June 30, 2020

Attn: Ms. Kathryn Vallis, Coastal Resources Planner
Lake Michigan Coastal Program
Indiana Department of Natural Resources
Indiana Dunes State Park Annex Office
1600 North 25 East
Chesterton, IN 46304

Subject: Coastal Zone Management Federal Consistency Review
Double Track Northwest Indiana (DT-NWI) Project
Lake, Porter, and LaPorte Counties, Indiana

Dear Ms. Vallis,

The South Shore Line (SSL) of the Northern Indiana Commuter Transportation District (NICTD) is hereby applying for a Federal Consistency Review for the proposed NICTD Double Track NWI Project due to its location within the Lake Michigan Coastal Program's (LMCP) jurisdictional boundary. NICTD operates the SSL commuter line from the South Bend International Airport in South Bend, Indiana to Millennium Station in downtown Chicago, Illinois. The SSL commuter line borders and provides train service adjacent to the Indiana Dunes State Park and the Indiana Dunes National Lakeshore.

NICTD proposes to expand their SSL commuter service between Gary, Indiana (approximate Universal Transverse Mercator [UTM] coordinates of 16 T 473047.77, 4605614.51) to Michigan City, Indiana (16 T 509426.03, 4617913.82 UTM), a distance of 26.6 miles. The proposed Project is depicted within the enclosed U.S. Geological Survey quadrangle maps for Gary, Portage, Chesterton, Dunes Acres, and Michigan City West.

Project Description

The proposed Project would include the construction of a second track with related signal, power, communications, bridge, track infrastructure, and station improvements. Improvements would include the addition of 1.8 miles of signal work at the far west and east ends of the proposed Project, generally between Milepost (MP) 58.8 and 58.1 and MP 33.3 and 32.2, and the construction of 16.1 miles of new second mainline track and new overhead contact system between MP 58.1 in Gary and MP 33.3 in Michigan City. These MPs roughly correspond with Tennessee Street in Gary and Michigan Boulevard in Michigan City, respectively.

At the east end of the proposed Project, between MP 35.3 (Sheridan Avenue) and MP 33.3 (Michigan Avenue) in Michigan City, the proposed Project would replace 1.9 miles of embedded, in-street track along 10th and 11th Streets with a segregated, double track.

Along 10th Street, the proposed Project would remove three at-grade road and rail crossings. The remaining open crossings would be upgraded with automatic warning devices consisting of flashers, gates, and bells.

The proposed Project would include four new bridges: over the CSX railroad tracks at MP 54.65 and Hobart Road at MP 54.62 in Gary; and over the Norfolk Southern railroad tracks at MP 47.41 and the main entrance road to ArcelorMittal at MP 47.32 in Burns Harbor to support the second mainline. The enclosed Overview Map depicts the location of these proposed bridges, proposed station improvements, and proposed double-track segments.

Two storage tracks for additional rush-hour trains, two high-level platforms, and additional parking would be constructed at the Gary/Miller Station. One high-level and one low-level platforms would be constructed at the Portage/Ogden Dunes Station. One new low-level platform would be constructed at the Dune Park Station while two new low-level platforms would be constructed at the Beverly Shores Station. Additional parking would be constructed at the Gary/Miller, Portage/Ogden Dunes, Dune Park, and 11th Street (Michigan City) Stations. The 11th Street (Michigan City) Station, located between Pine and Franklin Streets, would be improved and expanded with two high-level platforms and a new station building that includes a multi-level parking structure. Enclosed for your reference is the Affected Environment Mapbook depicting the proposed Project design on an aerial photo background.

Project documents are available at the Project's website https://www.doubletrack-nwi.com/docs.

Regulatory Compliance

As a Federal Undertaking, pursuant to the National Environmental Policy Act (NEPA) of 1969, the U.S. Department of Transportation (USDOT), Federal Transit Administration (FTA) and NICTD prepared an Environmental Assessment (EA), which was issued for public comment in September of 2017. FTA issued the Finding of No Significant Impact (FONSI) in November 2018. This proposed Project will require a federal Section 404 Individual Permit administered by the U.S. Army Corps of Engineers, Chicago District and pursuant to the Clean Water Act. The proposed Project's wetland and stream impacts trigger the need for said permit. Both a Section 404 Individual Permit Application and the FONSI have been enclosed for your reference.

Schedule

This proposed Project is funded, in part, by the FTA's Capital Investment Grant – New Starts program. NICTD submitted the proposed Project for a formal New Starts Project Rating by FTA in June 2019 and received approval to enter into the final phase of engineering in February 2020. The anticipated letting for construction of the proposed Project is July 2021 with construction completion in March 2023.

The proposed Project complies with Indiana's approved Coastal Management Program and will be conducted in a manner consistent with such program. Per the LMCP, it is anticipated that the proposed Project would help to decrease non-point source pollution into coastal waters. The increase in SSL commuter ridership should result in less vehicles on the road thereby reducing the amount of salinity runoff caused by roadway traffic. Pursuant to the Coastal Zone Management Act (CZMA), we are

requesting your agency's concurrence that our proposed activity is consistent to the maximum extent practicable with the enforceable policies of the approved LMCP.

We appreciate your consideration of this CZM federal consistency review. If you have any questions or require further information, please contact either Nicole Barker at nicole.barker@nictd.com or 219.926.6744 x 313 or Sara Merchán Paniagua at smerchanpaniagua@wightco.com or 630.739.7082.

Sincerely,

Nicole Barker
Director of Capital Investment and Implementation / Double Track NWI Project Manager
Northern Indiana Commuter Transportation District
33 E. US Highway 12
Chesterton, IN 46304

Sara Merchán Paniagua
Wight & Company
Environmental Scientist
2500 North Frontage Road
Darien, IL 60561

Enclosures:
Section 404 Individual Permit Application
Project Overview Map
U.S. Geological Survey Topographic Maps
Affected Environment Mapbook
Finding of No Significant Impact (FONSI)

cc:
Janice Reid, HDR
Kristine Kutscher, AECOM
Robin Martel, Wight & Company

TO SOUTH BEND
END IMPROVEMENT MP 32.2
LAKE MICHIGAN
MICHIGAN CITY
AMTRAK
CSS
CARROLL AVE
11TH ST (MICHIGAN CITY)
BEVERLY SHORES
PINES
CSX
DUNE PARK
DUNE ACRES
AMTRAK
BEVERLY SHORES
TO CHICAGO
GARY METRO CTR
GARY/MILLER
OVER HOBART ROAD (MP 54.62)
PORTAGE/OGDEN DUNES
OGDEN DUNES
BURNS HARBOR
PORTER
OVER NS (MP 47.41)
OVER ENTRANCE ROAD TO ARCELORMITTAL (MP 47.32)
GARY
NS
CHESTERTON
NS
BEGIN IMPROVEMENT MP 58.8
OVER CSX (MP 54.65)
LAKE STATION
CSX
PORTAGE
CSX
NEW CHICAGO
CF&E
NS
LAKE CO. PORTER CO.
SOUTH HAVEN
PORTER CO. LAPORTE CO.
WESTVILLE
HOBART
SALT CREEK COMMONS
Station
South Shore Line
Proposed Station Improvement
Proposed New Rail Bridge
Proposed Double Track
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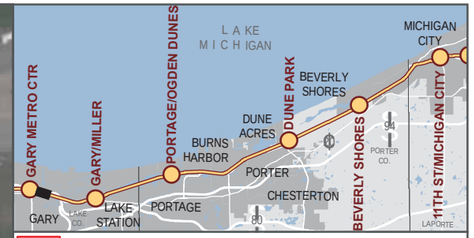
3
Miles

NATURAL ENVIRONMENT



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Proposed Acquisition Label Classification

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- NIPSCO
- Commercial
- INDOT
- Other Railroad
- Uneconomic Remnant
- Uneconomic Remnant Associated with a Streetside Parcel
- Full Acquisition
- Partial Acquisition

BUILT ENVIRONMENT

AFFECTED ENVIRONMENT

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0 200 400 FEET

SHEET 1 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

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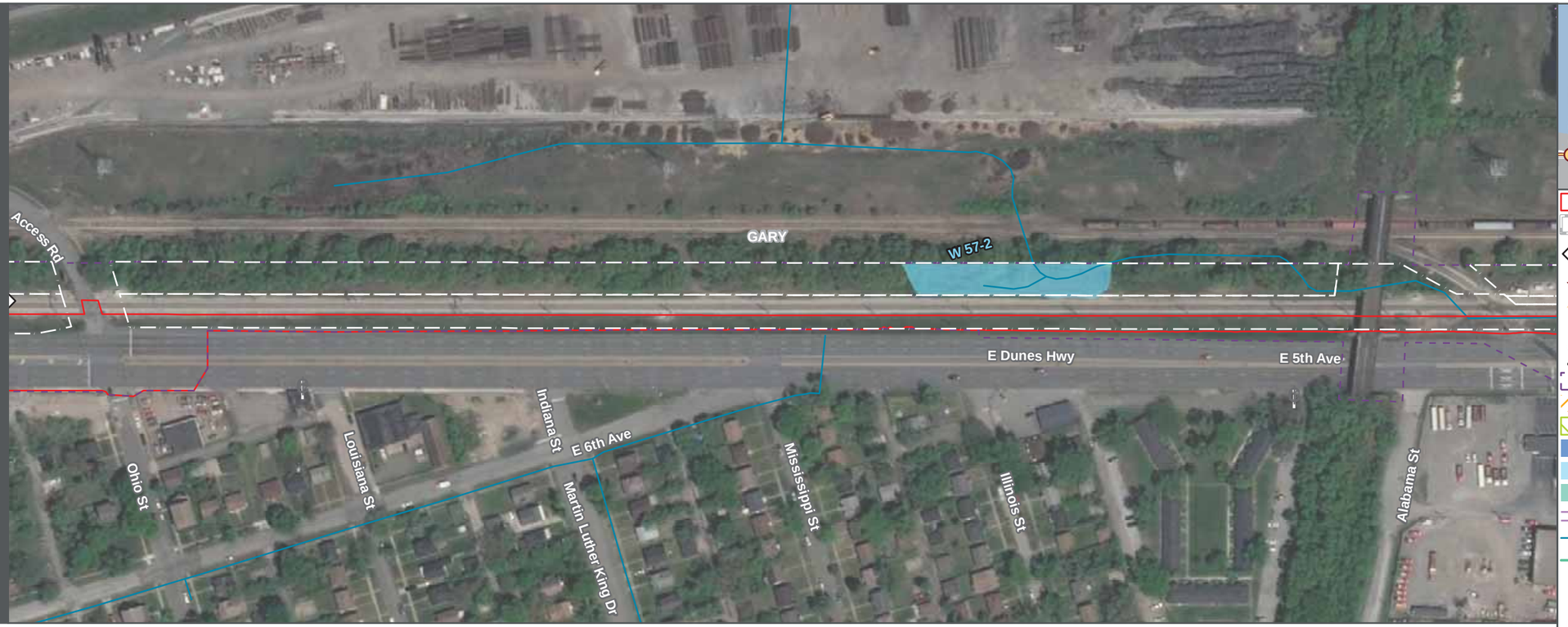

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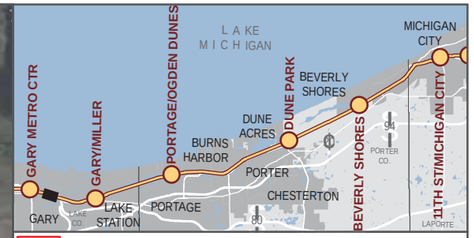

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DOUBLE TRACK NWI
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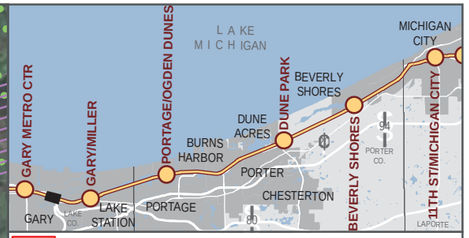

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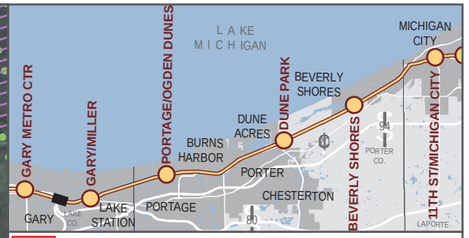

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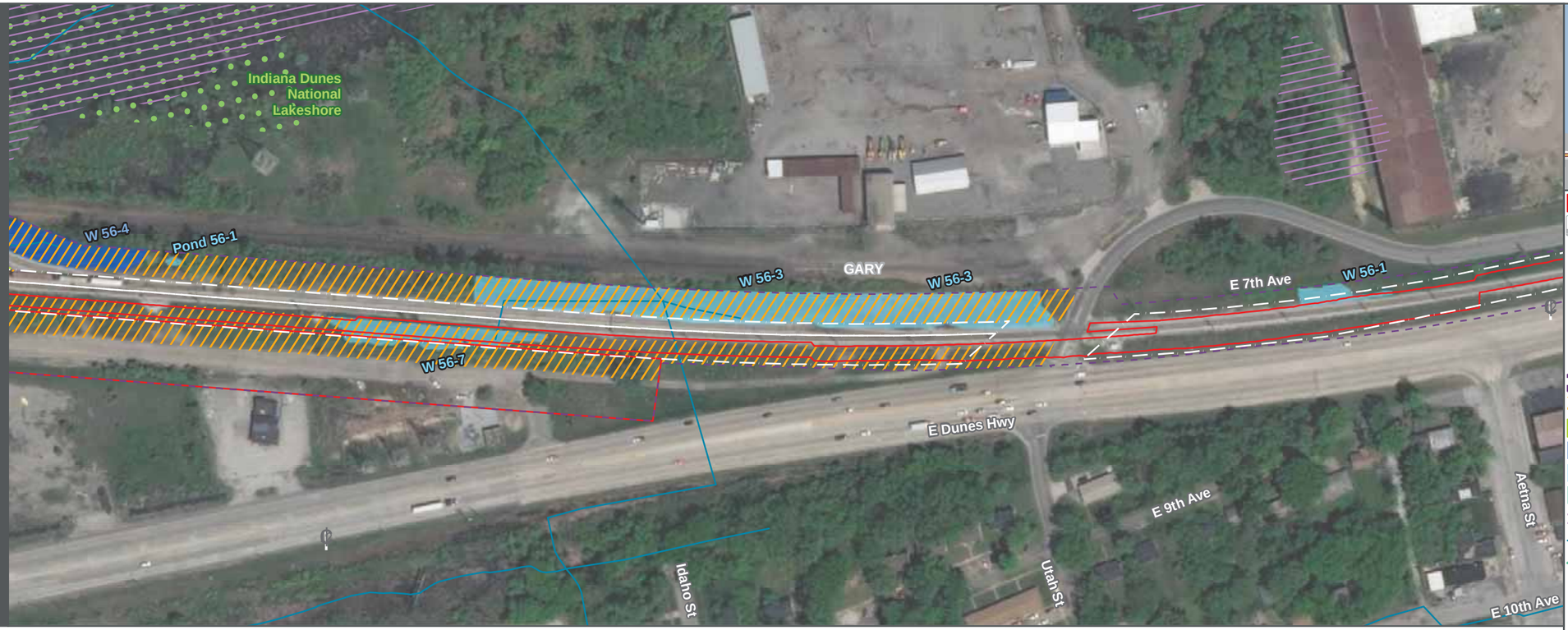

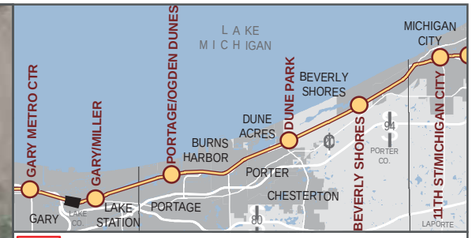

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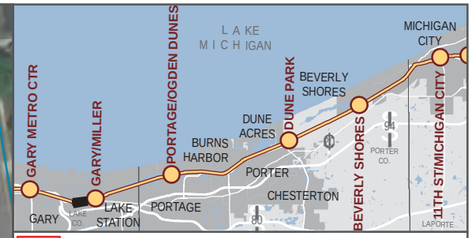

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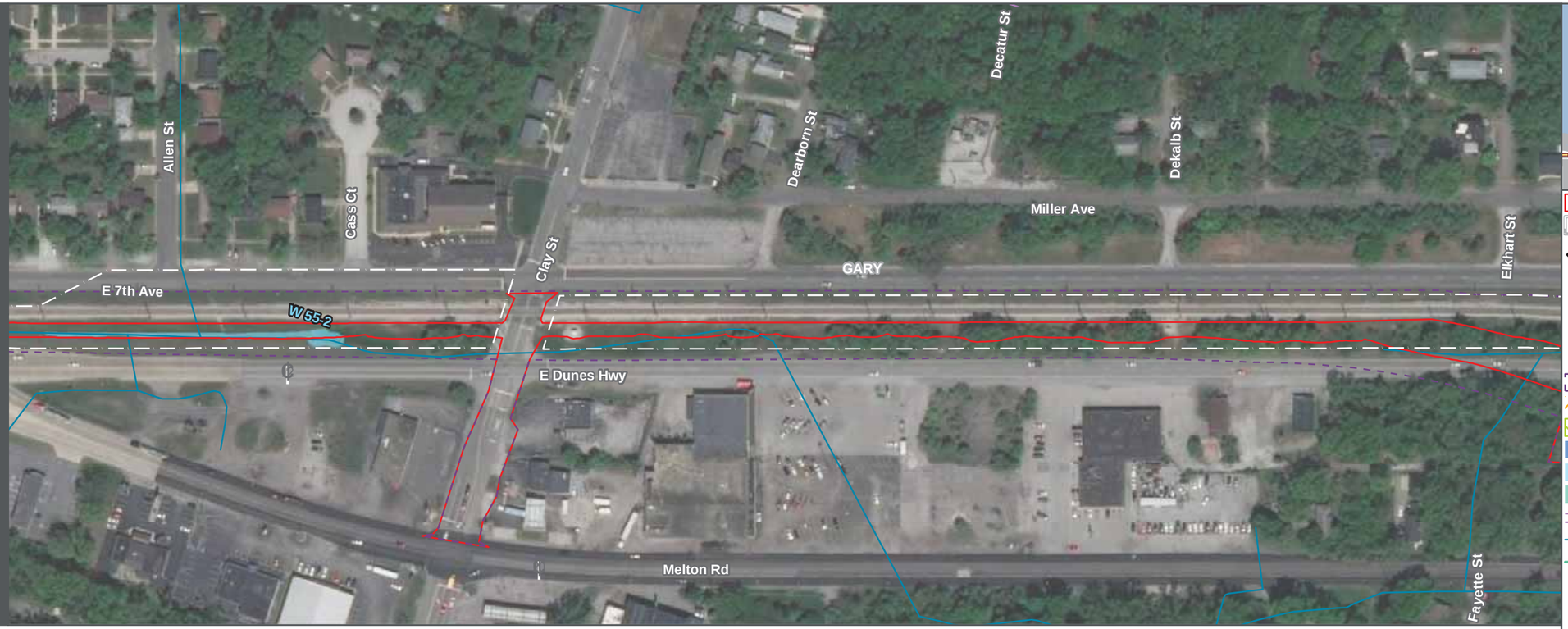

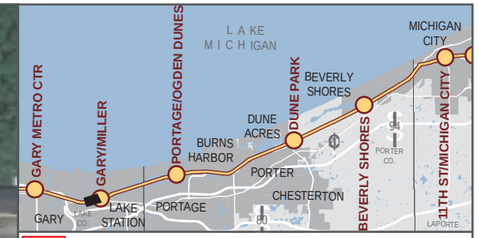

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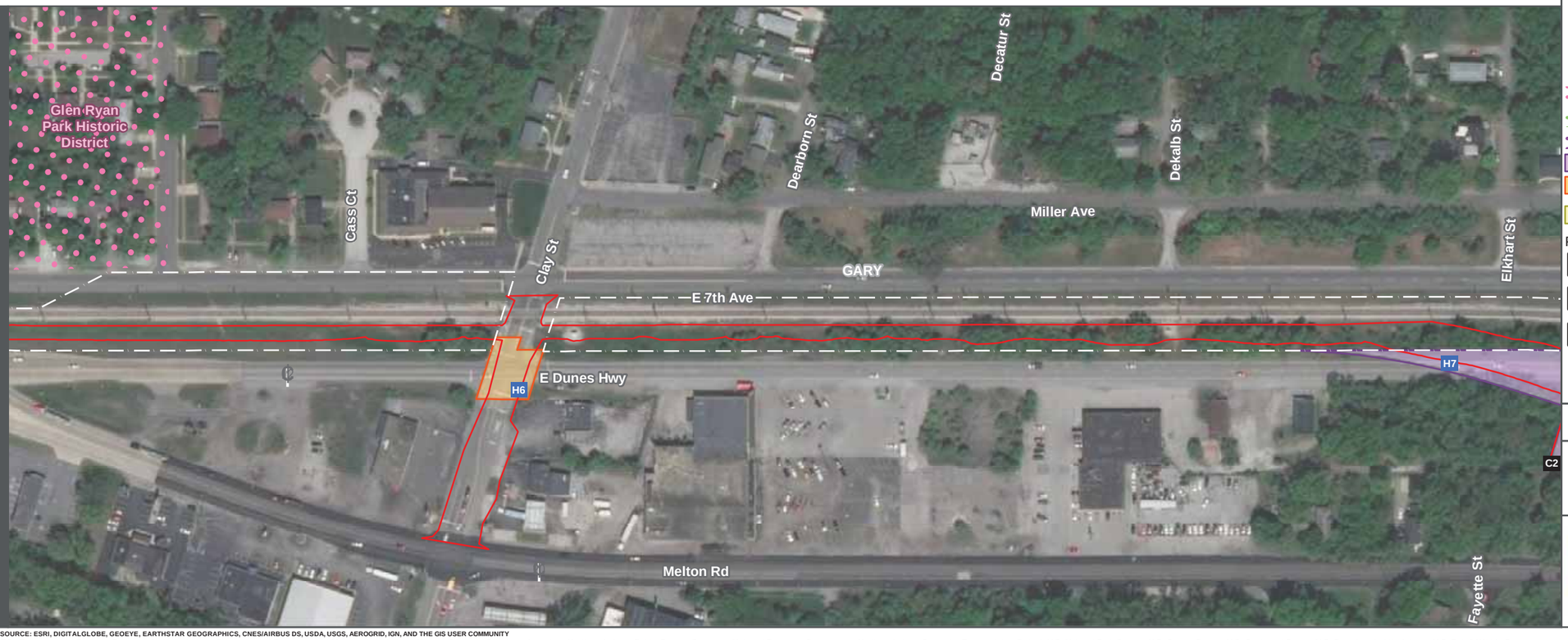

AFFECTED ENVIRONMENT

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

HDR

SHEET 7 OF 60

Data for reference only

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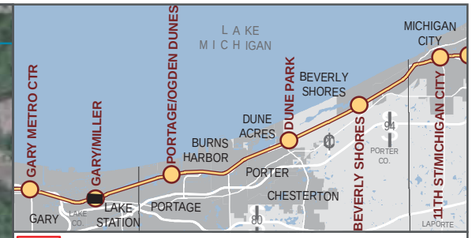

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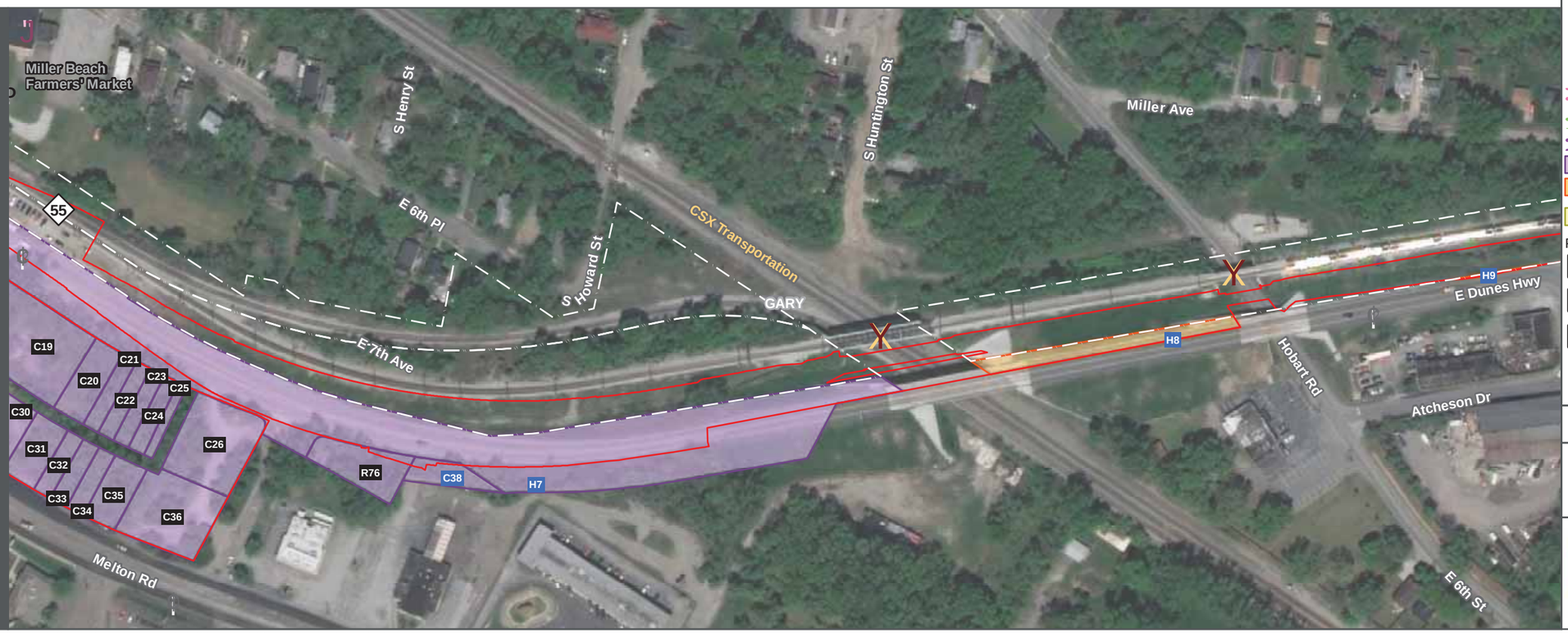

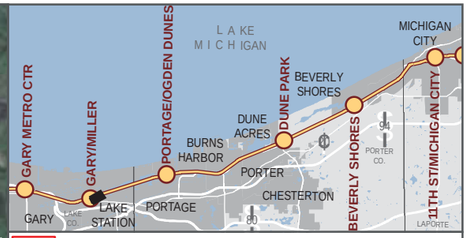

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- Environmental Survey Boundary
- Potential Threatened & Endangered Species Habitat
- Potential Bat Roost Habitat
- High-Quality Aquatic Resource
- Aquatic Resource
- 100-Year Floodplain
- NIPSCO Wetland
- NWI Wetland
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- Impaired Stream
- Existing Trail
- Planned Trail
- School
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- Police Department
- Public Place
- High or Medium Risk Recognized Environmental Condition
- Historic Property
- Historic District
- Indiana Dunes National Lakeshore
- Indiana Dunes State Park
- Anticipated Permanent Property Acquisition
- Anticipated Temporary Property Acquisition
- Mix of Anticipated Permanent & Temporary Property Acquisition

Proposed Acquisition Label Classification

- Residential
- Municipal
- NIPSCO
- Commercial
- INDOT
- Other Railroad
- Uneconomic Remnant
- Uneconomic Remnant Associated with a Streetside Parcel
- Full Acquisition
- Partial Acquisition

AFFECTED ENVIRONMENT

0

0 200 400 FEET

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

HDR

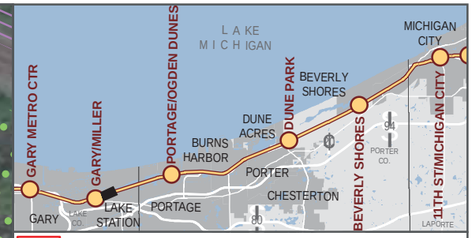
SHEET 9 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY
DATA SOURCES: Environmental Systems Research Institute, Indiana Department of Environmental Management, Indiana Historic Sites and Structures Inventory, Northern Indiana Public Service Company, National Resource Commission, Northern Indiana Commuter Transportation District, U.S. National Park Service, U.S. Census Bureau, U.S. Geological Survey, U.S. Department of the Interior, U.S. Fish & Wildlife Service

NATURAL ENVIRONMENT

BUILT ENVIRONMENT



- Proposed Construction Footprint
- Railroad Right-of-Way
- Milepost
- NICTD Station
- Proposed New NICTD Bridge
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- INDOT
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- Full Acquisition
- Partial Acquisition

AFFECTED ENVIRONMENT

0

0 200 400 FEET

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

HDR

SHEET 10 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY
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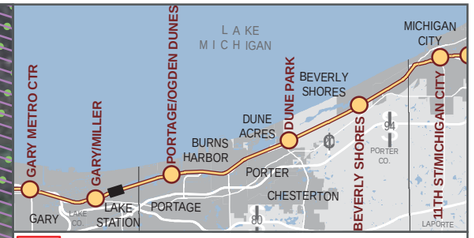
NATURAL ENVIRONMENT

BUILT ENVIRONMENT



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- Residential
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- Uneconomic Remnant Associated with a Streetside Parcel
- Full Acquisition
- Partial Acquisition

AFFECTED ENVIRONMENT

0

0 200 400 FEET

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

HDR

SHEET 11 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY
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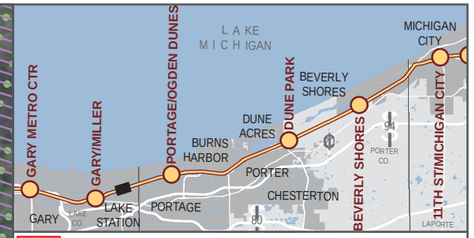
NATURAL ENVIRONMENT

BUILT ENVIRONMENT



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- Full Acquisition
- Partial Acquisition

AFFECTED ENVIRONMENT

0

0 200 400 FEET

DOUBLE TRACK N·W·I Connectivity for Accelerated Growth

HDR

SHEET 12 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

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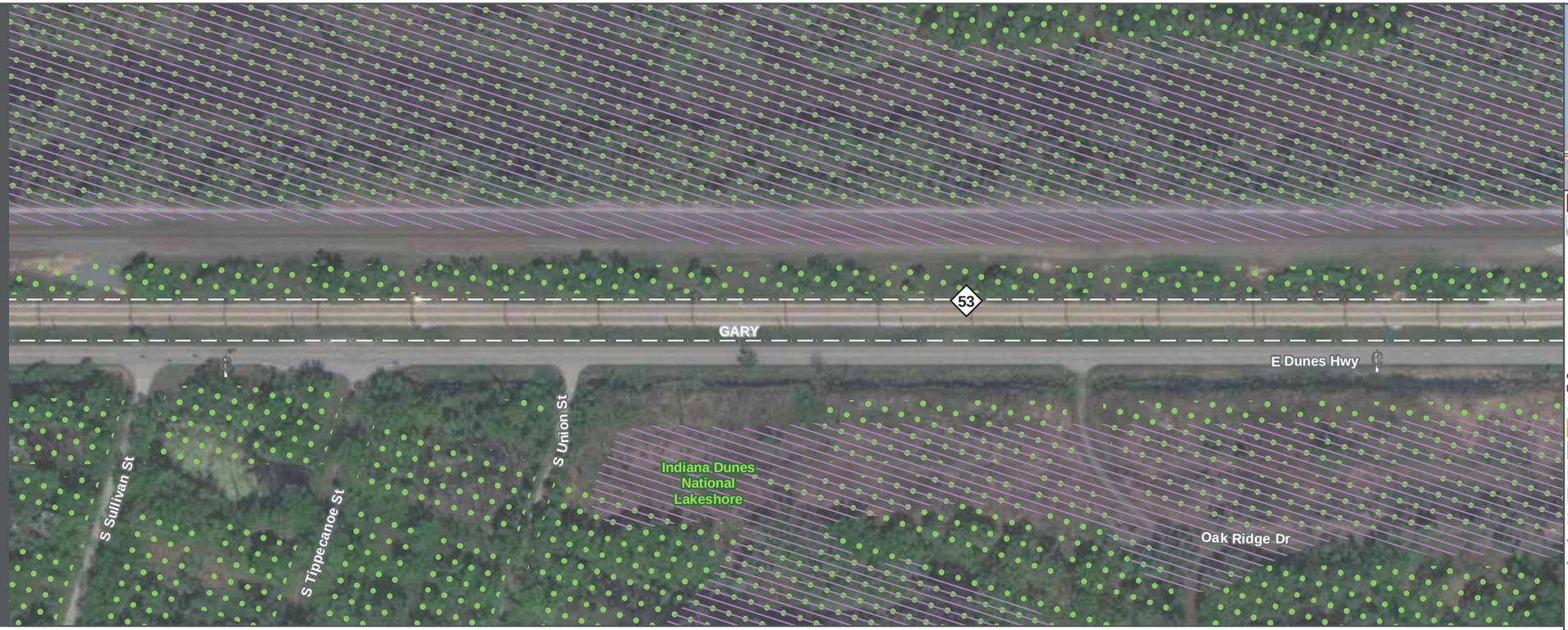
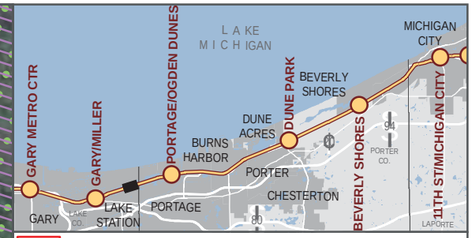
NATURAL ENVIRONMENT



BUILT ENVIRONMENT



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Proposed Acquisition Label Classification

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- Full Acquisition
- Partial Acquisition

AFFECTED ENVIRONMENT

0

0 200 400 FEET

DOUBLE TRACK NWI — Connectivity for Accelerated Growth

HDR

SHEET 13 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

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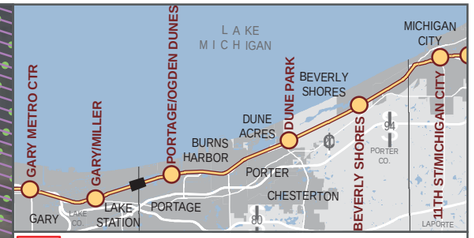
NATURAL ENVIRONMENT

BUILT ENVIRONMENT



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- Partial Acquisition

AFFECTED ENVIRONMENT

0

0 200 400 FEET

DOUBLE TRACK NWI
Connectivity for Accelerated Growth

HDR

SHEET 14 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

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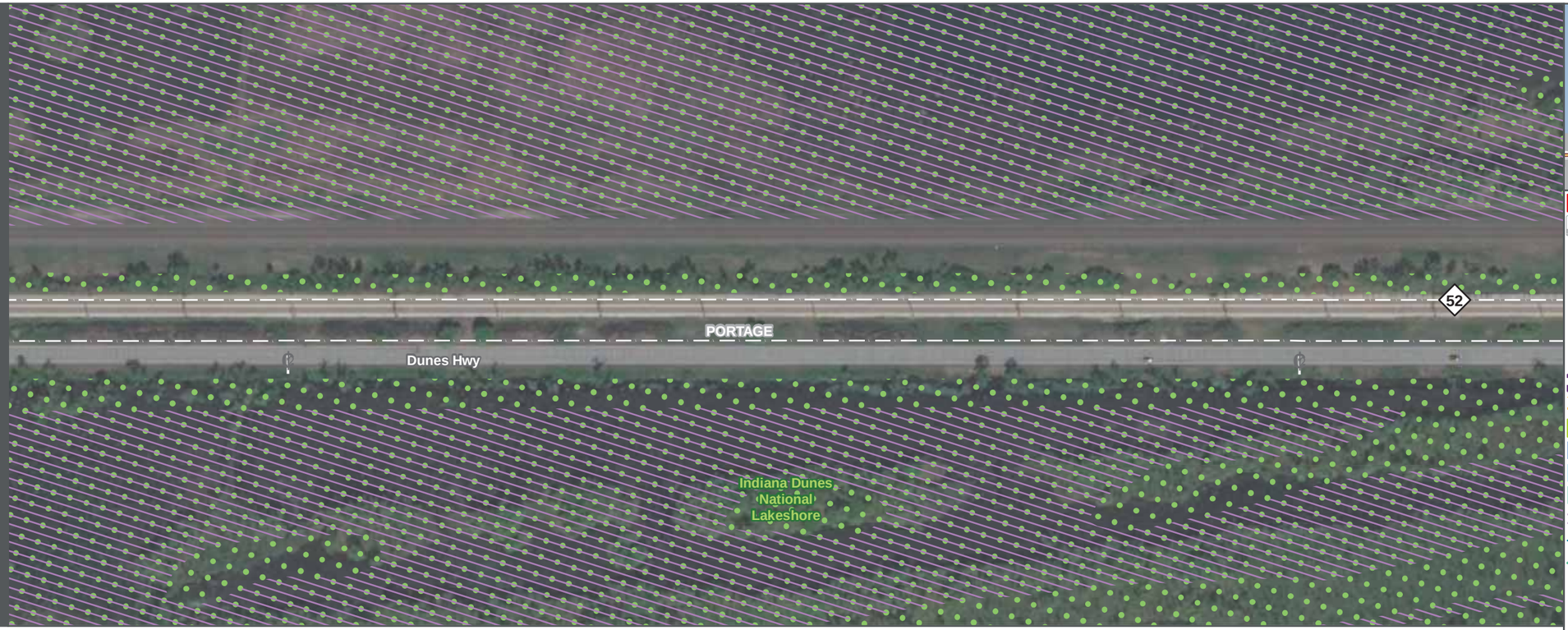
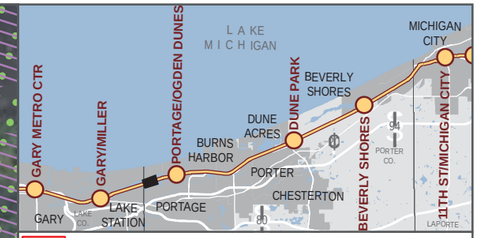
NATURAL ENVIRONMENT



BUILT ENVIRONMENT



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Proposed Acquisition Label Classification

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- Uneconomic Remnant Associated with a Streetside Parcel
- Full Acquisition
- Partial Acquisition

AFFECTED ENVIRONMENT

0

0 200 400 FEET

DOUBLE TRACK N·W·I Connectivity for Accelerated Growth

HDR

SHEET 15 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

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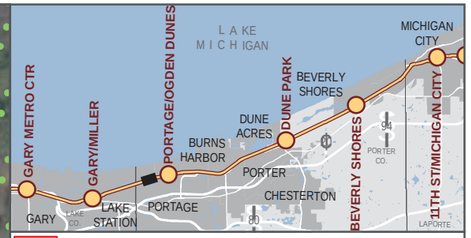
NATURAL ENVIRONMENT



- Proposed Construction Footprint
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Proposed Acquisition Label Classification

- Residential
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- Uneconomic Remnant Associated with a Streetside Parcel
- Full Acquisition
- Partial Acquisition

BUILT ENVIRONMENT

AFFECTED ENVIRONMENT

0

0 200 400 FEET

SHEET 16 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY
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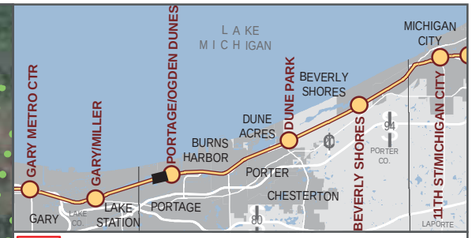
NATURAL ENVIRONMENT

BUILT ENVIRONMENT



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Proposed Acquisition Label Classification

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- Uneconomic Remnant Associated with a Streetside Parcel
- Full Acquisition
- Partial Acquisition

AFFECTED ENVIRONMENT

0

0 200 400 FEET

DOUBLE TRACK NWI
Connectivity for Accelerated Growth

HDR

SHEET 17 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

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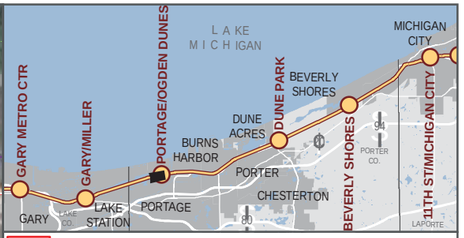
NATURAL ENVIRONMENT



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- Partial Acquisition

BUILT ENVIRONMENT

AFFECTED ENVIRONMENT

0

0 200 400 FEET

SHEET 18 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY
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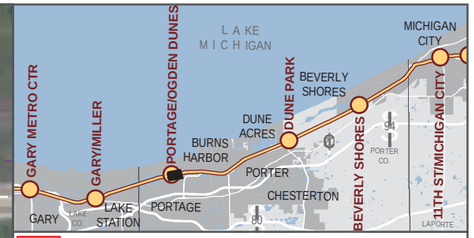
NATURAL ENVIRONMENT



- Proposed Construction Footprint
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- Partial Acquisition

BUILT ENVIRONMENT

AFFECTED ENVIRONMENT

0

0 200 400 FEET

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

HDR

SHEET 19 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY
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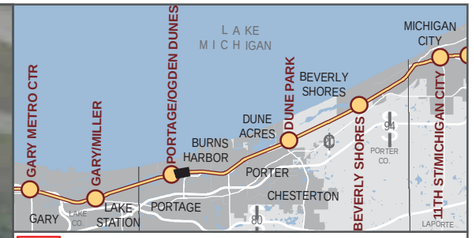
NATURAL ENVIRONMENT

BUILT ENVIRONMENT



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Proposed Acquisition Label Classification

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AFFECTED ENVIRONMENT

0

0 200 400 FEET

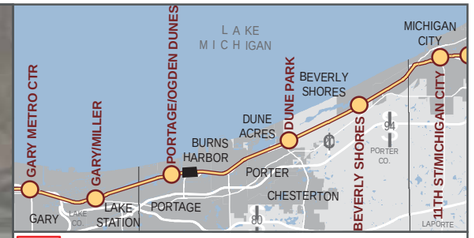
SHEET 20 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY
DATA SOURCES: Environmental Systems Research Institute, Indiana Department of Environmental Management, Indiana Historic Sites and Structures Inventory, Northern Indiana Public Service Company, National Resource Commission, Northern Indiana Commuter Transportation District, U.S. National Park Service, U.S. Census Bureau, U.S. Geological Survey, U.S. Department of the Interior, U.S. Fish & Wildlife Service

NATURAL ENVIRONMENT

BUILT ENVIRONMENT



- Proposed Construction Footprint
- Railroad Right-of-Way
- Milepost
- NICTD Station
- Proposed New NICTD Bridge
- Proposed Station Parking
- Proposed Crossing Closure
- Environmental Survey Boundary
- Potential Threatened & Endangered Species Habitat
- Potential Bat Roost Habitat
- High-Quality Aquatic Resource
- Aquatic Resource
- 100-Year Floodplain
- NIPSCO Wetland
- NWI Wetland
- Stream
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- Police Department
- Public Place
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- Historic Property
- Historic District
- Indiana Dunes National Lakeshore
- Indiana Dunes State Park
- Anticipated Permanent Property Acquisition
- Anticipated Temporary Property Acquisition
- Mix of Anticipated Permanent & Temporary Property Acquisition

Proposed Acquisition Label Classification

- Residential
- Municipal
- NIPSCO
- Commercial
- INDOT
- Other Railroad
- Uneconomic Remnant
- Uneconomic Remnant Associated with a Streetside Parcel
- Full Acquisition
- Partial Acquisition

AFFECTED ENVIRONMENT

0

0 200 400 FEET

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

HDR

SHEET 21 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY
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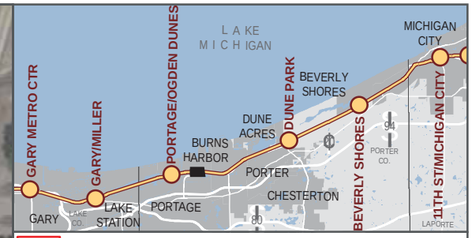
NATURAL ENVIRONMENT

BUILT ENVIRONMENT



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- Uneconomic Remnant Associated with a Streetside Parcel
- Full Acquisition
- Partial Acquisition

AFFECTED ENVIRONMENT

0

0 200 400 FEET

DOUBLE TRACK N·W·I Connectivity for Accelerated Growth

HDR

SHEET 22 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY
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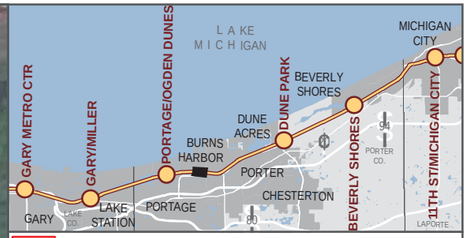
NATURAL ENVIRONMENT

BUILT ENVIRONMENT



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- INDOT
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- Uneconomic Remnant Associated with a Streetside Parcel
- Full Acquisition
- Partial Acquisition

AFFECTED ENVIRONMENT

0

0 200 400 FEET

DOUBLE TRACK NWI
Connectivity for Accelerated Growth

HDR

SHEET 23 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY
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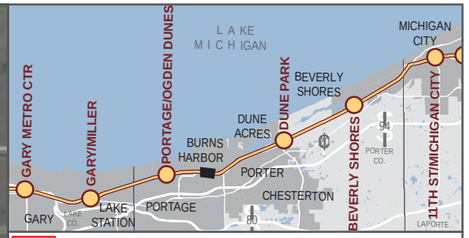
NATURAL ENVIRONMENT

BUILT ENVIRONMENT



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- Partial Acquisition

AFFECTED ENVIRONMENT

0

0 200 400 FEET

DOUBLE TRACK NWI — Connectivity for Accelerated Growth

HDR

SHEET 24 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY
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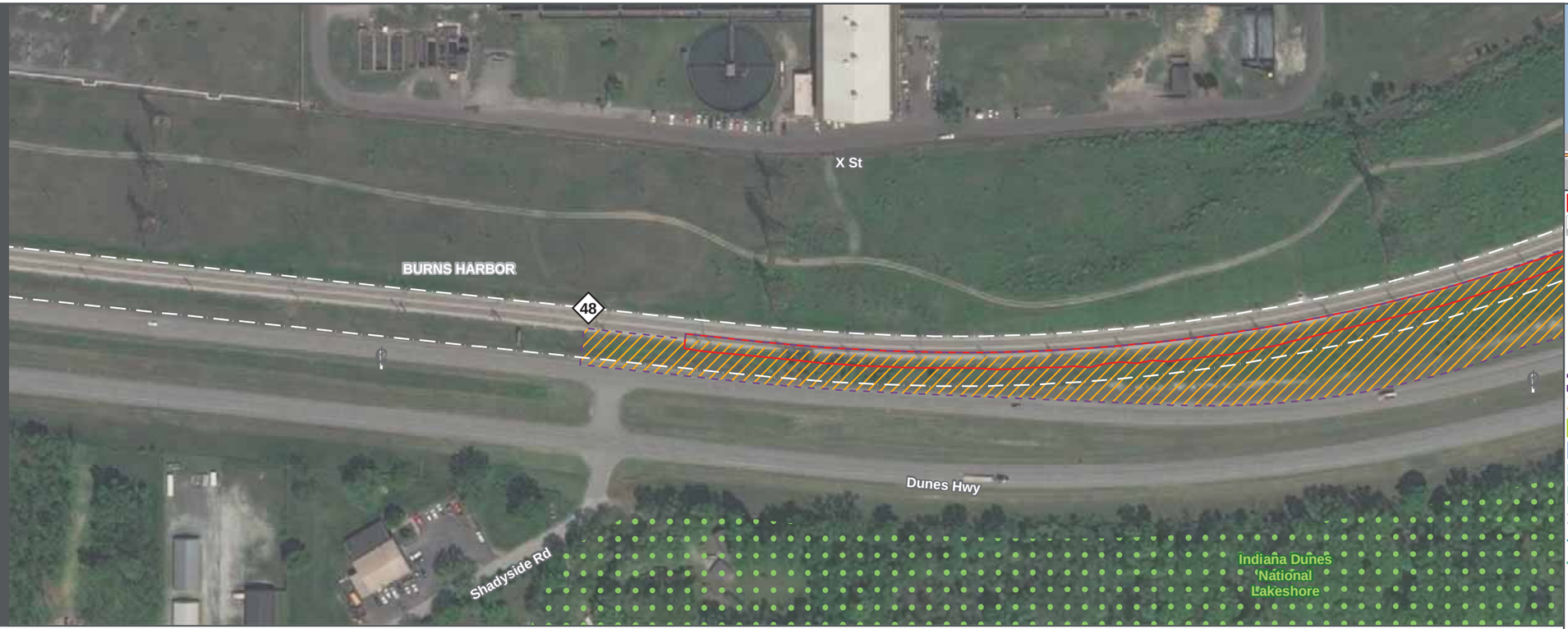
NATURAL ENVIRONMENT



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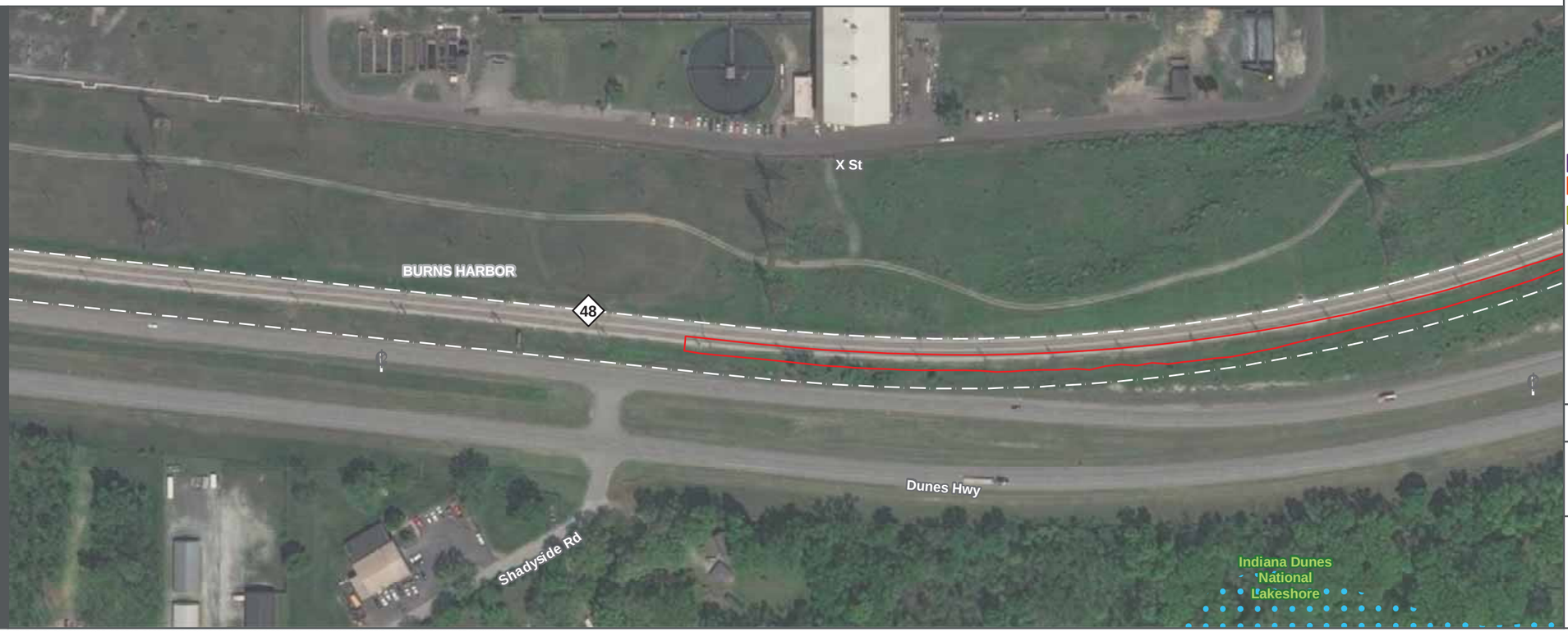

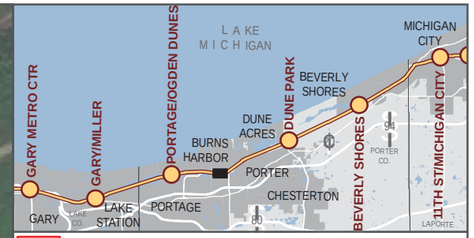

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Proposed Acquisition Label Classification

- Residential
- Municipal
- NIPSCO
- Commercial
- INDOT
- Other Railroad
- Uneconomic Remnant
- Uneconomic Remnant Associated with a Streetside Parcel
- Full Acquisition
- Partial Acquisition

AFFECTED ENVIRONMENT

0

0 200 400 FEET

DOUBLE TRACK NWI
Connectivity for Accelerated Growth

HDR

SHEET 25 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY
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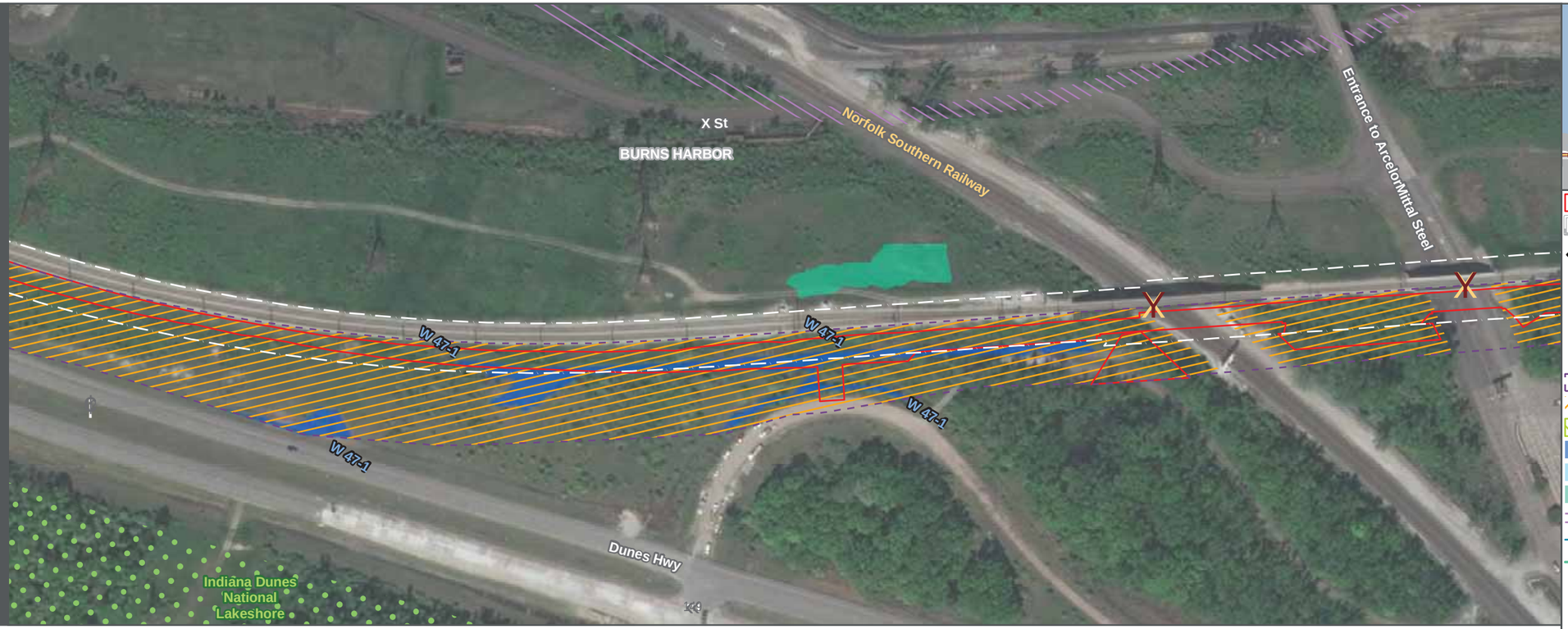
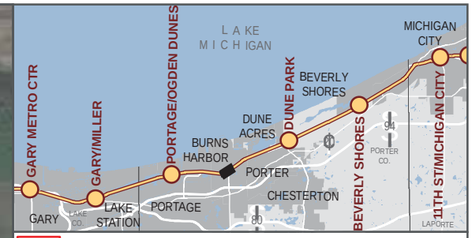
NATURAL ENVIRONMENT



BUILT ENVIRONMENT



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AFFECTED ENVIRONMENT

0

0 200 400 FEET

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

HDR

SHEET 26 OF 60

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BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY
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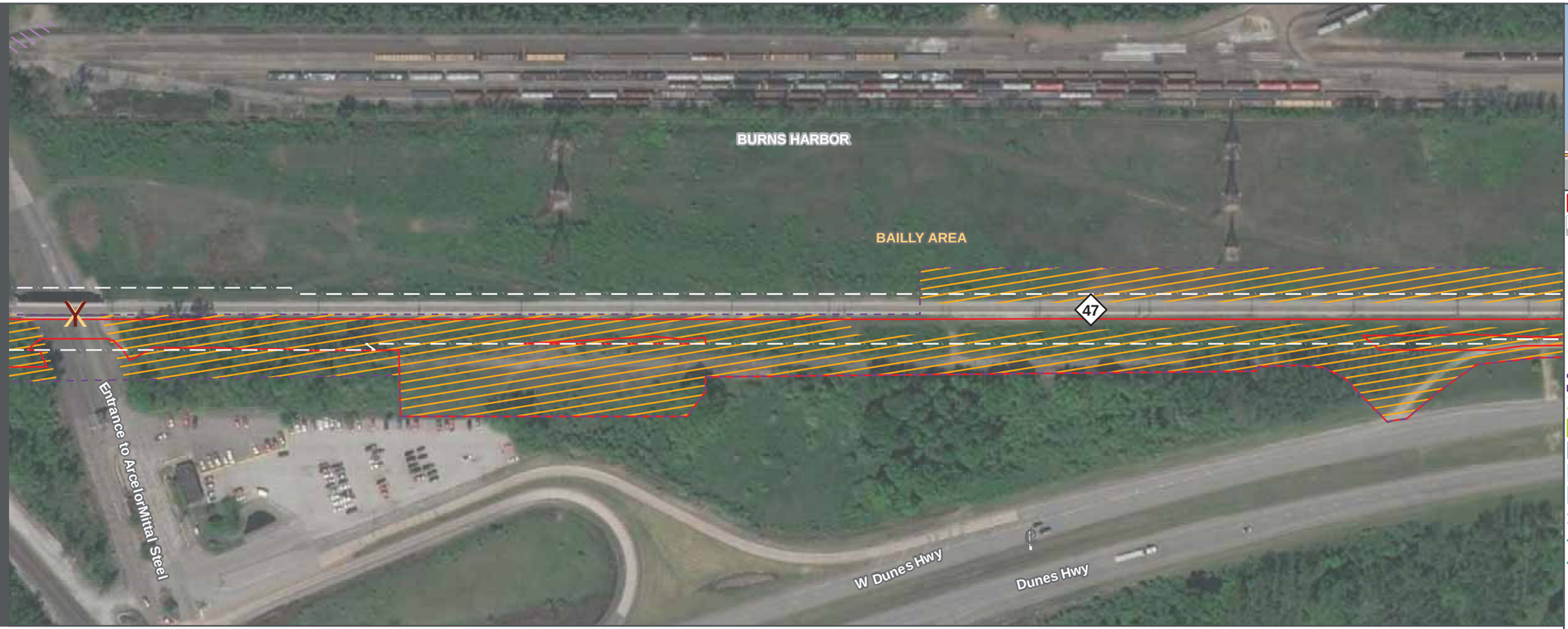
NATURAL ENVIRONMENT



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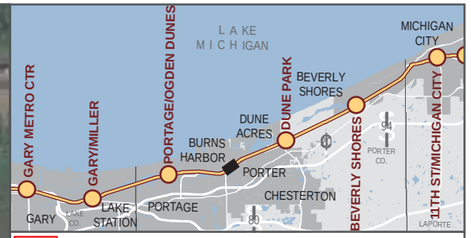

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AFFECTED ENVIRONMENT

0

0 200 400 FEET

DOUBLE TRACK N·W·I Connectivity for Accelerated Growth

HDR

SHEET 27 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

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NATURAL ENVIRONMENT

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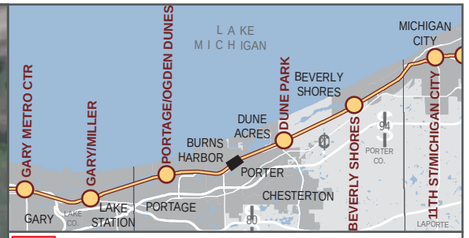

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- Partial Acquisition

AFFECTED ENVIRONMENT

0 200 400 FEET

DOUBLE TRACK N·W·I Connectivity for Accelerated Growth

HDR

SHEET 28 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY
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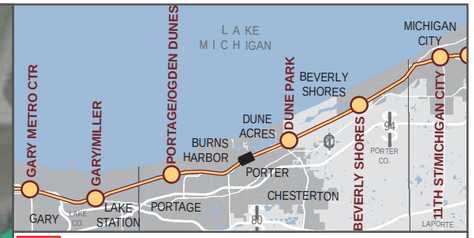

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BUILT ENVIRONMENT

AFFECTED ENVIRONMENT

0

0 200 400 FEET

SHEET 29 OF 60

Data for reference only

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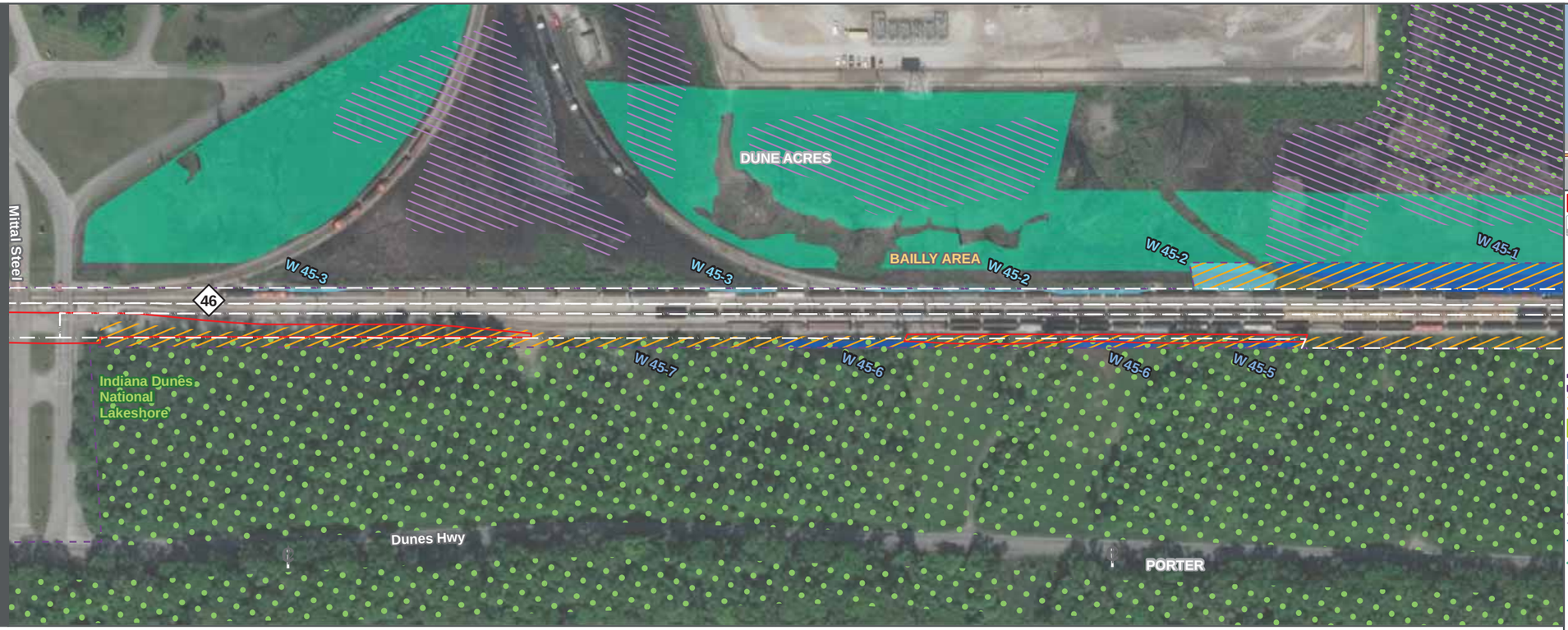

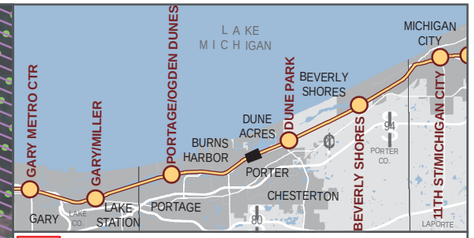

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BUILT ENVIRONMENT

AFFECTED ENVIRONMENT

0

0 200 400 FEET

SHEET 30 OF 60

Data for reference only

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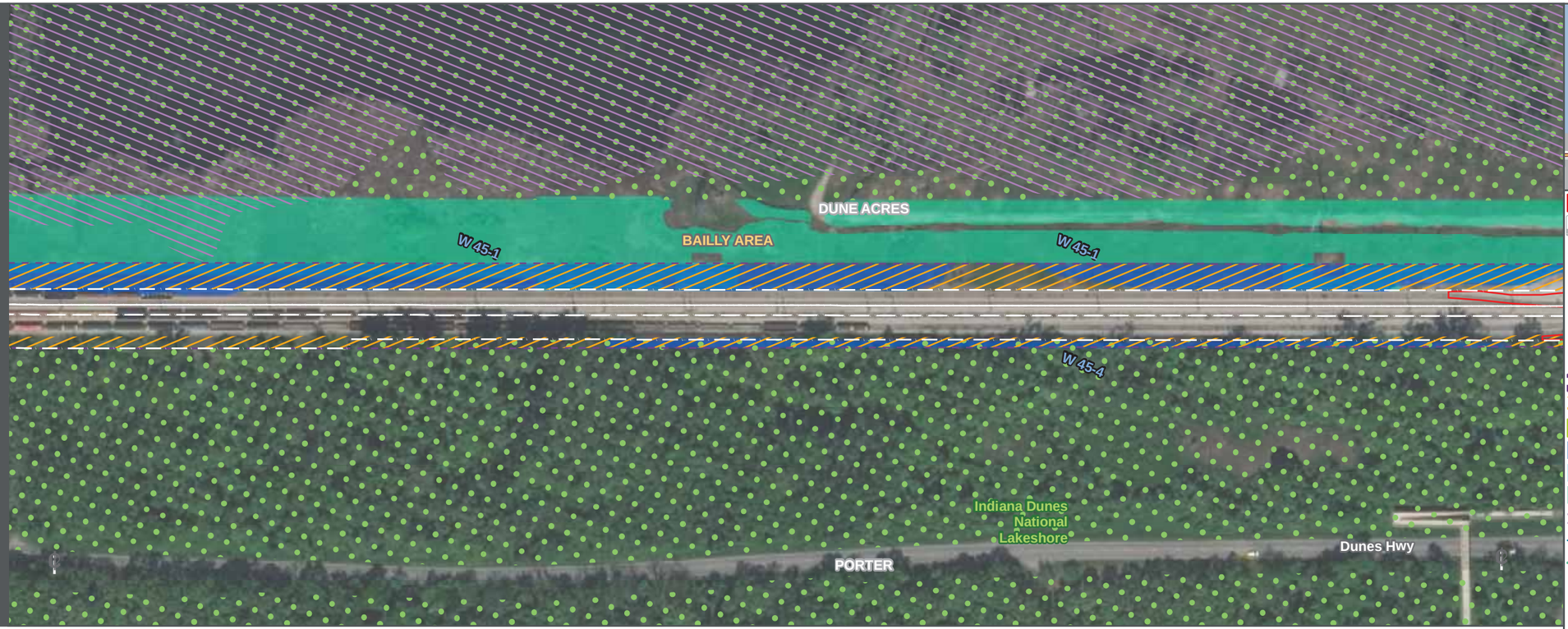

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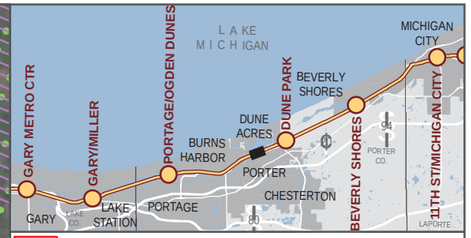

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- Indiana Dunes State Park
- Anticipated Permanent Property Acquisition
- Anticipated Temporary Property Acquisition
- Mix of Anticipated Permanent & Temporary Property Acquisition

Proposed Acquisition Label Classification

- Residential
- Municipal
- NIPSCO
- Commercial
- INDOT
- Other Railroad
- Uneconomic Remnant
- Uneconomic Remnant Associated with a Streetside Parcel
- Full Acquisition
- Partial Acquisition

AFFECTED ENVIRONMENT

0

0 200 400 FEET

DOUBLE TRACK NWI
Connectivity for Accelerated Growth

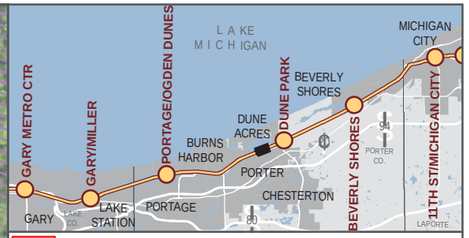
HDR

SHEET 31 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY
DATA SOURCES: Environmental Systems Research Institute, Indiana Department of Environmental Management, Indiana Historic Sites and Structures Inventory, Northern Indiana Public Service Company, National Resource Commission, Northern Indiana Commuter Transportation District, U.S. National Park Service, U.S. Census Bureau, U.S. Geological Survey, U.S. Department of the Interior, U.S. Fish & Wildlife Service

NATURAL ENVIRONMENT



- Proposed Construction Footprint
- Railroad Right-of-Way
- Milepost
- NICTD Station
- Proposed New NICTD Bridge
- Proposed Station Parking
- Proposed Crossing Closure
- Environmental Survey Boundary
- Potential Threatened & Endangered Species Habitat
- Potential Bat Roost Habitat
- High-Quality Aquatic Resource
- Aquatic Resource
- 100-Year Floodplain
- NIPSCO Wetland
- NWI Wetland
- Stream
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- Full Acquisition
- Partial Acquisition

BUILT ENVIRONMENT

AFFECTED ENVIRONMENT

0 200 400 FEET

SHEET 32 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

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NATURAL ENVIRONMENT

DUNE ACRES

W 44-3

BAILLY AREA

Wagner Rd

PORTER

W 44-2

W 44-4

W 44-4

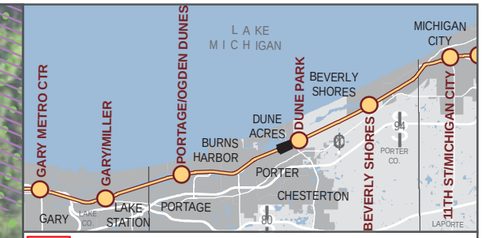
W 44-4

W 44-4

W 44-5

Indiana Dunes National Lakeshore

CO Rd 50 W



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BUILT ENVIRONMENT

DUNE ACRES

Calumet Trail

BAILLY AREA

U2

U2

U2

U2

PORTER

Co Rd 50 W

Indiana Dunes National Lakeshore

Wagner Rd

AFFECTED ENVIRONMENT

0

0 200 400 FEET

DOUBLE TRACK N·W·I Connectivity for Accelerated Growth

HDR

SHEET 33 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY
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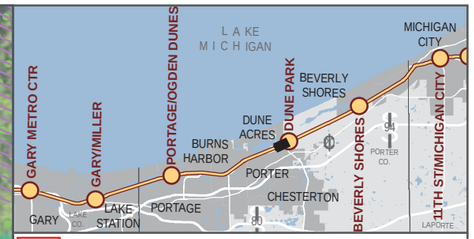
NATURAL ENVIRONMENT

BUILT ENVIRONMENT



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AFFECTED ENVIRONMENT

0

0 200 400 FEET

DOUBLE TRACK NWI
Connectivity for Accelerated Growth

HDR

SHEET 34 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY
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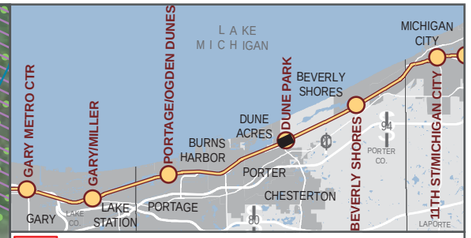

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BUILT ENVIRONMENT

AFFECTED ENVIRONMENT

0

0 200 400 FEET

DOUBLE TRACK N·W·I Connectivity for Accelerated Growth

HDR

SHEET 35 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY
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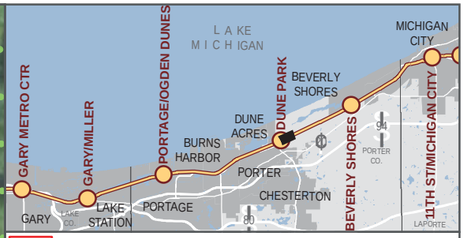
NATURAL ENVIRONMENT

BUILT ENVIRONMENT



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AFFECTED ENVIRONMENT

0

0 200 400 FEET

DOUBLE TRACK NWI — Connectivity for Accelerated Growth

HDR

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY
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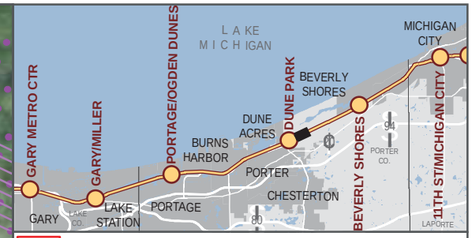
NATURAL ENVIRONMENT



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BUILT ENVIRONMENT

AFFECTED ENVIRONMENT

0 200 400 FEET

SHEET 37 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY
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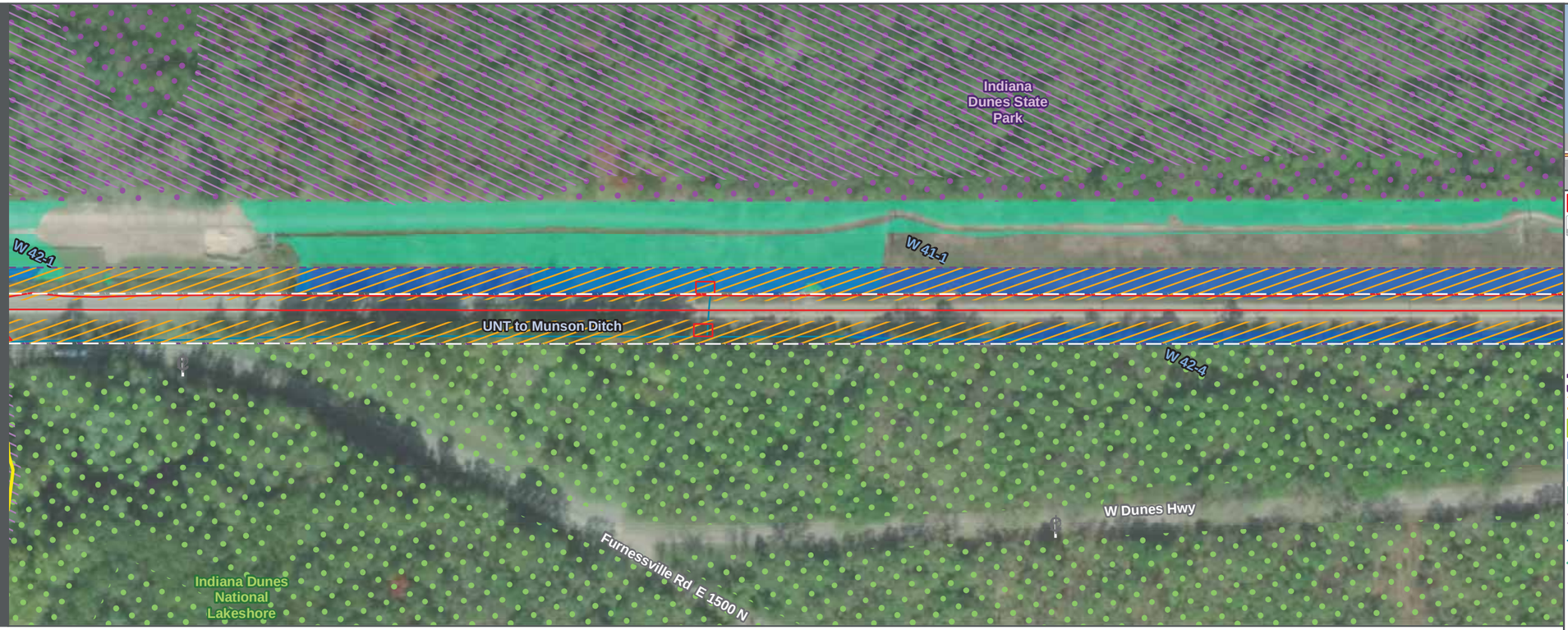
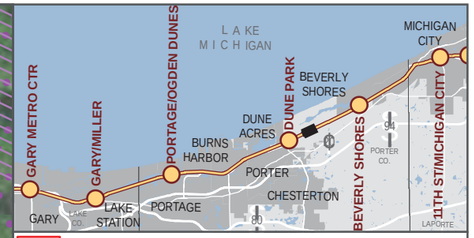
NATURAL ENVIRONMENT



BUILT ENVIRONMENT



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AFFECTED ENVIRONMENT

0

0 200 400 FEET

DOUBLE TRACK NWI — Connectivity for Accelerated Growth

HDR

SHEET 38 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

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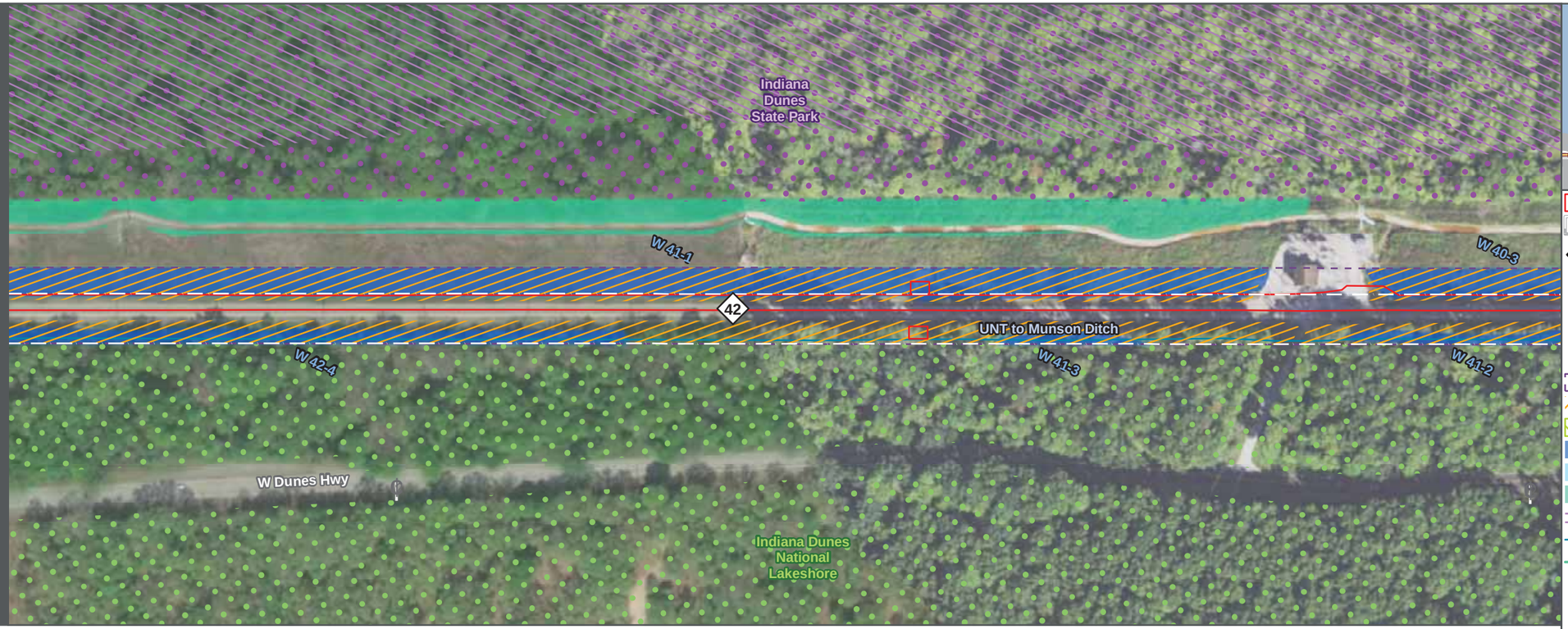
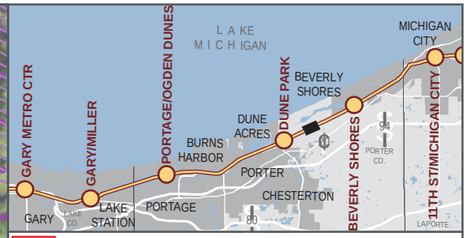
NATURAL ENVIRONMENT



BUILT ENVIRONMENT



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AFFECTED ENVIRONMENT

0

0 200 400 FEET

DOUBLE TRACK NWI — Connectivity for Accelerated Growth

HDR

SHEET 39 OF 60

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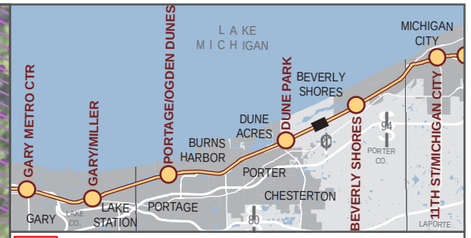
NATURAL ENVIRONMENT

BUILT ENVIRONMENT



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AFFECTED ENVIRONMENT

0 200 400 FEET

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

HDR

SHEET 40 OF 60

Data for reference only

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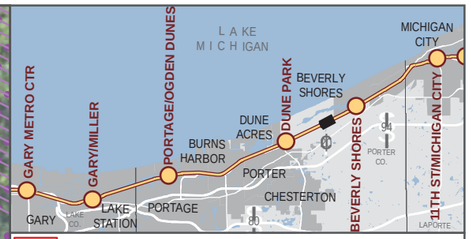
NATURAL ENVIRONMENT

BUILT ENVIRONMENT



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AFFECTED ENVIRONMENT

0

0 200 400 FEET

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

HDR

SHEET 41 OF 60

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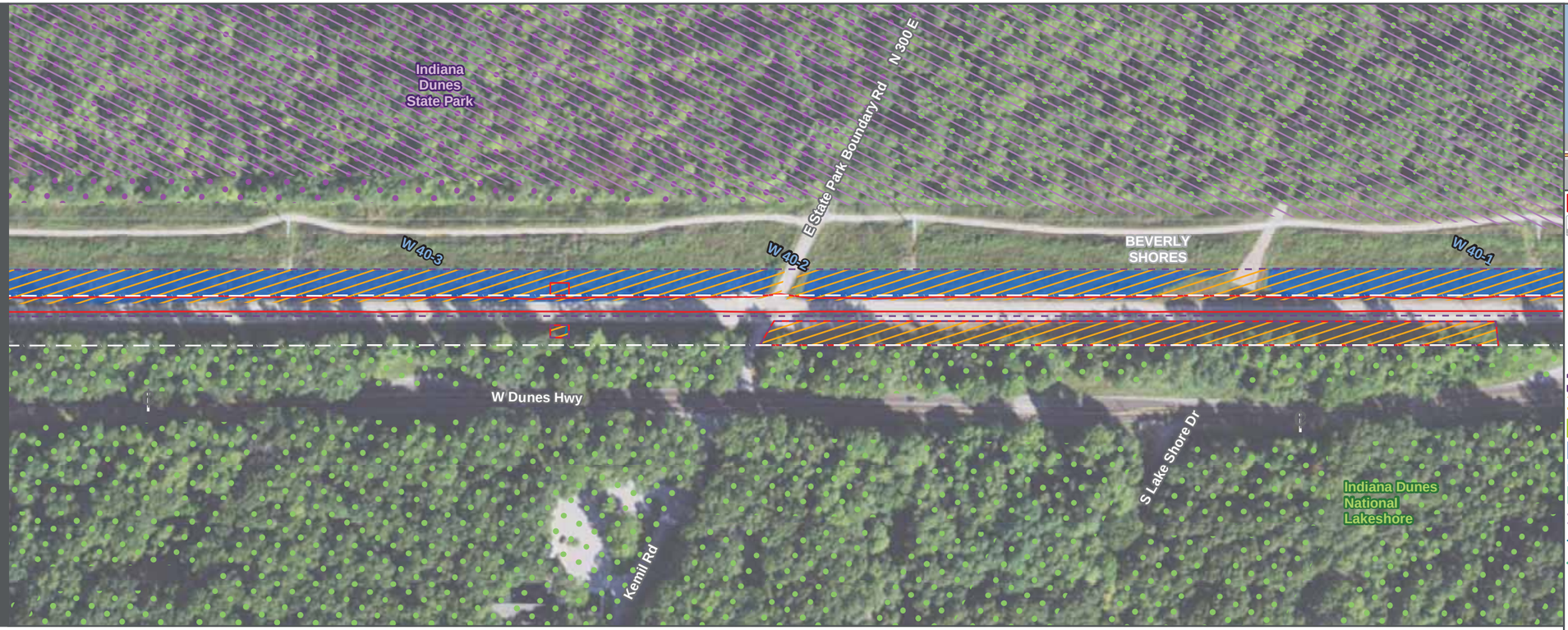

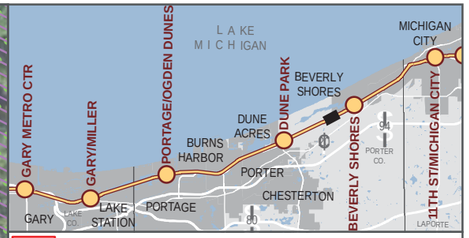

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- Full Acquisition
- Partial Acquisition

BUILT ENVIRONMENT

AFFECTED ENVIRONMENT

0

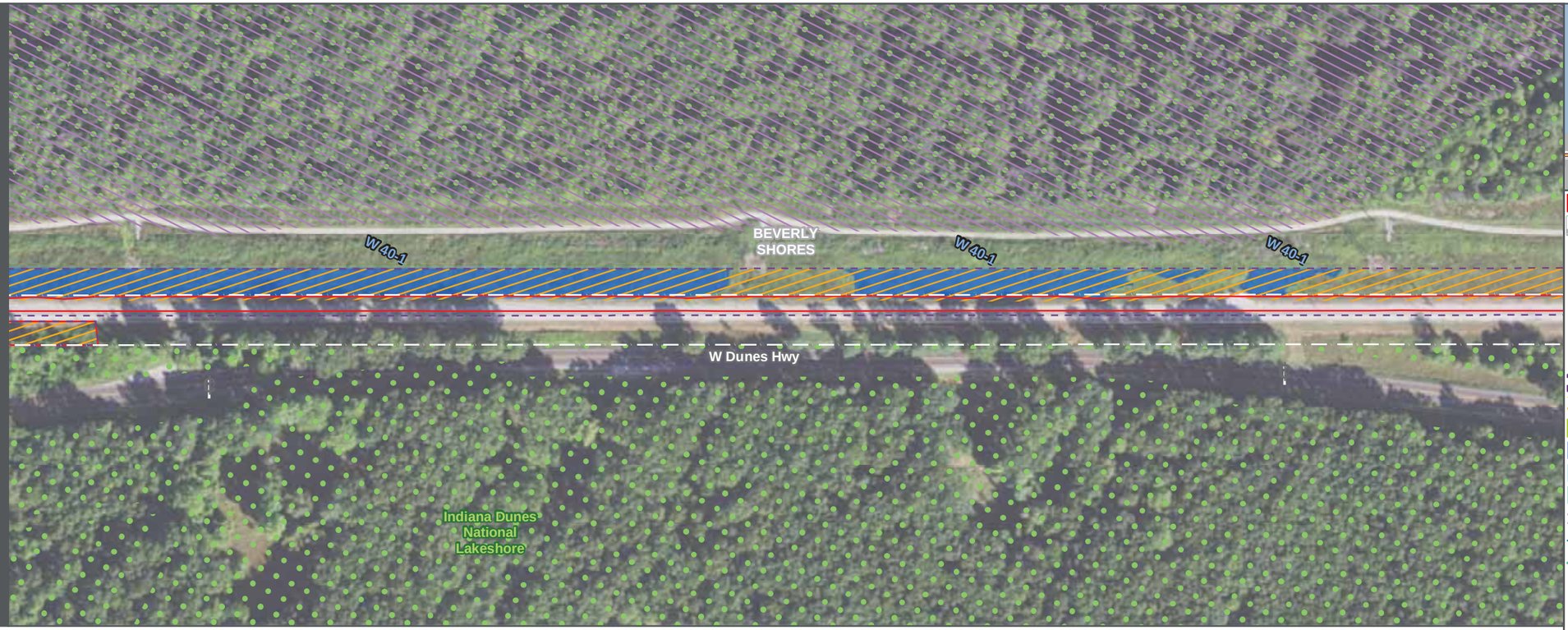
0 200 400 FEET

SHEET 42 OF 60

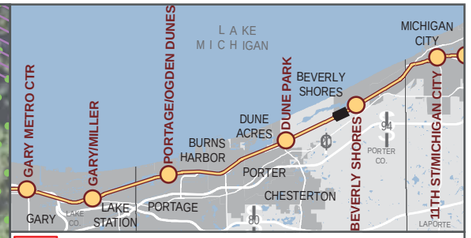
Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY
DATA SOURCES: Environmental Systems Research Institute, Indiana Department of Environmental Management, Indiana Historic Sites and Structures Inventory, Northern Indiana Public Service Company, National Resource Commission, Northern Indiana Commuter Transportation District, U.S. National Park Service, U.S. Census Bureau, U.S. Geological Survey, U.S. Department of the Interior, U.S. Fish & Wildlife Service

NATURAL ENVIRONMENT



BUILT ENVIRONMENT



- Proposed Construction Footprint
- Railroad Right-of-Way
- Milepost
- NICTD Station
- Proposed New NICTD Bridge
- Proposed Station Parking
- Proposed Crossing Closure
- Environmental Survey Boundary
- Potential Threatened & Endangered Species Habitat
- Potential Bat Roost Habitat
- High-Quality Aquatic Resource
- Aquatic Resource
- 100-Year Floodplain
- NIPSCO Wetland
- NWI Wetland
- Stream
- Impaired Stream
- Existing Trail
- Planned Trail
- School
- Fire Station
- Place of Worship
- Marina
- Police Department
- Public Place
- High or Medium Risk Recognized Environmental Condition
- Historic Property
- Historic District
- Indiana Dunes National Lakeshore
- Indiana Dunes State Park
- Anticipated Permanent Property Acquisition
- Anticipated Temporary Property Acquisition
- Mix of Anticipated Permanent & Temporary Property Acquisition

Proposed Acquisition Label Classification

- Residential
- Municipal
- NIPSCO
- Commercial
- INDOT
- Other Railroad
- Uneconomic Remnant
- Uneconomic Remnant Associated with a Streetside Parcel
- Full Acquisition
- Partial Acquisition

AFFECTED ENVIRONMENT

0

0 200 400 FEET

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

HDR

SHEET 43 OF 60

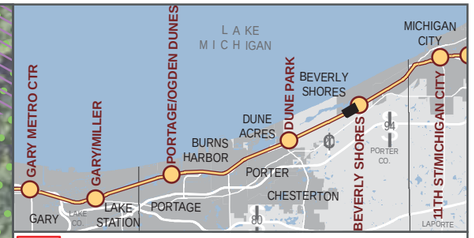
Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

DATA SOURCES: Environmental Systems Research Institute, Indiana Department of Environmental Management, Indiana Historic Sites and Structures Inventory, Northern Indiana Public Service Company, National Resource Commission, Northern Indiana Commuter Transportation District, U.S. National Park Service, U.S. Census Bureau, U.S. Geological Survey, U.S. Department of the Interior, U.S. Fish & Wildlife Service

NATURAL ENVIRONMENT

BUILT ENVIRONMENT



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- Full Acquisition
- Partial Acquisition

AFFECTED ENVIRONMENT

0

0 200 400 FEET

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

HDR

SHEET 44 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY
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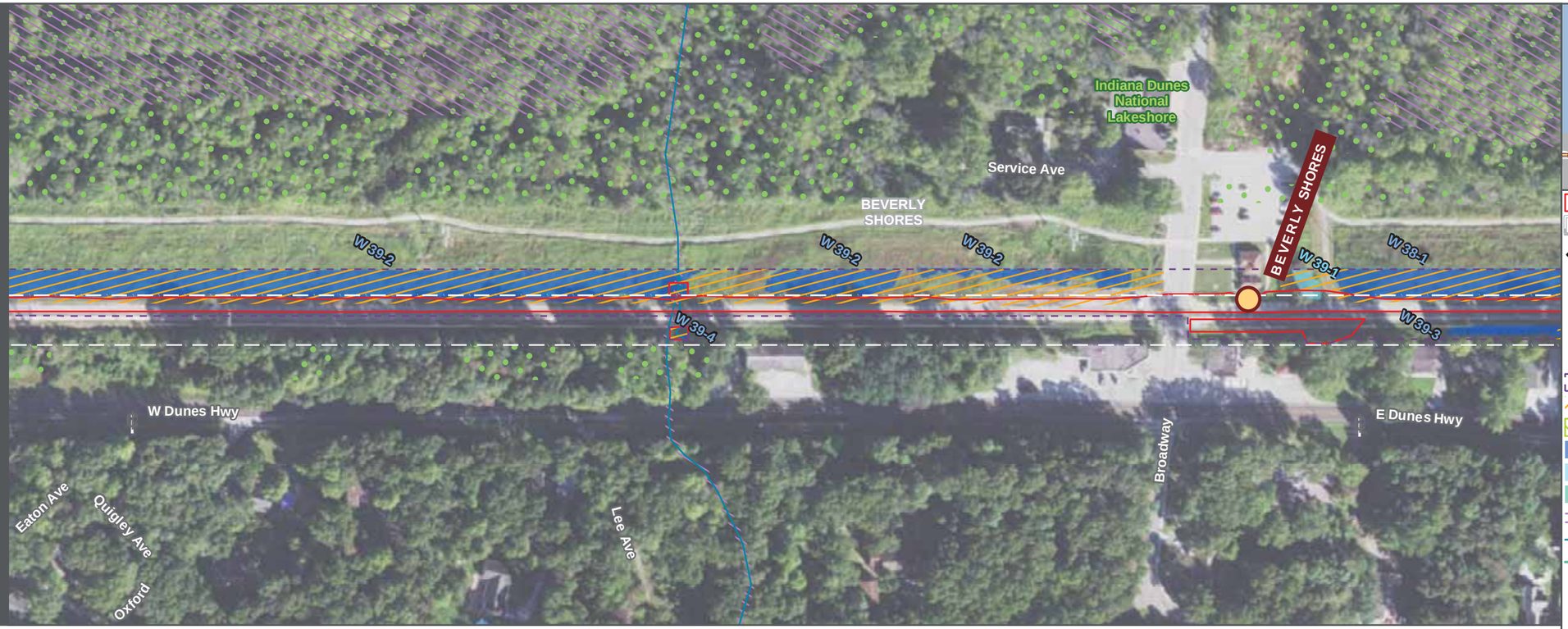
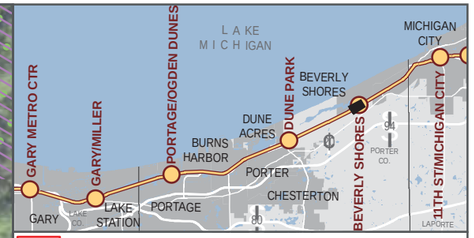
NATURAL ENVIRONMENT





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BUILT ENVIRONMENT

AFFECTED ENVIRONMENT

0 200 400 FEET

DOUBLE TRACK N·W·I Connectivity for Accelerated Growth

HDR

SHEET 45 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY
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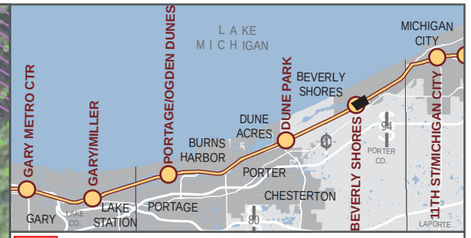

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- Partial Acquisition

BUILT ENVIRONMENT

AFFECTED ENVIRONMENT

0

0 200 400 FEET

SHEET 46 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY
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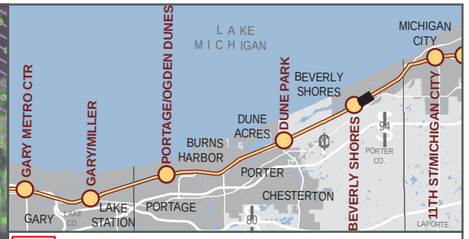
NATURAL ENVIRONMENT

BUILT ENVIRONMENT



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- Residential
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- Full Acquisition
- Partial Acquisition

AFFECTED ENVIRONMENT

0

0 200 400 FEET

DOUBLE TRACK NWI — Connectivity for Accelerated Growth

HDR

SHEET 47 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY
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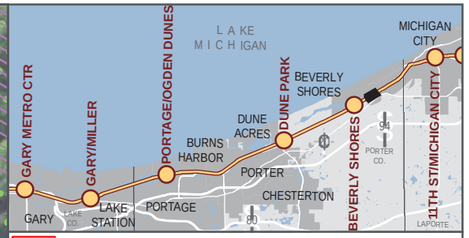
NATURAL ENVIRONMENT



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Proposed Acquisition Label Classification

- Residential
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- Uneconomic Remnant Associated with a Streetside Parcel
- Full Acquisition
- Partial Acquisition

BUILT ENVIRONMENT

AFFECTED ENVIRONMENT

0

0 200 400 FEET

SHEET 48 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY
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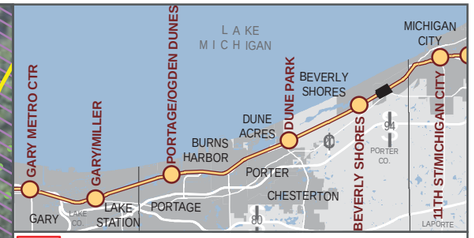
NATURAL ENVIRONMENT



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Proposed Acquisition Label Classification

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- Partial Acquisition

BUILT ENVIRONMENT

AFFECTED ENVIRONMENT

0 200 400 FEET

DOUBLE TRACK N·W·I — Connectivity for Accelerated Growth

HDR

SHEET 49 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY
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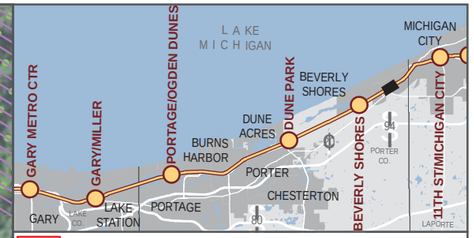
NATURAL ENVIRONMENT

BUILT ENVIRONMENT



- Proposed Construction Footprint
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- Partial Acquisition

AFFECTED ENVIRONMENT

0

0 200 400 FEET

DOUBLE TRACK NWI
Connectivity for Accelerated Growth

HDR

SHEET 50 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY
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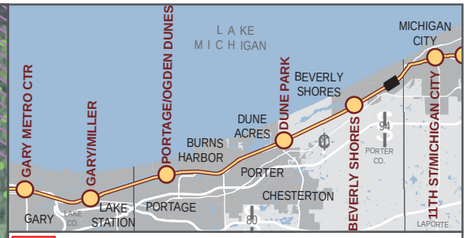
NATURAL ENVIRONMENT



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BUILT ENVIRONMENT

AFFECTED ENVIRONMENT

0 200 400 FEET

DOUBLE TRACK NWI — Connectivity for Accelerated Growth

HDR

SHEET 51 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

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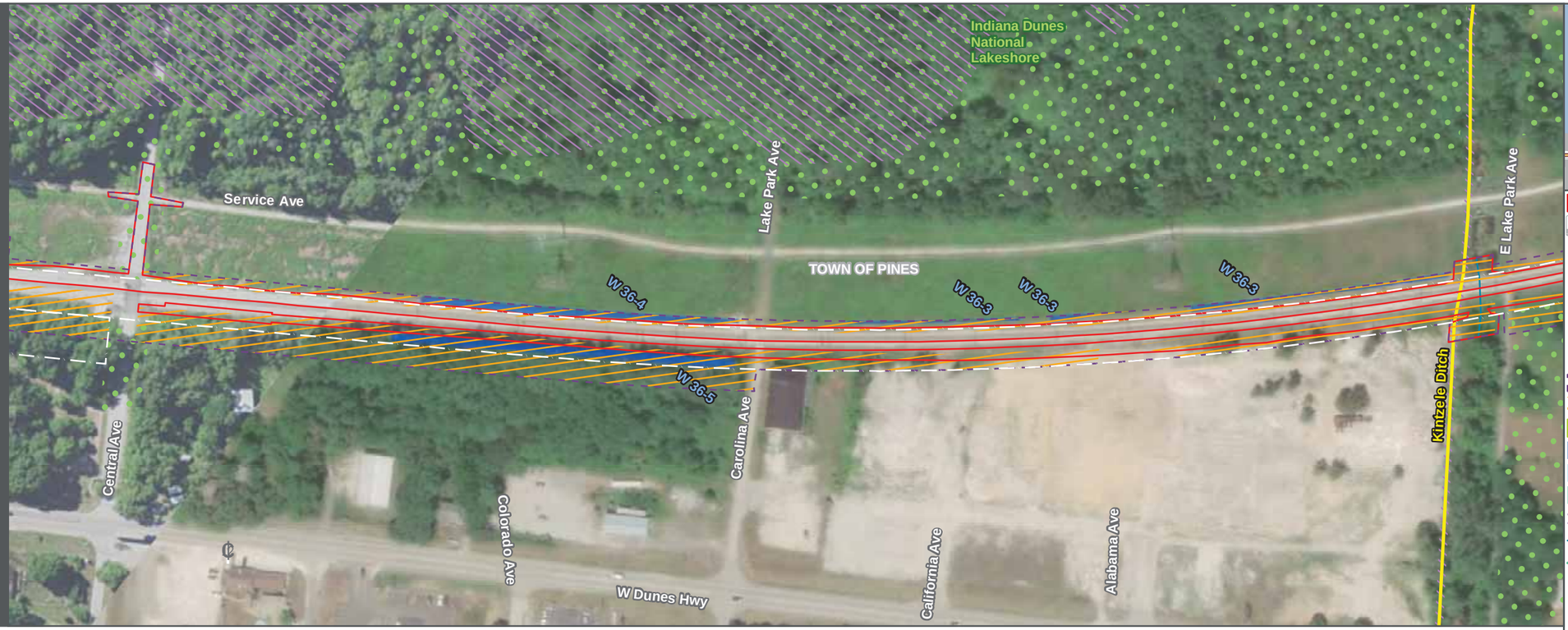
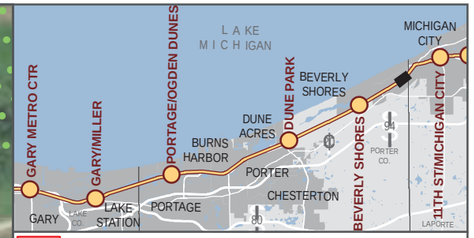
NATURAL ENVIRONMENT





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BUILT ENVIRONMENT

AFFECTED ENVIRONMENT

0 200 400 FEET

SHEET 52 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

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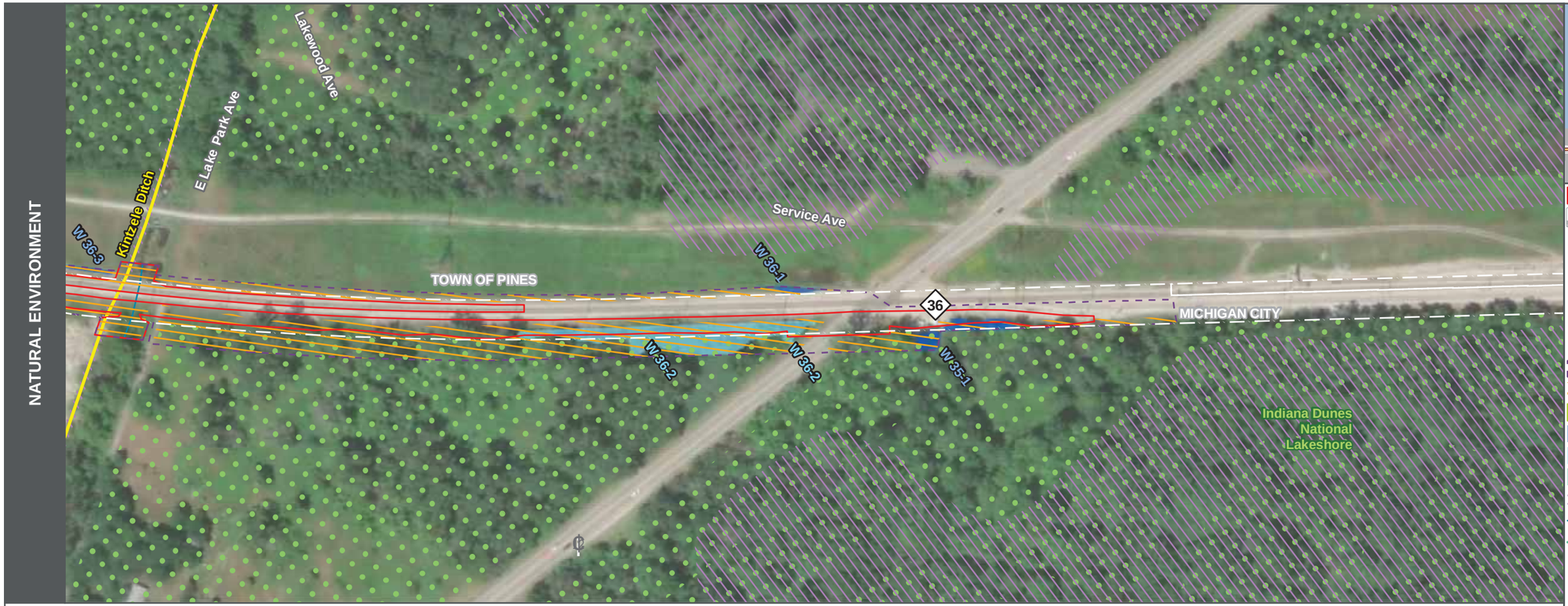

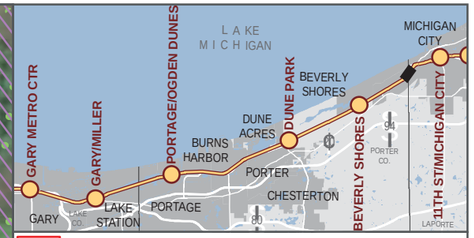

BUILT ENVIRONMENT

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AFFECTED ENVIRONMENT

0 200 400 FEET

SHEET 53 OF 60

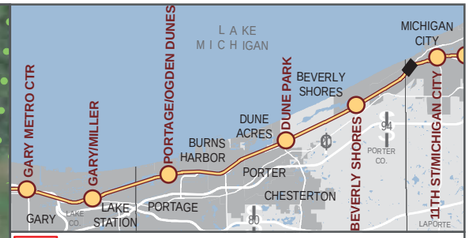
Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

DATA SOURCES: Environmental Systems Research Institute, Indiana Department of Environmental Management, Indiana Historic Sites and Structures Inventory, Northern Indiana Public Service Company, National Resource Commission, Northern Indiana Commuter Transportation District, U.S. National Park Service, U.S. Census Bureau, U.S. Geological Survey, U.S. Department of the Interior, U.S. Fish & Wildlife Service

NATURAL ENVIRONMENT

BUILT ENVIRONMENT



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- Mix of Anticipated Permanent & Temporary Property Acquisition

Proposed Acquisition Label Classification

- Residential
- Municipal
- NIPSCO
- Commercial
- INDOT
- Other Railroad
- Uneconomic Remnant
- Uneconomic Remnant Associated with a Streetside Parcel
- Full Acquisition
- Partial Acquisition

AFFECTED ENVIRONMENT

0 200 400 FEET

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

HDR

SHEET 54 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

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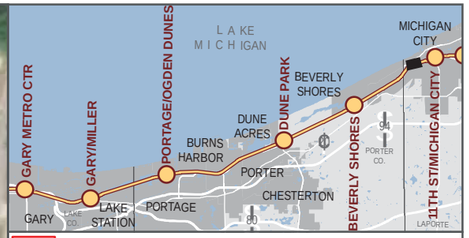
NATURAL ENVIRONMENT



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BUILT ENVIRONMENT

AFFECTED ENVIRONMENT

0

0 200 400 FEET

DOUBLE TRACK NWI Connectivity for Accelerated Growth

HDR

SHEET 55 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

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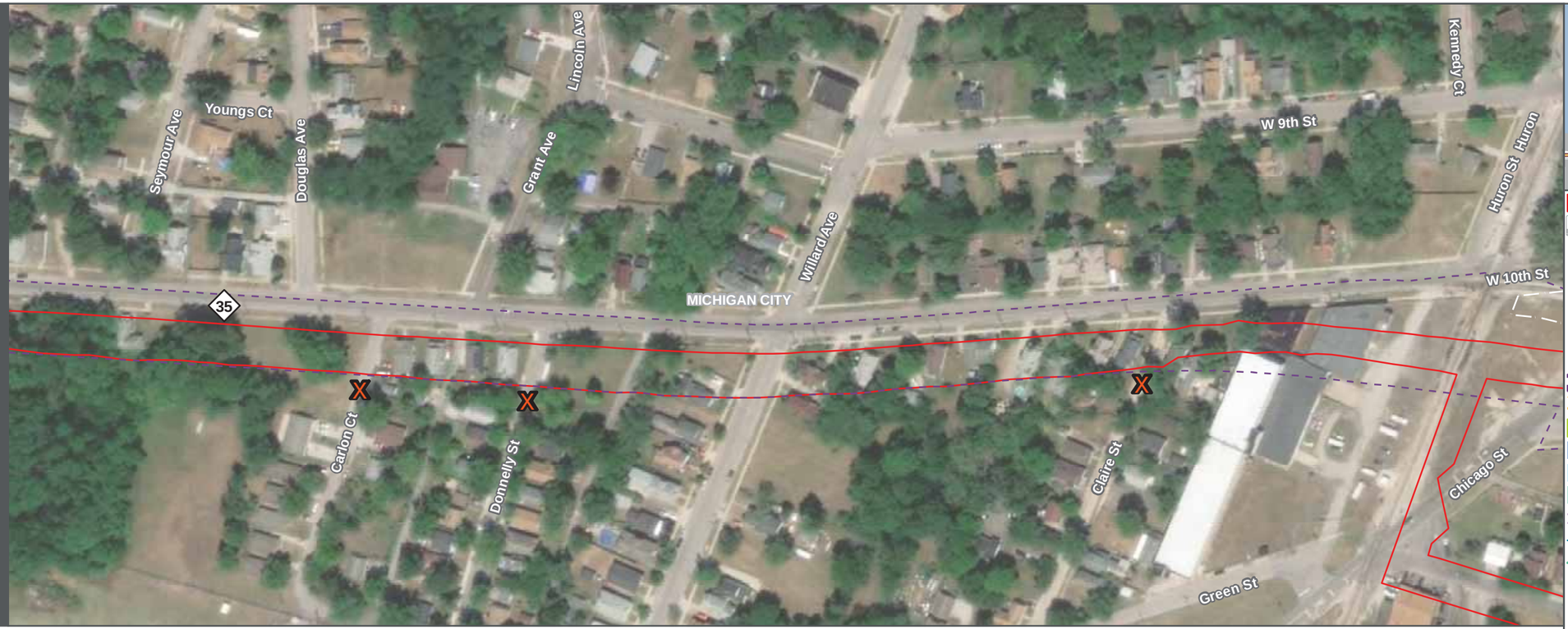

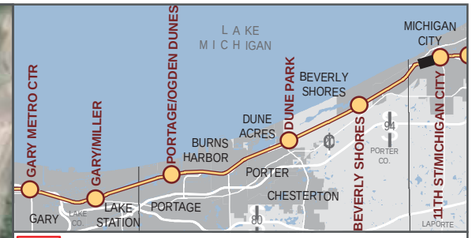

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AFFECTED ENVIRONMENT

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0 200 400 FEET

DOUBLE TRACK NWI
Connectivity for Accelerated Growth

HDR

SHEET 56 OF 60

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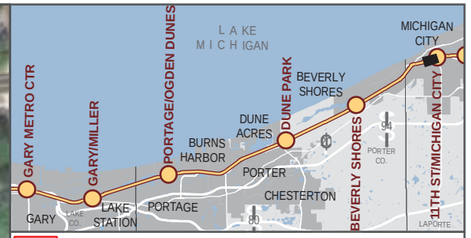

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BUILT ENVIRONMENT

AFFECTED ENVIRONMENT

0 200 400 FEET

DOUBLE TRACK NWI — Connectivity for Accelerated Growth

HDR

SHEET 57 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY
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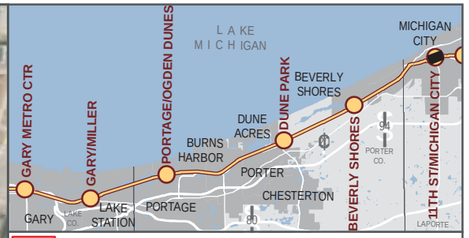

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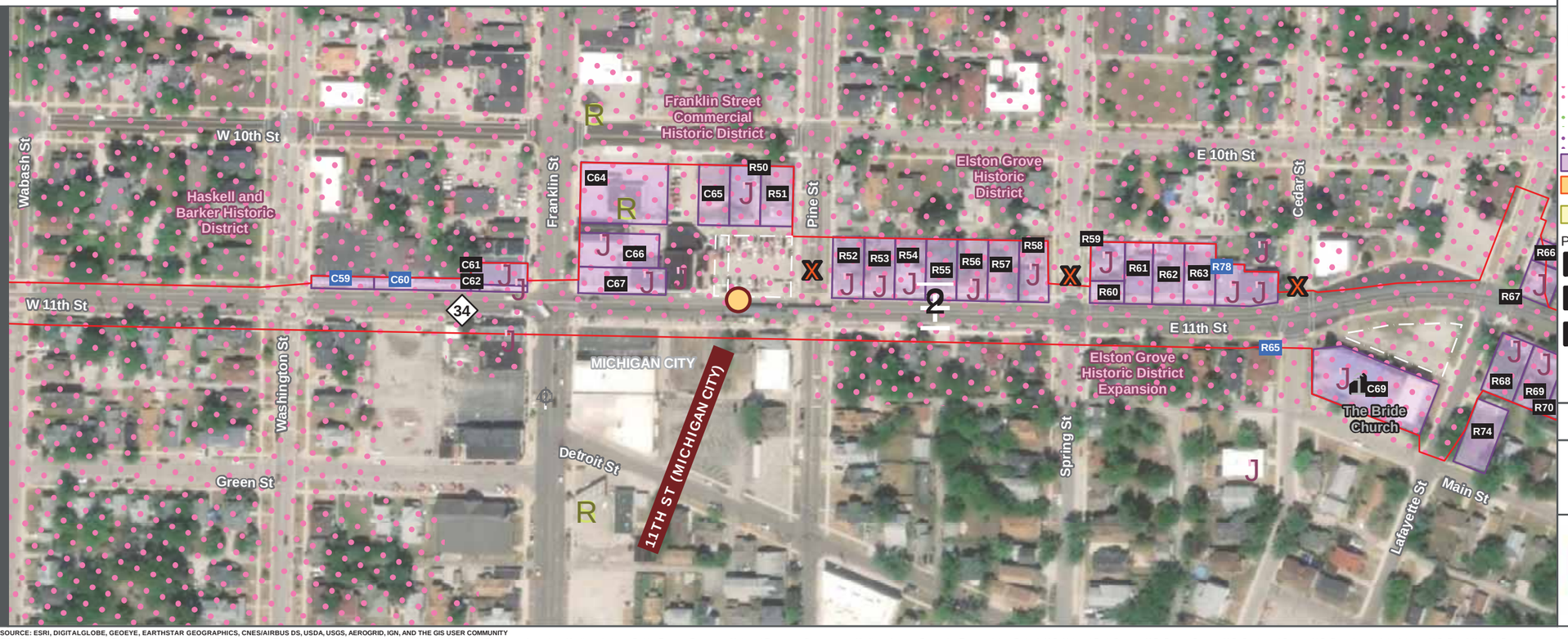

AFFECTED ENVIRONMENT

0 200 400 FEET

SHEET 58 OF 60

Data for reference only

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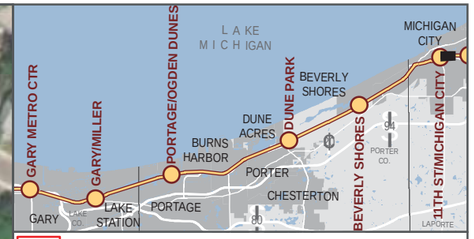

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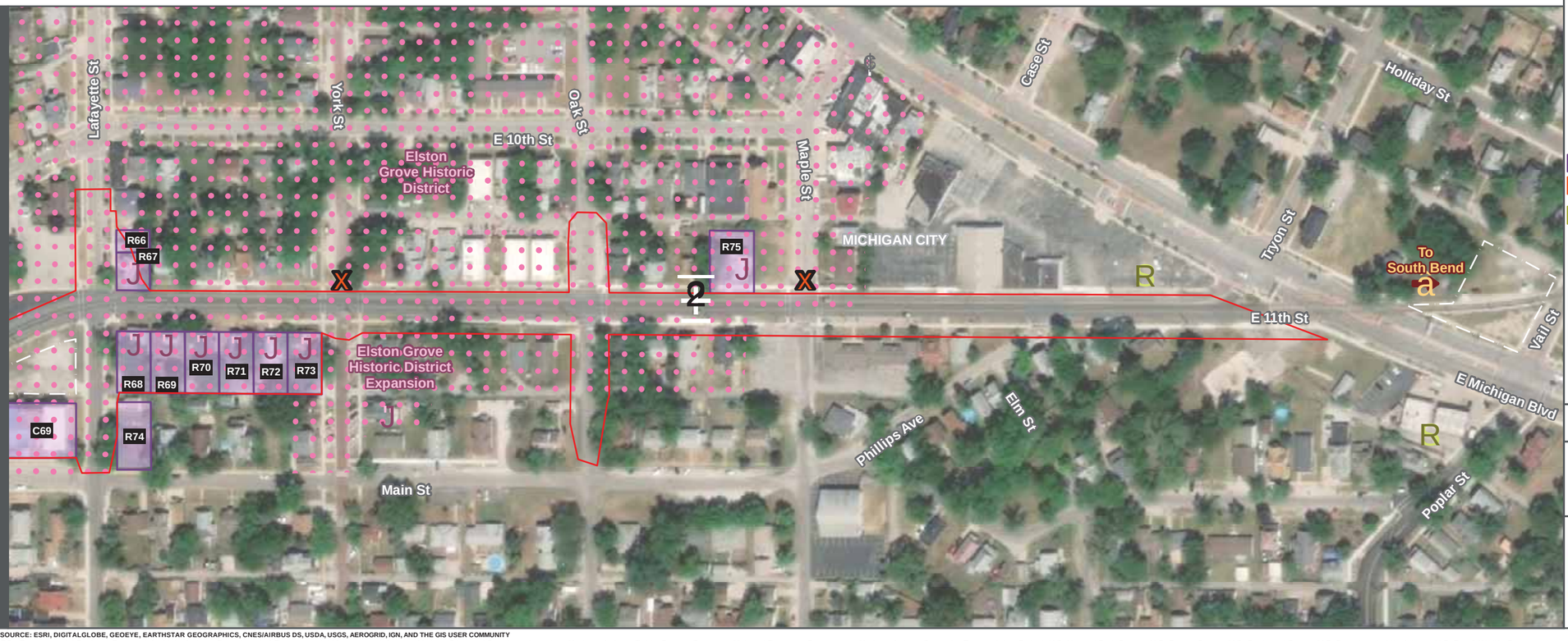

AFFECTED ENVIRONMENT

0 FEET
0 200 400

SHEET 59 OF 60

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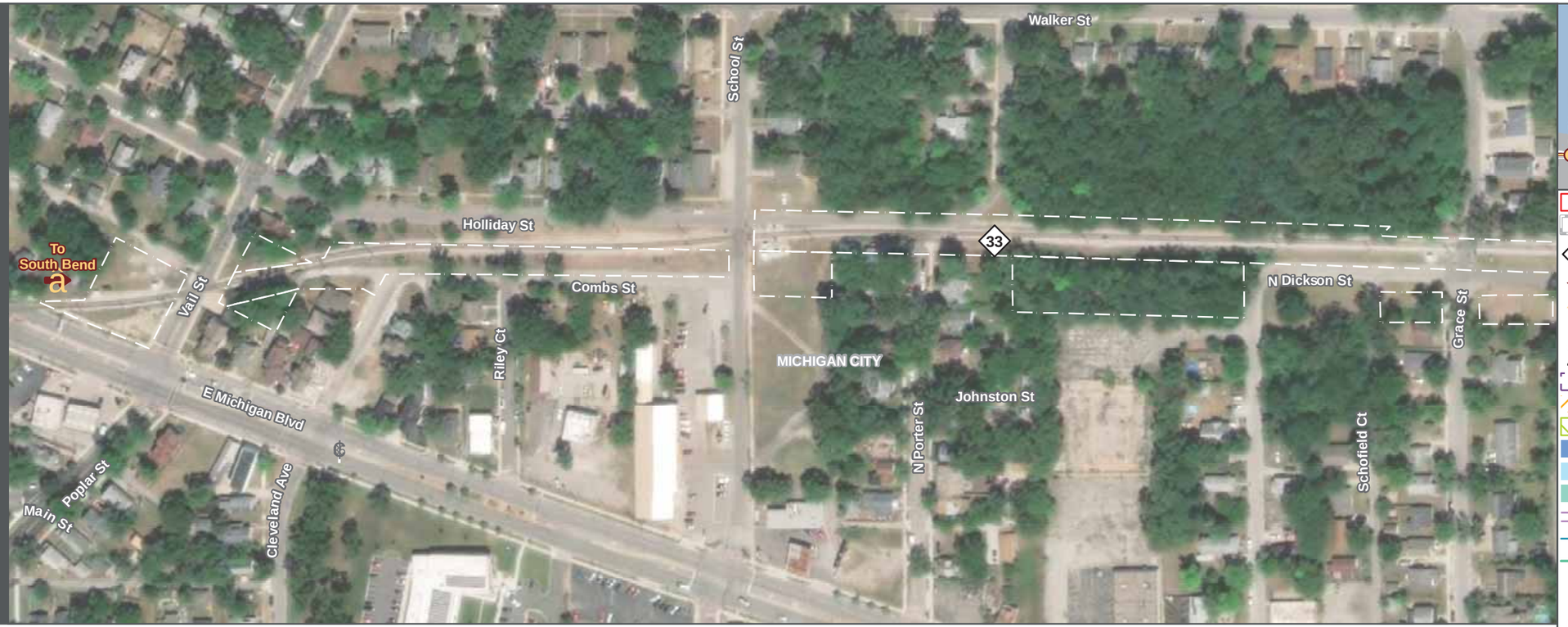

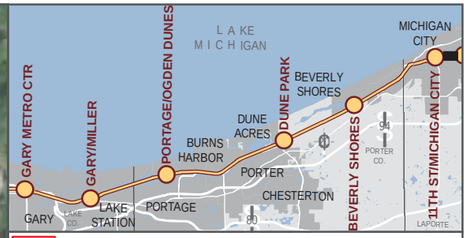

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BUILT ENVIRONMENT

AFFECTED ENVIRONMENT

0

0 200 400 FEET

DOUBLE TRACK N-W-I
Connectivity for Accelerated Growth

HDR

SHEET 60 OF 60

Data for reference only

BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

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START OF THE PROJECT

UTM coordinates:
16 T 473047.77, 4605614.51

USGS TOPOGRAPHIC MAP

QUADRANGLE MAP - GARY, IN

Project Corridor

N

0 5 10 Miles

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DOUBLE TRACK NORTHWEST INDIANA (NWI) PROJECT

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

Figure 1-1

USGS TOPOGRAPHIC MAP

QUADRANGLE MAP - PORTAGE, IN

Project Corridor

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N

0 5 10 Miles

DOUBLE TRACK NORTHWEST INDIANA (NWI) PROJECT

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

Figure 1-2

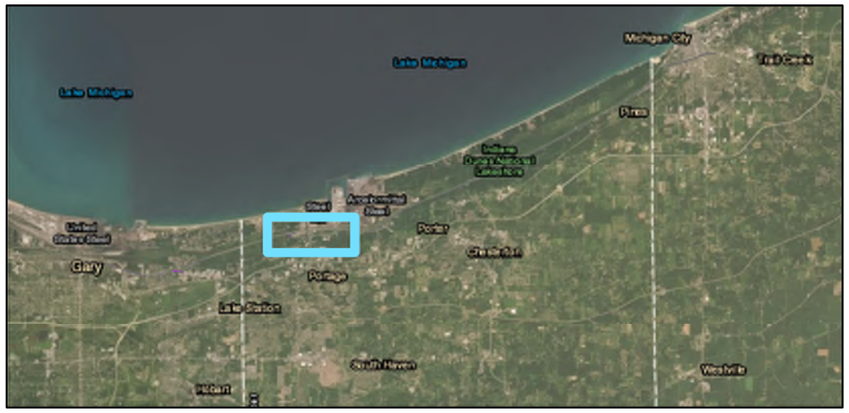
USGS TOPOGRAPHIC MAP

QUADRANGLE MAP - PORTAGE, IN

Project Corridor

N

0 5 10 Miles



Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
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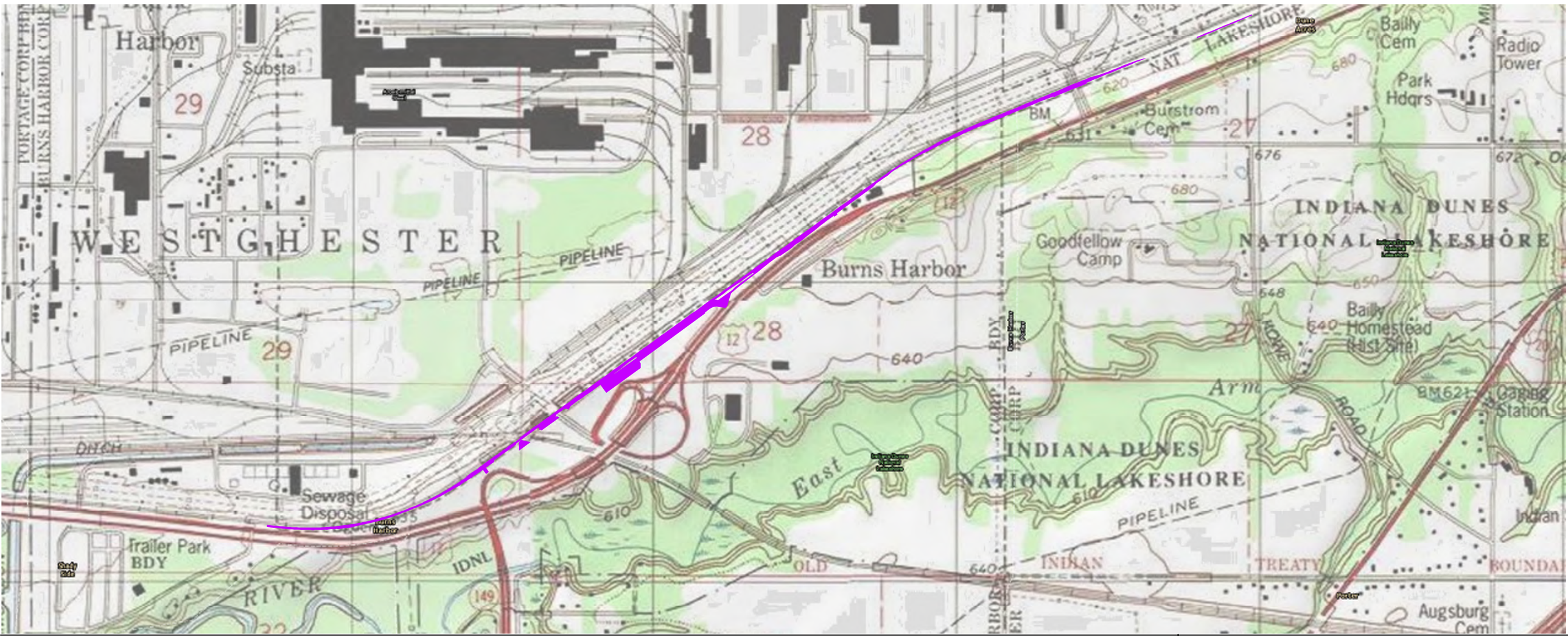
DOUBLE TRACK NORTHWEST INDIANA (NWI) PROJECT

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

Figure 1-3



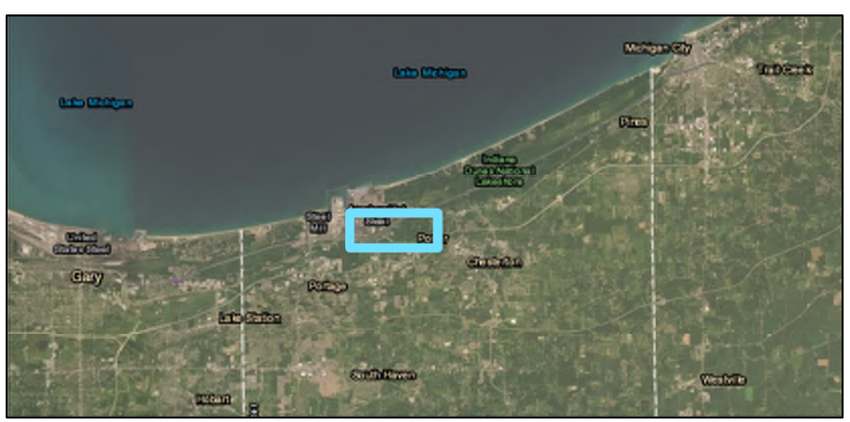
USGS TOPOGRAPHIC MAP

QUADRANGLE MAP - PORTAGE, CHESTERTON, DUNE ACRES, IN

Project Corridor

N

0 5 10 Miles



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DOUBLE TRACK NORTHWEST INDIANA (NWI) PROJECT

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

Figure 1-4

USGS TOPOGRAPHIC MAP

QUADRANGLE MAP - DUNE ACRES, IN

Project Corridor

Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
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N

0 5 10 Miles

DOUBLE TRACK NORTHWEST INDIANA (NWI) PROJECT

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

Figure 1-5

USGS TOPOGRAPHIC MAP

QUADRANGLE MAP - DUNE ACRES, IN

Project Corridor

Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
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N

0 5 10 Miles

DOUBLE TRACK NORTHWEST INDIANA (NWI) PROJECT

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

Figure 1-6

USGS TOPOGRAPHIC MAP

QUADRANGLE MAP - MICHIGAN CITY WEST, IN

Project Corridor

Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
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N

0 5 10 Miles

DOUBLE TRACK NORTHWEST INDIANA (NWI) PROJECT

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

Figure 1-7

USGS TOPOGRAPHIC MAP

QUADRANGLE MAP - MICHIGAN CITY WEST, IN

Project Corridor

Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
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N

0 5 10 Miles

DOUBLE TRACK NORTHWEST INDIANA (NWI) PROJECT

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

Figure 1-8

END OF THE PROJECT
UTM coordinates:
16 T 509426.03, 4617913.82

USGS TOPOGRAPHIC MAP

QUADRANGLE MAP - MICHIGAN CITY WEST, IN

Project Corridor

N

0 5 10 Miles

Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
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DOUBLE TRACK NORTHWEST INDIANA (NWI) PROJECT

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

Figure 1-9

Finding of No Significant Impact

for the

Double Track NWI Project

Gary to Michigan City, Indiana

prepared by the

U.S. Department of Transportation
Federal Transit Administration

and the

Northern Indiana Commuter Transportation District

pursuant to:

National Environmental Policy Act of 1969 (42 USC § 4332) and
Section 4(f) of the United States Department of Transportation Act of 1966
(49 USC § 303)

Federal Transit Administration
Region V
DOUBLE TRACK NORTHWEST INDIANA PROJECT
Finding of No Significant Impact (FONSI)
Approved November 1, 2018

1.0 INTRODUCTION

This document provides the basis for a determination by the United States Department of Transportation (USDOT), Federal Transit Administration (FTA), of a Finding of No Significant Impact (FONSI) for the proposed Double Track Northwest Indiana (DT-NWI) Project. This determination is made in accordance with the National Environmental Policy Act of 1969 (NEPA); 42 United States Code (USC) § 4331 et seq; FTA's implementing procedures (23 Code of Federal Regulations [CFR] § 771.121); Section 4(f) of the USDOT Act of 1966, 49 USC § 303; and the National Historic Preservation Act of 1966 (NHPA), 54 USC § 300101 et seq.

As lead federal agency, FTA jointly prepared the Environmental Assessment (EA), Section 4(f) Evaluation, and Section 106 findings (of the NHPA) with the Northern Indiana Commuter Transportation District (NICTD), as the local project sponsor. These documents describe potential adverse effects on the human and natural environment and the integrity of historic resources that may result from the proposed Project. The EA was prepared pursuant to 23 CFR § 771.119 and issued by FTA on September 21, 2017. This FONSI is prepared by FTA pursuant to 23 CFR § 771.121, and incorporates, by reference, the EA and other cited documentation.

2.0 EXISTING CONDITIONS

The South Shore Line (SSL) operates from South Bend, Indiana, to downtown Chicago, Illinois (**Figure 1**). From Gary, Indiana to South Bend (approximately 59 miles), the railroad is mostly single track, except for one 6.5-mile section of double track and three separate passing sidings that total 2.2 miles. The proposed Project begins in Gary at milepost (MP) 58.8, west of Virginia Street, and ends at MP 32.2, near Carroll Avenue in Michigan City, Indiana, a distance of 26.6 miles.

Most of the SSL commuter line shares track with the Chicago South Shore and South Bend Railroad (CSS) freight service. Commuters on the SSL frequently experience less than optimum on-time performance, limited schedules, and trains without enough seating capacity. The lack of a second track constrains capacity and results in inflexible schedules, reliability issues, and long running times, making it less competitive with automobile travel times. Additionally, the 2 miles of embedded, street-running track in Michigan City, along with 39 at-grade crossings in 3 miles, contribute to some of the highest roadway and rail accident rates in Indiana.

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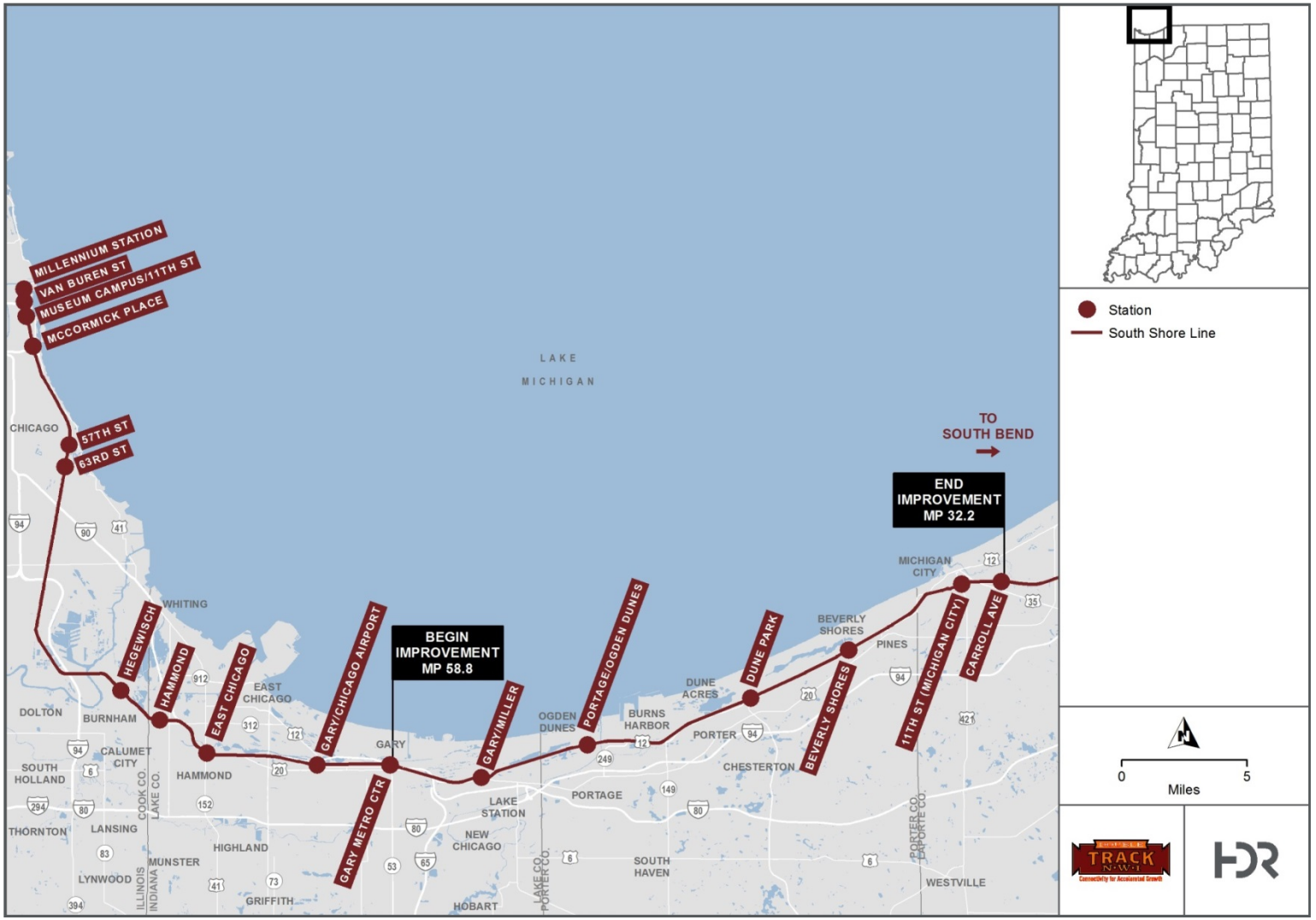
Figure 1. Project Corridor



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3.0 PROJECT PURPOSE AND NEED

The purpose of the proposed Project is to expand the existing SSL capacity to meet current and future ridership demand. Increasing capacity will improve operating flexibility; reduce delay; reduce travel time; improve system reliability, mobility, and safety; and increase access to employment centers in Chicago.

The following key factors define the need for the proposed Project:

In the Bailly portion of the proposed Project (a 2.7-mile track segment), the single NICTD/CSS railroad track is located between CSS freight storage tracks resulting in switching conflicts, slower speeds, and safety concerns. Additionally, CSS transfers many long unit trains in this area, which requires that the train switch off the mainline for temporary storage. These conflicts partially contribute to NICTD's 2016 overall on-time performance of 81.9 percent, compared to the acceptable industry standard of 90 percent.

Peak trains currently operate at 98 percent seating capacity, with little room to accommodate additional passengers. As the population of northwest Indiana continues to grow and export workers to jobs in Chicago, demand for transit will increase.

The current average trip time on the SSL during rush hour is considerably longer than by automobile because of freight and passenger train interference, speed restrictions, and passenger boarding delays.

Only 7 of the 39 existing at-grade crossings in the Michigan City portion of the proposed Project have automatic warning devices. Eight of the crossings are in the Federal Railroad Administration's (FRA) 2016 top 100 predicted accident locations in Indiana (FRA 2017). These statistics do not account for the inherent danger of trains traveling down the middle of residential and commercial streets with automobiles, pedestrians, and bicyclists sharing the same right-of-way (ROW).

4.0 ALTERNATIVES CONSIDERED

Two alternatives were developed and evaluated as part of the proposed Project EA: the No Build Alternative and the Build Alternative. The Build Alternative was developed and evolved through an alternatives analysis that considered multiple design options and extensive public input. It was determined that the Build Alternative best meets the purpose and need for the proposed Project.

4.1 NO BUILD ALTERNATIVE

The No Build Alternative represents future conditions if the proposed Project was not implemented. The No Build Alternative would be the least environmentally disruptive alternative; however, the No Build Alternative does not meet the purpose and need for the proposed Project. The No Build Alternative would not include any major transit system or station investments or construction, but would include typical maintenance and repairs to the NICTD/CSS railroad track and associated infrastructure based on historic funding levels needed to keep the lines functional. Some expenditure would be made to keep the SSL service operating; however, service quality and capacity would decline over time as capital expenditures would be minor compared to the Build Alternative, maintenance costs would rise, and ridership is predicted to continue to rise. Interference with freight train operations would continue, and likely worsen because of the anticipated growth in freight traffic. The corridor would continue to suffer from the single point of failure that exists with single-track operations. Travel times would likely continue to increase and service reliability would continue to degrade, as train operators would continue to safely operate both freight and passenger trains on a single track with limited capacity.

4.2 BUILD ALTERNATIVE

Figures 2, 3A, 3B, and 4A through 4C illustrate the proposed Build Alternative presented in the EA**.** Key Project elements of the Build Alternative include:

Station Improvements

- The Gary/Miller Station will be improved with two realigned tracks, two high-level boarding platforms, gauntlet tracks for passing freight trains, two storage tracks, a new station building and additional parking.
- At the Portage/Ogden Dunes Station, two new high-level boarding platforms and additional parking will be constructed. The mainline tracks will be realigned to the north and south of the existing tracks and gauntlet tracks for passing freight trains will be constructed.
- At the Dune Park Station, one new low-level platform to the north and additional parking will be constructed.
- At the Beverly Shores Station, two new low-level boarding platforms will be constructed and the second mainline will be located to the north of the existing mainline.
- 11th Street (Michigan City) Station will be improved and expanded with two high-level boarding platforms and a new station building that will include a multi-level parking structure, a station waiting area, and gauntlet tracks.

Double Tracking – 14.2 miles of a second mainline and five high-speed crossovers will be added in locations where only a single track exists, mostly within existing ROW, between Tennessee Street in Gary to Sheridan Avenue in Michigan City (MP 58.1 to MP 35.3).

Remove/Replace In-Street Tracks – Approximately 1.9 miles of embedded, in-street tracks will be removed from the roadway and two tracks will be reconstructed in a separate, parallel ROW between Sheridan Avenue and just west of Michigan Boulevard in Michigan City (MP 35.3 to MP 33.3).

Bridges – Four additional NICTD bridges will be constructed at the following locations to accommodate the second mainline tracks: over CSX Transportation tracks at MP 54.65, Hobart Road at 54.62 in Gary, over Norfolk Southern Railway (NS) tracks at MP 47.41, and the main entrance road to ArcelorMittal at MP 47.32 in Burns Harbor.

Signal and Overhead Contact System Infrastructure – New signal work from MP 58.8 to MP 58.1 and from MP 33.3 to MP 32.2 (1.8 miles) and overhead contact system infrastructure along the entire proposed Project length (MP 58.8 to 32.2) will be installed.

Crossing Diamonds – One new crossing diamond will be constructed at the CN track at MP 57.6 in Gary. At the Amtrak crossing at MP 34.5 in Michigan City, the existing crossing will be replaced with new crossing diamonds for the two new SSL tracks.

Figure 2. Preferred Alternative

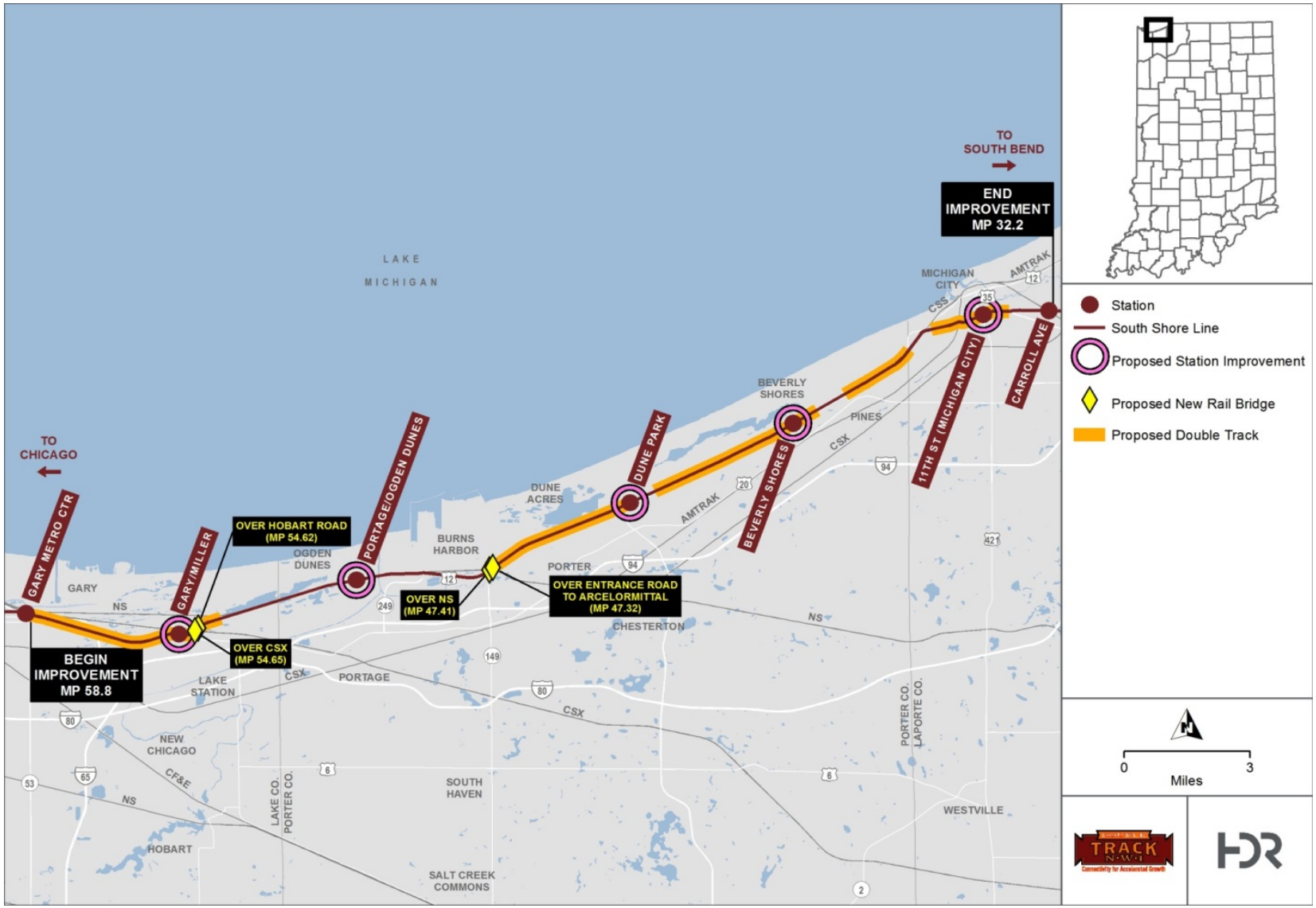


Figure 3. Bailly Design Option 4, MP 46.5 to MP 44 (EA PREFERRED ALTERNATIVE)

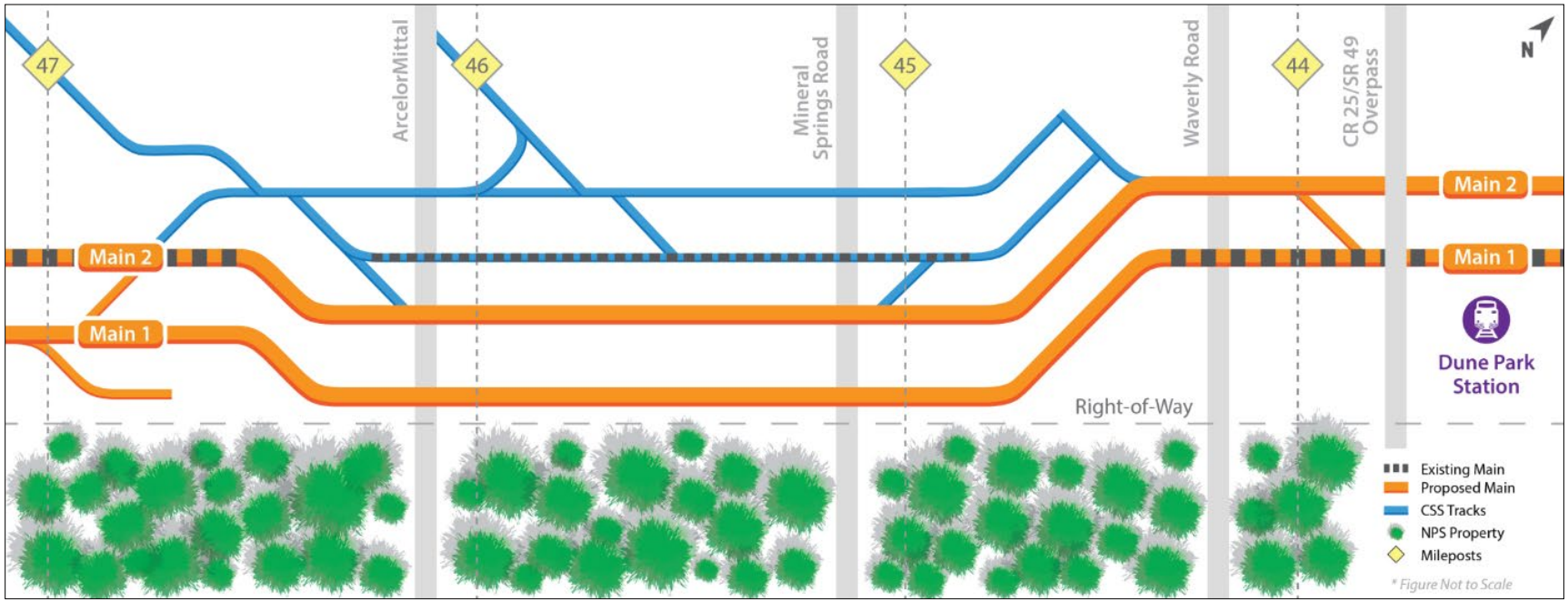


Figure 3B. Bailly Design Option 4, Wilson Freight Siding, MP 49.7 to MP 48.3 (EA PREFERRED ALTERNATIVE)

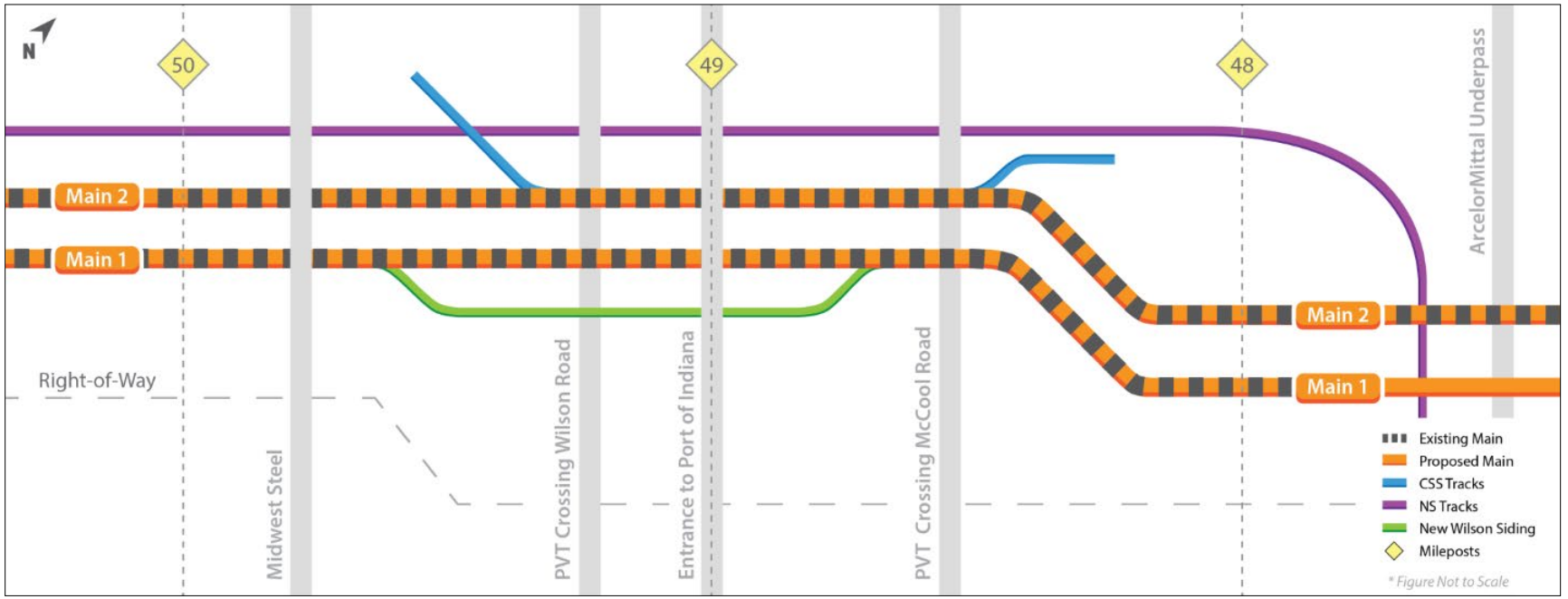


Figure 4A. 10th Street from Sheridan Avenue to Chicago Street, Michigan City (EA PREFERRED ALTERNATIVE)

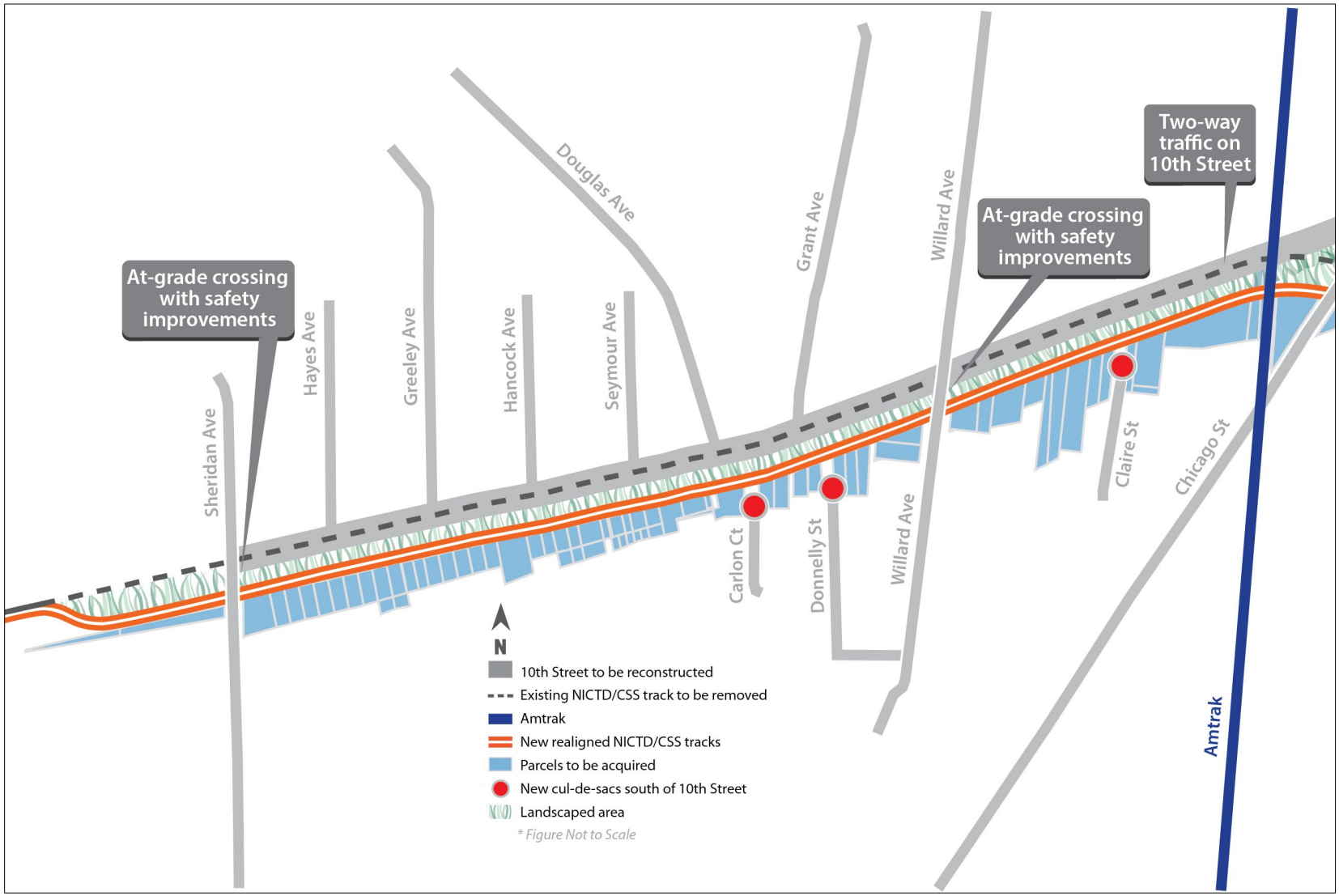
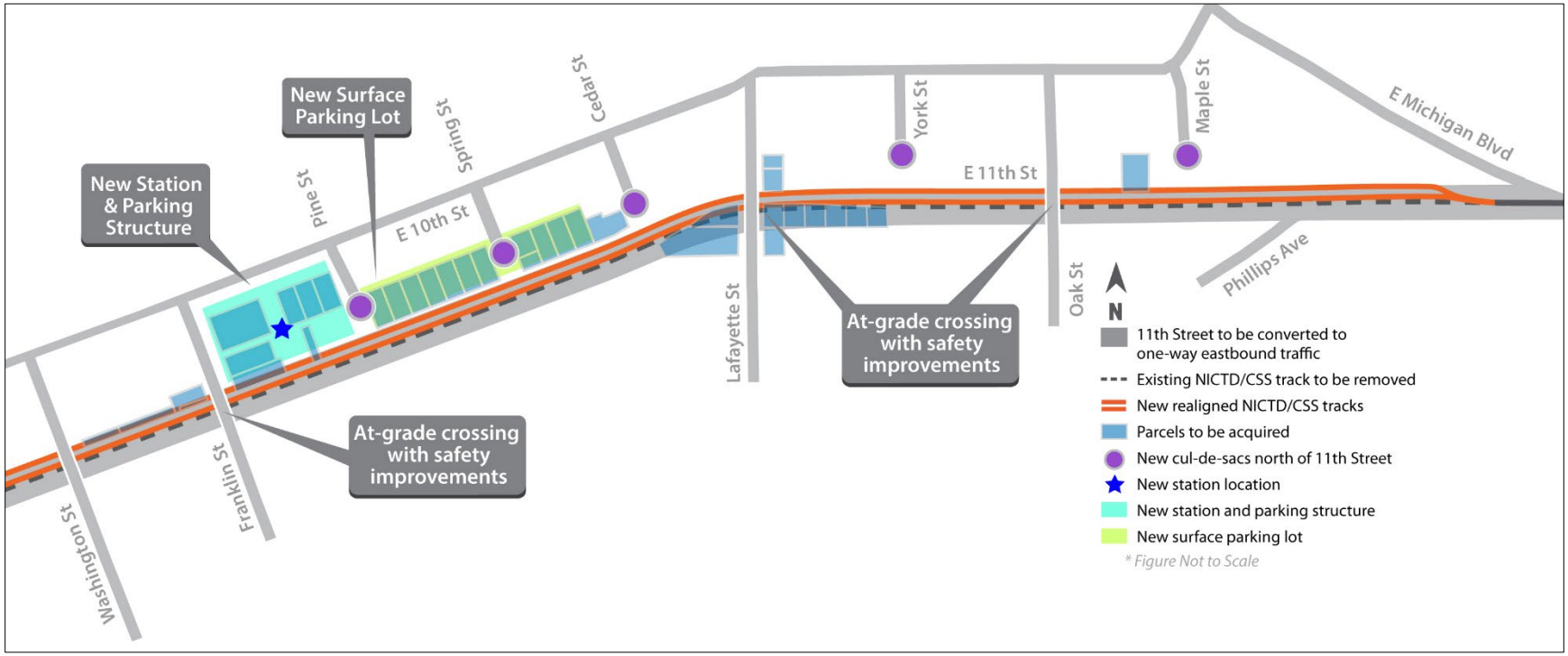


Figure 4B. 11th Street from Chicago Street to Washington Street, Michigan City (EA PREFERRED ALTERNATIVE)

Figure 4C. 11th Street from Washington Street to E. Michigan Boulevard, Michigan City (EA PREFERRED ALTERNATIVE)



4.3 MODIFICATIONS TO PREFERRED ALTERNATIVE

In response to comments received from various agencies after publication of the EA, NICTD proposed modifications to the Preferred Alternative, as described below. In September 2018, NICTD re-evaluated the proposed Project for impacts based on the modifications and submitted a re-evaluation to FTA. FTA concurred with NICTD's re-evaluation findings on September 26, 2018 (see **Appendix G**).

The proposed changes are described below. With most resources, there was no change in impacts. The proposed modifications reduce impacts to right-of-way, wetlands and habitat for two threatened and endangered species.

4.3.1 CHICAGO SOUTH SHORE & SOUTH BEND RAILROAD (CSS)

During the EA 30-day formal comment period, the CSS submitted a letter with its concerns that the EA's Preferred Alternative would have an adverse effect on CSS' freight operations, operational efficiency, and performance in the Bailly area of the proposed Project, and stated that it would not support this alternative. The CSS further stated that of the options studied and presented in the EA, the only option that satisfied their operational concerns in the Bailly area was Design Option 2, which encroached upon National Park Service land to the south (see **Appendix B**).

Since receipt of the CSS letter on October 23, 2017, NICTD, CSS and the Northern Indiana Public Service Company LLC (NIPSCO), all property owners within the Bailly area, have negotiated a series of agreements to convey the necessary property, easements and rights to achieve an alternate design that satisfies all parties and does not affect National Park Service land; these agreements resulted in modifications to the Preferred Alternative.

The negotiations resulted in three agreements between NICTD, CSS and NIPSCO. The following list describes the tenets of the agreements. **Figure 4D** illustrates the subsequent modifications to the Preferred Alternative in the Bailly area.

- NICTD will purchase 8.807 acres of (certain) Bailly yard tracks and property from NIPSCO. The purchase will occur after a Full Funding Grant Agreement (FFGA) or equivalent funding for the DT-NWI Project is obtained. **There is no construction associated with this transaction.**

- CSS agrees to swap the two Bailly south tracks consisting of 7.13 acres for the 8.807 acres purchased by NICTD described above. This will allow for commuter trains to run on the two south tracks, freight trains to run on the two north tracks, and CSS to store trains on the Bailly yard tracks. Further, with this swap, the proposed siding extension at Wilson is unnecessary and wetland impacts would be reduced. There is no impact to the National Park Service land. **The separation of commuter and freight traffic in this manner was included in the EA Preferred Alternative.**

- The CSS will purchase an easement for the wye tracks from NIPSCO. There is an active Resource Conservation and Recovery Act cleanup at the wye track that the U.S. Environmental Protection Agency (USEPA) is monitoring, and NIPSCO will be required to finish, as part of the agreement. CSS will allow NICTD the right to cross the wye tracks to access the existing maintenance of way stub track that NICTD will purchase from NIPSCO as part of the 8.807-acre purchase. **There is no construction associated with these transactions.**

- NICTD will construct the "north siding extension" between mileposts 44 and 46 for CSS and convey this property and track to the CSS (approximately 3.05 acres). **This extension was included in the EA Preferred Alternative.**

- The CSS would withdraw its letter submitted during the EA comment period, and issue a new statement in support of the Project and the revised Preferred Alternative (see **Appendix B**).

In addition to the agreement tenets described above, NICTD and CSS agreed on the following land conveyances during negotiations:

- NICTD and CSS agree to swap property near the Gary (Miller) station. NICTD will convey to CSS a 1.361-acre linear parcel of land generally located south of the existing Miller station building and parking lot, proposed for the new CSX Transportation (CSX) connection track. **The EA Preferred Alternative included this parcel.** NICTD will build the new CSX connection track as part of the proposed Project, and will turn the track and property over to CSS when construction is completed. In exchange, CSS will convey to NICTD the "old CSX connection," which is a 0.45-acre CSS-owned linear parcel located between the existing NICTD mainline and 7th Avenue (see **Figure 4E**). After NICTD takes ownership, they will remove the track; however, there are no current plans to develop the land. All of the properties that are subject to this transaction are within the environmental survey boundary. **No new construction occurs with this transaction**; **however, the existing CSX tracks will be removed**. The parcel that CSS will convey to NICTD falls slightly outside of the construction footprint, therefore, NICTD updated the construction footprint to include the entirety of this parcel. Updated plan sheets reflecting the changes are including in **Appendix H**.

- CSS will convey two properties in Michigan City to NICTD. **These properties were included in the EA Preferred Alternative's construction footprint.** One is a vacant property along 11th Street adjacent to the former First Christian Church (now known as Bride Church) and the other is a small lot on 11th Street between the existing South Shore Line station and the NICTD parking lot.

Figure 4D. Revised Design at Bailly

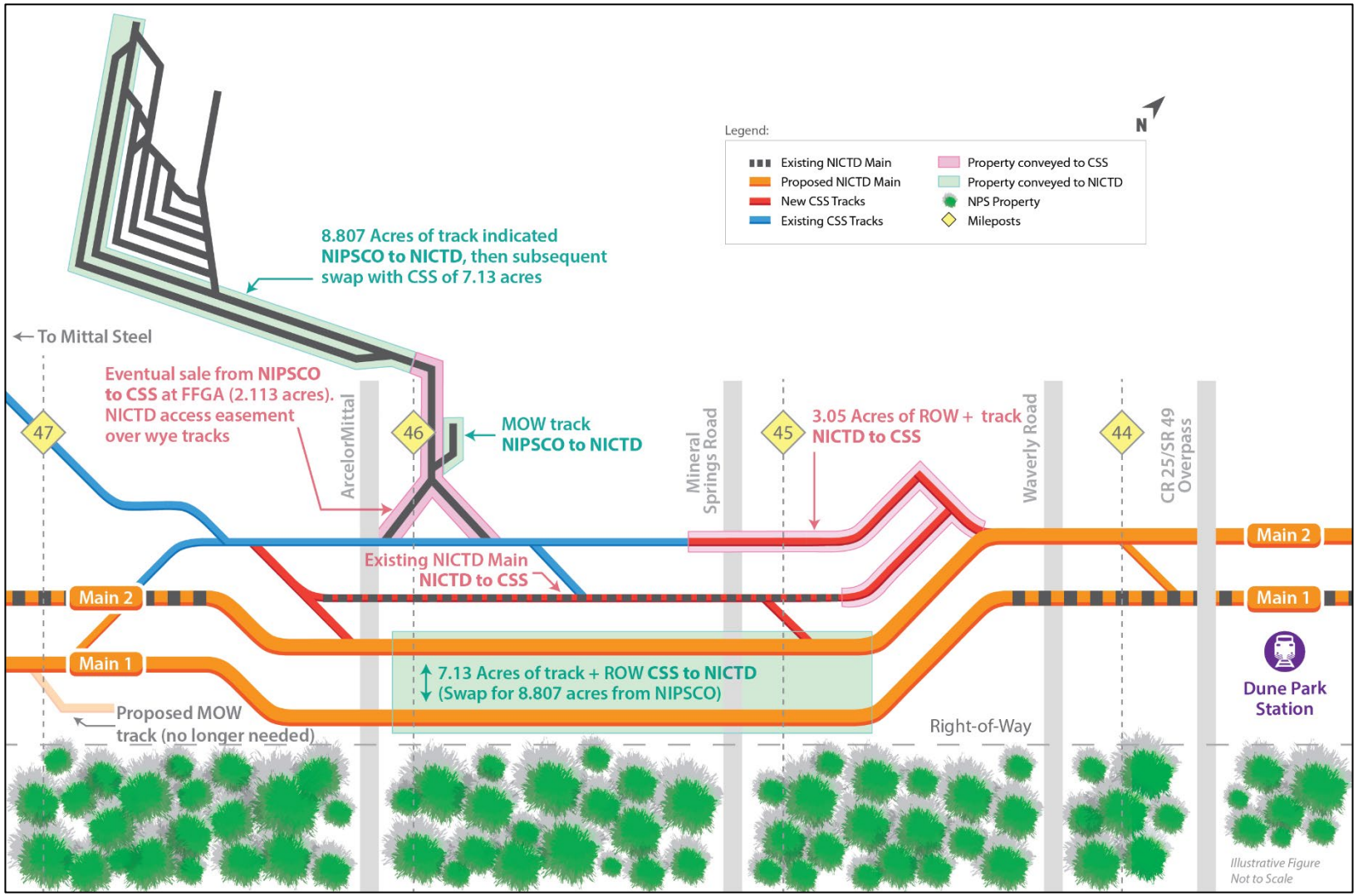
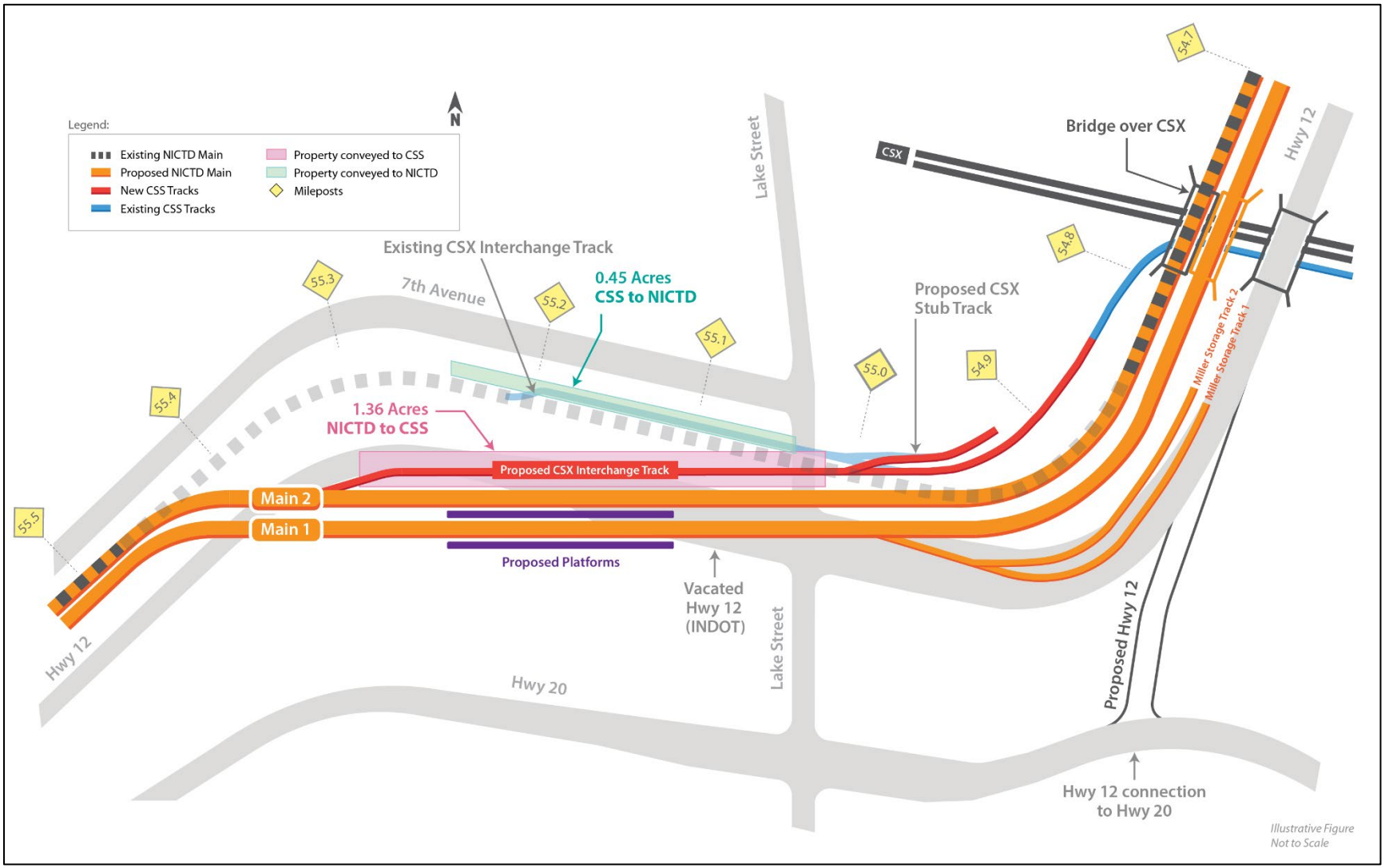


Figure 4E. NICTD/CSS Property Transfer at Gary/Miller



4.3.2 MICHIGAN CITY/GREEN STREET

During discussions with Michigan City that concluded after publication of the EA, Michigan City informed NICTD that closing the Kentucky/11th Street intersection would eliminate the direct route that the City's Public Works vehicles and emergency vehicles use to access the west side of the City. The City requested that NICTD identify an alternate route for these vehicles to use.

The closest and most reasonable east-west road to use is Green Street, between Kentucky Street and Chicago Street, just to the south of the Kentucky/11th Street intersection. NICTD modified the proposed Project and construction footprint to include improvements to Green Street with one 16' travel lane in each direction, curb and gutter, and a five foot sidewalk on each side. The Green Street/Chicago Street intersection will be improved to define the travel ways of the large angled intersection near the Amtrak railroad crossing. **Figure 5** depicts the updated project footprint. As a result of the changes to the construction footprint, FTA revised the Section 106 Area of Potential Effect (APE) assessed effects of the project changes, and prepared a memo of the findings (See **Appendix G**). FTA consulted with SHPO on the findings. The SHPO concurred with FTA's determination that no historic properties would be affected by the proposed modifications on September 14, 2018. See correspondence in **Appendix B**. Further discussion is presented in **Section 8.3**.

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Figure 5. Green Street Construction Footprint

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5.0 PUBLIC INVOLVEMENT, AGENCY COORDINATION, AND PUBLIC OPPORTUNITY TO COMMENT

The EA, Section 4(f) Evaluation, and Section 106 findings document was made available for public comment from September 21, 2017 through October 23, 2017. The legal Notice of Availability was published in the Northwest Indiana Times, Gary Crusader, and Post Tribune of Northwest Indiana on September 21, 2017. Copies of the document were available for review during this period online on the Project website (www.doubletrack-nwi.com) and in hardcopy format at the following locations: (a) Gary Public Library – Woodson Branch at 501 S. Lake Street, Gary, IN 46403; (b) Gary Public Library – Main Branch at 220 W. 5th Avenue, Gary, IN 46402; (c) Portage Public Library at 2665 Irving Street, Portage, IN 46368; (c) NICTD offices at 33 E. U.S. 12, Chesterton, IN 46304; (d) Michigan City Public Library at 100 E. 4th Street, Michigan City, IN 46360; (e) Westchester Public Library at 200 W. Indiana Avenue, Chesterton, IN, 46304; and (f) FTA Region V offices at 200 W Adams Street, Suite 320, Chicago, IL 60606.

NICTD held two public hearings:

1. Wednesday, October 11, 2017, at the Miller Beach Arts and Creative District, Marshall J. Gardner Center for the Arts (540 S. Lake Street, Gary, IN 46403) from 6:00 PM to 8:00 PM. A total of 92 people signed in at the public hearing.
2. Thursday, October 12, 2017, at the Stardust Event Center (777 Blue Chip Drive, Michigan City, IN 46360) from 6:00 PM to 8:00 PM. A total of 81 people signed in at the public hearing.

Information about the advertising and outreach conducted for the hearings and comment period is included in **Appendix A**.

The public hearings were held in an open house format and included a rolling Microsoft PowerPoint® presentation on a video screen and exhibit boards that described the proposed Project and the EA, Section 4(f) Evaluation, and Section 106 findings. Hearing attendees were invited to speak with NICTD staff to discuss specific issues and ask questions regarding the proposed Project. NICTD provided comment cards to all attendees at the sign-in desk and a court reporter was available to record oral public comments. Multiple copies of the EA, Section 4(f) Evaluation, and Section 106 findings and all EA appendices were available at the hearing for attendees to review. NICTD made the public hearing Microsoft PowerPoint® presentation and the exhibit boards available on the NICTD Project website after the meeting.

Comments were accepted in writing and verbally through a court reporter at public hearings held on October 11 and 12, 2017. Comments were also accepted via e-mail, United States mail, and the Project website through October 23, 2017. Comments from the United States Department of Interior (USDOI) were accepted until November 24, 2017, due to the proposed Project's adverse effects on Section 4(f) resources.

NICTD received 70 comments from agencies, organizations and the public during the comment period. FTA and NICTD have addressed the comments in this FONSI. **Appendices B and C** contain the agency, organization and public comments and responses, respectively.

Written comments were received from the following federal and state regulatory agencies, local agencies, and railroads. These letters and individual responses from FTA, where appropriate, are included in **Appendix B**:

- United States Environmental Protection Agency (USEPA)
- United States Department of Interior (USDOI)
- Indiana Department of Natural Resources, Fish and Wildlife Division (IDNR)
- Indiana Department of Natural Resources, Division of Historic Preservation and Archaeology (DHPA)
- Town of Ogden Dunes, Indiana
- Town of Chesterton, Indiana
- Commuter Rail Division of the Regional Transportation Authority (Metra)
- Chicago South Shore & South Bend Railroad (CSS)

Written comments were also received from other organizations. These letters are included in **Appendix C**. Responses to these comments are included in the comment/response matrix in **Appendix C**.

- Save the Dunes
- National Parks Conservation Association (NPCA)

Key concerns raised during this comment period include:

- Existing and future noise
- Potential for increases in freight traffic due to the proposed Project improvements
- Potential operational impacts to freight services
- Station and platform locations
- Universal/ADA access at the Gary/Miller Station
- Traffic impacts to Lake Street (Gary) between the existing U.S. 12 and U.S. 20 after implementation of the proposed Project and the relocation of U.S. 12 by INDOT
- Impacts of the additional parking, traffic, and pedestrian access at the Portage/Ogden Dunes Station
- Potential errors in the identification of certain plant species, including state threatened or endangered species

6.0 NEW INFORMATION AND PROJECT REFINEMENTS SINCE ISSUANCE OF THE ENVIRONMENTAL ASSESSMENT

NICTD has continued to refine the proposed Project in response to comments received during the EA public comment period and afterwards.

Comments received from IDNR and two non-profit organizations, Save the Dunes and the NPCA, indicated potential errors in the identification of certain plant species, including those that are considered threatened or endangered. NICTD thoroughly re-examined its floristic inventory findings and threatened and endangered species conclusions. As a result, several species were changed and the list of state threatened or endangered plant species was modified. The number of state threatened or endangered plant species remains at seven. An erratum to the EA has been prepared to address these changes. See **Appendix D** for a more thorough description of these changes.

NICTD continued coordination with the CSS and NIPSCO to address concerns regarding operational impacts to CSS in the area known as Bailly. After considerable discussion, the parties negotiated a series of agreements to convey the necessary property, easements and rights to achieve a new alternate design that satisfies all parties and does not affect National Park Service land. See **Section 4.3.1** for details

regarding these negotiations. As a result of these agreements, on August 10, 2018 CSS sent a retraction letter to their objection letter that was submitted September 23, 2017 (see **Appendix B**).

NICTD's on-going collaboration with the City of Michigan City determined that Green Street between Kentucky and Chicago Streets must be improved in order to better accommodate City services and emergency vehicles after the proposed Project is constructed. The changes resulted in an expansion of the proposed Project's construction footprint and the Section 106 Area of Potential Effect (APE).

The design modifications in the Bailly area resulted in a slight decrease in the acreage of wetlands to be filled. It also decreased the area to be cleared that contained suitable habitat for two threatened and endangered species. The changes to the proposed Project reduced ROW acquisitions by seven acres and required temporary easements by two acres. These changes have a net reduction in the proposed Project cost of approximately $3 million. **Table 1** provides a summary of changes to impacts as a result of project modifications.

Table 1. Summary of Re-Evaluation Resource Impacts

Resource	EA Identified Impact?	Change in Impacts?	Post-EA Impact
Transportation	Yes	No	No change
Land Acquisition/Displacement	Yes **158 properties**	Yes **-3 properties**	**Reduction** **155 properties**
Land Use and Economic Development	No	No	No change
Neighborhoods, Communities and Businesses	Yes	No	No change
Historic, Archaeological and Cultural Resources (Section 106)	Yes	No	No change
Visual and Aesthetics	Yes	No	No change
Noise	Yes	No	No change
Vibration	Yes	No	No change
Hazardous/Regulated Materials	No	No	No change
Biological Resources	Yes **29.3 ac**	Yes **- 1.3 ac**	**Reduction** **28.0 ac**
Water Resources	Yes **5.7 ac**	Yes **- 0.3 ac**	**Reduction** **5.4 ac**
Section 6(f) Resources	No	No	No change
Environmental Justice	No	No	No change
Safety and Security	No	No	No change
Indirect and Cumulative Impacts	No	No	No change
Air Quality	No	No	No change
Farmland	No	No	No change
Energy	No	No	No change
Navigable Waters	No	No	No change
Coastal Zone Management	No	No	No change
Geology, Soils and Karst	No	No	No change
Section 4(f) Resources	Yes	No	No change

7.0 MITIGATION MEASURES TO MINIMIZE HARM

The EA describes the proposed Project, its likely effects, and potential mitigation measures to avoid or minimize those effects. **Appendix E** describes the mitigation commitments that FTA requires of NICTD as a condition of FTA's finding that the proposed Project will have no significant impact. These mitigation commitments are based on the mitigation measures identified in the published EA, and described in the Section 106 Memorandum of Agreement (MOA) (**Attachment F**). Satisfaction of the mitigation commitments will be a condition of any future FTA grant for the proposed Project.

8.0 ENVIRONMENTAL DETERMINATIONS AND FINDINGS

8.1 NEPA FINDING

FTA served as the lead federal agency under NEPA for the proposed Project. NICTD will construct the proposed Project in accordance with the design features and mitigation measures presented in the EA, Section 4(f) Evaluation, and Section 106 findings. NICTD prepared the EA, with FTA oversight, in compliance with NEPA, 42 USC § 4331, et. seq., and 23 CFR § 771.121. FTA has made an independent evaluation of the EA and Section 4(f) Evaluation.

After reviewing the EA and supporting documents, including public comments and responses made thereto, FTA finds that the proposed Project will result in temporary and permanent effects on some resources as identified in **Table 2**. Mitigation measures that NICTD will implement to avoid or minimize effects on these resources are described in **Appendix E**.

Table 2. Permanent and Temporary Effects of the Proposed Project

Resource Appendix E - Section	Appendix E - Mitigation Commitment	Temporary Effects During Construction? (Yes/No)	Permanent Effects? (Yes/No)
Transportation **Section 3.0**	1 - 6	Yes	Yes
Land Acquisition/Displacement **Section 4.1**	7 - 8	Yes	Yes
Land Use and Economic Development **Section 4.2**	9	No	No
Neighborhoods, Communities and Businesses **Section 4.3**	10 - 12	Yes	Yes
Historic, Archaeological and Cultural Resources (Section 106) **Section 4.4**	13	Yes	Yes
Visual and Aesthetics Section 4.5	14 - 15	Yes	Yes
Noise Section 4.6	16 - 18	Yes	Yes
Vibration Section 4.7	19 - 20	Yes	Yes

Resource Appendix E - Section	Appendix E - Mitigation Commitment	Temporary Effects During Construction? (Yes/No)	Permanent Effects? (Yes/No)
Hazardous/Regulated Materials Section 4.8	21	Yes	No
Biological Resources Section 4.9	22 - 27	Yes	Yes
Water Resources Section 4.10	28 - 33	Yes	Yes
Section 6(f) Resources Section 4.11	n/a	No	No
Environmental Justice Section 4.12	34	Yes	No
Safety and Security Section 4.13	n/a	Yes	No
Indirect and Cumulative Impacts Section 4.14	n/a	Yes	No
Air Quality Section 4.15a	36	Yes	No
Farmland Section 4.15b	n/a	No	No
Energy Section 4.15c	n/a	No	No
Navigable Waters Section 4.15d	n/a	No	No
Coastal Zone Management Section 4.15e	37	No	No
Geology, Soils and Karst Section 4.15f	38	Yes	No
Section 4(f) Resources Section 4.15g	39 - 41	Yes	Yes

Pursuant to 23 CFR § 771.121, FTA finds that the proposed Project with mitigation to which NICTD has committed will have no significant impact on the environment. The record provides sufficient evidence and analysis for determining that an Environmental Impact Statement is not required.

8.2 FEDERAL UNIFORM RELOCATION ACT COMPLIANCE

The Uniform Relocation Assistance and Real Property Acquisition Policies Act (URA) of 1970 (42 U.S.C. 61) and its implementing regulations, 49 CFR § 24, ensure the fair and equitable treatment of persons whose real property is acquired or who are displaced as a result of a federal or federally assisted Project.

It is anticipated that the proposed Project will require the acquisition of property and temporary construction easements. A total of 80 residential properties; 62 commercial properties; 6 transportation, communication, or utility properties; and 7 municipal easements are required. In addition, temporary construction easements from 41 properties will be required. See **Appendix E, Section 4.1**.

As design progresses, property effects, including acquisitions and temporary and permanent easements, will continue to be refined. NICTD will use, to the greatest extent possible, existing NICTD ROW and acquired properties for construction activities, staging, equipment, and materials storage in order to minimize effects.

NICTD will conduct the acquisition process in accordance with the URA. It is anticipated that comparable decent, safe, and sanitary housing will be available on the real estate market to relocate those who will be displaced from their residences. However, if comparable housing cannot be offered, last-resort housing assistance will become available to displaced persons. Relocation planning and services will be provided to businesses, as explained in the EA.

8.3 SECTION 106 FINDING

In compliance with Section 106 of the National Historic Preservation Act of 1966 and in accordance with the Criteria of Adverse Effect described in 36 CFR § 800.5, FTA determined that the proposed Project will have an Adverse Effect on 27 historic resources, resulting from physical demolition and permanent incorporation. These historic resources include properties individually eligible or listed in the National Register of Historic Places (NRHP); the Elston Grove Historic District, Elston Grove Historic District Expansion, and Franklin Street Commercial Historic District; and contributing resources to these historic districts. The specific historic resources that will be adversely affected are included in **Appendix F, Attachment B**.

The Indiana State Historic Preservation Office (SHPO) concurred with these determinations on August 15, 2017. Treatment measures to minimize and mitigate adverse effects on historic properties were developed based on input from SHPO and Section 106 consulting parties. These mitigating treatment measures are incorporated in the executed MOA (dated December 8, 2017) between FTA, SHPO, and NICTD, included as **Appendix F**.

Additional consultation under Section 106 occurred following the identification of design modifications necessary at Green Street in Michigan City as described above in **Section 4.3.2**. The SHPO concurred with FTA's determination that no historic properties would be affected by the proposed modifications on September 14, 2018. See correspondence in **Appendix B**. See **Appendix G** for the analysis of the proposed changes.

The proposed Project will have an adverse effect on multiple historic properties; however, the effects, when mitigated through the stipulations and treatment measures outlined in the MOA, will not be significant. See **Appendix E, Section 4.4**.

Based on the historic resources analysis included in the EA as well as the consultation with SHPO, and the other Section 106 consulting parties, **FTA finds, in accordance with 36 CFR § 800, that the Section 106 coordination and consultation requirements for the proposed Project have been fulfilled.**

8.4 ENDANGERED SPECIES ACT OF 1973 (ESA) FINDINGS

The ESA intends to protect threatened and endangered species and the ecosystems on which they depend (16 USC §§ 1531-1544). The ESA requires a federal agency to ensure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of any listed species or result in direct mortality or destruction or adverse modification of critical habitat of listed species (50 CFR

§ 402). This requirement is fulfilled under Section 7 of the ESA by review of the proposed actions and consultation with the appropriate agency responsible for the conservation of the affected species (16 USC § 1536 *et seq.*). If necessary, mitigation is required to avoid jeopardizing listed species or their habitat.

Section 7 of the ESA requires all federal agencies to consult with the United States Fish and Wildlife Service (USFWS) for fresh-water species and inland flora and fauna (50 CFR § 402). USFWS determined that three federally listed species had the potential to occur in the proposed Project area: Indiana bat (*Myotis sodalis*), northern long-eared bat (*Myotis septentrionalis*), and eastern massasauga rattlesnake (*Sistrurus catentatus catentatus*). No federally listed plant species were identified in the proposed Project Area.

IDNR identified three additional state-listed species potentially present in the area: Kirtland's snake (*Clonophis kirtlandii*), spotted turtle (*Clemmys guttata*), and northern leopard frog (*Lithobates pipiens*).

8.4.1 AMPHIBIANS AND REPTILES

Twenty-eight acres of suitable habitat for the federally-listed eastern massasauga rattlesnake and the state-listed Kirtland's snake will be cleared during construction activities. Four acres of suitable habitat for the spotted turtle and 4.7 acres of suitable habitat for northern leopard frog, both state listed species, will be cleared. See **Appendix E, Section 4.9 – Threatened and Endangered Species: Amphibians and Reptiles**. NICTD will implement the following mitigation measures to avoid and minimize adverse effects on these four species:

- No digging, excavating, or filling of wetlands will occur from November 1 to March 1.
- To the extent practicable, trenched-in silt fences will be installed around the sites where these species are found prior to work during the active season. The fencing requirements will be followed.
- NICTD will conduct daily inspections before work begins. To the extent possible, a qualified herpetologist will relocate individual amphibians and/or reptiles from any of the four target species found in construction areas. NICTD will require the construction contractor to employ at least one environmental specialist to monitor compliance with best management practices (BMPs).
- NICTD will require that the construction contractor work within the designated construction footprint to avoid inadvertent encroachment on wetlands and protect adjacent wetland areas during construction.

8.4.2 INDIANA BAT AND NORTHERN LONG-EARED BAT

USFWS issued the Revised Programmatic Biological Opinion (Programmatic B.O.) for Transportation Projects in the Range of the Indiana Bat and Northern Long-Eared Bat and the Range-wide Programmatic Consultation for Indiana Bat and Northern Long-eared Bat Avoidance and Minimization Measures in December 2016. After reviewing the DT-NWI Bat Habitat Assessment in January 2017, the USFWS Field Office agreed that there was "low to moderate" suitable habitat for the two bat species. The USFWS Field Office also indicated there are no known maternity roost trees in the proposed Project Area. No individual coordination with USFWS with respect to bats was necessary, nor were acoustic surveys needed. USFWS advised NICTD to follow the avoidance and minimization measures in the range-wide programmatic consultation issued in December 2016.

This proposed Project is covered under the Programmatic B.O. as a project "Not Likely to Adversely Affect, with Avoidance and Minimization Measures" for the two bat species. As such, NICTD will implement the following avoidance and minimization measures. See also **Appendix E, Section 4.9 – Threatened and Endangered Species: Indiana Bat and Northern Long-eared Bat**:

- No tree clearing can occur between April 1 and December 31. These areas will be identified in the design plans and a special provision will be included in the specifications.
- NICTD will ensure all operators, employees, and contractors working in areas of known or presumed bat habitat are aware of all environmental commitments contained in this FONSI.
- NICTD will ensure that contract plans indicate that temporary lighting must be directed away from suitable habitat during the active season (April 1 – December 31).
- For permanent lighting near moderate-quality habitat, NICTD will use downward-facing, full cut-off lens lights, and direct lighting away from suitable habitat when installing new or replacing existing permanent lights.
- NICTD will ensure that tree removal is limited to that specified in proposed Project plans or as developed in the wetland and natural resource mitigation plan by installing bright colored flagging/fencing prior to any tree clearing to ensure contractors stay within clearing limits.

8.4.3 PLANT SPECIES

The IDNR search of the Natural Heritage Data Center and their June 2016 Environmental Review identified 31 threatened or endangered plant species that are previously known to occur within the general area. Seven of the 31 state-listed plant species were reported in the EA to be observed in the area during field surveys. See also **Appendix D - EA Errata and Appendix E, Section 4.9 – Threatened and Endangered Species: State Listed Plant Species.**

Field surveys were conducted to assess the potential habitat suitability for both federally- and state-listed species. During the survey periods (late summer/fall 2016 and early spring 2017), many plants were not in flower or fruit, and were identified based on leaf, stem and/or bark characteristics only. A total of 502 plants were identified to the species level, and an additional 21 were identified to the genus level. Direct observations of some listed species were made during fieldwork, which supplemented information that was available in the literature and obtained through agency consultation.

Save the Dunes submitted comments on the EA, indicating potential errors in the identification of certain plant species, including state threatened or endangered species, based on their extensive regional knowledge of the flora within the Indiana Dunes National Lakeshore and the northwest Indiana region. The NPCA reiterated these concerns, and the IDNR requested more information about the report's finding of the state-expatriated Russet buffalo-berry (*Shepherdia canadensis*).

NICTD and FTA re-examined the findings of the floristic inventory and threatened and endangered species plant survey that was conducted for the proposed Project; the qualifications of the individuals involved in the survey; survey methods; and agency review protocol. FTA finds that the surveys were conducted by professional staff with the proper credentials and according to standards for such work, and that regulatory agency reviews of the draft reports by NPS, IDNR, USFWS and U.S. Army Corps of Engineers (USACE) were conducted in January and February 2017.

NICTD's re-examination of the findings included consultation with the IDNR State Botanist on November 6, 2017 regarding the Russet buffalo-berry and the Forked bluecurls. The State Botanist indicated that the

specimen believed to be Russet buffalo-berry should be considered to be either a privet (*Ligustrum sp*.) or a species/hybrid of honeysuckle (*Lonicera sp*.) Neither of these is considered state-listed species. This has been changed in the master list of species documented for the proposed Project. The State Botanist further indicated that the specimen believed to be Forked bluecurls should be considered to be a young sprout of purple loosestrife (*Lythrum salicaria*). This is not considered a state-listed species. This change has been made in the master species list.

Based on a thorough re-examination of the floristic inventory reports the following corrections have been made regarding the state-listed plant species observed within the Project Area through the erratum contained in **Appendix D.** Additionally, the erratum corrects other species identifications or errors that are not considered threatened or endangered. The number of state-listed plant species that will likely be unsettled by ground disturbance remains at seven, although the actual species of plant has changed somewhat.

Remove:

- Hairy golden aster (*Chrysopsis villosa*)
- Russet buffalo-berry (*Sherpherdia Canadensis*)
- Forked bluecurls (*Trichostema dichotomum*)
- Skinner's false foxglove (*Agalinis skinneriana*)

Add:

- Kalm's St. John's-wort *(Hypericum kalmianum)*
- Needle-pod rush (*Juncus scirpoides*)
- Dwarf ginseng (*Panax trifolius*)
- White Pine (*Pinus strobus*)

FTA finds that the order of magnitude of the errors or change in species identifications is low and does not change the overall results; that is, the identification of the inaccuracies and resulting corrections do not lead to significant impacts not previously identified during NEPA analysis.

NICTD will implement the following avoidance and minimization measures, to the extent practicable:

- NICTD will coordinate with IDNR and NPS to either relocate listed plant species prior to disturbance or plant new vegetation. This effort will be part of the overall wetland and natural resource mitigation plan that will be prepared as part of the Section 404 individual permit to also mitigate for adverse effects on wetlands.
- NICTD will utilize local area expert botanists during the development and implementation of the relocation plan. This may include conducting additional floristic surveys if deemed appropriate.
- NICTD will continue coordination with the IDNR staff at Indiana Dunes State Park and at the Division of Nature Preserves during final design and construction.

Additional site-specific stipulations may be imposed by regulatory agencies during the permitting phase of the proposed Project. NICTD will comply with all such stipulations and will continue consultation with USFWS and IDNR, as appropriate, to avoid and/or minimize effects to endangered and threatened species.

With the mitigation commitments described above and presented in Appendix E, FTA finds that the proposed Project meets the substantive and procedural requirements of the Endangered Species Act.

8.5 WETLANDS FINDING

USDOT seeks to assure the protection, preservation, and enhancement of the nation's wetlands to the fullest extent practicable during the planning, construction, and operation of transportation facilities and projects (DOT Order 5660.1A). This is consistent with Executive Order 11990, requiring that new construction located in wetlands be avoided unless there is no practicable alternative to the construction and that the proposed Project include all practicable measures to minimize harm to wetlands that may result from such construction, and with Section 404 of the Clean Water Act (CWA)(33 U.S.C. 1251 et seq). Under Section 404, the United States Army Corps of Engineers (USACE) regulates discharges of dredged or fill materials into waters of the United States, including wetlands (33 CFR § 323). USACE requires that adverse effects on wetlands be avoided or minimized to the extent practicable (40 CFR part 230).

In accordance with USACE's direction, all wetlands in the proposed Project corridor were considered jurisdictional waters of the United States and subject to regulation by USACE. Even after undertaking all practicable avoidance measures, the proposed Project will adversely affect 46 of the 76 wetlands found in the proposed Project corridor, accounting for 5.4 acres of the total 43.01 acres identified. Of these, 4.42 acres will be permanently filled. The remaining 0.62 acre will be temporarily affected. Wetlands will be directly affected to create ballast for the track, service roads, and temporary construction access. The majority of the wetlands are narrow, linear, and run parallel to the proposed Project. Approximately 4.8 acres of the anticipated affected wetlands are considered high quality. In addition, the proposed Project will require in-stream work in 18 streams, for a total of 1,117 linear feet. Construction work primarily includes extending or widening existing culverts, or constructing new culverts. See also **Appendix E, Section 4.10 - Water Resources: Wetlands and Streams.**

Direct, adverse effects on wetlands were minimized substantially by reducing the construction grading footprint throughout the entire proposed Project corridor. **Appendix E** lists measures that will be undertaken to further minimize and mitigate adverse effects on wetlands and streams including:

- NICTD will develop a wetland and natural resource mitigation plan to create, restore, and enhance wetlands and hydrology within the adjacent Indiana Dunes National Lakeshore. The wetland and natural resource mitigation plan will be developed in consultation with National Park Service (NPS), USACE, IDNR and Indiana Department of Environmental Management (IDEM) and submitted as part of the Section 404 individual permit application.
- Erosion and sediment control plans that incorporate BMPs to avoid or minimize construction-related effects. These plans will be developed as part of the National Pollutant Discharge Elimination System permit required under the Clean Water Act.

To provide a preliminary quantification of potential indirect impacts to wetlands, NICTD overlaid the National Wetlands Inventory (NWI) with the Project's construction footprint and the delineated wetlands. While NICTD understands that the NWI maps are not extremely accurate, it is the best source of available data to indicate connections between the wetlands in the Project's construction footprint and larger nearby wetland complexes. The results indicate that of the 5.4 acres of wetlands

that are located within the construction footprint that would be filled, only 0.160 acres are associated with NWI wetlands (see Table 3).

To illustrate these indirect relationships, both the NWI wetlands and the delineated wetlands are included on the natural resource maps that are contained in Appendix II of the EA.

Table 3. NWI Wetlands in Construction Footprint

Wetland Type	Cowardin Class	Acres in Construction Footprint
Freshwater Emergent	PEM1F	0.013
Riverine	R5UBFx	0.029
Riverine	R5UBFx	0.014
Riverine	R5UBFx	0.023
Riverine	R5UBFx	0.033
Riverine	R5UBH	0.032
Riverine	R2UBHx	0.016
	Total	**0.160**

To further protect adjacent wetland areas from short term impacts during construction, commitments that include developing erosion and sediment control plans that incorporate BMPs (such as silt and drift fences) to avoid or minimize construction-related impacts are detailed in this FONSI. The locations of the BMPs and the wetland boundaries will be included in the design drawings and specifications as project design and engineering advances. NICTD will require that contractors institute these BMPs, and monitor compliance by having an on-site environmental specialist overseeing the work. NICTD will also require that the construction contractor work within the designated construction footprint to avoid inadvertent encroachment on wetlands. These mitigation measures are detailed in **Appendix E**.

The wetland and natural resource mitigation plan described above will mitigate for the direct impacts caused by the Project and also establish longer-term strategies that not only protect adjacent wetlands from indirect impacts, but enhance their functions. NICTD has committed to working with USACE, NPS, IDNR and IDEM to develop this mitigation plan as part of the Section 404 individual permit.

With the wetlands-related mitigation commitments described in Appendix E, including a commitment to comply with permit conditions to be determined in consultation with USACE, FTA finds that the proposed Project satisfies the requirements of DOT Order 5660.1(a), Executive Order 11990, and Section 404 of the CWA.

8.6 FLOODPLAINS FINDING

NICTD evaluated potential effects on floodplains as a result of the proposed Project, in accordance with Indiana's code for Floodplain Control and Floodplain Management and Executive Order 11988. Executive Order 11988 requires federal agencies to avoid to the extent possible the long- and short-term adverse effects associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative.

Permanent adverse effects on three floodplains are anticipated from 1) the construction of a new track and extension of an existing culvert in the Bailly segment (MP 44.4–44.6); 2) the construction of a new track on the north side of the existing track (MP 37.5–37.6) and the repair of the headwalls and wing walls of the existing culvert for Brown Ditch; and 3) the construction of a new track on either the north or south side of the existing track and the enlargement of the existing culvert for Kintzele Ditch (MP 36.0–36.3). The proposed Project will result in the potential filling of approximately 2.02 acres of floodplain. See also **Appendix E, Section 4.10 - Water Resources: Floodplains and Floodways.**

NICTD will mitigate the anticipated adverse effects, including the design of structures in accordance with the IDEM and IDNR permit requirements and submittal of permit applications to local and state authorities. NICTD will follow conditions specified in the permits and erosion control plans will be developed as part of the construction documents. Additionally, work proposed in the floodplain will be conducted with every effort to minimize any adverse effects.

Preliminary analyses determined there are no practical alternatives that will not cause any adverse effects on floodplains. With the mitigation commitments described above and in **Appendix E** and compliance with local and state permit requirements, **FTA finds that the DT-NWI Project will have no significant impacts on 100-year floodplains or floodways.**

8.7 ENVIRONMENTAL JUSTICE FINDING

Executive Order 12898 provides that “each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and/or low-income populations.” A disproportionately high and adverse effect on minority or low-income populations is defined as an adverse effect that: (a) is predominantly borne by a minority population and/or a low-income population; or (b) will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or non-low-income population (USDOT Order 5610.2(a)).

Based on the analysis contained in the EA and the mitigation commitments made by NICTD, the proposed Project will not result in adverse effects on environmental justice populations. See also **Appendix E, 4.12: Environmental Justice**.

As a result, **FTA finds that the DT-NWI Project will not result in disproportionately high and adverse effects on Environmental Justice populations Project wide.**

8.8 AIR QUALITY CONFORMITY FINDING

The Clean Air Act (CAA) (42 U.S.C. §7401 et seq.) and its associated regulations (40 CFR § 50) are the basic federal statutes and regulations governing air pollution. The Transportation Conformity Rule (40 CFR § 93, Subpart A) requires that projects that are developed, funded, or approved by USDOT and by metropolitan planning organizations or other recipients of federal funds demonstrate conformity with the State Implementation Plan (SIP) developed pursuant to the CAA. A determination of conformity is made by the metropolitan planning organization and USDOT.

The proposed Project is identified in the Fiscal Year 2018–2021 Northwest Indiana Regional Planning Commission transportation improvement program (TIP) under ID # 1700529, 1700594, and 1700620. As this TIP is amended and TIPs for future years are developed, additional funding will be added to support

construction of the proposed Project. The proposed Project is also within the fiscally constrained 2040 Comprehensive Regional Plan. On July 3, 2017, the Federal Highway Administration and FTA determined that NIRPC's amendment to the 2040 Comprehensive Regional Plan and TIP conforms to the transportation-related requirements of the 1990 Clean Air Act Amendments. These findings were in accordance with 40 CFR § 93, "Determining Conformity of Federal Actions to State or Federal Implementation Plans." The proposed Project's design and scope are consistent with the proposed Project information used for the TIP conformity analysis; therefore, **FTA finds that the proposed Project conforms to the existing TIP and the transportation-related requirements of the 1990 Clean Air Act Amendments.** See also **Appendix E, Section 4.15a: Air Quality.**

8.9 SECTION 4(F) FINDING

Section 4(f) of the USDOT Act of 1966 (49 USC § 303) is a national policy that states that the Secretary of Transportation may not approve transportation projects that use publicly owned parks, recreation areas, wildlife and waterfowl refuges, or any significant historic site unless a determination is made that there is no prudent or feasible alternative to using that land, and that all possible planning has been done to minimize harm.

The existence of potential Section 4(f) resources was evaluated in the EA and Section 4(f) Evaluation. The proposed Project will result in a Section 4(f) use of the Dunes Kankakee Trail – Porter Brickyard Segment and the Calumet Trail. The use of both trails will have a *de minimis* impact and would not adversely affect the features, attributes, or activities of the Dunes Kankakee Trail or the Calumet Trail that qualify the trails for protection under Section 4(f). Confirmation of this finding from the Officials with Jurisdiction for each resource is included in **Appendix B.**

In addition, the proposed Project will result in the permanent incorporation of 27 historic resources as identified during the Section 106 consultation process including, but not limited to, the historic South Shore Station, the First Christian Church, the Elston Grove and the Franklin Street Commercial Historic Districts, and the Elston Grove Historic District Expansion. To mitigate these effects, NICTD will implement the measures identified in the executed MOA (see **Appendix F**) between FTA, SHPO, and NICTD. See also **Appendix E, Section 5.0: Section 4(f) Resources**.

There are no feasible or prudent alternatives to avoid the use of historic properties. The attached executed MOA between FTA, SHPO, and NICTD, along with the Section 4(f) Avoidance and Least Overall Harm analyses included in the EA, documents that all possible planning to minimize harm to these historic resources has been taken. On October 23, 2017, SHPO indicated that it "does not object to the Section 4(f) Determination Conclusions stated in the (EA) Section 5.10." The DOI indicated on November 16, 2017 that it concurred with FTA's determinations as well, and that "if the MOA is fully executed and included in the environmental decision document, the Department will have no objection to the 4(f) evaluation and concur with the measures to mitigate the adverse effects of the project" (see **Appendix B**). Taking into account the mitigation commitments made by NICTD, **FTA finds that the proposed Project is in compliance with the Section 4(f) statute 49 USC § 303 and 23 USC § 138 and the implementing regulations under 23 CFR § 774.**

9.0 CONCLUSION

Based on the EA and its associated supporting documents, FTA finds that, pursuant to 23 CFR § 771.121, there are no significant impacts on the environment associated with the development and operation of the proposed Project. Preparation of an Environmental Impact Statement is not warranted.

Kelley Brookins
Regional Administrator
Federal Transit Administration, Region V

November 1, 2018
Date

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APPENDICES

A. EA Notice of Availability and Invitation to Comment

B. Agency Comments and Responses

C. Public Comments and Responses

D. EA Errata

E. Mitigation Commitments

F. Section 106 Memorandum of Agreement

G. NEPA Re-Evaluation dated September 14, 2018

H. 30% Plan Sheets for Modifications at Bailly

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June 30, 2020

United States Army Corps of Engineers
Chicago District
Regulatory Branch
Attention: Mr. Paul Leffler
231 South LaSalle Street, Suite 1500
Chicago, Illinois 60604

Indiana Department of Environmental Management
Section 401 WQC Program
Attention: Mr. Marty Maupin
100 North Senate Avenue, 12th Floor
Indianapolis, Indiana 46204

Subject: Double Track Northwest Indiana (DT-NWI)
Railway Improvements Project
Lake, Porter, and LaPorte Counties, Indiana
Section 404 Individual Permit & 401 Water Quality Certification (WQC) Permit Application

Cardno Inc., acting as the authorized agent for the Northern Indiana Commuter Transportation District (NICTD), is hereby applying for a Section 404 Individual Permit & 401 Water Quality Certification (WQC) Permit for the Double Track Northwest Indiana (DT- NWI) Project. The proposed Project will impact wetlands and waterways as a result of the track expansion and culvert improvements along the proposed Project corridor. Because these wetlands and waterways are considered jurisdictional, they are regulated under Section 404 and Section 401, pursuant to the Clean Water Act (CWA). The information included in this permit application is intended to satisfy the regulatory requirements. As of this submittal date, the proposed impacts are based upon the 60% engineering design plans. Updated documentation will be provided after the 90% engineering plans are completed. However, if impacts to wetlands are waterways occur in the 90% engineering plans because of design refinements, these are anticipated to be minor.

Enclosure A includes the U.S. Army Corps of Engineers (USACE), ENG Form 4345 and the Indiana Department of Environmental Management (IDEM), Application for Authorization to Discharge Dredged or Fill Material to Isolated Wetlands and/or Waters of the State.

Project Description

NICTD, in cooperation with the Federal Transit Administration (FTA), proposes the DT- NWI Project for the South Shore Line (SSL) commuter service between milepost (MP) 58.8 in Gary and MP 32.2 in Michigan City, Indiana spanning across Lake, Porter, and LaPorte Counties (See the Project Overview Map in **Enclosure B**). The proposed Project will include the construction of a second track with related signal, power, communications, bridge, track infrastructure, and station improvements along an existing track for approximately 26.6 miles.

Regulatory Compliance

As a Federal Undertaking, pursuant to the National Environmental Policy Act (NEPA) of 1969, the U.S. Department of Transportation (USDOT), FTA and NICTD prepared an Environmental

Assessment (EA) and Section 4(f) Evaluation for the Double Track NWI Project dated September 18, 2017. FTA served as the lead federal agency under NEPA for the proposed Project. FTA issued the Finding of No Significant Impact (FONSI) in November 2018. NICTD will construct the proposed Project in accordance with the design features and mitigation measures presented in the EA, Section 4(f) Evaluation, and Section 106 findings.

Schedule

This proposed Project is funded, in part, by FTA's Capital Investment Grant – New Starts program. NICTD submitted the proposed Project for a formal New Starts Project Rating by FTA in June 2019 and received approval to enter into the final phase of engineering in February 2020. The anticipated letting for construction of the proposed Project is July 2021 with anticipated construction completion in March 2023.

Waters of the U.S. Impacts - wetlands and streams

Per USACE's direction, all wetlands in the proposed Project corridor were considered jurisdictional (**Enclosure C**). Therefore, the proposed Project does not include isolated wetlands. A wetland delineation survey performed in 2017 to identify wetlands and streams within the Project's study area resulted in a total of 76 wetlands totaling 43.01 acres and a total of 1,117 linear feet of streams (Refer to the *Waters of the U.S. Delineation Report* at the Project's website: https://www.doubletrack-nwi.com/docs).

The EA anticipated a permanent impact of 4.75 acres of wetlands and 1,117 linear feet of streams. The current proposed impacts are listed in the Stream and Wetland impact Tables (**Enclosure D**), which show 33 wetlands totaling 4.86 acres of permanent impacts and 1.28 acre of temporary impacts and 12 streams totaling 82 linear feet of new stream encapsulation (**Enclosures E** and **G**).

The table below summarizes the total impacts to wetlands and streams identified in the EA and presently in the 60% design engineering plans. Temporary and Permanent Impacts are discussed in **Block 21** and **Block 22** in **Enclosure A**.

Waters of the U.S. Impact Summary		
Type of Impact	**EA**	**60% Design Plans**
Wetland Impacts (Total)	**5.73 acres**	**6.15 acres**
Permanent	4.75 acres	4.86 acres
Temporary	0.98 acre	1.28 acres
Stream Impacts (Total)	**1,117 linear feet**	**82 linear feet**

Avoidance and Minimization Efforts

There are no practical alternatives to avoid the wetlands and streams impacts to construct the preferred Build Alternative and best meet the purpose and need for the proposed Project. The alternatives considered are discussed in the **Section 4.0** Alternatives Considered of the FONSI at the Project's website: https://www.doubletrack-nwi.com/docs.

Wetlands and stream impacts have been minimized to the extent practicable. The construction method to install the culverts was changed from “jack and bore” which consists of pushing the casing pipe into the earth with a horizontal auger boring machine at the conceptual stage to the “removal and replacement” method in the design phase of the proposed Project.

Erosion and Sediment Control

The *Soil and Erosion Control (SEC) Plan Sheets* based upon the 60% engineering designs, dated March 16, 2020, show the sediment and control methods for the entire proposed Project area. In addition, *Stormwater Pollution Prevention Plans* (SWPPP) in accordance with 327 IAC 15-5, “Rule 5” will be provided the five MS4s operators that may receive discharges from this proposed Project which include: City of Gary, Porter County, City of Portage, Town of Porter, and Michigan City (**Enclosure H** and **Enclosure I**). The SEC Plan Sheets and SWPPPs are still under development therefore updated information will be provided, as the proposed Project progresses toward completion.

Best management practices (BMPs) or temporary erosion control methods for the proposed Project will include the following: temporary seeding; silt fence; water diversion methods; bio-degradable filter socks (if needed); erosion control blankets; gravel construction entrances/exits; and concrete washouts.

Protected Species

FTA found that the proposed Project meets the substantive and procedural requirements of the Endangered Species Act due to NICTD’s agreed upon adherence to implement the mitigation commitments defined in Appendix E of the FONSI.

In order to adhere to the mitigation commitments, set forth in the FONSI and to comply with the Indiana Department of Natural Resources (IDNR) and the U.S. Fish and Wildlife Service (USFWS) permitting requirements, NICTD has put forth a *Threatened and Endangered Species Avoidance Plan* (**Enclosure J**). This Plan sets out the actions to protect the Eastern Massasauga rattlesnake (*Sistrurus catenatus*; federally threatened, state endangered) and Indiana state-listed species of Kirtland’s snake (*Clonophis kirtlandii*; state endangered) and Spotted turtle (*Clemmys guttata*; state endangered) within 11.58 acres of high quality habitat within the Project area. The northern leopard frog (*Lithobates pipiens*) was considered a state-listed species when surveys were performed for the EA but has since been formally delisted by the IDNR and Natural Resources Amphibian and Reptile Technical Advisory Committee therefore it was not included in the Plan.

The 2017 *Indiana Bat and Northern Long-Eared Bat Habitat Assessment* prepared as part of the EA found approximately 48.9 acres of summer habitat deemed as low to moderate quality (NICTD 2017). Potential summer roosting habitat for northern long-eared bats (*Myotis septentrionalis*; federally threatened, state endangered) and Indiana bats (*Myotis sodalis*; federally and state endangered) was identified during a habitat assessment.

The Project’s FONSI mitigation commitment to protect the bat species along the Project corridor includes the following construction activity restrictions: no tree clearing can occur between April 1 and September 30; temporary lighting used during construction activities will be directed away from suitable habitat during the active season from April 1 to September 30; and installation

of bright colored flagging/fencing prior to any tree clearing. In order to avoid possible adverse impacts, advance tree removal will occur during the inactive season of the northern long-eared and Indiana bats between October 1 and March 31.

Refer to the *Habitat Surveys for the Eastern Massasauga, Kirtland's Snake, Spotted Turtle, and Northern Leopard Frog* and *Indiana Bat and Northern Long-Eared Bat Habitat Assessment* at the Project's website: https://www.doubletrack-nwi.com/docs.

Cultural Resources

In compliance with Section 106 of the National Historic Preservation Act of 1966 and in accordance with the Criteria of Adverse Effect described in 36 CFR § 800.5, FTA determined that the proposed Project will have an adverse effect on 27 historic resources, resulting from physical demolition and permanent incorporation. The Indiana State Historic Preservation Office (SHPO) concurred with these determinations on August 15, 2017.

The adverse effect on historic properties will be mitigated through the stipulations and treatment measures outlined in the Memorandum of Agreement between FTA, SHPO, and NICTD. Based on the historic resources analysis included in the EA as well as the consultation with SHPO, and the other Section 106 consulting parties, FTA finds, in accordance with 36 CFR § 800, that the Section 106 coordination and consultation requirements for the proposed Project have been fulfilled (Refer to **Section 8.3** and **Appendix F** of the FONSI at the Project's website: https://www.doubletrack-nwi.com/docs).

Mitigation

The impacted wetlands located along the track corridor and culvert areas are considered high-quality aquatic resources (HQAR) at the proposed Project's location. Per the Interagency Wetland Policy Act of 1989, NICTD proposes that mitigation for permanent impacts to Waters of the U.S. occur at a 3:1 ratio pending USACE approval. If approved, NICTD would provide 14.58 mitigation credits (3 x 4.86 acres) as compensation for the permanent impacts. NICTD will utilize the IDNR, In Lieu Fee Indiana Stream and Wetland Mitigation Program. Temporary wetland impacts will be reseeded with an approved seedmix. This information will be provided with the 90% design engineering submittal.

Adjoining Property Owners

The list of adjacent property landowners within 500 feet from the proposed wetland and/or stream impacts are included in **Enclosure F**.

Project documents can be provided upon request or, as previously stated, accessed at the proposed Project's website at https://www.doubletrack-nwi.com/.

We appreciate your review of this permit application. If you have any questions or additional information is needed, please contact the authorized agent, Timothy Meeks, at Timothy.Meeks@cardno.com or (574) 586-3400.

Sincerely,

Nicole Barker
Double Track NWI Project Manager
Northern Indiana Commuter Transportation District
33 E. US Highway 12 Chesterton, IN 46304
Email: nicole.barker@nictd.com
Direct 219-926-5744

Timothy Meeks
Senior Staff Scientist
Cardno, Inc.
708 Roosevelt Road Walkerton, IN 46574
Email: timothy.meeks@cardno.com
Direct 574-586-3400

cc:
Paul Labovitz, Indiana Dunes National Park
Janice Reid, HDR
Kristine Kutscher, AECOM

Enclosures:
A: USACE ENG Form 4345 and IDEM Application Form for Authorization to Discharge Dredged or Fill Material to Isolated Wetlands and/or Waters of the State
B: Project Overview Map
C: Correspondence regarding Jurisdictional Determination
D: Stream and Wetland Impact Tables
E: Stream and Wetland Impact Exhibits (includes Adjacent Property Landowner Parcels)
F: Adjacent Property Landowner List
G: Permitting Plan Set (to be provided as project progresses toward 90% design plans)
H: 60% Design Engineering Plans
  Track Plans (dated March 16, 2020)
  Structural Plans (dated March 16, 2020)
  General & Miscellaneous Plans (dated March 16, 2020)
I: Stormwater Pollution Prevention Plans (SWPPP) per MS4
J: Threatened and Endangered (T&E) Species Avoidance Plan

Below is a list of the proposed Project's documents which are relevant to the review of this application and can be accessed at the website https://www.doubletrack-nwi.com/.

Environmental Assessment and Section 4(f) Evaluation:

Appendix I – References Cited

Appendix II – Affected Environmental Mapbook

Appendix III – Environmental Assessment Technical Memoranda

Floristic Quality Assessment, Threatened and Endangered Species Plant Survey, and Woodland Characterization Investigation

Habitat Surveys for the Eastern Massasauga, Kirtland's Snake, Spotted Turtle, and Northern Leopard Frog

Indiana Bat and Northern Long-Eared Bat Habitat Assessment

Waters of the U.S. Delineation Report

Finding of No Significant Impact (FONSI):

Finding of No Significant Impact (FONSI) – Main Document

Appendix D: EA Errata
Updated Plan Lists

Appendix E: Mitigation Commitment

Appendix F: Section 106 Memorandum of Agreement

Appendix G: NEPA Re-Evaluation dated September 2018
Updated Mapbook

Appendix H: 30% Plan Sheets for Modifications at Bailly

Double Track NWI Project

A – USACE ENG Form 4345
and
IDEM Application Form for Authorization to Discharge Dredged or Fill Material to Isolated Wetlands and/or Waters of the State

U.S. Army Corps of Engineers (USACE)

APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT

33 CFR 325. The proponent agency is CECW-CO-R.

Form Approved - OMB No. 0710-0003 Expires: 02-28-2022

The public reporting burden for this collection of information, OMB Control Number 0710-0003, is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. PLEASE DO NOT RETURN YOUR APPLICATION TO THE ABOVE EMAIL.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned. System of Record Notice (SORN). The information received is entered into our permit tracking database and a SORN has been completed (SORN #A1145b) and may be accessed at the following website: http://dpcld.defense.gov/Privacy/SORNsIndex/DOD-wide-SORN-Article-View/Article/570115/a1145b-ce.aspx

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME	8. AUTHORIZED AGENT'S NAME AND TITLE (agent is not required)
First - Nicole Middle - Last - Barker	First - Timothy Middle - Last - Meeks
Company - South Shore Line	Company - Cardno, Inc.
E-mail Address - nicole.barker@nictd.com	E-mail Address - timothy.meeks@cardno.com
6. APPLICANT'S ADDRESS:	**9. AGENT'S ADDRESS:**
Address- 33 E. US Highway 12	Address- 708 Roosevelt Road
City - Chesterton State - IN Zip - 46304 Country -	City - Walkerton State - IN Zip - 46574 Country - USA
7. APPLICANT'S PHONE NOs. w/AREA CODE	**10. AGENTS PHONE NOs. w/AREA CODE**
a. Residence b. Business 219-926-5744 c. Fax	a. Residence b. Business 574-586-3400 c. Fax

STATEMENT OF AUTHORIZATION

11. I hereby authorize, Cardno, Inc. to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

Nicole Barker 6/30/2020

SIGNATURE OF APPLICANT DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions)
Double Track Northwest Indiana, or DT-NWI (Project)

13. NAME OF WATERBODY, IF KNOWN (if applicable)	14. PROJECT STREET ADDRESS (if applicable)
Multiple locations along linear corridor See Enclosure E	Address 33. E. US Highway 12
15. LOCATION OF PROJECT	City - Chesterton State- IN Zip- 46304
Latitude: ◦N 41.644671° Longitude: ◦W -87.061566°	

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions)

State Tax Parcel ID Municipality

Section - Township - Range -

17. DIRECTIONS TO THE SITE

The proposed Project is over a 26.6 mile distance but should be considered centrally located at the Dunes Park Station and NICTD office space at 33 E. US Highway 12, Chesterton, IN 46304. To reach this location from Interstate 94 take Exit 26B. Exit on 26B and travel North on SR49 North for 1.3 miles. Follow signage and turn left to US12. Turn right onto US12 East. Follow US12 East for 0.1 miles and turn left to the destination.

18. Nature of Activity (Description of project, include all features)

See Block 18 for a detailed description.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

See Block 19 for a detailed description.

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

See Block 20 for a detailed description.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type Amount in Cubic Yards | Type Amount in Cubic Yards | Type Amount in Cubic Yards

See Enclosure D for detailed information.

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres 4.86 acres of wetland. See Block 22 and Enclosure D for detailed information.

and

Linear Feet 82 linear feet of new encapsulation of waterways.

23. Description of Avoidance, Minimization, and Compensation (see instructions)

See Block 23 detailed description

24. Is Any Portion of the Work Already Complete? ☐ Yes ☒ No IF YES, DESCRIBE THE COMPLETED WORK

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list).

a. Address- See Attached List Enclosure F

City - State - Zip -

b. Address-

City - State - Zip -

c. Address-

City - State - Zip -

d. Address-

City - State - Zip -

e. Address-

City - State - Zip -

26. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED
U.S. FTA Region V	FONSI		2017-09-18	2018-11-01	

* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

Nicole Barbas — 6/30/2020
SIGNATURE OF APPLICANT — DATE

Timothy M. Meeks — 06/30/2020
SIGNATURE OF AGENT — DATE

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

Block 18. Nature of Activity (Project Description)
The proposed Project would include the construction of an adjacent second track with related signal, power, communications, bridge, track infrastructure, and station improvements. Improvements would include the addition of 1.8 miles of signal work at the far west and east ends of the Project, generally between Mileposts (MP) 58.8 and 58.1 and MP 33.3 and 32.2, and the construction of 16.1 miles of a new second mainline track and new overhead contact system between MP 58.1 in Gary and MP 33.3 in Michigan City. These MPs roughly correspond with Tennessee Street in Gary and Michigan Boulevard in Michigan City, respectively.

At the east end of the proposed Project, between MP 35.3 (Sheridan Avenue) and MP 33.3 (Michigan Avenue) in Michigan City, the proposed Project would replace 1.9 miles of embedded, in-street track along 10th and 11th Streets with a segregated, double track.

Along 10th Street, the proposed Project would remove three at-grade road and rail crossings. The remaining open crossings would be upgraded with automatic warning devices consisting of flashers, gates, and bells.

The proposed Project would include four new bridges: over the CSX railroad tracks at MP 54.65 and Hobart Road at MP 54.62 in Gary; and over the Norfolk Southern railroad tracks at MP 47.41 and the main entrance road to ArcelorMittal at MP 47.32 in Burns Harbor to support the second mainline. The enclosed Project Overview Map depicts the location of these proposed bridges, proposed station improvements, and proposed double-track segments (Enclosure B).

Two storage tracks for additional rush-hour trains, two high-level platforms, and additional parking would be constructed at the Gary/Miller Station.

Two high-level platforms and additional parking would be constructed at the Portage/Ogden Dunes Station. One new low-level platform would be constructed at the Dune Park and Beverly Shores Stations. Additional parking would be constructed at the Dune Park Station.

The 11th Street (Michigan City) Station, located between Pine and Franklin Streets, would be improved and expanded with two high-level platforms and a new station building that includes a multi-level parking structure.

The South Shore Line (SSL) of the Northern Indiana Commuter Transportation District Construction is anticipated to begin in July 2021 and finish by the end of March 2023.

Block 19. Project Purpose

The purpose of the proposed Project as defined in the FONSI is to expand the existing SSL capacity to meet current and future ridership demand. Increasing capacity will improve operating flexibility; reduce delay; reduce travel time; improve system reliability, mobility, and safety; and increase access to employment centers in Chicago.

The following key factors define the need for the proposed Project:

In the Bailly portion of the proposed Project (a 2.7-mile track segment), the single NICTD/CSS railroad track is located between CSS freight storage tracks resulting in switching conflicts, slower speeds, and safety concerns. Additionally, CSS transfers many long unit trains in this area, which requires that the train switch off the mainline for temporary storage. These conflicts partially contribute to NICTD's 2016 overall on-time performance of 81.9 percent, compared to the acceptable industry standard of 90 percent.

Peak trains currently operate at 98 percent seating capacity, with little room to accommodate additional passengers. As the population of northwest Indiana continues to grow and export workers to jobs in Chicago, demand for transit will increase.

The current average trip time on the SSL during rush hour is considerably longer than by automobile because of freight and passenger train interference, speed restrictions, and passenger boarding delays.

Only 7 of the 39 existing at-grade crossings in the Michigan City portion of the proposed Project have automatic warning devices. Eight of the crossings are in the Federal Railroad Administration's (FRA) 2016 top 100 predicted accident locations in Indiana (FRA 2017). These statistics do not account for the inherent danger of trains traveling down the middle of residential and commercial streets with automobiles, pedestrians, and bicyclists sharing the same right-of-way (ROW) (Refer to **Section 3.0** in the main document of the FONSI at the Project's website: https://www.doubletrack-nwi.com/docs).

Block 20. Reason(s) for Discharge
The discharge of fill materials into wetlands and streams is required in order to construct a stable base for rail line construction by utilizing non-erodible materials such as ballast and revetment rip-rip. The fill will be placed in a standard configuration to complete a grade capable of supporting the South Shore Line commuter rail cars and service rail cars.

Block 21. Type(s) of Materials Being Discharged and the Amount of Each Type in Cubic Yards

Revetment Stone Riprap at a 1.50 (Min D. (ft.) – 735 cy

Fill of Concrete – 6.7 cy

Ballast – 8,513 cy

Block 22. Surface Area of Wetlands or Other Waters Filled
Permanent impacts to the wetlands will result due to the addition of ballast along the railway corridor to accommodate for the additional of a second adjacent track. Permanent impacts at the certain culvert locations will result due to replacement of a concrete culvert structure including the steel pipe, headwalls, and wingwalls. Temporary impacts along the track corridor and the culvert locations will result due to temporary construction access areas.

NICTD is proposing the “remove and replace” method to construct three large culverts and nine small culverts in stream channels to accommodate for the widening of the track corridor. Streams will be permanently impacted as a result of construction work to extend or widen existing culverts or to construct new culverts. Permanent impacts would result from the placement of fill in the form of riprap, concrete wingwalls and steel culvert pipe and are detailed in the Stream Impact Table in **Enclosure D**.

Wetland and Stream Impact Summary Table

Waters of the U.S. Impact Summary		
Type of Impact	**EA**	**60% Design Plans**
Wetland Impacts (Total)	**5.73 acres**	**6.15 acres**
Permanent	4.75 acres	4.86 acres
Temporary	0.98 acre	1.28 acre
Stream Impacts (Total)	**1,117 linear feet**	**82 linear feet**
Permanent	1,117 linear feet	82 linear feet
Temporary	N/A	0 linear feet

*EA refers to the Environmental Assessment (EA) and Section 4(f) Evaluation for the Double Track NWI Project dated September 18, 2017.

Block 23. Description of Avoidance, Minimization and Compensation

There are no practical alternatives to avoid the wetland and stream impacts while constructing the preferred Build Alternative and best meet the purpose and need for the proposed Project. The alternatives considered are discussed in **Section 4.0** in the main document of the FONSI at the Project's website https://www.doubletrack-nwi.com/docs.

While designing the culvert engineering plans, the design team coordinated with the Indiana Dunes National Park to minimize stream impacts as well as impacts to the National Park Service land. In addition, the culvert replacements will meet the design criteria for both Porter County and the Indiana Department of Natural Resources (IDNR) requirements by utilizing a pipe sized to accommodate both a 10-year storm event and a 100-year storm event as well as installed at least twelve inches below the streambed to maintain a more natural streambed to maintain natural water velocities and water depth to assist fish passage.

The engineering designs for the three large culverts were designed using the "remove and replace" method and the engineering designs were modified since the 30% design. The culvert inverts are designed to a minimum depth, thereby also keeping the length of the impact to a minimum. On the upstream side of the pipe, the riprap design was shortened for the small culverts. The length on the downstream side was shortened to a practical minimum length of eight feet. Some of the pipe depths have also been adjusted to keep the top of the pipe within two inches from the top of the sub-ballast. Since the maximum size of the aggregate in the sub-ballast is two inches, this is the highest elevation that the pipe can be placed. The contractor is responsible for means and methods regarding waterway diversion and dewatering of the culvert work areas prior to construction which will be included in the specifications to be provided to the contractor.

APPLICATION FOR AUTHORIZATION TO DISCHARGE DREDGED OR FILL MATERIAL TO ISOLATED WETLANDS AND/OR WATERS OF THE STATE

State Form 51821 (R2 / 11-15)

Indiana Department of Environmental Management

INSTRUCTIONS: *1. Read the instruction sheet before filling out this form.*

2. You must complete all applicable sections of this form

1. Applicant Information	2. Agent Information
Name of Applicant Northern Indiana Commuter Transportation District South Shore Line	Name of Agent Cardno, Inc
Mailing address *(Street/ PO Box/ Rural Route, City, State, ZIP Code)* 33 E. US Highway 12 Chesterton, IN 46304	Mailing address *(Street/ PO Box/ Rural Route, City, State, ZIP Code)* 708 Roosevelt Road Walkerton, IN 46574
Daytime Telephone Number 219-926-5744	Daytime Telephone Number 574-586-3400
Fax Number	Fax Number
E-mail address *(optional)* nicole.barker@nictd.com	E-mail address *(optional)* timothy.meeks@cardno.com
Contact person *(required)* Nicole Barker	Contact person Timothy Meeks

3. Project / Tract Location

County Lake/Porter/LaPorte	Nearest city or town Chesterton
U.S.G.S. Quadrangle map name *(Topographic map)* Michigan City West, Dune Acres Portage and Gary Quads	Project street address *(if applicable)* 33 E. US Highway 12, Chesterton, IN 46304

Quarter	Section	Township	Range

Type of aquatic resource(s) to be impacted *(Attach Worksheet One.)* Waterways and Wetlands	Project name or title *(if applicable)* Double Track Northwest Indiana (DT-NWI)

Other location descriptions or driving directions N 41.644671°, W -87.061566°

The proposed Project is over a 26.6 mile distance but should be considered centrally located at the Dunes Park Station and NICTD office space at 33 E. US Highway 12, Chesterton, IN 46304. To reach this location from Interstate 94 take Exit 26B. Exit on 26B and travel North on SR49 North for 1.3 miles. Follow signage and turn left to US12. Turn right onto US12 East. Follow US12 East for 0.1 miles and turn left to the destination.

4. Project Purpose and Description (*Use additional sheet(s) if required.*)

Has any construction been started? ☐ Yes ☑ No	Anticipated start date *(month, day, year)* July 2021

If yes, how much work is completed?
None

Purpose of project and overview of activities

See Block 19 Purpose and Need document provided

5. Avoidance, Minimization, and Mitigation Information: Applicants must answer all of the following questions
(*Use additional sheet(s) if necessary - provide a detailed response to all applicable questions.*)

A. For projects with Class II isolated wetlands –

1. Is there a reasonable alternative to the proposed activity?

2. Is the proposed activity reasonably necessary or appropriate?

B. For projects with Class III wetlands, adjacent wetlands, and/or streams, rivers, lakes or other water bodies –

1. Is there a practicable alternative to the proposed activity?

   There are no practical alternatives to avoid the wetlands and streams impacts to construct the preferred Build Alternative and best meet the purpose and need for the proposed Project.

2. Have practicable and appropriate steps to minimize impacts to water resources been taken?

Describe all compensatory mitigation required for unavoidable impacts.

The impacted wetlands located along the track corridor and culvert areas are considered high- quality aquatic resources (HQAR) at the proposed Project's location. Per the Interagency Wetland Policy Act of 1989, NICTD recommends that mitigation for permanent impacts to Waters of the U.S. occur at a 3:1 ratio pending USACE approval NICTD is proposing to provide 14.58mitigation credits (3 x 4.709 acres) for the permanent impacts. NICTD will utilize the IDNR, In Lieu Fee Indiana Stream and Wetland Mitigation Program. Temporary wetland impacts will be reseeded with an approved seedmix. This information will be provided with the 90% design engineering submittal.

6. Drawing / Plan Requirements *(Applicants must provide the following.)*

a. Top/aerial/overhead views of the project site showing existing conditions and proposed construction.
b. Cross sectional view of areas of fill or alterations to streams and other waters.
c. North arrow, scale, property boundaries.
d. Include wetland delineation boundary *(if applicable)*. Label all wetlands (jurisdictional, isolated and exempt) as I-1, I-2, I-3, etc. and the mitigation areas as M-1, M-2, etc.
e. Location of all surface waters, including wetlands, erosion control measures, existing and proposed structures, fill and excavation locations, disposal area for excavated material, including quantities, and wetland mitigation site *(if applicable)*.
f. Approximate water depths and bottom configurations *(if applicable)*.

7. Supplemental Application Materials *(Applicants must provide the following.)*

a. A wetland delineation of all wetlands on the project site *(for projects with wetland impacts)*.
b. At least three photographs of the project site. Indicate the photo locations on the project plans.
c. If isolated wetlands are present, a letter from the Corps of Engineers verifying this statement.
d. Wetland mitigation plan and monitoring report.
e. Classification of all isolated wetlands on the tract *(if isolated wetlands are present onsite)*.
f. Copies of all applicable local permits and/or resolutions pertaining to the project or tract.
g. Tract history *(see instructions)*.

8. Additional information that MAY be required *(IDEM will notify you if needed.)*

a. Erosion control and/or storm water management plans.
b. Sediment analysis.
c. Species surveys for fish, mussels, plants and threatened or endangered species.
d. Stream habitat assessment.
e. Any other information IDEM deems necessary to review the proposed project.

9. Permitting Requirements

a. Does this project require the issuance of a Department of the Army Section 404 Permit from the US Army Corps of Engineers? ☑ Yes ☐ No

If no, you do not need to answer Part b.

b. Have you applied for an Army Corps of Engineers Section 404 permit? ☑ Yes ☐ No

If yes, please supply the Corps of Engineers ID Number, the Corps of Engineers District, the project manager, and a copy of any correspondence with the Corps. **If no, contact** the Army Corps of Engineers regarding the possible need for a permit application.

Applied concurrently

c. Have you applied for, received, or been denied a permit from the Department of Natural Resources for this project? ☑ Yes ☐ No

Please give the permit name, permit number, and date of application, issuance or denial.

Construction in a Floodway permit is being applied for concurrently.

d. Have you applied for, received, or been denied any other federal, state, or local permits, variances, licenses, or certifications for this project? ☑ Yes ☐ No

Please give the permit name, agency from which it was obtained, permit number, and date of issuance or denial.

U.S. FTA Region V NEPA Review with result of Finding of No Significant Impact issued 11-01-2018

10. Adjoining Property Owners and Addresses

List the names and addresses of landowners adjacent to the property on which your project is located and the names and addresses of other persons (or entities) potentially affected by your project. Use additional sheet(s) if required.

Name See attached list as Enclosure F Address *(number and street)* City State ZIP Code	Name Address *(number and street)* City State ZIP Code
Name Address *(number and street)* City State ZIP Code	Name Address *(number and street)* City State ZIP Code
Name Address *(number and street)* City State ZIP Code	Name Address *(number and street)* City State ZIP Code
Name Address *(number and street)* City State ZIP Code	Name Address *(number and street)* City State ZIP Code
Name Address *(number and street)* City State ZIP Code	Name Address *(number and street)* City State ZIP Code
Name Address *(number and street)* City State ZIP Code	Name Address *(number and street)* City State ZIP Code

11. Signature - Statement of Affirmation

I certify that I am familiar with the information contained in this application and, to the best of my knowledge and belief, such information is true and accurate. I certify that I have the authority to undertake and will undertake the activities as described in this application. I am aware that there are penalties for submitting false information. I understand that any changes in project design subsequent to IDEM's granting of authorization to discharge to a water of the state are not authorized and I may be subject to civil and criminal penalties for proceeding without proper authorization. I agree to allow representatives of the IDEM to enter and inspect the project site. I understand that the granting of other permits by local, state, or federal agencies does not release me from the requirement of obtaining the authorization requested herein before commencing the project.

Applicant's Signature: Nicole Barker Date: 6/30/2020
(mm/dd/yyyy)

Print Name: Nicole Barker Title: Double Track NWI Project Manager

Worksheet – Summary of Onsite Water Resources and Project Impacts

A. Jurisdictional Wetlands (Existing Conditions)		Jurisdictional Wetlands (Proposed Impacts)			
Wetland Type	**Size of wetland *(acreage)***	**To be Impacted?**	**Acreage**	**Fill quantity *(cys)***	**ATF**
☑ EM ☐ SS ☐ FO	See attached Enclosure E	☐ Yes ☐ No			
☐ EM ☐ SS ☐ FO		☐ Yes ☐ No			
☐ EM ☐ SS ☐ FO		☐ Yes ☐ No			
☐ EM ☐ SS ☐ FO		☐ Yes ☐ No			
☐ EM ☐ SS ☐ FO		☐ Yes ☐ No			
☐ EM ☐ SS ☐ FO		☐ Yes ☐ No			
☐ EM ☐ SS ☐ FO		☐ Yes ☐ No			

Describe the type and composition of fill material to be placed in wetlands on the project site:
Please find the attached documentation detailing wetland impacts and materials

Describe the type and composition and quantity *(cubic yards)* of material proposed to be dredged or excavated from wetlands on the project site:

B. Isolated Wetlands (Existing Conditions)			Isolated Wetlands (Proposed Impacts)			
Wetland Class	**Type**	**Size of wetland *(acreage)***	**To be Impacted?**	**Acreage**	**Fill quantity *(cys)***	**ATF**
☐ 1 ☐ 2 ☐ 3	☐ NF ☐ F	N/A	☐ Yes ☐ No			
☐ 1 ☐ 2 ☐ 3	☐ NF ☐ F		☐ Yes ☐ No			
☐ 1 ☐ 2 ☐ 3	☐ NF ☐ F		☐ Yes ☐ No			
☐ 1 ☐ 2 ☐ 3	☐ NF ☐ F		☐ Yes ☐ No			
☐ 1 ☐ 2 ☐ 3	☐ NF ☐ F		☐ Yes ☐ No			
☐ 1 ☐ 2 ☐ 3	☐ NF ☐ F		☐ Yes ☐ No			

Describe the type and composition of fill material to be placed in isolated wetlands on the project site:
N/A

Describe the type and composition and quantity *(cubic yards)* of material proposed to be dredged or excavated from isolated wetlands on the project site:

C. Bridges and Stream Crossings - provide the following information for EACH structure (*Use additional sheet(s) if required.*)

Stream name
N/A

Description of impacts

Length of upstream bank impacts:
Left side: Right side:

Length of downstream bank impacts:
Left side: Right side:

Bank protection fill placed below the Ordinary High Water Mark:
Volume per running foot:

Bank protection fill placed below the Ordinary High Water Mark:
Area of coverage:

D. Bank Stabilization – provide the following information for EACH segment (*Use additional sheet(s) if required.*)
Water body name N/A
Description of impacts
Length of shoreline or bank protection
Volume *(cubic yards)* of bank protection fill placed below the Ordinary High Water Mark per running foot
Area *(square feet)* of bank protection fill placed below the Ordinary High Water Mark

E. Stream Relocation	
Water body name Please see attached documentation detailing the stream impacts as Enclosure D.	
Description of impacts	
Length of existing channel to be relocated *(linear feet)*	
Length of new channel to be constructed *(linear feet)*	
Existing channel to be backfilled? ☐ Yes ☑ No	Type of relocation ☑ Piping ☐ Open ☐ Channel ☐ Other:____
Type of fill and volume *(cubic yards)*	

F. Open Water Fill
Water body name N/A
Description of impacts
Area of water body to be filled *(acres)*
Type of fill and volume *(cubic yards)*

Double Track NWI Project

B – Project Overview Map

This map and all data contained within are supplied as is with no warranty. Cardno, Inc. expressly disclaims responsibility for damages or liability from any claims that may arise out of the use or misuse of this map. It is the sole responsibility of the user to determine if the data on this map meets the user's needs. This map was not created as survey data, nor should it be used as such. It is the user's responsibility to obtain proper survey data, prepared by a licensed surveyor, where required by law.

Project No.
J177345200

Figure 1. Project Overview

NICTD Double Track Mitigation Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

Cardno
708 Roosevelt Road, Walkerton, IN 46574 USA
Phone (+1) 574-586-3400 Fax (+1) 574-586-3446
www.cardno.com

Date: 4/2/2020 File Path: R:\Projects\17\177\177345200_AECOM_NICTD_DoubleTrack_NWI_FinalEngineeringDesignServices\GIS\MXD\Wetlands\20200402_F1_NICTD_overview.mxd Saved By: Christine.Dittmar

Basemap: Content may not reflect National Geographic's current map policy. Sources: National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp., Copyright © 2013 National Geographic Society, i-cubed

Double Track NWI Project

C – Correspondence regarding Jurisdictional Determination

From: Leffler, Paul M LRC <Paul.M.Leffler@usace.army.mil>
Sent: Wednesday, June 22, 2016 9:49 AM
To: Merchan Paniagua, Sara; MAUPIN, MARTY
Cc: Reid, Janice; Angela Kattmann (angelak@metricenv.com)
Subject: RE: NICTD Double Track - Wetlands under IDEM's Jurisdiction

Hi Sara,

For most lengthy corridor projects the applicant's assume all wetlands are federally jurisdictional. To prevent delays I recommend doing the same here. Making those determinations take a lot of time and are not all that useful, as our 404 and 401 permit requirements will likely be the same either way. If we can assume the wetlands are federally jurisdictional then we can focus on the wetland boundaries and the project impacts.

Sincerely,

Paul M. Leffler
U.S. Army Corps of Engineers
Chicago District, Regulatory Branch
(312)846-5529
http://www.lrc.usace.army.mil/missions/regulatory

-----Original Message-----
From: Merchan Paniagua, Sara [mailto:Sara.MerchanPaniagua@hdrinc.com]
Sent: Wednesday, June 22, 2016 8:59 AM
To: MAUPIN, MARTY <MMAUPIN@idem.IN.gov>
Cc: Leffler, Paul M LRC <Paul.M.Leffler@usace.army.mil>; Reid, Janice <Janice.Reid@hdrinc.com>; Angela Kattmann (angelak@metricenv.com) <angelak@metricenv.com>
Subject: [EXTERNAL] RE: NICTD Double Track - Wetlands under IDEM's Jurisdiction

Marty,

Paul is requiring we take GPS points. We don't need to flag wetlands. Could we use the same protocol when delineating isolated wetlands?

Also, we typically don't delineate wetlands outside of our project limits although we indicate in our report that the wetland extends farther. Would this be considered acceptable under IDEM's standards?

Thanks,

Sara Merchán Paniagua

D 773.867.7217 O 773.380.7900

hdrinc.com/follow-us <Blockedhttp://hdrinc.com/follow-us>

From: MAUPIN, MARTY [mailto:MMAUPIN@idem.IN.gov]
Sent: Tuesday, June 21, 2016 3:07 PM
To: Merchan Paniagua, Sara
Cc: 'Leffler, Paul M LRC (Paul.M.Leffler@usace.army.mil)' (Paul.M.Leffler@usace.army.mil)
Subject: RE: NICTD Double Track - Wetlands under IDEM's Jurisdiction

Sara,

For protocols on wetland delineation you should follow what Paul is requiring of you. Saying that, if he considers a particular wetland isolated you may be required to complete the delineation on the other side of the track. Indiana's isolated wetland law and how it looks and exemptions requires that IDEM know the size of each individual isolated wetland. Unless it would be a logistical nightmare, at this time I would like areas to be flagged. I am not requiring any ORAM or InWrap assessments.

Marty

Marty Maupin

Office of Water Quality

Phone: 317-409-7579

E-Mail: mmaupin@idem.in.gov <mailto:mmaupin@idem.in.gov>

From: Merchan Paniagua, Sara [mailto:Sara.MerchanPaniagua@hdrinc.com]
Sent: Tuesday, June 21, 2016 12:14 PM
To: MAUPIN, MARTY
Cc: John.Parsons@nictd.com <mailto:John.Parsons@nictd.com> ; Reid, Janice; Angela Kattmann (angelak@metricenv.com <mailto:angelak@metricenv.com>); nicolebarker06@gmail.com <mailto:nicolebarker06@gmail.com>
Subject: NICTD Double Track - Wetlands under IDEM's Jurisdiction
Importance: High

Double Track NWI Project

D – Wetland and Stream Impact Tables

NICTD DT-NWI Wetland Impact Table

Wetland Identifier	Surveyed Wetland (Acres)	Area (Sq Ft)	Area (Acres)	Quality	Impact
W-35-1	0.069	605	0.014	High	Permanent
W-36-2	0.356	6869	0.158	Low	Permanent
W-36-3	0.086	155	0.004	High	Permanent
		195	0.004	High	Temporary
W-36-4	0.121	67	0.002	High	Permanent
W-37-1	0.254	5334	0.122	High	Permanent
		902	0.021	High	Temporary
W-37-4	0.026	415	0.010	High	Permanent
W-37-5	0.003	136	0.003	High	Permanent
W-38-1	3.779	6286	0.144	High	Permanent
		4191	0.096	High	Temporary
W-38-3	0.004	195	0.004	High	Permanent
W-39-1	0.035	577	0.013	Low	Permanent
W-39-2	2.174	2233	0.051	High	Permanent
		1838	0.042	High	Temporary
W-40-1	2.064	3085	0.071	High	Permanent
W-40-2	0.648	1160	0.027	High	Permanent
W-40-3	6.424	28098	0.645	High	Permanent
		10260	0.236	High	Temporary
W-41-1	3.997	9782	0.225	High	Permanent
		5065	0.116	High	Temporary
W-42-1	0.289	4902	0.113	High	Permanent
		2557	0.059	High	Temporary
W-42-5	0.042	718	0.016	High	Permanent
W-43-1	0.496	47	0.001	High	Permanent
W-43-2	0.252	1370	0.031	High	Permanent
W-43-3	0.666	7900	0.181	High	Permanent
W-44-1	0.021	141	0.003	High	Permanent
W-44-2	2.348	13416	0.308	High	Permanent
		4480	0.103	High	Temporary
W-44-3	3.056	12018	0.276	High	Permanent
		7802	0.179	High	Temporary
W-44-4	1.305	52663	1.209	High	Permanent
		54	0.001	High	Temporary
W-44-5	0.367	73	0.002	High	Permanent
		343	0.008	High	Temporary
W-46-1	0.027	1170	0.027	High	Permanent
W-46-3	0.076	2799	0.064	High	Permanent
		445	0.010	High	Temporary
W-47-1	0.621	13454	0.309	High	Permanent
		1131	0.026	High	Temporary
W-55-2	0.109	3938	0.090	Low	Permanent

W-55-3	0.025	1094	0.025	Low	Permanent
W-56-1	0.064	587	0.013	Low	Permanent
W-56-2	0.875	18330	0.421	High	Permanent
		16696	0.383	High	Temporary
W-56-7	0.153	6577	0.151	Low	Permanent
W-56.-5	2.115	5550	0.127	High	Permanent
W-57-1	0.603	91	0.002	Low	Permanent
		Total:	**6.15**		
		Total Temp:	**1.28**		
		Total Perm:	**4.86**		

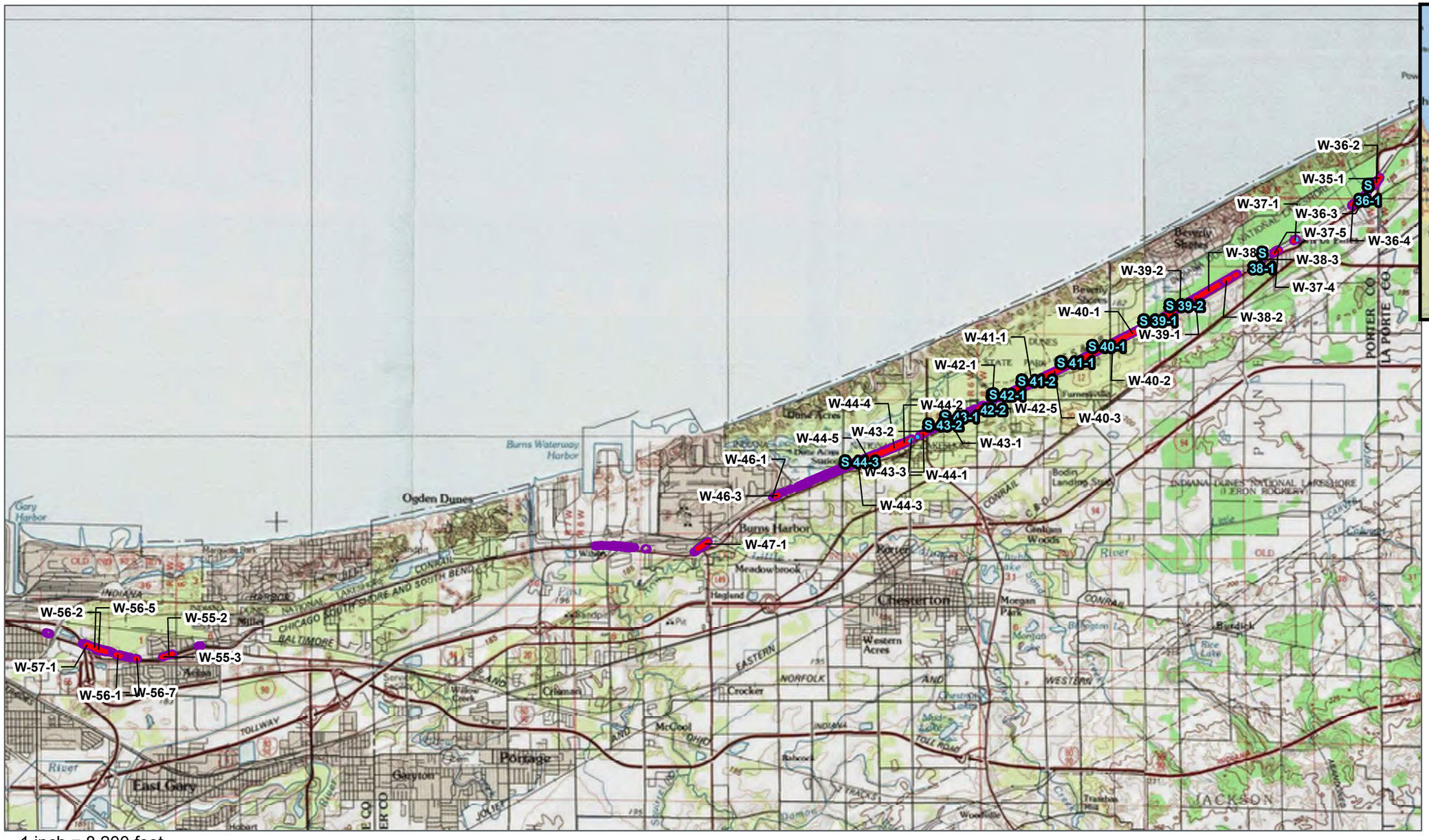
NICTD DT-NWI Stream Impact Table

Stream Name	Stream name from USGS Topographic Map	Milepost Location	Nominal MP	Culvert Classification Size	OWHM Depth (ft)	OHWM Width (ft)	New Encapsulation per Culvert (ft)	Existing Culvert Length (ft)	Proposed Quantity & Pipe size(inches)	Depth of Riprap (ft)	Voume of Fill Riprap (cy)	Fill of Concrete (cy)	Structural Plan Set Drawing Number
Stream 36-1	Kintzele Ditch	Between MP 36.3 and MP 36.2	36.20	Large	3.00	17.00	3	48	3- 84"	3.33	327	3.46	CUL-101 of CUL-105
Stream 38-1	Unnamed Stream	Between MP 38.8 and MP 38.7	38.20	Small	1.00	8.95	0	33	3-36"	2.00	33	0	CUL-601 of CUL-614
Stream 39-1	Wieland Ditch	Between MP 40.1 and MP 39.9	39.93	Large	2.00	9.50	12	52	2- 84"	0.00	0	1.67	CUL-301 of CUL-305
Stream 39-2	Unnamed Stream	Between MP 39.5 and MP 39.4	39.48	Small	1.50	5.70	0	48	1-48"	2.00	54	0	CUL-603 of CUL-614
Stream 40-1	Unnamed Stream	Between MP 40.8 and MP 40.7	40.80	Small	1.00	1.75	2	35	3-24"	2.00	18.00	0	CUL-604 of CUL-614
Stream 41-1	UNT to UNT to Munson Ditch	Between MP 40.8 and MP 40.7	41.41	Small	2.00	9.50	2	40	3- 36"	1.50	19	0	CUL-605 of CUL-614
Stream 41-2	UNT to Munson Ditch	Between MP 41.8 and MP 41.7	41.74	Small	N/A	N/A	12	48	3-24"	2.00	18	0	CUL-606 of CUL-614
Stream 42-1	UNT to UNT to Munson Ditch	Between MP 42.1 and MP 41.9	42.39	Small	1.00	6.25	4	30	3-24"	2.57	27	0	CUL-608 of CUL-614
Stream 42-2	Munson Ditch	Between MP 42.1 and MP 41.9	42.60	Large	2.50	8.75	32	48	2- 84"	0	0	1.57	CUL-401 of CUL-405
Stream 43-1	UNT to Dunes Creek	Between MP 43.3 and MP 43.2	43.22	Small	1.50	5.85	8	35	2- 48"	3.33	138	0	CUL-609 OF CUL-614
Stream 43-2	UNT to Dunes Creek	Between MP 43.3 and MP 43.2	43.50	Small	1.00	5.50	1	60	1- 60"	2.00	79	0	CUL-610 of CUL-614
Stream 44-3	Unnamed Stream	Between MP 44.1 and MP 43.9	44.86	Small	1.00	4.50	6	75	3-36"	2.50	22	0	CUL-614 of CUL-614
					Total		**82**	**552**			**735**	**6.7**	

*Stream Name Labels fromn Waters of the U.S. Delineation Report NICTD Double Track NWI (DT-NWI) Milepost (MP) 58.8 to 32.2 Gary to Michigan City, IN August 18, 2017

Double Track NWI Project

E – Wetland and Stream Impact Exhibits including Adjacent Landowner Parcels



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Project No.
J177345200

Figure 1. Project Overview

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

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Phone (+1) 574-586-3400 Fax (+1) 574-586-3446
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1 inch = 8,200 feet

0 4,050 8,100 16,200 Feet

Legend

- OHWM
- Delineated Wetland
- Wetland Impact
- Sheet Index

N W E S

Project No. J177345200

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Figure 2. Wetland Area Sheet Index

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

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Basemap: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

STREAM LABEL	CULVERT NEW ENCAPSULATION IMPACT LENGTH (feet)
Stream 44-3	6
Stream 43-2	1
Stream 43-1	8
Stream 42-2	32
Stream 42-1	4
Stream 41-2	12
Stream 41-1	2
Stream 40-1	2
Stream 39-2	0
Stream 39-1	12
Stream 38-1	0
Stream 36-1	3
TOTAL	**82**

Legend

- Construction Limits
- Parcel Boundary
- Mileposts
- OHWM
- Wetland Impact Permanent
- Delineated Wetland

WETLAND IDENTIFIER	TOTAL ACREAGE	PERMANENT WETLAND IMPACT ACREAGE	TYPE OF IMPACT
W-35-1	0.069	0.014	Permanent
W-36-2	0.356	0.158	Permanent
W-36-3	0.086	0.004	Permanent
		0.004	Temporary
W-36-4	0.121	0.002	Permanent
W-37-1	0.254	0.122	Permanent
		0.021	Temporary
W-37-4	0.026	0.010	Permanent
W-37-5	0.003	0.003	Permanent
W-38-1	3.779	0.144	Permanent
		0.096	Temporary
W-38-3	0.004	0.004	Permanent
W-39-1	0.035	0.013	Permanent
W-39-2	2.174	0.051	Permanent
		0.042	Temporary
W-40-1	2.064	0.071	Permanent
W-40-2	0.648	0.027	Permanent
W-40-3	6.424	0.645	Permanent
		0.236	Temporary
W-41-1	3.997	0.225	Permanent
		0.116	Temporary
W-42-1	0.289	0.113	Permanent
		0.059	Temporary
W-42-5	0.042	0.016	Permanent
W-43-1	0.496	0.001	Permanent
W-43-2	0.252	0.031	Permanent
W-43-3	0.666	0.181	Permanent
W-44-1	0.021	0.003	Permanent
W-44-2	2.348	0.308	Permanent
		0.103	Temporary
W-44-3	3.056	0.276	Permanent
		0.179	Temporary
W-44-4	1.305	1.209	Permanent
		0.001	Temporary
W-44-5	0.367	0.002	Permanent
		0.008	Temporary
W-46-1	0.027	0.027	Permanent
W-46-3	0.076	0.064	Permanent
		0.010	Temporary
W-47-1	0.621	0.309	Permanent
		0.026	Temporary
W-55-2	0.109	0.090	Permanent
W-55-3	0.025	0.025	Permanent
W-56-1	0.064	0.013	Permanent
W-56-2	0.875	0.421	Permanent
		0.383	Temporary
W-56-5	2.115	0.127	Permanent
W-56-7	0.238	0.151	Permanent
W-57-1	0.603	0.002	Permanent
TOTAL IMPACT		**6.15**	
TOTAL TEMPORARY IMPACT		**1.28**	
TOTAL PERMANENT IMPACT		**4.86**	

N W E S

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Figure 2.01. Wetland Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

1 inch = 200 feet

0 105 210 420 Feet

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STREAM LABEL	CULVERT NEW ENCAPSULATION IMPACT LENGTH (feet)
Stream 44-3	6
Stream 43-2	1
Stream 43-1	8
Stream 42-2	32
Stream 42-1	4
Stream 41-2	12
Stream 41-1	2
Stream 40-1	2
Stream 39-2	0
Stream 39-1	12
Stream 38-1	0
Stream 36-1	3
TOTAL	**82**

Legend

- Construction Limits
- Parcel Boundary
- Mileposts
- OHWM
- Wetland Impact Permanent
- Delineated Wetland

WETLAND IDENTIFIER	TOTAL ACREAGE	PERMANENT WETLAND IMPACT ACREAGE	TYPE OF IMPACT
W-35-1	0.069	0.014	Permanent
W-36-2	0.356	0.158	Permanent
W-36-3	0.086	0.004	Permanent
		0.004	Temporary
W-36-4	0.121	0.002	Permanent
W-37-1	0.254	0.122	Permanent
		0.021	Temporary
W-37-4	0.026	0.010	Permanent
W-37-5	0.003	0.003	Permanent
W-38-1	3.779	0.144	Permanent
		0.096	Temporary
W-38-3	0.004	0.004	Permanent
W-39-1	0.035	0.013	Permanent
W-39-2	2.174	0.051	Permanent
		0.042	Temporary
W-40-1	2.064	0.071	Permanent
W-40-2	0.648	0.027	Permanent
W-40-3	6.424	0.645	Permanent
		0.236	Temporary
W-41-1	3.997	0.225	Permanent
		0.116	Temporary
W-42-1	0.289	0.113	Permanent
		0.059	Temporary
W-42-5	0.042	0.016	Permanent
W-43-1	0.496	0.001	Permanent
W-43-2	0.252	0.031	Permanent
W-43-3	0.666	0.181	Permanent
W-44-1	0.021	0.003	Permanent
W-44-2	2.348	0.308	Permanent
		0.103	Temporary
W-44-3	3.056	0.276	Permanent
		0.179	Temporary
W-44-4	1.305	1.209	Permanent
		0.001	Temporary
W-44-5	0.367	0.002	Permanent
		0.008	Temporary
W-46-1	0.027	0.027	Permanent
W-46-3	0.076	0.064	Permanent
		0.010	Temporary
W-47-1	0.621	0.309	Permanent
		0.026	Temporary
W-55-2	0.109	0.090	Permanent
W-55-3	0.025	0.025	Permanent
W-56-1	0.064	0.013	Permanent
W-56-2	0.875	0.421	Permanent
		0.383	Temporary
W-56-5	2.115	0.127	Permanent
W-56-7	0.238	0.151	Permanent
W-57-1	0.603	0.002	Permanent
TOTAL IMPACT		**6.15**	
TOTAL TEMPORARY IMPACT		**1.28**	
TOTAL PERMANENT IMPACT		**4.86**	

N W E S

Project No.
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Figure 2.02. Wetland Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

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0 105 210 420 Feet

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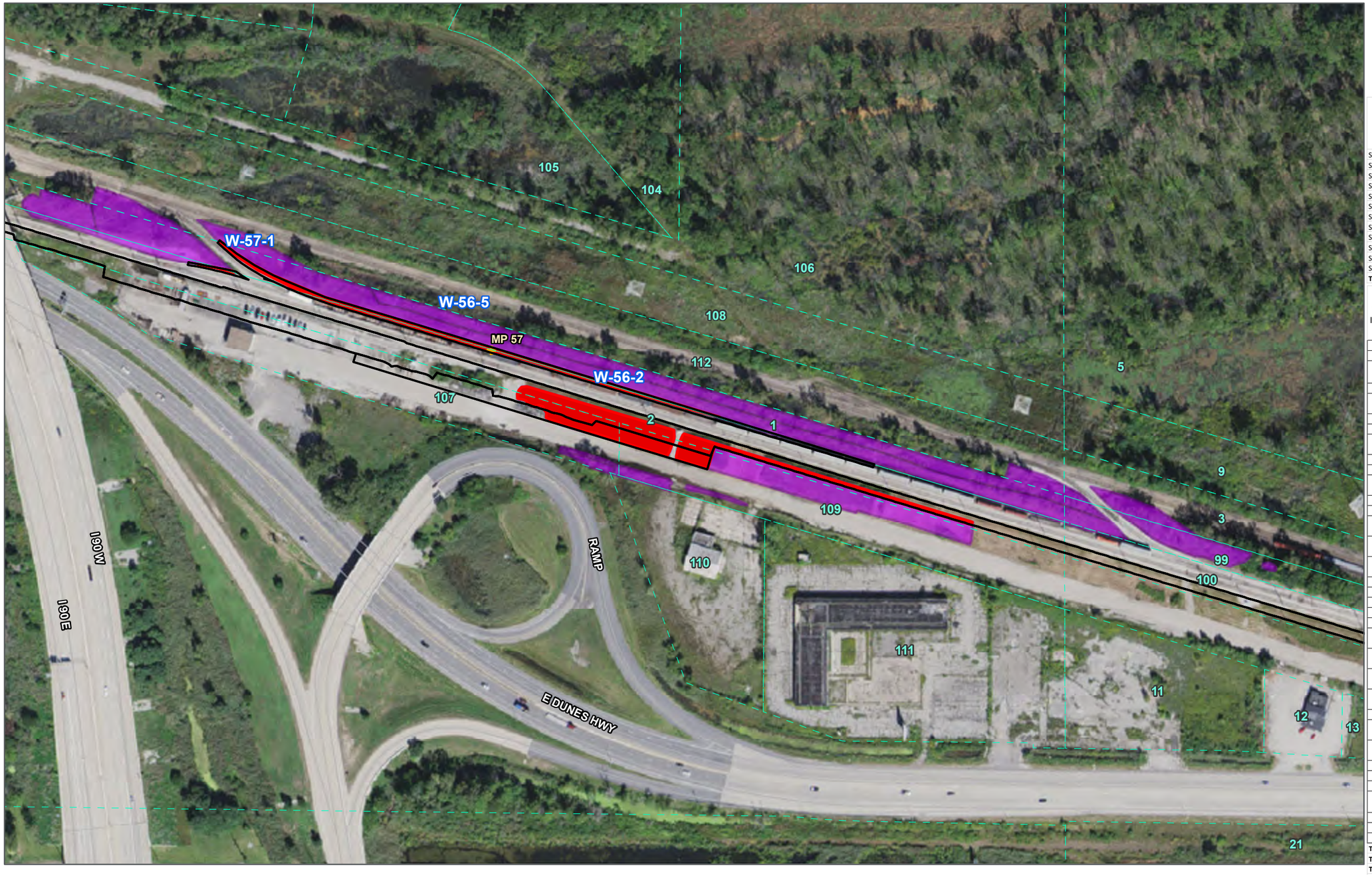

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Stream 42-1	4
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Stream 41-1	2
Stream 40-1	2
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Stream 39-1	12
Stream 38-1	0
Stream 36-1	3
TOTAL	**82**

Legend

- Construction Limits
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- OHWM
- Wetland Impact Permanent
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WETLAND IDENTIFIER	TOTAL ACREAGE	PERMANENT WETLAND IMPACT ACREAGE	TYPE OF IMPACT
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W-46-3	0.076	0.064	Permanent
		0.010	Temporary
W-47-1	0.621	0.309	Permanent
		0.026	Temporary
W-55-2	0.109	0.090	Permanent
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W-56-5	2.115	0.127	Permanent
W-56-7	0.238	0.151	Permanent
W-57-1	0.603	0.002	Permanent
TOTAL IMPACT		**6.15**	
TOTAL TEMPORARY IMPACT		**1.28**	
TOTAL PERMANENT IMPACT		**4.86**	

N W E S

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Figure 2.03. Wetland Areas

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AECOM
Lake, Porter and LaPorte Counties, Indiana

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0 105 210 420 Feet

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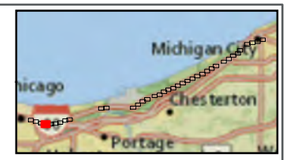

STREAM LABEL	CULVERT NEW ENCAPSULATION IMPACT LENGTH (feet)
Stream 44-3	6
Stream 43-2	1
Stream 43-1	8
Stream 42-2	32
Stream 42-1	4
Stream 41-2	12
Stream 41-1	2
Stream 40-1	2
Stream 39-2	0
Stream 39-1	12
Stream 38-1	0
Stream 36-1	3
TOTAL	**82**

Legend
- Construction Limits
- Parcel Boundary
- Mileposts
- OHWM
- Wetland Impact Permanent
- Delineated Wetland

WETLAND IDENTIFIER	TOTAL ACREAGE	PERMANENT WETLAND IMPACT ACREAGE	TYPE OF IMPACT
W-35-1	0.069	0.014	Permanent
W-36-2	0.356	0.158	Permanent
W-36-3	0.086	0.004	Permanent
		0.004	Temporary
W-36-4	0.121	0.002	Permanent
W-37-1	0.254	0.122	Permanent
		0.021	Temporary
W-37-4	0.026	0.010	Permanent
W-37-5	0.003	0.003	Permanent
W-38-1	3.779	0.144	Permanent
		0.096	Temporary
W-38-3	0.004	0.004	Permanent
W-39-1	0.035	0.013	Permanent
W-39-2	2.174	0.051	Permanent
		0.042	Temporary
W-40-1	2.064	0.071	Permanent
W-40-2	0.648	0.027	Permanent
W-40-3	6.424	0.645	Permanent
		0.236	Temporary
W-41-1	3.997	0.225	Permanent
		0.116	Temporary
W-42-1	0.289	0.113	Permanent
		0.059	Temporary
W-42-5	0.042	0.016	Permanent
W-43-1	0.496	0.001	Permanent
W-43-2	0.252	0.031	Permanent
W-43-3	0.666	0.181	Permanent
W-44-1	0.021	0.003	Permanent
W-44-2	2.348	0.308	Permanent
		0.103	Temporary
W-44-3	3.056	0.276	Permanent
		0.179	Temporary
W-44-4	1.305	1.209	Permanent
		0.001	Temporary
W-44-5	0.367	0.002	Permanent
		0.008	Temporary
W-46-1	0.027	0.027	Permanent
W-46-3	0.076	0.064	Permanent
		0.010	Temporary
W-47-1	0.621	0.309	Permanent
		0.026	Temporary
W-55-2	0.109	0.090	Permanent
W-55-3	0.025	0.025	Permanent
W-56-1	0.064	0.013	Permanent
W-56-2	0.875	0.421	Permanent
		0.383	Temporary
W-56-5	2.115	0.127	Permanent
W-56-7	0.238	0.151	Permanent
W-57-1	0.603	0.002	Permanent
TOTAL IMPACT		**6.15**	
TOTAL TEMPORARY IMPACT		**1.28**	
TOTAL PERMANENT IMPACT		**4.86**	

N W E S

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Figure 2.04. Wetland Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

1 inch = 200 feet

0 105 210 420 Feet

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STREAM LABEL	CULVERT NEW ENCAPSULATION IMPACT LENGTH (feet)
Stream 44-3	6
Stream 43-2	1
Stream 43-1	8
Stream 42-2	32
Stream 42-1	4
Stream 41-2	12
Stream 41-1	2
Stream 40-1	2
Stream 39-2	0
Stream 39-1	12
Stream 38-1	0
Stream 36-1	3
TOTAL	**82**

Legend
- Construction Limits
- Parcel Boundary
- Mileposts
- OHWM
- Wetland Impact Permanent
- Delineated Wetland

WETLAND IDENTIFIER	TOTAL ACREAGE	PERMANENT WETLAND IMPACT ACREAGE	TYPE OF IMPACT
W-35-1	0.069	0.014	Permanent
W-36-2	0.356	0.158	Permanent
W-36-3	0.086	0.004	Permanent
		0.004	Temporary
W-36-4	0.121	0.002	Permanent
W-37-1	0.254	0.122	Permanent
		0.021	Temporary
W-37-4	0.026	0.010	Permanent
W-37-5	0.003	0.003	Permanent
W-38-1	3.779	0.144	Permanent
		0.096	Temporary
W-38-3	0.004	0.004	Permanent
W-39-1	0.035	0.013	Permanent
W-39-2	2.174	0.051	Permanent
		0.042	Temporary
W-40-1	2.064	0.071	Permanent
W-40-2	0.648	0.027	Permanent
W-40-3	6.424	0.645	Permanent
		0.236	Temporary
W-41-1	3.997	0.225	Permanent
		0.116	Temporary
W-42-1	0.289	0.113	Permanent
		0.059	Temporary
W-42-5	0.042	0.016	Permanent
W-43-1	0.496	0.001	Permanent
W-43-2	0.252	0.031	Permanent
W-43-3	0.666	0.181	Permanent
W-44-1	0.021	0.003	Permanent
W-44-2	2.348	0.308	Permanent
		0.103	Temporary
W-44-3	3.056	0.276	Permanent
		0.179	Temporary
W-44-4	1.305	1.209	Permanent
		0.001	Temporary
W-44-5	0.367	0.002	Permanent
		0.008	Temporary
W-46-1	0.027	0.027	Permanent
W-46-3	0.076	0.064	Permanent
		0.010	Temporary
W-47-1	0.621	0.309	Permanent
		0.026	Temporary
W-55-2	0.109	0.090	Permanent
W-55-3	0.025	0.025	Permanent
W-56-1	0.064	0.013	Permanent
W-56-2	0.875	0.421	Permanent
		0.383	Temporary
W-56-5	2.115	0.127	Permanent
W-56-7	0.238	0.151	Permanent
W-57-1	0.603	0.002	Permanent
TOTAL IMPACT		**6.15**	
TOTAL TEMPORARY IMPACT		**1.28**	
TOTAL PERMANENT IMPACT		**4.86**	

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Figure 2.05. Wetland Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

1 inch = 200 feet

0 105 210 420 Feet

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STREAM LABEL	CULVERT NEW ENCAPSULATION IMPACT LENGTH (feet)
Stream 44-3	6
Stream 43-2	1
Stream 43-1	8
Stream 42-2	32
Stream 42-1	4
Stream 41-2	12
Stream 41-1	2
Stream 40-1	2
Stream 39-2	0
Stream 39-1	12
Stream 38-1	0
Stream 36-1	3
TOTAL	**82**

Legend

- Construction Limits
- Parcel Boundary
- Mileposts
- OHWM
- Wetland Impact Permanent
- Delineated Wetland

WETLAND IDENTIFIER	TOTAL ACREAGE	PERMANENT WETLAND IMPACT ACREAGE	TYPE OF IMPACT
W-35-1	0.069	0.014	Permanent
W-36-2	0.356	0.158	Permanent
W-36-3	0.086	0.004	Permanent
		0.004	Temporary
W-36-4	0.121	0.002	Permanent
W-37-1	0.254	0.122	Permanent
		0.021	Temporary
W-37-4	0.026	0.010	Permanent
W-37-5	0.003	0.003	Permanent
W-38-1	3.779	0.144	Permanent
		0.096	Temporary
W-38-3	0.004	0.004	Permanent
W-39-1	0.035	0.013	Permanent
W-39-2	2.174	0.051	Permanent
		0.042	Temporary
W-40-1	2.064	0.071	Permanent
W-40-2	0.648	0.027	Permanent
W-40-3	6.424	0.645	Permanent
		0.236	Temporary
W-41-1	3.997	0.225	Permanent
		0.116	Temporary
W-42-1	0.289	0.113	Permanent
		0.059	Temporary
W-42-5	0.042	0.016	Permanent
W-43-1	0.496	0.001	Permanent
W-43-2	0.252	0.031	Permanent
W-43-3	0.666	0.181	Permanent
W-44-1	0.021	0.003	Permanent
W-44-2	2.348	0.308	Permanent
		0.103	Temporary
W-44-3	3.056	0.276	Permanent
		0.179	Temporary
W-44-4	1.305	1.209	Permanent
		0.001	Temporary
W-44-5	0.367	0.002	Permanent
		0.008	Temporary
W-46-1	0.027	0.027	Permanent
W-46-3	0.076	0.064	Permanent
		0.010	Temporary
W-47-1	0.621	0.309	Permanent
		0.026	Temporary
W-55-2	0.109	0.090	Permanent
W-55-3	0.025	0.025	Permanent
W-56-1	0.064	0.013	Permanent
W-56-2	0.875	0.421	Permanent
		0.383	Temporary
W-56-5	2.115	0.127	Permanent
W-56-7	0.238	0.151	Permanent
W-57-1	0.603	0.002	Permanent
TOTAL IMPACT		**6.15**	
TOTAL TEMPORARY IMPACT		**1.28**	
TOTAL PERMANENT IMPACT		**4.86**	

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Figure 2.06. Wetland Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

1 inch = 200 feet

0 105 210 420 Feet

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STREAM LABEL	CULVERT NEW ENCAPSULATION IMPACT LENGTH (feet)
Stream 44-3	6
Stream 43-2	1
Stream 43-1	8
Stream 42-2	32
Stream 42-1	4
Stream 41-2	12
Stream 41-1	2
Stream 40-1	2
Stream 39-2	0
Stream 39-1	12
Stream 38-1	0
Stream 36-1	3
TOTAL	**82**

Legend

- Construction Limits
- Parcel Boundary
- Mileposts
- OHWM
- Wetland Impact Permanent
- Delineated Wetland

WETLAND IDENTIFIER	TOTAL ACREAGE	PERMANENT WETLAND IMPACT ACREAGE	TYPE OF IMPACT
W-35-1	0.069	0.014	Permanent
W-36-2	0.356	0.158	Permanent
W-36-3	0.086	0.004	Permanent
		0.004	Temporary
W-36-4	0.121	0.002	Permanent
W-37-1	0.254	0.122	Permanent
		0.021	Temporary
W-37-4	0.026	0.010	Permanent
W-37-5	0.003	0.003	Permanent
W-38-1	3.779	0.144	Permanent
		0.096	Temporary
W-38-3	0.004	0.004	Permanent
W-39-1	0.035	0.013	Permanent
W-39-2	2.174	0.051	Permanent
		0.042	Temporary
W-40-1	2.064	0.071	Permanent
W-40-2	0.648	0.027	Permanent
W-40-3	6.424	0.645	Permanent
		0.236	Temporary
W-41-1	3.997	0.225	Permanent
		0.116	Temporary
W-42-1	0.289	0.113	Permanent
		0.059	Temporary
W-42-5	0.042	0.016	Permanent
W-43-1	0.496	0.001	Permanent
W-43-2	0.252	0.031	Permanent
W-43-3	0.666	0.181	Permanent
W-44-1	0.021	0.003	Permanent
W-44-2	2.348	0.308	Permanent
		0.103	Temporary
W-44-3	3.056	0.276	Permanent
		0.179	Temporary
W-44-4	1.305	1.209	Permanent
		0.001	Temporary
W-44-5	0.367	0.002	Permanent
		0.008	Temporary
W-46-1	0.027	0.027	Permanent
W-46-3	0.076	0.064	Permanent
		0.010	Temporary
W-47-1	0.621	0.309	Permanent
		0.026	Temporary
W-55-2	0.109	0.090	Permanent
W-55-3	0.025	0.025	Permanent
W-56-1	0.064	0.013	Permanent
W-56-2	0.875	0.421	Permanent
		0.383	Temporary
W-56-5	2.115	0.127	Permanent
W-56-7	0.238	0.151	Permanent
W-57-1	0.603	0.002	Permanent
TOTAL IMPACT		**6.15**	
TOTAL TEMPORARY IMPACT		**1.28**	
TOTAL PERMANENT IMPACT		**4.86**	

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Figure 2.07. Wetland Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

1 inch = 200 feet

0 105 210 420 Feet

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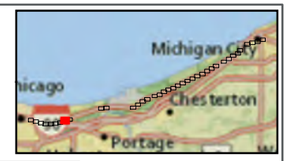

STREAM LABEL	CULVERT NEW ENCAPSULATION IMPACT LENGTH (feet)
Stream 44-3	6
Stream 43-2	1
Stream 43-1	8
Stream 42-2	32
Stream 42-1	4
Stream 41-2	12
Stream 41-1	2
Stream 40-1	2
Stream 39-2	0
Stream 39-1	12
Stream 38-1	0
Stream 36-1	3
TOTAL	**82**

Legend

- Construction Limits
- Parcel Boundary
- Mileposts
- OHWM
- Wetland Impact Permanent
- Delineated Wetland

WETLAND IDENTIFIER	TOTAL ACREAGE	PERMANENT WETLAND IMPACT ACREAGE	TYPE OF IMPACT
W-35-1	0.069	0.014	Permanent
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W-38-1	3.779	0.144	Permanent
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W-39-1	0.035	0.013	Permanent
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W-40-1	2.064	0.071	Permanent
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W-41-1	3.997	0.225	Permanent
		0.116	Temporary
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W-56-5	2.115	0.127	Permanent
W-56-7	0.238	0.151	Permanent
W-57-1	0.603	0.002	Permanent
TOTAL IMPACT		**6.15**	
TOTAL TEMPORARY IMPACT		**1.28**	
TOTAL PERMANENT IMPACT		**4.86**	

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Figure 2.08. Wetland Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

1 inch = 200 feet

0 105 210 420 Feet

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Stream 42-2	32
Stream 42-1	4
Stream 41-2	12
Stream 41-1	2
Stream 40-1	2
Stream 39-2	0
Stream 39-1	12
Stream 38-1	0
Stream 36-1	3
TOTAL	**82**

Legend

- Construction Limits
- Parcel Boundary
- Mileposts
- OHWM
- Wetland Impact Permanent
- Delineated Wetland

WETLAND IDENTIFIER	TOTAL ACREAGE	PERMANENT WETLAND IMPACT ACREAGE	TYPE OF IMPACT
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W-41-1	3.997	0.225	Permanent
		0.116	Temporary
W-42-1	0.289	0.113	Permanent
		0.059	Temporary
W-42-5	0.042	0.016	Permanent
W-43-1	0.496	0.001	Permanent
W-43-2	0.252	0.031	Permanent
W-43-3	0.666	0.181	Permanent
W-44-1	0.021	0.003	Permanent
W-44-2	2.348	0.308	Permanent
		0.103	Temporary
W-44-3	3.056	0.276	Permanent
		0.179	Temporary
W-44-4	1.305	1.209	Permanent
		0.001	Temporary
W-44-5	0.367	0.002	Permanent
		0.008	Temporary
W-46-1	0.027	0.027	Permanent
W-46-3	0.076	0.064	Permanent
		0.010	Temporary
W-47-1	0.621	0.309	Permanent
		0.026	Temporary
W-55-2	0.109	0.090	Permanent
W-55-3	0.025	0.025	Permanent
W-56-1	0.064	0.013	Permanent
W-56-2	0.875	0.421	Permanent
		0.383	Temporary
W-56-5	2.115	0.127	Permanent
W-56-7	0.238	0.151	Permanent
W-57-1	0.603	0.002	Permanent
TOTAL IMPACT		**6.15**	
TOTAL TEMPORARY IMPACT		**1.28**	
TOTAL PERMANENT IMPACT		**4.86**	

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Figure 2.09. Wetland Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

1 inch = 200 feet

0 105 210 420 Feet

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STREAM LABEL	CULVERT NEW ENCAPSULATION IMPACT LENGTH (feet)
Stream 44-3	6
Stream 43-2	1
Stream 43-1	8
Stream 42-2	32
Stream 42-1	4
Stream 41-2	12
Stream 41-1	2
Stream 40-1	2
Stream 39-2	0
Stream 39-1	12
Stream 38-1	0
Stream 36-1	3
TOTAL	**82**

Legend

- Construction Limits
- Parcel Boundary
- Mileposts
- OHWM
- Wetland Impact Permanent
- Delineated Wetland

WETLAND IDENTIFIER	TOTAL ACREAGE	PERMANENT WETLAND IMPACT ACREAGE	TYPE OF IMPACT
W-35-1	0.069	0.014	Permanent
W-36-2	0.356	0.158	Permanent
W-36-3	0.086	0.004	Permanent
		0.004	Temporary
W-36-4	0.121	0.002	Permanent
W-37-1	0.254	0.122	Permanent
		0.021	Temporary
W-37-4	0.026	0.010	Permanent
W-37-5	0.003	0.003	Permanent
W-38-1	3.779	0.144	Permanent
		0.096	Temporary
W-38-3	0.004	0.004	Permanent
W-39-1	0.035	0.013	Permanent
W-39-2	2.174	0.051	Permanent
		0.042	Temporary
W-40-1	2.064	0.071	Permanent
W-40-2	0.648	0.027	Permanent
W-40-3	6.424	0.645	Permanent
		0.236	Temporary
W-41-1	3.997	0.225	Permanent
		0.116	Temporary
W-42-1	0.289	0.113	Permanent
		0.059	Temporary
W-42-5	0.042	0.016	Permanent
W-43-1	0.496	0.001	Permanent
W-43-2	0.252	0.031	Permanent
W-43-3	0.666	0.181	Permanent
W-44-1	0.021	0.003	Permanent
W-44-2	2.348	0.308	Permanent
		0.103	Temporary
W-44-3	3.056	0.276	Permanent
		0.179	Temporary
W-44-4	1.305	1.209	Permanent
		0.001	Temporary
W-44-5	0.367	0.002	Permanent
		0.008	Temporary
W-46-1	0.027	0.027	Permanent
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W-47-1	0.621	0.309	Permanent
		0.026	Temporary
W-55-2	0.109	0.090	Permanent
W-55-3	0.025	0.025	Permanent
W-56-1	0.064	0.013	Permanent
W-56-2	0.875	0.421	Permanent
		0.383	Temporary
W-56-5	2.115	0.127	Permanent
W-56-7	0.238	0.151	Permanent
W-57-1	0.603	0.002	Permanent
TOTAL IMPACT		**6.15**	
TOTAL TEMPORARY IMPACT		**1.28**	
TOTAL PERMANENT IMPACT		**4.86**	

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Figure 2.10. Wetland Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

1 inch = 200 feet

0 105 210 420 Feet

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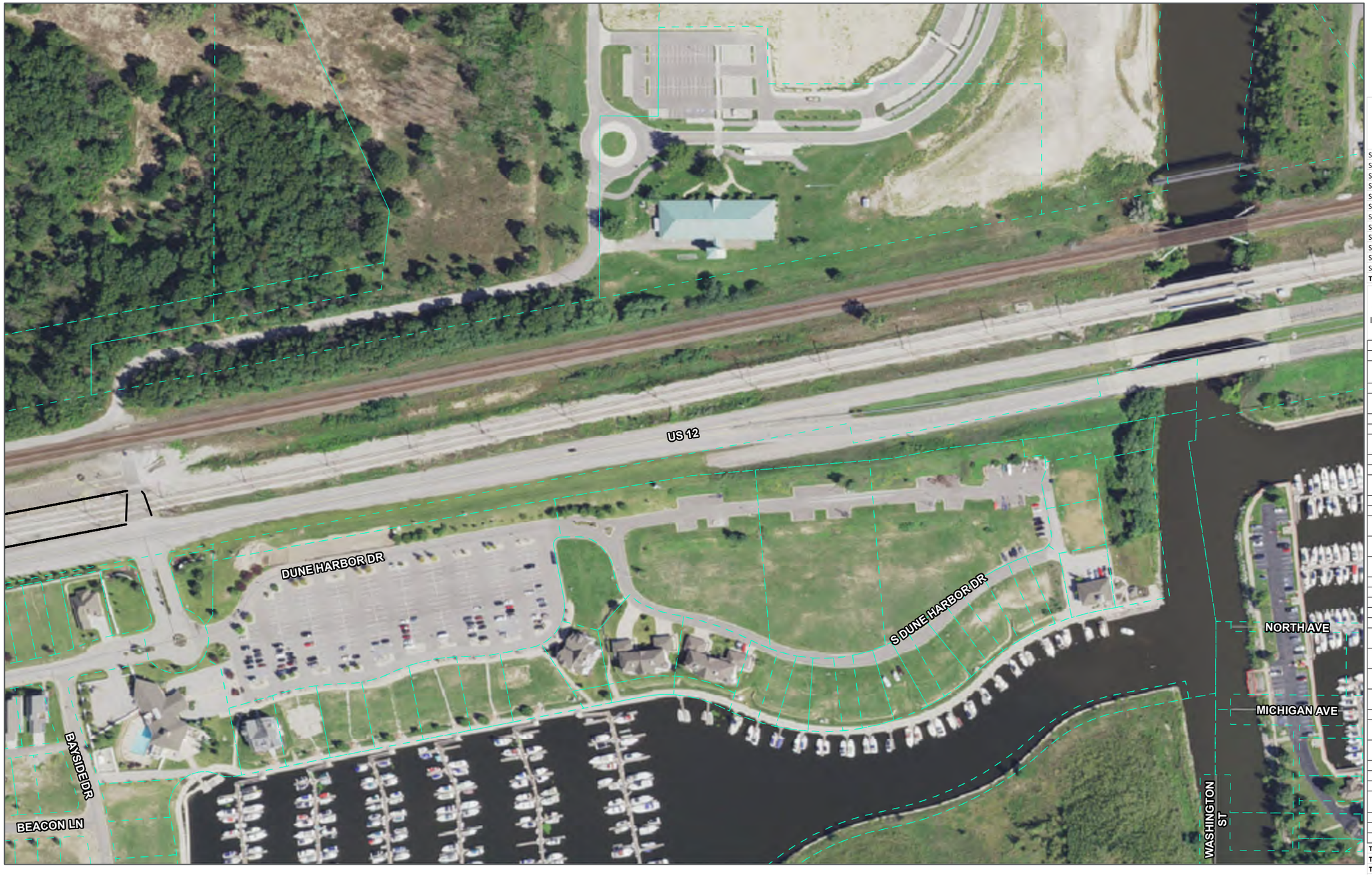

STREAM LABEL	CULVERT NEW ENCAPSULATION IMPACT LENGTH (feet)
Stream 44-3	6
Stream 43-2	1
Stream 43-1	8
Stream 42-2	32
Stream 42-1	4
Stream 41-2	12
Stream 41-1	2
Stream 40-1	2
Stream 39-2	0
Stream 39-1	12
Stream 38-1	0
Stream 36-1	3
TOTAL	**82**

Legend

- Construction Limits
- Parcel Boundary
- Mileposts
- OHWM
- Wetland Impact Permanent
- Delineated Wetland

WETLAND IDENTIFIER	TOTAL ACREAGE	PERMANENT WETLAND IMPACT ACREAGE	TYPE OF IMPACT
W-35-1	0.069	0.014	Permanent
W-36-2	0.356	0.158	Permanent
W-36-3	0.086	0.004	Permanent
		0.004	Temporary
W-36-4	0.121	0.002	Permanent
W-37-1	0.254	0.122	Permanent
		0.021	Temporary
W-37-4	0.026	0.010	Permanent
W-37-5	0.003	0.003	Permanent
W-38-1	3.779	0.144	Permanent
		0.096	Temporary
W-38-3	0.004	0.004	Permanent
W-39-1	0.035	0.013	Permanent
W-39-2	2.174	0.051	Permanent
		0.042	Temporary
W-40-1	2.064	0.071	Permanent
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		0.116	Temporary
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		0.059	Temporary
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W-44-1	0.021	0.003	Permanent
W-44-2	2.348	0.308	Permanent
		0.103	Temporary
W-44-3	3.056	0.276	Permanent
		0.179	Temporary
W-44-4	1.305	1.209	Permanent
		0.001	Temporary
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		0.008	Temporary
W-46-1	0.027	0.027	Permanent
W-46-3	0.076	0.064	Permanent
		0.010	Temporary
W-47-1	0.621	0.309	Permanent
		0.026	Temporary
W-55-2	0.109	0.090	Permanent
W-55-3	0.025	0.025	Permanent
W-56-1	0.064	0.013	Permanent
W-56-2	0.875	0.421	Permanent
		0.383	Temporary
W-56-5	2.115	0.127	Permanent
W-56-7	0.238	0.151	Permanent
W-57-1	0.603	0.002	Permanent
TOTAL IMPACT		**6.15**	
TOTAL TEMPORARY IMPACT		**1.28**	
TOTAL PERMANENT IMPACT		**4.86**	

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Figure 2.11. Wetland Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

1 inch = 200 feet

0 105 210 420 Feet

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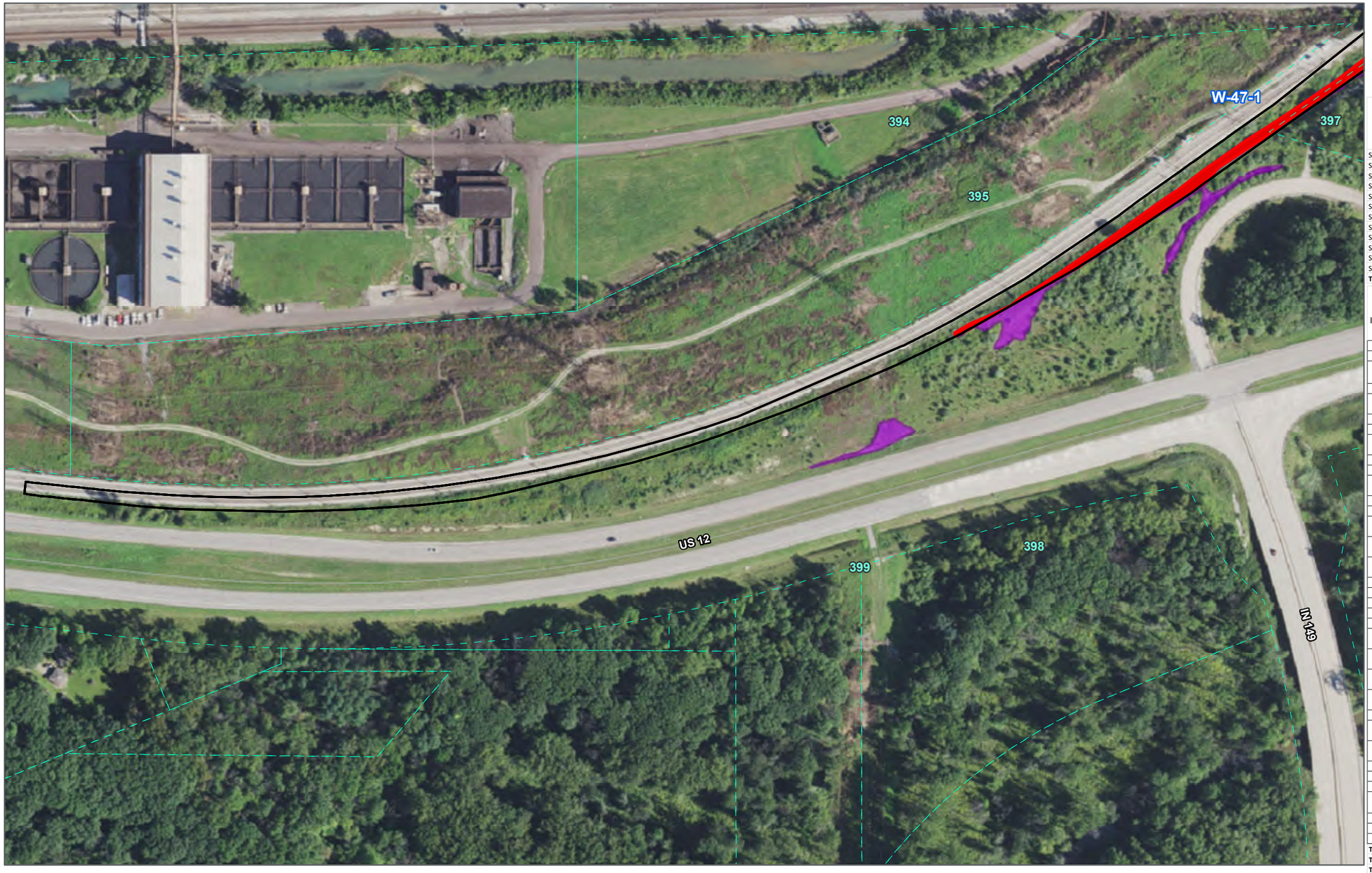

STREAM LABEL	CULVERT NEW ENCAPSULATION IMPACT LENGTH (feet)
Stream 44-3	6
Stream 43-2	1
Stream 43-1	8
Stream 42-2	32
Stream 42-1	4
Stream 41-2	12
Stream 41-1	2
Stream 40-1	2
Stream 39-2	0
Stream 39-1	12
Stream 38-1	0
Stream 36-1	3
TOTAL	**82**

Legend

- Construction Limits
- Parcel Boundary
- Mileposts
- OHWM
- Wetland Impact Permanent
- Delineated Wetland

WETLAND IDENTIFIER	TOTAL ACREAGE	PERMANENT WETLAND IMPACT ACREAGE	TYPE OF IMPACT
W-35-1	0.069	0.014	Permanent
W-36-2	0.356	0.158	Permanent
W-36-3	0.086	0.004	Permanent
		0.004	Temporary
W-36-4	0.121	0.002	Permanent
W-37-1	0.254	0.122	Permanent
		0.021	Temporary
W-37-4	0.026	0.010	Permanent
W-37-5	0.003	0.003	Permanent
W-38-1	3.779	0.144	Permanent
		0.096	Temporary
W-38-3	0.004	0.004	Permanent
W-39-1	0.035	0.013	Permanent
W-39-2	2.174	0.051	Permanent
		0.042	Temporary
W-40-1	2.064	0.071	Permanent
W-40-2	0.648	0.027	Permanent
W-40-3	6.424	0.645	Permanent
		0.236	Temporary
W-41-1	3.997	0.225	Permanent
		0.116	Temporary
W-42-1	0.289	0.113	Permanent
		0.059	Temporary
W-42-5	0.042	0.016	Permanent
W-43-1	0.496	0.001	Permanent
W-43-2	0.252	0.031	Permanent
W-43-3	0.666	0.181	Permanent
W-44-1	0.021	0.003	Permanent
W-44-2	2.348	0.308	Permanent
		0.103	Temporary
W-44-3	3.056	0.276	Permanent
		0.179	Temporary
W-44-4	1.305	1.209	Permanent
		0.001	Temporary
W-44-5	0.367	0.002	Permanent
		0.008	Temporary
W-46-1	0.027	0.027	Permanent
W-46-3	0.076	0.064	Permanent
		0.010	Temporary
W-47-1	0.621	0.309	Permanent
		0.026	Temporary
W-55-2	0.109	0.090	Permanent
W-55-3	0.025	0.025	Permanent
W-56-1	0.064	0.013	Permanent
W-56-2	0.875	0.421	Permanent
		0.383	Temporary
W-56-5	2.115	0.127	Permanent
W-56-7	0.238	0.151	Permanent
W-57-1	0.603	0.002	Permanent
TOTAL IMPACT		**6.15**	
TOTAL TEMPORARY IMPACT		**1.28**	
TOTAL PERMANENT IMPACT		**4.86**	

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Figure 2.12. Wetland Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

1 inch = 200 feet

0 105 210 420 Feet

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STREAM LABEL	CULVERT NEW ENCAPSULATION IMPACT LENGTH (feet)
Stream 44-3	6
Stream 43-2	1
Stream 43-1	8
Stream 42-2	32
Stream 42-1	4
Stream 41-2	12
Stream 41-1	2
Stream 40-1	2
Stream 39-2	0
Stream 39-1	12
Stream 38-1	0
Stream 36-1	3
TOTAL	**82**

Legend

- Construction Limits
- Parcel Boundary
- Mileposts
- OHWM
- Wetland Impact Permanent
- Delineated Wetland

WETLAND IDENTIFIER	TOTAL ACREAGE	PERMANENT WETLAND IMPACT ACREAGE	TYPE OF IMPACT
W-35-1	0.069	0.014	Permanent
W-36-2	0.356	0.158	Permanent
W-36-3	0.086	0.004	Permanent
		0.004	Temporary
W-36-4	0.121	0.002	Permanent
W-37-1	0.254	0.122	Permanent
		0.021	Temporary
W-37-4	0.026	0.010	Permanent
W-37-5	0.003	0.003	Permanent
W-38-1	3.779	0.144	Permanent
		0.096	Temporary
W-38-3	0.004	0.004	Permanent
W-39-1	0.035	0.013	Permanent
W-39-2	2.174	0.051	Permanent
		0.042	Temporary
W-40-1	2.064	0.071	Permanent
W-40-2	0.648	0.027	Permanent
W-40-3	6.424	0.645	Permanent
		0.236	Temporary
W-41-1	3.997	0.225	Permanent
		0.116	Temporary
W-42-1	0.289	0.113	Permanent
		0.059	Temporary
W-42-5	0.042	0.016	Permanent
W-43-1	0.496	0.001	Permanent
W-43-2	0.252	0.031	Permanent
W-43-3	0.666	0.181	Permanent
W-44-1	0.021	0.003	Permanent
W-44-2	2.348	0.308	Permanent
		0.103	Temporary
W-44-3	3.056	0.276	Permanent
		0.179	Temporary
W-44-4	1.305	1.209	Permanent
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		0.010	Temporary
W-47-1	0.621	0.309	Permanent
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W-55-3	0.025	0.025	Permanent
W-56-1	0.064	0.013	Permanent
W-56-2	0.875	0.421	Permanent
		0.383	Temporary
W-56-5	2.115	0.127	Permanent
W-56-7	0.238	0.151	Permanent
W-57-1	0.603	0.002	Permanent
TOTAL IMPACT		**6.15**	
TOTAL TEMPORARY IMPACT		**1.28**	
TOTAL PERMANENT IMPACT		**4.86**	

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Figure 2.13. Wetland Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
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STREAM LABEL	CULVERT NEW ENCAPSULATION IMPACT LENGTH (feet)
Stream 44-3	6
Stream 43-2	1
Stream 43-1	8
Stream 42-2	32
Stream 42-1	4
Stream 41-2	12
Stream 41-1	2
Stream 40-1	2
Stream 39-2	0
Stream 39-1	12
Stream 38-1	0
Stream 36-1	3
TOTAL	**82**

Legend

- Construction Limits
- Parcel Boundary
- Mileposts
- OHWM
- Wetland Impact Permanent
- Delineated Wetland

WETLAND IDENTIFIER	TOTAL ACREAGE	PERMANENT WETLAND IMPACT ACREAGE	TYPE OF IMPACT
W-35-1	0.069	0.014	Permanent
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W-38-1	3.779	0.144	Permanent
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		0.042	Temporary
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TOTAL IMPACT		**6.15**	
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Figure 2.14. Wetland Areas

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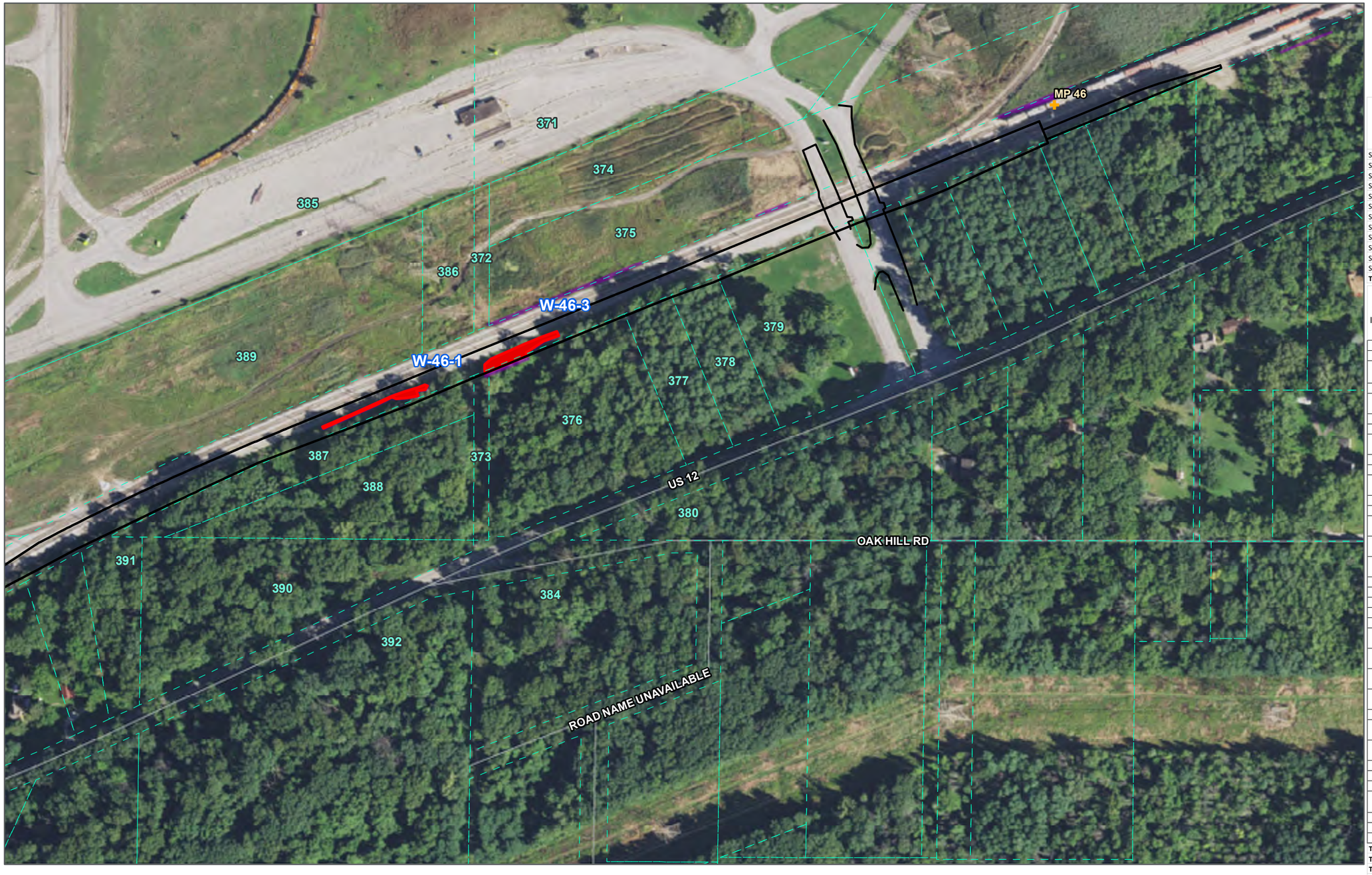

STREAM LABEL	CULVERT NEW ENCAPSULATION IMPACT LENGTH (feet)
Stream 44-3	6
Stream 43-2	1
Stream 43-1	8
Stream 42-2	32
Stream 42-1	4
Stream 41-2	12
Stream 41-1	2
Stream 40-1	2
Stream 39-2	0
Stream 39-1	12
Stream 38-1	0
Stream 36-1	3
TOTAL	**82**

Legend

- Construction Limits
- Parcel Boundary
- Mileposts
- OHWM
- Wetland Impact Permanent
- Delineated Wetland

WETLAND IDENTIFIER	TOTAL ACREAGE	PERMANENT WETLAND IMPACT ACREAGE	TYPE OF IMPACT
W-35-1	0.069	0.014	Permanent
W-36-2	0.356	0.158	Permanent
W-36-3	0.086	0.004	Permanent
		0.004	Temporary
W-36-4	0.121	0.002	Permanent
W-37-1	0.254	0.122	Permanent
		0.021	Temporary
W-37-4	0.026	0.010	Permanent
W-37-5	0.003	0.003	Permanent
W-38-1	3.779	0.144	Permanent
		0.096	Temporary
W-38-3	0.004	0.004	Permanent
W-39-1	0.035	0.013	Permanent
W-39-2	2.174	0.051	Permanent
		0.042	Temporary
W-40-1	2.064	0.071	Permanent
W-40-2	0.648	0.027	Permanent
W-40-3	6.424	0.645	Permanent
		0.236	Temporary
W-41-1	3.997	0.225	Permanent
		0.116	Temporary
W-42-1	0.289	0.113	Permanent
		0.059	Temporary
W-42-5	0.042	0.016	Permanent
W-43-1	0.496	0.001	Permanent
W-43-2	0.252	0.031	Permanent
W-43-3	0.666	0.181	Permanent
W-44-1	0.021	0.003	Permanent
W-44-2	2.348	0.308	Permanent
		0.103	Temporary
W-44-3	3.056	0.276	Permanent
		0.179	Temporary
W-44-4	1.305	1.209	Permanent
		0.001	Temporary
W-44-5	0.367	0.002	Permanent
		0.008	Temporary
W-46-1	0.027	0.027	Permanent
W-46-3	0.076	0.064	Permanent
		0.010	Temporary
W-47-1	0.621	0.309	Permanent
		0.026	Temporary
W-55-2	0.109	0.090	Permanent
W-55-3	0.025	0.025	Permanent
W-56-1	0.064	0.013	Permanent
W-56-2	0.875	0.421	Permanent
		0.383	Temporary
W-56-5	2.115	0.127	Permanent
W-56-7	0.238	0.151	Permanent
W-57-1	0.603	0.002	Permanent
TOTAL IMPACT		**6.15**	
TOTAL TEMPORARY IMPACT		**1.28**	
TOTAL PERMANENT IMPACT		**4.86**	

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Figure 2.15. Wetland Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

1 inch = 200 feet

0 105 210 420 Feet

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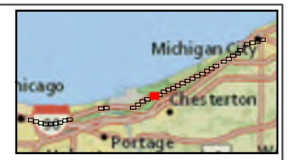

STREAM LABEL	CULVERT NEW ENCAPSULATION IMPACT LENGTH (feet)
Stream 44-3	6
Stream 43-2	1
Stream 43-1	8
Stream 42-2	32
Stream 42-1	4
Stream 41-2	12
Stream 41-1	2
Stream 40-1	2
Stream 39-2	0
Stream 39-1	12
Stream 38-1	0
Stream 36-1	3
TOTAL	**82**

Legend

- Construction Limits
- Parcel Boundary
- Mileposts
- OHWM
- Wetland Impact Permanent
- Delineated Wetland

WETLAND IDENTIFIER	TOTAL ACREAGE	PERMANENT WETLAND IMPACT ACREAGE	TYPE OF IMPACT
W-35-1	0.069	0.014	Permanent
W-36-2	0.356	0.158	Permanent
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		0.116	Temporary
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		0.008	Temporary
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W-46-3	0.076	0.064	Permanent
		0.010	Temporary
W-47-1	0.621	0.309	Permanent
		0.026	Temporary
W-55-2	0.109	0.090	Permanent
W-55-3	0.025	0.025	Permanent
W-56-1	0.064	0.013	Permanent
W-56-2	0.875	0.421	Permanent
		0.383	Temporary
W-56-5	2.115	0.127	Permanent
W-56-7	0.238	0.151	Permanent
W-57-1	0.603	0.002	Permanent
TOTAL IMPACT		**6.15**	
TOTAL TEMPORARY IMPACT		**1.28**	
TOTAL PERMANENT IMPACT		**4.86**	

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Figure 2.16. Wetland Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

1 inch = 200 feet

0 105 210 420 Feet

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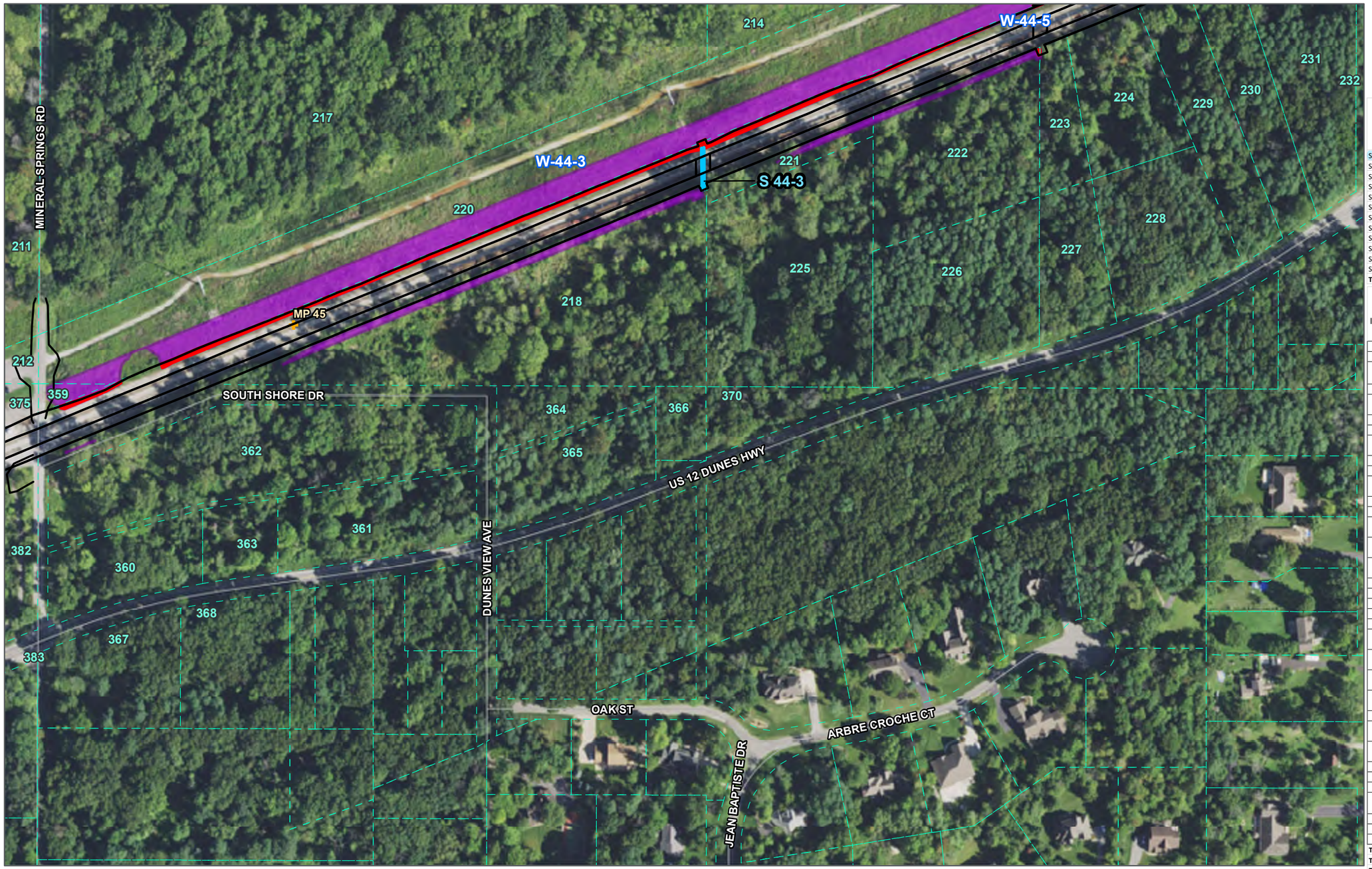

STREAM LABEL	CULVERT NEW ENCAPSULATION IMPACT LENGTH (feet)
Stream 44-3	6
Stream 43-2	1
Stream 43-1	8
Stream 42-2	32
Stream 42-1	4
Stream 41-2	12
Stream 41-1	2
Stream 40-1	2
Stream 39-2	0
Stream 39-1	12
Stream 38-1	0
Stream 36-1	3
TOTAL	**82**

Legend

- Construction Limits
- Parcel Boundary
- Mileposts
- OHWM
- Wetland Impact Permanent
- Delineated Wetland

WETLAND IDENTIFIER	TOTAL ACREAGE	PERMANENT WETLAND IMPACT ACREAGE	TYPE OF IMPACT
W-35-1	0.069	0.014	Permanent
W-36-2	0.356	0.158	Permanent
W-36-3	0.086	0.004	Permanent
		0.004	Temporary
W-36-4	0.121	0.002	Permanent
W-37-1	0.254	0.122	Permanent
		0.021	Temporary
W-37-4	0.026	0.010	Permanent
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W-44-2	2.348	0.308	Permanent
		0.103	Temporary
W-44-3	3.056	0.276	Permanent
		0.179	Temporary
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		0.001	Temporary
W-44-5	0.367	0.002	Permanent
		0.008	Temporary
W-46-1	0.027	0.027	Permanent
W-46-3	0.076	0.064	Permanent
		0.010	Temporary
W-47-1	0.621	0.309	Permanent
		0.026	Temporary
W-55-2	0.109	0.090	Permanent
W-55-3	0.025	0.025	Permanent
W-56-1	0.064	0.013	Permanent
W-56-2	0.875	0.421	Permanent
		0.383	Temporary
W-56-5	2.115	0.127	Permanent
W-56-7	0.238	0.151	Permanent
W-57-1	0.603	0.002	Permanent
TOTAL IMPACT		**6.15**	
TOTAL TEMPORARY IMPACT		**1.28**	
TOTAL PERMANENT IMPACT		**4.86**	

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Figure 2.17. Wetland Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

1 inch = 200 feet

0 105 210 420 Feet

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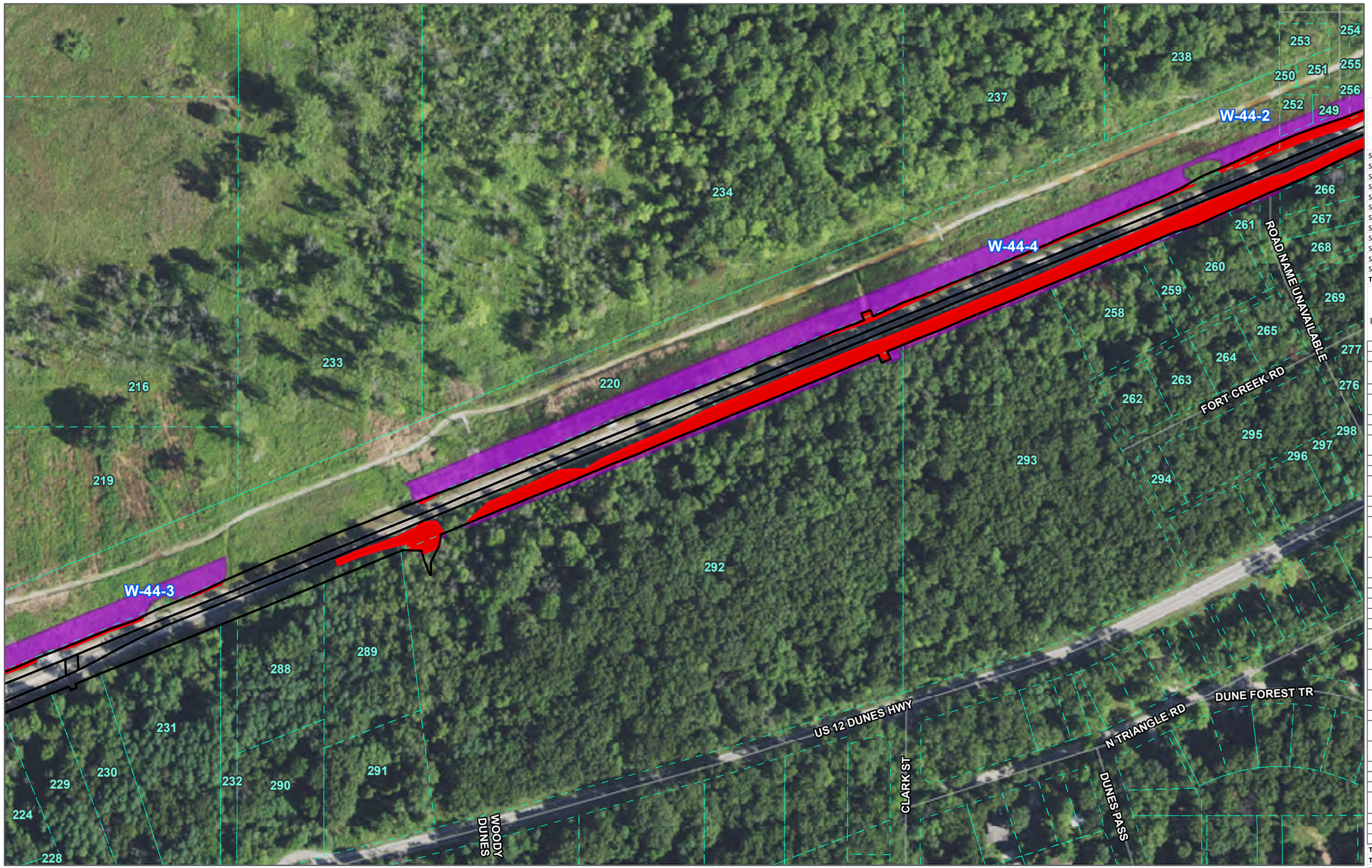

STREAM LABEL	CULVERT NEW ENCAPSULATION IMPACT LENGTH (feet)
Stream 44-3	6
Stream 43-2	1
Stream 43-1	8
Stream 42-2	32
Stream 42-1	4
Stream 41-2	12
Stream 41-1	2
Stream 40-1	2
Stream 39-2	0
Stream 39-1	12
Stream 38-1	0
Stream 36-1	3
TOTAL	**82**

Legend
- Construction Limits
- Parcel Boundary
- Mileposts
- OHWM
- Wetland Impact Permanent
- Delineated Wetland

WETLAND IDENTIFIER	TOTAL ACREAGE	PERMANENT WETLAND IMPACT ACREAGE	TYPE OF IMPACT
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W-38-1	3.779	0.144	Permanent
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		0.059	Temporary
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W-43-1	0.496	0.001	Permanent
W-43-2	0.252	0.031	Permanent
W-43-3	0.666	0.181	Permanent
W-44-1	0.021	0.003	Permanent
W-44-2	2.348	0.308	Permanent
		0.103	Temporary
W-44-3	3.056	0.276	Permanent
		0.179	Temporary
W-44-4	1.305	1.209	Permanent
		0.001	Temporary
W-44-5	0.367	0.002	Permanent
		0.008	Temporary
W-46-1	0.027	0.027	Permanent
W-46-3	0.076	0.064	Permanent
		0.010	Temporary
W-47-1	0.621	0.309	Permanent
		0.026	Temporary
W-55-2	0.109	0.090	Permanent
W-55-3	0.025	0.025	Permanent
W-56-1	0.064	0.013	Permanent
W-56-2	0.875	0.421	Permanent
		0.383	Temporary
W-56-5	2.115	0.127	Permanent
W-56-7	0.238	0.151	Permanent
W-57-1	0.603	0.002	Permanent
TOTAL IMPACT		**6.15**	
TOTAL TEMPORARY IMPACT		**1.28**	
TOTAL PERMANENT IMPACT		**4.86**	

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Figure 2.18. Wetland Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

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0 105 210 420 Feet

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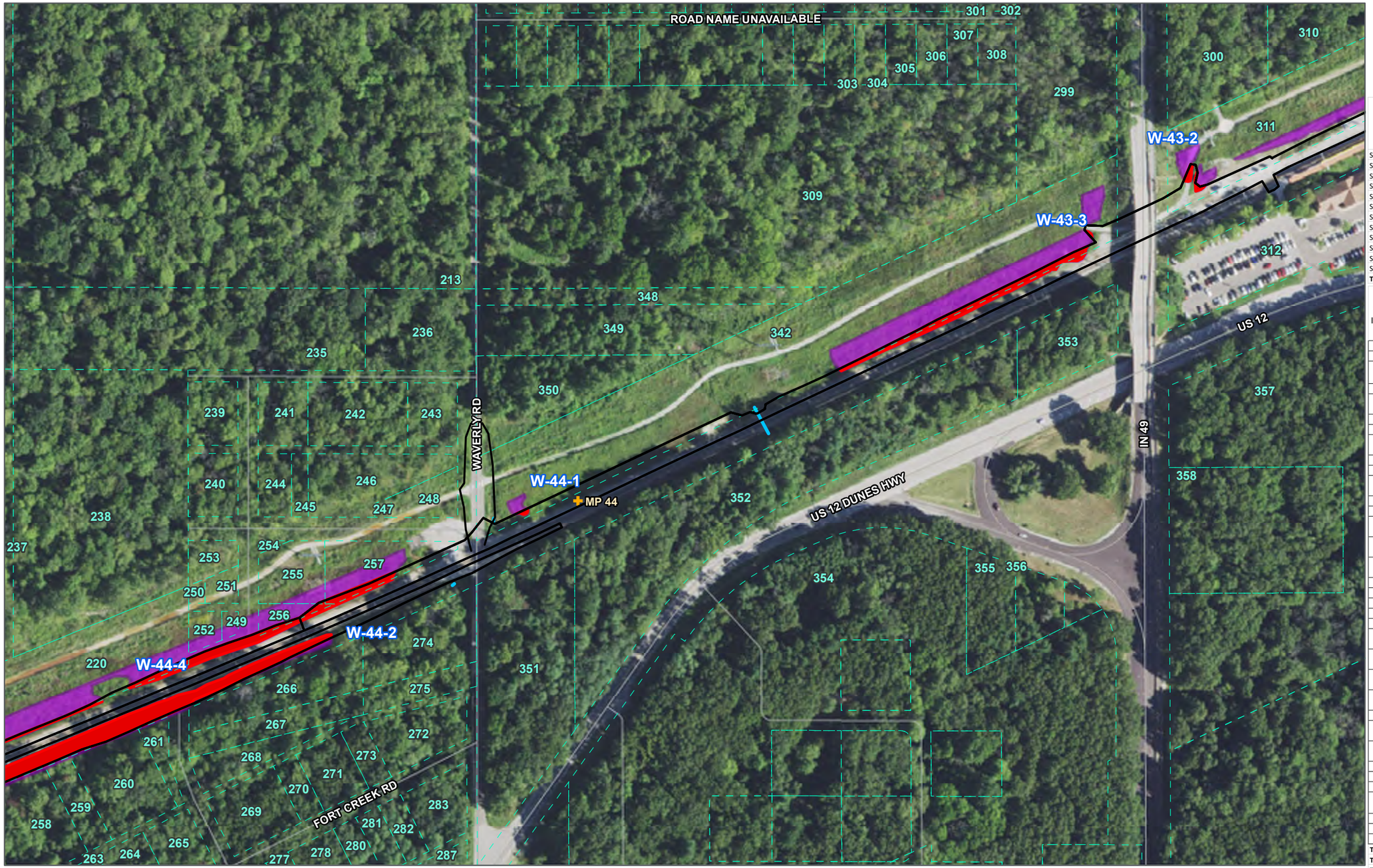

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Stream 42-1	4
Stream 41-2	12
Stream 41-1	2
Stream 40-1	2
Stream 39-2	0
Stream 39-1	12
Stream 38-1	0
Stream 36-1	3
TOTAL	**82**

Legend

- Construction Limits
- Parcel Boundary
- Mileposts
- OHWM
- Wetland Impact Permanent
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WETLAND IDENTIFIER	TOTAL ACREAGE	PERMANENT WETLAND IMPACT ACREAGE	TYPE OF IMPACT
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		0.010	Temporary
W-47-1	0.621	0.309	Permanent
		0.026	Temporary
W-55-2	0.109	0.090	Permanent
W-55-3	0.025	0.025	Permanent
W-56-1	0.064	0.013	Permanent
W-56-2	0.875	0.421	Permanent
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W-56-5	2.115	0.127	Permanent
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W-57-1	0.603	0.002	Permanent
TOTAL IMPACT		**6.15**	
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Figure 2.19. Wetland Areas

NICTD Double Track Northwest Indiana (NWI) Project
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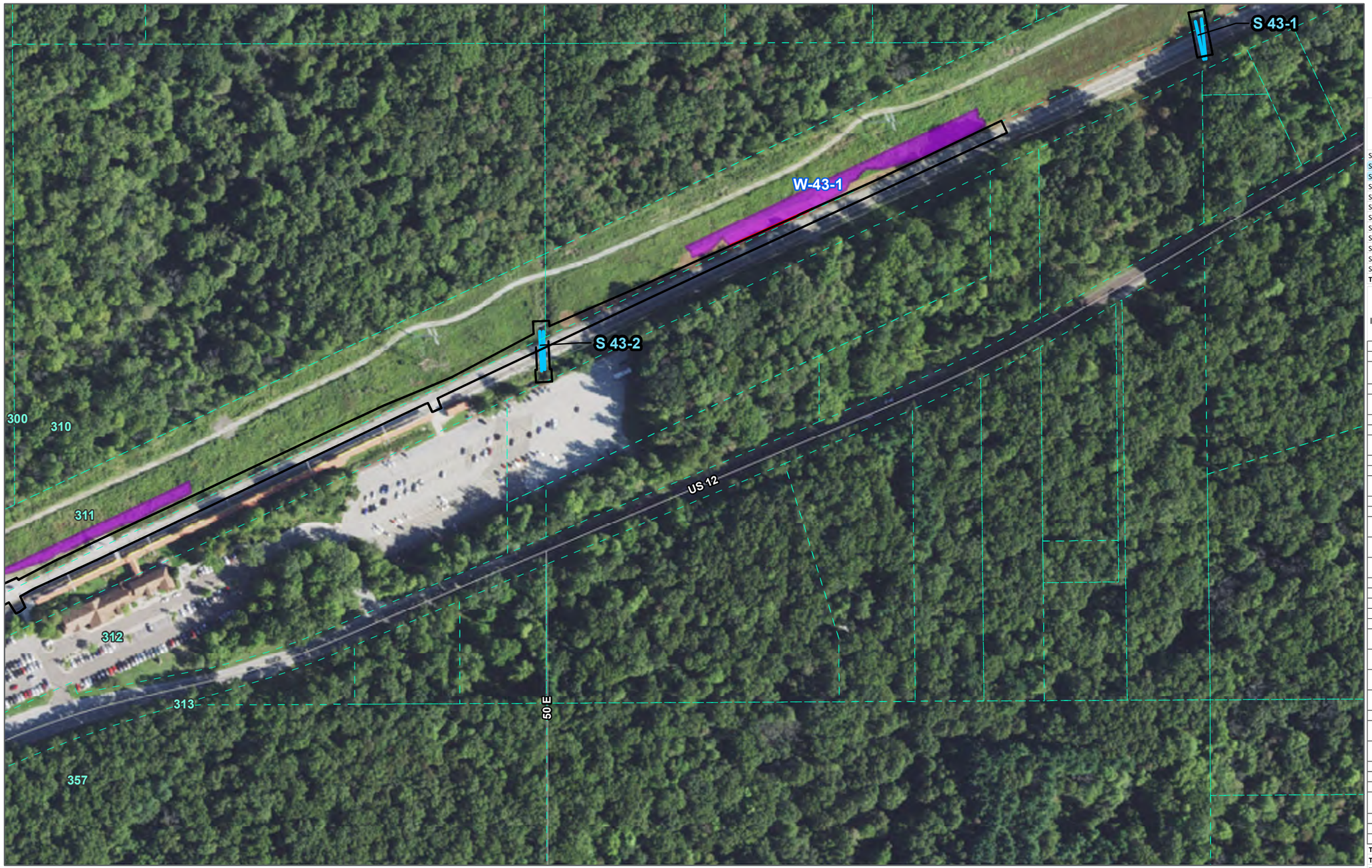

STREAM LABEL	CULVERT NEW ENCAPSULATION IMPACT LENGTH (feet)
Stream 44-3	6
Stream 43-2	1
Stream 43-1	8
Stream 42-2	32
Stream 42-1	4
Stream 41-2	12
Stream 41-1	2
Stream 40-1	2
Stream 39-2	0
Stream 39-1	12
Stream 38-1	0
Stream 36-1	3
TOTAL	**82**

Legend

- Construction Limits
- Parcel Boundary
- Mileposts
- OHWM
- Wetland Impact Permanent
- Delineated Wetland

WETLAND IDENTIFIER	TOTAL ACREAGE	PERMANENT WETLAND IMPACT ACREAGE	TYPE OF IMPACT
W-35-1	0.069	0.014	Permanent
W-36-2	0.356	0.158	Permanent
W-36-3	0.086	0.004	Permanent
		0.004	Temporary
W-36-4	0.121	0.002	Permanent
W-37-1	0.254	0.122	Permanent
		0.021	Temporary
W-37-4	0.026	0.010	Permanent
W-37-5	0.003	0.003	Permanent
W-38-1	3.779	0.144	Permanent
		0.096	Temporary
W-38-3	0.004	0.004	Permanent
W-39-1	0.035	0.013	Permanent
W-39-2	2.174	0.051	Permanent
		0.042	Temporary
W-40-1	2.064	0.071	Permanent
W-40-2	0.648	0.027	Permanent
W-40-3	6.424	0.645	Permanent
		0.236	Temporary
W-41-1	3.997	0.225	Permanent
		0.116	Temporary
W-42-1	0.289	0.113	Permanent
		0.059	Temporary
W-42-5	0.042	0.016	Permanent
W-43-1	0.496	0.001	Permanent
W-43-2	0.252	0.031	Permanent
W-43-3	0.666	0.181	Permanent
W-44-1	0.021	0.003	Permanent
W-44-2	2.348	0.308	Permanent
		0.103	Temporary
W-44-3	3.056	0.276	Permanent
		0.179	Temporary
W-44-4	1.305	1.209	Permanent
		0.001	Temporary
W-44-5	0.367	0.002	Permanent
		0.008	Temporary
W-46-1	0.027	0.027	Permanent
W-46-3	0.076	0.064	Permanent
		0.010	Temporary
W-47-1	0.621	0.309	Permanent
		0.026	Temporary
W-55-2	0.109	0.090	Permanent
W-55-3	0.025	0.025	Permanent
W-56-1	0.064	0.013	Permanent
W-56-2	0.875	0.421	Permanent
		0.383	Temporary
W-56-5	2.115	0.127	Permanent
W-56-7	0.238	0.151	Permanent
W-57-1	0.603	0.002	Permanent
TOTAL IMPACT		**6.15**	
TOTAL TEMPORARY IMPACT		**1.28**	
TOTAL PERMANENT IMPACT		**4.86**	

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Project No. J177345200

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Figure 2.20. Wetland Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

1 inch = 200 feet

0 105 210 420 Feet

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STREAM LABEL	CULVERT NEW ENCAPSULATION IMPACT LENGTH (feet)
Stream 44-3	6
Stream 43-2	1
Stream 43-1	8
Stream 42-2	32
Stream 42-1	4
Stream 41-2	12
Stream 41-1	2
Stream 40-1	2
Stream 39-2	0
Stream 39-1	12
Stream 38-1	0
Stream 36-1	3
TOTAL	**82**

Legend
- Construction Limits
- Parcel Boundary
- Mileposts
- OHWM
- Wetland Impact Permanent
- Delineated Wetland

WETLAND IDENTIFIER	TOTAL ACREAGE	PERMANENT WETLAND IMPACT ACREAGE	TYPE OF IMPACT
W-35-1	0.069	0.014	Permanent
W-36-2	0.356	0.158	Permanent
W-36-3	0.086	0.004	Permanent
		0.004	Temporary
W-36-4	0.121	0.002	Permanent
W-37-1	0.254	0.122	Permanent
		0.021	Temporary
W-37-4	0.026	0.010	Permanent
W-37-5	0.003	0.003	Permanent
W-38-1	3.779	0.144	Permanent
		0.096	Temporary
W-38-3	0.004	0.004	Permanent
W-39-1	0.035	0.013	Permanent
W-39-2	2.174	0.051	Permanent
		0.042	Temporary
W-40-1	2.064	0.071	Permanent
W-40-2	0.648	0.027	Permanent
W-40-3	6.424	0.645	Permanent
		0.236	Temporary
W-41-1	3.997	0.225	Permanent
		0.116	Temporary
W-42-1	0.289	0.113	Permanent
		0.059	Temporary
W-42-5	0.042	0.016	Permanent
W-43-1	0.496	0.001	Permanent
W-43-2	0.252	0.031	Permanent
W-43-3	0.666	0.181	Permanent
W-44-1	0.021	0.003	Permanent
W-44-2	2.348	0.308	Permanent
		0.103	Temporary
W-44-3	3.056	0.276	Permanent
		0.179	Temporary
W-44-4	1.305	1.209	Permanent
		0.001	Temporary
W-44-5	0.367	0.002	Permanent
		0.008	Temporary
W-46-1	0.027	0.027	Permanent
W-46-3	0.076	0.064	Permanent
		0.010	Temporary
W-47-1	0.621	0.309	Permanent
		0.026	Temporary
W-55-2	0.109	0.090	Permanent
W-55-3	0.025	0.025	Permanent
W-56-1	0.064	0.013	Permanent
W-56-2	0.875	0.421	Permanent
		0.383	Temporary
W-56-5	2.115	0.127	Permanent
W-56-7	0.238	0.151	Permanent
W-57-1	0.603	0.002	Permanent
TOTAL IMPACT		**6.15**	
TOTAL TEMPORARY IMPACT		**1.28**	
TOTAL PERMANENT IMPACT		**4.86**	

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Figure 2.21. Wetland Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

1 inch = 200 feet

0 105 210 420 Feet

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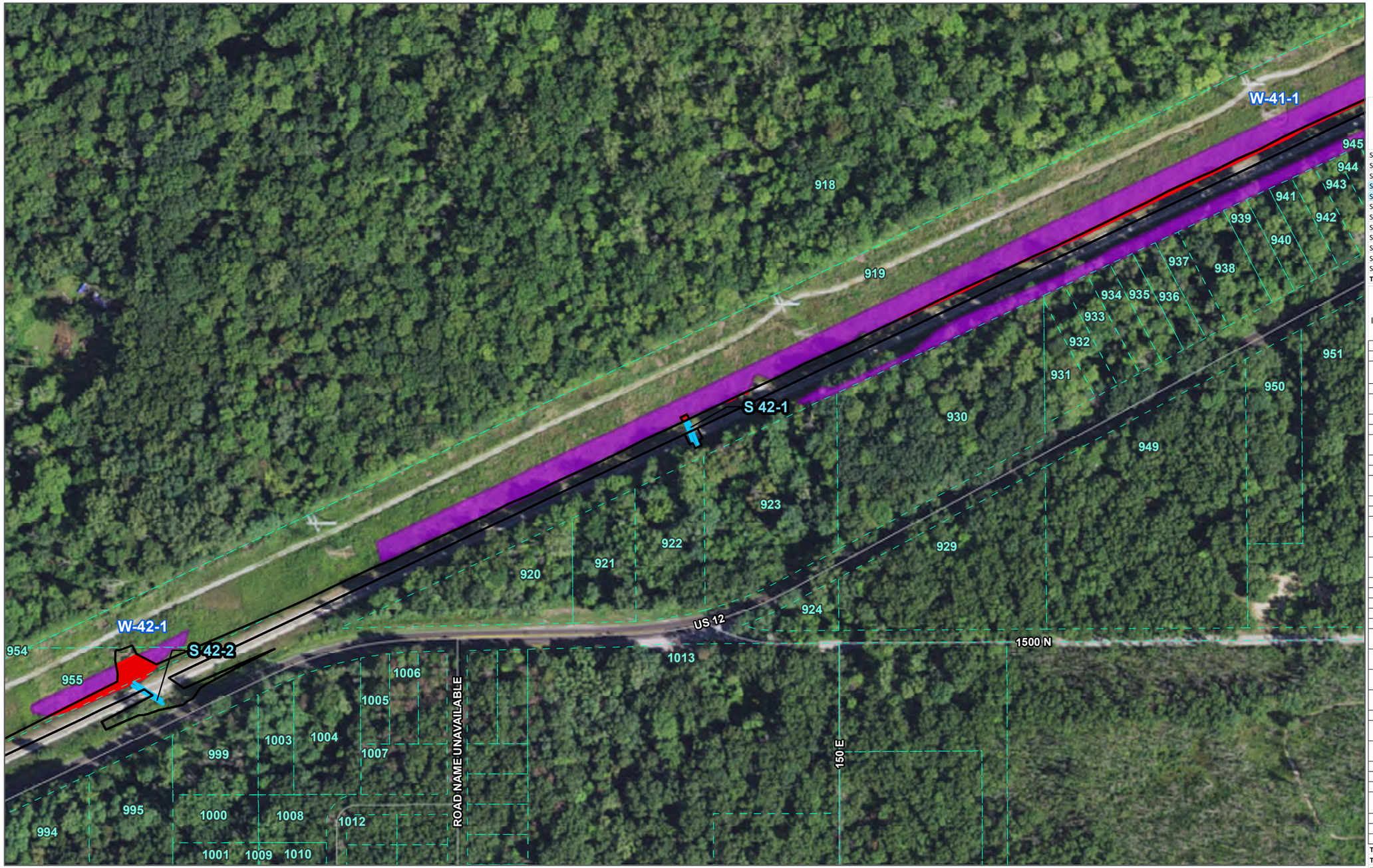

STREAM LABEL	CULVERT NEW ENCAPSULATION IMPACT LENGTH (feet)
Stream 44-3	6
Stream 43-2	1
Stream 43-1	8
Stream 42-2	32
Stream 42-1	4
Stream 41-2	12
Stream 41-1	2
Stream 40-1	2
Stream 39-2	0
Stream 39-1	12
Stream 38-1	0
Stream 36-1	3
TOTAL	**82**

Legend

- Construction Limits
- Parcel Boundary
- Mileposts
- OHWM
- Wetland Impact Permanent
- Delineated Wetland

WETLAND IDENTIFIER	TOTAL ACREAGE	PERMANENT WETLAND IMPACT ACREAGE	TYPE OF IMPACT
W-35-1	0.069	0.014	Permanent
W-36-2	0.356	0.158	Permanent
W-36-3	0.086	0.004	Permanent
		0.004	Temporary
W-36-4	0.121	0.002	Permanent
W-37-1	0.254	0.122	Permanent
		0.021	Temporary
W-37-4	0.026	0.010	Permanent
W-37-5	0.003	0.003	Permanent
W-38-1	3.779	0.144	Permanent
		0.096	Temporary
W-38-3	0.004	0.004	Permanent
W-39-1	0.035	0.013	Permanent
W-39-2	2.174	0.051	Permanent
		0.042	Temporary
W-40-1	2.064	0.071	Permanent
W-40-2	0.648	0.027	Permanent
W-40-3	6.424	0.645	Permanent
		0.236	Temporary
W-41-1	3.997	0.225	Permanent
		0.116	Temporary
W-42-1	0.289	0.113	Permanent
		0.059	Temporary
W-42-5	0.042	0.016	Permanent
W-43-1	0.496	0.001	Permanent
W-43-2	0.252	0.031	Permanent
W-43-3	0.666	0.181	Permanent
W-44-1	0.021	0.003	Permanent
W-44-2	2.348	0.308	Permanent
		0.103	Temporary
W-44-3	3.056	0.276	Permanent
		0.179	Temporary
W-44-4	1.305	1.209	Permanent
		0.001	Temporary
W-44-5	0.367	0.002	Permanent
		0.008	Temporary
W-46-1	0.027	0.027	Permanent
W-46-3	0.076	0.064	Permanent
		0.010	Temporary
W-47-1	0.621	0.309	Permanent
		0.026	Temporary
W-55-2	0.109	0.090	Permanent
W-55-3	0.025	0.025	Permanent
W-56-1	0.064	0.013	Permanent
W-56-2	0.875	0.421	Permanent
		0.383	Temporary
W-56-5	2.115	0.127	Permanent
W-56-7	0.238	0.151	Permanent
W-57-1	0.603	0.002	Permanent
TOTAL IMPACT		**6.15**	
TOTAL TEMPORARY IMPACT		**1.28**	
TOTAL PERMANENT IMPACT		**4.86**	

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Figure 2.22. Wetland Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

1 inch = 200 feet

0 105 210 420 Feet

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STREAM LABEL	CULVERT NEW ENCAPSULATION IMPACT LENGTH (feet)
Stream 44-3	6
Stream 43-2	1
Stream 43-1	8
Stream 42-2	32
Stream 42-1	4
Stream 41-2	12
Stream 41-1	2
Stream 40-1	2
Stream 39-2	0
Stream 39-1	12
Stream 38-1	0
Stream 36-1	3
TOTAL	**82**

Legend

- Construction Limits
- Parcel Boundary
- Mileposts
- OHWM
- Wetland Impact Permanent
- Delineated Wetland

WETLAND IDENTIFIER	TOTAL ACREAGE	PERMANENT WETLAND IMPACT ACREAGE	TYPE OF IMPACT
W-35-1	0.069	0.014	Permanent
W-36-2	0.356	0.158	Permanent
W-36-3	0.086	0.004	Permanent
		0.004	Temporary
W-36-4	0.121	0.002	Permanent
W-37-1	0.254	0.122	Permanent
		0.021	Temporary
W-37-4	0.026	0.010	Permanent
W-37-5	0.003	0.003	Permanent
W-38-1	3.779	0.144	Permanent
		0.096	Temporary
W-38-3	0.004	0.004	Permanent
W-39-1	0.035	0.013	Permanent
W-39-2	2.174	0.051	Permanent
		0.042	Temporary
W-40-1	2.064	0.071	Permanent
W-40-2	0.648	0.027	Permanent
W-40-3	6.424	0.645	Permanent
		0.236	Temporary
W-41-1	3.997	0.225	Permanent
		0.116	Temporary
W-42-1	0.289	0.113	Permanent
		0.059	Temporary
W-42-5	0.042	0.016	Permanent
W-43-1	0.496	0.001	Permanent
W-43-2	0.252	0.031	Permanent
W-43-3	0.666	0.181	Permanent
W-44-1	0.021	0.003	Permanent
W-44-2	2.348	0.308	Permanent
		0.103	Temporary
W-44-3	3.056	0.276	Permanent
		0.179	Temporary
W-44-4	1.305	1.209	Permanent
		0.001	Temporary
W-44-5	0.367	0.002	Permanent
		0.008	Temporary
W-46-1	0.027	0.027	Permanent
W-46-3	0.076	0.064	Permanent
		0.010	Temporary
W-47-1	0.621	0.309	Permanent
		0.026	Temporary
W-55-2	0.109	0.090	Permanent
W-55-3	0.025	0.025	Permanent
W-56-1	0.064	0.013	Permanent
W-56-2	0.875	0.421	Permanent
		0.383	Temporary
W-56-5	2.115	0.127	Permanent
W-56-7	0.238	0.151	Permanent
W-57-1	0.603	0.002	Permanent
TOTAL IMPACT		**6.15**	
TOTAL TEMPORARY IMPACT		**1.28**	
TOTAL PERMANENT IMPACT		**4.86**	

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Figure 2.23. Wetland Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

1 inch = 200 feet

0 105 210 420 Feet

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STREAM LABEL	CULVERT NEW ENCAPSULATION IMPACT LENGTH (feet)
Stream 44-3	6
Stream 43-2	1
Stream 43-1	8
Stream 42-2	32
Stream 42-1	4
Stream 41-2	12
Stream 41-1	2
Stream 40-1	2
Stream 39-2	0
Stream 39-1	12
Stream 38-1	0
Stream 36-1	3
TOTAL	**82**

Legend

- Construction Limits
- Parcel Boundary
- Mileposts
- OHWM
- Wetland Impact Permanent
- Delineated Wetland

WETLAND IDENTIFIER	TOTAL ACREAGE	PERMANENT WETLAND IMPACT ACREAGE	TYPE OF IMPACT
W-35-1	0.069	0.014	Permanent
W-36-2	0.356	0.158	Permanent
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W-36-4	0.121	0.002	Permanent
W-37-1	0.254	0.122	Permanent
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W-37-4	0.026	0.010	Permanent
W-37-5	0.003	0.003	Permanent
W-38-1	3.779	0.144	Permanent
		0.096	Temporary
W-38-3	0.004	0.004	Permanent
W-39-1	0.035	0.013	Permanent
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W-40-1	2.064	0.071	Permanent
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W-56-5	2.115	0.127	Permanent
W-56-7	0.238	0.151	Permanent
W-57-1	0.603	0.002	Permanent
TOTAL IMPACT		**6.15**	
TOTAL TEMPORARY IMPACT		**1.28**	
TOTAL PERMANENT IMPACT		**4.86**	

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Figure 2.24. Wetland Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

1 inch = 200 feet

0 105 210 420 Feet

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STREAM LABEL	CULVERT NEW ENCAPSULATION IMPACT LENGTH (feet)
Stream 44-3	6
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Stream 42-2	32
Stream 42-1	4
Stream 41-2	12
Stream 41-1	2
Stream 40-1	2
Stream 39-2	0
Stream 39-1	12
Stream 38-1	0
Stream 36-1	3
TOTAL	**82**

Legend

- Construction Limits
- Parcel Boundary
- Mileposts
- OHWM
- Wetland Impact Permanent
- Delineated Wetland

WETLAND IDENTIFIER	TOTAL ACREAGE	PERMANENT WETLAND IMPACT ACREAGE	TYPE OF IMPACT
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W-41-1	3.997	0.225	Permanent
		0.116	Temporary
W-42-1	0.289	0.113	Permanent
		0.059	Temporary
W-42-5	0.042	0.016	Permanent
W-43-1	0.496	0.001	Permanent
W-43-2	0.252	0.031	Permanent
W-43-3	0.666	0.181	Permanent
W-44-1	0.021	0.003	Permanent
W-44-2	2.348	0.308	Permanent
		0.103	Temporary
W-44-3	3.056	0.276	Permanent
		0.179	Temporary
W-44-4	1.305	1.209	Permanent
		0.001	Temporary
W-44-5	0.367	0.002	Permanent
		0.008	Temporary
W-46-1	0.027	0.027	Permanent
W-46-3	0.076	0.064	Permanent
		0.010	Temporary
W-47-1	0.621	0.309	Permanent
		0.026	Temporary
W-55-2	0.109	0.090	Permanent
W-55-3	0.025	0.025	Permanent
W-56-1	0.064	0.013	Permanent
W-56-2	0.875	0.421	Permanent
		0.383	Temporary
W-56-5	2.115	0.127	Permanent
W-56-7	0.238	0.151	Permanent
W-57-1	0.603	0.002	Permanent
TOTAL IMPACT		**6.15**	
TOTAL TEMPORARY IMPACT		**1.28**	
TOTAL PERMANENT IMPACT		**4.86**	

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Figure 2.25. Wetland Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

1 inch = 200 feet

0 105 210 420 Feet

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STREAM LABEL	CULVERT NEW ENCAPSULATION IMPACT LENGTH (feet)
Stream 44-3	6
Stream 43-2	1
Stream 43-1	8
Stream 42-2	32
Stream 42-1	4
Stream 41-2	12
Stream 41-1	2
Stream 40-1	2
Stream 39-2	0
Stream 39-1	12
Stream 38-1	0
Stream 36-1	3
TOTAL	**82**

Legend
- Construction Limits
- Parcel Boundary
- Mileposts
- OHWM
- Wetland Impact Permanent
- Delineated Wetland

WETLAND IDENTIFIER	TOTAL ACREAGE	PERMANENT WETLAND IMPACT ACREAGE	TYPE OF IMPACT
W-35-1	0.069	0.014	Permanent
W-36-2	0.356	0.158	Permanent
W-36-3	0.086	0.004	Permanent
		0.004	Temporary
W-36-4	0.121	0.002	Permanent
W-37-1	0.254	0.122	Permanent
		0.021	Temporary
W-37-4	0.026	0.010	Permanent
W-37-5	0.003	0.003	Permanent
W-38-1	3.779	0.144	Permanent
		0.096	Temporary
W-38-3	0.004	0.004	Permanent
W-39-1	0.035	0.013	Permanent
W-39-2	2.174	0.051	Permanent
		0.042	Temporary
W-40-1	2.064	0.071	Permanent
W-40-2	0.648	0.027	Permanent
W-40-3	6.424	0.645	Permanent
		0.236	Temporary
W-41-1	3.997	0.225	Permanent
		0.116	Temporary
W-42-1	0.289	0.113	Permanent
		0.059	Temporary
W-42-5	0.042	0.016	Permanent
W-43-1	0.496	0.001	Permanent
W-43-2	0.252	0.031	Permanent
W-43-3	0.666	0.181	Permanent
W-44-1	0.021	0.003	Permanent
W-44-2	2.348	0.308	Permanent
		0.103	Temporary
W-44-3	3.056	0.276	Permanent
		0.179	Temporary
W-44-4	1.305	1.209	Permanent
		0.001	Temporary
W-44-5	0.367	0.002	Permanent
		0.008	Temporary
W-46-1	0.027	0.027	Permanent
W-46-3	0.076	0.064	Permanent
		0.010	Temporary
W-47-1	0.621	0.309	Permanent
		0.026	Temporary
W-55-2	0.109	0.090	Permanent
W-55-3	0.025	0.025	Permanent
W-56-1	0.064	0.013	Permanent
W-56-2	0.875	0.421	Permanent
		0.383	Temporary
W-56-5	2.115	0.127	Permanent
W-56-7	0.238	0.151	Permanent
W-57-1	0.603	0.002	Permanent
TOTAL IMPACT		**6.15**	
TOTAL TEMPORARY IMPACT		**1.28**	
TOTAL PERMANENT IMPACT		**4.86**	

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Figure 2.26. Wetland Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

1 inch = 200 feet

0 105 210 420 Feet

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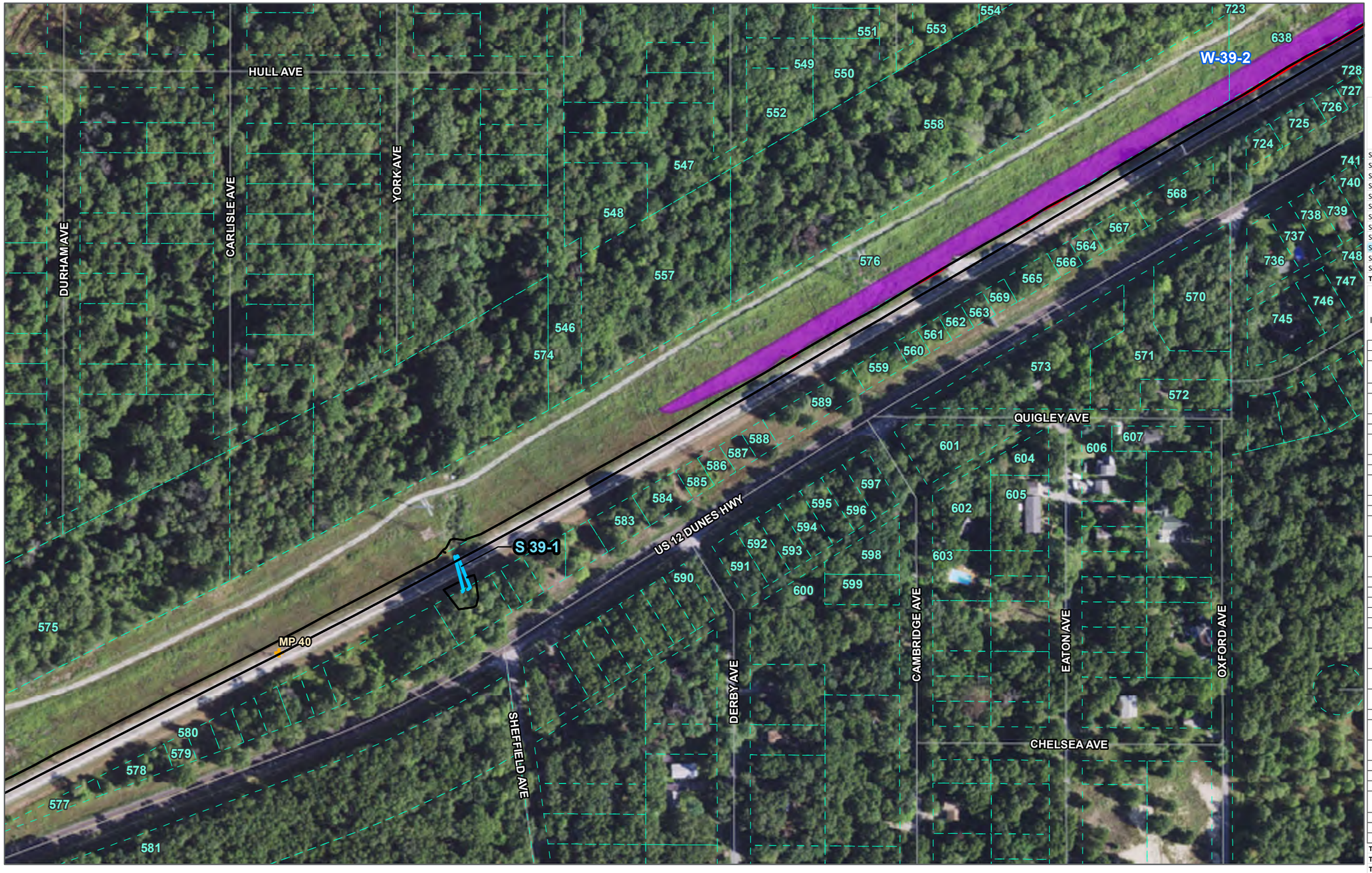

STREAM LABEL	CULVERT NEW ENCAPSULATION IMPACT LENGTH (feet)
Stream 44-3	6
Stream 43-2	1
Stream 43-1	8
Stream 42-2	32
Stream 42-1	4
Stream 41-2	12
Stream 41-1	2
Stream 40-1	2
Stream 39-2	0
Stream 39-1	12
Stream 38-1	0
Stream 36-1	3
TOTAL	**82**

Legend

- Construction Limits
- Parcel Boundary
- Mileposts
- OHWM
- Wetland Impact Permanent
- Delineated Wetland

WETLAND IDENTIFIER	TOTAL ACREAGE	PERMANENT WETLAND IMPACT ACREAGE	TYPE OF IMPACT
W-35-1	0.069	0.014	Permanent
W-36-2	0.356	0.158	Permanent
W-36-3	0.086	0.004	Permanent
		0.004	Temporary
W-36-4	0.121	0.002	Permanent
W-37-1	0.254	0.122	Permanent
		0.021	Temporary
W-37-4	0.026	0.010	Permanent
W-37-5	0.003	0.003	Permanent
W-38-1	3.779	0.144	Permanent
		0.096	Temporary
W-38-3	0.004	0.004	Permanent
W-39-1	0.035	0.013	Permanent
W-39-2	2.174	0.051	Permanent
		0.042	Temporary
W-40-1	2.064	0.071	Permanent
W-40-2	0.648	0.027	Permanent
W-40-3	6.424	0.645	Permanent
		0.236	Temporary
W-41-1	3.997	0.225	Permanent
		0.116	Temporary
W-42-1	0.289	0.113	Permanent
		0.059	Temporary
W-42-5	0.042	0.016	Permanent
W-43-1	0.496	0.001	Permanent
W-43-2	0.252	0.031	Permanent
W-43-3	0.666	0.181	Permanent
W-44-1	0.021	0.003	Permanent
W-44-2	2.348	0.308	Permanent
		0.103	Temporary
W-44-3	3.056	0.276	Permanent
		0.179	Temporary
W-44-4	1.305	1.209	Permanent
		0.001	Temporary
W-44-5	0.367	0.002	Permanent
		0.008	Temporary
W-46-1	0.027	0.027	Permanent
W-46-3	0.076	0.064	Permanent
		0.010	Temporary
W-47-1	0.621	0.309	Permanent
		0.026	Temporary
W-55-2	0.109	0.090	Permanent
W-55-3	0.025	0.025	Permanent
W-56-1	0.064	0.013	Permanent
W-56-2	0.875	0.421	Permanent
		0.383	Temporary
W-56-5	2.115	0.127	Permanent
W-56-7	0.238	0.151	Permanent
W-57-1	0.603	0.002	Permanent
TOTAL IMPACT		**6.15**	
TOTAL TEMPORARY IMPACT		**1.28**	
TOTAL PERMANENT IMPACT		**4.86**	

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Figure 2.27. Wetland Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

1 inch = 200 feet

0 105 210 420 Feet

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STREAM LABEL	CULVERT NEW ENCAPSULATION IMPACT LENGTH (feet)
Stream 44-3	6
Stream 43-2	1
Stream 43-1	8
Stream 42-2	32
Stream 42-1	4
Stream 41-2	12
Stream 41-1	2
Stream 40-1	2
Stream 39-2	0
Stream 39-1	12
Stream 38-1	0
Stream 36-1	3
TOTAL	**82**

Legend

- Construction Limits
- Parcel Boundary
- Mileposts
- OHWM
- Wetland Impact Permanent
- Delineated Wetland

WETLAND IDENTIFIER	TOTAL ACREAGE	PERMANENT WETLAND IMPACT ACREAGE	TYPE OF IMPACT
W-35-1	0.069	0.014	Permanent
W-36-2	0.356	0.158	Permanent
W-36-3	0.086	0.004	Permanent
		0.004	Temporary
W-36-4	0.121	0.002	Permanent
W-37-1	0.254	0.122	Permanent
		0.021	Temporary
W-37-4	0.026	0.010	Permanent
W-37-5	0.003	0.003	Permanent
W-38-1	3.779	0.144	Permanent
		0.096	Temporary
W-38-3	0.004	0.004	Permanent
W-39-1	0.035	0.013	Permanent
W-39-2	2.174	0.051	Permanent
		0.042	Temporary
W-40-1	2.064	0.071	Permanent
W-40-2	0.648	0.027	Permanent
W-40-3	6.424	0.645	Permanent
		0.236	Temporary
W-41-1	3.997	0.225	Permanent
		0.116	Temporary
W-42-1	0.289	0.113	Permanent
		0.059	Temporary
W-42-5	0.042	0.016	Permanent
W-43-1	0.496	0.001	Permanent
W-43-2	0.252	0.031	Permanent
W-43-3	0.666	0.181	Permanent
W-44-1	0.021	0.003	Permanent
W-44-2	2.348	0.308	Permanent
		0.103	Temporary
W-44-3	3.056	0.276	Permanent
		0.179	Temporary
W-44-4	1.305	1.209	Permanent
		0.001	Temporary
W-44-5	0.367	0.002	Permanent
		0.008	Temporary
W-46-1	0.027	0.027	Permanent
W-46-3	0.076	0.064	Permanent
		0.010	Temporary
W-47-1	0.621	0.309	Permanent
		0.026	Temporary
W-55-2	0.109	0.090	Permanent
W-55-3	0.025	0.025	Permanent
W-56-1	0.064	0.013	Permanent
W-56-2	0.875	0.421	Permanent
		0.383	Temporary
W-56-5	2.115	0.127	Permanent
W-56-7	0.238	0.151	Permanent
W-57-1	0.603	0.002	Permanent
TOTAL IMPACT		**6.15**	
TOTAL TEMPORARY IMPACT		**1.28**	
TOTAL PERMANENT IMPACT		**4.86**	

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Figure 2.28. Wetland Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

1 inch = 200 feet

0 105 210 420 Feet

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STREAM LABEL	CULVERT NEW ENCAPSULATION IMPACT LENGTH (feet)
Stream 44-3	6
Stream 43-2	1
Stream 43-1	8
Stream 42-2	32
Stream 42-1	4
Stream 41-2	12
Stream 41-1	2
Stream 40-1	2
Stream 39-2	0
Stream 39-1	12
Stream 38-1	0
Stream 36-1	3
TOTAL	**82**

Legend

- Construction Limits
- Parcel Boundary
- Mileposts
- OHWM
- Wetland Impact Permanent
- Delineated Wetland

WETLAND IDENTIFIER	TOTAL ACREAGE	PERMANENT WETLAND IMPACT ACREAGE	TYPE OF IMPACT
W-35-1	0.069	0.014	Permanent
W-36-2	0.356	0.158	Permanent
W-36-3	0.086	0.004	Permanent
		0.004	Temporary
W-36-4	0.121	0.002	Permanent
W-37-1	0.254	0.122	Permanent
		0.021	Temporary
W-37-4	0.026	0.010	Permanent
W-37-5	0.003	0.003	Permanent
W-38-1	3.779	0.144	Permanent
		0.096	Temporary
W-38-3	0.004	0.004	Permanent
W-39-1	0.035	0.013	Permanent
W-39-2	2.174	0.051	Permanent
		0.042	Temporary
W-40-1	2.064	0.071	Permanent
W-40-2	0.648	0.027	Permanent
W-40-3	6.424	0.645	Permanent
		0.236	Temporary
W-41-1	3.997	0.225	Permanent
		0.116	Temporary
W-42-1	0.289	0.113	Permanent
		0.059	Temporary
W-42-5	0.042	0.016	Permanent
W-43-1	0.496	0.001	Permanent
W-43-2	0.252	0.031	Permanent
W-43-3	0.666	0.181	Permanent
W-44-1	0.021	0.003	Permanent
W-44-2	2.348	0.308	Permanent
		0.103	Temporary
W-44-3	3.056	0.276	Permanent
		0.179	Temporary
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W-47-1	0.621	0.309	Permanent
		0.026	Temporary
W-55-2	0.109	0.090	Permanent
W-55-3	0.025	0.025	Permanent
W-56-1	0.064	0.013	Permanent
W-56-2	0.875	0.421	Permanent
		0.383	Temporary
W-56-5	2.115	0.127	Permanent
W-56-7	0.238	0.151	Permanent
W-57-1	0.603	0.002	Permanent
TOTAL IMPACT		**6.15**	
TOTAL TEMPORARY IMPACT		**1.28**	
TOTAL PERMANENT IMPACT		**4.86**	

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Figure 2.29. Wetland Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

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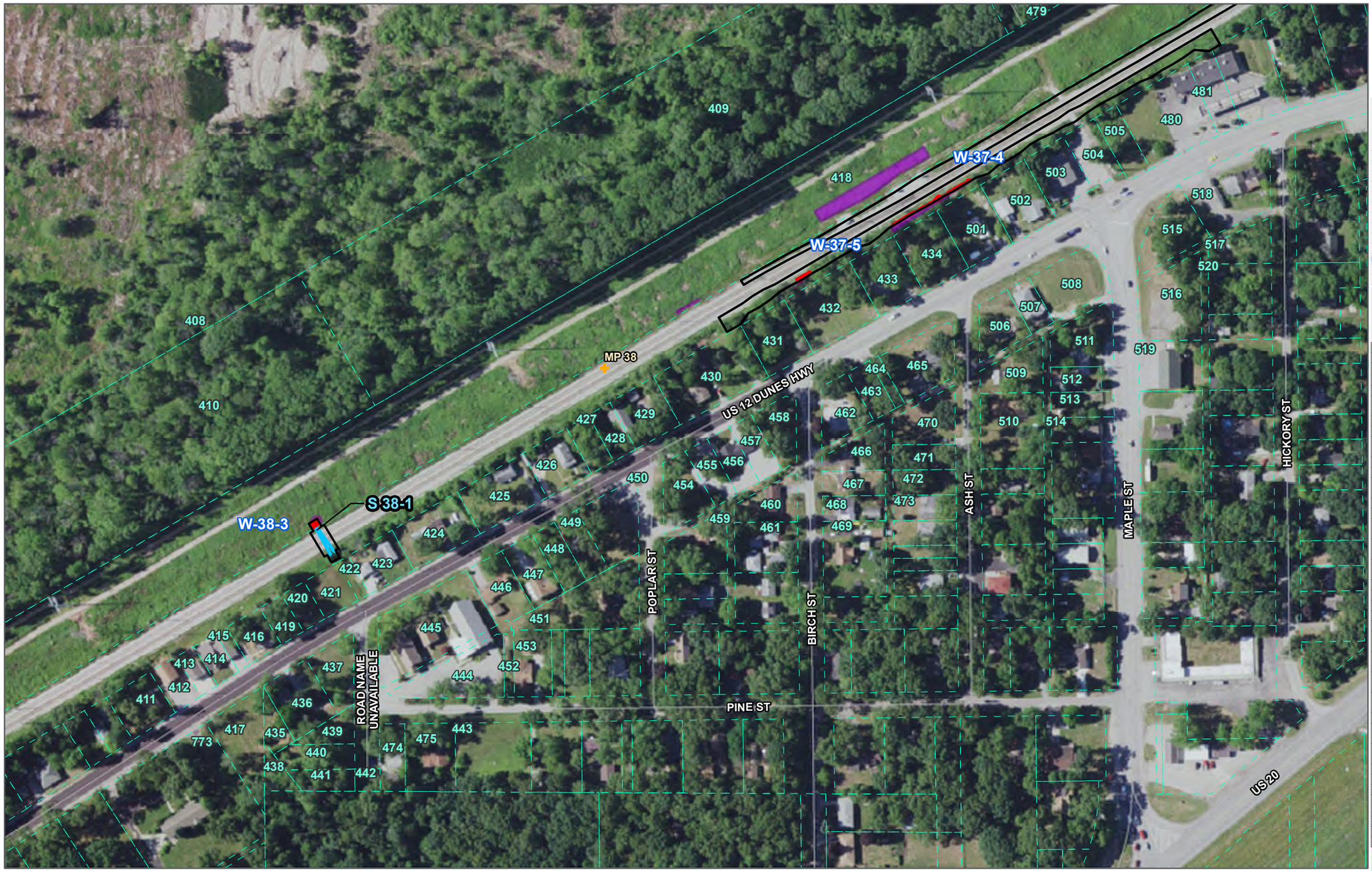

STREAM LABEL	CULVERT NEW ENCAPSULATION IMPACT LENGTH (feet)
Stream 44-3	6
Stream 43-2	1
Stream 43-1	8
Stream 42-2	32
Stream 42-1	4
Stream 41-2	12
Stream 41-1	2
Stream 40-1	2
Stream 39-2	0
Stream 39-1	12
Stream 38-1	0
Stream 36-1	3
TOTAL	**82**

Legend

- Construction Limits
- Parcel Boundary
- Mileposts
- OHWM
- Wetland Impact Permanent
- Delineated Wetland

WETLAND IDENTIFIER	TOTAL ACREAGE	PERMANENT WETLAND IMPACT ACREAGE	TYPE OF IMPACT
W-35-1	0.069	0.014	Permanent
W-36-2	0.356	0.158	Permanent
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W-38-1	3.779	0.144	Permanent
		0.096	Temporary
W-38-3	0.004	0.004	Permanent
W-39-1	0.035	0.013	Permanent
W-39-2	2.174	0.051	Permanent
		0.042	Temporary
W-40-1	2.064	0.071	Permanent
W-40-2	0.648	0.027	Permanent
W-40-3	6.424	0.645	Permanent
		0.236	Temporary
W-41-1	3.997	0.225	Permanent
		0.116	Temporary
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W-44-1	0.021	0.003	Permanent
W-44-2	2.348	0.308	Permanent
		0.103	Temporary
W-44-3	3.056	0.276	Permanent
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W-44-4	1.305	1.209	Permanent
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W-47-1	0.621	0.309	Permanent
		0.026	Temporary
W-55-2	0.109	0.090	Permanent
W-55-3	0.025	0.025	Permanent
W-56-1	0.064	0.013	Permanent
W-56-2	0.875	0.421	Permanent
		0.383	Temporary
W-56-5	2.115	0.127	Permanent
W-56-7	0.238	0.151	Permanent
W-57-1	0.603	0.002	Permanent
TOTAL IMPACT		**6.15**	
TOTAL TEMPORARY IMPACT		**1.28**	
TOTAL PERMANENT IMPACT		**4.86**	

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Figure 2.30. Wetland Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
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1 inch = 200 feet

0 105 210 420 Feet

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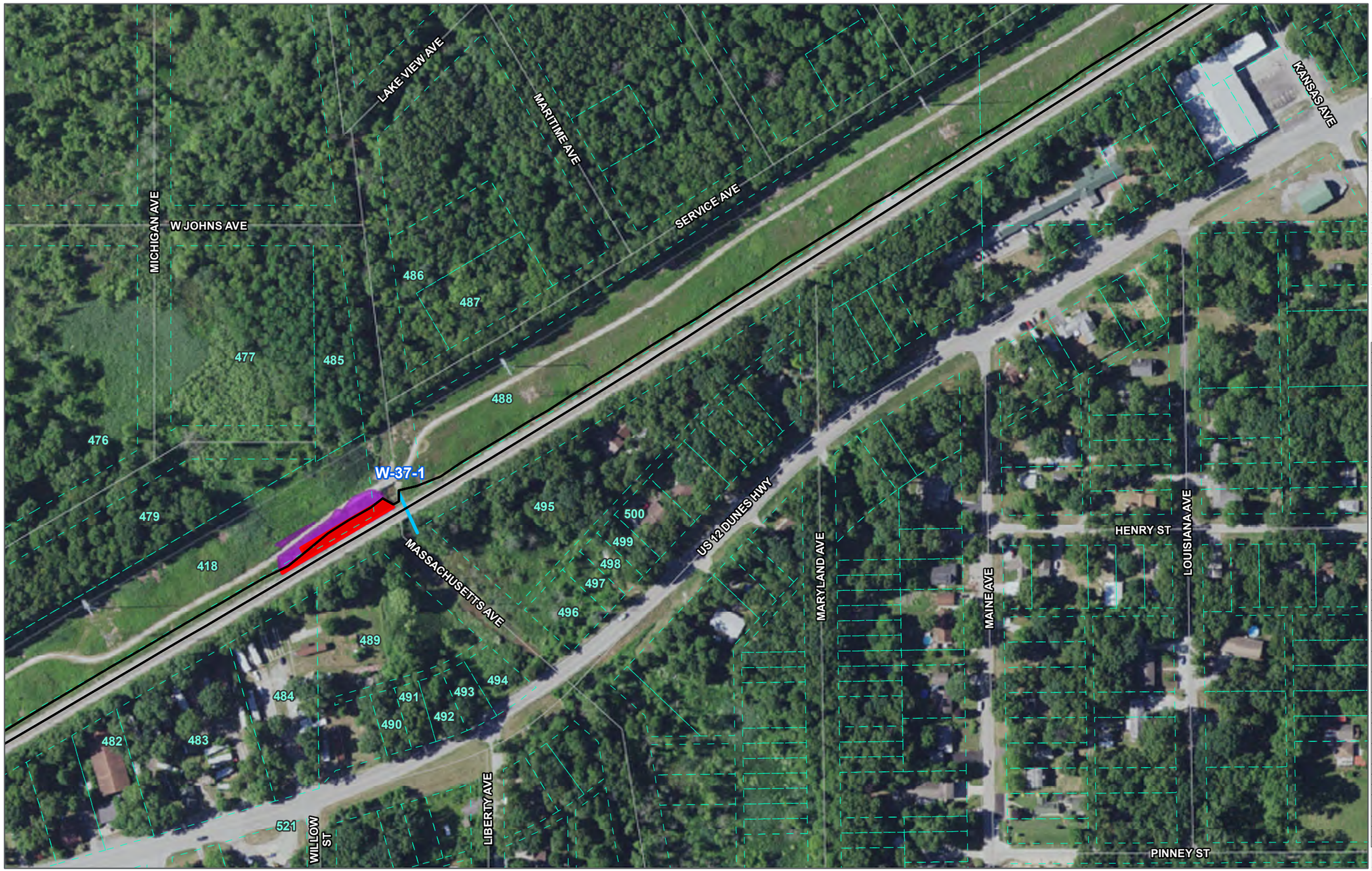

STREAM LABEL	CULVERT NEW ENCAPSULATION IMPACT LENGTH (feet)
Stream 44-3	6
Stream 43-2	1
Stream 43-1	8
Stream 42-2	32
Stream 42-1	4
Stream 41-2	12
Stream 41-1	2
Stream 40-1	2
Stream 39-2	0
Stream 39-1	12
Stream 38-1	0
Stream 36-1	3
TOTAL	**82**

Legend

- Construction Limits
- Parcel Boundary
- Mileposts
- OHWM
- Wetland Impact Permanent
- Delineated Wetland

WETLAND IDENTIFIER	TOTAL ACREAGE	PERMANENT WETLAND IMPACT ACREAGE	TYPE OF IMPACT
W-35-1	0.069	0.014	Permanent
W-36-2	0.356	0.158	Permanent
W-36-3	0.086	0.004	Permanent
		0.004	Temporary
W-36-4	0.121	0.002	Permanent
W-37-1	0.254	0.122	Permanent
		0.021	Temporary
W-37-4	0.026	0.010	Permanent
W-37-5	0.003	0.003	Permanent
W-38-1	3.779	0.144	Permanent
		0.096	Temporary
W-38-3	0.004	0.004	Permanent
W-39-1	0.035	0.013	Permanent
W-39-2	2.174	0.051	Permanent
		0.042	Temporary
W-40-1	2.064	0.071	Permanent
W-40-2	0.648	0.027	Permanent
W-40-3	6.424	0.645	Permanent
		0.236	Temporary
W-41-1	3.997	0.225	Permanent
		0.116	Temporary
W-42-1	0.289	0.113	Permanent
		0.059	Temporary
W-42-5	0.042	0.016	Permanent
W-43-1	0.496	0.001	Permanent
W-43-2	0.252	0.031	Permanent
W-43-3	0.666	0.181	Permanent
W-44-1	0.021	0.003	Permanent
W-44-2	2.348	0.308	Permanent
		0.103	Temporary
W-44-3	3.056	0.276	Permanent
		0.179	Temporary
W-44-4	1.305	1.209	Permanent
		0.001	Temporary
W-44-5	0.367	0.002	Permanent
		0.008	Temporary
W-46-1	0.027	0.027	Permanent
W-46-3	0.076	0.064	Permanent
		0.010	Temporary
W-47-1	0.621	0.309	Permanent
		0.026	Temporary
W-55-2	0.109	0.090	Permanent
W-55-3	0.025	0.025	Permanent
W-56-1	0.064	0.013	Permanent
W-56-2	0.875	0.421	Permanent
		0.383	Temporary
W-56-5	2.115	0.127	Permanent
W-56-7	0.238	0.151	Permanent
W-57-1	0.603	0.002	Permanent
TOTAL IMPACT		**6.15**	
TOTAL TEMPORARY IMPACT		**1.28**	
TOTAL PERMANENT IMPACT		**4.86**	

N W E S

Project No. J177345200

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Figure 2.31. Wetland Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

1 inch = 200 feet

0 105 210 420 Feet

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STREAM LABEL	CULVERT NEW ENCAPSULATION IMPACT LENGTH (feet)
Stream 44-3	6
Stream 43-2	1
Stream 43-1	8
Stream 42-2	32
Stream 42-1	4
Stream 41-2	12
Stream 41-1	2
Stream 40-1	2
Stream 39-2	0
Stream 39-1	12
Stream 38-1	0
Stream 36-1	3
TOTAL	**82**

Legend

- Construction Limits
- Parcel Boundary
- Mileposts
- OHWM
- Wetland Impact Permanent
- Delineated Wetland

WETLAND IDENTIFIER	TOTAL ACREAGE	PERMANENT WETLAND IMPACT ACREAGE	TYPE OF IMPACT
W-35-1	0.069	0.014	Permanent
W-36-2	0.356	0.158	Permanent
W-36-3	0.086	0.004	Permanent
		0.004	Temporary
W-36-4	0.121	0.002	Permanent
W-37-1	0.254	0.122	Permanent
		0.021	Temporary
W-37-4	0.026	0.010	Permanent
W-37-5	0.003	0.003	Permanent
W-38-1	3.779	0.144	Permanent
		0.096	Temporary
W-38-3	0.004	0.004	Permanent
W-39-1	0.035	0.013	Permanent
W-39-2	2.174	0.051	Permanent
		0.042	Temporary
W-40-1	2.064	0.071	Permanent
W-40-2	0.648	0.027	Permanent
W-40-3	6.424	0.645	Permanent
		0.236	Temporary
W-41-1	3.997	0.225	Permanent
		0.116	Temporary
W-42-1	0.289	0.113	Permanent
		0.059	Temporary
W-42-5	0.042	0.016	Permanent
W-43-1	0.496	0.001	Permanent
W-43-2	0.252	0.031	Permanent
W-43-3	0.666	0.181	Permanent
W-44-1	0.021	0.003	Permanent
W-44-2	2.348	0.308	Permanent
		0.103	Temporary
W-44-3	3.056	0.276	Permanent
		0.179	Temporary
W-44-4	1.305	1.209	Permanent
		0.001	Temporary
W-44-5	0.367	0.002	Permanent
		0.008	Temporary
W-46-1	0.027	0.027	Permanent
W-46-3	0.076	0.064	Permanent
		0.010	Temporary
W-47-1	0.621	0.309	Permanent
		0.026	Temporary
W-55-2	0.109	0.090	Permanent
W-55-3	0.025	0.025	Permanent
W-56-1	0.064	0.013	Permanent
W-56-2	0.875	0.421	Permanent
		0.383	Temporary
W-56-5	2.115	0.127	Permanent
W-56-7	0.238	0.151	Permanent
W-57-1	0.603	0.002	Permanent
TOTAL IMPACT		**6.15**	
TOTAL TEMPORARY IMPACT		**1.28**	
TOTAL PERMANENT IMPACT		**4.86**	

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Figure 2.32. Wetland Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

1 inch = 200 feet

0 105 210 420 Feet

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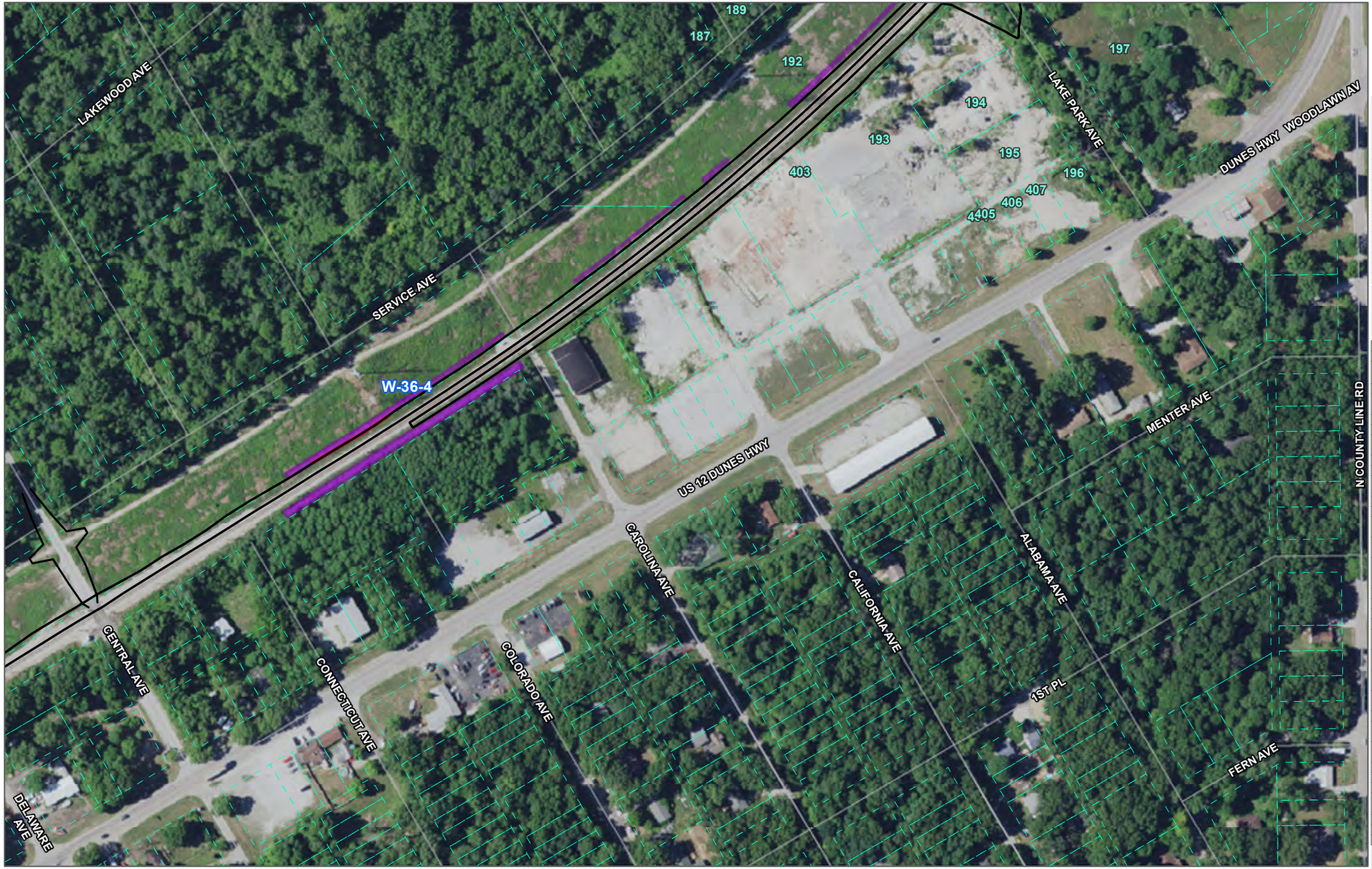

STREAM LABEL	CULVERT NEW ENCAPSULATION IMPACT LENGTH (feet)
Stream 44-3	6
Stream 43-2	1
Stream 43-1	8
Stream 42-2	32
Stream 42-1	4
Stream 41-2	12
Stream 41-1	2
Stream 40-1	2
Stream 39-2	0
Stream 39-1	12
Stream 38-1	0
Stream 36-1	3
TOTAL	**82**

Legend

- Construction Limits
- Parcel Boundary
- Mileposts
- OHWM
- Wetland Impact Permanent
- Delineated Wetland

WETLAND IDENTIFIER	TOTAL ACREAGE	PERMANENT WETLAND IMPACT ACREAGE	TYPE OF IMPACT
W-35-1	0.069	0.014	Permanent
W-36-2	0.356	0.158	Permanent
W-36-3	0.086	0.004	Permanent
		0.004	Temporary
W-36-4	0.121	0.002	Permanent
W-37-1	0.254	0.122	Permanent
		0.021	Temporary
W-37-4	0.026	0.010	Permanent
W-37-5	0.003	0.003	Permanent
W-38-1	3.779	0.144	Permanent
		0.096	Temporary
W-38-3	0.004	0.004	Permanent
W-39-1	0.035	0.013	Permanent
W-39-2	2.174	0.051	Permanent
		0.042	Temporary
W-40-1	2.064	0.071	Permanent
W-40-2	0.648	0.027	Permanent
W-40-3	6.424	0.645	Permanent
		0.236	Temporary
W-41-1	3.997	0.225	Permanent
		0.116	Temporary
W-42-1	0.289	0.113	Permanent
		0.059	Temporary
W-42-5	0.042	0.016	Permanent
W-43-1	0.496	0.001	Permanent
W-43-2	0.252	0.031	Permanent
W-43-3	0.666	0.181	Permanent
W-44-1	0.021	0.003	Permanent
W-44-2	2.348	0.308	Permanent
		0.103	Temporary
W-44-3	3.056	0.276	Permanent
		0.179	Temporary
W-44-4	1.305	1.209	Permanent
		0.001	Temporary
W-44-5	0.367	0.002	Permanent
		0.008	Temporary
W-46-1	0.027	0.027	Permanent
W-46-3	0.076	0.064	Permanent
		0.010	Temporary
W-47-1	0.621	0.309	Permanent
		0.026	Temporary
W-55-2	0.109	0.090	Permanent
W-55-3	0.025	0.025	Permanent
W-56-1	0.064	0.013	Permanent
W-56-2	0.875	0.421	Permanent
		0.383	Temporary
W-56-5	2.115	0.127	Permanent
W-56-7	0.238	0.151	Permanent
W-57-1	0.603	0.002	Permanent
TOTAL IMPACT		**6.15**	
TOTAL TEMPORARY IMPACT		**1.28**	
TOTAL PERMANENT IMPACT		**4.86**	

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Figure 2.33. Wetland Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

1 inch = 200 feet

0 105 210 420 Feet

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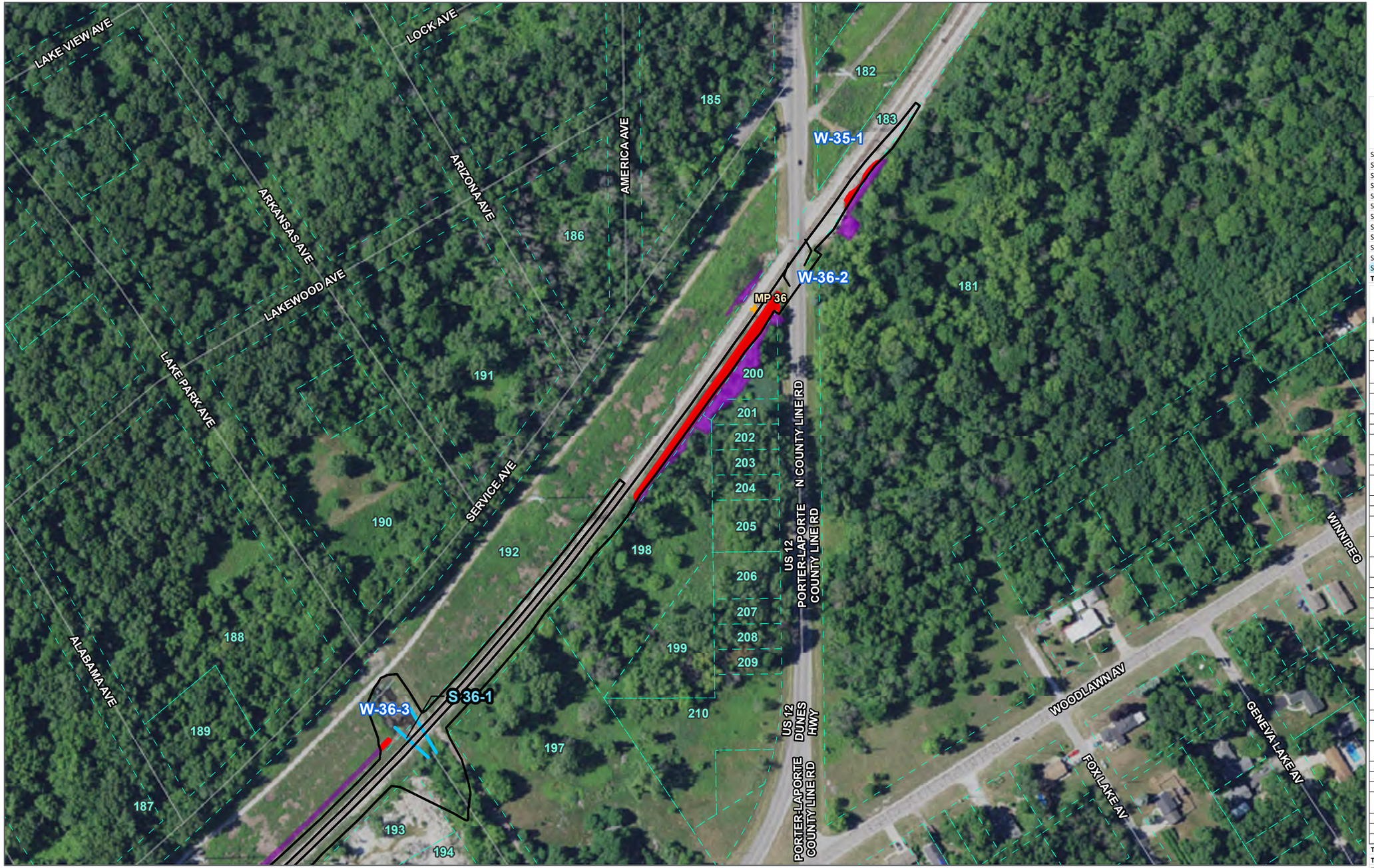

STREAM LABEL	CULVERT NEW ENCAPSULATION IMPACT LENGTH (feet)
Stream 44-3	6
Stream 43-2	1
Stream 43-1	8
Stream 42-2	32
Stream 42-1	4
Stream 41-2	12
Stream 41-1	2
Stream 40-1	2
Stream 39-2	0
Stream 39-1	12
Stream 38-1	0
Stream 36-1	3
TOTAL	**82**

Legend

- Construction Limits
- Parcel Boundary
- Mileposts
- OHWM
- Wetland Impact Permanent
- Delineated Wetland

WETLAND IDENTIFIER	TOTAL ACREAGE	PERMANENT WETLAND IMPACT ACREAGE	TYPE OF IMPACT
W-35-1	0.069	0.014	Permanent
W-36-2	0.356	0.158	Permanent
W-36-3	0.086	0.004	Permanent
		0.004	Temporary
W-36-4	0.121	0.002	Permanent
W-37-1	0.254	0.122	Permanent
		0.021	Temporary
W-37-4	0.026	0.010	Permanent
W-37-5	0.003	0.003	Permanent
W-38-1	3.779	0.144	Permanent
		0.096	Temporary
W-38-3	0.004	0.004	Permanent
W-39-1	0.035	0.013	Permanent
W-39-2	2.174	0.051	Permanent
		0.042	Temporary
W-40-1	2.064	0.071	Permanent
W-40-2	0.648	0.027	Permanent
W-40-3	6.424	0.645	Permanent
		0.236	Temporary
W-41-1	3.997	0.225	Permanent
		0.116	Temporary
W-42-1	0.289	0.113	Permanent
		0.059	Temporary
W-42-5	0.042	0.016	Permanent
W-43-1	0.496	0.001	Permanent
W-43-2	0.252	0.031	Permanent
W-43-3	0.666	0.181	Permanent
W-44-1	0.021	0.003	Permanent
W-44-2	2.348	0.308	Permanent
		0.103	Temporary
W-44-3	3.056	0.276	Permanent
		0.179	Temporary
W-44-4	1.305	1.209	Permanent
		0.001	Temporary
W-44-5	0.367	0.002	Permanent
		0.008	Temporary
W-46-1	0.027	0.027	Permanent
W-46-3	0.076	0.064	Permanent
		0.010	Temporary
W-47-1	0.621	0.309	Permanent
		0.026	Temporary
W-55-2	0.109	0.090	Permanent
W-55-3	0.025	0.025	Permanent
W-56-1	0.064	0.013	Permanent
W-56-2	0.875	0.421	Permanent
		0.383	Temporary
W-56-5	2.115	0.127	Permanent
W-56-7	0.238	0.151	Permanent
W-57-1	0.603	0.002	Permanent
TOTAL IMPACT		**6.15**	
TOTAL TEMPORARY IMPACT		**1.28**	
TOTAL PERMANENT IMPACT		**4.86**	

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Figure 2.34. Wetland Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

1 inch = 200 feet

0 105 210 420 Feet

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STREAM LABEL	CULVERT NEW ENCAPSULATION IMPACT LENGTH (feet)
Stream 44-3	6
Stream 43-2	1
Stream 43-1	8
Stream 42-2	32
Stream 42-1	4
Stream 41-2	12
Stream 41-1	2
Stream 40-1	2
Stream 39-2	0
Stream 39-1	12
Stream 38-1	0
Stream 36-1	3
TOTAL	**82**

Legend

- Construction Limits
- Parcel Boundary
- Mileposts
- OHWM
- Wetland Impact Permanent
- Delineated Wetland

WETLAND IDENTIFIER	TOTAL ACREAGE	PERMANENT WETLAND IMPACT ACREAGE	TYPE OF IMPACT
W-35-1	0.069	0.014	Permanent
W-36-2	0.356	0.158	Permanent
W-36-3	0.086	0.004	Permanent
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W-36-4	0.121	0.002	Permanent
W-37-1	0.254	0.122	Permanent
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W-38-1	3.779	0.144	Permanent
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W-43-3	0.666	0.181	Permanent
W-44-1	0.021	0.003	Permanent
W-44-2	2.348	0.308	Permanent
		0.103	Temporary
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		0.179	Temporary
W-44-4	1.305	1.209	Permanent
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		0.010	Temporary
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		0.026	Temporary
W-55-2	0.109	0.090	Permanent
W-55-3	0.025	0.025	Permanent
W-56-1	0.064	0.013	Permanent
W-56-2	0.875	0.421	Permanent
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Figure 2.35. Wetland Areas

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Stream 43-1	8
Stream 42-2	32
Stream 42-1	4
Stream 41-2	12
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Stream 40-1	2
Stream 39-2	0
Stream 39-1	12
Stream 38-1	0
Stream 36-1	3
TOTAL	**82**

Legend

- Construction Limits
- Parcel Boundary
- Mileposts
- OHWM
- Wetland Impact Permanent
- Delineated Wetland

WETLAND IDENTIFIER	TOTAL ACREAGE	PERMANENT WETLAND IMPACT ACREAGE	TYPE OF IMPACT
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W-37-4	0.026	0.010	Permanent
W-37-5	0.003	0.003	Permanent
W-38-1	3.779	0.144	Permanent
		0.096	Temporary
W-38-3	0.004	0.004	Permanent
W-39-1	0.035	0.013	Permanent
W-39-2	2.174	0.051	Permanent
		0.042	Temporary
W-40-1	2.064	0.071	Permanent
W-40-2	0.648	0.027	Permanent
W-40-3	6.424	0.645	Permanent
		0.236	Temporary
W-41-1	3.997	0.225	Permanent
		0.116	Temporary
W-42-1	0.289	0.113	Permanent
		0.059	Temporary
W-42-5	0.042	0.016	Permanent
W-43-1	0.496	0.001	Permanent
W-43-2	0.252	0.031	Permanent
W-43-3	0.666	0.181	Permanent
W-44-1	0.021	0.003	Permanent
W-44-2	2.348	0.308	Permanent
		0.103	Temporary
W-44-3	3.056	0.276	Permanent
		0.179	Temporary
W-44-4	1.305	1.209	Permanent
		0.001	Temporary
W-44-5	0.367	0.002	Permanent
		0.008	Temporary
W-46-1	0.027	0.027	Permanent
W-46-3	0.076	0.064	Permanent
		0.010	Temporary
W-47-1	0.621	0.309	Permanent
		0.026	Temporary
W-55-2	0.109	0.090	Permanent
W-55-3	0.025	0.025	Permanent
W-56-1	0.064	0.013	Permanent
W-56-2	0.875	0.421	Permanent
		0.383	Temporary
W-56-5	2.115	0.127	Permanent
W-56-7	0.238	0.151	Permanent
W-57-1	0.603	0.002	Permanent
TOTAL IMPACT		**6.15**	
TOTAL TEMPORARY IMPACT		**1.28**	
TOTAL PERMANENT IMPACT		**4.86**	

N W E S

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Figure 2.36. Wetland Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

1 inch = 200 feet

0 105 210 420 Feet

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STREAM LABEL	CULVERT NEW ENCAPSULATION IMPACT LENGTH (feet)
Stream 44-3	6
Stream 43-2	1
Stream 43-1	8
Stream 42-2	32
Stream 42-1	4
Stream 41-2	12
Stream 41-1	2
Stream 40-1	2
Stream 39-2	0
Stream 39-1	12
Stream 38-1	0
Stream 36-1	3
TOTAL	**82**

Legend

- Construction Limits
- Parcel Boundary
- Mileposts
- OHWM
- Wetland Impact Permanent
- Delineated Wetland

WETLAND IDENTIFIER	TOTAL ACREAGE	PERMANENT WETLAND IMPACT ACREAGE	TYPE OF IMPACT
W-35-1	0.069	0.014	Permanent
W-36-2	0.356	0.158	Permanent
W-36-3	0.086	0.004	Permanent
		0.004	Temporary
W-36-4	0.121	0.002	Permanent
W-37-1	0.254	0.122	Permanent
		0.021	Temporary
W-37-4	0.026	0.010	Permanent
W-37-5	0.003	0.003	Permanent
W-38-1	3.779	0.144	Permanent
		0.096	Temporary
W-38-3	0.004	0.004	Permanent
W-39-1	0.035	0.013	Permanent
W-39-2	2.174	0.051	Permanent
		0.042	Temporary
W-40-1	2.064	0.071	Permanent
W-40-2	0.648	0.027	Permanent
W-40-3	6.424	0.645	Permanent
		0.236	Temporary
W-41-1	3.997	0.225	Permanent
		0.116	Temporary
W-42-1	0.289	0.113	Permanent
		0.059	Temporary
W-42-5	0.042	0.016	Permanent
W-43-1	0.496	0.001	Permanent
W-43-2	0.252	0.031	Permanent
W-43-3	0.666	0.181	Permanent
W-44-1	0.021	0.003	Permanent
W-44-2	2.348	0.308	Permanent
		0.103	Temporary
W-44-3	3.056	0.276	Permanent
		0.179	Temporary
W-44-4	1.305	1.209	Permanent
		0.001	Temporary
W-44-5	0.367	0.002	Permanent
		0.008	Temporary
W-46-1	0.027	0.027	Permanent
W-46-3	0.076	0.064	Permanent
		0.010	Temporary
W-47-1	0.621	0.309	Permanent
		0.026	Temporary
W-55-2	0.109	0.090	Permanent
W-55-3	0.025	0.025	Permanent
W-56-1	0.064	0.013	Permanent
W-56-2	0.875	0.421	Permanent
		0.383	Temporary
W-56-5	2.115	0.127	Permanent
W-56-7	0.238	0.151	Permanent
W-57-1	0.603	0.002	Permanent
TOTAL IMPACT		**6.15**	
TOTAL TEMPORARY IMPACT		**1.28**	
TOTAL PERMANENT IMPACT		**4.86**	

N W E S

Project No. J177345200

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Figure 2.37. Wetland Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

1 inch = 200 feet

0 105 210 420 Feet

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STREAM LABEL	CULVERT NEW ENCAPSULATION IMPACT LENGTH (feet)
Stream 44-3	6
Stream 43-2	1
Stream 43-1	8
Stream 42-2	32
Stream 42-1	4
Stream 41-2	12
Stream 41-1	2
Stream 40-1	2
Stream 39-2	0
Stream 39-1	12
Stream 38-1	0
Stream 36-1	3
TOTAL	**82**

Legend

- Construction Limits
- Parcel Boundary
- Mileposts
- OHWM
- Wetland Impact Permanent
- Delineated Wetland

WETLAND IDENTIFIER	TOTAL ACREAGE	PERMANENT WETLAND IMPACT ACREAGE	TYPE OF IMPACT
W-35-1	0.069	0.014	Permanent
W-36-2	0.356	0.158	Permanent
W-36-3	0.086	0.004	Permanent
		0.004	Temporary
W-36-4	0.121	0.002	Permanent
W-37-1	0.254	0.122	Permanent
		0.021	Temporary
W-37-4	0.026	0.010	Permanent
W-37-5	0.003	0.003	Permanent
W-38-1	3.779	0.144	Permanent
		0.096	Temporary
W-38-3	0.004	0.004	Permanent
W-39-1	0.035	0.013	Permanent
W-39-2	2.174	0.051	Permanent
		0.042	Temporary
W-40-1	2.064	0.071	Permanent
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W-40-3	6.424	0.645	Permanent
		0.236	Temporary
W-41-1	3.997	0.225	Permanent
		0.116	Temporary
W-42-1	0.289	0.113	Permanent
		0.059	Temporary
W-42-5	0.042	0.016	Permanent
W-43-1	0.496	0.001	Permanent
W-43-2	0.252	0.031	Permanent
W-43-3	0.666	0.181	Permanent
W-44-1	0.021	0.003	Permanent
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		0.103	Temporary
W-44-3	3.056	0.276	Permanent
		0.179	Temporary
W-44-4	1.305	1.209	Permanent
		0.001	Temporary
W-44-5	0.367	0.002	Permanent
		0.008	Temporary
W-46-1	0.027	0.027	Permanent
W-46-3	0.076	0.064	Permanent
		0.010	Temporary
W-47-1	0.621	0.309	Permanent
		0.026	Temporary
W-55-2	0.109	0.090	Permanent
W-55-3	0.025	0.025	Permanent
W-56-1	0.064	0.013	Permanent
W-56-2	0.875	0.421	Permanent
		0.383	Temporary
W-56-5	2.115	0.127	Permanent
W-56-7	0.238	0.151	Permanent
W-57-1	0.603	0.002	Permanent
TOTAL IMPACT		**6.15**	
TOTAL TEMPORARY IMPACT		**1.28**	
TOTAL PERMANENT IMPACT		**4.86**	

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Project No.
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Figure 2.38. Wetland Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

1 inch = 200 feet

0 105 210 420 Feet

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Saved By: Christine.Dittmar

Basemap: Content may not reflect National Geographic's current map policy. Sources: National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp., National Agriculture Imagery Program (NAIP), Farm Services Agency (FSA), U. S. Department of Agriculture (USDA), UITS, Indiana Spatial Data Portal

ADJOINING PARCELS WITHIN 500 FEET OF PROPOSED IMPACTS				
MAP LABEL	**PARCEL NUMBER**	**SOURCE**	**LATITUDE**	**LONGITUDE**
1	45-08-02-477-001.000-004	Lake County	41.59758311460	-87.30256794540
2	45-08-02-502-002.000-004	Lake County	41.59742361830	-87.30259750220
3	45-08-01-503-001.000-004	Lake County	41.59609602260	-87.29490735590
4	45-08-01-506-006.000-004	Lake County	41.59580872390	-87.28150756080
5	45-08-01-301-001.000-004	Lake County	41.59919511740	-87.29713878080
6	45-08-01-301-002.000-004	Lake County	41.59878950160	-87.29467384700
7	45-08-01-326-002.000-004	Lake County	41.59719266790	-87.29243679040
8	45-08-01-326-003.000-004	Lake County	41.59868814760	-87.28985846710
9	45-08-01-351-001.000-004	Lake County	41.59674982410	-87.29663731370
10	45-08-01-351-002.000-004	Lake County	41.59613810210	-87.29387363280
11	45-08-01-352-001.000-004	Lake County	41.59564121650	-87.29768468500
12	45-08-01-352-002.000-004	Lake County	41.59551018650	-87.29662848890
13	45-08-01-352-003.000-004	Lake County	41.59545901310	-87.29624423860
14	45-08-01-352-004.000-004	Lake County	41.59539238790	-87.29588577660
15	45-08-01-352-005.000-004	Lake County	41.59532676680	-87.29538784520
16	45-08-01-353-001.000-004	Lake County	41.59523887480	-87.29466562660
17	45-08-01-376-001.000-004	Lake County	41.59718356070	-87.29163962930
18	45-08-01-376-002.000-004	Lake County	41.59581656750	-87.29210138610
19	45-08-01-376-003.000-004	Lake County	41.59530469540	-87.29179006390
20	45-08-01-376-004.000-004	Lake County	41.59655148480	-87.28900811020
21	45-08-01-377-001.000-004	Lake County	41.59472405060	-87.29187681200
22	45-08-01-377-001.000-004	Lake County	41.59465970550	-87.28065257410
23	45-08-01-454-026.000-004	Lake County	41.59677420290	-87.28391687660
24	45-08-01-454-027.000-004	Lake County	41.59680456220	-87.28372308110
25	45-08-01-454-028.000-004	Lake County	41.59683776330	-87.28353109020
26	45-08-01-454-029.000-004	Lake County	41.59687134060	-87.28333613480
27	45-08-01-454-030.000-004	Lake County	41.59691013700	-87.28314073820
28	45-08-01-454-031.000-004	Lake County	41.59694651730	-87.28295100980
29	45-08-01-455-007.000-004	Lake County	41.59613883700	-87.28452371850
30	45-08-01-455-008.000-004	Lake County	41.59617088560	-87.28431307210
31	45-08-01-455-009.000-004	Lake County	41.59620402690	-87.28410440560
32	45-08-01-455-010.000-004	Lake County	41.59623658160	-87.28390461640
33	45-08-01-455-016.000-004	Lake County	41.59574362810	-87.28475679450
34	45-08-01-455-017.000-004	Lake County	41.59577026660	-87.28456226730
35	45-08-01-455-018.000-004	Lake County	41.59579833180	-87.28436807630
36	45-08-01-455-019.000-004	Lake County	41.59582773180	-87.28417425690
37	45-08-01-455-020.000-004	Lake County	41.59585899140	-87.28398230480
38	45-08-01-455-021.000-004	Lake County	41.59588875070	-87.28379383970
39	45-08-01-476-020.000-004	Lake County	41.59703927010	-87.28255517080
40	45-08-01-476-021.000-004	Lake County	41.59708499780	-87.28236365200
41	45-08-01-476-022.000-004	Lake County	41.59713106610	-87.28217120200
42	45-08-01-476-023.000-004	Lake County	41.59717698730	-87.28197918020
43	45-08-01-476-024.000-004	Lake County	41.59722277980	-87.28178765490
44	45-08-01-476-025.000-004	Lake County	41.59726045990	-87.28159958210
45	45-08-01-477-001.000-004	Lake County	41.59631119590	-87.28348997140
46	45-08-01-477-002.000-004	Lake County	41.59635088870	-87.28327421770

47	45-08-01-477-003.000-004	Lake County	41.59639557360	-87.28305733350
48	45-08-01-477-004.000-004	Lake County	41.59643949410	-87.28283852880
49	45-08-01-477-005.000-004	Lake County	41.59648834000	-87.28262173890
50	45-08-01-477-006.000-004	Lake County	41.59653635340	-87.28240446700
51	45-08-01-477-007.000-004	Lake County	41.59658771130	-87.28218852940
52	45-08-01-477-008.000-004	Lake County	41.59664001980	-87.28197405490
53	45-08-01-477-009.000-004	Lake County	41.59668913210	-87.28176975480
55	45-08-01-477-011.000-004	Lake County	41.59678122180	-87.28138693710
54	45-08-01-477-010.000-004	Lake County	41.59673518390	-87.28157834250
56	45-08-01-477-012.000-004	Lake County	41.59595639200	-87.28341555200
57	45-08-01-477-013.000-004	Lake County	41.59598857830	-87.28324767160
58	45-08-01-477-014.000-004	Lake County	41.59602600190	-87.28305649580
59	45-08-01-477-015.000-004	Lake County	41.59606478560	-87.28286579840
60	45-08-01-477-016.000-004	Lake County	41.59610008000	-87.28269804800
61	45-08-01-477-017.000-004	Lake County	41.59613650630	-87.28253073020
62	45-08-01-477-018.000-004	Lake County	41.59617904040	-87.28234145950
63	45-08-01-477-019.000-004	Lake County	41.59622285160	-87.28215281710
64	45-08-01-477-020.000-004	Lake County	41.59626898400	-87.28196336690
65	45-08-01-477-021.000-004	Lake County	41.59630977560	-87.28179458120
66	45-08-01-477-022.000-004	Lake County	41.59635056390	-87.28162565390
67	45-08-01-477-023.000-004	Lake County	41.59639683180	-87.28143409510
68	45-08-01-477-024.000-004	Lake County	41.59644308610	-87.28124253500
69	45-08-01-478-007.000-004	Lake County	41.59769639930	-87.28016659380
70	45-08-01-478-008.000-004	Lake County	41.59769799270	-87.27996575980
71	45-08-01-478-009.000-004	Lake County	41.59769959420	-87.27976492630
72	45-08-01-478-013.000-004	Lake County	41.59743650980	-87.27921615040
73	45-08-01-478-014.000-004	Lake County	41.59722866790	-87.27922847430
74	45-08-01-478-016.000-004	Lake County	41.59728457700	-87.28105021660
75	45-08-01-478-017.000-004	Lake County	41.59712186530	-87.28098439790
76	45-08-01-478-018.000-004	Lake County	41.59696566270	-87.28091798500
77	45-08-01-478-019.000-004	Lake County	41.59681069680	-87.28085099510
78	45-08-01-478-020.000-004	Lake County	41.59654435230	-87.28082782560
79	45-08-01-478-021.000-004	Lake County	41.59659511800	-87.28061327110
80	45-08-01-478-022.000-004	Lake County	41.59664573180	-87.28040365610
81	45-08-01-478-023.000-004	Lake County	41.59669816840	-87.28018978910
82	45-08-01-478-024.000-004	Lake County	41.59690544580	-87.28045112140
83	45-08-01-478-025.000-004	Lake County	41.59708506500	-87.28058270820
84	45-08-01-478-026.000-004	Lake County	41.59733657170	-87.28061217870
85	45-08-01-478-027.000-004	Lake County	41.59740233950	-87.28028887470
86	45-08-01-478-028.000-004	Lake County	41.59740695540	-87.27996414460
87	45-08-01-478-029.000-004	Lake County	41.59733407840	-87.27967143310
88	45-08-01-478-030.000-004	Lake County	41.59709714120	-87.27967774030
89	45-08-01-478-031.000-004	Lake County	41.59688724630	-87.27942582090
90	45-08-01-479-001.000-004	Lake County	41.59556081480	-87.28071721220
91	45-08-01-479-003.000-004	Lake County	41.59565214330	-87.27989034120
92	45-08-01-479-004.000-004	Lake County	41.59575259700	-87.27912813110
93	45-08-01-480-001.000-004	Lake County	41.59477611850	-87.28343086420
94	45-08-01-480-005.000-004	Lake County	41.59500750330	-87.28224940220
95	45-08-01-480-006.000-004	Lake County	41.59502352110	-87.28133124220
96	45-08-01-480-008.000-004	Lake County	41.59501520660	-87.28054701880

97	45-08-01-480-009.000-004	Lake County	41.59501034580	-87.27931608740
98	45-08-01-480-010.000-004	Lake County	41.59500777080	-87.27999860640
99	45-08-01-506-001.000-004	Lake County	41.59594117740	-87.29514049540
100	45-08-01-506-002.000-004	Lake County	41.59557481760	-87.29381024550
101	45-08-01-506-003.000-004	Lake County	41.59506315730	-87.28907882820
102	45-08-01-506-004.000-004	Lake County	41.59506160040	-87.28786251970
103	45-08-01-506-005.000-004	Lake County	41.59508294780	-87.28588731530
104	45-08-02-426-001.000-004	Lake County	41.59998055330	-87.30169247990
105	45-08-02-426-002.000-004	Lake County	41.60013805830	-87.30288029930
106	45-08-02-426-003.000-004	Lake County	41.59951646180	-87.30006998530
107	45-08-02-451-001.000-004	Lake County	41.59741780080	-87.30360783160
108	45-08-02-476-001.000-004	Lake County	41.59806411590	-87.30247926770
109	45-08-02-478-001.000-004	Lake County	41.59660128410	-87.29997137260
110	45-08-02-478-002.000-004	Lake County	41.59622085160	-87.30096797560
111	45-08-02-478-003.000-004	Lake County	41.59587320150	-87.29950982800
112	45-08-02-503-002.000-004	Lake County	41.59778913910	-87.30252996320
113	45-08-12-101-003.000-004	Lake County	41.59383861930	-87.29613950190
114	45-08-12-101-018.000-004	Lake County	41.59442705300	-87.29471265880
115	45-08-12-101-019.000-004	Lake County	41.59428329640	-87.29471140880
116	45-08-12-126-001.000-004	Lake County	41.59445059500	-87.29407181910
117	45-08-12-126-003.000-004	Lake County	41.59435454030	-87.29382572930
118	45-08-12-126-004.000-004	Lake County	41.59436880580	-87.29359898920
119	45-08-12-127-001.000-004	Lake County	41.59448475920	-87.29189541850
120	45-08-12-127-002.000-004	Lake County	41.59452171920	-87.29134599630
121	45-08-12-129-001.000-004	Lake County	41.59406327290	-87.29185527670
122	45-08-12-129-002.000-004	Lake County	41.59409317030	-87.29162991240
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125	45-08-12-129-005.000-004	Lake County	41.59417090760	-87.29104396040
126	45-08-12-129-006.000-004	Lake County	41.59420081010	-87.29081859650
127	45-08-12-129-007.000-004	Lake County	41.59424023670	-87.29052138670
128	45-08-12-129-008.000-004	Lake County	41.59428064400	-87.29025117240
129	45-08-12-129-012.000-004	Lake County	41.59372383820	-87.29136786310
130	45-08-12-129-013.000-004	Lake County	41.59374394410	-87.29121631950
131	45-08-12-129-014.000-004	Lake County	41.59376237350	-87.29107739880
132	45-08-12-129-015.000-004	Lake County	41.59377755650	-87.29096295160
133	45-08-12-129-016.000-004	Lake County	41.59379849650	-87.29080510300
134	45-08-12-129-017.000-004	Lake County	41.59383356790	-87.29054069820
135	45-08-12-129-018.000-004	Lake County	41.59387383800	-87.29026379750
136	45-08-12-129-019.000-004	Lake County	41.59436956170	-87.28984495180
137	45-08-12-129-020.000-004	Lake County	41.59424049210	-87.28984489740
138	45-08-12-129-021.000-004	Lake County	41.59413766600	-87.28984469480
139	45-08-12-129-022.000-004	Lake County	41.59406225630	-87.28984457010
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142	45-08-12-129-025.000-004	Lake County	41.59375379810	-87.28984400660
143	45-08-12-130-001.000-004	Lake County	41.59433710840	-87.28902237430
144	45-08-12-130-002.000-004	Lake County	41.59420060810	-87.28902224790
145	45-08-12-130-003.000-004	Lake County	41.59413137380	-87.28902210690
146	45-08-12-130-004.000-004	Lake County	41.59399434900	-87.28902175760

147	45-08-12-130-005.000-004	Lake County	41.59385722450	-87.28902196950
148	45-08-12-130-006.000-004	Lake County	41.59375430500	-87.28902142890
149	45-08-12-130-007.000-004	Lake County	41.59406182810	-87.28839614440
150	45-08-12-201-022.000-004	Lake County	41.59431931550	-87.28415539950
151	45-08-12-201-023.000-004	Lake County	41.59431831540	-87.28400932510
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153	45-08-12-201-025.000-004	Lake County	41.59431628240	-87.28371712120
154	45-08-12-201-026.000-004	Lake County	41.59433336050	-87.28356856040
155	45-08-12-226-001.000-004	Lake County	41.59433880180	-87.28342604120
156	45-08-12-226-002.000-004	Lake County	41.59431329290	-87.28327875900
157	45-08-12-226-003.000-004	Lake County	41.59431227940	-87.28313263790
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161	45-08-12-226-007.000-004	Lake County	41.59430825030	-87.28254820310
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165	45-08-12-226-011.000-004	Lake County	41.59430424080	-87.28196377680
166	45-08-12-226-012.000-004	Lake County	41.59430323520	-87.28181766550
167	45-08-12-226-013.000-004	Lake County	41.59430223170	-87.28167155460
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172	45-08-12-226-018.000-004	Lake County	41.59429713130	-87.28092188720
173	45-08-12-226-019.000-004	Lake County	41.59429611300	-87.28077494440
174	45-09-06-302-035.000-004	Lake County	41.59735510830	-87.27844751990
175	45-09-06-351-001.000-004	Lake County	41.59696620430	-87.27823417530
176	45-09-06-352-001.000-004	Lake County	41.59607814350	-87.27836079530
177	45-09-06-352-004.000-004	Lake County	41.59576547520	-87.27830591630
178	45-09-06-353-001.000-004	Lake County	41.59503016580	-87.27831289540
179	45-09-06-506-001.000-004	Lake County	41.59742957700	-87.27460811320
180	45-09-06-506-002.000-004	Lake County	41.59720834790	-87.27528781540
181	46-01-30-300-001.000-022	LaPorte County	41.70636813080	-86.92738000190
182	46-01-31-177-001.000-022	LaPorte County	41.70290261770	-86.92651791180
183	46-01-31-504-001.000-022	LaPorte County	41.70082187530	-86.93082805510
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873	640417278006000021	Porter County	41.66161598260	-87.01230392520
874	640417278007000021	Porter County	41.66169711200	-87.01214646740
875	640417278008000021	Porter County	41.66176517180	-87.01201003660
876	640417278009000021	Porter County	41.66096223430	-87.01301320570
877	640417278010000021	Porter County	41.66100648830	-87.01289962580
878	640417278011000021	Porter County	41.66104953900	-87.01278913350
879	640417278012000021	Porter County	41.66109259090	-87.01267864090
880	640417278013000021	Porter County	41.66113564070	-87.01256814800
881	640417278014000021	Porter County	41.66117869190	-87.01245765510
882	640417278015000021	Porter County	41.66122174220	-87.01234716160
883	640417278016000021	Porter County	41.66126479310	-87.01223666810
884	640417278017000021	Porter County	41.66130784300	-87.01212617460
885	640417278018000021	Porter County	41.66135299680	-87.01201300660
886	640417279001000021	Porter County	41.66023087680	-87.01411423530
887	640417279002000021	Porter County	41.66011365090	-87.01414686330
888	640417279017000021	Porter County	41.66039932660	-87.01372092880
889	640417279018000021	Porter County	41.66030726830	-87.01378268430
890	640417279019000021	Porter County	41.66021040160	-87.01378204890
891	640417280001000021	Porter County	41.66070550310	-87.01286435200
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893	640417280031000021	Porter County	41.66012294870	-87.01307461250
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896	640417281023000021	Porter County	41.66099197230	-87.01210200170
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898	640417282001000021	Porter County	41.66146725420	-87.01063777930

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904	640417301006000021	Porter County	41.65694085130	-87.02591240490
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907	640417302001000021	Porter County	41.65542457360	-87.02740596400
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912	640417326003000021	Porter County	41.65821778570	-87.02278793880
913	640417326004000021	Porter County	41.65838624430	-87.02231898780
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918	640418100001000021	Porter County	41.65956866570	-87.03940391720
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920	640418300002000021	Porter County	41.65166002300	-87.04098374440
921	640418300003000021	Porter County	41.65180897540	-87.04018324620
922	640418300004000021	Porter County	41.65190833250	-87.03970696870
923	640418300005000021	Porter County	41.65212930760	-87.03897928200
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936	640418451007000021	Porter County	41.65326349000	-87.03608708620
937	640418451008000021	Porter County	41.65332519730	-87.03592420820
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943	640418451014000021	Porter County	41.65375713490	-87.03478405150
944	640418451015000021	Porter County	41.65381884020	-87.03462117120
945	640418451016000021	Porter County	41.65388054380	-87.03445829020
946	640418451017000021	Porter County	41.65394224840	-87.03429540960
947	640418451018000021	Porter County	41.65400395130	-87.03413252800
948	640418451019000021	Porter County	41.65413565560	-87.03388426950

949	640418452001000021	Porter County	41.65205036120	-87.03619382530
950	640418452002000021	Porter County	41.65245745680	-87.03532044670
951	640418452003000021	Porter County	41.65237740920	-87.03442181230
952	640418476001000021	Porter County	41.65454790290	-87.03252658420
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954	640419101001000021	Porter County	41.65095176060	-87.04685813430
955	640419101882000021	Porter County	41.65051994550	-87.04614200510
956	640419102001000021	Porter County	41.64923331850	-87.04796742550
957	640419102002000021	Porter County	41.64941086130	-87.04753259030
958	640419103001000021	Porter County	41.64882335140	-87.04800515540
959	640419103002000021	Porter County	41.64910720600	-87.04711703730
960	640419103003000021	Porter County	41.64920442340	-87.04701504080
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963	640419103006000021	Porter County	41.64884557100	-87.04697178830
964	640419103007000021	Porter County	41.64872272540	-87.04698250940
965	640419103008000021	Porter County	41.64846708260	-87.04691372020
966	640419103009000021	Porter County	41.64835556380	-87.04664625870
967	640419103010000021	Porter County	41.64835246430	-87.04637250870
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969	640419103014000021	Porter County	41.64798229050	-87.04695514810
970	640419103021000021	Porter County	41.64758930240	-87.04532850660
971	640419103021000021	Porter County	41.64950163270	-87.04655837800
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973	640419104001000021	Porter County	41.64973046860	-87.04680647070
974	640419104002000021	Porter County	41.64932901560	-87.04604300010
975	640419104003000021	Porter County	41.64940442430	-87.04641836040
976	640419104004000021	Porter County	41.64936814880	-87.04657889610
977	640419104005000021	Porter County	41.64934448650	-87.04669709520
978	640419104006000021	Porter County	41.64931658040	-87.04678058800
979	640419104007000021	Porter County	41.64920158510	-87.04649202510
980	640419104008000021	Porter County	41.64909529500	-87.04646996850
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982	640419104010000021	Porter County	41.64891627700	-87.04638539590
983	640419104011000021	Porter County	41.64887583860	-87.04626226320
984	640419104012000021	Porter County	41.64903951380	-87.04603770860
985	640419104013000021	Porter County	41.64903984700	-87.04593576080
986	640419104014000021	Porter County	41.64903630990	-87.04582960140
987	640419104015000021	Porter County	41.64880691550	-87.04616072320
988	640419104016000021	Porter County	41.64880722460	-87.04603086960
989	640419104017000021	Porter County	41.64881117160	-87.04589544240
990	640419104018000021	Porter County	41.64879342440	-87.04577723350
991	640419105001000021	Porter County	41.64983176100	-87.04538110490
992	640419105002000021	Porter County	41.64926643120	-87.04540675030
993	640419105003000021	Porter County	41.64966853040	-87.04481869070
994	640419105004000021	Porter County	41.64976894120	-87.04425647100
995	640419105005000021	Porter County	41.64995258330	-87.04361851090
996	640419105007000021	Porter County	41.64897814190	-87.04575154100
997	640419105008000021	Porter County	41.64883806220	-87.04571033880
998	640419105009000021	Porter County	41.64883449110	-87.04563712160

999	640419126001000021	Porter County	41.65076479170	-87.04298778160
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1001	640419126003000021	Porter County	41.65015170820	-87.04301197290
1002	640419126004000021	Porter County	41.64989099090	-87.04301114050
1003	640419129001000021	Porter County	41.65083903880	-87.04257079300
1004	640419129002000021	Porter County	41.65089252020	-87.04219525450
1005	640419129003000021	Porter County	41.65106050280	-87.04185337840
1006	640419129004000021	Porter County	41.65106945510	-87.04164487530
1007	640419129006000021	Porter County	41.65068315220	-87.04164401500
1008	640419129007000021	Porter County	41.65041912800	-87.04243770040
1009	640419129008000021	Porter County	41.65015242810	-87.04269729540
1010	640419129009000021	Porter County	41.65015300150	-87.04245031000
1011	640419129010000021	Porter County	41.64989787140	-87.04247111150
1012	640419130001000021	Porter County	41.65035225860	-87.04187584020
1013	640419132014000021	Porter County	41.65055032310	-87.03978148730

Double Track NWI Project

F – Adjacent Property Landowner List

Land Owners within 500 feet of a Proposed Stream or Wetland Impact

OWNER	MAILING ADDRESS	CITY	STATE	ZIP
Unknown Trust	3526-28 E 9th AVE	Gary	IN	46403
4500 Ryan LLC	PO Box 2685	Gary	IN	46403
699 Allen LLC	10409 Adler CV	St. John	IN	46373
Abelson Benjamin G	PO Box 311	Beverly Shores	IN	46301
Addison, Kimberly Cherese	689 Cass ST	Gary	IN	46403
Adey George E & Susan D/H&W	4082 W Dunes Hwy	Michigan City	IN	46360
Aetna Resurrection Comm Dev Corp	1016 Aetna ST	Gary	IN	46403-3500
Agee, Cleveland	4127 E 5th PL	Gary	IN	46403-2702
Aguilar, Thomas M. & Agapita	4499 Ryan Ct	Gary	IN	46403-2777
AL-DA RE III, LLC	13300 Old Blanco Rd #190	San Antonio	TX	78216
Andys Truck & Equipment Co	38355 Shagbark LN	Wadsworth	IL	60083-2798
Arcelormittal Burns Harbor Llc Tax Department 8-229	3210 Watling St	East Chicago	IN	46312
B 12 LLC	2924 Glacier Trl	Porter	IN	46304
B and C Featherbone LLC	109 Generation Dr	Three Oaks	MI	49128
Baciauskas Andrius & Danute Baciauskas/H&W	140 Oxford	Beverly Shores	IN	46301
Bagnall George C & Ann H/H&W	PO Box 526	Beverly Shores	IN	46301
Bahay Development Corp.	44 Cornflower LN	East Northport	NY	11731
Ballard, Denise	690 Cass Ct	Gary	IN	46403-2747
Ballou, Melanie	604 Vermont ST	Gary	IN	46402
Balzekas Stanley Jr Trust	6500 S Pulaski Rd	Chicago	IL	60629
Bandy, Ronald & Patricia A	4516 Miller AVE	Gary	IN	46403-2756
Bell, Dorainia	13842 Outlet Dr #224A	Silver Spring	MD	20904
Berke William J Jr & Lisa S	401 W Morgan Ave	Chesterton	IN	46304
Beverly Shores Town Of Building Corporation	PO Box 38	Beverly Shores	IN	46301
Blaskiewicz James A & Rosario M /H&W	PO Box 866	Beverly Shores	IN	46301
Blumenfeld Valerie	720 W US Highway 20	Michigan City	IN	46360
Brandstetter Susan C GST Non-Exempt Trust 1/2 & Brandstetter	2944 Glacier Trl	Porter	IN	46304
Brandy Charlotte	3803 A Murvihill Rd	Valparaiso	IN	46383
Bretl Kenneth & Candace /Hw	PO Box 309	Beverly Shores	IN	46301
Bright Nicholas J	1013 Scott Ct	Michigan City	IN	46360
Brown Inc	720 W US Highway 20	Michigan City	IN	46360
Brown Rosanne E	PO Box 53	Beverly Shores	IN	46301

Brown Rosanne E Revocable Trust	4390 W Dunes Hwy	Michigan City	IN	46360
Bryant, A Tyrone & Felicia A	4300 E 7th AVE	Gary	IN	46403-2733
Bulk Transport Corp	720 W Us Highway 20	Michigan City	IN	46360
Burrell, Debra J	4628 E 7th AVE	Gary	IN	46403
Bush, Delmar	1023 E 168th PL	South Holland	IL	60473
Cain Group Corporation	7820 Indiana Boundary	Gary	IN	46403
Calvin, Aaron B III	4305 Miller AVE	Gary	IN	46403
Campbell, Tonci M	4424 E 7th AVE	Gary	IN	46403
Carter, Carolyn Ann	57198 Phaeton Pl	Elkhart	IN	46516
Casko Daniel Michael	357 Us Highway 12	Beverly Shores	IN	46301
Chaddock James & Georgion Andrea/H&W	PO Box 674	Beverly Shores	IN	46301
Chambers Strength & Stability Corp	30991 Riverbend Cir #7	Osceola	IN	46561
Chambers, Latrell D	1206 Walker ST	Michigan City	IN	46360
Changnon Eugene A	14601 Oak Park Ave	Oak Forest	IL	60452
Chgo., So. Bend & So. Shore Ry.co.	GENERAL Offices N Carroll AVE	Michigan City	IN	46360
Chicago South Shore & South Bend RR Co Attn:President	505 N Carroll Ave	Michigan City	IN	46360
Christ Baptist Church Inc	4700 E 7th AVE	Gary	IN	46401
Church Pines Bible Inc	4274 W Dunes Hwy	Michigan City	IN	46360
Church Bishop Of The Diocese Of Gary %St Ann'S	PO Box 727	Beverly Shores	IN	46301
Cincoski Paul A	1521 Birch St	Michigan City	IN	46360
City of Gary Redevelopment Commission	839 Broadway Suite S200	Gary	IN	46402
City of Gary Redevelopment Commission	400 Broadway Ste 200	Gary	IN	46402
City of Gary Redevelopment Commission	504 Broadway STE 200	Gary	IN	46402
Clark, Tyrone	4635 Melton RD	Gary	IN	46403
Commissioners Porter County	155 Indiana Ave Rm 205	Valparaiso	IN	46383
Crockrom, Doris L	4525 Miller AVE	Gary	IN	46403-2757
Cunningham David A & Juliea/H&W	1560 Birch St	Michigan City	IN	46360
Daniel, Freddia	694 Cass CT	Gary	IN	46403
Darling Danny & Linda S/H&W	4327 W Dunes Hwy	Michigan City	IN	46360
Day Investments, LLC	38355 Shagbark LN	Wadsworth	IL	60083
Day Robert A Jr & Susan M/H&W	416 E US Highway 12	Chesterton	IN	46304
Demchak George M	1513 Hickory St	Michigan City	IN	46360
Devoted 2 Healing Inc	PO Box 1633	Valparaiso	IN	46384
Dhoot Sunil M	2608 Pennington Pl	Valparaiso	IN	46383
Dierdorf Norman E	4190 W Dunes Hwy	Michigan City	IN	46360

Dirty's Jazz and Blue House LLC	855 Taft ST	Gary	IN	46404
Dobre, Teofil & Hanne Brenzinger	739 W Belmont Ave #502	Chicago	IL	60657
Dunn David	1068 N 550 E	Westville	IN	46391
Dunomes, Lucy	4440 E 7th AVE	Gary	IN	46403
Egelske Bradley S	302 Cedar Lake Ave	Michigan City	IN	46360
EJ&E West Company	2422 Gaylord St	Joliet	IL	60435
Eliopoulos, Mary N. Revocable Living Tr dated 4-7-99 (Mary N Eli	8801 Lake Shore DR	Gary	IN	46403
Eliopoulos, Nick J R / L	8801 Lake Shore DR	Gary	IN	46403-1510
Elkins Richard E	2011 Elston St	Michigan City	IN	46360
ESA Resources LLC	709 2 Plaza Dr Ste 262	Chesterton	IN	46304
Evans, Clotisha	4308 E 7th AVE	Gary	IN	46403-2733
Fairhaven Church Incorporated	86 E Oak Hill Rd	Chesterton	IN	46304
Fiedler Thomas M & Westergren Suzanne M/JT	4050 W Dunes Hwy	Michigan City	IN	46360
Findling John David	25598 Sunrise Ln	Golden	CO	80401
Firme Kevin T & Firme Patrick A	PO Box 557	Beverly Shores	IN	46301
Firme Kevin T & Firme Patrick A/JT	PO Box 557	Beverly Shores	IN	46301
Firme Leo G & Fox Mary G/H&W	PO Box 557	Beverly Shores	IN	46301
First St Bank Of Porter	230 Lincoln St	Porter	IN	46304
Foreit Real Estate Holdings LLC	1843 Alta Vista Ave	Munster	IN	46321
Fox, Harold Michael	4510 E 10th AVE	CEDAR LAKE	IN	46303
GAB Trust	PO Box 526	Beverly Shores	IN	46301
Gardner Dennis	1400 W US Highway 20	Chesterton	IN	46304
Garmon, Christ L	4500 E 7th AVE	Gary	IN	46403-2735
Geiss Kira & Krutzikowsky Greg & Krutzikowsky Doug	2935 Market St	Chesterton	IN	46304
Georgion Andrea	4938 W Dunes Hwy	Beverly Shores	IN	46301
Gilbert, Jerry	4316 E 10th AVE	Gary	IN	46403-3028
Gilbert, William	1039 Live Oak AVE	Santa Cruz	CA	95062
Glorified Temple Ministries	3660 Madison ST	Gary	IN	46408
Glorified Temple of Church of God In Christ Inc	900 Arizona ST	Gary	IN	46403
GO4KAT LLC	600 E 84th Ave	Merrillville	IN	46410
Goodlow, Johnny D & Phyllis D	4524 E 7th AVE	Gary	IN	46403-2735
Gorbo Edmund Henry	1545 Carolina Ave	Michigan City	IN	46360
Green Linda	7 Covington Dr	Valparaiso	IN	46385
Greyt Estates LLC	4344 Miller AVE	Gary	IN	46403
Guenther Marvin E & Patricia A/H&W	3737 W Dunes Hwy	Michigan City	IN	46360

Hale Larry J & Hale Janet L & Oman Christine Lee/JT	3417 N 725 W	La Porte	IN	46350
Hall Stephanie A & Charlene F Hall/Jt	4261 W Dunes Hwy	Michigan City	IN	46360
Hall, Carolyn M	695 Allen ST	Gary	IN	46403
Hamilton Agnes I	4238 W Dunes Hwy	Michigan City	IN	46360
Harrison, Oradell	4416 E 7th AVE	Gary	IN	46403-2734
Hennessy, Douglas F	5932 Forest AVE	Gary	IN	46403
Henry, Alvin Lee & Eloris A	4513 Miller AVE	Gary	IN	46403-2757
Hewson Richard K Jr & Patricia M/H&W	315 W Lake Front Dr	Beverly Shores	IN	46301
Highberger Anne L	4237 W Dunes Hwy	Michigan City	IN	46360
Hines, Robert L & Linda	4402 E 10th AVE	Gary	IN	46403
Holmes, Homer N Sr.	4541 E 13th Pl	Gary	IN	46403
Hope, Harmon	PO Box 641127	Gary	IN	46401
Hunter, Carolyn Jean & Jerry Hunter, Sr.	4443 Miller AVE	Gary	IN	46403-1526
I & A, INC	1719 W 93rd AVE	Crown Point	IN	46307
IBAT Rentals IN LLC	2045 W Grand Ave Ste B , PMB#54905	Chicago	IL	60612
Indiana Land Tr Co Trs of Tr dtd 6-2-99 knonw as Tr #6640	9800 Connecticut Dr Ste B2-900	Crown Point	IN	46307
Indiana Land Trust #5619	9800 Connecticut St Ste B2-900	Crown Point	IN	46307
Indiana Land Trust #6139	9800 Connecticut St Ste B2-900	Crown Point	IN	46307
Indiana Land Trust Company Trs under tr agree dtd 04/13/15 Tr	9800 Connecticut Drive Suite B2-900	Crown Point	IN	46307
Indiana Propertys	P O Box 2052	Northbrook	IL	60065
Indiana, State of Department of Natural Resources	402 W Washington St Rm W271	Indianapolis	IN	46204
It's Garys Time Inc	613 S Lake ST	Gary	IN	46407
Jackson, Freddie M & Annie J h&w	4533 Miller AVE	Gary	IN	46403-2757
Jannsen John W & Beth M/H&W	PO Box 757	Beverly Shores	IN	46301
Jenkins, Robert	664 State ST	Gary	IN	46403
Jenkins, Robert O & Bonita H & W	664 State ST	Gary	IN	46403
Jimenez Raul M Jr & Laura L/H&W	PO Box 442	Beverly Shores	IN	46301
Jimenez, Lorenzo	4320 E 10th AVE	Gary	IN	46403
Johnson Sharon K	4286 Pine St	Michigan City	IN	46360
Jones Jr, Chester L	699 State ST	Gary	IN	46403
JONES, PERCY SR	4516 E 7TH AVE	Gary	IN	46403
Jones, Sharon A	4526 Miller AVE	Gary	IN	46403
Kalebich Frank N Jr & Kalebich Nancy A/JT	5305 W 136th Ct	Crestwood	IL	60445
Kasbaum Sheryl Lin & Kevin/W&H	10426 Brookridge Creek Dr	Frankfort	IL	60423
Katic Peter	128 Green St	Michigan City	IN	46360

Khan, Hammad H	8039 Hemlock AVE	Gary	IN	46403
Killian Ari	738 Woodmere Ln	Glenview	IL	60025
Kirby, Doreen	693 Allen ST	Gary	IN	46403
Kirklen, Steven M & Althia L h&w	3724 E 10th AVE	Gary	IN	46403
Kleemann Joseph E	PO Box 367	Beverly Shores	IN	46301
Knight, Angel	2226 Georgia ST	Gary	IN	46403
L I C Construction	P O Box 445	Kokomo	IN	46903
LA Ron Homes LLC	11301 Bell PL	Crown Point	IN	46307
Lake County Trst Co Trst #640	2205 169th St	Hammond	IN	46323
Lake County Trust Co Trustee Tr#3602	9800 Connecticut Dr Ste B2-900	Crown Point	IN	46307
Lakeside Land Trust	PO Box 308	Schererville	IN	46375
Lamar Whiteco Outdoorcorporation Gl#25-1201-7572	1770 W 41st Ave	Gary	IN	46408
Latour Charles R Sr & Kathleen	2626 Old Villa Ct	Powder Springs	GA	30127
Lee, Kathryn	P.O. Box 1624	Mount Laurel	NJ	08054
Livas, Pete & Nancy T/E	5907 Warnke RD	Michigan City	IN	46360
Love, Pearl Darlene	540 N Tippecanoe PL	Gary	IN	46403-2735
Lowe William J & Janice H&W	1615 Poplar St, The Pines	Michigan City	IN	46360
Lowe, Eddie J	4400 E 10th AVE	Gary	IN	46403
Luby Joseph K	2254 Sherman Ave Apt 1W, Attn: Elizabeth	Evanston	IL	60201
Lyles, Clarence A Jr	4448 E 7th AVE	Gary	IN	46403-2734
Mabone Jr, Argentras & Coranita H & W	4413 Miller AVE	Gary	IN	46403
MacDonald Ann Marie	PO Box 693, 421 E Golfwood Dr	Beverly Shores	IN	46301
MacKin John & Pozzi Richard J/Jt	1125 Peterson Ave Unit E	Park Ridge	IL	60068
MacKin John P &Patricia A	1125 Peterson Ave Unit E	Park Ridge	IL	60068
Man Cave Niteclub LLC (The)	1455 Shermer Rd #405C	Northbrook	IL	60062
Mandich, Bernice L Tr Et Al	2701 Regency BLVD Apt# 501	Clearwater	FL	33759
Manske Edward L III	4173 W Dunes Hwy	Michigan City	IN	46360
MARIANI, LUCY	3701 E 9TH AVE	Gary	IN	46403
Marshal & Saxson Construction Inc	25 Shore Dr # 915	Ogden Dunes	IN	46368
Marvel Douglas	1520 Birch St	Michigan City	IN	46360
Mead Charles & Helenv % Eileen Drutis	202 Dove Park	Versailles	KY	40383
Meera Realty LLC	95014 Indianapolis Blvd Ste C101	Highland	IN	46322
Midwest Rentals LLC	6111 Harrison St Ste 121	Merrillville	IN	46410
Mitchell Thomas B	744 Pintail Ln	Hobart	IN	46342
Mitchell Thomas B & Greavu Robert	744 Pintail Ln	Hobart	IN	46342

Molinaro John & Helen/H&W & Etal/Jt	1532 Ash St	Michigan City	IN	46360
Mosher Dennis A & Carmen/H&W The Pines	305 Tremont St	Michigan City	IN	46360
Muniz, Cynthia & Muniz, Adrian (H&W)	4505 Miller AVE	Gary	IN	46403
N & N Real Estate Inc	10065 76th AVE	Bridgeview	IL	60455
Nath Heather	32 East Rd	Chesterton	IN	46304
Newman David William &Terri L/H&W	3873 W Dunes Hwy	Michigan City	IN	46360
Newman Donna & Terri/Tc	3873 W Us Highway 12	Michigan City	IN	46360
Newman Walter & Davidw/Tc	3873 W Dunes	Michigan City	IN	46360
Newman Walter R Sr & David W Sr/Jt	3873 W Dunes Hwy	Michigan City	IN	46360
Newman Walter R Sr & Donna Lee	3873 W Dunes Hwy	Michigan City	IN	46360
NOKE LLC	733 Morgan ST	Gary	IN	46403
Norfolk & Western Railway	8 N Jefferson ST	Roanoke	VA	00000
North Star Trust Company Tr #6640	PO Box 1938	Gary	IN	46409
Northern Ind Pub Service Corp	Tax Dept PO Box 117, 290 Nationwide Blvd	Columbus	OH	43216-0117
Northern Indiana Commuter Transportation District	33 E US Highway 12	Chesterton	IN	46304
Northern Indiana Public Service Company	Tax Dept PO Box 117, 290 Nationwide Blvd	Columbus	OH	43216-0117
Northern Indiana Public Service Co	801 E 86th Ave	Merrillville	IN	46410
Olsick William & Helen	1180 State St	Lemont	IL	60439
Olson Group Network	PO Box 10665	Merrillville	IN	46410
Outlaw, Thomas L	667 State ST	Gary	IN	46403
Parrish, Ruth	3628 E 9th AVE	Gary	IN	46403
Parrish, William L Jr	1115 Utah ST	Gary	IN	46403
Pearce, Alton W. Jr. & Phyllis L.	688 Cass Ct	Gary	IN	46403-2744
Peckat Joey L Life Estate Peckat Joey L Revocable Living Trust	1518 Birch St	Michigan City	IN	46360
Perry Daniel & Perry Jeanne	4053 W Dunes Hwy	Michigan City	IN	46360
Perry, Julie A	6871 Prairie Run AVE	Portage	IN	46368
Peterson Martha E	1520 Poplar St	Michigan City	IN	46360
Piening Childs Frances Trust	PO Box 416, 645 Broadway	Beverly Shores	IN	46301
Pines Town Of % Clerk Treasurer	3737 W Dunes Hwy	Michigan City	IN	46360
Podgorski Aaron & Rebekah/H&W	4129 W Dunes Hwy	Michigan City	IN	46360
Powers, Elaine P	1970 Hendricks	Gary	IN	46404
Procario Nancy A	PO Box 824	Chesterton	IN	46304
Pulaski Properties Gary LLC	15941 S Harlem Ave PMB#108	Tinley Park	IL	60477
Ream Thomas H & Ruthann	4223 Pine St	Michigan City	IN	46360

Reda Fund LLC	15954 Jackson CreekPkwySte B PMB 382	Monument	CO	80132
Redmon, Wallace A & Marilyn A	4324 E 7th AVE	Gary	IN	46403-2733
Restore Gary LLC	725 Rush ST	Gary	IN	46403
Richardson, Willie Anne	4504 E 10th AVE	Gary	IN	46403-3534
RJRJ LLC	9824 New Devon ST	Munster	IN	46321
Robinson, Darrell & Betty h&w	4508 Miller AVE	Gary	IN	46403-2756
Ruge James D Revocable Living Trust	PO Box 721	Beverly Shores	IN	46301
Salerno, Richard & Nina	P O Box 2315	Chesterton	IN	46304-0415
Sandberg Richard H & Susan D	1541 Birch St	Michigan City	IN	46360
Sanders Roger E & Sanders Douglas J/JT	1154 Belfair Way	Chapel Hill	NC	27517
Schlosser Eric & Judith/H&W	1554 N 375 E	Chesterton	IN	46304
Scott Oscar J Etal	2205 169th St	Hammond	IN	46323
Sermak Properties LLC	5194 E 81st AVE	Merrillville	IN	46410-5852
Shirley Heinze Land Trust Inc	109 W 700 N	Valparaiso	IN	46385
Sims, John	PO Box 87633	Chicago	IL	60680
Singh Kamaljit & Sukhjinder	3901 W Dunes Hwy	Michigan City	IN	46360
Singh, Lakhwinder	10282 Doubletree DR	Crown Point	IN	46307
Singh, Varinder	4321 E Dunes Highway	Gary	IN	46403
SLB Bros Properties LLC	10282 Doubleteee Drive S	Crown Point	IN	46307
Smith, Lorenzo	1018 Wyoming ST	Gary	IN	46403
Sobolewski Noah	4001 W Dunes Hwy	Michigan City	IN	46360
Solner Kenneth R Living Trust	4351 W Dunes Hwy	Michigan City	IN	46360
Spencer, Doreen	4315 Miller AVE	Gary	IN	46403
State Of Indiana	100 N Senate Ave Rm N1026	Indianapolis	IN	46204
Stefanski Nikki S Livingtrust	3628 W 123rd Pl	Alsip	IL	60803
Stonehill, Keven E Tr of Keven E Stonehill Revoc Tr dtd 11/19/02	567 W 250 S	Hebron	IN	46341
Strength, Chambers & Stabilty Coro	3733-37 E 9th AVE	Gary	IN	46403
Strickland, R L & Irene	1741 Garfield ST	Gary	IN	46404-1341
Surney, Marguerite	4653 Miller Lane	Gary	IN	46403-2759
Surplus Management Systems LLC	38355 Shagbark LN	Wadsworth	IL	60083
SWC Group LLC	PO Box 244	Beverly Shores	IN	46301
Sweeney Edmund	2059 N Orleans St	Chicago	IL	60614
Szemes Michael J	386 E US Highway 12	Chesterton	IN	46304
Tarnowski James Patrick	1935 Toms Ct	Chesterton	IN	46304
Taylor Douglas P & Linda /H&W	PO Box 355, 478 E Highway 12	Beverly Shores	IN	46301

Taylor, Lillie	696 Allen ST	Gary	IN	46403
Tecumseh Redevelopment Inc	3210 Watling St, MC 8-229	East Chicago	IN	46312
Thrower, Donald E & Shaun Robinson T/C	1005 Bryon ST	Accokeek	MD	20607
Tierney Matt	3232 N Halsted St Apt D901	Chicago	IL	60657
Town of Beverly Shores	500 Broadway, PO Box 38	Beverly Shores	IN	46304
Traylor, Dorothy	4334 E 10th. AVE	Gary	IN	46403
Turner, Charles & Gloria A	801 Utah	Gary	IN	46403-3470
Twelve Step House Of Gary,ind.	913 Aetna St. Inc.	Gary	IN	46403-3510
Twp Pine % Theis	PO Box 335	Beverly Shores	IN	46301
Twp Pine Fire Dept	PO Box 335	Beverly Shores	IN	46301
Underwood, Willie III	676 Clay St	Gary	IN	46403
United States of America	601 Riverfront Dr	Omaha	NE	68102
United States Of America	106 E Pottawattomie Ct	Chesterton	IN	46304
United States Of America	1100 N Mineral Springs Rd	Porter	IN	46304
United States Of America %Pioneer Natl Title	57 Michigan Ave	Valparaiso	IN	46383
United States Of America % Pioneer Natl Title	PO Box 283	Valparaiso	IN	46384
United States Of America Ind Dunes	621 E Michigan Blvd	Washington	DC	20410
United States Steel Corporation	600 GRANT STREET, ROOM 1381	PITTSBURGH	PA	15219
Unity Outreach Ministries	1441 Delaware Street	Gary	IN	46407
USA	801 E 86th Ave	Merrillville	IN	46410
Usa, (natl Parks)	1708 Jackson St Real Est F Suarez	Omaha	NE	68102
Vera Angela Lynn	3973 W Dunes Hwy	Michigan City	IN	46360
VGH Investors, LLC	PO Box 930	Oak Lawn	IL	60454
Vining Edmund P Apt 1307	1060 N Farnsworth Ave	Aurora	IL	60505
Virk-Mart Inc	3901 W Dunes Hwy	Michigan City	IN	46360
Wafford, Natee	12827 S Carpenter ST	Calumet Park	IL	60827
Weaver, Edmonia E	692 Cass CT	Gary	IN	46403-2747
Wendt William H & Dalia K/H&W	1922 Lake Shore Dr, Stop 20	Long Beach	IN	46360
Wesley, Karyn & Zeid Sharif (h&w)	2502 Walnut ST	Blue Island	IL	60406
Westerhoff, Terry & Nelly Westerhoff	4426 Miller AVE	Gary	IN	46403
Whitfield, Tamara	3619 E 12th AVE	Gary	IN	46403
Williams Mary Ann	PO Box 453	Beverly Shores	IN	46301
Williams, Stephanie	4610 E 7th AVE	Gary	IN	46403
Wilson-Lyles, Latoya	4709 Miller LN	Gary	IN	46403
Windmiller Dennis W Living Trust & Iazzetto Josephine Living Tru	PO Box 564, 167 E Hwy 12	Beverly Shores	IN	46301

Wolanyk Paul J	PO Box 575	Beverly Shores	IN	46301
Wolanyk Paul J & Pamelas/H&W	PO Box 575	Beverly Shores	IN	46301
Wright Ronald D & Jennifer L/H&W	1539 Ash St	Michigan City	IN	46360
Wyatt Stanley E & Celeste M/H&W	PO Box 574, 113 Oxford Dr Box 574	Beverly Shores	IN	46301
Xiam LLC	328 Miami	Gary	IN	46403
Zavalza Engracia	404 E US Highway 12	Beverly Shores	IN	46301
Zavalza Santiago	404 E US Highway 12	Beverly Shores	IN	46301

Double Track NWI Project

G – Permitting Plan Set

(Will be provided as Engineering Plans progress toward 90% design)

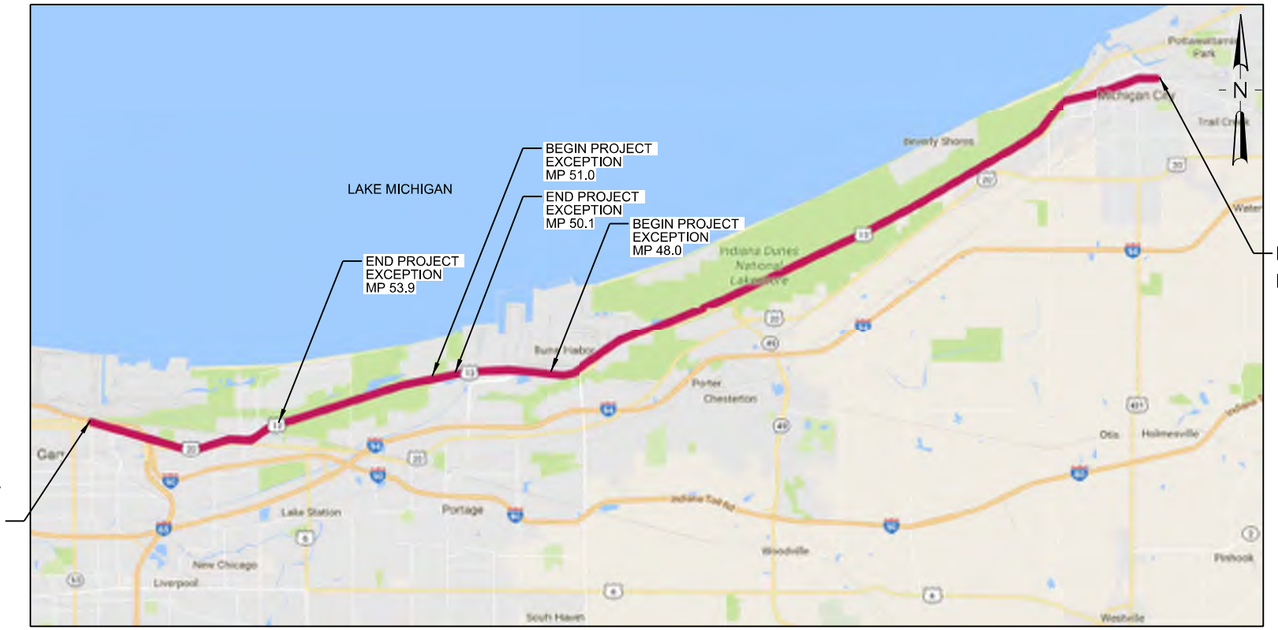
NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT

DOUBLE TRACK NWI (NORTHWEST INDIANA)
MILEPOST 32.2 TO MILEPOST 58.8
MICHIGAN CITY TO GARY, INDIANA

TRACK DESIGN PLANS

SHEET INDEX

SHEET #	TITLE	DESCRIPTION
1	RGN-001	COVER SHEET
2	RGN-002	LEGEND & ABBREVIATIONS
3	RGN-003	GENERAL NOTES
4	RGN-004	PROJECT OVERVIEW
5-10	RTS-001 TO -006	TRACK DESIGN TYPICAL SECTIONS
11-105	RPP-001 TO -095	PLAN & PROFILE SHEETS
106-113	RPP-096 TO -103	MAIN 2 PROFILE STA 3014+00 TO 2636+00
114-130	RPP-104 TO -120	MAIN 1 PROFILE STA 2538+00 TO 1758+00
131	RPP-121	BOAT HOUSE LEAD PROFILE
132	RPP-122	GOFF SIDING PROFILE
133	RPP-123	CN CONNECTION PROFILES
134	RPP-124	GARY MOW TRACK PROFILE
135-136	RPP-125 TO -126	CSX CONNECTION TRACK PROFILE
137	RPP-127	MILLER SET OUT TRACKS PROFILES
138-140	RPP-128 TO -130	WILSON SIDING PROFILE
141	RPP-131	NICTD MOW PROFILE
142	RPP-132	BAILLY NORTH PROFILE
143	RPP-133	5406 & CSS TRK 1 PROFILE
144-146	RPP-134 TO -136	PROP BAILLY NORTH PROFILE
147	RPP-137	PROP CSS TRK 1 PROFILE
148	RPP-138	3502 PROFILE
149-346	RXS-301 TO -497	CROSS-SECTIONS



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0	03/16/2020	60% DESIGN

NICTD
NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

COVER SHEET

FILENAME	DT_DWG_RGN-001
SCALE	AS NOTED

SHEET OF

LEGEND

- EXISTING TRACK TO REMAIN
- EXISTING TRACK TO BE REMOVED
- EXISTING TRACK TO BE SHIFTED
- EXISTING TRACK TO BE SURFACED
- 5+00 PROPOSED TRACK
- PROPOSED POWER OPERATED TURNOUT
- PROPOSED HAND-THROW TURNOUT
- PROPOSED ELECTRIC LOCK TURNOUT
- PROPOSED DOUBLE SWITCH POINT DERAIL
- PROPOSED SLIDING DERAIL
- PROPOSED CULVERT EXTENSION
- CONSTRUCTION LIMITS
- COMM COMMUNICATION LINE
- OHP EXISTING OVERHEAD POWER LINE
- X EXISTING FENCE
- SS EXISTING SANITARY SEWER
- SS PROPOSED SANITARY SEWER
- OHF OVERHEAD FIBER
- FO EXISTING FIBER OPTIC
- FO UG EXISTING UNDERGROUND FIBER OPTIC
- FO UG PROPOSED UNDERGROUND FIBER OPTIC
- FO OH EXISTING OVERHEAD FIBER OPTIC
- FO OH PROPOSED OVERHEAD FIBER OPTIC
- G EXISTING GAS LINE
- G PROPOSED GAS LINE
- PG PETRO GAS LINE
- PG PROPOSED PETRO GAS LINE
- W EXISTING WATER LINE
- W PROPOSED WATER LINE
- E UG EXISTING UNDERGROUND ELECTRIC
- E UG PROPOSED UNDERGROUND ELECTRIC

- E OH EXISTING OVERHEAD ELECTRIC
- OHP PROPOSED OVERHEAD ELECTRIC
- TREE/SHRUB/VEGETATION
- EDGE OF GRAVEL
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- PARCELS
- PROPOSED CONSTRUCTION EASEMENT
- ACCESS ROAD/TURNOUT PAD
- HIGH QUALITY WETLAND
- NON HIGH QUALITY WETLAND/UNDETERMINED
- STREAM OR DITCH
- RIP RAP
- ELECTRIC POLE
- COMMUNICATION POLE
- EXISTING CROSSING SIGNAL
- PROPOSED CROSSING SIGNAL
- GUARDRAIL
- SIGNS (NON-RAILROAD)
- GAS WARNING SIGN
- RAILROAD SIGN
- FIBER OPTIC MARKER
- WHISTLE POST SIGN
- LIGHT POLE
- FIRE HYDRANT
- RAIL SIGNAL (DWARF SIGNAL)
- TRAFFIC SIGNAL

- FIBER OPTIC HAND HOLE
- ELECTRIC METER
- E ELECTRIC PEDESTAL
- C COMMUNICATION PEDESTAL
- CONTROL POINT
- GRADE CROSSING PAVEMENT MARKING
- PEDESTRIAN CROSSING GATE
- EXISTING CROSSBUCK
- NPS PROPERTY
- PROPOSED TEMPORARY IMPACT AREA

GENERAL NOTES

1. THE EXISTENCE, LOCATION, AND ELEVATION OF UTILITIES AND/OR CONCEALED STRUCTURES AT THE PROJECT SITE ARE NOT GUARANTEED. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXISTENCE, LOCATION, AND ELEVATION OF ALL SUCH UTILITIES AND/OR STRUCTURES AND IS RESPONSIBLE FOR NOTIFYING THE APPROPRIATE COMPANY, DEPARTMENT, OR PERSON(S) OF ITS INTENTION TO CARRY OUT ITS OPERATIONS.

ABBREVIATIONS

APPROX	APPROXIMATE	NICTD	NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
BLDG	BUILDING	NIPSCO	NORTHERN INDIANA PUBLIC SERVICE COMPANY
BM	BENCH MARK	N.T.S.	NOT TO SCALE
CB	CATCH BASIN	NO., #	NUMBER
℄	CENTERLINE	NS	NORFOLK SOUTHERN
CMP	CORRUGATED METAL PIPE	OHP	OVERHEAD POWER
CN	CANADIAN NATIONAL	OVH	OVERHEAD
CONC	CONCRETE	PC	POINT OF CURVE
CS	CURVE TO SPIRAL	PI	POINT OF INTERSECTION
CSS	CHICAGO SOUTH SHORE	PITO	POINT OF INTERSECTION OF TURNOUT
CSXT	CSX TRANSPORTATION	POB	POINT OF BEGINNING
CWR	CONTINUOUSLY WELDED RAIL	POE	POINT OF ENDING
CY	CUBIC YARD	POTO	POWER OPERATED TURNOUT
Dc	DEGREE OF CURVE	PR, PROP	PROPOSED
DI	DUCTILE IRON	P.S.	POINT OF SWITCH
DIAM.	DIAMETER	PT	POINT OF TANGENCY, POINT
DOT	DEPARTMENT OF TRANSPORTATION	PVC	POINT OF VERTICAL CURVE
DSPD	DUAL SWITCH POINT DERAILS	PVI	POINT OF VERTICAL INTERSECTION
DWG	DRAWING	PVT	POINT OF VERTICAL TANGENCY
E	EASTING	R	RADIUS
EA	EACH	RE	RAILWAY ENGINEERED, AREMA APPROVED RAIL SECTION
E.L.	ELECTRIC LOCK	REV	REVISION
ELEC	ELECTRICAL	RH	RIGHT HAND
ELEV, EL	ELEVATION	RR	RAILROAD
ENGR	ENGINEER	RT	RIGHT, ROUTE
EXIST, EX	EXISTING	R/W, ROW	RIGHT-OF-WAY
FOTS	FIBER OPTIC TRANSMISSION SYSTEM	S	SOUTH
FT	FOOT, FEET	SC	SPIRAL TO CURVE
G	GAS	SD	STORM DRAIN, SLIDING DERAIL
GND	GROUND	SDWC	SLIDING DERAIL WITH CROWDER
HDPE	HIGH DENSITY POLYETHYLENE	SDG	SIDING
HORZ	HORIZONTAL	SDWLK	SIDEWALK
HTTO	HAND THROW TURNOUT	SF	SQUARE FOOT
HMA	HOT MIX ASPHALT	SS	SANITARY SEWER
INV	INVERT	STA	STATION
LB	POUND	ST	STREET, SPIRAL TO TANGENT
Lc	LENGTH OF CURVE	STD	STANDARD
LH	LEFT HAND	STM, SD	STORM SEWER, STORM DRAIN
Ls	LENGTH OF SPIRAL	SW	SWITCH
LIN FT, LF	LINEAR FOOT	TEMP	TEMPORARY
LLT	LAST LONG TIE	TF	TRACK FOOT, TRACK FEET
LN	LANE	T.O.	TURNOUT
LT	LEFT	TOR	TOP OF RAIL
MAX	MAXIMUM	TRK	TRACK
MH	MANHOLE	TS	TANGENT TO SPRIAL
MIN	MINIMUM	TYP, TYP.	TYPICAL
MISC	MISCELLANEOUS	UG	UNDERGROUND
MOW	MAINTENANCE OF WAY	V	VELOCITY
MP	MILE POST	VC	VERTICAL CURVE
N	NORTHING	W	WATER, WEST
NIC	NOT IN CONTRACT	XOVER	CROSSOVER
		XING	CROSSING
		YD	YARD

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NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-KEK
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

LEGEND & ABBREVIATIONS

FILENAME	DT_DWG_RGN-002
SCALE	AS NOTED

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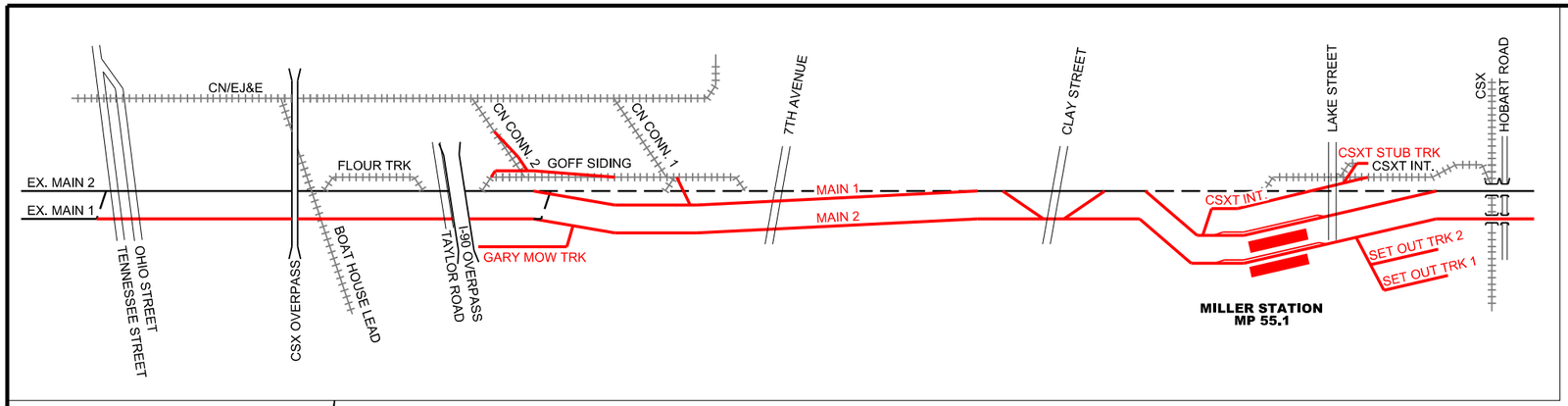

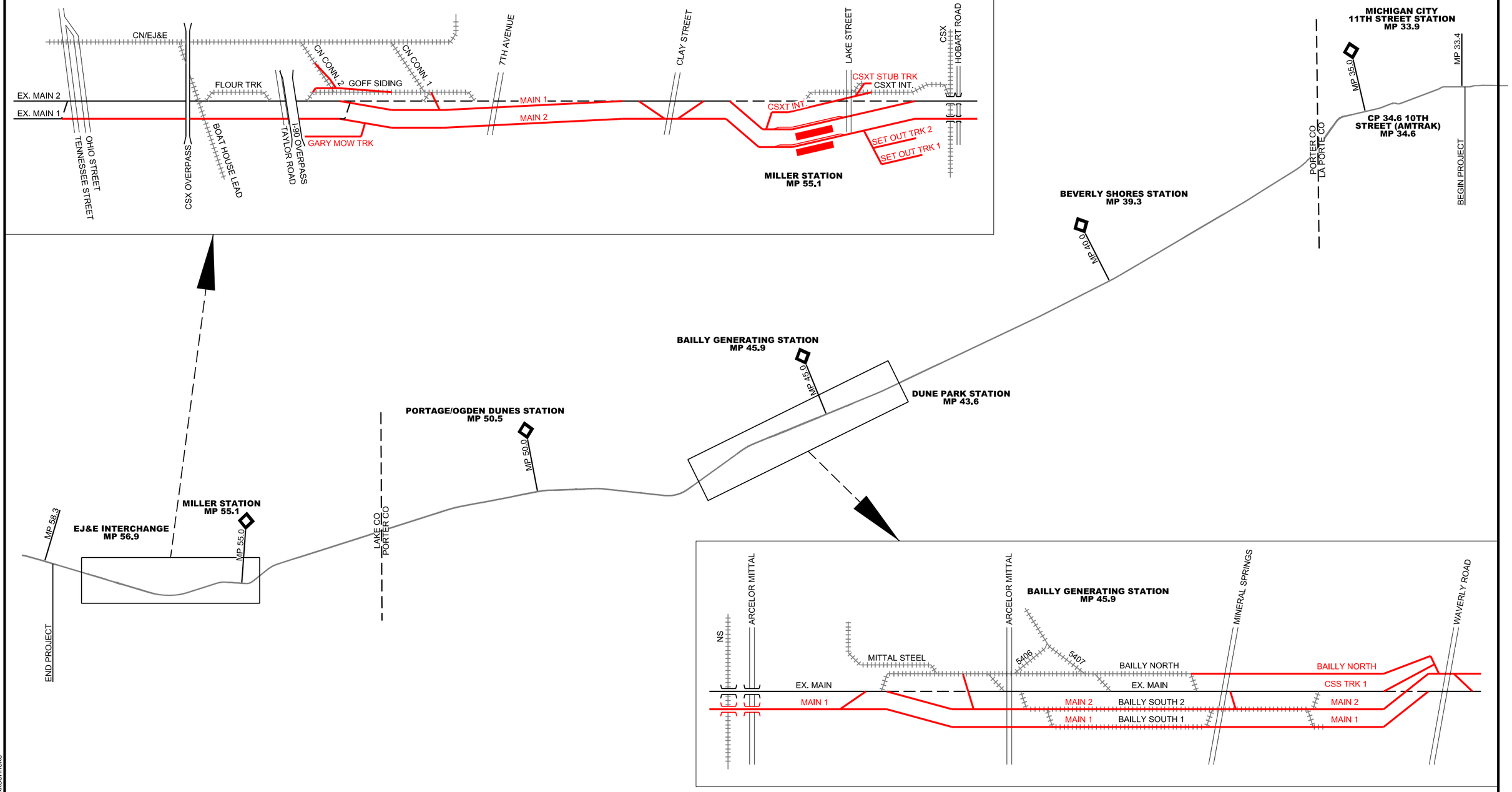

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DOUBLE TRACK N·W·I
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NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PROJECT OVERVIEW

FILENAME	DT_DWG_RGN-004
SCALE	AS NOTED

SHEET OF

PROPOSED MAIN TRACK 1 CURVE TABLE

CURVE	PC/SC STATION	PI STATION	PT/CS STATION	DEGREE OF CURVATURE	RADIUS	LENGTH	DIRECTION	PC/SC		PI		PT/CS	
								NORTHING	EASTING	NORTHING	EASTING	NORTHING	EASTING
C-M1-33.6	1776+52.64		1778+98.80	5°00'00"	1,146.28'	246.16'							
C-M1-33.9	1794+56.61		1795+17.84	0°30'00"	11,459.19'	61.23'							
C-M1-34.0	1797+22.84		1797+82.64	0°30'00"	11,459.19'	59.80'							
C-M1-34.4	1817+37.19		1818+02.64	5°00'00"	1,146.28'	65.43'							
C-M1-34.6	1826+69.79		1827+43.68	5°00'00"	1,146.28'	73.89'							
C-M1-34.7	1835+30.98		1835+86.49	2°58'41"	1,924.08'	55.51'							
C-M1-35.1	1855+34.05		1857+84.00	1°00'00"	5,729.65'	249.95'							
C-M1-35.4	1867+20.27		1872+95.32	5°13'52"	1,095.69'	575.05'							
C-M1-36.2	1907+43.05		1926+21.82	1°00'00"	5,729.65'	1,878.77'							
C-M1-44.1	2330+99.61		2334+95.51	0°30'00"	11,459.19'	395.90'							
C-M1-44.4	2347+78.24		2348+11.73	0°10'00"	34,377.48'	33.49'							
C-M1-46.3	2445+73.18		2453+43.80	1°10'00"	4,911.15'	770.62'							
C-M1-47.0	2483+19.73		2484+41.20	0°20'00"	17,188.76'	121.47'							
C-M1-47.1	2492+38.19		2493+52.71	0°20'00"	17,188.76'	114.52'							
C-M1-47.7	2511+56.55		2530+21.55	1°56'15"	2,957.00'	1,865.00'							
C-M1-54.4	2868+73.95		2876+21.73	2°00'35"	2,850.93'	747.78'							
C-M1-54.8	2893+82.03		2899+91.24	4°52'09"	1,177.03'	609.21'							
C-M1-55.4	2925+33.58		2927+01.27	5°00'00"	1,146.28'	167.69'							
C-M1-56.2	2950+18.24		2982+78.29	0°56'58"	6,034.00'	3,260.05'							
C-M1-56.8	2998+00.01		2998+45.83	0°10'00"	34,377.50'	45.82'							
C-M1-57.0	3007+50.83		3008+06.90	0°10'00"	34,377.50'	56.07'							
C-M1-58.2	3068+56.91		3068+76.42	0°10'00"	34,377.50'	19.50'							
C-M1-58.3	3074+65.65		3075+38.73	0°10'00"	34,377.50'	73.08'							

PROPOSED MAIN TRACK 2 CURVE TABLE

CURVE	PC/SC STATION	PI STATION	PT/CS STATION	DEGREE OF CURVATURE	RADIUS	LENGTH	DIRECTION	PC/SC		PI		PT/CS	
								NORTHING	EASTING	NORTHING	EASTING	NORTHING	EASTING
C-M2-33.4	1766+35.78		1767+86.73	1°30'00"	3,819.83'	150.95'							
C-M2-33.6	1776+91.08		1779+37.24	5°00'00"	1,146.28'	246.16'							
C-M2-33.9	1795+04.69		1795+79.12	1°15'00"	4,583.75'	74.43'							
C-M2-34.0	1799+04.12		1799+77.99	1°15'00"	4,583.75'	73.87'							
C-M2-34.4	1817+43.64		1818+09.10	5°00'00"	1,146.28'	65.46'							
C-M2-34.6	1826+76.30		1827+50.19	5°00'00"	1,146.28'	73.89'							
C-M2-34.7	1835+38.95		1835+92.49	3°00'00"	1,910.08'	53.54'							
C-M2-35.1	1855+25.47		1858+03.76	1°00'00"	5,729.65'	278.29'							
C-M2-35.4	1867+14.96		1873+12.93	5°08'47"	1,113.69'	597.97'							
C-M2-36.2	1907+71.74		1926+47.52	1°00'00"	5,730.65'	1,875.78'							
C-M2-37.1	1962+10.54		1963+18.70	0°15'00"	22,918.33'	108.16'							
C-M2-37.4	1975+96.40		1980+61.77	0°20'00"	17,188.76'	465.37'							
C-M2-38.0	2006+27.47		2006+50.02	0°10'00"	34,377.48'	22.55'							
C-M2-38.1	2010+20.64		2010+57.56	0°10'00"	34,377.48'	36.92'							
C-M2-38.5	2034+77.73		2035+27.65	0°10'00"	34,377.48'	49.92'							
C-M2-39.9	2102+48.28		2111+73.52	0°20'00"	17,188.76'	925.24'							
C-M2-41.2	2175+07.14		2180+39.93	0°15'00"	22,918.33'	532.79'							
C-M2-42.0	2219+84.48		2219+93.46	0°05'00"	68,754.94'	8.98'							
C-M2-42.1	2223+29.14		2223+48.79	0°05'00"	68,754.94'	19.65'							
C-M2-43.3	2285+49.54		2287+56.98	0°15'00"	22,918.33'	207.44'							
C-M2-43.4	2291+74.36		2293+62.18	0°15'00"	22,918.33'	187.82'							
C-M2-43.8	2312+30.94		2313+35.10	0°45'00"	7,639.49'	104.16'							
C-M2-43.9	2316+38.94		2317+32.69	0°45'00"	7,639.49'	93.75'							
C-M2-44.1	2331+10.25		2335+06.14	0°30'00"	11,459.19'	395.89'							
C-M2-44.4	2347+88.50		2348+21.99	0°10'00"	34,377.48'	33.49'							
C-M2-46.3	2445+87.28		2453+60.29	1°10'00"	4,911.15'	773.01'							
C-M1-47.0	2483+19.73		2484+41.20	0°20'00"	17,188.76'	121.47'							
C-M2-47.7	2511+88.46		2530+23.78	1°57'20"	2,930.00'	1,835.32'							
C-M2-50.2	2653+65.51		2654+67.38	0°30'00"	11,459.20'	101.87'							
C-M2-50.4	2661+72.33		2662+75.79	0°30'00"	11,459.20'	103.46'							
C-M2-50.9	2685+60.40		2686+23.61	0°25'00"	13,751.00'	63.21'							
C-M2-51.0	2692+39.94		2693+03.14	0°25'00"	13,751.00'	63.20'							
C-M2-54.8	2893+88.83		2899+67.97	5°00'00"	1,146.28'	579.14'							
C-M2-55.4	2924+52.64		2926+27.50	4°54'02"	1,169.53'	174.86'							
C-M2-56.2	2950+03.94		2982+55.60	0°57'06"	6,020.00'	3,251.66'							
C-M2-56.8	2997+77.31		2998+23.07	0°10'00"	34,363.50'	45.76'							
C-M2-57.0	3007+28.13		3007+84.15	0°10'00"	34,363.50'	56.02'							

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

CURVE DATA

FILENAME	DT_DWG_RGN-005
SCALE	AS NOTED

SHEET OF

PROPOSED OTHER TRACKS CURVE TABLE

TRACK	CURVE	PC/SC STATION	PI STATION	PT/CS STATION	DEGREE OF CURVATURE	RADIUS	LENGTH	DIRECTION	PC/SC		PI		PT/CS	
									NORTHING	EASTING	NORTHING	EASTING	NORTHING	EASTING
BAILEY N	C-BN-44.1	2330+33.69		2331+29.11	6°00'00"	955.37'	95.42'							
BAILEY N	C2-BN-44.1	2332+21.34		2333+98.24	1°30'00"	3,819.83'	176.90'							
BAILEY N	C2-BN-44.2	2337+43.85		2337+86.45	1°00'00"	729.65'	42.60'							
BAILEY N	C-BN-44.4	234788.36		2348+21.81	0°10'00"	34,377.48'	33.45'							
CN	C-CN-57.1	1+17.23		2+74.88	11°30'00"	499.06'	157.65'							
CSS	C-CSS-44.1	2332+21.09		2333+97.99	1°30'00"	3,819.83'	176.90'							
CSS	C-CSS-44.2	2337+45.65		2337+85.00	1°05'07"	5,279.65'	39.35'							
CSXT INT		2+68.84		3+45.16	7°30'00"	764.49'	76.32'							
CSXT INT		20+36.73		28+11.01	5°34'24"	1,028.44'	774.28'							
CSXT STUB		2+92.53		5+27.29	4°31'17"	1,267.51'	234.76'							
CSXT STUB		1+24.10		1+92.04	7°30'00"	764.49'	67.94'							
GARY MOW	C-MOW-57.0	1+83.46		2+56.32	7°30'00"	764.49'	72.86'							
GOFF	C-G-56.8	9+60.72		11+07.80	0°10'01"	34,343.50'	147.08'							
GOFF	C-G-57.0	19+12.18		20+68.43	0°10'01"	34,343.50'	156.25'							
GOFF	C-G-57.1	23+74.49		24+51.44	7°30'00"	764.49'	76.95'							
MILLER 1		3+69.57		11+10.23	6°00'00"	955.37'	740.66'							
MILLER 2		2+88.61		9+19.66	6°08'06"	934.37'	631.05'							

PROPOSED TURNOUT AND GAUNTLET TABLE

MP	PARENT TRACK	DIVERGING TRACK	PS STATION	SIZE	DIRECTION	SWITCH TYPE
33.41	MAIN 1	MAIN 2	1763+70.00	20	RH	POTO
33.76	MAIN 1	GUANTLET	1782+29.50	15 GAUNTLET	LH	POTO
33.76	MAIN 2	GUANTLET	1782+37.15	15 GAUNTLET	LH	POTO
33.96	MAIN 1	GUANTLET	1793+21.25	15 GAUNTLET	RH	POTO
33.96	MAIN 2	GUANTLET	1793+28.90	15 GAUNTLET	RH	POTO
36.62	MAIN 1	TEMP	1934+61.10	10	RH	HTTO
37.75	MAIN 2	MAIN 1	1993+21.68	20	LH	POTO (XO)
37.82	MAIN 1	MAIN 2	1997+11.53	20	LH	POTO (XO)
37.94	MAIN 2	MAIN 1	2003+39.59	20	RH	POTO (XO)
42.91	MAIN 2	MAIN 1	2264+66.57	20	LH	POTO (XO)
42.99	MAIN 1	MAIN 2	2268+59.71	20	LH	POTO (XO)
43.50	MAIN 1	GUANTLET	2296+02.40	20 GAUNTLET	RH	POTO
43.75	MAIN 1	GUANTLET	2309+48.62	20 GAUNTLET	LH	POTO
43.94	MAIN 1	MAIN 2	2319+54.33	20	RH	POTO (XO)
44.02	MAIN 2	MAIN 1	2323+67.37	20	RH	POTO (XO)
44.08	MAIN 2	BAILLY N	2326+74.87	10	RH	POTO
44.12	BAILLY N	CSS 1	2329+09.74	10	LH	HTTO
45.04	MAIN 2	CSS 1	M2 2378+97.77	10	RH	HTTO E.L.
45.10	CSS 1	MAIN 2	2381+60.01	10	RH	HTTO E.L.
46.16	MAIN 2	CSS 1	2435+93.65	10	RH	HTTO E.L.
46.21	CSS 1	MAIN 2	2438+47.01	10	LH	HTTO E.L.
46.24	BAILLY N	CSS 1	2440+02.13	10	RH	HTTO
46.64	MAIN 2	MAIN 1	2461+93.62	20	LH	POTO (XO)
46.71	MAIN 1	MAIN 2	2465+87.29	20	LH	POTO (XO)
50.52	MAIN 2	GUANTLET	2667+78.67	20 GAUNTLET	LH	POTO
50.76	MAIN 2	GUANTLET	2680+95.12	20 GAUNTLET	RH	POTO
54.98	MILLER 1	MILLER 2	1+75.44	10	LH	POTO
55.01	MAIN 1	MILLER 1	2904+20.73	10	RH	POTO
55.02	CSXT INT	CSXT STUB	17+31.85	10	LH	HTTO
55.06	MAIN 1	GUANTLET	2906+77.86	20 GAUNTLET	RH	POTO
55.06	MAIN 2	GUANTLET	2906+56.38	20 GAUNTLET	RH	POTO
55.31	MAIN 1	GUANTLET	2919+94.31	20 GAUNTLET	LH	POTO
55.31	MAIN 2	GUANTLET	2919+72.84	20 GAUNTLET	LH	POTO
55.35	MAIN 2	CSXT INT	2921+66.64	10	LH	POTO
55.58	MAIN 2	MAIN 1	2933+63.58	20	LH	POTO (XO)
55.66	MAIN 1	MAIN 2	2937+79.90	20	LH	POTO (XO)
55.73	MAIN 1	MAIN 2	2941+56.17	20	RH	POTO (XO)
55.80	MAIN 2	MAIN 1	2945+43.90	20	RH	POTO (XO)
56.18	MAIN 2	GOFF	2987+66.85	10	RH	HTTO E.L.
56.67	GOFF	MAIN 2	2+63.33	10	RH	HTTO E.L.
56.92	MAIN 1	GARY MOW	3002+97.75	10	LH	HTTO
57.05	GOFF	CN CONN	22+16.95	10	RH	HTTO

PROPOSED DERAIL TABLE

TRACK	MP	STATION	TYPE	DIVERGING ROUTE
BAILLY N	44.12	2328+96.59	PWR SLIDING WHEEL CROWDER	LH
EX BAILLY N	46.53	2456+16.77	PWR SLIDING WHEEL CROWDER	RH
MILLER 1	54.95	3+47.16	PWR SLIDING	LH
MILLER 2	54.95	1+71.72	PWR SLIDING	LH
CSXT INT	55.27	4+05.16	PWR SLIDING WHEEL CROWDER	RH
GARY MOW	56.97	2+59.32	HT SLIDING	RH
GOFF	57.11	24+63.03	HT SLIDING WHEEL CROWDER	RH

PROPOSED BUMPING POST TABLE

TRACK	STATION	TYPE
MILLER 1	12+10.23	WG
MILLER 2	10+19.66	WG
GARY MOW	11+76.32	WG
EX GOFF	2981+49.48	WG

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

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NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

CURVE AND TURNOUT DATA

FILENAME DT_DWG_RGN-006
SCALE AS NOTED
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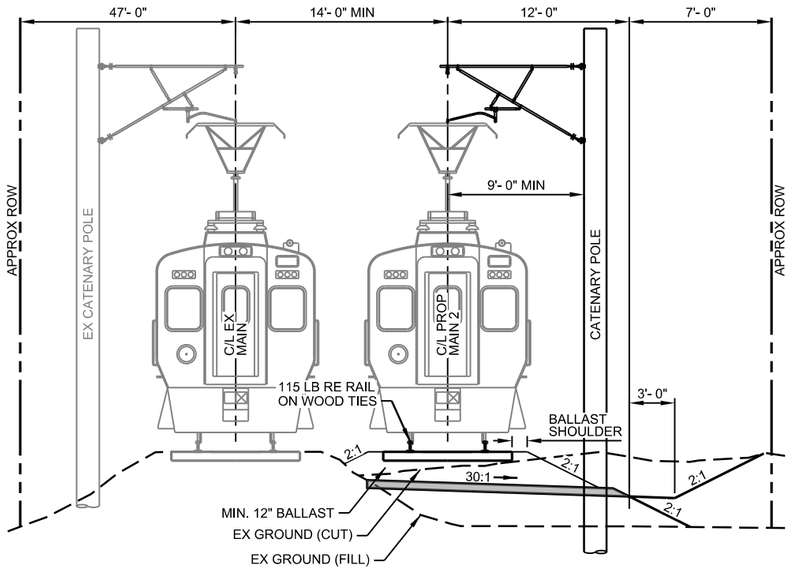
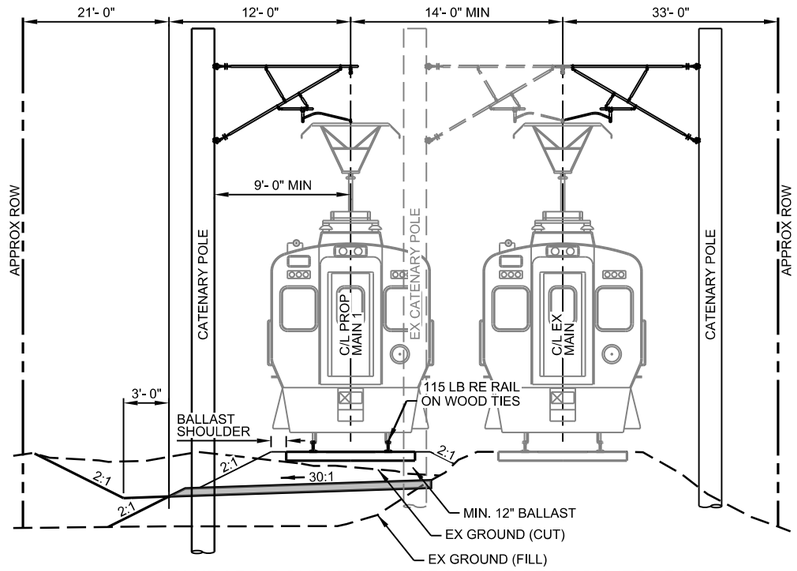


STANDARD DOUBLE TRACK BALLAST SECTION (PROP MAIN 2)

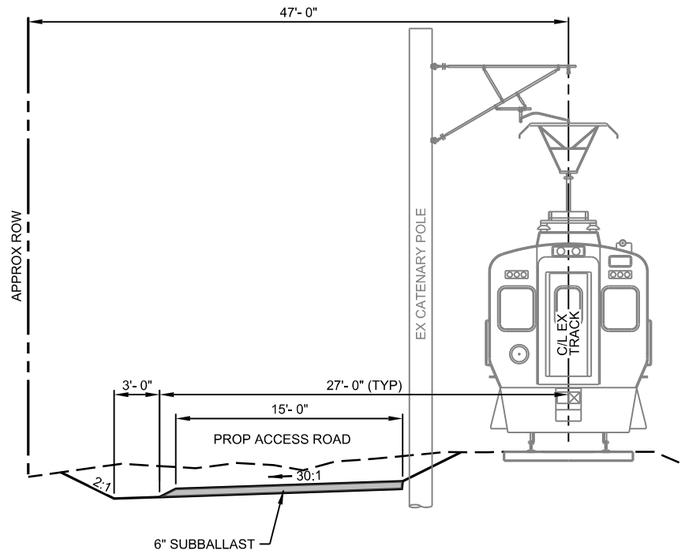
MAIN 2 STA. 1919+85.3 TO STA. 2010+92.6
MAIN 2 STA. 2037+94.7 TO STA. 2272+91.6
MAIN 2 STA. 2307+02.3 TO STA. 2326+74.9
MAIN 2 STA. 2952+68.1 TO STA. 2971+47.7

NOTE:
WIDTH OF BALLAST SHOULDER SHALL BE 6" ON TANGENT TRACK AND 12" ALONG CURVES GREATER THAN 1°



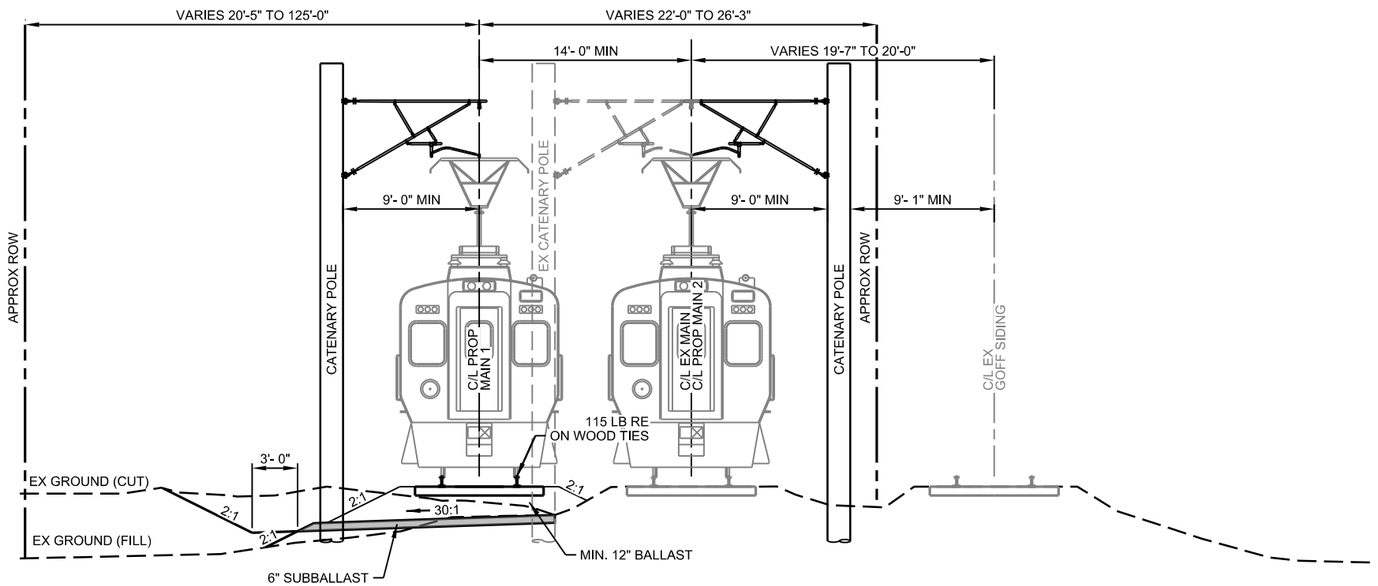
STANDARD DOUBLE TRACK BALLAST SECTION (PROP MAIN 1)

MAIN 1 STA. 1893+60.0 TO STA. 1919+70.5
MAIN 1 STA. 2448+53.4 TO STA. 2520+96.7
MAIN 1 STA. 2850+39.5 TO STA. 2877+00.0
MAIN 1 STA. 2926+79.6 TO STA. 2952+83.4
MAIN 1 STA. 2971+67.4 TO STA. 2989+30.5
MAIN 1 STA. 3011+63.1 TO STA. 3066+23.5



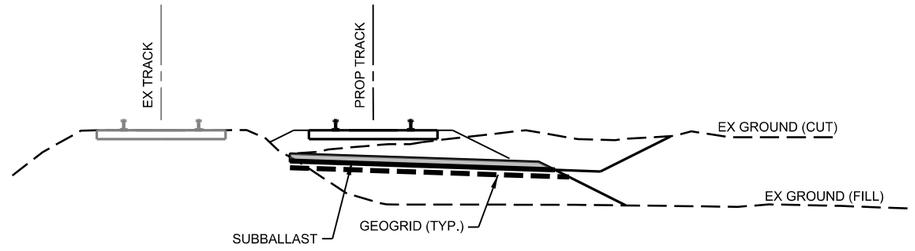
STANDARD ACCESS ROAD

MAIN 1 STA. 2264+05.7 TO STA. 2269+09.7
MAIN 1 STA. 1992+59.5 TO STA. 2003+77.9



GOFF SIDING

MAIN 1 STA. 2989+30.5 TO STA. 3011+63.1



STANDARD GEOGRID SECTION

LOCATION DESCRIPTION	STATION BEGIN	STATION END	SQUARE YARDS
MAIN 1	3014+00	3017+00	600
WEST CLAY ST XOVER	2941+50	2945+60	1,300
EAST CLAY ST XOVER	2933+70	2937+80	1,300
MILLER STATION GAUNTLETS	2906+70	2920+00	6,000
OGDEN DUNES GAUNTLETS	2667+70	2681+00	3,000
WEST BAILLY XOVER	2461+70	2465+90	1,340
BAILLY TO OGDEN DUNES M1 & M2	2424+00	2520+00	28,000
EAST BAILLY XOVER	2319+50	2323+60	1,300
TREMONT EAST XOVER	2264+50	2268+70	1,340
TAMARACK EAST XOVER	2001+20	2003+40	650
TAMARACK EAST XOVER	1993+10	1997+20	1,300

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

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NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

TYPICAL SECTIONS

FILENAME	DT_DWG_RTS-100
SCALE	NOT TO SCALE

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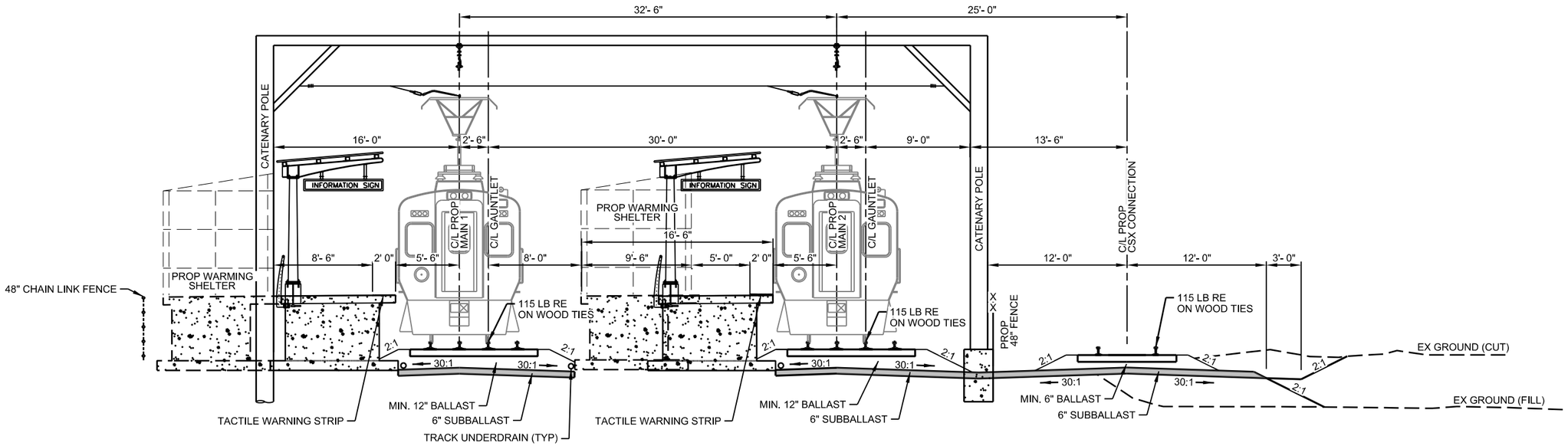
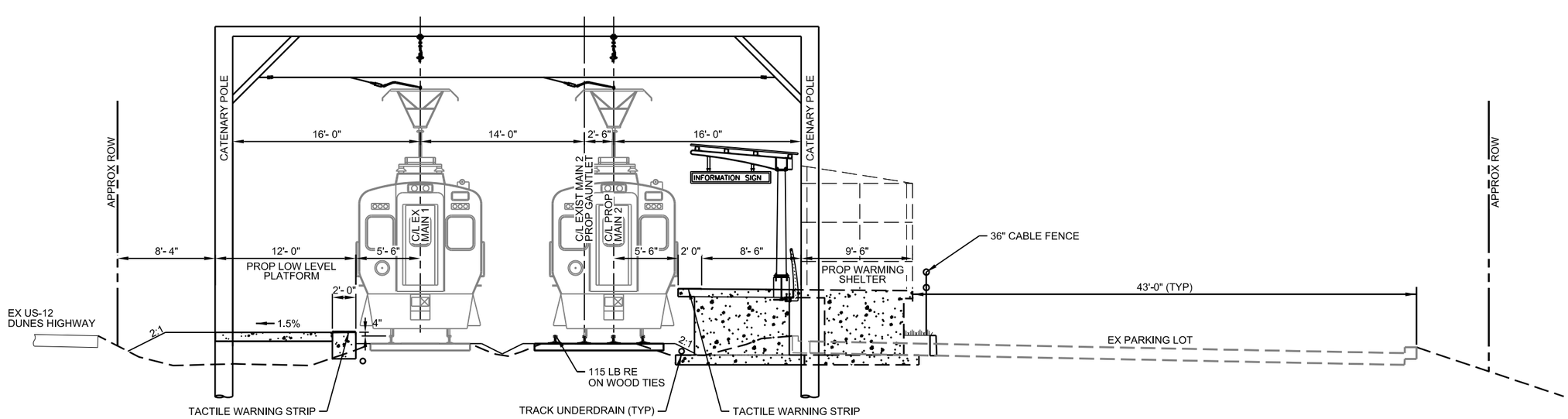


MILLER STATION WITH TWO PLATFORMS

MAIN 1 STA. 2909+76.1 TO STA. 2916+96.1



OGDEN DUNES STATION WITH TWO PLATFORMS

MAIN 2 STA. 2670+76.9 TO STA. 2677+96.9

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DRAWING RTS-101 OF RTS-105

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DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

TYPICAL SECTIONS

FILENAME	DT_DWG_RTS-100
SCALE	NOT TO SCALE

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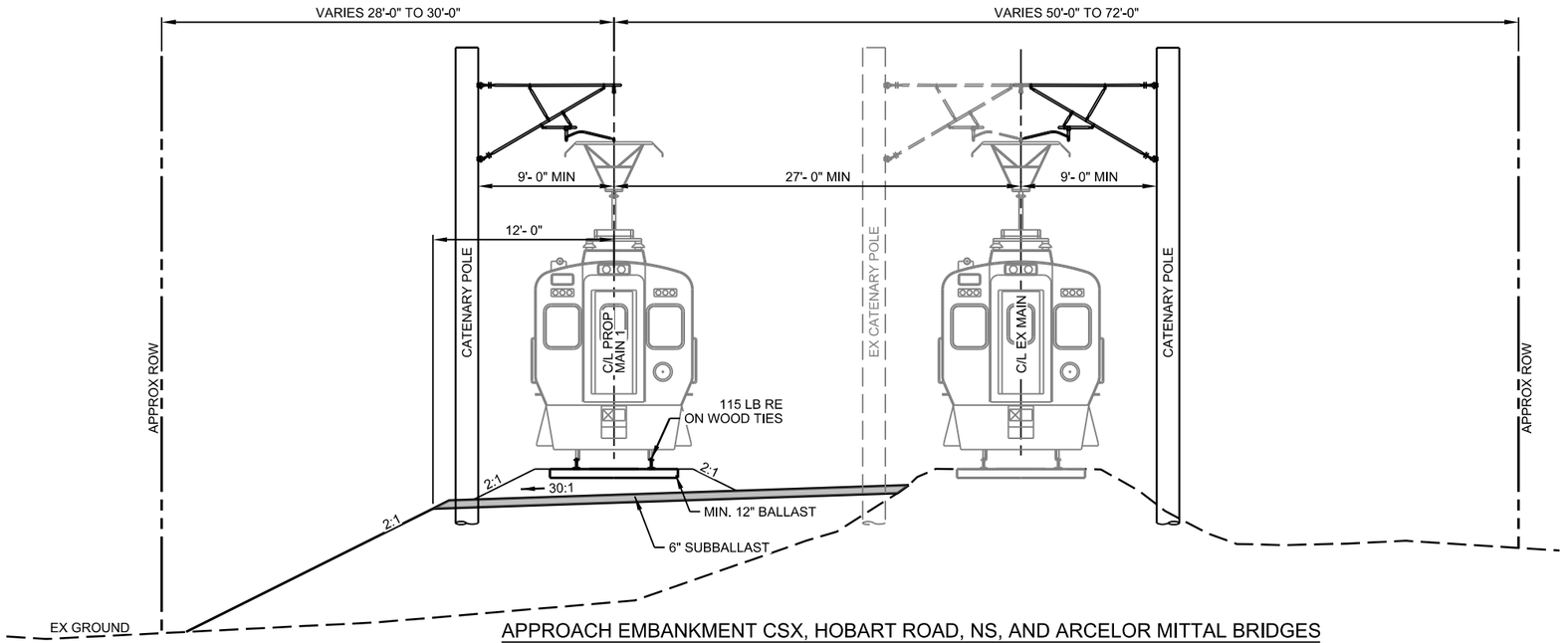
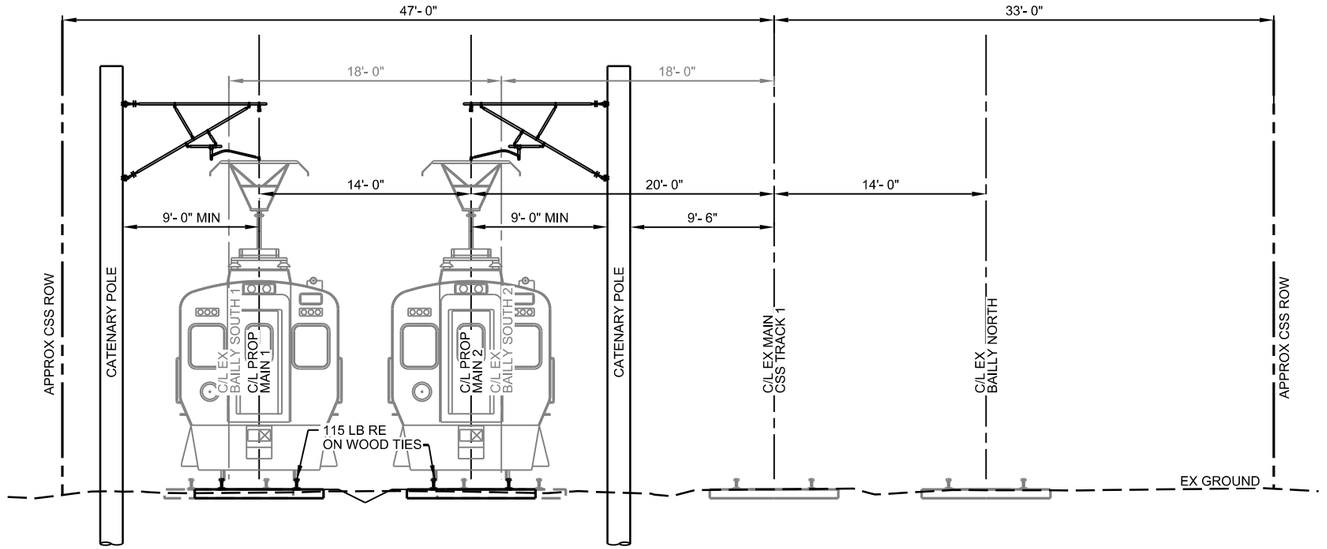


APPROACH EMBANKMENT CSX, HOBART ROAD, NS, AND ARCELOR MITTAL BRIDGES

MAIN 1 STA. 2877+00.0 TO STA. 2890+92.2
MAIN 1 STA. 2946+66.4 TO STA. 2507+33.3



BAILLY AREA

MAIN 1 STA. 2326+63.9 TO STA. 2448+53.4

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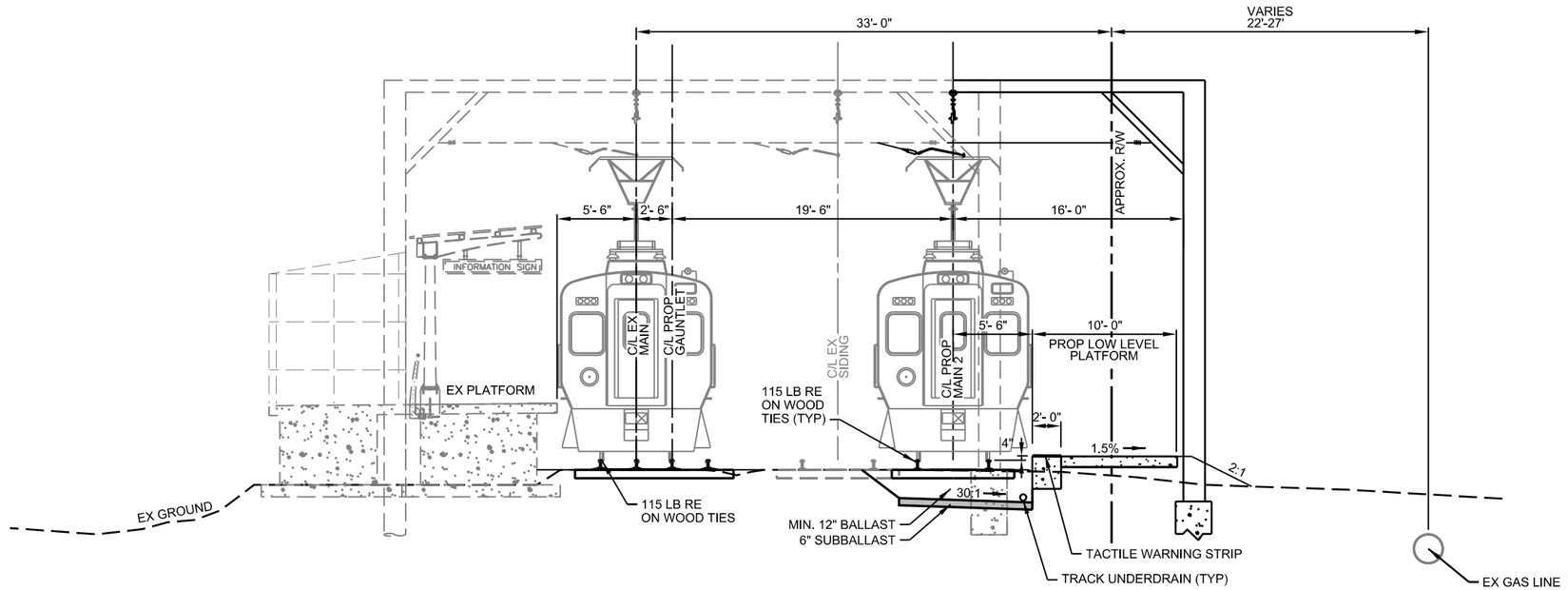
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

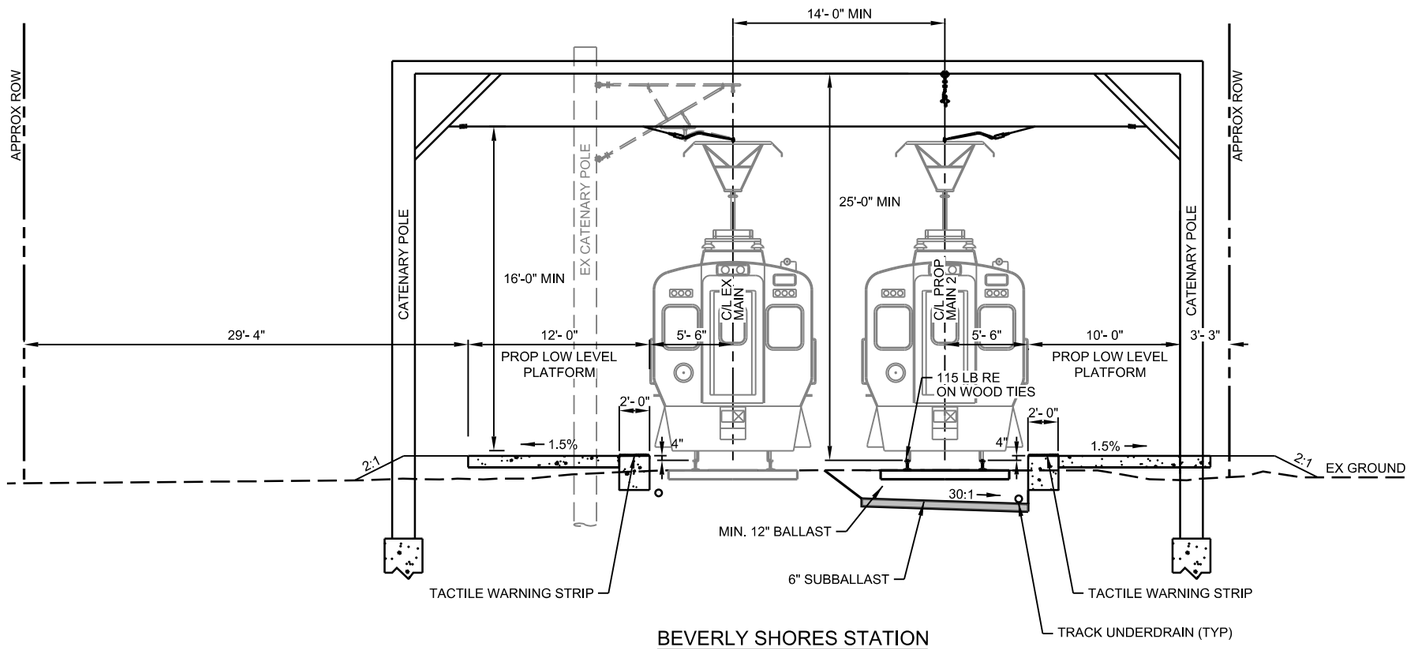
TYPICAL SECTIONS

FILENAME	DT_DWG_RTS-100
SCALE	NOT TO SCALE
SHEET	



DUNE PARK STATION

MAIN 1 STA. 2299+10.6 TO STA. 2306+30.6



BEVERLY SHORES STATION

MAIN 1 STA. 2073+04.2 TO STA. 2075+04.2

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RTS-103 OF RTS-105

PLOT DATE: 4/30/2020 10:19:48 PM kkoehneke

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NICTD
NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

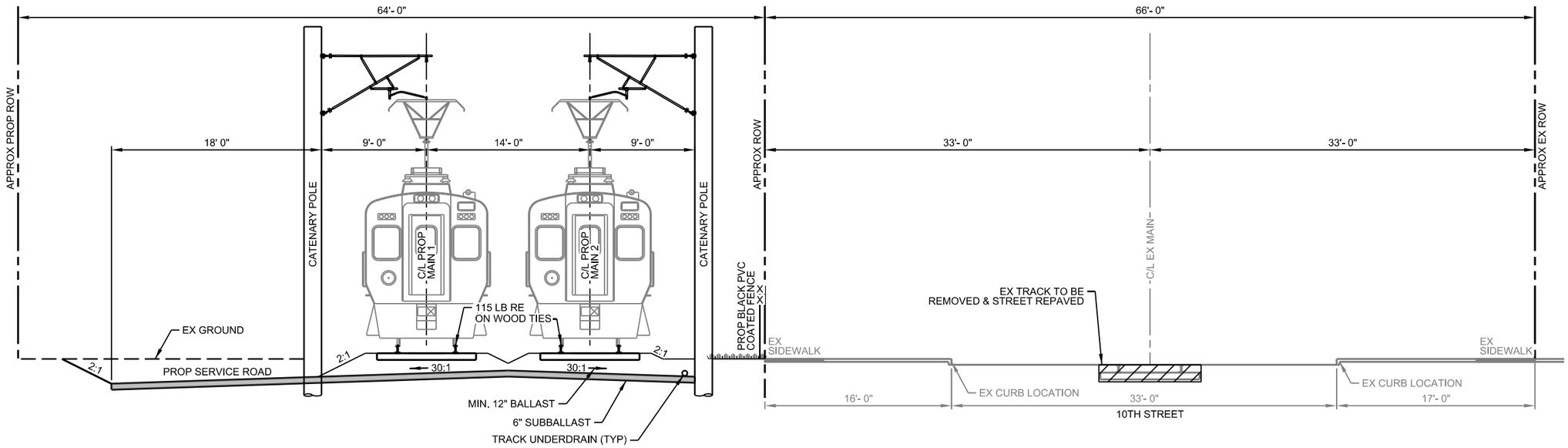
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

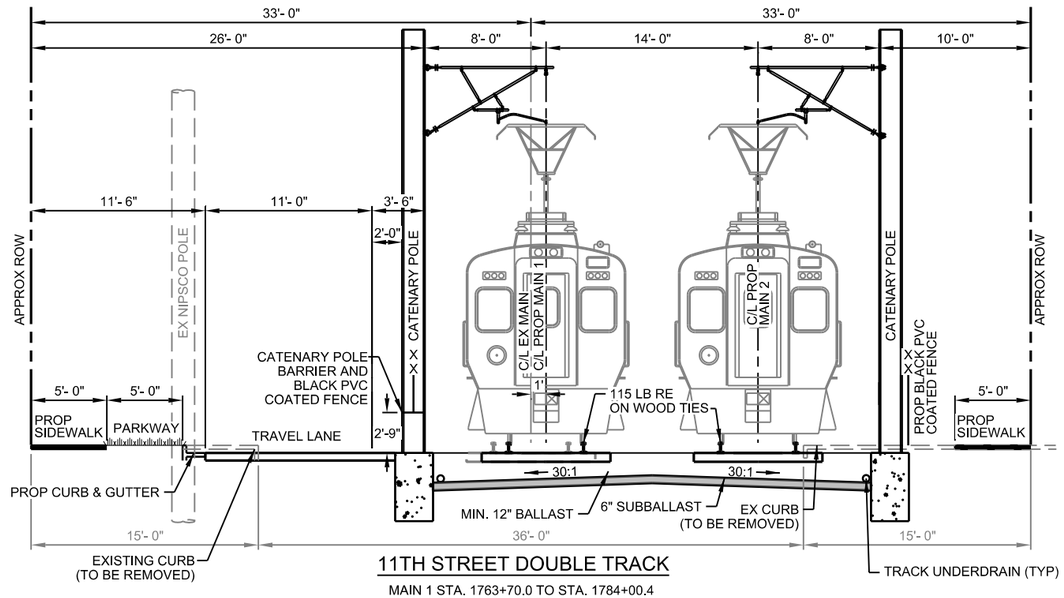
TYPICAL SECTIONS

FILENAME	DT_DWG_RTS-100
SCALE	NOT TO SCALE
SHEET	



10TH STREET DOUBLE TRACK

MAIN 1 STA. 1859+35.0 TO STA. 1829+25.0



11TH STREET DOUBLE TRACK

MAIN 1 STA. 1763+70.0 TO STA. 1784+00.4
MAIN 1 STA. 1791+20.4 TO STA. 1795+98.5
MAIN 1 STA. 1796+82.6 TO STA. 1799+88.2
MAIN 1 STA. 1801+26.2 TO STA. 1804+13.7
MAIN 1 STA. 1805+51.6 TO STA. 1806+89.7
MAIN 1 STA. 1807+56.9 TO STA. 1808+05.3
MAIN 1 STA. 1808+65.9 TO STA. 1809+51.6
MAIN 1 STA. 1809+90.8 TO STA. 1809+99.7
MAIN 1 STA. 1810+66.7 TO STA. 1812+49.8
MAIN 1 STA. 1813+46.5 TO STA. 1817+29.0

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RTS-104 OF RTS-105

PLOT DATE: 4/30/2020 10:19:49 PM kkoelneke

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

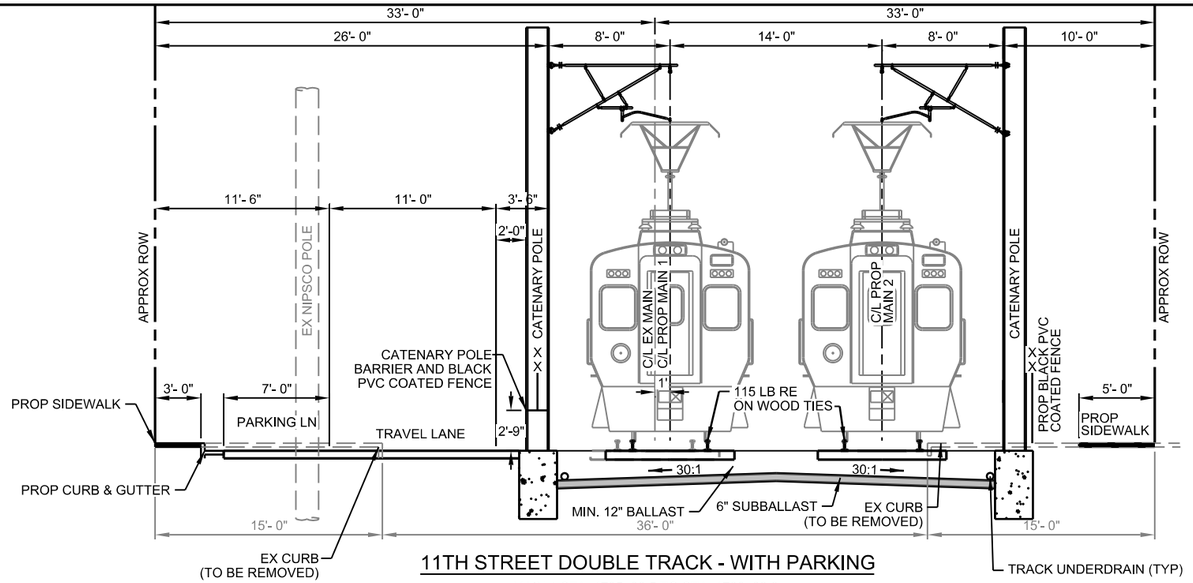
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

TYPICAL SECTIONS

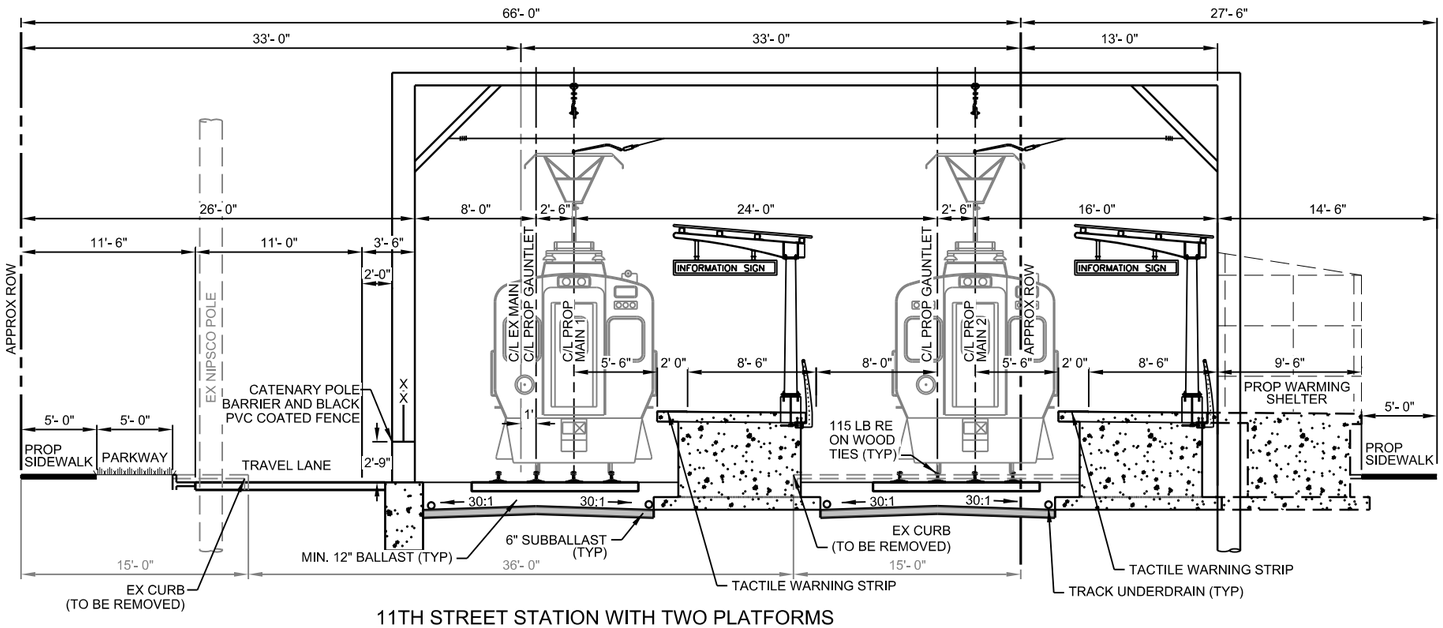
FILENAME	DT_DWG_RTS-100
SCALE	NOT TO SCALE

SHEET



11TH STREET DOUBLE TRACK - WITH PARKING

MAIN 1 STA. 1795+98.5 TO STA. 1796+82.6
MAIN 1 STA. 1799+88.2 TO STA. 1801+26.2
MAIN 1 STA. 1804+13.7 TO STA. 1805+51.6
MAIN 1 STA. 1806+89.7 TO STA. 1807+56.9
MAIN 1 STA. 1808+05.3 TO STA. 1808+65.9
MAIN 1 STA. 1809+51.6 TO STA. 1809+90.8
MAIN 1 STA. 1809+99.7 TO STA. 1810+66.7
MAIN 1 STA. 1812+49.8 TO STA. 1813+46.5



11TH STREET STATION WITH TWO PLATFORMS

MAIN 1 STA. 1784+00.4 TO STA. 1791+20.4

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RTS-105 OF RTS-105

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

TYPICAL SECTIONS

FILENAME	DT_DWG_RTS-100
SCALE	NOT TO SCALE
SHEET	

PROP MAIN 1 PROFILE

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DRAWING RPP-001 OF RPP-095

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

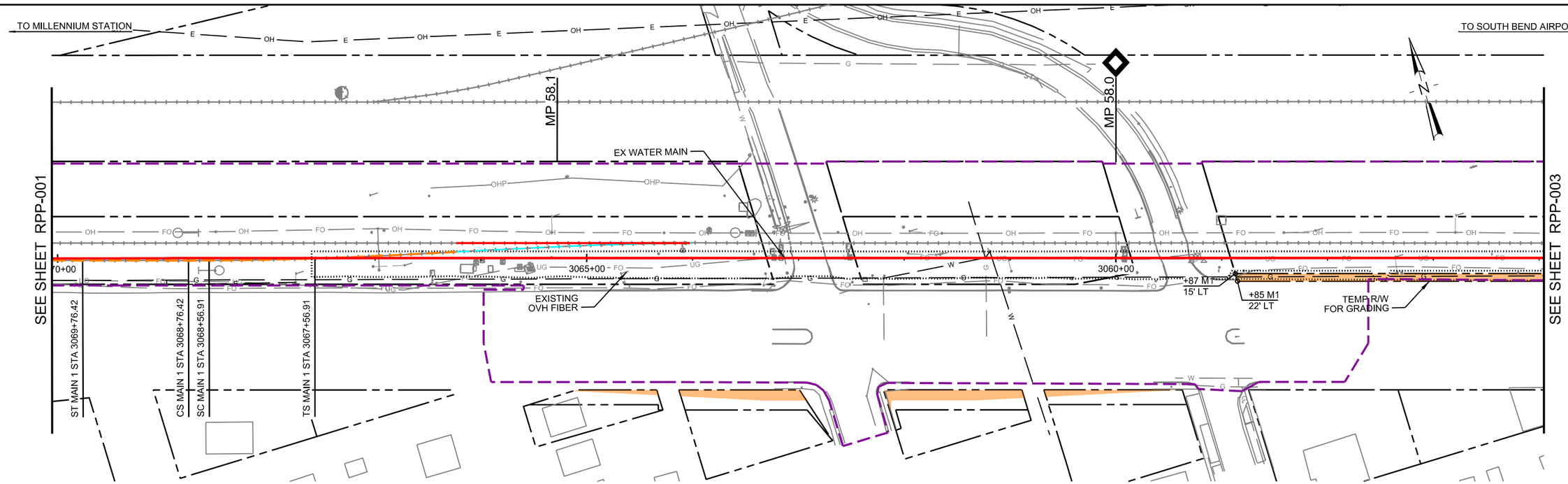
DESIGNED:	PEI-KEK
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

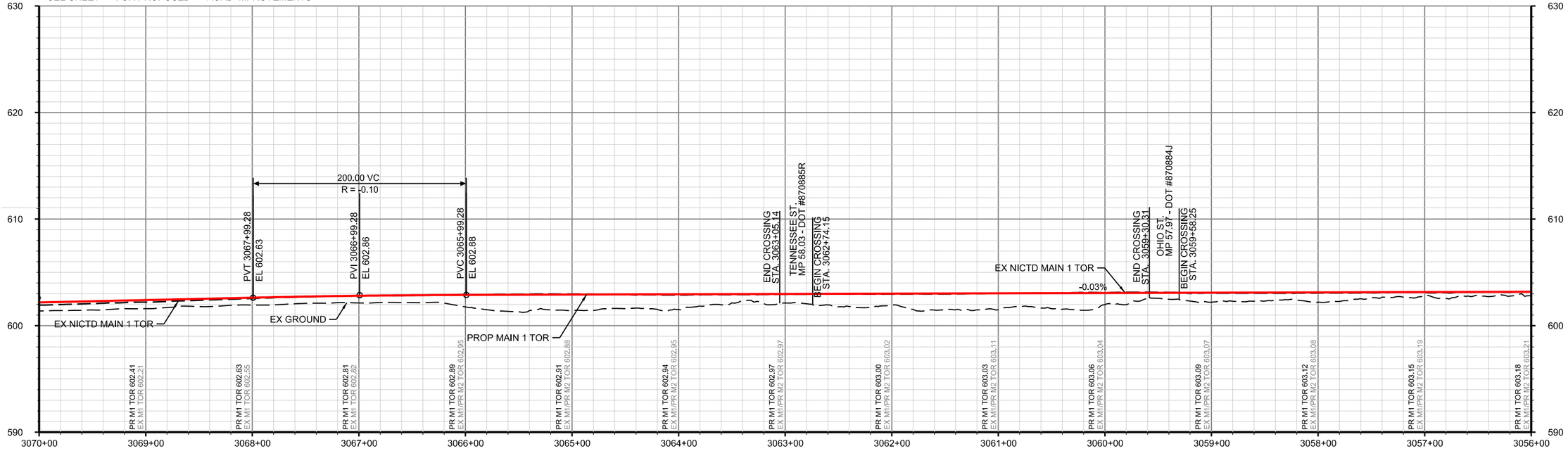
PLAN AND PROFILE
STA 3070+00 TO 3084+00
MP 58.2 TO 58.4

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



NOTE:
SEE SHEET *** FOR PROPOSED *** ROAD IMPROVEMENTS



50 25 0 50 100 HORIZONTAL SCALE
10 5 0 10 20 VERTICAL SCALE

PROP MAIN 1 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-002 OF RPP-095

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Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	PEI-KEK
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

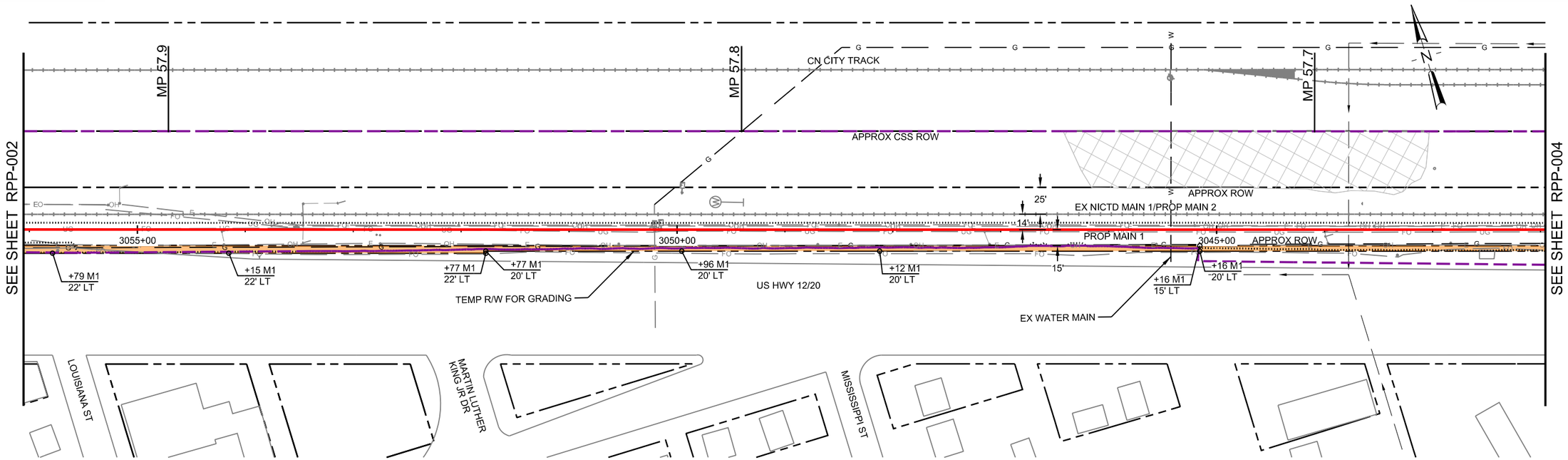
PLAN AND PROFILE
STA 3056+00 TO 3070+00
MP 57.9 TO 58.2

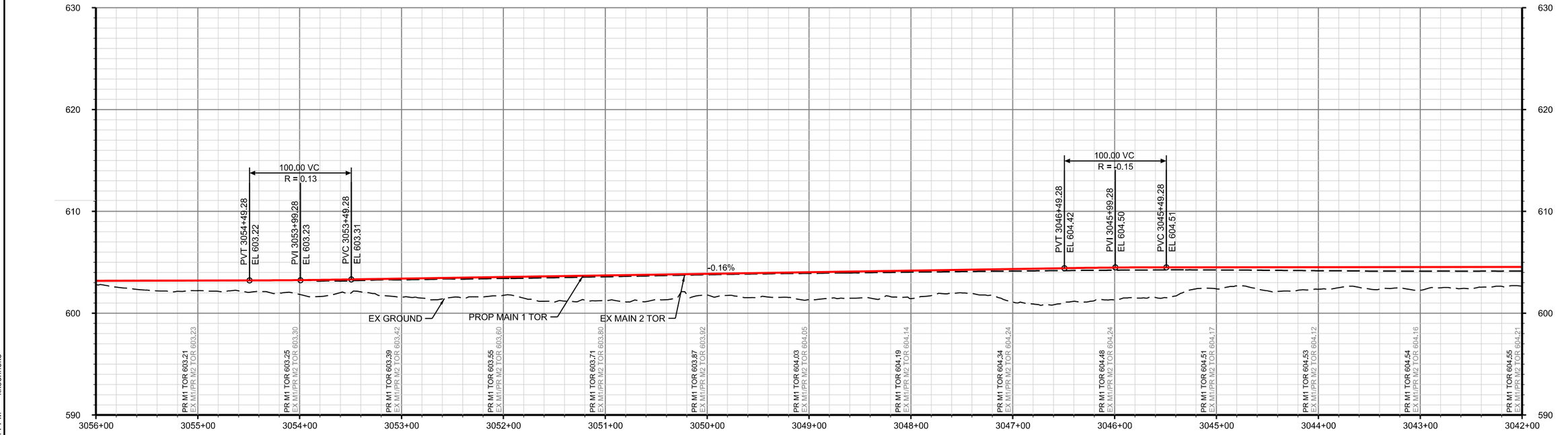
FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF

TO MILLENNIUM STATION

TO SOUTH BEND AIRPORT





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 1 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-003 OF RPP-095

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

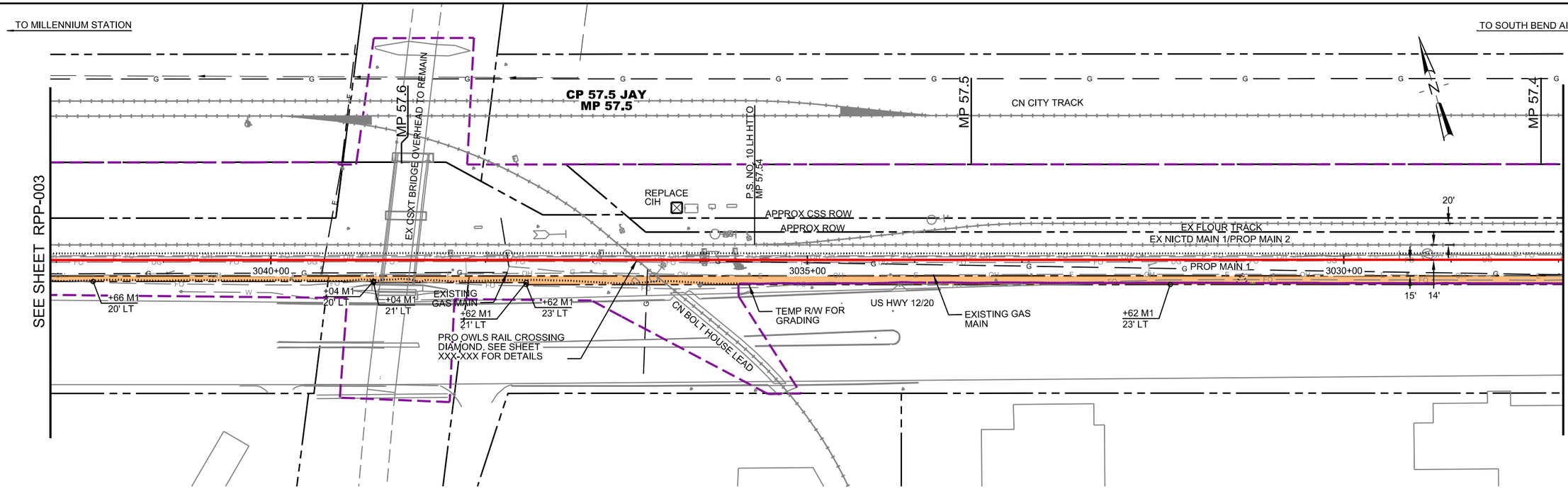
DESIGNED:	PEI-KEK
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

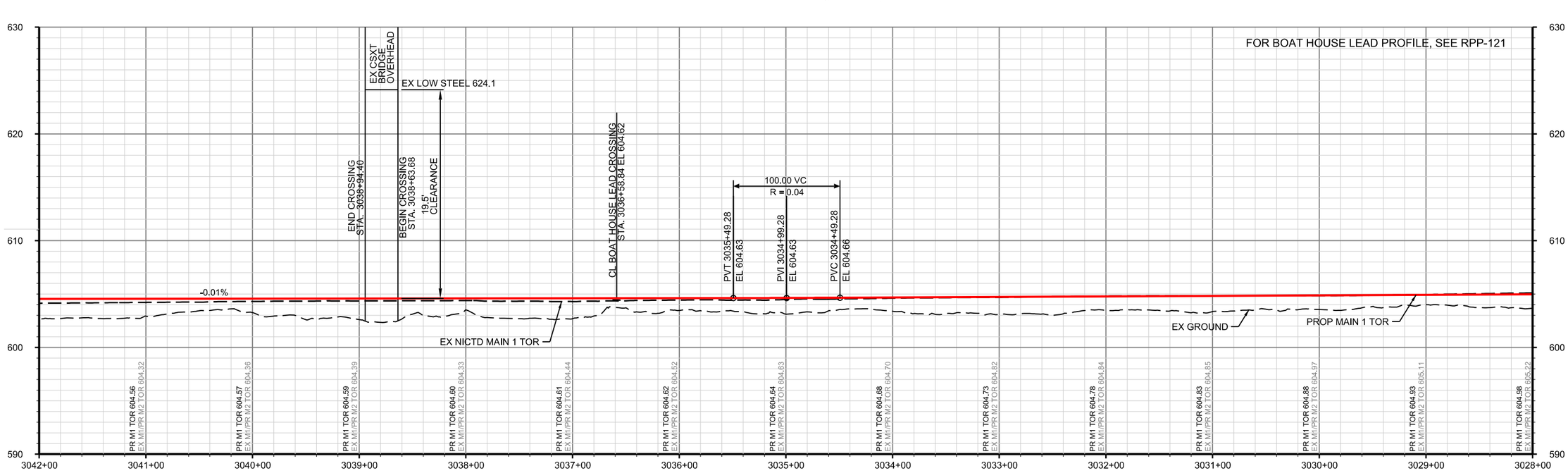
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 3042+00 TO 3056+00
MP 57.7 TO 57.9

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





PROP MAIN 1 PROFILE

HORIZONTAL SCALE 50 25 0 50 100

VERTICAL SCALE 10 5 0 10 20

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-004 OF RPP-095

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

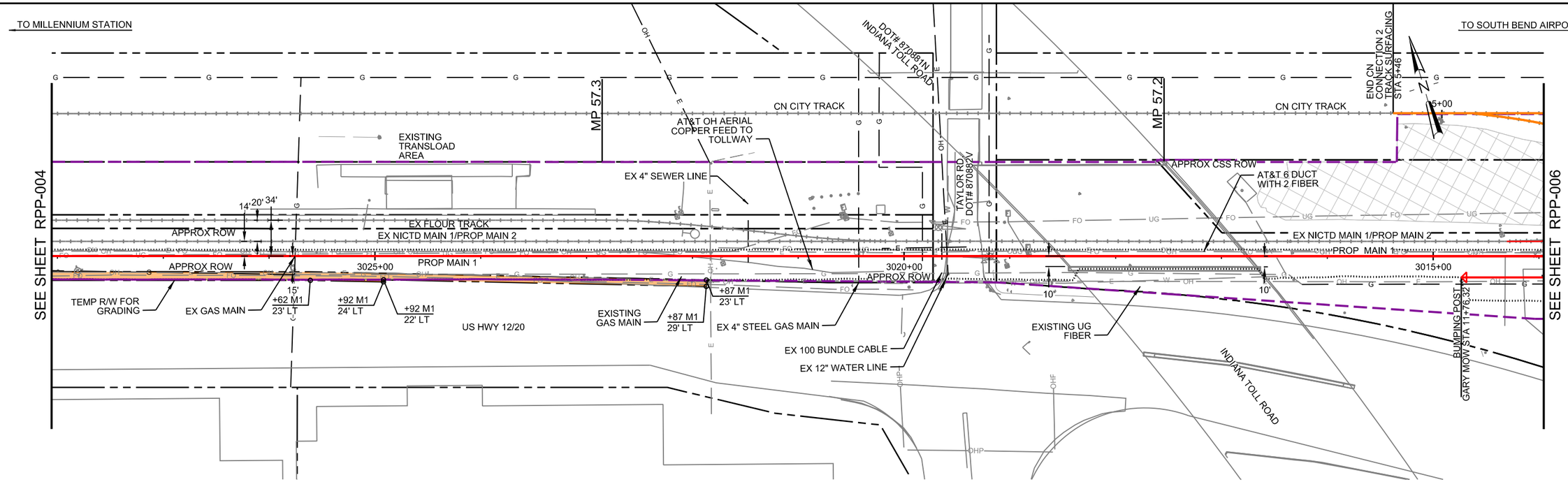
DESIGNED:	PEI-KEK
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

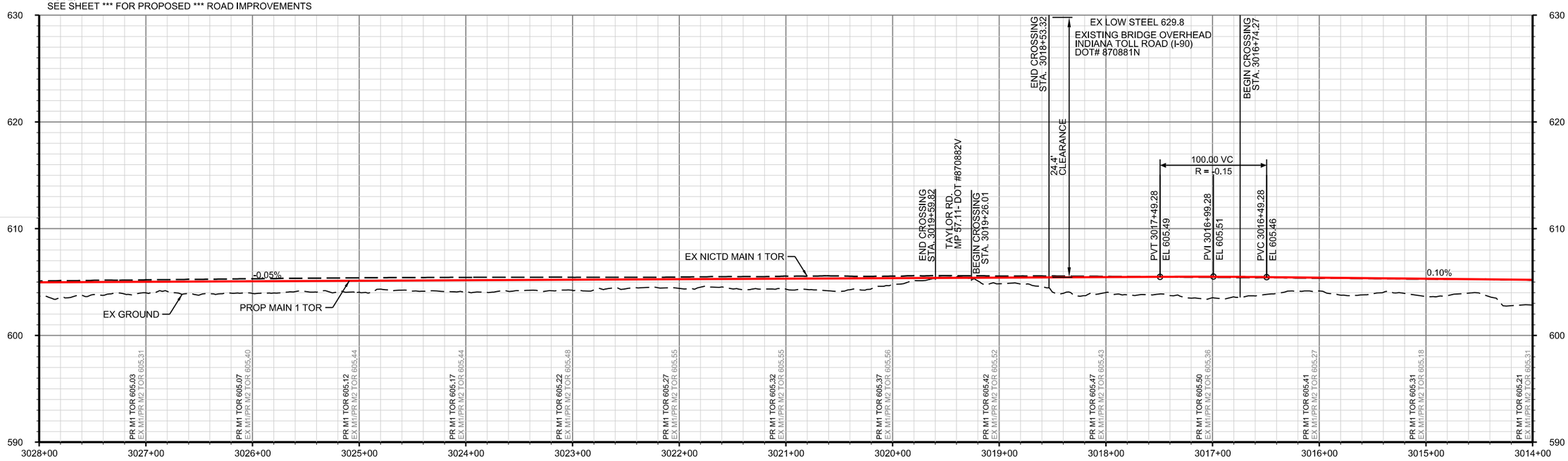
PLAN AND PROFILE
STA 3028+00 TO 3042+00
MP 57.4 TO 57.7

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



NOTE:
SEE SHEET *** FOR PROPOSED *** ROAD IMPROVEMENTS



50 25 0 50 100 HORIZONTAL SCALE
10 5 0 10 20 VERTICAL SCALE

PROP MAIN 1 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-005 OF RPP-095

PLOT DATE: 4/30/2020 10:20:18 PM kkoehneke

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

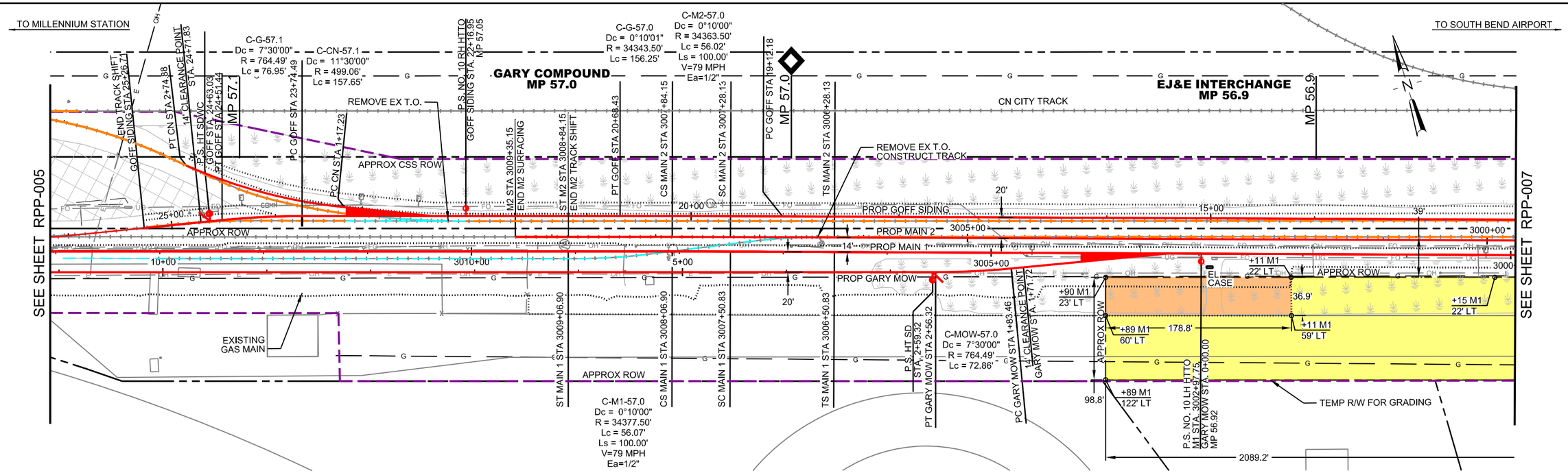
DESIGNED:	PEI-KEK
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

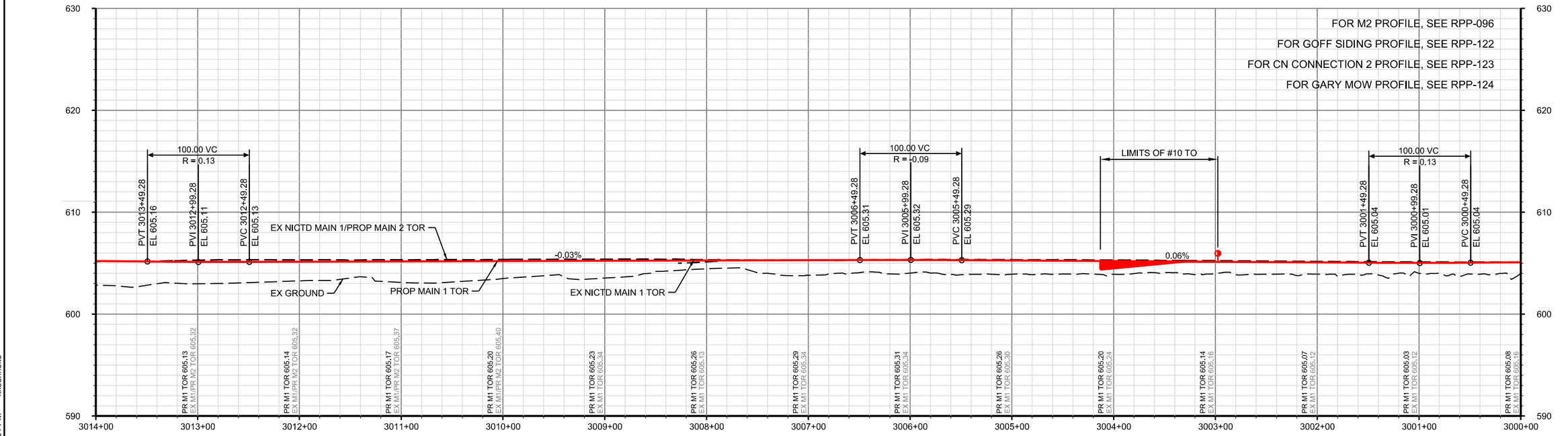
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 3014+00 TO 3028+00
MP 57.1 TO 57.4

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE
10 5 0 10 20 VERTICAL SCALE

PROP MAIN 1 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-006 OF RPP-095

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

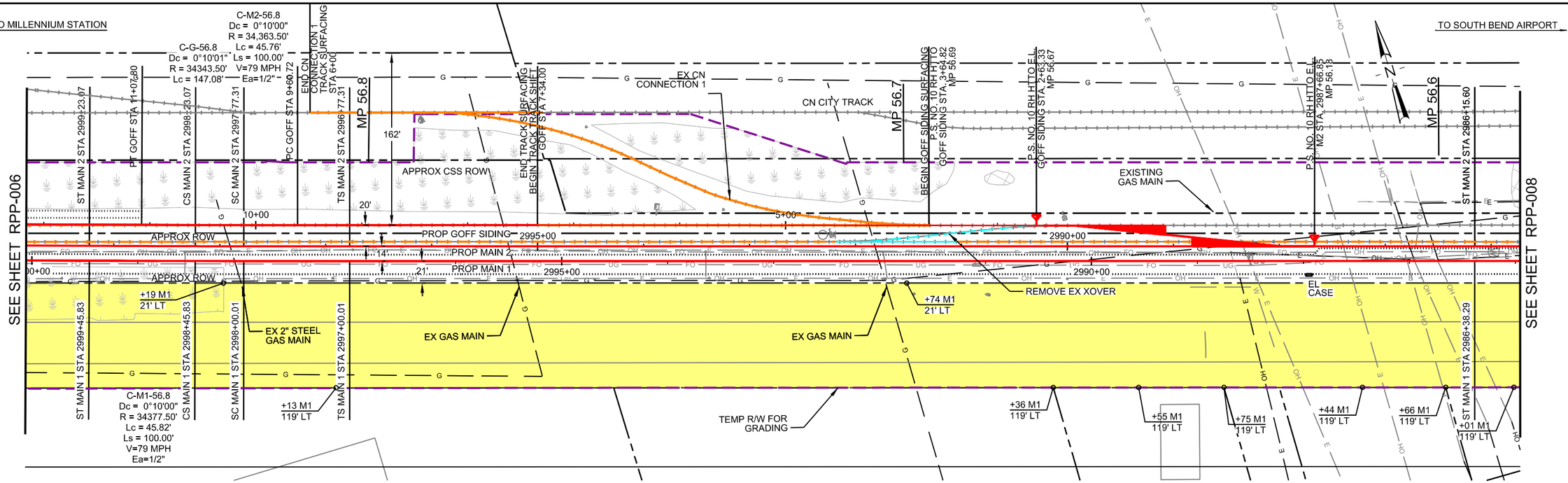
DESIGNED:	PEI-KEK
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

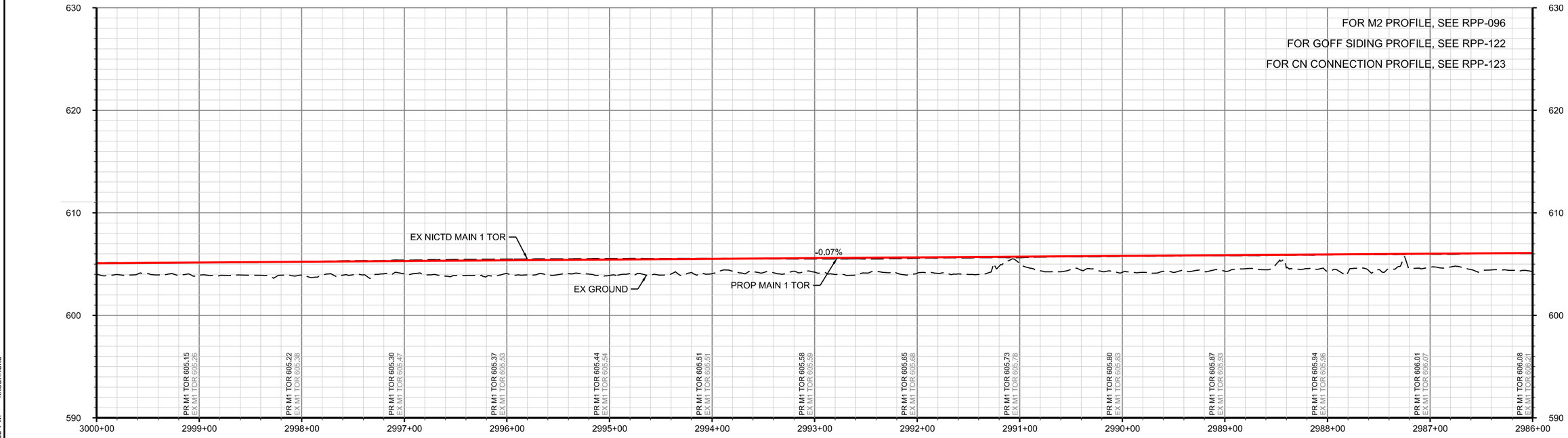
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 3000+00 TO 3014+00
MP 56.9 TO 57.1

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE
10 5 0 10 20 VERTICAL SCALE

PROP MAIN 1 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-007 OF RPP-095

PLOT DATE: 4/30/2020 10:20:29 PM kkoehneke

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Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

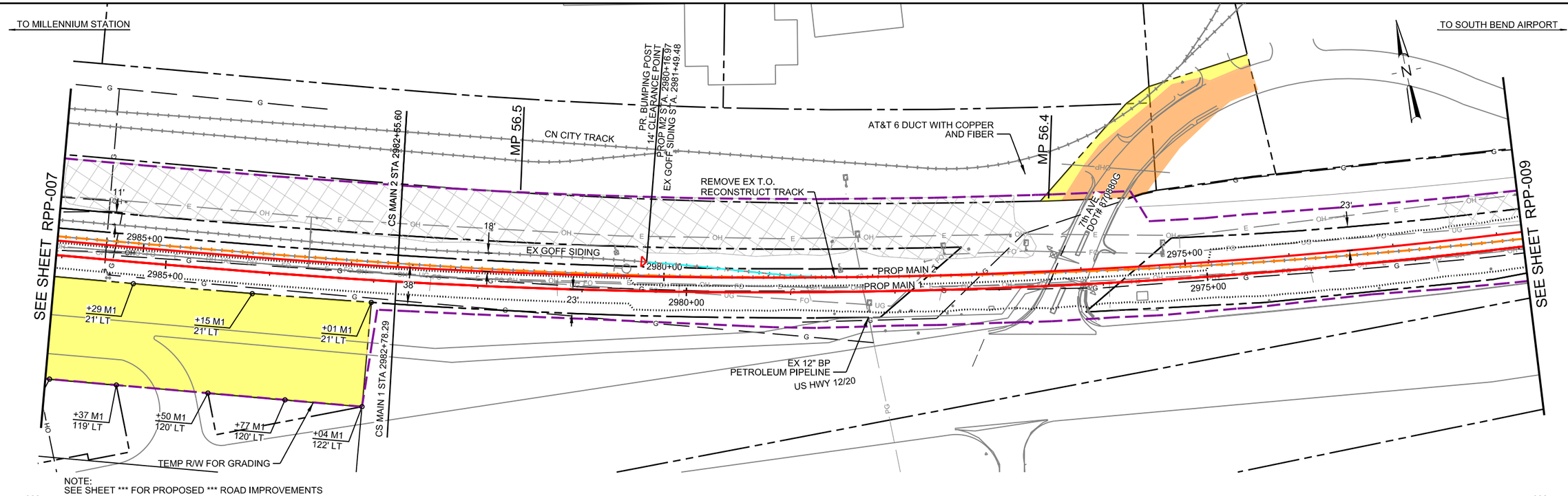
DESIGNED:	PEI-KEK
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

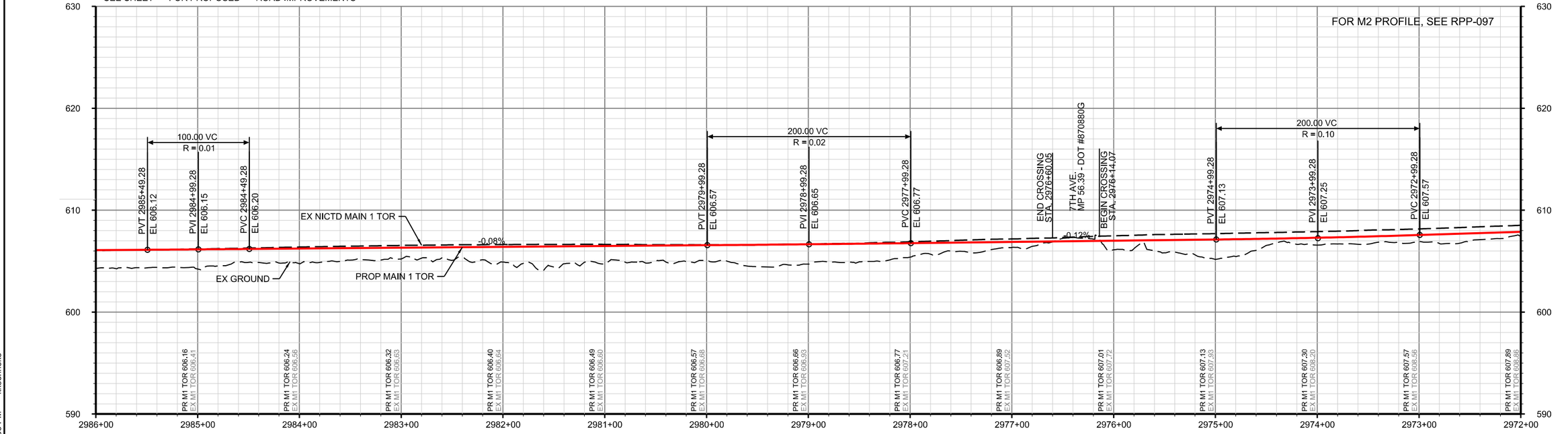
PLAN AND PROFILE
STA 2986+00 TO 3000+00
MP 56.6 TO 56.9

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



NOTE:
SEE SHEET *** FOR PROPOSED *** ROAD IMPROVEMENTS



PROP MAIN 1 PROFILE

HORIZONTAL SCALE 50 25 0 50 100
VERTICAL SCALE 10 5 0 10 20

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-008 OF RPP-095

PLOT DATE: 4/30/2020 10:20:33 PM kkoehneke

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33 East Highway 12
Chesterton, Indiana 46304

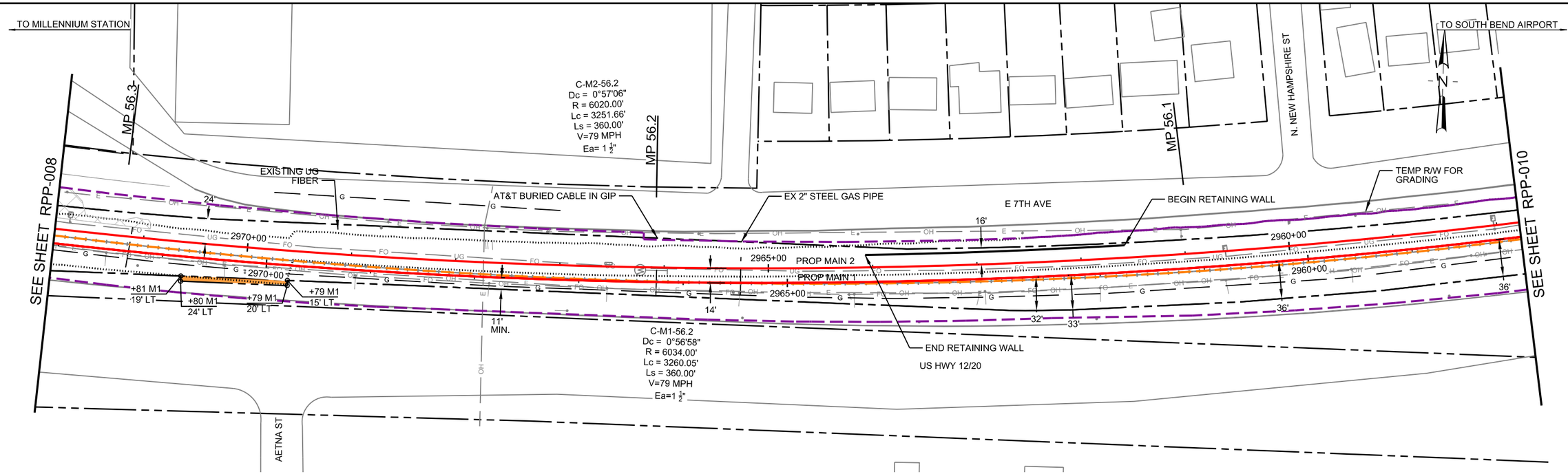
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

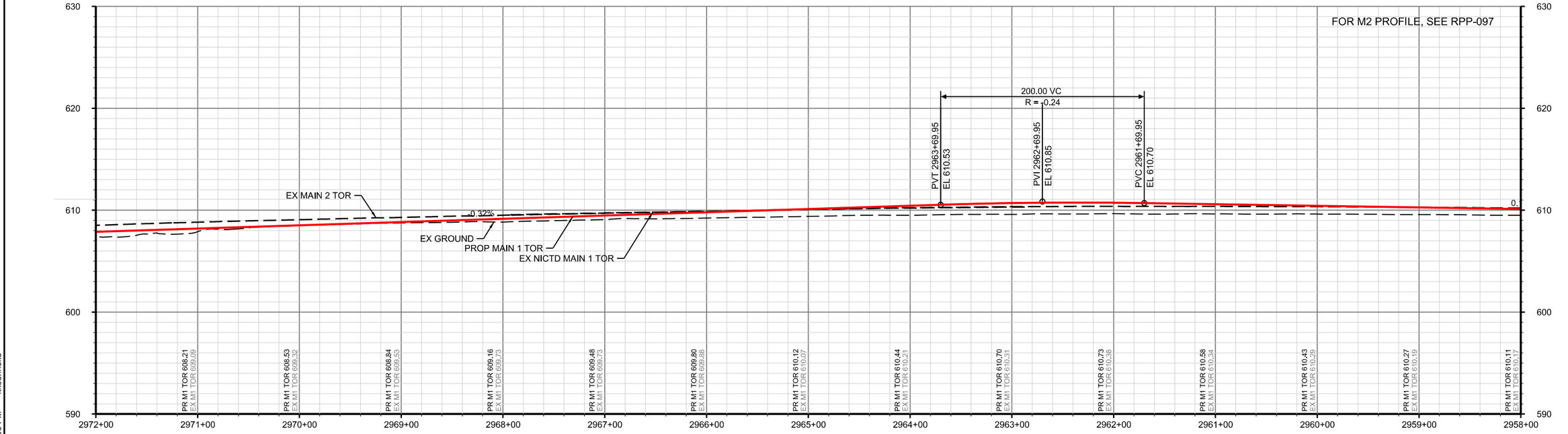
DESIGNED:	PEI-KEK
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2972+00 TO 2986+00
MP 56.3 TO 56.6

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED
SHEET	OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 1 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-009 OF RPP-095

PLOT DATE: 4/30/2020 10:20:38 PM kkoehneke

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PATRICK ENGINEERING

ISSUE	DATE	DESCRIPTION
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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

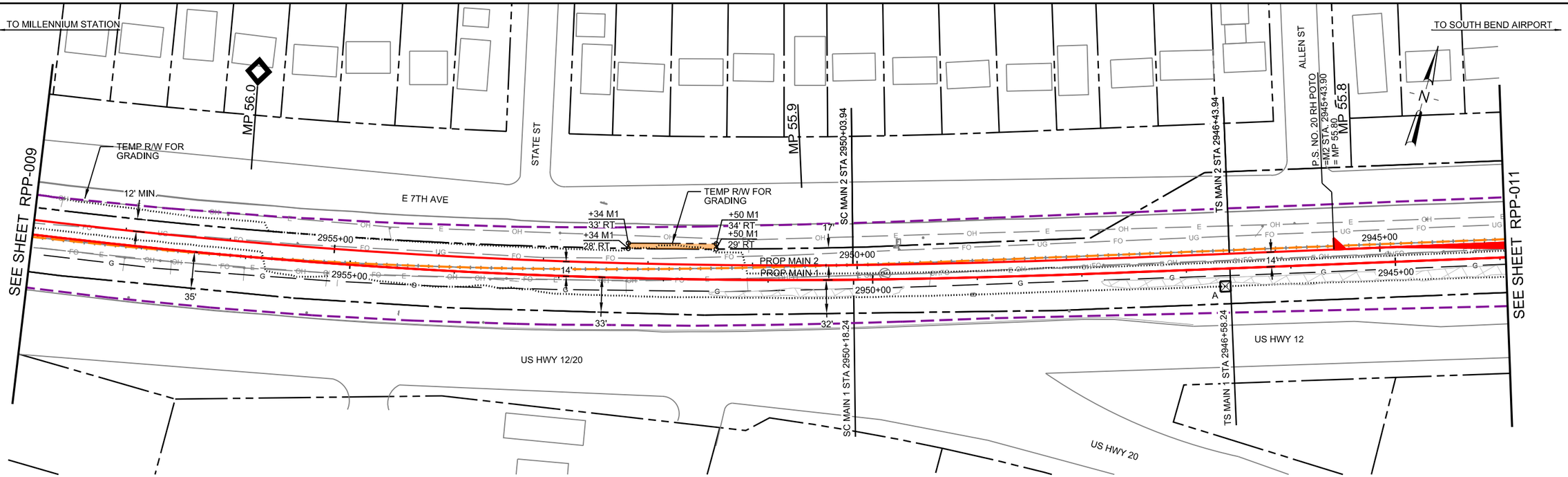
DESIGNED:	PEI-KEK
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

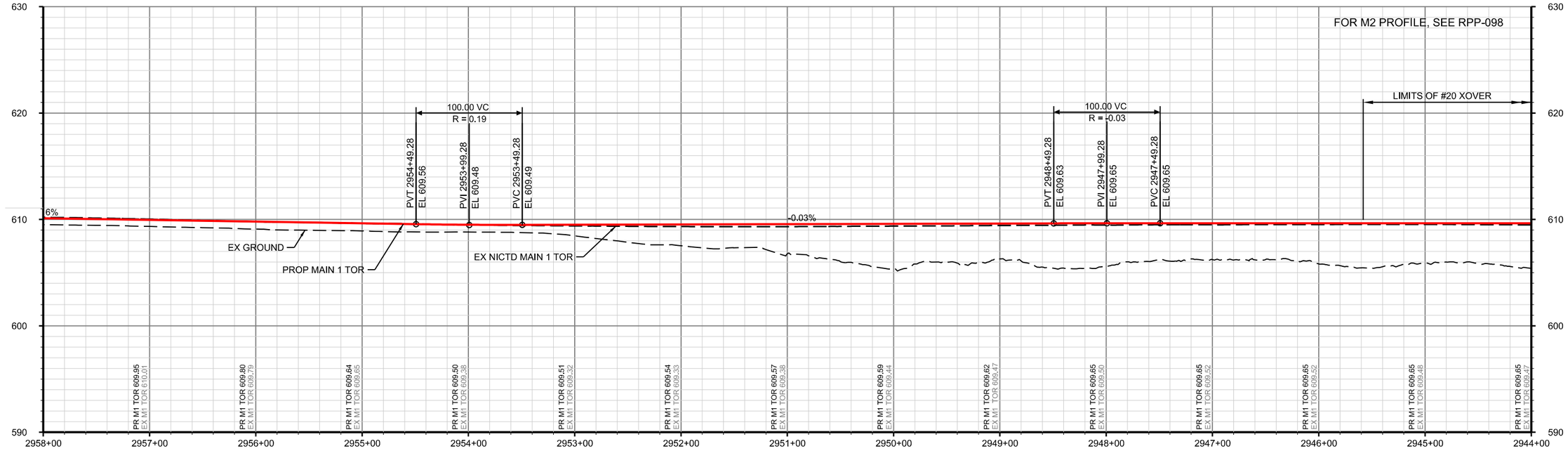
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2958+00 TO 2972+00
MP 56.0 TO 56.3

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE
10 5 0 10 20 VERTICAL SCALE

PROP MAIN 1 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-010 OF RPP-095

PLOT DATE: 4/30/2020 10:20:42 PM kkoehneke

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PATRICK ENGINEERING

ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

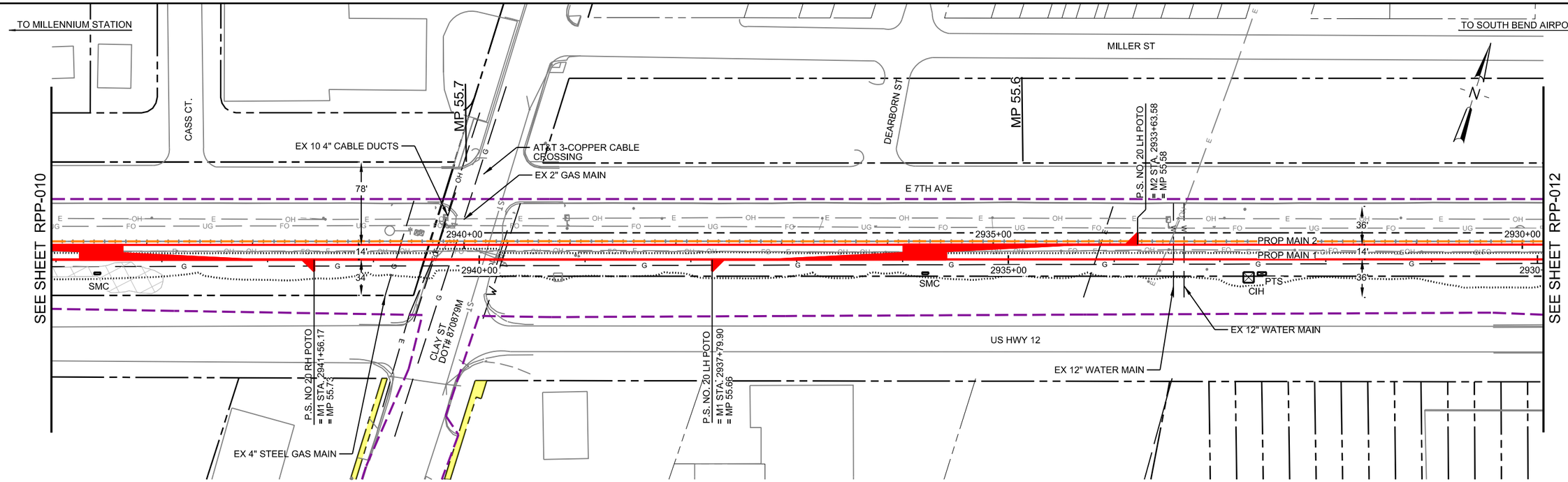
DESIGNED:	PEI-KEK
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

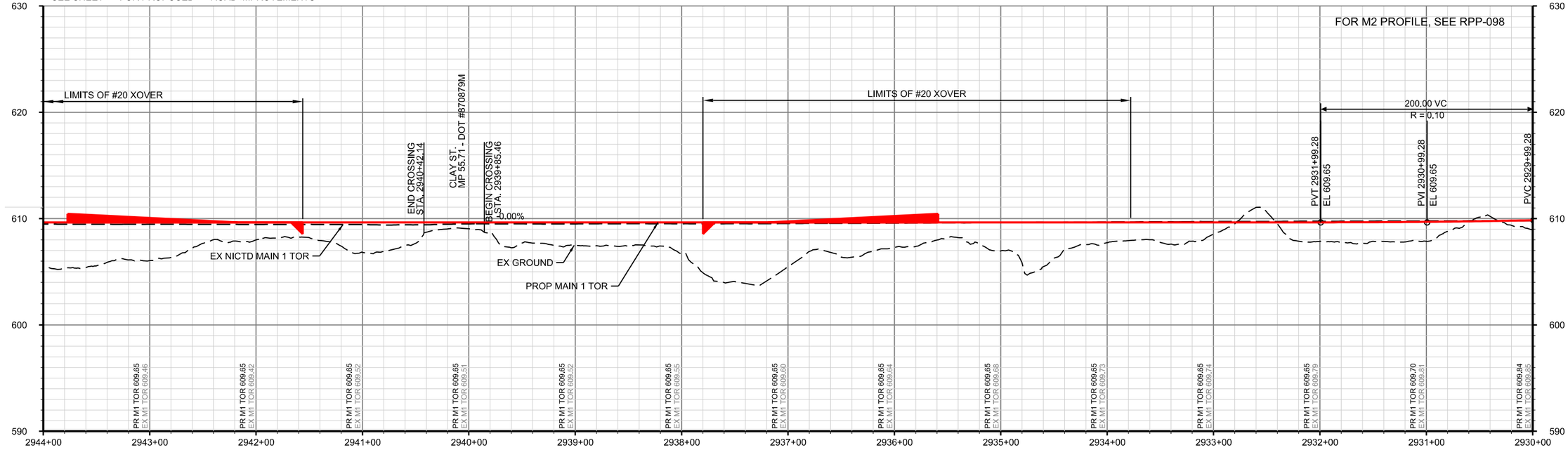
PLAN AND PROFILE
STA 2944+00 TO 2958+00
MP 55.8 TO 56.0

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



NOTE:
SEE SHEET *** FOR PROPOSED *** ROAD IMPROVEMENTS



PROP MAIN 1 PROFILE

HORIZONTAL SCALE 50 25 0 50 100
VERTICAL SCALE 10 5 0 10 20

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-011 OF RPP-095

PLOT DATE: 4/30/2020 10:20:47 PM kkoehneke

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NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	PEI-KEK
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

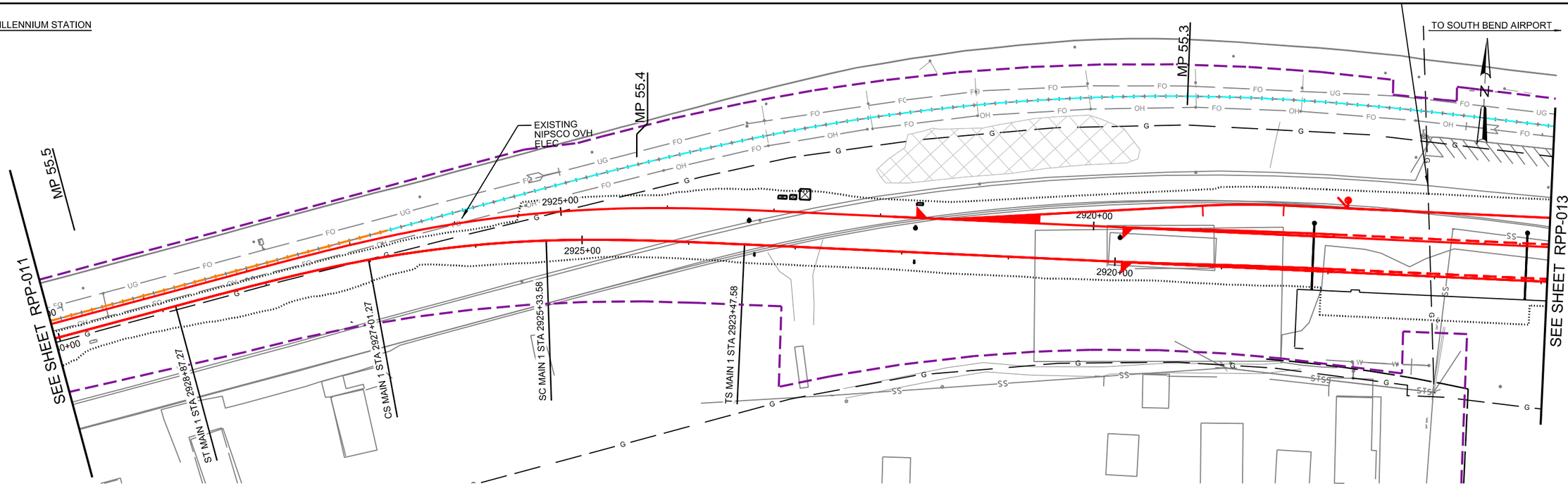
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2930+00 TO 2944+00
MP 55.5 TO 55.8

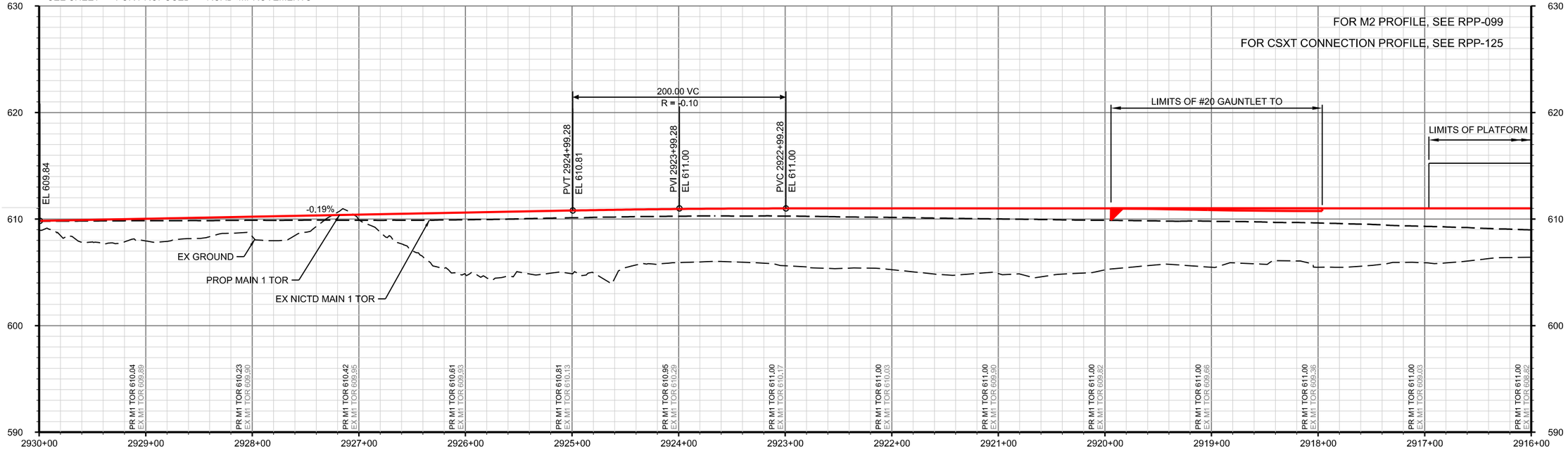
FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED
SHEET	OF

TO MILLENNIUM STATION

TO SOUTH BEND AIRPORT



NOTE:
SEE SHEET *** FOR PROPOSED *** ROAD IMPROVEMENTS



HORIZONTAL SCALE 50 25 0 50 100

VERTICAL SCALE 10 5 0 10 20

PROP MAIN 1 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-012 OF RPP-095

PLOT DATE: 4/30/2020 10:20:53 PM kkoehneke

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ISSUE	DATE	DESCRIPTION
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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

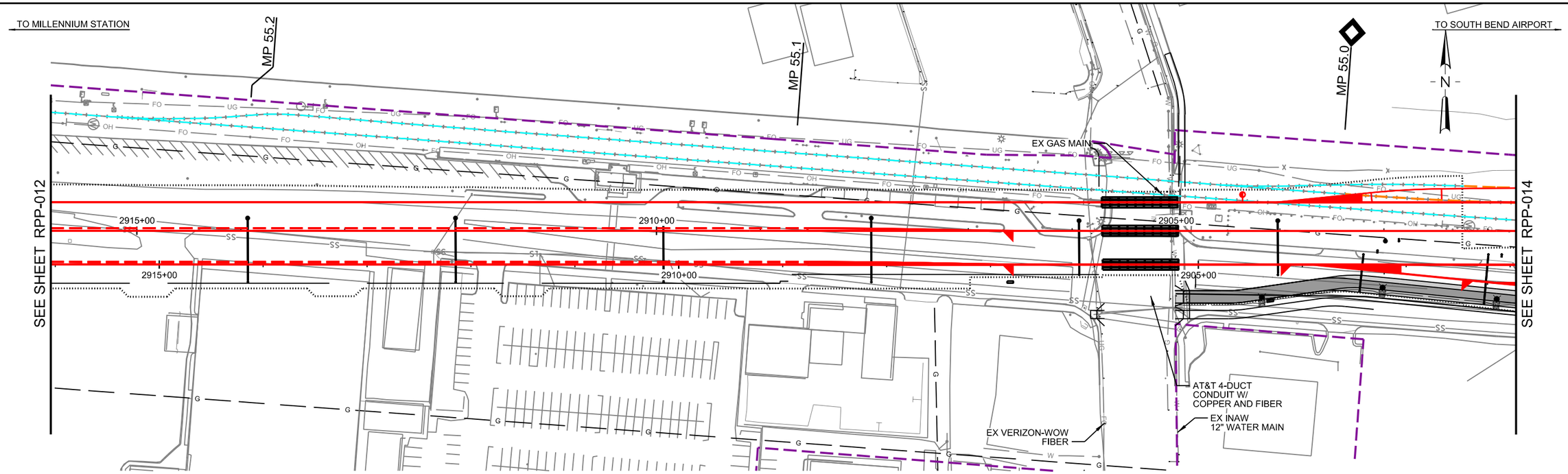
DESIGNED:	PEI-KEK
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

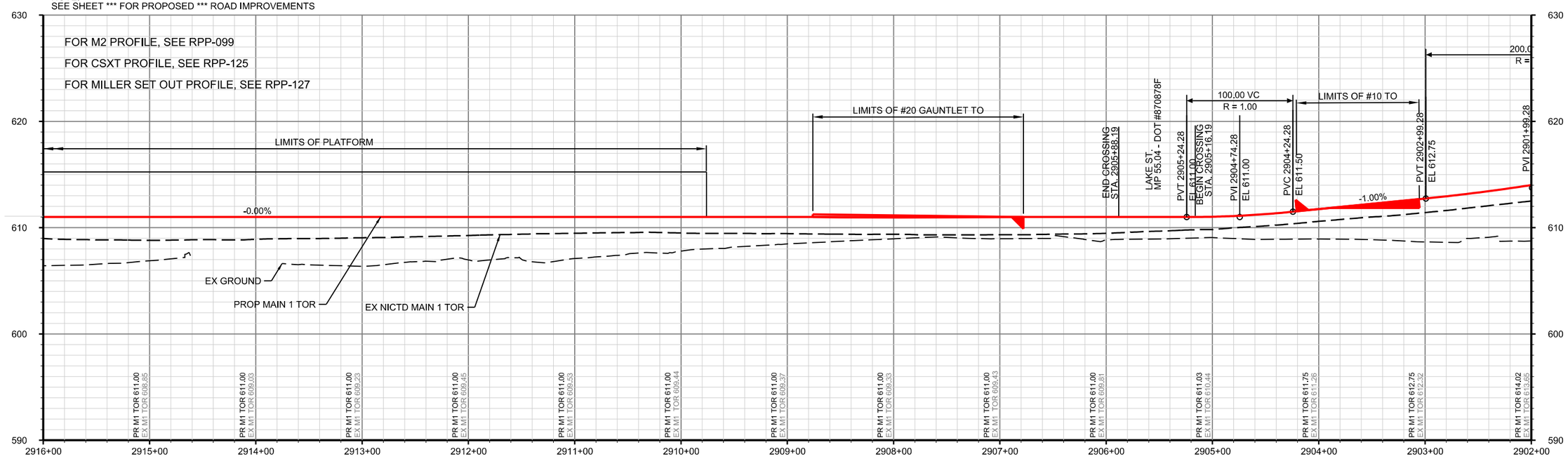
PLAN AND PROFILE
STA 2916+00 TO 2930+00
MP 55.2 TO 55.5

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



NOTE:
SEE SHEET *** FOR PROPOSED *** ROAD IMPROVEMENTS



50 25 0 50 100 HORIZONTAL SCALE
10 5 0 10 20 VERTICAL SCALE

PROP MAIN 1 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-013 OF RPP-095

PLOT DATE: 4/30/2020 10:20:57 PM kkoehneke

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

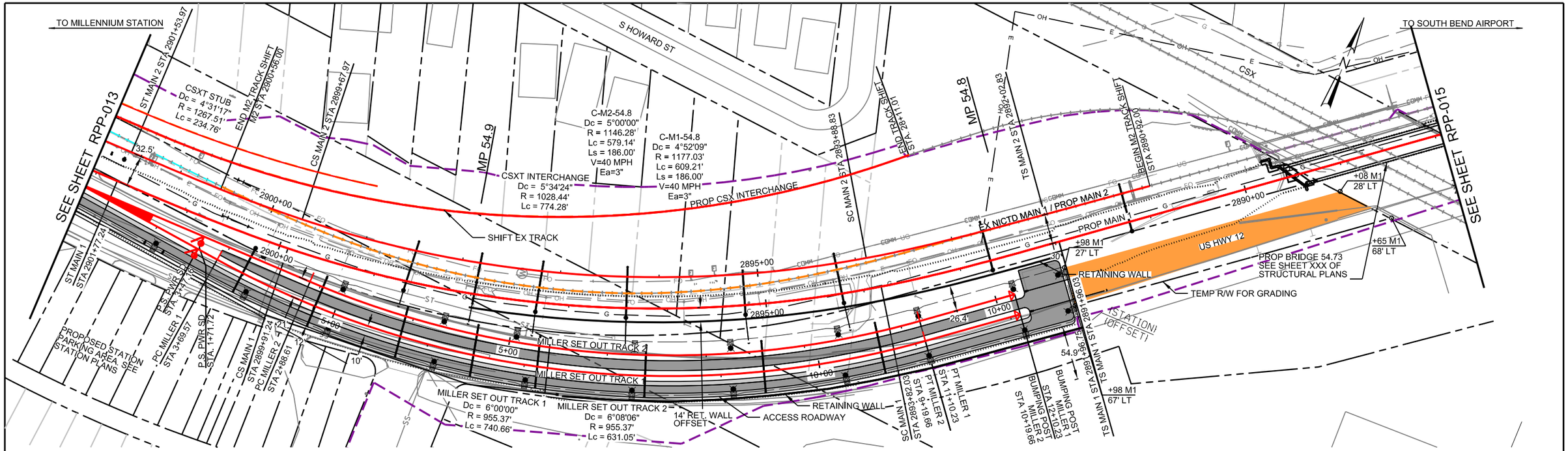
DESIGNED:	PEI-KEK
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

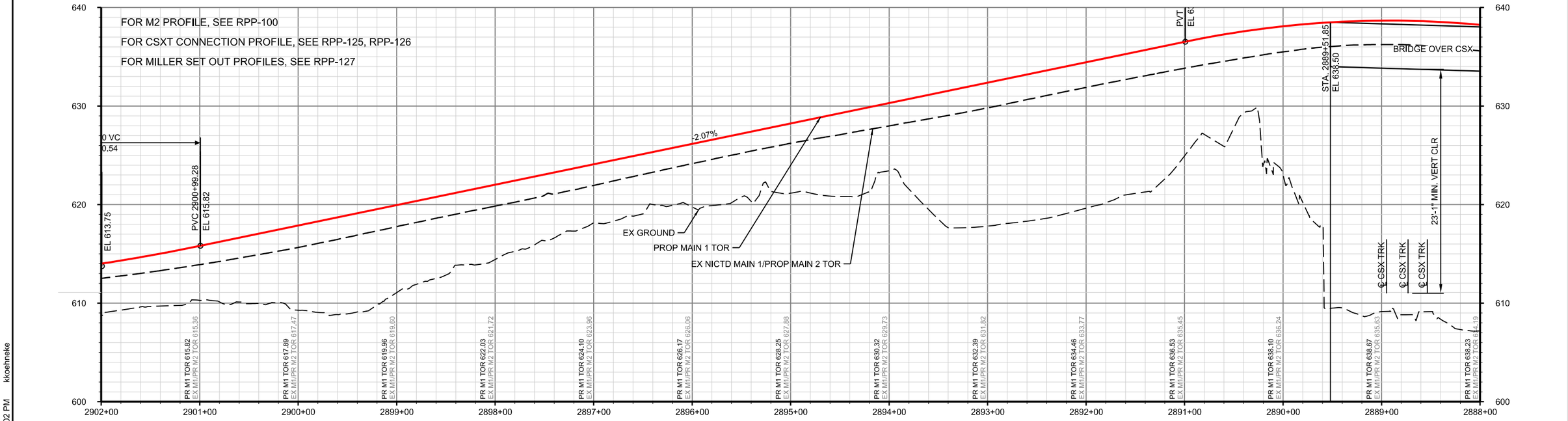
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2902+00 TO 2916+00
MP 55.0 TO 55.2

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 1 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-014 OF RPP-095

PLOT DATE: 4/30/2020 10:21:02 PM kkoehneke

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NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

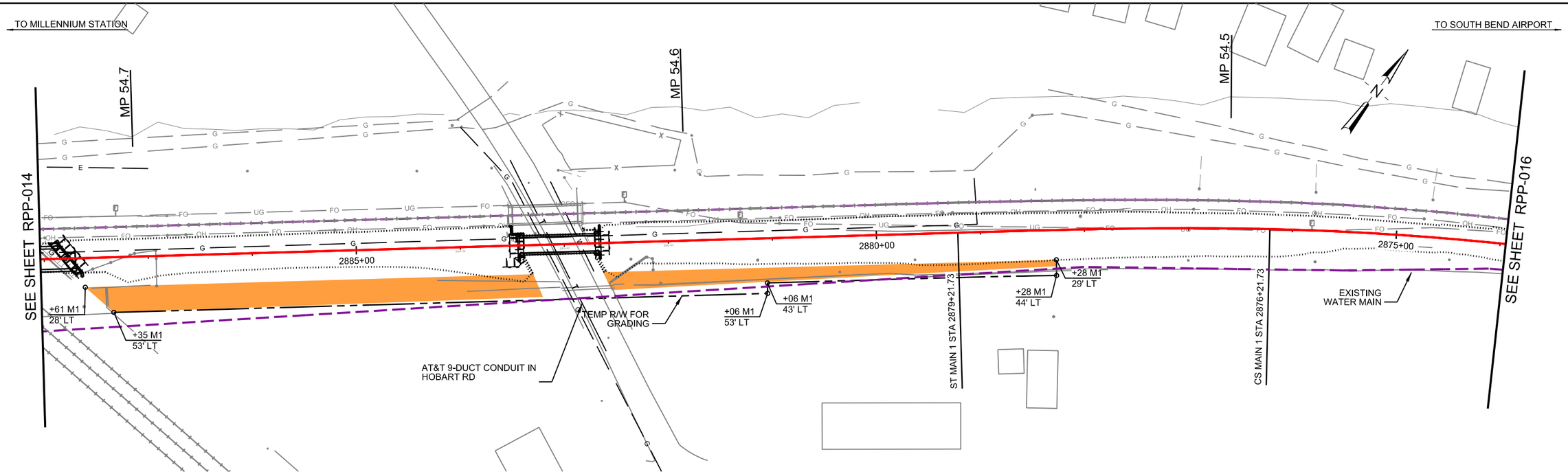
DESIGNED:	PEI-KEK
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

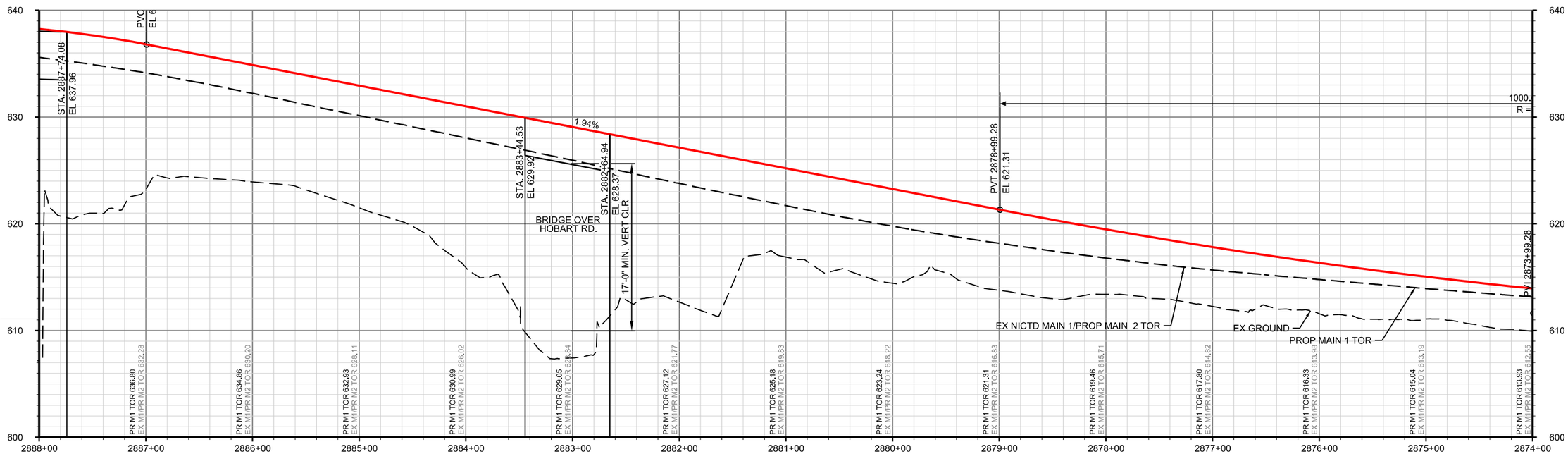
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2888+00 TO 2902+00
MP 54.7 TP 55.0

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 1 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-015 OF RPP-095

PLOT DATE: 4/30/2020 10:21:06 PM kkoehneke

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

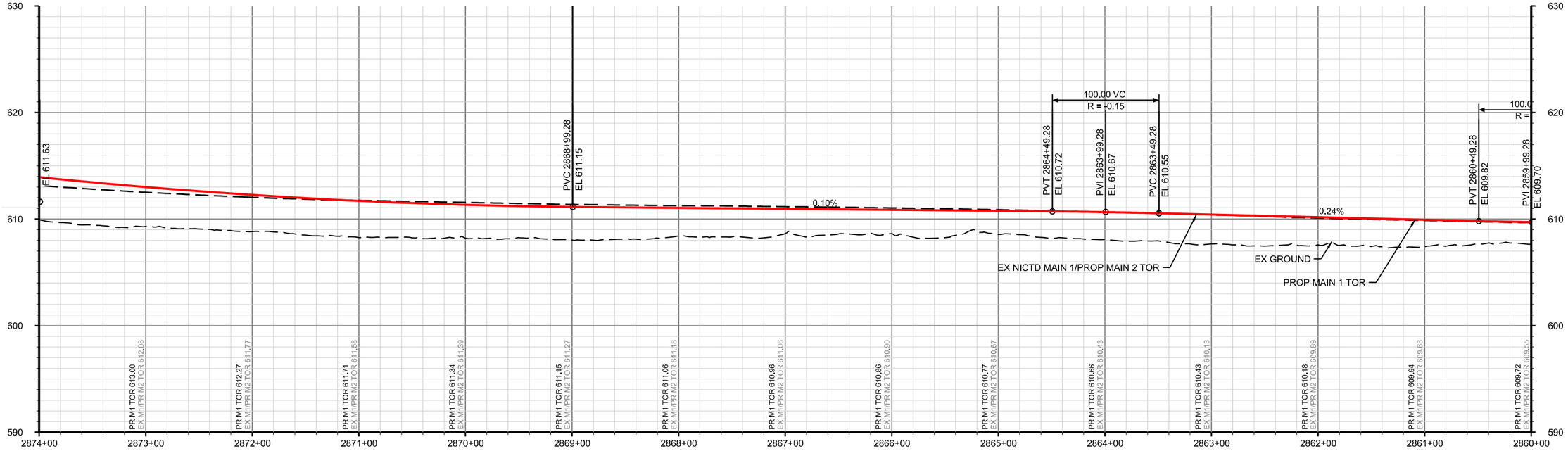
DESIGNED:	PEI-KEK
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2874+00 TO 2888+00
MP 54.5 TO 54.7

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



PROP MAIN 1 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-016 OF RPP-095

PLOT DATE: 4/30/2020 10:21:11 PM kkoehneke

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Chesterton, Indiana 46304

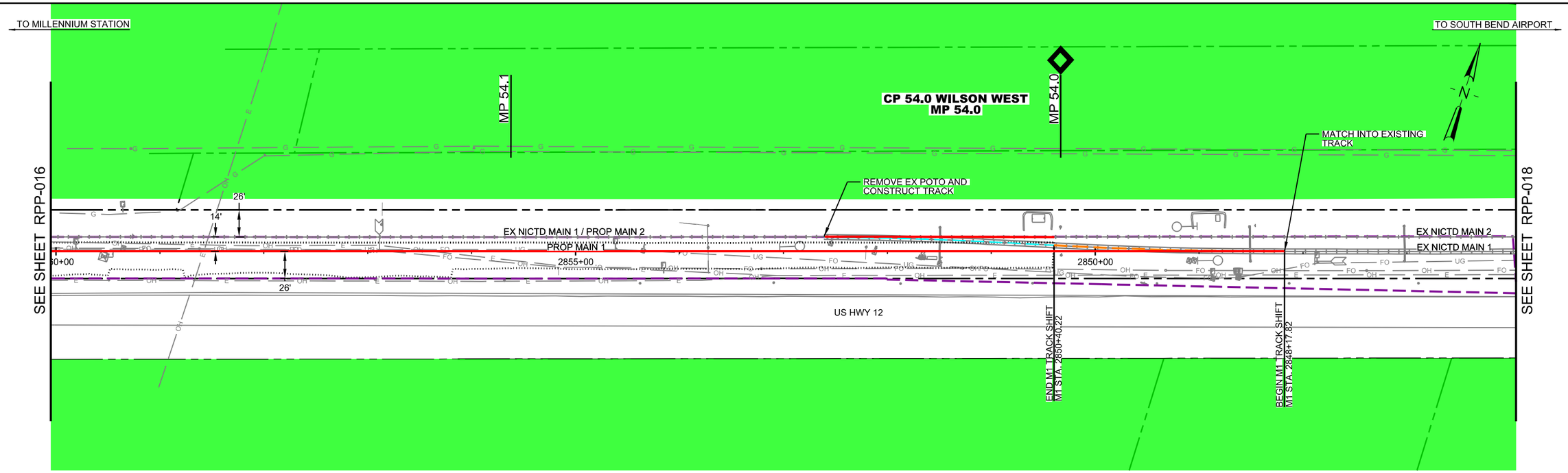
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

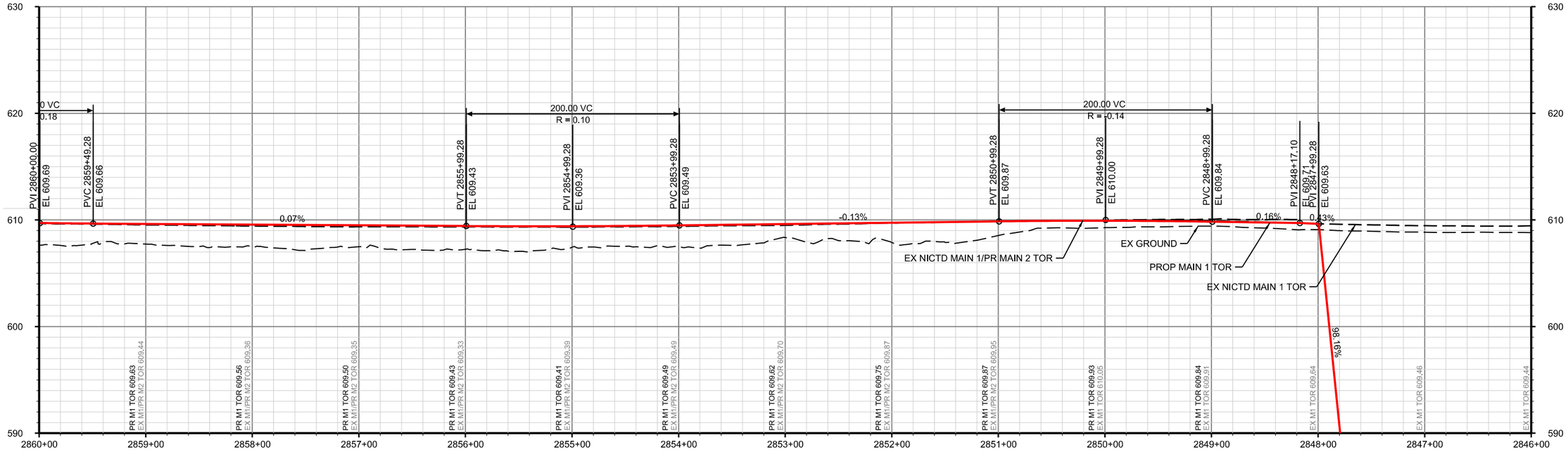
DESIGNED:	PEI-KEK
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2860+00 TO 2874+00
MP 54.2 TO 54.5

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED
SHEET	OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 1 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-017 OF RPP-095

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Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

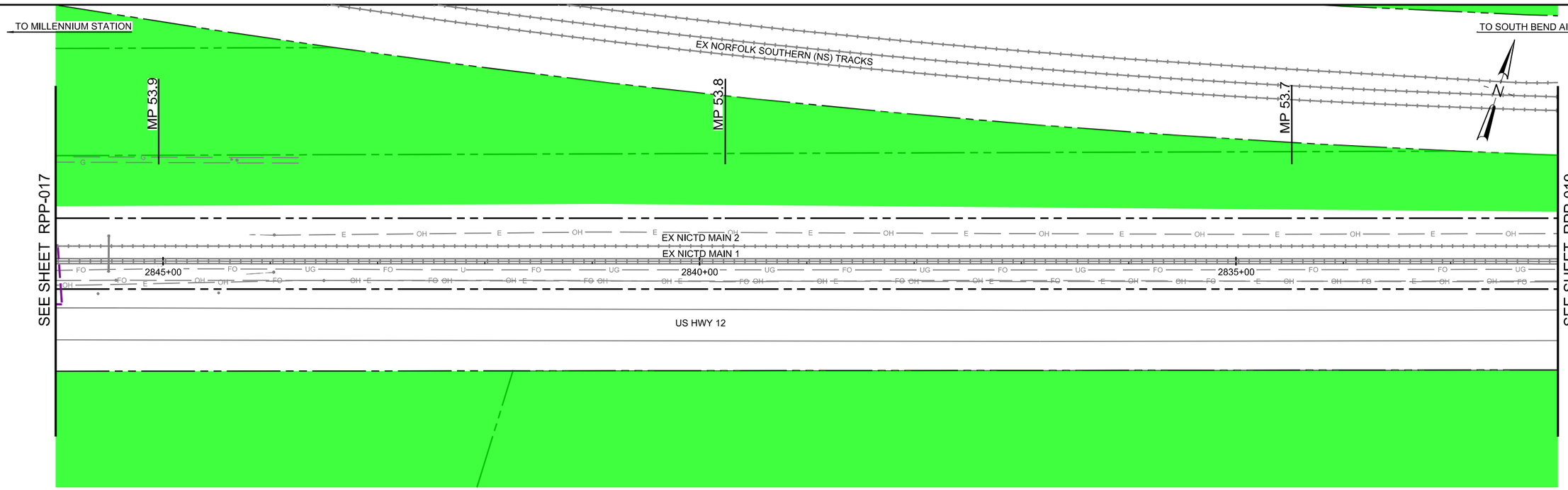
DESIGNED:	PEI-KEK
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

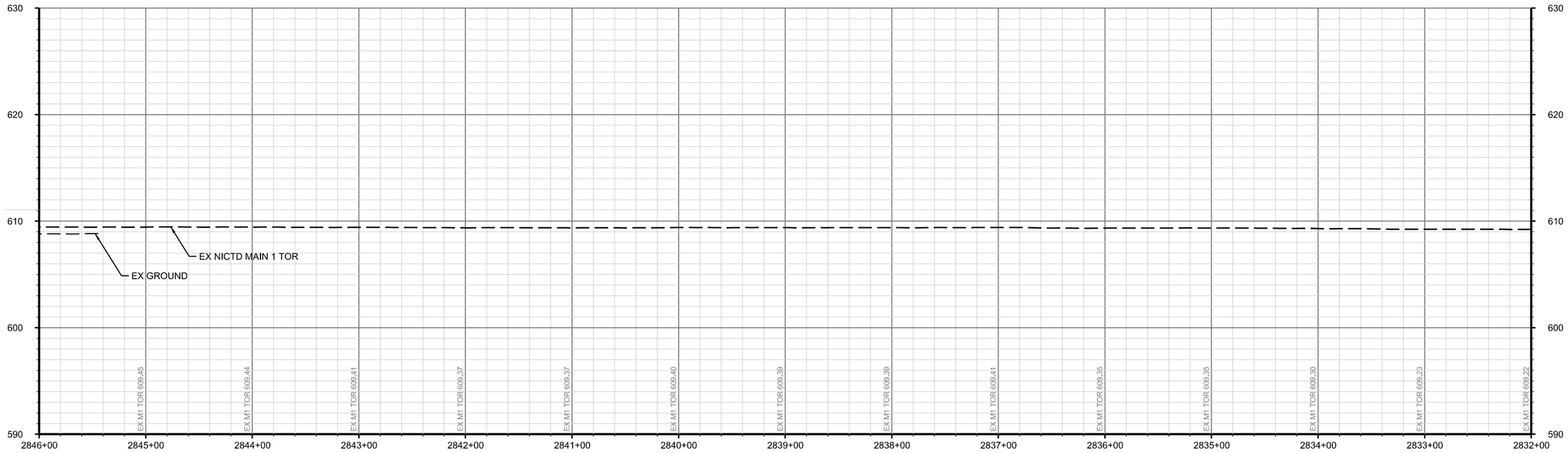
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2846+00 TO 2860+00
MP 53.9 TO 54.2

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





PROP MAIN 1 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-018 OF RPP-095

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Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

MICHIGAN CITY TO GARY, INDIANA

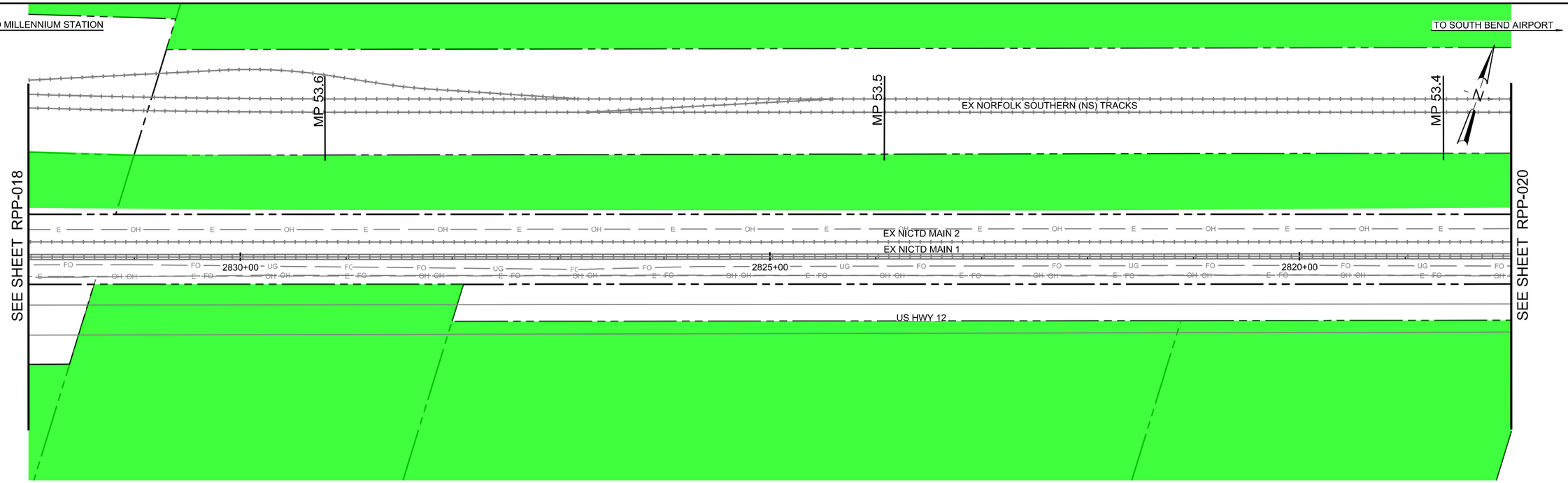
DESIGNED:	PEI-KEK
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

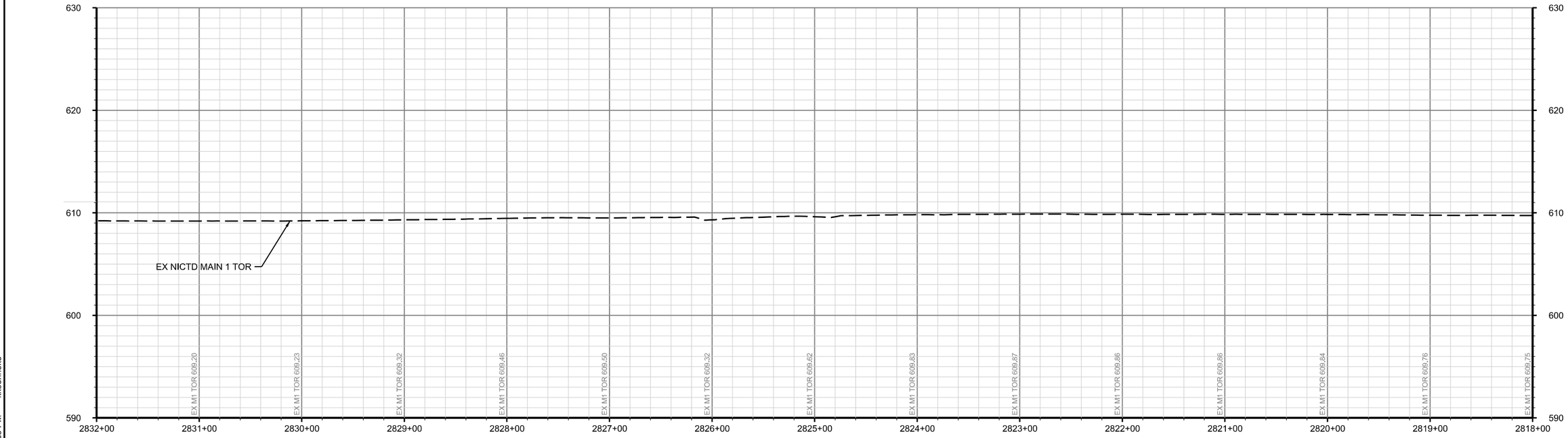
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2832+00 TO 2846+00
MP 53.7 TO 53.9

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





PROP MAIN 1 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-019 OF RPP-095

PLOT DATE: 4/30/2020 10:21:25 PM kkoehneke

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

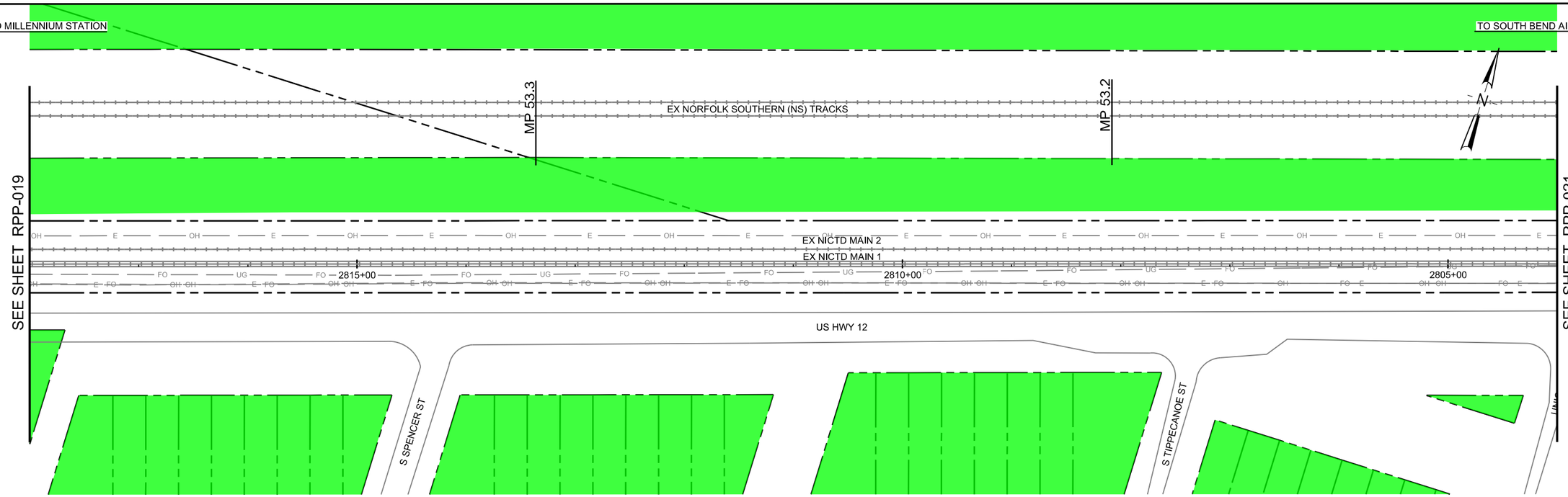
DESIGNED:	PEI-KEK
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

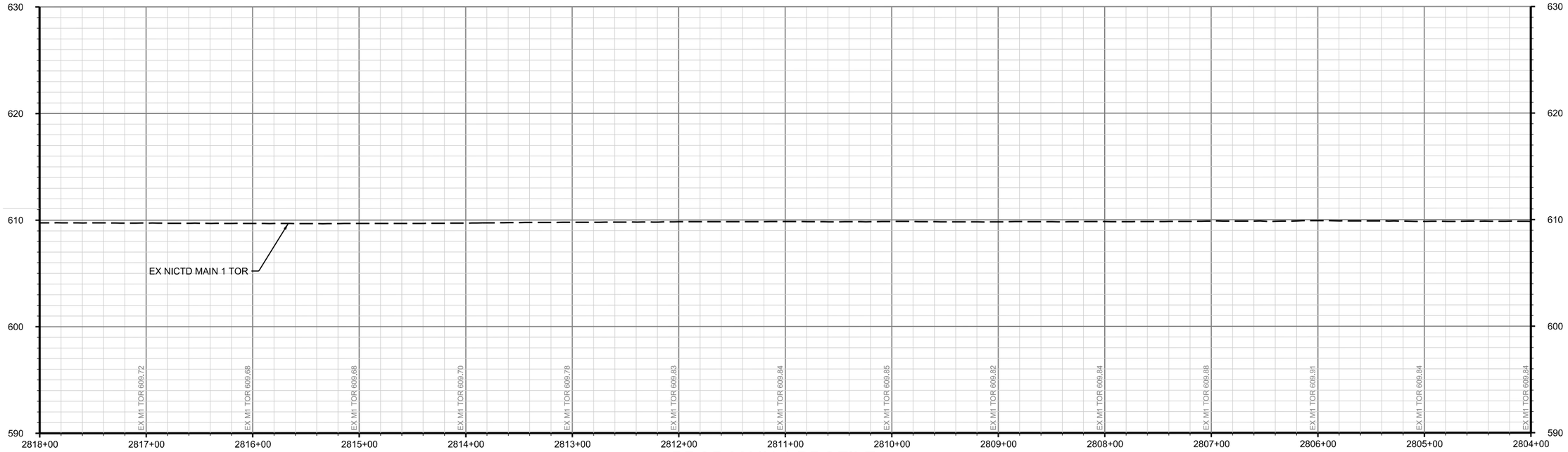
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2818+00 TO 2832+00
MP 53.4 TO 53.7

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 1 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-020 OF RPP-095

PLOT DATE: 4/30/2020 10:21:29 PM kkoehneke

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ISSUE	DATE	DESCRIPTION
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NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

MICHIGAN CITY TO GARY, INDIANA

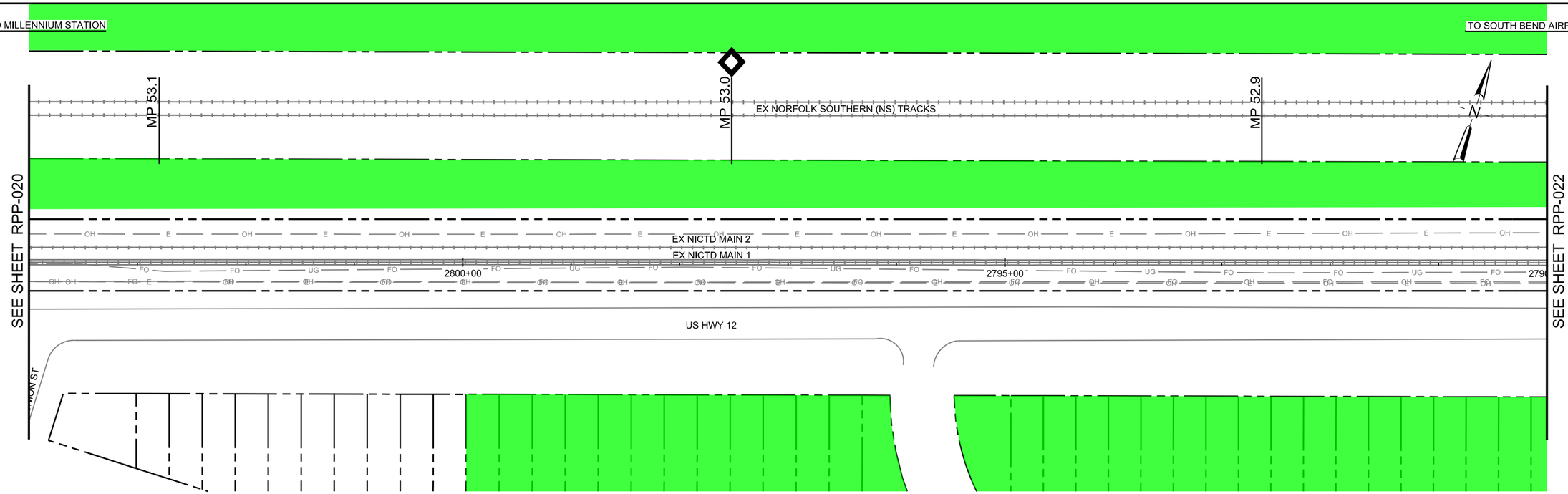
DESIGNED:	PEI-KEK
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

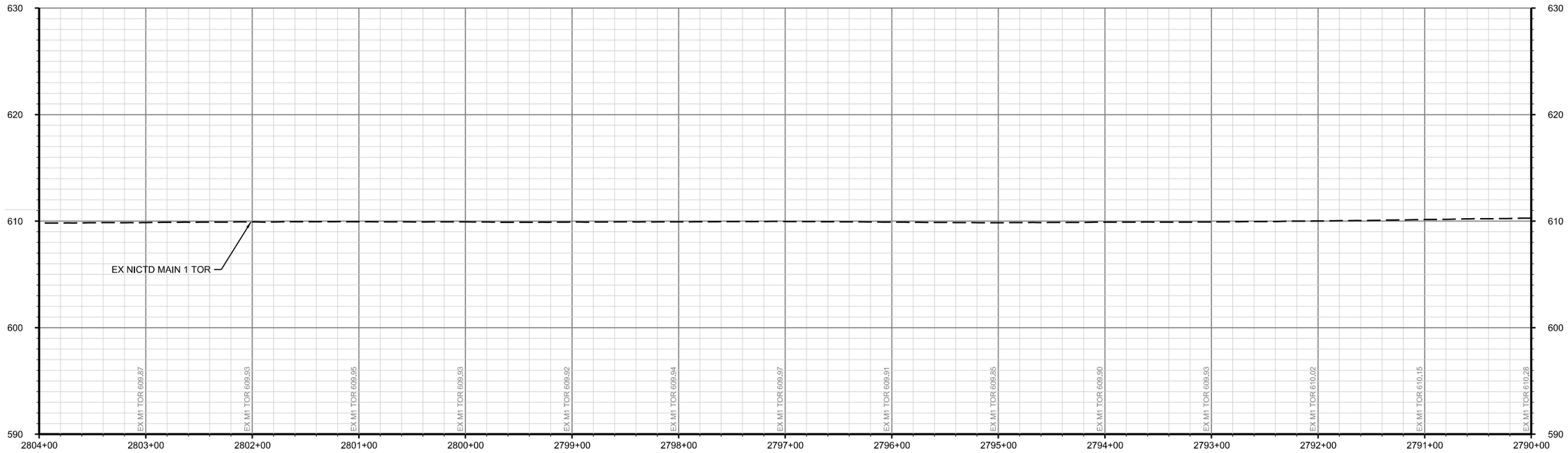
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2804+00 TP 2818+00
MP 53.1 TO 53.4

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





PROP MAIN 1 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-021 OF RPP-095

PLOT DATE: 4/30/2020 10:21:34 PM kkoehneke

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PATRICK ENGINEERING

ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

MICHIGAN CITY TO GARY, INDIANA

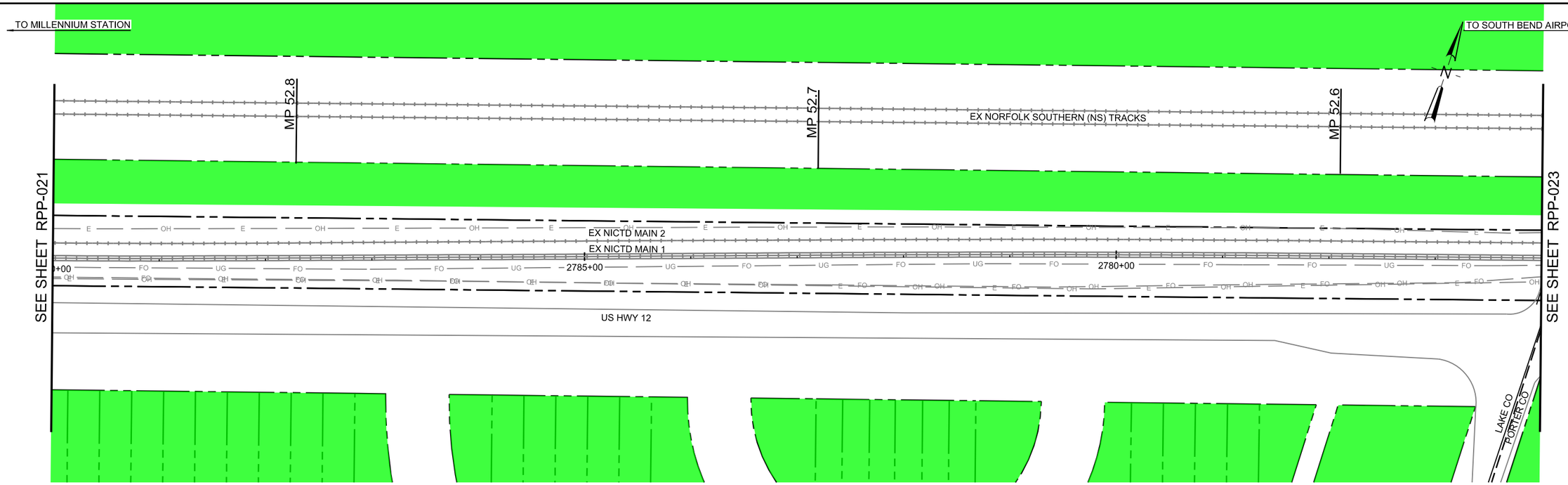
DESIGNED:	PEI-DJS
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

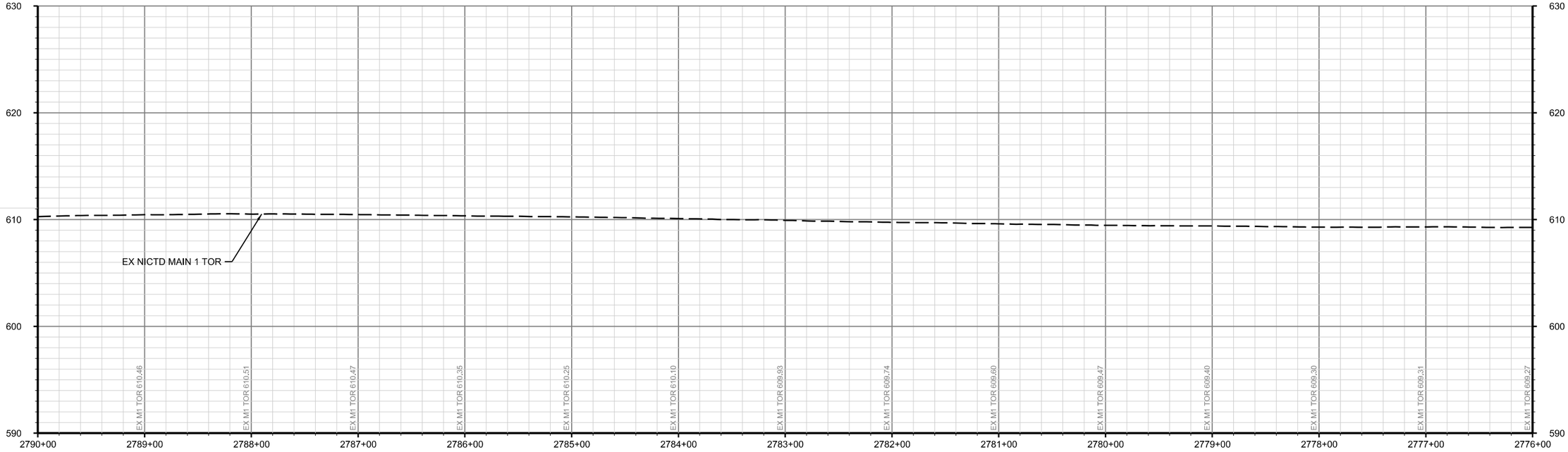
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2790+00 TO 2804+00
MP 52.8 TO 53.1

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 1 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-022 OF RPP-095

PLOT DATE: 4/30/2020 10:21:38 PM kkoehneke

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PATRICK ENGINEERING

ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

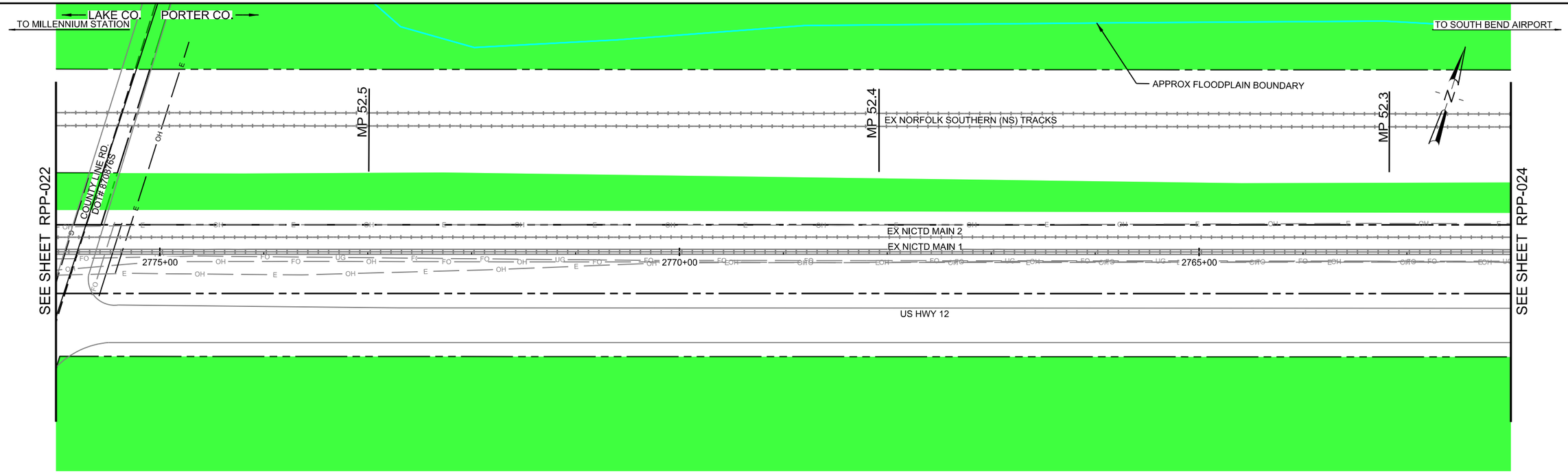
DESIGNED:	PEI-DJS
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

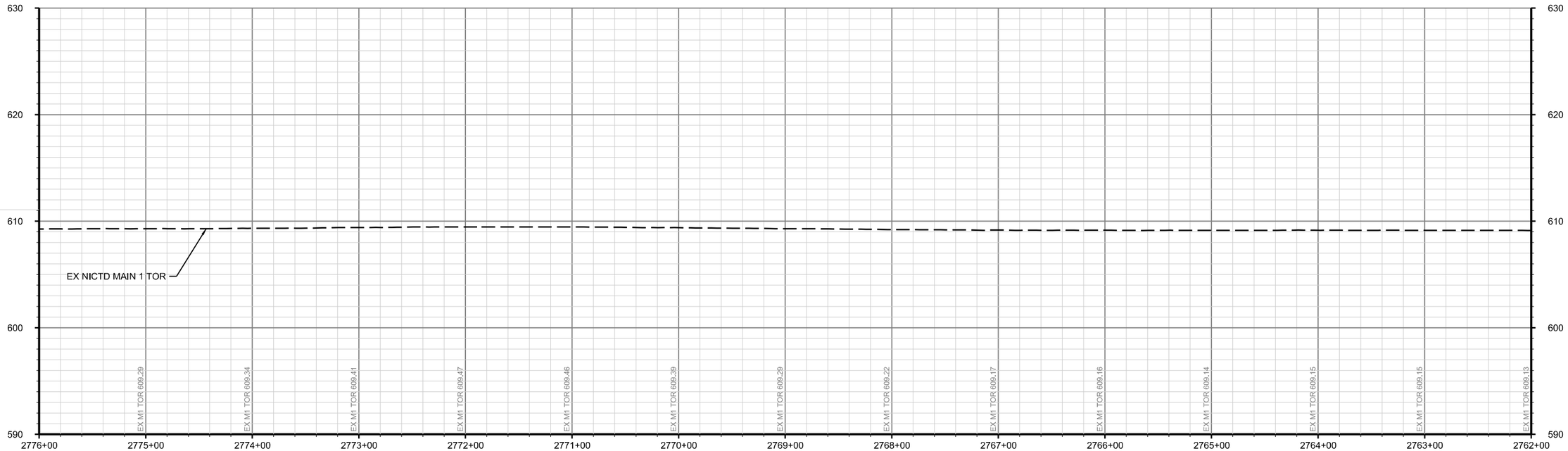
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2776+00 TO 2790+00
MP 52.5 TO 52.8

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 1 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-023 OF RPP-095

PLOT DATE: 4/30/2020 10:21:43 PM kkoehneke

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PATRICK ENGINEERING

ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

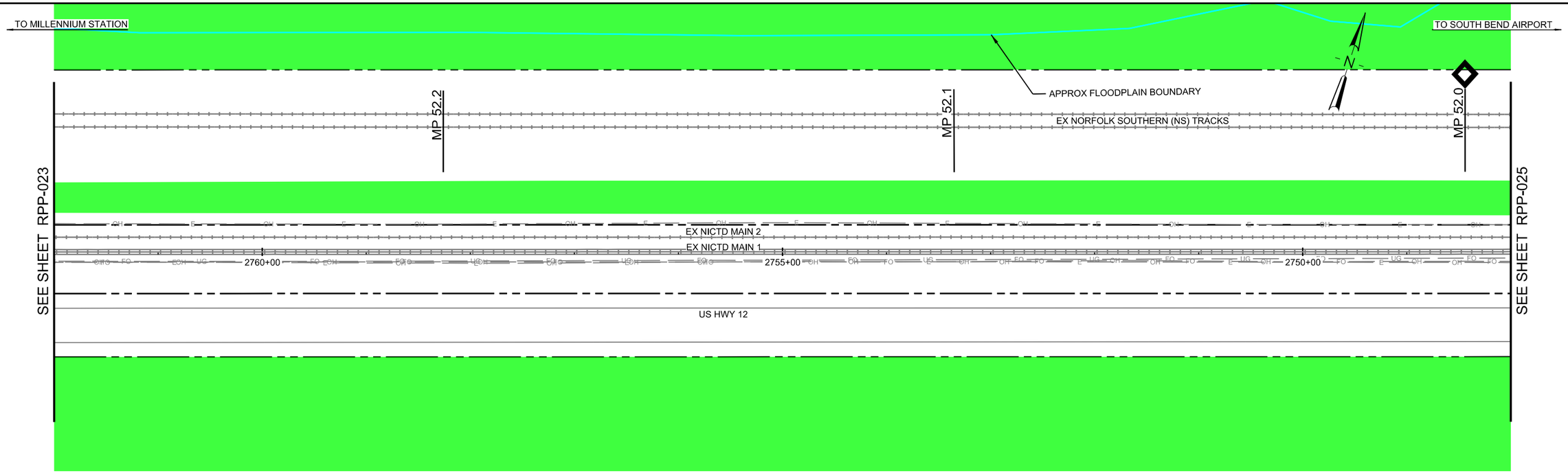
DESIGNED:	PEI-DJS
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

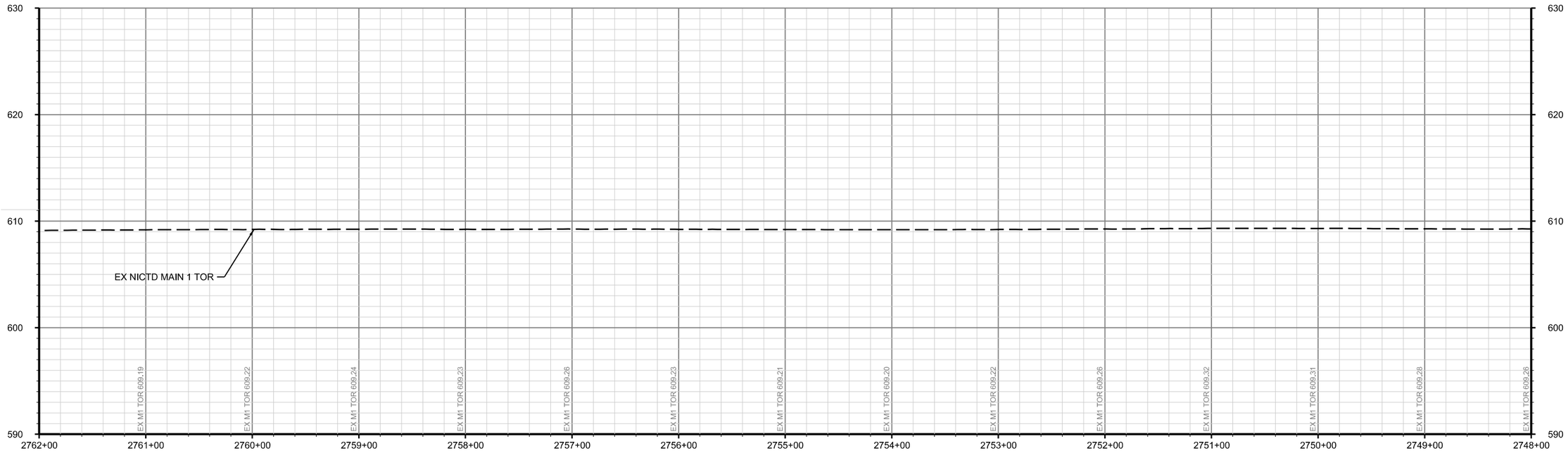
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2762+00 TO 2776+00
MP 52.3 TO 52.5

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 1 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-024 OF RPP-095

PLOT DATE: 4/30/2020 10:21:48 PM kkoehneke

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PATRICK ENGINEERING

ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

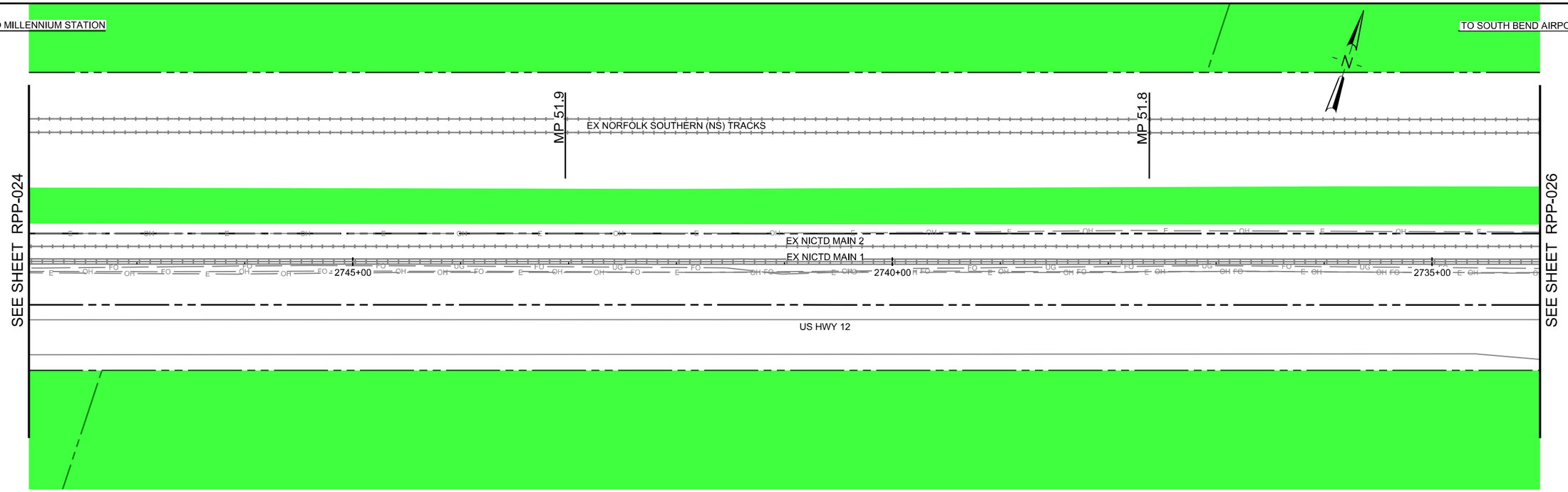
DESIGNED:	PEI-DJS
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

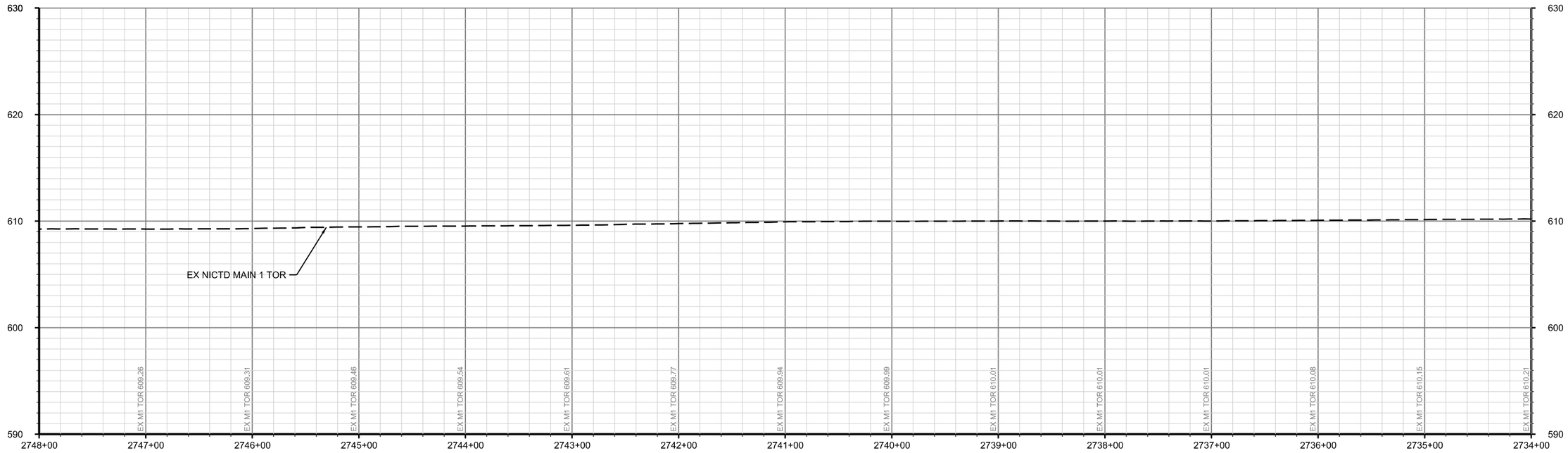
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2748+00 TO 2762+00
MP 52.0 TO 52.3

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 1 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-025 OF RPP-095

PLOT DATE: 4/30/2020 10:21:53 PM kkoehneke

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ISSUE	DATE	DESCRIPTION
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NICTD
NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	PEI-DJS
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

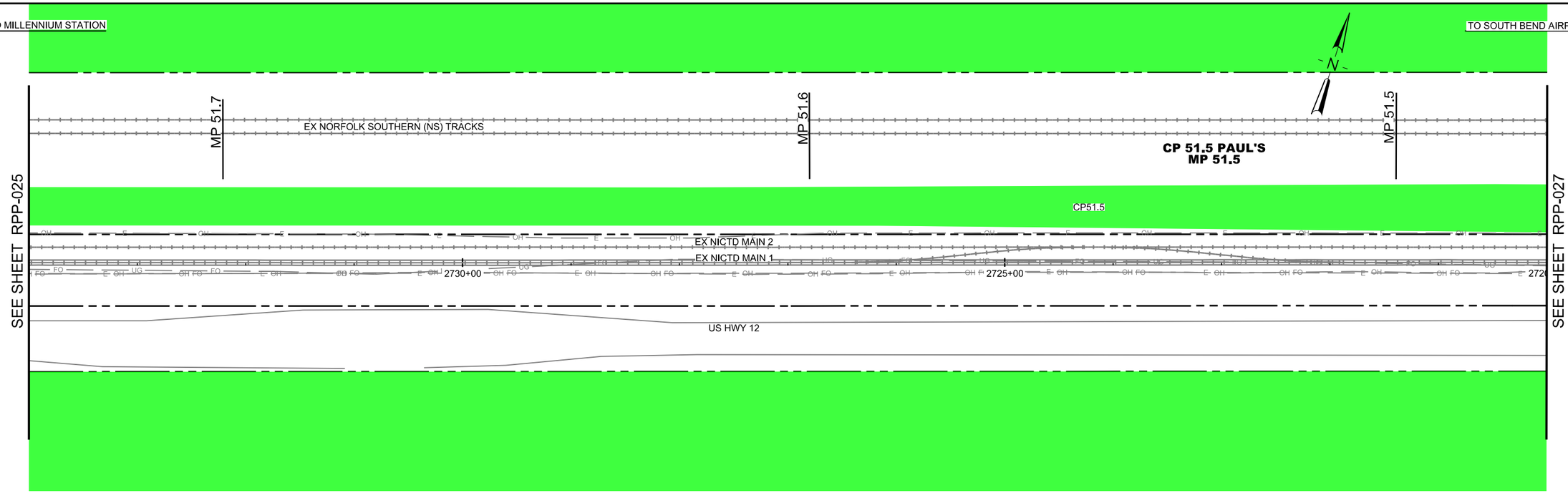
PLAN AND PROFILE
STA 2734+00 TO 2748+00
MP 51.7 TO 52.0

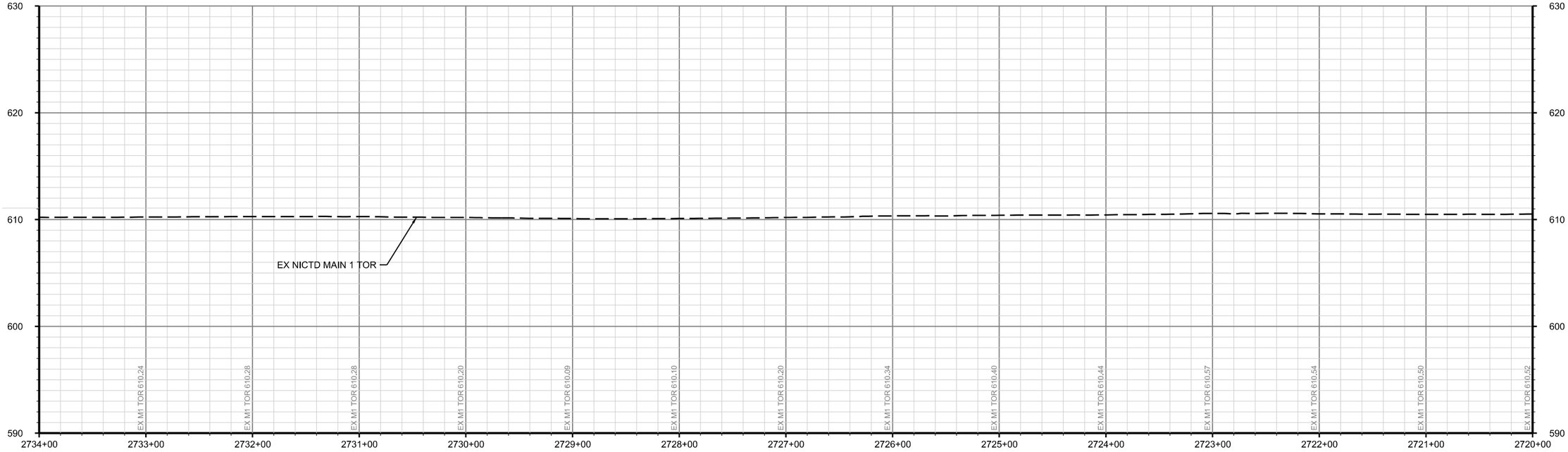
FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF

TO MILLENNIUM STATION

TO SOUTH BEND AIRPORT





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 1 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-026 OF RPP-095

PLOT DATE: 4/30/2020 10:22:00 PM kkoehneke

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ISSUE	DATE	DESCRIPTION
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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

MICHIGAN CITY TO GARY, INDIANA

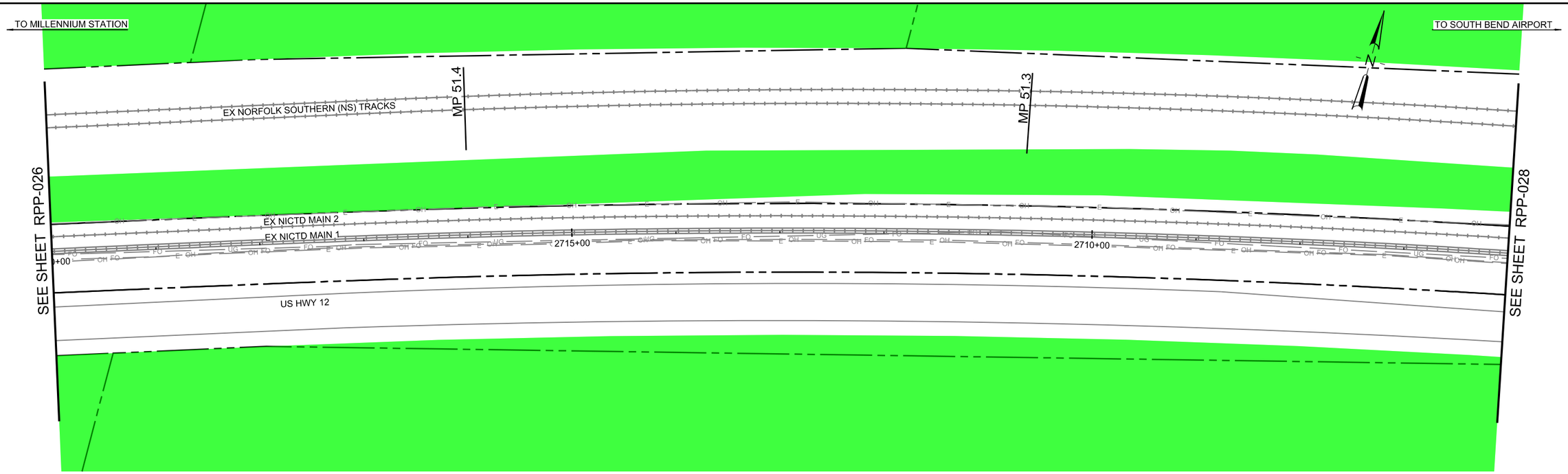
DESIGNED:	PEI-DJS
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

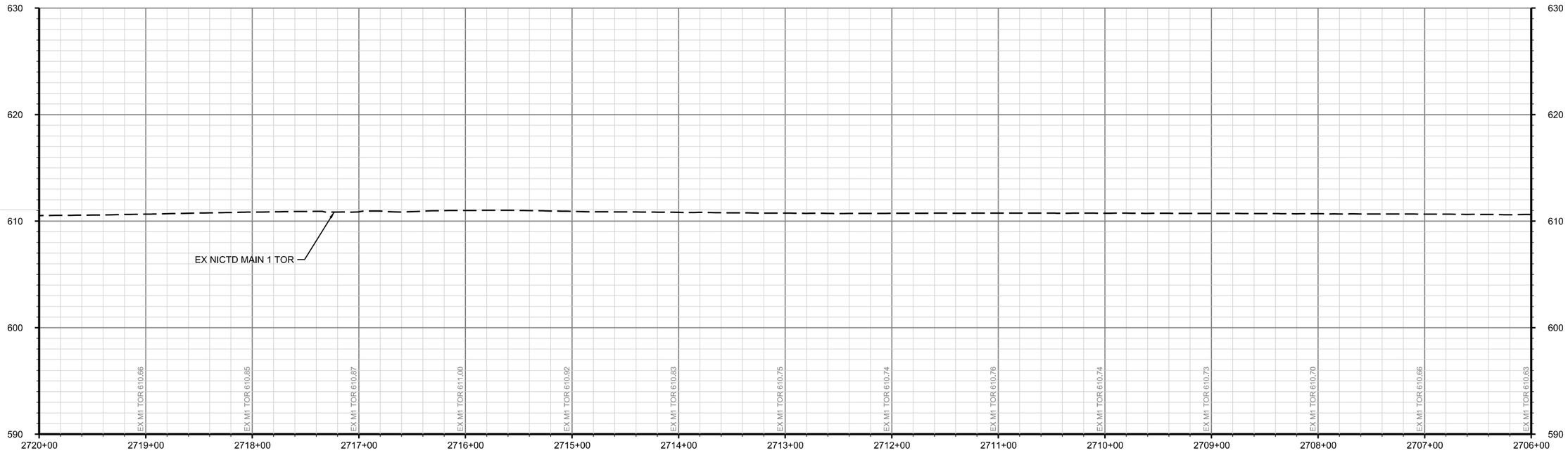
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2720+00 TO 2734+00
MP 51.5 TO 51.7

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 1 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-027 OF RPP-095

PLOT DATE: 4/30/2020 10:22:04 PM kkoehneke

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NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

MICHIGAN CITY TO GARY, INDIANA

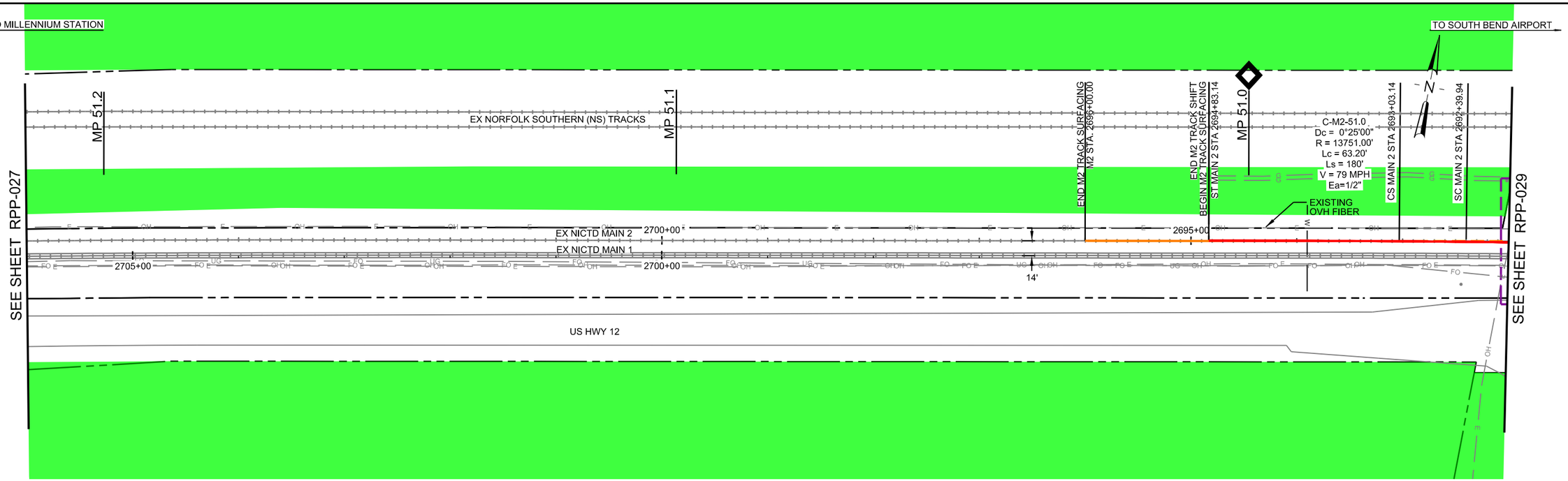
DESIGNED:	PEI-DJS
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

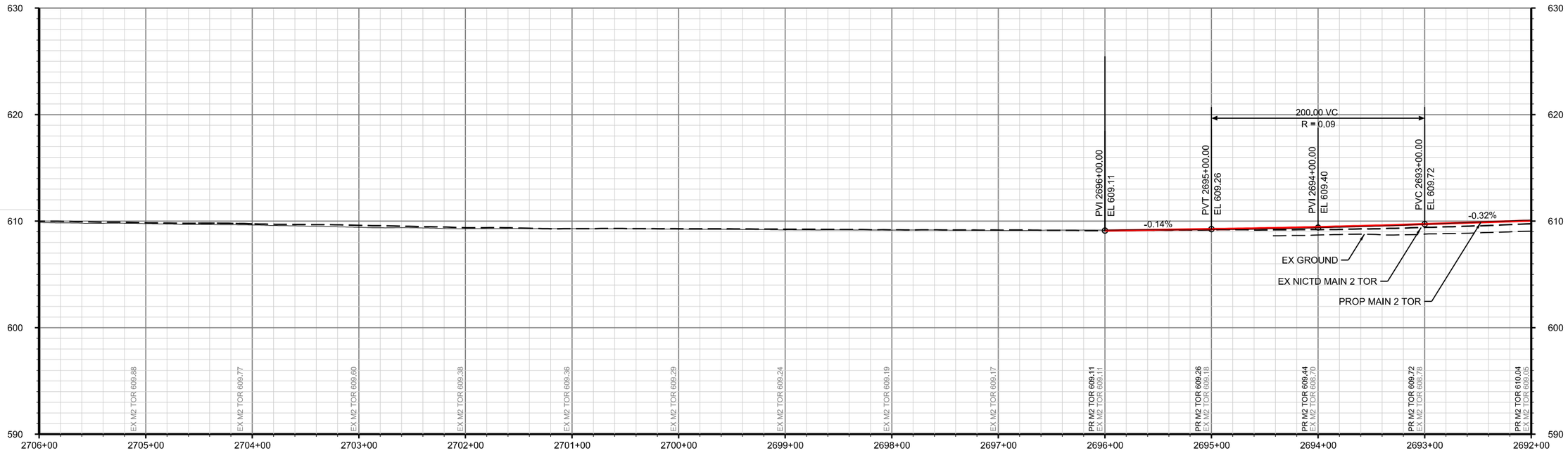
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2706+00 TO 2720+00
MP 51.2 TO 51.5

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE
10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-028 OF RPP-095

PLOT DATE: 4/30/2020 10:22:08 PM kkoehneke

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Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

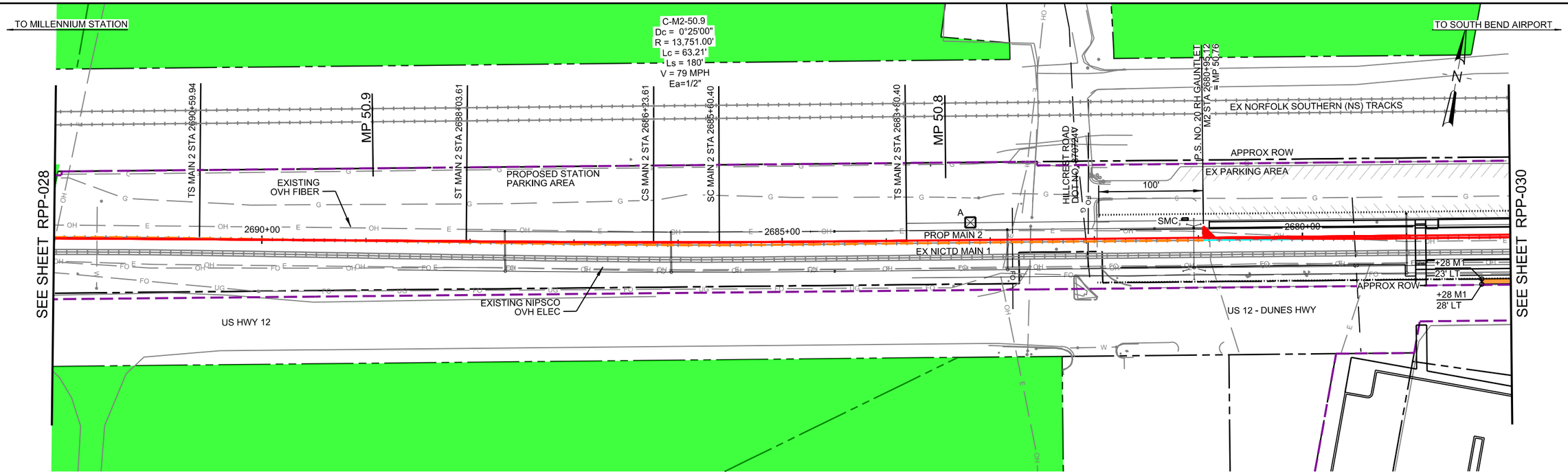
DESIGNED:	PEI-DJS
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

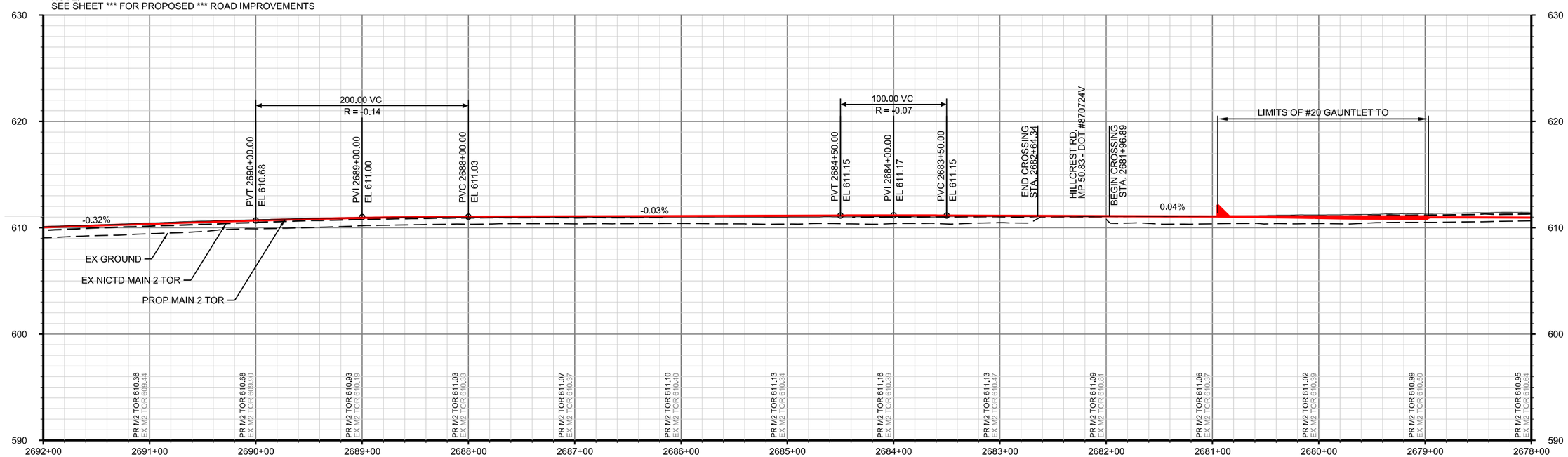
PLAN AND PROFILE
STA 2692+00 TO 2706+00
MP 51.0 TO 51.2

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



NOTE:
SEE SHEET *** FOR PROPOSED *** ROAD IMPROVEMENTS



PROP MAIN 2 PROFILE

HORIZONTAL SCALE 50 25 0 50 100

VERTICAL SCALE 10 5 0 10 20

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-029 OF RPP-095

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

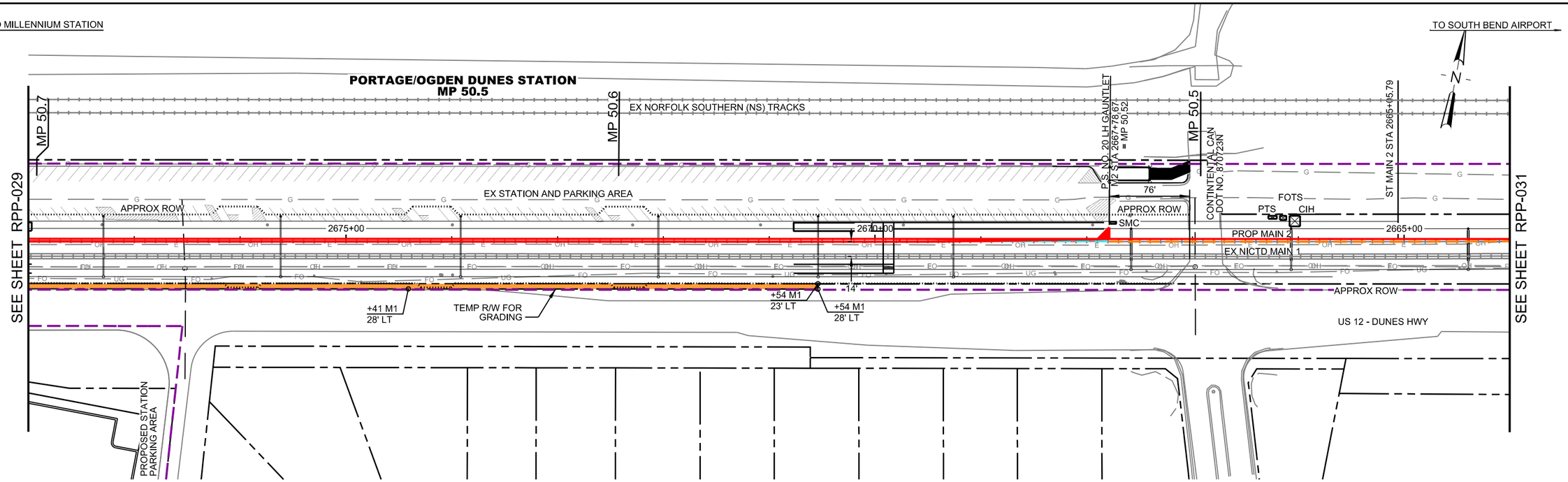
DESIGNED:	PEI-DJS
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

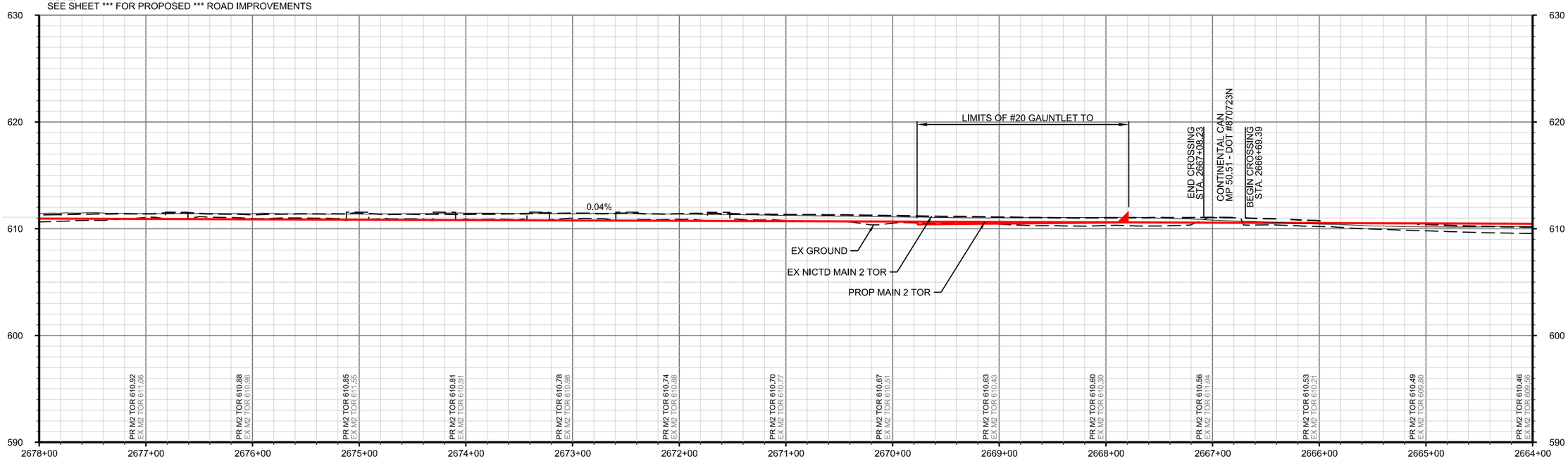
PLAN AND PROFILE
STA 2678+00 TO 2692+00
MP 50.7 TO 51.0

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



NOTE:
SEE SHEET *** FOR PROPOSED *** ROAD IMPROVEMENTS



50 25 0 50 100 HORIZONTAL SCALE
10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-030 OF RPP-095

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

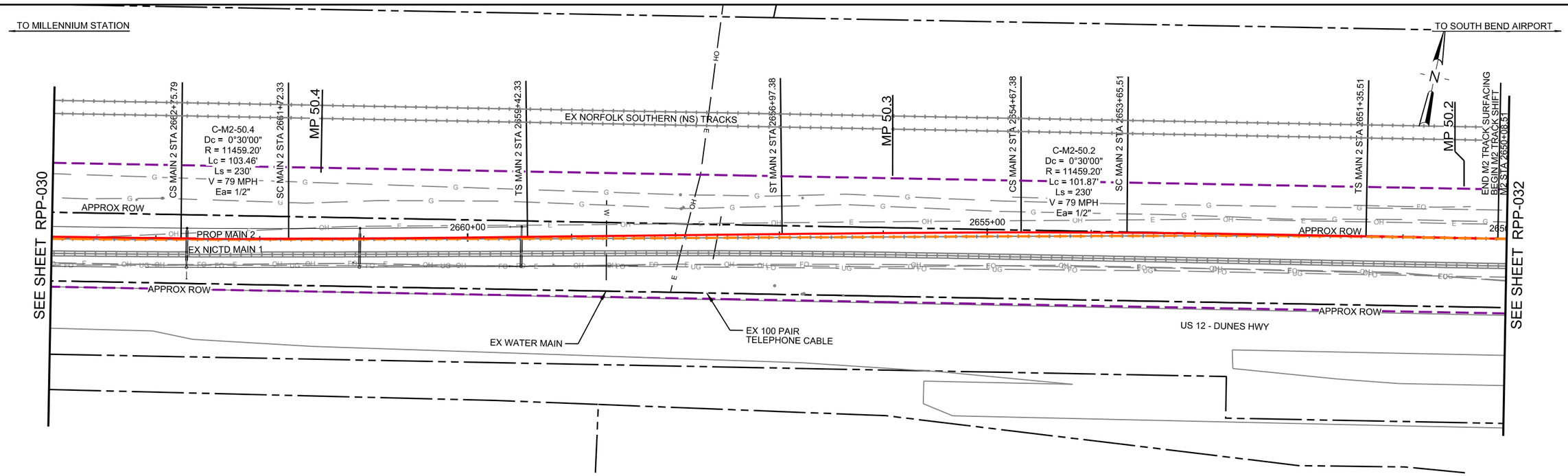
DESIGNED:	PEI-DJS
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

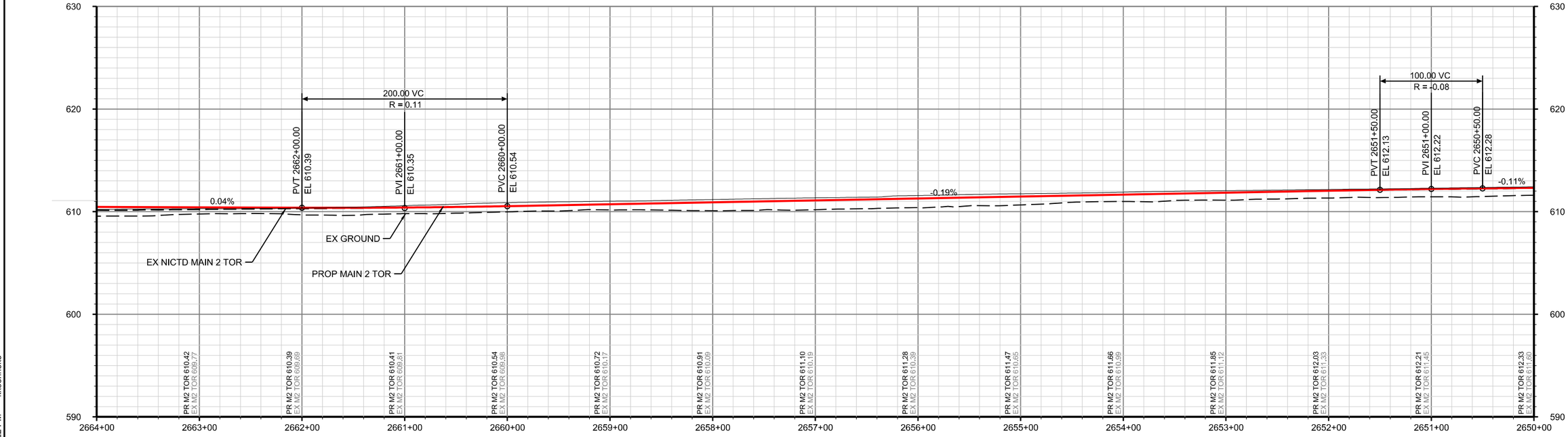
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2664+00 TO 2678+00
MP 50.4 TO 50.7

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





PROP MAIN 2 PROFILE

HORIZONTAL SCALE 50 25 0 50 100

VERTICAL SCALE 10 5 0 10 20

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-031 OF RPP-095

PLOT DATE: 4/30/2020 10:22:22 PM kkoehneke

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

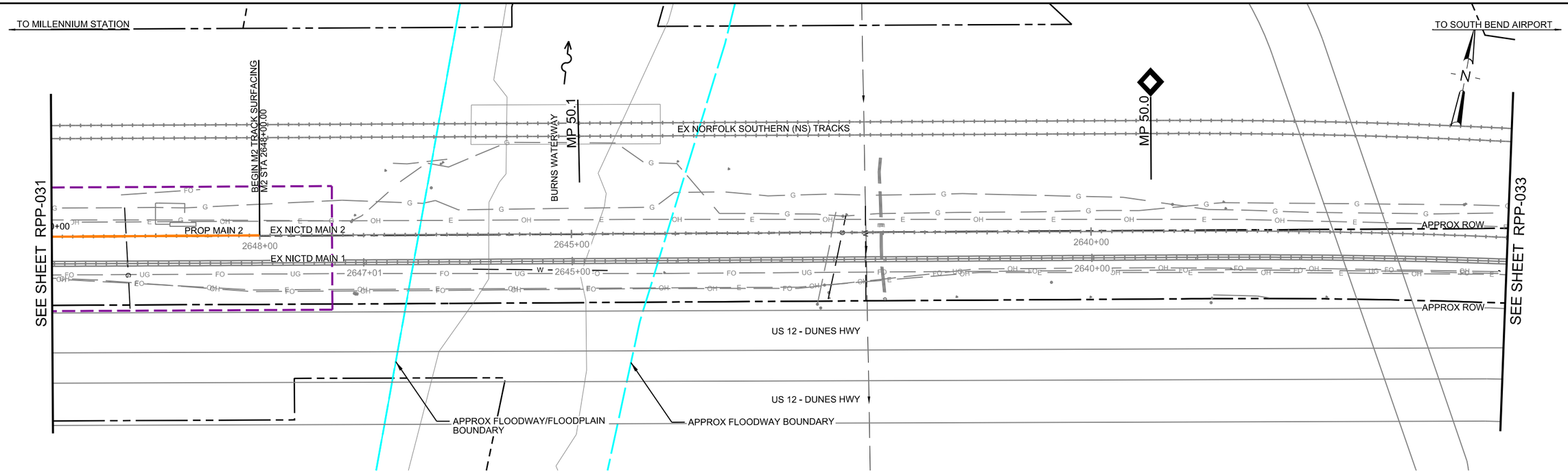
DESIGNED:	PEI-DJS
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

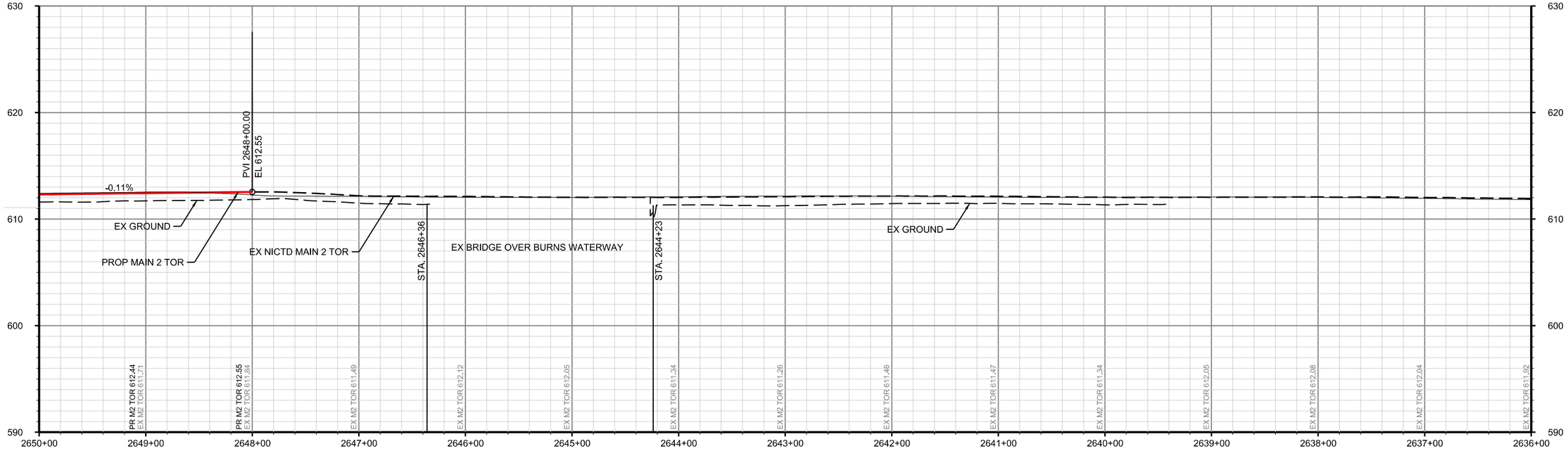
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2650+00 TO 2644+00
MP 50.2 TO 50.4

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-032 OF RPP-095

PLOT DATE: 4/30/2020 10:22:26 PM kkoehneke

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PATRICK ENGINEERING

ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

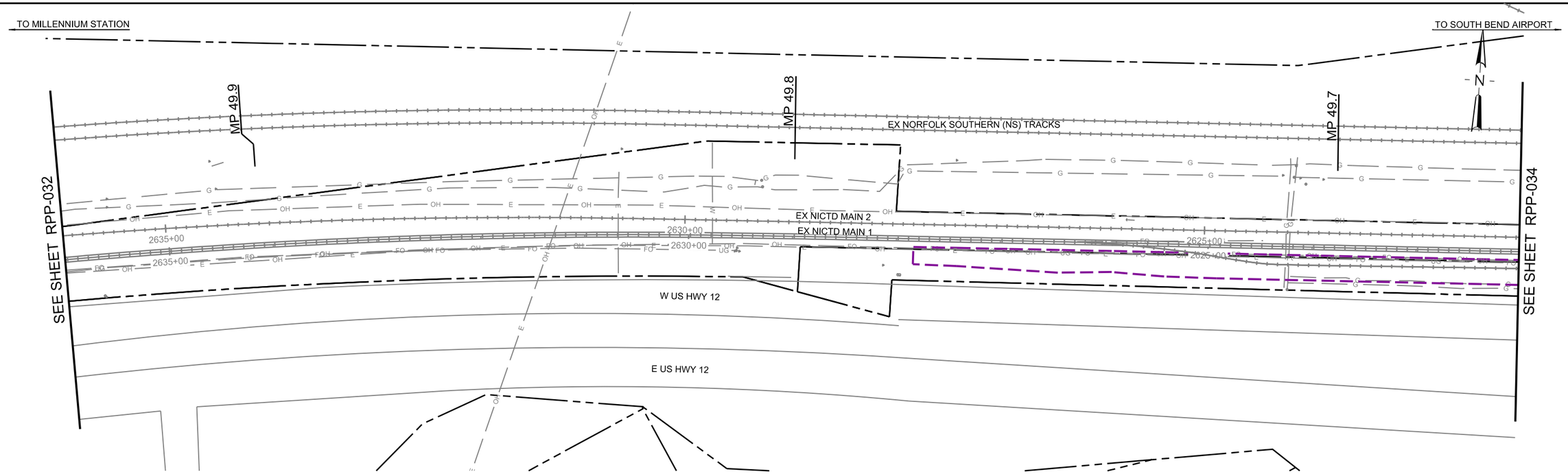
DESIGNED:	PEI-DJS
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

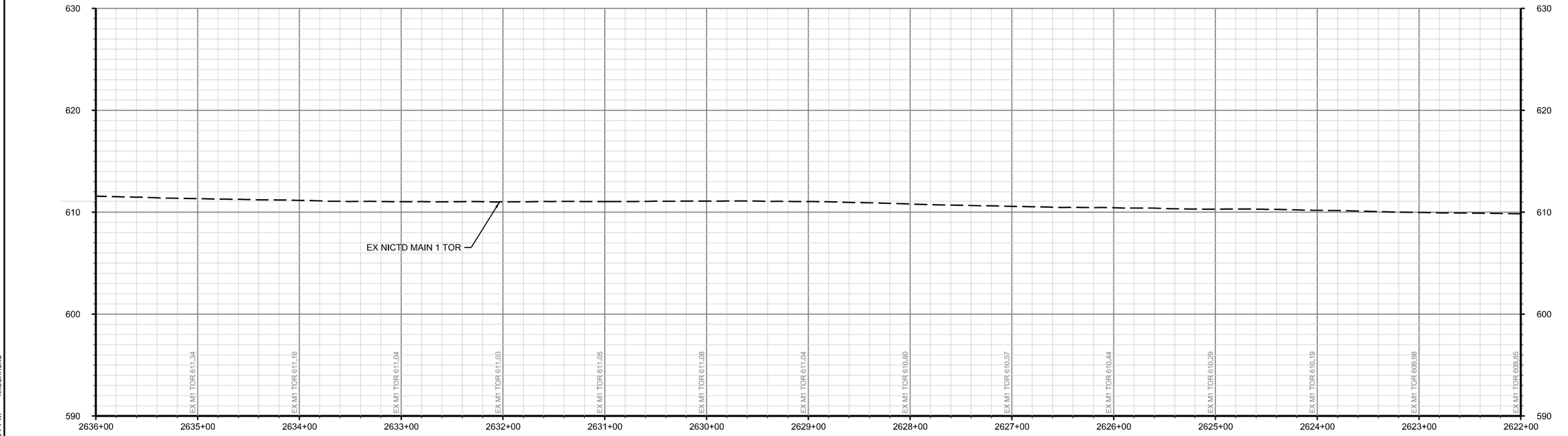
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2636+00 TO 2650+00
MP 49.9 TO 50.2

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 1 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-033 OF RPP-095

PLOT DATE: 4/30/2020 10:22:31 PM kkoehneke

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PATRICK ENGINEERING

ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

NICTD
NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

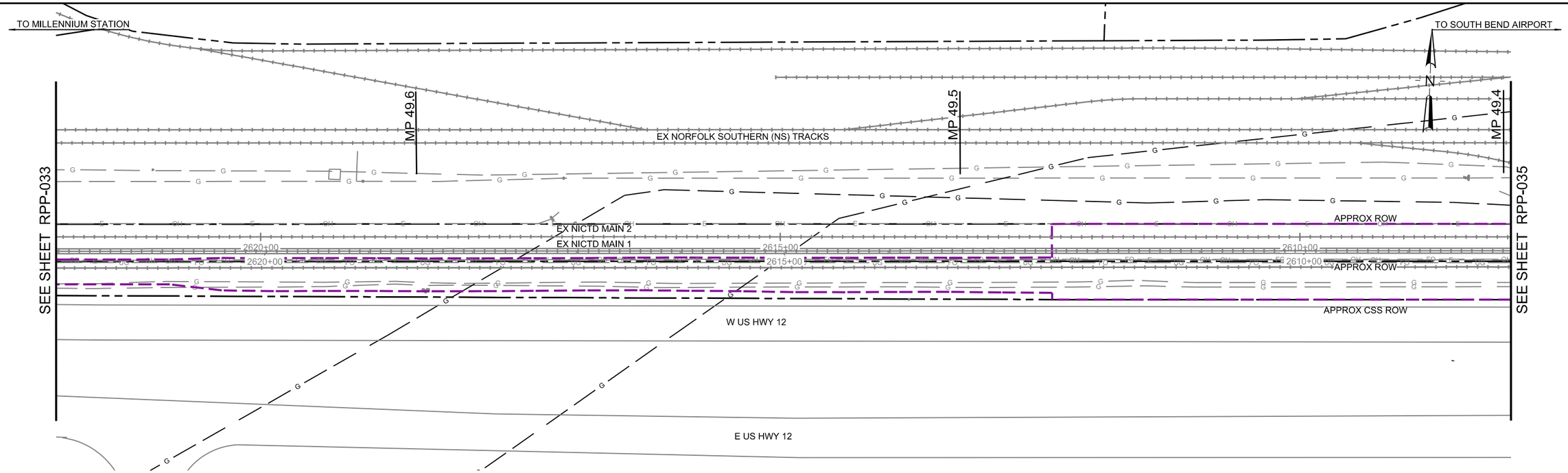
DESIGNED:	PEI-DJS
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

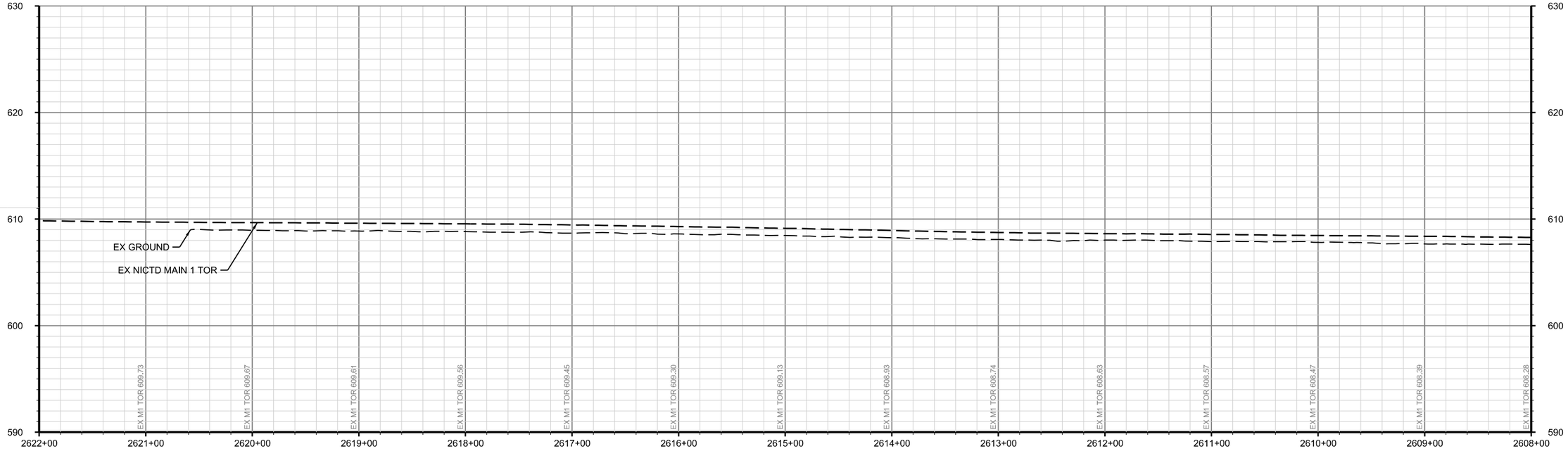
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2622+00 TO 2636+00
MP 49.7 TO 49.9

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 1 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-034 OF RPP-095

PLOT DATE: 4/30/2020 10:22:36 PM kkoehneke

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PATRICK ENGINEERING

ISSUE	DATE	DESCRIPTION
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NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

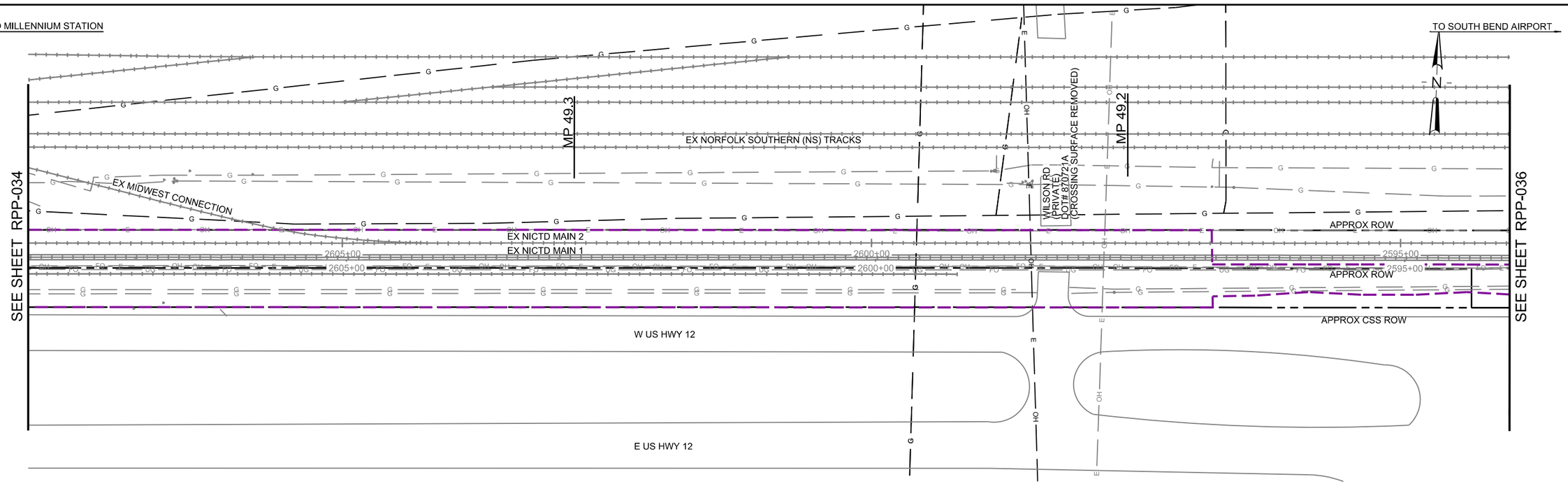
DESIGNED:	PEI-DJS
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

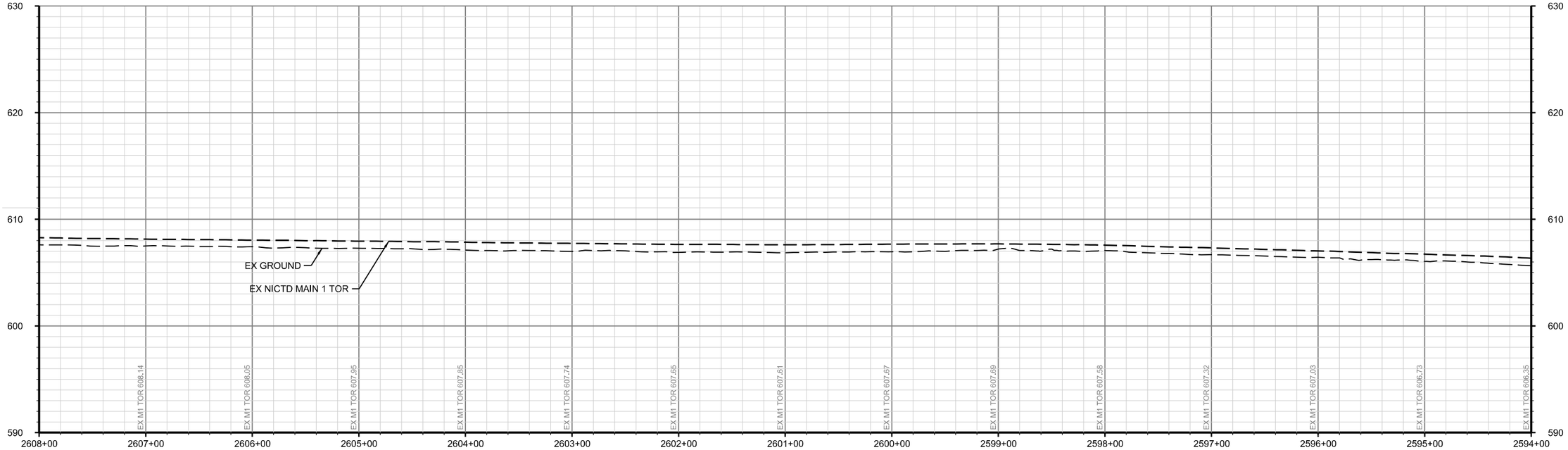
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2608+00 TO 2622+00
MP 49.4 TO 49.7

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 1 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-035 OF RPP-095

PLOT DATE: 4/30/2020 10:22:41 PM kkoehneke

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PATRICK ENGINEERING

ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

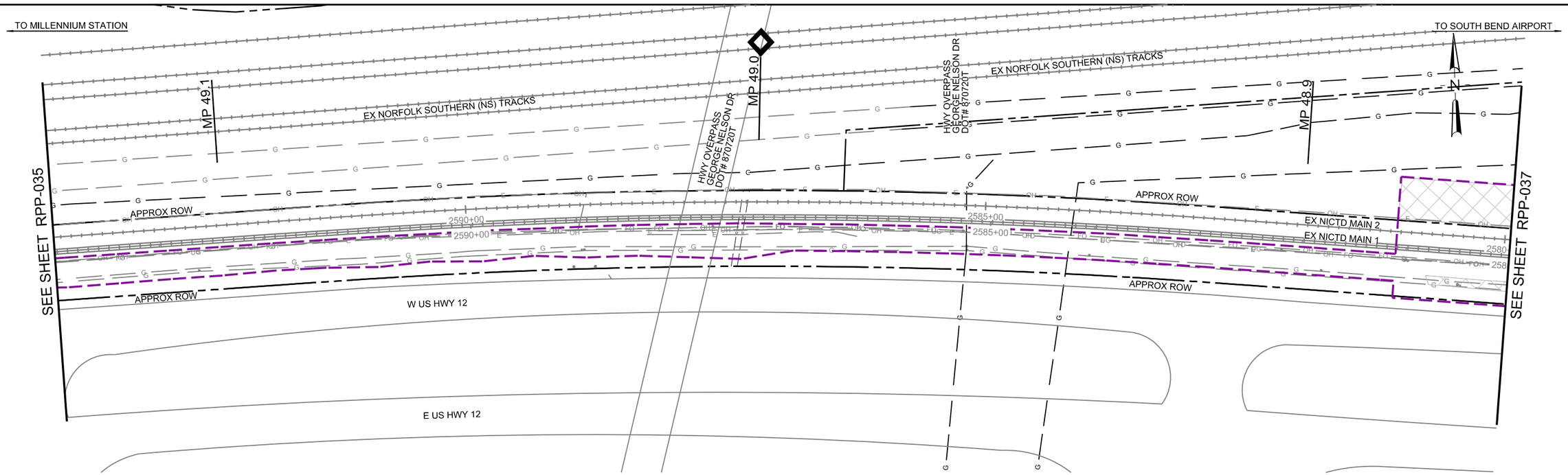
DESIGNED:	PEI-DJS
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

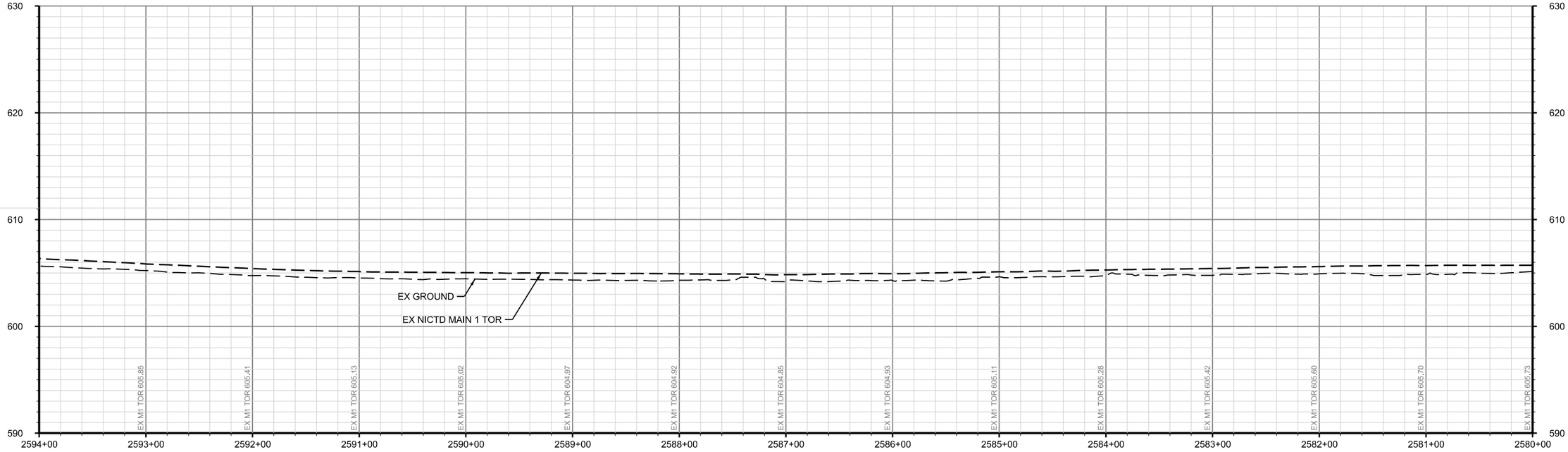
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2594+00 TO 2608+00
MP 49.1 TO 49.4

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 1 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-036 OF RPP-095

PLOT DATE: 4/30/2020 10:22:46 PM kkoehneke

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PATRICK ENGINEERING

ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

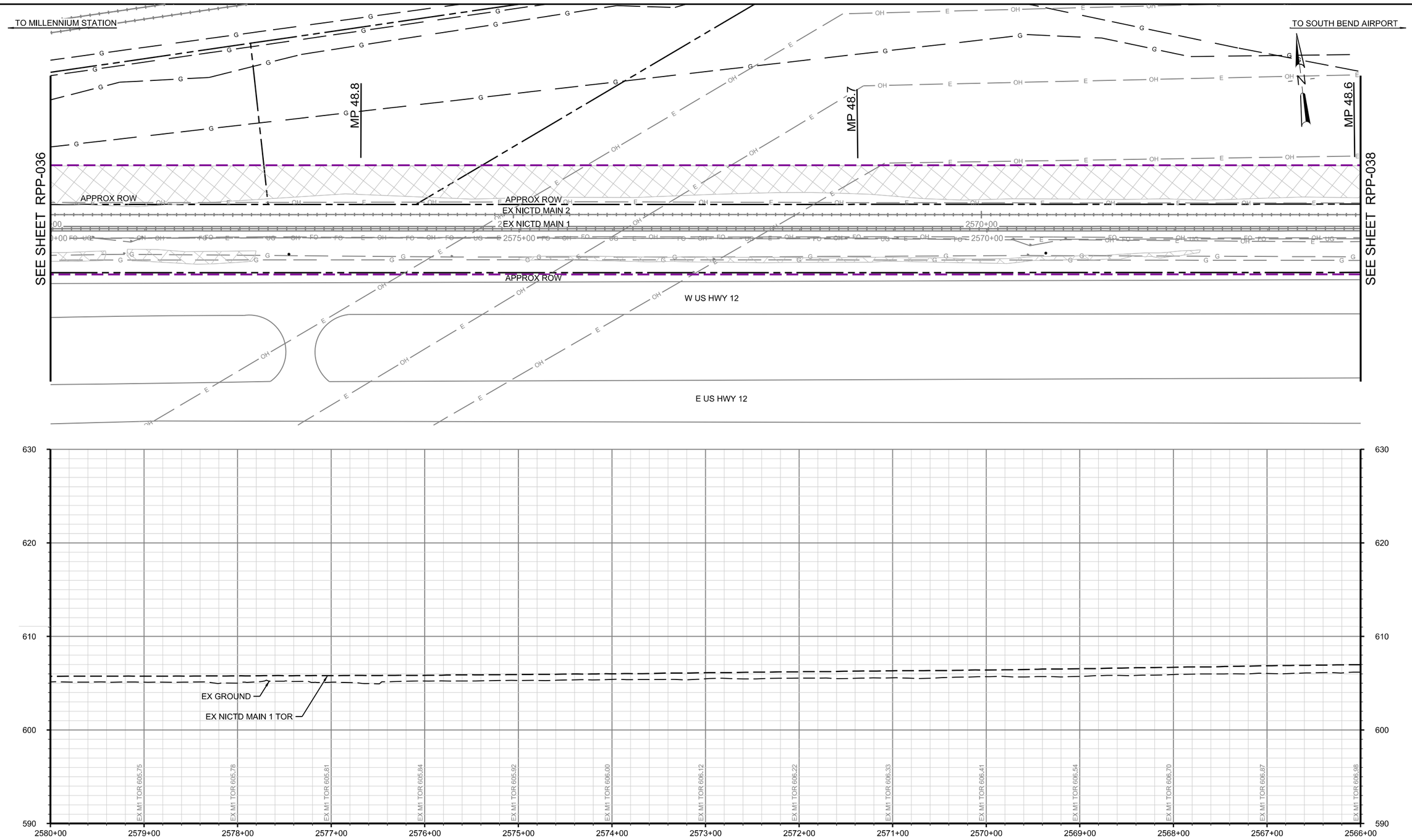
DESIGNED:	PEI-DJS
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2580+00 TO 2954+00
MP 48.9 TO 49.1

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



PROP MAIN 1 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-037 OF RPP-095

PLOT DATE: 4/30/2020 10:22:50 PM kkoehneke

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

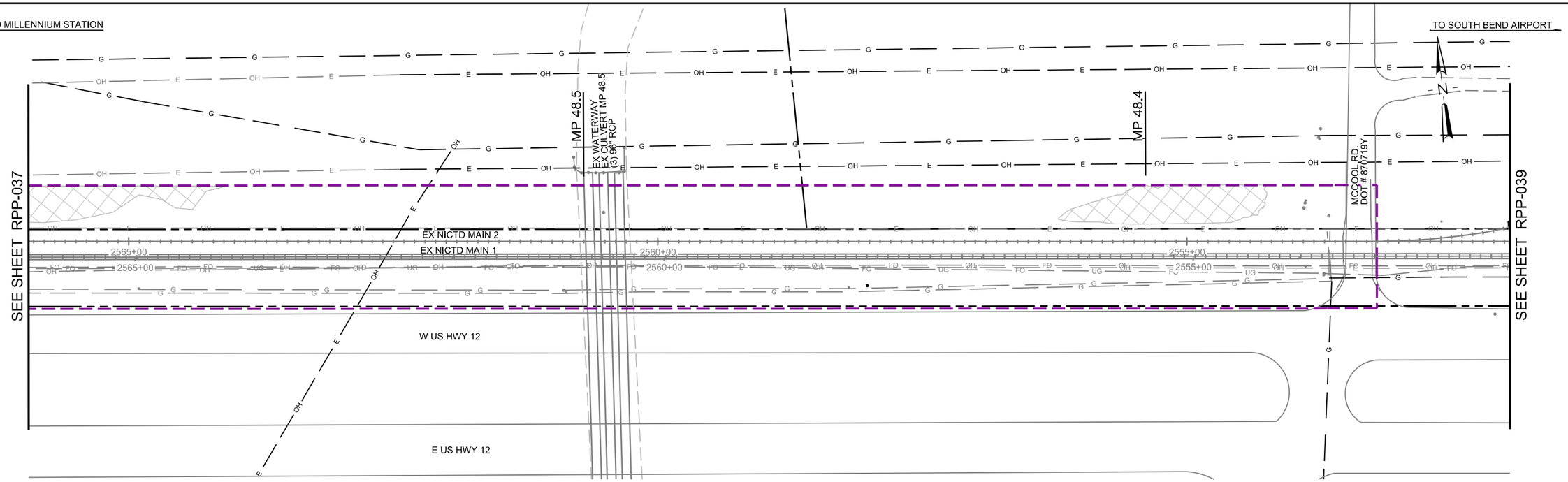
DESIGNED:	PEI-DJS
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2566+00 TO 2580+00
MP 48.6 TO 48.9

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



PROP MAIN 1 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-038 OF RPP-095

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

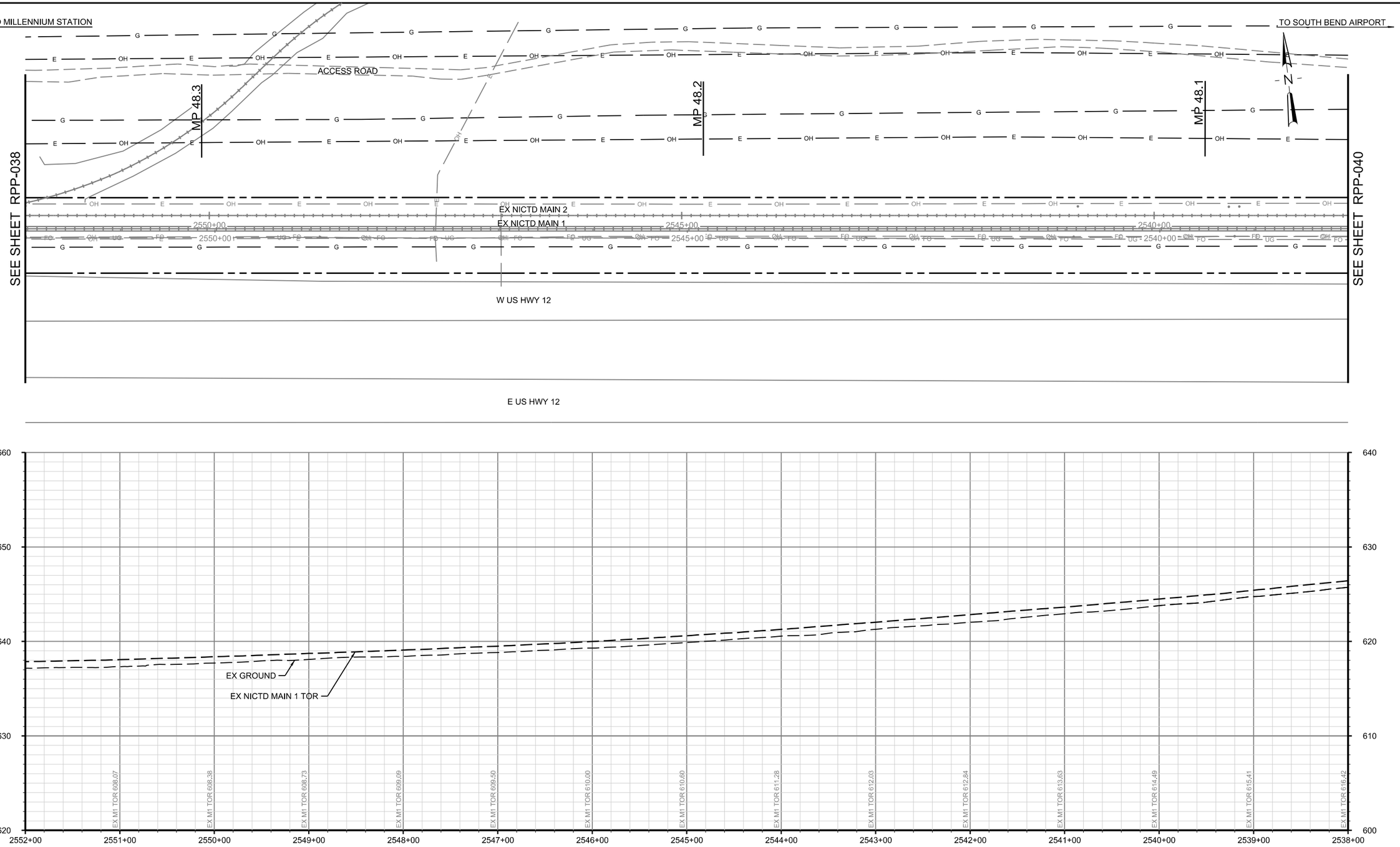
DESIGNED:	PEI-DJS
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2552+00 TO 2566+00
MP 48.3 TO 48.6

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



PROP MAIN 1 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-039 OF RPP-095

PLOT DATE: 4/30/2020 10:22:59 PM kkoehneke

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

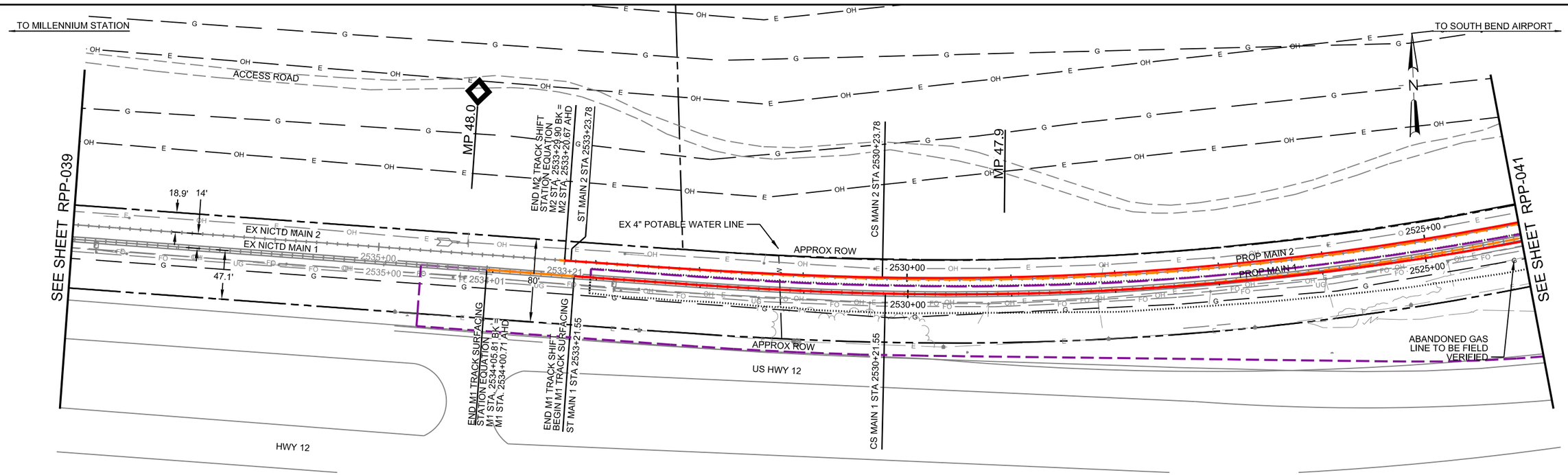
DESIGNED:	PEI-DJS
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

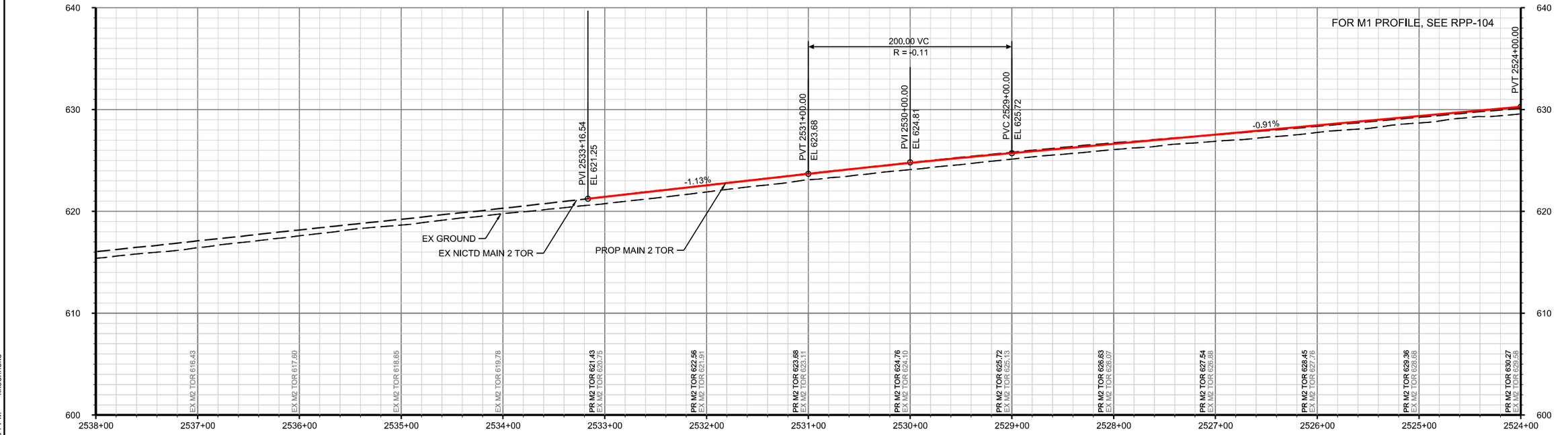
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2538+00 TO 2552+00
MP 48.1 TO 48.3

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE
10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-040 OF RPP-095

PLOT DATE: 4/30/2020 10:23:04 PM kkoehneke

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

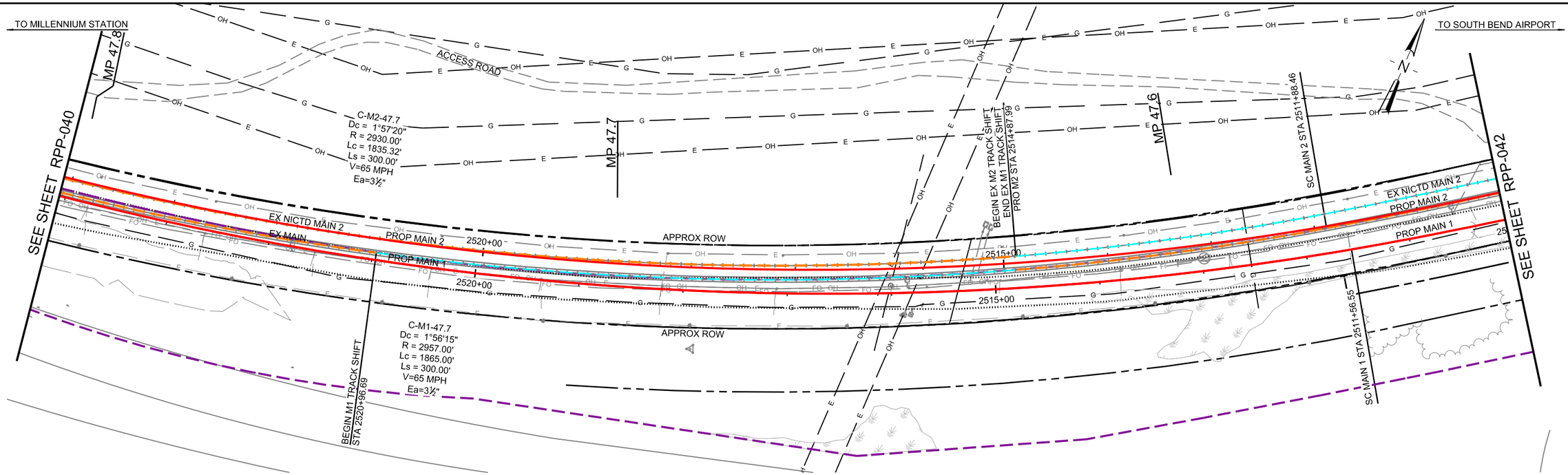
DESIGNED:	PEI-DJS
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

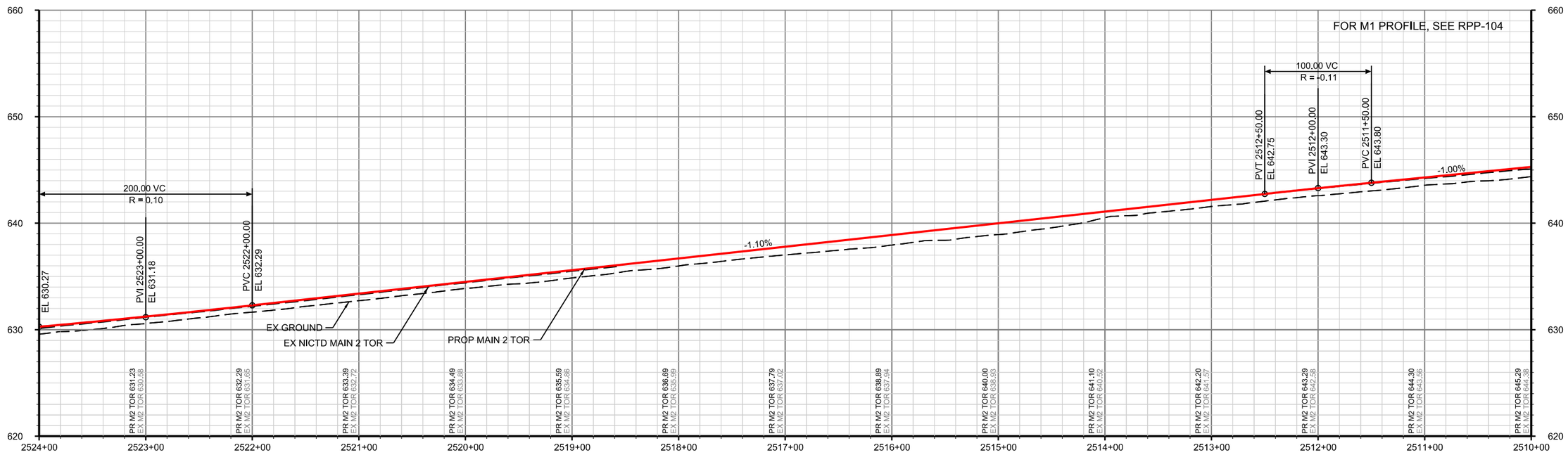
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2524+00 TO 2538+00
MP 47.8 TO 48.1

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE
10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-041 OF RPP-095

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33 East Highway 12
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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

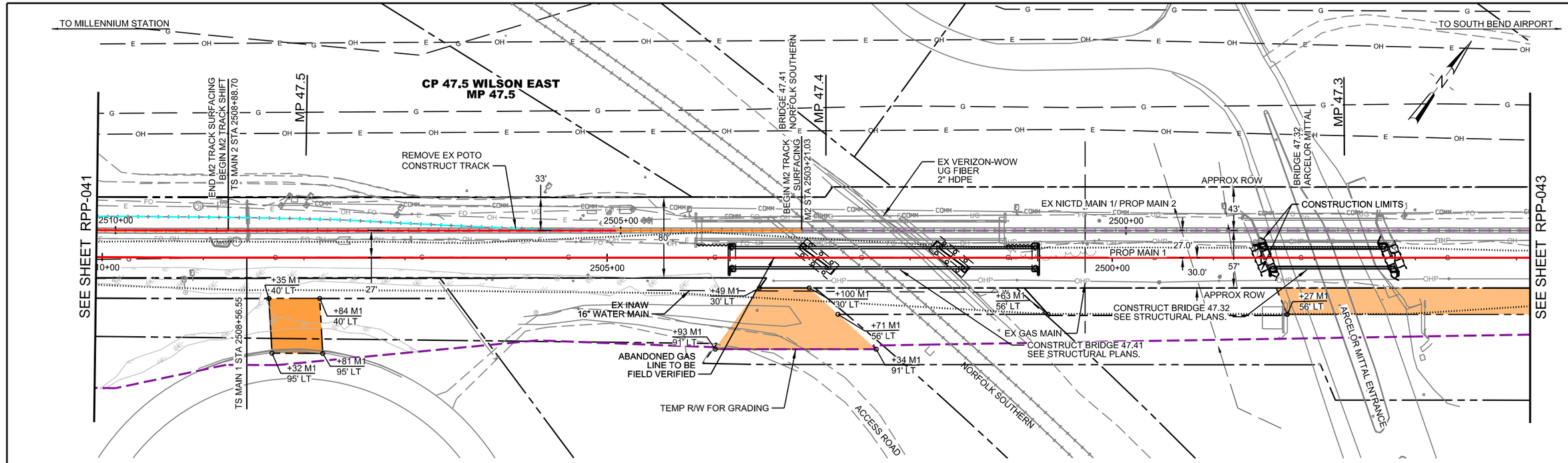
DESIGNED:	PEI-DJS
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

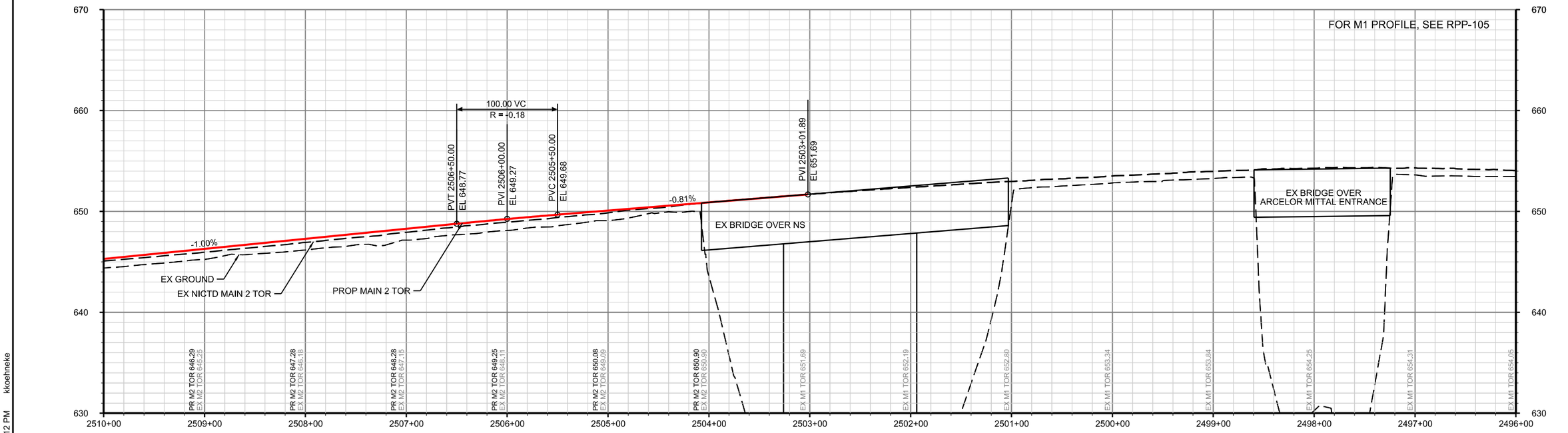
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2510+00 TO 2524+00
MP 47.5 TO 47.8

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-042 OF RPP-095

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

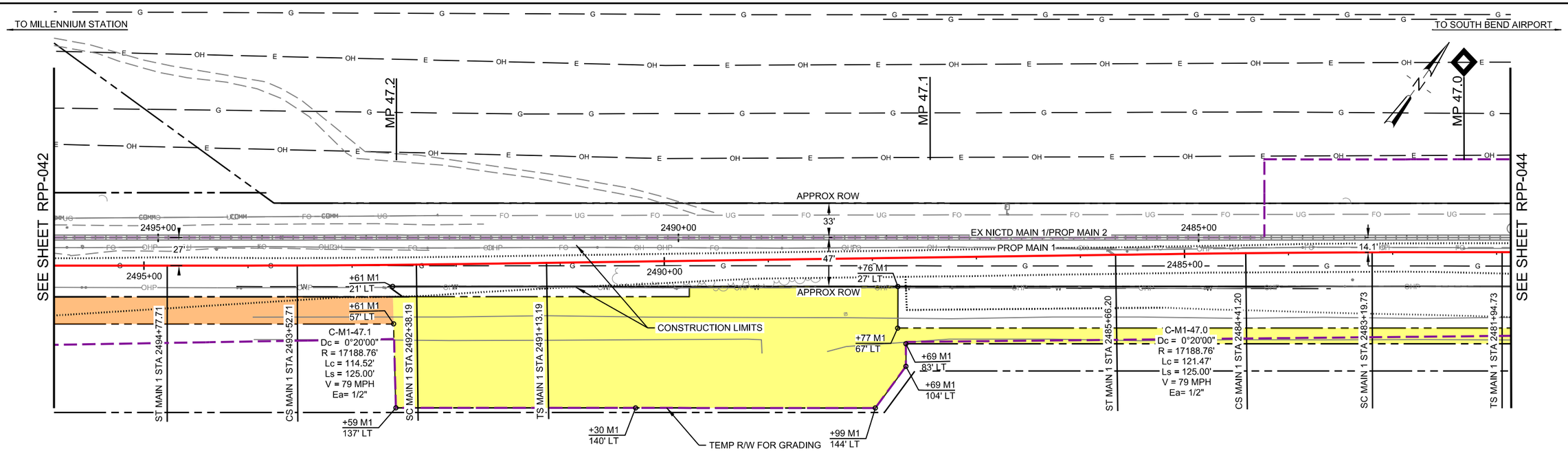
DESIGNED:	PEI-DJS
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

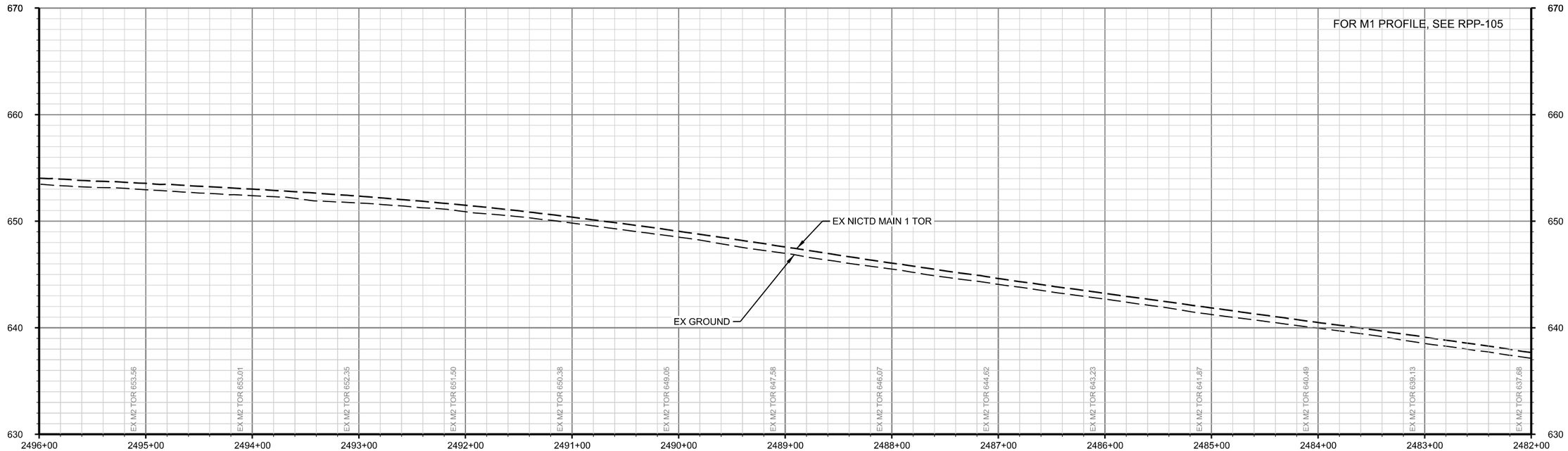
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2496+00 TO 2510+00
MP 47.3 TO 47.5

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-043 OF RPP-095

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

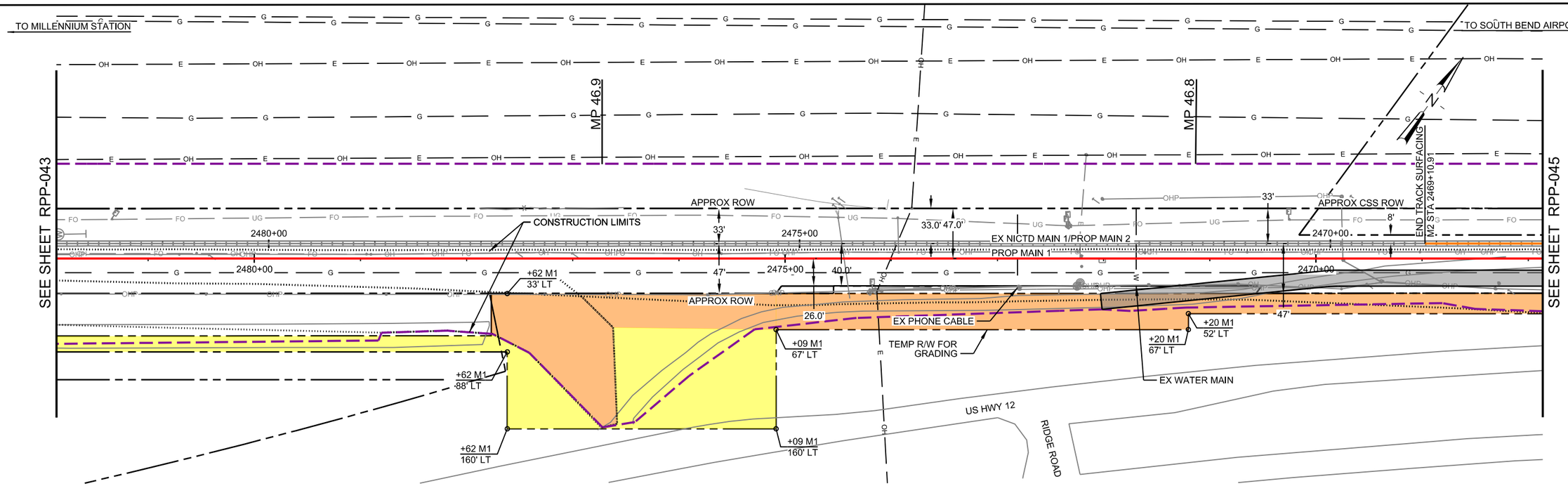
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

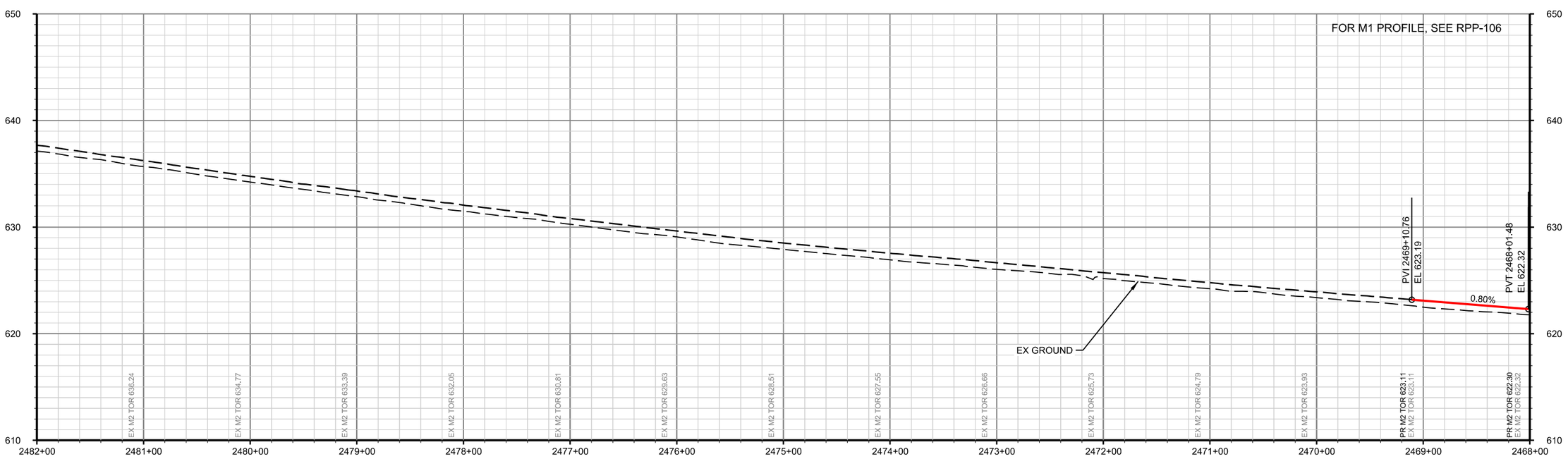
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2482+00 TO 2496+00
MP 47.0 TO 47.3

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-044 OF RPP-095

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

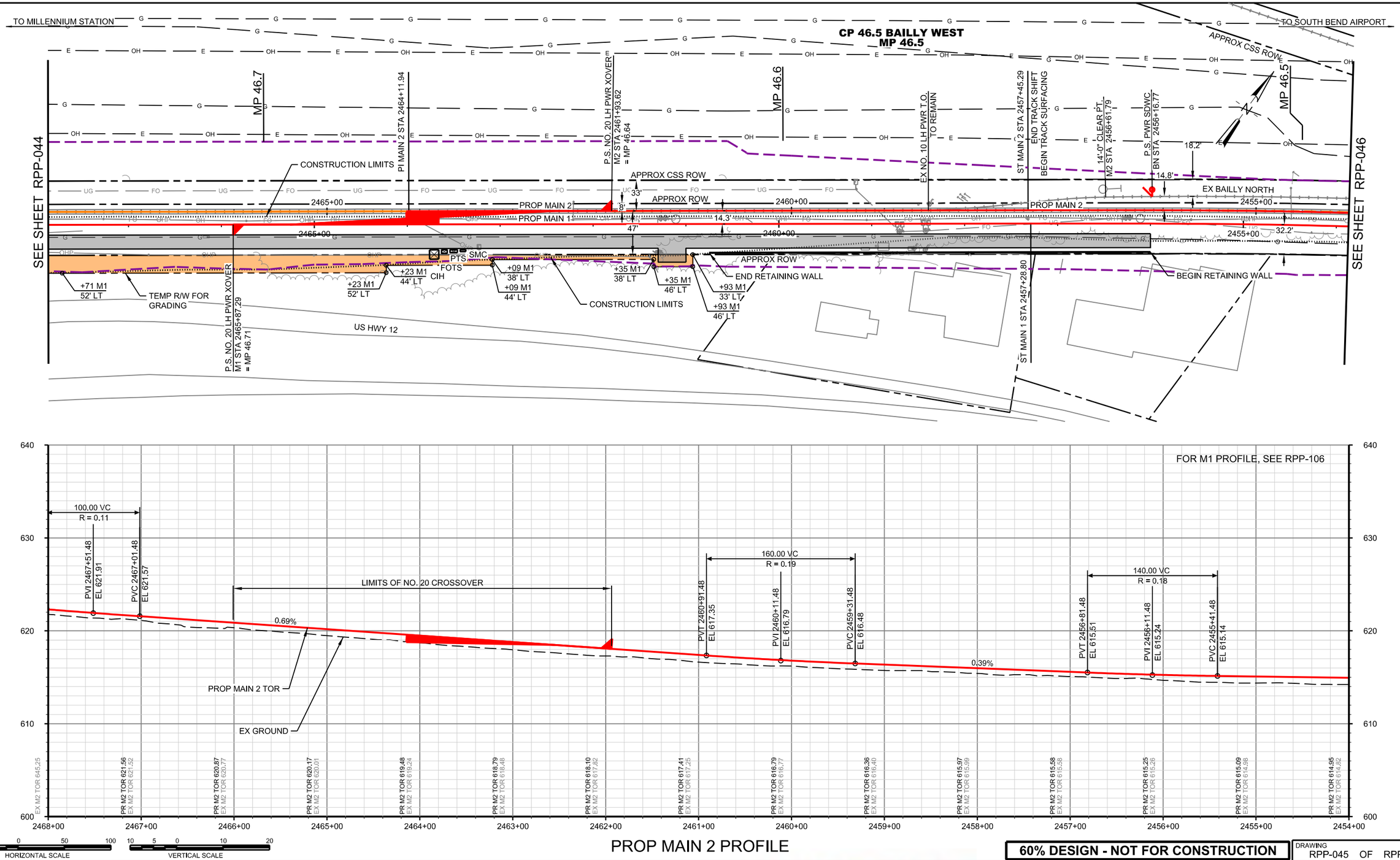
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2468+00 TO 2482+00
MP 46.7 TO 47.0

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-045 OF RPP-095

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

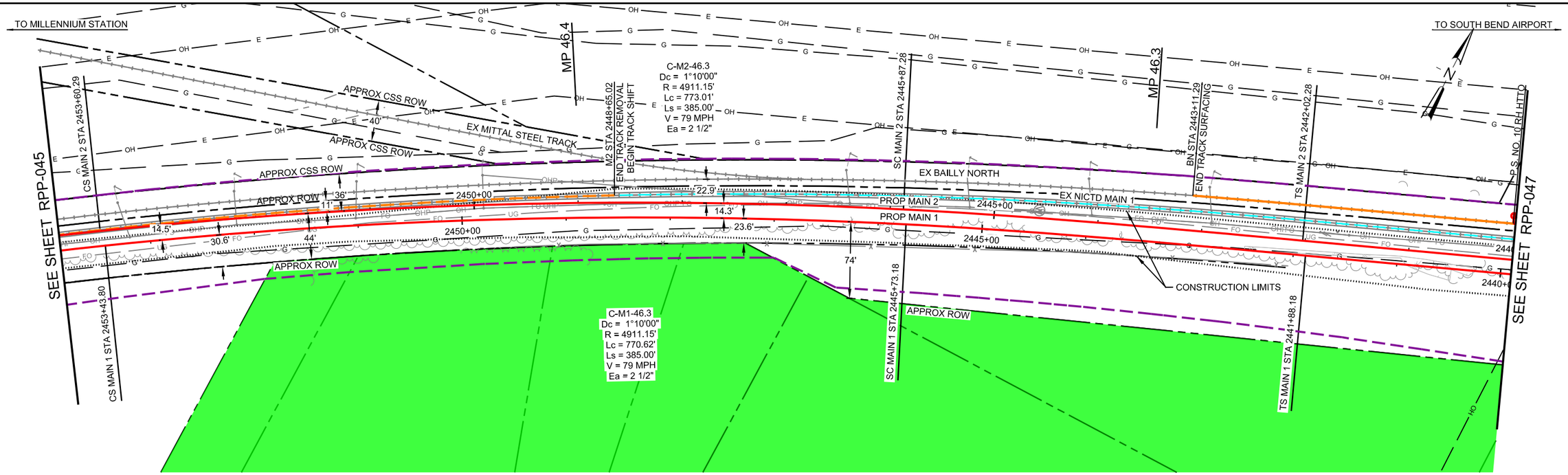
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

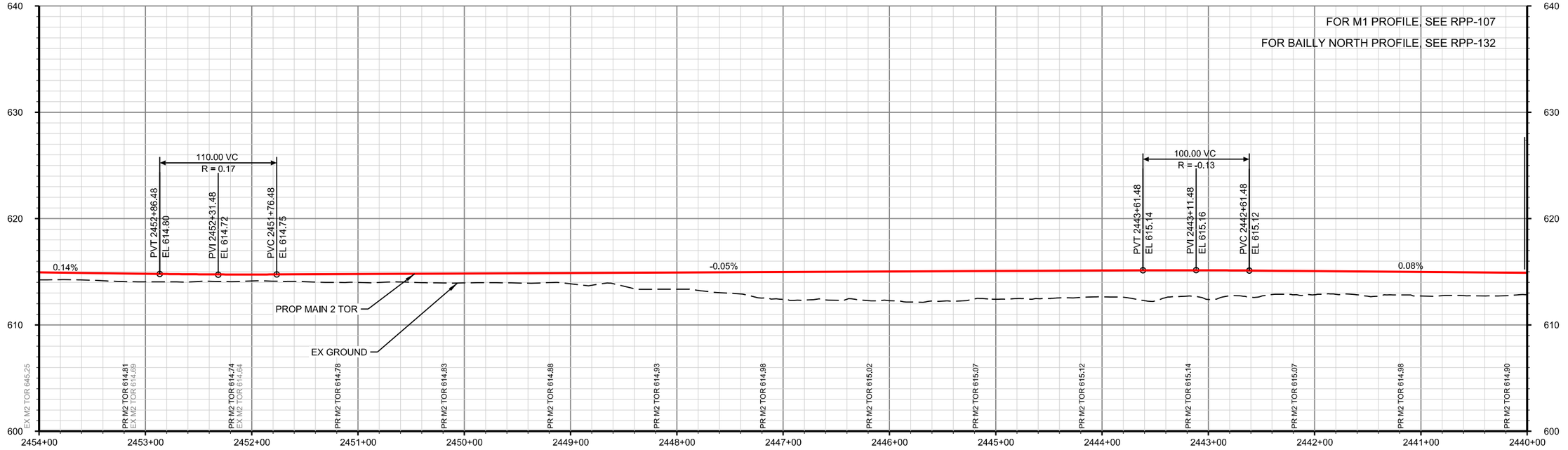
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2454+00 TO 2468+00
MP 46.5 TO 46.7

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-046 OF RPP-095

PLOT DATE: 4/30/2020 10:23:22 PM kkoehneke

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

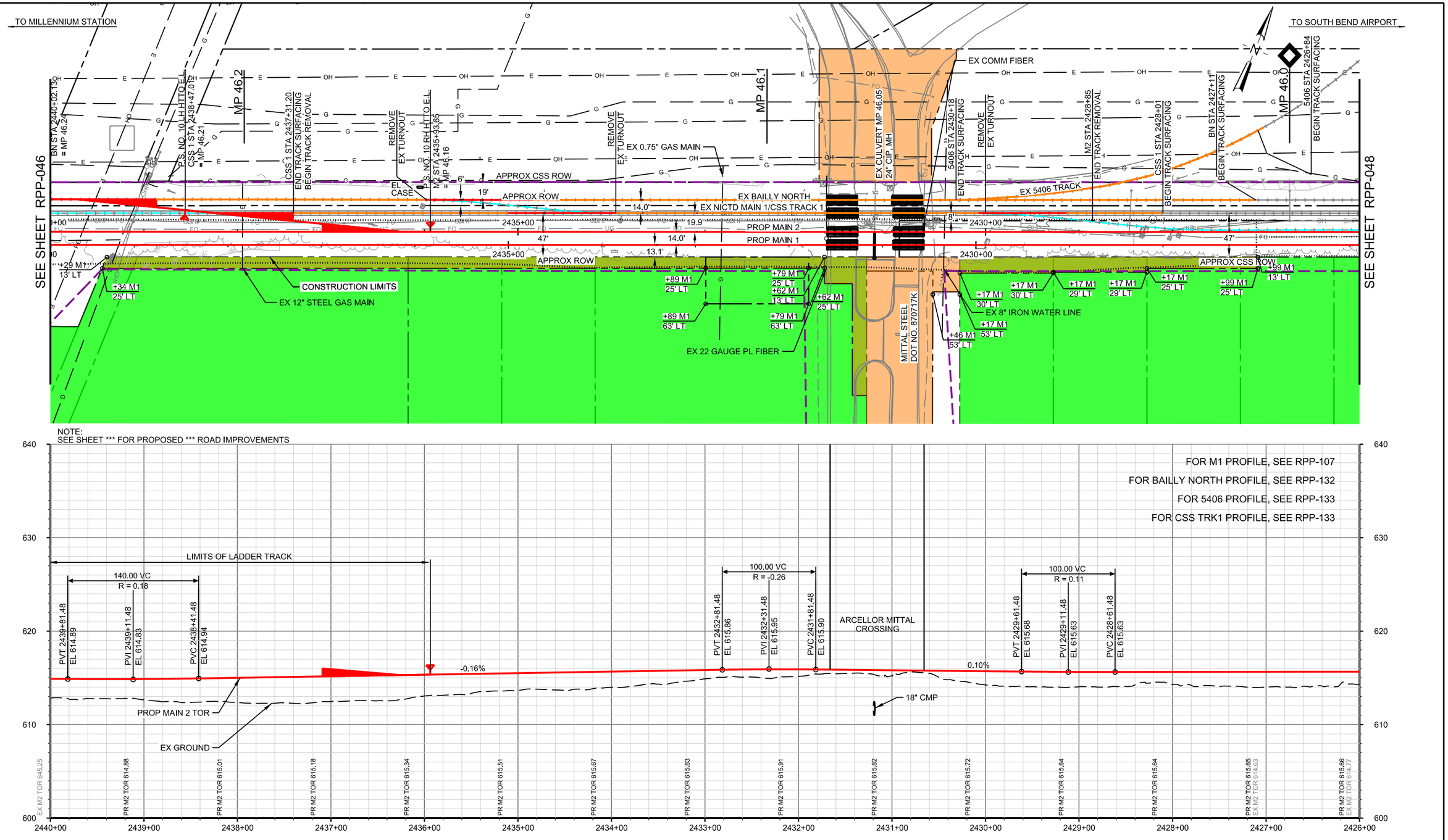
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2440+00 TO 2454+00
MP 46.2 TO 46.5

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



NOTE:
SEE SHEET *** FOR PROPOSED *** ROAD IMPROVEMENTS

FOR M1 PROFILE, SEE RPP-107
FOR BAILLY NORTH PROFILE, SEE RPP-132
FOR 5406 PROFILE, SEE RPP-133
FOR CSS TRK1 PROFILE, SEE RPP-133

50 25 0 50 100 HORIZONTAL SCALE
10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-047 OF RPP-095

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33 East Highway 12
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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

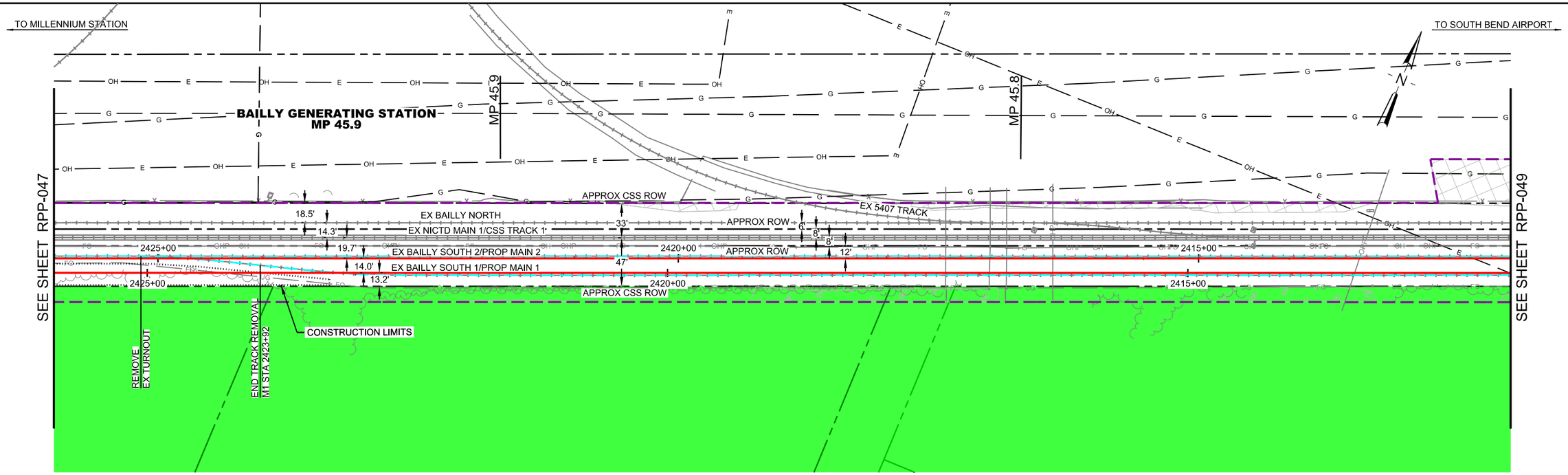
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

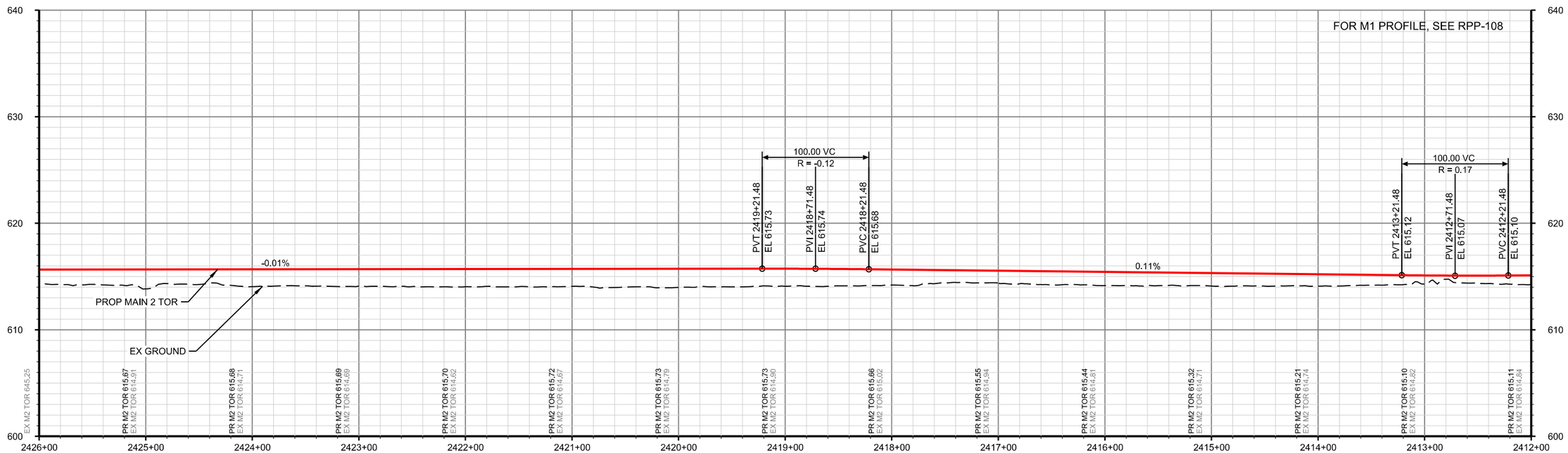
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2426+00 TO 2440+00
MP 46.0 TO 46.2

FILENAME	DT_DWG_RPP-001	SHEET
SCALE	AS NOTED	OF

PLOT DATE: 4/30/2020 10:23:24 PM kkoelneke





50 25 0 50 100 HORIZONTAL SCALE
10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-048 OF RPP-095

PLOT DATE: 4/30/2020 10:23:27 PM kkoehneke

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

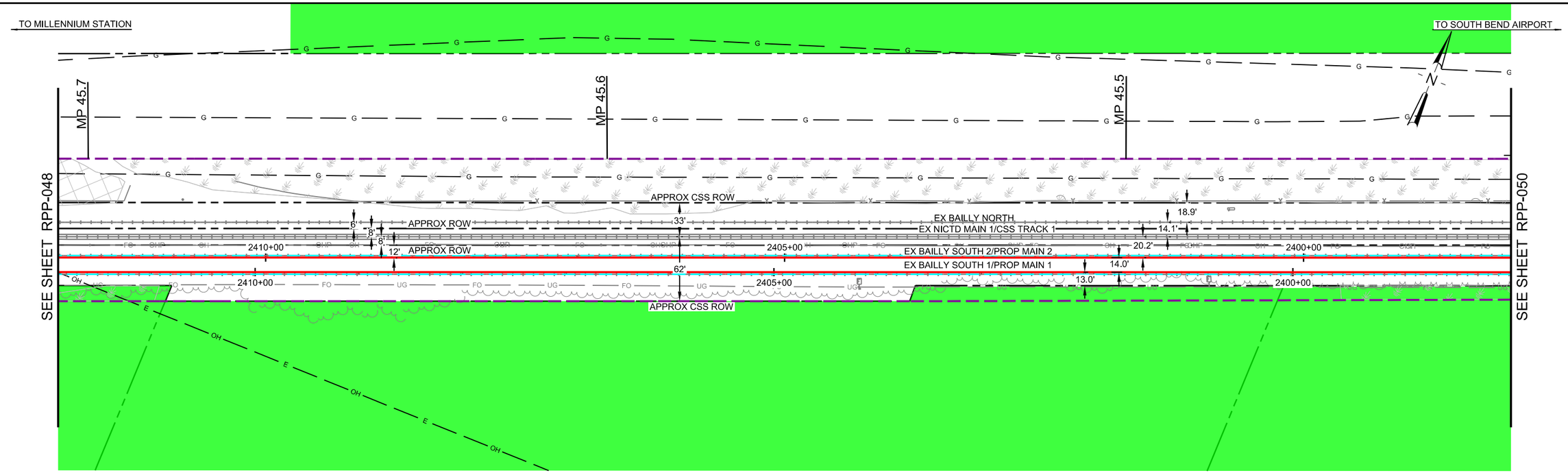
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

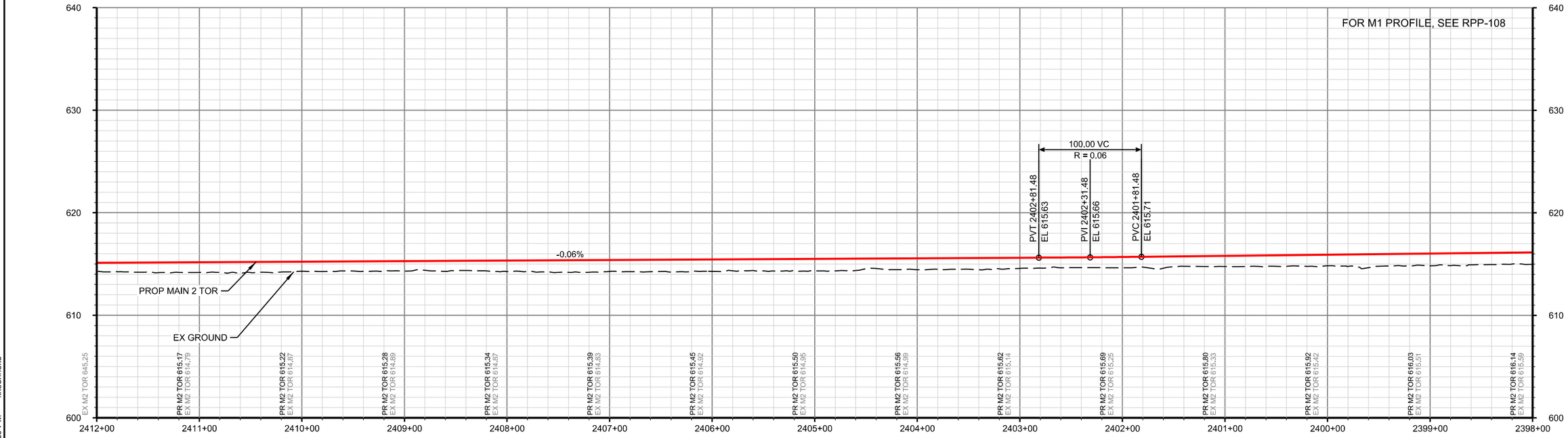
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2412+00 TO 2426+00
MP 45.7 TO 46.0

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-049 OF RPP-095

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

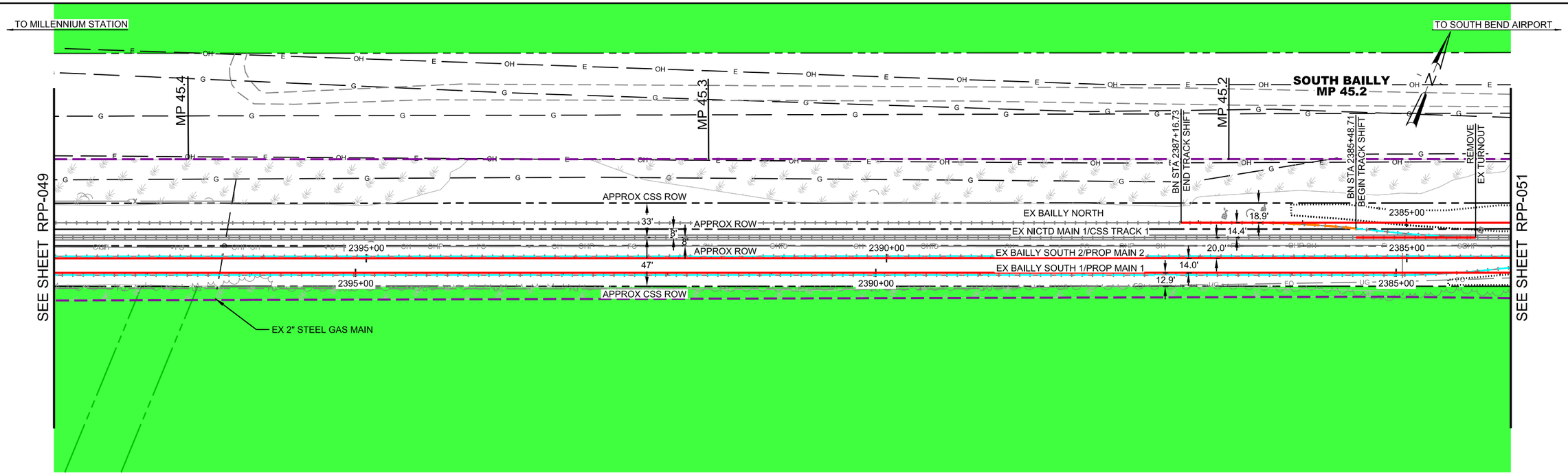
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

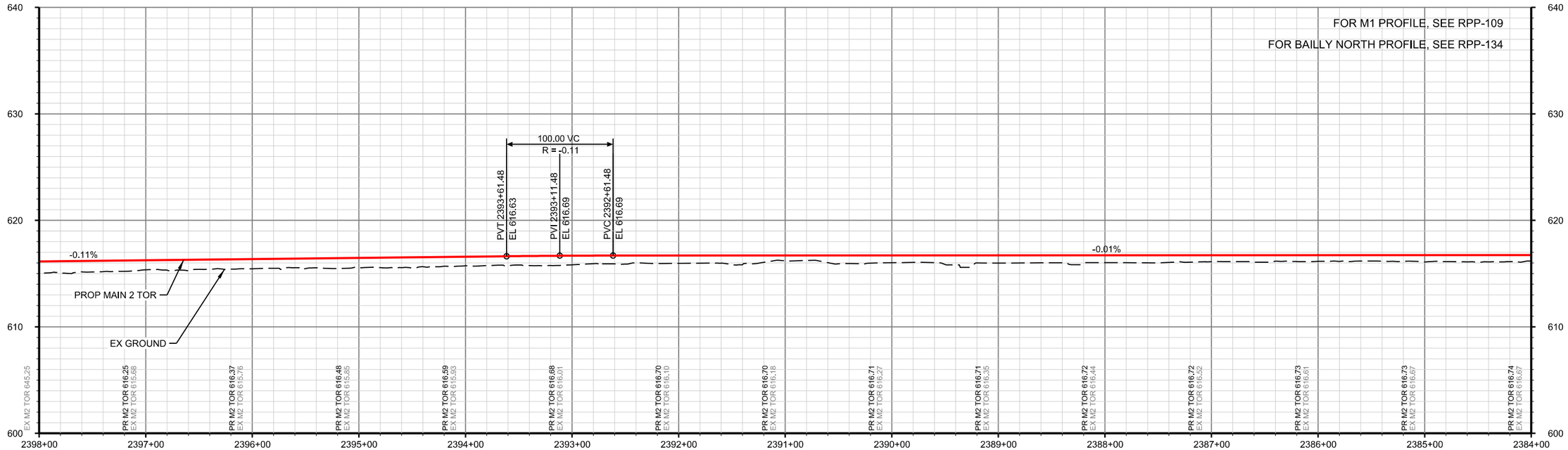
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2398+00 TO 2412+00
MP 45.4 TO 45.7

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE
10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-050 OF RPP-095

PLOT DATE: 4/30/2020 10:23:32 PM kkoehneke

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0	03/16/2020	60% DESIGN

NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

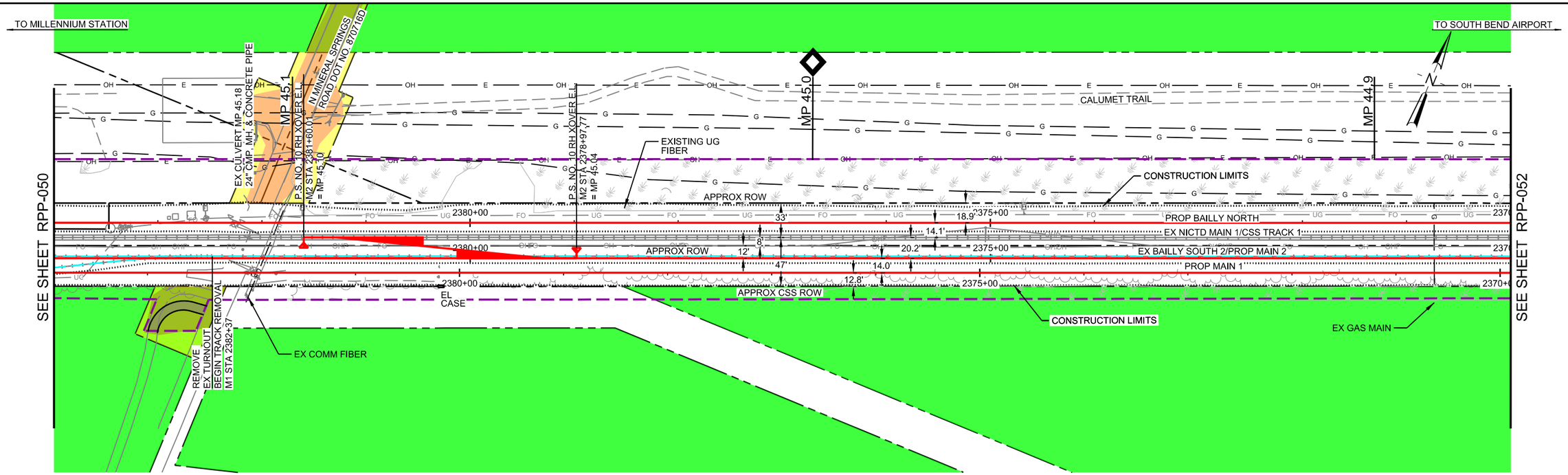
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

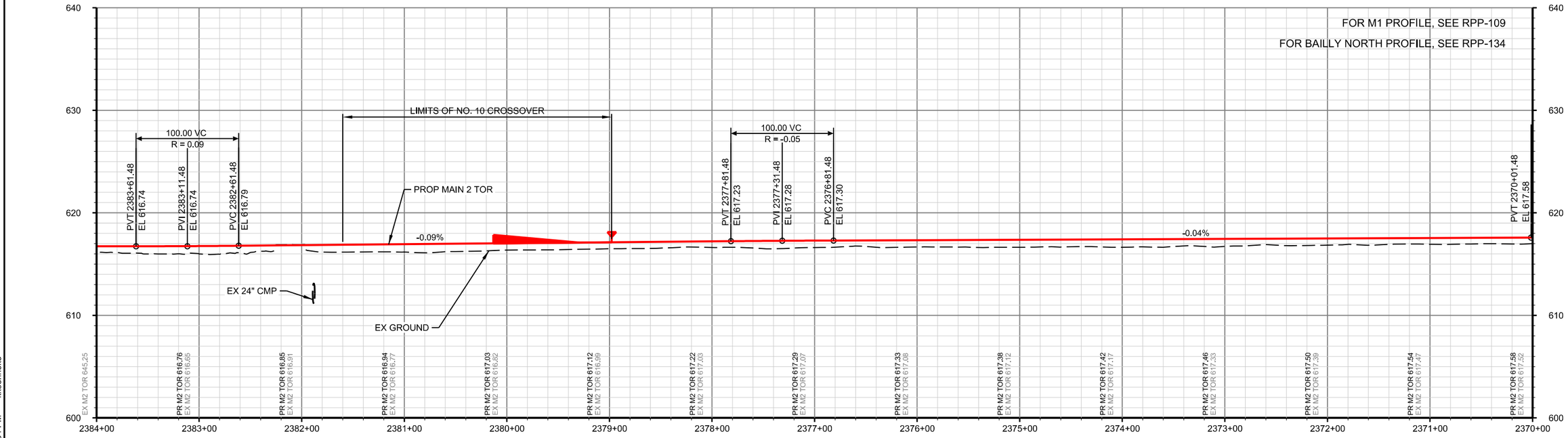
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2384+00 TO 2398+00
MP 45.1 TO 45.4

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





PROP MAIN 2 PROFILE

HORIZONTAL SCALE 50 25 0 50 100

VERTICAL SCALE 10 5 0 10 20

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-051 OF RPP-095

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

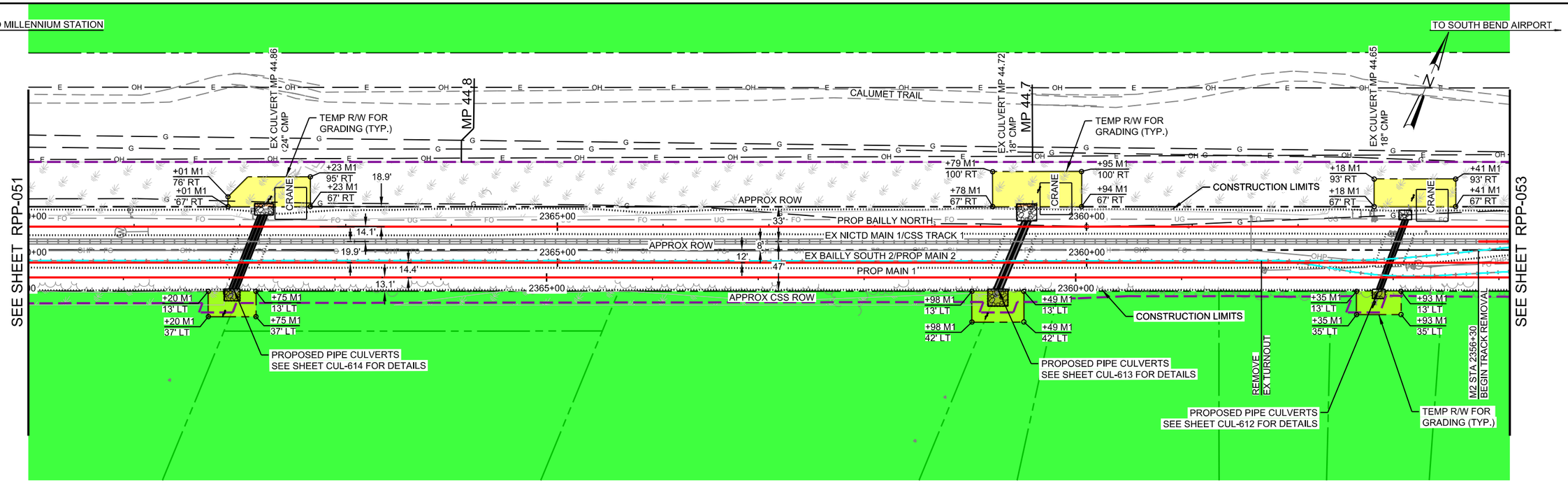
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

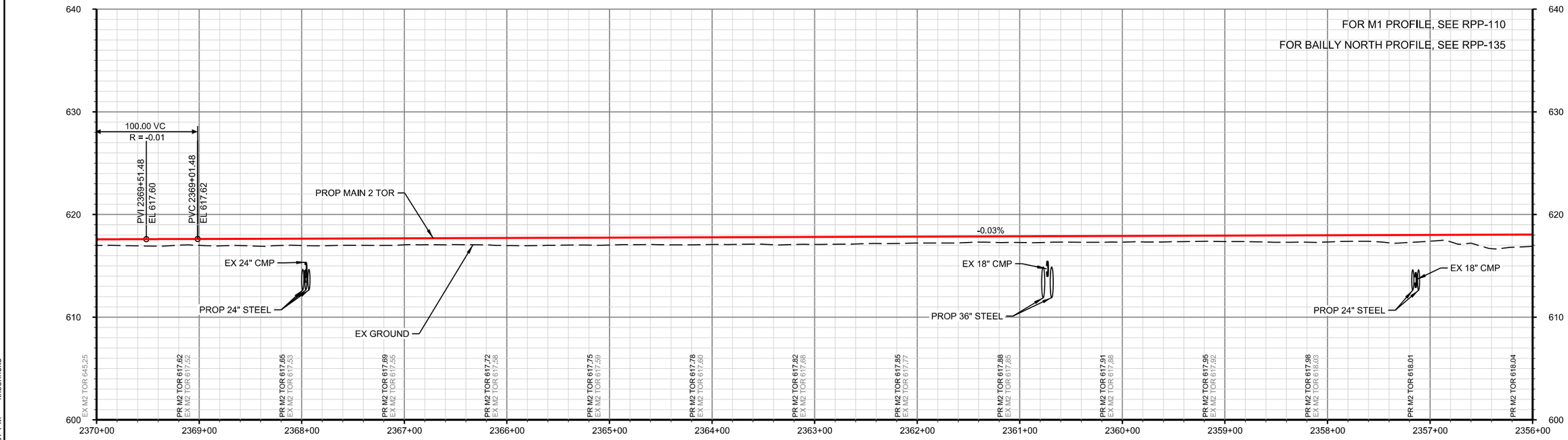
PLAN AND PROFILE
STA 2370+00 TO 2384+00
MP 44.9 TO 45.1

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF

PLOT DATE: 4/30/2020 10:23:34 PM kkoehneke





50 25 0 50 100 HORIZONTAL SCALE
10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-052 OF RPP-095

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Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

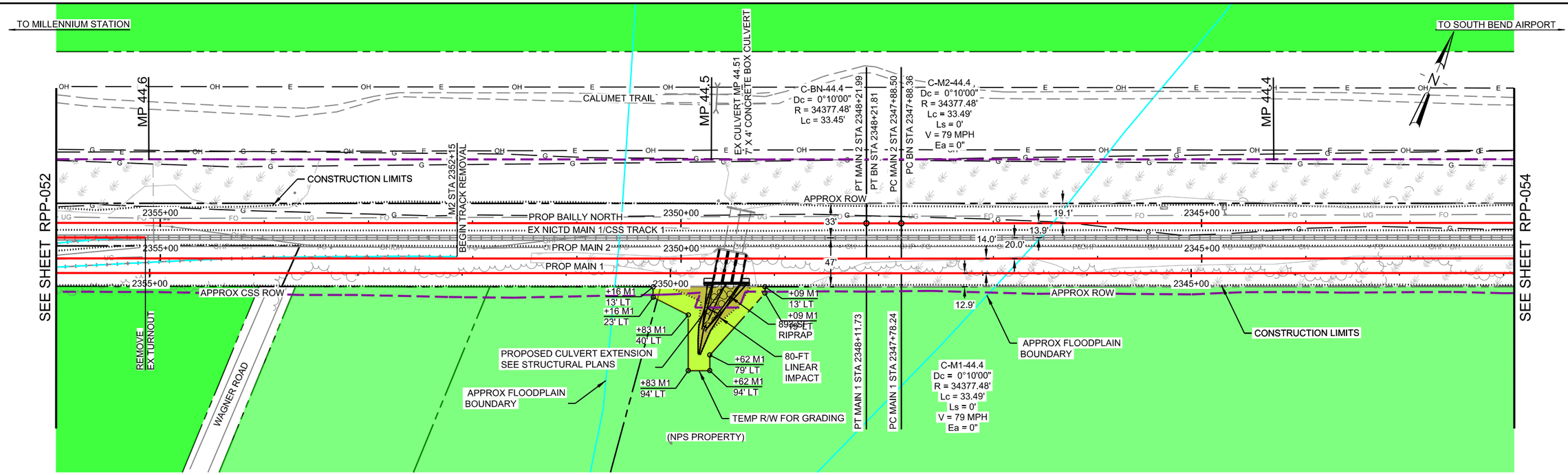
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

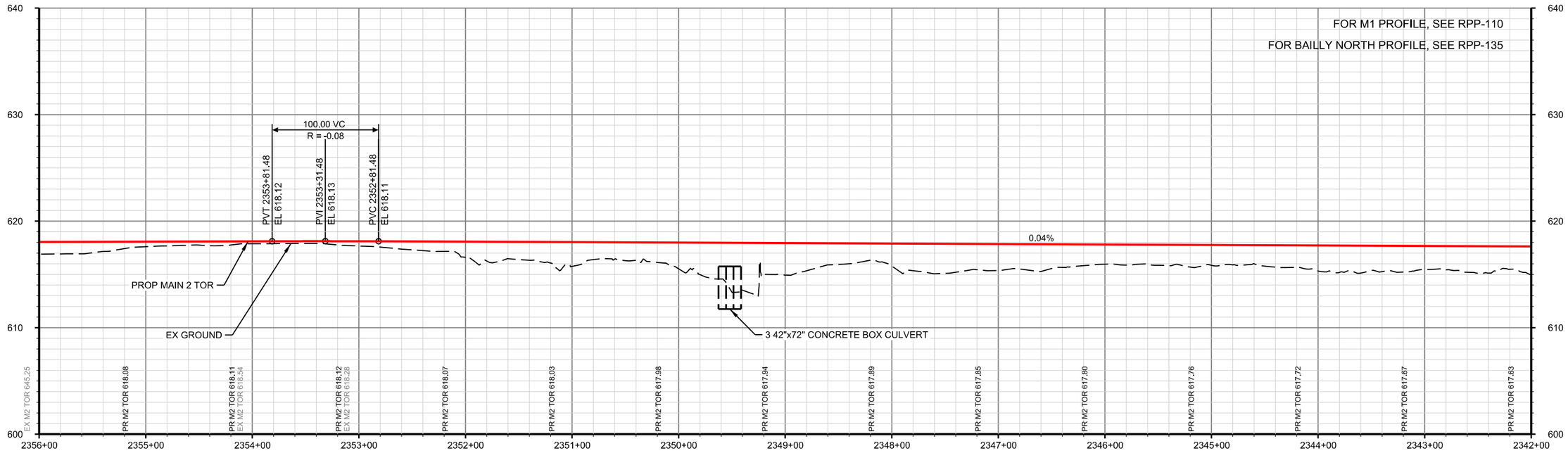
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2356+00 TO 2370+00
MP 44.6 TO 44.9

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-053 OF RPP-095

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33 East Highway 12
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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

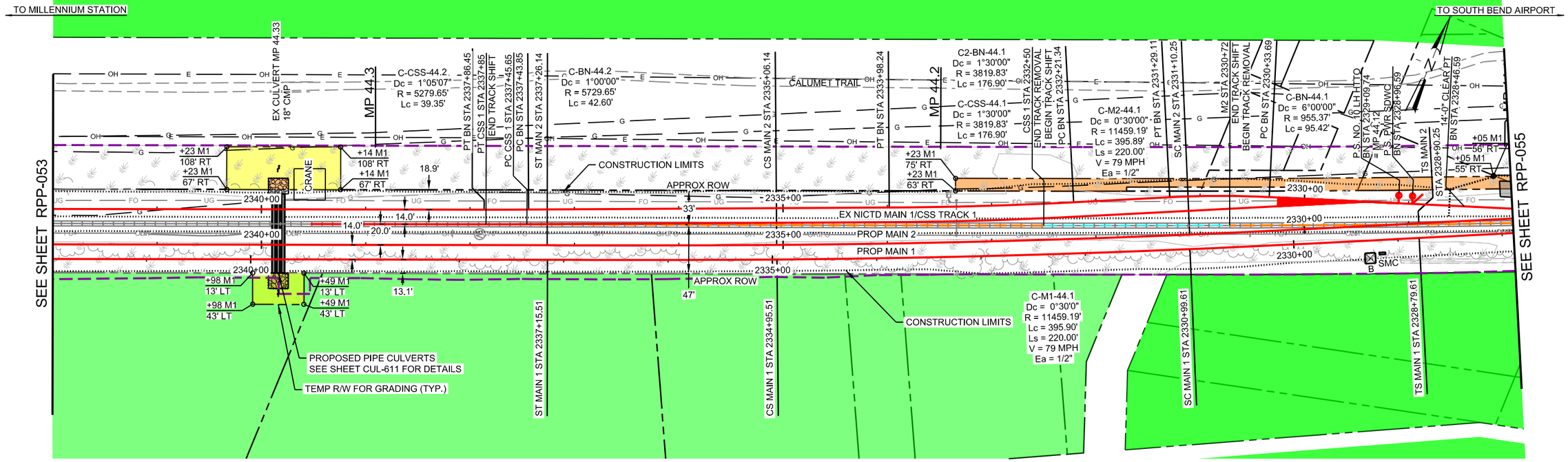
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

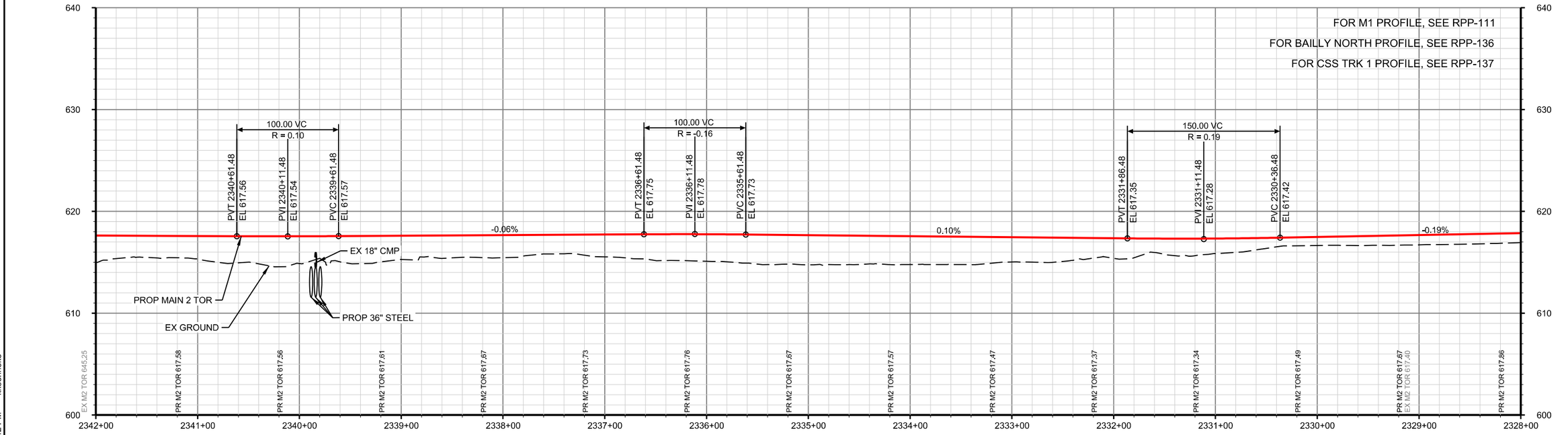
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2342+00 TO 2356+00
MP 44.4 TO 44.6

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE
10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-054 OF RPP-095

PLOT DATE: 4/30/2020 10:23:42 PM kkoehneke

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Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

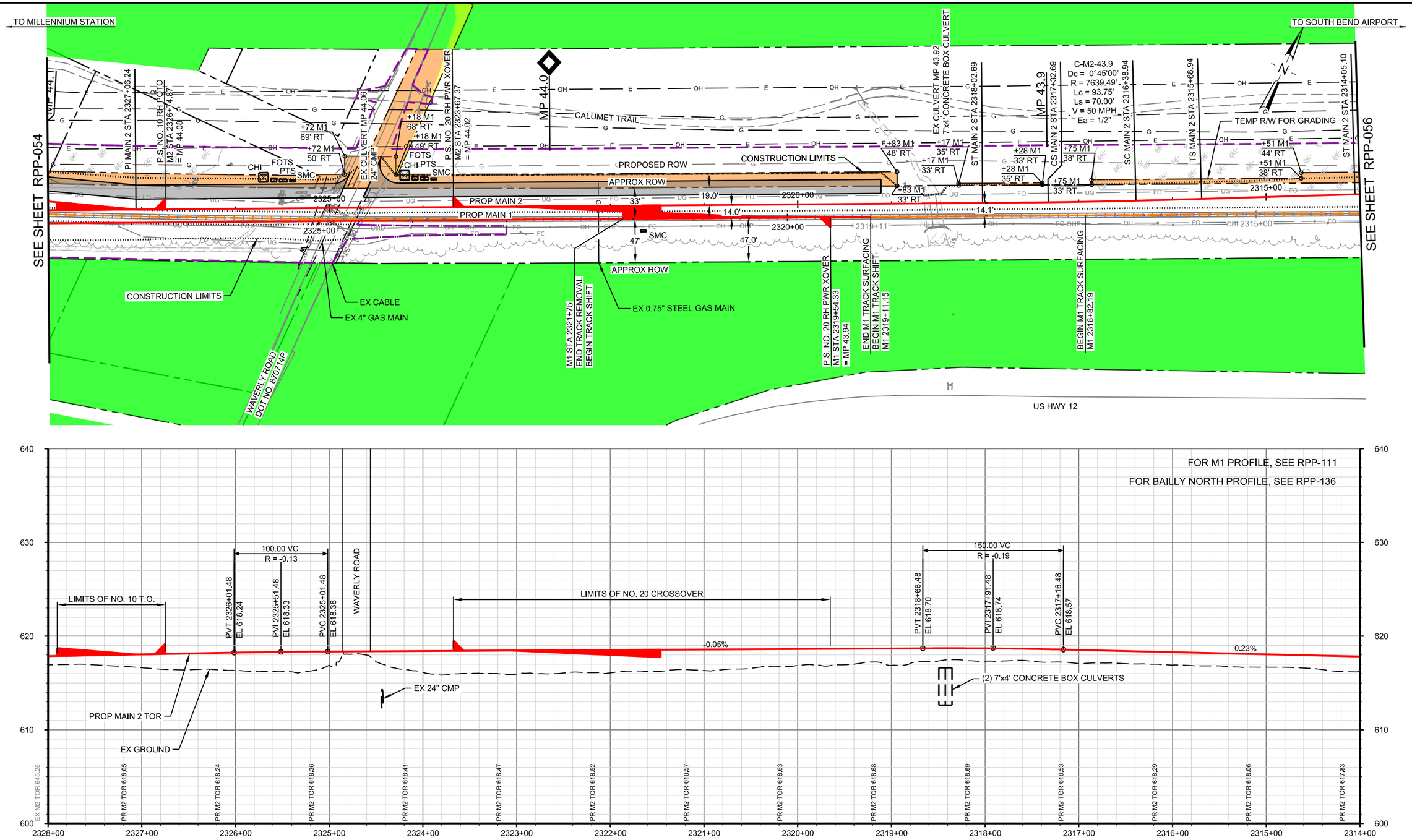
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2328+00 TO 2342+00
MP 44.1 TO 44.4

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



50 25 0 50 100 HORIZONTAL SCALE
10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-055 OF RPP-095

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

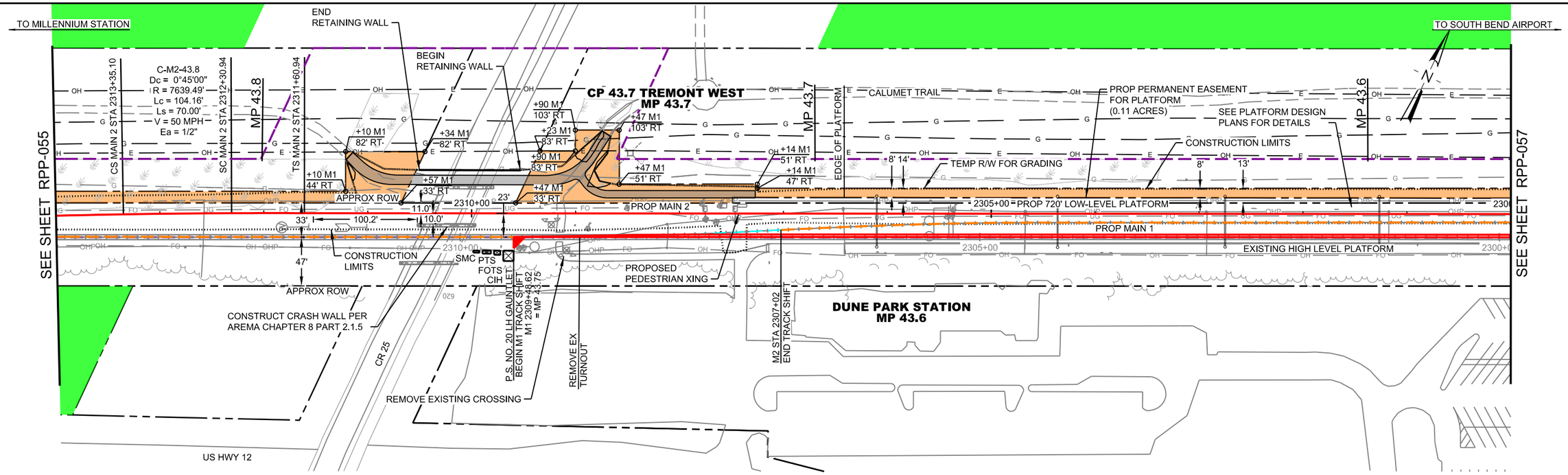
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

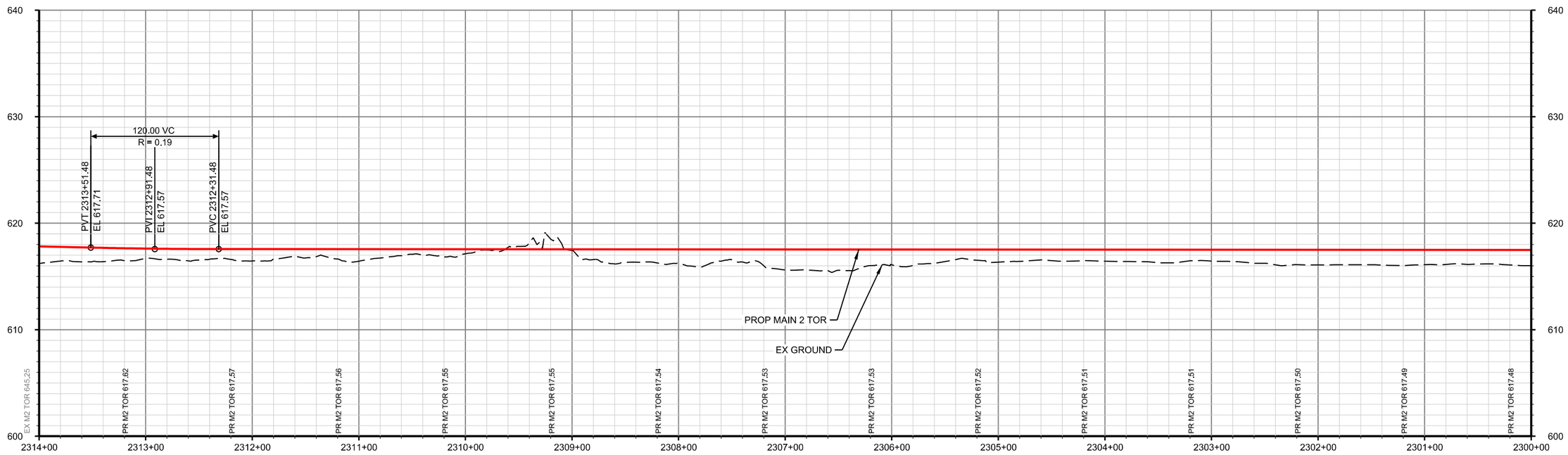
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2314+00 TO 2328+00
MP 43.8 TO 44.1

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-056 OF RPP-095

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2300+00 TO 2314+00
MP 43.6 TO 43.8

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

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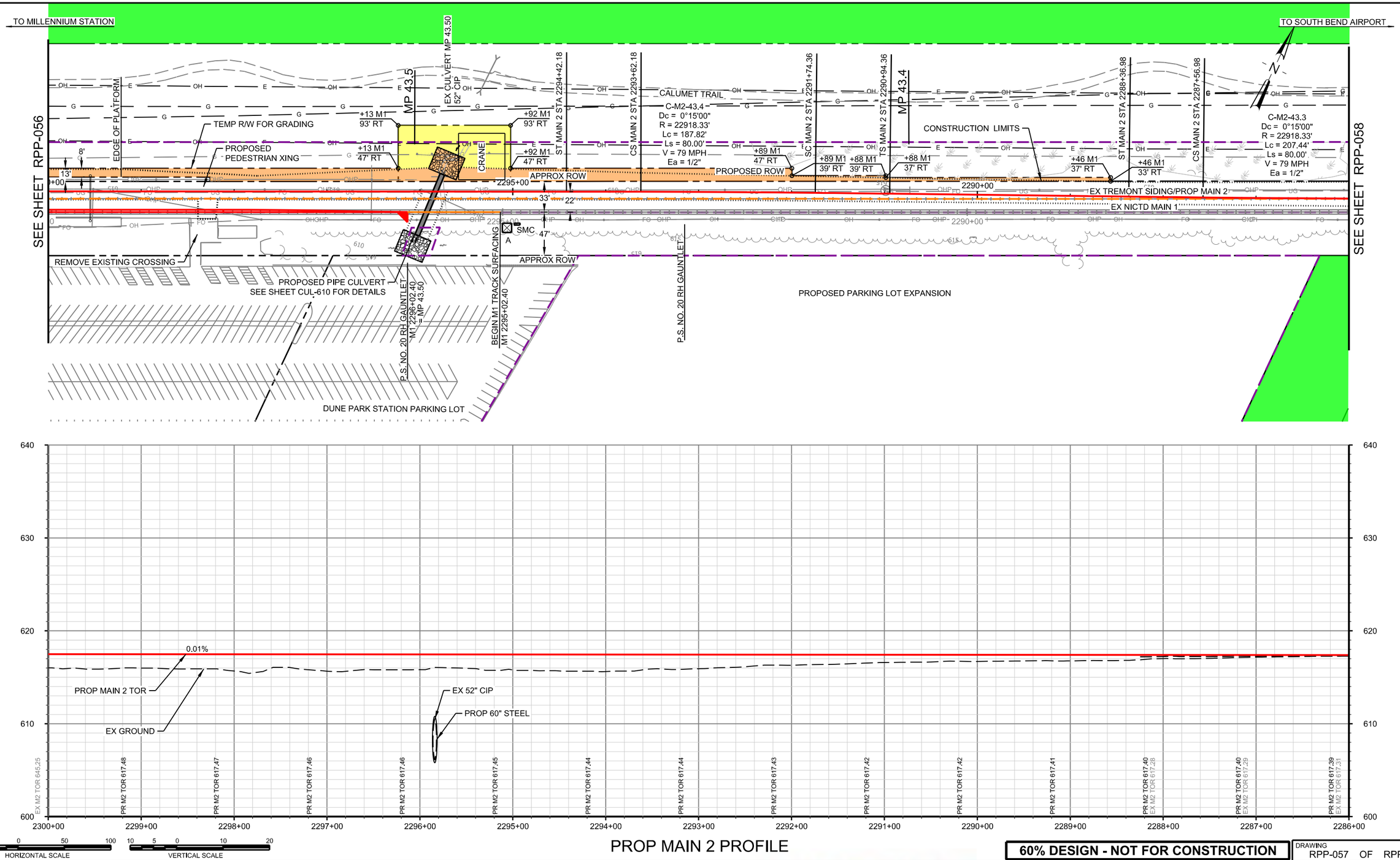

PROP MAIN 2 PROFILE

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DRAWING RPP-057 OF RPP-095

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

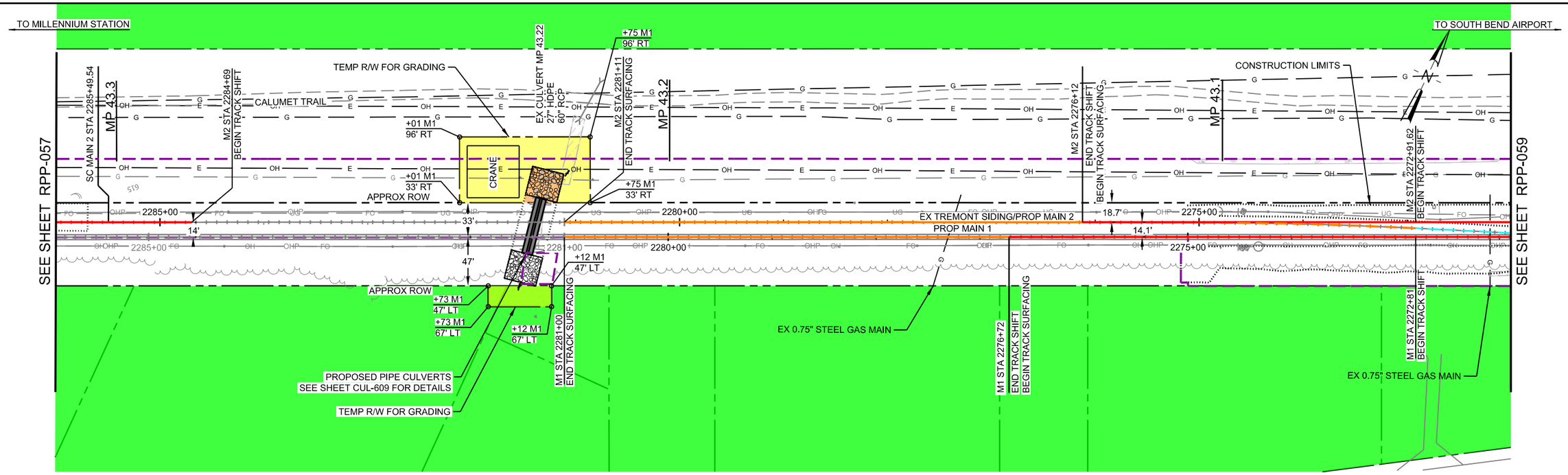
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

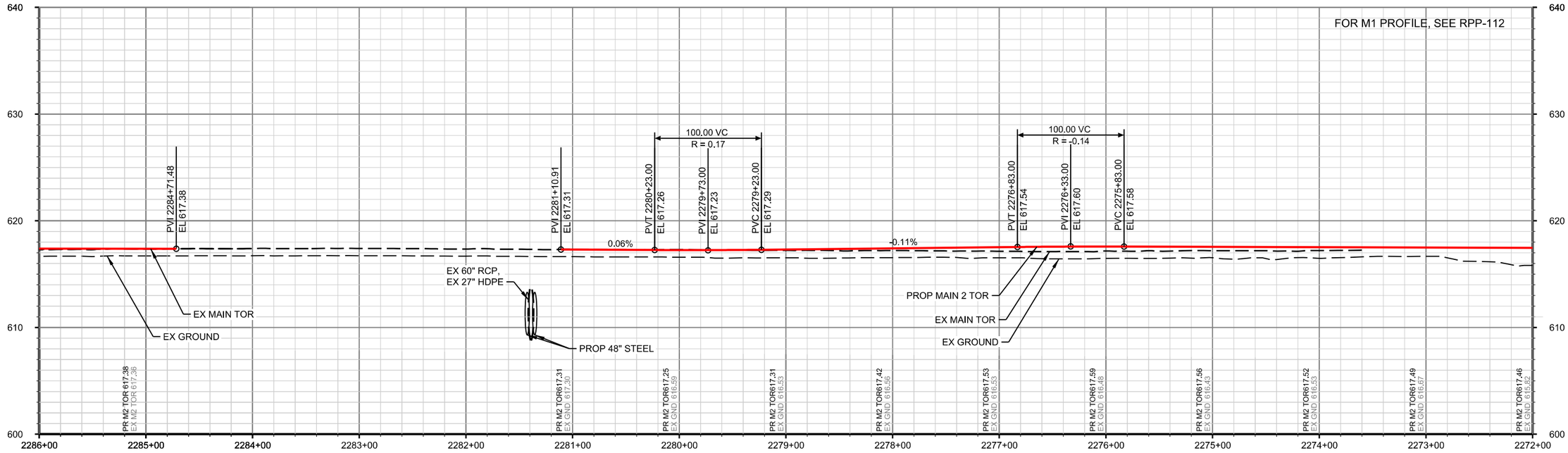
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2286+00 TO 2300+00
MP 43.3 TO 43.6

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-058 OF RPP-095

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

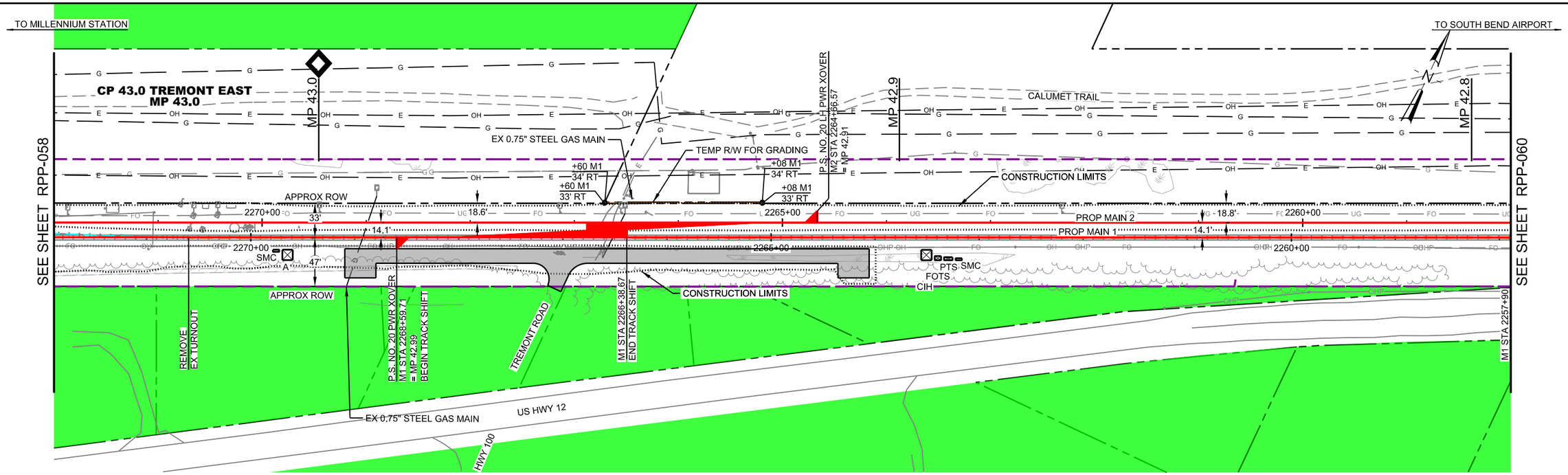
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

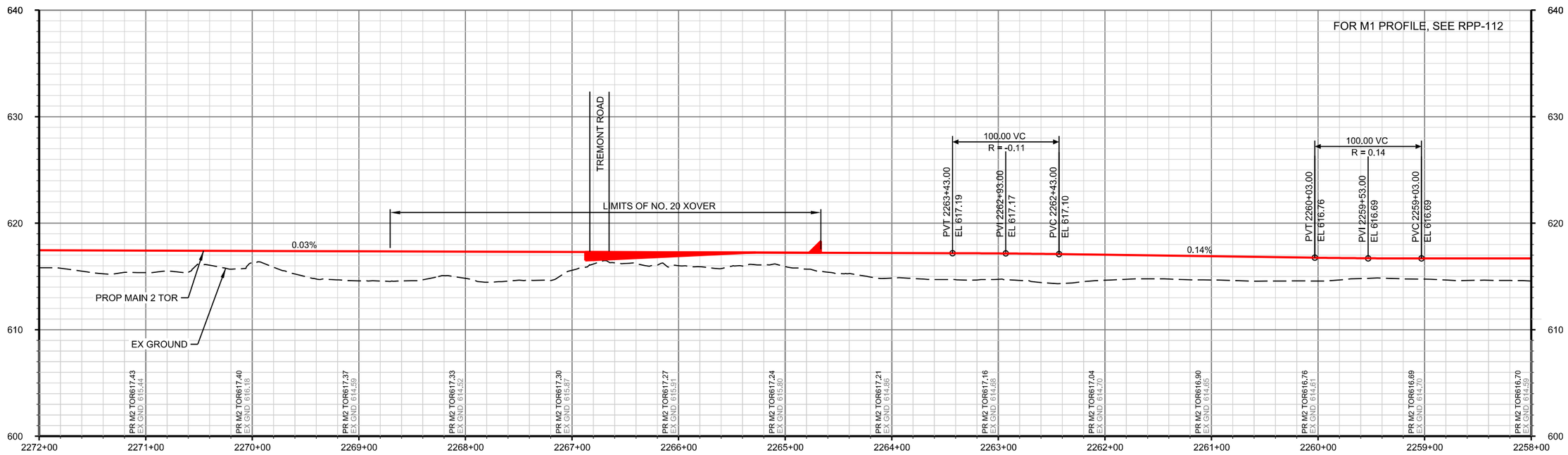
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2272+00 TO 2286+00
MP 43.0 TO 43.3

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE
10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-059 OF RPP-095

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Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

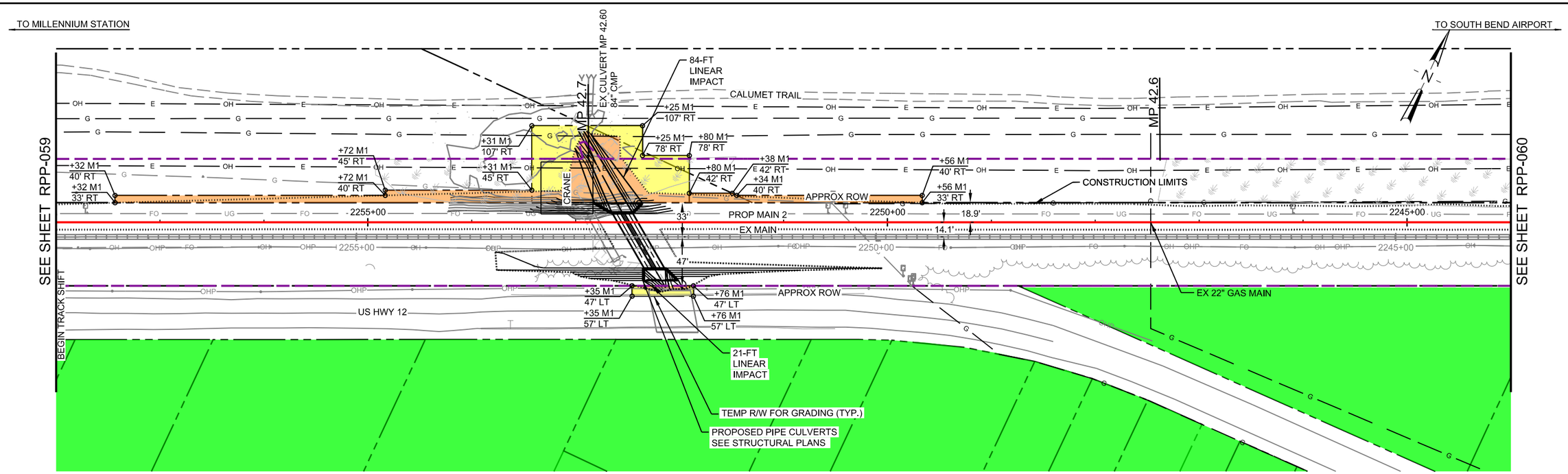
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2258+00 TO 2272+00
MP 42.8 TO 43.0

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-060 OF RPP-095

PLOT DATE: 4/30/2020 10:23:57 PM kkoehneke

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ISSUE	DATE	DESCRIPTION
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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

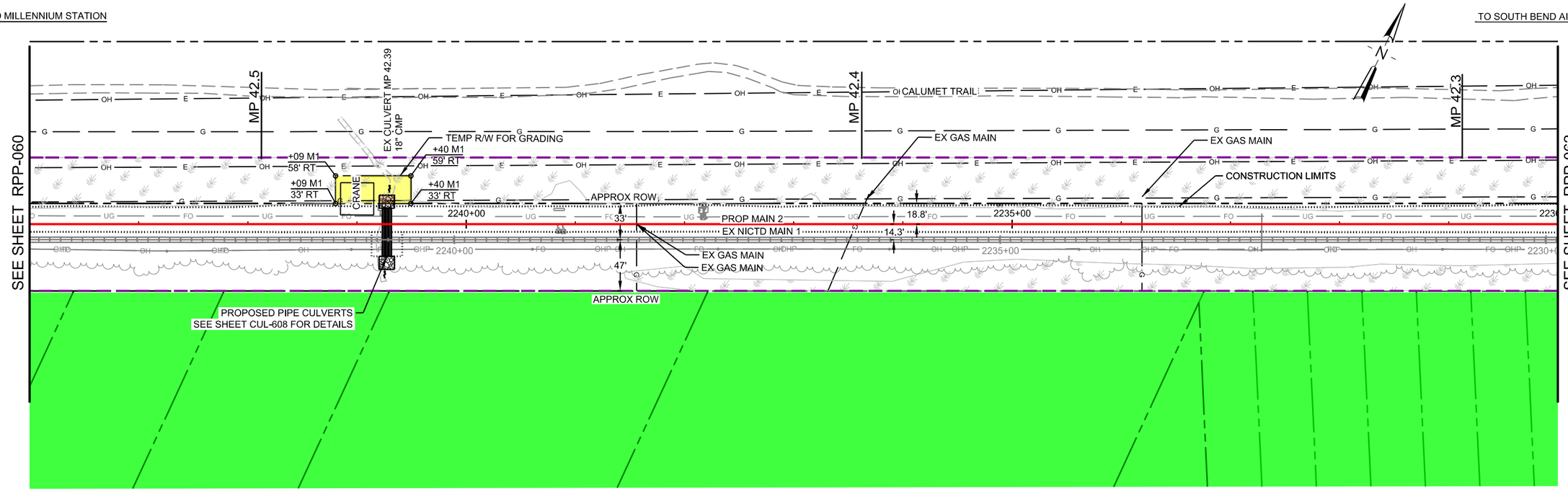
PLAN AND PROFILE
STA 2244+00 TO 2258+00
MP 42.5 TO 42.8

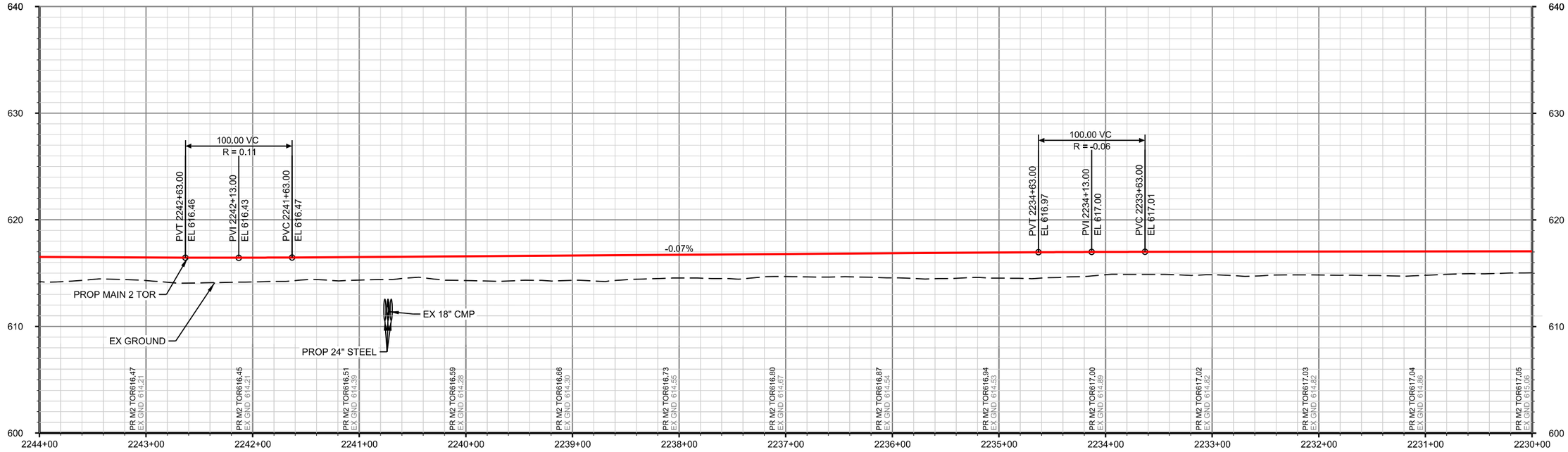
FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF

TO MILLENNIUM STATION

TO SOUTH BEND AIRPORT





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-061 OF RPP-095

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33 East Highway 12
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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

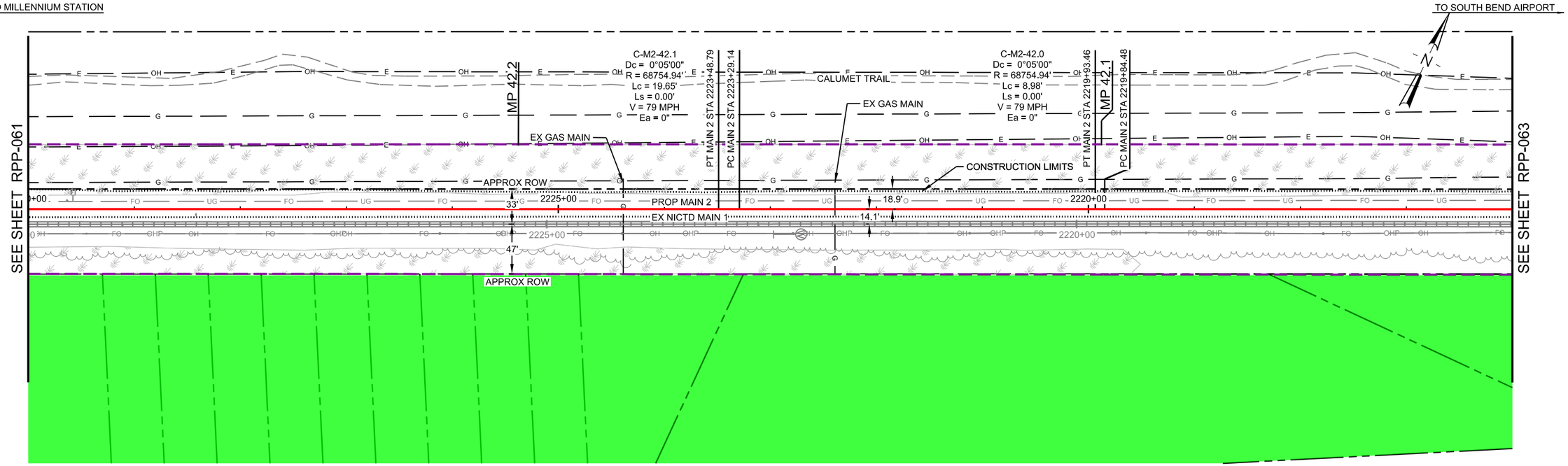
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

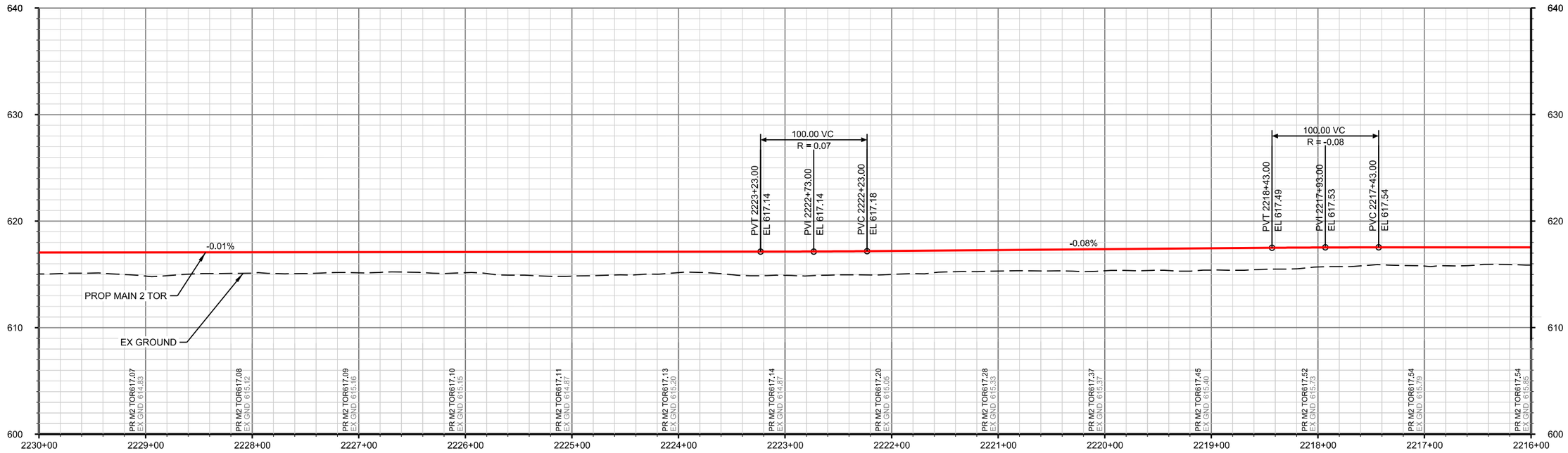
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2230+00 TO 2244+00
MP 42.3 TO 42.5

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-062 OF RPP-095

PLOT DATE: 4/30/2020 10:24:03 PM kkoehneke

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

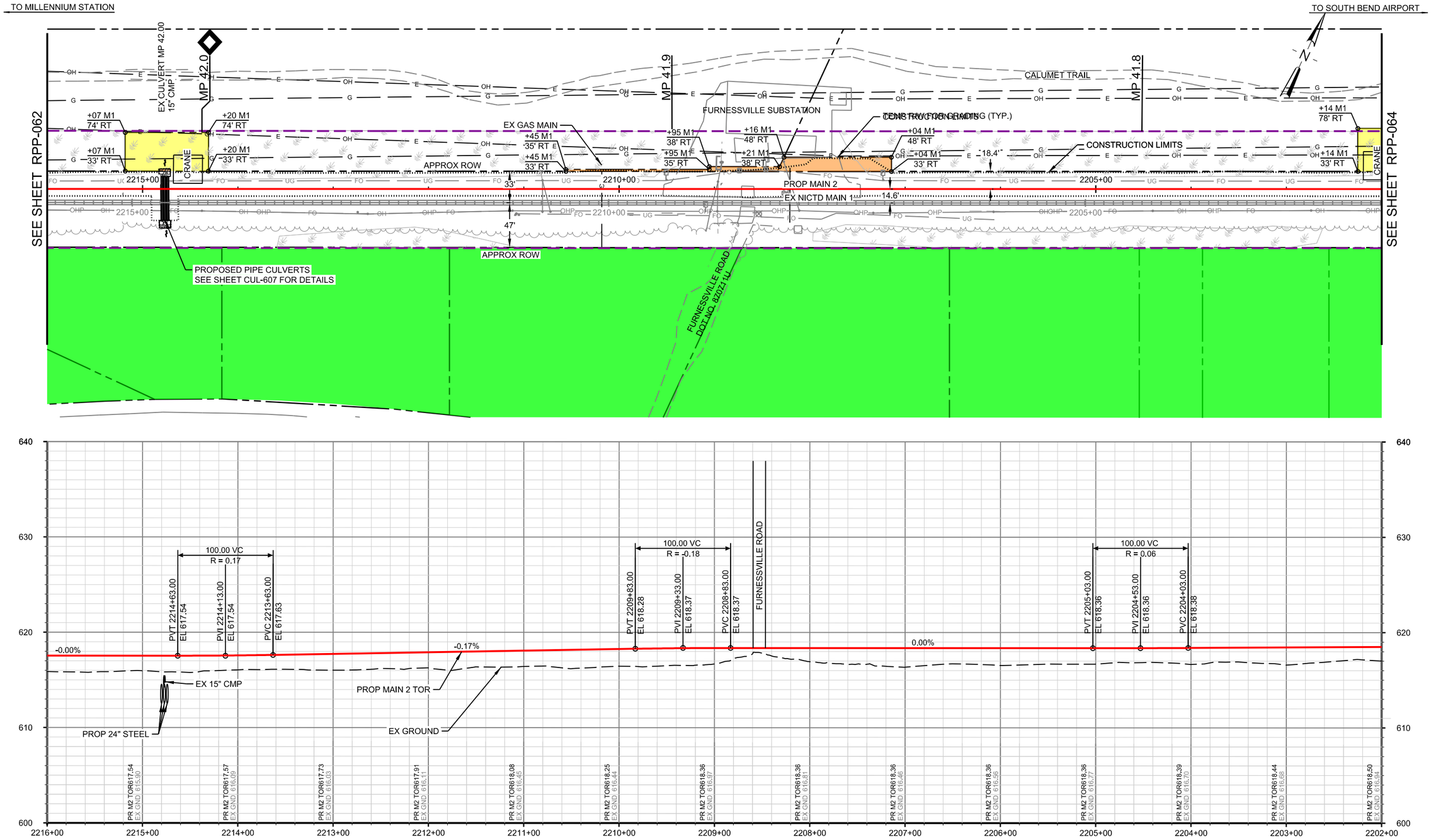
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2216+00 TO 2230+00
MP 42.0 TO 42.3

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-063 OF RPP-095

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N-W-I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

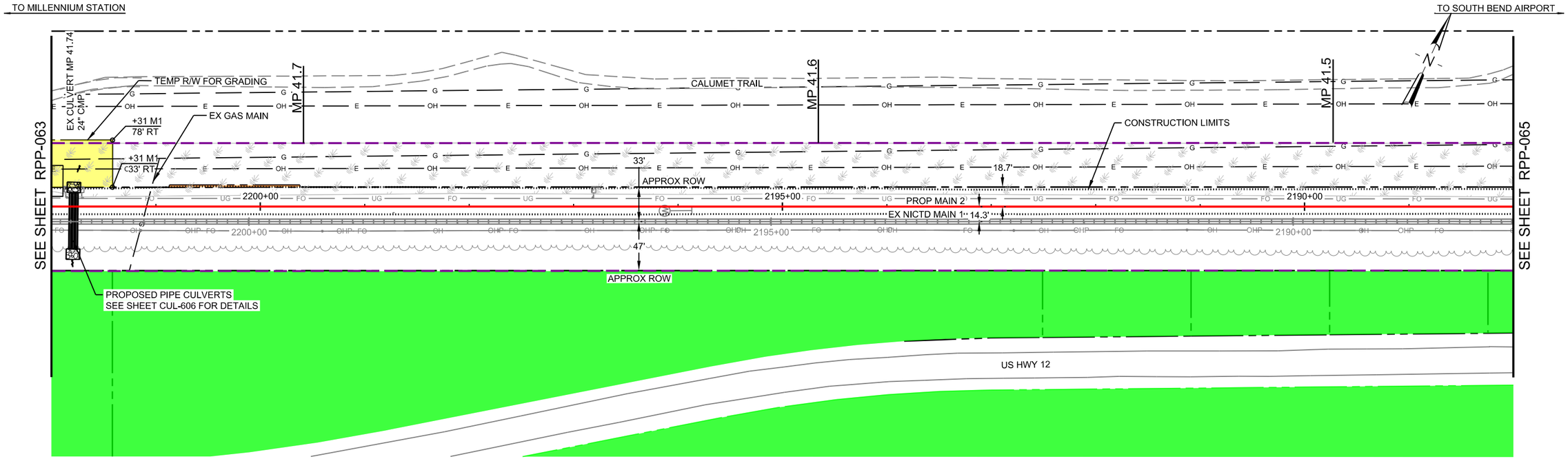
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

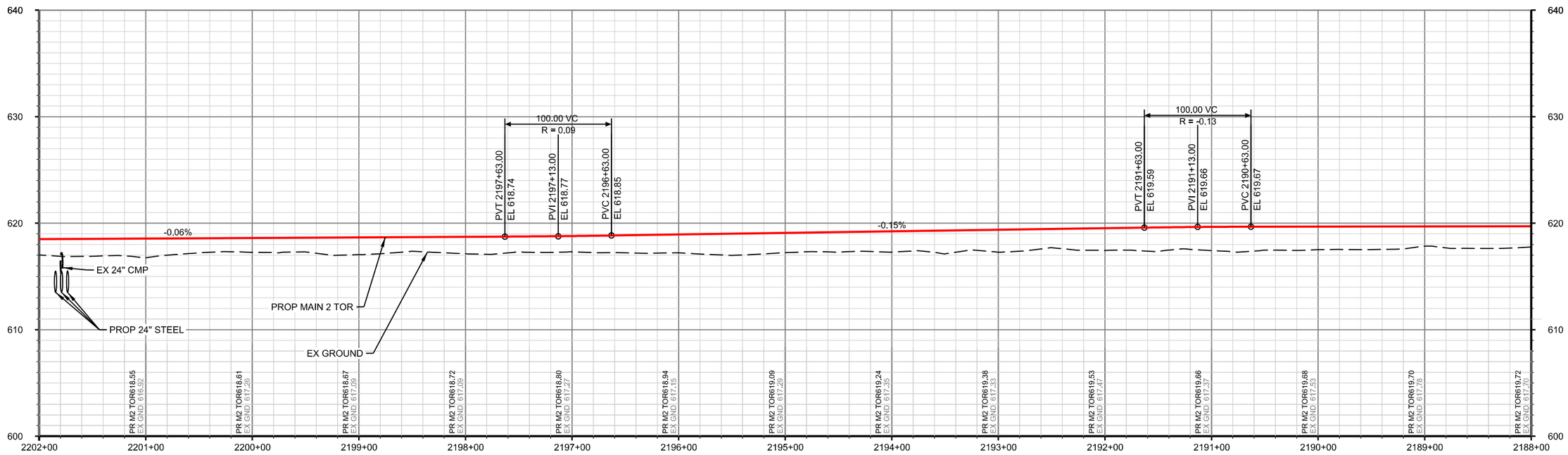
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2202+00 TO 2216+00
MP 41.7 TO 42.0

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-064 OF RPP-095

PLOT DATE: 4/30/2020 10:24:08 PM kkoehneke

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PATRICK ENGINEERING

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0	03/16/2020	60% DESIGN

NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

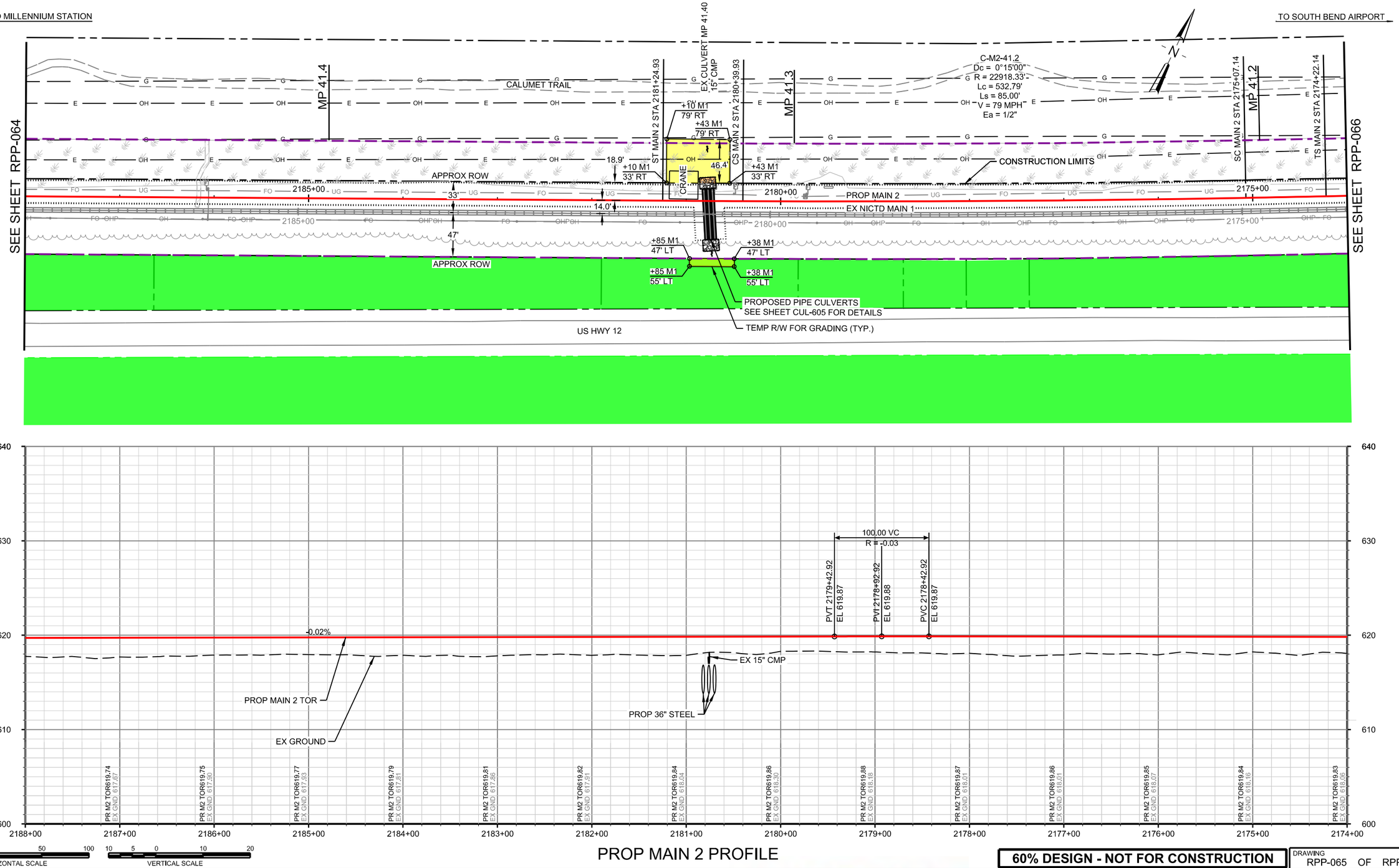
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2188+00 TO 2202+00
MP 41.5 TO 41.7

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-065 OF RPP-095

PLOT DATE: 4/30/2020 10:24:11 PM kkoehneke

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ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

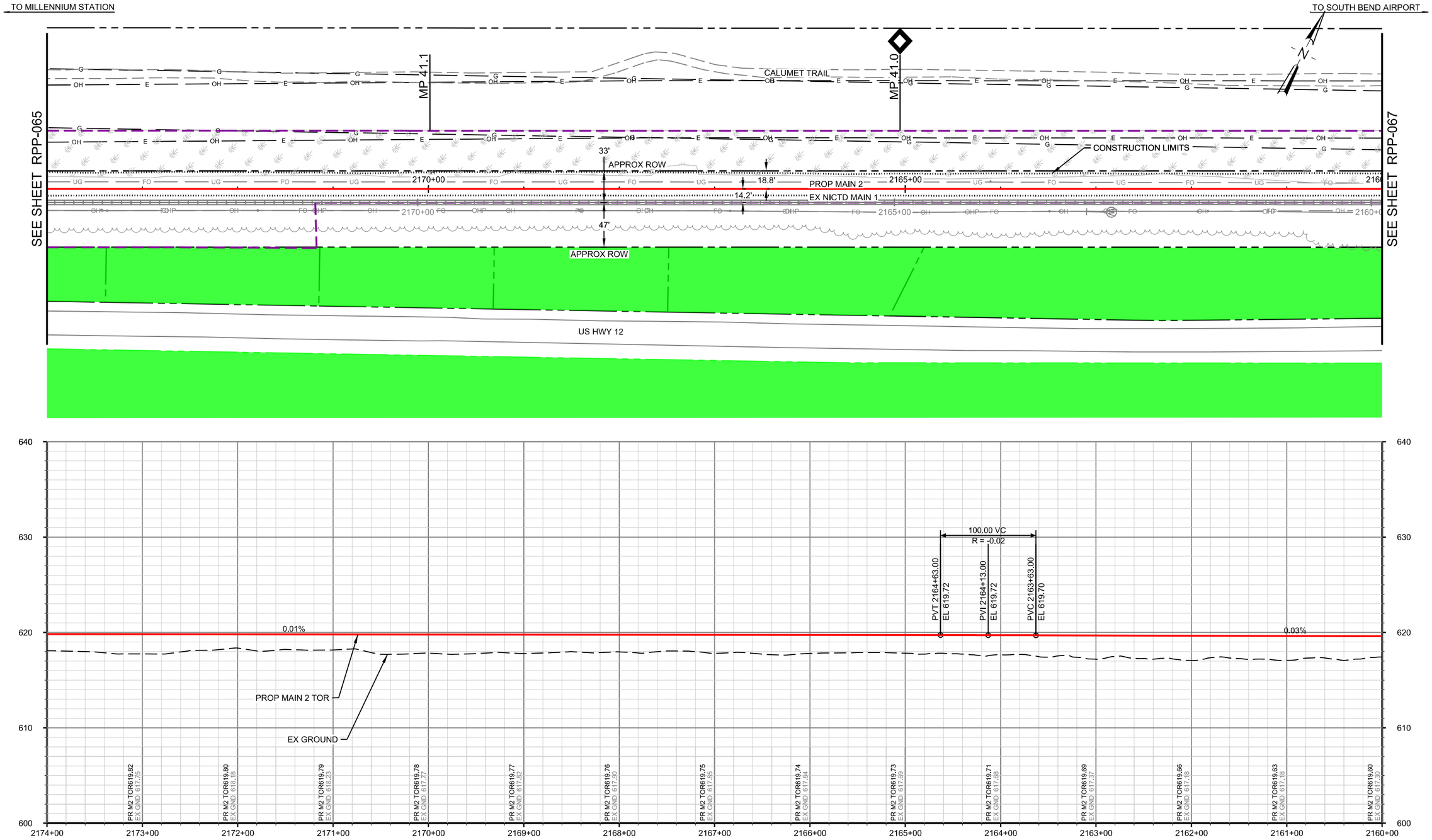
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2174+00 TO 2188+00
MP 41.2 TO 41.5

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-066 OF RPP-095

PLOT DATE: 4/30/2020 10:24:13 PM kkoehneke

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2160+00 TO 2174+00
MP 39.9 TO 41.2

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF

TO MILLENNIUM STATION

TO SOUTH BEND AIRPORT

SEE SHEET RPP-066

SEE SHEET RPP-068

MP 40.9

MP 40.8

MP 40.7

CALUMET TRAIL

EX CULVERT MP 40.80
18" CMP

TEMP R/W FOR GRADING

+30 M1
82' RT

+43 M1
82' RT

+30 M1
33' RT

+43 M1
33' RT

CRANE

EX 0.75" GAS MAIN

STATE PARK BOUNDARY ROAD
DOT NO. 810710M

CONSTRUCTION LIMITS

APPROX ROW

PROP MAIN 2

EX NICTD MAIN 1

2155+00

2150+00

33'

18.9'

14.2'

47'

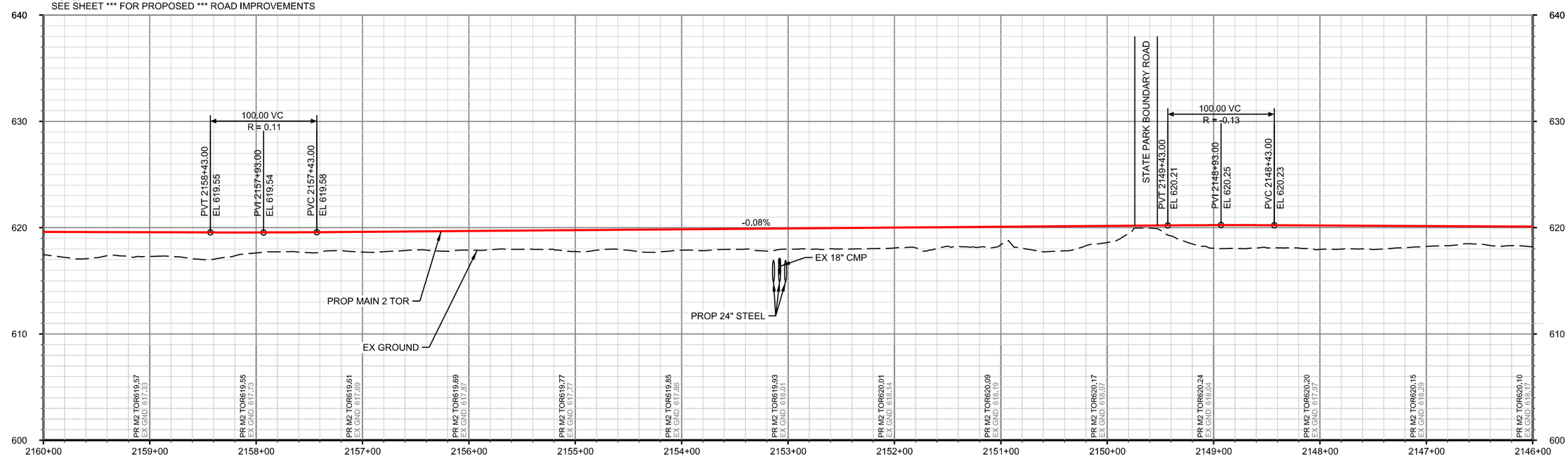
APPROX ROW

PROPOSED PIPE CULVERTS
SEE SHEET CUL-604 FOR DETAILS

US HWY 12

COUNTY ROAD 300

NOTE:
SEE SHEET *** FOR PROPOSED *** ROAD IMPROVEMENTS



HORIZONTAL SCALE: 50 25 0 50 100

VERTICAL SCALE: 10 5 0 10 20

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-067 OF RPP-095

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

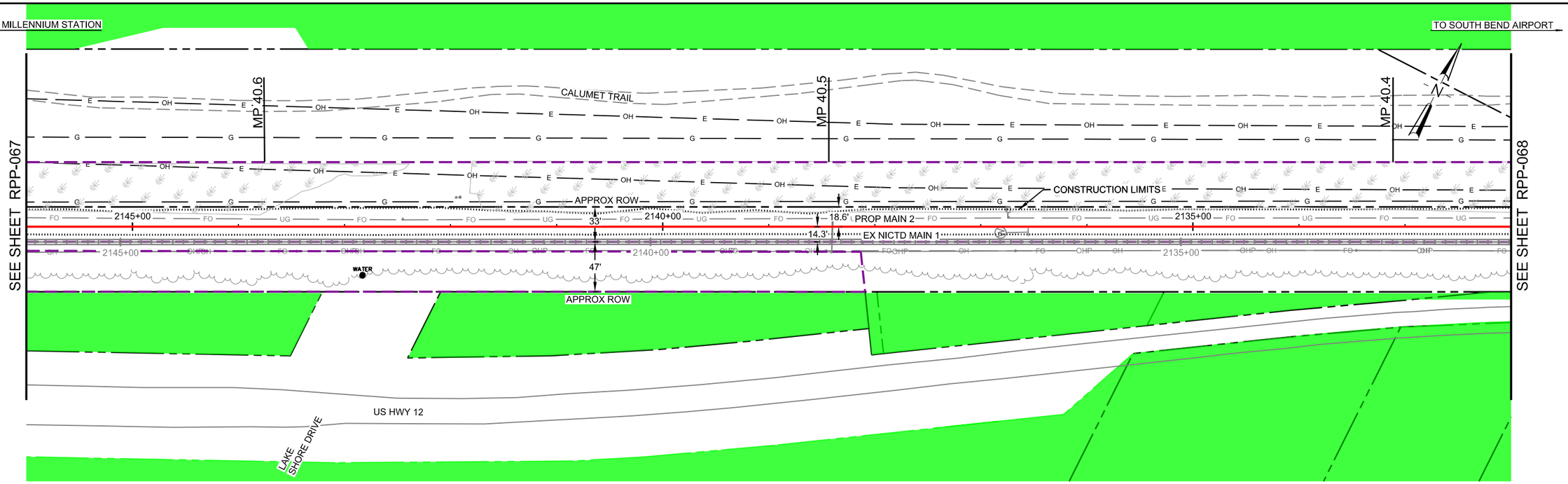
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

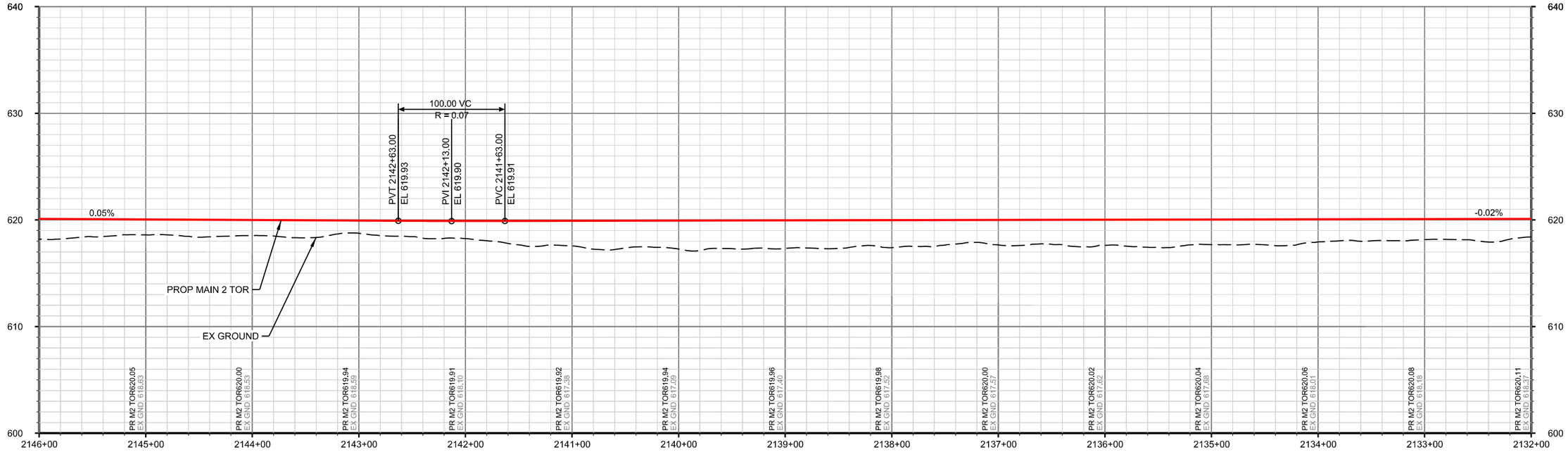
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2146+00 TO 2160+00
MP 40.6 TO 40.9

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





HORIZONTAL SCALE 50 25 0 50 100

VERTICAL SCALE 10 5 0 10 20

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-068 OF RPP-095

PLOT DATE: 4/30/2020 10:24:18 PM kkoehneke

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

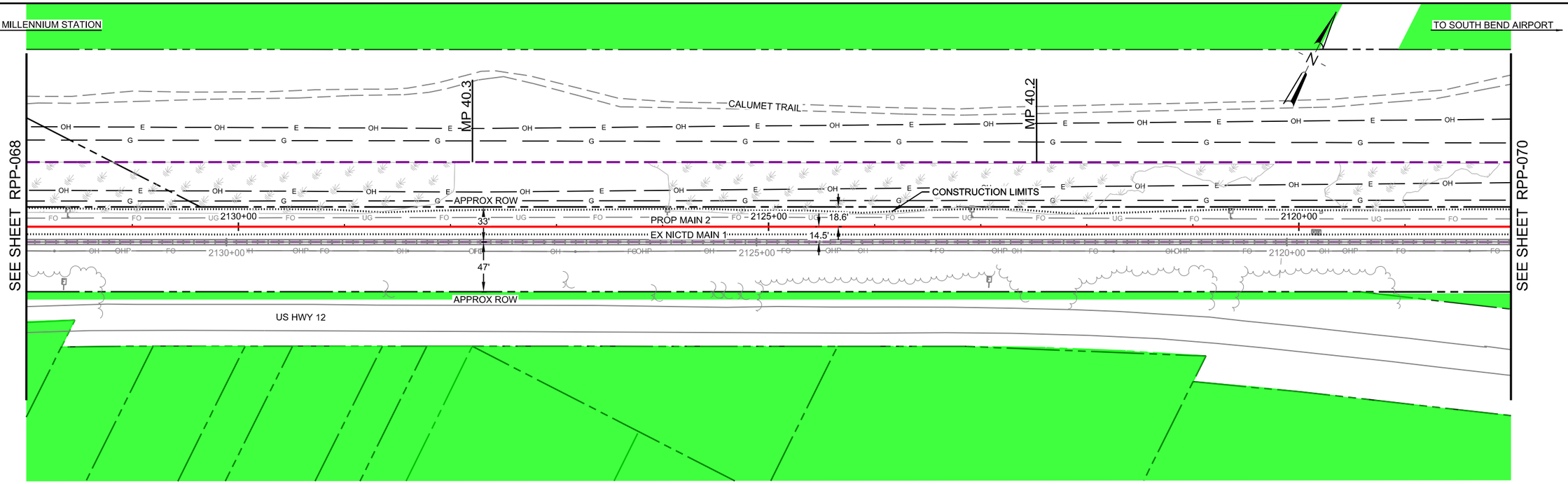
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

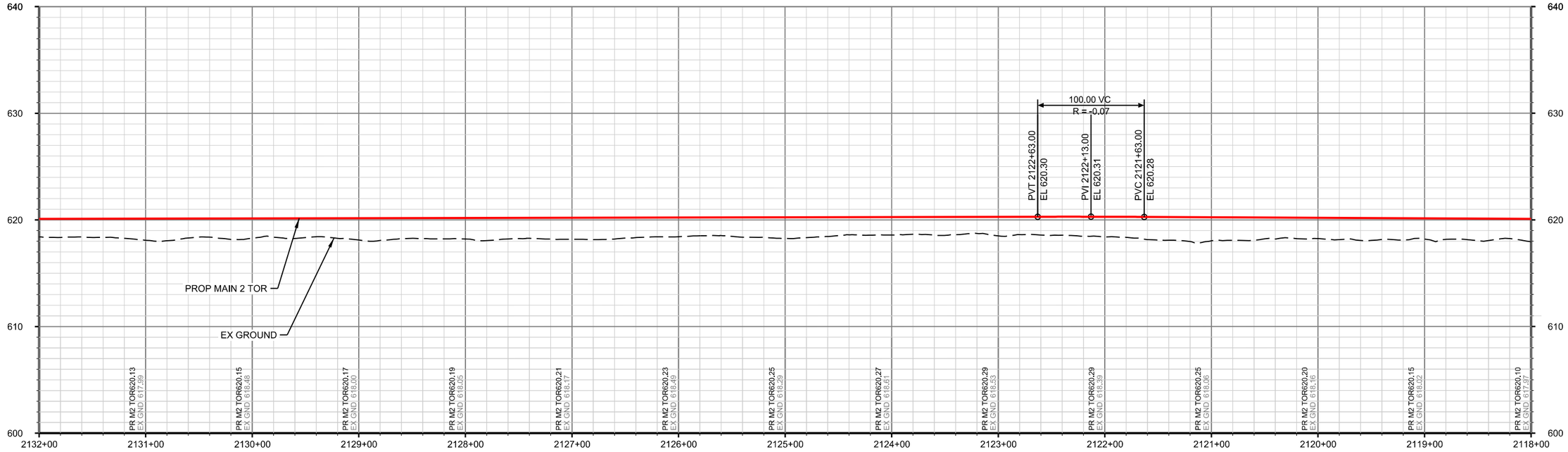
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2132+00 TO 2146+00
MP 40.4 TO 40.6

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-069 OF RPP-095

PLOT DATE: 4/30/2020 10:24:21 PM kkoehneke

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33 East Highway 12
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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

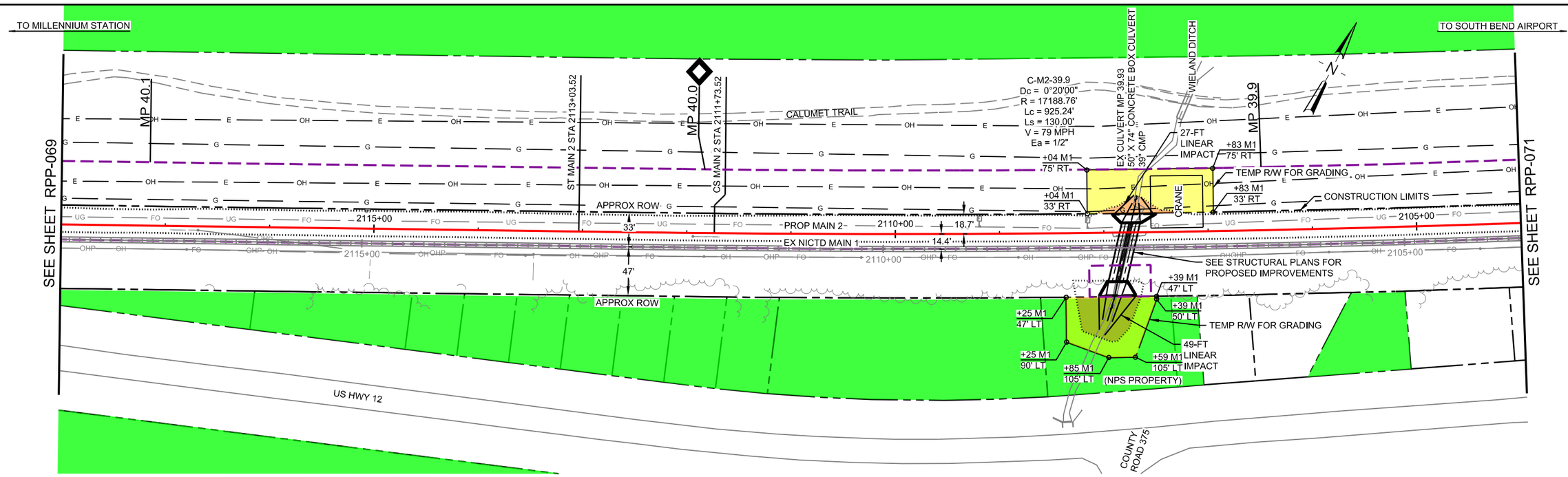
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

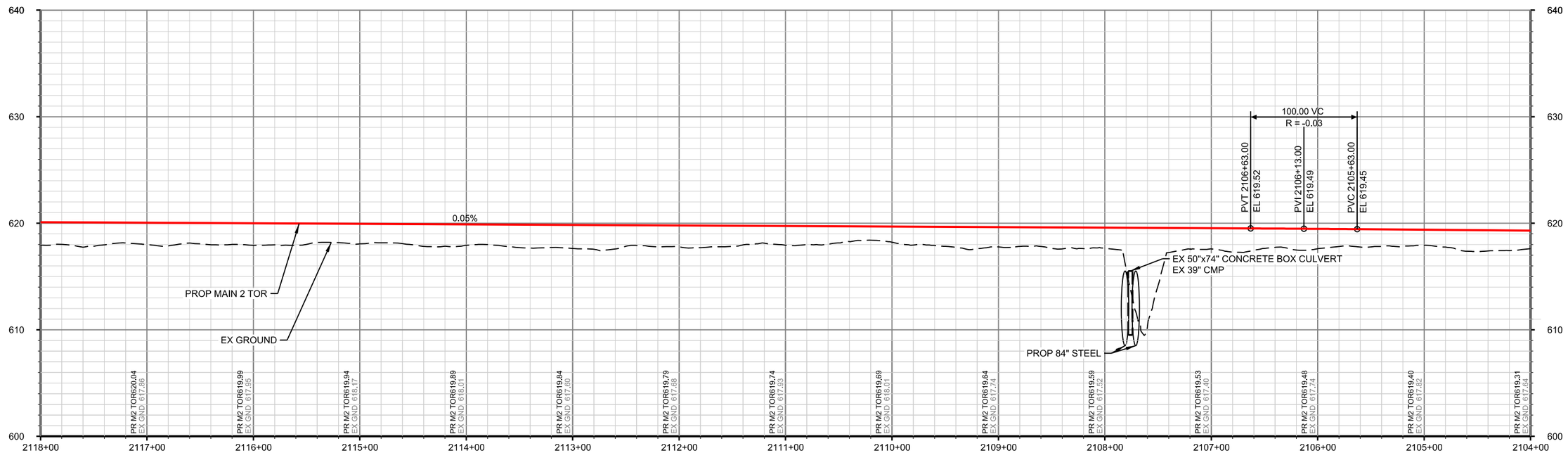
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2118+00 TO 2132+00
MP 40.1 TO 40.4

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE
10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-070 OF RPP-095

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

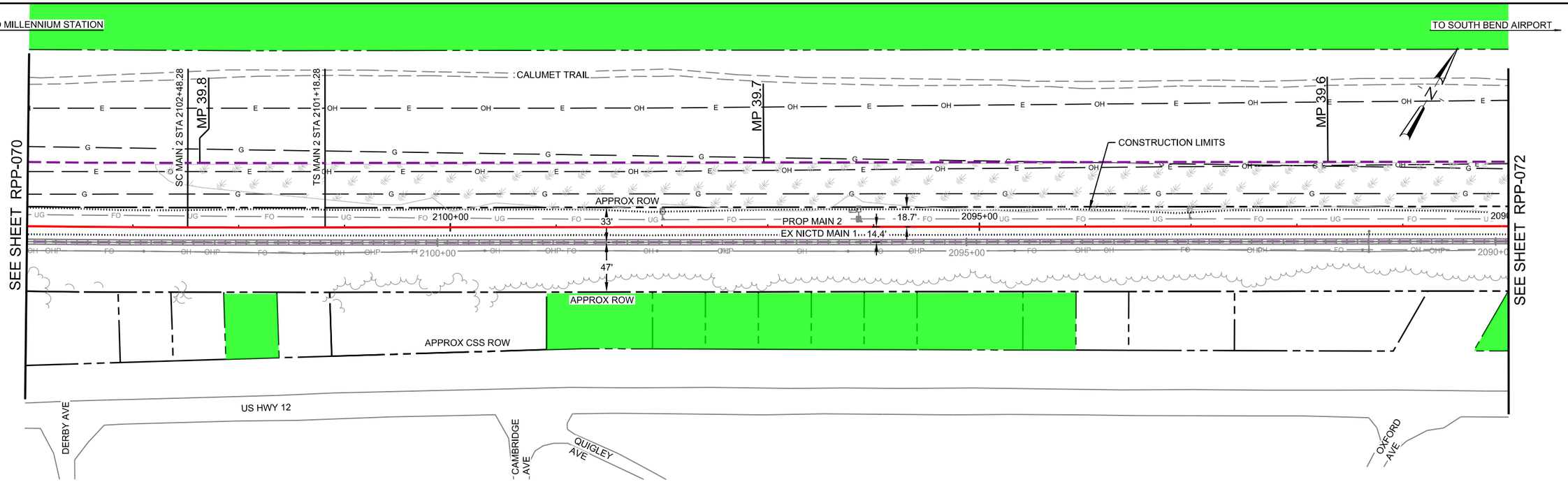
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

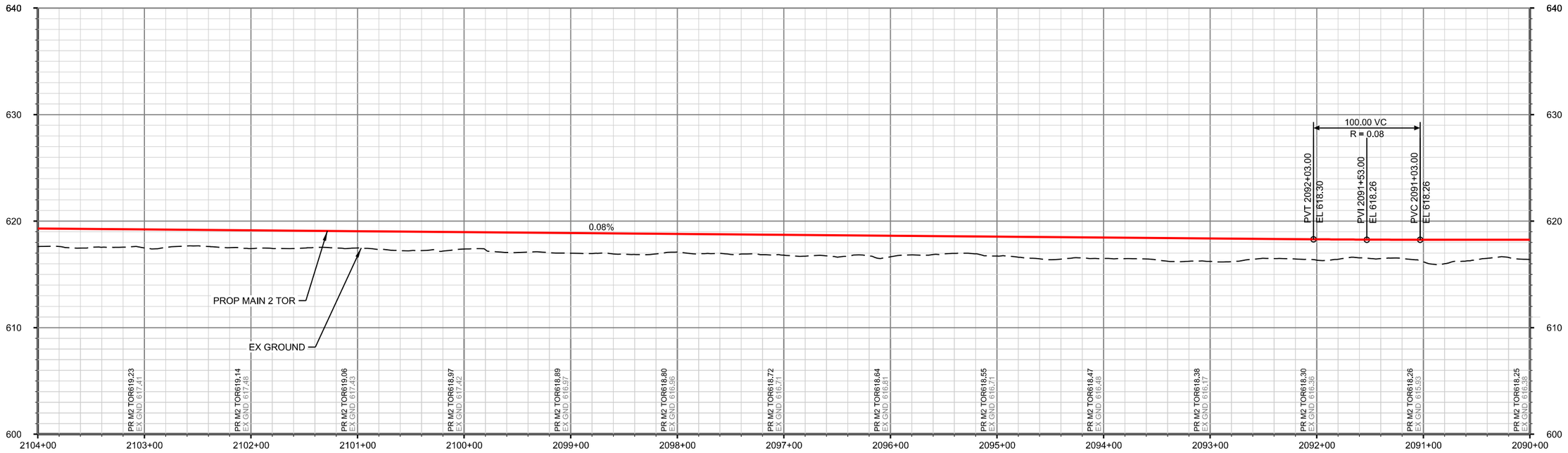
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2104+00 TO 2118+00
MP 39.8 TO 40.1

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-071 OF RPP-095

PLOT DATE: 4/30/2020 10:24:25 PM kkoehneke

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

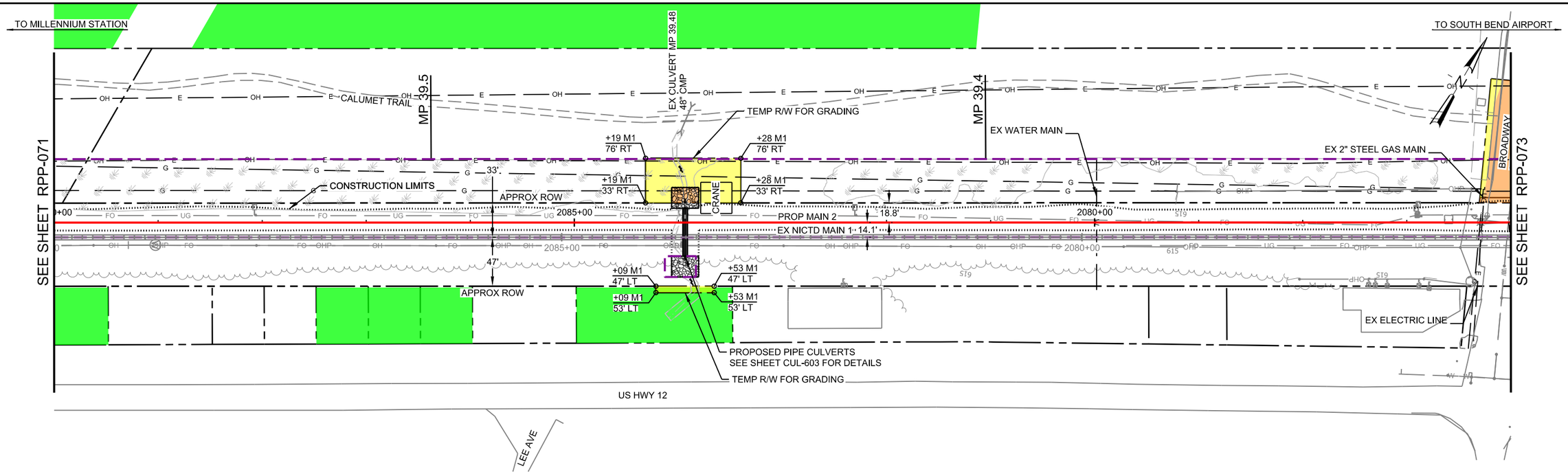
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

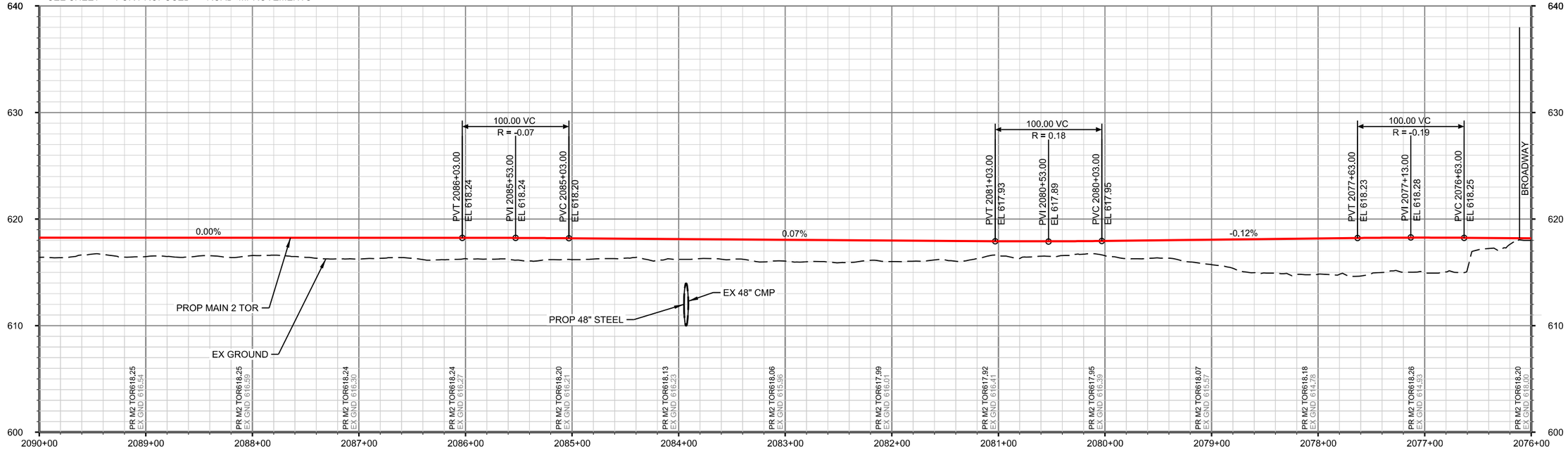
PLAN AND PROFILE
STA 2090+00 TO 2104+00
MP 39.6 TO 39.8

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



NOTE:
SEE SHEET *** FOR PROPOSED *** ROAD IMPROVEMENTS



PROP MAIN 2 PROFILE

50 25 0 50 100 HORIZONTAL SCALE
10 5 0 10 20 VERTICAL SCALE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-072 OF RPP-095

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Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

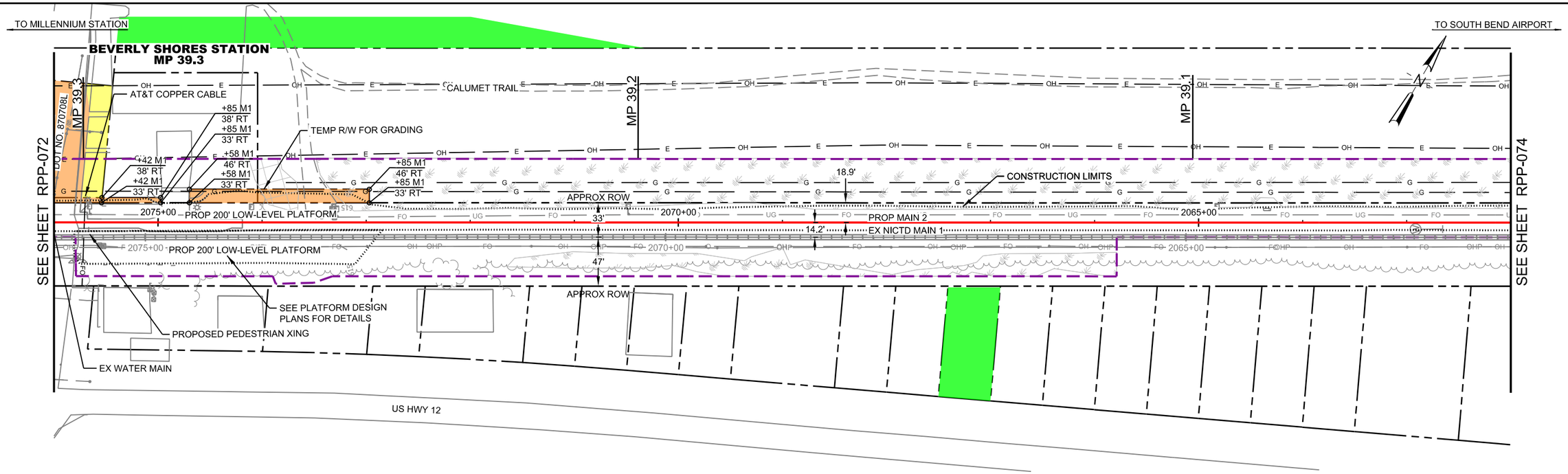
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

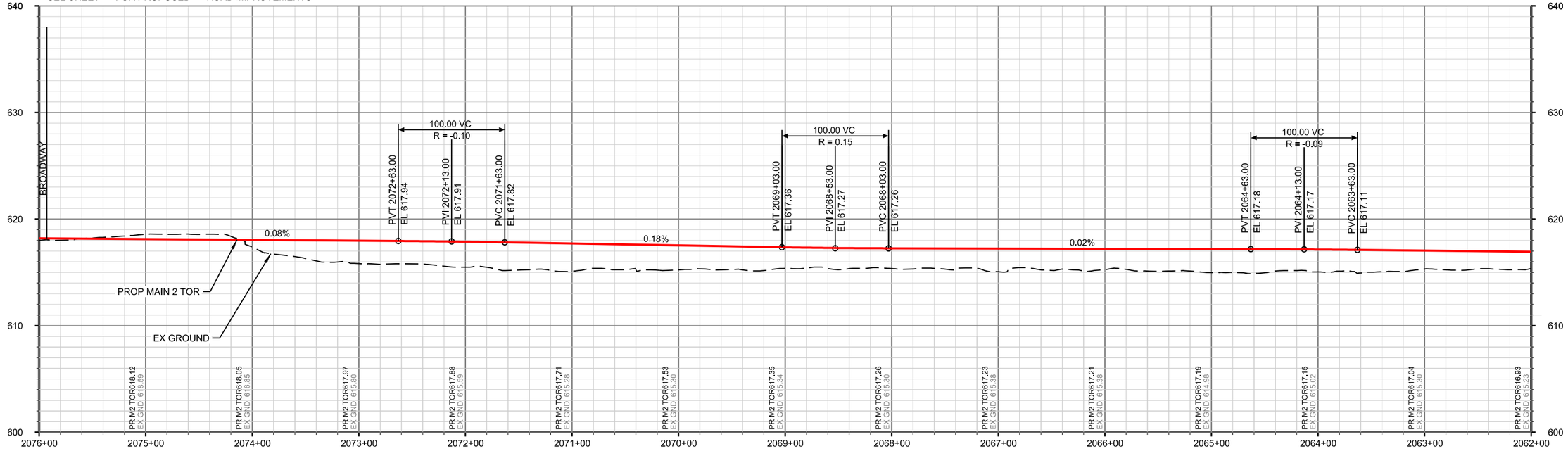
PLAN AND PROFILE
STA 2076+00 TO 2090+00
MP 39.3 TO 39.6

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



NOTE:
SEE SHEET *** FOR PROPOSED *** ROAD IMPROVEMENTS



50 25 0 50 100 HORIZONTAL SCALE
10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-073 OF RPP-095

PLOT DATE: 4/30/2020 10:24:31 PM kkoehneke

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

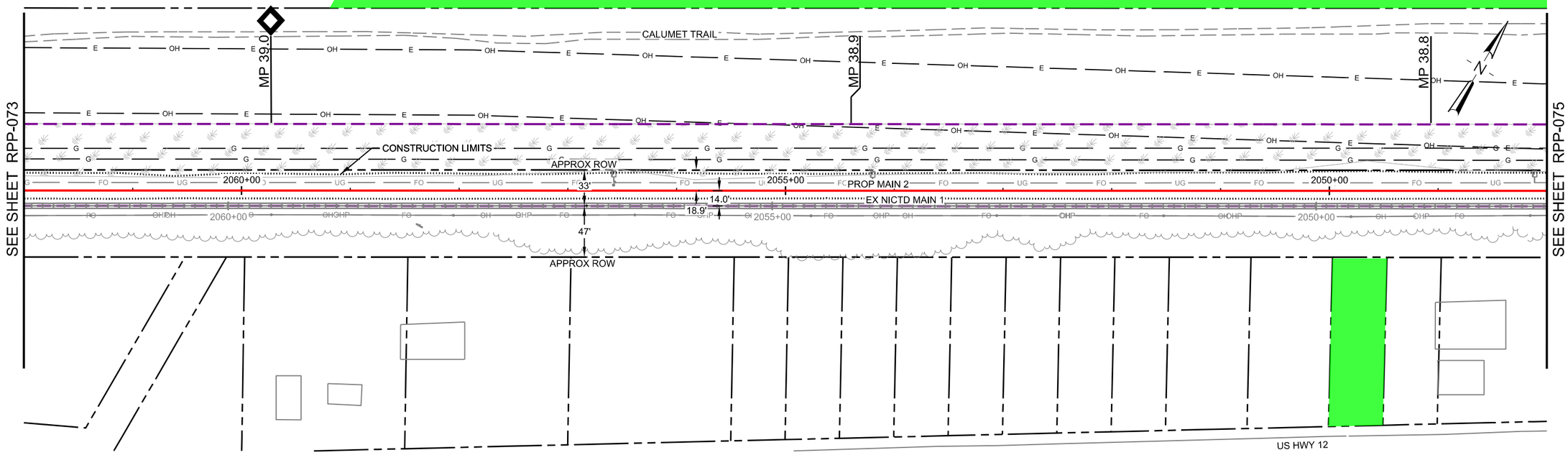
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

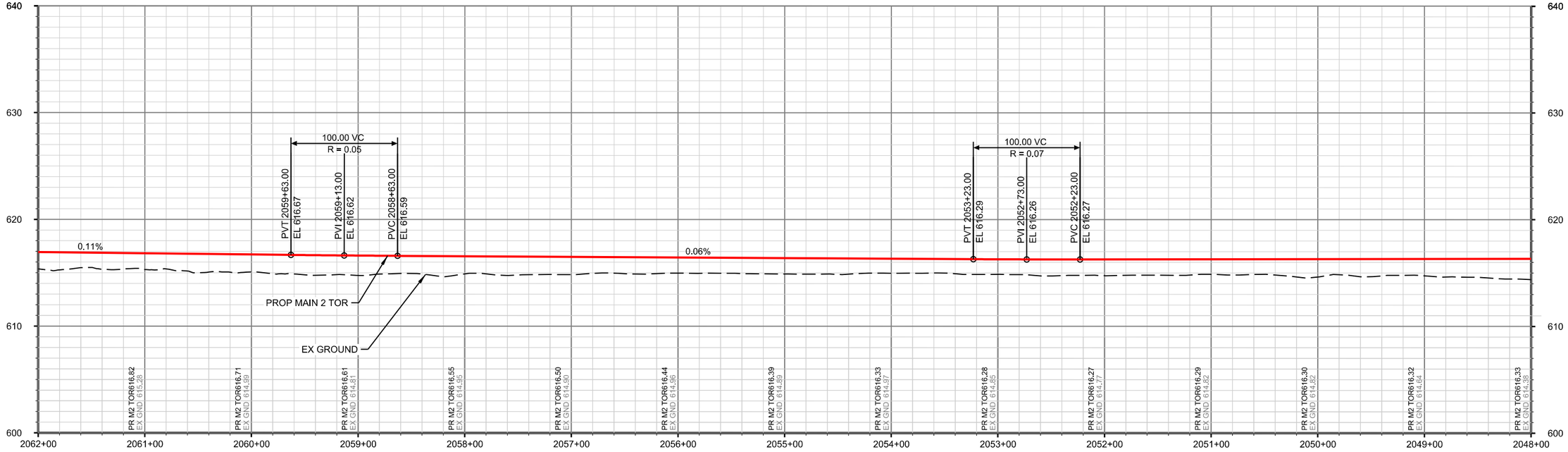
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2062+00 TO 2076+00
MP 39.0 TO 39.3

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-074 OF RPP-095

PLOT DATE: 4/30/2020 10:24:33 PM kkoehneke

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PATRICK ENGINEERING

ISSUE	DATE	DESCRIPTION
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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

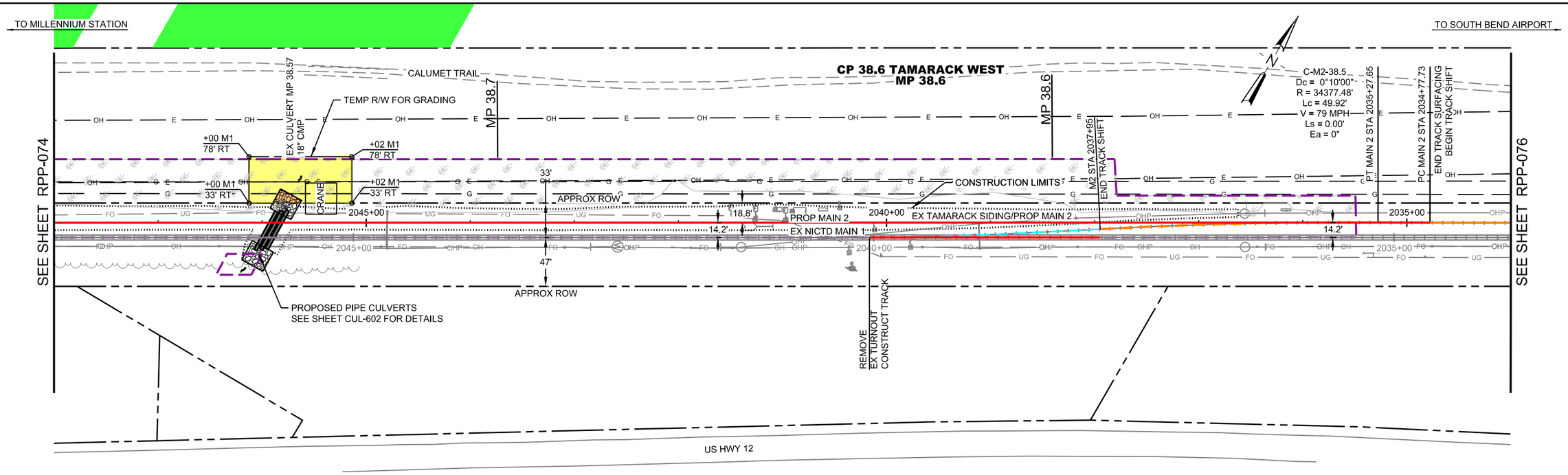
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

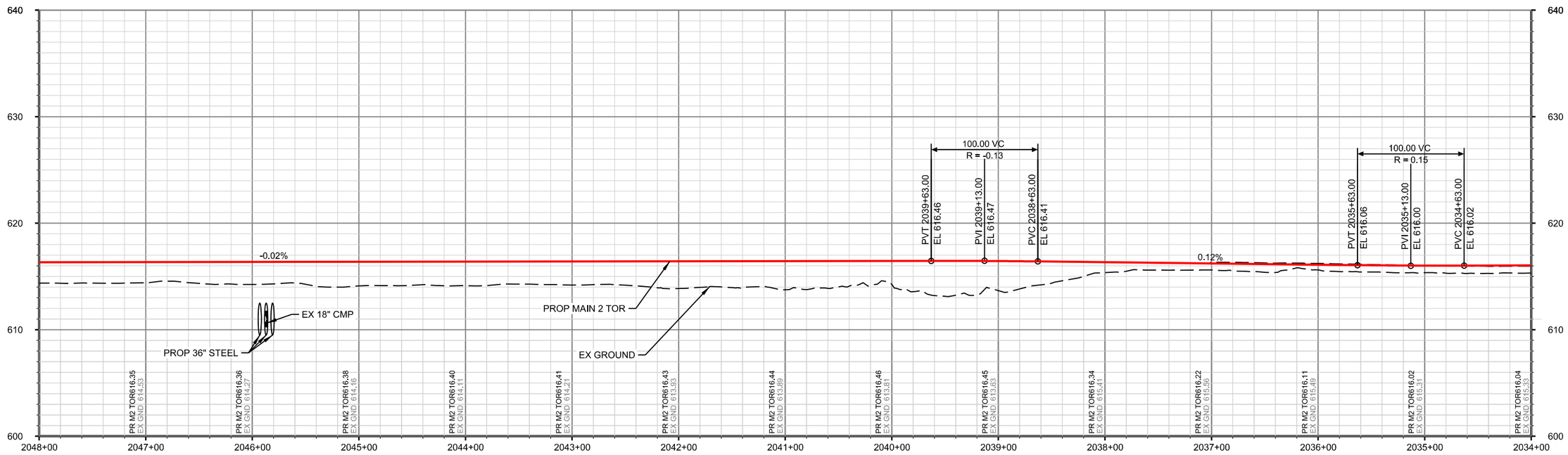
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2048+00 TO 2062+00
MP 38.8 TO 39.0

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE
10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-075 OF RPP-095

PLOT DATE: 4/30/2020 10:24:36 PM kkoehneke

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PATRICK ENGINEERING

ISSUE	DATE	DESCRIPTION
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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

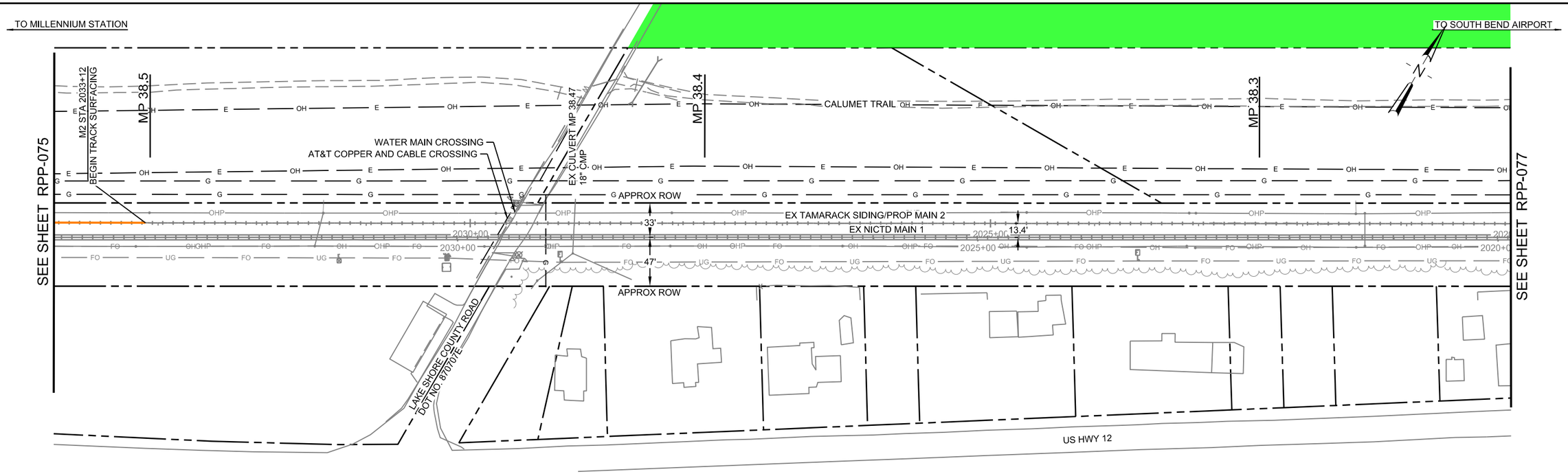
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2034+00 TO 2048+00
MP 38.5 TO 38.8

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-076 OF RPP-095

PLOT DATE: 4/30/2020 10:24:38 PM kkoehneke

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

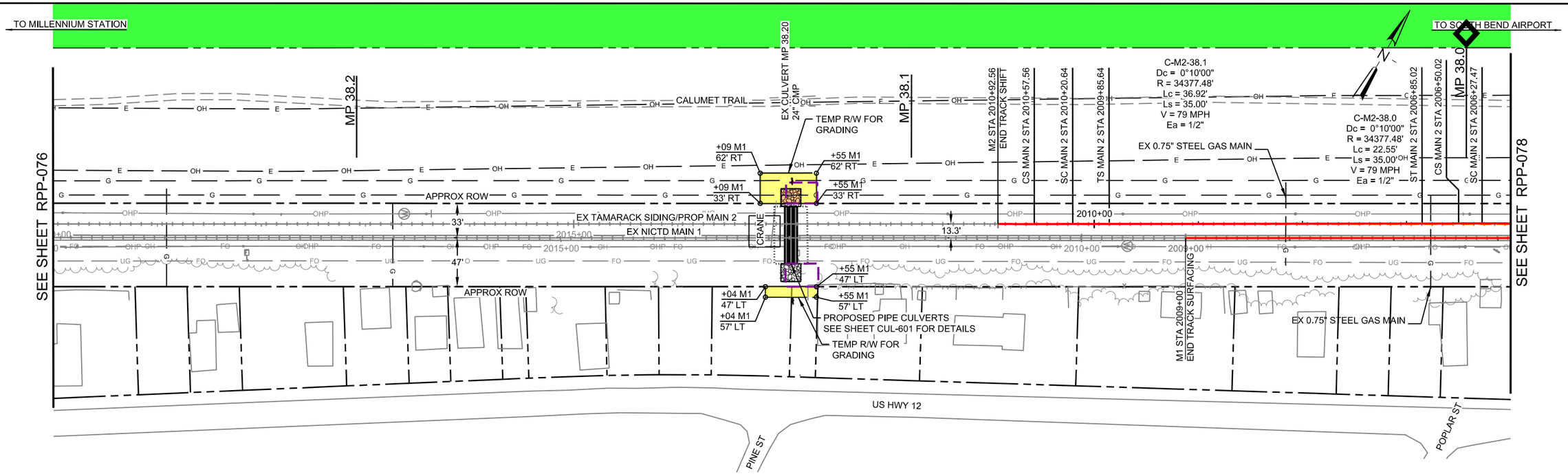
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

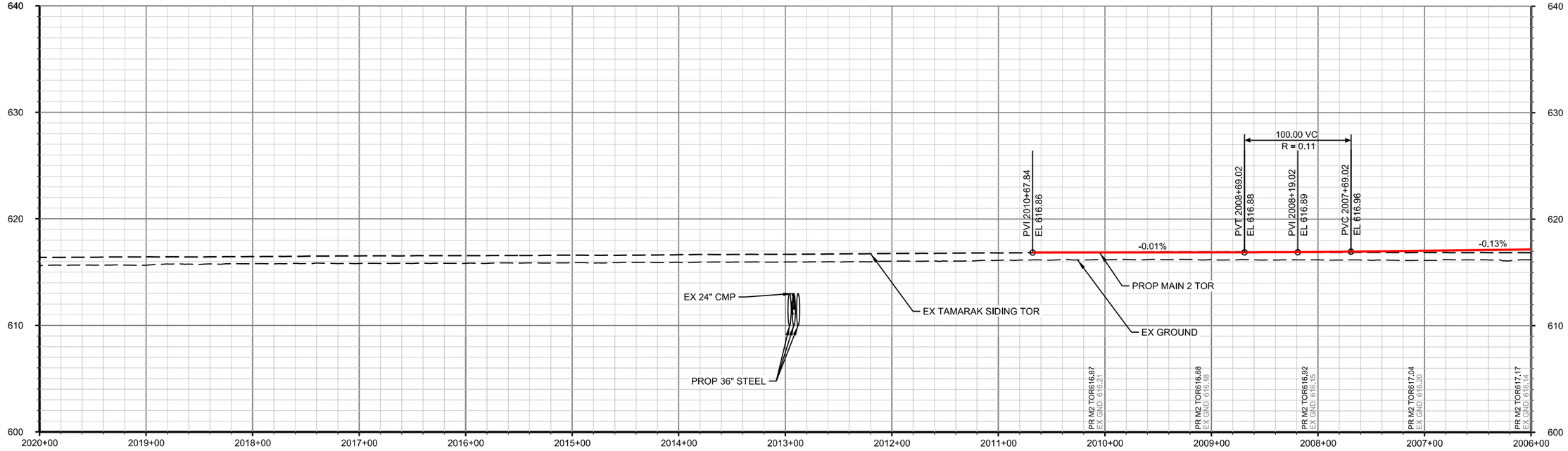
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2020+00 TO 2034+00
MP 38.3 TO 38.5

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE
10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-077 OF RPP-095

PLOT DATE: 4/30/2020 10:24:40 PM kkoehneke

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NICTD
NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

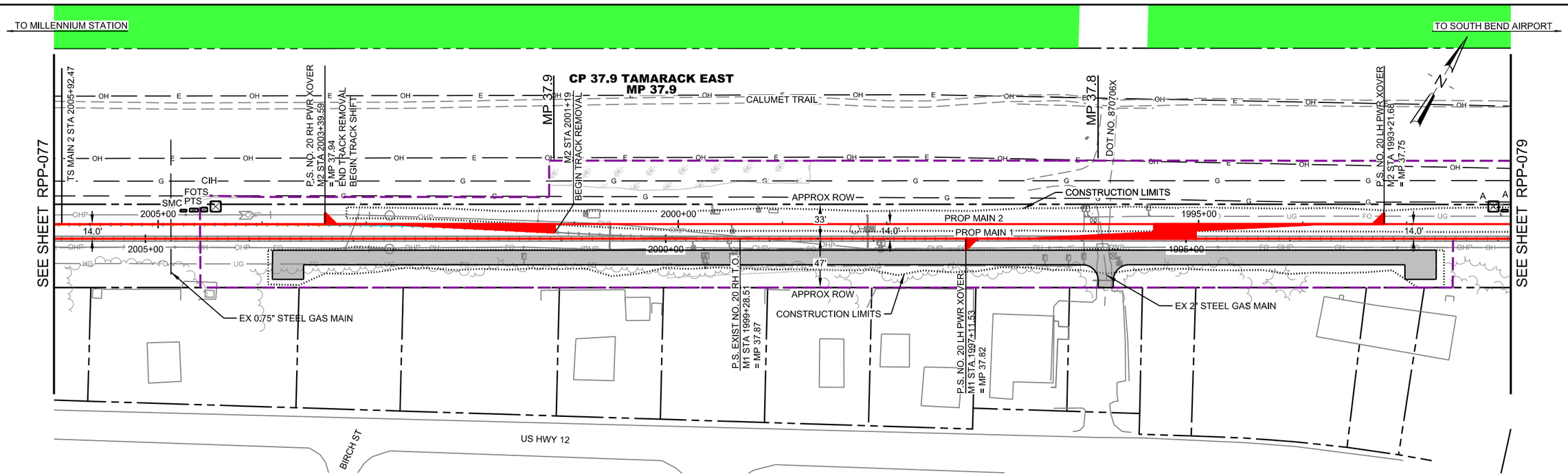
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

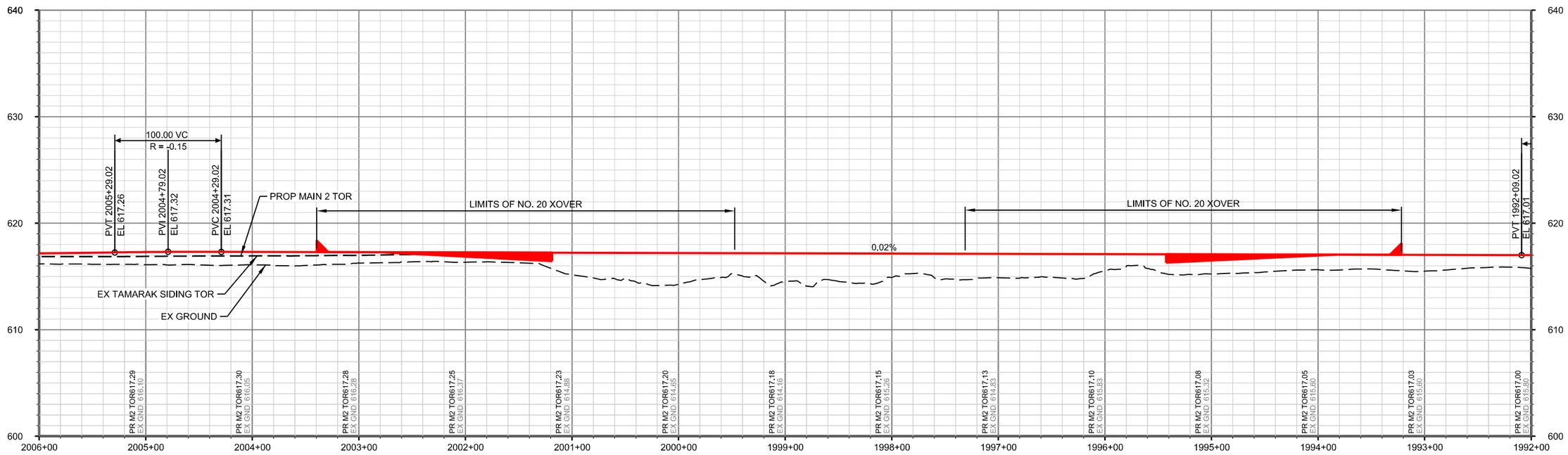
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 2006+00 TO 2020+00
MP 38.0 TO 38.3

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED
SHEET	OF





PROP MAIN 2 PROFILE

HORIZONTAL SCALE 50 25 0 50 100

VERTICAL SCALE 10 5 0 10 20

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-078 OF RPP-095

PLOT DATE: 4/30/2020 10:24:43 PM kkoehneke

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

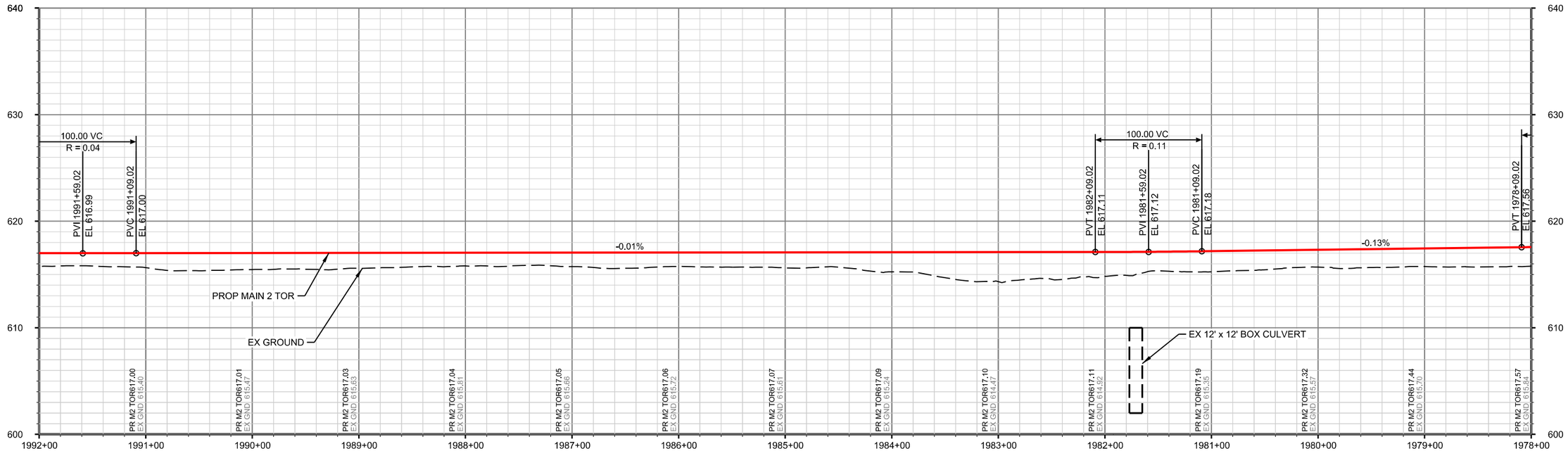
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 1992+00 TO 2006+00
MP 37.7 TO 38.0

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-079 OF RPP-095

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

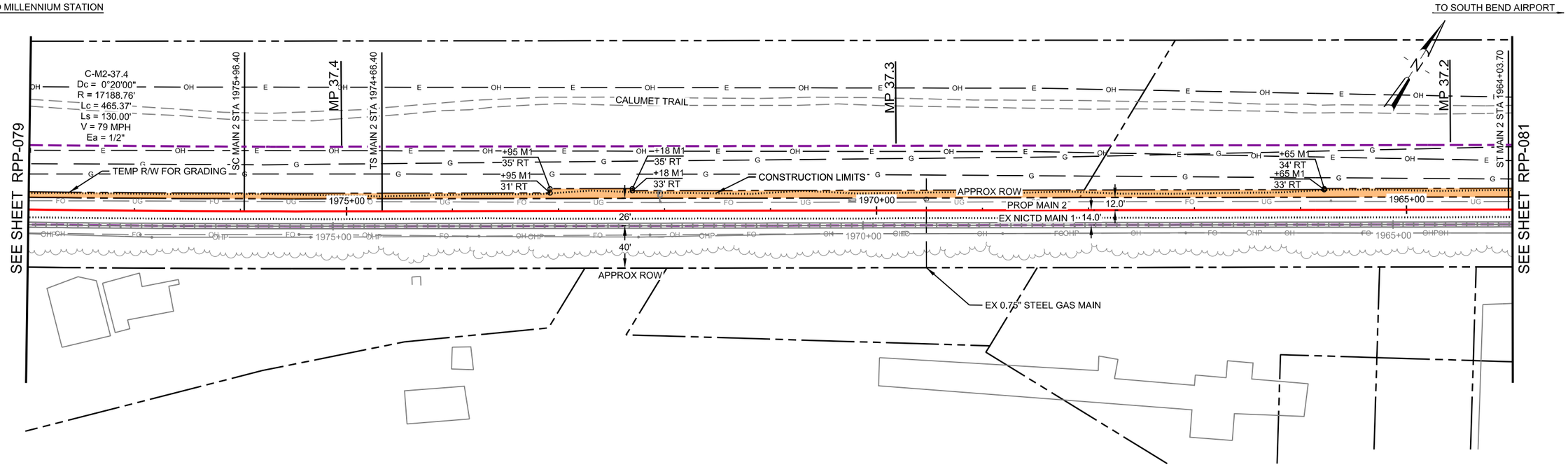
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

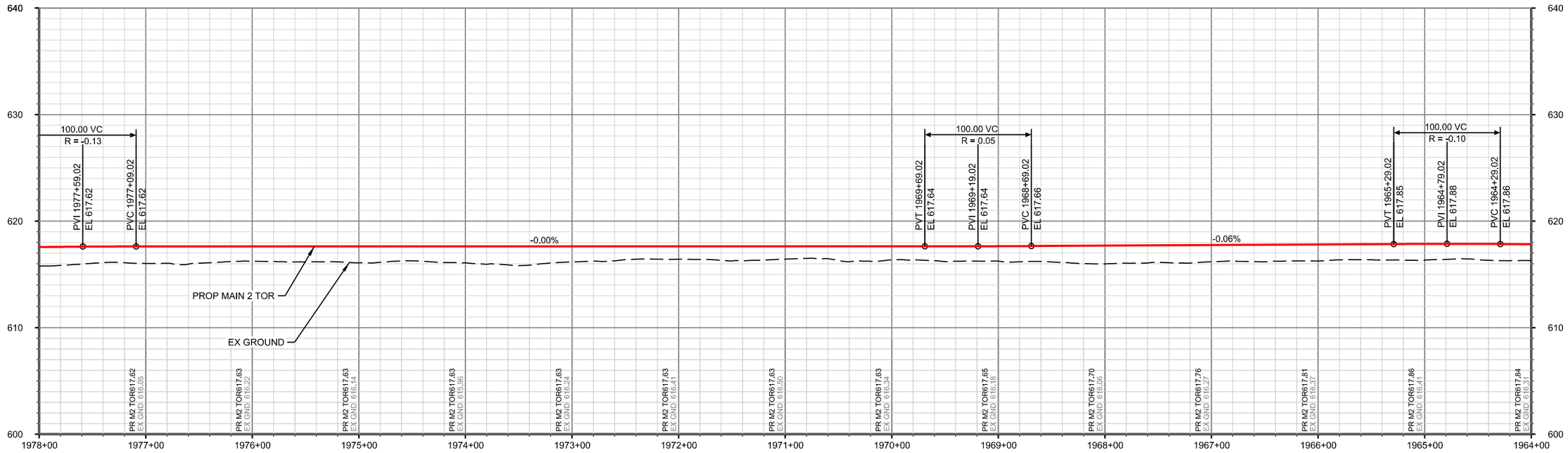
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 1978+00 TO 1992+00
MP 37.5 TO 37.7

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-080 OF RPP-095

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

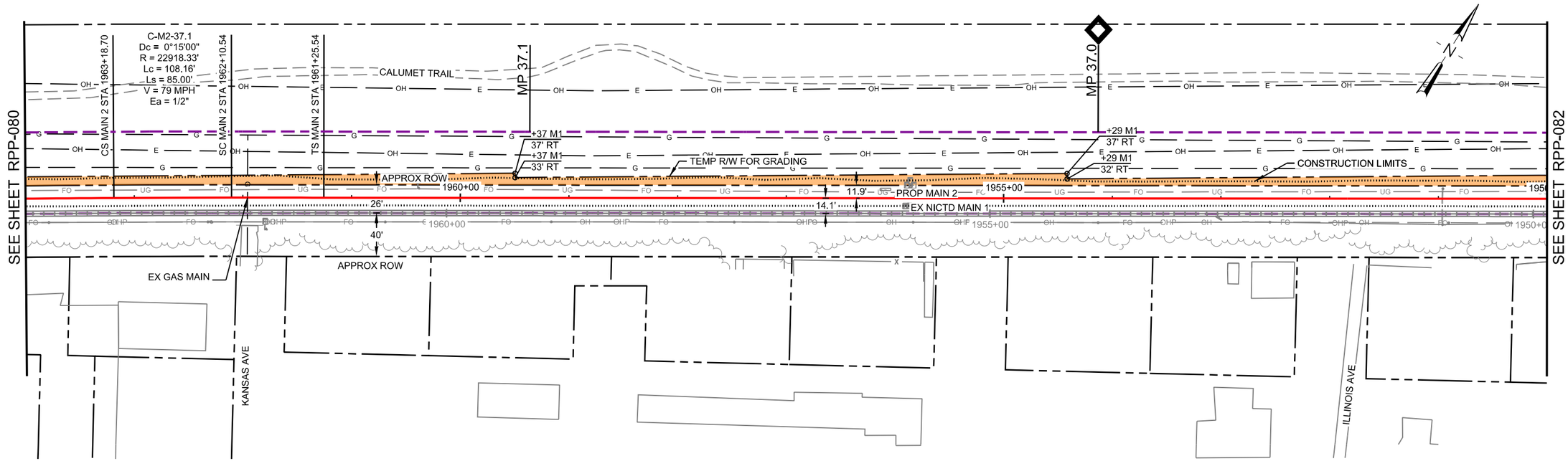
PLAN AND PROFILE
STA 1964+00 TO 1978+00
MP 37.2 TO 37.5

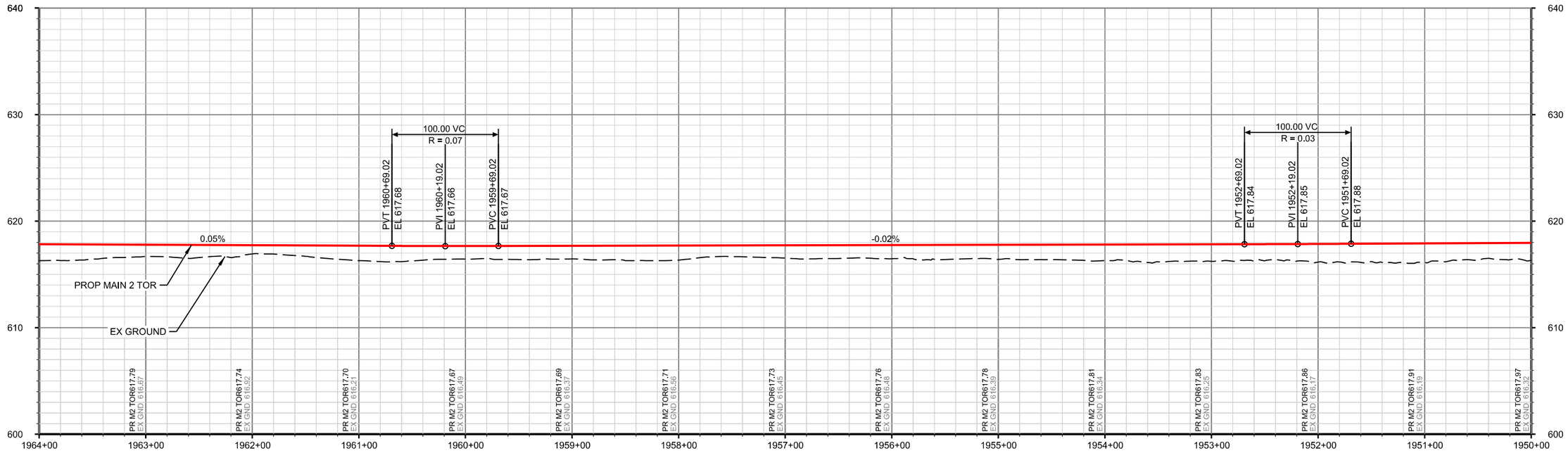
FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF

TO MILLENNIUM STATION

TO SOUTH BEND AIRPORT





HORIZONTAL SCALE 50 25 0 50 100

VERTICAL SCALE 10 5 0 10 20

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-081 OF RPP-095

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33 East Highway 12
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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

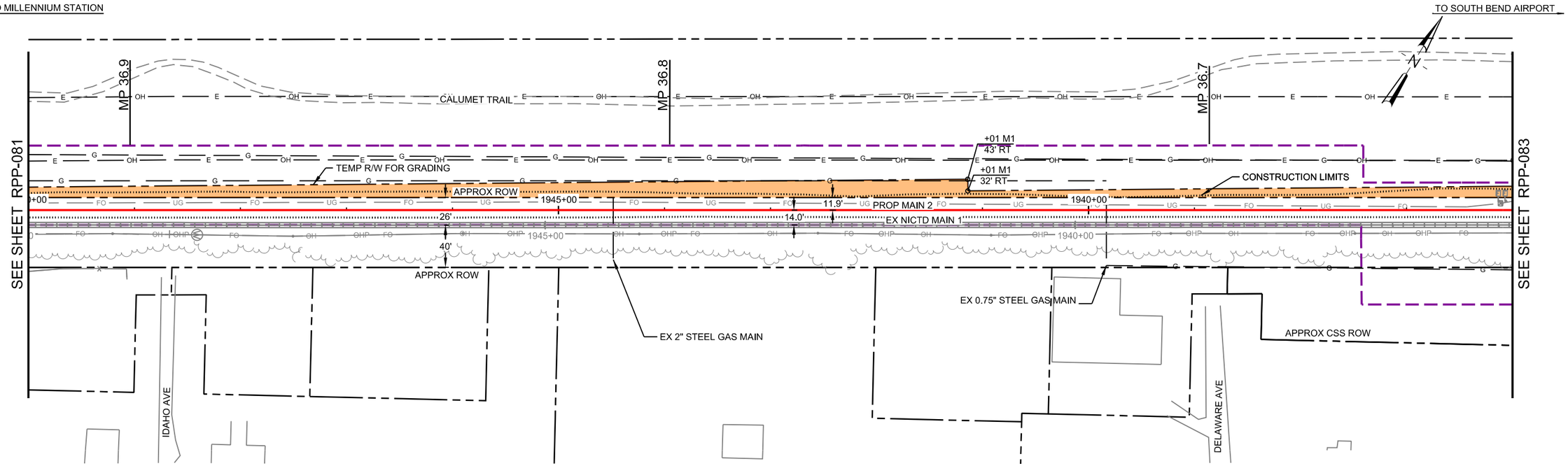
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

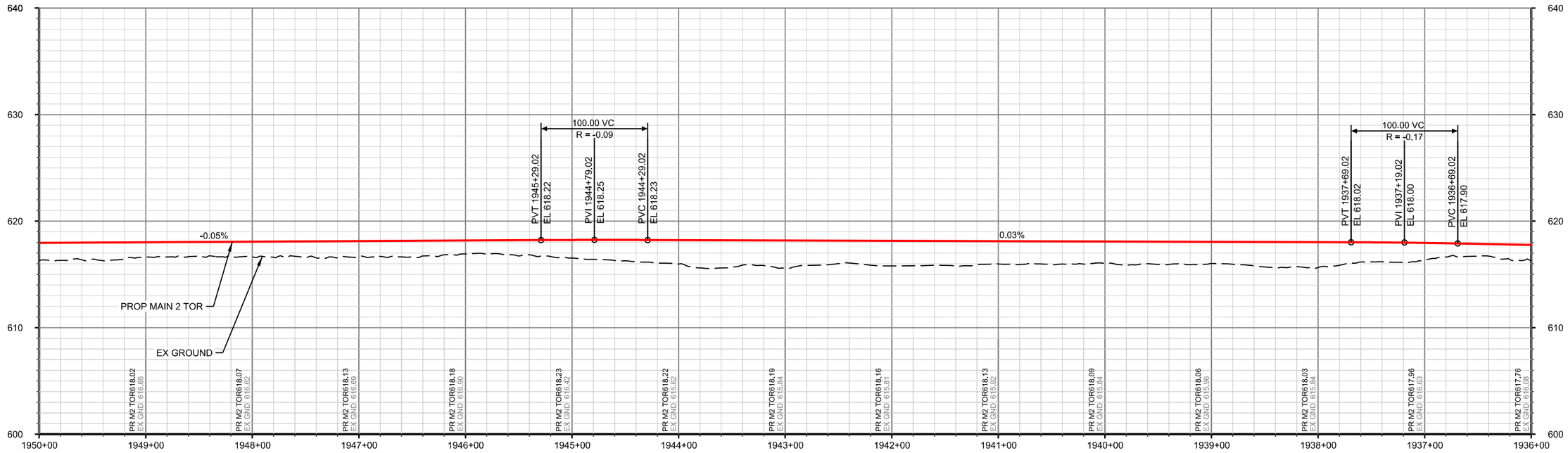
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 1950+00 TO 1964+00
MP 36.9 TO 37.2

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





PROP MAIN 2 PROFILE

HORIZONTAL SCALE 50 25 0 50 100

VERTICAL SCALE 10 5 0 10 20

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-082 OF RPP-095

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33 East Highway 12
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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

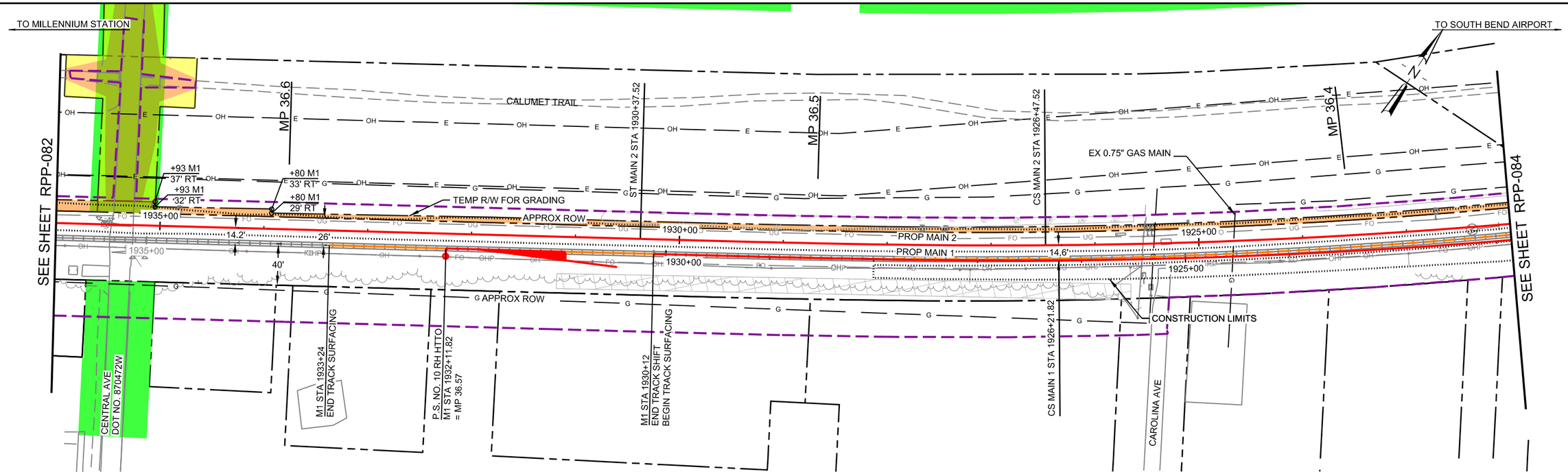
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

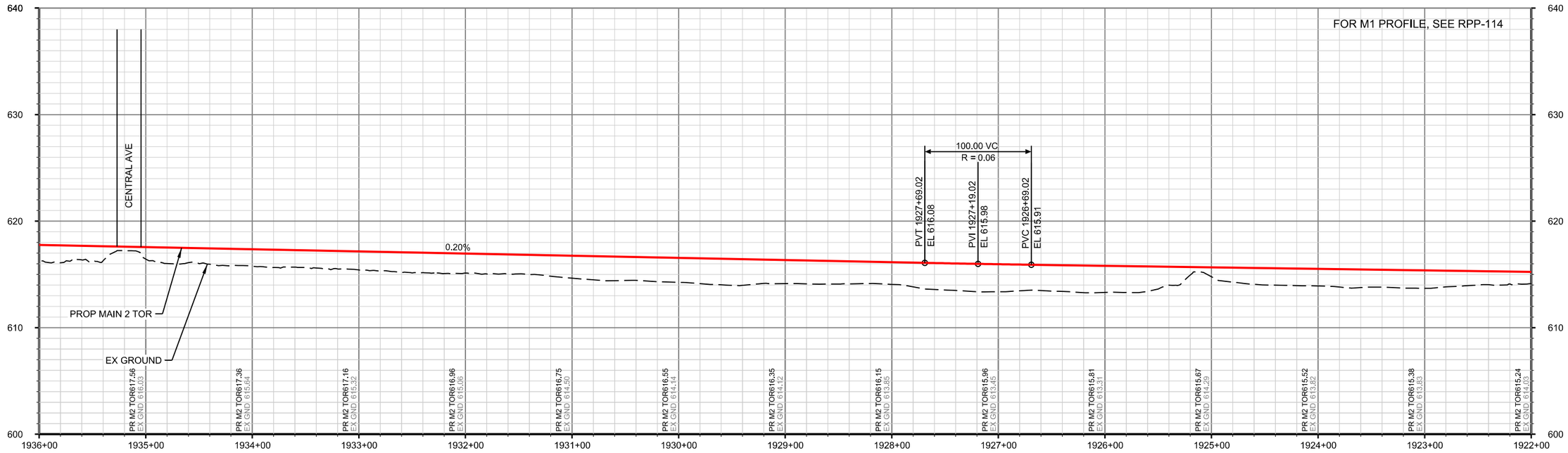
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 1936+00 TO 1950+00
MP 36.6 TO 36.9

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





HORIZONTAL SCALE 50 25 0 50 100

VERTICAL SCALE 10 5 0 10 20

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-083 OF RPP-095

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

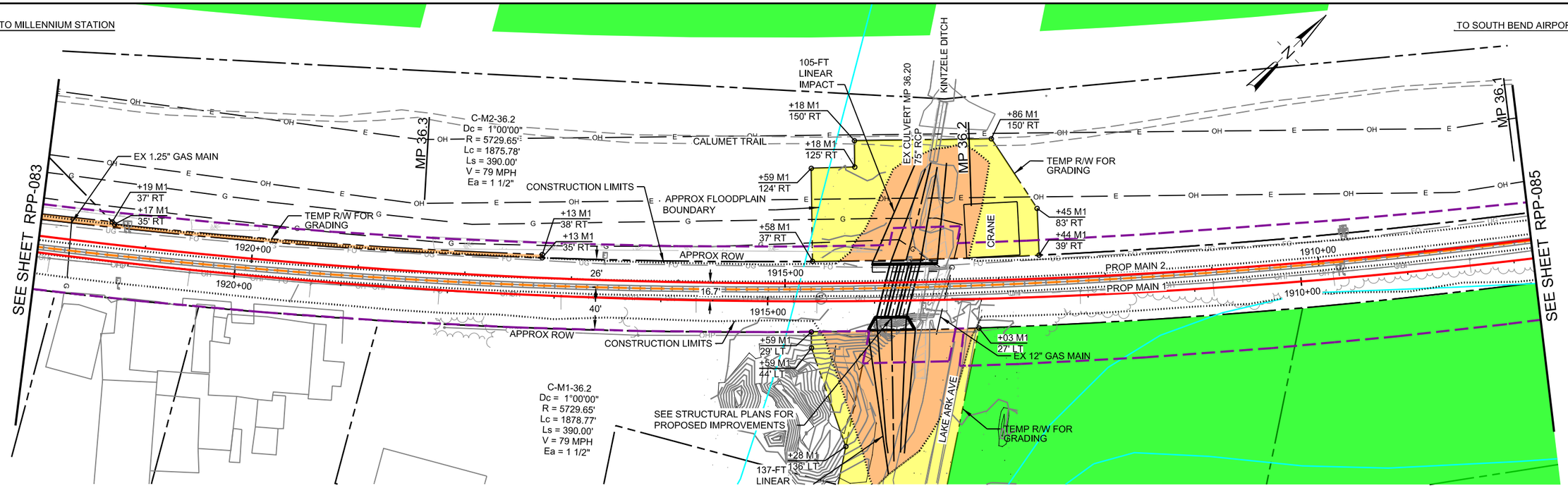
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

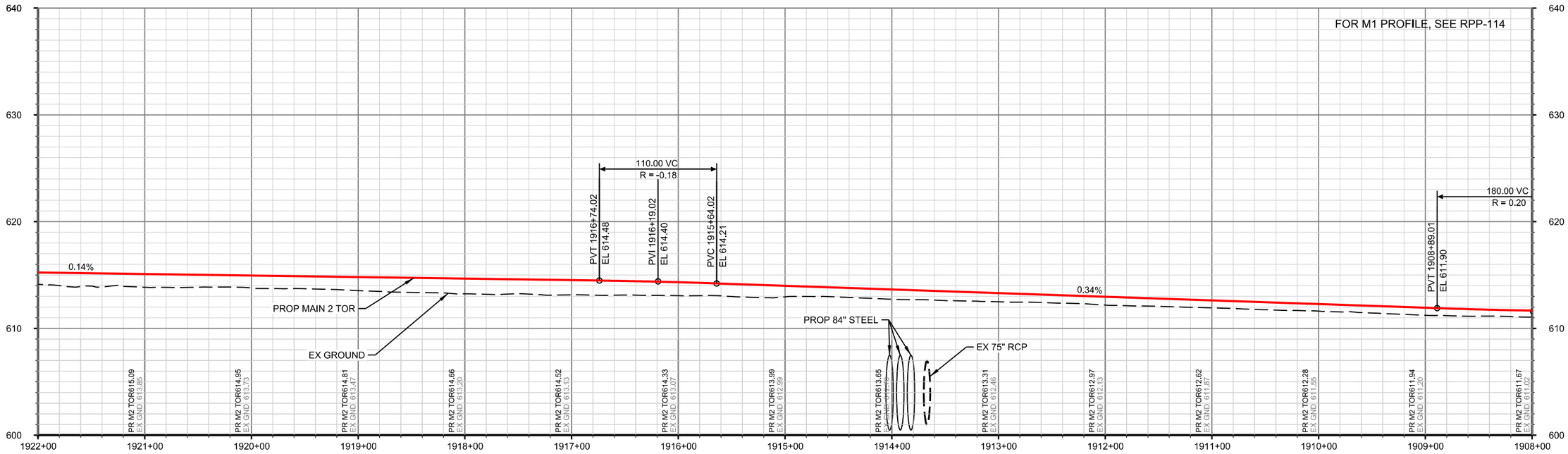
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 1922+00 TO 1936+00
MP 36.4 TO 36.6

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-084 OF RPP-095

PLOT DATE: 4/30/2020 10:24:58 PM kkoehneke

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Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

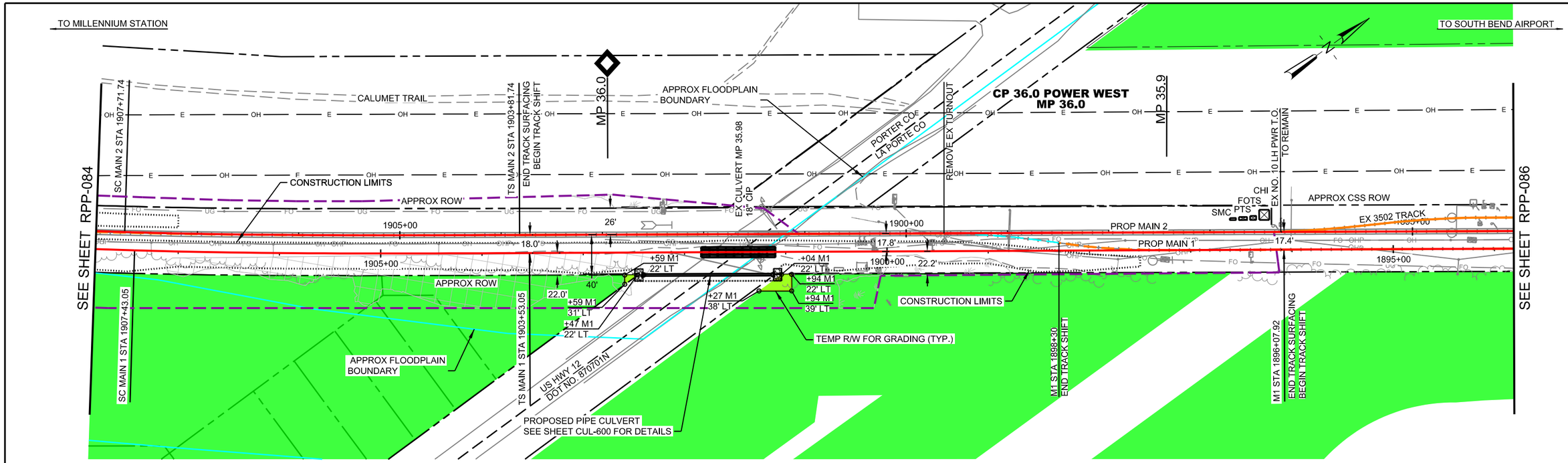
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

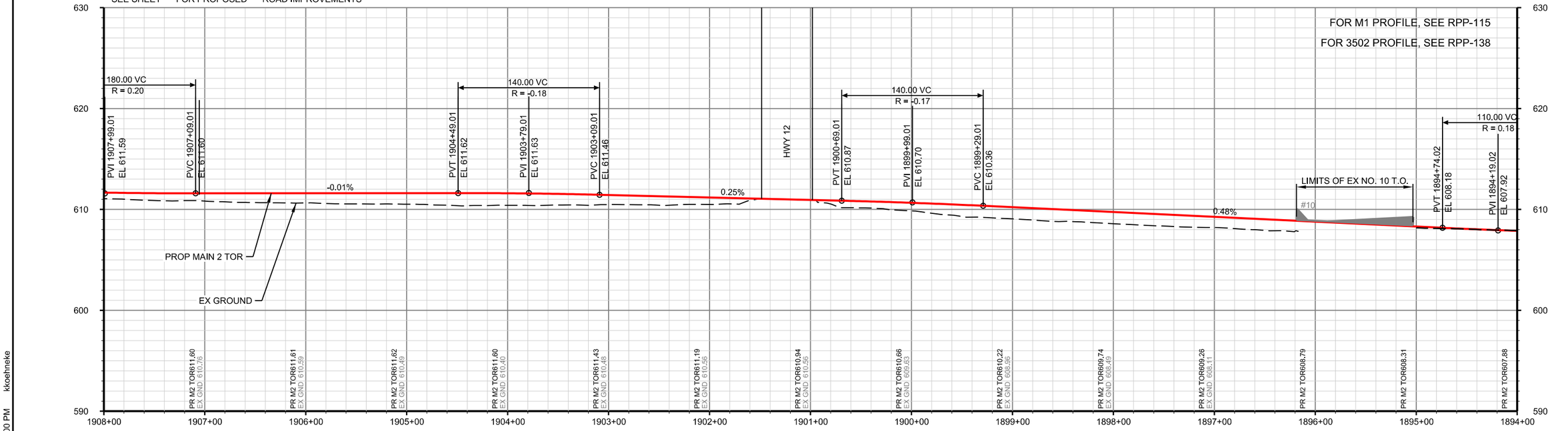
PLAN AND PROFILE
STA 1908+00 TO 1922+00
MP 36.1 TO 36.4

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



NOTE:
SEE SHEET *** FOR PROPOSED *** ROAD IMPROVEMENTS



50 25 0 50 100
HORIZONTAL SCALE

10 5 0 10 20
VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-085 OF RPP-095

PLOT DATE: 4/30/2020 10:25:00 PM kkoehneke

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Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

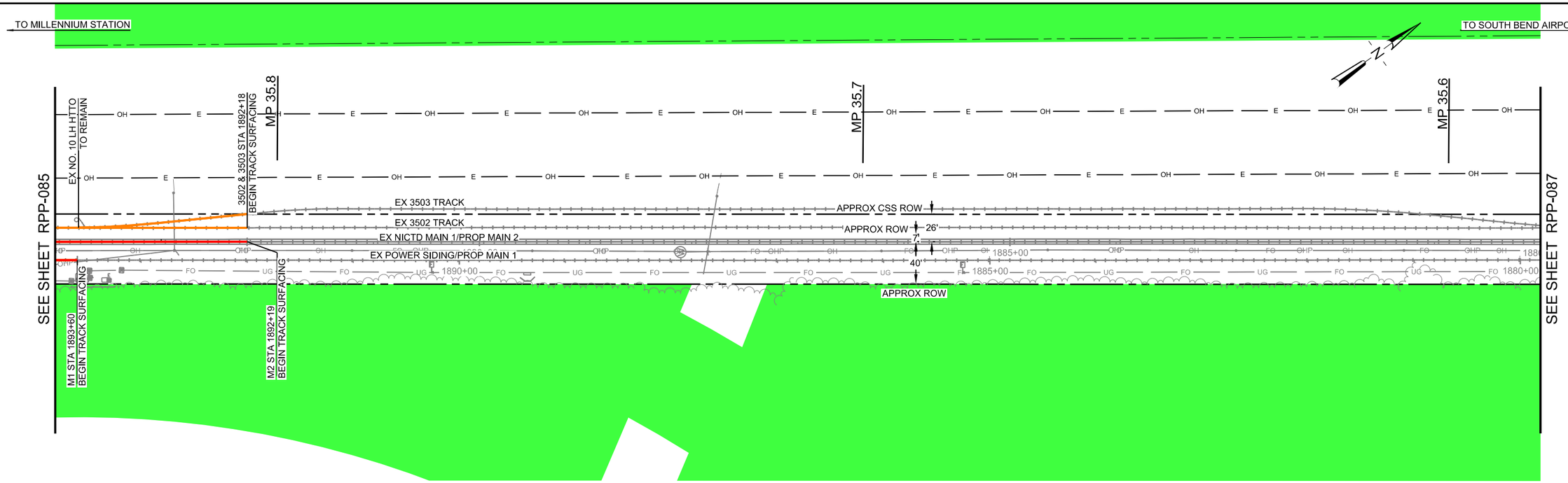
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

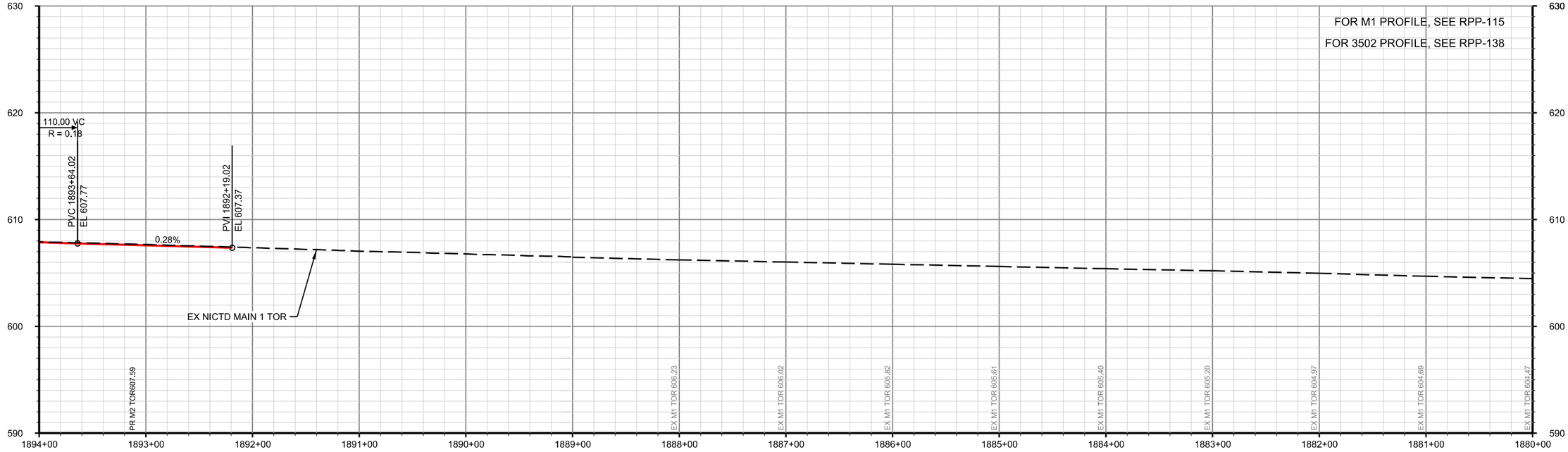
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 1894+00 TO 1908+00
MP 35.8 TO 36.1

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-086 OF RPP-095

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

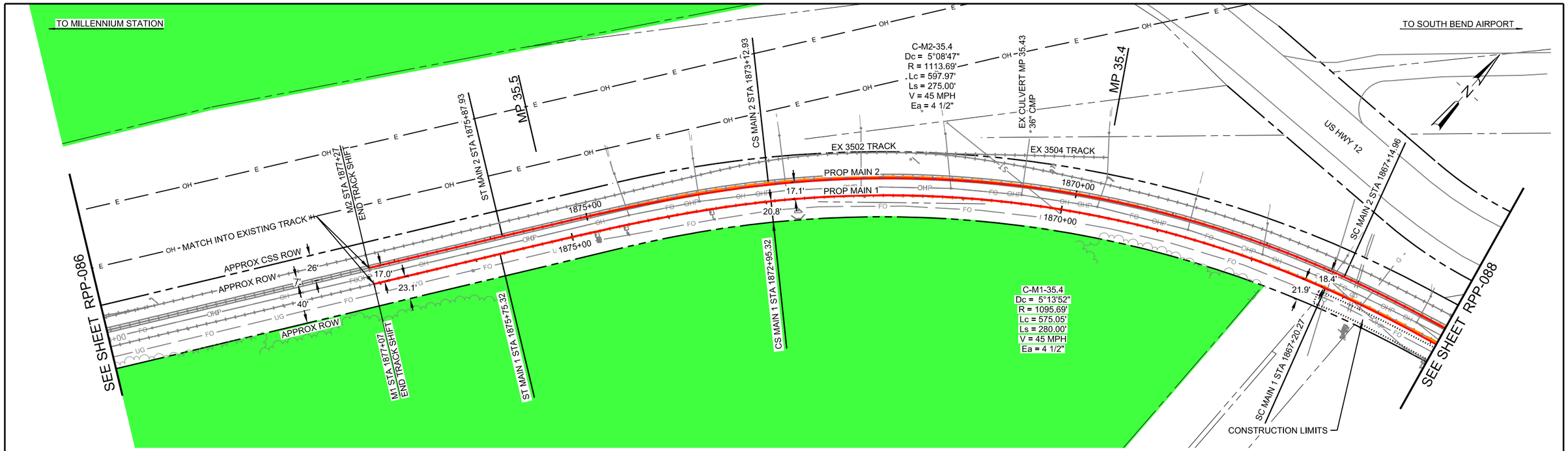
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

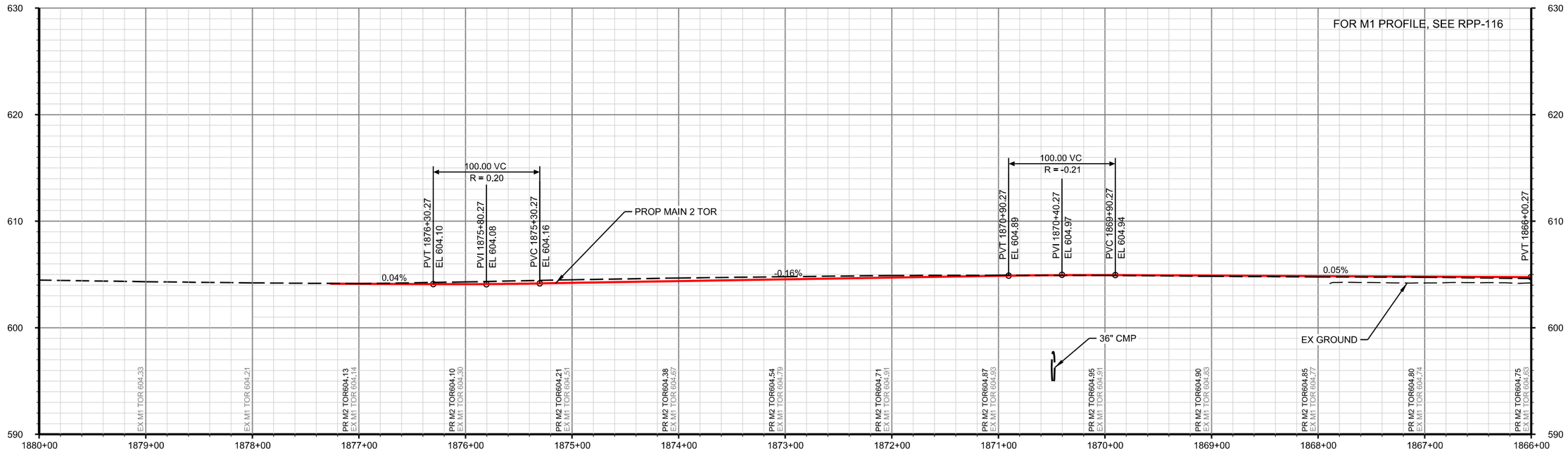
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 1880+00 TO 1894+00
MP 35.6 TO 35.8

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-087 OF RPP-095

PLOT DATE: 4/30/2020 10:25:05 PM kkoehneke

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ISSUE	DATE	DESCRIPTION
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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

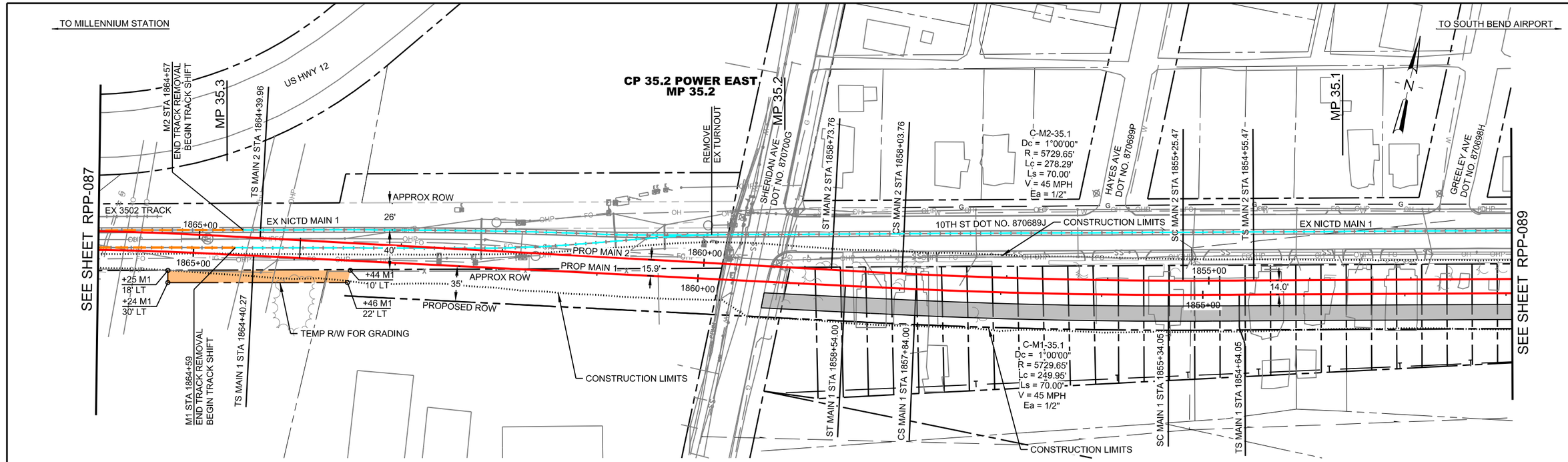
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 1866+00 TO 1880+00
MP 35.3 TO 35.6

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



NOTE:
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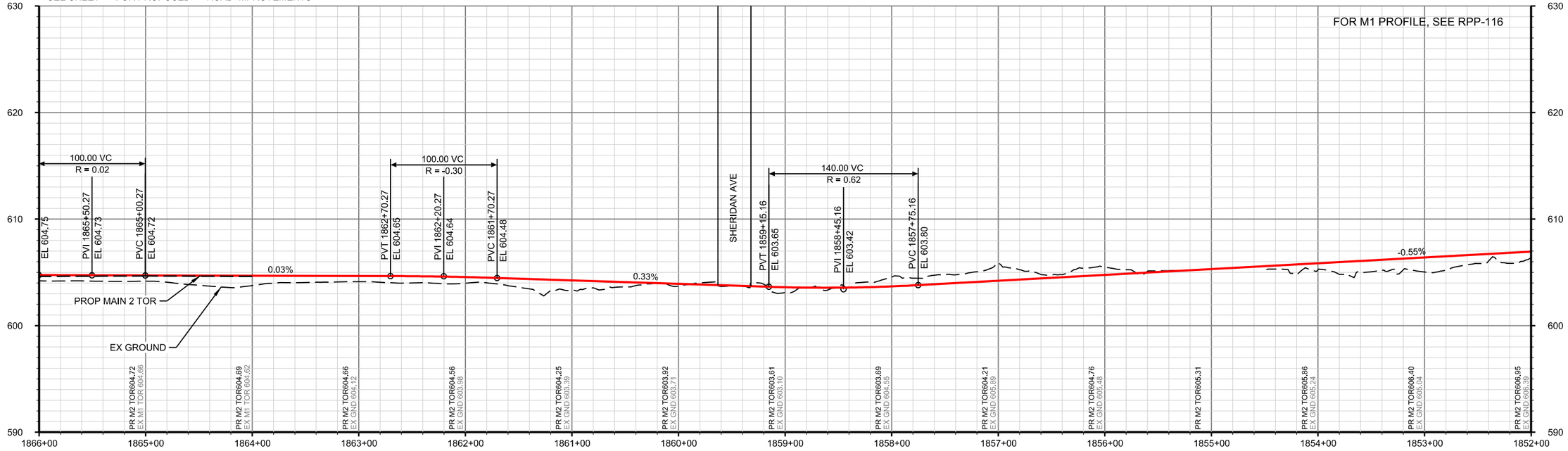

50 25 0 50 100 HORIZONTAL SCALE
10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-088 OF RPP-095

PLOT DATE: 4/30/2020 10:25:07 PM kkoehneke

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ISSUE	DATE	DESCRIPTION
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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

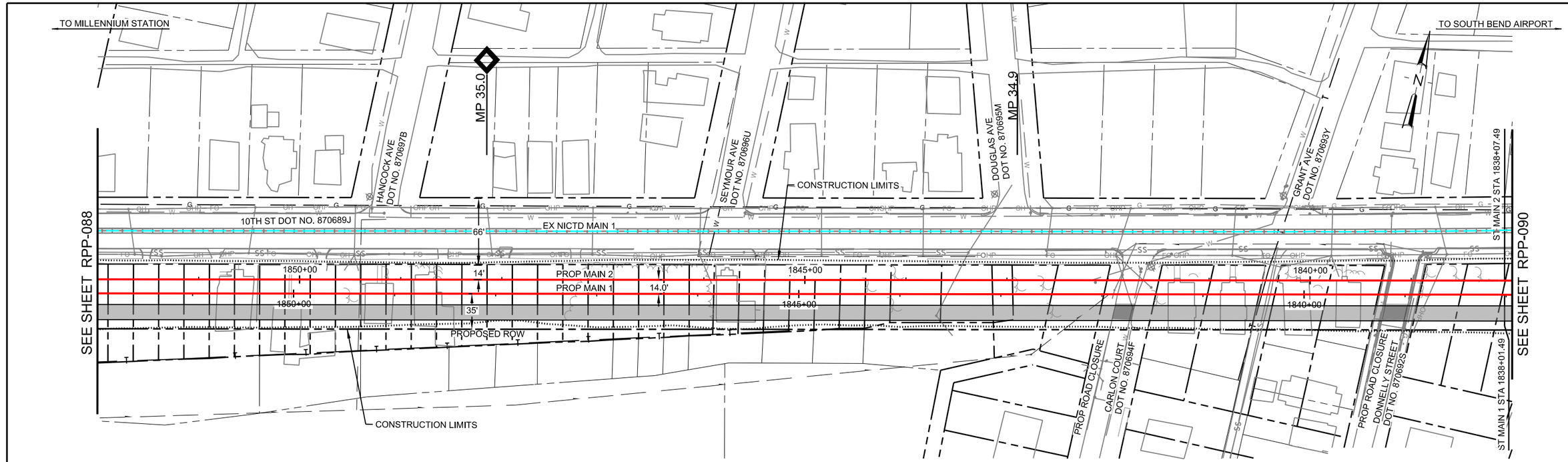
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

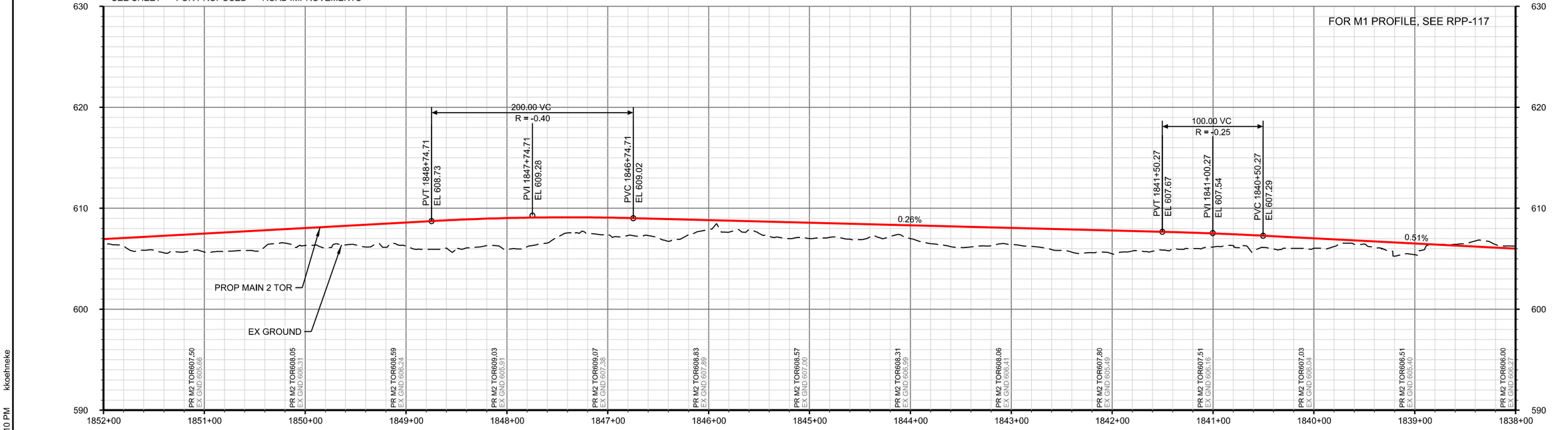
PLAN AND PROFILE
STA 1852+00 TO 1866+00
MP 35.1 TO 35.3

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



NOTE:
SEE SHEET *** FOR PROPOSED *** ROAD IMPROVEMENTS



50 25 0 50 100 HORIZONTAL SCALE
10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-089 OF RPP-095

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

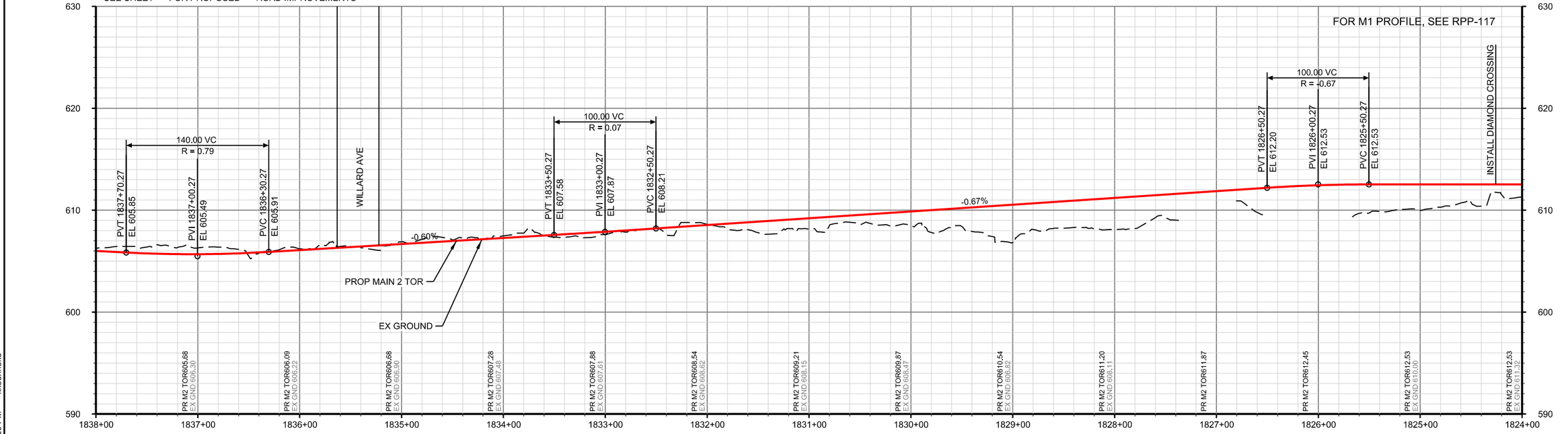
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 1838+00 TO 1852+00
MP 34.8 TO 35.1

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF

NOTE:
SEE SHEET *** FOR PROPOSED *** ROAD IMPROVEMENTS



PROP MAIN 2 PROFILE

50 25 0 50 100 HORIZONTAL SCALE
10 5 0 10 20 VERTICAL SCALE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-090 OF RPP-095

PLOT DATE: 4/30/2020 10:25:26 PM kkoehneke

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PATRICK ENGINEERING

ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

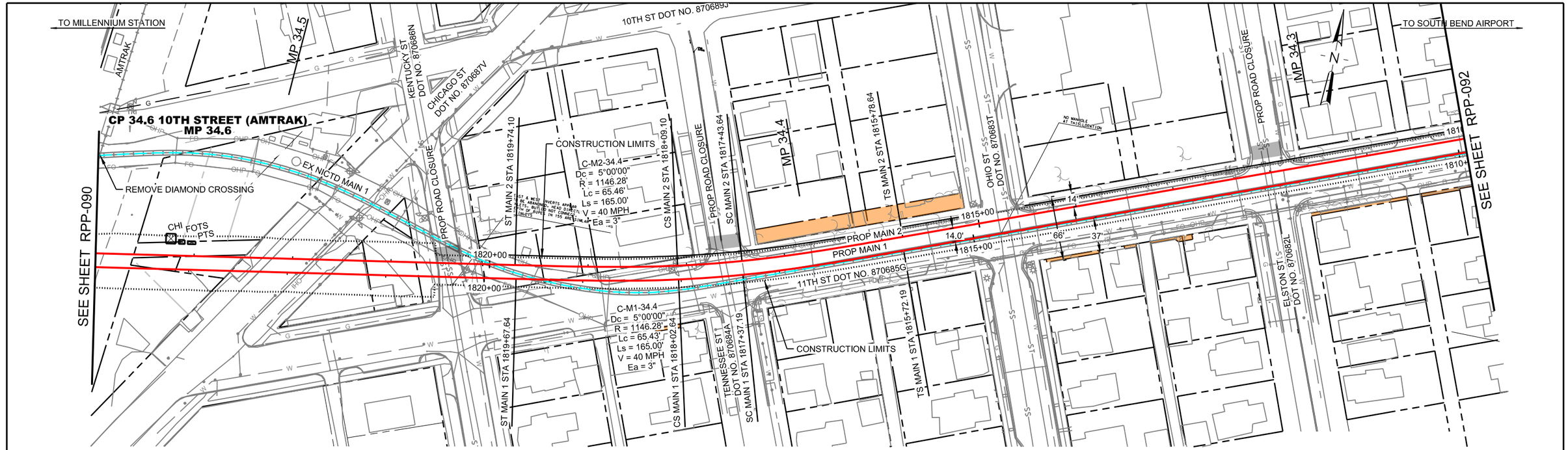
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

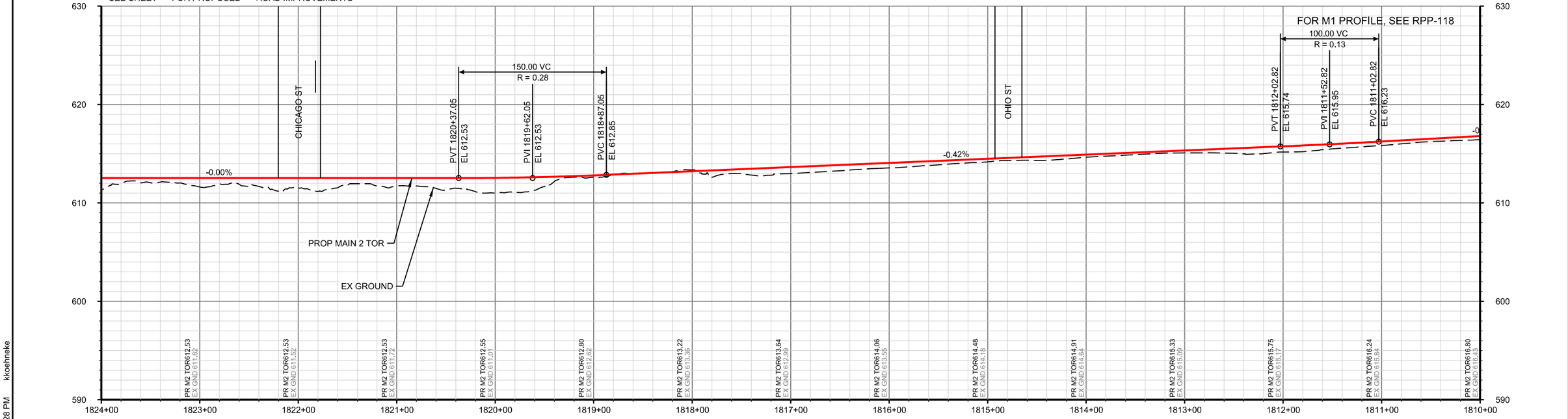
PLAN AND PROFILE
STA 1824+00 TO 1838+00
MP 34.5 TO 34.8

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



NOTE:
SEE SHEET *** FOR PROPOSED *** ROAD IMPROVEMENTS



PROP MAIN 2 PROFILE

HORIZONTAL SCALE 50 25 0 50 100

VERTICAL SCALE 10 5 0 10 20

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-091 OF RPP-095

PLOT DATE: 4/30/2020 10:25:28 PM kkoehneke

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ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

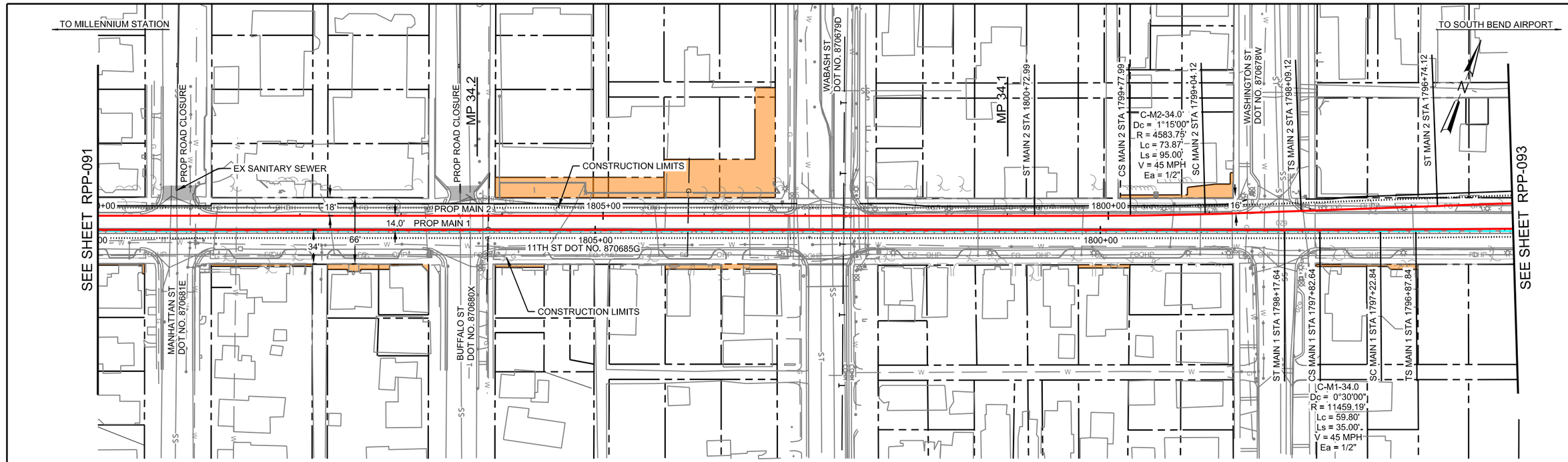
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

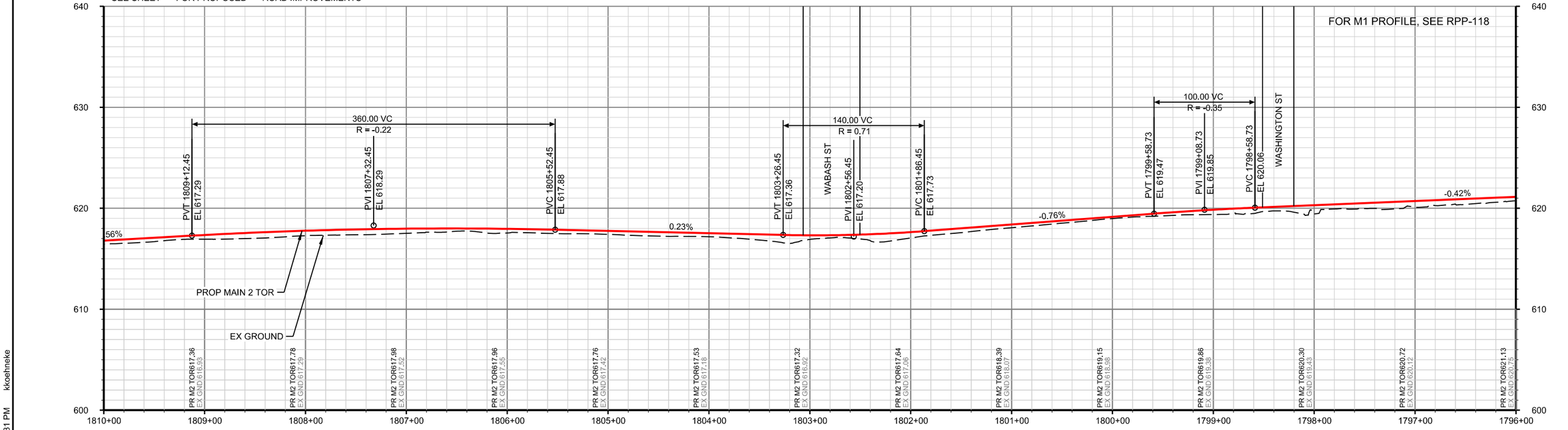
PLAN AND PROFILE
STA 1810+00 TO 1824+00
MP 34.3 TO 34.5

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



NOTE:
SEE SHEET *** FOR PROPOSED *** ROAD IMPROVEMENTS



50 25 0 50 100 HORIZONTAL SCALE
10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-092 OF RPP-095

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

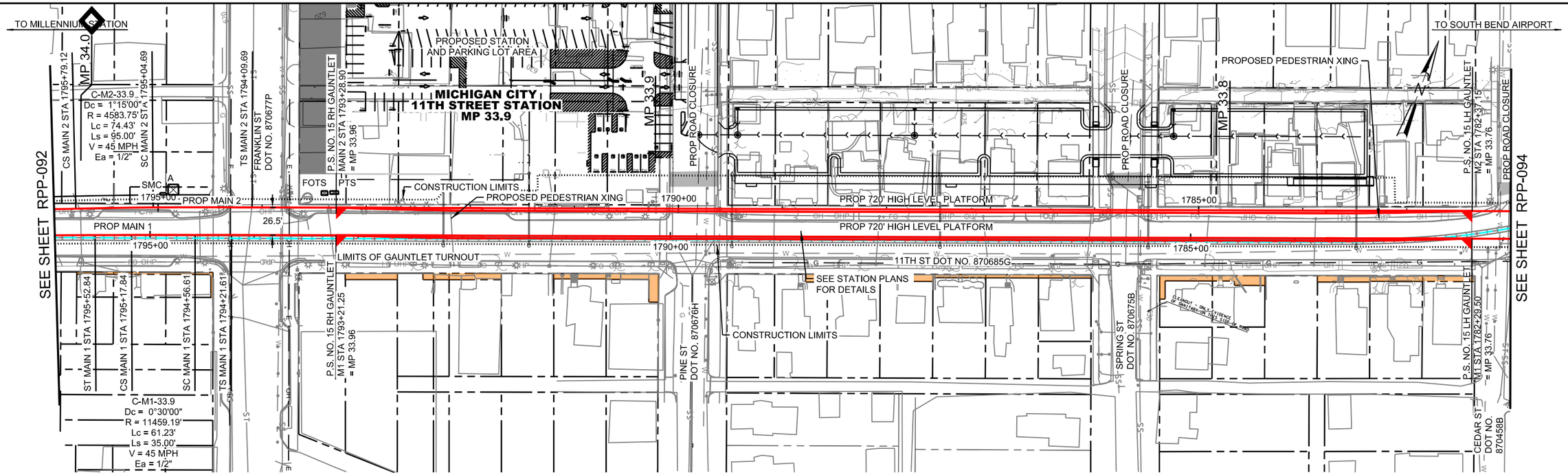
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

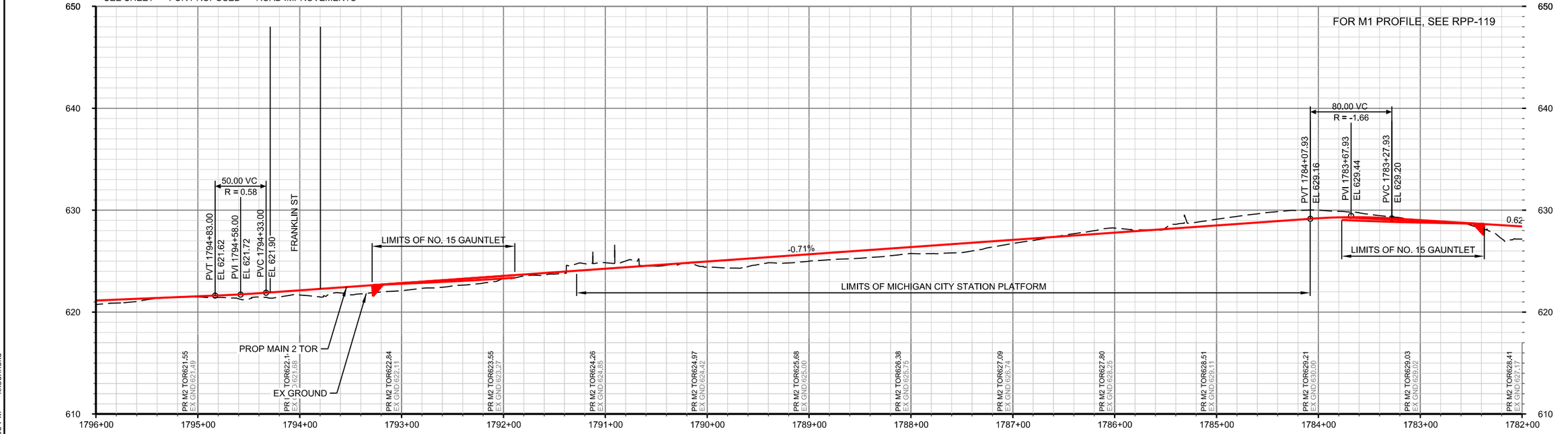
PLAN AND PROFILE
STA 1796+00 TO 1810+00
MP 34.0 TO 34.3

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



NOTE:
SEE SHEET *** FOR PROPOSED *** ROAD IMPROVEMENTS



50 25 0 50 100 HORIZONTAL SCALE
10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-093 OF RPP-095

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

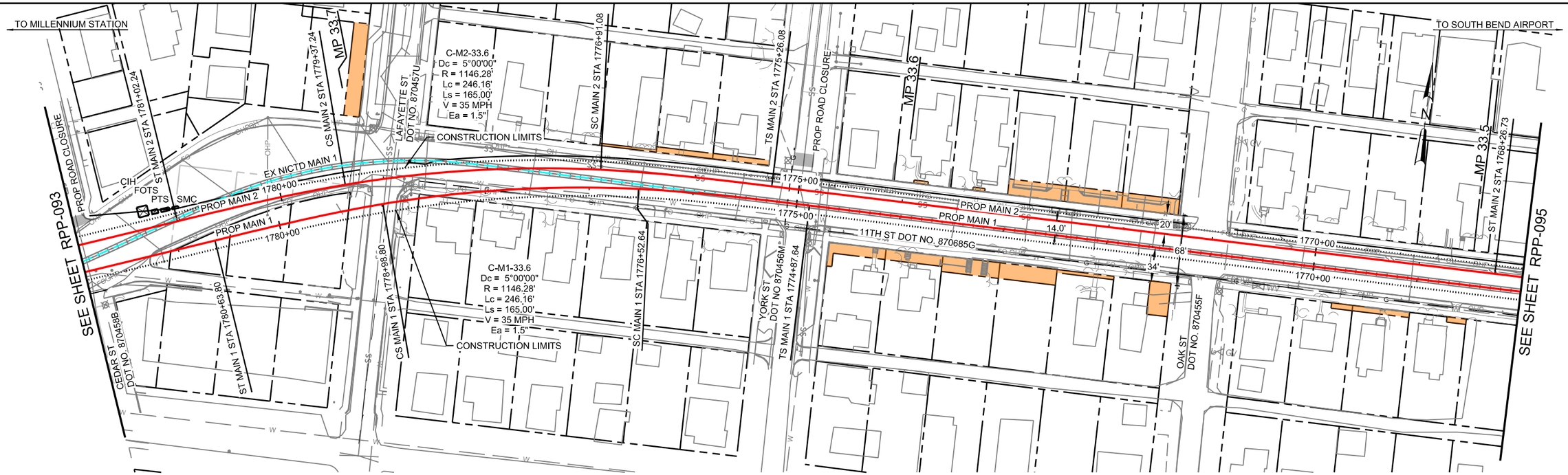
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

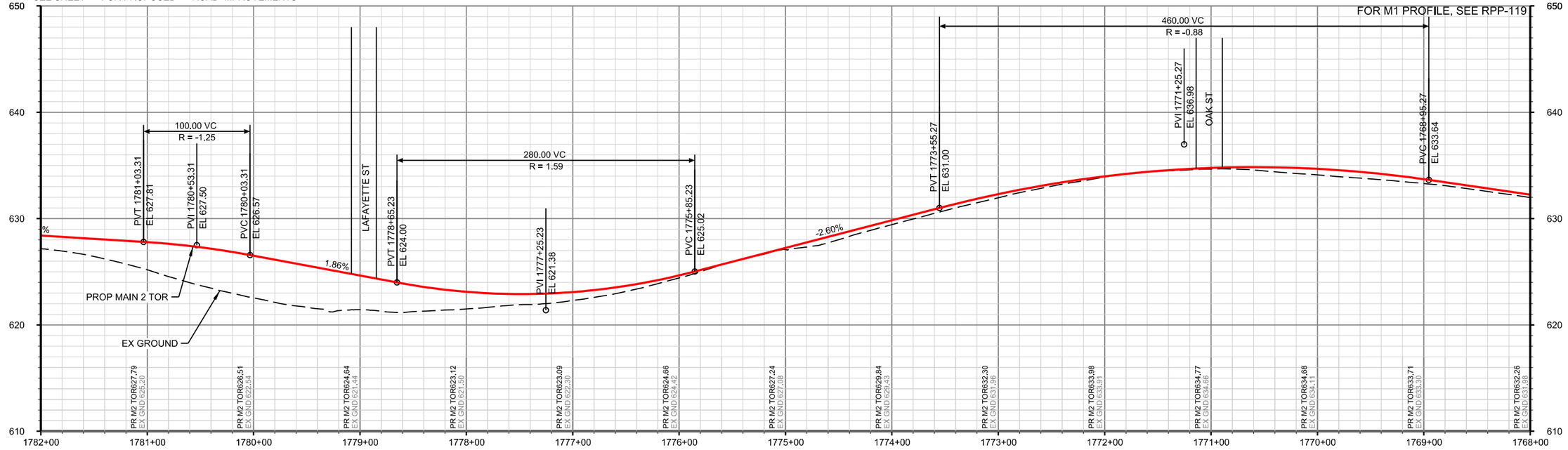
PLAN AND PROFILE
STA 1782+00 TO 1796+00
MP 33.8 TO 34.0

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



NOTE:
SEE SHEET *** FOR PROPOSED *** ROAD IMPROVEMENTS



PROP MAIN 2 PROFILE

HORIZONTAL SCALE 50 25 0 50 100
VERTICAL SCALE 10 5 0 10 20

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-094 OF RPP-095

PLOT DATE: 4/30/2020 10:25:36 PM kkoehneke

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ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

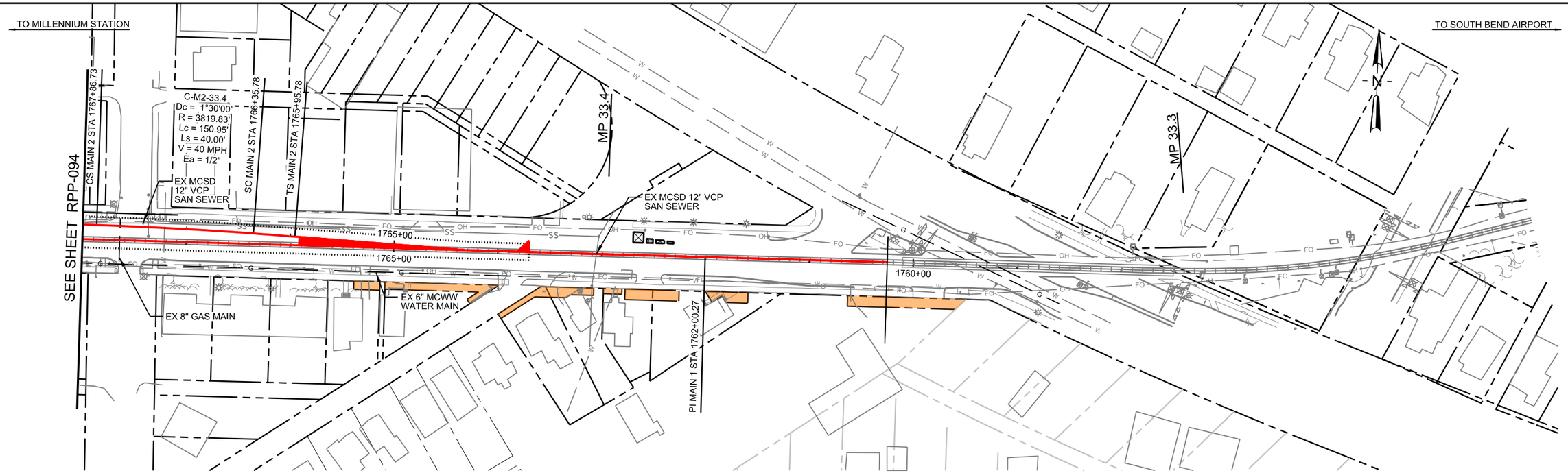
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

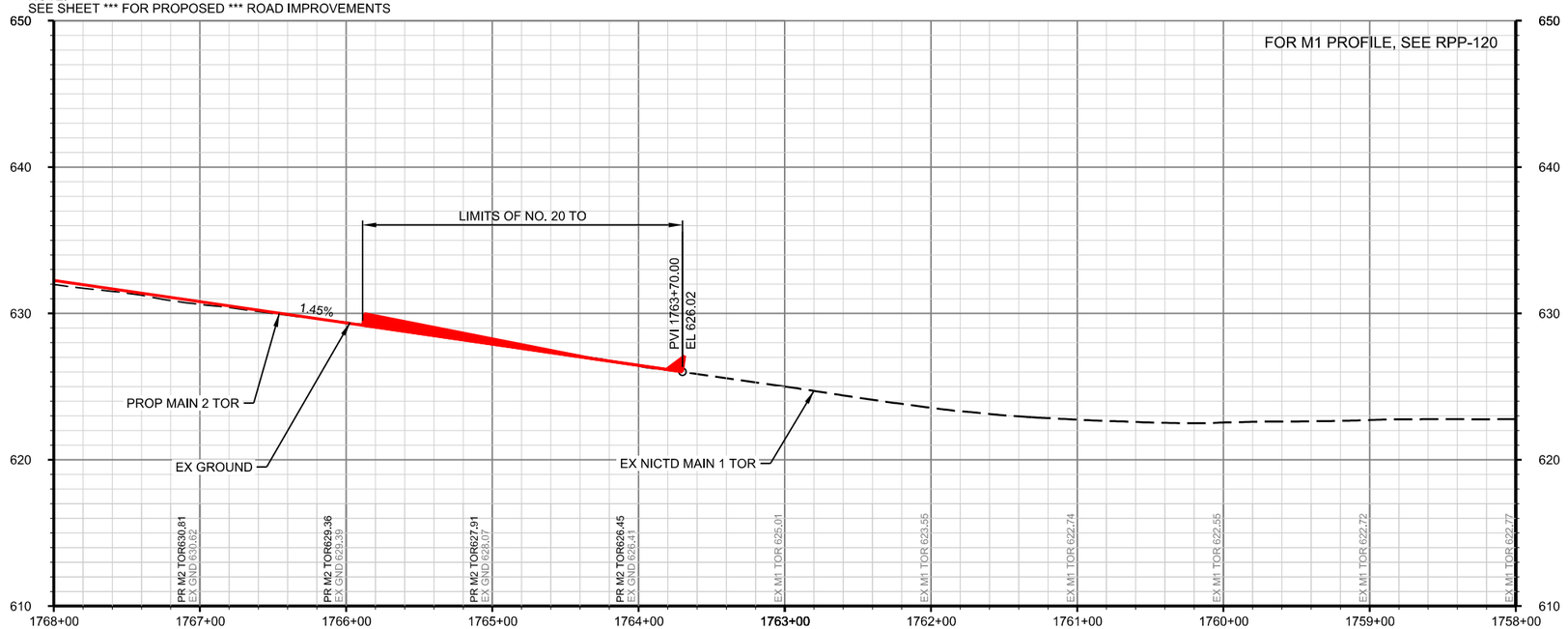
PLAN AND PROFILE
STA 1768+00 TO 1782+00
MP 33.5 TO 33.8

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



NOTE:
SEE SHEET *** FOR PROPOSED *** ROAD IMPROVEMENTS



50 25 0 50 100 HORIZONTAL SCALE
10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-095 OF RPP-095

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

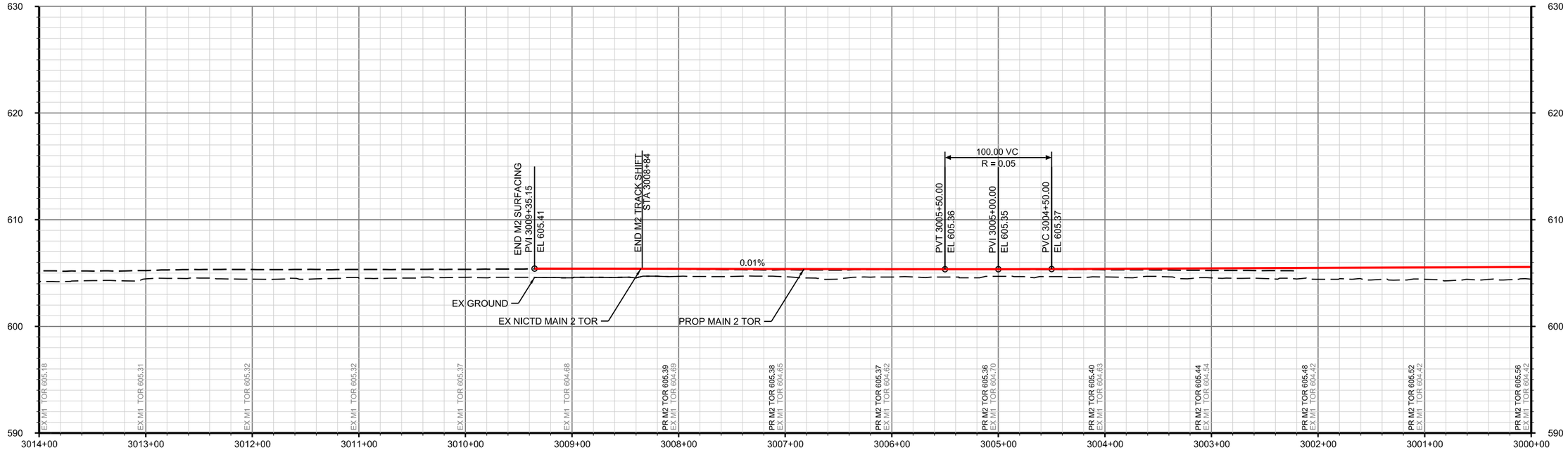
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

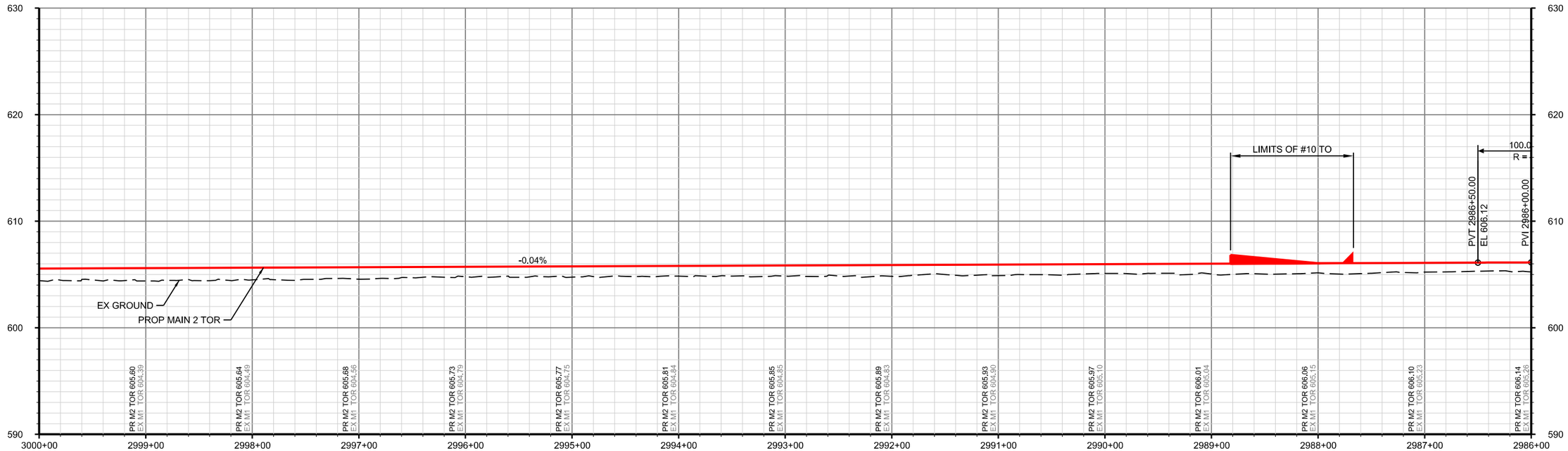
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PLAN AND PROFILE
STA 1757+00 TO 1768+00
MP 33.4 TO 33.5

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





PROP MAIN 2 PROFILES

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-096 OF RPP-100

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

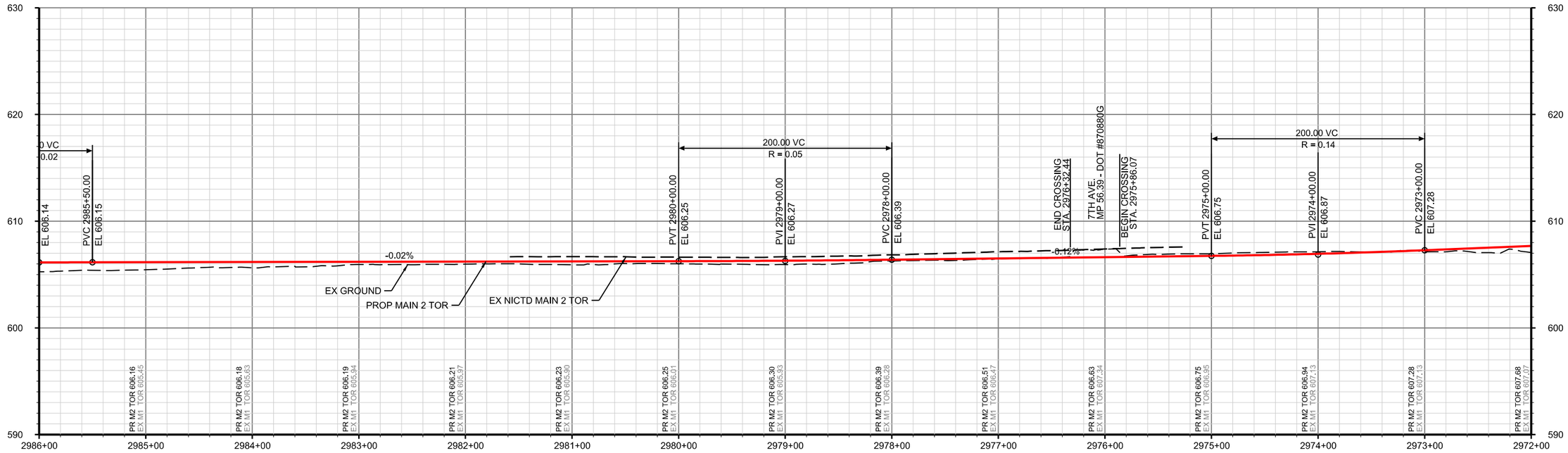
DESIGNED:	PEI-KEK
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

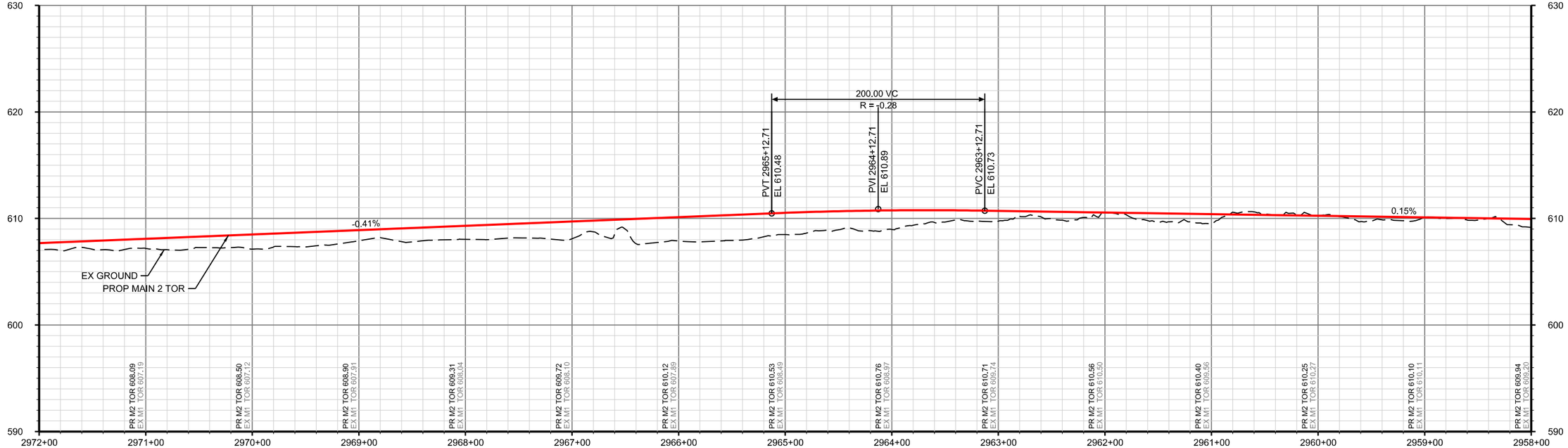
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

MAIN 2 PROFILE
MAIN 2 STA 2986+00 TO 3014+00
MP 56.6 TO 57.1

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100
HORIZONTAL SCALE

10 5 0 10 20
VERTICAL SCALE

PROP MAIN 2 PROFILES

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-097 OF RPP-100

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ISSUE	DATE	DESCRIPTION
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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

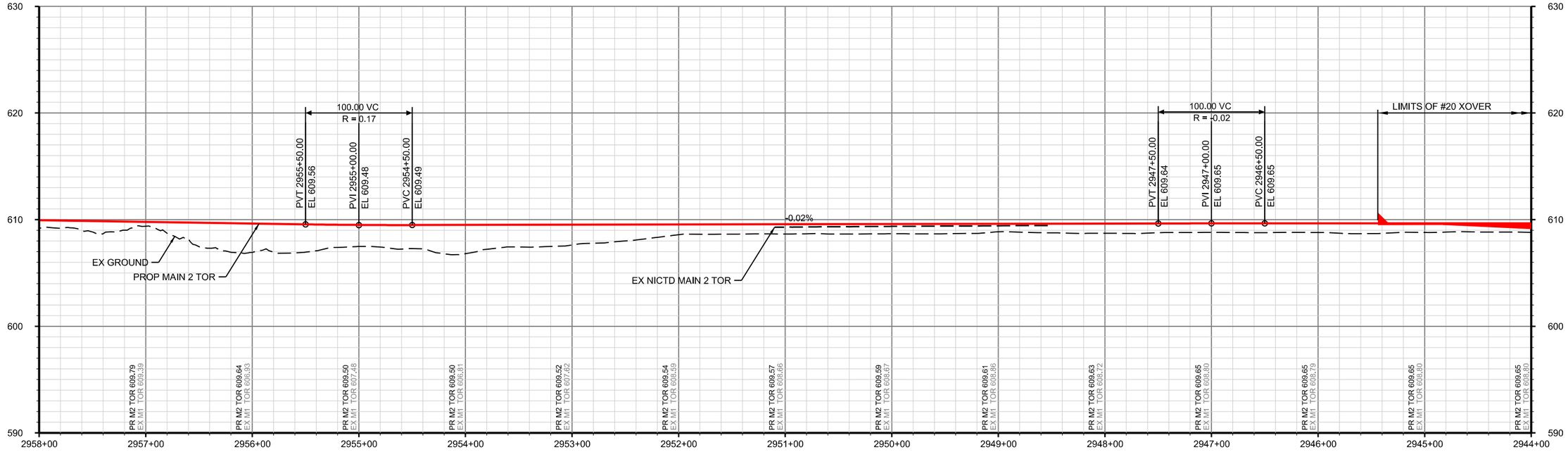
DESIGNED:	PEI-KEK
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

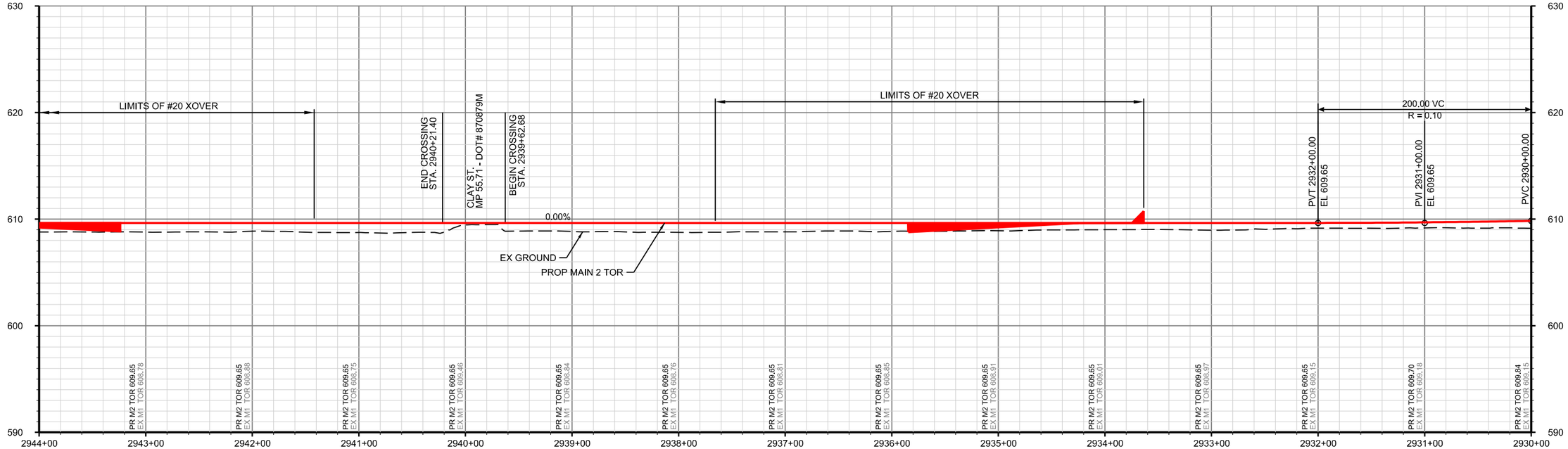
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

MAIN 2 PROFILE
MAIN 2 STA 2958+00 TO 2986+00
MP 56.0 TO 56.6

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





HORIZONTAL SCALE 50 25 0 50 100

VERTICAL SCALE 10 5 0 10 20

PROP MAIN 2 PROFILES

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-098 OF RPP-100

PLOT DATE: 4/30/2020 10:25:42 PM kkoehneke

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ISSUE	DATE	DESCRIPTION
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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

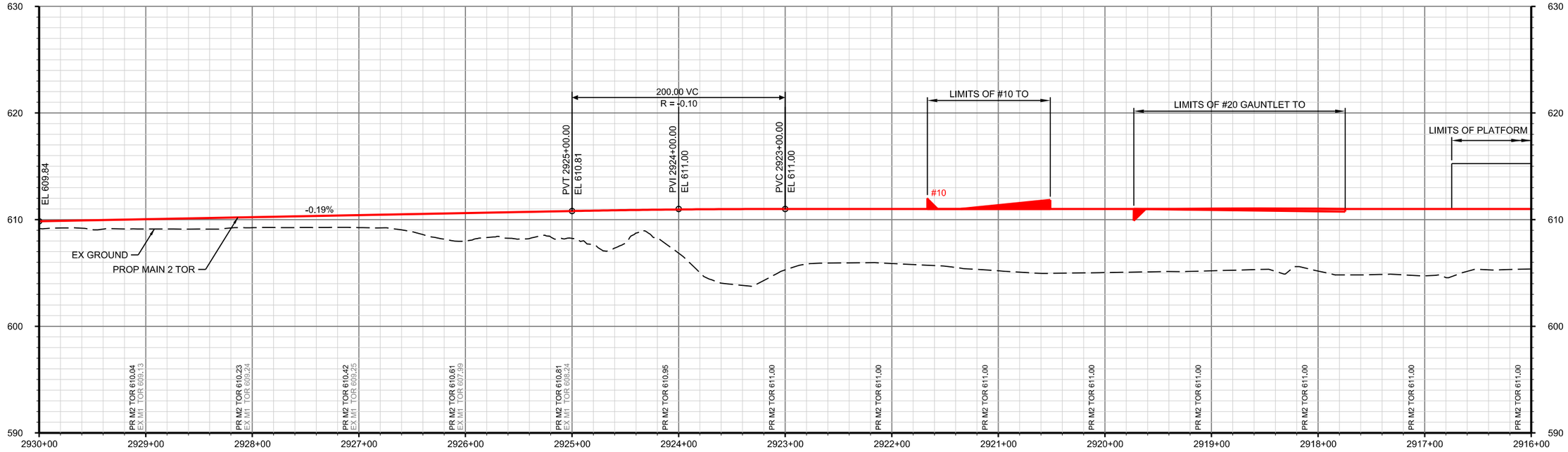
DESIGNED:	PEI-KEK
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

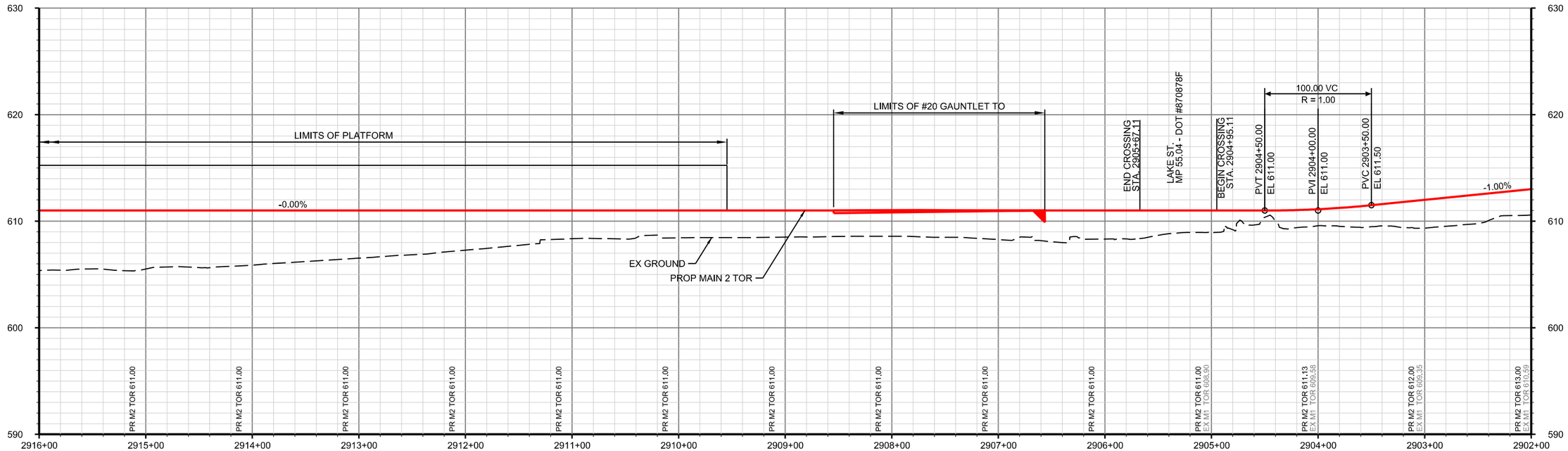
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

MAIN 2 PROFILE
MAIN 2 STA 2930+00 TO 2958+00
MP 55.5 TO 56.0

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 2 PROFILES

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-099 OF RPP-100

PLOT DATE: 4/30/2020 10:25:43 PM kkoehneke

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PATRICK ENGINEERING

ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

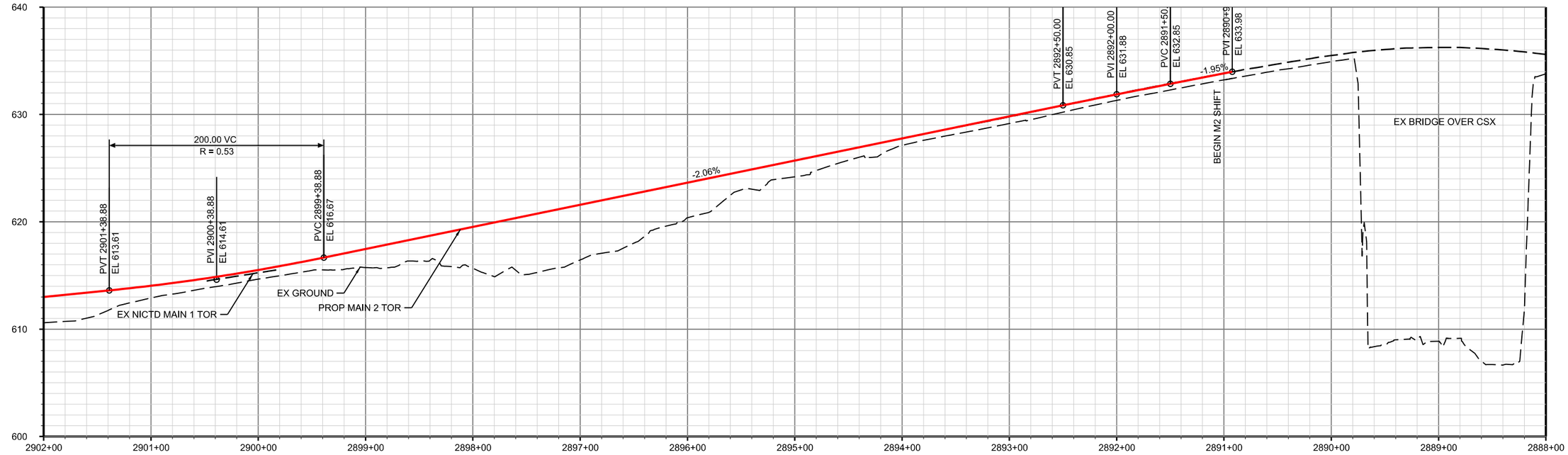
DESIGNED:	PEI-KEK
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

MAIN 2 PROFILE
MAIN 2 STA 2902+00 TO 2930+00
MP 55.0 TO 55.5

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



50 25 0 50 100
HORIZONTAL SCALE

10 5 0 10 20
VERTICAL SCALE

PROP MAIN 2 PROFILES

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-100 OF RPP-100

PLOT DATE: 4/30/2020 10:25:44 PM kkoehneke

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PATRICK ENGINEERING

ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

NICTD
NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

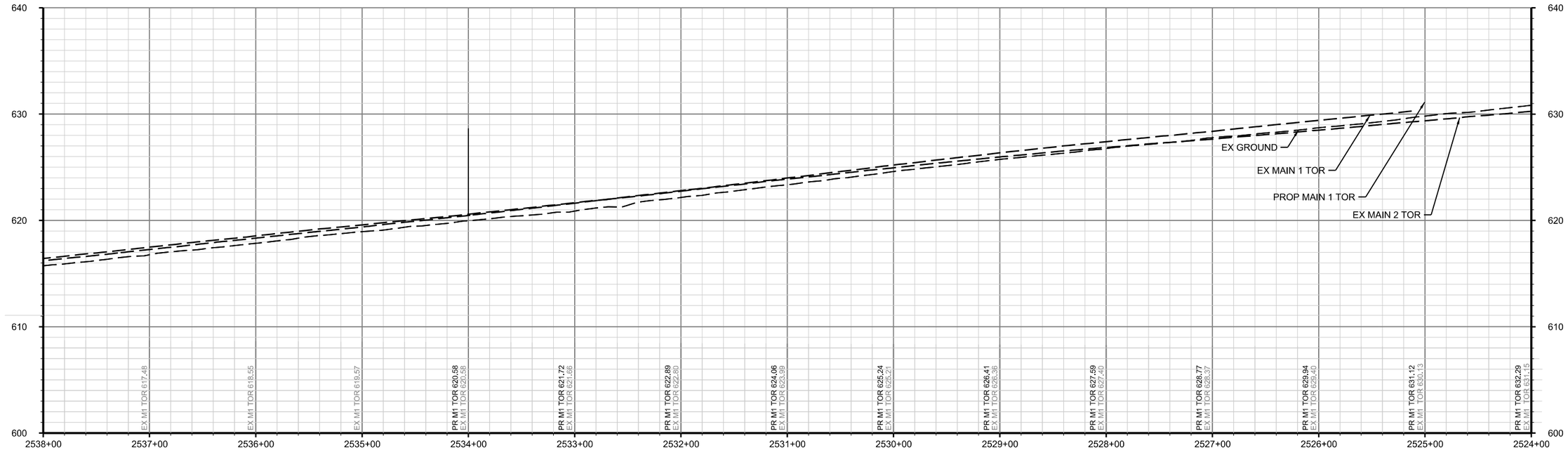
DESIGNED:	PEI-KEK
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

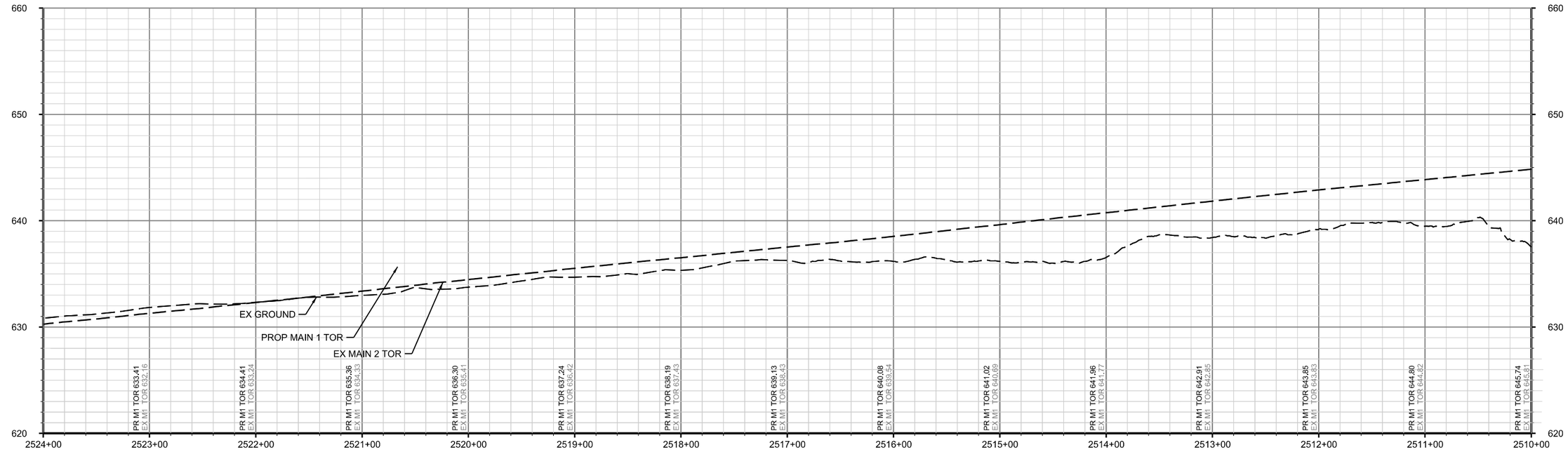
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

MAIN 2 PROFILE
MAIN 2 STA 2888+00 TO 2902+00
MP 54.7 TO 55.0

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 1 PROFILES

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-101 OF RPP-116

PLOT DATE: 4/30/2020 10:25:46 PM kkoehneke

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PATRICK ENGINEERING

ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

NICTD
NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

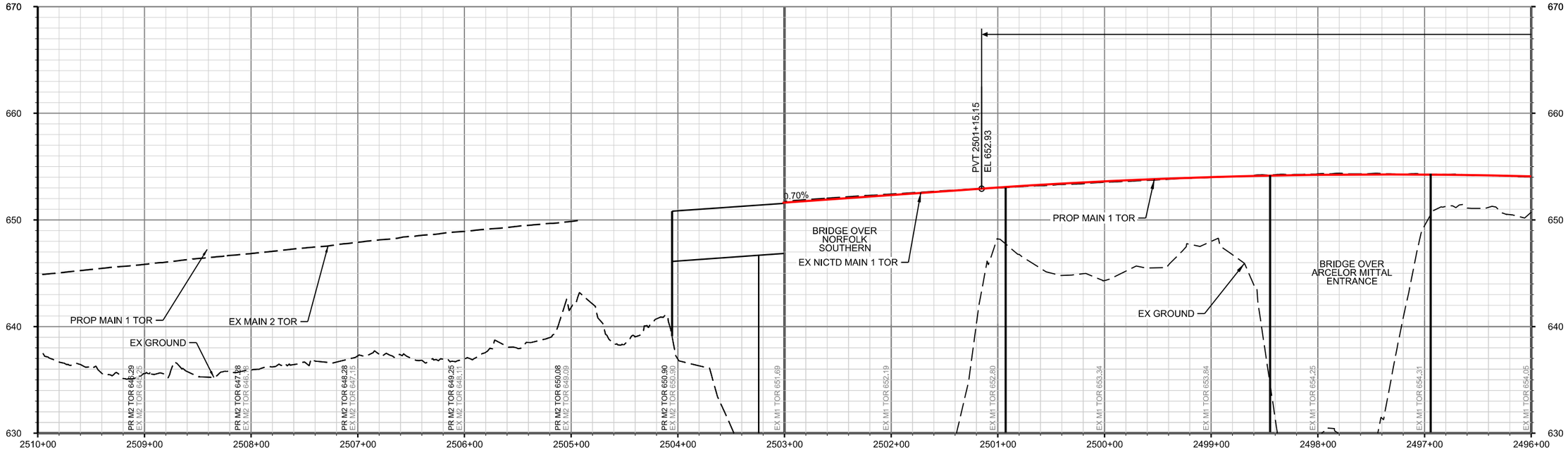
DESIGNED:	PEI-DJS
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

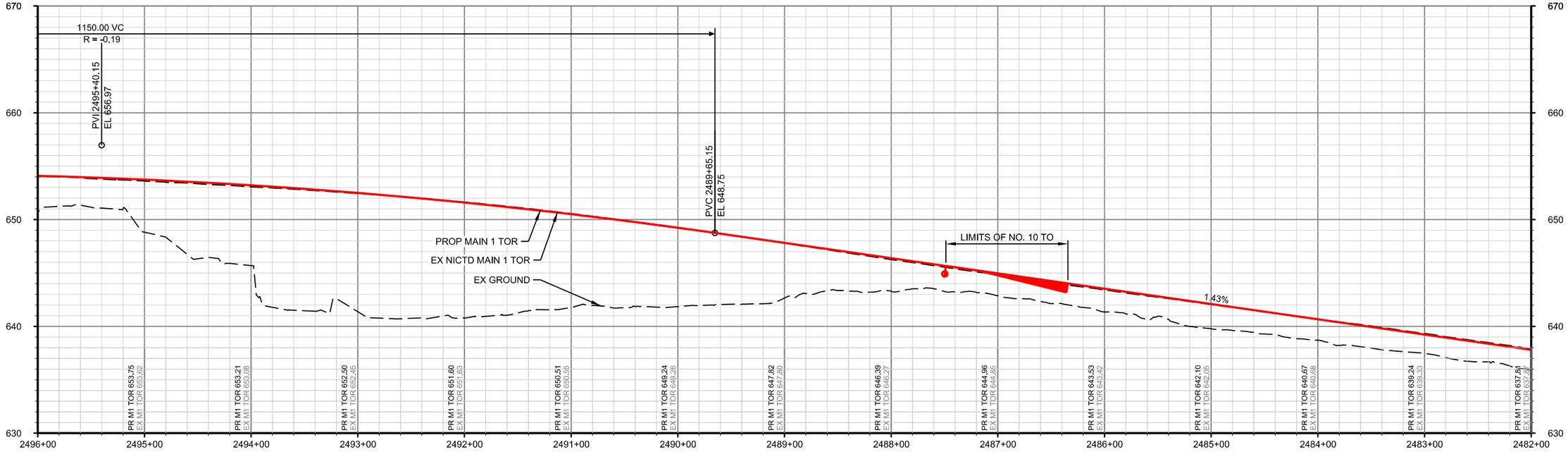
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

MAIN 1 PROFILE
MAIN 1 STA 2510+00 TO 2538+00
MP 47.5 TO 48.1

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 1 PROFILES

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-102 OF RPP-116

PLOT DATE: 4/30/2020 10:25:47 PM kkoehneke

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PATRICK ENGINEERING

ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

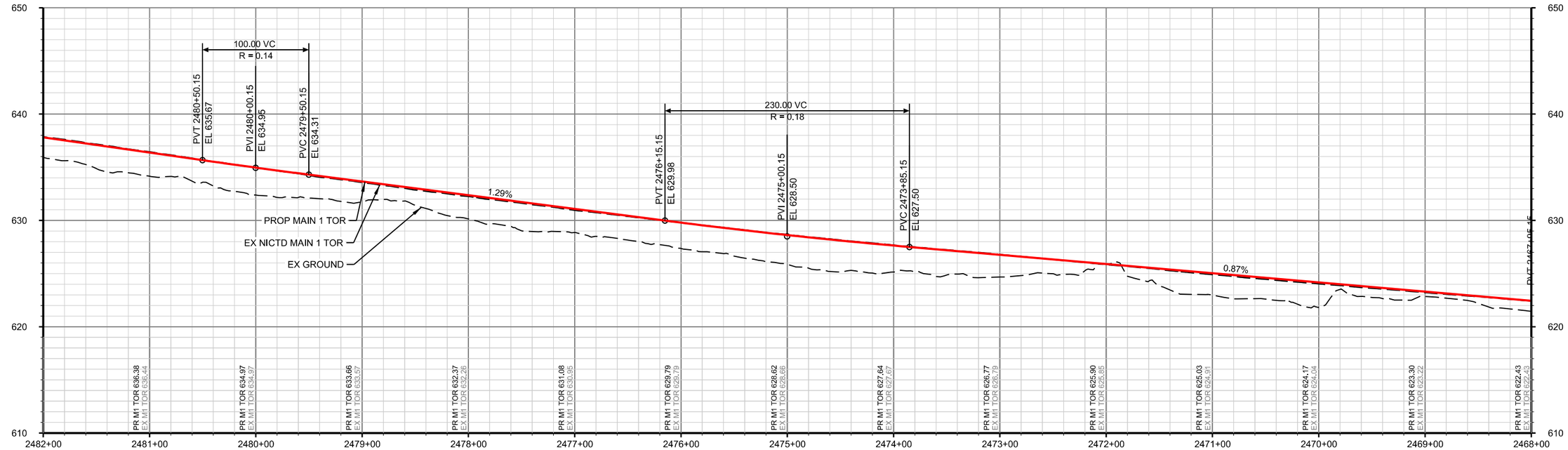
DESIGNED:	PEI-DJS
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

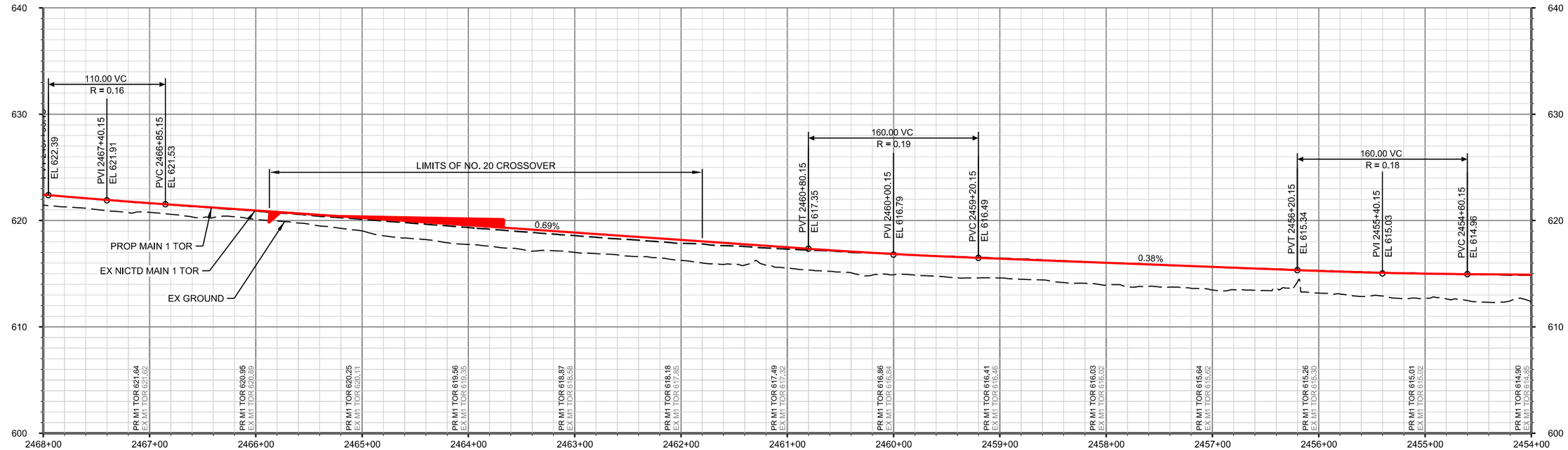
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

MAIN 1 PROFILE
MAIN 1 STA 2482+00 TO 2510+00
MP 47.0 TO 47.5

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 1 PROFILES

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-103 OF RPP-116

PLOT DATE: 4/30/2020 10:25:49 PM kkoehneke

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ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

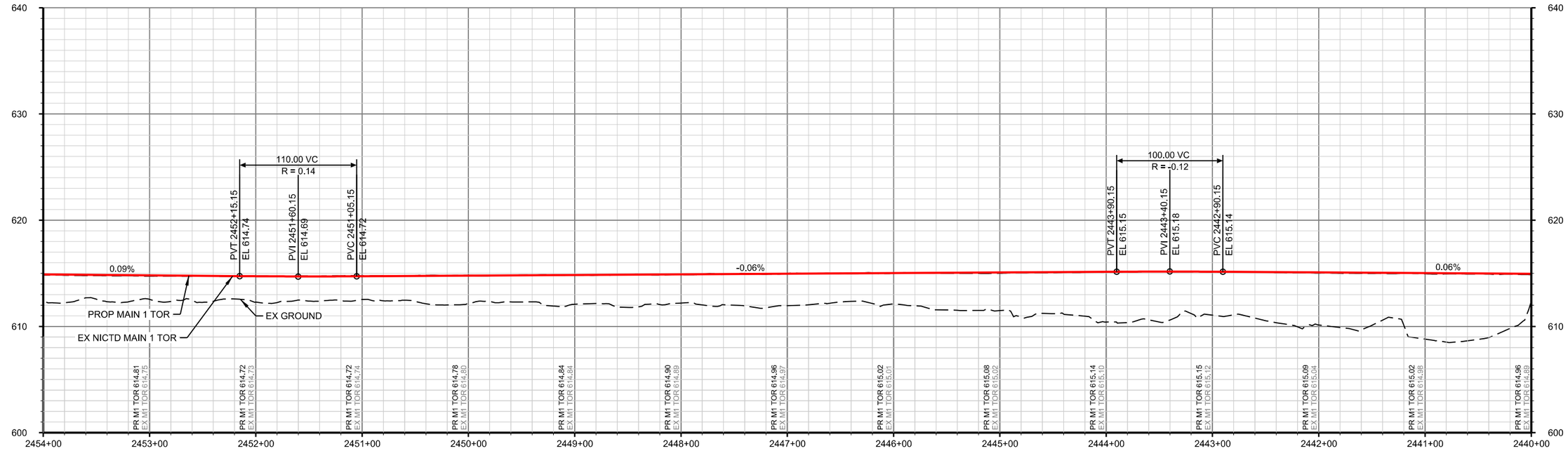
DESIGNED:	PEI-DJS
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

MAIN 1 PROFILE
MAIN 1 STA 2454+00 TO 2482+00
MP 46.5 TO 47.0

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



PROP MAIN 1 PROFILES

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-104 OF RPP-116

PLOT DATE: 4/30/2020 10:25:50 PM kkoehneke

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33 East Highway 12
Chesterton, Indiana 46304

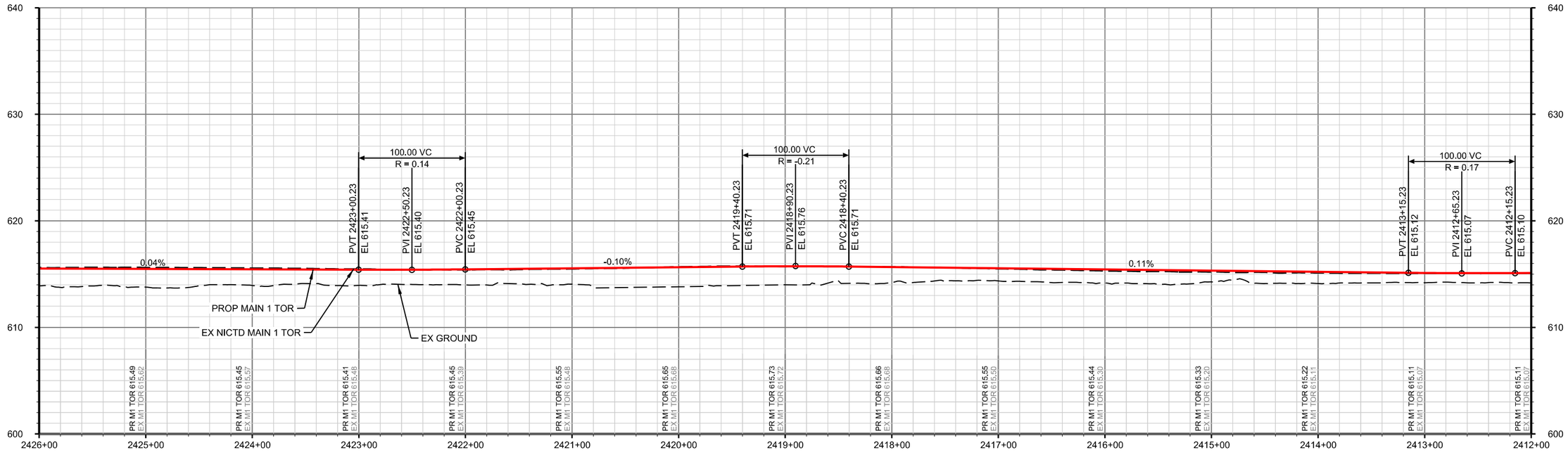
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

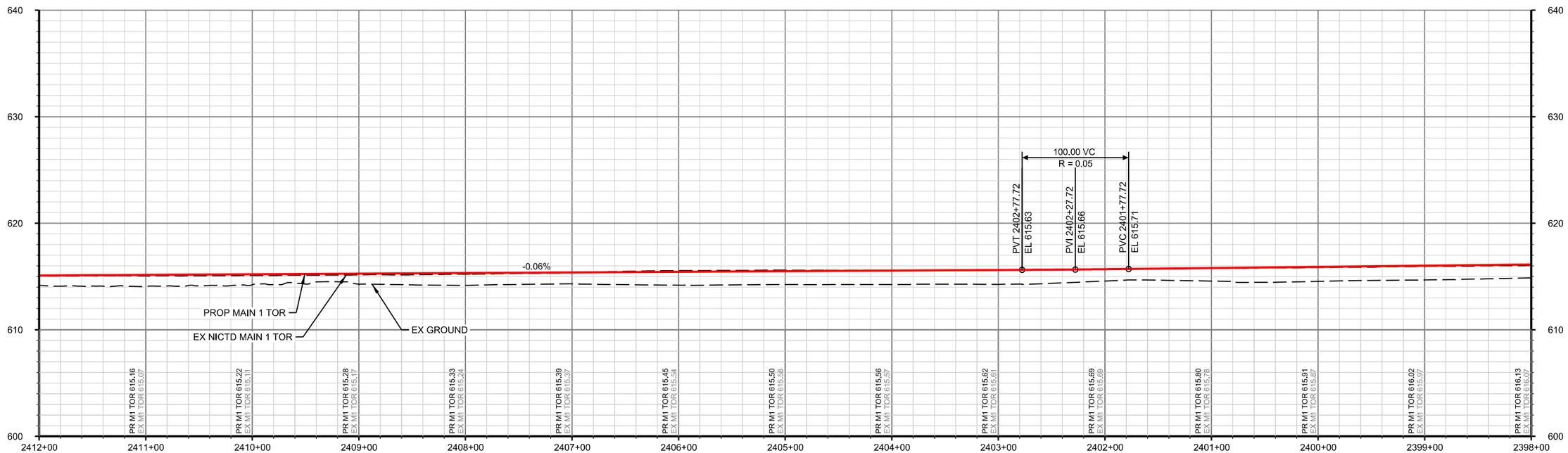
DESIGNED:	PEI-DJS
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

MAIN 1 PROFILE
MAIN 1 STA 2426+00 TO 2454+00
MP 46.0 TO 46.5

FILENAME	DT_DWG_RPP-001	SHEET	OF
SCALE	AS NOTED		





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 1 PROFILES

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-105 OF RPP-116

PLOT DATE: 4/30/2020 10:25:52 PM kkoehneke

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

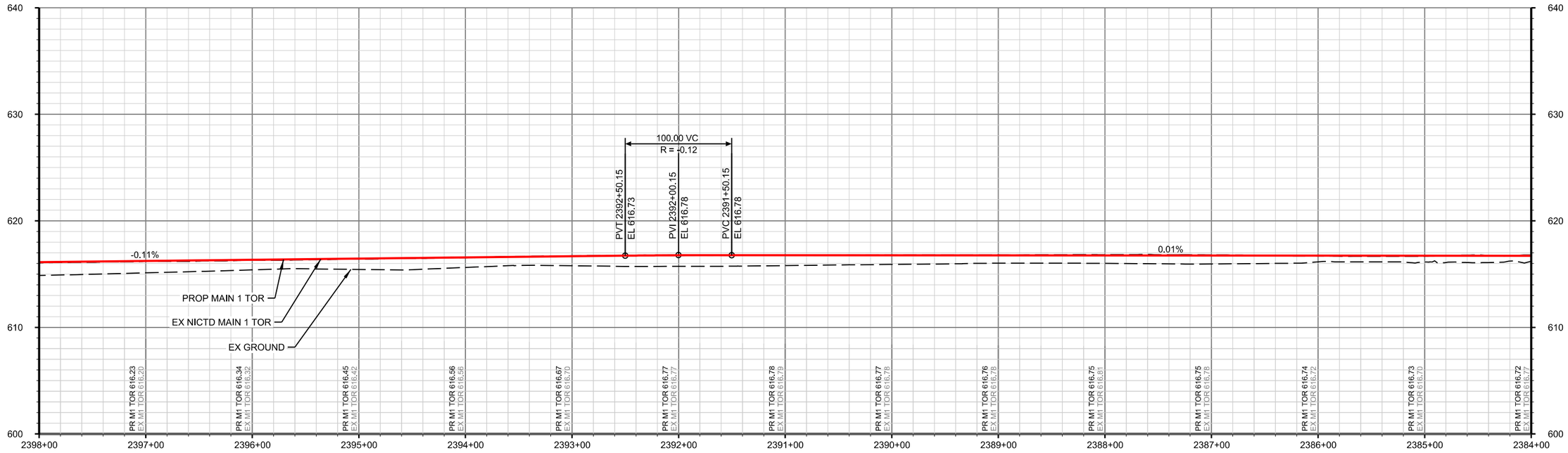
DESIGNED:	PEI-DJS
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

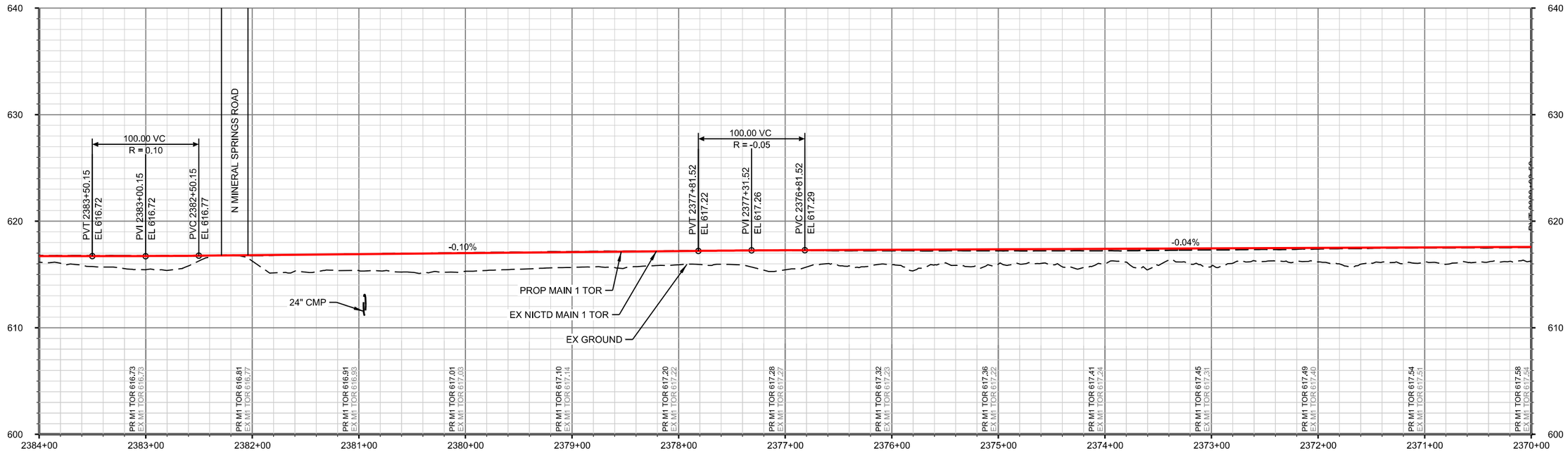
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

MAIN 1 PROFILE
MAIN 1 STA 2398+00 TO 2426+00
MP 45.4 TO 46.0

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 1 PROFILES

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-106 OF RPP-116

PLOT DATE: 4/30/2020 10:25:53 PM kkoehneke

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

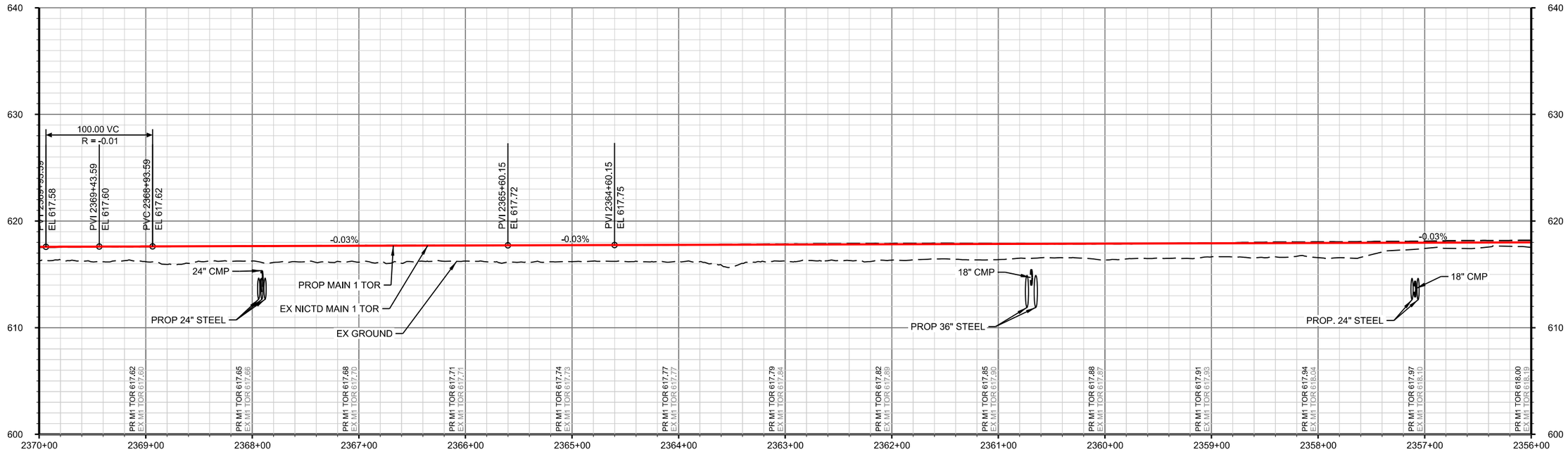
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

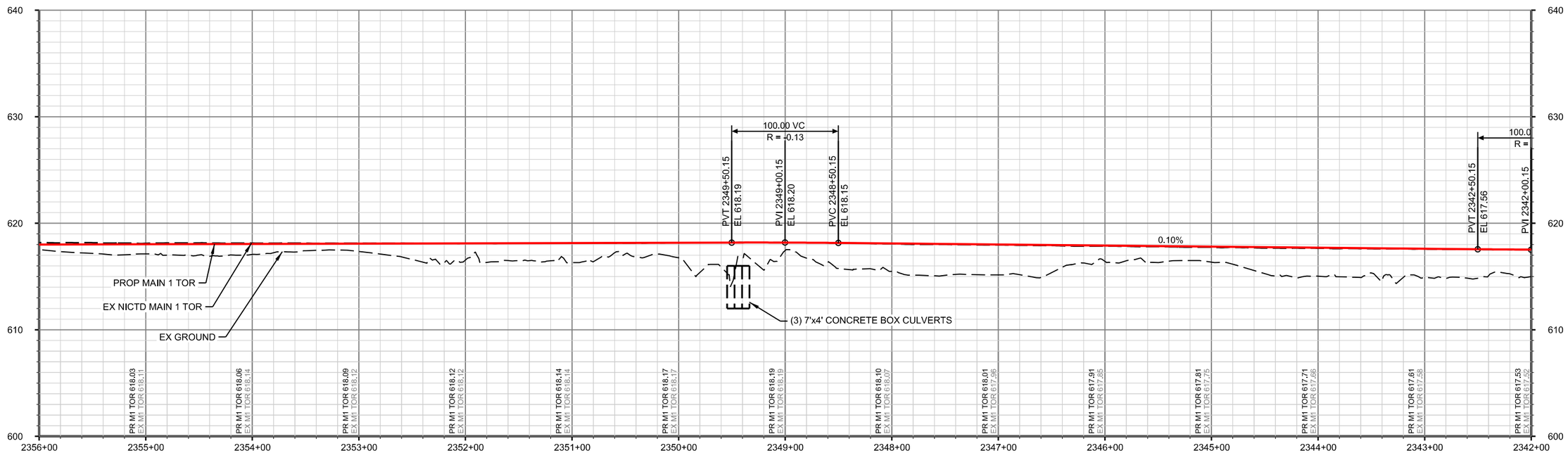
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

MAIN 1 PROFILE
MAIN 1 STA 2370+00 TO 2398+00
MP 44.9 TO 45.4

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 1 PROFILES

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DRAWING RPP-107 OF RPP-116

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

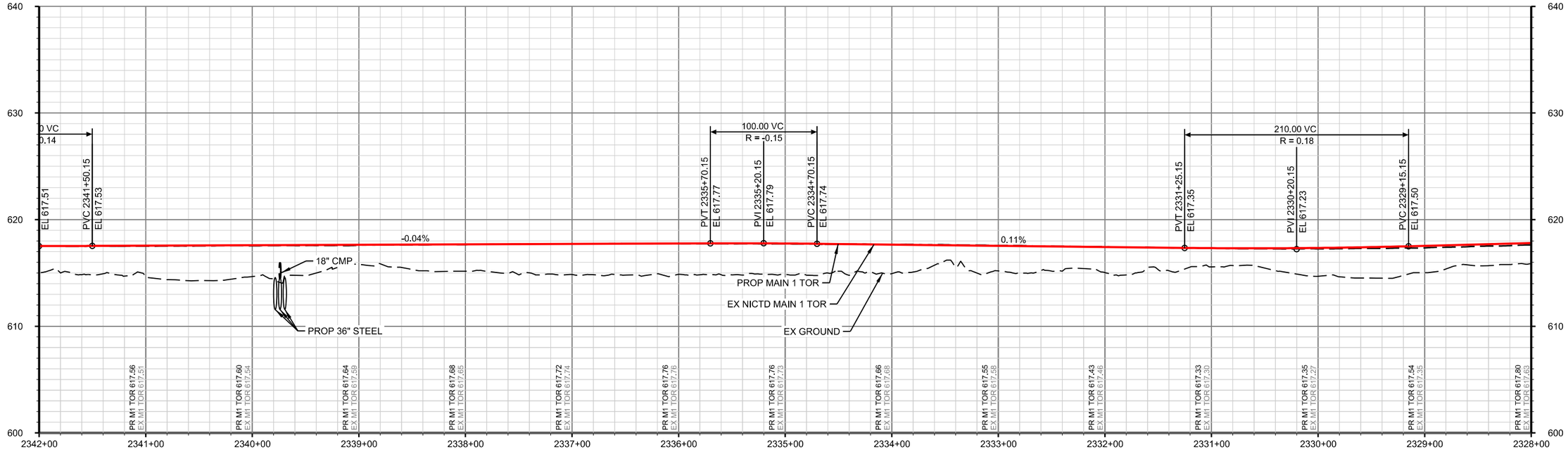
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

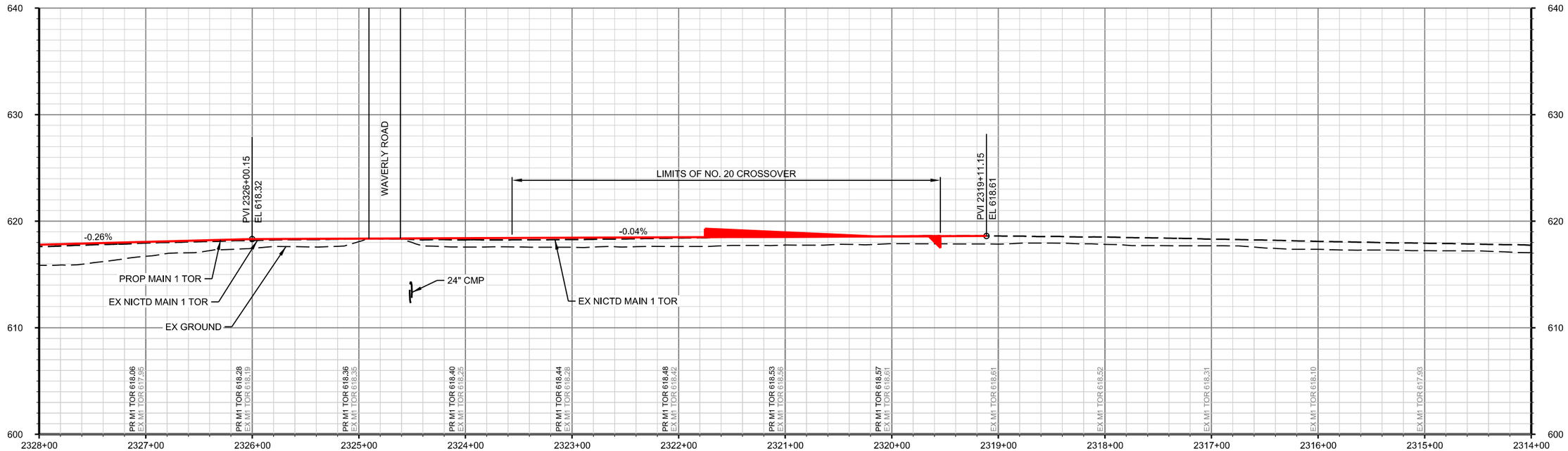
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

MAIN 1 PROFILE
MAIN 1 STA 2342+00 TO 2370+00
MP 44.4 TO 44.9

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 1 PROFILES

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DRAWING RPP-108 OF RPP-116

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33 East Highway 12
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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

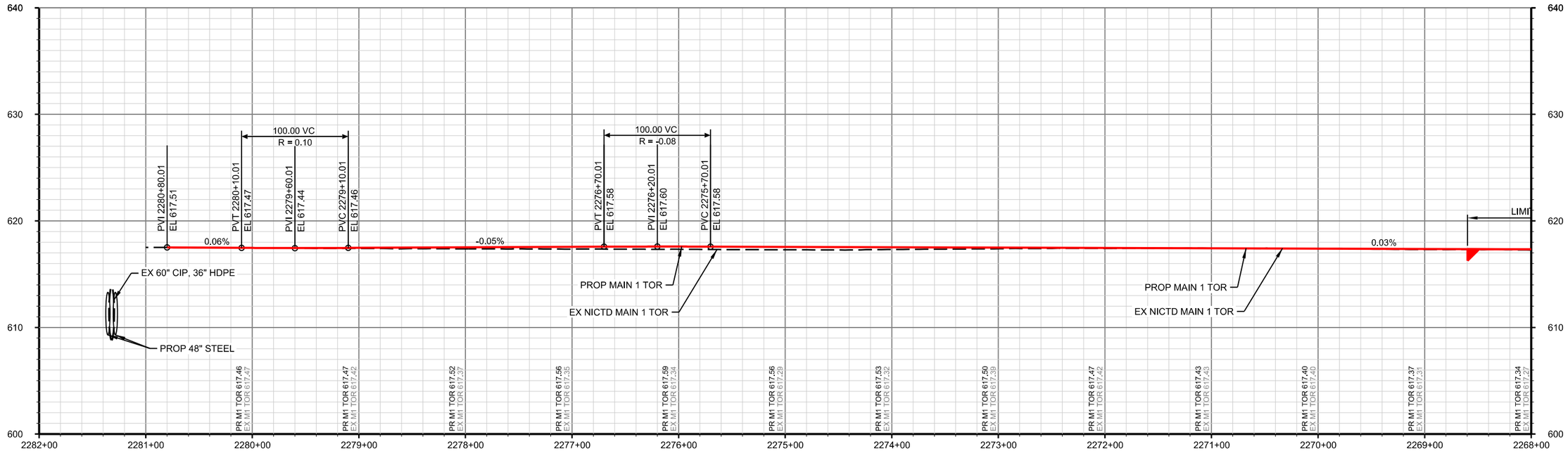
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

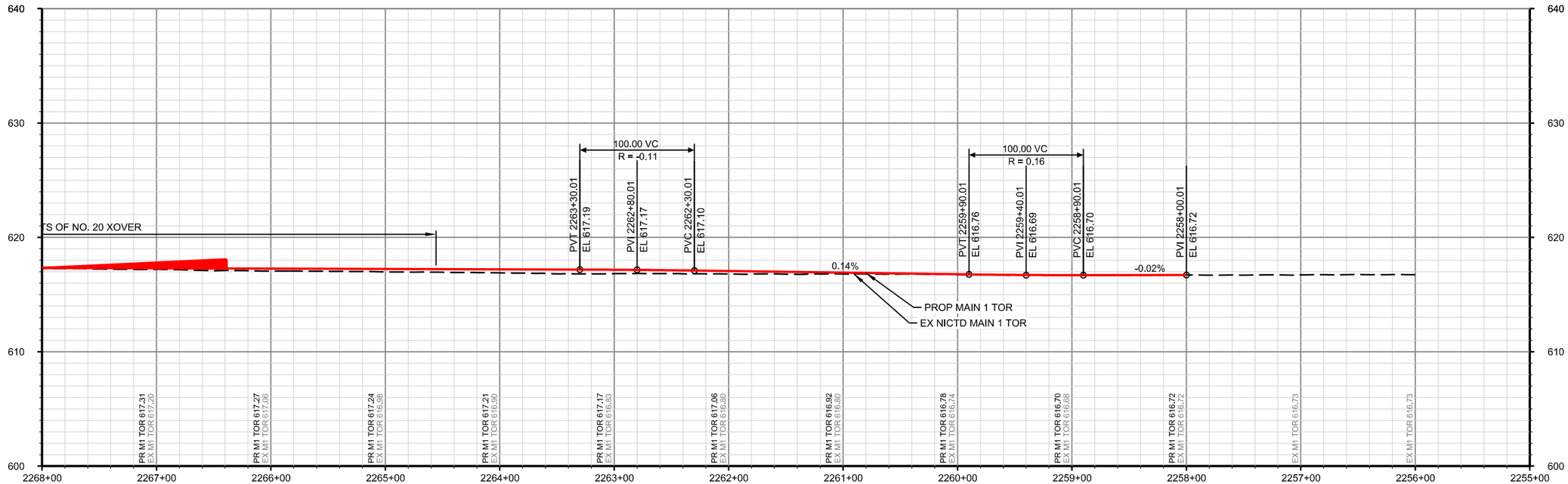
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

MAIN 1 PROFILE
MAIN 1 STA 2314+00 TO 2342+00
MP 43.8 TO 44.4

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 1 PROFILES

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-109 OF RPP-116

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

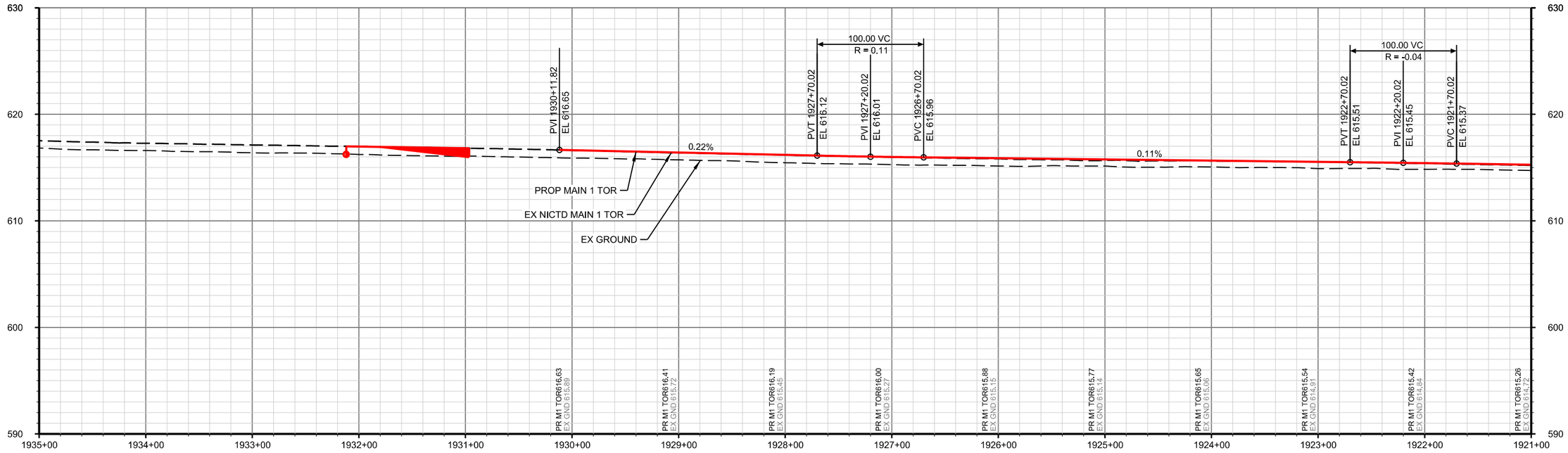
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

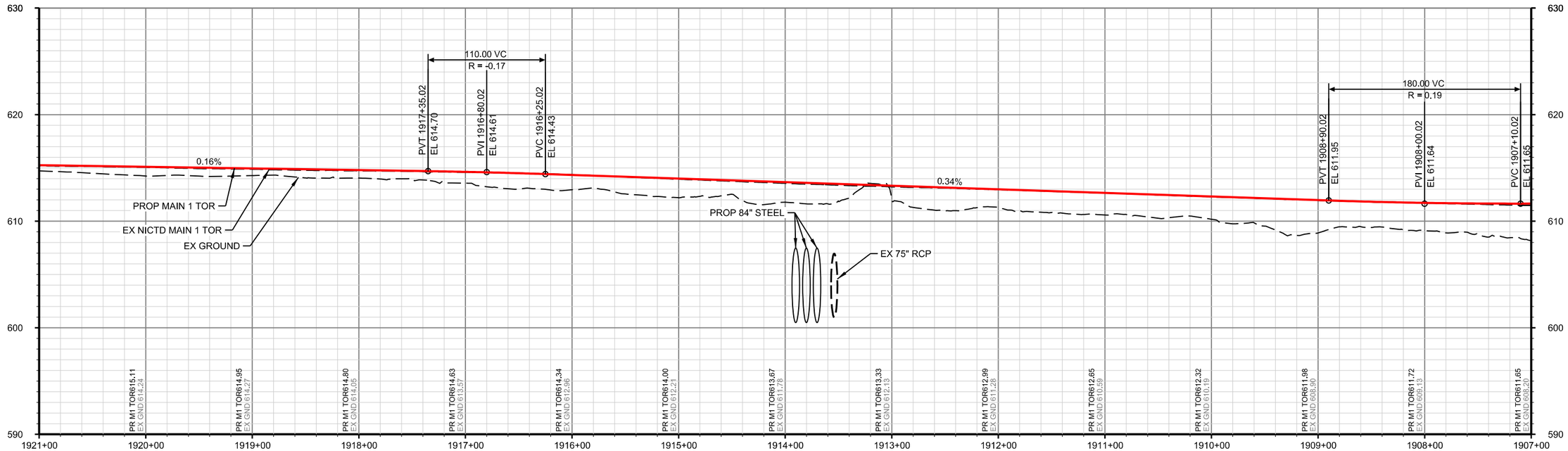
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

MAIN 1 PROFILE
MAIN 1 STA 2255+00 TO 2282+00
MP 42.8 TO 43.2

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100
HORIZONTAL SCALE

10 5 0 10 20
VERTICAL SCALE

PROP MAIN 1 PROFILES

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-110 OF RPP-116

PLOT DATE: 4/30/2020 10:25:58 PM kkoehneke

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

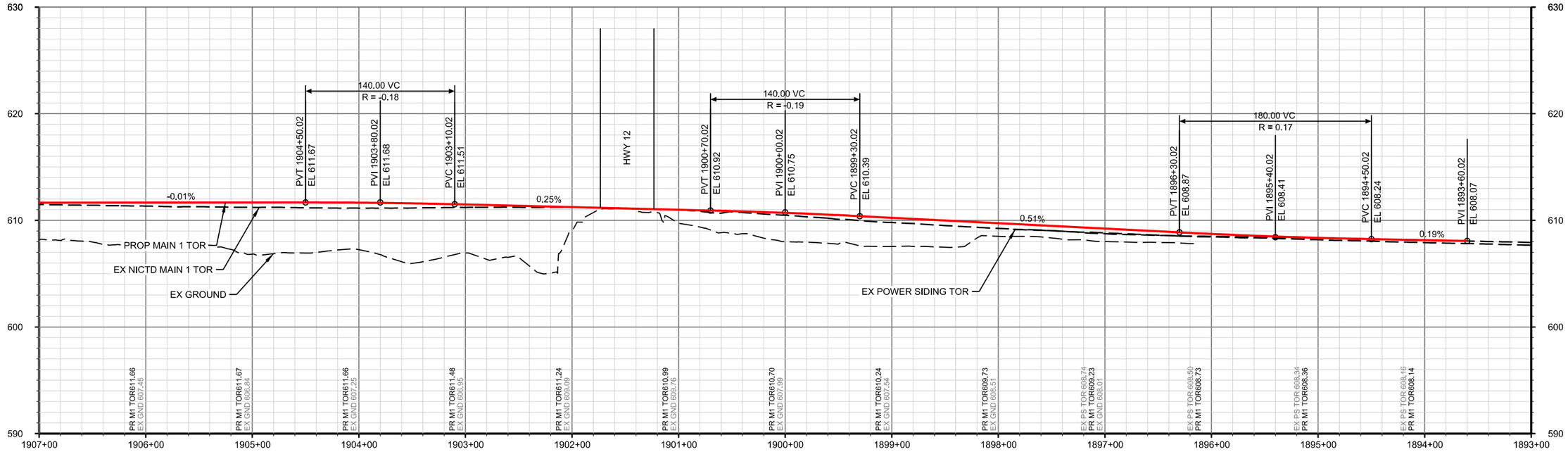
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

MAIN 1 PROFILE
MAIN 1 STA 1907+00 TO 1935+00
MP 36.1 TO 36.6

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



50 25 0 50 100
HORIZONTAL SCALE

10 5 0 10 20
VERTICAL SCALE

PROP MAIN 1 PROFILES

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-111 OF RPP-116

PLOT DATE: 4/30/2020 10:25:59 PM kkoehneke

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33 East Highway 12
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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

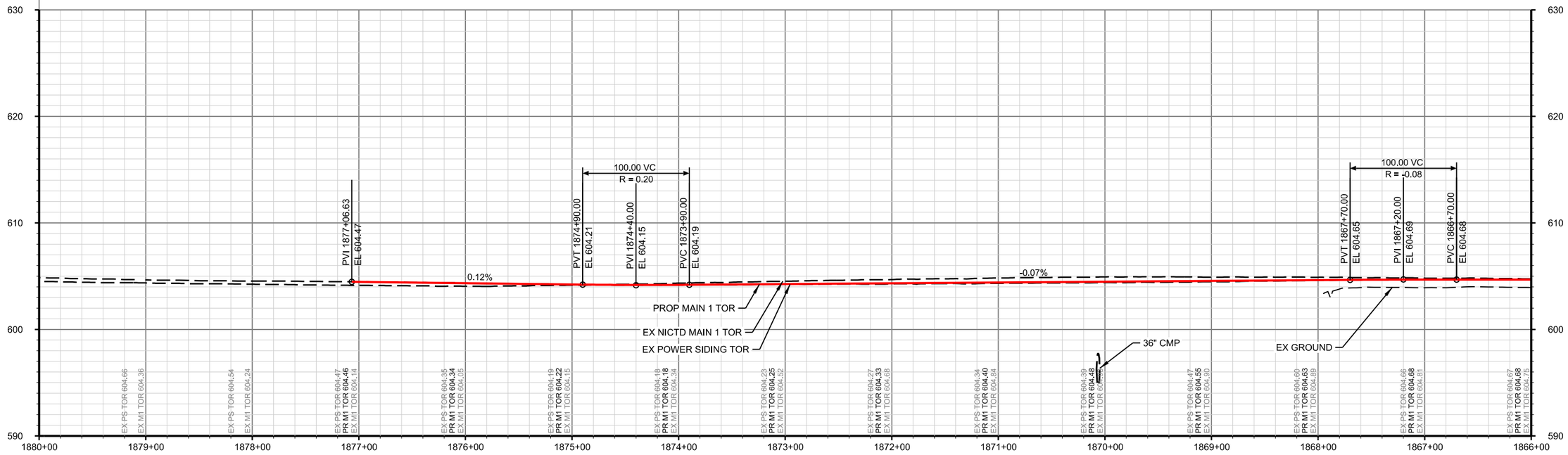
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

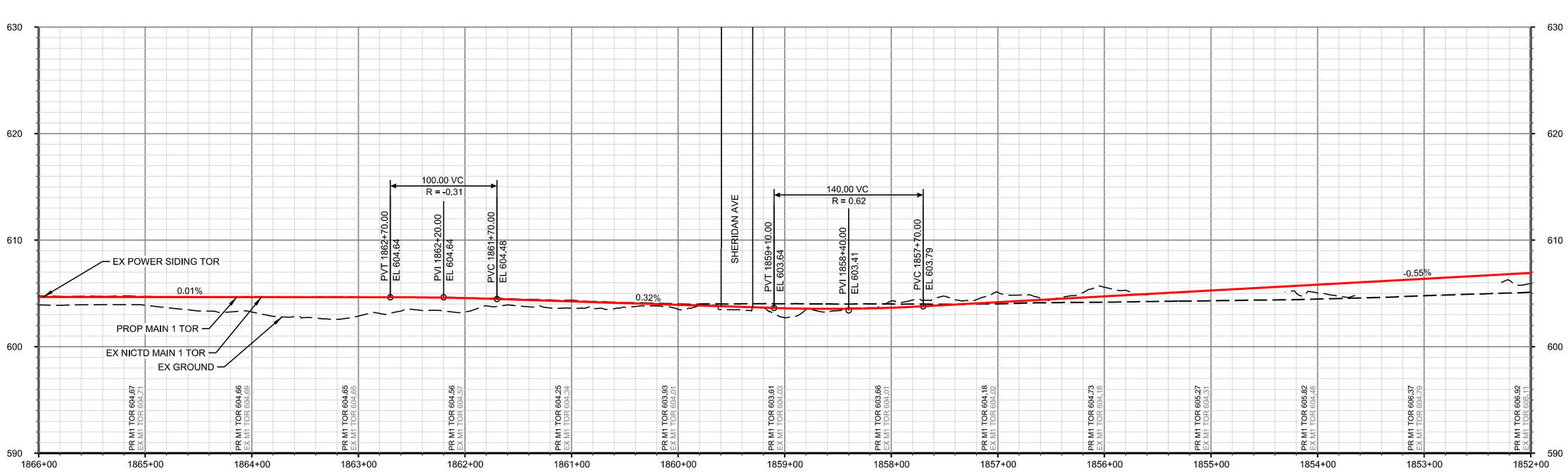
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

MAIN 1 PROFILE
MAIN 1 STA 1893+00 TO 1907+00
MP 35.8 TO 36.1

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 1 PROFILES

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-112 OF RPP-116

PLOT DATE: 4/30/2020 10:26:00 PM kkoehneke

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Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

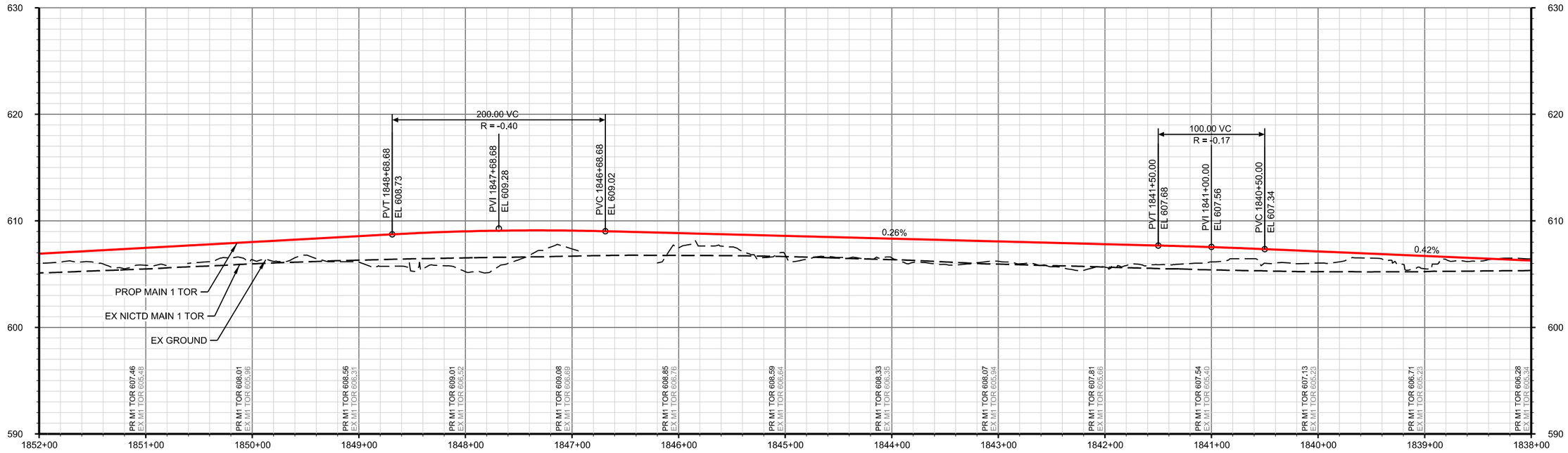
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

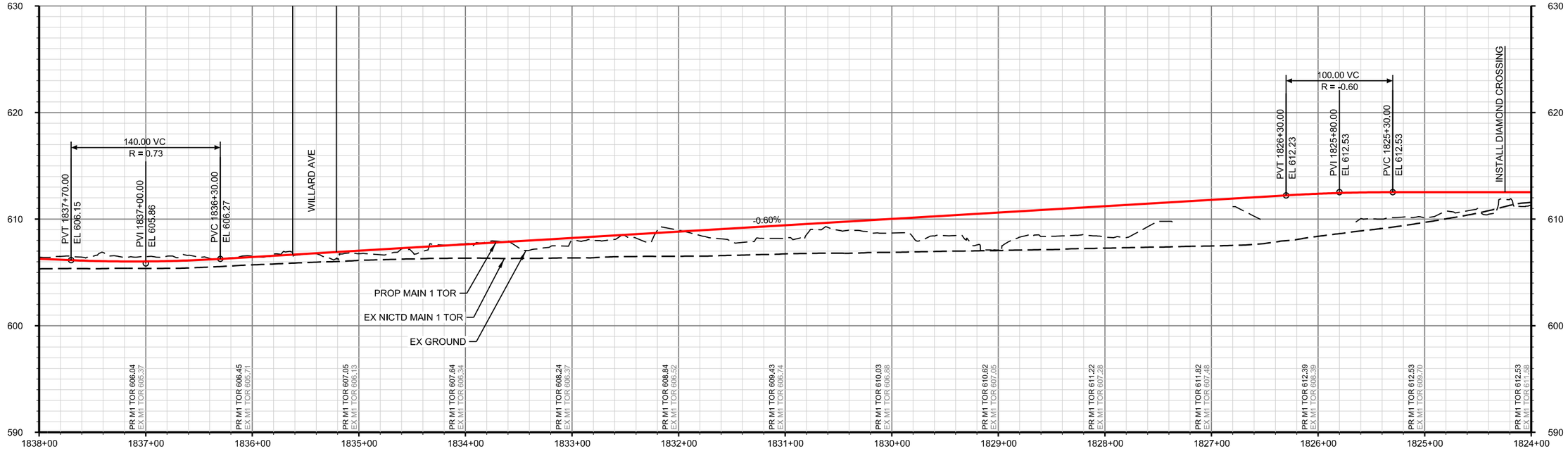
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

MAIN 1 PROFILE
MAIN 1 STA 1852+00 TO 1880+00
MP 35.1 TO 35.6

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 1 PROFILES

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-113 OF RPP-116

PLOT DATE: 4/30/2020 10:26:01 PM kkoehneke

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ISSUE	DATE	DESCRIPTION
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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

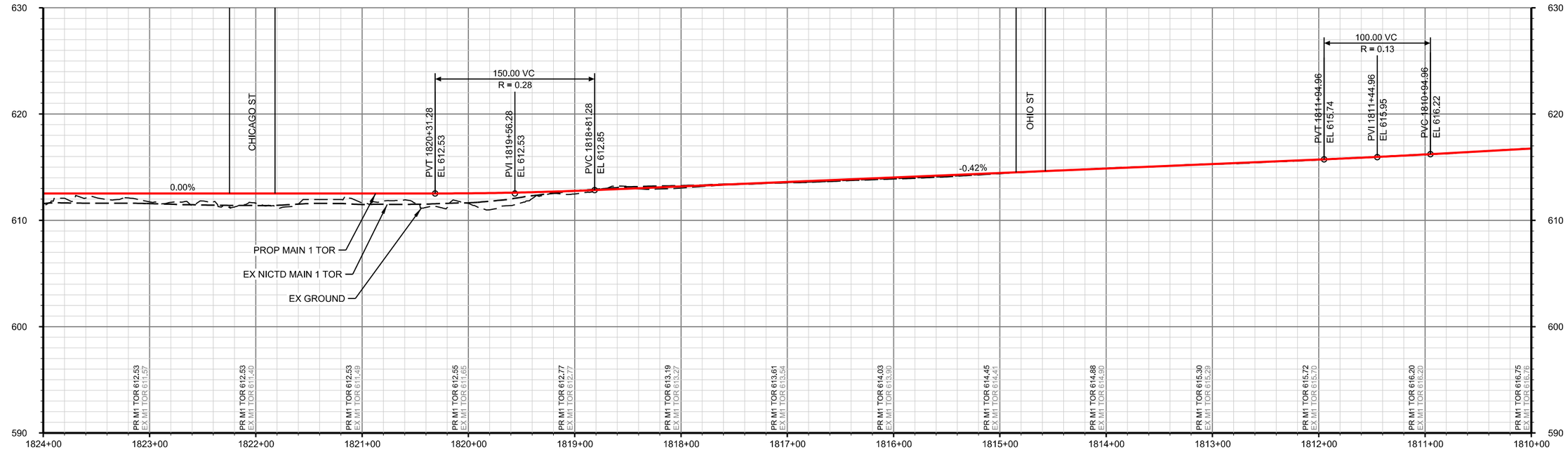
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

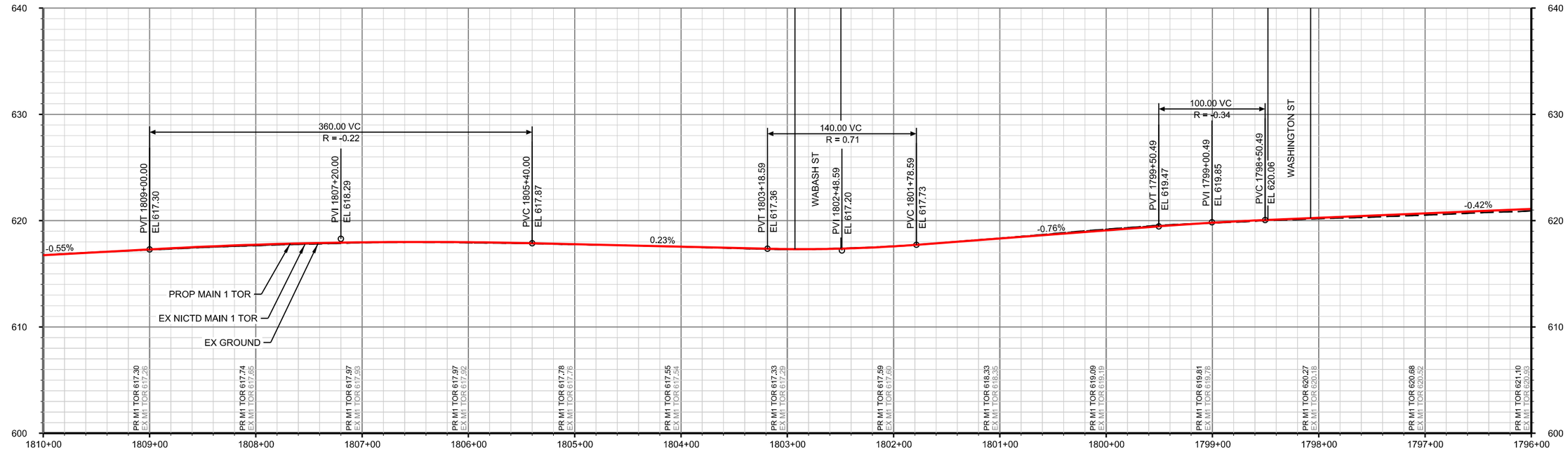
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

MAIN 1 PROFILE
MAIN 1 STA 1824+00 TO 1852+00
MP 34.5 TO 35.1

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 1 PROFILES

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-114 OF RPP-116

PLOT DATE: 4/30/2020 10:26:02 PM kkoehneke

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Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

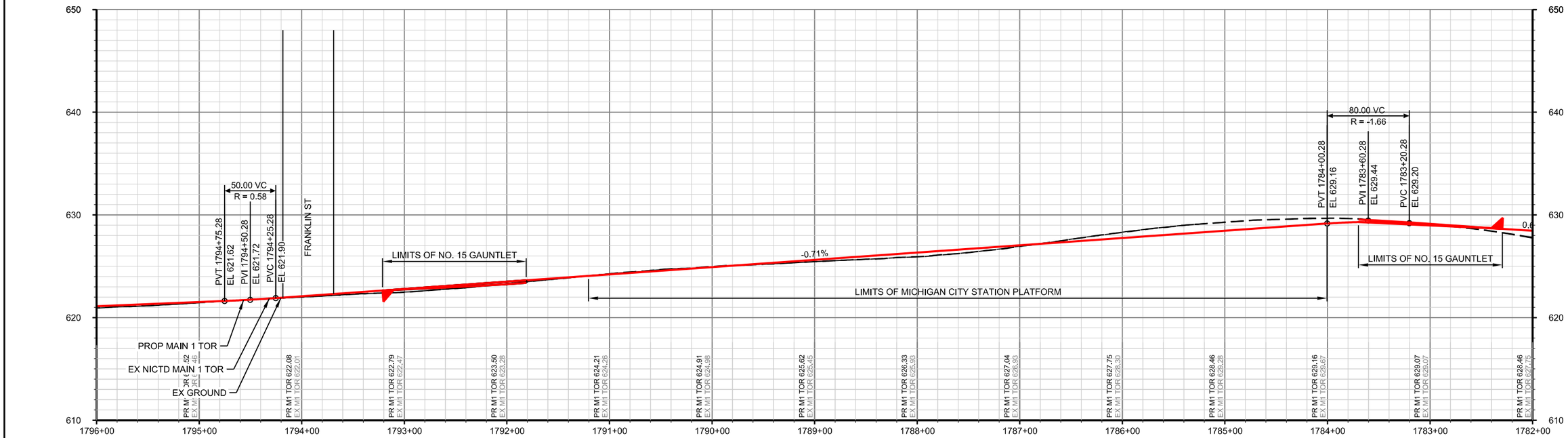
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

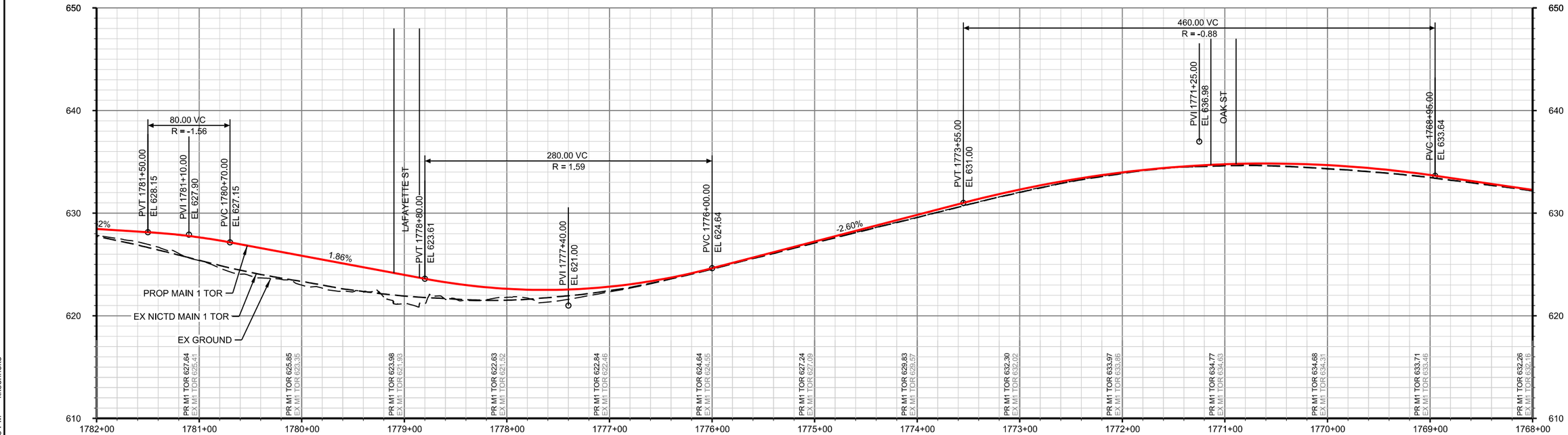
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

MAIN 1 PROFILE
MAIN 1 STA 1796+00 TO 1824+00
MP 34.0 TO 34.5

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP MAIN 1 PROFILES

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-115 OF RPP-116

PLOT DATE: 4/30/2020 10:26:03 PM kkoehneke

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PATRICK ENGINEERING

ISSUE	DATE	DESCRIPTION
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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

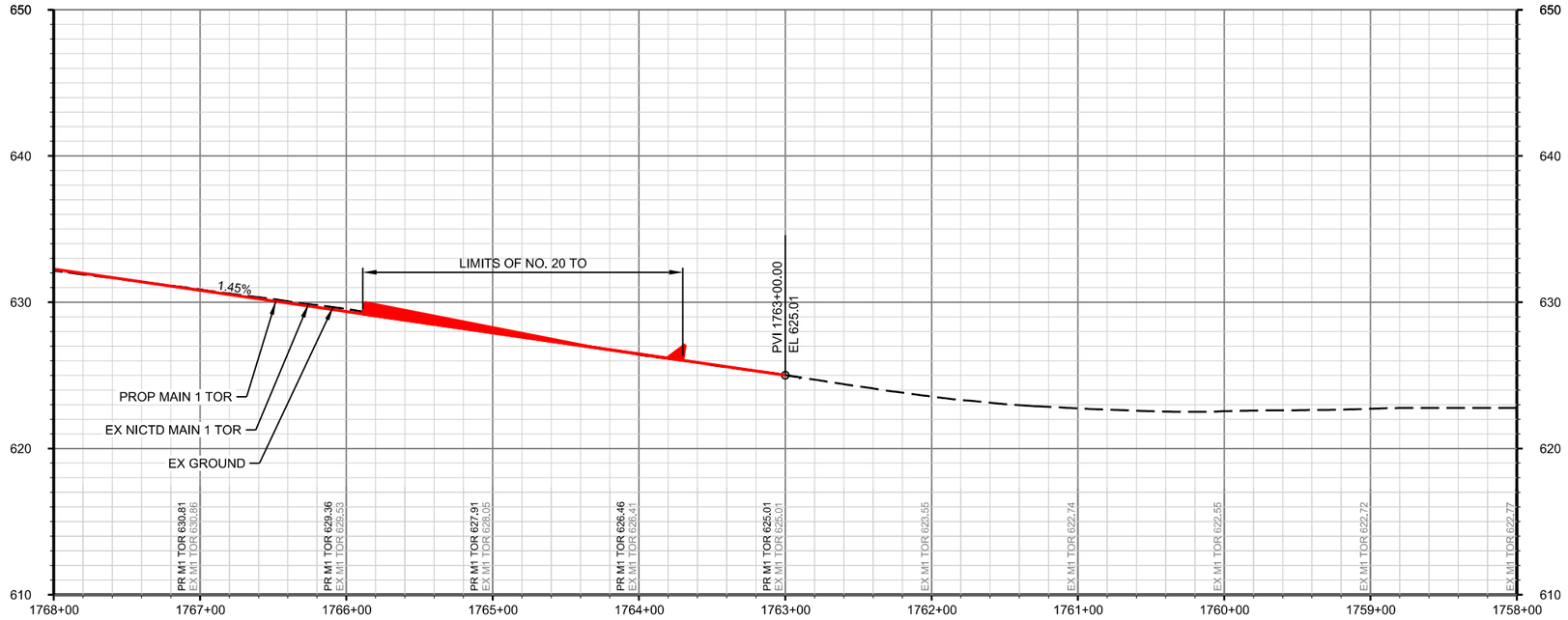
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

MAIN 1 PROFILE
MAIN 1 STA 1768+00 TO 1796+00
MP 33.5 TO 34.0

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



50 25 0 50 100
HORIZONTAL SCALE

10 5 0 10 20
VERTICAL SCALE

PROP MAIN 1 PROFILES

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-116 OF RPP-116

PLOT DATE: 4/30/2020 10:26:03 PM kkoehneke

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PATRICK ENGINEERING

ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

NICTD
NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

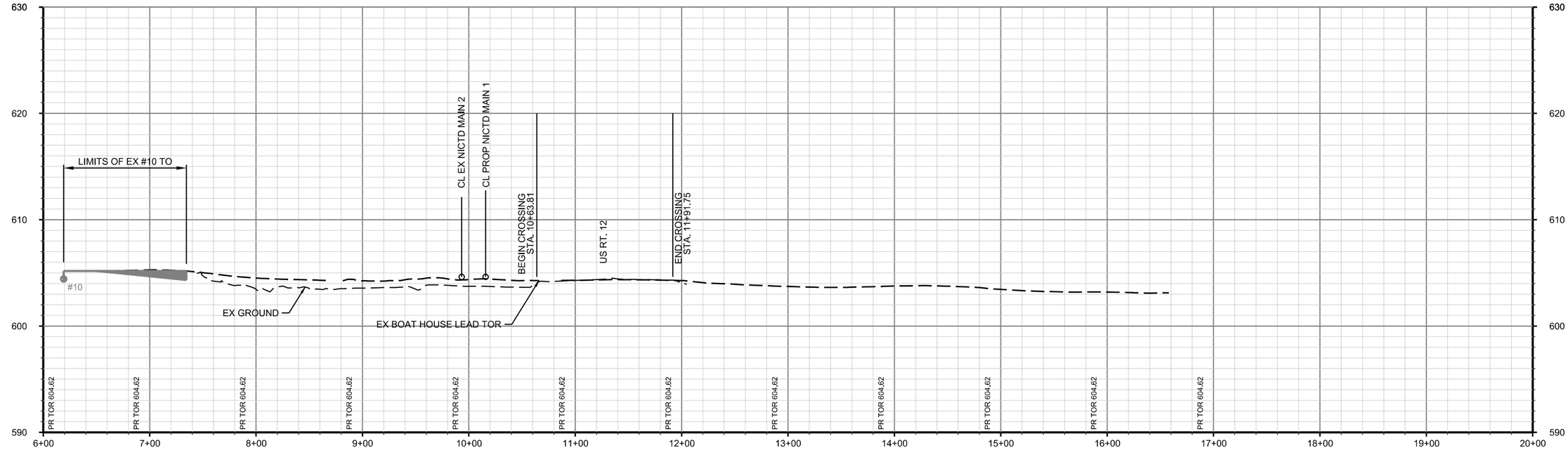
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

MAIN 1 PROFILE
MAIN 1 STA 1758+00 TO 1768+00
MP 33.4 TO 33.5

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



50 25 0 50 100
HORIZONTAL SCALE

10 5 0 10 20
VERTICAL SCALE

PROP BOAT HOUSE LEAD PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-117 OF RPP-117

PLOT DATE: 4/30/2020 10:26:04 PM kkoehneke

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PATRICK ENGINEERING

ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

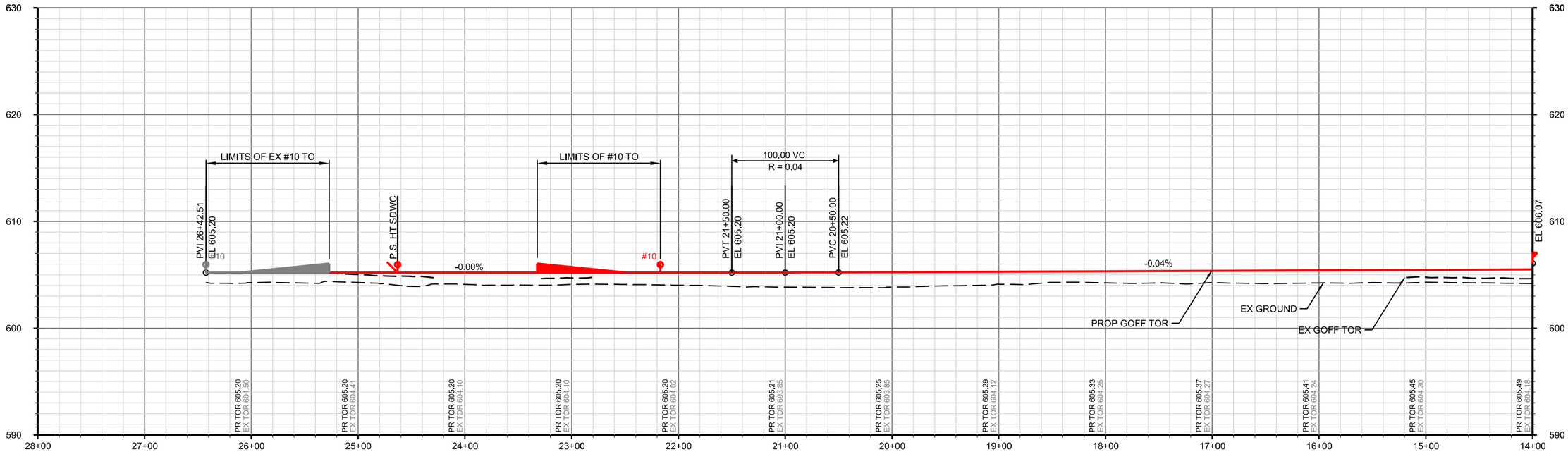
DESIGNED:	PEI-DJS
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

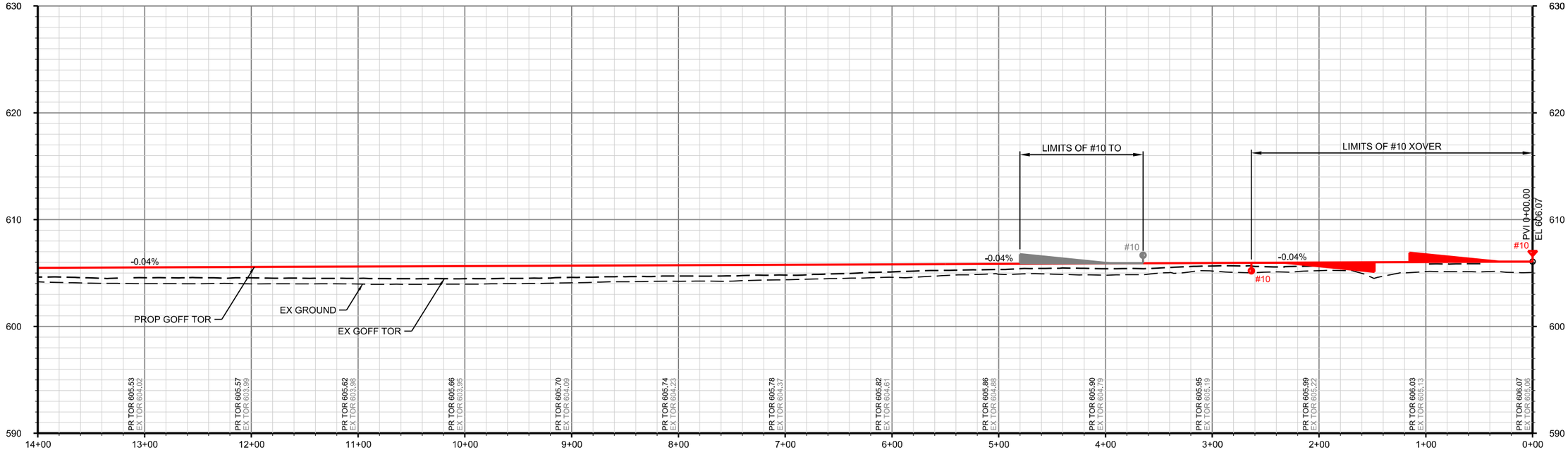
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BOAT HOUSE LEAD PROFILE
STA 6+00 TO 20+00
MP 57.5 TO 57.6

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP GOFF SIDING PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-118 OF RPP-118

PLOT DATE: 4/30/2020 10:26:04 PM kkoehneke

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ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

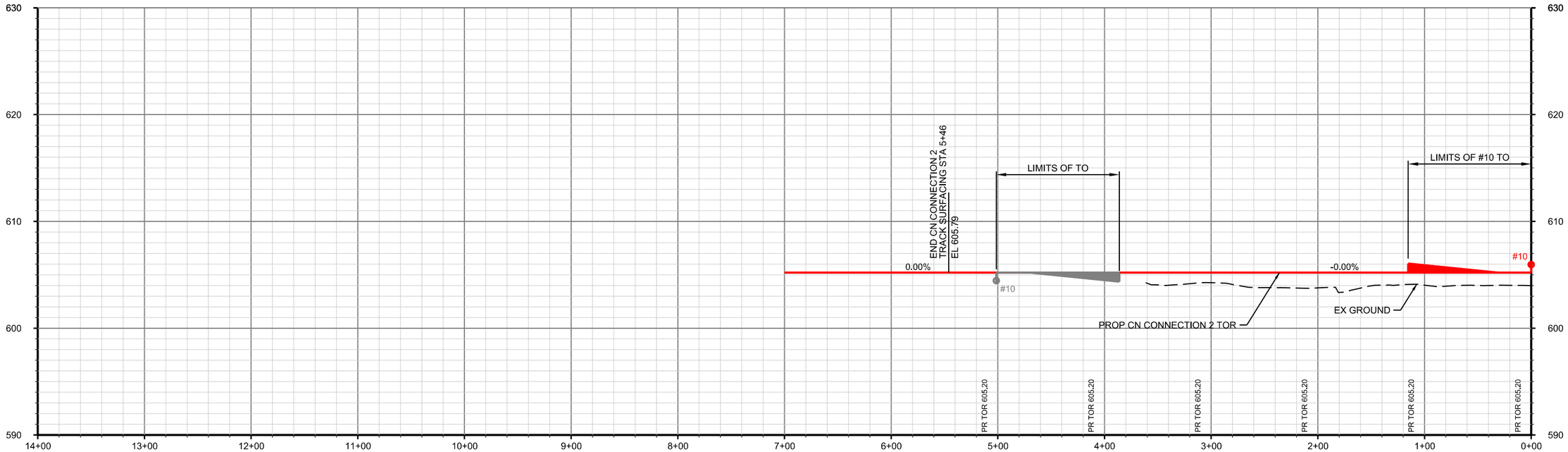
DESIGNED:	PEI-DJS
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

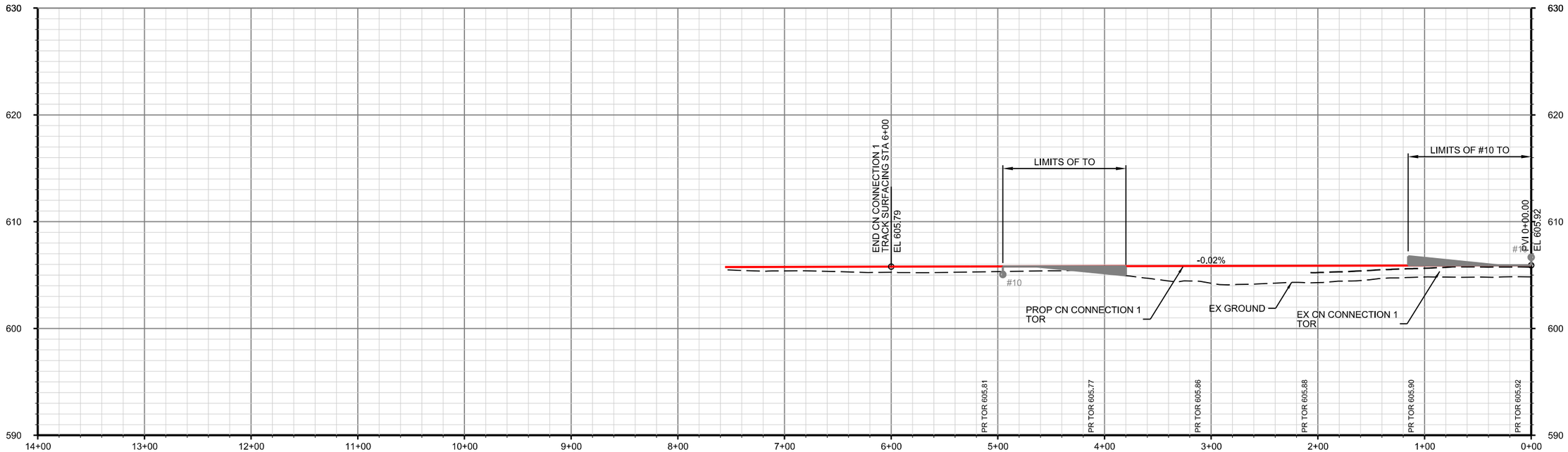
PROP GOFF SIDING
STA 0+00 TO 28+00
MP 56.2 TO 57.2

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



PROP CN CONNECTION 2 TRACK PROFILE



PROP CN CONNECTION 1 TRACK PROFILE

50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PLOT DATE: 4/30/2020 10:26:05 PM kkoehneke

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-119 OF RPP-119

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ISSUE	DATE	DESCRIPTION
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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

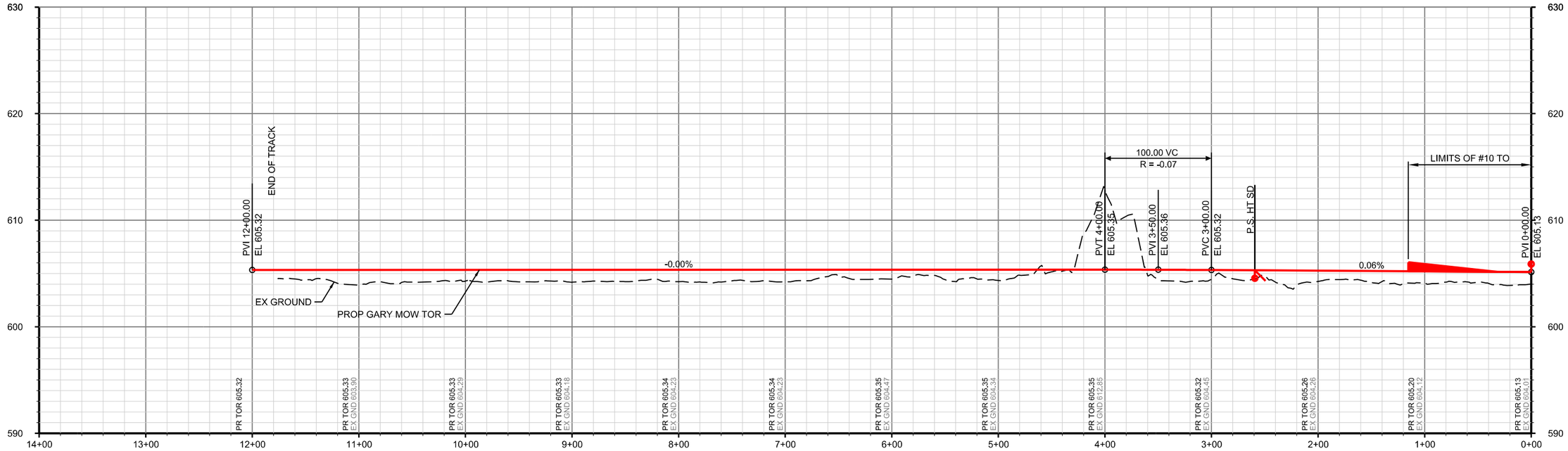
DESIGNED:	PEI-DJS
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PROP CN CONNECTION TRACKS
STA 0+00 TO 14+00
MP 57.0 TO 57.2, 56.7 TO 56.8

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



50 25 0 50 100
HORIZONTAL SCALE

10 5 0 10 20
VERTICAL SCALE

PROP NICTD MOW PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-120 OF RPP-120

PLOT DATE: 4/30/2020 10:26:05 PM kkoehneke

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ISSUE	DATE	DESCRIPTION
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NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

MICHIGAN CITY TO GARY, INDIANA

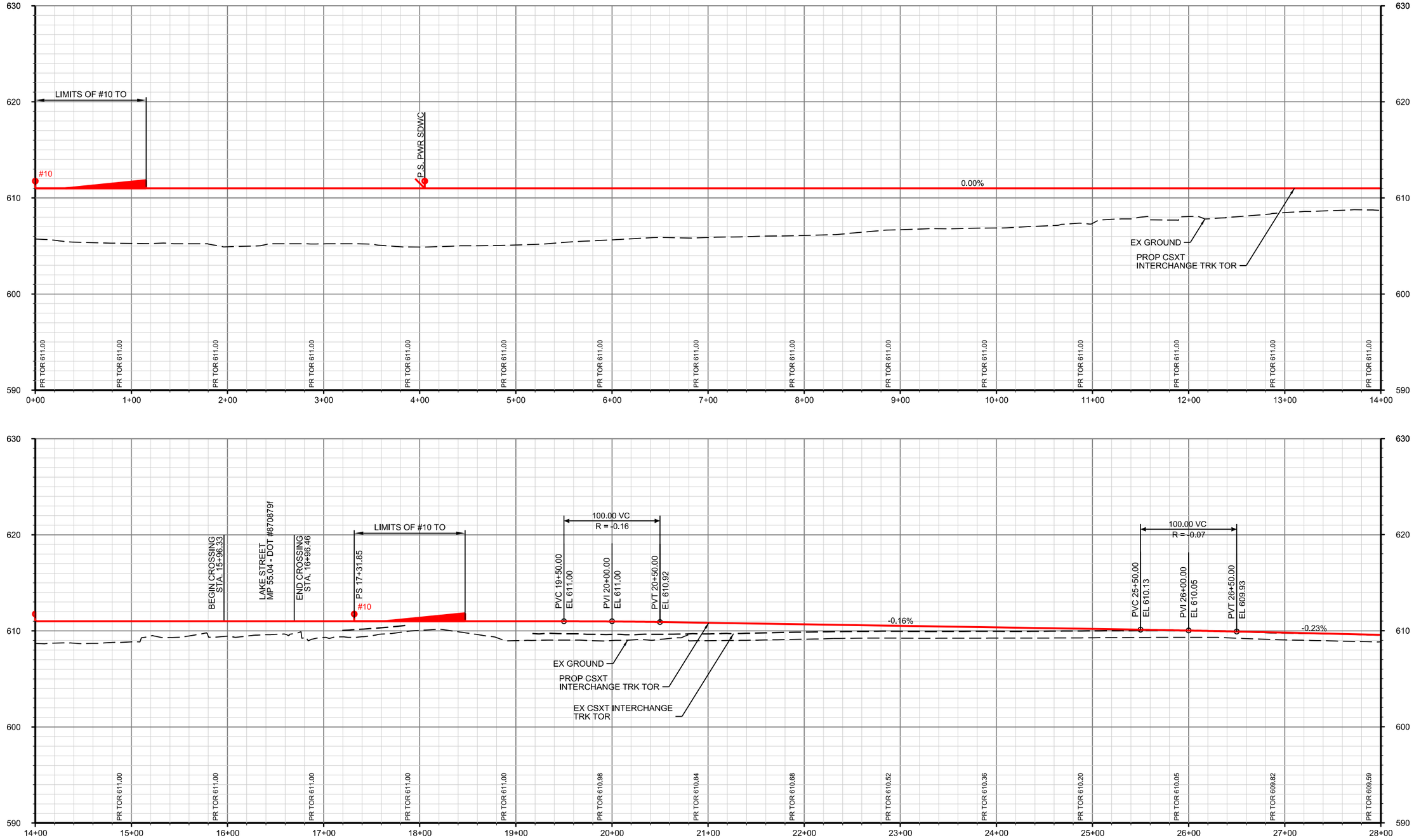
DESIGNED:	PEI-DJS
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PROP NICTD MOW TRACK
STA 0+00 TO 14+00
MP 56.9 TO 57.2

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

CSX CONNECTION PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-121 OF RPP-122

PLOT DATE: 4/30/2020 10:26:06 PM kkoehneke

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ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

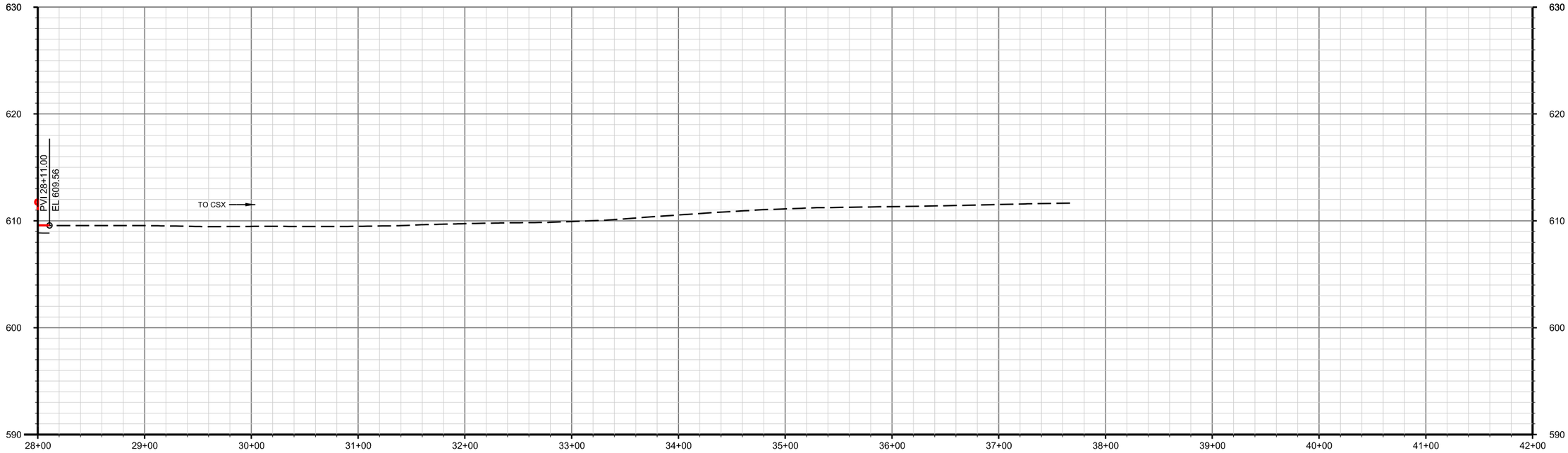
DESIGNED:	PEI-DJS
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

CSX CONNECTION TRACK PROFILE
STA 0+00 TO 28+00
MP 54.9 TO 55.4

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



50 25 0 50 100
HORIZONTAL SCALE

10 5 0 10 20
VERTICAL SCALE

CSX CONNECTION TRACK PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-122 OF RPP-122

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ISSUE	DATE	DESCRIPTION
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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	PEI-DJS
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

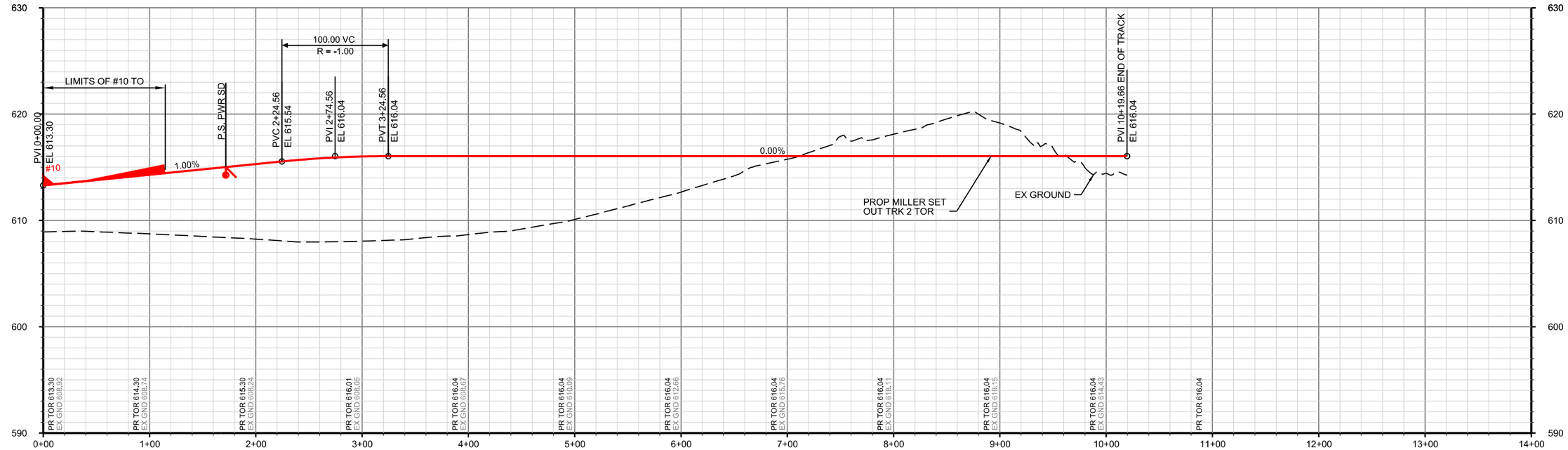
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

CSX CONNECTION TRACK PROFILE
STA 28+00 TO 42+00
MP 54.8 TO 54.9

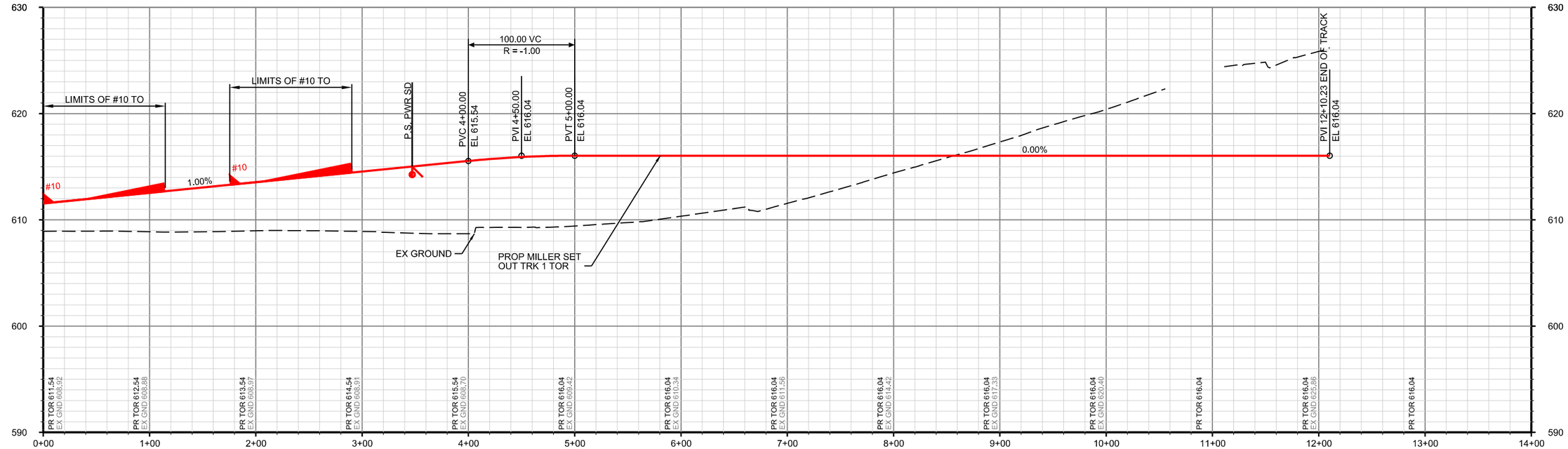
FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF

PLOT DATE: 4/30/2020 10:26:07 PM kkoehneke



MILLER SET OUT TRACK 2 PROFILE



MILLER SET OUT TRACK 1 PROFILE

50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

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60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-123 OF RPP-123

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ISSUE	DATE	DESCRIPTION
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NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

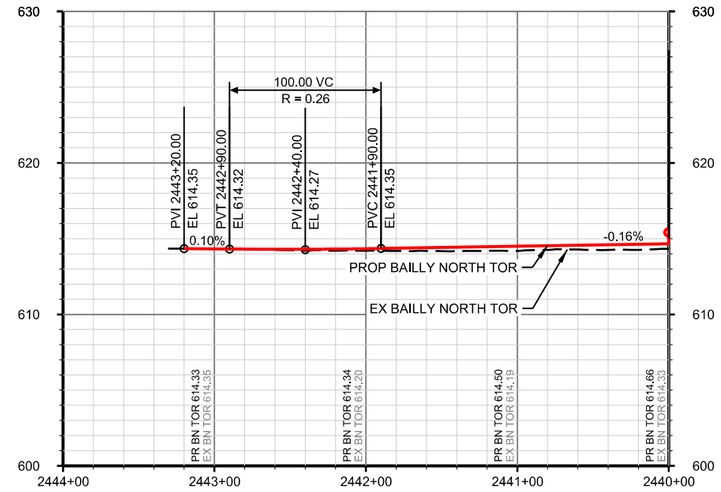
DESIGNED:	PEI-DJS
DRAWN:	PEI-ALH
CHECKED:	PEI-SPH
DATE:	03/16/2020

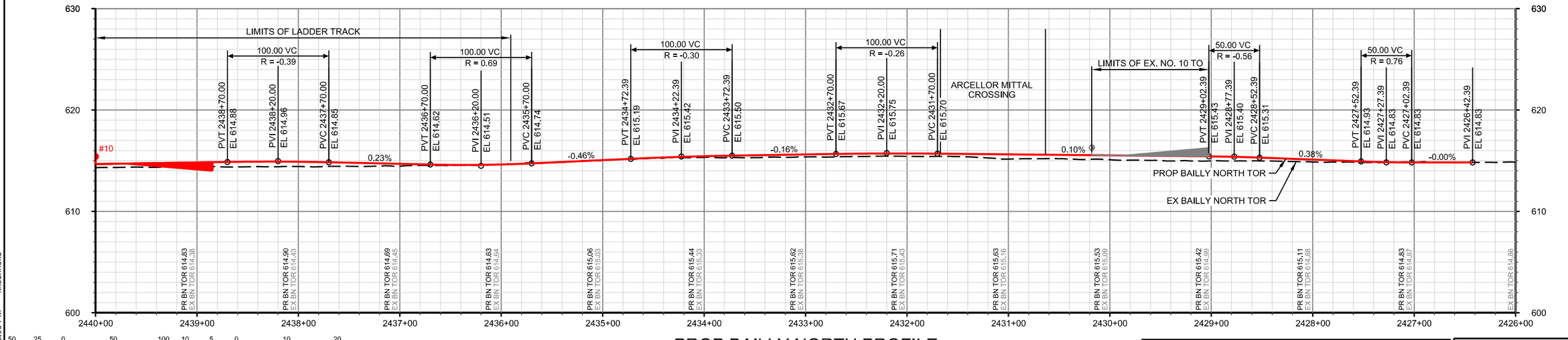
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

MILLER SET OUT TRACKS PROFILES STA 0+00 TO 14+00 MP 54.8 TO 55.0

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP BAILLY NORTH PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-124 OF RPP-124

PLOT DATE: 4/30/2020 10:26:08 PM kkoehneke

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ISSUE	DATE	DESCRIPTION
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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

MICHIGAN CITY TO GARY, INDIANA

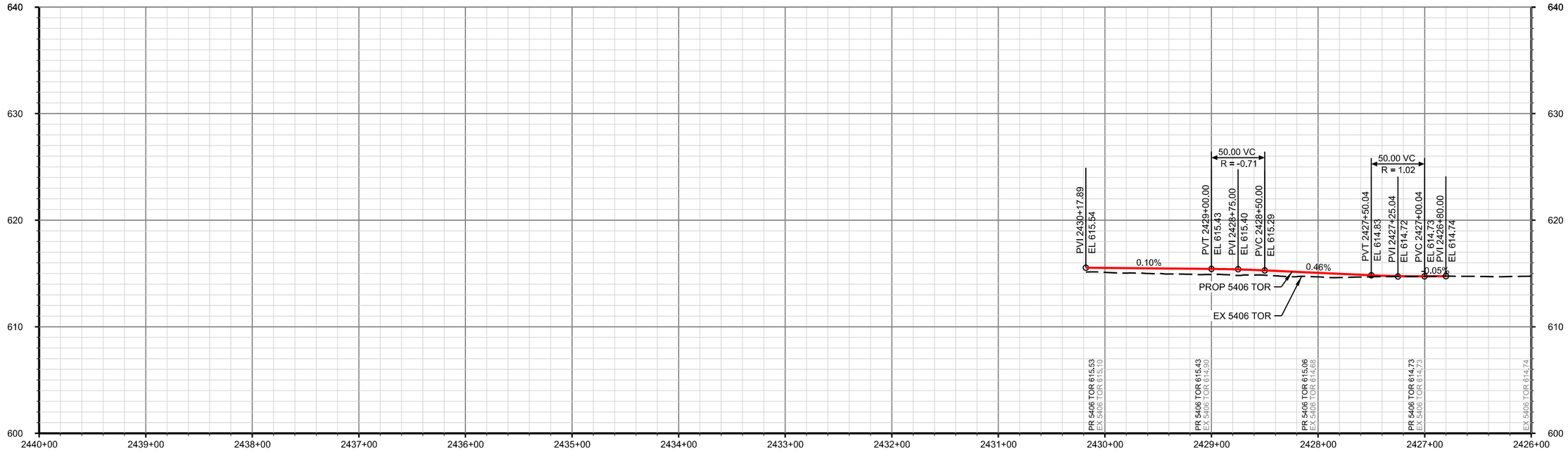
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

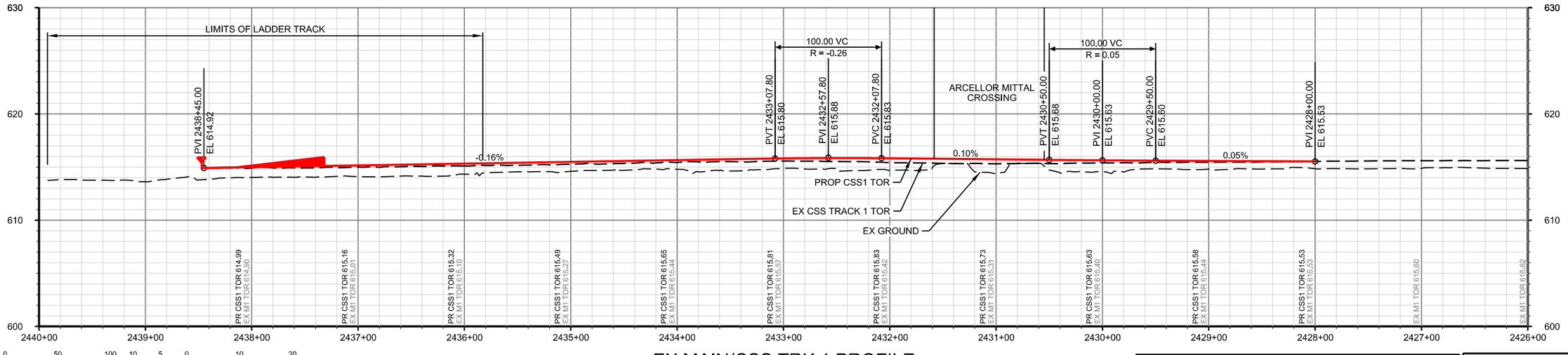
PROP BAILLY NORTH PROFILE
STA 2426+00 TO 2444+00
MP 46.0 TO 46.3

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



PROP 5406 PROFILE



EX MAIN/CSS TRK 1 PROFILE

10:26:09 PM kkoehneke

PLOT DATE: 4/30/2020

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-125 OF RPP-125

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ISSUE	DATE	DESCRIPTION
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33 East Highway 12
Chesterton, Indiana 46304

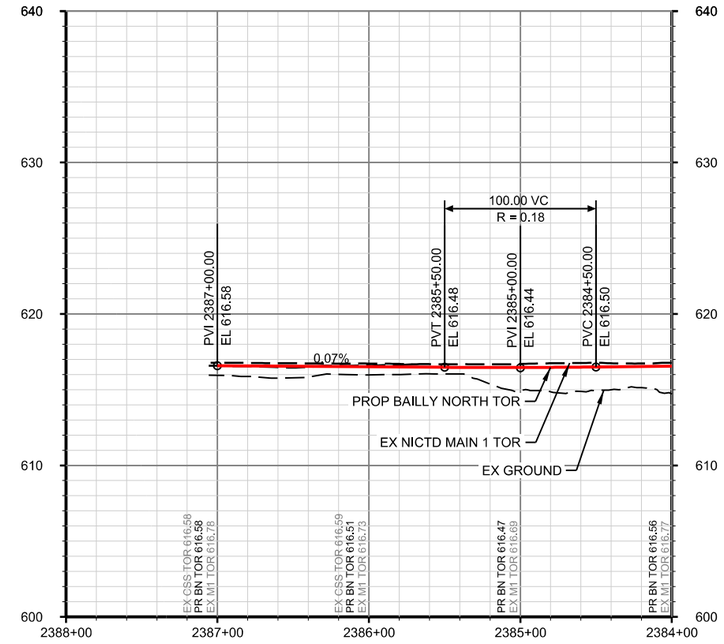
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

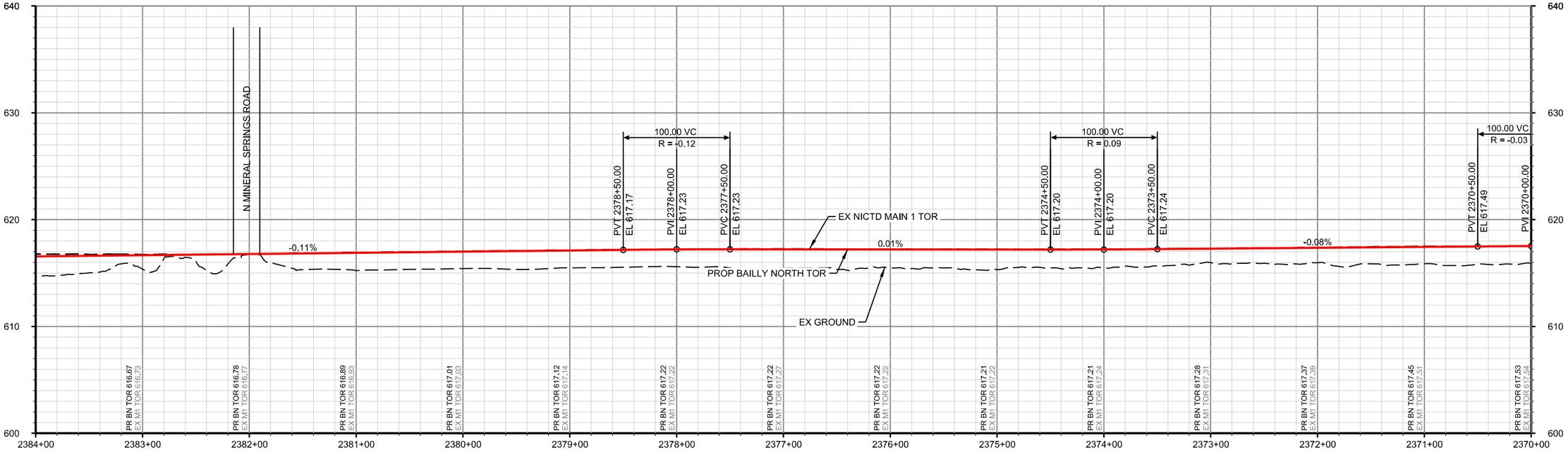
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PROP 5406, CSS TRK1 PROFILE
STA 2426+00 TO 2440+00
MP 46.0 TO 46.2

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED
SHEET	OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

BAILLY NORTH PROFILES

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-126 OF RPP-128

PLOT DATE: 4/30/2020 10:26:10 PM kkoehneke

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PATRICK ENGINEERING

ISSUE	DATE	DESCRIPTION
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NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

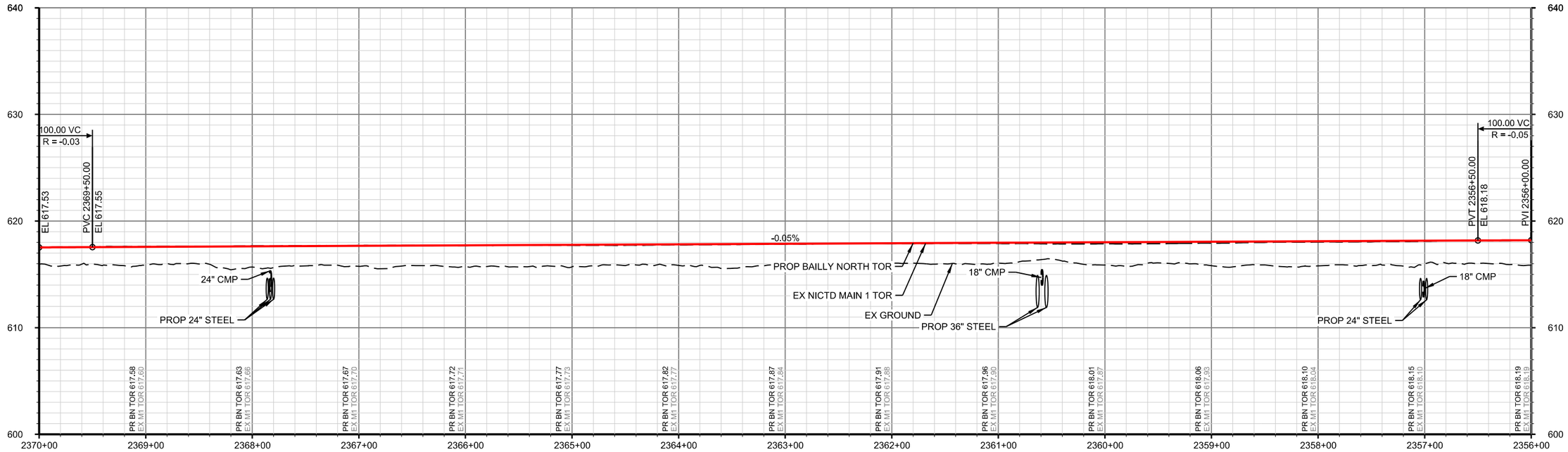
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

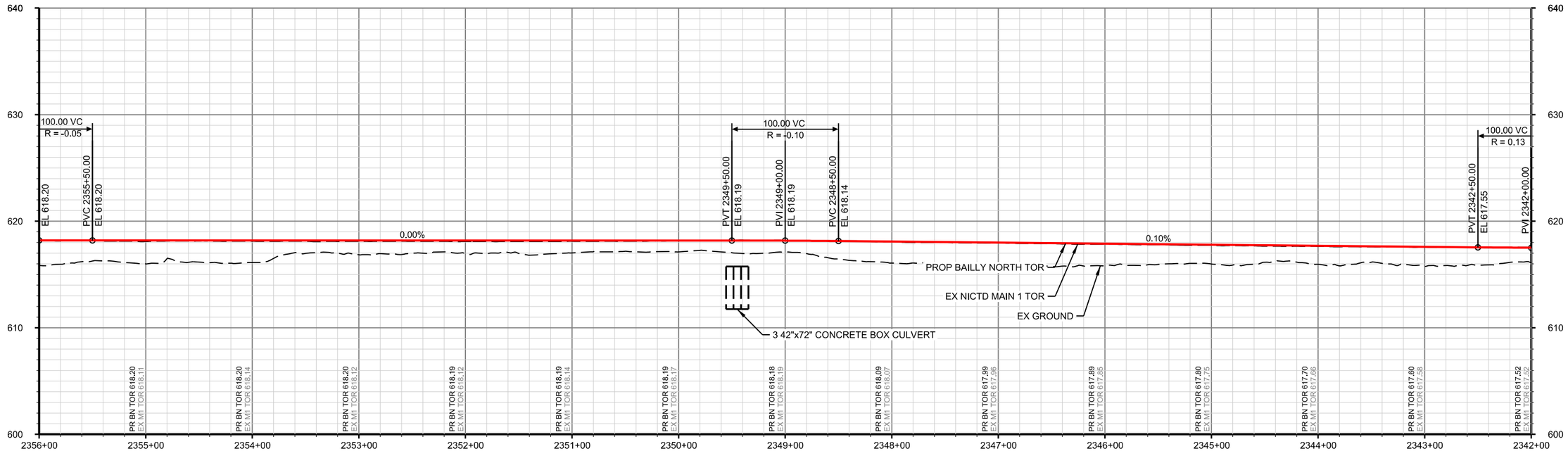
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PROP BAILLY NORTH
STA 2370+00 TO 2388+00
MP 44.9 TO 45.2

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





50 25 0 50 100 HORIZONTAL SCALE

10 5 0 10 20 VERTICAL SCALE

PROP BAILLY NORTH PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-127 OF RPP-128

PLOT DATE: 4/30/2020 10:26:11 PM kkoehneke

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PATRICK ENGINEERING

ISSUE	DATE	DESCRIPTION
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NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

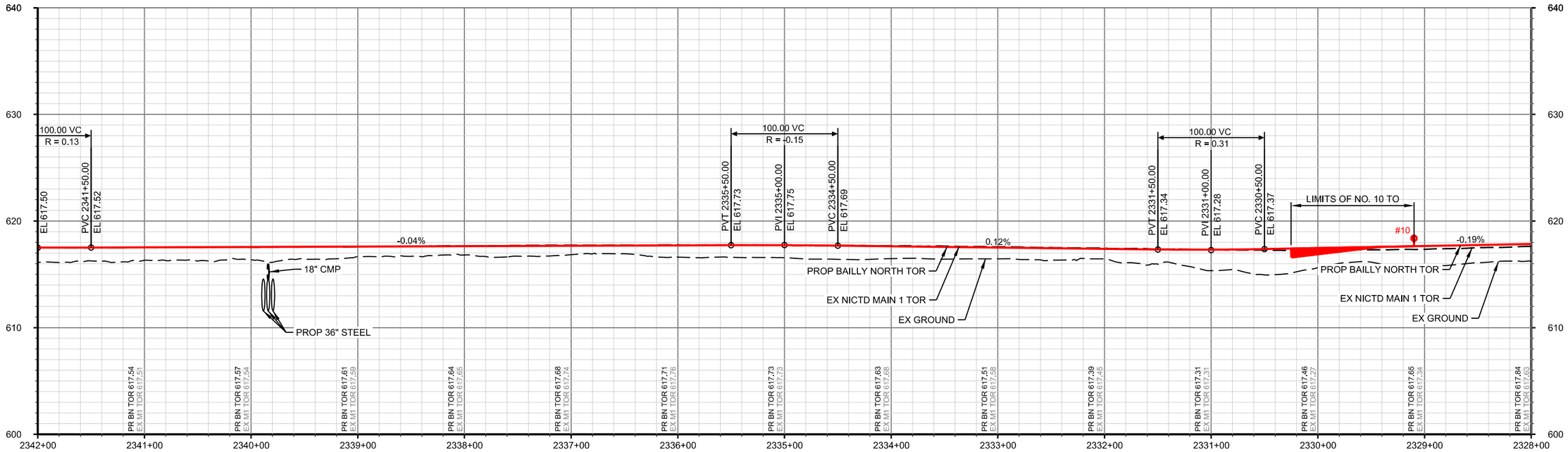
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

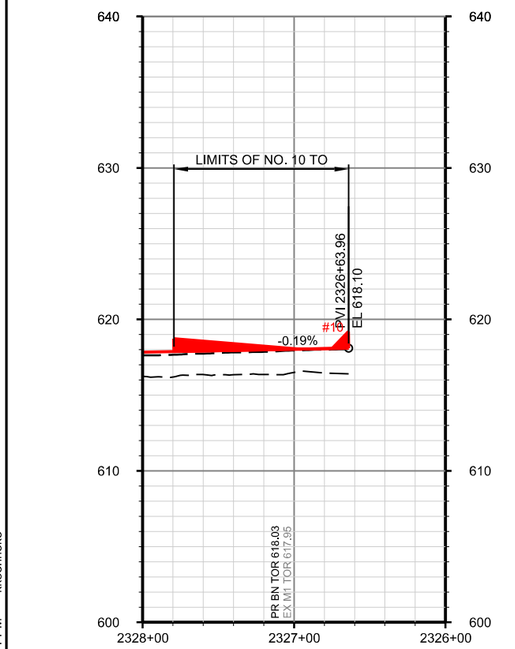
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PROP BAILLY NORTH
2342+00 TO 2370+00
MP 44.3 TO 45.2

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF





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PROP BAILLY NORTH PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-128 OF RPP-128

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PATRICK ENGINEERING

ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

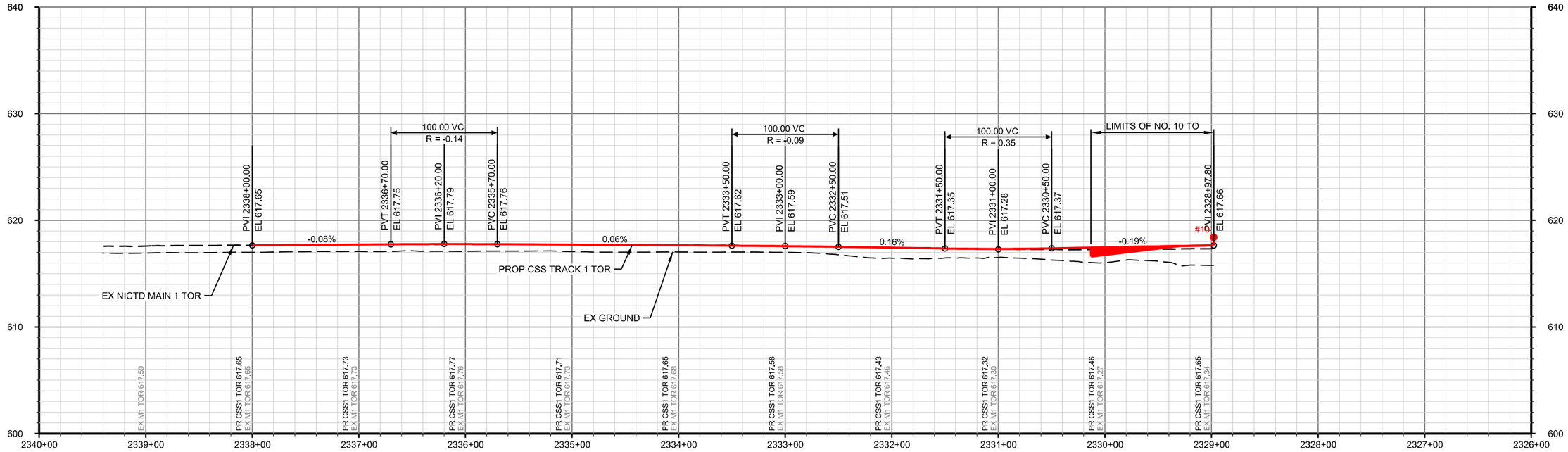
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PROP BAILLY NORTH PROFILE
STA 2326+00 TO 2342+00
MP 44.1 TO 44.3

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



50 25 0 50 100
HORIZONTAL SCALE

10 5 0 10 20
VERTICAL SCALE

PROP CSS TRK 1 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-129 OF RPP-129

PLOT DATE: 4/30/2020 10:26:12 PM kkoehneke

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TEL: (312) 373-7700
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PATRICK ENGINEERING

ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

NICTD
NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

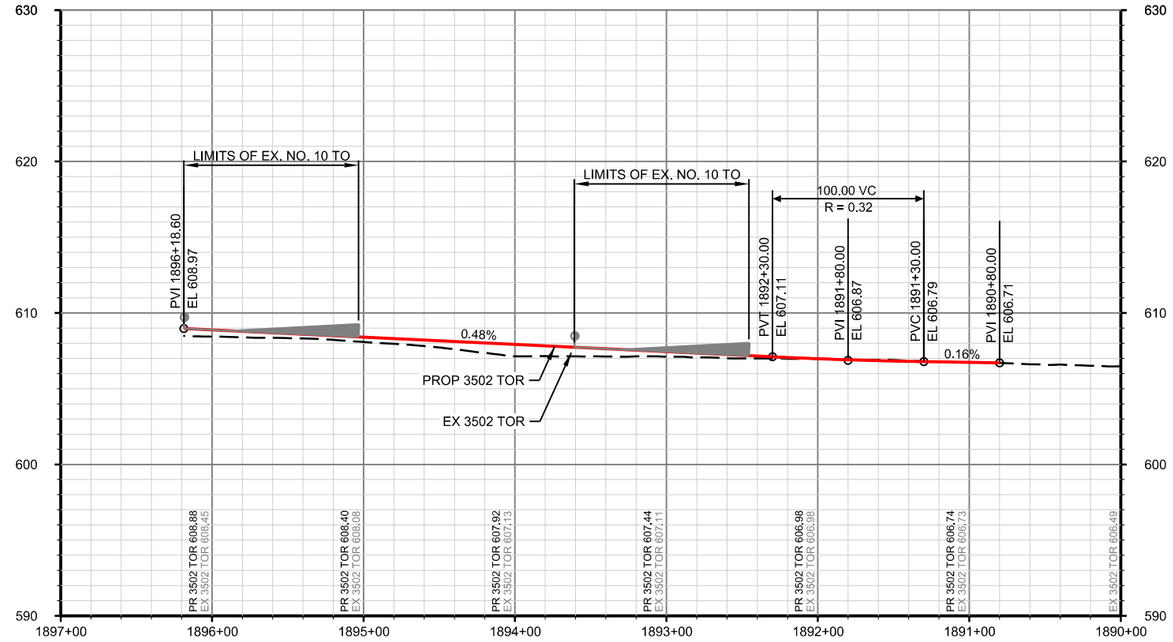
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PROP CSS TRK 1 PROFILE
STA 2326+00 TO 2340+00
MP 44.0 TO 44.3

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



50 25 0 50 100
HORIZONTAL SCALE

10 5 0 10 20
VERTICAL SCALE

PROP 3502 PROFILE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RPP-130 OF RPP-130

PLOT DATE: 4/30/2020 10:26:12 PM kkoehneke

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PATRICK ENGINEERING

ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

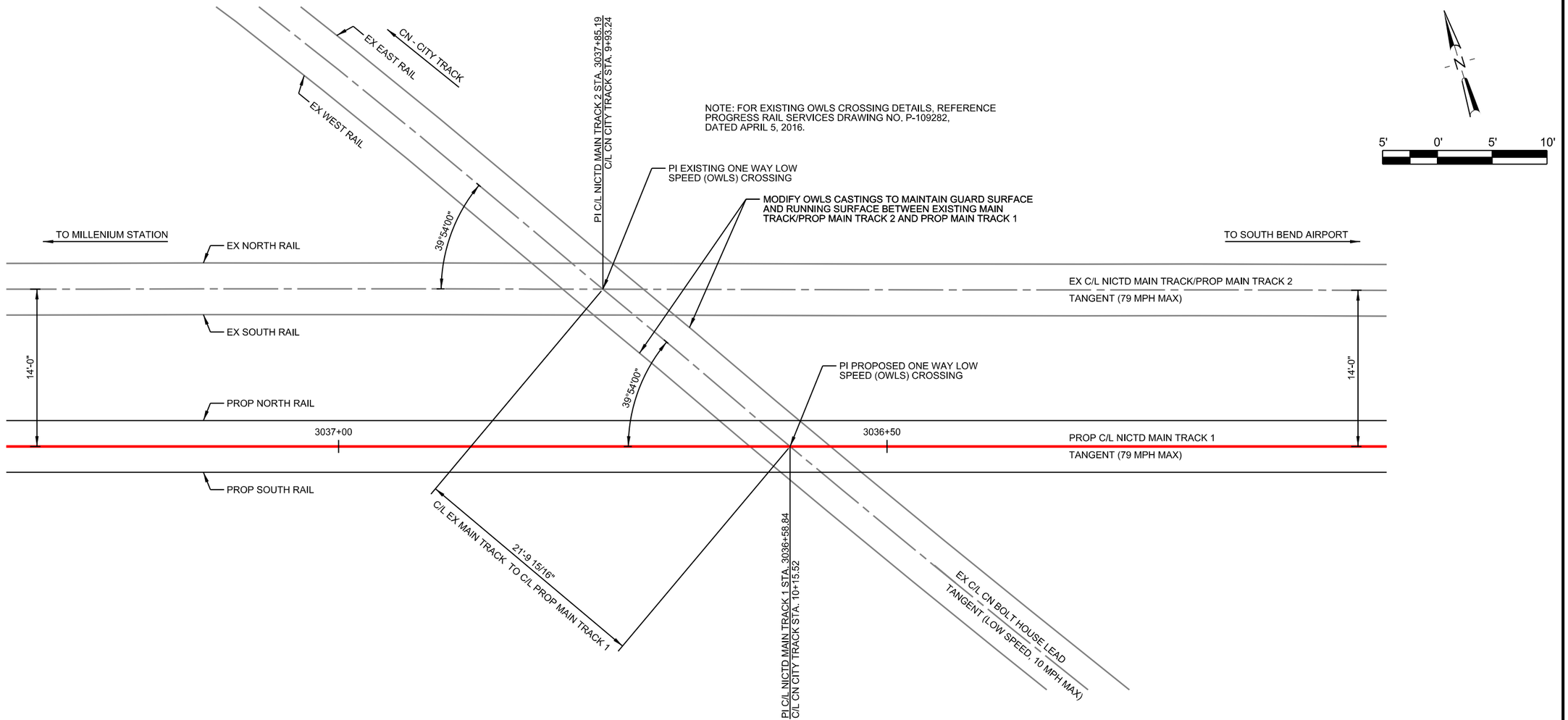
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PROP 3502 PROFILE
STA 1890+00 TO 1897+00
MP 35.8 TO 35.9

FILENAME	DT_DWG_RPP-001
SCALE	AS NOTED

SHEET OF



ALIGNMENT GEOMETRY FOR ONE WAY LOW SPEED CROSSING

CP 57.5 - JAY

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

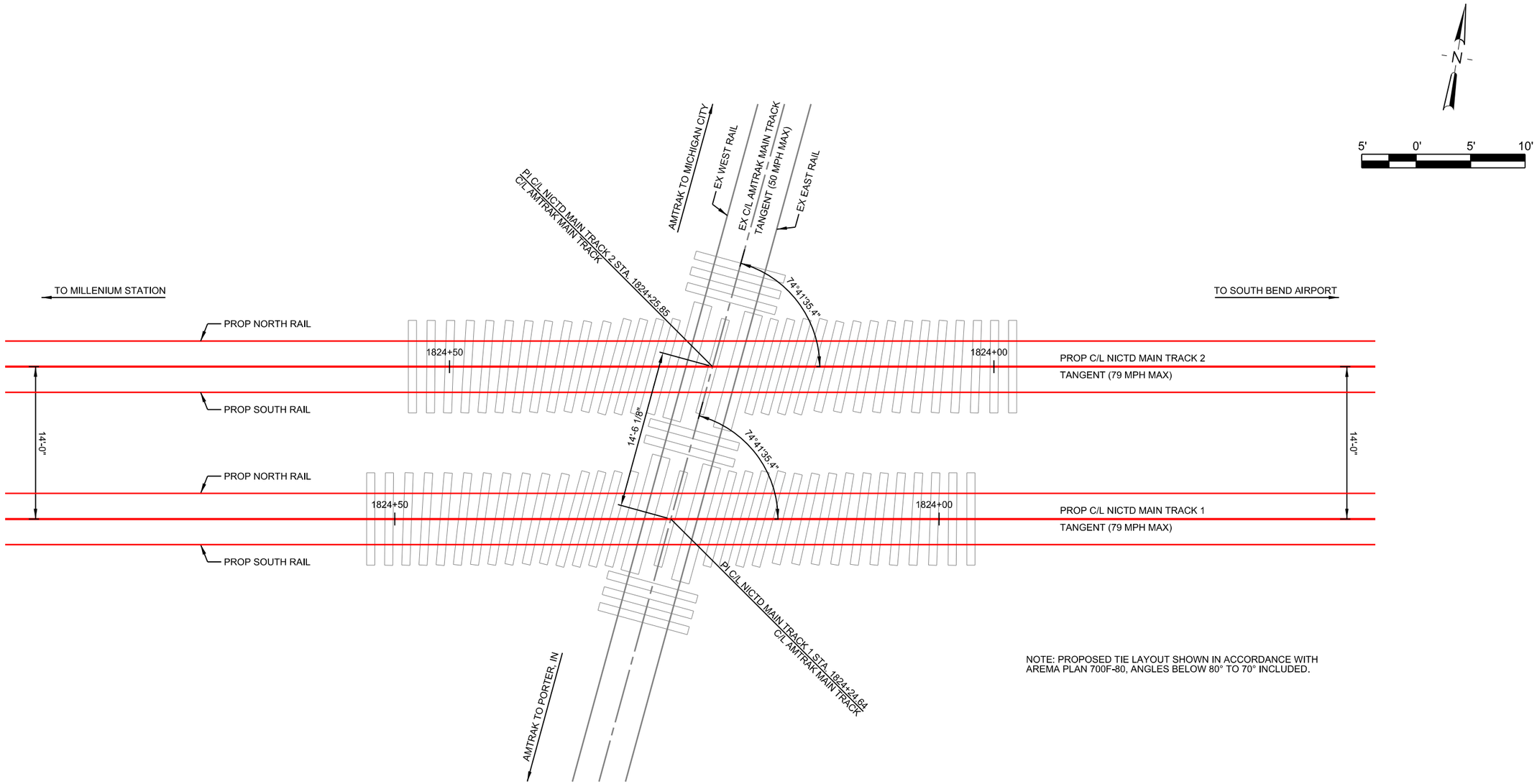
DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-SPH
DATE:	04/30/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

OWLS CROSSING FOR NICTD MAIN 1 ALIGNMENT GEOMETRY PLAN

FILENAME	DT_DWG_RDT-100
SCALE	AS NOTED
SHEET	1 OF 2

PLOT DATE: 4/30/2020 10:26:13 PM kkoehneke



NOTE: PROPOSED TIE LAYOUT SHOWN IN ACCORDANCE WITH AREMA PLAN 700F-80, ANGLES BELOW 80° TO 70° INCLUDED.

ALIGNMENT GEOMETRY FOR AT-GRADE CROSSING
CP 34.6 - 10TH STREET (AMTRAK)

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

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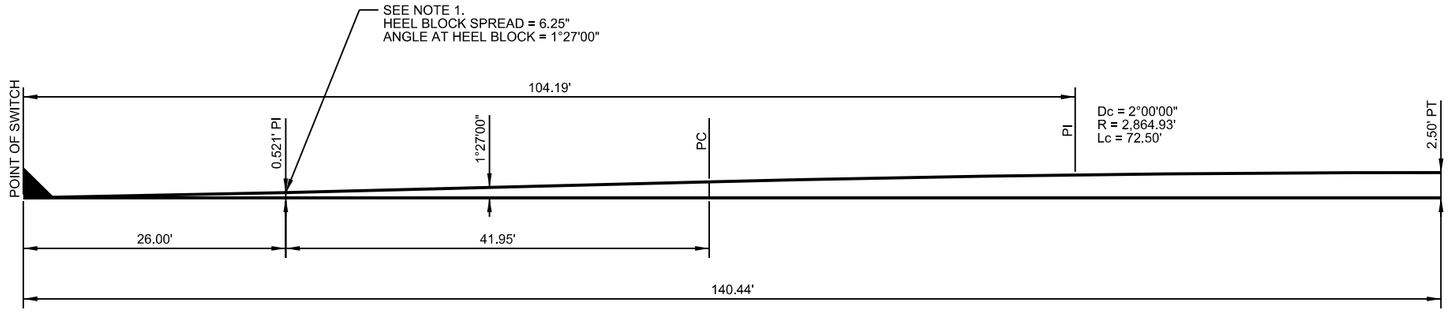
CHECKED:	PEI-SPH
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

AMTRAK CROSSING ALIGNMENT GEOMETRY

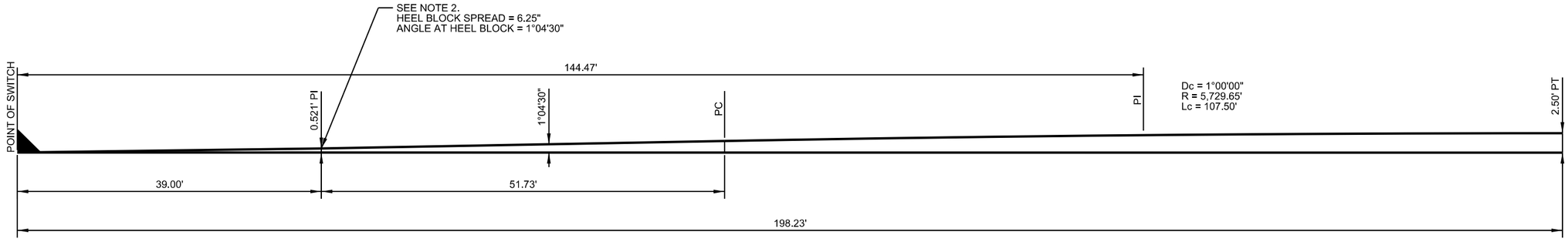
FILENAME	DT_DWG_RDT-101
SCALE	AS NOTED

SHEET OF



GUANTLET TURNOUT GEOMETRY - NO. 15 SWITCH POINTS

NOT TO SCALE



GUANTLET TURNOUT GEOMETRY - NO. 20 SWITCH POINTS

NOT TO SCALE

NOTES:

1. HEEL ANGLE FROM AREMA PORTFOLIO PLAN NO. 920-51 FOR NO. 15 TURNOUT WITH 26 FOOT SWITCH POINTS.
2. HEEL ANGLE FROM AREMA PORTFOLIO PLAN NO. 920-51 FOR NO. 20 TURNOUT WITH 39 FOOT SWITCH POINTS.

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DRAWING RDT-102 OF RDT-109

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MICHIGAN CITY TO GARY, INDIANA

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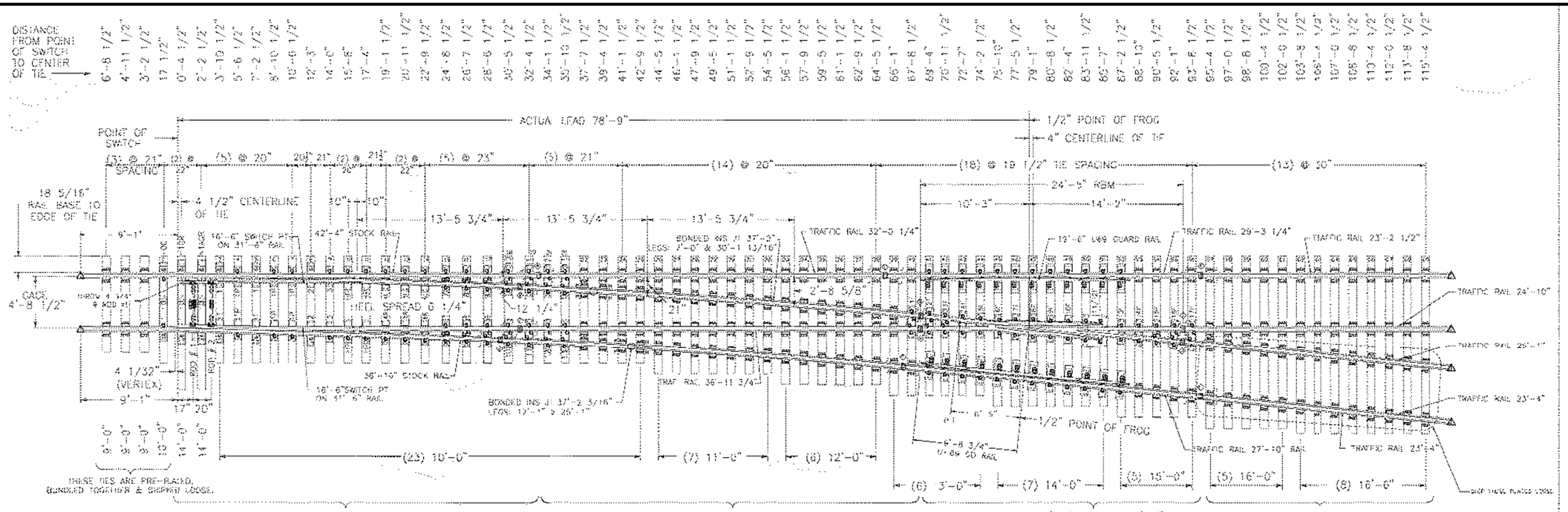
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

NOS. 15 & 20 GUANTLET SWITCHES ALIGNMENT GEOMETRY

FILENAME	DT_DWG_RDT-102
SCALE	AS NOTED

SHEET OF



#10 RIGHT HAND PANELIZED TURNOUT SHOWN, LH OPPOSITE

LH PART No. 9106482P03
RH PART No. 9106482P04

TANGENT OFFSETS FROM HEEL OF SWITCH	
9'-0"	8 9/16"
10'-0"	10 7/16"
15'-0"	15 3/32"
20'-0"	19 1/8"
25'-0"	19 9/16"
30'-0"	23 3/8"
35'-0"	2'-3 19/32"
40'-0"	2'-8 5/32"
45'-0"	3'-1 5/32"
50'-0"	3'-5 1/2"

BILL OF TIES	
LENGTH	QTY
9'-8"	3
10'-0"	24
11'-0"	7
12'-0"	8
13'-0"	6
14'-0"	9
15'-0"	5
16'-0"	5
16'-6"	6
TOTAL NO.	77

*TIES ARE 100% END PLATED

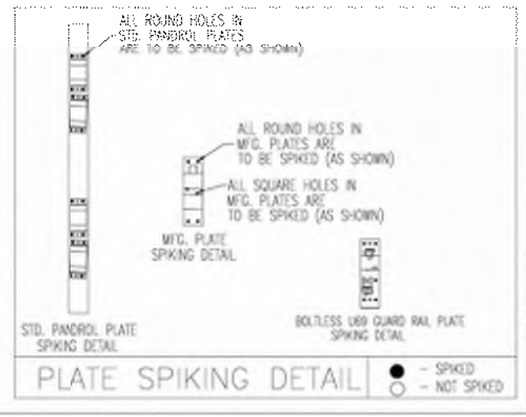
BILL OF TRACK MATERIAL

QUANTITY	DESCRIPTION	DRAWING #
1	NO.10 RBM "RBS EXPORT CLOSE"	P-106491
2	19'-6" LH69 BOLTLESS GUARD RAIL	P-106492
1	42'-4" STRAIGHT STOCK RAIL	P-106484
1	38'-10" RBM STOCK RAIL	P-106488
2	18'-6" STRAIGHT SPLIT SWITCH OF 21'-3" RAIL	P-106483
1	SET OF TRAFFIC RAILS	P-106491E
1	SET OF SWITCH RODS	P-103177
1	3RD TIE PLATE	P-100076
4 EA.	LH10 & RH10 GAGE PLATES	P-106481
1	SET OF SWITCH AND TURNOUT RODS	P-106481E
1	SET OF TRACK PLATES	P-100833
12	JOINTS, COMPLETE	
24	TRACK SPIKES	1002602
140	STD PANDROL 19 PLATES	1002461
408	PANDROL E-CLIP, 5/8"DIA	1002455
68	LJ CLIPS	1002473
424	SCREW SPIKES	1013932
8	MODIFIED J-CLIPS	1002457

TURNOUT DATA	
SPECS: NUMBER	10
SPECS: TOTAL LENGTH	224'-6"
SPECS: TOE LENGTH	10'-4"
SPECS: HEEL LENGTH	14'-2"
SPECS: TOE SPREAD	11 13/16"
SPECS: HEEL SPREAD	17 1/2"
SPECS: ANGLE	5°-43'-29"
SWITCH: LENGTH OF SWITCH POINT	16'-6 7/16"*
SWITCH: HEEL SPREAD	6 1/4"
SWITCH: SWITCH ANGLE	1°-46'-27"
SWITCH: THICKNESS OF POINT	1/8"
SWITCH: VERTEX DISTANCE	4 1/32"
ACTUAL LEAD	78'-9"
RADIUS OF CENTERLINE	779.38'
DEGREE OF CURVE	7°-21'-24"
1/2" PT. TO PT. OF CURVE	6'-5"
STRAIGHT CLOSURE LENGTH	52'-0"
CURVED CLOSURE LENGTH	52'-2"

*REPRESENTS BONDED INS. JOINTS

RAIL SCHEDULE			
PART No.	LENGTH	QTY	
1070928 *	37'-2 3/16"	1	RH TURNOUT
1070929 *	37'-2 3/16"	1	LH TURNOUT
1070930 *	37'-2"	1	RH TURNOUT
1070931 *	37'-2"	1	LH TURNOUT
9104696P77	36'-11 3/4"	1	
9104696P64	32'-0 1/4"	1	
9104696P53	29'-3 1/4"	1	
9104696P54	27'-10"	1	
9104696P56	23'-4"	1	RH TURNOUT
9104696P57	23'-4"	1	LH TURNOUT
9104696P58	25'-1"	1	RH TURNOUT
9104696P59	25'-1"	1	LH TURNOUT
9104696P60	24'-10"	1	RH TURNOUT
9104696P61	24'-10"	1	LH TURNOUT
9104696P62	23'-2 1/2"	1	RH TURNOUT
9104696P63	23'-2 1/2"	1	LH TURNOUT



NOTES:
1. WORKMANSHIP AND MATERIAL TO BE PER LATEST A.R.E.A. SPECIFICATIONS UNLESS OTHERWISE SPECIFIED.
2. SWITCH GRADES TO BE REFLECTED IN BOLTLESS BRACKETS.
3. TURNOUT TO BE ASSEMBLED UP TO THE END OF PANEL #3. THE REMAINDER OF TIES TO BE PRE-PLATED ON MANGANESE RAIL ONLY AND SHIPPED LOOSE. TURNOUT TIE PLATES AND CLIPS TO BE BUNDLED AND SHIPPED LOOSE.
4. PATTERNS, DRILLING HOLES FOR SCREW SPIKES 11/16" DIA. 6" DEEP.
5. PREBORE SQUARE HOLES FOR SQUARE SPIKES 9/16" DIA. 2 1/4" DEEP.

LEGEND:
- ▯ REPRESENTS WELDED JOINT 1/8" GAP. WELDED JOINT DRILLING: 4 1/2" X 3" X 1 1/16" DIA. - 2 7/8" A.B.
- ◯ REPRESENTS BONDED INSULATED JOINT WITH 3/16" GAP.
- △ REPRESENTS BLANK RAIL ENDS THAT EXTENDS 2'-0" PAST THE EDGE OF TIE.
- ◇ REPRESENTS MATCH MARKING

NOTE:

TURNOUT DRAWING SHOWN PROVIDED BY PROGRESS RAIL SERVICES, AND ORIGINALLY DRAWN FOR NICTD 05/10/10, REVISED 11/29/12.

DWG NO.	MAT BY	DATE	REVISIONS	APVD
3	LM	11/29/12	ALSO ADDED 1/16" GAP TO JOINTS (ON DRWG 2)	MLW
2	LM	08/08/12	REVISED TIES PER DWG #6 TO BE 10'-0" LONG AND 8'-0" LONG	MLW
1	LM	6/2/10	REVISED PER CUSTOMER COMMENTS	MLW

Drawn By: LM
Checked By: MLW
Approved By:
Date: 05/10/10
Scale: NONE
Rev: 11/29/12

PROGRESS RAIL SERVICES, A Caterpillar Company

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#10 TURNOUT MACHINE OPEN W/ LONG POINTS

Cust. Eng.: NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT

Eng. No.:

SHT: 2 of 2

P-106482

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DRAWING RDT-103 OF RDT-109

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33 East Highway 12
Chesterton, Indiana 46304

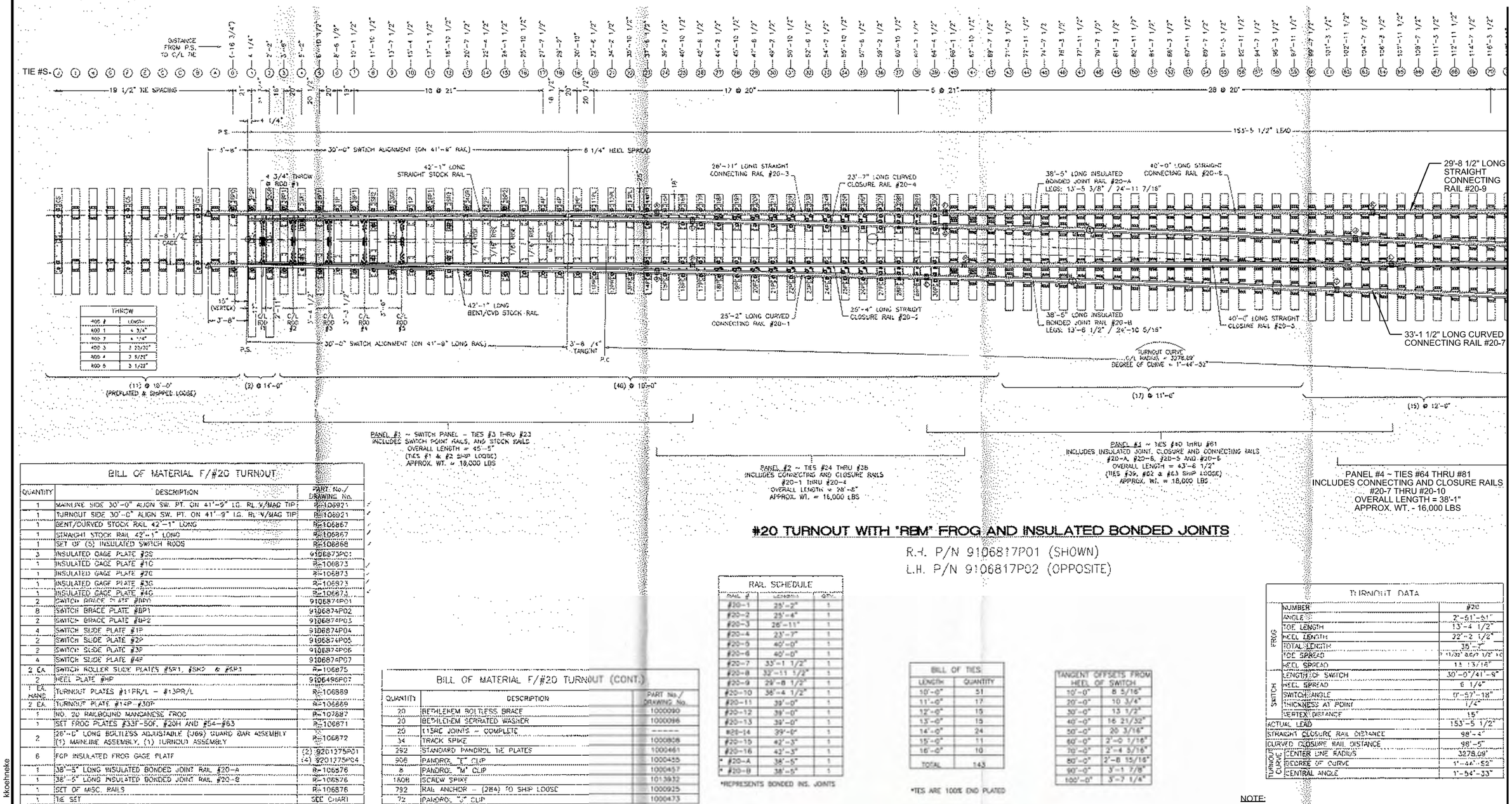
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

NO. 10 TURNOUT DETAILS

FILENAME	DT_DWG_RDT-103	SHEET
SCALE	AS NOTED	OF



THROW	
ROD #	LENGTH
ROD 1	4 3/4"
ROD 7	4 1/4"
ROD 3	3 23/32"
ROD 4	3 5/32"
ROD 5	3 1/32"

BILL OF MATERIAL F/#20 TURNOUT

QUANTITY	DESCRIPTION	PART No./ DRAWING No.
1	MAINLINE SIDE 30'-0" ALIGN SW. PT. ON 41'-9" LG. RL W/MAG TIP	R-106921
1	TURNOUT SIDE 30'-0" ALIGN SW. PT. ON 41'-9" LG. RL W/MAG TIP	R-106921
1	BENT/CURVED STOCK RAIL 42'-1" LONG	R-106867
1	STRAIGHT STOCK RAIL 42'-1" LONG	R-106867
1	SET OF (5) INSULATED SWITCH RODS	R-106868
3	INSULATED GAGE PLATE #2S	9106873P01
1	INSULATED GAGE PLATE #1G	R-106873
1	INSULATED GAGE PLATE #2G	R-106873
1	INSULATED GAGE PLATE #3G	R-106873
1	INSULATED GAGE PLATE #4G	R-106873
2	SWITCH BRACE PLATE #BP0	9106874P01
8	SWITCH BRACE PLATE #BP1	9106874P02
2	SWITCH BRACE PLATE #BP2	9106874P03
4	SWITCH SLIDE PLATE #1P	9106874P04
2	SWITCH SLIDE PLATE #2P	9106874P05
2	SWITCH SLIDE PLATE #3P	9106874P06
4	SWITCH SLIDE PLATE #4P	9106874P07
2 EA.	SWITCH ROLLER SLIDE PLATES #SR1, #SR2 & #SR3	R-106875
2	HEEL PLATE #HP	9106498P07
1 EA. HAND	TURNOUT PLATES #1-PR/L - #13PR/L	R-106869
1 EA.	TURNOUT PLATE #14P-#30P	R-106869
1	NO. 20 RAILBOUND MANGANESE FROG	R-107887
1	SET FROG PLATES #33F-50F, #20H AND #54-#63	R-106871
2	26'-0" LONG BOLTLESS ADJUSTABLE (J69) GUARD BAR ASSEMBLY (1) MAINLINE ASSEMBLY, (1) TURNOUT ASSEMBLY	R-106872
6	FGP INSULATED FROG GAGE PLATE	(2) 9201275P01 (4) 9201275P04
1	38'-5" LONG INSULATED BONDED JOINT RAIL #20-A	R-106876
1	38'-5" LONG INSULATED BONDED JOINT RAIL #20-B	R-106876
1	SET OF MISC. RAILS	R-106876
1	TIE SET	SEE CHART

BILL OF MATERIAL F/#20 TURNOUT (CONT.)

QUANTITY	DESCRIPTION	PART No./ DRAWING No.
20	BETHLEHEM BOLTLESS BRACE	1000090
20	BETHLEHEM SERRATED WASHER	1000096
20	(1.5RC JOINTS ~ COMPLETE	-------
34	TRACK SPIKE	1000808
392	STANDARD PANDROL TIE PLATES	1000461
906	PANDROL "E" CLIP	1000455
8	PANDROL "M" CLIP	1000457
1808	SCREW SPIKE	1013932
792	RAIL ANCHOR ~ (284) TO SHIP LOOSE	1000925
72	PANDROL "C" CLIP	1000473

RAIL SCHEDULE

RAIL #	LENGTH	QTY.
#20-1	25'-2"	1
#20-2	25'-4"	1
#20-3	26'-11"	1
#20-4	23'-7"	1
#20-5	40'-0"	1
#20-6	40'-0"	1
#20-7	33'-1 1/2"	1
#20-8	32'-11 1/2"	1
#20-9	29'-8 1/2"	1
#20-10	38'-4 1/2"	1
#20-11	39'-0"	1
#20-12	39'-0"	1
#20-13	39'-0"	1
#20-14	39'-0"	1
#20-15	42'-3"	1
#20-16	42'-3"	1
* #20-A	38'-5"	1
* #20-B	38'-5"	1

*REPRESENTS BONDED INS. JOINTS

BILL OF TIES

LENGTH	QUANTITY
10'-0"	51
11'-0"	17
12'-0"	13
13'-0"	15
14'-0"	24
15'-0"	11
16'-0"	10
TOTAL	143

*TIES ARE 100% END PLATED

TANGENT OFFSETS FROM HEEL OF SWITCH

10'-0"	8 5/16"
20'-0"	10 3/4"
30'-0"	13 1/2"
40'-0"	16 21/32"
50'-0"	20 3/16"
60'-0"	2'-0 1/16"
70'-0"	2'-4 3/16"
80'-0"	2'-8 15/16"
90'-0"	3'-1 7/8"
100'-0"	3'-7 1/4"

#20 TURNOUT WITH "RBM" FROG AND INSULATED BONDED JOINTS

R.H. P/N 9106817P01 (SHOWN)
L.H. P/N 9106817P02 (OPPOSITE)

TURNOUT DATA

FROG	NUMBER	#20
	ANGLE	2°-51'-51"
	TOE LENGTH	13'-4 1/2"
	HEEL LENGTH	22'-2 1/2"
	TOTAL LENGTH	35'-7"
	TOE SPREAD	2 11/32" 2.69" 1/2"
	HEEL SPREAD	13 13/16"
SWITCHES	LENGTH OF SWITCH	30'-0"/41'-9"
	HEEL SPREAD	8 1/4"
	SWITCH ANGLE	0°-57'-18"
	THICKNESS AT POINT	1/4"
	VERTEX DISTANCE	15"
ACTUAL LEAD		153'-5 1/2"
STRAIGHT CLOSURE RAIL DISTANCE		98'-4"
CURVED CLOSURE RAIL DISTANCE		98'-5"
TURNOUT CURVE	CENTER LINE RADIUS	3278.09'
	DEGREE OF CURVE	1°-44'-52"
	CENTRAL ANGLE	1°-54'-33"

NOTE:

TURNOUT DRAWING SHOWN PROVIDED BY NICTD, AND WAS ORIGINALLY PRODUCED BY PROGRESS RAIL SERVICES - LAST REVISED 11/29/12.

MATCH LINE - SEE SHEET XXX-XXX

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DRAWING RDT-104 OF RDT-109

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MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	PEI-TJW
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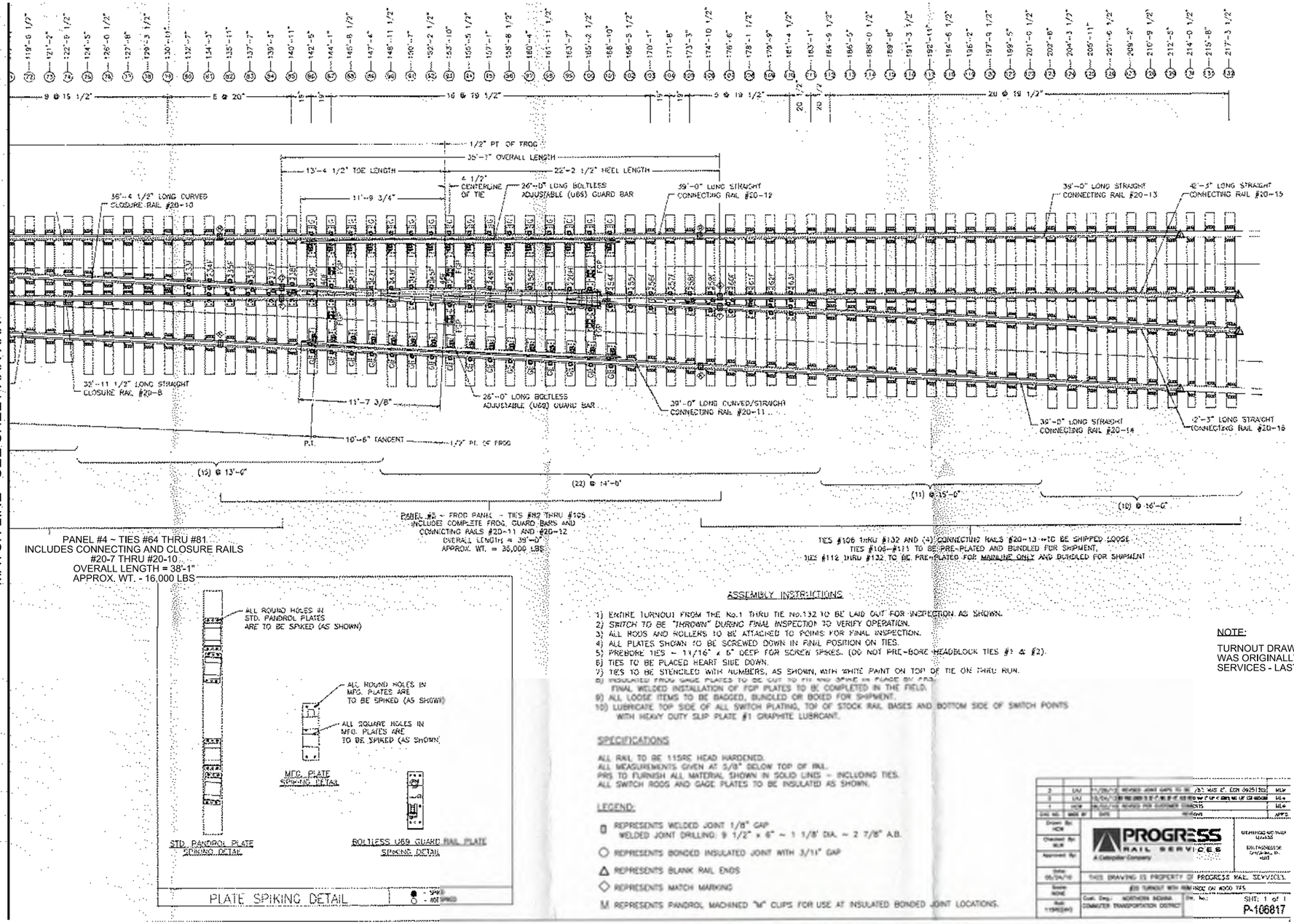
CHECKED:	PEI-GTC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

NO. 20 TURNOUT DETAILS

FILENAME	DT_DWG_RDT-104	SHEET	OF
SCALE	AS NOTED		



MATCH LINE - SEE SHEET XXX-XXX

PANEL #4 ~ TIES #64 THRU #81
INCLUDES CONNECTING AND CLOSURE RAILS #20-7 THRU #20-10
OVERALL LENGTH = 38'-1"
APPROX. WT. - 16,000 LBS

PANEL #3 ~ FROG PANEL ~ TIES #82 THRU #105
INCLUDES COMPLETE FROG, GUARD BARS AND CONNECTING RAILS #20-11 AND #20-12
OVERALL LENGTH = 39'-0"
APPROX. WT. = 35,000 LBS

TIES #106 THRU #132 AND (4) CONNECTING RAILS #20-13 ARE TO BE SHIPPED LOOSE
TIES #105-#111 TO BE PRE-PLATED AND BUNDLED FOR SHIPMENT.
TIES #112 THRU #132 TO BE PRE-PLATED FOR MAINLINE ONLY AND BUNDLED FOR SHIPMENT

ASSEMBLY INSTRUCTIONS

1) ENTIRE TURNOUT FROM THE No.1 THRU TIE No.132 TO BE LAID OUT FOR INSPECTION AS SHOWN.
2) SWITCH TO BE "THROWN" DURING FINAL INSPECTION TO VERIFY OPERATION.
3) ALL RODS AND ROLLERS TO BE ATTACHED TO POINTS FOR FINAL INSPECTION.
4) ALL PLATES SHOWN TO BE SCREWED DOWN IN FINAL POSITION ON TIES.
5) PREBORE TIES ~ 11/16" x 6" DEEP FOR SCREW SPIKES. (DO NOT PRE-BORE HEADBLOCK TIES #1 & #2).
6) TIES TO BE PLACED HEART SIDE DOWN.
7) TIES TO BE STENCILED WITH NUMBERS, AS SHOWN, WITH WHITE PAINT ON TOP OF TIE ON THRU RUN.
8) INSULATED RAIL GAGE PLATES TO BE CUT TO FIT AND SPIKE IN PLACE BY FIELD FINAL WELDED INSTALLATION OF TOP PLATES TO BE COMPLETED IN THE FIELD.
9) ALL LOOSE ITEMS TO BE BAGGED, BUNDLED OR BOXED FOR SHIPMENT.
10) LUBRICATE TOP SIDE OF ALL SWITCH PLATING, TOP OF STOCK RAIL BASES AND BOTTOM SIDE OF SWITCH POINTS WITH HEAVY DUTY SLIP PLATE #1 GRAPHITE LUBRICANT.

SPECIFICATIONS

ALL RAIL TO BE 115RE HEAD HARDENED.
ALL MEASUREMENTS GIVEN AT 5/8" BELOW TOP OF RAIL.
PRS TO FURNISH ALL MATERIAL SHOWN IN SOLID LINES ~ INCLUDING TIES.
ALL SWITCH RODS AND GAGE PLATES TO BE INSULATED AS SHOWN.

LEGEND:

- ▯ REPRESENTS WELDED JOINT 1/8" GAP. WELDED JOINT DRILLING: 9 1/2" x 6" ~ 1 1/8" DIA. ~ 2 7/8" A.B.
- ○ REPRESENTS BONDED INSULATED JOINT WITH 3/16" GAP
- △ REPRESENTS BLANK RAIL ENDS
- ◇ REPRESENTS MATCH MARKING
- M REPRESENTS PANDROL MACHINED "M" CLIPS FOR USE AT INSULATED BONDED JOINT LOCATIONS.

NOTE:

TURNOUT DRAWING SHOWN PROVIDED BY NICTD, AND WAS ORIGINALLY PRODUCED BY PROGRESS RAIL SERVICES - LAST REVISED 11/29/12.

3	LAU	11/29/12	REVISED JOINT GAPS TO BE .187 WAS 2", ECN 09251305	MLW
2	LAU	5/24/10	ADDED NOTE	MLW
1	MDW	05/04/10	REVISED PER CUSTOMER COMMENTS	MLW
ENG. NO.	MADE BY	DATE	REVISION	APP'D.

Drawn By: MDW
Checked By: MLW
Approved By:
Date: 05/04/10
Scale: NONE
Rail: 115RE(ARA)

PROGRESS RAIL SERVICES
A Caterpillar Company

DIMENSIONS ARE IN INCHES
INTERPRETATION PER ASME Y14.5M

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#20 TURNOUT WITH RAIL INSIDE ON WOOD TIES

Cust. Dwg.: NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
Dwg. No.: P-106817
SHT: 1 of 1

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RDT-105 OF RDT-109

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PATRICK ENGINEERING

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	PEI-TJW
DRAWN:	PEI-TJW
CHECKED:	PEI-GTC
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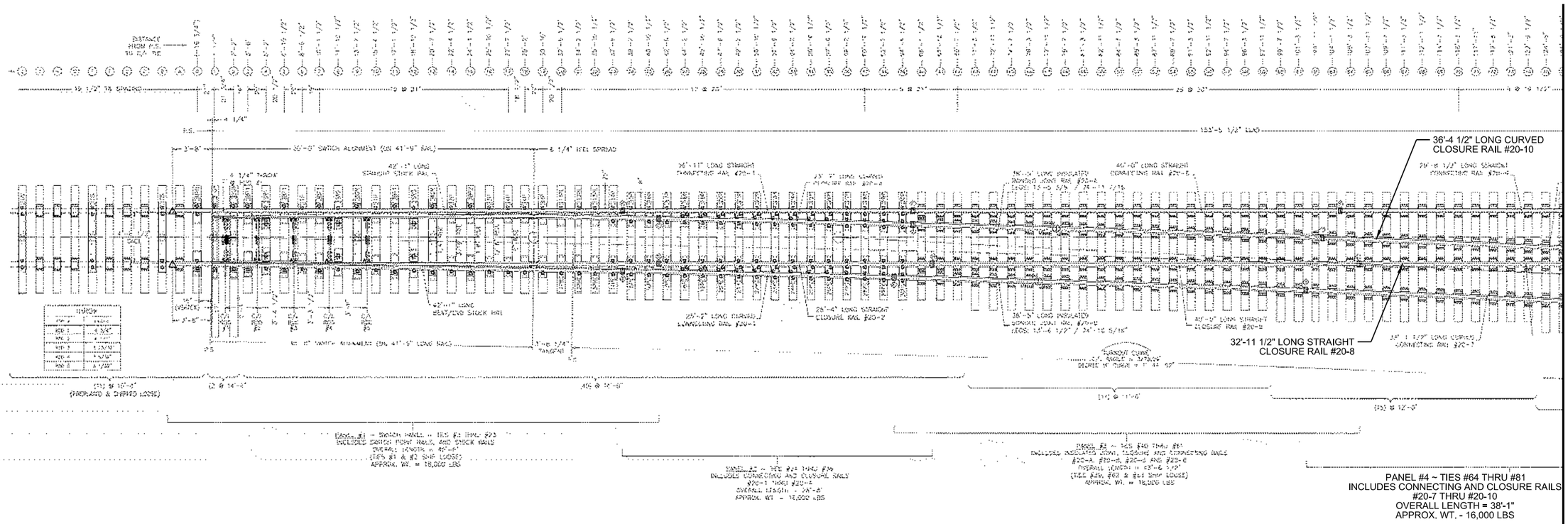
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

NO. 20 TURNOUT DETAILS

FILENAME	DT_DWG_RDT-105
SCALE	AS NOTED
SHEET	OF



#20 SINGLE CROSSOVER WITH 14' TRACK CENTERS, WITH "RBM" FROG AND INSULATED BONDED JOINTS

NOTE:

TURNOUT DRAWING SHOWN PROVIDED BY NICTD, AND WAS ORIGINALLY PRODUCED BY PROGRESS RAIL SERVICES - DATED 12/11/14.

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DRAWING RDT-106 OF RDT-109

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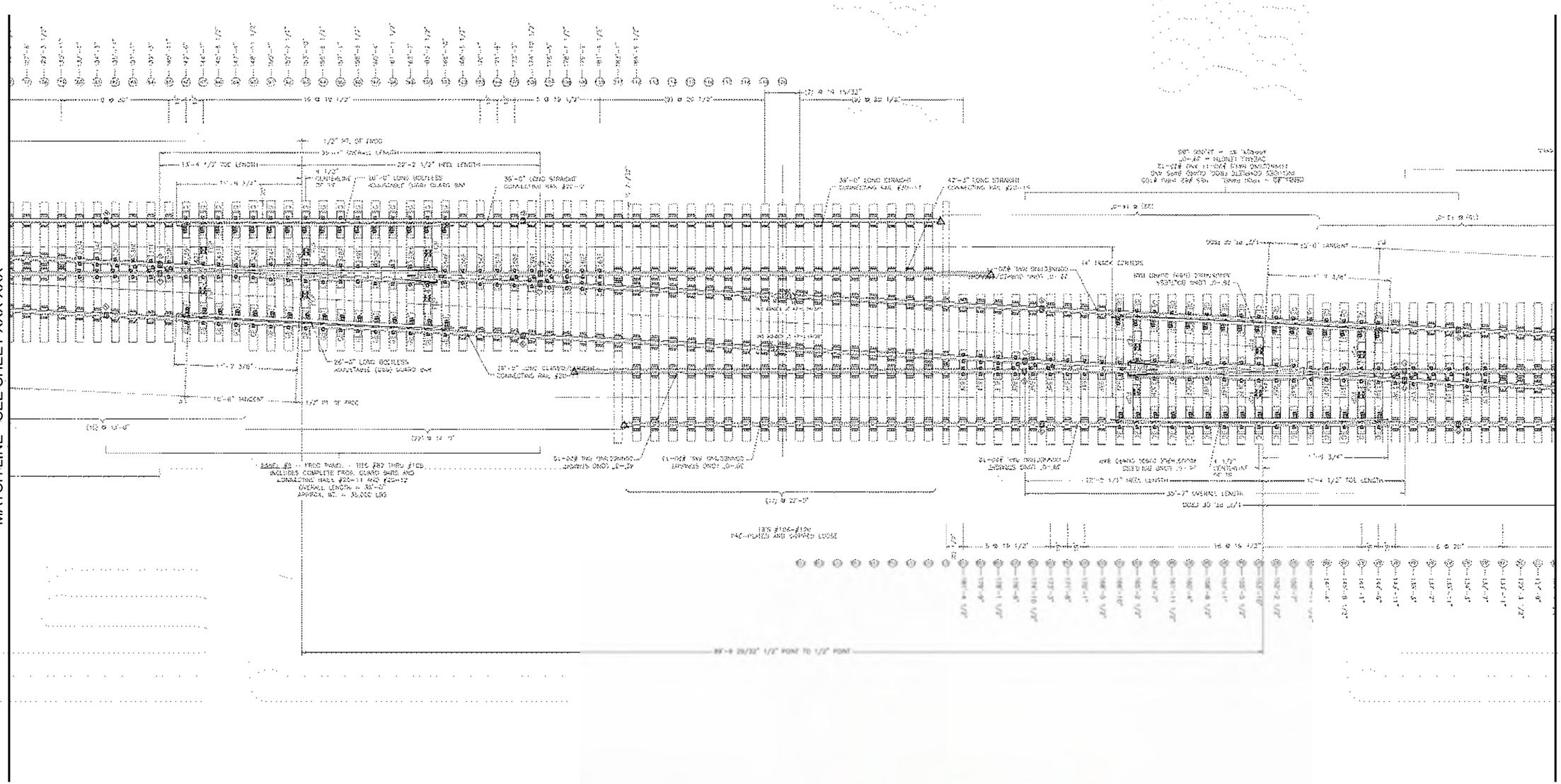
DOUBLE TRACK-NWI

NO. 20 CROSSOVER DETAILS

FILENAME	DT_DWG_RDT-106
SCALE	AS NOTED

SHEET OF

MATCH LINE - SEE SHEET XXX-XXX



MATCH LINE - SEE SHEET XXX-XXX

NOTE:

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NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

NO. 20 CROSSOVER DETAILS

FILENAME	DT_DWG_RDT-107
SCALE	AS NOTED

SHEET OF

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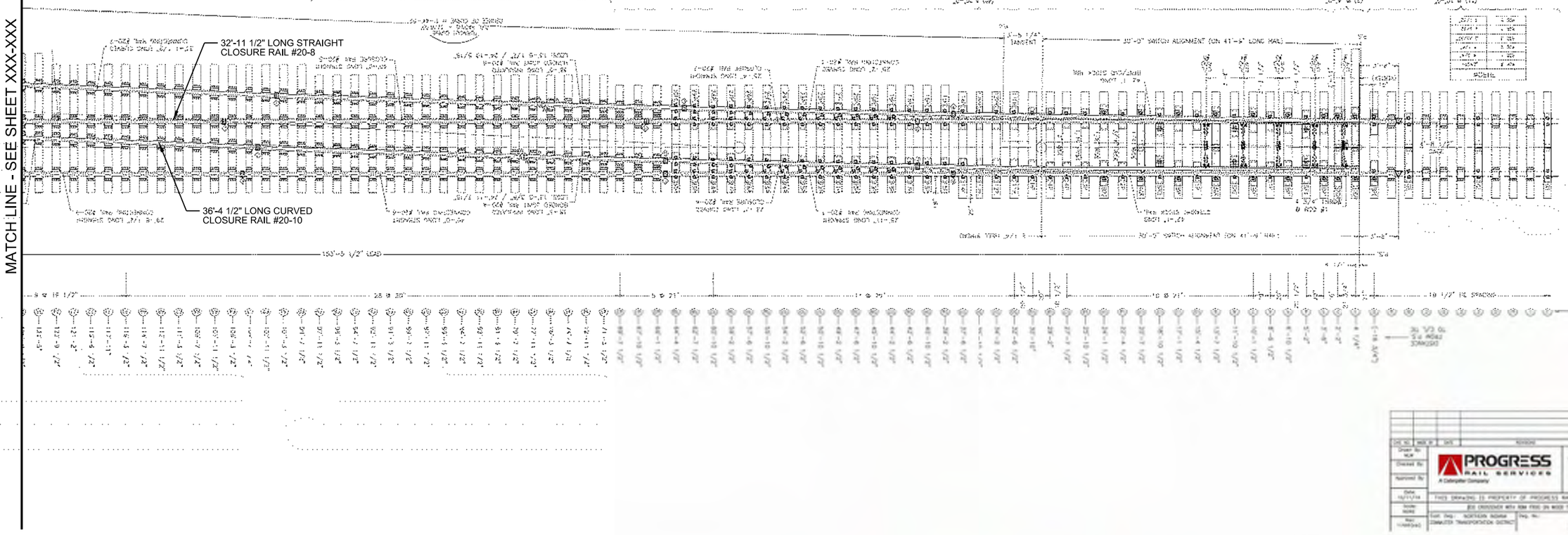
PANEL #4 ~ TIES #64 THRU #81
INCLUDES CONNECTING AND CLOSURE RAILS
#20-7 THRU #20-10
OVERALL LENGTH = 38'-1"
APPROX. WT. - 16,000 LBS

32'-11 1/2" LONG STRAIGHT
CLOSURE RAIL #20-8

36'-4 1/2" LONG CURVED
CLOSURE RAIL #20-10

MATCH LINE - SEE SHEET XXX-XXX



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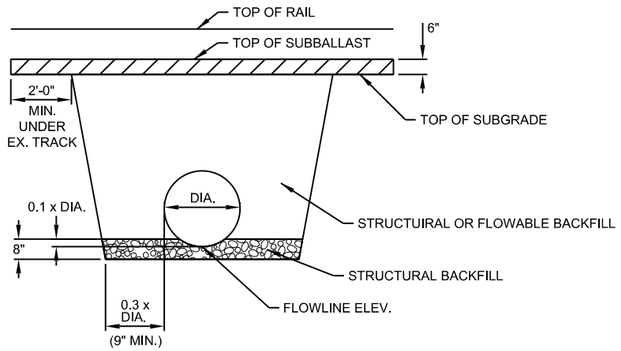
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

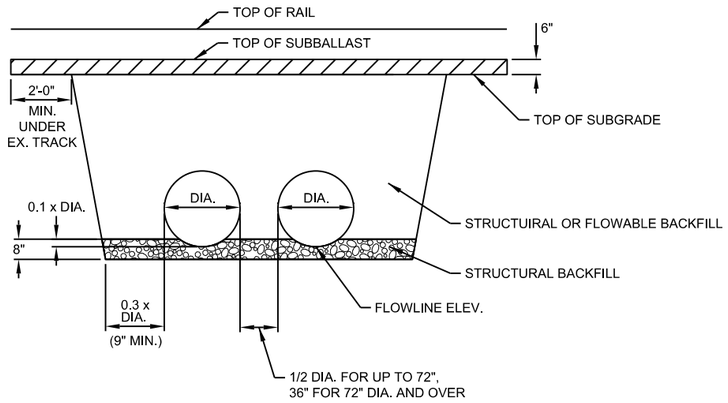
NO. 20 CROSSOVER DETAILS

FILENAME	DT_DWG_RDT-108
SCALE	AS NOTED

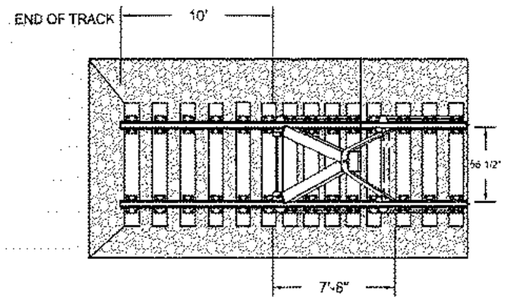
SHEET OF



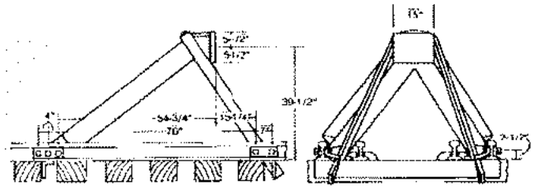
SINGLE PIPE CULVERT TRENCH BACKFILL DETAIL
NOT TO SCALE



MULTIPLE PIPE CULVERT TRENCH BACKFILL DETAIL
NOT TO SCALE



STANDARD BUMP POST FOR END OF TRACK



TYPE WG TRACK BUMPER DETAIL
NOT TO SCALE

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

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DRAWING RDT-109 OF RDT-109

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

TRACK DETAILS

FILENAME	DT_DWG_RDT-109
SCALE	AS NOTED

SHEET OF

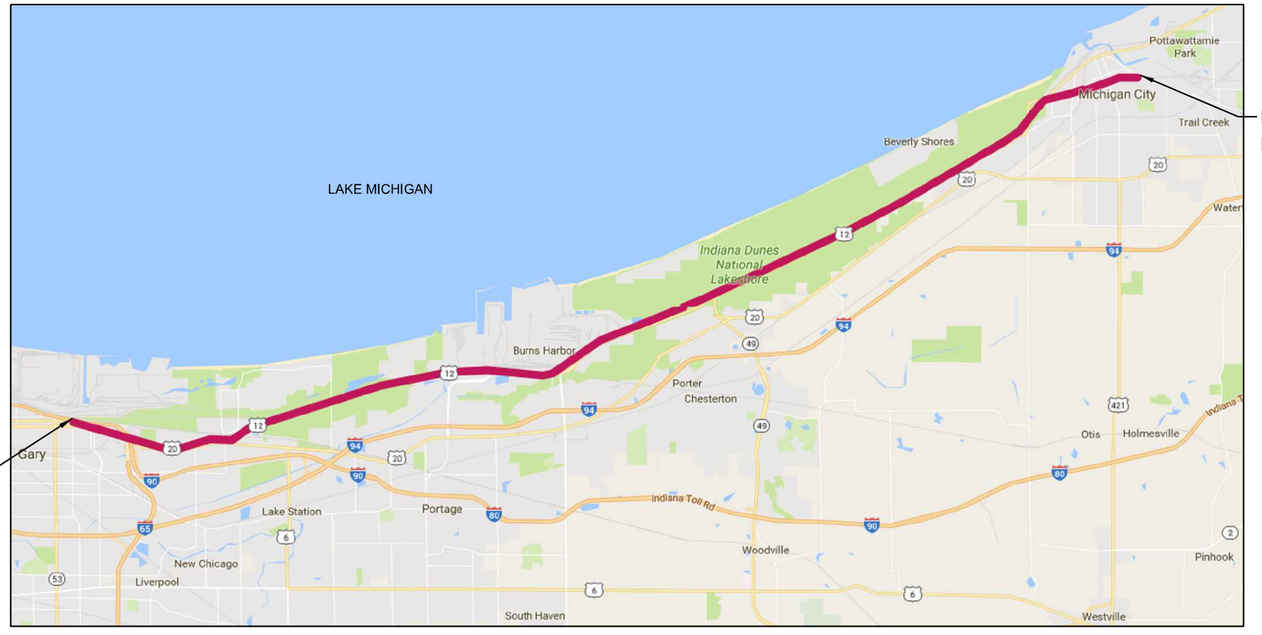
NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT

DOUBLE TRACK NWI (NORTHWEST INDIANA)
MILEPOST 32.2 TO MILEPOST 58.8
MICHIGAN CITY TO GARY, INDIANA

STRUCTURAL PLANS

SHEET INDEX

SHEET #	DRAWING	DESCRIPTION
	STR-001	COVER SHEET
	STR-002	LEGEND & ABBREVIATIONS
	STR-003	GENERAL NOTES
	BRG-100 TO BRG-116	BRIDGE 47.322 OVER ARCELOR MITTAL MAIN ENTRANCE ROAD
	BRG-200 TO BRG-244	BRIDGE 47.412 OVER NORFOLK SOUTHERN RAILWAY
	BRG-300 TO BRG-315	BRIDGE 54.622 OVER HOBART ROAD
	BRG-400 TO BRG-416	BRIDGE 54.732 OVER CSX TRANSPORTATION
	CUL-100 TO CUL-105	CULVERT OVER KINTZELE DITCH AT MP 36.20
	CUL-200 TO CUL-203	CULVERT OVER BROWN'S DITCH AT MP 37.54
	CUL-300 TO CUL-305	CULVERT OVER UNNAMED DRAINAGE AT MP AT MP 39.93
	CUL-400 TO CUL-405	CULVERT OVER UNNAMED DRAINAGE AT MP 42.60
	CUL-500 TO CUL-504	CULVERT OVER UNNAMED DRAINAGE AT MP 44.51
	CUL-600 TO CUL-614	CULVERT REPLACEMENTS
	RET-100 TO RET-100	RETAINING WALLS AT MICHIGAN CITY
	RET-200 TO RET-202	RETAINING WALL AT SR 49 BRIDGE
	RET-300 TO RET-300	RETAINING WALL AT BAILLY WEST
	RET-400 TO RET-403	RETAINING WALL AT MILLER ALONG MAIN 1



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NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

COVER SHEET

FILENAME	DT_DWG_CVR-001_R00_20200316.dgn
SCALE	AS NOTED

SHEET OF

LEGEND

- EXISTING TRACK TO REMAIN AS IS
- EXISTING TRACK TO BE REMOVED
- EXISTING TRACK TO BE SHIFTED
- EXISTING TRACK TO BE SURFACED
- 5+00 PROPOSED TRACK
- PROPOSED POWER OPERATED TURNOUT
- PROPOSED HAND-THROW TURNOUT
- PROPOSED ELECTRIC LOCK TURNOUT
- PROPOSED DOUBLE SWITCH POINT DERAIL
- PROPOSED SLIDING DERAIL
- PROPOSED CULVERT EXTENSION
- CONSTRUCTION LIMITS
- COMM COMMUNICATION LINE
- OHP EXISTING OVERHEAD POWER LINE
- X EXISTING FENCE
- SS EXISTING SANITARY SEWER
- SS PROPOSED SANITARY SEWER
- OHF OVERHEAD FIBER
- FO EXISTING FIBER OPTIC
- FO UG EXISTING UNDERGROUND FIBER OPTIC
- FO UG PROPOSED UNDERGROUND FIBER OPTIC
- FO OH EXISTING OVERHEAD FIBER OPTIC
- FO OH PROPOSED OVERHEAD FIBER OPTIC
- G EXISTING GAS LINE
- G PROPOSED GAS LINE
- PG PETRO GAS LINE
- PG PROPOSED PETRO GAS LINE
- W EXISTING WATER LINE
- W PROPOSED WATER LINE
- E UG EXISTING UNDERGROUND ELECTRIC
- E UG PROPOSED UNDERGROUND ELECTRIC
- E OH EXISTING OVERHEAD ELECTRIC
- OHP PROPOSED OVERHEAD ELECTRIC
- TREE/SHRUB/VEGETATION
- EDGE OF GRAVEL
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- PARCELS
- PROPOSED CONSTRUCTION EASEMENT
- ACCESS ROAD/TURNOUT PAD
- HIGH QUALITY WETLAND
- NON HIGH QUALITY WETLAND/UNDETERMINED
- STREAM OR DITCH
- RIP RAP
- ELECTRIC POLE
- COMMUNICATION POLE
- EXISTING CROSSING SIGNAL
- PROPOSED CROSSING SIGNAL
- GUARDRAIL
- SIGNS (NON-RAILROAD)
- GAS WARNING SIGN
- RAILROAD SIGN
- FIBER OPTIC MARKER
- WHISTLE POST SIGN
- LIGHT POLE
- FIRE HYDRANT
- RAIL SIGNAL (DWARF SIGNAL)
- TRAFFIC SIGNAL
- FIBER OPTIC HAND HOLE
- ELECTRIC METER
- E ELECTRIC PEDESTAL
- C COMMUNICATION PEDESTAL
- CONTROL POINT
- GRADE CROSSING PAVEMENT MARKING
- PEDESTRIAN CROSSING GATE
- EXISTING CROSSBUCK

ABBREVIATIONS

APPROX	APPROXIMATE
BLDG	BUILDING
BM	BENCH MARK
CB	CATCH BASIN
℄	CENTERLINE
CMP	CORRUGATED METAL PIPE
CN	CANADIAN NATIONAL
CONC	CONCRETE
CS	CURVE TO SPIRAL
CSS	CHICAGO SOUTH SHORE
CSXT	CSX TRANSPORTATION
CWR	CONTINUOUSLY WELDED RAIL
CY	CUBIC YARD
Dc	DEGREE OF CURVE
DI	DUCTILE IRON
DIAM.	DIAMETER
DOT	DEPARTMENT OF TRANSPORTATION
DSPD	DUAL SWITCH POINT DERAILS
DWG	DRAWING
E	EASTING
EA	EACH
E.L.	ELECTRIC LOCK
ELEC	ELECTRICAL
ELEV, EL	ELEVATION
ENGR	ENGINEER
EXIST, EX	EXISTING
FOTS	FIBER OPTIC TRANSMISSION SYSTEM
FT	FOOT, FEET
G	GAS
GND	GROUND
HDPE	HIGH DENSITY POLYETHYLENE
HORZ	HORIZONTAL
HTTO	HAND THROW TURNOUT
HMA	HOT MIX ASPHALT
INV	INVERT
LB	POUND
Lc	LENGTH OF CURVE
LH	LEFT HAND
Ls	LENGTH OF SPIRAL
LIN FT, LF	LINEAR FOOT
LLT	LAST LONG TIE
LN	LANE
LT	LEFT
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MOW	MAINTENANCE OF WAY
MP	MILE POST
N	NORTHING
NIC	NOT IN CONTRACT
NICTD	NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
NIPSCO	NORTHERN INDIANA PUBLIC SERVICE COMPANY
N.T.S.	NOT TO SCALE
NO., #	NUMBER
NS	NORFOLK SOUTHERN
OHP	OVERHEAD POWER
OVH	OVERHEAD
PC	POINT OF CURVE
PI	POINT OF INTERSECTION
PITO	POINT OF INTERSECTION OF TURNOUT
POB	POINT OF BEGINNING
POE	POINT OF ENDING
POTO	POWER OPERATED TURNOUT
PR, PROP	PROPOSED
P.S.	POINT OF SWITCH
PT	POINT OF TANGENCY, POINT
PVC	POINT OF VERTICAL CURVE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
R	RADIUS
RE	RAILWAY ENGINEERED, AREMA APPROVED RAIL SECTION
REV	REVISION
RH	RIGHT HAND
RR	RAILROAD
RT	RIGHT, ROUTE
R/W, ROW	RIGHT-OF-WAY
S	SOUTH
SC	SPIRAL TO CURVE
SD	STORM DRAIN, SLIDING DERAIL
SDWC	SLIDING DERAIL WITH CROWDER
SDG	SIDING
SDWLK	SIDEWALK
SF	SQUARE FOOT
SS	SANITARY SEWER
STA	STATION
ST	STREET, SPIRAL TO TANGENT
STD	STANDARD
STM, SD	STORM SEWER, STORM DRAIN
SW	SWITCH
TEMP	TEMPORARY
TF	TRACK FOOT, TRACK FEET
T.O.	TURNOUT
TOR	TOP OF RAIL
TRK	TRACK
TS	TANGENT TO SPRIAL
TYP, TYP.	TYPICAL
UG	UNDERGROUND
V	VELOCITY
VC	VERTICAL CURVE
W	WATER, WEST
XOVER	CROSSOVER
XING	CROSSING
YD	YARD

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Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

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NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

LEGEND & ABBREVIATIONS

FILENAME	DT_DWG_LEG-001_R00_20200316.dgn	SHEET
SCALE	AS NOTED	OF

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GENERAL NOTES

1. ALL CONSTRUCTION ACTIVITIES NOT SPECIFICALLY DESCRIBED IN THE CONTRACT PLANS OR TECHNICAL SPECIFICATIONS SHALL BE DONE IN ACCORDANCE WITH THE INDOT "STANDARD SPECIFICATIONS 2020"

2. THE CONTRACTOR IS ADVISED THAT THE SOILS INVESTIGATION FOR THE PROJECTIS INCLUDED IN THE SPECIFICATIONS AND THAT THE APPLICABLE RECOMMENDATIONS OF THE SOILS INVESTIGATION SHALL BE ADHERED TO.

3. CRUSHED STONE USED FOR TEMPORARY PURPOSES MAY BE RE-USED AT PERMANENT LOCATIONS IF IT CONFORMS TO THE APPLICABLE SPECIFICATIONS.

4. THE INFORMATION SHOWN IN THIS PLAN SET CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO.

5. THE CONTRACTOR, AND ALL OTHER PARTIES INVOLVED IN CONSTRUCTION OPERATIONS WITHIN THE PROJECT LIMITS, SHALL BE RESPONSIBLE FOR CONTACTING THE INDIANA 811 UNDERGROUND UTILITY LOCATION SERVICE FOR EXISTING UTILITIES SO THAT THE UTILITIES AND THEIR APPURTENANCES MAY BE LOCATED, AND ADJUSTED OR MOVED, IF NECESSARY, PRIOR TO THE START OF CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL COOPERATE WITH ALL UTILITY OWNERS AS PROVIDED FOR IN THE STANDARD SPECIFICATIONS.

6. THE EXPOSED SUBGRADE AND THE BOTTOM OF ALL EXCAVATIONS SHALL BE OBSERVED BY AN EXPERIENCED SOIL ENGINEER TO AID IN LOCATING ANY UNSUITABLE AREAS THAT MAY NEED IMPROVEMENT. MATERIALS IDENTIFIED AS UNSUITABLE BY THE ENGINEER SHALL BE REMOVED TO A DEPTH SPECIFIED BY NICTD, AND REPLACED BY SUITABLE FILL MATERIALS.

7. ALL PARTIES INVOLVED IN CONSTRUCTION OPERATIONS WITHIN THE LIMITS OF THIS PROJECT SHALL BE RESPONSIBLE FOR THE PROTECTION OF UNDERGROUND UTILITIES, INCLUDING THOSE THAT MAY NOT BE SHOWN ON THE PLANS. EACH PARTY SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING, AT ITS OWN EXPENSE, ANY UTILITY OR ITS APPURTENANCES DAMAGED DURING CONSTRUCTION OPERATIONS. ONLY PERSONNEL AUTHORIZED BY NICTD SHALL BE PERMITTED TO PERFORM THIS WORK.

8. THE CONTRACTOR IS ADVISED THAT CERTAIN CONSTRUCTION OPERATIONS WILL REQUIRE COORDINATION WITH NICTD AND OTHER AGENCIES PERFORMING WORK WITHIN THE LIMITS OF THE PROJECT. THE CONTRACTOR SHALL COOPERATE TO THE FULLEST EXTENT WITH THESE AGENCIES.

9. THE CONTRACTOR SHALL USE EXTREME CARE IN PROSECUTING WORK OUTSIDE THE LIMITS OF THE RECONSTRUCTION, AS SHOWN ON THE PLANS, SO AS NOT TO DAMAGE, DEFACE OR OTHERWISE DISTURB ADJACENT IMPROVED AREAS.

10. THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ADEQUATE WARNING SIGNS AND DEVICES TO INFORM AND PROTECT COMMUTERS THE PUBLIC.

11. CONTRACTORS ARE ADVISED THAT ALL MUD, DEBRIS, AND ASPHALT MUST NOT BE DEPOSITED ONTO ADJACENT ROADWAYS.

12. EXISTING CURB AND GUTTERS DAMAGED DURING CONSTRUCTION SHALL BE PROMPTLY RESTORED TO THEIR ORIGINAL CONDITION. THE WORK INCLUDES THE SAW-CUTTING AND REMOVAL OF DAMAGED SECTION AND PROVIDE GROUTED DOWELS. THESE WORKS SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.

13. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR SAFETY ON THE JOB.

14. THE CONTRACTOR SHALL SUBMIT A TIME SCHEDULE FOR THE CONSTRUCTION OF THIS PROJECT. THE SCHEDULE SHALL INCLUDE THE PERIOD OF TIMES IN WHICH THE WORK ITEMS ARE TO BE COMPLETE.

15. IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO CONSTRUCT ALL ITEMS ON THESE PLANS USING CONSTRUCTION MEANS AND METHODS THAT WILL PROTECT AT ALL TIMES AND PREVENT BODILY INJURY AND/OR DEATH. SPECIAL ATTENTION SHALL BE PAID BY CONTRACTOR IN SELECTING THE SAFE METHODS OF TRENCHING THE SEWERS. ALL OTHER GOVERNMENTAL REQUIREMENTS RELATIVE TO SAFETY SHALL BE COMPLIED WITH.

16. THE CONTRACTOR SHALL ASCERTAIN WHETHER ANY PERMITS, SPECIAL INSPECTIONS, ETC. ARE REQUIRED WITH RESPECT TO THE CONSTRUCTION OPERATIONS AND WORK UNDER THIS CONTRACT. IT IS SOLELY THE CONTRACTOR'S DUTY TO PROVIDE FOR SUCH REQUIREMENTS AND TO MAKE PAYMENTS AS NECESSARY.

17. DURING CONSTRUCTION, THE CONTRACTOR SHALL REMOVE DIRT AND DEBRIS AND MAINTAIN ROADWAYS IN SAFE AND CLEAN CONDITION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE STREETS AND/OR ASSOCIATED STRUCTURES AND SHALL MAKE REPAIRS AS NECESSARY.

18. THE CONTRACTOR SHALL MAINTAIN THE SURFACE DRAINAGE OF STREETS DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TEMPORARY OUTLETS AND CONNECTIONS FOR ALL PRIVATE AND PUBLIC DRAINS, SEWERS, AND CATCH BASINS WHEN EXISTING DRAINAGE FACILITIES ARE DISTURBED.

19. THE CONTRACTOR SHALL BE EXTREMELY CAUTIOUS WHEN WORKING NEAR ANY RAIL ROAD TRACKS. IF ANY MEN OR MACHINERY ARE REQUIRED TO WORK WITHIN 25' OF THE CENTERLINE OF THE RR TRACKS, NICTD IS TO BE NOTIFIED 24 HOURS IN ADVANCE. NO CRANES ARE ALLOWED WITHIN 25' OF THE TRACK CENTERLINE WITHOUT NICTD PROVIDED RAILROAD PROTECTION.

20. UNLESS OTHERWISE NOTED, THE REMOVAL OF SUCH ITEMS AS SIGNS, CONCRETE STRUCTURES OR OTHER MISCELLANEOUS ITEMS WHICH INTERFERE WITH THE CONSTRUCTION SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT. THE CONTRACTOR SHALL BE REQUIRED TO DISPOSE OF THESE ITEMS LEGALLY OUTSIDE THE LIMITS OF THE RIGHT OF WAY AT LOCATIONS PROVIDED BY NICTD.

21. EXISTING SIGNS TO BE REMOVED, AND NEW TEMPORARY SIGNS SHALL BE SALVAGED AND DELIVERED TO NICTD'S MICHIGAN CITY YARD.

22. NICTD MAY HAVE UNDERGROUND UTILITIES AT THE SITE. THE CONTRACTOR SHALL CONTACT NICTD FOR LOCATES OF THEIR UTILITIES.

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Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	
DRAWN:	
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NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

GENERAL NOTES

FILENAME	DT_DWG_GEN-001_R00_20200316.dgn
SCALE	AS NOTED

SHEET OF

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GENERAL NOTES:

GENERAL:
ALL MATERIALS AND WORKMANSHIP SHALL BE AS PER CURRENT A.R.E.M.A. MANUALS FOR RAILWAY ENGINEERING: CHAPTER 8 CONRETE STRUCTURES AND FOUNDATIONS, CHAPTER 15 STEEL STRUCTURES AND THE PROJECT TECHNICAL SPECIFICATIONS.

STRUCTURE EXCAVATION AND BACKFILL:
ALL STRUCTURE EXCAVATION AND BACKFILL SHALL BE IN ACCORDANCE WITH SECTION XXXXX OF THE PROJECT TECHNICAL SPECIFICATION.

REINFORCEMENT:
STEEL BARS FOR REINFORCEMENT SHALL BE EPOXY COATED STEEL BARS CONFORMING TO THE REQUIREMENTS OF THE CURRENT A.S.T.M. DESIGNATION A615, GRADE 60, OR A706.

FABRICATION FOR REINFORCEMENT SHALL BE IN ACCORDANCE WITH CHAPTER 7 OF THE CURRENT C.R.S.I. MANUAL OF STANDARD PRACTICE.

REINFORCEMENT WIRE BAR SUPPORTS THAT ARE IN CONTACT WITH FORMS SHALL BE CLASS 1, PLASTIC PROTECTED, IN ACCORDANCE WITH CHAPTER 3 OF THE CURRENT C.R.S.I. MANUAL OF STANDARD PRACTICE.

CAST-IN-PLACE CONCRETE:
ALL CONCRETE, CONCRETE WORK AND PLACEMENT OF REINFORCEMENT SHALL BE IN ACCORDANCE WITH SECTION XXXXX OF THE PROJECT TECHNICAL SPECIFICATIONS. DETAILED FALSEWORK PLANS IN ACCORDANCE WITH THE PROJECT TECHNICAL SPECIFICATIONS ARE REQUIRED AS NECESSARY.

THE PORTLAND CEMENT USED IN ALL CONCRETE SHALL BE TYPE II OR TYPE IIA. ALL CONCRETE BE SHALL BE AIR-ENTRAINED CONTAINING NOT LESS THAT 5 PERCENT NOR MORE THAT 7 PERCENT AIR BY VOLUME.

CONCRETE SHALL BE CLASS 40 WITH AN ULTIMATE COMPRESSIVE STRENGTH OF NOT LESS THAT THAT 4000 PSI IN 28 DAYS. MAXIMUM SIZE OF COARSE AGGREGATE SHALL BE ONE INCH. THE MINIMUM CONCRETE COVER ON REINFORCEMENT SHALL BE TWO INCHES UNLESS INDICATED OTHERWISE. EXPOSED CONCRETE EDGES SHALL BE BEVELED ¾".

PERVIOUS BACKFILL MATERIAL BEHIND ABUTMENTS:
PERVIOUS BECKFILL MATERIAL BEHIND ABUTMENT SHALL BE IN ACCORDANCE WITH PARAGRAPHS 2.5 AND 3.6 OF SECTION XXXXX OF THE PROJECT TECHNICAL SPECIFICATION.

PILING:
SHALL MEET THE MATERIAL REQUIREMENTS OF A.S.T.M. A572 GRADE 50 AND SHALL BE DRIVEN IN ACCORDANCE WITH THE PROJECT TECHNICAL SPECIFICATIONS. STEEL FRICTION PILES SHALL BE DRIVEN TO A MINIMUM ULTIMATE RESISTANCE OF 250 TONS AS DETERMINED BY THE MODIFIED ENGINEERING NEWS-RECORD FORMULA AS PER THE PROJECT TECHNICAL SPECIFICATIONS.

PILE DRIVING OPERATION SHALL MINIMIZE VIBRATIONS ON THE ADJACENT BRIDGE SUBSTRUCTURE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MONITORING THE VIBRATIONS CAUSED BY THE PILE DRIVING IN ACCORDANCE WITH THE SECTION XXXXX OF THE PROJECT TECHNICAL SPECIFICATION.

DAMPPROOFING:
THE BACK FACE OF THE NEW ABUTMENT CAPS, BACKWALLS, AND WINGWALLS SHALL BE DAMPPROOFED IN ACCORDANCE WITH THE SECTION XXXXX OF THE PROJECT TECHNICAL SPECIFICATION.

ELASTOMETIC BEARING PADS:
ELASTOMETRIC BEARING PADS SHALL BE IN ACCORDANCE WITH SECTION XXXXX OF THE PROJECT TECHNICAL SPECIFICATION.

DECK PLATES:
THE DECK PLATES SHALL BE ADJUSTED AS NECESSARY TO INSURE THE PLATES FIT TIGHT AGAINST THE BEAMS AND CURBS.

BRIDGE DECK WATERPROOFING:
SEE SHEET XX OF XX FOR WATERPROOFING AND NOTES.

STRUCTURAL STEEL:
SEE SHEET XX OF XX FOR STRUCTURAL STEEL NOTES.

REPAIR OF DAMAGED GALVANIZED SURFACES:
DAMAGED GALVANIZED SURFACES SHALL BE THOROUGHLY CLEANED TO REMOVE ALL CONTAMINANTS INCLUDING WELD SLAG, WELD SPLATTER AND RUST AND SHALL THEN BE PAINTED WITH TWO COATS OF ZINC DUST ZINC OXIDE. TYPE I. LINSEED OIL PAINT MEETING FEDERAL SPECIFICATION TT-P-641.

EXISTING PLANS:
1. RECONSTRUCTION OF NICTD (SOUTHSHORE) BRIDGE OVER BETHLEHEM STEEL ENTRANCE BRIDGE (BRIDGE 47.322), FEBRUARY, 2000.

SURVEY DATA:

BENCHMARK:

LIFTING WEIGHTS:
SEE SHEET XX OF XX STEEL LIFTING WEIGHTS.

DESIGN DATA:

2019 A.R.E.M.A. DESIGN SPECIFICATIONS
LOADING: COOPER E 80 W/ DIESEL IMPACT AND A.R.E.M.A. CHAPTER 15 ALTERNATIVE LIVE LOAD.

ATTENTION!! UTILITY NOTE:

THE IMPLIED PRESENCE OR ABSENCE OF UTILITIES IS NOT TO BE CONSTRUED BY OWNER, ENGINEER, CONTRACTOR, OR SUBCONTRACTORS TO BE AN ACCURATE AND COMPLETE REPRESENTATION OF UTILITIES THAT MAY OR MAY NOT EXIST ON THE CONSTRUCTION SITE. BURIED AND ABOVEGROUND UTILITY LOCATION, IDENTIFICATION AND MARKING ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. REROUTING, DISCONNECTION, PROTECTION, ETC. OF ANY UTILITIES MUST BE COORDINATED AMONG THE CONTRACTOR, UTILIITY COMPANY, AND OWNER. SITE SAFETY, INCLUDING THE AVOIDANCE OF HAZARDS, ASSOCIATED WITH BURIED AND ABOVEGROUND UTILITIES REMAIN THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

LEGEND:

F.S. = FARSIDE
N.S. = NEAR SIDE
B.S. = BOTH SIDES
U.N.O. =UNLESS NOTED OTHERWISE
cts. = CENTER
E.F. = EACH FACE
F.F. = FRONT FACE
B.F. = BACK FACE
T. = TOP
B. = BOTTOM
EXP. = EXPANSION BEARING
FIX. = FIXED BEARING
E.E. = EACH END
SPA = SPACES

PLOT DATE: 3/13/2020 5:08:35 PM bill.mcnatt

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-100 OF BRG-116

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Chicago, IL 60601
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www.aecom.com

ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

NICTD
NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	AECOM - RL
DRAWN:	AECOM - MW
CHECKED:	AECOM - TH
DATE:	03/16/2020

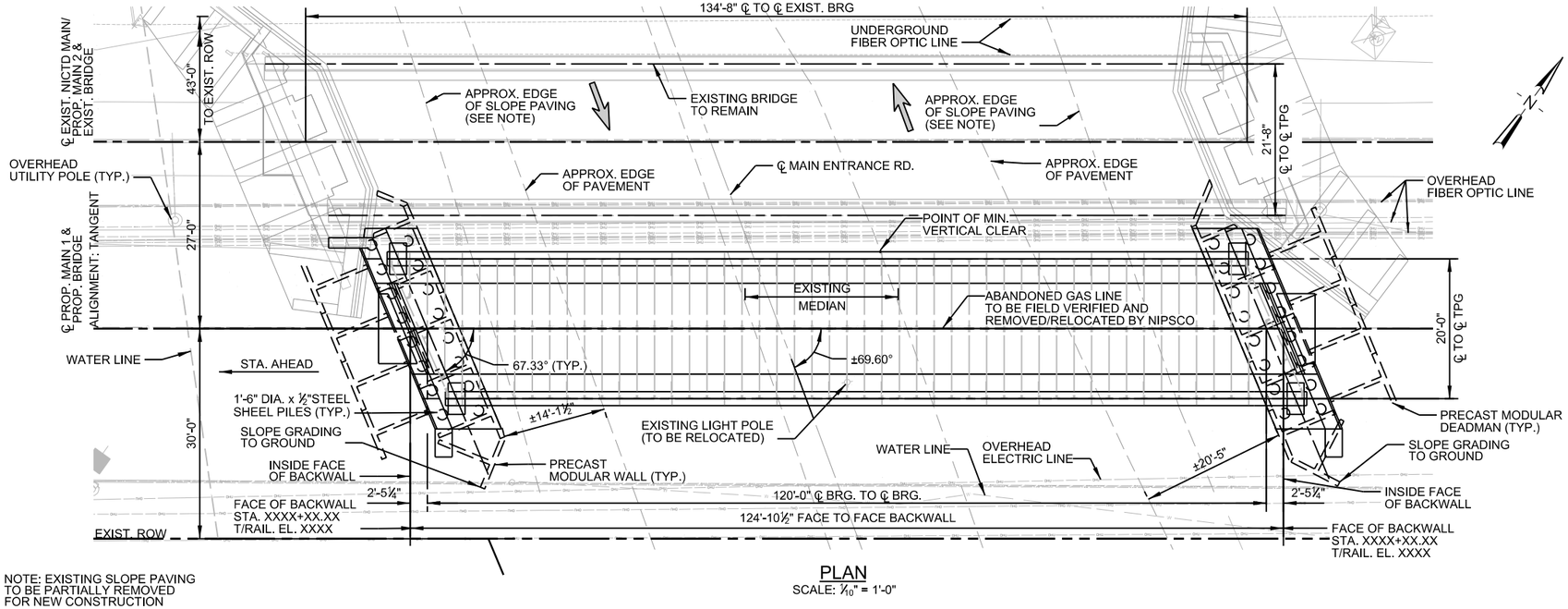
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR. 47.322 OVER ARCELOR MITTAL MAIN ENTRANCE RD GENERAL NOTES

FILENAME	DT_CAD_60BRG-100
SCALE	AS NOTED
SHEET	OF

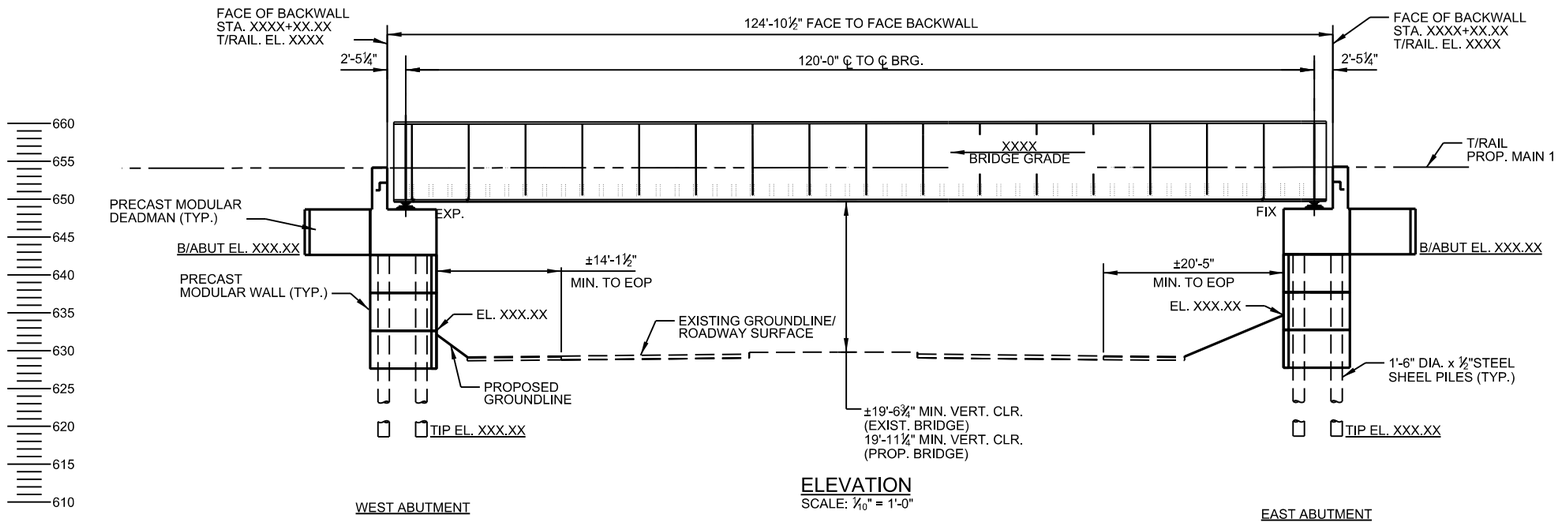
TO MILLENNIUM STATION

TO SOUTH BEND AIRPORT



NOTE: EXISTING SLOPE PAVING TO BE PARTIALLY REMOVED FOR NEW CONSTRUCTION

PLAN
SCALE: 1/10" = 1'-0"



ELEVATION
SCALE: 1/10" = 1'-0"

WEST ABUTMENT

EAST ABUTMENT

NOTES:

1. STATION AND T/RAIL ELEVATIONS TAKEN AT ℄ OF BRIDGE.

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CHECKED:	AECOM - TM
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR. 47.322 OVER ARCELOR MITTAL MAIN ENTRANCE RD GENERAL PLAN & ELEVATION

FILENAME	DT_CAD_60BRG-101
SCALE	AS NOTED

SHEET OF

TO MILLENNIUM STATION

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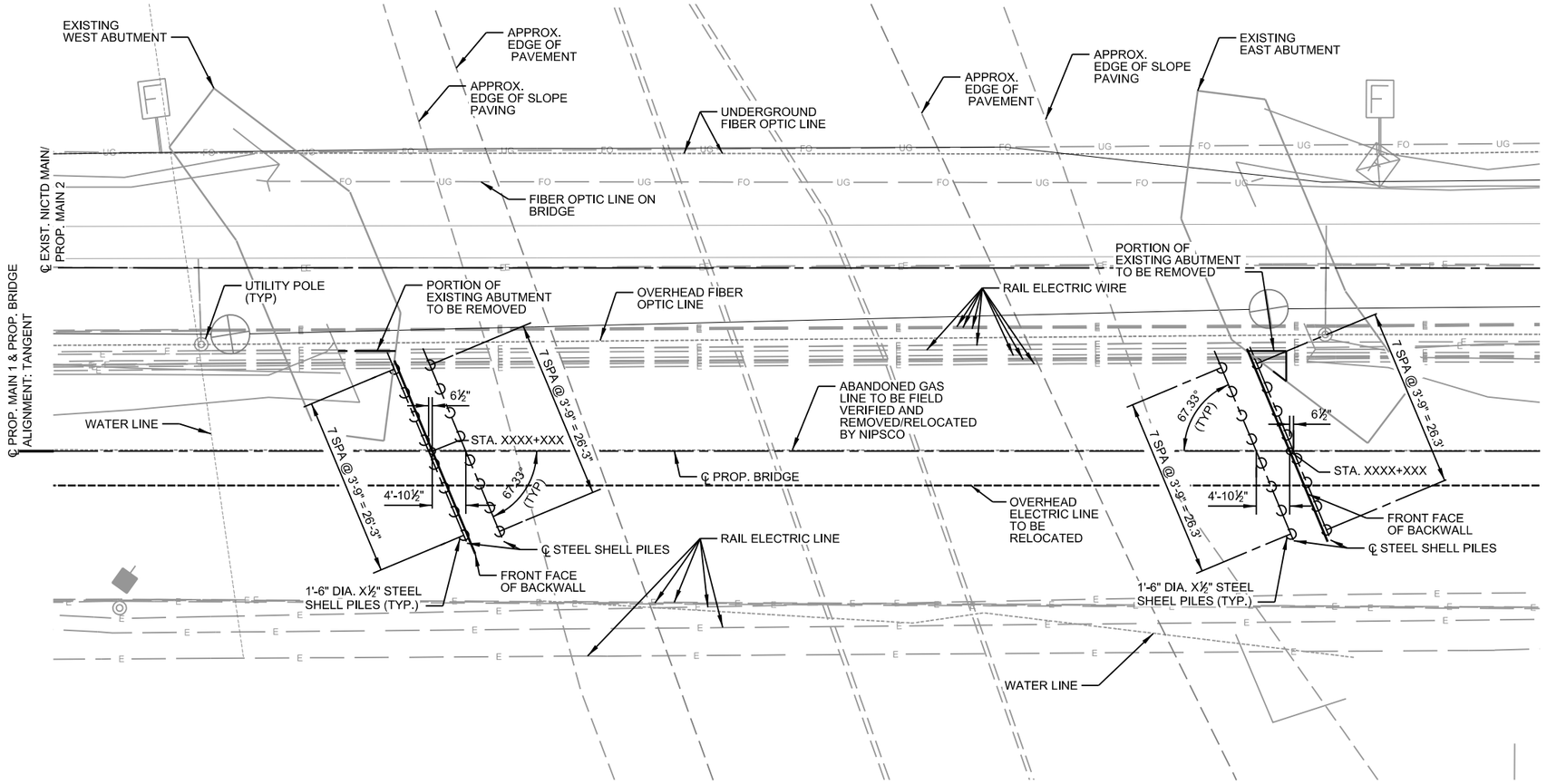

FOUNDATION LAYOUT PLAN

SCALE: 1/10" = 1'-0"

ELEVATIONS FOR PROPOSED BRIDGE

ABUT./ PIER NO.	T/RAIL ELEV.	BRIDGE SEAT	T/SHAFT CUTOFF	ESTIMATED BOTT. SHAFT ELEVATION *
EAST ABUT.	XXXX	XXXX	XXXX	XXXX
WEST ABUT.	XXXX	XXXX	XXXX	XXXX

* NOTE: ELEVATIONS ARE ESTIMATES BASED ON GEOTECHNICAL DATA AND CONDITIONS AT TIME OF BORINGS. ACTUAL FIELD CONDITIONS MAY VARY PENDING EQUIPMENT APPROVAL BY ENGINEER.

ATTENTION !

INFORMATION SHOWN ON THESE PLANS CONCERNING TYPE AND LOCATION OF UNDERGROUND OR ABOVE GROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE.

THE FORMAN IN CHARGE WILL VERIFY THE LOCATION OF UNDERGROUND AND OVERHEAD UTILITIES BEFORE BEGINNING CONSTRUCTION.

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DRAWING BRG-102 OF BRG-116

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CHECKED:	AECOM - TH
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

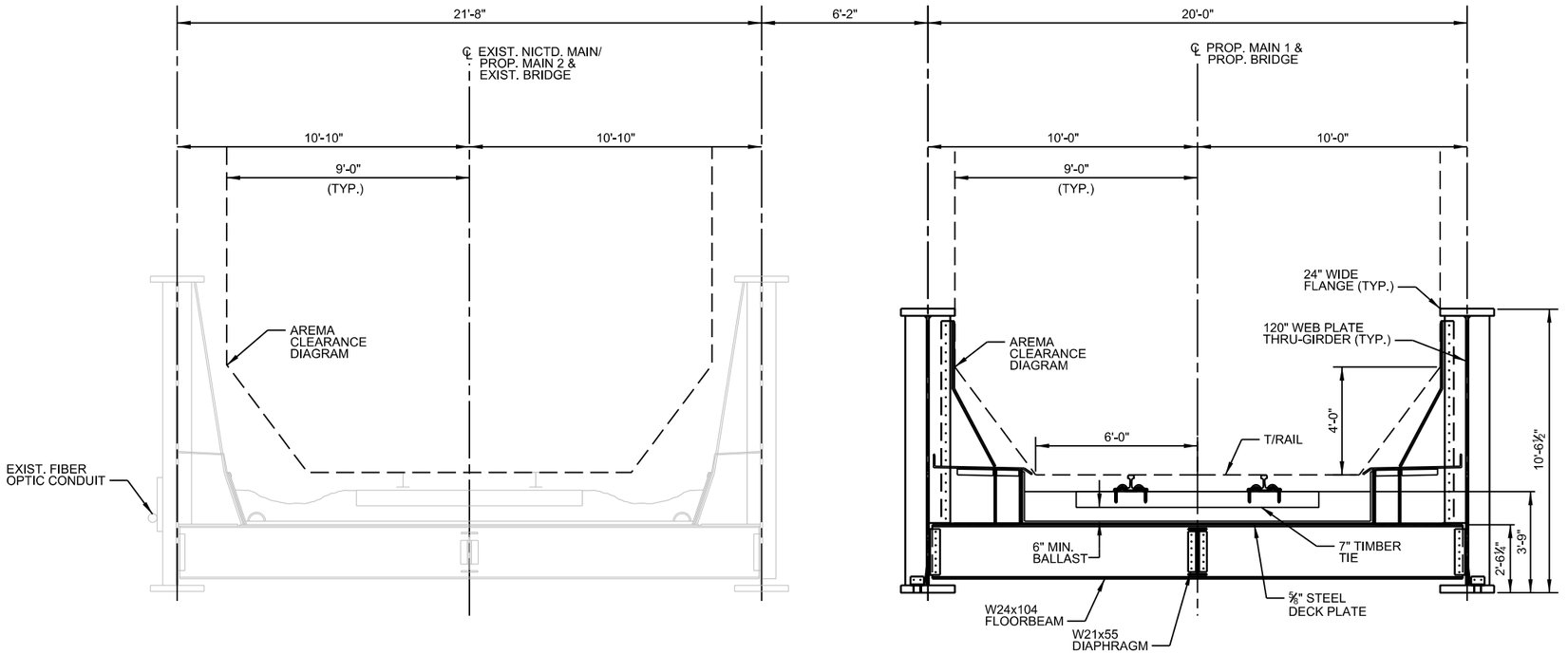
BR. 47.322 OVER ARCELOR MITTAL MAIN ENTRANCE RD
FOUNDATION LAYOUT PLAN

FILENAME	DT_CAD_60BRG-102
SCALE	AS NOTED

SHEET OF

CONSTRUCTION DEPTH

RAIL AND TIE PLATE	7½"
TIMBER TIE	7"
BALLAST	6"
WATERPROOFING	1⅛"
DECK PLATE	⅝"
FLOORBEAM	24"
CLEARANCE	3"
FLANGE PLATE	3¼"
	52½"



TYPICAL SECTION

SCALE: ⅜" = 1'-0"

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DRAWING BRG-103 OF BRG-116

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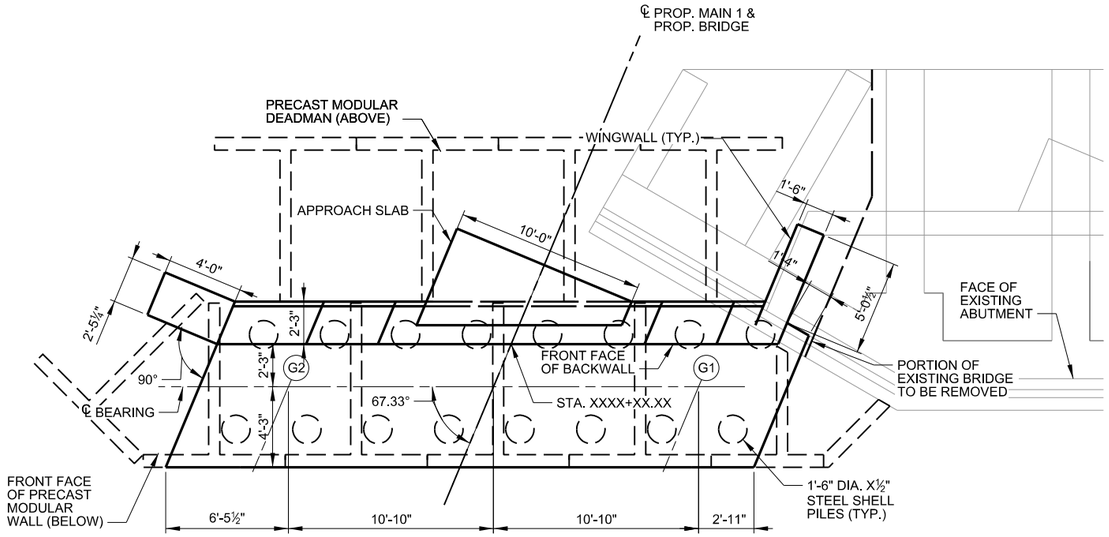
CHECKED:	AECOM - TH
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

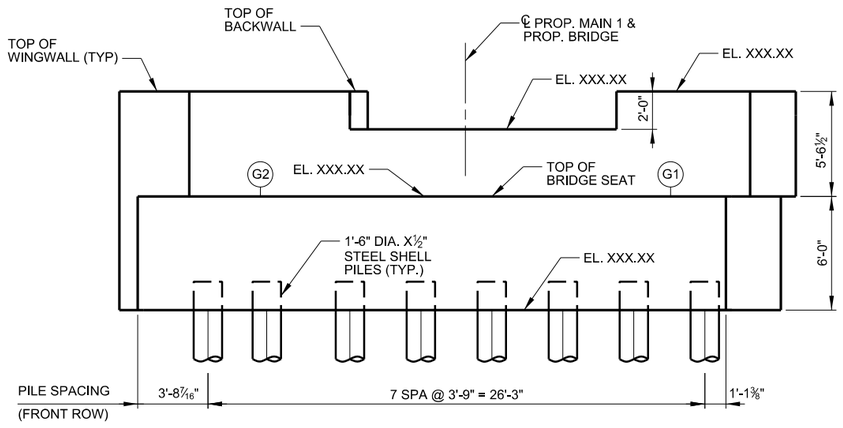
BR 47.322 OVER ARCELOR MITTAL MAIN ENTRANCE RD TYPICAL SECTION

FILENAME	DT_CAD_60BRG-103
SCALE	AS NOTED

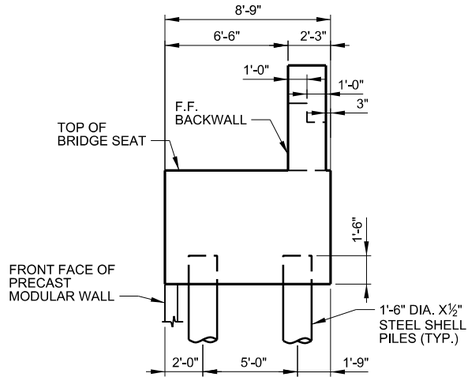
SHEET OF



PLAN - WEST ABUTMENT
SCALE: ¼" = 1'-0"



ELEVATION - WEST ABUTMENT
SCALE: ¼" = 1'-0"
PRECAST MODULAR WALL NOT SHOWN FOR CLARITY



TYPICAL SECTION
SCALE: ¼" = 1'-0"

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DRAWING BRG-104 OF BRG-116

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MICHIGAN CITY TO GARY, INDIANA

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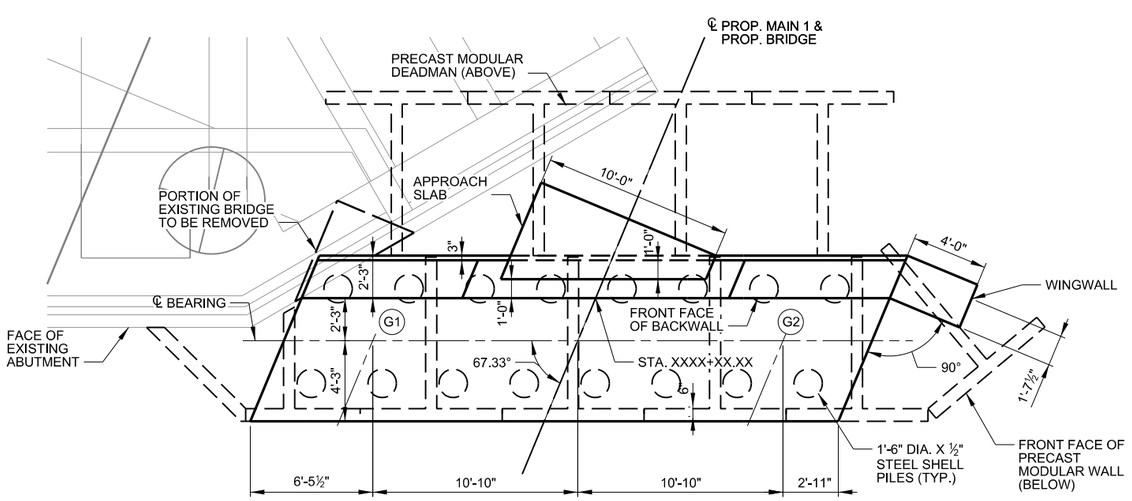
DRAWN:	AECOM - MW
CHECKED:	AECOM - TH
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR. 47.322 OVER ARCELOR MITTAL MAIN ENTRANCE RD WEAT ABUTMENT FRAMING DETAILS

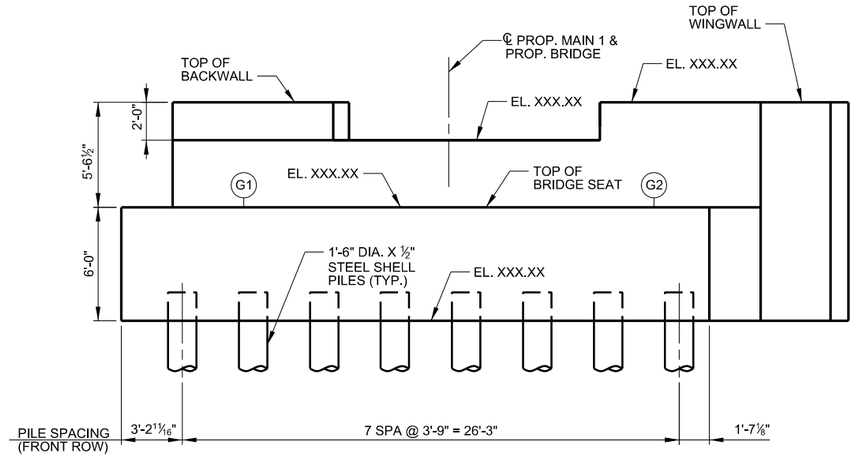
FILENAME	DT_CAD_60BRG-104
SCALE	AS NOTED

SHEET OF



PLAN - EAST ABUTMENT

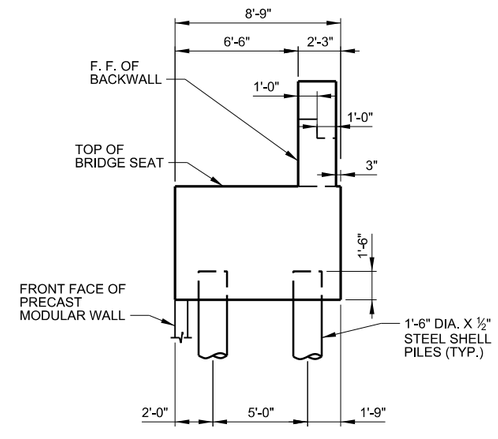
SCALE: ¼" = 1'-0"



ELEVATION - EAST ABUTMENT

SCALE: ¼" = 1'-0"

PRECAST MODULAR WALL NOT SHOWN FOR CLARITY



TYPICAL SECTION

SCALE: ¼" = 1'-0"

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DRAWING BRG-105 OF BRG-116

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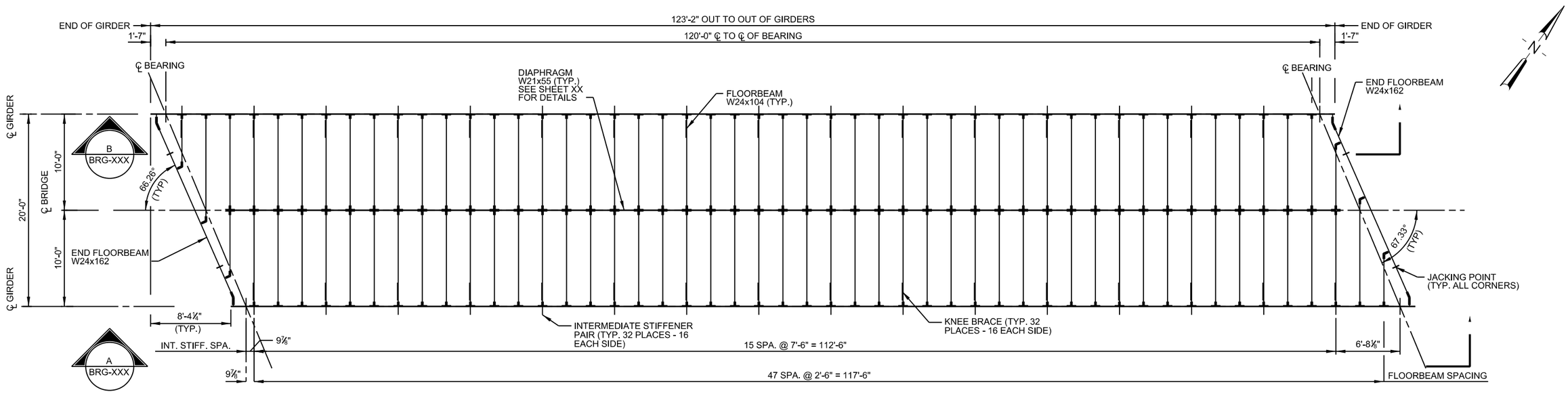
BR 47.322 OVER ARCELOR MITTAL MAIN ENTRANCE RD EAST ABUTMENT FRAMING DETAILS

FILENAME	DT_CAD_60BRG-105
SCALE	AS NOTED
SHEET	OF



FRAMING PLAN

SCALE: 3/16" = 1'-0"

STEEL NOTES:

GENERAL:
ALL MATERIALS,FABRICATION, AND ERECTION SHALL BE IN ACCORDANCE WITH CHAPTER 15 OF THE CURRECT AREMA MANUAL FOR RAILWAY ENGINEERING AND SECTION XXXXX OF THE PROJECT TECHNICAL SPECIFICATION.

DEAD LOAD: (ASSUMED)

RAIL	-
BALLAST (INCL. TIE)	-
WATERPROOFING	-
FUTURE BALLAST	-
STEEL	-
TOTAL	-

DESIGN LOADING:
COOPER E80 AND ALTERNATE LIVE LOAD WITH DIESEL IMPACT FOR BALLAST DECK.

MATERIAL :
STRUCTURAL STEEL FABRICATORS SHALL BE CERTIFIED UNDER THE AISC QUALITY CERTIFICATION PROGRAM, "MAJOR STEEL BRIDGES", OR ANOTHER SUITABLE PROGRAM AS DETERMINED BY THE ENGINEER.

ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A709, GRADE 50W, UNLESS NOTED OTHERWISE. ZONE 2 CONDITIONS CONTROL FOR CHARPY V-NOTCH TESTING.

FRACTURE CRITICAL MEMBERS (FCM) SHALL BE CHARPY V-NOTCH (CVN) TESTED, ACCORDING TO AREMA TABLE 15-9-3, ZONE 2, P FREQUENCY IN ACCORDANCE WITH ASTM A673.

FLANGES, FLOOR BEAMS, STIFFENERS, KNEE BRACES, FLOOR PLATE, CONNECTION ANGLES AND DIAPHRAGMS SHALL BE CHARPY V-NOTCH (CVN) TESTED, ACCORDING TO AREMA TABLE 15-9-2, H FREQUENCY IN ACCORDANCE WITH ASTM A673.

FABRICATION NOTE:
FASTENERS SHALL BE ASTM F3125 GRADE A325 SLIP CRITICAL CLASS A HEAVY HEX HIGH STRENGTH BOLTS, TYPE 3, BOLTS 7/8"DIA., OPEN HOLES 15/16"DIA. UNLESS OTHERWISE NOTED. BOLTED CONNECTIONS SHALL USE ASTM A563, GRADE C3, HEAVY HEX NUTS AND ASTM F436 HARDENED WEATHERING STEEL WASHERS FOR HIGH STRENGTH BOLTS UNDER THE TURNED ELEMENT. HIGH STRENGTH BOLTS SHALL BE TIGHTENED BY THE "TURN-OF-NUT"METHOD TO OBTAIN PROPER BOLT TENSION.

BEARING PLATES ARE TO BE FLAT AND LEVEL AFTER WELDING.

ALL WELDING OPERATIONS PROCESSES, EQUIPMENT, MATERIALS, QUALIFICATIONS OF WELDERS, WORKMANSHIP, TESTING AND INSPECTION SHALL BE IN ACCORDANCE WITH THE CURRENT AREMA MANUAL AND CURRENT AWS STRUCTURAL WELDING CODE D1.5. ALL WELD METAL MUST BE EQUIVALENT TO THE BASE METAL IN STRENGTH, CORROSION RESISTANCE AND WEATHERED APPEARANCE. FIELD WELDING OF CONSTRUCTION ACCESSORIES TO THE BEAMS WILL NOT BE PERMITTED. ALL SHOP AND FIELD WELDING SHALL BE EITHER SMAW OR SAW UNLESS APPROVED BY THE ENGINEER.

AFTER FABRICATION OF WEATHERING STEEL STRUCTURE AND WHILE THE STRUCTURE IS WAITING TO BE SHIPPED, THE FABRICATOR SHALL COMPLETELY WET THE STRUCTURE WITH WATER ONCE DAILY TO START THE WEATHERING PROCESS. THE FABRICATOR SHALL PROVIDE 2 WEEKS OF DAILY WETTING FOLLOWED BY WETTING EVERY FOUR DAYS.

ALL SHOP DRAWINGS SHALL BE CHECKED BY THE FABRICATOR BEFORE SUBMITTING THEM FOR APPROVAL. SUBMISSION SHALL BE MADE TO NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT (NICTD), 33 EAST HIGHWAY 12, CHESTERTON, INDIANA 46304. THESE DRAWINGS MAY BE SUBMITTED BY EMAIL WITH MAXIMUM FILE SIZE OF 10Mb PER EMAIL. THEY CAN ALSO BE TRANSFERRED BY FTP AT FABRICATOR'S DISCRETION. THESE DRAWINGS SHALL BECOME THE PROPERTY OF, AND SHALL BE DELIVERED TO THE RAILWAY CO. UPON COMPLETION OF THE CONTRACT.

DURING THE PREPARATION OF SHOP DRAWINGS, THE FABRICATOR SHALL CHECK ALL GENERAL DIMENSIONS OF THE STEEL WORK AND SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER FOR REVISION AND CORRECTION BEFORE FABRICATION IS BEGUN. NO ALLOWANCE WILL BE MADE TO THE FABRICATOR FOR MATERIAL FABRICATED TO INCORRECT DIMENSIONS NOT SO REPORTED.

ALL EXPOSED SURFACES OF STRUCTURAL STEEL SHALL BE CLEANED PER STEEL STRUCTURES PAINTING COUNCIL SPECIFICATION SSPC-SP6, AND PER SECTION XXXXX OF THE PROJECT TECHNICAL SPECIFICATION.

THE TOP SURFACE OF THE BEAMS SHALL BE ADJUSTED TO FORM A STRAIGHT LINE AT ANY TRANSVERSE SECTION THROUGHOUT THE SPAN. TOLERANCE IS PLUS OR MINUS 1/8".

SPAN SHALL BE FULLY SHOP ASSEMBLED TO ASSURE ACCURATE FIT. DISASSEMBLE AS REQUIRED FOR SHIPPING.

ERECTION NOTES:
A SINGLE GIRDER MAY NOT BE ERECTED DURING HIGH WIND CONDITIONS WITHOUT THE SUPPORT OF THE SECOND GIRDER CONNECTED BY ALL KNEE BRACES AND FLOOR BEAMS.

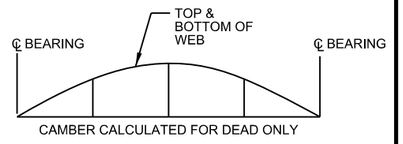
SPLICE NOTES:
1. NO TWO PARTS OR MEMBERS SHALL BE SPLICED BY SHOP WELDING AT THE SAME LOCATION.
2. WEB SPLICES BY SHOP WELDING SHALL BE LOCATED A MINIMUM OF 36"AWAY FROM ANY FLANGE SPLICE.
3. SPLICES OF THE WEB OR FLANGES SHALL NOT BE PERMITTED WITHIN THE CENTRAL 40'-0"OF THE GIRDER SPAN LENGTH. THIS REQUIREMENT MAY BE WAIVED ONLY BY THE APPROVAL OF THE ENGINEER.

ESTIMATED WEIGHT OF STRUCTURAL STEEL = XXX TONS
ESTIMATED LIFTING WEIGHT OF ONE GIRDER = XXX TONS

TOP OF TIE	TO MASONRY	TO CLEARANCE
TIE	-	-
BALLAST	-	-
WATERPROOFING	-	-
BALLAST PAN	-	-
FLOORBEAM	-	-
FLANGE PLATE	-	-
NUT & BOLT SHANK	-	-
BEARING	-	-
TOTAL	-	-

MOMENT & SHEAR TABLE FOR STEEL THRU PLATE GIRDER

DESCRIPTION	MOMENT	SHEAR
DEAD LOAD	-	-
LIVE LOAD	-	-
IMPACT	-	-
TOTAL	-	-
SECTION	-	
NET I	-	
NET S (BOTT)	-	
fsc (TOP)	-	
GROSS I	-	
GROSS S (TOP)	-	
fsc (TOP)	-	



CAMBER DIAGRAM

MOMENT & SHEAR TABLE FOR STEEL FLOORBEAMS

DESCRIPTION	MOMENT	SHEAR	MOMENT *	MOMENT *
DEAD LOAD	-	-	-	-
LIVE LOAD	-	-	-	-
IMPACT	-	-	-	-
TOTAL	-	-	-	-
SECTION	-		-	
NET I	-		-	
NET S (BOTT)	-		-	
fsc (TOP)	-		-	
GROSS I	-		-	
GROSS S (TOP)	-		-	
fsc (TOP)	-		-	

* JACKING CONDITIONS CONTROL
50% ALLOWABLE STRESS INCREASE IS PERMITTED

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-106 OF BRG-116

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	AECOM - RL
DRAWN:	AECOM - MW
CHECKED:	AECOM - TH
DATE:	03/16/2020

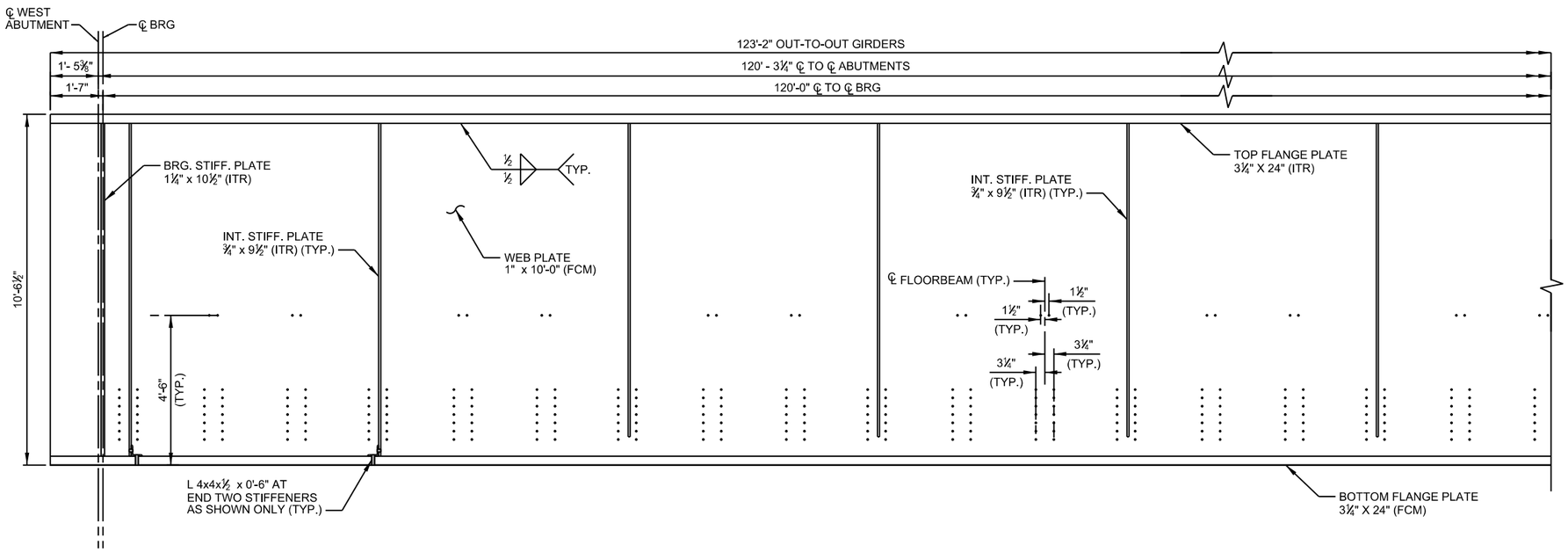
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 47.322 OVER ARCELOR MITTAL MAIN ENTRANCE RD FRAMING PLAN

FILENAME	DT_CAD_60BRG-106
SCALE	AS NOTED
SHEET	OF

TO MILLENNIUM STATION

TO SOUTH BEND AIRPORT



VIEW A - A OUTSIDE ELEVATION OF GIRDER

SCALE:½" = 1'-0"

NOTES:

1. FCM - FRACTURE CRITICAL MEMBER
2. ITR - IMPACT TEST REQUIRED

PLOT DATE: 3/13/2020 5:09:23 PM billmcnatt

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-107 OF BRG-116

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	AECOM - RL
DRAWN:	AECOM - MW
CHECKED:	AECOM - TH
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

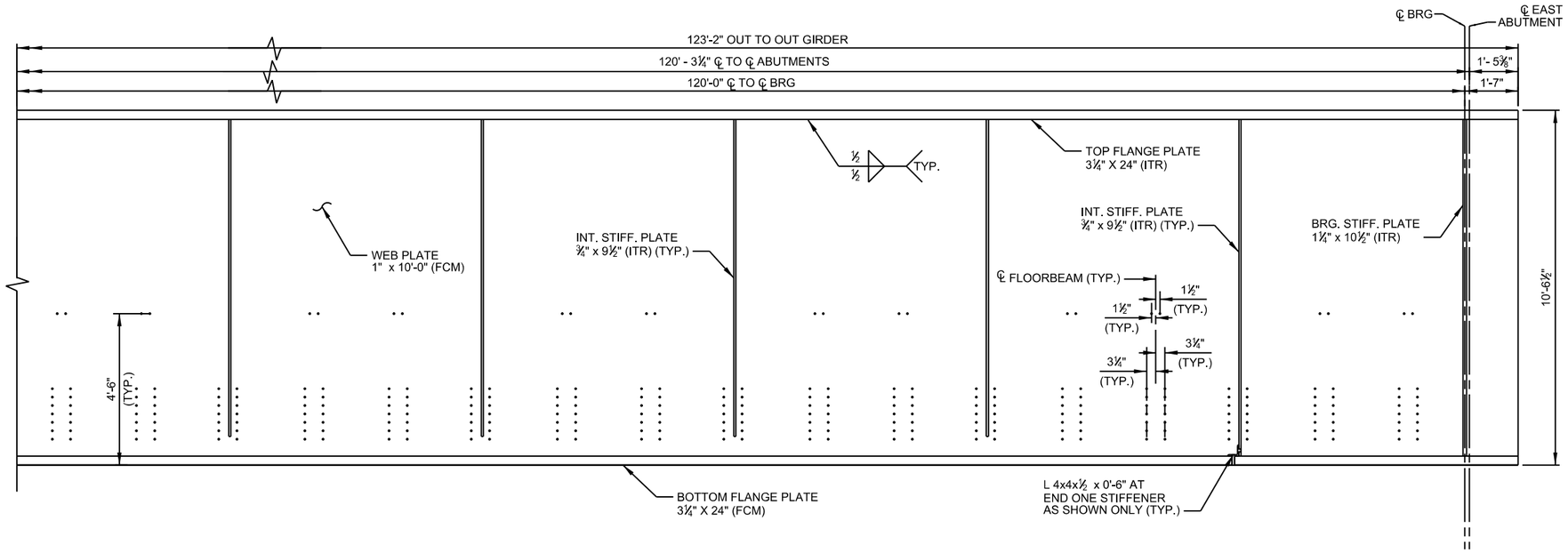
BR. 47.322 OVER ARCELOR MITAL MAIN ENTRANCE RD OUTSIDE ELEV. OF GIRDER (1 OF 2)

FILENAME	DT_CAD_60BRG-107
SCALE	AS NOTED

SHEET OF

TO MILLENNIUM STATION

TO SOUTH BEND AIRPORT



VIEW A - A OUTSIDE ELEVATION OF GIRDER

SCALE:½" = 1' - 0"

NOTES:

1. FCM - FRACTURE CRITICAL MEMBER
2. ITR - IMPACT TEST REQUIRED

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NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

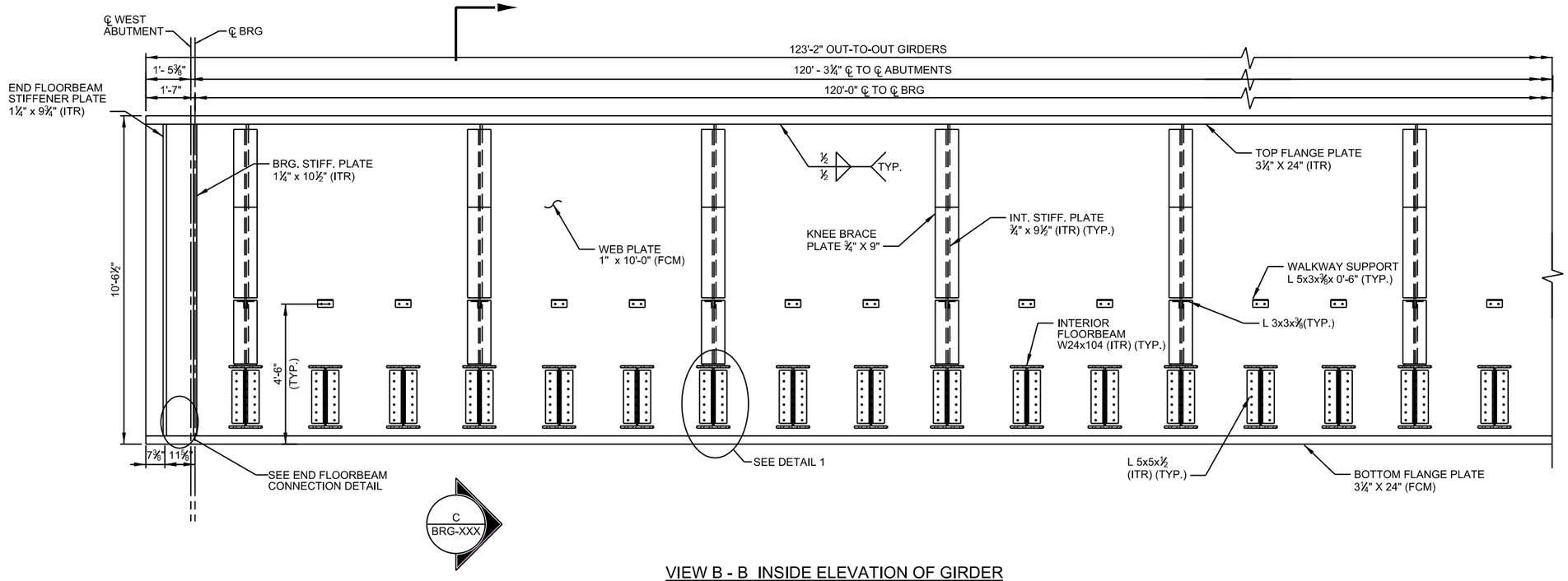
BR. 47.322 OVER ARCELOR MITTAL MAIN ENTRANCE RD. OUTSIDE ELEV. OF GIRDER (2 OF 2)

FILENAME	DT_CAD_60BRG-108
SCALE	AS NOTED

SHEET OF

TO MILLENNIUM STATION

TO SOUTH BEND AIRPORT



VIEW B - B INSIDE ELEVATION OF GIRDER

SCALE: ½" = 1' - 0"
SEE SHEET XXX FOR SECTION C-C
SEE SHEET XXX FOR DETAIL 1
SEE SHEET XXX FOR END FLOORBEAM CONNECTION DETAIL

NOTES:

1. FCM - FRACTURE CRITICAL MEMBER
2. ITR - IMPACT TEST REQUIRED

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DOUBLE TRACK N·W·I
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NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

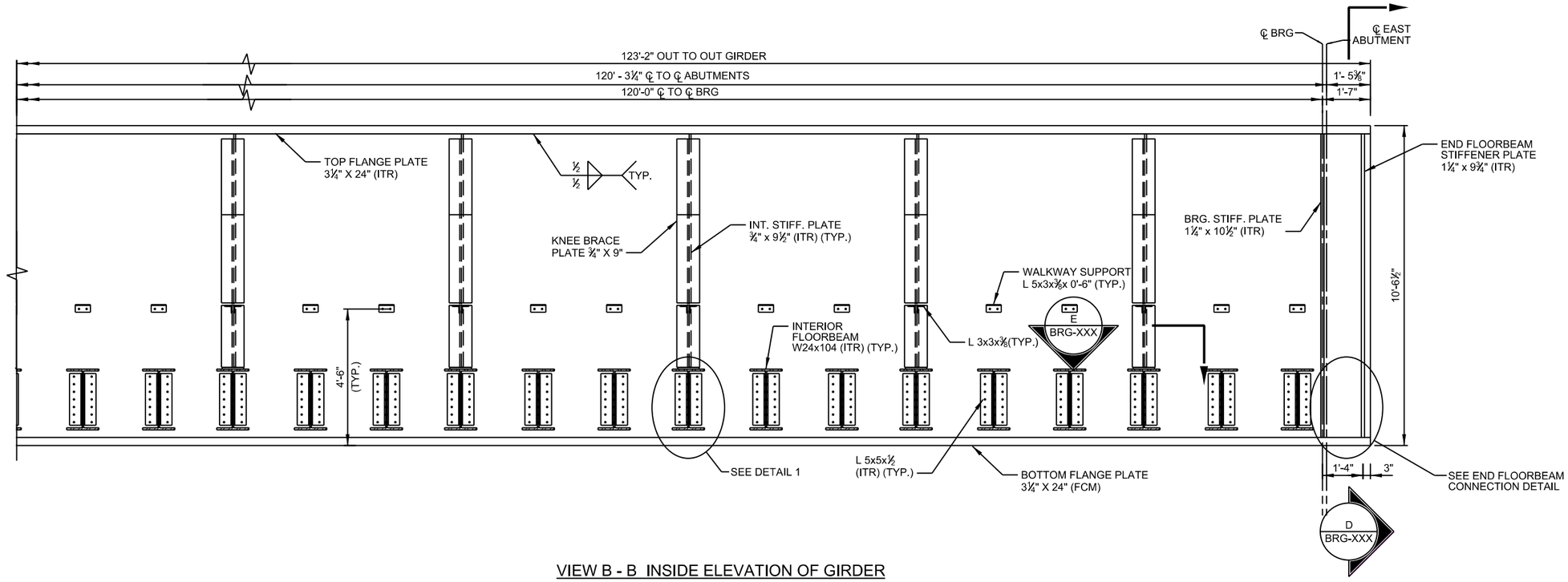
BR. 47.322 OVER ARCELOR MITTAL MAIN ENTRANCE RD. INSIDE ELEV. OF GIRDER (1 OF 2)

FILENAME	DT_CAD_60BRG-109
SCALE	AS NOTED

SHEET OF

TO MILLENNIUM STATION

TO SOUTH BEND AIRPORT



VIEW B - B INSIDE ELEVATION OF GIRDER

SCALE:½" = 1' - 0"

SEE SHEET XXX FOR SECTION D-D
SEE SHEET XXX FOR SECTION E-E
SEE SHEET XXX FOR DETAIL 1

NOTES:

1. FCM - FRACTURE CRITICAL MEMBER
2. ITR - IMPACT TEST REQUIRED

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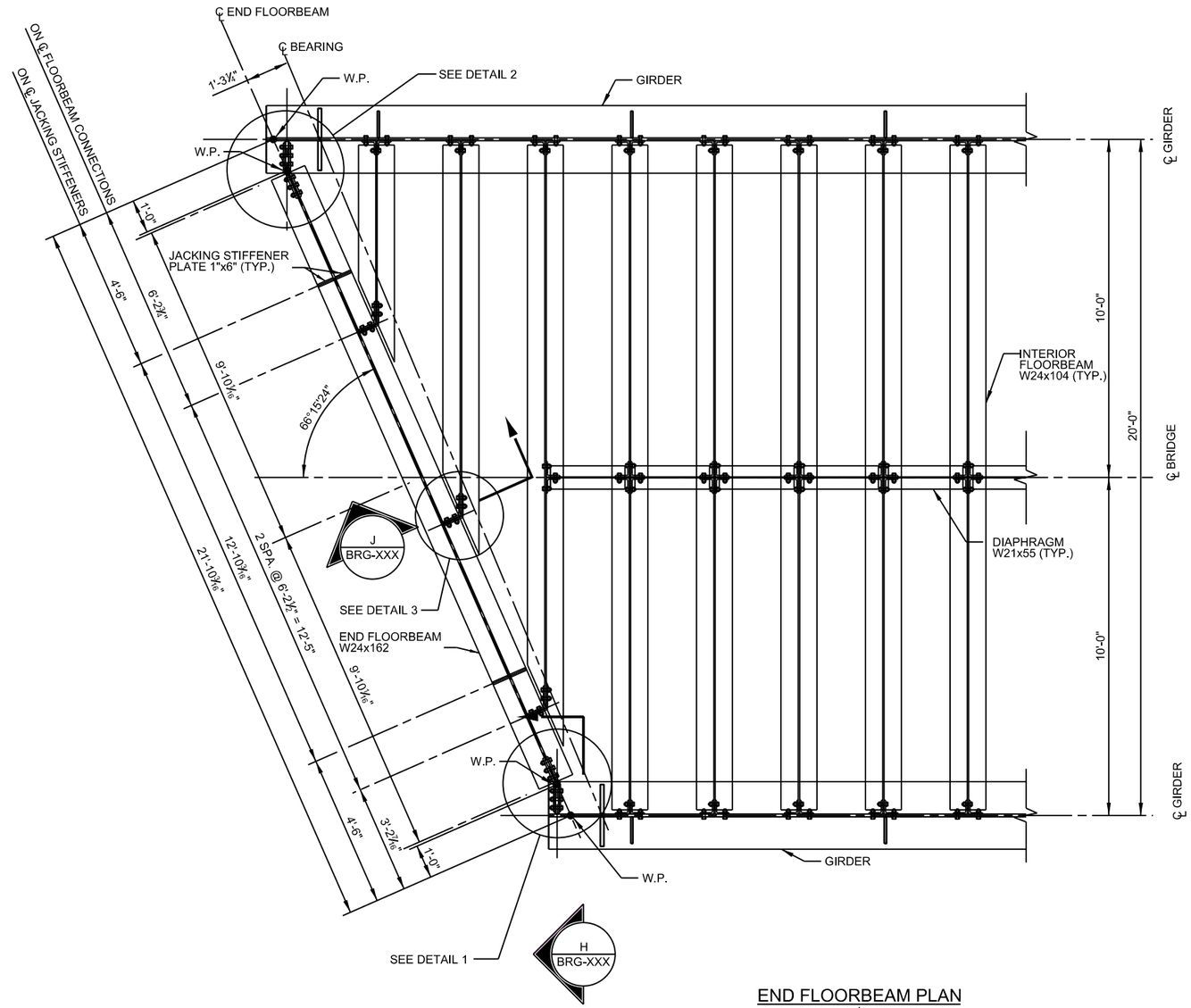
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

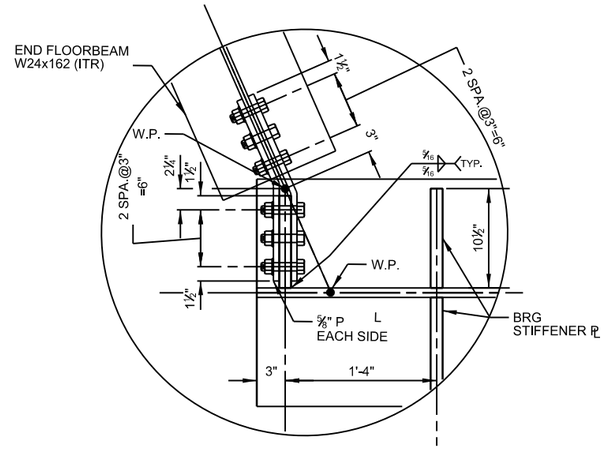
BR. 47.322 OVER ARCELOR MITTAL MAIN ENTRANCE RD. INSIDE ELEV. OF GIRDER (2 OF 2)

FILENAME	DT_CAD_60BRG-110
SCALE	AS NOTED

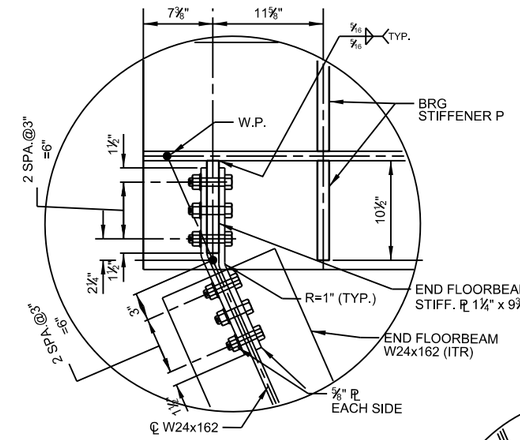
SHEET OF



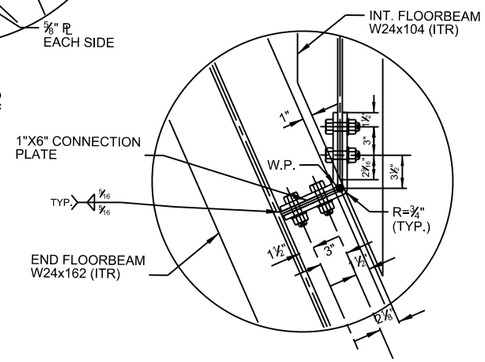
END FLOORBEAM PLAN
SCALE: ½" = 1'-0"



DETAIL 1



DETAIL 2



DETAIL 3

NOTES:

1. TOP FLANGES NOT SHOWN FOR CLARITY
2. FOR SECTIONS H AND J SEE SHEET XXX

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DRAWING BRG-111 OF BRG-116

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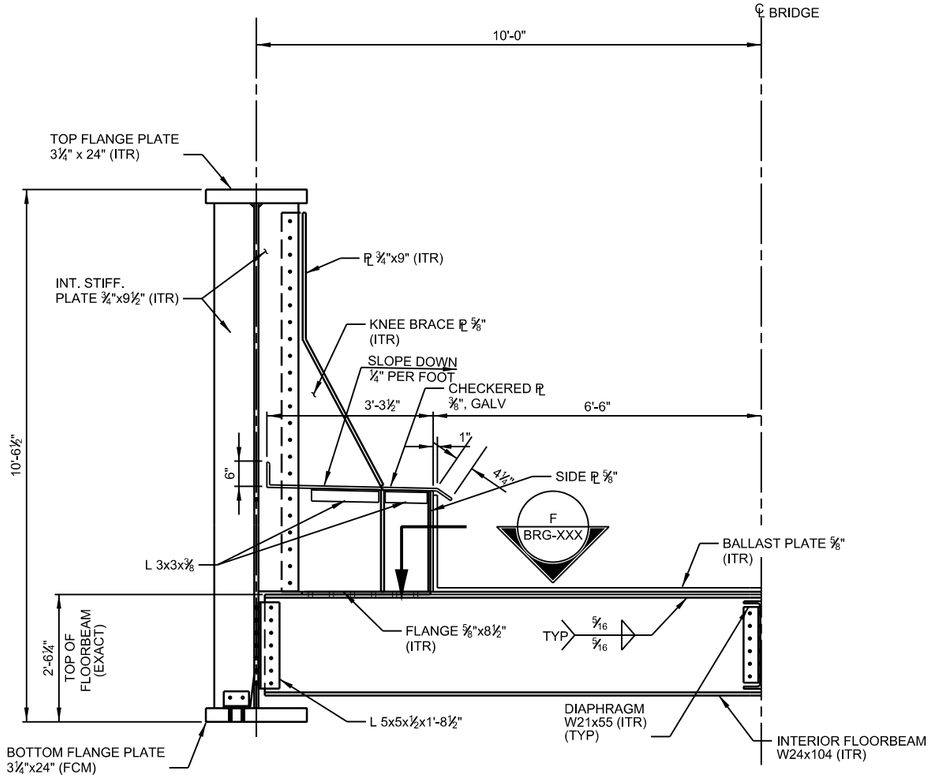
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	
DRAWN:	
CHECKED:	
DATE:	

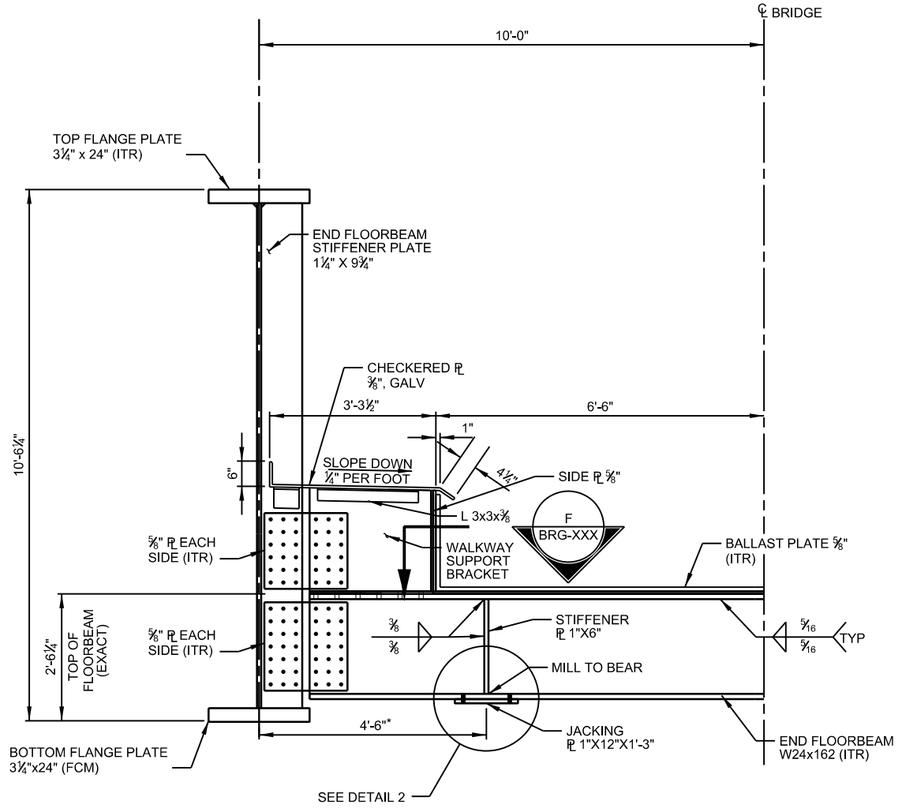
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 47.322 OVER ARCELOR MITTAL MAIN ENTRANCE RD END FLOORBEAM PLAN

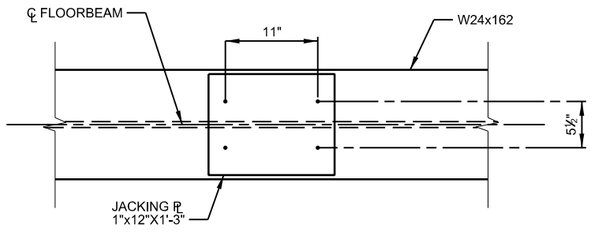
FILENAME	DT_CAD_60BRG-111	SHEET	OF
SCALE	AS NOTED		



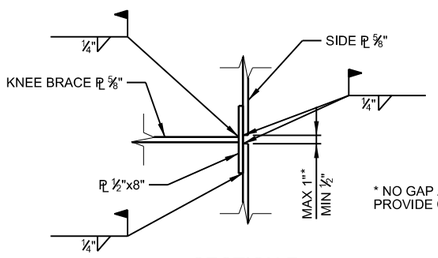
SECTION C
SCALE: 1½" = 1'-0"



SECTION D
SCALE: 1½" = 1'-0"
* ALONG END FLOORBEAM ℄



DETAIL 2
SCALE: 3" = 1'-0"
LOOKING AT UNDERSIDE OF FLOORBEAM
BOLT HEADS TO BE DOWN



SECTION F
SCALE: 3" = 1'-0"

* NO GAP AT WALKWAY SUPPORT BRACKET PROVIDE CONTINUOUS SIDE ℄.

NOTES:
1. NOTCH CHECKERED PLATE TO FIT AROUND BRACKET PLATE AND STIFFENER PLATE.
2. FOR WALKWAY BRACKET DIMENSION, SEE WALKWAY SUPPORT BRACKET DETAIL ON SHEET ***.
3. FOR LOCATION AND WELDING OF ANGLES 3X3X⅜ ON KNEE BRACES, SEE SECTION X-X AND X-X ON SHEET XX OF XX.
4. JACKING CONNECTIONS DESIGNED FOR DL ONLY. LL NOT PERMITTED DURING JACKING.

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DRAWING BRG-112 OF BRG-116

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

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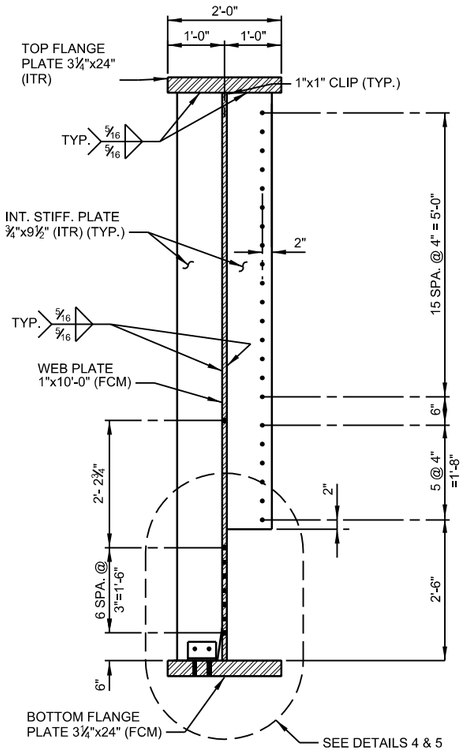
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

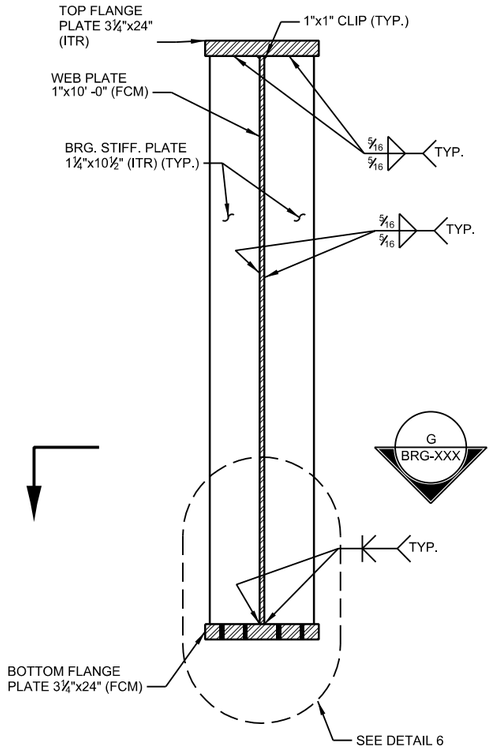
BR 47.322 OVER ARCELOR MITTAL MAIN ENTRANCE RD SECTIONS AND DETAILS

FILENAME	DT_CAD_60BRG-112
SCALE	AS NOTED

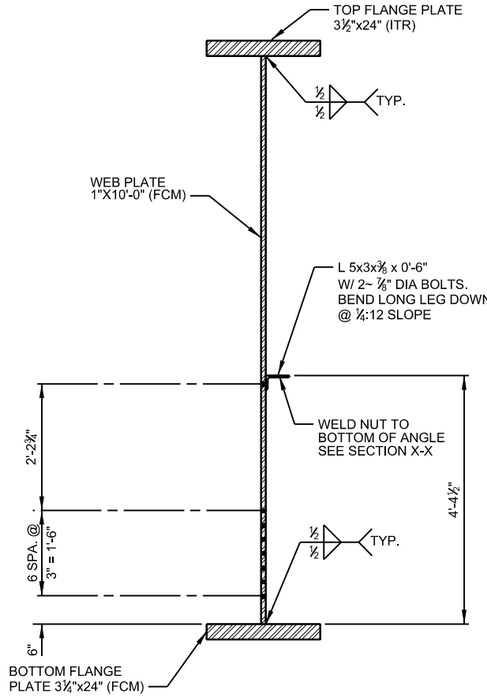
SHEET OF



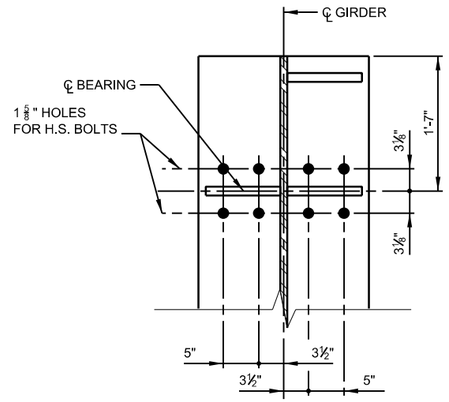
TYPICAL SECTION AT INT. STIFFENER AND KNEE BRACE
(KNEE BRACE OMITTED FOR CLARITY)



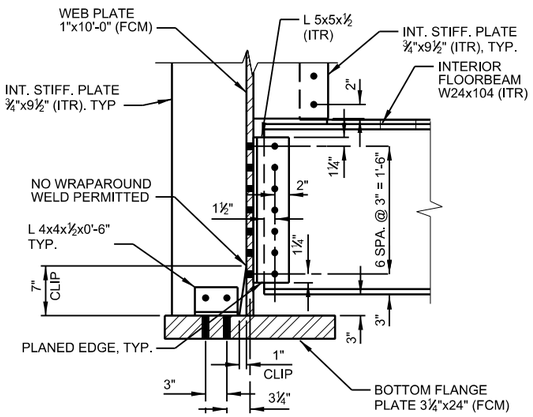
TYPICAL SECTION AT BEARING STIFFENER



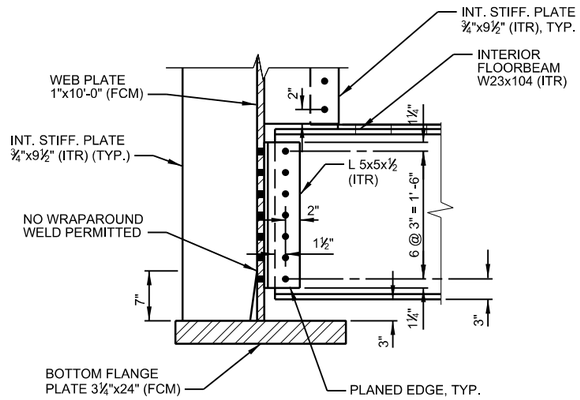
TYPICAL SECTION AT CHECKERED PLATE SUPPORT



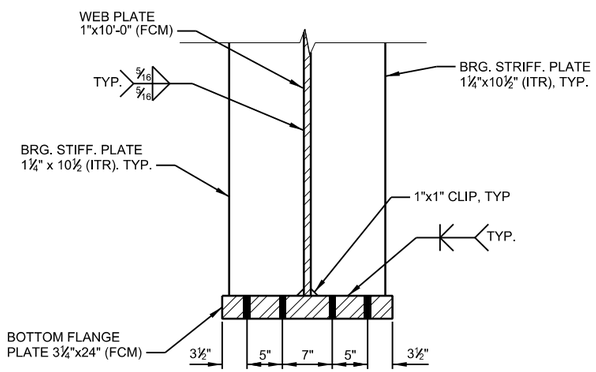
SECTION G



DETAIL 4
TYPICAL FOR STIFFENER WITHIN 12'-0" OF GIRDER ENDS
(KNEE BRACE OMITTED FOR CLARITY)



DETAIL 5
TYPICAL FOR INTERIOR STIFFENER UNLESS NOTED OTHERWISE
(KNEE BRACE OMITTED FOR CLARITY)



DETAIL 6
TYPICAL AT BEARING STIFFENER

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DOUBLE TRACK N·W·I
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MICHIGAN CITY TO GARY, INDIANA

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NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 47.322 OVER ARCELOR MITTAL MAIN ENTRANCE RD GIRDER SECTIONS

FILENAME	DT_CAD_60BRG-113
SCALE	AS NOTED

SHEET OF

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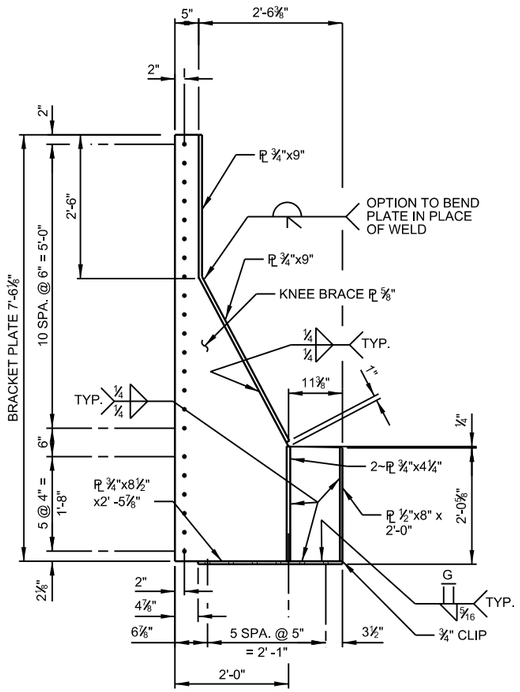
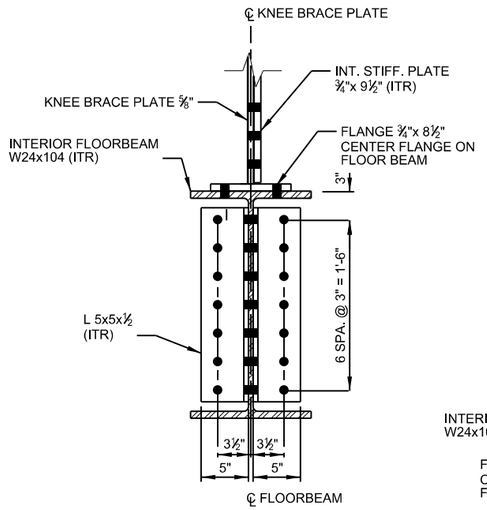


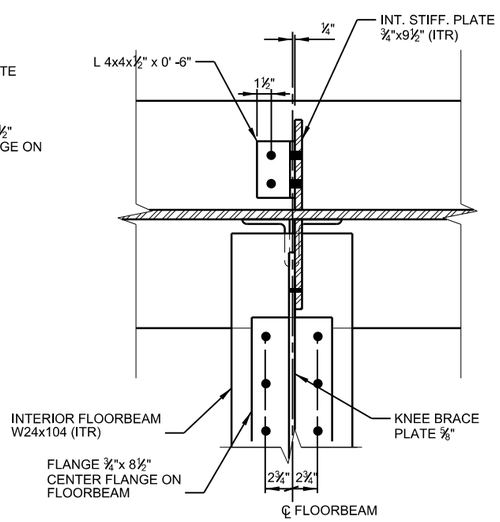
KNEE BRACE @ INTERMEDIATE STIFFENER

SEE SECTION E FOR HOLE LOCATIONS



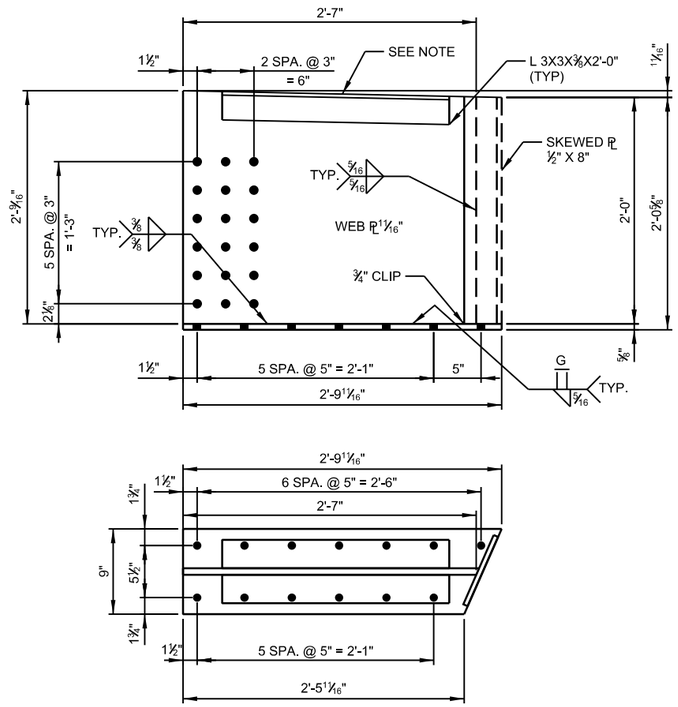
DETAIL 1

KNEE BRACE AT INTERMEDIATE STIFFENER SHOWN



SECTION E

KNEE BRACE AT INTERMEDIATE STIFFENER SHOWN



WALKWAY SUPPORT BRACKET

SEE SHEET XX FOR SKEW ANGLE

NOTE

FOR LOCATION AND WELDING OF L 3X3X⅜, WELDING AND BOLTED CONNECTION TO WALKWAY CHECKER PLATE SEE PLAN VIEW OF WALKWAY AT KNEE BRACE ON SHEET XXX.

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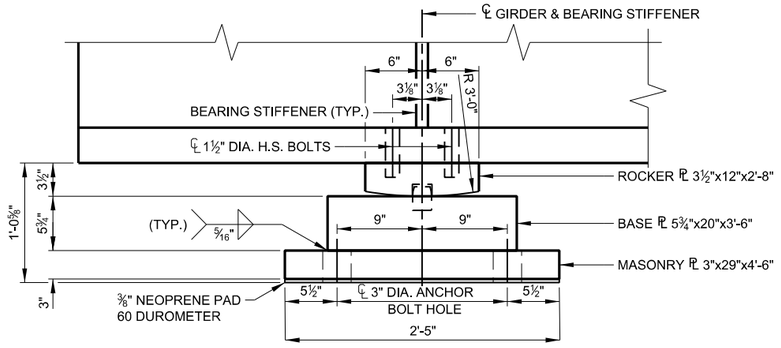
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

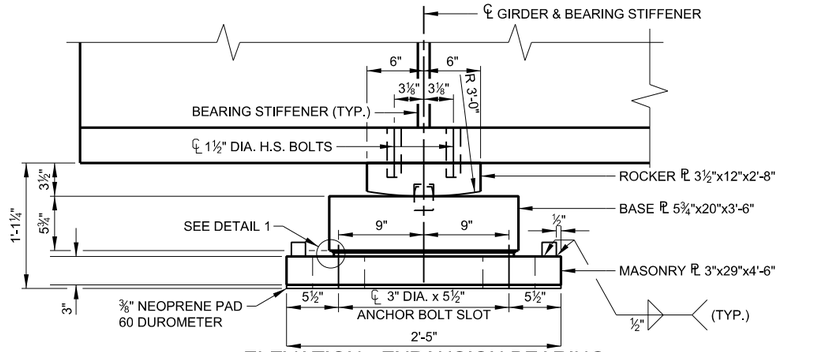
BR 47.322 OVER ARCELOR MITTAL MAIN ENTRANCE RD KNEE BRACE SECTIONS

FILENAME	DT_CAD_60BRG-114
SCALE	AS NOTED

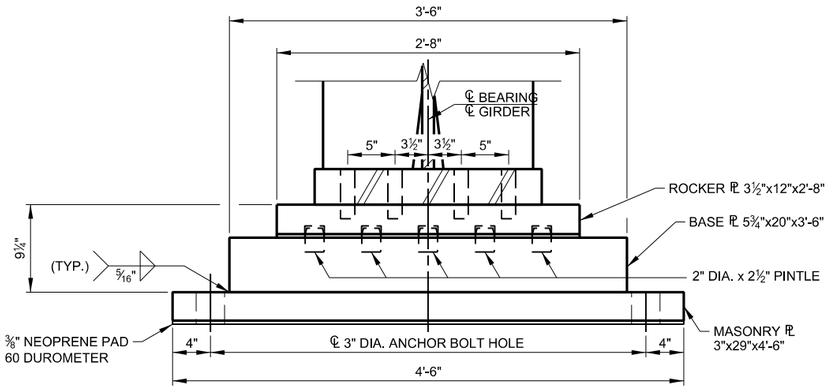
SHEET OF



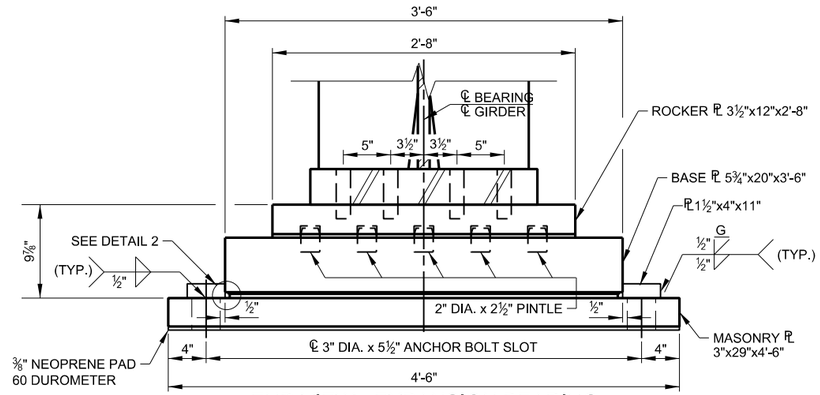
ELEVATION - FIXED BEARING



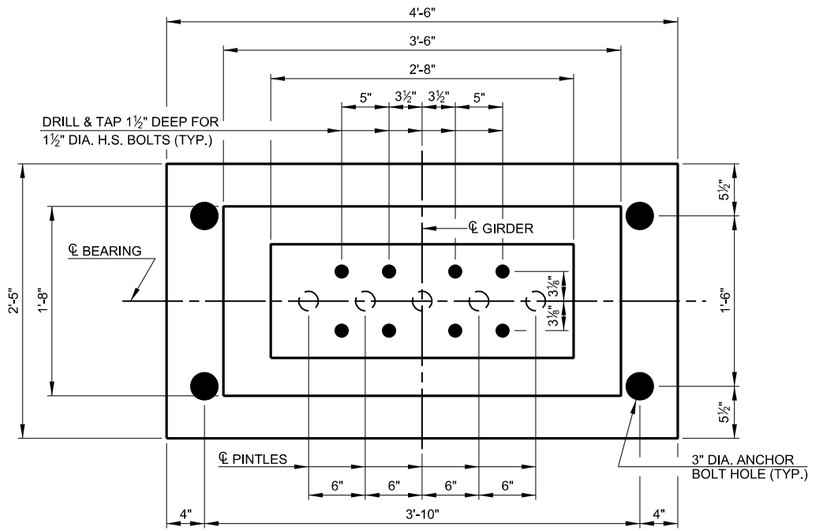
ELEVATION - EXPANSION BEARING



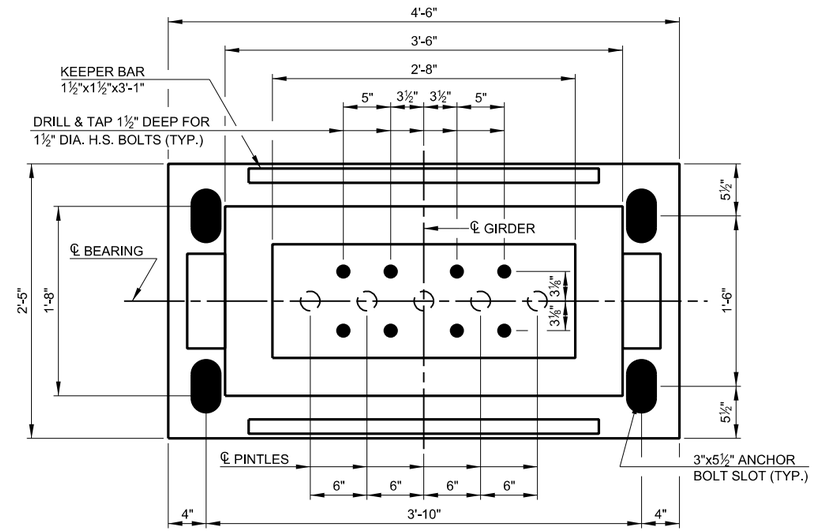
END VIEW - FIXED BEARING



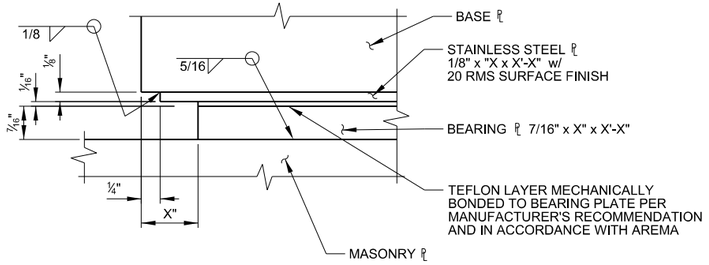
END VIEW - EXPANSION BEARING



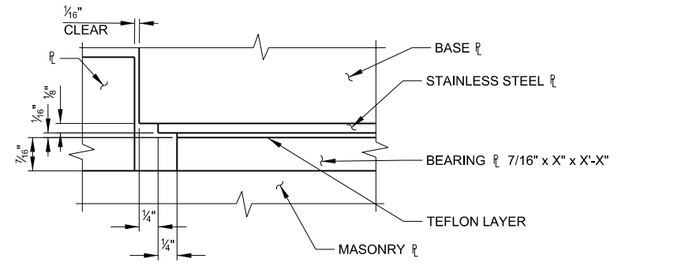
PLAN VIEW - FIXED BEARING
(2 REQUIRED)



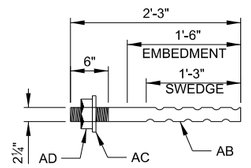
PLAN VIEW - EXPANSION BEARING
(2 REQUIRED)



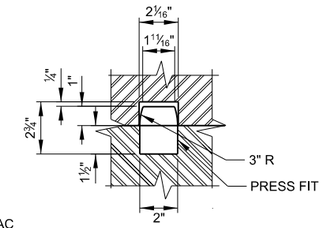
DETAIL 1



DETAIL 2



ANCHOR BOLT ~AB100.1B
1 ~ BAR 2-1/4" DIA. X 2'-3" ~ AB
1 ~ BAR 4" DIA. X 1/4" W/ 2-3/8" DIA. HOLE AT CENTER ~ AC
1 ~ HEAVY HEX NUT ~ AD
WEIGHT = 35 LBS.
GALVANIZE AFTER FABRICATION
(16 REQUIRED)



PINTLE DETAL

NOTES:

1. STEEL USED FOR BEARING ASSEMBLIES SHALL CONFORM TO ASTM A709 GR50W, UNLESS NOTED OTHERWISE. ANCHOR BOLTS SHALL CONFORM TO ASTM F1554 GR 105.

2. STAINLESS STEEL SHALL CONFORM TO ASTM A480.

3. BEARING ASSEMBLY WELDMENTS SHALL BE STRESSED RELIEVED BY HEAT TREATING PRIOR TO FINISH MACHINING, PER CURRENT AWS STRUCTURAL WELDING CODES.

4. TEFLON LAYER SHALL BE COMPOSED OF VIRGIN UNFILLED TFE RESIN, UNFILLED TFE SHEETS OR UNFILLED TFE FABRIC. FILLER MATERIAL, SUCH AS MILLED GLASS FIBERS WILL NOT BE ALLOWED. TEFLON LAYER SHALL CONFORM TO THE REQUIREMENTS OF AREMA CHAPTER 15.

5. ALL SURFACES IN THE MOVING CONTACT SHALL BE FINISHED 125

6. ALL DIMENSIONS SHOWN ARE FINAL DIMENSIONS AFTER MACHINING.

7. BEARINGS TO BE SHOP FITTED TO GIRDERS, MATCH MARKED AND ASSEMBLED IN UNITS FOR SHIPPING.

8. ANCHOR BOLTS, NUTS AND PLATE WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM B695, CLASS 50.

9. ANCHOR BOLT NUTS SHALL BE A563 GR DH HEAVY HEX & WASHERS SHALL BE F436 TYPE 1.

10. BOLT REMOVAL AND REPLACEMENTS TO GAIN ACCESS TO PROPERLY TIGHTEN BEARING BOLTS IS INCIDENTAL TO STEEL ERECTION.

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DRAWING BRG-115 OF BRG-116

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Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

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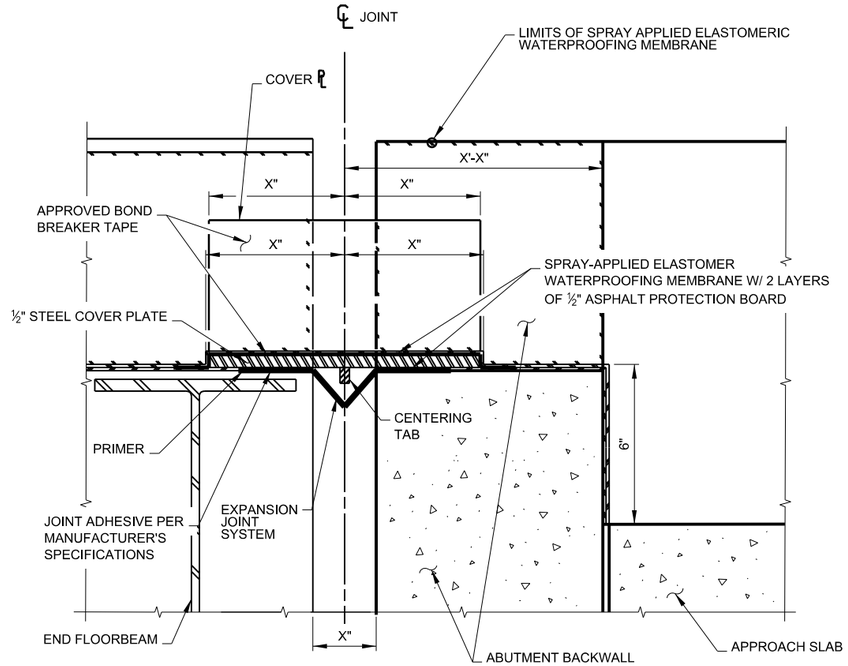
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 47.322 OVER ARCELOR MITTAL MAIN ENTRANCE RD TPG BEARING DETAILS

FILENAME	DT_CAD_60BRG-115
SCALE	AS NOTED
SHEET	OF

ESTIMATED WATERPROOFING QUANTITIES		
DESCRIPTION	UNIT	QUANTITY
BRIDGE DECK WATERPROOFING	SQ. YDS.	XXX

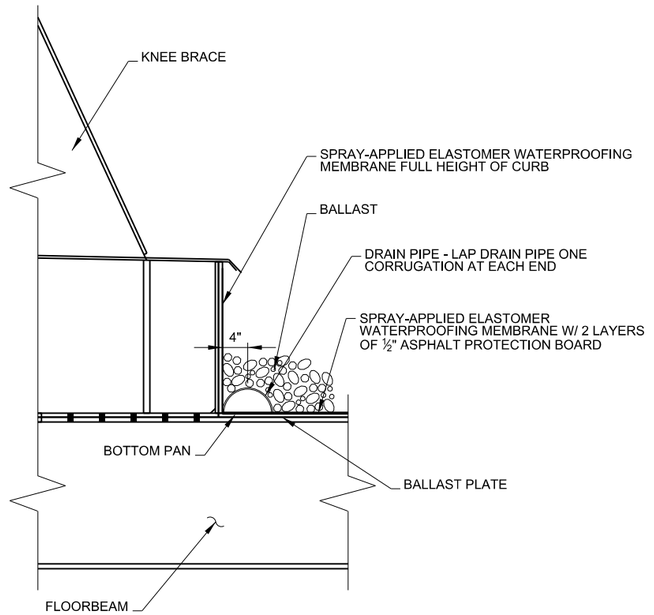


NOTE:

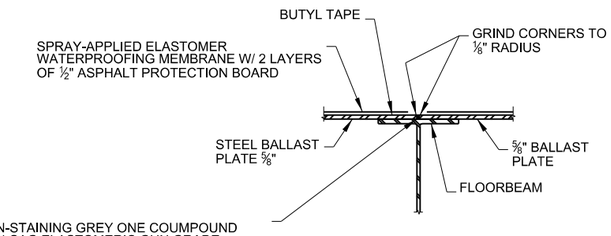
1. BRIDGE DECK MEMBRANE CONTINUOUS THRU JOINT
2. TYPICAL JOINT DETAIL SHOWN FOR INFORMATION ONLY. WATERPROOFING INSTALLER SHALL DETERMINE FINAL DETAILS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

SECTION A-A

(AT RT. ℄ 'S TO BK. OF ABUT.)



SECTION B-B



NON-STAINING GREY ONE COUMPOUND NON-SAG ELASTOMERIC GUN GRADE POLYURETHANE SEALANT MEETING THE REQUIREMENTS OF ASTM C-920, TYPE S, GRADE NS, GLASS 25. COST INCLUDED WITH MEMBRANE WATERPROOFING (SPECIAL).

SECTION C-C

WATERPROOFING SYSTEM:

WATERPROOFING SYSTEM SHALL BE 120 MIL ACRYLIC-BASED, COLD SPRAY APPLIED, SEAMLESS ELASTOMERIC WATERPROOFING MEMBRANE. SUPPLIERS MAY BE STIRLING-LLOYD, 420 SACKETT ROAD, NORTH HAVEN, CONNECTICUT 0673, (203) 230-9448, OR BRIDGE PRESERVATION, LLC, KANSAS CITY, MO 64171, (816) 561-9996, OR APPROVED EQUAL. SPRAY APPLIED WATERPROOFING SYSTEMS SHALL HAVE TWO ½" THICK LAYERS OF ASPHALT PROTECTION BOARDS PLACED ON THE DECK SURFACE ONLY TO THE LIMITS INDICATED.

PRIOR TO APPLYING WATERPROOFING SYSTEM, ALL VOIDS, GAPS, AND RECESSES IN THE STEEL BALLAST PLATE DECK SHALL BE FILLED IN WITH METASET 300, OR APPROVED EQUAL, BY STIRLING-LLOYD PER THE MANUFACTURER'S RECOMMENDATIONS.

GALVANIZED SHEETING, SHEET MEMBRANE, DEBONDED REGION, AND OTHER JOINT DETAILS SHALL EXTEND UP THE CURB FACE 1'-11" MIN. ON EACH SIDE.

WATERPROOFING SYSTEM SHALL BE APPLIED TO BALLAST PLATE DECK AND INSIDE FACE OF CURBS TO THE LIMITS SHOWN. CONTRACTOR SHALL SUBMIT DETAILED APPLICATION PROCEDURES, MATERIAL SPECIFICATIONS AND SHOP DRAWINGS FOR THE WATERPROOFING SYSTEM INCLUDING FIELD INSTALLED JOINT SYSTEMS, TO NICTD FOR APPROVAL PRIOR TO INSTALLATION.

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NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 47.322 OVER ARCELOR MITTAL MAIN ENTRANCE RD. BRIDGE DECK WATERPROOFING

FILENAME	DT_CAD_60BRG-116
SCALE	AS NOTED

SHEET OF

GENERAL NOTES:

GENERAL:
ALL MATERIALS AND WORKMANSHIP SHALL BE AS PER CURRENT A.R.E.M.A. MANUALS FOR RAILWAY ENGINEERING: CHAPTER 8 CONRETE STRUCTURES AND FOUNDATIONS, CHAPTER 15 STEEL STRUCTURES AND THE PROJECT TECHNICAL SPECIFICATIONS.

STRUCTURE EXCAVATION AND BACKFILL:
ALL STRUCTURE EXCAVATION AND BACKFILL SHALL BE IN ACCORDANCE WITH SECTION XXXXX OF THE PROJECT TECHNICAL SPECIFICATION.

REINFORCEMENT:
STEEL BARS FOR REINFORCEMENT SHALL BE DEFORMED BILLET-STEEL BARS CONFORMING TO THE REQUIREMENTS OF THE CURRENT A.S.T.M. DESIGNATION A615, GRADE 60, OR A706.

FABRICATION FOR REINFORCEMENT SHALL BE IN ACCORDANCE WITH CHAPTER 7 OF THE CURRENT C.R.S.I. MANUAL OF STANDARD PRACTICE.

REINFORCEMENT WIRE BAR SUPPORTS THAT ARE IN CONTACT WITH FORMS SHALL BE CLASS 1, PLASTIC PROTECTED, IN ACCORDANCE WITH CHAPTER 3 OF THE CURRENT C.R.S.I. MANUAL OF STANDARD PRACTICE.

CAST-IN-PLACE CONCRETE:
ALL CONCRETE, CONCRETE WORK AND PLACEMENT OF REINFORCEMENT SHALL BE IN ACCORDANCE WITH SECTION XXXXX OF THE PROJECT TECHNICAL SPECIFICATIONS. DETAILED FALSEWORK PLANS IN ACCORDANCE WITH THE PROJECT TECHNICAL SPECIFICATIONS ARE REQUIRED AS NECESSARY.

THE PORTLAND CEMENT USED IN ALL CONCRETE SHALL BE TYPE II OR TYPE IIA. ALL CONCRETE BE SHALL BE AIR-ENTRAINED CONTAINING NOT LESS THAT 5 PERCENT NOR MORE THAT 7 PERCENT AIR BY VOLUME.

CONCRETE SHALL BE CLASS 40 WITH AN ULTIMATE COMPRESSIVE STRENGTH OF NOT LESS THAT THAT 4000 PSI IN 28 DAYS. MAXIMUM SIZE OF COARSE AGGREGATE SHALL BE ONE INCH. THE MINIMUM CONCRETE COVER ON REINFORCEMENT SHALL BE TWO INCHES UNLESS INDICATED OTHERWISE. EXPOSED CONCRETE EDGES SHALL BE BEVELED ¾".

PERVIOUS BACKFILL MATERIAL BEHIND ABUTMENTS: PERVIOUS BECKFILL MATERIAL BEHIND ABUTMENT SHALL BE IN ACCORDANCE WITH PARAGRAPHS 2.5 AND 3.6 OF SECTION XXXXX OF THE PROJECT TECHNICAL SPECIFICATION.

PILING:
SHALL MEET THE MATERIAL REQUIREMENTS OF A.S.T.M. A572 GRADE 50 AND SHALL BE DRIVEN IN ACCORDANCE WITH THE PROJECT TECHNICAL SPECIFICATIONS. STEEL FRICTION PILES SHALL BE DRIVEN TO A MINIMUM ULTIMATE RESISTANCE OF 250 TONS AS DETERMINED BY THE MODIFIED ENGINEERING NEWS-RECORD FORMULA AS PER THE PROJECT TECHNICAL SPECIFICATIONS.

PILE DRIVING OPERATION SHALL MINIMIZE VIBRATIONS ON THE ADJACENT BRIDGE SUBSTRUCTURE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MONITORING THE VIBRATIONS CAUSED BY THE PILE DRIVING IN ACCORDANCE WITH THE SECTION XXXXX OF THE PROJECT TECHNICAL SPECIFICATION.

DAMPPROOFING:
THE BACK FACE OF THE NEW ABUTMENT CAPS, BACKWALLS, AND WINGWALLS SHALL BE DAMPPROOFED IN ACCORDANCE WITH THE SECTION XXXXX OF THE PROJECT TECHNICAL SPECIFICATION.

ELASTOMETIC BEARING PADS:
ELASTOMETRIC BEARING PADS SHALL BE IN ACCORDANCE WITH SECTION XXXXX OF THE PROJECT TECHNICAL SPECIFICATION.

DECK PLATES:
THE DECK PLATES SHALL BE ADJUSTED AS NECESSARY TO INSURE THE PLATES FIT TIGHT AGAINST THE BEAMS AND CURBS.

BRIDGE DECK WATERPROOFING:
SEE SHEET XX OF XX FOR WATERPROOFING AND NOTES.

STRUCTURAL STEEL:
SEE SHEET XX OF XX FOR STRUCTURAL STEEL NOTES.

REPAIR OF DAMAGED GALVANIZED SURFACES:
DAMAGED GALVANIZED SURFACES SHALL BE THOROUGHLY CLEANED TO REMOVE ALL CONTAMINANTS INCLUDING WELD SLAG, WELD SPLATTER AND RUST AND SHALL THEN BE PAINTED WITH TWO COATS OF ZINC DUST ZINC OXIDE. TYPE I. LINSEED OIL PAINT MEETING FEDERAL SPECIFICATION TT-P-641.

EXISTING PLANS:
1. RECONSTRUCTION OF NICTD (SOUTHSHORE) BRIDGE OVER CSX RAILROAD (BRIDGE 54.73), JUNE 2001.

SURVEY DATA:

BENCHMARK:

LIFTING WEIGHTS:
SEE SHEET XX OF XX STEEL LIFTING WEIGHTS.

DESIGN DATA:

2019 A.R.E.M.A. DESIGN SPECIFICATIONS
LOADING: COOPER E 80 W/ DIESEL IMPACT AND A.R.E.M.A. CHAPTER 15 ALTERNATIVE LIVE LOAD.

ATTENTION!! UTILITY NOTE:

THE IMPLIED PRESENCE OR ABSENCE OF UTILITIES IS NOT TO BE CONSTRUED BY OWNER, ENGINEER, CONTRACTOR, OR SUBCONTRACTORS TO BE AN ACCURATE AND COMPLETE REPRESENTATION OF UTILITIES THAT MAY OR MAY NOT EXIST ON THE CONSTRUCTION SITE. BURIED AND ABOVEGROUND UTILITY LOCATION, IDENTIFICATION AND MARKING ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. REROUTING, DISCONNECTION, PROTECTION, ETC. OF ANY UTILITIES MUST BE COORDINATED AMONG THE CONTRACTOR, UTILIITY COMPANY, AND OWNER. SITE SAFETY, INCLUDING THE AVOIDANCE OF HAZARDS, ASSOCIATED WITH BURIED AND ABOVEGROUND UTILITIES REMAIN THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

LEGEND:

F.S. = FARSIDE
N.S. = NEAR SIDE
B.S. = BOTH SIDES
U.N.O. =UNLESS NOTED OTHERWISE
cts. = CENTER
E.F. = EACH FACE
F.F. = FRONT FACE
B.F. = BACK FACE
T. = TOP
B. = BOTTOM
EXP. = EXPANSION BEARING
FIX. = FIXED BEARING
E.E. = EACH END
SPA = SPACES

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NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

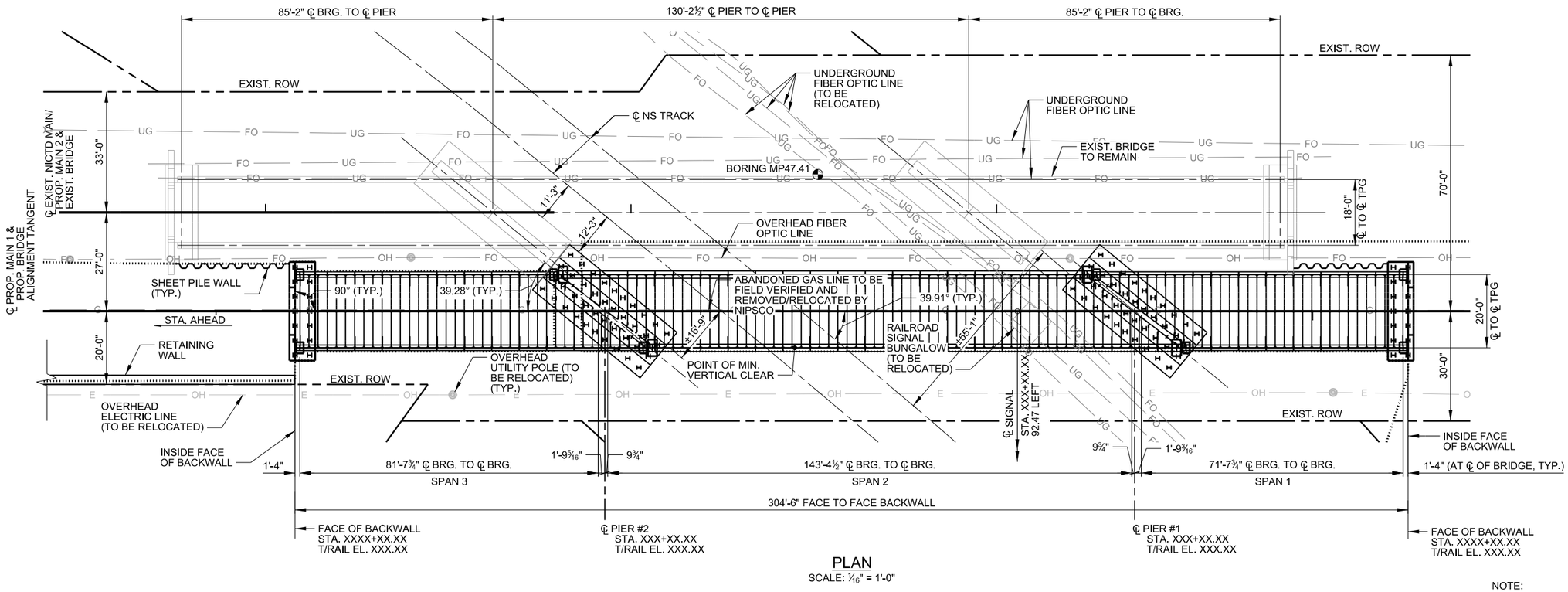
BR 47.412 OVER NORFOLK SOUTHERN RAILWAY
GENERAL NOTES & LIST OF SHEETS

FILENAME	$FILES$
SCALE	AS NOTED

SHEET OF

TO MILLENNIUM STATION

TO SOUTH BEND AIRPORT



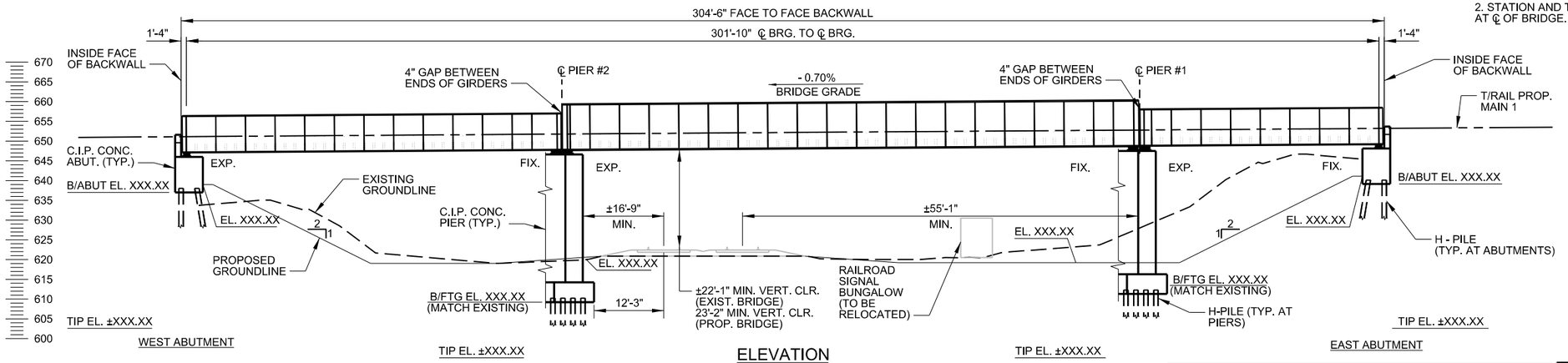
PLAN

SCALE: 1⁄16" = 1'-0"

NOTE:

1. NS ALLOWS A MINIMUM 22'-0" VERTICAL AND 13'-0" TO 14'-0" TEMPORARY HORIZONTAL CLEARANCE DURING CONSTRUCTION.

2. STATION AND T/RAIL ELEVATIONS TAKEN AT ℄ OF BRIDGE.



ELEVATION

SCALE: 1⁄16" = 1'-0"

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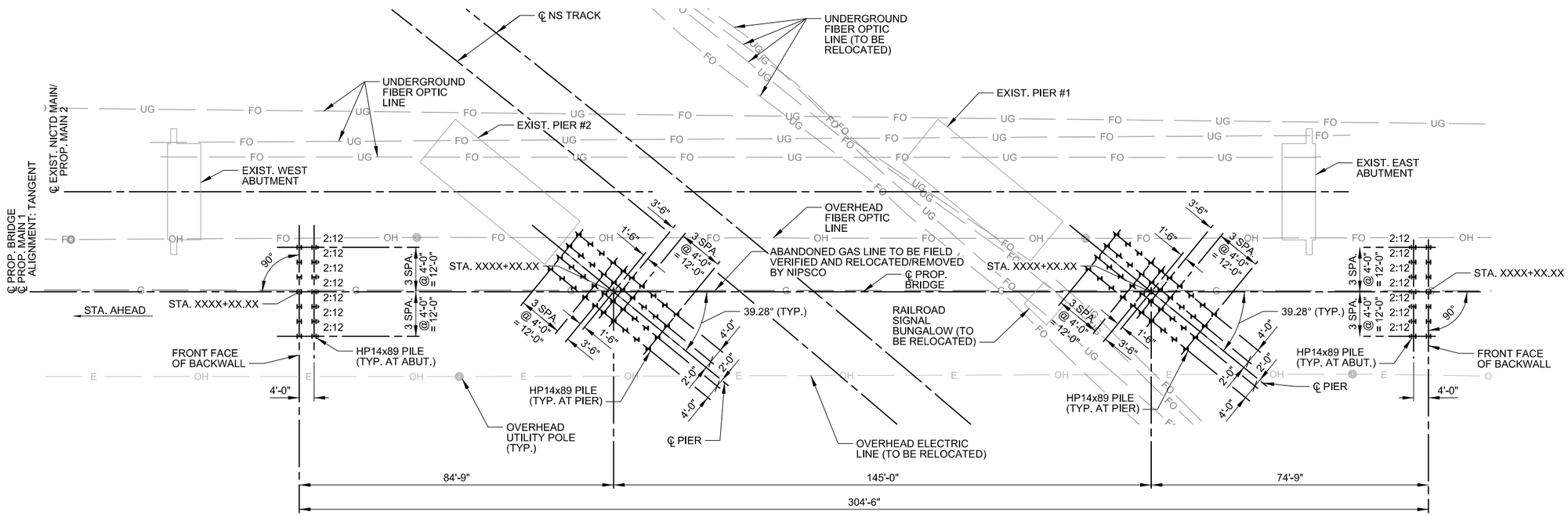
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 47.412 OVER NORFOLK SOUTHERN RAILWAY GENERAL PLAN & ELEVATION

FILENAME	$FILESS	SHEET	OF
SCALE	AS NOTED		



FOUNDATION LAYOUT PLAN

SCALE: 1/16" = 1'-0"
(PILE SPACING SHOWN IS AT CUTOFF ELEVATION)

ATTENTION !

INFORMATION SHOWN ON THESE PLANS CONCERNING TYPE AND LOCATION OF UNDERGROUND OR ABOVE GROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE.

THE FORMAN IN CHARGE WILL VERIFY THE LOCATION OF UNDERGROUND AND OVERHEAD UTILITIES BEFORE BEGINNING CONSTRUCTION.

ELEVATIONS FOR PROPOSED BRIDGE

ABUT./ PIER NO.	T/RAIL ELEV.	BRIDGE SEAT	PILE CUTOFF	ESTIMATED PILE TIP ELEVATION *
EAST ABUT.	XXXX	XXXX	XXXX	XXXX
PIER #1	XXXX	XXXX	XXXX	XXXX
PIER #2	XXXX	XXXX	XXXX	XXXX
WEST ABUT.	XXXX	XXXX	XXXX	XXXX

* NOTE: ELEVATIONS ARE ESTIMATES BASED ON GEOTECHNICAL DATA AND CONDITIONS AT TIME OF BORINGS. ACTUAL FIELD CONDITIONS MAY VARY PENDING EQUIPMENT APPROVAL BY ENGINEER.

DRIVEN PILING NOTES:

1. STEEL FRICTION PILES SHALL BE DRIVEN TO A MINIMUM ULTIMATE RESISTANCE OF XXX TONS AS DETERMINED BY THE MODIFIED ENGINEERING NEWS RECORD FORMULA AS PER THE PROJECT TECHNICAL SPECIFICATIONS.
2. ALL DIMENSIONS ARE GIVEN AT TOP OF PILES.
3. X:12 ▶ DENOTES AMOUNT AND DIRECTION OF PILE BATTER.
4. PILES SHALL BE ASTM A572, GRADE 50 MATERIAL.

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NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
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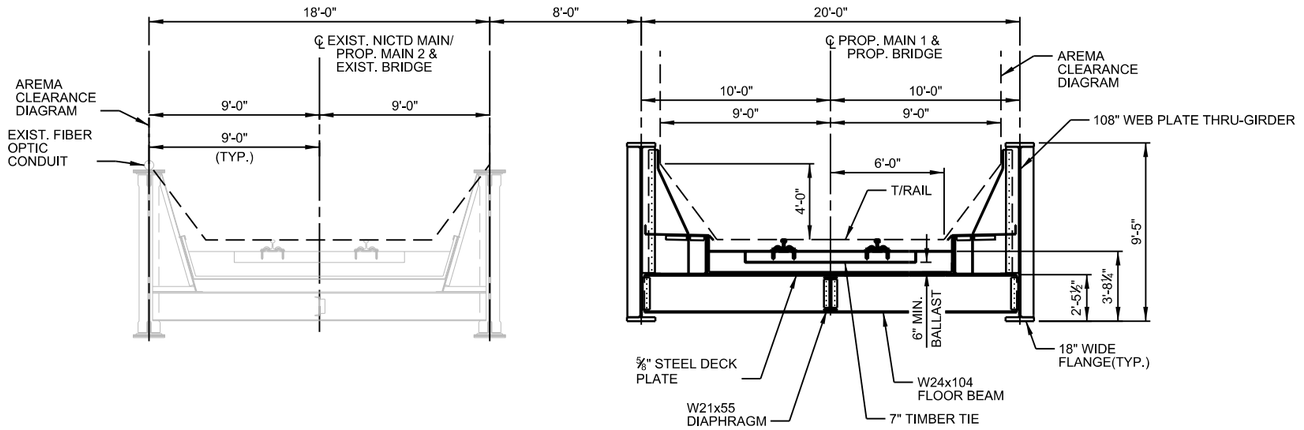
BR 47.412 OVER NORFOLK SOUTHERN RAILWAY FOUNDATION LAYOUT PLAN

FILENAME	$FILES$
SCALE	AS NOTED

SHEET OF

CONSTRUCTION DEPTH - SPAN 1 & 3

RAIL AND TIE PLATE	7½"
TIMBER TIE	7"
BALLAST	6"
WATERPROOFING	1 ⅛"
DECK PLATE	⅝"
FLOORBEAM	24"
CLEARANCE	3"
FLANGE PLATE	2½"
	51¾"

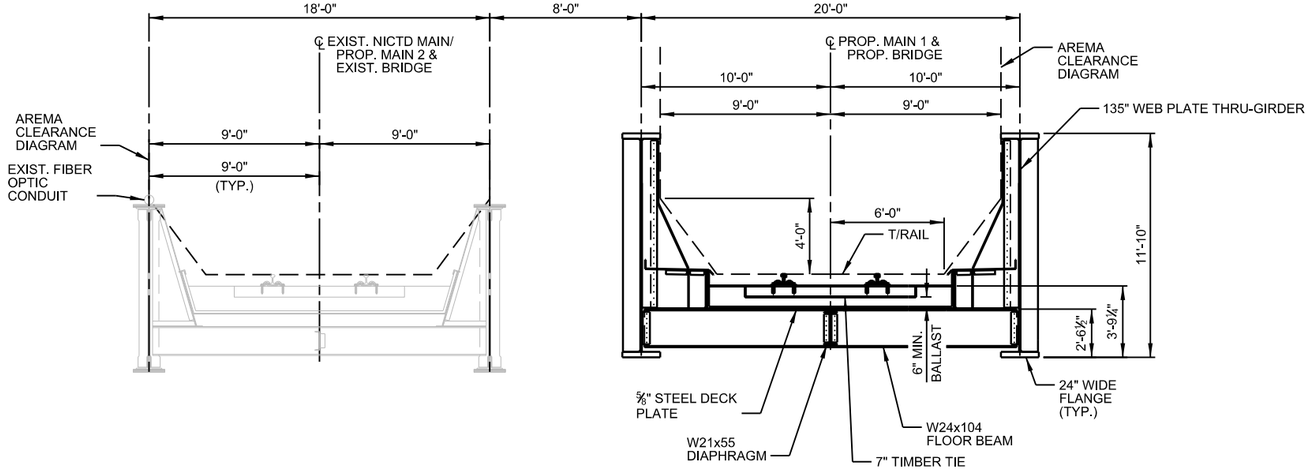


TYPICAL SECTION - SPANS 1 & 3

SCALE: ¼" = 1'-0"

CONSTRUCTION DEPTH - SPAN 2

RAIL AND TIE PLATE	7½"
TIMBER TIE	7"
BALLAST	6"
WATERPROOFING	1 ⅛"
DECK PLATE	⅝"
FLOORBEAM	24"
CLEARANCE	3"
FLANGE PLATE	3½"
	52¾"



TYPICAL SECTION - SPAN 2

SCALE: ¼" = 1'-0"

PLOT DATE: $DATES $TIMES $USERS

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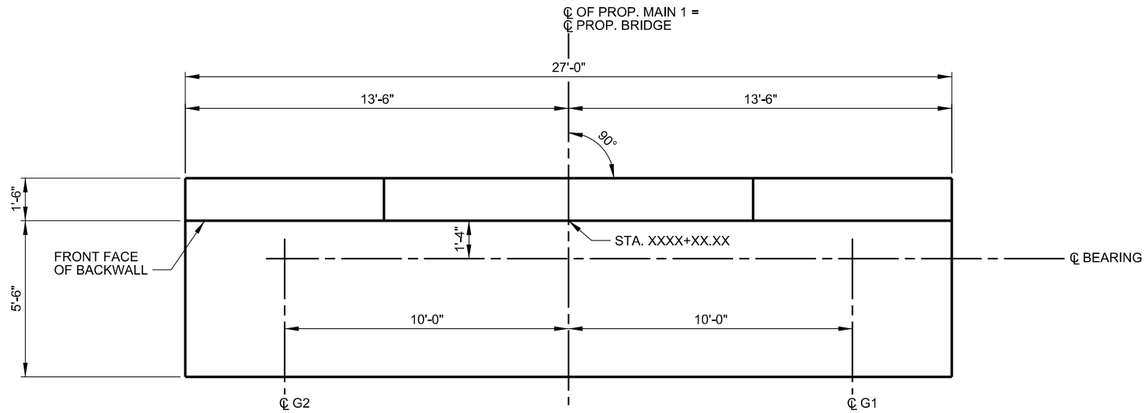
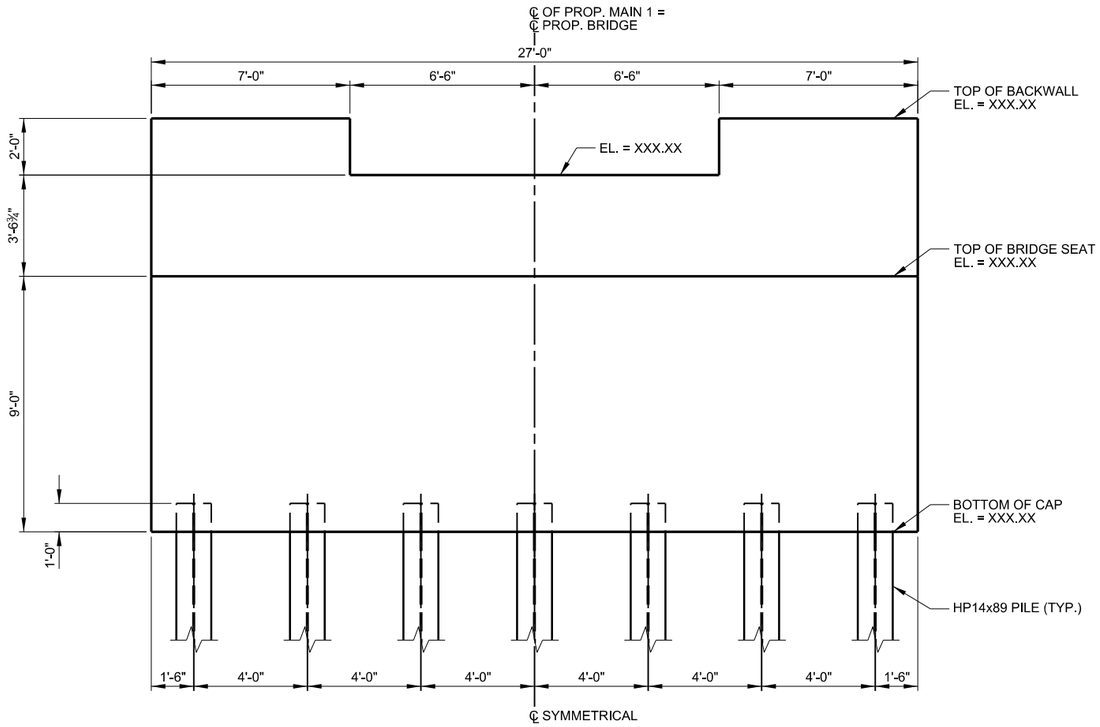
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 47.412 OVER NORFOLK SOUTHERN RAILWAY TYPICAL SECTIONS

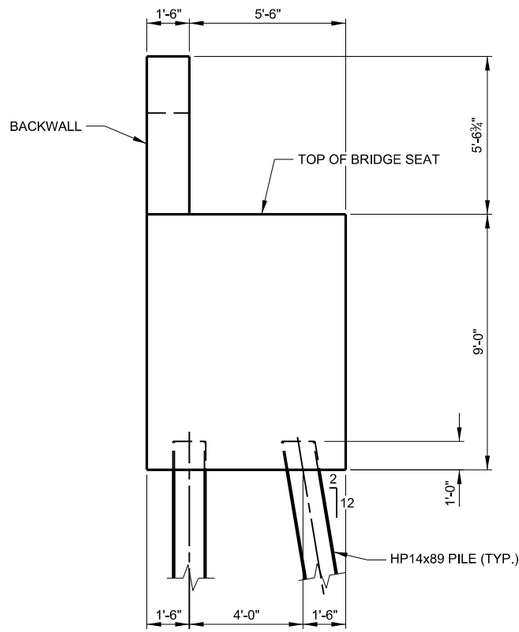
FILENAME	$FILESS
SCALE	AS NOTED
SHEET	OF



PLAN



ELEVATION



SIDE VIEW

EAST AND WEST ABUTMENT CAP FRAMING DETAILS

SCALE: ⅜" = 1'-0"

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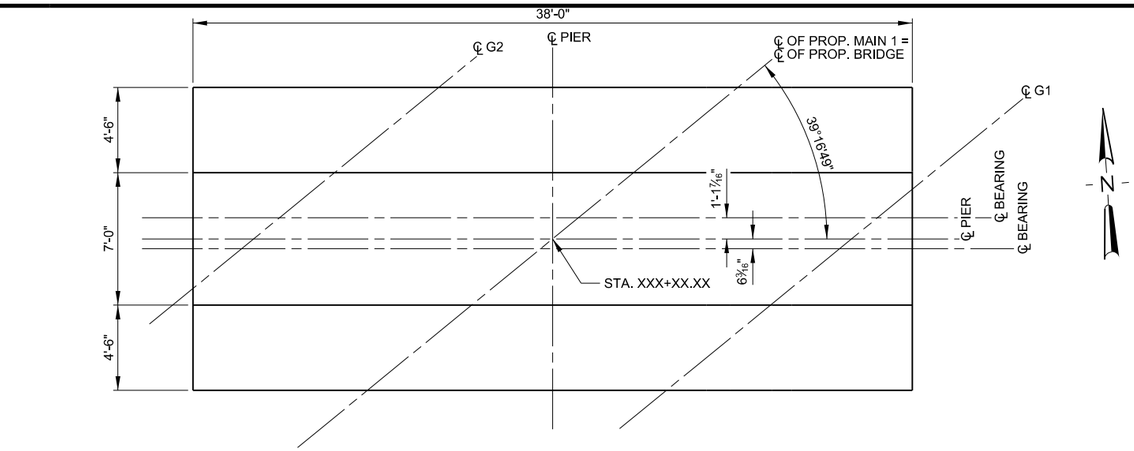
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 47.412 OVER NORFOLK SOUTHERN RAILWAY EAST & WEST ABUT. FRAMING DETAILS

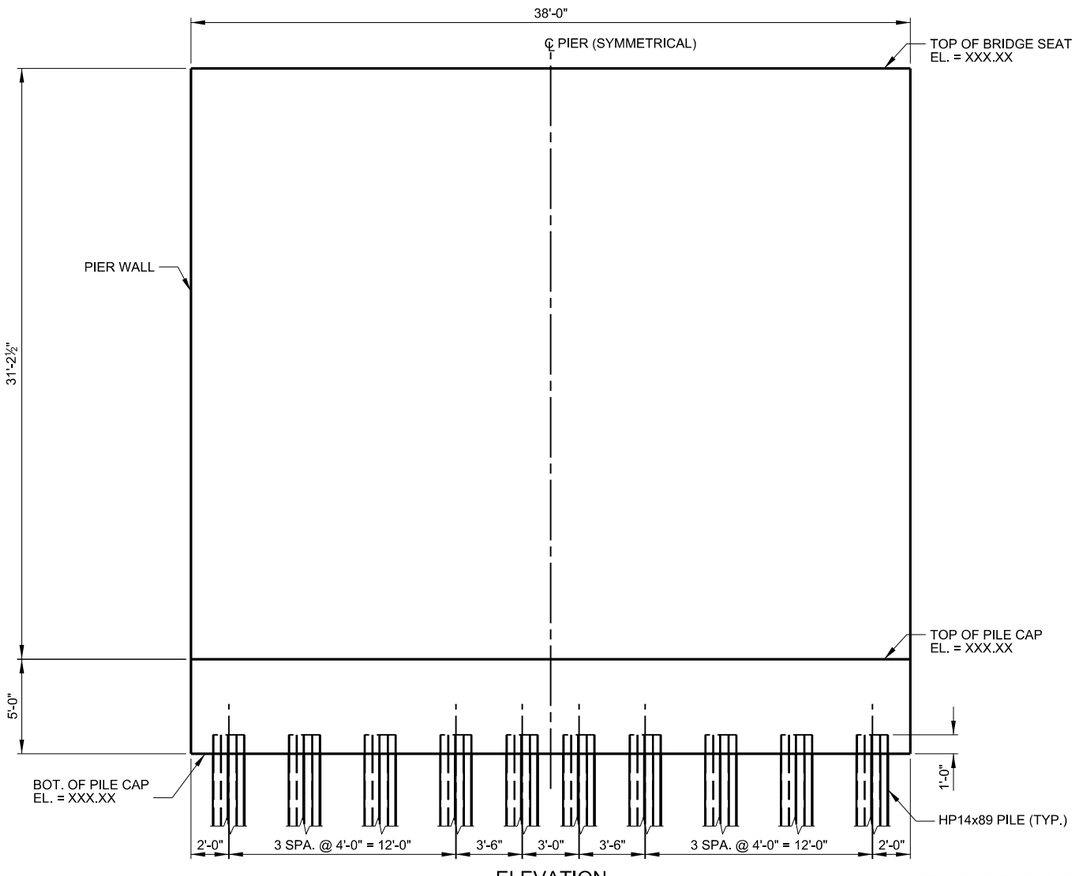
FILENAME	$FILESS
SCALE	AS NOTED

SHEET OF

PLOT DATE: $DATE$ $TIME$ $USER$

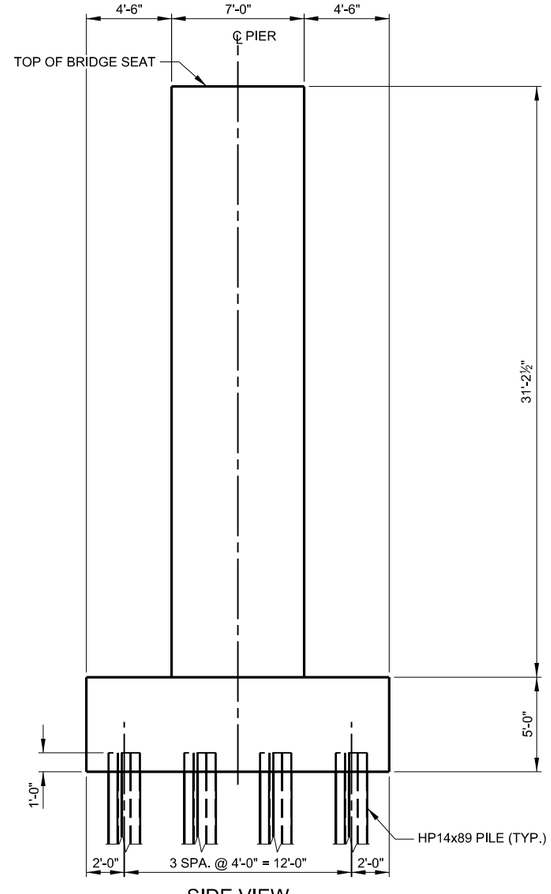


PLAN



ELEVATION

PIER #1 FRAMING DETAILS
SCALE: ¼" = 1'-0"



SIDE VIEW

NOTE:

GEOMETRY TO BE VERIFIED IN FINAL DESIGN.

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DRAWING BRG-205 OF BRG-244

PLOT DATE: $DATE$ $TIME$ $USER$

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ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

NICTD
NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

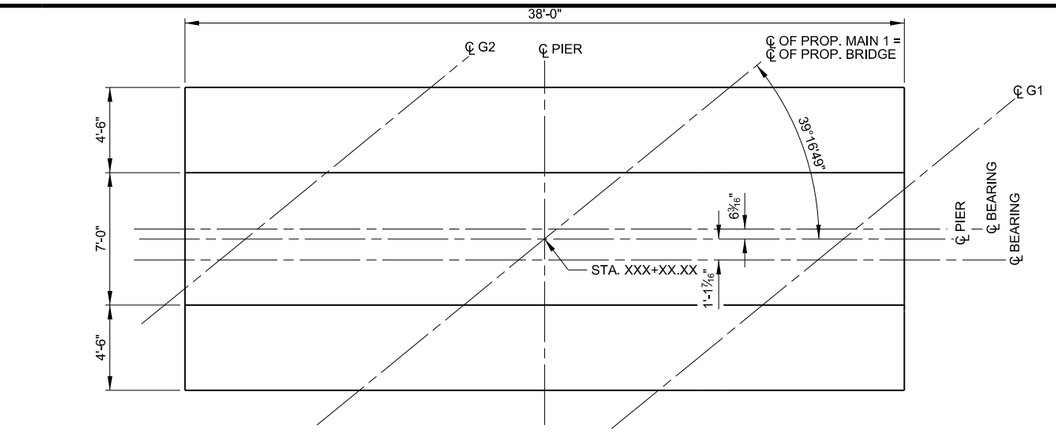
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	AECOM-TH
DRAWN:	AECOM-BBM
CHECKED:	AECOM-ALR
DATE:	03/16/2020

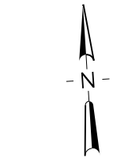
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 47.412 OVER NORFOLK SOUTHERN RAILWAY PIER #1 FRAMING DETAILS

FILENAME	$FILESS
SCALE	AS NOTED
SHEET	OF

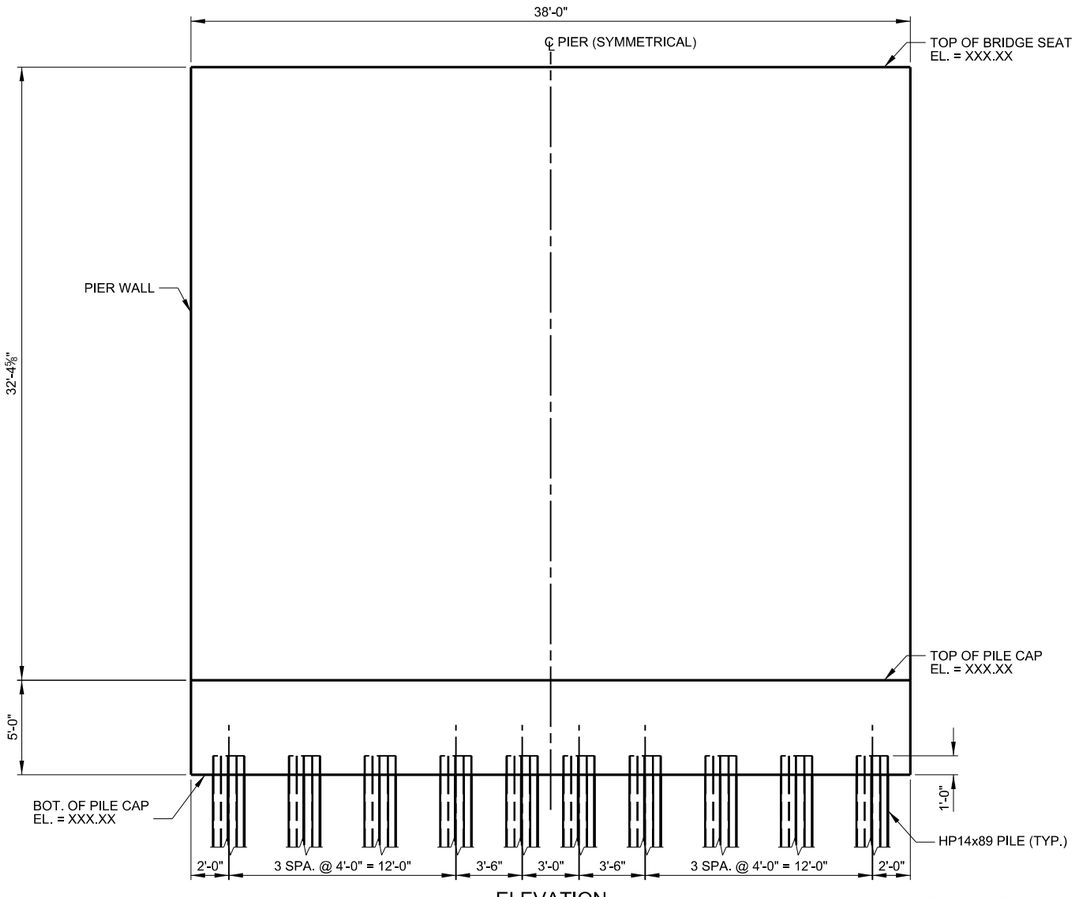


PLAN



NOTE:

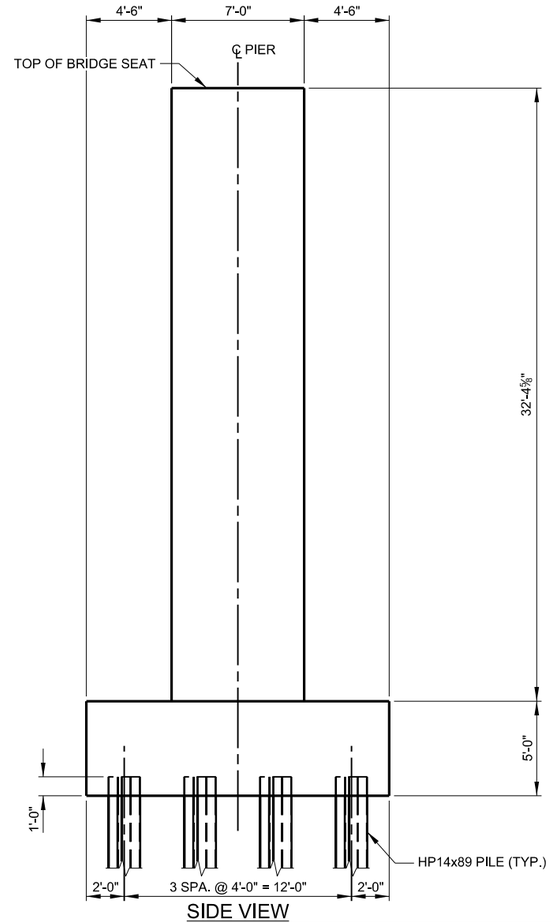
GEOMETRY TO BE VERIFIED IN FINAL DESIGN.



ELEVATION

PIER #2 FRAMING DETAILS

SCALE: ¼" = 1'-0"



SIDE VIEW

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-206 OF BRG-244

PLOT DATE: $DATE$ $TIME$ $USER$

AECOM
303 E. Wacker Drive, Suite 1400
Chicago, IL 60601
TEL: (312) 373-7700
www.aecom.com

ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

NICTD
NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

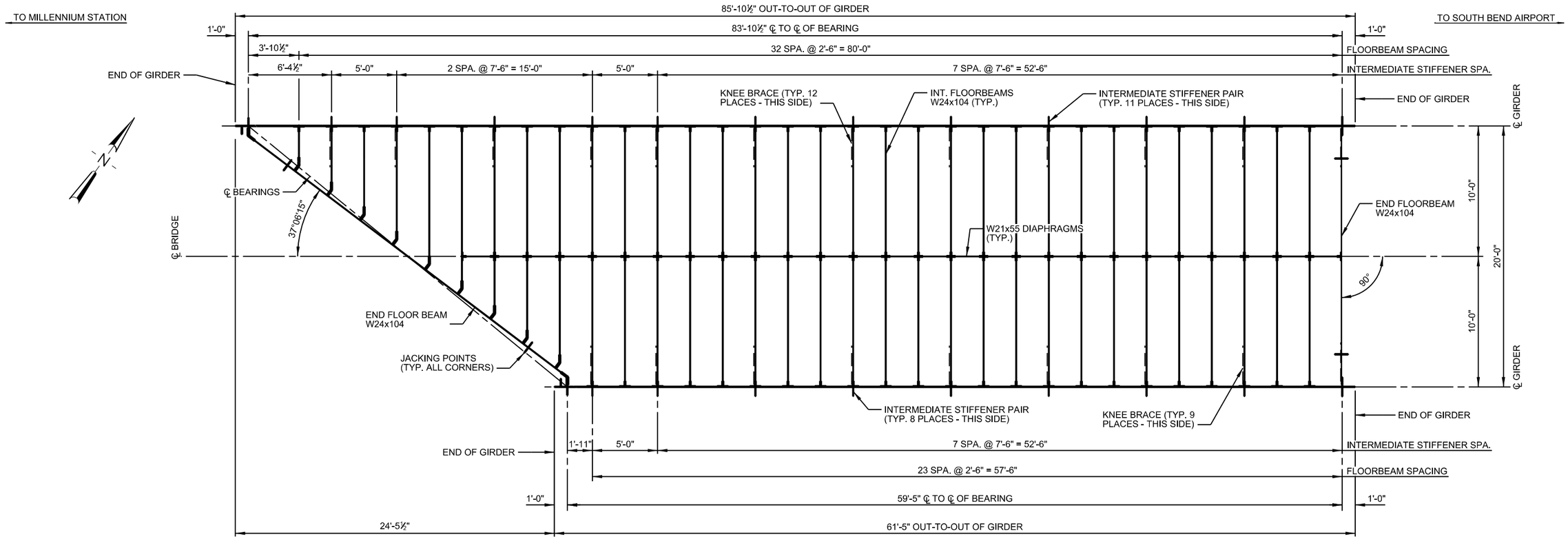
DESIGNED:	AECOM-TH
DRAWN:	AECOM-BBM
CHECKED:	AECOM-ALR
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 47.412 OVER NORFOLK SOUTHERN RAILWAY PIER #2 FRAMING DETAILS

FILENAME	$FILESS
SCALE	AS NOTED

SHEET OF



FRAMING PLAN - SPAN 1

SCALE: ¼" = 1'-0"

STEEL NOTES:

GENERAL:
ALL MATERIALS,FABRICATION, AND ERECTION SHALL BE IN ACCORDANCE WITH CHAPTER 15 OF THE CURRECT AREMA MANUAL FOR RAILWAY ENGINEERING AND SECTION XXXXX OF THE PROJECT TECHNICAL SPECIFICATION.

DEAD LOAD: (ASSUMED)

RAIL	-
BALLAST (INCL. TIE)	-
WATERPROOFING	-
FUTURE BALLAST	-
STEEL	-
TOTAL	-

DESIGN LOADING:
COOPER E80 AND ALTERNATE LIVE LOAD WITH DIESEL IMPACT FOR BALLAST DECK.

MATERIAL:
STRUCTURAL STEEL FABRICATORS SHALL BE CERTIFIED UNDER THE AISC QUALITY CERTIFICATION PROGRAM, "MAJOR STEEL BRIDGES", OR ANOTHER SUITABLE PROGRAM AS DETERMINED BY THE ENGINEER.

ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A709, GRADE 50W, UNLESS NOTED OTHERWISE. ZONE 2 CONDITIONS CONTROL FOR CHARPY V-NOTCH TESTING.

FRACTURE CRITICAL MEMBERS (FCM) SHALL BE CHARPY V-NOTCH (CVN) TESTED, ACCORDING TO AREMA TABLE 15-9-3, ZONE 2, P FREQUENCY IN ACCORDANCE WITH ASTM A673.

FLANGES, FLOOR BEAMS, STIFFENERS, KNEE BRACES, FLOOR PLATE, CONNECTION ANGLES AND DIAPHRAGMS SHALL BE CHARPY V-NOTCH (CVN) TESTED, ACCORDING TO AREMA TABLE 15-9-2, H FREQUENCY IN ACCORDANCE WITH ASTM A673.

FABRICATION NOTE:
FASTENERS SHALL BE ASTM F3125 GRADE A325 SLIP CRITICAL CLASS A HEAVY HEX HIGH STRENGTH BOLTS, TYPE 3. BOLTS 7/8"DIA., OPEN HOLES 15/16"DIA. UNLESS OTHERWISE NOTED. BOLTED CONNECTIONS SHALL USE ASTM A563, GRADE C3, HEAVY HEX NUTS AND ASTM F436 HARDENED WEATHERING STEEL WASHERS FOR HIGH STRENGTH BOLTS UNDER THE TURNED ELEMENT. HIGH STRENGTH BOLTS SHALL BE TIGHTENED BY THE "TURN-OF-NUT"METHOD TO OBTAIN PROPER BOLT TENSION.

BEARING PLATES ARE TO BE FLAT AND LEVEL AFTER WELDING.

ALL WELDING OPERATIONS PROCESSES, EQUIPMENT, MATERIALS, QUALIFICATIONS OF WELDERS, WORKMANSHIP, TESTING AND INSPECTION SHALL BE IN ACCORDANCE WITH THE CURRENT AREMA MANUAL AND CURRENT AWS STRUCTURAL WELDING CODE D1.5. ALL WELD METAL MUST BE EQUIVALENT TO THE BASE METAL IN STRENGTH, CORROSION RESISTANCE AND WEATHERED APPERARANCE. FIELD WELDING OF CONSTRUCTION ACCESSORIES TO THE BEAMS WILL NOT BE PERMITTED. ALL SHOP AND FIELD WELDING SHALL BE EITHER SMAW OR SAW UNLESS APPROVED BY THE ENGINEER.

AFTER FABRICATION OF WEATHERING STEEL STRUCTURE AND WHILE THE STRUCTURE IS WAITING TO BE SHIPPED, THE FABRICATOR SHALL COMPLETELY WET THE STRUCTURE WITH WATER ONCE DAILY TO START THE WEATHERING PROCESS. THE FABRICATOR SHALL PROVIDE 2 WEEKS OF DAILY WETTING FOLLOWED BY WETTING EVERY FOUR DAYS.

ALL SHOP DRAWINGS SHALL BE CHECKED BY THE FABRICATOR BEFORE SUBMITTING THEM FOR APPROVAL. SUBMISSION SHALL BE MADE TO NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT (NICTD), 33 EAST HIGHWAY 12, CHESTERTON, INDIANA 46304. THESE DRAWINGS MAY BE SUBMITTED BY EMAIL WITH MAXIMUM FILE SIZE OF 10Mb PER EMAIL. THEY CAN ALSO BE TRANSFERRED BY FTP AT FABRICATOR'S DISCRETION. THESE DRAWINGS SHALL BECOME THE PROPERTY OF, AND SHALL BE DELIVERED TO THE RAILWAY CO. UPON COMPLETION OF THE CONTRACT.

DURING THE PREPARATION OF SHOP DRAWINGS, THE FABRICATOR SHALL CHECK ALL GENERAL DIMENSIONS OF THE STEEL WORK AND SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER FOR REVISION AND CORRECTION BEFORE FABRICATION IS BEGUN. NO ALLOWANCE WILL BE MADE TO THE FABRICATOR FOR MATERIAL FABRICATED TO INCORRECT DIMENSIONS NOT SO REPORTED.

ALL EXPOSED SURFACES OF STRUCTURAL STEEL SHALL BE CLEANED PER STEEL STRUCTURES PAINTING COUNCIL SPECIFICATION SSPC-SP6, AND PER SECTION XXXXX OF THE PROJECT TECHNICAL SPECIFICATION.

THE TOP SURFACE OF THE BEAMS SHALL BE ADJUSTED TO FORM A STRAIGHT LINE AT ANY TRANSVERSE SECTION THROUGHOUT THE SPAN. TOLERANCE IS PLUS OR MINUS 1/8".

SPAN SHALL BE FULLY SHOP ASSEMBLED TO ASSURE ACCURATE FIT. DISASSEMBLE AS REQUIRED FOR SHIPPING.

ERECTION NOTES:
A SINGLE GIRDER MAY NOT BE ERECTED DURING HIGH WIND CONDITIONS WITHOUT THE SUPPORT OF THE SECOND GIRDER CONNECTED BY ALL KNEE BRACES AND FLOOR BEAMS.

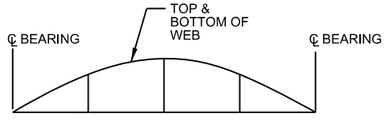
SPLICE NOTES:
1. NO TWO PARTS OR MEMBERS SHALL BE SPLICED BY SHOP WELDING AT THE SAME LOCATION.
2. WEB SPLICES BY SHOP WELDING SHALL BE LOCATED A MINIMUM OF 36"AWAY FROM ANY FLANGE SPLICE.
3. SPLICES OF THE WEB OR FLANGES SHALL NOT BE PERMITTED WITHIN THE CENTRAL 40'-0"OF THE GIRDER SPAN LENGTH. THIS REQUIREMENT MAY BE WAIVED ONLY BY THE APPROVAL OF THE ENGINEER.

ESTIMATED WEIGHT OF STRUCTURAL STEEL = XXX TONS
ESTIMATED LIFTING WEIGHT OF ONE GIRDER = XXX TONS

TOP OF TIE	TO MASONRY	TO CLEARANCE
TIE	-	-
BALLAST	-	-
WATERPROOFING	-	-
BALLAST PAN	-	-
FLOORBEAM	-	-
FLANGE PLATE	-	-
NUT & BOLT SHANK	-	-
BEARING	-	-
TOTAL	-	-

MOMENT & SHEAR TABLE FOR STEEL THRU PLATE GIRDER

DESCRIPTION	MOMENT	SHEAR
DEAD LOAD	-	-
LIVE LOAD	-	-
IMPACT	-	-
TOTAL	-	-
SECTION	-	
NET I	-	
NET S (BOTT)	-	
fsc (TOP)	-	
GROSS I	-	
GROSS S (TOP)	-	
fsc (TOP)	-	



CAMBER DIAGRAM

MOMENT & SHEAR TABLE FOR STEEL FLOORBEAMS

DESCRIPTION	MOMENT	SHEAR	MOMENT *	MOMENT *
DEAD LOAD	-	-	-	-
LIVE LOAD	-	-	-	-
IMPACT	-	-	-	-
TOTAL	-	-	-	-
SECTION	-		-	
NET I	-		-	
NET S (BOTT)	-		-	
fsc (TOP)	-		-	
GROSS I	-		-	
GROSS S (TOP)	-		-	
fsc (TOP)	-		-	

* JACKING CONDITIONS CONTROL
50% ALLOWABLE STRESS INCREASE IS PERMITTED

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-207 OF BRG-244

PLOT DATE: $DATES $TIMES $USERS

AECOM
303 E. Wacker Drive, Suite 1400
Chicago, IL 60601
TEL: (312) 373-7700
www.aecom.com

ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

NICTD
NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

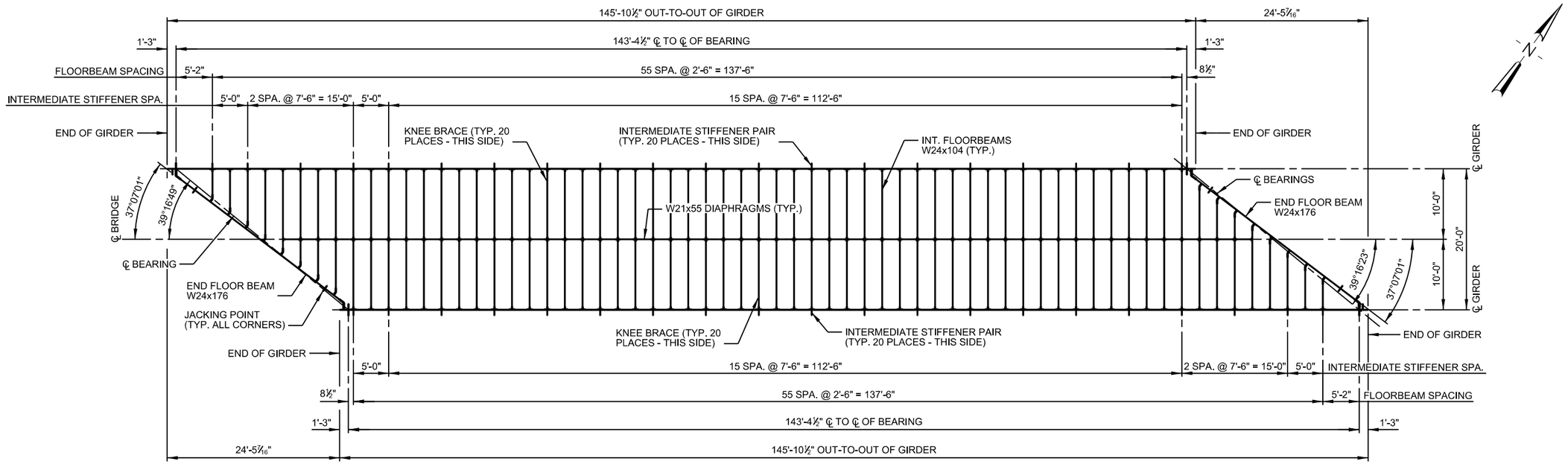
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	AECOM-TH
DRAWN:	AECOM-BBM
CHECKED:	AECOM-ALR
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 47.412 OVER NORFOLK SOUTHERN RAILWAY FRAMING PLAN - SPAN 1

FILENAME	$FILESS
SCALE	AS NOTED
SHEET	OF



FRAMING PLAN - SPAN 2

SCALE: ⅛" = 1'-0"

STEEL NOTES:

GENERAL:
ALL MATERIALS,FABRICATION, AND ERECTION SHALL BE IN ACCORDANCE WITH CHAPTER 15 OF THE CURRECT AREMA MANUAL FOR RAILWAY ENGINEERING AND SECTION XXXXX OF THE PROJECT TECHNICAL SPECIFICATION.

DEAD LOAD: (ASSUMED)

RAIL	-
BALLAST (INCL. TIE)	-
WATERPROOFING	-
FUTURE BALLAST	-
STEEL	-
TOTAL	-

DESIGN LOADING:
COOPER E80 AND ALTERNATE LIVE LOAD WITH DIESEL IMPACT FOR BALLAST DECK.

MATERIAL:
STRUCTURAL STEEL FABRICATORS SHALL BE CERTIFIED UNDER THE AISC QUALITY CERTIFICATION PROGRAM, "MAJOR STEEL BRIDGES", OR ANOTHER SUITABLE PROGRAM AS DETERMINED BY THE ENGINEER.

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FABRICATION NOTE:
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BEARING PLATES ARE TO BE FLAT AND LEVEL AFTER WELDING.

ALL WELDING OPERATIONS PROCESSES, EQUIPMENT, MATERIALS, QUALIFICATIONS OF WELDERS, WORKMANSHIP, TESTING AND INSPECTION SHALL BE IN ACCORDANCE WITH THE CURRENT AREMA MANUAL AND CURRENT AWS STRUCTURAL WELDING CODE D1.5. ALL WELD METAL MUST BE EQUIVALENT TO THE BASE METAL IN STRENGTH, CORROSION RESISTANCE AND WEATHERED APPERARANCE. FIELD WELDING OF CONSTRUCTION ACCESSORIES TO THE BEAMS WILL NOT BE PERMITTED. ALL SHOP AND FIELD WELDING SHALL BE EITHER SMAW OR SAW UNLESS APPROVED BY THE ENGINEER.

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SPAN SHALL BE FULLY SHOP ASSEMBLED TO ASSURE ACCURATE FIT. DISASSEMBLE AS REQUIRED FOR SHIPPING.

ERECTION NOTES:
A SINGLE GIRDER MAY NOT BE ERECTED DURING HIGH WIND CONDITIONS WITHOUT THE SUPPORT OF THE SECOND GIRDER CONNECTED BY ALL KNEE BRACES AND FLOOR BEAMS.

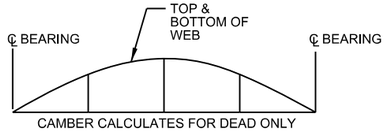
SPLICE NOTES:
1. NO TWO PARTS OR MEMBERS SHALL BE SPLICED BY SHOP WELDING AT THE SAME LOCATION.
2. WEB SPLICES BY SHOP WELDING SHALL BE LOCATED A MINIMUM OF 36"AWAY FROM ANY FLANGE SPLICE.
3. SPLICES OF THE WEB OR FLANGES SHALL NOT BE PERMITTED WITHIN THE CENTRAL 40'-0"OF THE GIRDER SPAN LENGTH. THIS REQUIREMENT MAY BE WAIVED ONLY BY THE APPROVAL OF THE ENGINEER.

ESTIMATED WEIGHT OF STRUCTURAL STEEL = XXX TONS
ESTIMATED LIFTING WEIGHT OF ONE GIRDER = XXX TONS

TOP OF TIE	TO MASONRY	TO CLEARANCE
TIE	-	-
BALLAST	-	-
WATERPROOFING	-	-
BALLAST PAN	-	-
FLOORBEAM	-	-
FLANGE PLATE	-	-
NUT & BOLT SHANK	-	-
BEARING	-	-
TOTAL	-	-

MOMENT & SHEAR TABLE FOR STEEL THRU PLATE GIRDER

DESCRIPTION	MOMENT	SHEAR
DEAD LOAD	-	-
LIVE LOAD	-	-
IMPACT	-	-
TOTAL	-	-
SECTION	-	
NET I	-	
NET S (BOTT)	-	
fsc (TOP)	-	
GROSS I	-	
GROSS S (TOP)	-	
fsc (TOP)	-	



CAMBER DIAGRAM

MOMENT & SHEAR TABLE FOR STEEL FLOORBEAMS

DESCRIPTION	MOMENT	SHEAR	MOMENT *	MOMENT *
DEAD LOAD	-	-	-	-
LIVE LOAD	-	-	-	-
IMPACT	-	-	-	-
TOTAL	-	-	-	-
SECTION	-		-	
NET I	-		-	
NET S (BOTT)	-		-	
fsc (TOP)	-		-	
GROSS I	-		-	
GROSS S (TOP)	-		-	
fsc (TOP)	-		-	

* JACKING CONDITIONS CONTROL
50% ALLOWABLE STRESS INCREASE IS PERMITTED

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-208 OF BRG-244

PLOT DATE: $DATES $TIMES $USERS

AECOM
303 E. Wacker Drive, Suite 1400
Chicago, IL 60601
TEL: (312) 373-7700
www.aecom.com

ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

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33 East Highway 12
Chesterton, Indiana 46304

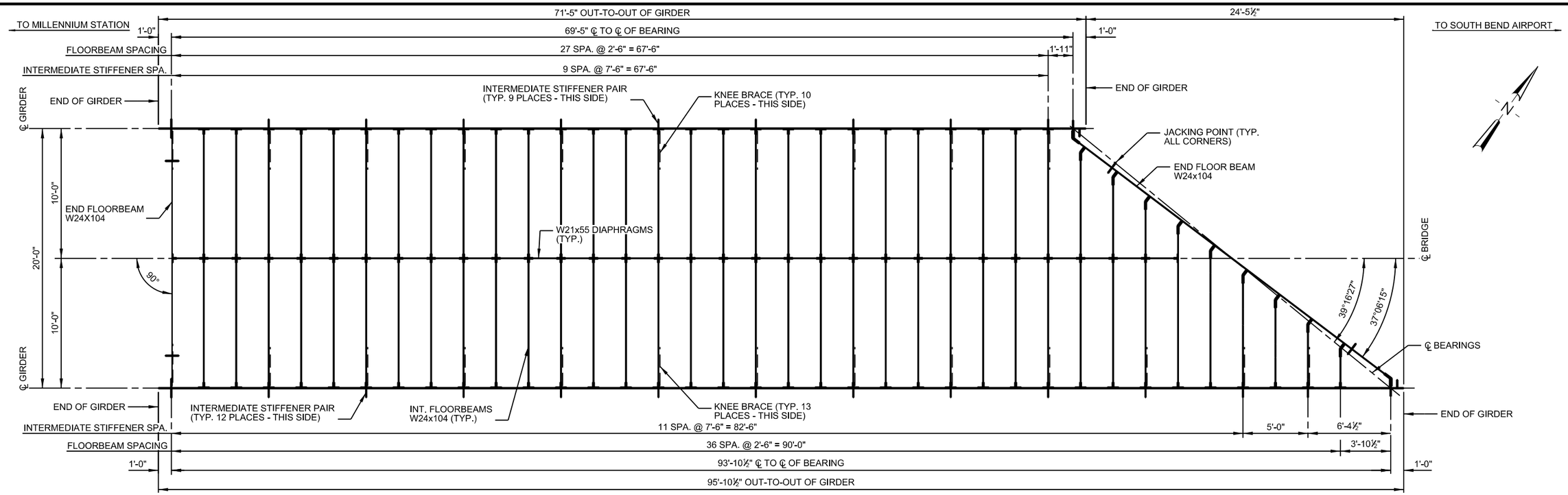
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	AECOM-TH
DRAWN:	AECOM-BBM
CHECKED:	AECOM-ALR
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 47.412 OVER NORFOLK SOUTHERN RAILWAY FRAMING PLAN - SPAN 2

FILENAME	$FILESS	SHEET	OF
SCALE	AS NOTED		



FRAMING PLAN - SPAN 3

SCALE: ¼" = 1'-0"

STEEL NOTES:

GENERAL:
ALL MATERIALS,FABRICATION, AND ERECTION SHALL BE IN ACCORDANCE WITH CHAPTER 15 OF THE CURRECT AREMA MANUAL FOR RAILWAY ENGINEERING AND SECTION XXXXX OF THE PROJECT TECHNICAL SPECIFICATION.

DEAD LOAD: (ASSUMED)

RAIL	-
BALLAST (INCL. TIE)	-
WATERPROOFING	-
FUTURE BALLAST	-
STEEL	-
TOTAL	-

DESIGN LOADING:
COOPER E80 AND ALTERNATE LIVE LOAD WITH DIESEL IMPACT FOR BALLAST DECK.

MATERIAL:
STRUCTURAL STEEL FABRICATORS SHALL BE CERTIFIED UNDER THE AISC QUALITY CERTIFICATION PROGRAM, "MAJOR STEEL BRIDGES", OR ANOTHER SUITABLE PROGRAM AS DETERMINED BY THE ENGINEER.

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FABRICATION NOTE:
FASTENERS SHALL BE ASTM F3125 GRADE A325 SLIP CRITICAL CLASS A HEAVY HEX HIGH STRENGTH BOLTS, TYPE 3. BOLTS 7/8"DIA., OPEN HOLES 15/16"DIA. UNLESS OTHERWISE NOTED. BOLTED CONNECTIONS SHALL USE ASTM A563, GRADE C3, HEAVY HEX NUTS AND ASTM F436 HARDENED WEATHERING STEEL WASHERS FOR HIGH STRENGTH BOLTS UNDER THE TURNED ELEMENT. HIGH STRENGTH BOLTS SHALL BE TIGHTENED BY THE "TURN-OF-NUT"METHOD TO OBTAIN PROPER BOLT TENSION.

BEARING PLATES ARE TO BE FLAT AND LEVEL AFTER WELDING.

ALL WELDING OPERATIONS PROCESSES, EQUIPMENT, MATERIALS, QUALIFICATIONS OF WELDERS, WORKMANSHIP, TESTING AND INSPECTION SHALL BE IN ACCORDANCE WITH THE CURRENT AREMA MANUAL AND CURRENT AWS STRUCTURAL WELDING CODE D1.5. ALL WELD METAL MUST BE EQUIVALENT TO THE BASE METAL IN STRENGTH, CORROSION RESISTANCE AND WEATHERED APPERARANCE. FIELD WELDING OF CONSTRUCTION ACCESSORIES TO THE BEAMS WILL NOT BE PERMITTED. ALL SHOP AND FIELD WELDING SHALL BE EITHER SMAW OR SAW UNLESS APPROVED BY THE ENGINEER.

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THE TOP SURFACE OF THE BEAMS SHALL BE ADJUSTED TO FORM A STRAIGHT LINE AT ANY TRANSVERSE SECTION THROUGHOUT THE SPAN. TOLERANCE IS PLUS OR MINUS 1/8".

SPAN SHALL BE FULLY SHOP ASSEMBLED TO ASSURE ACCURATE FIT. DISASSEMBLE AS REQUIRED FOR SHIPPING.

ERECTION NOTES:
A SINGLE GIRDER MAY NOT BE ERECTED DURING HIGH WIND CONDITIONS WITHOUT THE SUPPORT OF THE SECOND GIRDER CONNECTED BY ALL KNEE BRACES AND FLOOR BEAMS.

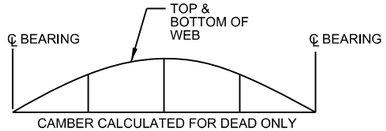
SPLICE NOTES:
1. NO TWO PARTS OR MEMBERS SHALL BE SPLICED BY SHOP WELDING AT THE SAME LOCATION.
2. WEB SPLICES BY SHOP WELDING SHALL BE LOCATED A MINIMUM OF 36"AWAY FROM ANY FLANGE SPLICE.
3. SPLICES OF THE WEB OR FLANGES SHALL NOT BE PERMITTED WITHIN THE CENTRAL 40'-0"OF THE GIRDER SPAN LENGTH. THIS REQUIREMENT MAY BE WAIVED ONLY BY THE APPROVAL OF THE ENGINEER.

ESTIMATED WEIGHT OF STRUCTURAL STEEL = XXX TONS
ESTIMATED LIFTING WEIGHT OF ONE GIRDER = XXX TONS

TOP OF TIE	TO MASONRY	TO CLEARANCE
TIE	-	-
BALLAST	-	-
WATERPROOFING	-	-
BALLAST PAN	-	-
FLOORBEAM	-	-
FLANGE PLATE	-	-
NUT & BOLT SHANK	-	-
BEARING	-	-
TOTAL	-	-

MOMENT & SHEAR TABLE FOR STEEL THRU PLATE GIRDER

DESCRIPTION	MOMENT	SHEAR
DEAD LOAD	-	-
LIVE LOAD	-	-
IMPACT	-	-
TOTAL	-	-
SECTION	-	
NET I	-	
NET S (BOTT)	-	
fsc (TOP)	-	
GROSS I	-	
GROSS S (TOP)	-	
fsc (TOP)	-	



CAMBER DIAGRAM

MOMENT & SHEAR TABLE FOR STEEL FLOORBEAMS

DESCRIPTION	MOMENT	SHEAR	MOMENT *	MOMENT *
DEAD LOAD	-	-	-	-
LIVE LOAD	-	-	-	-
IMPACT	-	-	-	-
TOTAL	-	-	-	-
SECTION	-		-	
NET I	-		-	
NET S (BOTT)	-		-	
fsc (TOP)	-		-	
GROSS I	-		-	
GROSS S (TOP)	-		-	
fsc (TOP)	-		-	

* JACKING CONDITIONS CONTROL
50% ALLOWABLE STRESS INCREASE IS PERMITTED

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-209 OF BRG-244

PLOT DATE: $DATES $TIMES $USERS

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	AECOM-TH
DRAWN:	AECOM-BBM
CHECKED:	AECOM-ALR
DATE:	03/16/2020

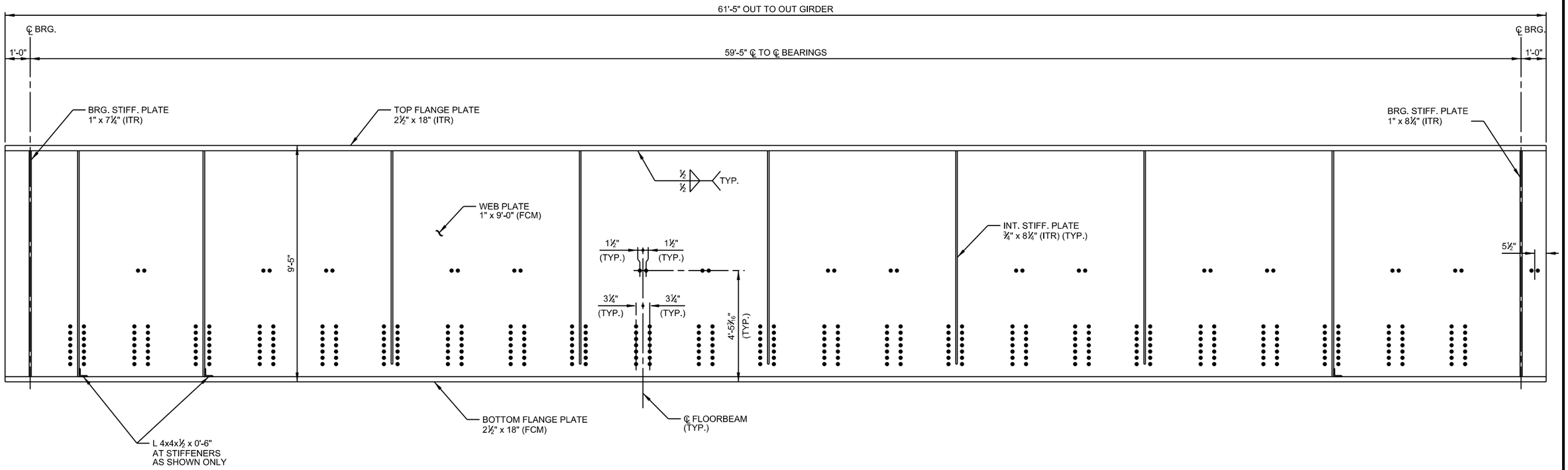
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 47.412 OVER NORFOLK SOUTHERN RAILWAY FRAMING PLAN - SPAN 3

FILENAME	$FILESS	SHEET	OF
SCALE	AS NOTED		

TO MILLENNIUM STATION

TO SOUTH BEND AIRPORT



SPAN 1 - OUTSIDE ELEVATION - SOUTH GIRDER

SCALE: ½" = 1'-0"

NOTES:

1. FCM - FRACTURE CRITICAL MEMBER
2. ITR - IMPACT TEST REQUIRED

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-210 OF BRG-244

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	ACM-TH
DRAWN:	ACM-BBM
CHECKED:	ACM-ALR
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

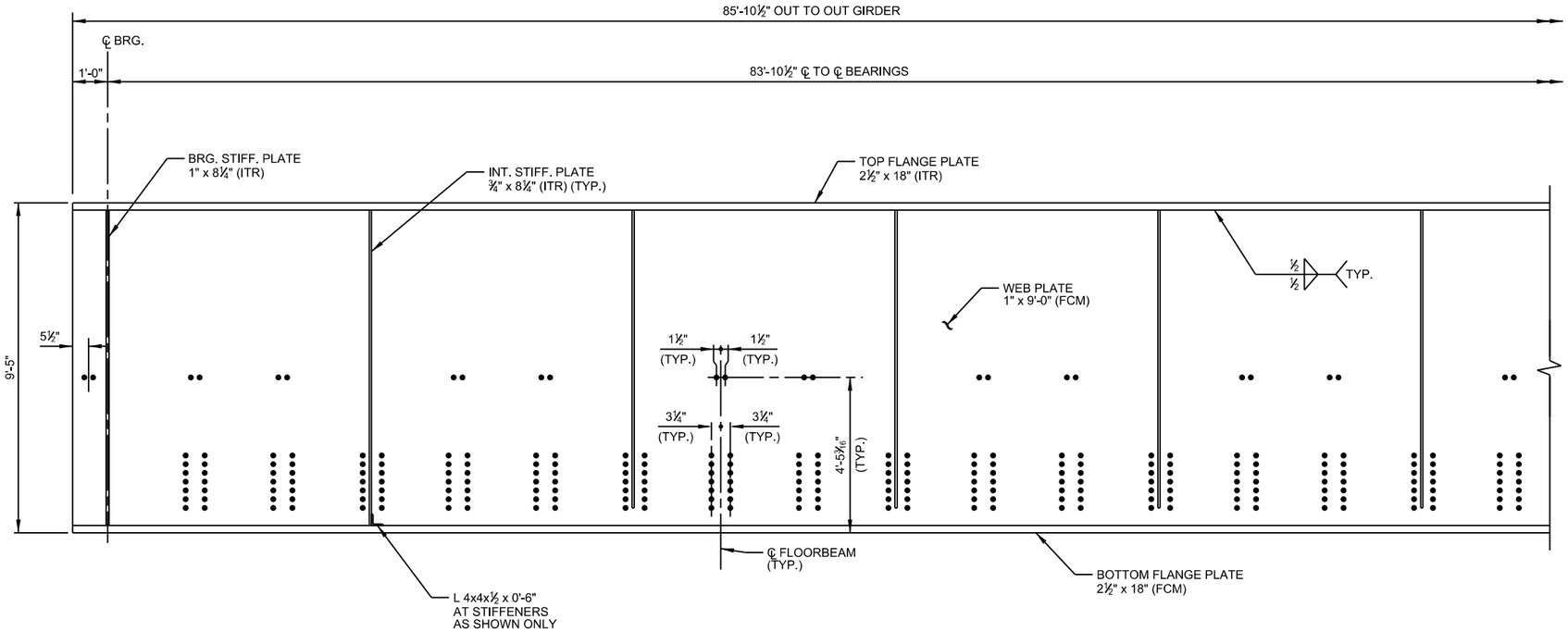
BR 47.412 OVER NORFOLK SOUTHERN RAILWAY - SPAN 1 - OUTSIDE GIRDER ELEV. (SOUTH GIRDER)

FILENAME	$FILES$
SCALE	AS NOTED

SHEET OF

TO SOUTH BEND AIRPORT

TO MILLENNIUM STATION



SPAN 1 - OUTSIDE ELEVATION - NORTH GIRDER

SCALE: ½" = 1'-0"

NOTES:

1. FCM - FRACTURE CRITICAL MEMBER
2. ITR - IMPACT TEST REQUIRED

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-211 OF BRG-244

$USER$

$TIME$

PLOT DATE: $DATE$

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Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

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DATE:	03/16/2020

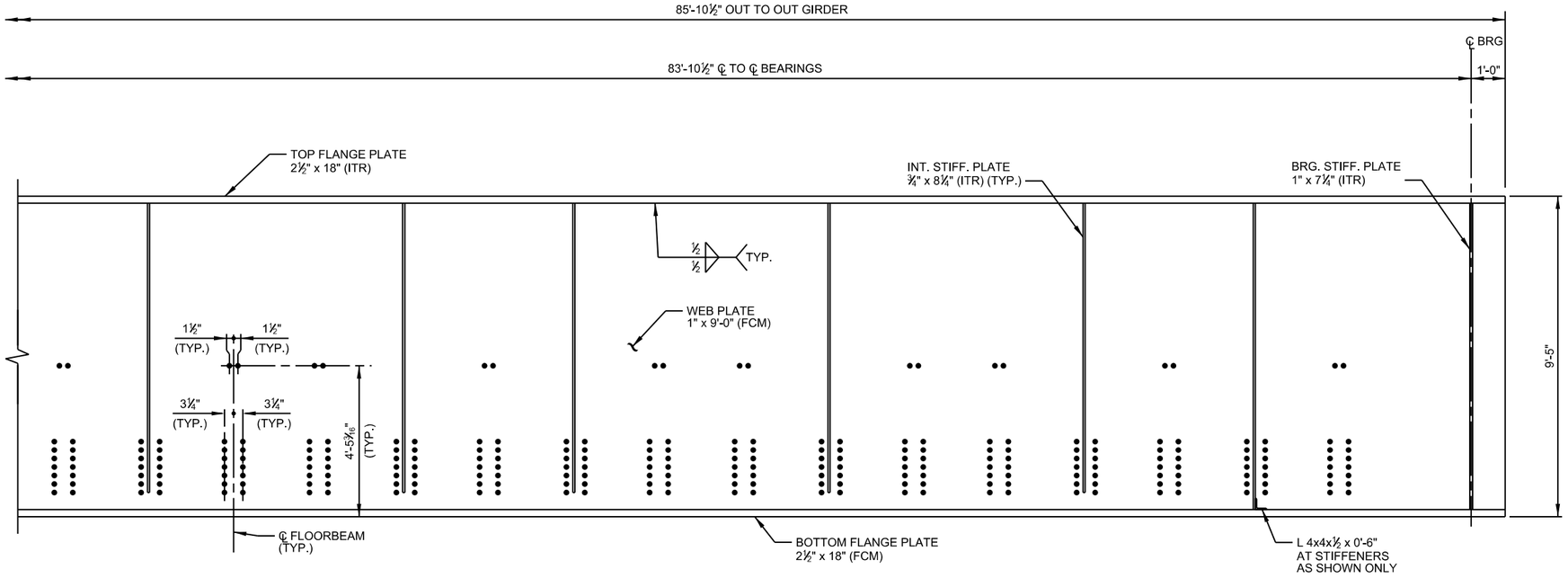
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 47.412 OVER NORFOLK SOUTHERN RAILWAY - SPAN 1 - OUTSIDE GIRDER ELEV. (NORTH GIRDER) (1 OF 2)

FILENAME	$FILES$	SHEET OF
SCALE	AS NOTED	

TO SOUTH BEND AIRPORT

TO MILLENNIUM STATION



SPAN 1 - OUTSIDE ELEVATION - NORTH GIRDER

SCALE: ½" = 1'-0"

NOTES:

1. FCM - FRACTURE CRITICAL MEMBER
2. ITR - IMPACT TEST REQUIRED

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-212 OF BRG-244

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	ACM-TH
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CHECKED:	ACM-ALR
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

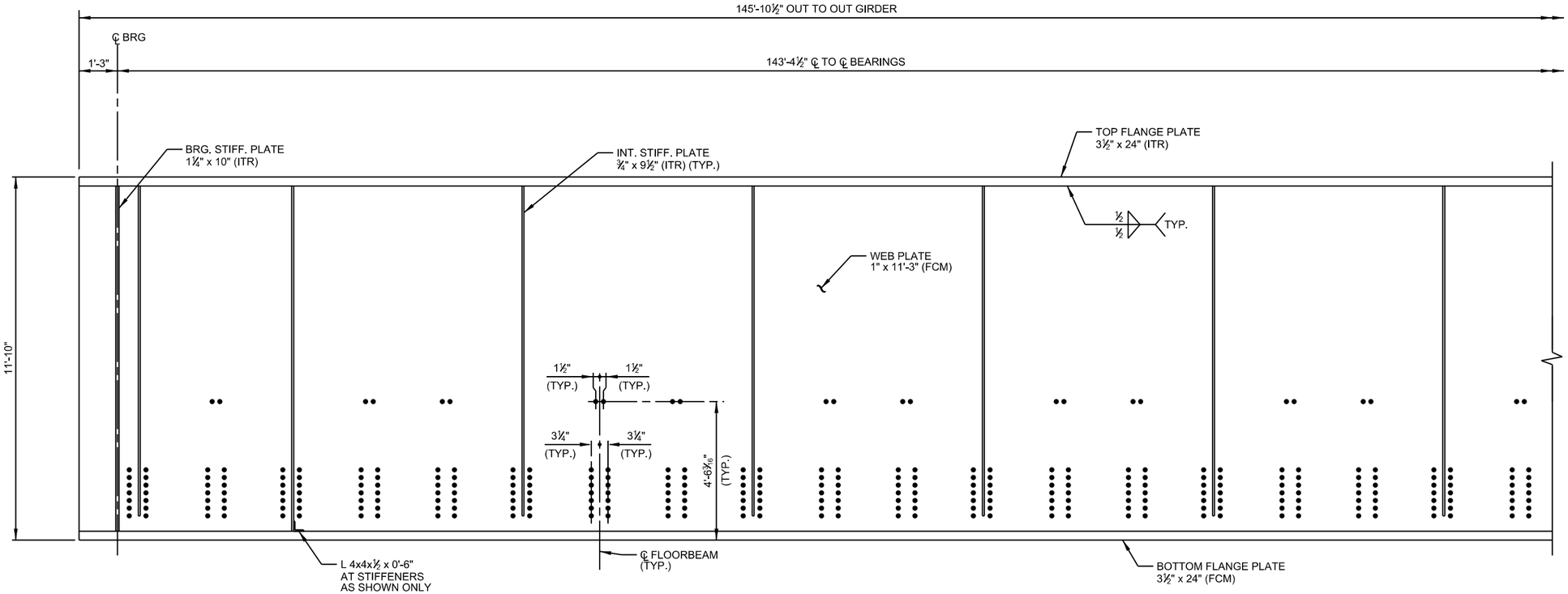
BR 47.412 OVER NORFOLK SOUTHERN RAILWAY - SPAN 1 - OUTSIDE GIRDER ELEV. (NORTH GIRDER) (2 OF 2)

FILENAME	$FILES$
SCALE	AS NOTED

SHEET OF

TO MILLENNIUM STATION

TO SOUTH BEND AIRPORT



SPAN 2 - OUTSIDE ELEVATION - SOUTH GIRDER

SCALE: ½" = 1'-0"

NOTES:

1. FCM - FRACTURE CRITICAL MEMBER
2. ITR - IMPACT TEST REQUIRED

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-213 OF BRG-244

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Connectivity for Accelerated Growth

MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	ACM-TH
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CHECKED:	ACM-ALR
DATE:	03/16/2020

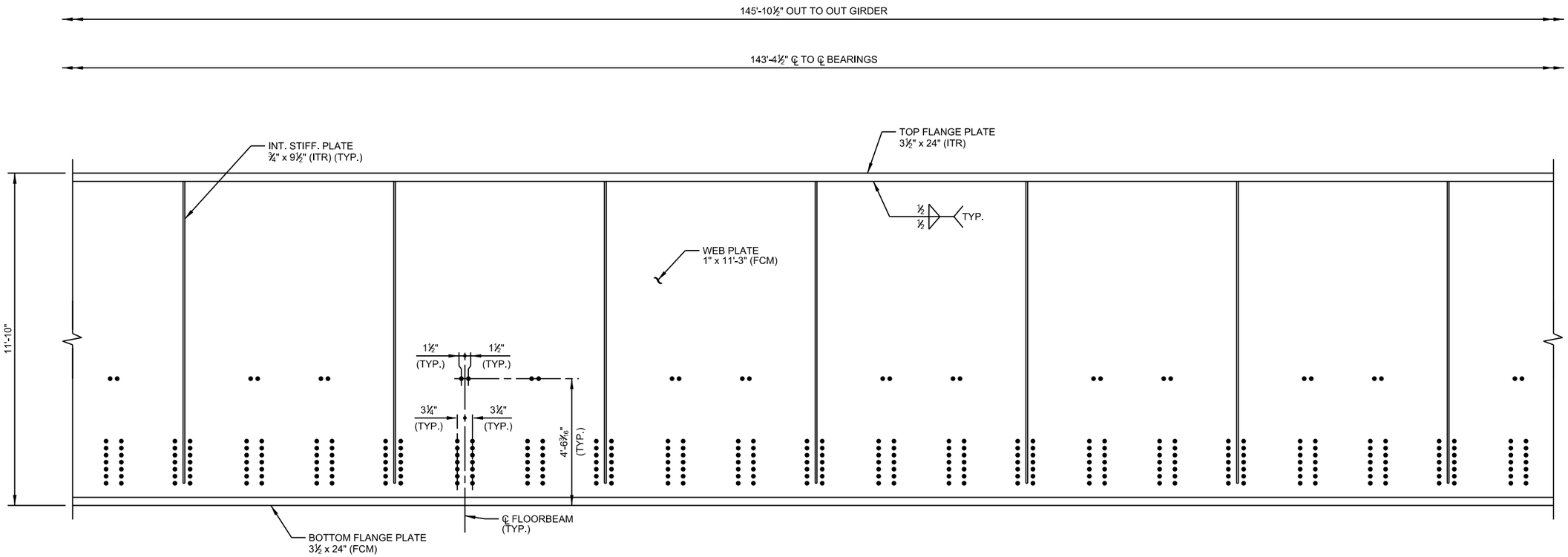
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 47.412 OVER NORFOLK SOUTHERN RAILWAY - SPAN 2 - OUTSIDE GIRDER ELEV. (SOUTH GIRDER) (1 OF 3)

FILENAME	$FILES$	SHEET
SCALE	AS NOTED	OF

TO MILLENNIUM STATION

TO SOUTH BEND AIRPORT



SPAN 2 - OUTSIDE ELEVATION - SOUTH GIRDER

SCALE: ½" = 1'-0"

NOTES:

1. FCM - FRACTURE CRITICAL MEMBER
2. ITR - IMPACT TEST REQUIRED

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-214 OF BRG-244

$USER$

$TIME$

PLOT DATE: $DATE$

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DOUBLE TRACK N·W·I
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MICHIGAN CITY TO GARY, INDIANA

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DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

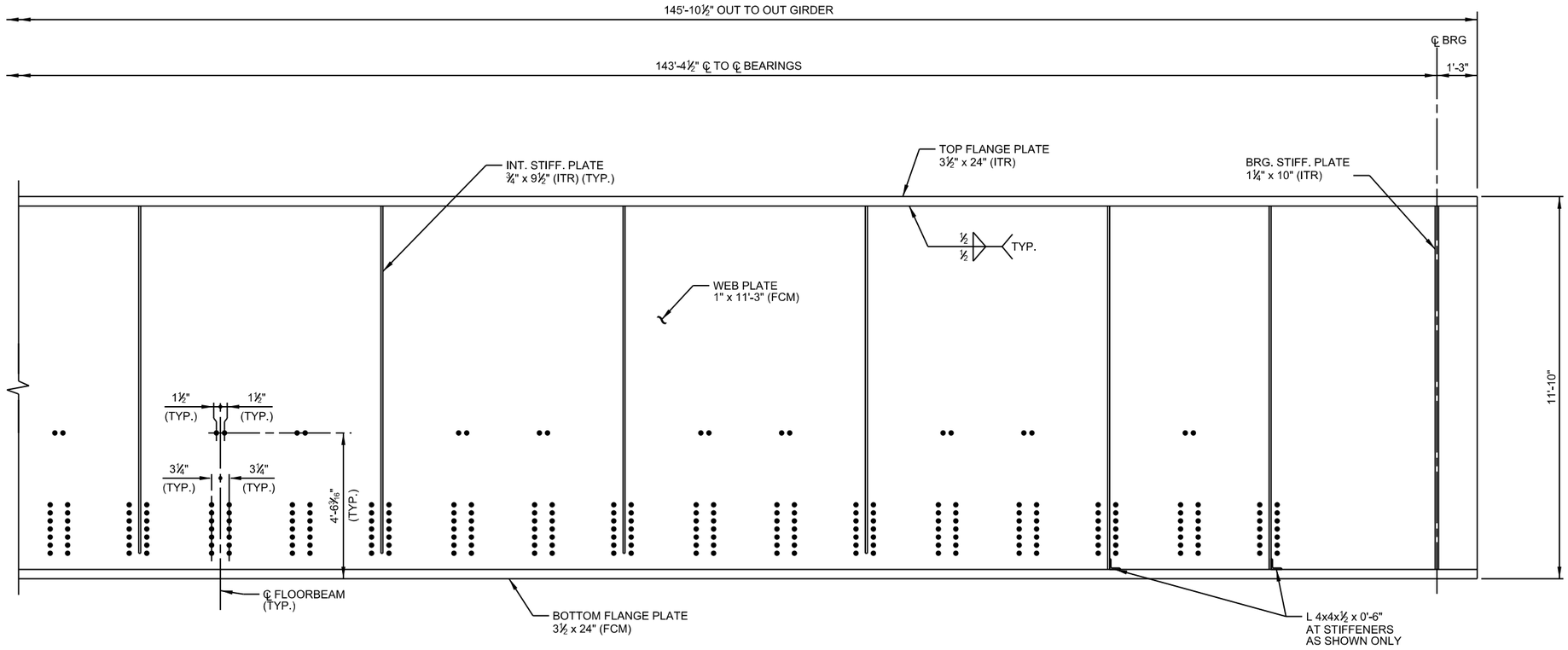
BR 47.412 OVER NORFOLK SOUTHERN RAILWAY - SPAN 2 - OUTSIDE GIRDER ELEV. (SOUTH GIRDER) (2 OF 3)

FILENAME	$FILES$
SCALE	AS NOTED

SHEET OF

TO MILLENNIUM STATION

TO SOUTH BEND AIRPORT



SPAN 2 - OUTSIDE ELEVATION - SOUTH GIRDER

SCALE: ½" = 1'-0"

NOTES:

1. FCM - FRACTURE CRITICAL MEMBER
2. ITR - IMPACT TEST REQUIRED

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-215 OF BRG-244

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NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

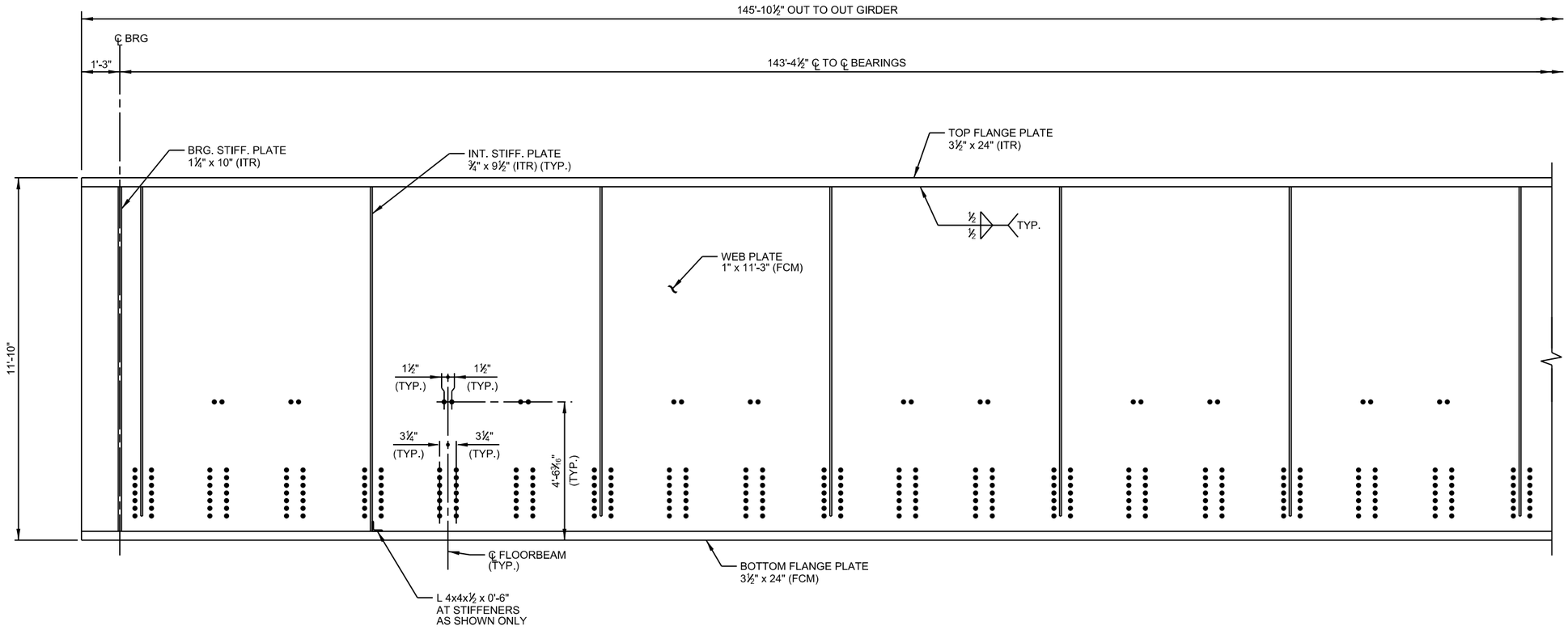
BR 47.412 OVER NORFOLK SOUTHERN RAILWAY - SPAN 2 - OUTSIDE GIRDER ELEV. (SOUTH GIRDER) (3 OF 3)

FILENAME	$FILES$	SHEET	OF
SCALE	AS NOTED		

PLOT DATE: $DATE$ $TIME$ $USER$

TO SOUTH BEND AIRPORT

TO MILLENNIUM STATION



SPAN 2 - OUTSIDE ELEVATION - NORTH GIRDER

SCALE: ½" = 1'-0"

NOTES:

1. FCM - FRACTURE CRITICAL MEMBER
2. ITR - IMPACT TEST REQUIRED

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-216 OF BRG-244

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MICHIGAN CITY TO GARY, INDIANA

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DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

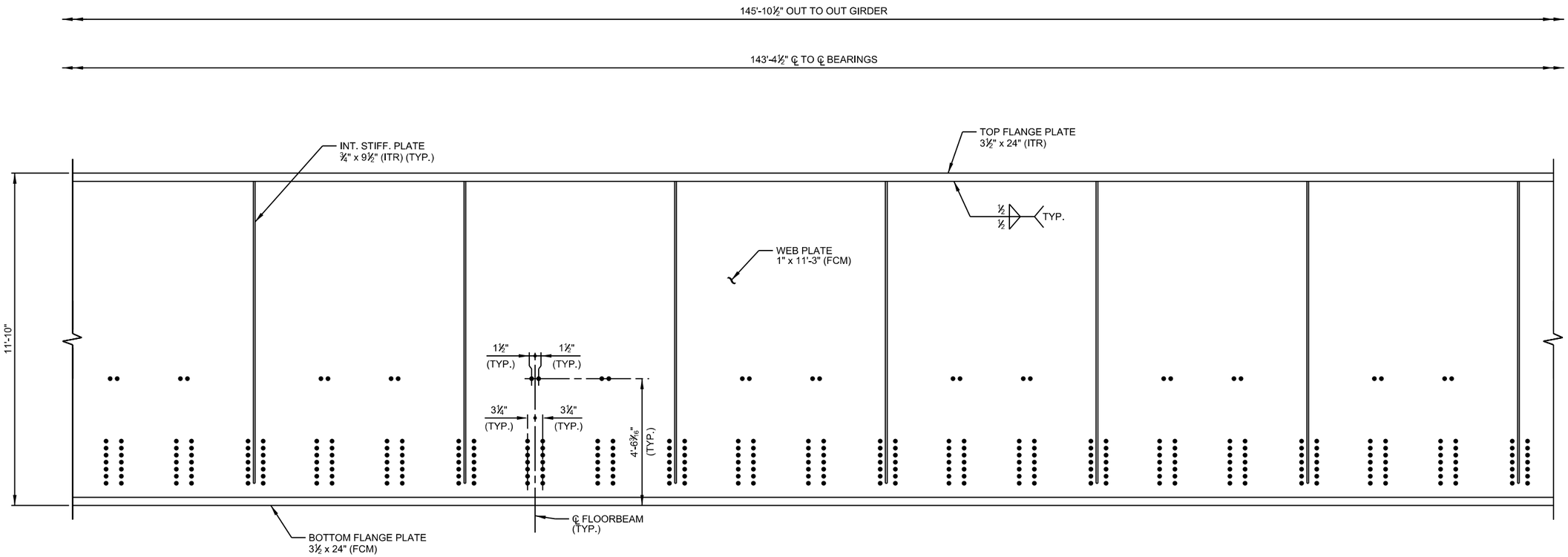
BR 47.412 OVER NORFOLK SOUTHERN RAILWAY - SPAN 2 - OUTSIDE GIRDER ELEV. (NORTH GIRDER) (1 OF 3)

FILENAME	$FILESS
SCALE	AS NOTED

SHEET OF

TO SOUTH BEND AIRPORT

TO MILLENNIUM STATION



SPAN 2 - OUTSIDE ELEVATION - NORTH GIRDER

SCALE: ½" = 1'-0"

NOTES:

1. FCM - FRACTURE CRITICAL MEMBER
2. ITR - IMPACT TEST REQUIRED

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-217 OF BRG-244

$USER$

$TIME$

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MICHIGAN CITY TO GARY, INDIANA

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DATE:	03/16/2020

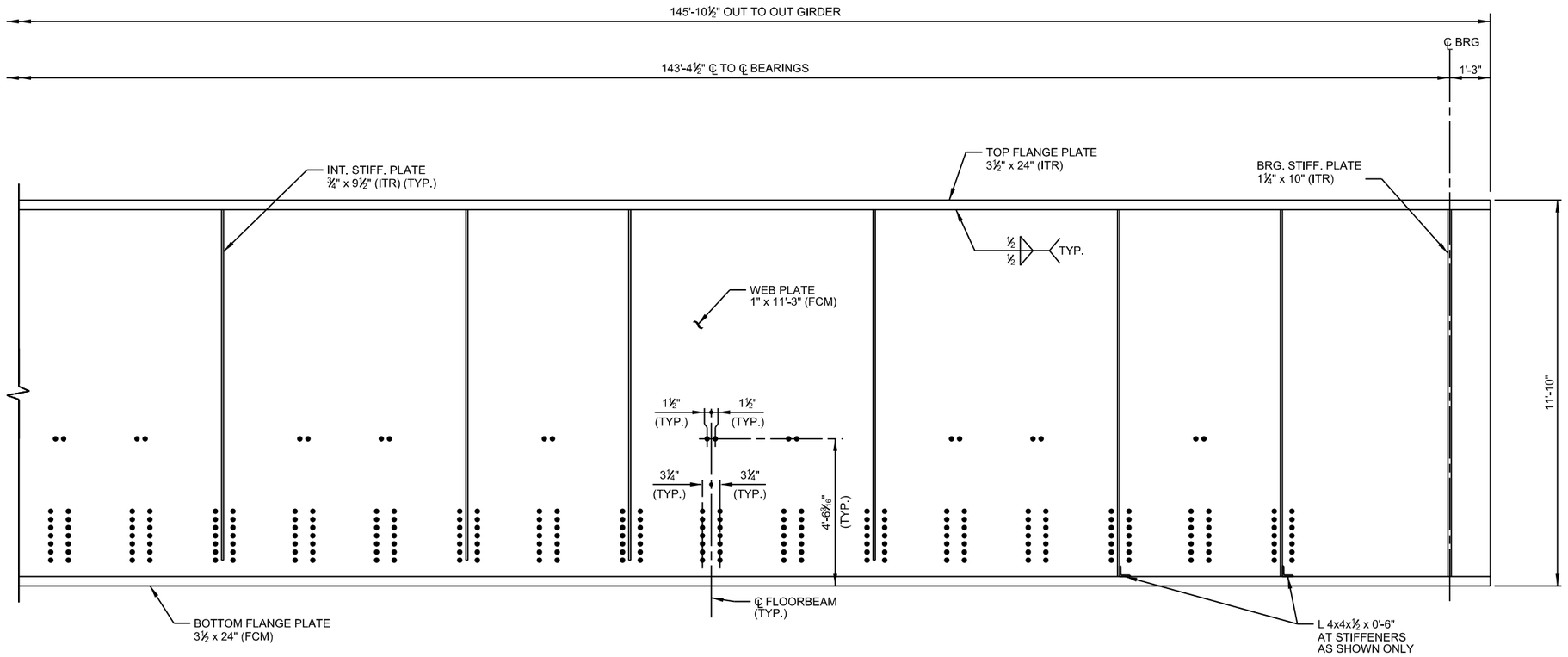
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 47.412 OVER NORFOLK SOUTHERN RAILWAY - SPAN 2 - OUTSIDE GIRDER ELEV. (NORTH GIRDER) (2 OF 3)

FILENAME	$FILES$	SHEET OF
SCALE	AS NOTED	

TO SOUTH BEND AIRPORT

TO MILLENNIUM STATION



SPAN 2 - OUTSIDE ELEVATION - NORTH GIRDER

SCALE: ½" = 1'-0"

NOTES:

1. FCM - FRACTURE CRITICAL MEMBER
2. ITR - IMPACT TEST REQUIRED

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-218 OF BRG-244

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

MICHIGAN CITY TO GARY, INDIANA

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CHECKED:	ACM-ALR
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

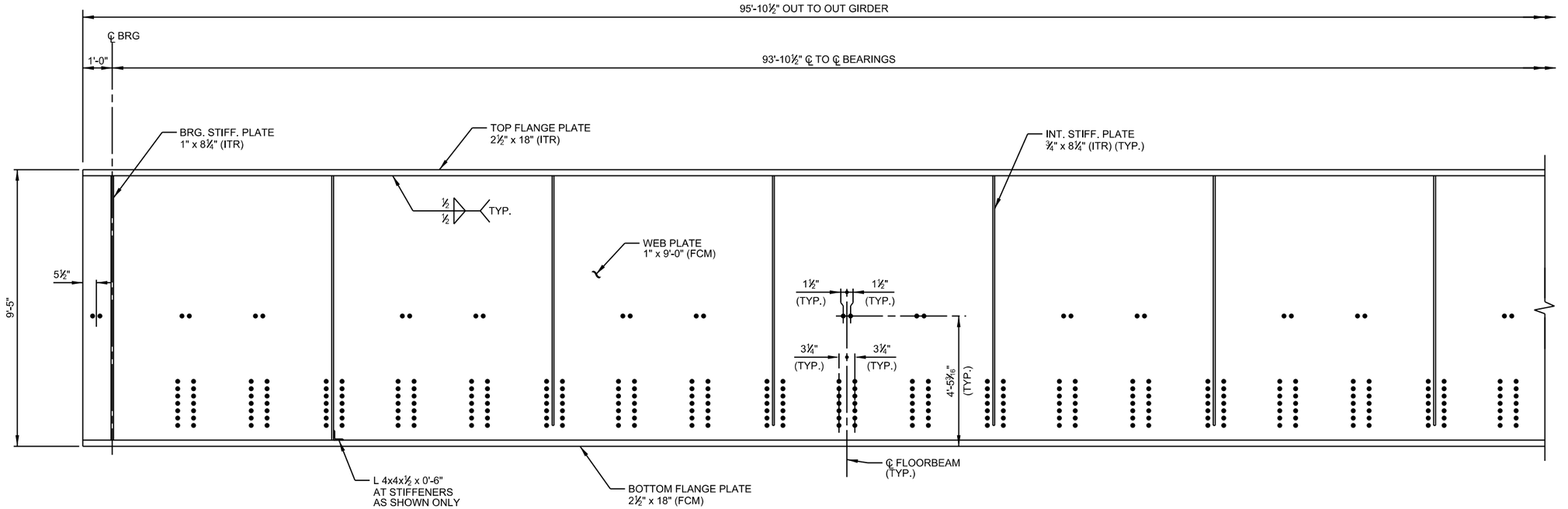
BR 47.412 OVER NORFOLK SOUTHERN RAILWAY - SPAN 2 - OUTSIDE GIRDER ELEV. (NORTH GIRDER) (3 OF 3)

FILENAME	$FILES$	SHEET	OF
SCALE	AS NOTED		

PLOT DATE: $DATE$ $TIME$ $USER$

TO MILLENNIUM STATION

TO SOUTH BEND AIRPORT



SPAN 3 - OUTSIDE ELEVATION - SOUTH GIRDER

SCALE: ½" = 1'-0"

NOTES:

1. FCM - FRACTURE CRITICAL MEMBER
2. ITR - IMPACT TEST REQUIRED

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-219 OF BRG-244

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DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

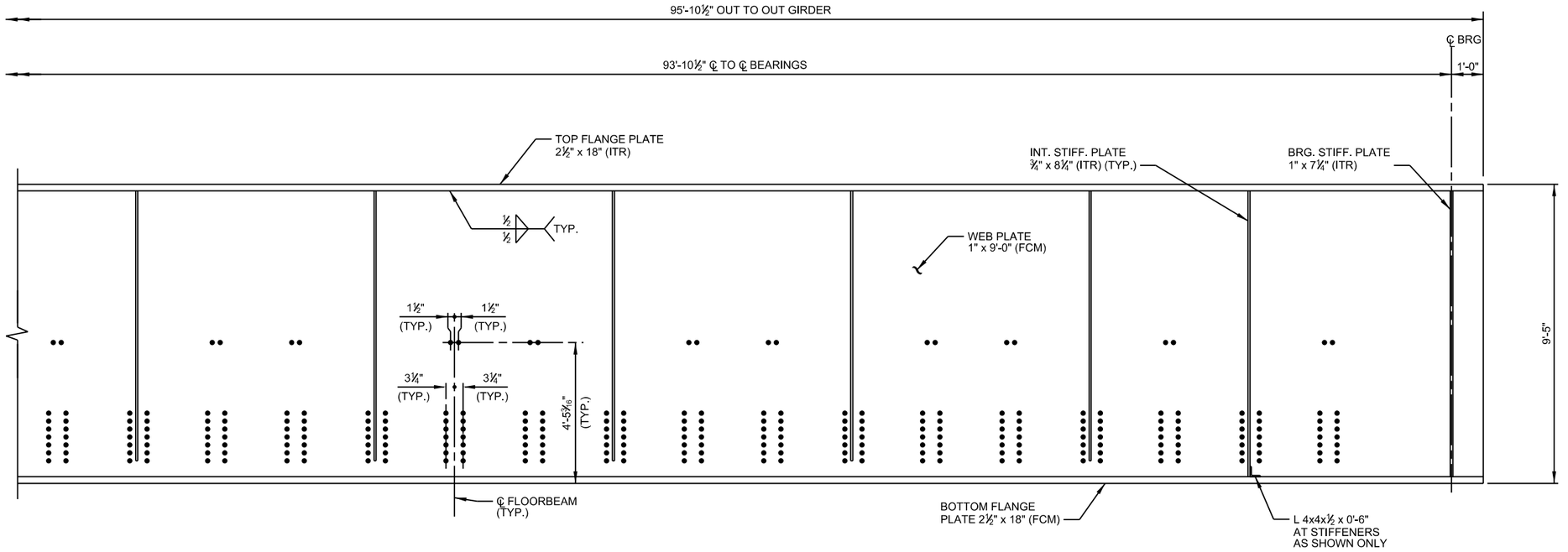
BR 47.412 OVER NORFOLK SOUTHERN RAILWAY - SPAN 3 - OUTSIDE GIRDER ELEV. (SOUTH GIRDER) (1 OF 2)

FILENAME	$FILESS
SCALE	AS NOTED

SHEET OF

TO MILLENNIUM STATION

TO SOUTH BEND AIRPORT



SPAN 3 - OUTSIDE ELEVATION - SOUTH GIRDER

SCALE: ½" = 1'-0"

NOTES:

1. FCM - FRACTURE CRITICAL MEMBER
2. ITR - IMPACT TEST REQUIRED

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-220 OF BRG-244

PLOT DATE: $DATE$ $TIME$ $USER$

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MICHIGAN CITY TO GARY, INDIANA

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DRAWN:	ACM-BBM
CHECKED:	ACM-ALR
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

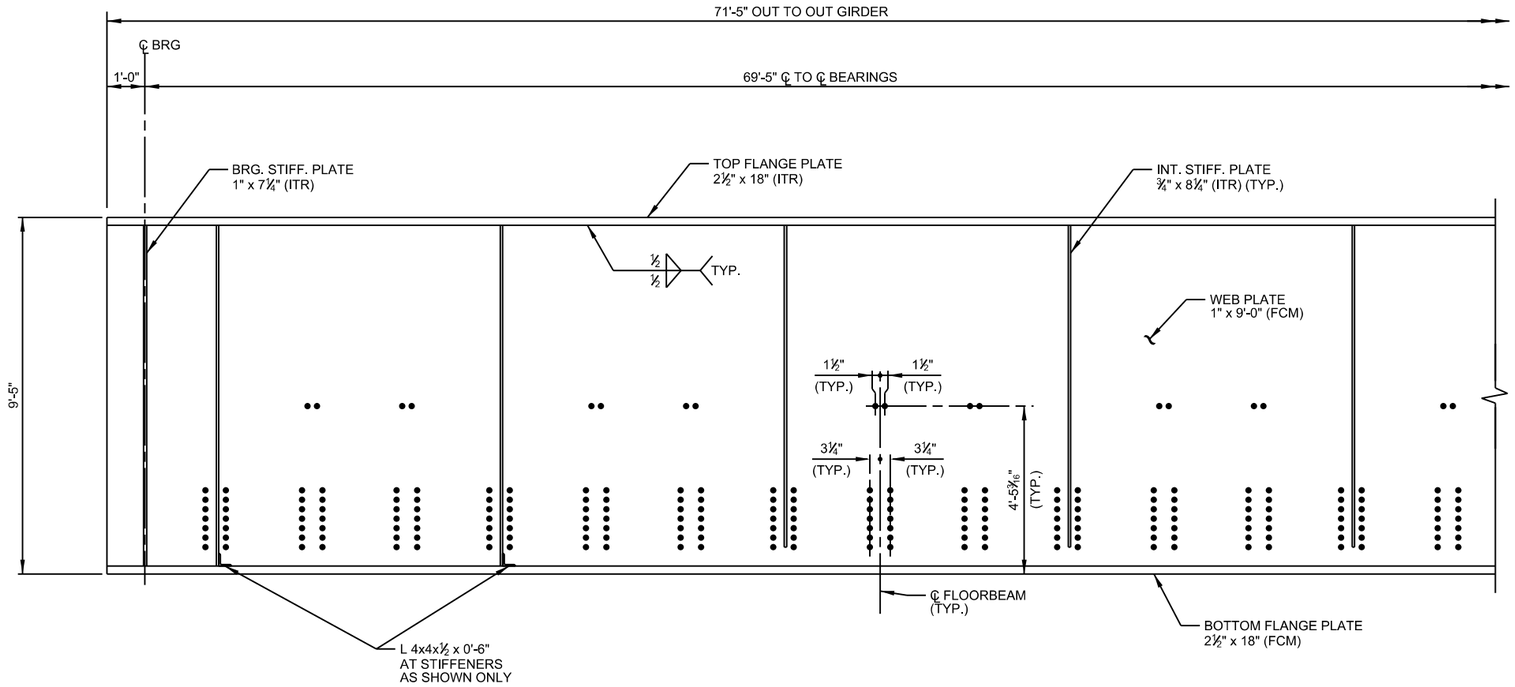
BR 47.412 OVER NORFOLK SOUTHERN RAILWAY - SPAN 3 - OUTSIDE GIRDER ELEV. (SOUTH GIRDER) (2 OF 2)

FILENAME	$FILESS
SCALE	AS NOTED

SHEET OF

TO SOUTH BEND AIRPORT

TO MILLENNIUM STATION



SPAN 3 - OUTSIDE ELEVATION - NORTH GIRDER

SCALE: ½" = 1'-0"

NOTES:

1. FCM - FRACTURE CRITICAL MEMBER
2. ITR - IMPACT TEST REQUIRED

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-221 OF BRG-244

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MICHIGAN CITY TO GARY, INDIANA

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DRAWN:	ACM-BBM
CHECKED:	ACM-ALR
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 47.412 OVER NORFOLK SOUTHERN RAILWAY - SPAN 3 - OUTSIDE GIRDER ELEV. (NORTH GIRDER) (1 OF 2)

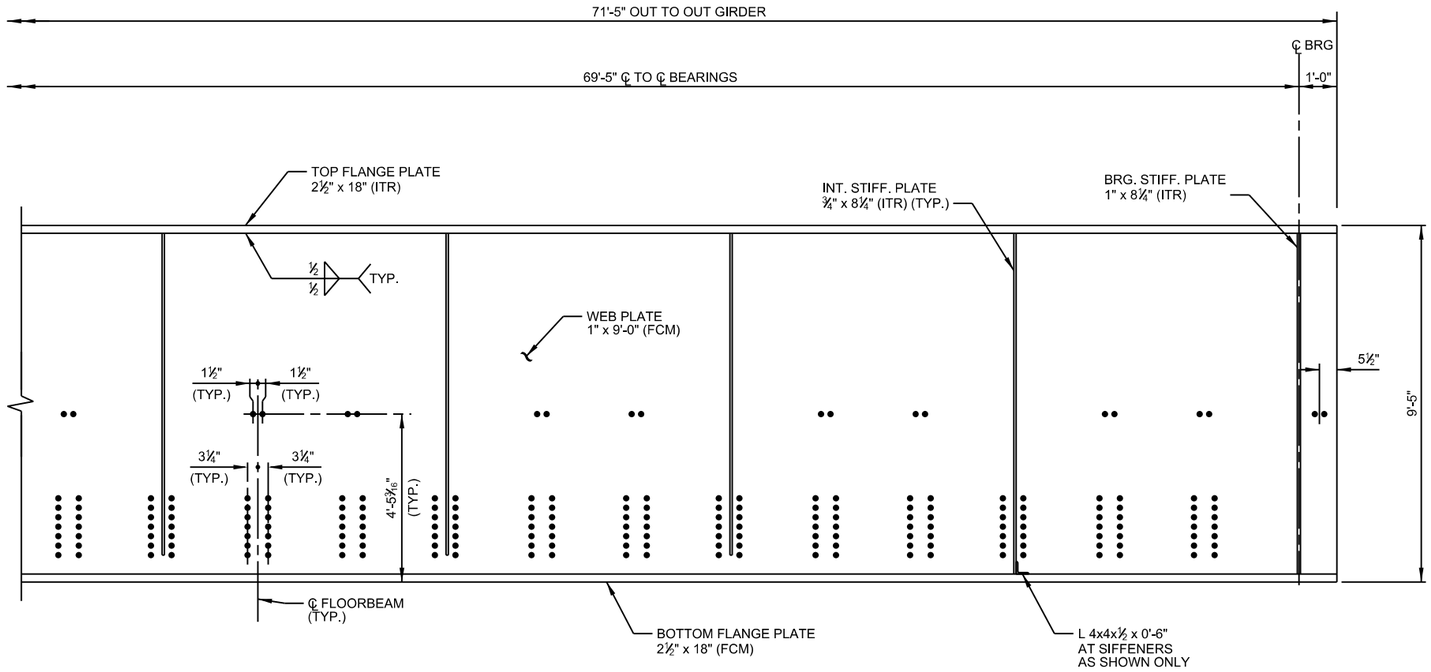
FILENAME	$FILESS
SCALE	AS NOTED

SHEET OF

PLOT DATE: $DATE$ $TIME$ $USER$

TO SOUTH BEND AIRPORT

TO MILLENNIUM STATION



SPAN 3 - OUTSIDE ELEVATION - NORTH GIRDER

SCALE: ½" = 1'-0"

NOTES:

1. FCM - FRACTURE CRITICAL MEMBER
2. ITR - IMPACT TEST REQUIRED

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-222 OF BRG-244

$USER$

$TIME$

PLOT DATE: $DATE$

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CHECKED:	ACM-ALR
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

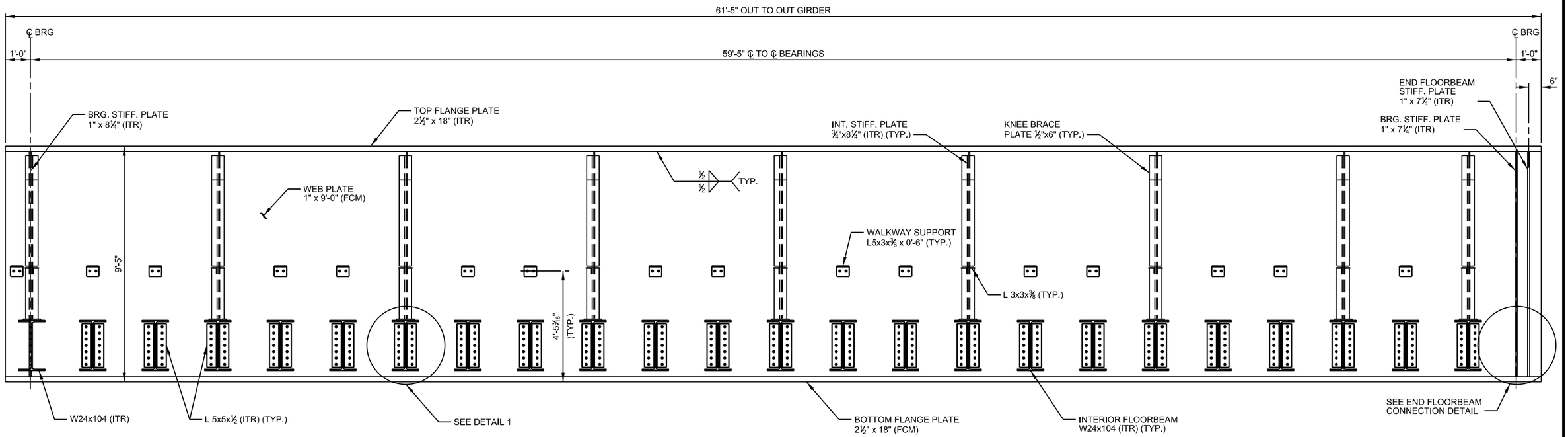
BR 47.412 OVER NORFOLK SOUTHERN RAILWAY - SPAN 3 - OUTSIDE GIRDER ELEV. (NORTH GIRDER) (2 OF 2)

FILENAME	$FILES$
SCALE	AS NOTED

SHEET OF

TO SOUTH BEND AIRPORT

TO MILLENNIUM STATION



SPAN 1 - INSIDE ELEVATION - SOUTH GIRDER

SCALE: ½" = 1'-0"

NOTES:

1. FCM - FRACTURE CRITICAL MEMBER
2. ITR - IMPACT TEST REQUIRED

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-223 OF BRG-244

PLOT DATE: $DATE$ $TIME$ $USER$

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ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

NICTD
NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	ACM-TH
DRAWN:	ACM-BBM
CHECKED:	ACM-ALR
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

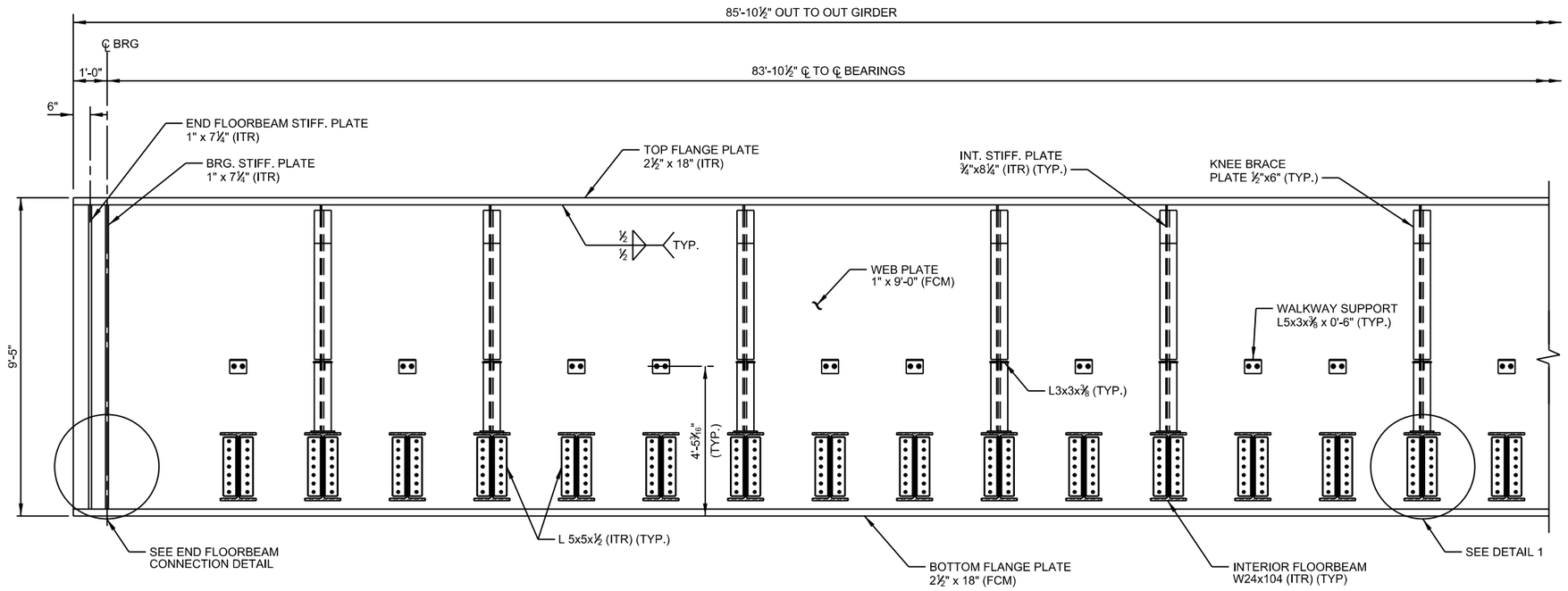
BR 47.412 OVER NORFOLK SOUTHERN RAILWAY - SPAN 1 - INSIDE GIRDER ELEV. (SOUTH GIRDER)

FILENAME	$FILES$
SCALE	AS NOTED

SHEET OF

TO MILLENNIUM STATION

TO SOUTH BEND AIRPORT



SPAN 1 - INSIDE ELEVATION - NORTH GIRDER

SCALE: ½" = 1'-0"

NOTES:

1. FCM - FRACTURE CRITICAL MEMBER
2. ITR - IMPACT TEST REQUIRED

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-224 OF BRG-244

$USER$

$TIME$

PLOT DATE: $DATE$

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	ACM-TH
DRAWN:	ACM-BBM
CHECKED:	ACM-ALR
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

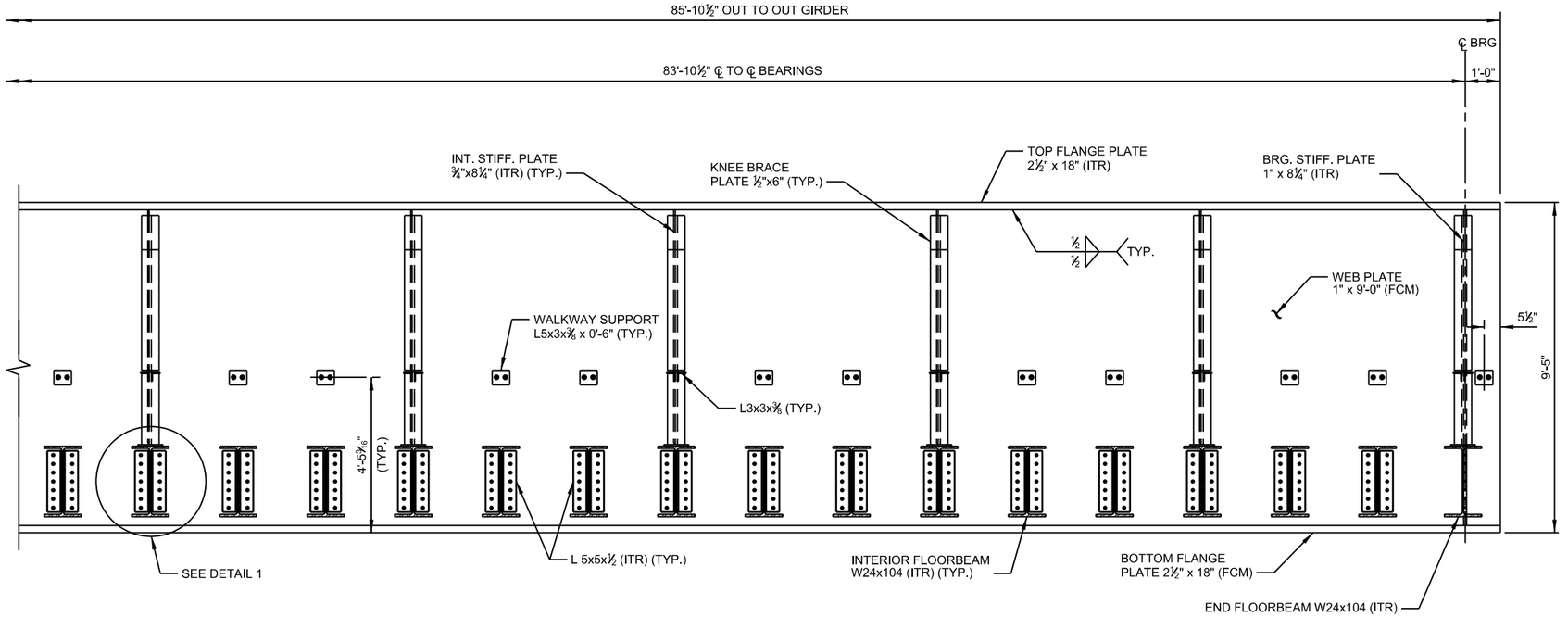
BR 47.412 OVER NORFOLK SOUTHERN RAILWAY - SPAN 1 - INSIDE GIRDER ELEV. (NORTH GIRDER) (1 OF 2)

FILENAME	$FILESS
SCALE	AS NOTED

SHEET OF

TO MILLENNIUM STATION

TO SOUTH BEND AIRPORT



SPAN 1 - INSIDE ELEVATION - NORTH GIRDER

SCALE: ½" = 1'-0"

NOTES:

1. FCM - FRACTURE CRITICAL MEMBER
2. ITR - IMPACT TEST REQUIRED

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-225 OF BRG-244

PLOT DATE: $DATE$ $TIME$ $USER$

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	ACM-TH
DRAWN:	ACM-BBM
CHECKED:	ACM-ALR
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

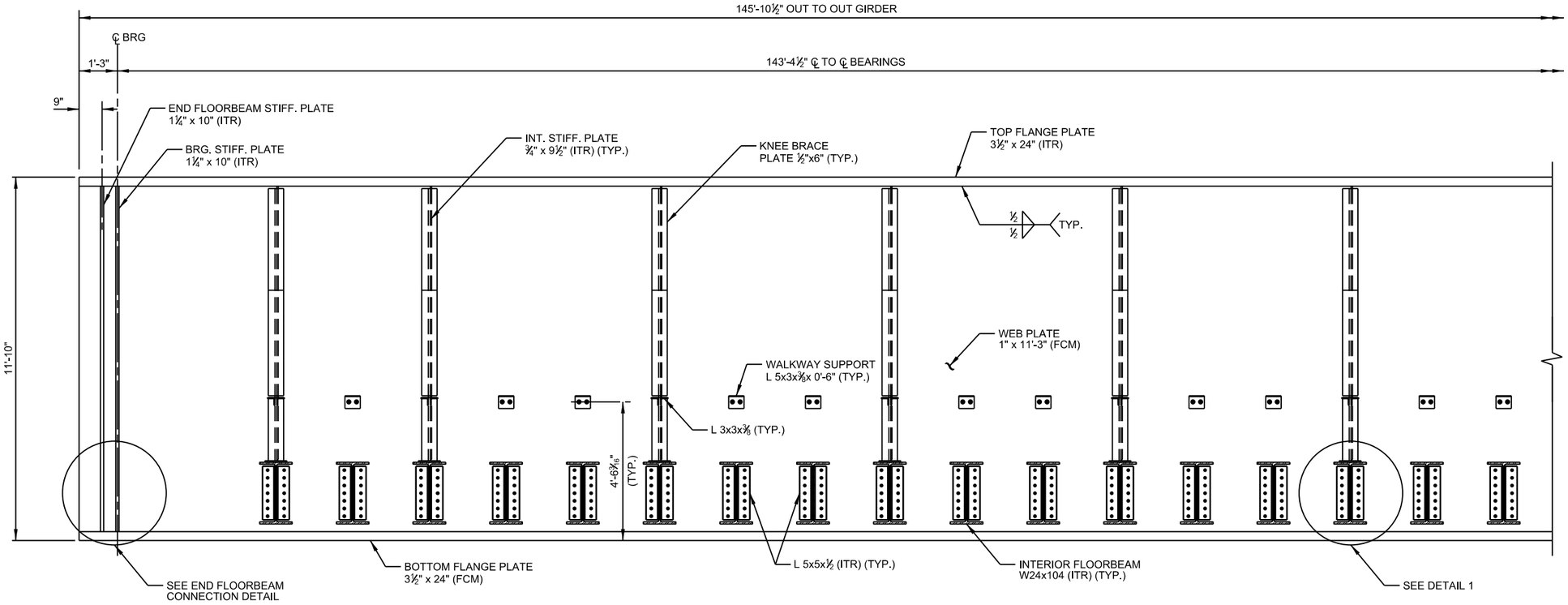
BR 47.412 OVER NORFOLK SOUTHERN RAILWAY - SPAN 1 - INSIDE GIRDER ELEV. (NORTH GIRDER) (2 OF 2)

FILENAME	$FILES$
SCALE	AS NOTED

SHEET OF

TO SOUTH BEND AIRPORT

TO MILLENNIUM STATION



SPAN 2 - INSIDE ELEVATION - SOUTH GIRDER

SCALE: ½" = 1'-0"

NOTES:

1. FCM - FRACTURE CRITICAL MEMBER
2. ITR - IMPACT TEST REQUIRED

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-226 OF BRG-244

PLOT DATE: $DATE$ $TIME$ $USER$

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	ACM-TH
DRAWN:	ACM-BBM
CHECKED:	ACM-ALR
DATE:	03/16/2020

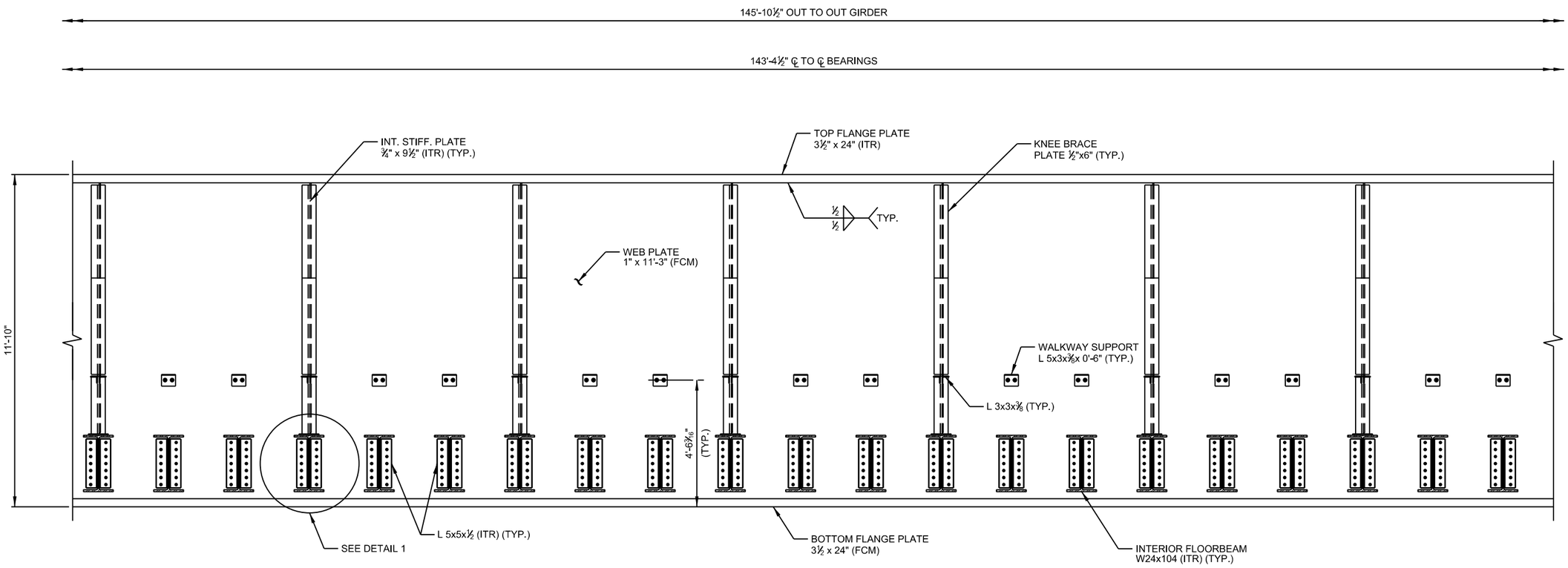
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 47.412 OVER NORFOLK SOUTHERN RAILWAY - SPAN 2 - OUTSIDE GIRDER ELEV. (SOUTH GIRDER) (1 OF 3)

FILENAME	$FILESS
SCALE	AS NOTED
SHEET	OF

TO SOUTH BEND AIRPORT

TO MILLENNIUM STATION



SPAN 2 - INSIDE ELEVATION - SOUTH GIRDER

SCALE: ½" = 1'-0"

NOTES:

1. FCM - FRACTURE CRITICAL MEMBER
2. ITR - IMPACT TEST REQUIRED

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-227 OF BRG-244

PLOT DATE: $DATE$ $TIME$ $USER$

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	ACM-TH
DRAWN:	ACM-BBM
CHECKED:	ACM-ALR
DATE:	03/16/2020

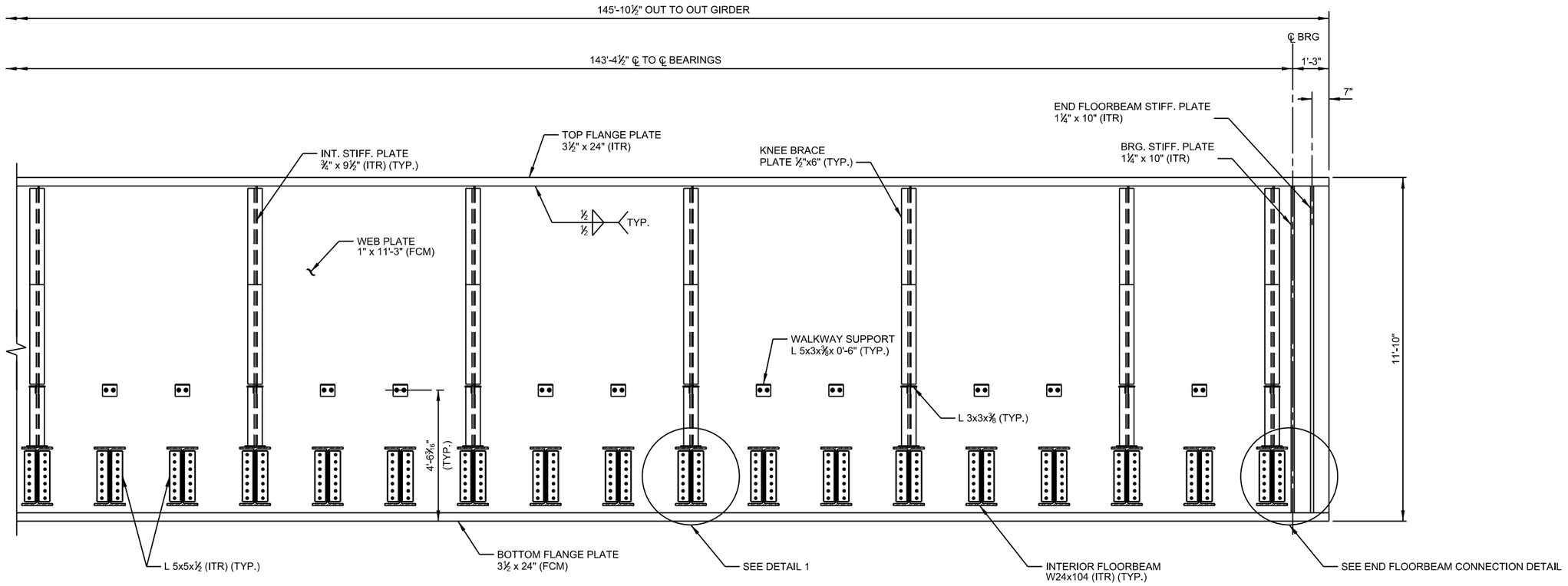
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 47.412 OVER NORFOLK SOUTHERN RAILWAY - SPAN 2 - INSIDE GIRDER ELEV. (SOUTH GIRDER) (2 OF 3)

FILENAME	$FILES$	SHEET	OF
SCALE	AS NOTED		

TO SOUTH BEND AIRPORT

TO MILLENNIUM STATION



SPAN 2 - INSIDE ELEVATION - SOUTH GIRDER

SCALE: ½" = 1'-0"

NOTES:

1. FCM - FRACTURE CRITICAL MEMBER
2. ITR - IMPACT TEST REQUIRED

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-228 OF BRG-244

PLOT DATE: $DATE$ $TIME$ $USER$

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	ACM-TH
DRAWN:	ACM-BBM
CHECKED:	ACM-ALR
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

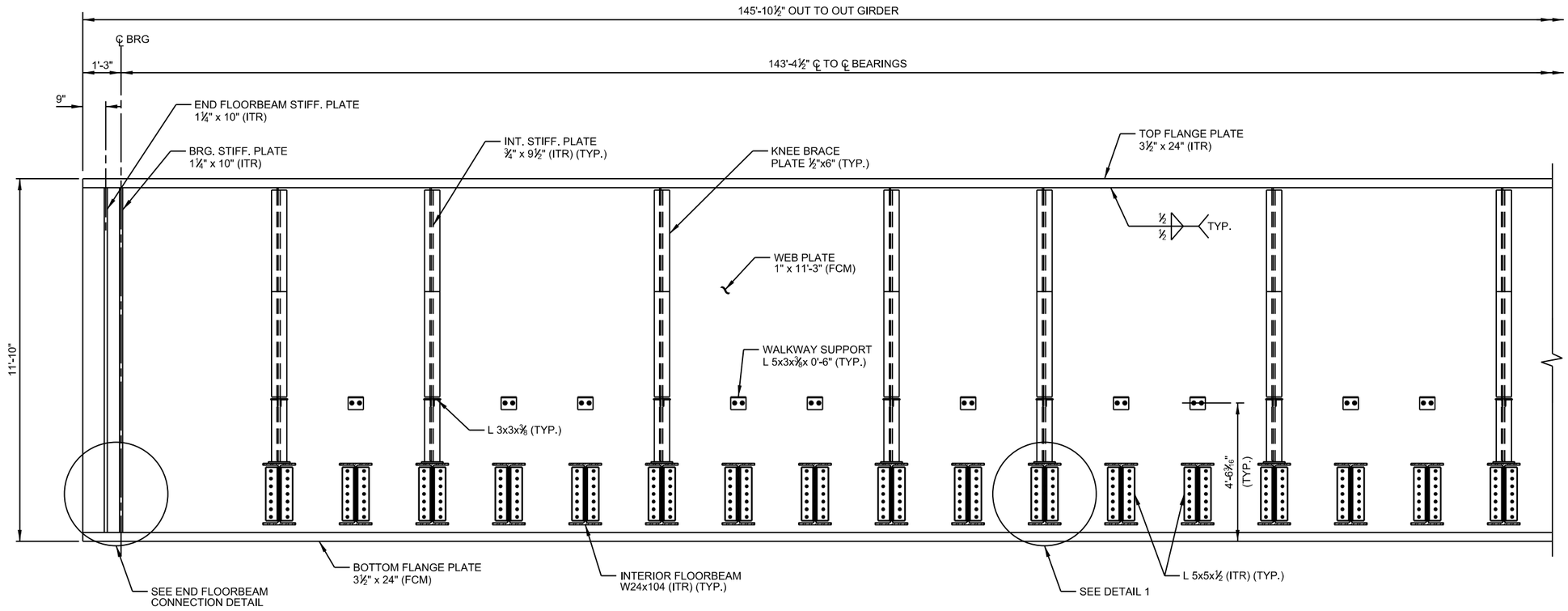
BR 47.412 OVER NORFOLK SOUTHERN RAILWAY - SPAN 2 - INSIDE GIRDER ELEV. (SOUTH GIRDER) (3 OF 3)

FILENAME	$FILESS
SCALE	AS NOTED

SHEET OF

TO MILLENNIUM STATION

TO SOUTH BEND AIRPORT



SPAN 2 - INSIDE ELEVATION - NORTH GIRDER

SCALE: ½" = 1'-0"

NOTES:

1. FCM - FRACTURE CRITICAL MEMBER
2. ITR - IMPACT TEST REQUIRED

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-229 OF BRG-244

PLOT DATE: $DATE$ $TIME$ $USER$

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DOUBLE TRACK N·W·I
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MICHIGAN CITY TO GARY, INDIANA

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CHECKED:	ACM-ALR
DATE:	03/16/2020

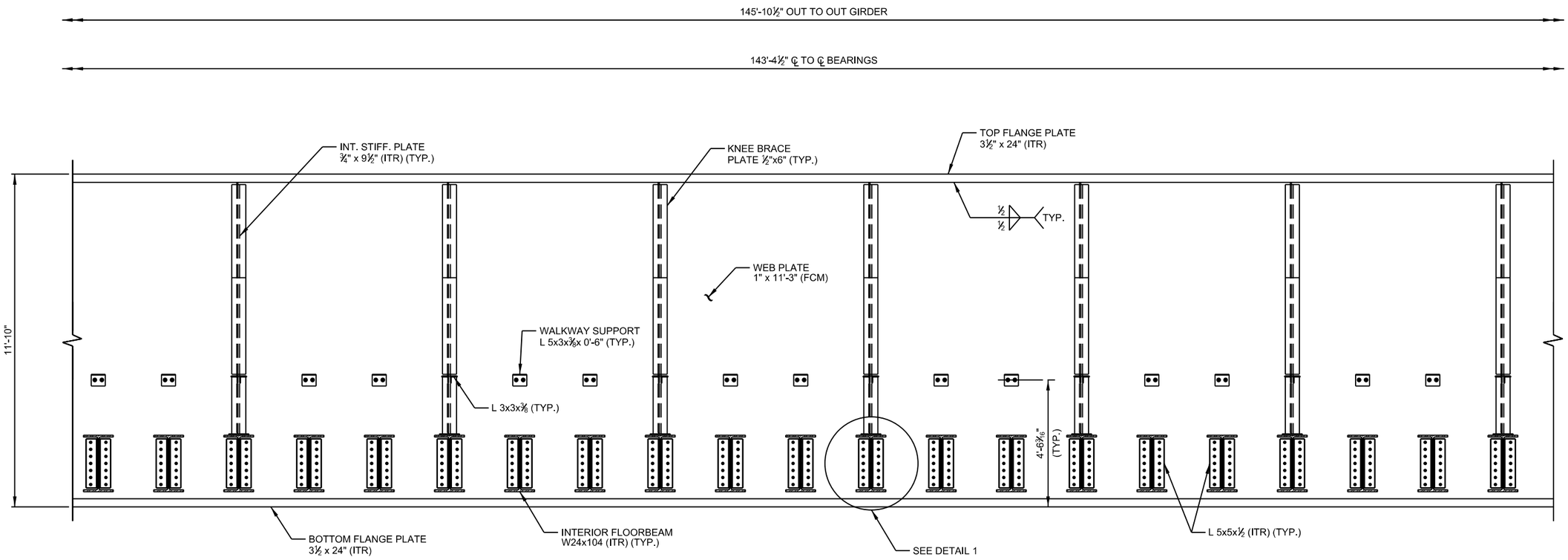
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 47.412 OVER NORFOLK SOUTHERN RAILWAY - SPAN 2 - INSIDE GIRDER ELEV. (NORTH GIRDER) (1 OF 3)

FILENAME	$FILESS	SHEET
SCALE	AS NOTED	OF

TO MILLENNIUM STATION

TO SOUTH BEND AIRPORT



SPAN 2 - INSIDE ELEVATION - NORTH GIRDER

SCALE: ½" = 1'-0"

NOTES:

1. FCM - FRACTURE CRITICAL MEMBER
2. ITR - IMPACT TEST REQUIRED

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-230 OF BRG-244

PLOT DATE: $DATE$ $TIME$ $USER$

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	ACM-TH
DRAWN:	ACM-BBM
CHECKED:	ACM-ALR
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

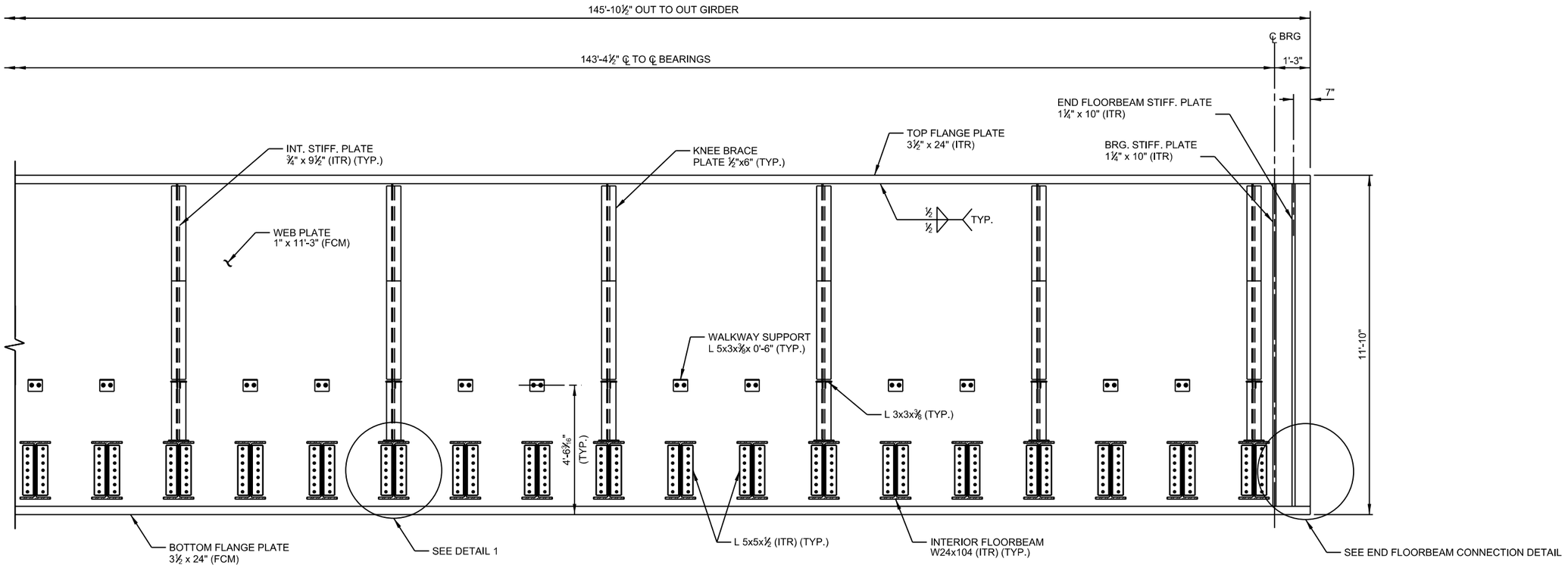
BR 47.412 OVER NORFOLK SOUTHERN RAILWAY - SPAN 2 - INSIDE GIRDER ELEV. (NORTH GIRDER) (2 OF 3)

FILENAME	$FILESS
SCALE	AS NOTED

SHEET OF

TO MILLENNIUM STATION

TO SOUTH BEND AIRPORT



SPAN 2 - INSIDE ELEVATION - NORTH GIRDER

SCALE: ½" = 1'-0"

NOTES:

1. FCM - FRACTURE CRITICAL MEMBER
2. ITR - IMPACT TEST REQUIRED

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-231 OF BRG-244

PLOT DATE: $DATE$ $TIME$ $USER$

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	ACM-TH
DRAWN:	ACM-BBM
CHECKED:	ACM-ALR
DATE:	03/16/2020

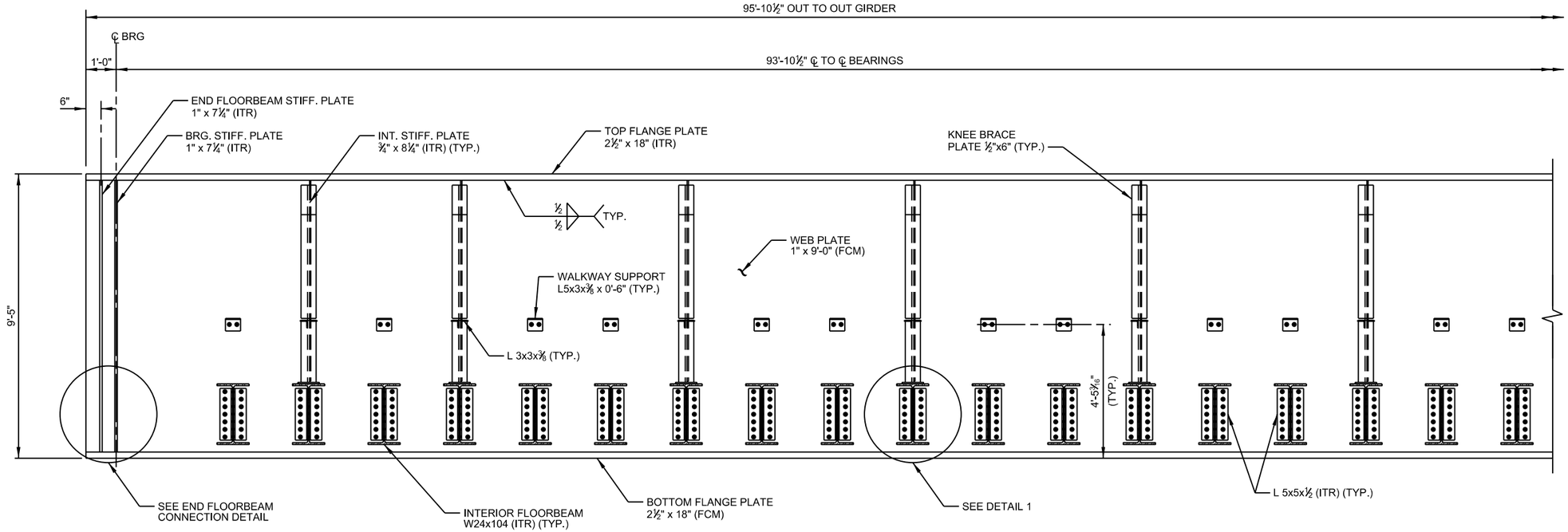
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 47.412 OVER NORFOLK SOUTHERN RAILWAY - SPAN 2 - INSIDE GIRDER ELEV. (NORTH GIRDER) (3 OF 3)

FILENAME	$FILESS	SHEET	OF
SCALE	AS NOTED		

TO SOUTH BEND AIRPORT

TO MILLENNIUM STATION



SPAN 3 - INSIDE ELEVATION - SOUTH GIRDER

SCALE: ½" = 1'-0"

NOTES:

1. FCM - FRACTURE CRITICAL MEMBER
2. ITR - IMPACT TEST REQUIRED

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-232 OF BRG-244

PLOT DATE: $DATE$ $TIME$ $USER$

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	ACM-TH
DRAWN:	ACM-BBM
CHECKED:	ACM-ALR
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

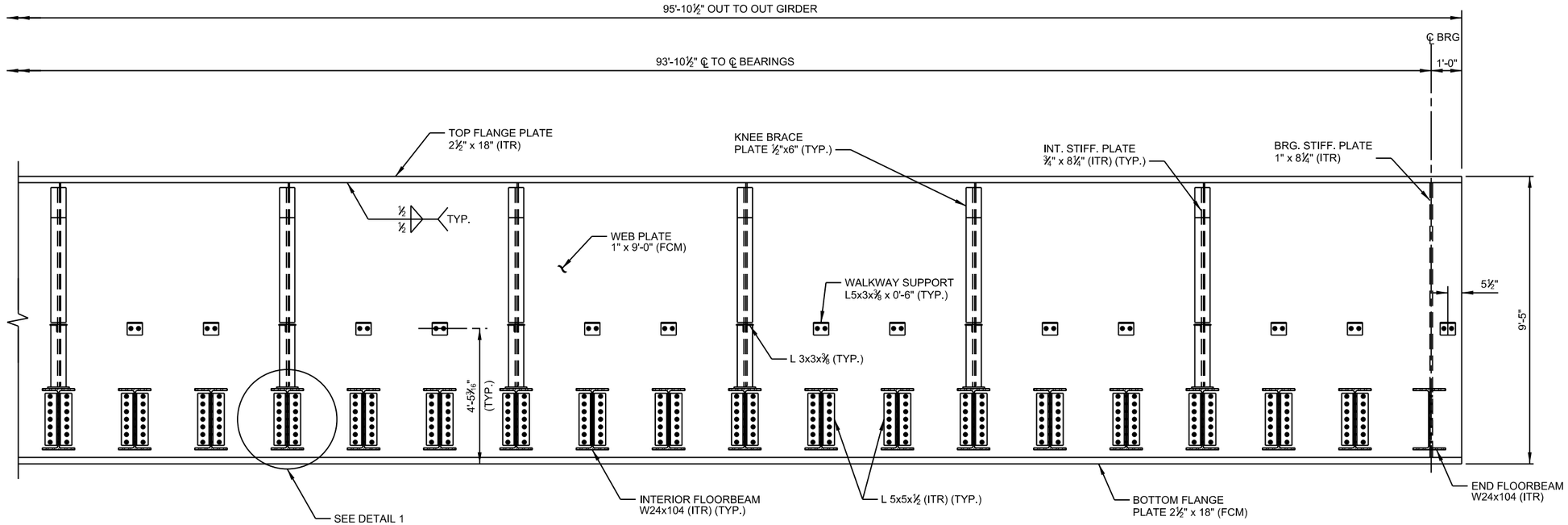
BR 47.412 OVER NORFOLK SOUTHERN RAILWAY - SPAN 3 - INSIDE GIRDER ELEV. (SOUTH GIRDER) (1 OF 2)

FILENAME	$FILES$
SCALE	AS NOTED

SHEET OF

TO SOUTH BEND AIRPORT

TO MILLENNIUM STATION



SPAN 3 - INSIDE ELEVATION - SOUTH GIRDER

SCALE: ½" = 1'-0"

NOTES:

1. FCM - FRACTURE CRITICAL MEMBER
2. ITR - IMPACT TEST REQUIRED

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-233 OF BRG-244

PLOT DATE: $DATE$ $TIME$ $USER$

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	ACM-TH
DRAWN:	ACM-BBM
CHECKED:	ACM-ALR
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

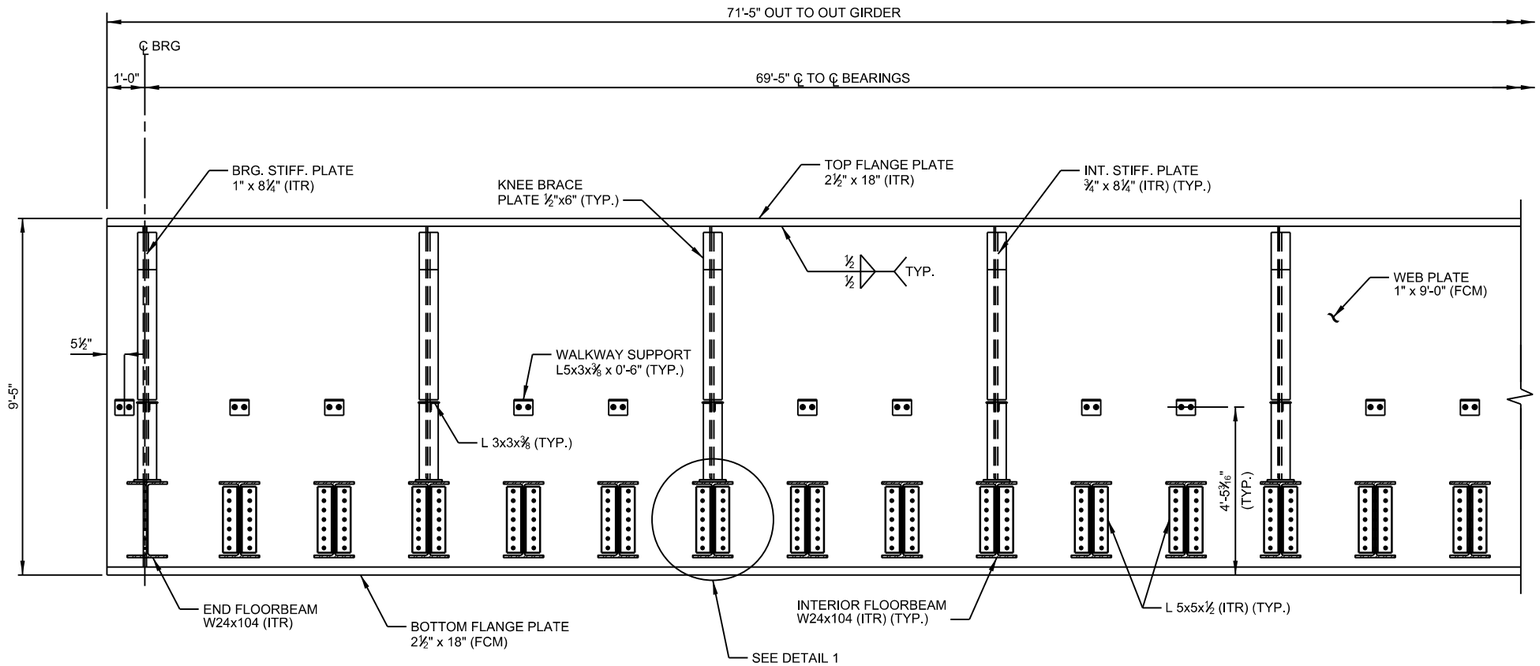
BR 47.412 OVER NORFOLK SOUTHERN RAILWAY - SPAN 3 - INSIDE GIRDER ELEV. (SOUTH GIRDER) (2 OF 2)

FILENAME	$FILES$
SCALE	AS NOTED

SHEET OF

TO MILLENNIUM STATION

TO SOUTH BEND AIRPORT



SPAN 3 - INSIDE ELEVATION - NORTH GIRDER

SCALE: ½" = 1'-0"

NOTES:

1. FCM - FRACTURE CRITICAL MEMBER
2. ITR - IMPACT TEST REQUIRED

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-234 OF BRG-244

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ISSUE	DATE	DESCRIPTION
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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	ACM-TH
DRAWN:	ACM-BBM
CHECKED:	ACM-ALR
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 47.412 OVER NORFOLK SOUTHERN RAILWAY - SPAN 3 - INSIDE GIRDER ELEV. (NORTH GIRDER) (1 OF 2)

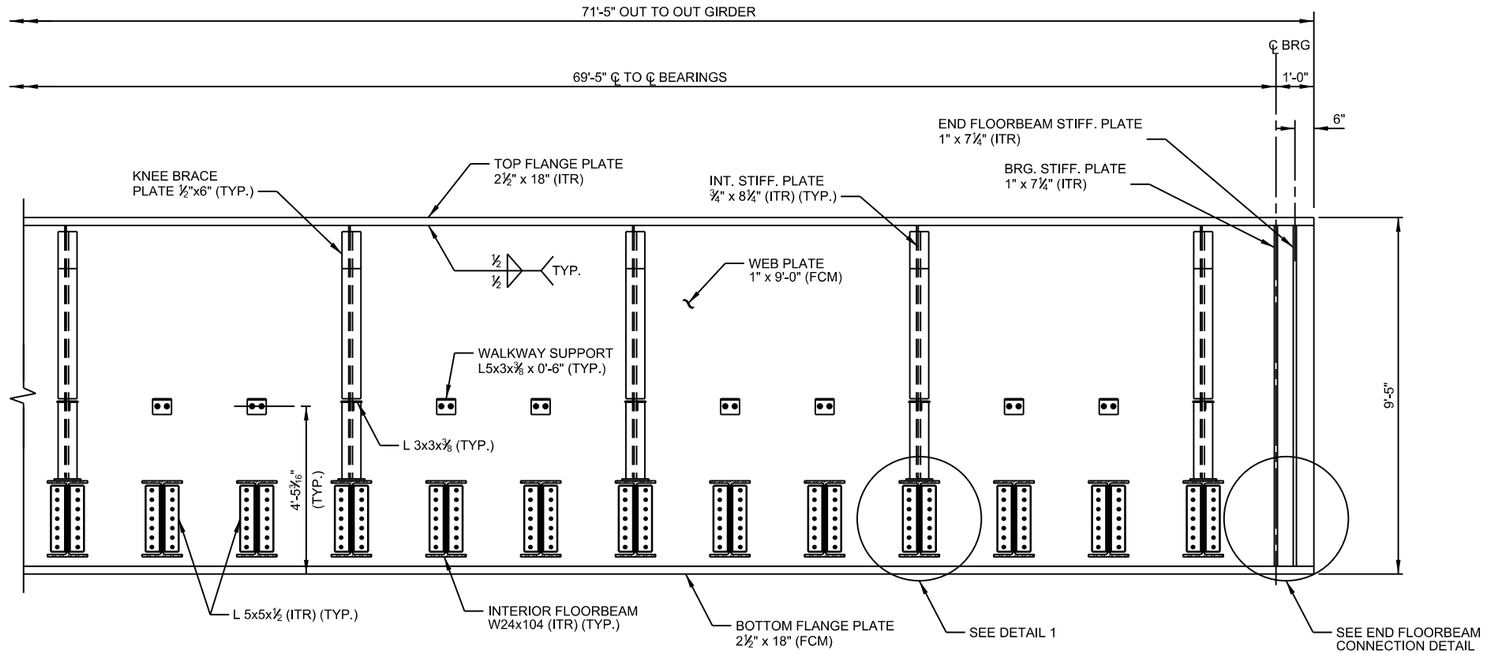
FILENAME	$FILES$
SCALE	AS NOTED

SHEET OF

PLOT DATE: $DATES $TIMES $USERS

TO MILLENNIUM STATION

TO SOUTH BEND AIRPORT



SPAN 3 - INSIDE ELEVATION - NORTH GIRDER

SCALE: ½" = 1'-0"

NOTES:

1. FCM - FRACTURE CRITICAL MEMBER
2. ITR - IMPACT TEST REQUIRED

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-235 OF BRG-244

PLOT DATE: $DATE$ $TIME$ $USER$

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	ACM-TH
DRAWN:	ACM-BBM
CHECKED:	ACM-ALR
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

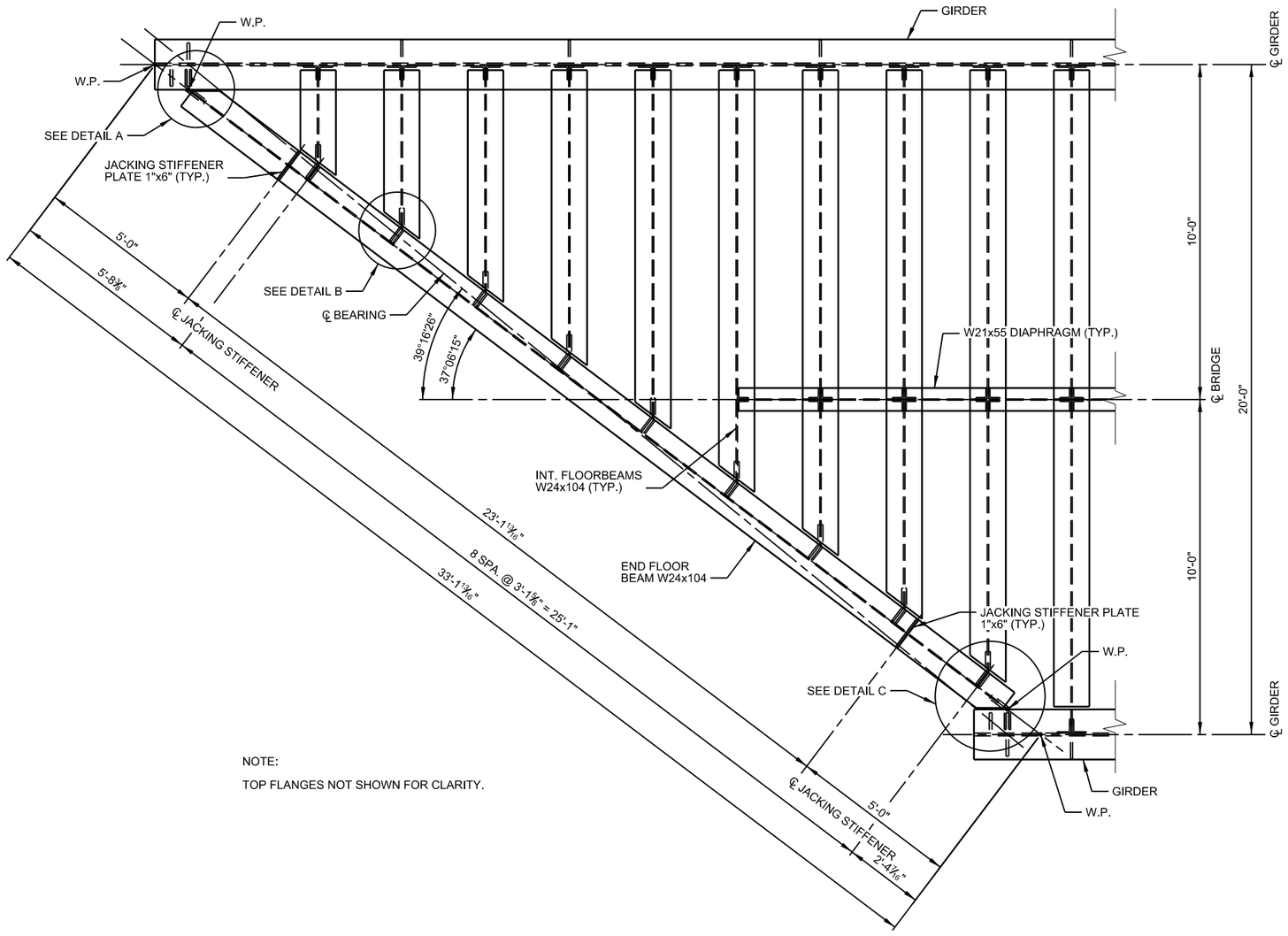
BR 47.412 OVER NORFOLK SOUTHERN RAILWAY - SPAN 3 - INSIDE GIRDER ELEV. (NORTH GIRDER) (2 OF 2)

FILENAME	$FILES$
SCALE	AS NOTED

SHEET OF

TO MILLENNIUM STATION

TO SOUTH BEND AIRPORT

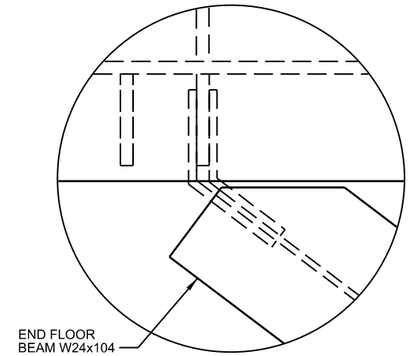


NOTE:

TOP FLANGES NOT SHOWN FOR CLARITY.

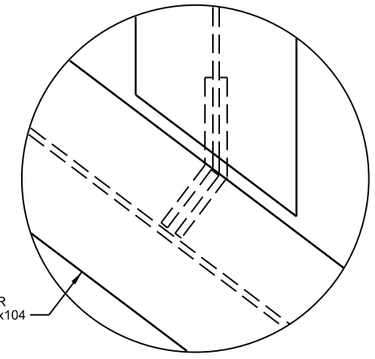
END FLOORBEAM PLAN - SPAN 1

SCALE: ½" = 1'-0"



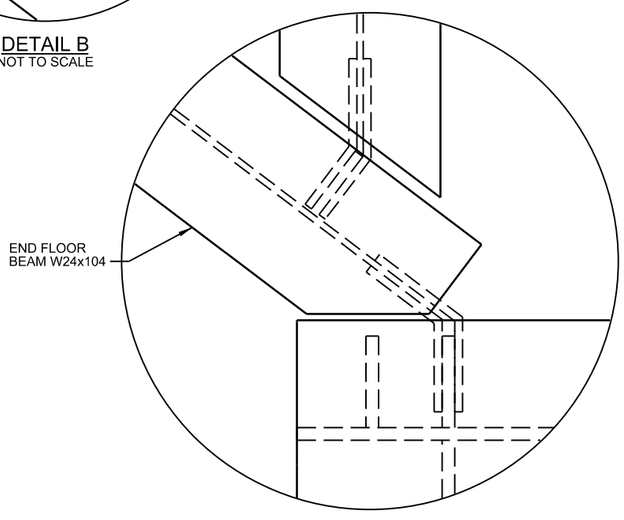
DETAIL A

NOT TO SCALE



DETAIL B

NOT TO SCALE



DETAIL C

NOT TO SCALE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-236 OF BRG-244

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	AECOM-TH
DRAWN:	AECOM-BBM
CHECKED:	AECOM-ALR
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

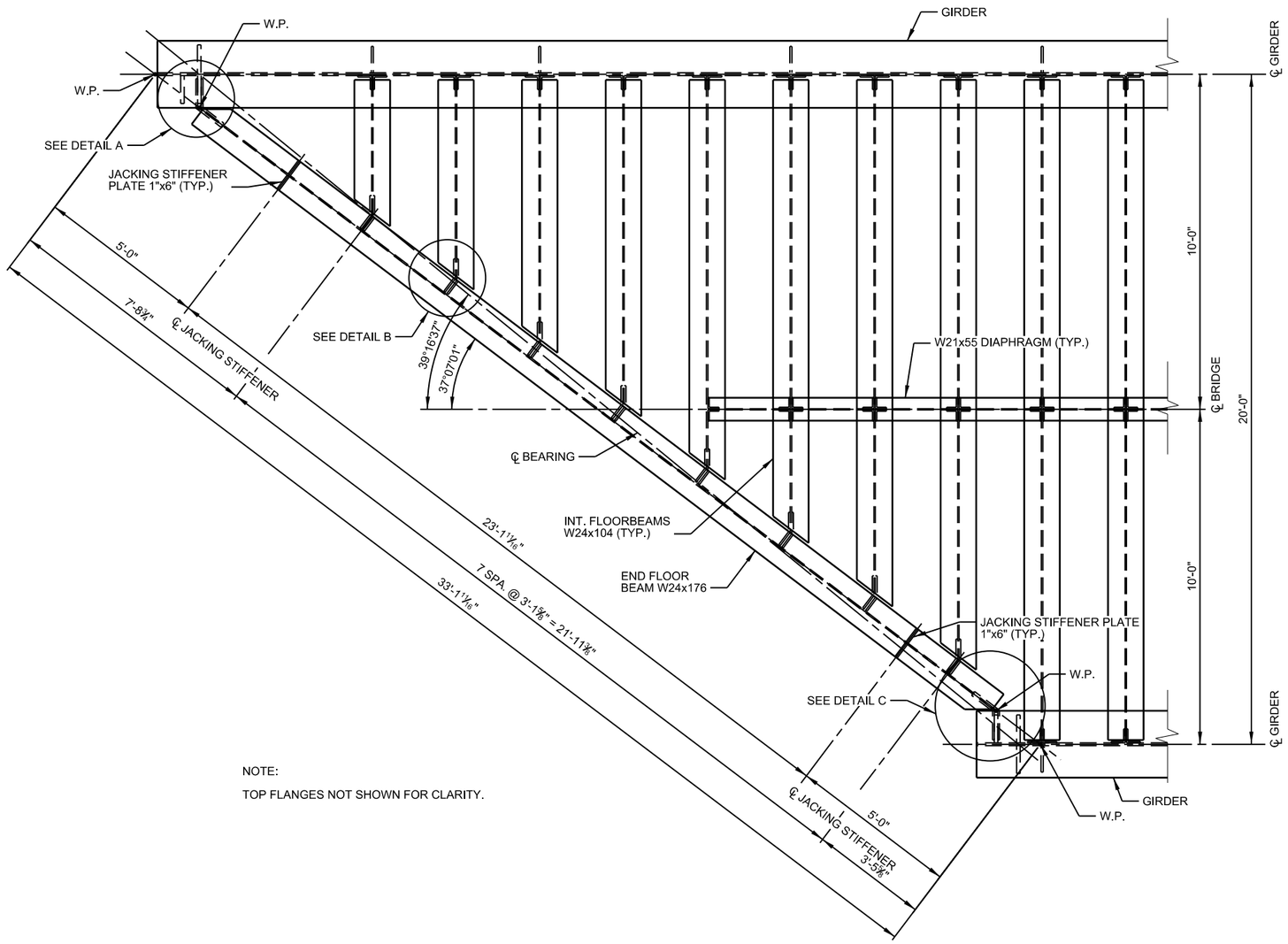
BR 47.412 OVER NORFOLK SOUTHERN RAILWAY END FLOORBEAM PLAN - SPAN 1

FILENAME	$FILESS	SHEET	OF
SCALE	AS NOTED		

PLOT DATE: $DATE$ $TIME$ $USER$

TO MILLENNIUM STATION

TO SOUTH BEND AIRPORT

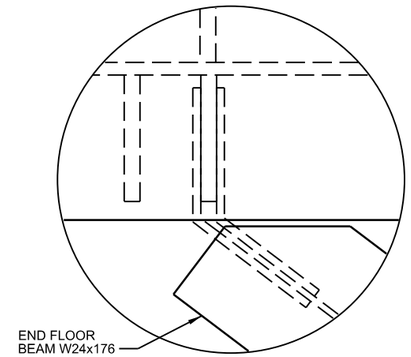


NOTE:

TOP FLANGES NOT SHOWN FOR CLARITY.

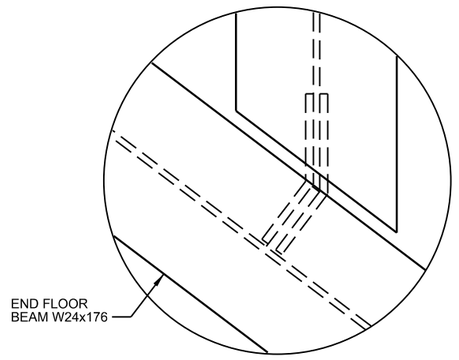
END FLOORBEAM PLAN - SPAN 2

SCALE: ½" = 1'-0"



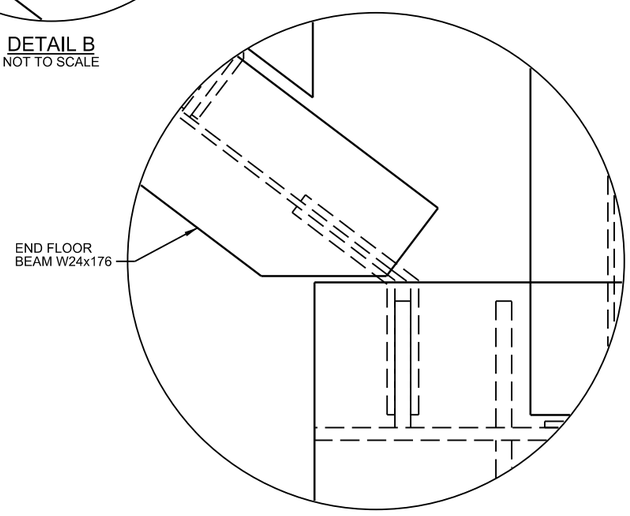
DETAIL A

NOT TO SCALE



DETAIL B

NOT TO SCALE



DETAIL C

NOT TO SCALE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-237 OF BRG-244

PLOT DATE: $DATE$ $TIME$ $USER$

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ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

NICTD
NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

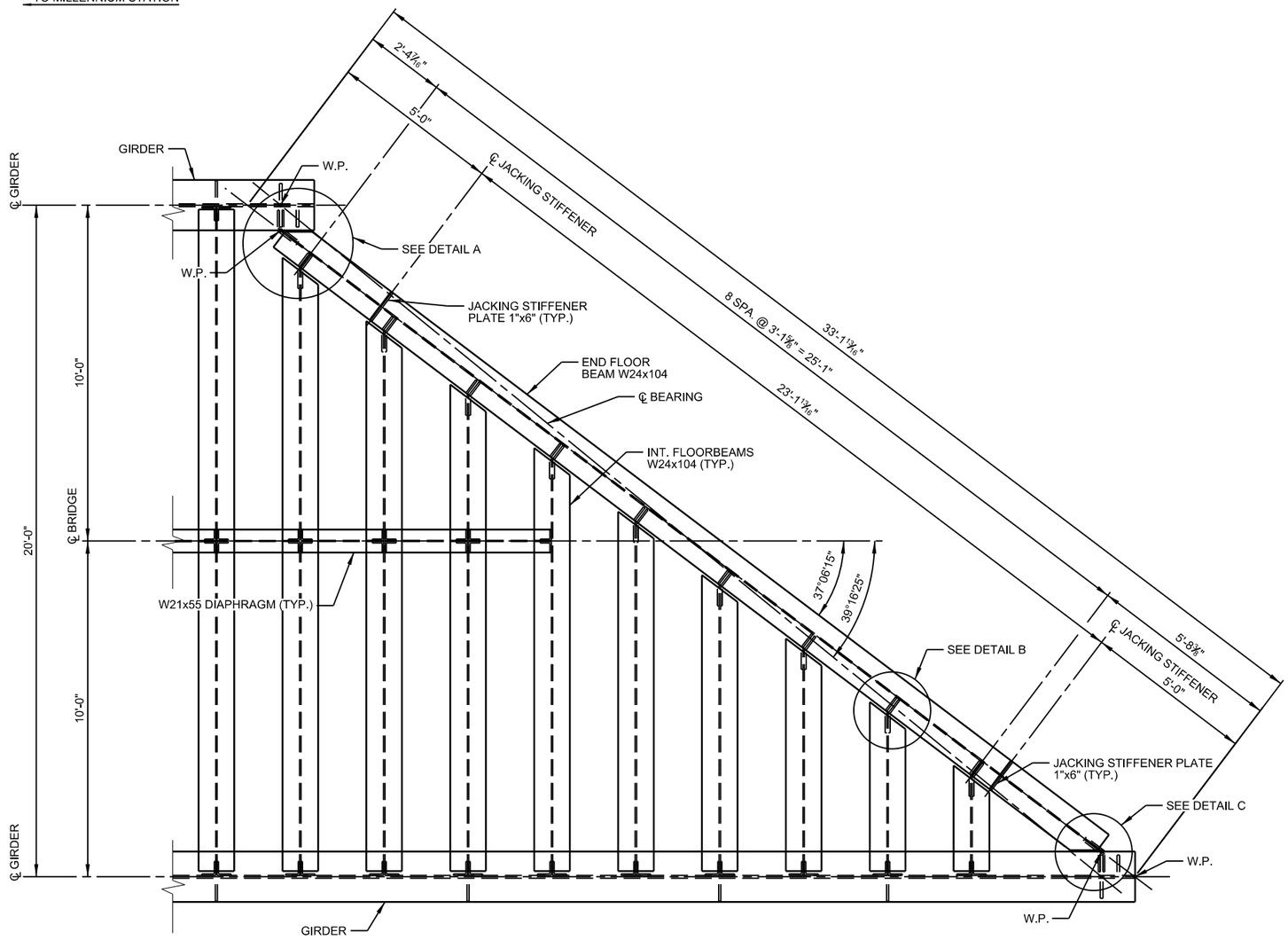
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	AECOM-TH
DRAWN:	AECOM-BBM
CHECKED:	AECOM-ALR
DATE:	03/16/2020

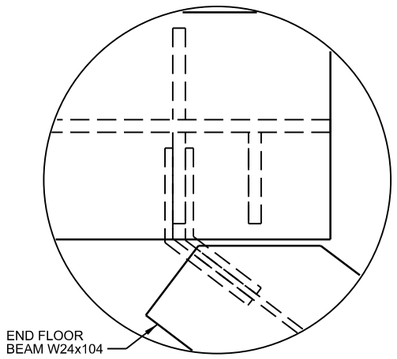
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 47.412 OVER NORFOLK SOUTHERN RAILWAY
END FLOORBEAM PLAN - SPAN 2

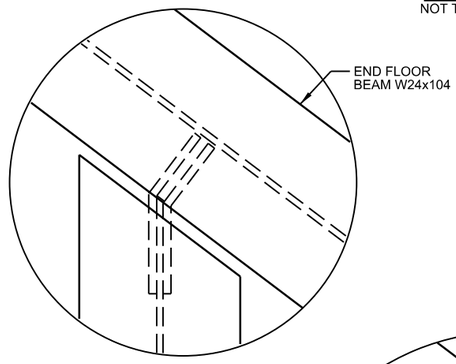
FILENAME	$FILESS
SCALE	AS NOTED
SHEET	OF



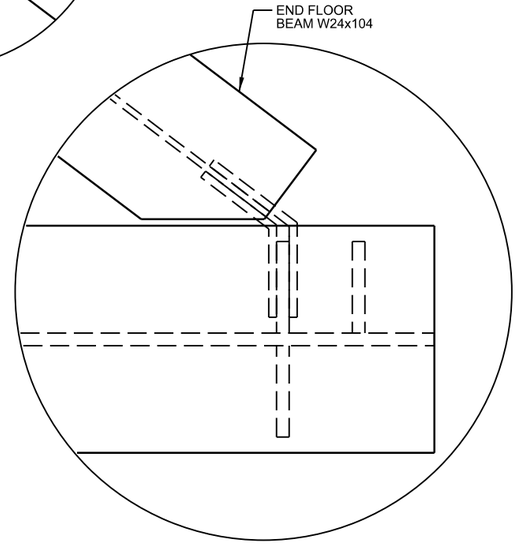
END FLOORBEAM PLAN - SPAN 3
SCALE: ½" = 1'-0"



DETAIL A
NOT TO SCALE



DETAIL B
NOT TO SCALE



DETAIL C
NOT TO SCALE

NOTE:

TOP FLANGES NOT SHOWN FOR CLARITY.

TO SOUTH BEND AIRPORT

PLOT DATE: $DATE$ $TIME$ $USER$

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-238 OF BRG-244

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ISSUE	DATE	DESCRIPTION
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33 East Highway 12
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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

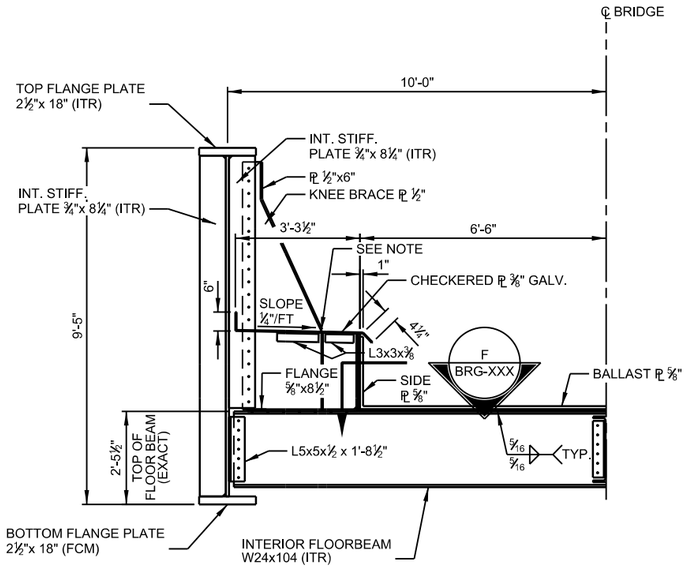
DESIGNED:	AECOM-TH
DRAWN:	AECOM-BBM
CHECKED:	AECOM-ALR
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

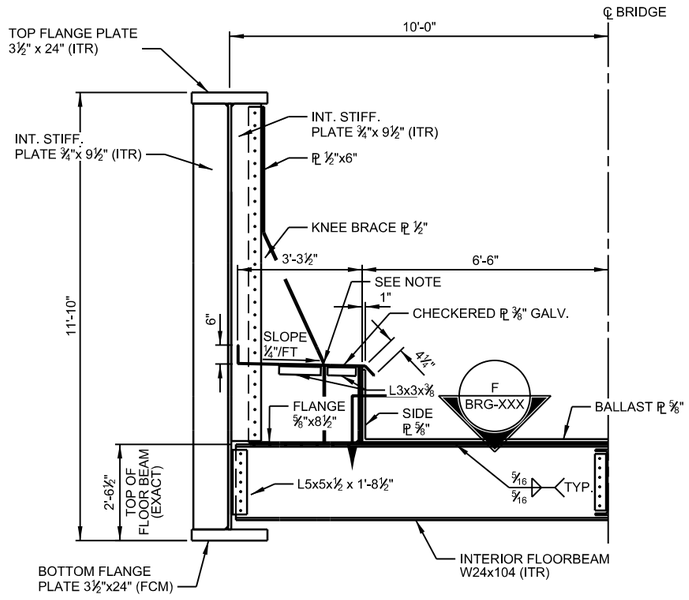
BR 47.412 OVER NORFOLK SOUTHERN RAILWAY END FLOORBEAM PLAN - SPAN 3

FILENAME	$FILES$
SCALE	AS NOTED

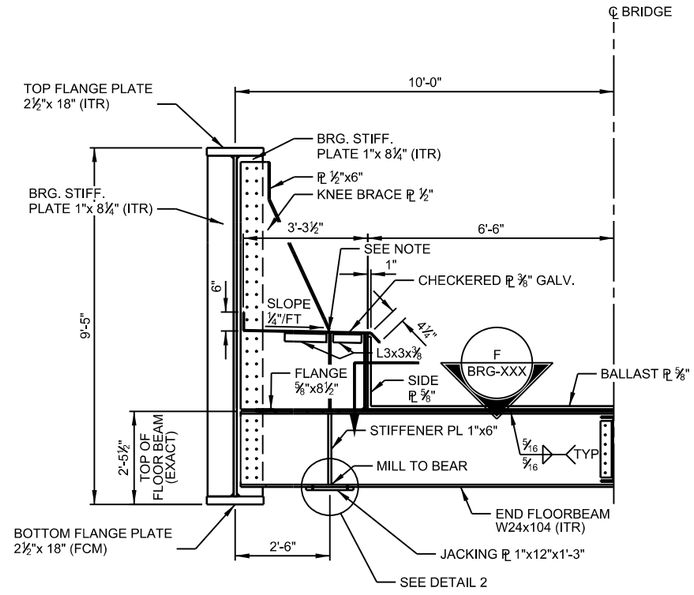
SHEET OF



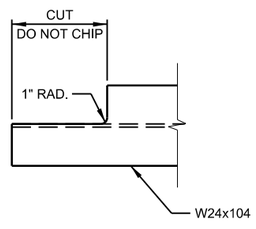
SECTION C-C
SCALE: ½" = 1'-0"
(SPAN 1 & 3)



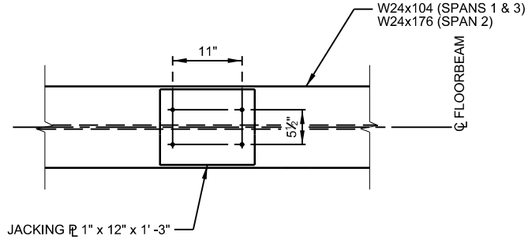
SECTION D-D
SCALE: ½" = 1'-0"
(SPAN 2)



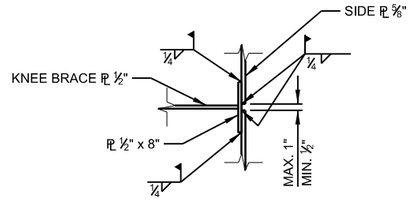
SECTION E-E
SCALE: ½" = 1'-0"
(SPAN 1 & 3 ABUTMENTS)



END FLOORBEAAM COPE
SCALE: 1" = 1'-0"
(AT EAST AND WEST ABUTMENTS ONLY)



DETAIL 2
SCALE: 1" = 1'-0"
LOOKING AT UNDERSIDE OF FLOORBEAM.
BOLT HEADS TO BE DOWN.



DETAIL F-F
SCALE: 1" = 1'-0"

NOTES:
1. NOTCH CHECKERED PLATE TO FIT AROUND BRACKET PLATE AND STIFFENER PLATE.
2. FOR LOCATION AND WELDING OF ANGLES 3x3x⅜ ON KNEE BRACES, SEE SECTION X-X AND X-X ON SHEET XX OF XX.
3. END FLOORBEAM AND JACKING PLATE CONNECTIONS DESIGNED FOR DEAD LOAD ONLY. LIVE LOAD NOT PERMITTED DURING JACKING.

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-239 OF BRG-244

PLOT DATE: $DATE$ $TIME$ $USER$

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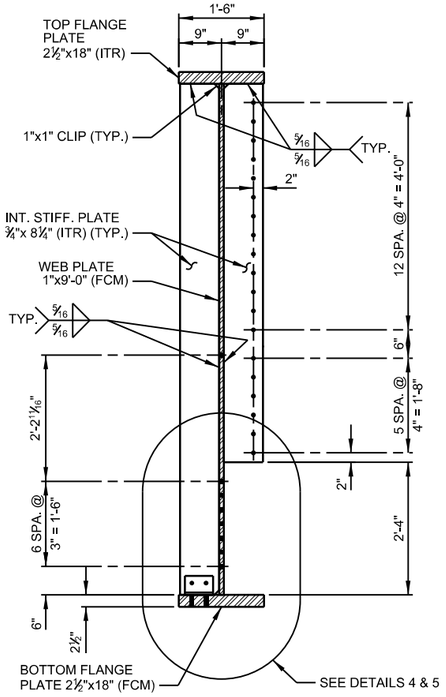
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	AECOM-TH
DRAWN:	AECOM-BBM
CHECKED:	AECOM-ALR
DATE:	03/16/2020

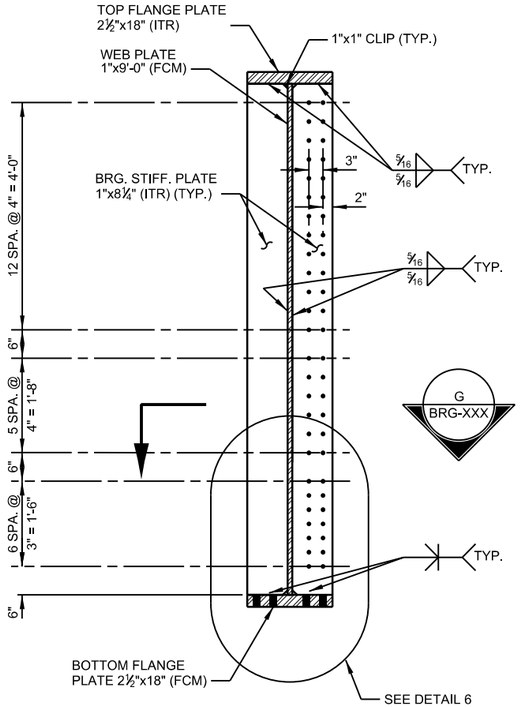
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 47.412 OVER NORFOLK SOUTHERN RAILWAY SECTIONS AND DETAILS

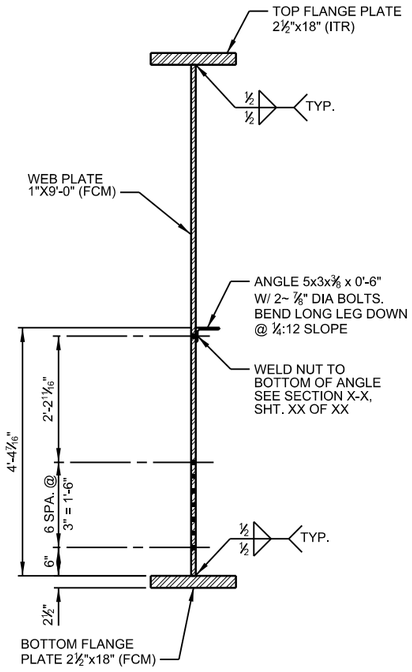
FILENAME	$FILESS
SCALE	AS NOTED
SHEET	OF



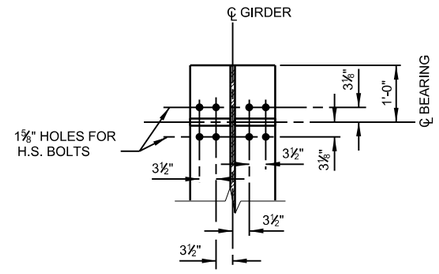
TYPICAL SECTION AT INT.
STIFFENER AND KNEE BRACE - SPAN 1&3
(KNEE BRACE OMITTED FOR CLARITY)



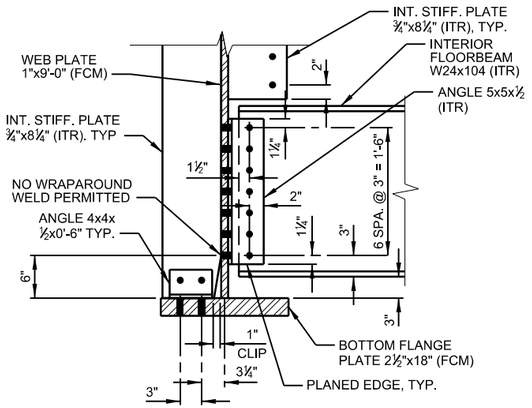
TYPICAL SECTION AT
BEARING STIFFENER - SPAN1&3 (ABUTMENT ONLY)
(KNEE BRACE OMITTED FOR CLARITY)



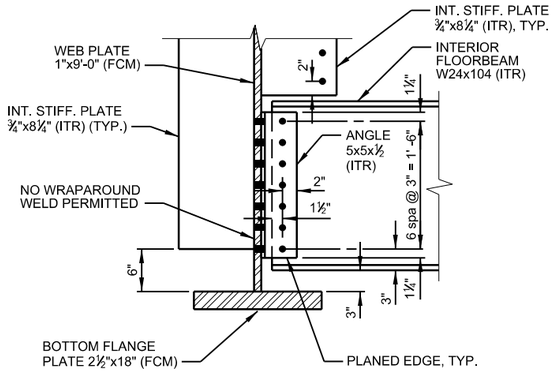
TYPICAL SECTION AT
CHECKERED PLATE SUPPORT - SPAN 1&3
(KNEE BRACE OMITTED FOR CLARITY)



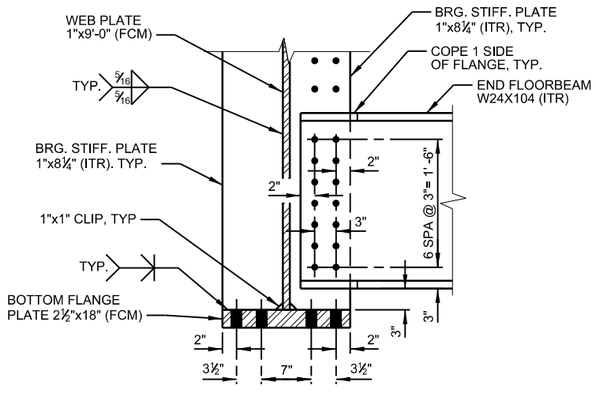
DETAIL G-G
(AT SPAN 1 & 3 ABUTMENTS ONLY)



DETAIL 4
TYPICAL FOR STIFFENER WITHIN 10'-0" OF GIRDER ENDS
(KNEE BRACE OMITTED FOR CLARITY)



DETAIL 5
TYPICAL FOR INTERIOR STIFFENER UNLESS NOTED OTHERWISE
(KNEE BRACE OMITTED FOR CLARITY)



DETAIL 6
BEARING STIFFENER AT ABUTMENT
(KNEE BRACE OMITTED FOR CLARITY)

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-240 OF BRG-244

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

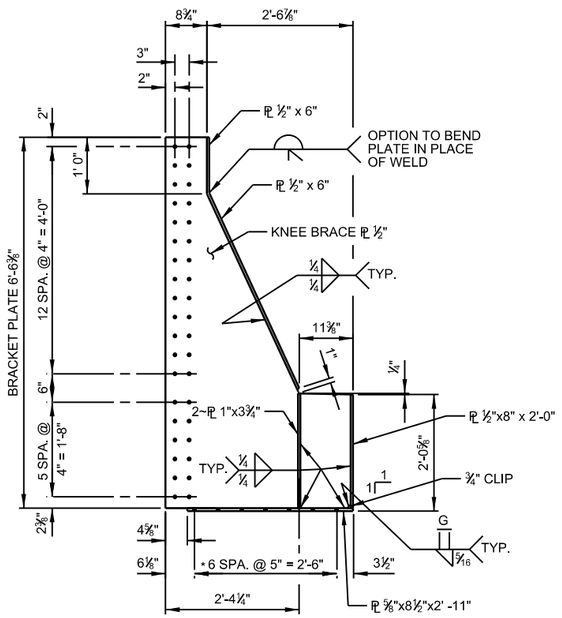
DESIGNED:	AECOM-TH
DRAWN:	AECOM-BBM
CHECKED:	AECOM-ALR
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

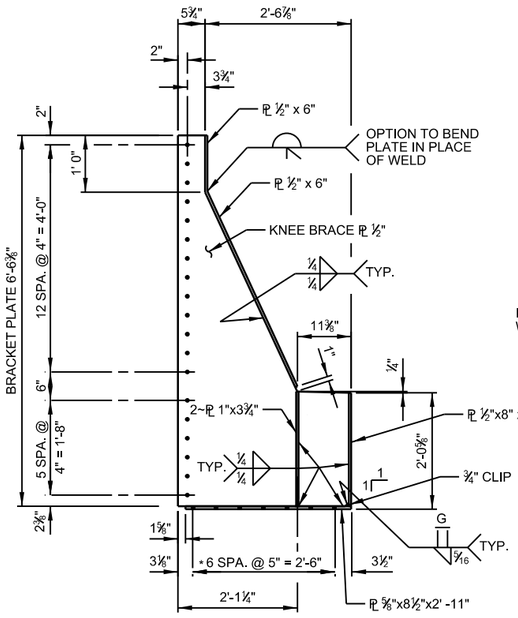
BR 47.412 OVER NORFOLK SOUTHERN RAILWAY GIRDER SECTIONS - SPAN 1&3

FILENAME	DT_CAD_60BRG_240.dgn
SCALE	AS NOTED

SHEET OF

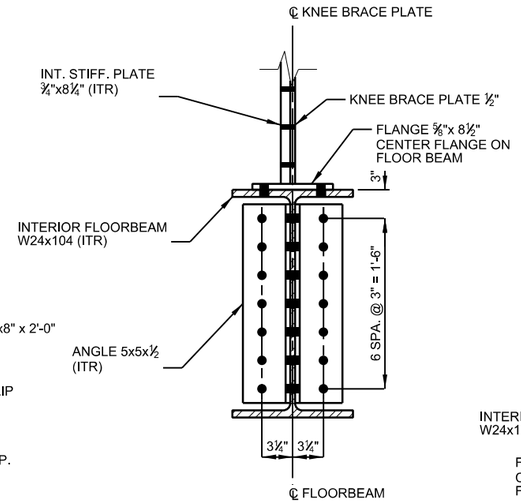


KNEE BRACE @ BEARING STIFFENER
(SPAN 1 & 3 ABUTMENTS ONLY)

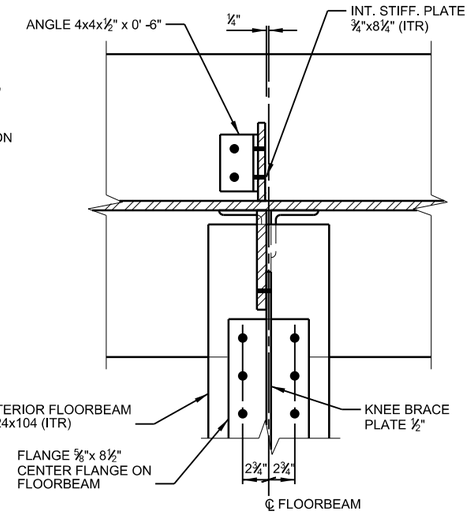


KNEE BRACE @ INTERMEDIATE STIFFENER
(SPAN 1 & 3)

* SEE DETAIL E-E FOR HOLE LOCATIONS



DETAIL 1
KNEE BRACE AT INTERMEDIATE STIFFENER SHOWN.
KNEE BRACE AT BEARING STIFFENER SIMILAR.



SECTION E-E
KNEE BRACE AT INTERMEDIATE STIFFENER SHOWN.
KNEE BRACE AT BEARING SIFFENER SIMILAR.

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

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DRAWING BRG-241 OF BRG-244

DESIGNED:	AECOM-TH
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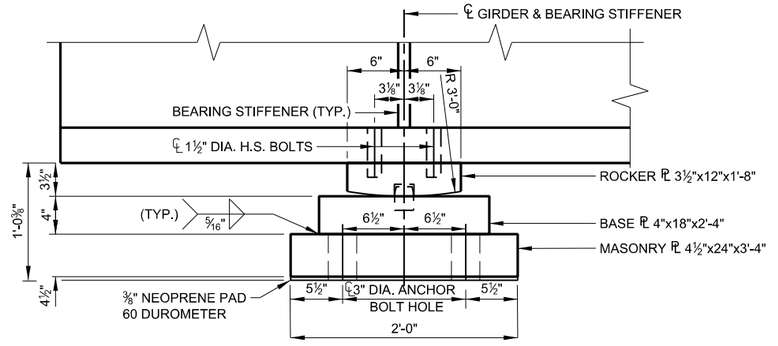
CHECKED:	AECOM-ALR
DATE:	03/16/2020

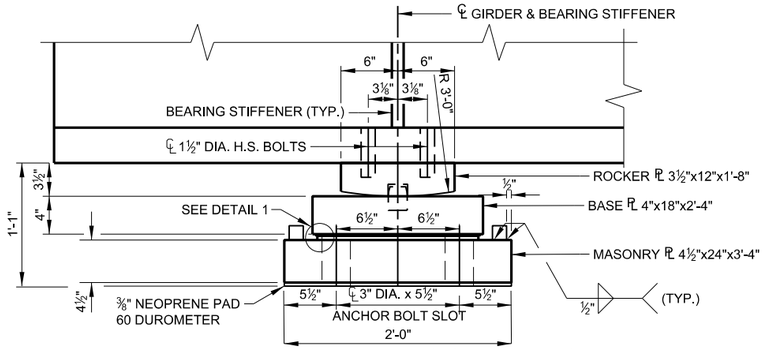
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 47.412 OVER NORFOLK SOUTHERN RAILWAY KNEE BRACE SECTIONS - SPANS 1 & 3

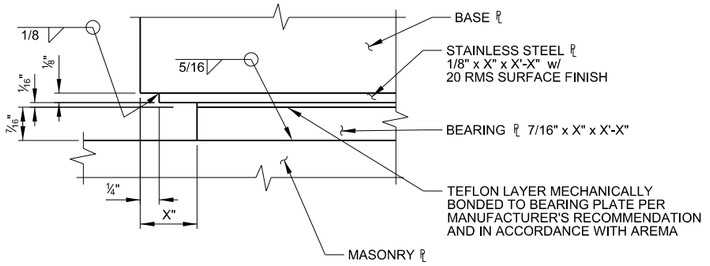
FILENAME	$FILES$	SHEET OF
SCALE	AS NOTED	



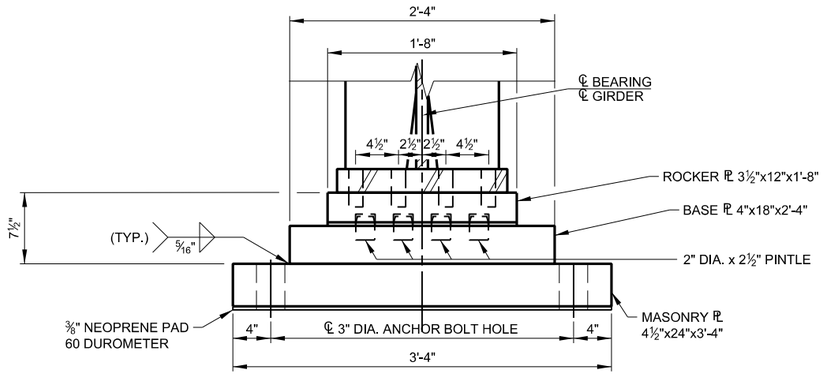
ELEVATION - FIXED BEARING



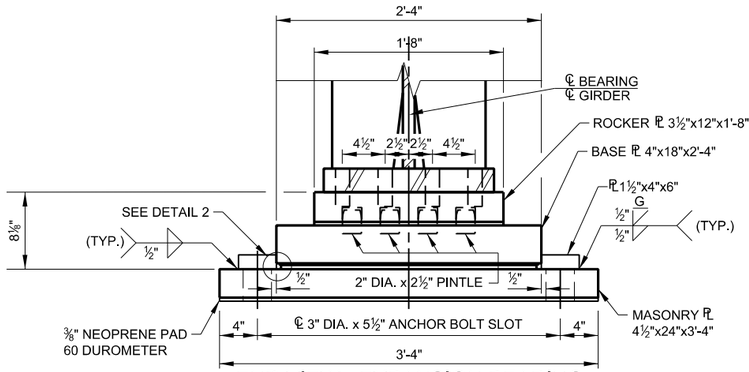
ELEVATION - EXPANSION BEARING



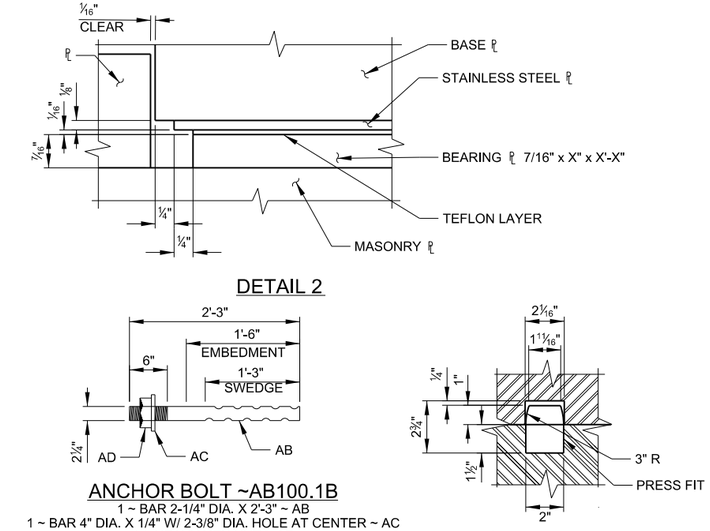
DETAIL 1



END VIEW - FIXED BEARING



END VIEW - EXPANSION BEARING

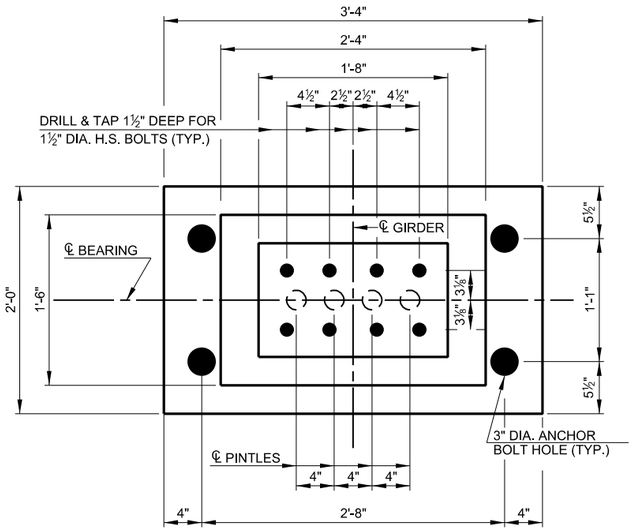


DETAIL 2

ANCHOR BOLT ~AB100.1B

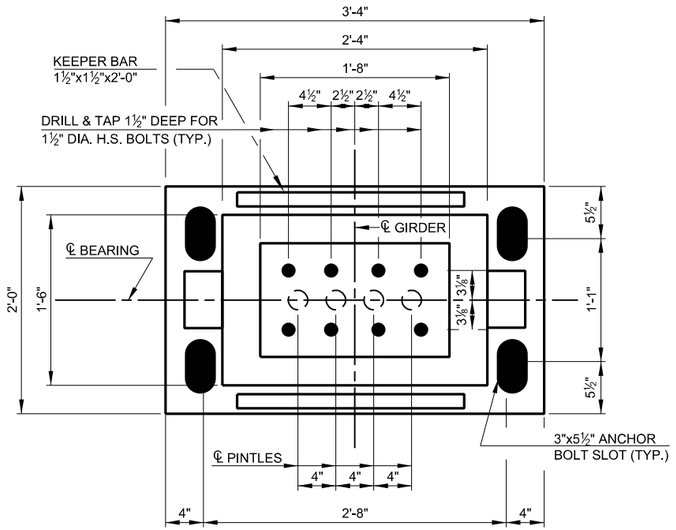
1 ~ BAR 2-1/4" DIA. X 2'-3" ~ AB
1 ~ BAR 4" DIA. X 1/4" W/ 2-3/8" DIA. HOLE AT CENTER ~ AC
1 ~ HEAVY HEX NUT ~ AD
WEIGHT = 35 LBS.
GALVANIZE AFTER FABRICATION
(32 REQUIRED)

PINTLE DETAL



PLAN VIEW - FIXED BEARING

(4 REQUIRED)



PLAN VIEW - EXPANSION BEARING

(4 REQUIRED)

NOTES:

1. STEEL USED FOR BEARING ASSEMBLIES SHALL CONFORM TO ASTM A709 GR50W, UNLESS NOTED OTHERWISE. ANCHOR BOLTS SHALL CONFORM TO ASTM F1554 GR 105.

2. STAINLESS STEEL SHALL CONFORM TO ASTM A480.

3. BEARING ASSEMBLY WELDMENTS SHALL BE STRESSED RELIEVED BY HEAT TREATING PRIOR TO FINISH MACHINING, PER CURRENT AWS STRUCTURAL WELDING CODES.

4. TEFLON LAYER SHALL BE COMPOSED OF VIRGIN UNFILLED TFE RESIN, UNFILLED TFE SHEETS OR UNFILLED TFE FABRIC. FILLER MATERIAL, SUCH AS MILLED GLASS FIBERS WILL NOT BE ALLOWED. TEFLON LAYER SHALL CONFORM TO THE REQUIREMENTS OF AREMA CHAPTER 15.

5. ALL SURFACES IN THE MOVING CONTACT SHALL BE FINISHED 125√

6. ALL DIMENSIONS SHOWN ARE FINAL DIMENSIONS AFTER MACHINING.

7. BEARINGS TO BE SHOP FITTED TO GIRDERS, MATCH MARKED AND ASSEMBLED IN UNITS FOR SHIPPING.

8. ANCHOR BOLTS, NUTS AND PLATE WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM B695, CLASS 50.

9. ANCHOR BOLT NUTS SHALL BE A563 GR DH HEAVY HEX & WASHERS SHALL BE F436 TYPE 1.

10. BOLT REMOVAL AND REPLACEMENTS TO GAIN ACCESS TO PROPERLY TIGHTEN BEARING BOLTS IS INCIDENTAL TO STEEL ERECTION.

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-242 OF BRG-244

PLOT DATE: 3/13/2020 5:45:33 PM eric.a.newman

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MICHIGAN CITY TO GARY, INDIANA

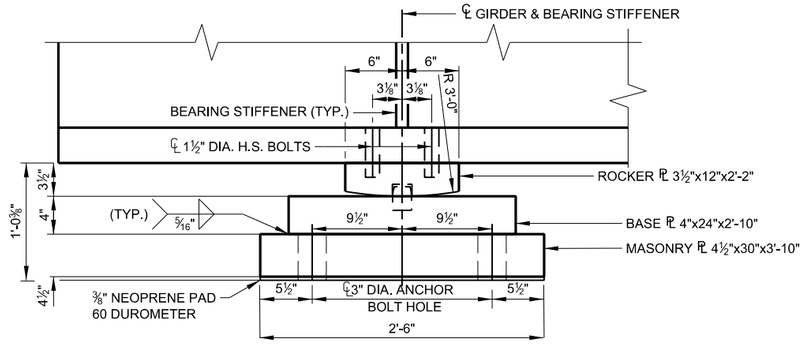
DESIGNED:	AECOM-TH
DRAWN:	AECOM-DNJ/GTS
CHECKED:	AECOM-ALR
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

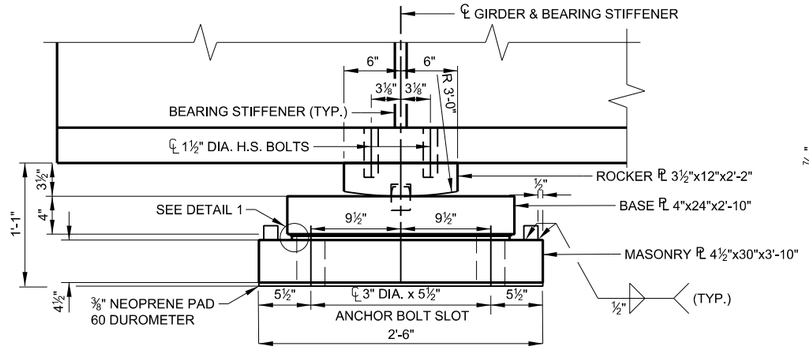
BR 47.412 OVER NORFOLK SOUTHERN RAILWAY SPANS 1 & 3 BEARING DETAILS

FILENAME	DT_CAD_60BRG_242.dgn
SCALE	AS NOTED

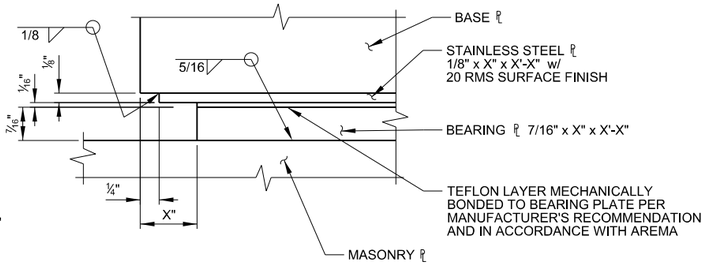
SHEET OF



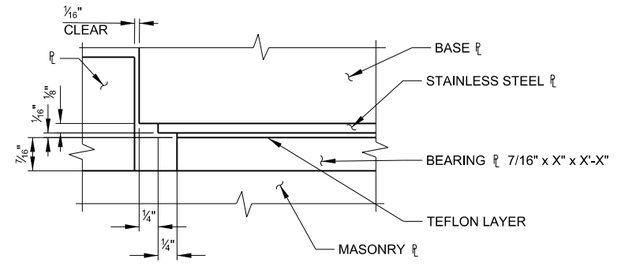
ELEVATION - FIXED BEARING



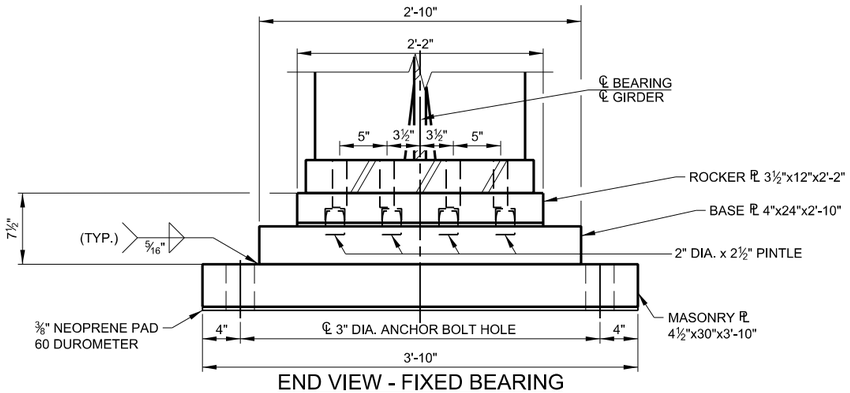
ELEVATION - EXPANSION BEARING



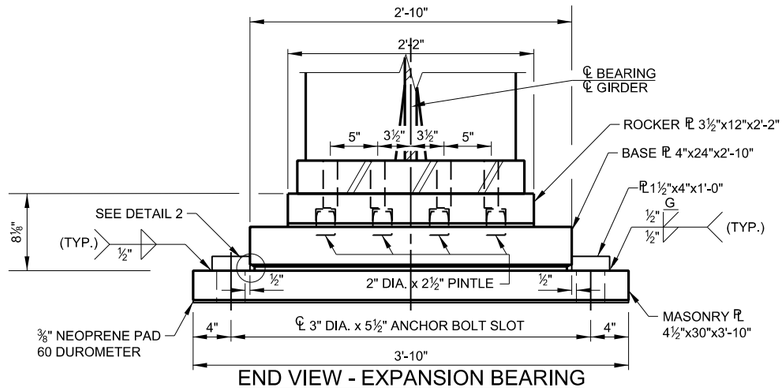
DETAIL 1



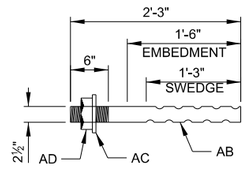
DETAIL 2



END VIEW - FIXED BEARING

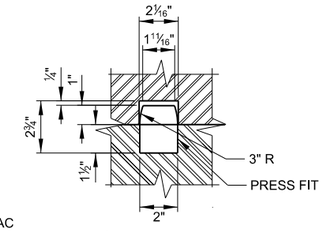


END VIEW - EXPANSION BEARING

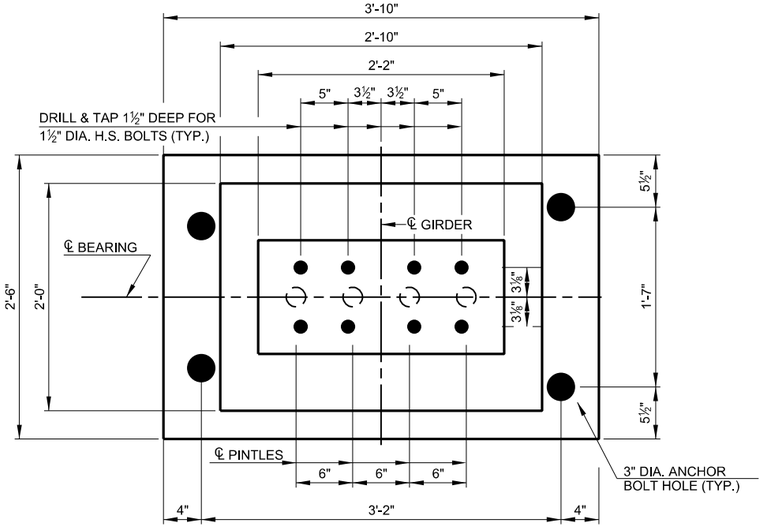


ANCHOR BOLT ~AB100.1B

1 ~ BAR 2-1/4" DIA. X 2'-3" ~ AB
1 ~ BAR 4" DIA. X 1/4" W/ 2-5/8" DIA. HOLE AT CENTER ~ AC
1 ~ HEAVY HEX NUT ~ AD
WEIGHT = 43 LBS.
GALVANIZE AFTER FABRICATION
(16 REQUIRED)

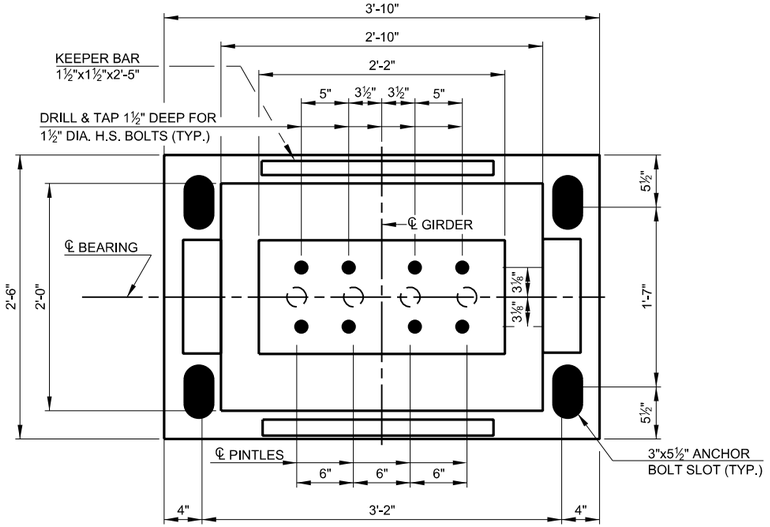


PINTLE DETAL



PLAN VIEW - FIXED BEARING

(2 REQUIRED)



PLAN VIEW - EXPANSION BEARING

(2 REQUIRED)

NOTES:

1. STEEL USED FOR BEARING ASSEMBLIES SHALL CONFORM TO ASTM A709 GR50W, UNLESS NOTED OTHERWISE. ANCHOR BOLTS SHALL CONFORM TO ASTM F1554 GR 105.

2. STAINLESS STEEL SHALL CONFORM TO ASTM A480.

3. BEARING ASSEMBLY WELDMENTS SHALL BE STRESSED RELIEVED BY HEAT TREATING PRIOR TO FINISH MACHINING, PER CURRENT AWS STRUCTURAL WELDING CODES.

4. TEFLON LAYER SHALL BE COMPOSED OF VIRGIN UNFILLED TFE RESIN, UNFILLED TFE SHEETS OR UNFILLED TFE FABRIC. FILLER MATERIAL, SUCH AS MILLED GLASS FIBERS WILL NOT BE ALLOWED. TEFLON LAYER SHALL CONFORM TO THE REQUIREMENTS OF AREMA CHAPTER 15.

5. ALL SURFACES IN THE MOVING CONTACT SHALL BE FINISHED 125.

6. ALL DIMENSIONS SHOWN ARE FINAL DIMENSIONS AFTER MACHINING.

7. BEARINGS TO BE SHOP FITTED TO GIRDERS, MATCH MARKED AND ASSEMBLED IN UNITS FOR SHIPPING.

8. ANCHOR BOLTS, NUTS AND PLATE WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM B695, CLASS 50.

9. ANCHOR BOLT NUTS SHALL BE A563 GR DH HEAVY HEX & WASHERS SHALL BE F436 TYPE 1.

10. BOLT REMOVAL AND REPLACEMENTS TO GAIN ACCESS TO PROPERLY TIGHTEN BEARING BOLTS IS INCIDENTAL TO STEEL ERECTION.

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DRAWING BRG-243 OF BRG-244

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	AECOM-TH
DRAWN:	AECOM-DNJ/GTS
CHECKED:	AECOM-ALR
DATE:	03/16/2020

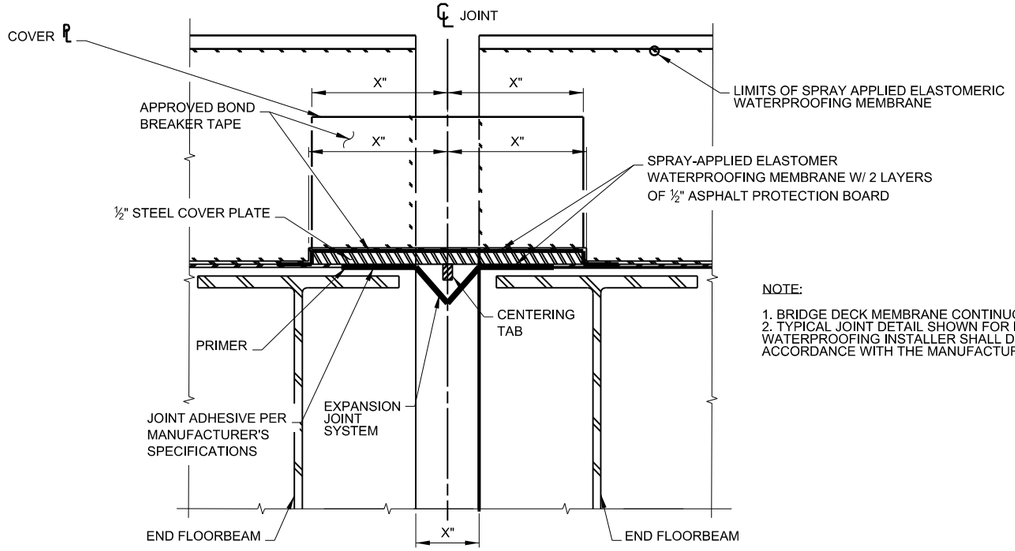
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 47.412 OVER NORFOLK SOUTHERN RAILWAY SPAN 2 TPG BEARING DETAILS

FILENAME	DT_CAD_60BRG_243.dgn
SCALE	AS NOTED

SHEET OF

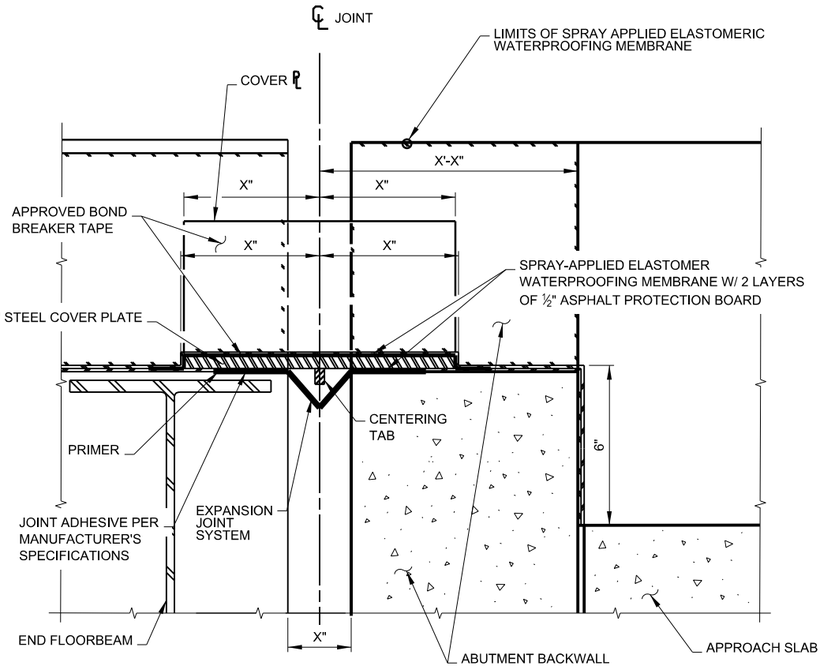
ESTIMATED WATERPROOFING QUANTITIES		
DESCRIPTION	UNIT	QUANTITY
BRIDGE DECK WATERPROOFING	SQ. YDS.	XXX



SECTION D-D

NOTE:

1. BRIDGE DECK MEMBRANE CONTINUOUS THRU JOINT
2. TYPICAL JOINT DETAIL SHOWN FOR INFORMATION ONLY. WATERPROOFING INSTALLER SHALL DETERMINE FINAL DETAILS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.



NOTE:

1. BRIDGE DECK MEMBRANE CONTINUOUS THRU JOINT
2. TYPICAL JOINT DETAIL SHOWN FOR INFORMATION ONLY. WATERPROOFING INSTALLER SHALL DETERMINE FINAL DETAILS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

SECTION A-A

(AT RT. ℄'S TO BK. OF ABUT.)

SECTION B-B

NON-STAINING GREY ONE COUMPOUND NON-SAG ELASTOMERIC GUN GRADE POLYURETHANE SEALANT MEETING THE REQUIREMENTS OF ASTM C-920, TYPE S, GRADE NS, GLASS 25. COST INCLUDED WITH MEMBRANE WATERPROOFING (SPECIAL).

SECTION C-C

WATERPROOFING SYSTEM:

WATERPROOFING SYSTEM SHALL BE 120 MIL ACRYLIC-BASED, COLD SPRAY APPLIED, SEAMLESS ELASTOMERIC WATERPROOFING MEMBRANE. SUPPLIERS MAY BE STIRLING-LLOYD, 420 SACKETT ROAD, NORTH HAVEN, CONNECTICUT 0673, (203) 230-9448, OR BRIDGE PRESERVATION, LLC, KANSAS CITY, MO 64171, (816) 561-9996, OR APPROVED EQUAL. SPRAY APPLIED WATERPROOFING SYSTEMS SHALL HAVE TWO ½" THICK LAYERS OF ASPHALT PROTECTION BOARDS PLACED ON THE DECK SURFACE ONLY TO THE LIMITS INDICATED.

PRIOR TO APPLYING WATERPROOFING SYSTEM, ALL VOIDS, GAPS, AND RECESSES IN THE STEEL BALLAST PLATE DECK SHALL BE FILLED IN WITH METASET 300, OR APPROVED EQUAL, BY STIRLING-LLOYD PER THE MANUFACTURER'S RECOMMENDATIONS.

GALVANIZED SHEETING, SHEET MEMBRANE, DEBONDED REGION, AND OTHER JOINT DETAILS SHALL EXTEND UP THE CURB FACE 1'-11" MIN. ON EACH SIDE.

WATERPROOFING SYSTEM SHALL BE APPLIED TO BALLAST PLATE DECK AND INSIDE FACE OF CURBS TO THE LIMITS SHOWN. CONTRACTOR SHALL SUBMIT DETAILED APPLICATION PROCEDURES, MATERIAL SPECIFICATIONS AND SHOP DRAWINGS FOR THE WATERPROOFING SYSTEM INCLUDING FIELD INSTALLED JOINT SYSTEMS, TO NICTD FOR APPROVAL PRIOR TO INSTALLATION.

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CHECKED:	AECOM-ALR
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 47.412 OVER NORFOLK SOUTHERN RAILWAY BRDIGE DECK WATERPROOFING

FILENAME	DT_CAD_60BRG_244.dgn
SCALE	AS NOTED

SHEET OF

PLOT DATE: 3/13/2020 5:45:59 PM eric.a.newman

GENERAL NOTES:

GENERAL:
ALL MATERIALS AND WORKMANSHIP SHALL BE AS PER CURRENT A.R.E.M.A. MANUALS FOR RAILWAY ENGINEERING: CHAPTER 8 CONRETE STRUCTURES AND FOUNDATIONS, CHAPTER 15 STEEL STRUCTURES AND THE PROJECT TECHNICAL SPECIFICATIONS.

STRUCTURE EXCAVATION AND BACKFILL:
ALL STRUCTURE EXCAVATION AND BACKFILL SHALL BE IN ACCORDANCE WITH SECTION XXXXX OF THE PROJECT TECHNICAL SPECIFICATION.

REINFORCEMENT:
STEEL BARS FOR REINFORCEMENT SHALL BE EPOXY COATED DEFORMED BILLET-STEEL BARS CONFORMING TO THE REQUIREMENTS OF THE CURRENT A.S.T.M. DESIGNATION A615, GRADE 60, OR A706.

FABRICATION FOR REINFORCEMENT SHALL BE IN ACCORDANCE WITH CHAPTER 7 OF THE CURRENT C.R.S.I. MANUAL OF STANDARD PRACTICE.

REINFORCEMENT WIRE BAR SUPPORTS THAT ARE IN CONTACT WITH FORMS SHALL BE CLASS 1, PLASTIC PROTECTED, IN ACCORDANCE WITH CHAPTER 3 OF THE CURRENT C.R.S.I. MANUAL OF STANDARD PRACTICE.

CAST-IN-PLACE CONCRETE:
ALL CONCRETE, CONCRETE WORK AND PLACEMENT OF REINFORCEMENT SHALL BE IN ACCORDANCE WITH SECTION XXXXX OF THE PROJECT TECHNICAL SPECIFICATIONS. DETAILED FALSEWORK PLANS IN ACCORDANCE WITH THE PROJECT TECHNICAL SPECIFICATIONS ARE REQUIRED AS NECESSARY.

THE PORTLAND CEMENT USED IN ALL CONCRETE SHALL BE TYPE II OR TYPE IIA. ALL CONCRETE BE SHALL BE AIR-ENTRAINED CONTAINING NOT LESS THAT 5 PERCENT NOR MORE THAT 7 PERCENT AIR BY VOLUME.

CONCRETE SHALL BE CLASS 40 WITH AN ULTIMATE COMPRESSIVE STRENGTH OF NOT LESS THAT THAT 4000 PSI IN 28 DAYS. MAXIMUM SIZE OF COARSE AGGREGATE SHALL BE ONE INCH. THE MINIMUM CONCRETE COVER ON REINFORCEMENT SHALL BE TWO INCHES UNLESS INDICATED OTHERWISE. EXPOSED CONCRETE EDGES SHALL BE BEVELED ¾".

PERVIOUS BACKFILL MATERIAL BEHIND ABUTMENTS:
PERVIOUS BECKFILL MATERIAL BEHIND ABUTMENT SHALL BE IN ACCORDANCE WITH PARAGRAPHS 2.5 AND 3.6 OF SECTION XXXXX OF THE PROJECT TECHNICAL SPECIFICATION.

PILING:
SHALL MEET THE MATERIAL REQUIREMENTS OF A.S.T.M. A572 GRADE 50 AND SHALL BE DRIVEN IN ACCORDANCE WITH THE PROJECT TECHNICAL SPECIFICATIONS. STEEL FRICTION PILES SHALL BE DRIVEN TO A MINIMUM ULTIMATE RESISTANCE OF 250 TONS AS DETERMINED BY THE MODIFIED ENGINEERING NEWS-RECORD FORMULA AS PER THE PROJECT TECHNICAL SPECIFICATIONS.

PILE DRIVING OPERATION SHALL MINIMIZE VIBRATIONS ON THE ADJACENT BRIDGE SUBSTRUCTURE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MONITORING THE VIBRATIONS CAUSED BY THE PILE DRIVING IN ACCORDANCE WITH THE SECTION XXXXX OF THE PROJECT TECHNICAL SPECIFICATION.

DAMPPROOFING:
THE BACK FACE OF THE NEW ABUTMENT CAPS, BACKWALLS, AND WINGWALLS SHALL BE DAMPPROOFED IN ACCORDANCE WITH THE SECTION XXXXX OF THE PROJECT TECHNICAL SPECIFICATION.

ELASTOMETIC BEARING PADS:
ELASTOMETRIC BEARING PADS SHALL BE IN ACCORDANCE WITH SECTION XXXXX OF THE PROJECT TECHNICAL SPECIFICATION.

DECK PLATES:
THE DECK PLATES SHALL BE ADJUSTED AS NECESSARY TO INSURE THE PLATES FIT TIGHT AGAINST THE BEAMS AND CURBS.

BRIDGE DECK WATERPROOFING:
SEE SHEET XX OF XX FOR WATERPROOFING AND NOTES.

STRUCTURAL STEEL:
SEE SHEET XX OF XX FOR STRUCTURAL STEEL NOTES.

REPAIR OF DAMAGED GALVANIZED SURFACES:
DAMAGED GALVANIZED SURFACES SHALL BE THOROUGHLY CLEANED TO REMOVE ALL CONTAMINANTS INCLUDING WELD SLAG, WELD SPLATTER AND RUST AND SHALL THEN BE PAINTED WITH TWO COATS OF ZINC DUST ZINC OXIDE. TYPE I. LINSEED OIL PAINT MEETING FEDERAL SPECIFICATION TT-P-641.

EXISTING PLANS:
1. RECONSTRUCTION OF NICTD (SOUTHSHORE) BRIDGE 54.62 OVER HOBART ROAD, FEB. 2010.

SURVEY DATA:

BENCHMARK:

LIFTING WEIGHTS:
SEE SHEET XX OF XX STEEL LIFTING WEIGHTS.

DESIGN DATA

2019 A.R.E.M.A. DESIGN SPECIFICATIONS
LOADING: COOPER E 80 W/ DIESEL IMPACT AND A.R.E.M.A. CHAPTER 15 ALTERNATIVE LIVE LOAD.

ATTENTION!! UTILITY NOTE:

THE IMPLIED PRESENCE OR ABSENCE OF UTILITIES IS NOT TO BE CONSTRUED BY OWNER, ENGINEER, CONTRACTOR, OR SUBCONTRACTORS TO BE AN ACCURATE AND COMPLETE REPRESENTATION OF UTILITIES THAT MAY OR MAY NOT EXIST ON THE CONSTRUCTION SITE. BURIED AND ABOVEGROUND UTILITY LOCATION, IDENTIFICATION AND MARKING ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. REROUTING, DISCONNECTION, PROTECTION, ETC. OF ANY UTILITIES MUST BE COORDINATED AMONG THE CONTRACTOR, UTILIITY COMPANY, AND OWNER. SITE SAFETY, INCLUDING THE AVOIDANCE OF HAZARDS, ASSOCIATED WITH BURIED AND ABOVEGROUND UTILITIES REMAIN THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

LEGEND:

F.S. = FARSIDE
N.S. = NEAR SIDE
B.S. = BOTH SIDES
U.N.O. =UNLESS NOTED OTHERWISE
cts. = CENTER
E.F. = EACH FACE
F.F. = FRONT FACE
B.F. = BACK FACE
T. = TOP
B. = BOTTOM
EXP. = EXPANSION BEARING
FIX. = FIXED BEARING
E.E. = EACH END
SPA = SPACES

PLOT DATE: $DATE$ $TIME$ $USER$

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DRAWING BRG-300 OF BRG-315

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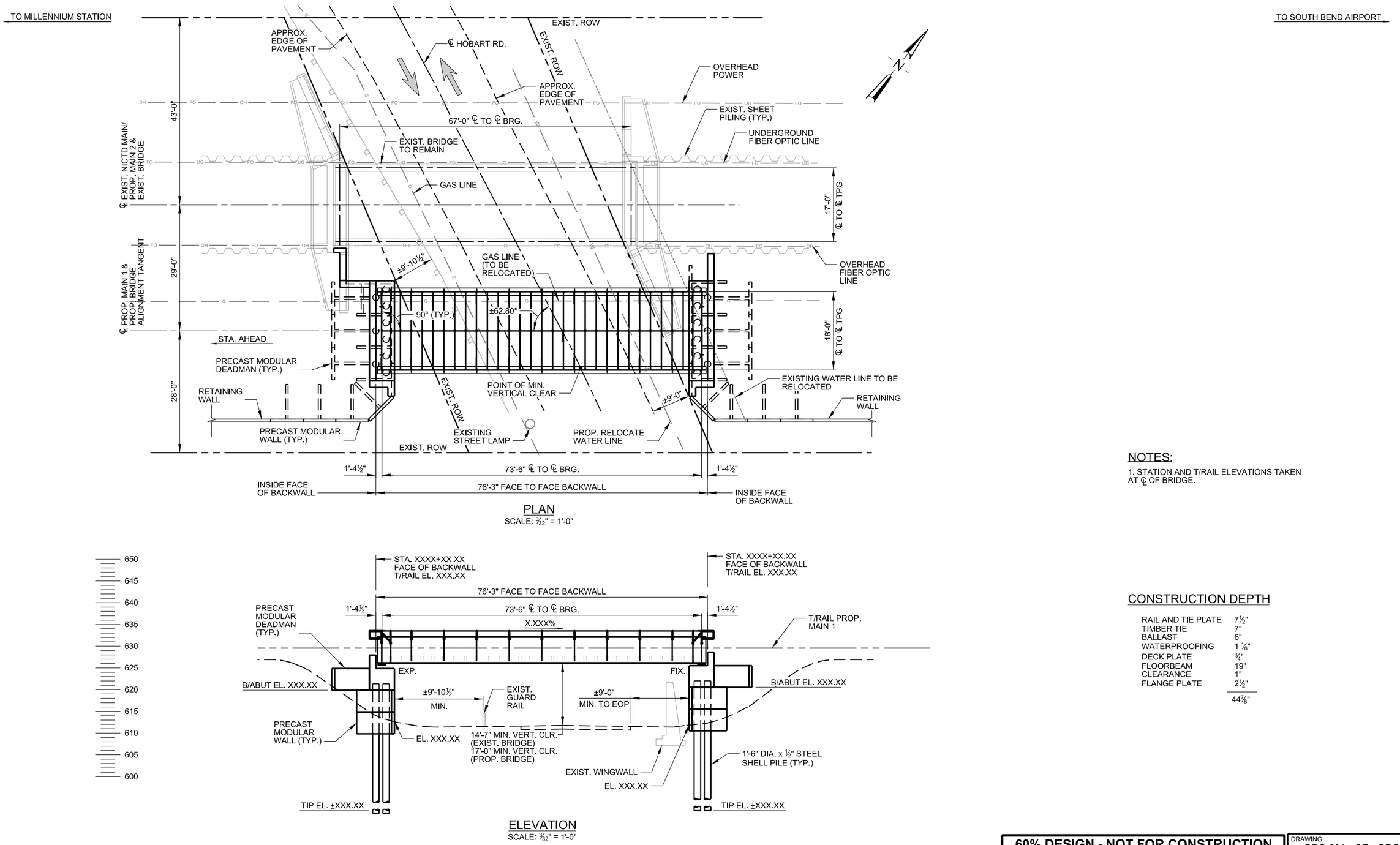
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR. 54.622 OVER HOBART RD GENERAL NOTES

FILENAME	$FILES$	SHEET	OF
SCALE	AS NOTED		



PLAN
SCALE: 3/32" = 1'-0"

ELEVATION
SCALE: 3/32" = 1'-0"

NOTES:

1. STATION AND T/RAIL ELEVATIONS TAKEN AT ℄ OF BRIDGE.

CONSTRUCTION DEPTH

RAIL AND TIE PLATE	7½"
TIMBER TIE	7"
BALLAST	6"
WATERPROOFING	1 ⅛"
DECK PLATE	¾"
FLOORBEAM	19"
CLEARANCE	1"
FLANGE PLATE	2½"
	44⅞"

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DRAWING BRG-301 OF BRG-315

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NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

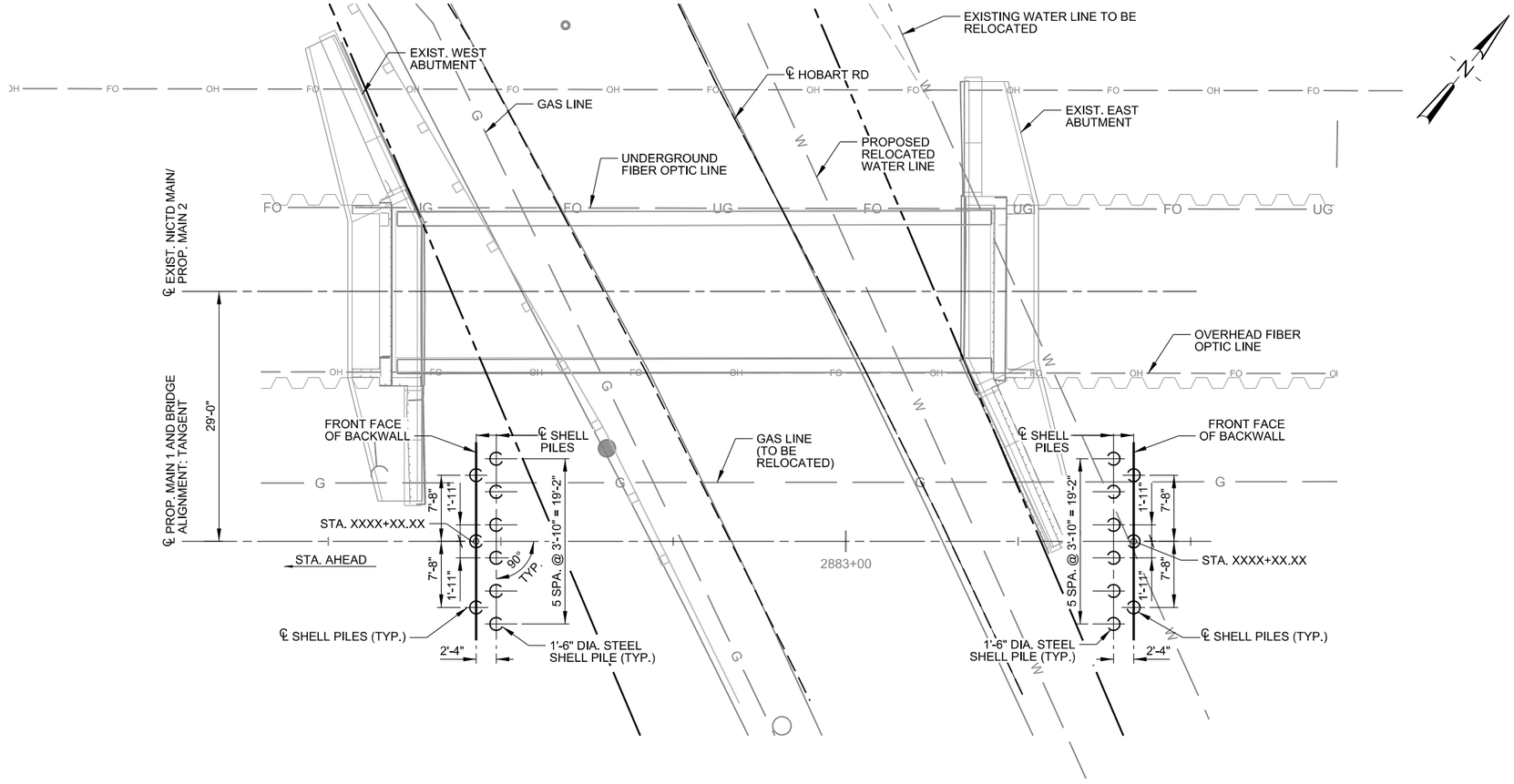
BR 54.622 OVER HOBART RD
GENERAL PLAN AND ELEVATION

FILENAME	$FILESS
SCALE	AS NOTED

SHEET OF

TO MILLENNIUM STATION

TO SOUTH BEND AIRPORT



FOUNDATION LAYOUT PLAN

SCALE: ⅛" = 1'-0"

ELEVATIONS FOR PROPOSED BRIDGE

ABUT. NO.	T/RAIL ELEV.	BRIDGE SEAT	PILE CUTOFF	ESTIMATED TIP ELEVATION *
EAST ABUT.	XXXX	XXXX	XXXX	XXXX
WEST ABUT.	XXXX	XXXX	XXXX	XXXX

* NOTE: ELEVATIONS ARE ESTIMATES BASED ON GEOTECHNICAL DATA AND CONDITIONS AT TIME OF BORINGS. ACTUAL FIELD CONDITIONS MAY VARY PENDING EQUIPMENT APPROVAL BY ENGINEER.

ATTENTION !

INFORMATION SHOWN ON THESE PLANS CONCERNING TYPE AND LOCATION OF UNDERGROUND OR ABOVE GROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE.

THE SUPERVISOR OF STRUCTURES OR THE FORMAN IN CHARGE WILL VERIFY THE LOCATION OF UNDERGROUND AND OVERHEAD UTILITIES BEFORE BEGINNING CONSTRUCTION.

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DRAWING BRG-302 OF BRG-315

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DATE:	3/16/2020

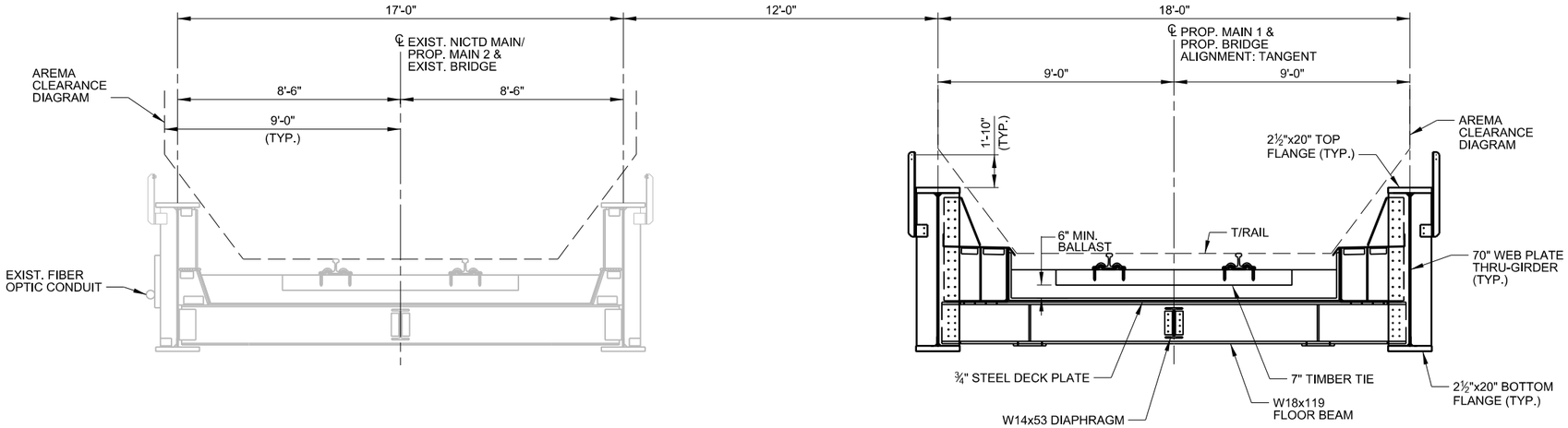
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 54.622 OVER HOBART RD FOUNDATION LAYOUT

FILENAME	$FILESS
SCALE	AS NOTED
SHEET	OF

TO MILLENNIUM STATION

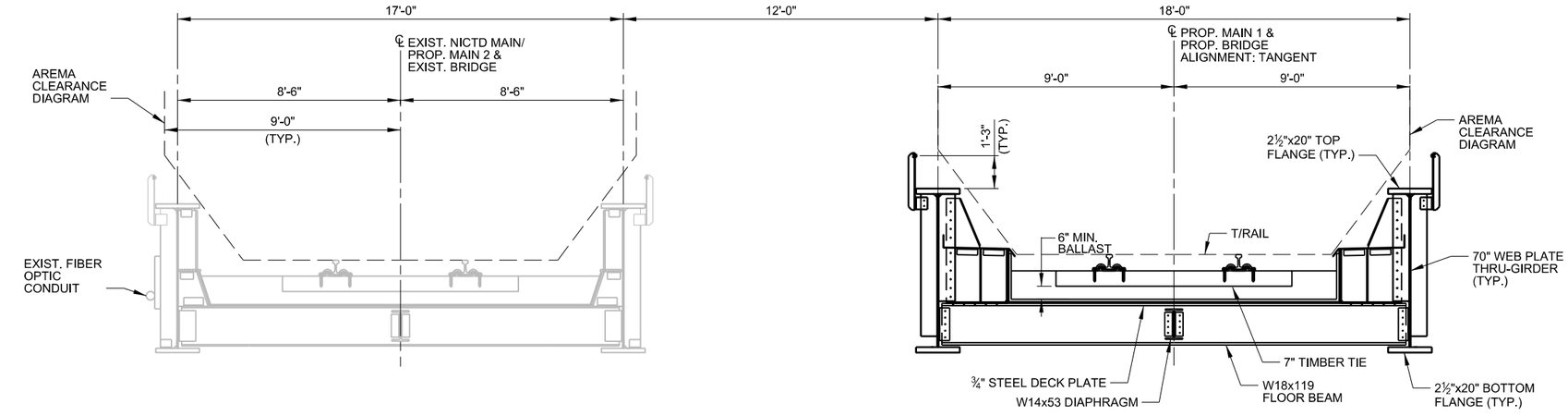
TO SOUTH BEND AIRPORT



TYPICAL SECTION AT END FLOORBEAM

SCALE: ⅜" = 1'-0"

(LOOKING IN THE DIRECTION OF DECREASING STATION)



TYPICAL SECTION AT INTERIOR FLOORBEAM

SCALE: ⅜" = 1'-0"

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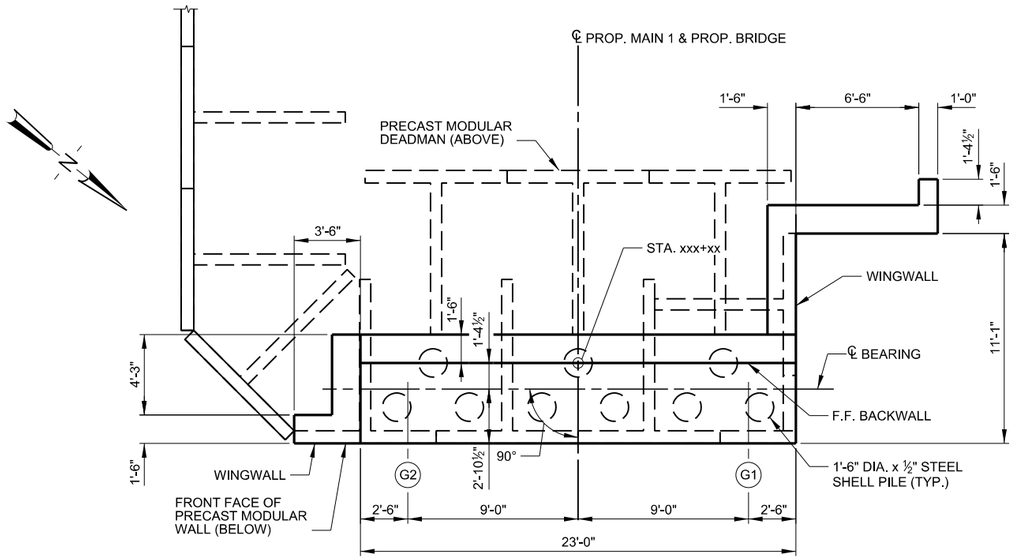
DATE:	3/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 54.622 OVER HOBART RD TYPICAL SECTIONS

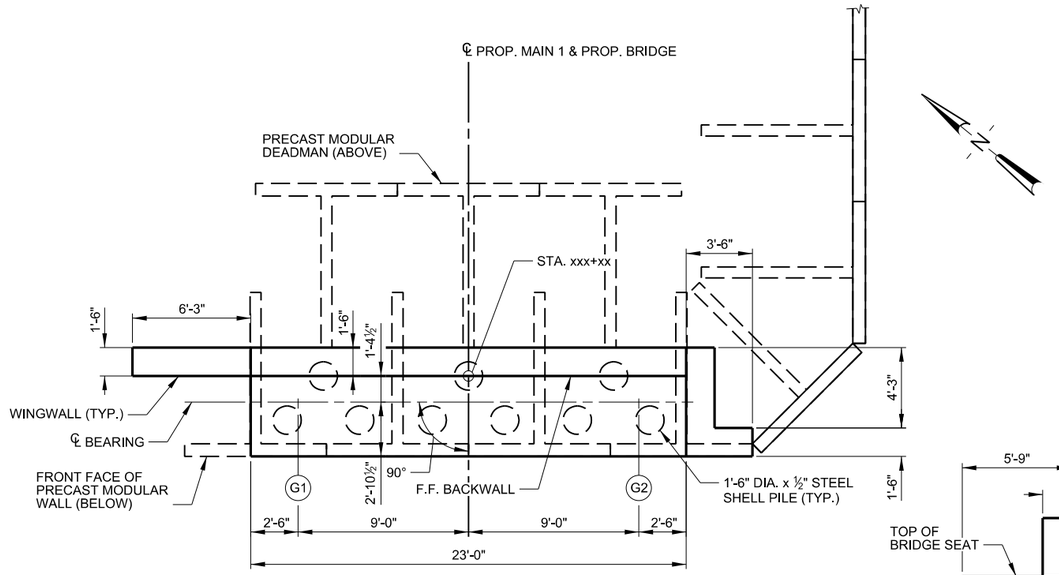
FILENAME	$FILESS
SCALE	AS NOTED

SHEET OF



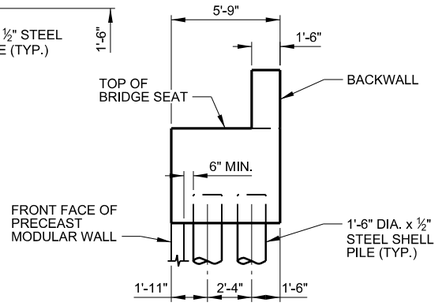
PLAN - WEST ABUTMENT

SCALE: ¼" = 1'-0"



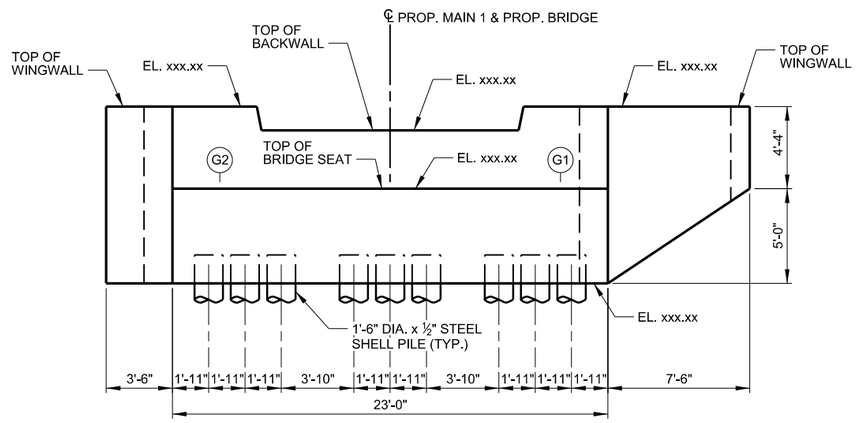
PLAN - EAST ABUTMENT

SCALE: ¼" = 1'-0"



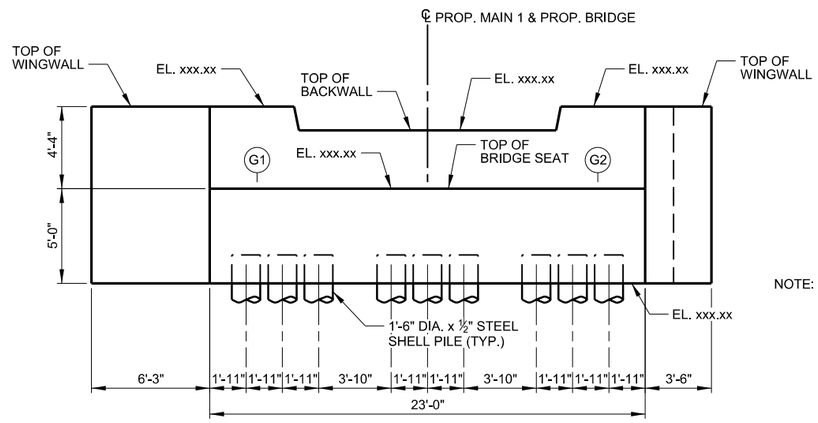
TYPICAL SECTION

SCALE: ¼" = 1'-0"



ELEVATION - WEST ABUTMENT

SCALE: ¼" = 1'-0"



ELEVATION - EAST ABUTMENT

SCALE: ¼" = 1'-0"

NOTE: PRECAST MODULAR WALL NOT SHOWN FOR CLARITY

NOTE: BRIDGE GEOMETRY TO BE VERIFIED IN FINAL DESIGN

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DRAWING BRG-304 OF BRG-315

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ISSUE	DATE	DESCRIPTION
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NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

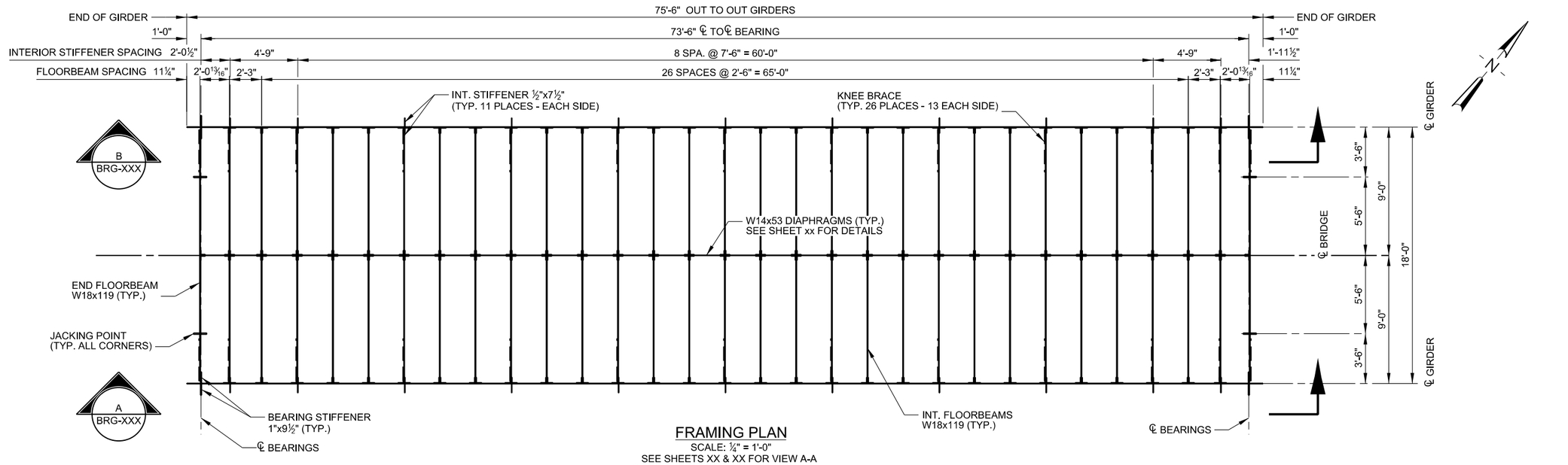
DESIGNED:	AECOM - KBT
DRAWN:	AECOM - EAN
CHECKED:	AECOM - JCF
DATE:	3/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 54.622 OVER HOBART RD ABUTMENT FRAMING DETAILS

FILENAME	$FILESS
SCALE	AS NOTED

SHEET OF



FRAMING PLAN

SCALE: ¼" = 1'-0"
SEE SHEETS XX & XX FOR VIEW A-A
SEE SHEETS XX & XX FOR SECTION B-B

STEEL NOTES:

GENERAL:
ALL MATERIALS,FABRICATION, AND ERECTION SHALL BE IN ACCORDANCE WITH CHAPTER 15 OF THE CURRECT AREMA MANUAL FOR RAILWAY ENGINEERING AND SECTION XXXXX OF THE PROJECT TECHNICAL SPECIFICATION.

DEAD LOAD: (ASSUMED)

RAIL	-
BALLAST (INCL. TIE)	-
WATERPROOFING	-
FUTURE BALLAST	-
STEEL	-
TOTAL	-

DESIGN LOADING:
COOPER E80 AND ALTERNATE LIVE LOAD WITH DIESEL IMPACT FOR BALLAST DECK.

MATERIAL:
STRUCTURAL STEEL FABRICATORS SHALL BE CERTIFIED UNDER THE AISC QUALITY CERTIFICATION PROGRAM, "MAJOR STEEL BRIDGES", OR ANOTHER SUITABLE PROGRAM AS DETERMINED BY THE ENGINEER.

ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A709, GRADE 50W, UNLESS NOTED OTHERWISE. ZONE 2 CONDITIONS CONTROL FOR CHARPY V-NOTCH TESTING.

FRACTURE CRITICAL MEMBERS (FCM) SHALL BE CHARPY V-NOTCH (CVN) TESTED, ACCORDING TO AREMA TABLE 15-9-3, ZONE 2, P FREQUENCY IN ACCORDANCE WITH ASTM A673.

FLANGES, FLOOR BEAMS, STIFFENERS, KNEE BRACES, FLOOR PLATE, CONNECTION ANGLES AND DIAPHRAGMS SHALL BE CHARPY V-NOTCH (CVN) TESTED, ACCORDING TO AREMA TABLE 15-9-2, H FREQUENCY IN ACCORDANCE WITH ASTM A673.

FABRICATION NOTE:
FASTENERS SHALL BE ASTM F3125 GRADE A325 SLIP CRITICAL CLASS A HEAVY HEX HIGH STRENGTH BOLTS, TYPE 3. BOLTS 7/8"DIA., OPEN HOLES 15/16"DIA. UNLESS OTHERWISE NOTED. BOLTED CONNECTIONS SHALL USE ASTM A563, GRADE C3, HEAVY HEX NUTS AND ASTM F436 HARDENED WEATHERING STEEL WASHERS FOR HIGH STRENGTH BOLTS UNDER THE TURNED ELEMENT. HIGH STRENGTH BOLTS SHALL BE TIGHTENED BY THE "TURN-OF-NUT"METHOD TO OBTAIN PROPER BOLT TENSION.

BEARING PLATES ARE TO BE FLAT AND LEVEL AFTER WELDING.

ALL WELDING OPERATIONS PROCESSES, EQUIPMENT, MATERIALS, QUALIFICATIONS OF WELDERS, WORKMANSHIP, TESTING AND INSPECTION SHALL BE IN ACCORDANCE WITH THE CURRENT AREMA MANUAL AND CURRENT AWS STRUCTURAL WELDING CODE D1.5. ALL WELD METAL MUST BE EQUIVALENT TO THE BASE METAL IN STRENGTH, CORROSION RESISTANCE AND WEATHERED APPERARANCE. FIELD WELDING OF CONSTRUCTION ACCESSORIES TO THE BEAMS WILL NOT BE PERMITTED. ALL SHOP AND FIELD WELDING SHALL BE EITHER SMAW OR SAW UNLESS APPROVED BY THE ENGINEER.

AFTER FABRICATION OF WEATHERING STEEL STRUCTURE AND WHILE THE STRUCTURE IS WAITING TO BE SHIPPED, THE FABRICATOR SHALL COMPLETELY WET THE STRUCTURE WITH, WATER ONCE DAILY TO START THE WEATHERING PROCESS. THE FABRICATOR SHALL PROVIDE 2 WEEKS OF DAILY WETTING FOLLOWED BY WETTING EVERY FOUR DAYS.

ALL SHOP DRAWINGS SHALL BE CHECKED BY THE FABRICATOR BEFORE SUBMITTING THEM FOR APPROVAL. SUBMISSION SHALL BE MADE TO NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT (NICTD), 33 EAST HIGHWAY 12, CHESTERTON, INDIANA 46304. THESE DRAWINGS MAY BE SUBMITTED BY EMAIL WITH MAXIMUM FILE SIZE OF 10Mb PER EMAIL. THEY CAN ALSO BE TRANSFERRED BY FTP AT FABRICATOR'S DISCRETION. THESE DRAWINGS SHALL BECOME THE PROPERTY OF, AND SHALL BE DELIVERED TO THE RAILWAY CO. UPON COMPLETION OF THE CONTRACT.

DURING THE PREPARATION OF SHOP DRAWINGS, THE FABRICATOR SHALL CHECK ALL GENERAL DIMENSIONS OF THE STEEL WORK AND SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER FOR REVISION AND CORRECTION BEFORE FABRICATION IS BEGUN. NO ALLOWANCE WILL BE MADE TO THE FABRICATOR FOR MATERIAL FABRICATED TO INCORRECT DIMENSIONS NOT SO REPORTED.

ALL EXPOSED SURFACES OF STRUCTURAL STEEL SHALL BE CLEANED PER STEEL STRUCTURES PAINTING COUNCIL SPECIFICATION SSPC-SP6, AND PER SECTION XXXXX OF THE PROJECT TECHNICAL SPECIFICATION.

THE TOP SURFACE OF THE BEAMS SHALL BE ADJUSTED TO FORM A STRAIGHT LINE AT ANY TRANSVERSE SECTION THROUGHOUT THE SPAN. TOLERANCE IS PLUS OR MINUS 1/8".

SPAN SHALL BE FULLY SHOP ASSEMBLED TO ASSURE ACCURATE FIT. DISASSEMBLE AS REQUIRED FOR SHIPPING.

ERECTION NOTES:
A SINGLE GIRDER MAY NOT BE ERECTED DURING HIGH WIND CONDITIONS WITHOUT THE SUPPORT OF THE SECOND GIRDER CONNECTED BY ALL KNEE BRACES AND FLOOR BEAMS.

SPLICE NOTES:
1. NO TWO PARTS OR MEMBERS SHALL BE SPLICED BY SHOP WELDING AT THE SAME LOCATION.
2. WEB SPLICES BY SHOP WELDING SHALL BE LOCATED A MINIMUM OF 36"AWAY FROM ANY FLANGE SPLICE.
3. SPLICES OF THE WEB OR FLANGES SHALL NOT BE PERMITTED WITHIN THE CENTRAL 40'-0"OF THE GIRDER SPAN LENGTH. THIS REQUIREMENT MAY BE WAIVED ONLY BY THE APPROVAL OF THE ENGINEER.

ESTIMATED WEIGHT OF STRUCTURAL STEEL = XXX TONS
ESTIMATED LIFTING WEIGHT OF ONE GIRDER = XXX TONS

TOP OF TIE	TO MASONRY	TO CLEARANCE
TIE	-	-
BALLAST	-	-
WATERPROOFING	-	-
BALLAST PAN	-	-
FLOORBEAM	-	-
FLANGE PLATE	-	-
NUT & BOLT SHANK	-	-
BEARING	-	-
TOTAL	-	-

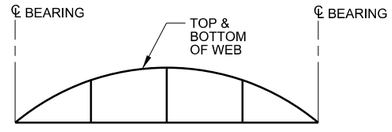
MOMENT & SHEAR TABLE FOR STEEL THRU PLATE GIRDER

DESCRIPTION	MOMENT	SHEAR
DEAD LOAD	-	-
LIVE LOAD	-	-
IMPACT	-	-
TOTAL	-	-
SECTION	-	
NET I	-	
NET S (BOTT)	-	
fsc (TOP)	-	
GROSS I	-	
GROSS S (TOP)	-	
fsc (TOP)	-	

I - MOMENT OF INERTIA SECTION

S - SECTION MODULUS

fs - MAX. UNFACTORED STRESS IN THE SECTION DUE TO D.L. + L.L. + IMPACT.



CAMBER CALCULATED FOR DEAD LOAD ONLY.

CAMBER DIAGRAM

MOMENT & SHEAR TABLE FOR STEEL FLOORBEAMS

DESCRIPTION	MOMENT	SHEAR	MOMENT *	MOMENT *
DEAD LOAD	-	-	-	-
LIVE LOAD	-	-	-	-
IMPACT	-	-	-	-
TOTAL	-	-	-	-
SECTION	-		-	
NET I	-		-	
NET S (BOTT)	-		-	
fsc (TOP)	-		-	
GROSS I	-		-	
GROSS S (TOP)	-		-	
fsc (TOP)	-		-	

* JACKING CONDITIONS CONTROL
50% ALLOWABLE STRESS INCREASE IS PERMITTED

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-305 OF BRG-315

PLOT DATE: $DATES $TIMES $USERS

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Chicago, IL 60601
TEL: (312) 373-7700
www.aecom.com

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

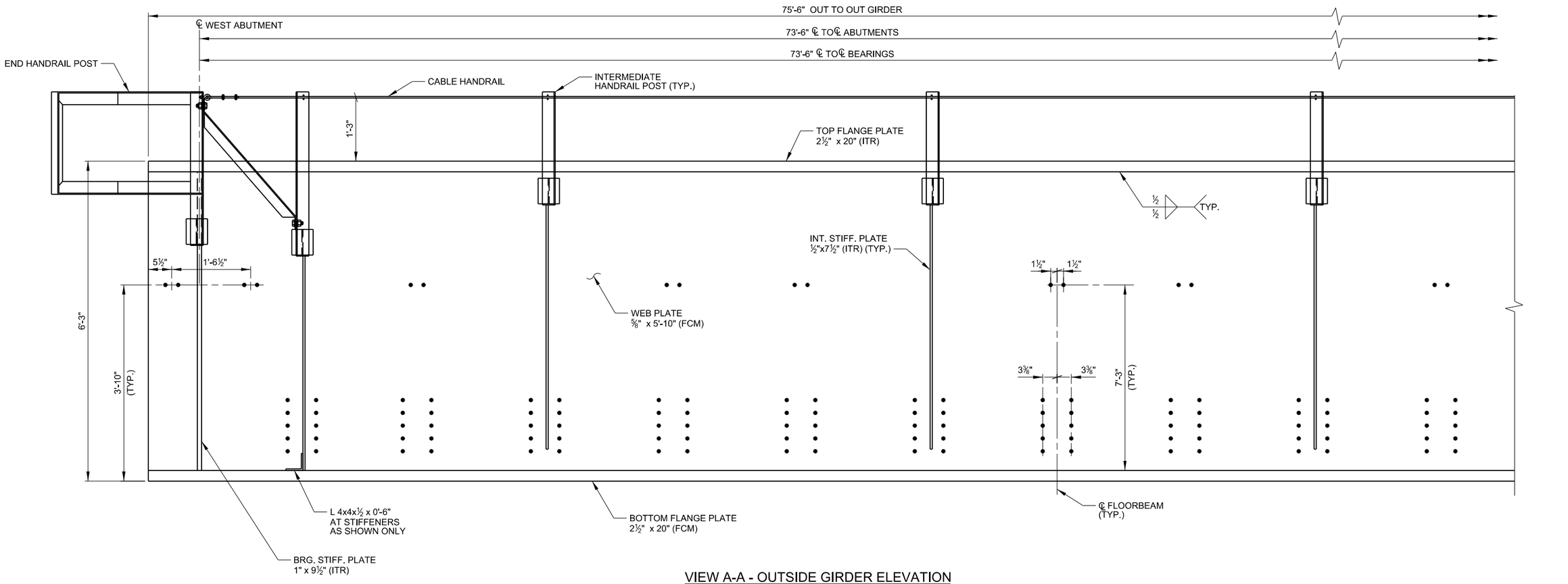
DESIGNED:	AECOM - KBT
DRAWN:	AECOM - EAN
CHECKED:	AECOM - JCF
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 54.622 OVER HOBART RD FRAMING PLAN

FILENAME	$FILESS
SCALE	AS NOTED

SHEET OF



VIEW A-A - OUTSIDE GIRDER ELEVATION
SCALE: 1" = 1'-0"

NOTES:
1. FCM - FRACTURE CRITICAL MEMBER
2. ITR - IMPACT TEST REQUIRED

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-306 OF BRG-315

PLOT DATE: $DATE$ $TIME$ $USER$

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MICHIGAN CITY TO GARY, INDIANA

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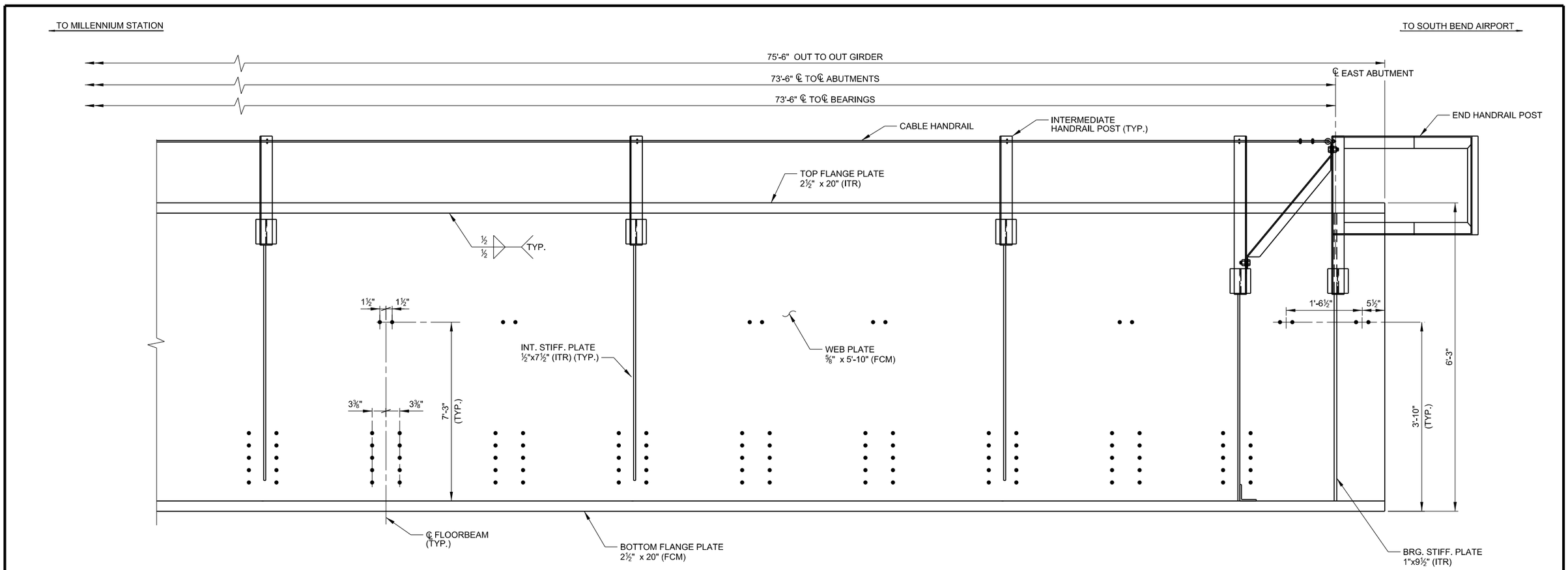
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 54.622 OVER HOBART RD
OUTSIDE GIRDER ELEVATION (1 OF 2)

FILENAME	$FILES$
SCALE	AS NOTED

SHEET OF



VIEW A-A - OUTSIDE GIRDER ELEVATION
SCALE: 1" = 1'-0"

NOTES:
1. FCM - FRACTURE CRITICAL MEMBER
2. ITR - IMPACT TEST REQUIRED

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-307 OF BRG-315

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MICHIGAN CITY TO GARY, INDIANA

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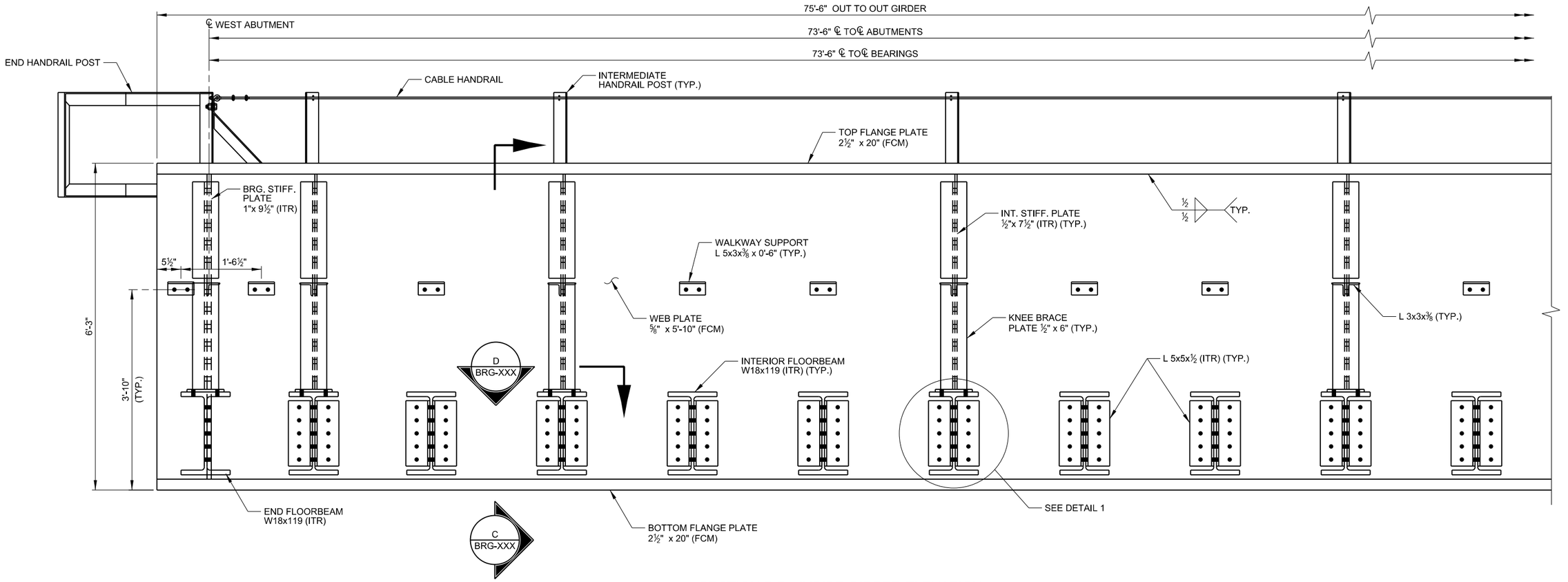
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 54.622 OVER HOBART RD
OUTSIDE GIRDER ELEVATION (2 OF 2)

FILENAME	$FILES$
SCALE	AS NOTED

SHEET OF

PLOT DATE: $DATE$ $TIME$ $USER$



SECTION B-B - INSIDE GIRDER ELEVATION
SCALE: 1" = 1'-0"

NOTES:

1. FCM - FRACTURE CRITICAL MEMBER
2. ITR - IMPACT TEST REQUIRED

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-308 OF BRG-315

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Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
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MICHIGAN CITY TO GARY, INDIANA

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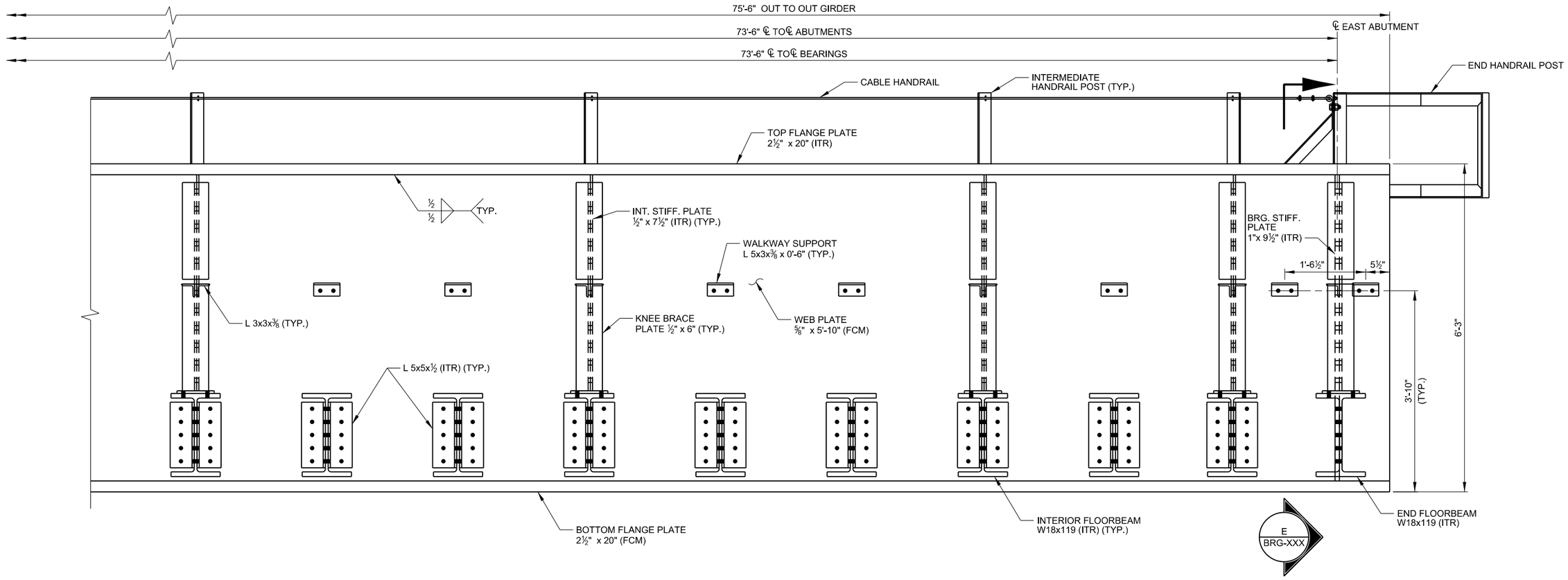
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 54.622 OVER HOBART RD
INSIDE GIRDER ELEVATION (1 OF 2)

FILENAME	$FILESS
SCALE	AS NOTED

SHEET OF

PLOT DATE: $DATE$ $TIME$ $USER$



SECTION B-B - INSIDE GIRDER ELEVATION
SCALE: 1" = 1'-0"

NOTES:
1. FCM - FRACTURE CRITICAL MEMBER
2. ITR - IMPACT TEST REQUIRED

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-309 OF BRG-315

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NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 54.622 OVER HOBART RD
INSIDE GIRDER ELEVATION (2 OF 2)

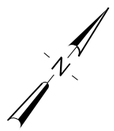
FILENAME	$FILESS
SCALE	AS NOTED

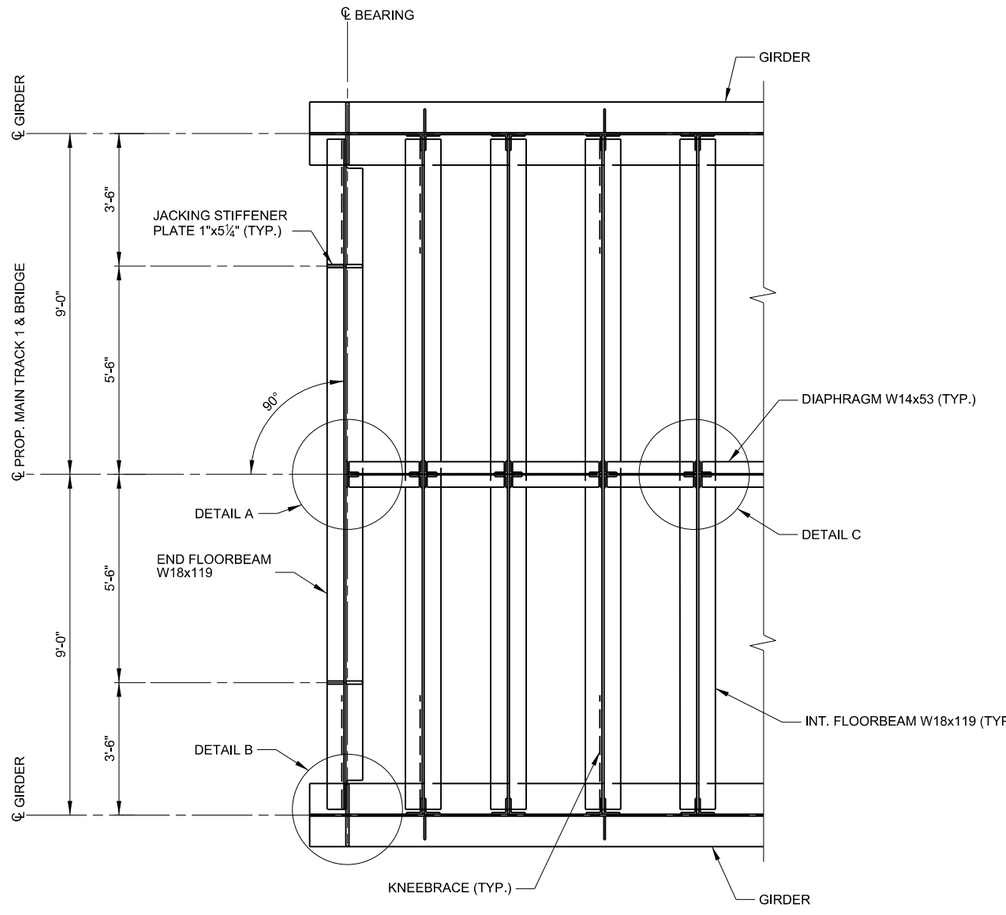
SHEET OF

PLOT DATE: $DATE$ $TIME$ $USER$

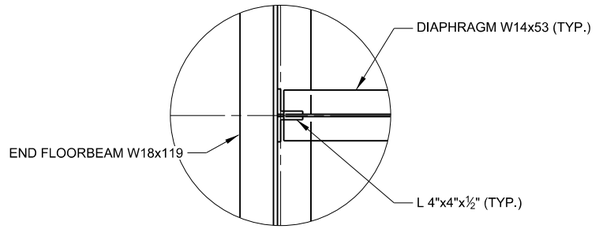
TO MILLENNIUM STATION

TO SOUTH BEND AIRPORT

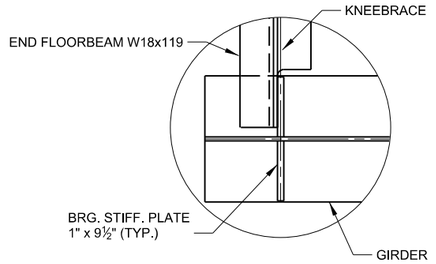




END FLOORBEAM PLAN
SCALE: ½" = 1'-0"



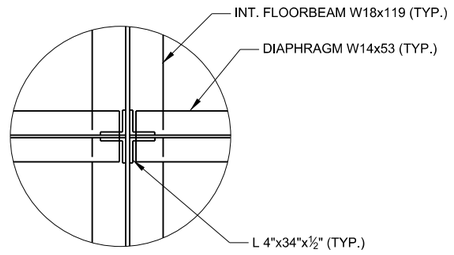
DETAIL A
SCALE: 1" = 1'-0"



DETAIL B
SCALE: 1" = 1'-0"

NOTES:

1. TOP FLANGES NOT SHOWN FOR CLARITY.



DETAIL C
SCALE: 1" = 1'-0"

PLOT DATE: $DATE$ $TIME$ $USER$

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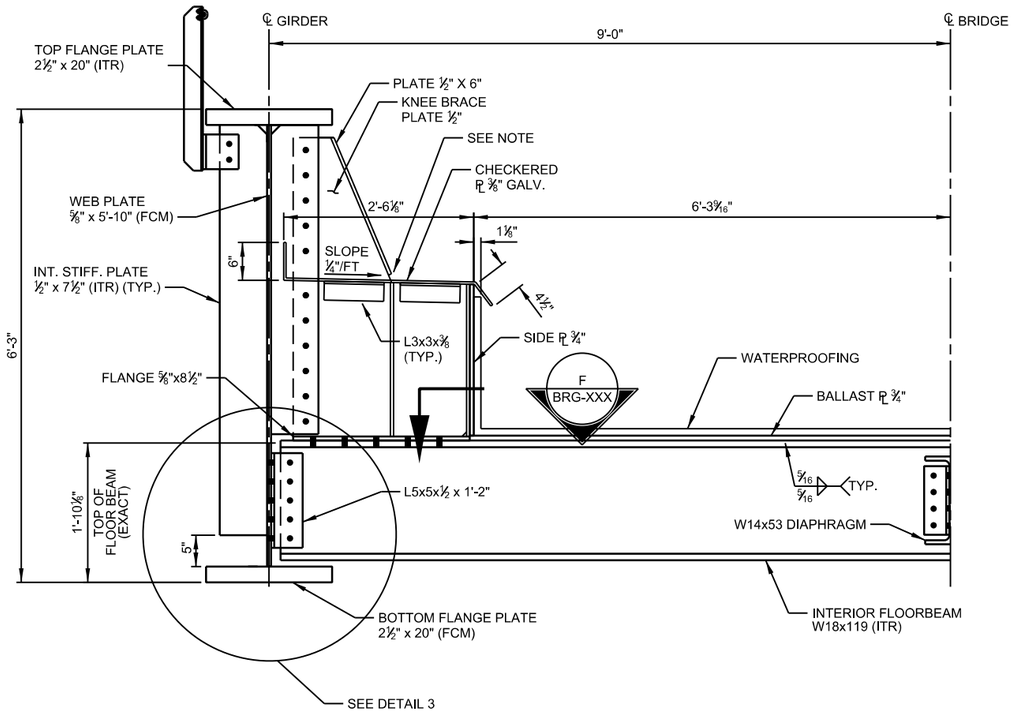
DRAWING BRG-310 OF BRG-315

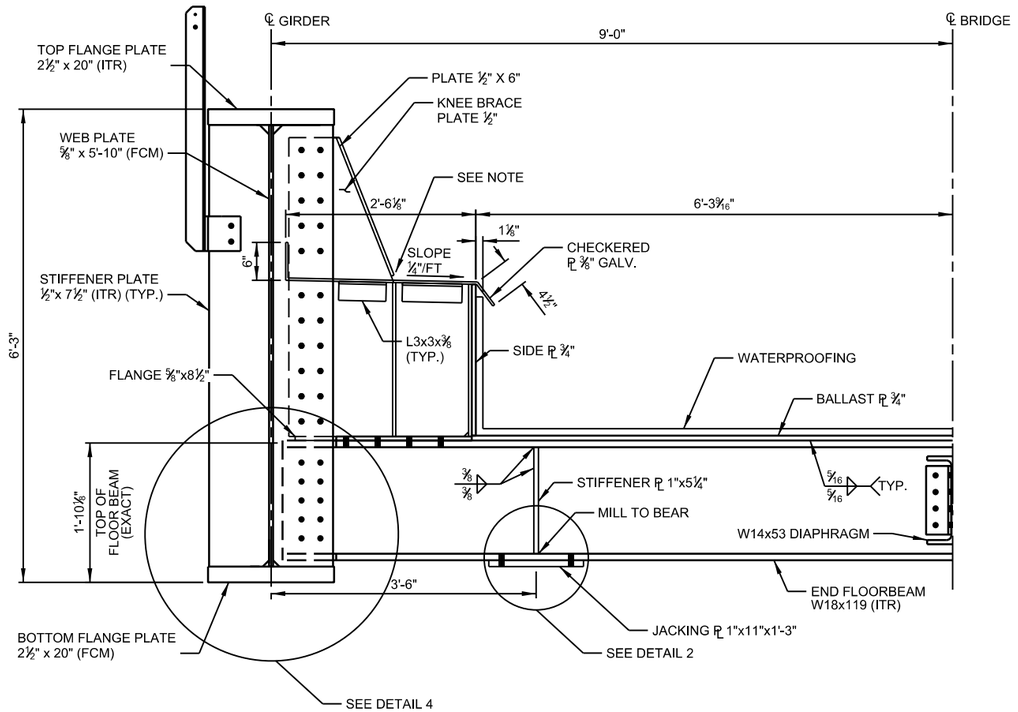
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 54.622 OVER HOBART RD
END FLOORBEAM PLAN

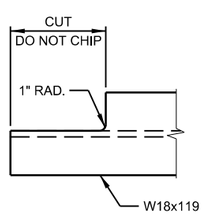
FILENAME	$FILESS
SCALE	AS NOTED
SHEET	OF



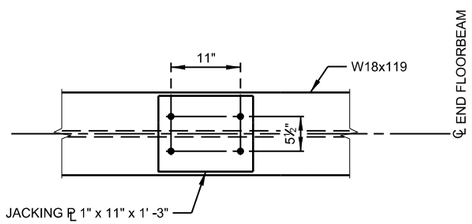
SECTION C-C
SCALE: 1" = 1'-0"



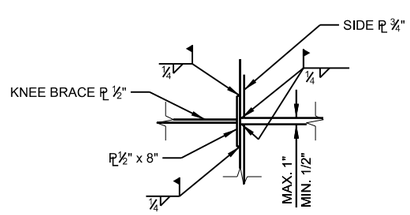
SECTION E-E
SCALE: 1" = 1'-0"



END FLOORBEAM COPE
SCALE: 1" = 1'-0"



DETAIL 2
SCALE: 1" = 1'-0"
LOOKING AT UNDERSIDE OF FLOORBEAM.
BOLT HEADS TO BE DOWN.



DETAIL F-F
SCALE: 1" = 1'-0"

NOTES:

1. NOTCH CHECKERED PLATE TO FIT AROUND BRACKET PLATE AND STIFFENER PLATE.
2. FOR LOCATION AND WELDING OF ANGLES 3x3x⅜ ON KNEE BRACES, SEE SECTION X-X AND X-X ON SHEET XX OF XX.
3. END FLOORBEAM AND JACKING PLATE CONNECTIONS DESIGNED FOR DEAD LOAD ONLY. LIVE LOAD NOT PERMITTED DURING JACKING.

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-311 OF BRG-315

PLOT DATE: $DATE$ $TIME$ $USER$

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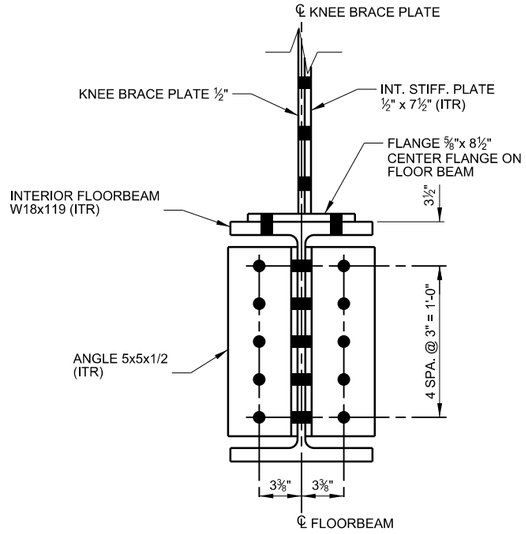
DATE:	3/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

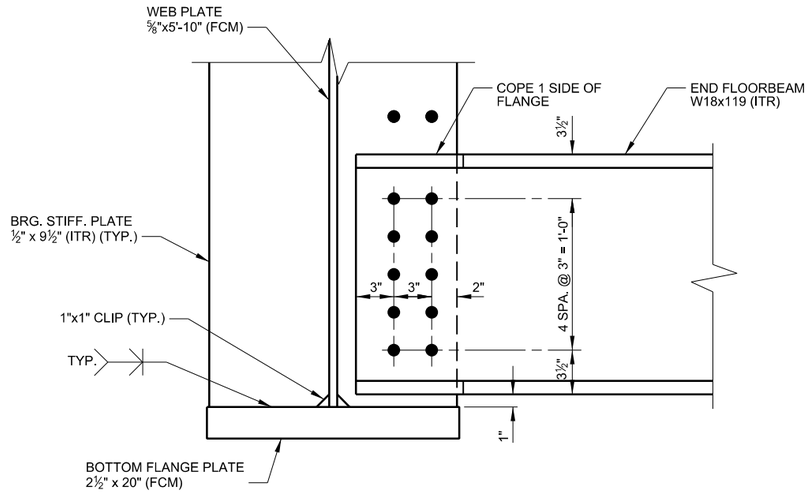
BR. 54.622 OVER HOBART RD SECTIONS AND DETAILS

FILENAME	$FILES$
SCALE	AS NOTED
SHEET	OF



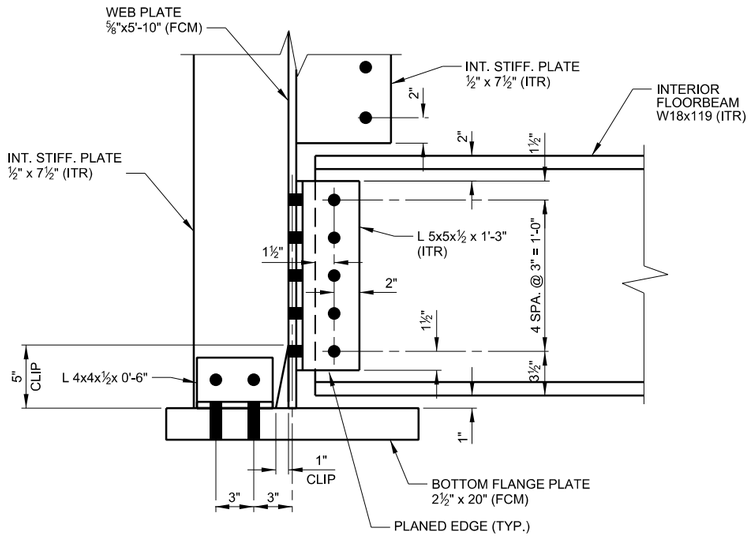
DETAIL 1

KNEE BRACE AT INTERMEDIATE STIFFENER SHOWN.
KNEE BRACE AT BEARING STIFFENER SIMILAR.



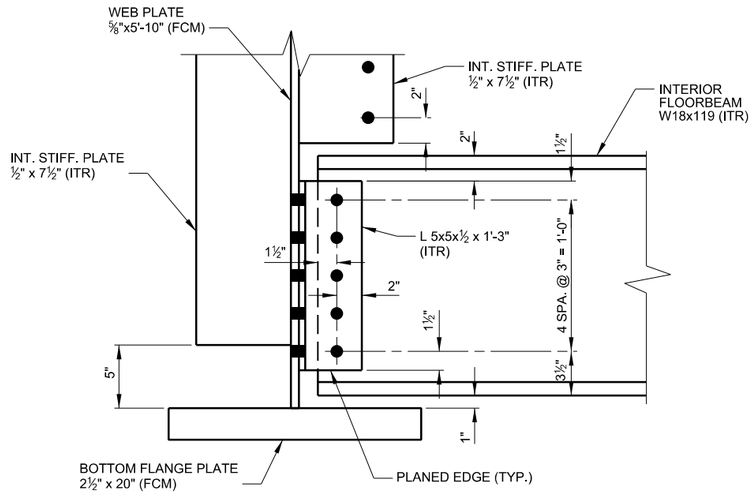
DETAIL 4

TYPICAL AT BEARING STIFFENER
(KNEE BRACE OMITTED FOR CLARITY)



DETAIL 3 (SIM.)

TYPICAL FOR INTERIOR STIFFENER WITHIN 6'-3" OF GIRDER ENDS



DETAIL 3

TYPICAL AT INTERIOR STIFFENER UNLESS NOTED OTHERWISE
(KNEE BRACE OMITTED FOR CLARITY)

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-312 OF BRG-315

PLOT DATE: $DATE$ $TIME$ $USER$

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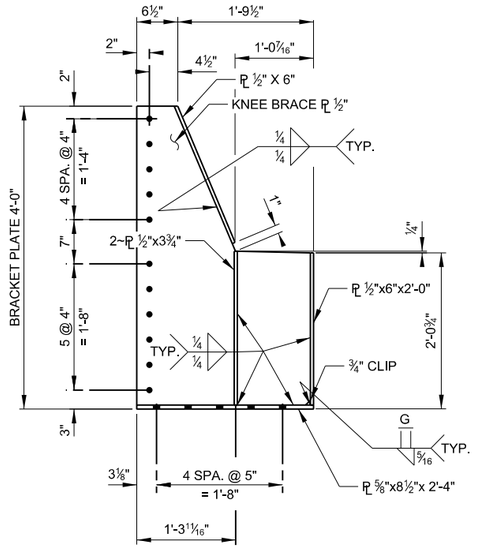
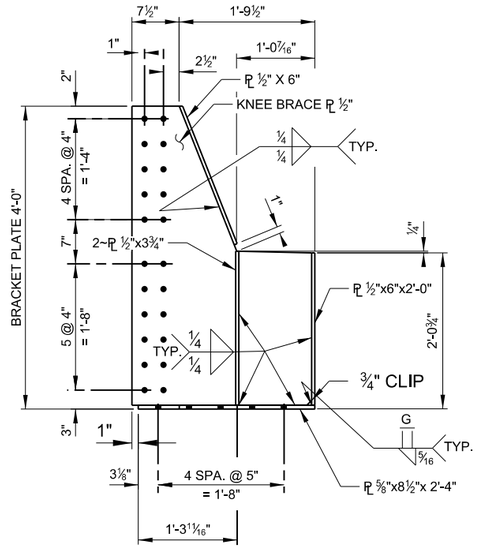
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 54.622 OVER HOBART RD GIRDER SECTIONS

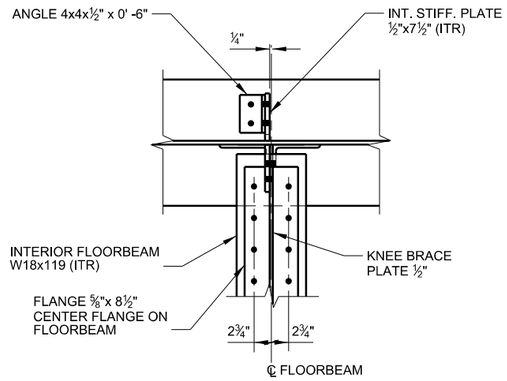
FILENAME	$FILES$	SHEET	OF
SCALE	AS NOTED		



KNEE BRACE @ INTERMEDIATE STIFFENER

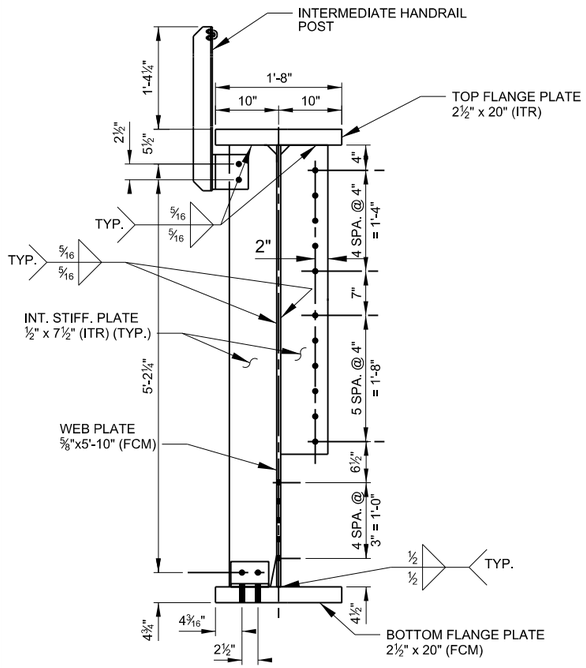


KNEE BRACE @ BEARING STIFFENER

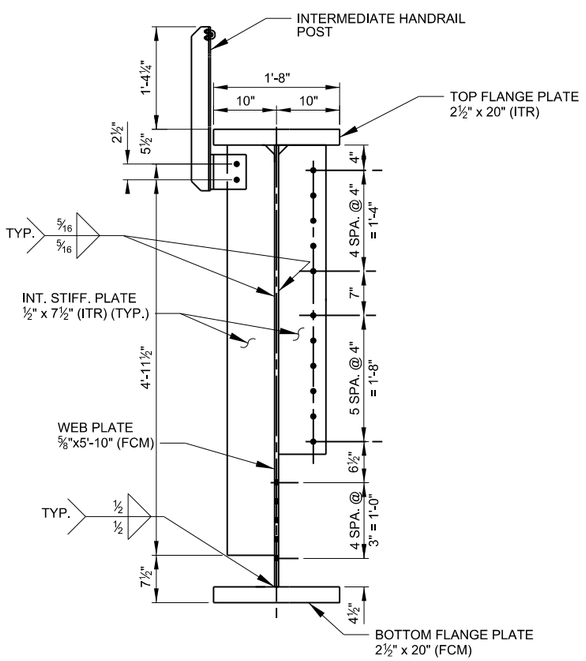


SECTION E-E

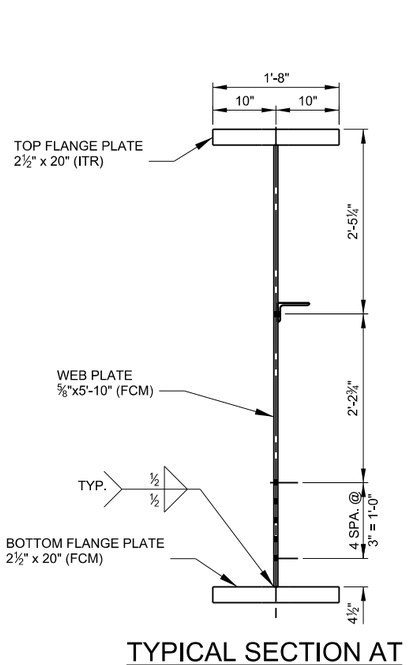
KNEE BRACE AT INTERMEDIATE STIFFENER SHOWN.
KNEE BRACE AT BEARING SIFFENER SIMILAR.



TYPICAL SECTION AT INT. STIFFENER AND KNEE BRACE
(KNEE BRACE OMITTED FOR CLARITY)



TYPICAL SECTION AT INT. STIFFENER AND KNEE BRACE
(KNEE BRACE OMITTED FOR CLARITY)



TYPICAL SECTION AT CHECKERED PLATE SUPPORT
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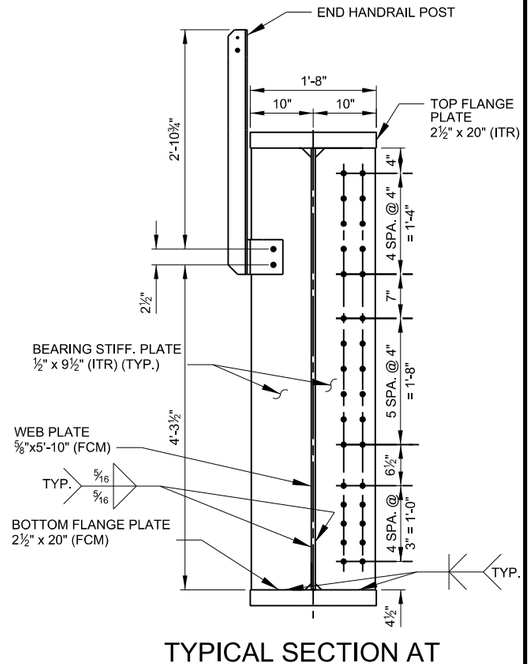

TYPICAL SECTION AT BEARING STIFFENER
(KNEE BRACE OMITTED FOR CLARITY)

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DRAWING BRG-313 OF BRG-315

PLOT DATE: $DATE$ $TIME$ $USER$

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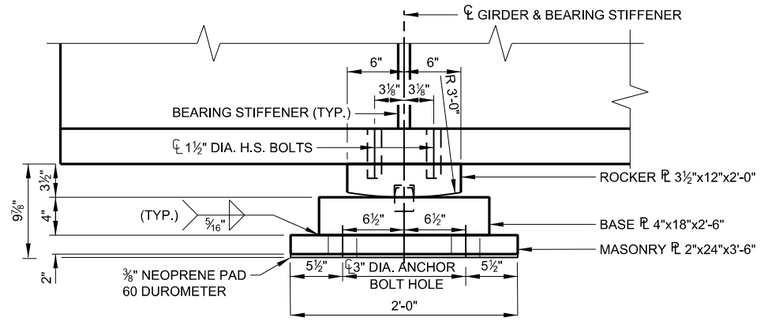
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	HDR-JRR
DRAWN:	HDR-JM
CHECKED:	HDR-JRR
DATE:	

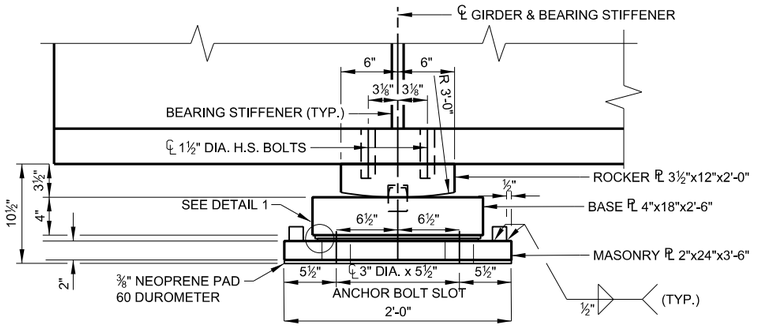
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 54.622 OVER HOBART RD MISC. STEEL DETAILS (2 OF 2)

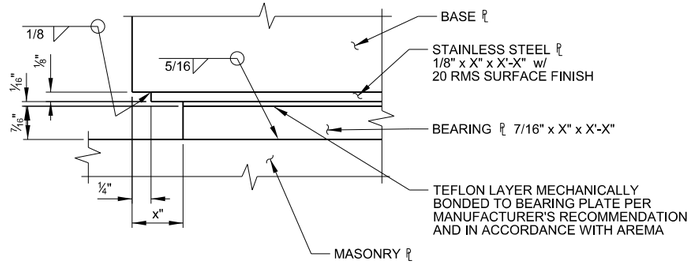
FILENAME	$FILESS	SHEET
SCALE	AS NOTED	OF



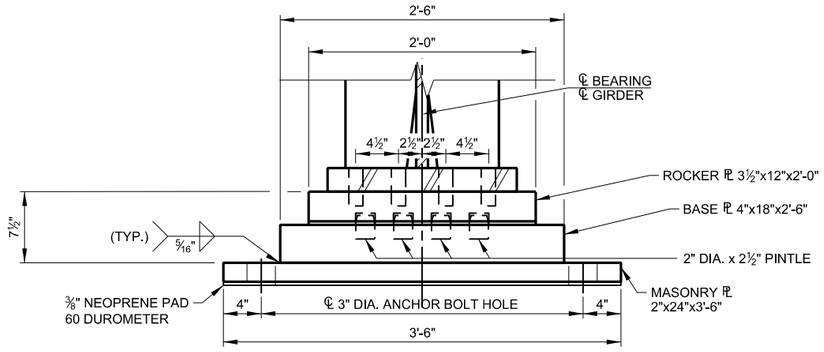
ELEVATION - FIXED BEARING



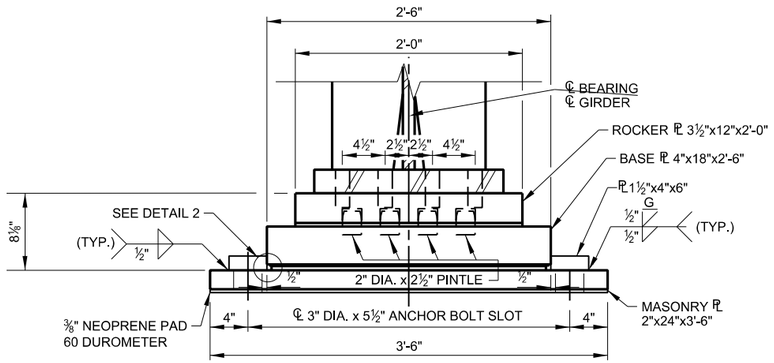
ELEVATION - EXPANSION BEARING



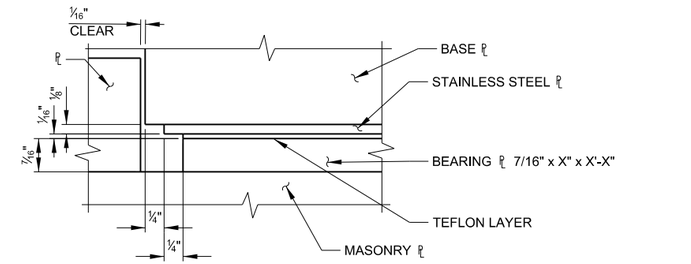
DETAIL 1



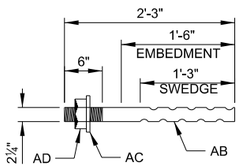
END VIEW - FIXED BEARING



END VIEW - EXPANSION BEARING

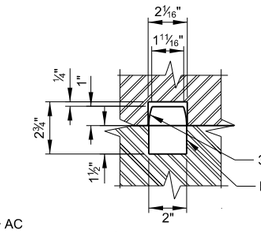


DETAIL 2

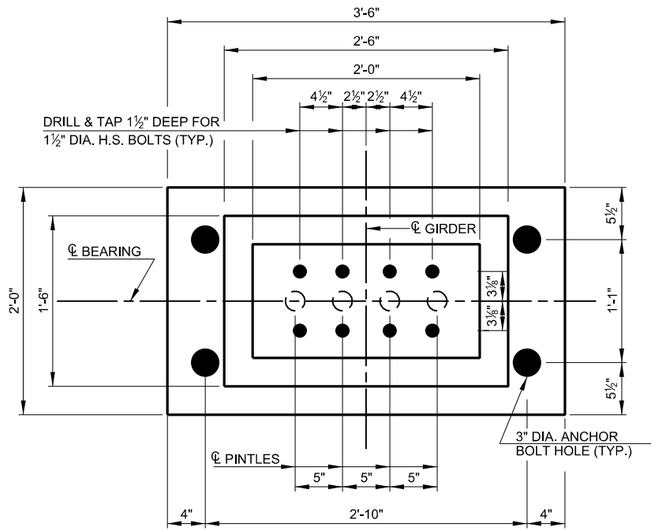


ANCHOR BOLT ~AB100.1B

1 ~ BAR 2-1/4" DIA. X 2'-3" ~ AB
1 ~ BAR 4" DIA. X 1/4" W/ 2-3/8" DIA. HOLE AT CENTER ~ AC
1 ~ HEAVY HEX NUT ~ AD
WEIGHT = 35 LBS.
GALVANIZE AFTER FABRICATION
(16 REQUIRED)

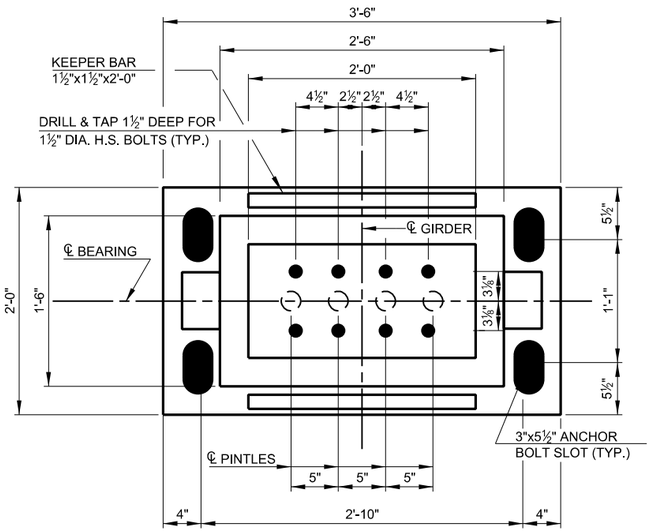


PINTLE DETAL



PLAN VIEW - FIXED BEARING

(2 REQUIRED)



PLAN VIEW - EXPANSION BEARING

(2 REQUIRED)

NOTES:

1. STEEL USED FOR BEARING ASSEMBLIES SHALL CONFORM TO ASTM A709 GR50W, UNLESS NOTED OTHERWISE. ANCHOR BOLTS SHALL CONFORM TO ASTM F1554 GR 105.

2. STAINLESS STEEL SHALL CONFORM TO ASTM A480.

3. BEARING ASSEMBLY WELDMENTS SHALL BE STRESSED RELIEVED BY HEAT TREATING PRIOR TO FINISH MACHINING, PER CURRENT AWS STRUCTURAL WELDING CODES.

4. TEFLON LAYER SHALL BE COMPOSED OF VIRGIN UNFILLED TFE RESIN, UNFILLED TFE SHEETS OR UNFILLED TFE FABRIC. FILLER MATERIAL, SUCH AS MILLED GLASS FIBERS WILL NOT BE ALLOWED. TEFLON LAYER SHALL CONFORM TO THE REQUIREMENTS OF AREMA CHAPTER 15.

5. ALL SURFACES IN THE MOVING CONTACT SHALL BE FINISHED 125√

6. ALL DIMENSIONS SHOWN ARE FINAL DIMENSIONS AFTER MACHINING.

7. BEARINGS TO BE SHOP FITTED TO GIRDERS, MATCH MARKED AND ASSEMBLED IN UNITS FOR SHIPPING.

8. ANCHOR BOLTS, NUTS AND PLATE WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM B695, CLASS 50.

9. ANCHOR BOLT NUTS SHALL BE A563 GR DH HEAVY HEX & WASHERS SHALL BE F436 TYPE 1.

10. BOLT REMOVAL AND REPLACEMENTS TO GAIN ACCESS TO PROPERLY TIGHTEN BEARING BOLTS IS INCIDENTAL TO STEEL ERECTION.

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-314 OF BRG-315

PLOT DATE: 3/13/2020 6:21:55 PM kurt.thomsen

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MICHIGAN CITY TO GARY, INDIANA

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DRAWN: DNJ/GTS
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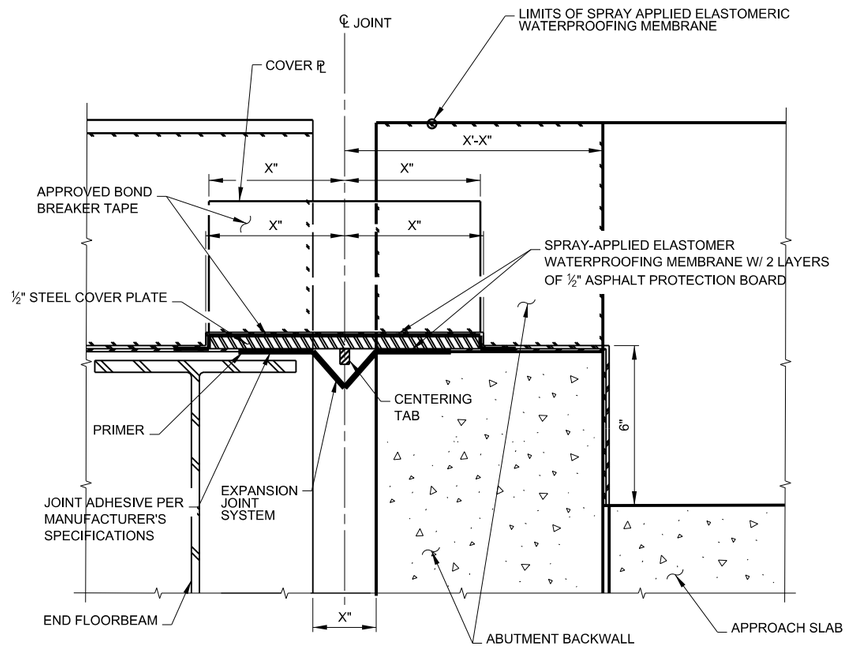
DATE:

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 54.622 OVER HOBART RD TPG BEARING DETAILS

FILENAME	DT_CAD_60BRG-314.dgn	SHEET
SCALE	AS NOTED	OF

ESTIMATED WATERPROOFING QUANTITIES		
DESCRIPTION	UNIT	QUANTITY
BRIDGE DECK WATERPROOFING	SQ. YDS.	XXX

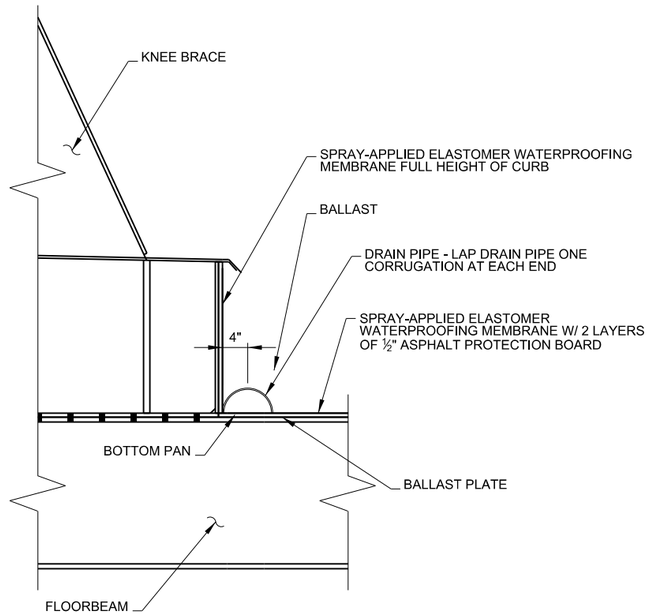


NOTE:

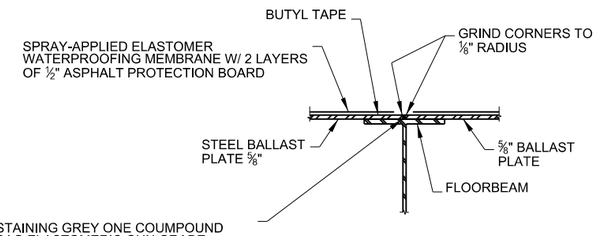
1. BRIDGE DECK MEMBRANE CONTINUOUS THRU JOINT
2. TYPICAL JOINT DETAIL SHOWN FOR INFORMATION ONLY. WATERPROOFING INSTALLER SHALL DETERMINE FINAL DETAILS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

SECTION A-A

(AT RT. ℄ 'S TO BK. OF ABUT.)



SECTION B-B



NON-STAINING GREY ONE COUMPOUND NON-SAG ELASTOMERIC GUN GRADE POLYURETHANE SEALANT MEETING THE REQUIREMENTS OF ASTM C-920, TYPE S, GRADE NS, GLASS 25. COST INCLUDED WITH MEMBRANE WATERPROOFING (SPECIAL).

SECTION C-C

WATERPROOFING SYSTEM:

WATERPROOFING SYSTEM SHALL BE 120 MIL ACRYLIC-BASED, COLD SPRAY APPLIED, SEAMLESS ELASTOMERIC WATERPROOFING MEMBRANE. SUPPLIERS MAY BE STIRLING-LLOYD, 420 SACKETT ROAD, NORTH HAVEN, CONNECTICUT 0673, (203) 230-9448, OR BRIDGE PRESERVATION, LLC, KANSAS CITY, MO 64171, (816) 561-9996, OR APPROVED EQUAL. SPRAY APPLIED WATERPROOFING SYSTEMS SHALL HAVE TWO ½" THICK LAYERS OF ASPHALT PROTECTION BOARDS PLACED ON THE DECK SURFACE ONLY TO THE LIMITS INDICATED.

PRIOR TO APPLYING WATERPROOFING SYSTEM, ALL VOIDS, GAPS, AND RECESSES IN THE STEEL BALLAST PLATE DECK SHALL BE FILLED IN WITH METASET 300, OR APPROVED EQUAL, BY STIRLING-LLOYD PER THE MANUFACTURER'S RECOMMENDATIONS.

GALVANIZED SHEETING, SHEET MEMBRANE, DEBONDED REGION, AND OTHER JOINT DETAILS SHALL EXTEND UP THE CURB FACE 1'-11" MIN. ON EACH SIDE.

WATERPROOFING SYSTEM SHALL BE APPLIED TO BALLAST PLATE DECK AND INSIDE FACE OF CURBS TO THE LIMITS SHOWN. CONTRACTOR SHALL SUBMIT DETAILED APPLICATION PROCEDURES, MATERIAL SPECIFICATIONS AND SHOP DRAWINGS FOR THE WATERPROOFING SYSTEM INCLUDING FIELD INSTALLED JOINT SYSTEMS, TO NICTD FOR APPROVAL PRIOR TO INSTALLATION.

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-315 OF BRG-315

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MICHIGAN CITY TO GARY, INDIANA

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NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR. 54+622 OVER HOBART RD. BRIDGE DECK WATERPROOFING

FILENAME	DT_CAD_60BRG-315.dgn
SCALE	AS NOTED

SHEET OF

PLOT DATE: 3/13/2020 6:22:01 PM kurt.thomsen

GENERAL NOTES:

GENERAL:
ALL MATERIALS AND WORKMANSHIP SHALL BE AS PER CURRENT A.R.E.M.A. MANUALS FOR RAILWAY ENGINEERING: CHAPTER 8 CONRETE STRUCTURES AND FOUNDATIONS, CHAPTER 15 STEEL STRUCTURES AND THE PROJECT TECHNICAL SPECIFICATIONS.

STRUCTURE EXCAVATION AND BACKFILL:
ALL STRUCTURE EXCAVATION AND BACKFILL SHALL BE IN ACCORDANCE WITH SECTION XXXXX OF THE PROJECT TECHNICAL SPECIFICATION.

REINFORCEMENT:
STEEL BARS FOR REINFORCEMENT SHALL BE DEFORMED BILLET-STEEL BARS CONFORMING TO THE REQUIREMENTS OF THE CURRENT A.S.T.M. DESIGNATION A615, GRADE 60, OR A706.

FABRICATION FOR REINFORCEMENT SHALL BE IN ACCORDANCE WITH CHAPTER 7 OF THE CURRENT C.R.S.I. MANUAL OF STANDARD PRACTICE.

REINFORCEMENT WIRE BAR SUPPORTS THAT ARE IN CONTACT WITH FORMS SHALL BE CLASS 1, PLASTIC PROTECTED, IN ACCORDANCE WITH CHAPTER 3 OF THE CURRENT C.R.S.I. MANUAL OF STANDARD PRACTICE.

CAST-IN-PLACE CONCRETE:
ALL CONCRETE, CONCRETE WORK AND PLACEMENT OF REINFORCEMENT SHALL BE IN ACCORDANCE WITH SECTION XXXXX OF THE PROJECT TECHNICAL SPECIFICATIONS. DETAILED FALSEWORK PLANS IN ACCORDANCE WITH THE PROJECT TECHNICAL SPECIFICATIONS ARE REQUIRED AS NECESSARY.

THE PORTLAND CEMENT USED IN ALL CONCRETE SHALL BE TYPE II OR TYPE IIA. ALL CONCRETE BE SHALL BE AIR-ENTRAINED CONTAINING NOT LESS THAT 5 PERCENT NOR MORE THAT 7 PERCENT AIR BY VOLUME.

CONCRETE SHALL BE CLASS 40 WITH AN ULTIMATE COMPRESSIVE STRENGTH OF NOT LESS THAT THAT 4000 PSI IN 28 DAYS. MAXIMUM SIZE OF COARSE AGGREGATE SHALL BE ONE INCH. THE MINIMUM CONCRETE COVER ON REINFORCEMENT SHALL BE TWO INCHES UNLESS INDICATED OTHERWISE. EXPOSED CONCRETE EDGES SHALL BE BEVELED ¾".

PERVIOUS BACKFILL MATERIAL BEHIND ABUTMENTS:
PERVIOUS BECKFILL MATERIAL BEHIND ABUTMENT SHALL BE IN ACCORDANCE WITH PARAGRAPHS 2.5 AND 3.6 OF SECTION XXXXX OF THE PROJECT TECHNICAL SPECIFICATION.

PILING:
SHALL MEET THE MATERIAL REQUIREMENTS OF A.S.T.M. A572 GRADE 50 AND SHALL BE DRIVEN IN ACCORDANCE WITH THE PROJECT TECHNICAL SPECIFICATIONS. STEEL FRICTION PILES SHALL BE DRIVEN TO A MINIMUM ULTIMATE RESISTANCE OF 250 TONS AS DETERMINED BY THE MODIFIED ENGINEERING NEWS-RECORD FORMULA AS PER THE PROJECT TECHNICAL SPECIFICATIONS.

PILE DRIVING OPERATION SHALL MINIMIZE VIBRATIONS ON THE ADJACENT BRIDGE SUBSTRUCTURE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MONITORING THE VIBRATIONS CAUSED BY THE PILE DRIVING IN ACCORDANCE WITH THE SECTION XXXXX OF THE PROJECT TECHNICAL SPECIFICATION.

DAMPPROOFING:
THE BACK FACE OF THE NEW ABUTMENT CAPS, BACKWALLS, AND WINGWALLS SHALL BE DAMPPROOFED IN ACCORDANCE WITH THE SECTION XXXXX OF THE PROJECT TECHNICAL SPECIFICATION.

ELASTOMETIC BEARING PADS:
ELASTOMETRIC BEARING PADS SHALL BE IN ACCORDANCE WITH SECTION XXXXX OF THE PROJECT TECHNICAL SPECIFICATION.

DECK PLATES:
THE DECK PLATES SHALL BE ADJUSTED AS NECESSARY TO INSURE THE PLATES FIT TIGHT AGAINST THE BEAMS AND CURBS.

BRIDGE DECK WATERPROOFING:
SEE SHEET XX OF XX FOR WATERPROOFING AND NOTES.

STRUCTURAL STEEL:
SEE SHEET XX OF XX FOR STRUCTURAL STEEL NOTES.

REPAIR OF DAMAGED GALVANIZED SURFACES:
DAMAGED GALVANIZED SURFACES SHALL BE THOROUGHLY CLEANED TO REMOVE ALL CONTAMINANTS INCLUDING WELD SLAG, WELD SPLATTER AND RUST AND SHALL THEN BE PAINTED WITH TWO COATS OF ZINC DUST ZINC OXIDE. TYPE I. LINSEED OIL PAINT MEETING FEDERAL SPECIFICATION TT-P-641.

EXISTING PLANS:
1. RECONSTRUCTION OF NICTD (SOUTHSHORE) BRIDGE OVER CSX RAILROAD (BRIDGE 54.73), JUNE 2001.

SURVEY DATA:

BENCHMARK:

LIFTING WEIGHTS:
SEE SHEET XX OF XX STEEL LIFTING WEIGHTS.

DESIGN DATA:

2019 A.R.E.M.A. DESIGN SPECIFICATIONS
LOADING: COOPER E 80 W/ DIESEL IMPACT AND A.R.E.M.A. CHAPTER 15 ALTERNATIVE LIVE LOAD.

ATTENTION!! UTILITY NOTE:

THE IMPLIED PRESENCE OR ABSENCE OF UTILITIES IS NOT TO BE CONSTRUED BY OWNER, ENGINEER, CONTRACTOR, OR SUBCONTRACTORS TO BE AN ACCURATE AND COMPLETE REPRESENTATION OF UTILITIES THAT MAY OR MAY NOT EXIST ON THE CONSTRUCTION SITE. BURIED AND ABOVEGROUND UTILITY LOCATION, IDENTIFICATION AND MARKING ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. REROUTING, DISCONNECTION, PROTECTION, ETC. OF ANY UTILITIES MUST BE COORDINATED AMONG THE CONTRACTOR, UTILIITY COMPANY, AND OWNER. SITE SAFETY, INCLUDING THE AVOIDANCE OF HAZARDS, ASSOCIATED WITH BURIED AND ABOVEGROUND UTILITIES REMAIN THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

LEGEND:

F.S. = FARSIDE
N.S. = NEAR SIDE
B.S. = BOTH SIDES
U.N.O. =UNLESS NOTED OTHERWISE
cts. = CENTER
E.F. = EACH FACE
F.F. = FRONT FACE
B.F. = BACK FACE
T. = TOP
B. = BOTTOM
EXP. = EXPANSION BEARING
FIX. = FIXED BEARING
E.E. = EACH END
SPA = SPACES

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DOUBLE TRACK N·W·I
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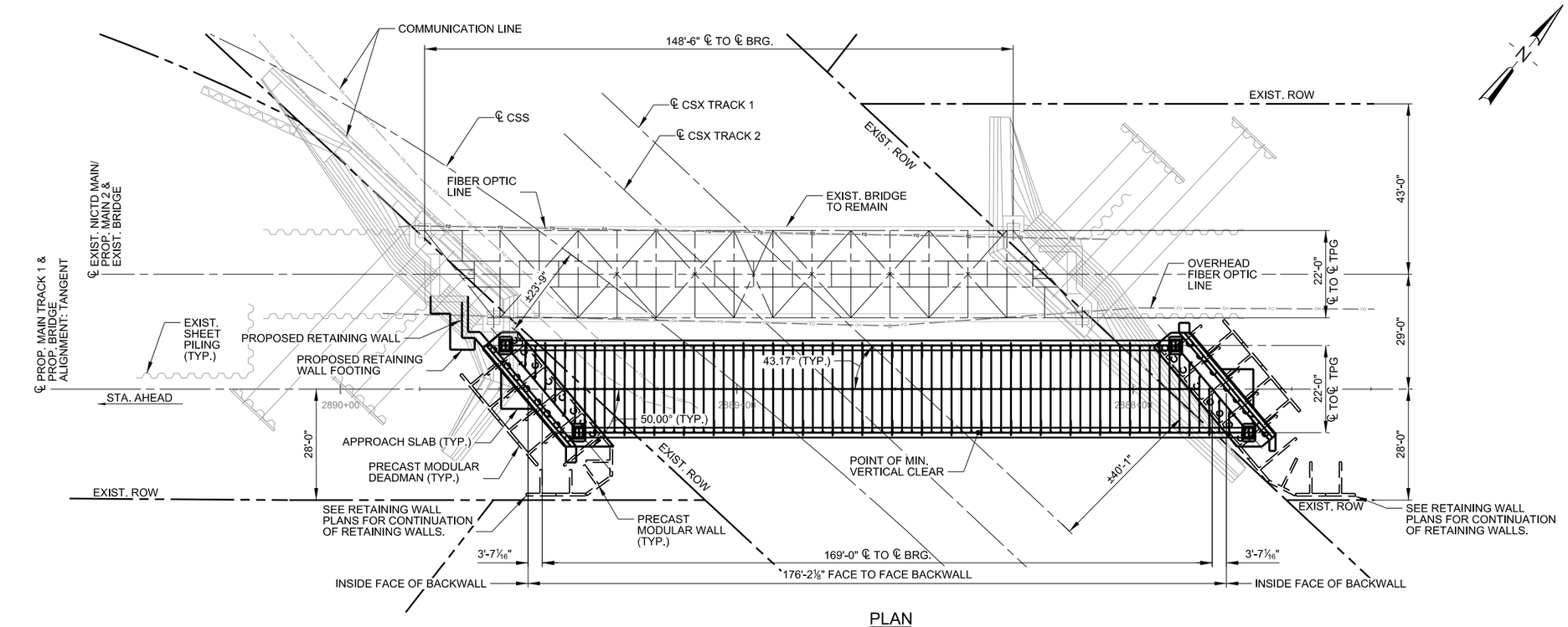
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	AECOM-JCF
DRAWN:	AECOM-EAN
CHECKED:	AECOM-TJH
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 54.732 OVER CSX TRANSPORTATION GENERAL NOTES

FILENAME	$FILES$	SHEET	OF
SCALE	AS NOTED		



NOTES

1. TEMPORARY CONSTRUCTION CLEARANCES SUBJECT TO CSX APPROVAL.
2. STATIONS AND T/RAIL ELEVATIONS ARE TAKEN AT CENTERLINE OF BRIDGE.
3. PRECAST MODULAR WALL ALONG FRONT FACE OF WEST ABUTMENT WILL BE DESIGNED AS CRASH LOAD WALL.

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-401 OF BRG-416

PLOT DATE: $DATE$ $TIME$ $USER$

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DOUBLE TRACK N·W·I
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MICHIGAN CITY TO GARY, INDIANA

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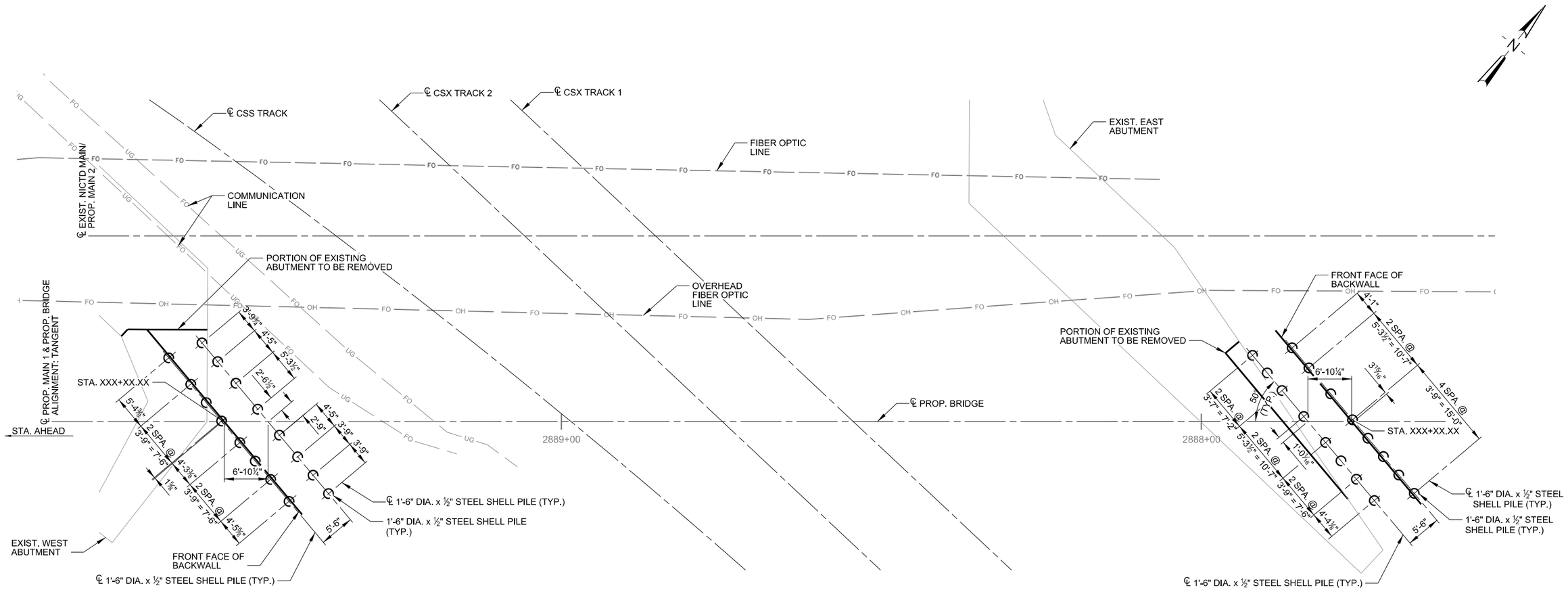
CHECKED:	AECOM-TJH
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 54.732 OVER CSX TRANSPORTATION GENERAL PLAN & ELEVATION

FILENAME	$FILESS	SHEET	OF
SCALE	AS NOTED		



FOUNDATION LAYOUT PLAN

SCALE: ⅛" = 1'-0"

ELEVATIONS FOR PROPOSED BRIDGE

ABUT./ PIER NO.	T/RAIL ELEV.	BRIDGE SEAT	T/PILE CUTOFF	ESTIMATED BOTT. PILE ELEVATION *
EAST ABUT.	XXXX	XXXX	XXXX	XXXX
WEST ABUT.	XXXX	XXXX	XXXX	XXXX

* NOTE: ELEVATIONS ARE ESTIMATES BASED ON GEOTECHNICAL DATA AND CONDITIONS AT TIME OF BORINGS. ACTUAL FIELD CONDITIONS MAY VARY PENDING EQUIPMENT APPROVAL BY ENGINEER.

ATTENTION !

INFORMATION SHOWN ON THESE PLANS CONCERNING TYPE AND LOCATION OF UNDERGROUND OR ABOVE GROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE.

THE FORMAN IN CHARGE WILL VERIFY THE LOCATION OF UNDERGROUND AND OVERHEAD UTILITIES BEFORE BEGINNING CONSTRUCTION.

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-402 OF BRG-416

$USER$
$TIME$
$DATE$
PLOT DATE:

AECOM
303 E. Wacker Drive, Suite 1400
Chicago, IL 60601
TEL: (312) 373-7700
www.aecom.com

ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

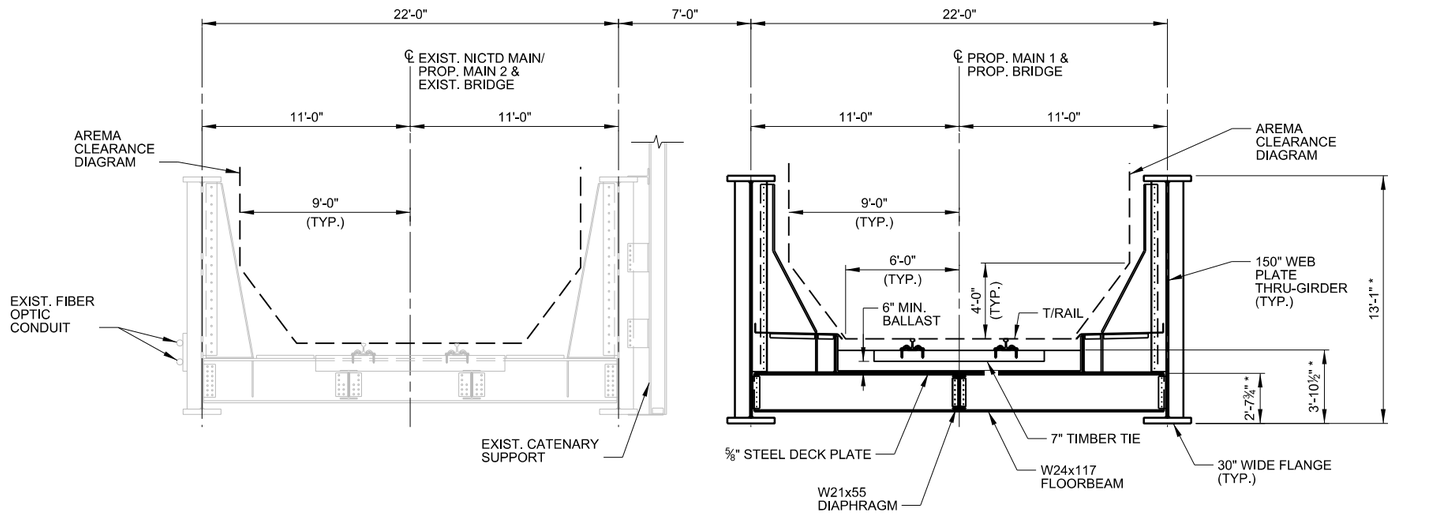
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	AECOM-JCF
DRAWN:	AECOM-EAN
CHECKED:	AECOM-TJH
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 54.732 OVER CSX TRANSPORTATION FOUNDATION LAYOUT PLAN

FILENAME	$FILES$	SHEET OF
SCALE	AS NOTED	



* DIMENSIONS SHOWN FOR 3½" FLANGE.
ADJUST ACCORDINGLY FOR 2½" FLANGE.

TYPICAL SECTION

SCALE: ¼" = 1'-0"

(LOOKING IN THE DIRECTION OF DECREASING STATION)

CONSTRUCTION DEPTH

RAIL AND TIE PLATE	7½"
TIMBER TIE	7"
BALLAST	6"
WATERPROOFING	1 ⅛"
DECK PLATE	⅝"
FLOORBEAM	24 ¼"
CLEARANCE	4"
FLANGE PLATE	3 ½"
	54"

PLOT DATE: $DATE$ $TIME$ $USER$

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

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DRAWING BRG-403 OF BRG-416

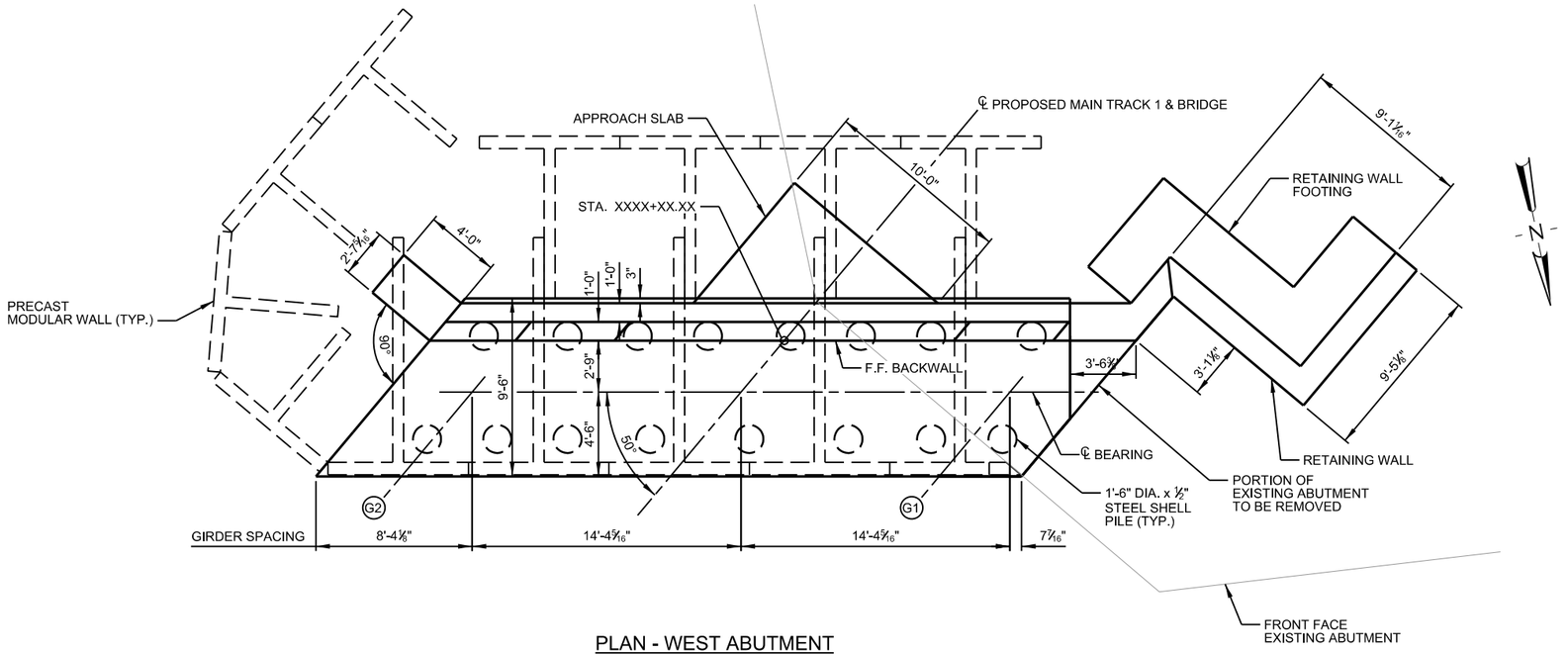
DESIGNED:	AECOM-JCF
DRAWN:	AECOM-EAN
CHECKED:	AECOM-TJH
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 54.732 OVER CSX TRANSPORTATION TYPICAL SECTION

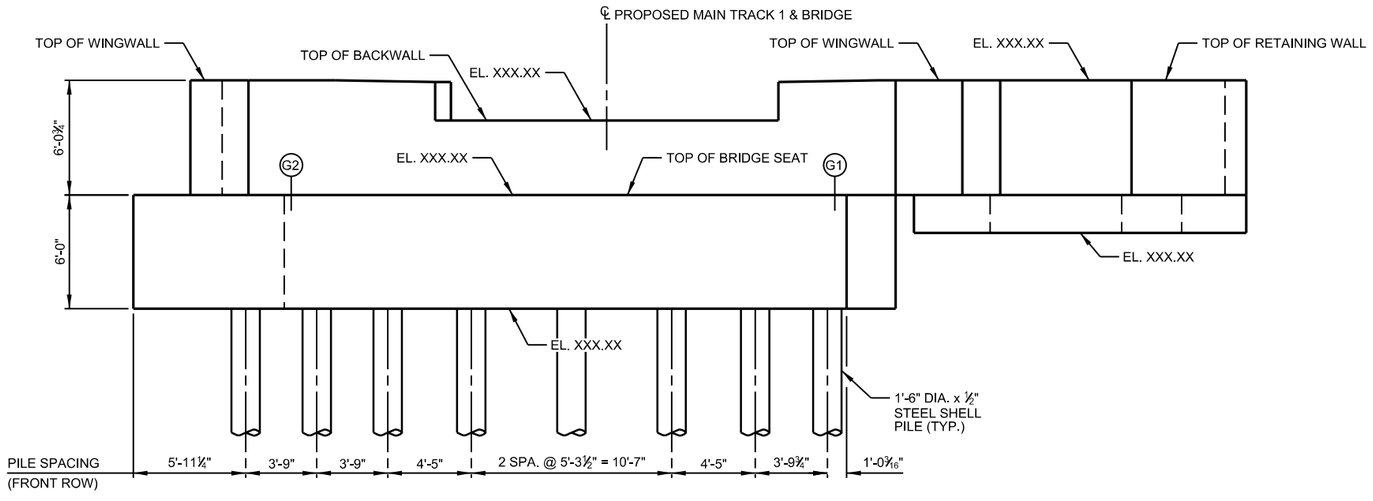
FILENAME	$FILESS
SCALE	AS NOTED

SHEET OF



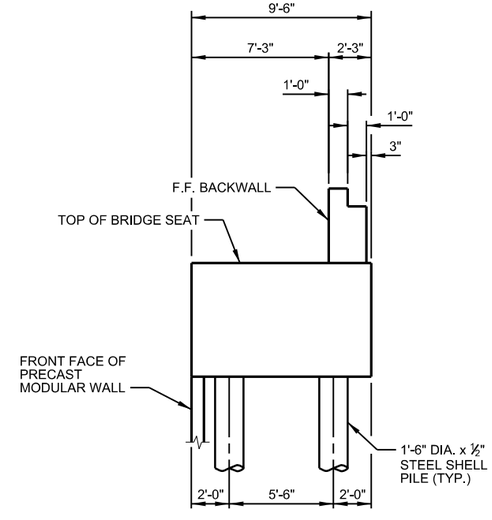
PLAN - WEST ABUTMENT

SCALE: 1/4" = 1'-0"



ELEVATION - WEST ABUTMENT

SCALE: 1/4" = 1'-0"
PRECAST MODULAR WALL NOT SHOWN FOR CLARITY



TYPICAL SECTION

SCALE: 1/4" = 1'-0"

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-404 OF BRG-416

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DOUBLE TRACK N·W·I
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MICHIGAN CITY TO GARY, INDIANA

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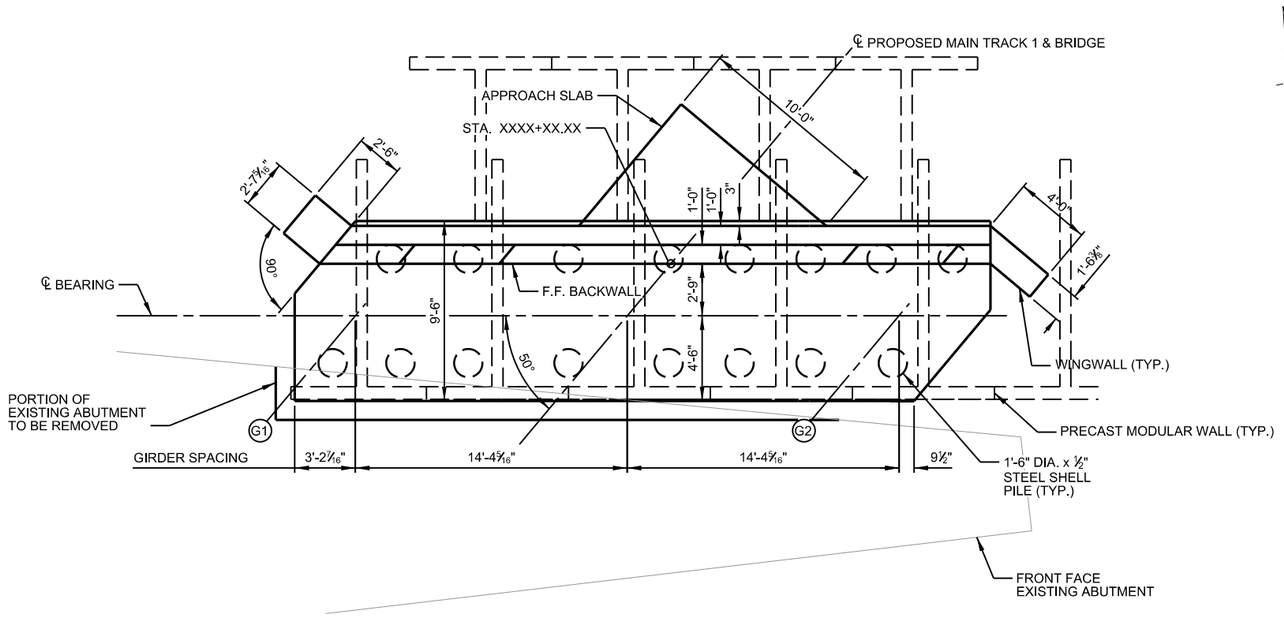
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

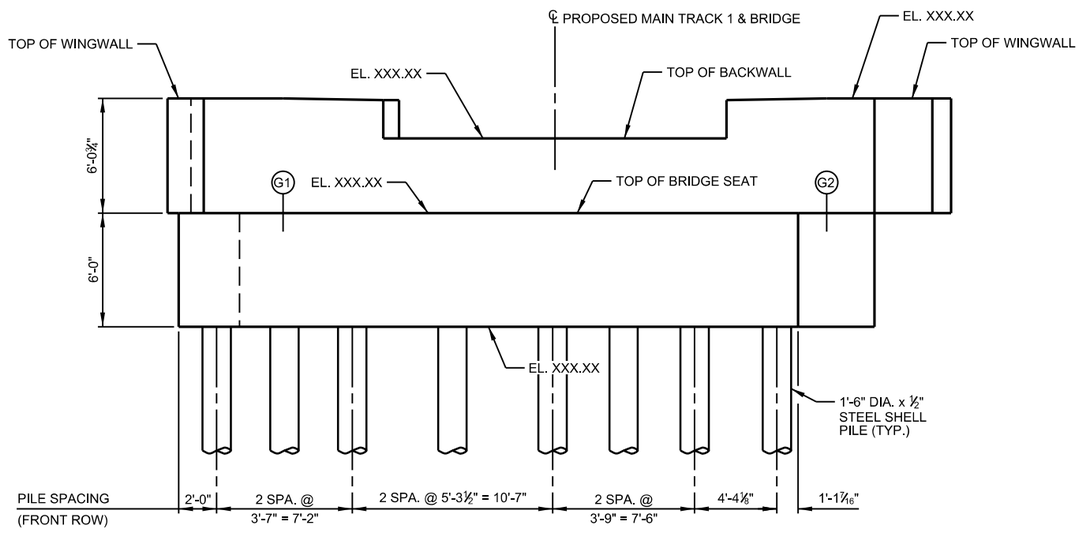
BR. 54.732 OVER CSX TRANSPORTATION WEST ABUTMENT FRAMING DETAILS

FILENAME	$FILESS
SCALE	AS NOTED

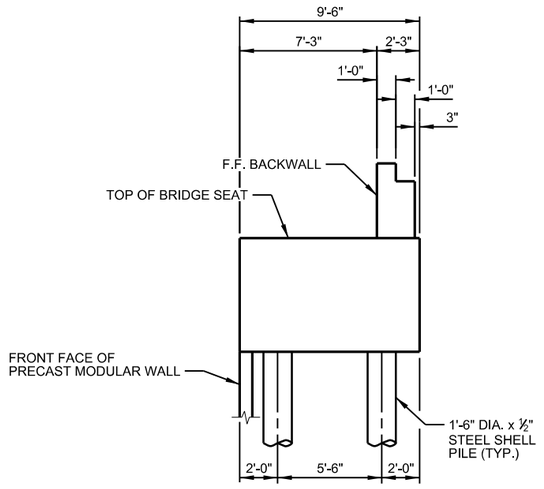
SHEET OF



PLAN - EAST ABUTMENT
SCALE: ¼" = 1'-0"



ELEVATION - EAST ABUTMENT
SCALE: ¼" = 1'-0"
PRECAST MODULAR WALL NOT SHOWN FOR CLARITY



TYPICAL SECTION
SCALE: ¼" = 1'-0"

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-405 OF BRG-416

PLOT DATE: $DATE$ $TIME$ $USER$

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MICHIGAN CITY TO GARY, INDIANA

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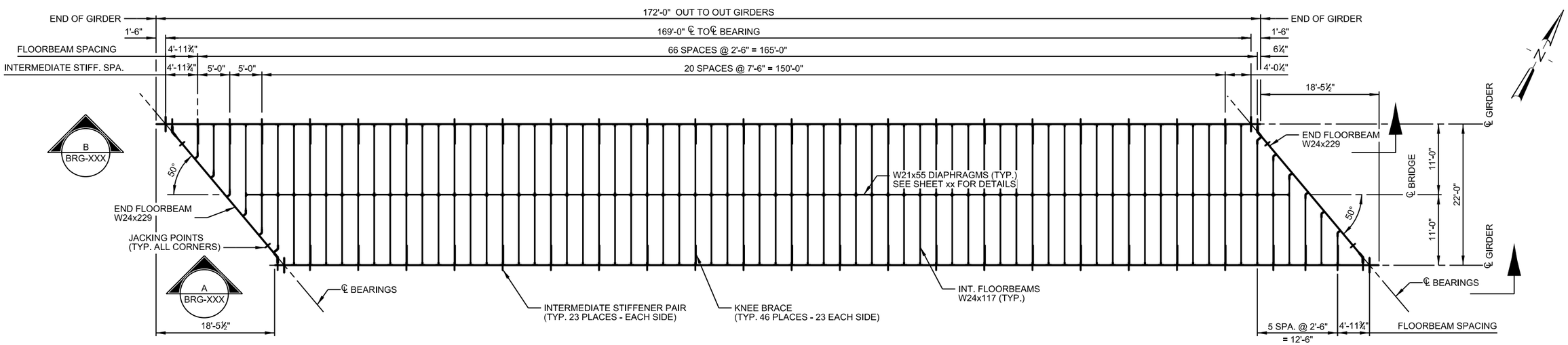
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR. 54.732 OVER CSX TRANSPORTATION EAST ABUTMENT FRAMING DETAILS

FILENAME	$FILESS
SCALE	AS NOTED

SHEET OF



FRAMING PLAN

SCALE: ⅛" = 1'-0"
SEE SHEET XX FOR VIEW A-A
SEE SHEET XX FOR VIEW B-B

STEEL NOTES:

GENERAL:
ALL MATERIALS,FABRICATION, AND ERECTION SHALL BE IN ACCORDANCE WITH CHAPTER 15 OF THE CURRECT AREMA MANUAL FOR RAILWAY ENGINEERING AND SECTION XXXXX OF THE PROJECT TECHNICAL SPECIFICATION.

DEAD LOAD: (ASSUMED)

RAIL	-
BALLAST (INCL. TIE)	-
WATERPROOFING	-
FUTURE BALLAST	-
STEEL	-
TOTAL	-

DESIGN LOADING:
COOPER E80 AND ALTERNATE LIVE LOAD WITH DIESEL IMPACT FOR BALLAST DECK.

MATERIAL:
STRUCTURAL STEEL FABRICATORS SHALL BE CERTIFIED UNDER THE AISC QUALITY CERTIFICATION PROGRAM, "MAJOR STEEL BRIDGES", OR ANOTHER SUITABLE PROGRAM AS DETERMINED BY THE ENGINEER.

ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A709, GRADE 50W, UNLESS NOTED OTHERWISE. ZONE 2 CONDITIONS CONTROL FOR CHARPY V-NOTCH TESTING.

FRACTURE CRITICAL MEMBERS (FCM) SHALL BE CHARPY V-NOTCH (CVN) TESTED, ACCORDING TO AREMA TABLE 15-9-3, ZONE 2, P FREQUENCY IN ACCORDANCE WITH ASTM A673.

FLANGES, FLOOR BEAMS, STIFFENERS, KNEE BRACES, FLOOR PLATE, CONNECTION ANGLES AND DIAPHRAGMS SHALL BE CHARPY V-NOTCH (CVN) TESTED, ACCORDING TO AREMA TABLE 15-9-2, H FREQUENCY IN ACCORDANCE WITH ASTM A673.

FABRICATION NOTE:
FASTENERS SHALL BE ASTM F3125 GRADE A325 SLIP CRITICAL CLASS A HEAVY HEX HIGH STRENGTH BOLTS, TYPE 3. BOLTS 7/8"DIA., OPEN HOLES 15/16"DIA. UNLESS OTHERWISE NOTED. BOLTED CONNECTIONS SHALL USE ASTM A563, GRADE C3, HEAVY HEX NUTS AND ASTM F436 HARDENED WEATHERING STEEL WASHERS FOR HIGH STRENGTH BOLTS UNDER THE TURNED ELEMENT. HIGH STRENGTH BOLTS SHALL BE TIGHTENED BY THE "TURN-OF-NUT"METHOD TO OBTAIN PROPER BOLT TENSION.

BEARING PLATES ARE TO BE FLAT AND LEVEL AFTER WELDING.

ALL WELDING OPERATIONS PROCESSES, EQUIPMENT, MATERIALS, QUALIFICATIONS OF WELDERS, WORKMANSHIP, TESTING AND INSPECTION SHALL BE IN ACCORDANCE WITH THE CURRENT AREMA MANUAL AND CURRENT AWS STRUCTURAL WELDING CODE D1.5. ALL WELD METAL MUST BE EQUIVALENT TO THE BASE METAL IN STRENGTH, CORROSION RESISTANCE AND WEATHERED APPERARANCE. FIELD WELDING OF CONSTRUCTION ACCESSORIES TO THE BEAMS WILL NOT BE PERMITTED. ALL SHOP AND FIELD WELDING SHALL BE EITHER SMAW OR SAW UNLESS APPROVED BY THE ENGINEER.

AFTER FABRICATION OF WEATHERING STEEL STRUCTURE AND WHILE THE STRUCTURE IS WAITING TO BE SHIPPED, THE FABRICATOR SHALL COMPLETELY WET THE STRUCTURE WITH, WATER ONCE DAILY TO START THE WEATHERING PROCESS. THE FABRICATOR SHALL PROVIDE 2 WEEKS OF DAILY WETTING FOLLOWED BY WETTING EVERY FOUR DAYS.

ALL SHOP DRAWINGS SHALL BE CHECKED BY THE FABRICATOR BEFORE SUBMITTING THEM FOR APPROVAL. SUBMISSION SHALL BE MADE TO NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT (NICTD), 33 EAST HIGHWAY 12, CHESTERTON, INDIANA 46304. THESE DRAWINGS MAY BE SUBMITTED BY EMAIL WITH MAXIMUM FILE SIZE OF 10Mb PER EMAIL. THEY CAN ALSO BE TRANSFERRED BY FTP AT FABRICATOR'S DISCRETION. THESE DRAWINGS SHALL BECOME THE PROPERTY OF, AND SHALL BE DELIVERED TO THE RAILWAY CO. UPON COMPLETION OF THE CONTRACT.

DURING THE PREPARATION OF SHOP DRAWINGS, THE FABRICATOR SHALL CHECK ALL GENERAL DIMENSIONS OF THE STEEL WORK AND SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER FOR REVISION AND CORRECTION BEFORE FABRICATION IS BEGUN. NO ALLOWANCE WILL BE MADE TO THE FABRICATOR FOR MATERIAL FABRICATED TO INCORRECT DIMENSIONS NOT SO REPORTED.

ALL EXPOSED SURFACES OF STRUCTURAL STEEL SHALL BE CLEANED PER STEEL STRUCTURES PAINTING COUNCIL SPECIFICATION SSPC-SP6, AND PER SECTION XXXXX OF THE PROJECT TECHNICAL SPECIFICATION.

THE TOP SURFACE OF THE BEAMS SHALL BE ADJUSTED TO FORM A STRAIGHT LINE AT ANY TRANSVERSE SECTION THROUGHOUT THE SPAN. TOLERANCE IS PLUS OR MINUS 1/8".

SPAN SHALL BE FULLY SHOP ASSEMBLED TO ASSURE ACCURATE FIT. DISASSEMBLE AS REQUIRED FOR SHIPPING.

ERECTION NOTES:
A SINGLE GIRDER MAY NOT BE ERECTED DURING HIGH WIND CONDITIONS WITHOUT THE SUPPORT OF THE SECOND GIRDER CONNECTED BY ALL KNEE BRACES AND FLOOR BEAMS.

SPLICE NOTES:
1. NO TWO PARTS OR MEMBERS SHALL BE SPLICED BY SHOP WELDING AT THE SAME LOCATION.
2. WEB SPLICES BY SHOP WELDING SHALL BE LOCATED A MINIMUM OF 36"AWAY FROM ANY FLANGE SPLICE.
3. SPLICES OF THE WEB OR FLANGES SHALL NOT BE PERMITTED WITHIN THE CENTRAL 40'-0"OF THE GIRDER SPAN LENGTH. THIS REQUIREMENT MAY BE WAIVED ONLY BY THE APPROVAL OF THE ENGINEER.

ESTIMATED WEIGHT OF STRUCTURAL STEEL = XXX TONS
ESTIMATED LIFTING WEIGHT OF ONE GIRDER = XXX TONS

TOP OF TIE	TO MASONRY	TO CLEARANCE
TIE	-	-
BALLAST	-	-
WATERPROOFING	-	-
BALLAST PAN	-	-
FLOORBEAM	-	-
FLANGE PLATE	-	-
NUT & BOLT SHANK	-	-
BEARING	-	-
TOTAL	-	-

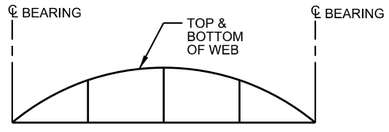
MOMENT & SHEAR TABLE FOR STEEL THRU PLATE GIRDER

DESCRIPTION	MOMENT	SHEAR
DEAD LOAD	-	-
LIVE LOAD	-	-
IMPACT	-	-
TOTAL	-	-
SECTION	-	
NET I	-	
NET S (BOTT)	-	
fsc (TOP)	-	
GROSS I	-	
GROSS S (TOP)	-	
fsc (TOP)	-	

I - MOMENT OF INERTIA SECTION

S - SECTION MODULUS

fs - MAX. UNFACTORED STRESS IN THE SECTION DUE TO D.L. + L.L. + IMPACT.



CAMBER CALCULATED FOR DEAD LOAD ONLY.

CAMBER DIAGRAM

MOMENT & SHEAR TABLE FOR STEEL FLOORBEAMS

DESCRIPTION	MOMENT	SHEAR	MOMENT *	MOMENT *
DEAD LOAD	-	-	-	-
LIVE LOAD	-	-	-	-
IMPACT	-	-	-	-
TOTAL	-	-	-	-
SECTION	-		-	
NET I	-		-	
NET S (BOTT)	-		-	
fsc (TOP)	-		-	
GROSS I	-		-	
GROSS S (TOP)	-		-	
fsc (TOP)	-		-	

* JACKING CONDITIONS CONTROL
50% ALLOWABLE STRESS INCREASE IS PERMITTED

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-406 OF BRG-416

$USERS
$TIMES
PLOT DATE: $DATES

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Chesterton, Indiana 46304

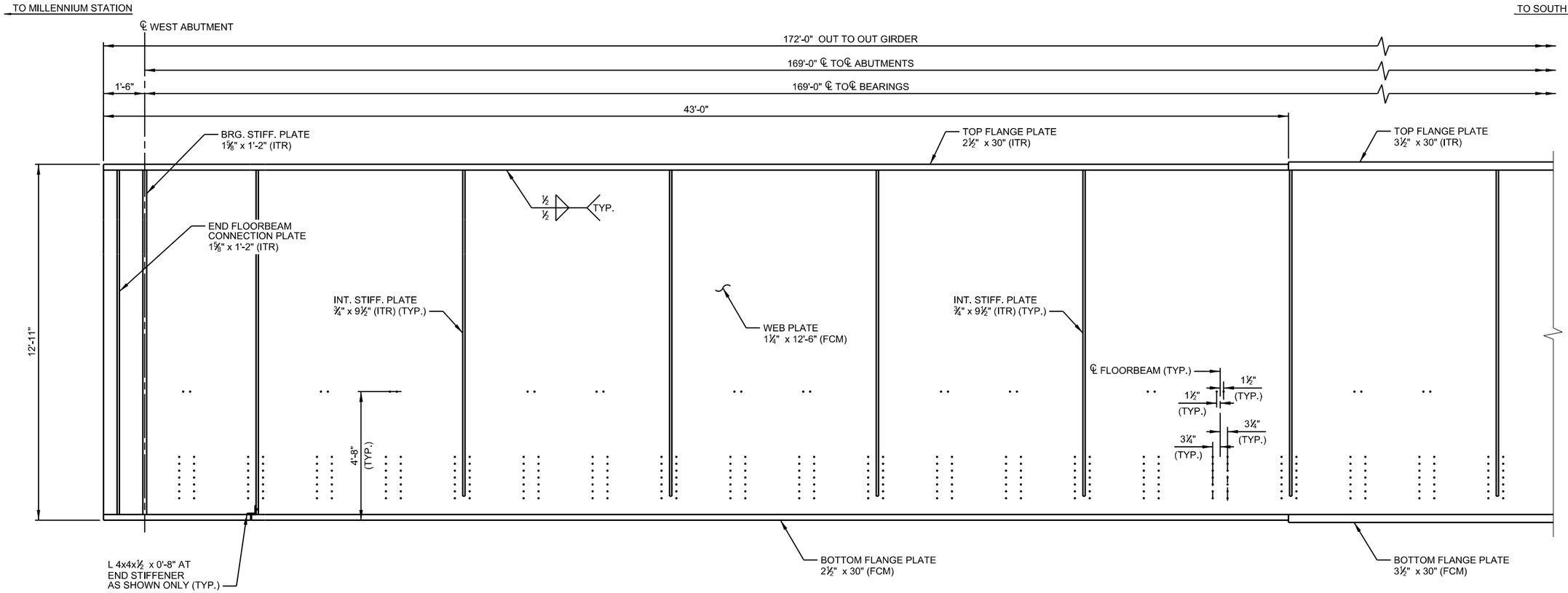
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	AECOM-JCF
DRAWN:	AECOM-EAN
CHECKED:	AECOM-TJH
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR. 54.732 OVER CSX TRANSPORTATION FRAMING PLAN

FILENAME	$FILESS
SCALE	AS NOTED
SHEET	OF



VIEW A-A - OUTSIDE GIRDER ELEVATION
SCALE: ½" = 1'-0"

NOTES:

1. FCM - FRACTURE CRITICAL MEMBER
2. ITR - IMPACT TEST REQUIRED

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-407 OF BRG-416

PLOT DATE: $DATE$ $TIME$ $USER$

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MICHIGAN CITY TO GARY, INDIANA

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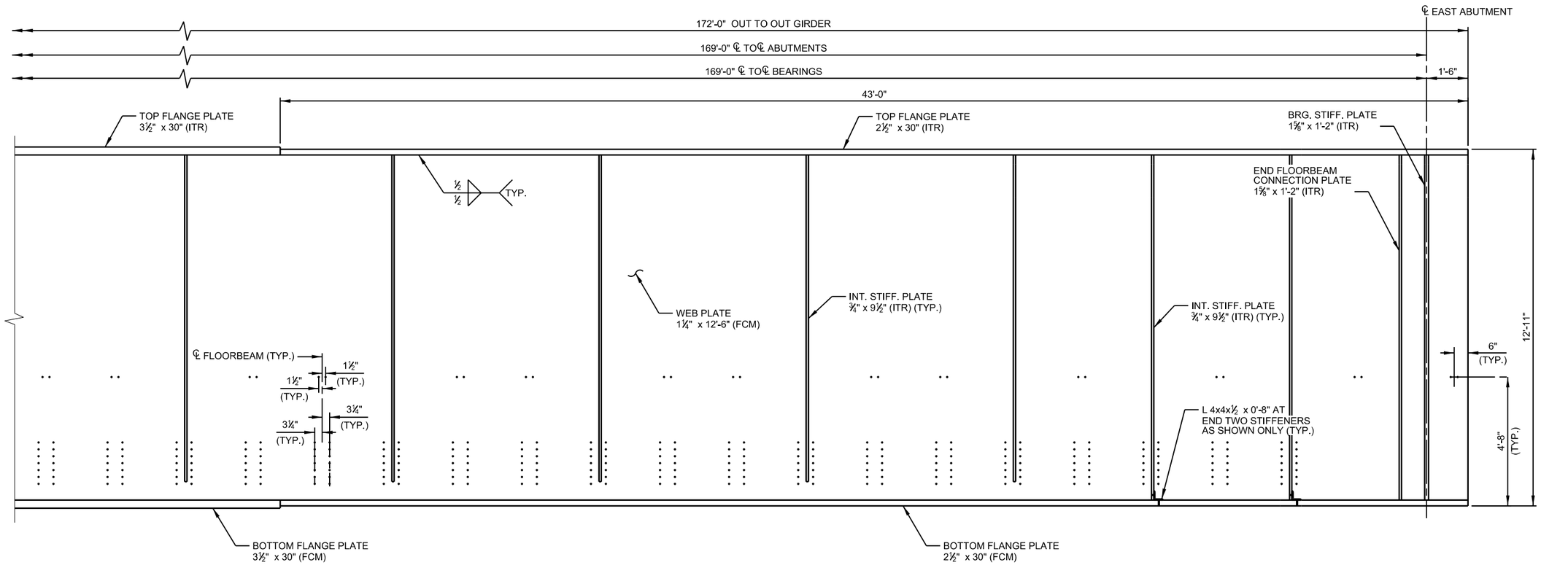
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR. 54.732 OVER CSX TRANSPORTATION OUTSIDE ELEV. OF GIRDER (1 OF 2)

FILENAME	$FILES$
SCALE	AS NOTED

SHEET OF



VIEW A-A - OUTSIDE GIRDER ELEVATION

SCALE: ½" = 1'-0"

NOTES:

1. FCM - FRACTURE CRITICAL MEMBER
2. ITR - IMPACT TEST REQUIRED

PLOT DATE: $DATE$ $TIME$ $USER$

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DOUBLE TRACK N·W·I
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MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	AECOM-JCF
DRAWN:	AECOM-EAN
CHECKED:	AECOM-TJH
DATE:	03/16/2020

60% DESIGN - NOT FOR CONSTRUCTION

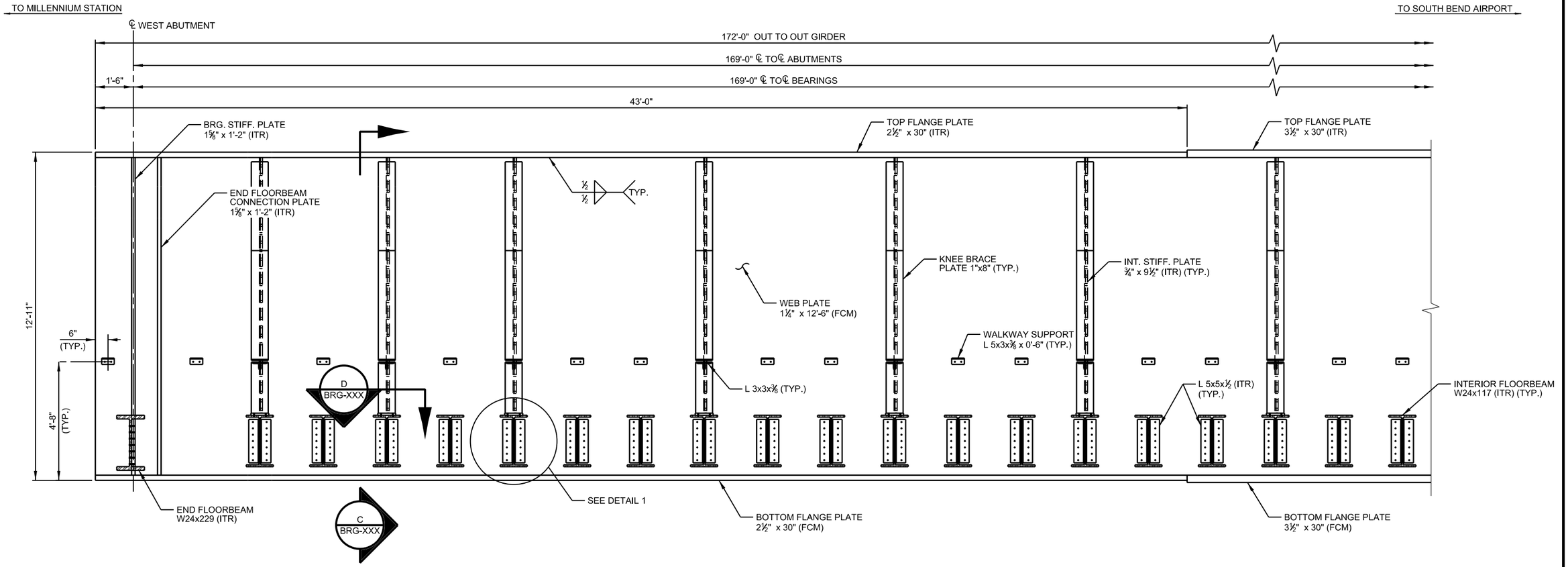
DRAWING BRG-408 OF BRG-416

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR. 54.732 OVER CSX TRANSPORTATION OUTSIDE ELEV. OF GIRDER (2 OF 2)

FILENAME	$FILES$
SCALE	AS NOTED

SHEET OF



VIEW B-B - INSIDE GIRDER ELEVATION

SCALE: ½" = 1'-0"
SEE SHEET xx FOR SECTION C-C.
SEE SHEET xx FOR SECTION D-D AND DETAIL 1.

NOTES:

1. FCM - FRACTURE CRITICAL MEMBER
2. ITR - IMPACT TEST REQUIRED

PLOT DATE: $DATE$ $TIME$ $USER$

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DRAWING BRG-409 OF BRG-416

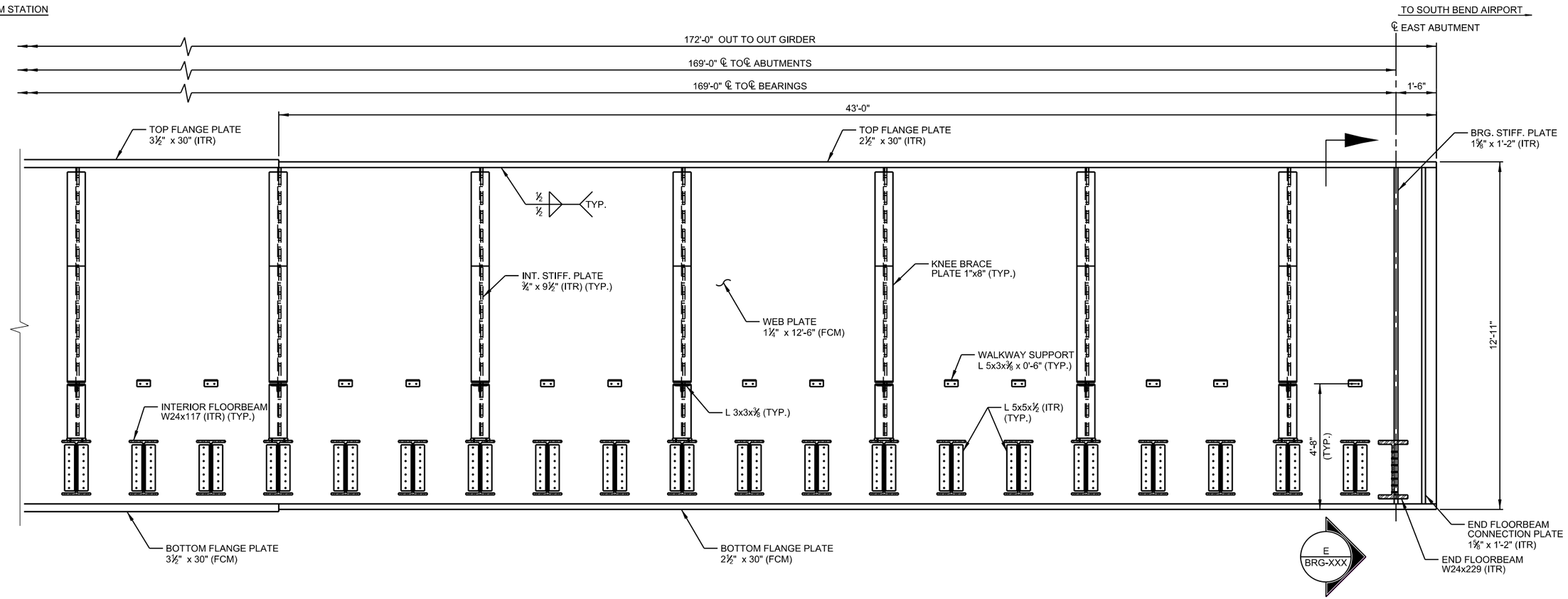
DESIGNED:	AECOM-JCF
DRAWN:	AECOM-EAN
CHECKED:	AECOM-TJH
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR. 54.732 OVER CSX TRANSPORTATION INSIDE ELEV. OF GIRDER (1 OF 2)

FILENAME	$FILES$
SCALE	AS NOTED

SHEET OF



VIEW B-B - INSIDE GIRDER ELEVATION

SCALE: ½" = 1'-0"
SEE SHEET xx FOR SECTION E-E.

NOTES:

1. FCM - FRACTURE CRITICAL MEMBER
2. ITR - IMPACT TEST REQUIRED

PLOT DATE: $DATE$ $TIME$ $USER$

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MICHIGAN CITY TO GARY, INDIANA

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-410 OF BRG-416

DESIGNED:	AECOM-JCF
DRAWN:	AECOM-EAN
CHECKED:	AECOM-TJH
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

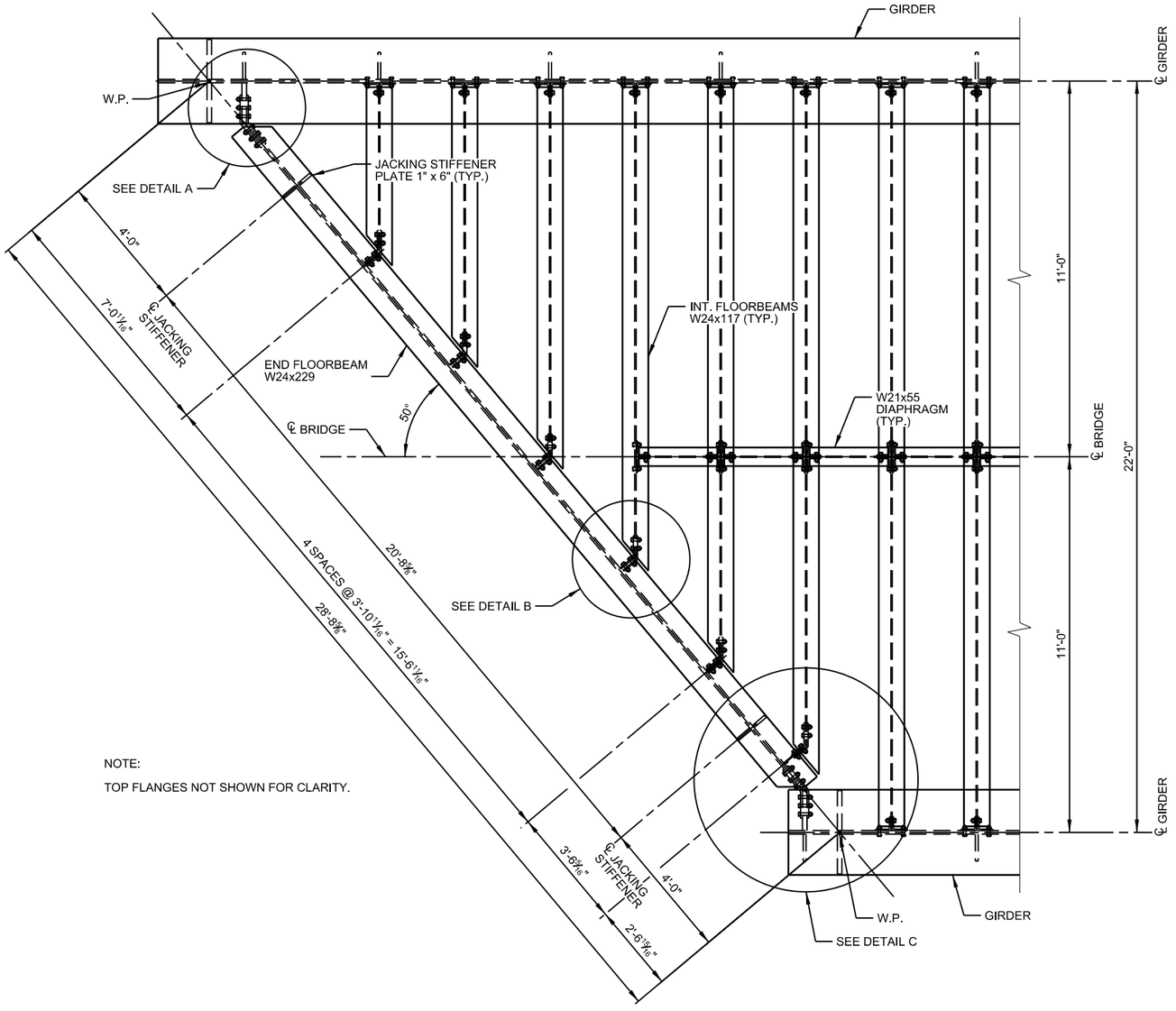
BR. 54.732 OVER CSX TRANSPORTATION INSIDE ELEV. OF GIRDER (2 OF 2)

FILENAME	$FILES$
SCALE	AS NOTED

SHEET OF

TO MILLENNIUM STATION

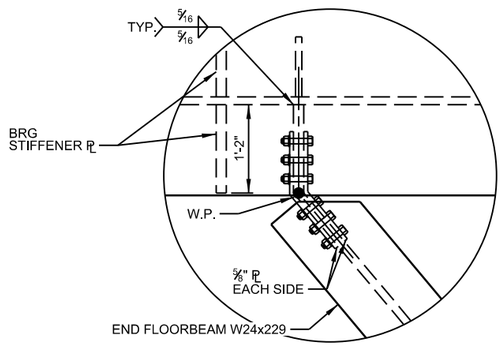
TO SOUTH BEND AIRPORT



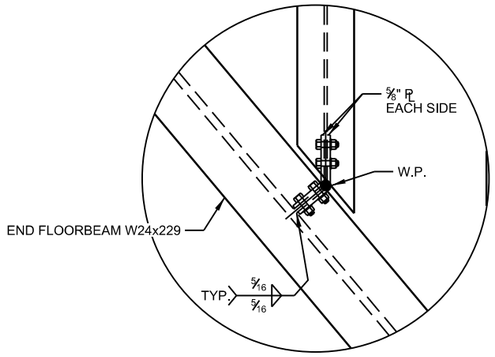
NOTE:

TOP FLANGES NOT SHOWN FOR CLARITY.

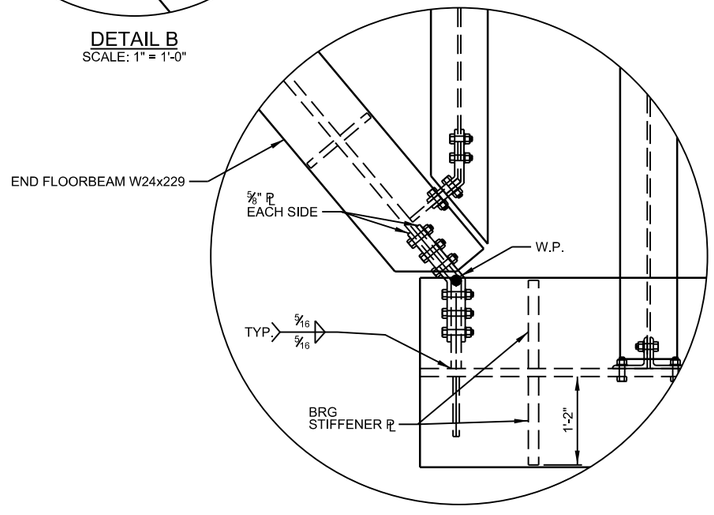
END FLOORBEAM PLAN
SCALE: ½" = 1'-0"



DETAIL A
SCALE: 1" = 1'-0"



DETAIL B
SCALE: 1" = 1'-0"



DETAIL C
SCALE: 1" = 1'-0"

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-411 OF BRG-416

PLOT DATE: $DATES $TIMES $USERS

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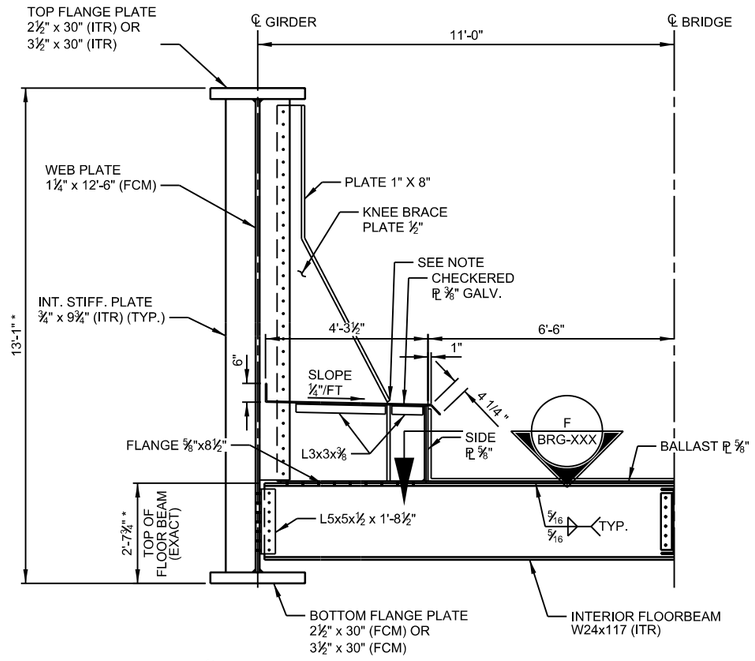
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	AECOM-JCF
DRAWN:	AECOM-EAN
CHECKED:	AECOM-TJH
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

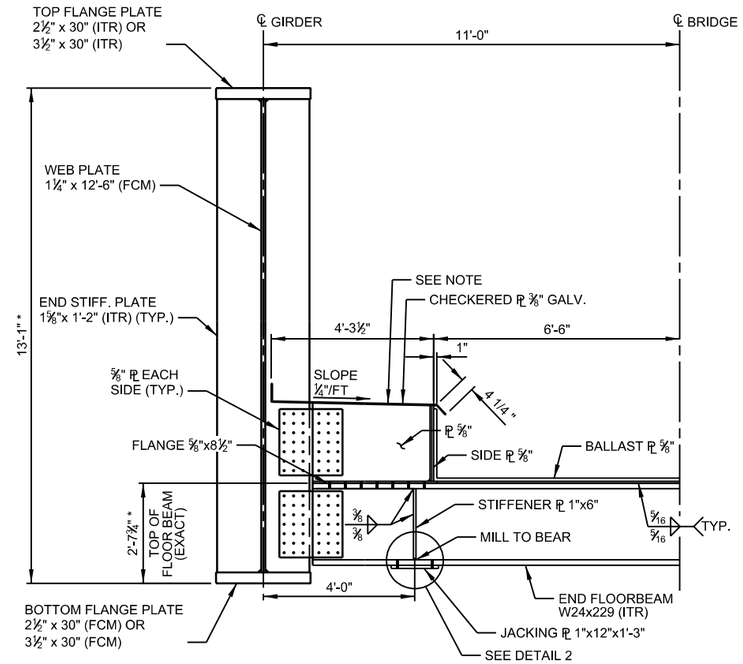
BR. 54.732 OVER CSX TRANSPORTION END FLOORBEAM PLAN

FILENAME	$FILESS	SHEET	OF
SCALE	AS NOTED		



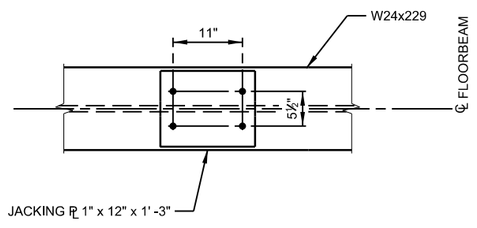
* DIMENSION SHOWN FOR 3½" FLANGE.
ADJUST ACCORDINGLY FOR 2½" FLANGE.

SECTION C-C
SCALE: ½" = 1'-0"

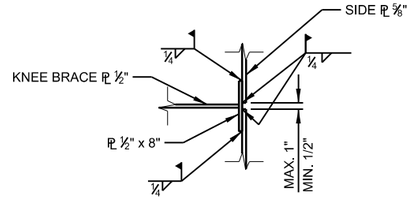


* DIMENSION SHOWN FOR 3½" FLANGE.
ADJUST ACCORDINGLY FOR 2½" FLANGE.

SECTION E-E
SCALE: ½" = 1'-0"



DETAIL 2
SCALE: 1" = 1'-0"
LOOKING AT UNDERSIDE OF FLOORBEAM.
BOLT HEADS TO BE DOWN.



DETAIL F-F
SCALE: 1" = 1'-0"

NOTES:

1. NOTCH CHECKERED PLATE TO FIT AROUND BRACKET PLATE AND STIFFENER PLATE.
2. FOR LOCATION AND WELDING OF ANGLES 3x3x⅜ ON KNEE BRACES, SEE SECTION X-X AND X-X ON SHEET XX OF XX.
3. END FLOORBEAM AND JACKING PLATE CONNECTIONS DESIGNED FOR DEAD LOAD ONLY. LIVE LOAD NOT PERMITTED DURING JACKING.

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-412 OF BRG-416

PLOT DATE: $DATES $TIMES $USERS

AECOM
303 E. Wacker Drive, Suite 1400
Chicago, IL 60601
TEL: (312) 373-7700
www.aecom.com

ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	AECOM-JCF
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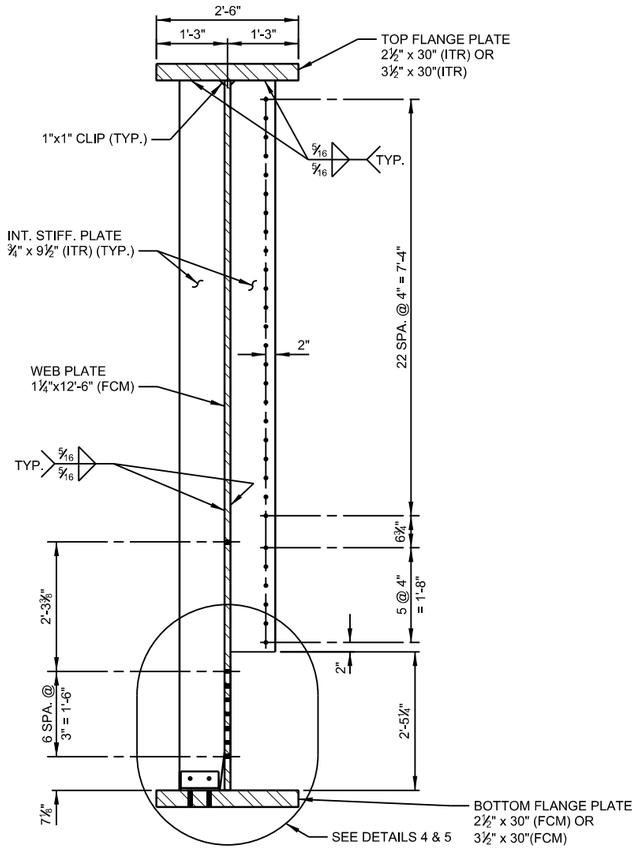
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR. 54.732 OVER CSX TRANSPORTATION SECTIONS AND DETAILS

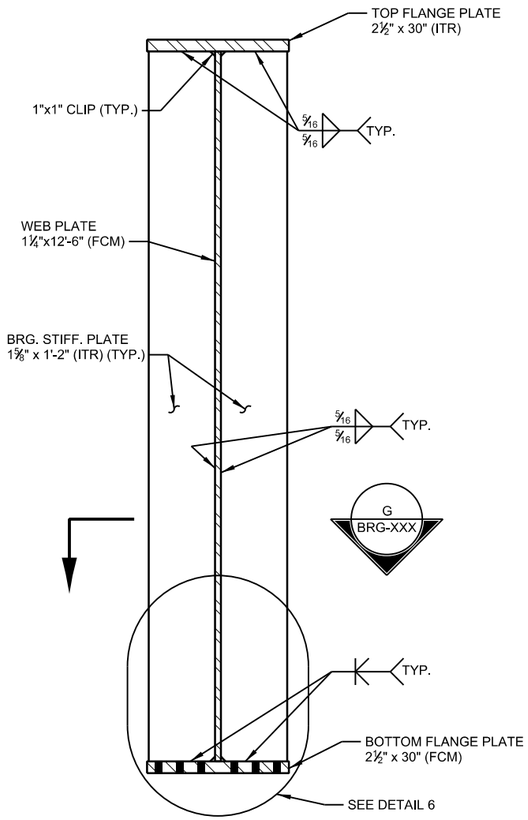
FILENAME	$FILESS
SCALE	AS NOTED

SHEET OF



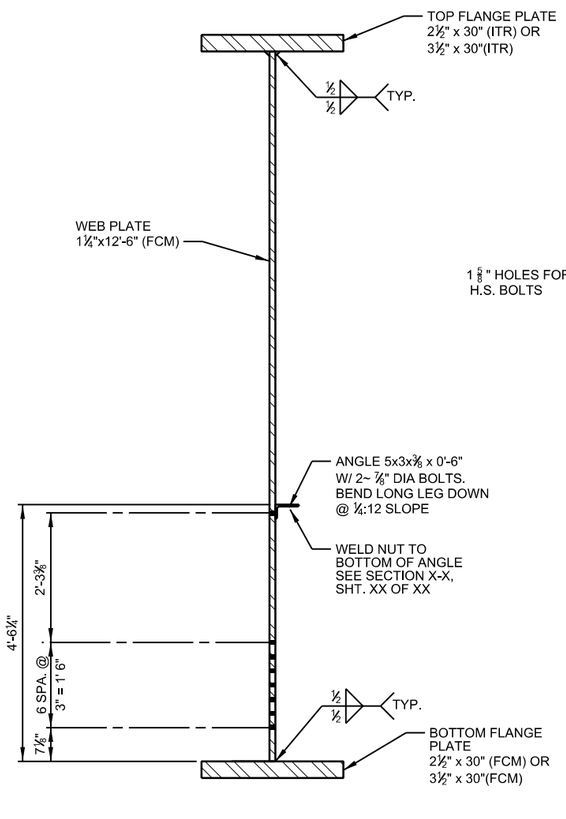
TYPICAL SECTION AT INT. STIFFENER AND KNEE BRACE

(KNEE BRACE OMITTED FOR CLARITY)



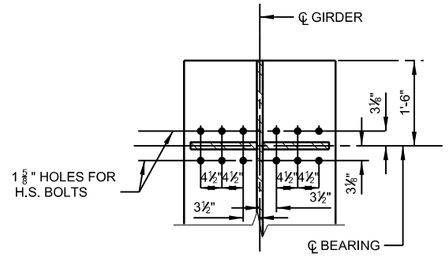
TYPICAL SECTION AT BEARING STIFFENER

(KNEE BRACE OMITTED FOR CLARITY)



TYPICAL SECTION AT CHECKERED PLATE SUPPORT

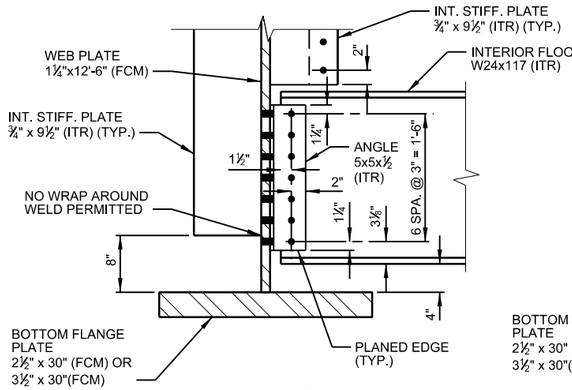
(KNEE BRACE OMITTED FOR CLARITY)



DETAIL G-G

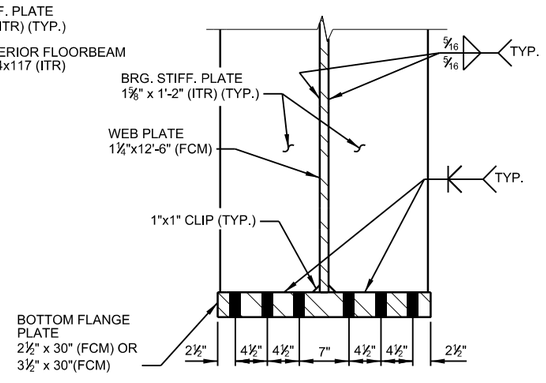
DETAIL 4

TYPICAL FOR STIFFENER WITHIN 12'-6" OF GIRDER ENDS
(KNEE BRACE OMITTED FOR CLARITY)



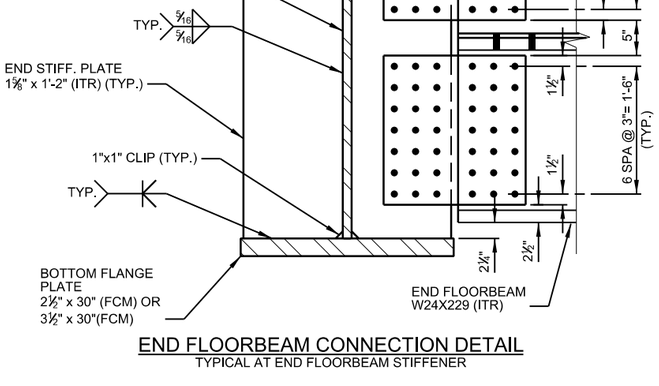
DETAIL 5

TYPICAL FOR INTERIOR STIFFENER UNLESS NOTED OTHERWISE
(KNEE BRACE OMITTED FOR CLARITY)



DETAIL 6

TYPICAL AT BEARING STIFFENER
(KNEE BRACE OMITTED FOR CLARITY)



END FLOORBEAM CONNECTION DETAIL

TYPICAL AT END FLOORBEAM STIFFENER

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DRAWING BRG-413 OF BRG-416

PLOT DATE: $DATE$ | $TIME$ | $USER$

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Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

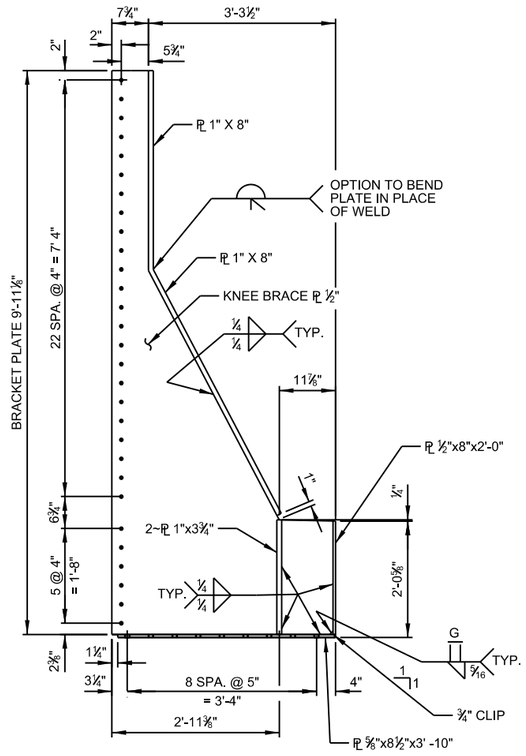
DESIGNED:	AECOM-JCF
DRAWN:	AECOM-EAN
CHECKED:	AECOM-TJH
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

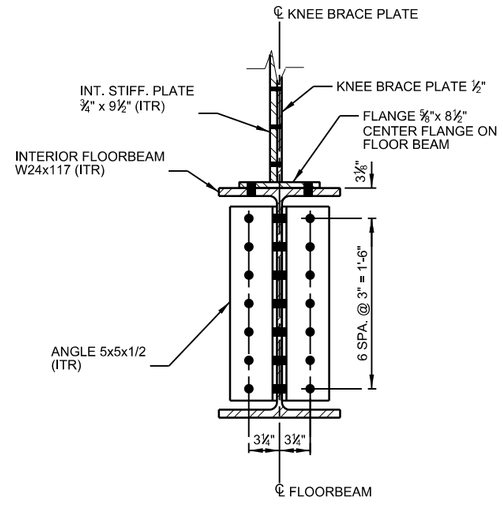
BR. 54.732 OVER CSX TRANSPORTATION GIRDER SECTIONS

FILENAME	$FILES$
SCALE	AS NOTED

SHEET OF

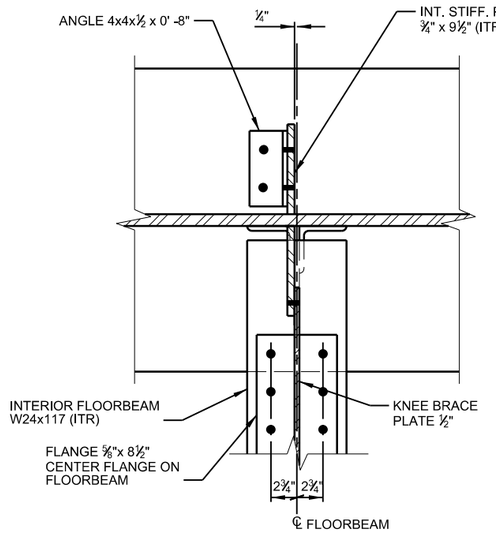


KNEE BRACE @ INTERMEDIATE STIFFENER



DETAIL 1

KNEE BRACE AT INTERMEDIATE STIFFENER SHOWN.



SECTION E-E

KNEE BRACE AT INTERMEDIATE STIFFENER SHOWN.

PLOT DATE: $DATE$ $TIME$ $USER$

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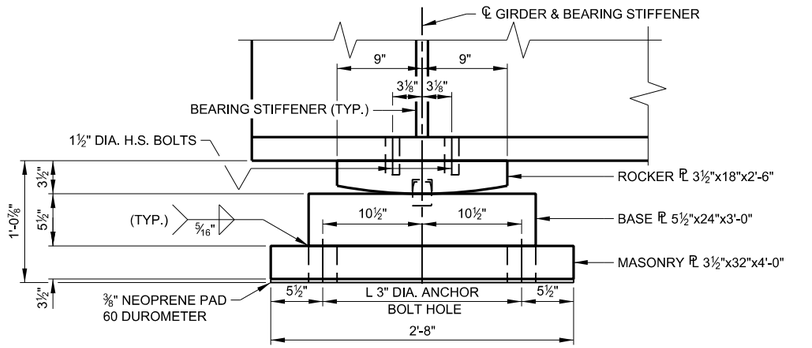
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

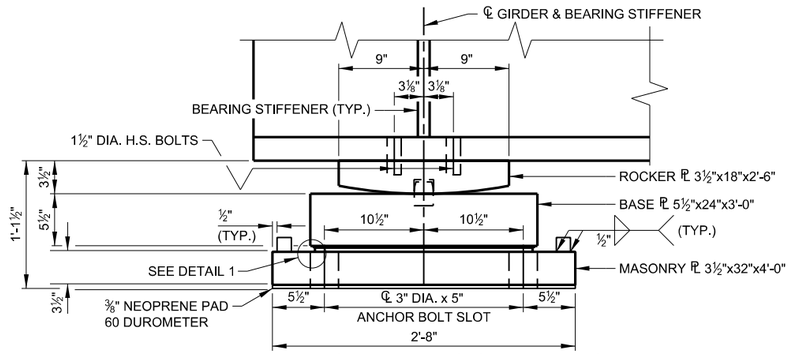
BR. 54.732 OVER CSX TRANSPORTATION KNEE BRACE SECTIONS

FILENAME	$FILESS
SCALE	AS NOTED

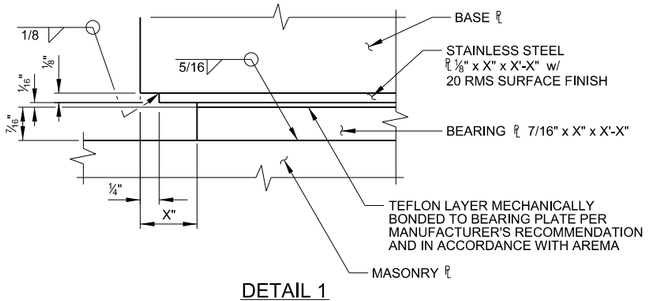
SHEET OF



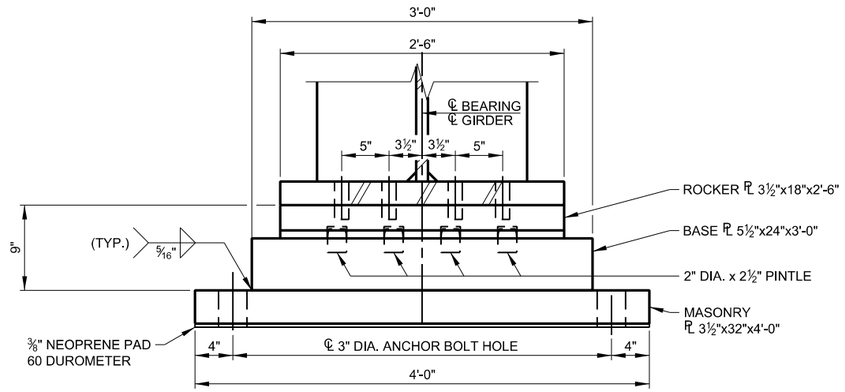
ELEVATION - FIXED BEARING



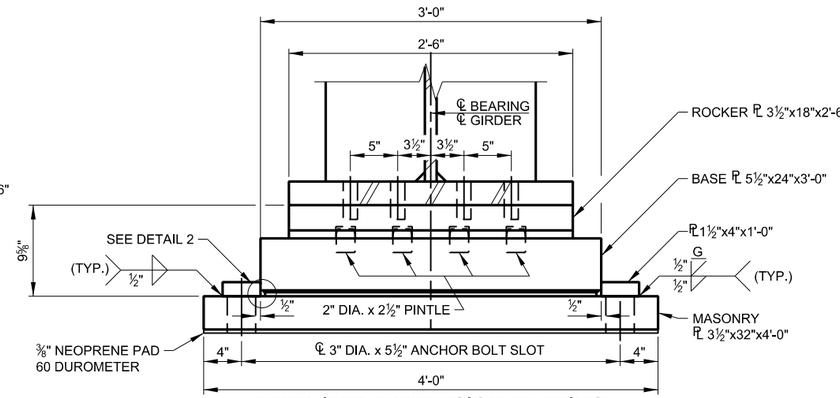
ELEVATION - EXPANSION BEARING



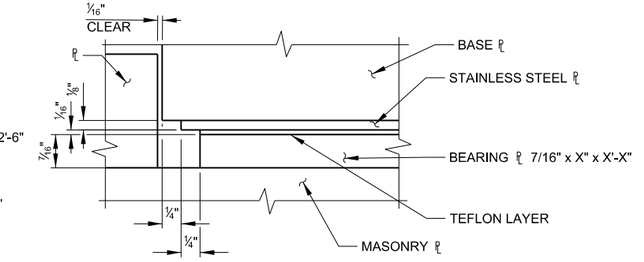
DETAIL 1



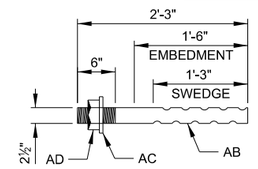
END VIEW - FIXED BEARING



END VIEW - EXPANSION BEARING

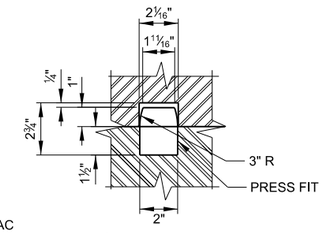


DETAIL 2

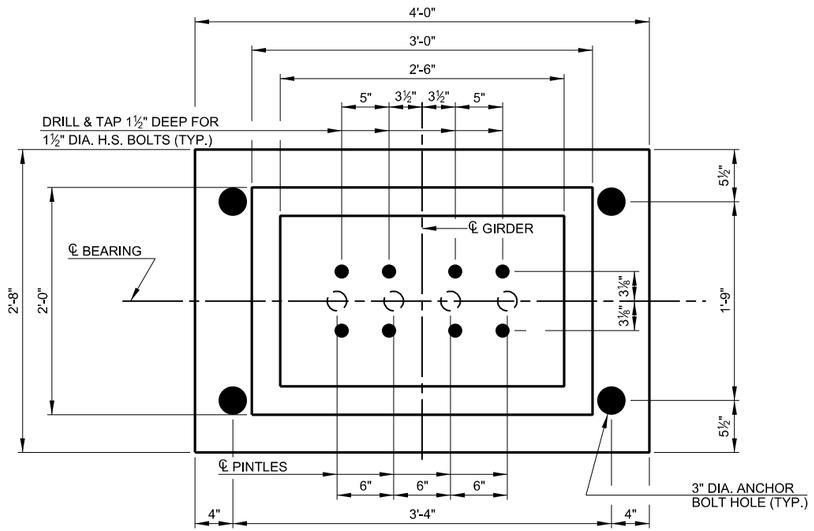


ANCHOR BOLT ~AB100.1B

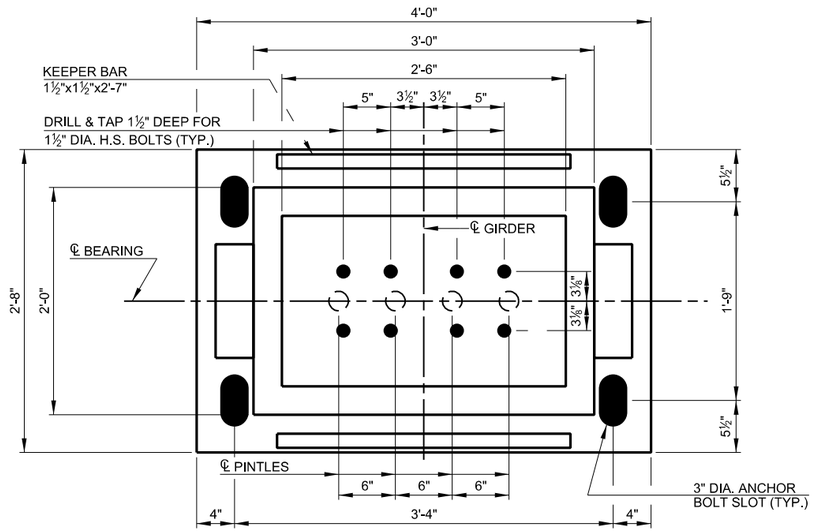
1 ~ BAR 2-1/4" DIA. X 2'-3" ~ AB
1 ~ BAR 4" DIA. X 1/4" W/ 2-5/8" DIA. HOLE AT CENTER ~ AC
1 ~ HEAVY HEX NUT ~ AD
WEIGHT = 43 LBS.
GALVANIZE AFTER FABRICATION
(16 REQUIRED)



PINTLE DETAL



PLAN VIEW - FIXED BEARING
(2 REQUIRED)



PLAN VIEW - EXPANSION BEARING
(2 REQUIRED)

NOTES:

1. STEEL USED FOR BEARING ASSEMBLIES SHALL CONFORM TO ASTM A709 GR50W, UNLESS NOTED OTHERWISE. ANCHOR BOLTS SHALL CONFORM TO ASTM F1554 GR 105.

2. STAINLESS STEEL SHALL CONFORM TO ASTM A480.

3. BEARING ASSEMBLY WELDMENTS SHALL BE STRESSED RELIEVED BY HEAT TREATING PRIOR TO FINISH MACHINING, PER CURRENT AWS STRUCTURAL WELDING CODES.

4. TEFLON LAYER SHALL BE COMPOSED OF VIRGIN UNFILLED TFE RESIN, UNFILLED TFE SHEETS OR UNFILLED TFE FABRIC. FILLER MATERIAL, SUCH AS MILLED GLASS FIBERS WILL NOT BE ALLOWED. TEFLON LAYER SHALL CONFORM TO THE REQUIREMENTS OF AREMA CHAPTER 15.

5. ALL SURFACES IN THE MOVING CONTACT SHALL BE FINISHED 125

6. ALL DIMENSIONS SHOWN ARE FINAL DIMENSIONS AFTER MACHINING.

7. BEARINGS TO BE SHOP FITTED TO GIRDERS, MATCH MARKED AND ASSEMBLED IN UNITS FOR SHIPPING.

8. ANCHOR BOLTS, NUTS AND PLATE WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM B695, CLASS 50.

9. ANCHOR BOLT NUTS SHALL BE A563 GR DH HEAVY HEX & WASHERS SHALL BE F436 TYPE 1.

10. BOLT REMOVAL AND REPLACEMENTS TO GAIN ACCESS TO PROPERLY TIGHTEN BEARING BOLTS IS INCIDENTAL TO STEEL ERECTION.

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING BRG-415 OF BRG-416

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33 East Highway 12
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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

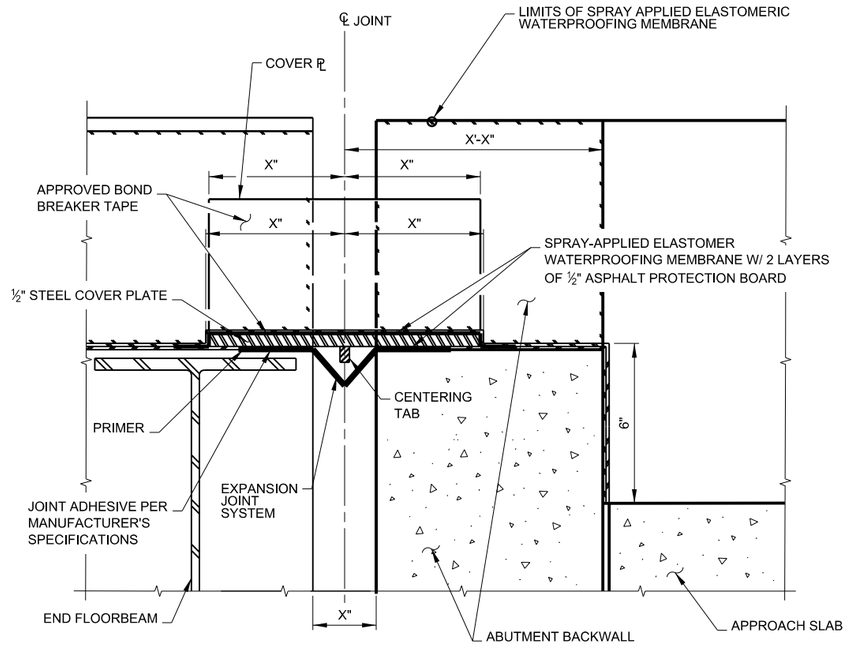
DESIGNED:	AECOM-JCF
DRAWN:	AECOM-DNJ
CHECKED:	AECOM-TJH
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR 54.732 OVER CSX TRANSPORTATION TPG BEARING DETAILS

FILENAME	DT_CAD_60BRG-415.dgn
SCALE	AS NOTED
SHEET	OF

PLOT DATE: 3/13/2020 3:47:21 PM eric.a.newman

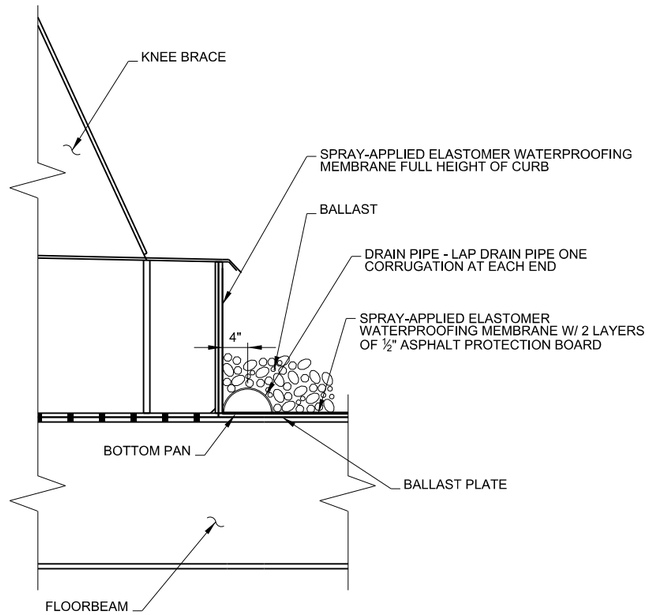


NOTE:

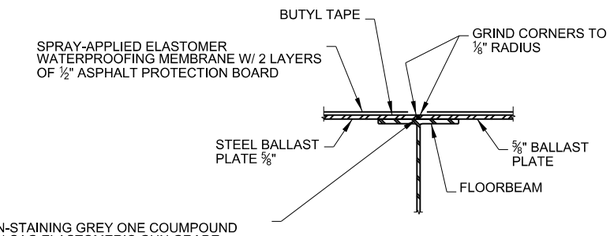
1. BRIDGE DECK MEMBRANE CONTINUOUS THRU JOINT
2. TYPICAL JOINT DETAIL SHOWN FOR INFORMATION ONLY. WATERPROOFING INSTALLER SHALL DETERMINE FINAL DETAILS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

SECTION A-A

(AT RT. ℄'S TO BK. OF ABUT.)



SECTION B-B



NON-STAINING GREY ONE COUMPOUND NON-SAG ELASTOMERIC GUN GRADE POLYURETHANE SEALANT MEETING THE REQUIREMENTS OF ASTM C-920, TYPE S, GRADE NS, GLASS 25. COST INCLUDED WITH MEMBRANE WATERPROOFING (SPECIAL).

SECTION C-C

WATERPROOFING SYSTEM:

WATERPROOFING SYSTEM SHALL BE 120 MIL ACRYLIC-BASED, COLD SPRAY APPLIED, SEAMLESS ELASTOMERIC WATERPROOFING MEMBRANE. SUPPLIERS MAY BE STIRLING-LLOYD, 420 SACKETT ROAD, NORTH HAVEN, CONNECTICUT 0673, (203) 230-9448, OR BRIDGE PRESERVATION, LLC, KANSAS CITY, MO 64171, (816) 561-9996, OR APPROVED EQUAL. SPRAY APPLIED WATERPROOFING SYSTEMS SHALL HAVE TWO ½" THICK LAYERS OF ASPHALT PROTECTION BOARDS PLACED ON THE DECK SURFACE ONLY TO THE LIMITS INDICATED.

PRIOR TO APPLYING WATERPROOFING SYSTEM, ALL VOIDS, GAPS, AND RECESSES IN THE STEEL BALLAST PLATE DECK SHALL BE FILLED IN WITH METASET 300, OR APPROVED EQUAL, BY STIRLING-LLOYD PER THE MANUFACTURER'S RECOMMENDATIONS.

GALVANIZED SHEETING, SHEET MEMBRANE, DEBONDED REGION, AND OTHER JOINT DETAILS SHALL EXTEND UP THE CURB FACE 1'-11" MIN. ON EACH SIDE.

WATERPROOFING SYSTEM SHALL BE APPLIED TO BALLAST PLATE DECK AND INSIDE FACE OF CURBS TO THE LIMITS SHOWN. CONTRACTOR SHALL SUBMIT DETAILED APPLICATION PROCEDURES, MATERIAL SPECIFICATIONS AND SHOP DRAWINGS FOR THE WATERPROOFING SYSTEM INCLUDING FIELD INSTALLED JOINT SYSTEMS, TO NICTD FOR APPROVAL PRIOR TO INSTALLATION.

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DRAWING BRG-416 OF BRG-416

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NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

BR. 54.732 OVER CSX TRANSPORTATION BRIDGE DECK WATERPROOFING

FILENAME	DT_CAD_60BRG-416.dgn
SCALE	AS NOTED

SHEET OF

PATRICK ENGINEERING INC.

BORING NUMBER **MP36.20** SHEET **1** OF **2**
CLIENT **Northern Indiana Commuter Transportation District**
PROJECT & NO. **Rail Improvements 21677.111**
LOCATION **N41°41'47.0"; W86°56'6.7"**

LOGGED BY **SAS**
GROUND ELEVATION **613.0**

ELEVATION	DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY(IN)	BLOW COUNTS	Water Content PL 10 20 30 40 LL 50 / Unconfined Compressive Strength (TSF) 1 2 3 4 5	NOTES & TEST RESULTS
613.0	0.0		Black silty topsoil, trace gravel OL				
611.8	1.2		Brown and gray fine to medium sand, little silt, loose, moist SP	SS-1 1.0-2.5 15"R	3 2 2		
			Light brown, trace silt, trace coarse sand	SS-2 3.5-5.0 10"R	2 2 2		
				SS-3 6.0-7.5 16"R	4 5 5		
			Medium dense	SS-4 8.5-10.0 18"R	4 6 6		
602.7	10.3	▽					
			Saturated	SS-5 11.0-12.5 18"R	5 6 4		
			Gray, loose	SS-6 13.5-15.0 18"R	6 3 5		
594.2	18.8		Gray silty clay, trace fine sand, stiff, low plasticity, moist CL	SS-7 18.5-20.0 18"R	7 6 6	✳	qu=1.75*tsf

DRILLING CONTRACTOR **K&S Engineers**
DRILLING METHOD **3.25" I.D. HSA**
DRILLING EQUIPMENT **D-50**
DRILLING STARTED **10/11/16** ENDED **10/11/16**

REMARKS
Boring backfilled with soil cuttings upon completion.

WATER LEVEL (ft.)
▽ **10.3**
▼
▼

PATRICK ENGINEERING INC.

BORING NUMBER **MP36.20** SHEET **2** OF **2**
CLIENT **Northern Indiana Commuter Transportation District**
PROJECT & NO. **Rail Improvements 21677.111**
LOCATION **N41°41'47.0"; W86°56'6.7"**

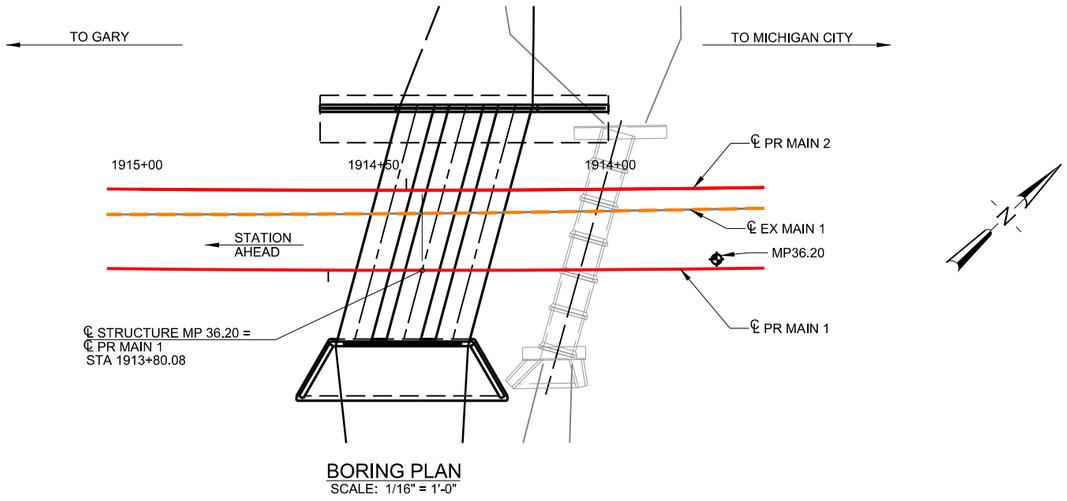
LOGGED BY **SAS**
GROUND ELEVATION **613.0**

ELEVATION	DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY(IN)	BLOW COUNTS	Water Content PL 10 20 30 40 LL 50 / Unconfined Compressive Strength (TSF) 1 2 3 4 5	NOTES & TEST RESULTS
593.0	20.0						
591.2	21.8		Gray silty sand, occasional small seams of clay, medium dense, saturated SM				Water added to counter heaving sand
				SS-8 23.5-25.0 16"R	3 6 7		
			6" seam of silt at 29.1'	SS-9 28.5-30.0 18"R	6 7 14		0% gravel 5% sand 68% silt 27% clay
579.2	33.8		Gray silty clay, trace fine to coarse sand, stiff, medium plasticity, moist CL	SS-10 33.5-35.0 11"R	4 6 7	✳	Water added to counter heaving sand qu=1.75*tsf
			Occasional sand lenses				
573.0	40.0		End of Boring at 40.0'	SS-11 38.5-40.0 11"R	3 4 8	✳ □ - - - △	SS-11: LL=32 PL=16 PI=16 qu=1.25*tsf

DRILLING CONTRACTOR **K&S Engineers**
DRILLING METHOD **3.25" I.D. HSA**
DRILLING EQUIPMENT **D-50**
DRILLING STARTED **10/11/16** ENDED **10/11/16**

REMARKS
Boring backfilled with soil cuttings upon completion.

WATER LEVEL (ft.)
▽ **10.3**
▼
▼



BORING PLAN
SCALE: 1/16" = 1'-0"

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING CUL-100 OF CUL-105

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ISSUE	DATE	DESCRIPTION
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NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	PEI-MVW
DRAWN:	PEI-RMH
CHECKED:	PEI-PS
DATE:	

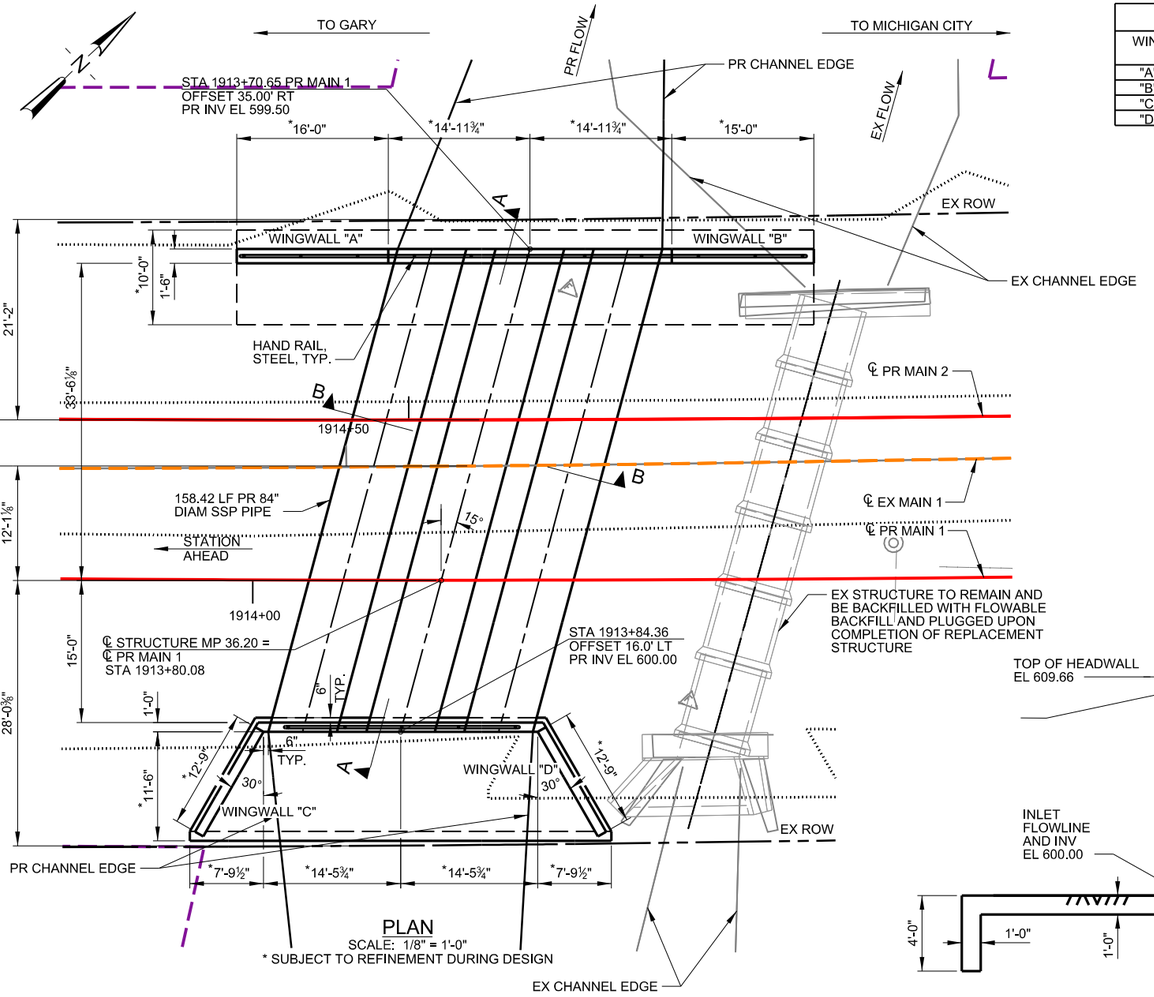
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

NICTD MP 36.20 OVER KINTZELE DITCH SOIL BORINGS

FILENAME	DT_DWG_CUL-100.dgn
SCALE	AS NOTED

SHEET **OF**

PLOT DATE: 3/6/2020 5:10:18 PM kkoehneke



PLAN
SCALE: 1/8" = 1'-0"
* SUBJECT TO REFINEMENT DURING DESIGN

WINGWALL TABLE					
WING	LENGTH	FLARE ANGLE	TOP OF FOOTING	TOP OF WINGWALL	TOP OF HEADWALL
"A"	16'-0"	90°	597.50	609.66	609.66
"B"	15'-0"	90°	597.50	609.66	609.66
"C"	12'-9"	30°	600.00	609.66	609.66
"D"	12'-9"	30°	600.00	609.66	609.66

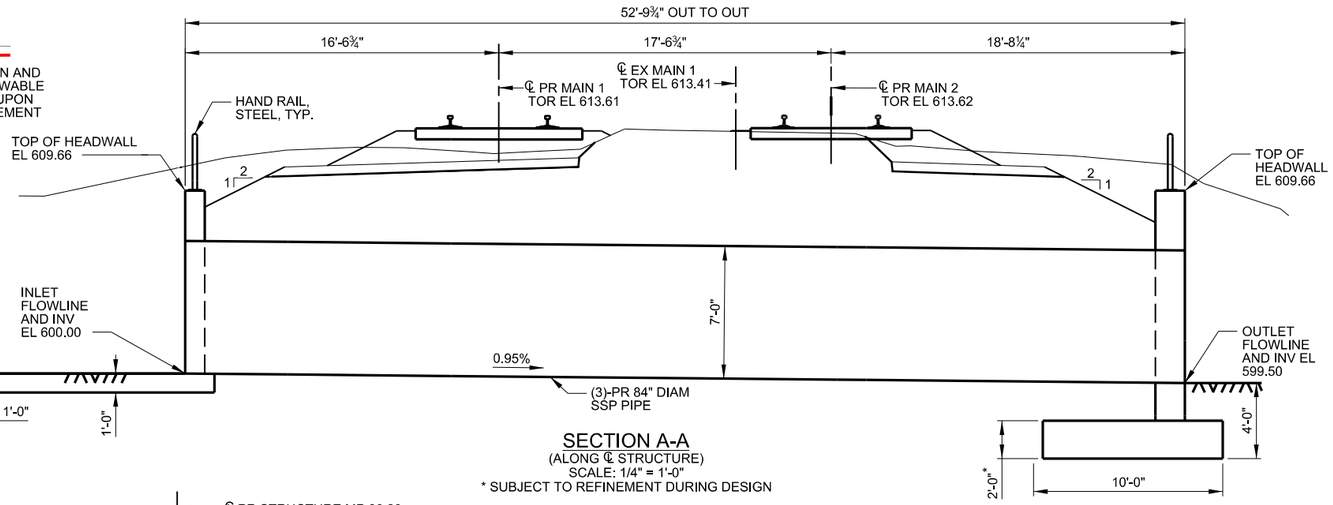
DESIGN DATA

SPECIFICATIONS:
AMERICAN RAILWAY ENGINEERING AND MAINTENANCE-OF-WAY ASSOCATION (A.R.E.M.A.), MANUAL FOR RAILROAD ENGINEERING, 2016, CHAPTERS 1 AND 8.

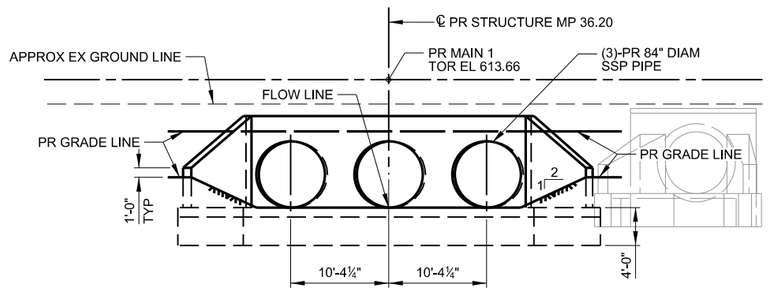
LIVE LOADS:
DESIGNED FOR E-80 COOPER WITH DIESEL IMPACT LOADING

DEAD LOADS:
ACTUAL DEAD LOAD WHICH CONSISTS OF THE DEAD LOAD OF CULVERT, FILL/BALLAST, AND TRACK PLUS ADDITIONAL 6" BALLAST FOR FUTURE TRACK RAISE.

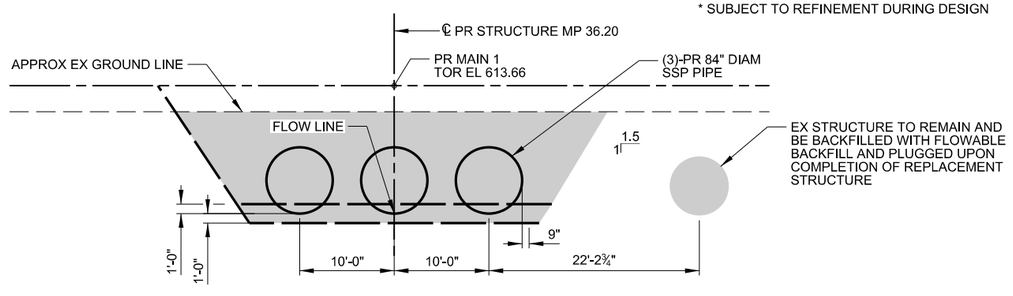
GENERAL NOTES



SECTION A-A
(ALONG ℄ STRUCTURE)
SCALE: 1/4" = 1'-0"
* SUBJECT TO REFINEMENT DURING DESIGN



END ELEVATION
(LOOKING NORTH)
SCALE: 1/8" = 1'-0"



SECTION B-B
(LOOKING NORTH)
SCALE: 1/8" = 1'-0"

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING CUL-101 OF CUL-105

PLOT DATE: 3/6/2020 5:10:53 PM kkoehneke

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

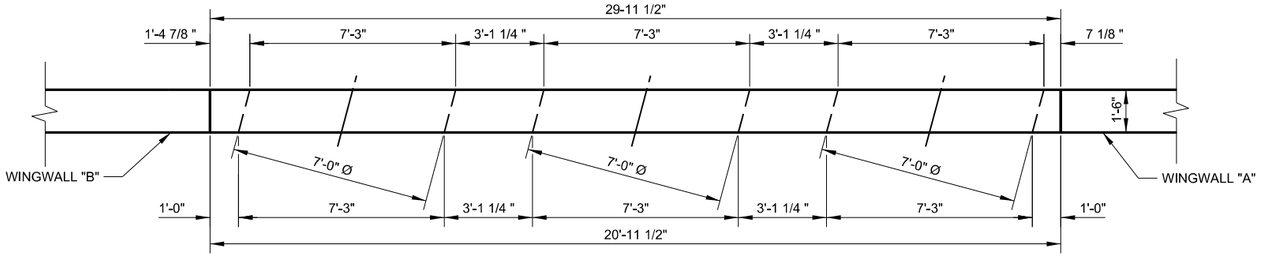
DESIGNED:	PEI-MVW
DRAWN:	PEI-RMH
CHECKED:	PEI-PS
DATE:	

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

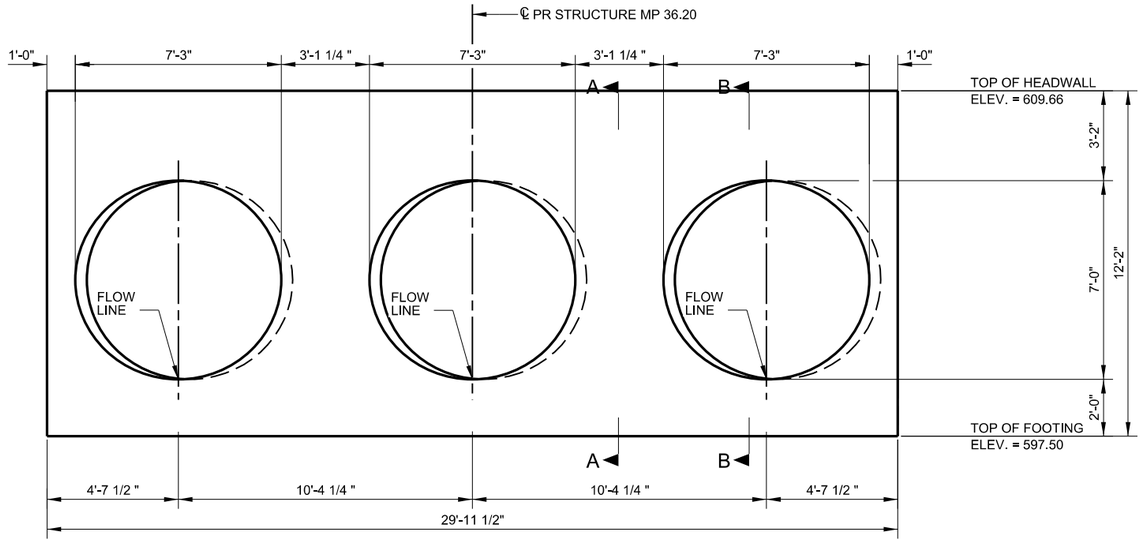
NICTD MP 36.20 OVER KINTZELE DITCH GENERAL PLAN & ELEVATION

FILENAME	DT_DWG_CUL-101.dgn
SCALE	AS NOTED

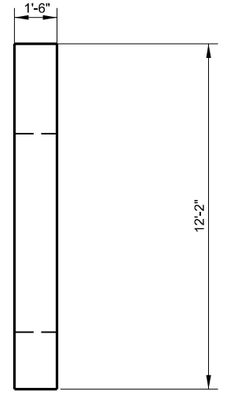
SHEET OF



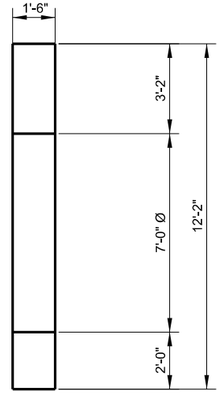
NORTH HEADWALL PLAN
SCALE: 3/8" = 1'-0"



NORTH HEADWALL ELEVATION
SCALE: 3/8" = 1'-0"



SECTION A-A
SCALE: 3/8" = 1'-0"



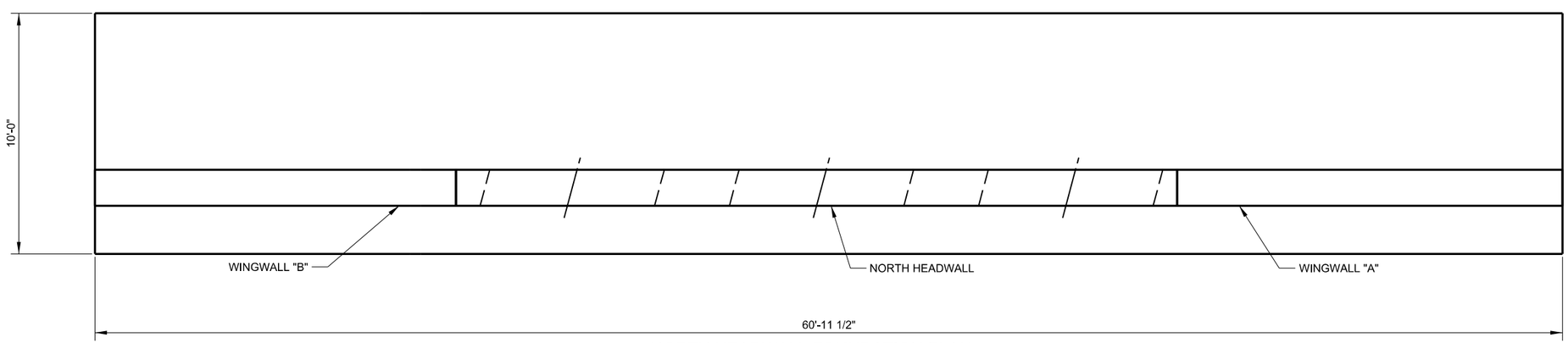
SECTION B-B
SCALE: 3/8" = 1'-0"

BILL OF MATERIALS			
NORTH HEADWALL			
MARK OR SIZE	NO. REQ'D	LENGTH	WEIGHT
#X	XX	X'-X"	
		TOTAL #X BARS	XXXX#
		TOTAL REINFORCING BARS	XXXX#
CONCRETE			
CONCRETE QUANTITY			XX.X CYS

NOTE: THESE QUANTITIES ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT SEPARATE PAY ITEMS.

BILL OF MATERIALS			
FOUNDATION			
MARK OR SIZE	NO. REQ'D	LENGTH	WEIGHT
#X	XX	X'-X"	
		TOTAL #X BARS	XXXX#
		TOTAL REINFORCING BARS	XXXX#
CONCRETE			
CONCRETE QUANTITY			XX.X CYS

NOTE: THESE QUANTITIES ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT SEPARATE PAY ITEMS.



NORTH HEADWALL FOUNDATION PLAN
SCALE: 3/8" = 1'-0"

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DRAWING CUL-102 OF CUL-105

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

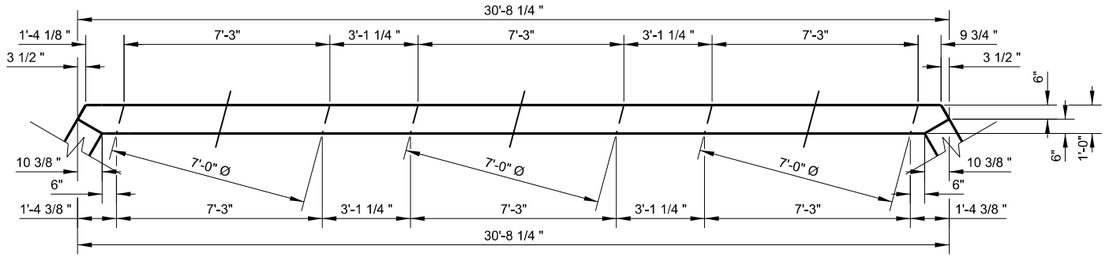
DESIGNED:	PEI-MVW
DRAWN:	PEI-RMH
CHECKED:	PEI-PS
DATE:	

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

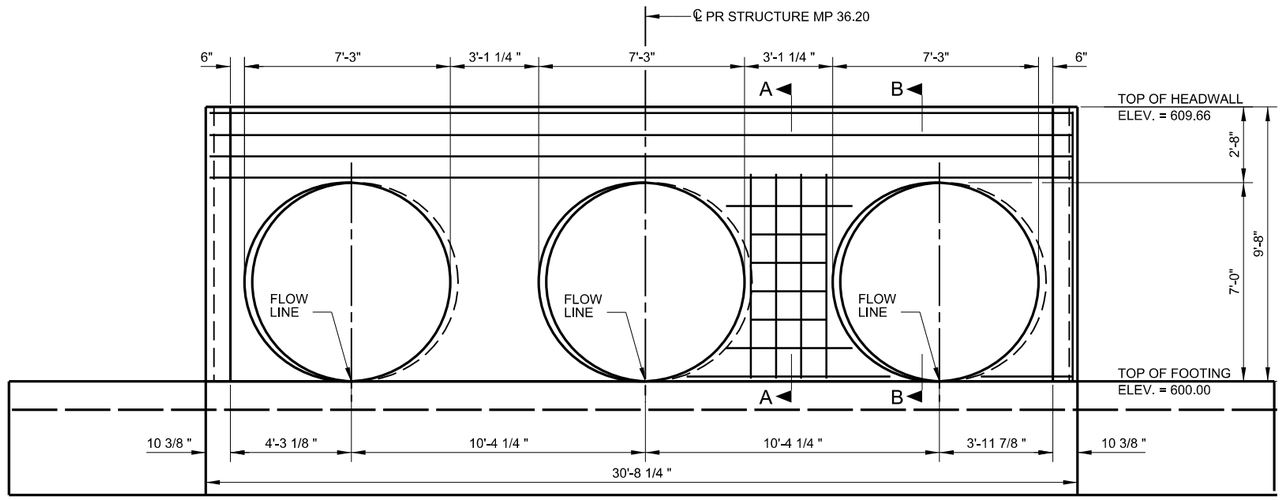
NICTD MP 36.20 OVER KINTZELE DITCH NORTH HEADWALL DETAILS

FILENAME	DT_DWG_CUL-102.dgn
SCALE	AS NOTED

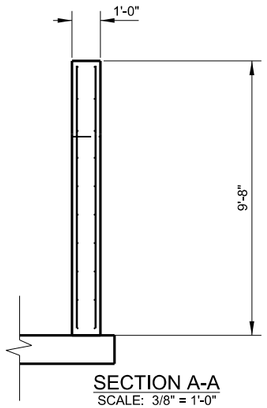
SHEET OF



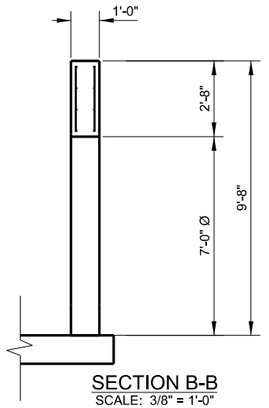
SOUTH HEADWALL PLAN
SCALE: 3/8" = 1'-0"



SOUTH HEADWALL ELEVATION
SCALE: 3/8" = 1'-0"



SECTION A-A
SCALE: 3/8" = 1'-0"



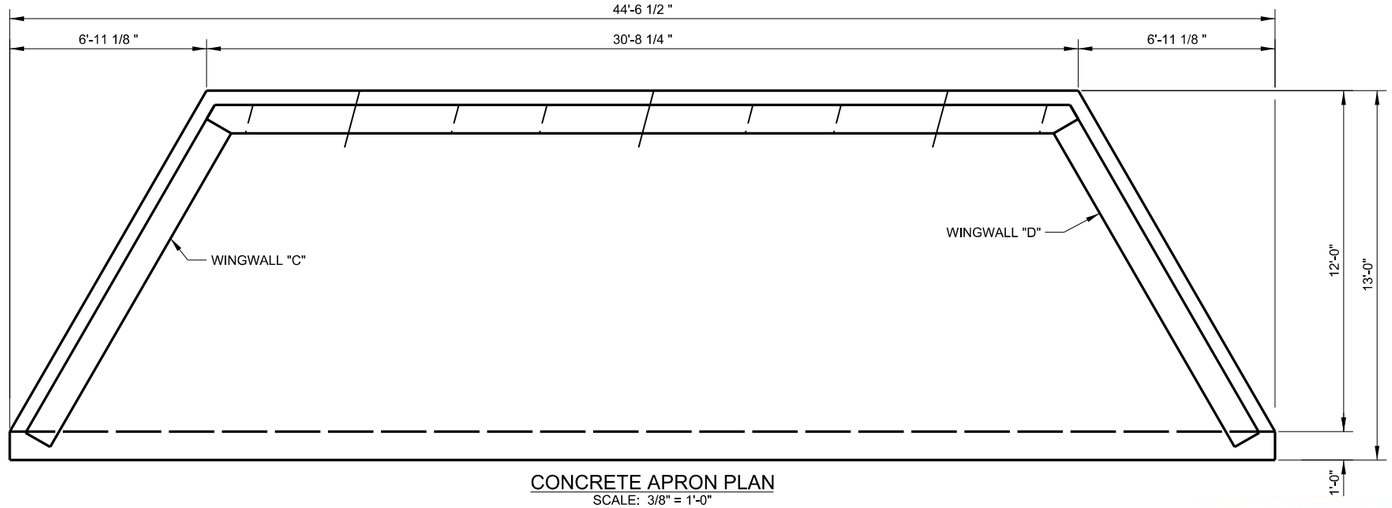
SECTION B-B
SCALE: 3/8" = 1'-0"

BILL OF MATERIALS			
SOUTH HEADWALL			
MARK OR SIZE	NO. REQ'D	LENGTH	WEIGHT
#X	XX	X'-X"	
		TOTAL #X BARS	XXXX#
		TOTAL REINFORCING BARS	XXXX#
CONCRETE			
CONCRETE QUANTITY			XX.X CYS

NOTE: THESE QUANTITIES ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT SEPARATE PAY ITEMS.

BILL OF MATERIALS			
FOUNDATION			
MARK OR SIZE	NO. REQ'D	LENGTH	WEIGHT
#X	XX	X'-X"	
		TOTAL #X BARS	XXXX#
		TOTAL REINFORCING BARS	XXXX#
CONCRETE			
CONCRETE QUANTITY			XX.X CYS

NOTE: THESE QUANTITIES ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT SEPARATE PAY ITEMS.



CONCRETE APRON PLAN
SCALE: 3/8" = 1'-0"

PLOT DATE: 3/6/2020 5:11:49 PM kkoehneke

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING CUL-103 OF CUL-105

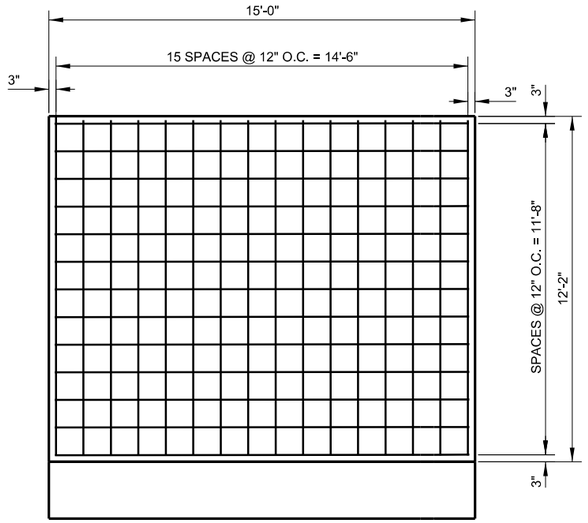
DESIGNED:	PEI-MVW
DRAWN:	PEI-RMH
CHECKED:	PEI-PS
DATE:	

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

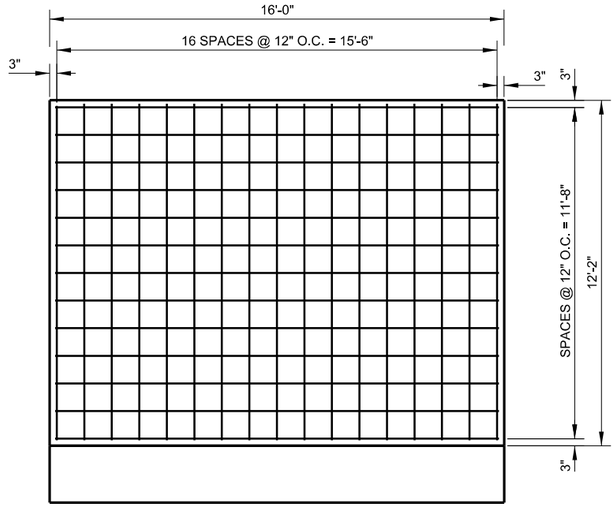
NICTD MP 36.20 OVER KINTZELE DITCH SOUTH HEADWALL DETAILS

FILENAME	DT_DWG_CUL-103.dgn
SCALE	AS NOTED

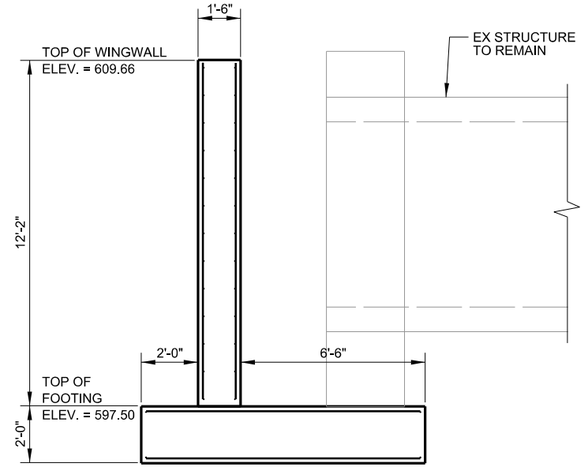
SHEET OF



WINGWALL B ELEVATION
SCALE: 3/8" = 1'-0"



WINGWALL A ELEVATION
SCALE: 3/8" = 1'-0"



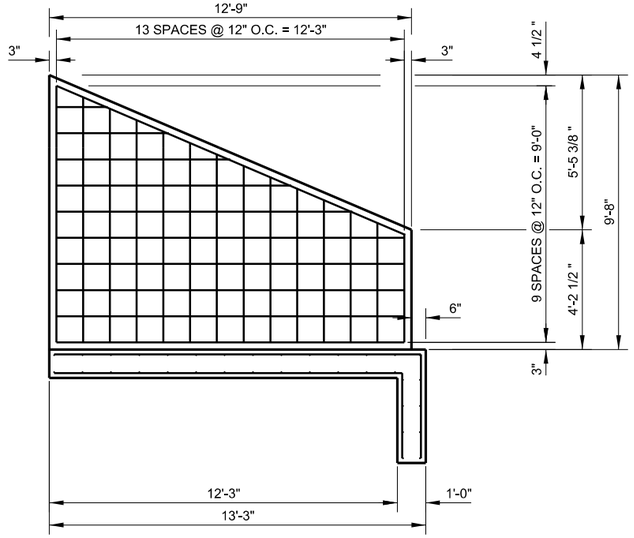
TYPICALL WINGWALL SECTION - A & B
SCALE: 3/8" = 1'-0"

BILL OF MATERIALS			
WINGWALLS A & B			
MARK OR SIZE	NO. REQ'D	LENGTH	WEIGHT
#X	XX	X'-X"	
	TOTAL #X BARS		XXXX#
	TOTAL REINFORCING BARS		XXXX#
CONCRETE			
CONCRETE QUANTITY			XX.X CYS

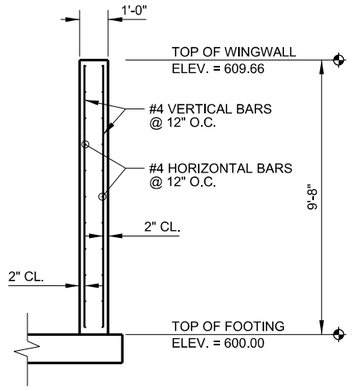
NOTE: THESE QUANTITIES ARE FOR
INFORMATIONAL PURPOSES ONLY
AND ARE NOT SEPARATE PAY ITEMS.

BILL OF MATERIALS			
WINGWALLS C & D			
MARK OR SIZE	NO. REQ'D	LENGTH	WEIGHT
#X	XX	X'-X"	
	TOTAL #X BARS		XXXX#
	TOTAL REINFORCING BARS		XXXX#
CONCRETE			
CONCRETE QUANTITY			XX.X CYS

NOTE: THESE QUANTITIES ARE FOR
INFORMATIONAL PURPOSES ONLY
AND ARE NOT SEPARATE PAY ITEMS.



WINGWALL ELEVATION
SCALE: 3/8" = 1'-0"
WINGWALL D SHOWN
WINGWALL C MIRRORED.



TYPICALL WINGWALL SECTION - C & D
SCALE: 3/8" = 1'-0"

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	PEI-MVW
DRAWN:	PEI-RMH
CHECKED:	PEI-PS
DATE:	

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

NICTD MP 36.20 OVER KINTZELE DITCH WINGWALL DETAILS

FILENAME	DT_DWG_CUL-104.dgn
SCALE	AS NOTED

SHEET OF

PLOT DATE: 3/6/2020 5:12:16 PM kkoehneke

SUMMARY OF STRUCTURE C36.20 QUANTITIES

ITEM	CONCRETE				CONCRETE RAILING CLASS C	REINF. BARS	REINF. BARS, EPOXY COATED	RAILING STEEL	BARRIER DELIN-EATORS	REINF. CONC. BRIDGE APPROACH (SIZE)	DENSE GRADED SUBBASE	STRUCT. STEEL	ANCHOR PLATES MK-AP	PILES										GRATES, BASINS, & FITTINGS, CAST IRON	EXP. JOINT TYPE ___	CONC. STR. MEMBERS		SURFACE SEAL
	CLASS C SUPERSTR	CLASS A SUBSTR	CLASS B ABOVE FTG.	CLASS B IN FTG.										STEEL PIPE (SIZE)	STEEL PIPE EPOXY	STEEL H (SIZE)	STEEL H EPOXY COATED	STEEL H REINF. CONC.	TEST PILE, DYNAMIC, PRODUCTI	TEST PILE, DYNAMIC, RESTRICK	PILE SHOE (SIZE)	PILE TIP STEEL H (SIZE)	CORED HOLE IN ROCK				BOX BEAM TYPE & SIZE	I-BEAM TYPE & SIZE	
	CYS	CYS	CYS	CYS	CYS	LBS	LBS	LFT	EACH	SYS	CYS	LBS	EACH	LFT	LFT	LFT	LFT	LFT	LFT	EACH	EACH	EACH	NO.	LFT	LBS	LFT	LFT	LFT	SFT

PATRICK ENGINEERING INC.

BORING NUMBER **MP37.54** SHEET **1** OF **2**
CLIENT **Northern Indiana Commuter Transportation District**
PROJECT & NO. **Rail Improvements 21677.111**
LOCATION **N41°41'9.7"; W86°57'22.2"**

LOGGED BY **SAS**
GROUND ELEVATION **615.0**

ELEVATION	DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY(IN)	BLOW COUNTS	Water Content PL 10 20 30 40 LL; Unconfined Compressive Strength (TSF) 1 2 3 4 5	NOTES & TEST RESULTS
615.0	0.0		Gravel fill, little silt				
613.9	1.1		Brown fine to coarse sand, trace gravel, trace fines, loose, moist, fill SP	SS-1 1.0-2.5 1"R	1 2 3		
				SS-2 3.5-5.0 3"R	1 1 0		
			Light brown, fine to medium sand	SS-3 6.0-7.5 18"R	1 1 1		0% gravel 99% sand 1% fines
			Some gravel	SS-4 8.5-10.0 13"R	2 2 5		
604.0	11.0		Black organic silt, trace wood, very loose, moist OL	SS-5 11.0-12.5 16"R	1 1 1		MC=213% LOI=34%
			Lower organic content	SS-6 13.5-15.0 2"R	1 0 1		MC=82% LOI=6%
598.9	16.1						
598.5	16.5		▽ Gray fine to medium sand, trace coarse sand, loose, saturated SP				
				SS-7 18.5-20.0 13"R	2 2 2		

DRILLING CONTRACTOR **K&S Engineers**
DRILLING METHOD **3.25" I.D. HSA**
DRILLING EQUIPMENT **D-50**
DRILLING STARTED **10/10/16** ENDED **10/10/16**

REMARKS
Boring backfilled with soil cuttings upon completion.

WATER LEVEL (ft.)
▽ **16.5**

PATRICK ENGINEERING INC.

BORING NUMBER **MP37.54** SHEET **2** OF **2**
CLIENT **Northern Indiana Commuter Transportation District**
PROJECT & NO. **Rail Improvements 21677.111**
LOCATION **N41°41'9.7"; W86°57'22.2"**

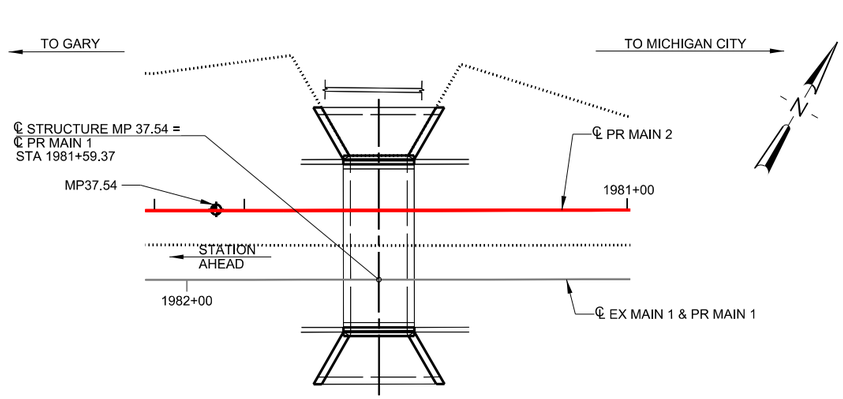
LOGGED BY **SAS**
GROUND ELEVATION **615.0**

ELEVATION	DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY(IN)	BLOW COUNTS	Water Content PL 10 20 30 40 LL; Unconfined Compressive Strength (TSF) 1 2 3 4 5	NOTES & TEST RESULTS
595.0	20.0		Gray fine to medium sand, trace coarse sand, loose, saturated SP				
			Medium dense	SS-8 23.5-25.0 18"R	6 7 10		
588.2	26.8		Gray silty clay, little fine to coarse sand, trace gravel, stiff, medium plasticity, moist CL				Water added to counter heaving sands
				SS-9 28.5-30.0 12"R	3 3 4	⊞ △	qu=1.5*tsf LL=32 PL=16 PI=16
			Occasional sand lenses	SS-10 33.5-35.0 18"R	3 6 8	✳	qu=1.0*tsf
			Very stiff	SS-11 38.5-40.0 18"R	4 9 19	✳	qu=3.5*tsf
575.0	40.0		End of Boring at 40.0'				

DRILLING CONTRACTOR **K&S Engineers**
DRILLING METHOD **3.25" I.D. HSA**
DRILLING EQUIPMENT **D-50**
DRILLING STARTED **10/10/16** ENDED **10/10/16**

REMARKS
Boring backfilled with soil cuttings upon completion.

WATER LEVEL (ft.)
▽ **16.5**



PLAN
SCALE: 1/16" = 1'-0"

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING CUL-200 OF CUL-203

PLOT DATE: 3/6/2020 5:12:22 PM kkoehneke

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Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

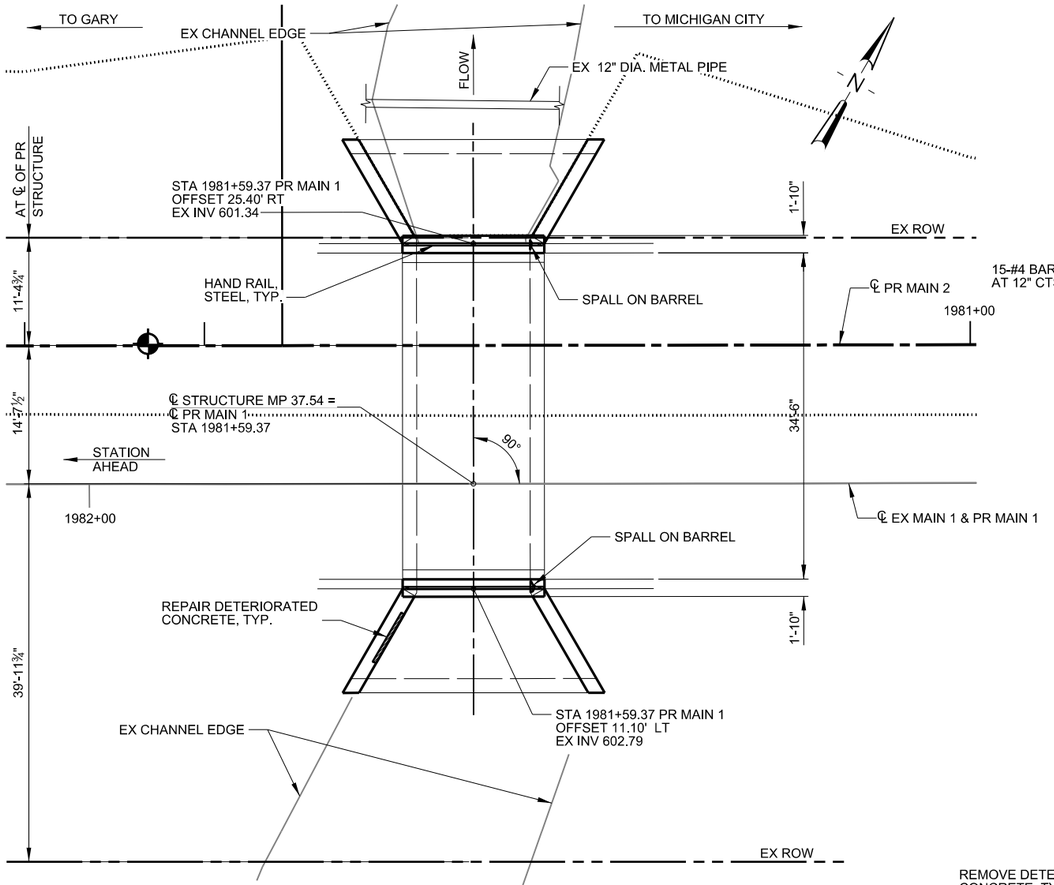
DESIGNED:	PEI-MVW
DRAWN:	PEI-RMH
CHECKED:	PEI-PS
DATE:	

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

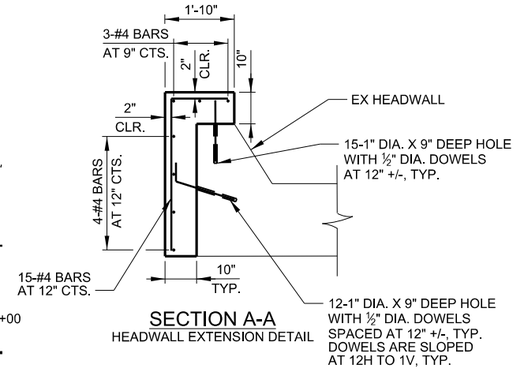
NICTD MP 37.54 OVER BROWN'S DITCH SOIL BORINGS

FILENAME	DT_DWG_CUL-200.dgn
SCALE	AS NOTED

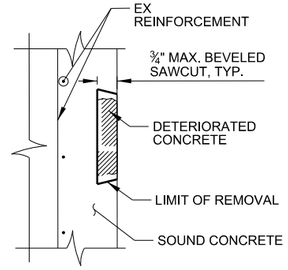
SHEET **OF**



PLAN
SCALE: 1/8" = 1'-0"



SECTION A-A
HEADWALL EXTENSION DETAIL



SECTION B-B
TYPICAL SPALL REPAIR DETAIL

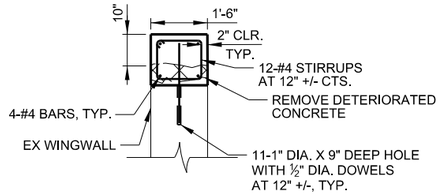
DESIGN DATA

SPECIFICATIONS:
AMERICAN RAILWAY ENGINEERING AND MAINTENANCE-OF-WAY ASSOCATION (A.R.E.M.A.), MANUAL FOR RAILROAD ENGINEERING, 2016, CHAPTERS 1 AND 8.

GENERAL NOTES

FOR CONCRETE SPALL REPAIRS, SQUARE OFF TO SOUND CONCRETE WITH A SAWCUT OF 3/4" MAXIMUM. REMOVE ALL LOOSE AND DELAMINATED CONCRETE TO PROVIDE A SOUND BOND BETWEEN EXISTING CONCRETE AND PATCHING MATERIAL. IF DETERIORATED CONCRETE EXTENDS BEYOND THE PRIMARY REINFORCEMENT, REMOVE THE CONCRETE TO AT LEAST ¾" BEHIND THE REINFORCEMENT.

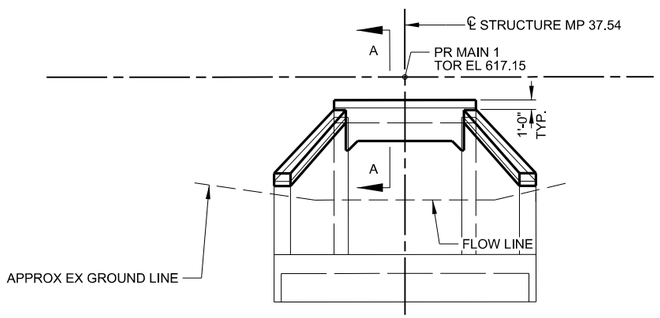
EXISTING STRUCTURE APPEARS TO ENCROACH UPON EXISTING RIGHT OF WAY.



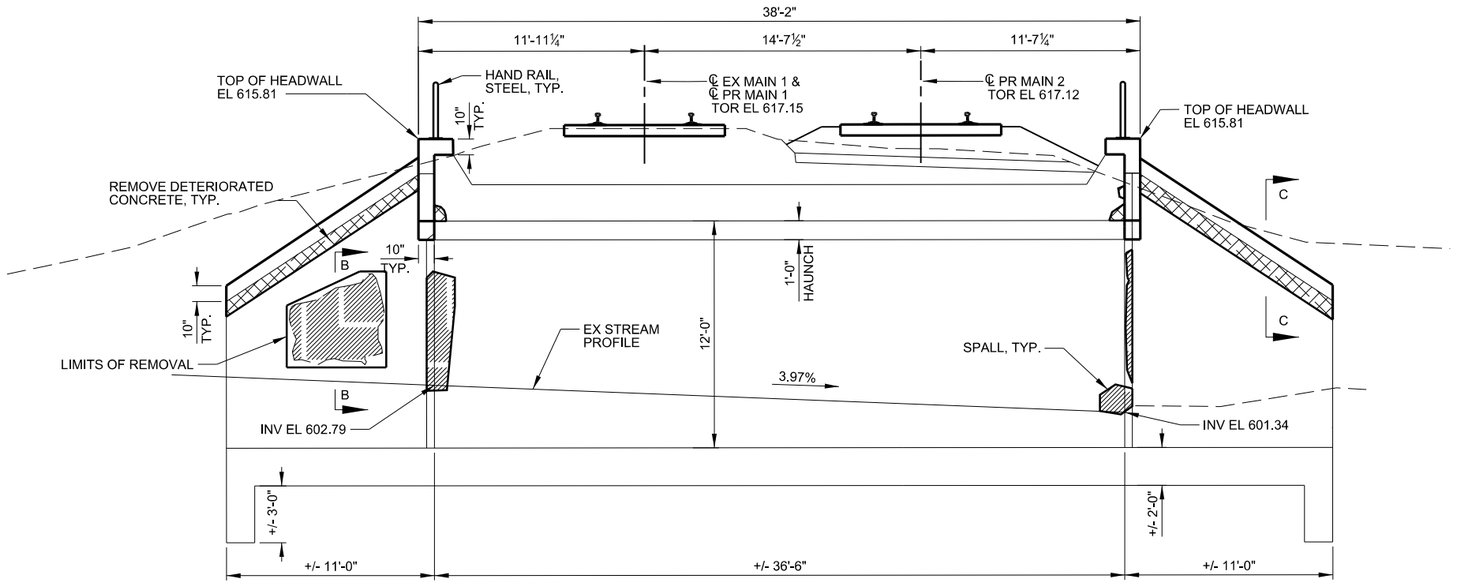
SECTION C-C
WINGWALL REPAIR DETAIL
(TYPICAL FOR ALL WINGWALLS)

LEGEND

DETERIORATED CONCRETE
CONCRETE SPALL



END ELEVATION
(LOOKING NORTH)
SCALE: 1/8" = 1'-0"
* SUBJECT TO REFINEMENT DURING DESIGN



LONGITUDINAL SECTION
(ALONG ℄ STRUCTURE)
SCALE: 1/4" = 1'-0"

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING CUL-201 OF CUL-203

PLOT DATE: 3/6/2020 5:12:49 PM kkoehneke

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PATRICK ENGINEERING

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33 East Highway 12
Chesterton, Indiana 46304

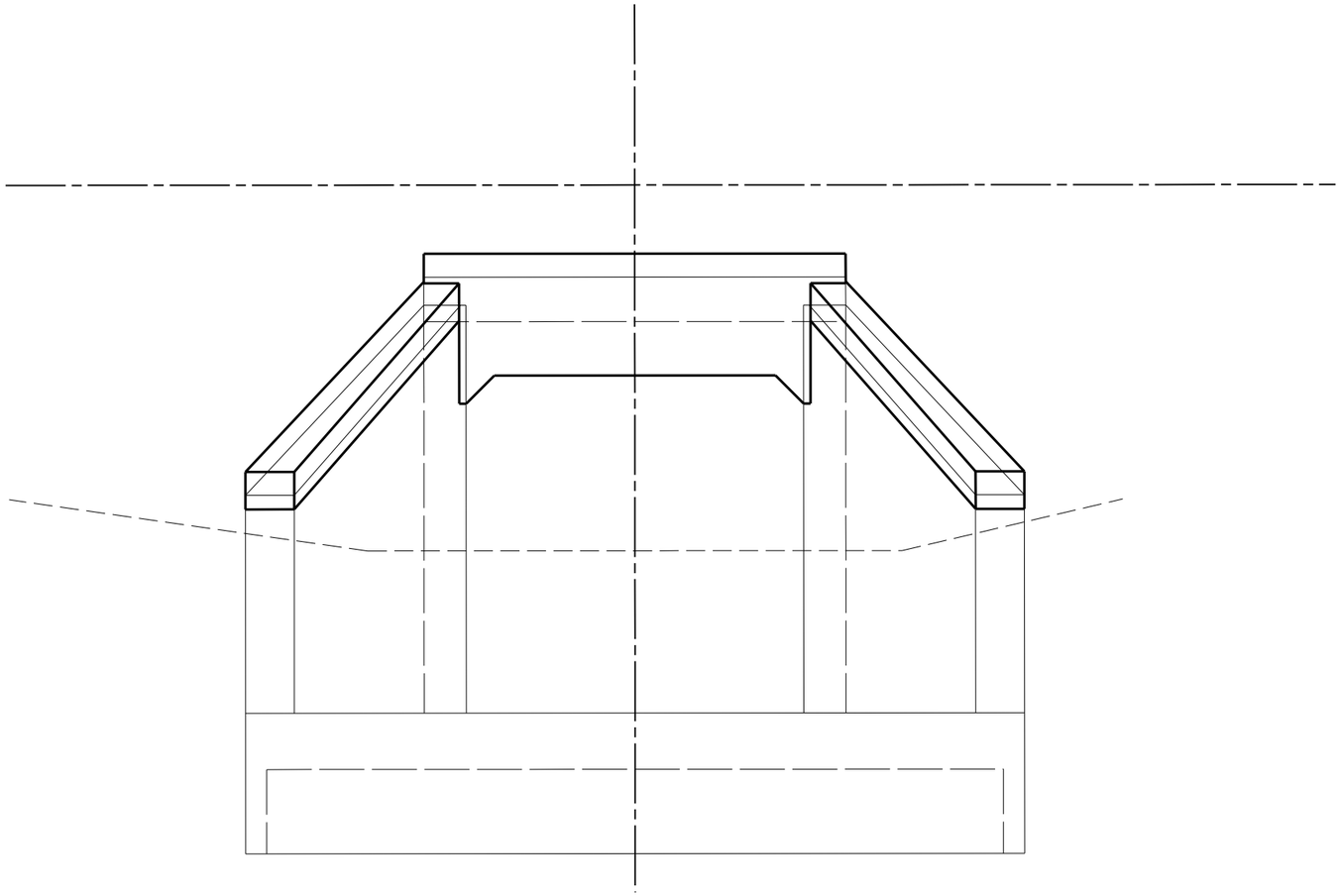
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	PEI-MVW
DRAWN:	PEI-RMH
CHECKED:	PEI-PS
DATE:	

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

NICTD MP 37.54 OVER BROWN'S DITCH GENERAL PLAN & ELEVATION

FILENAME	DT_DWG_CUL-201.dgn
SCALE	AS NOTED
SHEET	OF



ELEVATION
(LOOKING NORTH)
SCALE: 3/8" = 1'-0"

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DRAWING CUL-202 OF CUL-203

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MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	PEI-MVW
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CHECKED:	PEI-PS
DATE:	

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

NICTD MP 37.54 OVER BROWN'S DITCH WINGWALL DETAILS

FILENAME	DT_DWG_CUL-202.dgn
SCALE	AS NOTED

SHEET OF

SUMMARY OF STRUCTURE C37.54 QUANTITIES

ITEM	CONCRETE				CONCRETE RAILING CLASS C	REINF. BARS	REINF. BARS, EPOXY COATED	RAILING STEEL	BARRIER DELIN-EATORS	REINF. CONC. BRIDGE APPROACH (SIZE)	DENSE GRADED SUBBASE	STRUCT. STEEL	ANCHOR PLATES MK-AP	PILES										GRATES, BASINS, & FITTINGS, CAST IRON	EXP. JOINT TYPE ___	CONC. STR. MEMBERS		SURFACE SEAL
	CLASS C SUPERSTR	CLASS A SUBSTR	CLASS B ABOVE FTG.	CLASS B IN FTG.										STEEL PIPE (SIZE)	STEEL PIPE EPOXY	STEEL H (SIZE)	STEEL H EPOXY COATED	STEEL H REINF. CONC.	TEST PILE, DYNAMIC, PRODUCTI	TEST PILE, DYNAMIC, RESTRICK	PILE SHOE (SIZE)	PILE TIP STEEL H (SIZE)	CORED HOLE IN ROCK				BOX BEAM TYPE & SIZE	I-BEAM TYPE & SIZE	
	CYS	CYS	CYS	CYS	CYS	LBS	LBS	LFT	EACH	SYS	CYS	LBS	EACH	LFT	LFT	LFT	LFT	LFT	LFT	EACH	EACH	EACH	NO.	LFT	LBS	LFT	LFT	LFT	SFT

** Estimated quantity

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DOUBLE TRACK N·W·I
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MICHIGAN CITY TO GARY, INDIANA

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DRAWING CUL-203 OF CUL-203

DESIGNED:	PEI-MVW
DRAWN:	PEI-RMH
CHECKED:	PEI-PS
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NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

NICTD MP 37.54 OVER BROWN'S DITCH STRUCTURE SUMMARY

FILENAME	DT_DWG_CUL-203.dgn
SCALE	AS NOTED

SHEET OF

PATRICK ENGINEERING INC.

BORING NUMBER **MP39.93** SHEET **1** OF **2**
CLIENT **Northern Indiana Commuter Transportation District**
PROJECT & NO. **Rail Improvements 21677.111**
LOCATION **N41°40'7.0"; W86°59'46.0"**

LOGGED BY **SAS**
GROUND ELEVATION **617.3**

ELEVATION	DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY(IN)	BLOW COUNTS	Water Content PL 10 20 30 40 LL 50 / Unconfined Compressive Strength (TSF) 1 2 3 4 5	NOTES & TEST RESULTS
617.3	0.0		Brown topsoil with roots, trace gravel OL				
616.1	1.2		Light brown fine to medium sand, trace gravel, loose, moist SP	SS-1 1.0-2.5 14"R	3 2 3		
			No gravel, trace coarse sand	SS-2 3.5-5.0 16"R	2 9 5		
			Medium dense	SS-3 6.0-7.5 18"R	3 6 7		
610.2	7.1	▽					
			Saturated	SS-4 8.5-10.0 15"R	5 9 12		
			Trace gravel, dense	SS-5 11.0-12.5 18"R	6 12 20		
			Medium dense	SS-6 13.5-15.0 18"R	3 6 10		
			Gray	SS-7 18.5-20.0 11"R	3 4 7		Water added to counter heaving sands
597.3	20.0						

DRILLING CONTRACTOR **K&S Engineers**
DRILLING METHOD **3.25" I.D. HSA**
DRILLING EQUIPMENT **D-50**
DRILLING STARTED **10/5/16** ENDED **10/5/16**

REMARKS
Boring backfilled with soil cuttings upon completion.

WATER LEVEL (ft.)
▽ **7.1**
▼
▼

PATRICK ENGINEERING INC.

BORING NUMBER **MP39.93** SHEET **2** OF **2**
CLIENT **Northern Indiana Commuter Transportation District**
PROJECT & NO. **Rail Improvements 21677.111**
LOCATION **N41°40'7.0"; W86°59'46.0"**

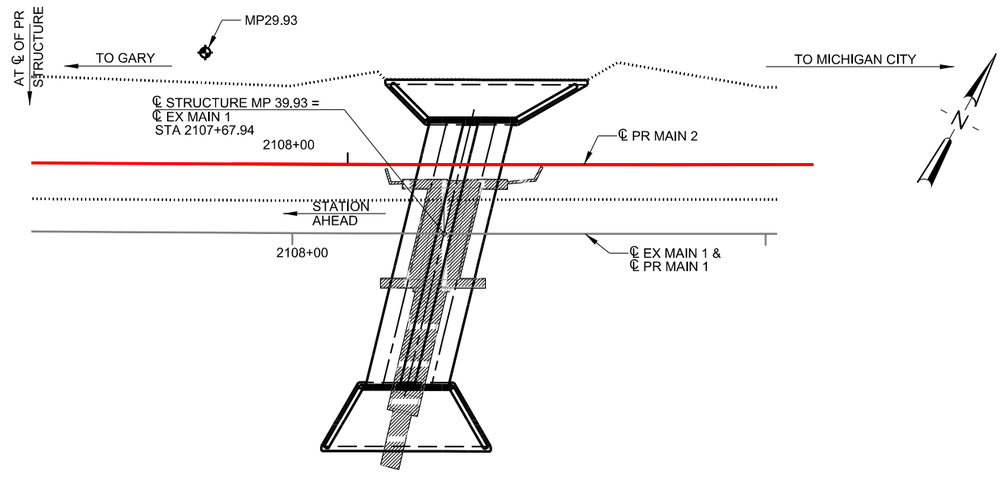
LOGGED BY **SAS**
GROUND ELEVATION **617.3**

ELEVATION	DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY(IN)	BLOW COUNTS	Water Content PL 10 20 30 40 LL 50 / Unconfined Compressive Strength (TSF) 1 2 3 4 5	NOTES & TEST RESULTS
597.3	20.0		Gray fine to medium sand, trace coarse sand, medium dense, wet SP	SS-8 23.5-25.0 18"R	3 6 14		
				SS-9 28.5-30.0 11"R	5 9 14		
582.9	34.4		Bluish gray silty clay, little fine to coarse sand, trace gravel, very stiff, low plasticity, moist CL	SS-10 33.5-35.0 18"R	3 7 12		qu=3.0*tsf
			Medium stiff End of Boring at 40.0'	SS-11 38.5-40.0 13"R	2 3 5		qu=0.75*tsf
577.3	40.0						

DRILLING CONTRACTOR **K&S Engineers**
DRILLING METHOD **3.25" I.D. HSA**
DRILLING EQUIPMENT **D-50**
DRILLING STARTED **10/5/16** ENDED **10/5/16**

REMARKS
Boring backfilled with soil cuttings upon completion.

WATER LEVEL (ft.)
▽ **7.1**
▼
▼



BORING PLAN
SCALE: 1/16" = 1'-0"

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33 East Highway 12
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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

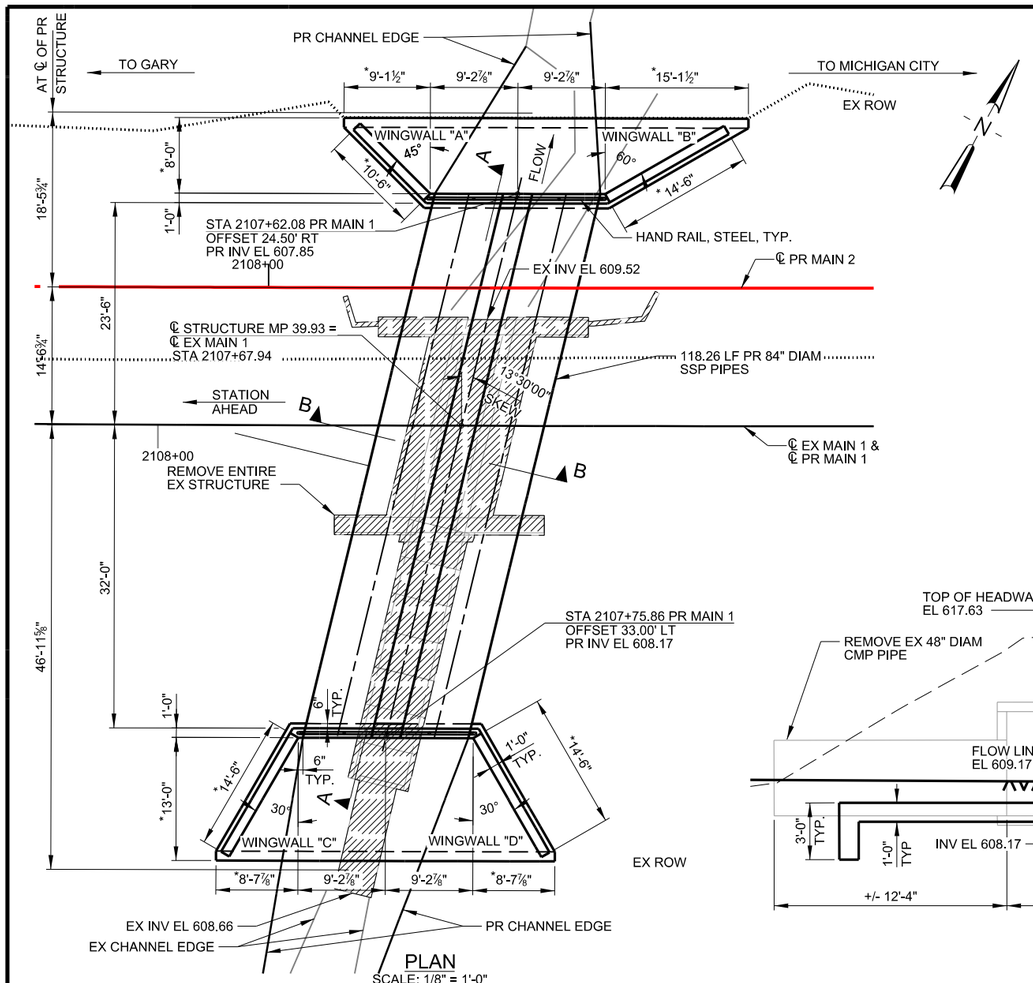
DESIGNED:	PEI-MVW
DRAWN:	PEI-RMH
CHECKED:	PEI-PS
DATE:	

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

NICTD MP 39.93 OVER UNNAMED DRAINAGE SOIL BORINGS

FILENAME	DT_DWG_CUL-300.dgn
SCALE	AS NOTED

SHEET **OF**



PLAN

SCALE: 1/8" = 1'-0"

* SUBJECT TO REFINEMENT DURING DESIGN

WINGWALL TABLE					
WING	LENGTH	FLARE ANGLE	TOP OF FOOTING	TOP OF WINGWALL	TOP OF HEADWALL
"A"	10'-6"	90°			
"B"	14'-6"	90°			
"C"	14'-6"	30°			
"D"	14'-6"	30°			

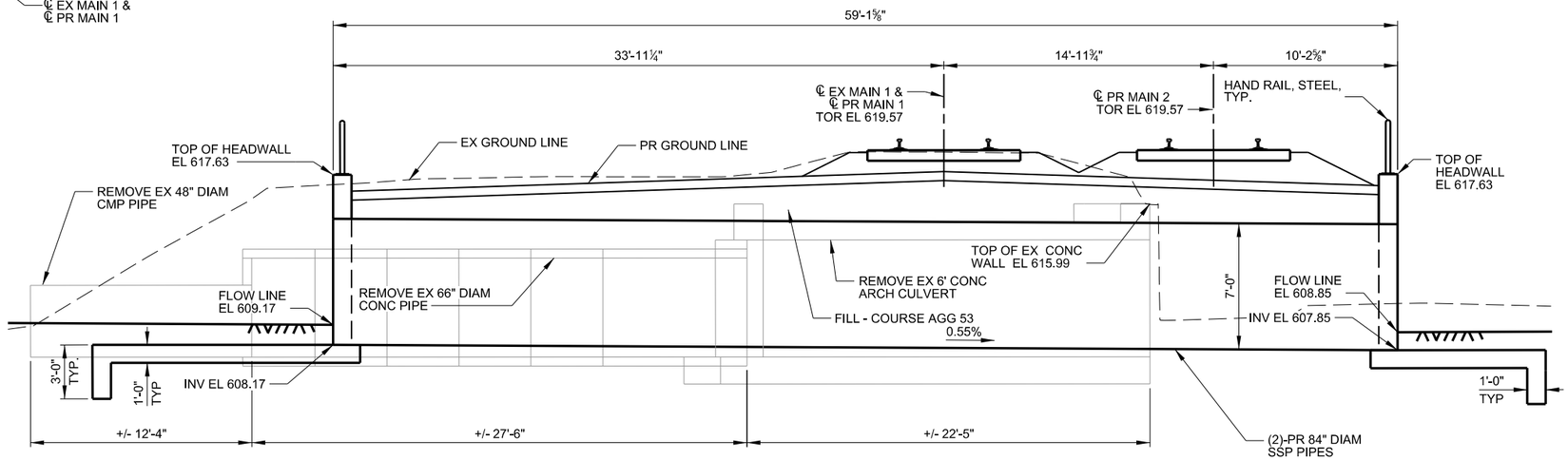
DESIGN DATA

SPECIFICATIONS:
AMERICAN RAILWAY ENGINEERING AND MAINTENANCE-OF-WAY ASSOCATION (A.R.E.M.A.), MANUAL FOR RAILROAD ENGINEERING, 2016, CHAPTERS 1 AND 8.

LIVE LOADS:
DESIGNED FOR E-80 COOPER WITH DIESEL IMPACT LOADING

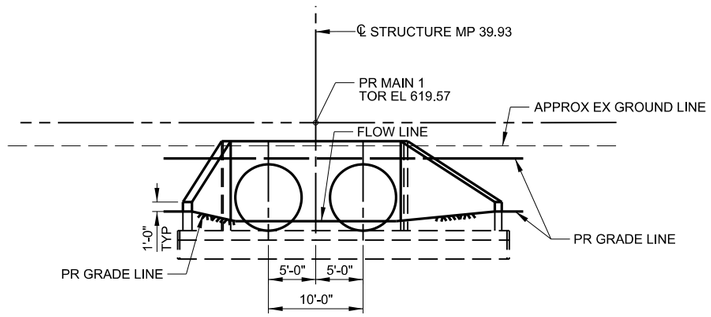
DEAD LOADS:
ACTUAL DEAD LOAD WHICH CONSISTS OF THE DEAD LOAD OF CULVERT, FILL/BALLAST, AND TRACK PLUS ADDITIONAL 6" BALLAST FOR FUTURE TRACK RAISE.

GENERAL NOTES



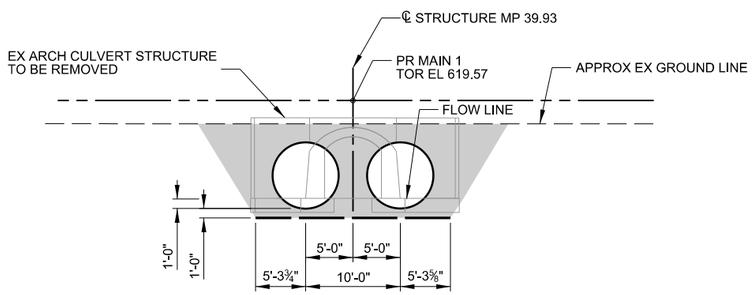
LONGITUDINAL SECTION

(ALONG ℄ STRUCTURE)
SCALE: 1/4" = 1'-0"



END ELEVATION

(LOOKING NORTH)
SCALE: 1/8" = 1'-0"



SECTION B-B

(LOOKING NORTH)
SCALE: 1/8" = 1'-0"

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DRAWING CUL-301 OF CUL-305

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

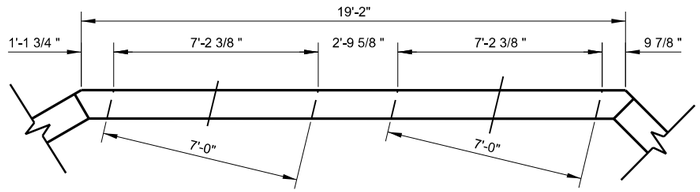
DESIGNED:	PEI-MVW
DRAWN:	PEI-RMH
CHECKED:	PEI-PS
DATE:	

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

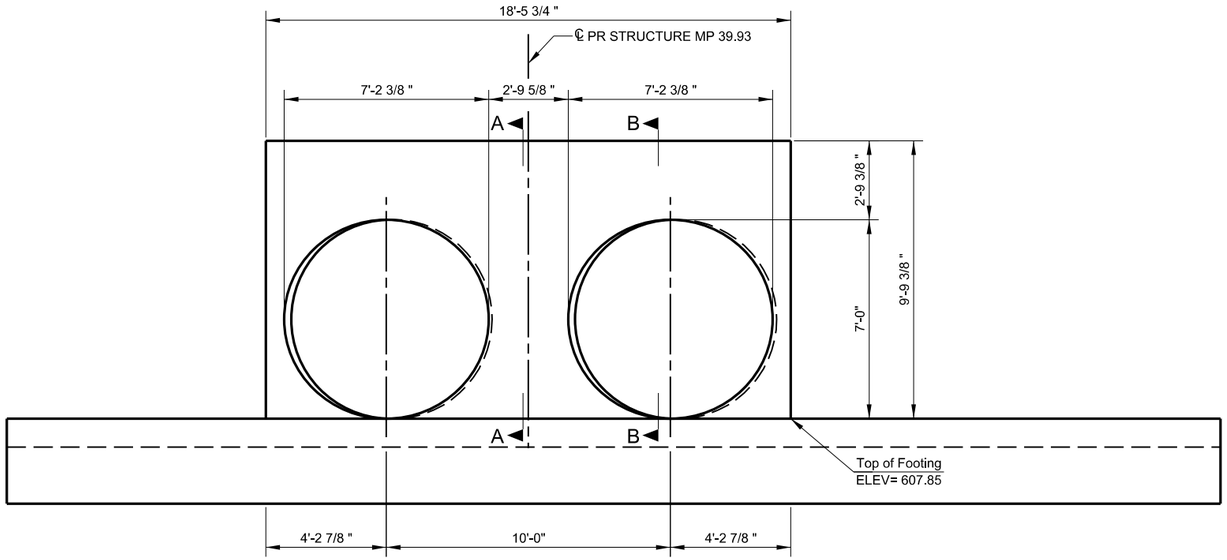
NICTD MP 39.93 OVER UNNAMED DRAINAGE GENERAL PLAN & ELEVATION

FILENAME	DT_DWG_CUL-301.dgn
SCALE	AS NOTED

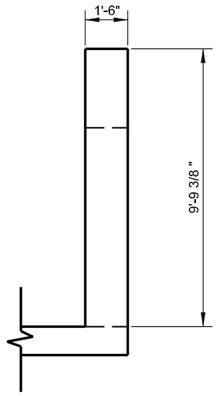
SHEET OF



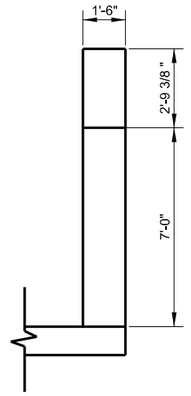
NORTH HEADWALL PLAN
SCALE: 3/8" = 1'-0"



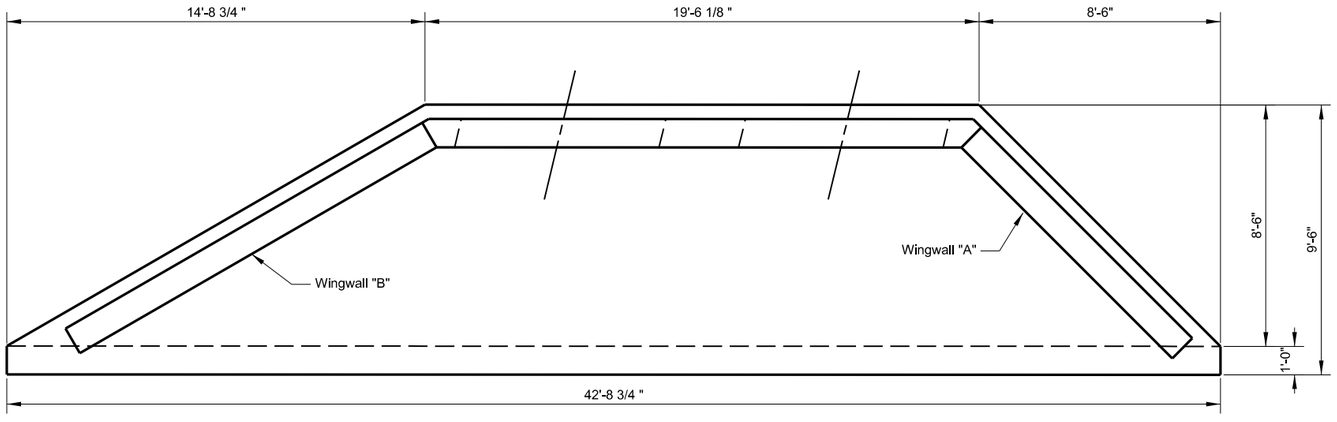
NORTH HEADWALL ELEVATION
SCALE: 3/8" = 1'-0"



SECTION A-A
SCALE: 3/8" = 1'-0"



SECTION B-B
SCALE: 3/8" = 1'-0"



CONCRETE APRON PLAN
SCALE: 3/8" = 1'-0"

BILL OF MATERIALS			
NORTH HEADWALL			
MARK OR SIZE	NO. REQ'D	LENGTH	WEIGHT
#X	XX	X'-X"	
		TOTAL #X BARS	XXXX#
		TOTAL REINFORCING BARS	XXXX#
CONCRETE			
CONCRETE QUANTITY			XX.X CYS

NOTE: THESE QUANTITIES ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT SEPARATE PAY ITEMS.

BILL OF MATERIALS			
FOUNDATION			
MARK OR SIZE	NO. REQ'D	LENGTH	WEIGHT
#X	XX	X'-X"	
		TOTAL #X BARS	XXXX#
		TOTAL REINFORCING BARS	XXXX#
CONCRETE			
CONCRETE QUANTITY			XX.X CYS

NOTE: THESE QUANTITIES ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT SEPARATE PAY ITEMS.

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DRAWING CUL-302 OF CUL-305

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	PEI-MVW
DRAWN:	PEI-RMH
CHECKED:	PEI-PS
DATE:	

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

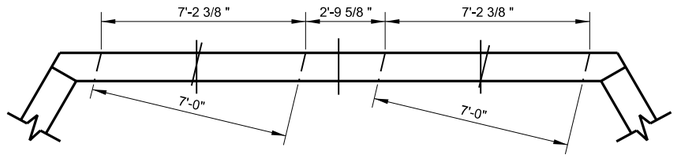
NICTD MP 39.93 OVER UNNAMED DRAINAGE NORTH HEADWALL DETAILS

FILENAME	DT_DWG_CUL-302.dgn
SCALE	AS NOTED

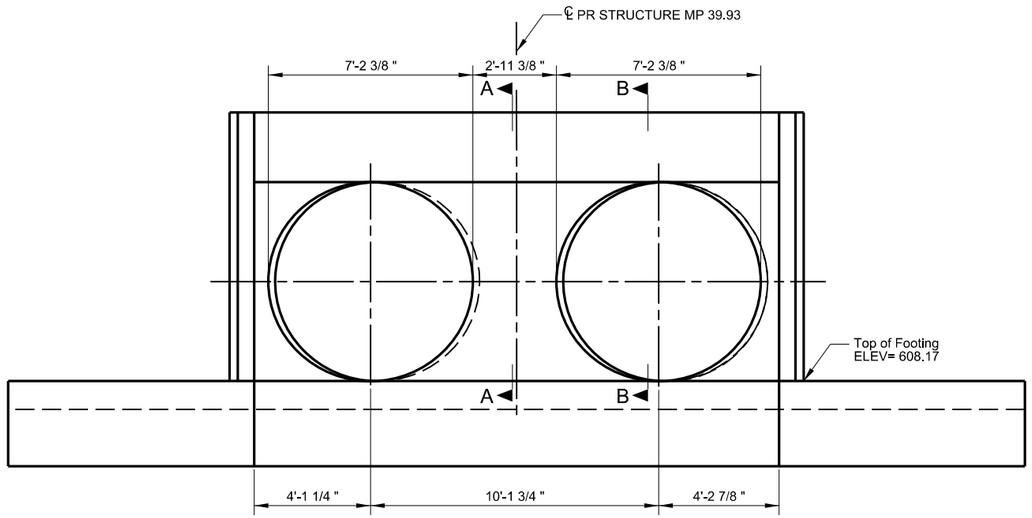
SHEET OF

TO MILLENNIUM STATION

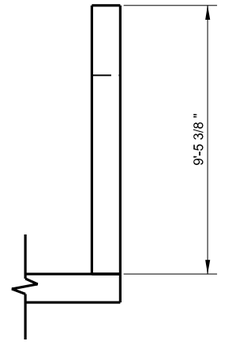
TO SOUTH BEND AIRPORT



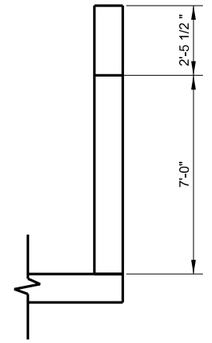
SOUTH HEADWALL PLAN
SCALE: 3/8" = 1'-0"



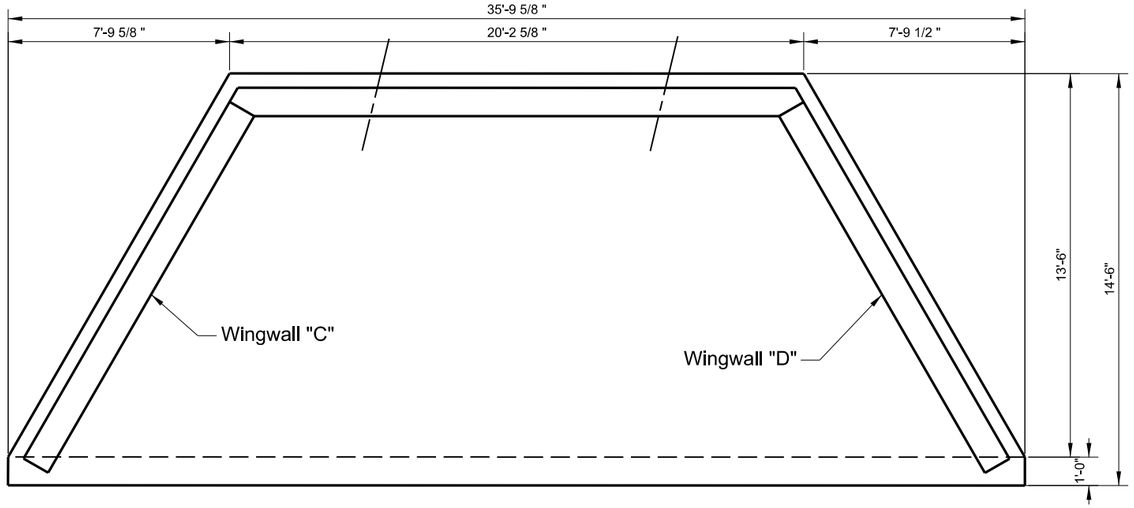
SOUTH HEADWALL ELEVATION
SCALE: 3/8" = 1'-0"



SECTION A-A
SCALE: 3/8" = 1'-0"



SECTION B-B
SCALE: 3/8" = 1'-0"



CONCRETE APRON PLAN
SCALE: 3/8" = 1'-0"

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DRAWING CUL-303 OF CUL-305

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	PEI-MVW
DRAWN:	PEI-RMH
CHECKED:	PEI-PS
DATE:	

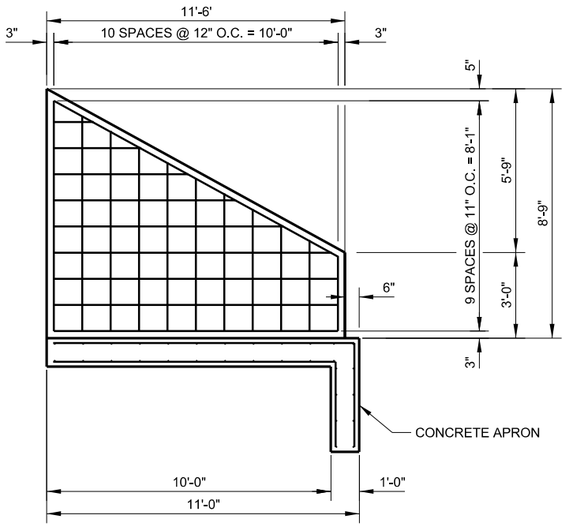
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

NICTD MP 39.93 OVER UNNAMED DRAINAGE SOUTH HEADWALL DETAILS

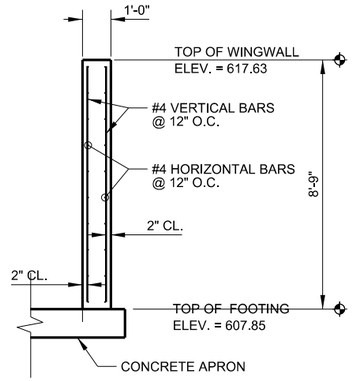
FILENAME	DT_DWG_CUL-303.dgn
SCALE	AS NOTED

SHEET OF

PLOT DATE: 3/6/2020 5:13:52 PM kkoehneke



WINGWALL A ELEVATION
SCALE: 3/8" = 1'-0"



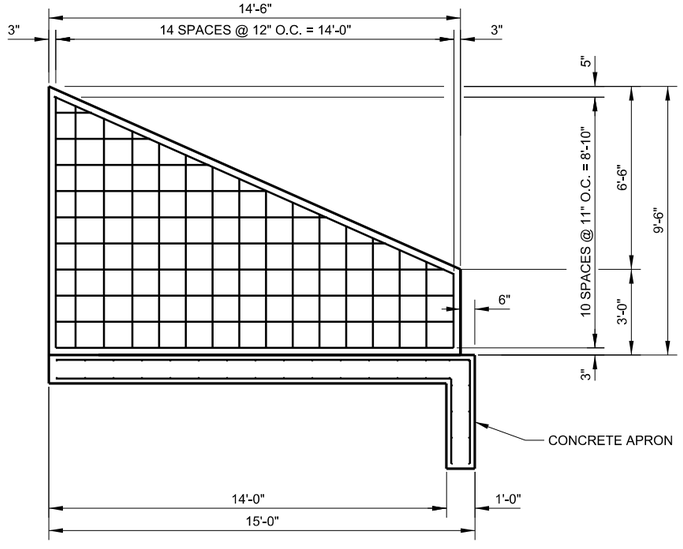
WINGWALL A SECTION
SCALE: 3/8" = 1'-0"

BILL OF MATERIALS			
WINGWALLS A & B			
MARK OR SIZE	NO. REQ'D	LENGTH	WEIGHT
#X	XX	X'-X"	
		TOTAL #X BARS	XXXX#
		TOTAL REINFORCING BARS	XXXX#
CONCRETE			
CONCRETE QUANTITY			XX.X CYS

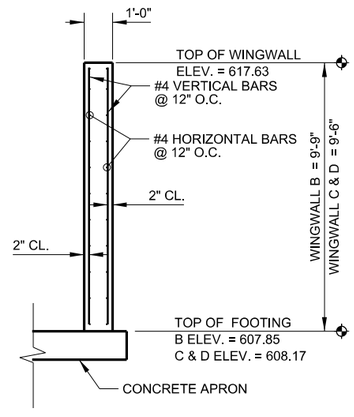
NOTE: THESE QUANTITIES ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT SEPARATE PAY ITEMS.

BILL OF MATERIALS			
WINGWALLS C & D			
MARK OR SIZE	NO. REQ'D	LENGTH	WEIGHT
#X	XX	X'-X"	
		TOTAL #X BARS	XXXX#
		TOTAL REINFORCING BARS	XXXX#
CONCRETE			
CONCRETE QUANTITY			XX.X CYS

NOTE: THESE QUANTITIES ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT SEPARATE PAY ITEMS.



WINGWALL B, C & D ELEVATION
SCALE: 3/8" = 1'-0"



WINGWALL B, C & D SECTION
SCALE: 3/8" = 1'-0"

PLOT DATE: 3/6/2020 5:14:09 PM kkoehneke

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING CUL-304 OF CUL-305

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PATRICK ENGINEERING

ISSUE	DATE	DESCRIPTION
0	03/17/2020	60% DESIGN

NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	PEI-MVW
DRAWN:	PEI-RMH
CHECKED:	PEI-PS
DATE:	

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

NICTD MP 39.93 OVER UNNAMED DRAINAGE WINGWALL DETAILS

FILENAME	DT_DWG_CUL-304.dgn
SCALE	AS NOTED

SHEET OF

SUMMARY OF STRUCTURE C39.93 QUANTITIES

ITEM	CONCRETE				CONCRETE RAILING CLASS C	REINF. BARS	REINF. BARS, EPOXY COATED	RAILING STEEL	BARRIER DELIN-EATORS	REINF. CONC. BRIDGE APPROACH (SIZE)	DENSE GRADED SUBBASE	STRUCT. STEEL	ANCHOR PLATES MK-AP	PILES										GRATES, BASINS, & FITTINGS, CAST IRON	EXP. JOINT TYPE ___	CONC. STR. MEMBERS		SURFACE SEAL
	CLASS C SUPERSTR	CLASS A SUBSTR	CLASS B ABOVE FTG.	CLASS B IN FTG.										STEEL PIPE (SIZE)	STEEL PIPE EPOXY	STEEL H (SIZE)	STEEL H EPOXY COATED	STEEL H REINF. CONC.	TEST PILE, DYNAMIC, PRODUCTI	TEST PILE, DYNAMIC, RESTRICK	PILE SHOE (SIZE)	PILE TIP STEEL H (SIZE)	CORED HOLE IN ROCK				BOX BEAM TYPE & SIZE	I-BEAM TYPE & SIZE	
	CYS	CYS	CYS	CYS	CYS	LBS	LBS	LFT	EACH	SYS	CYS	LBS	EACH	LFT	LFT	LFT	LFT	LFT	LFT	EACH	EACH	EACH	NO.	LFT	LBS	LFT	LFT	LFT	SFT

PATRICK ENGINEERING INC.

BORING NUMBER **MP42.60** SHEET **1** OF **2**
CLIENT **Northern Indiana Commuter Transportation District**
PROJECT & NO. **Rail Improvements 21677.111**
LOCATION **N41°39'4.2"; W87°2'36.4"**

LOGGED BY **SAS**
GROUND ELEVATION **614.5**

ELEVATION	DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY(IN)	BLOW COUNTS	Water Content PL 10 20 30 40 LL; Unconfined Compressive Strength (TSF) 1 2 3 4 5	NOTES & TEST RESULTS
614.5	0.0		Sand and gravel fill, little slag				
613.5	1.0		FILL				
			Light brown fine to medium sand, trace gravel, loose, moist	SS-1 1.0-2.5 3"R	5 5 5		Rock in shoe
			SP				
				SS-2 3.5-5.0 15"R	1 2 2		
608.3	6.2		Brown silty sand, loose, moist	SS-3 6.0-7.5 18"R	1 1 1		
			SM				
606.5	8.0		Gray fine to medium sand, little silt, loose, moist	SS-4 8.5-10.0 18"R	3 4 4		
			SP				
603.7	10.8		▽ Some coarse sand, trace gravel, trace silt, medium dense, saturated	SS-5 11.0-12.5 15"R	5 4 9		1% gravel 95% sand 4% fines
			Light brown, trace coarse sand	SS-6 13.5-15.0 15"R	6 8 12		
			Dense	SS-7 18.5-20.0 17"R	9 15 24		Water added to counter heaving sands
594.5	20.0						

DRILLING CONTRACTOR **K&S Engineers**
DRILLING METHOD **3.25" I.D. HSA**
DRILLING EQUIPMENT **D-50**
DRILLING STARTED **10/5/16** ENDED **10/5/16**

REMARKS
Boring backfilled with soil cuttings upon completion.

WATER LEVEL (ft.)
▽ **10.8**
▼
▼

PATRICK ENGINEERING INC.

BORING NUMBER **MP42.60** SHEET **2** OF **2**
CLIENT **Northern Indiana Commuter Transportation District**
PROJECT & NO. **Rail Improvements 21677.111**
LOCATION **N41°39'4.2"; W87°2'36.4"**

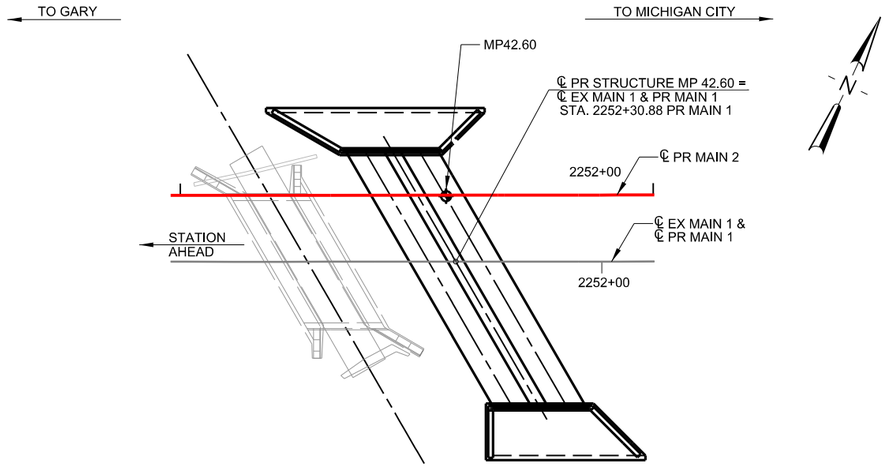
LOGGED BY **SAS**
GROUND ELEVATION **614.5**

ELEVATION	DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY(IN)	BLOW COUNTS	Water Content PL 10 20 30 40 LL; Unconfined Compressive Strength (TSF) 1 2 3 4 5	NOTES & TEST RESULTS
594.5	20.0		Light brown fine to medium sand, trace coarse sand, dense, wet				
			SP				
590.5	24.0		Gray silty clay, trace fine to coarse sand, stiff, medium plasticity, moist	SS-8 23.5-25.0 18"R	3 5 10	✳	qu=2.0*tsf
			CL				
			3" silt seam at 25.0'	SS-9 28.5-30.0 18"R	4 4 6	✳ □ - - - △	qu=1.5*tsf LL=32 PL=17 PI=15
				SS-10 33.5-35.0 17"R	5 6 7	✳	qu=1.75*tsf
				SS-11 38.5-40.0 19"R	3 5 7	✳	qu=1.75*tsf
574.5	40.0		End of Boring at 40.0'				

DRILLING CONTRACTOR **K&S Engineers**
DRILLING METHOD **3.25" I.D. HSA**
DRILLING EQUIPMENT **D-50**
DRILLING STARTED **10/5/16** ENDED **10/5/16**

REMARKS
Boring backfilled with soil cuttings upon completion.

WATER LEVEL (ft.)
▽ **10.8**
▼
▼



BORING PLAN
SCALE: 1/16 = 1'-0"

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING CUL-400 OF CUL-405

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ISSUE	DATE	DESCRIPTION
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NICTD
NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	PEI-MVW
DRAWN:	PEI-RMH
CHECKED:	PEI-PS
DATE:	

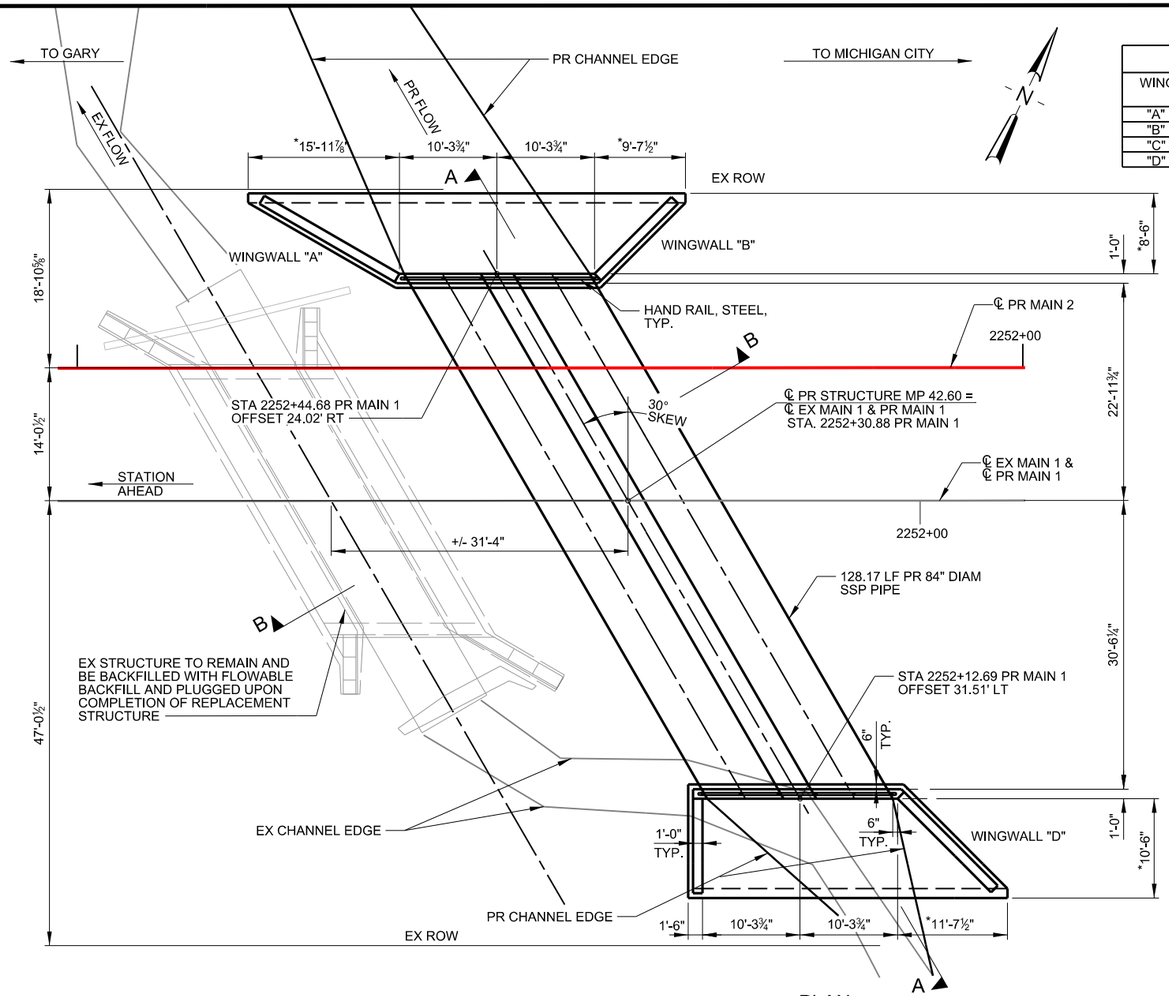
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

NICTD MP 42.60 OVER UNNAMED DRAINAGE SOIL BORINGS

FILENAME	DT_DWG_CUL-400.dgn
SCALE	AS NOTED

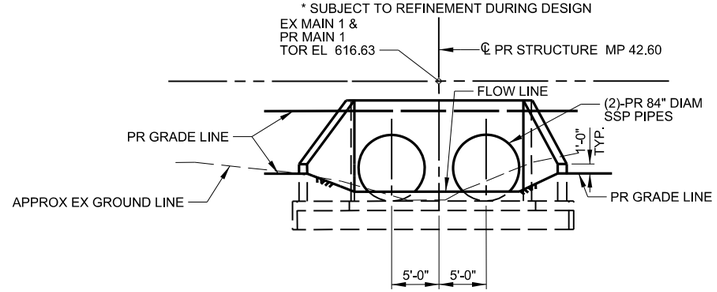
SHEET **OF**

PLOT DATE: 3/6/2020 5:14:15 PM kkoehneke



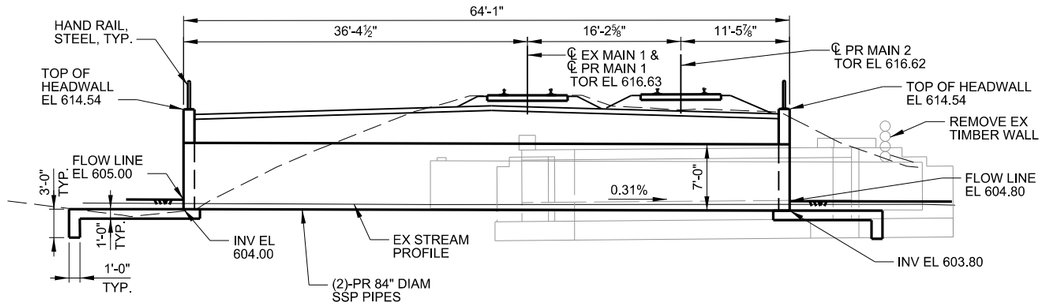
PLAN

SCALE: 1/8" = 1'-0"
* SUBJECT TO REFINEMENT DURING DESIGN



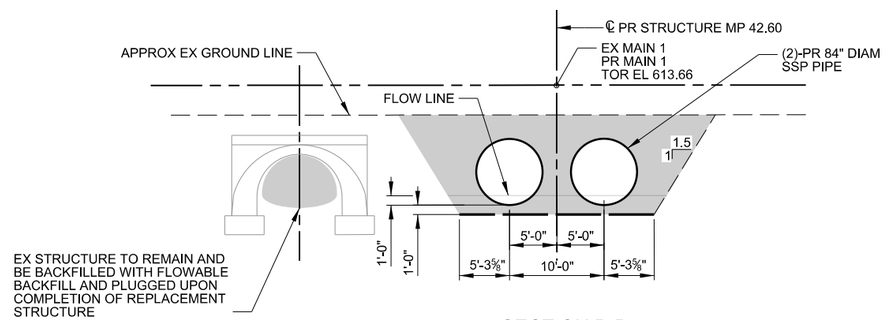
END ELEVATION

(LOOKING ALONG SKEW)
SCALE: 1/8" = 1'-0"



LONGITUDINAL SECTION

(ALONG ℄ STRUCTURE)
SCALE: 1/8" = 1'-0"



SECTION B-B

SCALE: 1/8" = 1'-0"

WINGWALL TABLE

WING	LENGTH	FLARE ANGLE	TOP OF FOOTING	TOP OF WINGWALL	TOP OF HEADWALL
"A"	16'-6"	60°	603.80	614.54	614.54
"B"	11'-6"	45°	603.80	614.54	614.54
"C"	10'-0"	90°	604.00	614.54	614.54
"D"	14'-0"	45°	604.00	614.54	614.54

DESIGN DATA

SPECIFICATIONS:
AMERICAN RAILWAY ENGINEERING AND MAINTENANCE-OF-WAY ASSOCATION (A.R.E.M.A.), MANUAL FOR RAILROAD ENGINEERING, 2016, CHAPTERS 1 AND 8.

LIVE LOADS:
DESIGNED FOR E-80 COOPER WITH DIESEL IMPACT LOADING

DEAD LOADS:
ACTUAL DEAD LOAD WHICH CONSISTS OF THE DEAD LOAD OF CULVERT, FILL/BALLAST, AND TRACK PLUS ADDITIONAL 6" BALLAST FOR FUTURE TRACK RAISE.

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DRAWING CUL-401 OF CUL-405

PLOT DATE: 3/6/2020 5:14:49 PM kkoehneke

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PATRICK ENGINEERING

ISSUE	DATE	DESCRIPTION
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NICTD
NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

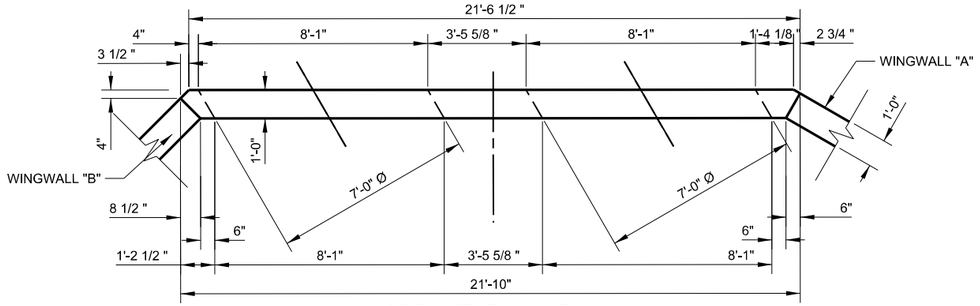
DESIGNED:	PEI-MVW
DRAWN:	PEI-RMH
CHECKED:	PEI-PS
DATE:	

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

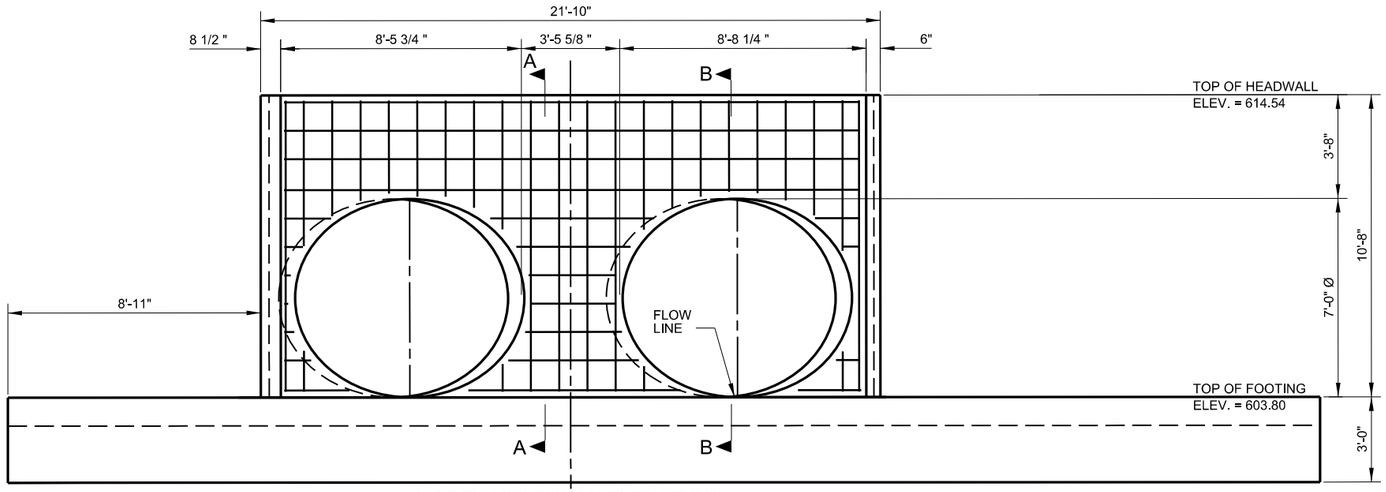
NICTD MP 42.60 OVER UNNAMED DRAINAGE GENERAL PLAN & ELEVATION

FILENAME	DT_DWG_CUL-401.dgn
SCALE	AS NOTED

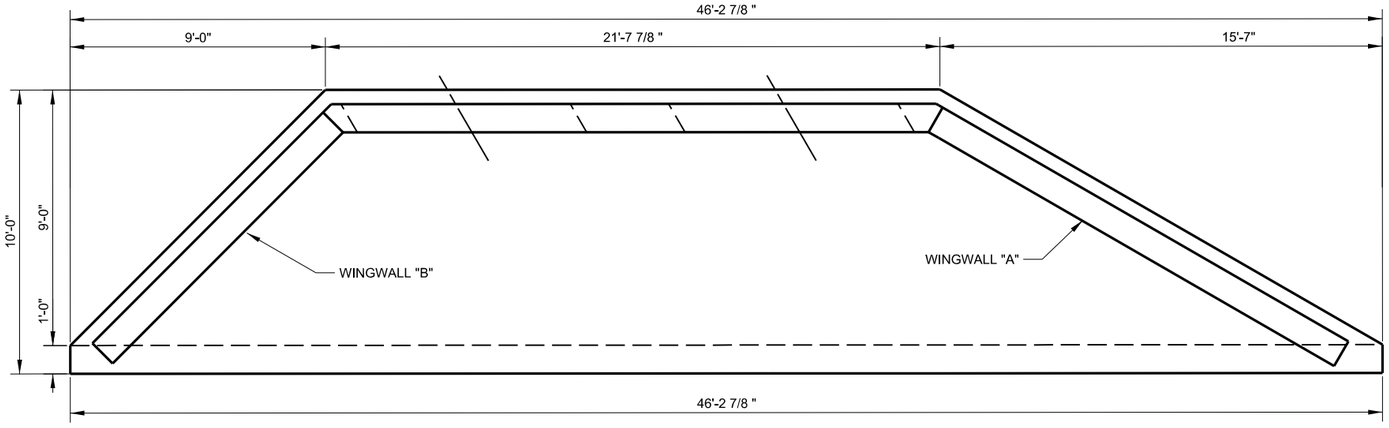
SHEET OF



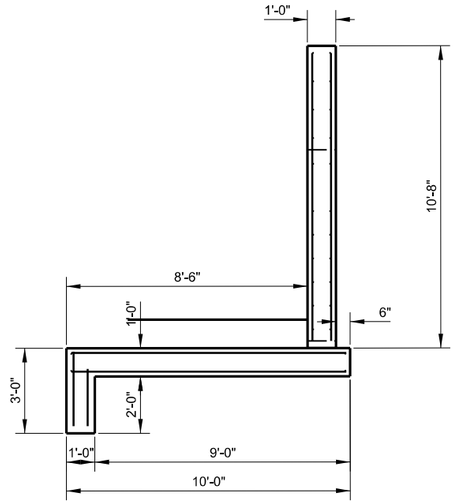
NORTH HEADWALL PLAN
SCALE: 3/8" = 1'-0"



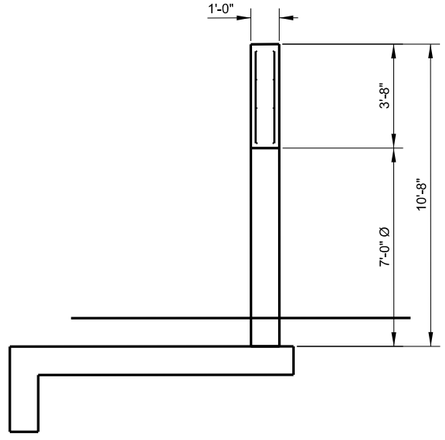
NORTH HEADWALL ELEVATION
SCALE: 3/8" = 1'-0"



NORTH CONCRETE APRON
SCALE: 3/8" = 1'-0"



SECTION A-A
SCALE: 3/8" = 1'-0"



SECTION B-B
SCALE: 3/8" = 1'-0"

BILL OF MATERIALS			
NORTH HEADWALL			
MARK OR SIZE	NO. REQ'D	LENGTH	WEIGHT
#X	XX	X'-X"	
		TOTAL #X BARS	XXXX#
		TOTAL REINFORCING BARS	XXXX#
CONCRETE			
CONCRETE QUANTITY			XX.X CYS

NOTE: THESE QUANTITIES ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT SEPARATE PAY ITEMS.

BILL OF MATERIALS			
FOUNDATION			
MARK OR SIZE	NO. REQ'D	LENGTH	WEIGHT
#X	XX	X'-X"	
		TOTAL #X BARS	XXXX#
		TOTAL REINFORCING BARS	XXXX#
CONCRETE			
CONCRETE QUANTITY			XX.X CYS

NOTE: THESE QUANTITIES ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT SEPARATE PAY ITEMS.

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ISSUE	DATE	DESCRIPTION
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NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	PEI-MVW
DRAWN:	PEI-RMH
CHECKED:	PEI-PS
DATE:	

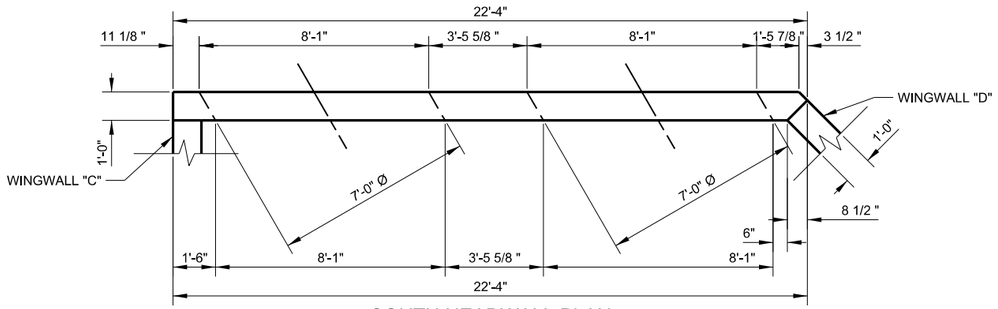
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

NICTD MP 42.60 OVER UNNAMED DRAINAGE NORTH HEADWALL DETAILS

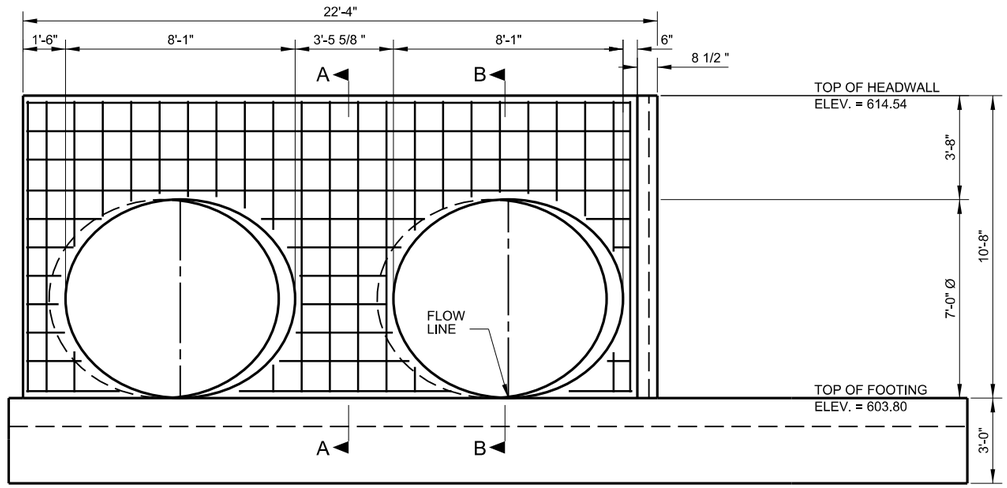
FILENAME	DT_DWG_CUL-402.dgn
SCALE	AS NOTED

SHEET OF

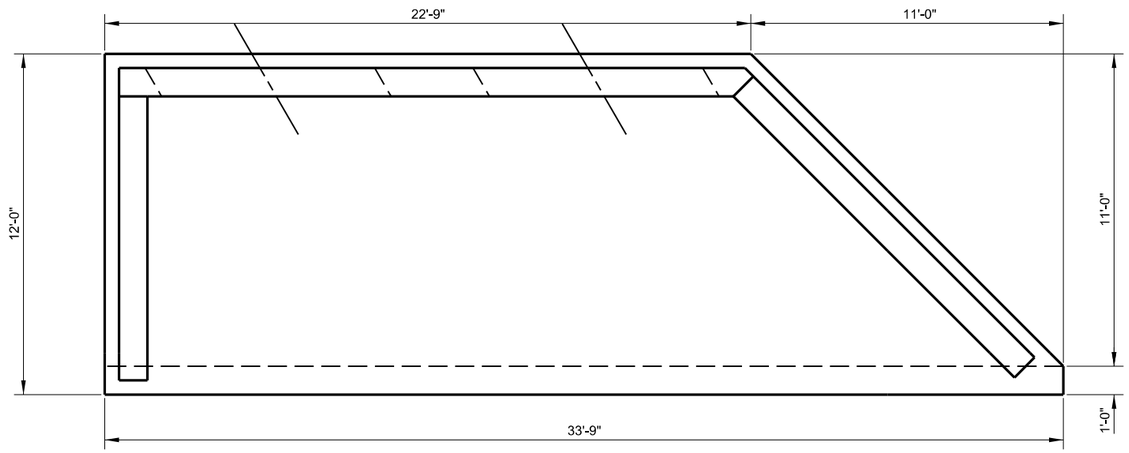
PLOT DATE: 3/6/2020 5:14:52 PM kkoehneke



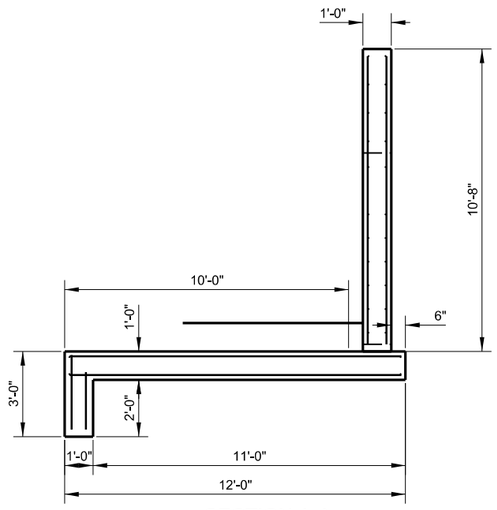
SOUTH HEADWALL PLAN
SCALE: 3/8" = 1'-0"



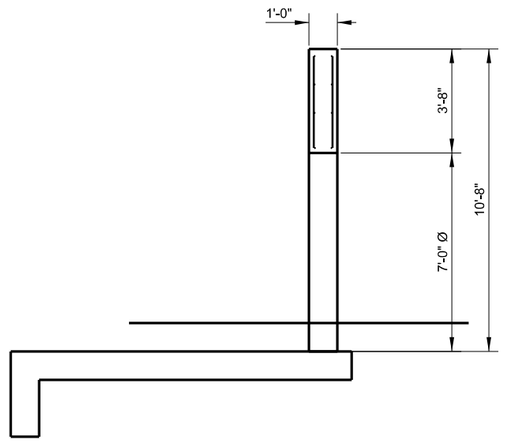
SOUTH HEADWALL ELEVATION
SCALE: 3/8" = 1'-0"



SOUTH CONCRETE APRON
SCALE: 3/8" = 1'-0"



SECTION A-A
SCALE: 3/8" = 1'-0"



SECTION B-B
SCALE: 3/8" = 1'-0"

BILL OF MATERIALS			
NORTH HEADWALL			
MARK OR SIZE	NO. REQ'D	LENGTH	WEIGHT
#X	XX	X'-X"	
	TOTAL #X BARS		XXXX#
	TOTAL REINFORCING BARS		XXXX#
CONCRETE			
CONCRETE QUANTITY			XX.X CYS

NOTE: THESE QUANTITIES ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT SEPARATE PAY ITEMS.

BILL OF MATERIALS			
FOUNDATION			
MARK OR SIZE	NO. REQ'D	LENGTH	WEIGHT
#X	XX	X'-X"	
	TOTAL #X BARS		XXXX#
	TOTAL REINFORCING BARS		XXXX#
CONCRETE			
CONCRETE QUANTITY			XX.X CYS

NOTE: THESE QUANTITIES ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT SEPARATE PAY ITEMS.

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ISSUE	DATE	DESCRIPTION
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NICTD
NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

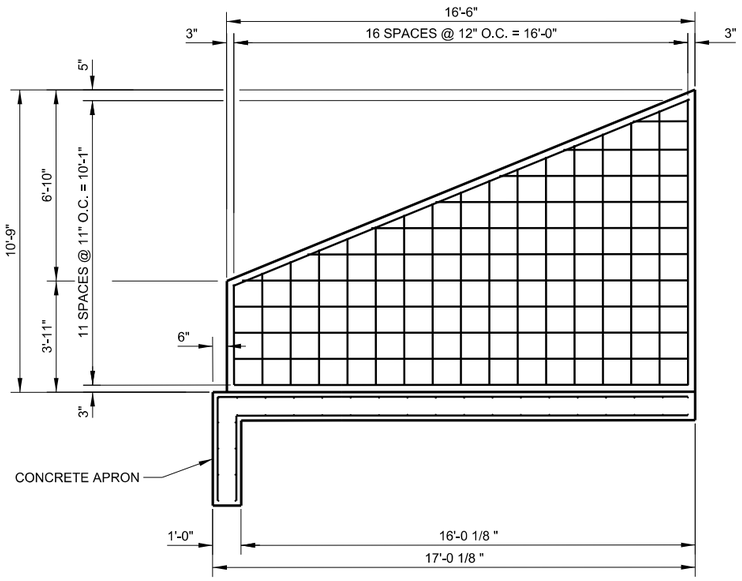
DESIGNED:	PEI-MVW
DRAWN:	PEI-RMH
CHECKED:	PEI-PS
DATE:	

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

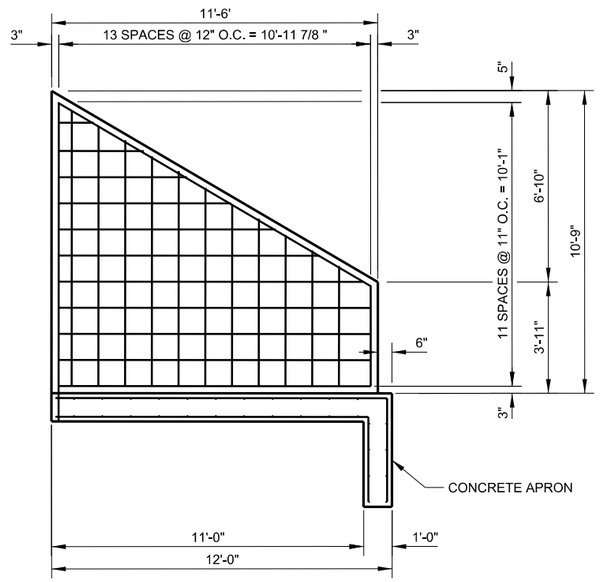
NICTD MP 42.60 OVER UNNAMED DRAINAGE SOUTH HEADWALL DETAILS

FILENAME	DT_DWG_CUL-403.dgn
SCALE	AS NOTED

SHEET OF



WINGWALL A ELEVATION
SCALE: 3/8" = 1'-0"



WINGWALL B ELEVATION
SCALE: 3/8" = 1'-0"

BILL OF MATERIALS			
WINGWALLS A & B			
MARK OR SIZE	NO. REQ'D	LENGTH	WEIGHT
#X	XX	X'-X"	
TOTAL #X BARS			XXXX#
TOTAL REINFORCING BARS			XXXX#
CONCRETE			
CONCRETE QUANTITY			XX.X CYS

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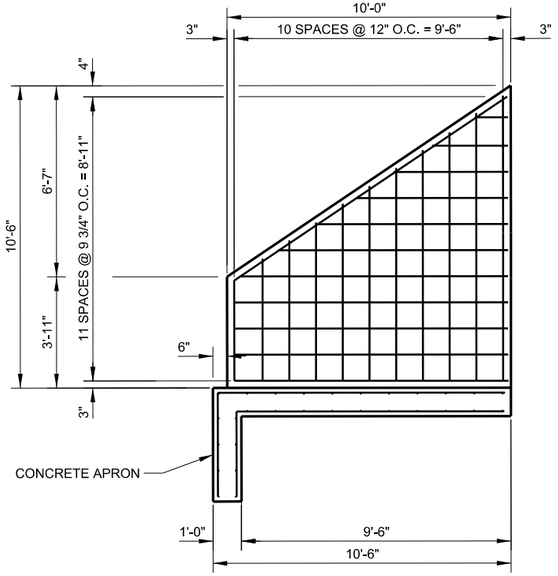
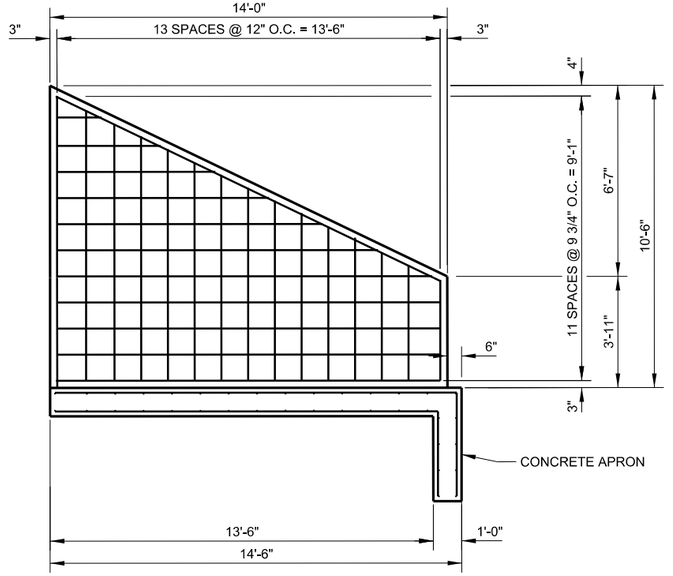
BILL OF MATERIALS			
WINGWALLS C & D			
MARK OR SIZE	NO. REQ'D	LENGTH	WEIGHT
#X	XX	X'-X"	
TOTAL #X BARS			XXXX#
TOTAL REINFORCING BARS			XXXX#
CONCRETE			
CONCRETE QUANTITY			XX.X CYS

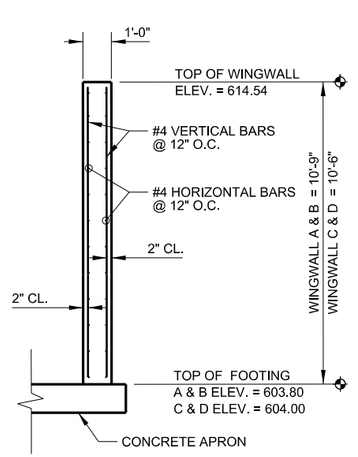
NOTE: THESE QUANTITIES ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT SEPARATE PAY ITEMS.



WINGWALL C ELEVATION
SCALE: 3/8" = 1'-0"



WINGWALL D ELEVATION
SCALE: 3/8" = 1'-0"



WINGWALL D ELEVATION
SCALE: 3/8" = 1'-0"

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DRAWING CUL-404 OF CUL-405

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NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	PEI-MVW
DRAWN:	PEI-RMH
CHECKED:	PEI-PS
DATE:	

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

NICTD MP 42.60 OVER UNNAMED DRAINAGE WINGWALL DETAILS

FILENAME	DT_DWG_CUL-404.dgn
SCALE	AS NOTED

SHEET OF

PLOT DATE: 3/6/2020 5:14:58 PM kkoehneke

SUMMARY OF STRUCTURE C42.60 QUANTITIES

ITEM	CONCRETE				CONCRETE RAILING CLASS C	REINF. BARS	REINF. BARS, EPOXY COATED	RAILING STEEL	BARRIER DELIN-EATORS	REINF. CONC. BRIDGE APPROACH (SIZE)	DENSE GRADED SUBBASE	STRUCT. STEEL	ANCHOR PLATES MK-AP	PILES										GRATES, BASINS, & FITTINGS, CAST IRON	EXP. JOINT TYPE ___	CONC. STR. MEMBERS		SURFACE SEAL
	CLASS C SUPERSTR	CLASS A SUBSTR	CLASS B ABOVE FTG.	CLASS B IN FTG.										STEEL PIPE (SIZE)	STEEL PIPE EPOXY	STEEL H (SIZE)	STEEL H EPOXY COATED	STEEL H REINF. CONC.	TEST PILE, DYNAMIC, PRODUCTI	TEST PILE, DYNAMIC, RESTRICK	PILE SHOE (SIZE)	PILE TIP STEEL H (SIZE)	CORED HOLE IN ROCK				BOX BEAM TYPE & SIZE	I-BEAM TYPE & SIZE	
	CYS	CYS	CYS	CYS	CYS	LBS	LBS	LFT	EACH	SYS	CYS	LBS	EACH	LFT	LFT	LFT	LFT	LFT	LFT	EACH	EACH	EACH	NO.	LFT	LBS	LFT	LFT	LFT	SFT

** Estimated quantity

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NICTD
NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

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DRAWING CUL-405 OF CUL-405

DESIGNED:	PEI-MVW
DRAWN:	PEI-RMH
CHECKED:	PEI-PS
DATE:	

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

NICTD MP 42.60 OVER UNNAMED DRAINAGE STRUCTURE SUMMARY

FILENAME	DT_DWG_CUL-405.dgn
SCALE	AS NOTED

SHEET OF

PATRICK ENGINEERING INC.

BORING NUMBER **MP44.51** SHEET **1** OF **2**
CLIENT **Northern Indiana Commuter Transportation District**
PROJECT & NO. **Rail Improvements 21677.111**
LOCATION **N41°38'24.1"; W87°4'32.8"**

LOGGED BY **SAS**
GROUND ELEVATION **617.1**

ELEVATION	DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY(IN)	BLOW COUNTS	Water Content PL 10 20 30 40 50 LL; Unconfined Compressive Strength (TSF) 1 2 3 4 5	NOTES & TEST RESULTS
617.1	0.0		Brown topsoil, trace gravel				
			CL				
615.8	1.3		Dark brown silty sand, trace gravel, loose, moist	SS-1 1.0-2.5 15"R	4 2 3		
			SM				
613.0	4.1		▽	SS-2 3.5-5.0 16"R	3 6 9		
612.8	4.3		Light brown fine to medium sand, trace coarse sand, medium dense, saturated				
			SP	SS-3 6.0-7.5 17"R	6 7 11		
				SS-4 8.5-10.0 18"R	6 9 10		
			Some gray sand at 9.0', trace gravel				Water added to counter heaving sands.
				SS-5 11.0-12.5 18"R	4 7 7		
			Gray				
				SS-6 13.5-15.0 16"R	5 7 9		
				SS-7 18.5-20.0 18"R	2 2 3		
597.1	20.0		Increased silt content, loose				

DRILLING CONTRACTOR **K&S Engineers**
DRILLING METHOD **3.25" I.D. HSA**
DRILLING EQUIPMENT **D-50**
DRILLING STARTED **10/4/16** ENDED **10/4/16**

REMARKS
Boring backfilled with soil cuttings upon completion.

WATER LEVEL (ft.)
▽ **4.1**
▼
▼

PATRICK ENGINEERING INC.

BORING NUMBER **MP44.51** SHEET **2** OF **2**
CLIENT **Northern Indiana Commuter Transportation District**
PROJECT & NO. **Rail Improvements 21677.111**
LOCATION **N41°38'24.1"; W87°4'32.8"**

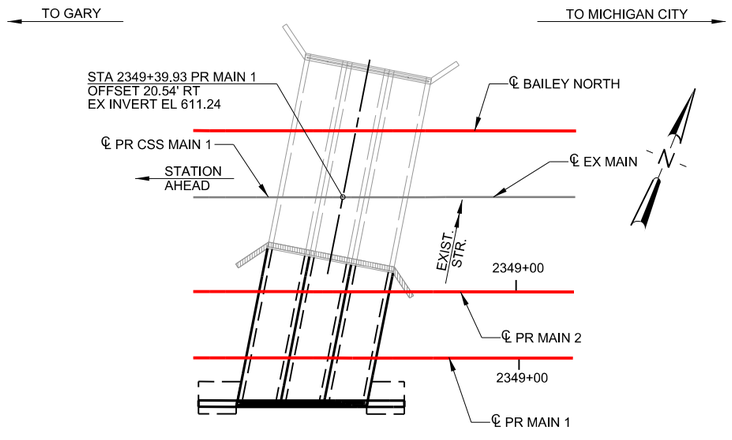
LOGGED BY **SAS**
GROUND ELEVATION **617.1**

ELEVATION	DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY(IN)	BLOW COUNTS	Water Content PL 10 20 30 40 50 LL; Unconfined Compressive Strength (TSF) 1 2 3 4 5	NOTES & TEST RESULTS
597.1	20.0		Gray fine to medium sand, little silt, trace coarse sand, trace gravel, loose, wet				
			SP				
				SS-8 23.5-25.0 18"R	4 7 10	✳	qu=4.25*tsf
593.0	24.1		Gray silty clay, little medium to coarse sand, little fine gravel, hard, low plasticity, moist				
			CL				
			Stiff	SS-9 28.5-30.0 19"R	2 4 7	✳	qu=1.75*tsf
				SS-10 33.5-35.0 18"R	4 5 9	⊡✳△	qu=2.0*tsf LL=28 PL=16 PI=12
			Trace gravel				
				SS-11 38.5-40.0 3"R	5 6 10		
577.1	40.0		End of Boring at 40.0'				

DRILLING CONTRACTOR **K&S Engineers**
DRILLING METHOD **3.25" I.D. HSA**
DRILLING EQUIPMENT **D-50**
DRILLING STARTED **10/4/16** ENDED **10/4/16**

REMARKS
Boring backfilled with soil cuttings upon completion.

WATER LEVEL (ft.)
▽ **4.1**
▼
▼



BORING PLAN
SCALE: 1/16" = 1'-0"

PLOT DATE: 3/6/2020 5:15:05 PM kkoehneke

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DRAWING CUL-500 OF CUL-504

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

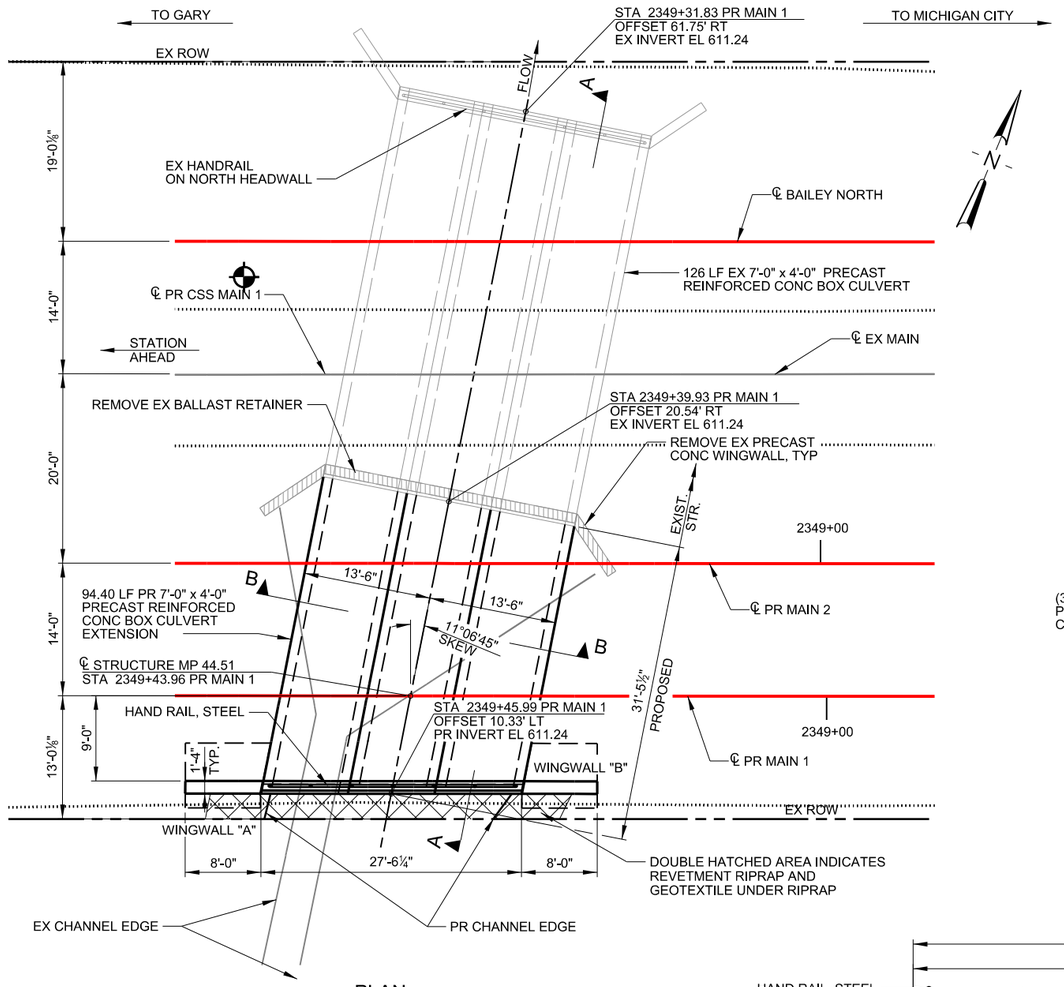
DESIGNED:	PEI-
DRAWN:	PEI-RMH
CHECKED:	PEI-
DATE:	

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

NICTD MP 44.51 OVER UNNAMED DRAINAGE SOIL BORINGS

FILENAME	DT_DWG_CUL-500.dgn
SCALE	AS NOTED

SHEET **OF**



PLAN
SCALE: ⅛" = 1'-0"

GENERAL NOTES

FOR EXISTING CULVERT PLANS, SEE NICTD SLAB CULVERTS REPLACEMENT PROJECT PLANS, DRAWING SC2304GP02, MARCH, 2008.

THE PRECAST REINFORCED CONCRETE BOX CULVERTS SHALL BE IN ACCORDANCE WITH SECTION 714 OF THE INDOT STANDARD SPECIFICATIONS AND ARE TO BE MANUFACTURED AND DESIGNED IN ACCORDANCE WITH AREMA CHAPTER 8, SECTION 16 FOR 18 IN. OF COVER OR LESS. THE PAY ITEM FOR THIS WORK WILL BE "STRUCTURE EXTENSION, PRECAST REINFORCED CONCRETE BOX SECTIONS, 7 FT X 4 FT," AND PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE PER FOOT COMPLETE IN PLACE. PAYMENT SHALL INCLUDE ALL EXCAVATION, REINFORCING STEEL, CONCRETE, DEWATERING, AND ALL OTHER INCIDENTALS REQUIRED TO COMPLETE THIS WORK.

THE OUTER 10 FT. OF THIS STRUCTURE BACKFILL, UNDER THE UPSTREAM END OF THE STRUCTURE, SHOULD BE ENVELOPED AT THE TOP, BOTTOM, AND OUTSIDE ENDS, WITH A CONTINUOUS LENGTH OF PERMEABLE GEOTEXTILE. THIS GEOTEXTILE SHOULD EXTEND THE ENTIRE WIDTH OF THE EXCAVATION.

FINAL DETAILS FOR CHANNEL GRADING AND PROTECTION WILL BE PART OF THE MITIGATION PLAN THAT WILL BE DEVELOPED DURING FINAL DESIGN.

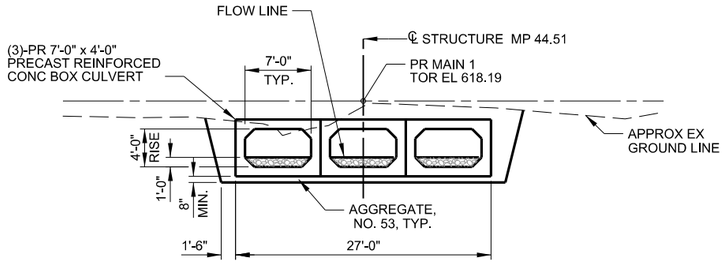
DESIGN DATA

SPECIFICATIONS:
AMERICAN RAILWAY ENGINEERING AND MAINTENANCE-OF-WAY ASSOCATION (A.R.E.M.A.), MANUAL FOR RAILROAD ENGINEERING, 2016, CHAPTERS 1 AND 8.

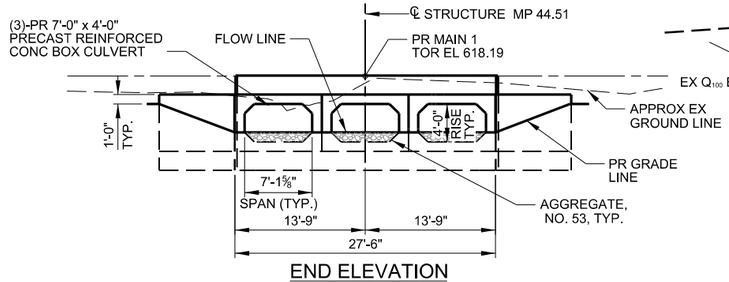
LIVE LOADS:
DESIGNED FOR E-80 COOPER WITH DIESEL IMPACT LOADING

DEAD LOADS:
ACTUAL DEAD LOAD WHICH CONSISTS OF THE DEAD LOAD OF CULVERT, FILL/BALLAST, AND TRACK PLUS ADDITIONAL 6" BALLAST FOR FUTURE TRACK RAISE.

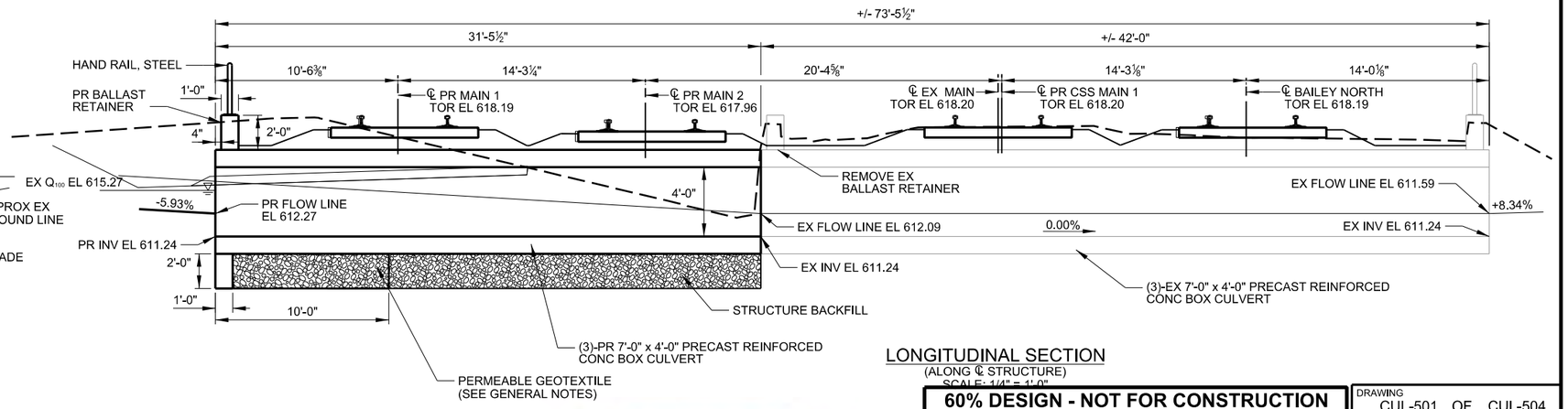
WINGWALL TABLE					
WING	LENGTH	FLARE ANGLE	TOP OF FOOTING	TOP OF WINGWALL	TOP OF HEADWALL
"A"	8'-0"	90°	610.24	616.24	618.24
"B"	8'-0"	90°	610.24	616.24	618.24



SECTION B-B
(LOOKING NORTH)
SCALE: ⅛" = 1'-0"



END ELEVATION
(LOOKING NORTH)
SCALE: ⅛" = 1'-0"



LONGITUDINAL SECTION
(ALONG ℄ STRUCTURE)
SCALE: 1/4" = 1'-0"

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33 East Highway 12
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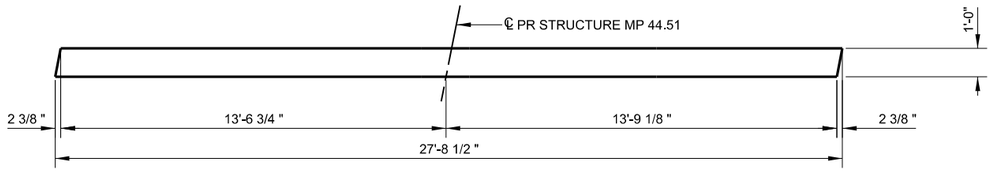
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	PEI-
DRAWN:	PEI-RMH
CHECKED:	PEI-
DATE:	

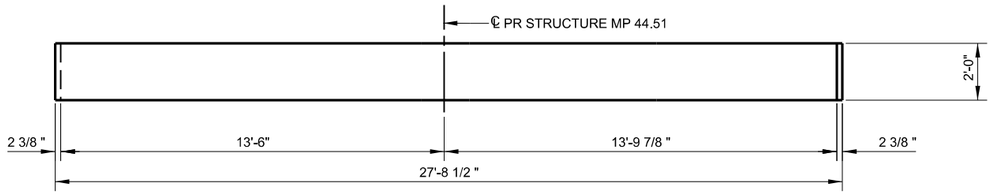
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

NICTD MP 44.51 OVER UNNAMED DRAINAGE GENERAL PLAN

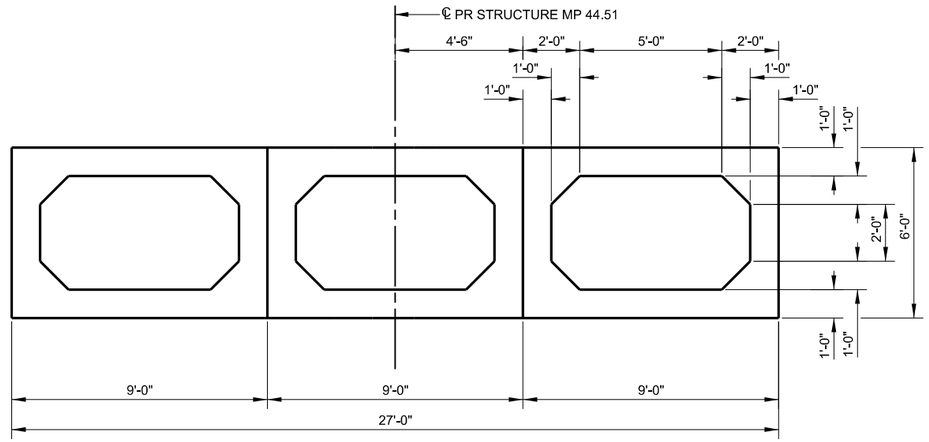
FILENAME	DT_DWG_CUL-501.dgn
SCALE	AS NOTED
SHEET	OF



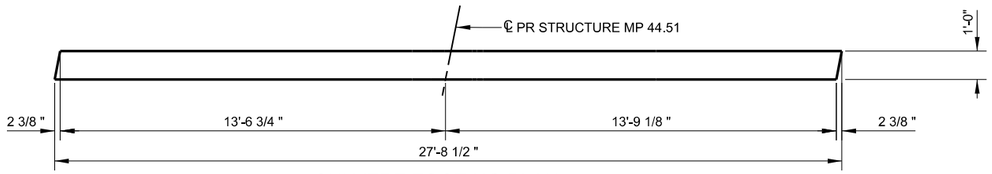
BALLAST RETAINER PLAN
SCALE: 3/8" = 1'-0"



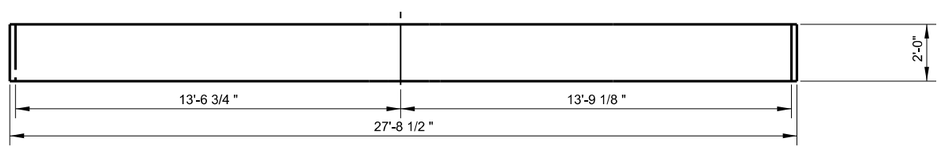
BALLAST RETAINER ELEVATION
SCALE: 3/8" = 1'-0"



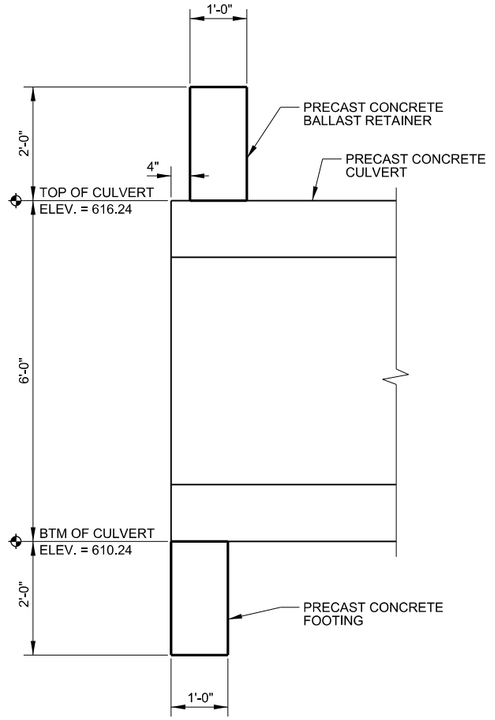
CULVERT CROSS SECTION
SCALE: 3/8" = 1'-0"



CULVERT FOOTING PLAN
SCALE: 3/8" = 1'-0"



CULVERT FOOTING ELEVATION
SCALE: 3/8" = 1'-0"



SECTION THRU CULVERT
SCALE: 3/4" = 1'-0"

BILL OF MATERIALS			
CONCRETE CULVERT			
MARK OR SIZE	NO. REQ'D	LENGTH	WEIGHT
#X	XX	X'-X"	
		TOTAL #X BARS	XXXX#
		TOTAL REINFORCING BARS	XXXX#
CONCRETE			
CONCRETE QUANTITY			XX.X CYS

NOTE: THESE QUANTITIES ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT SEPARATE PAY ITEMS.

BILL OF MATERIALS			
FOUNDATION			
MARK OR SIZE	NO. REQ'D	LENGTH	WEIGHT
#X	XX	X'-X"	
		TOTAL #X BARS	XXXX#
		TOTAL REINFORCING BARS	XXXX#
CONCRETE			
CONCRETE QUANTITY			XX.X CYS

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	PEI-
DRAWN:	PEI-RMH
CHECKED:	PEI-
DATE:	

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

NICTD MP 44.51 OVER UNNAMED DRAINAGE PRECAST CONCRETE CULVERT

FILENAME	DT_DWG_CUL-502.dgn
SCALE	AS NOTED

SHEET OF

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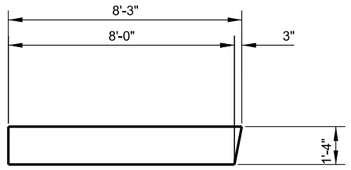
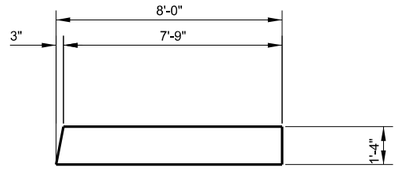
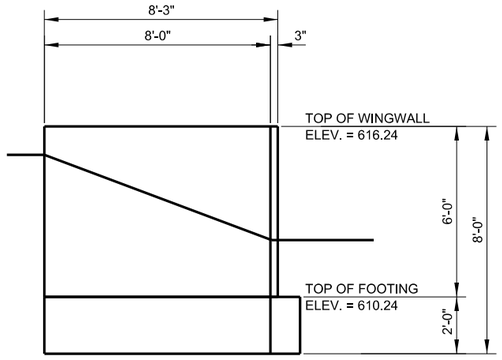


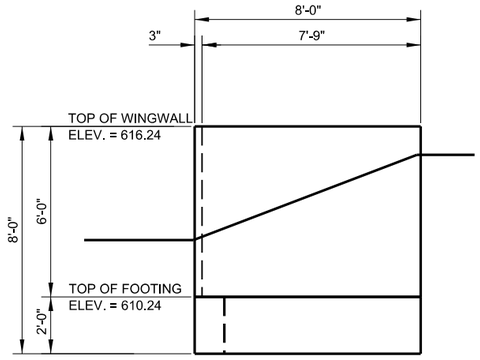
WINGWALL A PLAN
SCALE: 3/8" = 1'-0"



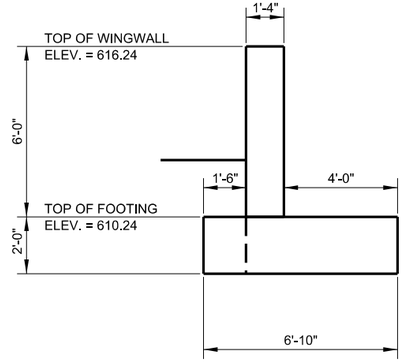
WINGWALL B PLAN
SCALE: 3/8" = 1'-0"



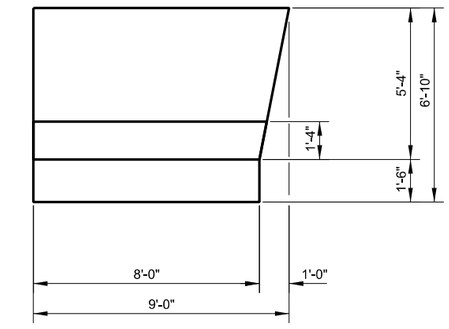
WINGWALL A ELEVATION
SCALE: 3/8" = 1'-0"



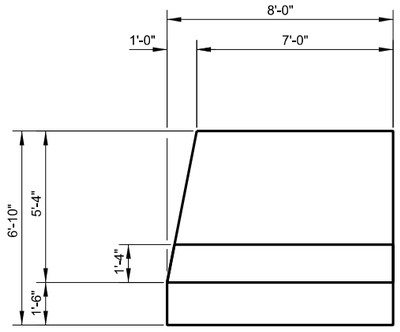
WINGWALL B ELEVATION
SCALE: 3/8" = 1'-0"



TYPICAL WINGWALL SECTION
SCALE: 3/8" = 1'-0"



WINGWALL A FOUNDATION PLAN
SCALE: 3/8" = 1'-0"



WINGWALL B FOUNDATION PLAN
SCALE: 3/8" = 1'-0"

BILL OF MATERIALS			
WINGWALLS A & B			
MARK OR SIZE	NO. REQ'D	LENGTH	WEIGHT
#X	XX	X'-X"	
TOTAL #X BARS			XXXX#
TOTAL REINFORCING BARS			XXXX#
CONCRETE			
CONCRETE QUANTITY			XX.X CYS

NOTE: THESE QUANTITIES ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT SEPARATE PAY ITEMS.

BILL OF MATERIALS			
WINGWALL A & B FOUNDATIONS			
MARK OR SIZE	NO. REQ'D	LENGTH	WEIGHT
#X	XX	X'-X"	
TOTAL #X BARS			XXXX#
TOTAL REINFORCING BARS			XXXX#
CONCRETE			
CONCRETE QUANTITY			XX.X CYS

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Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING CUL-503 OF CUL-504

DESIGNED:	PEI-
DRAWN:	PEI-RMH
CHECKED:	PEI-
DATE:	

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

NICTD MP 44.51 OVER UNNAMED DRAINAGE WINGWALL DETAILS

FILENAME	DT_DWG_CUL-503.dgn
SCALE	AS NOTED

SHEET OF

SUMMARY OF STRUCTURE C44.51 QUANTITIES

ITEM	CONCRETE				CONCRETE RAILING CLASS C	REINF. BARS	REINF. BARS, EPOXY COATED	RAILING STEEL	BARRIER DELIN-EATORS	REINF. CONC. BRIDGE APPROACH (SIZE)	DENSE GRADED SUBBASE	STRUCT. STEEL	ANCHOR PLATES MK-AP	PILES										GRATES, BASINS, & FITTINGS, CAST IRON	EXP. JOINT TYPE ___	CONC. STR. MEMBERS		SURFACE SEAL
	CLASS C SUPERSTR	CLASS A SUBSTR	CLASS B ABOVE FTG.	CLASS B IN FTG.										STEEL PIPE (SIZE)	STEEL PIPE EPOXY	STEEL H (SIZE)	STEEL H EPOXY COATED	STEEL H REINF. CONC.	TEST PILE, DYNAMIC, PRODUCTI	TEST PILE, DYNAMIC, RESTRICK	PILE SHOE (SIZE)	PILE TIP STEEL H (SIZE)	CORED HOLE IN ROCK				BOX BEAM TYPE & SIZE	I-BEAM TYPE & SIZE	
	CYS	CYS	CYS	CYS	CYS	LBS	LBS	LFT	EACH	SYS	CYS	LBS	EACH	LFT	LFT	LFT	LFT	LFT	LFT	EACH	EACH	EACH	NO.	LFT	LBS	LFT	LFT	LFT	SFT

** Estimated quantity

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING CUL-504 OF CUL-504

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ISSUE	DATE	DESCRIPTION
0	03/17/2020	60% DESIGN

NICTD
NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	PEI-
DRAWN:	PEI-RMH
CHECKED:	PEI-
DATE:	

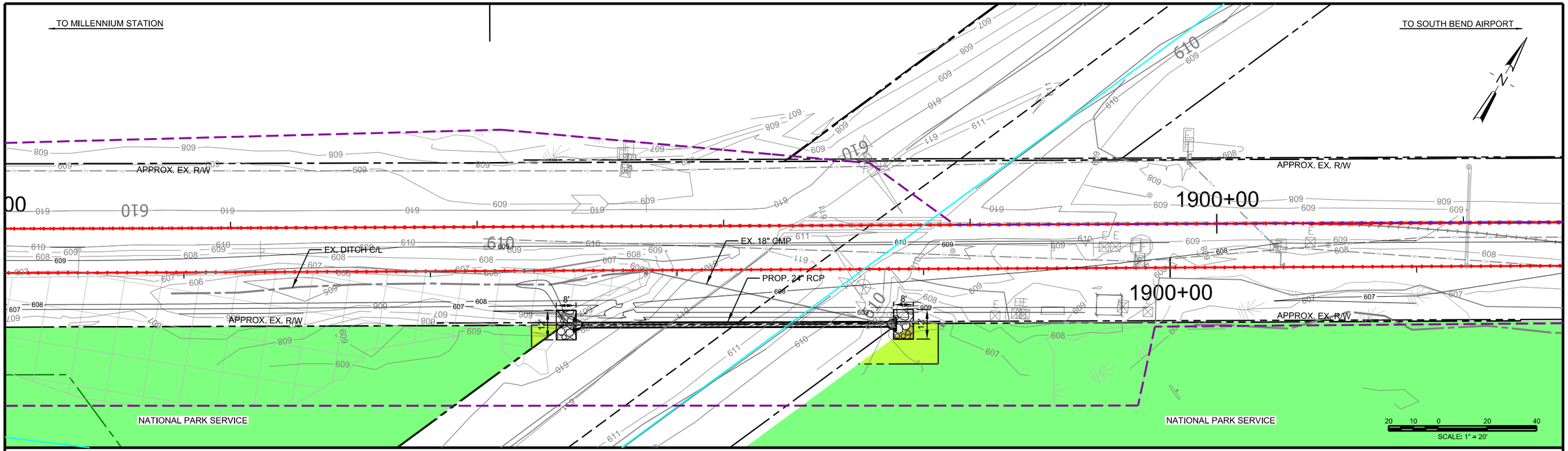
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

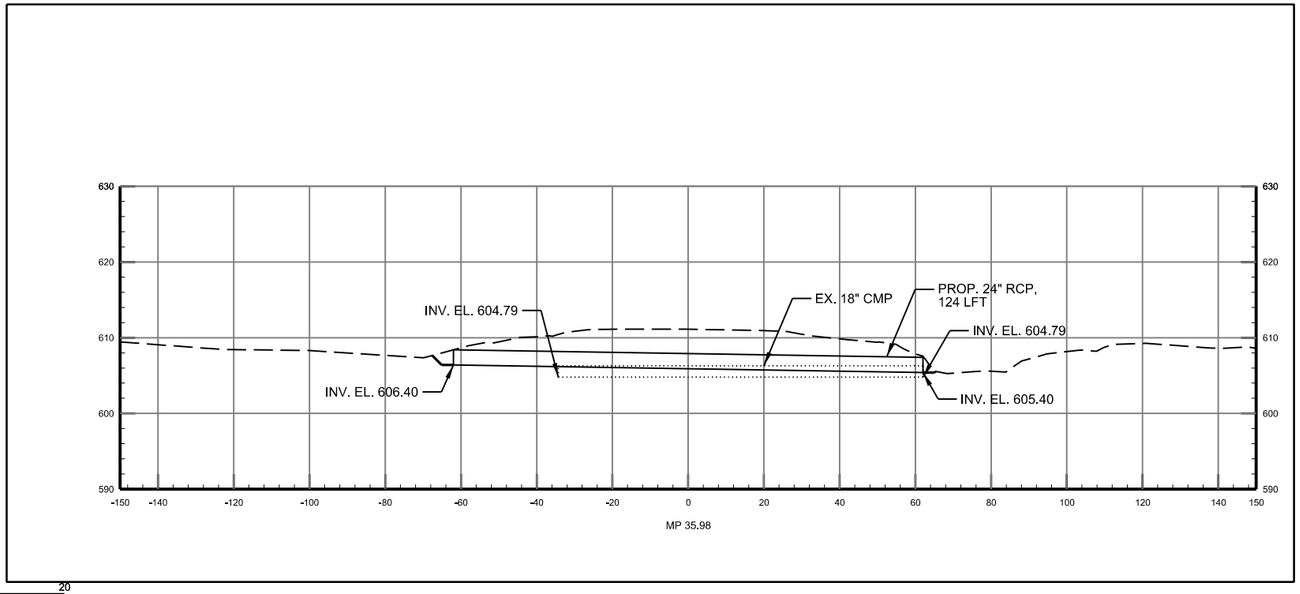
NICTD MP 44.51 OVER UNNAMED DRAINAGE
SUMMARY OF STRUCTURE

FILENAME	DT_DWG_CUL-504.dgn
SCALE	AS NOTED

SHEET OF

PLOT DATE: 3/6/2020 5:16:11 PM kkoehneke





HORIZONTAL SCALE 20 10 0 20 40

VERTICAL SCALE 10 5 0 10 20

LEGEND

- EXISTING TRACK TO REMAIN
- 5+00 PROPOSED TRACK
- ENVIRONMENTAL SURVEY LIMIT
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- NPS PROPERTY
- PROPOSED TEMPORARY IMPACT AREA
- PROPOSED CONSTRUCTION EASEMENT
- ACCESS ROAD/TURNOUT PAD
- HIGH QUALITY WETLAND
- NON HIGH QUALITY WETLAND/UNDETERMINED
- STREAM OR DITCH
- RIP RAP

PLOT DATE: 3/16/2020 12:07:20 PM jfeinstein

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DRAWING CUL-600 OF CUL-614

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NICTD
NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

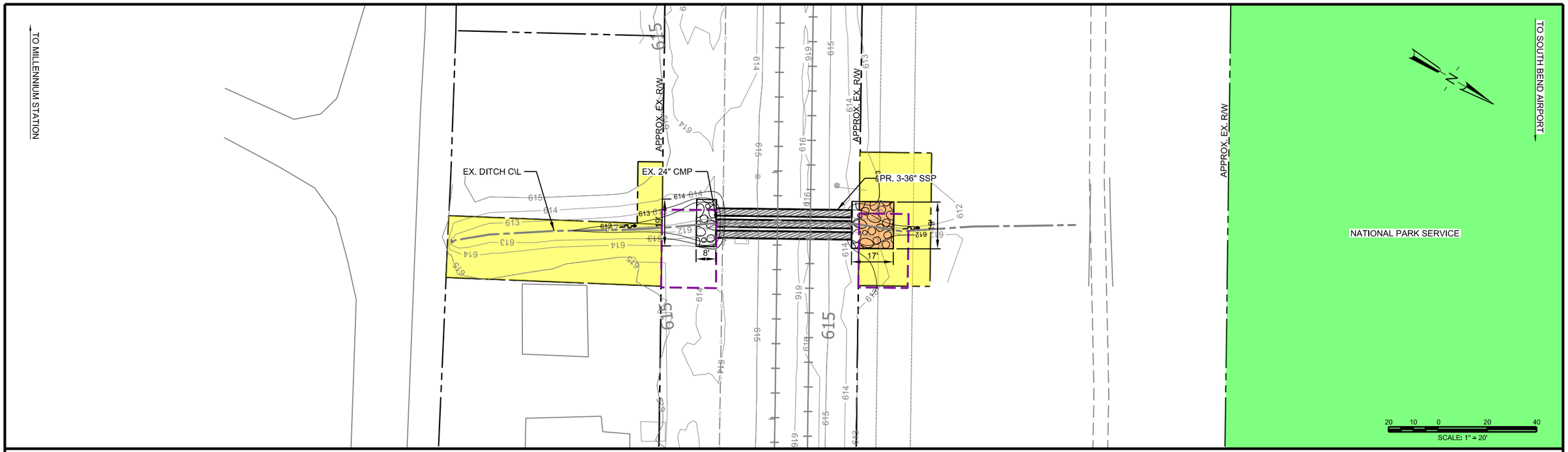
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

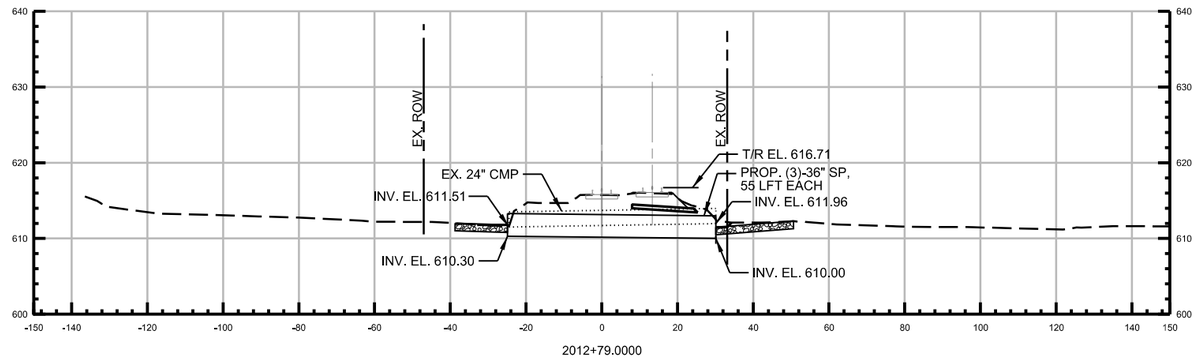
DESIGNED:	PEI-SA
DRAWN:	PEI-PK
CHECKED:	PEI-JIF
DATE:	3/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK NWI

NICTD MP 35.98
PROPOSED CULVERT REPLACEMENT

FILENAME	DT_DWG_CUL-600.dgn	SHEET	OF
SCALE	AS NOTED		





LEGEND

- EXISTING TRACK TO REMAIN
- 5+00 PROPOSED TRACK
- ENVIRONMENTAL SURVEY LIMIT
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- NPS PROPERTY
- PROPOSED TEMPORARY IMPACT AREA
- PROPOSED CONSTRUCTION EASEMENT
- ACCESS ROAD/TURNOUT PAD
- HIGH QUALITY WETLAND
- NON HIGH QUALITY WETLAND/UNDETERMINED
- STREAM OR DITCH
- RIP RAP

20 10 0 20 40
HORIZONTAL SCALE

10 5 0 10 20
VERTICAL SCALE

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12:07:55 PM
3/16/2020
PLOT DATE:

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DRAWING CUL-601 OF CUL-614

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33 East Highway 12
Chesterton, Indiana 46304

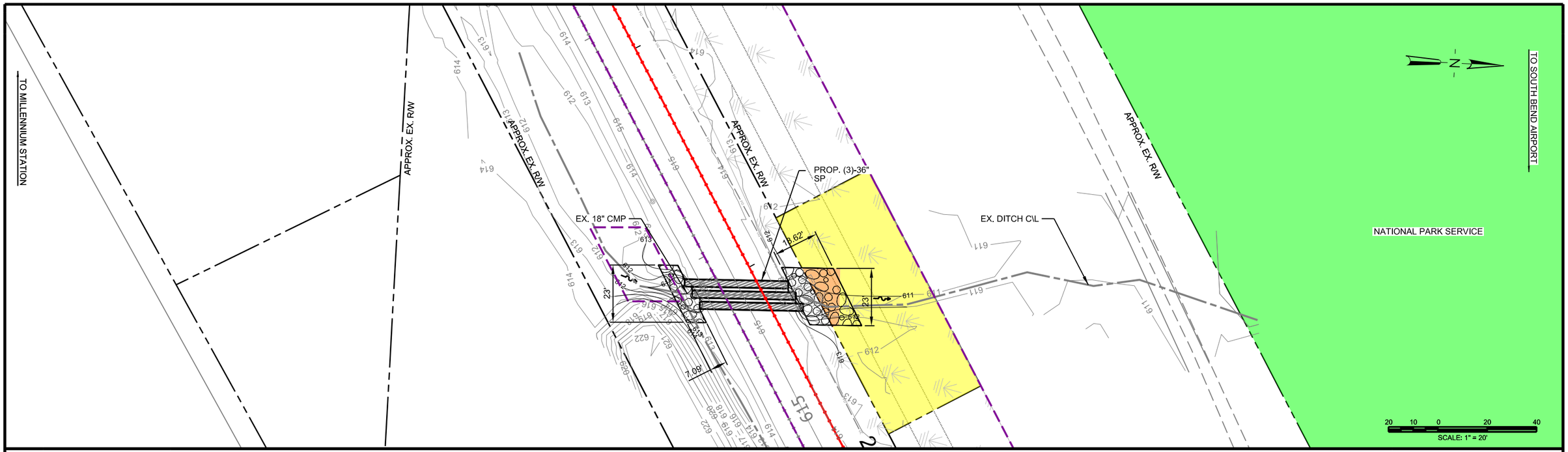
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

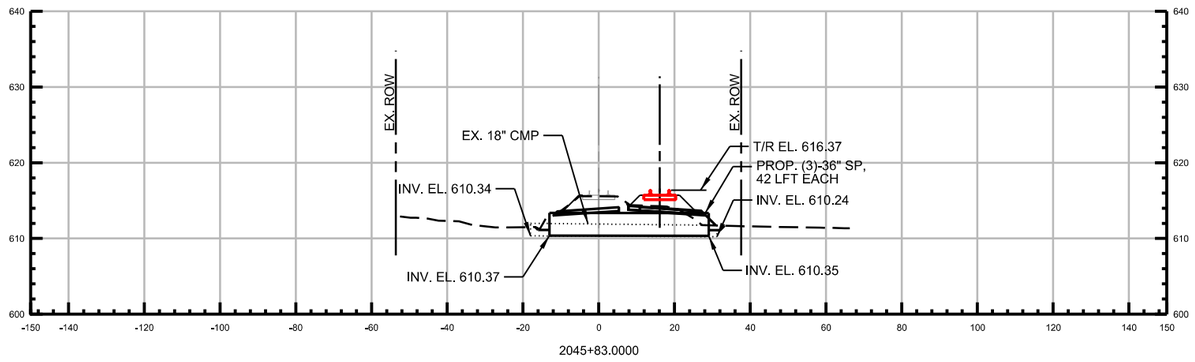
DESIGNED:	PEI-SA
DRAWN:	PEI-PK
CHECKED:	PEI-JIF
DATE:	3/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK NWI

NICTD MP 38.20
PROPOSED CULVERT REPLACEMENT

FILENAME	DT_DWG_CUL-601.dgn	SHEET	OF
SCALE	AS NOTED		





LEGEND

- EXISTING TRACK TO REMAIN
- 5+00 PROPOSED TRACK
- ENVIRONMENTAL SURVEY LIMIT
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- NPS PROPERTY
- PROPOSED TEMPORARY IMPACT AREA
- PROPOSED CONSTRUCTION EASEMENT
- ACCESS ROAD/TURNOUT PAD
- HIGH QUALITY WETLAND
- NON HIGH QUALITY WETLAND/UNDETERMINED
- STREAM OR DITCH
- RIP RAP

20 10 0 20 40
HORIZONTAL SCALE

10 5 0 10 20
VERTICAL SCALE

PLOT DATE: 3/16/2020 12:08:32 PM jfeinstein

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING CUL-602 OF CUL-614

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ISSUE	DATE	DESCRIPTION
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NICTD
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33 East Highway 12
Chesterton, Indiana 46304

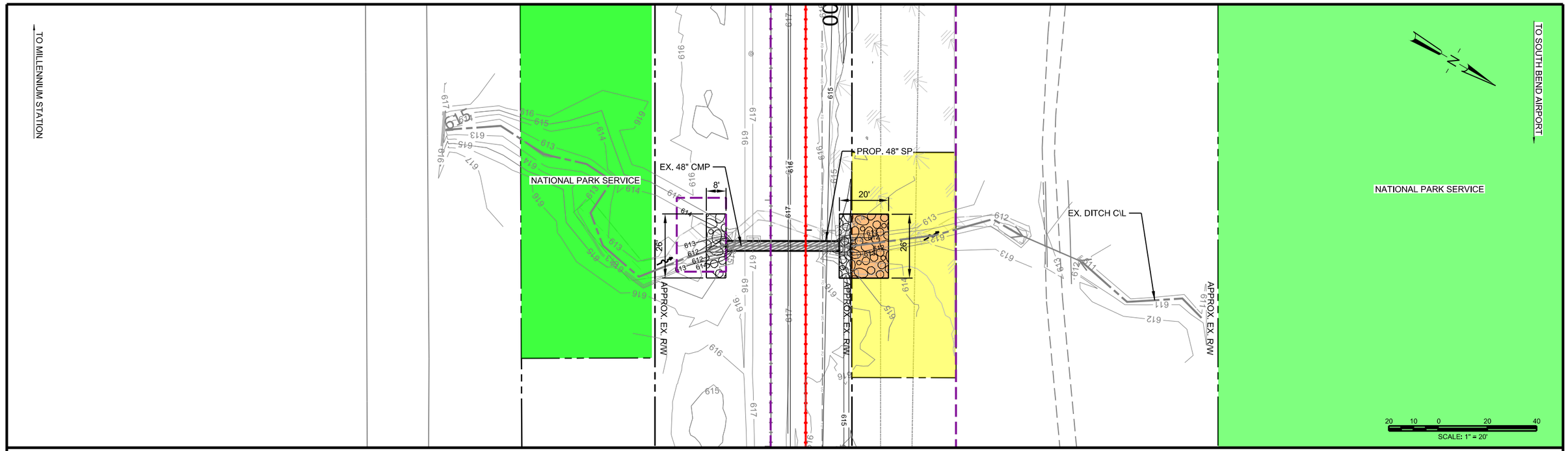
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

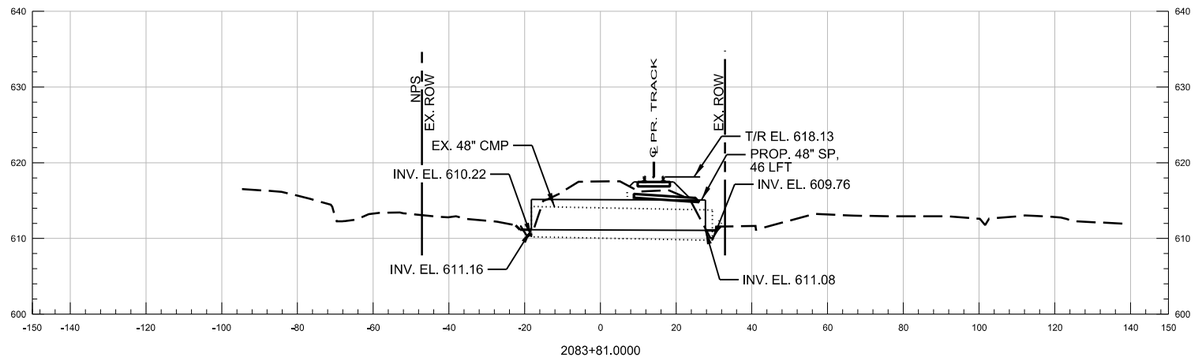
DESIGNED:	PEI-SA
DRAWN:	PEI-PK
CHECKED:	PEI-JIF
DATE:	3/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK NWI

NICTD MP 38.57
PROPOSED CULVERT REPLACEMENT

FILENAME	DT_DWG_CUL-602.dgn	SHEET OF
SCALE	AS NOTED	





LEGEND

- EXISTING TRACK TO REMAIN
- 5+00 PROPOSED TRACK
- ENVIRONMENTAL SURVEY LIMIT
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- NPS PROPERTY
- PROPOSED TEMPORARY IMPACT AREA
- PROPOSED CONSTRUCTION EASEMENT
- ACCESS ROAD/TURNOUT PAD
- HIGH QUALITY WETLAND
- NON HIGH QUALITY WETLAND/UNDETERMINED
- STREAM OR DITCH
- RIP RAP

20 10 0 20 40
HORIZONTAL SCALE

10 5 0 10 20
VERTICAL SCALE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING CUL-603 OF CUL-614

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ISSUE	DATE	DESCRIPTION
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33 East Highway 12
Chesterton, Indiana 46304

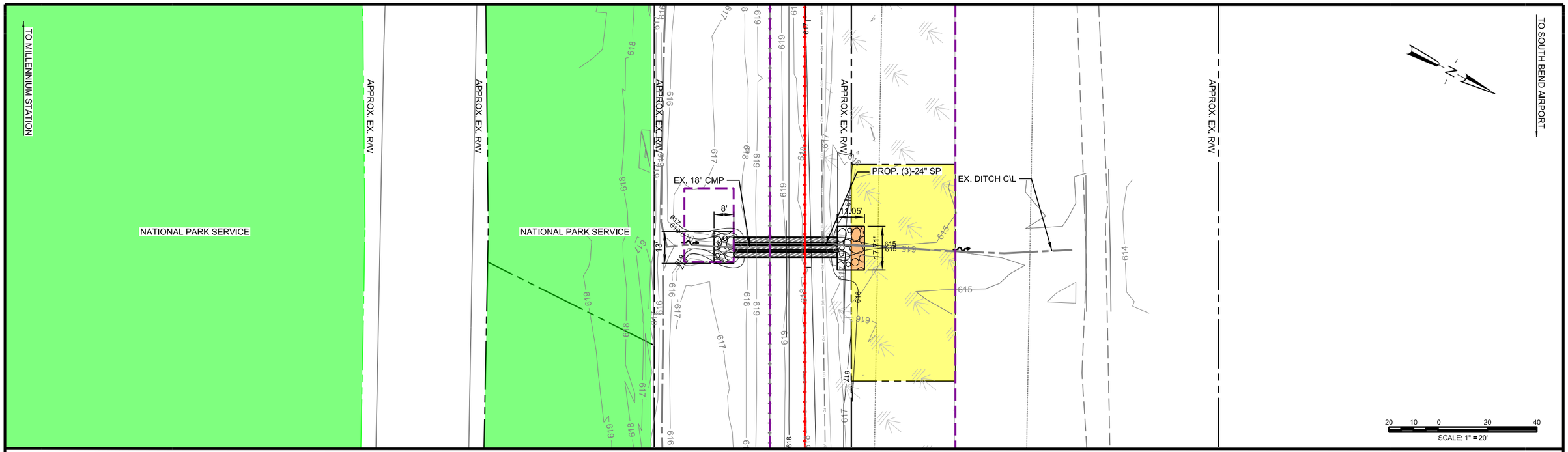
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

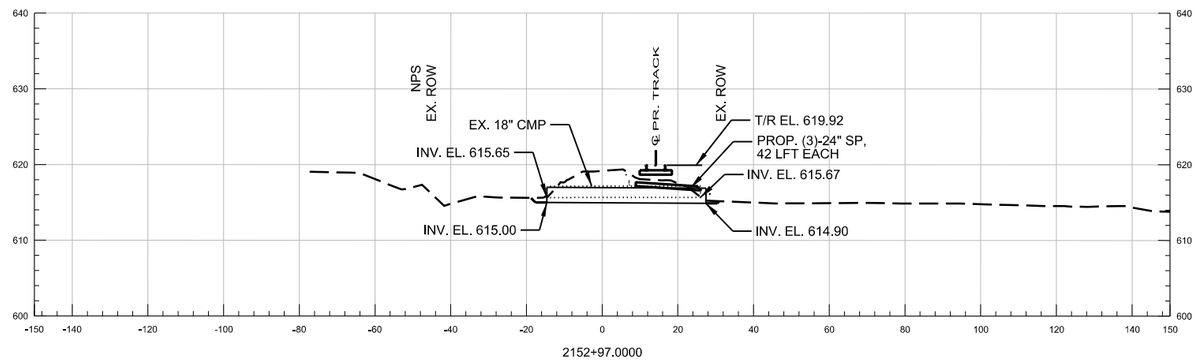
DESIGNED:	PEI-SA
DRAWN:	PEI-PK
CHECKED:	PEI-JIF
DATE:	3/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK NWI

NICTD MP 39.48
PROPOSED CULVERT REPLACEMENT

FILENAME	DT_DWG_CUL-603.dgn	SHEET	OF
SCALE	AS NOTED		





LEGEND

- EXISTING TRACK TO REMAIN
- 5+00 PROPOSED TRACK
- ENVIRONMENTAL SURVEY LIMIT
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- NPS PROPERTY
- PROPOSED TEMPORARY IMPACT AREA
- PROPOSED CONSTRUCTION EASEMENT
- ACCESS ROAD/TURNOUT PAD
- HIGH QUALITY WETLAND
- NON HIGH QUALITY WETLAND/UNDETERMINED
- STREAM OR DITCH
- RIP RAP

20 10 0 20 40
HORIZONTAL SCALE

10 5 0 10 20
VERTICAL SCALE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING CUL-604 OF CUL-614

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

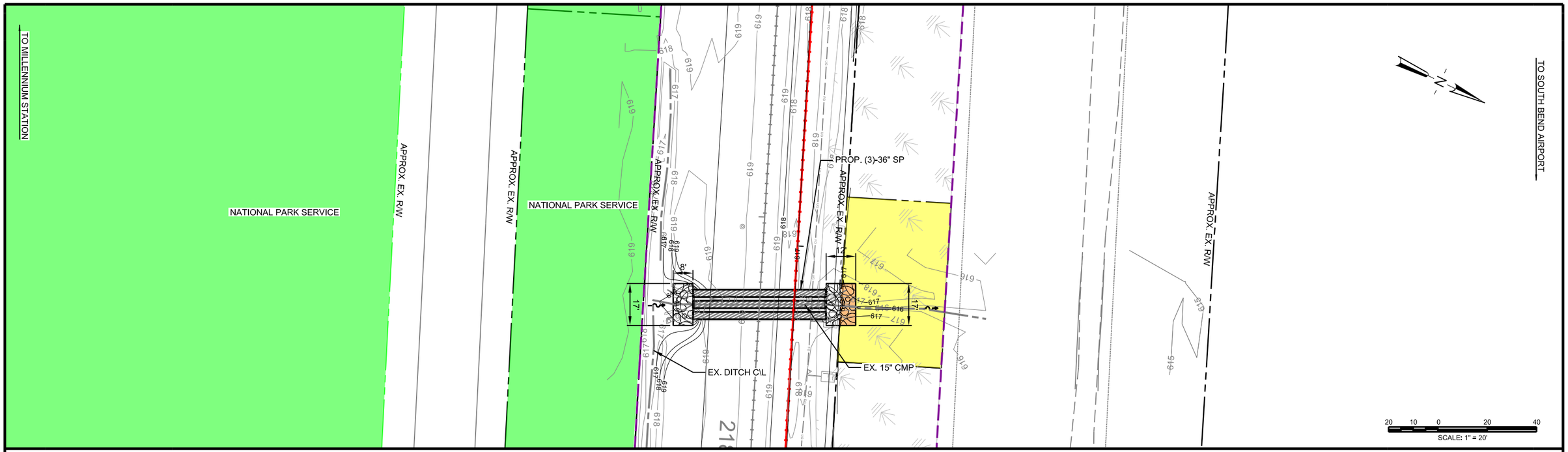
DESIGNED:	PEI-SA
DRAWN:	PEI-PK
CHECKED:	PEI-JIF
DATE:	3/16/2020

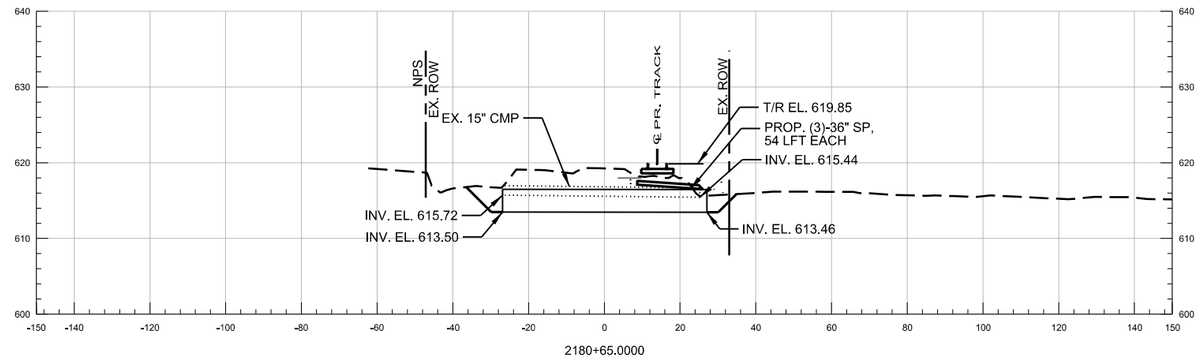
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK NWI

NICTD MP 40.80
PROPOSED CULVERT REPLACEMENT

FILENAME	DT_DWG_CUL-604.dgn
SCALE	AS NOTED

SHEET OF





LEGEND

- EXISTING TRACK TO REMAIN
- 5+00 PROPOSED TRACK
- ENVIRONMENTAL SURVEY LIMIT
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- NPS PROPERTY
- PROPOSED TEMPORARY IMPACT AREA
- PROPOSED CONSTRUCTION EASEMENT
- ACCESS ROAD/TURNOUT PAD
- HIGH QUALITY WETLAND
- NON HIGH QUALITY WETLAND/UNDETERMINED
- STREAM OR DITCH
- RIP RAP

20 10 0 20 40
HORIZONTAL SCALE

10 5 0 10 20
VERTICAL SCALE

PLOT DATE: 3/16/2020 12:10:07 PM jfeinstein

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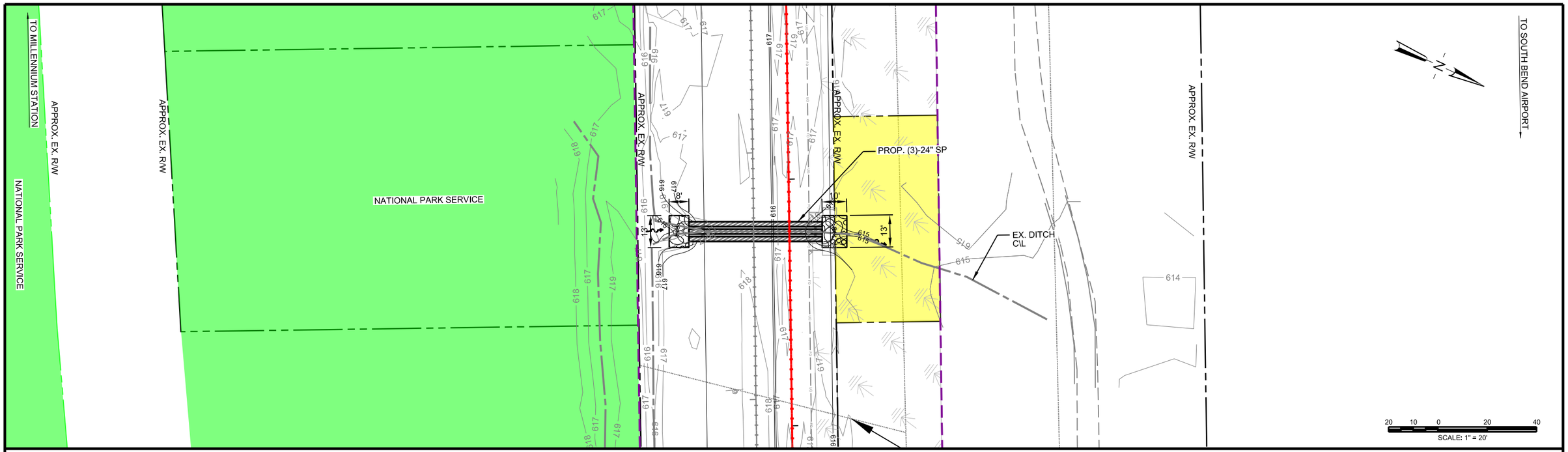
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

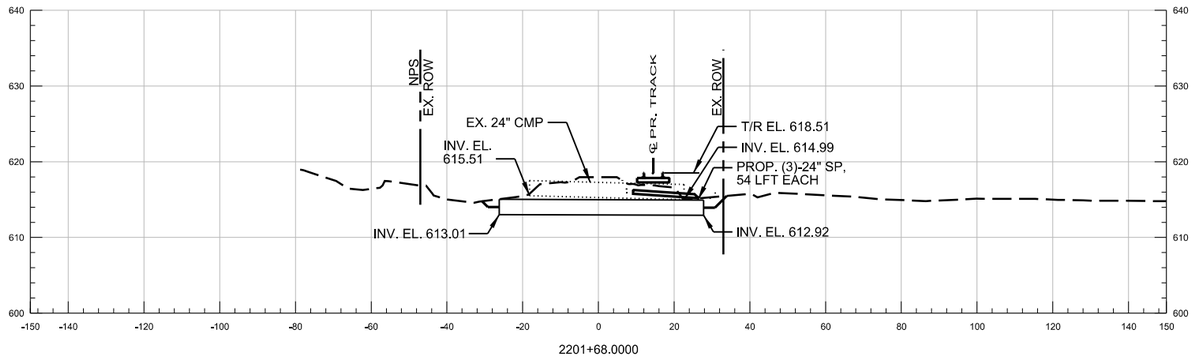
DESIGNED:	PEI-SA
DRAWN:	PEI-PK
CHECKED:	PEI-JIF
DATE:	3/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK NWI

NICTD MP 41.40
PROPOSED CULVERT REPLACEMENT

FILENAME	DT_DWG_CUL-605.dgn	SHEET	OF
SCALE	AS NOTED		





LEGEND

- EXISTING TRACK TO REMAIN
- 5+00 PROPOSED TRACK
- ENVIRONMENTAL SURVEY LIMIT
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- NPS PROPERTY
- PROPOSED TEMPORARY IMPACT AREA
- PROPOSED CONSTRUCTION EASEMENT
- ACCESS ROAD/TURNOUT PAD
- HIGH QUALITY WETLAND
- NON HIGH QUALITY WETLAND/UNDETERMINED
- STREAM OR DITCH
- RIP RAP

20 10 0 20 40
HORIZONTAL SCALE

10 5 0 10 20
VERTICAL SCALE

PLOT DATE: 3/16/2020 12:10:38 PM jfeinstein

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DRAWING CUL-606 OF CUL-614

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ISSUE	DATE	DESCRIPTION
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NICTD
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33 East Highway 12
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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

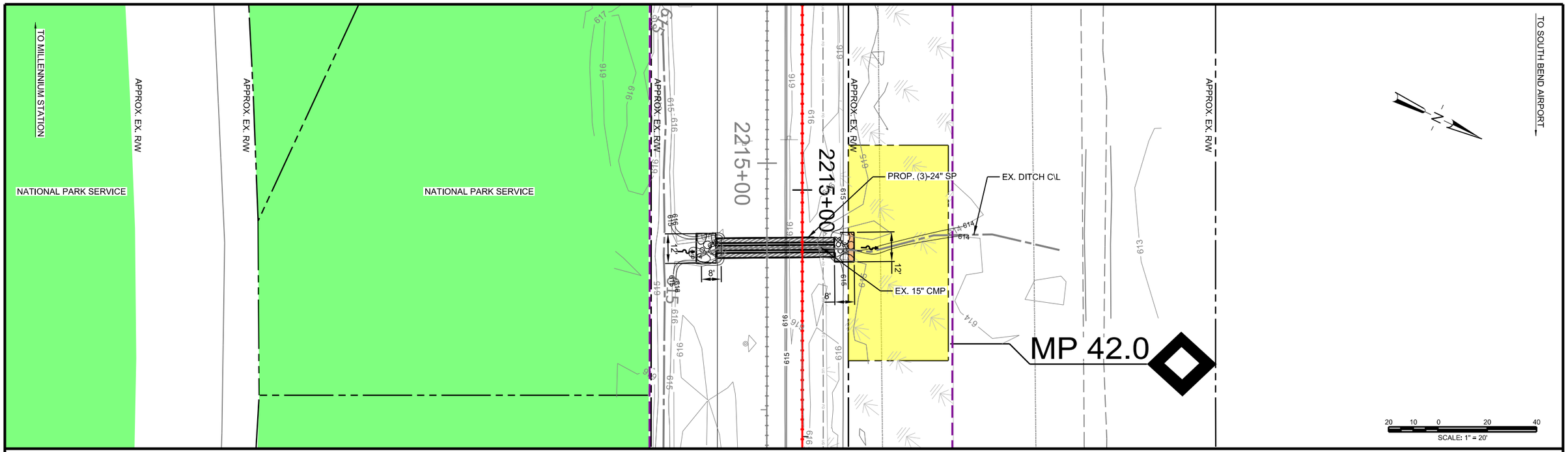
DESIGNED:	PEI-SA
DRAWN:	PEI-PK
CHECKED:	PEI-JIF
DATE:	3/16/2020

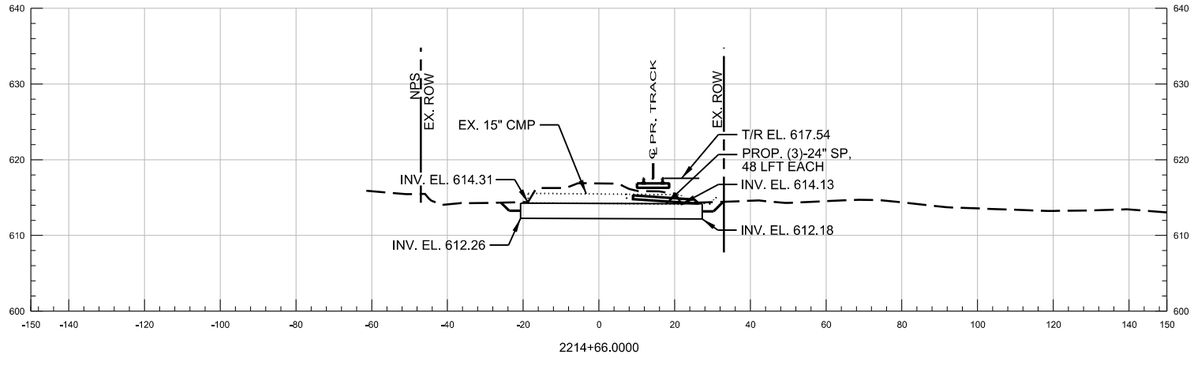
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK NWI

NICTD MP 41.74
PROPOSED CULVERT REPLACEMENT

FILENAME	DT_DWG_CUL-606.dgn
SCALE	AS NOTED

SHEET OF





LEGEND

- EXISTING TRACK TO REMAIN
- 5+00 PROPOSED TRACK
- ENVIRONMENTAL SURVEY LIMIT
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- NPS PROPERTY
- PROPOSED TEMPORARY IMPACT AREA
- PROPOSED CONSTRUCTION EASEMENT
- ACCESS ROAD/TURNOUT PAD
- HIGH QUALITY WETLAND
- NON HIGH QUALITY WETLAND/UNDETERMINED
- STREAM OR DITCH
- RIP RAP

20 10 0 20 40
HORIZONTAL SCALE

10 5 0 10 20
VERTICAL SCALE

PLOT DATE: 3/16/2020 12:11:11 PM jfeinstein

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DRAWING CUL-607 OF CUL-614

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ISSUE	DATE	DESCRIPTION
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33 East Highway 12
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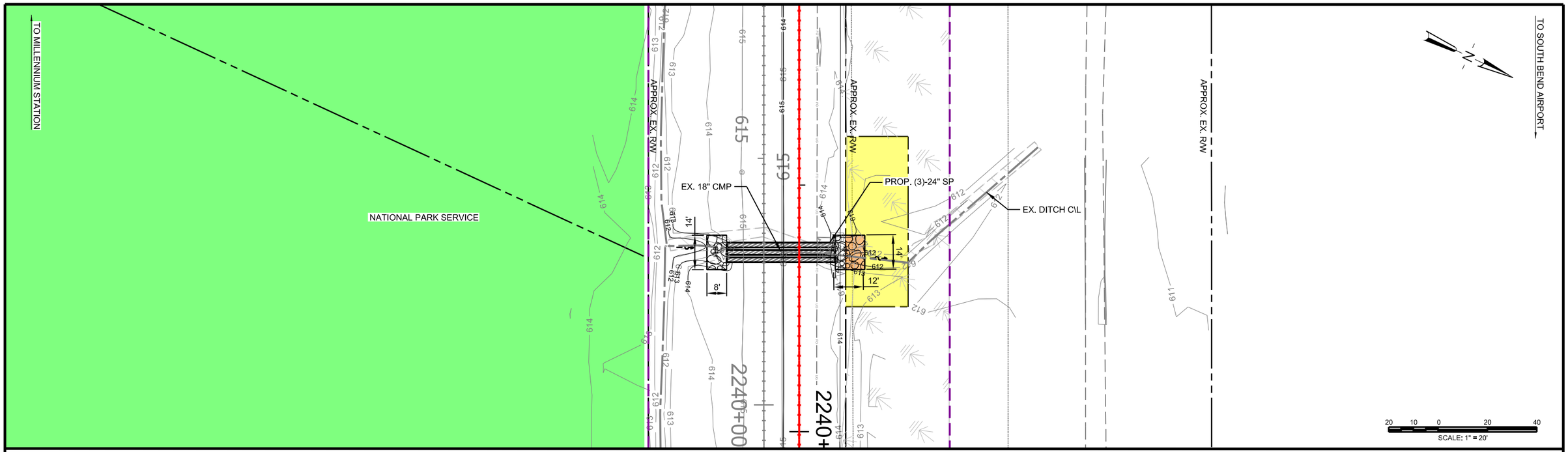
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

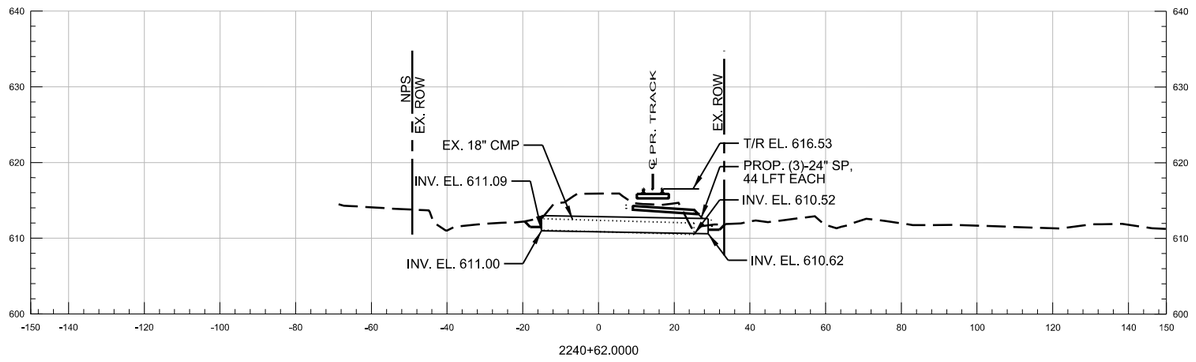
DESIGNED:	PEI-SA
DRAWN:	PEI-PK
CHECKED:	PEI-JIF
DATE:	3/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK NWI

NICTD MP 42.00
PROPOSED CULVERT REPLACEMENT

FILENAME	DT_DWG_CUL-607.dgn	SHEET	OF
SCALE	AS NOTED		





LEGEND

- EXISTING TRACK TO REMAIN
- 5+00 PROPOSED TRACK
- ENVIRONMENTAL SURVEY LIMIT
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- NPS PROPERTY
- PROPOSED TEMPORARY IMPACT AREA
- PROPOSED CONSTRUCTION EASEMENT
- ACCESS ROAD/TURNOUT PAD
- HIGH QUALITY WETLAND
- NON HIGH QUALITY WETLAND/UNDETERMINED
- STREAM OR DITCH
- RIP RAP

20 10 0 20 40
HORIZONTAL SCALE

10 5 0 10 20
VERTICAL SCALE

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12:11:44 PM
PLOT DATE: 3/16/2020

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING CUL-608 OF CUL-614

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ISSUE	DATE	DESCRIPTION
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NICTD
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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

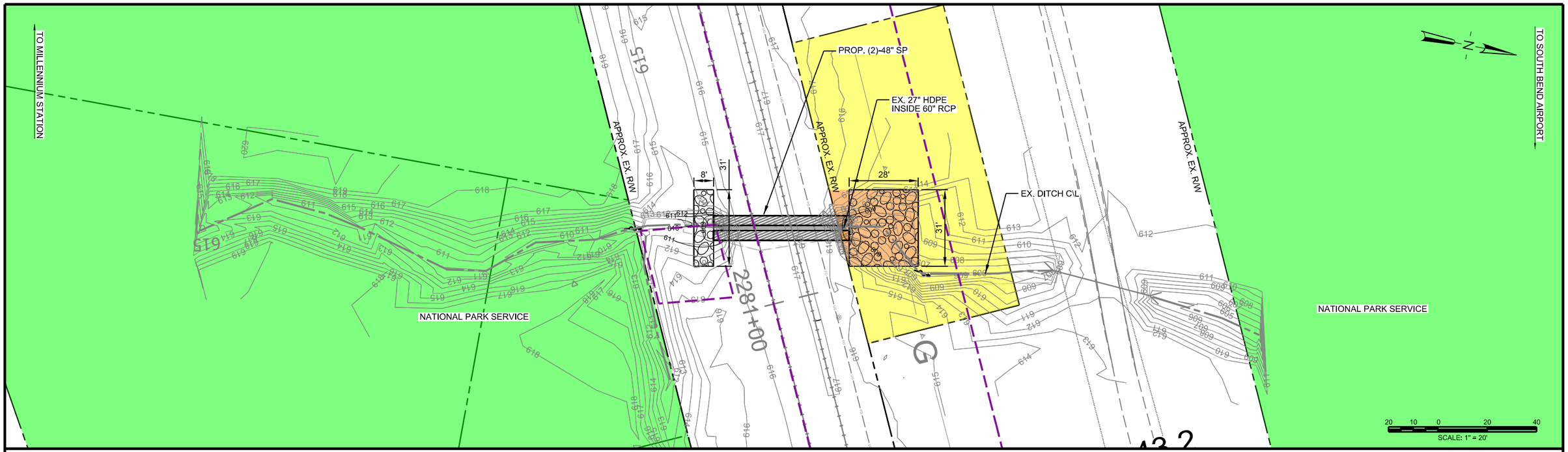
DESIGNED:	PEI-SA
DRAWN:	PEI-PK
CHECKED:	PEI-JIF
DATE:	3/16/2020

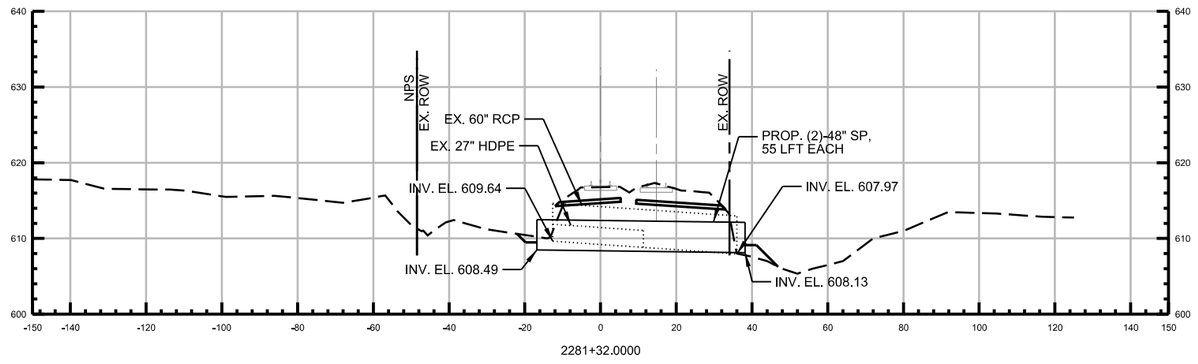
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK NWI

NICTD MP 42.39
PROPOSED CULVERT REPLACEMENT

FILENAME	DT_DWG_CUL-608.dgn
SCALE	AS NOTED

SHEET OF





LEGEND

- EXISTING TRACK TO REMAIN
- 5+00 PROPOSED TRACK
- ENVIRONMENTAL SURVEY LIMIT
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- NPS PROPERTY
- PROPOSED TEMPORARY IMPACT AREA
- PROPOSED CONSTRUCTION EASEMENT
- ACCESS ROAD/TURNOUT PAD
- HIGH QUALITY WETLAND
- NON HIGH QUALITY WETLAND/UNDETERMINED
- STREAM OR DITCH
- RIP RAP

20 10 0 20 40
HORIZONTAL SCALE

10 5 0 10 20
VERTICAL SCALE

PLOT DATE: 3/16/2020 12:12:19 PM jfeinstein

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING CUL-609 OF CUL-614

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303 E. Wacker Drive, Suite 1400
Chicago, IL 60601
TEL: (312) 373-7700
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PATRICK ENGINEERING

ISSUE	DATE	DESCRIPTION
0	03/17/2020	60% DESIGN

NICTD
NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

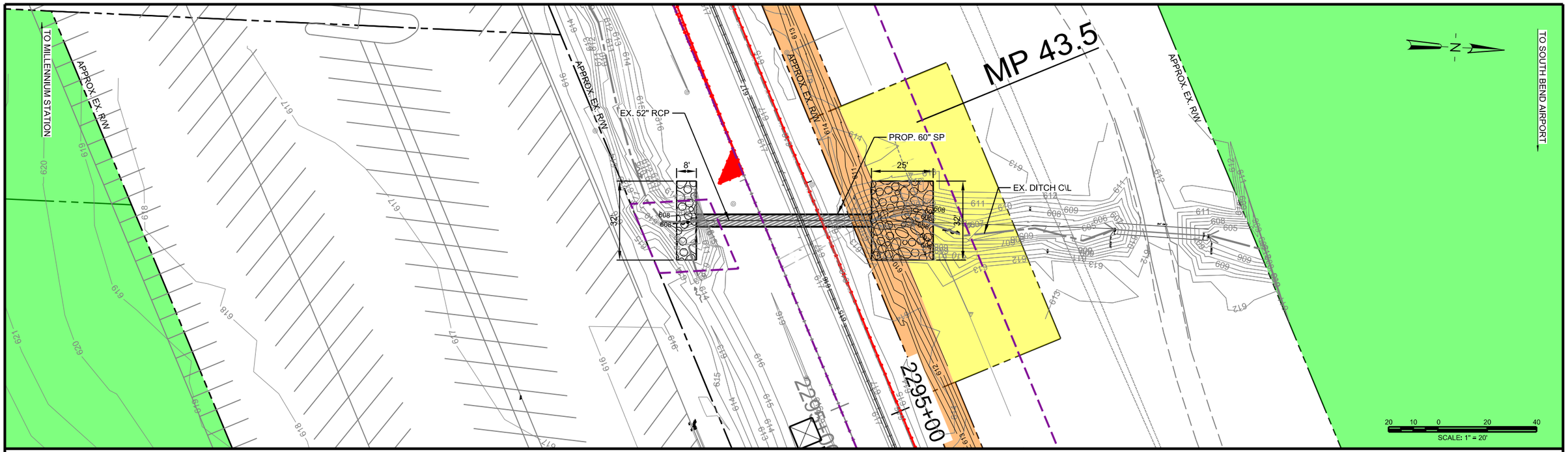
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

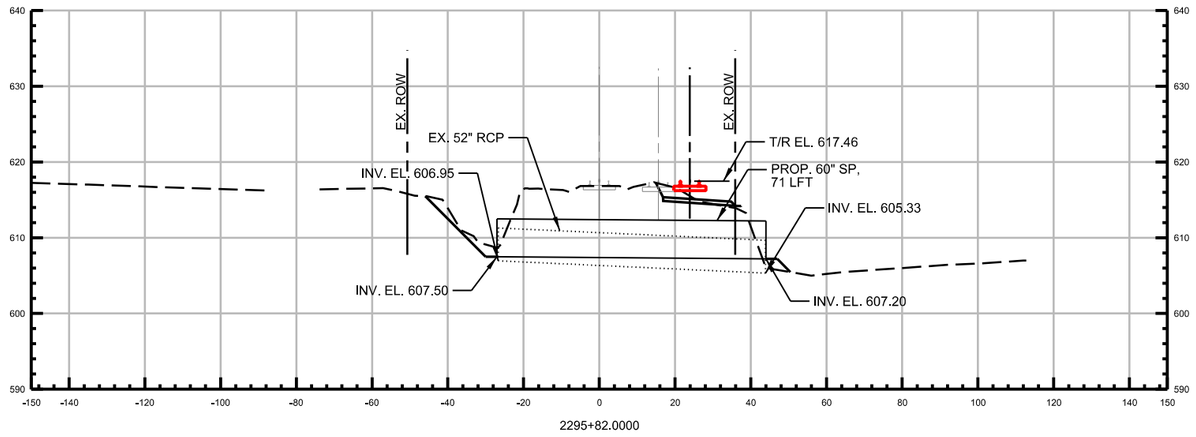
DESIGNED:	PEI-SA
DRAWN:	PEI-PK
CHECKED:	PEI-JIF
DATE:	3/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK NWI

NICTD MP 43.22
PROPOSED CULVERT REPLACEMENT

FILENAME	DT_DWG_CUL-609.dgn	SHEET OF
SCALE	AS NOTED	





LEGEND

- EXISTING TRACK TO REMAIN
- 5+00 PROPOSED TRACK
- ENVIRONMENTAL SURVEY LIMIT
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- NPS PROPERTY
- PROPOSED TEMPORARY IMPACT AREA
- PROPOSED CONSTRUCTION EASEMENT
- ACCESS ROAD/TURNOUT PAD
- HIGH QUALITY WETLAND
- NON HIGH QUALITY WETLAND/UNDETERMINED
- STREAM OR DITCH
- RIP RAP

20 10 0 20 40
HORIZONTAL SCALE

10 5 0 10 20
VERTICAL SCALE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING CUL-610 OF CUL-614

PLOT DATE: 3/16/2020 12:12:53 PM jfeinstein

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33 East Highway 12
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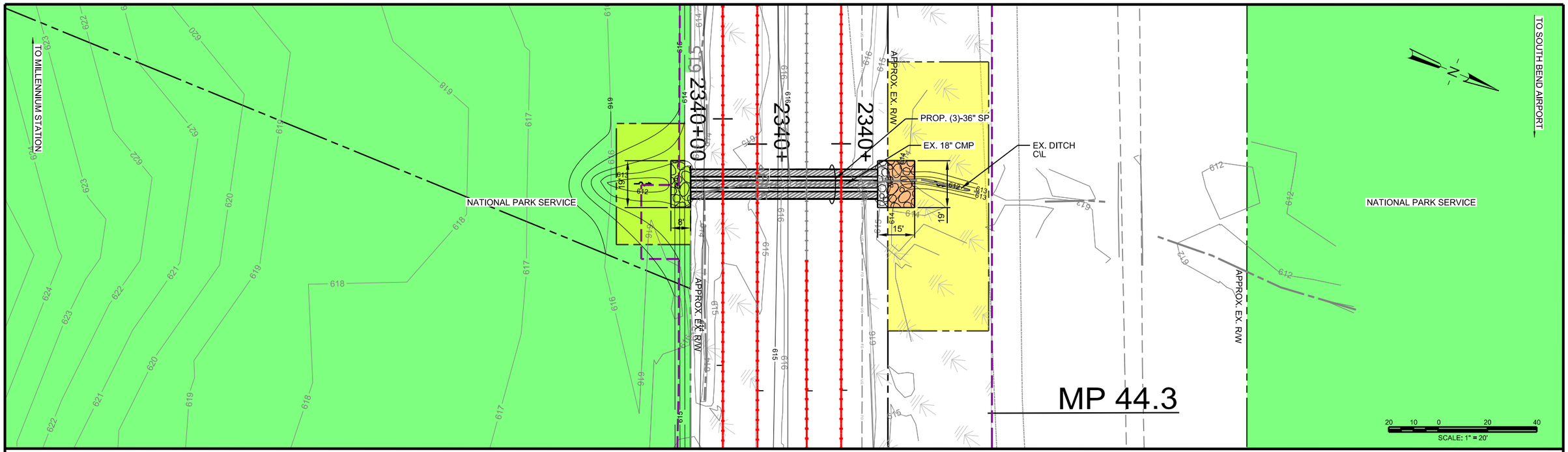
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

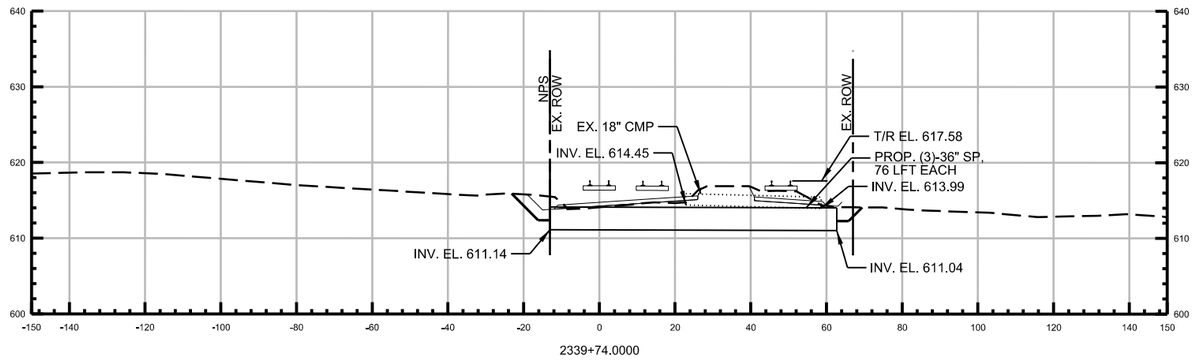
DESIGNED:	PEI-SA
DRAWN:	PEI-PK
CHECKED:	PEI-JIF
DATE:	3/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK NWI

NICTD MP 43.50
PROPOSED CULVERT REPLACEMENT

FILENAME	DT_DWG_CUL-610.dgn	SHEET OF
SCALE	AS NOTED	





LEGEND

- EXISTING TRACK TO REMAIN
- 5+00 PROPOSED TRACK
- ENVIRONMENTAL SURVEY LIMIT
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- NPS PROPERTY
- PROPOSED TEMPORARY IMPACT AREA
- PROPOSED CONSTRUCTION EASEMENT
- ACCESS ROAD/TURNOUT PAD
- HIGH QUALITY WETLAND
- NON HIGH QUALITY WETLAND/UNDETERMINED
- STREAM OR DITCH
- RIP RAP

20 10 0 20 40
HORIZONTAL SCALE

10 5 0 10 20
VERTICAL SCALE

PLOT DATE: 3/16/2020 12:13:27 PM jfeinstein

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DRAWING CUL-611 OF CUL-614

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

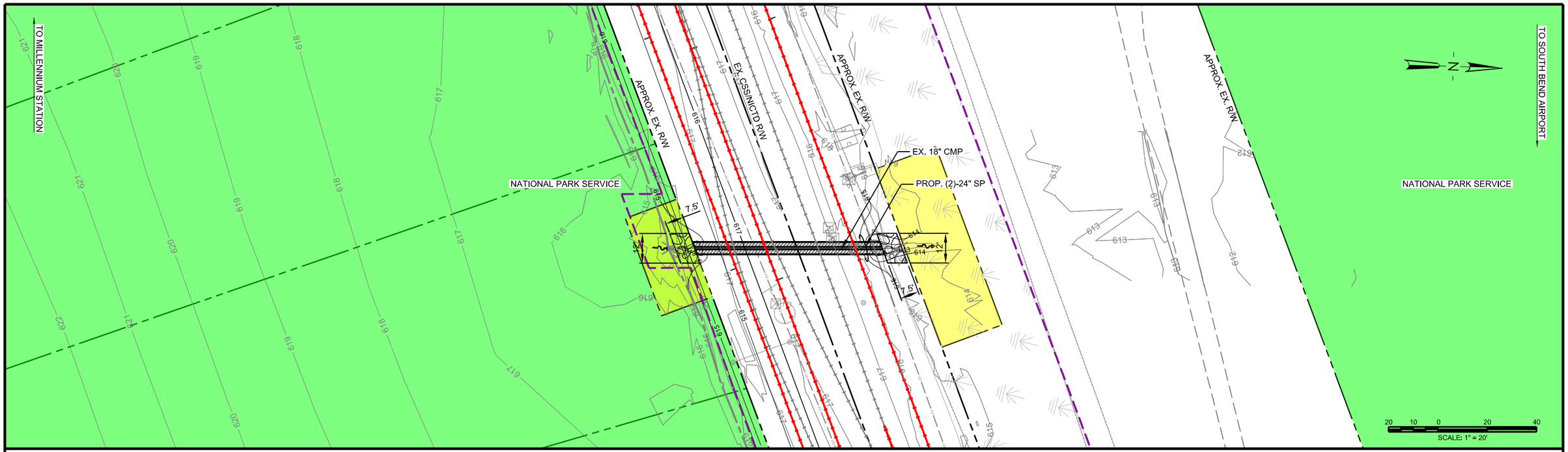
DESIGNED:	PEI-SA
DRAWN:	PEI-PK
CHECKED:	PEI-JIF
DATE:	3/16/2020

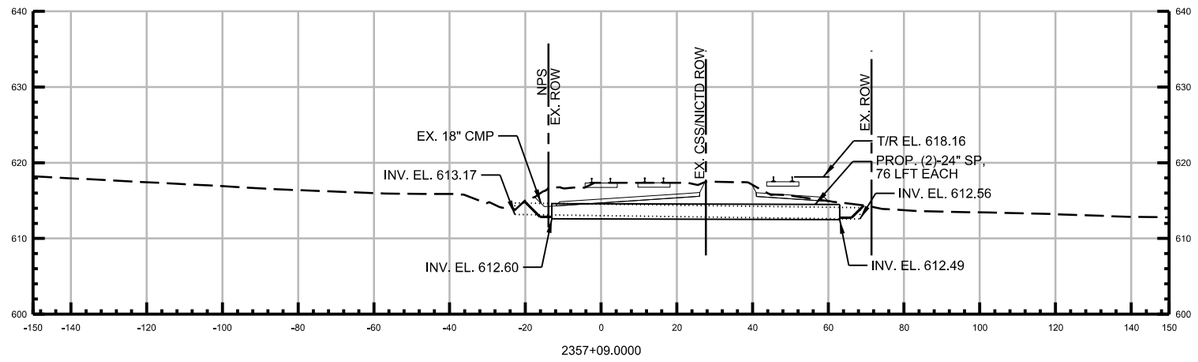
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK NWI

NICTD MP 44.33
PROPOSED CULVERT REPLACEMENT

FILENAME	DT_DWG_CUL-611.dgn
SCALE	AS NOTED

SHEET OF





LEGEND

- EXISTING TRACK TO REMAIN
- 5+00 PROPOSED TRACK
- ENVIRONMENTAL SURVEY LIMIT
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- NPS PROPERTY
- PROPOSED TEMPORARY IMPACT AREA
- PROPOSED CONSTRUCTION EASEMENT
- ACCESS ROAD/TURNOUT PAD
- HIGH QUALITY WETLAND
- NON HIGH QUALITY WETLAND/UNDETERMINED
- STREAM OR DITCH
- RIP RAP

20 10 0 20 40
HORIZONTAL SCALE

10 5 0 10 20
VERTICAL SCALE

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING CUL-612 OF CUL-614

PLOT DATE: 3/16/2020 12:14:01 PM jfeinstein

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33 East Highway 12
Chesterton, Indiana 46304

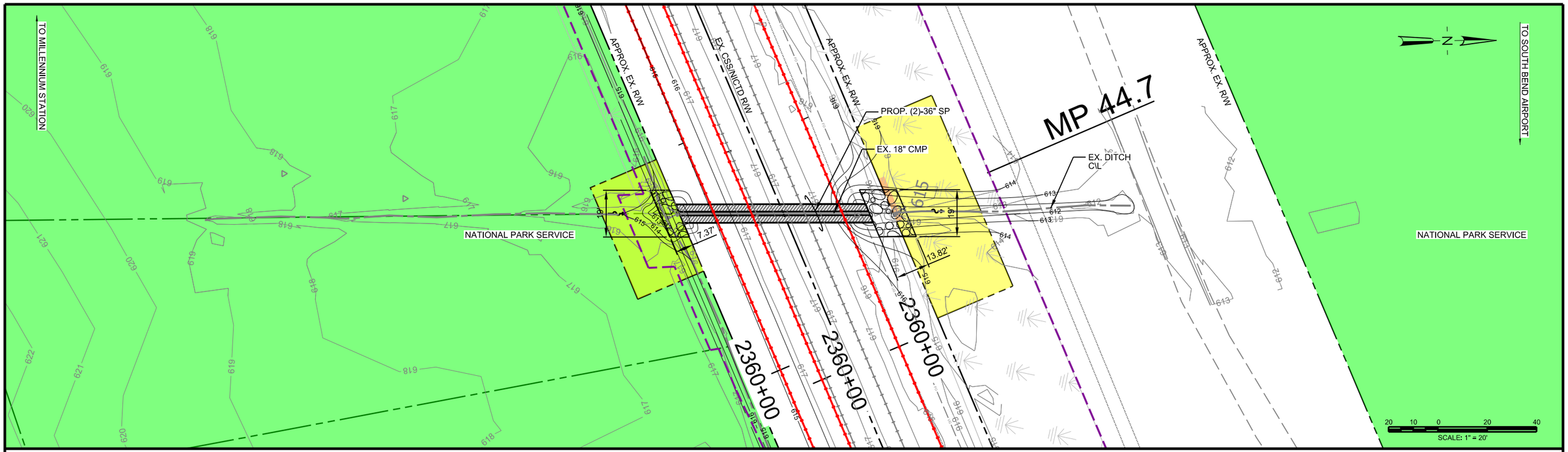
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

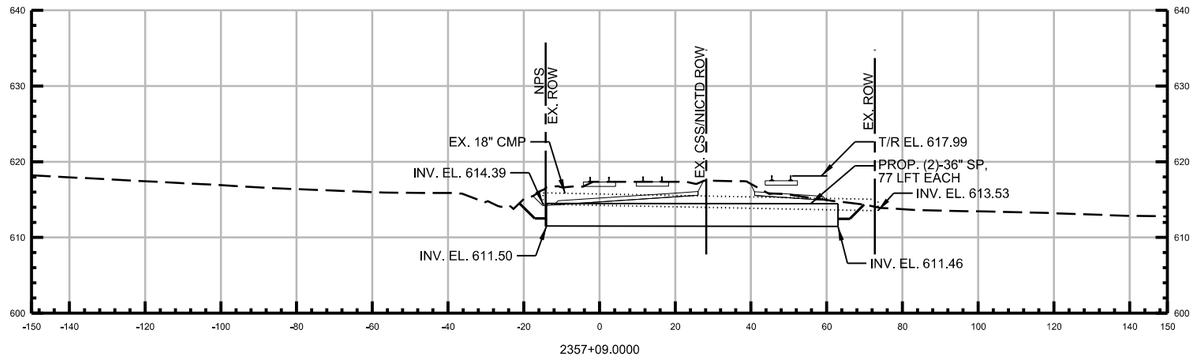
DESIGNED:	PEI-SA
DRAWN:	PEI-PK
CHECKED:	PEI-JIF
DATE:	3/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK NWI

NICTD MP 44.65
PROPOSED CULVERT REPLACEMENT

FILENAME	DT_DWG_CUL-612.dgn	SHEET OF
SCALE	AS NOTED	





LEGEND

- EXISTING TRACK TO REMAIN
- 5+00 PROPOSED TRACK
- ENVIRONMENTAL SURVEY LIMIT
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- NPS PROPERTY
- PROPOSED TEMPORARY IMPACT AREA
- PROPOSED CONSTRUCTION EASEMENT
- ACCESS ROAD/TURNOUT PAD
- HIGH QUALITY WETLAND
- NON HIGH QUALITY WETLAND/UNDETERMINED
- STREAM OR DITCH
- RIP RAP

20 10 0 20 40
HORIZONTAL SCALE

10 5 0 10 20
VERTICAL SCALE

PLOT DATE: 3/16/2020 12:14:22 PM jfeinstein

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING CUL-613 OF CUL-614

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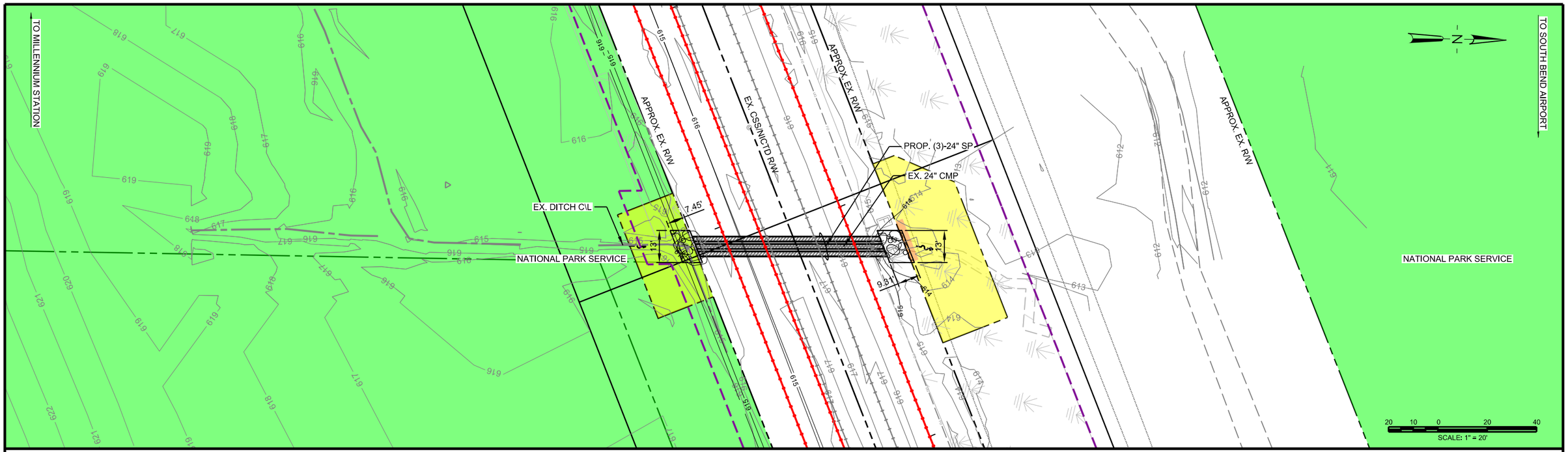
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

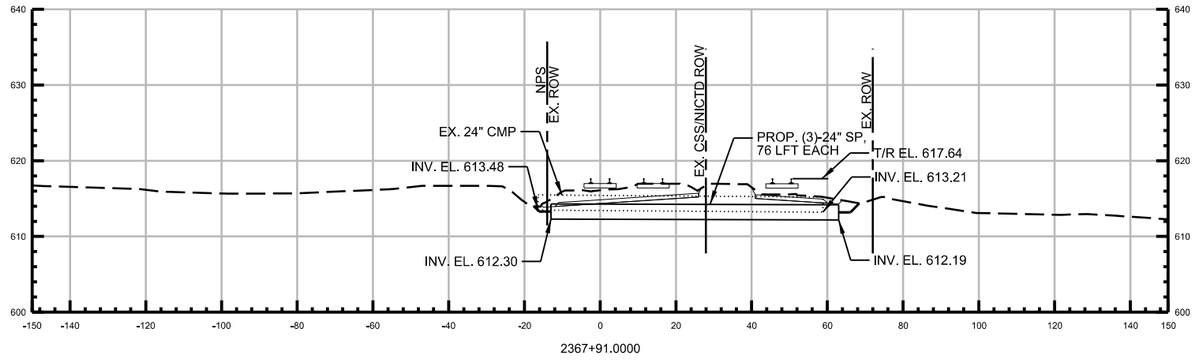
DESIGNED:	PEI-SA
DRAWN:	PEI-PK
CHECKED:	PEI-JIF
DATE:	3/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK NWI

NICTD MP 44.72 PROPOSED CULVERT REPLACEMENT

FILENAME	DT_DWG_CUL-613.dgn	SHEET OF
SCALE	AS NOTED	





LEGEND

- EXISTING TRACK TO REMAIN
- 5+00 PROPOSED TRACK
- ENVIRONMENTAL SURVEY LIMIT
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- NPS PROPERTY
- PROPOSED TEMPORARY IMPACT AREA
- PROPOSED CONSTRUCTION EASEMENT
- ACCESS ROAD/TURNOUT PAD
- HIGH QUALITY WETLAND
- NON HIGH QUALITY WETLAND/UNDETERMINED
- STREAM OR DITCH
- RIP RAP

20 10 0 20 40
HORIZONTAL SCALE

10 5 0 10 20
VERTICAL SCALE

PLOT DATE: 3/16/2020 12:14:43 PM jfeinstein

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DRAWING CUL-614 OF CUL-614

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

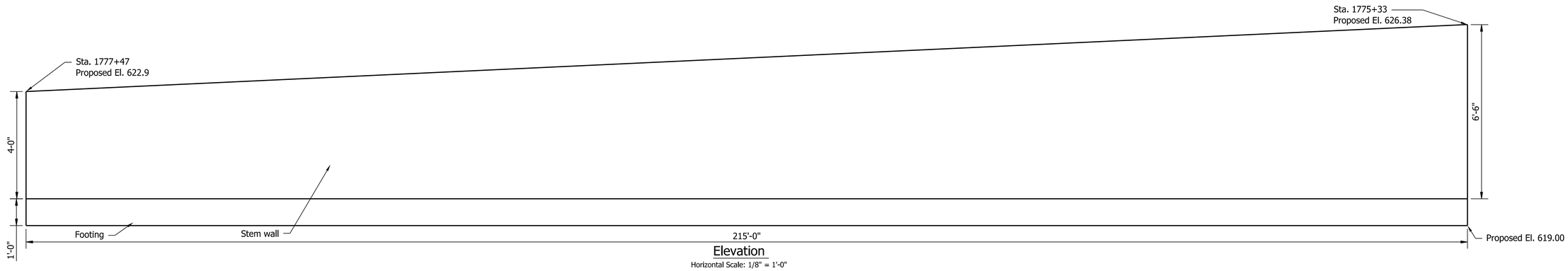
DESIGNED:	PEI-SA
DRAWN:	PEI-PK
CHECKED:	PEI-JIF
DATE:	3/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK NWI

NICTD MP 44.86
PROPOSED CULVERT REPLACEMENT

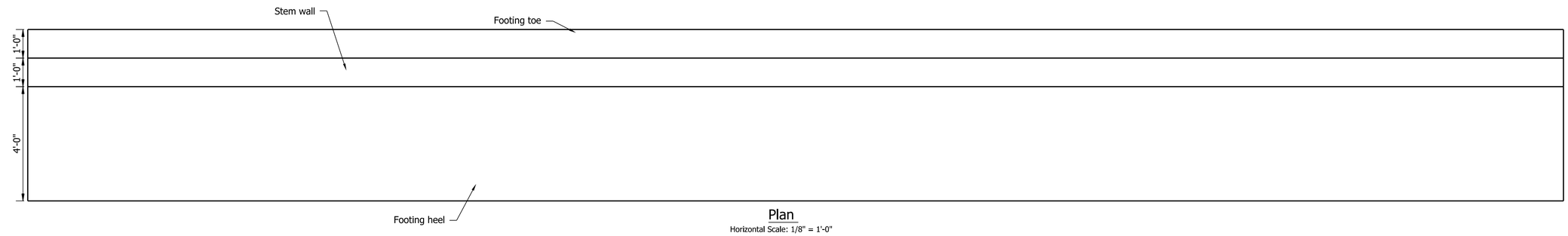
FILENAME	DT_DWG_CUL-614.dgn
SCALE	AS NOTED

SHEET OF



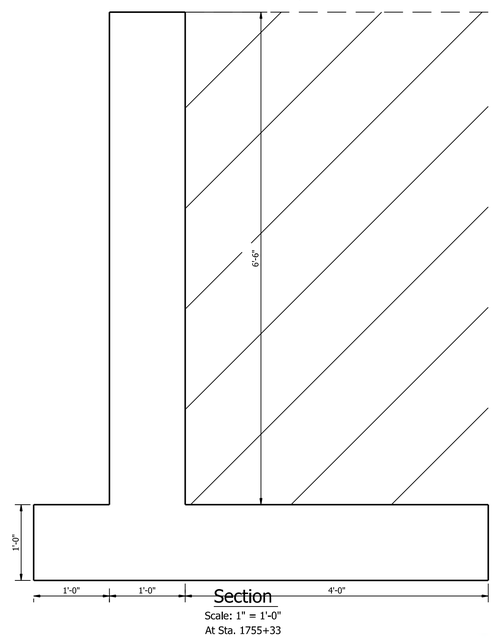
Elevation

Horizontal Scale: 1/8" = 1'-0"
Vertical Scale: 1/2" = 1'-0"



Plan

Horizontal Scale: 1/8" = 1'-0"
Vertical Scale: 1/2" = 1'-0"



Section

Scale: 1" = 1'-0"
At Sta. 1755+33

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RET-100 OF RET-100

PLOT DATE: 3/14/2020 6:04:33 PM JMowery

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

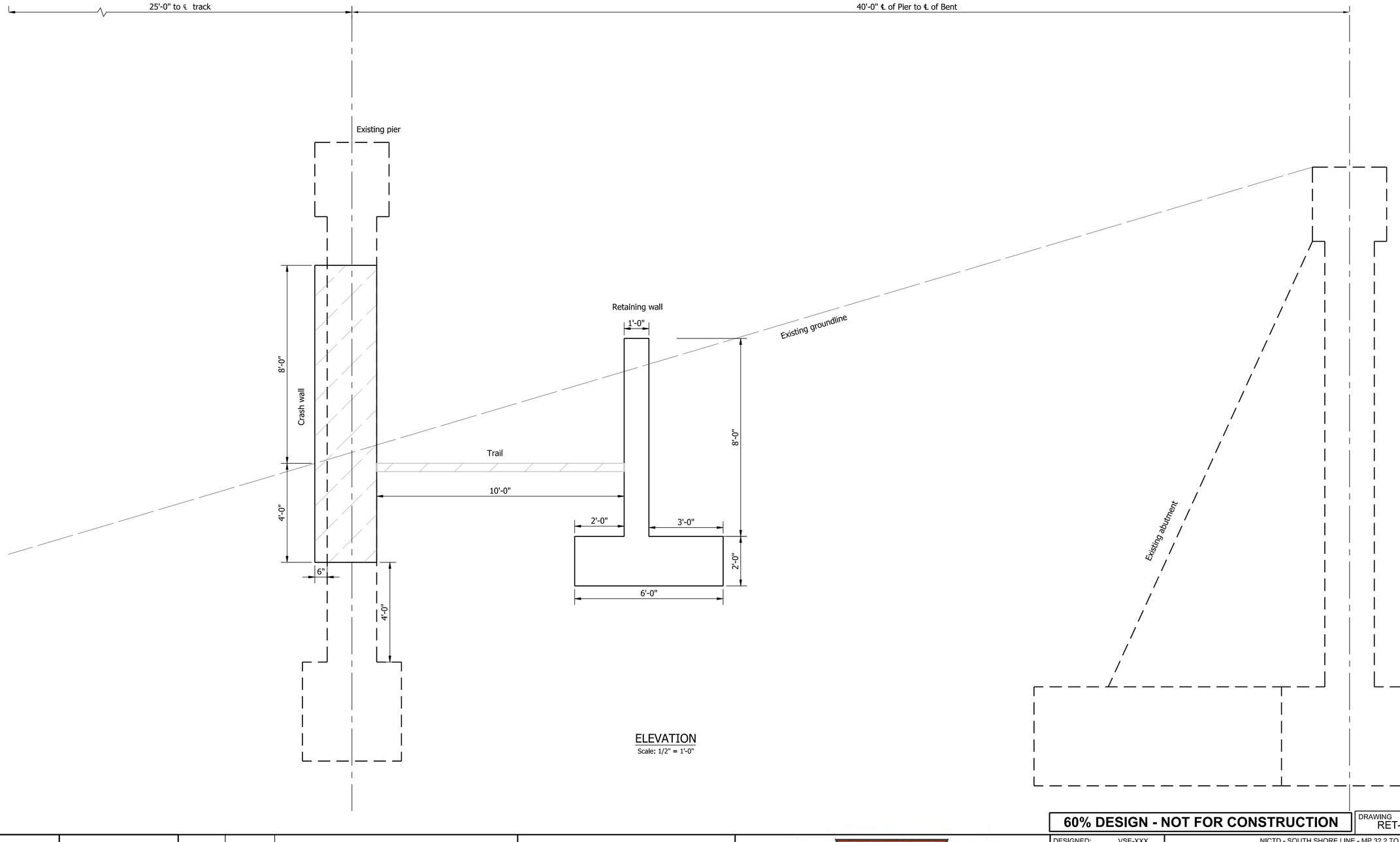
DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

RETAINING WALLS AT MICHIGAN CITY

FILENAME	DT_DWG_RET-101.dgn
SCALE	AS NOTED

SHEET OF



ELEVATION
Scale: 1/2" = 1'-0"

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RET-200 OF RET-202

PLOT DATE: 3/14/2020 3:41:19 PM JMowery

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

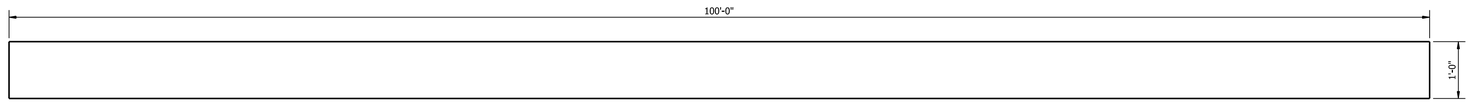
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

RETAINING WALLS AT STATE ROAD 49

FILENAME	DT_DWG_RET-201.dgn	SHEET	OF
SCALE	AS NOTED		

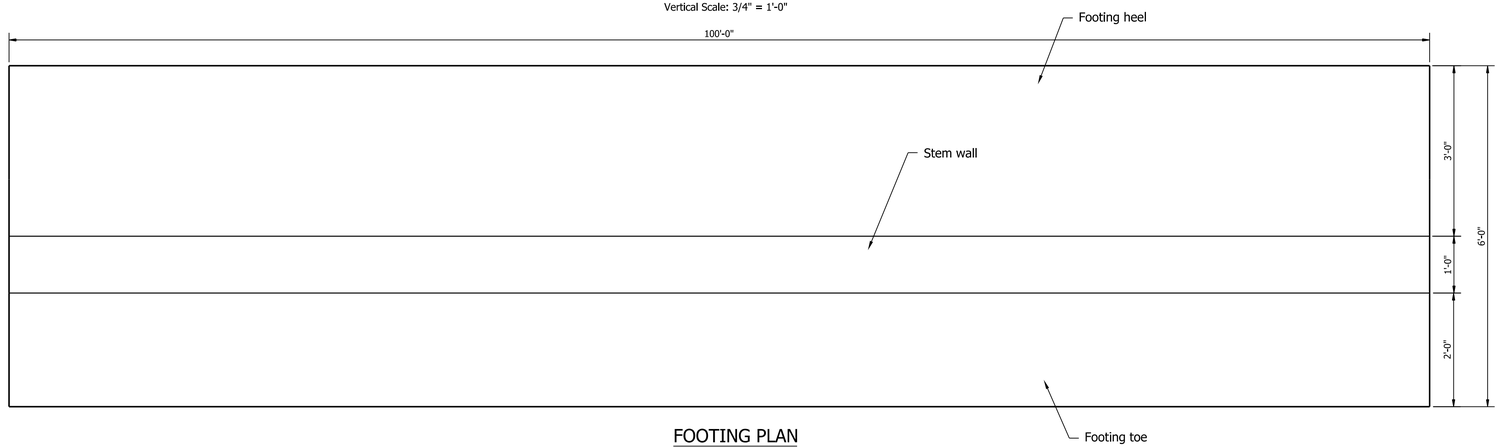
ELEVATION

Horizontal Scale: 3/16" = 1'-0"
Vertical Scale: 3/4" = 1'-0"



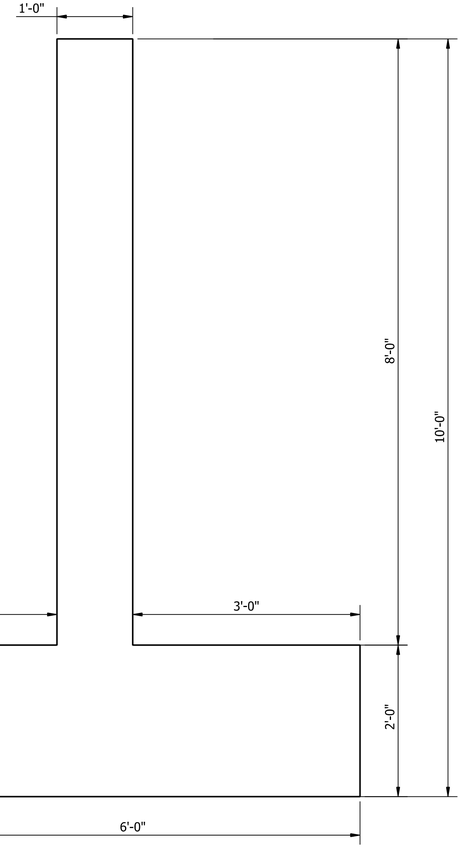
STEM WALL PLAN

Horizontal Scale: 3/16" = 1'-0"
Vertical Scale: 3/4" = 1'-0"



FOOTING PLAN

Horizontal Scale: 3/16" = 1'-0"
Vertical Scale: 3/4" = 1'-0"



SECTION

Scale: 1" = 1'-0"

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DRAWING RET-201 OF RET-202

PLOT DATE: 3/14/2020 3:41:20 PM JMowery

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33 East Highway 12
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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

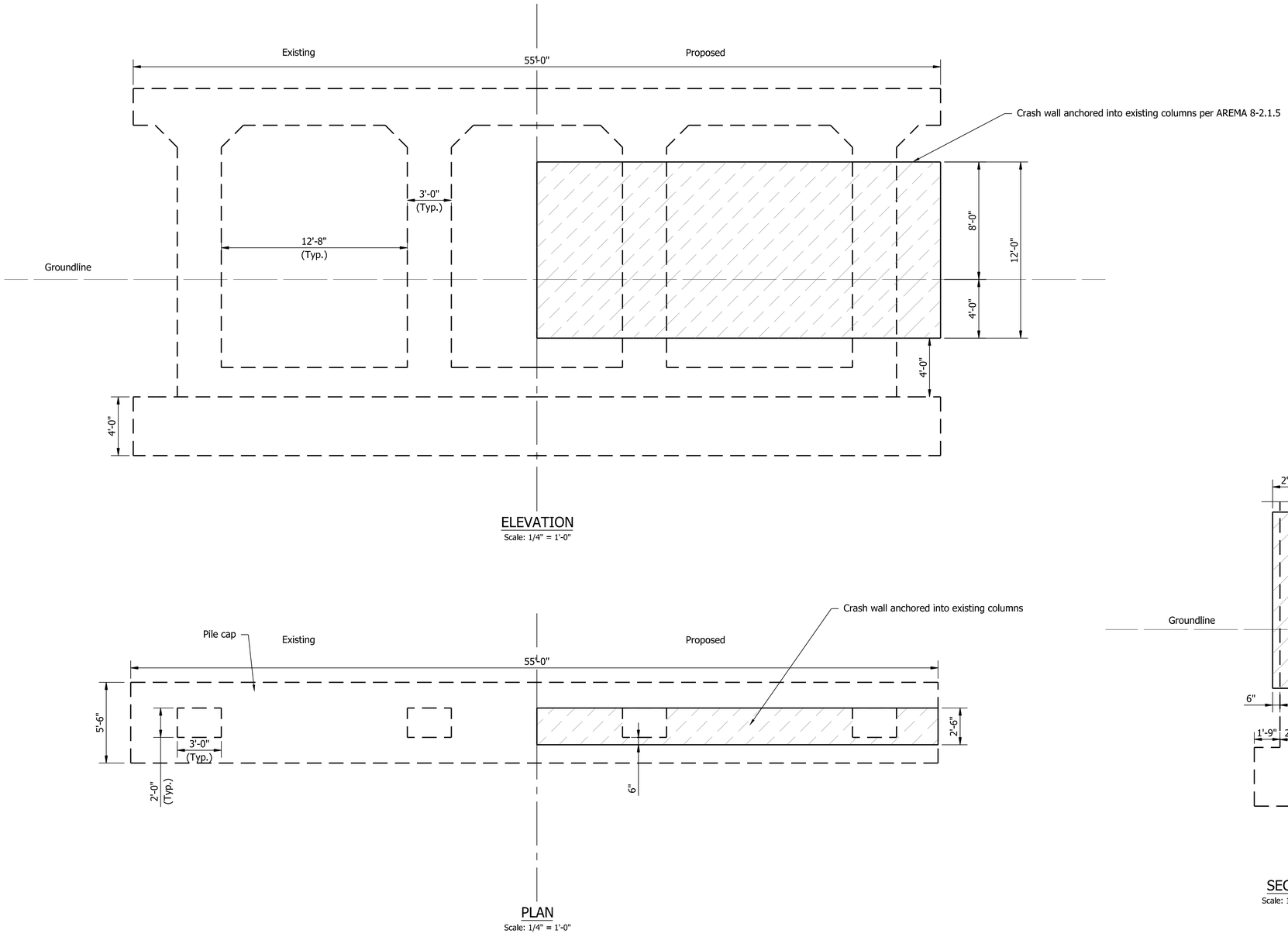
DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

RETAINING WALLS AT STATE ROAD 49

FILENAME	DT_DWG_RET-201.dgn
SCALE	AS NOTED

SHEET OF



ELEVATION
Scale: 1/4" = 1'-0"

PLAN
Scale: 1/4" = 1'-0"

SECTION
Scale: 1/4" = 1'-0"

PLOT DATE: 3/14/2020 3:41:21 PM JMowery

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RET-202 OF RET-202

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VSE ENGINEERING

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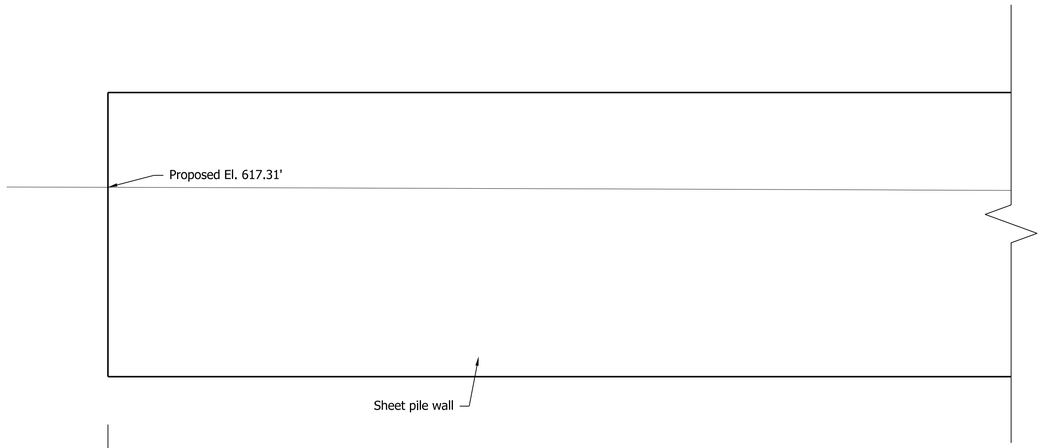
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

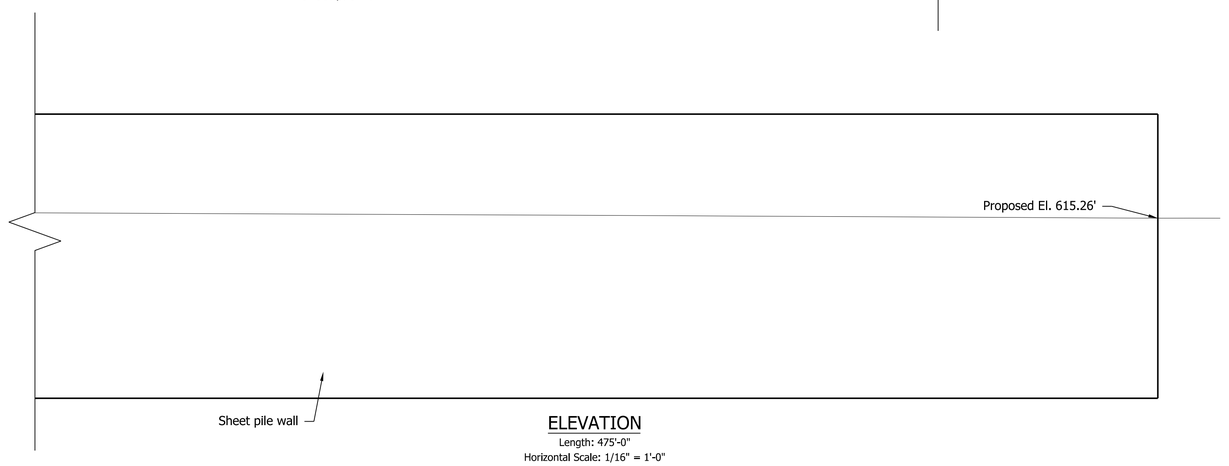
DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

RETAINING WALLS AT STATE ROAD 49

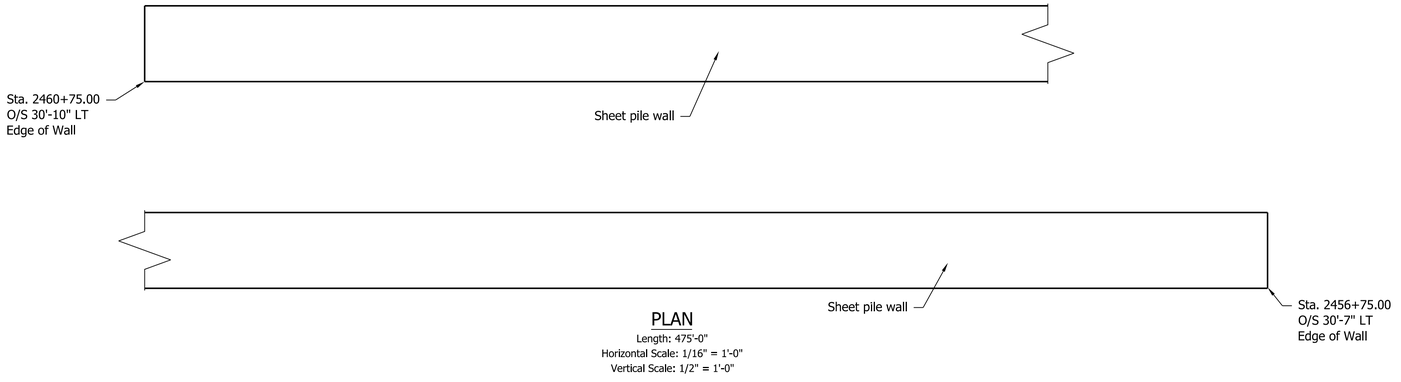
FILENAME	DT_DWG_RET-201.dgn	SHEET OF
SCALE	AS NOTED	





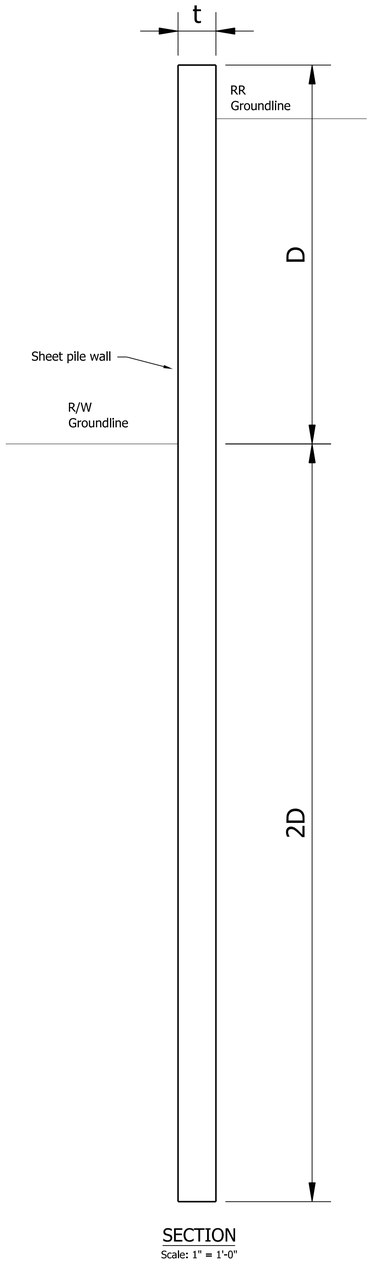
ELEVATION

Length: 475'-0"
Horizontal Scale: 1/16" = 1'-0"
Vertical Scale: 1/4" = 1'-0"



PLAN

Length: 475'-0"
Horizontal Scale: 1/16" = 1'-0"
Vertical Scale: 1/2" = 1'-0"



SECTION

Scale: 1" = 1'-0"

Note: Geotechnical consultant responsible for design of sheet piling wall. Plan sheet is to show horizontal limits & differences in elevations.

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DRAWING RET-300 OF RET-300

PLOT DATE: 3/14/2020 3:41:24 PM JMowery

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

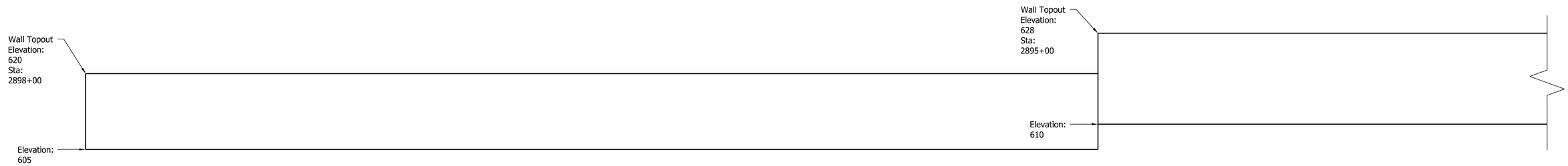
DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

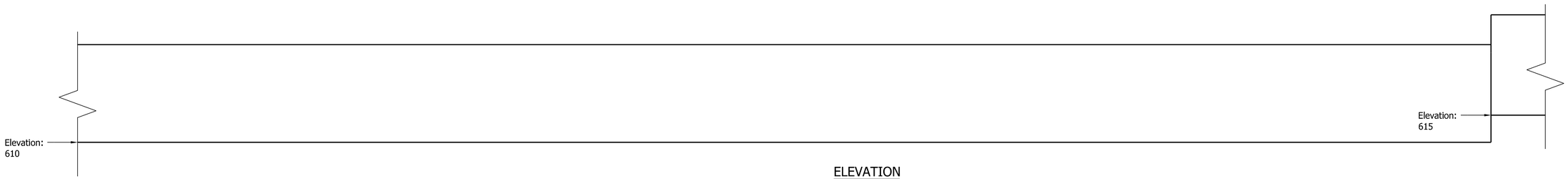
RETAINING WALL AT BAILLY WEST

FILENAME	DT_DWG_RET-301.dgn
SCALE	AS NOTED

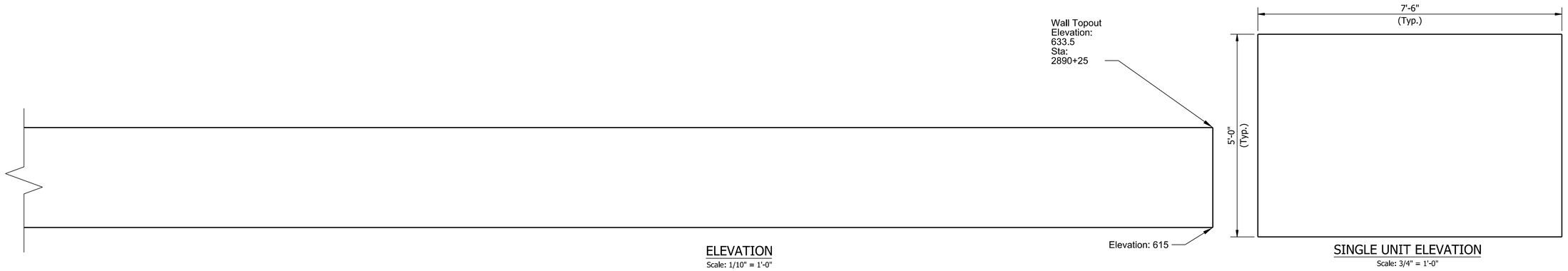
SHEET OF



ELEVATION
Scale: 1/10" = 1'-0"



ELEVATION
Scale: 1/10" = 1'-0"



ELEVATION
Scale: 1/10" = 1'-0"

SINGLE UNIT ELEVATION
Scale: 3/4" = 1'-0"

Note: Geotechnical consultant responsible for design of sheet piling wall. Plan sheet is to show horizontal limits & differences in elevations.

SINGLE UNIT ELEVATION
Scale: 3/4" = 1'-0"

PLOT DATE: 3/14/2020 3:41:27 PM JMowery

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VS ENGINEERING

ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING RET-400 OF RET-403

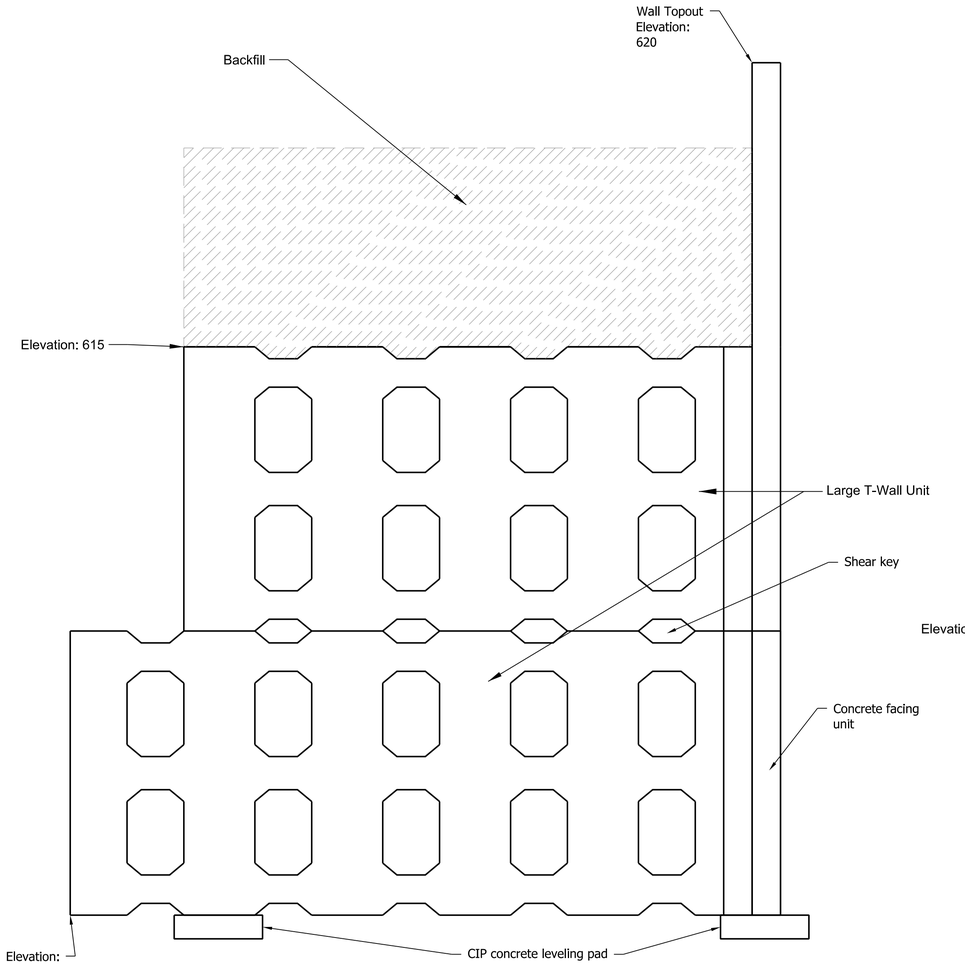
DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

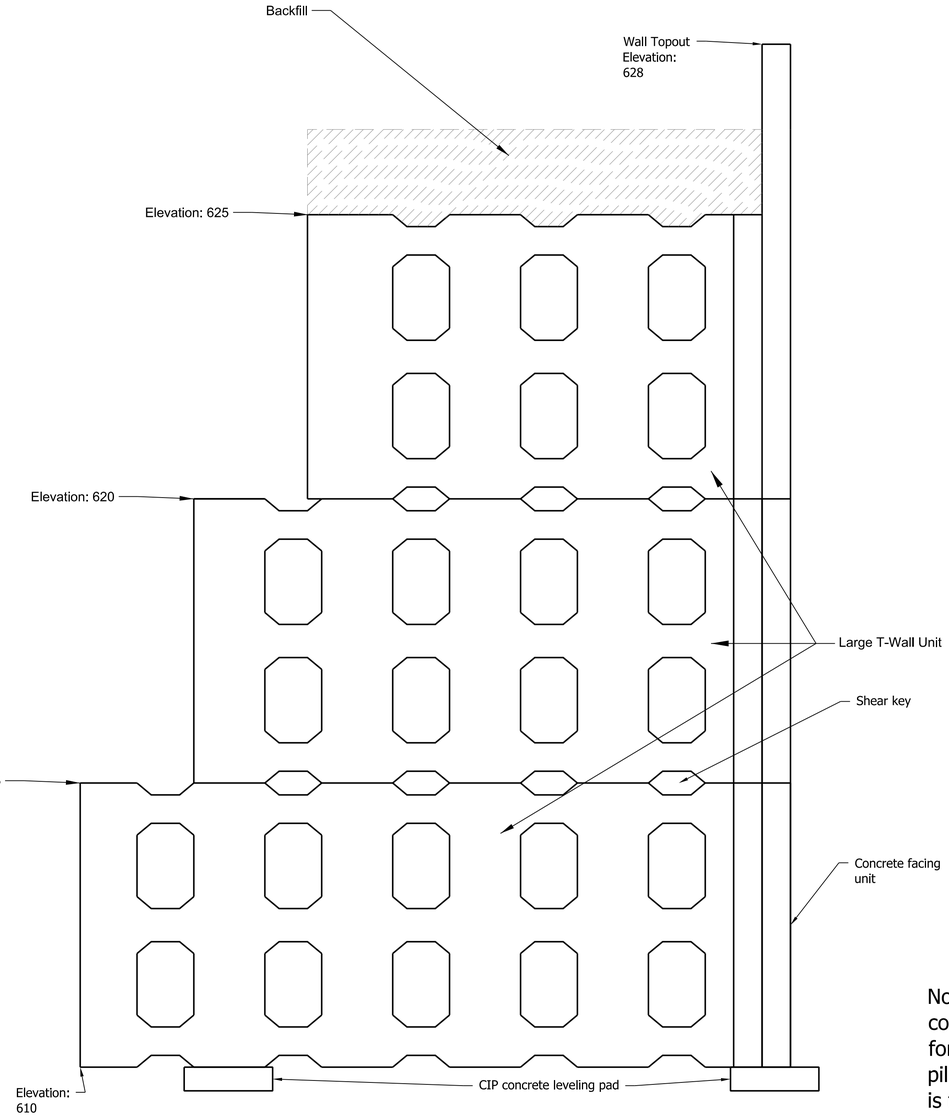
RETAINING WALLS AT MILLER MAIN 1

FILENAME	DT_DWG_RET-401.dgn
SCALE	AS NOTED

SHEET **OF**



SECTION
At Station: 2898+00
Scale: 3/4" = 1'-0"



SECTION
At Station: 2895+00
Scale: 3/4" = 1'-0"

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DOUBLE TRACK N·W·I
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MICHIGAN CITY TO GARY, INDIANA

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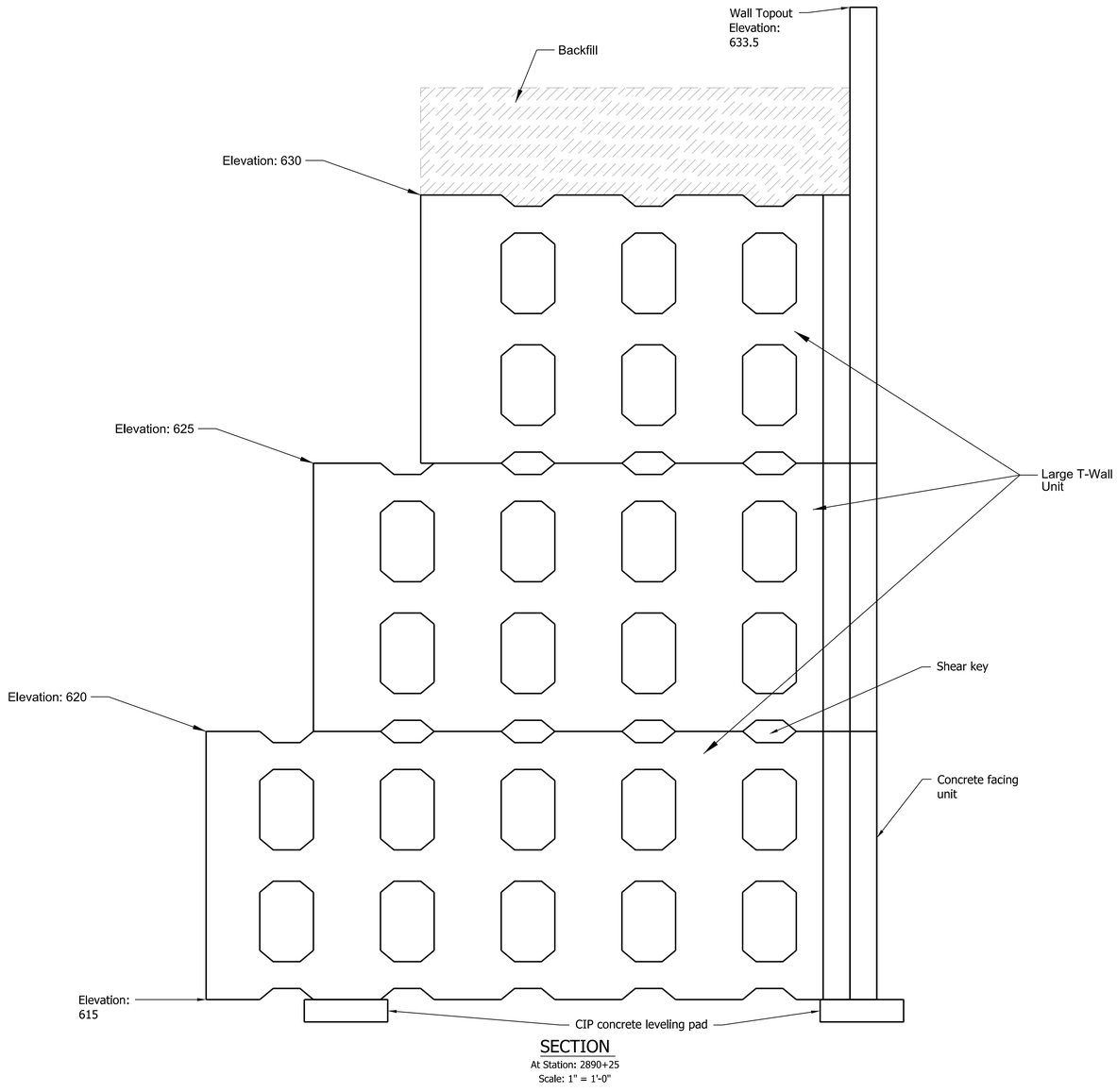
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

RETAINING WALLS AT MILLER MAIN 1

FILENAME	DT_DWG_RET-401.dgn
SCALE	AS NOTED

SHEET
OF



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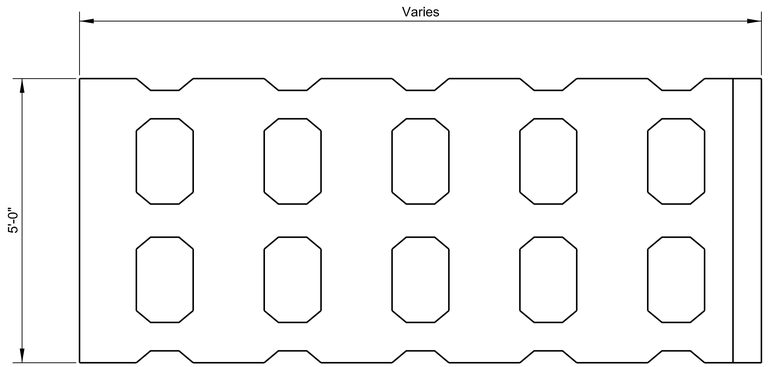
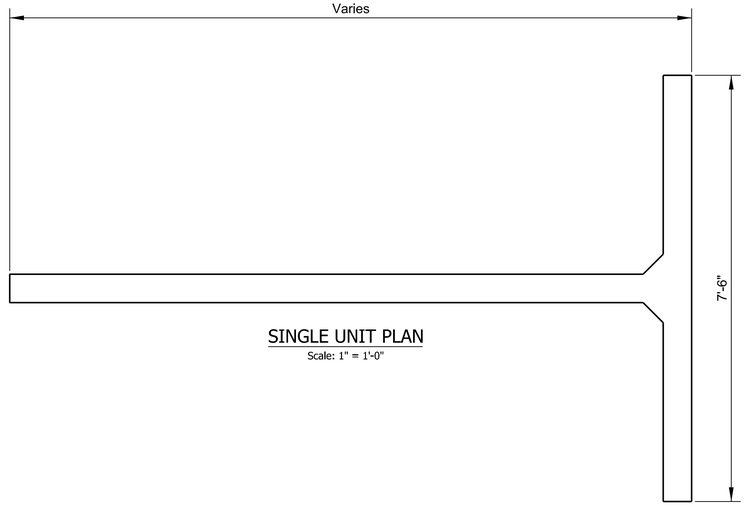
At Station: 2890+25
Scale: 1" = 1'-0"



SINGLE UNIT SECTION
Scale: 1" = 1'-0"



SINGLE UNIT PLAN
Scale: 1" = 1'-0"

Note: Geotechnical consultant responsible for design of sheet piling wall.
Plan sheet is to show horizontal limits & differences in elevations.

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

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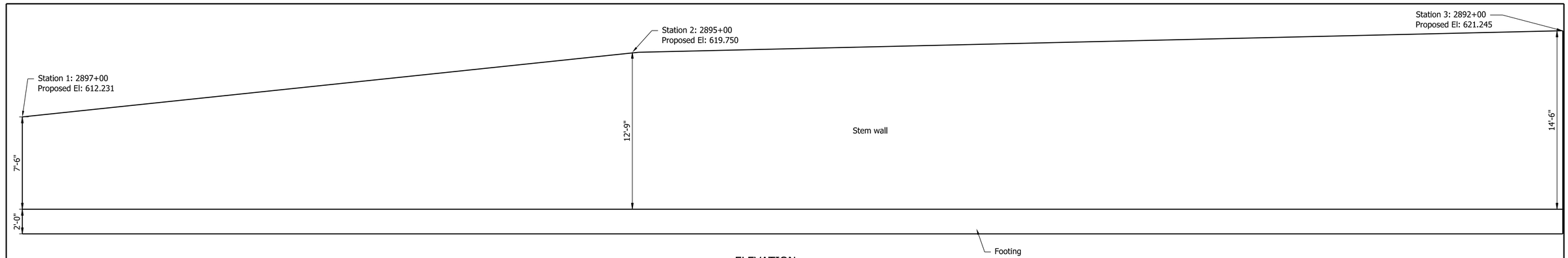
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

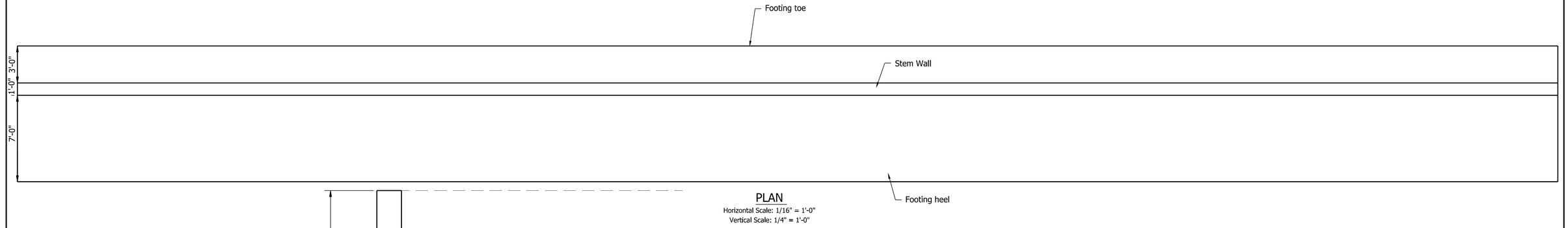
RETAINING WALLS AT MILLER MAIN 1

FILENAME	DT_DWG_RET-401.dgn	SHEET	OF
SCALE	AS NOTED		



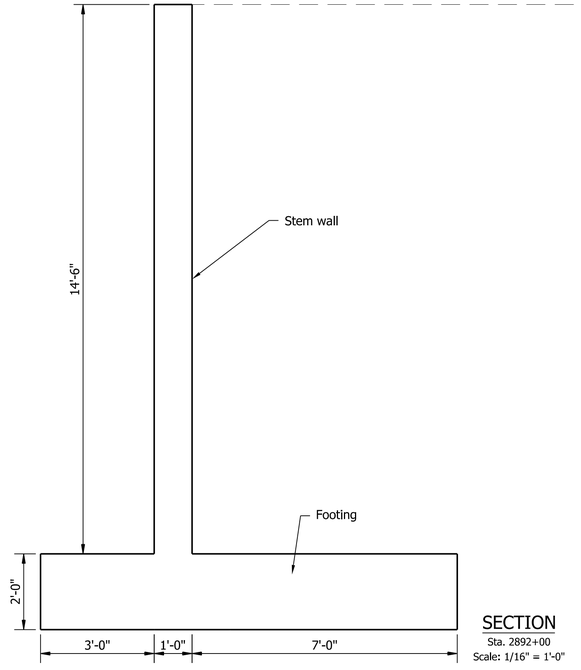
ELEVATION

Horizontal Scale: 1/16" = 1'-0"
Vertical Scale: 1/4" = 1'-0"



PLAN

Horizontal Scale: 1/16" = 1'-0"
Vertical Scale: 1/4" = 1'-0"



SECTION

Sta. 2892+00
Scale: 1/16" = 1'-0"

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

RETAINING WALLS AT MILLER MAIN 1

FILENAME	DT_DWG_RET-401.dgn
SCALE	AS NOTED

SHEET OF

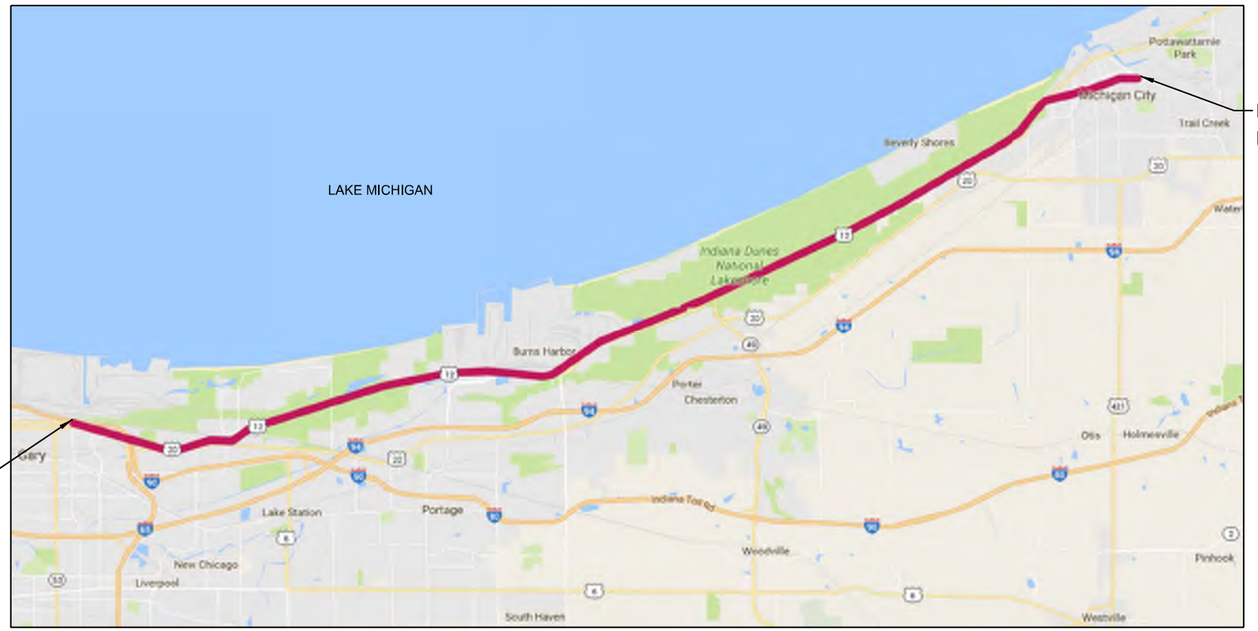
NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT

DOUBLE TRACK NWI (NORTHWEST INDIANA)
MILEPOST 32.2 TO MILEPOST 58.8
MICHIGAN CITY TO GARY, INDIANA

GENERAL & MISCELLANEOUS PLANS

SHEET INDEX

SHEET #	DRAWING	DESCRIPTION
	GEN-001	COVER SHEET
	GEN-002	LEGEND & ABBREVIATIONS
	ENV-001	EPIC PLAN
	ENV-200 TO ENV-284	EROSION CONTROL PLANS
	PHA-001 TO PHA-008	CONSTRUCTION PHASING
	UTL-001 TO UTL-008	PUBLIC UTILITY RELOCATION PLANS - 11TH STREET
	UTL-101 TO UTL-106	PUBLIC UTILITY RELOCATION PLANS - MILLER (GARY)
	MSC-001 TO MSC-006	MILLER STATION - SET OUT TRACKS
	MSC-100 TO MSC-103	DUNE PARK CALUMET TRAIL & PEDESTRIAN PATH
	MSC-200 TO MSC-215	DUNE PARK CALUMET TRAIL - CROSS SECTIONS
	MSC-300 TO MSC-304	DUNE PARK PEDESTRIAN PATH - CROSS SECTIONS
	MSC-400 TO MSC-401	OGDEN DUNES - SALT STORAGE SHED
	MSC-401 TO MSC-401	MILLER STATION - STORAGE SET OUT TRACKS



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COVER SHEET

FILENAME	DT_DWG_CVR-008_R00_20200316.dgn
SCALE	AS NOTED

SHEET OF

LEGEND

- EXISTING TRACK TO REMAIN AS IS
- EXISTING TRACK TO BE REMOVED
- EXISTING TRACK TO BE SHIFTED
- EXISTING TRACK TO BE SURFACED
- 5+00 PROPOSED TRACK
- PROPOSED POWER OPERATED TURNOUT
- PROPOSED HAND-THROW TURNOUT
- PROPOSED ELECTRIC LOCK TURNOUT
- PROPOSED DOUBLE SWITCH POINT DERAIL
- PROPOSED SLIDING DERAIL
- PROPOSED CULVERT EXTENSION
- CONSTRUCTION LIMITS
- COMM COMMUNICATION LINE
- OHP EXISTING OVERHEAD POWER LINE
- X EXISTING FENCE
- SS EXISTING SANITARY SEWER
- SS PROPOSED SANITARY SEWER
- OHF OVERHEAD FIBER
- FO EXISTING FIBER OPTIC
- FO UG EXISTING UNDERGROUND FIBER OPTIC
- FO UG PROPOSED UNDERGROUND FIBER OPTIC
- FO OH EXISTING OVERHEAD FIBER OPTIC
- FO OH PROPOSED OVERHEAD FIBER OPTIC
- G EXISTING GAS LINE
- G PROPOSED GAS LINE
- PG PETRO GAS LINE
- PG PROPOSED PETRO GAS LINE
- W EXISTING WATER LINE
- W PROPOSED WATER LINE
- E UG EXISTING UNDERGROUND ELECTRIC
- E UG PROPOSED UNDERGROUND ELECTRIC
- E OH EXISTING OVERHEAD ELECTRIC
- OHP PROPOSED OVERHEAD ELECTRIC
- TREE/SHRUB/VEGETATION
- EDGE OF GRAVEL
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- PARCELS
- PROPOSED CONSTRUCTION EASEMENT
- ACCESS ROAD/TURNOUT PAD
- HIGH QUALITY WETLAND
- NON HIGH QUALITY WETLAND/UNDETERMINED
- STREAM OR DITCH
- RIP RAP
- ELECTRIC POLE
- COMMUNICATION POLE
- EXISTING CROSSING SIGNAL
- PROPOSED CROSSING SIGNAL
- GUARDRAIL
- SIGNS (NON-RAILROAD)
- GAS WARNING SIGN
- RAILROAD SIGN
- FIBER OPTIC MARKER
- WHISTLE POST SIGN
- LIGHT POLE
- FIRE HYDRANT
- RAIL SIGNAL (DWARF SIGNAL)
- TRAFFIC SIGNAL
- FIBER OPTIC HAND HOLE
- ELECTRIC METER
- E ELECTRIC PEDESTAL
- C COMMUNICATION PEDESTAL
- CONTROL POINT
- GRADE CROSSING PAVEMENT MARKING
- PEDESTRIAN CROSSING GATE
- EXISTING CROSSBUCK

ABBREVIATIONS

APPROX	APPROXIMATE
BLDG	BUILDING
BM	BENCH MARK
CB	CATCH BASIN
℄	CENTERLINE
CMP	CORRUGATED METAL PIPE
CN	CANADIAN NATIONAL
CONC	CONCRETE
CS	CURVE TO SPIRAL
CSS	CHICAGO SOUTH SHORE
CSXT	CSX TRANSPORTATION
CWR	CONTINUOUSLY WELDED RAIL
CY	CUBIC YARD
Dc	DEGREE OF CURVE
DI	DUCTILE IRON
DIAM.	DIAMETER
DOT	DEPARTMENT OF TRANSPORTATION
DSPD	DUAL SWITCH POINT DERAILS
DWG	DRAWING
E	EASTING
EA	EACH
E.L.	ELECTRIC LOCK
ELEC	ELECTRICAL
ELEV, EL	ELEVATION
ENGR	ENGINEER
EXIST, EX	EXISTING
FOTS	FIBER OPTIC TRANSMISSION SYSTEM
FT	FOOT, FEET
G	GAS
GND	GROUND
HDPE	HIGH DENSITY POLYETHYLENE
HORZ	HORIZONTAL
HTTO	HAND THROW TURNOUT
HMA	HOT MIX ASPHALT
INV	INVERT
LB	POUND
Lc	LENGTH OF CURVE
LH	LEFT HAND
Ls	LENGTH OF SPIRAL
LIN FT, LF	LINEAR FOOT
LLT	LAST LONG TIE
LN	LANE
LT	LEFT
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MOW	MAINTENANCE OF WAY
MP	MILE POST
N	NORTHING
NIC	NOT IN CONTRACT
NICTD	NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
NIPSCO	NORTHERN INDIANA PUBLIC SERVICE COMPANY
N.T.S.	NOT TO SCALE
NO., #	NUMBER
NS	NORFOLK SOUTHERN
OHP	OVERHEAD POWER
OVH	OVERHEAD
PC	POINT OF CURVE
PI	POINT OF INTERSECTION
PITO	POINT OF INTERSECTION OF TURNOUT
POB	POINT OF BEGINNING
POE	POINT OF ENDING
POTO	POWER OPERATED TURNOUT
PR, PROP	PROPOSED
P.S.	POINT OF SWITCH
PT	POINT OF TANGENCY, POINT
PVC	POINT OF VERTICAL CURVE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
R	RADIUS
RE	RAILWAY ENGINEERED, AREMA APPROVED RAIL SECTION
REV	REVISION
RH	RIGHT HAND
RR	RAILROAD
RT	RIGHT, ROUTE
R/W, ROW	RIGHT-OF-WAY
S	SOUTH
SC	SPIRAL TO CURVE
SD	STORM DRAIN, SLIDING DERAIL
SDWC	SLIDING DERAIL WITH CROWDER
SDG	SIDING
SDWLK	SIDEWALK
SF	SQUARE FOOT
SS	SANITARY SEWER
STA	STATION
ST	STREET, SPIRAL TO TANGENT
STD	STANDARD
STM, SD	STORM SEWER, STORM DRAIN
SW	SWITCH
TEMP	TEMPORARY
TF	TRACK FOOT, TRACK FEET
T.O.	TURNOUT
TOR	TOP OF RAIL
TRK	TRACK
TS	TANGENT TO SPRIAL
TYP, TYP.	TYPICAL
UG	UNDERGROUND
V	VELOCITY
VC	VERTICAL CURVE
W	WATER, WEST
XOVER	CROSSOVER
XING	CROSSING
YD	YARD

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LEGEND & ABBREVIATIONS

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I. STORMWATER POLLUTION PREVENTION

- O THE EROSION AND SEDIMENT CONTROL PLANS AS PART OF THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) AND A SECTION 401 WATER QUALITY CERTIFICATION WILL BE REQUIRED FOR THIS PROJECT PRIOR TO CONSTRUCTION AND SHALL BE MADE AVAILABLE ON-SITE.
- O NICTD HAS DESIGNED ALL DRAINAGE STRUCTURES IN ACCORDANCE WITH THE INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT (IDEM) AND THE INDIANA DEPARTMENT OF NATURAL RESOURCES (IDNR).
- O A CONSTRUCTION PLAN TO INCLUDE A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AND CONSTRUCTION SITE EROSION AND SEDIMENT CONTROL PERMIT(S) ARE REQUIRED FOR THE PROJECT PRIOR TO CONSTRUCTION. PROJECTS WITH ANY DISTURBED SOIL MUST PROTECT FOR EROSION AND SEDIMENTATION IN ACCORDANCE WITH (327 IAC 15-5, "RULE 5").
- O A LIST OF MS4 OPERATORS THAT MAY RECEIVE DISCHARGES FROM THIS PROJECT ARE PROVIDED BELOW. THEY NEED TO BE NOTIFIED PRIOR TO CONSTRUCTION ACTIVITIES.

    1. CITY OF GARY
    2. CITY OF PORTAGE
    3. PORTER COUNTY
    4. CITY OF MICHIGAN CITY
    5. CITY OF PORTER

- O CONTRACTORS SHALL INSTITUTE BEST MANAGEMENT PRACTICES AS IDENTIFIED BY THE IDEM TO PROTECT WATER QUALITY DURING CONSTRUCTION.
- O THE CONTRACTOR SHALL INSTALL SILT FENCES AND DRIFT FENCES PRIOR TO CONSTRUCTION.
- O NICTD SHALL INFORM THE CONTRACTORS OF AREAS THAT MUST BE AVOIDED DURING CONSTRUCTION.

II. WORK IN OR NEAR WATERWAYS AND WETLANDS

- O A SECTION 404 INDIVIDUAL PERMIT WILL BE REQUIRED FOR THE PROJECT PRIOR TO CONSTRUCTION. AS PART OF THE SECTION 404 PERMIT PROCESS, NICTD COORDINATED WITH THE U.S. FISH THE WILDLIFE (USFWS) UNDER THE MIGRATORY BIRD TREATY ACT (MBTA) AND SECTION 7 CONSULTATION OF THE ENDANGERED SPECIES ACT. NICTD SHALL ADHERE TO ALL PERMIT CONDITIONS.
- O NICTD SHALL INFORM THE CONTRACTORS OF AREAS THAT MUST BE AVOIDED DURING CONSTRUCTION.
- O THE CONTRACTOR SHALL AVOID DIGGING / EXCAVATING OR FILLING WETLANDS DURING THE INACTIVE SEASON FROM NOVEMBER 1 AND MARCH 1.
- O CONSTRUCTION ACTIVITIES WITHIN THE WATERWAY BETWEEN APRIL 1 THROUGH JUNE 30 (FISH SPAWNING SEASON) WILL ONLY BE ALLOWED UPON WRITTEN APPROVAL BY THE IDNR.
- O WORK MUST EXCLUSIVELY BE PERFORMED FROM ONE SIDE OF THE WATERWAY AND CROSSING THE WATERWAY IS PROHIBITED.
- O APPROPRIATE EROSION AND SEDIMENT MEASURES SHALL BE INSTALLED TO PREVENT SEDIMENT LADEN WATERS FROM ENTERING THE WATERWAY.

III. VEGETATION RESOURCES

- O CONTRACTORS ARE REQUIRED TO WASH CONSTRUCTION VEHICLES BEFORE AND AFTER LEAVING A CONSTRUCTION SITE TO MINIMIZE TRANSFER OF INVASIVE SPECIES.
- O CONTRACTOR SHALL SEED AND PROTECT ALL DISTURBED STREAMBANKS AND SLOPES THAT ARE 3:1 OR STEEPER WITH EROSION CONTROL BLANKETS; SEED AND APPLY MULCH ON ALL OTHER DISTURBED AREAS.
- O CONTRACTORS SHALL UTILIZE NICTD APPROVED UPON NATIVE SEED MIXTURES.

IV. FEDERAL LISTED - THREATENDED AND ENDANGERED SPECIES

- O NICTD SHALL TAKE ALL APPROPRIATE ACTIONS TO COMPLY WITH ALL STATE AND FEDERAL REGULATIONS AS RELATED TO THE STATE AND FEDERAL LISTED THREATENED AND ENDANGERED SPECIES.
- O BRIGHT COLORED FLAGGING/FENCING SHALL BE INSTALLED PRIOR TO ANY TREE CLEARING TO ENSURE CONTRACTORS STAY WITHIN CLEARING LIMITS.
- O TREE CLEARING IS ONLY ALLOWED BETWEEN OCTOBER 1 AND MARCH 31.
- O TEMPORARY LIGHTING SHALL BE TURNED AWAY FROM SUITABLE BAT HABITAT BETWEEN APRIL 1 AND NOVEMBER 30 (BAT ACTIVE SEASON).
- O PERMANENT LIGHTING NEAR MODERATE-QUALITY BAT HABITAT SHALL ONLY CONSIST OF DOWNWARD-FACING, FULL CUT-OFF LENS LIGHTS, AND DIRECTED AWAY FROM SUITABLE BAT HABITAT WHEN INSTALLING NEW OR REPLACING EXISTING PERMANENT LIGHTS.
- O FOR WORK AREAS THAT WILL BE ACTIVE DURING OCTOBER 15 THROUGH APRIL 15, THE CONTRACTOR SHALL INSTALL SILT FENCING AND COVER BOARDS THREE WEEKS PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES, PER THE OVERSIGHT AND DIRECTION OF A QUALIFIED PERSON. FENCING CAN BE INSTALLED MANUALLY OR BY MECHANIZED METHODS.
- O AFTER THE INSTALLATION OF SILT FENCING AND COVER BOARDS BY THE CONTRACTOR, A QUALIFIED PERSON SHALL CONDUCT REGULAR SURVEY INSPECTIONS FOR THREATENED AND ENDANGERED SPECIES IN THE PROPOSED WORK AREAS. DOCUMENT SPECIES FOUND AND RELOCATE INDIVIDUAL AMPHIBIANS AND/OR REPTILES FROM ANY OF THE THREE TARGET SPECIES INCLUDING THE EASTERN MASSASAUGA RATTLESNAKE (SISTRURUS CATENTATUS), KIRTLAND'S SNAKE (CLONOPHIS KIRTLANDII), AND SPOTTED TURTLE (CLEMMYS GUTTATA) FOUND IN THE CONSTRUCTION AREAS.
- O ANY SNAKES OR TURTLES ENCOUNTERED DURING CONSTRUCTION ACTIVITIES, REGARDLESS OF SPECIES, SHOULD BE REMOVED, UNHARMED, AND IMMEDIATELY PLACED OUTSIDE THE WORK AREA INTO NEARBY SAFE HABITAT PER THE DIRECTION OF A QUALIFIED PERSON.
- O SPECIES POTENTIALLY FOUND WITHIN PROJECT AREA:
- O **EASTERN MASSASAUGA RATTLESNAKE**: SMALL, STOUT-BODIED RATTLESNAKE WITH A HEART-SHAPED HEAD, ROUNDED SNOUT, GRAY TO LIGHT BROWN WITH LARGE, DARK DORSAL BLOTCHES, AND A SMALL BUT WELL-DEVELOPED RATTLE. HABITAT: WETLANDS, WET PRAIRIES.
- O **KIRTLAND'S SNAKE**: SMALL WATER SNAKE WITH A BRIGHT RED OR PINK VENTRAL SURFACE, ROW OF BLACK DOTS ALONG THE SIDES, AND A BLACK HEAD. HABITAT: WETLANDS AND WET PRAIRIES.
- O **SPOTTED TURTLE**: SPOTTED TURTLE WITH A SMOOTH BLACK UPPER SHELL, SPECKLED WITH YELLOW OR WHITE SPOTS. HABITAT: WETLANDS.

V. HAZARDOUS / REGULATED MATERIALS

- O CONTRACTOR SHALL OBTAIN THE FOLLOWING REQUIRED PLANS: CONTAMINATED MATERIAL MANAGEMENT PLAN, SPILL CONTROL AND PREVENTION PLAN, STORMWATER POLLUTION PLAN, AND HEALTH AND SAFETY PLANS FOR THE PROJECT PRIOR TO CONSTRUCTION.
- O ASBESTOS, LEAD-BASED AND HAZARDOUS MATERIAL SURVEYS OF BUILDINGS OR STRUCTURES WILL BE REQUIRED PRIOR TO RECONSTRUCTION OR DEMOLITION OF ANY PROPERTY, INLCUDING NICTD OWNED PROPERTIES OR STRUCTURES. ANY HAZARDOUS MATERIALS IDENTIFIED SHALL BE ABATED AND DISPOSED OF IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS.
- O CONTRACTORS SHALL CONTACT THE NICTD ENGINEER IMMEDIATELY AND STOP ALL SUBSURFACE ACTIVITES IN THE EVENT THAT ODORS, VENTS, DISTURBED OR SIGNIFICANTLY STAINED SOILS ARE DISCOVERED DURNG CONSTRUCTION.
- O CONTRACTORS SHALL CLEAN UP CONSTRUCTION SITES TO ACCEPTABLE STANDARDS AT THE END OF EACH WORKING DAY.

VI. NOISE / VIBRATION / DUST RESTRICTION MEASURES

- O CONTRACTOR SHALL PREPARE AND IMPLEMENT A DUST CONTROL PLAN PRIOR TO CONSTRUCTION.
- O CONTRACTOR SHALL FOLLOW ELEMENT'S OF THE U.S. EPA'S CONSTRUCTION EMISSION CONTROL CHECKLIST.
- O CONTRACTOR SHALL DEVELOP A CONSTRUCTION NOISE MANAGEMENT PLAN WHEN WORKING NEAR SENSITIVE RECEPTORS SUCH AS RESIDENCES AND SCHOOLS. THE PLAN WOULD IDENTIFY METHODS TO MINIMIZE NOISE EFFECTS, PERIODIC EVALUATION OF THE PLACEMENT OF CONSTRUCTION EQUIPMENT TO AVOID OVEREXPOSURE AT ANY SINGLE RECEPTOR, AND A PROCESS TO HANDLE AND RESOLVE ANY NOISE-RELATED COMPLAINTS.
- O CONTRACTOR IS REQUIRED TO COMPLY WITH APPLICABLE NOISE LIMITS AT THE STATE AND LOCAL LEVEL.
- O NICTD SHALL LOWER THE DECIBEL LEVEL ON THE TRAIN HORN TO 100 DBA.
- O CONSTRUCTION AIR QUALITY: INCORPORATE MEASURES TO CONTROL FUGITIVE DUST DURING CONSTRUCTION SUCH AS COVERING OR TREATING DISTURBED AREAS WITH DUST SUPPRESSION TECHNIQUES INCLUDING SPRINKLING, COVERING LOADED TRUCKS, AND OTHER DUST ABATEMENT CONTROLS AS APPROPRIATE.

VII. OTHER ENVIRONMENTAL ISSUES

- O FLOODPLAINS: A CONSTRUCTION IN A FLOODWAY PERMIT AND TREE MITIGATION COORDINATION WILL BE REQUIRED FOR THIS PROJECT PRIOR TO CONSTRUCTION.
- O CONSTRUCTION ACCESS ROADS MUST BE MINIMIZED WITH NO CHANGE TO THE ELEVATION OF THE FLOODPLAIN.
- O A FEDERAL CONSISTENCY REVIEW WILL BE REQUIRED FOR THIS PROJECT PRIOR TO CONSTRUCTION.
- O LAND ACQUISTIONS, RELOCATIONS AND TEMPORARY EASEMENTS WERE CONDUCTED ON BEHALF OF THIS PROJECT WERE CONDUCTED IN ACCORDANCE WITH THE UNIFORM RELOCATION ASSISTANCE AND REAL PROPERTY ACQUISITION POLICIES ACT OF 1970.
- O ALTHOUGH NICTD IS EXEMPT FROM LOCAL ZONING AND DEVELOPMENT REQUIREMENTS, POTENTIAL CONFLICTS WITH LOCAL MUNICIPALITES WERE TAKEN INTO CONSIDERATION DURING THE FINAL DESIGN OF THE PROJECT.

PLOT DATE: 3/15/2020 4:47:53 PM dominguez1

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-001 OF ENV-001

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0	03/16/2020	60% DESIGN

NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

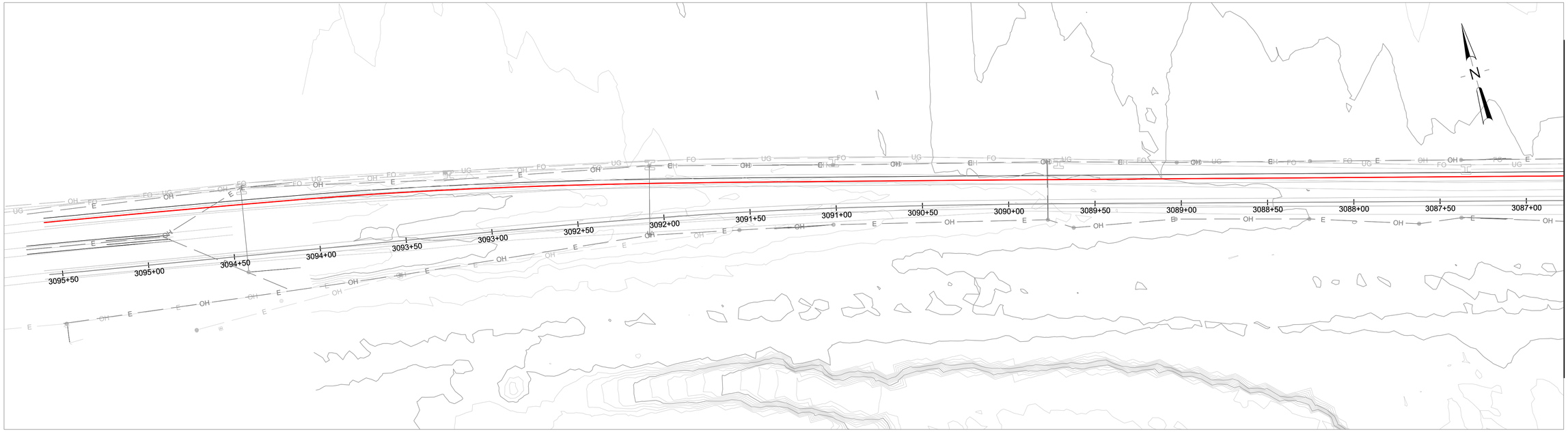
DESIGNED:	
DRAWN:	
CHECKED:	
DATE:	03/16/2020

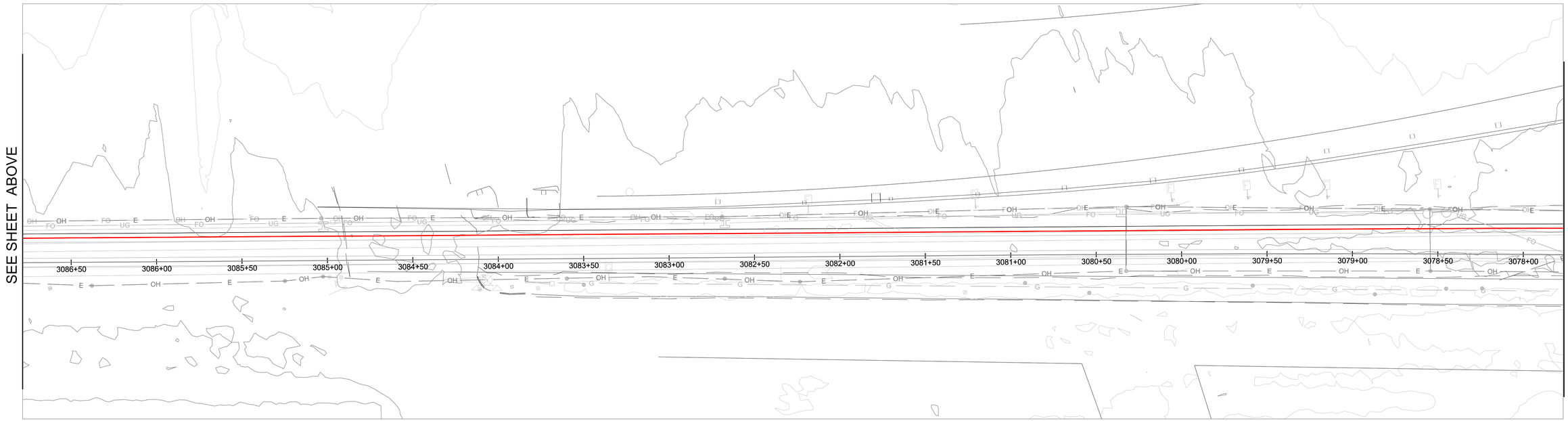
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS EPIC

FILENAME	DT_DWG_EPIC_Gen Notes.dgn
SCALE	AS NOTED

SHEET OF





PLOT DATE: 3/14/2020 10:44:20 AM CBertram

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MICHIGAN CITY TO GARY, INDIANA

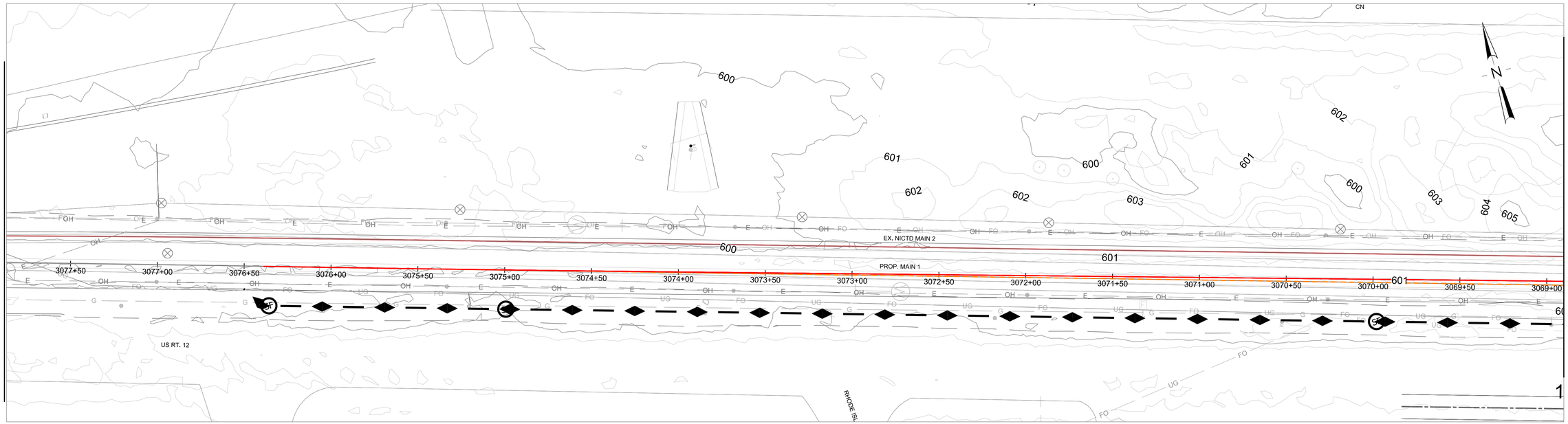
DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

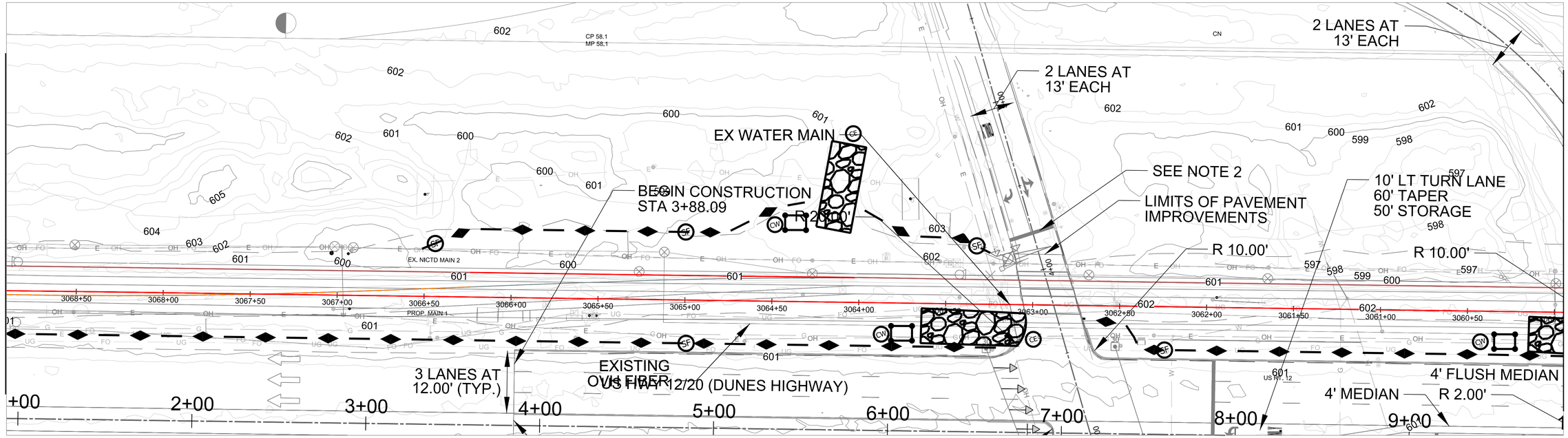
FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		

SEE SHEET BEFORE



SEE SHEET BELOW

SEE SHEET ABOVE



SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-201 OF ENV-284

PLOT DATE: 3/14/2020 10:43:10 AM CBertram

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DOUBLE TRACK N·W·I
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MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
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CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn
SCALE	AS NOTED
SHEET	OF

SEE SHEET BEFORE

SEE SHEET BELOW

APPROX. CSS R/W

APPROX. R/W

EX. NICTD MAIN 2

PROP. MAIN 1

APPROX. R/W

US RT. 12

EX WATER MAIN

SEE SHEET ABOVE

SEE SHEET AFTER

CP 57.5 JAY
MP 57.5

EXISTING
GAS MAIN

30 15 0 30 60
SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING
ENV-202 OF ENV-284

PLOT DATE: 3/14/2020 10:42:00 AM CBertram

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Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS
TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn
SCALE	AS NOTED

SHEET
OF

SEE SHEET BEFORE

EX. FLOUR TRACK SIDING

992' TOTAL LENGTH = 15 CARS @ 65'

APPROX. CSS R/W

APPROX. R/W

EX. GOFF SIDING

EX. NICTD MAIN 2

PROP. MAIN 1

US RT. 12

EXISTING GAS MAIN

SEE SHEET BELOW

EXISTING TRANSLOAD AREA

EX. FLOUR TRACK SIDING

EX 4" SEWER LINE

CROSSING CLEAR LENGTH

15+00

APPROX. R/W

APPROX. R/W

US RT. 12

SEE SHEET ABOVE

K GAS MAIN

EXISTING GAS MAIN

EX 4" STEEL GAS MAIN

EX 100 BUNDLE CABLE

EXISTING UG FIBER

SEE SHEET AFTER

SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-203 OF ENV-284

PLOT DATE: 3/14/2020 10:40:49 AM CBertram

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MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		

SEE SHEET BEFORE

SEE SHEET BELOW

SEE SHEET ABOVE

SEE SHEET AFTER

EXISTING GAS MAIN

30 15 0 30 60

SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-204 OF ENV-284

PLOT DATE: 3/14/2020 10:36:35 AM CBertram

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

MICHIGAN CITY TO GARY, INDIANA

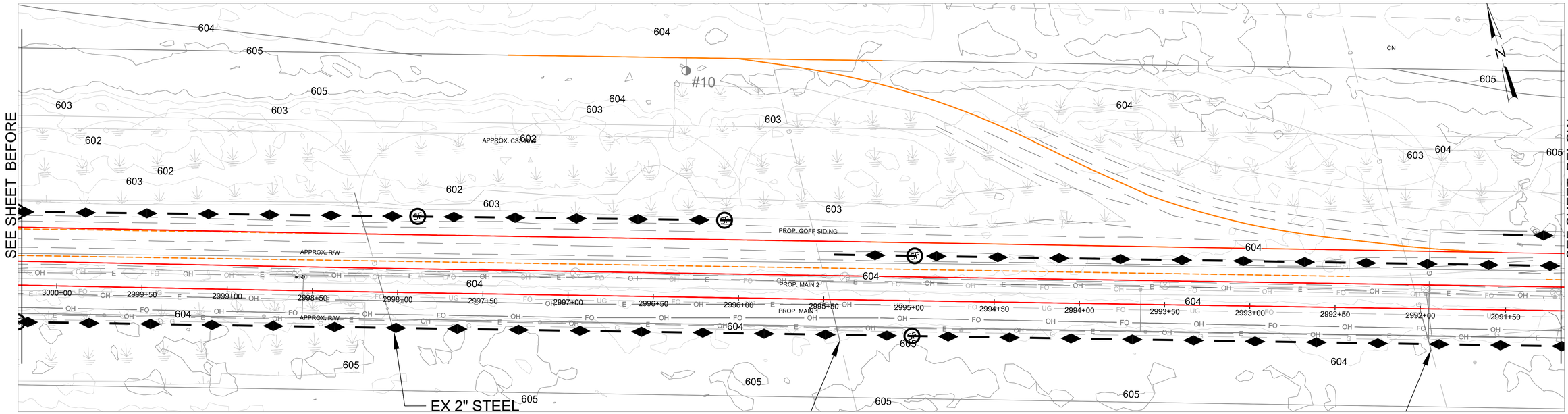
DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

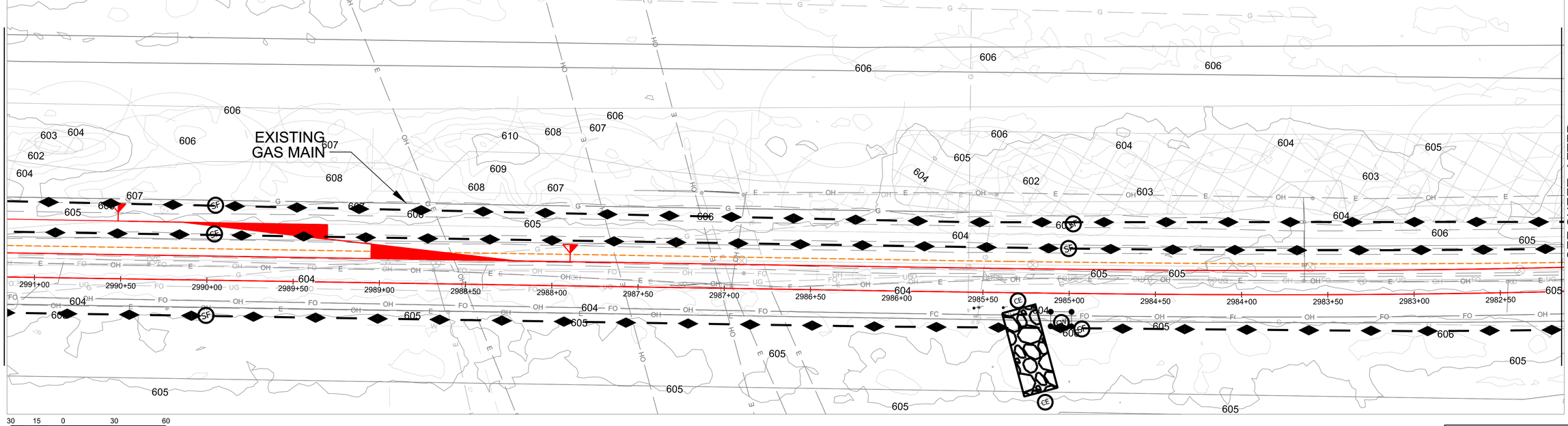
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn
SCALE	AS NOTED

SHEET OF





30 15 0 30 60
SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-205 OF ENV-284

PLOT DATE: 3/14/2020 10:34:28 AM CBertram

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DOUBLE TRACK N·W·I
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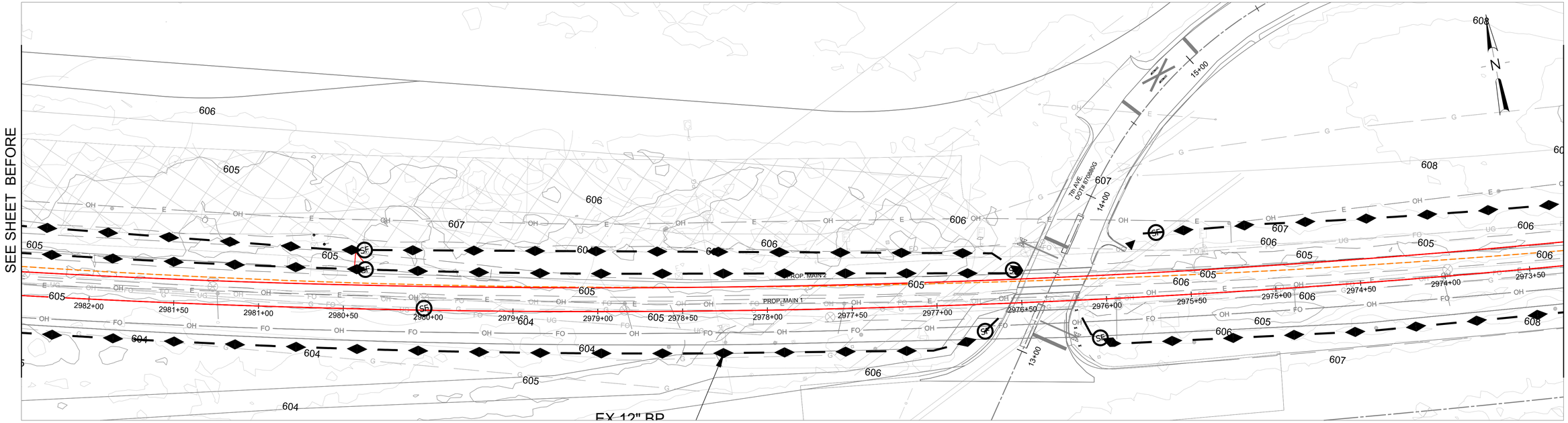
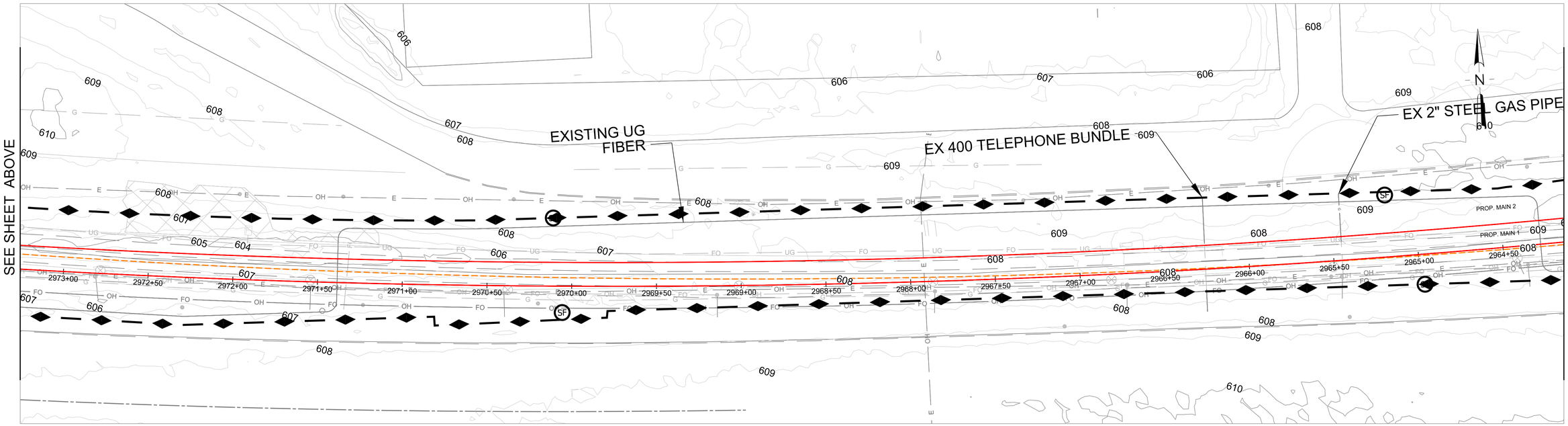
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		





30 15 0 30 60
SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-206 OF ENV-284

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DESIGNED:	VSE-XXX
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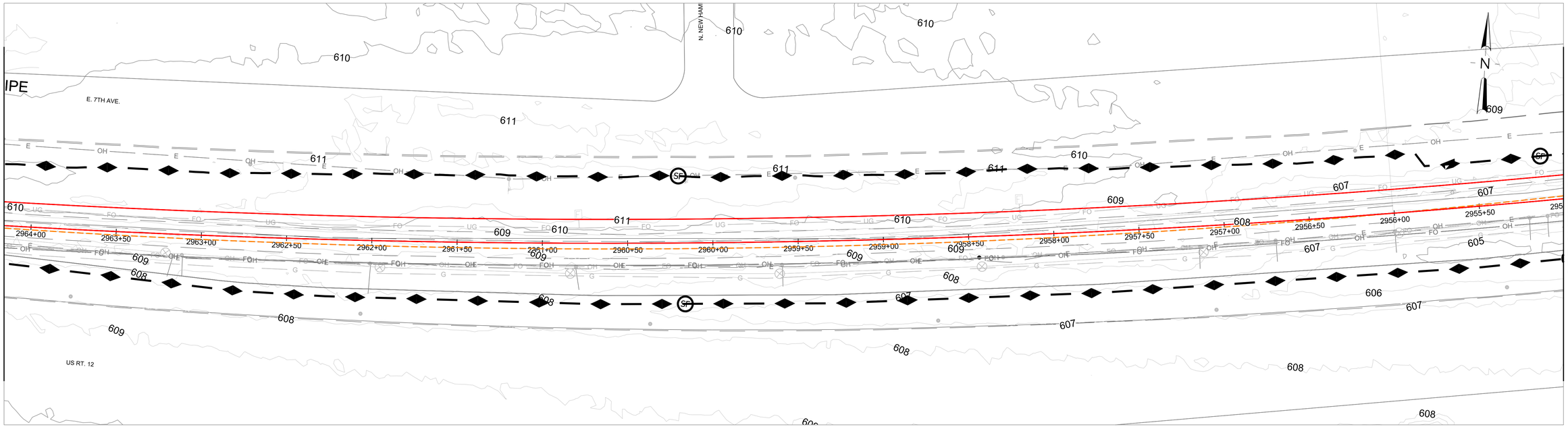
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

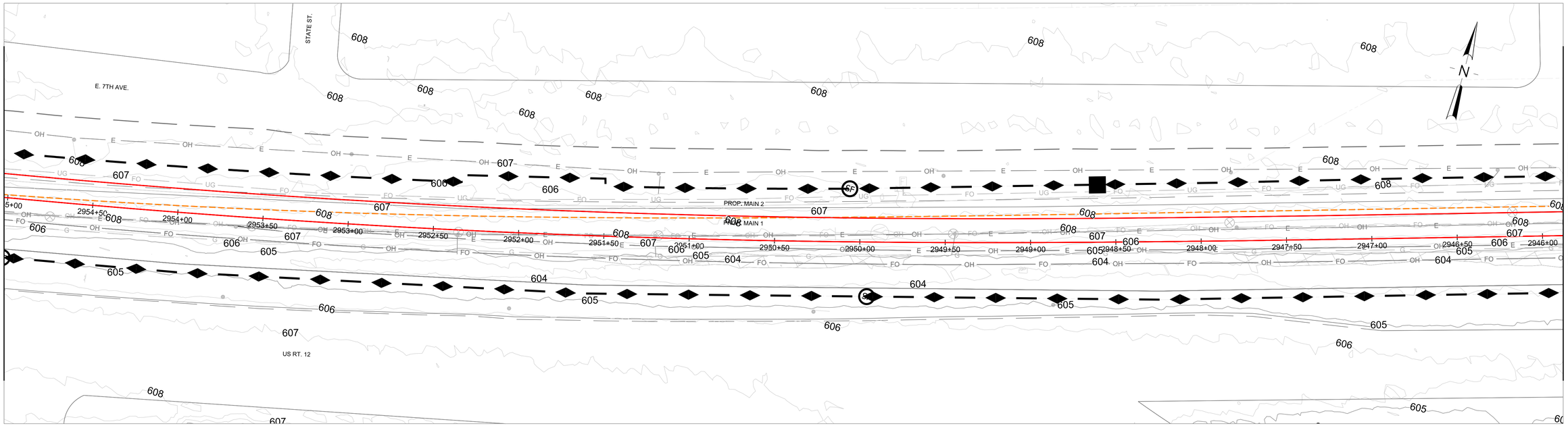
EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		

SEE SHEET BEFORE



SEE SHEET ABOVE



SEE SHEET AFTER

30 15 0 30 60

SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-207 OF ENV-284

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
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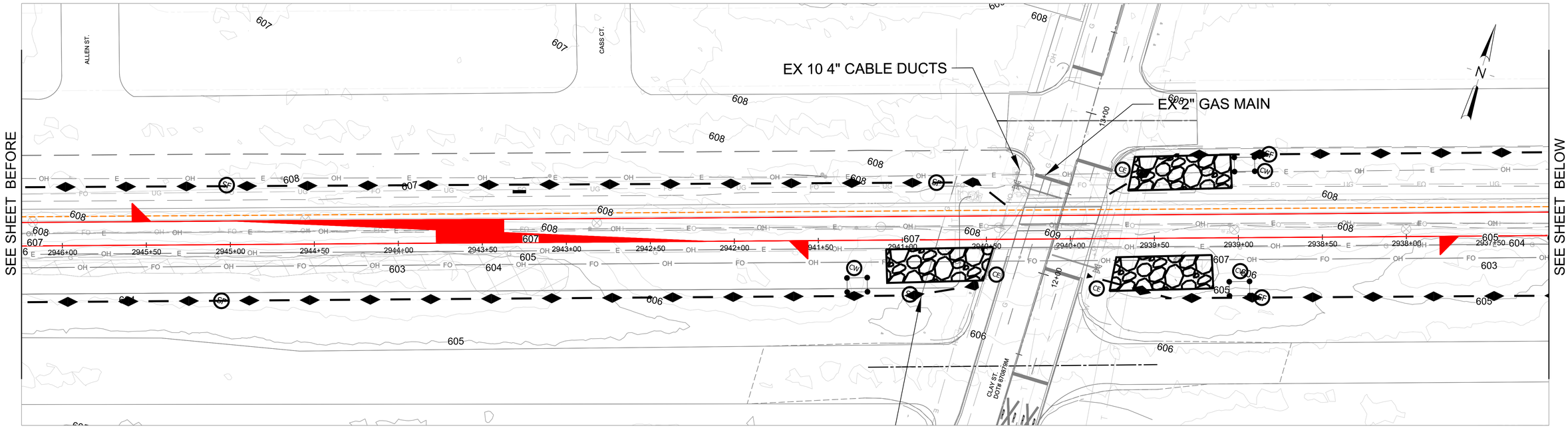
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn
SCALE	AS NOTED

SHEET OF



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DRAWING ENV-208 OF ENV-284

PLOT DATE: 3/14/2020 10:29:48 AM CBertram

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DOUBLE TRACK N·W·I
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MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		

SEE SHEET BEFORE

SEE SHEET BELOW

EXISTING NIPSCO OVH ELEC

PROP. MAIN 2

PROP. MAIN 1

SEE SHEET ABOVE

SEE SHEET AFTER

PROPOSED PLATFORM

643'

PLATFORM

PROP. MAIN 2

PROP. MAIN 1

WB PLATFORM

EB PLATFORM

WARMING HOUSE

CSS

PED XING

52'

20.0'(TYP.)

24'

9.0' (TYP.)

20.0' (TYP.)

5' (MIN.)

11' (MIN.)

66'

30 15 0 30 60

SCALE: 1" = 30'

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DRAWING ENV-209 OF ENV-284

PLOT DATE: 3/14/2020 3:19:43 PM CBertram

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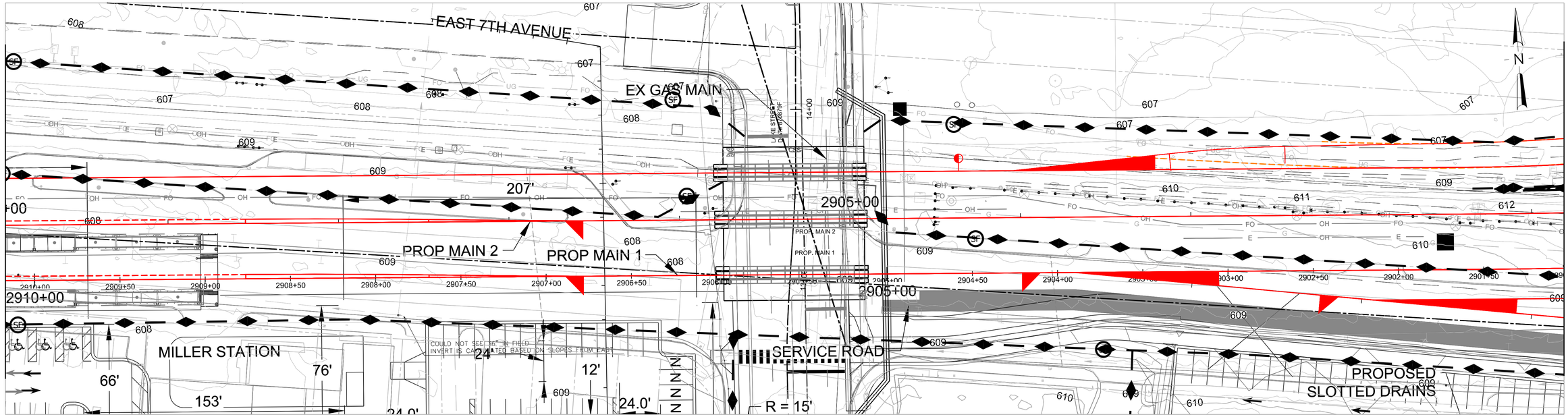
MICHIGAN CITY TO GARY, INDIANA

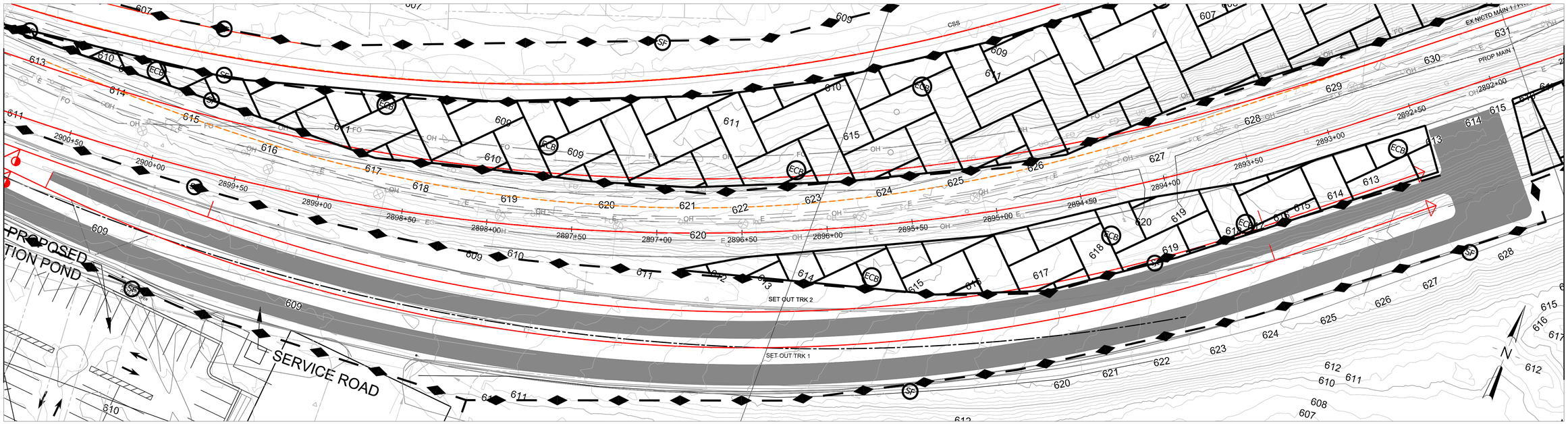
DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		





30 15 0 30 60
SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-210 OF ENV-284

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Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		

SEE SHEET BEFORE

SEE SHEET BELOW

SEE SHEET ABOVE

SEE SHEET AFTER

EX NICTD MAIN 1 / PROP MAIN 2

PROP MAIN 1

US RT. 12

CSX

SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-211 OF ENV-284

PLOT DATE: 3/14/2020 10:24:26 AM CBertram

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		

SEE SHEET BEFORE

EX 4" STEEL GAS MAIN

US RT. 12

SEE SHEET BELOW

SEE SHEET ABOVE

EX NICTD MAIN 1 / PROP MAIN 2

PROP MAIN 1

REMOVE EX COMM POLES

REMOVE EX ELEC. EQUIP.

SEE SHEET AFTER

30 15 0 30 60

SCALE: 1" = 30'

PLOT DATE: 3/14/2020 10:23:32 AM CBertram

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-212 OF ENV-284

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		

CP 54.0 WILSON WEST
MP 54,0

SEE SHEET BEFORE

SEE SHEET BELOW

EX NICTD MAIN 1 / PROP MAIN 2

PROP MAIN 1

EX NICTD

EX NICTD

US RT. 12

US RT. 12

SEE SHEET ABOVE

SEE SHEET AFTER

EX NICTD MAIN 2

EX NICTD MAIN 1

US RT. 12

SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-213 OF ENV-284

PLOT DATE: 3/14/2020 10:22:42 AM CBertram

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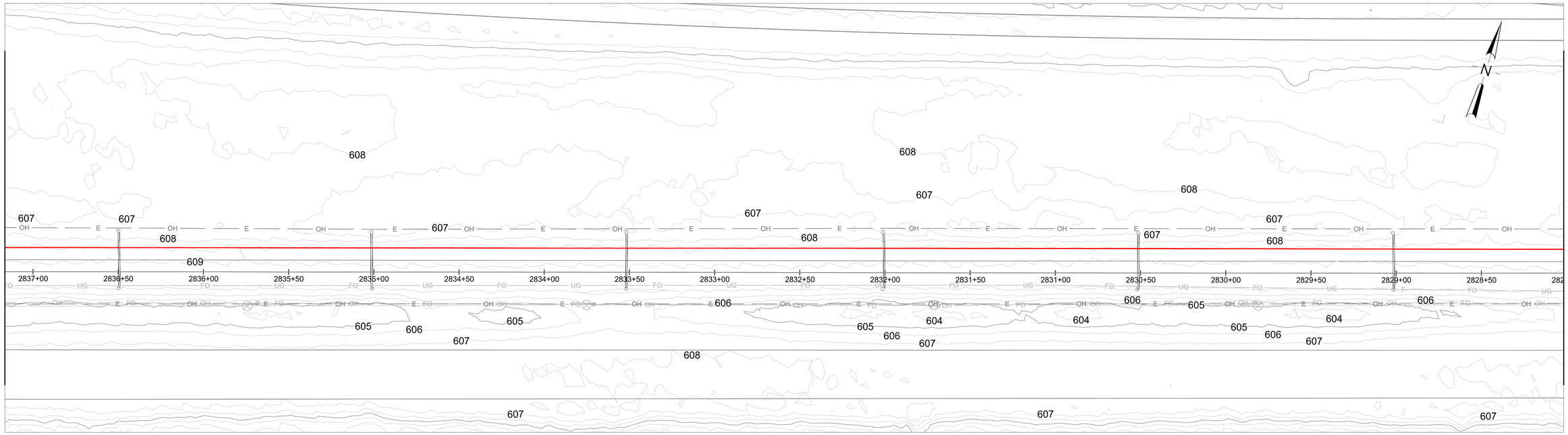
DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

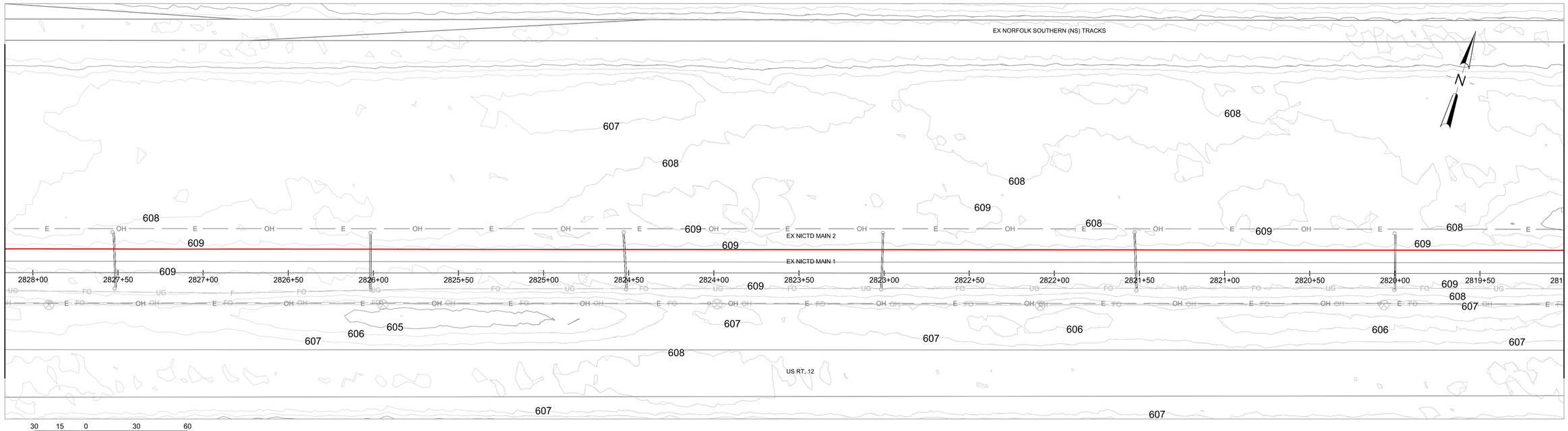
EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		

SEE SHEET BEFORE



SEE SHEET ABOVE



SEE SHEET AFTER

30 15 0 30 60

SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-214 OF ENV-284

PLOT DATE: 3/14/2020 10:21:57 AM CBertram

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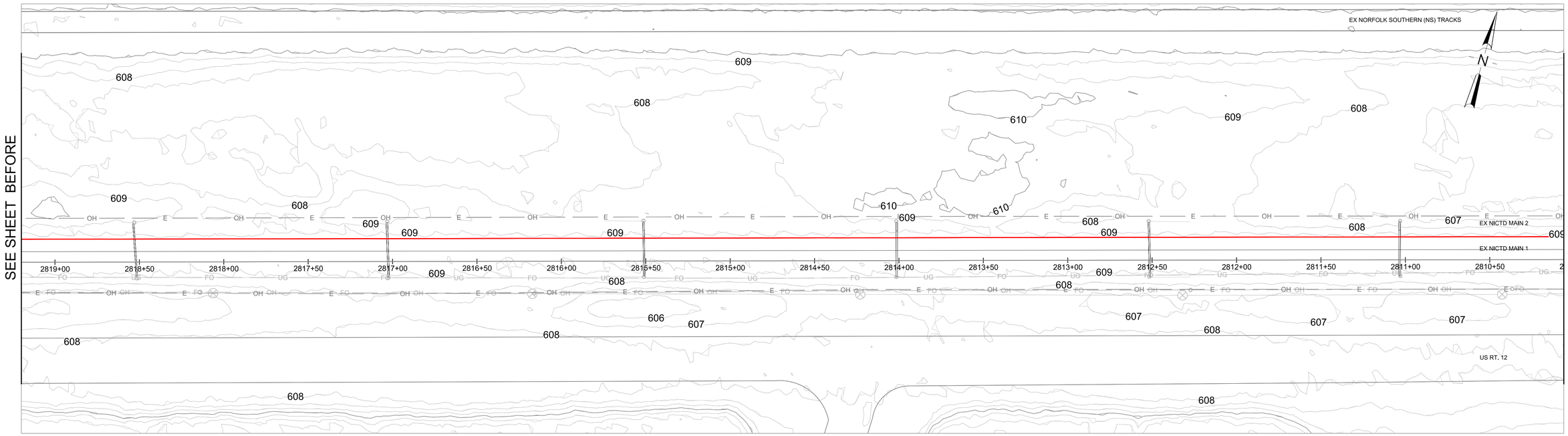
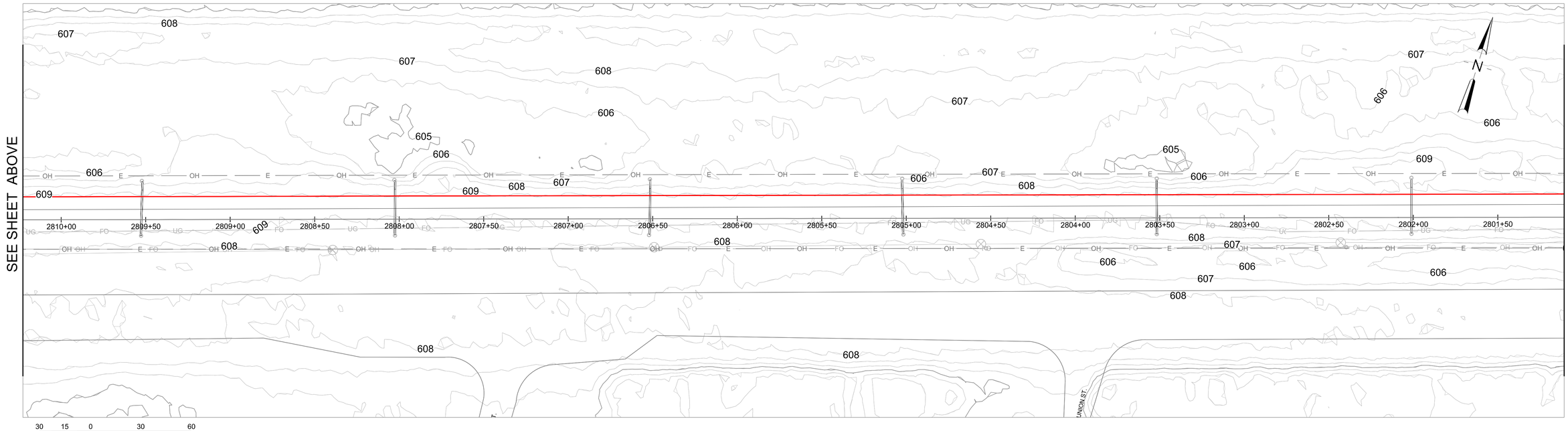
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET
SCALE	AS NOTED	OF





30 15 0 30 60
SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-215 OF ENV-284

PLOT DATE: 3/14/2020 10:21:10 AM CBertram

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VS ENGINEERING

ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

NICTD
NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

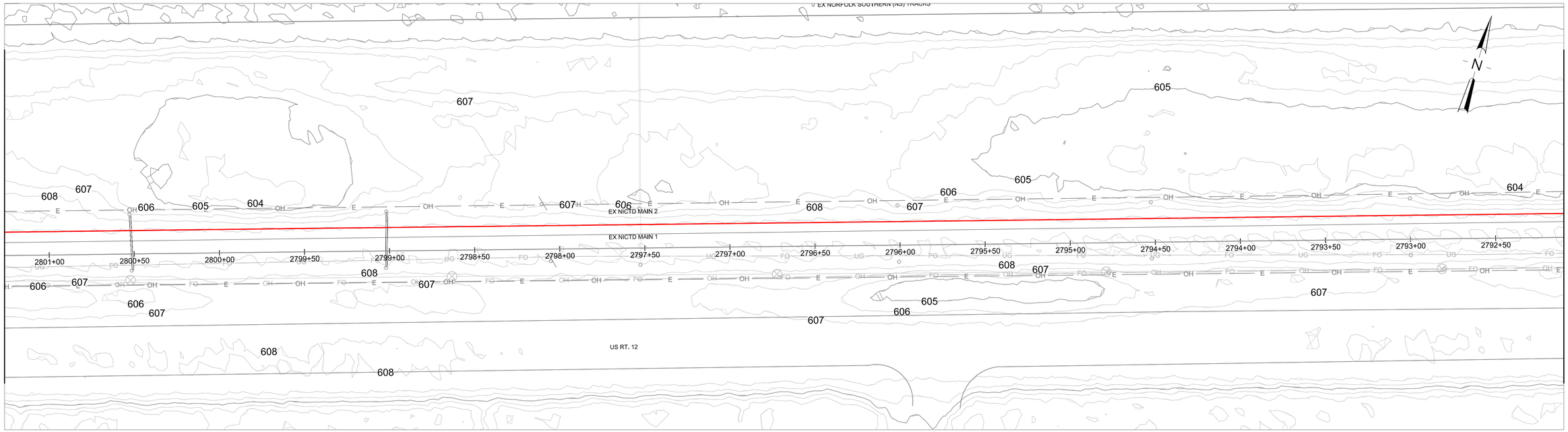
DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

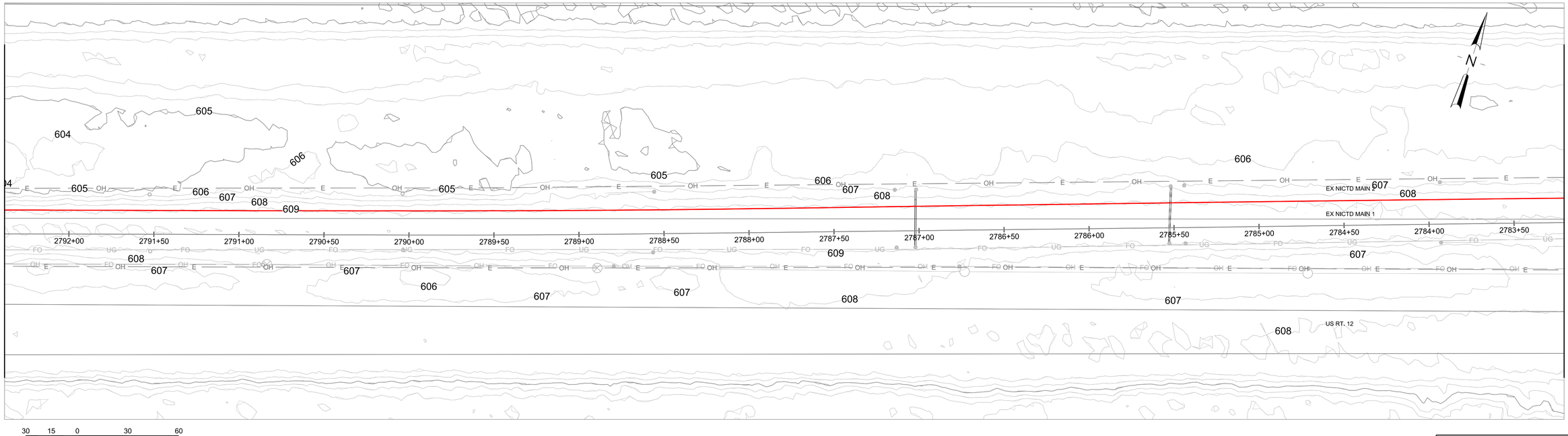
EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET
SCALE	AS NOTED	OF

SEE SHEET BEFORE



SEE SHEET ABOVE



SEE SHEET AFTER

30 15 0 30 60
SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-216 OF ENV-284

PLOT DATE: 3/14/2020 10:19:52 AM CBertram

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

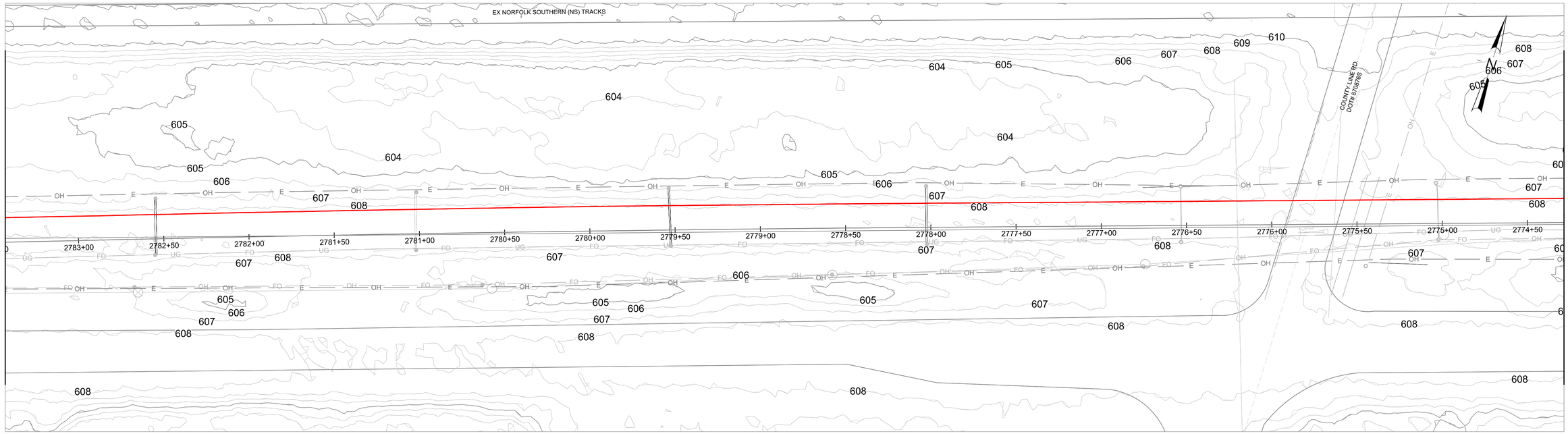
DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

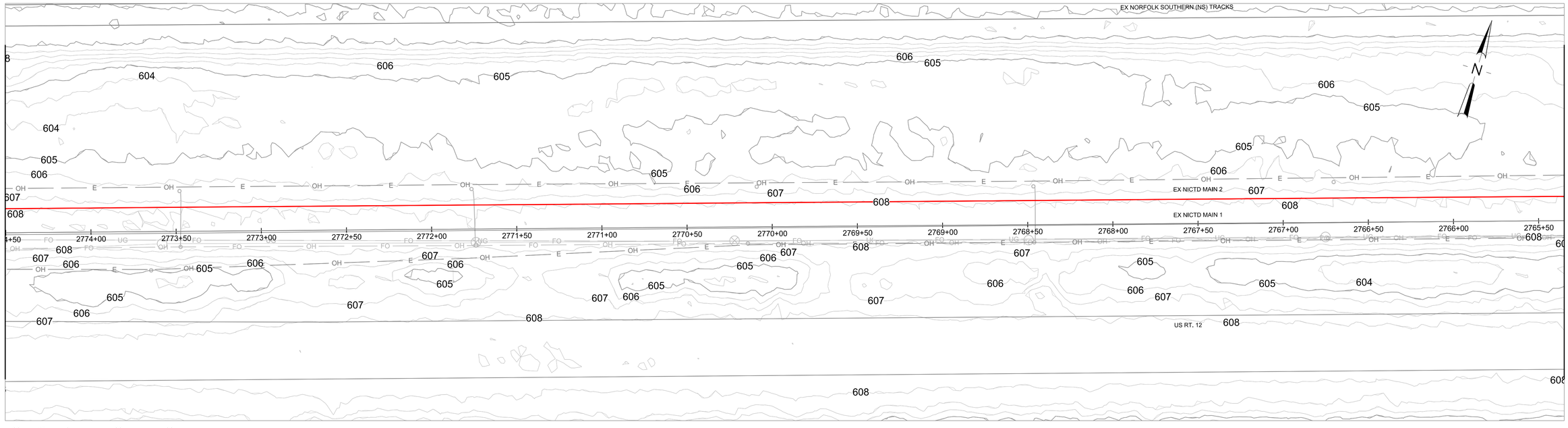
EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET OF
SCALE	AS NOTED	

SEE SHEET BEFORE



SEE SHEET ABOVE



SEE SHEET AFTER

30 15 0 30 60
SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-217 OF ENV-284

PLOT DATE: 3/14/2020 10:19:01 AM CBertram

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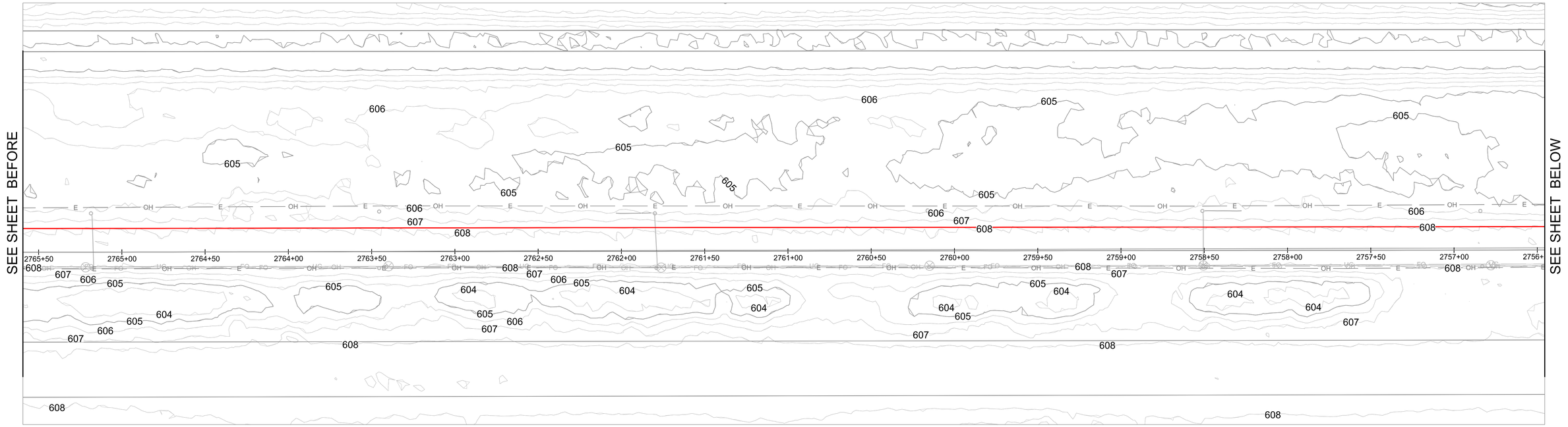
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

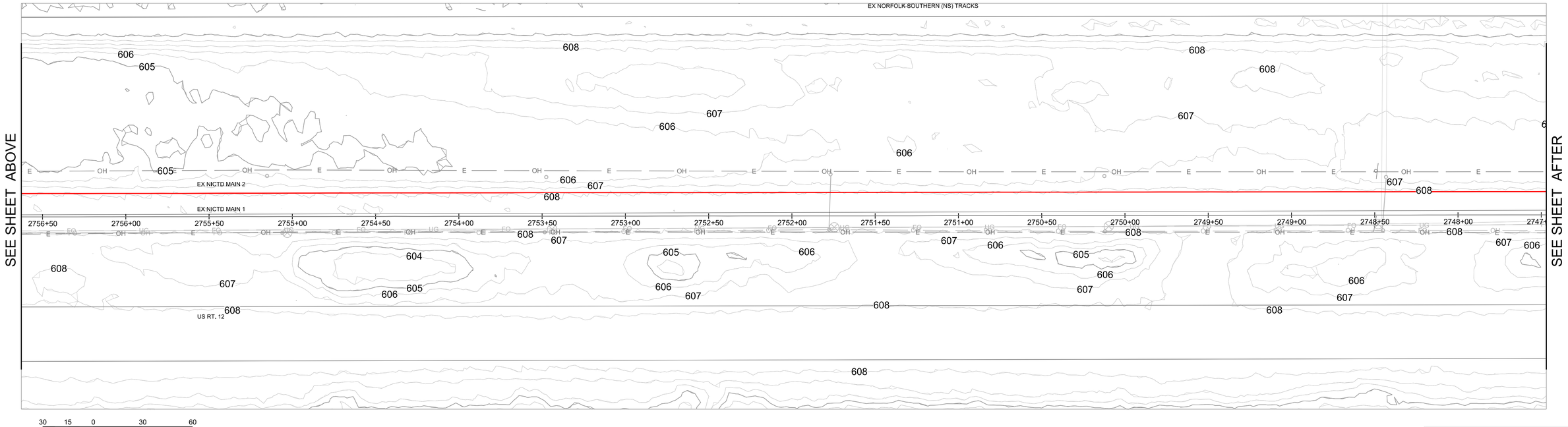
DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		





30 15 0 30 60
SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-218 OF ENV-284

PLOT DATE: 3/13/2020 1:34:35 PM CBertram

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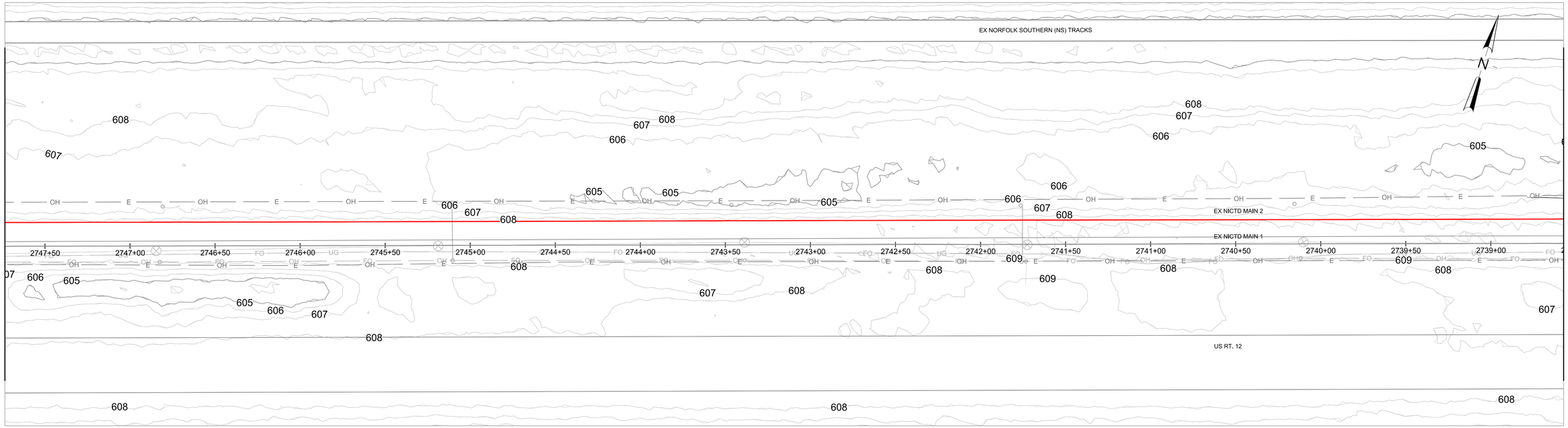
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

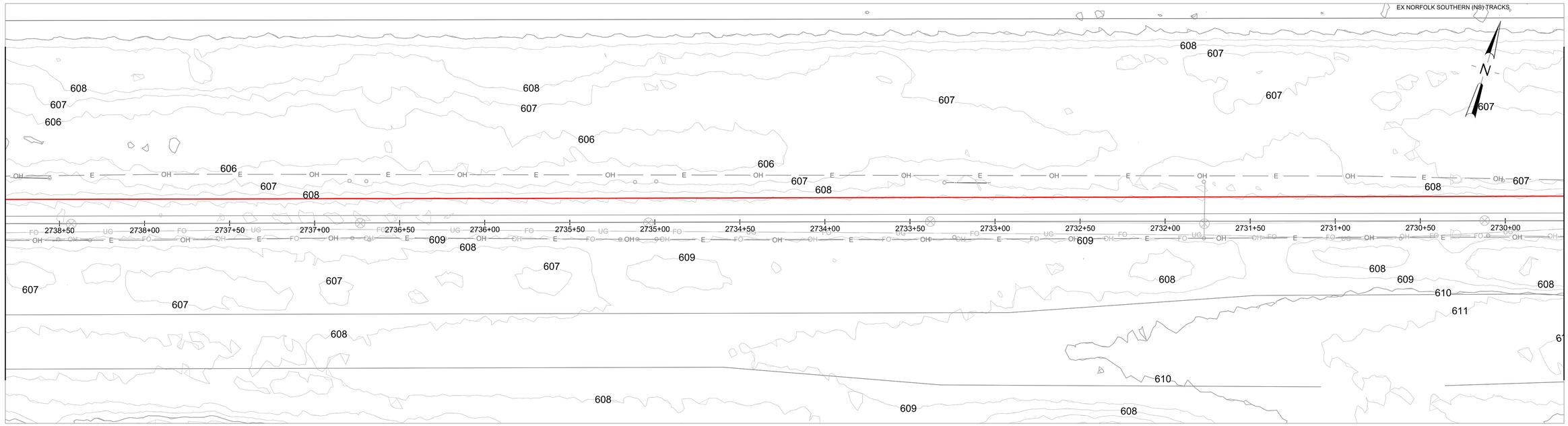
DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		





30 15 0 30 60
SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-219 OF ENV-284

PLOT DATE: 3/13/2020 1:41:14 PM CBertram

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

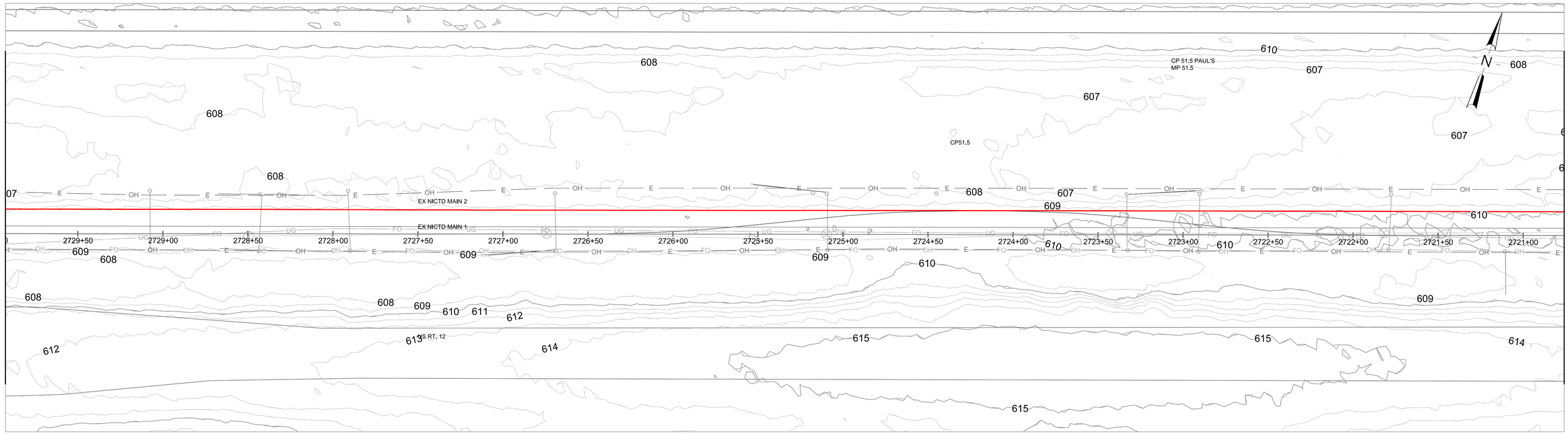
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

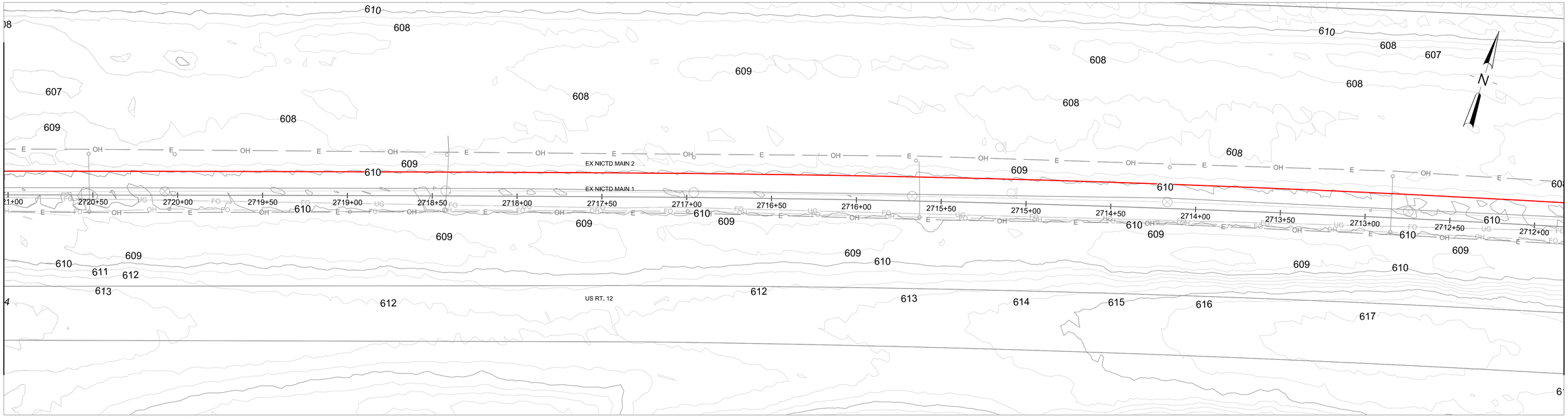
FILENAME	DT_DWG_ENV-004.dgn
SCALE	AS NOTED

SHEET OF

SEE SHEET BEFORE



SEE SHEET ABOVE



SEE SHEET AFTER

30 15 0 30 60
SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-220 OF ENV-284

PLOT DATE: 3/13/2020 1:46:35 PM CBertram

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		

SEE SHEET BEFORE

SEE SHEET BELOW

SEE SHEET ABOVE

SEE SHEET AFTER

EX NICTD MAIN 2

EX NICTD MAIN 1

US RT. 12

14'

SP

SP

30 15 0 30 60

SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-221 OF ENV-284

PLOT DATE: 3/13/2020 1:51:23 PM CBertram

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		

SEE SHEET BEFORE

SEE SHEET BELOW

EXISTING OVH FIBER

EXISTING OVH FIBER

EXISTING NIPSCO OVH ELEC

HWY 12

US RT. 12

SEE SHEET ABOVE

SEE SHEET AFTER

DUNES HWY (US-12)

HWY 12

NEW PEDESTRIAN CROSSING

PROPERTY BOUNDARY

SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-222 OF ENV-284

PLOT DATE: 3/13/2020 2:03:43 PM CBertram

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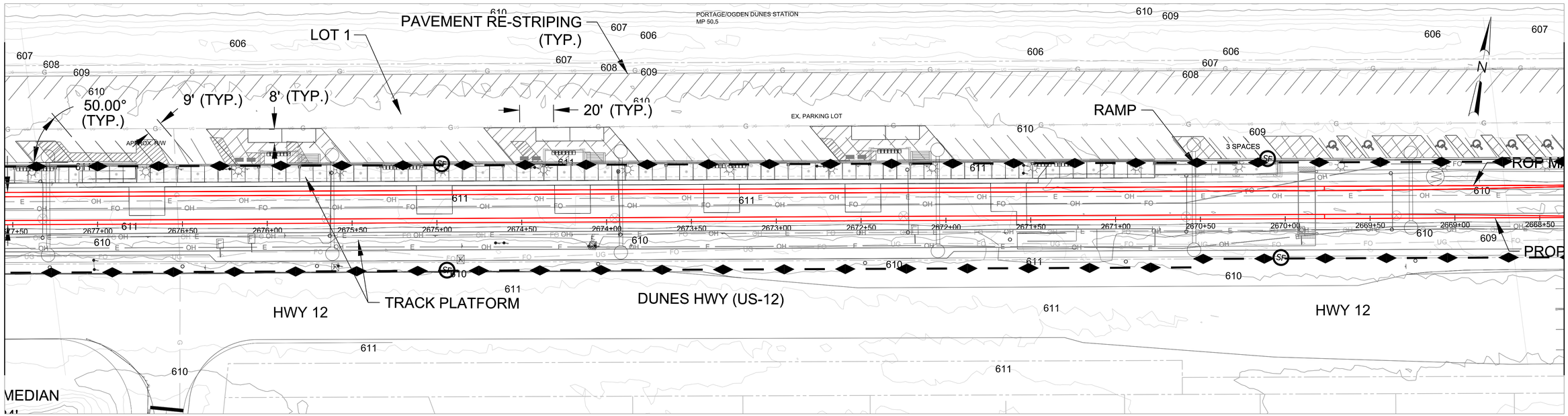
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

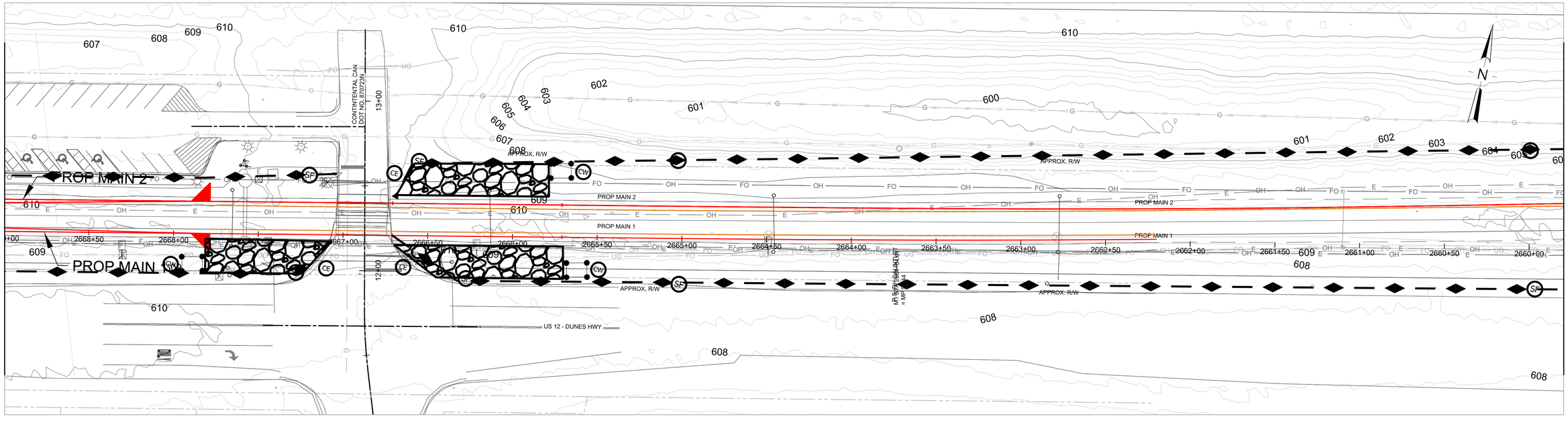
DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET
SCALE	AS NOTED	OF





30 15 0 30 60
SCALE: 1" = 30'

PLOT DATE: 3/13/2020 2:15:17 PM CBertram

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-223 OF ENV-284

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		

SEE SHEET BEFORE

EX NORFOLK SOUTHERN (NS) TRACKS

N

APPROX. R/W

EX WATER MAIN

EX 100 PAIR TELEPHONE CABLE

US 12 - DUNES HWY

SEE SHEET BELOW

SEE SHEET ABOVE

EX NORFOLK SOUTHERN (NS) TRACKS

BURNS WATERWAY

PROP MAIN 2

EX NICTD MAIN 2

EX NICTD MAIN 1

APPROX. R/W

US 12 - DUNES

SEE SHEET AFTER

30 15 0 30 60

SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-224 OF ENV-284

PLOT DATE: 3/13/2020 2:32:48 PM CBertram

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Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

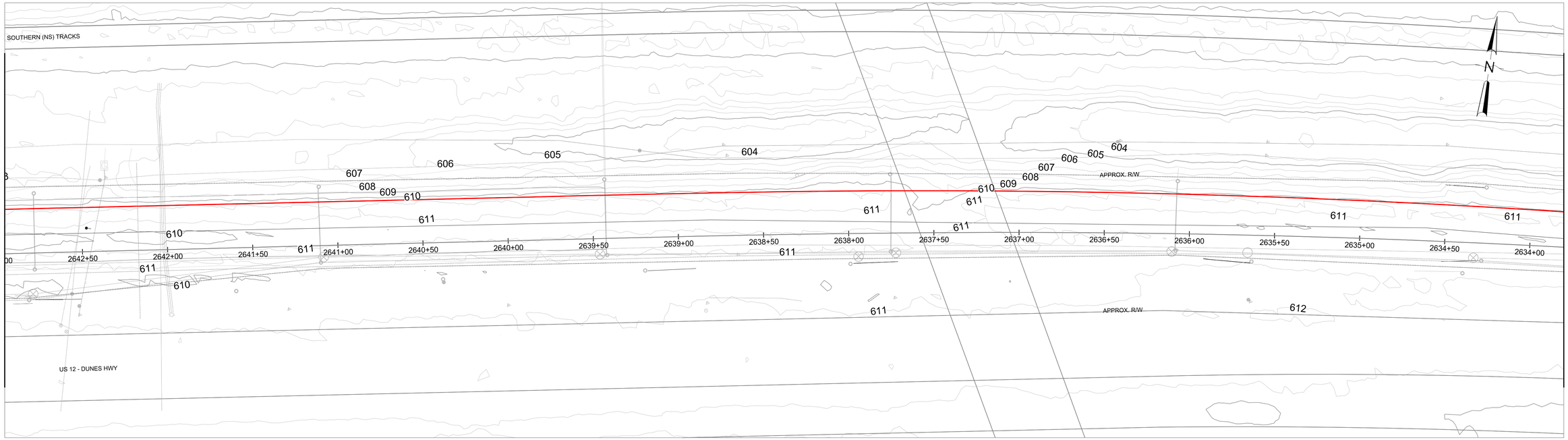
DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

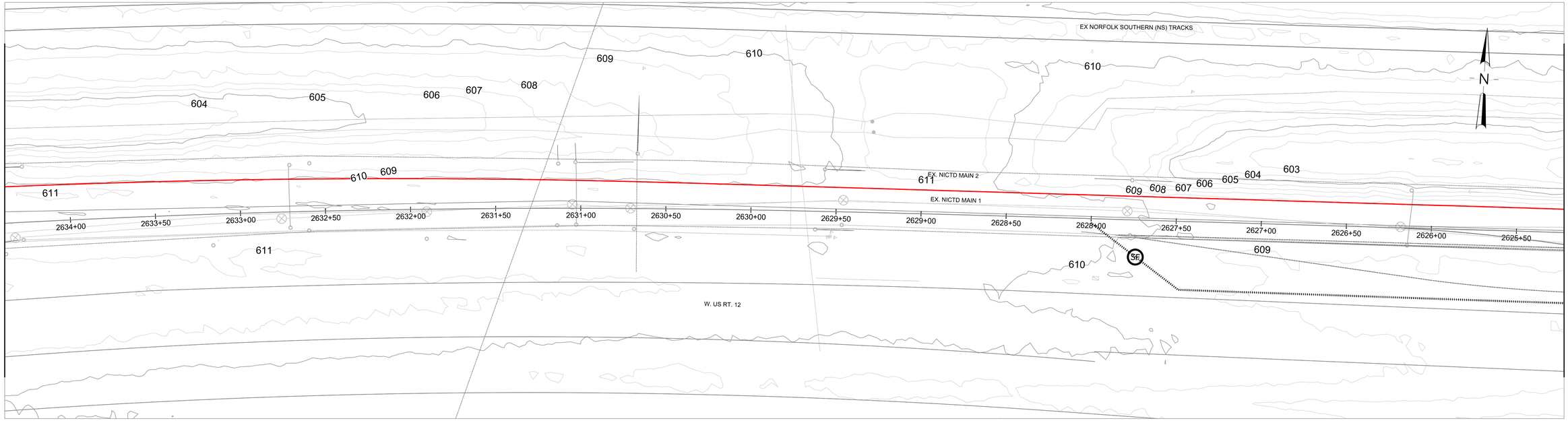
FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		

SEE SHEET BEFORE



SEE SHEET BEFORE

SEE SHEET AFTER



SEE SHEET ABOVE

30 15 0 30 60

SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-225 OF ENV-284

PLOT DATE: 3/13/2020 2:43:17 PM CBertram

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

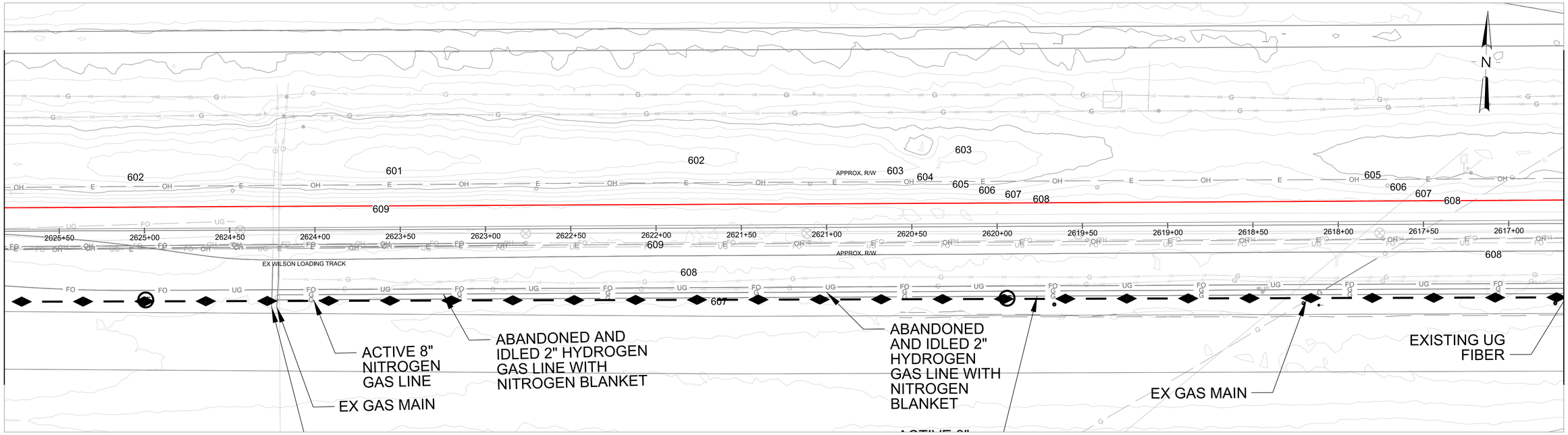
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		

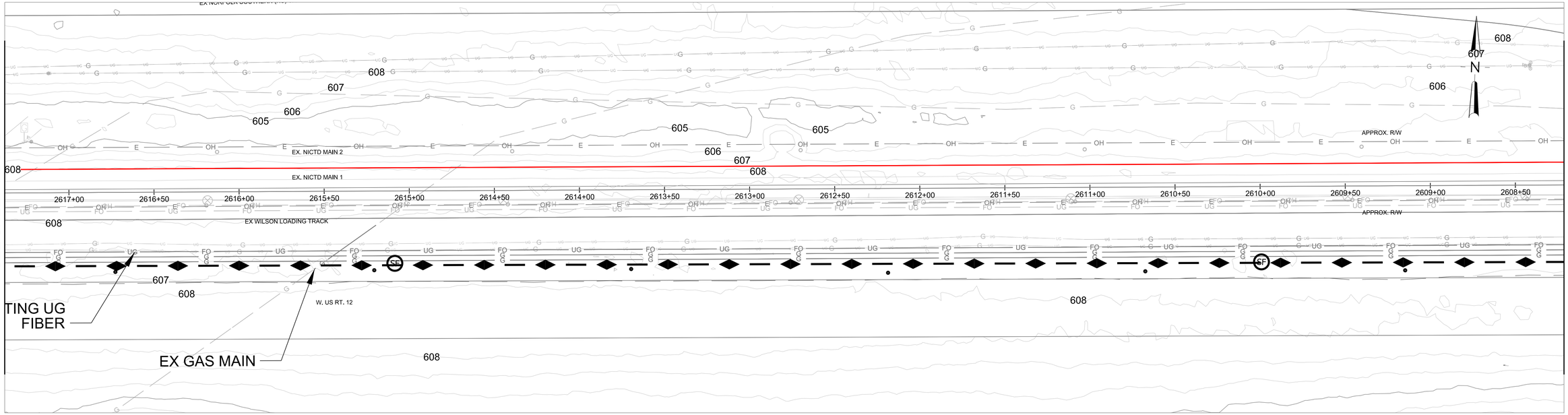
SEE SHEET BEFORE

SEE SHEET BELOW



SEE SHEET ABOVE

SEE SHEET AFTER



30 15 0 30 60

SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-226 OF ENV-284

PLOT DATE: 3/13/2020 2:53:47 PM CBertram

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33 East Highway 12
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DOUBLE TRACK N·W·I

Connectivity for Accelerated Growth

MICHIGAN CITY TO GARY, INDIANA

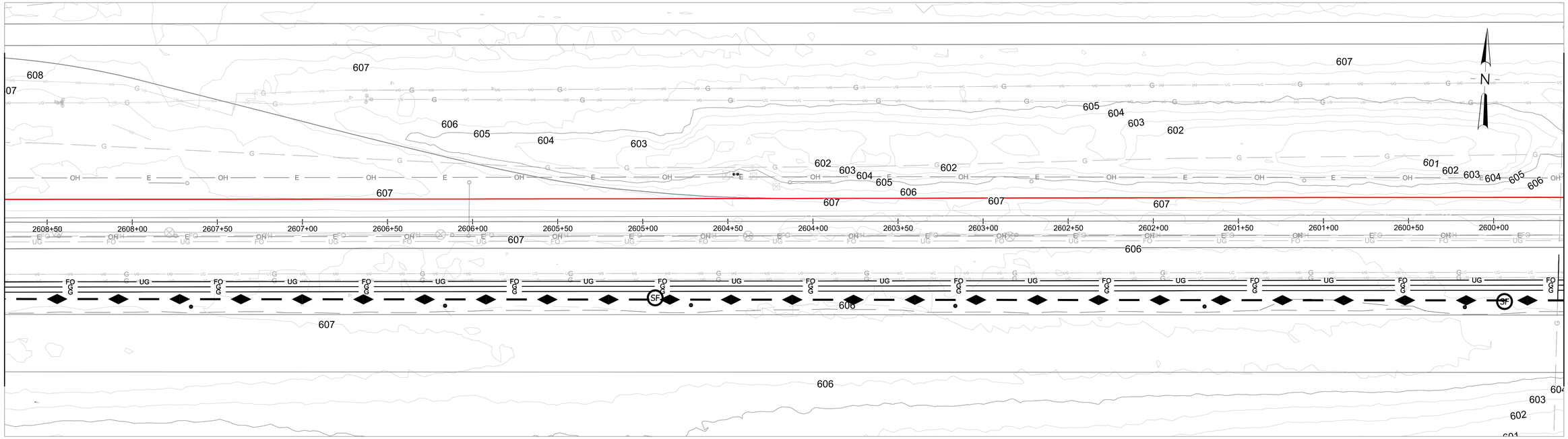
DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

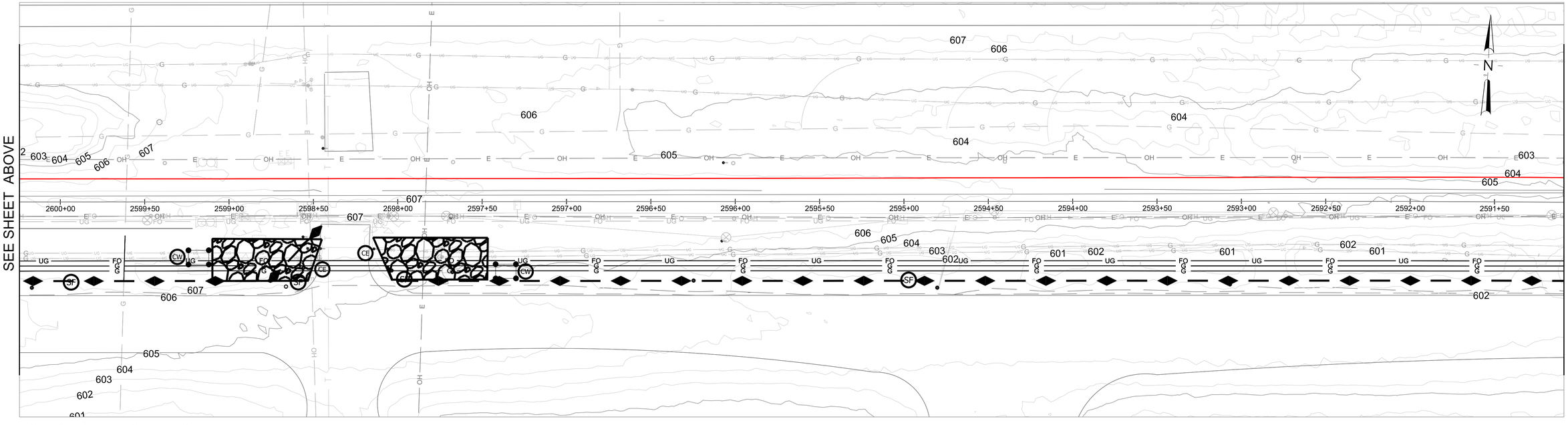
EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		

SEE SHEET BEFORE



SEE SHEET ABOVE



SEE SHEET AFTER

30 15 0 30 60

SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-227 OF ENV-284

PLOT DATE: 3/13/2020 3:09:04 PM CBertram

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		

SEE SHEET BEFORE

SEE SHEET BELOW

EXISTING OXYGEN GAS LINE

ABANDONED AND IDLED 2" HYDROGEN GAS LINE

EX BILLBOARD

ABANDONED AND IDLED 2" HYDROGEN GAS LINE

ACT NITR GAS

SEE SHEET ABOVE

SEE SHEET AFTER

ACTIVE 8" NITROGEN GAS LINE

W. US HWY. 12

EX BILLBOARD

30 15 0 30 60

SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-228 OF ENV-284

PLOT DATE: 3/13/2020 3:17:03 PM CBertram

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

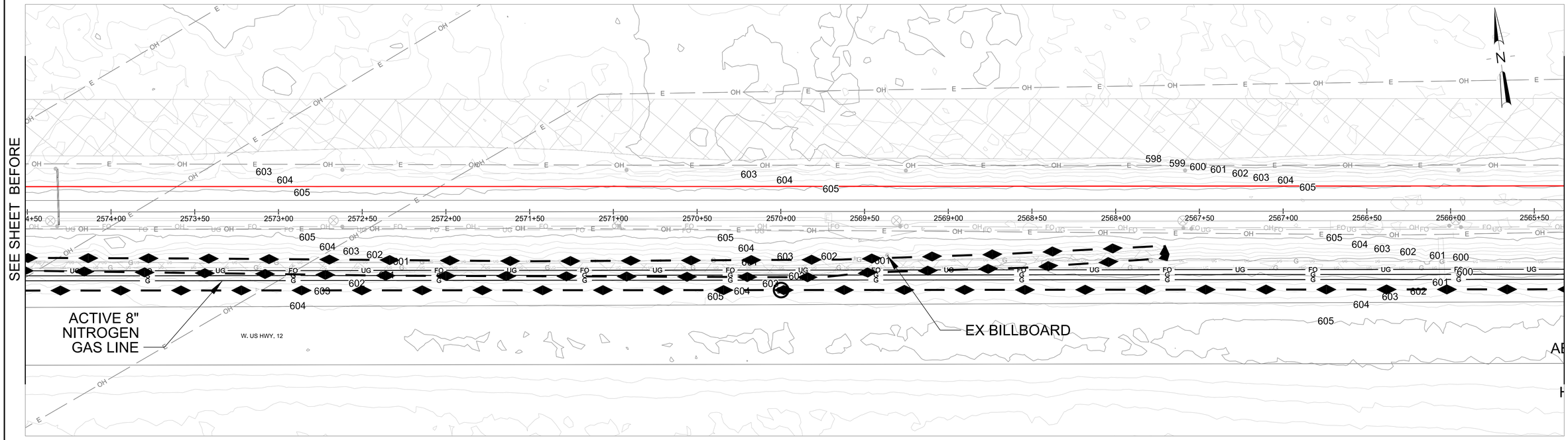
DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

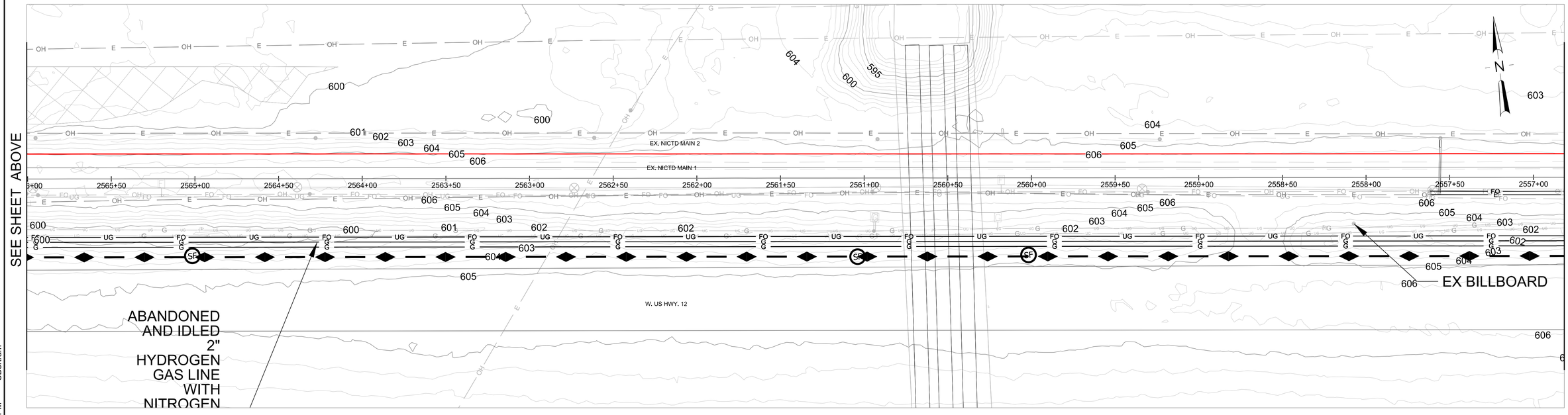
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn
SCALE	AS NOTED

SHEET OF





60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-229 OF ENV-284

PLOT DATE: 3/13/2020 3:25:15 PM CBertram

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ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

NICTD
NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn
SCALE	AS NOTED
SHEET	OF

SEE SHEET BEFORE

SEE SHEET BELOW

EX BILLBOARD

EXISTING NIPSCO OVH ELEC

ACTIVE 8" NITROGEN GAS LINE

MCCOOL RD. DOT # 870175Y

N

SEE SHEET ABOVE

SEE SHEET AFTER

EX. NICTD MAIN 2

EX. NICTD MAIN 1

W. US HWY. 12

30 15 0 30 60

SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-230 OF ENV-284

PLOT DATE: 3/13/2020 3:32:29 PM CBertram

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		

SEE SHEET BEFORE

SEE SHEET BELOW

EX 4" POTABLE WATER LINE

SEE SHEET ABOVE

SEE SHEET AFTER

ABANDONED GAS LINE TO BE FIELD VERIFIED

APPROX. R/W

PROP. MAIN 2

PROP. MAIN 1

HWY 12

SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-231 OF ENV-284

PLOT DATE: 3/13/2020 3:42:21 PM CBertram

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn
SCALE	AS NOTED
SHEET	OF

SEE SHEET BEFORE

SEE SHEET BELOW

EX. NICTD MAIN 2

EX. MAIN

PROP MAIN 2

PROP MAIN 1

APPROX. R/W

GAS CASING EXTENSION

EX 0.75" STEEL GAS MAIN

EX NICTD MAIN 2

PROP NICTD MAIN 2

SEE SHEET ABOVE

SEE SHEET AFTER

SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-232 OF ENV-284

PLOT DATE: 3/13/2020 3:48:52 PM CBertram

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		

SEE SHEET BEFORE

EXISTING UG FIBER

EX GAS MAIN

EX NICTD MAIN/ PROP. MAIN 2

PROP. MAIN 1

APPROX. R/W

NORFOLK S...

SEE SHEET BELOW

SEE SHEET ABOVE

APPROX. R/W

APPROX. R/W

SEE SHEET AFTER

SCALE: 1" = 30'

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3:56:20 PM
3/13/2020
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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn
SCALE	AS NOTED

SHEET OF

SEE SHEET BEFORE

SEE SHEET BELOW

SEE SHEET ABOVE

SEE SHEET AFTER

APPROX. R/W

PROP BAILLY NORTH

EX MAIN/PROP. MAIN 2

PROP. MAIN 1

APPROX. CSS R/W

EX PHONE CABLE

EX WATER MAIN

30 15 0 30 60

SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-234 OF ENV-284

PLOT DATE: 3/13/2020 4:02:30 PM CBertram

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

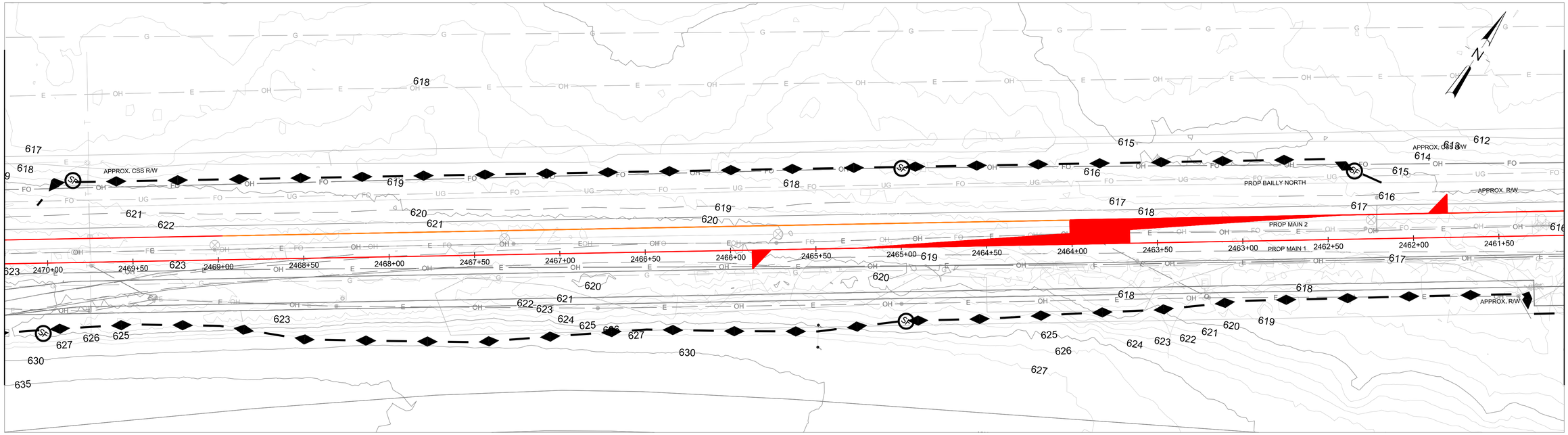
DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

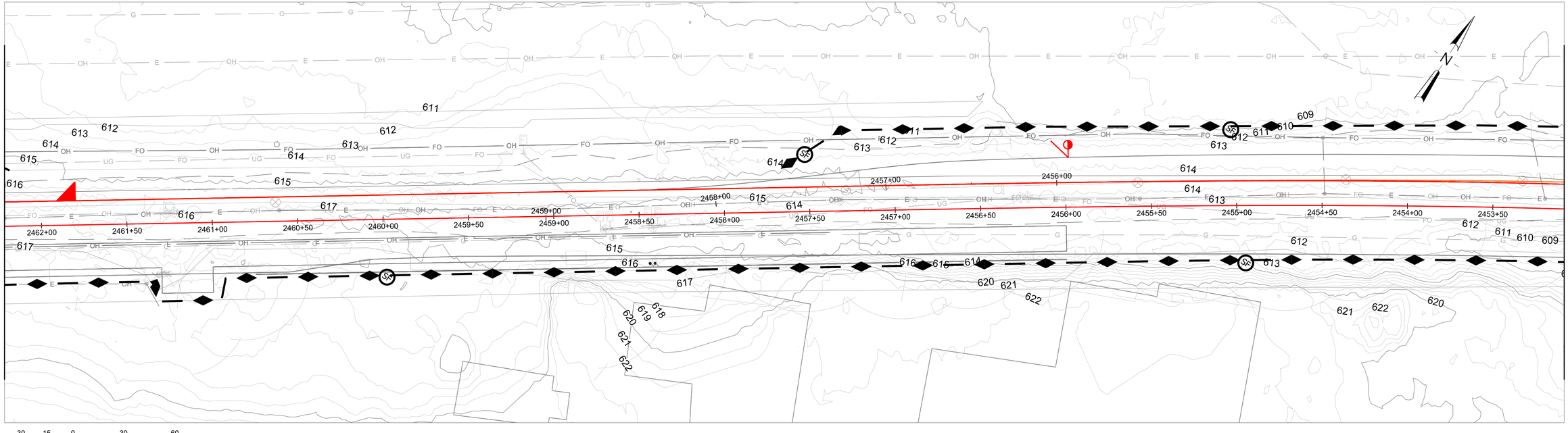
EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		

SEE SHEET BEFORE



SEE SHEET ABOVE



SEE SHEET AFTER

30 15 0 30 60

SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-235 OF ENV-284

PLOT DATE: 3/13/2020 4:12:17 PM CBertram

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

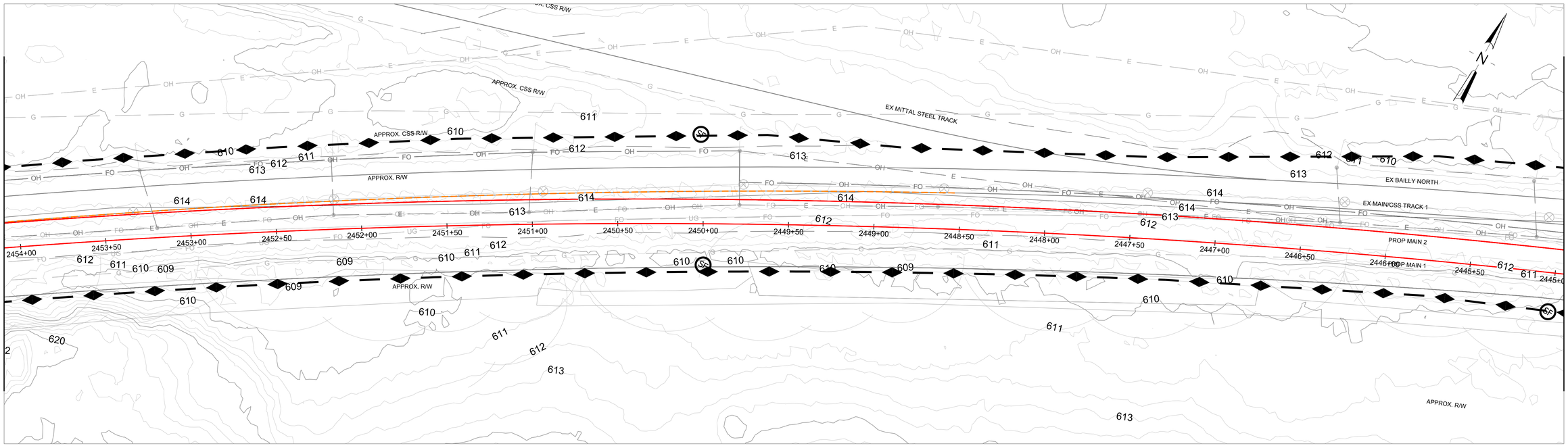
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		

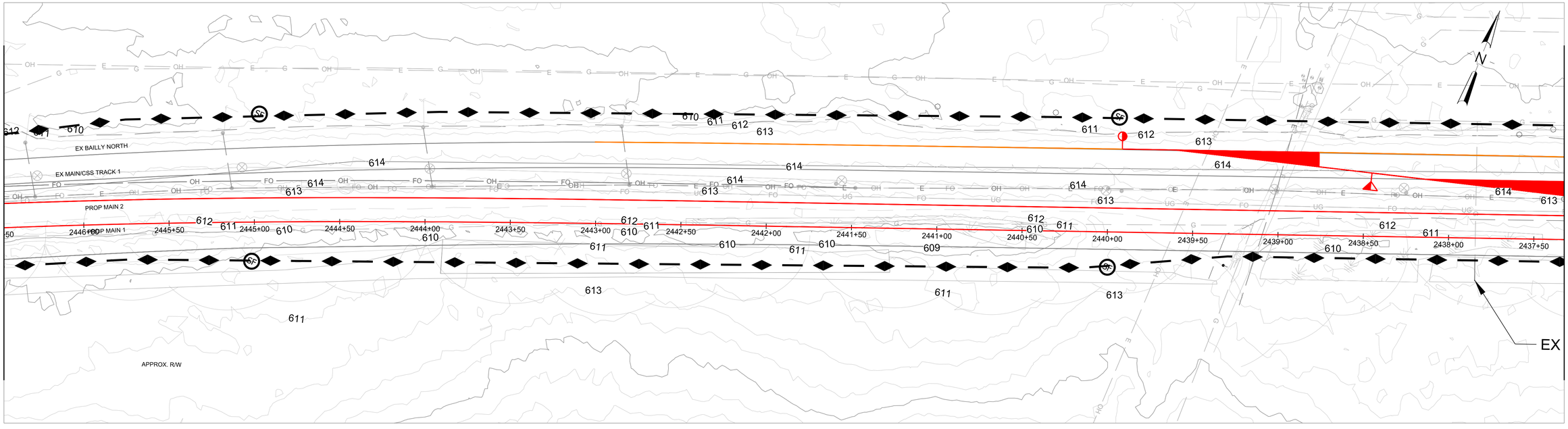
SEE SHEET BEFORE

SEE SHEET BELOW



SEE SHEET ABOVE

SEE SHEET AFTER



30 15 0 30 60

SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-236 OF ENV-284

PLOT DATE: 3/13/2020 4:21:39 PM CBertram

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		

SEE SHEET BEFORE

EX 0.75" GAS MAIN

APPROX. CSS R/W

APPROX. R/W

EX BAILLY NORTH

EX MAIN/CSS TRACK 1

PROP MAIN 2

PROP MAIN 1

EX 22 GAUGE PL FIBER

EX 12" STEEL GAS MAIN

SEE SHEET BELOW

SEE SHEET ABOVE

EX 8" IRON WATER LINE

SEE SHEET AFTER

SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-237 OF ENV-284

PLOT DATE: 3/15/2020 6:48:31 PM JMowery

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-SJW
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		

SEE SHEET BEFORE

BAILLY GENERATING STATION
MP 45.9

APPROX. CSS R/W

EX BAILLY NORTH

EX 54022 TRACK

APPROX. R/W

EX MAIN/CSS TRACK 1

EX BAILLY SOUTH 2/PROP MAIN 2

APPROX. R/W

EX BAILLY SOUTH 1/PROP MAIN 1

2423+00 2422+50 2422+00 2421+50 2421+00 2420+50 2420+00 2419+50 2419+00 2418+50 2418+00 2417+50 2417+00 2416+50 2416+00 2415+50 2415+00 2414+50

APPROX. CSS R/W

SEE SHEET BELOW

SEE SHEET ABOVE

2414+50 2414+00 2413+50 2413+00 2412+50 2412+00 2411+50 2411+00 2410+50 2410+00 2409+50 2409+00 2408+50 2408+00 2407+50 2407+00 2406+50 2406+00

APPROX. CSS R/W

SEE SHEET AFTER

30 15 0 30 60
SCALE: 1" = 30'

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DRAWING ENV-238 OF ENV-284

PLOT DATE: 3/13/2020 4:37:33 PM CBertram

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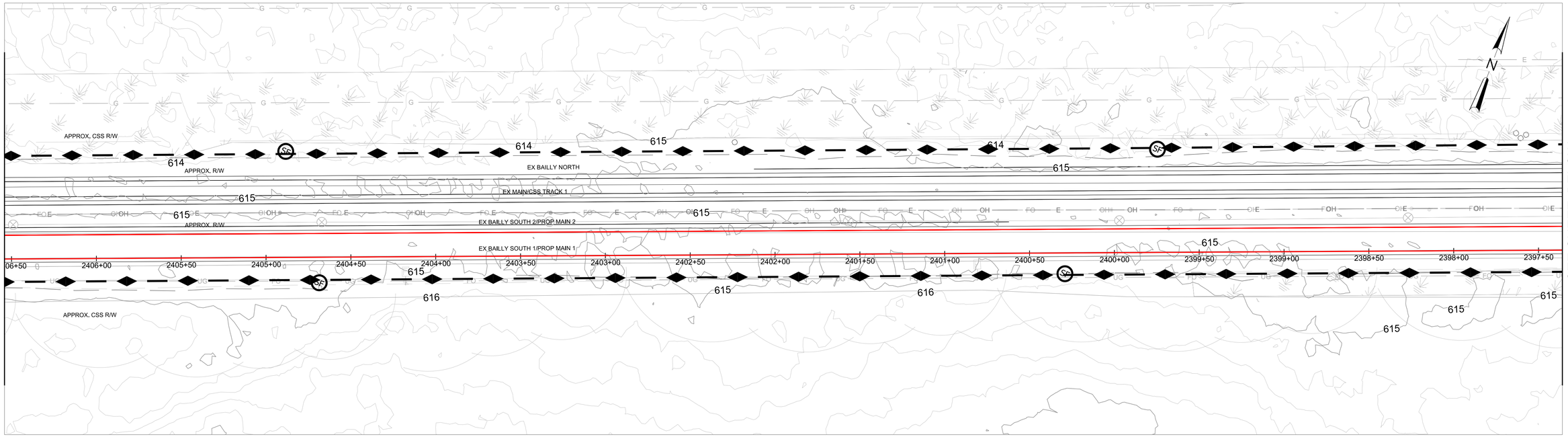
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

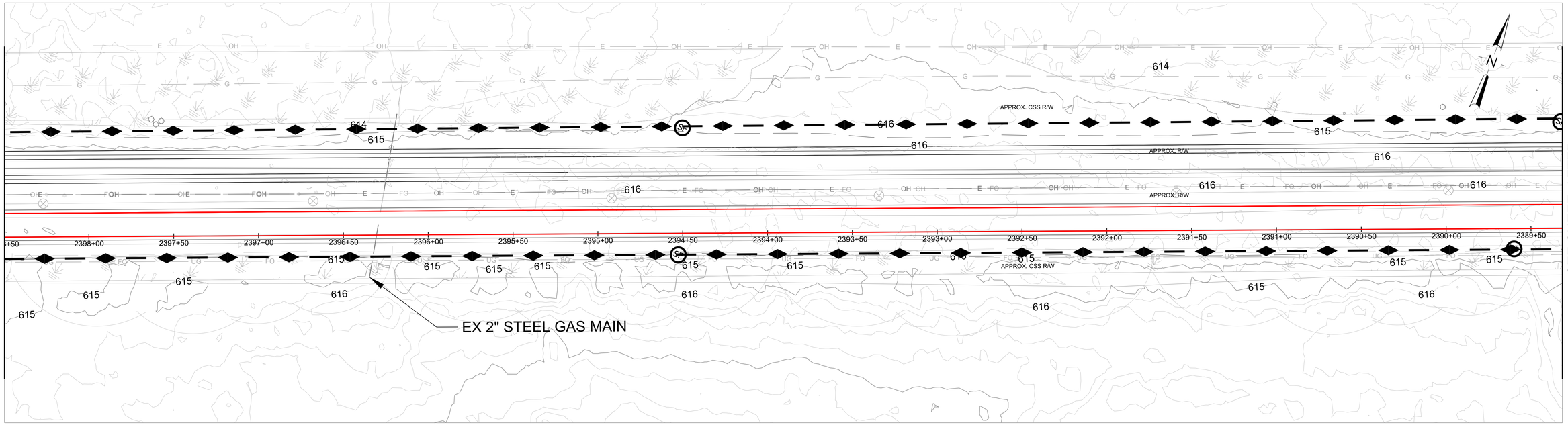
DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		





30 15 0 30 60
SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-239 OF ENV-284

PLOT DATE: 3/14/2020 10:53:20 AM CBertram

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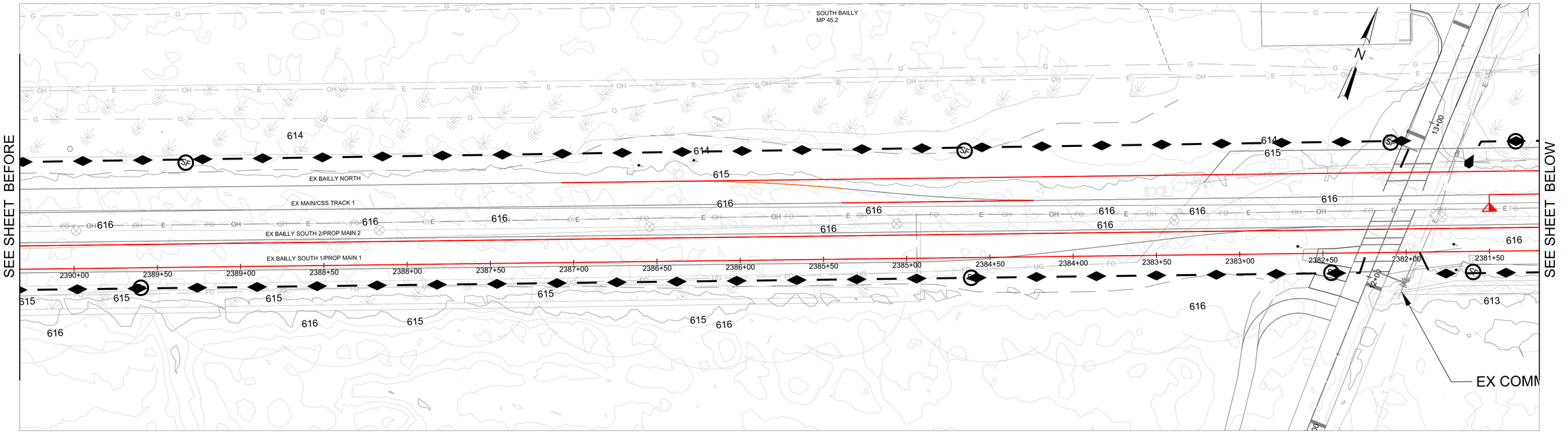
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

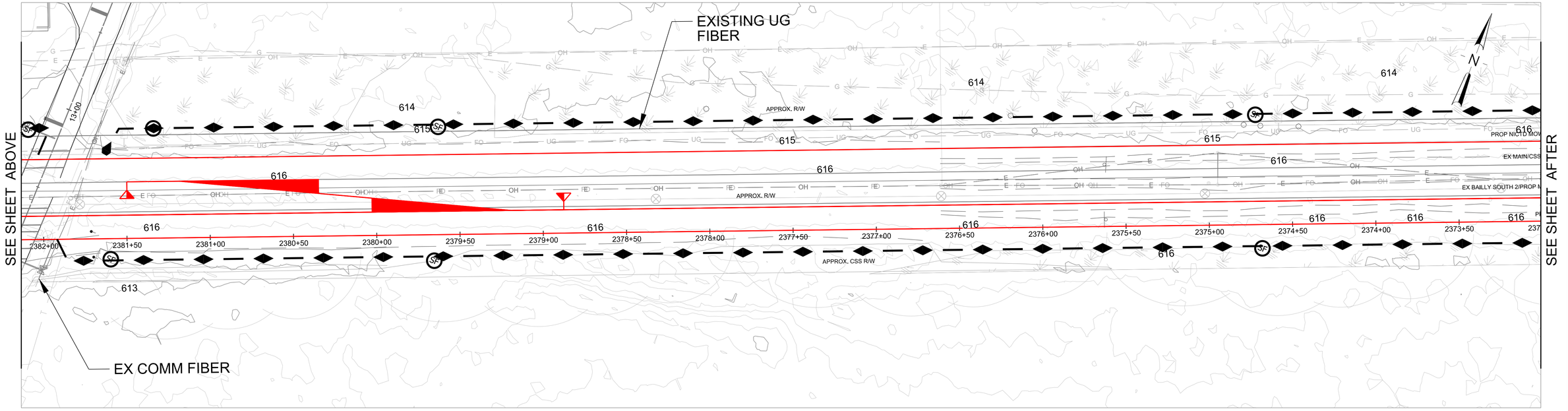
DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		





30 15 0 30 60
SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-240 OF ENV-284

PLOT DATE: 3/14/2020 11:01:39 AM CBertram

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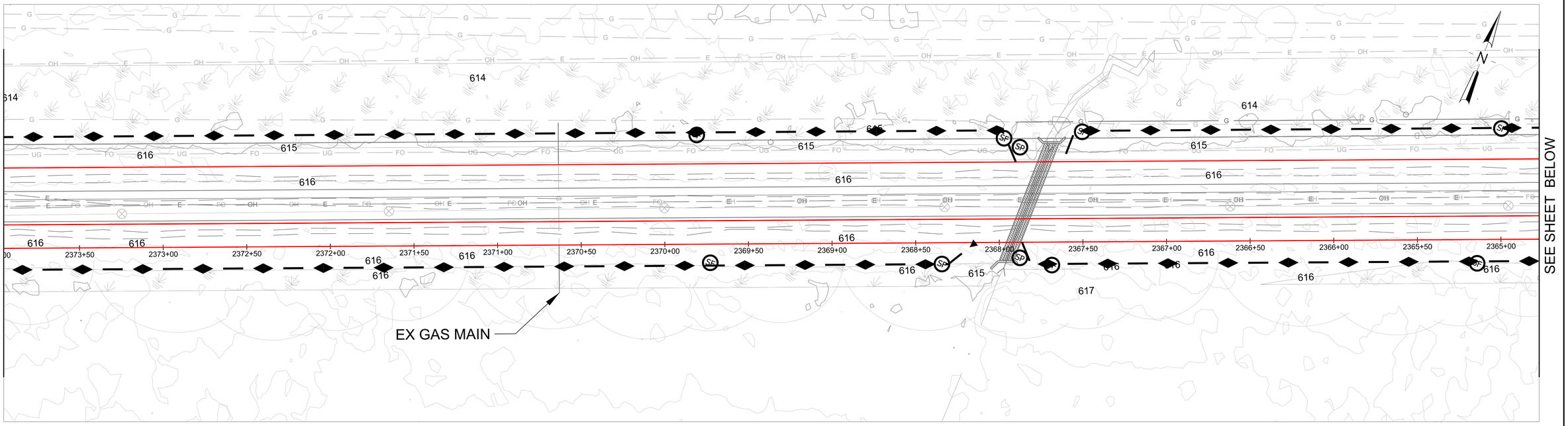
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

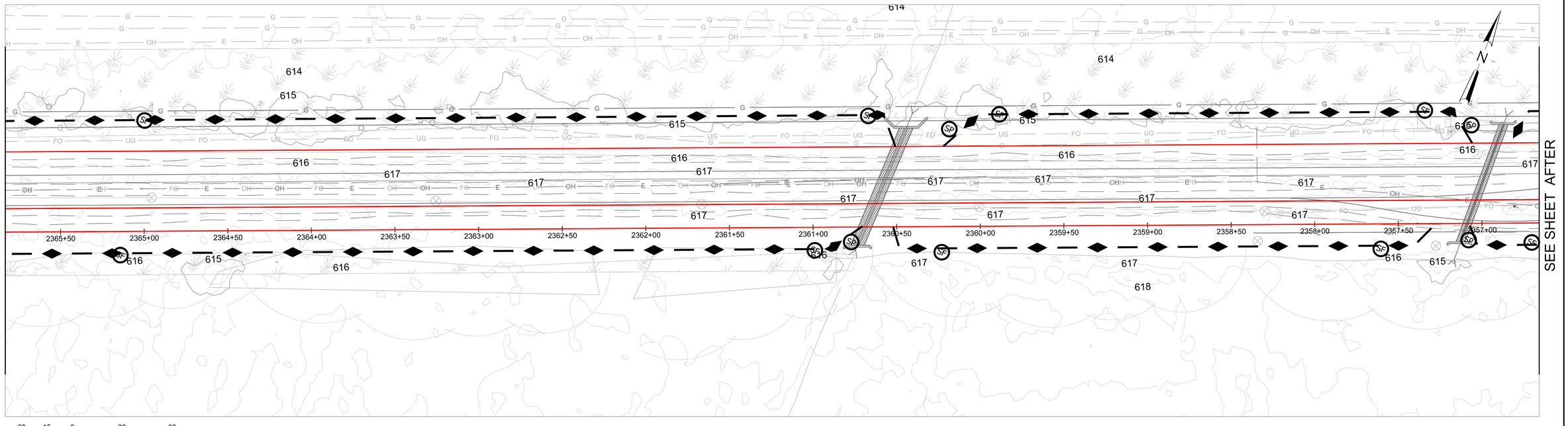
DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		





30 15 0 30 60
SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-241 OF ENV-284

PLOT DATE: 3/14/2020 3:14:58 PM CBertram

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

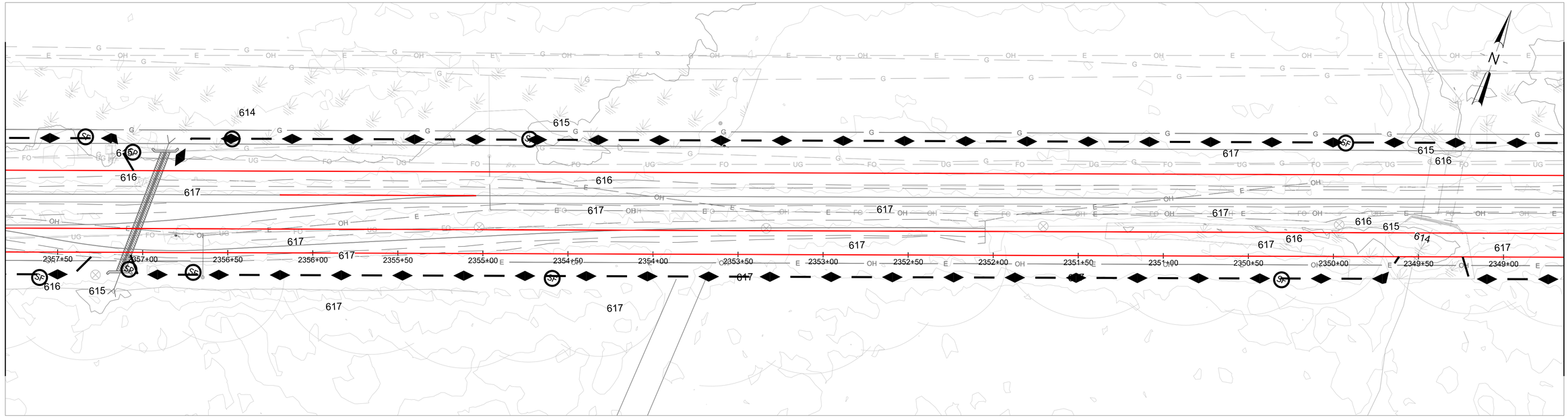
DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

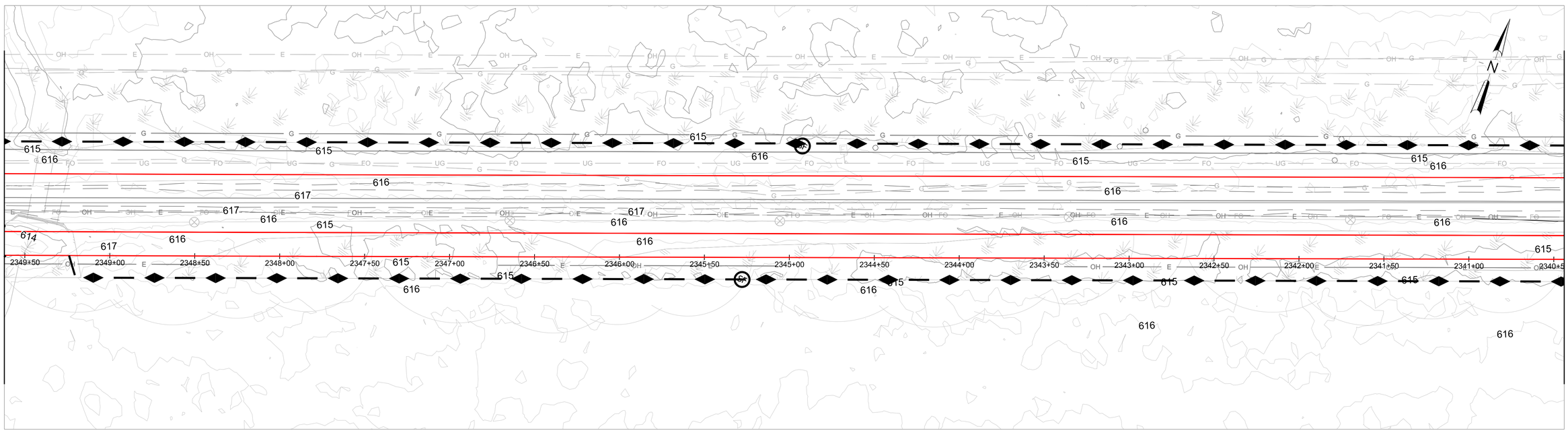
EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		

SEE SHEET BEFORE



SEE SHEET ABOVE



SEE SHEET AFTER

30 15 0 30 60

SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-242 OF ENV-284

PLOT DATE: 3/14/2020 3:18:46 PM CBertram

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

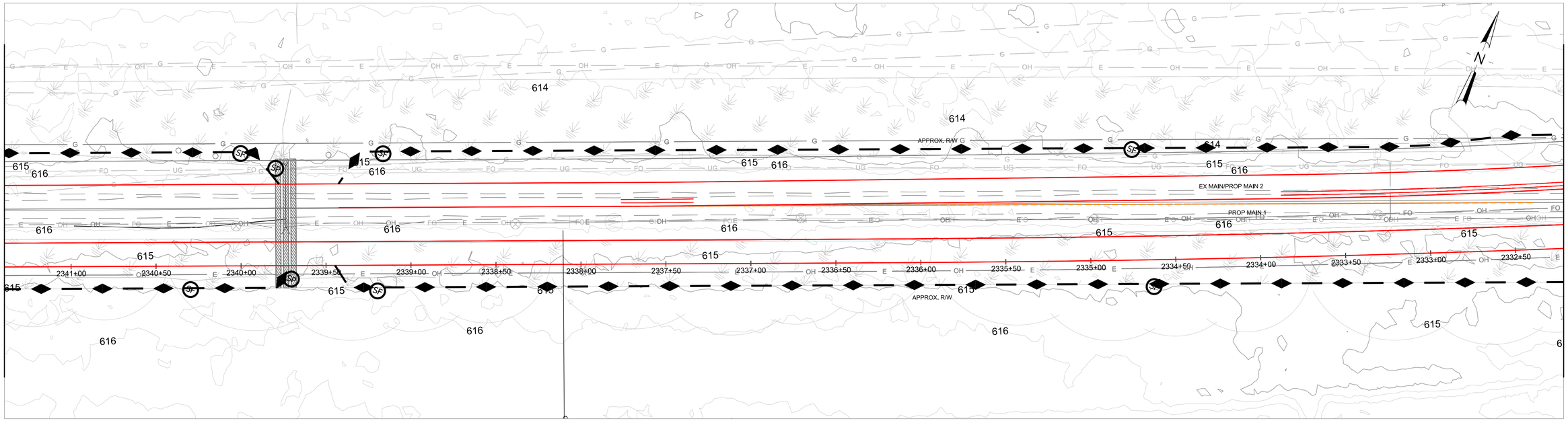
FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		

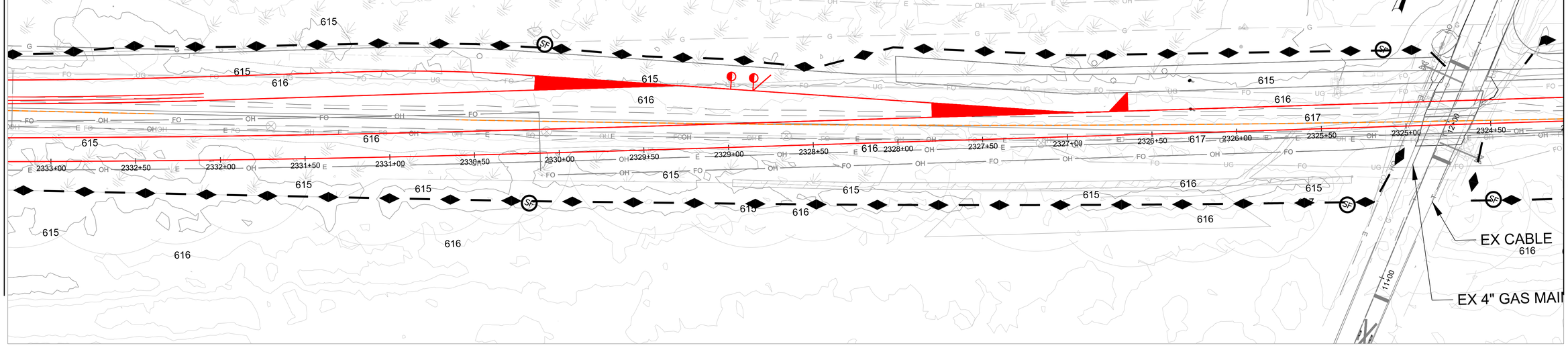
SEE SHEET BEFORE

SEE SHEET BELOW

SEE SHEET ABOVE

SEE SHEET AFTER





30 15 0 30 60

SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-243 OF ENV-284

PLOT DATE: 3/14/2020 3:28:21 PM CBertram

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		

SEE SHEET BEFORE

SEE SHEET BELOW

CALUMET TRAIL

APPROX. R/W

PROP MAIN 2

EX MAIN/PROP MAIN 1

PROPOSED R/W

EX CABLE

EX 4" GAS MAIN

EX 0.75" STEEL GAS MAIN

SEE SHEET ABOVE

SEE SHEET AFTER

PROPOSED R/W

APPROX. R/W

PROP MAIN 2

EX MAIN/PROP MAIN 1

APPROX. R/W

SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-244 OF ENV-284

PLOT DATE: 3/14/2020 3:31:28 PM CBertram

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VS ENGINEERING

ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

NICTD
NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		

SEE SHEET BEFORE

SEE SHEET BELOW

TRACK PLATFORM

SEE SHEET ABOVE

PEDESTRIAN CROSSING

DUNE PARK
PARK SHORE LINE

PROP MAIN 2

PROP MAIN 1

131.1'

8'-8" (TYP.)

20.0'

5.0'

187.0'

MODIFIED CC&G
VERTICAL (TYP.)

SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-245 OF ENV-284

PLOT DATE: 3/14/2020 3:35:16 PM CBertram

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MICHIGAN CITY TO GARY, INDIANA

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DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
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NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS
TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		

SEE SHEET BEFORE

SEE SHEET BELOW

EX TREMONT SIDING/PROP MAIN 2

EX MAIN/PROP MAIN 1

2291+50 2291+00 2290+50 2290+00 2289+50 2289+00 2288+50 2288+00 2287+50 2287+00 2286+50 2286+00 2285+50 2285+00 2284+50 2284+00 2283+50 2283+00

ED CC&G
AL (TYP.)

SEE SHEET ABOVE

APPROX. R/W

EX TREMONT SIDING/PROP MAIN 2

EX MAIN/PROP MAIN 1

2283+00 2282+50 2282+00 2281+50 2281+00 2280+50 2280+00 2279+50 2279+00 2278+50 2278+00 2277+50 2277+00 2276+50 2276+00 2275+50 2275+00 2274+50

P.S. NO. 20 RH POTO
M2 STA 2274+53.309
= MP 43.10

EX 0.75" STEEL GAS MAIN

SEE SHEET AFTER

30 15 0 30 60
SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-246 OF ENV-284

PLOT DATE: 3/14/2020 3:37:14 PM CBertram

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Connectivity for Accelerated Growth

MICHIGAN CITY TO GARY, INDIANA

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NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		

SEE SHEET BEFORE

SEE SHEET BELOW

EX 0.75" STEEL GAS MAIN

EX 0.75" STEEL GAS MAIN

EX 0.75" STEEL GAS MAIN

SEE SHEET ABOVE

SEE SHEET AFTER

SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-247 OF ENV-284

PLOT DATE: 3/14/2020 3:39:41 PM CBertram

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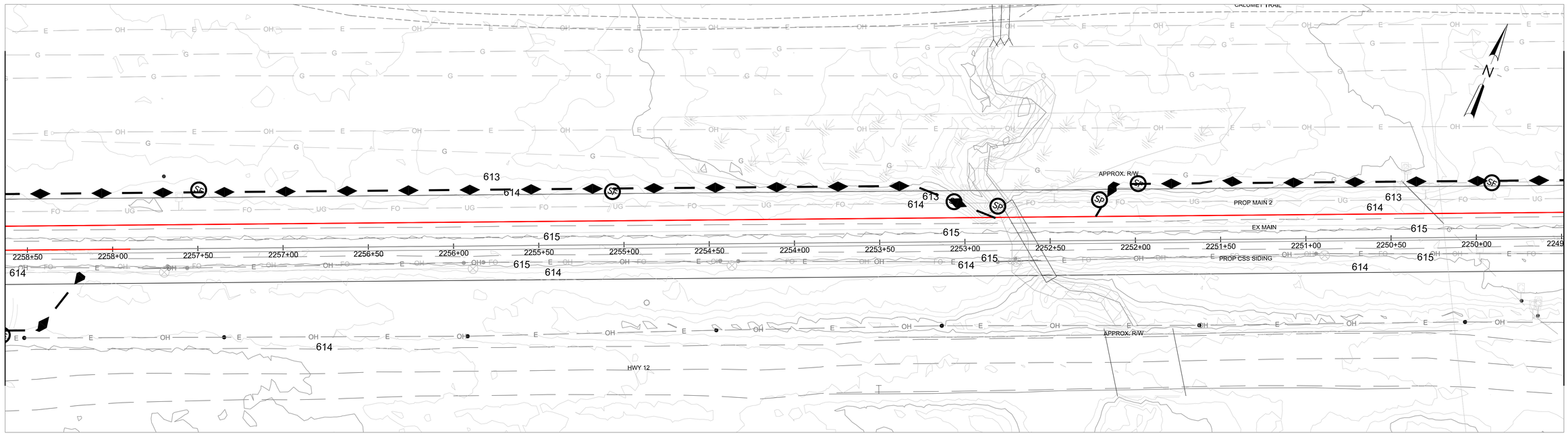
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn
SCALE	AS NOTED
SHEET	OF



60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-248 OF ENV-284

PLOT DATE: 3/14/2020 3:41:44 PM CBertram

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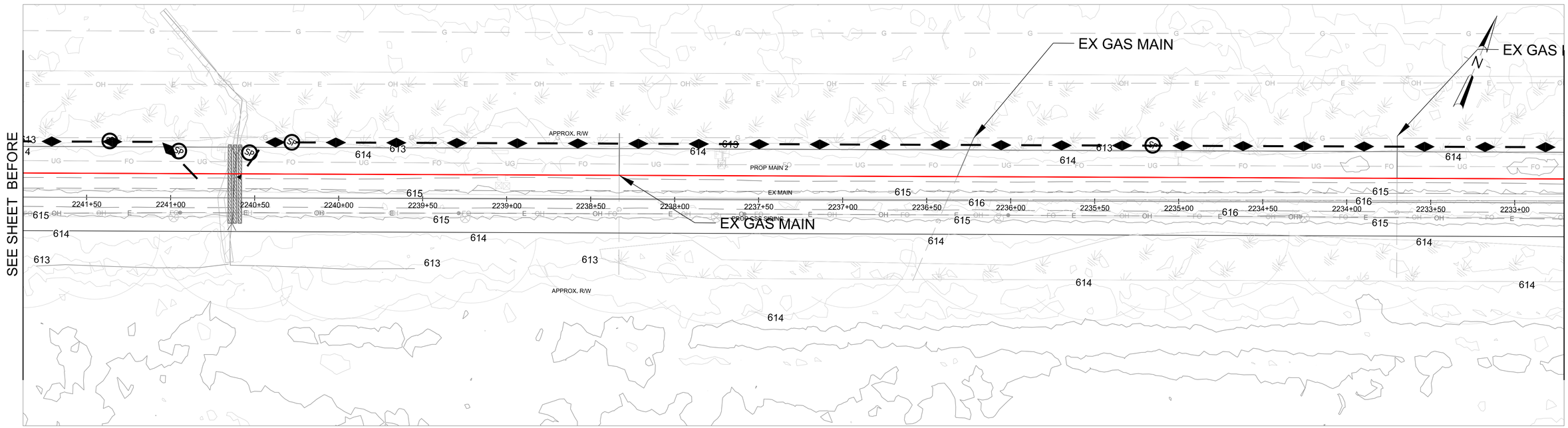
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

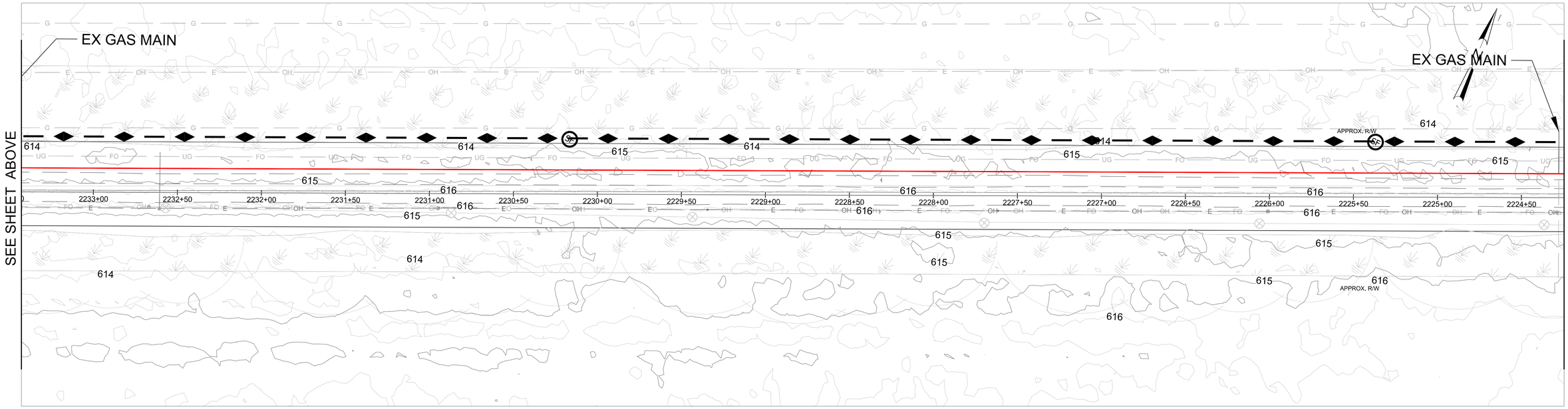
DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		





30 15 0 30 60
SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-249 OF ENV-284

PLOT DATE: 3/14/2020 3:43:48 PM CBertram

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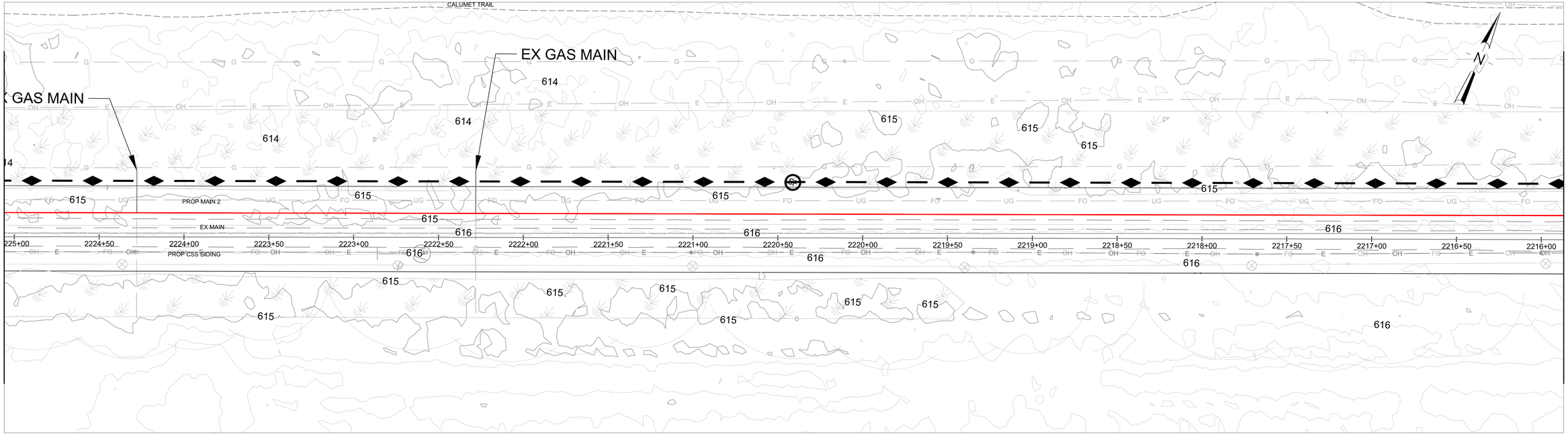
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

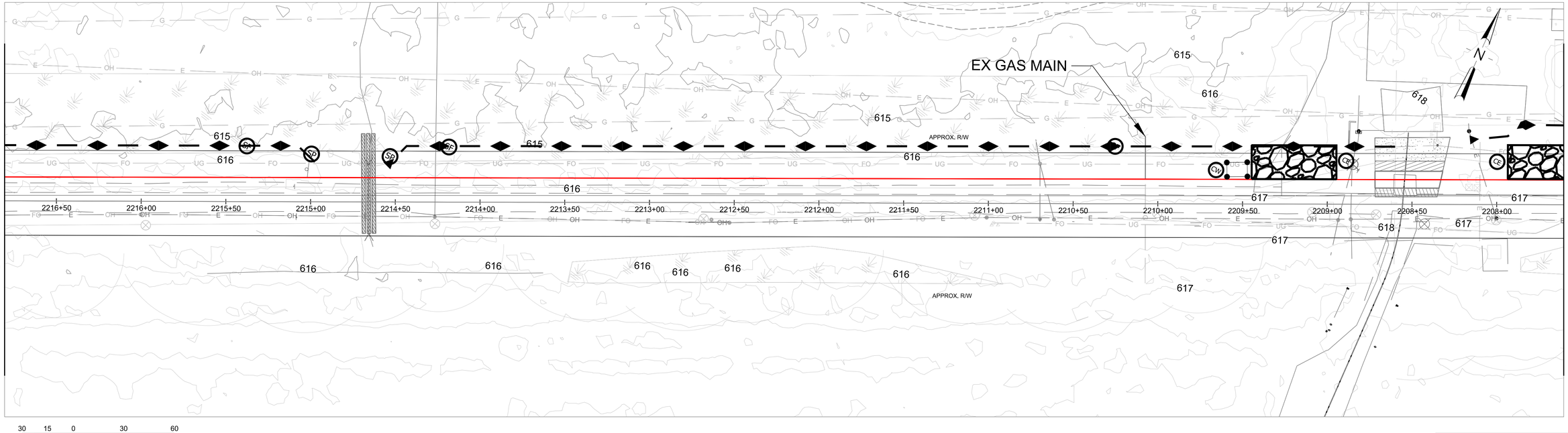
DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS
TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		





30 15 0 30 60
SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-250 OF ENV-284

PLOT DATE: 3/14/2020 3:45:27 PM CBertram

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Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
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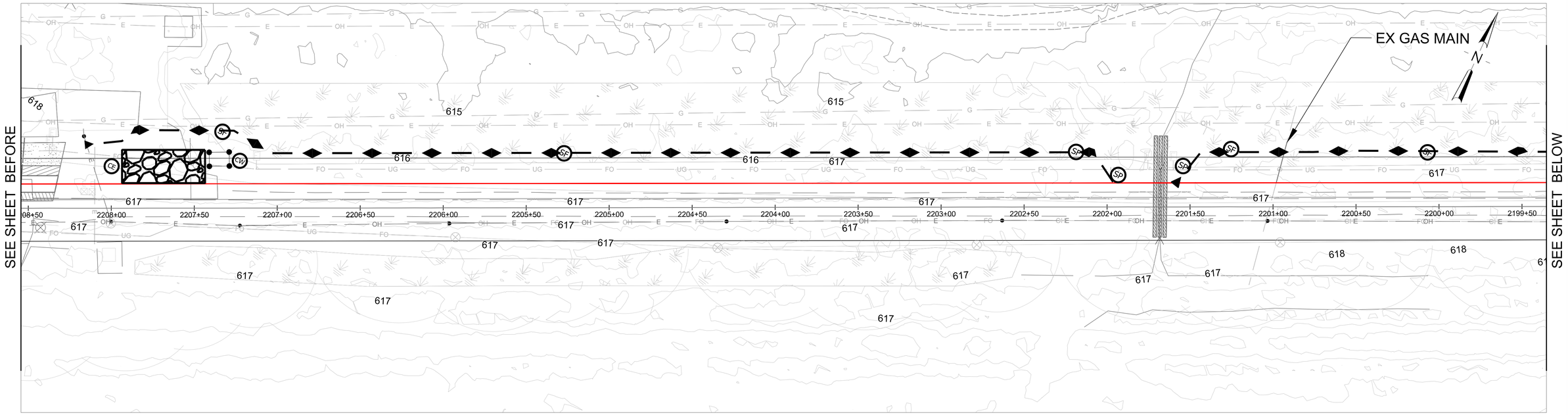
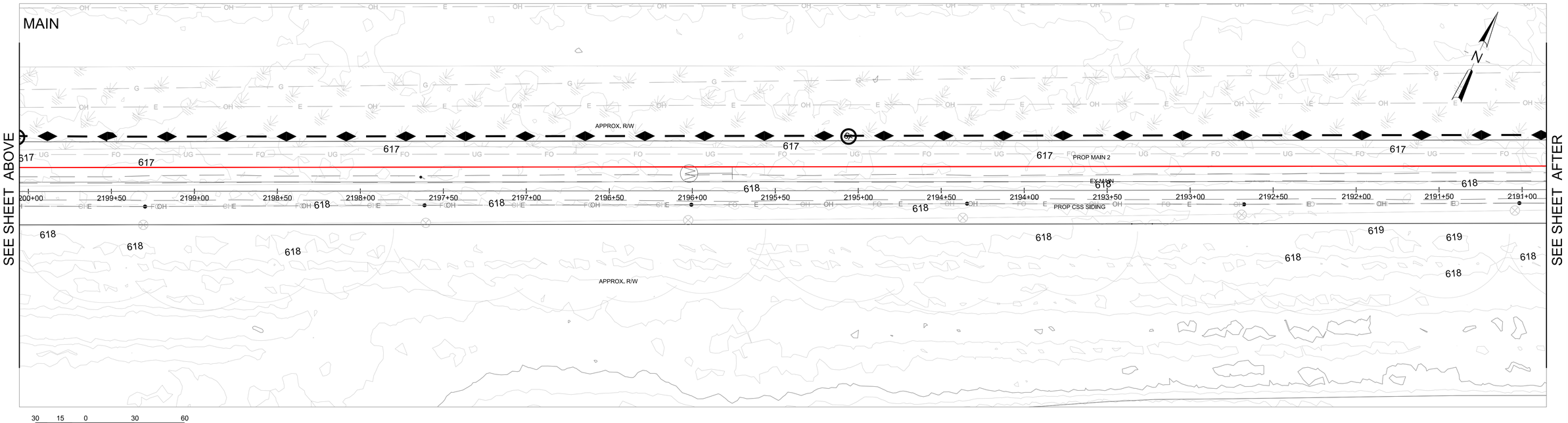
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		





30 15 0 30 60
SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-251 OF ENV-284

PLOT DATE: 3/14/2020 3:47:07 PM CBertram

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MICHIGAN CITY TO GARY, INDIANA

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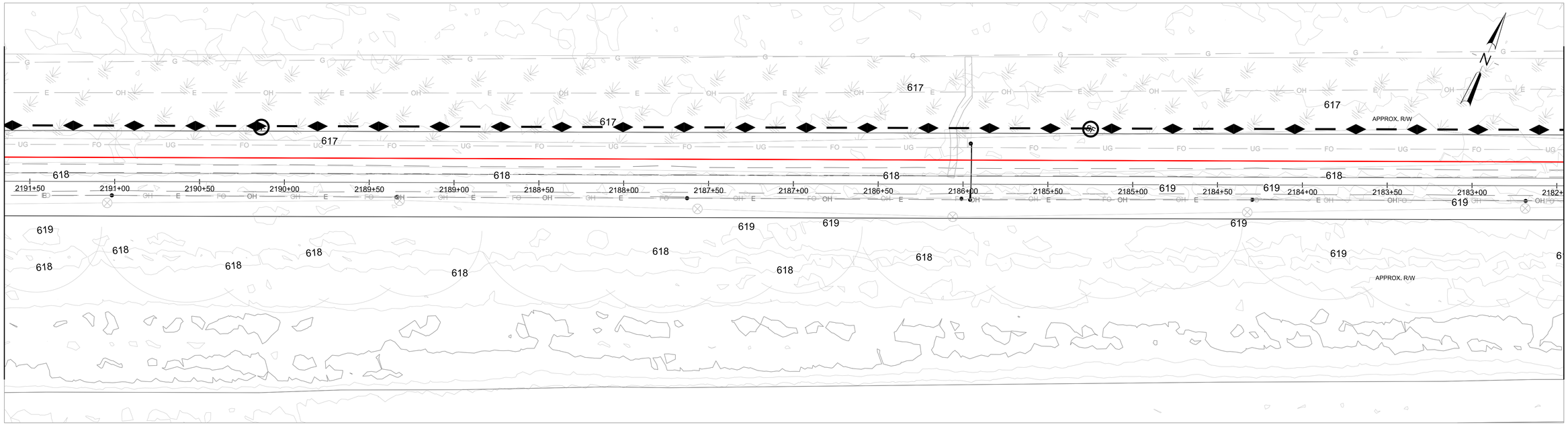
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

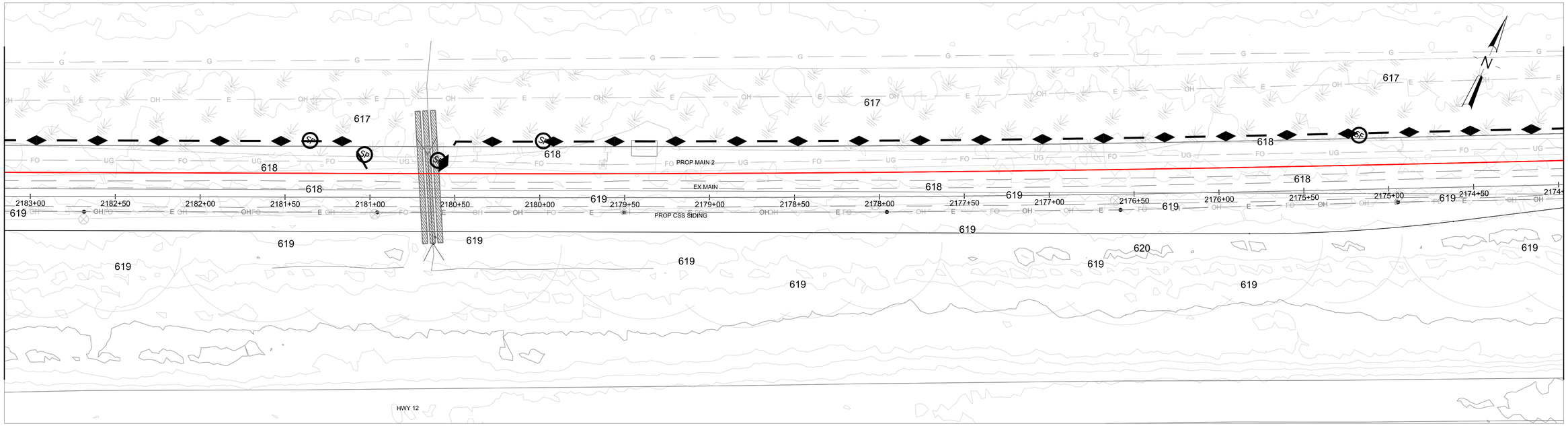
EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET
SCALE	AS NOTED	OF

SEE SHEET BEFORE



SEE SHEET ABOVE



30 15 0 30 60

SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-252 OF ENV-284

PLOT DATE: 3/14/2020 3:49:43 PM CBertram

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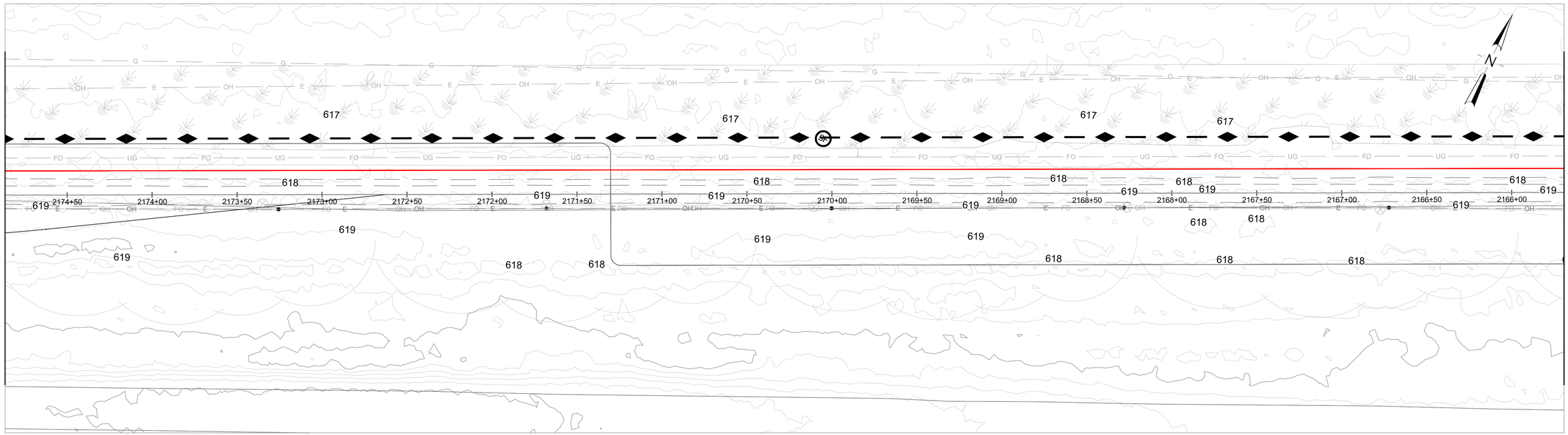
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

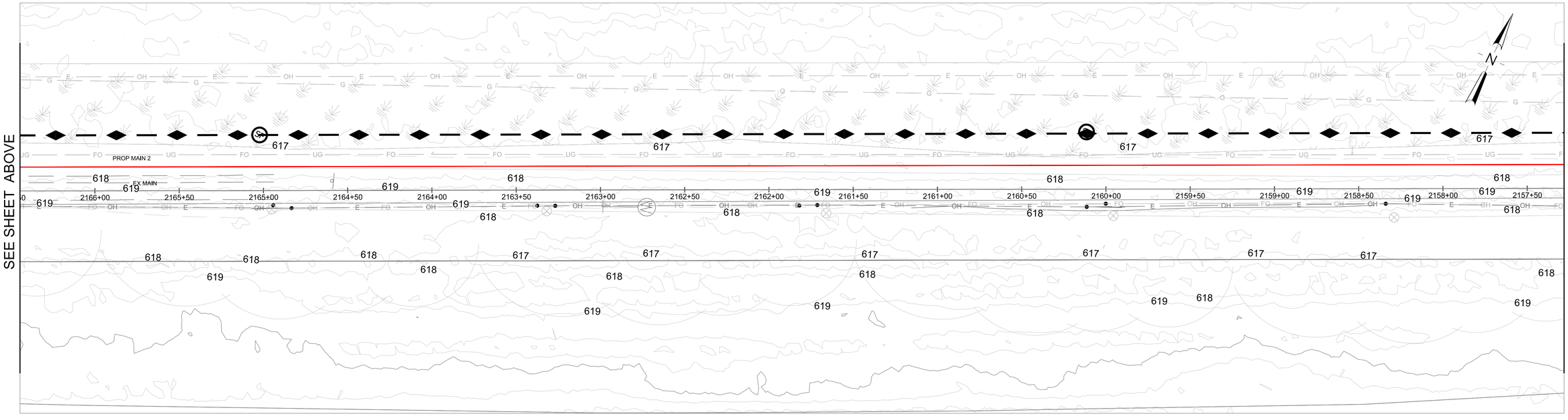
DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn
SCALE	AS NOTED
SHEET	OF





30 15 0 30 60
SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-253 OF ENV-284

PLOT DATE: 3/14/2020 3:52:17 PM CBertram

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Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
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CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		

SEE SHEET BEFORE

EX 0.75" GAS MAIN

SEE SHEET BELOW

SEE SHEET ABOVE

SEE SHEET AFTER

WATER

SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-254 OF ENV-284

PLOT DATE: 3/14/2020 3:54:43 PM CBertram

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MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
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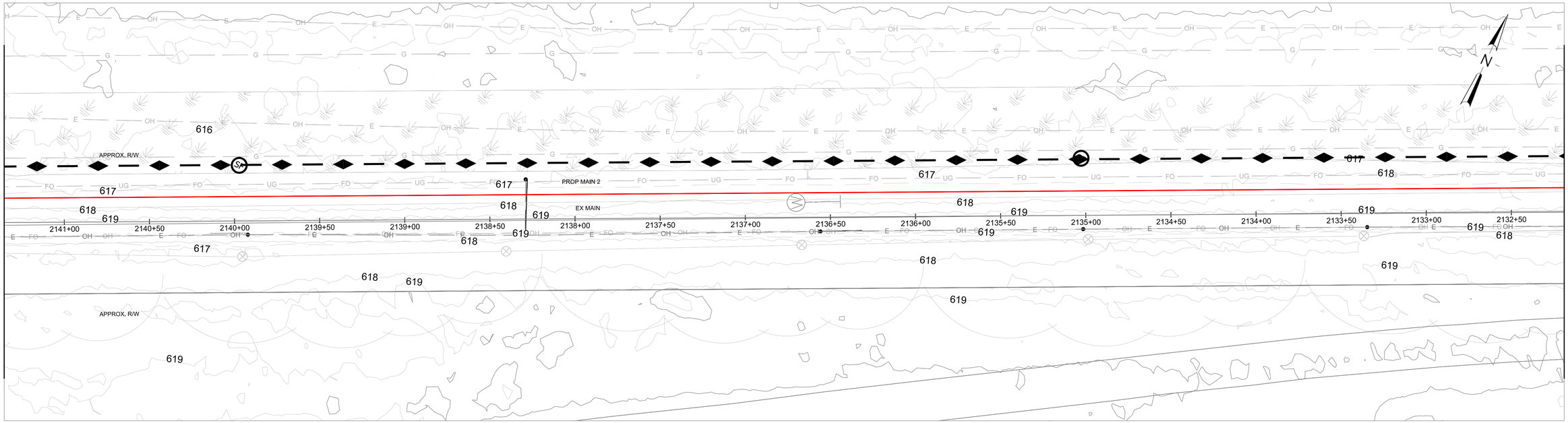
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

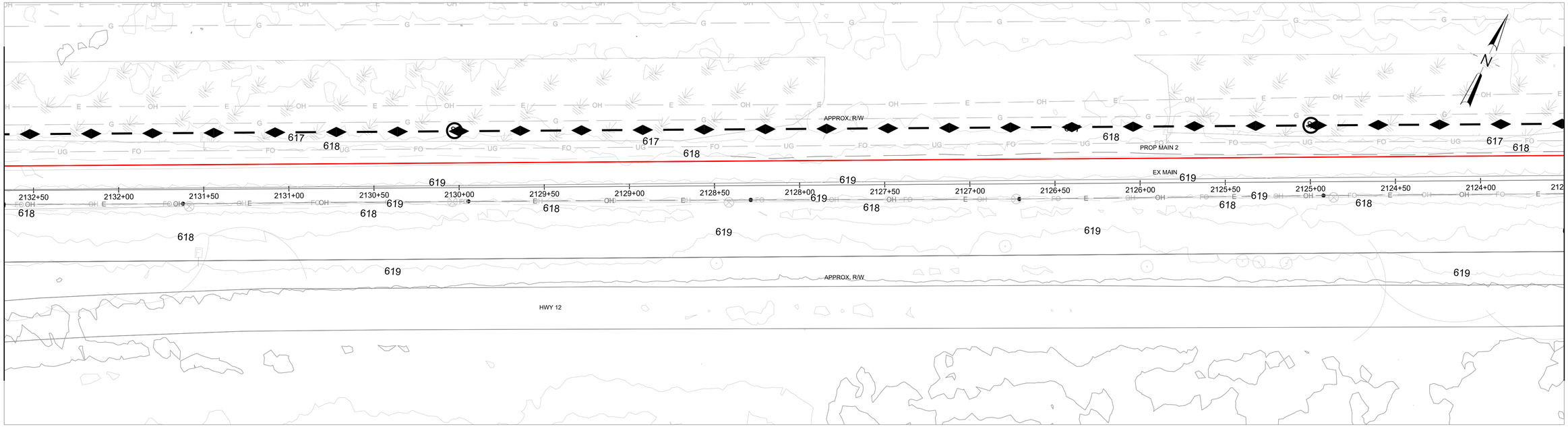
FILENAME	DT_DWG_ENV-004.dgn
SCALE	AS NOTED
SHEET	OF

SEE SHEET BEFORE



SEE SHEET BELOW

SEE SHEET ABOVE



SEE SHEET AFTER

30 15 0 30 60

SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-255 OF ENV-284

PLOT DATE: 3/14/2020 3:56:42 PM CBertram

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Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
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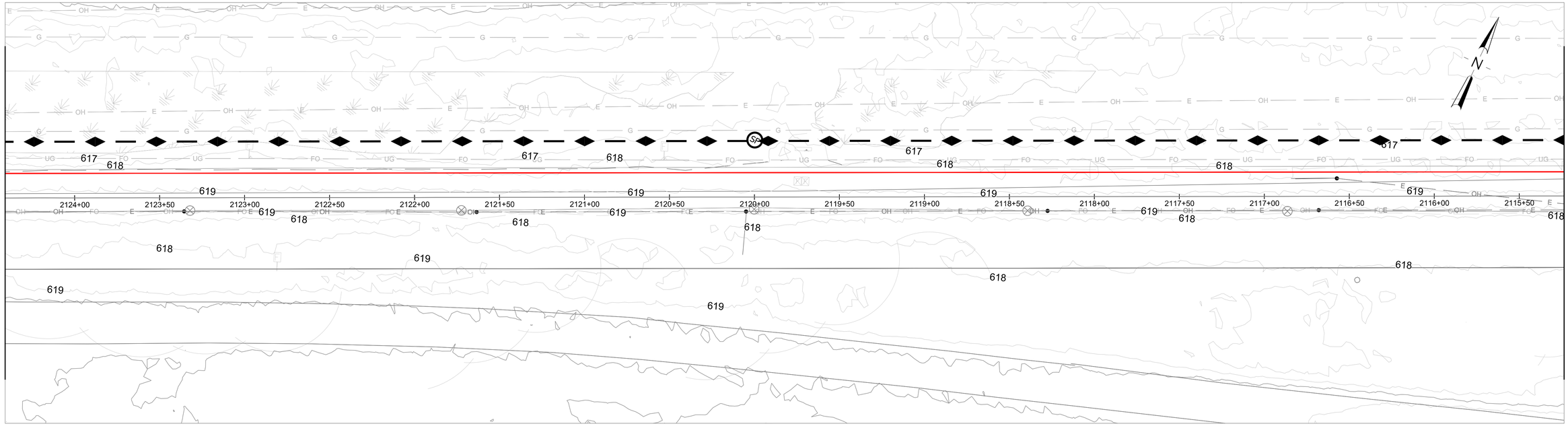
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

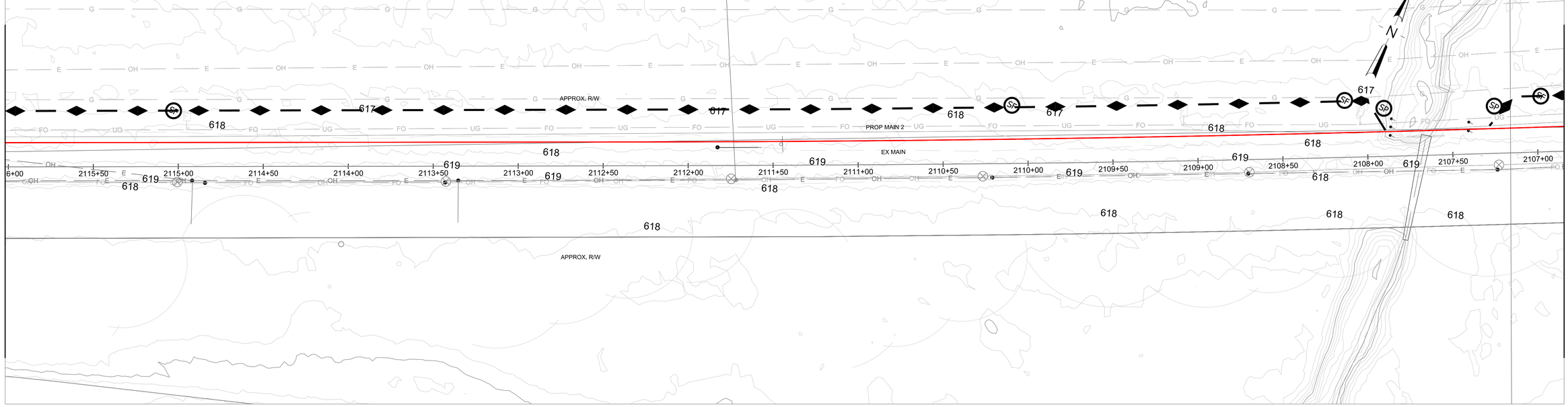
FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		

SEE SHEET BEFORE



SEE SHEET BELOW

SEE SHEET ABOVE



SEE SHEET AFTER

30 15 0 30 60
SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-256 OF ENV-284

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Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
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CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

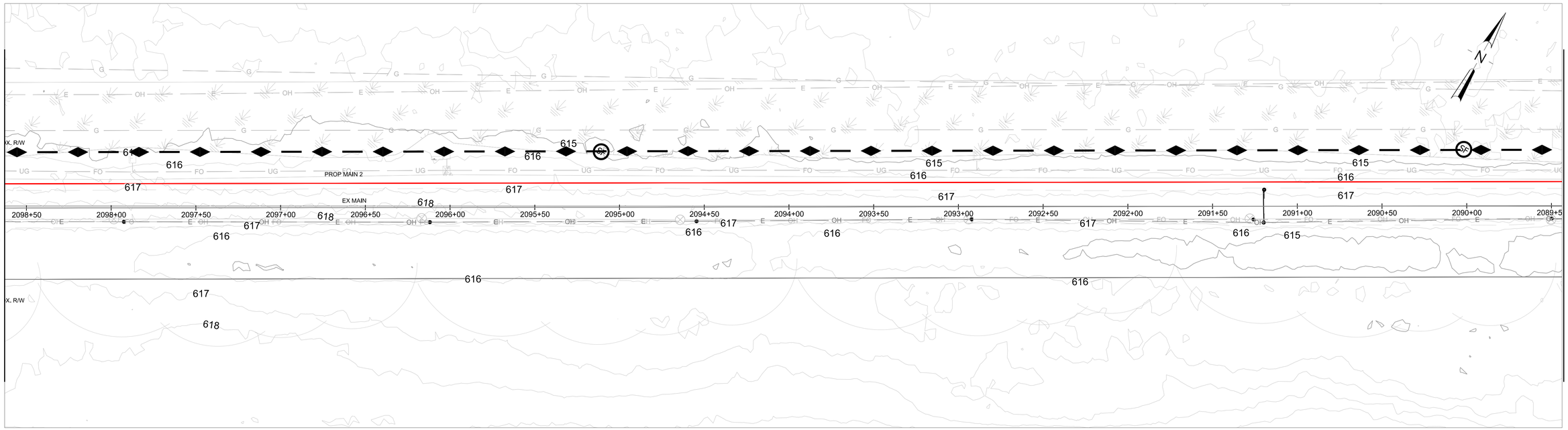
FILENAME	DT_DWG_ENV-004.dgn	SHEET
SCALE	AS NOTED	OF

SEE SHEET BEFORE

SEE SHEET BELOW

SEE SHEET ABOVE

SEE SHEET AFTER



60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-257 OF ENV-284

PLOT DATE: 3/14/2020 4:28:41 PM CBertram

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Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

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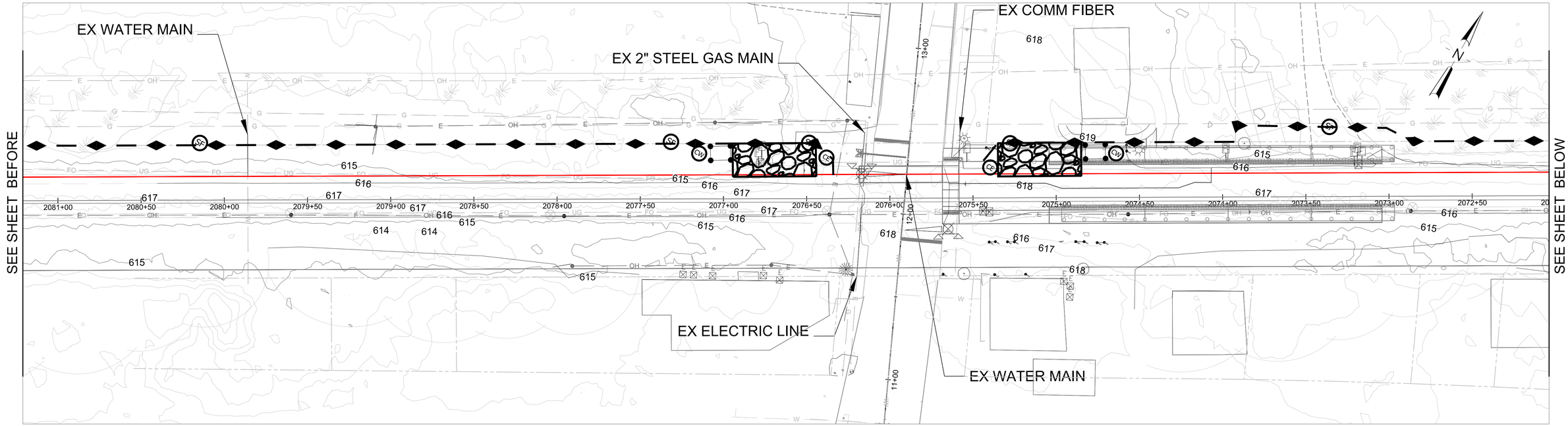
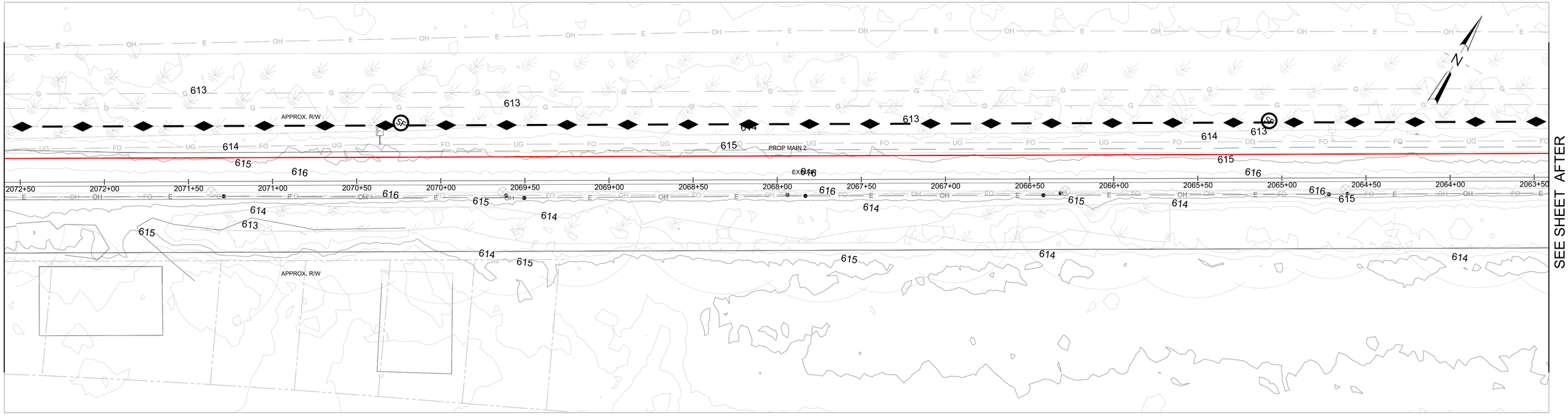
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		





30 15 0 30 60
SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-258 OF ENV-284

PLOT DATE: 3/14/2020 4:28:04 PM CBertram

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Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		

SEE SHEET BEFORE

SEE SHEET BELOW

APPROX. R/W

APPROX. R/W

SEE SHEET ABOVE

PROP MAIN 2

EX MAIN

SEE SHEET AFTER

30 15 0 30 60

SCALE: 1" = 20'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-259 OF ENV-284

PLOT DATE: 3/14/2020 4:22:57 PM CBertram

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DOUBLE TRACK N·W·I

Connectivity for Accelerated Growth

MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn
SCALE	AS NOTED

SHEET OF

SEE SHEET BEFORE

SEE SHEET BELOW

SEE SHEET ABOVE

SEE SHEET AFTER

CULVERT MP 38.5
18" STEEL PIPE

CULVERT MP 38.47
18" CMP

SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING
ENV-260 OF ENV-284

PLOT DATE: 3/14/2020 4:21:30 PM CBertram

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0	03/16/2020	60% DESIGN

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NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

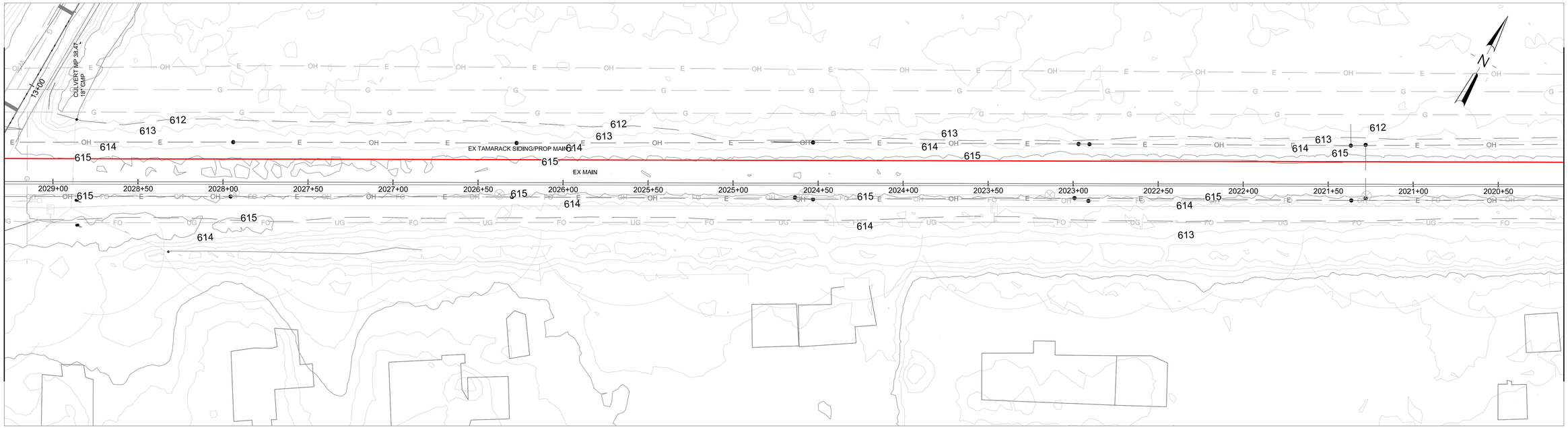
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		

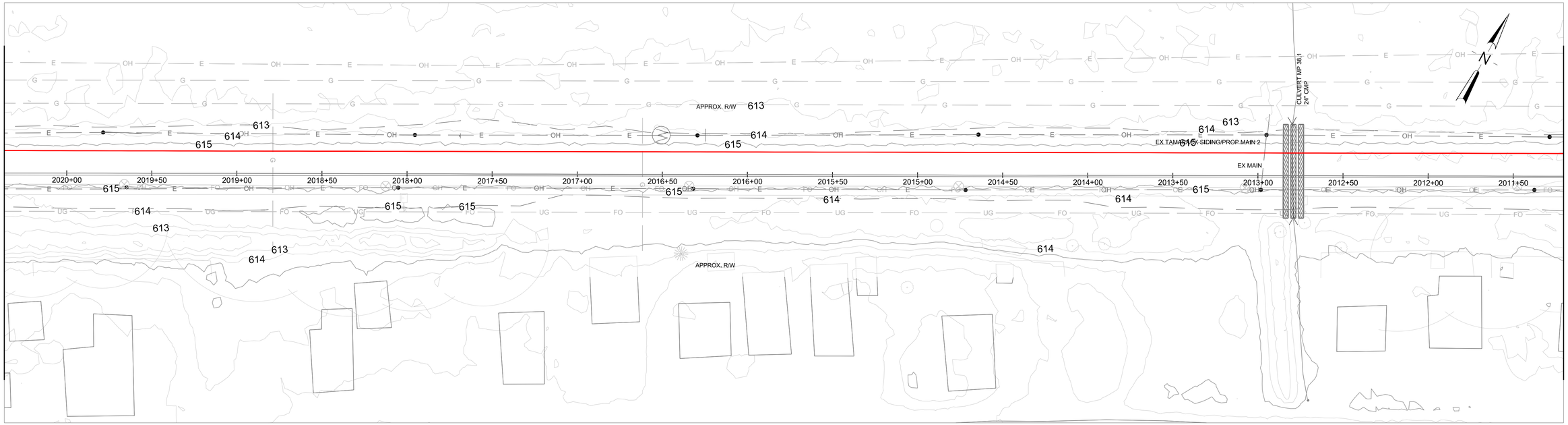
SEE SHEET BEFORE

SEE SHEET BELOW



SEE SHEET ABOVE

SEE SHEET AFTER



30 15 0 30 60

SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-261 OF ENV-284

PLOT DATE: 3/14/2020 4:20:19 PM CBertram

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DOUBLE TRACK N·W·I

Connectivity for Accelerated Growth

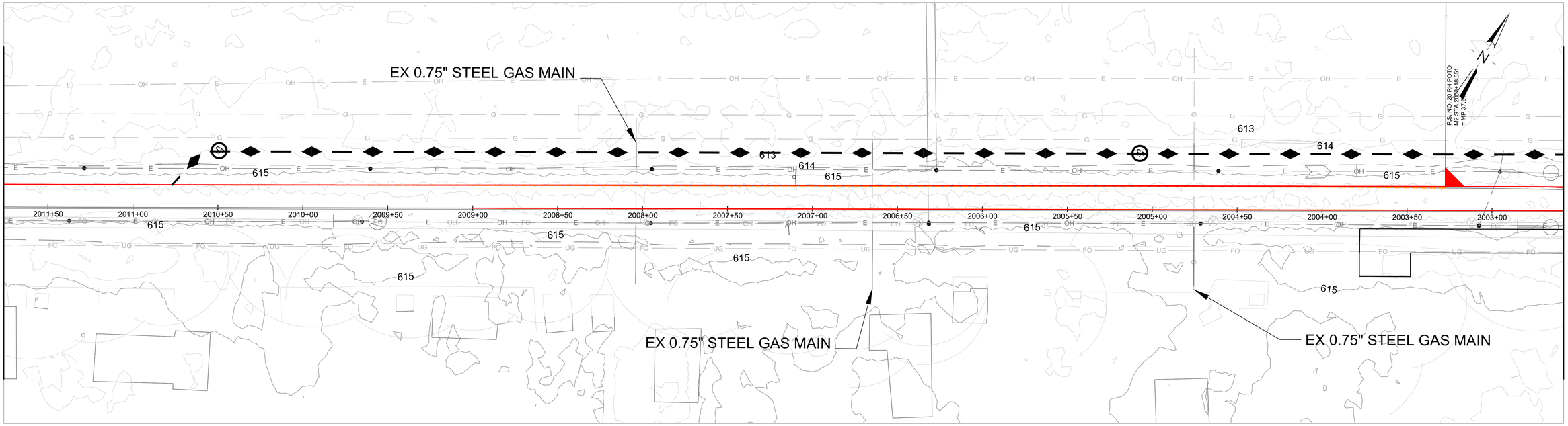
MICHIGAN CITY TO GARY, INDIANA

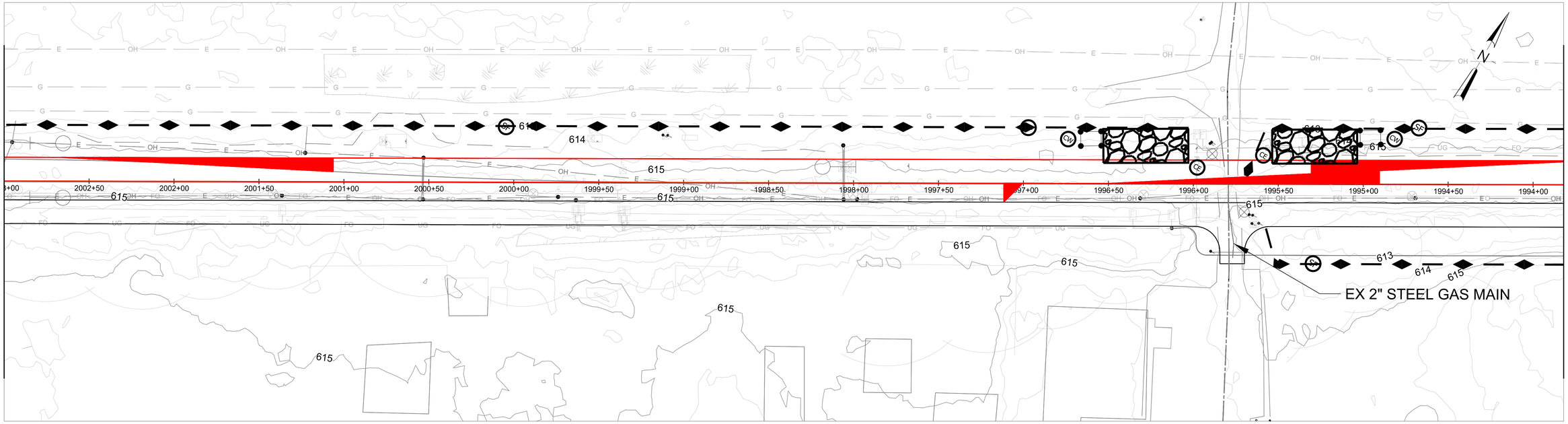
DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn
SCALE	AS NOTED
SHEET	OF





30 15 0 30 60
SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-262 OF ENV-284

PLOT DATE: 3/14/2020 4:19:20 PM CBertram

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
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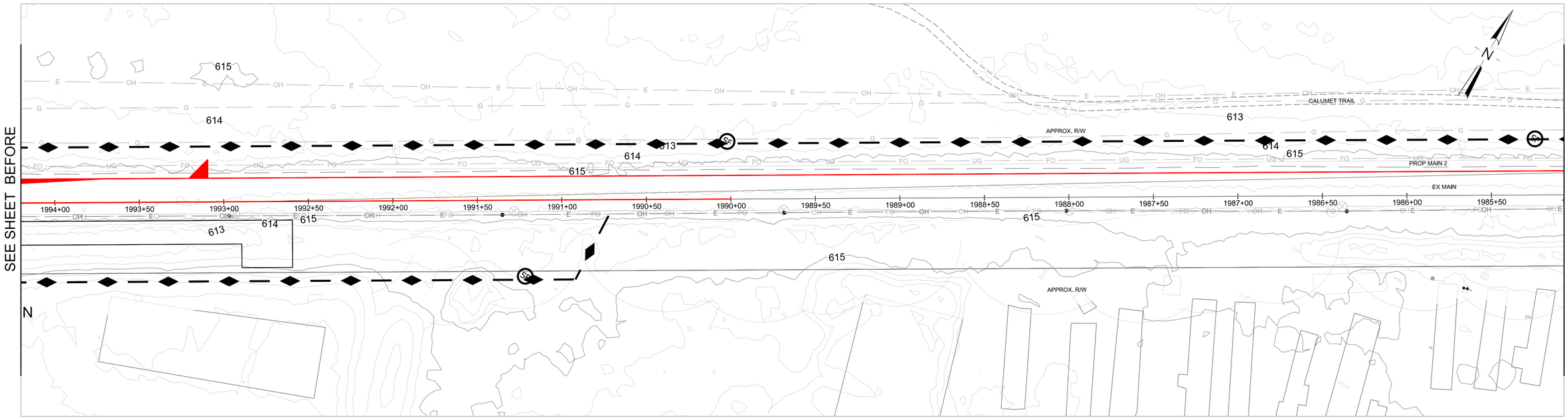
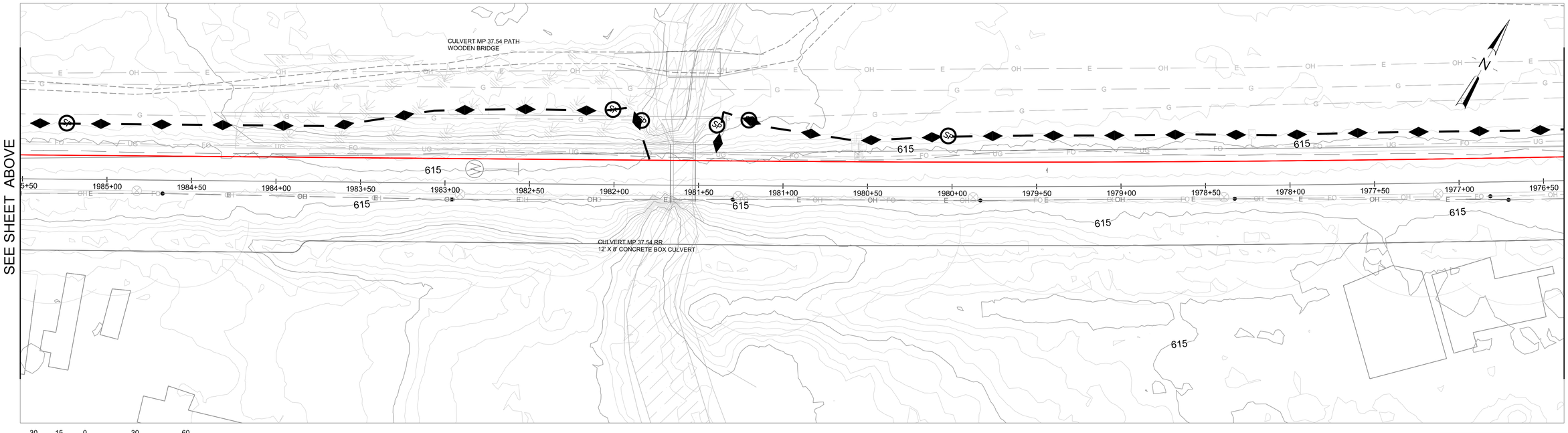
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn
SCALE	AS NOTED
SHEET	OF





60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-263 OF ENV-284

PLOT DATE: 3/14/2020 4:16:09 PM CBertram

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

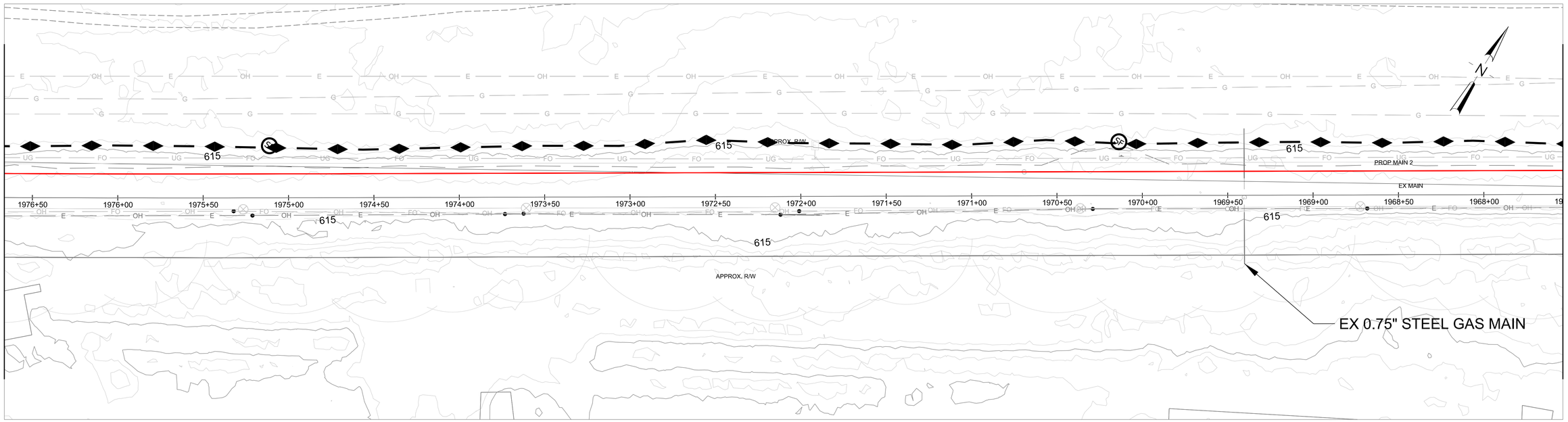
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		

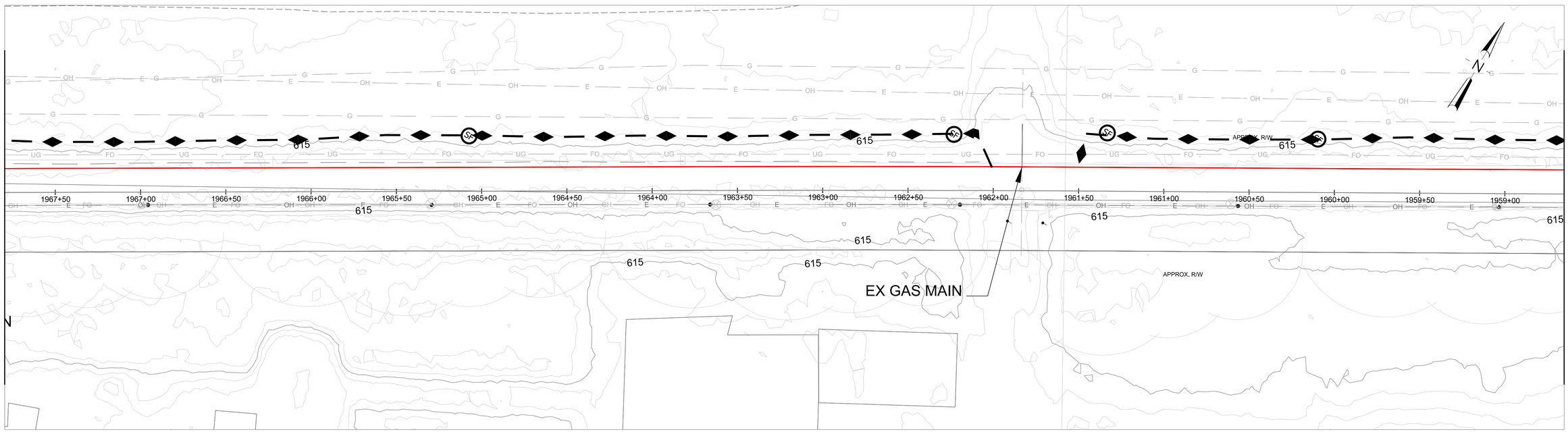
SEE SHEET BEFORE

SEE SHEET BELOW



SEE SHEET ABOVE

SEE SHEET AFTER



30 15 0 30 60

SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-264 OF ENV-284

PLOT DATE: 3/14/2020 4:17:03 PM CBertram

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DOUBLE TRACK N·W·I

Connectivity for Accelerated Growth

MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

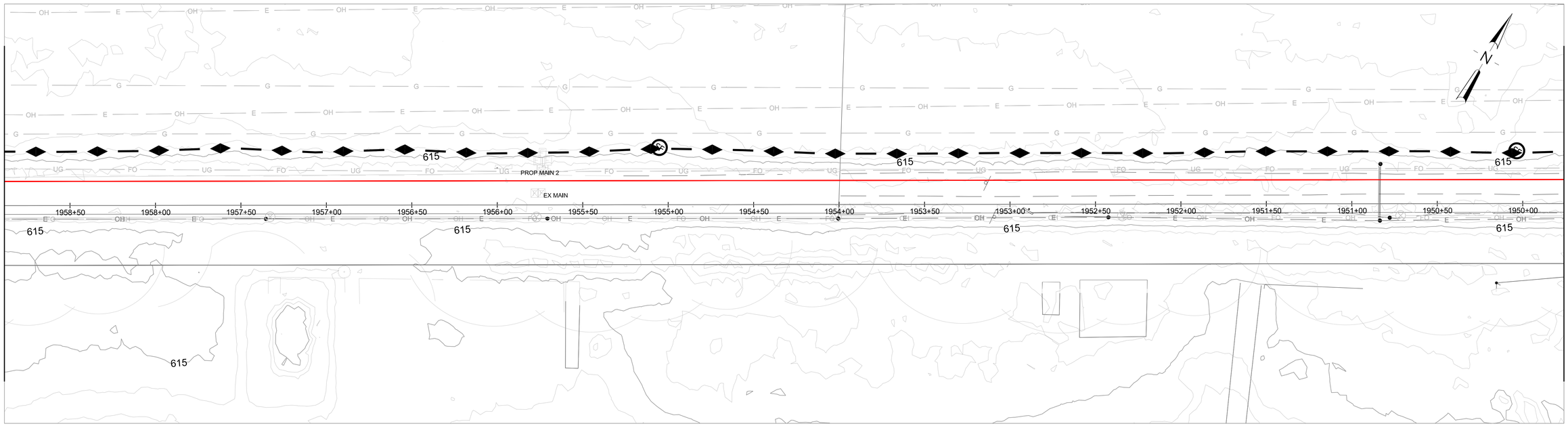
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn
SCALE	AS NOTED

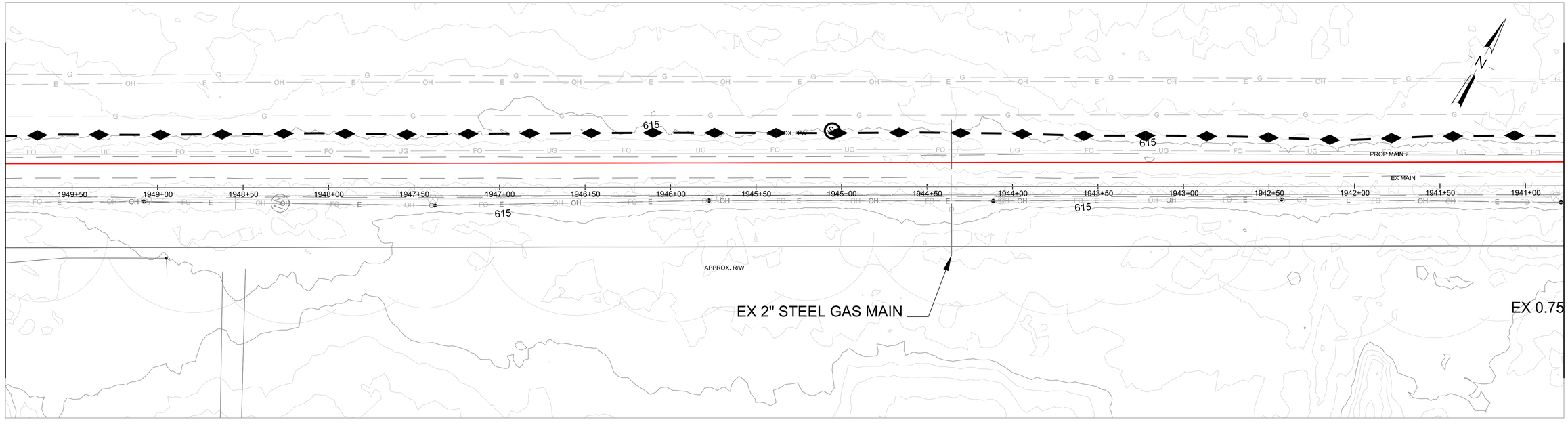
SHEET OF

SEE SHEET BEFORE



SEE SHEET BELOW

SEE SHEET ABOVE



SEE SHEET AFTER

30 15 0 30 60
SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-265 OF ENV-284

PLOT DATE: 3/14/2020 4:15:29 PM CBertram

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		

SEE SHEET BEFORE

SEE SHEET BELOW

0.75" STEEL GAS MAIN

APPROX. CSS R/W

APPROX. CSS R/W

SEE SHEET ABOVE

EX 0.75" GAS MAIN

PROP MAIN 2

PROP MAIN 1

APPROX. R/W

APPROX. R/W

SEE SHEET AFTER

SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-266 OF ENV-284

PLOT DATE: 3/14/2020 4:14:33 PM CBertram

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MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
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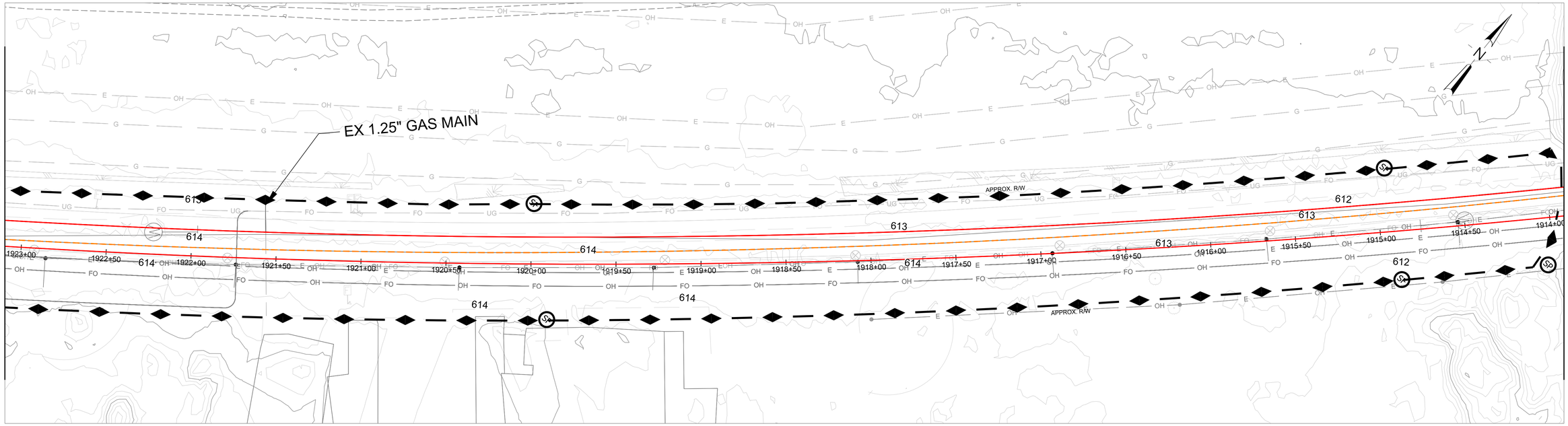
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

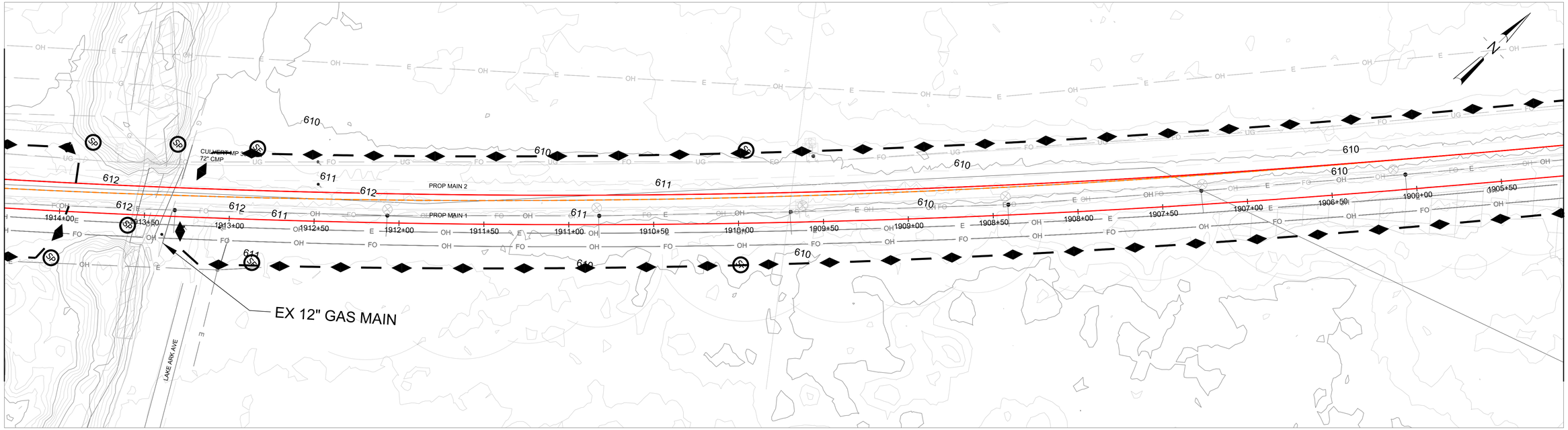
FILENAME	DT_DWG_ENV-004.dgn
SCALE	AS NOTED
SHEET	OF

SEE SHEET BEFORE



SEE SHEET BELOW

SEE SHEET ABOVE



SEE SHEET AFTER

30 15 0 30 60

SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-267 OF ENV-284

PLOT DATE: 3/14/2020 4:13:30 PM CBertram

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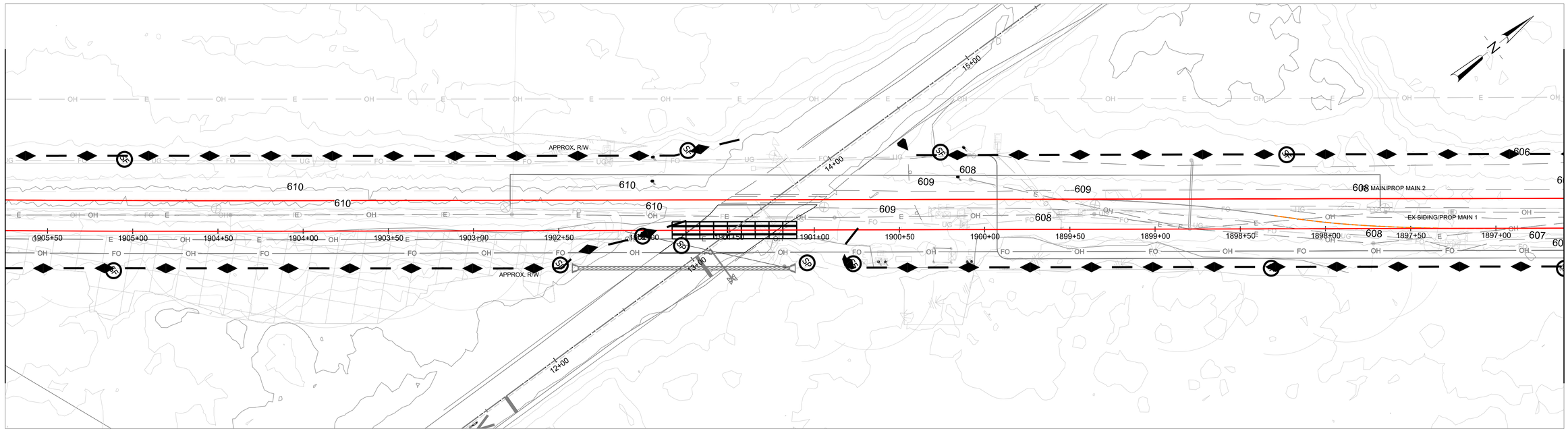
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

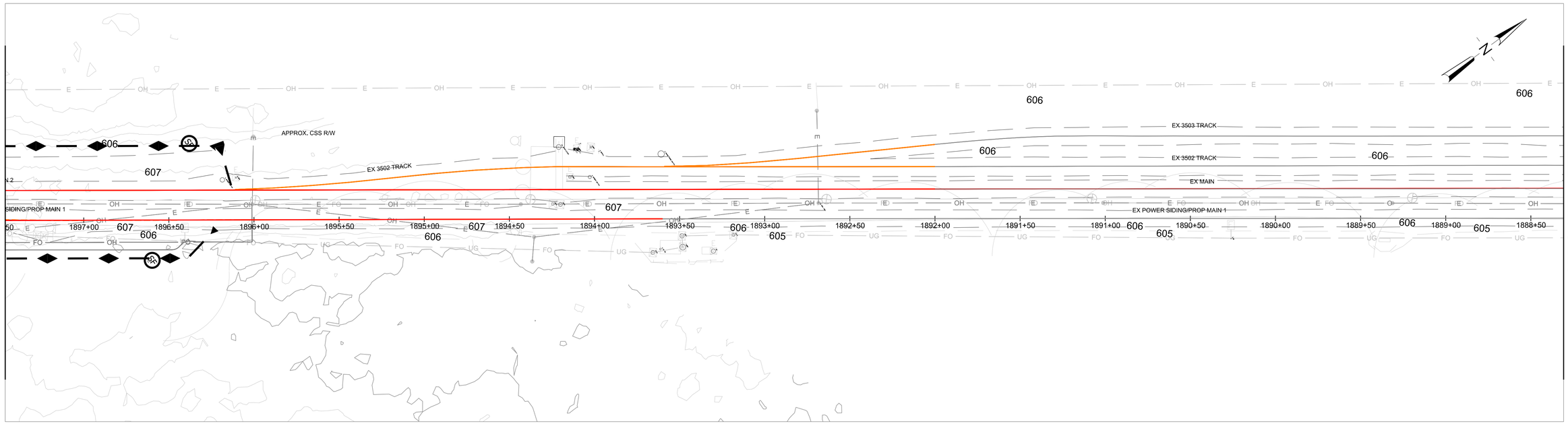
DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn
SCALE	AS NOTED
SHEET	OF





30 15 0 30 60
SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-268 OF ENV-284

PLOT DATE: 3/14/2020 4:12:32 PM CBertram

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

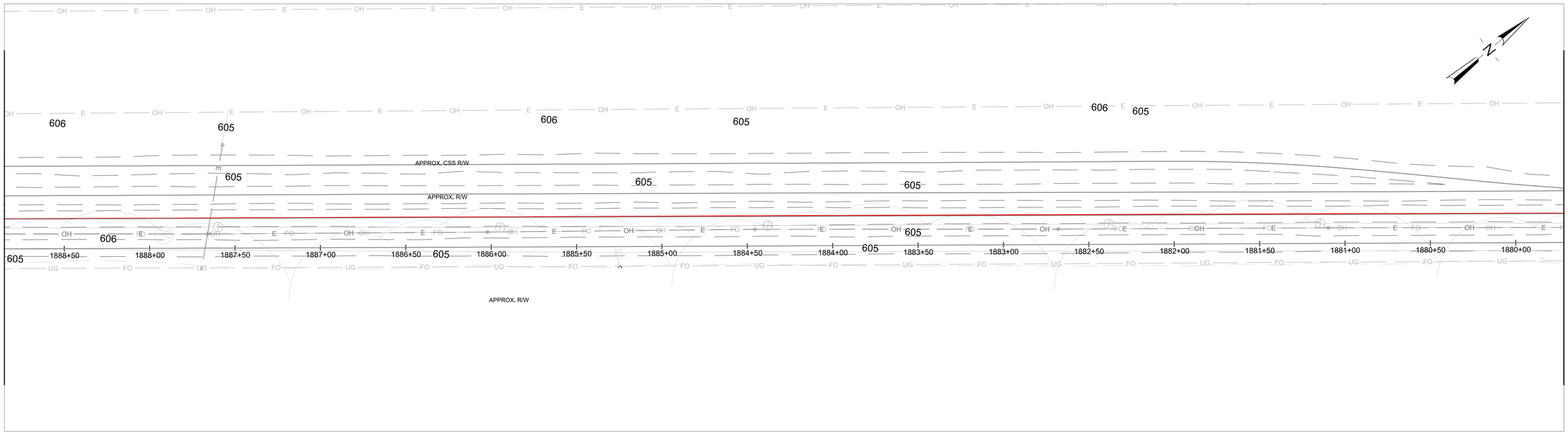
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn
SCALE	AS NOTED

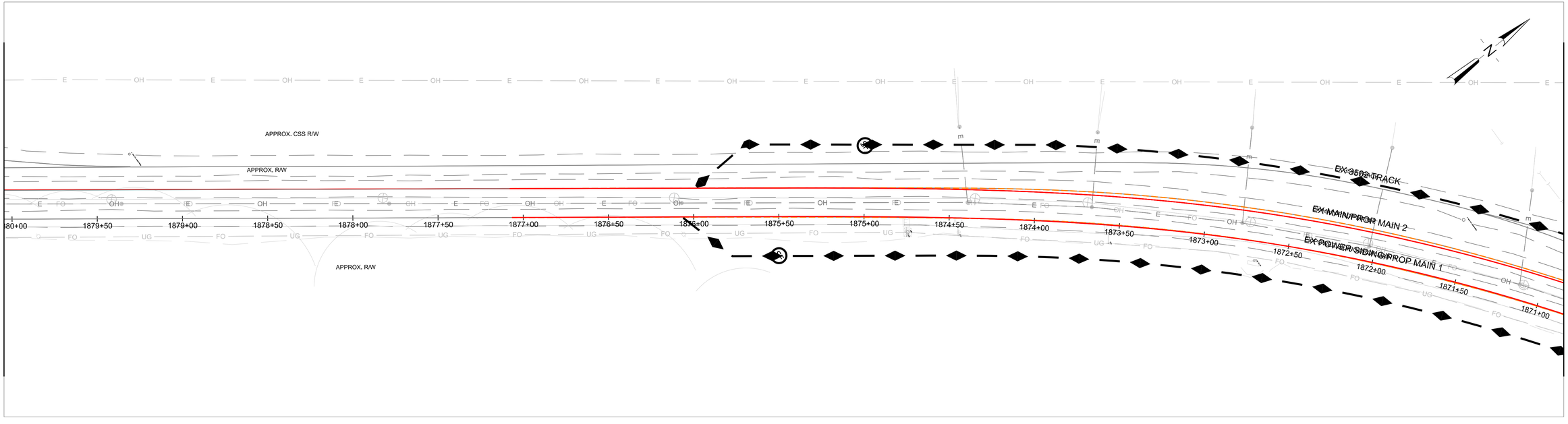
SHEET OF

SEE SHEET BEFORE



SEE SHEET AFTER

SEE SHEET ABOVE



30 15 0 30 60

SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-269 OF ENV-284

PLOT DATE: 3/14/2020 4:11:17 PM CBertram

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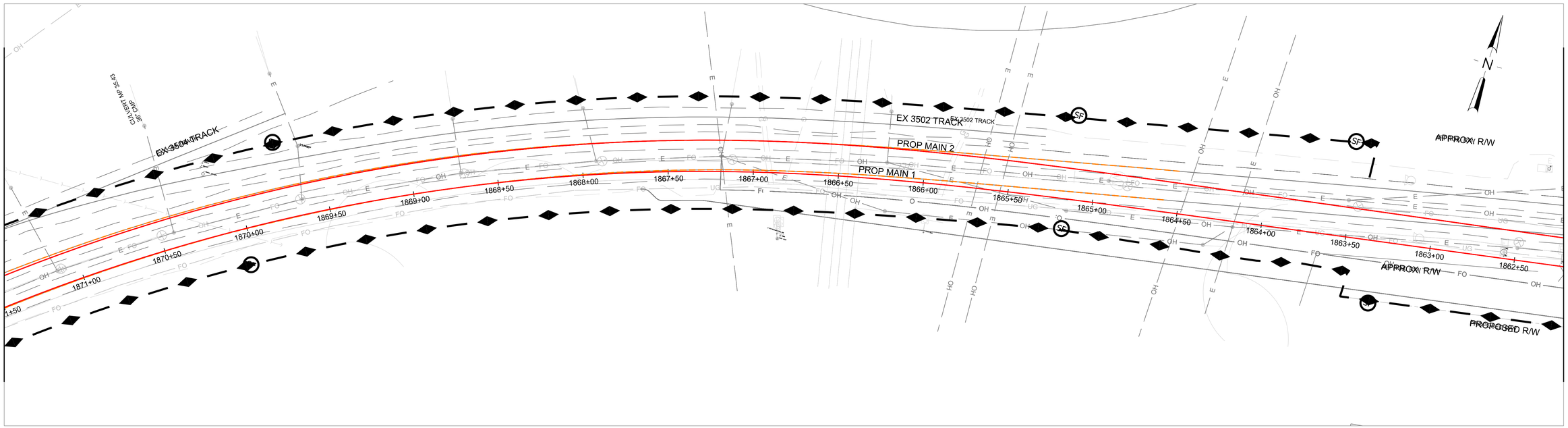
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

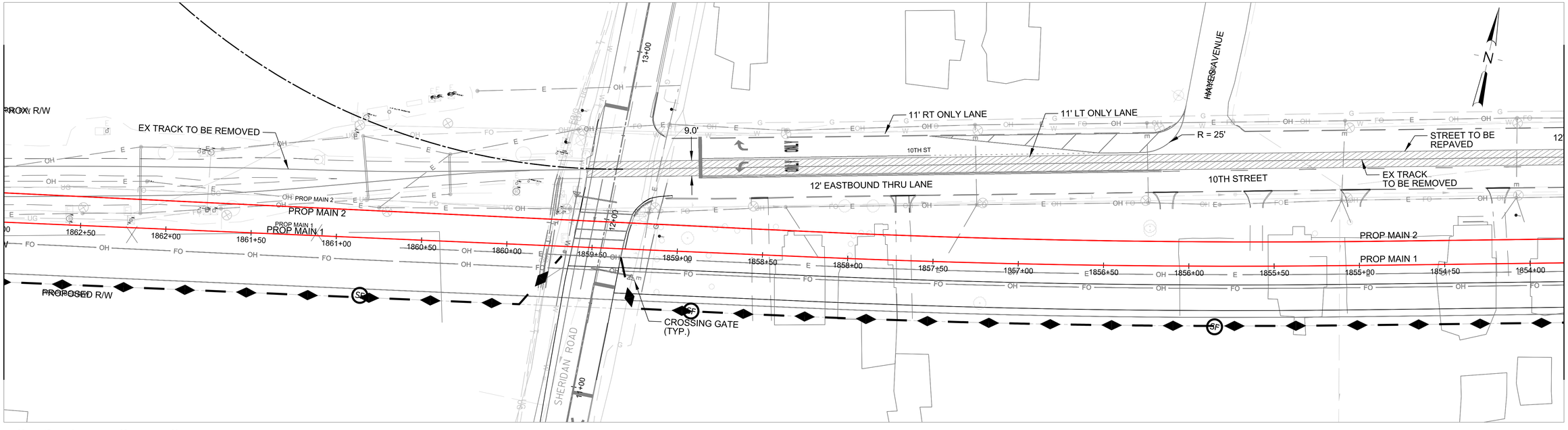
DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET OF
SCALE	AS NOTED	





30 15 0 30 60
SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-270 OF ENV-284

PLOT DATE: 3/14/2020 4:10:11 PM CBertram

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

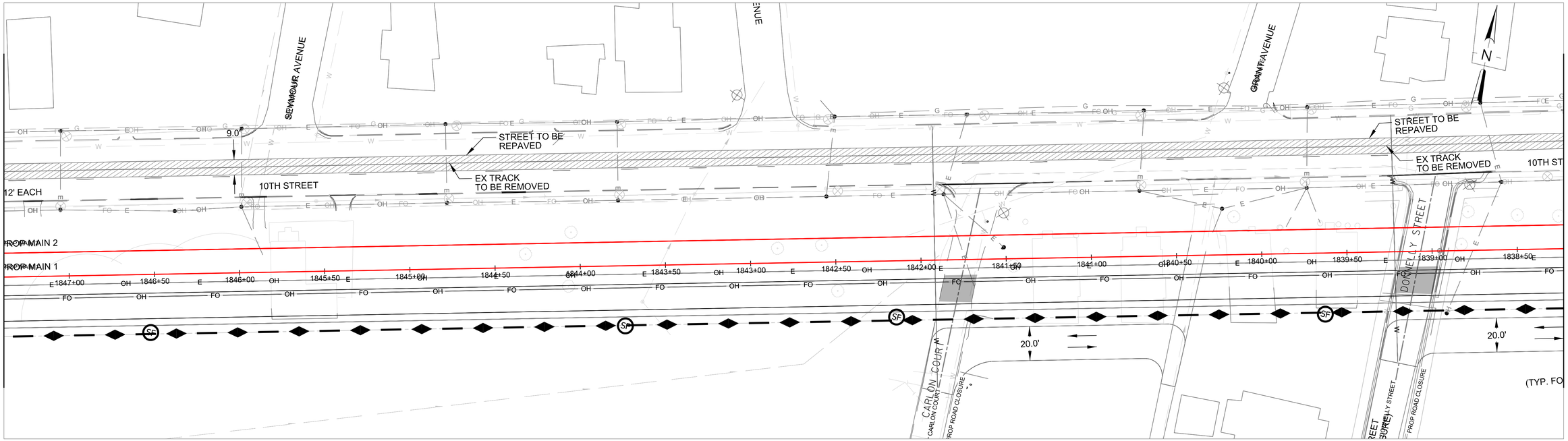
EROSION CONTROL PLANS TRACK ALIGNMENT

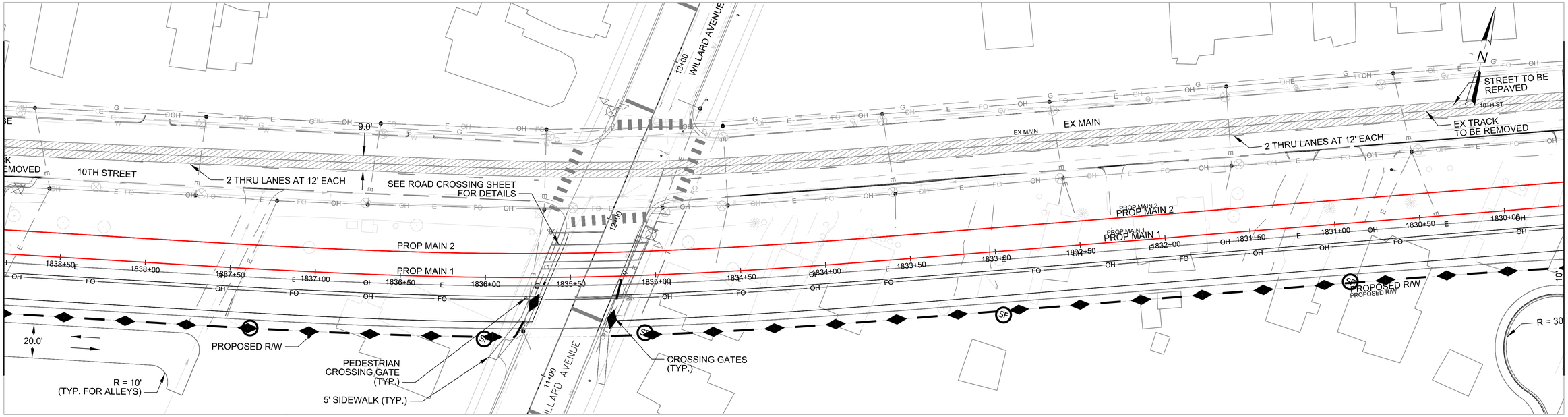
FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		

SEE SHEET BEFORE

SEE SHEET ABOVE

SEE SHEET AFTER





30 15 0 30 60

SCALE: 1" = 30'

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-271 OF ENV-284

PLOT DATE: 3/14/2020 4:08:54 PM CBertram

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

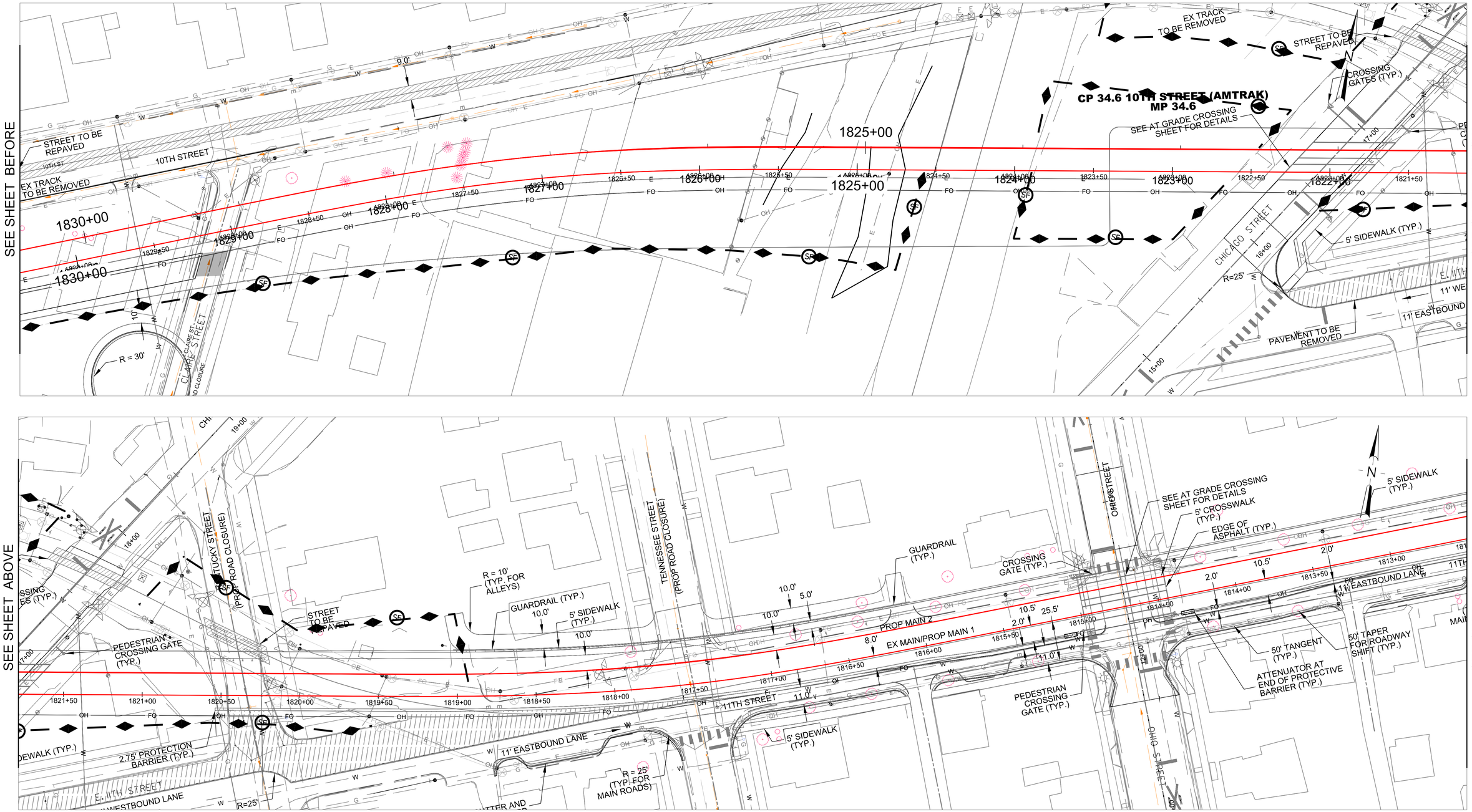
FILENAME	DT_DWG_ENV-004.dgn	SHEET OF
SCALE	AS NOTED	

SEE SHEET BEFORE

SEE SHEET BELOW

SEE SHEET ABOVE

SEE SHEET AFTER



60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-272 OF ENV-284

PLOT DATE: 3/14/2020 4:07:14 PM CBertram

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
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CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

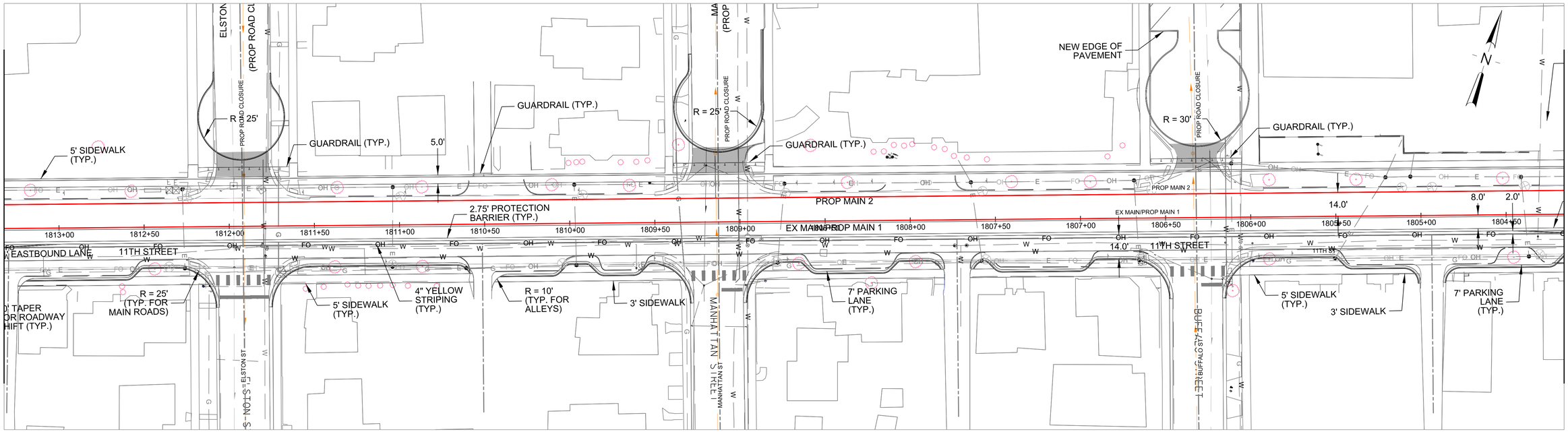
FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		

SEE SHEET BEFORE

SEE SHEET BELOW

SEE SHEET ABOVE

SEE SHEET AFTER



60% DESIGN - NOT FOR CONSTRUCTION

DRAWING ENV-273 OF ENV-284

PLOT DATE: 3/14/2020 4:05:43 PM CBertram

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		

SEE SHEET BEFORE

MICHIGAN CITY
11TH STREET STATION
MP 33.9

FRANKLIN STREET

PEDESTRIAN CROSSING GATE (TYP.)

5' SIDEWALK (TYP.)

SEE AT GRADE CROSSING SHEET FOR DETAILS

5' CROSSWALK (TYP.)

EDGE OF ASPHALT (TYP.)

PROP MAIN 2

EX MAIN/PROP MAIN 1

2.0'

2.75' PROTECTION BARRIER (TYP.)

25.5'

2.0'

10.5'

11' EASTBOUND LANE

11.0'

11TH STREET

7' PARKING LANE (TYP.)

3' SIDEWALK

50' TAPER FOR ROADWAY SHIFT (TYP.)

50' TANGENT (TYP.)

ATTENUATOR AT END OF PROTECTIVE BARRIER (TYP.)

CROSSING GATE (TYP.)

12" GUTTER AND 6" BARRIER CURB (TYP.)

2.75' PROTECTION BARRIER (TYP.)

PINE STREET
OR ROAD CLOSURE

24'

9' (TYP.)

GUARDRAIL (TYP.)

R = 10'

R = 25'
(TYP. FOR MAIN ROADS)

FUTURE NICTD PARKING AREA

PROP 720' HIGH LEVEL PLATFORM

PROP 720' HIGH LEVEL PLATFORM

5' SIDEWALK (TYP.)

SEE SHEET BELOW

SEE SHEET ABOVE

FUTURE NICTD PARKING AREA

SEE STATION PLATFORM SHEETS FOR DETAILS

PROP ROAD CLOSURE

GUARDRAIL (TYP.)

5' SIDEWALK (TYP.)

0' HIGH LEVEL PLATFORM

20' HIGH LEVEL PLATFORM

1785+00

PROP MAIN 2

EX MAIN/PROP MAIN 1

8.0'

1.5'

2.0'

11TH STREET

11TH ST

1785+00

11' EASTBOUND LANE

5' SIDEWALK (TYP.)

SPRING ST

CEDAR
(PROP ROA

CROSSING GATE (TYP.)

5' CROSSWALK (TYP.)

SEE AT GRADE CROSSING SHEET FOR DETAILS

EDGE OF ASPHALT

1780+00

8.0'

27.5'

4.6'

1780+00

11' EASTBOUND LANE

11.0'

2.75' PROTECTION BARRIER (TYP.)

ATTENUATOR AT END OF PROTECTIVE BARRIER (TYP.)

SEE SHEET AFTER

30 15 0 30 60

SCALE: 1" = 30'

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

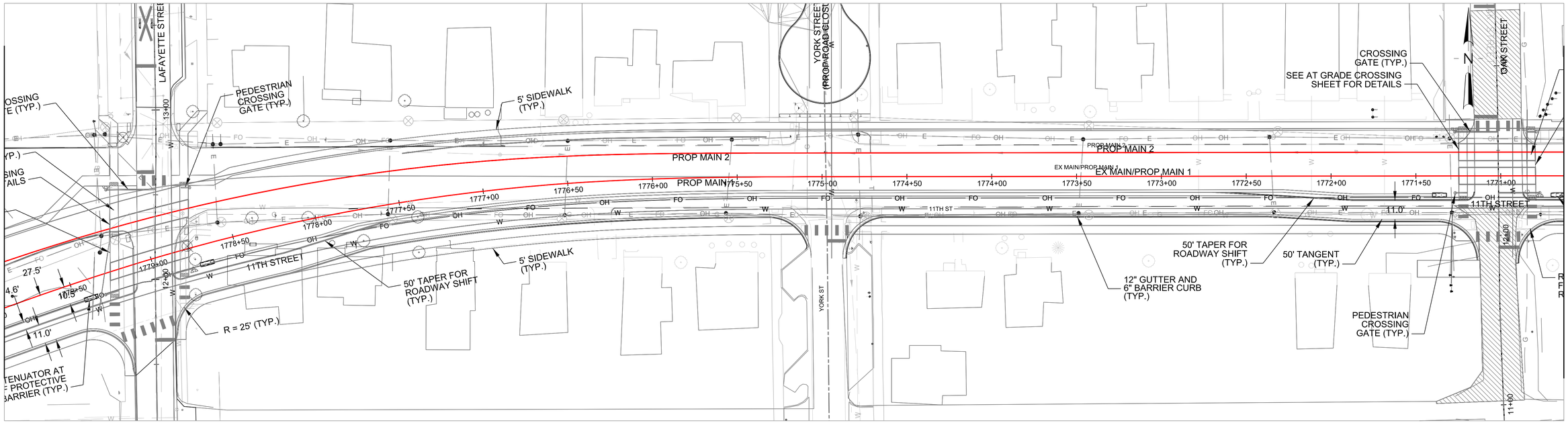
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS
TRACK ALIGNMENT

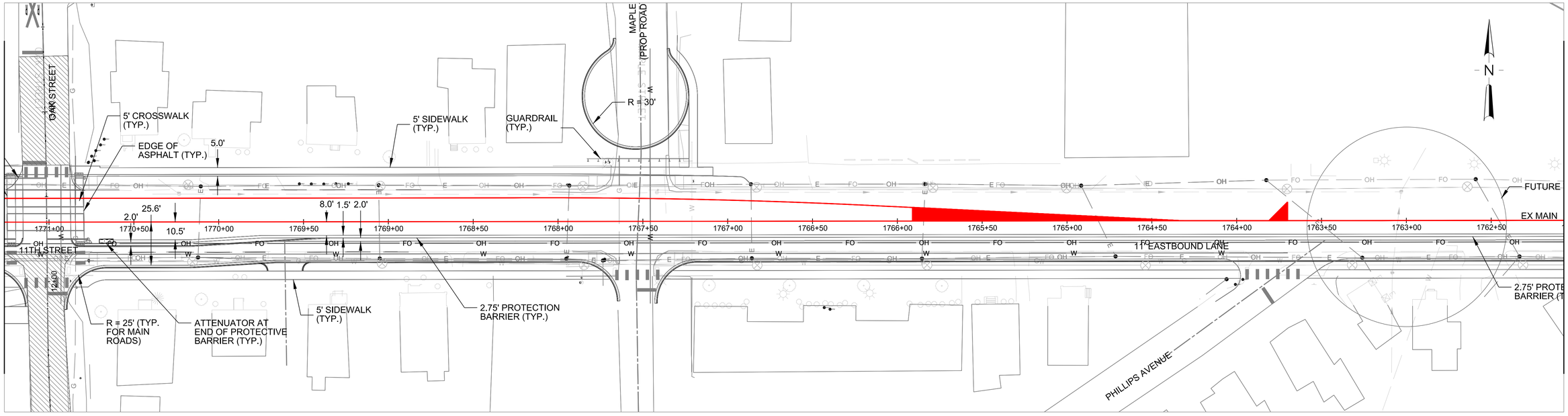
FILENAME	DT_DWG_ENV-004.dgn	SHEET	OF
SCALE	AS NOTED		

SEE SHEET BEFORE

SEE SHEET BELOW



SEE SHEET ABOVE



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NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

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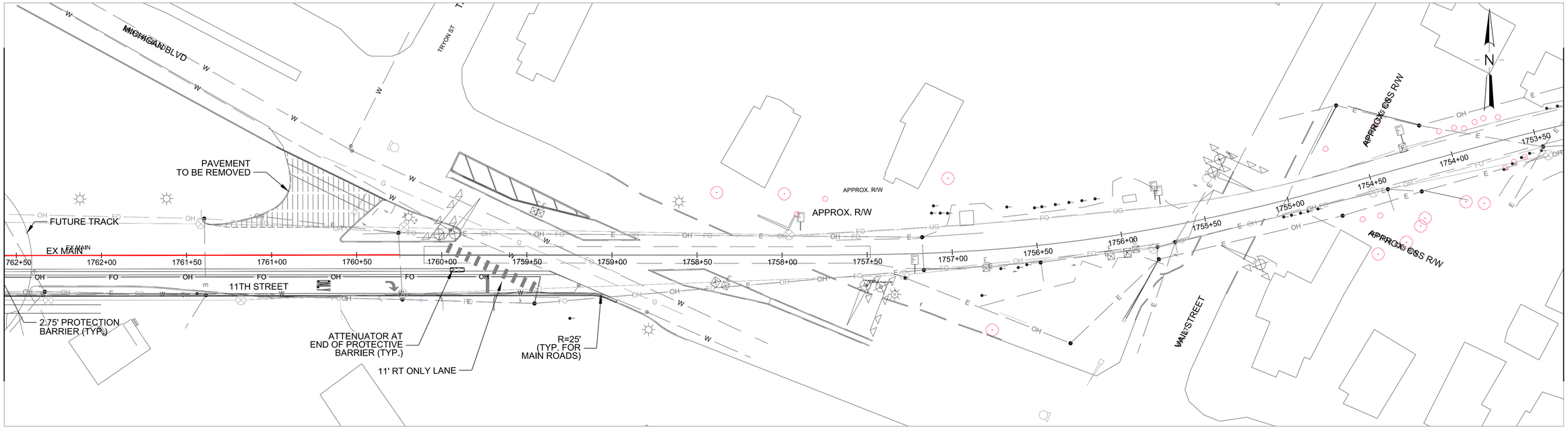
SCALE	AS NOTED		

SEE SHEET BEFORE

SEE SHEET BELOW



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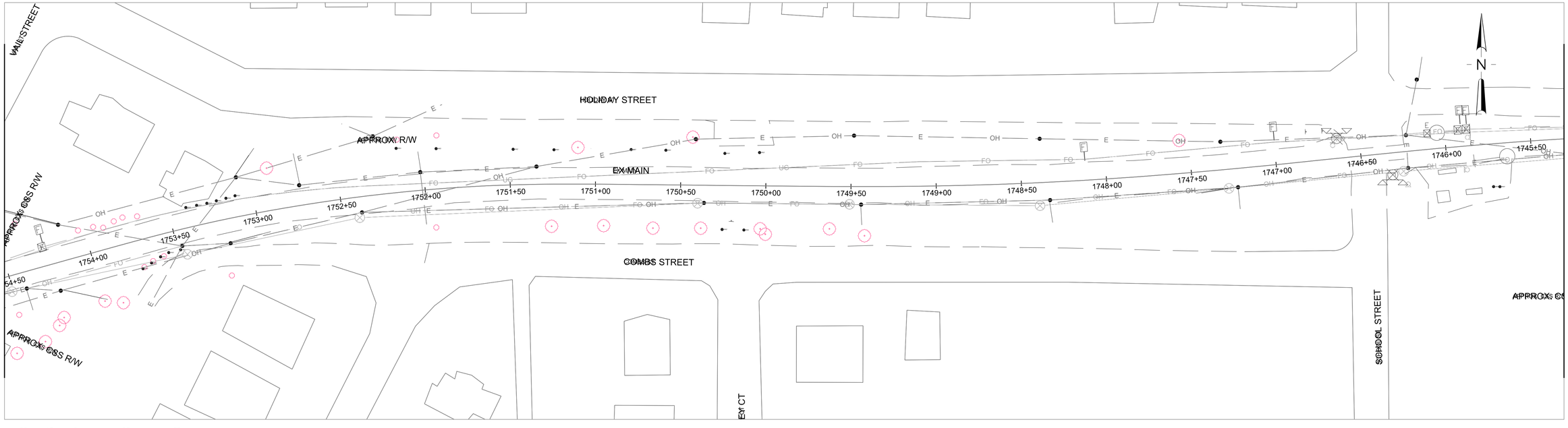

SEE SHEET AFTER

30 15 0 30 60

SCALE: 1" = 30'

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NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

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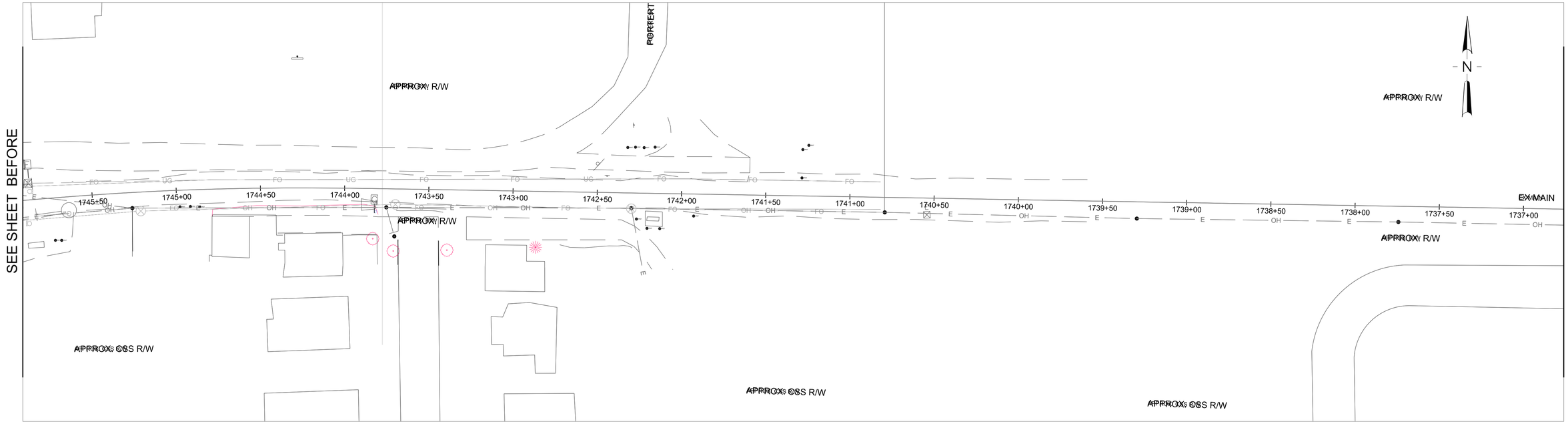
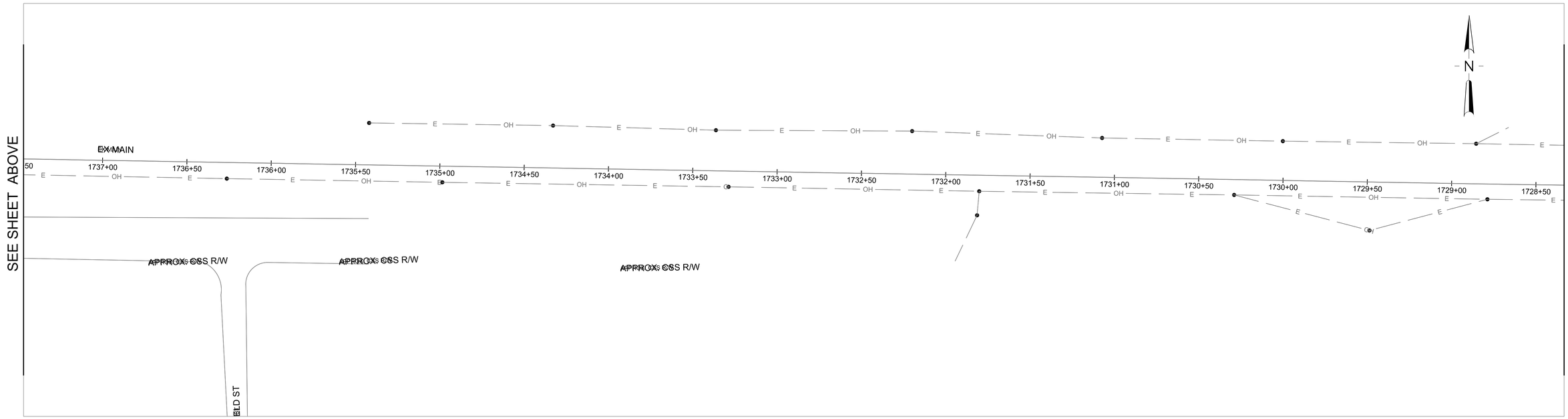
SCALE	AS NOTED		





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SCALE: 1" = 30'

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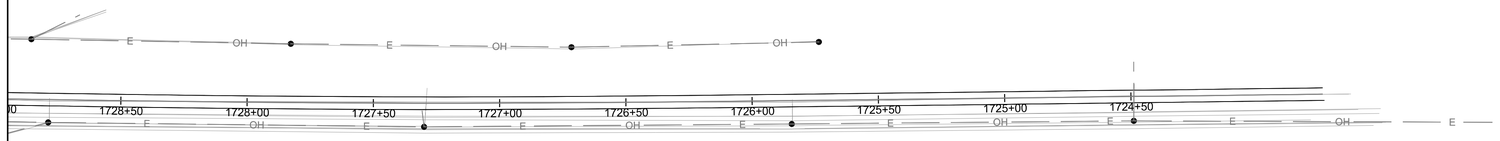
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn
SCALE	AS NOTED

SHEET **OF**

SEE SHEET BEFORE



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SCALE: 1" = 30'

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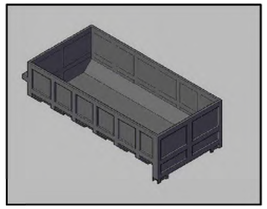
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-004.dgn
SCALE	AS NOTED

SHEET **OF**



"CONCRETE WASHOUT AREA" 18"X24" SIGN
NOTE: - SIGN FACE ROTATED 90° FOR CLARITY-FACE TO BE INSTALLED PARALLEL TO CONSTRUCTION AREAS IN FIELD

SPECIFICATIONS:

SMALL AMOUNTS OF EXCESS OR RESIDUAL CONCRETE (NOT WASHOUT WATER) MAY BE DISPOSED OF IN AREAS THAT WILL NOT RESULT IN FLOW TO AN AREA THAT IS TO BE PROTECTED.

LOCATE CONCRETE WASHOUT SYSTEMS AT LEAST 50 FEET FROM ANY CREEKS, WETLANDS, DITCHES KARST FEATURES, OR STORM DRAINS/MAN MADE CONVEYANCE SYSTEMS.

INDOT REQUIRES DUMPSTERS WITH 10 MIL LINERS PER 205-R-636 DATED MARCH 17, 2017.
NOTE: IF APPROVED BY INDOT PE/PS, A SMALL CONCRETE REPAIR PROJECTS MAY CHOOSE A TEMPORARY CONCRETE WASHOUT PRODUCT (OUTPAK - CORRUGATED CARDBOARD CONTAINER WITH 10 MIL LINER OR APPROVED EQUAL) .
THE SIZE AND NUMBER OF DUMPSTER(S) SHALL BE DESIGNED TO CONTAIN THE ANTICIPATED WASHOUT WATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES. CONCRETE WASTE WATER LIQUID SHALL BE FULLY EVAPORATED PRIOR TO THE PLANNED CAPACITY OF THE WASHOUT CONTAINER CAPACITY BEING EXCEEDED. ESTIMATE USING THE FOLLOWING EQUATION:

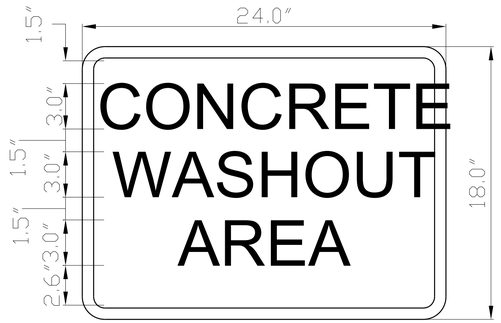
$$\frac{\text{CYD OF CONCRETE} \times 7 \text{ GAL PER TRUCK}}{10} = \text{GAL OF WASHOUT WASTE}$$

POLYETHYLENE SHEETING SHOULD BE A MINIMUM OF TEN MILS THAT IS FREE OF HOLES, TEARS, AND OTHER DEFECTS. THE SHEETING SELECTED SHOULD BE OF AN APPROPRIATE SIZE TO FIT THE WASHOUT SYSTEM WITHOUT SEAMS OR OVERLAP OF THE LINING.

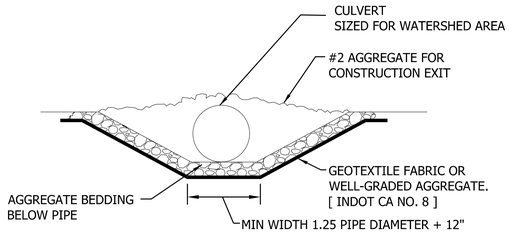
INSPECT DUMPSTERS AS THEY ARRIVE AND DURING USE FOR STRUCTURAL INTEGRITY AND DEFECTS. REJECT AND DISCONTINUE THE USE OF ANY DUMPSTER AS A WASH OUT CONTAINER THAT HAVE HOLES IN THEM. A SECONDARY WASHOUT CONTAINER SHALL BE ON SITE AND BE PART OF THE MATERIAL HANDLING AND SPILL PREVENTION PLAN.

CONCRETE WASTE WATER SHALL NOT BE ALLOWED TO LEAK ONTO THE GROUND, RUN INTO STORM DRAINS, OR INTO ANY BODY OF WATER. WHERE WASHOUT WASTE WATER LEAKS ONTO THE GROUND, ALL CONTAMINATED SOILS SHALL BE EXCAVATED AND DISPOSED OF IN ACCORDANCE WITH 202.08 EXCEPT THAT ALL COSTS ASSOCIATED WITH EXCAVATION AND DISPOSAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

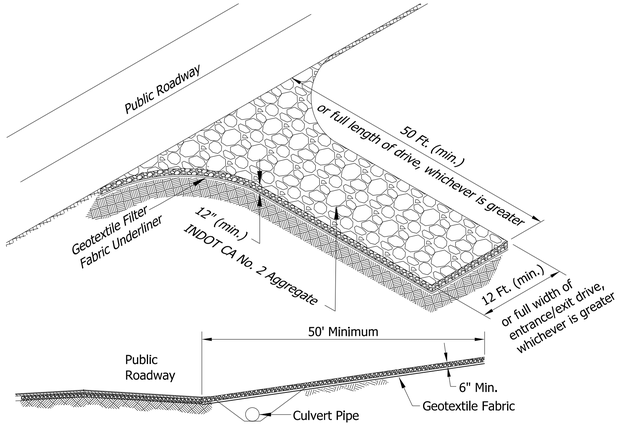
CONCRETE WASHOUT (DUMPSTER)
NTS



- MINIMUM 3" LETTER SIZE
- WHITE BACKGROUND WITH BLACK LEGEND AND BORDER
- 1.5" CORNER RADIUS
- 0.375" BORDER WIDTH



TEMPORARY CULVERT FOR CONSTRUCTION EXIT
(AS REQUIRED)
NTS



INSTALLATION:

1. Remove all vegetation and other objectionable material from the foundation area.
2. Grade the foundation and crown for positive drainage.
3. Install a culvert pipe under the pad if needed to maintain proper public road drainage.
4. Place aggregate (INDOT CA No. 2) to the dimensions and grade shown in the construction plans, leaving the surface smooth and sloped for drainage.
5. Where possible, divert all storm water runoff and drainage from the temporary construction ingress/egress pad to a sediment trap or basin.

STABILIZED CONSTRUCTION ENTRANCE
NTS

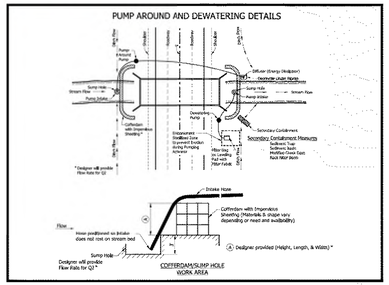
STORM WATER QUALITY
CONTROL PLAN LEGEND

- SF — SILT FENCE
- FS — FILTER SOCK
- CIP — CURB INLET PROTECTION
- ECB — TEMPORARY EROSION CONTROL BLANKET (SURFACE APPLIED) ON TEMPORARY SEEDING
- SP — TEMPORARY STONE SLOPE PROTECTION
- CW — CONCRETE WASHOUT (WITH SIGN)
- CE — STABILIZED CONSTRUCTION ENTRANCE/EXIT

STORM WATER QUALITY CONTROL
PLAN GENERAL NOTES

1. IN PROPOSED GRADING LOCATIONS WHERE DISTURBED SLOPE EXCEEDS 3:1, A TEMPORARY EROSION CONTROL BLANKET (WITH SEEDING) SHALL BE PLACED PER PROVIDED DETAIL. PROPOSED GRADING PLANS HAVE NOT BEEN PROVIDED BY PROJECT ENGINEER SO LOCATIONS FOR PROPOSED EROSION CONTROL BLANKET ARE NOT CURRENTLY DEFINED.
2. ALL EXISTING STORMWATER INLET, CATCH BASIN, DITCH BASIN, ETC. STRUCTURES WITHIN 100 FEET OF THE PROPOSED RAILWAY CORRIDOR SHALL BE PROTECTED WITH INLET PROTECTION. PROTECTION PROVIDED SHALL VARY DEPENDING UPON TYPE OF INLET STRUCTURE AND SHALL CONFORM TO THE PROVIDED INLET PROTECTION DETAILS HEREIN.

Pump Around



Standard References
Standard Specification Reference: 206.09 Cofferdams and Temporary Construction Dikes

Standard Drawing Reference: Details shown on plans and in environmental permits.

Description
A pump around should be utilized as a method of diversion for existing stream water. The purpose of the pump around is to isolate the jurisdictional water from the work area. This method of water control is usually designed specifically for a contract and will be detailed within the plans. This method may be used by a contractor in lieu of stream diversion to isolate the work area from the jurisdictional waterway. Earthen dikes are never permitted on INDOT projects.

Installation
- Place water tight cofferdams (see Cofferdam page 28) in the waterway both upstream and downstream of the work area.
- Pump water from the upstream side, around the work area, and outlet on a stable outlet (usually riprap) on the banks of the waterway downstream of downstream cofferdam.
- Pump should be sized to ensure upstream water does not overtop the cofferdam and allow water into the work area.
- Stream water should not be allowed to flow through work area until the area is completely stable, which includes the final shaping of the disturbed stream banks and stabilization of those banks with riprap, erosion control blankets, etc.
- Pump around stream water is not to be filtered through a filter bag.

Inspection
- Inspect daily during pump around operations.
- Inspect stable outlet and ensure stream bank is not eroding.
- Monitor the creek water level upstream to ensure pump is adequately sized and water does not flow over cofferdam.
- Monitor the weather forecast and anticipate increases in stream water levels.

Maintenance
- Adjust outlet stabilization if bank erosion is noticed.
- Adjust pump capacity as needed to handle stream water volume.
- Fix leaks or otherwise stabilize cofferdams if water is back flowing into work area.

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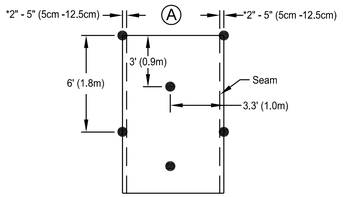
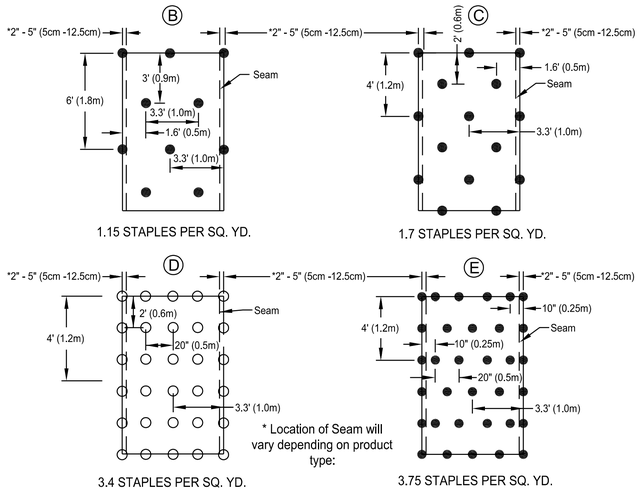


0.7 STAPLES PER SQ. YD.



1.15 STAPLES PER SQ. YD.

1.7 STAPLES PER SQ. YD.

3.4 STAPLES PER SQ. YD.

3.75 STAPLES PER SQ. YD.

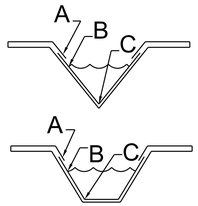
* Location of Seam will vary depending on product type:

Contractor to select staple pattern per manufacturer's specifications.

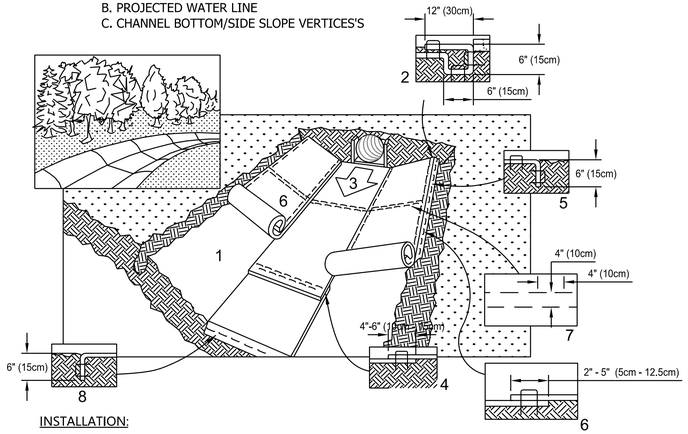
STAPLE PATTERN GUIDE FOR EROSION CONTROL BLANKETS

NTS

NOTE:
HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE. REFER TO GENERAL STAPLE PATTERN GUIDE FOR CORRECT STAPLE RECOMMENDATIONS FOR CHANNELS. IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15CM) MAY BE NECESSARY TO PROPERLY ANCHOR THE RECP'S.



CRITICAL POINTS:
A. OVERLAPS AND SEAMS
B. PROJECTED WATER LINE
C. CHANNEL BOTTOM/SIDE SLOPE VERTICES'S



INSTALLATION:

1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROLPRODUCTS (RECPS), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORINGTHE RECPS IN A 6"(15CM) DEEP X 6"(15CM) WIDE TRENCH WITH APPROXIMATELY 12"(30CM) OF RECPS EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. USE SHOREMAXMAT AT THE CHANNEL/CULVERT OUTLET AS SUPPLEMENTAL SCOUR PROTECTION AS NEEDED. ANCHORTHE RECPS WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12"(30CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACTTHE TRENCH AFTER STAPLING. APPLY SEED TO THE COMPACTEDSOIL AND FOLD THE REMAINING12"(30CM) PORTION OF RECPS BACK OVER THE SEED AND COMPACTED SOIL. SECURE RECPS OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE RECPS.
3. ROLL CENTER RECPS IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. RECPS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECPS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWNIN THE STAPLE PATTERN GUIDE.
4. PLACE CONSECUTIVE RECPS END-OVER-END (SHINGLE STYLE) WITH A 4"-6" OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER TO SECURE RECPS.
5. FULL LENGTH EDGE OF RECPS AT TOP OF SIDE SLOPES MUST BE ANCHOREDWITH A ROW OF STAPLES/STAKES APPROXIMATELY12"(30CM) APART IN A 6"(15CM) DEEP X 6"(15CM) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. ADJACENT RECPS MUST BE OVERLAPPED APPROXIMATELY 2"-5" (5-12.5CM) (DEPENDING ON RECPS TYPE) AND STAPLED.
7. IN HIGH FLOW CHANNELAPPLICATIONS A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT (9 -12M) INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4"(10CM) APART AND 4"(10CM) ON CENTER OVER ENTIRE WIDTH OF THE CHANNEL.
8. THE TERMINAL END OF THE RECPS MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30CM) APART IN A 6"(15CM) DEEP X 6"(15CM) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.

CHANNEL INSTALLATION OF EROSION CONTROL BLANKET

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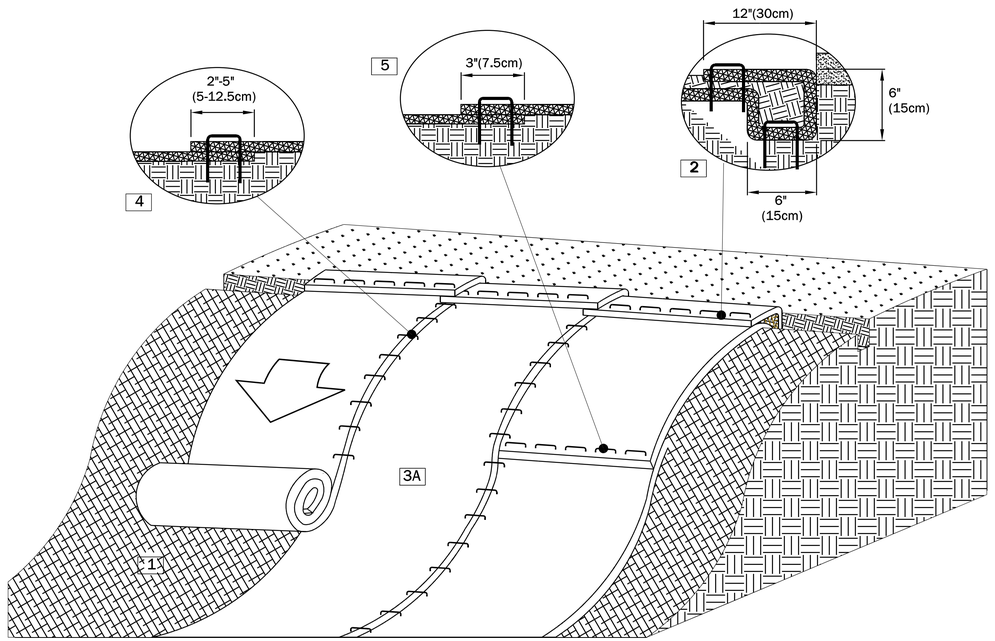

INSTALLATION:

1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROLPRODUCTS (RECPS), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORINGTHE RECPS IN A 6"(15CM) DEEP X 6"(15CM) WIDE TRENCH WITH APPROXIMATELY 12" (30CM) OF RECPS EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHORTHE RECPS WITH A ROW OF STAPLES/STAKES APPROXIMATELY12" (30CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACTTHE TRENCH AFTER STAPLING. APPLY SEED TO THE COMPACTED SOIL AND FOLD THE REMAINING 12"(30CM) PORTION OF RECPS BACK OVER THE SEED AND COMPACTED SOIL. SECURE RECPS OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12"(30CM) APART ACROSS THE WIDTH OF THE RECPS.
3. ROLL THE RECPS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. RECPS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECPS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
4. THE EDGES OF PARALLEL RECPS MUST BE STAPLED WITH APPROXIMATELY 2" ¯ 5" (5-12.5CM) OVERLAP DEPENDING ON THE RECPS TYPE.
5. CONSECUTIVE RECPS SPLICED DOWNTHE SLOPE MUST BE END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3"(7.5CM) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12"(30CM) APART ACROSS ENTIRE RECPS WIDTH.

ROLLED EROSION CONTROL PRODUCT SLOPE INSTALLATION

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VS ENGINEERING

ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

NICTD
NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

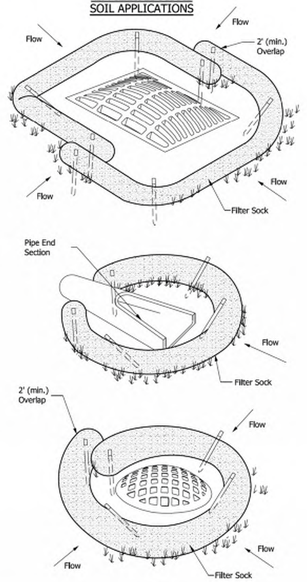
DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

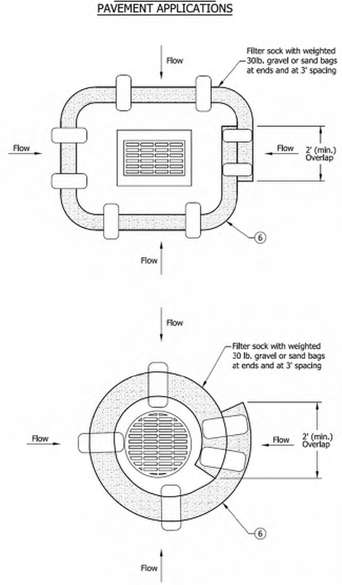
EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-005.dgn	SHEET	OF
SCALE	AS NOTED		

INLET PROTECTION SOIL APPLICATIONS



INLET PROTECTION PAVEMENT APPLICATIONS



NOTES:

1. Fiber roll may be substituted for filter sock.
2. Filter sock shall be secured to prevent movement and undercutting as shown or in accordance with the manufacturer's instructions. See Standard Drawing E 205-TECD-10 for securing methods.
3. Inlet protection shall be inspected, at a minimum once every seven days and after each storm event. Sediment shall be removed when 1/3 of the filter sock depth has been filled or as directed.
4. Sediment and gravel deposited on roadways shall be removed once identified after each storm event.
5. Inlet protection shall be removed after the surrounding area becomes stable.
6. Inlet protection shall be used within a lane or shoulder only when closed to traffic. Inlet protection shall not cause water to encroach upon a lane open to traffic.

INDIANA DEPARTMENT OF TRANSPORTATION

TEMPORARY INLET PROTECTION, FILTER SOCK

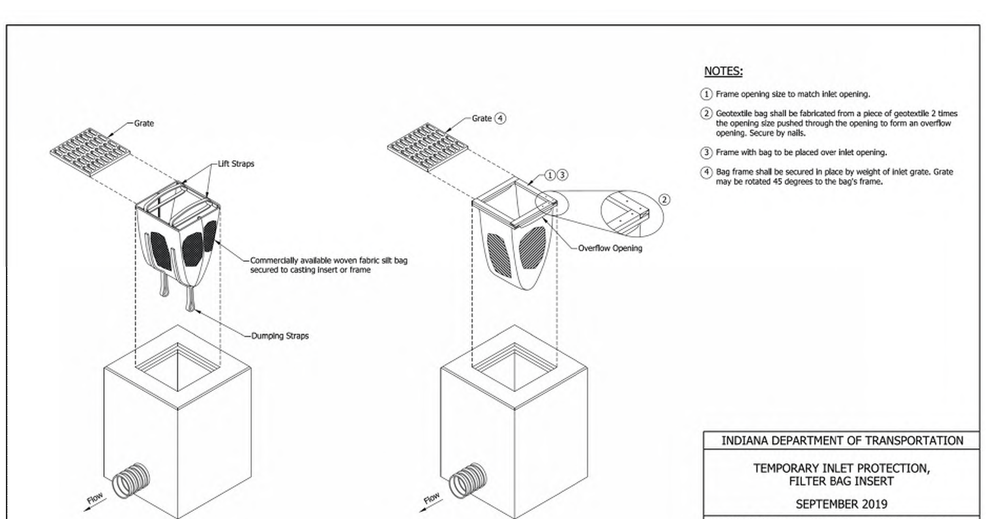
SEPTEMBER 2019

STANDARD DRAWING NO. E 205-TECD-02

ELIZABETH W. PHILLIPS REGISTERED No. 10200124 STATE OF INDIANA PROFESSIONAL ENGINEER

5/2/2019 DESIGN STANDARDS ENGINEER DATE

5/31/2019 CHIEF ENGINEER DATE



NOTES:

1. Frame opening size to match inlet opening.
2. Geotextile bag shall be fabricated from a piece of geotextile 2 times the opening size pushed through the opening to form an overflow opening. Secure by nails.
3. Frame with bag to be placed over inlet opening.
4. Bag frame shall be secured in place by weight of inlet grate. Grate may be rotated 45 degrees to the bag's frame.

INDIANA DEPARTMENT OF TRANSPORTATION

TEMPORARY INLET PROTECTION, FILTER BAG INSERT

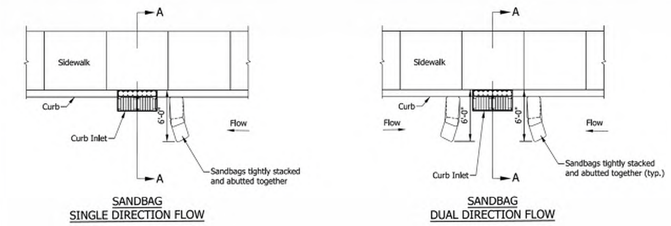
SEPTEMBER 2019

STANDARD DRAWING NO. E 205-TECD-04

ELIZABETH W. PHILLIPS REGISTERED No. 10200124 STATE OF INDIANA PROFESSIONAL ENGINEER

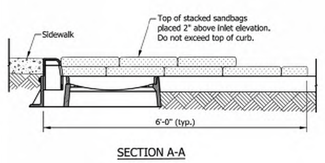
5/2/2019 DESIGN STANDARDS ENGINEER DATE

5/31/2019 CHIEF ENGINEER DATE

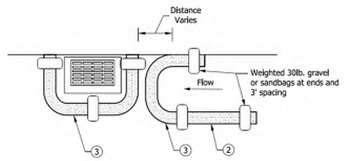


NOTES:

1. Curb inlet protection shall be used within a lane or shoulder only when closed to traffic. Curb inlet protection shall not cause water to encroach upon a lane open to traffic.
2. May be used in conjunction with drain inlet protection as a best management practice (BMP) in combination with bag or drop inlet protection inserts.
3. Inlet protection shall be used within a lane or shoulder only when closed to traffic. Inlet protection shall not cause water to encroach upon a lane open to traffic.



SECTION A-A



FILTER SOCK SINGLE OR DUAL DIRECTION FLOW

INDIANA DEPARTMENT OF TRANSPORTATION

TEMPORARY CURB INLET PROTECTION

SEPTEMBER 2019

STANDARD DRAWING NO. E 205-TECD-05

ELIZABETH W. PHILLIPS REGISTERED No. 10200124 STATE OF INDIANA PROFESSIONAL ENGINEER

5/2/2019 DESIGN STANDARDS ENGINEER DATE

5/31/2019 CHIEF ENGINEER DATE

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DRAWING ENV-281 OF ENV-284

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

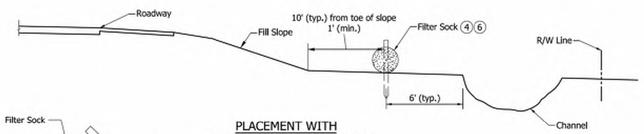
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

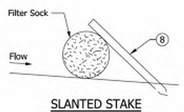
FILENAME	DT_DWG_ENV-005.dgn
SCALE	AS NOTED

SHEET OF

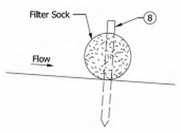
PLACEMENT
RELATIVE TO RIGHT-OF-WAY LINE



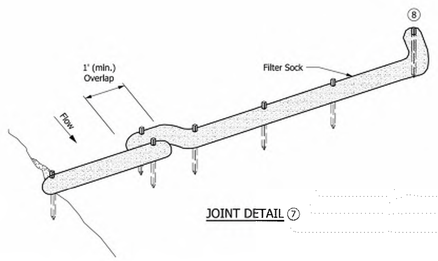
PLACEMENT WITH
CHANNEL IN RIGHT OF WAY



SLANTED STAKE
SECURING METHOD



STAKE THROUGH
SECURING METHOD

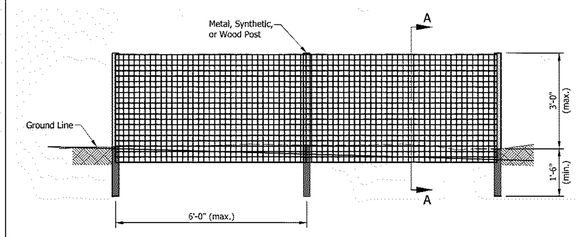


JOINT DETAIL 7

NOTES:

1. Fiber roll may be substituted for filter sock.
2. Filter sock shall be installed as shown or in accordance with manufacturer's recommendations.
3. Filter sock diameter shall be as required by design based on watershed area.
4. Filter sock shall be placed perpendicular to the flow of water.
5. Filter sock shall be secured as shown or in accordance with the manufacturer's instructions.
6. Filter sock does not require staking when fill slope is less than or equal to 12%, except when fill slope is below the Q_{100} water surface elevation and flood prone area.
7. Filter socks shall be secured in locations below the Q_{100} water surface elevation and flood prone location. Filter sock end shall be secured using the stake through method. Intermediate points may be secured using either the stake through or slanted stake method.
8. Stake angle and length shall be sufficient to wedge filter sock to the ground to prevent movement and undercutting.

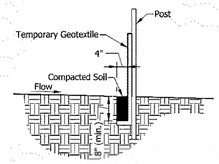
INDIANA DEPARTMENT OF TRANSPORTATION	
PERIMETER PROTECTION, FILTER SOCK SEPTEMBER 2019	
STANDARD DRAWING NO. E 205-TECD-10	
ELIZABETH W. PHILLIPS REGISTERED No. 10200124 STATE OF INDIANA PROFESSIONAL ENGINEER	DESIGN STANDARDS ENGINEER 5/2/2019 DATE CHIEF ENGINEER 5/31/2019 DATE



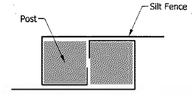
ELEVATION

NOTES:

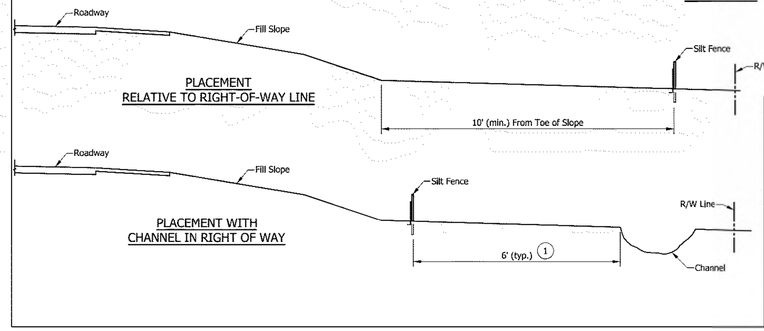
1. Dimensions will vary based on right-of-way availability. Silt fence shall be placed as close as possible to the edge of construction limits.
2. The spacing of the tiebacks shall equal the spacing of the posts. Additional post depth or tiebacks may be required in unstable soils
3. Filter Sock shall be used instead of silt fence at or below Q_{100}.



SECTION A-A



JOINT DETAIL
PLAN VIEW



PLACEMENT
RELATIVE TO RIGHT-OF-WAY LINE

PLACEMENT WITH
CHANNEL IN RIGHT OF WAY

INDIANA DEPARTMENT OF TRANSPORTATION	
PERIMETER PROTECTION, SILT FENCE SEPTEMBER 2019	
STANDARD DRAWING NO. E 205-TECD-11	
ELIZABETH W. PHILLIPS REGISTERED No. 10200124 STATE OF INDIANA PROFESSIONAL ENGINEER	DESIGN STANDARDS ENGINEER 5/2/2019 DATE CHIEF ENGINEER 5/31/2019 DATE

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33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

EROSION CONTROL PLANS TRACK ALIGNMENT

FILENAME	DT_DWG_ENV-005.dgn	SHEET
SCALE	AS NOTED	OF

TEMPORARY EROSION CONTROL TABLE

STATION	STATION	LOCATION		TEMPORARY SILT FENCE	TEMPORARY CONSTRUCTION EXIT #2 STONE	TEMPORARY EROSION CONTROL BLANKET	TEMPORARY CONCRETE WASHOUT	TEMPORARY STONE SLOPE PROTECTION	TEMPORARY CURB INLET PROTECTION	TEMPORARY DITCH INLET PROTECTION	TEMPORARY GEOTEXTILE	FILTER SOCK	REMARKS
		LEFT	RIGHT	LFT	TON	SYS	EACH	TON	EACH	EACH	SYS	LFT	
LINE ""													
Sheet ""													
Sheet ""													
Sheet

TEMPORARY EROSION CONTROL TABLE

STATION	STATION	LOCATION		TEMPORARY SILT FENCE	TEMPORARY CONSTRUCTION EXIT #2 STONE	TEMPORARY EROSION CONTROL BLANKET	TEMPORARY CONCRETE WASHOUT	TEMPORARY STONE SLOPE PROTECTION	TEMPORARY CURB INLET PROTECTION	TEMPORARY DITCH INLET PROTECTION	TEMPORARY GEOTEXTILE	FILTER SOCK	REMARKS
		LEFT	RIGHT	LFT	TON	SYS	EACH	TON	EACH	EACH	SYS	LFT	
LINE ""													
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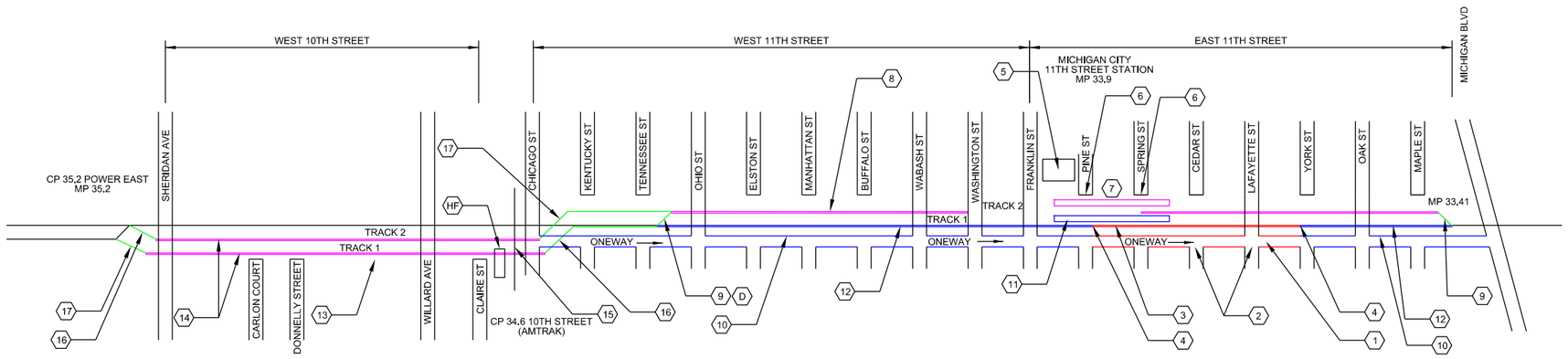
Sheet ""													
Sheet

MICHIGAN CITY
NICTD DOUBLE TRACK
CONSTRUCTION WORK PHASING



PHASE III

13. PREPARE RIGHT OF WAY FOR CONSTRUCTION {HAT FACTORY DEMO} (HF)
14. CONSTRUCT NEW TRACKS 1 & 2
15. INSTALL ADVANCED PURCHASED NEW AMTRAK DIAMONDS
16. CUT OVER NEW TRACK 1 MP 33.4 TO 35.2
17. CUT OVER NEW TRACK 2 MP 34.5 TO 35.2

PHASE II

5. CLOSE MICHIGAN CITY PASSENGER STATION, WEST BOUND 11TH STREET AND 10 CROSS STREETS
6. CLOSE PINE AND SPRING STREET
7. CONSTRUCT PLATFORM TRACK 2
8. CONSTRUCT NEW TRACK 2
9. CUT OVER NEW TRACK 2 & CATENARY
10. CONSTRUCT NEW EB 11TH
11. CONSTRUCT PLATFORM TRACK 1
12. REBUILD TRACK 1 AND INSTALL CATENARY

PHASE I

1. CONSTRUCT NEW EAST BOUND 11TH STREET
2. CLOSING CEDAR AND LAFAYETTE STREET X-INGS
3. CONSTRUCT NEW TRACK 1
4. CONSTRUCT NEW CATENARY STRUCTURES AND TEMPORARY MASTARM POLES AND TROLLEY WIRE

CUT OVER NEW TRACK 1 & TROLLEY

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DRAWING PHA-001 OF PHA-008

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MICHIGAN CITY TO GARY, INDIANA

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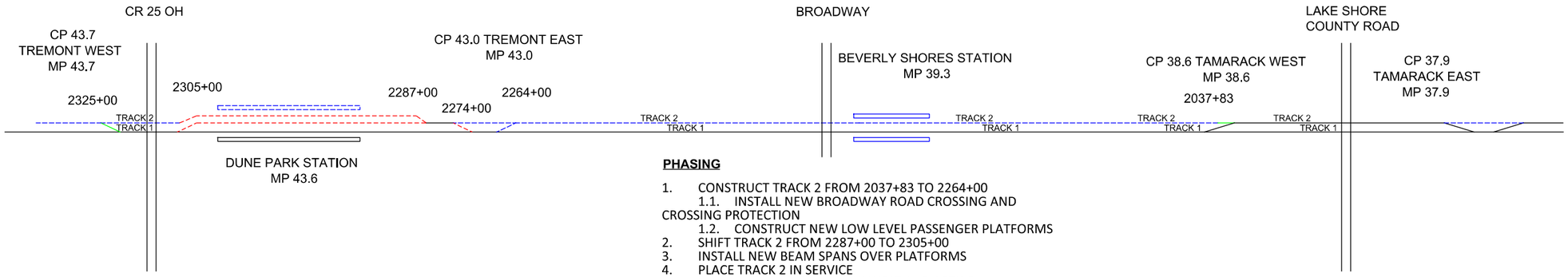
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

CONSTRUCTION PHASING MICHIGAN CITY

FILENAME	DT_DWG_PHA-001_R00_20200316.dgn	SHEET	OF
SCALE	AS NOTED		

PLOT DATE: 3/15/2020 4:37:19 PM dominguez1

TAMARACK TO DUNE PARK
NICTD DOUBLE TRACK
CONSTRUCTION WORK PHASING

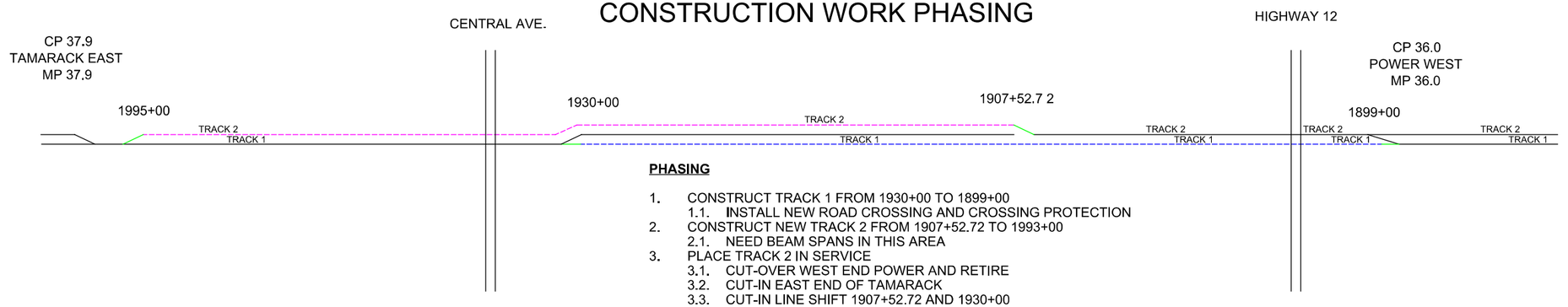


PHASING

1. CONSTRUCT TRACK 2 FROM 2037+83 TO 2264+00
   - 1.1. INSTALL NEW BROADWAY ROAD CROSSING AND CROSSING PROTECTION
   - 1.2. CONSTRUCT NEW LOW LEVEL PASSENGER PLATFORMS
2. SHIFT TRACK 2 FROM 2287+00 TO 2305+00
3. INSTALL NEW BEAM SPANS OVER PLATFORMS
4. PLACE TRACK 2 IN SERVICE
   - 4.1. CUT-OVER TAMARACK WEST AND RETIRE
   - 4.2. CUT-IN EAST END OF TREMONT 2274+00

NOTE: CULVERT WORK WILL REQUIRE 7 SEPARATE WEEKEND OUTAGES

WEST POWER
NICTD DOUBLE TRACK
CONSTRUCTION WORK PHASING



PHASING

1. CONSTRUCT TRACK 1 FROM 1930+00 TO 1899+00
   - 1.1. INSTALL NEW ROAD CROSSING AND CROSSING PROTECTION
2. CONSTRUCT NEW TRACK 2 FROM 1907+52.72 TO 1993+00
   - 2.1. NEED BEAM SPANS IN THIS AREA
3. PLACE TRACK 2 IN SERVICE
   - 3.1. CUT-OVER WEST END POWER AND RETIRE
   - 3.2. CUT-IN EAST END OF TAMARACK
   - 3.3. CUT-IN LINE SHIFT 1907+52.72 AND 1930+00

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DRAWING PHA-002 OF PHA-008

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MICHIGAN CITY TO GARY, INDIANA

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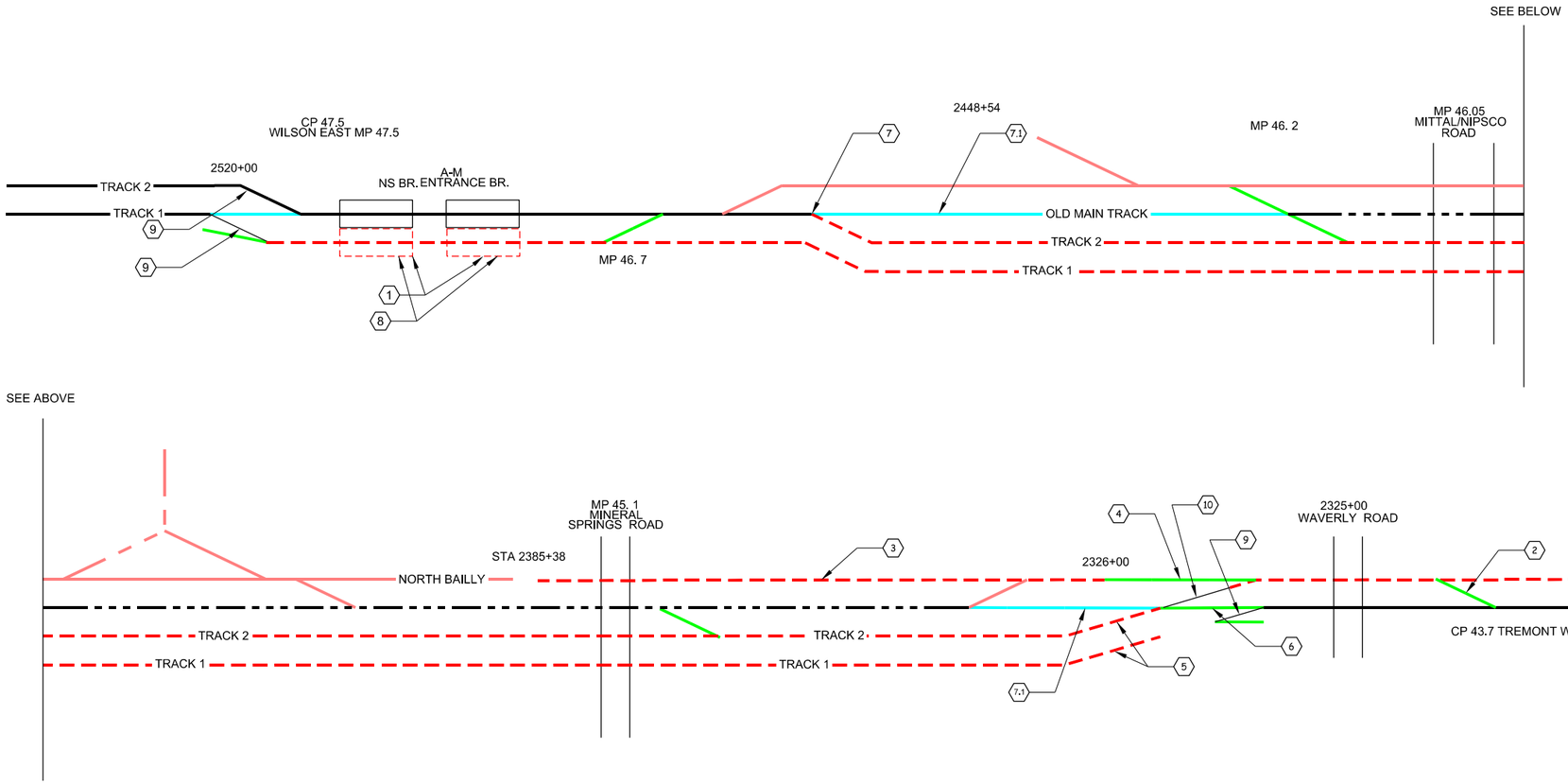
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

CONSTRUCTION PHASING
WEST END SHERIDAN TO BAILLY

FILENAME	DT_DWG_PHA-002_R00_20200316.dgn
SCALE	AS NOTED

SHEET OF

BAILLY
NICTD DOUBLE TRACK
CONSTRUCTION WORK PHASING



BAILLY PHASING

PHASE 1 - NORTH BAILLY CUT OVER

1. CONSTRUCT NEW BRIDGES
2. CP 43.7 IN SERVICE
3. CONSTRUCT NORTH BAILLY EXTENSION TO 2326+00
4. CONSTRUCT TEMPORARY CONNECTION TO TRACK 2 TO NORTH BAILLY (NOW IN SERVICE)

PHASE 2 - MAIN TRACK 2 CUT OVER

5. CONSTRUCT NEW TRACKS 1 AND 2
6. CUT OVER MAIN TRACK TO TRACK 2
7. CUT OVER MAIN TRACK TO TRACK 2 (NOW IN SERVICE)
   7.1. REMOVE OLD MAIN TRACKS

PHASE 3 - MAIN TRACK 1 CUT OVER

8. CONSTRUCT BOTH BRIDGES
9. CUT OVER TRACKS 1 AND 2

MAIN TRACK 1 AND NOW IN FULL SERVICE

10. CUT OVER TRACK 1 AND 2 AND ITS TURNOUT

MAIN TRACK 2 AND NOW IN FULL SERVICE

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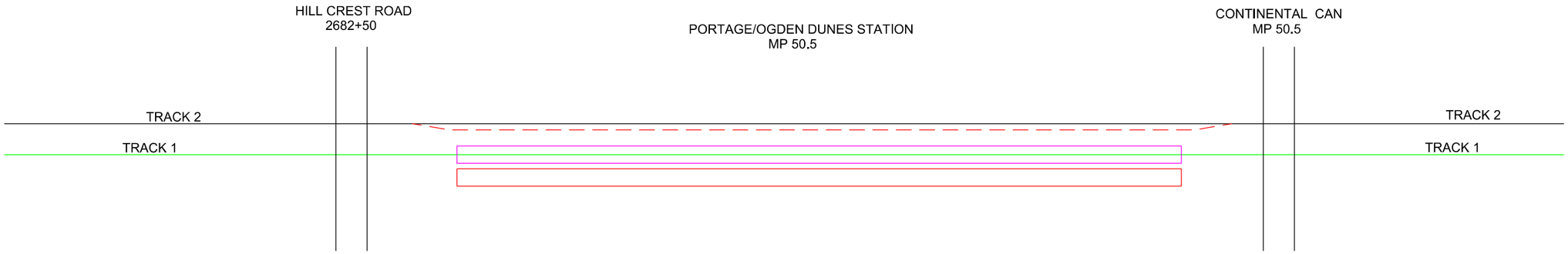
CONSTRUCTION PHASING
BAILLY

FILENAME	DT_DWG_PHA-003_R00_20200316.dgn	SHEET
SCALE	AS NOTED	OF

OGDEN DUNES STATION
NICTD DOUBLE TRACK
CONSTRUCTION WORK PHASING



PHASE 1 -TRACK 1

1. INSTALL NEW CATENARY SUPPORT
2. CONSTRUCT TRACK 1 LOW LEVEL PLATFORM
3. PLACE PLATFORM IN SERVICE

PHASE 2 -TRACK 2

1. CLOSE PARKING LOT AND DEMO OLD PLATFORM
2. SHIFT TRACK 2 TO NEW ALIGNMENT
   2.1. REBUILD ROAD X-ING
3. CONSTRUCT GAUNTLET TRACK
   3.1. CLAMP SWITCHES FOR FREIGHT SIDE MOVEMENT
4. CONSTRUCT TRACK 2 HIGH LEVEL PLATFORM
5. PLACE PLATFORM IN SERVICE

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DRAWING PHA-004 OF PHA-008

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DOUBLE TRACK-NWI

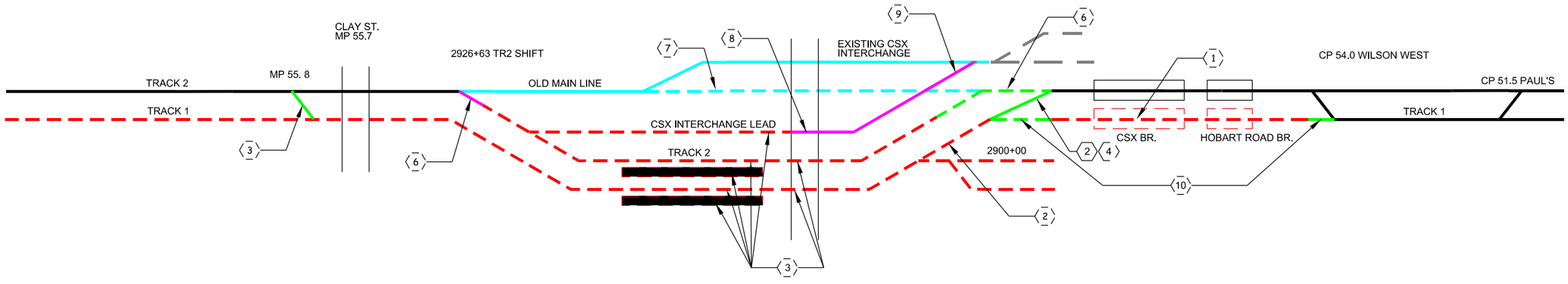
CONSTRUCTION PHASING OGDEN DUNES

FILENAME	DT_DWG_PHA-004_R00_20200316.dgn
SCALE	AS NOTED

SHEET OF

PLOT DATE: 3/15/2020 4:37:45 PM dominguezre1

MILLER STATION
NICTD DOUBLE TRACK
CONSTRUCTION WORK PHASING



MILLER PHASING

PHASE 1

1. BEGIN CONSTRUCTION OF THE BRIDGES
2. CONSTRUCT NEW CATENARY BEAM STRUCTURES CSX BRIDGE TO STATION 2900+00.
   TRANSFER EXISTING CATENARY TO NEW STRUCTURES.
3. CONSTRUCT NEW CROSSOVER MP 55.8
   - 3.1. CONSTRUCT TRACK 1 FROM CXS BRIDGE TO CLAY STREET X-OVERS.
   - 3.2. CONSTRUCT TRACK 2 FROM MP 55 TO 2926+63
   - 3.3. CONSTRUCT MILLER PLATFORMS BOTH TRACKS 1 AND 2
   - 3.4. CONSTRUCT CSX INTERCHANGE LEAD TO LAKE STREET
   - 3.5. INSTALL GATES FROM TRACKS 1 AND 2
4. CUT OVER TRACK 1 TO NEW ALIGNMENT STATION 2893+50
5. **PLACE TRACK IN SERVICE CLAY STREET CROSSOVERS TO CP 51.5 PAUL'S MP 51.5**
   NOTE: CSS&SBRR STILL HAS ACCESS TO CSXI

PHASE 2

6. **CUT OVER SERVICE TO TRACK 2 PUTS TRACK OUT OF SERVICE**
7. DEMO OLD MAIN TRACK STATION 2850+00 TO 2926+00
8. CONSTRUCT CSXI ACROSS LAKE STREET (DEMO OLD MAIN TRACK)
9. CUT OVER CSXI CONNECTION

PHASE 3

10. CUT OVER TRACK 1 AT CP 54.0 AND WEST SIDE OF CSX BRIDGE

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33 East Highway 12
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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

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NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

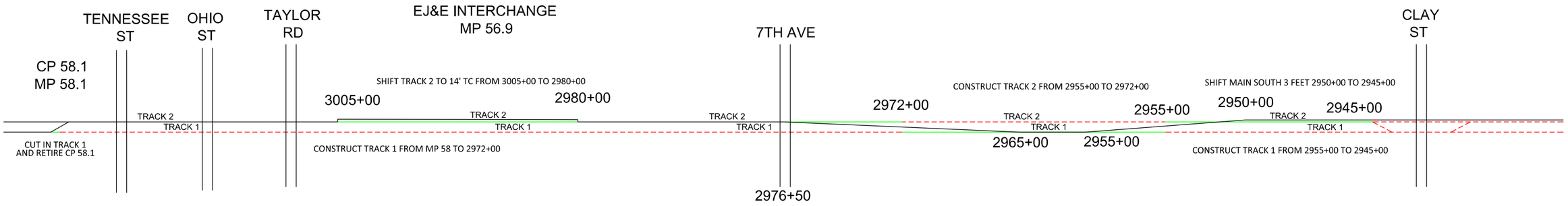
CONSTRUCTION PHASING
MILLER STATION

FILENAME	DT_DWG_PHA-005_R00_20200316.dgn
SCALE	AS NOTED

SHEET OF

PLOT DATE: 3/15/2020 4:37:47 PM dominguezе1

END OF DOUBLE TRACK TO CLAY ST. X-OVER
NICTD DOUBLE TRACK
CONSTRUCTION WORK PHASING



PHASING

1. CONSTRUCT TRACK 1 FROM MP 58 TO 2972+00
2. CONSTRUCT TRACK 2 FROM 2955+00 TO 2972+00
3. CONSTRUCT TRACK 1 FROM 2955+00 TO 2945+00
4. CUT OVER TRACK 2 FROM 2976+00 TO 2950+00 (TRACK OUT OF SERVICE)
5. CUT OVER TRACK 1 FROM 2972+00 TO 2955+00
6. CUT IN TRACK 1 FROM CLAY ST WEST DOUBLE X OVER AND RETIRE CP 58.1
7. SHIFT TRACK 2 TO 14' TC FROM 3005+00 TO 2980+00

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MICHIGAN CITY TO GARY, INDIANA

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NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

CONSTRUCTION PHASING
CLAY ST CROSSOVER

FILENAME DT_DWG_PHA-006_R00_20200316.dgn
SCALE AS NOTED
SHEET OF

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CONSTRUCTION STAGING MICHIGAN CITY SEGMENT

1. PHASE 1 PERFORM TRACK AND ROADWAY CONSTRUCTION FROM PINE ST TO YORK ST

A. AS PART OF YEAR 1 PHASE 1 CONSTRUCTION ALONG 11" STREET, PERFORM RELOCATION OF PUBLIC UTILITIES ALONG 11" STREET THAT ARE IN CONFLICT WITH THE PROJECT.
B. BARRICADE OFF EAST SIDE OF 11" ST JUST EAST OF PINE ST (PINE REMAINS OPEN).
C. CLOSE TO THRU-TRAFFIC, SPRING ST, CEDAR ST, AND LAFAYETTE (YORK REMAINS OPEN).
D. CONSTRUCT THE NEW EASTBOUND LANE OF 11" STREET ON ITS HORIZONTALLY SHIFTED ALIGNMENT AND ELEVATED PROFILE BETWEEN YORK STREET AND CEDAR STREET.
E. RECONSTRUCT THE SOUTH LEGS OF YORK STREET, LAFAYETTE STREET, AND CEDAR STREET AT THEIR INTERSECTIONS WITH THE RECONSTRUCTED EASTBOUND LANE OF 11" STREET.
F. CONSTRUCT APPROXIMATELY 700 FEET OF NEW MAIN 1 WITH TROLLEY WIRE AND SIGNAL RELATED ELEMENTS ON ITS ELEVATED PROFILE AND PERMANENT ALIGNMENT OFFSET ALIGNMENT FROM THE EXISTING TRACK THROUGH THE CURVE AT MP 33.7 BETWEEN YORK STREET AND CEDAR STREET.
G. CONSTRUCT CATENARY SUPPORT STRUCTURES ALONG THE NEWLY CONSTRUCTED SECTION OF MAIN 1 AT THE CEDAR STREET CURVE.
   – THESE STRUCTURES WILL EVENTUALLY BE USED TO SUPPORT NEW MAIN 1'S CONSTANT TENSIONING OCS OVER THIS SECTION OF TRACK.
   – ALL OCS STRUCTURES HAVE CAISSON FOUNDATIONS.
   – THESE STRUCTURES WILL INITIALLY BE USED TO SUPPORT THE EXISTING TRACK'S TROLLEY WIRE WHEN THAT TRACK IS SHIFTED AND ADJUSTED ONTO THIS NEW SECTION OF NEW TRACK IN THE FOLLOWING STEP.
H. BEGIN A SHORT DURATION TRACK OUTAGE.
   – CUT OVER BOTH ENDS OF THE EXISTING TRACK TO THE NEWLY CONSTRUCTED SECTION AT THE CEDAR STREET CURVE
   – SHIFT THE SUPPORT OF ITS TROLLEY WIRE TO THE NEWLY CONSTRUCTED CATENARY SUPPORTS BUILT IN STEP D.
   – CUTOVER NEW TRACK TO EXISTING TRACK, AND PUT IN-SERVICE..
   – OPEN THE NEWLY CONSTRUCTED EASTBOUND LANE OF 11" STREET AT THE CEDAR STREET CURVE.
   – RE-OPEN THE SOUTH LEGS OF YORK STREET, LAFAYETTE STREET, AND CEDAR STREET TO RIGHT-IN/RIGHT OUT MOVEMENTS AT THEIR INTERSECTIONS WITH THE RECONSTRUCTED EASTBOUND LANE OF 11" STREET

2. PHASE 2 CONSTRUCT MAIN 2 ALONG 11" STREET BETWEEN EAST PROJECT LIMIT AND AMTRAK

A. CLOSE THE 11TH ST. STATION.
B. SHUT DOWN THE NORTH LEGS OF STREETS INTERSECTING 11" STREET THAT ARE PROPOSED FOR PERMANENT CLOSURE.
C. PERMANENTLY CLOSE 11" STREET TO WESTBOUND TRAFFIC; MAINTAIN 11" STREET EASTBOUND TRAFFIC.
D. CONSTRUCT HIGH LEVEL PLATFORM SYSTEM FOR TRACK 2.
E. CONSTRUCT NEW MAIN 2 ALONG 11" STREET BETWEEN THE EASTERN PROJECT LIMIT (JUST WEST OF MICHIGAN BLVD. NEAR MP 33.4) TO JUST EAST OF AMTRAK (BETWEEN TENNESSEE STREET AND KENTUCKY STREET NEAR MP 34.5).
   – CONSTRUCT NEW SIGNAL SYSTEM FOR THIS SECTION OF NEW MAIN 2.
   – CONSTRUCT NEW OCS SYSTEM FOR THIS SECTION OF NEW MAIN 2.
      ▪ THIS WILL INCLUDE PERMANENT SUPPORTING POLES OUTSIDE OF THE NEW 11" STREET STATION LIMITS
      ▪ THIS WILL INCLUDE TEMPORARY SUPPORTING POLES WITHIN STATION LIMITS WHERE PERMANENT STEEL FRAMES SPANNING BOTH TRACKS AND PLATFORMS WILL NEED TO BE LATER CONSTRUCTED.
   – FOR STREETS INTERSECTING 11" STREET AND NEW MAIN 2 THAT ARE PROPOSED TO REMAIN OPEN
      ▪ INSTALL NEW GRADE CROSSING SURFACES
      ▪ PLACE CONDUIT UNDER NEW MAIN 2 TRACK FOR CROSSING WARNING DEVICES
      ▪ INSTALL GRADE CROSSING WARNING DEVICES ON NORTH LEGS OF INTERSECTIONS
      ▪ TRAINS WILL CONTINUE TO OPERATE WITHOUT GRADE CROSSING WARNING DEVICE UNTIL BOTH TRACKS ARE PLACED INTO SERVICE
      ▪ CONSTRUCT TRACK AND GRADE CROSSING SURFACES ACROSS THESE STREETS IN A STAGED MANNER SUCH THAT SOME STREETS WILL ALWAYS BE OPEN TO 11" STREET.
F. BEGIN A SHORT DURATION TRACK OUTAGE TO CUT OVER RAIL TRAFFIC FROM THE EXISTING TRACK TO NEW MAIN 2 BETWEEN THE EAST PROJECT LIMIT AND AMTRAK
   – AT THE EAST END OF THIS NEWLY CONSTRUCTED SECTION OF MAIN 2, INSTALL A PERMANENT #20 TURNOUT BETWEEN THE EXISTING TRACK AND NEW MAIN 2 MP 33.4
   – AT THE WEST END OF THIS NEWLY CONSTRUCTED SECTION OF MAIN 2, PERFORM A TEMPORARY CUTOVER BETWEEN IT AND THE EXISTING TRACK WEST OF TENNESSEE STREET
   – *WE WILL STILL NEED TO WORK THROUGH AND FEASIBILITY AND DETAILS FOR TRANSITIONING THE NEW OCS SYSTEM FOR THIS SECTION OF NEW MAIN 2 TO THE EXISTING TRACK AND ITS TROLLEY LINE TO THE WEST.*
G. TRAIN OPERATION WILL BE MAINTAINED USING THE NEW MAIN 2 FROM MP 33.4 TO NEAR TENNESSEE ST. THIS WILL CLEAR THE WAY FOR THE RECONSTRUCTION OF NEW MAIN 1 THROUGH 11" ST.
H. PLACE THE NEWLY COMPLETED SECTION OF MAIN 2 ALONG 11" STREET INTO SERVICE WITH THE SERVICE ACROSS AMTRAK AND ON 10" STREET CONTINUING TO BE ON THE EXISTING TRACK.
I. CONCURRENT WITH THIS PHASE, CONSTRUCTION OF THE NEW PARKING GARAGE AND STATION WITHIN IT CAN BEGIN.
J. IN A STAGED MANNER, CLOSE THEN RE-OPEN SECTIONS OF EASTBOUND 11" STREET, TO PROGRESSIVELY PERFORM THE FOLLOWING WORK ALONG 11" STREET:
   – REMOVE THE EXISTING TRACK
   – CONSTRUCT PUBLIC UTILITY RELOCATIONS WITHIN
   – CONSTRUCT NEW PROTECTIVE CONCRETE BARRIER BETWEEN EASTBOUND 11" STREET AND MAIN 1.
   – FOR THE SECTION OF MAIN 2 WITHIN THE LIMITS OF THE NEW 11" STREET STATION, CONSTRUCT THE NEW CENTER-BOUND HIGH-LEVEL PLATFORM
   – CONSTRUCT NEW MAIN 1
   – INSTALL CATENARY SUPPORTS ON CONCRETE BARRIER
   – CONSTRUCT NEW EASTBOUND 11" STREET
   – RECONSTRUCT THE SOUTH LEGS OF THOSE STREETS INTERSECTING 11" STREET AND ARE TO REMAIN IN SERVICE AFTER THE PROJECT.
      ▪ CONSTRUCT NEW PAVEMENT FOR THESE SIDE STREETS
      ▪ INSTALL TRAFFIC SIGNALS, WHERE APPLICABLE, FOR THESE STREETS
      ▪ CONSTRUCT NEW MAIN 1 CROSSING SURFACES FOR THOSE STREETS THAT WILL CROSS THE TRACKS.
      ▪ INSTALL GRADE CROSSING WARNING DEVICES FOR THOSE STREETS THAT WILL CROSS THE TRACKS.
K. COMPLETE CONSTRUCTION OF MAINS 1 AND 2 OUTBOARD OF SOUTH SIDE OF 10TH STREET EAST OF AMTRAK, INCLUDING OCS AND SIGNALS.
   – 10" STREET WILL REMAIN IN SERVICE DURING THIS STEP.
   – THE SOUTH LEG OF WILLARD AVENUE WILL NEED TO BE TEMPORARILY CLOSED WHILE CONSTRUCTING THE TWO TRACKS AND CROSSING SURFACES ACROSS IT.
L. CONCURRENT WITH THE BEGINNING OF YEAR 1 CONSTRUCTION ALONG 11" STREET IN STEP A, BEGIN CONSTRUCTION OF NEW MAINS 1 AND 2 ALONG THE SOUTH SIDE OF 10" STREET EAST OF AMTRAK.
M. CONCURRENT WITH THE BEGINNING OF YEAR 1 PHASE 1 CONSTRUCTION ALONG 11" STREET, BEGIN THE PARTIAL DEMOLITION AND RETROFIT OF THE ALPHA STORAGE BUILDING JUST WEST OF THE AMTRAK TRACKS ON THE SOUTH SIDE OF 10" STREET. REMOVAL OF A PORTION OF THAT FACILITY WILL BE REQUIRED TO ACCOMMODATE NEW MAINS 1 AND 2 ON THE SOUTH SIDE OF 10" STREET.
N. AMTRAK TO COMPLETE INSTALLATION OF BOTH DIAMONDS BEFORE BEGINNING OF YEAR 2 CONSTRUCTION. THE DIAMONDS WILL BE ADVANCEPROCURED FOR AMTRAK.

3. PHASE 3

A. PREPARE ROW FROM SHERIDAN TO CHICAGO (INCLUDES ALL DEMO OF PROPERTIES)
B. CONSTRUCT REMAINING SHORT SECTIONS OF TRACK FOR MAIN 1 AND 2 ON BOTH SIDES OF THE AMTRAK-INSTALLED DIAMONDS
C. SIGNALS WILL BE ACTIVATED ON THE AMTRAK MOVEMENT BUT WILL NOT THE ACTIVE ON THE NICTD MOVEMENTS ON MAINS 1 AND 2.
D. A CUT OVER ON EAST END TO THE EXISTING 1 AND 2 MAIN WEST OF TENNESSEE ST AND A CUT OVER THE EXISTING MAIN AND PASSING SIDING WEST OF SHERIDAN AVE. AT MP 35.3 WILL OCCUR DURING A PLANNED OUTAGE.
E. THE PROPOSED MAIN 2 WILL TIE INTO THE EXISTING MAIN TRACK AND THE PROPOSED 1 MAIN WILL TIE INTO THE PASSING SIDING.
F. THE CP POWERS EAST TURNOUT AT MP 35.2 WILL BE REMOVED DURING THIS OPERATION.
G. THE AMTRAK DIAMONDS WILL BE MADE FULLY OPERATIONAL FOR AMTRAK AND NICTD DURING THIS CUT OVER.

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

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DOUBLE TRACK-NWI

CONSTRUCTION PHASING NOTES- MICHIGAN CITY

FILENAME DT_DWG_PHA-007_R00_20200316.dgn
SCALE AS NOTED
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CONSTRUCTION STAGING BAILLY SEGMENT

1. PHASE 1- NORTH BAILLY CUT-OVER

A. BEGIN CONSTRUCTION OF THE NEW BRIDGES OVER THE NS (MP47.4) AND ARCELOR MITTAL ENTRANCE ROAD (MP 47.3).
   I) CONSTRUCT THE NEW RETAINING WALL JUST NORTH OF THE NEW BRIDGE OVER THE NS, ON THE SOUTH SIDE OF THE TRACKS.
B. CP 43.7 PUT IN-SERVICE
   I) CONSTRUCT TRACK AT CP 43.7 WEST ACROSS WAVERLY ROAD.
   II) INSTALL PERMANENT CROSSOVER AT CP 43.7.
C. CONSTRUCT NORTH BAILEY EXTENSION FROM STA. 2385+38 STA. 2326+00 (APPROX. 1+ MILE OF NEW TRACK).
   I) INSTALL NEW T/O FROM NEW NORTH BAILLY TO EXISTING MAIN.
D. NORTH BAILLY IN-SERVICE
   I) CUT-OVER TEMPORARY CONNECTION FROM MAIN TRACK 2 TO NORTH BAILEY.
   II) NO CATENARY REQUIRED B/C NO CATENARY ON FREIGHT LINE.

2. PHASE 2- MAIN TRACK 2 CUT-OVER

A. CONSTRUCT NEW TRACKS 1 AND 2
   I) CONSTRUCT MT 1 TO APPROX. MP 47.0 (JUST EAST OF BRIDGES).
   II) INSTALL NEW X/O AT MP 46.7
   III) ARCELORMITTAL/NIPSCO - TWO NEW AT-GRADE CROSSINGS INSTALLED NEW GATES REQUIRED
   IV) ROADWAY PAVING FROM HIGHWAY 12/ARCELOR-MITTAL/NIPSCO ACCESS NEEDS TO BE KEPT IN SERVICE (CLOSE ONE SIDE OF ISLAND AT A TIME)
   V) MINERAL SPRINGS ROAD NEW GATES REQUIRED NEW AT-GRADE CROSSING
   VI) WAVERLY ROAD NEW GATES REQUIRED NEW AT-GRADE CROSSING
   VII) CATENARY STRUCTURES (MAST ARMS) INSTALLED OVER MT 2 FROM STA. 2448+54 STA. 2326+00, AND STA. 2520+00 2326+00 ON MT 1

B. CUT-OVER (CUT-AND-SLIDE) EXISTING MAIN TO NEW MT 2 (EAST END)
   I) EXISTING MAIN WILL BE CONNECTED TO MT 2
   II) INSTALL NEW X/O EAST OF MINERAL SPRINGS RD
   III) INSTALL X/O FROM EXISTING MAIN TO MT 2
   IV) INSTALL X/O FROM EXISTING MAIN TO NORTH BAILLEY
   V) REMOVE EXISTING MAIN AT STA. 2326+00

C. CUT-OVER (CUT-AND-SLIDE) EXISTING MAIN TO NEW MT 2 (WEST END)
   I) REMOVE EXISTING MAIN AT STA. 2448+54
   II) MAIN TRACK 2 TEMP. ALIGNMENT IN-SERVICE (MT 2 CONNECTING TO EXISTING MAIN)

3. PHASE 3- MAIN TRACK 1 CUT-OVER

A. <u>BRIDGES MUST BE IN-SERVICE FOR MT 1 COMPLETION.</u>
B. AT STA. 2508+69 (WEST END) CUT-AND-SLIDE EXISTING MAIN TO MT 2
   I) CUT-OVER MT 1 STA. 2520+91

C. AT STA. 2326+00 (EAST END) CUTOVER MT 1
   I) MAIN TRACK 1 IN-SERVICE
D. MAIN TRACK 2 CUT-AND-SLIDE
   I) INSTALL NEW T/O CONNECTING NORTH BAILLY TO MT 2
   II) MAIN TRACK 2 IN-SERVICE

CONSTRUCTION STAGING MILLER SEGMENT

1. PHASE 1 CUTOVER SERVICE TO TEMP. MAIN 1

A. BEGIN CONSTRUCTION OF THE NEW BRIDGES OVER THE CSX (THRU-PLATE GIRDER @ APPROX. 150' STRUCTURE) AND HOBART ROAD (THRU-PLATE GIRDER @ APPROX. 80' STRUCTURE).
B. QTY: 2 NEW RETAINING WALL(S) (TYPE TBD) BETWEEN PROPOSED (NEW) MAIN 1 AND THE PROPOSED SET-OUT TRACKS WILL NEED TO BE CONSTRUCTED (UTILITIES NEED TO BE RELOCATED, ABANDONED GAS LINE NEEDS TO BE FIELD VERIFIED).
   I) INSTALL EMBANKMENT FOR THE NEW MAIN 1 BETWEEN THE NEW BRIDGE OVER THE CSX AND THE SET-OUT TRACK AREA. BUILD EMBANKMENT WHILE BUILDING RETAINING WALL.
   II) CATENARY STRUCTURE SUPPORT ALONG PROPOSED MT 1 & MT 2 TO BE BUILT ALONG PROPOSED ALIGNMENT (FROM CSX BRIDGE TO MP 55.8).
C. INSTALL CROSSOVER AT MP 55.8, CONNECTING MT 2 TO MT 1.
   I) FROM MP 55.04 (LAKE ST) TO MP 55.8 (STA. 2926+63) CONSTRUCT CSX INTERCHANGE LEAD
   II) FROM MP 54.9 (STA. 2897+00) TO JUST EAST OF APPROX. MP 55.8 (STA. 2926+63) CONSTRUCT PROPOSED MT 2/GAUNTLET TRACKS
   III) NEW AT-GROSSING AT LAKE ST FOR MT 1 & MT 2 (CSX INTERCHANGE TOO CLOSE TO OLD MAIN, WILL NEED TO COMPLETED PHASE 2)
   IV) BUILD STATION PLATFORM 2
   V) FROM MP 54.9 (STA. 2897+00) TO MP 55.8 (STA. 2897+50) CONSTRUCT PROPOSED MT 1/GAUNTLET TRACKS
   VI) BUILD STATION PLATFORM 1
   VII) CATENARY INSTALLED AND ACTIVATED FOR MT 1 (AND INSTALLED FOR MT 2?)
D. CUT AND SLIDE OLD MAIN TO NEW MT 1 AT MP 54.9. OLD MAIN OOS FOR PASSENGER SERVICE.
E. NEW MT 1 IN OPERATION WITH TEMPORARY ALIGNMENT.
   I) PASSENGER SERVICE OFF OF PLATFORM 1.
   II) FREIGHT STILL OPERATIONAL OFF OF CURRENT TRACK ALIGNMENT.
   III) EXISTING NICTD PARKING TO SOUTH IN USE
   IV) MT 1 IN-SERVICE ACROSS EXISTING CSX AND HOBART BRIDGE(S)

2. PHASE 2 CUTOVER SERVICE TO PERMANENT MAIN 2 AND CSX INTERCHANGE LEAD

F. CUT-OVER SERVICE TO MT 2
   I) CONSTRUCT/CONNECT REMAINING SECTIONS OF MT 2 FROM STA 2926+63 TO STA 2900+00
   II) CUT AND SLIDE FROM PHASE 1 MT 1/2 CONNECTION, BACK TO NEW MT 2.
   III) MT 2 IN-SERVICE
   IV) TAKE NEW MT1 OOS
G. REMOVE OLD MAIN BACK FROM EMBANKMENT TO CSX INTERCHANGE LEAD
H. GRADE-CROSSING FOR THE CSX INTERCHANGE LEAD ACROSS LAKE STREET AND DEMO ACROSS LAKE STREET
I. CUT-OVER SERVICE TO CSX INTERCHANGE LEAD
   I) CONSTRUCT CSX INTERCHANGE TRACK FROM EAST OF LAKE ST TO CONNECTION (EXISTING CSX LEAD ~ 1500' OF TRACK).
   II) CSX INTERCHANGE LEAD IN-SERVICE

3. PHASE 3 CUTOVER SERVICE TO PERMANENT MAIN 1

J. FINAL CUT-OVER SERVICE TO MT 1
   I) NEW CSX AND HOBART BRIDGES NEED TO BE COMPLETE AT THIS POINT. NICTD CAN RUN ON MT 1 WHILE BRIDGES ARE CONSTRUCTED. HOWEVER, BRIDGES TO BE FINISHED AT THIS POINT IN ORDER TO PUT MT 2 IN-SERVICE.
   II) CONNECT MT 1 TO NEW TRACK AT BRIDGE APPROACHES
   III) CUTTING OVER NEW TRACK (ACROSS NEW BRIDGES) TO CONNECT MT 1.
   IV) MT 1 IN FINAL ALIGNMENT.

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CONSTRUCTION PHASING NOTES- BAILLY AND MILLER STATION

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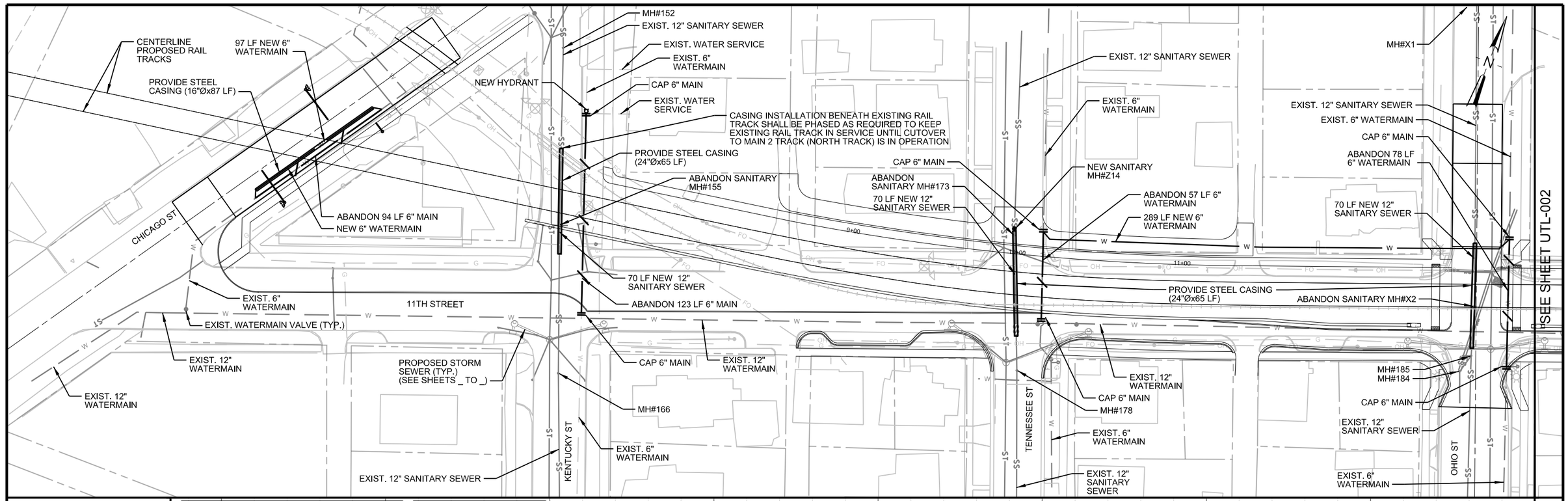

SANITARY SEWER MANHOLE TABLE		
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E INV=607.76		
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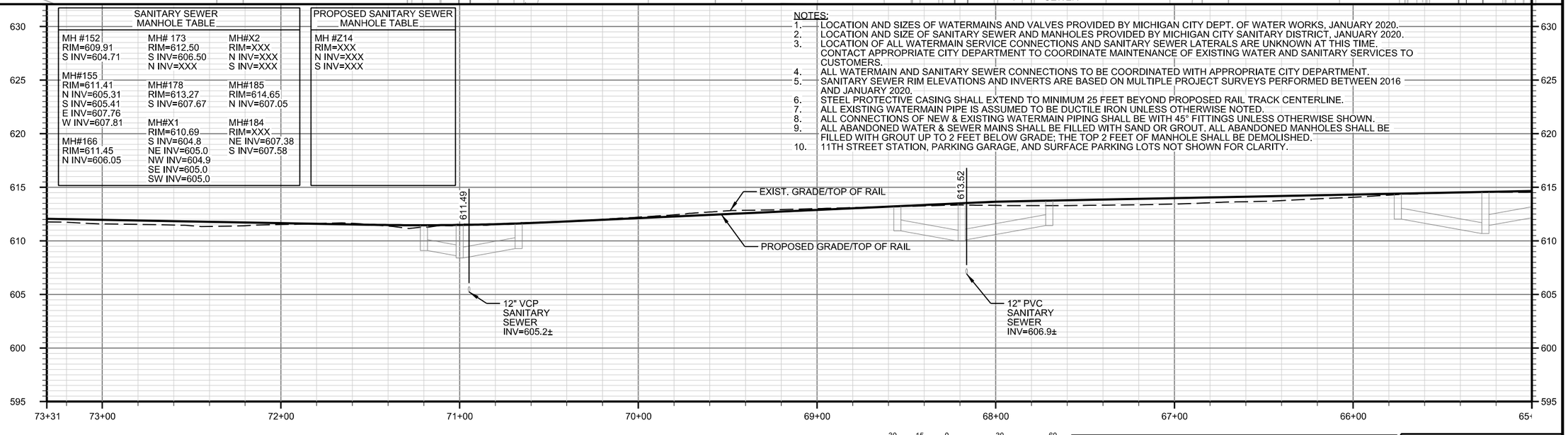
	SE INV=605.0	
	SW INV=605.0	

PROPOSED SANITARY SEWER MANHOLE TABLE
MH #Z14
RIM=XXX
N INV=XXX
S INV=XXX

NOTES:
1. LOCATION AND SIZES OF WATERMAINS AND VALVES PROVIDED BY MICHIGAN CITY DEPT. OF WATER WORKS, JANUARY 2020.
2. LOCATION AND SIZE OF SANITARY SEWER AND MANHOLES PROVIDED BY MICHIGAN CITY SANITARY DISTRICT, JANUARY 2020.
3. LOCATION OF ALL WATERMAIN SERVICE CONNECTIONS AND SANITARY SEWER LATERALS ARE UNKNOWN AT THIS TIME. CONTACT APPROPRIATE CITY DEPARTMENT TO COORDINATE MAINTENANCE OF EXISTING WATER AND SANITARY SERVICES TO CUSTOMERS.
4. ALL WATERMAIN AND SANITARY SEWER CONNECTIONS TO BE COORDINATED WITH APPROPRIATE CITY DEPARTMENT.
5. SANITARY SEWER RIM ELEVATIONS AND INVERTS ARE BASED ON MULTIPLE PROJECT SURVEYS PERFORMED BETWEEN 2016 AND JANUARY 2020.
6. STEEL PROTECTIVE CASING SHALL EXTEND TO MINIMUM 25 FEET BEYOND PROPOSED RAIL TRACK CENTERLINE.
7. ALL EXISTING WATERMAIN PIPE IS ASSUMED TO BE DUCTILE IRON UNLESS OTHERWISE NOTED.
8. ALL CONNECTIONS OF NEW & EXISTING WATERMAIN PIPING SHALL BE WITH 45° FITTINGS UNLESS OTHERWISE SHOWN.
9. ALL ABANDONED WATER & SEWER MAINS SHALL BE FILLED WITH SAND OR GROUT. ALL ABANDONED MANHOLES SHALL BE FILLED WITH GROUT UP TO 2 FEET BELOW GRADE; THE TOP 2 FEET OF MANHOLE SHALL BE DEMOLISHED.
10. 11TH STREET STATION, PARKING GARAGE, AND SURFACE PARKING LOTS NOT SHOWN FOR CLARITY.



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PATRICK ENGINEERING

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NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK NWI

PUBLIC UTILITY RELOCATION PLAN STA. 73+31 TO STA. 65+00

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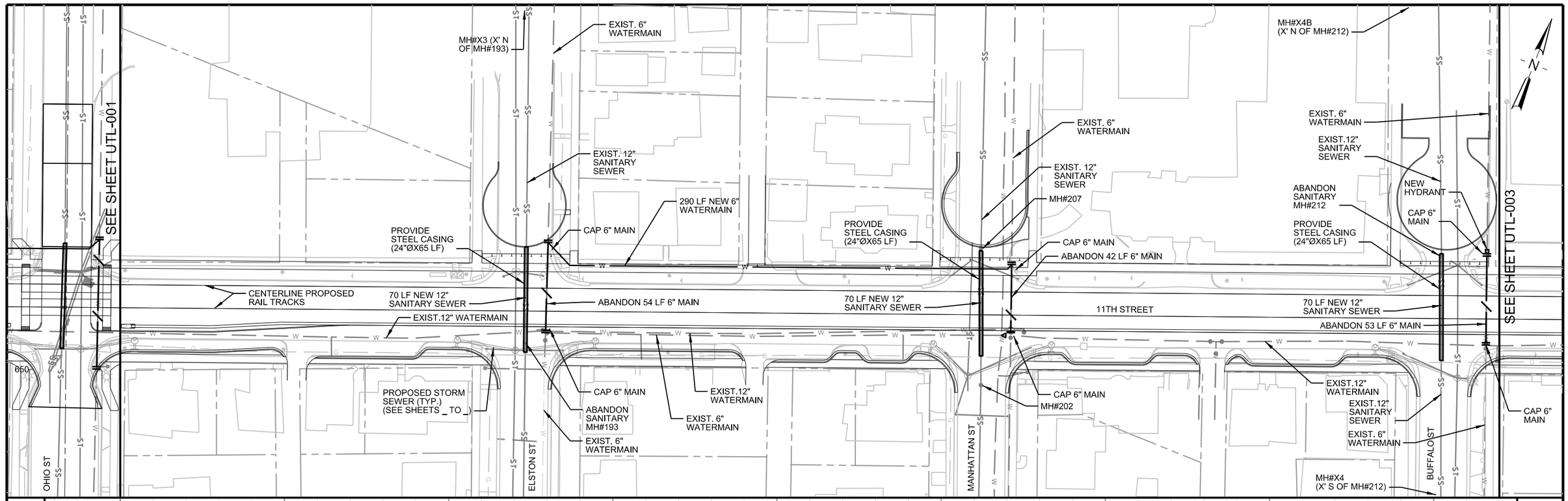

SANITARY SEWER MANHOLE TABLE	

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MH#207 RIM=616.59 S INV=607.99	

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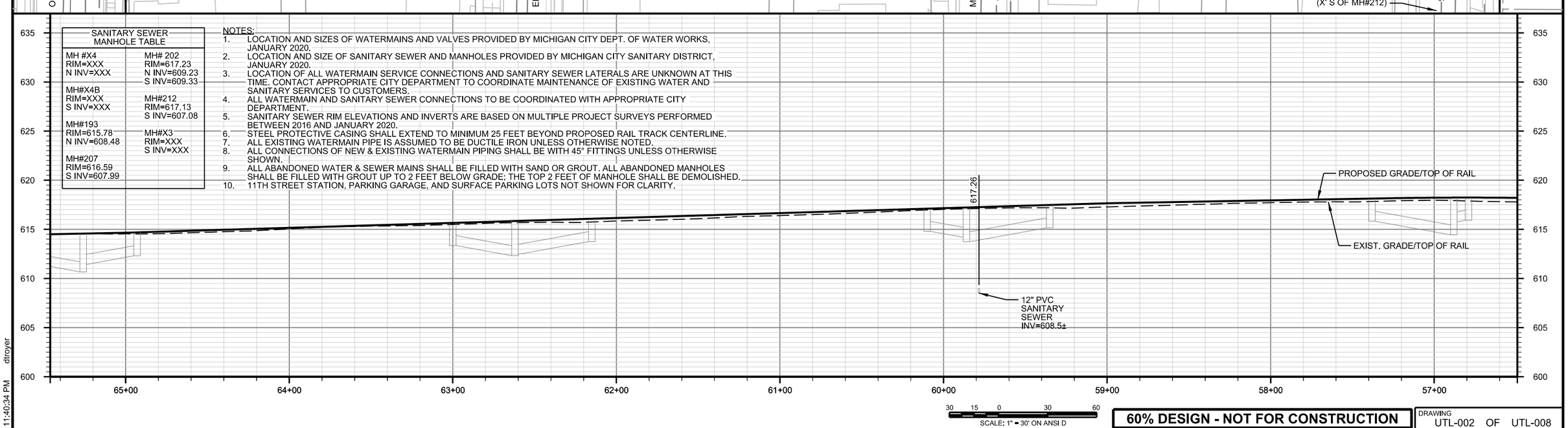
10. 11TH STREET STATION, PARKING GARAGE, AND SURFACE PARKING LOTS NOT SHOWN FOR CLARITY.



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SCALE: 1" = 30' ON ANSI D

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING UTL-002 OF UTL-008

PLOT DATE: 3/12/2020 11:40:34 PM dtroyer

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PATRICK ENGINEERING

ISSUE	DATE	DESCRIPTION
0	03/17/2020	60% DESIGN

NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

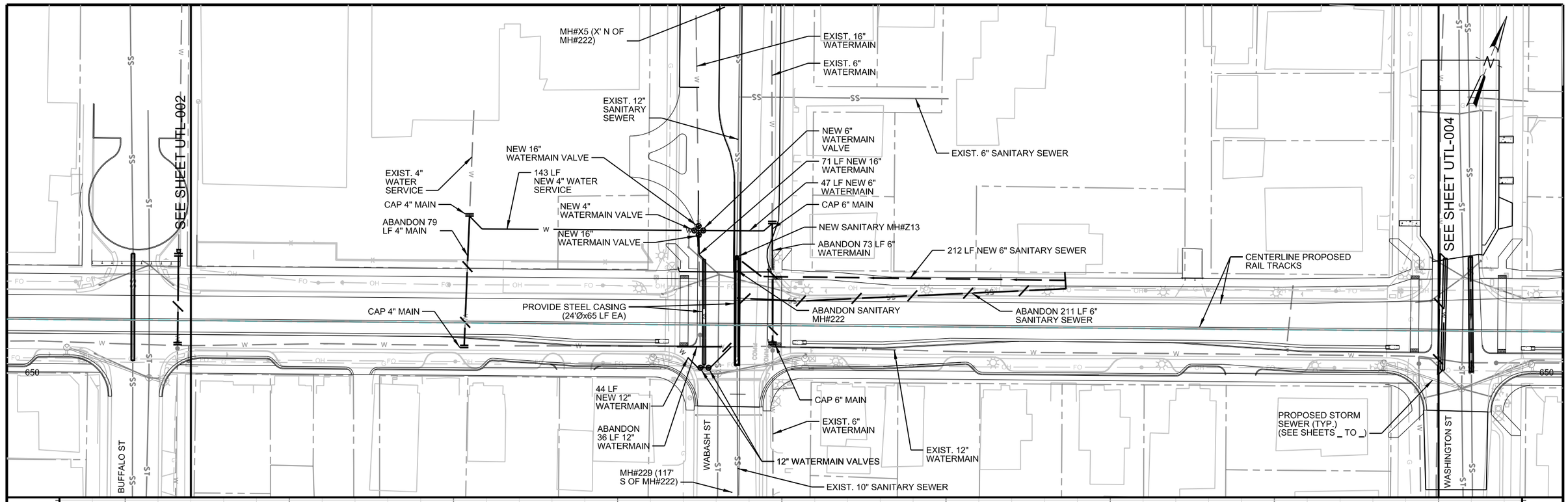
DESIGNED:	PEI-MM
DRAWN:	PEI-EB
CHECKED:	PEI-AFS
DATE:	

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK NWI

PUBLIC UTILITY RELOCATION PLAN STA. 65+00 TO STA. 57+40

FILENAME	DT_DWG_UTL-001-008.dgn
SCALE	AS NOTED

SHEET OF



SANITARY SEWER MANHOLE TABLE
MH #229 RIM=617.61 N INV=607.81
MH#X5 RIM=XXX S INV=XXX
MH#222 RIM=617.27 S INV=606.87

PROPOSED SANITARY SEWER MANHOLE TABLE

MH #Z13
RIM=XXX
N INV=XXX
S INV=XXX
SE INV=XXX

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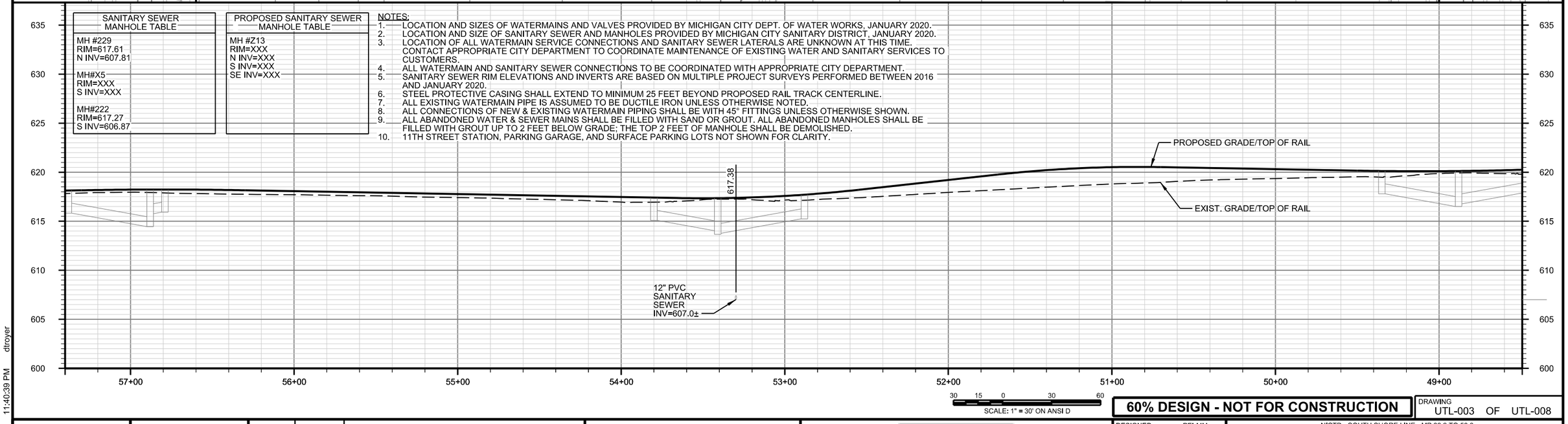

SCALE: 1" = 30' ON ANSI D

60% DESIGN - NOT FOR CONSTRUCTION

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PLOT DATE: 3/12/2020 11:40:39 PM dtroyer

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PATRICK ENGINEERING

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NICTD
NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

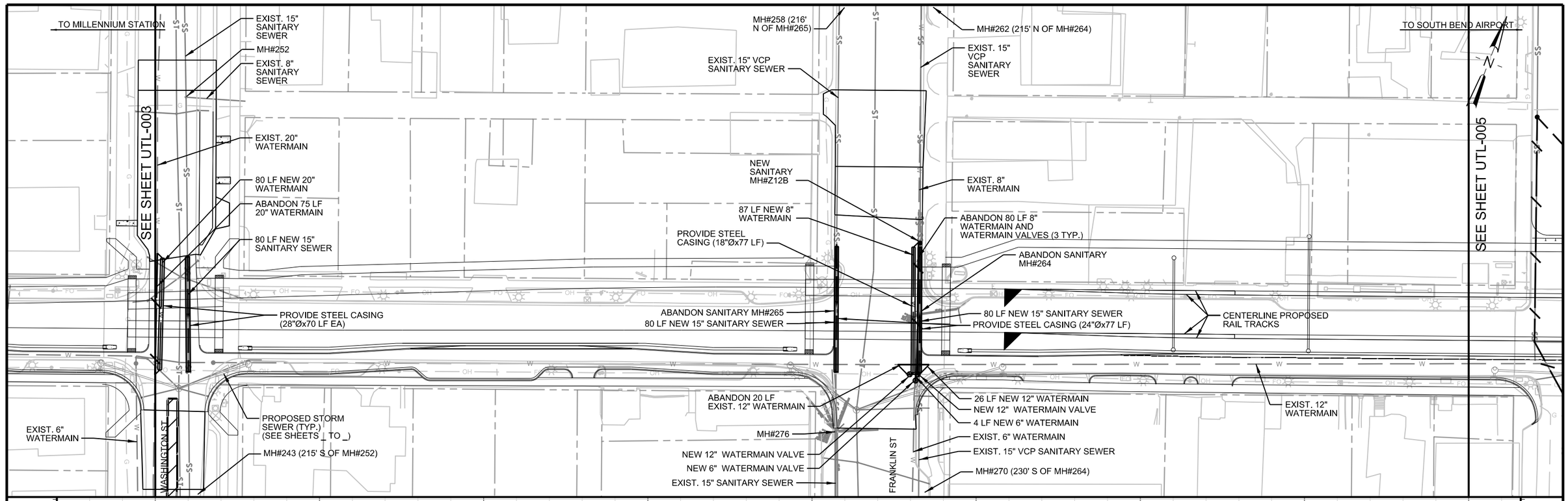
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	PEI-MM
DRAWN:	PEI-EB
CHECKED:	PEI-AFS
DATE:	

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK NWI

PUBLIC UTILITY RELOCATION PLAN STA. 57+40 TO STA. 48+00

FILENAME	DT_DWG_UTL-001-008.dgn	SHEET
SCALE	AS NOTED	OF



SANITARY SEWER MANHOLE TABLE	
MH #258	MH#264
RIM=619.28	RIM=621.96
S INV=611.28	N INV=XXX
	S INV=XXX
MH#265	
RIM=626.62	MH#270
N INV=611.82	RIM=623.47
S INV=612.02	N INV=612.37
MH#276	MH#252
RIM=621.38	RIM=618.00
N INV=XXX	S INV=610.20
MH# 262	MH#243
RIM=619.24	RIM=620.98
S INV=611.14	N INV=613.08

PROPOSED SANITARY SEWER MANHOLE TABLE
MH #Z12B
RIM=XXX
N INV=XXX
S INV=XXX

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60% DESIGN - NOT FOR CONSTRUCTION

DRAWING UTL-004 OF UTL-008

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PATRICK ENGINEERING

ISSUE	DATE	DESCRIPTION
0	03/17/2020	60% DESIGN

NICTD
NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

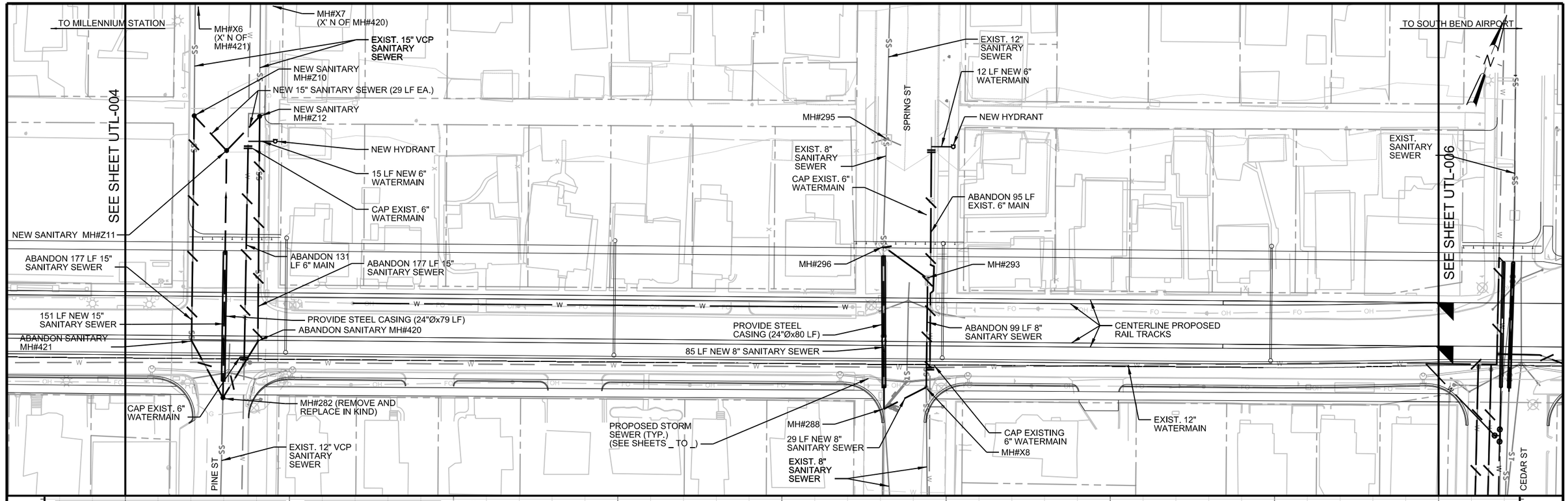
DESIGNED:	PEI-MM
DRAWN:	PEI-EB
CHECKED:	PEI-AFS
DATE:	

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK NWI

PUBLIC UTILITY RELOCATION PLAN STA. 48+00 TO STA. 41+00

FILENAME	DT_DWG_UTL-001-008.dgn
SCALE	AS NOTED
SHEET	OF

PLOT DATE: 3/12/2020 11:40:43 PM dtroyer



SANITARY SEWER MANHOLE TABLE		
MH #X6	MH#420	MH#293
RIM=XXX	RIM=625.31	RIM=622.99
S INV=XXX	N INV=614.96	NW INV=620.79
	W INV=618.59	S INV=622.39
MH#421	SW INV=618.59	
RIM=625.04	S INV=615.11	MH#X8
N INV=614.79		RIM=XXX
SE INV=61489	MH#295	N INV=XXX
E INV=618.59	RIM=625.18	S INV=XXX
S INV=616.04	S INV=615.28	
MH#282	MH#296	
RIM=625.91	RIM=627.47	
NW INV=614.21	N INV=616.87	
NE INV=619.26	S INV=622.07	
S INV=619.31	SE INV=620.27	
MH# X7	MH#288	
RIM=XXX	RIM=629.30	
S INV=XXX	N INV=623.00	

PROPOSED SANITARY SEWER MANHOLE TABLE
MH #Z10
RIM=ZZZ
N INV=ZZZ
SE INV=ZZZ
MH #Z11
RIM=ZZZ
NW INV=ZZZ
NE INV=ZZZ
S INV=ZZZ
MH #Z12
RIM=ZZ
N INV=ZZZ
SW INV=ZZZ

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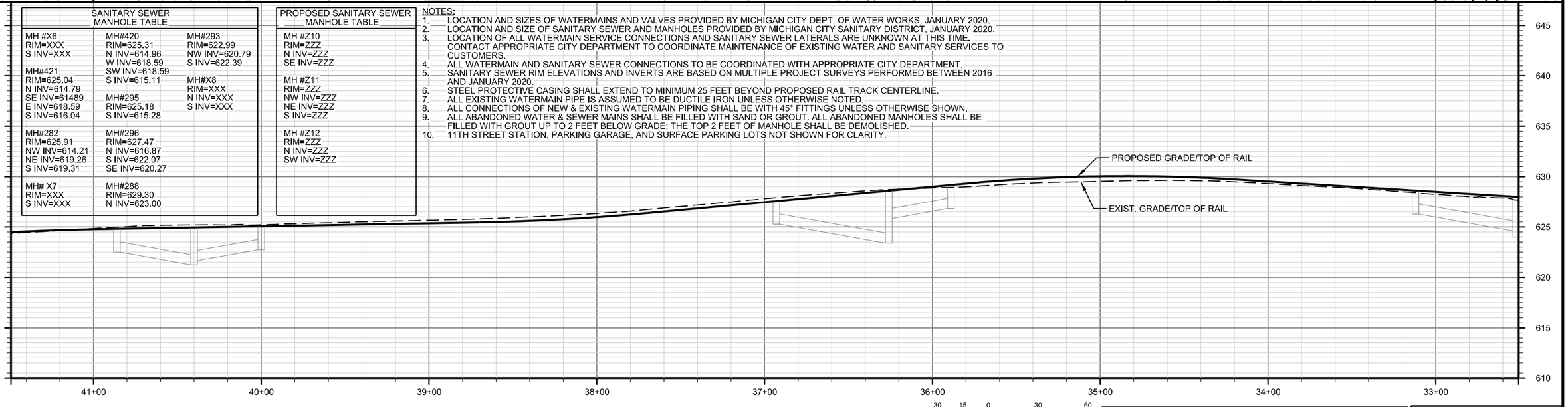

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING UTL-005 OF UTL-008

PLOT DATE: 3/12/2020 11:40:48 PM dtroyer

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PATRICK ENGINEERING

ISSUE	DATE	DESCRIPTION
0	03/17/2020	60% DESIGN

NICTD
NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

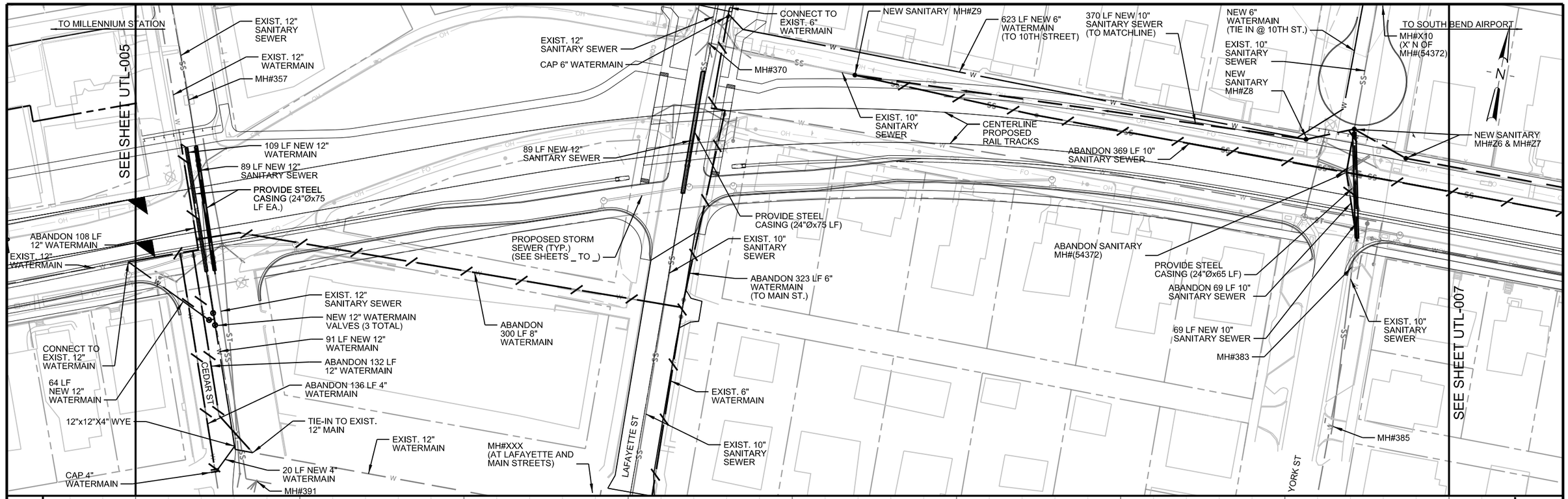
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	PEI-MM
DRAWN:	PEI-EB
CHECKED:	PEI-AFS
DATE:	

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK NWI

PUBLIC UTILITY RELOCATION PLAN STA. 41+00 TO STA. 33+00

FILENAME	DT_DWG_UTL-001-008.dgn
SCALE	AS NOTED
SHEET	OF



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PROPOSED SANITARY SEWER MANHOLE TABLE	
MH# Z6 RIM=ZZZ E INV=XXX W INV=ZZZ	MH# Z8 RIM=ZZZ E INV=XXX W INV=ZZZ
MH# Z7 RIM=ZZZ E INV=XXX W INV=ZZZ	MH#Z9 RIM=XXX E INV=XXX W INV=XXX

SANITARY SEWER MANHOLE TABLE	
MH #357 RIM=625.89 S INV=615.59	MH#X10 RIM=XXX S INV=XXX
MH#391 RIM=630.50 W INV=624.40 E INV=622.30 S INV=623.20	MH#(54372) RIM=627.16 N INV=XXX S INV=XXX
MH#370 RIM=621.12 N INV=615.92 E INV=615.97 S INV=616.12	MH#383 RIM=628.13 N INV=620.93 S INV=621.03 MH#385 RIM=631.89 N INV=622.54

30 15 0 30 60
SCALE: 1" = 30' ON ANSI D

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DRAWING UTL-006 OF UTL-008

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PATRICK ENGINEERING

ISSUE	DATE	DESCRIPTION
0	03/17/2020	60% DESIGN

NICTD
NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	PEI-MM
DRAWN:	PEI-EB
CHECKED:	PEI-AFS
DATE:	

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK NWI

PUBLIC UTILITY RELOCATION PLAN STA. 33+00 TO STA. 25+00

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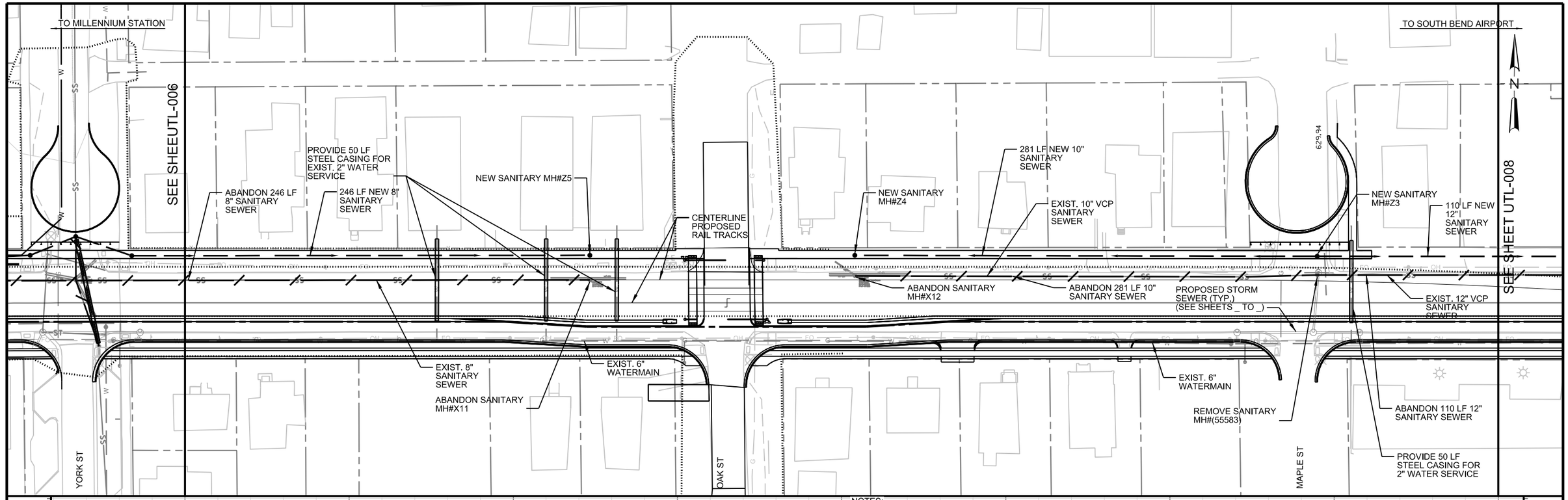
SCALE	AS NOTED	OF

PLOT DATE: 3/12/2020 11:40:53 PM dtroyer



SANITARY SEWER MANHOLE TABLE

MH #X11
RIM=XXX
W INV=XXX

MH #X12
RIM=XXX
E INV=XXX

MH#(55583) RIM=630.95 E INV=623.80 W INV=623.95

PROPOSED SANITARY SEWER MANHOLE TABLE
MH#Z5 RIM=ZZZ W INV=ZZZ
MH#Z4 RIM=ZZZ E INV=ZZZ
MH#Z3 RIM=ZZZ W INV=ZZZ E INV=ZZZ

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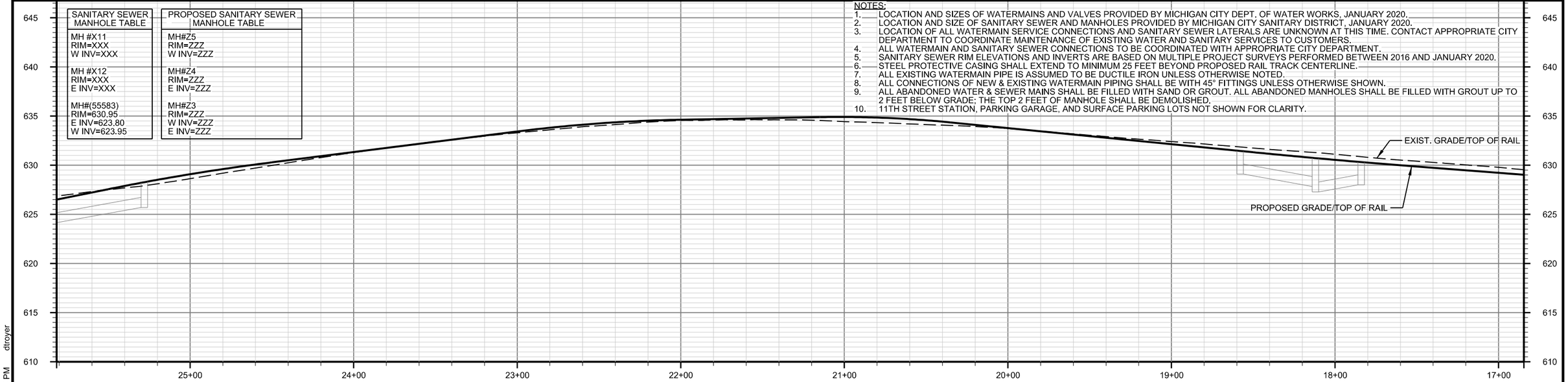

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SCALE: 1" = 30' ON ANSI D

60% DESIGN - NOT FOR CONSTRUCTION

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PLOT DATE: 3/12/2020 11:40:58 PM dtroyer

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PATRICK ENGINEERING

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NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

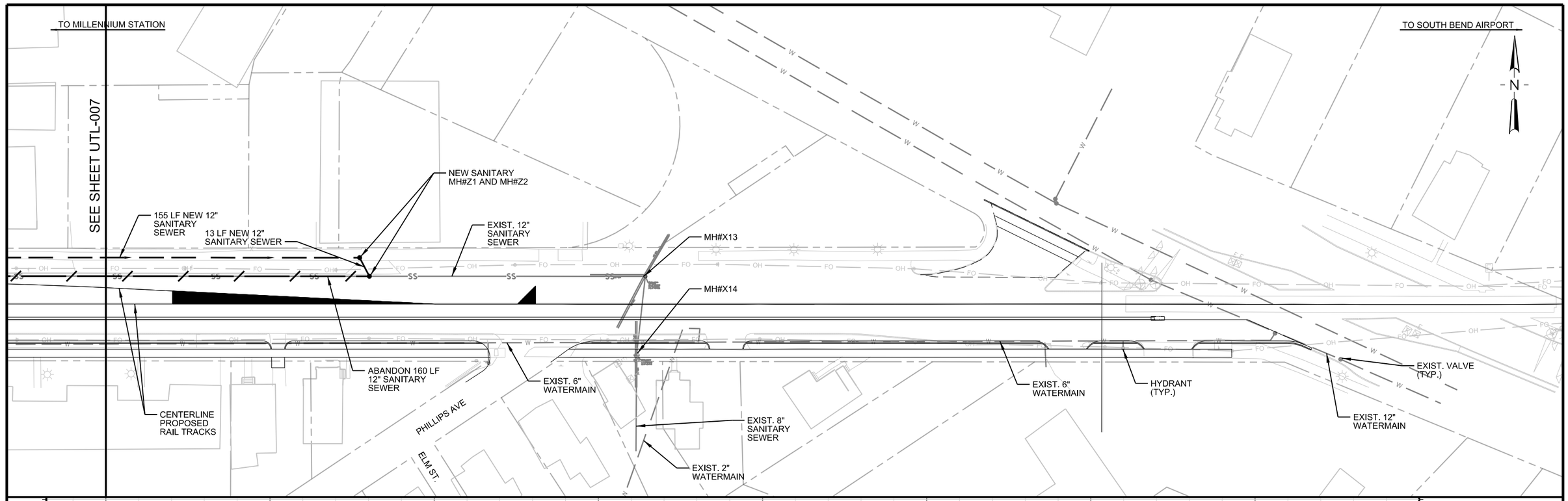
DESIGNED:	PEI-MM
DRAWN:	PEI-EB
CHECKED:	PEI-AFS
DATE:	

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK NWI

PUBLIC UTILITY RELOCATION PLAN STA. 25+00 TO STA. 17+00

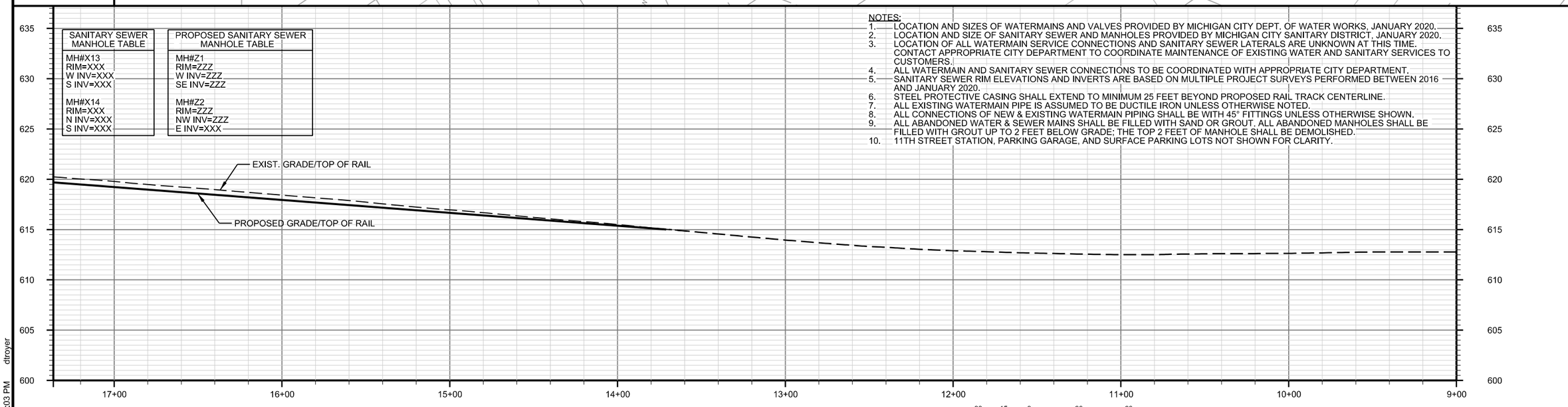
FILENAME	DT_DWG_UTL-001-008.dgn
SCALE	AS NOTED

SHEET OF



SANITARY SEWER MANHOLE TABLE
MH#X13
RIM=XXX
W INV=XXX
S INV=XXX
MH#X14
RIM=XXX
N INV=XXX
S INV=XXX

PROPOSED SANITARY SEWER MANHOLE TABLE
MH#Z1
RIM=ZZZ
W INV=ZZZ
SE INV=ZZZ
MH#Z2
RIM=ZZZ
NW INV=ZZZ
E INV=XXX



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30 15 0 30 60
SCALE: 1" = 30' ON ANSI D

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING UTL-008 OF UTL-008

PLOT DATE: 3/12/2020 11:41:03 PM dtroyer

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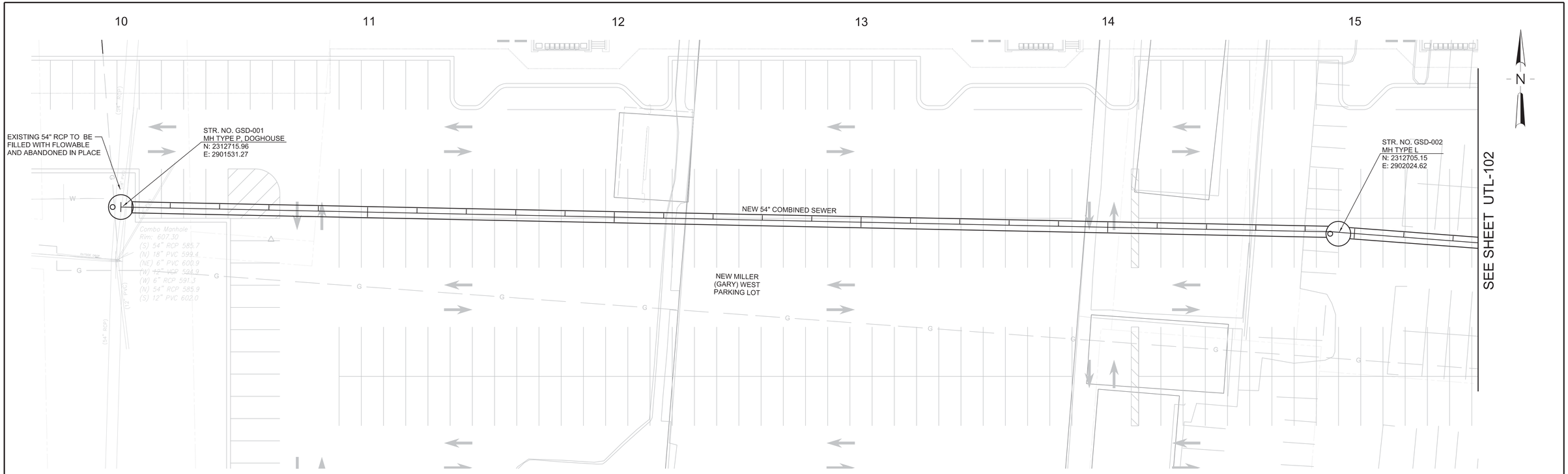
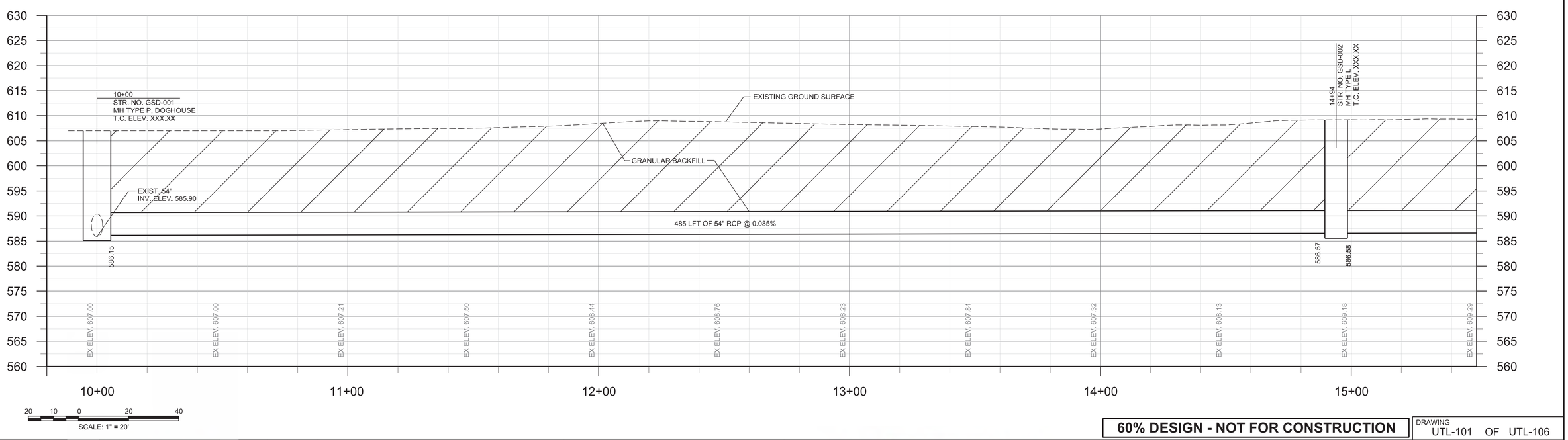
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK NWI

PUBLIC UTILITY RELOCATION PLAN STA. 17+00 TO STA. 9+00

FILENAME	DT_DWG_UTL-001-008.dgn
SCALE	AS NOTED

SHEET OF





60% DESIGN - NOT FOR CONSTRUCTION

DRAWING UTL-101 OF UTL-106

PLOT DATE: 3/14/2020 1:00:50 AM JMowery

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ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

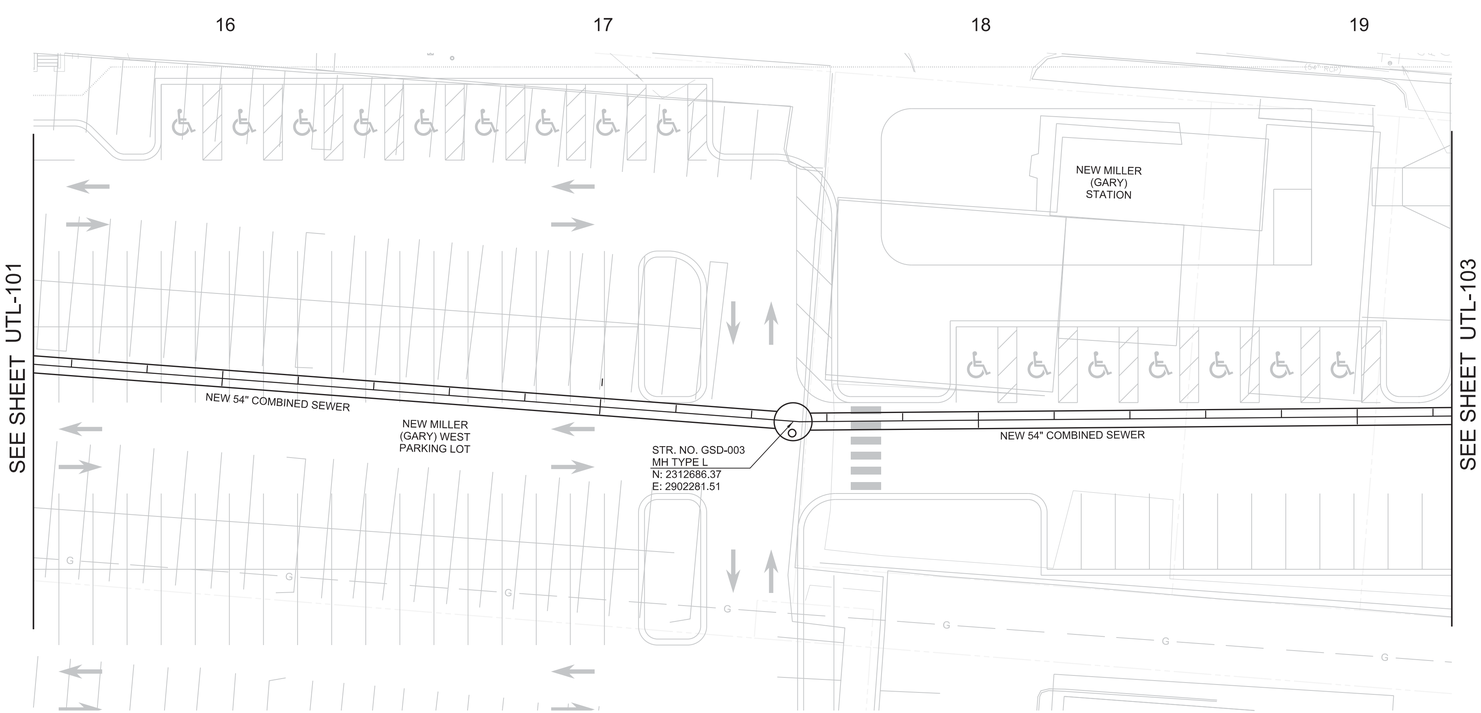
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

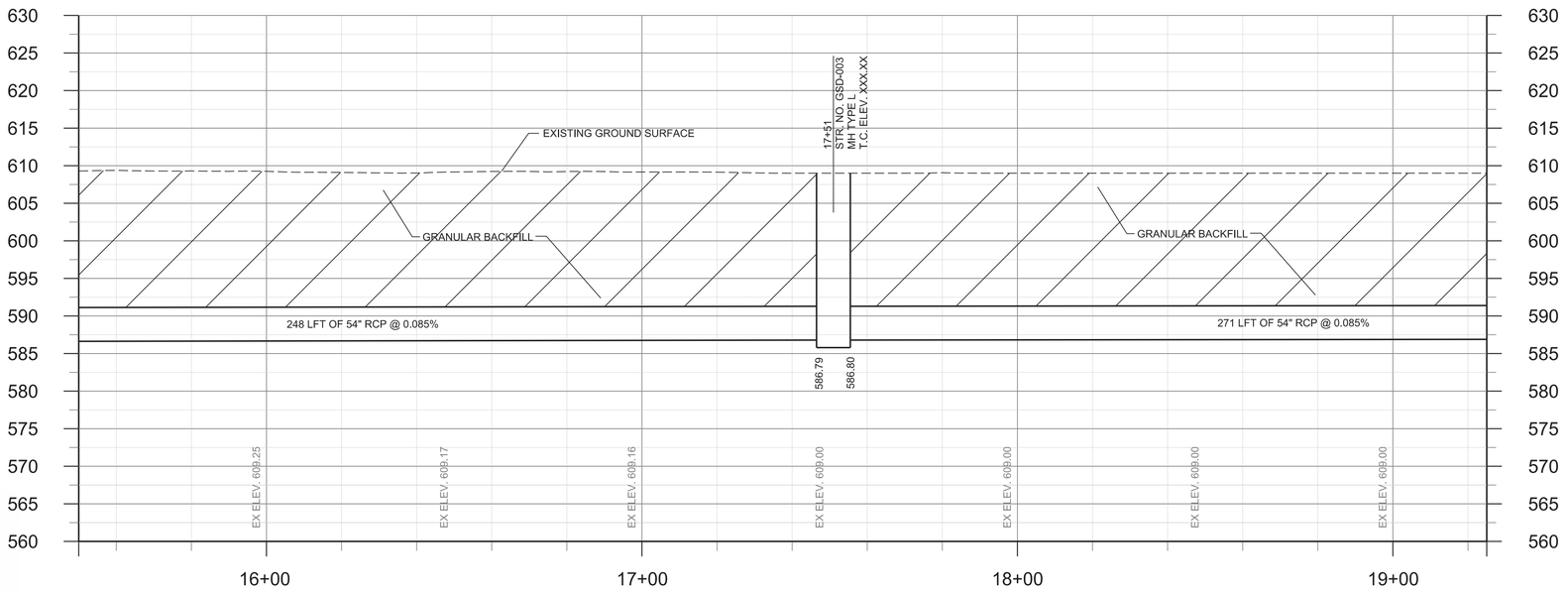
DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

MILLER (GARY)
PUBLIC UTILITY RELOCATION PLANS

FILENAME	DT_DWG_UTL-003.dgn	SHEET OF
SCALE	AS NOTED	





20 10 0 20 40
SCALE: 1" = 20'

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DRAWING UTL-102 OF UTL-106

PLOT DATE: 3/14/2020 1:00:51 AM JMowery

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Chesterton, Indiana 46304

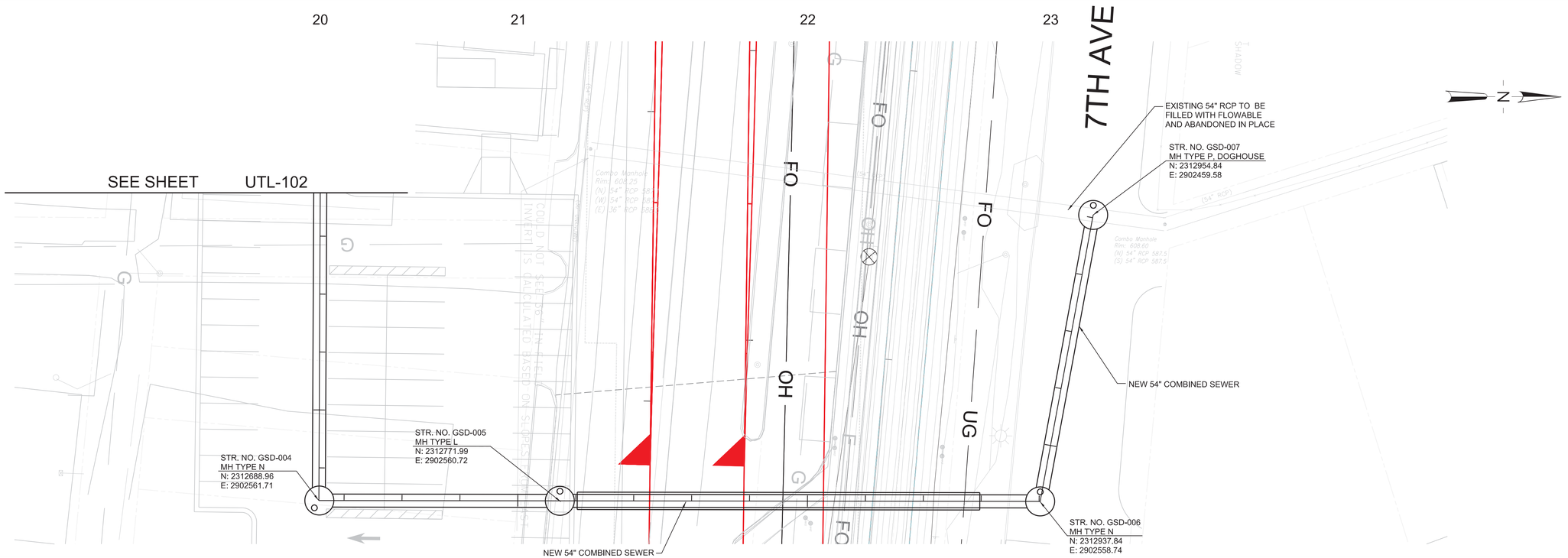
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

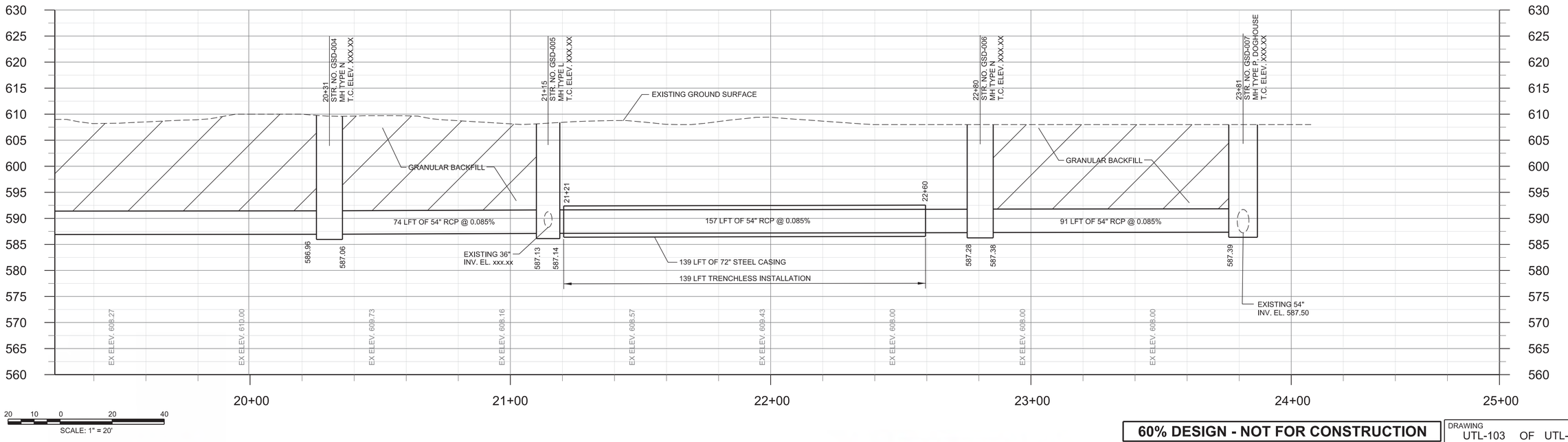
DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

PUBLIC UTILITY RELOCATION PLANS MILLER (GARY)

FILENAME	DT_DWG_UTL-003.dgn	SHEET
SCALE	AS NOTED	OF





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DRAWING UTL-103 OF UTL-106

PLOT DATE: 3/14/2020 1:00:52 AM JMowery

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Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

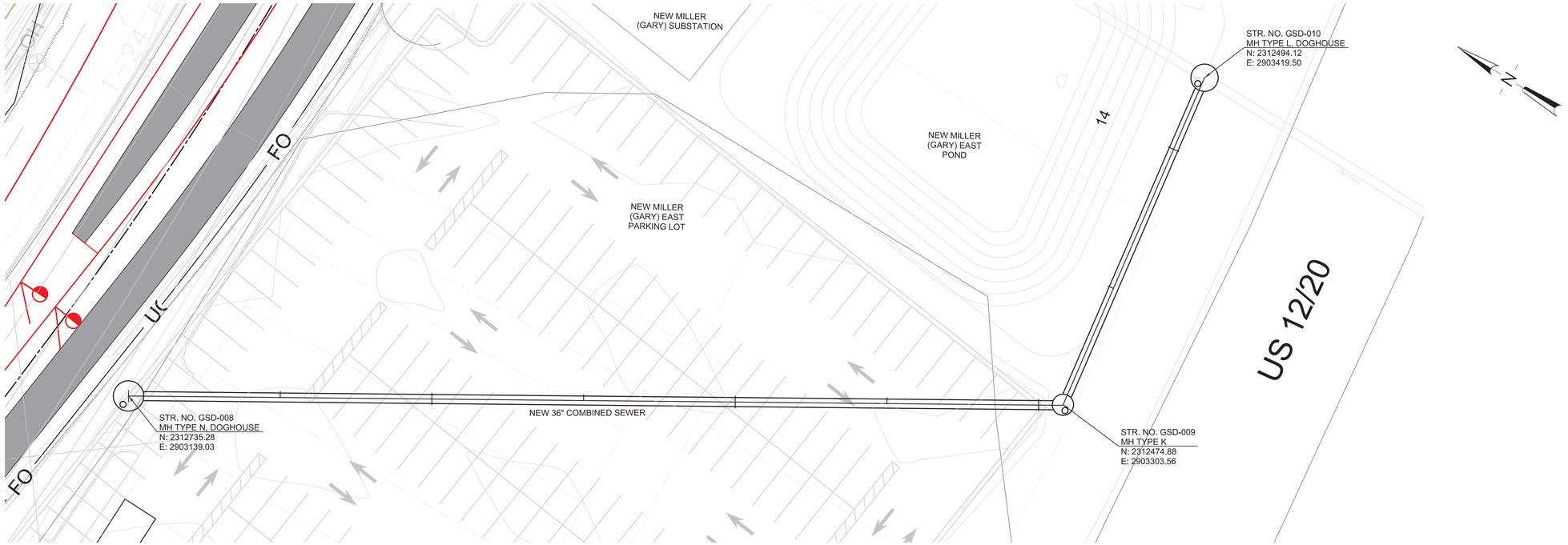
MICHIGAN CITY TO GARY, INDIANA

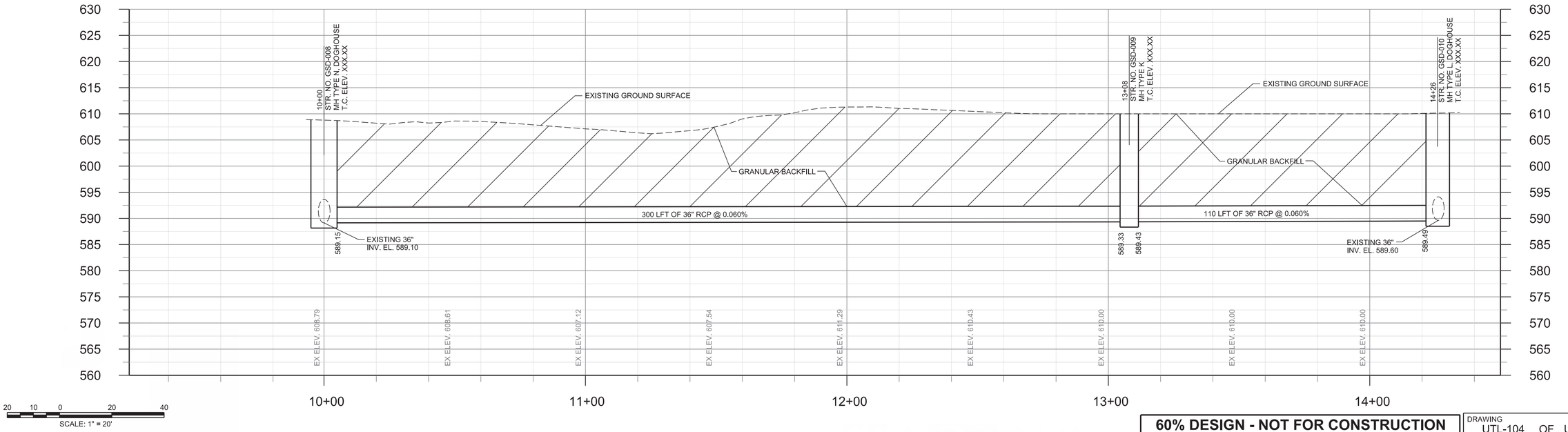
DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

MILLER (GARY)
PUBLIC UTILITY RELOCATION PLANS

FILENAME	DT_DWG_UTL-003.dgn	SHEET OF
SCALE	AS NOTED	





60% DESIGN - NOT FOR CONSTRUCTION

DRAWING UTL-104 OF UTL-106

PLOT DATE: 3/14/2020 1:00:54 AM JMowery

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ISSUE	DATE	DESCRIPTION
		EX ELEV. 608.71
0	03/16/2020	60% DESIGN

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33 East Highway 12
Chesterton, Indiana 46304

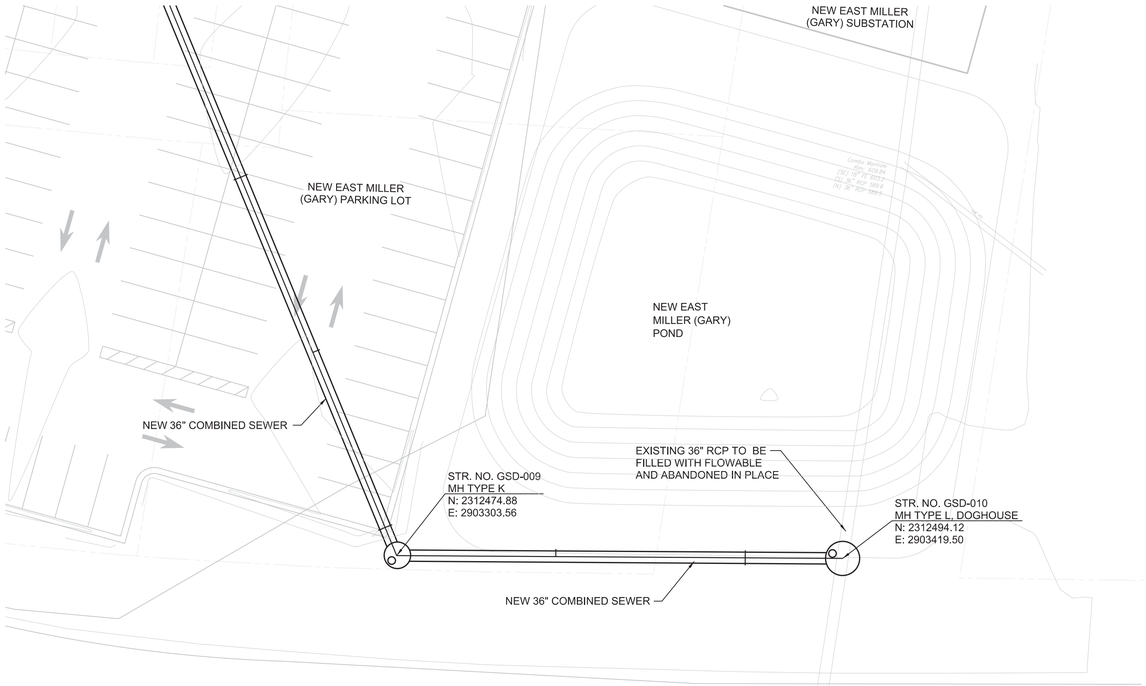
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

MILLER (GARY)
PUBLIC UTILITY RELOCATION PLANS

FILENAME	DT_DWG_UTL-003.dgn	SHEET
SCALE	AS NOTED	OF



US 12/20

N

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SCALE: 1" = 20'

PLOT DATE: 3/14/2020 1:00:55 AM JMowery

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DRAWING UTL-105 OF UTL-106

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33 East Highway 12
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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

MILLER (GARY) PUBLIC UTILITY RELOCATION PLANS

FILENAME	DT_DWG_UTL-003.dgn
SCALE	AS NOTED

SHEET OF

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING UTL-106 OF UTL-106

PLOT DATE: 3/14/2020 1:00:56 AM JMowery

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	VSE-XXX
DRAWN:	VSE-XXX
CHECKED:	VSE-XXX
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

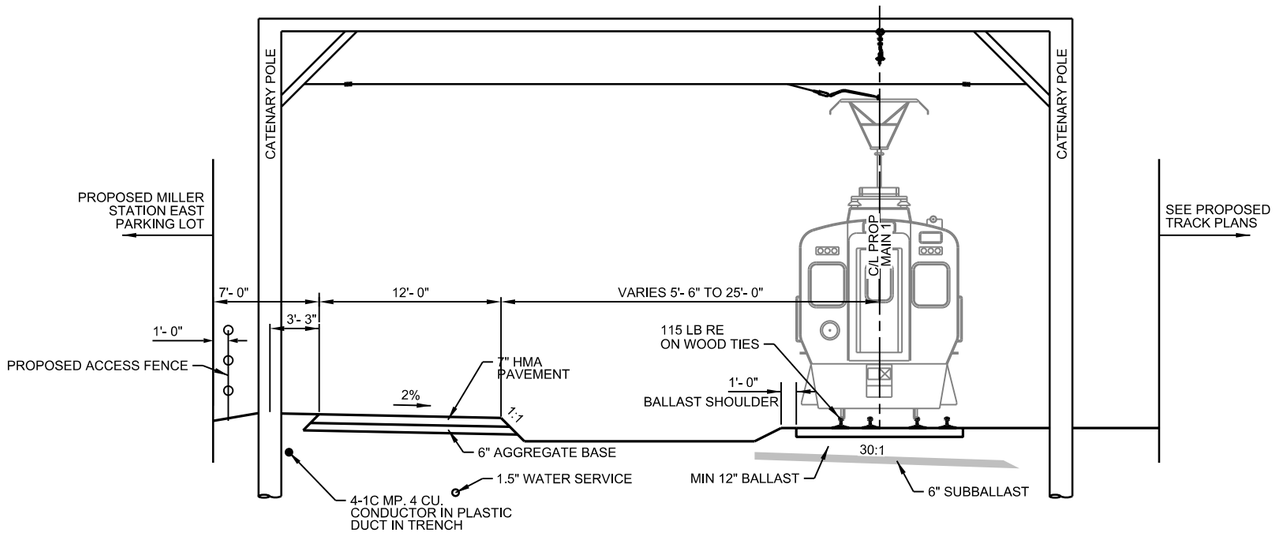
MILLER (GARY)
PUBLIC UTILITY RELOCATION PLANS

FILENAME	DT_DWG_UTL-003.dgn
SCALE	AS NOTED

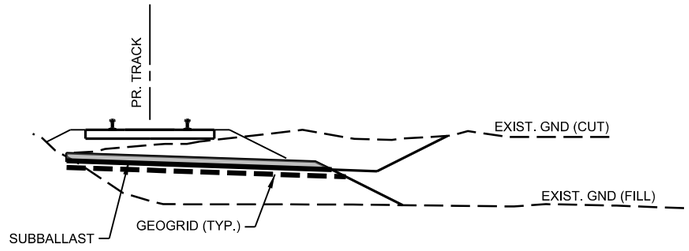
SHEET OF

TO MILLENNIUM STATION

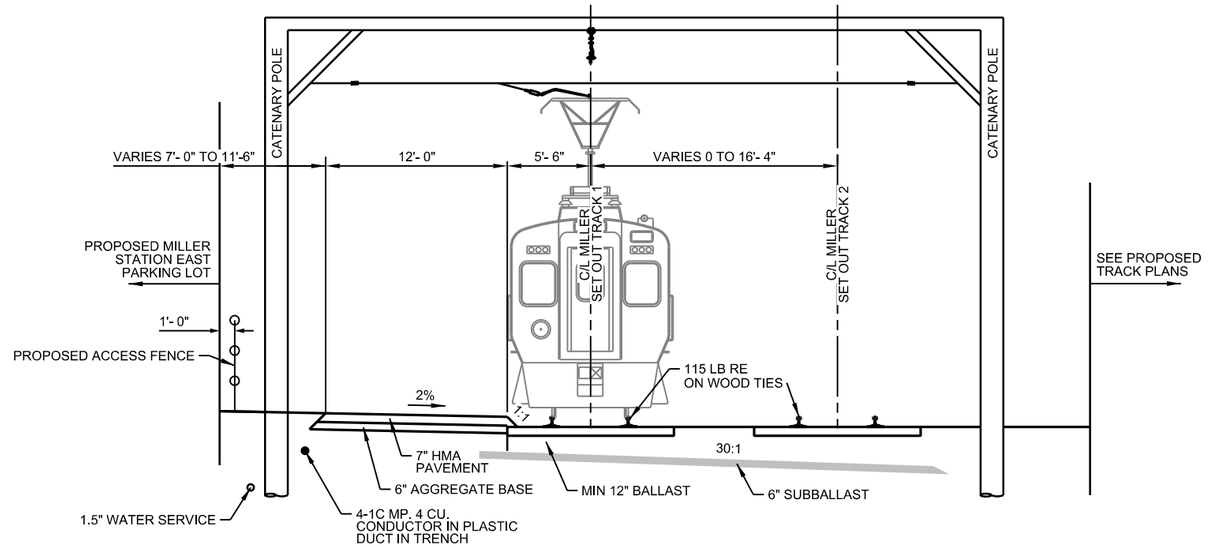
TO SOUTH BEND AIRPORT



1. TYPICAL SECTION PROP MAIN 1 STA 2905+21.89 TO STA 2903+51.69
MILLER SET OUT TRACKS



STANDARD GEOGRID SECTION



2. TYPICAL SECTION SET OUT TRACK 1 STA 0+83.87 TO STA 3+69.57
MILLER SET OUT TRACKS

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DRAWING MSC-001 OF MSC-006

PLOT DATE: 3/15/2020 2:13:48 PM Jacqueline.Ng

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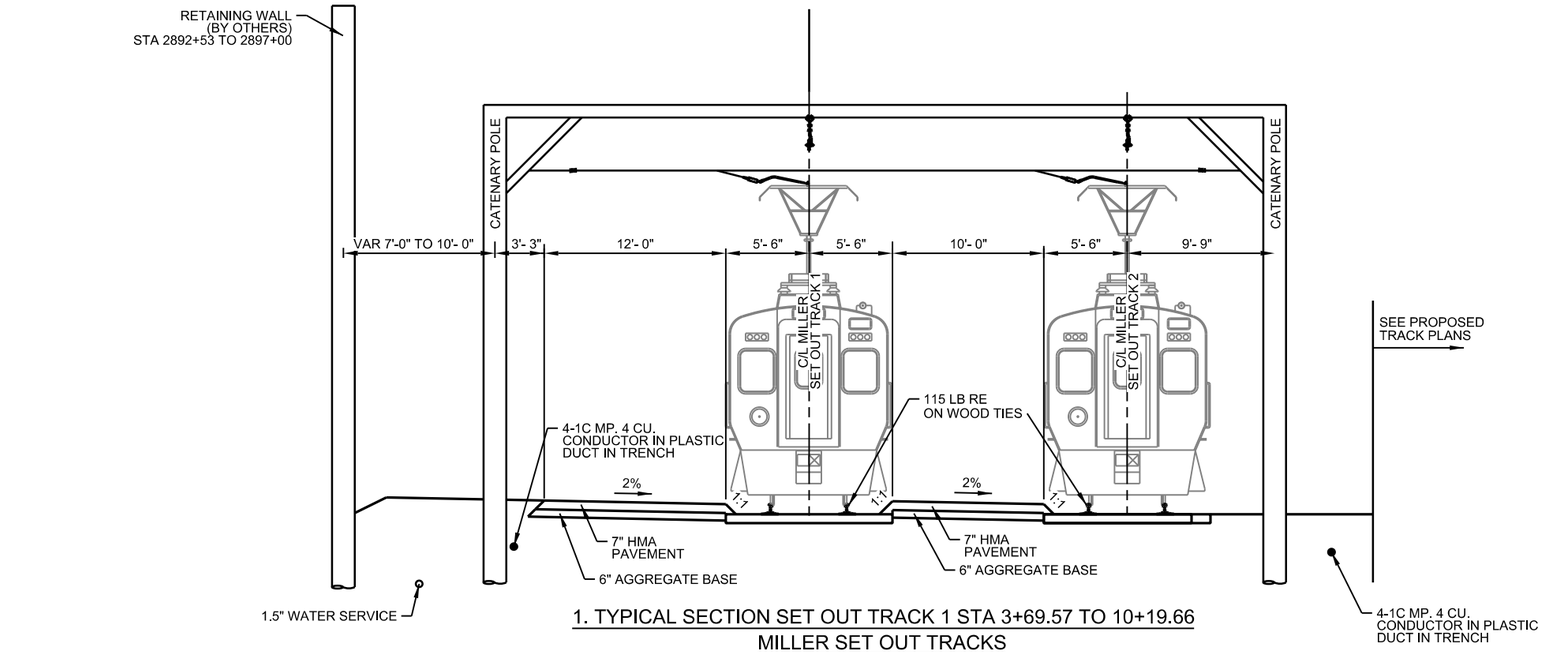
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:
DRAWN:
CHECKED:
DATE:

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

MILLER SET OUT TRACKS- TYPICAL SECTIONS

FILENAME	DT-DWG-MSC-001-R00_20200316.dgn	SHEET
SCALE	AS NOTED	OF



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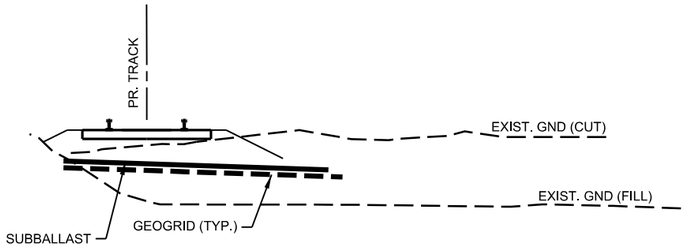
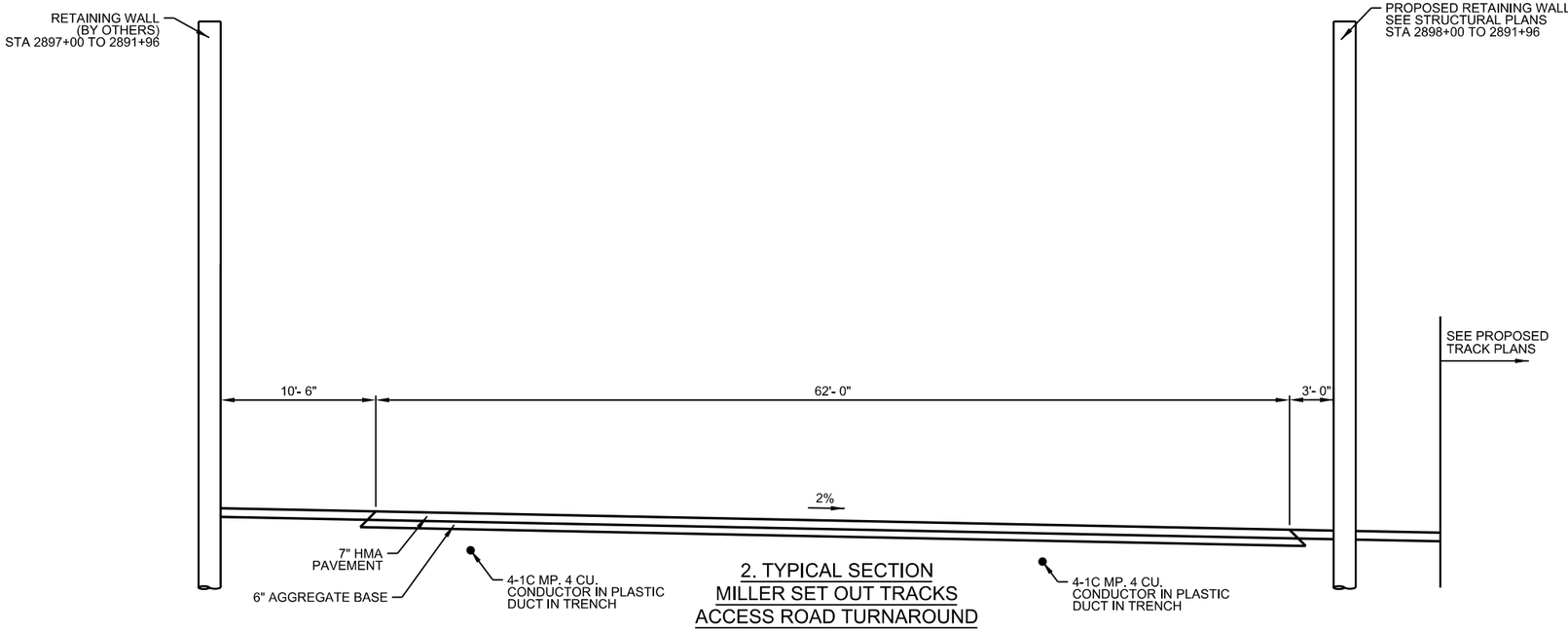
MILLER SET OUT TRACKS



STANDARD GEOGRID SECTION



2. TYPICAL SECTION
MILLER SET OUT TRACKS
ACCESS ROAD TURNAROUND

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DRAWING MSC-002 OF MSC-006

PLOT DATE: 3/15/2020 2:16:52 PM Jacqueline.Ng

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:
DRAWN:
CHECKED:
DATE:

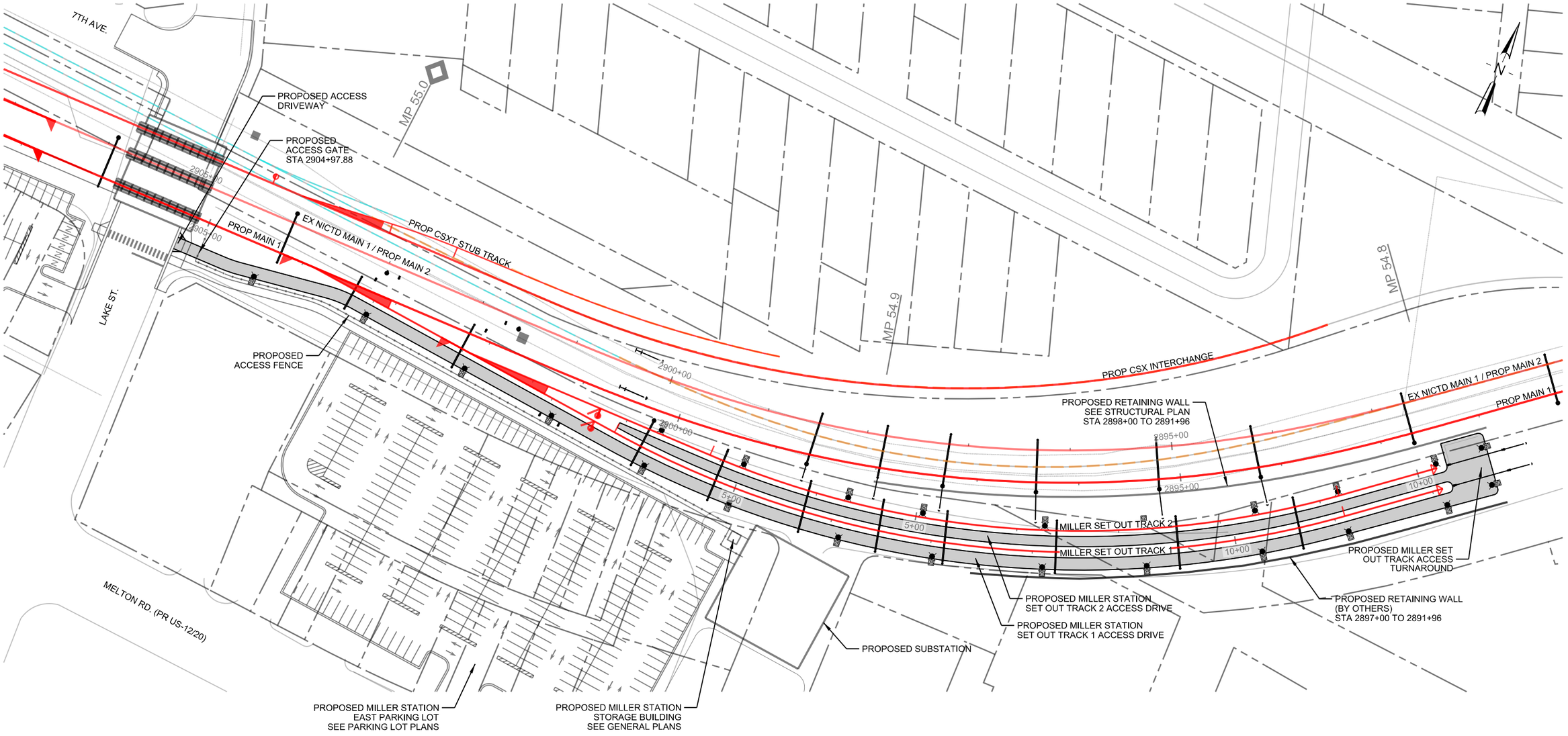
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

MILLER SET OUT TRACKS- TYPICAL SECTIONS

FILENAME	DT-DWG-MSC-002-R00_20200316.dgn	SHEET
SCALE	AS NOTED	OF

TO MILLENNIUM STATION

TO SOUTH BEND AIRPORT



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DRAWING MSC-003 OF MSC-006

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth

MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	
DRAWN:	
CHECKED:	
DATE:	
	PEI-KEK
	PEI-ALH
	PEI-SPH

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

MILLER STATION SET OUT TRACK

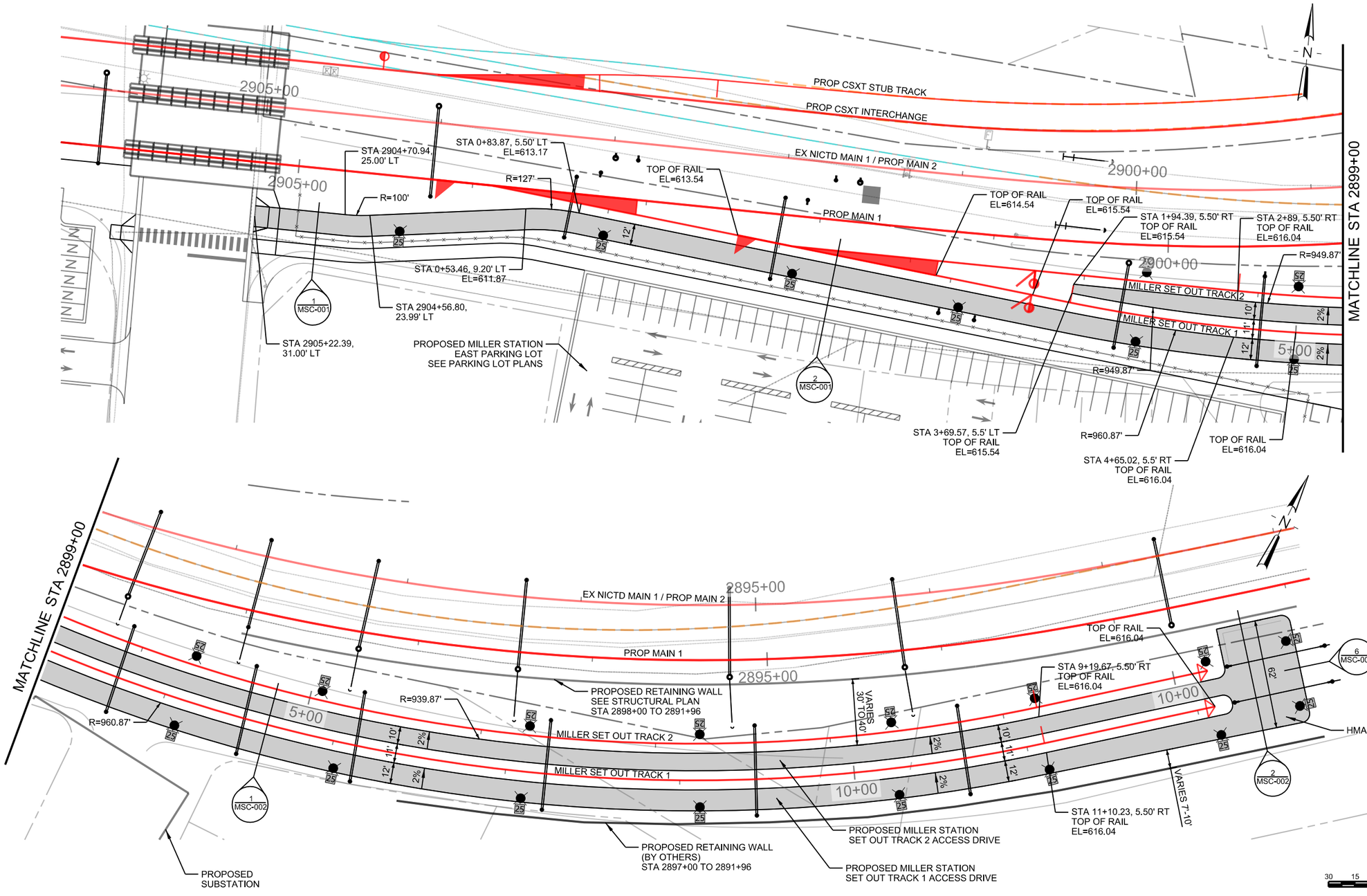
FILENAME	DT-DWG-MSC-003-R00_20200316.dgn
SCALE	AS NOTED

SHEET OF

PLOT DATE: 3/15/2020 11:59:09 AM Jacqueline.Ng

TO MILLENNIUM STATION

TO SOUTH BEND AIRPORT



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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:
DRAWN:
CHECKED:
DATE:

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

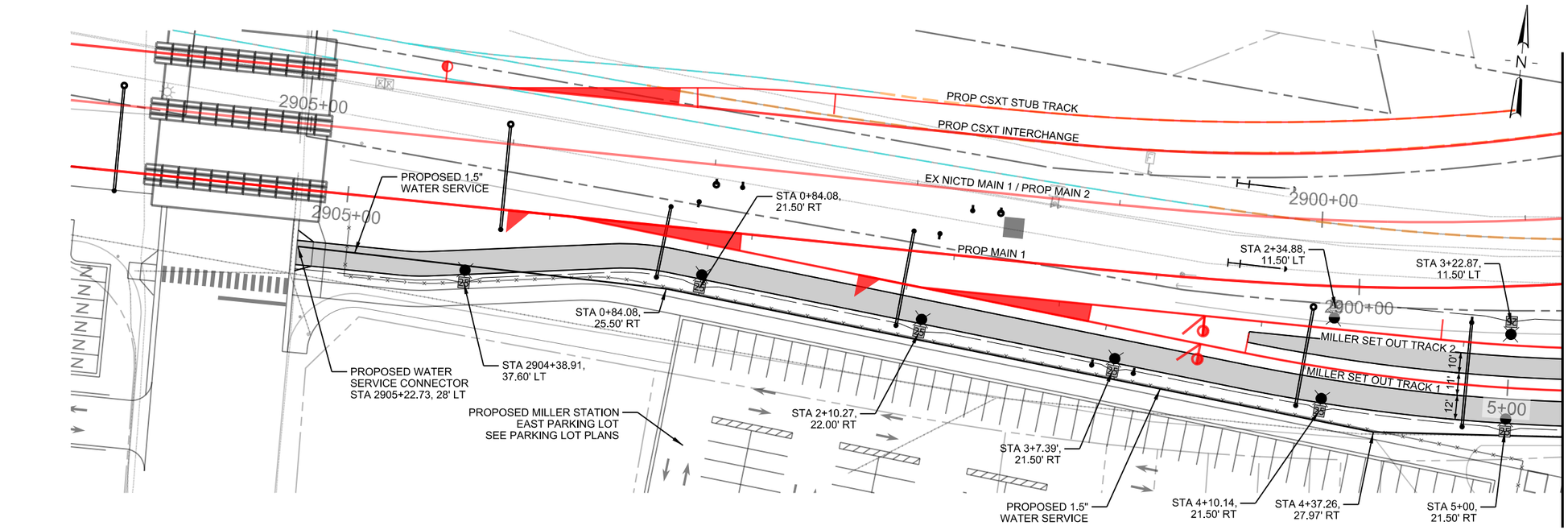
MILLER SET OUT TRACKS - SITE GRADING

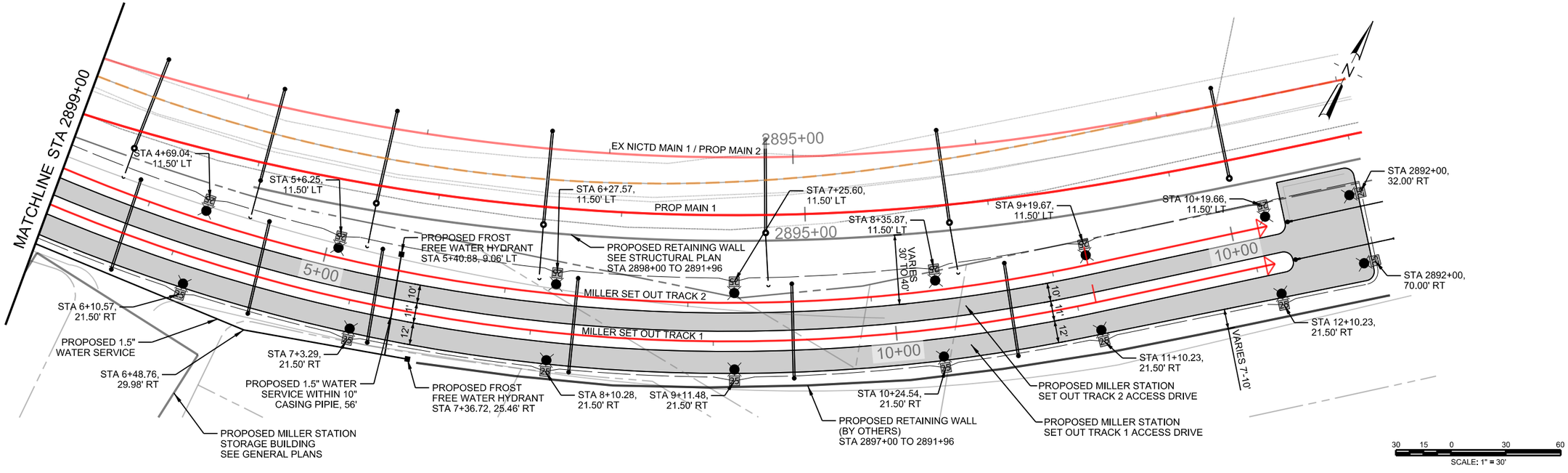
FILENAME DT-DWG-MSC-004-R00_20200316.dgn
SCALE AS NOTED
SHEET OF

PLOT DATE: 3/15/2020 2:08:07 PM Jacqueline.Ng

TO MILLENNIUM STATION

TO SOUTH BEND AIRPORT





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DRAWING MSC-005 OF MSC-006

PLOT DATE: 3/15/2020 2:05:45 PM Jacqueline.Ng

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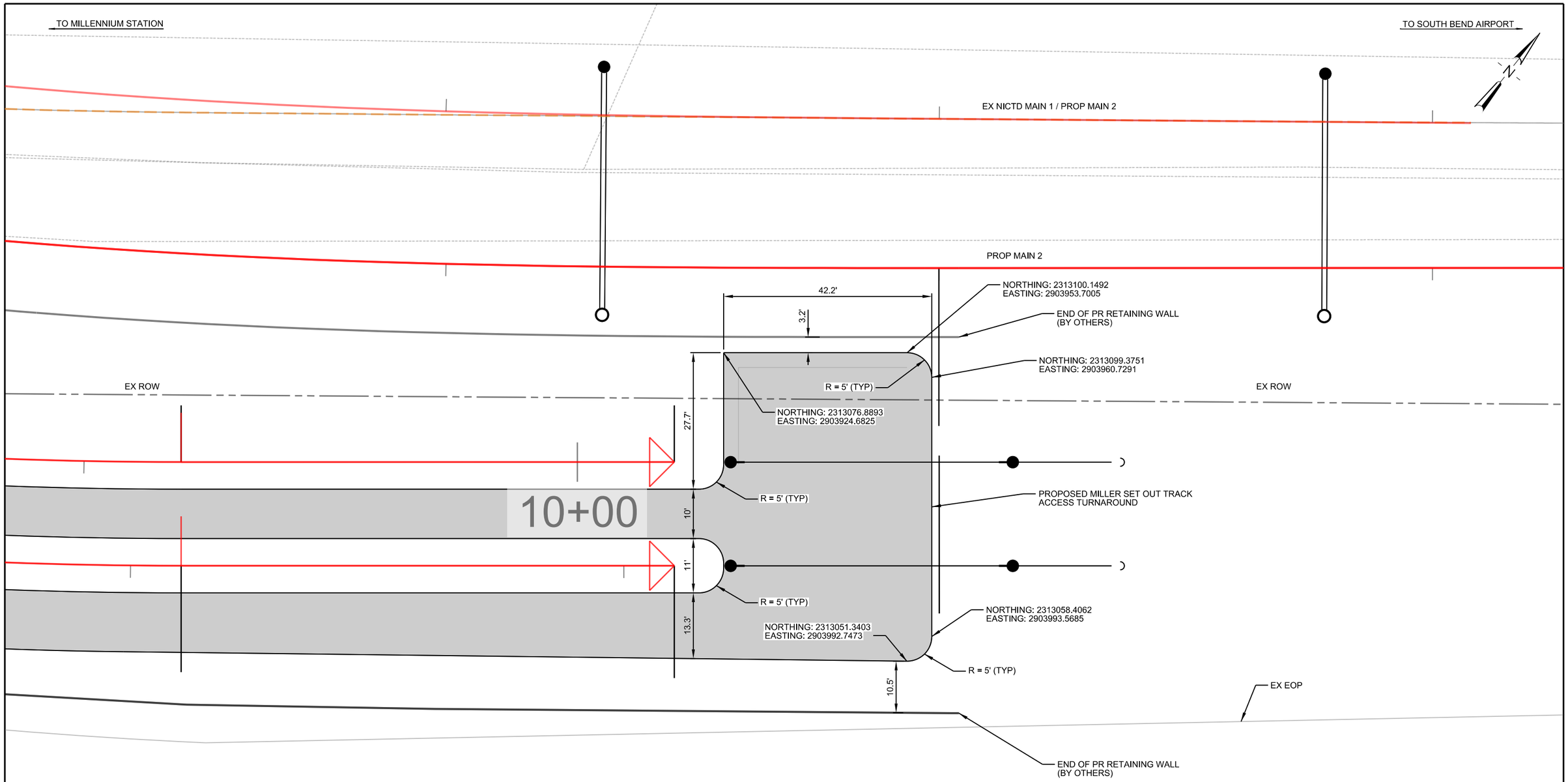
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:
DRAWN:
CHECKED:
DATE:

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

MILLER SET OUT TRACKS - PROPOSED UTILITIES

FILENAME DT-DWG-MSC-005-R00_20200316.dgn
SCALE AS NOTED
SHEET OF



PLOT DATE: 3/15/2020 4:51:14 PM dominguezе1

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DRAWING MSC-006 OF MSC-006

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ISSUE	DATE	DESCRIPTION
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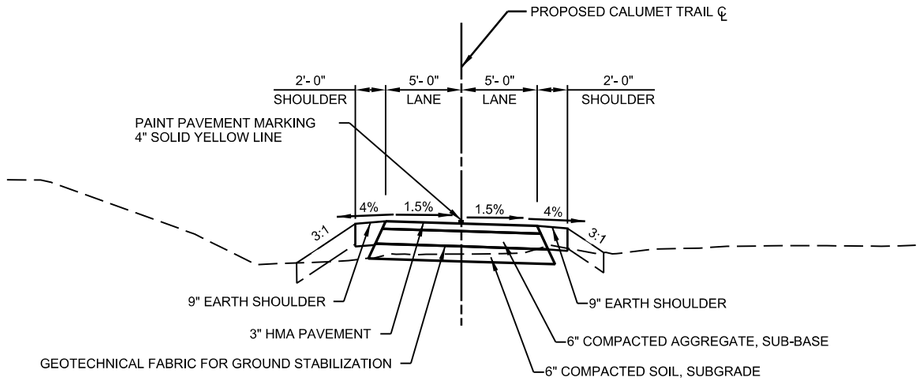
DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	ACM-ED
DRAWN:	ACM-ED
CHECKED:	ACM-BMC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

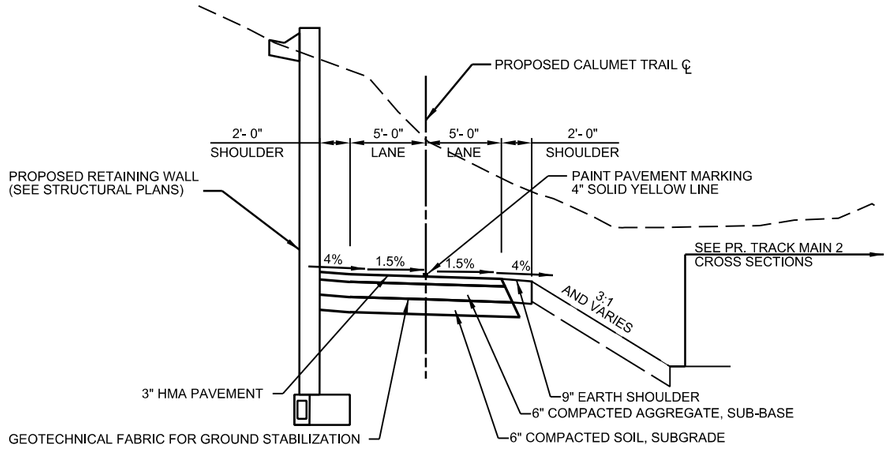
MILLER STATION SET OUT TRACKS ACCESS TURNAROUND DETAIL

FILENAME	DT-DWG-MSC-006-R00_20200316.dgn
SCALE	AS NOTED
SHEET	OF



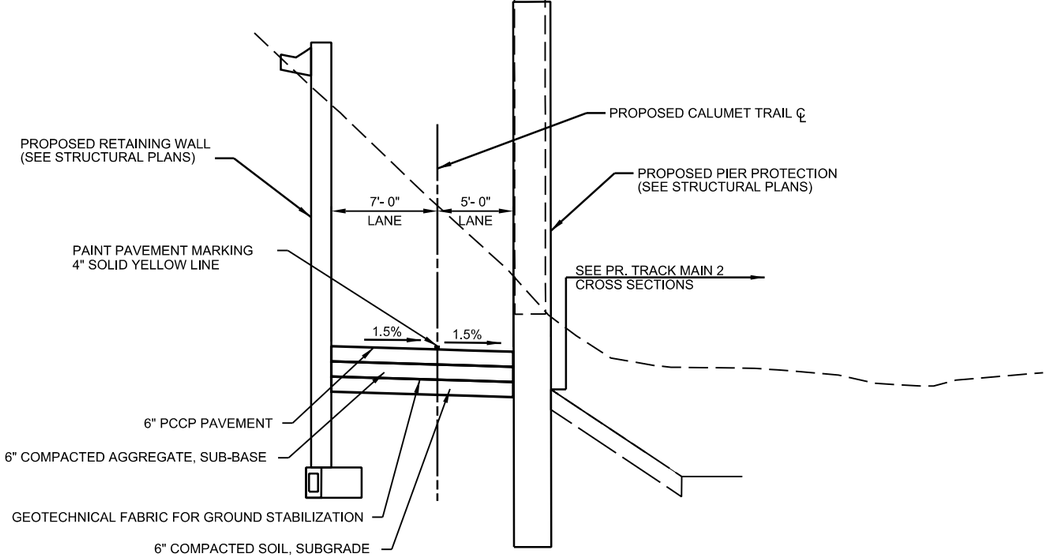
TYPICAL SECTION - CALUMET TRAIL

STA 100+00.00 TO STA 101+00.00
AND
STA 102+55.00 TO STA 103+09.37



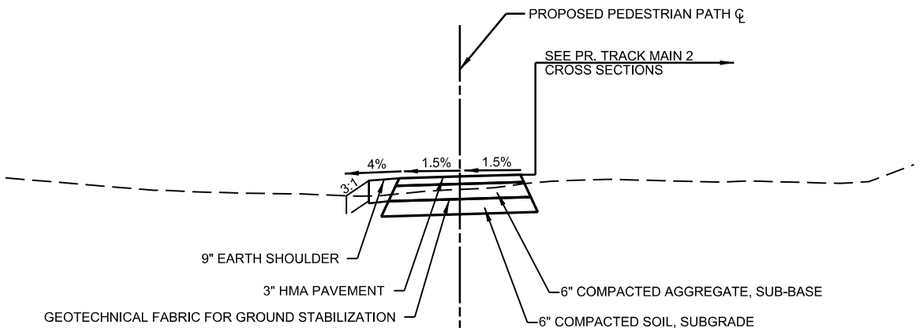
TYPICAL SECTION - CALUMET TRAIL

STA 101+00.00 TO STA 101+18.12
AND
STA 101+81.47 TO STA 102+55.00



TYPICAL SECTION - CALUMET TRAIL

STA 101+18.12 TO STA 101+81.47



TYPICAL SECTION - PEDESTRIAN PATH

STA 10+05.00 TO STA 11+76.44

PLOT DATE: 3/13/2020 6:24:50 PM dominguezе1

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

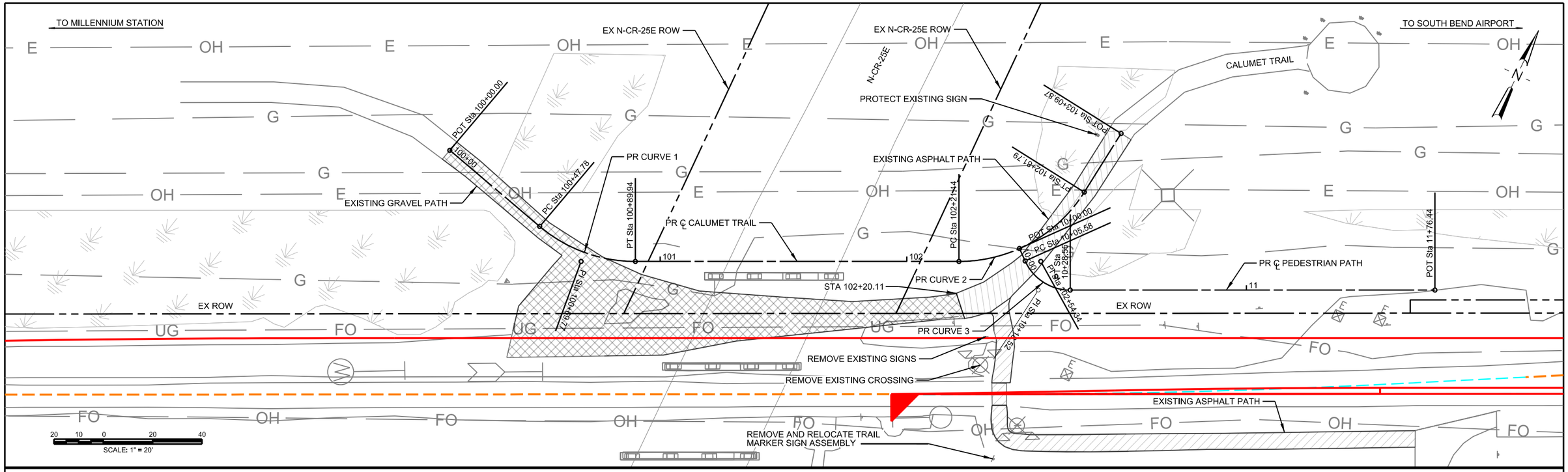
DESIGNED:	ACM-ED
DRAWN:	ACM-ED
CHECKED:	ACM-BMC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK NWI

DUNE PARK CALUMET TRAIL AND PEDESTRIAN PATH TYPICAL SECTIONS

FILENAME	DT_DWG_SHT_MSC-100-TYP-SEC.dgn
SCALE	AS NOTED

SHEET OF



PR CALUMET TRAIL ALIGNMENT COORDINATES

POINT	DESCRIPTION	STATION	NORTHING	EASTING
POT		100+00.00	2329814.48	2958288.78
PC	PR CURVE 1	100+47.78	2329802.18	2958334.95
PI	PR CURVE 1	100+69.77	2329796.52	2958356.20
PT	PR CURVE 1	100+89.94	2329805.94	2958376.08
PC	PR CURVE 2	102+21.14	2329862.10	2958494.65
PI	PR CURVE 2	102+54.34	2329876.31	2958524.65
PT	PR CURVE 2	102+81.79	2329909.28	2958528.55
POT		103+09.87	2329937.18	2958531.84

PR CALUMET TRAIL ALIGNMENT DATA

PROP. CURVE 1
PI STA. = 100+69.77
Δ = 40° 15' 38" (LT)
D = 95° 29' 35"
R = 60.00'
T = 21.99'
L = 42.16'
E = 3.90'
e = _____
T.R. = _____
S.E. RUN = _____
P.C. STA. = 100+47.78
P.T. STA. = 100+89.94

PROP. CURVE 2
PI STA. = 102+54.34
Δ = 57° 54' 53" (LT)
D = 95° 29' 35"
R = 60.00'
T = 33.20'
L = 60.65'
E = 8.57'
e = _____
T.R. = _____
S.E. RUN = _____
P.C. STA. = 102+21.14
P.T. STA. = 102+81.79

PR PEDESTRIAN PATH ALIGNMENT COORDINATES

POINT	DESCRIPTION	STATION	NORTHING	EASTING
POT		10+00.00	2329877.381	2958514.604
PC	PR CURVE 3	10+05.58	2329873.76	2958518.85
PI	PR CURVE 3	10+18.52	2329865.36	2958528.693
PT	PR CURVE 3	10+28.55	2329870.9	2958540.39
POT		11+76.44	2329934.207	2958674.04

PR PEDESTRIAN PATH ALIGNMENT DATA

PROP. CURVE 3
PI STA. = 10+18.52
Δ = 65° 49' 02" (LT)
D = 286° 28' 44"
R = 20.00'
T = 12.94'
L = 22.97'
E = 3.82'
e = _____
T.R. = _____
S.E. RUN = _____
P.C. STA. = 10+05.58
P.T. STA. = 10+28.55

REMOVAL LEGEND

ASPHALT PAVEMENT REMOVAL

AGGREGATE SURFACE REMOVAL

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DRAWING MSC-101 OF MSC-103

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33 East Highway 12
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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

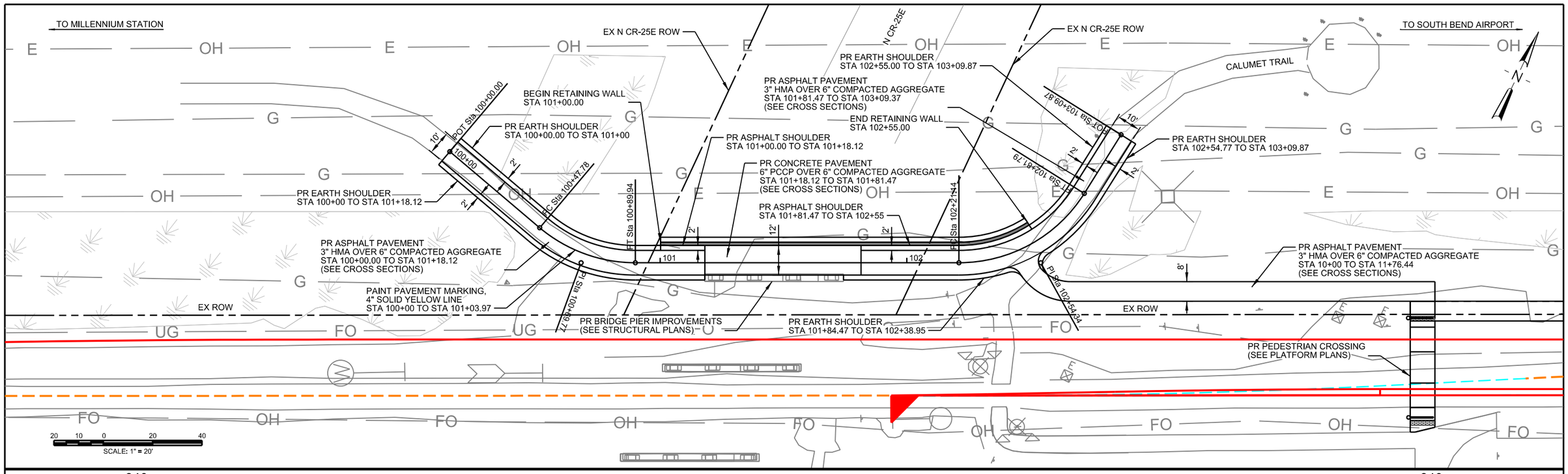
DESIGNED:	ACM-ED
DRAWN:	ACM-ED
CHECKED:	ACM-BMC
DATE:	

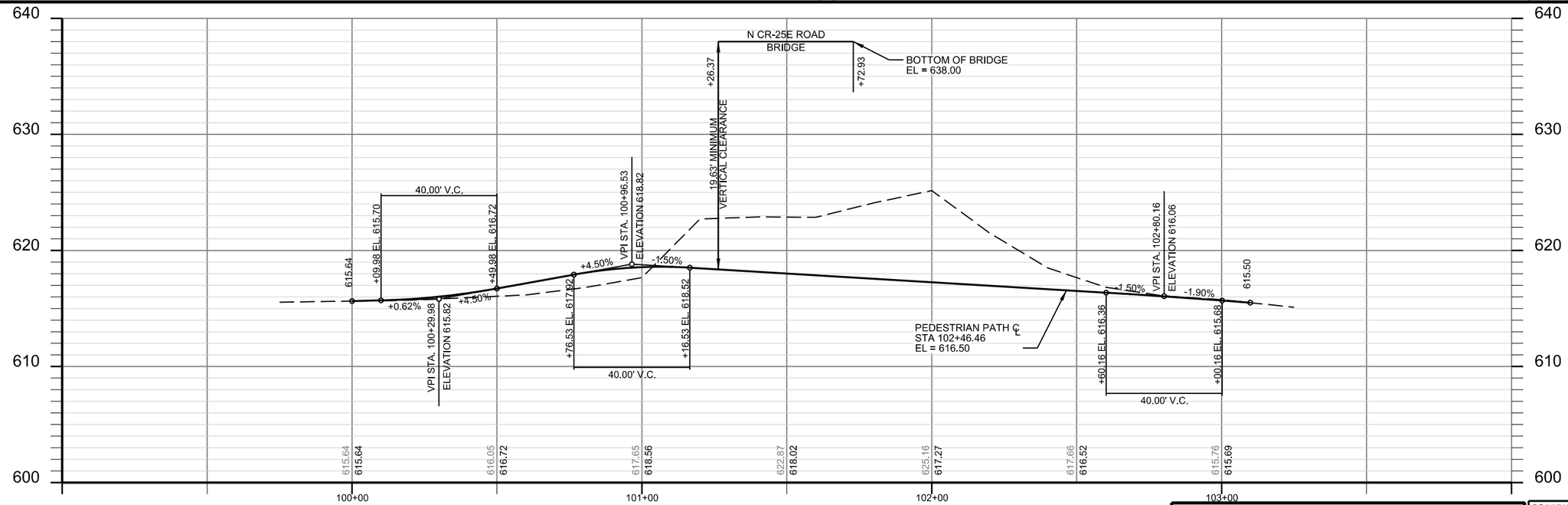
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

DUNE PARK CALUMET TRAIL & PEDESTRIAN PATH ALIGNMENT AND REMOVAL

FILENAME	DT_DWG_SHT_MSC-101-ALIGN-REM.dgn
SCALE	AS NOTED
SHEET	OF

PLOT DATE: 3/13/2020 6:25:08 PM dominguezе1





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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	ACM-ED
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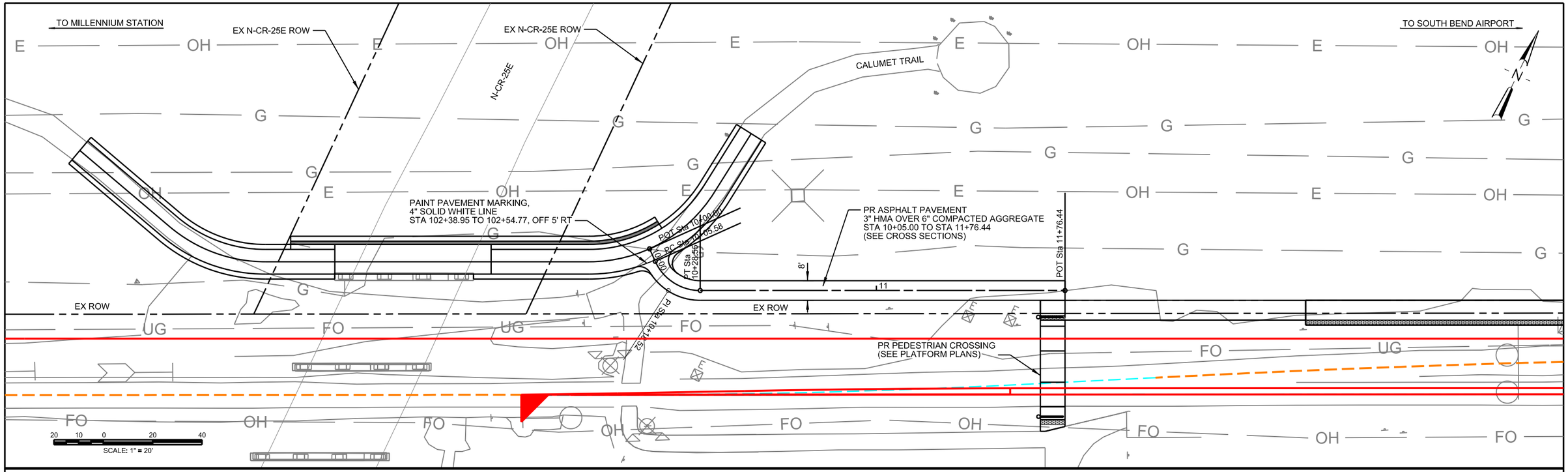
DATE:	

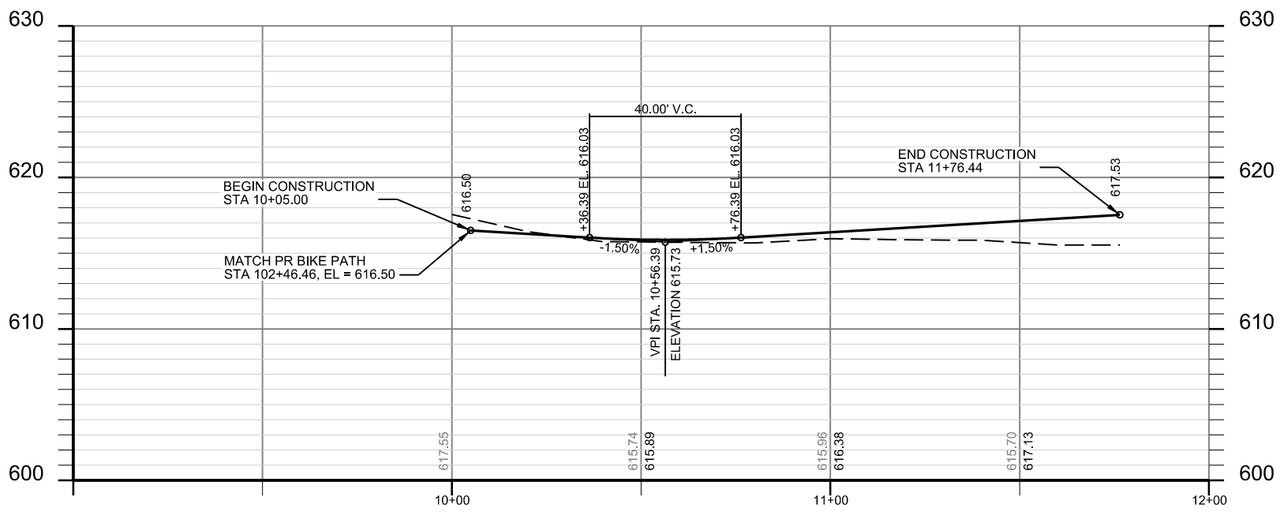
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

DUNE PARK CALUMET TRAIL PLAN AND PROFILE MP 43.7 TO MP 43.8

FILENAME	T_DWG_SHT_MSC-102-BIKE-PLAN-PROF.dgn	SHEET
SCALE	AS NOTED	OF

PLOT DATE: 3/13/2020 6:25:36 PM dominguez1





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DRAWING MSC-103 OF MSC-103

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	ACM-ED
DRAWN:	ACM-ED
CHECKED:	ACM-BMC
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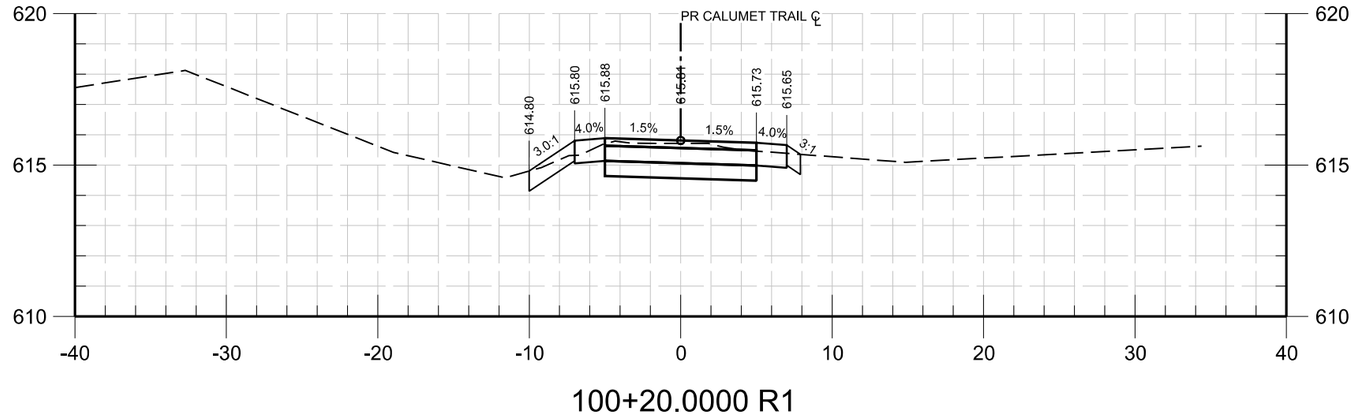
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

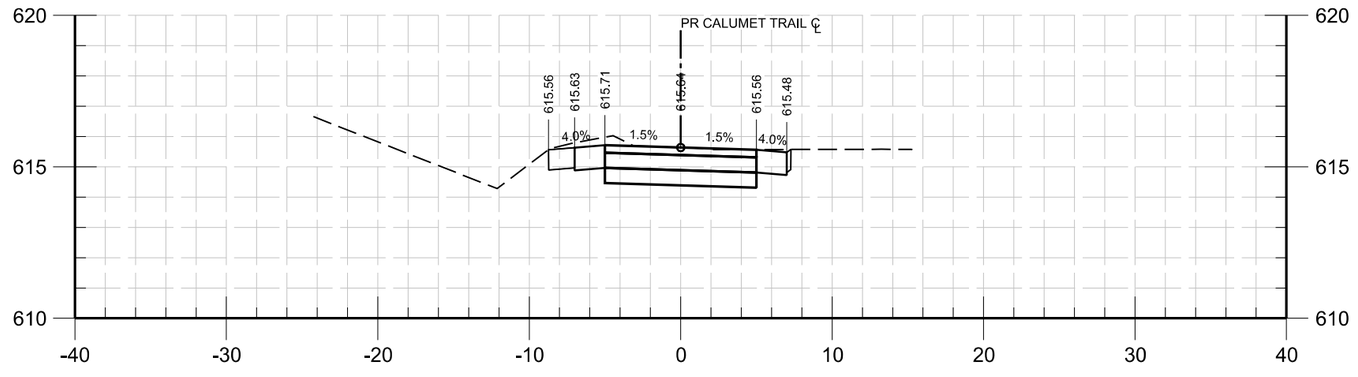
DUNE PARK PEDESTRIAN TRAIL PLAN AND PROFILE MP 43.7 TO MP 43.8

FILENAME: DWG_SHT_MSC-103-PEDPATH-PLAN-PROF.dgn
SCALE: AS NOTED
SHEET 1 OF 1

PLOT DATE: 3/13/2020 6:25:48 PM dominguezе1



100+20.0000 R1



100+00.0000 R1

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	ACM-ED
DRAWN:	ACM-ED
CHECKED:	ACM-BMC
DATE:	03/16/2020

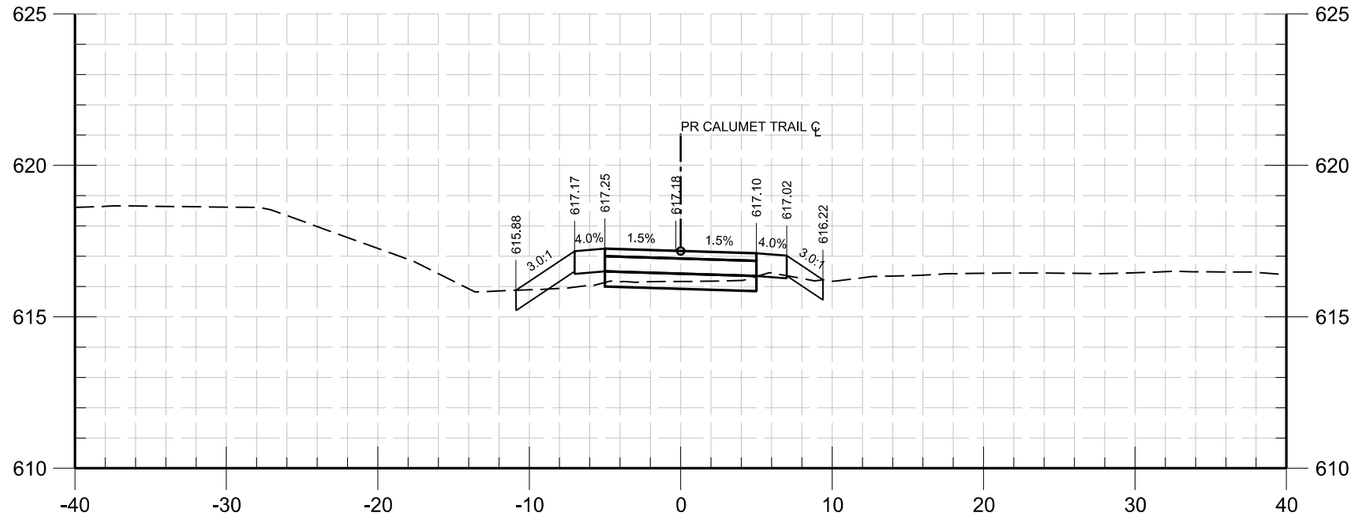
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

DUNE PARK CALUMET TRAIL CROSS SECTIONS STA 100+00.00 TO STA 103+03.87

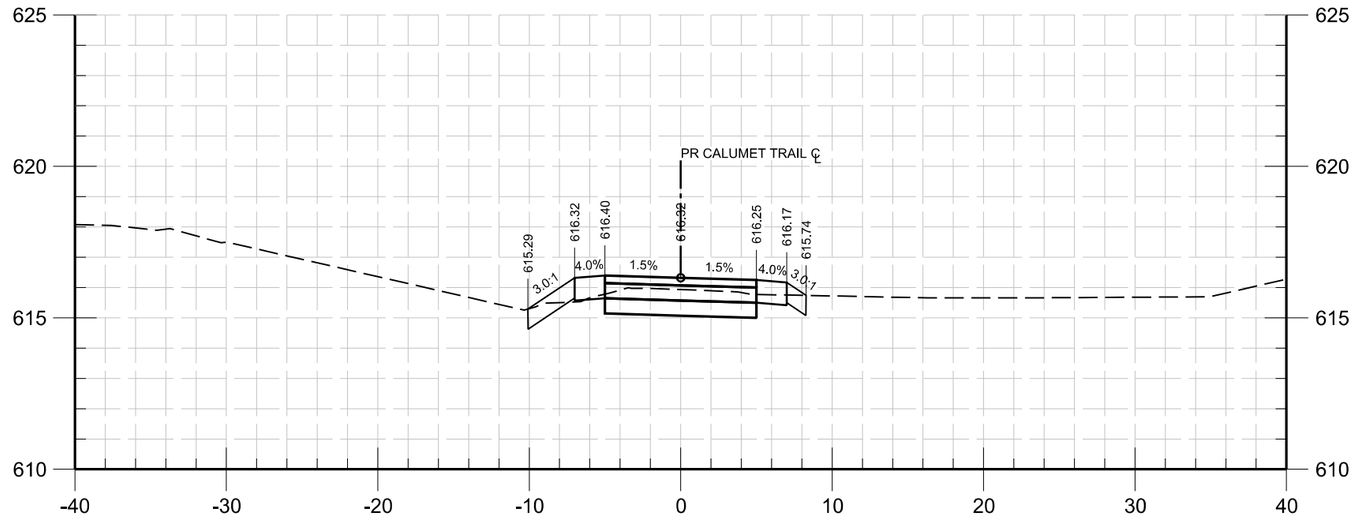
FILENAME	DT_DWG_MSC-BIKE-XS.dgn
SCALE	AS NOTED

SHEET OF

PLOT DATE: 3/13/2020 6:26:02 PM dominguezc1



100+60.0000 R1



100+40.0000 R1

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

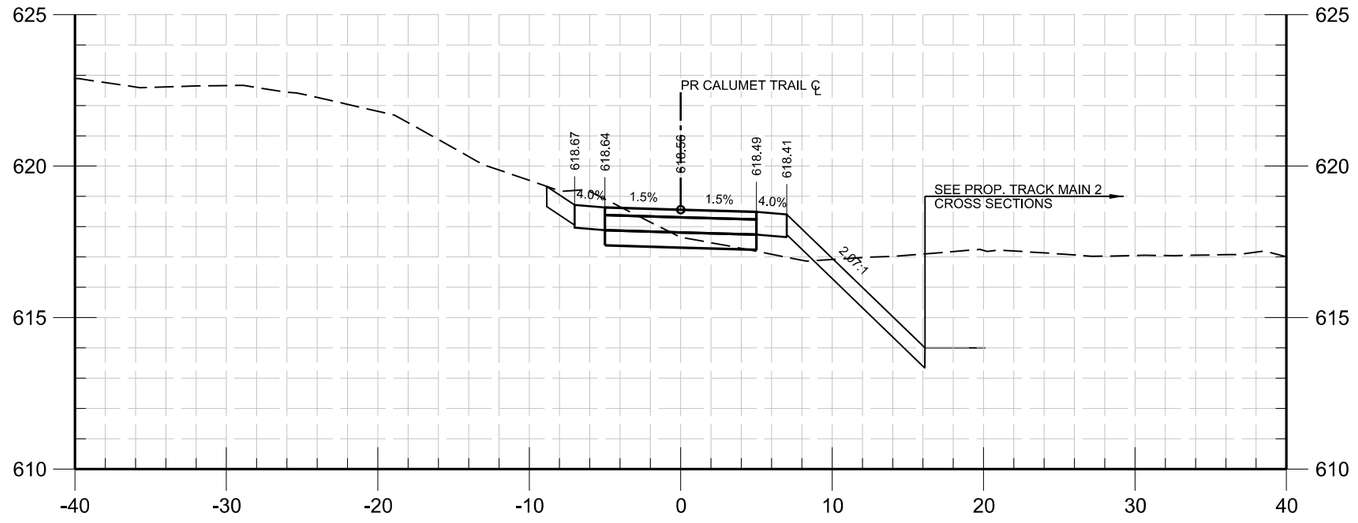
DESIGNED:	ACM-ED
DRAWN:	ACM-ED
CHECKED:	ACM-BMC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

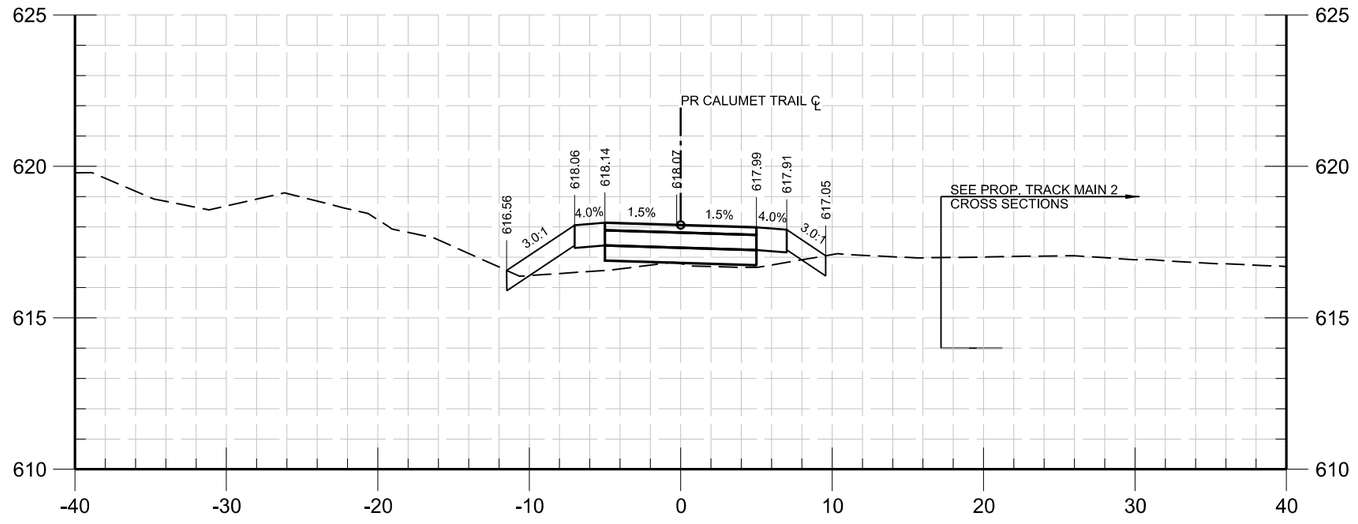
DUNE PARK CALUMET TRAIL CROSS SECTIONS STA 100+00.00 TO STA 103+03.87

FILENAME	DT_DWG_MSC-BIKE-XS.dgn
SCALE	AS NOTED
SHEET	OF

PLOT DATE: 3/13/2020 6:26:04 PM dominguez1



101+00.0000 R1



100+80.0000 R1

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

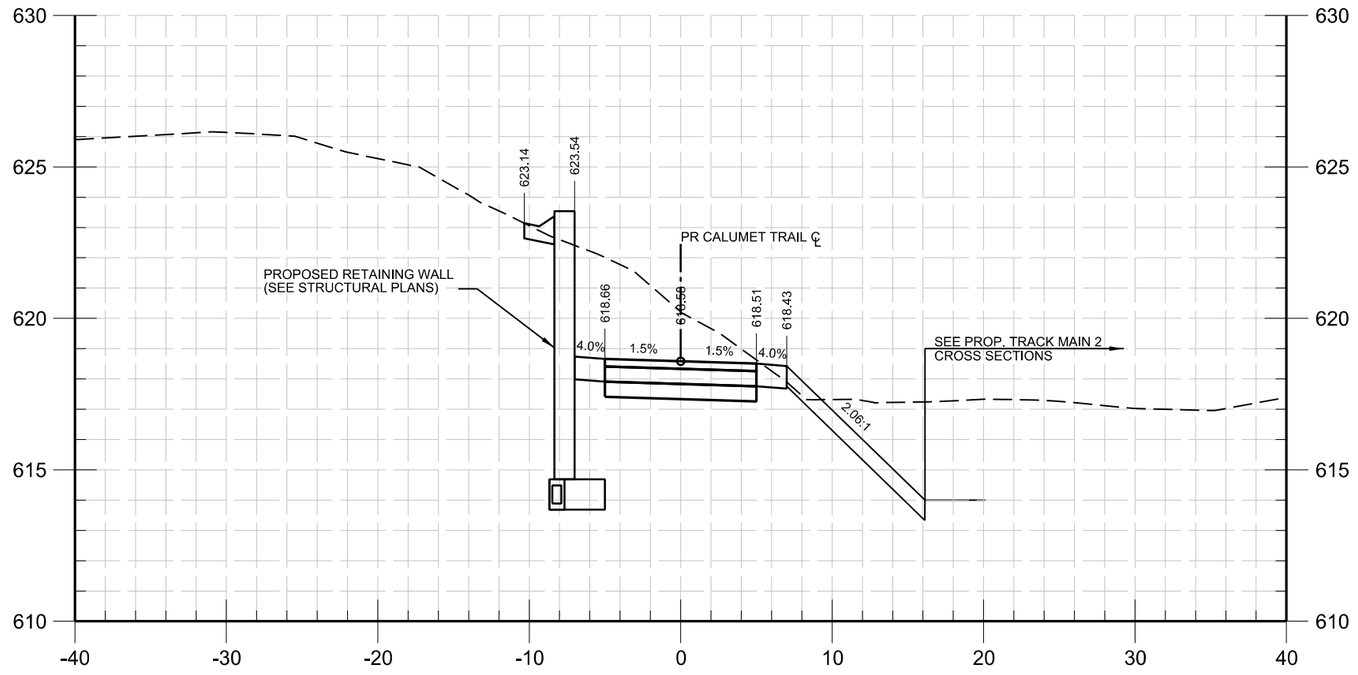
DESIGNED:	ACM-ED
DRAWN:	ACM-ED
CHECKED:	ACM-BMC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

DUNE PARK CALUMET TRAIL CROSS SECTIONS STA 100+00.00 TO STA 103+03.87

FILENAME	DT_DWG_MSC-BIKE-XS.dgn
SCALE	AS NOTED
SHEET	OF

PLOT DATE: 3/13/2020 6:26:10 PM dominguezе1



101+10.0000 R1

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	ACM-ED
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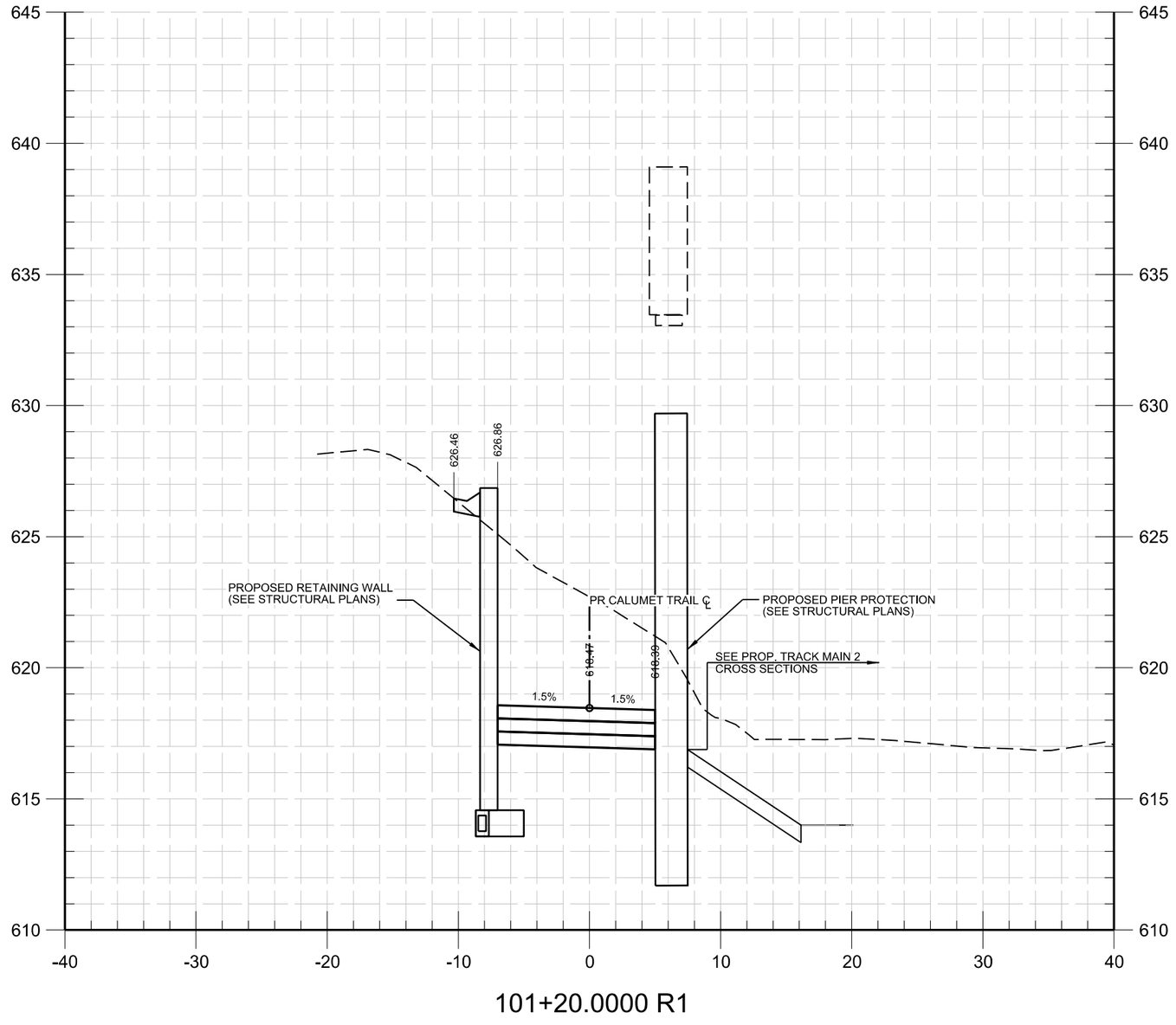
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

DUNE PARK CALUMET TRAIL CROSS SECTIONS STA 100+00.00 TO STA 103+03.87

FILENAME	DT_DWG_MSC-BIKE-XS.dgn
SCALE	AS NOTED
SHEET	OF

PLOT DATE: 3/13/2020 6:26:16 PM dominguezе1



101+20.0000 R1

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

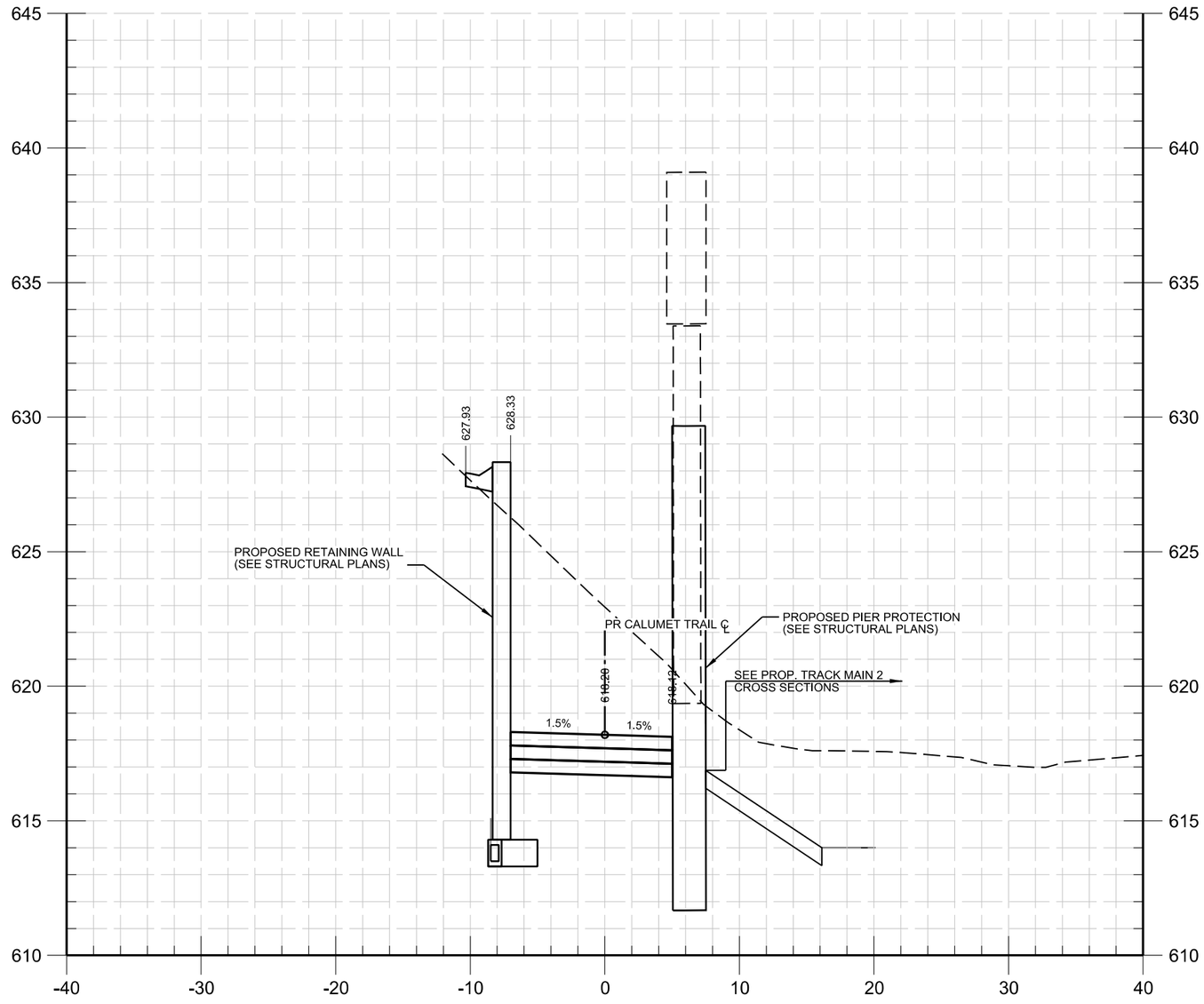
DESIGNED:	ACM-ED
DRAWN:	ACM-ED
CHECKED:	ACM-BMC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

DUNE PARK CALUMET TRAIL CROSS SECTIONS STA 100+00.00 TO STA 103+03.87

FILENAME	DT_DWG_MSC-BIKE-XS.dgn
SCALE	AS NOTED
SHEET	OF

PLOT DATE: 3/13/2020 6:26:22 PM dominguezе1



101+38.0000 R1

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	ACM-ED
DRAWN:	ACM-ED
CHECKED:	ACM-BMC
DATE:	03/16/2020

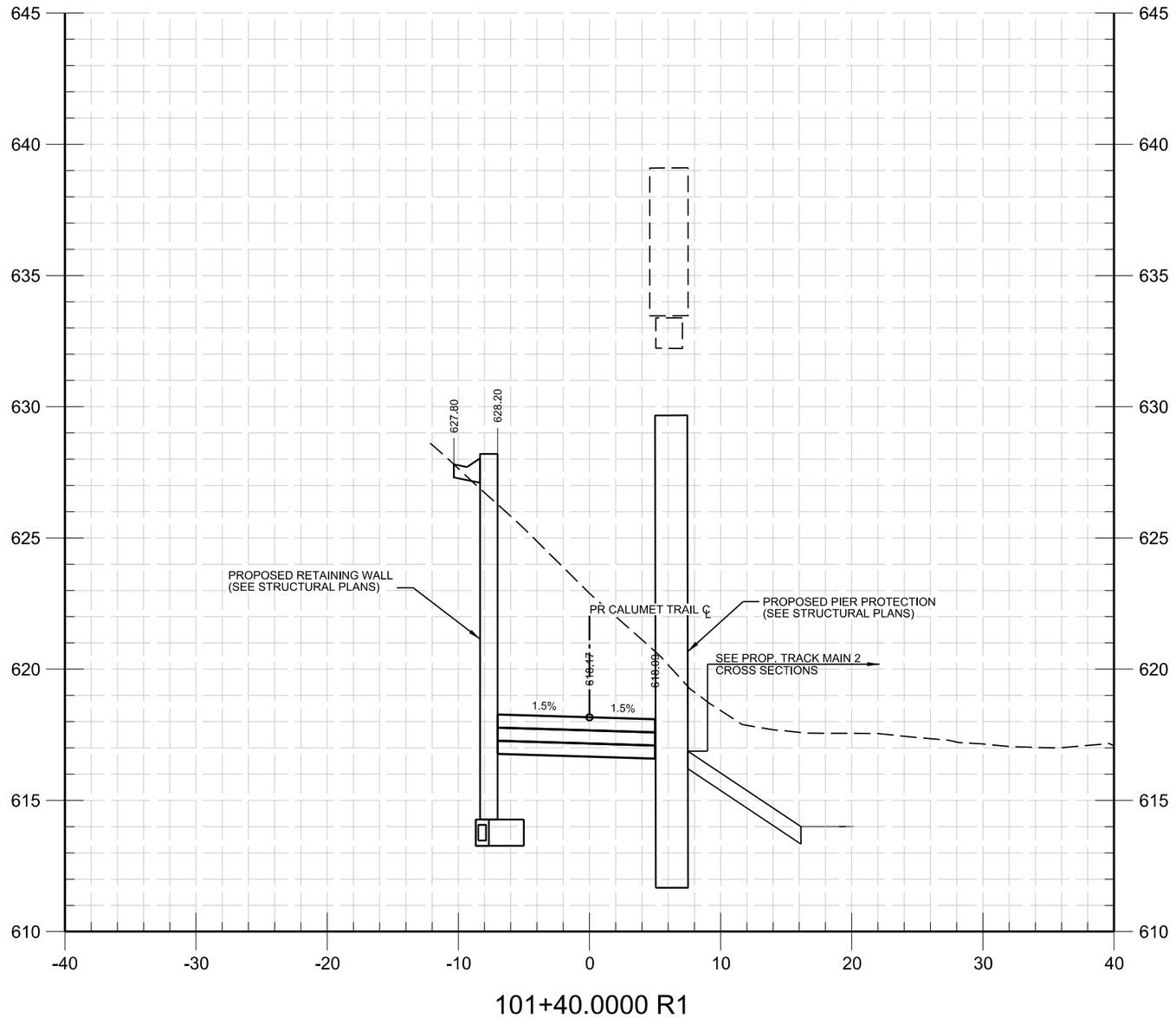
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

DUNE PARK CALUMET TRAIL CROSS SECTIONS STA 100+00.00 TO STA 103+03.87

FILENAME	DT_DWG_MSC-BIKE-XS.dgn
SCALE	AS NOTED

SHEET OF

PLOT DATE: 3/13/2020 6:26:28 PM dominguezе1



101+40.0000 R1

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PLOT DATE: 3/13/2020 6:26:34 PM dominguezе1

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

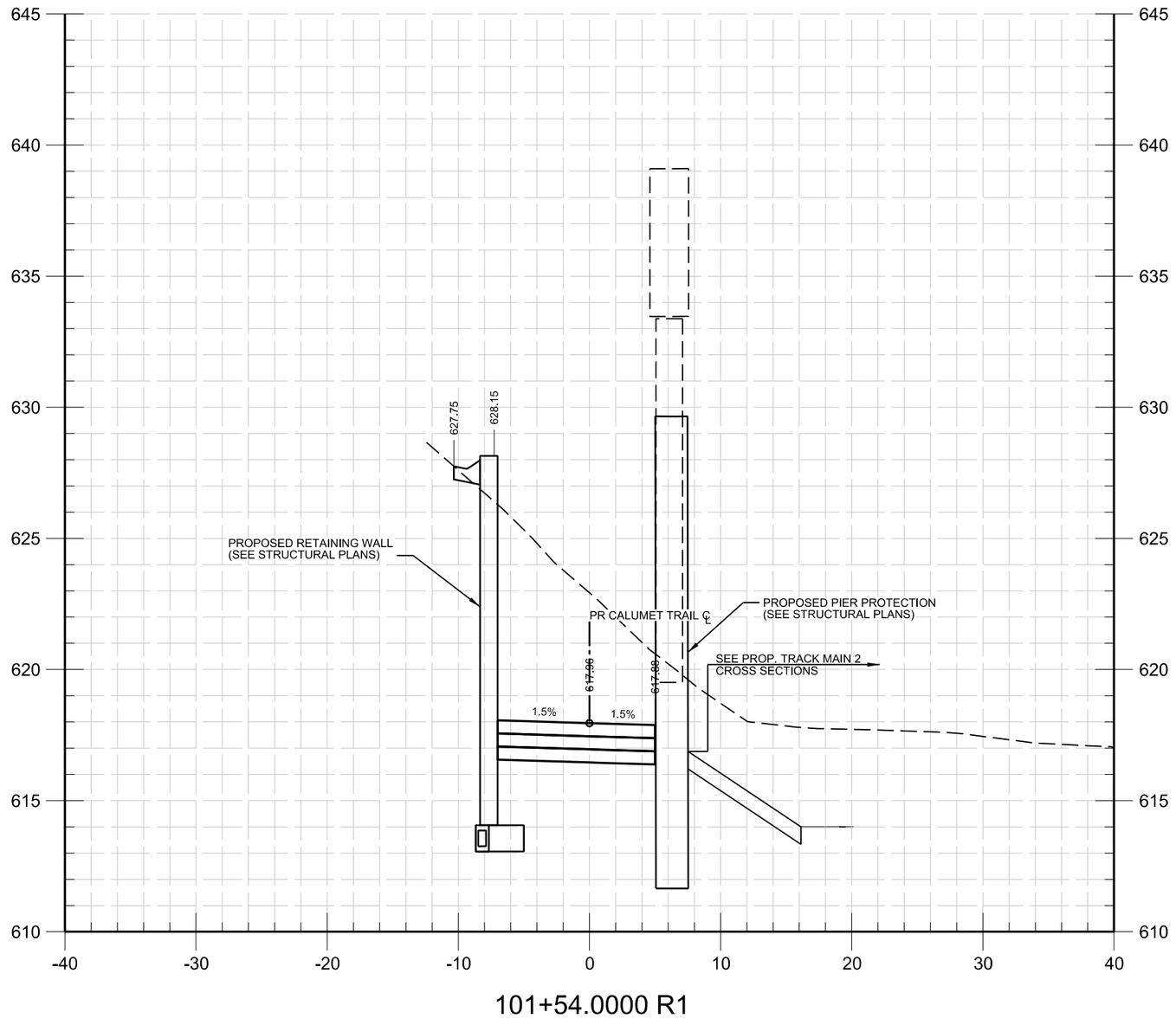
DESIGNED:	ACM-ED
DRAWN:	ACM-ED
CHECKED:	ACM-BMC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

DUNE PARK CALUMET TRAIL CROSS SECTIONS STA 100+00.00 TO STA 103+03.87

FILENAME	DT_DWG_MSC-BIKE-XS.dgn
SCALE	AS NOTED

SHEET OF



101+54.0000 R1

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

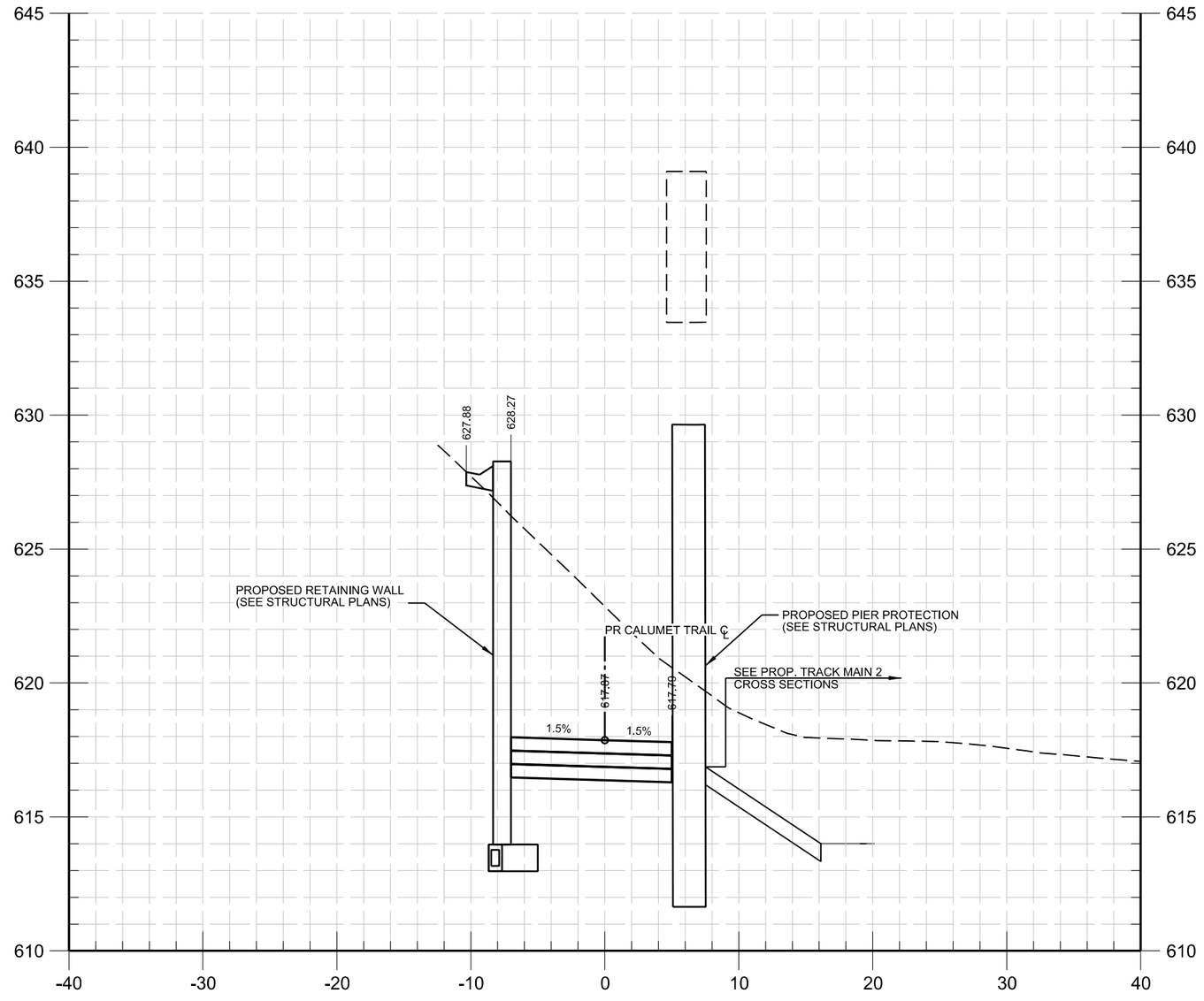
DESIGNED:	ACM-ED
DRAWN:	ACM-ED
CHECKED:	ACM-BMC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

DUNE PARK CALUMET TRAIL CROSS SECTIONS STA 100+00.00 TO STA 103+03.87

FILENAME	DT_DWG_MSC-BIKE-XS.dgn
SCALE	AS NOTED
SHEET	OF

PLOT DATE: 3/13/2020 6:26:40 PM dominguezе1



101+60.0000 R1

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	ACM-ED
DRAWN:	ACM-ED
CHECKED:	ACM-BMC
DATE:	03/16/2020

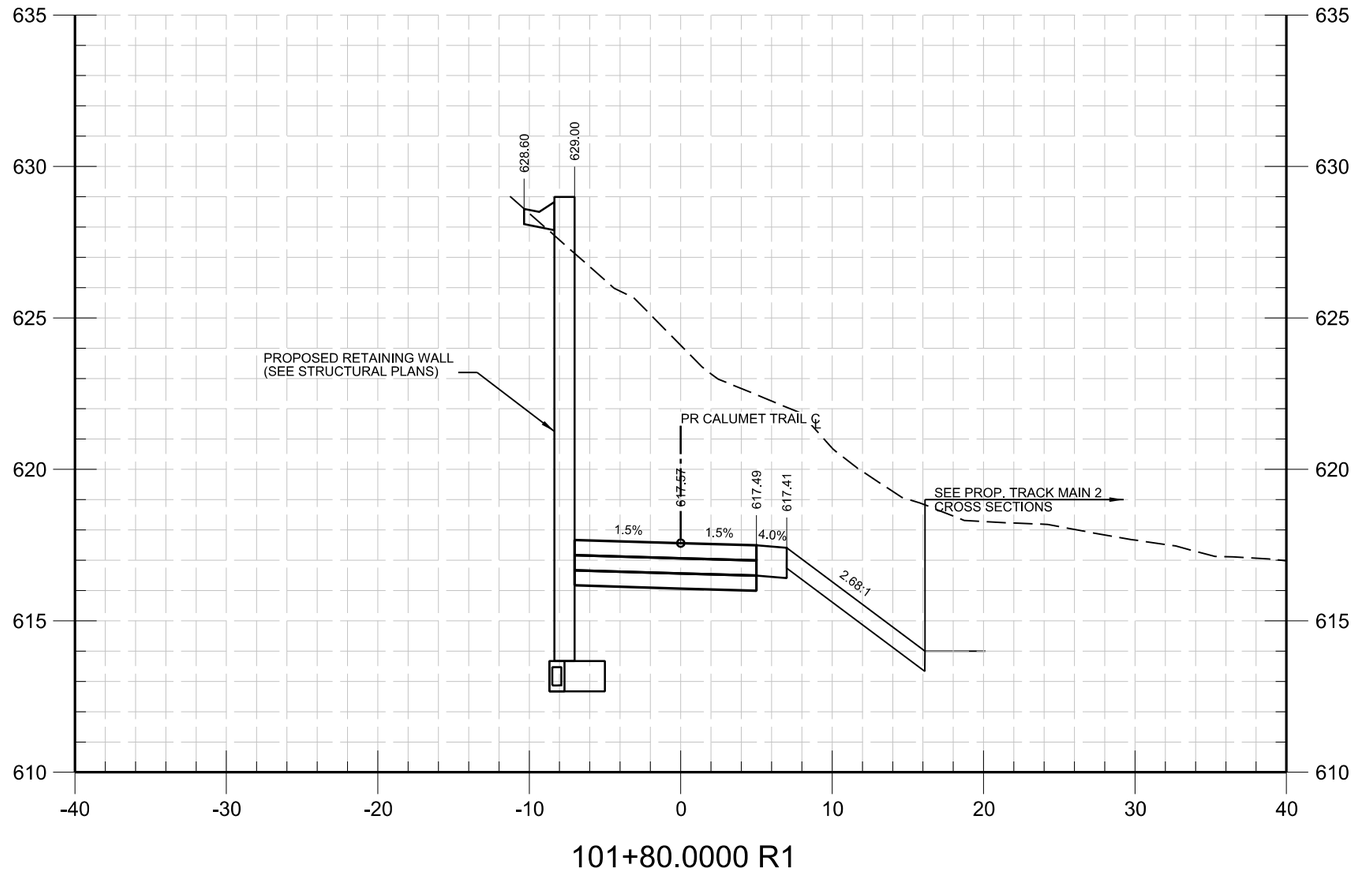
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

DUNE PARK CALUMET TRAIL CROSS SECTIONS STA 100+00.00 TO STA 103+03.87

FILENAME	DT_DWG_MSC-BIKE-XS.dgn
SCALE	AS NOTED

SHEET OF

PLOT DATE: 3/13/2020 6:26:46 PM dominguezе1



101+80.0000 R1

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

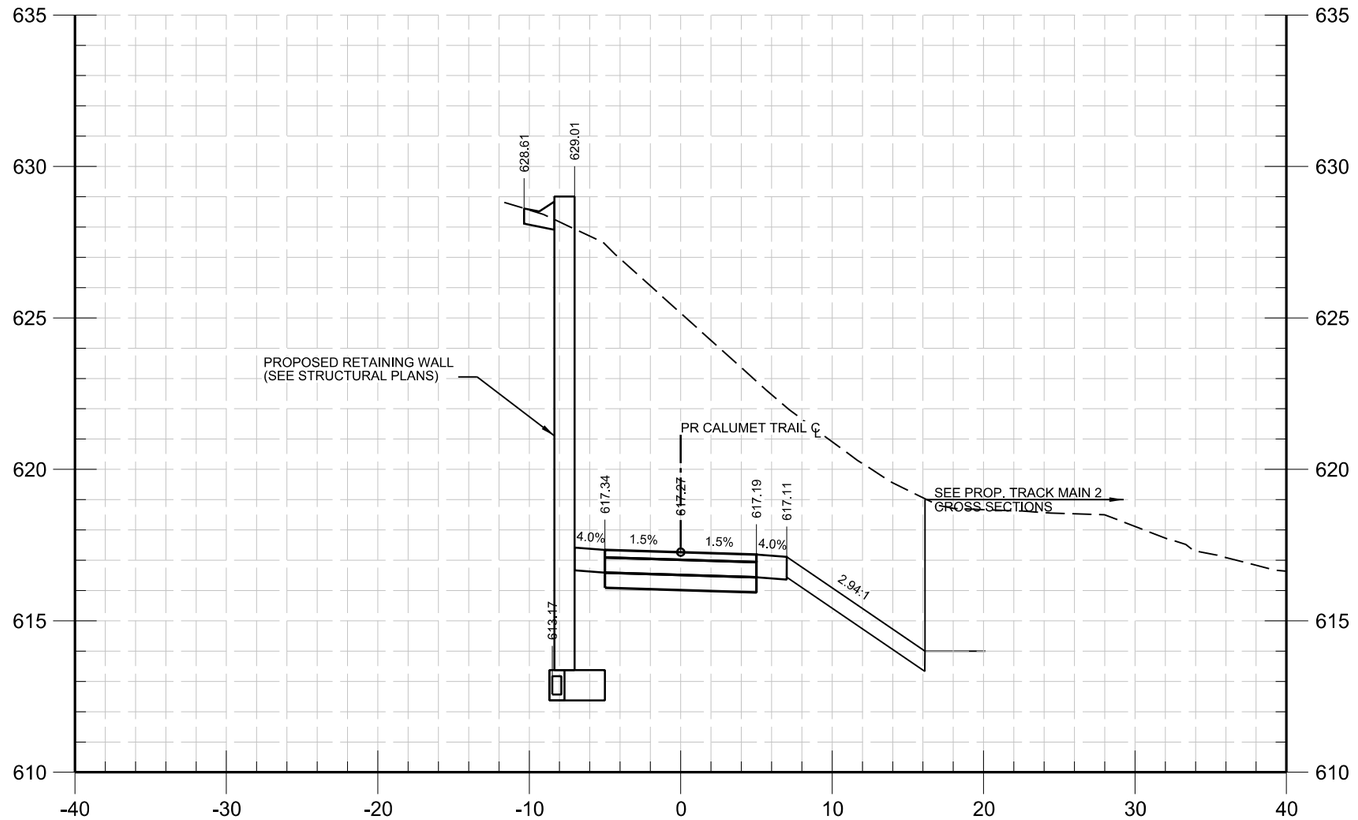
DESIGNED:	ACM-ED
DRAWN:	ACM-ED
CHECKED:	ACM-BMC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

DUNE PARK CALUMET TRAIL CROSS SECTIONS STA 100+00.00 TO STA 103+03.87

FILENAME	DT_DWG_MSC-BIKE-XS.dgn
SCALE	AS NOTED

SHEET OF



102+00.0000 R1

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

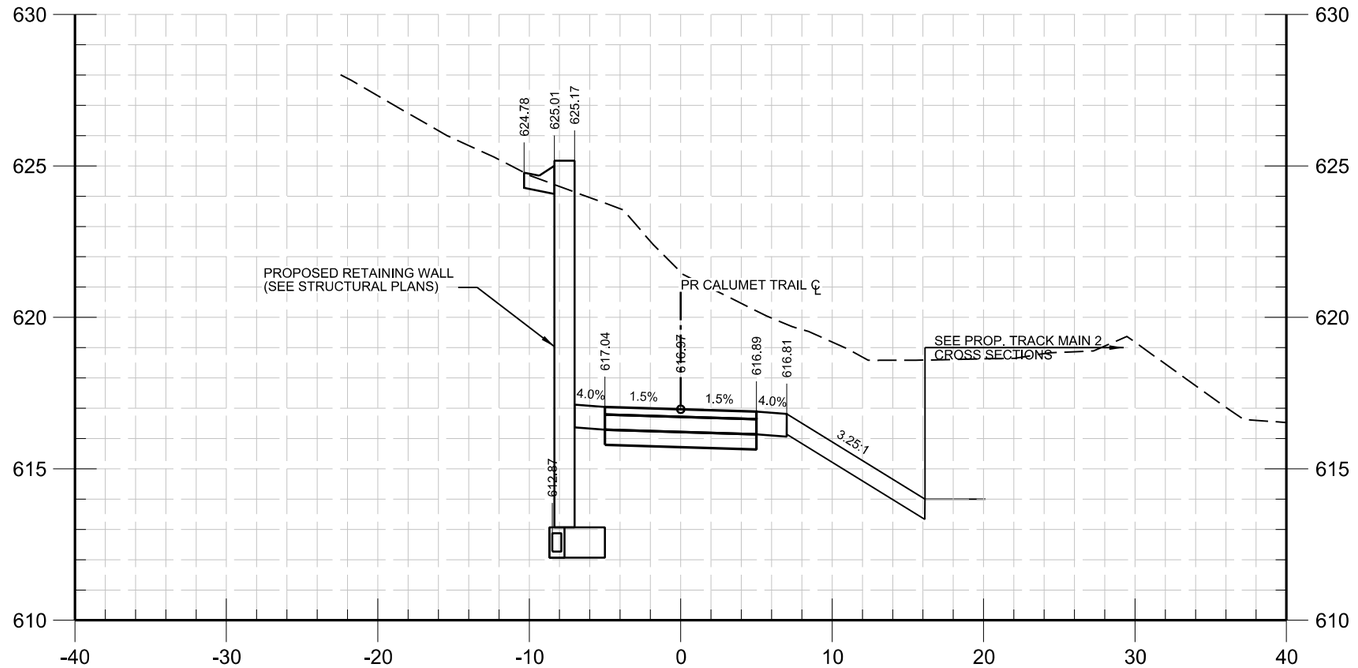
DESIGNED:	ACM-ED
DRAWN:	ACM-ED
CHECKED:	ACM-BMC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

DUNE PARK CALUMET TRAIL CROSS SECTIONS STA 100+00.00 TO STA 103+03.87

FILENAME	DT_DWG_MSC-BIKE-XS.dgn
SCALE	AS NOTED
SHEET	OF

PLOT DATE: 3/13/2020 6:26:58 PM dominguezre1



102+20.0000 R1

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Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	ACM-ED
DRAWN:	ACM-ED
CHECKED:	ACM-BMC
DATE:	03/16/2020

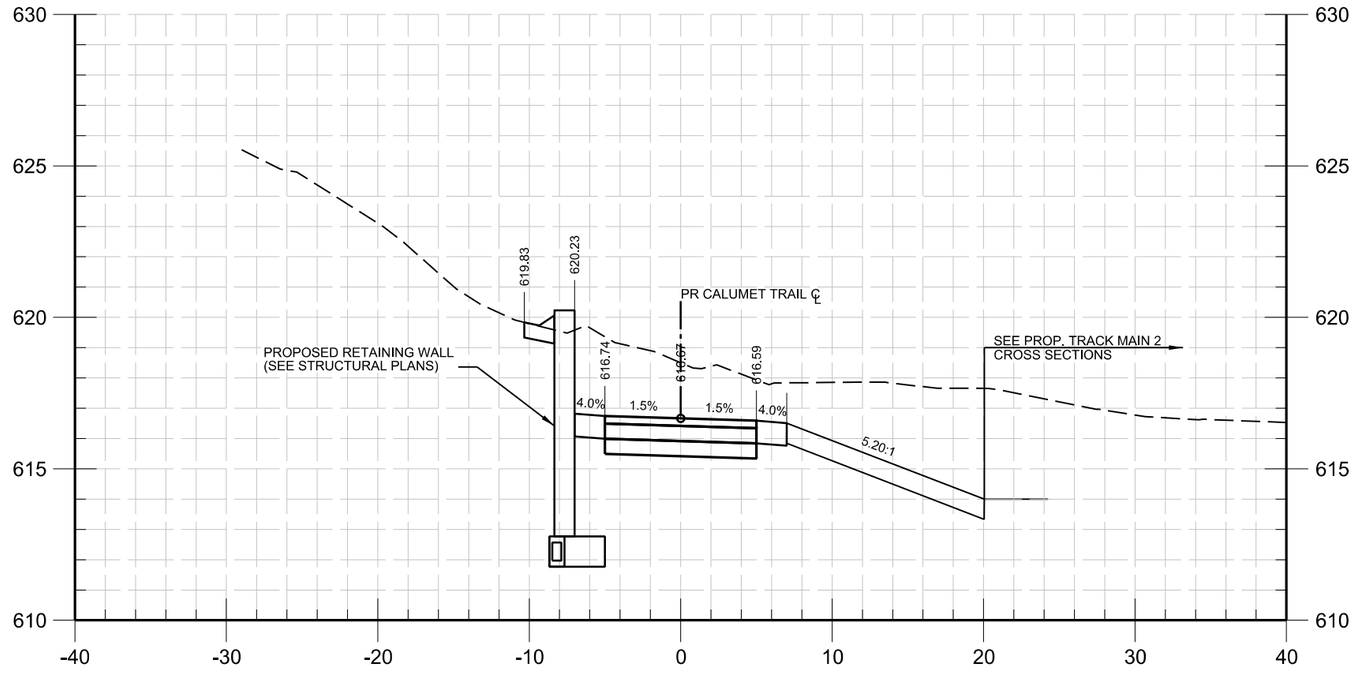
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

DUNE PARK CALUMET TRAIL CROSS SECTIONS STA 100+00.00 TO STA 103+03.87

FILENAME	DT_DWG_MSC-BIKE-XS.dgn
SCALE	AS NOTED

SHEET OF

PLOT DATE: 3/13/2020 6:27:03 PM dominguezе1



102+40.0000 R1

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33 East Highway 12
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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	ACM-ED
DRAWN:	ACM-ED
CHECKED:	ACM-BMC
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

DUNE PARK CALUMET TRAIL CROSS SECTIONS STA 100+00.00 TO STA 103+03.87

FILENAME	DT_DWG_MSC-BIKE-XS.dgn
SCALE	AS NOTED
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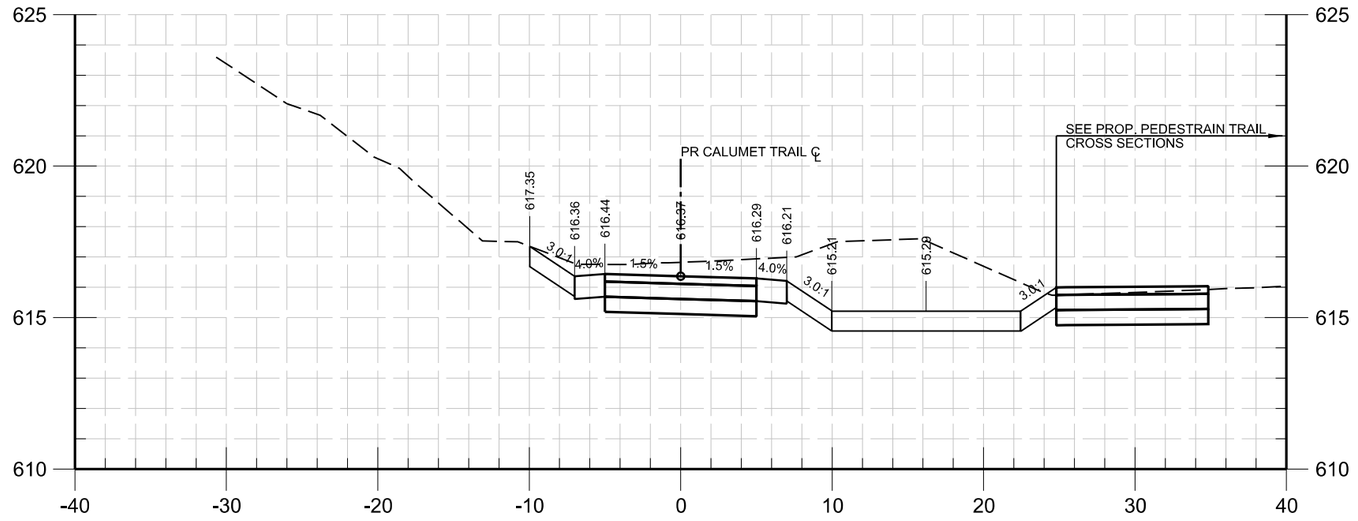
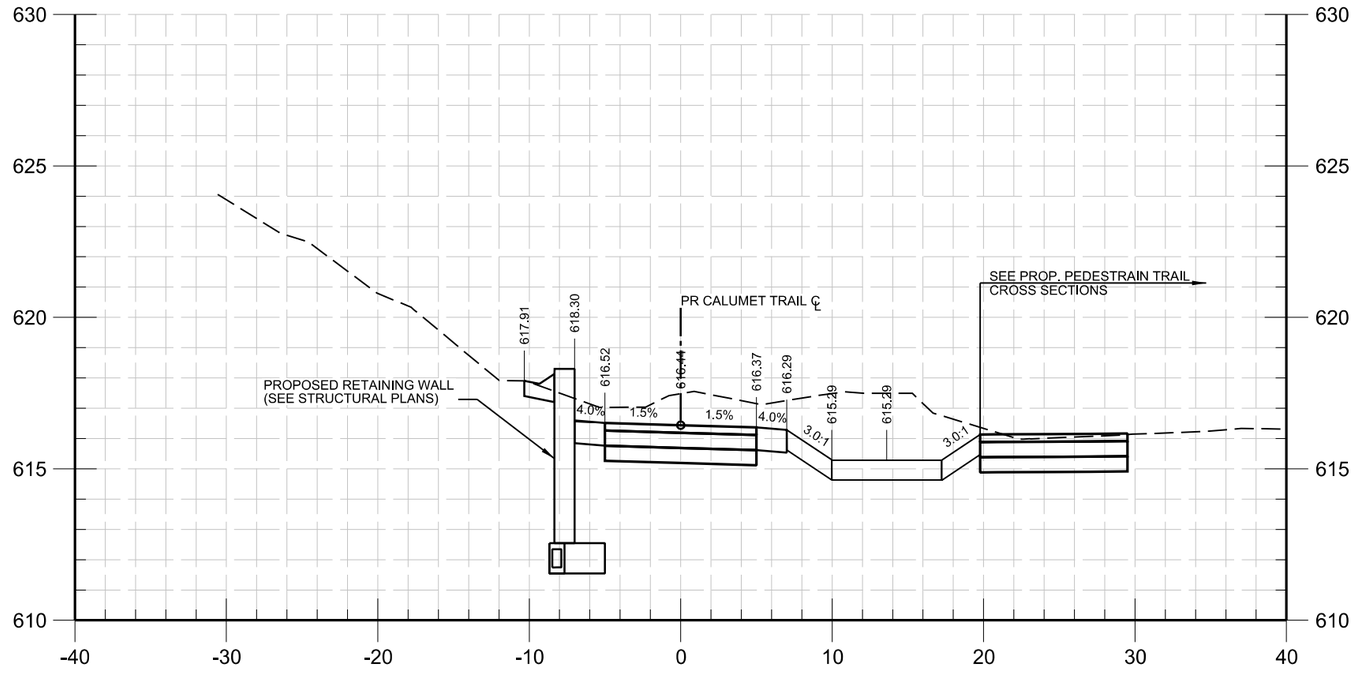
PLOT DATE: 3/13/2020 6:27:09 PM dominguezе1



102+60.0000 R1



102+55.0000 R1

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DRAWING MSC-213 OF MSC-215

PLOT DATE: 3/13/2020 6:27:15 PM dominguezе1

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:	ACM-ED
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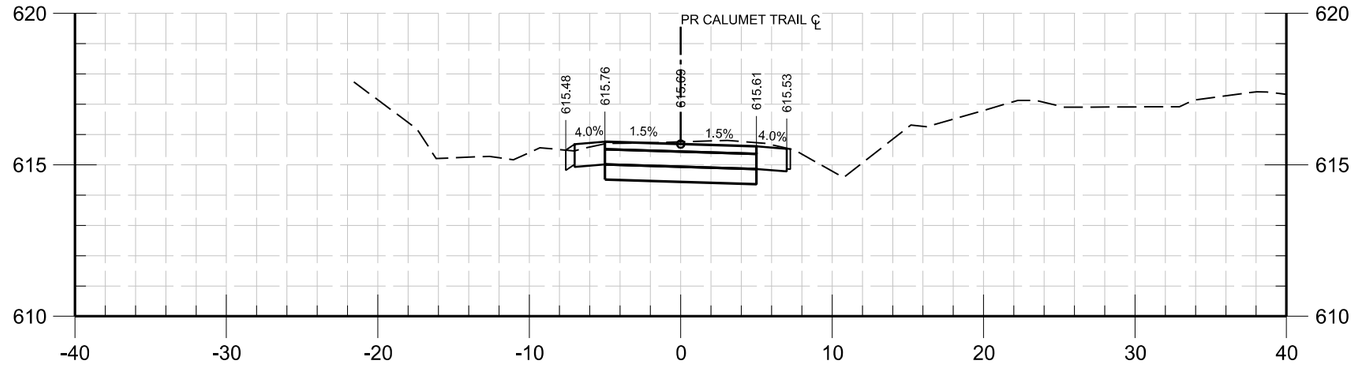
DATE:	03/16/2020

NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

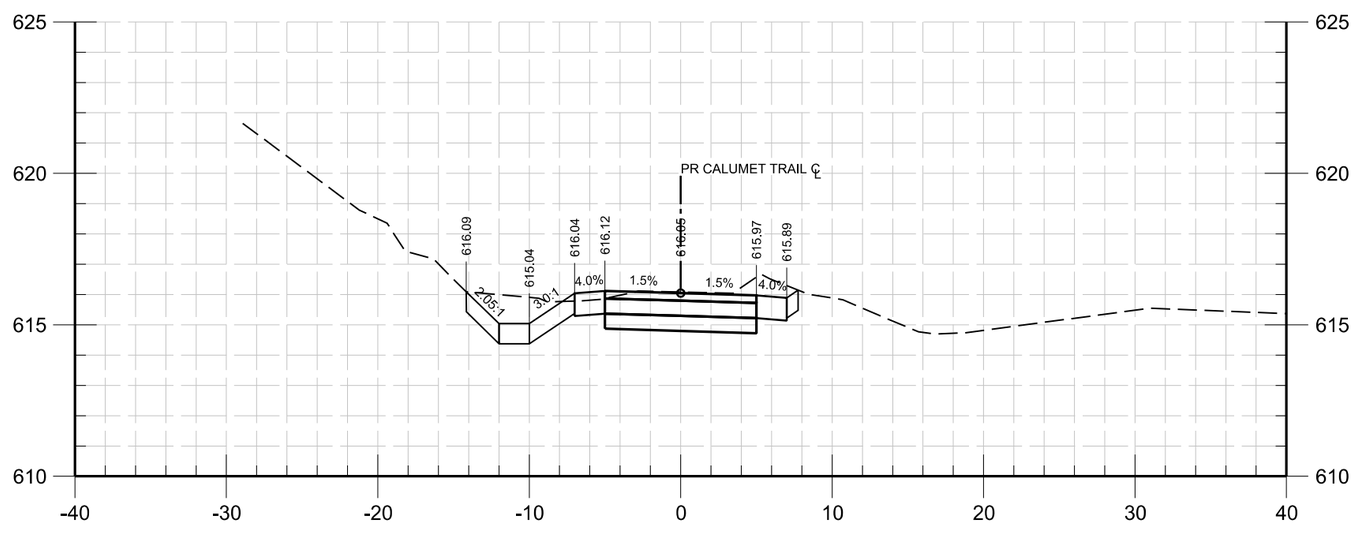
DUNE PARK CALUMET TRAIL CROSS SECTIONS STA 100+00.00 TO STA 103+03.87

FILENAME	DT_DWG_MSC-BIKE-XS.dgn
SCALE	AS NOTED

SHEET OF



103+00.0000 R1



102+80.0000 R1

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DOUBLE TRACK N·W·I
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MICHIGAN CITY TO GARY, INDIANA

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NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

DUNE PARK CALUMET TRAIL CROSS SECTIONS STA 100+00.00 TO STA 103+03.87

FILENAME	DT_DWG_MSC-BIKE-XS.dgn
SCALE	AS NOTED

SHEET OF

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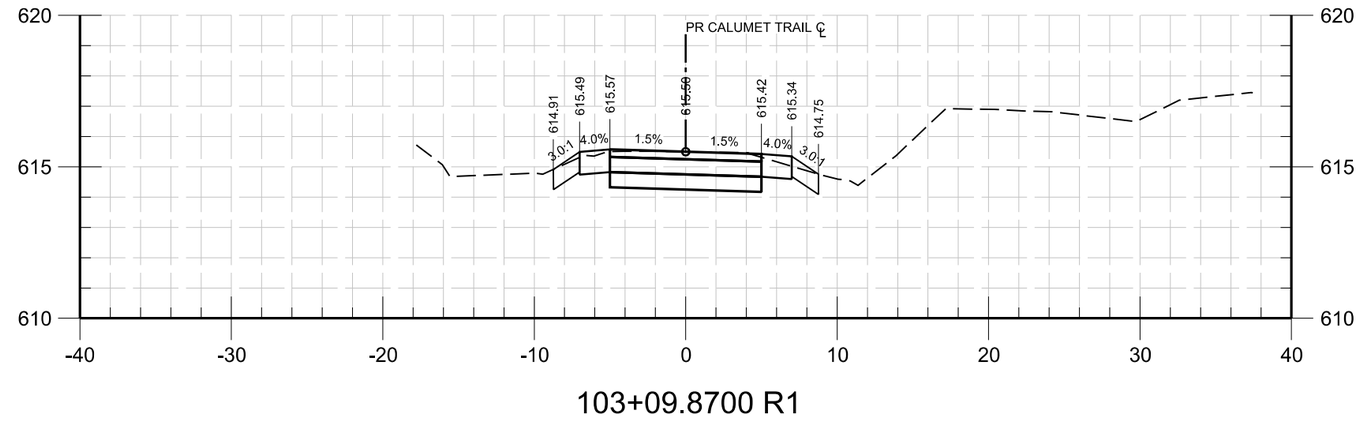

103+09.8700 R1

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DOUBLE TRACK N·W·I
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NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

DUNE PARK CALUMET TRAIL CROSS SECTIONS STA 100+00.00 TO STA 103+03.87

FILENAME	DT_DWG_MSC-BIKE-XS.dgn
SCALE	AS NOTED
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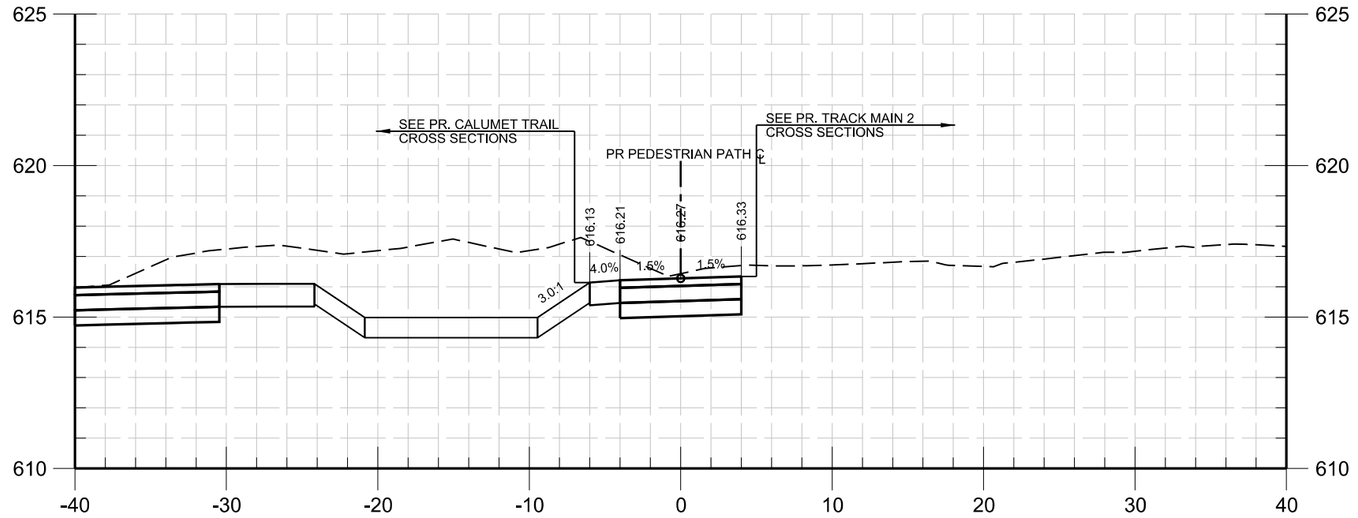
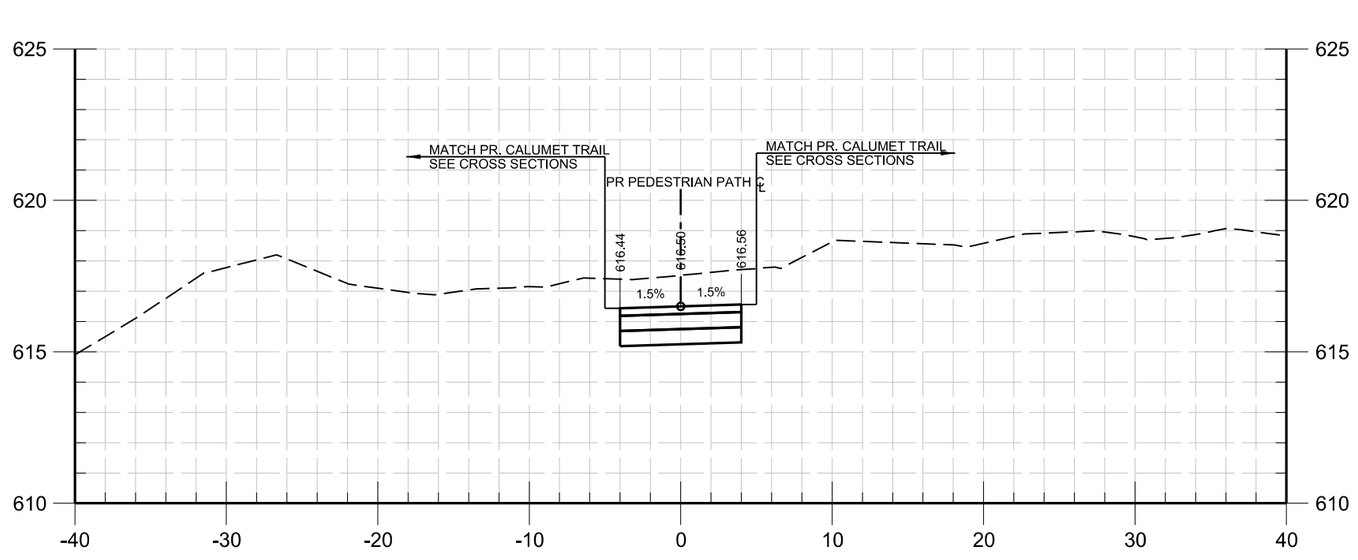
PLOT DATE: 3/13/2020 6:27:27 PM dominguez1



10+20.0000 R1



10+05.0000 R1

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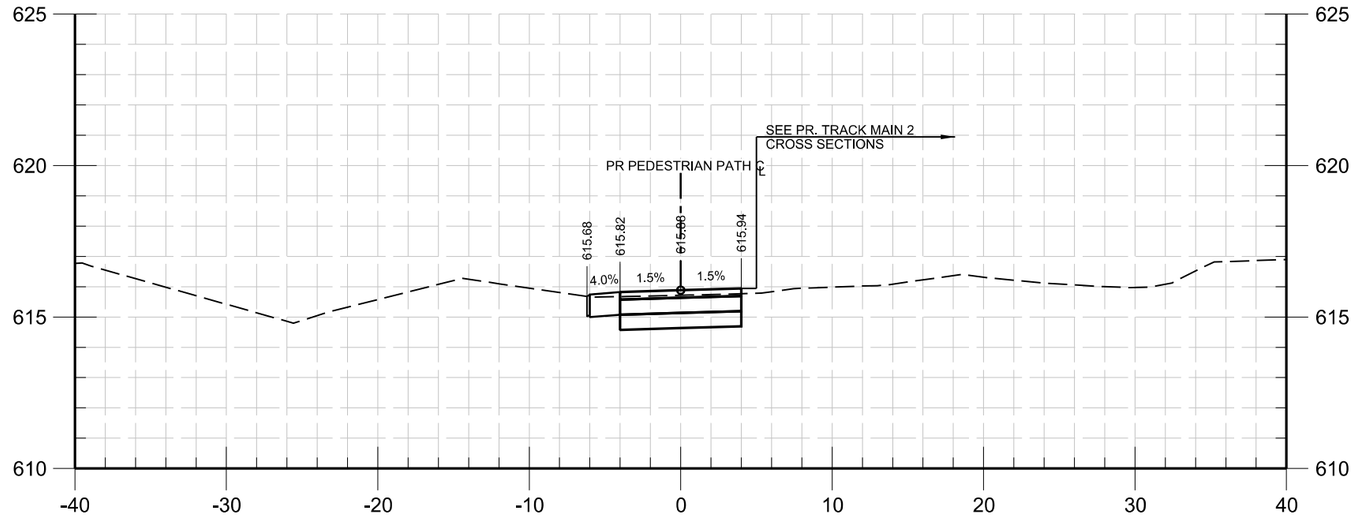
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

DUNE PARK PEDESTRIAN PATH CROSS SECTIONS STA 10+05.00 TO STA 11+76.44

FILENAME	DT_DWG_MSC-BIKE-XS.dgn
SCALE	AS NOTED

SHEET OF



10+60.0000 R1

10+40.0000 R1

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

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NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

DUNE PARK PEDESTRIAN PATH CROSS SECTIONS STA 10+05.00 TO STA 11+76.44

FILENAME	DT_DWG_MSC-BIKE-XS.dgn
SCALE	AS NOTED

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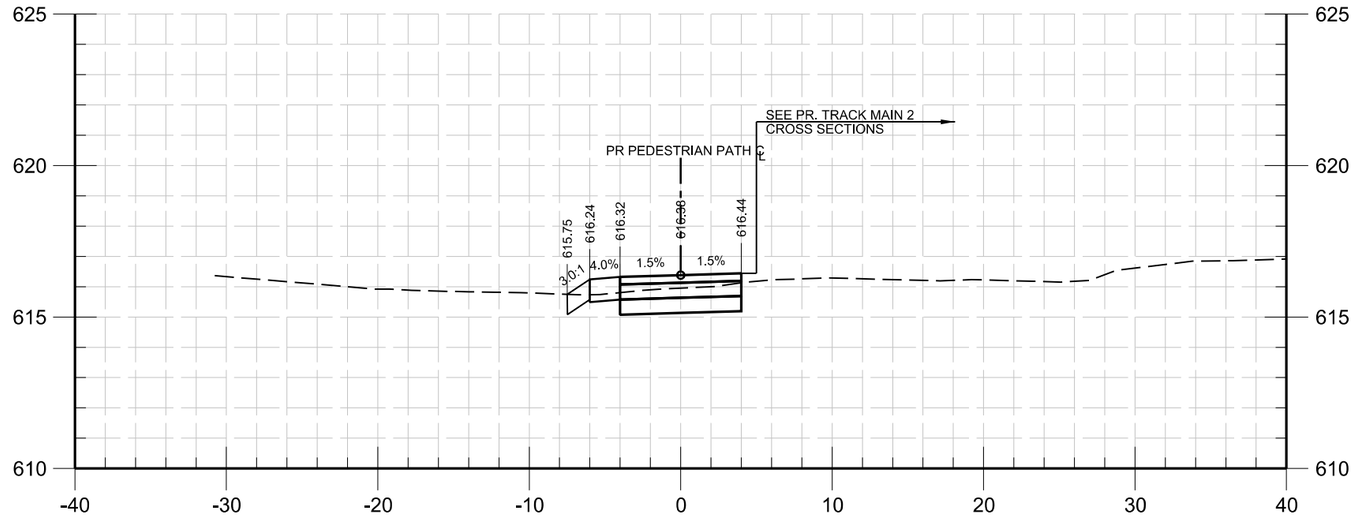
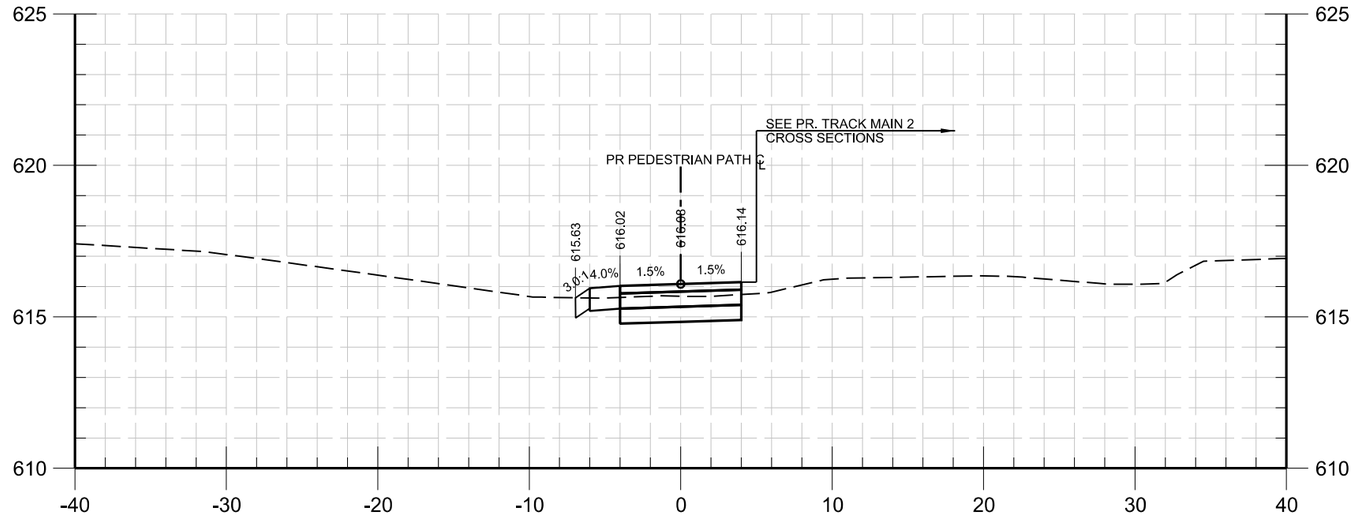


11+00.0000 R1



10+80.0000 R1

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NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
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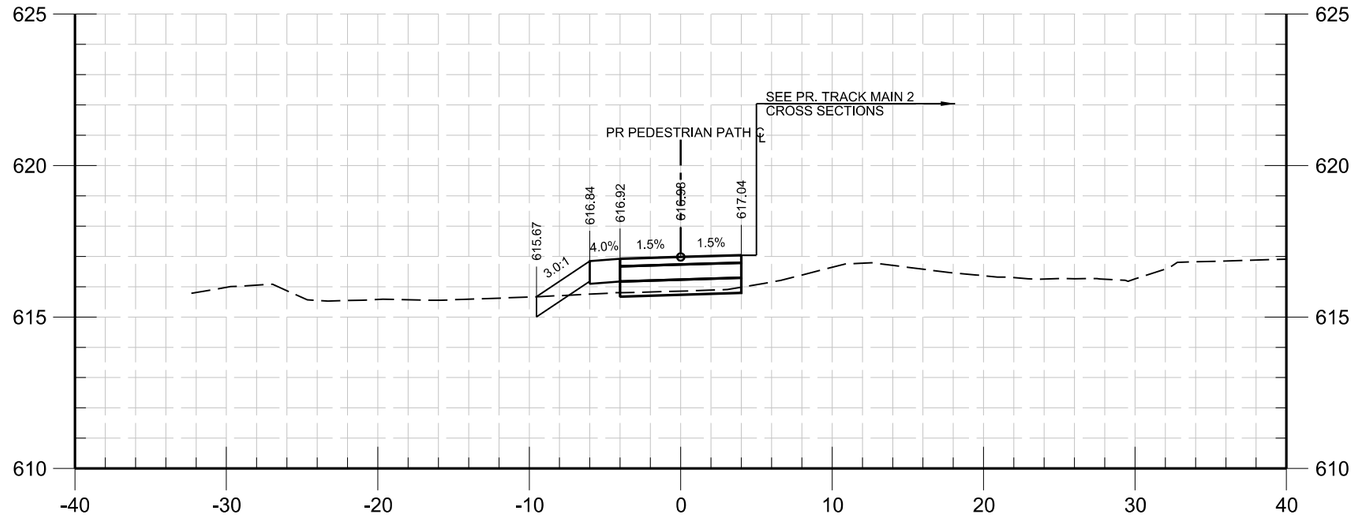
DUNE PARK PEDESTRIAN PATH CROSS SECTIONS STA 10+05.00 TO STA 11+76.44

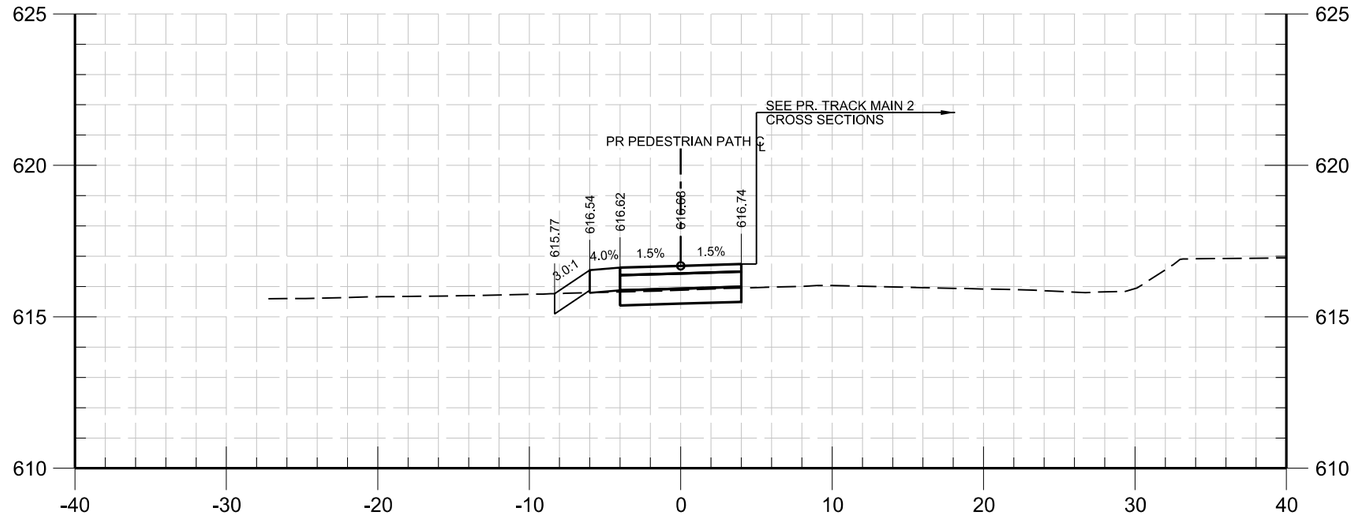
FILENAME	DT_DWG_MSC-BIKE-XS.dgn
SCALE	AS NOTED

SHEET OF

PLOT DATE: 3/13/2020 6:27:44 PM dominguez1



11+40.0000 R1



11+20.0000 R1

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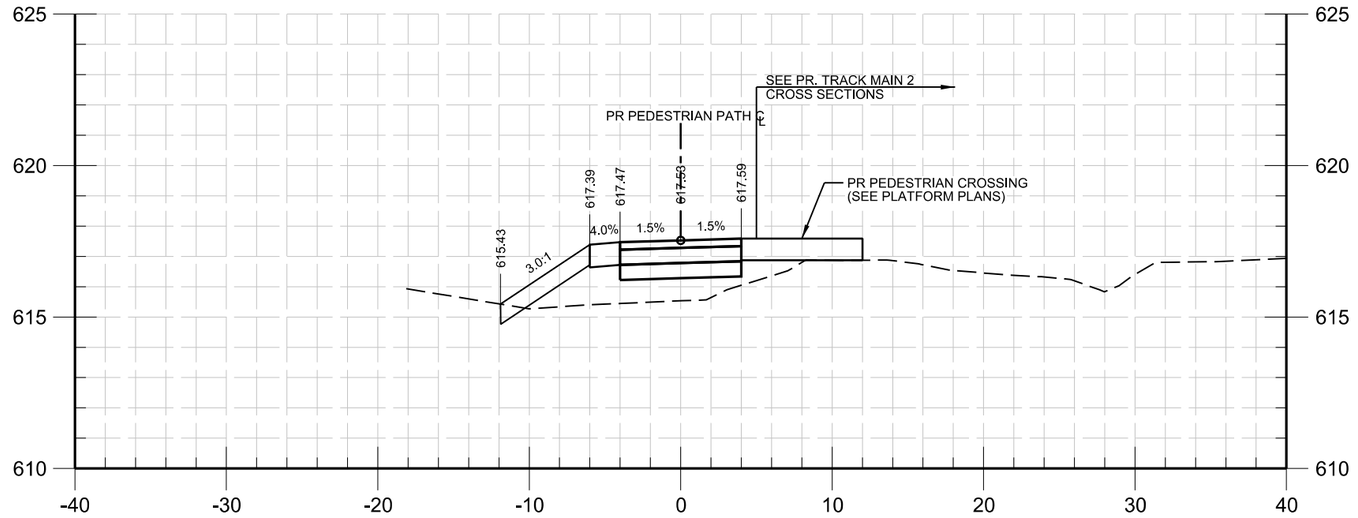
NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

DUNE PARK PEDESTRIAN PATH CROSS SECTIONS STA 10+05.00 TO STA 11+76.44

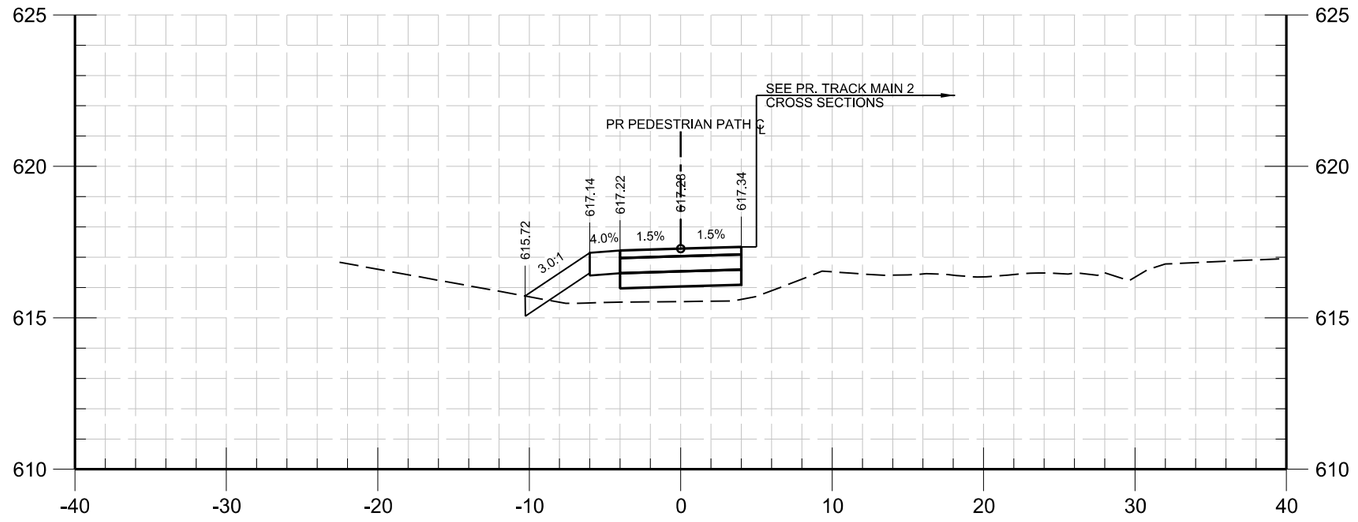
FILENAME	DT_DWG_MSC-BIKE-XS.dgn
SCALE	AS NOTED

SHEET OF

PLOT DATE: 3/13/2020 6:27:50 PM dominguezc1



11+76.44 R1



11+60.0000 R1

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DOUBLE TRACK N·W·I
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MICHIGAN CITY TO GARY, INDIANA

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NICTD - SOUTH SHORE LINE - MP 32.2 TO 58.8
DOUBLE TRACK-NWI

DUNE PARK PEDESTRIAN PATH CROSS SECTIONS STA 10+05.00 TO STA 11+76.44

FILENAME	DT_DWG_MSC-BIKE-XS.dgn
SCALE	AS NOTED

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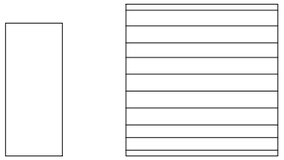
DOOR SCHEDULE									
DR.#	ELEV.	SIZE	THICK.	MATERIAL	FINISH	FRAME MATERIAL	FRAME FINISH	HDW	COMMENTS
S101a	A	3'-0" x 7'-0"	1 3/4"	FIBERGLASS	PAINT	FIBERGLASS			
S101b	B	9'-0" x 10'-0"	1 3/4"	FIBERGLASS	PAINT	FIBERGLASS			



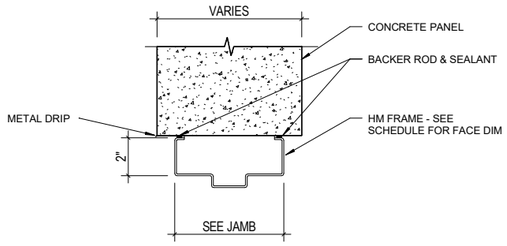
FLUSH

A

SECTIONAL OVERHEAD DOOR

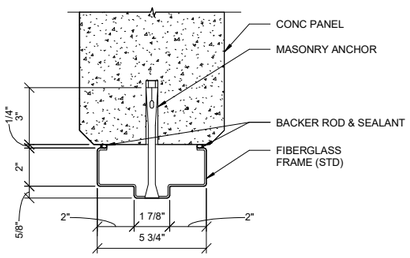
B

FINISH SCHEDULE																		INT. CEILING HEIGHT MIN.
RM#	ROOM NAME	FLOOR						BASE				WALLS				CEILING		
		LIGHT BROOM FIN. CONCRETE						NONE				NONE				EXPOSED TO STRUCTURE		
S101	SALT STORAGE	■						■				■				■		12'-0" CLEAR



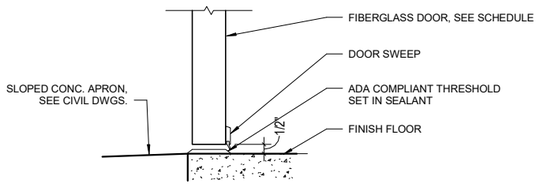
12 HEAD DETAIL AT PRECAST PANEL

Scale: 3" = 1'-0"



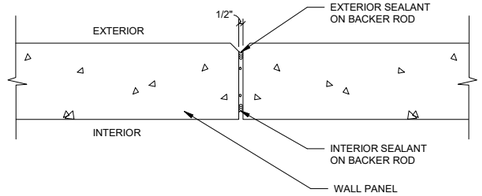
8 JAMB DETAIL AT PRECAST PANEL

Scale: 3" = 1'-0"



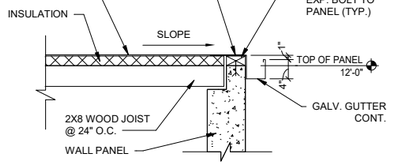
4 DOOR THRESHOLD

Scale: 3" = 1'-0"



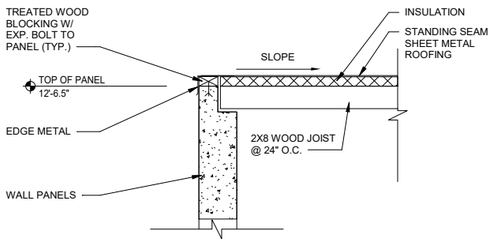
11 SALT STORAGE WALL DETAIL 1

Scale: 1 1/2" = 1'-0"



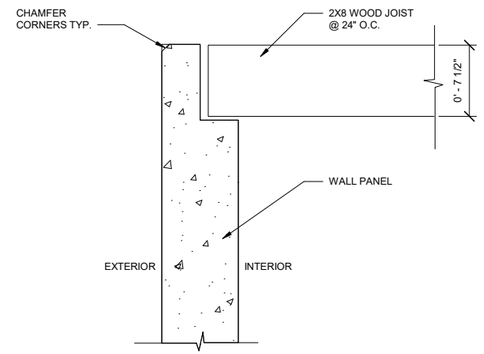
7 WALL DETAIL @ ROOF 2

MSC-001 Scale: 3/4" = 1'-0"



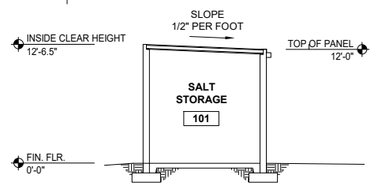
3 WALL DETAIL @ ROOF1

MSC-001 Scale: 3/4" = 1'-0"



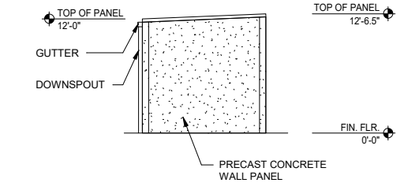
14 SALT STORAGE WALL DETAIL 2

Scale: 1 1/2" = 1'-0"



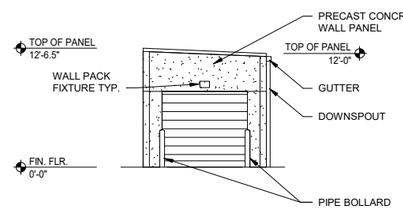
10 SALT STORAGE BUILDING SECTION

Scale: 1/8" = 1'-0"



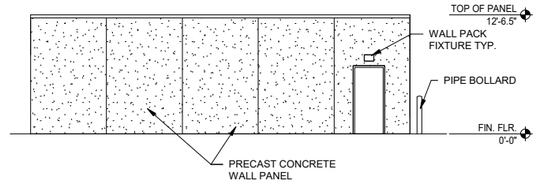
6 SALT STORAGE WEST ELEVATION

Scale: 1/8" = 1'-0"



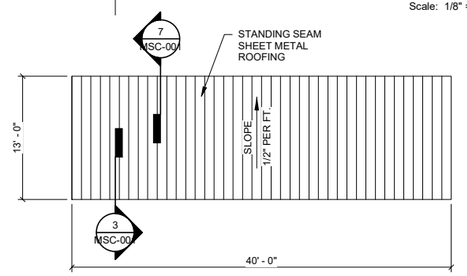
2 SALT STORAGE EAST ELEVATION

Scale: 1/8" = 1'-0"



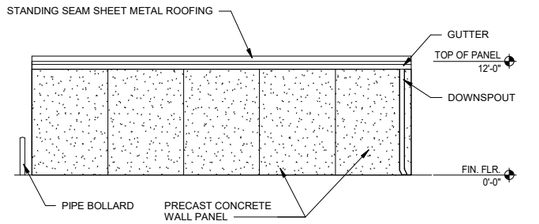
13 SALT STORAGE SOUTH ELEVATION

Scale: 1/8" = 1'-0"



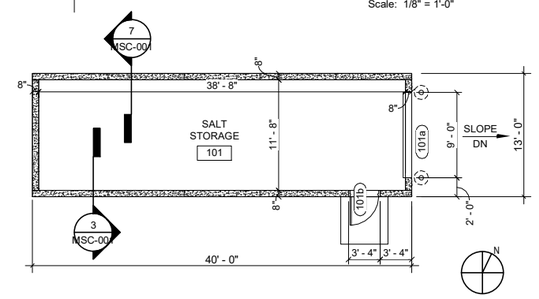
9 SALT STORAGE ROOF PLAN

Scale: 1/8" = 1'-0"



5 SALT STORAGE NORTH ELEVATION

Scale: 1/8" = 1'-0"



1 SALT STORAGE FLOOR PLAN

Scale: 1/8" = 1'-0"

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DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

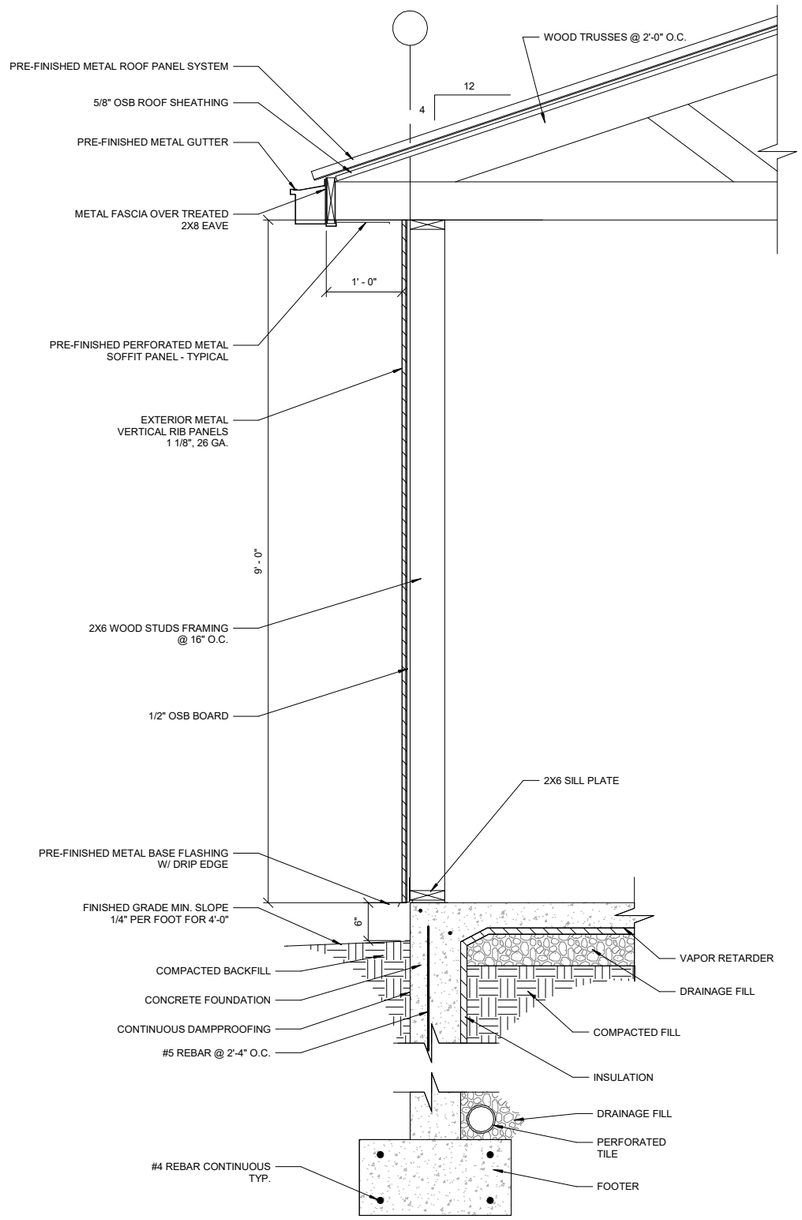
DESIGNED:
DRAWN: Author
CHECKED: Checker
DATE : -

NICTD - SOUTH SHORE LINE MP 32.2 TO 58.8
DOUBLE TRACK - NWI

OGDEN DUNES-SALT STORAGE

FILENAME
SCALE AS NOTED
SHEET:

3/12/2020 10:59:01 AM



3 **TYP. WALL SECTION**
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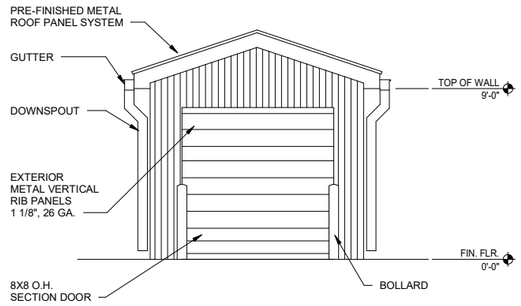

2 **STORAGE BUILDING ELEVATION**
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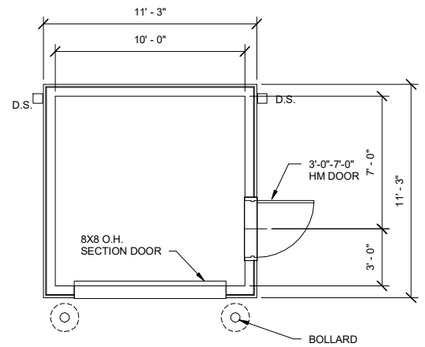

1 **STORAGE BUILDING FLOOR PLAN**
Scale: 1/4" = 1'-0"

60% DESIGN - NOT FOR CONSTRUCTION

DRAWING MSC-401 OF MSC-401

AECOM
303 E. Wacker Drive, Suite 1400
Chicago, IL 60601
Tel: (312) 373-7700
www.aecom.com

ISSUE	DATE	DESCRIPTION
0	03/16/2020	60% DESIGN

NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
33 East Highway 12
Chesterton, Indiana 46304

DOUBLE TRACK N·W·I
Connectivity for Accelerated Growth
MICHIGAN CITY TO GARY, INDIANA

DESIGNED:
DRAWN: Author
CHECKED: Checker
DATE : -

NICTD - SOUTH SHORE LINE MP 32.2 TO 58.8
DOUBLE TRACK - NWI

MILLER STATION-STORAGE BUILDING

FILENAME
SCALE AS NOTED
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Double Track NWI Project

I – Stormwater Pollution Prevention Plans

SWPPP for the City of Gary

STORM WATER POLLUTION PREVENTION PLAN

DRAFT

For

Northern Indiana Commuter Transportation District (NICTD)
Double Track North West Indiana (DTNWI)
City of Gary MS4 District
Milepost 52.55 to 58.32
(Project Station 2775+80 to 3076+40)

MS4 Point of Contact: Brenda Scott-Henry, Stormwater & MS4 Director
Contact Address: 3600 West 3rd Avenue, Gary, IN 46406
p. 219-944-0595
e. bhenry@ci.gary.in.us

Prepared by:
VS Engineering / AECOM
Point of Contact: Jeffrey J. Haw, PE
5821 N. US-35, La Porte, IN 46350
p. 219-873-1100 f. 219-873-1006
e. jhaw@vsengineering.com

Date: June 17, 2020

Hydrologic Unit Code (HUC14): 04040001020010 & 04040001020020
West End: Latitude: 41.6020° N Longitude: 87.3235° W
East End: Latitude: 41.6100° N Longitude: 87.2225° W

Contents

Section 1 SWPPP Elements – PART A 3
A1 – Plan Elements 3
A2 – 11x17 Plat 5
A3 - Project Narrative and Description 5
A4 – Vicinity Map 7
A5 – Legal Description (Including Latitude And Longitude) 7
A6 – Proposed Site Plan 8
A7 – Hydrological Unit Code 8
A8 – State Or Federal Permits 8
A9 – Storm Water Discharge Points 8
A10 – Location of water courses onsite and adjacent to Project 8
A11– Identification of Receiving Waters 8
A12– Identification of potential discharges to groundwater 8
A13 – 100-year Floodplains, floodways and fringes 9
A14 – Pre-Demolition and Post Demolition estimate of Peak Discharge 9
A15 – Adjacent Land Use 10
A16 –Locations And Approximate Boundaries Of All Disturbed Areas 10
A17 – Identification of existing vegetative cover 10
A18 – Soil Map 10
A19 – Storm Water System 11
A20 – Off-Site Construction Activities 12
A21 – Stock Piles, Disposal Areas 12
A22 – Existing Topography 12
A23 – Proposed Final Topography 12
Section 2 SWPPP Elements – PART B 13
B-1 Description Of Potential Pollutant Sources Associated With Construction Activities 13
B-2 Sequence Describing Storm Water Quality Measure Implementation Relative To Land Disturbing Activities 13
B-3 Stable Construction Entrance Locations And Specifications 13
B-4 Sediment Control Measures For Sheet Flow Areas 14

B-5 Sediment Control Measures For Concentrated Flow Area 14
B-6 Storm Sewer Inlet Protection Measures And Locations 14
B-7 Runoff Control Measures 14
B-8 Storm Water Outlet Protection Specification 14
B-9 Grade stabilization structure locations and specifications 14
B-10 Locations, Dimensions, Specifications Of Each Stormwater Quality Measure 14
B-11 Temporary surface stabilization methods appropriate for each season 14
B-12 Permanent surface stabilization specifications 14
B-13 Material handling and spill prevention plan 15
B-14 Monitoring and maintenance guidelines for each proposed storm water quality measure 16
B-15 Erosion and Sediment Control Specifications for Individual Building Lots 18

Section 3 SWPPP Elements –PART C 19
C-1 Description of pollutants and their sources associated with the proposed land use 19
C-2 Sequence describing storm water quality measure implementation 19
C-3 Description of proposed post construction storm water quality measures 19
C-4 Location, dimensions, specifications, and construction details of each storm water quality measure: 20
C-5 Description of maintenance guidelines for post construction storm water quality measures 20

A1 – PLAN ELEMENTS

Plan Elements designated by the Rule 5 Submittal Requirements for Checklist Sections A, B and C are listed in the table below. The location of said elements in the in the plan set "NICTD General & Miscellaneous Plans" are also provided:

Section 1 SWPPP Elements –Part A				
		Element	Description	Location
A	1	Plan Elements	Location of described features in Plans; "NICTD General & Miscellaneous Plans"	PART A1 – table of plan requirement locations
	2	Plat	Site plan of Project Site	APPENDIX SECTION: Plat will be provided at 90% completion in August, 2020
	3	Project Description	Narrative of project and purpose	PART A3
	4	Vicinity Map	Location Map	PART A4 this report; SHEET GEN001 of Plan Set "NICTD General & Miscellaneous Plans"
	5	Legal Description	Legal of Project Site	PART A5 this report; Not Applicable to this project as it spans 26.6 miles across multiple jurisdictions
	6	Site Improvements	Proposed Project Improvements	PART A6 this report; SHEETS ENV200 TO ENV217 of Plan Set "NICTD General & Miscellaneous Plans"
	7	Hydrological unit code	HUC Designation	COVER SHEET this report; PART A7 this report
	8	State/Federal WQP	Additional Water Quality Permits	PART A8 this report
	9	Storm Water Discharge Point	Description/Location of Storm Water Leaving Site	PART A9 this report, SHEETS ENV200 TO ENV217 of Plan Set "NICTD General & Miscellaneous Plans"
	10	Wetlands, Water courses	Location and description of any wetlands/Water courses adjacent to site	PART 10 this report
	11	Receiving Waters	Location and description of all streams that will receive storm water discharge	PART 11 this report, SHEETS ENV200 TO ENV217of Plan Set "NICTD General & Miscellaneous Plans"

Section 2 – SWPPP ELEMENTS CONT.				
		Element	Description	Narrative Location/Sheet Location
A	12	Groundwater Discharge	Location and description of Groundwater Discharge	PART 12 this report - SHEETS ENV200 TO ENV217 of Plan Set "NICTD General & Miscellaneous Plans"
	13	100 Floodplains	Location and description of Floodplain and fringe	PART 13 this report; SHEETS ENV200 TO ENV217 of Plan Set "NICTD General & Miscellaneous Plans"`
	14	Drainage Discharge	Pre-Construction and Post Construction peak discharge rates	PART 14 this report: discharge values/
	15	Adjacent Land use	Identity of adjacent parcel use	PART 15 this report;
	16	Boundaries	Construction Limits	PART 16 this report – SHEETS ENV200 TO ENV217 of Plan Set "NICTD General & Miscellaneous Plans"
	17	Vegetative Cover	Locations of existing vegetative cover	PART 17 this report/ SHEETS ENV200 TO ENV217 of Plan Set "NICTD General & Miscellaneous Plans"
	18	Soils Map	NRCS soil Map	PART 18 this report
	19	Storm System	Location ,size and dimensions of Storm System	PART 19 this report
	20	Off-Site Activity	Plan for Off-Site construction if any	PART 20 this report
	21	Stock Pile, Borrow/Disposal Area	Areas of cut and fill	PART21 this report
	22	Existing Topo	Existing Contours	SHEETS ENV200 TO ENV217 of Plan Set "NICTD General & Miscellaneous Plans"
	23	Proposed Topo	Proposed Contours	SHEETS ENV200 TO ENV217 of Plan Set "NICTD General & Miscellaneous Plans"

A2 – 11X17 PLAT

An 11x17 set of the project sheet drawings will be located in the appendix section of this report as the project approaches 90% completion in August, 2020.

A3 - Project Narrative and Description

The Northern Indiana Commuter Transportation District (NICTD) is proposing to improve a 26.6 mile corridor of their commuter rail line extending from Michigan City westward to the City of Gary. The project will include utility relocations at various locations along the line, improvements to three commuter rail stations and the construction of a second commuter rail line adjacent to the existing commuter rail line for the majority of the project's length.

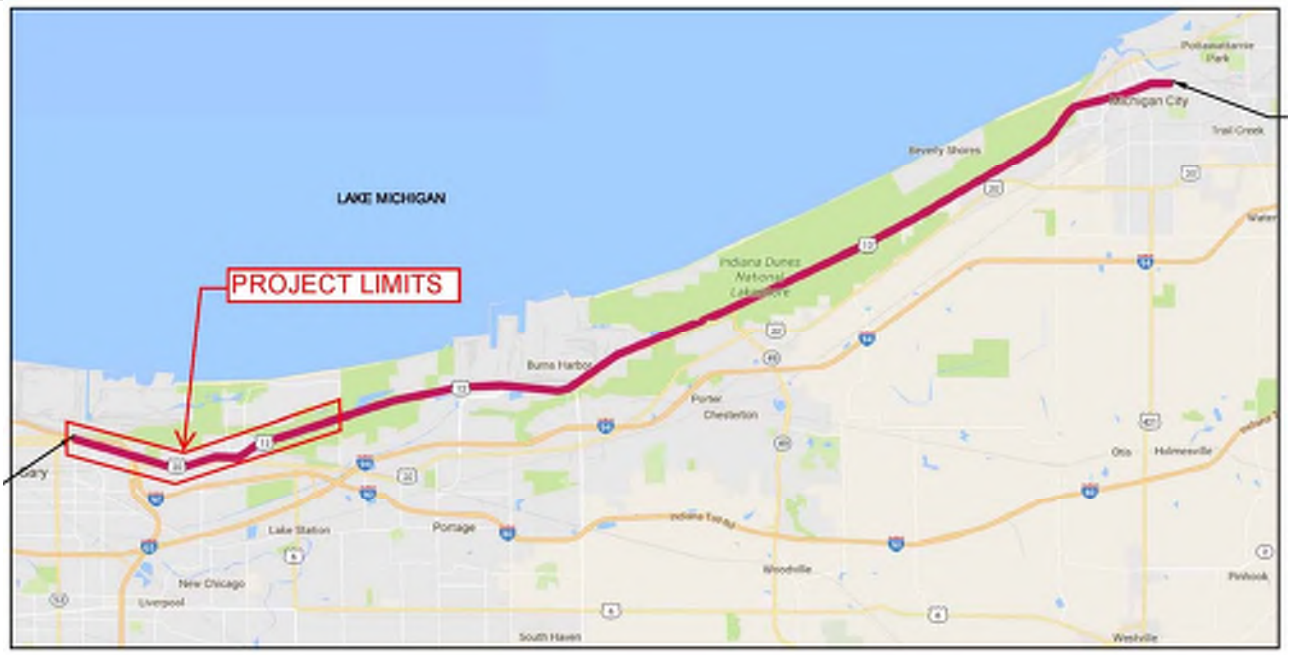
This report will focus on those portions of the project within the City of Gary MS4 District. Per the appended Sheet drawings, this section of the project extends 5.77 miles from Milepost 52.55 (Lake/Porter County Line/County Line Road) to 58.32 (end of project at Georgia Street) or, per the internal project stationing, from Station 2775+80 to 3076+40. The entire length of the project within the City of Gary parallels US-12 and is located along its northern edge. This section of the project includes the following:

- Installation of a second commuter rail line parallel to the existing commuter rail line from Georgia Street to the Lake/Porter County line.
- Relocation of various impacted utilities along the entire project length.
- Significant improvements to the Miller Street Station.

It is important to note that, while this project takes into account the permanent closure of a portion of US-12, it is not part of the Scope of this project to perform that work. Said work will be addressed via INDOT under separate cover.

The project is proposed to begin construction in July of 2021 with a scheduled completion date of March 2023.

A4 – VICINITY MAP



Vicinity Map – No Scale

A5 – LEGAL DESCRIPTION

There is no legal description for this project as, in its entirety, it spans more than 28 miles through multiple jurisdictions.

Site latitude and longitude are as follows:
West End: Latitude: 41.6020° N Longitude: 87.3235° W
East End: Latitude: 41.6100° N Longitude: 87.2225° W

A6 – PROPOSED SITE PLAN

The proposed site plan for the project can be found in the plan set "NICTD General & Miscellaneous Plans", SHEETS ENV200 TO ENV217.

A7 – HYDROLOGICAL UNIT CODE

The HUC 14 unit codes for the project are 04040001020010 (Lake Michigan Shoreline–IND/Harbor Canal) & 04040001020020 (Grand Calumet River/Gary).

A8 – STATE OR FEDERAL PERMITS

A Rule 5 Notice of Intent must be filed with the Indiana Department of Environmental Management for the entirety of the project. Additionally, permits must be filed with the State for the sanitary sewer and water main utilities proposed to be relocated. 401 and 404 permits will be obtained from IDEM/IDNR/Army Corps of Engineers for proposed crossings of Waters of the State where they may occur. Permits from INDOT will be obtained for infringement on INDOT-jurisdiction roadways and crossings.

A9 – STORM WATER DISCHARGE POINTS

In general, the track areas to be improved already have drainage systems in place to accommodate potential future improvement. Therefore, in areas where the only proposed construction is installation of the second commuter rail line and attendant utility relocation, the storm water generated in the area will flow to the same discharge points it is currently flowing to. The exception to this model is the improved Miller Street station. The stormwater plan for this station is **CURRENTLY UNDER DEVELOPMENT AND NOT AVAILABLE FOR REVIEW AT THIS TIME.**

A10 – Location of wetlands, lakes and water courses onsite and adjacent to Project

A wetland delineation survey performed in 2017 to identify wetlands and streams within the Project's study area resulted in a total of 76 wetlands totaling 43.01 acres and a total of 1,117 feet of streams. This information is captured in a Waters of the U.S. Delineation Report for the Project dated August 18, 2017 which was prepared by Metric Environmental. Project documents can be accessed at the Project's website at https://www.doubletrack-nwi.com/. NICTD is currently applying to the USACE and IDEM for a Section 404/401 Individual Permit. These areas are shown via hatch on SHEETS ENV200 TO ENV217. Said areas shall be protected and, to the extent possible given the scope of the project, shall not be disturbed.

A12 – Identification of potential discharges to groundwater

The vast majority of the proposed construction scope includes construction of a secondary commuter rail adjacent to the existing commuter rail. These areas will drain via sheet drainage to their existing drainage points. However, the Miller Street Station improvements include a number of facilities that will allow discharge to groundwater, specifically including the proposed detention/retention areas and rain gardens included in the development plans.

A13 – 100-Year Floodplains, floodways and fringes

This is located entirely within zone X (areas determined to be outside of the 0.2% annual chance floodplain) national Flood Insurance Rate Map numbers 180089C0156E, 18089C0157E and 18089C0176E, all effective dated January 18, 2012.

A14 – Pre-Construction and Post Construction Estimates of Peak Discharge

THIS SECTION TO BE COMPLETED WITH INFORMATION OBTAINED FROM OTHER DESIGNERS – THIS INFORMATION IS NOT YET AVAILABLE FOR REVIEW.

A15 – Adjacent Land Use

Given its length, adjacent land uses to the commuter track corridor range from undeveloped through residential to industrial and commercial. Additional detail regarding land use may be found in SHEETS ENV200 TO ENV217 of the plan set "NICTD General & Miscellaneous Plans".

A16 –Locations and Approximate Boundaries of all disturbed areas

The project demolition limits may be found on SHEETS ENV200 TO ENV217 of the plan set "NICTD General & Miscellaneous Plans".

A17 – Identification of existing vegetative cover

The existing vegetative cover can be found on SHEETS ENV200 TO ENV217 of the plan set "NICTD General & Miscellaneous Plans". The vast majority of the proposed development area is clear of trees and vegetation due to the presence of the existing commuter rail line track.

A18 – Soil Map

The USDA Soil Map for the project Map is shown below. The site consists of multiple significant soil types:

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ca	Houghton muck, drained, 0 to 1 percent slopes	22.4	3.7%
Gf	Gilford mucky fine sandy loam	11.7	2.0%
Mm	Maumee loamy fine sand, 0 to 1 percent slopes	3.0	0.5%
OaE	Oakville fine sand, 12 to 25 percent slopes	3.3	0.5%
OkB	Oakville-Adrian complex, 0 to 6 percent slopes	219.5	36.5%
PlB	Plainfield fine sand, 0 to 6 percent slopes	0.0	0.0%
Ta	Adrian muck, drained, 0 to 1 percent slopes	23.0	3.8%
Ur	Urban land	317.4	52.7%
Subtotals for Soil Survey Area		**600.4**	**99.8%**
Totals for Area of Interest		**601.7**	**100.0%**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ad	Adrian muck, drained, 0 to 1 percent slopes	0.0	0.0%
Hm	Houghton muck, ponded	0.3	0.0%
Mm	Maumee loamy sand	0.1	0.0%
OaC	Oakville fine sand, 4 to 12 percent slopes	0.1	0.0%
OaE	Oakville fine sand, 18 to 40 percent slopes	0.9	0.1%
Subtotals for Soil Survey Area		**1.3**	**0.2%**
Totals for Area of Interest		**601.7**	**100.0%**

Mm
Mm
Mm

A20 – Off-Site Construction Activities

There are no proposed off-site construction activities.

A21- Stock Piles, Disposal Areas

All material generated by the site will be disposed of in approved disposal facilities off-site. Stock pile locations will be determined and protected by project contractor on an as-needed bases. Stock pile areas will be protected by silt fence at their base immediately upon creation and, if said areas are intended to sit unattended for more than 15 days, will be temporarily seeded and mulched.

A22- Existing Topography

The existing topography with major and minor contour intervals of one foot interval is located on SHEETS ENV200 TO ENV217 of the plan set ““NICTD General & Miscellaneous Plans”.

A-23 Proposed Final Topography

The proposed final topography may be found on SHEETS ENV200 TO ENV217 of the plan set “NICTD General & Miscellaneous Plans”.

Section 2 SWPPP Elements – PART B

B-1 Description of potential pollutant sources associated with construction activities

The proposed development will generate potential pollutants during construction operation that could enter the existing storm sewer system, and storm water. Potential pollutant sources that may generate pollutants on the project include, but are not limited to, material and fuel storage areas, fueling locations, exposed soil locations, stored construction equipment and vehicles that may be leaking oil arid fuels. Pollutants generated from these sources include, but are not limited to, gasoline and diesel fuel, oil and grease, fertilizers, antifreeze, rubber fragments, metals, trash, and unprotected soils.

B-2 Sequence describing storm water quality measure implementation relative to land disturbing activities

The contractors and subcontractors shall be responsible to implement practices for the prevention of pollutants reaching the existing storm sewer systems in place. Prevention should include but not be limited to the following items.

A general anticipated construction schedule is attached for the project that highlights the construction sequencing and implementation of the storm water quality measures

a. Install SWPPP information boards and permits.
b. Installation of silt fencing prior to any earthwork activities.
c. Installation of gravel construction entrances prior to any earthwork activities.
d. Installation of pump arounds/diversion devices.
e. Topsoil stockpiles shall be surrounded with silt fencing.
f. All proposed swales and major grading shall be done to rough grades at start of construction to prevent excessive soil erosion due to construction. All swales, ditches and detention/retention basins shall be temporarily seeded and have fiber rolls installed to prevent run off and bank erosion. Permanent seeding or hydro seeding shall be done upon completion of construction.
g. Basin slopes shall be protected with erosion control matting and temporary seeding/mulching as necessary.
h. After completion of storm sewer system facilities, storm sewer inlet protection shall be placed at each open-grate structure (fiber roll barrier, filter basket, etc).
i. Inlets and outlets shall be protected via rip-rap to slope and disperse discharges.
j. Utility relocations shall be installed as necessary.
k. Utilities relocations including electric/cable/telephone, gas and fiber shall be installed.
l. Curb and gutter, road pavement, parking area and other pavement repair tasks shall be constructed.
m. All disturbed areas shall be seeded or mulched upon final grading and when no additional disturbance is anticipated.
n. Silt fencing shall be installed at perimeter of major drainage swales upon final grading to prevent erosion or sediment build up from adjacent construction activities.
o. Permanent seeding shall be placed across all completed graded areas – see following notes regarding extent of establishment.
p. All erosion control features and materials are to be maintained until the completion of construction. This standard includes that vegetation must be established to at least 70% full growth prior to completion.
q. All temporary erosion control measures are to be removed upon permanent vegetative cover being established. This standard includes that vegetation must be established to at least 70% full growth prior to completion.

B-3 Stable construction entrance locations and specification (at all points of ingress and egress)

Construction entrances shall be implemented at entrances to site from main access roads or where contractor deems access is necessary. See SHEETS ENV200 TO ENV217.

B-4 Sediment control measures for sheet flow areas

Silt fencing shall be used for the sheet flow areas along the perimeter of the project as shown. See SHEETS ENV200 TO ENV217. Erosion control matting shall be used in high slope or high flow areas as shown on SHEETS ENV200 TO ENV217.

B-5 Sediment control measures for concentrated flow area

Temporary and permanent seeding shall be used for the swales and drainage ditches to control erosion. If these methods are found to be inadequate, erosion control blankets or other methods will be applied. See SHEETS ENV200 TO ENV217.

B-6 Storm sewer inlet protection

Storm sewer inlets, both existing and proposed, shall be protected by basket-type inlet protection. This policy is universal across the entirety of the project and is covered by general note in SHEETS ENV200 TO ENV217.

B-7 Runoff control measures

Erosion fencing shall be used to control runoff.

B-8 Storm water outlet protection specification

The storm water outlets will have a rip-rap blanket and a stone aggregate filter. See SHEETS ENV200 TO ENV217 for additional information.

B-9 Grade stabilization structure locations and specifications

No grade stabilization structures or measures are required for this development.

B-10 Location, dimensions, specifications and construction details of each storm water quality measure

Locations, dimensions specifications and construction details of each storm water quality measure are detailed on SHEETS ENV200 TO ENV217 in the plan set “NICTD General & Miscellaneous Plans”.

B-11 Temporary surface stabilization methods appropriate for each season

Temporary seeding shall be done on all grading areas within 15 days of temporary completion of grading to provide for stabilization. In the event that seeding is to be done outside the typical seeding periods, during the late fall, early winter or early spring seasons, dormant or frost seeding or mulching shall be done for areas to remain undisturbed for 15 days or more.

B-12 Permanent surface stabilization specifications

Permanent seeding shall be done on all earthen pond banks, street right-of-ways, and major drainage swales at the time of completion. Construction and seeding of these items shall be completed during the
normal seeding seasons to ensure adequate germination and stabilization. In the event that seeding is to be done outside the typical seeding periods, during the late fall, early winter or early spring seasons, dormant or frost seeding or mulching shall be done for areas to remain undisturbed for 15 days or more.

B-13 Material handling and spill prevention plan

The contractors and their subsequent subcontractors shall be responsible to implement practices for the prevention of pollutants reaching the proposed storm drainage system, the existing storm sewer system, or the floodplain. Prevention should include but not be limited to, material handling and storage, clean-up of pollutant at time of detection, and regular maintenance of erosion practices.
Throughout the construction of this project there are a number of materials expected to be handled on the site and may be subject to spills. In order to prevent the entering of these materials into the soils, storm sewers, and ground waters of the project the on-site handling of soils shall be limited to the
Excavation, loading, arid spreading. The contractor shall minimize the disturbance of excavated soils by minimizing the number of times the soil is handled. In the event that a spill occurs, the following measures shall be taken for the associated material,

Material handling & spill prevention

- Material handling and spill prevention for all materials listed, anticipated to be used and any other pollutants not described but associated with land disturbance and construction activities shall be provided by all project contractors and subcontractors. The contractors and subcontractors shall refer to the Material Safety Data Sheet (MSDS) for information on the proper storage, use, and cleanup methods for all materials anticipated to be on the project site.
- All required materials for spilt clean up and disposal of all onsite materials shall be kept on site in a project trailer with easy access for all users of associated materials.
- All disposals of spilled materials shall be done in accordance with Federal, State and Local waste disposal regulations. All contractors and subcontractors shall be responsible for any and all spills associated with their work.

Oil, grease and other hydrocarbons

Spills if possible should be contained at time of detection, Removal shall be done mechanically or wipe up or absorbed on suitable material and shovel up. Disposal should be in accordance with Federal, State and Local waste disposal regulations. Handling and storage of any oil, grease or other hydrocarbons shall he done in tightly closed containers, in a dry cool place away from any heat or ignition sources.

Gasoline and diesel fuel

Spills if possible should be contained at the time of detection, Remove any source of heat and ignition, such as engines and power tools. Clean up spill area by use of sand or other absorbent
scrape up and place in appropriate containers for disposal. Disposal should be in accordance with Federal, State and Local waste disposal regulations. Handling and storage of any gasoline and diesel fuel shall be done in tightly closed containers, in a dry cool place away from any heat or ignition sources.

Fuel storage on the project site shall be avoided if possible to aid in the prevention of spills, Tanker trucks should be used for the fueling of large construction equipment.

Antifreeze

Spills if possible should be contained at time of detection. Shot off source or leak, dike and contain spill area. Remove spills promptly by use of shovel, vacuum trucks or pump, and store into clean
empty storage drums, Trace residue can be soaked with water, but do not flush to sewer or surface water, Disposal should be in accordance with Federal, State and Local waste disposal regulations Handling and storage of any antifreeze shall be done in tightly closed containers, in a dry cool place away from any heat or ignition sources.

Rubber fragments, metals and trash

All materials shall be swept up and disposed of as regular trash or reclaimed for scrap value in accordance with Federal, State and Local waste disposal regulations. Handling arid storage of rubber, metals and trash shall be placed in a refuse area until such time of appropriate disposal.

Fertilizer

All excess spills of material shall be swept or soaked up and placed in a suitable waste disposal container, when possible it should be recycled. Minor spills should be flushed with water, avoiding contamination of any streams and waterways. Disposal should be in accordance with Federal, State and Local waste disposal regulations. Handling and storage of any fertilizer shall be done in tightly closed containers or bags, in a dry cool place.

Grit, wearing of road surface

- All materials shall be swept up and disposed of as regular trash or reclaimed for scrap value in accordance with Federal State and Local waste disposal regulations
- Handling and storage of rubber, metals and trash shall be placed in a refuse area until such time of appropriate disposal.

- Concrete wash out

  Contractor to designate a specific concrete wash out area on the project site for use by the concrete supply company to release any remaining concrete. The area chosen shall be away from any storm water drainage structures, and shall be properly surrounded with silt fencing to prevent runoff of excess material. The concrete shall be disposed of in accordance with Federal, State and Local waste disposal regulations.
  The concrete shall be piled as to provide for easy loading and removal from the project site.

- Vehicle Washing

  Contractors are required to wash construction vehicles before AND after leaving a construction site to minimize transfer of invasive species.

- Typical Spill Procedures

  In the event that a large spill occurs (that which requires extensive cleanup actions, refer to MSD sheets for information), the following procedures shall be followed to minimize exposure of the material.

  a. Immediate action shall be taken to control and contain the spill to prevent it from entering any nearby storm sewer structures or open waters.
  b. Notify the Local Fire Department at 911 for all combustible and flammable materials.
  c. Notify the Federal Emergency Spill Hotline at 1-800-424-8802 within 2 hours for spills above the reported allowable quantity, or if the material enters any nearby storm sewer structures or open waters.
  d. Notify the Indiana Emergency Response Hotline at 1-888-233-7745.
  e. The spill area shall be isolated from all surrounding areas with absorbent pads, booms, and pillows designed for the use of spill containment and absorption.
  f. The spill kits that are required to be on site shall be utilized.
  g. Emergency Response teams shall be contacted for extensive spills above and beyond the containment by available methods, These materials listed, and the associates spill prevention and clean up methods, are the typical expected materials to be used. All additional materials used on the project site shall be monitored, and all spills addressed in the same manner above.

B-14 Monitoring and maintenance guidelines for each proposed storm water quality measure

Maintenance of all erosion and sediment control practices shall be done on a weekly basis and after all measurable rain events. The Contractor, and associated subcontractors, is responsible for the maintenance and implementation of all practices. The Contractor shall see that all practices are maintained according to the design criteria.

Silt fence

- To be installed prior to any dirt movement on the site. Installation to be in accordance with Erosion Control Plan of engineering plans.
- Additional silt fencing may be required as deemed necessary by Contractor to prevent additional onsite erosion of topsoil stock pile or proposed bermed areas.
- If fence fabric tears, starts to decompose or becomes ineffective, replace the affected portion.
- Remove any deposited sediment when it reaches half of the height of the fence at Its lowest point or is causing the fabric to bulge.
- Take care to avoid undermining the fence during clean out.
- After the watershed has been stabilized with vegetation, remove the fence and the sediment deposits

Filter Socks

- To be installed prior to any dirt movement on the site. Installation to be in accordance with Erosion Control Plan of engineering plans.
- Additional filter socks may be required as deemed necessary by Contractor to prevent additional onsite erosion of topsoil stock pile or proposed bermed areas.
- Filter socks must be biodegradable. However, filter socks may NOT contain photo degradable mesh due to the presence of the T/E species Eastern massasauga within the project area.
- Remove any deposited sediment when it reaches half of the height of the sock at Its lowest point or is causing the sock to deform.
- Take care to avoid undermining or moving the socks during clean out.
- After the watershed has been stabilized with vegetation, remove the socks and the sediment deposits

Pump Arounds

- To be installed prior to any dirt movement on the site. Installation to be in accordance with Erosion Control Plan of engineering plans.
- Filter bags to be checked on a daily basis – sediment/filter bags to be removed/replaced according to manufacturer's specifications.
- Discharge points/sump pits to be checked on a daily basis – sediment to be removed when sump pit is 1/2 full.
- Take care to avoid damaging or undermining the sump pits during clean out.
- Take care to avoid damaging or undermining the filter bags during removal/replacement.
- After the watershed has been stabilized with vegetation, remove the socks and the sediment deposits

Barrier filters (fabric inlet protection, basket curb protection)

- To be installed in all storm sewer drainage structures upon installation m paved areas to prevent sediment buildup with the newly installed structures.
- Inspect after storm events and when visual signs of sediment buildup is encountered.
- If excess sediment buildup is anticipated around certain structures, additional methods may be combined to provide extra protection
- If basket filters become ineffective for any reason, they will be promptly replaced.

Gravel construction entrance pads

- To be installed at start of construction in conjunction with the silt fencing prior to any dirt movement on the site.
- Inspect entrance pad and sediment disposal area weekly and after storm events or heavy use.
- Reshape pad as needed for drainage and runoff control,
- Top dress with clean stone as needed.
- immediately remove mud and sediment tracked or washed onto public roads by brushing or sweeping, Flushing should only be used if the water is conveyed into a sediment trap or basin.
- Repair any broken road pavement immediately.

Mulching

- To be installed once major grading has taken place and fine grading is near completion or completed.
- To be installed as alternative to temporary seeding to provide temporary stabilization of surface grading. To be used in conjunction with permanent seeding to provide additional moisture conservation

to speed seed germination and growth.

- Inspect after storm events to check for movement or mulch or for erosion
- If washout, breakage, or erosion is present, repair the surface, then re-seed, re-mulch and, if applicable, install new netting.
- Continue inspections until vegetation is firmly established.

Grass-lined channel

- To be installed to rough grade as part of mass grading to provide adequate surface drainage for construction. To be seeded upon fine grading and when no further grading or construction is anticipated on, around or across channel.
- Inspect the channel following storm events during and even after vegetative establishment: make needed repairs immediately.
- Check the channel outlet and road crossings for blockage, sediment, bank instability, and piping or scour holes; remove any blockage, and make repairs immediately.
- Remove significant sediment and debris from the channel to maintain design cross-section and grade and to prevent spot erosion.
- To be installed upon installation, backfill and rough grading around all yard drains and any drainage structures not in paved areas.
- Also inspect periodically for deterioration or damage from construction activities, and repair immediately.

Temporary seeding

- To be installed on all areas upon fine grading when minor or little future grading may be required, but exceeds a month's time until future disturbance.
- Inspect periodically after planting to see that vegetative stands are adequately established: re-seed if necessary.
- Check for erosion damage after storm events and repair; re-seed and mulch if necessary
- Top dress fall seeded wheat or rye seedlings with 50 lbs/acre of nitrogen In February or March if nitrogen deficiency is apparent.

Permanent seeding

- To be installed upon final grading of areas of no future grading or disturbance and not be disturbed be remaining construction.
- Inspect periodically, especially 24 hours after storm events of a minimum of ½ inch, until the stand is successfully established. (Characteristics of a successful stand include: vigorous dark green bluish-green seeding; uniform density with nurse plants, legumes, and grasses well inter-mixed; green leaves; and the perennials remaining green throughout the summer, at least at the plant base.).
- Plan to add fertilizer the following growing season according to soil test recommendations.
- Repair damaged, bare, or sparse areas by filling any gullies, re-fertilizing, over- or re- seeding, and mulching.
- If plant cover is sparse or patchy, review the plant materials chosen, soil fertility moisture condition, and mulching: then repair the affected area either by over-seeding or by reseeding and mulching alter re-preparing the seedbed.
- If vegetation fails to grow, consider soil testing to determine acidity or nutrient deficiency problems. (Contact your SWCD or Cooperative Extension office for assistance.)
- If additional fertilization is needed to get a satisfactory stand, do so according to soil test recommendations.
- Final stabilization and approval will not be permitted until at least 70% coverage has been achieved.

Stone rip-rap (rip rap on slopes, rock chutes)

- To be installed upon rough grading of backfill of storm sewer outlet structures, and maintained until final grading takes place.
- Inspect rip-rap areas periodically and after storm events of ½ inch or greater.
- Check for displaced stone material, slumping and erosion at all edges.
- If needed top dress with clean stone, using appropriate size stone.

B-15 Erosion and sediment control specifications for individual building lots

Silt fence to be installed as indicated on the Soil Erosion & Sedimentation Control Plan in the set "NICTD General & Miscellaneous Plans". Temporary seeding, permanent seeding, rip-rap and erosion control matting will be used along the ditches, for the retention pond, inlets, along the road and other locations as needed.

Section 3 SWPPP Elements –PART C

C-1 Description of pollutants and their sources associated with the proposed land use

The project when completed will be accessed by numerous maintenance vehicles as well as periodic daily commuter train traffic. The expected pollutants that will be generated by the site when completed will be that associated with vehicular and train emission (e.g., oil, grease, antifreeze, rubber fragments, gasoline, diesel fuel and other vehicular matters), wearing of the road surface, salt or other means of snow removal, and trash from littering and other types of improper disposal or storage. Also included are grass clippings, fertilizers, pesticides and herbicides resulting from landscaping and land maintenance activities. Elevated storm water runoff temperatures may exist due to contact with the impervious surfaces during the warmer months of the year.

C-2 Sequence describing storm water quality measure implementation

The post construction storm water quality measures to be installed with this project and the sequencing are as follows:

a. Grass-lined drainage swales. Shall be installed to rough grade at start or early stage of construction to prevent storm water runoff from the project construction entering the surrounding areas. If underground utilities are proposed under the proposed swales, they shall be installed first, and the swales shall be incorporated into the grading of the backfill.

b. Storm sewer basins with sumps (parking lot areas). Shall be installed at early stage of construction with storm sewer system to provide drainage for the project site during and after construction activities. To be installed prior to roadway construction and lot grading.

c. Storm water detention basin/forebays with controlled outlet flow (parking lot areas) : Shall be installed at early stage of construction with storm sewer system to provide stormwater storage area during and after construction activities. To be installed prior to roadway construction and lot grading.

d. Permanent seeding and any additional landscaping. Shall be installed on all final graded areas that have no additional land disturbing activities scheduled.

C-3 Description of proposed post construction storm water quality measures

As with any new construction project, whether residential, commercial, or industrial, there will be an increase in the amount of impervious areas that will generate additional storm water runoff. To accommodate this increase, along with the pollutants expected to be generated by the use of the project, certain storm water quality measures and erosion control methods have been incorporated into the design.

The project is designed to help reduce pollution and sediment in storm water runoff associated with the project when completed in addition to during construction. The measures to be used have been listed above and their respective effects on storm water quality are described below.

a. Storm water detention/retention basin. Is designed to accept the storm sewer system discharge to prevent unrestricted outflow and sediment release to existing storm sewer systems, drainage swales or ditches, or open waterways. The basin system will act as a settling basin for sediment and pollutants that may still exist in the storm water being received. The basin also allows for the storage of storm water during a 100-year storm event while slowly releasing the water through the designed restriction method. This prevents the erosion of the downstream areas.

b. Grass-lined drainage swales. Shall be permanently seeded, sodded, or hydroseeded upon final grading to ensure adequate stabilization. The swales will be the first to receive any runoff of surrounding grassed areas that have reached saturation after infiltration. The grass-lined swales will act as a pretreatment area to filter sediment and any minor pollutants prior to entrance into the storm sewer system.

c. Storm sewer basins with sumps. Sumps shall be utilized to collect sediment from storm water runoff not filtered from the grass-lined swales to prevent excessive build up in the pond.

d. Permanent seeding and any additional landscaping. Stabilized vegetation and landscaping features will aid in the reduction of storm water runoff velocity and aid in filtering sediment contained in said runoff before it reaches the storm sewer systems

C-4 Location, dimensions, specifications, and construction details of each storm water quality measure:

See SHEETS ENV200 TO ENV217 in the plan set “NICTD General & Miscellaneous Plans”.

C-5 Description of maintenance guidelines for post construction storm water quality measures

Routine inspections, operation and maintenance of the storm water quality measures associated with the project are the responsibility of the owner, homeowner association, local government for public utilities, or can be contracted to an outside company far the private utilities.

•Periodic inspection of the storm water quality measures should be implemented to ensure continued operation during the lifetime of the project.
•Any accumulated sediment and debris shall be removed and disposed of properly from structures, BMP devices, and rip-rap,

so as not to impact on the capacity arid function of such devises.

- Rip-rap areas shall be check for displaced stone material, slumping and erosion at all edges, and if needed top dress with clean stone, using appropriate size stone.
- All outlet control devices, being restrictor pipe or restrictor plates within manholes shall be routinely inspected for proper operation and sediment accumulation.
- Pond banks and basins shall be inspected for debris and sediment accumulation and be removed arid disposed of properly to ensure the pond functions properly.

TABULAR SCHEDULE OF INSPECTION AND MAINTENANCE ACTIVITIES

System Devise	Frequency	Task
Catch Basins and Sumps	Quarterly	Inspect and clean as needed with pump or vacuum removal
Detention Basins and Inlet and Outlet Pipes	Quarterly	Inspect and Clean (Debris Removal)
Drainage Swales	Quarterly and following significant storm events	Inspect and Clean (Regrade and Seed as Necessary)
Rip Rap Areas	Quarterly	Inspect and Clean (Remove and Replace as Needed)

United States Department of Agriculture

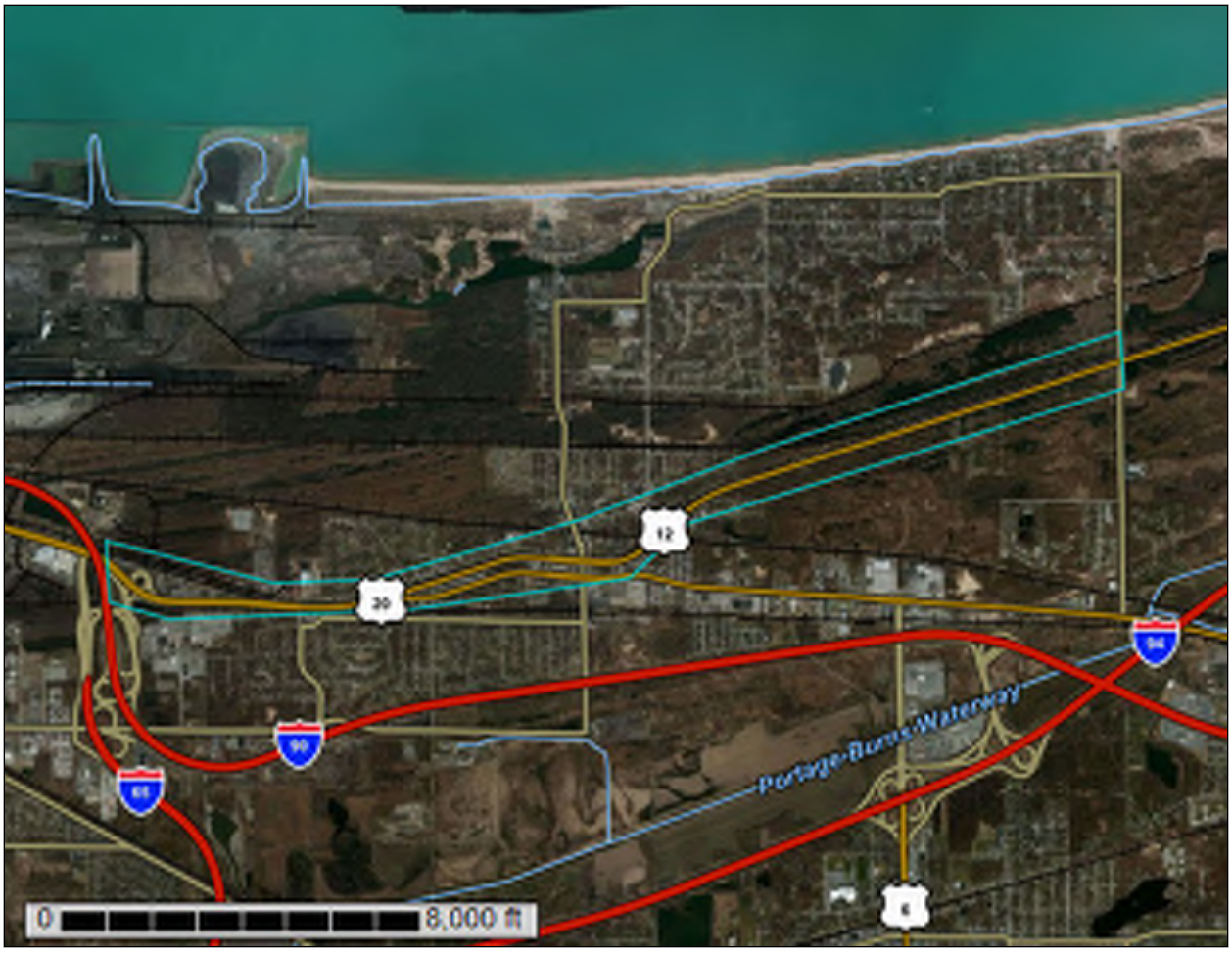
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Lake County, Indiana, and Porter County, Indiana

Soils Map Milepost 52.55 to 58.32



May 3, 2020

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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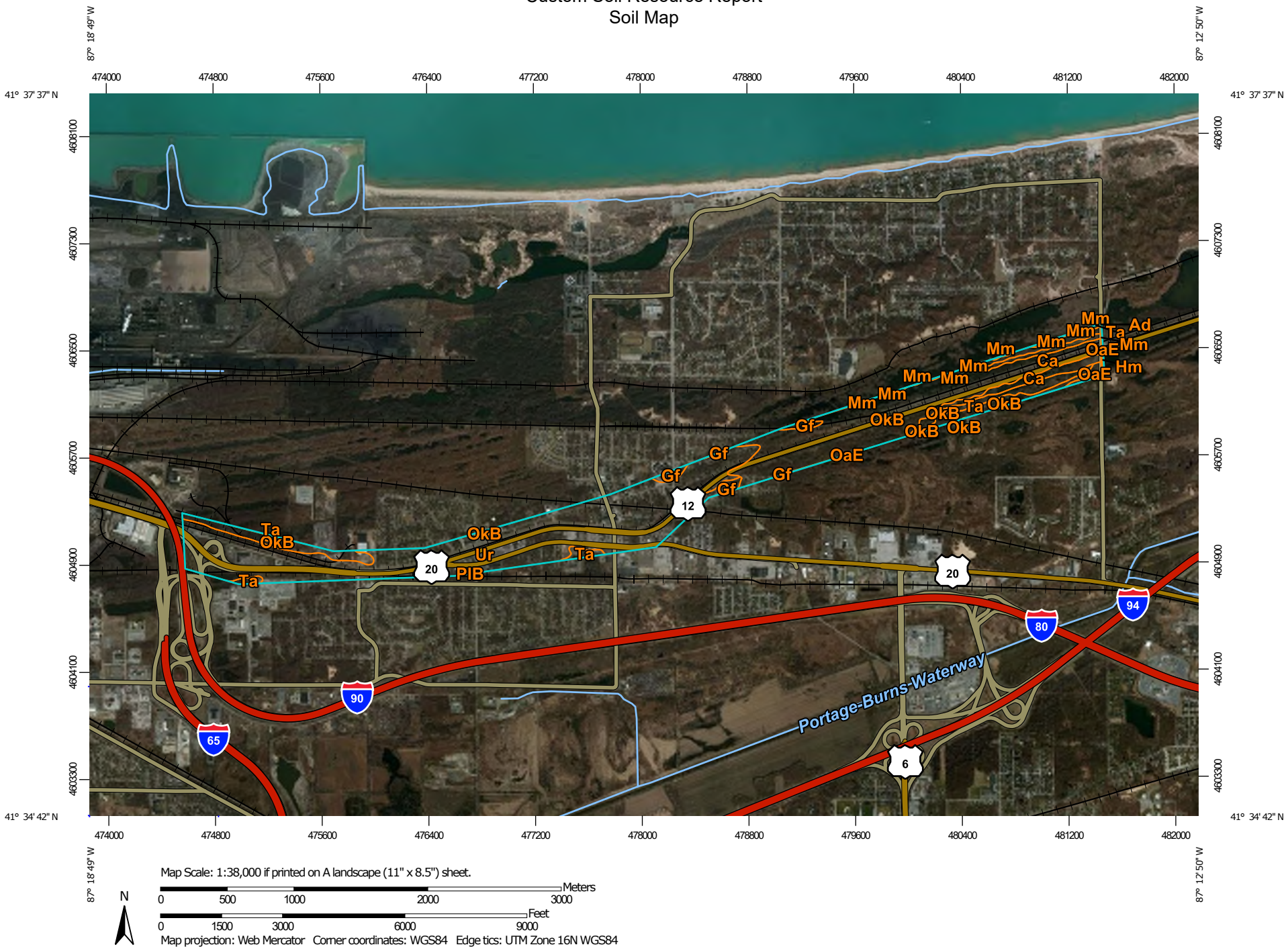
Contents

Preface..... 2
Soil Map..... 5
Soil Map.....6
Legend.....7
Map Unit Legend..... 9
Map Unit Descriptions..... 9
Lake County, Indiana..... 12
Ca—Houghton muck, drained, 0 to 1 percent slopes.....12
Gf—Gilford mucky fine sandy loam.....13
Mm—Maumee loamy fine sand, 0 to 1 percent slopes..... 14
OaE—Oakville fine sand, 12 to 25 percent slopes.....16
OkB—Oakville-Adrian complex, 0 to 6 percent slopes.....17
PlB—Plainfield fine sand, 0 to 6 percent slopes.....19
Ta—Adrian muck, drained, 0 to 1 percent slopes.....20
Ur—Urban land..... 22
Porter County, Indiana..... 23
Ad—Adrian muck, drained, 0 to 1 percent slopes.....23
Hm—Houghton muck, ponded.....24
Mm—Maumee loamy sand..... 25
OaC—Oakville fine sand, 4 to 12 percent slopes.....26
OaE—Oakville fine sand, 18 to 40 percent slopes.....28

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:38,000 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 500 1000 2000 3000

Feet
0 1500 3000 6000 9000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

Soil Map Unit Lines

Soil Map Unit Points

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Lake County, Indiana
Survey Area Data: Version 22, Sep 16, 2019

Soil Survey Area: Porter County, Indiana
Survey Area Data: Version 23, Sep 16, 2019

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 13, 2012—Mar 28, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND

MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ca	Houghton muck, drained, 0 to 1 percent slopes	22.4	3.7%
Gf	Gilford mucky fine sandy loam	11.7	2.0%
Mm	Maumee loamy fine sand, 0 to 1 percent slopes	3.0	0.5%
OaE	Oakville fine sand, 12 to 25 percent slopes	3.3	0.5%
OkB	Oakville-Adrian complex, 0 to 6 percent slopes	219.5	36.5%
PlB	Plainfield fine sand, 0 to 6 percent slopes	0.0	0.0%
Ta	Adrian muck, drained, 0 to 1 percent slopes	23.0	3.8%
Ur	Urban land	317.4	52.7%
Subtotals for Soil Survey Area		**600.4**	**99.8%**
Totals for Area of Interest		**601.7**	**100.0%**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ad	Adrian muck, drained, 0 to 1 percent slopes	0.0	0.0%
Hm	Houghton muck, ponded	0.3	0.0%
Mm	Maumee loamy sand	0.1	0.0%
OaC	Oakville fine sand, 4 to 12 percent slopes	0.1	0.0%
OaE	Oakville fine sand, 18 to 40 percent slopes	0.9	0.1%
Subtotals for Soil Survey Area		**1.3**	**0.2%**
Totals for Area of Interest		**601.7**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some

observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The

pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Lake County, Indiana

Ca—Houghton muck, drained, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 94hp
Elevation: 600 to 1,400 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 51 degrees F
Frost-free period: 170 to 185 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Houghton, drained, and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Houghton, Drained

Setting

Landform: Depressions on outwash plains, depressions on moraines, depressions on till plains, depressions on lake plains
Landform position (two-dimensional): Toeslope, footslope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Herbaceous organic material

Typical profile

Op - 0 to 9 inches: muck
Oa - 9 to 80 inches: muck

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water storage in profile: Very high (about 23.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Minor Components

Edwards, drained

Percent of map unit: 7 percent
Landform: Depressions on outwash plains, depressions on till plains, depressions on lake plains

Landform position (two-dimensional): Footslope, toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Adrian, drained

Percent of map unit: 7 percent
Landform: Depressions on outwash plains, depressions on till plains, depressions on lake plains
Landform position (two-dimensional): Footslope, toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Muskego, drained

Percent of map unit: 6 percent
Landform: Depressions on outwash plains, depressions on till plains, depressions on lake plains
Landform position (two-dimensional): Footslope, toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Palms, drained

Percent of map unit: 5 percent
Landform: Depressions on outwash plains, depressions on till plains
Landform position (two-dimensional): Footslope, toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Gf—Gilford mucky fine sandy loam

Map Unit Setting

National map unit symbol: 94j1
Elevation: 570 to 790 feet
Mean annual precipitation: 36 to 40 inches
Mean annual air temperature: 49 to 51 degrees F
Frost-free period: 170 to 180 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Gilford and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gilford

Setting

Landform: Depressions on outwash plains
Landform position (two-dimensional): Footslope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Loamy over sandy outwash

Typical profile

H1 - 0 to 11 inches: mucky fine sandy loam
H2 - 11 to 38 inches: fine sandy loam
H3 - 38 to 50 inches: loamy sand
H4 - 50 to 60 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 40 percent
Available water storage in profile: Moderate (about 7.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Ecological site: Wet Kankakee Drift Flats (R098XB034IN)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Mm—Maumee loamy fine sand, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2w5n0
Elevation: 630 to 740 feet
Mean annual precipitation: 30 to 41 inches
Mean annual air temperature: 43 to 52 degrees F
Frost-free period: 140 to 230 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Maumee and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Maumee

Setting

Landform: Depressions on outwash plains, depressions on lake plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, dip
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Parent material: Sandy outwash

Typical profile

Ap - 0 to 10 inches: loamy fine sand
A - 10 to 17 inches: loamy fine sand
Bg - 17 to 28 inches: fine sand
Cg - 28 to 80 inches: sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (1.42 to 14.17 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 1.0
Available water storage in profile: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Ecological site: Wet Kankakee Drift Flats (R098XB034IN)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Minor Components

Gilford

Percent of map unit: 3 percent
Landform: Outwash plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Morocco

Percent of map unit: 3 percent
Landform: Dune fields, outwash plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope

Down-slope shape: Linear, convex
Across-slope shape: Linear
Ecological site: Kankakee Acidic Interdunes (F098XB031IN)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Gumz

Percent of map unit: 2 percent
Landform: Depressions on till plains
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope, dip
Down-slope shape: Linear
Across-slope shape: Concave
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Newton

Percent of map unit: 2 percent
Landform: Depressions on outwash plains
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope, dip
Down-slope shape: Concave
Across-slope shape: Concave
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

OaE—Oakville fine sand, 12 to 25 percent slopes

Map Unit Setting

National map unit symbol: 94jr
Elevation: 570 to 790 feet
Mean annual precipitation: 36 to 40 inches
Mean annual air temperature: 49 to 51 degrees F
Frost-free period: 170 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Oakville and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Oakville

Setting

Landform: Dunes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian sands

Typical profile

H1 - 0 to 2 inches: fine sand
H2 - 2 to 60 inches: fine sand

Properties and qualities

Slope: 12 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: Sand Hills (F097XA010MI), Chicago Sand Hills (F097XB040IN)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Tawas

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Maumee

Percent of map unit: 5 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

OkB—Oakville-Adrian complex, 0 to 6 percent slopes

Map Unit Setting

National map unit symbol: 94js
Elevation: 570 to 790 feet
Mean annual precipitation: 36 to 40 inches
Mean annual air temperature: 49 to 51 degrees F
Frost-free period: 170 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Oakville and similar soils: 60 percent
Adrian, drained, and similar soils: 40 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Oakville

Setting

Landform: Dunes
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Eolian sands

Typical profile

H1 - 0 to 2 inches: fine sand
H2 - 2 to 60 inches: fine sand

Properties and qualities

Slope: 0 to 6 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Ecological site: Chicago Sandy Lake Plain (F097XB033IN)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Description of Adrian, Drained

Setting

Landform: Depressions on outwash plains, depressions on till plains, depressions on lake plains
Landform position (two-dimensional): Toeslope, footslope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Herbaceous organic material over sandy outwash

Typical profile

Op - 0 to 9 inches: muck
Oa - 9 to 34 inches: muck
Cg - 34 to 80 inches: sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)

Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 40 percent
Available water storage in profile: Very high (about 15.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Ecological site: Chicago Mucky Depression (R097XB051IL)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

PlB—Plainfield fine sand, 0 to 6 percent slopes

Map Unit Setting

National map unit symbol: 94jz
Elevation: 570 to 790 feet
Mean annual precipitation: 36 to 40 inches
Mean annual air temperature: 49 to 51 degrees F
Frost-free period: 170 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Plainfield and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Plainfield

Setting

Landform: Outwash plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy outwash

Typical profile

H1 - 0 to 6 inches: fine sand
H2 - 6 to 27 inches: fine sand
H3 - 27 to 60 inches: sand

Properties and qualities

Slope: 0 to 6 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Ecological site: Chicago Sandy Lake Plain (F097XB033IN)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Maumee

Percent of map unit: 10 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Ta—Adrian muck, drained, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2w5n1
Elevation: 580 to 880 feet
Mean annual precipitation: 30 to 41 inches
Mean annual air temperature: 43 to 52 degrees F
Frost-free period: 140 to 230 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Adrian, drained, and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Adrian, Drained

Setting

Landform: Depressions on outwash plains, moraines, till plains, lake plains, flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave
Parent material: Herbaceous organic material over sandy outwash

Typical profile

Oap - 0 to 10 inches: muck
Oa - 10 to 28 inches: muck
Cg - 28 to 80 inches: sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 0.4
Available water storage in profile: Very high (about 13.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Ecological site: Mucky Depressions (F098XA006MI), Wet Kankakee Floodplains (F098XB026IN)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Minor Components

Antung, drained

Percent of map unit: 10 percent
Landform: Depressions on outwash plains, moraines, till plains, lake plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Edwards, drained

Percent of map unit: 6 percent
Landform: Depressions on outwash plains, moraines, till plains, lake plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Houghton, drained

Percent of map unit: 6 percent
Landform: Depressions on outwash plains, moraines, till plains, lake plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave
Ecological site: Mucky Depression (F097XA030MI), Mucky Depressions (F098XA006MI)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)

Hydric soil rating: Yes

Muskego, drained

Percent of map unit: 3 percent
Landform: Moraines, depressions on outwash plains, till plains, lake plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Ur—Urban land

Map Unit Setting

National map unit symbol: 94kg
Elevation: 570 to 790 feet
Mean annual precipitation: 36 to 40 inches
Mean annual air temperature: 49 to 51 degrees F
Frost-free period: 170 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: Unranked

Porter County, Indiana

Ad—Adrian muck, drained, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2w5n1
Elevation: 580 to 880 feet
Mean annual precipitation: 30 to 41 inches
Mean annual air temperature: 43 to 52 degrees F
Frost-free period: 140 to 230 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Adrian, drained, and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Adrian, Drained

Setting

Landform: Depressions on outwash plains, moraines, till plains, lake plains, flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Parent material: Herbaceous organic material over sandy outwash

Typical profile

Oap - 0 to 10 inches: muck
Oa - 10 to 28 inches: muck
Cg - 28 to 80 inches: sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 0.4
Available water storage in profile: Very high (about 13.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Ecological site: Wet Kankakee Floodplains (F098XB026IN), Mucky Depressions (F098XA006MI)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)

Hydric soil rating: Yes

Minor Components

Antung, drained

Percent of map unit: 10 percent
Landform: Till plains, lake plains, depressions on outwash plains, moraines
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Edwards, drained

Percent of map unit: 6 percent
Landform: Depressions on outwash plains, moraines, till plains, lake plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Houghton, drained

Percent of map unit: 6 percent
Landform: Depressions on outwash plains, moraines, till plains, lake plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: Mucky Depression (F097XA030MI), Mucky Depressions (F098XA006MI)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Muskego, drained

Percent of map unit: 3 percent
Landform: Till plains, lake plains, moraines, depressions on outwash plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Hm—Houghton muck, ponded

Map Unit Setting

National map unit symbol: 5d59
Elevation: 570 to 870 feet

Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 51 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition
Houghton, undrained, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Houghton, Undrained

Setting
Landform: Depressions on till plains, depressions on lake plains, depressions on outwash plains
Landform position (two-dimensional): Toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Herbaceous organic material

Typical profile
Oa1 - 0 to 66 inches: muck

Properties and qualities
Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 10 percent
Available water storage in profile: Very high (about 23.9 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: A/D
Ecological site: Chicago Mucky Depression (R097XB051IL)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Mm—Maumee loamy sand

Map Unit Setting
National map unit symbol: 5d5k
Elevation: 570 to 870 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 51 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Maumee and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Maumee

Setting

Landform: Depressions on outwash plains
Landform position (two-dimensional): Footslope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Sandy outwash

Typical profile

H1 - 0 to 23 inches: loamy sand
H2 - 23 to 60 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water storage in profile: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Ecological site: Chicago Wet Sandy Swale (R097XB036IN)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

OaC—Oakville fine sand, 4 to 12 percent slopes

Map Unit Setting

National map unit symbol: 5d5x
Elevation: 570 to 870 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 51 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Oakville and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Oakville

Setting

Landform: Dunes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian sands

Typical profile

H1 - 0 to 7 inches: fine sand
H2 - 7 to 30 inches: fine sand
H3 - 30 to 60 inches: fine sand

Properties and qualities

Slope: 4 to 12 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: Chicago Sandy Lake Plain (F097XB033IN)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Newton

Percent of map unit: 4 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Maumee

Percent of map unit: 3 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Adrian

Percent of map unit: 3 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

OaE—Oakville fine sand, 18 to 40 percent slopes

Map Unit Setting

National map unit symbol: 5d5y
Elevation: 570 to 870 feet
Mean annual precipitation: 36 to 40 inches
Mean annual air temperature: 49 to 51 degrees F
Frost-free period: 170 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Oakville and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Oakville

Setting

Landform: Dunes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian sands

Typical profile

H1 - 0 to 7 inches: fine sand
H2 - 7 to 30 inches: fine sand
H3 - 30 to 60 inches: fine sand

Properties and qualities

Slope: 18 to 40 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: Sand Hills (F097XA010MI), Chicago Sand Hills (F097XB040IN)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Newton

Percent of map unit: 4 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Adrian

Percent of map unit: 3 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Maumee

Percent of map unit: 3 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

SWPPP for Porter County

STORM WATER POLLUTION PREVENTION PLAN

DRAFT

For

Northern Indiana Commuter Transportation District (NICTD)
Double Track North West Indiana (DTNWI)
Porter County MS4 District
Milepost 35.98 to 43.76, 45.10 to 48.47 and 50.65 to 50.95
(Project Stations 1901+50 to 2310+00, 2382+00 to 2558+60
and 2676+35 to 2691+50)

MS4 Point of Contact: Rich Hudson, MS4 Program Coordinator
Contact Address: 155 Indiana Avenue, Suite 311, Valparaiso, IN 46383
p. 219-465-3530
e. rhudson@porterco.org

Prepared by:
VS Engineering / AECOM
Point of Contact: Jeffrey J. Haw, PE
5821 N. US-35, La Porte, IN 46350
p. 219-873-1100 f. 219-873-1006
e. jhaw@vsengineering.com

Date: June 17, 2020

Hydrologic Unit Code (HUC14): 04040001060040 & 04040001080020 & 04040001080030 & 04040001080040
West End: Latitude: 41.6191° N Longitude: 87.1448° W
East End: Latitude: 41.6989° N Longitude: 86.9325° W

Contents

Section 1 SWPPP Elements – PART A 3
A1 – Plan Elements 3
A2 – 11x17 Plat 5
A3 - Project Narrative and Description 5
A4 – Vicinity Map 7
A5 – Legal Description (Including Latitude And Longitude) 7
A6 – Proposed Site Plan 8
A7 – Hydrological Unit Code 8
A8 – State Or Federal Permits 8
A9 – Storm Water Discharge Points 8
A10 – Location of water courses onsite and adjacent to Project 8
A11– Identification of Receiving Waters 8
A12– Identification of potential discharges to groundwater 8
A13 – 100-year Floodplains, floodways and fringes 9
A14 – Pre-Demolition and Post Demolition estimate of Peak Discharge 9
A15 – Adjacent Land Use 10
A16 –Locations And Approximate Boundaries Of All Disturbed Areas 10
A17 – Identification of existing vegetative cover 10
A18 – Soil Map 10
A19 – Storm Water System 11
A20 – Off-Site Construction Activities 12
A21 – Stock Piles, Disposal Areas 12
A22 – Existing Topography 12
A23 – Proposed Final Topography 12
Section 2 SWPPP Elements – PART B 13
B-1 Description Of Potential Pollutant Sources Associated With Construction Activities 13
B-2 Sequence Describing Storm Water Quality Measure Implementation Relative To Land Disturbing Activities 13
B-3 Stable Construction Entrance Locations And Specifications 13
B-4 Sediment Control Measures For Sheet Flow Areas 14

B-5 Sediment Control Measures For Concentrated Flow Area 14
B-6 Storm Sewer Inlet Protection Measures And Locations 14
B-7 Runoff Control Measures 14
B-8 Storm Water Outlet Protection Specification 14
B-9 Grade stabilization structure locations and specifications 14
B-10 Locations, Dimensions, Specifications Of Each Stormwater Quality Measure 14
B-11 Temporary surface stabilization methods appropriate for each season 14
B-12 Permanent surface stabilization specifications 14
B-13 Material handling and spill prevention plan 15
B-14 Monitoring and maintenance guidelines for each proposed storm water quality measure 16
B-15 Erosion and Sediment Control Specifications for Individual Building Lots 18

Section 3 SWPPP Elements –PART C 19
C-1 Description of pollutants and their sources associated with the proposed land use 19
C-2 Sequence describing storm water quality measure implementation 19
C-3 Description of proposed post construction storm water quality measures 19
C-4 Location, dimensions, specifications, and construction details of each storm water quality measure: 20
C-5 Description of maintenance guidelines for post construction storm water quality measures 20

A1 – PLAN ELEMENTS

Plan Elements designated by the Rule 5 Submittal Requirements for Checklist Sections A, B and C are listed in the table below. The location of said elements in the in the plan set "NICTD General & Miscellaneous Plans" are also provided:

Section 1 SWPPP Elements –Part A				
		Element	Description	Location
A	1	Plan Elements	Location of described features in Plans; "NICTD General & Miscellaneous Plans"	PART A1 – table of plan requirement locations
	2	Plat	Site plan of Project Site	APPENDIX SECTION: Plat will be provided at 90% completion in August, 2020
	3	Project Description	Narrative of project and purpose	PART A3
	4	Vicinity Map	Location Map	PART A4 this report; SHEET GEN001 of Plan Set "NICTD General & Miscellaneous Plans"
	5	Legal Description	Legal of Project Site	PART A5 this report; Not Applicable to this project as it spans 26.6 miles across multiple jurisdictions
	6	Site Improvements	Proposed Project Improvements	PART A6 this report; SHEETS ENV222-ENV223, ENV230-ENV240 & ENV244-ENV270 of Plan Set "NICTD General & Miscellaneous Plans"
	7	Hydrological unit code	HUC Designation	COVER SHEET this report; PART A7 this report
	8	State/Federal WQP	Additional Water Quality Permits	PART A8 this report
	9	Storm Water Discharge Point	Description/Location of Storm Water Leaving Site	PART A9 this report, SHEETS ENV222-ENV223, ENV230-ENV240 & ENV244-ENV270 of Plan Set "NICTD General & Miscellaneous Plans"
	10	Wetlands, Water courses	Location and description of any wetlands/Water courses adjacent to site	PART 10 this report
	11	Receiving Waters	Location and description of all streams that will receive storm water discharge	PART 11 this report, SHEETS ENV222-ENV223, ENV230-ENV240 & ENV244-ENV270of Plan Set "NICTD General & Miscellaneous Plans"

Section 2 – SWPPP ELEMENTS CONT.				
		Element	Description	Narrative Location/Sheet Location
A	12	Groundwater Discharge	Location and description of Groundwater Discharge	PART 12 this report - SHEETS ENV222-ENV223, ENV230-ENV240 & ENV244-ENV270 of Plan Set "NICTD General & Miscellaneous
	13	100 Floodplains	Location and description of Floodplain and fringe	PART 13 this report; SHEETS ENV222-ENV223, ENV230-ENV240 & ENV244-ENV270 of Plan Set "NICTD General & Miscellaneous Plans"
	14	Drainage Discharge	Pre-Construction and Post Construction peak discharge rates	PART 14 this report: discharge values/
	15	Adjacent Land use	Identity of adjacent parcel use	PART 15 this report;
	16	Boundaries	Construction Limits	PART 16 this report – SHEETS ENV222-ENV223, ENV230-ENV240 & ENV244-ENV270 of Plan Set "NICTD General & Miscellaneous Plans"
	17	Vegetative Cover	Locations of existing vegetative cover	PART 17 this report/ SHEETS ENV222-ENV223, ENV230-ENV240 & ENV244-ENV270 of Plan Set "NICTD General & Miscellaneous Plans"
	18	Soils Map	NRCS soil Map	PART 18 this report
	19	Storm System	Location ,size and dimensions of Storm System	PART 19 this report
	20	Off-Site Activity	Plan for Off-Site construction if any	PART 20 this report
	21	Stock Pile, Borrow/Disposal Area	Areas of cut and fill	PART21 this report
	22	Existing Topo	Existing Contours	SHEETS ENV222-ENV223, ENV230-ENV240 & ENV244-ENV270 of Plan Set "NICTD General & Miscellaneous Plans"
	23	Proposed Topo	Proposed Contours	SHEETS ENV222-ENV223, ENV230-ENV240 & ENV244-ENV270 of Plan Set "NICTD General & Miscellaneous Plans"

A2 – 11X17 PLAT

An 11x17 set of the project sheet drawings will be located in the appendix section of this report as the project approaches 90% completion in August, 2020.

A3 - Project Narrative and Description

The Northern Indiana Commuter Transportation District (NICTD) is proposing to improve a 26.6 mile corridor of their commuter rail line extending from Michigan City westward to the City of Gary. The project will include utility relocations at various locations along the line, improvements to three commuter rail stations and the construction of a second commuter rail line adjacent to the existing commuter rail line for the majority of the project's length.

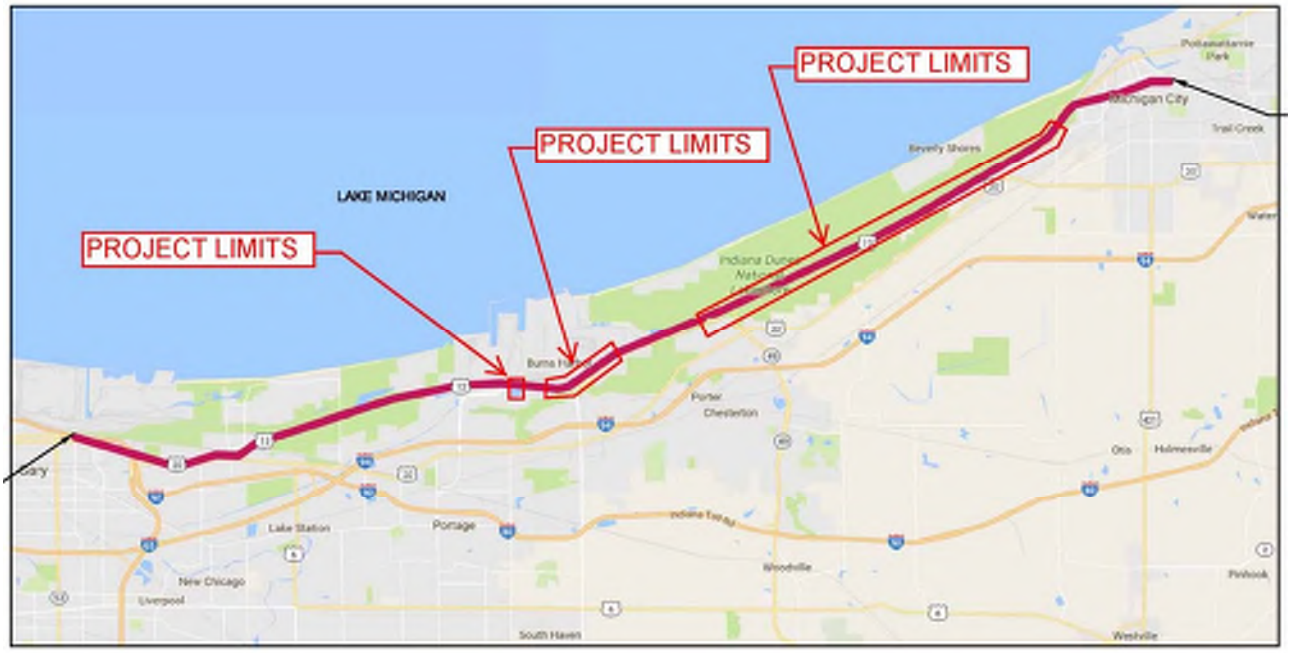
This report will focus on those portions of the project within the Porter County MS4 District. Per the appended Sheet drawings, this section of the project contains approximately 11.45 miles including the following: from Milepost 35.98 (Porter/LaPorte County Line/Sheridan Road) to 43.76 (Town of Porter City Limit), from Milepost 45.10 (Town of Porter City Limit) to 48.47 (City of Portage City Limit) and from Milepost 50.65 (City of Portage City Limit) to 50.95 (City of Portage City Limit) containing the Ogden Dunes Station. The entire length of the project within Porter County roughly parallels US-12 and is located along its northern edge. This section of the project includes the following:

- Installation of a second commuter rail line parallel to the existing commuter rail line from the City of Portage City Limits, through unincorporated Porter County to Porter County/LaPorte County line, excluding the Town of Porter.
- Relocation of various impacted utilities along the entire project length.
- Significant improvements to the Ogden Dunes Station.
- Significant improvements to the Dune Park Station.

It is important to note that, while this project takes into account the permanent closure of a portion of US-12, it is not part of the Scope of this project to perform that work. Said work will be addressed via INDOT under separate cover.

The project is proposed to begin construction in July of 2021 with a scheduled completion date of March 2023.

A4 – VICINITY MAP



Vicinity Map – No Scale

A5 – LEGAL DESCRIPTION

There is no legal description for this project as, in its entirety, it spans more than 28 miles through multiple jurisdictions.

Site latitude and longitude are as follows:
West End: Latitude: 41.6191° N Longitude: 87.1448° W
East End: Latitude: 41.6989° N Longitude: 86.9325° W

A6 – PROPOSED SITE PLAN

The proposed site plan for the project can be found in the plan set "NICTD General & Miscellaneous Plans", SHEETS ENV222-ENV223, ENV230-ENV240 & ENV244-ENV270.

A7 – HYDROLOGICAL UNIT CODE

The HUC 14 unit codes for the project are 04040001060040 (Little Calumet River & Burns Ditch Outlet) & 04040001080020 (Dunes Creek) & 04040001080030 (Beverly Shores Tributary) & 04040001080040 (Kintzele Ditch).

A8 – STATE OR FEDERAL PERMITS

A Rule 5 Notice of Intent must be filed with the Indiana Department of Environmental Management for the entirety of the project. Additionally, permits must be filed with the State for the sanitary sewer and water main utilities proposed to be relocated. 401 and 404 permits will be obtained from IDEM/IDNR/Army Corps of Engineers for proposed crossings of Waters of the State where they may occur. Permits from INDOT will be obtained for infringement on INDOT-jurisdiction roadways and crossings.

A9 – STORM WATER DISCHARGE POINTS

In general, the track areas to be improved already have drainage systems in place to accommodate potential future improvement. Therefore, in areas where the only proposed construction is installation of the second commuter rail line and attendant utility relocation, the storm water generated in the area will flow to the same discharge points it is currently flowing to. The exception to this model are the proposed improvements to improved Ogden Dunes and Dunes Park stations. The stormwater plan for

these stations is **CURRENTLY UNDER DEVELOPMENT AND NOT AVAILABLE FOR REVIEW AT THIS TIME.**

A10 – Location of wetlands, lakes and water courses onsite and adjacent to Project

A wetland delineation survey performed in 2017 to identify wetlands and streams within the Project's study area resulted in a total of 76 wetlands totaling 43.01 acres and a total of 1,117 feet of streams. This information is captured in a Waters of the U.S. Delineation Report for the Project dated August 18, 2017 which was prepared by Metric Environmental. Project documents can be accessed at the Project's website at https://www.doubletrack-nwi.com/. NICTD is currently applying to the USACE and IDEM for a Section 404/401 Individual Permit. These areas are shown via hatch on SHEETS ENV222-ENV223, ENV230-ENV240 & ENV244-ENV270. Said areas shall be protected and, to the extent possible given the scope of the project, shall not be disturbed.

A12 – Identification of potential discharges to groundwater

The vast majority of the proposed construction scope includes construction of a secondary commuter rail adjacent to the existing commuter rail. These areas will drain via sheet drainage to their existing drainage points. However, the Ogden Dunes and Dunes Park Station improvements include a number of facilities that will allow discharge to groundwater, specifically including the proposed detention/retention areas and rain gardens included in the development plans.

A13 – 100-Year Floodplains, floodways and fringes

This is located entirely within zone X (areas determined to be outside of the 0.2% annual chance floodplain) national Flood Insurance Rate Map numbers 18127C0102D, 18127C0106D, 18127C0107D, 18127C0065D, 18127C0070D, 18127C0080D, 18127C0090D and 18127C0083D, all effective dated September 30, 2015.

A14 – Pre-Construction and Post Construction Estimates of Peak Discharge

THIS SECTION TO BE COMPLETED WITH INFORMATION OBTAINED FROM OTHER DESIGNERS – THIS INFORMATION IS NOT YET AVAILABLE FOR REVIEW.

A15 – Adjacent Land Use

Given its length, adjacent land uses to the commuter track corridor range from undeveloped through residential to industrial and commercial. Additional detail regarding land use may be found in SHEETS ENV222-ENV223, ENV230-ENV240 & ENV244-ENV270 of the plan set "NICTD General & Miscellaneous Plans".

A16 –Locations and Approximate Boundaries of all disturbed areas

The project demolition limits may be found on SHEETS ENV222-ENV223, ENV230-ENV240 & ENV244-ENV270 of the plan set "NICTD General & Miscellaneous Plans".

A17 – Identification of existing vegetative cover

The existing vegetative cover can be found on SHEETS ENV222-ENV223, ENV230-ENV240 & ENV244-ENV270 of the plan set "NICTD General & Miscellaneous Plans". The vast majority of the proposed development area is clear of trees and vegetation due to the presence of the existing commuter rail line track.

A18 – Soil Map

The USDA Soil Map for the project Map is shown below. The site consists of multiple significant soil types:

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ho	Houghton muck, drained, 0 to 1 percent slopes	0.1	0.0%
OaC	Oakville fine sand, 4 to 12 percent slopes	2.5	0.1%
Subtotals for Soil Survey Area		**2.6**	**0.1%**
Totals for Area of Interest		**2,943.5**	**100.0%**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ad	Adrian muck, drained, 0 to 1 percent slopes	9.2	0.3%
BaA	Blount silt loam, Lake Michigan Lobe, 0 to 2 percent slopes	0.5	0.0%
BtA	Brems sand, 0 to 3 percent slopes	53.6	1.8%
De	Del Rey silt loam	10.7	0.4%
Du	Dune land	2.3	0.1%
Fh	Fluvaquents	24.6	0.8%
HaA	Hanna sandy loam, 0 to 3 percent slopes	24.6	0.8%
Hm	Houghton muck, ponded	1.6	0.1%
Ho	Houghton muck, drained	41.8	1.4%
MfA	Martinsville loam, 0 to 2 percent slopes	89.5	3.0%
Mm	Maumee loamy sand	432.0	14.7%
Mn	Maumee loamy sand, ponded	263.5	9.0%
MoB	Metea loamy fine sand, 1 to 6 percent slopes	24.4	0.8%
Mp	Milford silty clay loam, 0 to 2 percent slopes	5.4	0.2%
MuuA	Morocco loamy sand, lake plain, 0 to 2 percent slopes	188.0	6.4%
Nf	Newton loamy fine sand	11.1	0.4%
OaC	Oakville fine sand, 4 to 12 percent slopes	562.7	19.1%
OaE	Oakville fine sand, 18 to 40 percent slopes	179.3	6.1%
OzaB2	Ozaukee silt loam, 2 to 6 percent slopes, eroded	42.9	1.5%
OzaE	Ozaukee silt loam, 18 to 30 percent slopes	4.2	0.1%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
PlB	Plainfield sand, 2 to 6 percent slopes	0.0	0.0%
RaB	Rawson loam, 2 to 6 percent slopes	4.3	0.1%
RmC2	Riddles loam, 6 to 12 percent slopes, eroded	0.6	0.0%
So	Suman silt loam	11.2	0.4%
TyA	Tyner loamy sand, 0 to 3 percent slopes	116.5	4.0%
UcG	Udorthents, loamy, 3 to 30 percent slopes	0.3	0.0%
UpB	Urban land-Psamments complex, 0 to 6 percent slopes	773.7	26.3%
W	Water	48.1	1.6%
We	Warners silt loam	14.1	0.5%
Subtotals for Soil Survey Area		**2,941.0**	**99.9%**
Totals for Area of Interest		**2,943.5**	**100.0%**

A19 – Storm Water System

The existing track drains nearly exclusively via overland drainage to a series of water courses/wetlands/water bodies that have been previously analyzed and designed to contain/release the drainage from the track in a controlled manner. Given the proposed track facilities will be installed on already impervious area within the construction limits, it is not anticipated that significant additional drainage quantities will be generated.

The notable exception to this standard is the improvements to the Ogden Dunes and Dunes Park Stations. The new parking and other station facilities will increase the overall hardscape in the area and will develop additional drainage quantities above and beyond those currently being generated. This additional drainage quantity will be collected via a surface catchment system which will then be conveyed via a subsurface conveyance system to the proposed detention/retention facilities detailed in the plan drawings. Said retention/detention system will discharge both to groundwater and will have a constructed outlet that will discharge to an authorized location.

A20 – Off-Site Construction Activities

There are no proposed off-site construction activities.

A21- Stock Piles, Disposal Areas

All material generated by the site will be disposed of in approved disposal facilities off-site. Stock pile locations will be determined and protected by project contractor on an as-needed bases. Stock pile areas will be protected by silt fence at their base immediately upon creation and, if said areas are intended to sit unattended for more than 15 days, will be temporarily seeded and mulched.

A22- Existing Topography

The existing topography with major and minor contour intervals of one foot interval is located on SHEETS ENV222-ENV223, ENV230-ENV240 & ENV244-ENV270 of the plan set ““NICTD General & Miscellaneous Plans”.

A-23 Proposed Final Topography

The proposed final topography may be found on SHEETS ENV222-ENV223, ENV230-ENV240 & ENV244-ENV270 of the plan set “NICTD General & Miscellaneous Plans”.

Section 2 SWPPP Elements – PART B

B-1 Description of potential pollutant sources associated with construction activities

The proposed development will generate potential pollutants during construction operation that could enter the existing storm sewer system, and storm water. Potential pollutant sources that may generate pollutants on the project include, but are not limited to, material and fuel storage areas, fueling locations, exposed soil locations, stored construction equipment and vehicles that may be leaking oil arid fuels. Pollutants generated from these sources include, but are not limited to, gasoline and diesel fuel, oil and grease, fertilizers, antifreeze, rubber fragments, metals, trash, and unprotected soils.

B-2 Sequence describing storm water quality measure implementation relative to land disturbing activities

The contractors and subcontractors shall be responsible to implement practices for the prevention of pollutants reaching the existing storm sewer systems in place. Prevention should include but not be limited to the following items.

A general anticipated construction schedule is attached for the project that highlights the construction sequencing and implementation of the storm water quality measures

a. Install SWPPP information boards and permits.
b. Installation of silt fencing prior to any earthwork activities.
c. Installation of gravel construction entrances prior to any earthwork activities.
d. Installation of pump arounds/diversion devices.
e. Topsoil stockpiles shall be surrounded with silt fencing.
f. All proposed swales and major grading shall be done to rough grades at start of construction to prevent excessive soil erosion due to construction. All swales, ditches and detention/retention basins shall be temporarily seeded and have fiber rolls installed to prevent run off and bank erosion. Permanent seeding or hydro seeding shall be done upon completion of construction.
g. Basin slopes shall be protected with erosion control matting and temporary seeding/mulching as necessary.
h. After completion of storm sewer system facilities, storm sewer inlet protection shall be placed at each open-grate structure (fiber roll barrier, filter basket, etc).
i. Inlets and outlets shall be protected via rip-rap to slope and disperse discharges.
j. Utility relocations shall be installed as necessary.
k. Utilities relocations including electric/cable/telephone, gas and fiber shall be installed.
l. Curb and gutter, road pavement, parking area and other pavement repair tasks shall be constructed.
m. All disturbed areas shall be seeded or mulched upon final grading and when no additional disturbance is anticipated.
n. Silt fencing shall be installed at perimeter of major drainage swales upon final grading to prevent erosion or sediment build up from adjacent construction activities.
o. Permanent seeding shall be placed across all completed graded areas – see following notes regarding extent of establishment.
p. All erosion control features and materials are to be maintained until the completion of construction. This standard includes that vegetation must be established to at least 70% full growth prior to completion.
q. All temporary erosion control measures are to be removed upon permanent vegetative cover being established. This standard includes that vegetation must be established to at least 70% full growth prior to completion.

B-3 Stable construction entrance locations and specification (at all points of ingress and egress)

Construction entrances shall be implemented at entrances to site from main access roads or where contractor deems access is necessary. See SHEETS ENV222-ENV223, ENV230-ENV240 & ENV244-ENV270.

B-4 Sediment control measures for sheet flow areas

Silt fencing shall be used for the sheet flow areas along the perimeter of the project as shown. See SHEETS ENV222-ENV223, ENV230-ENV240 & ENV244-ENV270. Erosion control matting shall be used in high slope or high flow areas as shown on SHEETS ENV222-ENV223, ENV230-ENV240 & ENV244-ENV270.

B-5 Sediment control measures for concentrated flow area

Temporary and permanent seeding shall be used for the swales and drainage ditches to control erosion. If these methods are found to be inadequate, erosion control blankets or other methods will be applied. See SHEETS ENV222-ENV223, ENV230-ENV240 & ENV244-ENV270.

B-6 Storm sewer inlet protection

Storm sewer inlets, both existing and proposed, shall be protected by basket-type inlet protection. This policy is universal across the entirety of the project and is covered by general note in SHEETS ENV222-ENV223, ENV230-ENV240 & ENV244-ENV270.

B-7 Runoff control measures

Erosion fencing shall be used to control runoff.

B-8 Storm water outlet protection specification

The storm water outlets will have a rip-rap blanket and a stone aggregate filter. See SHEETS ENV222-ENV223, ENV230-ENV240 & ENV244-ENV270 for additional information.

B-9 Grade stabilization structure locations and specifications

No grade stabilization structures or measures are required for this development.

B-10 Location, dimensions, specifications and construction details of each storm water quality measure

Locations, dimensions specifications and construction details of each storm water quality measure are detailed on SHEETS ENV222-ENV223, ENV230-ENV240 & ENV244-ENV270 in the plan set “NICTD General & Miscellaneous Plans”.

B-11 Temporary surface stabilization methods appropriate for each season

Temporary seeding shall be done on all grading areas within 15 days of temporary completion of grading to provide for stabilization. In the event that seeding is to be done outside the typical seeding periods, during the late fall, early winter or early spring seasons, dormant or frost seeding or mulching shall be done for areas to remain undisturbed for 15 days or more.

B-12 Permanent surface stabilization specifications

Permanent seeding shall be done on all earthen pond banks, street right-of-ways, and major drainage swales at the time of completion. Construction and seeding of these items shall be completed during the
normal seeding seasons to ensure adequate germination and stabilization. In the event that seeding is to be done outside the typical seeding periods, during the late fall, early winter or early spring seasons, dormant or frost seeding or mulching shall be done for areas to remain undisturbed for 15 days or more.

B-13 Material handling and spill prevention plan

The contractors and their subsequent subcontractors shall be responsible to implement practices for the prevention of pollutants reaching the proposed storm drainage system, the existing storm sewer system, or the floodplain. Prevention should include but not be limited to, material handling and storage, clean-up of pollutant at time of detection, and regular maintenance of erosion practices.
Throughout the construction of this project there are a number of materials expected to be handled on the site and may be subject to spills. In order to prevent the entering of these materials into the soils, storm sewers, and ground waters of the project the on-site handling of soils shall be limited to the
Excavation, loading, arid spreading. The contractor shall minimize the disturbance of excavated soils by minimizing the number of times the soil is handled. In the event that a spill occurs, the following measures shall be taken for the associated material,

Material handling & spill prevention

- Material handling and spill prevention for all materials listed, anticipated to be used and any other pollutants not described but associated with land disturbance and construction activities shall be provided by all project contractors and subcontractors. The contractors and subcontractors shall refer to the Material Safety Data Sheet (MSDS) for information on the proper storage, use, and cleanup methods for all materials anticipated to be on the project site.
- All required materials for spilt clean up and disposal of all onsite materials shall be kept on site in a project trailer with easy access for all users of associated materials.
- All disposals of spilled materials shall be done in accordance with Federal, State and Local waste disposal regulations. All contractors and subcontractors shall be responsible for any and all spills associated with their work.

Oil, grease and other hydrocarbons

Spills if possible should be contained at time of detection, Removal shall be done mechanically or wipe up or absorbed on suitable material and shovel up. Disposal should be in accordance with Federal, State and Local waste disposal regulations. Handling and storage of any oil, grease or other hydrocarbons shall he done in tightly closed containers, in a dry cool place away from any heat or ignition sources.

Gasoline and diesel fuel

Spills if possible should be contained at the time of detection, Remove any source of heat and ignition, such as engines and power tools. Clean up spill area by use of sand or other absorbent
scrape up and place in appropriate containers for disposal. Disposal should be in accordance with Federal, State and Local waste disposal regulations. Handling and storage of any gasoline and diesel fuel shall be done in tightly closed containers, in a dry cool place away from any heat or ignition sources.

Fuel storage on the project site shall be avoided if possible to aid in the prevention of spills, Tanker trucks should be used for the fueling of large construction equipment.

Antifreeze

Spills if possible should be contained at time of detection. Shot off source or leak, dike and contain spill area. Remove spills

promptly by use of shovel, vacuum trucks or pump, and store into clean
empty storage drums, Trace residue can be soaked with water, but do not flush to sewer or surface water, Disposal should be in accordance with Federal, State and Local waste disposal regulations Handling and storage of any antifreeze shall be done in tightly closed containers, in a dry cool place away from any heat or ignition sources.

Rubber fragments, metals and trash

All materials shall be swept up and disposed of as regular trash or reclaimed for scrap value in accordance with Federal, State and Local waste disposal regulations. Handling arid storage of rubber, metals and trash shall be placed in a refuse area until such time of appropriate disposal.

Fertilizer

All excess spills of material shall be swept or soaked up and placed in a suitable waste disposal container, when possible it should be recycled. Minor spills should be flushed with water, avoiding contamination of any streams and waterways. Disposal should be in accordance with Federal, State and Local waste disposal regulations. Handling and storage of any fertilizer shall be done in tightly closed containers or bags, in a dry cool place.

Grit, wearing of road surface

- All materials shall be swept up and disposed of as regular trash or reclaimed for scrap value in accordance with Federal State and Local waste disposal regulations
- Handling and storage of rubber, metals and trash shall be placed in a refuse area until such time of appropriate disposal.

- Concrete wash out

  Contractor to designate a specific concrete wash out area on the project site for use by the concrete supply company to release any remaining concrete. The area chosen shall be away from any storm water drainage structures, and shall be properly surrounded with silt fencing to prevent runoff of excess material. The concrete shall be disposed of in accordance with Federal, State and Local waste disposal regulations.
  The concrete shall be piled as to provide for easy loading and removal from the project site.

- Vehicle Washing

  Contractors are required to wash construction vehicles before AND after leaving a construction site to minimize transfer of invasive species.

- Typical Spill Procedures

  In the event that a large spill occurs (that which requires extensive cleanup actions, refer to MSD sheets for information), the following procedures shall be followed to minimize exposure of the material.

  a. Immediate action shall be taken to control and contain the spill to prevent it from entering any nearby storm sewer structures or open waters.
  b. Notify the Local Fire Department at 911 for all combustible and flammable materials.
  c. Notify the Federal Emergency Spill Hotline at 1-800-424-8802 within 2 hours for spills above the reported allowable quantity, or if the material enters any nearby storm sewer structures or open waters.
  d. Notify the Indiana Emergency Response Hotline at 1-888-233-7745.
  e. The spill area shall be isolated from all surrounding areas with absorbent pads, booms, and pillows designed for the use of spill containment and absorption.
  f. The spill kits that are required to be on site shall be utilized.
  g. Emergency Response teams shall be contacted for extensive spills above and beyond the containment by available methods, These materials listed, and the associates spill prevention and clean up methods, are the typical expected materials to be used. All additional materials used on the project site shall be monitored, and all spills addressed in the same manner above.

B-14 Monitoring and maintenance guidelines for each proposed storm water quality measure

Maintenance of all erosion and sediment control practices shall be done on a weekly basis and after all measurable rain events. The Contractor, and associated subcontractors, is responsible for the maintenance and implementation of all practices. The Contractor shall see that all practices are maintained according to the design criteria.

Silt fence

- To be installed prior to any dirt movement on the site. Installation to be in accordance with Erosion Control Plan of engineering plans.
- Additional silt fencing may be required as deemed necessary by Contractor to prevent additional onsite erosion of topsoil stock pile or proposed bermed areas.
- If fence fabric tears, starts to decompose or becomes ineffective, replace the affected portion.
- Remove any deposited sediment when it reaches half of the height of the fence at Its lowest point or is causing the fabric to bulge.
- Take care to avoid undermining the fence during clean out.
- After the watershed has been stabilized with vegetation, remove the fence and the sediment deposits

Filter Socks

- To be installed prior to any dirt movement on the site. Installation to be in accordance with Erosion Control Plan of engineering plans.
- Additional filter socks may be required as deemed necessary by Contractor to prevent additional onsite erosion of topsoil stock pile or proposed bermed areas.
- Filter socks must be biodegradable. However, filter socks may NOT contain photo degradable mesh due to the presence of the T/E species Eastern massasauga within the project area.
- Remove any deposited sediment when it reaches half of the height of the sock at Its lowest point or is causing the sock to deform.
- Take care to avoid undermining or moving the socks during clean out.
- After the watershed has been stabilized with vegetation, remove the socks and the sediment deposits

Pump Arounds

- To be installed prior to any dirt movement on the site. Installation to be in accordance with Erosion Control Plan of engineering plans.
- Filter bags to be checked on a daily basis – sediment/filter bags to be removed/replaced according to manufacturer's specifications.
- Discharge points/sump pits to be checked on a daily basis – sediment to be removed when sump pit is 1/2 full.
- Take care to avoid damaging or undermining the sump pits during clean out.
- Take care to avoid damaging or undermining the filter bags during removal/replacement.
- After the watershed has been stabilized with vegetation, remove the socks and the sediment deposits

Barrier filters (fabric inlet protection, basket curb protection)

- To be installed in all storm sewer drainage structures upon installation m paved areas to prevent sediment buildup with the newly installed structures.
- Inspect after storm events and when visual signs of sediment buildup is encountered.
- If excess sediment buildup is anticipated around certain structures, additional methods may be combined to provide extra protection
- If basket filters become ineffective for any reason, they will be promptly replaced.

Gravel construction entrance pads

- To be installed at start of construction in conjunction with the silt fencing prior to any dirt movement on the site.
- Inspect entrance pad and sediment disposal area weekly and after storm events or heavy use.
- Reshape pad as needed for drainage and runoff control,
- Top dress with clean stone as needed.
- immediately remove mud and sediment tracked or washed onto public roads by brushing or sweeping, Flushing should only be used if the water is conveyed into a sediment trap or basin.
- Repair any broken road pavement immediately.

Mulching

- To be installed once major grading has taken place and fine grading is near completion or completed.
- To be installed as alternative to temporary seeding to provide temporary stabilization of surface grading. To be used in conjunction with permanent seeding to provide additional moisture conservation

to speed seed germination and growth.

- Inspect after storm events to check for movement or mulch or for erosion
- If washout, breakage, or erosion is present, repair the surface, then re-seed, re-mulch and, if applicable, install new netting.
- Continue inspections until vegetation is firmly established.

Grass-lined channel

- To be installed to rough grade as part of mass grading to provide adequate surface drainage for construction. To be seeded upon fine grading and when no further grading or construction is anticipated on, around or across channel.
- Inspect the channel following storm events during and even after vegetative establishment: make needed repairs immediately.
- Check the channel outlet and road crossings for blockage, sediment, bank instability, and piping or scour holes; remove any blockage, and make repairs immediately.
- Remove significant sediment and debris from the channel to maintain design cross-section and grade and to prevent spot erosion.
- To be installed upon installation, backfill and rough grading around all yard drains and any drainage structures not in paved areas.
- Also inspect periodically for deterioration or damage from construction activities, and repair immediately.

Temporary seeding

- To be installed on all areas upon fine grading when minor or little future grading may be required, but exceeds a month's time until future disturbance.
- Inspect periodically after planting to see that vegetative stands are adequately established: re-seed if necessary.
- Check for erosion damage after storm events and repair; re-seed and mulch if necessary
- Top dress fall seeded wheat or rye seedlings with 50 lbs/acre of nitrogen In February or March if nitrogen deficiency is apparent.

Permanent seeding

- To be installed upon final grading of areas of no future grading or disturbance and not be disturbed be remaining construction.
- Inspect periodically, especially 24 hours after storm events of a minimum of ½ inch, until the stand is successfully established. (Characteristics of a successful stand include: vigorous dark green bluish-green seeding; uniform density with nurse plants, legumes, and grasses well inter-mixed; green leaves; and the perennials remaining green throughout the summer, at least at the plant base.).
- Plan to add fertilizer the following growing season according to soil test recommendations.
- Repair damaged, bare, or sparse areas by filling any gullies, re-fertilizing, over- or re- seeding, and mulching.
- If plant cover is sparse or patchy, review the plant materials chosen, soil fertility moisture condition, and mulching: then repair the affected area either by over-seeding or by reseeding and mulching alter re-preparing the seedbed.
- If vegetation fails to grow, consider soil testing to determine acidity or nutrient deficiency problems. (Contact your SWCD or Cooperative Extension office for assistance.)
- If additional fertilization is needed to get a satisfactory stand, do so according to soil test recommendations.
- Final stabilization and approval will not be permitted until at least 70% coverage has been achieved.

Stone rip-rap (rip rap on slopes, rock chutes)

- To be installed upon rough grading of backfill of storm sewer outlet structures, and maintained until final grading takes place.
- Inspect rip-rap areas periodically and after storm events of ½ inch or greater.
- Check for displaced stone material, slumping and erosion at all edges.
- If needed top dress with clean stone, using appropriate size stone.

B-15 Erosion and sediment control specifications for individual building lots

Silt fence to be installed as indicated on the Soil Erosion & Sedimentation Control Plan in the set "NICTD General & Miscellaneous Plans". Temporary seeding, permanent seeding, rip-rap and erosion control matting will be used along the ditches, for the retention pond, inlets, along the road and other locations as needed.

Section 3 SWPPP Elements –PART C

C-1 Description of pollutants and their sources associated with the proposed land use

The project when completed will be accessed by numerous maintenance vehicles as well as periodic daily commuter train traffic. The expected pollutants that will be generated by the site when completed will be that associated with vehicular and train emission (e.g., oil, grease, antifreeze, rubber fragments, gasoline, diesel fuel and other vehicular matters), wearing of the road surface, salt or other means of snow removal, and trash from littering and other types of improper disposal or storage. Also included are grass clippings, fertilizers, pesticides and herbicides resulting from landscaping and land maintenance activities. Elevated storm water runoff temperatures may exist due to contact with the impervious surfaces during the warmer months of the year.

C-2 Sequence describing storm water quality measure implementation

The post construction storm water quality measures to be installed with this project and the sequencing are as follows:

a. Grass-lined drainage swales. Shall be installed to rough grade at start or early stage of construction to prevent storm water runoff from the project construction entering the surrounding areas. If underground utilities are proposed under the proposed swales, they shall be installed first, and the swales shall be incorporated into the grading of the backfill.

b. Storm sewer basins with sumps (parking lot areas). Shall be installed at early stage of construction with storm sewer system to provide drainage for the project site during and after construction activities. To be installed prior to roadway construction and lot grading.

c. Storm water detention basin/forebays with controlled outlet flow (parking lot areas) : Shall be installed at early stage of construction with storm sewer system to provide stormwater storage area during and after construction activities. To be installed prior to roadway construction and lot grading.

d. Permanent seeding and any additional landscaping. Shall be installed on all final graded areas that have no additional land disturbing activities scheduled.

C-3 Description of proposed post construction storm water quality measures

As with any new construction project, whether residential, commercial, or industrial, there will be an increase in the amount of impervious areas that will generate additional storm water runoff. To accommodate this increase, along with the pollutants expected to be generated by the use of the project, certain storm water quality measures and erosion control methods have been incorporated into the design.

The project is designed to help reduce pollution and sediment in storm water runoff associated with the project when completed in addition to during construction. The measures to be used have been listed above and their respective effects on storm water quality are described below.

a. Storm water detention/retention basin. Is designed to accept the storm sewer system discharge to prevent unrestricted outflow and sediment release to existing storm sewer systems, drainage swales or ditches, or open waterways. The basin system will act as a settling basin for sediment and pollutants that may still exist in the storm water being received. The basin also allows for the storage of storm water during a 100-year storm event while slowly releasing the water through the designed restriction method. This prevents the erosion of the downstream areas.

b. Grass-lined drainage swales. Shall be permanently seeded, sodded, or hydroseeded upon final grading to ensure adequate stabilization. The swales will be the first to receive any runoff of surrounding grassed areas that have reached saturation after infiltration. The grass-lined swales will act as a pretreatment area to filter sediment and any minor pollutants prior to entrance into the storm sewer system.

c. Storm sewer basins with sumps. Sumps shall be utilized to collect sediment from storm water runoff not filtered from the grass-lined swales to prevent excessive build up in the pond.

d. Permanent seeding and any additional landscaping. Stabilized vegetation and landscaping features will aid in the reduction of storm water runoff velocity and aid in filtering sediment contained in said runoff before it reaches the storm sewer systems

C-4 Location, dimensions, specifications, and construction details of each storm water quality measure:

See SHEETS ENV222-ENV223, ENV230-ENV240 & ENV244-ENV270 in the plan set “NICTD General & Miscellaneous Plans”.

C-5 Description of maintenance guidelines for post construction storm water quality measures

Routine inspections, operation and maintenance of the storm water quality measures associated with the project are the responsibility of the owner, homeowner association, local government for public utilities, or can be contracted to an outside company far the private utilities.

•Periodic inspection of the storm water quality measures should be implemented to ensure continued operation during the lifetime of the project.

- Any accumulated sediment and debris shall be removed and disposed of properly from structures, BMP devices, and rip-rap, so as not to impact on the capacity arid function of such devises.
- Rip-rap areas shall be check for displaced stone material, slumping and erosion at all edges, and if needed top dress with clean stone, using appropriate size stone.
- All outlet control devices, being restrictor pipe or restrictor plates within manholes shall be routinely inspected for proper operation and sediment accumulation.
- Pond banks and basins shall be inspected for debris and sediment accumulation and be removed arid disposed of properly to ensure the pond functions properly.

TABULAR SCHEDULE OF INSPECTION AND MAINTENANCE ACTIVITIES

System Devise	Frequency	Task
Catch Basins and Sumps	Quarterly	Inspect and clean as needed with pump or vacuum removal
Detention Basins and Inlet and Outlet Pipes	Quarterly	Inspect and Clean (Debris Removal)
Drainage Swales	Quarterly and following significant storm events	Inspect and Clean (Regrade and Seed as Necessary)
Rip Rap Areas	Quarterly	Inspect and Clean (Remove and Replace as Needed)

United States Department of Agriculture

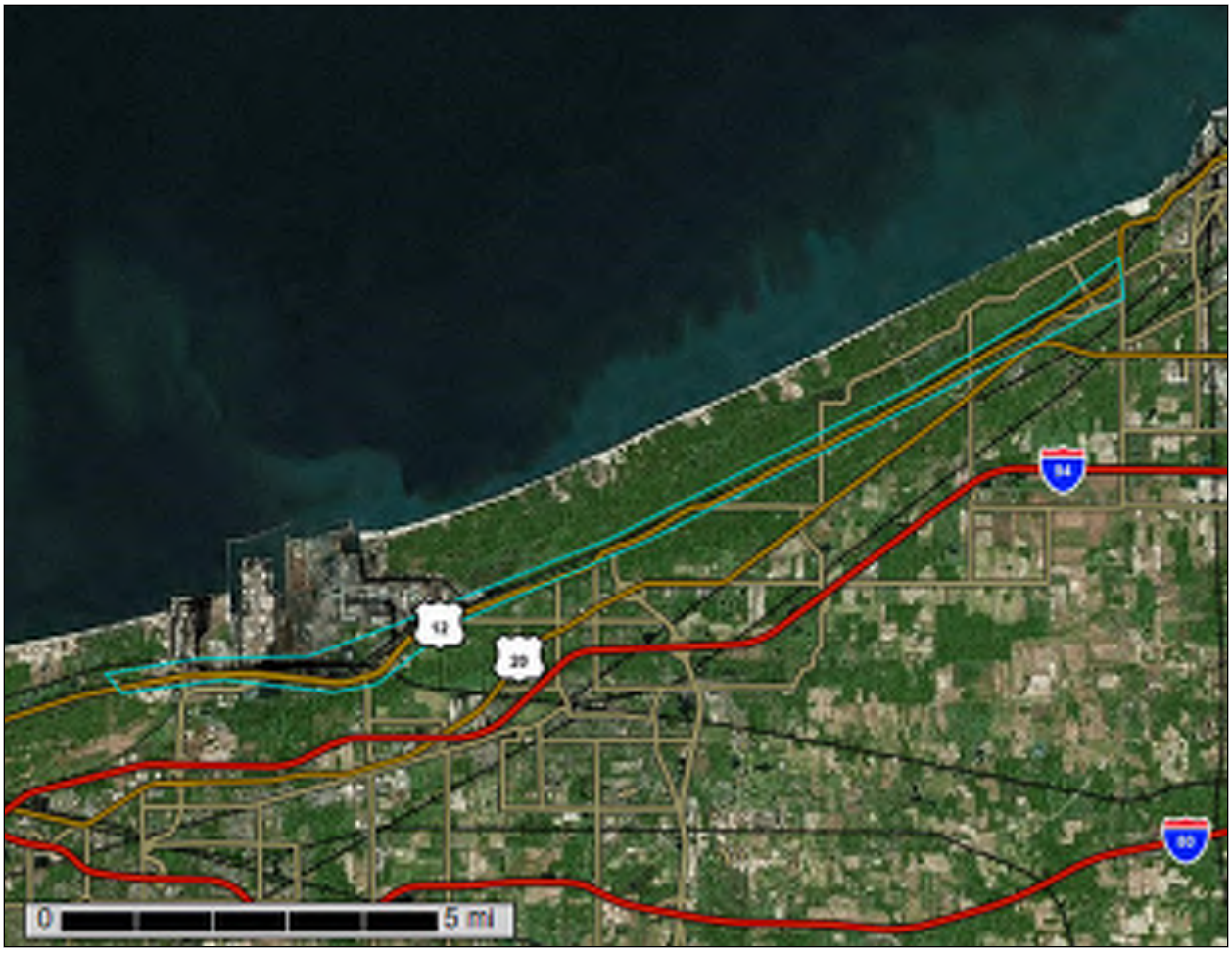
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for La Porte County, Indiana, and Porter County, Indiana

Porter County MS4 Soil Survey



May 4, 2020

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

Preface..... 2
Soil Map..... 5
Soil Map.....6
Legend.....7
Map Unit Legend..... 9
Map Unit Descriptions..... 10
La Porte County, Indiana..... 12
Ho—Houghton muck, drained, 0 to 1 percent slopes.....12
OaC—Oakville fine sand, 4 to 12 percent slopes.....13
Porter County, Indiana..... 15
Ad—Adrian muck, drained, 0 to 1 percent slopes.....15
BaA—Blount silt loam, Lake Michigan Lobe, 0 to 2 percent slopes..... 16
BtA—Brems sand, 0 to 3 percent slopes..... 18
De—Del Rey silt loam..... 19
Du—Dune land.....20
Fh—Fluvaquents.....21
HaA—Hanna sandy loam, 0 to 3 percent slopes..... 22
Hm—Houghton muck, ponded.....23
Ho—Houghton muck, drained.....24
MfA—Martinsville loam, 0 to 2 percent slopes..... 26
Mm—Maumee loamy sand..... 27
Mn—Maumee loamy sand, ponded..... 28
MoB—Metea loamy fine sand, 1 to 6 percent slopes.....29
Mp—Milford silty clay loam, 0 to 2 percent slopes..... 30
MuuA—Morocco loamy sand, lake plain, 0 to 2 percent slopes.....31
Nf—Newton loamy fine sand.....33
OaC—Oakville fine sand, 4 to 12 percent slopes.....34
OaE—Oakville fine sand, 18 to 40 percent slopes.....35
OzaB2—Ozaukee silt loam, 2 to 6 percent slopes, eroded.....37
OzaE—Ozaukee silt loam, 18 to 30 percent slopes.....38
PlB—Plainfield sand, 2 to 6 percent slopes..... 40
RaB—Rawson loam, 2 to 6 percent slopes.....41
RmC2—Riddles loam, 6 to 12 percent slopes, eroded..... 43
So—Suman silt loam.....44
TyA—Tyner loamy sand, 0 to 3 percent slopes.....45
UcG—Udorthents, loamy, 3 to 30 percent slopes..... 46
UpB—Urban land-Psamments complex, 0 to 6 percent slopes..... 47
W—Water.....48
We—Warners silt loam.....48

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

87° 13' 8" W
86° 54' 20" W
41° 44' 0" N
41° 34' 52" N
483000
485000
487000
489000
491000
493000
495000
497000
499000
501000
503000
505000
507000
4620000
4618000
4616000
4614000
4612000
4610000
4608000
4606000
4604000
94
12
20
80
Map Scale: 1:119,000 if printed on A landscape (11" x 8.5") sheet.
N
Meters
0 1500 3000 6000 9000
Feet
0 5000 10000 20000 30000
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

Soil Map Unit Lines

Soil Map Unit Points

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: La Porte County, Indiana
Survey Area Data: Version 24, Sep 16, 2019

Soil Survey Area: Porter County, Indiana
Survey Area Data: Version 23, Sep 16, 2019

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 1, 1999—Oct 13, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND

MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ho	Houghton muck, drained, 0 to 1 percent slopes	0.1	0.0%
OaC	Oakville fine sand, 4 to 12 percent slopes	2.5	0.1%
Subtotals for Soil Survey Area		**2.6**	**0.1%**
Totals for Area of Interest		**2,943.5**	**100.0%**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ad	Adrian muck, drained, 0 to 1 percent slopes	9.2	0.3%
BaA	Blount silt loam, Lake Michigan Lobe, 0 to 2 percent slopes	0.5	0.0%
BtA	Brems sand, 0 to 3 percent slopes	53.6	1.8%
De	Del Rey silt loam	10.7	0.4%
Du	Dune land	2.3	0.1%
Fh	Fluvaquents	24.6	0.8%
HaA	Hanna sandy loam, 0 to 3 percent slopes	24.6	0.8%
Hm	Houghton muck, ponded	1.6	0.1%
Ho	Houghton muck, drained	41.8	1.4%
MfA	Martinsville loam, 0 to 2 percent slopes	89.5	3.0%
Mm	Maumee loamy sand	432.0	14.7%
Mn	Maumee loamy sand, ponded	263.5	9.0%
MoB	Metea loamy fine sand, 1 to 6 percent slopes	24.4	0.8%
Mp	Milford silty clay loam, 0 to 2 percent slopes	5.4	0.2%
MuuA	Morocco loamy sand, lake plain, 0 to 2 percent slopes	188.0	6.4%
Nf	Newton loamy fine sand	11.1	0.4%
OaC	Oakville fine sand, 4 to 12 percent slopes	562.7	19.1%
OaE	Oakville fine sand, 18 to 40 percent slopes	179.3	6.1%
OzaB2	Ozaukee silt loam, 2 to 6 percent slopes, eroded	42.9	1.5%
OzaE	Ozaukee silt loam, 18 to 30 percent slopes	4.2	0.1%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
PlB	Plainfield sand, 2 to 6 percent slopes	0.0	0.0%
RaB	Rawson loam, 2 to 6 percent slopes	4.3	0.1%
RmC2	Riddles loam, 6 to 12 percent slopes, eroded	0.6	0.0%
So	Suman silt loam	11.2	0.4%
TyA	Tyner loamy sand, 0 to 3 percent slopes	116.5	4.0%
UcG	Udorthents, loamy, 3 to 30 percent slopes	0.3	0.0%
UpB	Urban land-Psamments complex, 0 to 6 percent slopes	773.7	26.3%
W	Water	48.1	1.6%
We	Warners silt loam	14.1	0.5%
Subtotals for Soil Survey Area		**2,941.0**	**99.9%**
Totals for Area of Interest		**2,943.5**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor

components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

La Porte County, Indiana

Ho—Houghton muck, drained, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2w64q
Elevation: 590 to 920 feet
Mean annual precipitation: 30 to 41 inches
Mean annual air temperature: 43 to 52 degrees F
Frost-free period: 140 to 230 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Houghton, drained, and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Houghton, Drained

Setting

Landform: Moraines, depressions on outwash plains, till plains, lake plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave
Parent material: Herbaceous organic material

Typical profile

Oap - 0 to 12 inches: muck
Oa1 - 12 to 35 inches: muck
Oa2 - 35 to 80 inches: muck

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 0.6
Available water storage in profile: Very high (about 23.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Ecological site: Kankakee Mucky Depressions (R098XB028IN)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Minor Components

Edwards, drained

Percent of map unit: 3 percent
Landform: Moraines, depressions on outwash plains, till plains, lake plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Adrian, drained

Percent of map unit: 3 percent
Landform: Moraines, depressions on outwash plains, till plains, lake plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Palms, drained

Percent of map unit: 2 percent
Landform: Moraines, outwash plains, depressions on till plains, lake plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Maumee, drained

Percent of map unit: 2 percent
Landform: Depressions on outwash plains, moraines, till plains, lake plains
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear, convex
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

OaC—Oakville fine sand, 4 to 12 percent slopes

Map Unit Setting

National map unit symbol: 94r2
Elevation: 570 to 950 feet
Mean annual precipitation: 36 to 40 inches
Mean annual air temperature: 49 to 51 degrees F
Frost-free period: 170 to 180 days

Farmland classification: Not prime farmland

Map Unit Composition

Oakville and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Oakville

Setting

Landform: Outwash plains, beach ridges, dunes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian sands

Typical profile

H1 - 0 to 14 inches: fine sand
H2 - 14 to 39 inches: fine sand
H3 - 39 to 60 inches: fine sand

Properties and qualities

Slope: 4 to 12 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: Chicago Sandy Lake Plain (F097XB033IN)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Newton

Percent of map unit: 10 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Porter County, Indiana

Ad—Adrian muck, drained, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2w5n1
Elevation: 580 to 880 feet
Mean annual precipitation: 30 to 41 inches
Mean annual air temperature: 43 to 52 degrees F
Frost-free period: 140 to 230 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Adrian, drained, and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Adrian, Drained

Setting

Landform: Depressions on outwash plains, moraines, till plains, lake plains, flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Parent material: Herbaceous organic material over sandy outwash

Typical profile

Oap - 0 to 10 inches: muck
Oa - 10 to 28 inches: muck
Cg - 28 to 80 inches: sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 0.4
Available water storage in profile: Very high (about 13.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Ecological site: Wet Kankakee Floodplains (F098XB026IN), Mucky Depressions (F098XA006MI)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)

Hydric soil rating: Yes

Minor Components

Antung, drained

Percent of map unit: 10 percent
Landform: Till plains, lake plains, depressions on outwash plains, moraines
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Edwards, drained

Percent of map unit: 6 percent
Landform: Depressions on outwash plains, moraines, till plains, lake plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Houghton, drained

Percent of map unit: 6 percent
Landform: Depressions on outwash plains, moraines, till plains, lake plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: Mucky Depression (F097XA030MI), Mucky Depressions (F098XA006MI)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Muskego, drained

Percent of map unit: 3 percent
Landform: Till plains, lake plains, moraines, depressions on outwash plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

BaA—Blount silt loam, Lake Michigan Lobe, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2t6zk
Elevation: 540 to 930 feet

Mean annual precipitation: 33 to 41 inches
Mean annual air temperature: 46 to 54 degrees F
Frost-free period: 160 to 190 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Blount, lake michigan lobe, and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Blount, Lake Michigan Lobe

Setting

Landform: Ground moraines, end moraines
Landform position (two-dimensional): Footslope, summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess over clayey till

Typical profile

Ap - 0 to 7 inches: silt loam
E - 7 to 13 inches: silt loam
2Bt1 - 13 to 26 inches: silty clay
2Bt2 - 26 to 32 inches: silty clay loam
2Cd - 32 to 60 inches: silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 8 to 16 inches to abrupt textural change; 30 to 48 inches to densic material
Natural drainage class: Somewhat poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 6 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 2.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Hydric soil rating: No

Minor Components

Ashkum, drained

Percent of map unit: 4 percent
Landform: Ground moraines, end moraines
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear

Across-slope shape: Concave
Hydric soil rating: Yes

Orthents, clayey

Percent of map unit: 1 percent
Landform: Ground moraines, lake plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

BtA—Brems sand, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 5d4w
Elevation: 570 to 870 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 51 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Brems and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Brems

Setting

Landform: Outwash plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy outwash

Typical profile

H1 - 0 to 12 inches: fine sand
H2 - 12 to 67 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None

Available water storage in profile: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Ecological site: Chicago Sandy Swale (F097XB035IN)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Maumee

Percent of map unit: 5 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Newton

Percent of map unit: 5 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

De—Del Rey silt loam

Map Unit Setting

National map unit symbol: 5d4z
Elevation: 570 to 870 feet
Mean annual precipitation: 36 to 40 inches
Mean annual air temperature: 49 to 52 degrees F
Frost-free period: 165 to 175 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Del rey and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Del Rey

Setting

Landform: Lake plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Clayey lacustrine deposits

Typical profile

H1 - 0 to 8 inches: silt loam

H2 - 8 to 31 inches: silty clay loam
H3 - 31 to 60 inches: silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 6 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Available water storage in profile: Moderate (about 6.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: Chicago Clayey Flats (R097XB046IL)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Milford

Percent of map unit: 10 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Du—Dune land

Map Unit Setting

National map unit symbol: 5d51
Elevation: 570 to 870 feet
Mean annual precipitation: 36 to 40 inches
Mean annual air temperature: 49 to 51 degrees F
Frost-free period: 170 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Dune land: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dune Land

Setting

Parent material: Eolian sands

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Ecological site: Beach And Foredune (R097XA001MI)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Fh—Fluvaquents

Map Unit Setting

National map unit symbol: 5d55
Elevation: 570 to 870 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 50 degrees F
Frost-free period: 140 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Fluvaquents and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Fluvaquents

Setting

Landform: Flood plains
Landform position (two-dimensional): Footslope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Loamy alluvium

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: Negligible
Depth to water table: More than 80 inches
Frequency of flooding: Frequent
Frequency of ponding: None

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Ecological site: Chicago Floodplain (F097XB044IN)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

HaA—Hanna sandy loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 5d57
Elevation: 570 to 870 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 50 degrees F
Frost-free period: 140 to 170 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Hanna and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hanna

Setting

Landform: Outwash plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy outwash

Typical profile

H1 - 0 to 12 inches: sandy loam
H2 - 12 to 42 inches: loam
H3 - 42 to 54 inches: sandy loam
H4 - 54 to 60 inches: sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 9.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 1
Hydrologic Soil Group: C
Ecological site: Acidic Drift Flats (F098XA017MI)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Gilford

Percent of map unit: 5 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Pinhook

Percent of map unit: 5 percent
Landform: Flats
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Hm—Houghton muck, ponded

Map Unit Setting

National map unit symbol: 5d59
Elevation: 570 to 870 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 51 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Houghton, undrained, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Houghton, Undrained

Setting

Landform: Depressions on till plains, depressions on lake plains, depressions on outwash plains
Landform position (two-dimensional): Toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Herbaceous organic material

Typical profile

Oa1 - 0 to 66 inches: muck

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None

Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 10 percent
Available water storage in profile: Very high (about 23.9 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: A/D
Ecological site: Chicago Mucky Depression (R097XB051IL)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Ho—Houghton muck, drained

Map Unit Setting
National map unit symbol: 5d5b
Elevation: 600 to 1,400 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 51 degrees F
Frost-free period: 170 to 185 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Houghton, drained, and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Houghton, Drained

Setting
Landform: Depressions on till plains, depressions on lake plains, depressions on outwash plains, depressions on moraines
Landform position (two-dimensional): Toeslope, footslope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Herbaceous organic material

Typical profile
Op - 0 to 9 inches: muck
Oa - 9 to 80 inches: muck

Properties and qualities
Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water storage in profile: Very high (about 23.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Minor Components

Edwards, drained

Percent of map unit: 7 percent
Landform: Depressions on outwash plains, depressions on till plains, depressions on lake plains
Landform position (two-dimensional): Footslope, toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Adrian, drained

Percent of map unit: 7 percent
Landform: Depressions on outwash plains, depressions on till plains, depressions on lake plains
Landform position (two-dimensional): Footslope, toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Muskego, drained

Percent of map unit: 6 percent
Landform: Depressions on outwash plains, depressions on till plains, depressions on lake plains
Landform position (two-dimensional): Footslope, toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Palms, drained

Percent of map unit: 5 percent
Landform: Depressions on outwash plains, depressions on till plains
Landform position (two-dimensional): Footslope, toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

MfA—Martinsville loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 5d5h
Elevation: 570 to 870 feet
Mean annual precipitation: 36 to 40 inches
Mean annual air temperature: 49 to 52 degrees F
Frost-free period: 165 to 175 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Martinsville and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Martinsville

Setting

Landform: Terraces on outwash plains, terraces on lake plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy outwash

Typical profile

H1 - 0 to 12 inches: loam
H2 - 12 to 36 inches: clay loam
H3 - 36 to 46 inches: sandy clay loam
H4 - 46 to 60 inches: sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 45 percent
Available water storage in profile: High (about 9.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 1
Hydrologic Soil Group: B
Ecological site: Chicago Clayey Flats (R097XB046IL)
Other vegetative classification: Trees/Timber (Woody Vegetation)

Hydric soil rating: No

Minor Components

Rensselaer

Percent of map unit: 10 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Mm—Maumee loamy sand

Map Unit Setting

National map unit symbol: 5d5k
Elevation: 570 to 870 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 51 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Maumee and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Maumee

Setting

Landform: Depressions on outwash plains
Landform position (two-dimensional): Footslope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Sandy outwash

Typical profile

H1 - 0 to 23 inches: loamy sand
H2 - 23 to 60 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water storage in profile: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Ecological site: Chicago Wet Sandy Swale (R097XB036IN)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Mn—Maumee loamy sand, ponded

Map Unit Setting

National map unit symbol: 5d5l
Elevation: 570 to 870 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 51 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Maumee, undrained, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Maumee, Undrained

Setting

Landform: Depressions on outwash plains
Landform position (two-dimensional): Footslope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Sandy outwash

Typical profile

H1 - 0 to 23 inches: loamy sand
H2 - 23 to 60 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 40 percent
Available water storage in profile: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A/D
Ecological site: Chicago Wet Sandy Swale (R097XB036IN)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)

Hydric soil rating: Yes

MoB—Metea loamy fine sand, 1 to 6 percent slopes

Map Unit Setting

National map unit symbol: 5d5m
Elevation: 570 to 870 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 50 degrees F
Frost-free period: 140 to 170 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Metea and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Metea

Setting

Landform: Moraines
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy outwash over loamy till

Typical profile

H1 - 0 to 10 inches: loamy fine sand
H2 - 10 to 38 inches: loamy sand
H3 - 38 to 52 inches: sandy clay loam
H4 - 52 to 65 inches: clay loam
H5 - 65 to 75 inches: loam

Properties and qualities

Slope: 1 to 6 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Available water storage in profile: Moderate (about 6.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: Chicago Sandy Lake Plain (F097XB033IN)
Other vegetative classification: Trees/Timber (Woody Vegetation)

Hydric soil rating: No

Mp—Milford silty clay loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2smzk
Elevation: 510 to 930 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 46 to 54 degrees F
Frost-free period: 155 to 190 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Milford, drained, and similar soils: 93 percent
Minor components: 7 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Milford, Drained

Setting

Landform: Depressions on lake plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip, talf
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Parent material: Clayey lacustrine deposits

Typical profile

Ap - 0 to 9 inches: silty clay loam
A - 9 to 22 inches: silty clay
Bg - 22 to 50 inches: silty clay loam
Cg - 50 to 60 inches: stratified sandy loam to silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 30 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 9.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D

Hydric soil rating: Yes

Minor Components

Peotone, drained

Percent of map unit: 5 percent
Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Orthents, clayey

Percent of map unit: 1 percent
Landform: Ground moraines, lake plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Urban land

Percent of map unit: 1 percent
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

MuuA—Morocco loamy sand, lake plain, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2w64t
Elevation: 580 to 740 feet
Mean annual precipitation: 34 to 41 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 170 to 230 days
Farmland classification: Not prime farmland

Map Unit Composition

Morocco, lake plain, and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Morocco, Lake Plain

Setting

Landform: Outwash plains, nearshore zones (relict)
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Linear

Parent material: Sandy glaciolacustrine deposits

Typical profile

Ap - 0 to 8 inches: loamy sand
Bw - 8 to 36 inches: sand
C - 36 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (1.42 to 14.17 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 0.1 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 1.0
Available water storage in profile: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Ecological site: Acidic Sandy Flatwoods (F097XA006MI), Chicago Sandy Swale (F097XB035IN)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Granby, lake plain

Percent of map unit: 5 percent
Landform: Depressions on nearshore zones (relict), depressions on outwash plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, talf
Down-slope shape: Concave, linear
Across-slope shape: Linear
Ecological site: Wet Sandy Flatwoods (F097XA008MI)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Brems

Percent of map unit: 3 percent
Landform: Nearshore zones (relict)
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Linear
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Plainfield, lake plain

Percent of map unit: 1 percent
Landform: Nearshore zones (relict)

Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Side slope, nose slope, head slope, interfluve
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Ecological site: Sandy Lake Plain (F097XA004MI)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Newton

Percent of map unit: 1 percent
Landform: Outwash plains, depressions on nearshore zones (relict)
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave
Ecological site: Wet Acidic Sandy Flatwoods (F097XA007MI)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Nf—Newton loamy fine sand

Map Unit Setting

National map unit symbol: 5d5w
Elevation: 570 to 870 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 51 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Newton and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Newton

Setting

Landform: Depressions on outwash plains
Landform position (two-dimensional): Footslope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Sandy outwash

Typical profile

H1 - 0 to 18 inches: loamy fine sand
H2 - 18 to 60 inches: fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained

Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water storage in profile: Moderate (about 6.3 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Ecological site: Wet Acidic Sandy Flatwoods (F097XA007MI)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

OaC—Oakville fine sand, 4 to 12 percent slopes

Map Unit Setting
National map unit symbol: 5d5x
Elevation: 570 to 870 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 51 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition
Oakville and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Oakville

Setting
Landform: Dunes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian sands

Typical profile
H1 - 0 to 7 inches: fine sand
H2 - 7 to 30 inches: fine sand
H3 - 30 to 60 inches: fine sand

Properties and qualities
Slope: 4 to 12 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: Chicago Sandy Lake Plain (F097XB033IN)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Newton

Percent of map unit: 4 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Maumee

Percent of map unit: 3 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Adrian

Percent of map unit: 3 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

OaE—Oakville fine sand, 18 to 40 percent slopes

Map Unit Setting

National map unit symbol: 5d5y
Elevation: 570 to 870 feet
Mean annual precipitation: 36 to 40 inches
Mean annual air temperature: 49 to 51 degrees F
Frost-free period: 170 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Oakville and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Oakville

Setting

Landform: Dunes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian sands

Typical profile

H1 - 0 to 7 inches: fine sand
H2 - 7 to 30 inches: fine sand
H3 - 30 to 60 inches: fine sand

Properties and qualities

Slope: 18 to 40 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: Sand Hills (F097XA010MI), Chicago Sand Hills (F097XB040IN)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Newton

Percent of map unit: 4 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Adrian

Percent of map unit: 3 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Maumee

Percent of map unit: 3 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

OzaB2—Ozaukee silt loam, 2 to 6 percent slopes, eroded

Map Unit Setting

National map unit symbol: 2sn0d
Elevation: 600 to 930 feet
Mean annual precipitation: 31 to 42 inches
Mean annual air temperature: 46 to 51 degrees F
Frost-free period: 135 to 190 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Ozaukee, eroded, and similar soils: 93 percent
Minor components: 7 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ozaukee, Eroded

Setting

Landform: Ground moraines, end moraines
Landform position (two-dimensional): Shoulder, summit, backslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loess over wisconsinan age silty and clayey till

Typical profile

Ap - 0 to 8 inches: silt loam
Bt1 - 8 to 11 inches: silty clay loam
2Bt2 - 11 to 29 inches: silty clay
2BCt - 29 to 34 inches: silty clay loam
2Cd - 34 to 60 inches: silty clay loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: 23 to 43 inches to densic material
Natural drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 24 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 5.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: C
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Ashkum, drained
Percent of map unit: 3 percent
Landform: Ground moraines, end moraines
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Other vegetative classification: Grass/Prairie (Herbaceous Vegetation)
Hydric soil rating: Yes

Pewamo, drained
Percent of map unit: 3 percent
Landform: Depressions on ground moraines, drainageways on ground moraines
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Urban land
Percent of map unit: 1 percent
Landform: Ground moraines
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

OzaE—Ozaukee silt loam, 18 to 30 percent slopes

Map Unit Setting
National map unit symbol: 2sn0r
Elevation: 610 to 850 feet
Mean annual precipitation: 35 to 42 inches
Mean annual air temperature: 49 to 52 degrees F
Frost-free period: 145 to 195 days
Farmland classification: Not prime farmland

Map Unit Composition
Ozaukee and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ozaukee

Setting

Landform: Ground moraines, end moraines
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess over wisconsinan age silty and clayey till

Typical profile

A - 0 to 4 inches: silt loam
E - 4 to 8 inches: silt loam
Bt1 - 8 to 12 inches: silty clay loam
2Bt2 - 12 to 29 inches: silty clay
2Bt3 - 29 to 36 inches: silty clay loam
2Cd - 36 to 60 inches: silty clay loam

Properties and qualities

Slope: 18 to 30 percent
Depth to restrictive feature: 22 to 42 inches to densic material
Natural drainage class: Moderately well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 24 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Blount, lake mighican lobe

Percent of map unit: 3 percent
Landform: Ground moraines, end moraines
Landform position (two-dimensional): Summit, footslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Pewamo

Percent of map unit: 2 percent
Landform: Drainageways on ground moraines, depressions on ground moraines
Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

PlB—Plainfield sand, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 2w5lp
Elevation: 620 to 900 feet
Mean annual precipitation: 30 to 41 inches
Mean annual air temperature: 43 to 52 degrees F
Frost-free period: 140 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Plainfield and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Plainfield

Setting

Landform: Outwash plains
Landform position (two-dimensional): Backslope, shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy outwash

Typical profile

Ap - 0 to 6 inches: sand
Bw - 6 to 22 inches: sand
BC - 22 to 30 inches: sand
C - 30 to 80 inches: sand

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (1.42 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 0.1 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 1.0
Available water storage in profile: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Ecological site: Kankakee Sand Dunes (F098XB030IN)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Morocco

Percent of map unit: 2 percent
Landform: Outwash plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Brems

Percent of map unit: 2 percent
Landform: Outwash plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Newton

Percent of map unit: 1 percent
Landform: Outwash plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave, linear
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

RaB—Rawson loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 5d65
Elevation: 570 to 870 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 50 degrees F
Frost-free period: 140 to 170 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Rawson and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rawson

Setting

Landform: Outwash plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy outwash over clayey till

Typical profile

H1 - 0 to 16 inches: loam
H2 - 16 to 35 inches: gravelly sandy clay loam
H3 - 35 to 60 inches: silty clay loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: 20 to 40 inches to densic material
Natural drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.20 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Available water storage in profile: Moderate (about 6.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Mermill

Percent of map unit: 10 percent
Landform: Drainageways
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: Yes

RmC2—Riddles loam, 6 to 12 percent slopes, eroded

Map Unit Setting

National map unit symbol: 5d69
Elevation: 570 to 870 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 50 degrees F
Frost-free period: 140 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Riddles and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Riddles

Setting

Landform: Till plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy till

Typical profile

H1 - 0 to 10 inches: loam
H2 - 10 to 48 inches: loam
H3 - 48 to 60 inches: loam

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Available water storage in profile: High (about 9.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: Loamy Drift (F097XA018MI)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Pewamo

Percent of map unit: 5 percent
Landform: Drainageways
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Washtenaw

Percent of map unit: 5 percent
Landform: Drainageways
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

So—Suman silt loam

Map Unit Setting

National map unit symbol: 5d6f
Elevation: 570 to 870 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 50 degrees F
Frost-free period: 140 to 170 days
Farmland classification: Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Suman and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Suman

Setting

Landform: Depressions on flood plains
Landform position (two-dimensional): Footslope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Loamy alluvium over sandy alluvium

Typical profile

H1 - 0 to 13 inches: silt loam
H2 - 13 to 37 inches: sandy clay loam
H3 - 37 to 60 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)

Depth to water table: About 0 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Available water storage in profile: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D
Ecological site: Wet Kankakee Floodplains (F098XB026IN)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: Yes

TyA—Tyner loamy sand, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 5d6l
Elevation: 570 to 870 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 50 degrees F
Frost-free period: 140 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Tyner and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tyner

Setting

Landform: Outwash plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy outwash

Typical profile

H1 - 0 to 54 inches: loamy sand
H2 - 54 to 60 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None

Frequency of ponding: None
Available water storage in profile: Low (about 5.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Ecological site: Chicago Sandy Lake Plain (F097XB033IN)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Poorly drained aqualf

Percent of map unit: 5 percent
Landform: Depressions
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: Yes

Newton

Percent of map unit: 5 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

UcG—Udorthents, loamy, 3 to 30 percent slopes

Map Unit Setting

National map unit symbol: 5d6p
Elevation: 570 to 870 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 50 degrees F
Frost-free period: 140 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Udorthents and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents

Properties and qualities

Slope: 0 to 12 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

UpB—Urban land-Psamments complex, 0 to 6 percent slopes

Map Unit Setting

National map unit symbol: 5d6t
Elevation: 570 to 870 feet
Mean annual precipitation: 36 to 40 inches
Mean annual air temperature: 49 to 51 degrees F
Frost-free period: 170 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 50 percent
Psamments and similar soils: 40 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Landform: Dunes
Landform position (two-dimensional): Backslope
Down-slope shape: Convex
Across-slope shape: Linear

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Description of Psamments

Setting

Landform: Dunes
Landform position (two-dimensional): Backslope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Eolian sands

Properties and qualities

Slope: 0 to 6 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Interpretive groups

Land capability classification (irrigated): None specified

Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Newton
Percent of map unit: 4 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Adrian
Percent of map unit: 3 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Maumee
Percent of map unit: 3 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

W—Water

Map Unit Composition
Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Water

Interpretive groups
Land capability classification (irrigated): None specified
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

We—Warners silt loam

Map Unit Setting
National map unit symbol: 5d6y
Elevation: 570 to 870 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 50 degrees F
Frost-free period: 140 to 170 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Warners and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Warners

Setting

Landform: Depressions on flood plains
Landform position (two-dimensional): Footslope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Silty alluvium over marl

Typical profile

H1 - 0 to 10 inches: silt loam
H2 - 10 to 24 inches: silty clay loam
Lma - 24 to 60 inches: marl

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 60 percent
Available water storage in profile: High (about 10.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D
Ecological site: Chicago Wet Floodplain (F097XB049IN)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

SWPPP for the City of Portage

STORM WATER POLLUTION PREVENTION PLAN

DRAFT

For

Northern Indiana Commuter Transportation District (NICTD)
Double Track North West Indiana (DTNWI)
City of Portage MS4 District
Milepost 48.47 to 52.55 excepting 50.65 to 50.95
(Project Stations 2382+00 to 2775+80 excepting 2676+35 to 2691+50))

MS4 Point of Contact: David Littleton, Superintendant
Contact Address: 6070 Central Avenue, Portage, IN 46368
p. 219-762-5425
e. dlittleton@portage-in.com

Prepared by:
VS Engineering / AECOM
Point of Contact: Jeffrey J. Haw, PE
5821 N. US-35, La Porte, IN 46350
p. 219-873-1100 f. 219-873-1006
e. jhaw@vsengineering.com

Date: June 17, 2020

Hydrologic Unit Codes (HUC14): 04040001020010, 04040001040030 & 04040001060040
West End: Latitude: 41.6100° N Longitude: 87.2225° W
East End: Latitude: 41.6191° N Longitude: 87.1448° W

Contents

Section 1 SWPPP Elements – PART A 3
A1 – Plan Elements 3
A2 – 11x17 Plat 5
A3 - Project Narrative and Description 5
A4 – Vicinity Map 7
A5 – Legal Description (Including Latitude And Longitude) 7
A6 – Proposed Site Plan 8
A7 – Hydrological Unit Code 8
A8 – State Or Federal Permits 8
A9 – Storm Water Discharge Points 8
A10 – Location of water courses onsite and adjacent to Project 8
A11– Identification of Receiving Waters 8
A12– Identification of potential discharges to groundwater 8
A13 – 100-year Floodplains, floodways and fringes 9
A14 – Pre-Demolition and Post Demolition estimate of Peak Discharge 9
A15 – Adjacent Land Use 10
A16 –Locations And Approximate Boundaries Of All Disturbed Areas 10
A17 – Identification of existing vegetative cover 10
A18 – Soil Map 10
A19 – Storm Water System 11
A20 – Off-Site Construction Activities 12
A21 – Stock Piles, Disposal Areas 12
A22 – Existing Topography 12
A23 – Proposed Final Topography 12
Section 2 SWPPP Elements – PART B 13
B-1 Description Of Potential Pollutant Sources Associated With Construction Activities 13
B-2 Sequence Describing Storm Water Quality Measure Implementation Relative To Land Disturbing Activities 13
B-3 Stable Construction Entrance Locations And Specifications 13
B-4 Sediment Control Measures For Sheet Flow Areas 14

B-5 Sediment Control Measures For Concentrated Flow Area 14
B-6 Storm Sewer Inlet Protection Measures And Locations 14
B-7 Runoff Control Measures 14
B-8 Storm Water Outlet Protection Specification 14
B-9 Grade stabilization structure locations and specifications 14
B-10 Locations, Dimensions, Specifications Of Each Stormwater Quality Measure 14
B-11 Temporary surface stabilization methods appropriate for each season 14
B-12 Permanent surface stabilization specifications 14
B-13 Material handling and spill prevention plan 15
B-14 Monitoring and maintenance guidelines for each proposed storm water quality measure 16
B-15 Erosion and Sediment Control Specifications for Individual Building Lots 18

Section 3 SWPPP Elements –PART C 19
C-1 Description of pollutants and their sources associated with the proposed land use 19
C-2 Sequence describing storm water quality measure implementation 19
C-3 Description of proposed post construction storm water quality measures 19
C-4 Location, dimensions, specifications, and construction details of each storm water quality measure: 20
C-5 Description of maintenance guidelines for post construction storm water quality measures 20

Section 4 - Appendices 21

A1 – PLAN ELEMENTS

Plan Elements designated by the Rule 5 Submittal Requirements for Checklist Sections A, B and C are listed in the table below. The location of said elements in the in the plan set "NICTD General & Miscellaneous Plans" are also provided:

Section 1 SWPPP Elements –Part A				
		Element	Description	Location
A	1	Plan Elements	Location of described features in Plans; "NICTD General & Miscellaneous Plans"	PART A1 – table of plan requirement locations
	2	Plat	Site plan of Project Site	APPENDIX SECTION: Plat will be provided at 90% completion in August, 2020
	3	Project Description	Narrative of project and purpose	PART A3
	4	Vicinity Map	Location Map	PART A4 this report; SHEET GEN001 of Plan Set "NICTD General & Miscellaneous Plans"
	5	Legal Description	Legal of Project Site	PART A5 this report; Not Applicable to this project as it spans 26.6 miles across multiple jurisdictions
	6	Site Improvements	Proposed Project Improvements	PART A6 this report; SHEETS ENV217 TO ENV240 of Plan Set "NICTD General & Miscellaneous Plans"
	7	Hydrological unit code	HUC Designation	COVER SHEET this report; PART A7 this report
	8	State/Federal WQP	Additional Water Quality Permits	PART A8 this report
	9	Storm Water Discharge Point	Description/Location of Storm Water Leaving Site	PART A9 this report, SHEETS ENV217 TO ENV240 of Plan Set "NICTD General & Miscellaneous Plans"
	10	Wetlands, Water courses	Location and description of any wetlands/Water courses adjacent to site	PART 10 this report
	11	Receiving Waters	Location and description of all streams that will receive storm water discharge	PART 11 this report, SHEETS ENV217 TO ENV240of Plan Set "NICTD General & Miscellaneous Plans"

Section 2 – SWPPP ELEMENTS CONT.				
		Element	Description	Narrative Location/Sheet Location
A	12	Groundwater Discharge	Location and description of Groundwater Discharge	PART 12 this report - SHEETS ENV217 TO ENV240 of Plan Set "NICTD General & Miscellaneous Plans"
	13	100 Floodplains	Location and description of Floodplain and fringe	PART 13 this report; SHEETS ENV217 TO ENV240 of Plan Set "NICTD General & Miscellaneous Plans"`
	14	Drainage Discharge	Pre-Construction and Post Construction peak discharge rates	PART 14 this report: discharge values/
	15	Adjacent Land use	Identity of adjacent parcel use	PART 15 this report;
	16	Boundaries	Construction Limits	PART 16 this report – SHEETS ENV217 TO ENV240 of Plan Set "NICTD General & Miscellaneous Plans"
	17	Vegetative Cover	Locations of existing vegetative cover	PART 17 this report/ SHEETS ENV217 TO ENV240 of Plan Set "NICTD General & Miscellaneous Plans"
	18	Soils Map	NRCS soil Map	PART 18 this report
	19	Storm System	Location ,size and dimensions of Storm System	PART 19 this report
	20	Off-Site Activity	Plan for Off-Site construction if any	PART 20 this report
	21	Stock Pile, Borrow/Disposal Area	Areas of cut and fill	PART21 this report
	22	Existing Topo	Existing Contours	SHEETS ENV217 TO ENV240 of Plan Set "NICTD General & Miscellaneous Plans"
	23	Proposed Topo	Proposed Contours	SHEETS ENV217 TO ENV240 of Plan Set "NICTD General & Miscellaneous Plans"

A2 – 11X17 PLAT

An 11x17 set of the project sheet drawings will be located in the appendix section of this report as the project approaches 90% completion in August, 2020.

A3 - Project Narrative and Description

The Northern Indiana Commuter Transportation District (NICTD) is proposing to improve a 26.6 mile corridor of their commuter rail line extending from Michigan City westward to the City of Gary. The project will include utility relocations at various locations along the line, improvements to three commuter rail stations and the construction of a second commuter rail line adjacent to the existing commuter rail line for the majority of the project's length.

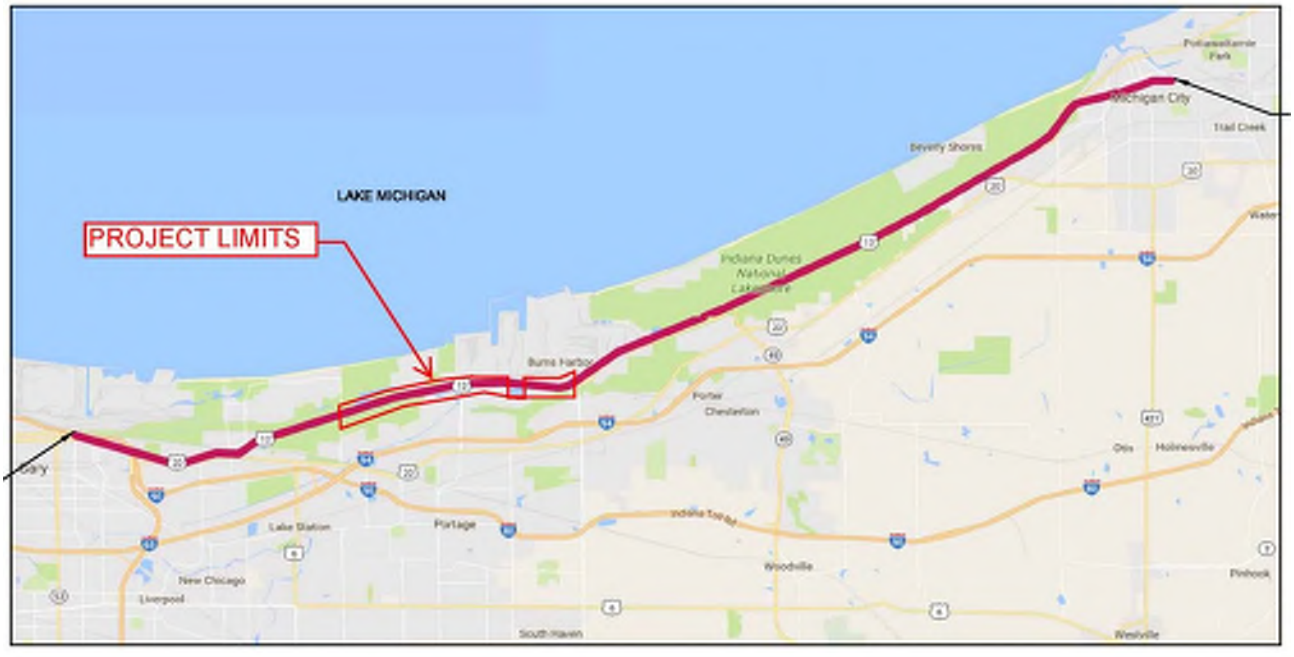
This report will focus on those portions of the project within the City of Portage MS4 District. Per the appended Sheet drawings, this section of the project extends approximately 4.08 miles from Milepost 48.47 (Lake/City of Portage City Limit) to 52.55 (Lake/Porter County Line/County Line Road) or, per the internal project stationing, from Station 2382+00 to 2775+80. The entire length of the project within the City of Portage parallels US-12 and is located along its northern edge. This section of the project includes the following:

- Installation of a second commuter rail line parallel to the existing commuter rail line from the Lake/Porter County line (County Line Road) eastward to the City of Portage City Limits.
- Relocation of various impacted utilities along the entire project length.

It is important to note that significant improvements to the Ogden Dunes station are proposed within the scope of this project. However, as Ogden Dunes falls within the MS4 jurisdiction of Porter County, said improvements will not be discussed within this document.

The project is proposed to begin construction in July of 2021 with a scheduled completion date of March 2023.

A4 – VICINITY MAP



Vicinity Map – No Scale

A5 – LEGAL DESCRIPTION

There is no legal description for this project as, in its entirety, it spans more than 28 miles through multiple jurisdictions.

Site latitude and longitude are as follows:
West End: Latitude: 41.6100° N Longitude: 87.2225° W
East End: Latitude: 41.6191° N Longitude: 87.1448° W

A6 – PROPOSED SITE PLAN

The proposed site plan for the project can be found in the plan set "NICTD General & Miscellaneous Plans", SHEETS ENV217 TO ENV240.

A7 – HYDROLOGICAL UNIT CODE

The HUC 14 unit codes for the project are 04040001020010 (Lake Michigan Shoreline–IND/Harbor Canal), 04040001040030 (Burns Ditch-Willow Creek) & 04040001060040 (Little Calumet River-Burns Ditch Outlet).

A8 – STATE OR FEDERAL PERMITS

A Rule 5 Notice of Intent must be filed with the Indiana Department of Environmental Management for the entirety of the project. Additionally, permits must be filed with the State for the sanitary sewer and water main utilities proposed to be relocated. 401 and 404 permits will be obtained from IDEM/IDNR/Army Corps of Engineers for proposed crossings of Waters of the State where they may occur. Permits from INDOT will be obtained for infringement on INDOT-jurisdiction roadways and crossings.

A9 – STORM WATER DISCHARGE POINTS

In general, the track areas to be improved already have drainage systems in place to accommodate potential future improvement. Therefore, in areas where the only proposed construction is installation of the second commuter rail line and attendant utility relocation, the storm water generated in the area will flow to the same discharge points it is currently flowing to.

A10 – Location of wetlands, lakes and water courses onsite and adjacent to Project

A wetland delineation survey performed in 2017 to identify wetlands and streams within the Project's study area resulted in a total of 76 wetlands totaling 43.01 acres and a total of 1,117 feet of streams. This information is captured in a Waters of the U.S. Delineation Report for the Project dated August 18, 2017 which was prepared by Metric Environmental. Project documents can be accessed at the Project's website at https://www.doubletrack-nwi.com/. NICTD is currently applying to the USACE and IDEM for a Section 404/401 Individual Permit. These areas are shown via hatch on SHEETS ENV217 TO ENV240. Said areas shall be protected and, to the extent possible given the scope of the project, shall not be disturbed.

A12 – Identification of potential discharges to groundwater

The vast majority of the proposed construction scope includes construction of a secondary commuter rail adjacent to the existing commuter rail. These areas will drain via sheet drainage to their existing drainage points. However, the Miller Street Station improvements include a number of facilities that will allow discharge to groundwater, specifically including the proposed detention/retention areas and rain gardens included in the development plans.

A13 – 100-Year Floodplains, floodways and fringes

This is located entirely within zone X (areas determined to be outside of the 0.2% annual chance floodplain) national Flood Insurance Rate Map numbers 18127C0102D, 18127C0106D and 18127C0107D, all effective September 30, 2015.

A14 – Pre-Construction and Post Construction Estimates of Peak Discharge

THIS SECTION TO BE COMPLETED WITH INFORMATION OBTAINED FROM OTHER DESIGNERS – THIS INFORMATION IS NOT YET AVAILABLE FOR REVIEW.

A15 – Adjacent Land Use

Given its length, adjacent land uses to the commuter track corridor range from undeveloped through residential to industrial and commercial. Additional detail regarding land use may be found in SHEETS ENV217 TO ENV240 of the plan set "NICTD General & Miscellaneous Plans".

A16 –Locations and Approximate Boundaries of all disturbed areas

The project demolition limits may be found on SHEETS ENV217 TO ENV240 of the plan set "NICTD General & Miscellaneous Plans".

A17 – Identification of existing vegetative cover

The existing vegetative cover can be found on SHEETS ENV217 TO ENV240 of the plan set "NICTD General & Miscellaneous Plans". The vast majority of the proposed development area is clear of trees and vegetation due to the presence of the existing commuter rail line track.

A18 – Soil Map

The USDA Soil Map for the project Map is shown below. The site consists of multiple significant soil types:

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ca	Houghton muck, drained, 0 to 1 percent slopes	0.1	0.0%
OaE	Oakville fine sand, 12 to 25 percent slopes	0.0	0.0%
OkB	Oakville-Adrian complex, 0 to 6 percent slopes	0.5	0.1%
Subtotals for Soil Survey Area		**0.6**	**0.1%**
Totals for Area of Interest		**403.0**	**100.0%**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ad	Adrian muck, drained, 0 to 1 percent slopes	25.8	6.4%
BtA	Brems sand, 0 to 3 percent slopes	1.5	0.4%
De	Del Rey silt loam	0.7	0.2%
Hm	Houghton muck, ponded	19.7	4.9%
Mm	Maumee loamy sand	0.6	0.1%
MoB	Metea loamy fine sand, 1 to 6 percent slopes	6.8	1.7%
Mp	Milford silty clay loam, 0 to 2 percent slopes	2.8	0.7%
MuuA	Morocco loamy sand, lake plain, 0 to 2 percent slopes	2.8	0.7%
Nf	Newton loamy fine sand	6.0	1.5%
OaC	Oakville fine sand, 4 to 12 percent slopes	84.9	21.1%
OaE	Oakville fine sand, 18 to 40 percent slopes	23.0	5.7%
UpB	Urban land-Psamments complex, 0 to 6 percent slopes	212.3	52.7%
W	Water	10.2	2.5%
We	Warners silt loam	5.5	1.4%
Subtotals for Soil Survey Area		**402.4**	**99.9%**
Totals for Area of Interest		**403.0**	**100.0%**

A19 – Storm Water System

The existing track drains nearly exclusively via overland drainage to a series of water courses/wetlands/water bodies that have been previously analyzed and designed to contain/release the drainage from the track in a controlled manner. Given the proposed track facilities will be installed on already impervious area within the construction limits, it is not anticipated that significant additional drainage quantities will be generated.

REVISE ABOVE PARAGRAPH WITH SPECIFICS FROM CONSTRUCTION PLAN DRAWINGS – THESE PLANS HAVE NOT YET BEEN COMPLETED AND SO ARE NOT CURRENTLY AVAILABLE FOR REVIEW.

A20 – Off-Site Construction Activities

There are no proposed off-site construction activities.

A21- Stock Piles, Disposal Areas

All material generated by the site will be disposed of in approved disposal facilities off-site. Stock pile locations will be determined and protected by project contractor on an as-needed bases. Stock pile areas will be protected by silt fence at their base immediately upon creation and, if said areas are intended to sit unattended for more than 15 days, will be temporarily seeded and mulched.

A22- Existing Topography

The existing topography with major and minor contour intervals of one foot interval is located on SHEETS ENV217 TO ENV240 of the plan set ““NICTD General & Miscellaneous Plans”.

A-23 Proposed Final Topography

The proposed final topography may be found on SHEETS ENV217 TO ENV240 of the plan set “NICTD General & Miscellaneous Plans”.

Section 2 SWPPP Elements – PART B

B-1 Description of potential pollutant sources associated with construction activities

The proposed development will generate potential pollutants during construction operation that could enter the existing storm sewer system, and storm water. Potential pollutant sources that may generate pollutants on the project include, but are not limited to, material and fuel storage areas, fueling locations, exposed soil locations, stored construction equipment and vehicles that may be leaking oil arid fuels. Pollutants generated from these sources include, but are not limited to, gasoline and diesel fuel, oil and grease, fertilizers, antifreeze, rubber fragments, metals, trash, and unprotected soils.

B-2 Sequence describing storm water quality measure implementation relative to land disturbing activities

The contractors and subcontractors shall be responsible to implement practices for the prevention of pollutants reaching the existing storm sewer systems in place. Prevention should include but not be limited to the following items.

A general anticipated construction schedule is attached for the project that highlights the construction sequencing and implementation of the storm water quality measures

a. Install SWPPP information boards and permits.
b. Installation of silt fencing prior to any earthwork activities.
c. Installation of gravel construction entrances prior to any earthwork activities.
d. Installation of pump arounds/diversion devices.
e. Topsoil stockpiles shall be surrounded with silt fencing.
f. All proposed swales and major grading shall be done to rough grades at start of construction to prevent excessive soil erosion due to construction. All swales, ditches and detention/retention basins shall be temporarily seeded and have fiber rolls installed to prevent run off and bank erosion. Permanent seeding or hydro seeding shall be done upon completion of construction.
g. Basin slopes shall be protected with erosion control matting and temporary seeding/mulching as necessary.
h. After completion of storm sewer system facilities, storm sewer inlet protection shall be placed at each open-grate structure (fiber roll barrier, filter basket, etc).
i. Inlets and outlets shall be protected via rip-rap to slope and disperse discharges.
j. Utility relocations shall be installed as necessary.
k. Utilities relocations including electric/cable/telephone, gas and fiber shall be installed.
l. Curb and gutter, road pavement, parking area and other pavement repair tasks shall be constructed.
m. All disturbed areas shall be seeded or mulched upon final grading and when no additional disturbance is anticipated.
n. Silt fencing shall be installed at perimeter of major drainage swales upon final grading to prevent erosion or sediment build up from adjacent construction activities.
o. Permanent seeding shall be placed across all completed graded areas – see following notes regarding extent of establishment.
p. All erosion control features and materials are to be maintained until the completion of construction. This standard includes that vegetation must be established to at least 70% full growth prior to completion.
q. All temporary erosion control measures are to be removed upon permanent vegetative cover being established. This standard includes that vegetation must be established to at least 70% full growth prior to completion.

B-3 Stable construction entrance locations and specification (at all points of ingress and egress)

Construction entrances shall be implemented at entrances to site from main access roads or where contractor deems access is necessary. See SHEETS ENV217 TO ENV240.

B-4 Sediment control measures for sheet flow areas

Silt fencing shall be used for the sheet flow areas along the perimeter of the project as shown. See SHEETS ENV217 TO ENV240. Erosion control matting shall be used in high slope or high flow areas as shown on SHEETS ENV217 TO ENV240.

B-5 Sediment control measures for concentrated flow area

Temporary and permanent seeding shall be used for the swales and drainage ditches to control erosion. If these methods are found to be inadequate, erosion control blankets or other methods will be applied. See SHEETS ENV217 TO ENV240.

B-6 Storm sewer inlet protection

Storm sewer inlets, both existing and proposed, shall be protected by basket-type inlet protection. This policy is universal across the entirety of the project and is covered by general note in SHEETS ENV217 TO ENV240.

B-7 Runoff control measures

Erosion fencing shall be used to control runoff.

B-8 Storm water outlet protection specification

The storm water outlets will have a rip-rap blanket and a stone aggregate filter. See SHEETS ENV217 TO ENV240 for additional information.

B-9 Grade stabilization structure locations and specifications

No grade stabilization structures or measures are required for this development.

B-10 Location, dimensions, specifications and construction details of each storm water quality measure

Locations, dimensions specifications and construction details of each storm water quality measure are detailed on SHEETS ENV217 TO ENV240 in the plan set “NICTD General & Miscellaneous Plans”.

B-11 Temporary surface stabilization methods appropriate for each season

Temporary seeding shall be done on all grading areas within 15 days of temporary completion of grading to provide for stabilization. In the event that seeding is to be done outside the typical seeding periods, during the late fall, early winter or early spring seasons, dormant or frost seeding or mulching shall be done for areas to remain undisturbed for 15 days or more.

B-12 Permanent surface stabilization specifications

Permanent seeding shall be done on all earthen pond banks, street right-of-ways, and major drainage swales at the time of completion. Construction and seeding of these items shall be completed during the
normal seeding seasons to ensure adequate germination and stabilization. In the event that seeding is to be done outside the typical seeding periods, during the late fall, early winter or early spring seasons, dormant or frost seeding or mulching shall be done for areas to remain undisturbed for 15 days or more.

B-13 Material handling and spill prevention plan

The contractors and their subsequent subcontractors shall be responsible to implement practices for the prevention of pollutants reaching the proposed storm drainage system, the existing storm sewer system, or the floodplain. Prevention should include but not be limited to, material handling and storage, clean-up of pollutant at time of detection, and regular maintenance of erosion practices.
Throughout the construction of this project there are a number of materials expected to be handled on the site and may be subject to spills. In order to prevent the entering of these materials into the soils, storm sewers, and ground waters of the project the on-site handling of soils shall be limited to the
Excavation, loading, arid spreading. The contractor shall minimize the disturbance of excavated soils by minimizing the number of times the soil is handled. In the event that a spill occurs, the following measures shall be taken for the associated material,

Material handling & spill prevention

- Material handling and spill prevention for all materials listed, anticipated to be used and any other pollutants not described but associated with land disturbance and construction activities shall be provided by all project contractors and subcontractors. The contractors and subcontractors shall refer to the Material Safety Data Sheet (MSDS) for information on the proper storage, use, and cleanup methods for all materials anticipated to be on the project site.
- All required materials for spilt clean up and disposal of all onsite materials shall be kept on site in a project trailer with easy access for all users of associated materials.
- All disposals of spilled materials shall be done in accordance with Federal, State and Local waste disposal regulations. All contractors and subcontractors shall be responsible for any and all spills associated with their work.

Oil, grease and other hydrocarbons

Spills if possible should be contained at time of detection, Removal shall be done mechanically or wipe up or absorbed on suitable material and shovel up. Disposal should be in accordance with Federal, State and Local waste disposal regulations. Handling and storage of any oil, grease or other hydrocarbons shall he done in tightly closed containers, in a dry cool place away from any heat or ignition sources.

Gasoline and diesel fuel

Spills if possible should be contained at the time of detection, Remove any source of heat and ignition, such as engines and power tools. Clean up spill area by use of sand or other absorbent
scrape up and place in appropriate containers for disposal. Disposal should be in accordance with Federal, State and Local waste disposal regulations. Handling and storage of any gasoline and diesel fuel shall be done in tightly closed containers, in a dry cool place away from any heat or ignition sources.

Fuel storage on the project site shall be avoided if possible to aid in the prevention of spills, Tanker trucks should be used for the fueling of large construction equipment.

Antifreeze

Spills if possible should be contained at time of detection. Shot off source or leak, dike and contain spill area. Remove spills promptly by use of shovel, vacuum trucks or pump, and store into clean
empty storage drums, Trace residue can be soaked with water, but do not flush to sewer or surface water, Disposal should be in accordance with Federal, State and Local waste disposal regulations Handling and storage of any antifreeze shall be done in tightly closed containers, in a dry cool place away from any heat or ignition sources.

Rubber fragments, metals and trash

All materials shall be swept up and disposed of as regular trash or reclaimed for scrap value in accordance with Federal, State and Local waste disposal regulations. Handling arid storage of rubber, metals and trash shall be placed in a refuse area until such time of appropriate disposal.

Fertilizer

All excess spills of material shall be swept or soaked up and placed in a suitable waste disposal container, when possible it should be recycled. Minor spills should be flushed with water, avoiding contamination of any streams and waterways. Disposal should be in accordance with Federal, State and Local waste disposal regulations. Handling and storage of any fertilizer shall be done in tightly closed containers or bags, in a dry cool place.

Grit, wearing of road surface

- All materials shall be swept up and disposed of as regular trash or reclaimed for scrap value in accordance with Federal State and Local waste disposal regulations
- Handling and storage of rubber, metals and trash shall be placed in a refuse area until such time of appropriate disposal.

- Concrete wash out

  Contractor to designate a specific concrete wash out area on the project site for use by the concrete supply company to release any remaining concrete. The area chosen shall be away from any storm water drainage structures, and shall be properly surrounded with silt fencing to prevent runoff of excess material. The concrete shall be disposed of in accordance with Federal, State and Local waste disposal regulations.
  The concrete shall be piled as to provide for easy loading and removal from the project site.

- Vehicle Washing

  Contractors are required to wash construction vehicles before AND after leaving a construction site to minimize transfer of invasive species.

- Typical Spill Procedures

  In the event that a large spill occurs (that which requires extensive cleanup actions, refer to MSD sheets for information), the following procedures shall be followed to minimize exposure of the material.

  a. Immediate action shall be taken to control and contain the spill to prevent it from entering any nearby storm sewer structures or open waters.
  b. Notify the Local Fire Department at 911 for all combustible and flammable materials.
  c. Notify the Federal Emergency Spill Hotline at 1-800-424-8802 within 2 hours for spills above the reported allowable quantity, or if the material enters any nearby storm sewer structures or open waters.
  d. Notify the Indiana Emergency Response Hotline at 1-888-233-7745.
  e. The spill area shall be isolated from all surrounding areas with absorbent pads, booms, and pillows designed for the use of spill containment and absorption.
  f. The spill kits that are required to be on site shall be utilized.
  g. Emergency Response teams shall be contacted for extensive spills above and beyond the containment by available methods, These materials listed, and the associates spill prevention and clean up methods, are the typical expected materials to be used. All additional materials used on the project site shall be monitored, and all spills addressed in the same manner above.

B-14 Monitoring and maintenance guidelines for each proposed storm water quality measure

Maintenance of all erosion and sediment control practices shall be done on a weekly basis and after all measurable rain events. The Contractor, and associated subcontractors, is responsible for the maintenance and implementation of all practices. The Contractor shall see that all practices are maintained according to the design criteria.

Silt fence

- To be installed prior to any dirt movement on the site. Installation to be in accordance with Erosion Control Plan of engineering plans.
- Additional silt fencing may be required as deemed necessary by Contractor to prevent additional onsite erosion of topsoil stock pile or proposed bermed areas.
- If fence fabric tears, starts to decompose or becomes ineffective, replace the affected portion.
- Remove any deposited sediment when it reaches half of the height of the fence at Its lowest point or is causing the fabric to bulge.
- Take care to avoid undermining the fence during clean out.
- After the watershed has been stabilized with vegetation, remove the fence and the sediment deposits

Filter Socks

- To be installed prior to any dirt movement on the site. Installation to be in accordance with Erosion Control Plan of engineering plans.
- Additional filter socks may be required as deemed necessary by Contractor to prevent additional onsite erosion of topsoil stock pile or proposed bermed areas.
- Filter socks must be biodegradable. However, filter socks may NOT contain photo degradable mesh due to the presence of the T/E species Eastern massasauga within the project area.
- Remove any deposited sediment when it reaches half of the height of the sock at Its lowest point or is causing the sock to deform.
- Take care to avoid undermining or moving the socks during clean out.
- After the watershed has been stabilized with vegetation, remove the socks and the sediment deposits

Pump Arounds

- To be installed prior to any dirt movement on the site. Installation to be in accordance with Erosion Control Plan of engineering plans.
- Filter bags to be checked on a daily basis – sediment/filter bags to be removed/replaced according to manufacturer's specifications.
- Discharge points/sump pits to be checked on a daily basis – sediment to be removed when sump pit is 1/2 full.
- Take care to avoid damaging or undermining the sump pits during clean out.
- Take care to avoid damaging or undermining the filter bags during removal/replacement.
- After the watershed has been stabilized with vegetation, remove the socks and the sediment deposits

Barrier filters (fabric inlet protection, basket curb protection)

- To be installed in all storm sewer drainage structures upon installation m paved areas to prevent sediment buildup with the newly installed structures.
- Inspect after storm events and when visual signs of sediment buildup is encountered.
- If excess sediment buildup is anticipated around certain structures, additional methods may be combined to provide extra protection
- If basket filters become ineffective for any reason, they will be promptly replaced.

Gravel construction entrance pads

- To be installed at start of construction in conjunction with the silt fencing prior to any dirt movement on the site.
- Inspect entrance pad and sediment disposal area weekly and after storm events or heavy use.
- Reshape pad as needed for drainage and runoff control,
- Top dress with clean stone as needed.
- immediately remove mud and sediment tracked or washed onto public roads by brushing or sweeping, Flushing should only be used if the water is conveyed into a sediment trap or basin.
- Repair any broken road pavement immediately.

Mulching

- To be installed once major grading has taken place and fine grading is near completion or completed.
- To be installed as alternative to temporary seeding to provide temporary stabilization of surface grading. To be used in conjunction with permanent seeding to provide additional moisture conservation

to speed seed germination and growth.
- Inspect after storm events to check for movement or mulch or for erosion
- If washout, breakage, or erosion is present, repair the surface, then re-seed, re-mulch and, if applicable, install new netting.
- Continue inspections until vegetation is firmly established.

Grass-lined channel

- To be installed to rough grade as part of mass grading to provide adequate surface drainage for construction. To be seeded upon fine grading and when no further grading or construction is anticipated on, around or across channel.
- Inspect the channel following storm events during and even after vegetative establishment: make needed repairs immediately.
- Check the channel outlet and road crossings for blockage, sediment, bank instability, and piping or scour holes; remove any blockage, and make repairs immediately.
- Remove significant sediment and debris from the channel to maintain design cross-section and grade and to prevent spot erosion.
- To be installed upon installation, backfill and rough grading around all yard drains and any drainage structures not in paved areas.
- Also inspect periodically for deterioration or damage from construction activities, and repair immediately.

Temporary seeding

- To be installed on all areas upon fine grading when minor or little future grading may be required, but exceeds a month's time until future disturbance.
- Inspect periodically after planting to see that vegetative stands are adequately established: re-seed if necessary.
- Check for erosion damage after storm events and repair; re-seed and mulch if necessary
- Top dress fall seeded wheat or rye seedlings with 50 lbs/acre of nitrogen In February or March if nitrogen deficiency is apparent.

Permanent seeding

- To be installed upon final grading of areas of no future grading or disturbance and not be disturbed be remaining construction.
- Inspect periodically, especially 24 hours after storm events of a minimum of ½ inch, until the stand is successfully established. (Characteristics of a successful stand include: vigorous dark green bluish-green seeding; uniform density with nurse plants, legumes, and grasses well inter-mixed; green leaves; and the perennials remaining green throughout the summer, at least at the plant base.).

•Plan to add fertilizer the following growing season according to soil test recommendations.
•Repair damaged, bare, or sparse areas by filling any gullies, re-fertilizing, over- or re- seeding, and mulching.
•If plant cover is sparse or patchy, review the plant materials chosen, soil fertility moisture condition, and mulching: then repair the affected area either by over-seeding or by reseeding and mulching alter re-preparing the seedbed.
•If vegetation fails to grow, consider soil testing to determine acidity or nutrient deficiency problems. (Contact your SWCD or Cooperative Extension office for assistance.)
•If additional fertilization is needed to get a satisfactory stand, do so according to soil test recommendations.
•Final stabilization and approval will not be permitted until at least 70% coverage has been achieved.

Stone rip-rap (rip rap on slopes, rock chutes)

•To be installed upon rough grading of backfill of storm sewer outlet structures, and maintained until final grading takes place.
•Inspect rip-rap areas periodically and after storm events of ½ inch or greater.
•Check for displaced stone material, slumping and erosion at all edges.
•If needed top dress with clean stone, using appropriate size stone.

B-15 Erosion and sediment control specifications for individual building lots

Silt fence to be installed as indicated on the Soil Erosion & Sedimentation Control Plan in the set "NICTD General & Miscellaneous Plans". Temporary seeding, permanent seeding, rip-rap and erosion control matting will be used along the ditches, for the retention pond, inlets, along the road and other locations as needed.

Section 3 SWPPP Elements –PART C

C-1 Description of pollutants and their sources associated with the proposed land use

The project when completed will be accessed by numerous maintenance vehicles as well as periodic daily commuter train traffic. The expected pollutants that will be generated by the site when completed will be that associated with vehicular and train emission (e.g., oil, grease, antifreeze, rubber fragments, gasoline, diesel fuel and other vehicular matters), wearing of the road surface, salt or other means of snow removal, and trash from littering and other types of improper disposal or storage. Also included are grass clippings, fertilizers, pesticides and herbicides resulting from landscaping and land maintenance activities. Elevated storm water runoff temperatures may exist due to contact with the impervious surfaces during the warmer months of the year.

C-2 Sequence describing storm water quality measure implementation

The post construction storm water quality measures to be installed with this project and the sequencing are as follows:

a. Grass-lined drainage swales. Shall be installed to rough grade at start or early stage of construction to prevent storm water runoff from the project construction entering the surrounding areas. If underground utilities are proposed under the proposed swales, they shall be installed first, and the swales shall be incorporated into the grading of the backfill.

b. Storm sewer basins with sumps (parking lot areas). Shall be installed at early stage of construction with storm sewer system to provide drainage for the project site during and after construction activities. To be installed prior to roadway construction and lot grading.

c. Storm water detention basin/forebays with controlled outlet flow (parking lot areas) : Shall be installed at early stage of construction with storm sewer system to provide stormwater storage area during and after construction activities. To be installed prior to roadway construction and lot grading.

d. Permanent seeding and any additional landscaping. Shall be installed on all final graded areas that have no

additional land disturbing activities scheduled.

C-3 Description of proposed post construction storm water quality measures

As with any new construction project, whether residential, commercial, or industrial, there will be an increase in the amount of impervious areas that will generate additional storm water runoff. To accommodate this increase, along with the pollutants expected to be generated by the use of the project, certain storm water quality measures and erosion control methods have been incorporated into the design.

The project is designed to help reduce pollution and sediment in storm water runoff associated with the project when completed in addition to during construction. The measures to be used have been listed above and their respective effects on storm water quality are described below.

a. Grass-lined drainage swales. Shall be permanently seeded, sodded, or hydroseeded upon final grading to ensure adequate stabilization. The swales will be the first to receive any runoff of surrounding grassed areas that have reached saturation after infiltration. The grass-lined swales will act as a pretreatment area to filter sediment and any minor pollutants prior to entrance into the storm sewer system.

b. Storm sewer basins with sumps. Sumps shall be utilized to collect sediment from storm water runoff not filtered from the grass-lined swales to prevent excessive build up in the pond.

c. Permanent seeding and any additional landscaping. Stabilized vegetation and landscaping features will aid in the reduction of storm water runoff velocity and aid in filtering sediment contained in said runoff before it reaches the storm sewer systems

C-4 Location, dimensions, specifications, and construction details of each storm water quality measure:

See SHEETS ENV217 TO ENV240 in the plan set “NICTD General & Miscellaneous Plans”.

C-5 Description of maintenance guidelines for post construction storm water quality measures

Routine inspections, operation and maintenance of the storm water quality measures associated with the project are the responsibility of the owner, homeowner association, local government for public utilities, or can be contracted to an outside company far the private utilities.

•Periodic inspection of the storm water quality measures should be implemented to ensure continued operation during the lifetime of the project.
•Any accumulated sediment and debris shall be removed and disposed of properly from structures, BMP devices, and rip-rap, so as not to impact on the capacity arid function of such devises.
•Rip-rap areas shall be check for displaced stone material, slumping and erosion at all edges, and if needed top dress with clean stone, using appropriate size stone.
•All outlet control devices, being restrictor pipe or restrictor plates within manholes shall be routinely inspected for proper operation and sediment accumulation.
•Pond banks and basins shall be inspected for debris and sediment accumulation and be removed arid disposed of properly to ensure the pond functions properly.

TABULAR SCHEDULE OF INSPECTION AND MAINTENANCE ACTIVITIES

System Devise	Frequency	Task
Catch Basins and Sumps	Quarterly	Inspect and clean as needed with pump or vacuum removal
Drainage Swales	Quarterly and following significant storm events	Inspect and Clean (Regrade and Seed as Necessary)

Rip Rap Areas	Quarterly	Inspect and Clean (Remove and Replace as Needed)

SWPPP for the Town of Porter

VS ENGINEERING

www.vsengineering.com

STORM WATER POLLUTION PREVENTION PLAN

DRAFT

For

Northern Indiana Commuter Transportation District (NICTD)
Double Track North West Indiana (DTNWI)
Town of Porter MS4 District
Milepost 43.76 to 45.10
(Project Stations 2310+00 to 2382+00)

MS4 Point of Contact: Michael Barry, Director of Development
Contact Address: 3030 Franklin Street, Porter, IN 46304
p. 219-395-9921
e. mbarry@townofporter.com

Prepared by:
VS Engineering / AECOM
Point of Contact: Jeffrey J. Haw, PE
5821 N. US-35, La Porte, IN 46350
p. 219-873-1100 f. 219-873-1006
e. jhaw@vsengineering.com

Date: June 17, 2020

Hydrologic Unit Codes (HUC14): 04040001080020
West End: Latitude: 41.6365° N Longitude: 87.0867° W
East End: Latitude: 41.6443° N Longitude: 87.0625° W

Contents

Section 1 SWPPP Elements – PART A 3
A1 – Plan Elements 3
A2 – 11x17 Plat 5
A3 - Project Narrative and Description 5
A4 – Vicinity Map 7
A5 – Legal Description (Including Latitude And Longitude) 7
A6 – Proposed Site Plan 8
A7 – Hydrological Unit Code 8
A8 – State Or Federal Permits 8
A9 – Storm Water Discharge Points 8
A10 – Location of water courses onsite and adjacent to Project 8
A11– Identification of Receiving Waters 8
A12– Identification of potential discharges to groundwater 8
A13 – 100-year Floodplains, floodways and fringes 9
A14 – Pre-Demolition and Post Demolition estimate of Peak Discharge 9
A15 – Adjacent Land Use 10
A16 –Locations And Approximate Boundaries Of All Disturbed Areas 10
A17 – Identification of existing vegetative cover 10
A18 – Soil Map 10
A19 – Storm Water System 11
A20 – Off-Site Construction Activities 12
A21 – Stock Piles, Disposal Areas 12
A22 – Existing Topography 12
A23 – Proposed Final Topography 12
Section 2 SWPPP Elements – PART B 13
B-1 Description Of Potential Pollutant Sources Associated With Construction Activities 13
B-2 Sequence Describing Storm Water Quality Measure Implementation Relative To Land Disturbing Activities 13
B-3 Stable Construction Entrance Locations And Specifications 13
B-4 Sediment Control Measures For Sheet Flow Areas 14

B-5 Sediment Control Measures For Concentrated Flow Area 14
B-6 Storm Sewer Inlet Protection Measures And Locations 14
B-7 Runoff Control Measures 14
B-8 Storm Water Outlet Protection Specification 14
B-9 Grade stabilization structure locations and specifications 14
B-10 Locations, Dimensions, Specifications Of Each Stormwater Quality Measure 14
B-11 Temporary surface stabilization methods appropriate for each season 14
B-12 Permanent surface stabilization specifications 14
B-13 Material handling and spill prevention plan 15
B-14 Monitoring and maintenance guidelines for each proposed storm water quality measure 16
B-15 Erosion and Sediment Control Specifications for Individual Building Lots 18

Section 3 SWPPP Elements –PART C 19
C-1 Description of pollutants and their sources associated with the proposed land use 19
C-2 Sequence describing storm water quality measure implementation 19
C-3 Description of proposed post construction storm water quality measures 19
C-4 Location, dimensions, specifications, and construction details of each storm water quality measure: 20
C-5 Description of maintenance guidelines for post construction storm water quality measures 20

Section 4 - Appendices 21

A1 – PLAN ELEMENTS

Plan Elements designated by the Rule 5 Submittal Requirements for Checklist Sections A, B and C are listed in the table below. The location of said elements in the in the plan set "NICTD General & Miscellaneous Plans" are also provided:

Section 1 SWPPP Elements –Part A				
		Element	Description	Location
A	1	Plan Elements	Location of described features in Plans; "NICTD General & Miscellaneous Plans"	PART A1 – table of plan requirement locations
	2	Plat	Site plan of Project Site	APPENDIX SECTION: Plat will be provided at 90% completion in August, 2020
	3	Project Description	Narrative of project and purpose	PART A3
	4	Vicinity Map	Location Map	PART A4 this report; SHEET GEN001 of Plan Set "NICTD General & Miscellaneous Plans"
	5	Legal Description	Legal of Project Site	PART A5 this report; Not Applicable to this project as it spans 26.6 miles across multiple jurisdictions
	6	Site Improvements	Proposed Project Improvements	PART A6 this report; SHEETS ENV240 TO ENV244 of Plan Set "NICTD General & Miscellaneous Plans"
	7	Hydrological unit code	HUC Designation	COVER SHEET this report; PART A7 this report
	8	State/Federal WQP	Additional Water Quality Permits	PART A8 this report
	9	Storm Water Discharge Point	Description/Location of Storm Water Leaving Site	PART A9 this report, SHEETS ENV240 TO ENV244 of Plan Set "NICTD General & Miscellaneous Plans"
	10	Wetlands, Water courses	Location and description of any wetlands/Water courses adjacent to site	PART 10 this report
	11	Receiving Waters	Location and description of all streams that will receive storm water discharge	PART 11 this report, SHEETS ENV240 TO ENV244of Plan Set "NICTD General & Miscellaneous Plans"

Section 2 – SWPPP ELEMENTS CONT.				
		Element	Description	Narrative Location/Sheet Location
A	12	Groundwater Discharge	Location and description of Groundwater Discharge	PART 12 this report - SHEETS ENV240 TO ENV244 of Plan Set "NICTD General & Miscellaneous Plans"
	13	100 Floodplains	Location and description of Floodplain and fringe	PART 13 this report; SHEETS ENV240 TO ENV244 of Plan Set "NICTD General & Miscellaneous Plans"`
	14	Drainage Discharge	Pre-Construction and Post Construction peak discharge rates	PART 14 this report: discharge values/
	15	Adjacent Land use	Identity of adjacent parcel use	PART 15 this report;
	16	Boundaries	Construction Limits	PART 16 this report – SHEETS ENV240 TO ENV244 of Plan Set "NICTD General & Miscellaneous Plans"
	17	Vegetative Cover	Locations of existing vegetative cover	PART 17 this report/ SHEETS ENV240 TO ENV244 of Plan Set "NICTD General & Miscellaneous Plans"
	18	Soils Map	NRCS soil Map	PART 18 this report
	19	Storm System	Location ,size and dimensions of Storm System	PART 19 this report
	20	Off-Site Activity	Plan for Off-Site construction if any	PART 20 this report
	21	Stock Pile, Borrow/Disposal Area	Areas of cut and fill	PART21 this report
	22	Existing Topo	Existing Contours	SHEETS ENV240 TO ENV244 of Plan Set "NICTD General & Miscellaneous Plans"
	23	Proposed Topo	Proposed Contours	SHEETS ENV240 TO ENV244 of Plan Set "NICTD General & Miscellaneous Plans"

A2 – 11X17 PLAT

An 11x17 set of the project sheet drawings will be located in the appendix section of this report as the project approaches 90% completion in August, 2020.

A3 - Project Narrative and Description

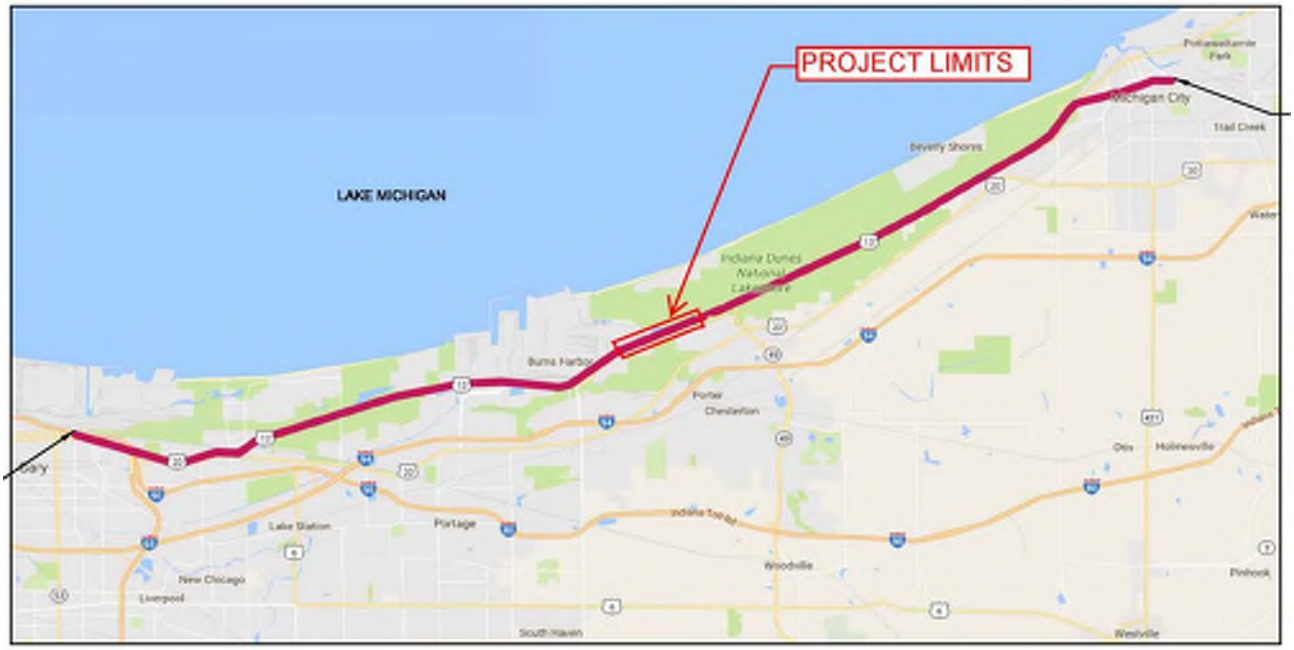
The Northern Indiana Commuter Transportation District (NICTD) is proposing to improve a 26.6 mile corridor of their commuter rail line extending from Michigan City westward to the City of Gary. The project will include utility relocations at various locations along the line, improvements to three commuter rail stations and the construction of a second commuter rail line adjacent to the existing commuter rail line for the majority of the project's length.

This report will focus on those portions of the project within the Town of Porter MS4 District. Per the appended Sheet drawings, this section of the project extends approximately 1.34 miles from Milepost 43.76 (Town of Porter Town Limit) to 45.1 (Town of Porter Town Limit) or, per the internal project stationing, from Station 2310+00 to 2382+00. The entire length of the project within Town of Porter parallels US-12 and is located along its northern edge. This section of the project includes the following:

- Installation of a second commuter rail line parallel to the existing commuter rail line from the between the eastern and western Town Limits.
- Relocation of various impacted utilities along the entire project length.

The project is proposed to begin construction in July of 2021 with a scheduled completion date of March 2023.

A4 – VICINITY MAP



Vicinity Map – No Scale

A5 – LEGAL DESCRIPTION

There is no legal description for this project as, in its entirety, it spans more than 28 miles through multiple jurisdictions.

Site latitude and longitude are as follows:
West End: Latitude: 41.6365° N Longitude: 87.0867° W
East End: Latitude: 41.6443° N Longitude: 87.0625° W

A6 – PROPOSED SITE PLAN

The proposed site plan for the project can be found in the plan set "NICTD General & Miscellaneous Plans", SHEETS ENV240 TO ENV244.

A7 – HYDROLOGICAL UNIT CODE

The HUC 14 unit code for the project is 04040001080020 (Dunes Creek).

A8 – STATE OR FEDERAL PERMITS

A Rule 5 Notice of Intent must be filed with the Indiana Department of Environmental Management for the entirety of the project. Additionally, permits must be filed with the State for the sanitary sewer and water main utilities proposed to be relocated. 401 and 404 permits will be obtained from IDEM/IDNR/Army Corps of Engineers for proposed crossings of Waters of the State where they may occur. Permits from INDOT will be obtained for infringement on INDOT-jurisdiction roadways and crossings.

A9 – STORM WATER DISCHARGE POINTS

In general, the track areas to be improved already have drainage systems in place to accommodate potential future improvement. Therefore, in areas where the only proposed construction is installation of the second commuter rail line and attendant utility relocation, the storm water generated in the area will flow to the same discharge points it is currently flowing to.

A10 – Location of wetlands, lakes and water courses onsite and adjacent to Project

A wetland delineation survey performed in 2017 to identify wetlands and streams within the Project's study area resulted in a total of 76 wetlands totaling 43.01 acres and a total of 1,117 feet of streams. This information is captured in a Waters of the U.S. Delineation Report for the Project dated August 18, 2017 which was prepared by Metric Environmental. Project documents can be accessed at the Project's website at https://www.doubletrack-nwi.com/. NICTD is currently applying to the USACE and IDEM for a Section 404/401 Individual Permit. These areas are shown via hatch on SHEETS ENV240 TO ENV244. Said areas shall be protected and, to the extent possible given the scope of the project, shall not be disturbed.

A12 – Identification of potential discharges to groundwater

The vast majority of the proposed construction scope includes construction of a secondary commuter rail adjacent to the existing commuter rail. These areas will drain via sheet drainage to their existing drainage points. However, the Miller Street Station improvements include a number of facilities that will allow discharge to groundwater, specifically including the proposed detention/retention areas and rain gardens included in the development plans.

A13 – 100-Year Floodplains, floodways and fringes

This is located entirely within zone X (areas determined to be outside of the 0.2% annual chance floodplain) national Flood Insurance Rate Map numbers 18127C0065D effective September 30, 2015.

A14 – Pre-Construction and Post Construction Estimates of Peak Discharge

THIS SECTION TO BE COMPLETED WITH INFORMATION OBTAINED FROM OTHER DESIGNERS – THIS INFORMATION IS NOT YET AVAILABLE FOR REVIEW.

A15 – Adjacent Land Use

Given its length, adjacent land uses to the commuter track corridor range from undeveloped through residential to industrial and commercial. Additional detail regarding land use may be found in SHEETS ENV240 TO ENV244 of the plan set "NICTD General & Miscellaneous Plans".

A16 –Locations and Approximate Boundaries of all disturbed areas

The project demolition limits may be found on SHEETS ENV240 TO ENV244 of the plan set "NICTD General & Miscellaneous Plans".

A17 – Identification of existing vegetative cover

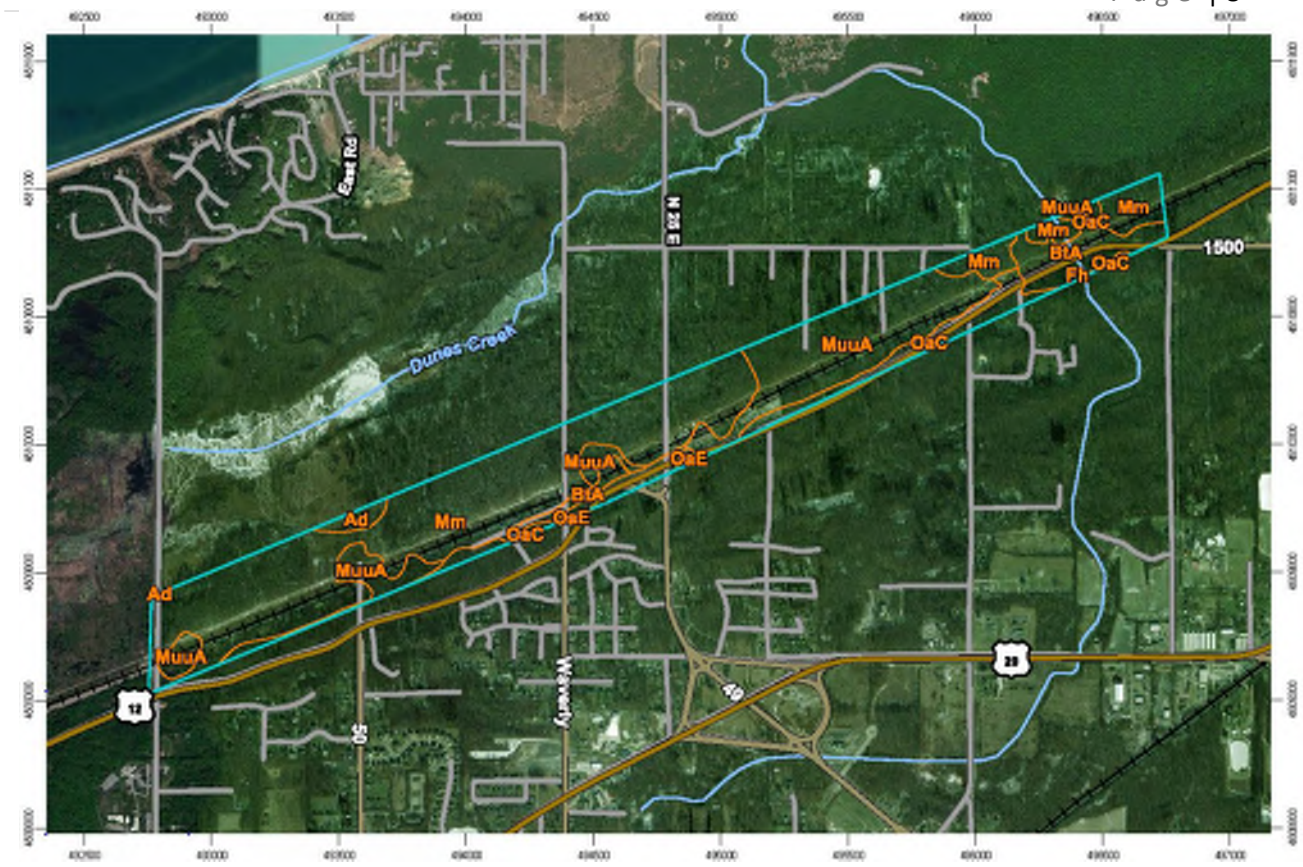
The existing vegetative cover can be found on SHEETS ENV240 TO ENV244 of the plan set "NICTD General & Miscellaneous Plans". The vast majority of the proposed development area is clear of trees and vegetation due to the presence of the existing commuter rail line track.

A18 – Soil Map

The USDA Soil Map for the project Map is shown below. The site consists of multiple significant soil types:

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ad	Adrian muck, drained, 0 to 1 percent slopes	4.1	1.2%
BtA	Brems sand, 0 to 3 percent slopes	27.2	7.9%
Fh	Fluvaquents	0.5	0.2%
Mm	Maumee loamy sand	191.3	55.9%
MuuA	Morocco loamy sand, lake plain, 0 to 2 percent slopes	83.7	24.4%
OaC	Oakville fine sand, 4 to 12 percent slopes	34.6	10.1%
OaE	Oakville fine sand, 18 to 40 percent slopes	1.0	0.3%
Totals for Area of Interest		342.5	100.0%



A19 – Storm Water System

The existing track drains nearly exclusively via overland drainage to a series of water courses/wetlands/water bodies that have been previously analyzed and designed to contain/release the drainage from the track in a controlled manner. Given the proposed track facilities will be installed on already impervious area within the construction limits, it is not anticipated that significant additional drainage quantities will be generated.

REVISE ABOVE PARAGRAPH WITH SPECIFICS FROM CONSTRUCTION PLAN DRAWINGS – THESE PLANS HAVE NOT YET BEEN COMPLETED AND SO ARE NOT CURRENTLY AVAILABLE FOR REVIEW.

A20 – Off-Site Construction Activities

There are no proposed off-site construction activities.

A21- Stock Piles, Disposal Areas

All material generated by the site will be disposed of in approved disposal facilities off-site. Stock pile locations will be determined and protected by project contractor on an as-needed bases. Stock pile areas will be protected by silt fence at their base immediately upon creation and, if said areas are intended to sit unattended for more than 15 days, will be temporarily seeded and mulched.

A22- Existing Topography

The existing topography with major and minor contour intervals of one foot interval is located on SHEETS ENV240 TO ENV244 of the plan set ““NICTD General & Miscellaneous Plans”.

A-23 Proposed Final Topography

The proposed final topography may be found on SHEETS ENV240 TO ENV244 of the plan set “NICTD General & Miscellaneous Plans”.

Section 2 SWPPP Elements – PART B

B-1 Description of potential pollutant sources associated with construction activities

The proposed development will generate potential pollutants during construction operation that could enter the existing storm sewer system, and storm water. Potential pollutant sources that may generate pollutants on the project include, but are not limited to, material and fuel storage areas, fueling locations, exposed soil locations, stored construction equipment and vehicles that may be leaking oil arid fuels. Pollutants generated from these sources include, but are not limited to, gasoline and diesel fuel, oil and grease, fertilizers, antifreeze, rubber fragments, metals, trash, and unprotected soils.

B-2 Sequence describing storm water quality measure implementation relative to land disturbing activities

The contractors and subcontractors shall be responsible to implement practices for the prevention of pollutants reaching the existing storm sewer systems in place. Prevention should include but not be limited to the following items.

A general anticipated construction schedule is attached for the project that highlights the construction sequencing and implementation of the storm water quality measures

a. Install SWPPP information boards and permits.
b. Installation of silt fencing prior to any earthwork activities.
c. Installation of gravel construction entrances prior to any earthwork activities.
d. Installation of pump arounds/diversion devices.
e. Topsoil stockpiles shall be surrounded with silt fencing.
f. All proposed swales and major grading shall be done to rough grades at start of construction to prevent excessive soil erosion due to construction. All swales, ditches and detention/retention basins shall be temporarily seeded and have fiber rolls installed to prevent run off and bank erosion. Permanent seeding or hydro seeding shall be done upon completion of construction.
g. Basin slopes shall be protected with erosion control matting and temporary seeding/mulching as necessary.
h. After completion of storm sewer system facilities, storm sewer inlet protection shall be placed at each open-grate structure (fiber roll barrier, filter basket, etc).
i. Inlets and outlets shall be protected via rip-rap to slope and disperse discharges.
j. Utility relocations shall be installed as necessary.
k. Utilities relocations including electric/cable/telephone, gas and fiber shall be installed.
l. Curb and gutter, road pavement, parking area and other pavement repair tasks shall be constructed.
m. All disturbed areas shall be seeded or mulched upon final grading and when no additional disturbance is anticipated.
n. Silt fencing shall be installed at perimeter of major drainage swales upon final grading to prevent erosion or sediment build up from adjacent construction activities.
o. Permanent seeding shall be placed across all completed graded areas – see following notes regarding extent of establishment.
p. All erosion control features and materials are to be maintained until the completion of construction. This standard includes that vegetation must be established to at least 70% full growth prior to completion.
q. All temporary erosion control measures are to be removed upon permanent vegetative cover being established. This standard includes that vegetation must be established to at least 70% full growth prior to completion.

B-3 Stable construction entrance locations and specification (at all points of ingress and egress)

Construction entrances shall be implemented at entrances to site from main access roads or where contractor deems access is necessary. Construction entrances shall be implemented at entrances to site from main access roads. See SHEETS ENV240 TO ENV244.

B-4 Sediment control measures for sheet flow areas

Silt fencing shall be used for the sheet flow areas along the perimeter of the project as shown. See SHEETS ENV240 TO ENV244. Erosion control matting shall be used in high slope or high flow areas as shown on SHEETS ENV240 TO ENV244.

B-5 Sediment control measures for concentrated flow area

Temporary and permanent seeding shall be used for the swales and drainage ditches to control erosion. If these methods are found to be inadequate, erosion control blankets or other methods will be applied. See SHEETS ENV240 TO ENV244.

B-6 Storm sewer inlet protection

Storm sewer inlets, both existing and proposed, shall be protected by basket-type inlet protection. This policy is universal across the entirety of the project and is covered by general note in SHEETS ENV240 TO ENV244.

B-7 Runoff control measures

Erosion fencing shall be used to control runoff.

B-8 Storm water outlet protection specification

The storm water outlets will have a rip-rap blanket and a stone aggregate filter. See SHEETS ENV240 TO ENV244 for additional information.

B-9 Grade stabilization structure locations and specifications

No grade stabilization structures or measures are required for this development.

B-10 Location, dimensions, specifications and construction details of each storm water quality measure

Locations, dimensions specifications and construction details of each storm water quality measure are detailed on SHEETS ENV240 TO ENV244 in the plan set “NICTD General & Miscellaneous Plans”.

B-11 Temporary surface stabilization methods appropriate for each season

Temporary seeding shall be done on all grading areas within 15 days of temporary completion of grading to provide for stabilization. In the event that seeding is to be done outside the typical seeding periods, during the late fall, early winter or early spring seasons, dormant or frost seeding or mulching shall be done for areas to remain undisturbed for 15 days or more.

B-12 Permanent surface stabilization specifications

Permanent seeding shall be done on all earthen pond banks, street right-of-ways, and major drainage swales at the time of completion. Construction and seeding of these items shall be completed during the
normal seeding seasons to ensure adequate germination and stabilization. In the event that seeding is to be done outside the typical seeding periods, during the late fall, early winter or early spring seasons, dormant or frost seeding or mulching shall be done for areas to remain undisturbed for 15 days or more.

B-13 Material handling and spill prevention plan

The contractors and their subsequent subcontractors shall be responsible to implement practices for the prevention of pollutants reaching the proposed storm drainage system, the existing storm sewer system, or the floodplain. Prevention should include but not be limited to, material handling and storage, clean-up of pollutant at time of detection, and regular maintenance of erosion practices.
Throughout the construction of this project there are a number of materials expected to be handled on the site and may be subject to spills. In order to prevent the entering of these materials into the soils, storm sewers, and ground waters of the project the on-site handling of soils shall be limited to the
Excavation, loading, arid spreading. The contractor shall minimize the disturbance of excavated soils by minimizing the number of times the soil is handled. In the event that a spill occurs, the following measures shall be taken for the associated material,

Material handling & spill prevention

- Material handling and spill prevention for all materials listed, anticipated to be used and any other pollutants not described but associated with land disturbance and construction activities shall be provided by all project contractors and subcontractors. The contractors and subcontractors shall refer to the Material Safety Data Sheet (MSDS) for information on the proper storage, use, and cleanup methods for all materials anticipated to be on the project site.
- All required materials for spilt clean up and disposal of all onsite materials shall be kept on site in a project trailer with easy access for all users of associated materials.
- All disposals of spilled materials shall be done in accordance with Federal, State and Local waste disposal regulations. All contractors and subcontractors shall be responsible for any and all spills associated with their work.

Oil, grease and other hydrocarbons

Spills if possible should be contained at time of detection, Removal shall be done mechanically or wipe up or absorbed on suitable material and shovel up. Disposal should be in accordance with Federal, State and Local waste disposal regulations. Handling and storage of any oil, grease or other hydrocarbons shall he done in tightly closed containers, in a dry cool place away from any heat or ignition sources.

Gasoline and diesel fuel

Spills if possible should be contained at the time of detection, Remove any source of heat and ignition, such as engines and power tools. Clean up spill area by use of sand or other absorbent
scrape up and place in appropriate containers for disposal. Disposal should be in accordance with Federal, State and Local waste disposal regulations. Handling and storage of any gasoline and diesel fuel shall be done in tightly closed containers, in a dry cool place away from any heat or ignition sources.

Fuel storage on the project site shall be avoided if possible to aid in the prevention of spills, Tanker trucks should be used for the fueling of large construction equipment.

Antifreeze

Spills if possible should be contained at time of detection. Shot off source or leak, dike and contain spill area. Remove spills promptly by use of shovel, vacuum trucks or pump, and store into clean
empty storage drums, Trace residue can be soaked with water, but do not flush to sewer or surface water, Disposal should be in accordance with Federal, State and Local waste disposal regulations Handling and storage of any antifreeze shall be done in tightly closed containers, in a dry cool place away from any heat or ignition sources.

Rubber fragments, metals and trash

All materials shall be swept up and disposed of as regular trash or reclaimed for scrap value in accordance with Federal, State and Local waste disposal regulations. Handling arid storage of rubber, metals and trash shall be placed in a refuse area until such time of appropriate disposal.

Fertilizer

All excess spills of material shall be swept or soaked up and placed in a suitable waste disposal container, when possible it should be recycled. Minor spills should be flushed with water, avoiding contamination of any streams and waterways. Disposal should be in accordance with Federal, State and Local waste disposal regulations. Handling and storage of any fertilizer shall be done in tightly closed containers or bags, in a dry cool place.

Grit, wearing of road surface

- All materials shall be swept up and disposed of as regular trash or reclaimed for scrap value in accordance with Federal State and Local waste disposal regulations
- Handling and storage of rubber, metals and trash shall be placed in a refuse area until such time of appropriate disposal.

- Concrete wash out

  Contractor to designate a specific concrete wash out area on the project site for use by the concrete supply company to release any remaining concrete. The area chosen shall be away from any storm water drainage structures, and shall be properly surrounded with silt fencing to prevent runoff of excess material. The concrete shall be disposed of in accordance with Federal, State and Local waste disposal regulations.
  The concrete shall be piled as to provide for easy loading and removal from the project site.

- Vehicle Washing

  Contractors are required to wash construction vehicles before AND after leaving a construction site to minimize transfer of invasive species.

- Typical Spill Procedures

  In the event that a large spill occurs (that which requires extensive cleanup actions, refer to MSD sheets for information), the following procedures shall be followed to minimize exposure of the material.

  a. Immediate action shall be taken to control and contain the spill to prevent it from entering any nearby storm sewer structures or open waters.
  b. Notify the Local Fire Department at 911 for all combustible and flammable materials.
  c. Notify the Federal Emergency Spill Hotline at 1-800-424-8802 within 2 hours for spills above the reported allowable quantity, or if the material enters any nearby storm sewer structures or open waters.
  d. Notify the Indiana Emergency Response Hotline at 1-888-233-7745.
  e. The spill area shall be isolated from all surrounding areas with absorbent pads, booms, and pillows designed for the use of spill containment and absorption.
  f. The spill kits that are required to be on site shall be utilized.
  g. Emergency Response teams shall be contacted for extensive spills above and beyond the containment by available methods, These materials listed, and the associates spill prevention and clean up methods, are the typical expected materials to be used. All additional materials used on the project site shall be monitored, and all spills addressed in the same manner above.

B-14 Monitoring and maintenance guidelines for each proposed storm water quality measure

Maintenance of all erosion and sediment control practices shall be done on a weekly basis and after all measurable rain events. The Contractor, and associated subcontractors, is responsible for the maintenance and implementation of all practices. The Contractor shall see that all practices are maintained according to the design criteria.

Silt fence

- To be installed prior to any dirt movement on the site. Installation to be in accordance with Erosion Control Plan of engineering plans.
- Additional silt fencing may be required as deemed necessary by Contractor to prevent additional onsite erosion of topsoil stock pile or proposed bermed areas.
- If fence fabric tears, starts to decompose or becomes ineffective, replace the affected portion.
- Remove any deposited sediment when it reaches half of the height of the fence at Its lowest point or is causing the fabric to bulge.
- Take care to avoid undermining the fence during clean out.
- After the watershed has been stabilized with vegetation, remove the fence and the sediment deposits

Filter Socks

- To be installed prior to any dirt movement on the site. Installation to be in accordance with Erosion Control Plan of engineering plans.
- Additional filter socks may be required as deemed necessary by Contractor to prevent additional onsite erosion of topsoil stock pile or proposed bermed areas.
- Filter socks must be biodegradable. However, filter socks may NOT contain photo degradable mesh due to the presence of the T/E species Eastern massasauga within the project area.
- Remove any deposited sediment when it reaches half of the height of the sock at Its lowest point or is causing the sock to deform.
- Take care to avoid undermining or moving the socks during clean out.
- After the watershed has been stabilized with vegetation, remove the socks and the sediment deposits

Pump Arounds

- To be installed prior to any dirt movement on the site. Installation to be in accordance with Erosion Control Plan of engineering plans.
- Filter bags to be checked on a daily basis – sediment/filter bags to be removed/replaced according to manufacturer's specifications.
- Discharge points/sump pits to be checked on a daily basis – sediment to be removed when sump pit is 1/2 full.
- Take care to avoid damaging or undermining the sump pits during clean out.
- Take care to avoid damaging or undermining the filter bags during removal/replacement.
- After the watershed has been stabilized with vegetation, remove the socks and the sediment deposits

Barrier filters (fabric inlet protection, basket curb protection)

- To be installed in all storm sewer drainage structures upon installation m paved areas to prevent sediment buildup with the newly installed structures.
- Inspect after storm events and when visual signs of sediment buildup is encountered.
- If excess sediment buildup is anticipated around certain structures, additional methods may be combined to provide extra protection
- If basket filters become ineffective for any reason, they will be promptly replaced.

Gravel construction entrance pads

•To be installed at start of construction in conjunction with the silt fencing prior to any dirt movement on the site.
•Inspect entrance pad and sediment disposal area weekly and after storm events or heavy use.
•Reshape pad as needed for drainage and runoff control,
•Top dress with clean stone as needed.
•immediately remove mud and sediment tracked or washed onto public roads by brushing or sweeping,
Flushing should only be used if the water is conveyed into a sediment trap or basin.
•Repair any broken road pavement immediately.

Mulching

•To be installed once major grading has taken place and fine grading is near completion or completed.
•To be installed as alternative to temporary seeding to provide temporary stabilization of surface grading. To be used in conjunction with permanent seeding to provide additional moisture conservation

to speed seed germination and growth.
•Inspect after storm events to check for movement or mulch or for erosion
•If washout, breakage, or erosion is present, repair the surface, then re-seed, re-mulch and, if applicable, install new netting.
•Continue inspections until vegetation is firmly established.

Grass-lined channel

•To be installed to rough grade as part of mass grading to provide adequate surface drainage for construction. To be seeded upon fine grading and when no further grading or construction is anticipated on, around or across channel.
•Inspect the channel following storm events during and even after vegetative establishment: make needed repairs immediately.
•Check the channel outlet and road crossings for blockage, sediment, bank instability, and piping or scour holes; remove any blockage, and make repairs immediately.
•Remove significant sediment and debris from the channel to maintain design cross-section and grade and to prevent spot erosion.
•To be installed upon installation, backfill and rough grading around all yard drains and any drainage structures not in paved areas.
•Also inspect periodically for deterioration or damage from construction activities, and repair immediately.

Temporary seeding

•To be installed on all areas upon fine grading when minor or little future grading may be required, but exceeds a month's time until future disturbance.
•Inspect periodically after planting to see that vegetative stands are adequately established: re-seed if necessary.
•Check for erosion damage after storm events and repair; re-seed and mulch if necessary
•Top dress fall seeded wheat or rye seedlings with 50 lbs/acre of nitrogen In February or March if nitrogen deficiency is apparent.

Permanent seeding

•To be installed upon final grading of areas of no future grading or disturbance and not be disturbed be remaining construction.
•Inspect periodically, especially 24 hours after storm events of a minimum of ½ inch, until the stand is successfully established. (Characteristics of a successful stand include: vigorous dark green bluish-green seeding; uniform density with nurse plants, legumes, and grasses well inter-mixed; green leaves; and the perennials remaining green throughout the summer, at least at the plant base.).

•Plan to add fertilizer the following growing season according to soil test recommendations.
•Repair damaged, bare, or sparse areas by filling any gullies, re-fertilizing, over- or re- seeding, and mulching.
•If plant cover is sparse or patchy, review the plant materials chosen, soil fertility moisture condition, and mulching: then repair the affected area either by over-seeding or by reseeding and mulching alter re-preparing the seedbed.
•If vegetation fails to grow, consider soil testing to determine acidity or nutrient deficiency problems. (Contact your SWCD or Cooperative Extension office for assistance.)
•If additional fertilization is needed to get a satisfactory stand, do so according to soil test recommendations.
•Final stabilization and approval will not be permitted until at least 70% coverage has been achieved.

Stone rip-rap (rip rap on slopes, rock chutes)

•To be installed upon rough grading of backfill of storm sewer outlet structures, and maintained until final grading takes place.
•Inspect rip-rap areas periodically and after storm events of ½ inch or greater.
•Check for displaced stone material, slumping and erosion at all edges.
•If needed top dress with clean stone, using appropriate size stone.

B-15 Erosion and sediment control specifications for individual building lots

Silt fence to be installed as indicated on the Soil Erosion & Sedimentation Control Plan in the set "NICTD General & Miscellaneous Plans". Temporary seeding, permanent seeding, rip-rap and erosion control matting will be used along the ditches, for the retention pond, inlets, along the road and other locations as needed.

Section 3 SWPPP Elements –PART C

C-1 Description of pollutants and their sources associated with the proposed land use

The project when completed will be accessed by numerous maintenance vehicles as well as periodic daily commuter train traffic. The expected pollutants that will be generated by the site when completed will be that associated with vehicular and train emission (e.g., oil, grease, antifreeze, rubber fragments, gasoline, diesel fuel and other vehicular matters), wearing of the road surface, salt or other means of snow removal, and trash from littering and other types of improper disposal or storage. Also included are grass clippings, fertilizers, pesticides and herbicides resulting from landscaping and land maintenance activities. Elevated storm water runoff temperatures may exist due to contact with the impervious surfaces during the warmer months of the year.

C-2 Sequence describing storm water quality measure implementation

The post construction storm water quality measures to be installed with this project and the sequencing are as follows:

a. Grass-lined drainage swales. Shall be installed to rough grade at start or early stage of construction to prevent storm water runoff from the project construction entering the surrounding areas. If underground utilities are proposed under the proposed swales, they shall be installed first, and the swales shall be incorporated into the grading of the backfill.

b. Storm sewer basins with sumps (parking lot areas). Shall be installed at early stage of construction with storm sewer system to provide drainage for the project site during and after construction activities. To be installed prior to roadway construction and lot grading.

c. Storm water detention basin/forebays with controlled outlet flow (parking lot areas) : Shall be installed at early stage of construction with storm sewer system to provide stormwater storage area during and after construction activities. To be installed prior to roadway construction and lot grading.

d. Permanent seeding and any additional landscaping. Shall be installed on all final graded areas that have no

additional land disturbing activities scheduled.

C-3 Description of proposed post construction storm water quality measures

As with any new construction project, whether residential, commercial, or industrial, there will be an increase in the amount of impervious areas that will generate additional storm water runoff. To accommodate this increase, along with the pollutants expected to be generated by the use of the project, certain storm water quality measures and erosion control methods have been incorporated into the design.

The project is designed to help reduce pollution and sediment in storm water runoff associated with the project when completed in addition to during construction. The measures to be used have been listed above and their respective effects on storm water quality are described below.

a. Grass-lined drainage swales. Shall be permanently seeded, sodded, or hydroseeded upon final grading to ensure adequate stabilization. The swales will be the first to receive any runoff of surrounding grassed areas that have reached saturation after infiltration. The grass-lined swales will act as a pretreatment area to filter sediment and any minor pollutants prior to entrance into the storm sewer system.

b. Storm sewer basins with sumps. Sumps shall be utilized to collect sediment from storm water runoff not filtered from the grass-lined swales to prevent excessive build up in the pond.

c. Permanent seeding and any additional landscaping. Stabilized vegetation and landscaping features will aid in the reduction of storm water runoff velocity and aid in filtering sediment contained in said runoff before it reaches the storm sewer systems

C-4 Location, dimensions, specifications, and construction details of each storm water quality measure:

See SHEETS ENV240 TO ENV244 in the plan set “NICTD General & Miscellaneous Plans”.

C-5 Description of maintenance guidelines for post construction storm water quality measures

Routine inspections, operation and maintenance of the storm water quality measures associated with the project are the responsibility of the owner, homeowner association, local government for public utilities, or can be contracted to an outside company far the private utilities.

•Periodic inspection of the storm water quality measures should be implemented to ensure continued operation during the lifetime of the project.
•Any accumulated sediment and debris shall be removed and disposed of properly from structures, BMP devices, and rip-rap, so as not to impact on the capacity arid function of such devises.
•Rip-rap areas shall be check for displaced stone material, slumping and erosion at all edges, and if needed top dress with clean stone, using appropriate size stone.
•All outlet control devices, being restrictor pipe or restrictor plates within manholes shall be routinely inspected for proper operation and sediment accumulation.
•Pond banks and basins shall be inspected for debris and sediment accumulation and be removed arid disposed of properly to ensure the pond functions properly.

TABULAR SCHEDULE OF INSPECTION AND MAINTENANCE ACTIVITIES

System Devise	Frequency	Task
Catch Basins and Sumps	Quarterly	Inspect and clean as needed with pump or vacuum removal
Drainage Swales	Quarterly and following significant storm events	Inspect and Clean (Regrade and Seed as Necessary)

Rip Rap Areas	Quarterly	Inspect and Clean (Remove and Replace as Needed)

Section 4 – APPENDICES

United States Department of Agriculture

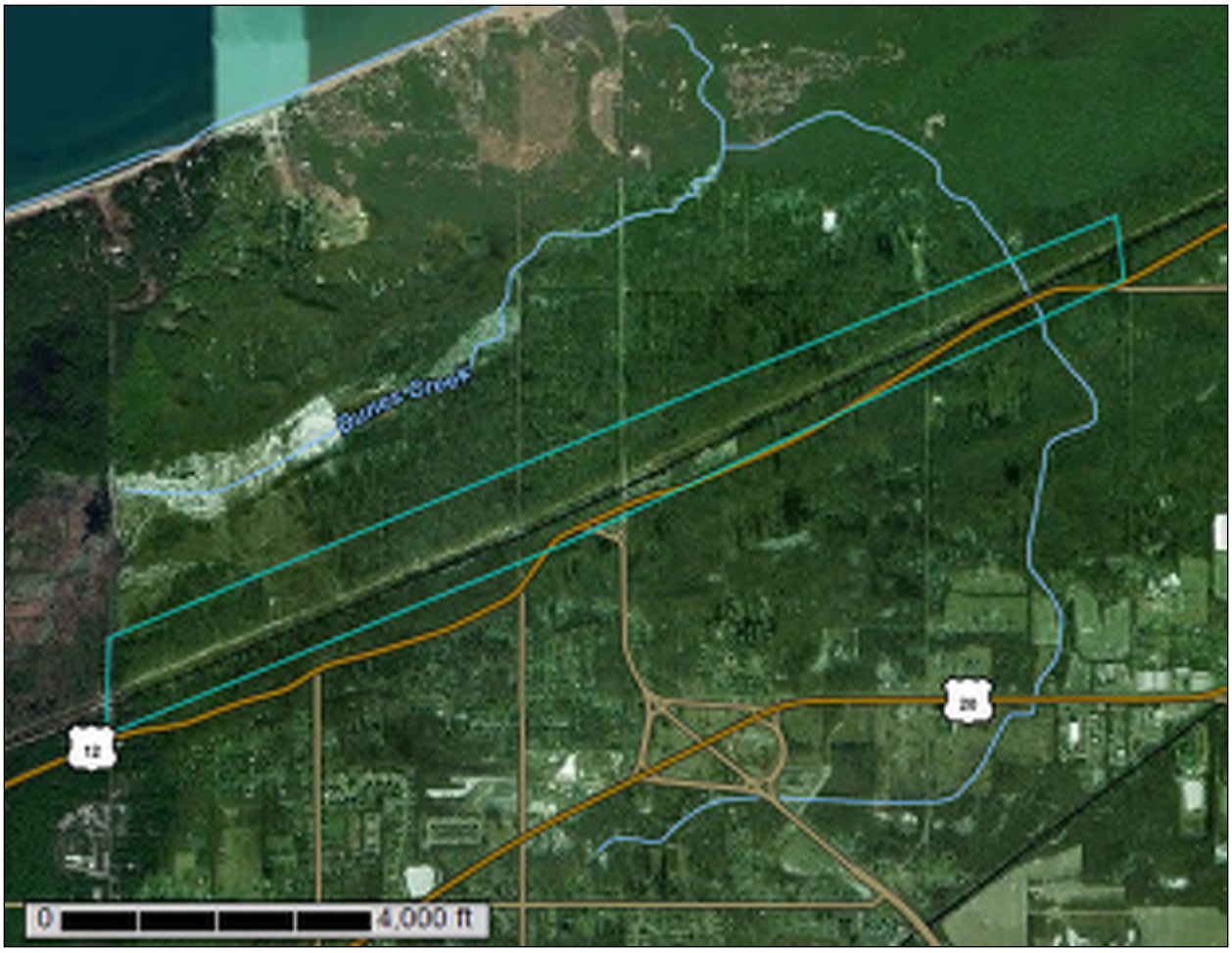
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Porter County, Indiana

Town of Porter MS4



May 4, 2020

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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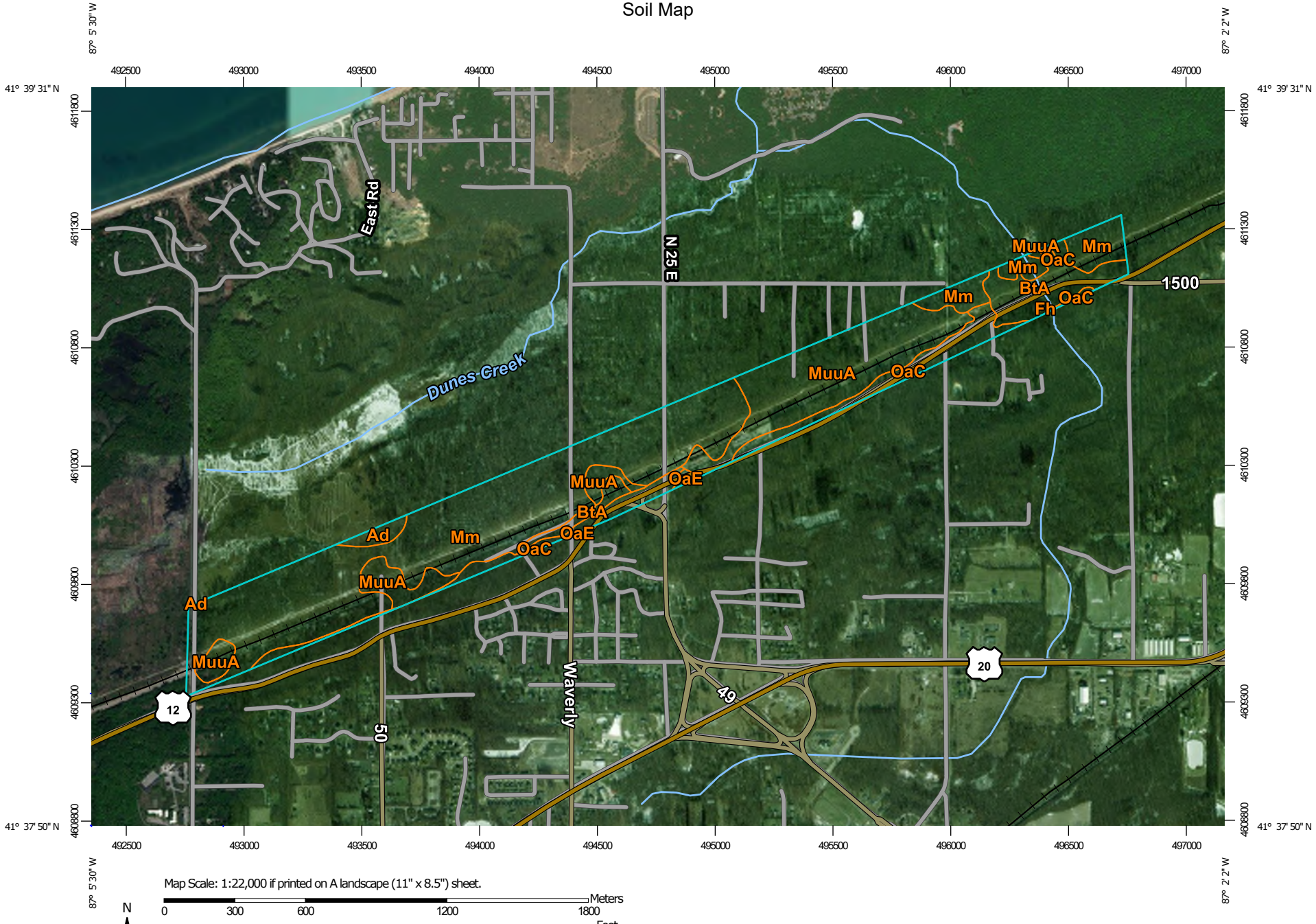
Contents

Preface..... 2
Soil Map..... 5
Soil Map.....6
Legend.....7
Map Unit Legend..... 8
Map Unit Descriptions..... 8
Porter County, Indiana..... 10
Ad—Adrian muck, drained, 0 to 1 percent slopes.....10
BtA—Brems sand, 0 to 3 percent slopes.....11
Fh—Fluvaquents.....13
Mm—Maumee loamy sand..... 13
MuuA—Morocco loamy sand, lake plain, 0 to 2 percent slopes.....14
OaC—Oakville fine sand, 4 to 12 percent slopes.....16
OaE—Oakville fine sand, 18 to 40 percent slopes.....18

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

Soil Map Unit Lines

Soil Map Unit Points

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Porter County, Indiana
Survey Area Data: Version 23, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 3, 2009—Oct 13, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ad	Adrian muck, drained, 0 to 1 percent slopes	4.1	1.2%
BtA	Brems sand, 0 to 3 percent slopes	27.2	7.9%
Fh	Fluvaquents	0.5	0.2%
Mm	Maumee loamy sand	191.3	55.9%
MuuA	Morocco loamy sand, lake plain, 0 to 2 percent slopes	83.7	24.4%
OaC	Oakville fine sand, 4 to 12 percent slopes	34.6	10.1%
OaE	Oakville fine sand, 18 to 40 percent slopes	1.0	0.3%
Totals for Area of Interest		**342.5**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not

mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Porter County, Indiana

Ad—Adrian muck, drained, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2w5n1
Elevation: 580 to 880 feet
Mean annual precipitation: 30 to 41 inches
Mean annual air temperature: 43 to 52 degrees F
Frost-free period: 140 to 230 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Adrian, drained, and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Adrian, Drained

Setting

Landform: Depressions on outwash plains, moraines, till plains, lake plains, flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Parent material: Herbaceous organic material over sandy outwash

Typical profile

Oap - 0 to 10 inches: muck
Oa - 10 to 28 inches: muck
Cg - 28 to 80 inches: sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 0.4
Available water storage in profile: Very high (about 13.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Ecological site: Wet Kankakee Floodplains (F098XB026IN), Mucky Depressions (F098XA006MI)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)

Hydric soil rating: Yes

Minor Components

Antung, drained

Percent of map unit: 10 percent
Landform: Till plains, lake plains, depressions on outwash plains, moraines
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Edwards, drained

Percent of map unit: 6 percent
Landform: Depressions on outwash plains, moraines, till plains, lake plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Houghton, drained

Percent of map unit: 6 percent
Landform: Depressions on outwash plains, moraines, till plains, lake plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: Mucky Depression (F097XA030MI), Mucky Depressions (F098XA006MI)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Muskego, drained

Percent of map unit: 3 percent
Landform: Till plains, lake plains, moraines, depressions on outwash plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

BtA—Brems sand, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 5d4w
Elevation: 570 to 870 feet

Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 51 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Brems and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Brems

Setting

Landform: Outwash plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy outwash

Typical profile

H1 - 0 to 12 inches: fine sand
H2 - 12 to 67 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Ecological site: Chicago Sandy Swale (F097XB035IN)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Maumee

Percent of map unit: 5 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Newton

Percent of map unit: 5 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Fh—Fluvaquents

Map Unit Setting

National map unit symbol: 5d55
Elevation: 570 to 870 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 50 degrees F
Frost-free period: 140 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Fluvaquents and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Fluvaquents

Setting

Landform: Flood plains
Landform position (two-dimensional): Footslope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Loamy alluvium

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: Negligible
Depth to water table: More than 80 inches
Frequency of flooding: Frequent
Frequency of ponding: None

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Ecological site: Chicago Floodplain (F097XB044IN)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Mm—Maumee loamy sand

Map Unit Setting

National map unit symbol: 5d5k
Elevation: 570 to 870 feet
Mean annual precipitation: 34 to 40 inches

Mean annual air temperature: 47 to 51 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Maumee and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Maumee

Setting
Landform: Depressions on outwash plains
Landform position (two-dimensional): Footslope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Sandy outwash

Typical profile
H1 - 0 to 23 inches: loamy sand
H2 - 23 to 60 inches: sand

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water storage in profile: Moderate (about 6.3 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Ecological site: Chicago Wet Sandy Swale (R097XB036IN)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

MuuA—Morocco loamy sand, lake plain, 0 to 2 percent slopes

Map Unit Setting
National map unit symbol: 2w64t
Elevation: 580 to 740 feet
Mean annual precipitation: 34 to 41 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 170 to 230 days
Farmland classification: Not prime farmland

Map Unit Composition

Morocco, lake plain, and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Morocco, Lake Plain

Setting

Landform: Outwash plains, nearshore zones (relict)
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Linear
Parent material: Sandy glaciolacustrine deposits

Typical profile

Ap - 0 to 8 inches: loamy sand
Bw - 8 to 36 inches: sand
C - 36 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (1.42 to 14.17 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 0.1 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 1.0
Available water storage in profile: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Ecological site: Acidic Sandy Flatwoods (F097XA006MI), Chicago Sandy Swale (F097XB035IN)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Granby, lake plain

Percent of map unit: 5 percent
Landform: Depressions on nearshore zones (relict), depressions on outwash plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, talf
Down-slope shape: Concave, linear
Across-slope shape: Linear
Ecological site: Wet Sandy Flatwoods (F097XA008MI)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Brems

Percent of map unit: 3 percent
Landform: Nearshore zones (relict)
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Linear
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Plainfield, lake plain

Percent of map unit: 1 percent
Landform: Nearshore zones (relict)
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Side slope, nose slope, head slope, interfluve
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Ecological site: Sandy Lake Plain (F097XA004MI)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Newton

Percent of map unit: 1 percent
Landform: Outwash plains, depressions on nearshore zones (relict)
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave
Ecological site: Wet Acidic Sandy Flatwoods (F097XA007MI)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

OaC—Oakville fine sand, 4 to 12 percent slopes

Map Unit Setting

National map unit symbol: 5d5x
Elevation: 570 to 870 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 51 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Oakville and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Oakville

Setting

Landform: Dunes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian sands

Typical profile

H1 - 0 to 7 inches: fine sand
H2 - 7 to 30 inches: fine sand
H3 - 30 to 60 inches: fine sand

Properties and qualities

Slope: 4 to 12 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: Chicago Sandy Lake Plain (F097XB033IN)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Newton

Percent of map unit: 4 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Maumee

Percent of map unit: 3 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Adrian

Percent of map unit: 3 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

OaE—Oakville fine sand, 18 to 40 percent slopes

Map Unit Setting

National map unit symbol: 5d5y
Elevation: 570 to 870 feet
Mean annual precipitation: 36 to 40 inches
Mean annual air temperature: 49 to 51 degrees F
Frost-free period: 170 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Oakville and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Oakville

Setting

Landform: Dunes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian sands

Typical profile

H1 - 0 to 7 inches: fine sand
H2 - 7 to 30 inches: fine sand
H3 - 30 to 60 inches: fine sand

Properties and qualities

Slope: 18 to 40 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: Sand Hills (F097XA010MI), Chicago Sand Hills (F097XB040IN)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Newton

Percent of map unit: 4 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Adrian

Percent of map unit: 3 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Maumee

Percent of map unit: 3 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Section 4 – APPENDICES

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Lake County, Indiana, and Porter County, Indiana

City of Portage MS4

May 4, 2020

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

Preface..... 2
Soil Map..... 5
Soil Map.....6
Legend.....7
Map Unit Legend..... 9
Map Unit Descriptions..... 10
Lake County, Indiana..... 12
Ca—Houghton muck, drained, 0 to 1 percent slopes.....12
OaE—Oakville fine sand, 12 to 25 percent slopes.....13
OkB—Oakville-Adrian complex, 0 to 6 percent slopes.....14
Porter County, Indiana..... 17
Ad—Adrian muck, drained, 0 to 1 percent slopes.....17
BtA—Brems sand, 0 to 3 percent slopes..... 18
De—Del Rey silt loam..... 20
Hm—Houghton muck, ponded.....21
Mm—Maumee loamy sand..... 22
MoB—Metea loamy fine sand, 1 to 6 percent slopes.....23
Mp—Milford silty clay loam, 0 to 2 percent slopes..... 24
MuuA—Morocco loamy sand, lake plain, 0 to 2 percent slopes.....25
Nf—Newton loamy fine sand.....27
OaC—Oakville fine sand, 4 to 12 percent slopes.....28
OaE—Oakville fine sand, 18 to 40 percent slopes.....29
UpB—Urban land-Psamments complex, 0 to 6 percent slopes..... 31
W—Water.....32
We—Warners silt loam.....32

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

87° 13' 54" W
87° 7' 24" W
41° 38' 27" N
41° 35' 17" N
480700
481600
482500
483400
484300
485200
486100
487000
487900
488800
489700
4609700
4608800
4607900
4607000
4606100
4605200
4604300
OaC
OaE
UpB
BtA
W
Mp
Hm
MoB
De
Nf
Ad
Mm
Ca
OkB
Portage-Burns Waterway
20
94
80
Map Scale: 1:41,300 if printed on A landscape (11" x 8.5") sheet.
N
Meters
0
500
1000
2000
3000
Feet
0
2000
4000
8000
12000
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Lake County, Indiana
Survey Area Data: Version 22, Sep 16, 2019

Soil Survey Area: Porter County, Indiana
Survey Area Data: Version 23, Sep 16, 2019

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 3, 2009—Oct 13, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND

MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ca	Houghton muck, drained, 0 to 1 percent slopes	0.1	0.0%
OaE	Oakville fine sand, 12 to 25 percent slopes	0.0	0.0%
OkB	Oakville-Adrian complex, 0 to 6 percent slopes	0.5	0.1%
Subtotals for Soil Survey Area		**0.6**	**0.1%**
Totals for Area of Interest		**403.0**	**100.0%**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ad	Adrian muck, drained, 0 to 1 percent slopes	25.8	6.4%
BtA	Brems sand, 0 to 3 percent slopes	1.5	0.4%
De	Del Rey silt loam	0.7	0.2%
Hm	Houghton muck, ponded	19.7	4.9%
Mm	Maumee loamy sand	0.6	0.1%
MoB	Metea loamy fine sand, 1 to 6 percent slopes	6.8	1.7%
Mp	Milford silty clay loam, 0 to 2 percent slopes	2.8	0.7%
MuuA	Morocco loamy sand, lake plain, 0 to 2 percent slopes	2.8	0.7%
Nf	Newton loamy fine sand	6.0	1.5%
OaC	Oakville fine sand, 4 to 12 percent slopes	84.9	21.1%
OaE	Oakville fine sand, 18 to 40 percent slopes	23.0	5.7%
UpB	Urban land-Psamments complex, 0 to 6 percent slopes	212.3	52.7%
W	Water	10.2	2.5%
We	Warners silt loam	5.5	1.4%
Subtotals for Soil Survey Area		**402.4**	**99.9%**
Totals for Area of Interest		**403.0**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas

shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Lake County, Indiana

Ca—Houghton muck, drained, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 94hp
Elevation: 600 to 1,400 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 51 degrees F
Frost-free period: 170 to 185 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Houghton, drained, and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Houghton, Drained

Setting

Landform: Depressions on outwash plains, depressions on moraines, depressions on till plains, depressions on lake plains
Landform position (two-dimensional): Toeslope, footslope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Herbaceous organic material

Typical profile

Op - 0 to 9 inches: muck
Oa - 9 to 80 inches: muck

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water storage in profile: Very high (about 23.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Minor Components

Edwards, drained

Percent of map unit: 7 percent
Landform: Depressions on outwash plains, depressions on till plains, depressions on lake plains

Landform position (two-dimensional): Footslope, toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Adrian, drained

Percent of map unit: 7 percent
Landform: Depressions on outwash plains, depressions on till plains, depressions on lake plains
Landform position (two-dimensional): Footslope, toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Muskego, drained

Percent of map unit: 6 percent
Landform: Depressions on outwash plains, depressions on till plains, depressions on lake plains
Landform position (two-dimensional): Footslope, toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Palms, drained

Percent of map unit: 5 percent
Landform: Depressions on outwash plains, depressions on till plains
Landform position (two-dimensional): Footslope, toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

OaE—Oakville fine sand, 12 to 25 percent slopes

Map Unit Setting

National map unit symbol: 94jr
Elevation: 570 to 790 feet
Mean annual precipitation: 36 to 40 inches
Mean annual air temperature: 49 to 51 degrees F
Frost-free period: 170 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Oakville and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Oakville

Setting

Landform: Dunes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian sands

Typical profile

H1 - 0 to 2 inches: fine sand
H2 - 2 to 60 inches: fine sand

Properties and qualities

Slope: 12 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: Sand Hills (F097XA010MI), Chicago Sand Hills (F097XB040IN)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Tawas

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Maumee

Percent of map unit: 5 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

OkB—Oakville-Adrian complex, 0 to 6 percent slopes

Map Unit Setting

National map unit symbol: 94js

Elevation: 570 to 790 feet
Mean annual precipitation: 36 to 40 inches
Mean annual air temperature: 49 to 51 degrees F
Frost-free period: 170 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Oakville and similar soils: 60 percent
Adrian, drained, and similar soils: 40 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Oakville

Setting

Landform: Dunes
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Eolian sands

Typical profile

H1 - 0 to 2 inches: fine sand
H2 - 2 to 60 inches: fine sand

Properties and qualities

Slope: 0 to 6 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Ecological site: Chicago Sandy Lake Plain (F097XB033IN)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Description of Adrian, Drained

Setting

Landform: Depressions on outwash plains, depressions on till plains, depressions on lake plains
Landform position (two-dimensional): Toeslope, footslope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Herbaceous organic material over sandy outwash

Typical profile

Op - 0 to 9 inches: muck

Oa - 9 to 34 inches: muck
Cg - 34 to 80 inches: sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 40 percent
Available water storage in profile: Very high (about 15.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Ecological site: Chicago Mucky Depression (R097XB051IL)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Porter County, Indiana

Ad—Adrian muck, drained, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2w5n1
Elevation: 580 to 880 feet
Mean annual precipitation: 30 to 41 inches
Mean annual air temperature: 43 to 52 degrees F
Frost-free period: 140 to 230 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Adrian, drained, and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Adrian, Drained

Setting

Landform: Depressions on outwash plains, moraines, till plains, lake plains, flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Parent material: Herbaceous organic material over sandy outwash

Typical profile

Oap - 0 to 10 inches: muck
Oa - 10 to 28 inches: muck
Cg - 28 to 80 inches: sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 0.4
Available water storage in profile: Very high (about 13.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Ecological site: Wet Kankakee Floodplains (F098XB026IN), Mucky Depressions (F098XA006MI)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)

Hydric soil rating: Yes

Minor Components

Antung, drained

Percent of map unit: 10 percent
Landform: Till plains, lake plains, depressions on outwash plains, moraines
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Edwards, drained

Percent of map unit: 6 percent
Landform: Depressions on outwash plains, moraines, till plains, lake plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Houghton, drained

Percent of map unit: 6 percent
Landform: Depressions on outwash plains, moraines, till plains, lake plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: Mucky Depression (F097XA030MI), Mucky Depressions (F098XA006MI)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Muskego, drained

Percent of map unit: 3 percent
Landform: Till plains, lake plains, moraines, depressions on outwash plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

BtA—Brems sand, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 5d4w
Elevation: 570 to 870 feet

Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 51 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Brems and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Brems

Setting

Landform: Outwash plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy outwash

Typical profile

H1 - 0 to 12 inches: fine sand
H2 - 12 to 67 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Ecological site: Chicago Sandy Swale (F097XB035IN)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Maumee

Percent of map unit: 5 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Newton

Percent of map unit: 5 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

De—Del Rey silt loam

Map Unit Setting

National map unit symbol: 5d4z
Elevation: 570 to 870 feet
Mean annual precipitation: 36 to 40 inches
Mean annual air temperature: 49 to 52 degrees F
Frost-free period: 165 to 175 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Del rey and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Del Rey

Setting

Landform: Lake plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Clayey lacustrine deposits

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 31 inches: silty clay loam
H3 - 31 to 60 inches: silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 6 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Available water storage in profile: Moderate (about 6.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: Chicago Clayey Flats (R097XB046IL)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Milford

Percent of map unit: 10 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Hm—Houghton muck, ponded

Map Unit Setting

National map unit symbol: 5d59
Elevation: 570 to 870 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 51 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Houghton, undrained, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Houghton, Undrained

Setting

Landform: Depressions on till plains, depressions on lake plains, depressions on outwash plains
Landform position (two-dimensional): Toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Herbaceous organic material

Typical profile

Oa1 - 0 to 66 inches: muck

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 10 percent
Available water storage in profile: Very high (about 23.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8
Hydrologic Soil Group: A/D
Ecological site: Chicago Mucky Depression (R097XB051IL)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Mm—Maumee loamy sand

Map Unit Setting

National map unit symbol: 5d5k
Elevation: 570 to 870 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 51 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Maumee and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Maumee

Setting

Landform: Depressions on outwash plains
Landform position (two-dimensional): Footslope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Sandy outwash

Typical profile

H1 - 0 to 23 inches: loamy sand
H2 - 23 to 60 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water storage in profile: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Ecological site: Chicago Wet Sandy Swale (R097XB036IN)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

MoB—Metea loamy fine sand, 1 to 6 percent slopes

Map Unit Setting

National map unit symbol: 5d5m
Elevation: 570 to 870 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 50 degrees F
Frost-free period: 140 to 170 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Metea and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Metea

Setting

Landform: Moraines
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy outwash over loamy till

Typical profile

H1 - 0 to 10 inches: loamy fine sand
H2 - 10 to 38 inches: loamy sand
H3 - 38 to 52 inches: sandy clay loam
H4 - 52 to 65 inches: clay loam
H5 - 65 to 75 inches: loam

Properties and qualities

Slope: 1 to 6 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Available water storage in profile: Moderate (about 6.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: Chicago Sandy Lake Plain (F097XB033IN)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Mp—Milford silty clay loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2smzk
Elevation: 510 to 930 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 46 to 54 degrees F
Frost-free period: 155 to 190 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Milford, drained, and similar soils: 93 percent
Minor components: 7 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Milford, Drained

Setting

Landform: Depressions on lake plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip, talf
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Parent material: Clayey lacustrine deposits

Typical profile

Ap - 0 to 9 inches: silty clay loam
A - 9 to 22 inches: silty clay
Bg - 22 to 50 inches: silty clay loam
Cg - 50 to 60 inches: stratified sandy loam to silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 30 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 9.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Hydric soil rating: Yes

Minor Components

Peotone, drained
Percent of map unit: 5 percent
Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Orthents, clayey
Percent of map unit: 1 percent
Landform: Ground moraines, lake plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Urban land
Percent of map unit: 1 percent
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

MuuA—Morocco loamy sand, lake plain, 0 to 2 percent slopes

Map Unit Setting
National map unit symbol: 2w64t
Elevation: 580 to 740 feet
Mean annual precipitation: 34 to 41 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 170 to 230 days
Farmland classification: Not prime farmland

Map Unit Composition
Morocco, lake plain, and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Morocco, Lake Plain

Setting
Landform: Outwash plains, nearshore zones (relict)
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Linear
Parent material: Sandy glaciolacustrine deposits

Typical profile

Ap - 0 to 8 inches: loamy sand
Bw - 8 to 36 inches: sand
C - 36 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (1.42 to 14.17 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 0.1 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 1.0
Available water storage in profile: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Ecological site: Acidic Sandy Flatwoods (F097XA006MI), Chicago Sandy Swale (F097XB035IN)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Granby, lake plain

Percent of map unit: 5 percent
Landform: Depressions on nearshore zones (relict), depressions on outwash plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, talf
Down-slope shape: Concave, linear
Across-slope shape: Linear
Ecological site: Wet Sandy Flatwoods (F097XA008MI)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Brems

Percent of map unit: 3 percent
Landform: Nearshore zones (relict)
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Linear
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Plainfield, lake plain

Percent of map unit: 1 percent
Landform: Nearshore zones (relict)
Landform position (two-dimensional): Summit, shoulder

Landform position (three-dimensional): Side slope, nose slope, head slope, interfluve
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Ecological site: Sandy Lake Plain (F097XA004MI)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Newton

Percent of map unit: 1 percent
Landform: Outwash plains, depressions on nearshore zones (relict)
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave
Ecological site: Wet Acidic Sandy Flatwoods (F097XA007MI)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Nf—Newton loamy fine sand

Map Unit Setting

National map unit symbol: 5d5w
Elevation: 570 to 870 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 51 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Newton and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Newton

Setting

Landform: Depressions on outwash plains
Landform position (two-dimensional): Footslope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Sandy outwash

Typical profile

H1 - 0 to 18 inches: loamy fine sand
H2 - 18 to 60 inches: fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water storage in profile: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Ecological site: Wet Acidic Sandy Flatwoods (F097XA007MI)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

OaC—Oakville fine sand, 4 to 12 percent slopes

Map Unit Setting

National map unit symbol: 5d5x
Elevation: 570 to 870 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 51 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Oakville and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Oakville

Setting

Landform: Dunes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian sands

Typical profile

H1 - 0 to 7 inches: fine sand
H2 - 7 to 30 inches: fine sand
H3 - 30 to 60 inches: fine sand

Properties and qualities

Slope: 4 to 12 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: Chicago Sandy Lake Plain (F097XB033IN)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Newton

Percent of map unit: 4 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Maumee

Percent of map unit: 3 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Adrian

Percent of map unit: 3 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

OaE—Oakville fine sand, 18 to 40 percent slopes

Map Unit Setting

National map unit symbol: 5d5y
Elevation: 570 to 870 feet
Mean annual precipitation: 36 to 40 inches
Mean annual air temperature: 49 to 51 degrees F
Frost-free period: 170 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Oakville and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Oakville

Setting

Landform: Dunes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian sands

Typical profile

H1 - 0 to 7 inches: fine sand
H2 - 7 to 30 inches: fine sand
H3 - 30 to 60 inches: fine sand

Properties and qualities

Slope: 18 to 40 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: Sand Hills (F097XA010MI), Chicago Sand Hills (F097XB040IN)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Newton

Percent of map unit: 4 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Adrian

Percent of map unit: 3 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Maumee

Percent of map unit: 3 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

UpB—Urban land-Psamments complex, 0 to 6 percent slopes

Map Unit Setting

National map unit symbol: 5d6t
Elevation: 570 to 870 feet
Mean annual precipitation: 36 to 40 inches
Mean annual air temperature: 49 to 51 degrees F
Frost-free period: 170 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 50 percent
Psamments and similar soils: 40 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Landform: Dunes
Landform position (two-dimensional): Backslope
Down-slope shape: Convex
Across-slope shape: Linear

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Description of Psamments

Setting

Landform: Dunes
Landform position (two-dimensional): Backslope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Eolian sands

Properties and qualities

Slope: 0 to 6 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Interpretive groups

Land capability classification (irrigated): None specified
Other vegetative classification: Trees/Timber (Woody Vegetation)

Hydric soil rating: No

Minor Components

Newton

Percent of map unit: 4 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Adrian

Percent of map unit: 3 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Maumee

Percent of map unit: 3 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

W—Water

Map Unit Composition

Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Water

Interpretive groups

Land capability classification (irrigated): None specified
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

We—Warners silt loam

Map Unit Setting

National map unit symbol: 5d6y
Elevation: 570 to 870 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 50 degrees F
Frost-free period: 140 to 170 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Warners and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Warners

Setting

Landform: Depressions on flood plains
Landform position (two-dimensional): Footslope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Silty alluvium over marl

Typical profile

H1 - 0 to 10 inches: silt loam
H2 - 10 to 24 inches: silty clay loam
Lma - 24 to 60 inches: marl

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 60 percent
Available water storage in profile: High (about 10.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D
Ecological site: Chicago Wet Floodplain (F097XB049IN)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

SWPPP for Michigan City

STORM WATER POLLUTION PREVENTION PLAN

DRAFT

For

Northern Indiana Commuter Transportation District (NICTD)
Double Track North West Indiana (DTNWI)
Michigan City MS4 District
Milepost 33.00 to 35.98
(Project Stations 1740+85 to 1901+50)

Point of Contact: Arber Himaj, MS4 Coordinator
Contact Address: 1100 East 8th Street, Michigan City, IN 46360
p. ahimaj@mcsan.org
e. 219-874-7799

Prepared by:
VS Engineering / AECOM
Point of Contact: Jeffrey J. Haw, PE
5821 N. US-35, La Porte, IN 46350
p. 219-873-1100 f. 219-873-1006
e. jhaw@vsengineering.com

Date: June 17, 2020

Hydrologic Unit Codes (HUC14): 04040001080040 & 04040001080010
West End: Latitude: 41.6989° N Longitude: 86.9325° W
East End: Latitude: 41.7133° N Longitude: 86.8798° W

Contents

Section 1 SWPPP Elements – PART A 3
A1 – Plan Elements 3
A2 – 11x17 Plat 5
A3 - Project Narrative and Description 5
A4 – Vicinity Map 7
A5 – Legal Description (Including Latitude And Longitude) 7
A6 – Proposed Site Plan 8
A7 – Hydrological Unit Code 8
A8 – State Or Federal Permits 8
A9 – Storm Water Discharge Points 8
A10 – Location of water courses onsite and adjacent to Project 8
A11– Identification of Receiving Waters 8
A12– Identification of potential discharges to groundwater 8
A13 – 100-year Floodplains, floodways and fringes 9
A14 – Pre-Demolition and Post Demolition estimate of Peak Discharge 9
A15 – Adjacent Land Use 10
A16 –Locations And Approximate Boundaries Of All Disturbed Areas 10
A17 – Identification of existing vegetative cover 10
A18 – Soil Map 10
A19 – Storm Water System 11
A20 – Off-Site Construction Activities 12
A21 – Stock Piles, Disposal Areas 12
A22 – Existing Topography 12
A23 – Proposed Final Topography 12
Section 2 SWPPP Elements – PART B 13
B-1 Description Of Potential Pollutant Sources Associated With Construction Activities 13
B-2 Sequence Describing Storm Water Quality Measure Implementation Relative To Land Disturbing Activities 13
B-3 Stable Construction Entrance Locations And Specifications 13
B-4 Sediment Control Measures For Sheet Flow Areas 14

B-5 Sediment Control Measures For Concentrated Flow Area 14
B-6 Storm Sewer Inlet Protection Measures And Locations 14
B-7 Runoff Control Measures 14
B-8 Storm Water Outlet Protection Specification 14
B-9 Grade stabilization structure locations and specifications 14
B-10 Locations, Dimensions, Specifications Of Each Stormwater Quality Measure 14
B-11 Temporary surface stabilization methods appropriate for each season 14
B-12 Permanent surface stabilization specifications 14
B-13 Material handling and spill prevention plan 15
B-14 Monitoring and maintenance guidelines for each proposed storm water quality measure 16
B-15 Erosion and Sediment Control Specifications for Individual Building Lots 18

Section 3 SWPPP Elements –PART C 19
C-1 Description of pollutants and their sources associated with the proposed land use 19
C-2 Sequence describing storm water quality measure implementation 19
C-3 Description of proposed post construction storm water quality measures 19
C-4 Location, dimensions, specifications, and construction details of each storm water quality measure: 20
C-5 Description of maintenance guidelines for post construction storm water quality measures 20

Section 4 - Appendices 21

A1 – PLAN ELEMENTS

Plan Elements designated by the Rule 5 Submittal Requirements for Checklist Sections A, B and C are listed in the table below. The location of said elements in the in the plan set "NICTD General & Miscellaneous Plans" are also provided:

Section 1 SWPPP Elements –Part A				
		Element	Description	Location
A	1	Plan Elements	Location of described features in Plans; "NICTD General & Miscellaneous Plans"	PART A1 – table of plan requirement locations
	2	Plat	Site plan of Project Site	APPENDIX SECTION: Plat will be provided at 90% completion in August, 2020
	3	Project Description	Narrative of project and purpose	PART A3
	4	Vicinity Map	Location Map	PART A4 this report; SHEET GEN001 of Plan Set "NICTD General & Miscellaneous Plans"
	5	Legal Description	Legal of Project Site	PART A5 this report; Not Applicable to this project as it spans 26.6 miles across multiple jurisdictions
	6	Site Improvements	Proposed Project Improvements	PART A6 this report; SHEETS ENV270 TO ENV278 of Plan Set "NICTD General & Miscellaneous Plans"
	7	Hydrological unit code	HUC Designation	COVER SHEET this report; PART A7 this report
	8	State/Federal WQP	Additional Water Quality Permits	PART A8 this report
	9	Storm Water Discharge Point	Description/Location of Storm Water Leaving Site	PART A9 this report, SHEETS ENV270 TO ENV278 of Plan Set "NICTD General & Miscellaneous Plans"
	10	Wetlands, Water courses	Location and description of any wetlands/Water courses adjacent to site	PART 10 this report
	11	Receiving Waters	Location and description of all streams that will receive storm water discharge	PART 11 this report, SHEETS ENV270 TO ENV278of Plan Set "NICTD General & Miscellaneous Plans"

Section 2 – SWPPP ELEMENTS CONT.				
		Element	Description	Narrative Location/Sheet Location
A	12	Groundwater Discharge	Location and description of Groundwater Discharge	PART 12 this report - SHEETS ENV270 TO ENV278 of Plan Set "NICTD General & Miscellaneous Plans"
	13	100 Floodplains	Location and description of Floodplain and fringe	PART 13 this report; SHEETS ENV270 TO ENV278 of Plan Set "NICTD General & Miscellaneous Plans"`
	14	Drainage Discharge	Pre-Construction and Post Construction peak discharge rates	PART 14 this report: discharge values/
	15	Adjacent Land use	Identity of adjacent parcel use	PART 15 this report;
	16	Boundaries	Construction Limits	PART 16 this report – SHEETS ENV270 TO ENV278 of Plan Set "NICTD General & Miscellaneous Plans"
	17	Vegetative Cover	Locations of existing vegetative cover	PART 17 this report/ SHEETS ENV270 TO ENV278 of Plan Set "NICTD General & Miscellaneous Plans"
	18	Soils Map	NRCS soil Map	PART 18 this report
	19	Storm System	Location ,size and dimensions of Storm System	PART 19 this report
	20	Off-Site Activity	Plan for Off-Site construction if any	PART 20 this report
	21	Stock Pile, Borrow/Disposal Area	Areas of cut and fill	PART21 this report
	22	Existing Topo	Existing Contours	SHEETS ENV270 TO ENV278 of Plan Set "NICTD General & Miscellaneous Plans"
	23	Proposed Topo	Proposed Contours	SHEETS ENV270 TO ENV278 of Plan Set "NICTD General & Miscellaneous Plans"

A2 – 11X17 PLAT

An 11x17 set of the project sheet drawings will be located in the appendix section of this report as the project approaches 90% completion in August, 2020.

A3 - Project Narrative and Description

The Northern Indiana Commuter Transportation District (NICTD) is proposing to improve a 26.6 mile corridor of their commuter rail line extending from Michigan City westward to the City of Gary. The project will include utility relocations at various locations along the line, improvements to three commuter rail stations and the construction of a second commuter rail line adjacent to the existing commuter rail line for the majority of the project's length.

This report will focus on those portions of the project within the City of Michigan City MS4 District. Per the appended Sheet drawings, this section of the project extends approximately 2.98 miles from Milepost 33.0 (Michigan Boulevard) to 35.98 (Michigan City City Limit) or, per the internal project stationing, from Station 1740+85 to 1901+50. Roughly half of the length of the project with Michigan City involves relocation of the existing track south of 10th Street and the remainder involves improvements to the existing track in 11th Street. This section of the project includes the following:

- Installation of a second commuter rail line parallel to the existing commuter rail line from the western City limits to Michigan Boulevard.
- Relocation of various impacted utilities along the entire project length.

The project is proposed to begin construction in July of 2021 with a scheduled completion date of March 2023.

A4 – VICINITY MAP

Vicinity Map – No Scale

A5 – LEGAL DESCRIPTION

There is no legal description for this project as, in its entirety, it spans more than 28 miles through multiple jurisdictions.

Site latitude and longitude are as follows:
West End: Latitude: 41.6989° N Longitude: 86.9325° W
East End: Latitude: 41.7133° N Longitude: 86.8798° W

A6 – PROPOSED SITE PLAN

The proposed site plan for the project can be found in the plan set "NICTD General & Miscellaneous Plans", SHEETS ENV270 TO ENV278.

A7 – HYDROLOGICAL UNIT CODE

The HUC 14 unit code for the project is 04040001080040 (Kintzele Ditch) & 04040001080010 (Lake Michigan Shoreline-Dunes.

A8 – STATE OR FEDERAL PERMITS

A Rule 5 Notice of Intent must be filed with the Indiana Department of Environmental Management for the entirety of the project. Additionally, permits must be filed with the State for the sanitary sewer and water main utilities proposed to be relocated. 401 and 404 permits will be obtained from IDEM/IDNR/Army Corps of Engineers for proposed crossings of Waters of the State where they may occur. Permits from INDOT will be obtained for infringement on INDOT-jurisdiction roadways and crossings.

A9 – STORM WATER DISCHARGE POINTS

In general, the track areas to be improved already have drainage systems in place to accommodate potential future improvement. Therefore, in areas where the only proposed construction is installation of the second commuter rail line and attendant utility relocation, the storm water generated in the area will flow to the same discharge points it is currently flowing to.

A10 – Location of wetlands, lakes and water courses onsite and adjacent to Project

A wetland delineation survey performed in 2017 to identify wetlands and streams within the Project's study area resulted in a total of 76 wetlands totaling 43.01 acres and a total of 1,117 feet of streams. This information is captured in a Waters of the U.S. Delineation Report for the Project dated August 18, 2017 which was prepared by Metric Environmental. Project documents can be accessed at the Project's website at https://www.doubletrack-nwi.com/. NICTD is currently applying to the USACE and IDEM for a Section 404/401 Individual Permit. These areas are shown via hatch on SHEETS ENV270 TO ENV278. Said areas shall be protected and, to the extent possible given the scope of the project, shall not be disturbed.

A12 – Identification of potential discharges to groundwater

The vast majority of the proposed construction scope includes construction of a secondary commuter rail adjacent to the existing commuter rail. These areas will drain via sheet drainage to their existing drainage points. However, the Miller Street Station improvements include a number of facilities that will allow discharge to groundwater, specifically including the proposed detention/retention areas and rain gardens included in the development plans.

A13 – 100-Year Floodplains, floodways and fringes

This is located entirely within zone X (areas determined to be outside of the 0.2% annual chance floodplain) national Flood Insurance Rate Map numbers 18091C0108D and 18091C0109D, both effective November 6, 2013.

A14 – Pre-Construction and Post Construction Estimates of Peak Discharge

THIS SECTION TO BE COMPLETED WITH INFORMATION OBTAINED FROM OTHER DESIGNERS – THIS INFORMATION IS NOT YET AVAILABLE FOR REVIEW.

A15 – Adjacent Land Use

Given its length, adjacent land uses to the commuter track corridor range from undeveloped through residential to industrial and commercial. Additional detail regarding land use may be found in SHEETS ENV270 TO ENV278 of the plan set "NICTD General & Miscellaneous Plans".

A16 –Locations and Approximate Boundaries of all disturbed areas

The project demolition limits may be found on SHEETS ENV270 TO ENV278 of the plan set "NICTD General & Miscellaneous Plans".

A17 – Identification of existing vegetative cover

The existing vegetative cover can be found on SHEETS ENV270 TO ENV278 of the plan set "NICTD General & Miscellaneous Plans". The vast majority of the proposed development area is clear of trees and vegetation due to the presence of the existing commuter rail line track.

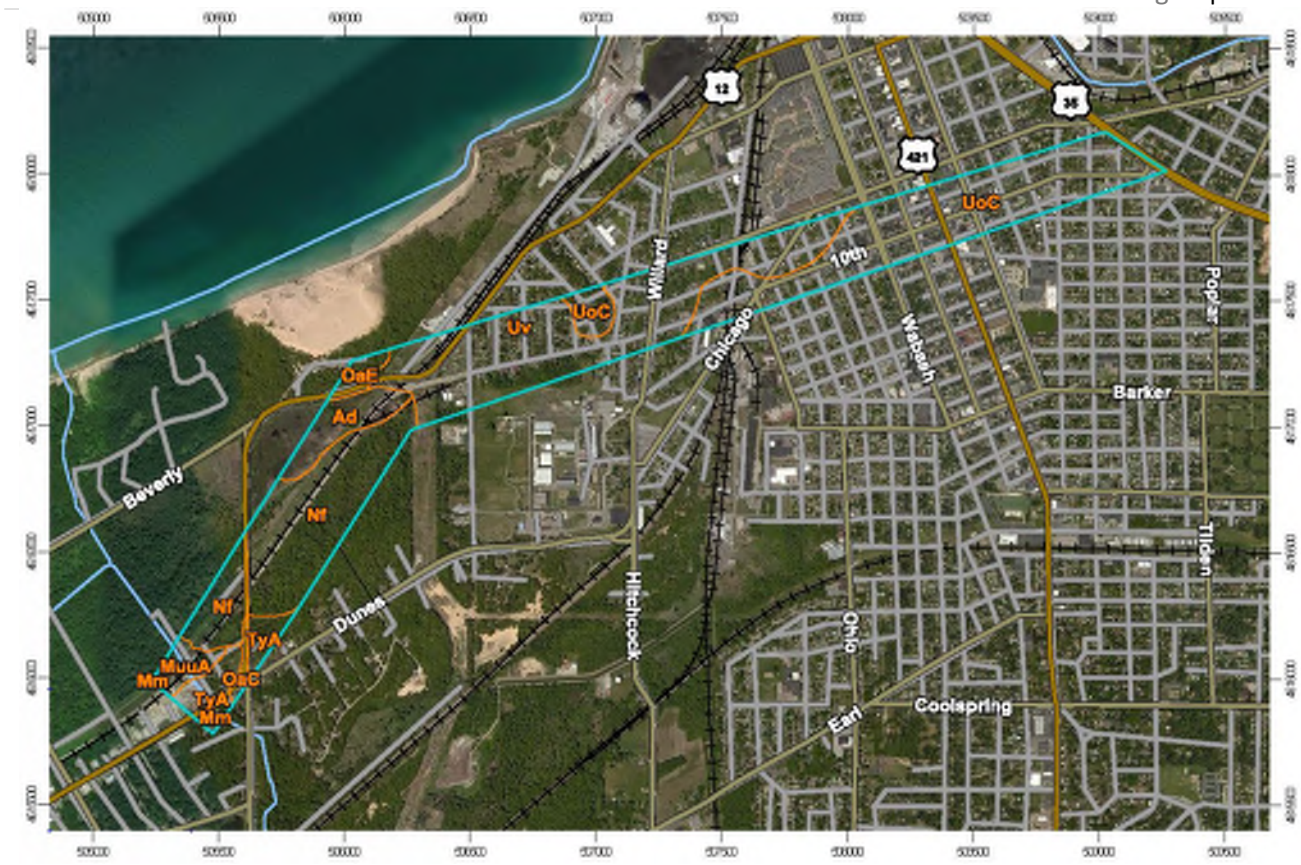
A18 – Soil Map

The USDA Soil Map for the project Map is shown below. The site consists of multiple significant soil types:

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ad	Adrian muck, drained, 0 to 1 percent slopes	16.8	4.9%
Nf	Newton loamy fine sand	61.7	18.1%
OaE	Oakville fine sand, 12 to 25 percent slopes	5.3	1.6%
TyA	Tyner loamy sand, 0 to 2 percent slopes	6.1	1.8%
UoC	Urban land-Oakville complex, 1 to 10 percent slopes	103.7	30.4%
Uv	Urban land-Morocco complex	108.3	31.8%
Subtotals for Soil Survey Area		**301.9**	**88.6%**
Totals for Area of Interest		**340.7**	**100.0%**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Mm	Maumee loamy sand	1.8	0.5%
MuuA	Morocco loamy sand, lake plain, 0 to 2 percent slopes	8.2	2.4%
Nf	Newton loamy fine sand	16.4	4.8%
OaC	Oakville fine sand, 4 to 12 percent slopes	2.5	0.7%
TyA	Tyner loamy sand, 0 to 3 percent slopes	9.8	2.9%
Subtotals for Soil Survey Area		**38.7**	**11.4%**
Totals for Area of Interest		**340.7**	**100.0%**



A19 – Storm Water System

The track within the City of Michigan City is located exclusively within hardscape. Said hardscape is currently and will remain drained by the Michigan City Stormwater Collection system.

REVISE ABOVE PARAGRAPH WITH SPECIFICS FROM CONSTRUCTION PLAN DRAWINGS – THESE PLANS HAVE NOT YET BEEN COMPLETED AND SO ARE NOT CURRENTLY AVAILABLE FOR REVIEW.

A20 – Off-Site Construction Activities

There are no proposed off-site construction activities.

A21- Stock Piles, Disposal Areas

All material generated by the site will be disposed of in approved disposal facilities off-site. Stock pile locations will be determined and protected by project contractor on an as-needed bases. Stock pile areas will be protected by silt fence at their base immediately upon creation and, if said areas are intended to sit unattended for more than 15 days, will be temporarily seeded and mulched.

A22- Existing Topography

The existing topography with major and minor contour intervals of one foot interval is located on SHEETS ENV270 TO ENV278 of the plan set ““NICTD General & Miscellaneous Plans”.

A-23 Proposed Final Topography

The proposed final topography may be found on SHEETS ENV270 TO ENV278 of the plan set “NICTD General & Miscellaneous Plans”.

Section 2 SWPPP Elements – PART B

B-1 Description of potential pollutant sources associated with construction activities

The proposed development will generate potential pollutants during construction operation that could enter the existing storm sewer system, and storm water. Potential pollutant sources that may generate pollutants on the project include, but are not limited to, material and fuel storage areas, fueling locations, exposed soil locations, stored construction equipment and vehicles that may be leaking oil arid fuels. Pollutants generated from these sources include, but are not limited to, gasoline and diesel fuel, oil and grease, fertilizers, antifreeze, rubber fragments, metals, trash, and unprotected soils.

B-2 Sequence describing storm water quality measure implementation relative to land disturbing activities

The contractors and subcontractors shall be responsible to implement practices for the prevention of pollutants reaching the existing storm sewer systems in place. Prevention should include but not be limited to the following items.

A general anticipated construction schedule is attached for the project that highlights the construction sequencing and implementation of the storm water quality measures

a. Install SWPPP information boards and permits.
b. Installation of silt fencing prior to any earthwork activities.
c. Installation of gravel construction entrances prior to any earthwork activities.
d. Installation of pump arounds/diversion devices.
e. Topsoil stockpiles shall be surrounded with silt fencing.
f. All proposed swales and major grading shall be done to rough grades at start of construction to prevent excessive soil erosion due to construction. All swales, ditches and detention/retention basins shall be temporarily seeded and have fiber rolls installed to prevent run off and bank erosion. Permanent seeding or hydro seeding shall be done upon completion of construction.
g. Basin slopes shall be protected with erosion control matting and temporary seeding/mulching as necessary.
h. After completion of storm sewer system facilities, storm sewer inlet protection shall be placed at each open-grate structure (fiber roll barrier, filter basket, etc).
i. Inlets and outlets shall be protected via rip-rap to slope and disperse discharges.
j. Utility relocations shall be installed as necessary.
k. Utilities relocations including electric/cable/telephone, gas and fiber shall be installed.
l. Curb and gutter, road pavement, parking area and other pavement repair tasks shall be constructed.
m. All disturbed areas shall be seeded or mulched upon final grading and when no additional disturbance is anticipated.
n. Silt fencing shall be installed at perimeter of major drainage swales upon final grading to prevent erosion or sediment build up from adjacent construction activities.
o. Permanent seeding shall be placed across all completed graded areas – see following notes regarding extent of establishment.
p. All erosion control features and materials are to be maintained until the completion of construction. This standard includes that vegetation must be established to at least 70% full growth prior to completion.
q. All temporary erosion control measures are to be removed upon permanent vegetative cover being established. This standard includes that vegetation must be established to at least 70% full growth prior to completion.

B-3 Stable construction entrance locations and specification (at all points of ingress and egress)

Construction entrances shall be implemented at entrances to site from main access roads or where contractor deems access is necessary. See SHEETS ENV270 TO ENV278.

B-4 Sediment control measures for sheet flow areas

Silt fencing shall be used for the sheet flow areas along the perimeter of the project as shown. See SHEETS ENV270 TO ENV278. Erosion control matting shall be used in high slope or high flow areas as shown on SHEETS ENV270 TO ENV278.

B-5 Sediment control measures for concentrated flow area

Temporary and permanent seeding shall be used for the swales and drainage ditches to control erosion. If these methods are found to be inadequate, erosion control blankets or other methods will be applied. See SHEETS ENV270 TO ENV278.

B-6 Storm sewer inlet protection

Storm sewer inlets, both existing and proposed, shall be protected by basket-type inlet protection. This policy is universal across the entirety of the project and is covered by general note in SHEETS ENV270 TO ENV278.

B-7 Runoff control measures

Erosion fencing shall be used to control runoff.

B-8 Storm water outlet protection specification

The storm water outlets will have a rip-rap blanket and a stone aggregate filter. See SHEETS ENV270 TO ENV278 for additional information.

B-9 Grade stabilization structure locations and specifications

No grade stabilization structures or measures are required for this development.

B-10 Location, dimensions, specifications and construction details of each storm water quality measure

Locations, dimensions specifications and construction details of each storm water quality measure are detailed on SHEETS ENV270 TO ENV278 in the plan set “NICTD General & Miscellaneous Plans”.

B-11 Temporary surface stabilization methods appropriate for each season

Temporary seeding shall be done on all grading areas within 15 days of temporary completion of grading to provide for stabilization. In the event that seeding is to be done outside the typical seeding periods, during the late fall, early winter or early spring seasons, dormant or frost seeding or mulching shall be done for areas to remain undisturbed for 15 days or more.

B-12 Permanent surface stabilization specifications

Permanent seeding shall be done on all earthen pond banks, street right-of-ways, and major drainage swales at the time of completion. Construction and seeding of these items shall be completed during the
normal seeding seasons to ensure adequate germination and stabilization. In the event that seeding is to be done outside the typical seeding periods, during the late fall, early winter or early spring seasons, dormant or frost seeding or mulching shall be done for areas to remain undisturbed for 15 days or more.

B-13 Material handling and spill prevention plan

The contractors and their subsequent subcontractors shall be responsible to implement practices for the prevention of pollutants reaching the proposed storm drainage system, the existing storm sewer system, or the floodplain. Prevention should include but not be limited to, material handling and storage, clean-up of pollutant at time of detection, and regular maintenance of erosion practices.
Throughout the construction of this project there are a number of materials expected to be handled on the site and may be subject to spills. In order to prevent the entering of these materials into the soils, storm sewers, and ground waters of the project the on-site handling of soils shall be limited to the
Excavation, loading, arid spreading. The contractor shall minimize the disturbance of excavated soils by minimizing the number of times the soil is handled. In the event that a spill occurs, the following measures shall be taken for the associated material,

Material handling & spill prevention

- Material handling and spill prevention for all materials listed, anticipated to be used and any other pollutants not described but associated with land disturbance and construction activities shall be provided by all project contractors and subcontractors. The contractors and subcontractors shall refer to the Material Safety Data Sheet (MSDS) for information on the proper storage, use, and cleanup methods for all materials anticipated to be on the project site.
- All required materials for spilt clean up and disposal of all onsite materials shall be kept on site in a project trailer with easy access for all users of associated materials.
- All disposals of spilled materials shall be done in accordance with Federal, State and Local waste disposal regulations. All contractors and subcontractors shall be responsible for any and all spills associated with their work.

Oil, grease and other hydrocarbons

Spills if possible should be contained at time of detection, Removal shall be done mechanically or wipe up or absorbed on suitable material and shovel up. Disposal should be in accordance with Federal, State and Local waste disposal regulations. Handling and storage of any oil, grease or other hydrocarbons shall he done in tightly closed containers, in a dry cool place away from any heat or ignition sources.

Gasoline and diesel fuel

Spills if possible should be contained at the time of detection, Remove any source of heat and ignition, such as engines and power tools. Clean up spill area by use of sand or other absorbent
scrape up and place in appropriate containers for disposal. Disposal should be in accordance with Federal, State and Local waste disposal regulations. Handling and storage of any gasoline and diesel fuel shall be done in tightly closed containers, in a dry cool place away from any heat or ignition sources.

Fuel storage on the project site shall be avoided if possible to aid in the prevention of spills, Tanker trucks should be used for the fueling of large construction equipment.

Antifreeze

Spills if possible should be contained at time of detection. Shot off source or leak, dike and contain spill area. Remove spills promptly by use of shovel, vacuum trucks or pump, and store into clean
empty storage drums, Trace residue can be soaked with water, but do not flush to sewer or surface water, Disposal should be in accordance with Federal, State and Local waste disposal regulations Handling and storage of any antifreeze shall be done in tightly closed containers, in a dry cool place away from any heat or ignition sources.

Rubber fragments, metals and trash

All materials shall be swept up and disposed of as regular trash or reclaimed for scrap value in accordance with Federal, State and Local waste disposal regulations. Handling arid storage of rubber, metals and trash shall be placed in a refuse area until such time of appropriate disposal.

Fertilizer

All excess spills of material shall be swept or soaked up and placed in a suitable waste disposal container, when possible it should be recycled. Minor spills should be flushed with water, avoiding contamination of any streams and waterways. Disposal should be in accordance with Federal, State and Local waste disposal regulations. Handling and storage of any fertilizer shall be done in tightly closed containers or bags, in a dry cool place.

Grit, wearing of road surface

- All materials shall be swept up and disposed of as regular trash or reclaimed for scrap value in accordance with Federal State and Local waste disposal regulations
- Handling and storage of rubber, metals and trash shall be placed in a refuse area until such time of appropriate disposal.

- Concrete wash out

  Contractor to designate a specific concrete wash out area on the project site for use by the concrete supply company to release any remaining concrete. The area chosen shall be away from any storm water drainage structures, and shall be properly surrounded with silt fencing to prevent runoff of excess material. The concrete shall be disposed of in accordance with Federal, State and Local waste disposal regulations.
  The concrete shall be piled as to provide for easy loading and removal from the project site.

- Vehicle Washing

  Contractors are required to wash construction vehicles before AND after leaving a construction site to minimize transfer of invasive species.

- Typical Spill Procedures

  In the event that a large spill occurs (that which requires extensive cleanup actions, refer to MSD sheets for information), the following procedures shall be followed to minimize exposure of the material.

  a. Immediate action shall be taken to control and contain the spill to prevent it from entering any nearby storm sewer structures or open waters.
  b. Notify the Local Fire Department at 911 for all combustible and flammable materials.
  c. Notify the Federal Emergency Spill Hotline at 1-800-424-8802 within 2 hours for spills above the reported allowable quantity, or if the material enters any nearby storm sewer structures or open waters.
  d. Notify the Indiana Emergency Response Hotline at 1-888-233-7745.
  e. The spill area shall be isolated from all surrounding areas with absorbent pads, booms, and pillows designed for the use of spill containment and absorption.
  f. The spill kits that are required to be on site shall be utilized.
  g. Emergency Response teams shall be contacted for extensive spills above and beyond the containment by available methods, These materials listed, and the associates spill prevention and clean up methods, are the typical expected materials to be used. All additional materials used on the project site shall be monitored, and all spills addressed in the same manner above.

B-14 Monitoring and maintenance guidelines for each proposed storm water quality measure

Maintenance of all erosion and sediment control practices shall be done on a weekly basis and after all measurable rain events. The Contractor, and associated subcontractors, is responsible for the maintenance and implementation of all practices. The Contractor shall see that all practices are maintained according to the design criteria.

Silt fence

- To be installed prior to any dirt movement on the site. Installation to be in accordance with Erosion Control Plan of engineering plans.
- Additional silt fencing may be required as deemed necessary by Contractor to prevent additional onsite erosion of topsoil stock pile or proposed bermed areas.
- If fence fabric tears, starts to decompose or becomes ineffective, replace the affected portion.
- Remove any deposited sediment when it reaches half of the height of the fence at Its lowest point or is causing the fabric to bulge.
- Take care to avoid undermining the fence during clean out.
- After the watershed has been stabilized with vegetation, remove the fence and the sediment deposits

Filter Socks

- To be installed prior to any dirt movement on the site. Installation to be in accordance with Erosion Control Plan of engineering plans.
- Additional filter socks may be required as deemed necessary by Contractor to prevent additional onsite erosion of topsoil stock pile or proposed bermed areas.
- Filter socks must be biodegradable. However, filter socks may NOT contain photo degradable mesh due to the presence of the T/E species Eastern massasauga within the project area.
- Remove any deposited sediment when it reaches half of the height of the sock at Its lowest point or is causing the sock to deform.
- Take care to avoid undermining or moving the socks during clean out.
- After the watershed has been stabilized with vegetation, remove the socks and the sediment deposits

Pump Arounds

- To be installed prior to any dirt movement on the site. Installation to be in accordance with Erosion Control Plan of engineering plans.
- Filter bags to be checked on a daily basis – sediment/filter bags to be removed/replaced according to manufacturer's specifications.
- Discharge points/sump pits to be checked on a daily basis – sediment to be removed when sump pit is 1/2 full.
- Take care to avoid damaging or undermining the sump pits during clean out.
- Take care to avoid damaging or undermining the filter bags during removal/replacement.
- After the watershed has been stabilized with vegetation, remove the socks and the sediment deposits

Barrier filters (fabric inlet protection, basket curb protection)

- To be installed in all storm sewer drainage structures upon installation m paved areas to prevent sediment buildup with the newly installed structures.
- Inspect after storm events and when visual signs of sediment buildup is encountered.
- If excess sediment buildup is anticipated around certain structures, additional methods may be combined to provide extra protection
- If basket filters become ineffective for any reason, they will be promptly replaced.

Gravel construction entrance pads

- To be installed at start of construction in conjunction with the silt fencing prior to any dirt movement on the site.
- Inspect entrance pad and sediment disposal area weekly and after storm events or heavy use.
- Reshape pad as needed for drainage and runoff control,
- Top dress with clean stone as needed.
- immediately remove mud and sediment tracked or washed onto public roads by brushing or sweeping, Flushing should only be used if the water is conveyed into a sediment trap or basin.
- Repair any broken road pavement immediately.

Mulching

- To be installed once major grading has taken place and fine grading is near completion or completed.
- To be installed as alternative to temporary seeding to provide temporary stabilization of surface grading. To be used in conjunction with permanent seeding to provide additional moisture conservation

to speed seed germination and growth.
- Inspect after storm events to check for movement or mulch or for erosion
- If washout, breakage, or erosion is present, repair the surface, then re-seed, re-mulch and, if applicable, install new netting.
- Continue inspections until vegetation is firmly established.

Grass-lined channel

- To be installed to rough grade as part of mass grading to provide adequate surface drainage for construction. To be seeded upon fine grading and when no further grading or construction is anticipated on, around or across channel.
- Inspect the channel following storm events during and even after vegetative establishment: make needed repairs immediately.
- Check the channel outlet and road crossings for blockage, sediment, bank instability, and piping or scour holes; remove any blockage, and make repairs immediately.
- Remove significant sediment and debris from the channel to maintain design cross-section and grade and to prevent spot erosion.
- To be installed upon installation, backfill and rough grading around all yard drains and any drainage structures not in paved areas.
- Also inspect periodically for deterioration or damage from construction activities, and repair immediately.

Temporary seeding

- To be installed on all areas upon fine grading when minor or little future grading may be required, but exceeds a month's time until future disturbance.
- Inspect periodically after planting to see that vegetative stands are adequately established: re-seed if necessary.
- Check for erosion damage after storm events and repair; re-seed and mulch if necessary
- Top dress fall seeded wheat or rye seedlings with 50 lbs/acre of nitrogen In February or March if nitrogen deficiency is apparent.

Permanent seeding

- To be installed upon final grading of areas of no future grading or disturbance and not be disturbed be remaining construction.
- Inspect periodically, especially 24 hours after storm events of a minimum of ½ inch, until the stand is successfully established. (Characteristics of a successful stand include: vigorous dark green bluish-green seeding; uniform density with nurse plants, legumes, and grasses well inter-mixed; green leaves; and the perennials remaining green throughout the summer, at least at the plant base.).

•Plan to add fertilizer the following growing season according to soil test recommendations.
•Repair damaged, bare, or sparse areas by filling any gullies, re-fertilizing, over- or re- seeding, and mulching.
•If plant cover is sparse or patchy, review the plant materials chosen, soil fertility moisture condition, and mulching: then repair the affected area either by over-seeding or by reseeding and mulching alter re-preparing the seedbed.
•If vegetation fails to grow, consider soil testing to determine acidity or nutrient deficiency problems. (Contact your SWCD or Cooperative Extension office for assistance.)
•If additional fertilization is needed to get a satisfactory stand, do so according to soil test recommendations.
•Final stabilization and approval will not be permitted until at least 70% coverage has been achieved.

Stone rip-rap (rip rap on slopes, rock chutes)

•To be installed upon rough grading of backfill of storm sewer outlet structures, and maintained until final grading takes place.
•Inspect rip-rap areas periodically and after storm events of ½ inch or greater.
•Check for displaced stone material, slumping and erosion at all edges.
•If needed top dress with clean stone, using appropriate size stone.

B-15 Erosion and sediment control specifications for individual building lots

Silt fence to be installed as indicated on the Soil Erosion & Sedimentation Control Plan in the set "NICTD General & Miscellaneous Plans". Temporary seeding, permanent seeding, rip-rap and erosion control matting will be used along the ditches, for the retention pond, inlets, along the road and other locations as needed.

Section 3 SWPPP Elements –PART C

C-1 Description of pollutants and their sources associated with the proposed land use

The project when completed will be accessed by numerous maintenance vehicles as well as periodic daily commuter train traffic. The expected pollutants that will be generated by the site when completed will be that associated with vehicular and train emission (e.g., oil, grease, antifreeze, rubber fragments, gasoline, diesel fuel and other vehicular matters), wearing of the road surface, salt or other means of snow removal, and trash from littering and other types of improper disposal or storage. Also included are grass clippings, fertilizers, pesticides and herbicides resulting from landscaping and land maintenance activities. Elevated storm water runoff temperatures may exist due to contact with the impervious surfaces during the warmer months of the year.

C-2 Sequence describing storm water quality measure implementation

The post construction storm water quality measures to be installed with this project and the sequencing are as follows:

a. Grass-lined drainage swales. Shall be installed to rough grade at start or early stage of construction to prevent storm water runoff from the project construction entering the surrounding areas. If underground utilities are proposed under the proposed swales, they shall be installed first, and the swales shall be incorporated into the grading of the backfill.

b. Storm sewer basins with sumps (parking lot areas). Shall be installed at early stage of construction with storm sewer system to provide drainage for the project site during and after construction activities. To be installed prior to roadway construction and lot grading.

c. Permanent seeding and any additional landscaping. Shall be installed on all final graded areas that have no additional land disturbing activities scheduled.

C-3 Description of proposed post construction storm water quality measures

As with any new construction project, whether residential, commercial, or industrial, there will be an increase in the amount of impervious areas that will generate additional storm water runoff. To accommodate this increase, along with the pollutants expected to be generated by the use of the project, certain storm water quality measures and erosion control methods have been incorporated into the design.

The project is designed to help reduce pollution and sediment in storm water runoff associated with the project when completed in addition to during construction. The measures to be used have been listed above and their respective effects on storm water quality are described below.

a. Grass-lined drainage swales. Shall be permanently seeded, sodded, or hydroseeded upon final grading to ensure adequate stabilization. The swales will be the first to receive any runoff of surrounding grassed areas that have reached saturation after infiltration. The grass-lined swales will act as a pretreatment area to filter sediment and any minor pollutants prior to entrance into the storm sewer system.

b. Storm sewer basins with sumps. Sumps shall be utilized to collect sediment from storm water runoff not filtered from the grass-lined swales to prevent excessive build up in the pond.

c. Permanent seeding and any additional landscaping. Stabilized vegetation and landscaping features will aid in the reduction of storm water runoff velocity and aid in filtering sediment contained in said runoff before it reaches the storm sewer systems

C-4 Location, dimensions, specifications, and construction details of each storm water quality measure:

See SHEETS ENV270 TO ENV278 in the plan set “NICTD General & Miscellaneous Plans”.

C-5 Description of maintenance guidelines for post construction storm water quality measures

Routine inspections, operation and maintenance of the storm water quality measures associated with the project are the responsibility of the owner, homeowner association, local government for public utilities, or can be contracted to an outside company far the private utilities.

•Periodic inspection of the storm water quality measures should be implemented to ensure continued operation during the lifetime of the project.
•Any accumulated sediment and debris shall be removed and disposed of properly from structures, BMP devices, and rip-rap, so as not to impact on the capacity arid function of such devises.
•Rip-rap areas shall be check for displaced stone material, slumping and erosion at all edges, and if needed top dress with clean stone, using appropriate size stone.
•All outlet control devices, being restrictor pipe or restrictor plates within manholes shall be routinely inspected for proper operation and sediment accumulation.
•Pond banks and basins shall be inspected for debris and sediment accumulation and be removed arid disposed of properly to ensure the pond functions properly.

TABULAR SCHEDULE OF INSPECTION AND MAINTENANCE ACTIVITIES

System Devise	Frequency	Task
Catch Basins and Sumps	Quarterly	Inspect and clean as needed with pump or vacuum removal
Drainage Swales	Quarterly and following significant storm events	Inspect and Clean (Regrade and Seed as Necessary)
Rip Rap Areas	Quarterly	Inspect and Clean (Remove and Replace as Needed)

Section 4 – APPENDICES

United States Department of Agriculture

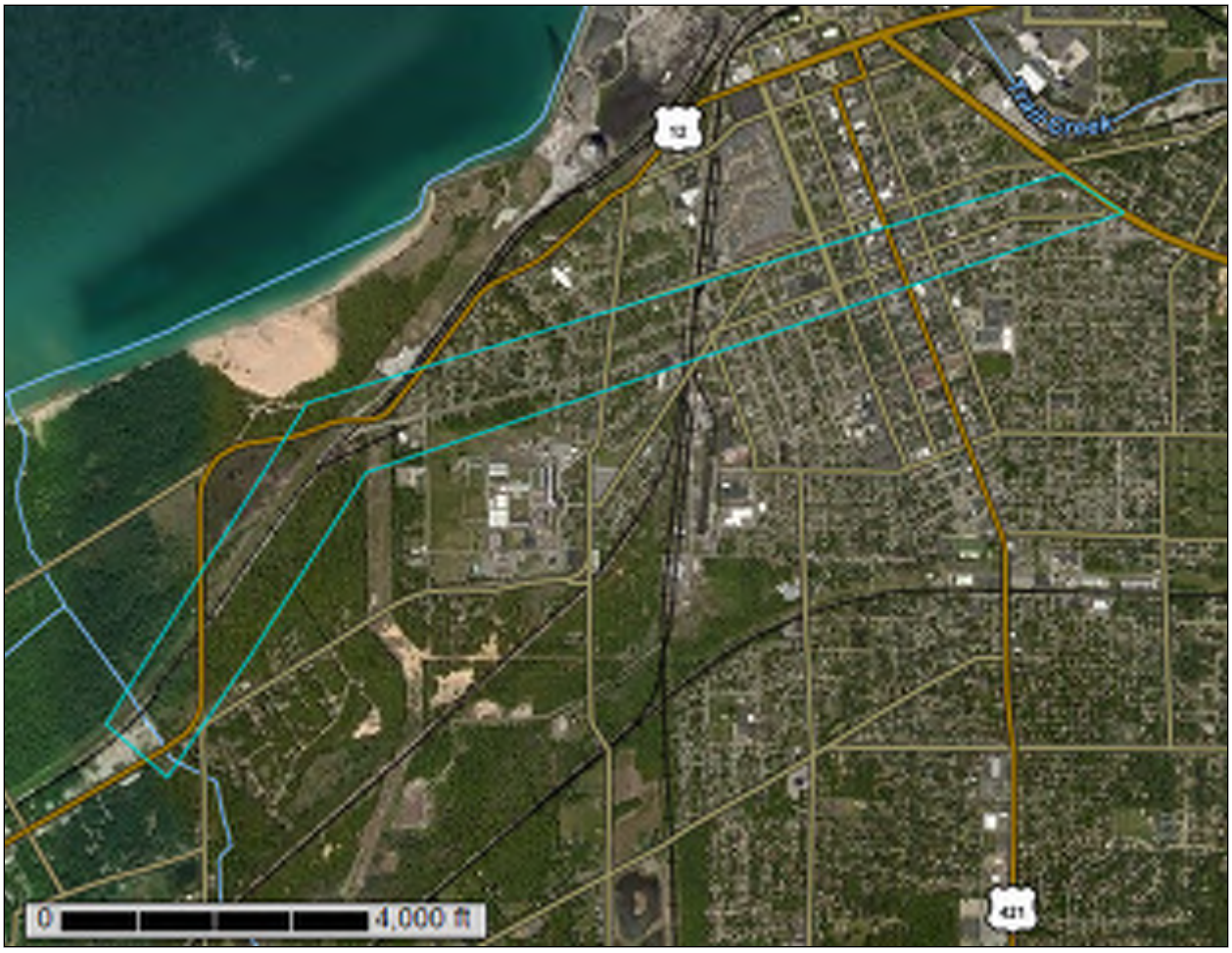
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for La Porte County, Indiana, and Porter County, Indiana

Michigan City MS4



May 4, 2020

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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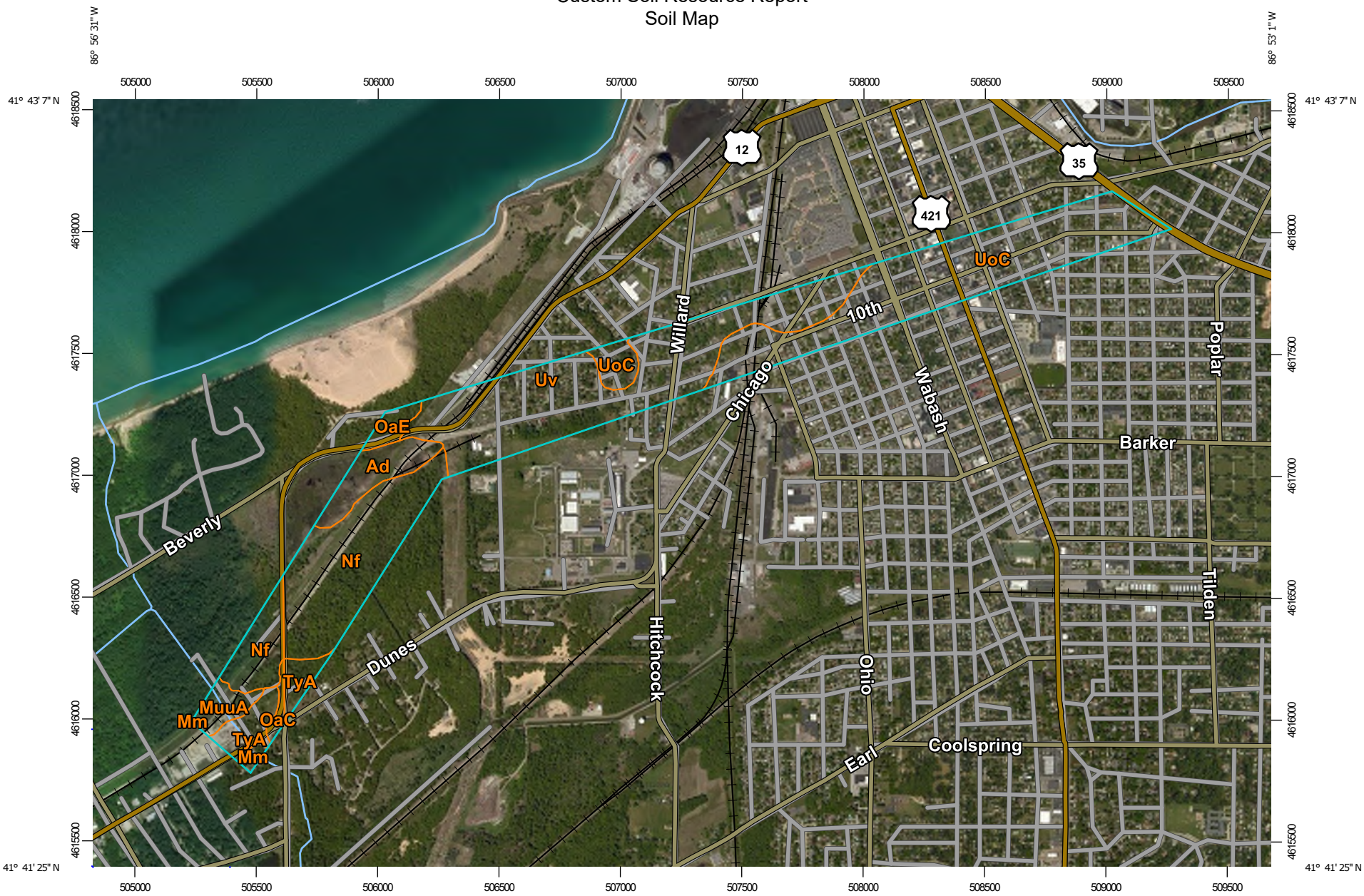
Contents

Preface..... 2
Soil Map..... 5
Soil Map.....6
Legend.....7
Map Unit Legend..... 9
Map Unit Descriptions..... 9
La Porte County, Indiana..... 12
Ad—Adrian muck, drained, 0 to 1 percent slopes.....12
Nf—Newton loamy fine sand.....13
OaE—Oakville fine sand, 12 to 25 percent slopes.....14
TyA—Tyner loamy sand, 0 to 2 percent slopes.....15
UoC—Urban land-Oakville complex, 1 to 10 percent slopes..... 17
Uv—Urban land-Morocco complex..... 18
Porter County, Indiana..... 21
Mm—Maumee loamy sand..... 21
MuuA—Morocco loamy sand, lake plain, 0 to 2 percent slopes.....22
Nf—Newton loamy fine sand.....24
OaC—Oakville fine sand, 4 to 12 percent slopes.....25
TyA—Tyner loamy sand, 0 to 3 percent slopes.....26

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

Soil Map Unit Lines

Soil Map Unit Points

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: La Porte County, Indiana
Survey Area Data: Version 24, Sep 16, 2019

Soil Survey Area: Porter County, Indiana
Survey Area Data: Version 23, Sep 16, 2019

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 1, 1999—Oct 9, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND

MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ad	Adrian muck, drained, 0 to 1 percent slopes	16.8	4.9%
Nf	Newton loamy fine sand	61.7	18.1%
OaE	Oakville fine sand, 12 to 25 percent slopes	5.3	1.6%
TyA	Tyner loamy sand, 0 to 2 percent slopes	6.1	1.8%
UoC	Urban land-Oakville complex, 1 to 10 percent slopes	103.7	30.4%
Uv	Urban land-Morocco complex	108.3	31.8%
Subtotals for Soil Survey Area		**301.9**	**88.6%**
Totals for Area of Interest		**340.7**	**100.0%**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Mm	Maumee loamy sand	1.8	0.5%
MuuA	Morocco loamy sand, lake plain, 0 to 2 percent slopes	8.2	2.4%
Nf	Newton loamy fine sand	16.4	4.8%
OaC	Oakville fine sand, 4 to 12 percent slopes	2.5	0.7%
TyA	Tyner loamy sand, 0 to 3 percent slopes	9.8	2.9%
Subtotals for Soil Survey Area		**38.7**	**11.4%**
Totals for Area of Interest		**340.7**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made

up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

La Porte County, Indiana

Ad—Adrian muck, drained, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2w5n1
Elevation: 580 to 880 feet
Mean annual precipitation: 30 to 41 inches
Mean annual air temperature: 43 to 52 degrees F
Frost-free period: 140 to 230 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Adrian, drained, and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Adrian, Drained

Setting

Landform: Depressions on outwash plains, moraines, till plains, lake plains, flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave
Parent material: Herbaceous organic material over sandy outwash

Typical profile

Oap - 0 to 10 inches: muck
Oa - 10 to 28 inches: muck
Cg - 28 to 80 inches: sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 0.4
Available water storage in profile: Very high (about 13.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Ecological site: Wet Kankakee Floodplains (F098XB026IN), Mucky Depressions (F098XA006MI)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)

Hydric soil rating: Yes

Minor Components

Antung, drained

Percent of map unit: 10 percent
Landform: Depressions on outwash plains, moraines, till plains, lake plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Edwards, drained

Percent of map unit: 6 percent
Landform: Depressions on outwash plains, moraines, till plains, lake plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Houghton, drained

Percent of map unit: 6 percent
Landform: Depressions on outwash plains, moraines, till plains, lake plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave
Ecological site: Mucky Depression (F097XA030MI), Mucky Depressions (F098XA006MI)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Muskego, drained

Percent of map unit: 3 percent
Landform: Moraines, depressions on outwash plains, till plains, lake plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Nf—Newton loamy fine sand

Map Unit Setting

National map unit symbol: 94r1
Elevation: 570 to 950 feet

Mean annual precipitation: 36 to 40 inches
Mean annual air temperature: 49 to 51 degrees F
Frost-free period: 170 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Newton and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Newton

Setting

Landform: Depressions on outwash plains, depressions on lake plains
Landform position (two-dimensional): Footslope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Sandy outwash

Typical profile

H1 - 0 to 15 inches: loamy fine sand
H2 - 15 to 60 inches: fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water storage in profile: Moderate (about 6.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Ecological site: Wet Acidic Sandy Flatwoods (F097XA007MI)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

OaE—Oakville fine sand, 12 to 25 percent slopes

Map Unit Setting

National map unit symbol: 94r3
Elevation: 570 to 950 feet
Mean annual precipitation: 36 to 40 inches
Mean annual air temperature: 49 to 51 degrees F
Frost-free period: 170 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Oakville and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Oakville

Setting

Landform: Outwash plains, dunes, beach ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian sands

Typical profile

H1 - 0 to 14 inches: fine sand
H2 - 14 to 39 inches: fine sand
H3 - 39 to 60 inches: fine sand

Properties and qualities

Slope: 12 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: Sand Hills (F097XA010MI), Chicago Sand Hills (F097XB040IN)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

TyA—Tyner loamy sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 94rs
Elevation: 570 to 1,540 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 50 degrees F
Frost-free period: 140 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Tyner and similar soils: 85 percent

Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tyner

Setting

Landform: Outwash plains
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy outwash

Typical profile

Ap - 0 to 12 inches: loamy sand
Bw1 - 12 to 20 inches: loamy sand
Bw2 - 20 to 41 inches: sand
Bw3 - 41 to 80 inches: sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Ecological site: Sandy Drift Plains (F098XA014MI)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Bristol

Percent of map unit: 5 percent
Landform: Outwash plains, outwash terraces
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Osolo

Percent of map unit: 5 percent
Landform: Outwash plains, outwash terraces
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope
Down-slope shape: Convex

Across-slope shape: Convex
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Coloma

Percent of map unit: 5 percent
Landform: Outwash plains, moraines
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

UoC—Urban land-Oakville complex, 1 to 10 percent slopes

Map Unit Setting

National map unit symbol: 94rw
Elevation: 570 to 950 feet
Mean annual precipitation: 36 to 40 inches
Mean annual air temperature: 49 to 51 degrees F
Frost-free period: 170 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 55 percent
Oakville and similar soils: 45 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Landform: Outwash plains

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: Unranked

Description of Oakville

Setting

Landform: Outwash plains
Landform position (two-dimensional): Backslope
Parent material: Eolian sands

Typical profile

H1 - 0 to 14 inches: fine sand
H2 - 14 to 39 inches: fine sand
H3 - 39 to 60 inches: fine sand

Properties and qualities

Slope: 1 to 10 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Ecological site: Chicago Sandy Lake Plain (F097XB033IN)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Uv—Urban land-Morocco complex

Map Unit Setting

National map unit symbol: 94rx
Elevation: 360 to 1,540 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 50 degrees F
Frost-free period: 140 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 50 percent
Morocco and similar soils: 40 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Landform: Outwash plains

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: Unranked

Description of Morocco

Setting

Landform: Outwash plains
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy outwash

Typical profile

Ap - 0 to 9 inches: loamy sand
Bw - 9 to 60 inches: sand
C - 60 to 80 inches: sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A/D
Ecological site: Acidic Sandy Flatwoods (F097XA006MI), Chicago Sandy Swale (F097XB035IN)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Osolo

Percent of map unit: 4 percent
Landform: Outwash plains, outwash terraces
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Gilford

Percent of map unit: 3 percent
Landform: Depressions on outwash plains, drainageways on outwash plains
Landform position (two-dimensional): Toeslope, footslope, backslope
Down-slope shape: Linear
Across-slope shape: Concave
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Maumee

Percent of map unit: 3 percent
Landform: Depressions on outwash plains, depressions on lake plains
Landform position (two-dimensional): Toeslope, footslope
Down-slope shape: Linear
Across-slope shape: Concave
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Porter County, Indiana

Mm—Maumee loamy sand

Map Unit Setting

National map unit symbol: 5d5k
Elevation: 570 to 870 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 51 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Maumee and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Maumee

Setting

Landform: Depressions on outwash plains
Landform position (two-dimensional): Footslope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Sandy outwash

Typical profile

H1 - 0 to 23 inches: loamy sand
H2 - 23 to 60 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water storage in profile: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Ecological site: Chicago Wet Sandy Swale (R097XB036IN)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

MuuA—Morocco loamy sand, lake plain, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2w64t
Elevation: 580 to 740 feet
Mean annual precipitation: 34 to 41 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 170 to 230 days
Farmland classification: Not prime farmland

Map Unit Composition

Morocco, lake plain, and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Morocco, Lake Plain

Setting

Landform: Outwash plains, nearshore zones (relict)
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Linear
Parent material: Sandy glaciolacustrine deposits

Typical profile

Ap - 0 to 8 inches: loamy sand
Bw - 8 to 36 inches: sand
C - 36 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (1.42 to 14.17 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 0.1 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 1.0
Available water storage in profile: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Ecological site: Acidic Sandy Flatwoods (F097XA006MI), Chicago Sandy Swale (F097XB035IN)
Other vegetative classification: Trees/Timber (Woody Vegetation)

Hydric soil rating: No

Minor Components

Granby, lake plain

Percent of map unit: 5 percent
Landform: Depressions on nearshore zones (relict), depressions on outwash plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, talf
Down-slope shape: Concave, linear
Across-slope shape: Linear
Ecological site: Wet Sandy Flatwoods (F097XA008MI)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Brems

Percent of map unit: 3 percent
Landform: Nearshore zones (relict)
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Linear
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Plainfield, lake plain

Percent of map unit: 1 percent
Landform: Nearshore zones (relict)
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Side slope, nose slope, head slope, interfluve
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Ecological site: Sandy Lake Plain (F097XA004MI)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Newton

Percent of map unit: 1 percent
Landform: Outwash plains, depressions on nearshore zones (relict)
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave
Ecological site: Wet Acidic Sandy Flatwoods (F097XA007MI)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Nf—Newton loamy fine sand

Map Unit Setting

National map unit symbol: 5d5w
Elevation: 570 to 870 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 51 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Newton and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Newton

Setting

Landform: Depressions on outwash plains
Landform position (two-dimensional): Footslope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Sandy outwash

Typical profile

H1 - 0 to 18 inches: loamy fine sand
H2 - 18 to 60 inches: fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water storage in profile: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Ecological site: Wet Acidic Sandy Flatwoods (F097XA007MI)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

OaC—Oakville fine sand, 4 to 12 percent slopes

Map Unit Setting

National map unit symbol: 5d5x
Elevation: 570 to 870 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 51 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Oakville and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Oakville

Setting

Landform: Dunes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian sands

Typical profile

H1 - 0 to 7 inches: fine sand
H2 - 7 to 30 inches: fine sand
H3 - 30 to 60 inches: fine sand

Properties and qualities

Slope: 4 to 12 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: Chicago Sandy Lake Plain (F097XB033IN)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Newton

Percent of map unit: 4 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Maumee

Percent of map unit: 3 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Adrian

Percent of map unit: 3 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

TyA—Tyner loamy sand, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 5d6l
Elevation: 570 to 870 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 50 degrees F
Frost-free period: 140 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Tyner and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tyner

Setting

Landform: Outwash plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy outwash

Typical profile

H1 - 0 to 54 inches: loamy sand
H2 - 54 to 60 inches: sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 5.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Ecological site: Chicago Sandy Lake Plain (F097XB033IN)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Poorly drained aqualf

Percent of map unit: 5 percent
Landform: Depressions
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: Yes

Newton

Percent of map unit: 5 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Double Track NWI Project

J – Threatened and Endangered (T&E) Species Avoidance Plan

Threatened and Endangered Species Avoidance Plan

Double Track NWI Project

Northern Indiana Commuter Transportation District

May 2020

Cardno®

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Prepared for:

Prepared by:

Cardno
708 Roosevelt Road, Walkerton, IN 46574

Table of Contents

1 Introduction 4
1.0 Project Background 4
1.1 Target Species 5
1.1.1 Reptiles and Amphibians 5
1.1.2 Bats 6
1.1.3 Plants 6
2 Avoidance Methodology 8
2.1 Reptiles and Amphibians 8
2.1.1 Exclusion Fencing 8
2.1.2 Cover boards 9
2.1.3 Surveys 9
2.1.4 Relocations 9
2.2 Bats 10
2.2.1 Construction Practices 10
2.3 Plants 10
2.3.1 Additional surveys 10
2.3.2 Relocations 10
2.3.3 Seed Collection and Propagation 10
2.3.4 Re-Seeding 10
3 Summary 11
4 References 12

Figures

Figure Set of Construction Footprints

Acronyms

EA	Environmental Assessment
ETR	Endangered Threatened and Rare
FE	Federally Endangered
FT	Federally Threatened
FTA	Federal Transit Administration
FONSI	Finding of No Significant Impact
FQA	Floristic Quality Assessment
FQI	Floristic Quality Index
IDNR	Indiana Department of Natural Resources
HQAR	High Quality Aquatic Resource
NHD	National Hydrography Dataset
NICTD	Northern Indiana Commuter Transportation District
NIPSCO	Northern Indiana Public Service Company
NPS	National Park Service
NRCS	U.S. Department of Agriculture Natural Resources Conservation Service
NWI	National Wetlands Inventory
SE	State Endangered
ST	State Threatened
SR	State Rare
SSC	State Species of Concern
SWL	State Watch List
USDA	United States Department of Agriculture
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

1 Introduction

1.0 Project Background

The Northern Indiana Commuter Transportation District (NICTD), in cooperation with the Federal Transit Administration (FTA), proposes an improvement project for the South Shore Line (SSL) commuter service between milepost (MP) 58.8 in Gary and MP 32.2 in Michigan City, northwest Indiana spanning across Lake, Porter, and La Porte Counties. The Project will include the construction of a second track with related signal, power, communications, bridge, track infrastructure, and station improvements along an existing track for approximately 26.6 miles.

The Project known as the Double Track Northwest Indiana, or DT-NWI (Project) will occur within an existing right-of-way adjacent to the Indiana Dunes National Park, the Indiana Dunes State Park, and other managed and unmanaged natural areas. These natural areas which include suitable habitat for endangered, threatened, and rare (ETR) species are located at various locations primarily concentrated in the eastern portion of the Project area. The “Habitat Surveys for Eastern Massasuaga, Kirtland’s Snake, Spotted Turtle, and Northern Leopard Frog” identified areas along the Project area corridor as “high quality suitable habitats.” In addition, recent and historic record sightings of ETR species that have occurred along the length of the track were referenced.

Reptiles and amphibians are especially well-represented in occurrence data and potential habitat along this corridor. Additionally, the right-of-way corridor provides suitable habitat for eastern massasaugas (*Sistrurus catenatus*; FT, SE), Kirtland’s snakes (*Clonophis kirtlandii*; SE), spotted turtles (*Clemmys guttata*; SE), and northern leopard frogs (*Lithobates pipiens*; formerly SSC). Suitable habitat for these species comprises approximately 118 acres along the corridor (Henningson, Durham, and Richardson, Inc. 2017). The Finding of No Significant Impact (FONSI) pursuant to the National Environmental Policy Act of 1969 (42 USC § 4332) and Section 4(f) of the U.S. Department of Transportation Act of 1966 (49 USC § 303) outlines mitigation commitments including: construction restriction of no digging/excavating to occur in wetlands between November 1 and March 1; installation of silt fencing in known habitat areas within active work areas prior to March1; and the utilization of a qualified herpetologist to conduct regular inspections of work areas and relocate individual reptiles and/or amphibians from construction areas (Section 8.4.1).

The 2017 Bat Habitat Assessment as part of the EA found approximately 48.9 acres of summer habitat deemed as low to moderate quality (Northern Indiana Commuter Transportation District 2017). Potential summer roosting habitat for northern long-eared bats (*Myotis septentrionalis*; FT, SE) and Indiana bats (*Myotis sodalis*; FE, SE) were found along the project area length. The Project’s FONSI mitigation commitment to protect the bat species along the Project corridor includes: no tree clearing can occur between April and December; temporary lighting used during construction activities will be directed away from suitable habitat during the active season from April 1 to November 30; and installation of bright colored flagging/fencing prior to any tree clearing.

The vegetation surveys summarized in the EA in 2016 (finalized in the FONSI) identified seven plant species listed as endangered, threatened, rare, or watch-list by the State of Indiana within the project area. The protected species include three state watch-list species, three state rare species, and one state threatened species occurring at various locations along the project area. The FONSI outlines mitigation commitment includes: continued coordination with the Indiana Department of Natural Resources (IDNR) Dunes Nature Preserves during final design and construction; continued coordination with the IDNR and the National Park Service (NPS) regarding the relocation of listed plant species prior to disturbance or the planting new vegetation; and utilization local area expert botanists to implement and develop relocation plans and conduct additional floristic surveys, if deemed appropriate.

The measures to avoid and minimize the impact to ETR species during construction of the Double Track NWI Project are proposed and outlined below. This Plan and associated guidance derive from the mitigation commitments outlined in the FONSI and practices agreed upon during consultation meetings with the U.S. Fish and Wildlife Service (USFWS) and IDNR.

1.1 Target Species

1.1.1 Reptiles and Amphibians

1.1.1.1 Eastern massasauga rattlesnake *(Sistrurus catenatus)*

The eastern massasauga rattlesnake is a stout-bodied snake that grows from 20 to 30 inches in length with light gray coloration accompanied by a series of dark gray to brown blotches along its dorsum and sides (Minton 2001). This species is a resident of a variety of wetlands across its range but can be found most commonly in wet prairies, fens, sedge meadows, and adjacent mesic woodlands in northern Indiana. Habitat use ranges from wet lowlands in the spring and fall to uplands with canopy cover in the summer months. Eastern massasauga rattlesnakes are listed as Threatened under the Endangered Species Act and Endangered by the State of Indiana. Populations have declined as a result of habitat loss, fragmentation, and persecution by humans (Minton 2001).

Historic records for eastern massasaugas exist at various locations along the project area, and a habitat assessment in 2016 indicated approximately 58 acres of high quality habitat is encompassed by the survey area boundaries (Northern Indiana Commuter Transportation District 2017). Although few reported sightings within the past decade exist near the project area, the secretive habits of this species may have allowed it to go undetected.

1.1.1.2 Kirtland's snake *(Clonophis kirtlandii)*

The Kirtland's snake is a small snake species ranging from 8.5 to 15 inches in total length with distinctive patterning (Minton 2001). Coloration for this species includes black diamond patterning on its dorsum with a red venter with pairs of black spots on each ventral scale running the length of its body. They can also be identified by a characteristic two-toned head with a black top and white bottom, often described as a "black hood." This species is extremely secretive and is rarely found on the surface, especially in undisturbed habitat. Kirtland's snakes inhabit a variety of wetland habitats and are found more commonly in central Indiana than other portions of the state. Wetland habitats range from large emergent marshes, wet meadows, and edges of wet woodlands or streamsides, but have also been found in heavily urbanized areas near Indianapolis (Minton 2001). This species is considered Endangered by the State of Indiana.

One historic record for Kirtland's snakes exists within the project area but a habitat assessment in 2016 indicated 58 acres of potentially high quality habitat occurs in the project area (Northern Indiana Commuter Transportation District 2017). The secretive nature of this species would easily allow it to go undetected without formal surveys, and records for this species in the northern portion of its range are uncommon.

1.1.1.3 Spotted turtle *(Clemmys guttata)*

The spotted turtle is the smallest Indiana turtle species with only 4 inches in carapace length (Minton 2001). Spotted turtles are distinctive with black coloration accompanied by bright yellow to dull orange spots along its body and shell. This species is a resident of emergent marshes, bogs, and a variety of shallow wetlands. Spotted turtles are considered Endangered by the State of Indiana.

Occasional occurrence records for spotted turtles exist near the project area with a record as recent as 2018. A habitat assessment in 2016 found only 2.34 acres of high quality habitat within the survey area (Northern Indiana Commuter Transportation District 2017).

1.1.1.4 Northern leopard frog *(Lithobates pipiens)*

At the time the habitat assessment and FONSI were completed, northern leopard frogs were listed as a species of special concern in the State of Indiana. However, this species is no longer listed by the State as of 2019. In addition, during consultation with the Indiana DNR, it was agreed that special surveys for this species would not be needed. Therefore, northern leopard frogs are no longer considered a target species for this project.

1.1.2 Bats

1.1.2.1 Indiana bat *(Myotis sodalis)*

The Indiana bat is a medium-sized bat similar to the little brown bat (*Myotis lucifugus*) but with more dull gray coloration. Their bodies range from 1.5 to 2 inches in length with a wingspan of up to 11 inches. Indiana bats can be found throughout the eastern hardwood forests in the summer months but retreat to southern hibernacula to overwinter in large congregations in caves that provide optimal temperature and moisture (United States Fish and Wildlife Service 2006).

Only moderate to low quality summer habitat was found during the habitat assessment in 2016 (Northern Indiana Commuter Transportation District 2017).

1.1.2.2 Northern long-eared bat *(Myotis septentrionalis)*

The northern long-eared bat is a medium-sized bat with a body length of 3 to 3.7 inches and wingspan of up to 10 inches. The most distinct feature of this species are its long ears. Hibernacula for this species include caves and mines but this species spends its summers underneath bark or cavities of dead and living trees (United States Fish and Wildlife Service 2015).

Only moderate to low quality summer habitat was found during the habitat assessment in 2016 (Northern Indiana Commuter Transportation District 2017).

1.1.3 Plants

1.1.3.1 Speckled alder *(Alnus rugosa)*

Speckled alder is a shrub of the Betulaceae (Birch) family with alternate, elliptic or ovate-oblong leaves. The leaves are rounded at the base with doubly serrate margins. The bark of this species is gray to reddish-brown with conspicuous white or light-colored lenticels. This species is present in low areas around large wetlands near Lake Michigan and is rare elsewhere throughout the state (Wilhelm and Rericha 2017).

Speckled alder was found in Habitat Units H01, H05, H07, and H19 (Northern Indiana Commuter Transportation District 2017).

1.1.3.2 Bebb's oval sedge *(Carex bebbii)*

Bebb's oval sedge grows in dense clusters or tufts from 7.5 to 35 inches in height. Perigynia are arranged in 4-12 dense sessile spikes, ascending with pale green to light brown coloration (Gleason and Cronquist 1991). This species grows infrequently in fens, wet prairies, sedge meadows, marshes and sphagnum bogs and is recorded in Lake and La Porte Counties (Wilhelm and Rericha 2017).

Bebb's oval sedge was found in Habitat Units H02, H08, H10, H17, H29, and H40 (Northern Indiana Commuter Transportation District 2017).

1.1.3.3 Long sedge *(Carex folliculata)*

Long sedge is a distinct species that grows in large clumps to a height up to 39 inches. Perigynia of long sedge are long-attenuate and slender, ascending or nearly spreading with a yellowish to light green color. The pistillate spikes are separate, attached on peduncles with the distal peduncle shorter than the proximal. This species grows in wet forests, bogs, seeps, or other wetlands with acidic, sandy, or peaty soils (Wilhelm and Rericha 2017).

Long sedge was found in Habitat Units H05, H07, H08, H10, H14, and H19 (Northern Indiana Commuter Transportation District 2017).

1.1.3.4 Kalm's St. John's wort *(Hypericum kalmianum)*

Kalm's St. John's wort is a small wetland shrub that grows to 39 inches tall. Bark of this species often peels, curling back on itself, evident on mature specimens. Like most in the genus *Hypericum*, the leaves are opposite, waxy, and dotted with glands beneath. Flowers are yellow and arranged in groups of 3 to 7 terminally. Flowers have numerous stamens and five petals (Gleason and Cronquist 1991). This species grows in calcareous wet and dry sand prairies in areas near Lake Michigan and in fens and marl prairies in areas further inland (Wilhelm and Rericha 2017).

Kalm's St. John's wort was not identified during the EA but is known to grow at various locations near the project area.

1.1.3.5 Needle-pod rush *(Juncus scirpoides)*

Needle-pod rush has slender, septate stems growing to 31.5 inches tall. The inflorescence is compact, spherical, and arranged in dense terminal panicles. This species is a rare coastal plain disjunct occurring in moist sandy habitats without dense vegetation.

Needle-pod rush was found in Habitat Unit H29 (Northern Indiana Commuter Transportation District 2017).

1.1.3.6 Dwarf ginseng *(Panax trifolius)*

Dwarf ginseng is a small species growing to less than 4.5 inches in height. This charismatic species is identified by its three (although sometimes four) leaves with three leaflets and a terminal inflorescence in an umbel to thimble-shaped panicle. Flowers are white to nearly pink in color. Dwarf ginseng is a species of rich, mesic, and wet woodlands and flatwoods with sandy loamy soils.

Dwarf ginseng was found in Habitat Unit H16 (Northern Indiana Commuter Transportation District 2017).

1.1.3.7 White pine *(Pinus strobus)*

White pine are large coniferous trees growing to 100 ft. or more tall. The bark is smooth when young but becoming fissured into rectangular plates when mature. The needles are long and arranged in clusters of five with a pale bluish green color. This species grows infrequently on forested dune slopes and black oak savannas but was once a prominent and prolific species forming white pine savannas in the Indiana Dunes (Wilhelm and Rericha 2017).

White pine was found in Habitat Units H13, H22, H23, and H47 (Northern Indiana Commuter Transportation District 2017).

2 Avoidance Methodology

2.1 Reptiles and Amphibians

Minimizing incidental take of reptile and amphibian species will be accomplished by taking proactive measures to ensure the displacement of target species from impacted areas. Displacement will involve excluding and removing target species from any area potentially impacted by construction activities. Measures to accomplish displacement will include installation of exclusion fencing that completely encompasses construction zones (i.e., exclusion zones), placing cover boards within the exclusion zones to enhance detection, surveying of the exclusion zones by a qualified herpetologist, and removal of target species to safe locations with suitable habitat. All activities will be overseen by a qualified herpetologist with knowledge of the surrounding natural areas and experience with all target species in some fashion in the State of Indiana.

2.1.1 Exclusion Fencing

Exclusion fencing will be installed prior to any construction activities and during the target species' active period active season (April 15 to October 15). If a scenario where surveys were to begin immediately on April 15, fencing would need to be installed prior to October 15 of the previous year. Fencing will be installed around entire areas indicated as high quality habitat in the EA for target species that fall within the construction footprint. This equates to approximately 11.58 acres of suitable habitat that is concentrated in the eastern portion of the project area to be placed in exclusion zones. The design, installation requirements, and monitoring of fencing are discussed below.

2.1.1.1 Design

The exclusion fences will enclose a particular construction zone in its entirety until work begins. The outer-most side of the exclusion fences at each end will include an 'L' portion to force animals traveling along the outer side of the fence away from the project area and prevent them from moving into future construction zones. This design feature is detailed in the Figure Set.

2.1.1.2 Installation

The exclusion fencing will be installed by method of entrenching and completed a minimum of three weeks (21 days) prior to the beginning of construction activities for a particular zone. Fence installation and the 21 day period must occur within the active season (April 15 to October 15) before construction may begin. However, surveys must occur for the duration the exclusion zone is to remain. A trencher may be used to install fencing, but a spotter must survey the area ahead of any vehicles or equipment to ensure no animals are harmed during installation. Fencing will be installed to a minimum depth of one foot below grade and soil surrounding the fencing must be replaced and compacted along the fence to ensure the base of the fencing is secure. No gaps or holes in the fencing will be allowed. Once the 21 day period has concluded and/or construction is about to begin, all fencing except for the outer-most fence (the fence furthest from the existing track) may be removed. The outer-most fence will remain until construction in that area is complete.

2.1.1.3 Monitoring

Regular monitoring of fencing during the minimum three week period will be conducted to verify that the fencing is in good condition with no tears or holes, and that the fencing remains upright. If the fencing is damaged at any time, immediate repairs must be made to ensure the exclusion of target species. All sections must be monitored once fencing is installed, including the outer-most fence during construction.

2.1.2 Cover Boards

The cover boards will allow for a more efficient search of target species and increase the rate of detection. After exclusion fencing is installed, plywood cover boards measuring 2 ft. x 2 ft. x 0.5 inches will be placed within each exclusion zone at a density of one board per 0.25 acre for sections (exclusion zones) that are greater than or equal to one acre in size. The boards will be placed at an angle, so that the majority of the board remains in contact with the ground. The cover boards must be in-place for a minimum of three weeks during the active season (April 15 to October 15) prior to the commencement of construction activities occurring within said exclusion zone. The cover boards will be regularly surveyed, every other day, during the minimum three week period. After said period, boards may be removed.

2.1.3 Surveys

After the entrenched fencing and cover boards are installed, the construction zones will be surveyed by a qualified Herpetologist every other day during a 21 day period (11 total survey days) during the active season from April 15 to October 15. The surveys will include visual encounter surveys for target species within the exclusion zone(s) with special attention paid to areas along the fence, checking cover boards, and collecting appropriate data on each individual found. The entire exclusion zone must be searched during each survey day and all cover boards checked. If construction will be conducted during winter months outside of the active season, this survey protocol must be followed during the active season before a zone can be cleared for construction. Surveys will continue beyond the 21 day period if an area is to remain enclosed and construction does not begin. The survey will continue and will follow the every other day schedule.

2.1.3.1 Data Collection

All surveys will be documented daily. This will include survey location, time at start and finish, number of people surveying, and data about any species encountered for relocation. Any target species encountered will be identified and its location will be marked with a GPS unit. Notes about the surrounding habitat and weather conditions are not required but are encouraged. Once data are collected, individuals of the target species will be relocated outside of the exclusion zones in the nearest habitat available. Suitable habitat must be within 900 feet (300 meters) of the capture location. The collected data will be provided to the Indiana DNR and USFWS (USFWS for FT or FE species only) once per month through the appropriate channels. No participating entities or individuals may disclose locations of animals found as part of this project to other entities or individuals in any form. Location data may only be provided to the Indiana DNR and/or USFWS.

2.1.4 Relocations

Animals found within the exclusion zones will be immediately relocated after they are found. This will involve transporting animals by hand or in an uncovered five-gallon bucket outside of the exclusion zone to the nearest available suitable habitat. Any non-target species found during the surveys will also be relocated from the exclusion zone(s). The animals will not be congregated with other animals and must be transported singly to reduce the potential spread of disease across individuals. The nearest suitable habitat will be identified by a qualified Herpetologist before the surveys begin to make relocations more efficient and transportation times shorter. The transported animals are not to be relocated more than 900 feet from where they are found within the exclusion zones based on guidance from USFWS Habitat Restoration Coordinator.

2.1.5 Safety Guidance

In order to ensure maximum detection of ETR species and avoid incidental take, “Call Sheets” with pictures and descriptions of each of the three reptile species will be provided to all acting parties in the construction process. Call sheets will include contact information for the Herpetologist overseeing surveys in the case a target species is encountered while the Herpetologist is not on-site. In addition, a pre-

construction briefing describing the content of the call sheets and to answer questions from construction staff will take place before construction begins. This briefing will include identification and potential areas where species will be encountered as well as general safety and situational guidance for encounters with ETR target species.

2.2 Bats

2.2.1 Construction Practices

Construction in areas designated as potential habitat for Indiana and northern long-eared bats will be conducted outside of the designated roosting and foraging period. Therefore, the tree clearing activities can occur between the beginning of October and the end of March. The habitat zones will be clearly marked with fluorescent fencing and all personnel will be informed of bat avoidance and minimization practices and construction timing for marked habitat zones. This also includes ensuring all temporary lighting will be directed away from the suitable habitat during the active season as well as using downward facing lights for permanent lighting near moderate quality habitat.

2.3 Plants

2.3.1 Additional surveys

The FONSI outlines the potential for additional surveys to be conducted to assess for the presence of ETR plant species. However, during discussions with the Indiana DNR, March 2020, additional surveys were not deemed necessary but were encouraged to take place when possible to document ETR populations more thoroughly.

2.3.2 Relocations

The FONSI outlines the potential for relocating individual ETR plants found within construction areas. However, consultation with the Indiana DNR staff indicated relocating plants would likely not be an effective means of relocating species outside of construction areas. Rather, propagating seed of select ETR species may provide a more effective means of enhancing populations outside of the construction area.

2.3.3 Seed Collection and Propagation

Seed collected from the corridor was used in 2019 for propagation on NPS property in the Cowles Prairie section of the Indiana Dunes National Park. In addition, 100 plugs of *Carex folliculata* and *Carex debilis* var. *rudgei* will be donated to NPS for enhancing habitats in the Indiana Dunes National Park's Cowles Bog Unit. These plugs will be grown from seed collected in the corridor. Other rare state listed species will not be grown into plugs because of their low success rate germinating from seed or because of their slow growth rate. Discussion of this with IDNR Regional Ecologist in March 2020 lead to a concurrence of this plan with NICTD project management.

2.3.4 Re-Seeding

The re-seeding of temporary impacts will be conducted after the construction activities are completed. The temporary impacted uplands will be seeded with an upland sand prairie mix. The temporary impacted wetlands will be seeded with two different seed mixes and seeded based on their quality designated by FQI scores from the EA. A native FQI score threshold of 30.0 will be used to distinguish between high quality aquatic resources (HQAR) and other aquatic resources. The FQI of 30.0 threshold is based on the descriptions of the distribution of FQI scores in the Chicago Region, where most areas fall below an FQI of 20.0 and areas with an FQI of 35.0 or greater represent areas of "profound importance" (Swink and Wilhelm 1994). Therefore, any wetland with an FQI greater than or equal to 30.0 will be seeded with a conservative seed mix (i.e., a HQAR mix), while wetlands with an FQI less than 30.0 will be seeded with a

common wetland seed mix. Based on the vegetation surveys as part of the EA, seven wetlands met the HQAR designation. All seed mixes will be approved by both the NPS and Indiana DNR staff and will be from locally sourced genotypes. In addition to seeding, the post-disturbance seed bank responses in areas with sandy soils are expected to be positive. Therefore, it is possible that the seed bank response will effectively supplement the seeding in these areas with conservative species.

3 Summary

Historic records and suitable habitat for a variety of both federal and state-listed species exist at various locations along the 26.6 mile proposed Double Track Northwest Indiana Project. This includes three reptile, two bat, and seven plant species. Proactive measures to reduce and minimize incidental take of target species will include exclusion fencing, cover board surveys, visual encounter surveys, timing construction activities during dormant periods, and re-seeding temporary impacts. Surveys will be conducted by qualified professionals, including by a qualified Herpetologist. Guidance in this Avoidance Plan is designed to incorporate the commitments in the FONSI, data collected in the EA, and guidance from the USFWS, NPS, and Indiana DNR.

Potential Sequence of Events:

1. Exclusion fencing installation.
2. Cover board installation.
3. Survey period of 21 days.
4. Exclusion fencing and cover boards removed except for outer-most fence.
5. Construction begins. Best management practices related to bat species is employed.
6. Construction completed, all fencing removed.
7. Seed mix for temporary impacts installed.

4 References

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South Shore Line Double Track
Northwest Indiana

FIGURES

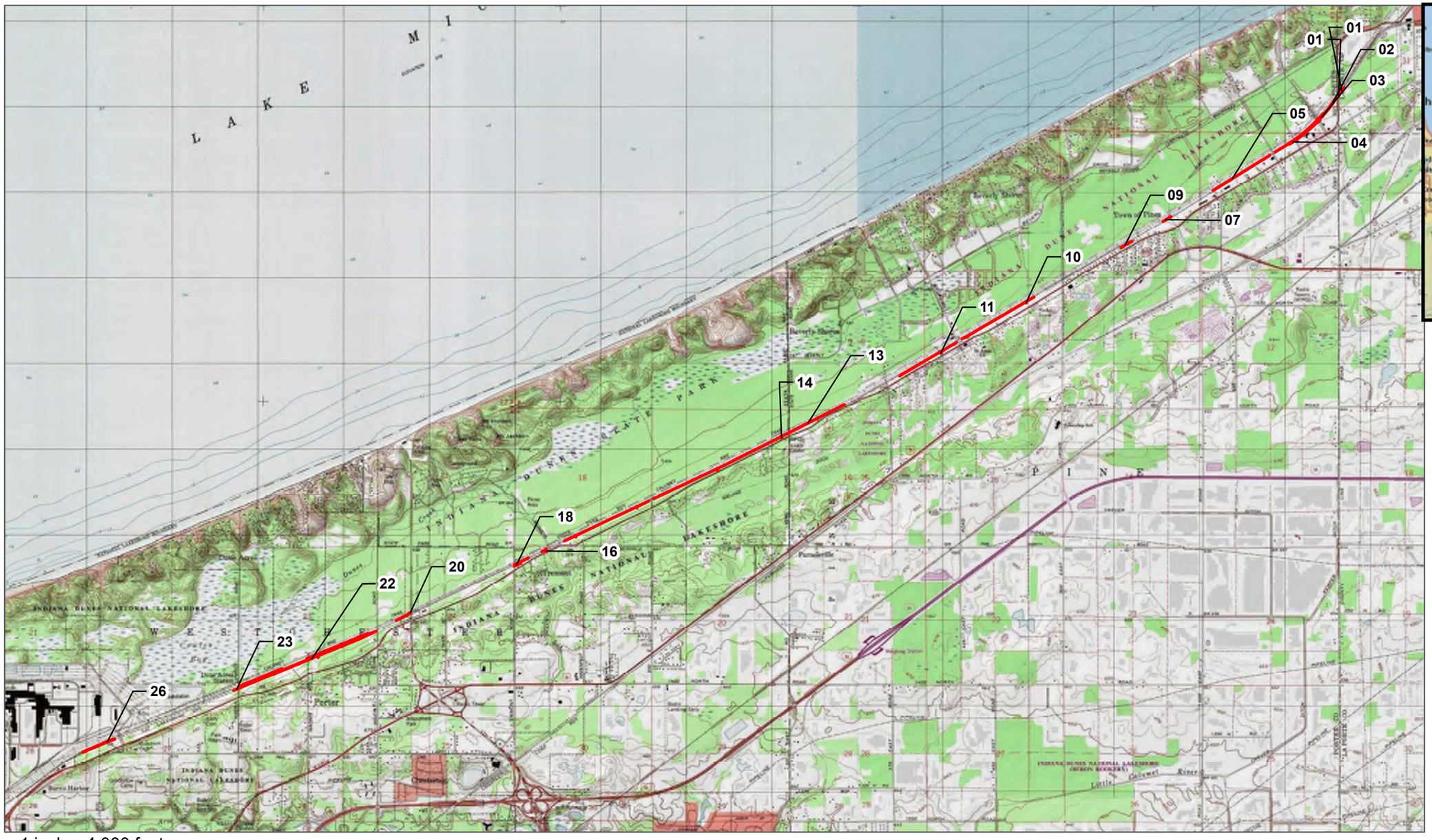

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Figure 1. Project Overview
NICTD Double Track Northwest Indiana (NWI) Project
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Lake, Porter and LaPorte Counties, Indiana

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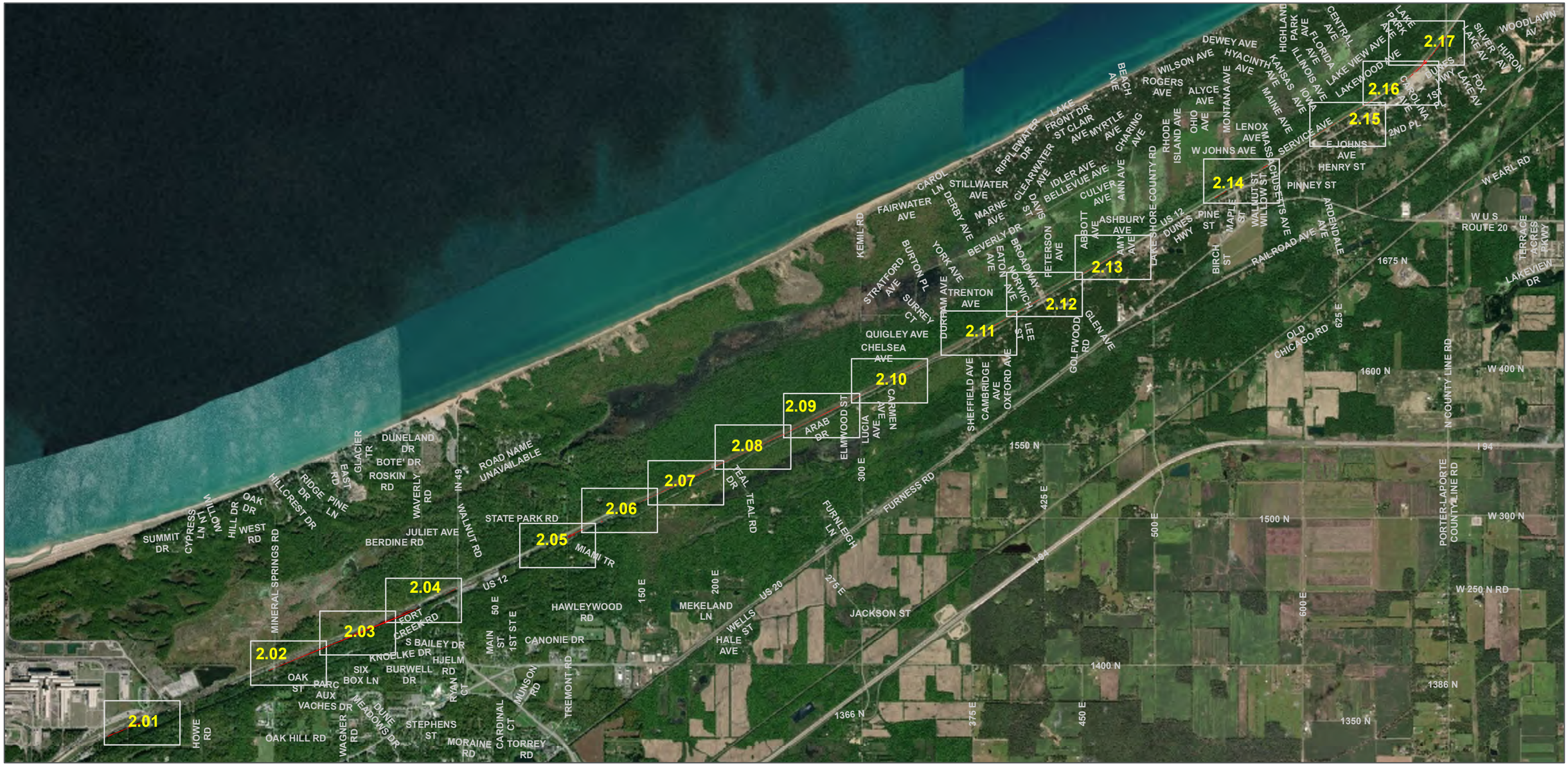

1 inch = 3,500 feet

0 1,750 3,500 7,000 Feet

Legend

- Sheet Index
- ETR Exclusion Mitigation Area

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Figure 2. ETR Exclusion Mitigation Area Sheet Index

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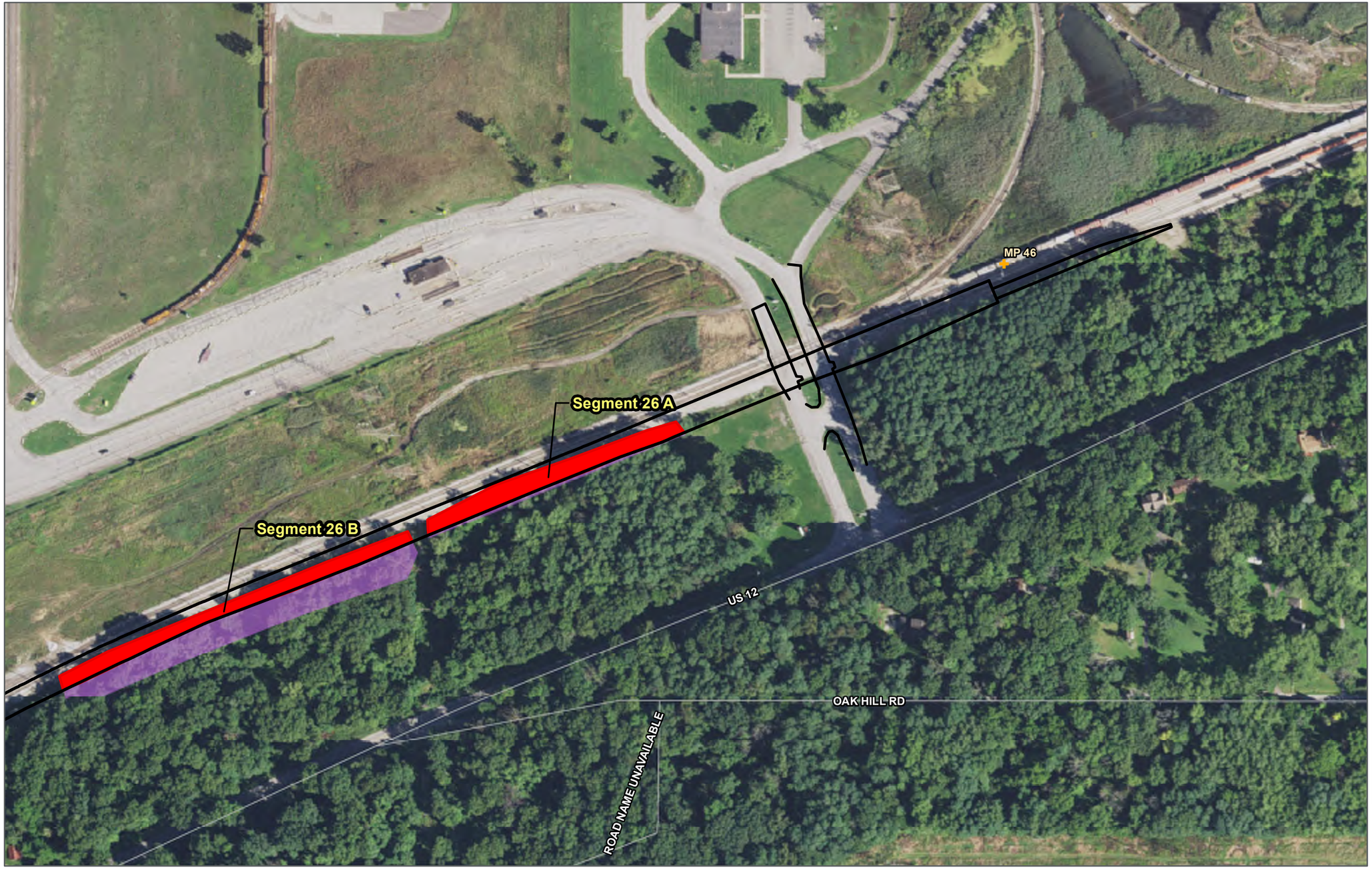
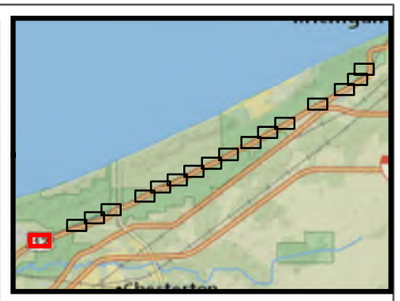
Basemap: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community





Legend

- Mileposts
- High Quality Massasauga Habitat
- Construction Limits
- ETR Exclusion Mitigation Area

ETR High Quality Habitat Exclusion Zones

BS = Beverly Shores Segment Milepost Limits 35.7-43.3

DS = Dune Park Segment Milepost Limits 43.3 - 48.3

LABEL	ACREAGE	PERIMETER (ft)	MP SEGMENT
Segment 26 B	0.451	1549	DP
Segment 26 A	0.424	1134	DP
Segment 23 A	0.053	439	DP
Segment 22 B	0.640	7823	DP
Segment 22 A	3.682	11605	DP
Segment 20 B	0.139	1171	DP
Segment 20 A	0.008	95	DP
Segment 18 B	0.216	1259	BS
Segment 18 A	0.152	639	BS
Segment 16 B	0.090	452	BS
Segment 16 A	0.034	191	BS
Segment 14 E	0.760	7249	BS
Segment 14 D	0.013	173	BS
Segment 14 C	0.016	114	BS
Segment 14 B	1.199	11742	BS
Segment 14 A	0.004	60	BS
Segment 13 B	0.311	4827	BS
Segment 11 B	0.609	5146	BS
Segment 11 A	0.005	68	BS
Segment 10 B	0.526	6462	BS
Segment 10 A	0.004	53	BS
Segment 09 A	0.150	1021	BS
Segment 07 B	0.128	768	BS
Segment 05 B	0.536	5170	BS
Segment 04 B	0.146	1981	BS
Segment 04 A	0.044	577	BS
Segment 03 D	0.144	1133	BS
Segment 03 C	0.321	1244	BS
Segment 03 B	0.267	2999	BS
Segment 03 A	0.117	767	BS
Segment 02 A	0.349	1590	BS
Segment 01 A	0.043	674	BS
TOTAL	11.58	80176	
TOTAL BS	**6.18**	**56360**	
TOTAL DP	**5.39**	**23817**	

1 inch = 200 feet

0 100 200 400 Feet

N W E S

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Figure 2.01. ETR Exclusion Mitigation Areas

NICTD Double Track Northwest Indiana (NWI) Project
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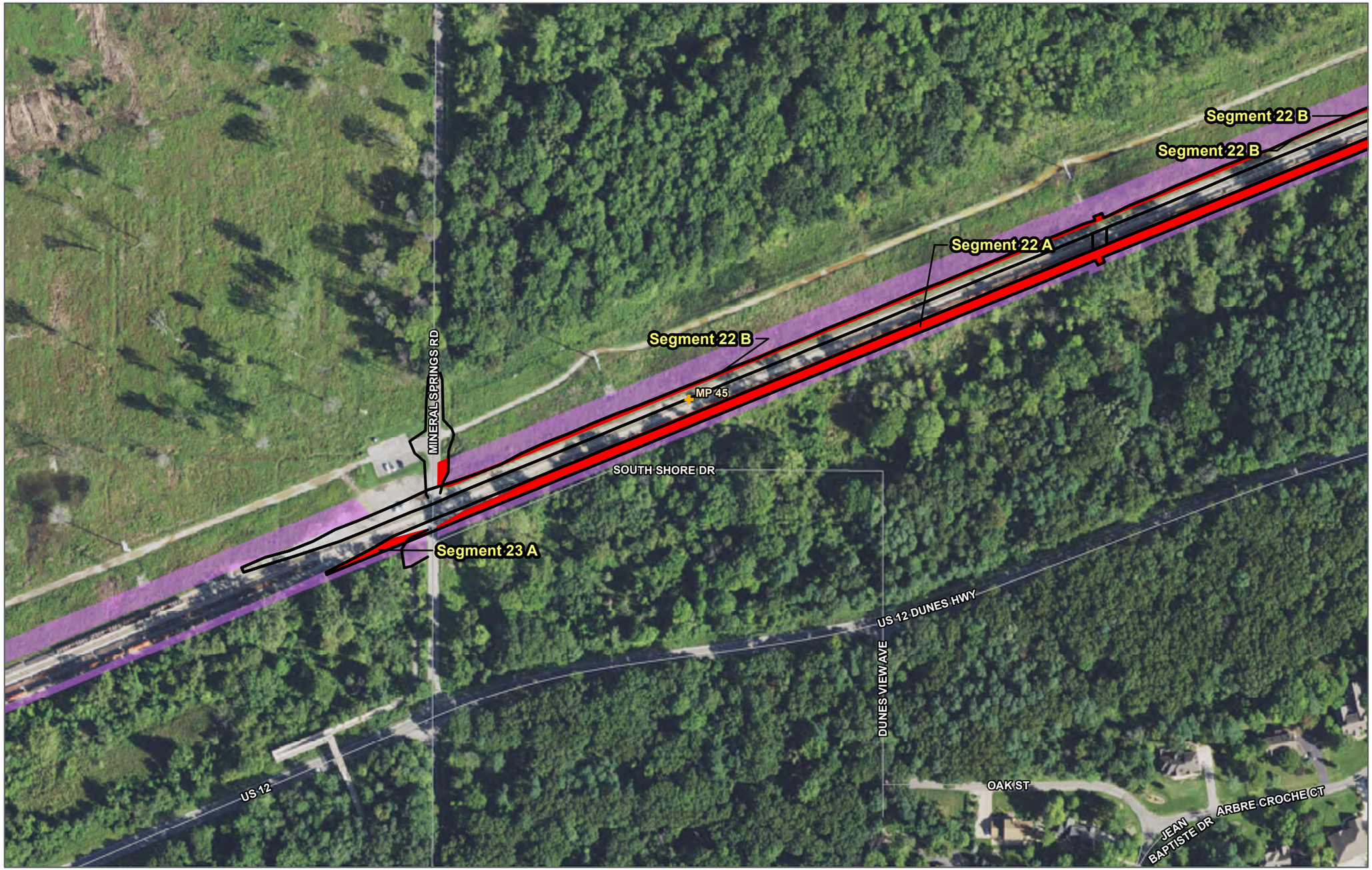

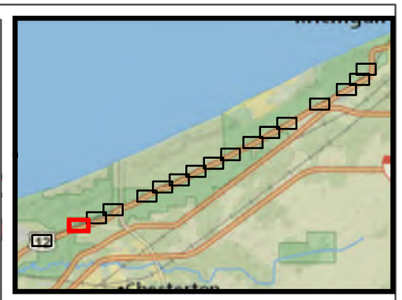

Legend

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ETR High Quality Habitat Exclusion Zones

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Segment 01 A	0.043	674	BS
TOTAL	11.58	80176	
TOTAL BS	**6.18**	**56360**	
TOTAL DP	**5.39**	**23817**	

1 inch = 200 feet

0 100 200 400 Feet

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Figure 2.02. ETR Exclusion Mitigation Areas

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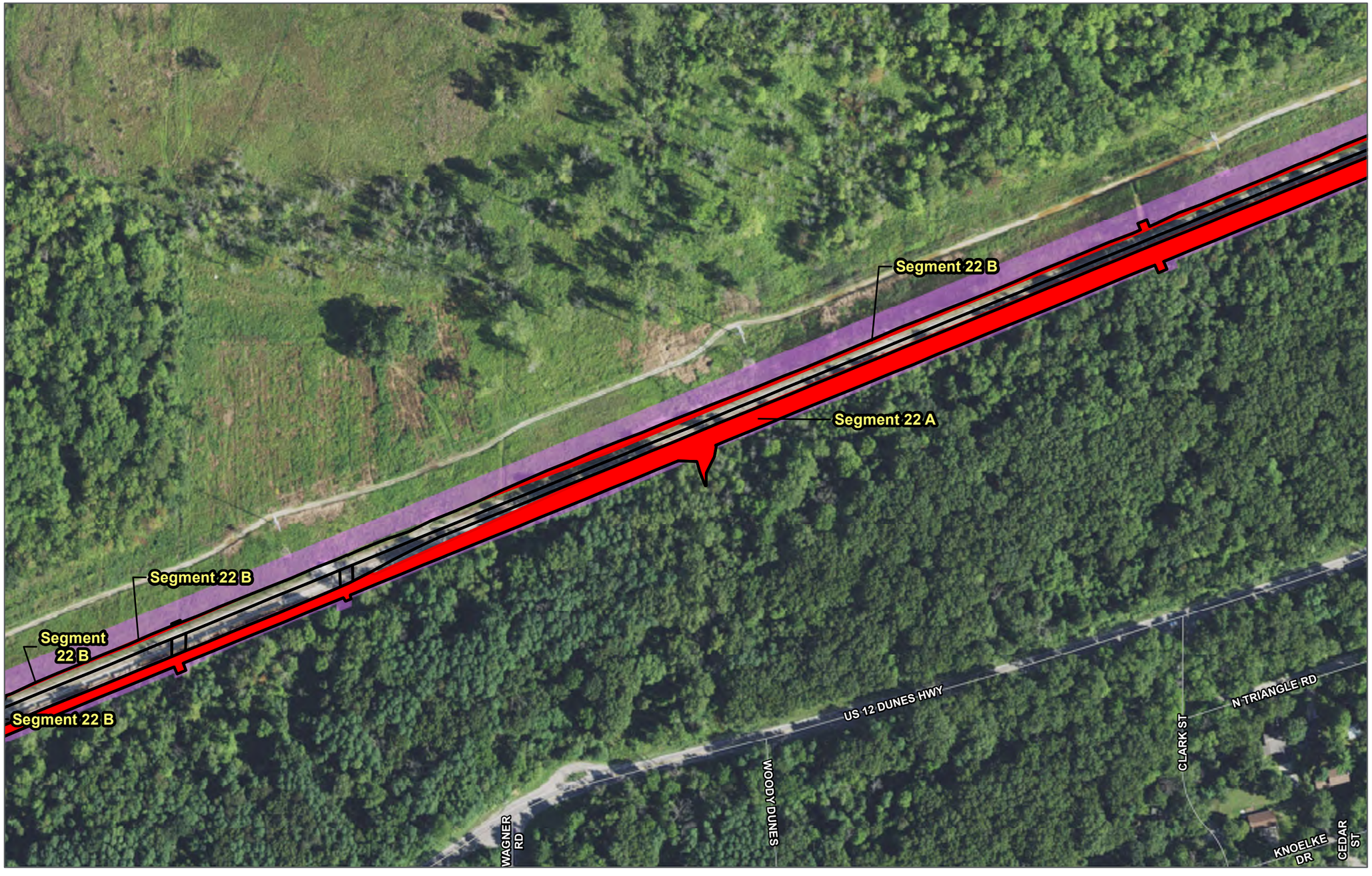

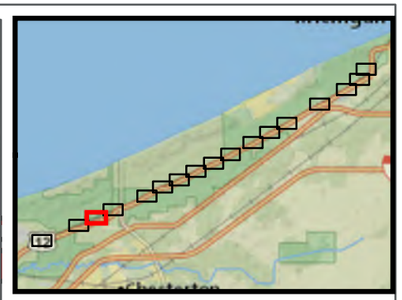

Legend

- Mileposts
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ETR High Quality Habitat Exclusion Zones

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TOTAL BS	**6.18**	**56360**	
TOTAL DP	**5.39**	**23817**	

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Figure 2.03. ETR Exclusion Mitigation Areas

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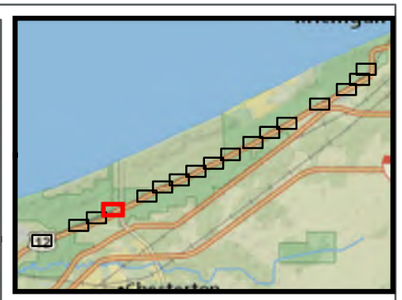

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N W E S

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Figure 2.04. ETR Exclusion Mitigation Areas

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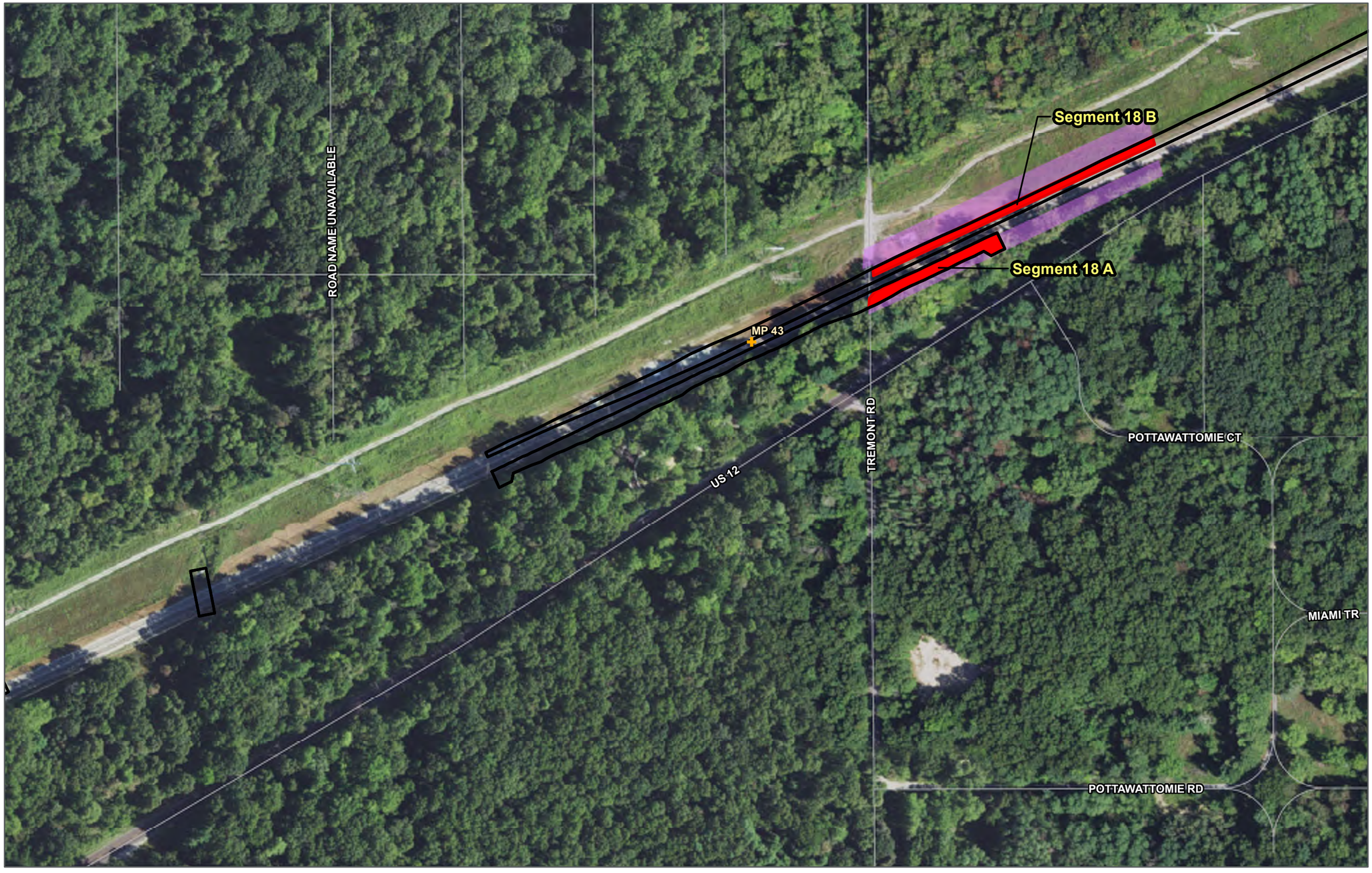

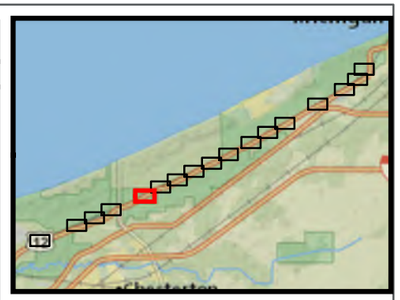

Legend

- Mileposts
- High Quality Massasauga Habitat
- Construction Limits
- ETR Exclusion Mitigation Area

ETR High Quality Habitat Exclusion Zones

BS = Beverly Shores Segment Milepost Limits 35.7-43.3

DS = Dune Park Segment Milepost Limits 43.3 - 48.3

LABEL	ACREAGE	PERIMETER (ft)	MP SEGMENT
Segment 26 B	0.451	1549	DP
Segment 26 A	0.424	1134	DP
Segment 23 A	0.053	439	DP
Segment 22 B	0.640	7823	DP
Segment 22 A	3.682	11605	DP
Segment 20 B	0.139	1171	DP
Segment 20 A	0.008	95	DP
Segment 18 B	0.216	1259	BS
Segment 18 A	0.152	639	BS
Segment 16 B	0.090	452	BS
Segment 16 A	0.034	191	BS
Segment 14 E	0.760	7249	BS
Segment 14 D	0.013	173	BS
Segment 14 C	0.016	114	BS
Segment 14 B	1.199	11742	BS
Segment 14 A	0.004	60	BS
Segment 13 B	0.311	4827	BS
Segment 11 B	0.609	5146	BS
Segment 11 A	0.005	68	BS
Segment 10 B	0.526	6462	BS
Segment 10 A	0.004	53	BS
Segment 09 A	0.150	1021	BS
Segment 07 B	0.128	768	BS
Segment 05 B	0.536	5170	BS
Segment 04 B	0.146	1981	BS
Segment 04 A	0.044	577	BS
Segment 03 D	0.144	1133	BS
Segment 03 C	0.321	1244	BS
Segment 03 B	0.267	2999	BS
Segment 03 A	0.117	767	BS
Segment 02 A	0.349	1590	BS
Segment 01 A	0.043	674	BS
TOTAL	11.58	80176	
TOTAL BS	**6.18**	**56360**	
TOTAL DP	**5.39**	**23817**	

1 inch = 200 feet

0 100 200 400 Feet

N W E S

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Figure 2.05. ETR Exclusion Mitigation Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

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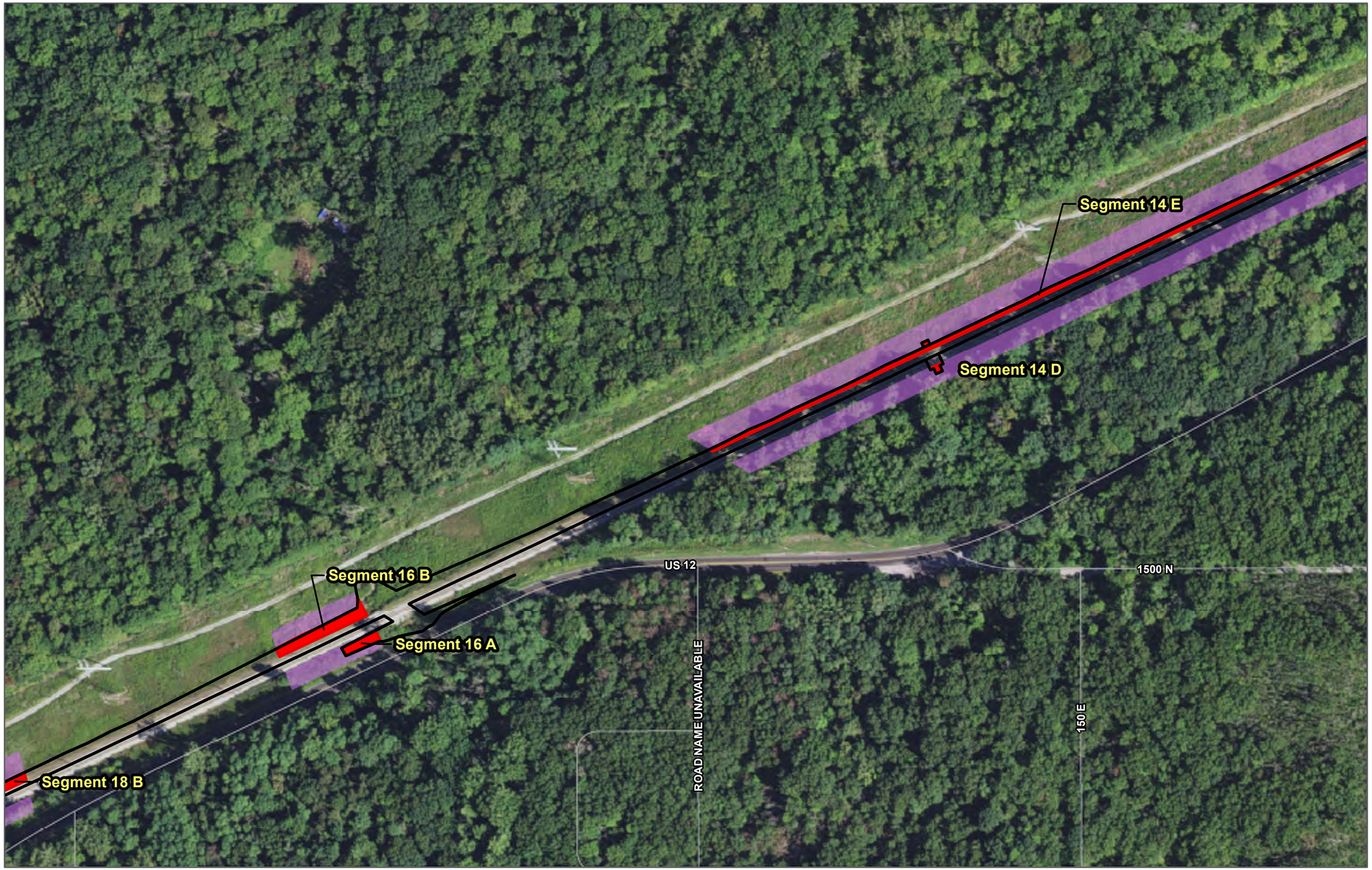

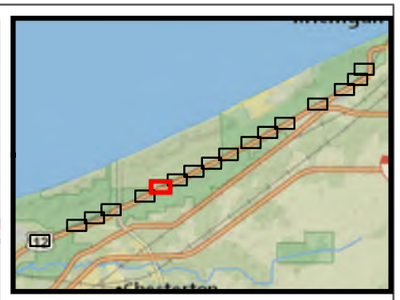

Legend

- Mileposts
- High Quality Massasauga Habitat
- Construction Limits
- ETR Exclusion Mitigation Area

ETR High Quality Habitat Exclusion Zones

BS = Beverly Shores Segment Milepost Limits 35.7-43.3

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LABEL	ACREAGE	PERIMETER (ft)	MP SEGMENT
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Segment 03 A	0.117	767	BS
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Segment 01 A	0.043	674	BS
TOTAL	11.58	80176	
TOTAL BS	**6.18**	**56360**	
TOTAL DP	**5.39**	**23817**	

1 inch = 200 feet

0 100 200 400 Feet

N W E S

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Figure 2.06. ETR Exclusion Mitigation Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
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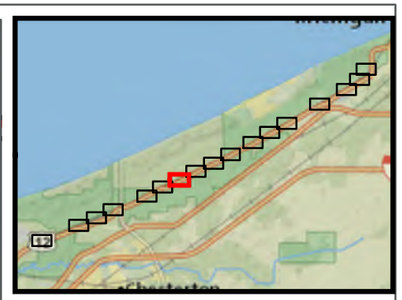

Legend

- Mileposts
- High Quality Massasauga Habitat
- Construction Limits
- ETR Exclusion Mitigation Area

ETR High Quality Habitat Exclusion Zones

BS = Beverly Shores Segment Milepost Limits 35.7-43.3

DS = Dune Park Segment Milepost Limits 43.3 - 48.3

LABEL	ACREAGE	PERIMETER (ft)	MP SEGMENT
Segment 26 B	0.451	1549	DP
Segment 26 A	0.424	1134	DP
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Segment 03 C	0.321	1244	BS
Segment 03 B	0.267	2999	BS
Segment 03 A	0.117	767	BS
Segment 02 A	0.349	1590	BS
Segment 01 A	0.043	674	BS
TOTAL	11.58	80176	
TOTAL BS	**6.18**	**56360**	
TOTAL DP	**5.39**	**23817**	

1 inch = 200 feet

0 100 200 400 Feet

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Figure 2.07. ETR Exclusion Mitigation Areas

NICTD Double Track Northwest Indiana (NWI) Project
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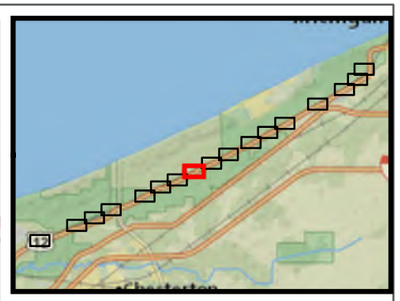

Legend

- Mileposts
- High Quality Massasauga Habitat
- Construction Limits
- ETR Exclusion Mitigation Area

ETR High Quality Habitat Exclusion Zones

BS = Beverly Shores Segment Milepost Limits 35.7-43.3

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LABEL	ACREAGE	PERIMETER (ft)	MP SEGMENT
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Segment 03 B	0.267	2999	BS
Segment 03 A	0.117	767	BS
Segment 02 A	0.349	1590	BS
Segment 01 A	0.043	674	BS
TOTAL	11.58	80176	
TOTAL BS	**6.18**	**56360**	
TOTAL DP	**5.39**	**23817**	

1 inch = 200 feet

0 100 200 400 Feet

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Figure 2.08. ETR Exclusion Mitigation Areas

NICTD Double Track Northwest Indiana (NWI) Project
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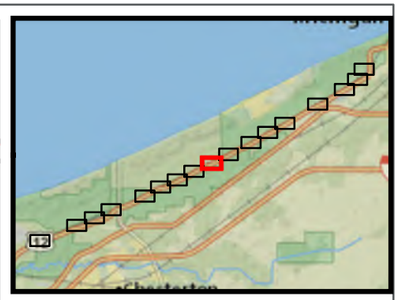

Legend

- Mileposts
- High Quality Massasauga Habitat
- Construction Limits
- ETR Exclusion Mitigation Area

ETR High Quality Habitat Exclusion Zones

BS = Beverly Shores Segment Milepost Limits 35.7-43.3

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LABEL	ACREAGE	PERIMETER (ft)	MP SEGMENT
Segment 26 B	0.451	1549	DP
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Segment 05 B	0.536	5170	BS
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Segment 03 D	0.144	1133	BS
Segment 03 C	0.321	1244	BS
Segment 03 B	0.267	2999	BS
Segment 03 A	0.117	767	BS
Segment 02 A	0.349	1590	BS
Segment 01 A	0.043	674	BS
TOTAL	11.58	80176	
TOTAL BS	**6.18**	**56360**	
TOTAL DP	**5.39**	**23817**	

1 inch = 200 feet

0 100 200 400 Feet

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Figure 2.09. ETR Exclusion Mitigation Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
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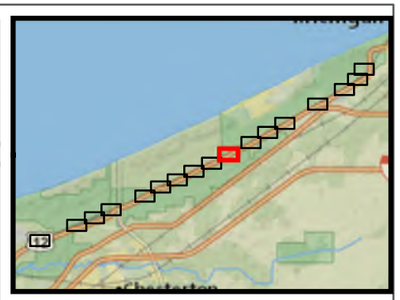

Legend

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TOTAL BS	**6.18**	**56360**	
TOTAL DP	**5.39**	**23817**	

1 inch = 200 feet

0 100 200 400 Feet

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Figure 2.10. ETR Exclusion Mitigation Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

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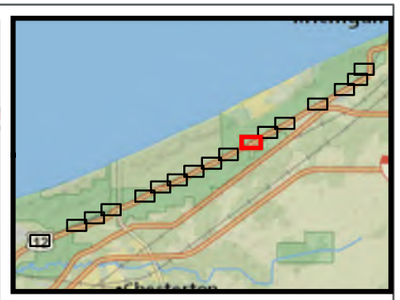

Legend

- Mileposts
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0 100 200 400 Feet

N W E S

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Figure 2.11. ETR Exclusion Mitigation Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

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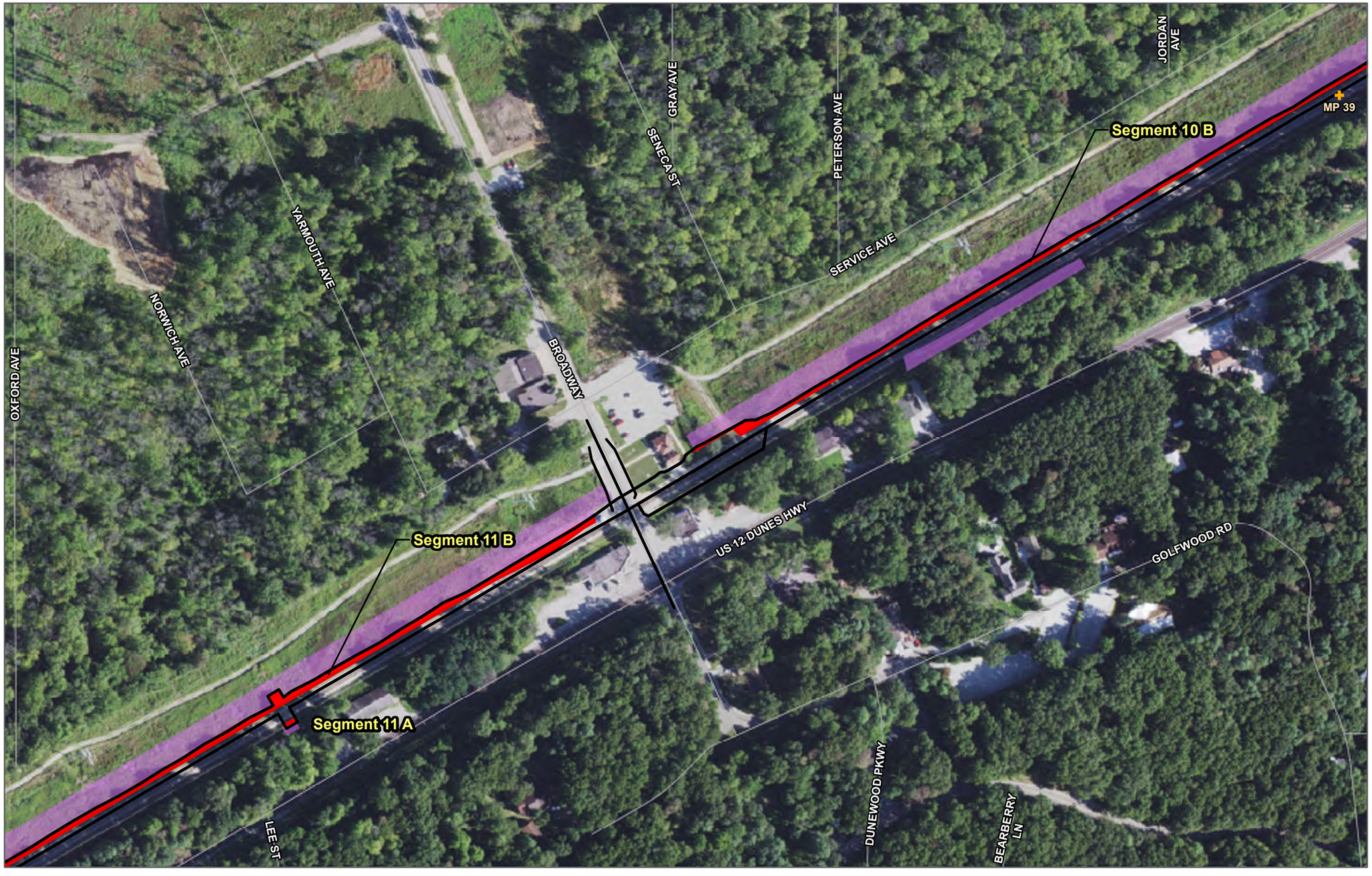

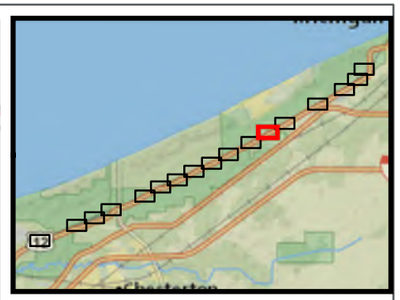

Legend

- Mileposts
- High Quality Massasauga Habitat
- Construction Limits
- ETR Exclusion Mitigation Area

ETR High Quality Habitat Exclusion Zones

BS = Beverly Shores Segment Milepost Limits 35.7-43.3

DS = Dune Park Segment Milepost Limits 43.3 - 48.3

LABEL	ACREAGE	PERIMETER (ft)	MP SEGMENT
Segment 26 B	0.451	1549	DP
Segment 26 A	0.424	1134	DP
Segment 23 A	0.053	439	DP
Segment 22 B	0.640	7823	DP
Segment 22 A	3.682	11605	DP
Segment 20 B	0.139	1171	DP
Segment 20 A	0.008	95	DP
Segment 18 B	0.216	1259	BS
Segment 18 A	0.152	639	BS
Segment 16 B	0.090	452	BS
Segment 16 A	0.034	191	BS
Segment 14 E	0.760	7249	BS
Segment 14 D	0.013	173	BS
Segment 14 C	0.016	114	BS
Segment 14 B	1.199	11742	BS
Segment 14 A	0.004	60	BS
Segment 13 B	0.311	4827	BS
Segment 11 B	0.609	5146	BS
Segment 11 A	0.005	68	BS
Segment 10 B	0.526	6462	BS
Segment 10 A	0.004	53	BS
Segment 09 A	0.150	1021	BS
Segment 07 B	0.128	768	BS
Segment 05 B	0.536	5170	BS
Segment 04 B	0.146	1981	BS
Segment 04 A	0.044	577	BS
Segment 03 D	0.144	1133	BS
Segment 03 C	0.321	1244	BS
Segment 03 B	0.267	2999	BS
Segment 03 A	0.117	767	BS
Segment 02 A	0.349	1590	BS
Segment 01 A	0.043	674	BS
TOTAL	11.58	80176	
TOTAL BS	**6.18**	**56360**	
TOTAL DP	**5.39**	**23817**	

1 inch = 200 feet

0 100 200 400 Feet

N W E S

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Figure 2.12. ETR Exclusion Mitigation Areas

NICTD Double Track Northwest Indiana (NWI) Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

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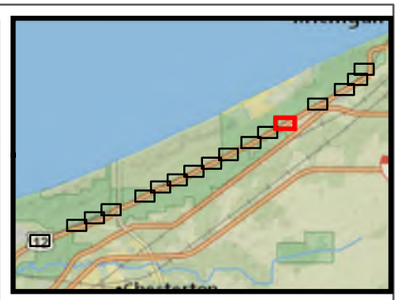

Legend

- Mileposts
- High Quality Massasauga Habitat
- Construction Limits
- ETR Exclusion Mitigation Area

ETR High Quality Habitat Exclusion Zones

BS = Beverly Shores Segment Milepost Limits 35.7-43.3

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LABEL	ACREAGE	PERIMETER (ft)	MP SEGMENT
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TOTAL BS	**6.18**	**56360**	
TOTAL DP	**5.39**	**23817**	

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0 100 200 400 Feet

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Figure 2.13. ETR Exclusion Mitigation Areas

NICTD Double Track Northwest Indiana (NWI) Project
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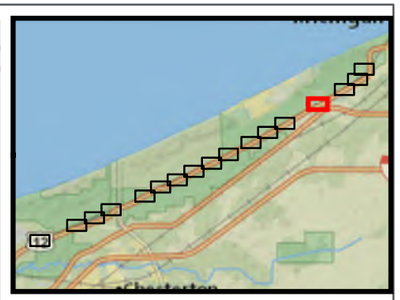

Legend

- Mileposts
- High Quality Massasauga Habitat
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Segment 01 A	0.043	674	BS
TOTAL	11.58	80176	
TOTAL BS	**6.18**	**56360**	
TOTAL DP	**5.39**	**23817**	

1 inch = 200 feet

0 100 200 400 Feet

N W E S

Project No. J177345200

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Figure 2.14. ETR Exclusion Mitigation Areas

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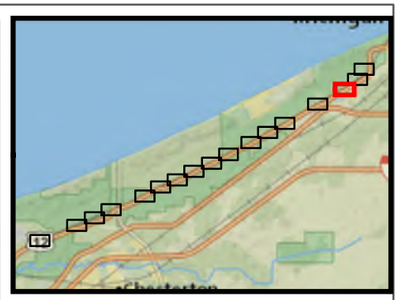

Legend

- Mileposts
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TOTAL	11.58	80176	
TOTAL BS	**6.18**	**56360**	
TOTAL DP	**5.39**	**23817**	

1 inch = 200 feet

0 100 200 400 Feet

N W E S

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Figure 2.15. ETR Exclusion Mitigation Areas

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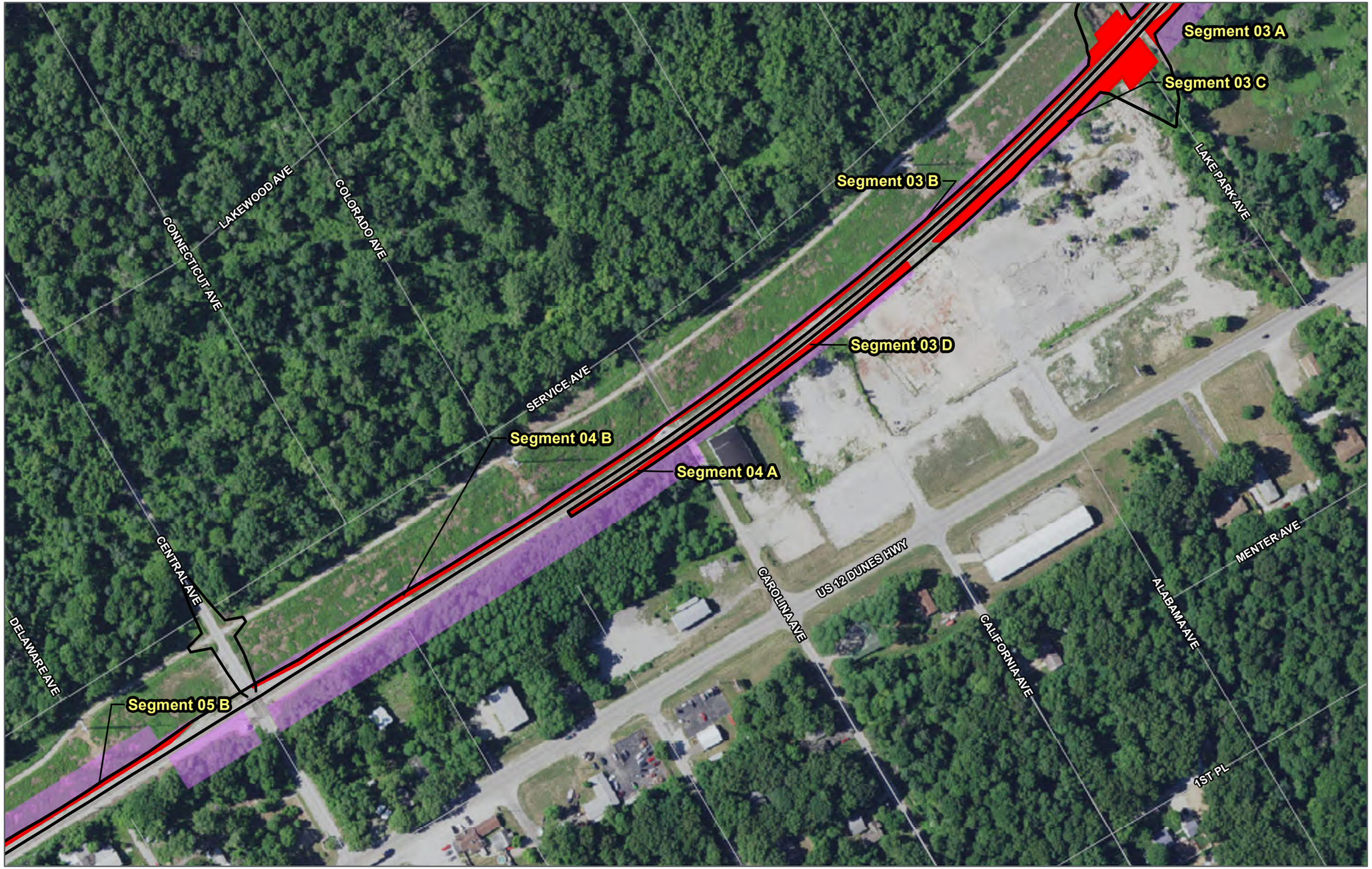

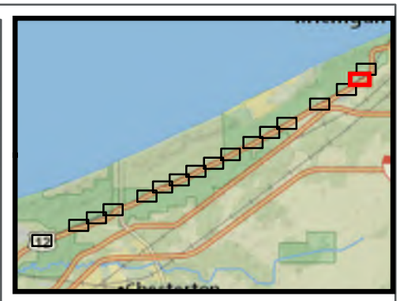

Legend

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Segment 03 A	0.117	767	BS
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Segment 01 A	0.043	674	BS
TOTAL	11.58	80176	
TOTAL BS	**6.18**	**56360**	
TOTAL DP	**5.39**	**23817**	

1 inch = 200 feet

0 100 200 400 Feet

N W E S

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Figure 2.16. ETR Exclusion Mitigation Areas

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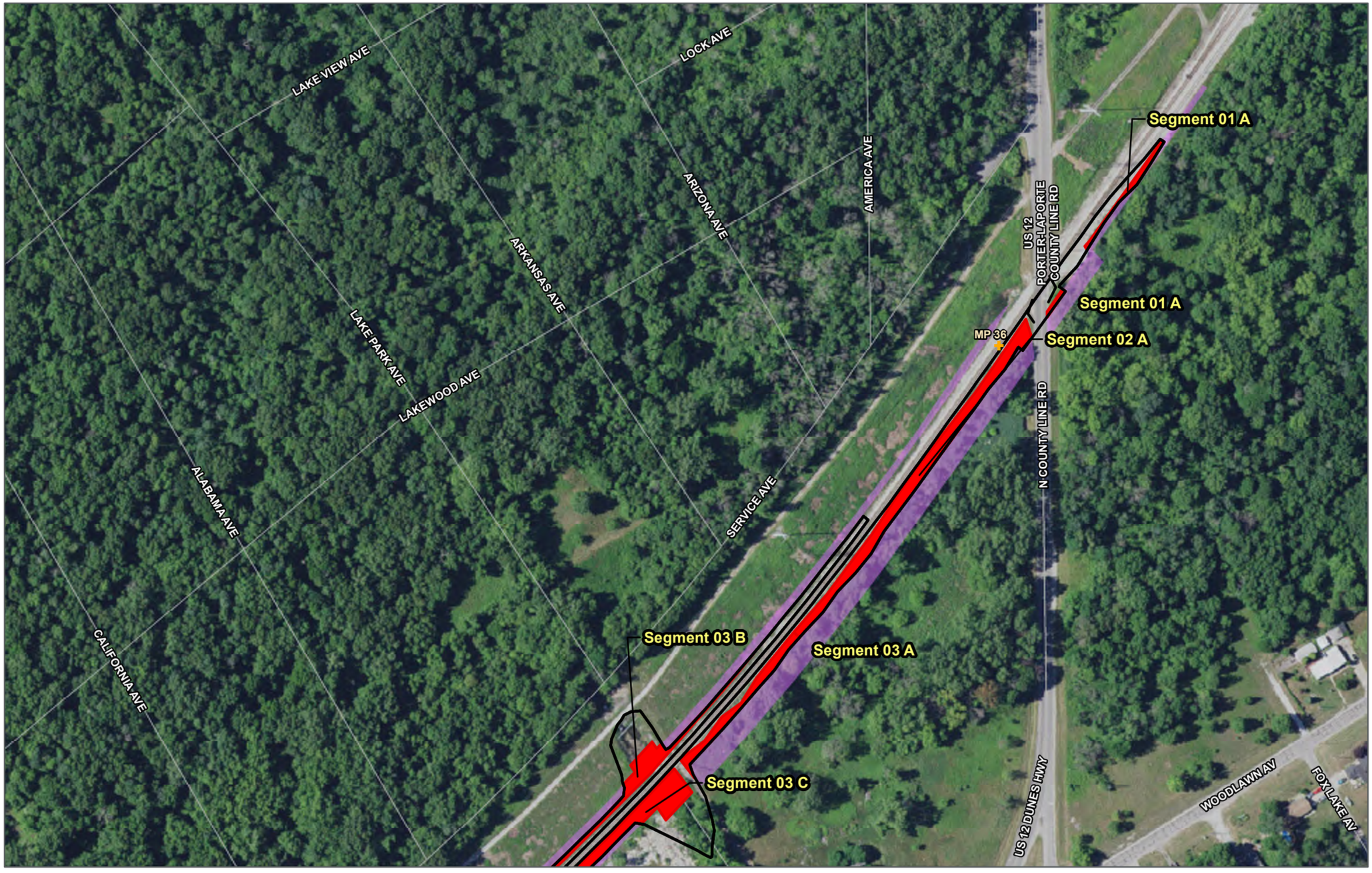

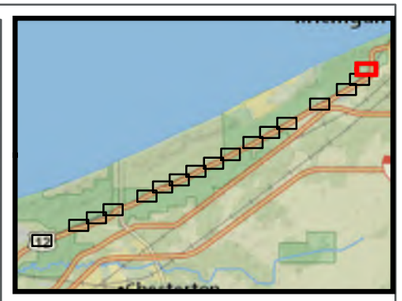

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Figure 2.17. ETR Exclusion Mitigation Areas

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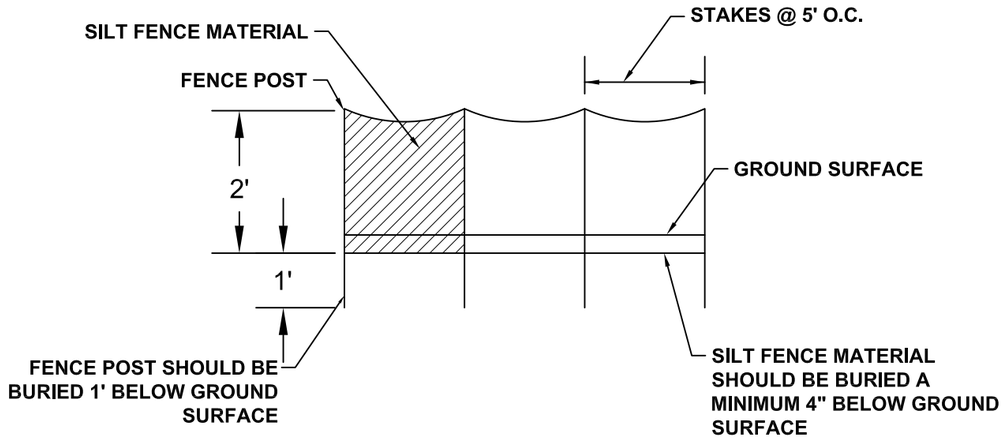
SILT FENCE MATERIALS

Silt Fence shall be a machine produced, non-woven geotextile of 100%polypropylene meeting the physical properties below.

All stakes shall be 2" X 2" hardwood 36" tall with 24" tall lath stapled to stakes over fabric as reinforcement.

All silt fence shall be prefabricated by the supplier. No field assembly will be accepted.

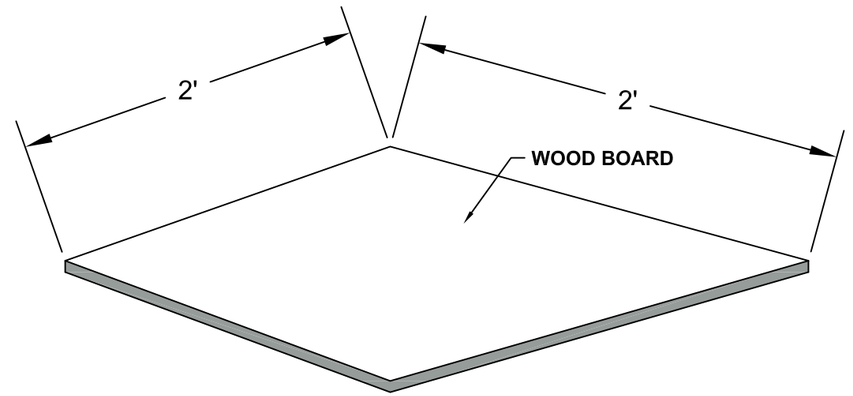
Fabric Weight..... 4 oz/syd
Grab Strength..... Warp 125 lbs.
Elongation..... Warp 50 %
Trapezoidal Tear Strength..... 50 lbs.
Burst Strength..... 200 psi
UV Resistance..... > 70 %
A.O.S..... 50-80
Slurry Flow Rate..... 225 gpm/sq. ft
Sediment Retention..... 75 %



1 ***SILT FENCE***
NOT TO SCALE

COVER BOARD MATERIAL

1. Cover board shall be cut from formaldehyde-free wood boards.
2. Place board at equal distances every 1/10 acre within mitigation area.



2 ***COVER BOARD DETAIL***
NOT TO SCALE

Project No.
J177345200

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Figure 3. Details
NICTD Double Track Northwest Indiana (NWI) Project
AECOM
Lake, Porter and LaPorte Counties, Indiana

Cardno
708 Roosevelt Road, Walkerton, IN 46574 USA
Phone (+1) 574-586-3400 Fax (+1) 574-586-3446
www.cardno.com

Date Created: 3/24/2020
Data Sources:
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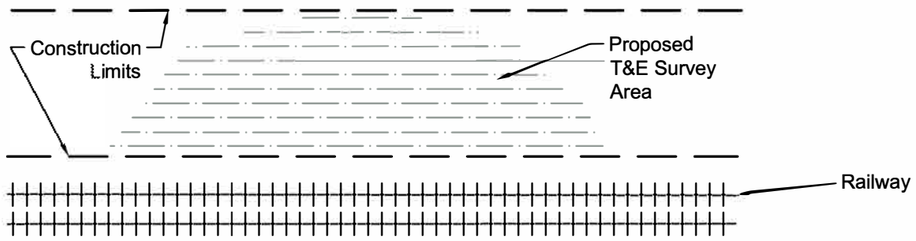
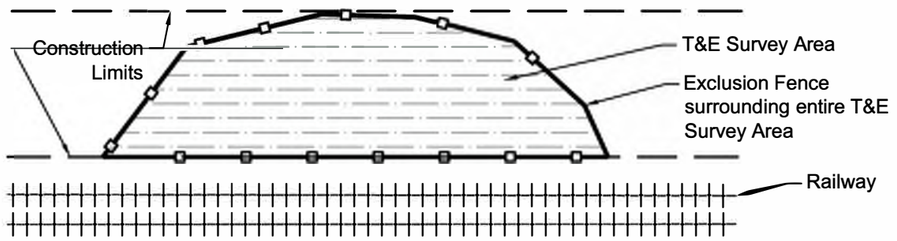
CAD Analyst: ChristIne.DIttmar



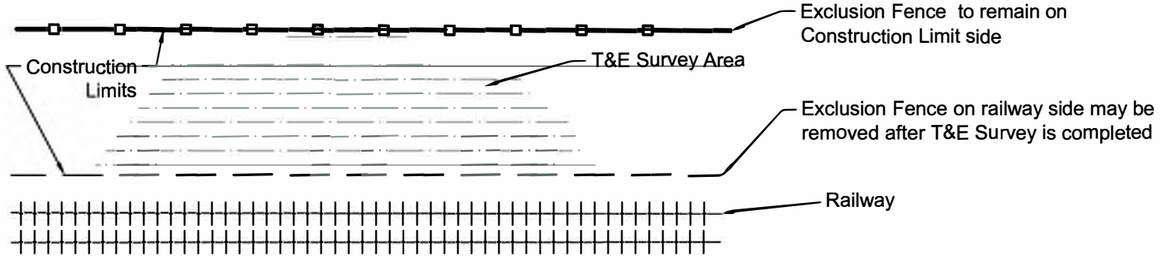
STEP 1

1. Proposed Threatened and Endangered (T&E) Species Survey Area to be determined by herpetologist.



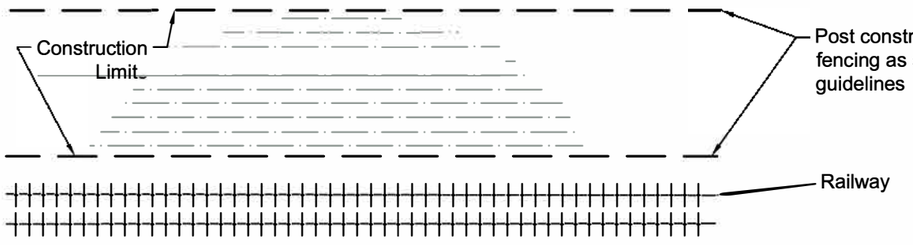
STEP 2

1. Exclusion (silt) fence must be installed around entire perimeter of T&E Survey Area under the oversight of an onsite herpetologist prior to any construction activities including clearing and grubbing during the species active period between April 15 and October 15.
2. Exclusion Fence must be installed with stakes placed on the construction side of the fence to prevent animals from using the stakes to maneuver over fencing.
3. Exclusion Fence must be 20 inches above ground with a minimum of 4 inches trenched into the soil.
4. Soils must be carefully compacted against both sides of the fence for its entire length to prevent animals from passage underneath.
5. Exclusion Fence must be inspected twice weekly on non-consecutive days.
6. Repair to the Exclusion Fence must be made immediately and the herpetologist notified.
7. Exclusion Fence must remain in place for 21 days.



STEP 3

1. After 21 days the herpetologist may be contacted for permission to remove the side of the fence adjacent to the railway.
2. The construction limit side of the fence (railway side) may be removed with herpetologist approval.



STEP 4

1. Post construction silt fence may be removed from project areas in accordance with design specifications.

3 ***FENCE SEQUENCE***
NOT TO SCALE

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Figure 4. Details
NICTD Double Track Northwest Indiana (NWI) Project
AECOM
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Phone (+1) 574-586-3400 Fax (+1) 574-586-3446
www.cardno.com

Project No. J177345200

Date Created: 3/24/2020
Data Sources:

File Path: R:\Projects\17\177345286_AECOM Master\177345200_NICTD_DoubleTrack_NWI_FinalEngineeringDesignServices\CAD\20200624_Details_AECOM.dwg

CAD Analyst: Christine.Dittmar