FHWA-Indiana Environmental Document

CATEGORICAL EXCLUSION / ENVIRONMENTAL ASSESSMENT FORM

GENERAL PROJECT INFORMATION

Road No./County:	**SR. 149 / Porter**
Designation Number(s):	**1600701**
Project Description/Termini:	**Intersection Improvement** SR 149 from 0.58 to 0.93 mile N. of US 6 Robbins Rd. from 160 ft W. to 160 ft E. of SR 149

X	**Categorical Exclusion, Level 2** – Required Signatories: INDOT DE and/or INDOT ESD
	Categorical Exclusion, Level 3 – Required Signatories: INDOT ESD
	Categorical Exclusion, Level 4 – Required Signatories: INDOT ESD and FHWA
	Environmental Assessment (EA) – Required Signatories: INDOT ESD and FHWA
	Additional Investigation (AI) – The proposed action included a design change from the original approved environmental document. Required Signatories must include the appropriate environmental approval authority

Approval

INDOT DE Signature and Date

INDOT ESD Signature and Date

FHWA Signature and Date

Release for Public Involvement

SFM 06/13/2022
INDOT DE Initials and Date

INDOT ESD Initials and Date

Certification of Public Involvement

INDOT Consultant Services Signature and Date

INDOT DE/ESD Reviewer Signature and Date:

Name and Organization of CE/EA Preparer: James Landry, The Troyer Group

Part I – Public Involvement

Every Federal action requires some level of public involvement, providing for early and continuous opportunities throughout the project development process. **The level of public involvement should be commensurate with the proposed action.**

	Yes	No
Does the project have a historic bridge processed under the Historic Bridges PA*?		x
If No, then:		
Opportunity for a Public Hearing Required?	x	

**A public hearing is required for all historic bridges processed under the Historic Bridges Programmatic Agreement between INDOT, FHWA, SHPO, and the ACHP.*

Discuss what public involvement activities (legal notices, letters to affected property owners and residents (i.e. notice of entry), meetings, special purpose meetings, newspaper articles, etc.) have occurred for this project.

Notice of Survey letters were mailed to potentially affected property owners near the project area on May 29, 2019 notifying them about the project and that individuals responsible for land surveying and field activities may be seen in the area. A sample copy of the Notice of Entry letter is included in Appendix G-1.

Project Does Meet

The project will meet the minimum requirements described in the current Indiana Department of Transportation (INDOT) Public Involvement Manual which requires the project sponsor to offer the public an opportunity to submit comments and/or request a public hearing. Therefore, a legal notice will appear in a local publication contingent upon the release of this document for public involvement. This document will be revised after the public involvement requirements are fulfilled.

Public Controversy on Environmental Grounds

Discuss public controversy concerning community and/or natural resource impacts, including what is being done during the project to minimize impacts.

No controversy

At this time there is no substantial public controversy concerning impacts to the community or to natural resources.

Part II - General Project Identification, Description, and Design Information

Sponsor of the Project: INDOT INDOT District: LaPorte

Local Name of the Facility: SR 149/Robbins Rd.

Funding Source (*mark all that apply*): Federal [x] State [x] Local [ ] Other* [ ]

*If other is selected, please indentify the funding source: _____

PURPOSE AND NEED:

The need should describe the specific transportation problem or deficiency that the project will address. The purpose should describe the goal or objective of the project. The solution to the traffic problem should NOT be discussed in this section.

Need:

The need of this project stems from the frequency and severity of crashes within the project area. According to the Engineer's Report, during a three year period from 2016 through 2019, 43 crashes occurred within the project limits, with 13 of these crashes resulting in injury (Appendix I-4). Based on this number of crashes, the Index of Crash Frequency (ICF) for the project area during this time frame is 4.82. Additionally, an analysis of the estimated costs of these incidents produces an Index of Crash Cost (ICC) of 3.33 for this area. ICF and ICC are measures of the frequency and cost of accidents compared to similar areas, with 0.0 being a neutral value for both measures. Both the ICF and ICC are significantly greater than 0 for this intersection, indicating that accidents are both more frequent and more costly at this location than at similar locations throughout the state. According to INDOT Traffic Safety Standards, a value above 1.0 for either index indicates a serious safety concern, and INDOT categorizes locations with a value of 2.0 or greater for either index as a high crash location.

Crashes at this location are generally attributed to two primary deficiencies at the intersection of SR 149 and Robbins Rd. The first is the lack of left turn lanes on SR 149 leading onto Robbins Rd. Intersections that lack designated left-turn lanes often have elevated numbers of rear-end collisions, and 10 of the 43 accidents at this location, roughly 23%, were rear-end collisions. The only accident type that was more frequent during this period involved vehicles running off the roadway, at 13 incidents. According to the narratives provided for these crashes, the primary cause of vehicles running off the road was improper turning speeds during non-ideal weather conditions, such as rain or ice (Appendix I-10). The other main cause of accidents within the project limits involves the inadequate sight distance looking north onto SR 149 from Robbins Rd. This lack of sight distance likely contributes to the prevalence of right-angle collisions at the intersection. Nine of the 43 accidents in the study period were of this type, making them almost as prevalent as rear-end collisions.

Purpose:

The purpose of this project is to improve the overall safety of the intersection by reducing the number and severity of crashes at this location, bringing the ICF and ICC values closer to 0.

PROJECT DESCRIPTION (PREFERRED ALTERNATIVE):

County: Porter Municipality: Portage

Limits of Proposed Work: SR 149 from 0.58 to 0.93 mile N. of US 6, Robbins Rd. from 160 ft W. to 160 ft E. of SR 149

Total Work Length: 0.35 Mile(s) Total Work Area: 4.6 Acre(s)

	Yes[1]	No
Is an Interstate Access Document (IAD)[1] required?		x
If yes, when did the FHWA provide a Determination of Engineering and Operational Acceptability?	Date:	

[1]*If an IAD is required; a copy of the approved CE/EA document must be submitted to the FHWA with a request for final approval of the IAD.*

Describe location of project including township, range, city, county, roads, etc. Existing conditions should include current conditions, current deficiencies, roadway description, surrounding features, etc. Preferred alternative should include the scope of work, anticipated impacts, and how the project will meet the Purpose and Need. Logical termini and independent utility also need discussed.

Funding/Federal Involvement:

This project was programmed into the 2018-2021 Statewide Transportation Improvement Program (STIP) to receive federal funds. However, prior to acceptance of the 2020-2024 STIP, the funding source was changed from federal funds to state-provided Toll-Lease Amendment Proceeds (TLAP). The Engineering funding amount in the Estimated Project Cost and Schedule section below reflects an amount that was listed in the 2018-2021 STIP. This amount is included in the Total Cost of Project column of the 2020-2024 STIP and will still be covered entirely by the state TLAP.

Projects that utilize the state TLAP are eligible for federal reimbursement by the Federal Highway Administration (FHWA) after the acquisition of Right-of-Way (ROW) has been completed. To qualify for this reimbursement, a project must have an approved National Environmental Policy Act (NEPA) document. This document is intended to fulfill the NEPA document requirement in the event of this reimbursement, as opposed to the State Environmental Policy Act (SEPA) document that would typically be prepared for a State funded project.

Location:

The project is located in Sections 20 and 21, Township 36N, Range 6W, in Portage and Liberty Townships, at the intersection of SR 149 and Robbins Rd. in Porter County, near Portage, IN. The project limits extend along SR 149 from 0.58 to 0.93 mile north of US 6, and along Robbins Rd. from 160 ft. west to 160 ft east of the intersection. A project location map is located in Appendix B-1 and USGS topographic map is located in Appendix B-2. Additional aerial photographs and ground level photographs are attached in Appendix B-3 through B-6.

Existing Conditions:

SR 149 is a two-lane Other Principal Arterial roadway within the project area. The existing roadway consists of two 12-ft travel lanes with approximately 2-ft paved shoulders on either side. There are no existing turn lanes within the project area. Robbins Rd. is classified as a Major Collector, and consists of two 12-ft travel lanes with 2-ft. paved shoulders. Currently, the project area contains stop signs for traffic on Robbins Rd. The surrounding area is primarily agricultural cropland and residential properties, with some forested areas in the northeast quadrant of the project area.

The project's northern terminus is located at the approach to a bridge carrying SR 149 over Salt Creek (Structure 149-64-03978 B) This structure is a single-span, steel, multi-beam bridge that was originally constructed in 1955. It was reconstructed in 1986. The structure has a length of 77 ft. an out-to-out width of 46.5 ft, and an approximately 30-degree skew. The bridge contains bridge and approach guardrails that extend into the northern edge of the project area. The 2019 Inspection Report determined that despite some minor rusting, cracking, and corrosion, the structure is still in good shape.

One small structure, CV 149-064-4.44, is located 915 feet south of the intersection. The existing structure is a 64-ft long, 3-ft by 2-ft Reinforced Concrete Box (RCB) culvert. It does not currently carry a water feature; however, it has degraded significantly, affecting its ability to facilitate drainage during storm events.

Preferred Alternative:

The preferred alternative involves widening SR 149 to install a 12-ft wide two-way left-turn-lane (TWLTL) and altering the vertical alignment of SR 149 north of the intersection. SR 149 will be widened between 10 and 16 ft. on each side in order to create a 56-ft wide roadway through the project area. It will consist of two 12-ft travel lanes, the newly installed 12-ft turn lane, and 10-ft. paved shoulders. The shoulder widening is required to keep this section of roadway in compliance with minimum standards outlined in the Indiana Design Manual (IDM). According to Indiana Design Manual Figure 55-3A, the minimum paved and usable shoulder width for a multi-lane undivided arterial roadway is 8 ft., while the desirable paved and usable widths are 10 ft. and 11 ft. respectively. The roadway will taper at both ends to match the configuration of SR 149 outside of the project area. In order to provide adequate drainage for the widened roadway, side slopes with 2.5:1 to 3:1 slope ratios will be installed by excavating and adding clean fill material as necessary. Roadside ditches will be shifted outward where necessary to accommodate roadway widening. A section of the roadside ditches along the west side of SR 149 extending southward from Robbins Rd. will be converted to a storm sewer system through the installation of 180 linear ft. of 15-in storm sewer pipes. One residential driveway and two field entrances will be replaced near their current locations, with new grades to tie into the widened pavement. Guardrail within the project area will be replaced and lengthened along the west side of SR 149 in or near the current ditchline. Robbins Rd. will be repaved as necessary where it connects to SR 149 to accommodate the widened roadway. Project plan sheets can be found in Appendix B-7 through B-29. Plan sheets illustrating the storm sewer installation, which was added to the project after the development of the most recent full plan set, can be found in Appendix B-30 through B-36.

In order to adjust the vertical alignment of SR 149, a segment of the existing roadway surface north of the center of the intersection will be removed. Fill material will be placed within the removed roadway section and will be resurfaced with new roadway asphalt.

The existing culvert (CV 149-064-4.44) located south of the intersection will be replaced with a 77-ft long, 4-ft by 2-ft RCB culvert. Riprap will be placed at both ends of the structure. In addition to this structure, there are seven, 15-18 in., maintenance pipes located within the project area that will be upgraded, along with 11 maintenance pipes, ranging from 12 to 18 in., that will be removed. End sections matching the existing structure size will be added to one maintenance pipe. Riprap will be placed at the ends of six of the pipes that are being upgraded. The project structure list can be found in Appendix B-29.

Logical Termini/Independent Utility:
The project limits extend along SR 149 from 0.58 to 0.92 mile north of US 6, and along Robbins Rd. from 160 ft. west to 160 ft. east of the intersection. The project termini at all ends are set as close to the intersection as possible while accommodating the required width tapers at the intersection and at the north and south ends. The roadway tapers on SR 149 will allow for the preferred alternative to meet the project's purpose and need without widening the SR 149 bridge over Salt Creek or other sections of the roadway outside of the project area. Therefore, the project will not rely on additional improvements or other projects and has independent utility.

Additional Information:
The maintenance of traffic (MOT) plan for the project involves closing the intersection to traffic and utilizing a detour. The detour will involve US 6, SR 49 and US 20, and will be approximately 16 miles long. This will add 12.4 miles to the average commute. Any provisions for a local detour will be coordinated with local authorities. The MOT plan will be in place for roughly one construction season. MOT plan sheets can be found in Appendix B-14 to B-15. MOT information can also be found in the MOT section of this document.

The preferred alternative meets the project's purpose and need by facilitating safer turning from SR 149 onto Robbins Rd., and by increasing the visibility for both Robbins Rd. traffic and for cars turning left from northbound SR 149. Having a designated left-turn lane is expected to decrease the number of rear-end crashes at the intersection, and the increased visibility eliminates one of the primary deficiencies that leads to right-angle crashes at this intersection.

OTHER ALTERNATIVES CONSIDERED:

Provide a header for each alternative. Describe all discarded alternatives, including the No Build Alternative. Explain why each discarded alternative was not selected. Make sure to state how each alternative meets or does not meet the Purpose and Need and why.

One other alternative was considered:

- "No Build Alternative" – This alternative would leave the existing intersection at SR 149 and Robbins Rd in its current state. This would not address the factors that currently lead to an elevated frequency of crashes at the intersection. The "no-build" alternative would not have associated costs, environmental concerns, or temporary inconveniences, but would allow the elevated frequency and cost of accidents to continue unabated. This would not meet the project's purpose and need, and therefore was not considered further.

The No Build Alternative is not feasible, prudent or practicable because (*Mark all that apply*)

It would not correct existing capacity deficiencies;	
It would not correct existing safety hazards;	x
It would not correct the existing roadway geometric deficiencies;	
It would not correct existing deteriorated conditions and maintenance problems; or	
It would result in serious impacts to the motoring public and general welfare of the economy.	
Other (Describe):	

ROADWAY CHARACTER:

If the proposed action includes multiple roadways, complete and duplicate for each roadway.

Name of Roadway: SR 149
Functional Classification: Other Principal Arterial
Current ADT: 10,261 VPD (2019) Design Year ADT: 11,637 VPD (2042)
Design Hour Volume (DHV): 1,065 Truck Percentage (%): 5.26
Designed Speed (mph): 50 Legal Speed (mph): 50

	Existing		Proposed	
Number of Lanes:	2		3	
Type of Lanes:	Vehicular – 1 NB, 1 SB		Vehicular – 1 NB, 1 SB, and 1 TWLTL	
Pavement Width:	28	ft.	56	ft.
Shoulder Width:	2	ft.	10	ft.
Median Width:	N/A	ft.	N/A	ft.
Sidewalk Width:	N/A	ft.	N/A	ft.

Setting:	x	Urban		Suburban		Rural
Topography:	x	Level		Rolling		Hilly

Name of Roadway: Robbins Rd.
Functional Classification: Major Collector
Current ADT: 2,176 VPD (2020) Design Year ADT: N/A VPD (2042)
Design Hour Volume (DHV): 232 Truck Percentage (%): 1
Designed Speed (mph): 35 Legal Speed (mph): 35

	Existing		Proposed	
Number of Lanes:	2		2	
Type of Lanes:	Vehicular – 1 EB, 1 WB		Vehicular – 1 EB, 1 WB	
Pavement Width:		ft.		ft.
Shoulder Width:		ft.		ft.
Median Width:	N/A	ft.	N/A	ft.
Sidewalk Width:	N/A	ft.	N/A	ft.

Setting:	x	Urban		Suburban		Rural
Topography:	x	Level		Rolling		Hilly

BRIDGES AND/OR SMALL STRUCTURE(S):

If the proposed action includes multiple structures, complete and duplicate for each bridge and/or small structure. Include both existing and proposed bridge(s) and/or small structure(s) in this section.

Structure/NBI Number(s): 149-64-03978 B (NBI No. 027350) Sufficiency Rating: 98.5, 2019 Bridge Inspection Report
(Rating, Source of Information)

	Existing		Proposed	
Bridge/Structure Type:	Steel, Multi-beam Bridge		Steel, Multi-beam Bridge	
Number of Spans:	1		1	
Weight Restrictions:	N/A	ton	N/A	ton
Height Restrictions:	N/A	ft.	N/A	ft.
Curb to Curb Width:	44	ft.	44	ft.
Outside to Outside Width:	46.5	ft.	46.5	ft.
Shoulder Width:	10	ft.	10	ft.

Describe impacts and work involving bridge(s), culvert(s), pipe(s), and small structure(s). Provide details for small structure(s): structure number, type, size (length and dia.), location and impacts to water. Use a table if the number of small structures becomes large. If the table exceeds a complete page, put it in the appendix and summarize the information below with a citation to the table.

Presence:

One bridge, Structure 149-64-03978 B (NBI No. 027350), is located within and adjacent to the project area. The project's northern terminus is located at the southern approach to the structure. The structure carries SR 149 over Salt Creek. It is a single-span, steel, multi-beam bridge that was originally constructed in 1955 and is not historic. It was reconstructed in 1986. The structure has a length of 77 ft. an out-to-out width of 46.5 ft, and an approximately 30-degree skew. Bridge and approach guardrails extend into the northern edge of the project area. The 2019 Inspection Report determined that despite some minor rusting, cracking, and corrosion, the structure is still in good shape. The southern approach will be included in the pavement tapering allowing for a transition from the two-lane bridge to the three-lane roadway. Revetment riprap will be placed adjacent to the southern approach in order to create stable side slopes. No other work will take place on the bridge structure.

One small structure, CV 149-064-4.44, is located 915 feet south of the intersection. The structure is a 64 ft. long, three ft. by two ft. RCB culvert. This structure will be removed and replaced with a 77 ft. long, four ft. by two ft. RCB. Riprap will be placed at both ends of the replacement structure.

In addition to this structure, there are seven, 15-18 in., maintenance pipes located within the project area that will be upgraded, along with 11 maintenance pipes, ranging from 12 to 18 in., that will be removed. End sections matching the existing structure size will be added to one maintenance pipe. Riprap will be placed at the ends of six of the pipes that are being upgraded. The project structure list can be found in Appendix B-29.

MAINTENANCE OF TRAFFIC (MOT) DURING CONSTRUCTION:

	Yes	No
Is a temporary bridge proposed?		x
Is a temporary roadway proposed?		x
Will the project involve the use of a detour or require a ramp closure? (describe below)	x	
Provisions will be made for access by local traffic and so posted.	x	
Provisions will be made for through-traffic dependent businesses.	x	
Provisions will be made to accommodate any local special events or festivals.	x	
Will the proposed MOT substantially change the environmental consequences of the action?		x
Is there substantial controversy associated with the proposed method for MOT?		x

Discuss closures and/or facilities (if any) that will be provided for maintenance of traffic. Any known impacts from these temporary measures should be quantified to the extent possible, particularly with respect to properties such as Section 4(f) resources and wetlands. Any local concerns about access and traffic flow should be detailed as well.

The MOT plan for the project involves closing the intersection to traffic and utilizing a detour. The detour will involve US 6, SR 49 and US 20, and will be approximately 16 miles long. This will add 12.4 miles, or approximately 17 minutes, to the average commute. Any provisions for a local detour will be coordinated with local authorities. The MOT plan will be in place for roughly one construction season. MOT plan sheets can be found in Appendix B-14 to B-15.

The closure will pose a temporary inconvenience to traveling motorists (including school buses and emergency services); however, no significant delays are anticipated, and all inconveniences and delays will cease upon project completion.

ESTIMATED PROJECT COST AND SCHEDULE:

Engineering: $ 185,627 (2019-2021) Right-of-Way: $ 65,000 (2021) Construction: $ 1,367,198 (2021-2022)

Anticipated Start Date of Construction: Spring 2023

RIGHT OF WAY:

	Amount (acres)	
Land Use Impacts	Permanent	Temporary
Residential	0.370	0.104
Commercial	0	0
Agricultural	1.914	0.190
Forest	0.627	0.195
Wetlands	0	0
Other:	-	-
Other:	-	-
TOTAL	2.911	0.489

Describe both Permanent and Temporary right-of-way and describe their current use. Typical and Maximum right-of-way widths (existing and proposed) should also be discussed. Any advance acquisition, reacquisition or easements, either known or suspected, and their impacts on the environmental analysis should be discussed.

Existing ROW consists primarily of paved roadway and shoulders, vegetated side slopes, and residential/agricultural landscaped area, with a portion of forested area towards the northern terminus of the project area. The existing ROW corridor is approximately 60 ft. wide along SR 149, and approximately 50 ft. wide along Robbins Rd. The proposed ROW for SR 149 will vary from 115 to 120 ft. wide, while proposed ROW for Robbins Rd. will vary from 64 ft. to 146 ft. as it approaches the intersection. Approximately 2.911 acres of permanent ROW acquisition will be required for the project. This will primarily come from adjacent agricultural properties, while portions will come from residential areas and the forested corridor at the northern project terminus. Additionally, 0.489 acre of temporary ROW acquisition will be required for project staging and construction. Portions of the apparent existing ROW consisting of paved roadway and vegetated sideslopes will need to be re-acquired as well, amounting to 3.58 acres of re-acquisition.

If the scope of work or permanent or temporary right-of-way amounts change, the INDOT Environmental Services Division (ESD) and the INDOT District Environmental Section will be contacted immediately. This will be a firm project commitment.

Part III – Identification and Evaluation of Impacts of the Proposed Action

SECTION A - EARLY COORDINATION:

List the date(s) coordination was sent and all resource agencies that were contacted as a part of the development of this Environmental Study. Also, include the date of their response or indicate that no response was received.

Early coordination letters were sent on June 26, 2020 (Appendix C-1). Follow-up early coordination letters detailing the revised Environmental Investigation Area were sent on June 15, 2021 (Appendix C-4).

Agency	Date Sent	Date Response Received	Appendix
United States Fish and Wildlife Service (USFWS)	06/26/2020 & 06/15/2021	06/29/2020 & 7/19/2021	Appendix C-6 & C-22
U.S. Department of Agriculture Natural Resource Conservation Service (NRCS)	06/26/2020 & 06/15/2021	07/13/2020 & 6/24/2021	Appendix C-19 & C-20
Indiana Department of Natural Resources Division of Fish and Wildlife (IDNR DFW)	06/26/2020 & 06/15/2021	07/24/2020 & 7/16/2021	Appendix C-17 & C-24
Federal Highway Administration (FHWA)	06/26/2020 & 06/15/2021	No Response	-
U.S. Army Corps of Engineers (USACE) Chicago District, Regulatory Division	06/26/2020 & 06/15/2021	No Response	-
Northwestern Indiana Regional Planning Commission (NIRPC)	06/26/2020 & 06/15/2021	No Response	-
Porter County Surveyor	06/26/2020 & 06/15/2021	No Response	-
Porter County Director of Stormwater Management	06/26/2020 & 06/15/2021	No Response	-
Porter County Plan Commission, Executive Director	06/26/2020 & 06/15/2021	No Response	-
Indiana Geological and Water Survey (IGWS)	06/26/2020	07/07/2020	Appendix C-7
Indiana Department of Environmental Management (IDEM)	06/26/2020	07/08/2020	Appendix C-10
National Park Service (NPS), Midwest Regional Office	06/26/2020	No Response	-
U.S. Department of Housing & Urban Development (HUD)	06/26/2020	No Response	-
Porter County Council	06/26/2020	No Response	-
Porter County Commissioners	06/26/2020	No Response	-
Porter County Engineering Department	06/26/2020	No Response	-

All applicable recommendations are included in the Environmental Commitments section of this CE document.

SECTION B – ECOLOGICAL RESOURCES:

	Presence	Impacts	
		Yes	No
Streams, Rivers, Watercourses & Other Jurisdictional Features	x	x	
Federal Wild and Scenic Rivers			
State Natural, Scenic or Recreational Rivers			
Nationwide Rivers Inventory (NRI) listed			
Outstanding Rivers List for Indiana			
Navigable Waterways			

Total stream(s) in project area: _____ Linear feet Total impacted stream(s): 0 Linear feet

Describe all streams, rivers, watercourses and other jurisdictional features adjacent or within the project area. Include whether or not impacts (both permanent and temporary) will occur to the features identified. Include if the streams or rivers are listed on any federal or state lists for Indiana. Include if features are subject to federal or state jurisdiction. Discuss measures to avoid, minimize, and mitigate if impacts will occur.

Presence, with impacts

Based on a desktop review, the aerial map of the project area (Appendix B-3), and the water resources map in the Red Flag Investigation (RFI) report (Appendix E), there are six river and streams, six lakes, two National Wetland Inventory (NWI) Lines, and two IDEM 303d listed streams and lakes located within the 0.5 mile search radius. One stream, Salt Creek, is adjacent to the northern end of the project area. That was confirmed by the site visits on May 29, 2019 and April 29, 2021 by Cardno, Inc.

Salt Creek is a perennial stream that flows from east to west along the northern edge of the project area. It is mapped as a solid blue line on USGS topographic maps. The Ordinary High Water Mark (OHWM) width at this location is approximately 60 ft. while the OHWM depth is five ft. The stream substrate is a mix of sand, silt, and clay. Salt Creek flows directly into the East Arm of the Little Calumet River, a Traditionally Navigable Waterway (TNW), and is therefore likely to be considered a jurisdictional waterway by the USACE. It is also considered a Salmonid Waterway. Salt Creek exhibits moderate sinuosity, moderate riparian tree coverage, and a decent amount of habitat for aquatic organisms, making it an average quality waterway.

The southern bank of Salt Creek will be impacted by grading and vegetation clearing activities for this project. Approximately 0.006 acre of trees will be removed from below the stream's 100-year flood elevation in the southeast corner next to the SR 149 bridge over Salt Creek, to facilitate regrading and placement of revetment riprap adjacent to eastern side of the southern approach to the bridge. However, no construction activity will take place below the OHWM. 401/404 permits from the USACE and IDEM are not expected for this project.

Waters Report

A *Waters of the U.S. Determination / Wetland Delineation Report* was completed for the project and approved by INDOT Ecology and Waterway Permitting Office (EWPO) on July 15, 2021. Please refer to Appendix F-1 for the Waters of the U.S. Report. It was determined that one jurisdictional stream, Salt Creek, is adjacent to the northern edge of the project area. The USACE makes all final determinations regarding jurisdiction.

Early Coordination

USFWS responded on June 29, 2020 (Appendix C-6) stating that because the project will have minor impacts on natural resources, the USFWS will not be providing a comment letter. After the follow-up early coordination letter was distributed to describe the expanded project area, USFWS provided an additional response on July 19, 2021 with recommendations to mitigate any riparian tree clearing that takes place adjacent to Salt Creek (Appendix C-22). IDNR DFW provided responses on July 24, 2020 (Appendix C-17) and July 16, 2020 (Appendix C-24), both of which included recommendations such as avoiding excavation in the channel of Salt Creek and restoring disturbed areas within the stream banks. All applicable recommendations are included in the Environmental Commitments section of this CE document.

Open Water Feature(s)	Presence	Impacts Yes	Impacts No
Reservoirs			
Lakes			
Farm Ponds			
Retention/Detention Basin			
Storm Water Management Facilities			
Other: Lake Michigan Coastal Program Boundaries	x		x

Describe all open water feature(s) identified adjacent or within the project area. Include whether or not impacts (both permanent and temporary) will occur to the features identified. Include if features are subject to federal or state jurisdiction. Discuss measures to avoid, minimize, and mitigate if impacts will occur.

No presence, no impact

Based on the desktop review, the aerial map of the project area (Appendix B-3), and the RFI report (Appendix E) there are six open water feature(s) within the 0.5 mile search radius. No open water features are present within or adjacent to the project area. That was confirmed by the site visits on May 29, 2019 and April 29, 2021 by Cardno, Inc. However, the project area is located within the Lake Michigan Coastal Program's boundaries. The only federal license for the project results from the Section 106 project and the project is not within 100 ft. of a navigable waterway, exempting it from Federal Consistency (FC) review.

Waters Report

A *Waters of the U.S. Determination / Wetland Delineation Report* was completed for the project and approved by INDOT Ecology and Waterway Permitting Office (EWPO) on July 15, 2021. Please refer to Appendix F-1 for the Waters of the U.S. Report. No jurisdictional open water features were discovered in the project area. The USACE makes all final determinations regarding jurisdiction.

Early Coordination

The IDNR responded on July 24, 2020 stating that the project is within the boundaries of the Lake Michigan Coastal Program (Appendix C-17). Their response included information on the types of projects requiring a FC review and the FC review process. The project will not require a FC review, and no other recommendations regarding open water features were provided.

Wetlands	Presence	Impacts Yes	Impacts No

Total wetland area: 0 Acre(s) Total wetland area impacted: 0 Acre(s)

(If a determination has not been made for non-isolated/isolated wetlands, fill in the total wetland area impacted above.)

Wetlands (*Mark all that apply*)	Documentation	ESD Approval Dates
Wetland Determination	x	July 15, 2021
Wetland Delineation		
USACE Isolated Waters Determination		

Improvements that will not result in any wetland impacts are not practicable because such avoidance would result in (Mark all that apply and explain):

Substantial adverse impacts to adjacent homes, business or other improved properties;	
Substantially increased project costs;	
Unique engineering, traffic, maintenance, or safety problems;	
Substantial adverse social, economic, or environmental impacts, or	
The project not meeting the identified needs.	

Describe all wetlands identified adjacent or within the project area. Include whether or not impacts (both permanent and temporary) will occur to the features identified. Include if features are subject to federal or state jurisdiction. Discuss measures to avoid, minimize, and mitigate if impacts will occur.

No presence, no impact

Based on the desktop review, the aerial map of the project area, and the RFI report (Appendix E) there are sixteen wetlands within the 0.5 mile search radius. None of these were determined to be within the project area by the site visits on May 29, 2019 and April 29, 2021 by Cardno, Inc. No wetlands are present within or adjacent to the project area, therefore, no impacts are expected.

Waters Report

A *Waters of the U.S. Determination / Wetland Delineation Report* was completed for the project and approved by INDOT Ecology and Waterway Permitting Office (EWPO) on July 15, 2021. Please refer to Appendix F-1 for the Waters of the U.S. Report. It was determined that no jurisdictional wetlands are present within the project area. The USACE makes all final determinations regarding jurisdiction.

Early Coordination

USFWS responded on June 29, 2020 (Appendix C-6) stating that because the project will have minor impacts on natural resources, the USFWS will not be providing a comment letter. After the follow-up early coordination letter was distributed to describe the expanded project area, USFWS provided an additional response on July 19, 2021 with recommendations to properly mitigate for any loss of trees that may be within riparian habitat (Appendix C-22). IDNR DFW provided responses on July 24, 2020 (Appendix C-17) and July 16, 2020 (Appendix C-24), both of which emphasized the importance of properly mitigating for any wetland impacts. All applicable recommendations are included in the Environmental Commitments section of this CE document.

	Presence	Impacts	
		Yes	No
Terrestrial Habitat	x	x	

Total terrestrial habitat in project area: 4.3 Acre(s) Total tree clearing: 7.65 Acre(s)

Describe types of terrestrial habitat (i.e. forested, grassland, farmland, lawn, etc.) adjacent or within the project area. Include whether or not impacts will occur to habitat identified. Include total terrestrial habitat impacted and total tree clearing that will occur. Discuss measure to avoid, minimize, and mitigate if impacts will occur.

Presence, with impacts

Based on a desktop review, site visits on May 29, 2019 and April 29, 2021 by Cardno, Inc., and the aerial map of the project area (Appendix B-3), there are mature trees and shrubs within the project area. The surrounding area is primarily agricultural cropland and residential properties, with some forested areas in the northeast quadrant of the project area. Vegetation around the southern and western portions of the project area consists primarily of agricultural crops and landscaping grasses. The northeastern portion of the project area contains a mix of brush and trees, mostly a mix of common species found in degraded forested areas, like Bush Honeysuckle (*Lonicera spp.)* and Eastern Cottonwood (*Populus deltoides*). A total of 85 individual trees will be removed within the project area. Using the USFWS conversion factor of 0.09 acre per tree, this results in a total tree clearing acreage of 7.65 acres. A total of approximately 4.3 acres of soil disturbance is anticipated to occur as part of this project. Due to the amount of soil disturbance exceeding one acre, a Construction Stormwater permit is anticipated to be required. No mitigation is expected for this project.

Early Coordination

IDNR DFW responded on July 24, 2020 (Appendix C-17) and July 16, 2021 (Appendix C-24). Their initial response included recommendations to minimize disturbance, utilize proper erosion and sediment control procedures, and revegetate disturbed areas. A follow-up early coordination letter was distributed on June 15, 2021, describing changes to the project area. IDNR DFW's follow-up response expanded on this with additional recommendations regarding site stabilization and revegetation. All applicable recommendations are included in the Environmental Commitments section of this CE document.

Protected Species **Federally Listed Bats**	**Yes**	**No**
Information for Planning and Consultation (IPaC) determination key completed	x	
Section 7 informal consultation completed (IPaC cannot be completed)		x
Section 7 formal consultation Biological Assessment (BA) required		x

Determination Received for Listed Bats from USFWS: NE [ ] NLAA [x] LAA [ ]

Other Species not included in IPaC	**Yes**	**No**
Additional federal species found in project area (based on IPaC species list)		x
State species (not bird) found in project area (based upon consultation with IDNR)		x

Migratory Birds	**Yes**	**No**
Known usage or presence of birds (i.e. nests)		x
State bird species based upon coordination with IDNR		x

Discuss IDNR coordination and species identified. Describe USFWS Section 7 consultation and determination received for Indiana bat and northern long-eared bat impacts. Discuss if other federally listed species were identified. If so, include consultation that has occurred and the determination that was received. Discuss if migratory birds have been observed and any impacts.

Based on a desktop review and the RFI report (Appendix E), completed by Troyer group on May 20, 2020, the IDNR Porter County Endangered, Threatened and Rare (ETR) Species List has been checked and is included in Appendix E-10 through E-20. The highlighted species on the list reflect the federal and state identified ETR species located within the county. According to the IDNR-DFW early coordination response letters dated July 24, 2020 and July 16, 2021 (Appendix C-17 and C-24), the Natural Heritage Program's Database has been checked. No plant or animal species listed as state or federally threatened, endangered, or rare have been reported to occur in the project vicinity. A review of the USFWS database that was performed by INDOT on May 29, 2020 did not indicate the presence of endangered bat species within 0.5 mile of the project area.

Indiana Bat and Northern Long-Eared Bat

Bats, Programmatic Informal Consultation – Not Likely to Adversely Affect

Project information was submitted through the USFWS's Information for Planning and Consultation (IPaC) portal, and an official species list was generated (Appendix C-26). The project is within range of the federally endangered Indiana bat (Myotis sodalis) and the federally threatened northern long-eared bat (NLEB) (Myotis septentrionalis). One additional species was found within or adjacent to the project area other than the Indiana bat and northern long-eared bat, the Monarch Butterfly (*Danaus plexippus*). The Monarch Butterfly is currently listed as a Candidate ETR species, and no further coordination is necessary.

The project qualifies for the Range-wide Programmatic Informal Consultation for the Indiana bat and northern long-eared bat (NLEB), dated May 2016 (revised February 2018), between FHWA, Federal Railroad Administration (FRA), Federal Transit Administration (FTA), and USFWS. The SR 149 bridge over Salt Creek (149-64-03978 B, NBI No. 027350) at the northern edge of the project area was inspected by INDOT in 2019 and by Troyer Group in 2021 (Appendix C-50 and C-51). No evidence of endangered bats or birds was discovered in either inspection. An effect determination key was completed on July 20, 2020, and based on the responses provided, the project was found to "May Affect – Not Likely to Adversely Affect" the Indiana bat and/or the NLEB. INDOT reviewed and verified the effect finding on October 18, 2021, and requested USFWS's review of the finding (Appendix C-32). No response was received from USFWS within the 14-day review period; therefore, it was concluded they concur with the finding. Avoidance and Mitigation Measures (AMMs) are included as firm commitments in the environmental Commitments section of this document. These AMMs include a directive to ensure all endangered species information is shared with the project contractor, an instruction to direct temporary lighting away from potential bat habitat, and guidance on tree clearing procedures.

This precludes the need for further consultation on this project as required under Section 7 of the Endangered Species Act, as amended. If new information on endangered species at the site becomes available, or if project plans are changed, USFWS will be contacted for consultation.

Geological and Mineral Resources	Yes	No
Project located within the Potential Karst Features Area of Indiana		x
Karst features identified within or adjacent to the project area		x
Oil/gas or exploration/abandoned wells identified in the project area		x

Date Karst Study/Report reviewed by INDOT EWPO (if applicable): _____

Discuss if project is located in Potential Karst Features Area of Indiana and if any karst features have been identified in the project area (from RFI). Discuss response received from IGWS coordination. Discuss if any mines, oil/gas, or exploration/abandoned wells were identified and if impacts will occur. Describe if any impacts will occur to any karst features. Include discussion of karst study/report was completed and results. (Karst investigation must comply with the current Karst MOU and coordinated and reviewed by INDOT EWPO)

Outside karst area

Based on a desktop review and the Indiana Karst Region map, the project is located outside the designated Indiana Karst Region as outlined in the most current Protection of Karst Features during Project Development and Construction. According to the topo map of the project area (Appendix B-2) and the RFI report (Appendix E) there are no karst features identified within or adjacent to the project area. In the early coordination response, the IGWS did not indicate that karst features exist in the project area (Appendix C-7). The IGWS response also stated that the project area contains high liquefaction potential, moderate bedrock resource potential, and low sand and gravel resource potential. Response from IGWS has been communicated with the designer on July 7, 2020. No impacts are expected.

SECTION C – OTHER RESOURCES

Drinking Water Resources	Presence	Impacts Yes	Impacts No
Wellhead Protection Area(s)			
Source Water Protection Area(s)	x		x
Water Well(s)			
Urbanized Area Boundary	x		x
Public Water System(s)			

	Yes	No
Is the project located in the St. Joseph Sole Source Aquifer (SSA):		x
If Yes, is the FHWA/EPA SSA MOU Applicable?		
If Yes, is a Groundwater Assessment Required?		

Check the appropriate boxes and discuss each topic below. Provide details about impacts and summarize resource-specific coordination responses and any mitigation commitments. Reference responses in the Appendix.

Sole Source Aquifer

Outside of Sole Source Aquifer (SSA)

The Project is located in Porter County, which is not located within the area of the St. Joseph Sole Source Aquifer, the only legally designated sole source aquifer in the state of Indiana. Therefore, the FHWA/EPA Sole Source Aquifer Memorandum of Understanding (MOU) is not applicable to this project; a detailed groundwater assessment is not needed, and no impacts are expected.

Wellhead Protection Area and Source Water

Located in a Wellhead Protection Area and/or Source Water Area

The Indiana Department of Environmental Management's Wellhead Proximity Determinator website (http://www.in.gov/idem/cleanwater/pages/wellhead/) was accessed on July 20, 2020 by Troyer Group. This project is not located within a Wellhead Protection Area but is located within a Source Water Area. The features will not be affected because no contaminants of concern are expected to be present within the project area, and proper storm water control procedures will be implemented to prevent contamination through groundwater or surface flow.

Water Wells

No wells present, no impacts

The Indiana Department of Natural Resources Water Well Record Database website (https://www.in.gov/dnr/water/3595.htm) was accessed on April 12, 2019 by Troyer Group. No wells are located near this project. Therefore, no impacts are expected.

Urban Area Boundary

In an Urban Area Boundary Location

Based on a desktop review of the INDOT MS4 map (https://entapps.indot.in.gov/MS4) by Troyer Group on June 26, 2020, this project is located in an Urban Area Boundary (UAB). An early coordination letter was sent on June 26, 2020 to the Porter County MS4 coordinator (Appendix C-3). The MS4 coordinator did not respond within the 30-day time frame. No impacts are expected.

Public Water System

Not in a Public Water System Location

Based on a desktop review, a site visit on the aerial map of the project area (Appendix B-3), and the RFI Report (Appendix E) no public water systems were identified. Therefore, no impacts are expected.

Floodplains	**Presence**	**Impacts** Yes	No
Project located within a regulated floodplain	x	x	
Longitudinal encroachment	x	x	
Transverse encroachment			
Homes located in floodplain within 1000' up/downstream from project			

If applicable, indicate the Floodplain Level?

Level 1 [ ] Level 2 [ ] Level 3 [x] Level 4 [ ] Level 5 [ ]

Use the IDNR Floodway Information Portal to help determine potential impacts. Include floodplain map in appendix. Discuss impacts according to the classification system. If encroachment on a flood plain will occur, coordinate with the Local Flood Plain Administrator during design to insure consistency with the local flood plain planning.

In floodplain

Based on a desktop review of The Indiana Department of Natural Resources Indiana Floodway Information Portal website (http://dnrmaps.dnr.in.gov/appsphp/fdms/) by Troyer Group on July 20, 2020, and the RFI report, this project is located in a regulatory floodplain as determined from approved IDNR floodplain maps (Appendix F-33). An early coordination letter was sent on June 26, 2020, to the local Floodplain Administrator (Appendix C-1). The floodplain administrator did not respond within the 30-day time frame. This project qualifies as a Category 3 per the current INDOT CE Manual, which states:

Category 3 – "The modifications to drainage structures included in this project will result in an insubstantial change in their capacity to carry flood water. This change could cause a minimal increase in flood heights and flood limits. These minimal increases will not result in any substantial adverse impacts on the natural and beneficial floodplain values; they will not result in substantial change in flood risks or damage; and they do not have substantial potential for interruption or termination of emergency service or emergency routes; therefore, it has been determined that this encroachment is not substantial."

Farmland	**Presence**	**Impacts** Yes	No
Agricultural Lands	x	x	
Prime Farmland (per NRCS)	x	x	

Total Points (from Section VII of CPA-106/AD-1006*) **127**

**If 160 or greater, see CE Manual for guidance.*

Discuss existing farmland resources in the project area, impacts that will occur to farmland, and mitigation and minimization measures considered.

Presence, score under 160

Based on a desktop review, the aerial map of the project area (Appendix B-3), the project will convert 2.93 acres of farmland as defined by the Farmland Protection Policy Act. An early coordination letter was sent on June 26, 2020, to NRCS, with a follow-up for the expanded project area sent on June 15, 2021. Coordination with NRCS resulted in a score of 127 on the NRCS AD 1006 Form (Appendix C-21). NRCS's threshold score for significant impacts to farmland that result in the consideration of alternatives is 160. Since this project score is less than the threshold, no significant loss of prime, unique, statewide, or local important farmland will result from this project. No alternatives other than those previously discussed in this document will be investigated without reevaluating impacts to prime farmland.

SECTION D – CULTURAL RESOURCES

	Category(ies) and Type(s)	INDOT Approval Date(s)	N/A
Minor Projects PA	B-3, B-4, & B-9	June 19, 2020, Feb. 9, 2022, & May 18,2022	

Full 106 Effect Finding

No Historic Properties Affected [ ] No Adverse Effect [ ] Adverse Effect [ ]

Eligible and/or Listed Resources Present

NRHP Building/Site/District(s) [ ] Archaeology [ ] NRHP Bridge(s) [ ]

Documentation Prepared (mark all that apply)		ESD Approval Date(s)	SHPO Approval Date(s)
APE, Eligibility and Effect Determination			
800.11 Documentation			
Historic Properties Report or Short Report			
Archaeological Records Check and Assessment			
Archaeological Phase Ia Survey Report	x	6/19/2020 & 2/9/2022	
Archaeological Phase Ic Survey Report			
Other:			

		MOA Signature Dates (List all signatories)
Memorandum of Agreement (MOA)		

If the project falls under the MPPA, describe the category(ies) that the project falls under and any approval dates. If the project requires full Section 106, use the headings provided. The completion of the Section 106 process requires that a Legal Notice be published in local newspapers. Please indicate the publication date, name of the paper(s) and the comment period deadline. Include any further Section 106 work which must be completed at a later date, such as mitigation from a MOA or avoidance commitments.

Minor Project PA Category B projects

On June 19, 2020, the INDOT Cultural Resource Office (CRO) determined that this project falls within the guidelines of Category B, Type 3 under the Minor Projects Programmatic Agreement (MPPA), (Appendix D-1). Type B-3 covers work involving construction of added travel, turning, or auxiliary lanes (e.g. bicycle, truck climbing, acceleration, and deceleration lanes) and shoulder widening. An archaeological survey was required, and a 5-acre survey area was examined during a June 26, 2019 site investigation by Cardno, Inc. The site consisted of a small scatter of historical artifacts. Due to the lack of potential to provide important information, the portion of the site identified within the survey area was recommended ineligible. An excerpt from the resulting Phase Ia Archaeological Report is included in Appendix D-16. An additional site investigation was performed by Cardno on August 19, 2021 to examine the newly added portion of the project area at the northern terminus, adjacent to Salt Creek. No archaeological sites were identified. An excerpt from the resulting Archaeological Short Report is included in Appendix D-19. Further coordination with INDOT CRO was initiated on December 10, 2021 regarding the extended project area and the addition of the structure replacement at the southern end of the project area. On February 9, 2022, INDOT CRO determined that the project still falls within the guidelines of Category B, Type 3 of the MPPA, and that the additional structure work falls within the guidelines of Category B, Type 9 of the MPPA

(Appendix D-4). Type 3 covers construction of added travel, turning, or auxiliary lanes and type 9 covers installation, repair, lining, or extension of drainage structures. Coordination was re-initiated with INDOT CRO on March 25, 2022 to include the guardrail installation in their review, and again on May 2, 2022 to add the storm sewer installation to the project scope. On May 18, 2022 INDOT CRO determined that the guardrail installation falls under category B-4 of the MPPA, which covers the installation of safety appurtenances, including guardrails (Appendix D-9). They also concluded that the storm sewer installation meets the criteria of the previously added category B-9. No further consultation is required. This completed the Section 106 process and the responsibilities of the FHWA under Section 106 have been fulfilled.

SECTION E – SECTION 4(f) RESOURCES/ SECTION 6(f) RESOURCES

	Presence	Use	
Parks and Other Recreational Land		**Yes**	**No**
Publicly owned park	☐	☐	☐
Publicly owned recreation area	☐	☐	☐
Other (school, state/national forest, bikeway, etc.)	☐	☐	☐
Wildlife and Waterfowl Refuges			
National Wildlife Refuge	☐	☐	☐
National Natural Landmark	☐	☐	☐
State Wildlife Area	☐	☐	☐
State Nature Preserve	☐	☐	☐
Historic Properties			
Site eligible and/or listed on the NRHP	☐	☐	☐

	Evaluations Prepared
Programmatic Section 4(f)	☐
"De minimis" Impact	☐
Individual Section 4(f)	☐
Any exception included in 23 CFR 774.13	☐

Discuss Programmatic Section 4(f) and "de minimis" Section 4(f) impacts in the discussion below. Individual Section 4(f) documentation must be included in the appendix and summarized below. Discuss proposed alternatives that satisfy the requirements of Section 4(f). FHWA has identified various exceptions to the requirement for Section 4(f) approval. Refer to 23 CFR § 774.13 - Exceptions.

No presence, no impact

Section 4(f) of the U.S. Department of Transportation Act of 1966 prohibits the use of certain public and historic lands for federally funded transportation facilities unless there is no feasible and prudent alternative. The law applies to significant publicly owned parks, recreation areas, wildlife / waterfowl refuges, and NRHP eligible or listed historic properties regardless of ownership. Lands subject to this law are considered Section 4(f) resources.

Based on a desktop review, the aerial map of the project area (Appendix B-3), and the RFI report (Appendix E) there are no 4(f) resources located within the 0.5 mile search radius. There are no Section 4(f) resources within or adjacent to the project area. Therefore, no use is expected.

Section 6(f) Involvement	**Presence**	**Use**	
		Yes	**No**
Section 6(f) Property	☐	☐	☐

Discuss Section 6(f) resources present or not present. Discuss if any conversion would occur as a result of this project. If conversion will occur, discuss the conversion approval.

No presence or presence, no impact

The U.S. Land and Water Conservation Fund Act of 1965 established the Land and Water Conservation Fund (LWCF), which was created to preserve, develop, and assure accessibility to outdoor recreation resources. Section 6(f) of this Act prohibits conversion of lands purchased with LWCF monies to a non-recreation use.

A review of 6(f) properties on the Land and Water Conservation Fund (LWCF) website at https://www.lwcfcoalition.com/tools revealed a total of 21 properties in Porter County (Appendix I-10). None of these properties are located within or adjacent to the project area. Therefore, there will be no impacts to 6(f) resources as a result of this project.

SECTION F – Air Quality

STIP/TIP and Conformity Status of the Project	Yes	No
Is the project in the most current STIP/TIP?	x	
Is the project located in an MPO Area?	x	
Is the project in an air quality non-attainment or maintenance area?	x	
If Yes, then:		
Is the project in the most current MPO TIP?	x	
Is the project exempt from conformity?	x	
If No, then:		
Is the project in the Transportation Plan (TP)?		
Is a hot spot analysis required (CO/PM)?		

Location in STIP: _____

Name of MPO (if applicable): _____

Location in TIP (if applicable): _____

Level of MSAT Analysis required?

Level 1a [x] Level 1b [ ] Level 2 [ ] Level 3 [ ] Level 4 [ ] Level 5 [ ]

Describe if the project is listed in the STIP and if it is in a TIP. Describe the attainment status of the county(ies) where the project is located. Indicate whether the project is exempt from a conformity determination. If the project is not exempt, include information about the TP and TIP. Describe if a hot spot analysis is required and the MSAT Level.

STIP/TIP

Standalone Project

This project is included in the Fiscal Year (FY) 2020-2024 Statewide Transportation Improvement Program (STIP) and the 2020-2024 NIRPC Transportation Improvement Program (TIP) (Appendix H-1 and H-2).

Attainment Status

Nonattainment/maintenance area, exempt project

This project is located in Porter County, which is currently a nonattainment area for Ozone, under the 2015, 2008, and 1997 Ozone 8-hour standard, which was revoked in 2015 but is being evaluated for conformity due to the February 16, 2018, South Coast Air Quality Management District V. Environmental Protection Agency, Et. Al. Decision. This project has been identified as being exempt from air quality analysis in accordance with 40 CFR Part 93.126 and this project is not a project of air quality concern (40 CFR Part 93.123). Therefore, the project will have no significant impact on air quality.

MSAT

MSAT Level 1a Analysis

This project is of a type qualifying as a categorical exclusion (Group 1) under 23 CFR 771.117 (c), or exempt under the Clean Air Act conformity rule under 40 CFR 93.126, and as such, a Mobile Source Air Toxics analysis is not required.

SECTION G - NOISE

Noise	Yes	No
Is a noise analysis required in accordance with FHWA regulations and INDOT's traffic noise policy?		x

Date Noise Analysis was approved/technically sufficient by INDOT ESD: _____

Describe if the project is a Type I or Type III project. If it is a Type I project, describe the studies completed to date and if noise impacts were identified. If noise impacts were identified, describe if abatement is feasible and reasonable and include a statement of likelihood.

Type III Project

This project is a Type III project. In accordance with 23 CFR 772 and the current *Indiana Department of Transportation Traffic Noise Analysis Procedure*, this action does not require a formal noise analysis.

SECTION H – COMMUNITY IMPACTS

Regional, Community & Neighborhood Factors	Yes	No
Will the proposed action comply with the local/regional development patterns for the area?	x	
Will the proposed action result in substantial impacts to community cohesion?		x
Will the proposed action result in substantial impacts to local tax base or property values?		x
Will construction activities impact community events (festivals, fairs, etc.)?		x
Does the community have an approved transition plan?	x	
If No, are steps being made to advance the community's transition plan?		
Does the project comply with the transition plan? (explain in the discussion below)	x	

Discuss how the project complies with the area's local/regional development patterns; whether the project will impact community cohesion; and impact community events. Discuss how the project conforms with the ADA Transition Plan.

The proposed project will not impact development patterns in the area. There will be no negative impacts to community cohesion, the local tax base, or property values. Construction is not expected to affect planned community events.

A community event calendar was reviewed on the Porter County Government website (https://www.porterco.org/calendar.aspx?CID=14). No community events are planned for the immediate project area during the time of construction.

The MOT for the project will require the intersection to be fully closed. A detour will be implemented utilizing US 6, SR 49 and US 20. It will be approximately 16 miles long and will add 12.4 miles to the average commute. The MOT plan will be in place for roughly one construction season.

Porter County has an approved Americans with Disabilities Act (ADA) transition plan, which is viewable online at https://www.porterco.org/DocumentCenter/View/3708/Porter-County-ADA-SETP?bidId=. There are no existing pedestrian facilities within the project limits and the purpose and need of the project does not include pedestrian facilities; furthermore, this project will not affect any area identified as priorities for improvement. Therefore, the project is considered in compliance with the county's ADA transition plan.

Public Facilities and Services

Discuss what public facilities and services are present in the project area and impacts (such as MOT) that will occur to them. Include how the impacts have been minimized and what coordination has occurred. Some examples of public facilities and services include health facilities, educational facilities, public and private utilities, emergency services, religious institutions, airports, transportation or public pedestrian and bicycle facilities.

Presence, no impact

Based on a desktop review, aerial map of the project area (Appendix B-3) and the RFI report (Appendix E) there is one religious facility and two cemeteries within the 0.5 mile search radius. There are multiple public and private utilities located within the project area. Access to all properties will be maintained during construction. It is the responsibility of the project sponsor to notify school corporations and emergency services at least two weeks prior to any construction that would block or limit access.

Public and private utilities are present within the project area. Fiber lines from CenturyLink, Frontier, and Comcast, power lines from Northern Indiana Public Service Company (NIPSCO), a Marathon gas pipeline, and water facilities from Indiana American Water (INAW) are located within the project limits and may be in conflict with the project. Additionally, NIPSCO gas facilities, sewer facilities for the Damon Run Conservancy District, and water facilities from Aqua Indiana, Inc. are present within or adjacent to the project area, but will not be in conflict with the project. Utility coordination was initiated on November 11, 2019. Work plans have been received from CenturyLink, Frontier, and Comcast. Relocation will be required for some or all of the facilities in conflict with the project.

In order to minimize potential impacts to CenturyLink's facilities within the project area, contractors will be required to hand dig any post holes for proposed guardrail replacement and extension. This is a firm project commitment. Frontier and Comcast are waiting on further information on the Marathon and NIPSCO electric facilities respectively. Neither Marathon nor NISPCO have provided work plans yet. INAW provided an itemized estimate for relocation costs in order to begin drafting a relocation agreement. Further utility coordination is ongoing.

Environmental Justice (EJ) (Presidential EO 12898)	**Yes**	**No**
During the development of the project were EJ issues identified?		x
Does the project require an EJ analysis?	x	
If YES, then:		
Are any EJ populations located within the project area?	x	
Will the project result in adversely high and disproportionate impacts to EJ populations?		x

Indicate if EJ issues were identified during project development. If an EJ analysis was not required, discuss why. If an EJ analysis was required, describe how the EJ population was identified. Include if the project has a disproportionately high and adverse effect on EJ populations and explain your reasoning. If yes, describe actions to avoid, minimize and mitigate these effects.

EJ Analysis, EJ Populations

Under FHWA Order 6640.23A, FHWA and the project sponsor, as a recipient of funding from FHWA, are responsible to ensure that their programs, policies, and activities do not have a disproportionately high and adverse effect on minority or low-income populations. Per the current INDOT Categorical Exclusion Manual, an Environmental Justice (EJ) Analysis is required for any project that has two or more relocations or 0.5 acre of additional permanent right-of-way. The project will require 2.92 acres of permanent ROW and no relocations. Therefore, an EJ Analysis is required.

Potential EJ impacts are detected by locating minority and low-income populations relative to a reference population to determine if populations of EJ concern exist and whether there could be disproportionately high and adverse impacts to them. The reference population may be a county, city or town and is called the community of comparison (COC). In this project, the COC consists of the combined Liberty and Portage Townships, in Porter County, IN. The community that overlaps the project area is called the affected community (AC). In this project, the ACs are Census Tracts 501.01 and 505.07, in Porter County, Indiana. An AC has a population of concern for EJ if the population is more than 50% minority or low-income or if the low-income or minority population is 125% of the COC. Data from the 2019 American Community Survey (ACS) 5-year Estimates was obtained from the US Census Bureau Website https://data.census.gov/ on June 30, 2020, by Troyer Group. The data collected for minority and low-income populations within the AC are summarized in the below table.

Table: Minority and Low-Income Data (2019 ACS 5-year Estimates Detailed Tables)			
	COC – Liberty and Portage Townships, Porter County IN	AC-1 – Census Tract 501.01, Porter County IN	AC-2 – Census Tract 505.07, Porter County IN
Percent Minority	26.15 %	16.24%	40.77%
125% of COC	32.69 %	AC < 125% COC	AC >125% COC
EJ Population of Concern		No	Yes
Percent Low-Income	14.88%	10.59%	14.70%
125% of COC	18.60%	AC < 125% COC	AC <125% COC
EJ Population of Concern		No	No

AC-1, Census Tract 501.01 has a percent minority of 16.24% which is below 50% and is below the 125% COC threshold. AC-2, Census Tract 505.07 has a percent minority of 40.77% which is below 50% but is above the 125% COC. Therefore, *AC-2* is a minority population of EJ concern.

AC-1, Census Tract 501.01 has a percent low-income of 10.59% which is below 50% and is below the 125% COC threshold. AC-2, Census Tract 505.07 has a percent low-income of 14.70% which is below 50% and is below the 125% COC. Therefore, the project area does not contain any low-income populations of EJ concern.

Conclusion

The census data sheets, map, and calculations can be found in Appendix I-15 through I-19. Potential impacts to EJ populations of concern are most likely to be the result of ROW acquisition and maintenance of traffic. The project will require the acquisition of approximately 2.92 acres of permanent ROW. ROW acquisition is limited to the minimum amount necessary to construct the project, and is centered around areas adjacent to the project area. It does not disproportionately target any individual AC.

The intersection will be closed to traffic during construction. An official state detour will be utilized and access to all properties will be maintained during construction. The detour will utilize US 6, SR 49, and US 20, and will be approximately 16 miles long. This will add 12.4 miles, or approximately 17 minutes, to the average commute. Any provisions for a local detour will be coordinated with local authorities. The MOT plan will be in place for roughly one construction season. Unsigned local detours not involving state routes will be available to nearby residents, thereby reducing the added travel distance for local trips.

No impacts to public facilities or community cohesion are expected, and there will be no relocations for the project. An email was sent to INDOT ES on June 17, 2021 requesting their comments on these conclusions (Appendix I-21). Their response, dated July 9, 2021 stated that “INDOT-ESD would not consider the impacts associated with this project as causing a disproportionately high and adverse effect on minority and/or low income populations of EJ concern relative to non EJ populations in accordance with the provisions of Executive Order 12898 and FHWA Order 6640.23a” (Appendix I-23). Based on this evidence, there will be no disproportionately high and adverse impacts to communities of concern as a result of this project.

Relocation of People, Businesses or Farms	**Yes**	**No**
Will the proposed action result in the relocation of people, businesses or farms?		x
Is a BIS or CSRS required?		x

Number of relocations: Residences: 0 Businesses: 0 Farms: 0 Other: 0

Discuss any relocations that will occur due to the project. If a BIS or CSRS is required, discuss the results in the discussion below.

No Relocations

No relocations of people, businesses, or farms will take place as a result of this project.

SECTION I – HAZARDOUS MATERIALS & REGULATED SUBSTANCES

Hazardous Materials & Regulated Substances (Mark all that apply)	**Documentation**
Red Flag Investigation (RFI)	x
Phase I Environmental Site Assessment (Phase I ESA)	
Phase II Environmental Site Assessment (Phase II ESA)	
Design/Specifications for Remediation required?	

Date RFI concurrence by INDOT SAM (if applicable): May 21, 2020

Include a summary of the potential hazardous material concerns found during review. Discuss in depth sites found within, directly adjacent to, or ones that could impact the project area. Refer to current INDOT SAM guidance. If additional documentation (special provisions, pay quantities, etc.) will be needed, include in discussion. Include applicable commitments.

No presence

Based on a review of GIS and available public records, a RFI was approved on May 21, 2020 by INDOT Site Assessment and Management (SAM) (Appendix E-1). No sites with hazardous material concerns (hazmat sites) or sites involved with regulated substances were identified in or within 0.5 mile of the project area. Further investigation for hazardous material concerns or regulated substances is not required at this time.

Part IV – Permits and Commitments

PERMITS CHECKLIST

Permits (mark all that apply)	**Likely Required**
Army Corps of Engineers (404/Section10 Permit)	
Nationwide Permit (NWP)	
Regional General Permit (RGP)	
Individual Permit (IP)	
Other	
IN Department of Environmental Management (401/Rule 5)	
Nationwide Permit (NWP)	
Regional General Permit (RGP)	
Individual Permit (IP)	
Isolated Wetlands	
Rule 5	x
Other	
IN Department of Natural Resources	
Construction in a Floodway	x
Navigable Waterway Permit	
Other	
Mitigation Required	
US Coast Guard Section 9 Bridge Permit	
Others (Please discuss in the discussion below)	

List the permits likely required for the project and summarize why the permits are needed, including permits designated as "Other."

Permits Required

No work will take place below the OHWM of any waterway or within the limits of any wetland. Therefore, no 401/404 permits are expected to be required for this project.

Work is expected to take place within the regulatory floodway of Salt Creek. A Construction in Floodway Permit from the IDNR was applied for on January 28, 2022 and approved on April 12, 2022 (Appendix I-24). While tree clearing within the floodway is planned for the project, the clearing acreage will not meet the minimum threshold for requiring mitigation. As a result, no mitigation is included in the project scope.

The total acreage of soil disturbance is expected to be greater than one acre; therefore, a Construction Stormwater permit from IDEM will likely be required.

Applicable recommendations provided by resource agencies are included in the Environmental Commitments section of this document. If permits are found to be necessary, the conditions of the permit will be requirements of the project and will supersede these recommendation. It is the responsibility of the project sponsor to identify and obtain all required permits.

ENVIRONMENTAL COMMITMENTS

List all commitments and include the name of agency/organization requesting/requiring the commitment(s). Listed commitments should be numbered.

Firm:

1) If the scope of work or permanent or temporary right-of-way amounts change, the INDOT Environmental Services Division (ESD) and the INDOT District Environmental Section will be contacted immediately. (INDOT ESD and INDOT District)
2) It is the responsibility of the project sponsor to notify school corporations and emergency services at least two weeks prior to any construction that would block or limit access. (INDOT ESD)
3) Any work in a wetland area within right-of-way or in a borrow/waste areas is prohibited unless specifically allowed in the U.S. Army Corps of Engineers or IDEM permit. (INDOT EWPO)
4) GENERAL AMM 1: Ensure all operators, employees, and contractors working in areas of known or presumed bat habitat are aware of all FHWA/FRA/FTA (Transportation Agencies) environmental commitments, including all applicable AMMs. (USFWS)
5) LIGHTING AMM 1: Direct temporary lighting away from suitable habitat during the active season.
6) TREE REMOVAL AMM 1: Modify all phases/aspects of the project (e.g. temporary work areas, alignments) to avoid tree removal. (USFWS)
7) TREE REMOVAL AMM 2: Apply time of year restrictions (April 1 through September 30) for tree removal when bast are not likely to be present, or limit tree removal to 10 or fewer trees per project at any time of year within 100 feet of existing road/rail surface and outside of documented roosting/foraging habitat or travel corridors; visual emergence survey must be conducted with no bats observed. (USFWS & IDNR DFW)
8) TREE REMOVAL AMM 3: Ensure tree removal is limited to that specified in project plans and ensure that contractors understand clearing limits and how they are marked in the field (e.g. install bright colored flagging/fencing prior to any tree clearing to ensure contractors stay within clearing limits). (USFWS)
9) TREE REMOVAL AMM 4: Do not remove documented Indiana bat or NLEB roosts that are still suitable for roosting, or trees within 0.25 mile of roosts or documented foraging habitat at any time of year. (USFWS)
10) Contractors will be required to hand dig any post holes required for guardrail replacement and extension. (CenturyLink)

For Further Consideration:

11) Impacts to non-wetland forest of one (1) acre or more should be mitigated at a minimum 2:1 ratio. If less than one acre of non-wetland forest is removed in a rural setting, replacement should be at a 1:1 ratio based on area. Impacts to non-wetland forest under one (1) acre in an urban setting should be mitigated by planting five trees, at least 2 inches in diameter-at-breast height (dbh), for each tree which is removed that is 10 in. dbh or greater (5:1 mitigation based on the number of large trees) or by using the 1:1 ratio based on area depending on the type of habitat impacted. (IDNR DFW)
12) Riprap must not be placed in the active thalweg channel or placed in the streambed in a manner that precludes fish or aquatic organism passage (riprap must not be placed above the existing streambed elevation). Riprap may be used onla at the toe of the sideslopes up to the OHWM. The banks above the OHWM must be restored, stabilized, and revegetated using geotextiles and a mixture of grasses, sedges, wildflowers, shrubs, and trees native to Northern Indiana and specifically for stream bank/floodway stabilization purposes as soon as possible upon completion. The new, replacement, or rehabbed structure, and any bank stabilization under the structure, should not create conditions that are less favorable for wildlife passage under the structure compared to current conditions. (IDNR DFW)
13) Do not excavate in the low flow area except for the placement of piers, foundations, and riprap, or removal of the old structure. (IDNR DFW)
14) Do not construct any temporary runarounds, access bridges, causeways, cofferdams, diversions, or pumparounds. (IDNR DFW)
15) Use minimum average six inch graded riprap stone extended below the normal water level to provide habitat for aquatic organisms in the voids. (IDNR DFW)

Table of Contents - Appendices

APPENDIX A

CE Threshold Chart

Categorical Exclusion Level Thresholds

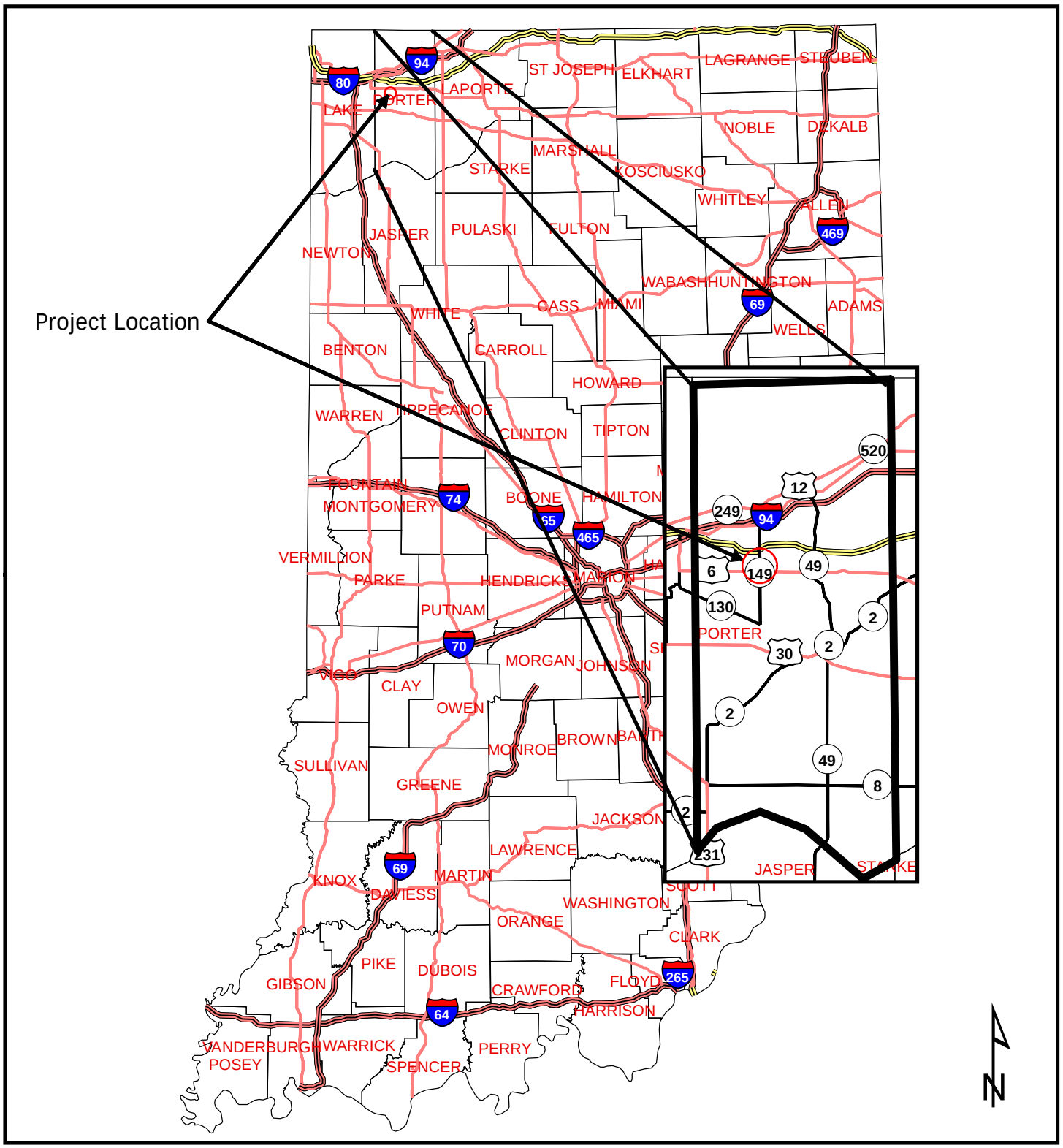
	PCE	Level 1	Level 2	Level 3	Level 4[1]
Section 106	Falls within guidelines of Minor Projects PA	"No Historic Properties Affected"	"No Adverse Effect"	-	"Adverse Effect" Or Historic Bridge involvement[2]
Stream Impacts	No construction in waterways or water bodies	< 300 linear feet of stream impacts	≥ 300 linear feet of stream impacts	-	Individual 404 Permit
Wetland Impacts	No adverse impacts to wetlands	< 0.1 acre	-	< 1 acre	≥ 1 acre
Right-of-way[3]	Property acquisition for preservation only or none	< 0.5 acre	≥ 0.5 acre	-	-
Relocations	None	-	-	< 5	≥ 5
Threatened/Endangered Species (Species Specific Programmatic for Indiana bat & northern long eared bat)	"No Effect", "Not likely to Adversely Affect" (Without AMMs[4] or with AMMs required for all projects[5])	"Not likely to Adversely Affect" (With any other AMMs)	-	"Likely to Adversely Affect"	Project does not fall under Species Specific Programmatic
Threatened/Endangered Species (Any other species)	Falls within guidelines of USFWS 2013 Interim Policy	"No Effect", ""Not likely to Adversely Affect"	-	-	"Likely to Adversely Affect"
Environmental Justice	No disproportionately high and adverse impacts	-	-	-	Potential[6]
Sole Source Aquifer	Detailed Assessment Not Required	-	-	-	Detailed Assessment
Floodplain	No Substantial Impacts	-	-	-	Substantial Impacts
Coastal Zone Consistency	Consistent	-	-	-	Not Consistent
National Wild and Scenic River	Not Present	-	-	-	Present
New Alignment	None	-	-	-	Any
Section 4(f) Impacts	None	-	-	-	Any
Section 6(f) Impacts	None	-	-	-	Any
Added Through Lane	None	-	-	-	Any
Permanent Traffic Alteration	None	-	-	-	Any
Coast Guard Permit	None	-	-	-	Any
Noise Analysis Required	No	-	-	-	Yes
Air Quality Analysis Required	No	-	-	-	Yes[7]
Approval Level • **District Env. Supervisor** • **Env. Services Division** • **FHWA**	Concurrence by INDOT District Environmental or Environmental Services	Yes	Yes	Yes Yes	Yes Yes Yes

[1]Coordinate with INDOT Environmental Services. INDOT will then coordinate with the appropriate FHWA Environmental Specialist.
[2]Any involvement with a bridge processed under the Historic Bridge Programmatic Agreement.
[3]Permanent and/or temporary right-of-way.
[4]AMMs = Avoidance and Mitigation Measures.
[5]AMMs determined by the IPAC decision key to be needed that are listed in the USFWS *User's Guide for the Range-wide Programmatic Consultation for Indiana bat and Northern long-eared bat* as "required for all projects".
[6]Potential for causing a disproportionately high and adverse impact.
[7]Hot Spot Analysis and/or MSAT Quantitative Emission Analysis.
*Substantial public or agency controversy may require a higher-level NEPA document.

APPENDIX B

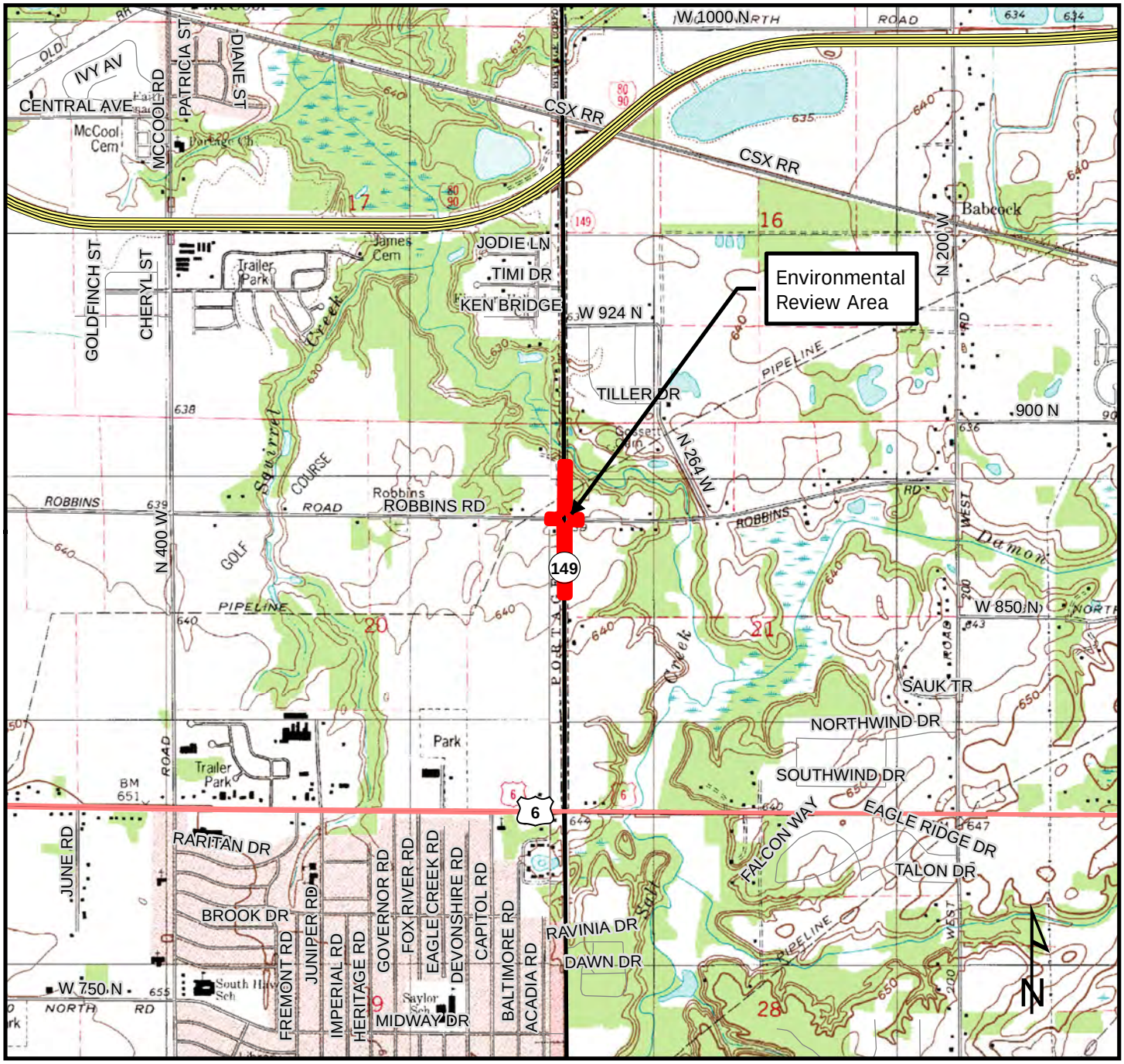
Graphics

Project Location



troyer group 550 Union St. | Mishawaka, IN 46544 574.259.9976 | troyergroup.com Together, We Will	PROJECT SR 149 at Robbins Rd (CR 875) Vertical Sight Correction, Added Turn Lanes (Des. No. 1600701) Porter County, Indiana	SCALE NTS SHEET Exhibit 1 Project Location Map

USGS Project Location Map



Portion of 7.5-Minute Series Map, Porter County, Chesterton and Portage Quadrangle, Indiana

Project Area

Source: USGS National Map

troyer group
550 Union St. | Mishawaka, IN 46544
574.259.9976 | troyergroup.com
Together, We Will

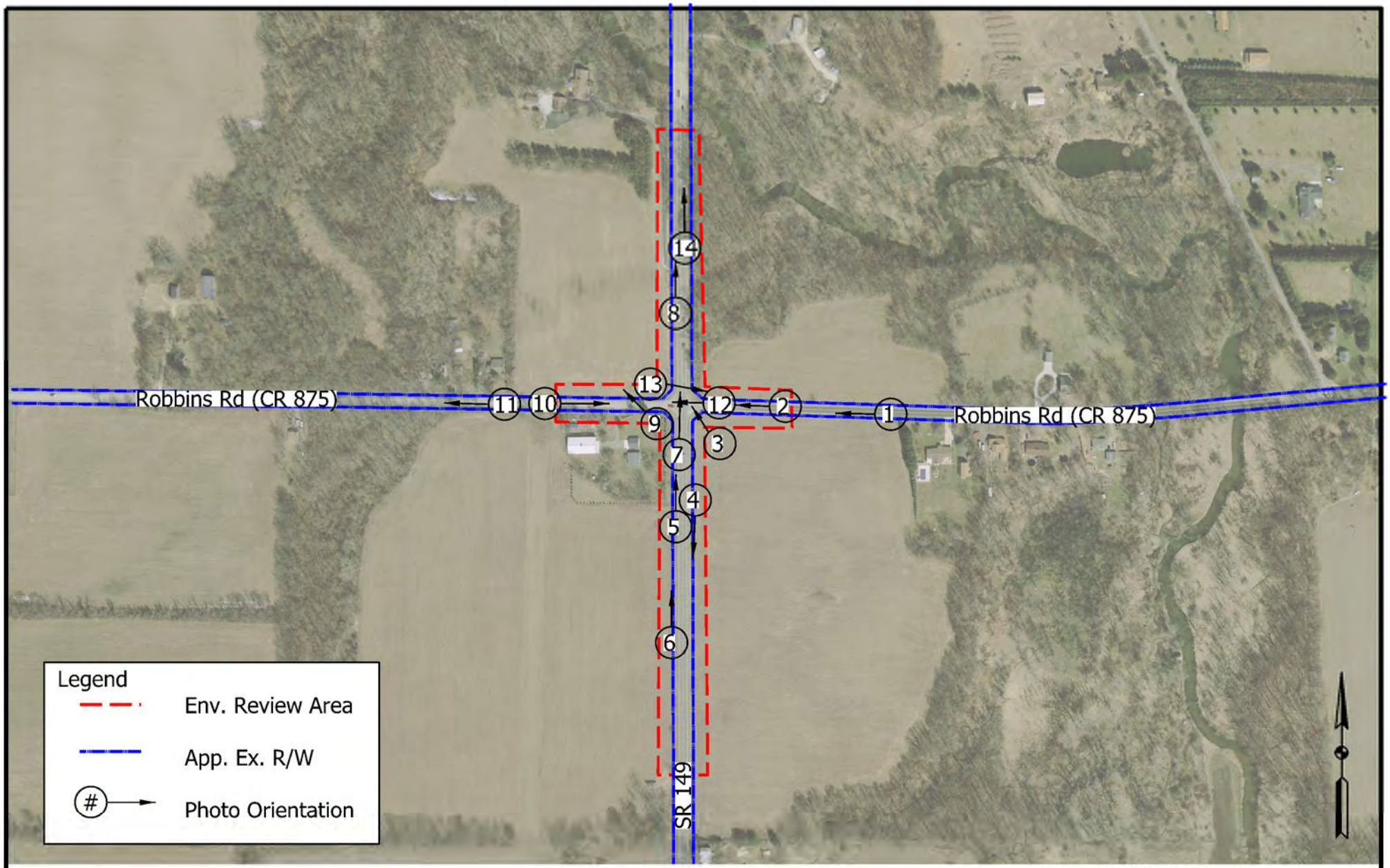
PROJECT
SR 149 at Robbins Rd (CR 875)
Vertical Sight Correction, Added Turn Lanes
(Des. No. 1600701)

Porter County, Indiana

SCALE
1:24,000

SHEET
Exhibit 2
USGS Map

Project Area Aerial with Photo Orientation



troyer group
550 Union St. | Mishawaka, IN 46544
574.259.0975 | troyergroup.com

PROJECT
SR 149 at Robbins Rd (CR 875)
Vertical Sight Correction,
Added Turn Lanes
Porter County, IN

DES. NO. 1600701

SHEET
Exhibit 3
Project Area Aerial

GRAPHIC SCALE
(IN FEET)
0 200 400 800 1200

SCALE: 1" = 400'

Porter County, IN
SR 149 at Robbins Rd (CR 875)
Vertical Sight Correction, Added Turn Lanes
Des. No: 1600701

Photo 1. Robbins Rd, looking west toward SR 149

Photo 2. Robbins Rd, looking west toward SR 149.

Photo 3. Looking north along the east side SR 149, from Robbins Rd

Photo 4. Looking north along the east side SR 149, from Robbins Rd

Photo 5. Looking north towards Robbins Rd. along the east side SR 149

Photo 6. Looking north towards Robbins Rd. along the east side SR 149 - southern end of investigation area

Photo 7. South of Robbins Rd., looking north along the west side SR 149.

Photo 8. North of Robbins Rd., looking north alongwest side of SR 149

Photo 9. Southwest corner of intersection- Looking northwest- along Robbins.

Photo 10. West of SR 149, looking east along the north side of Robbins Rd

Photo 11. West of SR 149, looking west along the north side of Robbins Rd.

Photo 12. East of SR 149, looking west along north side of Robbins Rd

Photo 13. Northwest corner of intersection- looking east across SR 149

PROJECT	DESIGNATION
1600701	1600701
CONTRACT	
R-42249	

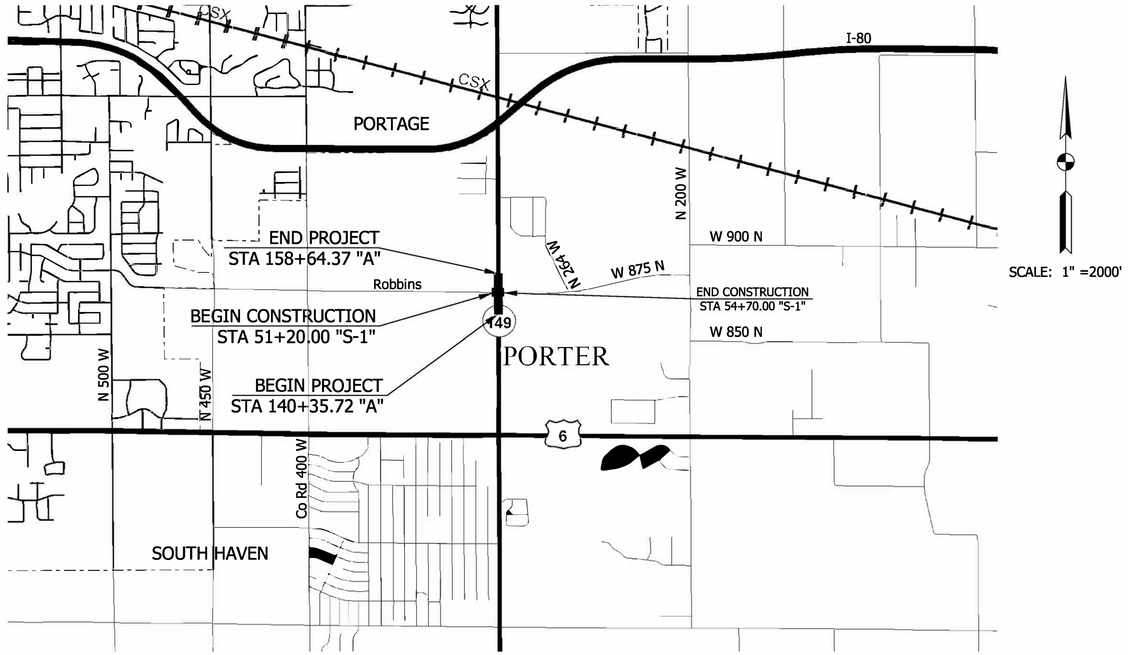
INDIANA DEPARTMENT OF TRANSPORTATION

ROAD PLANS

ROUTE: SR 149 FROM: RP 4+59 TO: RP 4+80

PROJECT NO. 1600701 P.E.
1600701 R/W
1600701 CONST.

Intersection Improvement on SR 149 at CR 875N/Robbins Road
Located 0.75 Miles North of US 6
Sections 20 & 21, T-36-N, R-6-W, Portage and Liberty Townships, Porter County, Indiana



SCALE: 1" =2000'

KIN PROJECT INFORMATION	
DESIGNATION	PROJECT DESCRIPTION
XXXXXXX	XXXXX
XXXXXXX	XXXXX
XXXXXXX	XXXXX
XXXXXXX	XXXXX
XXXXXXX	XXXXX
XXXXXXX	XXXXX
XXXXXXX	XXXXX
XXXXXXX	XXXXX
XXXXXXX	XXXXX
XXXXXXX	XXXXX

TRAFFIC DATA		SR 149	Robbins Rd
A.A.D.T.	(2022)	10,439 V.P.D.	Not Available V.P.D.
A.A.D.T.	(2042)	11,637 V.P.D.	Not Available V.P.D.
D.H.V	(2042)	1,065 V.P.H.	Not Available V.P.H.
DIRECTIONAL DISTRIBUTION		49.51 %	Not Available %
TRUCKS		5.26 % A.A.D.T.	Not Available A.A.D.T.
		3.86 % D.H.V.	Not Available D.H.V.

DESIGN DATA		
DESIGN SPEED	50 M.P.H.	35 M.P.H.
PROJECT DESIGN CRITERIA	RECONSTRUCTION (NON-FREEWAY)	RECONSTRUCTION (NON-FREEWAY)
FUNCTIONAL CLASSIFICATION	PRINCIPAL ARTERIAL	MINOR COLLECTOR
RURAL/URBAN	URBAN	URBAN
TERRAIN	LEVEL	LEVEL
ACCESS CONTROL	NONE	NONE

LAPORTE DISTRICT

PROJECT LOCATION SHOWN BY
PORTER COUNTY

LATITUDE: 41° 33' 39.9" N LONGITUDE: 87° 07' 27.5" W

GROSS LENGTH: 0.35 MI.
NET LENGTH: 0.35 MI.
MAX. GRADE: 3.74% %

Plan Set
10/08/2021

NOT FOR CONSTRUCTION

INDIANA DEPARTMENT OF TRANSPORTATION
STANDARD SPECIFICATIONS DATED 2020
TO BE USED WITH THESE PLANS

PLANS PREPARED BY: Lochner 219-324-4903 PHONE NUMBER

CERTIFIED BY: 10/8/2021 DATE

RECOMMENDED FOR LETTING: DATE
INDIANA DEPARTMENT OF TRANSPORTATION

DESIGNATION
1600701

SHEETS		
1	of	51

CONTRACT	PROJECT
R-42249	1600701

PlotPLOT_DATE$ PLOT_TIME$ AM_PM
File: c:\pw_working\lochner-slc\jsherrick\d0136732\RD_Title Sht.dgn
Model: $MODEL_NAME$

UTILITIES

Aqua Indiana - Sanitary Sewer
5750 Castle Creek Parkway - N. Dr. #314
Indianapolis, IN 46250
Jim Shields
317-577-1390
jeshields@aquaamerica.com

Comcast - Communication
Larry Smith
larry_smith@comcast.com

Damon Run Conservancy District - Sanitary Sewer
205 Billings Street
Valparaiso, IN 46383
Steve Poulos
219-462-6174
spoulos@valpo.us

Frontier Communications - Communication
8001 West Jefferson Blvd.
Fort Wayne, IN 46804
Joe Sarll
260-461-3324
utilitycordreq@ftr.com

Frontier Communications - Communication
Alison Buchanan
alison.buchanan@ftr.com

Indiana American Water Co. - Water
Ed Nickels
317-885-2407
edward.nickels@amwater.com

Centurylink (National) - Communication
Kendallyn Zetina
918-547-0547
kendall.zetina@centurylink.com

Marathon Pipeline - Gas
529 S. Main St., Room 7624A
Findlay, OH 45840
Greg Newman
419-884-0800
gnewman@mplx.com

NIPSCO Electric - Electric
22 S. SR 49
Valparaiso, IN 46383
Rich Ostertag
219-384-3382
rostertag@nisource.com

NIPSCO Gas - Gas
801 E. 86th St.
Merrillville, IN 46410
Dean Garrett
219-647-6260
dagarrett@nisource.com

Note:
Indiana Underground was notified.
There may be utilities other than these that were not notified or elected not to respond and no evidence was discovered as to their identity.

811 Know what's **below.** **Call** before you dig.

INDIANA UNDERGROUND
1-800-382-5544 OR CALL 811
24 HOURS A DAY 7 DAYS A WEEK

GENERAL NOTES

	The final cross sections of the grading contract will be the original cross sections of the paving contract. However, partial or complete cross sections shall be taken if necessary to determine the actual excavation quantities.
	The paper relocation lines will be cross sectioned by the engineer before construction.
	Existing asphalt pavement located outside the construction limits shall be removed as directed.
	Existing pccp sidewalks and curbs shall be removed from project right of way limits unless otherwise noted and shall be paid for under clearing right of way.
**	All earth shoulders, median areas, cut and fill slopes shall be plain or mulched seeded except where sodding is specified.
**	All existing storm drainage pipes, inlets, and manholes shall remain unless otherwise noted.
	All limited access right of way is to be fenced with black vinyl coated chain link type fence (b.v.c.l.t.f.) unless otherwise noted.
	All existing right of way fence shall be removed unless otherwise noted.
**	All disturbed areas shall be seeded with seed mixture "R" unless otherwise noted.
**	All slopes are to be repaired with a minimum amount of grading so as not to disturb existing vegetation more than necessary.
	All pipes that are to be removed which connect to existing sewers that are to remain in operation shall be sealed water tight.

** Denotes General Notes Required.

SHEET INDEX

REVISIONS

SHEET NO.	DATE	REVISED

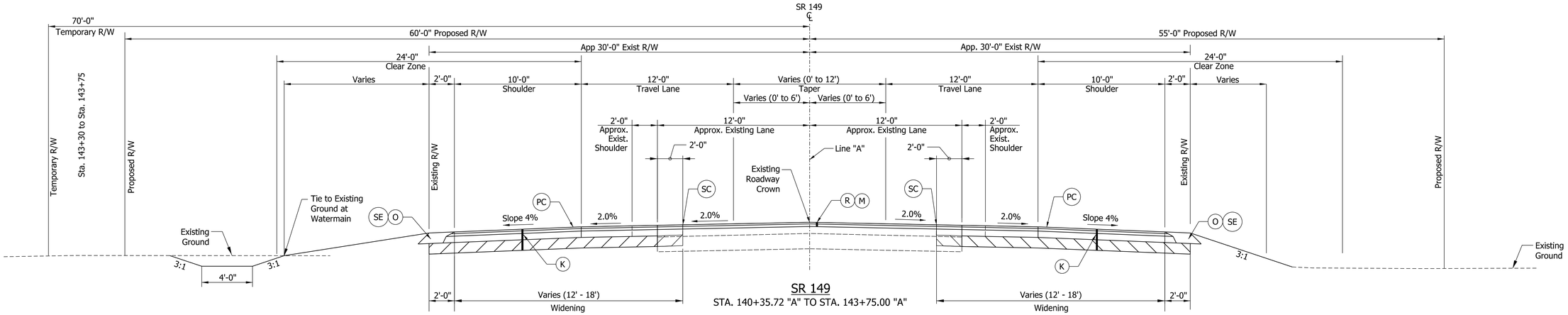
RECOMMENDED FOR APPROVAL $ENG_SIGNATURE$ 10/8/2021
DESIGN ENGINEER DATE

DESIGNED: JMS 08/19/2020 | DRAWN: KG 08/19/2020
CHECKED: ACH 08/19/2020 | CHECKED: MVL 08/19/2020

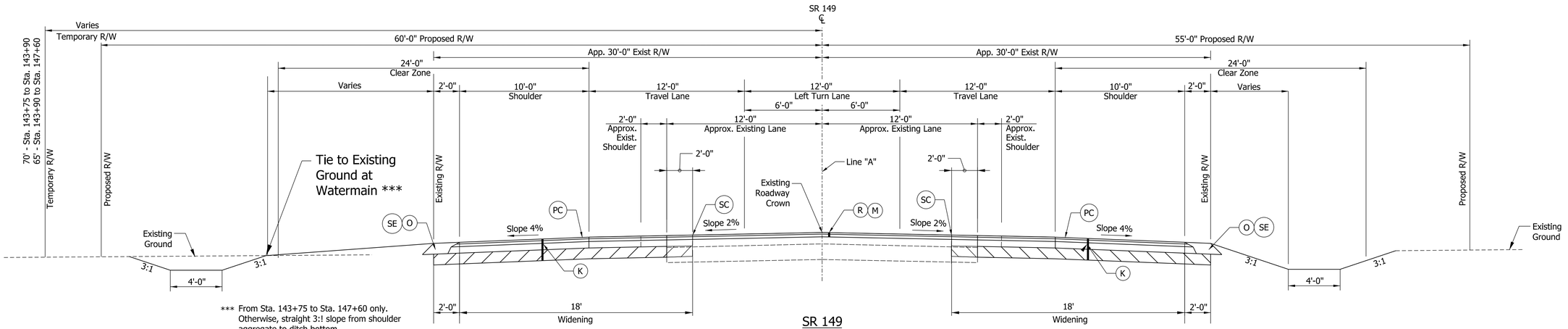
INDIANA
DEPARTMENT OF TRANSPORTATION

INDEX AND GENERAL NOTES

SCALE	BRIDGE FILE
N.T.S	
	DESIGNATION
	1600701
	SHEETS
ELECTRONIC	2 of 51
CONTRACT	PROJECT
R-42249	1600701

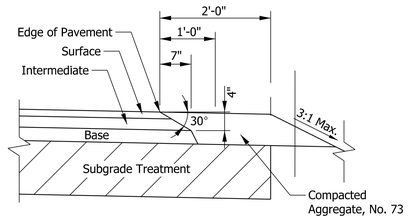


SR 149
STA. 140+35.72 "A" TO STA. 143+75.00 "A"



*** From Sta. 143+75 to Sta. 147+60 only.
Otherwise, straight 3:1 slope from shoulder aggregate to ditch bottom

SR 149
STA. 143+75.00 "A" TO STA. 147+60.00 "A"
STA. 153+73.00 "A" TO STA. 154+10.00 "A"



SAFETY EDGE ON HMA PAVEMENT

LEGEND

(K) 165 lbs/sys QC/QA-HMA, 3, 70, Surface 9.5 mm on
330 lbs/sys QC/QA-HMA, 3, 70, Intermediate 19.0 mm on
660 lbs/sys QC/QA-HMA, 3, 64, Base 25.0 mm on
Subgrade Treatment IBC (14-in of chemical modification with cement)

(O) Compacted Aggregate, No. 73

(R) 165 lbs/sys QC/QA-HMA, 3, 70, Surface 9.5 mm on
330 lbs/sys QC/QA-HMA, 3, 70, Intermediate 19.0 mm on
Existing, Milled HMA surface

(M) Milling, Asphalt, 4.5-in

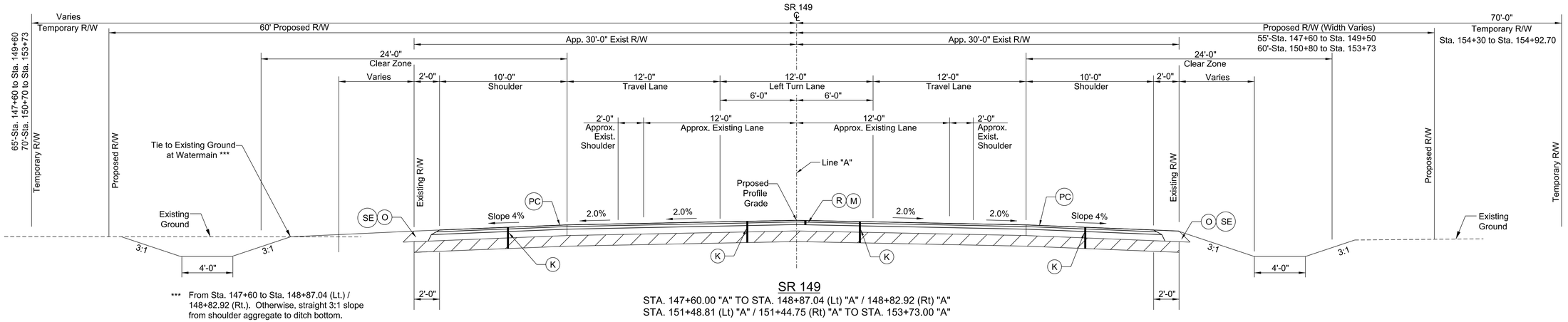
(SC) Saw Cut Line (Limit of Existing Pavement Removal)

(SE) Safety Edge (See Detail This Sheet)

(PC) Shoulder Rumble Strip - Milled Sinusoidal Corrugations

Note: Pavement Designs TBD

RECOMMENDED FOR APPROVAL $ENG_SIGNATURE$ DESIGN ENGINEER 10/8/2021 DATE		INDIANA DEPARTMENT OF TRANSPORTATION	SCALE / BRIDGE FILE
DESIGNED: JMS 08/19/2020	DRAWN: KG 08/19/2020	TYPICAL CROSS SECTIONS	DESIGNATION 1600701
CHECKED: ACH 08/19/2020	CHECKED: MVL 08/19/2020		SHEETS: ELECTRONIC 3 of 51
			CONTRACT R-42249 / PROJECT 1600701



*** From Sta. 147+60 to Sta. 148+87.04 (Lt.) / 148+82.92 (Rt.). Otherwise, straight 3:1 slope from shoulder aggregate to ditch bottom.

SR 149

STA. 147+60.00 "A" TO STA. 148+87.04 (Lt) "A" / 148+82.92 (Rt) "A"
STA. 151+48.81 (Lt) "A" / 151+44.75 (Rt) "A" TO STA. 153+73.00 "A"

SR 149

STA. 154+10.00 "A" TO STA. 154+92.70 "A"

Pipe

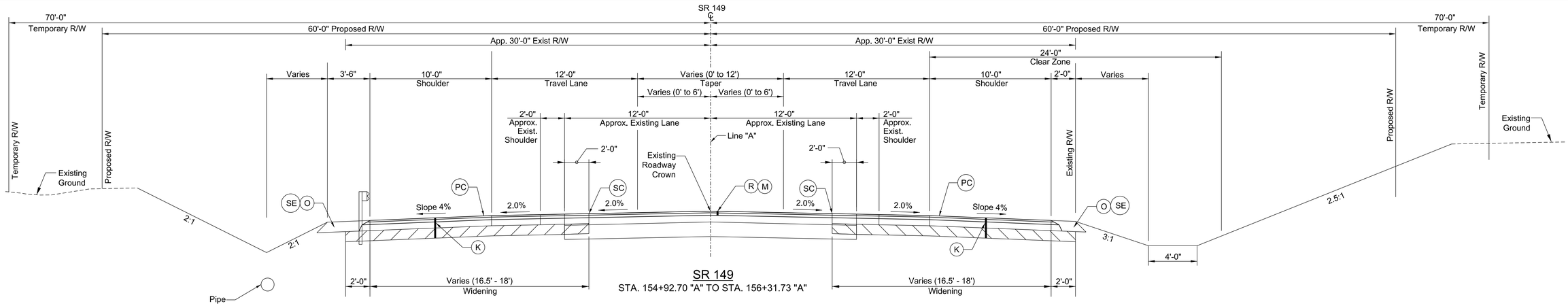
SAFETY EDGE ON HMA PAVEMENT

LEGEND

- (K) 165 lbs/sys QC/QA-HMA, 3, 70, Surface 9.5 mm on 330 lbs/sys QC/QA-HMA, 3, 70, Intermediate 19.0 mm on 660 lbs/sys QC/QA-HMA, 3, 64, Base 25.0 mm on Subgrade Treatment IBC (14-in of chemical modification with cement)
- (O) Compacted Aggregate, No. 73
- (R) 165 lbs/sys QC/QA-HMA, 3, 70, Surface 9.5 mm on 330 lbs/sys QC/QA-HMA, 3, 70, Intermediate 19.0 mm on Existing, Milled HMA surface
- (M) Milling, Asphalt, 4.5-in
- (SC) Saw Cut Line (Limit of Existing Pavement Removal)
- (SE) Safety Edge (See Detail This Sheet)
- (PC) Shoulder Rumble Strip - Milled Sinusoidal Corrugations

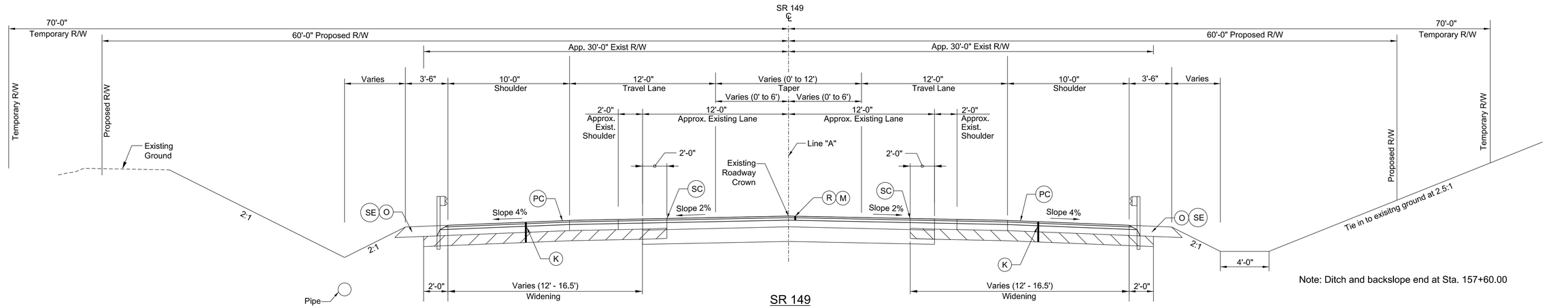
Note: Pavement Designs TBD

RECOMMENDED FOR APPROVAL $ENG_SIGNATURE$ DESIGN ENGINEER	10/8/2021 DATE	INDIANA DEPARTMENT OF TRANSPORTATION	SCALE / BRIDGE FILE
DESIGNED: JMS 08/19/2020	DRAWN: KG 08/19/2020	TYPICAL CROSS SECTIONS	DESIGNATION 1600701
CHECKED: ACH 08/19/2020	CHECKED: MVL 08/19/2020		SHEETS: ELECTRONIC 4 of 51
			CONTRACT R-42249 / PROJECT 1600701



SR 149

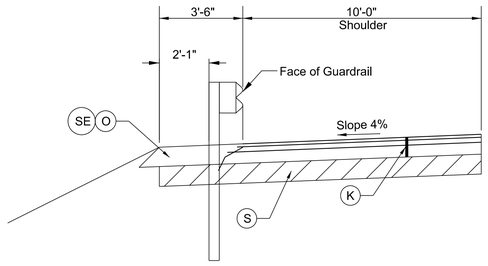
STA. 154+92.70 "A" TO STA. 156+31.73 "A"



SR 149

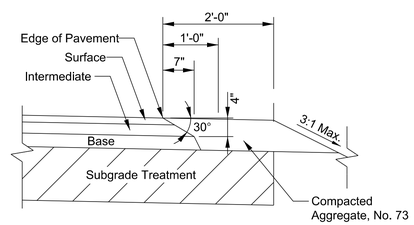
STA. 156+31.73 "A" TO STA. 158+64.37 "A"

Note: Ditch and backslope end at Sta. 157+60.00



Guardrail Detail

STA. 154+92.70 TO STA. 159+50.14 (Lt.)
STA. 156+30.00 TO STA. 159+30 (Rt.)
Left Side Shown, Right Side Similar



SAFETY EDGE ON HMA PAVEMENT

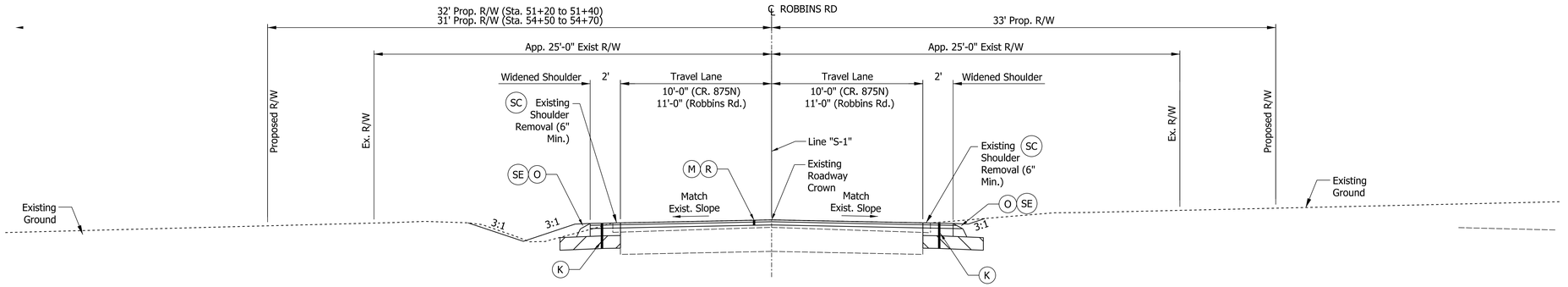
Right Side Shown, Left Side Similar

LEGEND

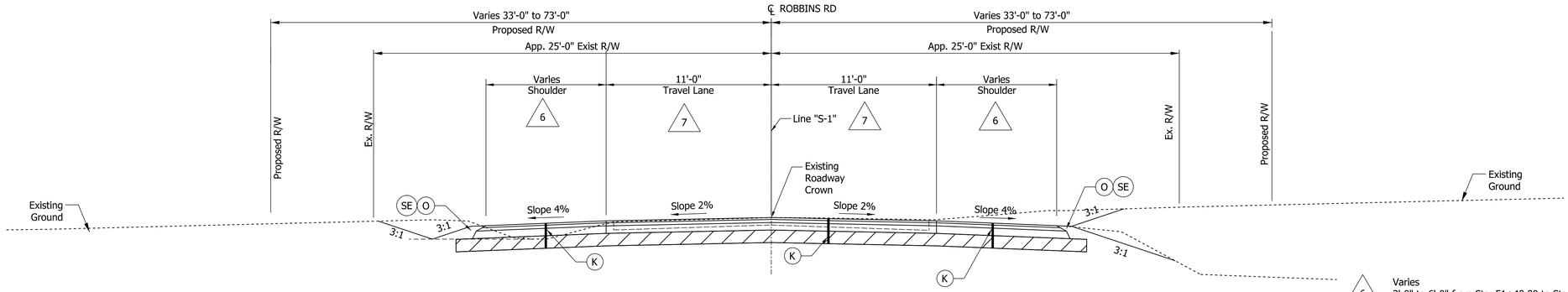
- (K) 165 lbs/sys QC/QA-HMA, 3, 70, Surface 9.5 mm on
  330 lbs/sys QC/QA-HMA, 3, 70, Intermediate 19.0 mm on
  660 lbs/sys QC/QA-HMA, 3, 64, Base 25.0 mm on
  Subgrade Treatment IBC (14-in of chemical modification with cement)
- (O) Compacted Aggregate, No. 73
- (R) 165 lbs/sys QC/QA-HMA, 3, 70, Surface 9.5 mm on
  330 lbs/sys QC/QA-HMA, 3, 70, Intermediate 19.0 mm on
  Existing, Milled HMA surface
- (M) Milling, Asphalt, 4.5-in
- (SC) Saw Cut Line (Limit of Existing Pavement Removal)
- (SE) Safety Edge (See Detail This Sheet)
- (PC) Shoulder Rumble Strip - Milled Sinusoidal Corrugations

Note: Pavement Designs TBD

RECOMMENDED FOR APPROVAL &ENG_SIGNATURE& 10/8/2021 DESIGN ENGINEER DATE		INDIANA DEPARTMENT OF TRANSPORTATION	SCALE: 1/4" = 1'-0"
DESIGNED: JMS 08/19/2020	DRAWN: KG 08/19/2020	TYPICAL CROSS SECTIONS	BRIDGE FILE: DESIGNATION 1600701
CHECKED: ACH 08/19/2020	CHECKED: MVL 08/19/2020		SHEETS: ELECTRONIC 5 of 51
			CONTRACT: R-42249 PROJECT: 1600701



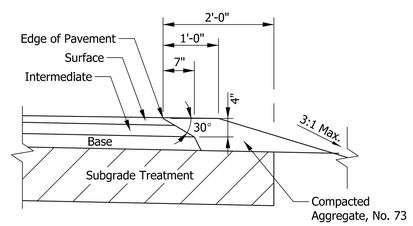
ROBBINS ROAD
STA. 51+20 "S-1" TO STA. 51+40 "S-1"
STA. 54+50 "S-1" TO STA. 54+70 "S-1"



ROBBINS ROAD
STA. 51+40 "S-1" TO STA. 54+50 "S-1"

6 Varies
3'-0" to 6'-0" from Sta. 51+40.00 to Sta. 51+67.83 and
3'-0" to 6'-0" from Sta. 53+74.84 to Sta. 54+50.00

7 Varies
11'-0" to 15'-0" from Sta. 51+67.83 to Sta. 52+17.83 and
15'-0" to 11'-0" from Sta. 53+74.84 to Sta. 54+34.84



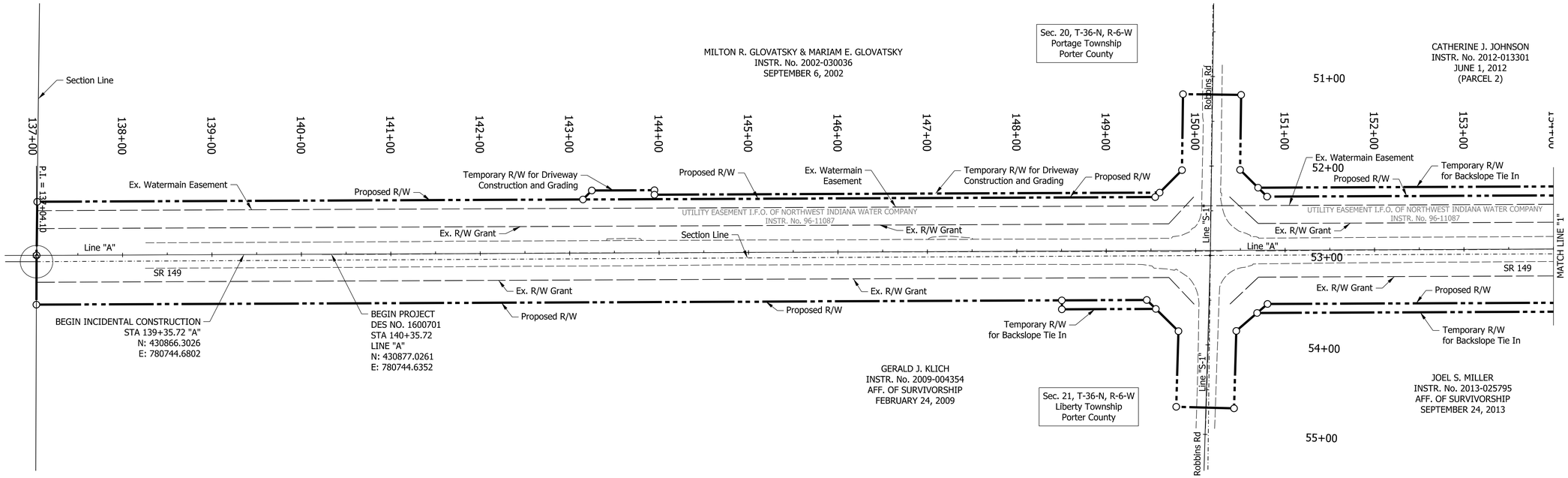
SAFETY EDGE ON HMA PAVEMENT

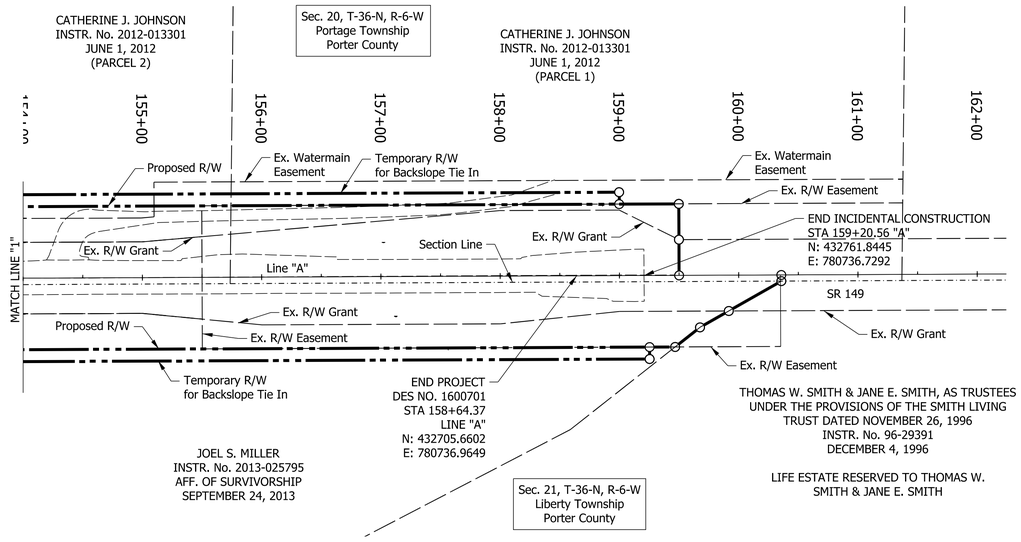
LEGEND

- (K) 165 lbs/sys QC/QA-HMA, 3, 70, Surface 9.5 mm on 330 lbs/sys QC/QA-HMA, 3, 70, Intermediate 19.0 mm on 660 lbs/sys QC/QA-HMA, 3, 64, Base 25.0 mm on Subgrade Treatment IBC (14-in of chemical modification with cement)
- (O) Compacted Aggregate, No. 73
- (R) 165 lbs/sys QC/QA-HMA, 3, 70, Surface 9.5 mm on 330 lbs/sys QC/QA-HMA, 3, 70, Intermediate 19.0 mm on Existing, Milled HMA surface
- (M) Milling, Asphalt, 4.5-in
- (SC) Saw Cut Line (Limit of Existing Pavement Removal)
- (SE) Safety Edge (See Detail This Sheet)
- (PC) Shoulder Rumble Strip - Milled Sinusoidal Corrugations

Note: Pavement Designs TBD

RECOMMENDED FOR APPROVAL $ENG_SIGNATURE$ DESIGN ENGINEER 10/8/2021 DATE		INDIANA DEPARTMENT OF TRANSPORTATION	SCALE: 1/4" = 1'-0"
DESIGNED: JMS 08/19/2020	DRAWN: KG 08/19/2020	TYPICAL CROSS SECTIONS	BRIDGE FILE:
CHECKED: ACH 08/19/2020	CHECKED: MVL 08/19/2020		DESIGNATION: 1600701
			SHEETS: ELECTRONIC 6 of 51
			CONTRACT: R-42249 PROJECT: 1600701





PlotPLOT_DATE$ PLOT_TIME$ AM_PM

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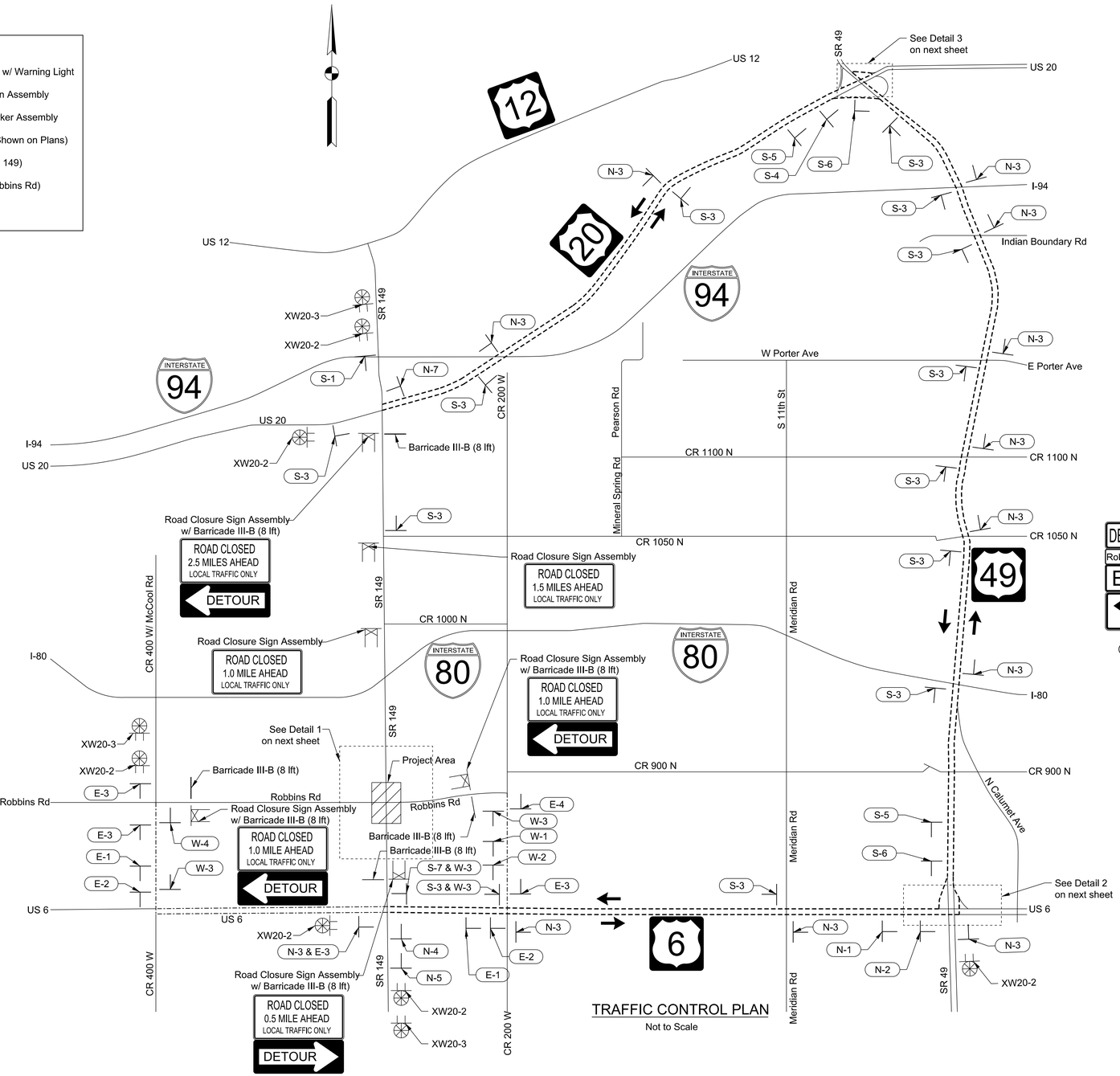
Model:$MODEL_NAME$

RECOMMENDED FOR APPROVAL $ENG_SIGNATURE$ DESIGN ENGINEER	10/8/2021 DATE	INDIANA DEPARTMENT OF TRANSPORTATION	SCALE 1" = 720' / BRIDGE FILE
DESIGNED: JMS 08/19/2020	DRAWN: KG 08/19/2020	PLAT NO. 1	DESIGNATION 1600701
CHECKED: ACH 08/19/2020	CHECKED: MVL 08/19/2020		SHEETS 7 of 51
			CONTRACT R-42249 / PROJECT 1600701

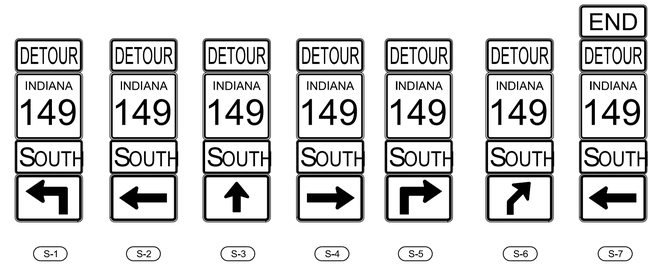
LEGEND

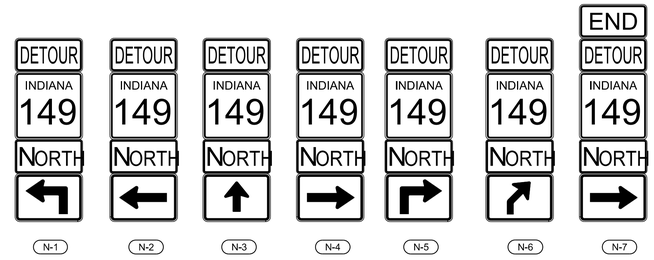
- Construction Sign w/ Warning Light
- Road Closure Sign Assembly
- Detour Route Marker Assembly
- Barricade (Type Shown on Plans)
- Detour Route (SR 149)
- Detour Route (Robbins Rd)
- Traffic Flow

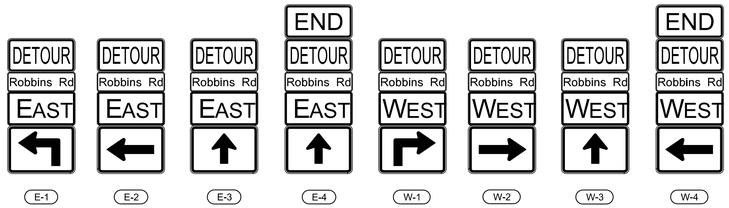


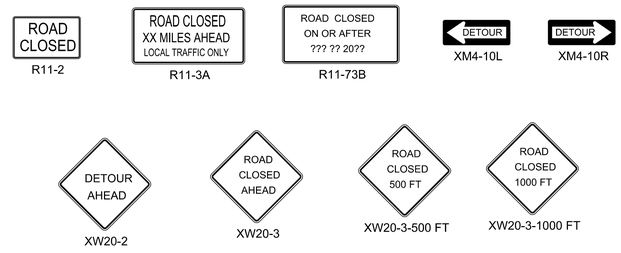
TRAFFIC CONTROL PLAN

Not to Scale









RECOMMENDED FOR APPROVAL $ENG_SIGNATURE$ DESIGN ENGINEER	10/8/2021 DATE	INDIANA DEPARTMENT OF TRANSPORTATION	SCALE: AS NOTED; BRIDGE FILE:
DESIGNED: JMS 08/19/2020	DRAWN: KG 08/19/2020	MAINTENANCE OF TRAFFIC	DESIGNATION: 1600701
CHECKED: ACH 08/19/2020	CHECKED: MVL 08/19/2020		SHEETS: 8 of 51; CONTRACT: R-42249; PROJECT: 1600701

Plot$PLOT_DATE$ $PLOT_TIME$AM_PM$

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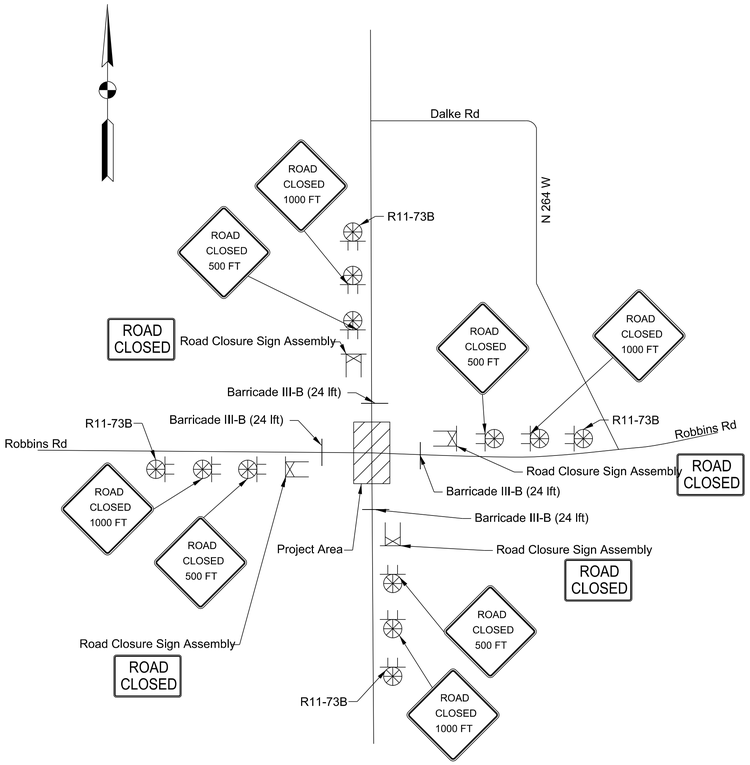
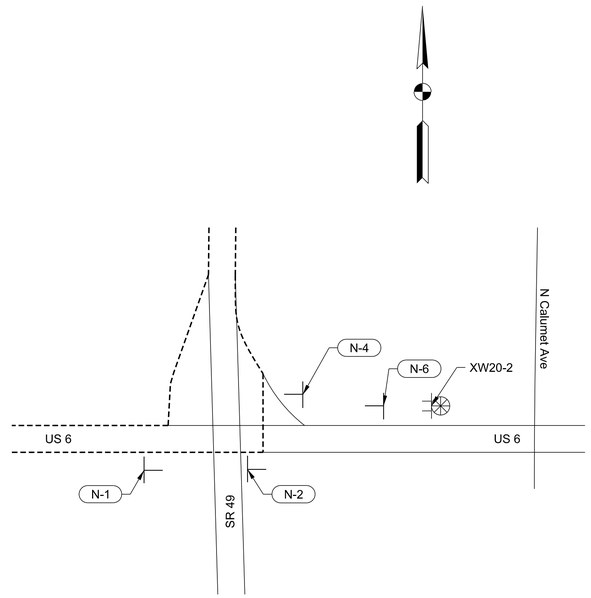
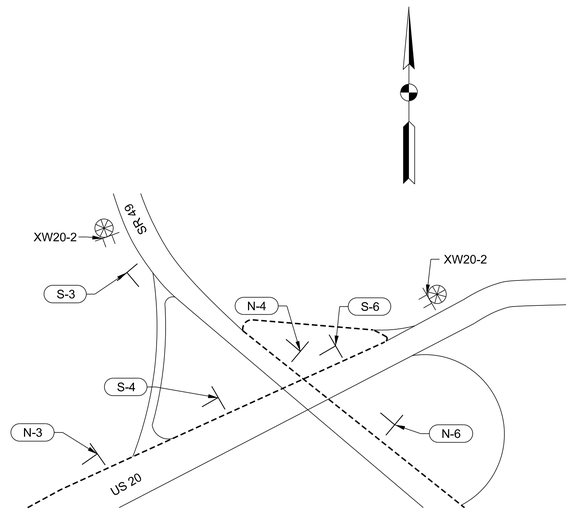
Model:$MODEL_NAME$



Detail 1



Detail 2



Detail 3

MOT SUMMARY

ITEM	UNIT	QUANTITY
CONSTRUCTION SIGN, A	EACH	24
ROAD CLOSURE SIGN ASSEMBLY	EACH	10
DETOUR ROUTE MARKER ASSEMBLY	EACH	63
BARRICADE, III-B	LFT	160

PlotPLOT_STYLES: TIMES&AM_PMS

File: c:\pw_working\lochner-slc\jsherrick\d0136732\RD_MOT.dgn
Model: $MODEL_NAME$

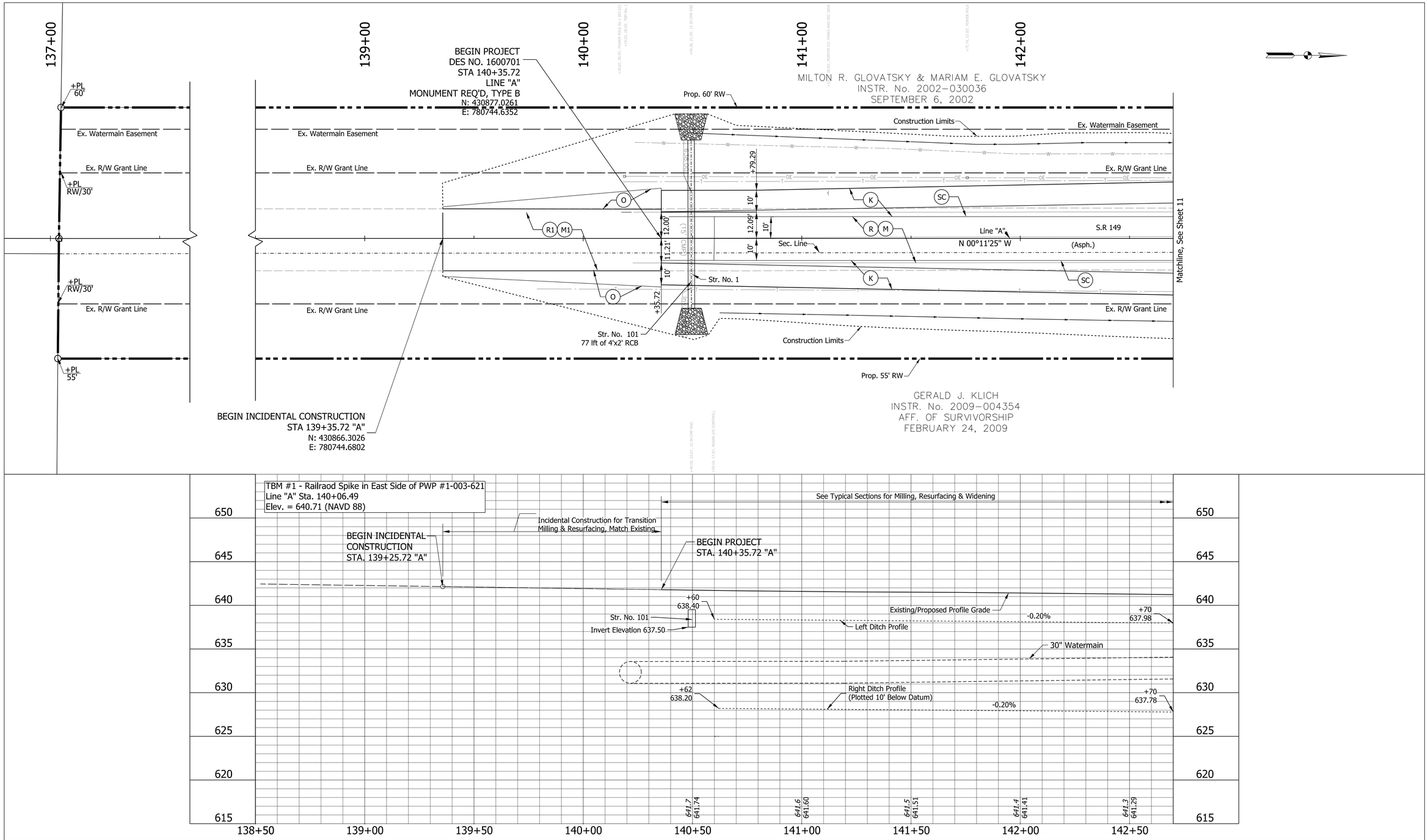
RECOMMENDED FOR APPROVAL $ENG_SIGNATURE$ 10/8/2021
DESIGN ENGINEER DATE

DESIGNED: JMS 08/19/2020 | DRAWN: KG 08/19/2020
CHECKED: ACH 08/19/2020 | CHECKED: MVL 08/19/2020

INDIANA
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC

SCALE	BRIDGE FILE
AS NOTED	
	DESIGNATION
	1600701
	SHEETS
	9 of 51
CONTRACT	PROJECT
R-42249	1600701



LEGEND

- (K) 165 #/SYD QC/QA-HMA, 3, 70, Surface, 9.5 mm on 275 #/SYD QC/QA-HMA, 3, 70, Intermediate, 19.0 mm on 660 #/SYD QC/QA-HMA, 3, 70, Base, 19.0 mm (2 Lifts) on Subgrade Treatment, Type TBD
- (O) Compacted Aggregate, No. 73
- (R) Resurfacing: 165 #/SYD QC/QA-HMA, 3, 70, Surface, 9.5 mm on 275 #/SYD QC/QA-HMA, 3, 70, Intermediate, 19.0 mm
- (R1) Resurfacing: 165 #/SYD QC/QA-HMA, 3, 70, Surface, 9.5 mm on
- (M) Milling, Asphalt, 4"
- (M1) Milling, Asphalt, 1.5"
- (SC) Saw Cut Line (Limit of Existing Pavement Removal)
- (D) Full Depth Driveway Replacement

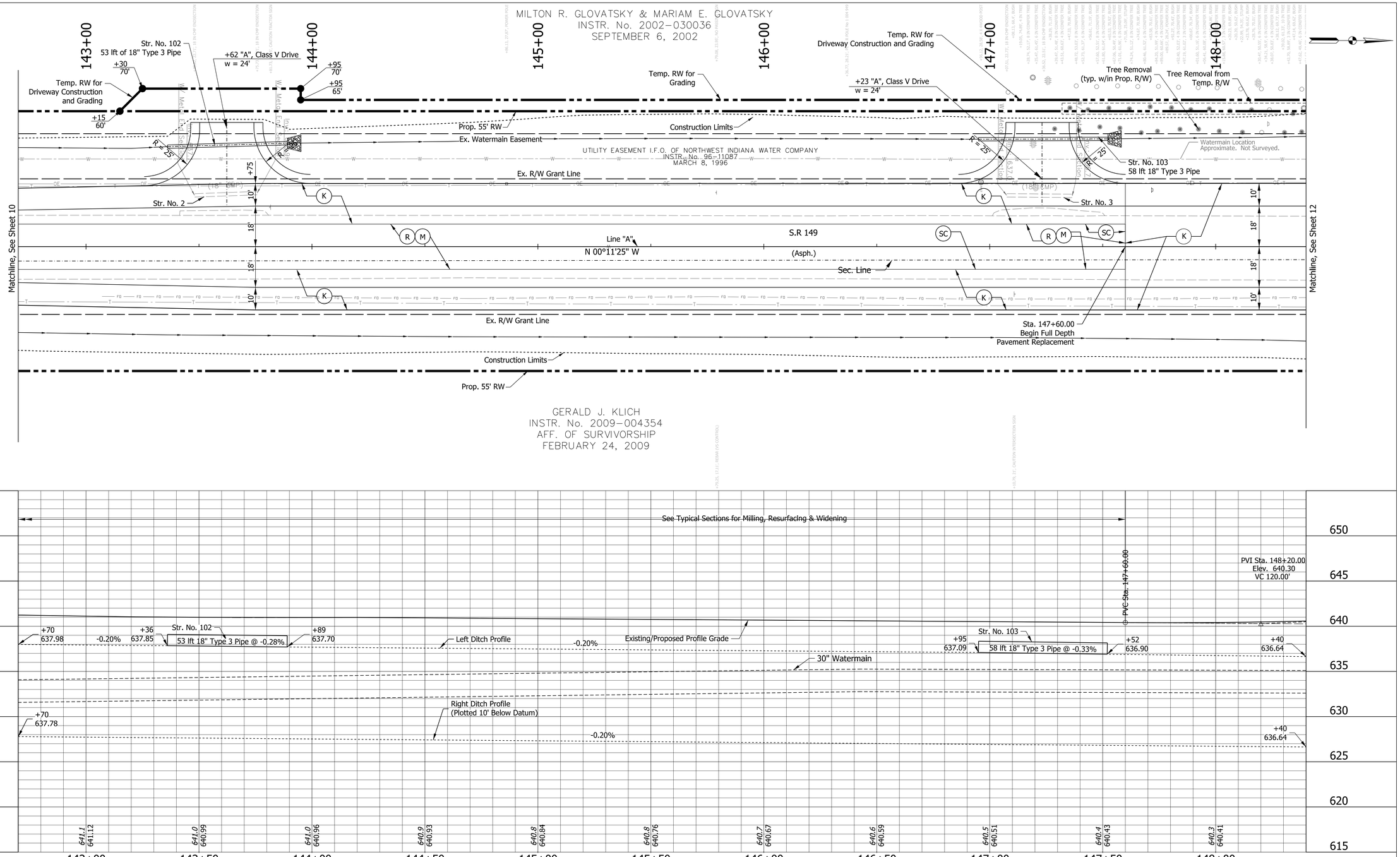
RECOMMENDED FOR APPROVAL $ENG_SIGNATURE$ 10/8/2021
DESIGN ENGINEER DATE

DESIGNED: JMS 08/19/2020 | DRAWN: KG 08/19/2020
CHECKED: ACH 08/19/2020 | CHECKED: MVL 08/19/2020

INDIANA
DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE
LINE "A"

HORIZONTAL SCALE	BRIDGE FILE
1" = 20'-0"	
VERTICAL SCALE	DESIGNATION
1" = 5'-0"	1600701
	SHEETS
ELECTRONIC	10 of 51
CONTRACT	PROJECT
R-42249	1600701



LEGEND

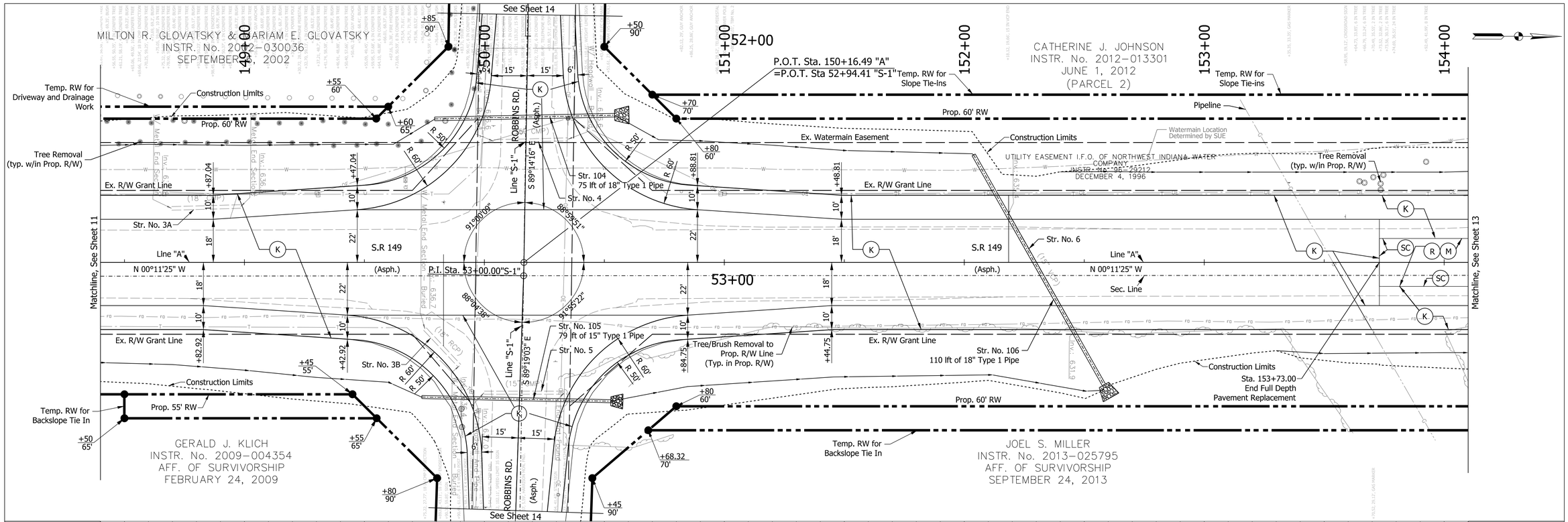
- (K) 165 #/SYD QC/QA-HMA, 3, 70, Surface, 9.5 mm on 275 #/SYD QC/QA-HMA, 3, 70, Intermediate, 19.0 mm on 660 #/SYD QC/QA-HMA, 3, 70, Base, 19.0 mm (2 Lifts) on Subgrade Treatment, Type TBD
- (O) Compacted Aggregate, No. 73
- (R) Resurfacing: 165 #/SYD QC/QA-HMA, 3, 70, Surface, 9.5 mm on 275 #/SYD QC/QA-HMA, 3, 70, Intermediate, 19.0 mm
- (R1) Resurfacing: 165 #/SYD QC/QA-HMA, 3, 70, Surface, 9.5 mm on
- (M) Milling, Asphalt, 4"
- (M1) Milling, Asphalt, 1.5"
- (SC) Saw Cut Line (Limit of Existing Pavement Removal)
- (D) Full Depth Driveway Replacement

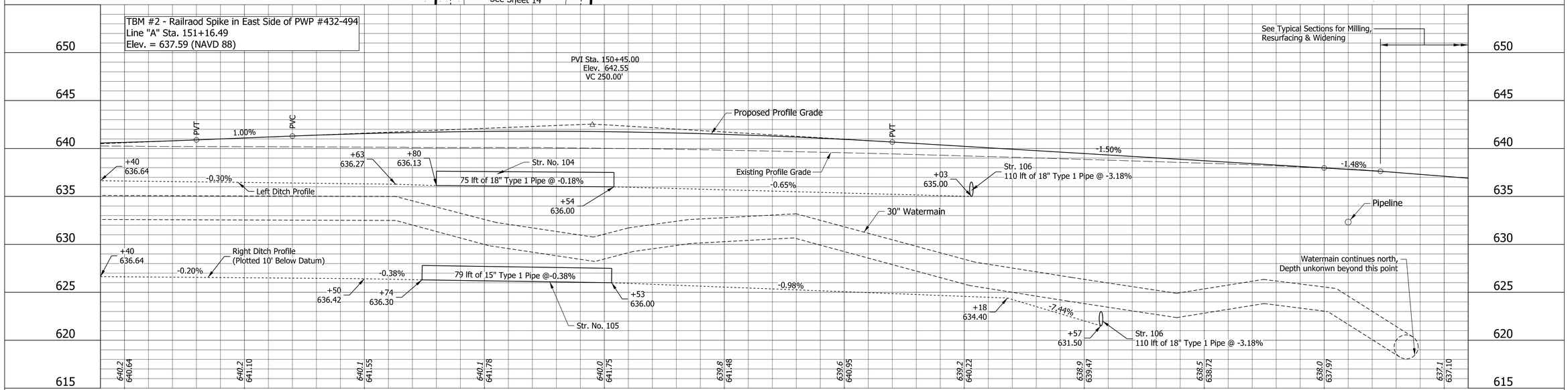
RECOMMENDED FOR APPROVAL	$ENG_SIGNATURE$ DESIGN ENGINEER	10/8/2021 DATE	
DESIGNED: JMS	08/19/2020	DRAWN: KG	08/19/2020
CHECKED: ACH	08/19/2020	CHECKED: MVL	08/19/2020

INDIANA
DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE
LINE "A"

HORIZONTAL SCALE	BRIDGE FILE
1" = 20'-0"	
VERTICAL SCALE	DESIGNATION
1" = 5'-0"	1600701
	SHEETS
ELECTRONIC	11 of 51
CONTRACT	PROJECT
R-42249	1600701





LEGEND

- (K) 165 #/SYD QC/QA-HMA, 3, 70, Surface, 9.5 mm on 275 #/SYD QC/QA-HMA, 3, 70, Intermediate, 19.0 mm on 660 #/SYD QC/QA-HMA, 3, 70, Base, 19.0 mm (2 Lifts) on Subgrade Treatment, Type TBD
- (O) Compacted Aggregate, No. 73
- (R) Resurfacing: 165 #/SYD QC/QA-HMA, 3, 70, Surface, 9.5 mm on 275 #/SYD QC/QA-HMA, 3, 70, Intermedlate, 19.0 mm
- (R1) Resurfacing: 165 #/SYD QC/QA-HMA, 3, 70, Surface, 9.5 mm on
- (M) Milling, Asphalt, 4"
- (M1) Milling, Asphalt, 1.5"
- (SC) Saw Cut Line (Limit of Existing Pavement Removal)
- (D) Full Depth Driveway Replacement

RECOMMENDED FOR APPROVAL: $ENG_SIGNATURE$ — DESIGN ENGINEER — 10/8/2021 DATE

DESIGNED: JMS 08/19/2020 | DRAWN: KG 08/19/2020

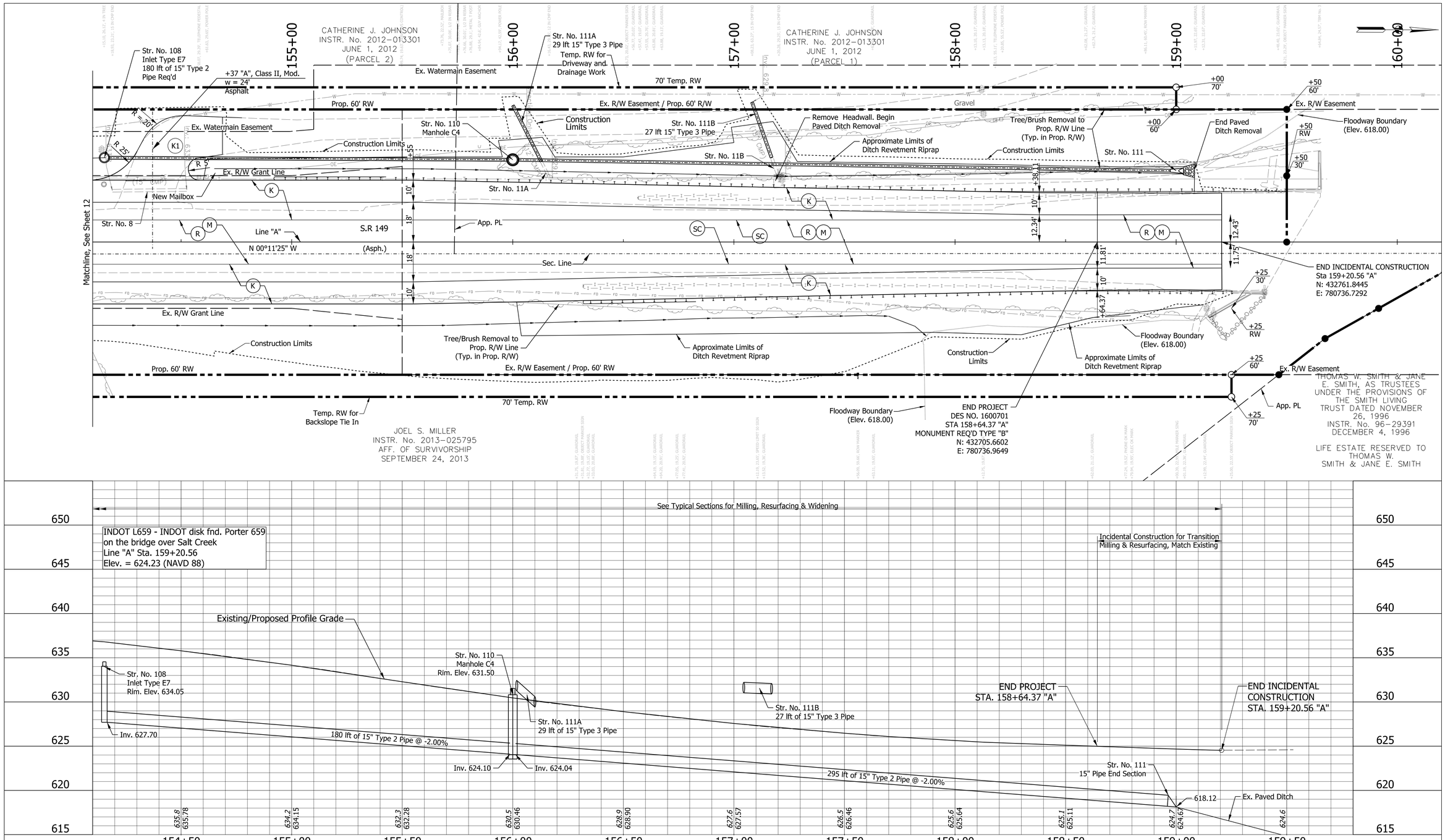
CHECKED: ACH 08/19/2020 | CHECKED: MVL 08/19/2020

INDIANA DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE LINE "A"

HORIZONTAL SCALE	BRIDGE FILE
1" = 20'-0"	
VERTICAL SCALE	DESIGNATION
1" = 5'-0"	1600701

SHEETS		
ELECTRONIC	12 of	51
CONTRACT	PROJECT	
R-42249	1600701	



LEGEND

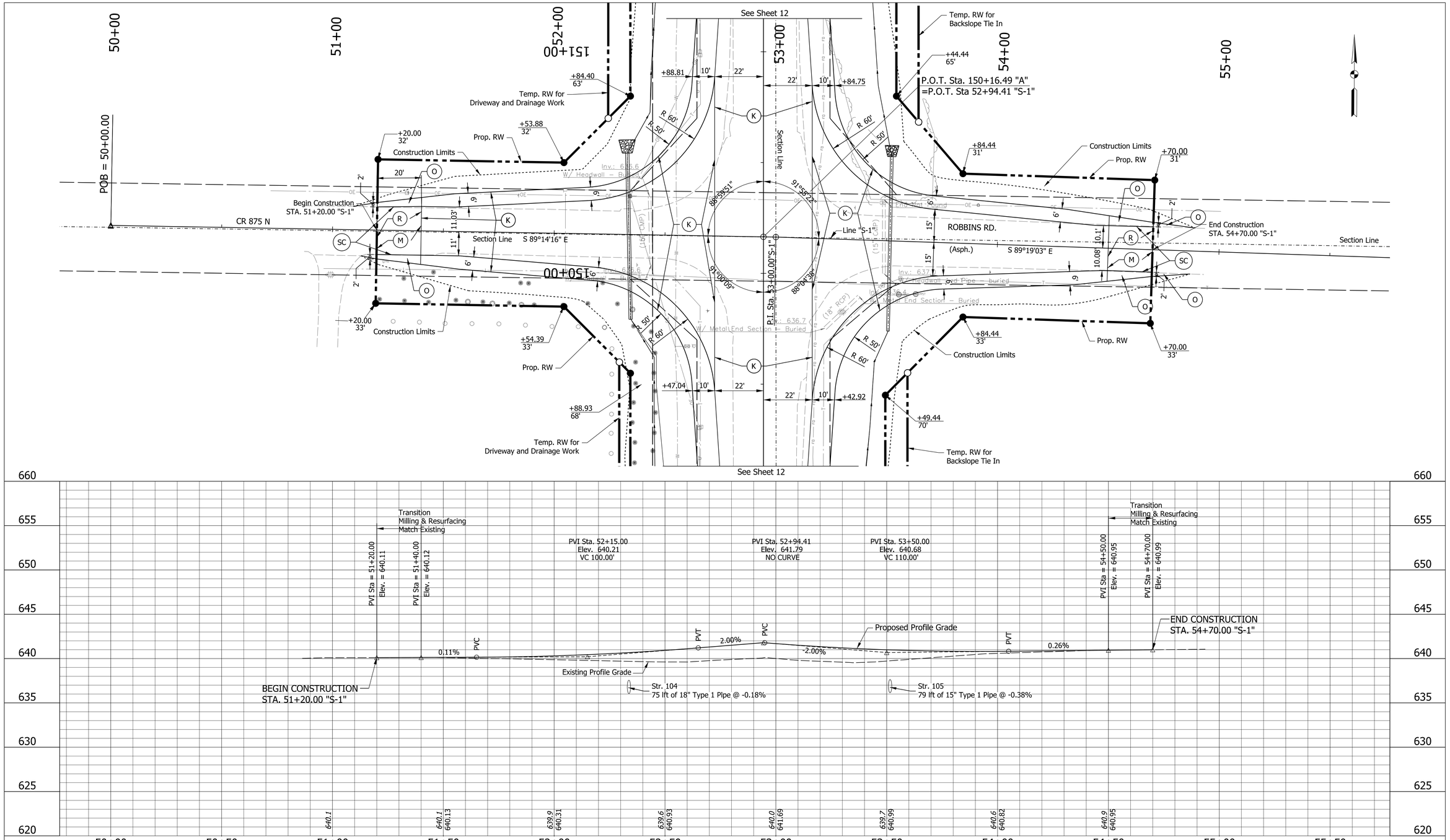
- (K) 165 #/SYD QC/QA-HMA, 3, 70, Surface, 9.5 mm on 275 #/SYD QC/QA-HMA, 3, 70, Intermediate, 19.0 mm on 660 #/SYD QC/QA-HMA, 3, 70, Base, 19.0 mm (2 Lifts) on Subgrade Treatment, Type TBD
- (O) Compacted Aggregate, No. 73
- (R) Resurfacing: 165 #/SYD QC/QA-HMA, 3, 70, Surface, 9.5 mm on 275 #/SYD QC/QA-HMA, 3, 70, Intermedlate, 19.0 mm
- (R1) Resurfacing: 165 #/SYD QC/QA-HMA, 3, 70, Surface, 9.5 mm on
- (M) Milling, Asphalt, 4"
- (M1) Milling, Asphalt, 1.5"
- (SC) Saw Cut Line (Limit of Existing Pavement Removal)
- (D) Full Depth Driveway Replacement

RECOMMENDED FOR APPROVAL	&ENG_SIGNATURE& DESIGN ENGINEER	10/8/2021 DATE	
DESIGNED: JMS	08/19/2020	DRAWN: KG	08/19/2020
CHECKED: ACH	08/19/2020	CHECKED: MVL	08/19/2020

INDIANA
DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE
LINE "A"

HORIZONTAL SCALE	BRIDGE FILE
1" = 20'-0"	
VERTICAL SCALE	DESIGNATION
1" = 5'-0"	1600701
	SHEETS
ELECTRONIC	13 of 51
CONTRACT	PROJECT
R-42249	1600701



LEGEND

- (K) 165 #/SYD QC/QA-HMA, 3, 70, Surface, 9.5 mm on 275 #/SYD QC/QA-HMA, 3, 70, Intermediate, 19.0 mm on 660 #/SYD QC/QA-HMA, 3, 70, Base, 19.0 mm (2 Lifts) on Subgrade Treatment, Type TBD
- (O) Compacted Aggregate, No. 73
- (R) Resurfacing: 165 #/SYD QC/QA-HMA, 3, 70, Surface, 9.5 mm on 275 #/SYD QC/QA-HMA, 3, 70, Intermediate, 19.0 mm
- (R1) Resurfacing: 165 #/SYD QC/QA-HMA, 3, 70, Surface, 9.5 mm on
- (M) Milling, Asphalt, 4"
- (M1) Milling, Asphalt, 1.5"
- (SC) Saw Cut Line (Limit of Existing Pavement Removal)
- (D) Full Depth Driveway Replacement

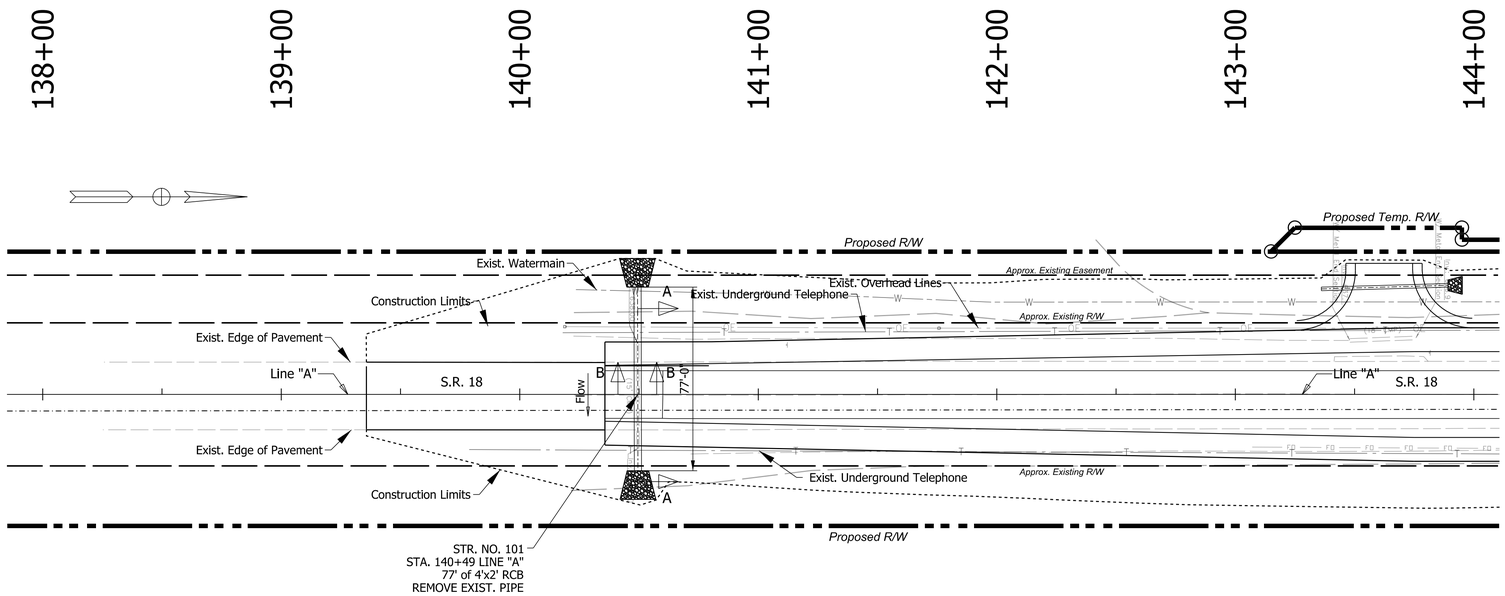
RECOMMENDED FOR APPROVAL $ENG_SIGNATURES$ 10/8/2021
DESIGN ENGINEER DATE

DESIGNED: JMS 08/19/2020 DRAWN: KG 08/19/2020
CHECKED: ACH 08/19/2020 CHECKED: MVL 08/19/2020

INDIANA
DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE
LINE "S-1"

HORIZONTAL SCALE	BRIDGE FILE
1" = 20'-0"	
VERTICAL SCALE	DESIGNATION
1" = 5'-0"	1600701
	SHEETS
ELECTRONIC	14 of 51
CONTRACT	PROJECT
R-42249	1600701



PROPOSED PLAN

Scale 1" = 30'-0"

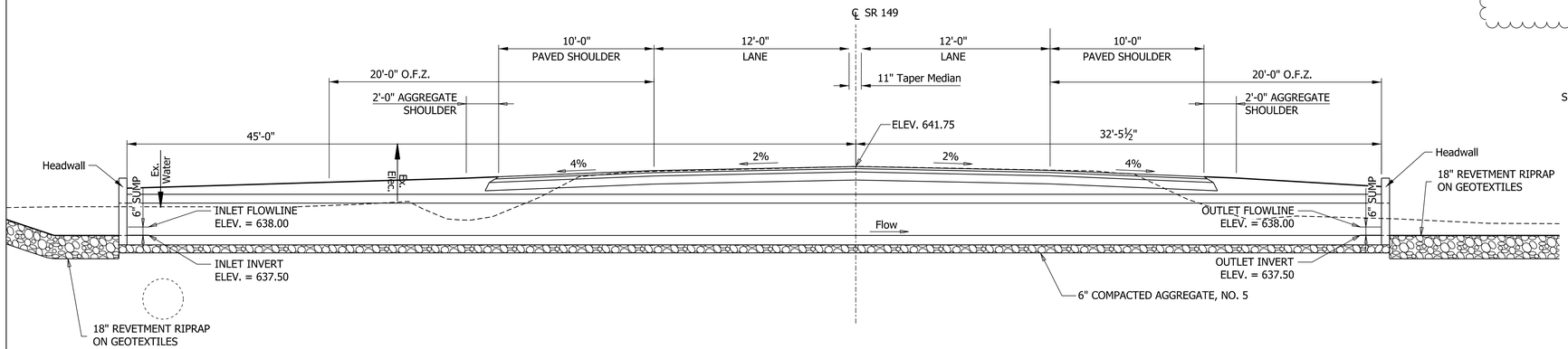
HYDRAULIC DATA

Drainage Area	13.25 Acres
Q100 Proposed Discharge	20.76 cfs
Q100 Proposed Water Surface Elevation (Outlet Depth)	1.14 ft.
Proposed Inlet-Edge Condition	Headwall
Q100 Proposed Headwater Elevation	639.93 ft.
Proposed Backwater Depth	0.87 ft.
Proposed Culvert Discharge Prior to Overtopping	39.26 cfs
Proposed Minimum Low Structure Elevation	639.50 ft.
Proposed Outlet-Flowline Elevation	638.00 ft.
Proposed Sump Depth	6 in.
Proposed Culvert Velocity (Q50)	5.39 ft./s
Proposed Outlet Riprap Size	Revetment Riprap

Q100 Existing Discharge	20.74 cfs
Q100 Existing Water Surface Elevation (Outlet Depth)	1.06 ft.
Existing Inlet-Edge Condition	End Projecting
Q100 Existing Headwater Elevation	641.88 ft. (Overtopping=641.75)
Existing Backwater Depth	2.82 ft.
Existing Culvert Discharge Prior to Overtopping	6.84 cfs
Existing Minimum Low Structure Elevation	639.25 ft.
Existing Outlet-Flowline Elevation	638.00 ft.
Existing Sump Depth	0 in.

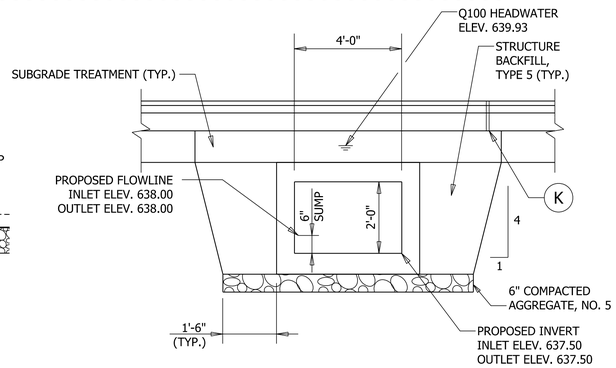
SOIL PARAMETERS	
PARAMETER	Foundation Soil
Factored Bearing Resistance (psf)	
Nominal Bearing Resistence (psf)	
Estimated Unit Weight, (pcf)	
Angle of Friction of Backfill,	
Interface Friction Angle between Concrete and Soil,	
Cohesion of Foundation Soil, (psf)	

Note: To be provided after geotechnical report



SECTION A-A

Scale 1/4" = 1'-0"

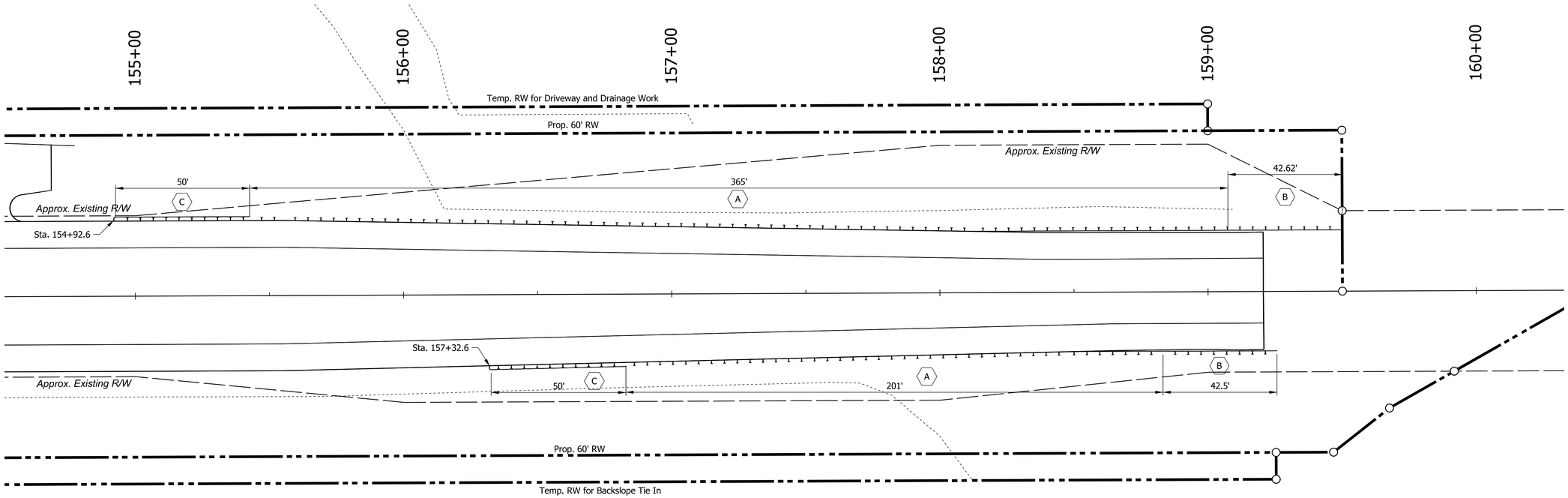


SECTION B-B

Scale 1/2" = 1'-0"

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	10/8/2021 DATE	INDIANA DEPARTMENT OF TRANSPORTATION
DESIGNED: RAR 08/19/2020	DRAWN: RAR 08/19/2020		STRUCTURE DETAILS
CHECKED: AH 08/19/2020	CHECKED: AH 08/19/2020		

SCALE	BRIDGE FILE
1" = 30'-0"	N/A
	DESIGNATION
	1600701
	SHEETS
	15 of 51
CONTRACT	PROJECT
R-42249	1600701



LEGEND:

A MGS W-Beam Guardrail, 6'-3" Spacing

B MGS Guardrail Transition Without Curb

C OS End Treatment, 31"

PlotPLOT_DATE$ PLOT_TIME$ AM_PM

File: c:\pw_working\lochner-slc\jsherrick\d0136732\RD_Guardrail Detail.dgn
Model:$MODEL_NAME$

RECOMMENDED FOR APPROVAL $ENG_SIGNATURE$ 10/8/2021
DESIGN ENGINEER DATE

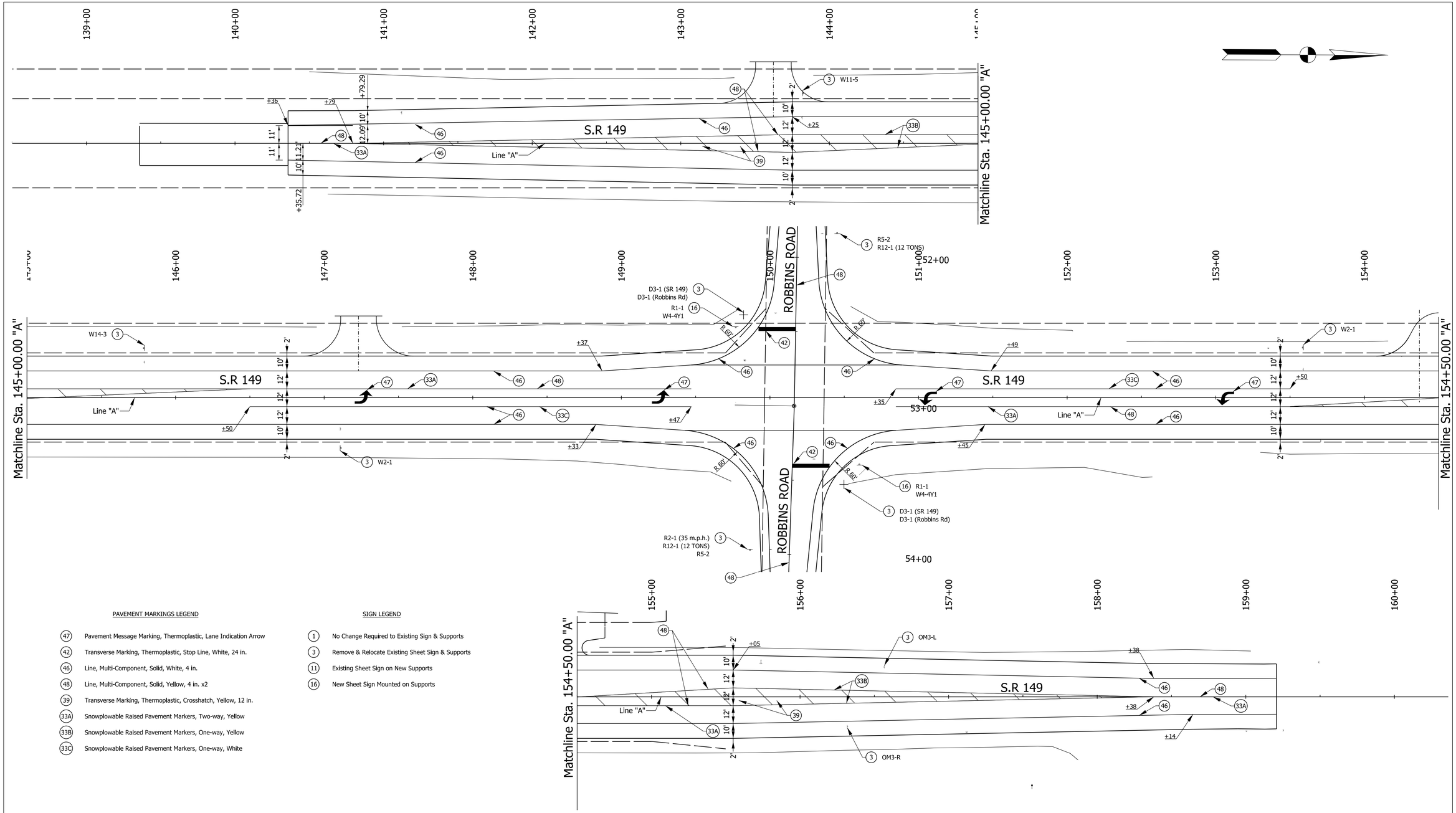
DESIGNED: JMS 08/19/2020 DRAWN: KG 08/19/2020

CHECKED: ACH 08/19/2020 CHECKED: MVL 08/19/2020

INDIANA
DEPARTMENT OF TRANSPORTATION

GUARDRAIL DETAILS

SCALE	BRIDGE FILE
1" = 20'-0"	
	DESIGNATION
	1600701
	SHEETS
	16 of 51
CONTRACT	PROJECT
R-42249	1600701



PAVEMENT MARKINGS LEGEND

47	Pavement Message Marking, Thermoplastic, Lane Indication Arrow
42	Transverse Marking, Thermoplastic, Stop Line, White, 24 in.
46	Line, Multi-Component, Solid, White, 4 in.
48	Line, Multi-Component, Solid, Yellow, 4 in. x2
39	Transverse Marking, Thermoplastic, Crosshatch, Yellow, 12 in.
33A	Snowplowable Raised Pavement Markers, Two-way, Yellow
33B	Snowplowable Raised Pavement Markers, One-way, Yellow
33C	Snowplowable Raised Pavement Markers, One-way, White

SIGN LEGEND

1	No Change Required to Existing Sign & Supports
3	Remove & Relocate Existing Sheet Sign & Supports
11	Existing Sheet Sign on New Supports
16	New Sheet Sign Mounted on Supports

RECOMMENDED FOR APPROVAL *SEND_SIGNATURES* 10/8/2021
DESIGN ENGINEER DATE

DESIGNED: JMS 08/19/2020 DRAWN: KG 08/19/2020

CHECKED: ACH 08/19/2020 CHECKED: MVL 08/19/2020

INDIANA
DEPARTMENT OF TRANSPORTATION

SIGNING AND PAVEMENT MARKINGS

HORIZONTAL SCALE	BRIDGE FILE
1" = 30'-0"	N/A
VERTICAL SCALE	DESIGNATION
	1600701
	SHEETS
	17 of 51
CONTRACT	PROJECT
R-42249	1600701

137+00

138+00

139+00

140+00

141+00

142+00

P.I. = 137+04.10

BEGIN PROJECT
DES NO. 1600701
STA. 140+35.72 LINE "A"
Type B Monument Req'd

BEGIN INCIDENTAL CONSTRUCTION
DES NO. 1600701
STA. 139+35.72 LINE "A"
N: 430866.3026
E: 780744.6802

Prop. 55' R/W

640

640

Prop. 55' R/W

MATCHLINE STA. 142+50.00

—×— Silt Fence

Mulched Temporary Seeding (placed after disturbance).
Place Mulched Seeding, Type R, after work complete.

IP Inlet Protection

OP Outlet Protection

Drainage Direction

Runoff Flow Direction

Temporary Check Dam

RECOMMENDED FOR APPROVAL $ENG_SIGNATURE$ 10/8/2021
DESIGN ENGINEER DATE

DESIGNED: JMS 08/19/2020	DRAWN: KG 08/19/2020
CHECKED: ACH 08/19/2020	CHECKED: MVL 08/19/2020

INDIANA
DEPARTMENT OF TRANSPORTATION

EROSION CONTROL

SCALE	BRIDGE FILE
1" = 20'	N/A
	DESIGNATION
	1600701
SURVEY BOOK	SHEETS
ELECTRONIC	18 of 51
CONTRACT	PROJECT
R-42249	1600701

Plot:$PLOT_DATE$ $PLOT_TIME$ AM_PM

File:
Model:$MODEL_NAME$

143+00

144+00

145+00

146+00

147+00

148+00

MATCHLINE STA. 142+50.00

MATCHLINE STA. 148+50.00

Temp. 65' R/W

Prop. 55' R/W

Temp. 65' R/W

Prop. 55' R/W

Watercrain Location
Approximate - Not Surveyed

(18" CMP)

(18" CMP)

640

640

640

640

—×— Silt Fence

Mulched Temporary Seeding (placed after disturbance).
Place Mulched Seeding, Type R, after work complete.

IP Inlet Protection

OP Outlet Protection

Drainage Direction

Runoff Flow Direction

Temporary Check Dam

RECOMMENDED FOR APPROVAL $ENG_SIGNATURE$ 10/8/2021
DESIGN ENGINEER DATE

DESIGNED: JMS 08/19/2020 DRAWN: KG 08/19/2020

CHECKED: ACH 08/19/2020 CHECKED: MVL 08/19/2020

INDIANA
DEPARTMENT OF TRANSPORTATION

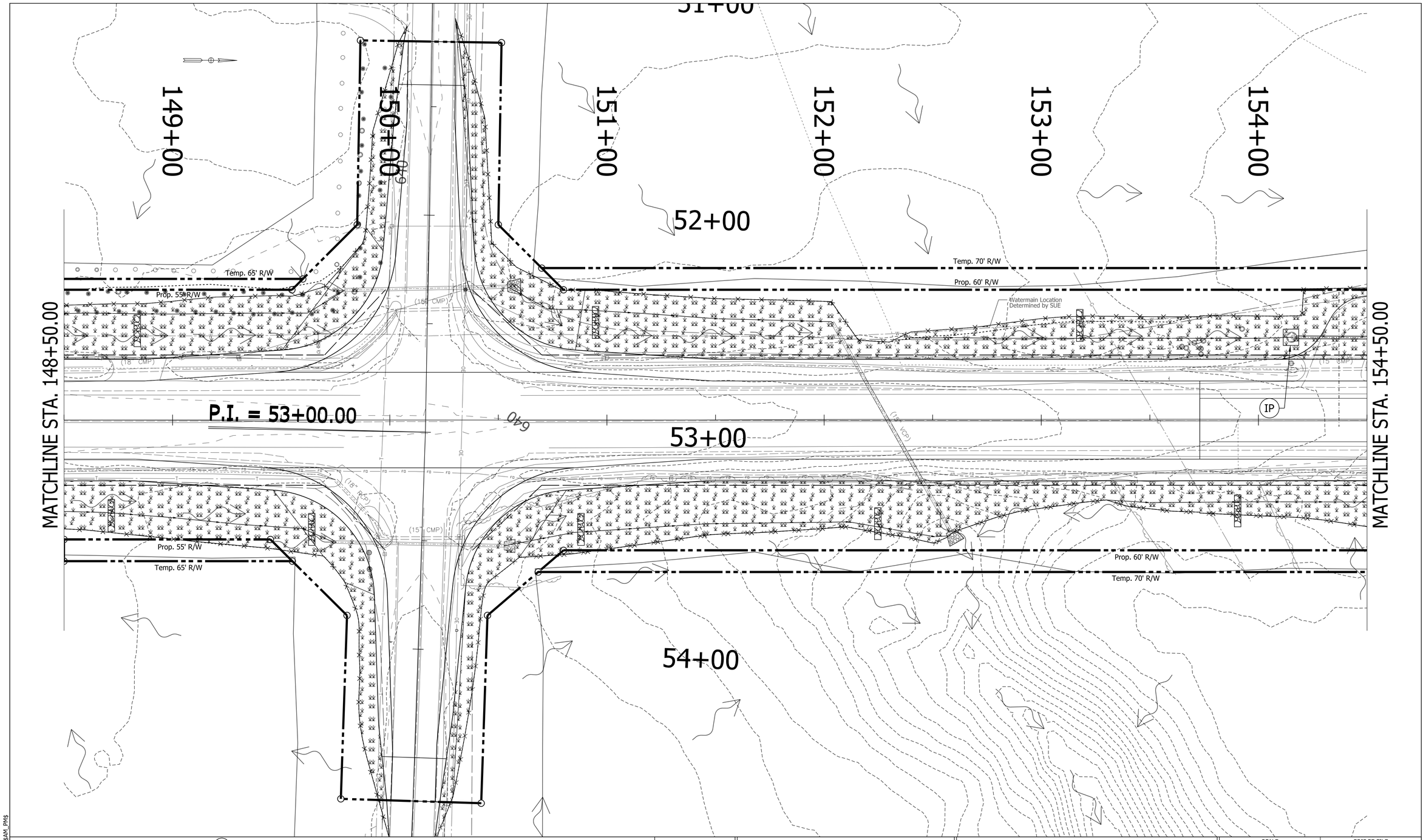
EROSION CONTROL

SCALE	BRIDGE FILE
1" = 20'	N/A
	DESIGNATION
	1600701

SURVEY BOOK	SHEETS
ELECTRONIC	19 of 51
CONTRACT	PROJECT
R-42249	1600701

PlotPLOT_DATE$ PLOT_TIME$ AM_PM

File: c:\pw_working\lochner-slc\jsherrick\d0136732\RD_EC.dgn
Model:$MODEL_NAME$



—×—	Silt Fence
	Mulched Temporary Seeding (placed after disturbance). Place Mulched Seeding, Type R, after work complete.
IP	Inlet Protection
OP	Outlet Protection
→	Drainage Direction
~~→	Runoff Flow Direction
	Temporary Check Dam

RECOMMENDED FOR APPROVAL $ENG_SIGNATURE$ 10/8/2021
DESIGN ENGINEER DATE

DESIGNED: JMS 08/19/2020 DRAWN: KG 08/19/2020
CHECKED: ACH 08/19/2020 CHECKED: MVL 08/19/2020

INDIANA
DEPARTMENT OF TRANSPORTATION

EROSION CONTROL

SCALE	BRIDGE FILE
1" = 20'	N/A
	DESIGNATION
	1600701

SURVEY BOOK	SHEETS		
ELECTRONIC	20	of	51
CONTRACT	PROJECT		
R-42249	1600701		

PlotPLOT_DATE$ PLOT_TIME$ AM_PM
File: c:\pw_working\lochner-slc\jsherrick\d0136732\RD_EC.dgn
Model: $MODEL_NAME$

155+00

156+00

157+00

158+00

159+00

160+00

MATCHLINE STA. 154+50.00

Temp. 70' R/W

Prop. 60' R/W

IP

Q100 = 618.00

610.00

Prop. 60' R/W

Temp. 70' R/W

Q100 = 618.00

END INCIDENTAL CONSTRUCTION
DES NO. 1600701
STA. 159+20.56 LINE "A"
N: 432761.8445
E: 780736.7292

END PROJECT
DES NO. 1600701
STA. 158+64.37 LINE "A"
Type B Monument Req'd

610.00

—×— Silt Fence

Mulched Temporary Seeding (placed after disturbance).
Place Mulched Seeding, Type R, after work complete.

IP Inlet Protection

OP Outlet Protection

Drainage Direction

Runoff Flow Direction

Temporary Check Dam

RECOMMENDED FOR APPROVAL $ENG_SIGNATURE$ 10/8/2021
DESIGN ENGINEER DATE

DESIGNED: JMS 08/19/2020	DRAWN: KG 08/19/2020
CHECKED: ACH 08/19/2020	CHECKED: MVL 08/19/2020

INDIANA
DEPARTMENT OF TRANSPORTATION

EROSION CONTROL

SCALE	BRIDGE FILE
1" = 20'	N/A
	DESIGNATION
	1600701
SURVEY BOOK	SHEETS
ELECTRONIC	21 of 51
CONTRACT	PROJECT
R-42249	1600701

Plotted: $DATE$ $TIME$ AM_PM
PLOT_DATE$ $TIME$ AM_PM

File: c:\pw_working\lochner-slc\jsherrick\d0136732\RD_EC.dgn
Model: $MODEL_NAME$

PAVEMENT QUANTITIES AND APPROACH TABLE

LOCATION	DESCRIPTION (APPROACH TYPE OR CLASS)	DRIVE APPROACH				GRADE			PAVEMENT REMOVAL	EXCAVATION		SUBGRADE TREATMENT, TYPE II	SUBGRADE TREATMENT, TYPE IC	MILLING, ASPHALT, 1.5 IN	MILLING, APPROACH	HMA FOR APPROACHES, TYPE B	MILLING, ASPHALT, 4 IN	HMA FOR ROADS			ASPHALT MATERIAL FOR:				MILLED HMA CORRUGATIONS, SINUSOIDAL	COMPACTED AGGREGATE NO. 53	COMPACTED AGGREGATE NO. 73	MULCHED SEEDING, TYPE R	REMARKS
		WIDTH	LENGTH	RADII	DISTANCE BEYOND R/W LINE	1	2	3		CUT	FILL							QC/QA, HMA, 3, 70, SURFACE, 9.5 MM	QC/QA-HMA, 4, 70, INTERMEDIATE, 19.0 MM	QC/QA-HMA, 4, 64, BASE, 25.0 MM	JOINT ADHESIVE, SURFACE	JOINT ADHESIVE, INTERMEDIATE	LIQUID ASPHALT SEALANT	ASPHALT FOR TACK COAT					
		FT	FT	FT	FT	%	%	%	SYS	CYS	CYS	SYS	SYS	SYS	SYS	TON	SYS	TON	TON	TON	LFT	LFT	LFT	TON	LFT	CYS	TON	SYS	
Line "A"																													
SR 149										4,336			7,248	253			3,224	901	1,501	2,392	7,315	7,315	10,973	6.00	3,658		314	1,014	
Line "S-1"																													
Robbins Rd	Approach Type B, Mod.											1,490			88	333					1,425	1,425	1,425	1.50		248	83		
Driveway																													
Sta. 143+62	Class V Drive	24	27	25	5																								
Sta. 147+23	Class V Drive	24	27	25	5																								
Sta. 154+37	Class II, Mod.	24	25	25	7							105				23													
TOTAL										**4,336**		**1,595**	**7,248**	**253**	**88**	**356**	**3,224**	**901**	**1,501**	**2,392**	**8,740**	**8,740**	**12,398**	**8**	**3,658**	**248**	**397**	**1,014**	

PAVEMENT MARKING TABLE

LOCATION	DESCRIPTION	LINE, MULTI-COMPONENT, SOLID, WHITE, 4 IN	LINE, MULTI-COMPONENT, SOLID, YELLOW, 4 IN	GROOVING FOR PAVEMENT MARKINGS	TRANSVERSE MARKING PAINT, CROSSHATCH LINE, YELLOW, 12 IN	TRANSVERSE MARKING, THERMOPLASTIC, STOP LINE, 24 IN	PAVEMENT MESSAGE MARKING, THERMOPLASTIC, LANE INDICATION ARROW	SNOWPLOABLE RAISED PAVEMENT MARKER, REMOVE	SNOWPLOABLE RAISED PAVEMENT MARKER	REMARKS
		LFT	LFT	LFT	LFT	LFT	EACH	EACH	EACH	
LINE "A"										
SR 149		4048	5612	10270	308		4	23	156	
LINE "S-1"										
ROBBINS RD		610				50				
TOTAL		**4,658**	**5,612**	**10,270**	**308**	**50**	**4**	**23**	**156**	

ROW MARKERS

STATION	LEFT	RIGHT	OFFSET (FT)	ROW MARKER ALONG R/W
Line "A"				
137+04	X		30	
137+04	X		55	
137+04		X	30	
137+04		X	55	
149+45		X	55	
149+50	X		55	
149+80		X	90	
149+85	X		90	
150+45		X	90	
150+50	X		90	
150+70		X	60	
150+80	X		60	
159+25		X	30	
159+25		X	60	
159+50	X		30	
159+50	X		60	
51+20	X		32	
51+20		X	33	
54+70	X		31	
54+70		X	33	
TOTAL:			**20**	

GUARDRAIL SUMMARY TABLE

LOCATION	GUARDRAIL, CONNECTOR SYSTEM, W-BEAM CURVED, 2	GUARDRAIL, REMOVE	GUARDRAIL END TREATMENT, OS	GUARDRAIL END TREATMENT, OS, 31"	HAND DIG GUARDRAIL POST HOLES	GUARDRAIL MGS W-BEAM, 6 FT 3 IN SPACING	GUARDRAIL MGS, HEIGHT TRANSITION	GUARDRAIL MGS TRANSITION WITHOUT CURB	REMARKS
	EACH	LFT	EACH	EACH	EACH	LFT	EACH	EACH	
LINE "A"									
SR 149		584		2		719		2	
TOTAL		**584**		**2**		**719**		**2**	

SIGN REPLACEMENT / INSTALLATION DATA

SIGN LOCATION (STA.)	DIRECTION	OFFSET (FT.)	SIGN CODE	SIGN SIZE (IN. x IN.)	GROUND - MOUNTED SIGN AREA (ft^2)		RELOCATE	REMOVE	NEW SIGN	2 1/4" X 2 1/4" - 12 GA. (TYPE 1) REINFORCED ANCHOR POST LENGTH (FT.)		REMARKS
					0.080"	0.100"				1	TOTAL	
143+92	SB	34	W11-5	36 X 36			1					
145+79	SB	34	W14-3	48 X 48 X 36			1					
147+11	NB	34	W2-1	30 X 30			1					
149+77	SB	48	R1-1	36 X 36		9.00			1	13.0	13.0	
149+77	SB	48	W4-4Y1	24 X 12	2.00				1	13.0	13.0	
149+87	NB	102	R2-1 (35 mph)	24 X 30			1					
149+87	NB	102	R12-1 (12 TONS)	24 X 30			1					
149+97	NB	102	R5-2	24 X 24								
150+45	SB	110	R5-2	24 X 24			1					
150+45	SB	110	R12-1 (12 TONS)	24 X 30			1					
150+60	NB	45	R1-1	36 X 36		9.00			1	13.0	13.0	
150+60	NB	45	W4-4Y1	24 X 12	2.00				1	13.0	13.0	
153+59	SB	34	W2-1	30 X 30			1					
156+32	NB	20	OM3-R				1					
156+57	SB	20	OM3-L				1					
				TOTAL:	**4.00**	**18.00**	**10**	**0**	**4**		**52.0**	

MONUMENT TABLE

STATION	TYPE OF POINT	OFFSET	MONUMENT TYPE (EA.)				
			A	B	C	D	CORNER
Line "A"							
140+35.72				X			
158+64.27				X			
TOTAL:				**2**			

MAILBOX TABLE

STATION	LEFT	RIGHT	SINGLE MAILBOX ASSEMBLE, RESET	DOUBLE MAILBOX ASSEMBLY
Line "A"				
155+74	X		1	
TOTAL:			**1**	

PAVED SIDE DITCH, RIPRAP DITCH, AND SODDING SUMMARY TABLE

LOCATION					PAVEMENT SIDE DITCH							RIPRAP			SODDING						
FROM STATION	TO STATION	LEFT	CROSS	RIGHT	ACTUAL LENGTH	CUT OFF WALLS (8 FT EQUAL LENGTH EACH)	TOTAL EQUIVALENT PAY LENGTHS TYPE					RIPRAP, REVETMENT	RIPRAP, UNIFORM	GEOTEXTILES, TYPE IA	FOR PAVED SIDE DITCHES	FOR DITCHES	FOR MEDIAN	FOR SHOULDER BREAK	SODDING AT BRIDGE CONE	TOTAL SODDING	NURSERY SODDING FOR LAWNS
					LFT	EACH						TONS	TONS	SYS	SYS	SYS	SYS	SYS	SYS	SYS	SYS
Line "A"																					
SR 149												1,013		1,013							
TOTALS												**1,013**		**1,013**							

STRUCTURE DATA

STRUCTURE NUMBER	LOCATION					SIZE	DESCRIPTION		LENGTH	VIDEO INSPECTION LENGTH	SKEW	COVER		FLOW LINE		SUMP DEPTH	TOP OF CASTING	SERVICE LIFE	SITE DESIGNATION	pH	BACKFILL METHOD	STRUCTURE BACKFILL TYPE 2	STRUCTURE BACKFILL TYPE 5	FLOWABLE BACKFILL TYPE R	GEOTEXTILES FOR RIPRAP TYPE 1A	RIPRAP, REVETMENT	Class 2 RIPRAP	STRUCTURE, REMOVE	PIPE, REMOVE	PIPE END SECTION	GRATED BOX END SECTION			SAFETY METAL END SECTION			CONNECT TO STR.	CULVERT ASSET ID	REMARKS
	STATION	LEFT	RIGHT	CROSS	OFFSET		PIPE TYPE	MANHOLE, INLET, CATCH BASIN, OR SPECIALTY STRUCTURE AND TYPE				MIN	MAX	UP STREAM	DOWN STREAM																TYPE	SLOPE	EA.	TYPE	SLOPE	EA.			
					FT	IN.			LFT	LFT		FT	FT	ELEV.	ELEV.	IN.	ELEV.	YRS				CYS	CYS	CYS	SYS	TON	TON	EA.	LFT	EA.									
101	140+49.44			X		36x24	1	Reinforced Concrete Box	64					638.00	638.00	6.00		50			1		25		17	17													
102	143+62.61	X			38.6	18	3	Pipe	53					637.85	637.70			50			2	9			4	4												
103	147+23.06	X			38.6	18	3	Pipe	58					637.09	636.90			50			2	6			4	4												
104	150+17.48	X			61.2	18	1	Pipe	75					636.13	636.00			50			1	17			4	4												
105	150+15.45		X		57.2	15	1	Pipe	79					636.30	636.00			50			1	18			3	3												
106	152+29.14			X		18	1	Pipe	110					635.00	631.50			50			1	4			4		4											
108	154+15.98	X			38.2	15	2	Catch basin, E7	180						627.70		634.05	50			2	118																
110	156+00.00	X			37.2	15	2	Manhole, C4	295					624.10	624.04		631.50	50			2	144																
111A	156+06.48	X			49.1	15	3	Pipe	29					631.40	629.60			50			2	10																
111B	157+12.62	X			50.7	15	3	Pipe	27					630.90	630.80			50			2	9																
111	159+00.64	X			32.2									618.12											3	3			1								End Section
1	140+49.44			X		15	CMP	Pipe																2.1				44									
2	143+61.85	X			24	18	CMP	Pipe																2				28									
3	147+22.01	X			23.4	18	CMP	Pipe																2				29									
3A	148+84.07	X			23.7	18	CMP	Pipe																2				29									
3B	149+82.97		X		39.4	18	RCP	Pipe																1.5				21									
4	150+19.29	X			51.6	15	CMP	Pipe																1.5				31									
5	150+16.62		X		55	15	CMP	Pipe																1.6				33									
6	152+29.14			X		15	VCP	Pipe																2.6				56									
8	154+35.75	X			24	15	CMP	Pipe																1.6				34									
11A	156+11.58	X			38	12	CMP	Pipe																0.6				20									
11B	157+13.67	X			46	15	CMP	Pipe																2				36									
TOTAL:									**970**	**0**												**335**	**25**	**19**	**39**	**35**	**4**	**0**	**361**	**1**			**0**			**0**		

	STRUCTURE NUMBER		102	103	104	105	106	108	110	111A	111B
	PIPE TYPE / SHAPE (CIR or DEF)		3	3	1	1	1	2	2	3	3
INT. DES.	SMOOTH PIPE SIZE		18	18	18	15	18	15	15	15	15
	CORRUGATED PIPE SIZE										
	SEMI-SMOOTH PIPE SIZE										
CONC.	RCP/RCHEP (S)	CLASS	1000	1000	1000	1350	1000	1000	1000	1000	1000
		$D_{0.01}$ RATING	II	II	II	II	II	II	II	II	II
	NON-REINFORCED CONCRETE PIPE, CLASS 3 (S)		X	X	X		X	X	X		
PLASTIC PIPE	CORRUGATED PE PIPE, TYPE S (S)*		X	X	X		X	X	X		
	PROFILE WALL (RIBBED) PE PIPE (S)*		X	X	X		X				
	PROFILE WALL (CLOSED) PE PIPE (S)*										
	SMOOTH WALL PE PIPE (S)* / MAXIMUM DR		X	X	X	X	X	X	X		
	CORRUGATED PP PIPE (S)										
	PROFILE WALL PVC PIPE (S)		X	X	X	X	X	X	X		
	SMOOTH WALL PVC PIPE (S)*		X	X	X	X	X	X	X		
CLAY	VITRIFIED CLAY PIPE, EXTRA STRENGTH (S)		X	X	X	X	X	X	X		
CORRUGATED STEEL PIPE / PIPE-ARCH	FULLY BIT. PAVED & LINED (S)	CORR.PROFILE							2 2/3 in X 1/2 in	2 2/3 in X 1/2 in	
		THICKNESS							0.109	0.109	
	ZINC COATED (C)	CORR. PROFILE									
		THICKNESS									
	ZINC COATED W/ BPI (C)	CORR. PROFILE									
		THICKNESS									
	ALUM. COATED TYPE 2 (C)	CORR. PROFILE									
		THICKNESS									
	POLYMER PRECOATED GALVANIZED (C)	CORR. PROFILE									
		THICKNESS									
	POLYMER PRECOATED GALVANIZED CORRUGATED STEEL PIPE TYPE 1A	CORR. PROFILE									
		THICKNESS									
COR. ALUM. PIPE/ P-ARCH	CORRUGATED ALUM. ALLOY (C)	CORR. PROFILE									
		THICKNESS									
	CORRUGATED ALUM. ALLOY W/ BPI (C)	CORR. PROFILE									
		THICKNESS									
SPIRAL RIB STEEL PIPE	FULLY BIT. PAVED & LINED (S)	CORR.PROFILE							3/4 in X 3/4 in X 7 1/2 in	3/4 in X 3/4 in X 7 1/2 in	
		THICKNESS							0.109	0.109	
	ZINC COATED (SS)	RIB PROFILE	3/4 in X 3/4 in X 7 1/2 in	3/4 in X 3/4 in X 7 1/2 in	3/4 in X 3/4 in X 7 1/2 in	3/4 in X 3/4 in X 7 1/2 in	3/4 in X 3/4 in X 7 1/2 in				
		THICKNESS	0.109	0.109	0.109	0.109	0.109				
	ZINC COATED W/ BPI (SS)	RIB PROFILE									
		THICKNESS									
	ALUM. COATED TYPE 2 (SS)	RIB PROFILE	3/4 in X 3/4 in X 7 1/2 in	3/4 in X 3/4 in X 7 1/2 in	3/4 in X 3/4 in X 7 1/2 in	3/4 in X 3/4 in X 7 1/2 in	3/4 in X 3/4 in X 7 1/2 in				
		THICKNESS	0.064	0.064	0.064	0.064	0.064				
	POLYMER PRECOATED GALVANIZED (SS)	RIB PROFILE	3/4 in X 3/4 in X 7 1/2 in	3/4 in X 3/4 in X 7 1/2 in	3/4 in X 3/4 in X 7 1/2 in	3/4 in X 3/4 in X 7 1/2 in	3/4 in X 3/4 in X 7 1/2 in				
		THICKNESS	0.064	0.064	0.064	0.064	0.064				
STRUCTURAL PLATE PIPE / PIPE-ARCH	STR. PLATE ALUMINUM ALLOY (C)	CORR. PROFILE									
		THICKNESS									
	STR. PLATE ALUMINUM ALLOY W/ CFP (C)	CORR. PROFILE									
		THICKNESS									
	STR. PLATE STEEL (C)	CORR. PROFILE									
		THICKNESS **									
	STR. PLATE STEEL W/ CFP (C)	CORR. PROFILE									
		THICKNESS **									

LEGEND

PIPE MATERIAL
- RCP — Reinforced Concrete Pipe
- RCHEP — Reinforced Concrete Horizontal Elliptical Pipe
- PE — Polyethylene
- DR — Dimension Ratio
- PVC — Polyvinyl Chloride
- PP — Polypropylene
- CORR — Corrugation
- ALUM — Aluminum
- STR — Structural
- (LS) — Lock Seam Pipe Required

PIPE PROTECTION
- BPI — Bituminous Paved Invert
- CFP — Concrete Field Paving
- BIT — Bituminous

SHAPE
- CIR — Circular Pipe
- DEF — Deformed Pipe

INTERIOR DESIGNATION
- (S) — Smooth Pipe Material
- (C) — Corrugated Pipe Material
- (SS) — Semi-Smooth Pipe Material

PIPE SIZE
Circular pipe is shown as diameter in inches
Deformed pipe is shown as area in square feet

* Refer to Standard Drawings 715-PHCL-20 through -22 for nominal diameter appropriate for pay item diameter.

** Tabulated thickness refers to top and side plates. For pipes and pipe-arches with a thickness less than .280 in., bottom plates shall be of next greater available thickness.

RECOMMENDED FOR APPROVAL $ENG_SIGNATURE$ DESIGN ENGINEER 10/8/2021 DATE

DESIGNED: JMS 08/19/2020 DRAWN: KG 08/19/2020

CHECKED: ACH 08/19/2020 CHECKED: MVL 08/19/2020

INDIANA DEPARTMENT OF TRANSPORTATION

QUANTITY SUMMARY TABLES

SCALE	BRIDGE FILE
	N/A
	DESIGNATION
	1600701

SURVEY BOOK	SHEETS		
ELECTRONIC	23	of	51
CONTRACT	PROJECT		
R-42249	1600701		

PlotPLOT_DATE$ PLOT_TIME$ AM_PM
File:
Model:$MODEL_NAME$

PROJECT	DESIGNATION
1600701	1600701
CONTRACT	
R-42249	

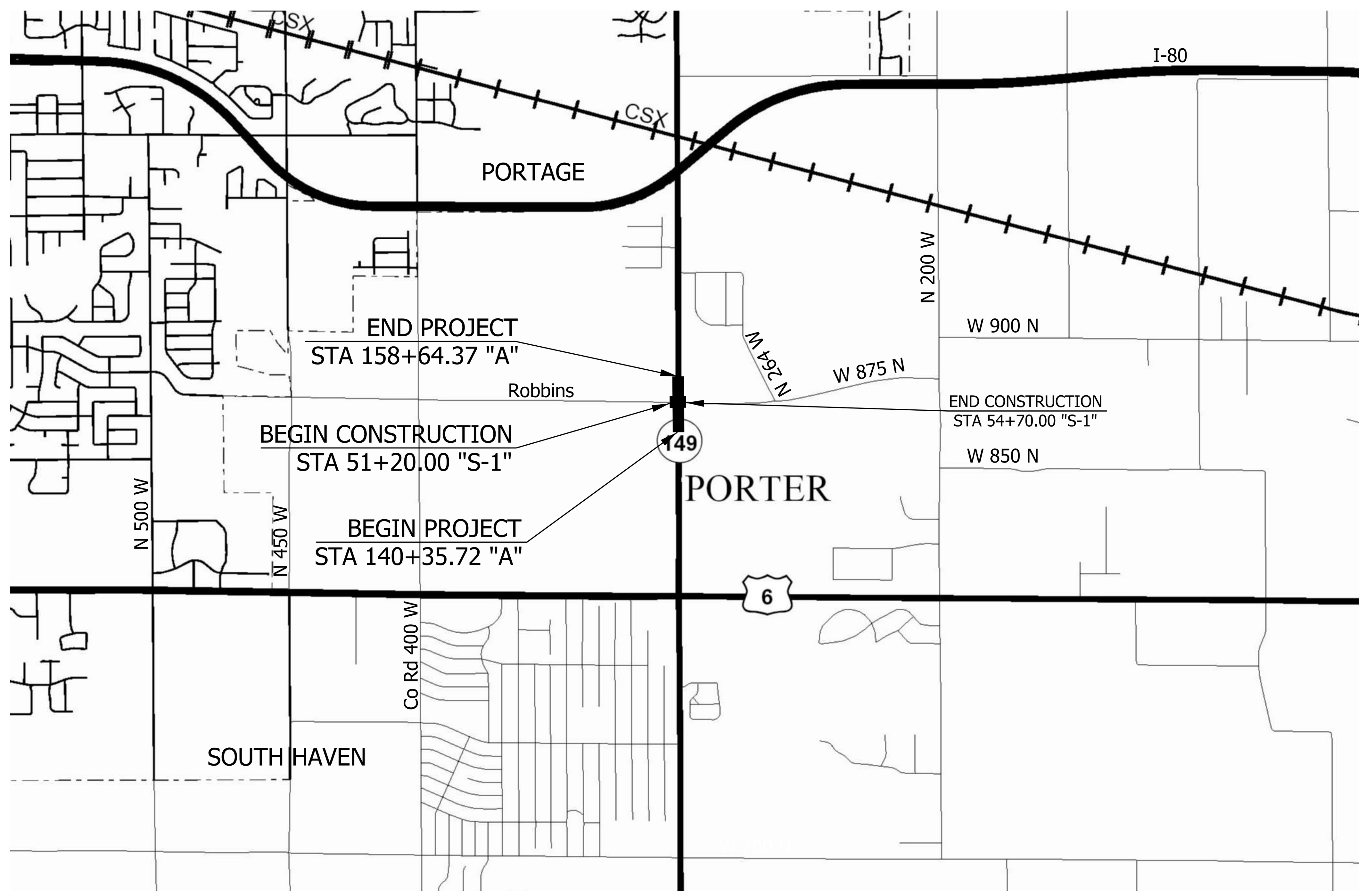
INDIANA DEPARTMENT OF TRANSPORTATION

ROAD PLANS

ROUTE: SR 149 FROM: RP 4+59 TO: RP 4+80

PROJECT NO. 1600701 P.E.
1600701 R/W
1600701 CONST.

Intersection Improvement on SR 149 at CR 875N/Robbins Road
Located 0.75 Miles North of US 6
Sections 20 & 21, T-36-N, R-6-W, Portage and Liberty Townships, Porter County, Indiana

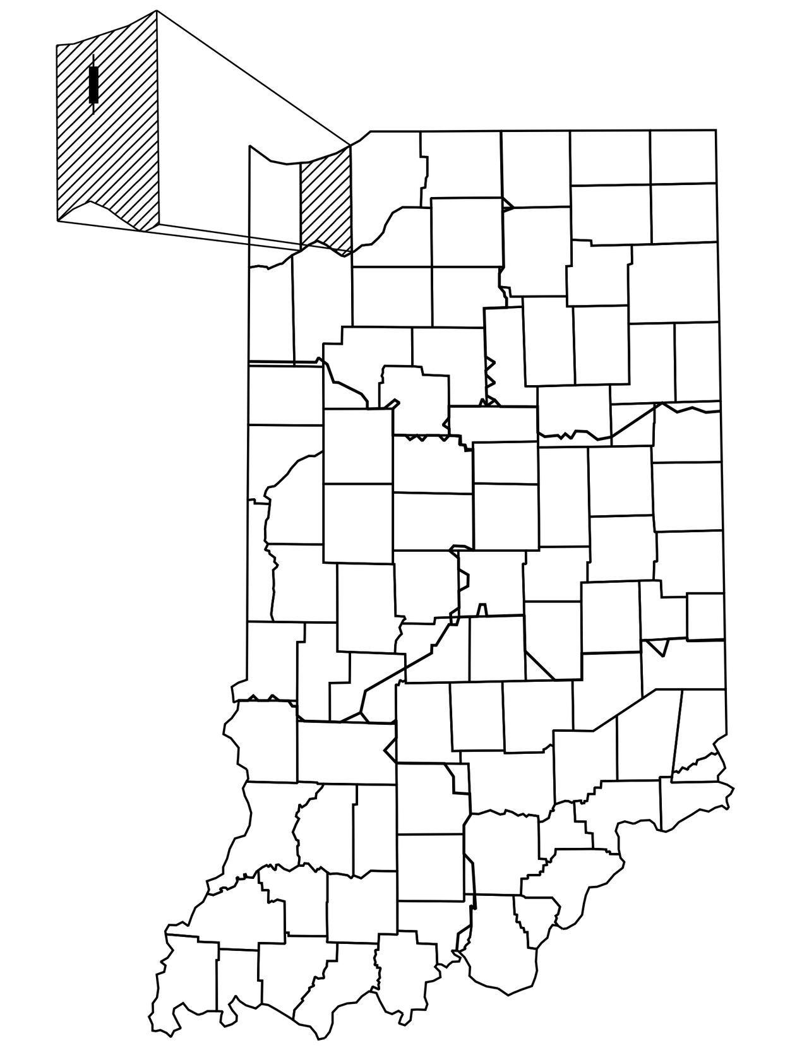


SCALE: 1" =2000'

TRAFFIC DATA	SR 149	Robbins Rd
A.A.D.T. (2022)	10,439 V.P.D.	2,491 V.P.D.
A.A.D.T. (2042)	11,637 V.P.D.	2,491 V.P.D.
D.H.V (2042)	1,065 V.P.H.	250 V.P.H.
DIRECTIONAL DISTRIBUTION	49.51 %	56.76 %
TRUCKS	5.26 % A.A.D.T.	5.82 % A.A.D.T.
	3.86 % D.H.V.	7.20 % D.H.V.

DESIGN DATA		
DESIGN SPEED	50 M.P.H.	35 M.P.H.
PROJECT DESIGN CRITERIA	RECONSTRUCTION (NON-FREEWAY)	RECONSTRUCTION (NON-FREEWAY)
FUNCTIONAL CLASSIFICATION	PRINCIPAL ARTERIAL	MINOR ARTERIAL
RURAL/URBAN	URBAN	URBAN
TERRAIN	LEVEL	LEVEL
ACCESS CONTROL	NONE	NONE

LAPORTE DISTRICT



PROJECT LOCATION SHOWN BY
PORTER COUNTY

LATITUDE: 41° 33' 39.9" N LONGITUDE: 87° 07' 27.5" W

GROSS LENGTH: 0.35 MI.
NET LENGTH: 0.35 MI.
MAX. GRADE: 3.74% %

Stage 3
02/10/2022
NOT FOR CONSTRUCTION

INDIANA DEPARTMENT OF TRANSPORTATION
STANDARD SPECIFICATIONS DATED 2022
TO BE USED WITH THESE PLANS

LOCHNER

H.W. LOCHNER
286 WEST JOHNSON ROAD
SUITE D
LAPORTE, IN 46350

PLANS PREPARED BY: Lochner 219-324-4903 PHONE NUMBER

CERTIFIED BY: "THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT." 4/4/2022 DATE

RECOMMENDED FOR LETTING: INDIANA DEPARTMENT OF TRANSPORTATION DATE

	DESIGNATION
	1600701
	SHEETS
	1 of 50
CONTRACT	PROJECT
R-42249	1600701

File: c:\pw_working\lochner-slc\jsherrick\d0136732\RD_Title Sht.dgn
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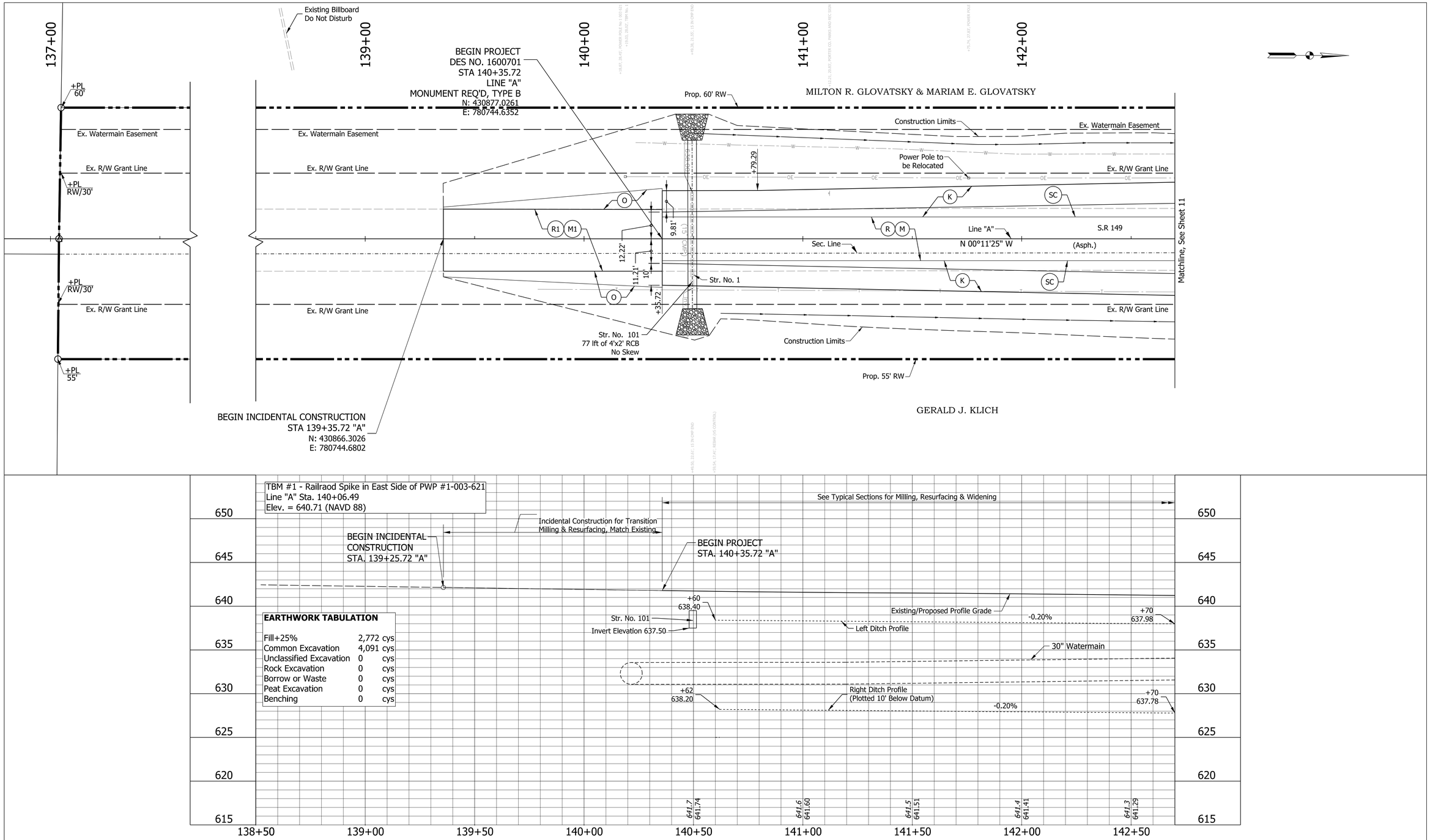
PlotSPLOT_DATES$ $TIME$ AM_PM



EARTHWORK TABULATION

Fill+25%	2,772 cys
Common Excavation	4,091 cys
Unclassified Excavation	0 cys
Rock Excavation	0 cys
Borrow or Waste	0 cys
Peat Excavation	0 cys
Benching	0 cys

LEGEND

(K) 165 #/SYD QC/QA-HMA, 3, 70, Surface, 9.5 mm on
330 #/SYD QC/QA-HMA, 3, 70, Intermediate, 19.0 mm on
660 #/SYD QC/QA-HMA, 3, 64, Base, 25.0 mm on
Subgrade Treatment, Type IBC

(O) Compacted Aggregate, No. 73

(M) Milling, Asphalt, 4.5"

(R) Resurfacing:
165 #/SYD QC/QA-HMA, 3, 70, Surface, 9.5 mm on
275 #/SYD QC/QA-HMA, 3, 70, Intermediate, 19.0 mm

(R1) Resurfacing:
165 #/SYD QC/QA-HMA, 3, 70, Surface, 9.5 mm

(M1) Milling, Asphalt, 1.5"

(D) HMA for Approaches, Type B consisting of:
165 #/SYD, HMA Surface Type B on
275 #/SYD, HMA Intermediate Type B on
6" Compacted Aggregate No. 53, on
Subgrade Treatment, Type II
(6" Coarse Aggregate No. 53)

(SC) Saw Cut Line (Limit of Existing Pavement Removal)

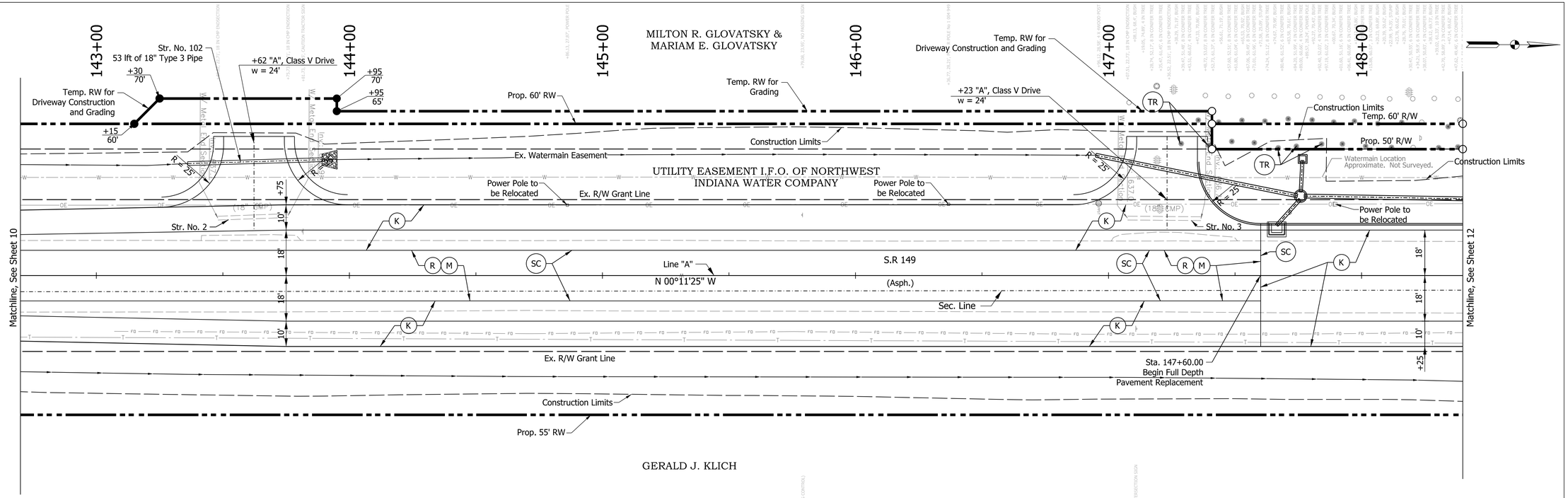
RECOMMENDED FOR APPROVAL *&ENG_SIGNATURE&* 4/4/2022
DESIGN ENGINEER DATE

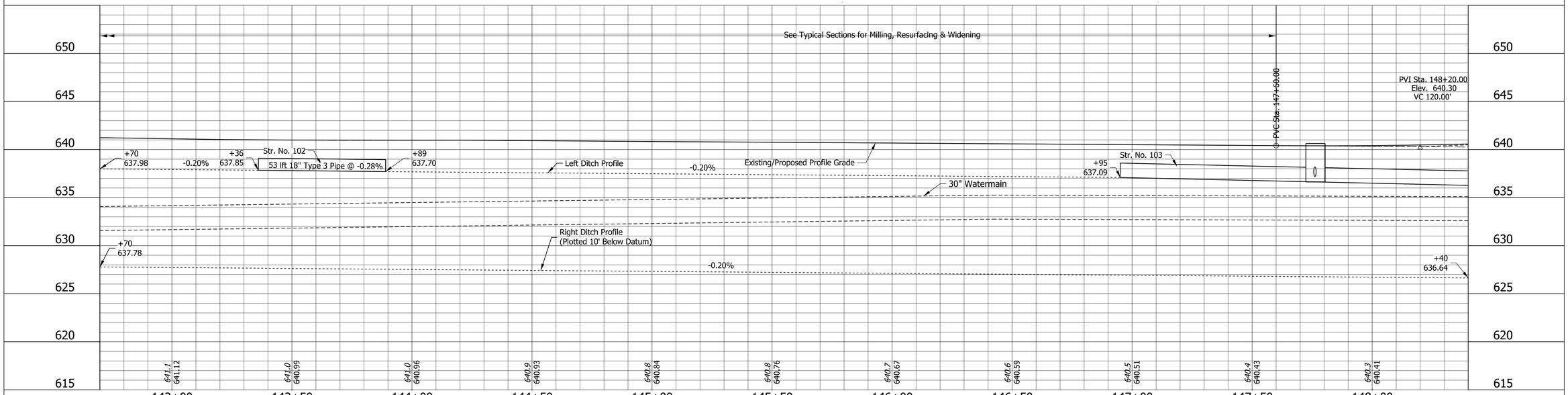
DESIGNED: JMS 08/19/2020	DRAWN: KG 08/19/2020
CHECKED: ACH 08/19/2020	CHECKED: MVL 08/19/2020

INDIANA
DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE
LINE "A"

HORIZONTAL SCALE	BRIDGE FILE
1" = 20'-0"	
VERTICAL SCALE	DESIGNATION
1" = 5'-0"	1600701
	SHEETS
ELECTRONIC	10 of 50
CONTRACT	PROJECT
R-42249	1600701





LEGEND

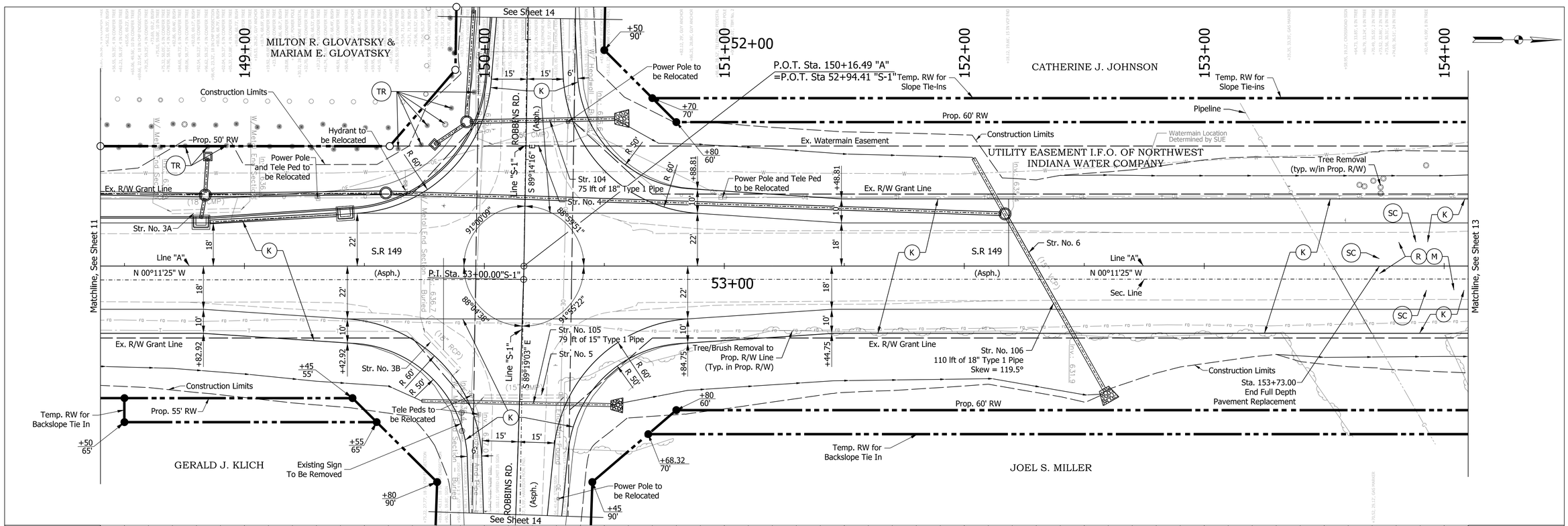
- (K) 165 #/SYD QC/QA-HMA, 3, 70, Surface, 9.5 mm on 330 #/SYD QC/QA-HMA, 3, 70, Intermediate, 19.0 mm on 660 #/SYD QC/QA-HMA, 3, 64, Base, 25.0 mm on Subgrade Treatment, Type IBC
- (O) Compacted Aggregate, No. 73
- (M) Milling, Asphalt, 4.5"
- (R) Resurfacing: 165 #/SYD QC/QA-HMA, 3, 70, Surface, 9.5 mm on 275 #/SYD QC/QA-HMA, 3, 70, Intermediate, 19.0 mm
- (R1) Resurfacing: 165 #/SYD QC/QA-HMA, 3, 70, Surface, 9.5 mm
- (M1) Milling, Asphalt, 1.5"
- (D) HMA for Approaches, Type B consisting of: 165 #/SYD, HMA Surface Type B on 275 #/SYD, HMA Intermediate Type B on 6" Compacted Aggregate No. 53, on Subgrade Treatment, Type II (6" Coarse Aggregate No. 53)
- (SC) Saw Cut Line (Limit of Existing Pavement Removal)

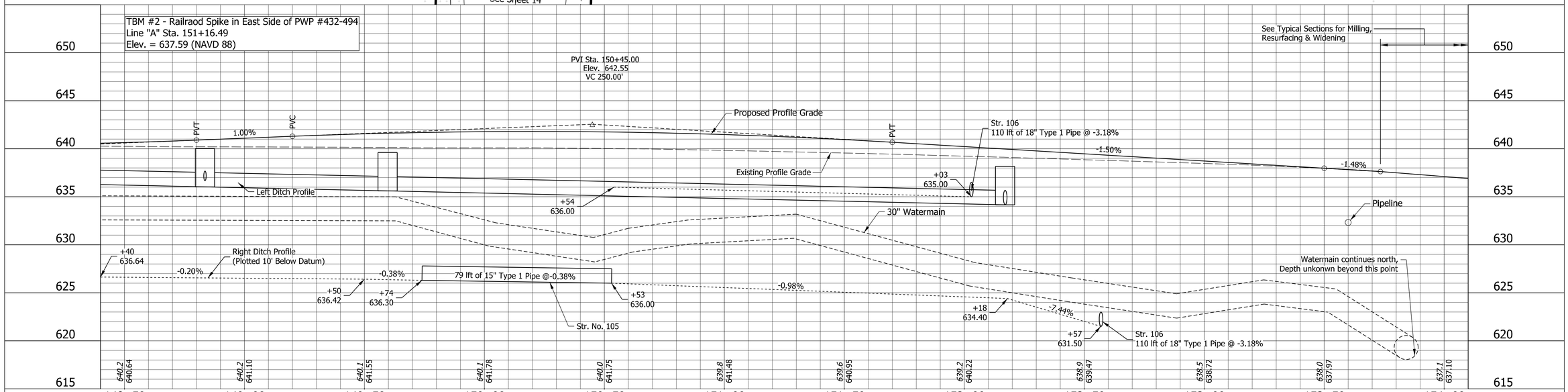
RECOMMENDED FOR APPROVAL	$ENG_SIGNATURE$ DESIGN ENGINEER	4/4/2022 DATE	
DESIGNED: JMS	08/19/2020	DRAWN: KG	08/19/2020
CHECKED: ACH	08/19/2020	CHECKED: MVL	08/19/2020

INDIANA
DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE
LINE "A"

HORIZONTAL SCALE	BRIDGE FILE
1" = 20'-0"	
VERTICAL SCALE	DESIGNATION
1" = 5'-0"	1600701
	SHEETS
ELECTRONIC	11 of 50
CONTRACT	PROJECT
R-42249	1600701





LEGEND

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RECOMMENDED FOR APPROVAL: $ENG_SIGNATURE$ — DESIGN ENGINEER — 4/4/2022 DATE

DESIGNED: JMS 08/19/2020 | DRAWN: KG 08/19/2020

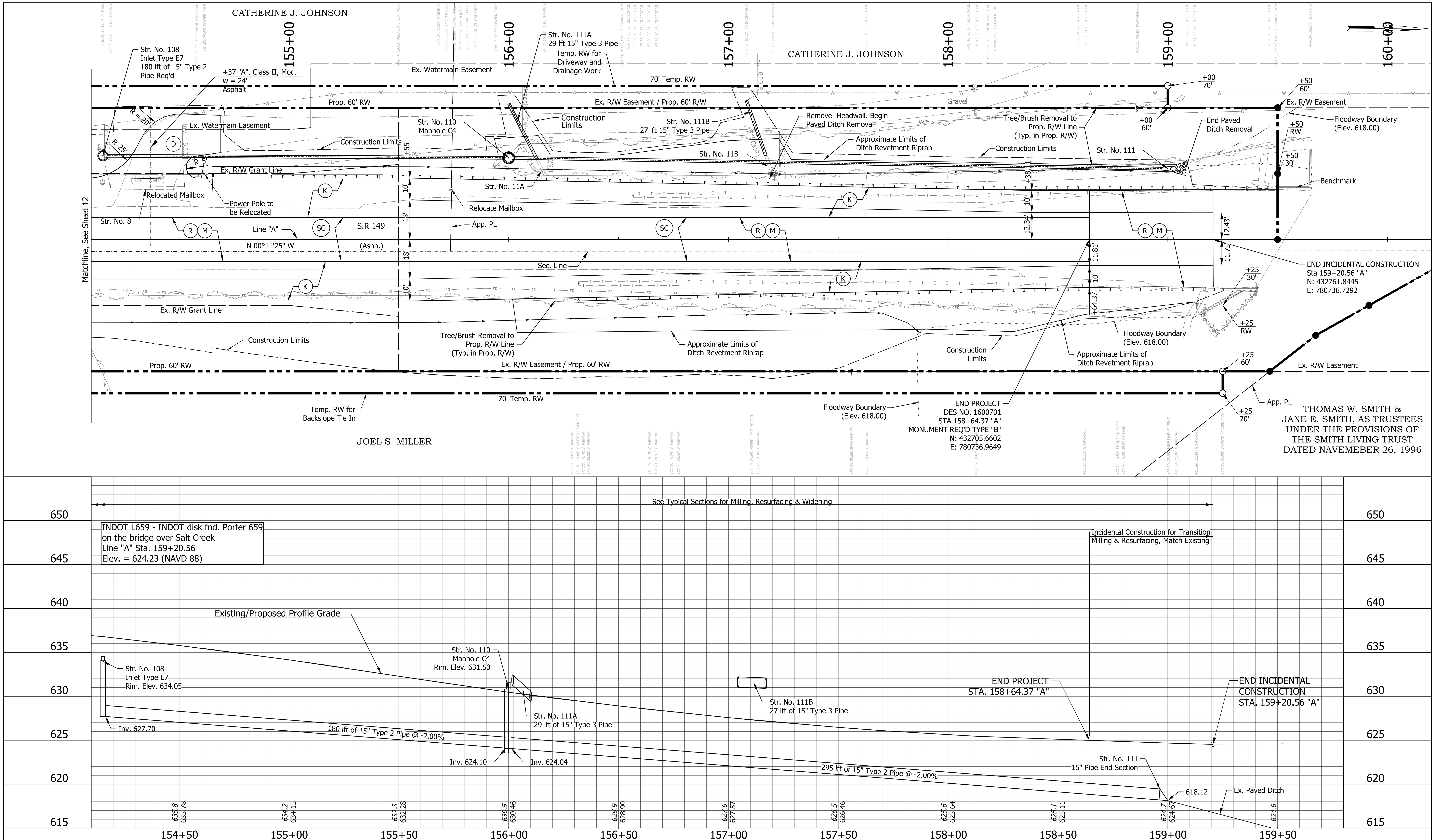
CHECKED: ACH 08/19/2020 | CHECKED: MVL 08/19/2020

INDIANA DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE LINE "A"

HORIZONTAL SCALE	BRIDGE FILE
1" = 20'-0"	
VERTICAL SCALE	DESIGNATION
1" = 5'-0"	1600701

SHEETS		
ELECTRONIC	12	of 50
CONTRACT	PROJECT	
R-42249	1600701	


CATHERINE J. JOHNSON
155+00
156+00
157+00
158+00
159+00
160+00
Str. No. 108
Inlet Type E7
180 lft of 15" Type 2
Pipe Req'd
+37 "A", Class II, Mod.
w = 24'
Asphalt
Ex. Watermain Easement
Str. No. 111A
29 lft 15" Type 3 Pipe
Temp. RW for
Driveway and
Drainage Work
70' Temp. RW
+00
70'
+50
60'
Prop. 60' RW
Ex. R/W Easement / Prop. 60' R/W
Gravel
Ex. R/W Easement
Str. No. 110
Manhole C4
Construction
Limits
Str. No. 111B
27 lft 15" Type 3 Pipe
Remove Headwall. Begin
Paved Ditch Removal
Tree/Brush Removal to
Prop. R/W Line
(Typ. in Prop. R/W)
+00
60'
End Paved
Ditch Removal
+50
RW
Floodway Boundary
(Elev. 618.00)
Construction Limits
Approximate Limits of
Ditch Revetment Riprap
Construction Limits
Str. No. 11B
Str. No. 111
+50
30'
Ex. R/W Grant Line
Benchmark
Relocated Mailbox
Power Pole to
be Relocated
Str. No. 11A
Relocate Mailbox
Str. No. 8
Line "A"
S.R 149
App. PL
N 00°11'25" W
(Asph.)
Matchline, See Sheet 12
Sec. Line
END INCIDENTAL CONSTRUCTION
Sta 159+20.56 "A"
N: 432761.8445
E: 780736.7292
+25
30'
Ex. R/W Grant Line
+25
RW
Construction Limits
Tree/Brush Removal to
Prop. R/W Line
(Typ. in Prop. R/W)
Approximate Limits of
Ditch Revetment Riprap
Construction
Limits
Floodway Boundary
(Elev. 618.00)
Approximate Limits of
Ditch Revetment Riprap
+25
60'
Ex. R/W Easement
Prop. 60' RW
Ex. R/W Easement / Prop. 60' R/W
70' Temp. RW
App. PL
+25
70'
Temp. RW for
Backslope Tie In
Floodway Boundary
(Elev. 618.00)
END PROJECT
DES NO. 1600701
STA 158+64.37 "A"
MONUMENT REQ'D TYPE "B"
N: 432705.6602
E: 780736.9649
THOMAS W. SMITH &
JANE E. SMITH, AS TRUSTEES
UNDER THE PROVISIONS OF
THE SMITH LIVING TRUST
DATED NAVEMEBER 26, 1996
JOEL S. MILLER
See Typical Sections for Milling, Resurfacing & Widening
INDOT L659 - INDOT disk fnd. Porter 659
on the bridge over Salt Creek
Line "A" Sta. 159+20.56
Elev. = 624.23 (NAVD 88)
Incidental Construction for Transition
Milling & Resurfacing, Match Existing
Existing/Proposed Profile Grade
Str. No. 110
Manhole C4
Rim. Elev. 631.50
Str. No. 108
Inlet Type E7
Rim. Elev. 634.05
Str. No. 111A
29 lft of 15" Type 3 Pipe
Str. No. 111B
27 lft of 15" Type 3 Pipe
END PROJECT
STA. 158+64.37 "A"
END INCIDENTAL
CONSTRUCTION
STA. 159+20.56 "A"
Inv. 627.70
180 lft of 15" Type 2 Pipe @ -2.00%
Inv. 624.10
Inv. 624.04
295 lft of 15" Type 2 Pipe @ -2.00%
Str. No. 111
15" Pipe End Section
618.12
Ex. Paved Ditch
650
645
640
635
630
625
620
615
635.8
635.78
634.2
634.15
632.3
632.28
630.5
630.46
628.9
628.90
627.6
627.57
626.5
626.46
625.6
625.64
625.1
625.11
624.7
624.67
624.6
154+50
155+00
155+50
156+00
156+50
157+00
157+50
158+00
158+50
159+00
159+50

LEGEND

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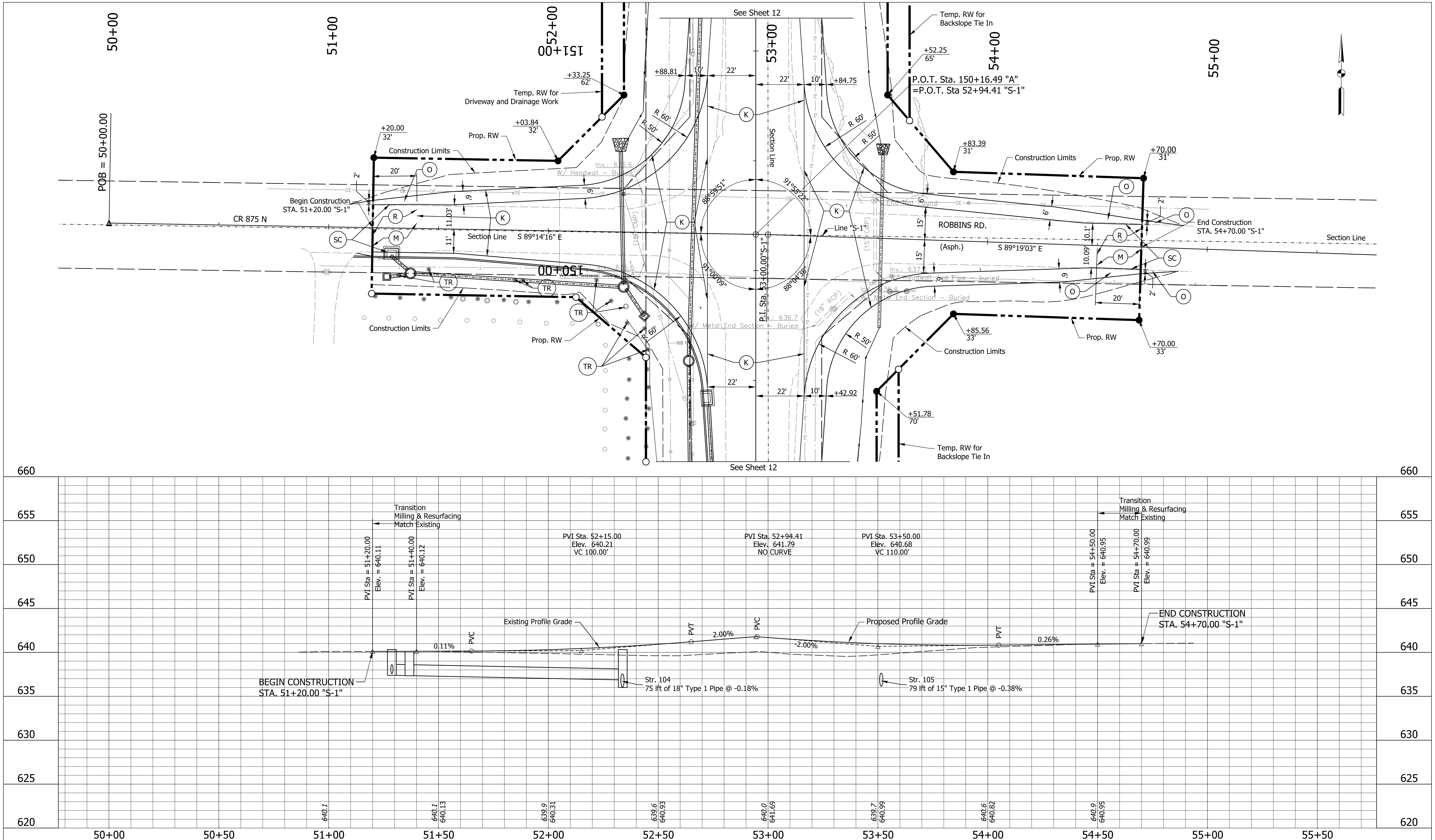
RECOMMENDED FOR APPROVAL	$ENG_SIGNATURE$ DESIGN ENGINEER		4/4/2022 DATE
DESIGNED: JMS	08/19/2020	DRAWN: KG	08/19/2020
CHECKED: ACH	08/19/2020	CHECKED: MVL	08/19/2020

INDIANA
DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE
LINE "A"

HORIZONTAL SCALE			BRIDGE FILE
1" = 20'-0"			
VERTICAL SCALE			DESIGNATION
1" = 5'-0"			1600701
			SHEETS
ELECTRONIC	13	of	50
CONTRACT			PROJECT
R-42249			1600701



LEGEND

- (K) 165 #/SYD QC/QA-HMA, 3, 70, Surface, 9.5 mm on 330 #/SYD QC/QA-HMA, 3, 70, Intermediate, 19.0 mm on 660 #/SYD QC/QA-HMA, 3, 64, Base, 25.0 mm on Subgrade Treatment, Type IBC
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- (SC) Saw Cut Line (Limit of Existing Pavement Removal)

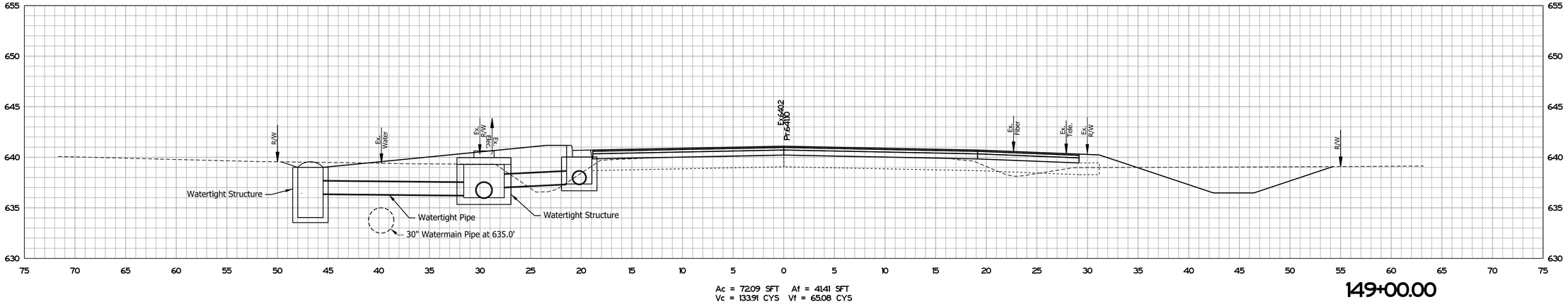
RECOMMENDED FOR APPROVAL $ENG_SIGNATURE$ DESIGN ENGINEER 4/4/2022 DATE

DESIGNED: JMS	08/19/2020	DRAWN: KG	08/19/2020
CHECKED: ACH	08/19/2020	CHECKED: MVL	08/19/2020

INDIANA
DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE
LINE "S-1"

HORIZONTAL SCALE		BRIDGE FILE	
1" = 20'-0"			
VERTICAL SCALE		DESIGNATION	
1" = 5'-0"		1600701	
		SHEETS	
ELECTRONIC	14	of	50
CONTRACT		PROJECT	
R-42249		1600701	



Ac = 72.09 SFT Af = 41.41 SFT
Vc = 133.91 CYS Vf = 65.08 CYS

149+00.00

Plot: 4/4/2022 4:53 PM

File:
Model:$MODEL_NAME$

RECOMMENDED FOR APPROVAL *SENG_SIGNATURES* 4/4/2022
DESIGN ENGINEER DATE

DESIGNED: JMS 08/19/2020 DRAWN: KG 08/19/2020
CHECKED: ACH 08/19/2020 CHECKED: MVL 08/19/2020

INDIANA
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
STA. 148+50.00 TO STA. 149+00.00

SCALE	BRIDGE FILE
1" = 5'	N/A
	DESIGNATION
	1600701

SURVEY BOOK	SHEETS
ELECTRONIC	35 of 50
CONTRACT	PROJECT
R-42249	1600701