TOWN OF BURNS HARBOR

MARQUETTE GREENWAY - PHASE 1B

MULTI-USE PATH FROM END OF PHASE 1A TO THE INTERSECTION OF N. BABCOCK RD. AND BEAM ST.

PROJECT: ☐ SEWER ☐ WATER ☐ TRAFFIC ☐ STREET ■ OTHER

Section 33 and 34, T-37-N, R-6-W, Westchester Township, Porter County

TOWN OF BURNS HARBOR
REDEVELOPMENT COMMISSION

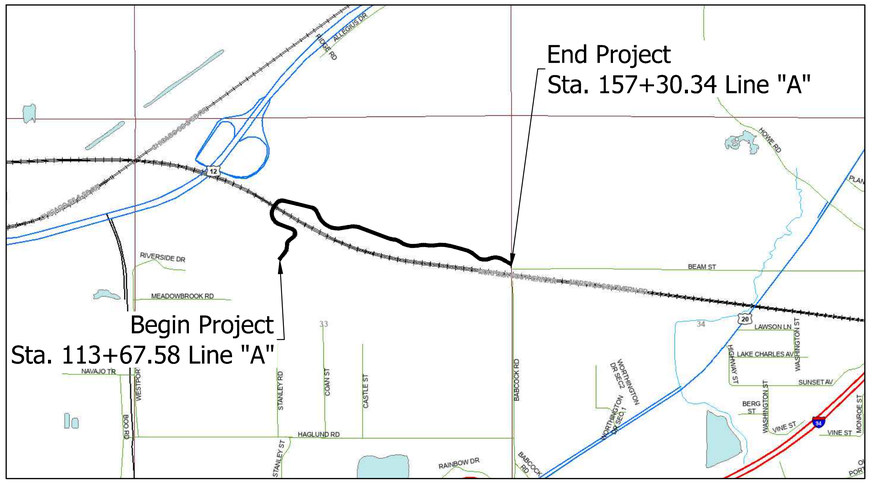
ROSEANN BOZAK, PRESIDENT DATE

BRAD ENSLEN, VICE PRESIDENT DATE

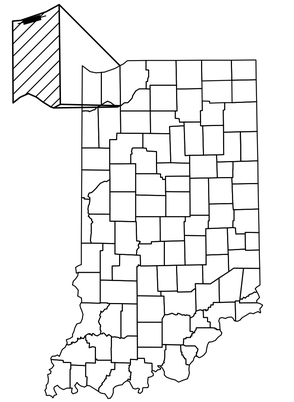
JENNIFER MCHARGUE, SECRETARY DATE

JACK MCRAW, MEMBER DATE

KYLA TUMBLIN, MEMBER DATE



VICINITY MAP
(NOT TO SCALE)



PROJECT LOCATION SHOWN BY

90% PRELIMINARY PLANS
May 27, 2025

SURVEYOR / ENGINEER
ABONMARCHE
315 W. Jefferson Boulevard
South Bend, IN 46601
T 574.232.8700

STANDARD DRAWINGS:
THE INDIANA DEPARTMENT OF TRANSPORTATION AND THE TOWN OF BURNS HARBOR, CURRENT EDITION, STANDARD DRAWINGS AND SPECIFICATIONS CURRENT EDITION AT THE TIME OF BIDDING TO BE USED WITH THESE PLANS.

NO.	REVISION DESCRIPTION:	BY:	DATE:

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Engineering Architecture Land Surveying

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PROJECT:
MARQUETTE GREENWAY
PHASE 1B
TOWN OF BURNS HARBOR, IN

SHEET TITLE:
TITLE SHEET

DRAWN BY: FJP
DESIGNED BY: FJP
PM REVIEW: MSK
QA/QC REVIEW: CAK
DATE: 05/27/2025
SEAL:
PRELIMINARY
SIGNATURE:
DATE:
SCALE: N.T.S.
ACI JOB # 24-0397
SHEET NO. 1 of 68

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UTILITY CONTACTS

Sewer
Town of Burns Harbor
1240 N. Boo Rd.
Burns Harbor, IN 46304
(219) 787-1165

Electric
Northern Indiana Public Service Co.
Attn: James Magdziarz
2755 Raystone Dr.
Valparaiso, IN 46383
(219) 647-4299
majosh1948@netnitco.net

Gas
Northern Indiana Public Service Co.
Attn: Mike Hudak
2755 Raystone Dr.
Valparaiso, IN 46383
(219) 647-4299
utilitycoordination@nisource.com

Pipeline
BP Pipeline Co.
Attn: Matt Rairigh
30 S. Wacker Dr., 10th Floor
Chicago, IL 60606
312-766-2430
matt.rairigh@bp.com

Fiber Optic
Lumen
Jim Rolley
980-376-1445
James.W.Rolley@Brightspeed.com

Fiber Optic
Job 8, LLC
800 Woodlands Parkway, Suite 118
Ridgeland, MS 39157
David Barksdale
david@barksdale.ms

Fiber Optic
Verizon
400 Inernation Pkwy
Richardson, TX 75081
469-886-4238
investigations@verizon.com

Communications
Windstream
5020 Smythe Dr.
Evansville, IN 47715
Mark Mills
mark.mills@windstream.com

National Park Service
Superintendent Jason Taylor
Attn: Rafi Wilkinson
773-573-6413
Rafi_Wilkinson@nps.gov

Norfolk Southern Railroad
E.W. Chambers, P.E.
650 W. Peachtree St. NW - Box 45
Atlanta, GA 30308
470-463-6307
Eldridge.Chambers@nscorp.com

GENERAL NOTES

1. All work shall be performed in accordance with of the Town of Burns Harbor and MUTCD Standards and Specifications and the contract documents for this project. Additions, deletions, and/or revisions shall not be made without prior approval by the Engineer.
2. In the event that the Contractor discovers a discrepancy in the contract documents or a potential utility conflict, notify the Engineer immediately for clarification prior to proceeding with construction of the portion of the work in question.
3. All disturbed existing items including, but not limited, to pavement, signs, lawn, fencing, retaining walls, posts, poles, landscaping, etc. shall be restored to original or better condition, by Contractor. Contractor shall coordinate resetting traffic signs with the Local Municipality and/or INDOT.
4. During construction, it may be necessary to trim or remove a tree within the right-of-way or an easement. Notify the Engineer and affected property Owner prior to any required tree removal. Tree trimming as required within the right-of-way or easement shall be minimized. No additional compensation will be provided for tree removal or trimming.
5. Contractor shall be responsible for all dewatering or bypass pumping required for project construction.
6. All utility installations or relocations that are required in conjunction with this project can be installed or relocated as part of the project provided the construction is performed by the project contractor or project contractor's sub-contractor. However, the utility must submit an application for the installation or relocation to NS Pipe and Wire for appropriate handling for license agreement and applicable fees. For utility applications go to: https://www.norfolksouthern.com/en/rail-development-property/ns-property/projects-on-ns-property. Note: License agreement must be executed prior to utility being installed or relocated.
7. The Contractor will not be permitted to store any equipment on Norfolk Southern property without the permission from the Norfolk Southern Railroad Engineer in accordance with Section E.5.K.1 of the Norfolk Southern Public Projects Manual.

EXISTING UTILITIES NOTES

1. Private utilities are not shown in the plans.
2. The Contractor is responsible for field locates of utilities.

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REVISIONS

SHEET NO.	DATE	SUBJECT

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CONTACT: JOEL ABONMARCHE CONSULTANTS, INC.

PROJECT:
MARQUETTE GREENWAY
PHASE 1B
TOWN OF BURNS HARBOR, IN

SHEET TITLE:
INDEX AND GENERAL NOTES

DRAWN BY: FJP
DESIGNED BY: FJP
PM REVIEW: MSK
QA/QC REVIEW: CAK
DATE: 05/27/2025
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SHEET NO. 2 of 68

NO.	REVISION DESCRIPTION:	BY:	DATE:

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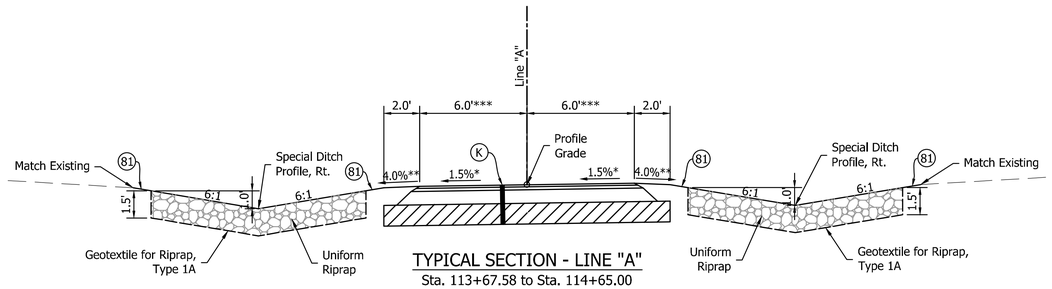
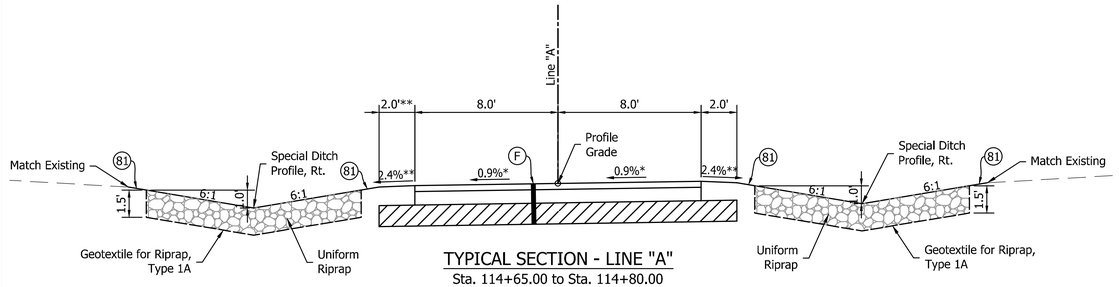


TYPICAL SECTION - LINE "A"
Sta. 113+67.58 to Sta. 114+65.00

*Cross Slope Varies as Follows:
1.5% from 113+67.58 to Sta. 114+55.00
From 1.5% at Sta. 114+55.00 to 0.9% at Sta. 114+65.00

**Cross Slope Varies as Follows:
4.0% from 113+67.58 to Sta. 114+55.00
From 4.0% at Sta. 114+55.00 to 2.4% at Sta. 114+65.00

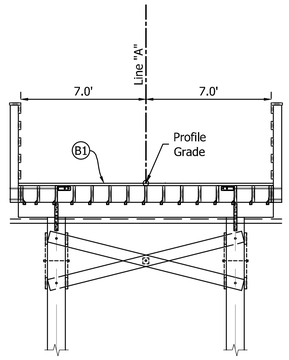
***Width Varies as Follows:
6.0' from 113+67.58 to Sta. 114+55.00
6.0' at Sta. 114+55.00 to 8.0' at Sta. 114+65.00



TYPICAL SECTION - LINE "A"
Sta. 114+65.00 to Sta. 114+80.00

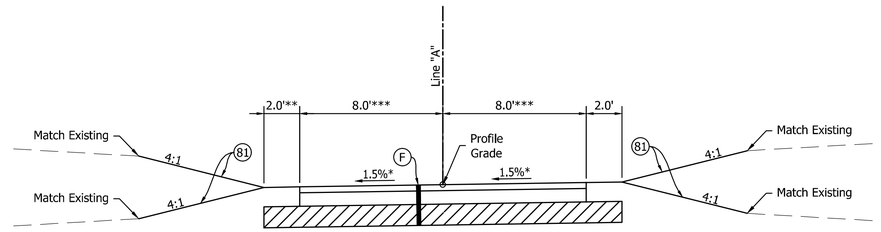
*Cross Slope Varies as Follows:
From 0.9% at Sta. 114+65.00 to 0.0% at Sta. 114+80.00

**Cross Slope Varies as Follows:
From 2.4% at Sta. 114+65.00 to 0.0% at Sta. 114+80.00



TYPICAL SECTION - LINE "A"
Sta. 114+80.00 to Sta. 116+10.00
Sta. 118+50.00 to Sta. 122+96.22
Sta. 125+55.07 to Sta. 131+00.95

Notes:
1. See Structural Sheets for Boardwalk Details



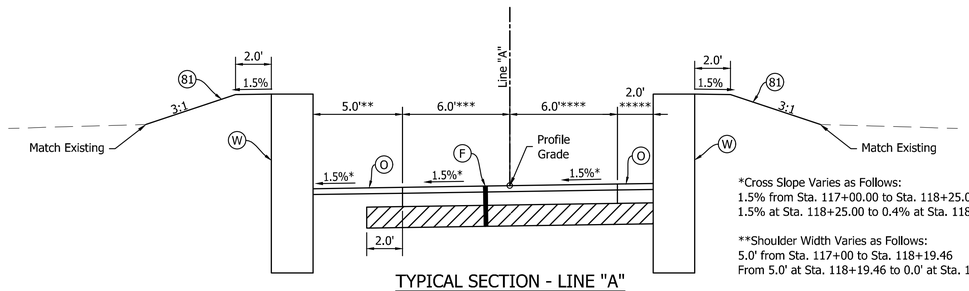
**Shoulder Width Varies as Follows:
2.0' from Sta. 116+10.00 to Sta. 116+70.00
2.0' at Sta. 116+70.00 to 5.0' at Sta. 117+00.00
2.0' from Sta. 118+44.00 to Sta. 118+50.00
2.0' from Sta. 139+45.95 to Sta. 139+55.95

TYPICAL SECTION - LINE "A"
Sta. 116+10.00 to Sta. 117+00.00
Sta. 118+44.00 to Sta. 118+50.00
Sta. 139+45.95 to Sta. 139+55.95

Notes:
1. See Sheet for 5 Special Ditch Details

*Cross Slope Varies as Follows:
From 0.0% at Sta. 116+10.00 to 1.5% at Sta. 116+35.00
1.5% from 116+35.00 to Sta. 117+00.00
From 0.4% at Sta. 118+44.00 to 0.0% at Sta. 118+50.00
From 0.0% at Sta. 139+45.95 to 0.6% at Sta. 139+55.95

***Width Varies as Follows:
8.0' from Sta. 116+10.00 to Sta. 116+36.13
From 8.0' at Sta. 116+36.13 to 6.0' at Sta. 116+46.13
6.0' from Sta. 116+46.13 to Sta. 117+00.00
8.0' from Sta. 118+44.00 to Sta. 118+50.00
6.0' from Sta. 139+45.95 to Sta. 139+55.95



TYPICAL SECTION - LINE "A"
Sta. 117+00.00 to Sta. 118+44.00

Notes:
1. See Structural Sheets for Modular Block Wall Details
2. See Sheet for 5 Special Ditch Details

*Cross Slope Varies as Follows:
1.5% from Sta. 117+00.00 to Sta. 118+25.00
1.5% at Sta. 118+25.00 to 0.4% at Sta. 118+44.00

**Shoulder Width Varies as Follows:
5.0' from Sta. 117+00 to Sta. 118+19.46
From 5.0' at Sta. 118+19.46 to 0.0' at Sta. 118+44.00

***Width Varies as Follows:
6.0' from Sta. 117+00.00 to Sta. 118+19.46
From 6.0' at Sta. 118+19.46 to 8.0' at Sta. 118+44.00

****Width Varies as Follows:
6.0' at Sta. 117+00.00 to Sta. 118+19.46
From 6.0' at Sta. 118+19.46 to 8.0' at Sta. 118+39.01
8.0' from Sta. 118+39.01 to Sta. 118+44.00

*****Shoulder Width Varies as Follows:
2.0' from Sta. 117+00.00 to Sta. 118+19.46
From 2.0' at Sta. 118+19.46 to 0.0' at Sta. 118+39.01
0.0' from Sta. 118+39.01 to Sta. 118+44.00

LEGEND
- (B1) Boardwalk, Timber Deck with Timber Piles
- (F) Concrete for Multi-Use Path, Consisting of: Sidewalk, Concrete, 4 in., on 9 in. of Compacted Aggregate, No. 53, Base, on Subgrade Treatment, Type IBL
- (K) HMA for Multi-Use Path, Consisting of: 140 lbs/syd HMA Surface, Type B, on 220 lbs/syd HMA Intermediate, Type B, on 9 in. of Compacted Aggregate, No. 53, Base, on Subgrade Treatment, Type IBL
- (O) Compacted Aggregate No. 53, 4 in.
- (W) Modular Block Wall
- (81) Mulched Seeding, Type U

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PROJECT:
MARQUETTE GREENWAY
PHASE 1B
TOWN OF BURNS HARBOR, IN

SHEET TITLE:
TYPICAL CROSS SECTIONS

DRAWN BY: FJP
DESIGNED BY: FJP
PM REVIEW: MSK
QA/QC REVIEW: CAK
DATE: 05/27/2025
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PRELIMINARY
SIGNATURE:
DATE:
SCALE:
HORZ: 1" = 4'
VERT: 1" = 4'
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24-0397
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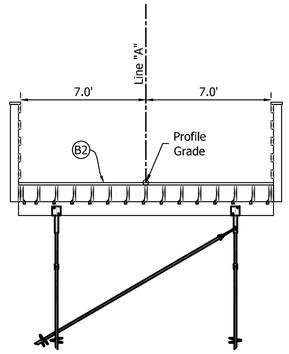
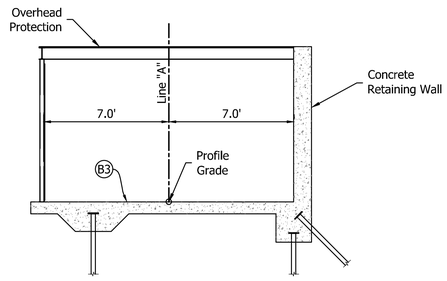


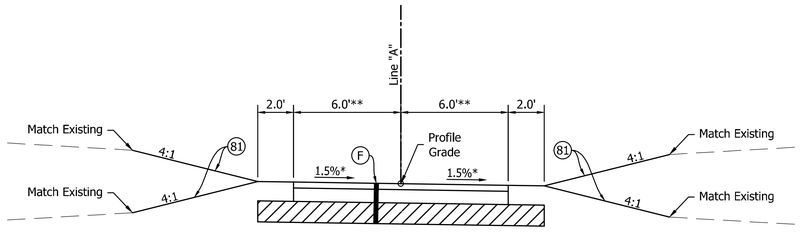
Notes:
1. See Structural Sheets for Boardwalk Details

TYPICAL SECTION - LINE "A"
Sta. 122+96.22 to Sta. 123+55.70
Sta. 124+95.07 to Sta. 125+55.07
Sta. 137+10.95 to Sta. 139+45.95



Notes:
1. See Structural Sheets for Boardwalk Details

TYPICAL SECTION - LINE "A"
Sta. 123+55.70 to Sta. 124+95.07

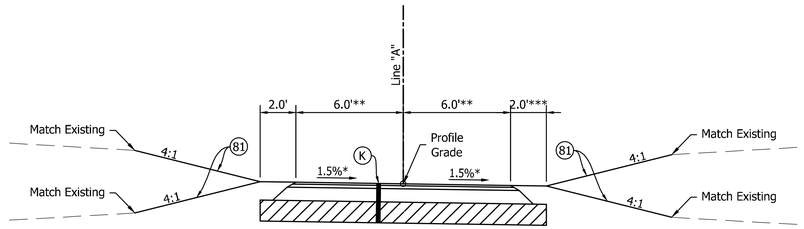


*Cross Slope Varies as Follows:
From 0.0% at Sta. 131+00.95 to 0.7% at Sta. 131+12.95
From 0.6% at Sta. 137+00.95 to 0.0% at Sta. 137+10.95

TYPICAL SECTION - LINE "A"
Sta. 131+00.95 to Sta. 131+12.95
Sta. 137+00.95 to Sta. 137+10.95

Notes:
1. See Sheet for 5 Special Ditch Details

**Width Varies as Follows:
8.0' from Sta. 131+00.95 to Sta. 131+12.95
6.0' from Sta. 137+00.95 to Sta. 137+10.95



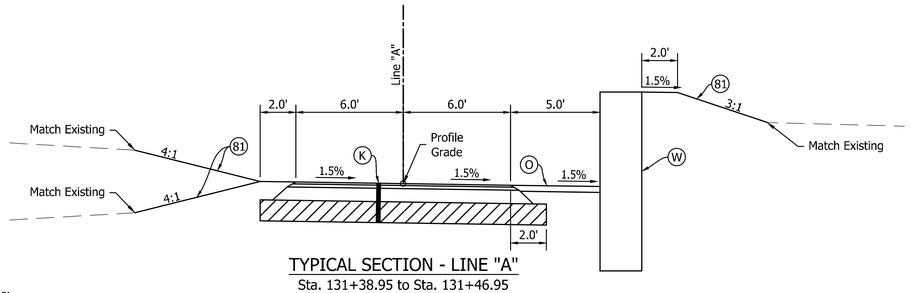
*Cross Slope Varies as Follows:
From 0.7% at Sta. 131+12.95 to 1.5% at Sta. 131+25.95
1.5% from Sta. 131+25.95 to Sta. 131+38.95
1.5% from 132+70.95 to Sta. 136+85.95
From 1.5% at Sta. 136+85.95 to 0.6% at Sta. 137+00.95

**Width Varies as Follows:
From 8.0' at Sta. 131+12.95 to 6.0' at Sta. 131+22.95
6.0' from Sta. 131+22.95 to Sta. 131+38.95
6.0' from Sta. 132+70.95 to Sta. 137+00.95

TYPICAL SECTION - LINE "A"
Sta. 131+12.95 to Sta. 131+38.95
Sta. 132+70.95 to Sta. 137+00.95

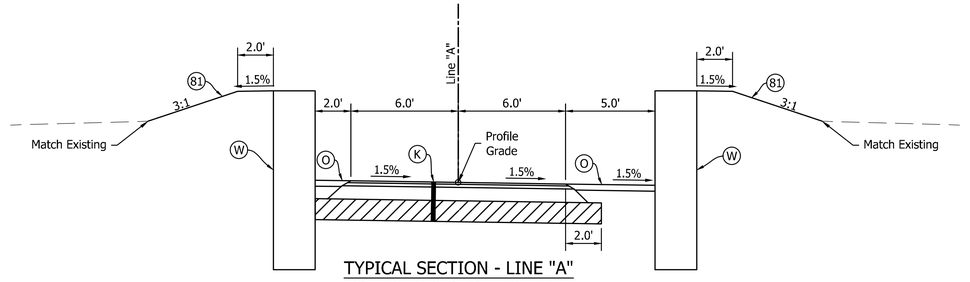
Notes:
1. See Sheet for 5 Special Ditch Details

**Shoulder Width Varies as Follows:
2.0' from Sta. 131+12.95 to Sta. 131+28.95
From 2.0' at Sta. 131+28.95 to 5.0' at Sta. 131+38.95
From 5.0' at Sta. 132+70.95 to 2.0' at Sta. 132+80.95
2.0' from Sta. 132+80.95 to Sta. 137+00.95



TYPICAL SECTION - LINE "A"
Sta. 131+38.95 to Sta. 131+46.95

Notes:
1. See Structural Sheets for Modular Block Wall Details



TYPICAL SECTION - LINE "A"
Sta. 131+46.95 to Sta. 132+70.95

Notes:
1. See Structural Sheets for Modular Block Wall Details

LEGEND

- (B2) Boardwalk, Timber Deck with Helical Piles
- (B3) Boardwalk, Concrete Deck with Helical Piles
- (F) Concrete for Multi-Use Path, Consisting of:
  Sidewalk, Concrete, 4 in., on
  9 in. of Compacted Aggregate, No. 53, Base, on
  Subgrade Treatment, Type IBL
- (K) HMA for Multi-Use Path, Consisting of:
  140 lbs/syd HMA Surface, Type B, on
  220 lbs/syd HMA Intermediate, Type B, on
  9 in. of Compacted Aggregate, No. 53, Base, on
  Subgrade Treatment, Type IBL
- (W) Modular Block Wall
- (81) Mulched Seeding, Type U

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PROJECT:
MARQUETTE GREENWAY
PHASE 1B
TOWN OF BURNS HARBOR, IN

SHEET TITLE:
TYPICAL CROSS SECTIONS

DRAWN BY: FJP
DESIGNED BY: FJP
PM REVIEW: MSK
QA/QC REVIEW: CAK
DATE: 05/27/2025
SEAL:

PRELIMINARY

SIGNATURE:
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SCALE:
HORZ: 1" = 4'
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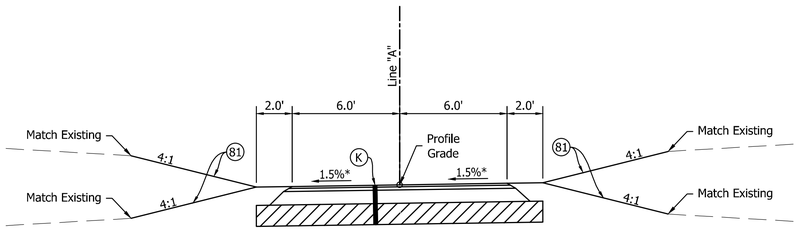
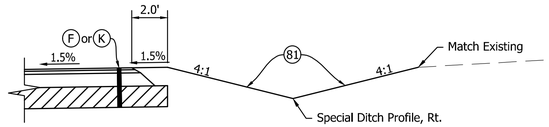


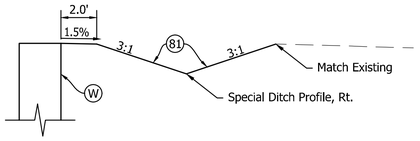
TYPICAL SECTION - LINE "A"
Sta. 139+55.95 to Sta. 157+30.34

*Cross Slope Varies as Follows:
From 0.6% at Sta. 139+45.95 to 1.5% at Sta. 139+70.95
1.5% from 139+70.95 to Sta. 157+30.34

Notes:
1. See Sheet for 5 Special Ditch Details



SPECIAL DITCH PROFILE, RT. DETAIL - LINE "A"
Sta. 116+30.00 to Sta. 117+00.00
Sta. 147+86.00 to Sta. 148+91.00
Sta. 154+11.00 to Sta. 156+91.00



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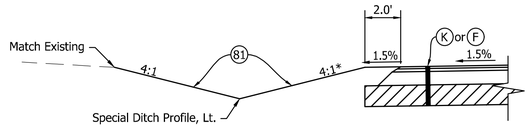
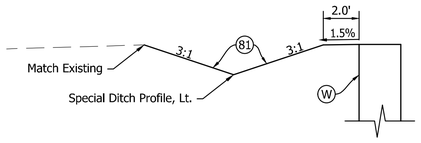
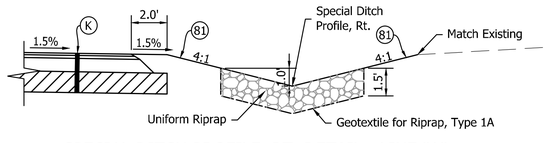


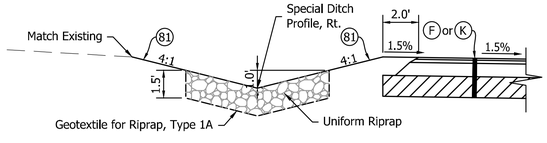
SPECIAL DITCH PROFILE, LT. DETAIL - LINE "A"
Sta. 116+30.00 to Sta. 116+70.00
Sta. 147+51.00 to Sta. 148+21.00
Sta. 150+11.00 to Sta. 152+31.00
Sta. 153+11.00 to Sta. 156+91.00



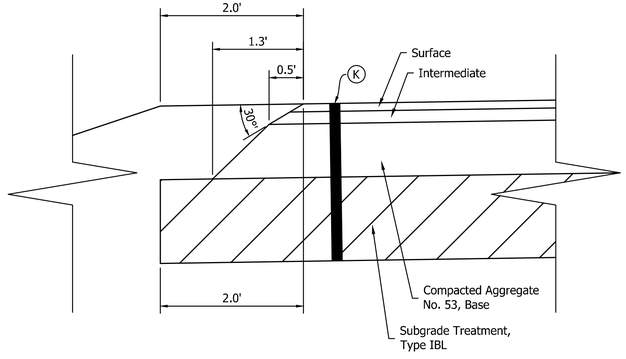
SPECIAL DITCH PROFILE, LT. DETAIL - LINE "A"
Sta. 117+00.00 to Sta. 117+80.00



SPECIAL DITCH PROFILE, RT. DETAIL - LINE "A"
Sta. 131+16.00 to Sta. 131+36.00



SPECIAL DITCH PROFILE, LT. DETAIL - LINE "A"
Sta. 131+06.00 to Sta. 131+36.00



HMA SAFETY EDGE DETAIL
Scale: 1" =1'

LEGEND

(F) Concrete for Multi-Use Path, Consisting of:
Sidewalk, Concrete, 4 in., on
9 in. of Compacted Aggregate, No. 53, Base, on
Subgrade Treatment, Type IBL

(K) HMA for Multi-Use Path, Consisting of:
140 lbs/syd HMA Surface, Type B, on
220 lbs/syd HMA Intermediate, Type B, on
9 in. of Compacted Aggregate, No. 53, Base, on
Subgrade Treatment, Type IBL

(W) Modular Block Wall

(81) Mulched Seeding, Type U

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PROJECT:
MARQUETTE GREENWAY
PHASE 1B
TOWN OF BURNS HARBOR, IN

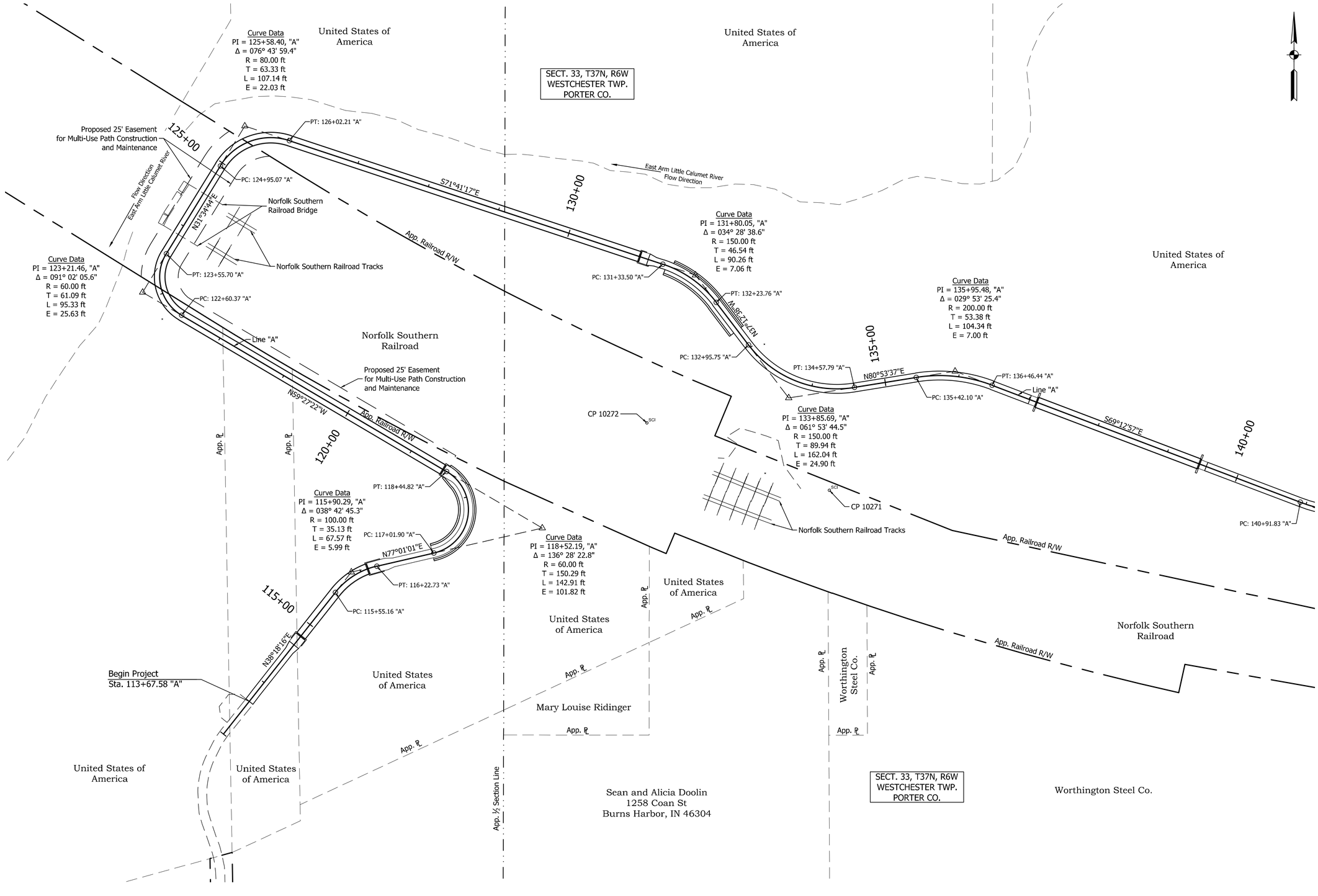
SHEET TITLE:
TYPICAL CROSS SECTIONS

DRAWN BY: FJP
DESIGNED BY: FJP
PM REVIEW: MSK
QA/QC REVIEW: CAK
DATE: 05/27/2025
SEAL:

PRELIMINARY

SIGNATURE:
DATE:
SCALE:
HORZ: 1" = 4'
VERT: 1" = 4'
ACI JOB #
24-0397
SHEET NO.
5 of 68

O:\PROJECTS\2024\24-0397 TOWN OF BURNS HARBOR - MARQUETTE GREENWAY TRAIL, PH1B\CAD_CIVIL\PLANS\24-0397 TYP X-SECT.DWG Typ-00 FRANCISCO PEREZ 5.27.2025 5:31 PM



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PROJECT:

MARQUETTE GREENWAY PHASE 1B

TOWN OF BURNS HARBOR, IN

GEOMETRIC TIE-UP

SHEET TITLE:

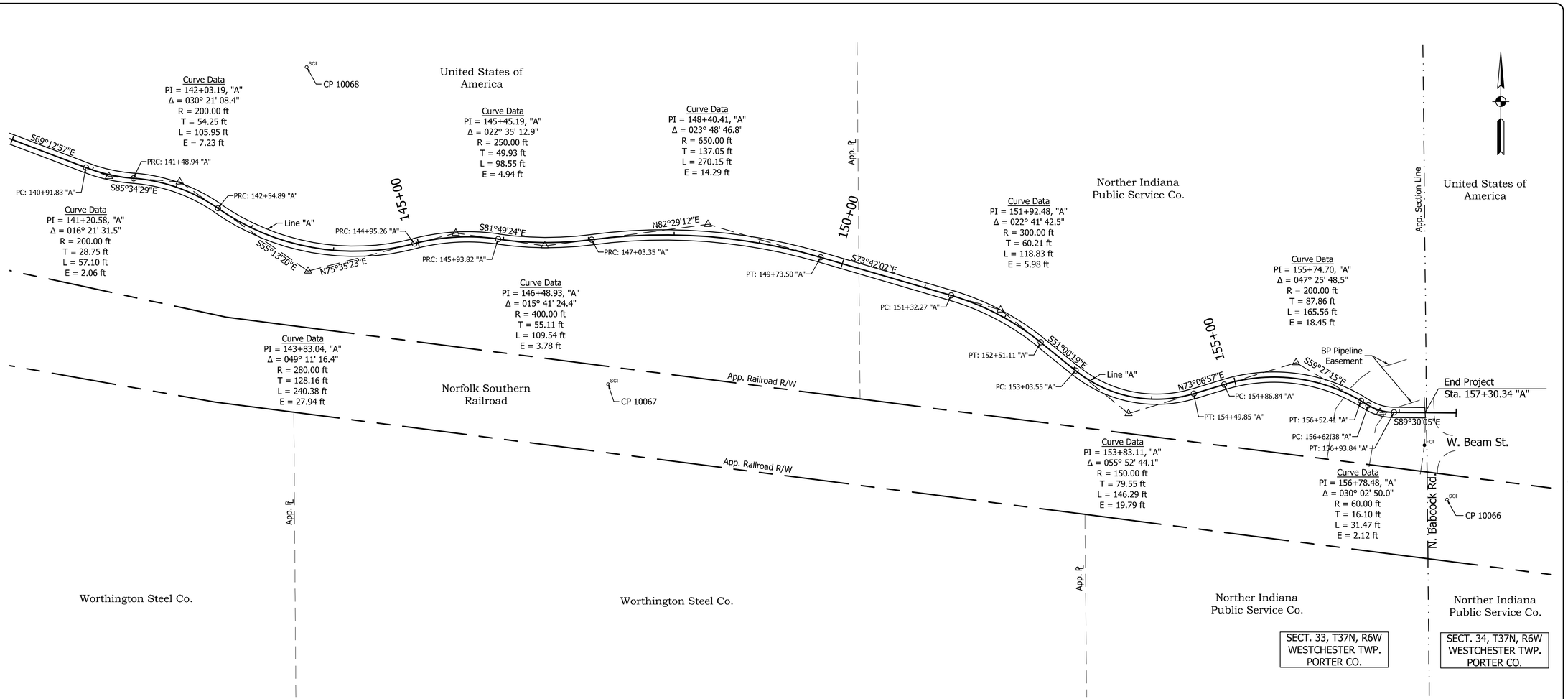
DRAWN BY: FJP
DESIGNED BY: FJP
PM REVIEW: MSK
QA/QC REVIEW: CAK
DATE: 05/27/2025
SEAL:

PRELIMINARY

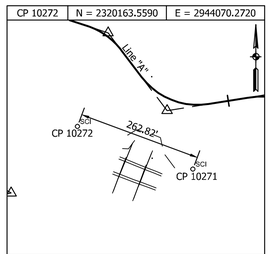
SIGNATURE:
DATE:
SCALE: 1" = 60'
ACI JOB # 24-0397
SHEET NO. 6 of 68

NO.	REVISION DESCRIPTION:	BY:	DATE:

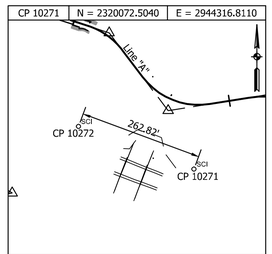
G:\PROJECTS\2024\24-0397 TOWN OF BURNS HARBOR - MARQUETTE GREENWAY TRAIL PH1B\CAD_CIVIL PLANS\24-0397 GEOMETRIC.DWG GEO-01 FRANCISCO PEREZ 5.27.2025 5:31 PM



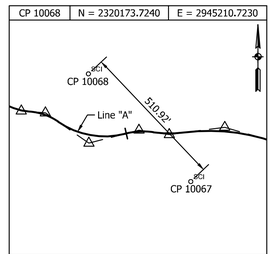
CP 10272	N = 2320163.5590	E = 2944070.2720
Set Capped Rebar	Sta. 132+96.17 "A", 172.97' Rt. Elev. = 633.22'	



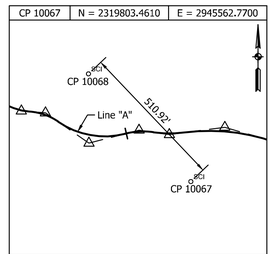
CP 10271	N = 2320072.5040	E = 2944316.8110
Set Capped Rebar	Sta. 134+28.66 "A", 137.27' Rt. Elev. = 636.06'	



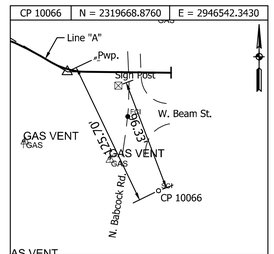
CP 10068	N = 2320173.7240	E = 2945210.7230
Set Capped Rebar	Sta. 142+50.31 "A", 194.70' Lt. Elev. = 637.22'	



CP 10067	N = 2319803.4610	E = 2945562.7700
Set Capped Rebar	Sta. 147+01.27 "A", 169.84' Rt. Elev. = 640.18'	



CP 10066	N = 2319668.8760	E = 2946542.3430
Set Capped Rebar	Sta. 157+56.77 "A", 101.18' Rt. Elev. = 640.28'	



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PROJECT:
MARQUETTE GREENWAY
PHASE 1B
TOWN OF BURNS HARBOR, IN

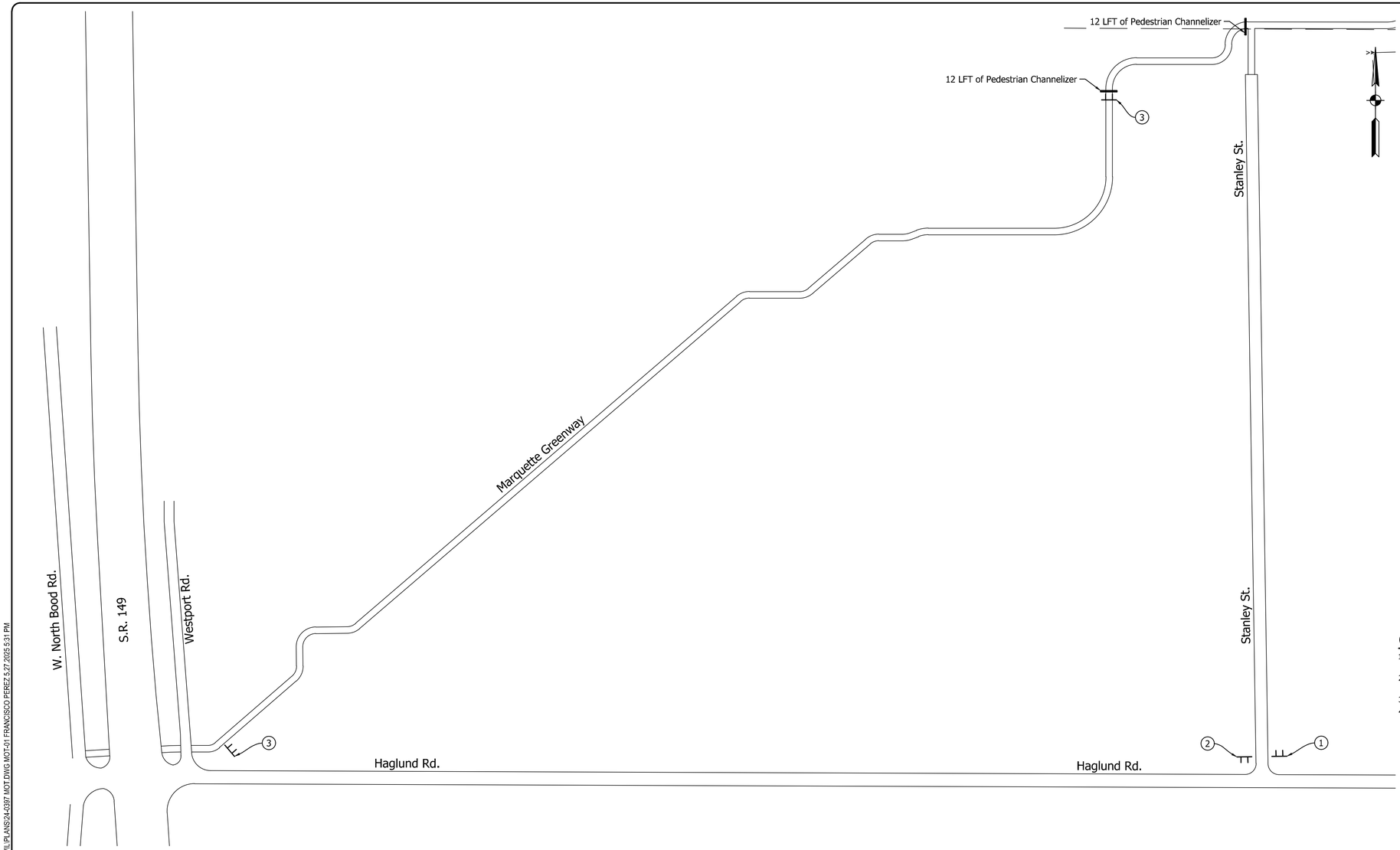
GEOMETRIC TIE-UP

SHEET TITLE:

DRAWN BY: FJP
DESIGNED BY: FJP
PM REVIEW: MSK
QA/QC REVIEW: CAK
DATE: 05/27/2025
SEAL:
PRELIMINARY
SIGNATURE:
DATE:
SCALE: 1" = 60'
ACI JOB # 24-0397
SHEET NO. 7 of 68

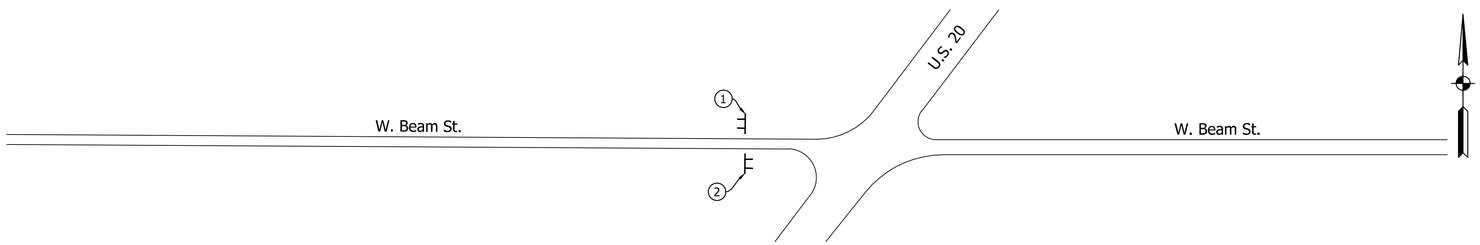
NO.	REVISION DESCRIPTION:	BY:	DATE:

C:\PROJECTS\2024\24-0397 TOWN OF BURNS HARBOR - MARQUETTE GREENWAY TRAIL PH1B\CAD_CIVIL PLANS\24-0397 GEOMETRIC.DWG GEO.40 FRANCISCO PEREZ 5.27.2025 5:31 PM



MAINTENANCE OF TRAFFIC - STANLEY ST.

Maintenance of Traffic for Stanley St. and the Exisitng
Sections of the Marquette Greenway



MAINTENANCE OF TRAFFIC - BEAM ST.

Maintenance of Traffic for W. Beam St.

CONSTRUCTION NOTES

1. No streets shall be closed or restricted without prior approval from the Town of Burns Harbor.
2. Sign designations shall comply with the U.S. Department of Transportation Federal Highway Administration "Manual on Uniform Traffic Control Devices" (MUTCD).
3. Type B construction warning lights shall be used with all construction signs.
4. Local access to all residences shall be maintained at all times. Access for emergency vehicles, trash pickup, and mail delivery shall be maintained at all times.

LEGEND

Construction Sign

Barricade or Pedestrian Channelizer

1 — ROAD CONSTRUCTION AHEAD — XW20-1

2 — END CONSTRUCTION — XG20-2

3 — SIDEWALK CLOSED — R9-9

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PROJECT:

MARQUETTE GREENWAY PHASE 1B
TOWN OF BURNS HARBOR, IN

SHEET TITLE:

MAINTENANCE OF TRAFFIC

DRAWN BY: FJP
DESIGNED BY: FJP
PM REVIEW: MSK
QA/QC REVIEW: CAK
DATE: 05/27/2025
SEAL:

PRELIMINARY

SIGNATURE:
DATE:
SCALE: 1" = 100'
ACI JOB # 24-0397
SHEET NO. 8 of 68

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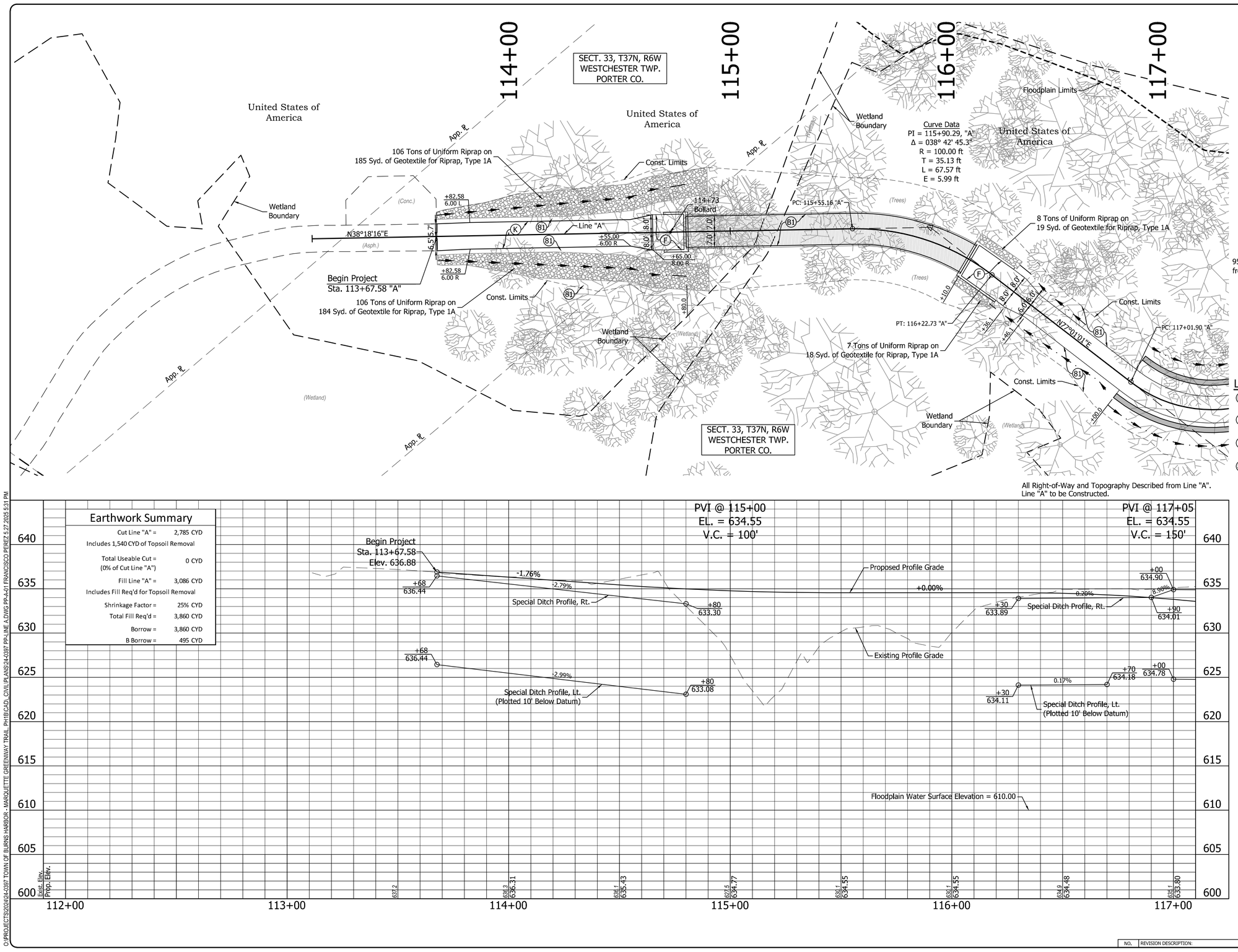

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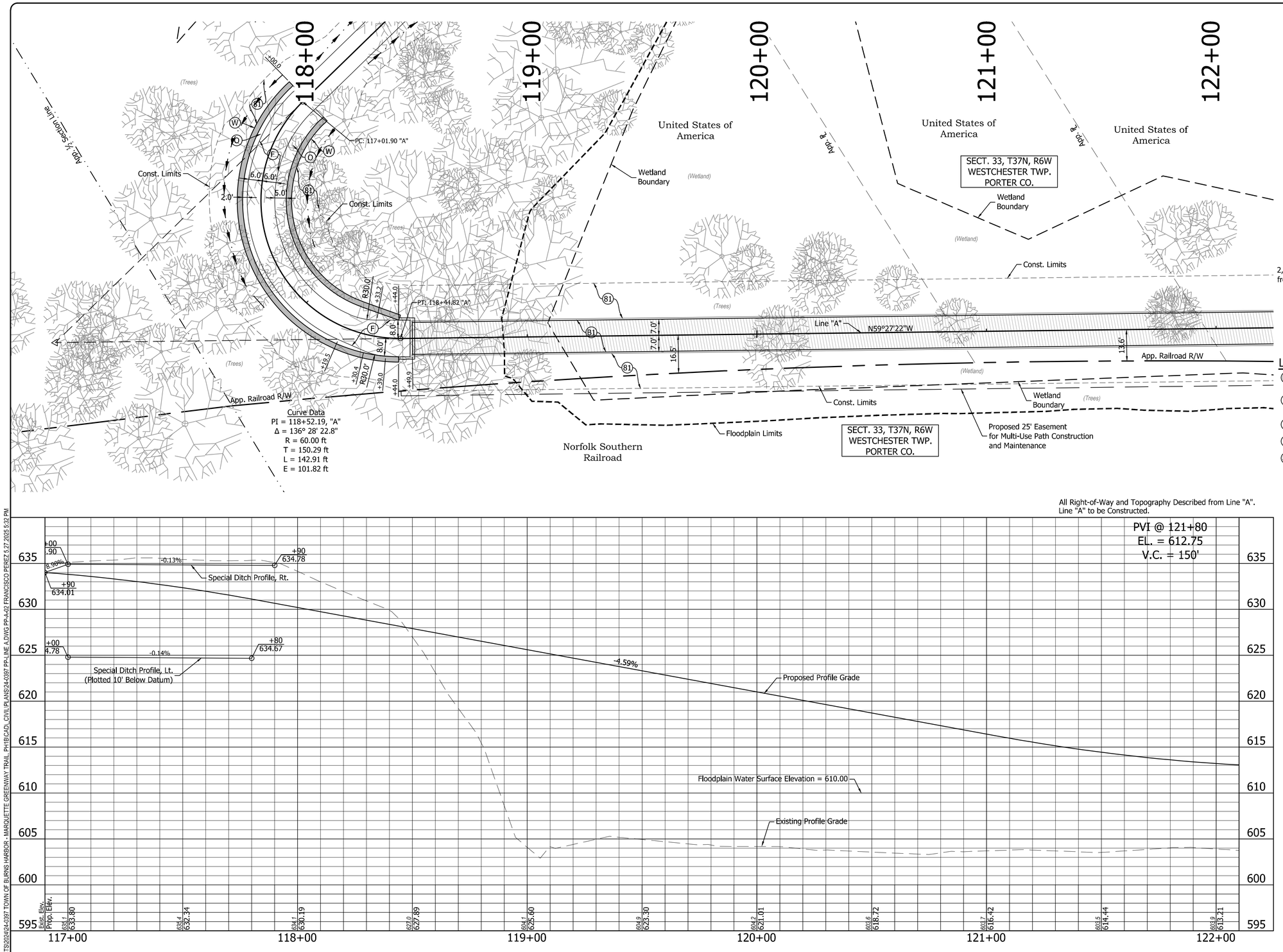
PROJECT:
MARQUETTE GREENWAY
PHASE 1B
TOWN OF BURNS HARBOR, IN

SHEET TITLE:
PLAN AND PROFILE LINE "A"

DRAWN BY: FJP
DESIGNED BY: FJP
PM REVIEW: MSK
QA/QC REVIEW: CAK
DATE: 05/27/2025
SEAL:
PRELIMINARY
SIGNATURE:
DATE:
SCALE:
HORZ: 1" = 20'
VERT: 1" = 5'
ACI JOB #
24-0397
SHEET NO.
9 of 68

NO.	REVISION DESCRIPTION:	BY:	DATE:

O:\PROJECTS\2024\24-0397 TOWN OF BURNS HARBOR - MARQUETTE GREENWAY TRAIL PH1B\CAD_CIVIL\PLANS\24-0397 PP-LINE A.DWG PP-A01 FRANCISCO PEREZ 5/27/2025 5:31 PM



All Right-of-Way and Topography Described from Line "A".
Line "A" to be Constructed.

(IN FEET)
1 inch = 20 ft.

NO.	REVISION DESCRIPTION:	BY:	DATE:

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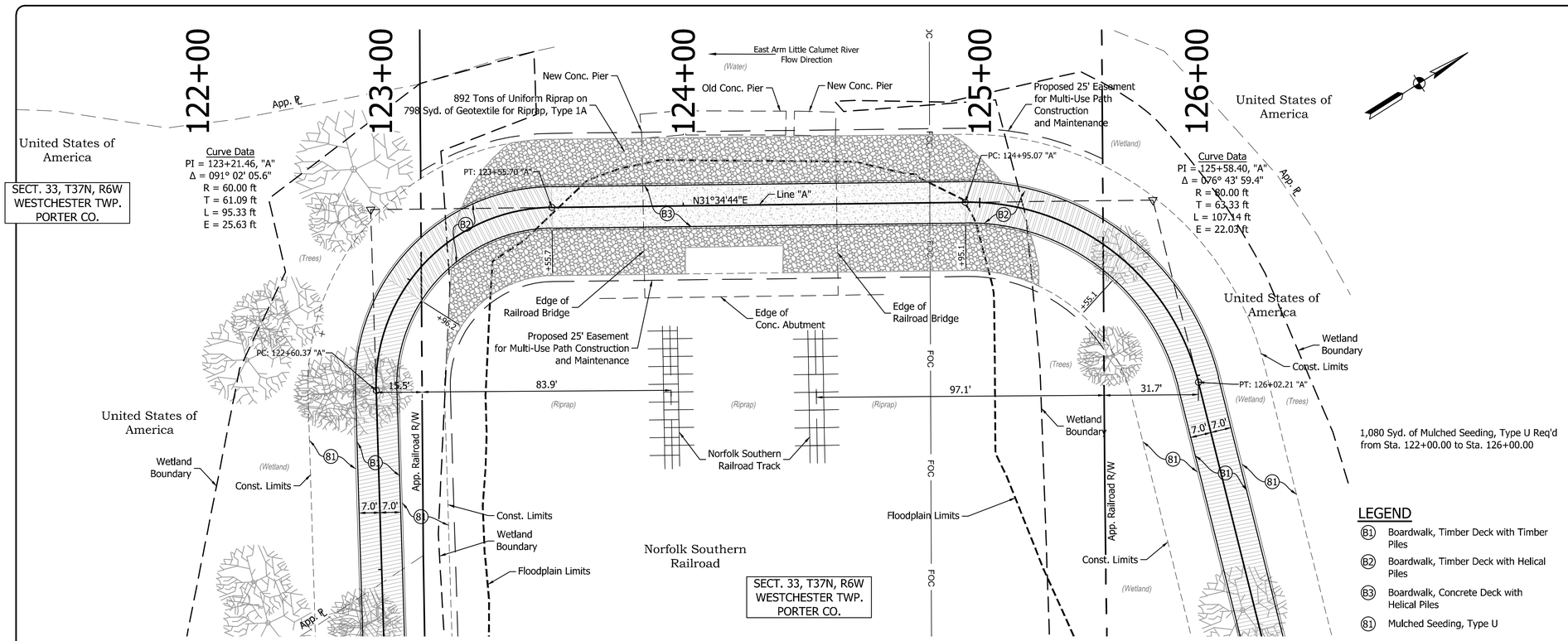
PROJECT:
MARQUETTE GREENWAY PHASE 1B
TOWN OF BURNS HARBOR, IN

SHEET TITLE:
PLAN AND PROFILE LINE "A"

DRAWN BY: FJP
DESIGNED BY: FJP
PM REVIEW: MSK
QA/QC REVIEW: CAK
DATE: 05/27/2025
SEAL:
PRELIMINARY
SIGNATURE:
DATE:
SCALE: HORZ: 1" = 20' VERT: 1" = 5'
ACI JOB # 24-0397
SHEET NO. 10 of 68

O:\PROJECTS\2024\24-0397 TOWN OF BURNS HARBOR - MARQUETTE GREENWAY TRAIL PH1B\CAD_CIVIL\PLANS\24-0397 PP-LINE A.DWG PP-A.02 FRANCISCO PEREZ 5/27/2025 5:32 PM

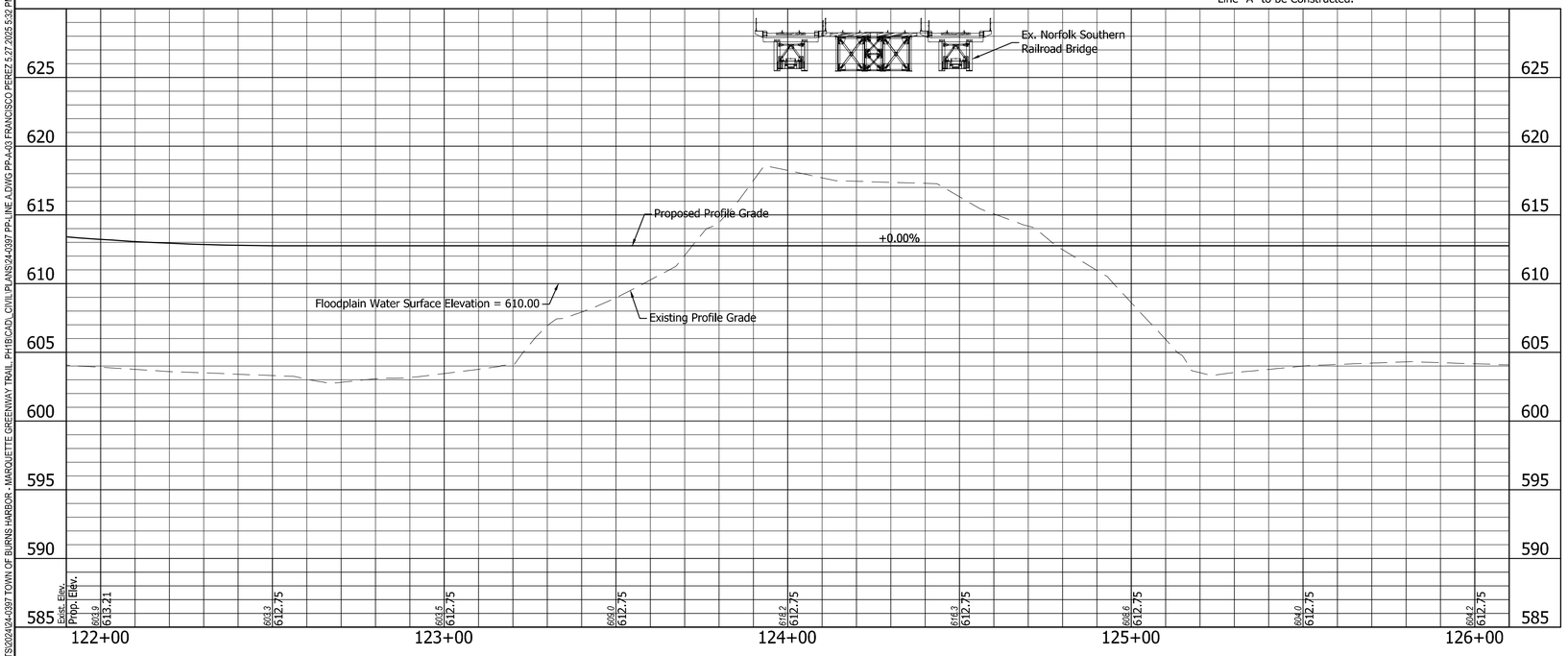


1,080 Syd. of Mulched Seeding, Type U Req'd from Sta. 122+00.00 to Sta. 126+00.00

LEGEND

- (B1) Boardwalk, Timber Deck with Timber Piles
- (B2) Boardwalk, Timber Deck with Helical Piles
- (B3) Boardwalk, Concrete Deck with Helical Piles
- (81) Mulched Seeding, Type U

All Right-of-Way and Topography Described from Line "A".
Line "A" to be Constructed.



0 10 20 40
(IN FEET)
1 inch = 20 ft.

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PROJECT:
MARQUETTE GREENWAY PHASE 1B
TOWN OF BURNS HARBOR, IN

SHEET TITLE:
PLAN AND PROFILE LINE "A"

DRAWN BY: FJP
DESIGNED BY: FJP
PM REVIEW: MSK
QA/QC REVIEW: CAK
DATE: 05/27/2025
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PRELIMINARY
SIGNATURE:
DATE:
SCALE:
HORZ: 1" = 20'
VERT: 1" = 5'
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24-0397
SHEET NO.
11 of 68

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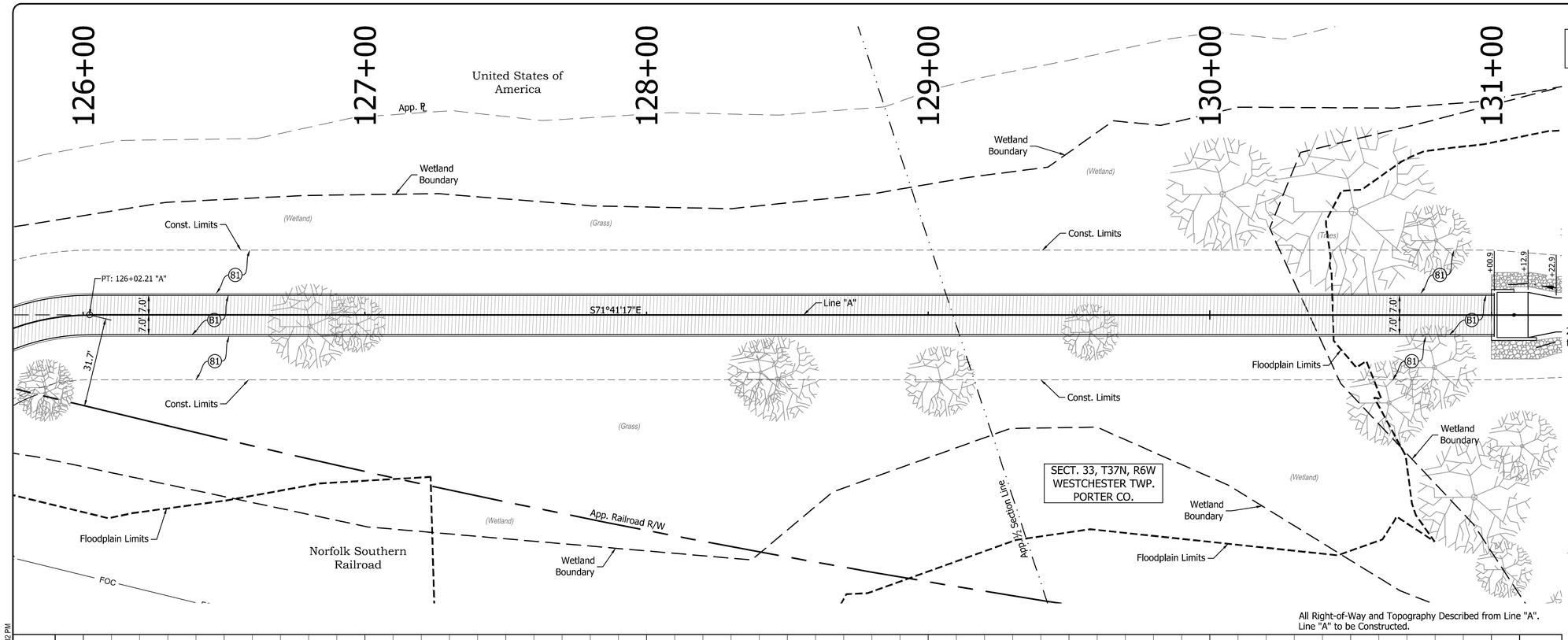

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PROJECT:
MARQUETTE GREENWAY
PHASE 1B
TOWN OF BURNS HARBOR, IN

SHEET TITLE:
PLAN AND PROFILE LINE "A"

DRAWN BY: FJP
DESIGNED BY: FJP
PM REVIEW: MSK
QA/QC REVIEW: CAK
DATE: 05/27/2025
SEAL:
PRELIMINARY
SIGNATURE:
DATE:
SCALE:
HORZ: 1" = 20'
VERT: 1" = 5'
ACI JOB #
24-0397
SHEET NO.
12 of 68

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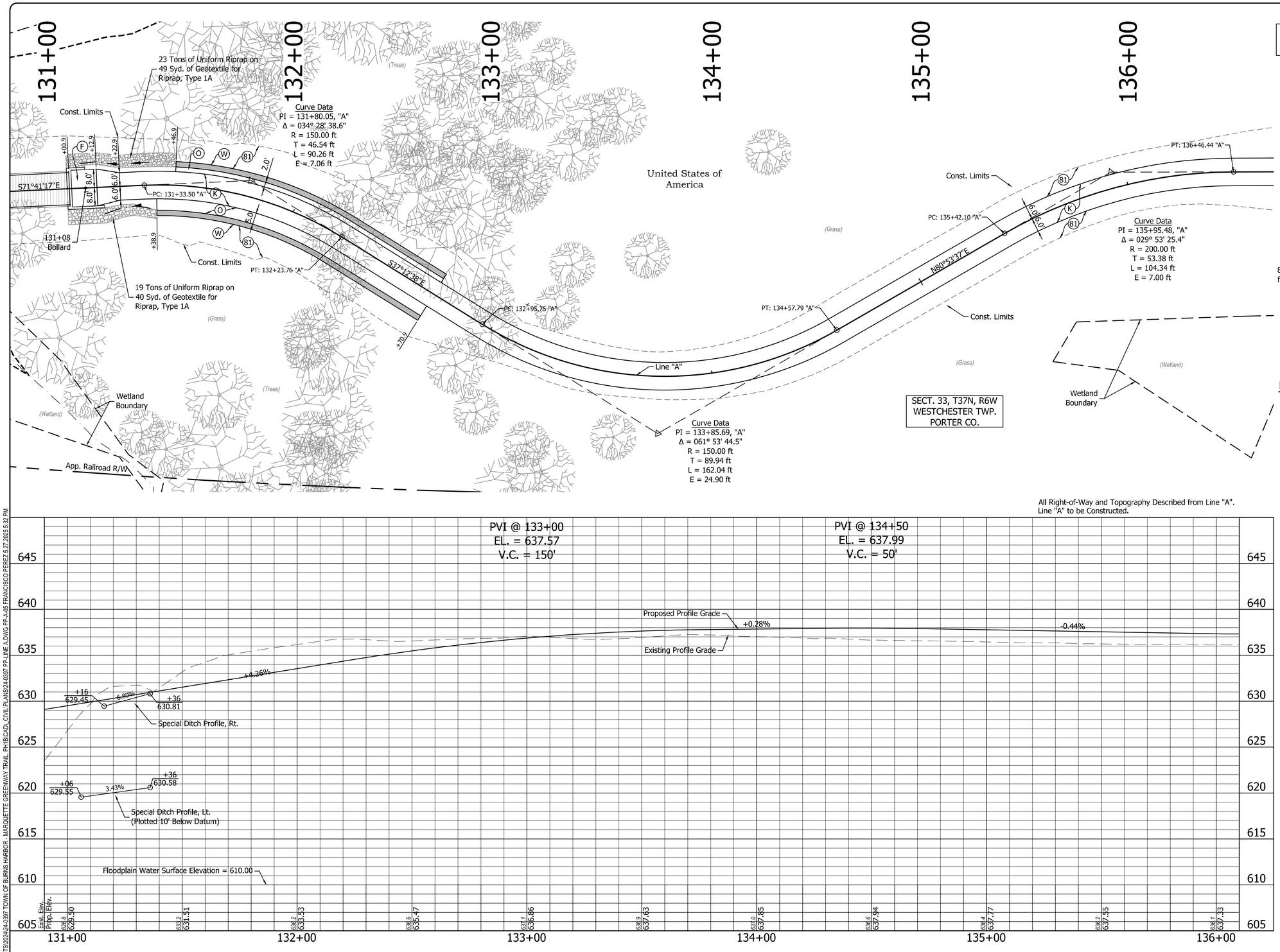

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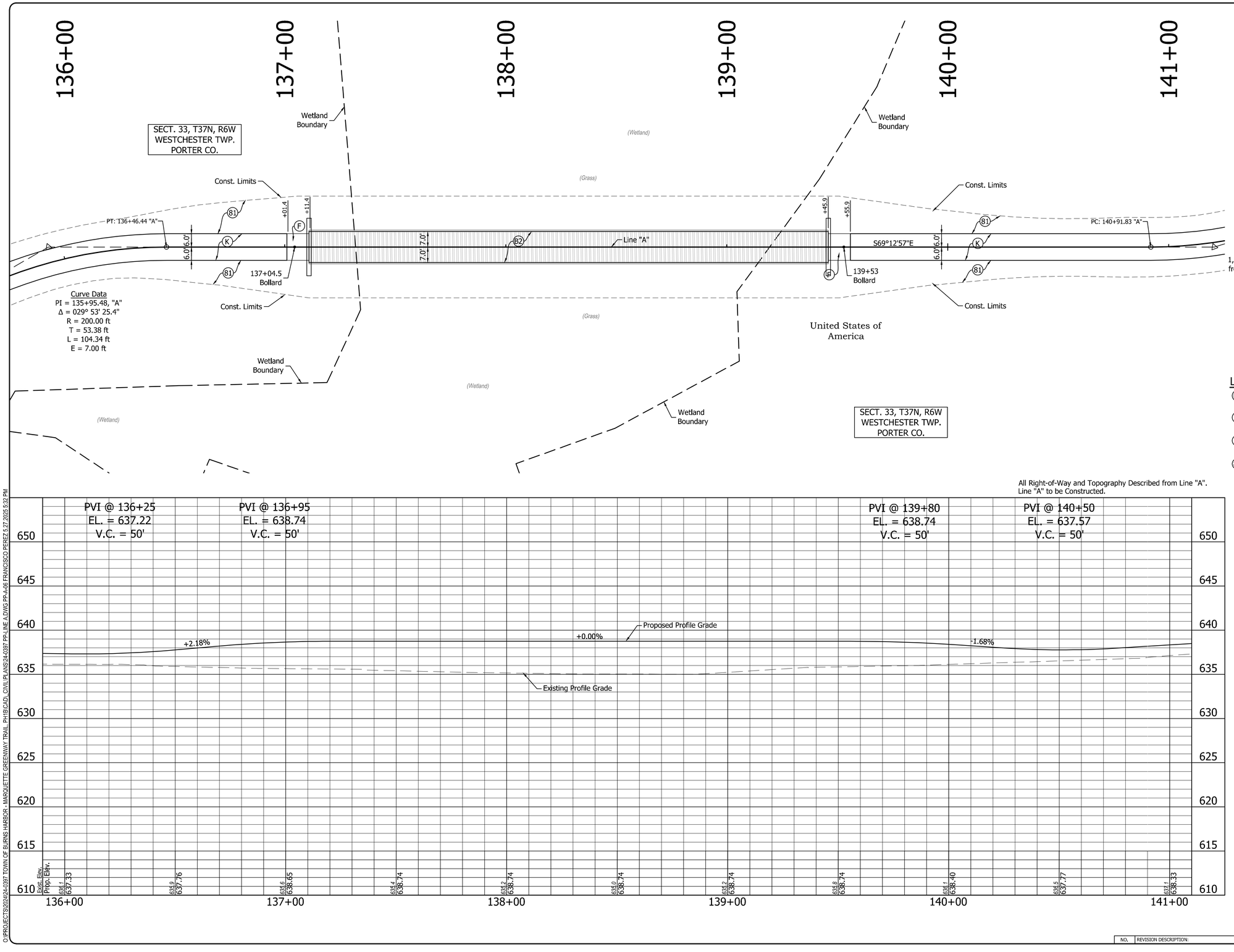
PROJECT:
MARQUETTE GREENWAY PHASE 1B
TOWN OF BURNS HARBOR, IN

SHEET TITLE:
PLAN AND PROFILE LINE "A"

DRAWN BY: FJP
DESIGNED BY: FJP
PM REVIEW: MSK
QA/QC REVIEW: CAK
DATE: 05/27/2025
SEAL:
PRELIMINARY
SIGNATURE:
DATE:
SCALE:
HORZ: 1" = 20'
VERT: 1" = 5'
ACI JOB #
24-0397
SHEET NO.
13 of 68



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PROJECT:

MARQUETTE GREENWAY PHASE 1B
TOWN OF BURNS HARBOR, IN

SHEET TITLE:

PLAN AND PROFILE LINE "A"

DRAWN BY: FJP
DESIGNED BY: FJP
PM REVIEW: MSK
QA/QC REVIEW: CAK
DATE: 05/27/2025
SEAL:

PRELIMINARY

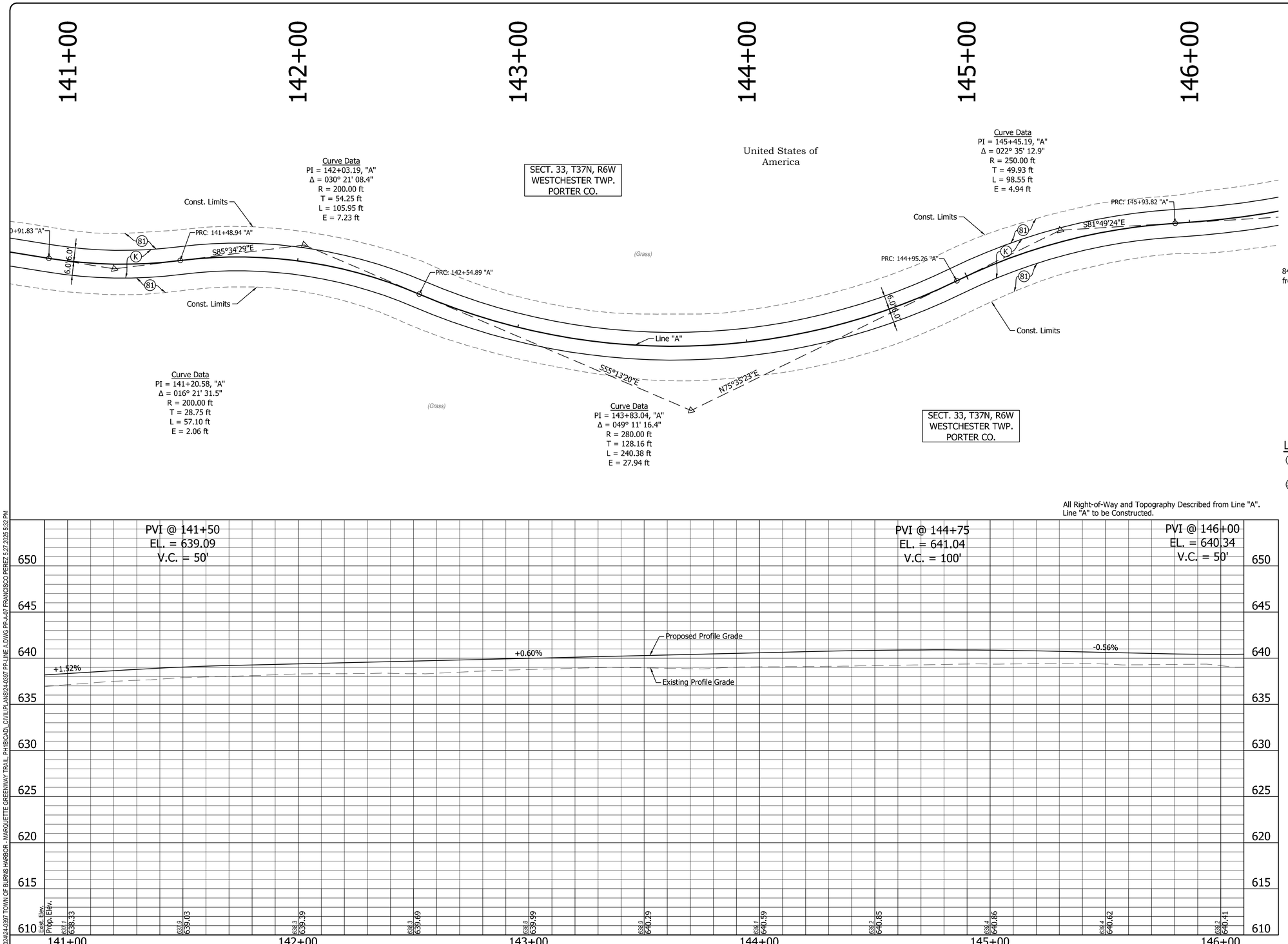
SIGNATURE:
DATE:

SCALE:
HORZ: 1" = 20'
VERT: 1" = 5'

ACI JOB #
24-0397

SHEET NO.
14 of 68

NO.	REVISION DESCRIPTION:	BY:	DATE:



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PROJECT:
MARQUETTE GREENWAY
PHASE 1B
TOWN OF BURNS HARBOR, IN

SHEET TITLE:
PLAN AND PROFILE LINE "A"

DRAWN BY: FJP
DESIGNED BY: FJP
PM REVIEW: MSK
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DATE:
SCALE:
HORZ: 1" = 20'
VERT: 1" = 5'
ACI JOB #
24-0397
SHEET NO.
15 of 68

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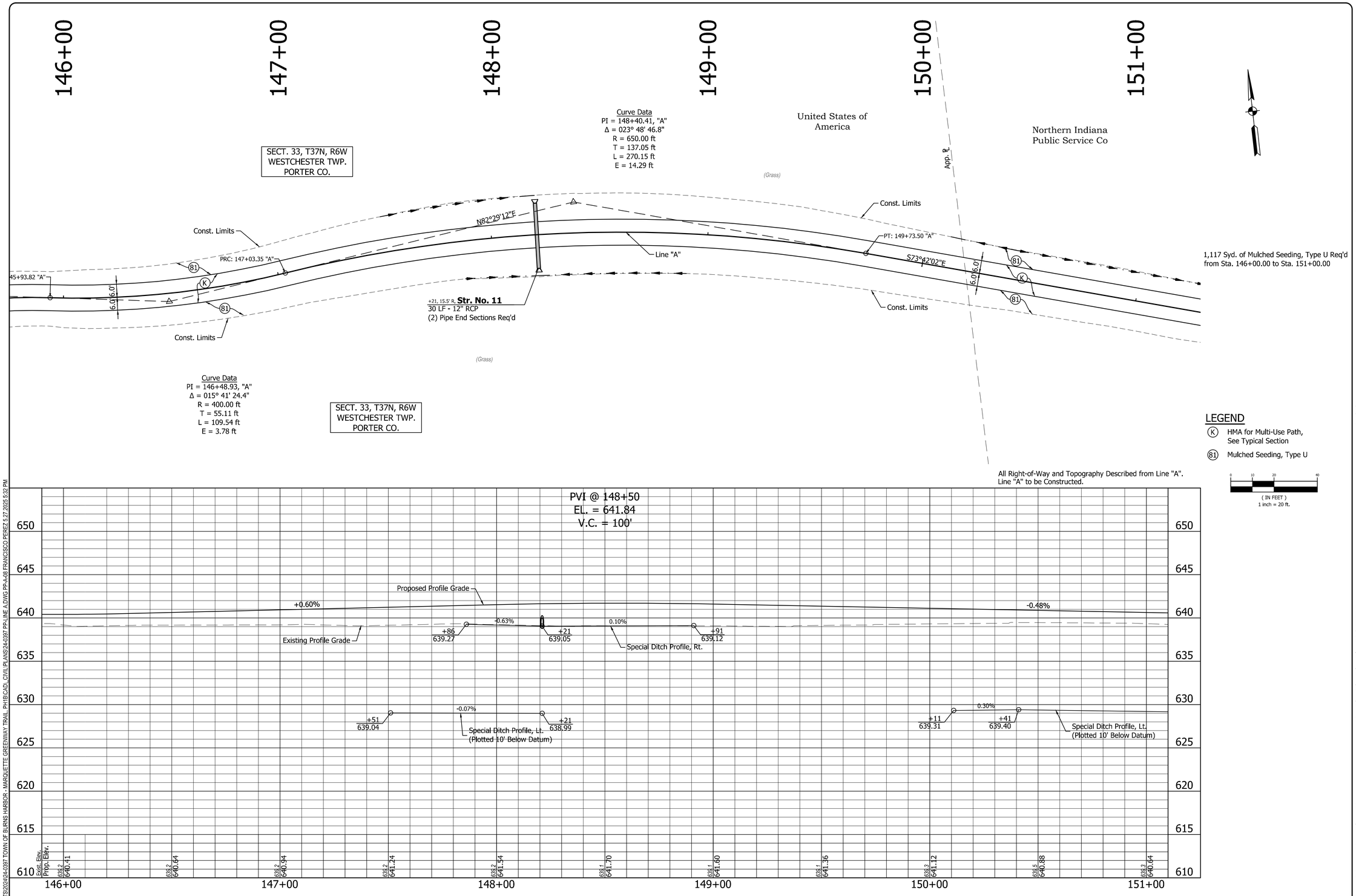

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PROJECT:
MARQUETTE GREENWAY PHASE 1B
TOWN OF BURNS HARBOR, IN

SHEET TITLE:
PLAN AND PROFILE LINE "A"

DRAWN BY: FJP
DESIGNED BY: FJP
PM REVIEW: MSK
QA/QC REVIEW: CAK
DATE: 05/27/2025
SEAL:
PRELIMINARY
SIGNATURE:
DATE:
SCALE: HORZ: 1" = 20' VERT: 1" = 5'
ACI JOB # 24-0397
SHEET NO. 16 of 68

151+00 | 152+00 | 153+00 | 154+00 | 155+00 | 156+00

Northern Indiana
Public Service Co

Curve Data
PI = 151+92.48, "A"
Δ = 022° 41' 42.5"
R = 300.00 ft
T = 60.21 ft
L = 118.83 ft
E = 5.98 ft

SECT. 33, T37N, R6W
WESTCHESTER TWP.
PORTER CO.

SECT. 33, T37N, R6W
WESTCHESTER TWP.
PORTER CO.

Curve Data
PI = 155+74.70, "A"
Δ = 047° 25' 48.5"
R = 200.00 ft
T = 87.86 ft
L = 165.56 ft
E = 18.45 ft

PI =
Δ =

Const. Limits
PC: 151+32.27 "A"
S73°42'02"E
6.0ft.0"
81
K
81
Const. Limits

+25, 14.5' L. **Str. No. 12**
30 LF - 12" RCP
(2) Pipe End Sections Req'd

PT: 152+51.11 "A"
S51°00'19"E
PC: 153+03.55 "A"
Line "A"

(Grass)
(Grass)

Const. Limits
PC: 154+86.34 "A"
PT: 154+49.85 "A"
N73°06'57"E
Const. Limits
6.0ft.0"
81
K
81
S5

1,064 Syd. of Mulched Seeding, Type U Req'd
from Sta. 151+00.00 to Sta. 156+00.00

Curve Data
PI = 153+83.11, "A"
Δ = 055° 52' 44.1"
R = 150.00 ft
T = 79.55 ft
L = 146.29 ft
E = 19.79 ft

App. Railroad R/W

Norfolk Southern
Railroad

LEGEND
(K) HMA for Multi-Use Path, See Typical Section
(81) Mulched Seeding, Type U

All Right-of-Way and Topography Described from Line "A".
Line "A" to be Constructed.

0 10 20 40
(IN FEET)
1 inch = 20 ft.

PVI @ 152+25
EL. = 640.04
V.C. = 50'

PVI @ 153+50
EL. = 641.19
V.C. = 50'

PVI @ 154+50
EL. = 640.19
V.C. = 50'

PVI @ 155+25
EL. = 640.46
V.C. = 50'

650 | 645 | 640 | 635 | 630 | 625 | 620 | 615 | 610

Proposed Profile Grade
+0.92%
-1.00%
+0.36%
-0.40%
0.32%
-0.08%
Existing Profile Grade
+11 638.57
+51 638.70
Special Ditch Profile, Rt.

-0.33%
Special Ditch Profile, Lt.
(Plotted 10' Below Datum)
+31 638.77
-0.86%
0.36%
0.18%
-0.13%
+11 638.56
+25 638.44
+71 638.61
+51 638.75
Special Ditch Profile, Lt.
(Plotted 10' Below Datum)

Exist. Elev. / Prop. Elev.

| 638.3 / 640.64 | 638.2 / 640.40 | 638.0 / 640.16 | 638.4 / 640.27 | 638.3 / 640.23 | 638.5 / 641.07 | 638.7 / 640.69 | 638.0 / 640.47 | 638.9 / 640.37 | 638.9 / 640.36 | 638.8 / 640.16 |

151+00 | 152+00 | 153+00 | 154+00 | 155+00 | 156+00

O:\PROJECTS\2024\24-0397 TOWN OF BURNS HARBOR - MARQUETTE GREENWAY TRAIL PH1B\CAD_CIVIL\PLANS\24-0397 PP-LINE A.DWG PP-A-09 FRANCISCO PEREZ 5/27/2025 5:32 PM

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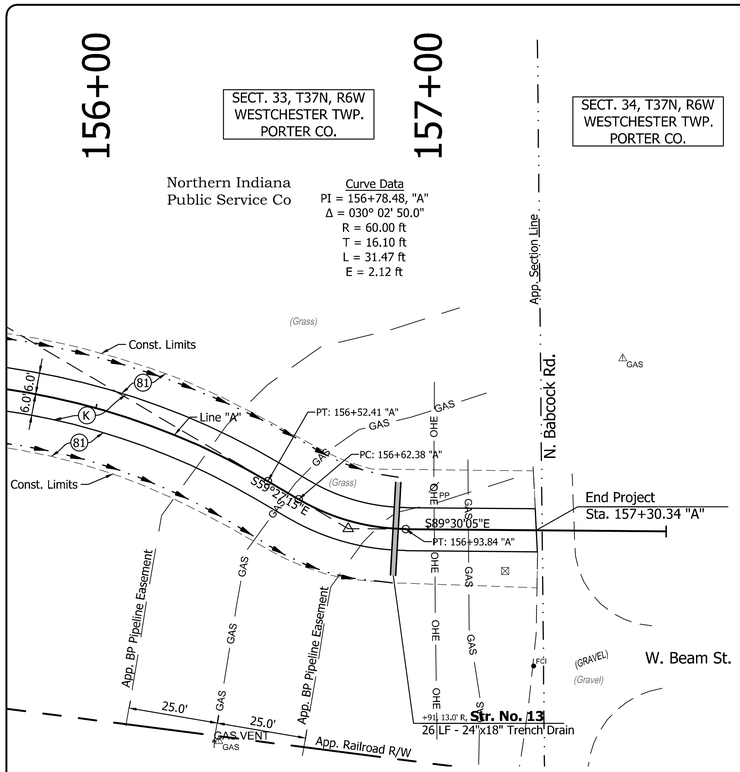
PROJECT:
MARQUETTE GREENWAY
PHASE 1B
TOWN OF BURNS HARBOR, IN

SHEET TITLE:
PLAN AND PROFILE LINE "A"

DRAWN BY: FJP
DESIGNED BY: FJP
PM REVIEW: MSK
QA/QC REVIEW: CAK
DATE: 05/27/2025
SEAL:
PRELIMINARY
SIGNATURE:
DATE:
SCALE: HORZ: 1" = 20' VERT: 1" = 5'
ACI JOB # 24-0397
SHEET NO. 17 of 68



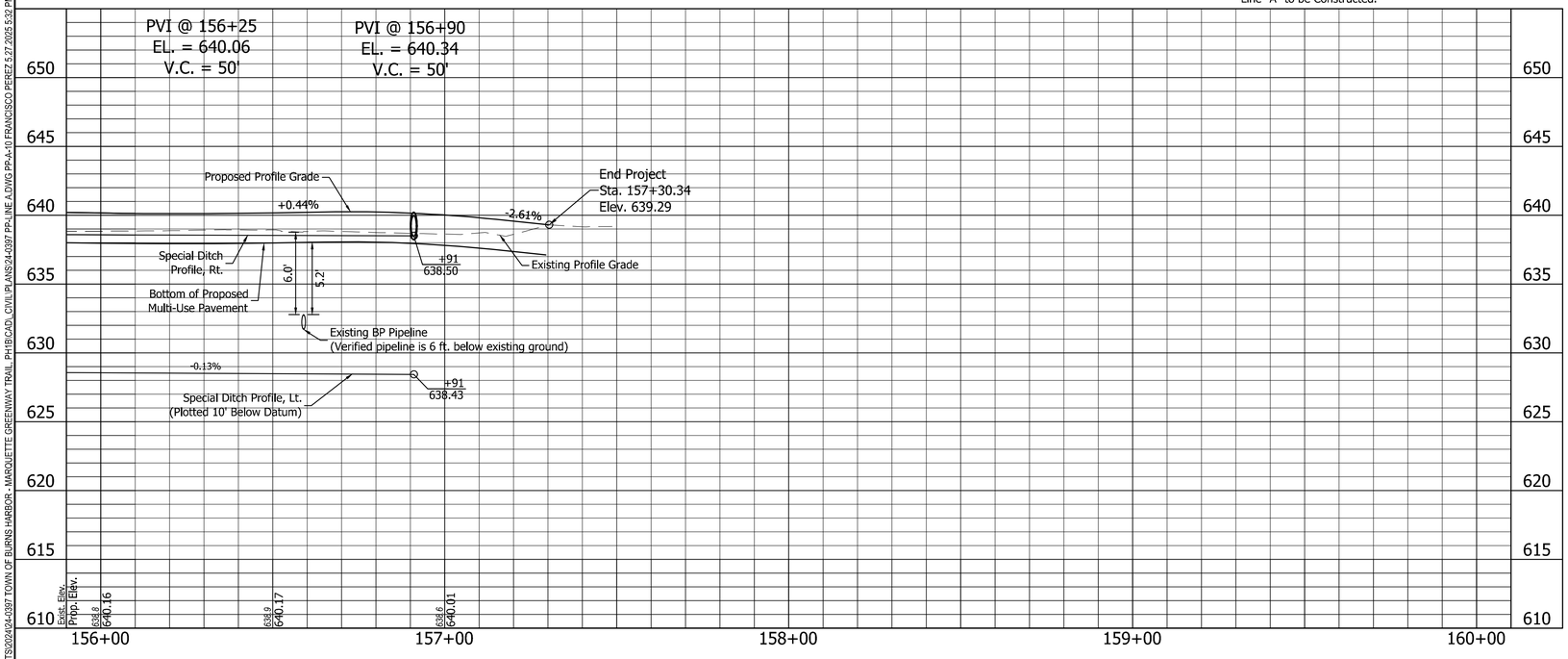
303 Syd. of Mulched Seeding, Type U Req'd
from Sta. 156+00.00 to Sta. 157+39.39

LEGEND

- (K) HMA for Multi-Use Path, See Typical Section
- (81) Mulched Seeding, Type U

All Right-of-Way and Topography Described from Line "A".
Line "A" to be Constructed.

0 10 20 40
(IN FEET)
1 inch = 20 ft.



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PROJECT:
MARQUETTE GREENWAY
PHASE 1B
TOWN OF BURNS HARBOR, IN

SHEET TITLE:
PLAN AND PROFILE LINE "A"

DRAWN BY: FJP
DESIGNED BY: FJP
PM REVIEW: MSK
QA/QC REVIEW: CAK
DATE: 05/27/2025
SEAL:
PRELIMINARY
SIGNATURE:
DATE:
SCALE:
HORZ: 1" = 20'
VERT: 1" = 5'
ACI JOB #
24-0397
SHEET NO.
18 of 68

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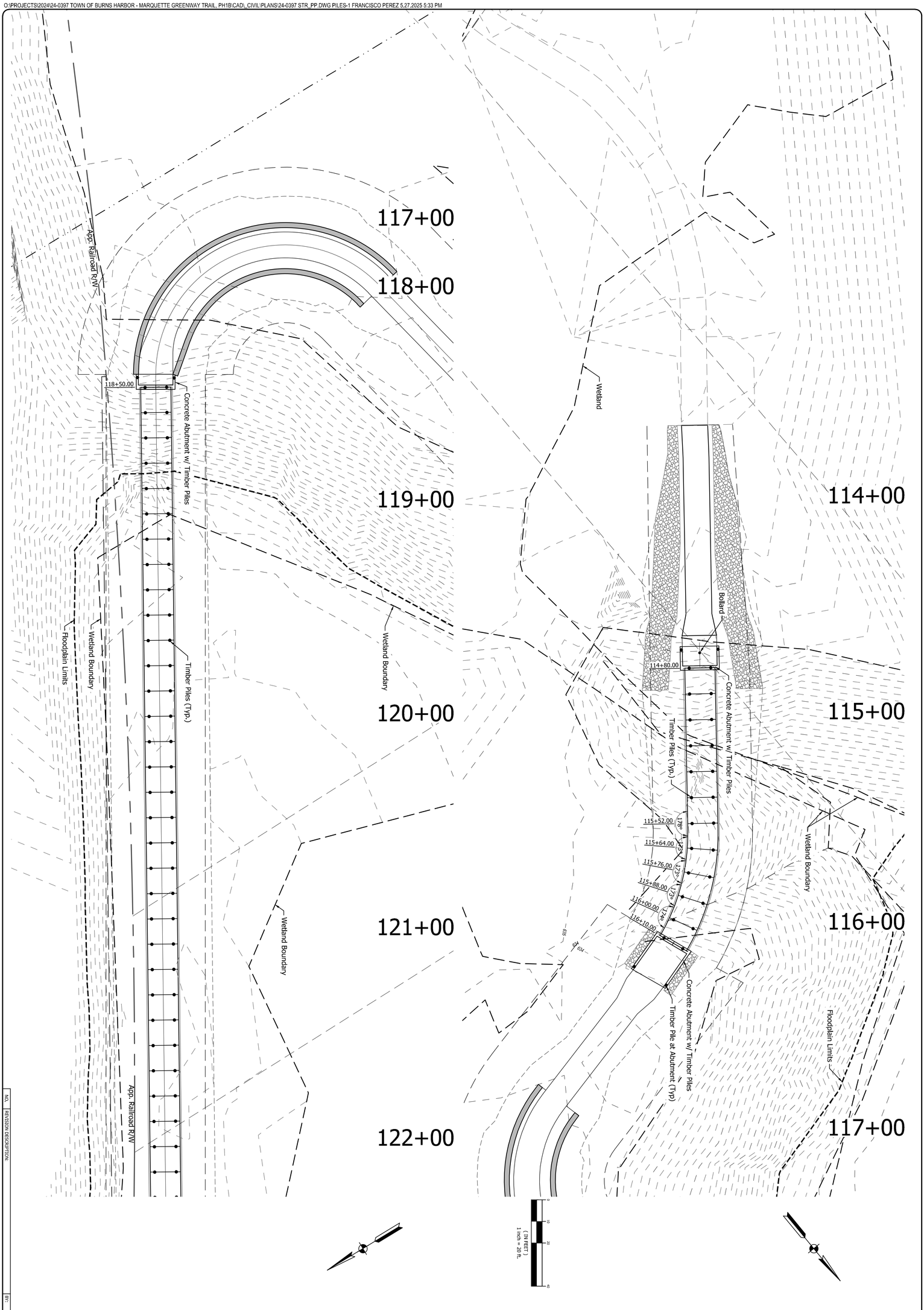

NO.	REVISION DESCRIPTION	BY:	DATE:

SHEET NO. 19 of 68

ACT 308 # 24-0397

SCALE: 1" = 20'

DATE:

SIGNATURE:

PRELIMINARY

SEAL

DATE: 05/27/2025

QA/QC REVIEW: SFL

PM REVIEW: MSK

DESIGNED BY: APH

DRAWN BY: APH / KRV

SHEET TITLE:

PLAN LINE "A" PILE LAYOUT

PROJECT:

MARQUETTE GREENWAY PHASE 1B

TOWN OF BURNS HARBOR, IN

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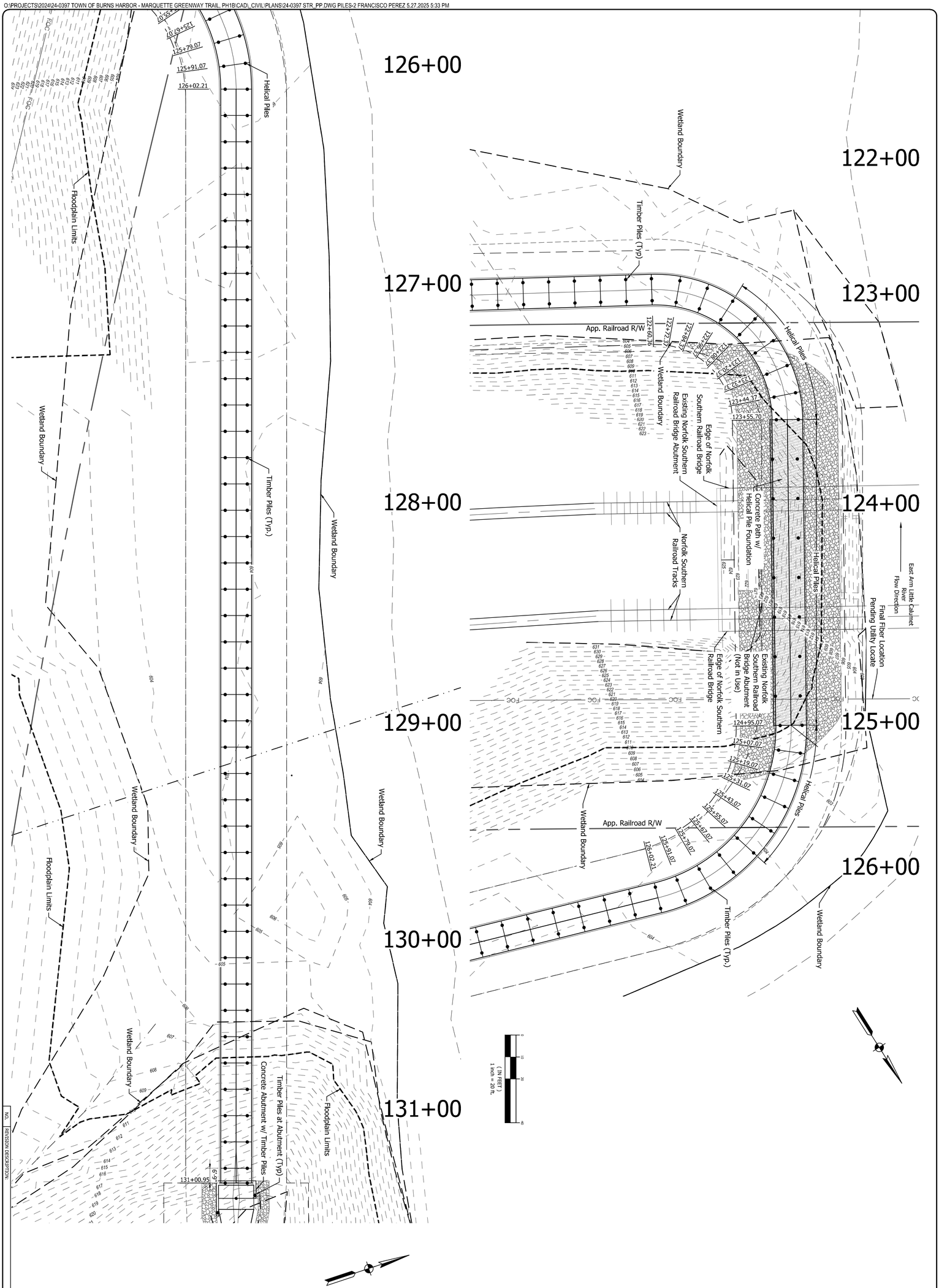

NO.	REVISION DESCRIPTION	BY:	DATE:

SHEET TITLE:

PLAN LINE "A" PILE LAYOUT

PROJECT:

MARQUETTE GREENWAY
PHASE 1B
TOWN OF BURNS HARBOR, IN

DRAWN BY: APH / KRV
DESIGNED BY: APH
PM REVIEW: MSK
QA/QC REVIEW: SFL
DATE: 05/27/2025
SEAL:

PRELIMINARY

SIGNATURE:
DATE:
SCALE: 1" = 20'
ACT JOB #: 24-0397
SHEET NO.: 20 of 68

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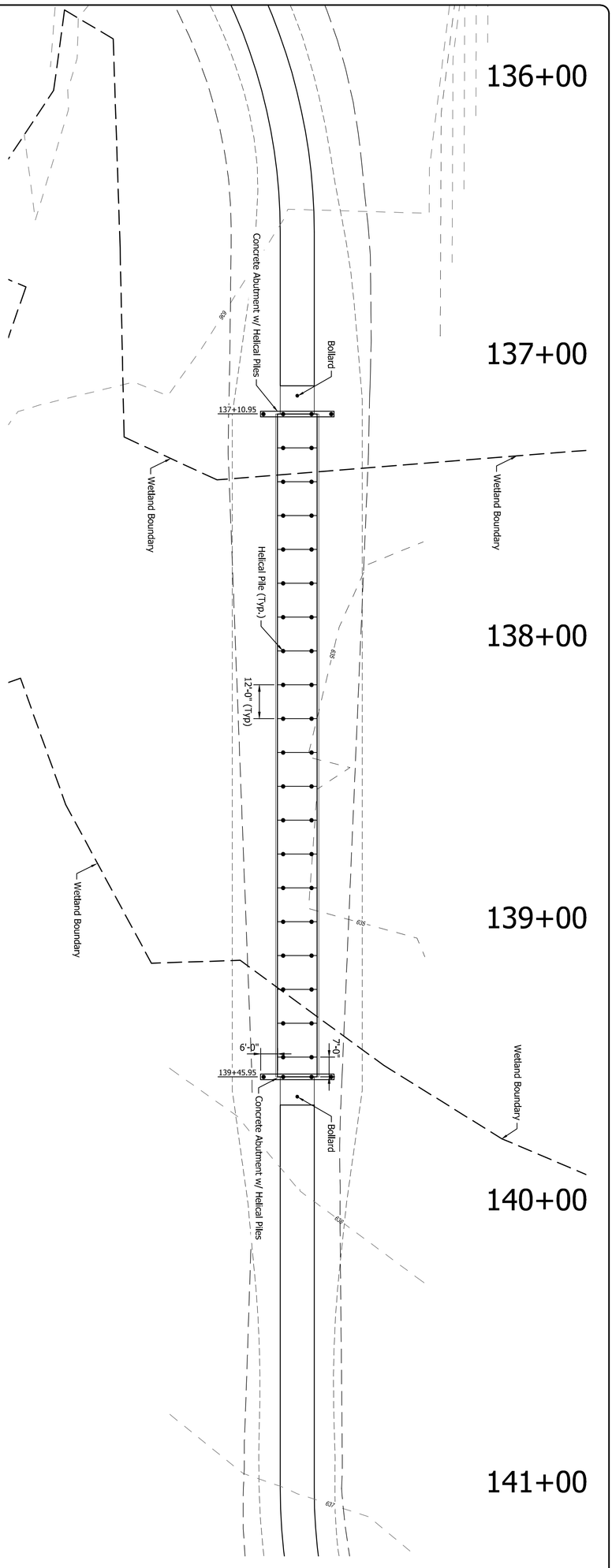

0 10 20 40
(IN FEET)
1 INCH = 20 ft.

NO.	REVISION DESCRIPTION	BY:	DATE:

SHEET NO. **21 of 68**

ACT 308 # **24-0397**

SCALE: **1" = 20'**

DATE:

SIGNATURE:

PRELIMINARY

SEAL

DATE: **05/27/2025**

QA/QC REVIEW: **MSK**

PM REVIEW: **APH**

DESIGNED BY: **APH**

DRAWN BY: **APH / KRV**

SHEET TITLE:

PLAN LINE "A" PILE LAYOUT

PROJECT:

MARQUETTE GREENWAY
PHASE 1B
TOWN OF BURNS HARBOR, IN

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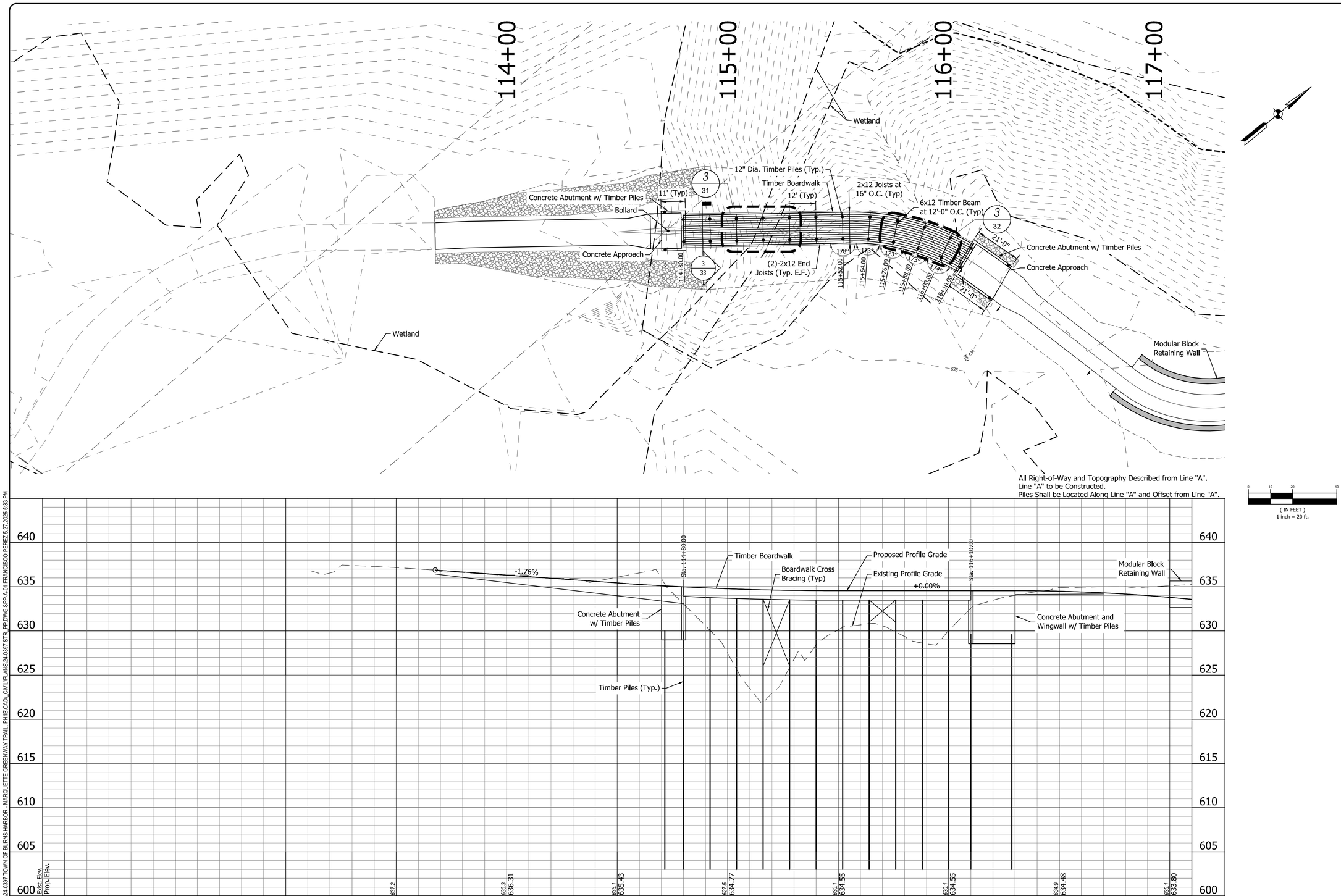

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PROJECT:

MARQUETTE GREENWAY PHASE 1B
TOWN OF BURNS HARBOR, IN

PLAN AND PROFILE LINE "A" STRUCTURAL

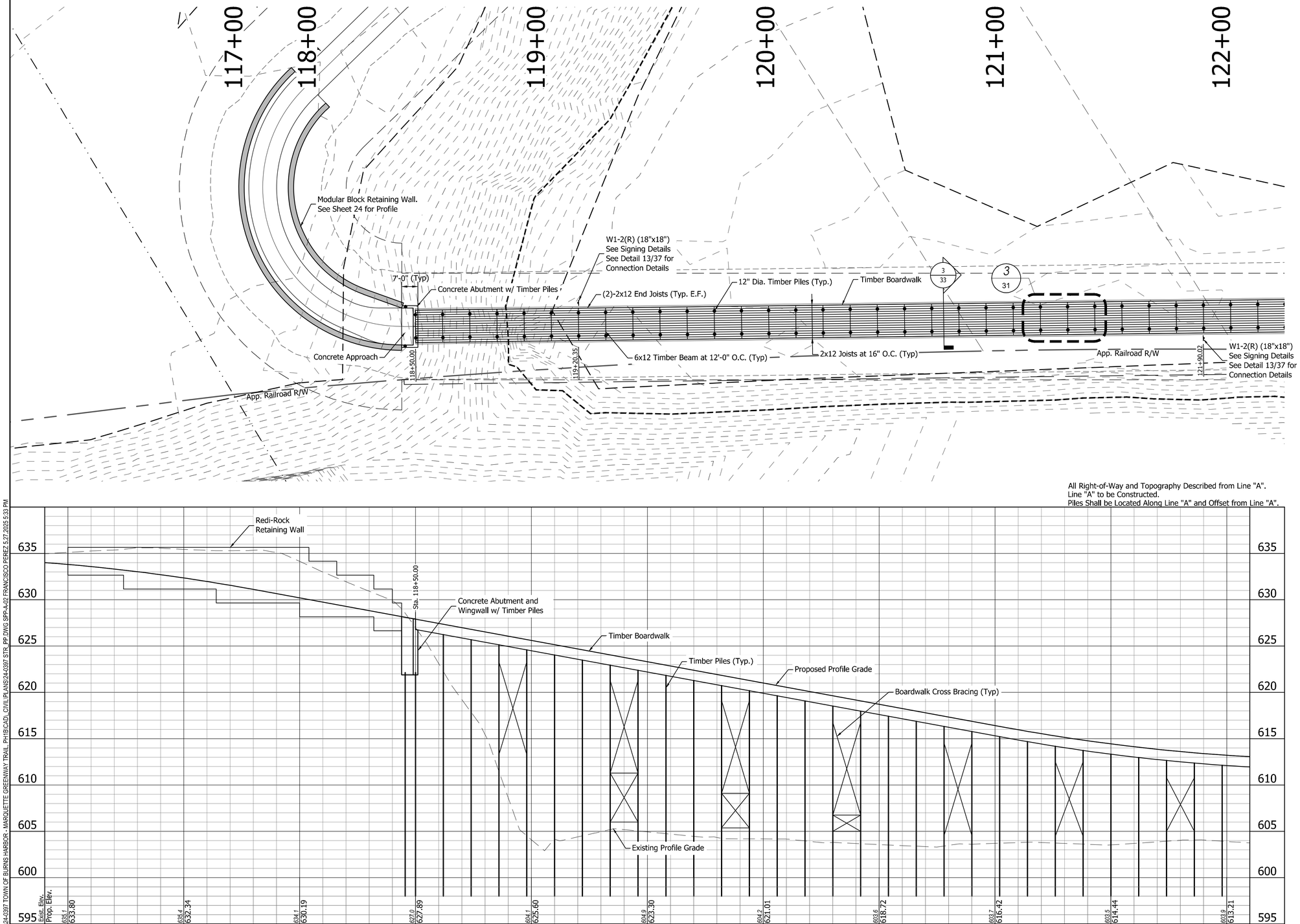
SHEET TITLE:

DRAWN BY: APH / KRV
DESIGNED BY: APH
PM REVIEW: MSK
QA/QC REVIEW: SFL
DATE: 05/27/2025
SEAL:

PRELIMINARY

SIGNATURE:
DATE:
SCALE:
HORZ: 1" = 20'
VERT: 1" = 5'
ACI JOB #
24-0397
SHEET NO.
22 of 68

NO.	REVISION DESCRIPTION:	BY:	DATE:



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PROJECT:

MARQUETTE GREENWAY PHASE 1B
TOWN OF BURNS HARBOR, IN

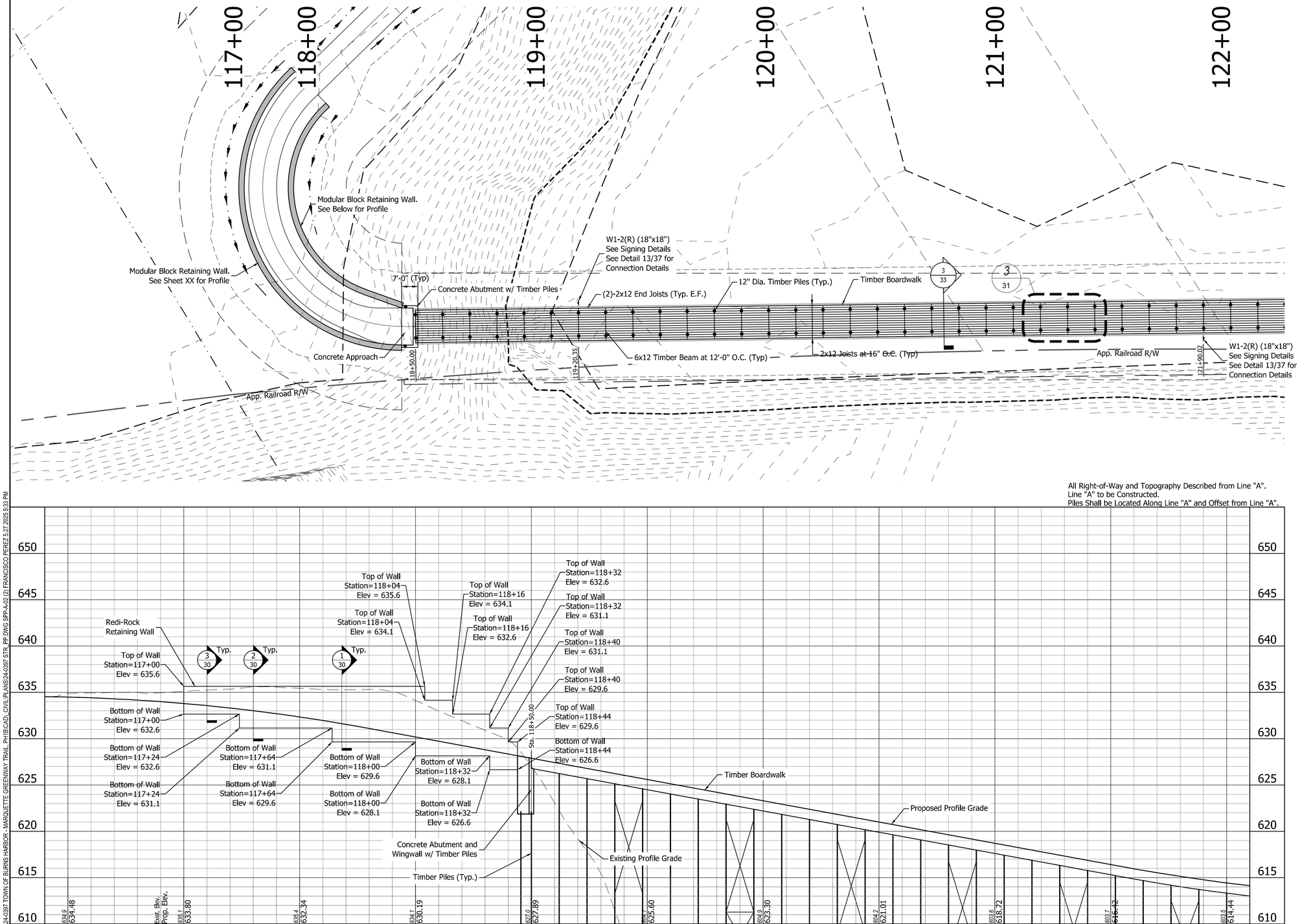
SHEET TITLE:

PLAN AND PROFILE LINE "A" STRUCTURAL

DRAWN BY: APH / KRV
DESIGNED BY: APH
PM REVIEW: MSK
QA/QC REVIEW: SFL
DATE: 05/27/2025
SEAL:

PRELIMINARY

SIGNATURE:
DATE:
SCALE:
HORZ: 1" = 20'
VERT: 1" = 5'
ACI JOB #
24-0397
SHEET NO.
23 of 68



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PROJECT:

MARQUETTE GREENWAY
PHASE 1B
TOWN OF BURNS HARBOR, IN

SHEET TITLE:

PLAN AND PROFILE LINE "A"
STRUCTURAL

DRAWN BY: APH / KRV
DESIGNED BY: APH
PM REVIEW: MSK
QA/QC REVIEW: SFL
DATE: 05/27/2025
SEAL:

PRELIMINARY

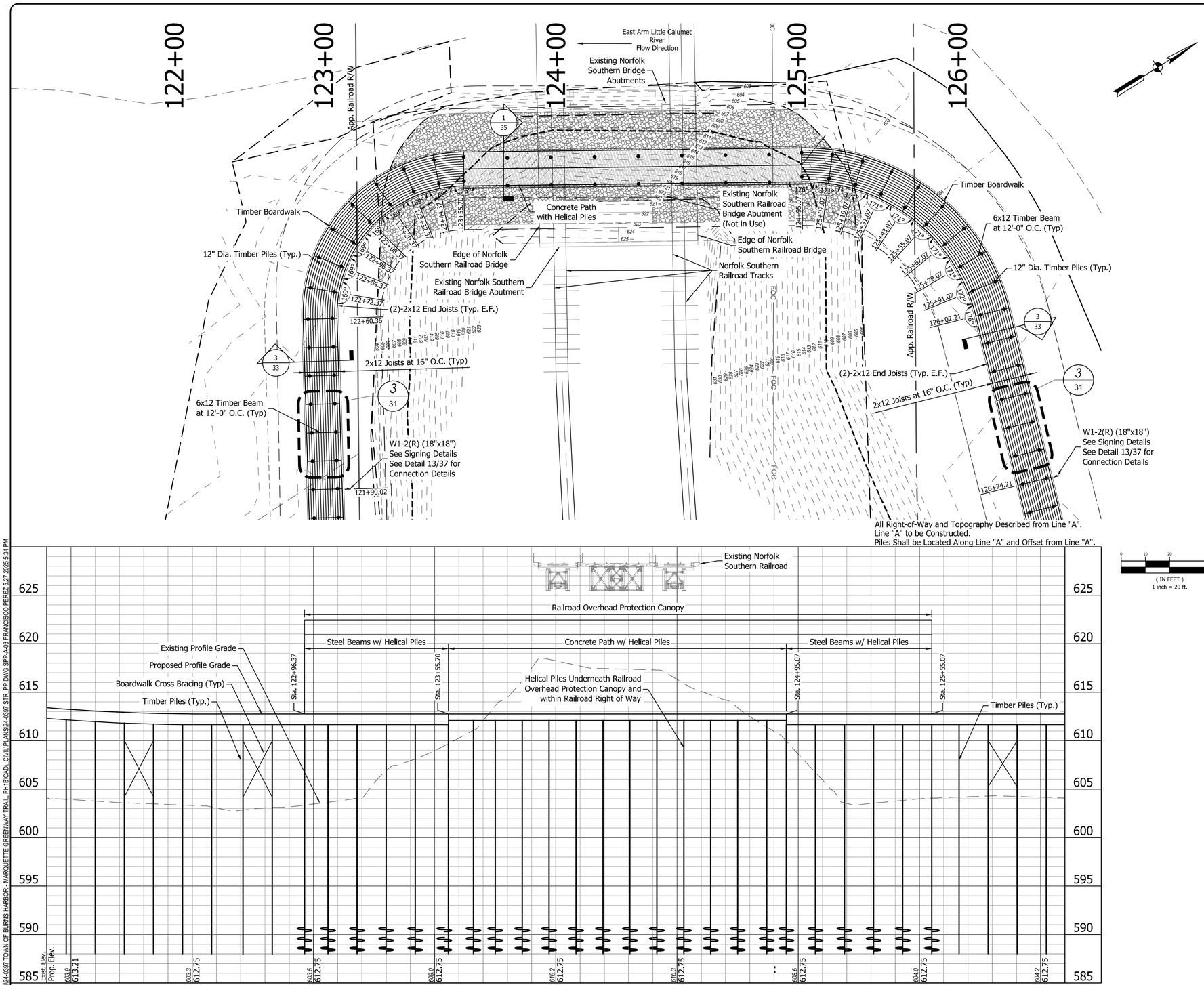
SIGNATURE:
DATE:

SCALE:
HORZ: 1" = 20'
VERT: 1" = 5'

ACI JOB #
24-0397

SHEET NO.
24 of 68

O:\PROJECTS\2024\24-0397 TOWN OF BURNS HARBOR - MARQUETTE GREENWAY TRAIL PH1B\CAD_CIVIL\PLANS\24-0397 STR_PP.DWG 5/27/2025 5:33 PM



(IN FEET)
1 inch = 20 ft.

NO.	REVISION DESCRIPTION:	BY:	DATE:

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PROJECT:
MARQUETTE GREENWAY
PHASE 1B
TOWN OF BURNS HARBOR, IN

SHEET TITLE:
PLAN AND PROFILE LINE "A"
STRUCTURAL

DRAWN BY: APH / KRV
DESIGNED BY: APH
PM REVIEW: MSK
QA/QC REVIEW: SFL
DATE: 05/27/2025
SEAL:

PRELIMINARY

SIGNATURE:
DATE:

SCALE:
HORZ: 1" = 20'
VERT: 1" = 5'

ACI JOB #
24-0397

SHEET NO.
25 of 68

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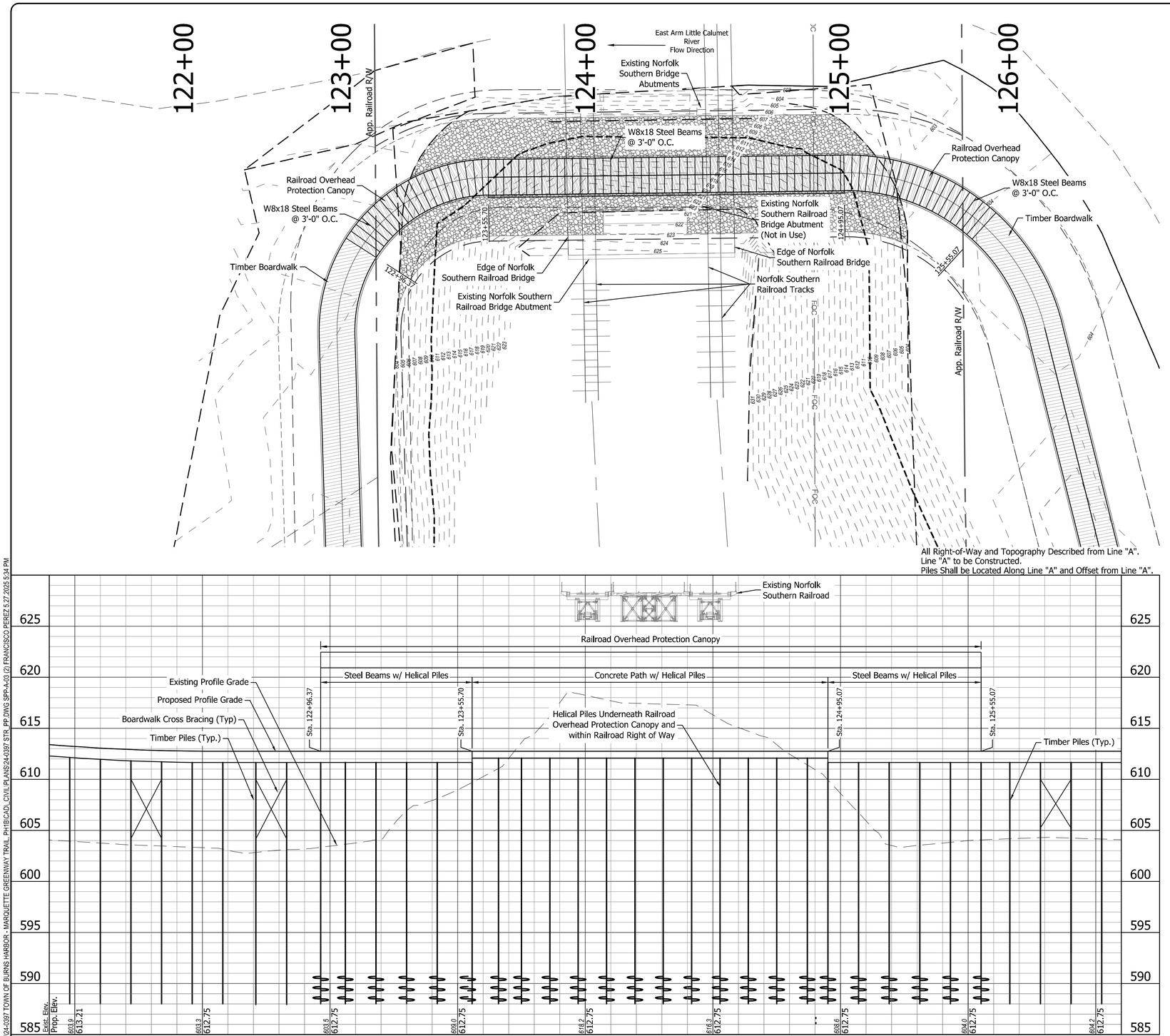

(IN FEET)
1 inch = 20 ft.

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PROJECT:

MARQUETTE GREENWAY PHASE 1B
TOWN OF BURNS HARBOR, IN

SHEET TITLE:

PLAN AND PROFILE LINE "A" STRUCTURAL

DRAWN BY: APH / KRV
DESIGNED BY: APH
PM REVIEW: MSK
QA/QC REVIEW: SFL
DATE: 05/27/2025
SEAL:

PRELIMINARY

SIGNATURE:
DATE:

SCALE:
HORZ: 1" = 20'
VERT: 1" = 5'

ACI JOB #
24-0397

SHEET NO.
26 of 68

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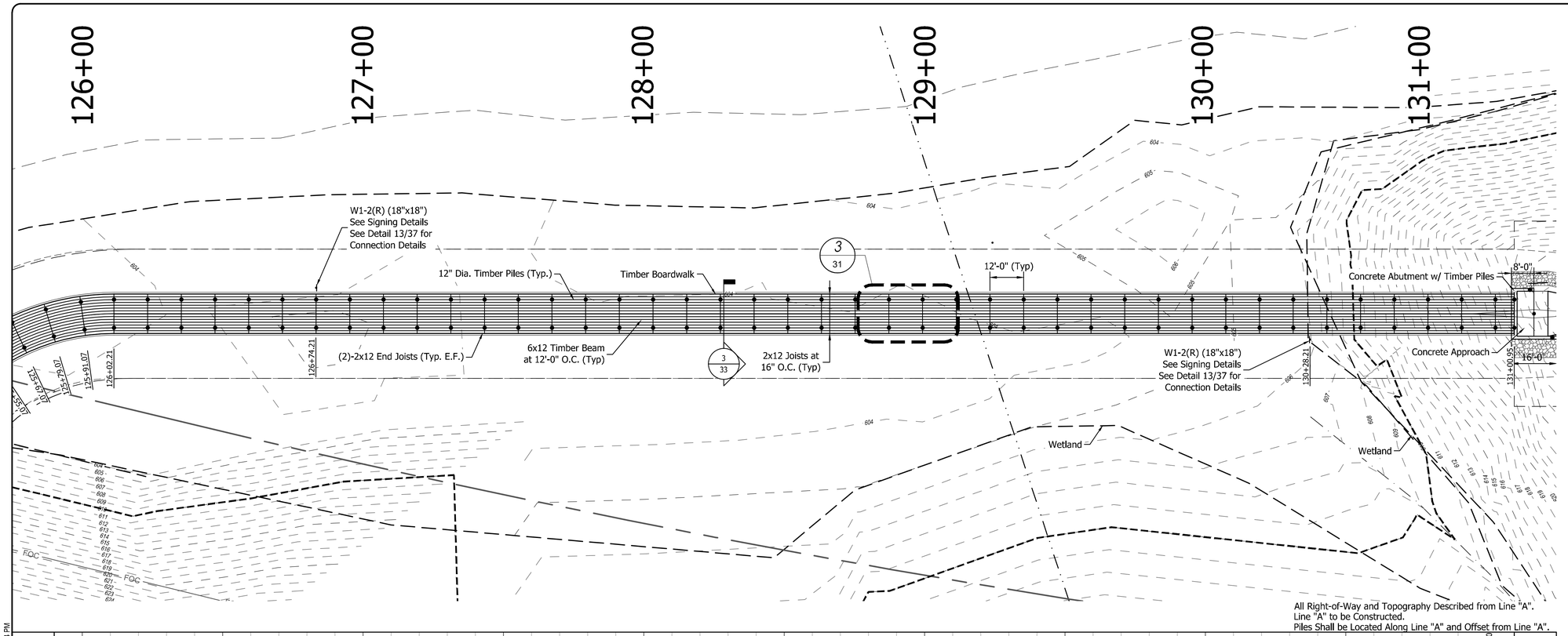

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PROJECT:

MARQUETTE GREENWAY
PHASE 1B
TOWN OF BURNS HARBOR, IN

SHEET TITLE:

PLAN AND PROFILE LINE "A"
STRUCTURAL

DRAWN BY: APH / KRV
DESIGNED BY: APH
PM REVIEW: MSK
QA/QC REVIEW: SFL
DATE: 05/27/2025
SEAL:

PRELIMINARY

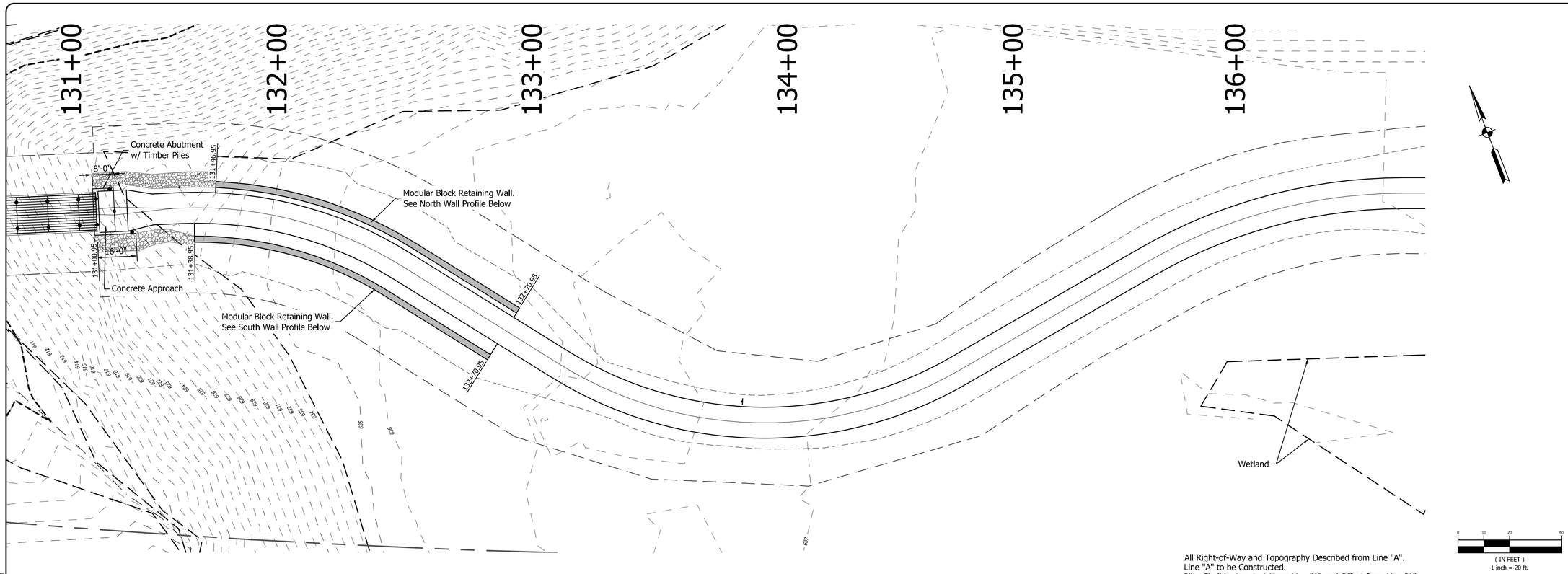
SIGNATURE:
DATE:

SCALE:
HORZ: 1" = 20'
VERT: 1" = 5'

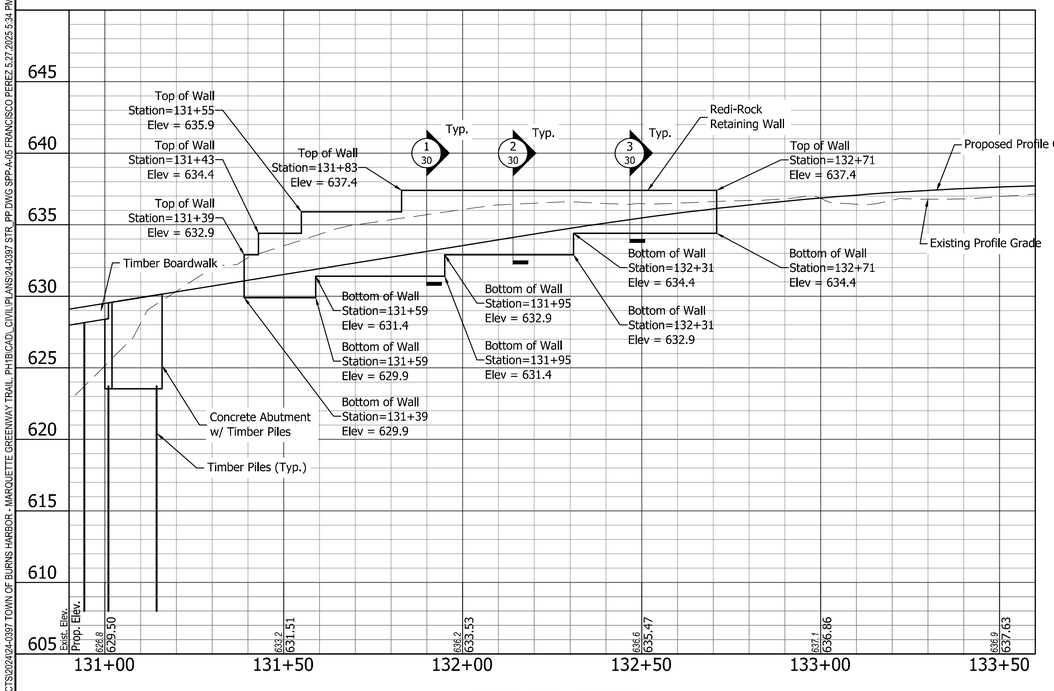
ACI JOB #
24-0397

SHEET NO.
27 of 68

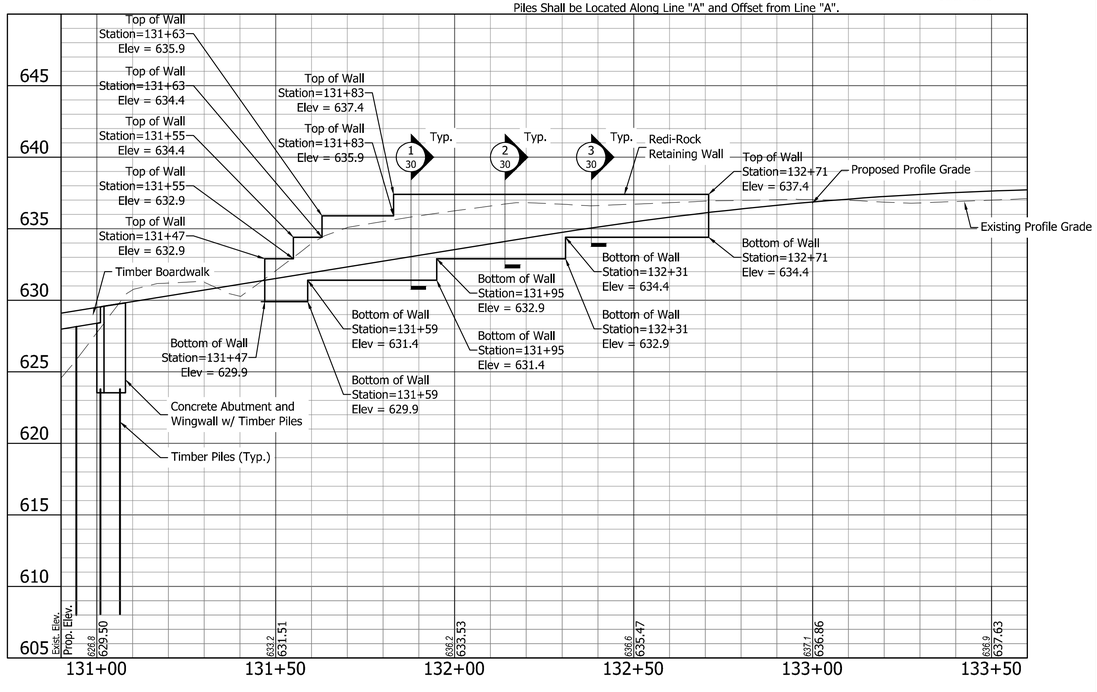
NO.	REVISION DESCRIPTION:	BY:	DATE:



All Right-of-Way and Topography Described from Line "A".
Line "A" to be Constructed.
Piles Shall be Located Along Line "A" and Offset from Line "A".



SOUTH WALL PROFILE



NORTH WALL PROFILE

NO.	REVISION DESCRIPTION:	BY:	DATE:

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PROJECT:

MARQUETTE GREENWAY
PHASE 1B
TOWN OF BURNS HARBOR, IN

SHEET TITLE:

PLAN AND PROFILE LINE "A"
STRUCTURAL

DRAWN BY: APH / KRV
DESIGNED BY: APH
PM REVIEW: MSK
QA/QC REVIEW: SFL
DATE: 05/27/2025
SEAL:

PRELIMINARY

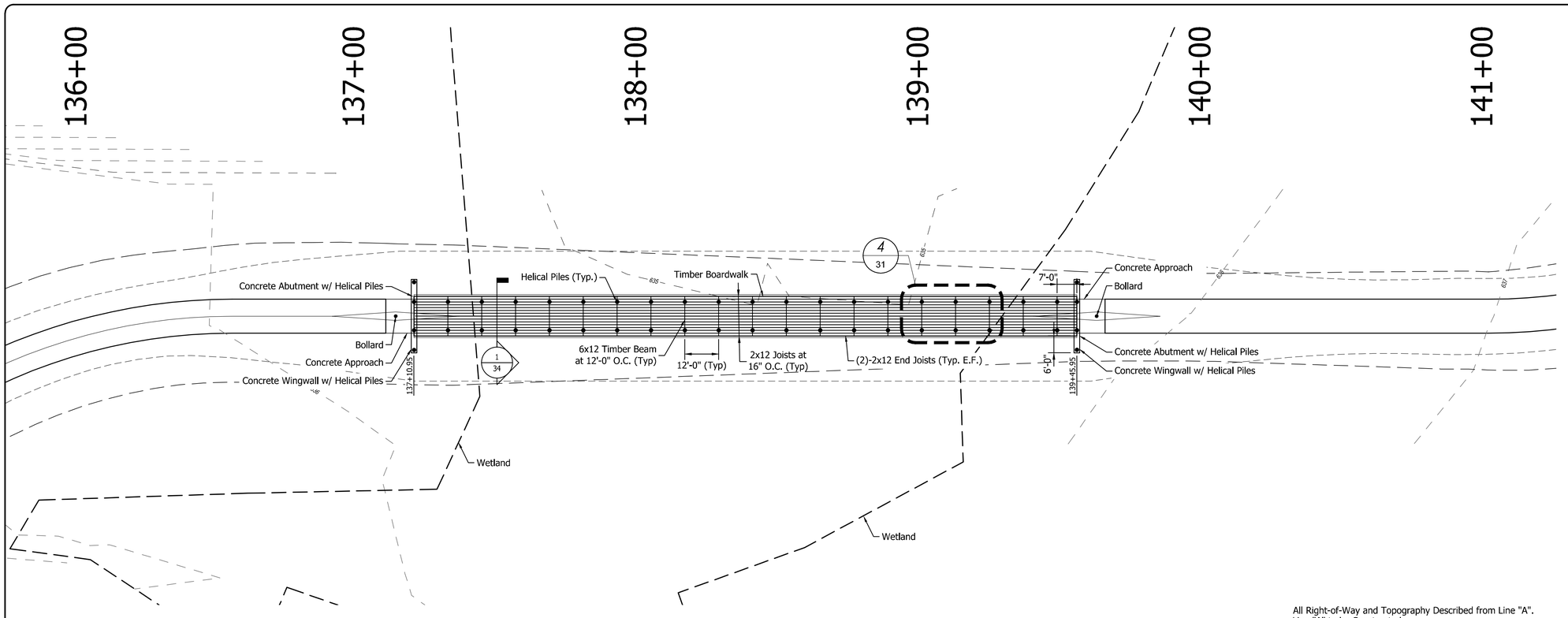
SIGNATURE:
DATE:

SCALE:
HORZ: 1" = 20'
VERT: 1" = 5'

ACT JOB #
24-0397

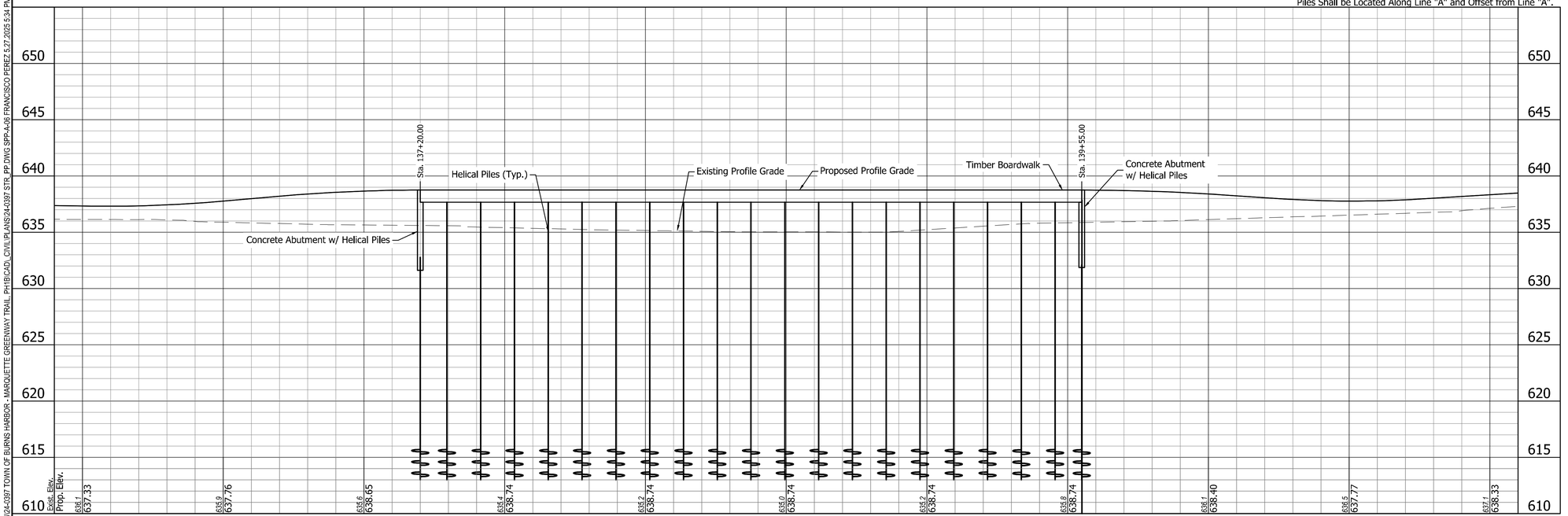
SHEET NO.
28 of 68

O:\PROJECTS\2024\24-0397 TOWN OF BURNS HARBOR - MARQUETTE GREENWAY TRAIL PH1B\CAD_CIVIL\PLANS\24-0397 STR_PP.DWG SPP-A-05 FRANCISCO PEREZ 5/27/2025 5:34 PM



All Right-of-Way and Topography Described from Line "A".
Line "A" to be Constructed.
Piles Shall be Located Along Line "A" and Offset from Line "A".

0 10 20 40
(IN FEET)
1 inch = 20 ft.



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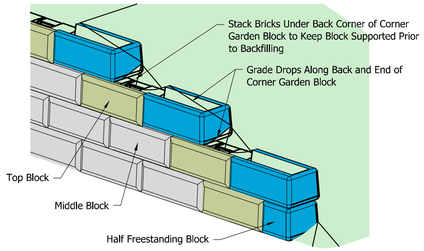
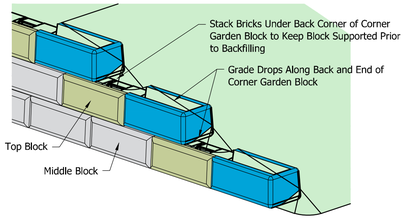
PROJECT:
MARQUETTE GREENWAY PHASE 1B
TOWN OF BURNS HARBOR, IN

SHEET TITLE:
PLAN AND PROFILE LINE "A" STRUCTURAL

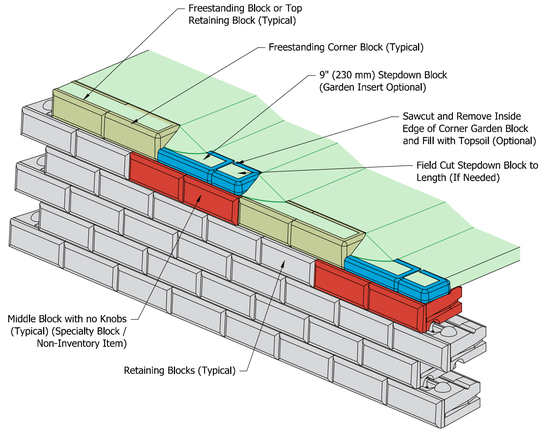
DRAWN BY: APH / KRV
DESIGNED BY: APH
PM REVIEW: MSK
QA/QC REVIEW: SFL
DATE: 05/27/2025
SEAL:
PRELIMINARY
SIGNATURE:
DATE:
SCALE:
HORZ: 1" = 20'
VERT: 1" = 5'
ACI JOB #
24-0397
SHEET NO.
29 of 68

O:\PROJECTS\2024\24-0397 TOWN OF BURNS HARBOR - MARQUETTE GREENWAY TRAIL PH1B\CAD_CIVIL\PLANS\24-0397 STR_PP.DWG 5/P-A-06 FRANCISCO PEREZ 5/27/2025 5:34 PM

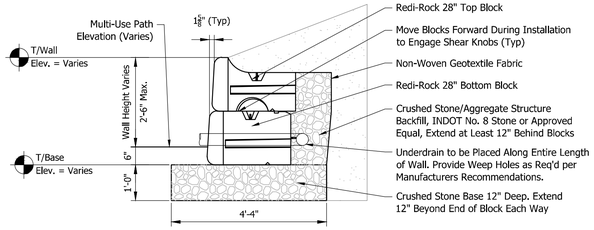




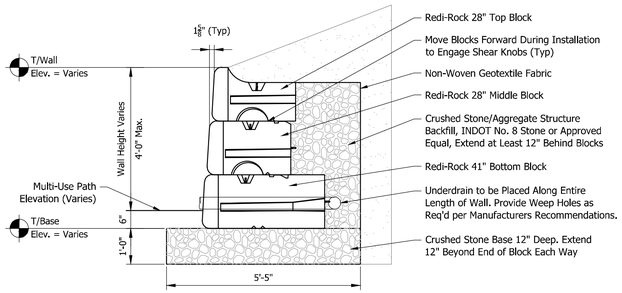
7 / 31 REDI-ROCK WALL STEP DETAIL
Scale: 1/2" = 1'-0"



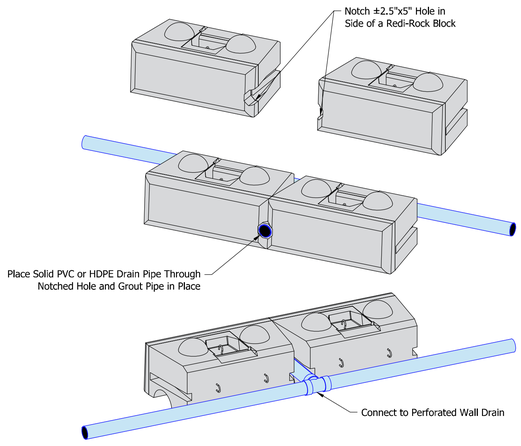
5 / 31 REDI-ROCK WALL STEP DETAIL
Scale: 1/2" = 1'-0"



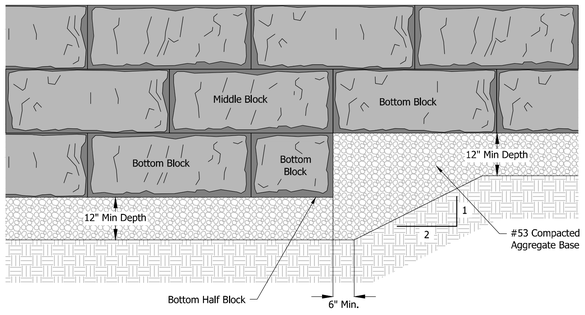
3 / 31 MODULAR BLOCK RETAINING WALL SECTION
Scale: 1/2" = 1'-0"



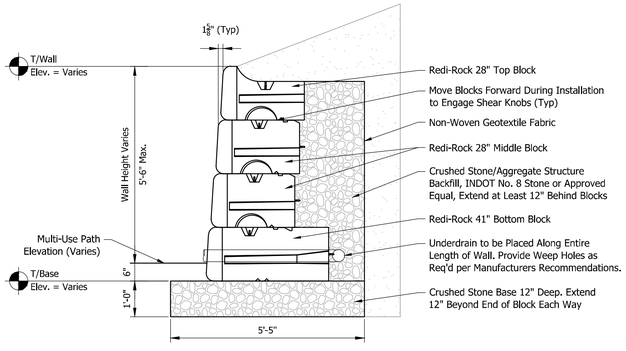
2 / 31 MODULAR BLOCK RETAINING WALL SECTION
Scale: 1/2" = 1'-0"



6 / 31 REDI-ROCK WALL DRAIN WEEP DETAIL
Scale: 1/2" = 1'-0"



4 / 31 REDI-ROCK STEP FOOTING DETAIL
Scale: 1/2" = 1'-0"



1 / 31 MODULAR BLOCK RETAINING WALL SECTION
Scale: 1/2" = 1'-0"

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PROJECT:
MARQUETTE GREENWAY PHASE 1B
TOWN OF BURNS HARBOR, IN

SHEET TITLE:
RETAINING WALL DETAILS

DRAWN BY: APH / KRV
DESIGNED BY: APH
PM REVIEW: MSK
QA/QC REVIEW: SFL
DATE: 05/27/2025
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PRELIMINARY
SIGNATURE:
DATE:
SCALE: AS NOTED
ACI JOB # 24-0397
SHEET NO. 30 of 68

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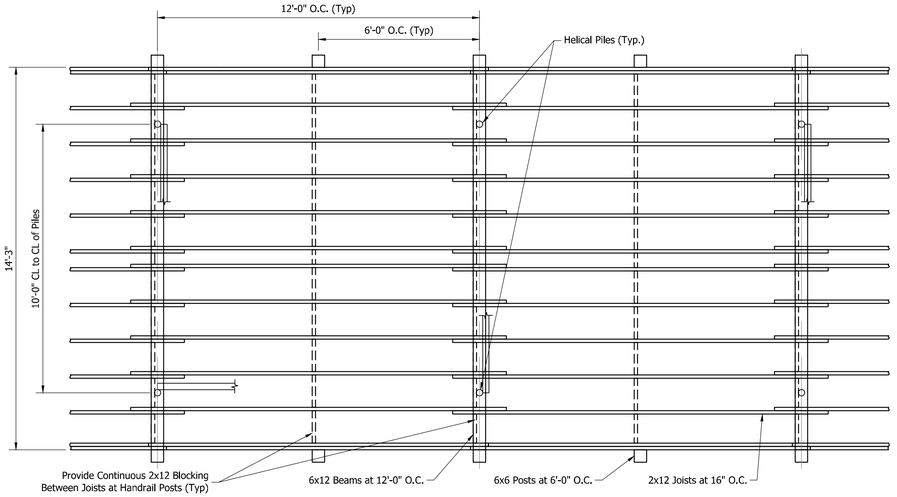
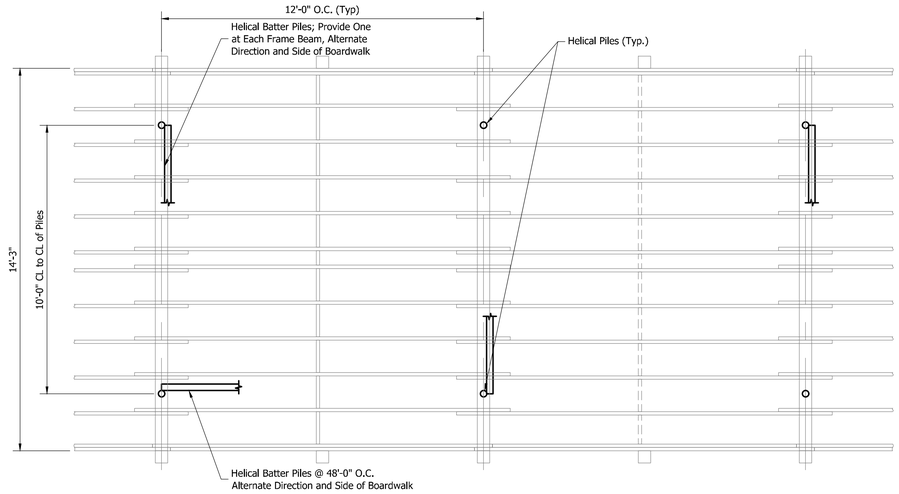
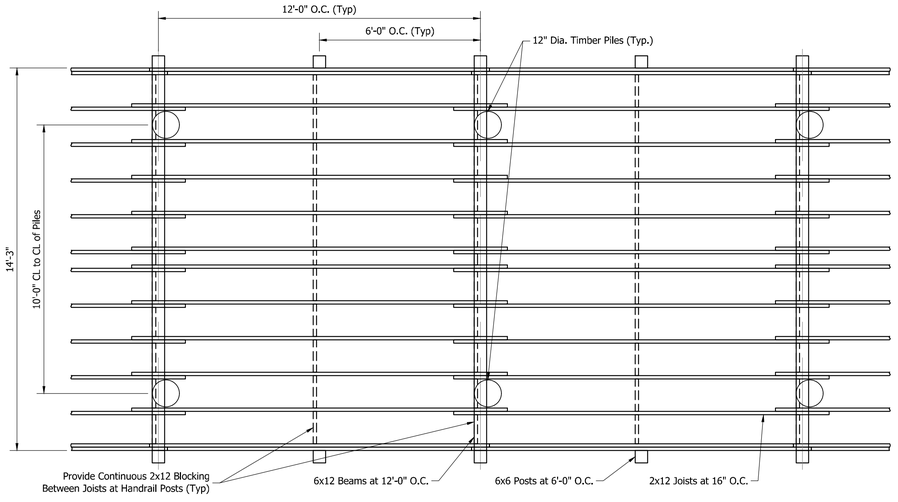


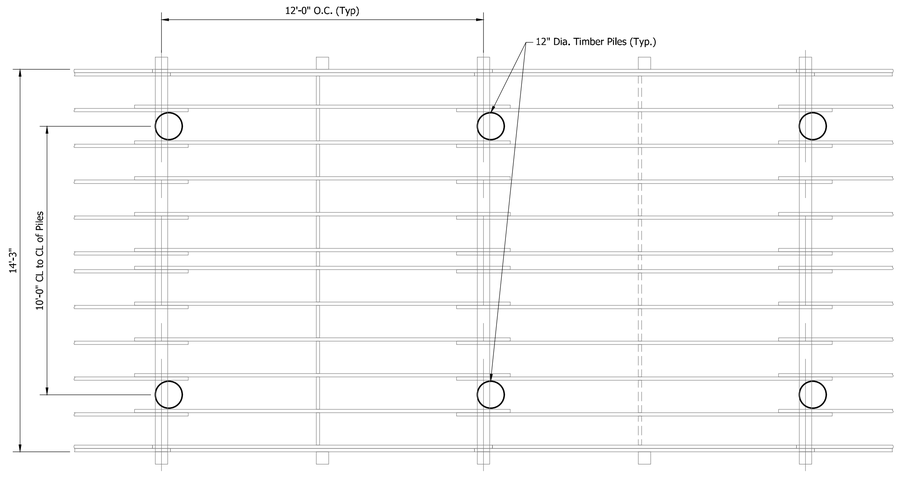
4 / 31 TYPICAL BOARDWALK PLAN - HELICAL PILES
Scale: 3/8" = 1'-0"



2 / 31 TYPICAL BOARDWALK PILE PLAN - HELICALS
Scale: 3/8" = 1'-0"



3 / 31 TYPICAL BOARDWALK PLAN - TIMBER PILES
Scale: 3/8" = 1'-0"



1 / 31 TYPICAL BOARDWALK PILE PLAN - TIMBERS
Scale: 3/8" = 1'-0"

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PROJECT:
MARQUETTE GREENWAY
PHASE 1B
TOWN OF BURNS HARBOR, IN

BOARDWALK PLANS

SHEET TITLE:

DRAWN BY: APH / KRV
DESIGNED BY: APH
PM REVIEW: MSK
QA/QC REVIEW: SFL
DATE: 05/27/2025
SEAL:

PRELIMINARY

SIGNATURE:
DATE:
SCALE: N.T.S.
ACI JOB # 24-0397
SHEET NO. 31 of 68

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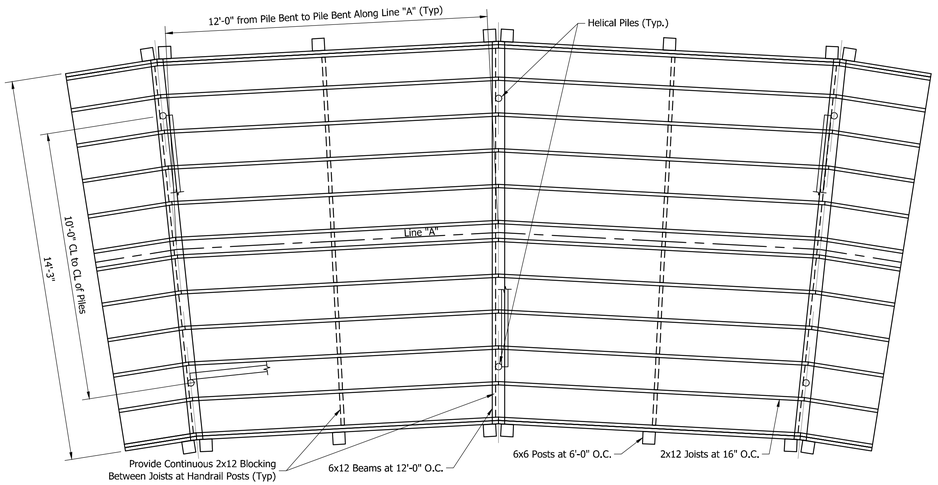
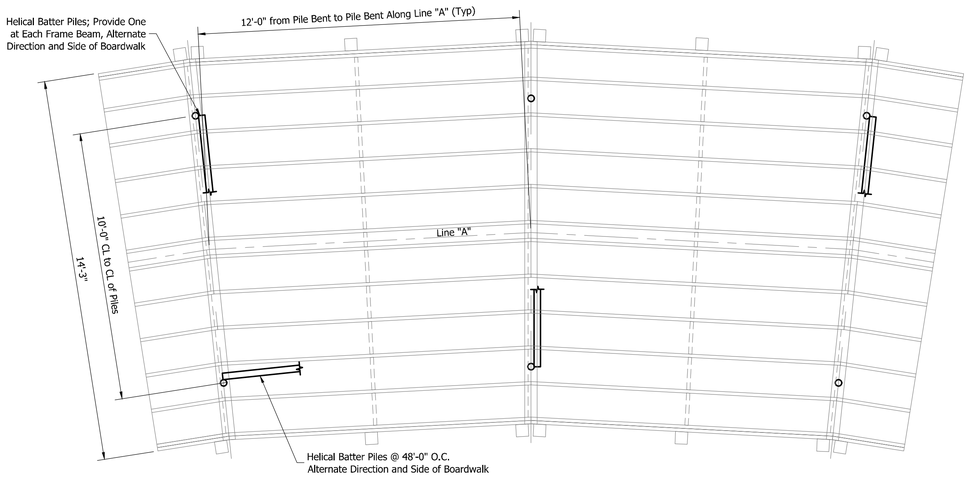
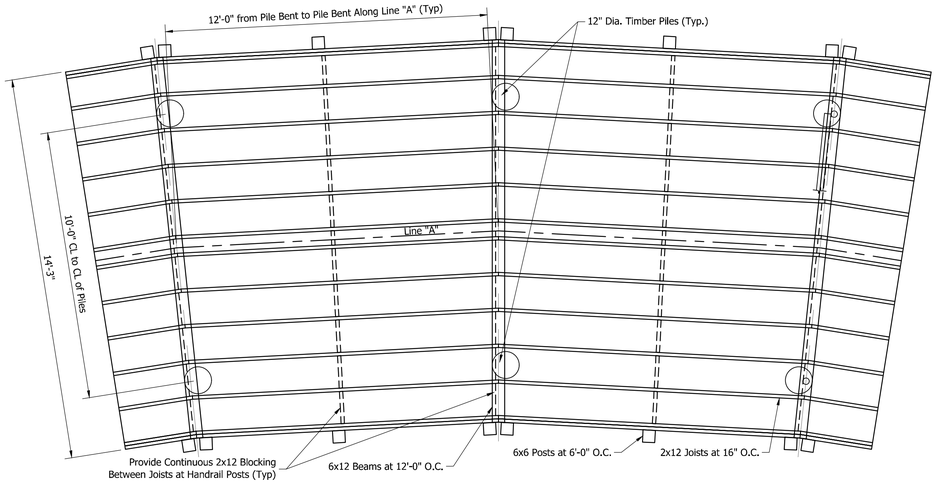


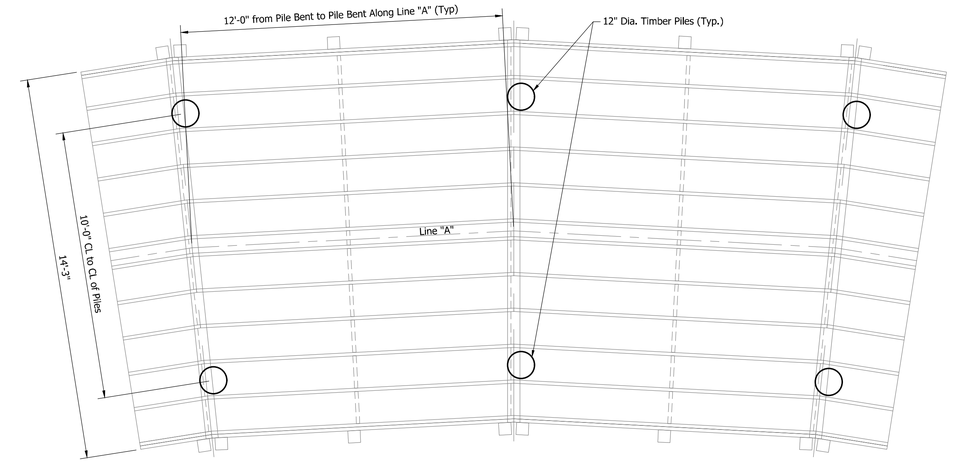
4 / 32 TYPICAL BOARDWALK PLAN - HELICAL PILES
Scale: 3/8" = 1'-0"



2 / 32 TYPICAL BOARDWALK PILE PLAN - HELICALS
Scale: 3/8" = 1'-0"



3 / 32 TYPICAL BOARDWALK PLAN - TIMBER PILES
Scale: 3/8" = 1'-0"



1 / 32 TYPICAL BOARDWALK PILE PLAN - TIMBERS
Scale: 3/8" = 1'-0"

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PROJECT:
MARQUETTE GREENWAY
PHASE 1B
TOWN OF BURNS HARBOR, IN

BOARDWALK PLANS

SHEET TITLE:

DRAWN BY: APH / KRV
DESIGNED BY: APH
PM REVIEW: MSK
QA/QC REVIEW: SFL
DATE: 05/27/2025
SEAL:

PRELIMINARY

SIGNATURE:
DATE:
SCALE: N.T.S.
ACI JOB # 24-0397
SHEET NO. 32 of 68

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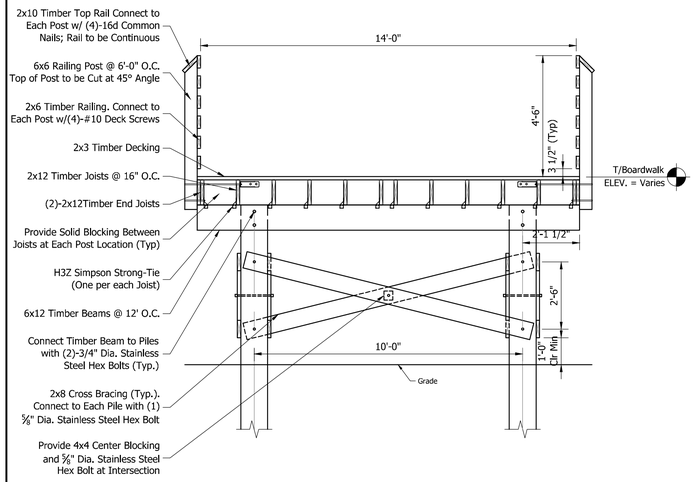
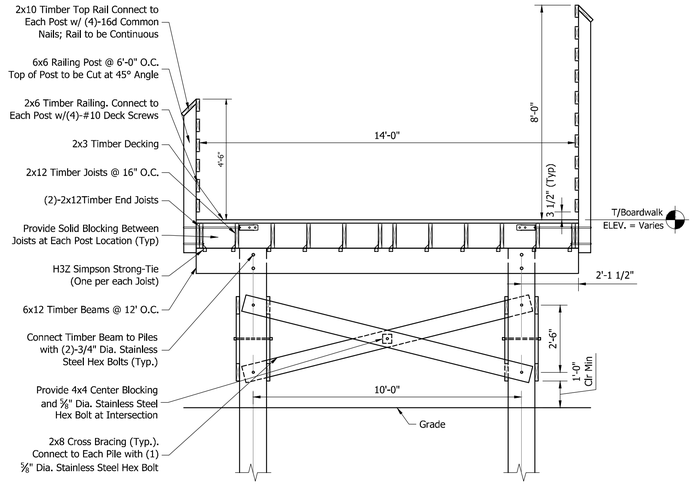
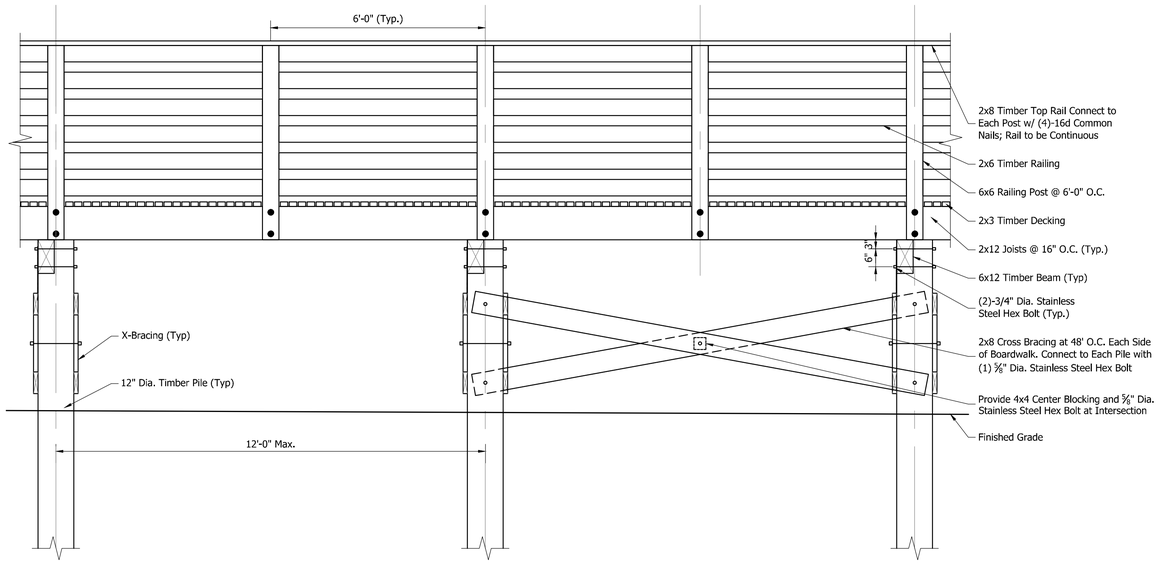


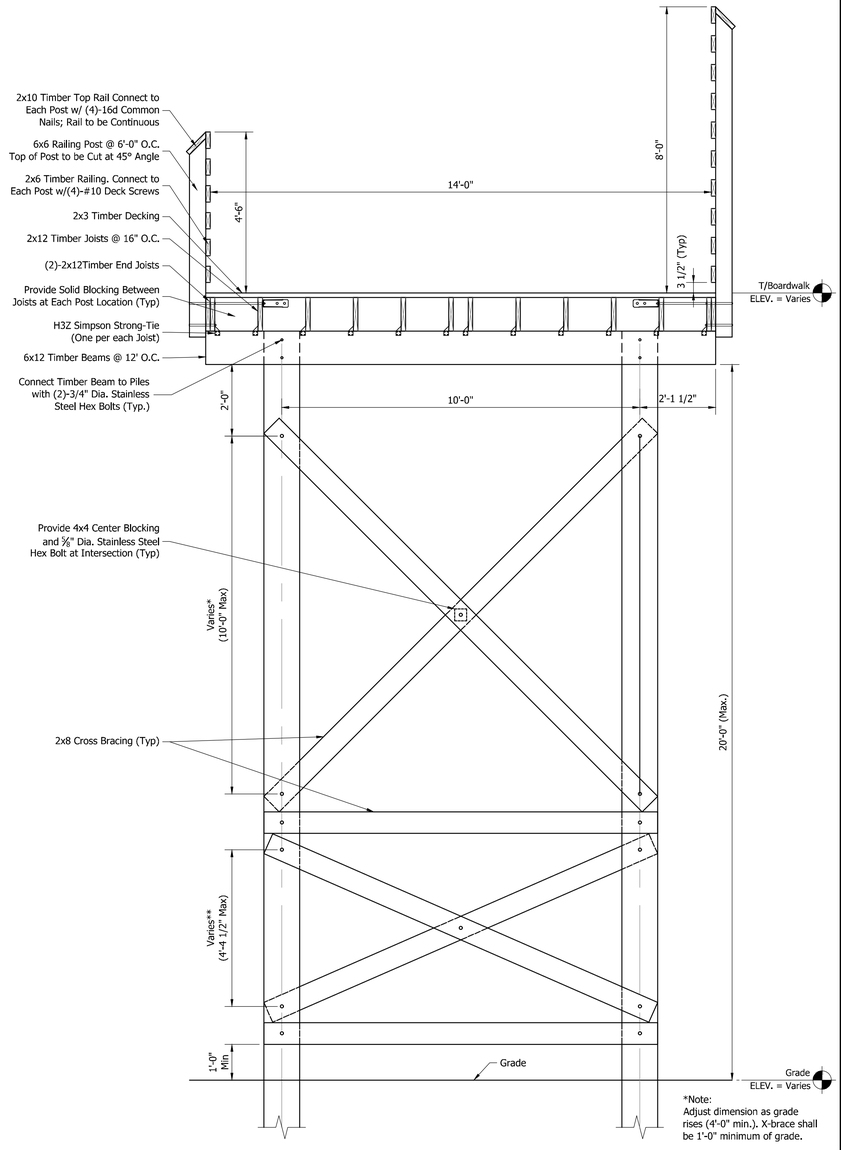
4 / 33 TYPICAL BOARDWALK SECTION - TIMBERS
Scale: 3/8" = 1'-0"



3 / 33 TYPICAL BOARDWALK SECTION - TIMBERS
Scale: 3/8" = 1'-0"



2 / 33 TYPICAL BOARDWALK ELEVATION - TIMBERS
Scale: 1/2" = 1'-0"



1 / 33 TYPICAL BOARDWALK SECTION - TIMBER
Scale: 1/2" = 1'-0"

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PROJECT:
MARQUETTE GREENWAY
PHASE 1B
TOWN OF BURNS HARBOR, IN

SHEET TITLE:
BOARDWALK DETAILS - TIMBER PILES

DRAWN BY: APH / KRV
DESIGNED BY: APH
PM REVIEW: MSK
QA/QC REVIEW: SFL
DATE: 05/27/2025
SEAL:

PRELIMINARY

SIGNATURE:
DATE:

SCALE:
HORZ: AS NOTED
VERT: AS NOTED

ACI JOB #
24-0397

SHEET NO.
33 of 68

NO.	REVISION DESCRIPTION:	BY:	DATE:

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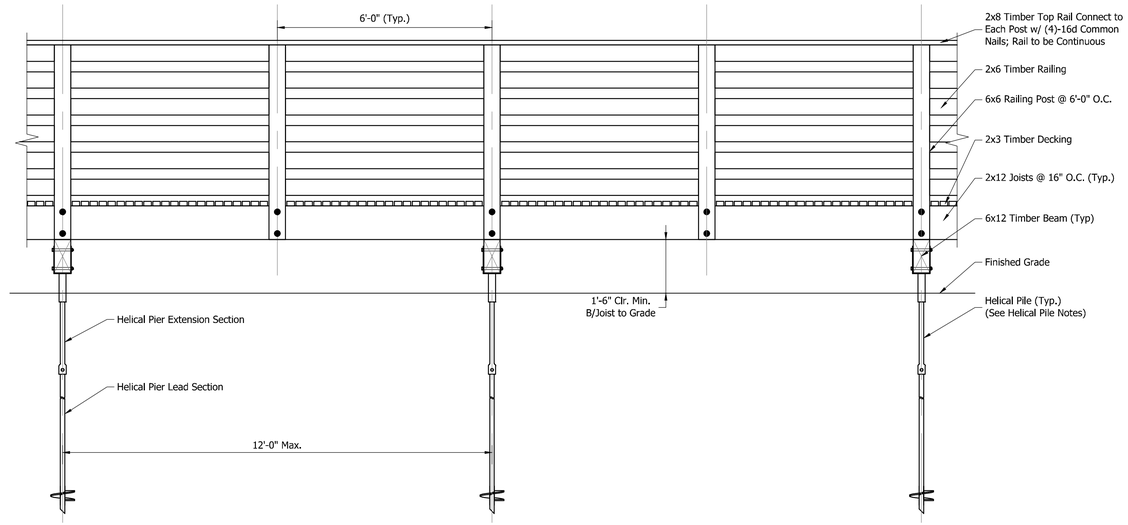
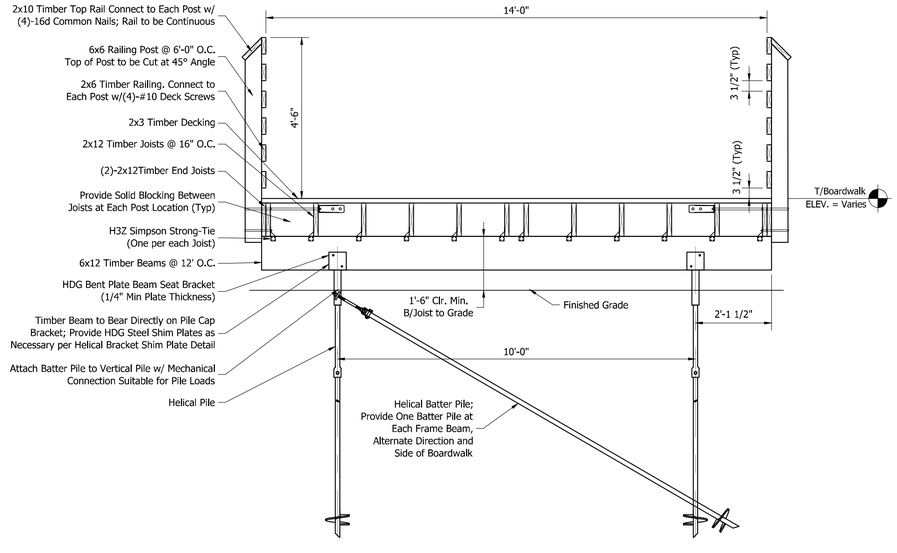


2 / 34 TYPICAL BOARDWALK ELEVATION - HELICAL
Scale: 1/2" = 1'-0"



1 / 34 TYPICAL BOARDWALK SECTION - HELICAL
Scale: 1/2" = 1'-0"

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PROJECT:
MARQUETTE GREENWAY
PHASE 1B
TOWN OF BURNS HARBOR, IN

SHEET TITLE:
BOARDWALK DETAILS - HELICAL PILES

DRAWN BY: APH / KRV
DESIGNED BY: APH
PM REVIEW: MSK
QA/QC REVIEW: SFL
DATE: 05/27/2025
SEAL:
PRELIMINARY
SIGNATURE:
DATE:
SCALE:
HORZ: AS NOTED
VERT: AS NOTED
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24-0397
SHEET NO.
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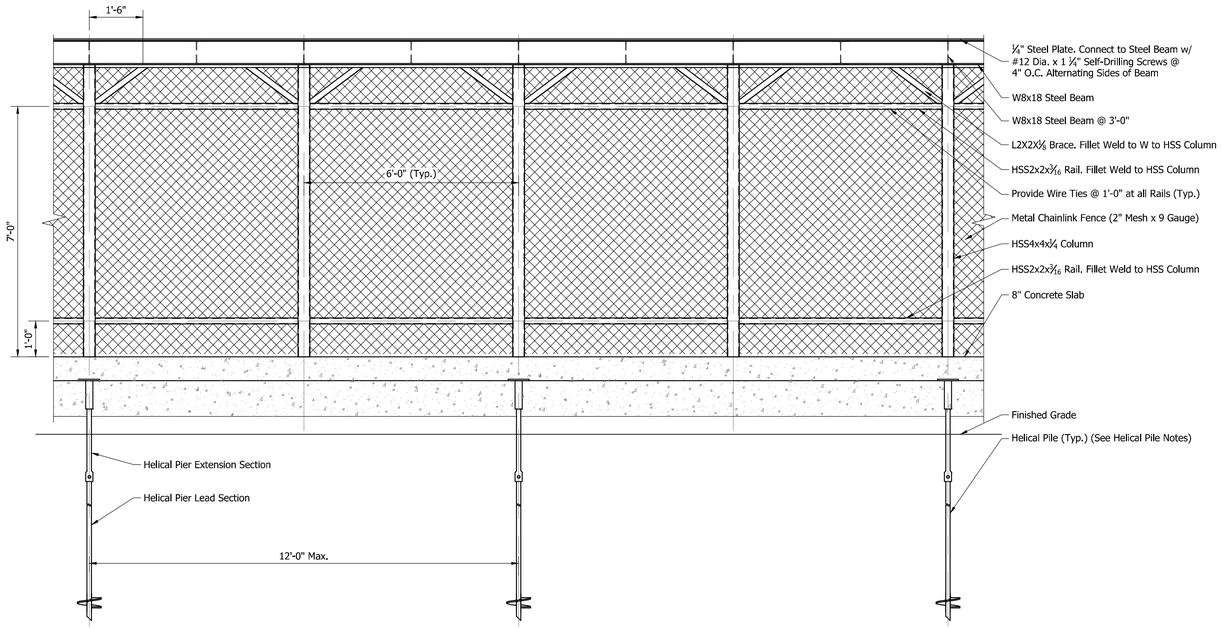
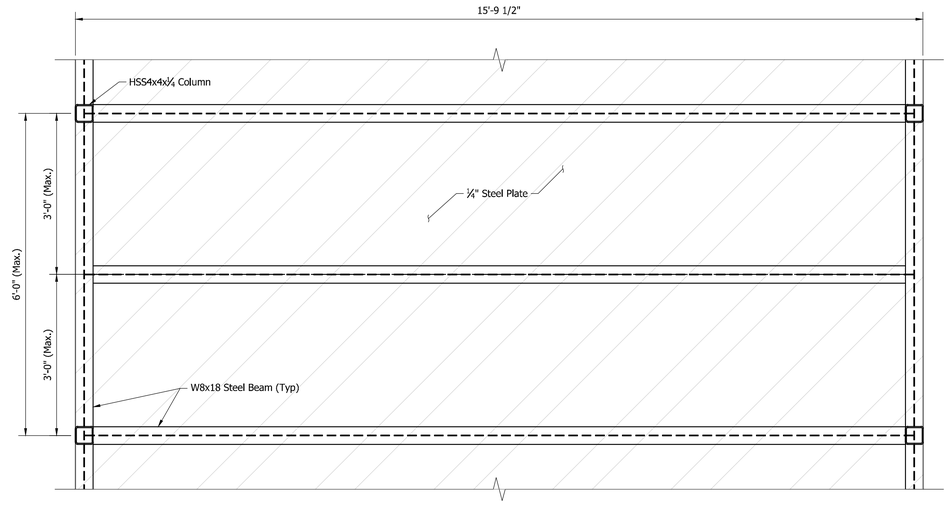
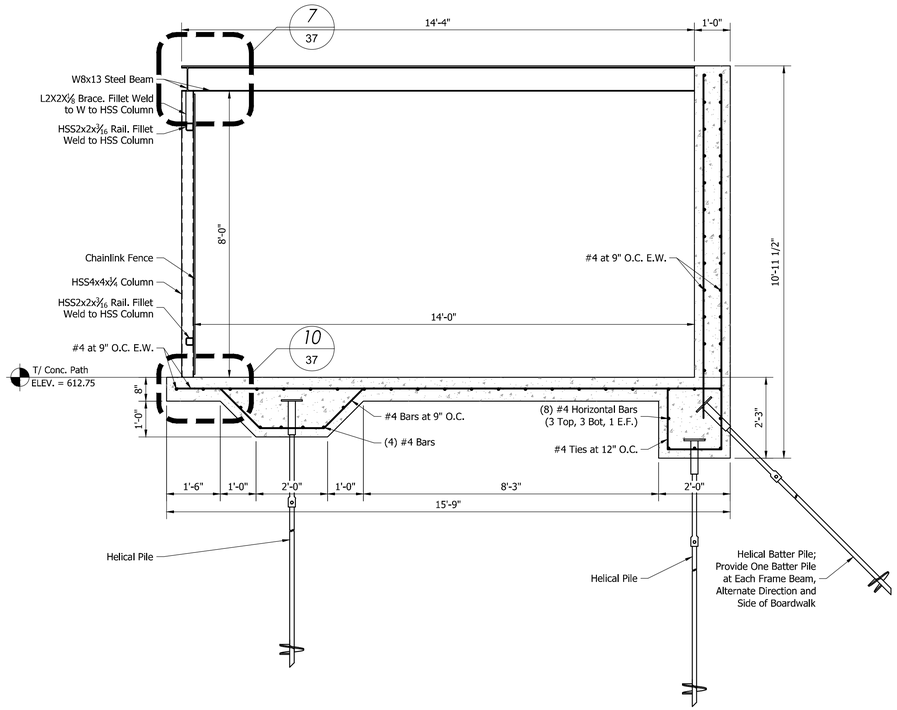


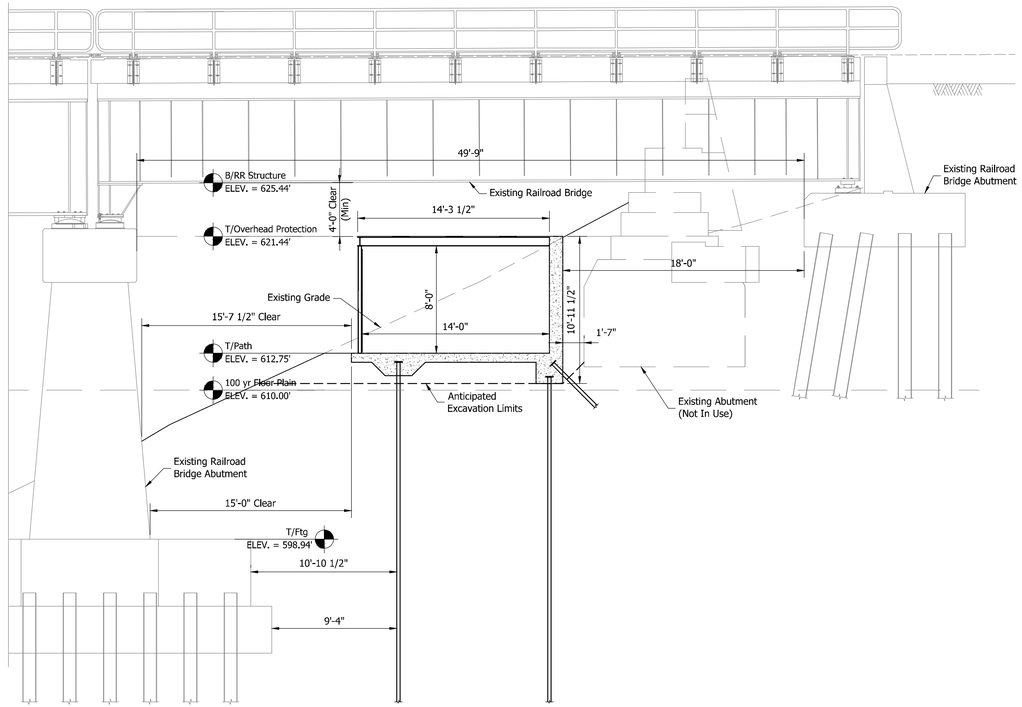
4 / 36 TYPICAL CONCRETE PATH ELEVATION - HELICAL
Scale: 1/2" = 1'-0"



2 / 35 TYPICAL CANOPY FRAMING PLAN
Scale: 3/4" = 1'-0"



3 / 35 TYPICAL BOARDWALK SECTION - HELICAL
Scale: 1/2" = 1'-0"



1 / 35 TYPICAL BOARDWALK SECTION UNDERNEATH RAILROAD
Scale: 3/16" = 1'-0"

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PROJECT:
MARQUETTE GREENWAY
PHASE 1B
TOWN OF BURNS HARBOR, IN

BOARDWALK DETAILS - HELICAL PILES

SHEET TITLE:

DRAWN BY: APH / KRV
DESIGNED BY: APH
PM REVIEW: MSK
QA/QC REVIEW: SFL
DATE: 05/27/2025
SEAL:

PRELIMINARY

SIGNATURE:
DATE:

SCALE:
HORZ: AS NOTED
VERT: AS NOTED
ACI JOB #
24-0397
SHEET NO.
35 of 68

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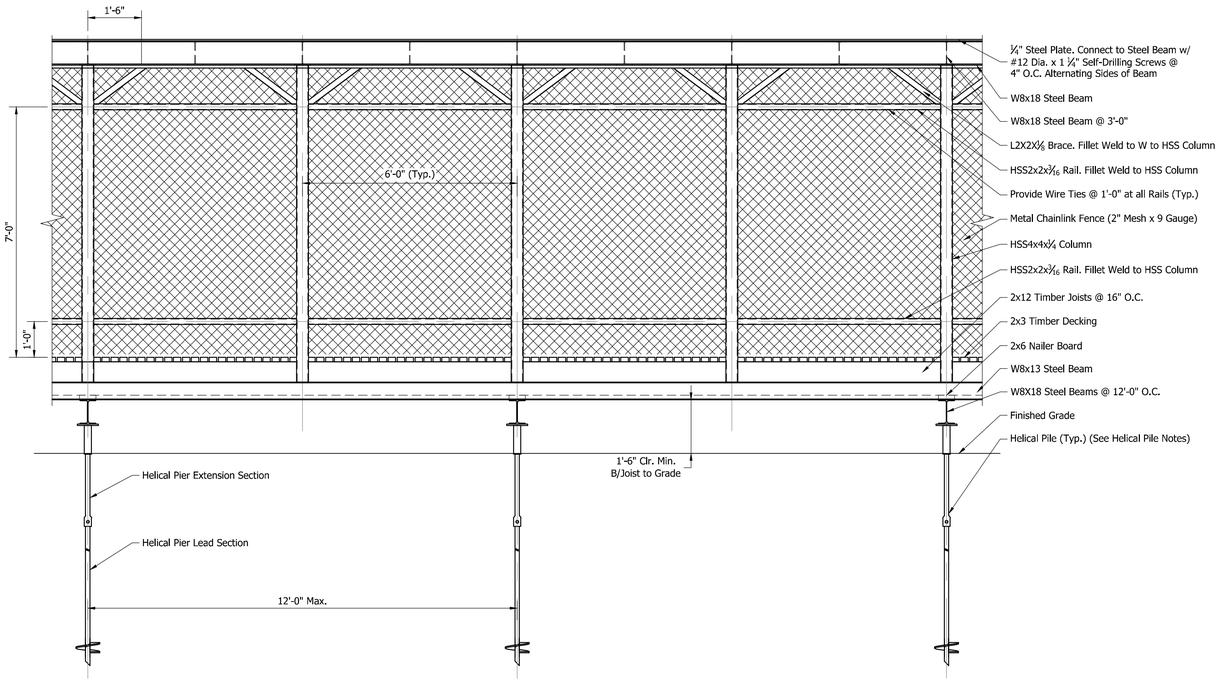
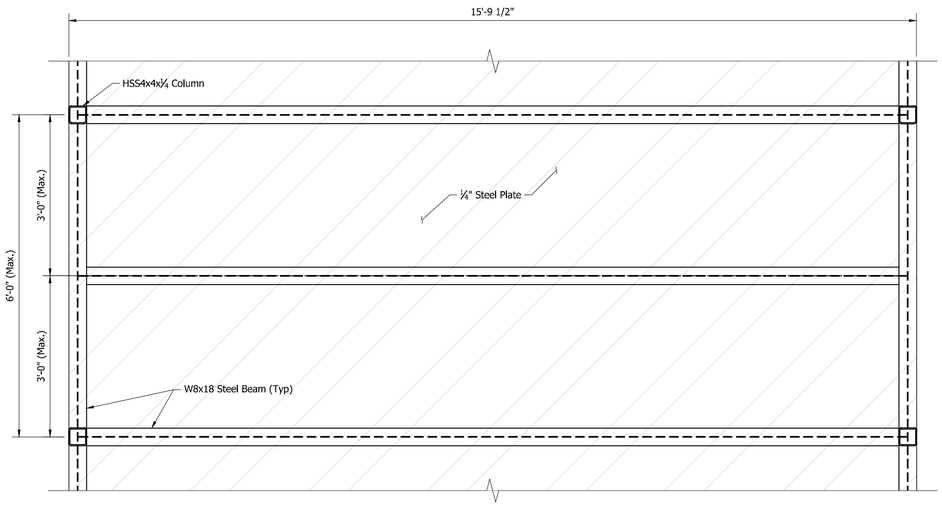
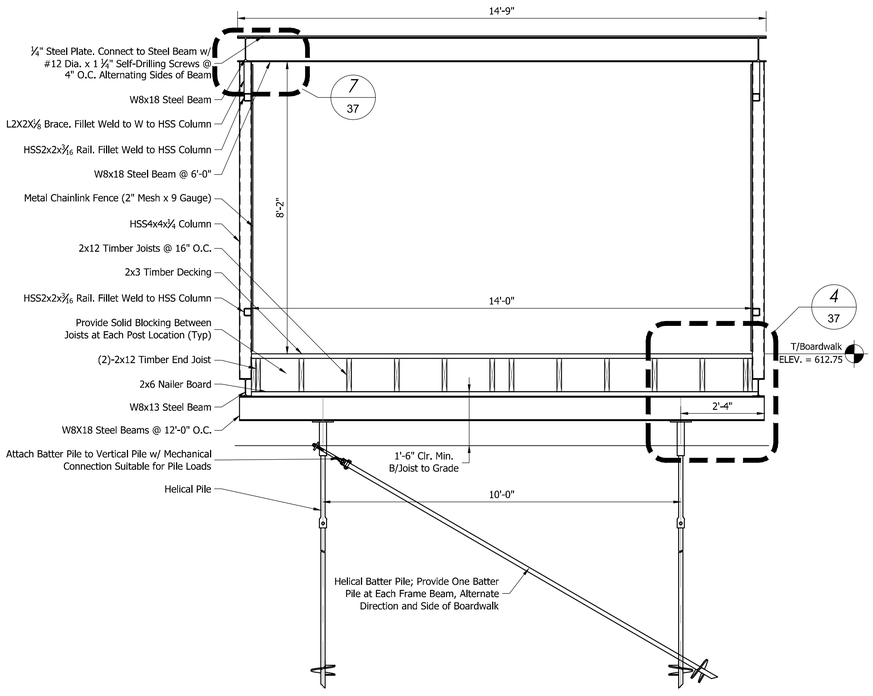


2 / 36 TYPICAL BOARDWALK ELEVATION - HELICAL
Scale: 1/2" = 1'-0"



3 / 36 TYPICAL CANOPY FRAMING PLAN
Scale: 3/4" = 1'-0"



1 / 36 TYPICAL BOARDWALK SECTION - HELICAL
Scale: 1/2" = 1'-0"

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PROJECT:
MARQUETTE GREENWAY PHASE 1B
TOWN OF BURNS HARBOR, IN

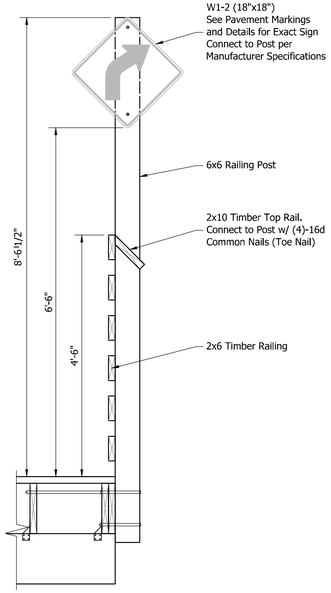
SHEET TITLE:
BOARDWALK DETAILS - HELICAL PILES

DRAWN BY: APH / KRV
DESIGNED BY: APH
PM REVIEW: MSK
QA/QC REVIEW: SFL
DATE: 05/27/2025
SEAL:

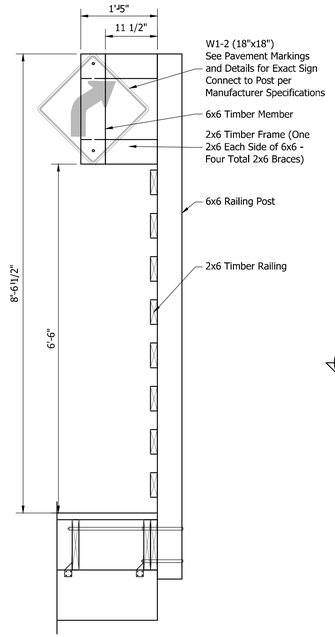
PRELIMINARY

SIGNATURE:
DATE:
SCALE: HORZ: AS NOTED VERT: AS NOTED
ACI JOB #: 24-0397
SHEET NO.: 36 of 68

O:\PROJECTS\2024\24-0397 TOWN OF BURNS HARBOR - MARQUETTE GREENWAY TRAIL PH1B\CAD_CIVIL\PLANS\24-0397 STR-DET_BW.DWG BW-Helical (3) FRANCISCO PEREZ 5.27.2025 5:35 PM



13 / 37 SIGN CONNECTION DETAIL
Scale: 3/4" = 1'-0"



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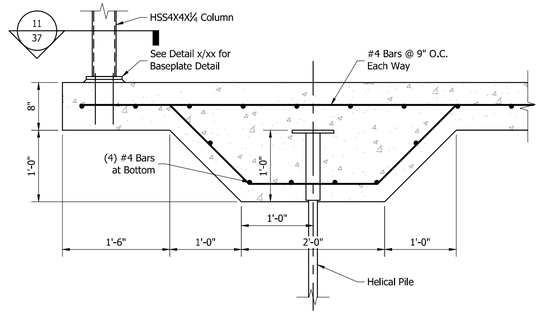

10 / 37 THICKEN SLAB DETAIL
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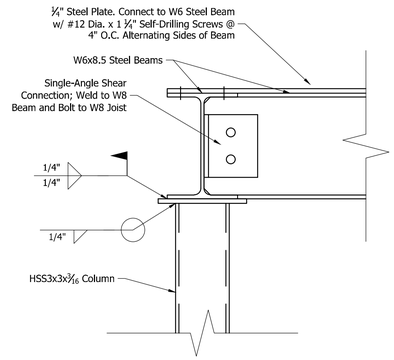

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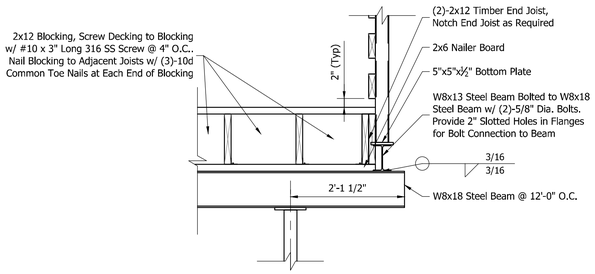

4 / 37 BEAM CONNECTION DETAIL
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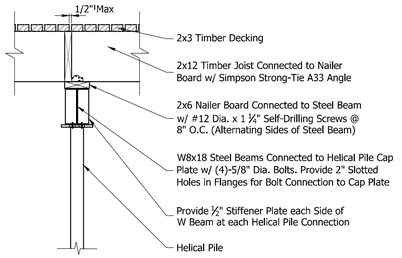

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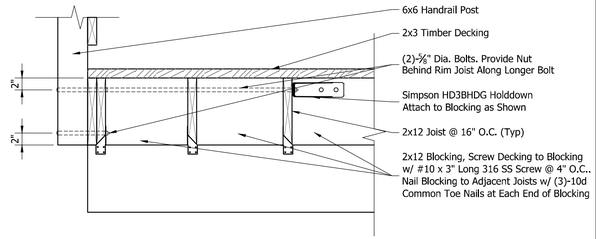

3 / 37 HANDRAIL POST CONNECTION SECTION
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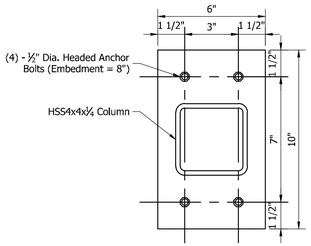

11 / 37 BASEPLATE DETAIL
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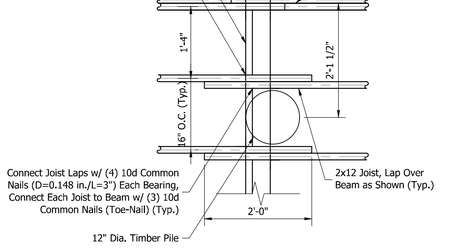
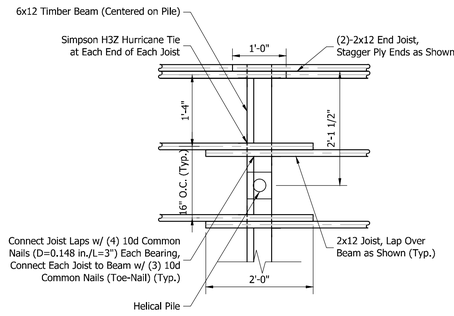
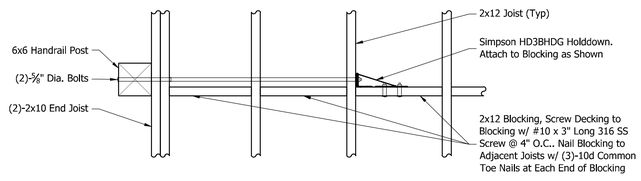


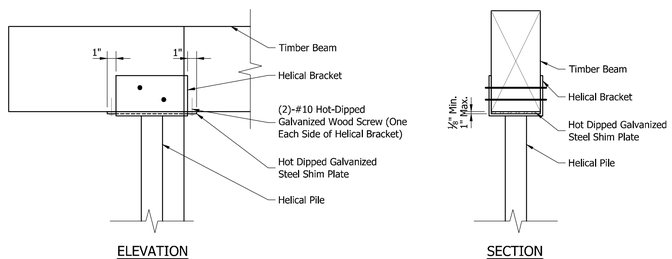
9 / 37 TYPICAL BEAM END DETAIL - TIMBER PILE
Scale: 3/4" = 1'-0"



5 / 37 TYPICAL BEAM END DETAIL - HELICAL PILE
Scale: 3/4" = 1'-0"



2 / 37 HELICAL BRACKET SHIM PLATE DETAIL
Scale: 1" = 1'-0"



8 / 37 HELICAL PILE CONNECTION DETAIL
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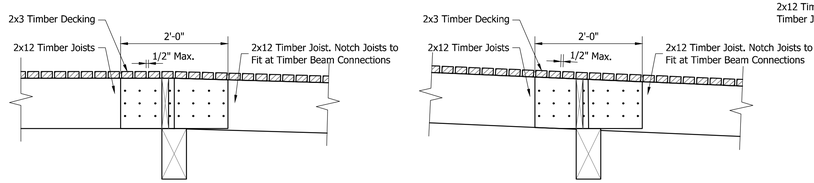

1 / 37 NOTCHED JOIST DETAIL
Scale: 3/4" = 1'-0"

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PROJECT:
MARQUETTE GREENWAY PHASE 1B
TOWN OF BURNS HARBOR, IN

SHEET TITLE:
BOARDWALK DETAILS

DRAWN BY: APH / KRV
DESIGNED BY: APH
PM REVIEW: MSK
QA/QC REVIEW: SFL
DATE: 05/27/2025
SEAL:
PRELIMINARY
SIGNATURE:
DATE:
SCALE: HORZ: AS NOTED VERT: AS NOTED
ACI JOB #: 24-0397
SHEET NO.: 37 of 68

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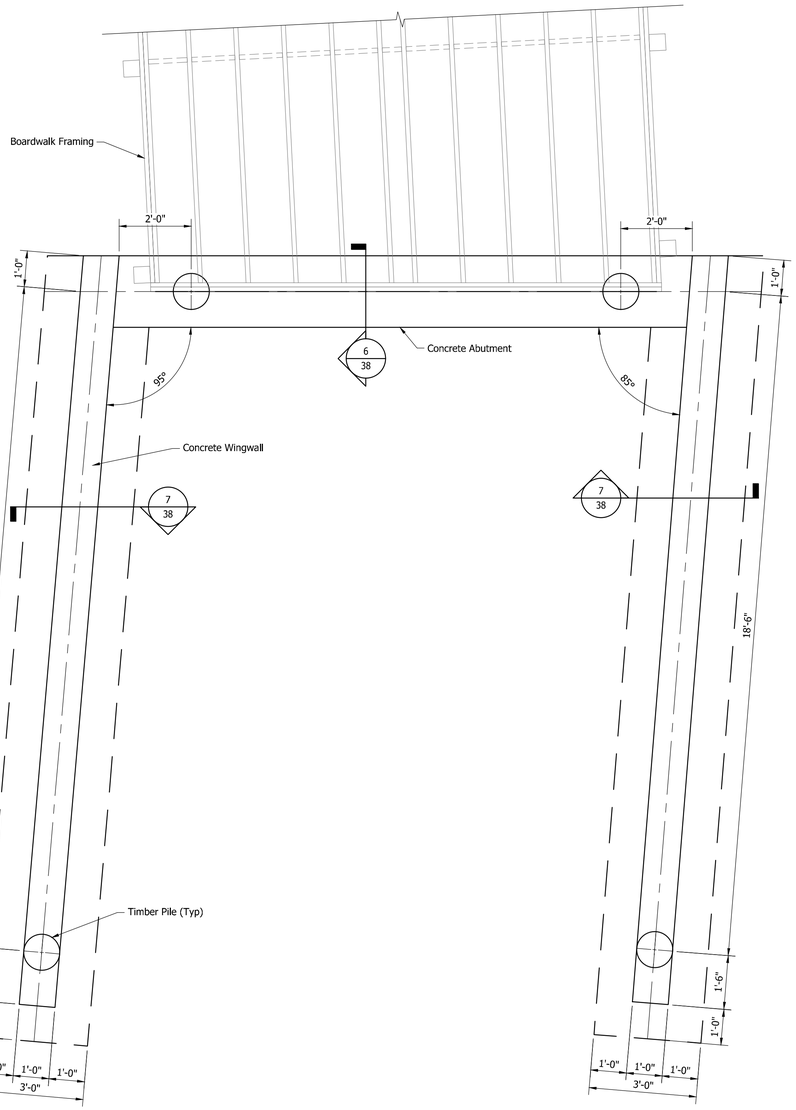
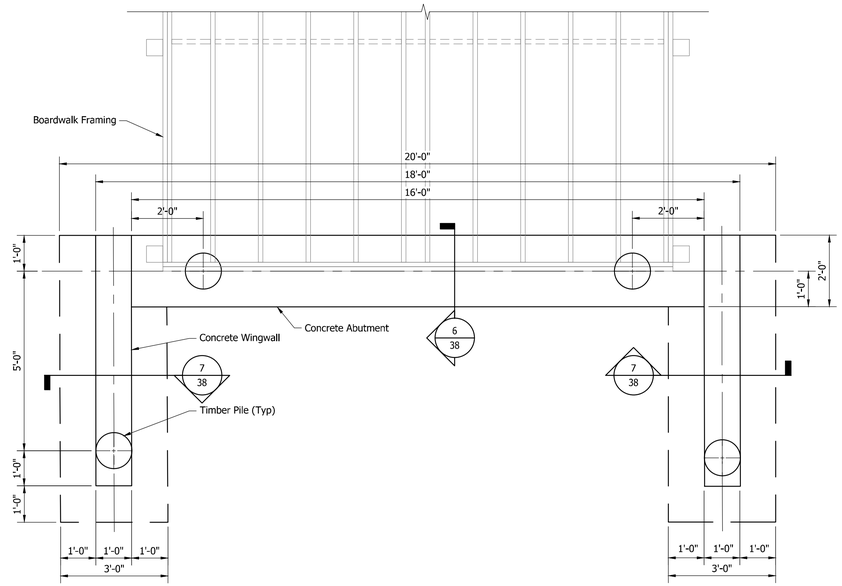
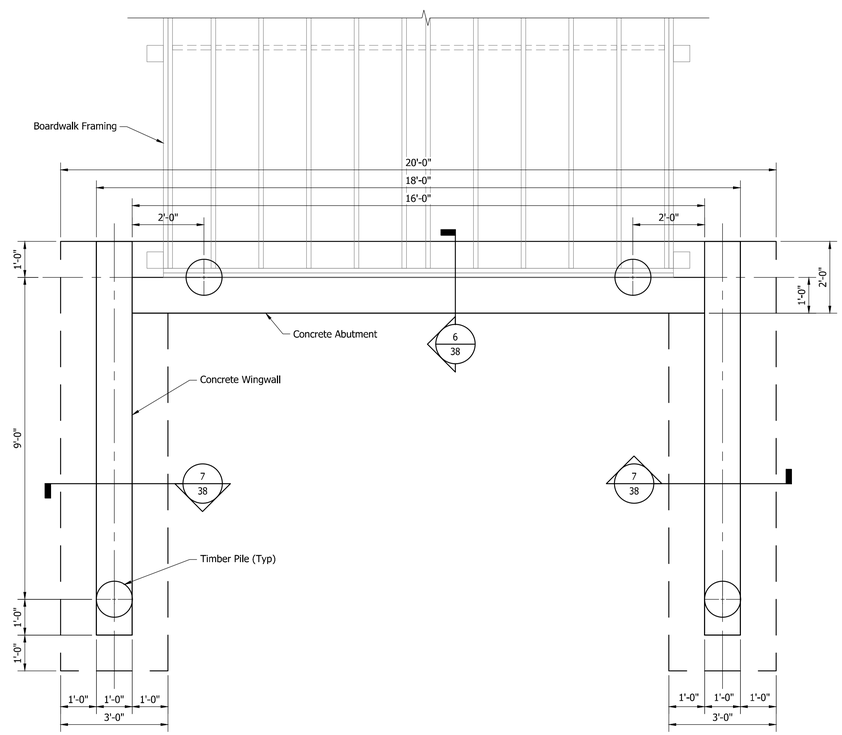


2 / 38 CONCRETE ABUTMENT PLAN VIEW - B
Scale: 1/2" = 1'-0" Sta. 116+10.00



3 / 38 CONCRETE ABUTMENT PLAN VIEW - C
Scale: 1/2" = 1'-0" Sta. 118+50.00



1 / 38 CONCRETE ABUTMENT PLAN VIEW - A
Scale: 1/2" = 1'-0" Sta. 114+80.00

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PROJECT:
MARQUETTE GREENWAY
PHASE 1B
TOWN OF BURNS HARBOR, IN

SHEET TITLE:
BOARDWALK ABUTMENTS
PLAN VIEWS

DRAWN BY: APH / KRV
DESIGNED BY: APH
PM REVIEW: MSK
QA/QC REVIEW: SFL
DATE: 05/27/2025
SEAL:

PRELIMINARY

SIGNATURE:
DATE:

SCALE:
HORZ: AS NOTED
VERT: AS NOTED
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24-0397
SHEET NO.
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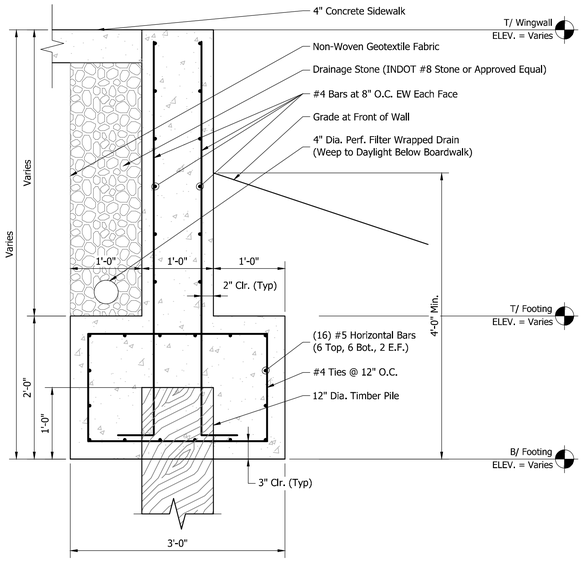
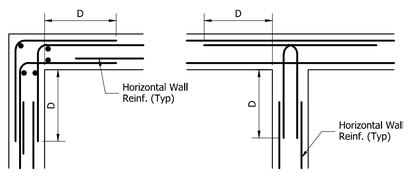


7/39 CONCRETE WINGWALL SECTION
Scale: 1" = 1'-0"

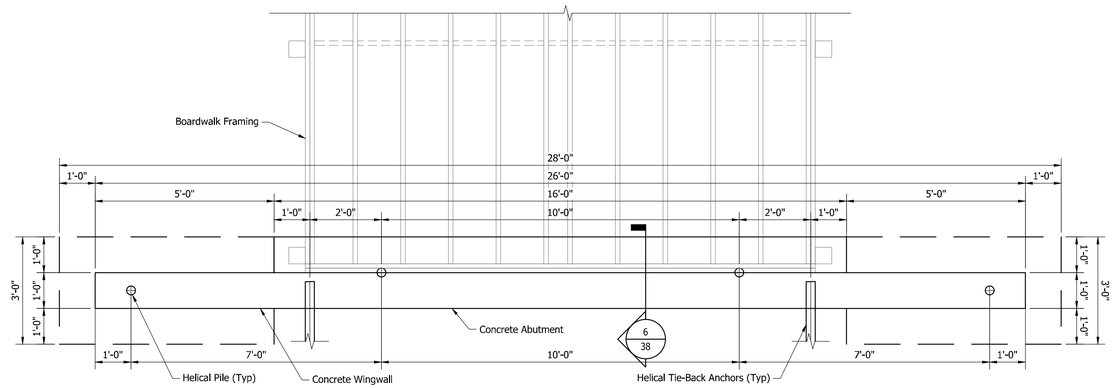


CORNER DETAIL "T" DETAIL

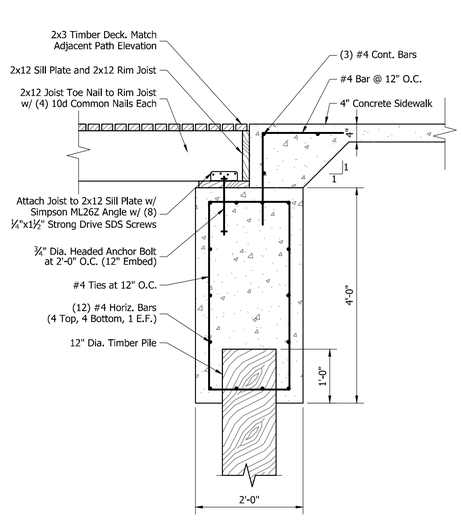
NOTES:
1. Minimum D = embedment length as noted on the drawings.
2. Bar development length per ACI 318.
3. Corner bars may be an extension of the wall reinf. at the option of the contractor.

MINUMUM REINF. BAR LAP LENGTHS TABLE		
REBAR SIZE	VERT. BARS	HORIZ. BARS
#4	25"	33"
#5	31"	41"
#6	37"	49"

4/39 REBAR CORNER AND T DETAIL
Scale: NTS



2/39 CONCRETE ABUTMENT PLAN VIEW - E
Scale: 1/2" = 1'-0" Sta. 137+20.00 & 139+55.00



6/39 ABUTMENT SECTION - HELICAL
Scale: 3/4" = 1'-0"

3/39 ABUTMENT SECTION - TIMBERS
Scale: 3/4" = 1'-0"

1/39 CONCRETE ABUTMENT PLAN VIEW - D
Scale: 1/2" = 1'-0" Sta. 131+10.00

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PROJECT:
MARQUETTE GREENWAY
PHASE 1B
TOWN OF BURNS HARBOR, IN

SHEET TITLE:
BOARDWALK FOUNDATION DETAILS

DRAWN BY: APH / KRV
DESIGNED BY: APH
PM REVIEW: MSK
QA/QC REVIEW: SFL
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I. DESIGN BASIS

A. Building code used in the design of this structure: 2012 Edition with Indiana Amendments & AASHTO LRFD Specifications for design of Pedestrian Bridges - Latest Edition.

B. The editions referenced in the building code listed above shall apply for the following design standards:

1. Concrete: ACI 318
2. Structural Steel: AISC Steel Construction Manual, LRFD/ASD
3. Wood: NDS for Wood Construction

C. Except where otherwise indicated on these plans or in the proposal and supplemental specifications contained therein, all materials and workmanship shall be in accordance with the 2022 Indiana Department of Transportation Standard Specifications for Construction.

D. Soil Capacity (Assumed at Bottom of Footing)
1. Minimum Soil Bearing Pressure = 2,000 PSF
2. Contractor must verify that the soils can support this pressure.
3. Design Active Pressure = 45 PSF/FT (Contractor to Verify)

E. Gravity Dead Loads
1. All Other = Actual Weights

F. Gravity Live Loads
1. Pedestrian Live Load = 90 PSF
2. Vehicle Live Load = 2.5 kip (Front Axle = 1 kips; Rear Axle = 1.5 kips)
3. Railroad Canopy Live Load = 50 LBS Point Load

G. Snow Loads
1. Ground Snow Load, Pg = 50 PSF
2. Snow Exposure Factor, Ce = 1.0
3. Snow Importance Factor, I = 1.0
4. Thermal Factor, Ct = 1.2
5. Flat Snow Load, Pf = 42.0 PSF

II. OVERVIEW

A. GENERAL
1. Any changes to the structural design must have written approval from the Engineer or the certification may be invalidated.
2. The Contractor shall be solely responsible for following safety precautions and regulations.
3. The Contractor shall be solely responsible for methods, techniques, sequencing and supervision of the Work.
4. These Drawings indicate general details of construction. Where conditions are not specifically detailed, construction similar to the drawing details shall be used, unless noted otherwise.
5. The Contractor shall use these Drawings together with the drawings and specifications of all other disciplines on the project and shall verify the requirements of other trades that interface with the structural Work.
6. These Drawings represent the finished structure. It is the sole responsibility of the Contractor to design, install and inspect adequate and safe temporary bracing, shoring, etc. required during construction until all structural work is completed.
7. The Contractor shall comply with the supplier's manufacturing, delivery, handling, storage and erection specifications for all structural system components.
8. The current editions of ASTM standards and all references shall apply unless noted otherwise.
9. Demolished items shall become the property of the Contractor and shall be removed from the site, unless noted otherwise.

B. SHOP DRAWINGS
1. The General Contractor shall review, check and coordinate the shop drawings and submit a review stamped set to the Engineer for review prior to fabrication. Shop drawings without a Contractor review stamp will be rejected by the Engineer.
2. The Engineer will review shop drawings only for conformance with the design concept and general compliance with the Drawings. The Contractor is solely responsible for errors and omissions associated with the preparation of shop drawings.
3. The Engineer shall review the shop drawings in accordance with a schedule pre-approved by the Engineer; or, in the absence of a schedule, in a manner deemed timely by the Engineer.
4. As a minimum, submit the following applicable shop drawings for review: (1) Concrete mix design specifications; (2) Concrete reinforcing steel; (3) Structural steel; (4) Redi-Rock Wall Layout.

III. FOUNDATIONS

A. GENERAL
1. Follow all recommendations of the Geotechnical Report for the site prepared by Advanced Engineering Services (AES) dated June 5, 2020. Foundations for this project have been designed in accordance with the requirements set forth in the Geotechnical Report.
2. Footings shall bear on undisturbed, firm, natural soil or compacted fill capable of supporting the minimum soil bearing pressure specified in the "Design Basis" section of these structural notes. A geotechnical engineer/testing agency shall evaluate foundation excavations prior to placing foundation concrete.
3. Contractor shall remove unsuitable soils from below the structure and place suitable fill material under the foundation compacted to 100% Standard Proctor in 8" maximum lifts. A geotechnical engineer licensed in the state where the project is located shall test compacted fill placed under foundations.
4. Concrete work shall conform to the specifications in the "Cast-in-Place Concrete" section of these structural notes.
5. If footings are not placed immediately after excavation, install a 2" thick seal of lean concrete to protect the soil from moisture damage.

IV. CONCRETE

A. CAST-IN-PLACE CONCRETE
1. Applicable Specifications
   a. Structural Concrete: ACI 301
   b. Hot Weather Concreting: ACI 305
   c. Cold Weather Concreting: ACI 306
   d. Concrete Mix: ACI 301
   e. Reinforcement Lap & Embedment Length: ACI 318
   f. Reinforcement Detailing: ACI 315
   g. Welding Reinforcing Steel: AWS D1.4
   h. Portland Cement Concrete: ASTM C150
   i. Aggregate: ASTM C33
   j. Reinforcing Steel: ASTM A615
   k. Welded Wire Fabric, Min. 70 ksi Strength: ASTM A185
   l. Epoxy Coated Reinforcing Steel: ASTM A775
   m. Admixtures: ASTM C494
   n. Air-Entraining Admixtures: ASTM C260
   o. Ready-Mixed Concrete: ASTM C94
2. All exposed concrete shall have a minimum strength of 4,000 psi at 28 days, limestone aggregate, and 5%-8% entrained air.
3. Minimum concrete cover for reinforcing steel:
   a. Cast against & permanently exposed to earth: 3"
   b. All others unless shown on plans: 2"
4. Steel reinforcing shall be Grade 60. Ties and stirrups shall be Grade 60.
5. Lap continuous reinforcing steel with Class B splices per LRFD Bridge Design Specifications, unless noted otherwise.
6. Provide plastic or epoxy coated steel supports for reinforcing steel to insure minimum concrete cover.
7. Set reinforcing steel and secure prior to placing concrete.
8. Reinforcing steel shall be continuous at corners. Extend wall vertical reinforcing into footings and provide dowels as required.
9. Do not field bend reinforcing bars embedded in hardened concrete.

V. WOOD

A. WOOD FRAMING
1. Material shall be surface dry and used at 19% maximum moisture content. Allowable stress shall be in accordance with the specifications of this section.
2. Unless noted otherwise, joists, rafters exterior wall studs, load bearing interior wall studs and miscellaneous framing shall be No. 1 Southern Yellow Pine or better with the following minimum properties:

Width	Fb	Ft	Fv	Fc, parallel	Fc, perp	E
2-4 inches	1,500 psi	1,000 psi	175 psi	1,650 psi	565 psi	1,600 psi
5-6 inches	1,350 psi	875 psi	175 psi	1,550 psi	565 psi	1,600 psi
8 inches	1,250 psi	800 psi	175 psi	1,500 psi	565 psi	1,600 psi
10 inches	1,050 psi	700 psi	175 psi	1,450 psi	565 psi	1,600 psi
12 inches	1,000 psi	650 psi	175 psi	1,400 psi	565 psi	1,600 psi

3. No. 1 Southern Yellow Pine timber has a fire spread rating of 70 with a flame spread class of B.
4. All piling should be Class B 12" dia. timber piles meeting the requirements of ASTM D-25. All piles for the boardwalk shall have an allowable load of 20 kips/pile and an allowable lateral load of 2 kips/pile. Piles are estimated to be driven to a depth of 45 feet below ground.
5. All stringers, pile caps, blocking, and nailers for the boardwalk shall be treated to a minimum 0.60 pounds per cubic foot retention of alkaline copper quaternary (ACQ) per AWPA, meeting use category UC4B. All wood must be air or kiln dried after treatment.
6. All posts, rails, and decking (posts and above decking components; blocking is part of boardwalk framing) for the boardwalk shall be treated to a minimum 0.60 pounds per cubic foot retention of alkaline copper quaternary (ACQ) per AWPA, meeting use category UC4B. All wood must be air or kiln dried after treatment.
7. Holes and notches cut or drilled into wood framing shall be in accordance with International Building Code requirements.
8. All bolts, nails, misc. fasteners, plate fabrications, etc. shall be hot dipped galvanized (HDG). All screws, bolts, nails, misc. fasteners, etc. used to fasten decking, railing, and fascia shall be stainless steel. All hardware for the handrail system shall be stainless steel.
9. Visible parts of timber decking shall be free of manufacturer and product stamps and markings.
10. All decking shall be screwed to each joist with (2)-#10 x 3" long stainless steel (316 grade stainless steel) screws. Locate ¾" from board edge, adjust as necessary to avoid splitting of deck board.
11. All decking shall have a minimum gap distance of 1/4" between boards and a maximum gap distance of 1/2".
12. Provide Simpson H3Z clips (or equal) to anchor joists to timber beams.
13. Prefabricated metal joist hangers, hurricane clips, hold down anchors and other accessories shall be manufactured by "Simpson Strong-Tie" or approved equal. Install all accessories in accordance with the manufacturer's requirements. Steel shall be ASTM Grade A steel, 0.04 inches or greater in coated thickness and have a G60 galvanized coating in accordance with ASTM A653.

VI. MODULAR BLOCK PRECAST RETAINING WALL

A. MODULAR BLOCK PRECAST RETAINING WALL
1. Modular block retaining wall to be constructed with precast concrete block units manufactured by a licensed Redi-Rock manufacturer per specifications.
2. The leveling pad shall be constructed to provide a level, hard surface on which to place the first course of precast modular block units.
3. Leveling pad shall be a INDOT No. 53 compacted aggregate base sized per details on plans. Pad shall be a minimum 12" deep and extend a minimum 12" beyond end of block each way unless noted otherwise on plan details.
4. The leveling pad shall bear on undisturbed, firm, natural soil or compacted fill capable of supporting the minimum soil bearing pressure specified in the "Design Basis" section of these structural notes. A geotechnical engineer/testing agency shall evaluate foundation excavations prior to placing foundation concrete.
5. Drainage collection pipe shall be a 4" diameter, 3-hole perforated, HDPE pipe with a minimum pipe stiffness of 22 psi per ASTM D2412. Underdrain shall be placed along entire length of wall. Outlet drainage collection pipe around ends of wall and as required per manufacturers recommendations (50' on center max). Outlet drainage pipe shall be according to wall drain detail.
6. The contractor is responsible for the location and protection of all existing underground utilities.
7. A minimum of 12" of compacted, low-permeability fill shall be placed over the granular infill zone of the zone of the precast modular block retaining wall structure.
8. All Redi-Rock blocks are to be moved forward during installation to engage shear knobs.
9. INDOT No. 8 crushed stone shall be placed in the V-shaped joints between adjacent blocks, and extend a minimum distance of 12" behind the block unit.
10. Soils for backfill shall be in accordance with INDOT B Borrow.
11. Natural soils meeting INDOT B Borrow specifications may be used for backfill.

VII. HELICAL PILES

1. Helical piles shall be hollow, round shaft, or structural steel tube or pipe (rolled) complying with ASTM A572/A572M. Helical piles shall have a minimum outside diameter of 2-7/8" and a minimum yield strength of 60 kips per square inch.
2. Helical piles and all components shall be hot-dipped galvanized in accordance with ASTM A123/A123M.
3. All vertical helical piles shall resist a working (service) axial compression load of 15 kips/pile. All battered helical pile tie-back anchors shall resist a working (service) axial tension load of 15 kips/pile. Design of piles and their components to be the responsibility of the pile installer.
4. Prior to pile installation contractor shall submit a set of shop drawings stamped and sealed by a registered professional engineer in the state of Michigan for the review of architect and E.O.R.
5. Installation shall be completed by a contractor who is certified by Earth Contact Products or PierTech System, LLC to install the manufacturer's material. Installation shall comply with the manufacturer's written installation requirements and recommendations for specific project site and conditions.
6. All helical piles to be installed at the locations shown on the plans (+/- 1 1/2" tolerance). All helical pile plumbness shall be within 2 degrees of design alignment.
7. A torque indicator shall be used during helical pile installation, torque indicators shall meet requirement set forth by helical pile manufacturers.
8. Hand-held installation equipment is acceptable for use of installing the helical piles. Damage to surrounding landscaping and vegetation should be kept to a minimum and replaced as necessary by the contractor at no additional cost to the owner.
9. If the helical pile is refused of deflected by a subsurface obstruction, the installation shall be terminated and the pile removed. The obstruction shall be removed, if feasible and the helical pile reinstalled. If the obstruction cannot be removed, the helical pile shall be installed at an adjacent location, subject to review and acceptance of the E.O.R..
10. If the torsional strength rating of the central steel shaft and/or installation equipment has been reached prior to proper position of the last plain extension section relative to the final elevation, the contractor may remove the last plain extension and replace it with a shorter length extension. If it is not feasible to remove the last plain extension, the contractor may cut said extension shaft to the correct elevation. The contractor shall not reverse (back-out) the helical pile to facilitate extension removal.
11. The contractor shall record the torque values for each individual helical pile at 1 foot increments during installation and provide them to E.O.R. These records shall be available to owner at their request.

V. STEEL

A. STRUCTURAL STEEL
1. Applicable Specifications (Fy=Minimum Yield Strength)
   a. W Shapes, Min. Fy = 50 ksi: ASTM A992
   b. HSS Round Shapes, Min Fy = 42 ksi: ASTM A500, Grade B
   c. HSS Rectangular Shapes, Min. Fy = 46 ksi: ASTM A500, Grade B
   d. M, S, C, MC, L Shapes, Min. Fy = 36 ksi: ASTM A36
   e. HP Shapes, Min. Fy = 50 ksi: ASTM A572, Grade 50
   f. Bearing Plates, Min. Fy = 36 ksi: ASTM A36
   g. Anchor Bolts: ASTM F1554, Grade 36
   h. High Strength Bolts, Min. Ultimate Strength, Fu = 120 ksi: ASTM A325
   i. Threaded Rods, Min. Fy = 36 ksi: ASTM A36
   j. Non-Shrink Grout, Min. 8,000 psi Strength: ASTM C1107
   k. Structural Steel Construction: AISC, Type 2
   l. Hot-Dip Galvanizing: ASTM A153
   m. Welding, Min. Fy = 58 ksi for filler material: AWS D1.1
2. Steel fabricator shall maintain detailed quality control procedures as required by the special inspection specifications of the International Building Code.
3. Connections shall be shear type unless noted otherwise and designed by the fabricator for shear loads indicated on these Drawings in accordance with the AISC specifications designated in the "Design Basis" section of these structural notes.
4. Columns, anchor bolts, base plates, etc. are designed for the final loading condition and have not been investigated for potential loadings during erection and construction. This investigation is the sole responsibility of the Contractor.
5. Moment connections are denoted with the symbol (-) on these Drawings. The fabricator shall submit calculations and shop drawings for all special connections, including moment connections.
6. Bolts shall be snug-fit shear/bearing type with minimum 3/4" diameter, unless noted otherwise.
7. A certified welder shall perform all welding work. Use E70XX electrodes for welding, unless noted otherwise. Provide continuous minimum sized fillet welds in accordance with AISC specifications. Touch up welded connections with zinc rich primer.
8. Drill or punch holes in steel. Provide smooth edges for slotted holes. Burning and torch cutting at the site is not permitted.
9. Shop paint structural steel with one coat of rust inhibitive alkyd primer, unless noted otherwise.
10. Hot-dip galvanize structural steel permanently exposed to the weather, including brick shelf angles and lintels at exterior openings.
11. Field repair permanent coatings damaged during transport, erecting and field welding to match the shop applied coating.
12. The structural steel erector shall provide temporary guying and bracing.

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PROJECT:
MARQUETTE GREENWAY
PHASE 1B
TOWN OF BURNS HARBOR, IN

SHEET TITLE:
BOARDWALK & RETAINING WALL SPECIFICATIONS

DRAWN BY: APH / KRV
DESIGNED BY: APH
PM REVIEW: MSK
QA/QC REVIEW: SFL
DATE: 05/27/2025
SEAL:
PRELIMINARY
SIGNATURE:
DATE:
SCALE:
HORZ: AS NOTED
VERT: AS NOTED
ACI JOB #
24-0397
SHEET NO.
40 of 68

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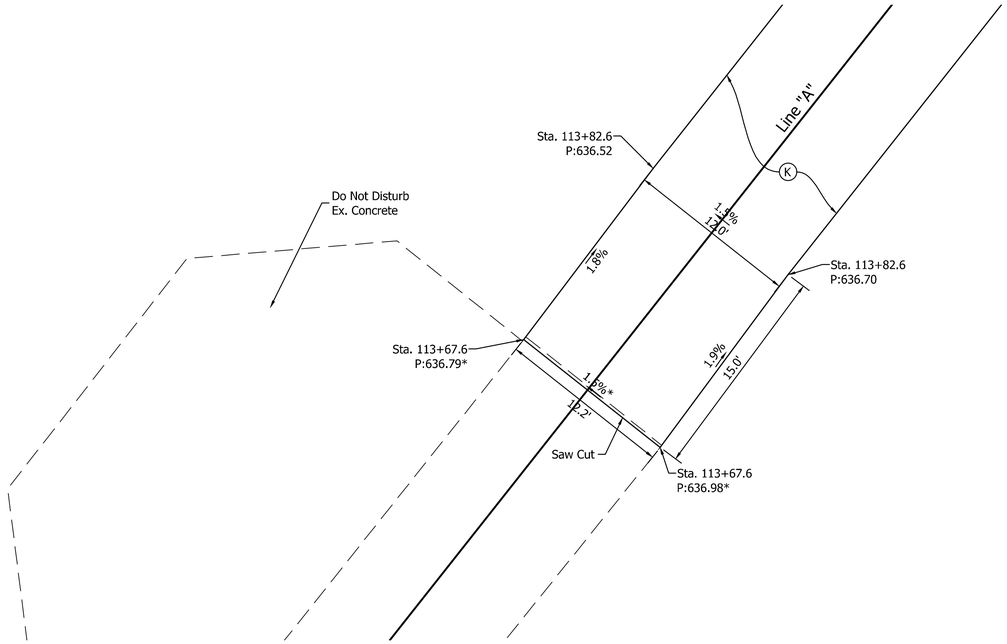
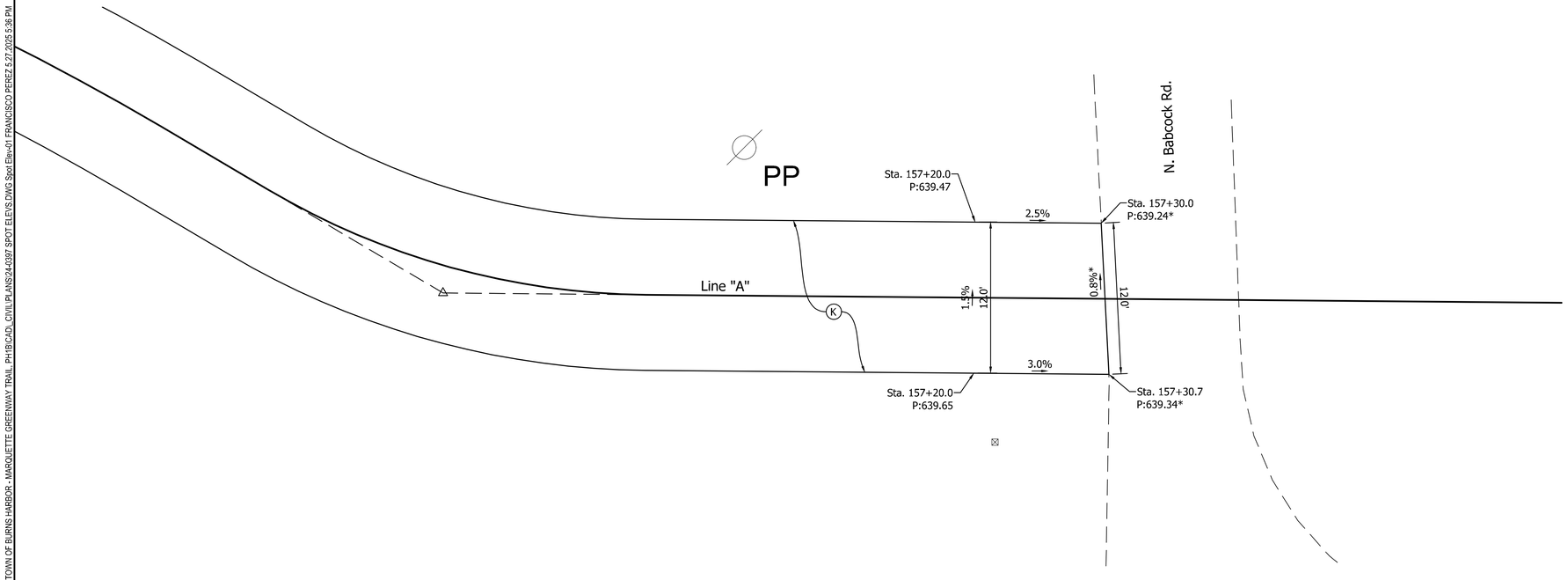


Beginning of Project
Spot Elevations



End of Project
Spot Elevations

LEGEND

(K) HMA for Multi-Use Path, See Typical Section

* Match Existing

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PROJECT:

MARQUETTE GREENWAY
PHASE 1B
TOWN OF BURNS HARBOR, IN

SPOT ELEVATIONS

SHEET TITLE:

DRAWN BY: FJP
DESIGNED BY: FJP
PM REVIEW: MSK
QA/QC REVIEW: CAK
DATE: 05/27/2025
SEAL:

PRELIMINARY

SIGNATURE:
DATE:
SCALE: 1" = 5'
ACI JOB #: 24-0397
SHEET NO.: 41 of 68

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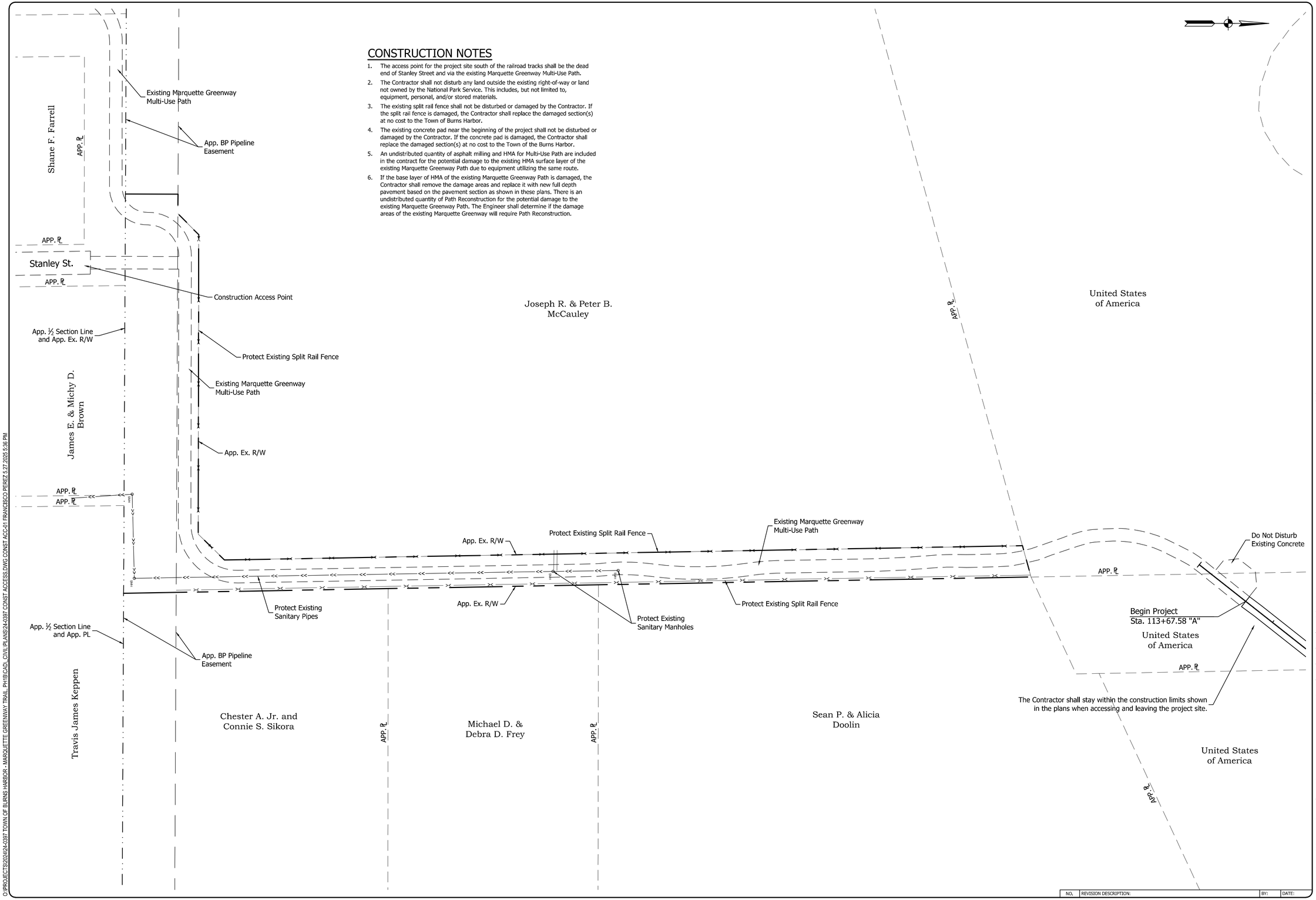
CONSTRUCTION NOTES

1. The access point for the project site south of the railroad tracks shall be the dead end of Stanley Street and via the existing Marquette Greenway Multi-Use Path.
2. The Contractor shall not disturb any land outside the existing right-of-way or land not owned by the National Park Service. This includes, but not limited to, equipment, personal, and/or stored materials.
3. The existing split rail fence shall not be disturbed or damaged by the Contractor. If the split rail fence is damaged, the Contractor shall replace the damaged section(s) at no cost to the Town of Burns Harbor.
4. The existing concrete pad near the beginning of the project shall not be disturbed or damaged by the Contractor. If the concrete pad is damaged, the Contractor shall replace the damaged section(s) at no cost to the Town of Burns Harbor.
5. An undistributed quantity of asphalt milling and HMA for Multi-Use Path are included in the contract for the potential damage to the existing HMA surface layer of the existing Marquette Greenway Path due to equipment utilizing the same route.
6. If the base layer of HMA of the existing Marquette Greenway Path is damaged, the Contractor shall remove the damage areas and replace it with new full depth pavement based on the pavement section as shown in these plans. There is an undistributed quantity of Path Reconstruction for the potential damage to the existing Marquette Greenway Path. The Engineer shall determine if the damage areas of the existing Marquette Greenway will require Path Reconstruction.



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PROJECT:
MARQUETTE GREENWAY PHASE 1B
TOWN OF BURNS HARBOR, IN

SHEET TITLE:
CONSTRUCTION ACCESS PLAN

DRAWN BY: FJP
DESIGNED BY: FJP
PM REVIEW: MSK
QA/QC REVIEW: CAK
DATE: 05/27/2025
SEAL:

PRELIMINARY

SIGNATURE:
DATE:
SCALE: 1" = 40'
ACI JOB # 24-0397
SHEET NO. 42 of 68

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PROJECT:

MARQUETTE GREENWAY PHASE 1B
TOWN OF BURNS HARBOR, IN

EROSION CONTROL PLAN

SHEET TITLE:

DRAWN BY: FJP
DESIGNED BY: FJP
PM REVIEW: MSK
QA/QC REVIEW: CAK
DATE: 05/27/2025
SEAL:

PRELIMINARY

SIGNATURE:
DATE:
SCALE: 1" = 20'
ACI JOB # 24-0397
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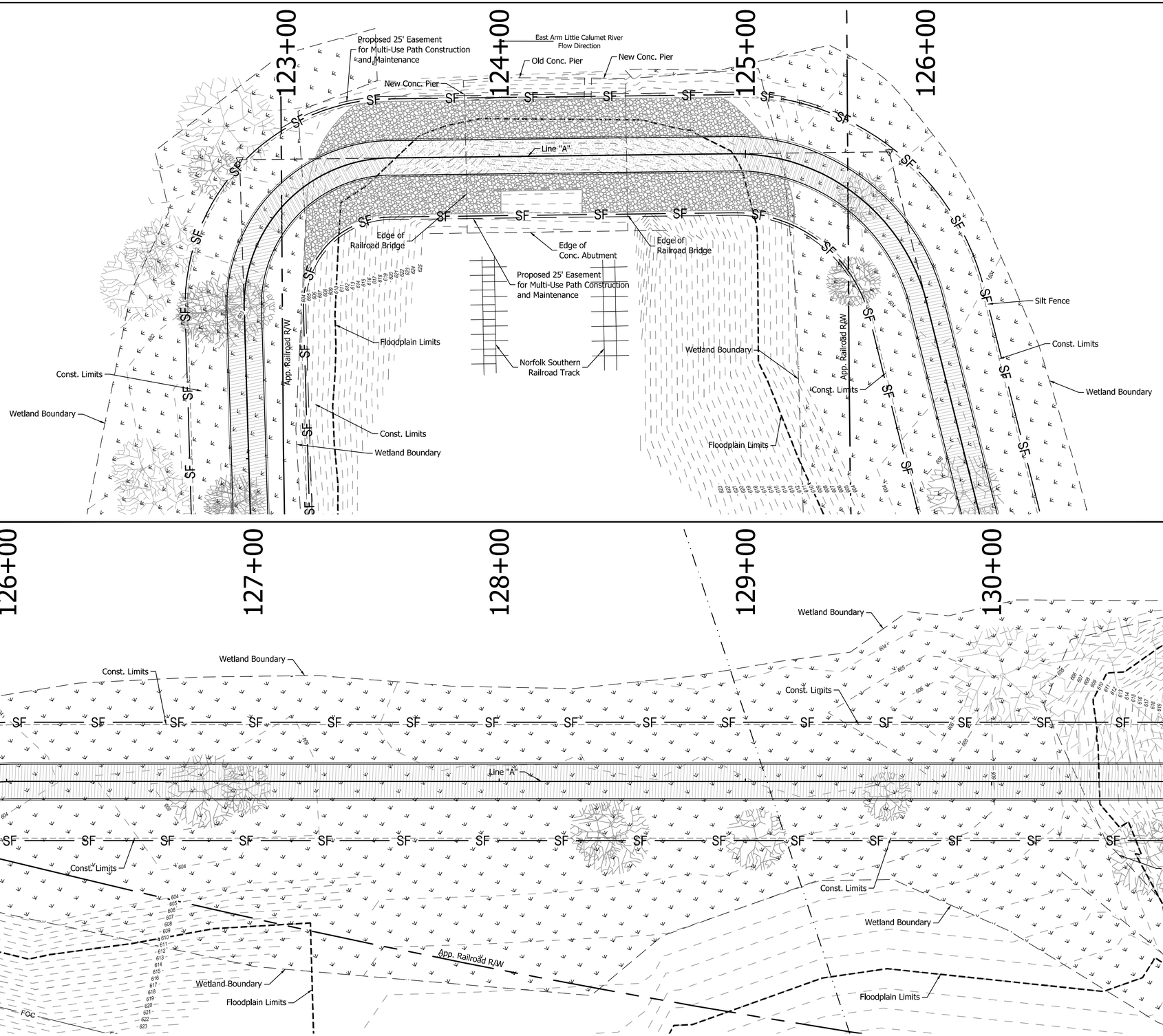

2,044 Syd. of Disturbed Soil from
Sta. 122+00.00 to Sta. 126+00.00

2,160 Syd. of Temporary Seeding Req'd from
Sta. 122+00.00 to Sta. 126+00.00

2,556 Syd. of Disturbed Soil from
Sta. 126+00.00 to Sta. 131+00.00

5,112 Syd. of Temporary Seeding Req'd from
Sta. 126+00.00 to Sta. 131+00.00

LEGEND

SF — Silt Fence

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PROJECT:

MARQUETTE GREENWAY
PHASE 1B
TOWN OF BURNS HARBOR, IN

SHEET TITLE:

EROSION CONTROL PLAN

NO.	REVISION DESCRIPTION:	BY:	DATE:

DRAWN BY: FJP
DESIGNED BY: FJP
PM REVIEW: MSK
QA/QC REVIEW: CAK
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SHEET NO. 44 of 68

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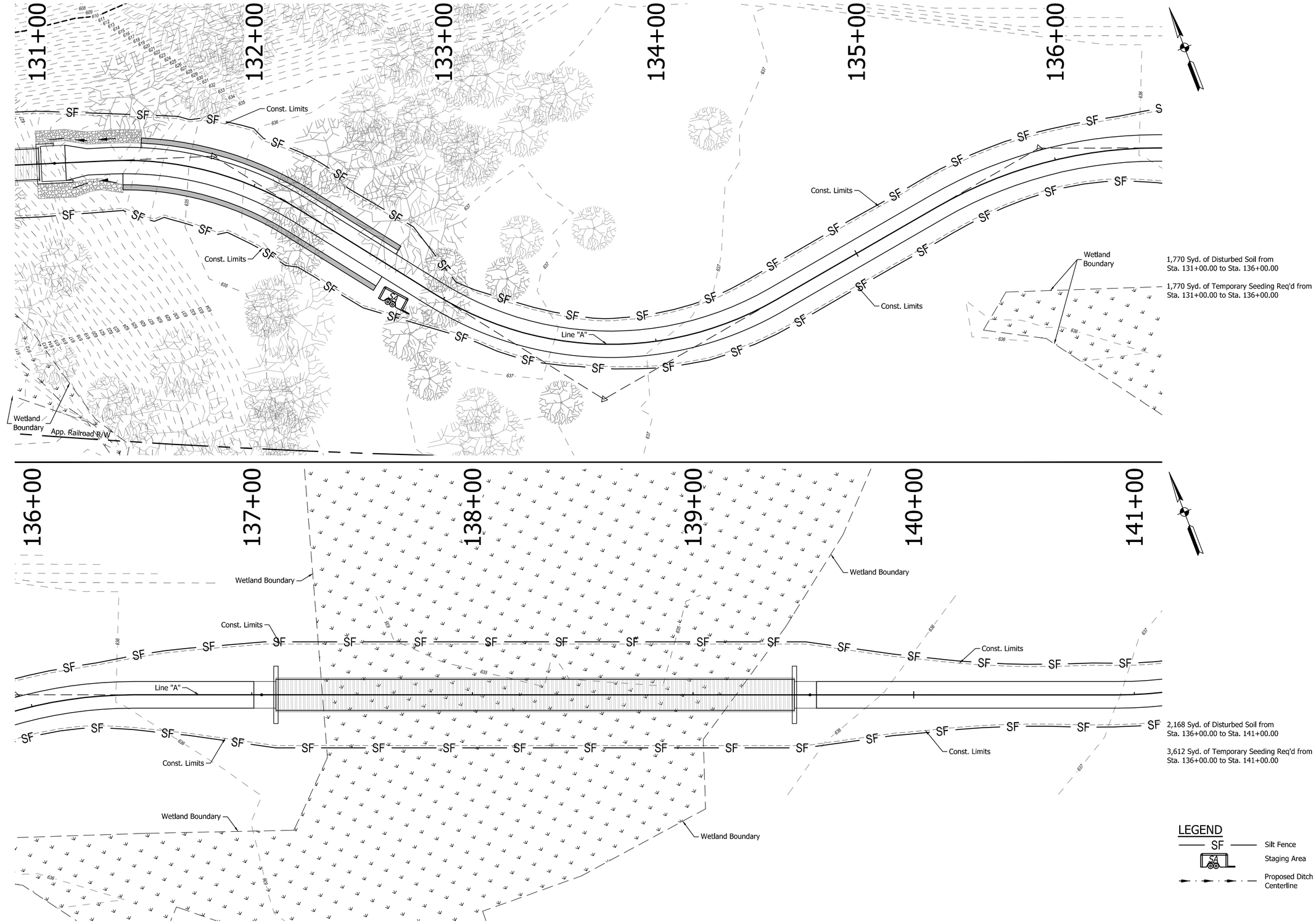

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TOWN OF BURNS HARBOR, IN

SHEET TITLE:

EROSION CONTROL PLAN

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PM REVIEW: MSK
QA/QC REVIEW: CAK
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DATE:
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ACI JOB #: 24-0397
SHEET NO.: 45 of 68

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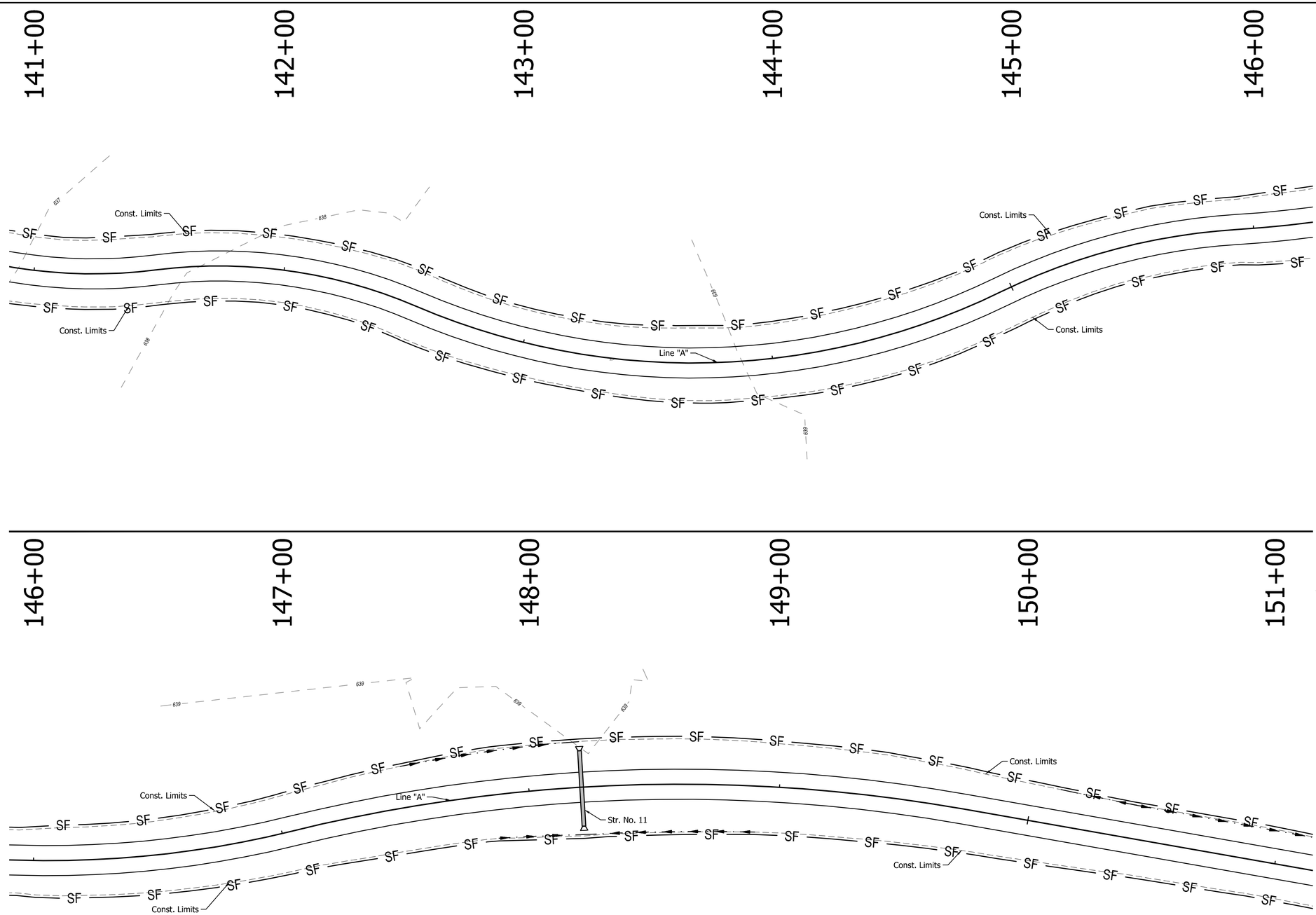

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TOWN OF BURNS HARBOR, IN

NO.	REVISION DESCRIPTION:	BY:	DATE:

SHEET TITLE:

EROSION CONTROL PLAN

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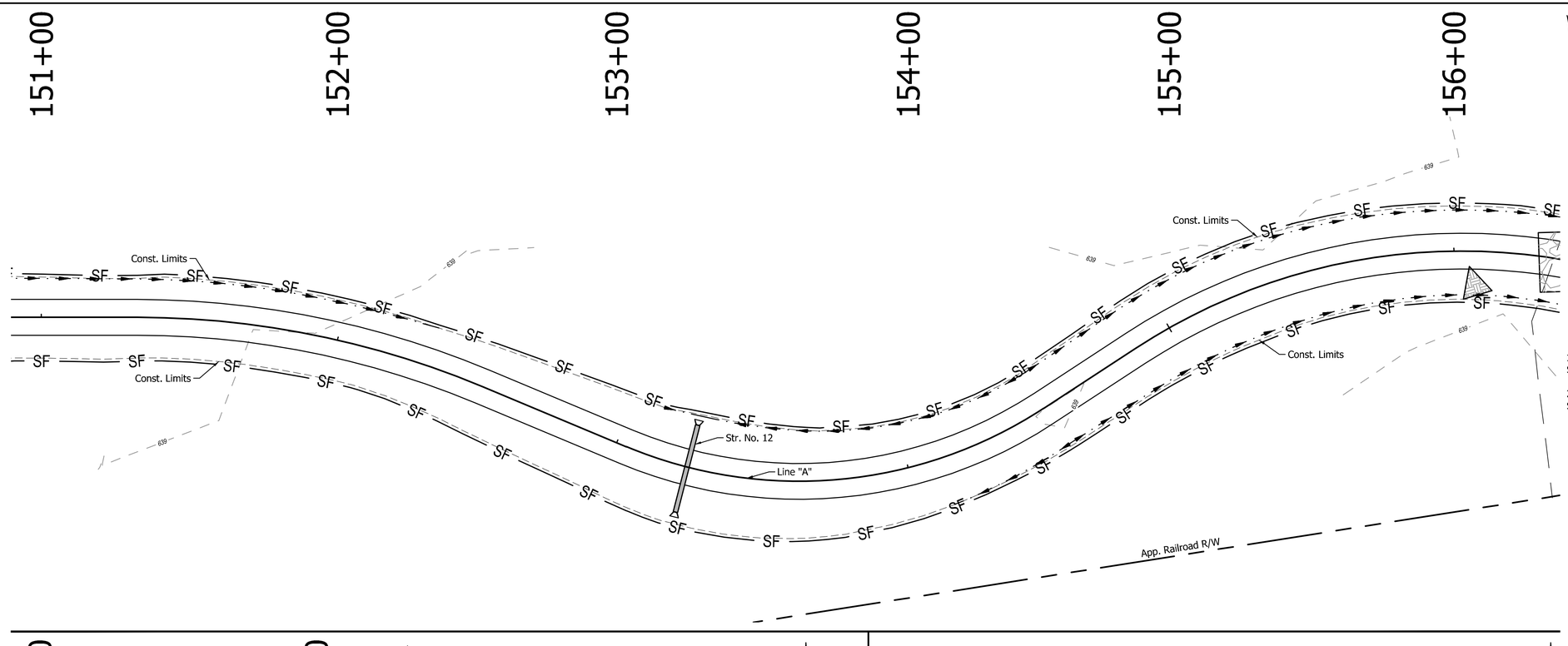
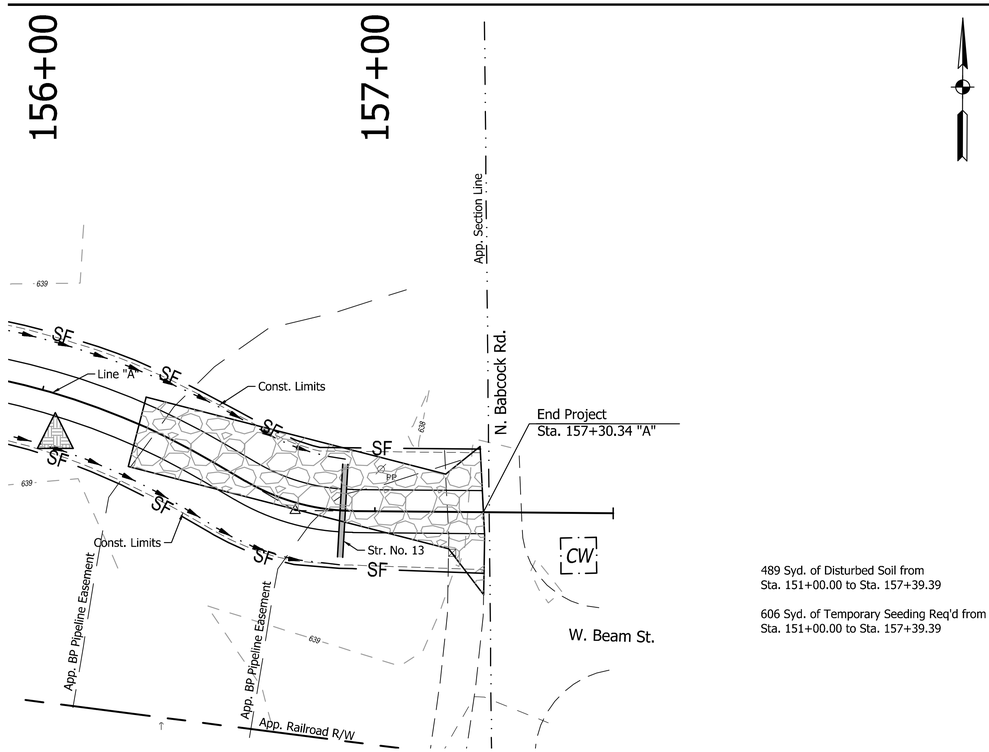
SIGNATURE:
DATE:
SCALE: 1" = 20'
ACI JOB # 24-0397
SHEET NO. 46 of 68



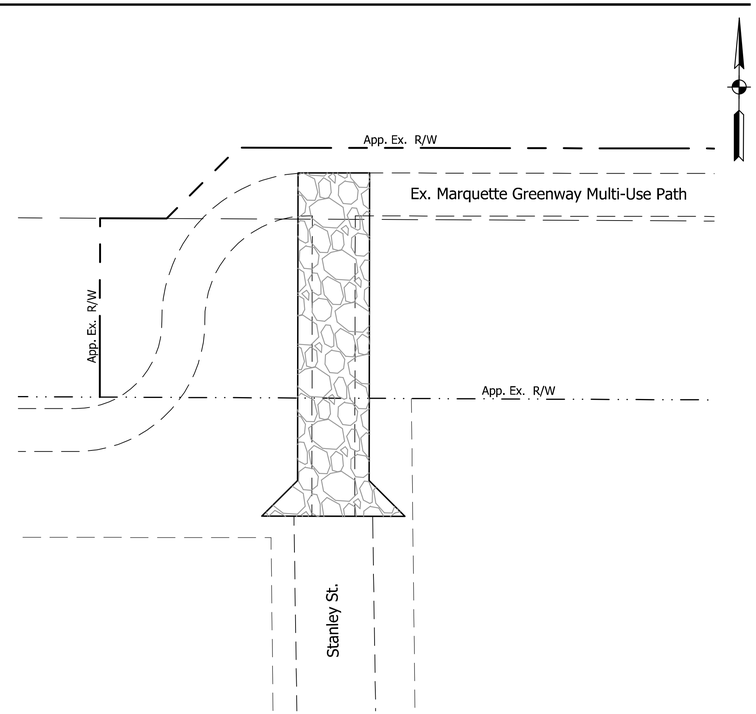
1,731 Syd. of Disturbed Soil from
Sta. 151+00.00 to Sta. 156+00.00

2,128 Syd. of Temporary Seeding Req'd from
Sta. 151+00.00 to Sta. 156+00.00



489 Syd. of Disturbed Soil from
Sta. 151+00.00 to Sta. 157+39.39

606 Syd. of Temporary Seeding Req'd from
Sta. 151+00.00 to Sta. 157+39.39



CONSTRUCTION ENTRANCE AT STANLEY STREET
Scale: 1" = 20'

LEGEND

- Temporary Construction Entrance
- CW — Concrete Washout
- SF — Silt Fence
- Soil Stockpile
- Proposed Ditch Centerline

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PROJECT:
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PHASE 1B
TOWN OF BURNS HARBOR, IN

SHEET TITLE:
EROSION CONTROL PLAN

DRAWN BY: FJP
DESIGNED BY: FJP
PM REVIEW: MSK
QA/QC REVIEW: CAK
DATE: 05/27/2025
SEAL:

PRELIMINARY

SIGNATURE:
DATE:
SCALE: 1" = 20'
ACI JOB #: 24-0397
SHEET NO.: 47 of 68

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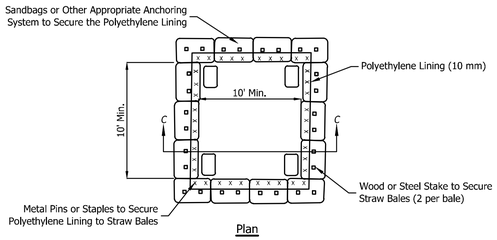
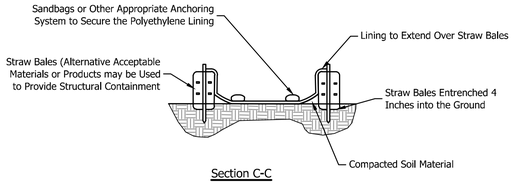


Plan

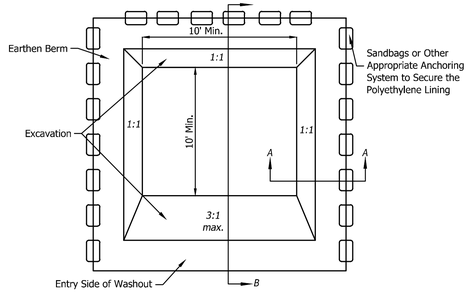


Section C-C

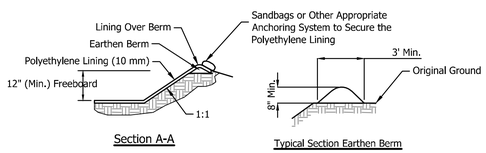
Note:
Contractor Must Install a Secure and Highly Visible "Concrete Washout Area" Sign Adjacent to each Concrete Washout Facility to Inform Concrete Workers of its Location.

CONCRETE WASHOUT STRUCTURE - ABOVE GRADE

(NOT TO SCALE)

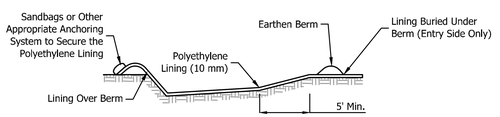


Plan



Section A-A

Typical Section Earthen Berm



Section B-B

Note:
Contractor Must Install a Secure and Highly Visible "Concrete Washout Area" Sign Adjacent to each Concrete Washout Facility to Inform Concrete Workers of its Location.

CONCRETE WASHOUT STRUCTURE - BELOW GRADE

(NOT TO SCALE)

Installation Notes:

1. Dependent upon the type of system, either excavate the pit or install the containment system. For prefabricated containers, locate, and install according to the manufacturer's recommendations.
2. A base shall be constructed and prepared that is free of rocks and other debris that may cause tears/punctures in the polyethylene lining.
3. Install the polyethylene lining. For excavated systems, the lining should extend over the entire excavation. The lining for bermed systems should be installed over the pooling area with enough material to extend the lining over the berm or containment system. The lining should be secured with pins, staples, or other fasteners.
4. Place flags, safety fencing, or equivalent to provide a barrier to construction equipment and other traffic.
5. Place a non-collapsing, non-water holding cover over the washout facility prior to a predicted rainfall event to prevent accumulation of water and possible overflow of the system (optional).
6. Install signage that identifies concrete washout areas and post signs directing contractors and suppliers to designated locations.
7. Where necessary, provide stable ingress and egress or alternative approach pad for concrete washout systems.

Maintenance:

1. Inspect daily - Inspect the integrity of the overall structure and containment system where applicable.
2. Inspect the system for leaks, spills, and tracking of soil by equipment, and the polyethylene lining for failure, including tears and punctures.
3. Once concrete wastes harden, remove and dispose of the material.
4. Excess concrete should be removed when the washout system reaches 50 percent of the design capacity. Use of the system should be discontinued until appropriate measures can be initiated to clean the structure. Prefabricated systems should also utilize this this criterion, unless the manufacturer has alternate specifications.
5. Upon removal of the solids, inspect the structure. Repair the structure as needed or construct a new system.
6. Dispose of all the concrete in a legal manner. Reuse the material on site, recycle, or haul the material to an approved construction/demolition landfill site. Recycling of material is encouraged. The waste material can be used for multiple applications including but not limited to roadbeds and building. The availability for recycling should be checked locally.
7. The plastic liner should be replaced after every cleaning; the removal of material will usually damage the lining.
8. The concrete washout system should be repaired or enlarged as necessary to maintain capacity for concrete waste.
9. Concrete washout systems are designed to promote evaporation. However, if the liquids do not evaporate and the system is near capacity it may be necessary to vacuum or remove the liquids and dispose of them in an acceptable method. Disposal may be allowed at the local sanitary sewer authority provided their national pollutant discharge elimination system permits allow for acceptance of this material. Another option would be to utilize a secondary containment system or basin for further dewatering.
10. Prefabricated units are often pumped and the company supplying the unit provides this service.
11. Inspect construction activities on a regular basis to ensure suppliers, contractors, and others are utilizing designated washout areas. If concrete waste is being disposed of improperly, identify violators and take appropriate action.
12. When concrete washout systems are no longer required, the concrete washout system shall be closed. Dispose of all hardened concrete and other materials used to construct the system.
13. Holes, depressions and other land disturbances associated with the system should be backfilled, graded, and stabilized.

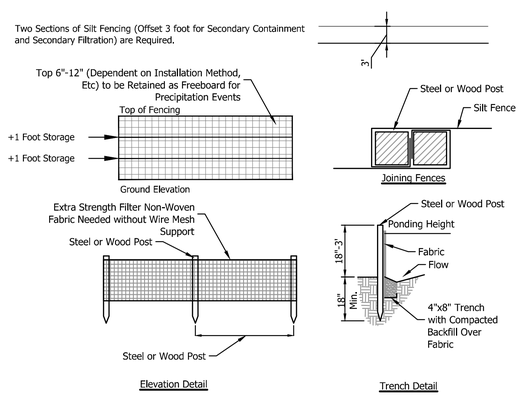
CONCRETE WASHOUT STRUCTURE NOTES

(NOT TO SCALE)

INSTALLATION NOTES

1. Lay Out the Location of the Fence so that it is Parallel to the Contour of the Slope and at Least 10 feet Beyond the Toe of the Slope to Provide a Sediment Storage Area. Turn the Ends of the Fence up Slope such that the Point of Contact Between the Ground and the Bottom of the Fence end Terminates at a Higher Elevation than the Top of the Fence at its Lowest Point.
2. Excavate an 8-inch Deep by 4-inch Wide Trench Along the Entire Length of the Fence.
   (Installation by Plowing is Acceptable)
3. Install Silt Fence with the Filter Fabric Located on the Up-slope Side of the Excavated Trench and the Support Posts on the Down-slope Side of the Trench.
4. Drive the Support Posts at Least 18 inches into the Ground, Tightly Stretching the Fabric Between the Posts as each is Driven into the Soil. A Minimum of 12 inches of the Filter Fabric should Extend into the Trench.
5. Lay the Lower 4 inches of Fabric on the Bottom of the Trench and Extend it Toward the Up-slope Side of the Trench.
6. Backfill the Trench with Soil Material and Compact it in Place.

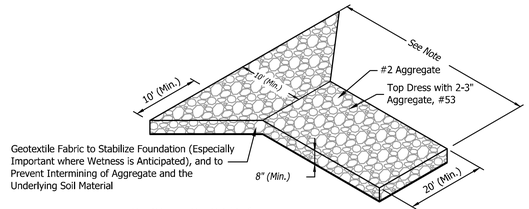
NOTE:
If the Silt Fence is Being Constructed on site, Attach the Filter Fabric to the Support Posts and Attach Wooden Lathe to Secure the Fabric to the Posts. Allow for at Least 12 inches of Fabric Below Ground Level. Complete the Silt Fence Installation, Following Steps 1 Through 6 Above.

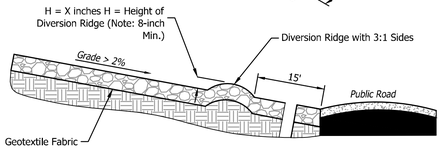


SILT FENCE

(NOT TO SCALE)

Notes:
Developer Reserves the Right to Require a Longer Construction Entrance, at no Additional Cost, if there are Issues with Tracking Soil onto Adjacent Roadways. All Tracking onto Adjoining Pavement is to be Removed as it Occurs.
50 feet Min. Length (Small Sites - Less than 2 Acres)
150 feet Min. Length (Large Sites - 2 Acres or Larger)





Diversion Ridge Cross-Section
For Entrances Where Slope Exceeds 2%.

Installation Notes:

1. Remove All Vegetation and other Objectionable Material from the Foundation Area.
2. Grade Foundation and Crown for Positive Drainage. If the Slope of the Construction Entrance is Toward a Public Road and Exceeds Two Percent, Construct an 8-inch High Diversion Ridge with a Ratio of 3-to-1 Side Slopes Across the Foundation Area About 15 feet from the Entrance to Divert Runoff Away from the Road.
3. Install a Culvert Pipe Under the Pad if Needed to Maintain Proper Public Road Drainage.
4. If Wet Conditions are Anticipated, Place Geotextile Fabric on the Graded Foundation to Improve Stability.
5. Place Specified Aggregate to the Dimensions Shown Leaving the Surface Smooth and Sloped for Drainage.
6. Top-dress the First 50 feet Adjacent to the Public Roadway with 2-3 Inches of Washed #53 Aggregate.
   [Optional, used Primarily where the Purpose of the Pad is Keeping Soil from Adhering to Vehicle Tires]
7. Where Possible, Divert All Storm Water Runoff and Drainage from the Pad to a Sediment Trap or Basin.

Maintenance Notes:

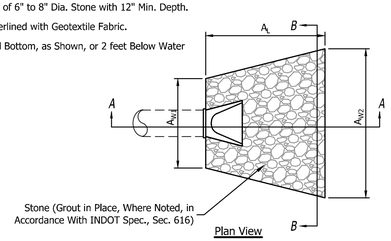
1. Inspect Daily.
2. Reshape Pad as Needed for Drainage and Runoff Control.
3. Top Dress with Clean Aggregate as Needed.
4. Immediately Remove Mud and Sediment Tracked or Washed onto Public Roads.
5. Flushing Should only be used if the Water can be Conveyed into a Sediment Trap or Basin.

TEMPORARY CONSTRUCTION ENTRANCE

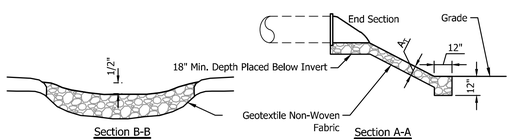
(NOT TO SCALE)

Maintenance Guidelines:

1. Rock Spillway to Consist of 6" to 8" Dia. Stone with 12" Min. Depth.
2. The Stone Shall be Underlined with Geotextile Fabric.
3. Stone to Extend to Pond Bottom, as Shown, or 2 feet Below Water Elev.



Plan View



Section B-B

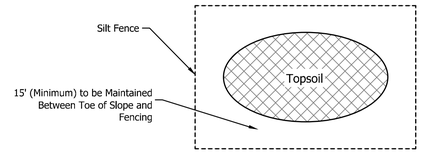
Section A-A

SIZING OF FLOW DISSIPATERS AT PIPE OUTLETS					
PIPE SIZE	AVERAGE STONE DIA.	APRON THICKNESS A_T	APRON WIDTH A_{W1}	APRON WIDTH A_{W2}	APRON LENGTH A_L
8 in.	3 in.	8"	3'	3.5'	5'
12 in.	5 in.	8"	3'	5'	6'
15 in.	6 in.	10"	4'	6'	8'
18 in.	8 in.	12"	5'	8'	8'
24 in.	10 in.	16"	6'	10'	12'
30 in.	12 in.	18"	8'	13'	14'
36 in.	14 in.	22"	9'	15'	16'

ENERGY DISSIPATOR

(NOT TO SCALE)

Note:
If Straw Bales are Utilized Instead of Silt Fence, the Bales Shall be Placed a Minimum of 10 feet from the Toe of Slope. Each Bale Shall Entrenched a Minimum of 4 inches into Subsoil and Shall be Anchored with (2) 36-inch Long Steel Rebars or 2x2 inch Wood Stakes Driven Through the Bale. The Minimum Bale Size Shall be 14"x18"x36".



TEMPORARY TOPSOIL STOCKPILE

(NOT TO SCALE)

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PROJECT:
MARQUETTE GREENWAY PHASE 1B
TOWN OF BURNS HARBOR, IN

SHEET TITLE:
EROSION CONTROL DETAILS

DRAWN BY: FJP
DESIGNED BY: FJP
PM REVIEW: MSK
QA/QC REVIEW: CAK
DATE: 05/27/2025
SEAL:
PRELIMINARY
SIGNATURE:
DATE:
SCALE: N.T.S.
ACI JOB #: 24-0397
SHEET NO.: 48 of 68

NO.	REVISION DESCRIPTION:	BY:	DATE:

C:\PROJECTS\2024\24-0397 TOWN OF BURNS HARBOR - MARQUETTE GREENWAY TRAIL PH1B\CAD_CIVIL PLANS\24-0397 EROS DTL DWG EC-DTL 1 FRANCISCO PEREZ 5.27.2025 5:36 PM

PERMANENT SEEDING

Site Preparation
1. Grade the site to achieve positive drainage.
2. Add topsoil or compost mulch to achieve needed depth for establishment of vegetation. (Compost material may be added to improve soil moisture holding capacity, soil friability, and nutrient availability.)

Seedbed Preparation
1. Test soil to determine pH and nutrient levels.
2. Apply soil amendments as recommended by the soil test and work into the upper two to four inches of soil. If testing is not done, apply 400 to 600 pounds per acre of 12-12-12 analysis fertilizer, or equivalent.
3. Till the soil to obtain a uniform seedbed. Use a disk or rake, operated across the slope, to work the soil amendments into the upper two to four inches of the soil.

Seeding
Optimum seeding dates are March 1 to May 10 and August 10 to September 30. Permanent seeding done between May 10 and August 10 may need to be irrigated. Seeding outside or beyond optimum seeding dates is still possible with the understanding that reseeding or overseeding may be required if adequate surface cover is not achieved. Reseeding or overseeding can be easily accomplished if the soil surface remains well protected with mulch.

1. Select a seeding mixture and rate from Table 1 Permanent Seeding Recommendations. Select seed mixture based on site conditions, soil pH, intended land use, and expected level of maintenance.
2. Apply seed uniformly with a drill or cultipacker seeder or by broadcasting. Plant or cover the seed to a depth of one-fourth to one-half inch. If drilling or broadcasting the seed, ensure good seed-to-soil contact by firming the seedbed with a roller or cultipacker after completing seeding operations. (If seeding is done with a hydroseeder fertilizer and mulch can be applied with the seed in a slurry mixture.)
3. Mulch all seeded areas and use appropriate methods to anchor the mulch in place. Consider using erosion control blankets on sloping areas and conveyance channels.

Maintenance
- Inspect within 24 hours of each rain event and at least once every seven calendar days until the vegetation is successfully established.
- Characteristics of a successful stand include vigorous dark green or bluishgreen seedlings with a uniform vegetative cover density of 90 percent or more.
- Check for erosion or movement of mulch.
- Repair damaged, bare, gullied, or sparsely vegetated areas and then fertilize, reseed, and apply and anchor mulch.
- If plant cover is sparse or patchy, evaluate the plant materials chosen, soil fertility, moisture condition, and mulch application; repair affected areas either by overseeding or preparing a new seedbed and reseeding. Apply and anchor mulch on the newly seeded areas.
- If vegetation fails to grow, consider soil testing to determine soil pH or nutrient deficiency problems. (Contact your soil and water conservation district or cooperative extension office for assistance.)
- If additional fertilization is needed to get a satisfactory stand, do so according to soil test recommendations.
- Add fertilizer the following growing season. Fertilize according to soil test recommendations.
- Fertilize turf areas annually. Apply fertilizer in a split application. For cool-season grasses, apply one-half of the fertilizer in late spring and one-half in early fall. For warm-season grasses, apply one-third in early spring, one-third in late spring, and the remaining one-third in middle summer.

Table 1 Permanent Seeding Recommendations
This table provides several seed mixture options. Additional seed mixtures are available commercially. When selecting a mixture, consider intended land use and site conditions, including soil properties (e.g., soil pH and drainage), slope aspect, and the tolerance of each species to shade and drought.

Open Low-Maintenance Areas (Remaining idle more than six months)

Seed Mixtures	Rate per Acre Pure Live Seed	Optimum Soil pH
1. Perennial ryegrass – white clover 1	70 lbs. 2 lbs.	5.6 to 7.0
2. Perennial ryegrass – tall fescue 2	70 lbs. 50 lbs.	5.6 to 7.0
3. Tall fescue 2 – white clover 1	70 lbs. 2 lbs.	5.5 to 7.5

Steep Banks and Cuts, Low-Maintenance Areas (not mowed)

Seed Mixtures	Rate per Acre Pure Live Seed	Optimum Soil pH
1. Smooth brome grass – red clover 1	35 lbs. 20 lbs.	5.5 to 7.0
2. Tall fescue 2 – white clover 1	50 lbs. 2 lbs.	5.5 to 7.5
3. Tall fescue 2 – red clover 1	50 lbs. 20 lbs.	5.5 to 7.5
4. Orchard grass – red clover 1 – white clover 1	30 lbs. 20 lbs. 2 lbs.	5.6 to 7.0
5. Crownvetch 1 – tall fescue 2	12 lbs. 30 lbs.	5.6 to 7.0

Lawns and High-Maintenance Areas

Seed Mixtures	Rate per Acre Pure Live Seed	Optimum Soil pH
1. Bluegrass	140 lbs.	5.5 to 7.0
2. Perennial ryegrass (turf type)	60 lbs. 90 lbs.	5.6 to 7.0
3. Tall fescue (turf type)2 –bluegrass	170 lbs. 30 lbs.	5.6 to 7.5

Channels and Areas of Concentrated Flow

Seed Mixtures	Rate per Acre Pure Live Seed	Optimum Soil pH
1. Perennial ryegrass – white 1	150 lbs. 2 lbs.	5.5 to 7.0
2. Kentucky bluegrass – smooth bromegrass – switchgrass – timothy – perennial ryegrass – white clover	20 lbs. 10 lbs. 3 lbs. 4 lbs. 10 lbs. 2 lbs.	5.5 to 7.5
3. Tall fescue 1 – white clover	150 lbs. 2 lbs.	5.5 to 7.5
4. Tall fescue 2 – perennial ryegrass – Kentucky bluegrass1	150 lbs. 20 lbs. 20 lbs.	5.5 to 7.5

1. For best results: (a) legume seed should be inoculated; (b) seeding mixtures containing legumes should preferably be spring-seeded, although the grass may be fall-seeded and the legume frost-seeded (see Dormant Seeding and Frost Seeding on page 41); and (c) if legumes are fall-seeded, do so in early fall.

2. Tall fescue provides little cover for, and may be toxic to some species of wildlife. The Indiana Department of Natural Resources recognizes the need for additional research on alternatives such as buffalograss, orchardgrass, smooth bromegrass, and switchgrass. This research, in conjunction with demonstration areas, should focus on erosion control characteristics, wildlife toxicity, turf durability, and drought resistance.

Notes
1. An oat or wheat companion or nurse crop may be used with any of the above permanent seeding mixtures, at the following rates:
   (a) spring oats - one-fourth to three-fourths bushel per acre
   (b) wheat - no more than one-half bushel per acre
2. A high potential for fertilizer, seed, and mulch to wash exists on steep banks, cuts, and in channels and areas of concentrated flow.

SOD

Installation
Sod should not be installed during hot weather, on dry soil, frozen soil, compacted clay, loose sand or gravelly substrate soils, aggregate, or pesticide treated soil. The ideal time to lay sod is May 1 to June 1 or September 1 to September 30, although it can be installed as early as March 15 if available or June 1 to September 1 if irrigated.

Site Preparation
1. Apply topsoil if existing soil conditions are unsuitable for establishing vegetation.
2. Grade the site to achieve positive drainage and create a smooth, firm soil surface.
3. Where applicable, use a chisel plow, disk, harrow, or rake to break up compacted soils and create a favorable rooting depth of six to eight inches.

Sod Bed Preparation
1. Test soil to determine pH and nutrient levels.
2. If soil pH is too acidic for the grass sod to be installed, apply lime according to soil test results or at the rate recommended by the sod supplier.
3. Apply fertilizer as recommended by the soil test. If testing was not done, apply 400 to 600 pounds per acre of 12-12-12 analysis fertilizer, or equivalent.
4. Work the soil amendments into the upper two to four inches of soil with a disk or rake operated across the slope.
5. Rake or harrow the area to achieve a smooth final grade and then roll or cultipack the soil surface to create a firm surface on which to lay the sod.

Laying the Sod
1. Install sod within thirty-six hours of its cutting.
2. Store the sod in a shaded location during installation.
3. Immediately before laying the sod, rake the soil surface to break any crust. (If the weather is hot, lightly irrigate the soil surface prior to laying the sod.)
4. Lay sod strips in a brick-like pattern.
5. Butt all joints tightly against each other (do not stretch or overlap them), using a knife or mason's trowel to trim and fit sod into irregularly shaped areas.
6. Roll the sod lightly after installation to ensure firm contact between the sod and soil.
7. Irrigate newly sodded areas until the underlying soil is wet to a depth of four inches, and then keep moist until the grass takes root.

Slope Application
1. Install sod strips with the longest dimension perpendicular to the slope.
2. Where slopes exceed a ratio of 3:1, staple or stake each strip at the corners and in the middle.

Channel Application
(Sodding provides quicker protection than seeding and may reduce the risk of early washout.)

1. Excavate the channel, allowing for the full thickness of the sod.
2. Lay sod strips with the longest dimension perpendicular to channel flow.
3. Staple or stake each strip of sod at the corners and in the middle.
4. Staple jute or biodegradable polypropylene netting over the sodded area to minimize the potential for washout during establishment.

Maintenance
- Inspect within 24 hours of each rain event and at least once every seven calendar days until sod is well rooted.
- Keep sod moist until fully rooted.
- After sod is well-rooted (two to three weeks), maintain a plant height of two to three inches.
- Time mowing to avoid ruts in turf
- Fertilize turf areas annually. Apply fertilizer in a split application. For coolseason grasses, apply one-half of the fertilizer in late spring and one-half in early fall. For warm-season grasses, apply one-third in early spring, one-third in late spring and one-third in mid-summer.

DORMANT SEEDING & FROST SEEDING

Contractor to determine the appropriate seeding method based on the time of year.

Purpose:
1. To provide early germination and soil stabilization in the spring.
2. To reduce sediment-laden stormwater runoff from being transported to downstream areas.
3. To improve visual aesthetics of construction area.
4. To repair or enhance previous seeding.

Materials Required:
1. Soil amendments based upon analysis of soil by a soil testing service. (fertilizer, etc.)
2. Seed (information follows)
3. Mulch (straw, hay, wood fiber, etc.) for protection of seedbed, moisture retention and encouragement of plant growth. mulch must be anchored to prevent dispersal by wind or water. may be covered with manufactured erosion control blankets.

Seed Specifications:
Note that seeding done outside of the optimum seeding dates increases the chances of seeding failure. dates may be shortened or extended depending on the location of the site within the State of Indiana. Mulch alone is an acceptable temporary cover and may be used in lieu of temporary seeding, providing that it is appropriately anchored. perennial species may be used as a temporary cover, especially if the area to be seeded will remain idle for more than one year (see permanent seeding).

Temporary Dormant or Frost Seeding
Wheat or Rye: 150 pounds per acre
Spring Oats: 150 pounds per acre
Annual Rye Grass: 60 pounds per acre

Permanent Dormant or Frost Seeding
Open low-maintenance areas (remaining idle more than 6 months):
Perennial ryegrass & white clover: ryegrass 75 pounds per acre + 3 pounds of clover per acre, optimum soil ph 5.6 to 7.0
Perennial ryegrass & tall fescue: ryegrass 45 pounds per acre + 45 pounds of fescue per acre, optimum soil ph 5.6 to 7.0
Tall fescue & white clover: fescue 75 pounds per acre + 3 pounds of white clover per acre, optimum soil ph 5.5 to 7.5
Kentucky bluegrass, smooth bromegrass, switchgrass, timothy, perennial ryegrass, & white clover; bluegrass 30 pounds per acre + 15 pounds of bromegrass per acre + 5 pounds of switchgrass per acre + 6 pounds of timothy per acre + 15 pounds of ryegrass per acre + 3 pounds of white clover per acre, optimum soil ph 5.5 to 7.5

Steep banks and cuts (low-maintenance areas, not mowed):
Smooth bromegrass & red clover: brome 50 pounds per acre + 30 pounds of red clover per acre, optimum soil ph 5.5 to 7.0
Tall fescue & white clover: fescue 75 pounds per acre + 30 pounds of white clover per acre, optimum soil ph 5.5 to 7.5
Tall fescue & red clover: fescue 75 pounds per acre + 30 pounds of red clover per acre, optimum soil ph 5.5 to 7.5
Orchard grass, red clover & white clover: orchard grass 45 pounds per acre + 30 pounds of red clover per acre + 3 pounds of white clover per acre, optimum soil ph 5.6 to 7.0

Lawns and high-maintenance areas:
Bluegrass: bluegrass 210 pounds per acre, optimum ph 5.5 to 7.0
Perennial ryegrass & bluegrass: 90 pounds of ryegrass per acre & 135 pounds of bluegrass per acre, optimum ph 5.6 to 7.0
Tall fescue (turf type) & bluegrass: fescue 250 pounds per acre + 45 pounds of bluegrass per acre, optimum soil ph 5.6 to 7.5

Channels and areas of concentrated flow:

Perennial ryegrass & white clover: ryegrass 225 pounds per acre + 3 pounds of white clover per acre, optimum soil ph 5.5 to 7.0
Kentucky bluegrass, smooth bromegrass, switchgrass, timothy, perennial ryegrass, & white clover; bluegrass 30 pounds per acre + 15 pounds of bromegrass per acre + 5 pounds of switchgrass per acre + 6 pounds of timothy per acre + 15 pounds of ryegrass per acre + 3 pounds of white clover per acre, optimum soil ph 5.5 to 7.5
Tall fescue & white clover: fescue 225 pounds per acre + 3 pounds of clover per acre, optimum soil ph 5.5 to 7.5
Tall fescue, perennial rye grass, & Kentucky bluegrass: fescue 225 pounds per acre + 30 pounds of ryegrass per acre + 30 pounds of bluegrass per acre, optimum soil ph 5.5 to 7.5

Note: for best results:
(a) Legume seed should be inoculated
(b) Seeding mixtures containing legumes should be spring-seeded although, the grass may be fall-seeded and the legume frost seeded
(c) If legumes are fall-seeded, do so in early fall
(d) If using mixtures other than those listed above, increase seeding rates by 50 percent over the conventional seeding rates.

Site Preparation:
1. Grade the site to achieve positive drainage.
2. Add topsoil to achieve needed depth for establishment of vegetation.

Dormant Seeding:
1. Test soil to determine ph and nutrient levels.
2. Broadcast soil amendments as recommended by soil test and work into the upper 2 to 4 inches of soil. If testing is not done, apply 200 to 300 pounds per acre of 12-12-12 analysis fertilizer, or equivalent.
3. Apply anchored mulch immediately after completion of grading and addition of soil amendments.
4. Select appropriate seed species (see seed specifications above). Broadcast the seed on top of the mulch and/or into existing ground cover at rates shown. Areas are to be seeded when soil temperatures are below 50 degrees but the soil is not frozen.

Frost Seeding:
1. Test soil to determine pH and nutrient levels.
2. Broadcast soil amendments as recommended by a soil test and work into the upper 2 to 4 inches of soil before it freezes. If testing was not done, apply 200 to 300 pounds per acre of 12-12-12 analysis fertilizer, or equivalent.
3. Select appropriate seed species or mixture (see seed specifications above). Broadcast the seed on the seedbed when the soil is frozen. do not work the seed into the soil.

Maintenance:
1. Inspect at least once every seven calendar days.
2. Check for erosion or movement of mulch.
3. Check for inadequate cover (less than 80 percent density over the soil surface); reseed and mulch in mid to late April if necessary. For best results, reseed within the recommended dates shown under temporary and permanent seeding).
4. Apply 200 to 300 pounds per acre of 12-12-12 analysis fertilizer, or equivalent, between April 15 and May 10 or during periods of vigorous growth.
5. Fertilize turf areas annually. Apply fertilizer in a split application. For cool-season grasses, apply 1/2 in late Spring and 1/2 in early Fall. For warm-season grasses, Apply 1/3 in early Spring, 1/3 in late Spring, and the remaining 1/3 in middle Summer.

Note: Required density of vegetative cover = 80 percent or greater over the soil surface.

HYDROSEEDING GENERAL INFORMATION

Definition
Hydroseeding is a mechanical method of applying seed, fertilizer, and mulch to land in one step.

Description and Purpose
Hydroseeding typically consists of applying a mixture of wood fiber, seed, fertilizer, and stabilizing emulsion with hydro-mulch equipment, which temporarily protects exposed soils from erosion by water and wind.
The practice may also be called hydro mulching, hydraulic planting, hydraulic mulch seeding, and hydraseeding.

Pollutant(s) controlled:
Suspended Sediments

Pollution Removal Efficiencies:
Hydroseeding initially reduces sediment generation by 70 to 80% as compared to sediment production off bare slopes.

Companion and Alternative BMPs
Mulching
Seeding/Vegetation
Rolled Erosion Control Products

Advantages and Disadvantages
Advantages:
Tackifiers can be used with the application to help keep the seed in place
Provides mulching medium around the seed to hold moisture

Disadvantages:
Hydroseeding may be used alone only when there is sufficient time in the season to ensure adequate vegetation establishment and erosion control. Otherwise, hydroseeding must be used in conjunction with a soil binder or mulching
Hydroseeding may be inappropriate in dry periods without supplemental irrigation
Wood fiber hydraulic mulches are generally short-lived (only last a part of a growing season) and need 24 hours to dry before rainfall occurs to be effective
May not be able to access remote areas with hydroseeder

Location
Hydroseeding is applied on disturbed soil areas requiring temporary protection until permanent vegetation is established or disturbed soil areas that must be re- disturbed following an extended period of inactivity

General Characteristics
Hydraulic planting mulch is the ingredient that makes the technique possible. Water-laden mulch shot from high-pressure hose or spray gun travels farther than seed and water alone. Once the mulch is on the soil surface, it creates a "mat" or blanket that holds the seed in place, retains soil moisture, resists wind and water erosion, and creates a favorable environment for seed germination.

Mulch materials may be made from wood chips, newsprint, or corrugated cardboard. Some products may include synthetic poly-based fibers or natural agricultural fibers, paper mill sludge, sawdust, slick papers, or some combination of these.
Each mulch product group has unique performance characteristics and associated costs. Some materials simply perform the mulch function better than others

Mulch Fiber length is the key to holding power, while germination is most influenced by moisture holding ability and application rates.

Virtually any fertilizer formulation can be incorporated into the hydroseeding slurry. It is important to use soil testing to determine the appropriate fertilizer for the site.

A difficult to access site is best fertilized with a long acting or time-release product at the same time it is seeded. An easily accessible site can be fertilized (again) after germination.

Tackifier is powdered or granular glue, which when added to the slurry, serves to glue the mulch blanket in place, helping it to withstand wind and rain erosion. Steep slopes are best protected with a tackifier, though any site susceptible to erosion (including that caused by the project's own irrigation) should be a candidate.

A wide variety of special use products can be incorporated into the hydroseed slurry when conditions dictate. Soil amendments, such as lime and gypsum, or organics such as sludge and humus can be applied right along with the seed and other ingredients. Dyes, surfactants, growth stimulators, fungicides, inoculates, and a host of other liquid, powdered and granular products are also widely available.

Materials
Cellulose Fiber Mulch, Fertilizer, Tackifier, and Hydroseed mix.

Design Specifications
To select appropriate hydroseeding mixtures, an evaluation of site conditions shall be performed with respect to:
soil conditions
site topography
season and climate
vegetation types
maintenance requirements
sensitive adjacent areas
water availability
plans for permanent vegetation

Paper Mulch is frequently applied at 1,200-1,500 pounds per acre (approximately 25lbs.-35 lbs. per 1,000 square feet). With a polyacrylamide additive, such rates can be effective. Many contractors avoid using more than 2,000-2,500 lbs per acre of paper mulch, because too much paper mulch tends to crust, and can inhibit germination.

Wood Mulch is most effective at rates beginning at 2,000 lbs per acre (about 45 lbs. per 1,000 square feet). In very hot conditions, 3,000 lbs (about 70 lbs. per 1,000 square feet) per acre will provide more moisture retention, and will therefore improve the probability of success significantly. A guar based tackifier is also highly recommended to improve the probability of yielding an excellent grass stand.

Bonded Fiber Matrix rates start at about 3,000 lbs per acre. At 4,000 lbs. per acre (about 90 lbs. per 1,000 square feet), most wood based Bonded Fiber Matrix products provide an excellent probability of achieving total coverage of grass, even when pounded with destructive rains or in very hot conditions.
Regardless of the quality of the mulch protection, rainfall or irrigation is always necessary to produce a stand of grass.

Guar tackifier can be used at 25-150 lbs per acre. The standard recommend application rate is 1½ lbs per 1,000 Sq. ft. or about 60 lbs per acre.
This product has been the mainstay as a glue additive for hydro-mulching for many years.
Seed and fertilizer recommendations are dependent upon the location of the area to be treated.
Hydroseeding can be accomplished using a multiple-step or one-step process.
The multiple-step process ensures maximum direct contact of the seeds to soil.
When the one-step process is used to apply the mixture of seed, fiber, etc., the seed rate shall be increased to compensate for all seeds not having direct contact with the soil.
Follow-up applications shall be made as needed to cover weak spots.
The time allowed between placement of seed in the hydraulic mulcher and the emptying of the hydraulic mulcher tank should not exceed 30 minutes.
Application of the slurry should proceed until a uniform cover is achieved. The applicator should not be directed at one location for too long a period of time or the applied water will cause erosion.

Construction Guidelines
Prior to application, roughen embankment and fill areas by rolling with a crimping or punching type roller or by track walking. Track walking shall only be used where other methods are impractical. Hydraulic matrices require 24 hours to dry before rainfall occurs to be effective

Monitoring
Hydromulched slopes should be inspected periodically for damage due to wind, water, or human disturbance.

Maintenance
Repair all damaged areas immediately using hydromulching at the original specifications or straw mulch.
Supplemental watering may be required.

NO.	REVISION DESCRIPTION:	BY:	DATE:

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PROJECT:
MARQUETTE GREENWAY
PHASE 1B
TOWN OF BURNS HARBOR, IN

SHEET TITLE:
EROSION CONTROL DETAILS

DRAWN BY: FJP
DESIGNED BY: FJP
PM REVIEW: MSK
QA/QC REVIEW: CAK
DATE: 05/27/2025
SEAL:
PRELIMINARY
SIGNATURE:
DATE:
SCALE: N.T.S.
ACI JOB # 24-0397
SHEET NO. 49 of 68

O:\PROJECTS\2024\24-0397 TOWN OF BURNS HARBOR - MARQUETTE GREENWAY TRAIL PH1B\CAD_CIVIL\PLANS\24-0397 EROS DTL.DWG EC-DTL 2 FRANCISCO PEREZ 5/27/2025 5:37 PM

STORMWATER POLLUTION PREVENTION PLAN (SWPPP) INDEX

Construction Plan – General Plan Components (Section A)

A1 - Index of the location of required plan elements in the construction plan:

See this sheet for Stormwater Pollution Prevention Plan (SWPPP) Index and Sheet 2 "Index and General Notes" for Sheet Index.

A2 - A vicinity map depicting the project site location in relationship to recognizable local landmarks, towns, and major roads:

See Sheet 1 "Title Sheet" for Vicinity Map.

A3 - Narrative of the nature and purpose of the project:

Project will include common excavation, new asphalt pavement and boardwalks for a new multi-use path, erecting new modular block walls, installing new storm sewer pipes, and necessary restoration after construction.

A4 - Latitude and longitude to the nearest fifteen (15) seconds:

Latitude 41° 37' 15"

Longitude 87° 06' 30"

A5 - Legal description of the project site:

See Sheet 1 "Title Sheet"

A6 - 11 X 17-inch plat showing building lot numbers/boundaries and road layout/names:

See Sheets 6-7 "Geometric Tie-up"

A7 - Boundaries of the one hundred (100) year floodplains, floodway fringes, and floodways:

See Flood Insurance Rate Map Note on Sheet 51 "SWPPP"

A8 - Land use of all adjacent properties:

North: Exempt Property Owned by the United States of America

South: Agricultural and Residential

East: Exempt Property Owned by the United States of America

West: Exempt Property Owned by the United States of America and Residential

A9 - Identification of a U.S. EPA approved or established TMDL:

The IDEM site (https://www.in.gov/idem/nps/resources/total-maximum-daily-load-reports/) does have record of a TMDL for the projects. Little Caluet River. The identified pollutants is E. Coli.

A10 - Name(s) of the receiving water(s):

Receiving Water, HUC, Little Calumet River, East Arm and ultimately Lake Michigan.

A11 - Identification of discharges to a water on the current 303(d) list of impaired waters and the pollutant(s) for which it is impaired:

The Little Calumet River, East Ar is on the list of 303(d) impaired list. The pollutants of concern are E. Coli and PCBs. Biological integrity is also in the list.

A12 - Soils map of the predominate soil types:

See Sheet 51 "SWPPP".

A13 - Identification and location of all known wetlands, lakes, and water courses on or adjacent to the project site (construction plan, existing site layout):

See Sheet 51 "SWPPP".

A14 - Identification of any other state or federal water quality permits or authorizations that are required for construction activities:

DNR, Construction in a Floodway permit.

A15 - Identification and delineation of existing cover, including natural buffers:

Grass and wooded areas. See Sheets 9-18 "Plan and Profile Line A".

A16 - Existing site topography at an interval appropriate to indicate drainage patterns:

See Sheets 43-47 "Erosion Control Plan" for existing contours.

A17- Location(s) where run-off enters the project site:

Run-off enters the site from the properties to the east and south.

A18 - Location(s) where run-off discharges from the project site prior to land disturbance:

Existing run-off discharges to the Little Calumet River, East Arm, which is to the west of the site.

A19 - Location of all existing structures on the project site:

See Sheets 9-18 "Plan and Profile Line A".

A20 - Existing permanent retention or detention facilities, including manmade wetlands, designed for the purpose of stormwater management:

See Sheets 9-18 "Plan and Profile Line A".

A21 - Locations where stormwater may be directly discharged into ground water, such as abandoned wells, sinkholes, or karst features:

See Sheets 9-18 "Plan and Profile Line A".

A22 - Size of the project area expressed in acres:

Total project size: 3.77± Acres

A23 - Total expected land disturbance expressed in acres:

Total disturbed area: 3.77± Acres

A24 - Proposed final topography:

See Sheets 9-18 "Plan and Profile Line A".

A25 - Locations and approximate boundaries of all disturbed areas:

See Sheets 43-47 "Erosion Control Plan".

A26 - Locations, size, and dimensions of all stormwater drainage system such as culverts, stormwater sewer, and conveyance channels:

See Sheets 9-18 "Plan and Profile Line A".

A27 - Locations of specific points where stormwater and non-stormwater discharges will leave the project site:

See Sheets 9-18 "Plan and Profile Line A".

A28 - Location of all proposed site improvements, including roads, utilities, lot delineation and identification, proposed structures, and common areas:

See Sheets 9-18 "Plan and Profile Line A".

A29 - Location of all on-site and off-site soil stockpiles and borrow areas:

See Sheets 43-47 "Erosion Control Plan".

A30 - Construction support activities that are expected to be part of the project:

See Sheets 43-47 "Erosion Control Plan".

A31 - Location of any in-stream activities that are planned for the project including, but not limited to, stream crossings and pump arounds:

This project does not have planned in-stream activities.

Stormwater Pollution Prevention - Post-construction Components (Section B)

B1 - Description of the potential pollutant generating sources and pollutants, including all potential non-stormwater discharges:

The following could generate pollutants associated with construction activities:

1. Vehicles/Equipment, Fueling and Leaking
2. Material Storage
3. Site Demolition & Construction Debris
4. Exposed Soils
5. Excavation of Materials
6. Sanitary Chemicals/Waste
7. Tracking Soils Offsite
8. Concrete Washout

B2 - Stable construction entrance locations and specifications:

See Sheets 43-47 "Erosion Control Details" and Sheets 48-49 "Erosion Control Details".

B3 – Specifications for temporary and permanent stabilization:

See Sheets 43-47 "Erosion Control Details" and Sheets 48-49 "Erosion Control Details".

B4 - Sediment control measures for concentrated flow areas:

On-site stormwater outlets will be protected with an energy dissipater. See "Sheets 43-47 "Erosion Control Details" and Sheets 48-49 "Erosion Control Details".

B5 - Sediment control measures for sheet flow areas:

See seeding notes on Sheets 43-47 "Erosion Control Plan" and Sheets 48-49 "Erosion Control Details" for location and specifications.

B6 – Run-off control measures:

Silt Fence will be used for storm run-off. See Sheets 43-47 "Erosion Control Plan" and Sheets 48-49 "Erosion Control Details" for location and specifications.

B7 - Stormwater outlet protection location and specifications:

On-site stormwater outlets will be protected with an energy dissipater. See Sheets 43-47 "Erosion Control Plan" and Sheets 48-49 "Erosion Control Details" for location and specifications.

B8 - Grade stabilization structure locations and specifications:

This project does not have planned grade stabilization structures.

B9 - Dewatering applications and management methods:

Dewatering is not anticipated.

B10 - Measures utilized for work within waterbodies:

In-stream activities are not planned.

B11 - Maintenance guidelines for each proposed stormwater quality measure:

See Sheets 48-49 "Erosion Control Details".

B12 - Planned construction sequence that describes the implementation of stormwater quality measures in relation to land disturbance:

Preconstruction:

1. Notify the Town of Burns Harbor and the National Park Service of work commencement.
2. Contact Indiana 811 (Indiana Underground Plant Protection System, Inc.) for Underground Utility Locations, 800-382-5544.
3. The "CSGP" Notice of Intent shall be visible and posted at the Project Site. Contractor shall designate a Stormwater Quality Manager who will be responsible for onsite inspection and for providing the SWQCP onsite.
4. Notify the Town of Burns Harbor and the National Park Service 48 hours prior to commencing construction, IDEM is notified via the Notice of Intent submittal. Schedule any required meetings with the Town of Burns Harbor and the National Park Service.

Install Perimeter Control:

5. Install Erosion Control Measures, which may include, but not limited to: Construction Entrance, Concrete Washout, Silt Fence and Inlet protection.
6. Establish Staging Areas, Material Storage Areas and Fuel Areas Locations. Area locations shall be approved by the Owner (INDOT) . Each area shall be properly protected and delineated prior to construction.
7. Establish Soil Stockpile Area Locations.

Construction:

8. Install utilities, grading and associated construction.
9. Maintain all erosion and sediment control practices until all disturbed areas are permanently stabilized.
10. Install and reset any signs, mailboxes, etc. that were removed during construction.
11. Final Grade and Seed.
12. Remove erosion control measures after all disturbed area are fully established.
13. A final site inspection will take place to assure that all requirements of the SWPPP and Construction Plans.

Project Completion:

14. When the site meets permanent surface stabilization requirements the Notice of Termination (NOT) shall be submitted to the Local Authority. When the NOT is approved, the Local Authority will forward it to IDEM.

B13 - Provisions for erosion and sediment control on individual residential building lots regulated under the proposed project:

There is no residential building lots for this project.

B14 - Material handling and spill prevention and spill response plan meeting the requirements in 327 IAC 2-6.1:

Construction materials that may be located onsite include vehicle lubricants, oils and fuels, concrete wash-out, acids, curing compounds, paints, mulch, water treatment chemicals, pesticides, herbicides, fertilizers, and trash. Any toxic materials are to be properly disposed of in an approved manor in accordance with local, state, and federal laws.

These materials should be stored in a manner that prevents or minimizes the chance that a spill will reach soils, groundwater or surface water. Any discharge that occurs from stored materials shall be contained and prevented from entering soils, groundwater, or surface water.

In the event of a material spill, the spill must be contained immediately utilizing appropriate response techniques including diking and absorbents. Clean up of the spill shall occur as soon as possible once the spill is stabilized and contained. Spills shall be cleaned up using acceptable methods such as, absorbents on impervious surfaces or removal of contaminated soils. In all cases cleanup standards must adhere to local, state and federal requirements. Failure to clean up any spill is a violation of the Indiana State Spill Rule (327 IAC 2-6.1), which is enforced by the Indiana Department of Environmental Management (IDEM). Certain spills must be reported to Town of Burns Harbor and the National Park Service and IDEM (888-233-7745). Initial calls should be made to the 911 system if the spell exceeds reportable quantities or is a threat to public safety. IDEM's Emergency Response line (888-233-7745) can typically assist with information on clean up operations or clean up contractors.

All spills that occur near an inlet to the stormwater conveyance system must have "curbing" implemented immediately. "Curbing" is the use of a barrier (absorbent material) which prevents the spill from making contact with the stormwater conveyance system or stormwater runoff.

B15 - Material handling and storage procedures associated with construction activity:

See Sheets 39-43 "Erosion Control Plan" and Sheets 44-45 "Erosion Control Details" for Concrete Washout Location and specifications.

Stormwater Pollution Prevention - Post-construction Components (Section C)

C1 - Description of pollutants and their sources associated with the proposed land use:

Potential pollutants are: Vehicular traffic (Grit, Oil & Solvents), discarded litter, sediment from road treatment, runoff from pesticides or fertilizers.

C2 - Description of proposed post-construction stormwater measures:

See Sheets 43-47 "Erosion Control Plan and Sheets 48-49 "Erosion Control Details". Permanent vegetation will help reduce the infiltration of sediment and pollutants. Energy dissipaters will be permanent stormwater quality measures for the project.

C3 – Plan details for each stormwater measures:

See Sheets 43-47 "Erosion Control Plan" and Sheets 48-49 "Erosion Control Details" sheets for location of permanent stormwater measures and specifications.

C4 - Sequence describing stormwater measure implementation:

Following construction, all erosion control measures shall be inspected and maintained until all permanent measures and vegetation have been established and construction is complete. Individual erosion control measures may be removed following permanent inlet protection, seeding, and after sufficient vegetation has been established in an area to prevent silt and soil erosion leaving the site.

C5 - Maintenance guidelines for proposed post-construction stormwater measures:

See Sheets 48-49 "Erosion Control Details".

C6 - Entity that will be responsible for operation and maintenance of the post construction stormwater measures:

The Town of Burns Harbor and the National Park Service will be responsible for the operation and maintenance of post-construction stormwater measures.

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PROJECT:

MARQUETTE GREENWAY
PHASE 1B
TOWN OF BURNS HARBOR, IN

SHEET TITLE:

SWPPP

DRAWN BY: FJP

DESIGNED BY: FJP

PM REVIEW: MSK

QA/QC REVIEW: CAK

DATE: 05/27/2025

SEAL:

PRELIMINARY

SIGNATURE:

DATE:

SCALE: N.T.S.

ACI JOB # 24-0397

SHEET NO. 50 of 68

NO.	REVISION DESCRIPTION:	BY:	DATE:

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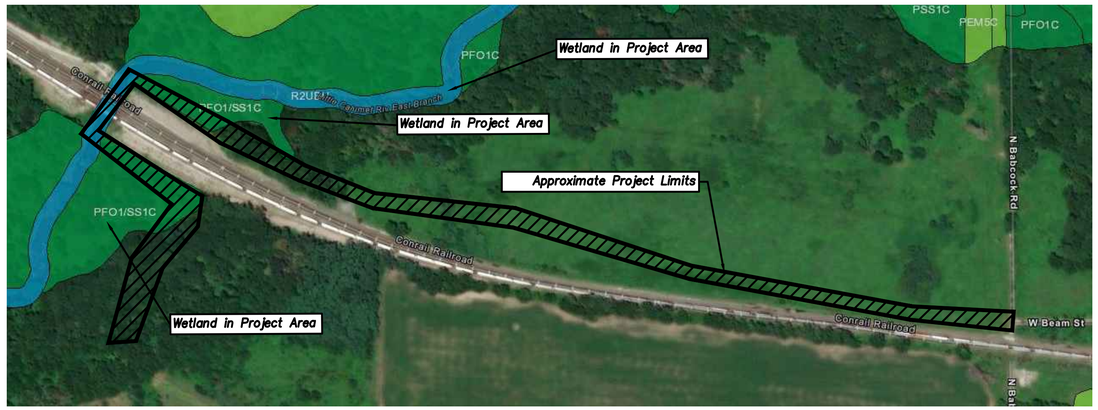
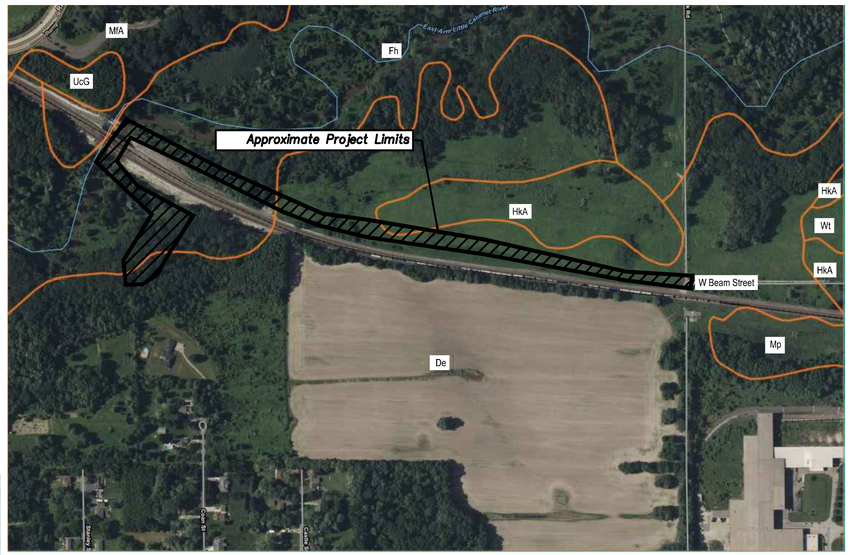


PUBLISHED WETLAND INFORMATION

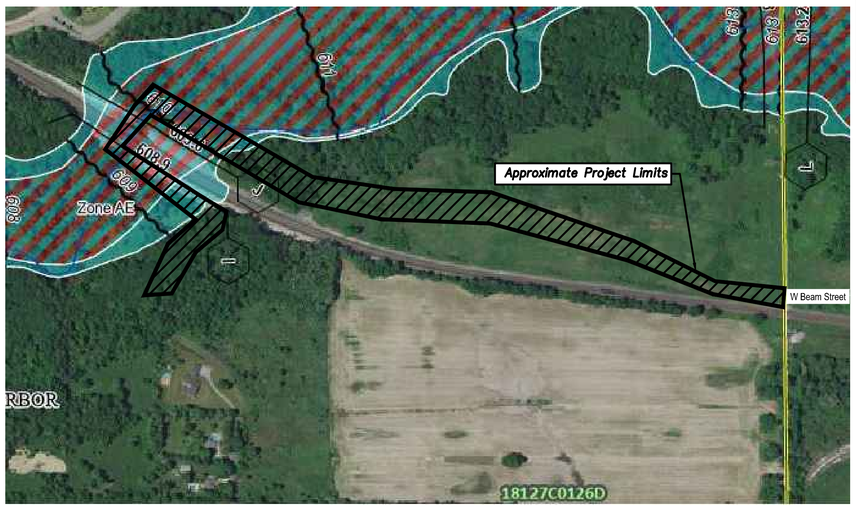
(NOT TO SCALE)

A review of the U.S. Fish & Wildlife Service Wetlands Inventory Map in August of 2023, indicates there is one mapped wetland located on the project site (subject to map scale). To ensure no wetland impacts on the project site, coordination with the IDNR will occur. The Wetland Mapper is located at the following address: https: //www.fws.gov/wetlands/data/mapper.html



PUBLISHED SOILS MAP

(NOT TO SCALE)



FEMA FLOOD INSURANCE RATE MAP (FIRM)
(NOT TO SCALE)

PANELS 18127C0126D
DATED September 30, 2015

SOILS CLASSIFICATION

SOILS INFORMATION IS DEFINED AND SCALED FROM THE UNITED STATES DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION DISTRICT'S WEB SOIL SURVEY.

De - Del Rey Silt Loam, 0 to 2 percent slopes

Soil is poorly drained having a depth to water table of more than 80 inches and a clayley lacustrine deposits parent material. The capacity of the most limiting layer to transmit water is high to very high (0.06 to 20.00 in/hr).

Soil Typical Profile

0 to 8 inches: silt loam
8 to 31 inches: silt clay loam
31 to 60 inches: silty clay loam

Fh - Fluvaquents, 0 to 2 percent slopes

Soil is somewhat poorly drained having a depth to water table of more than 80 inches and a loamy alluvium parent material.

HkA - Haskins Loam, 0 to 2 percent slopes

Soil is somewhat poorly drained having a depth to water table of more than 80 inches and a loamy glaciolacustrine deposits parent material. The capacity of the most limiting layer to transmit water is high to very high (0.01 to 0.20 in/hr).

Soil Typical Profile

0 to 18 inches: loam
18 to 40 inches: gravelly clay loam
40 to 48 inches: clay loam
48 to 60 inches: clay loam

MfA - Martinsville Loam, 0 to 2 percent slopes

Soil is well drained having a depth to water table of more than 80 inches and a loamy outwash parent material. The capacity of the most limiting layer to transmit water is high to very high (0.60 to 2.00 in/hr).

Soil Typical Profile

0 to 12 inches: loam
12 to 36 inches: clay loam
36 to 46 inches: sandy clay loam
46 to 60 inches: sandy loam

Mp - Milford Silty Clay Loam, 0 to 2 percent slopes

Soil is well drained having a depth to water table of more than 80 inches and a Clayey Lacustrine deposits parent material. The capacity of the most limiting layer to transmit water is high to very high (0.20 to 0.60 in/hr).

Soil Typical Profile

0 to 9 inches:silty clay loam
9 to 22 inches: silty clay
22 to 50 inches: silty clay loam
50 to 60 inches: stratified sandy loam to silty clay loam

UcG - Udorthents, Loamy, 0 to 12 percent slopes

Soil is well drained having a depth to water table of more than 80 inches and a Clayey Lacustrine deposits parent material.

Wt - Whitaker Loam, 0 to 2 percent slopes

Soil is somewhat poorly drained having a depth to water table of more than 80 inches and a Clayey Lacustrine deposits parent material. The capacity of the most limiting layer to transmit water is high to very high (0.60 to 2.00 in/hr).

Soil Typical Profile

0 to 9 inches: loam
9 to 41 inches: clay clay
41 to 60 inches: stratified sand to silt loam

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MARQUETTE GREENWAY
PHASE 1B
TOWN OF BURNS HARBOR, IN

SHEET TITLE:
SWPPP

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SHEET NO. 51 of 68

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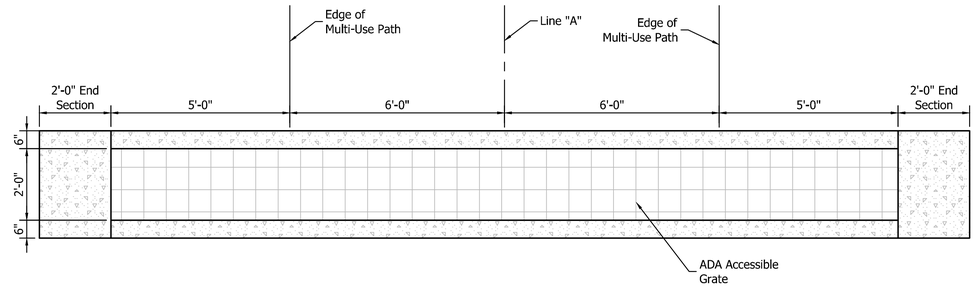
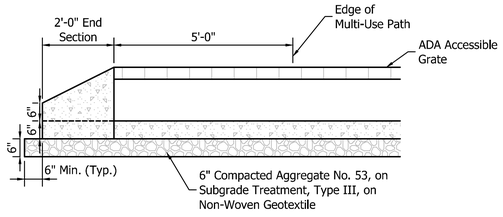


TRENCH DRAIN DETAIL - PLAN VIEW
Scale: 1" = 2'



TRENCH DRAIN DETAIL - ELEVATION VIEW
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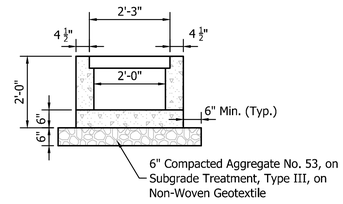
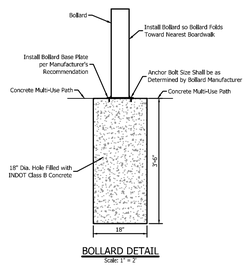


TRENCH DRAIN DETAIL - SECTION VIEW
Scale: 1" = 2'

Note:
See the Project Specifications for Additional Information on the Trench Drain



BOLLARD DETAIL
Scale: 1" = 2'

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PHASE 1B
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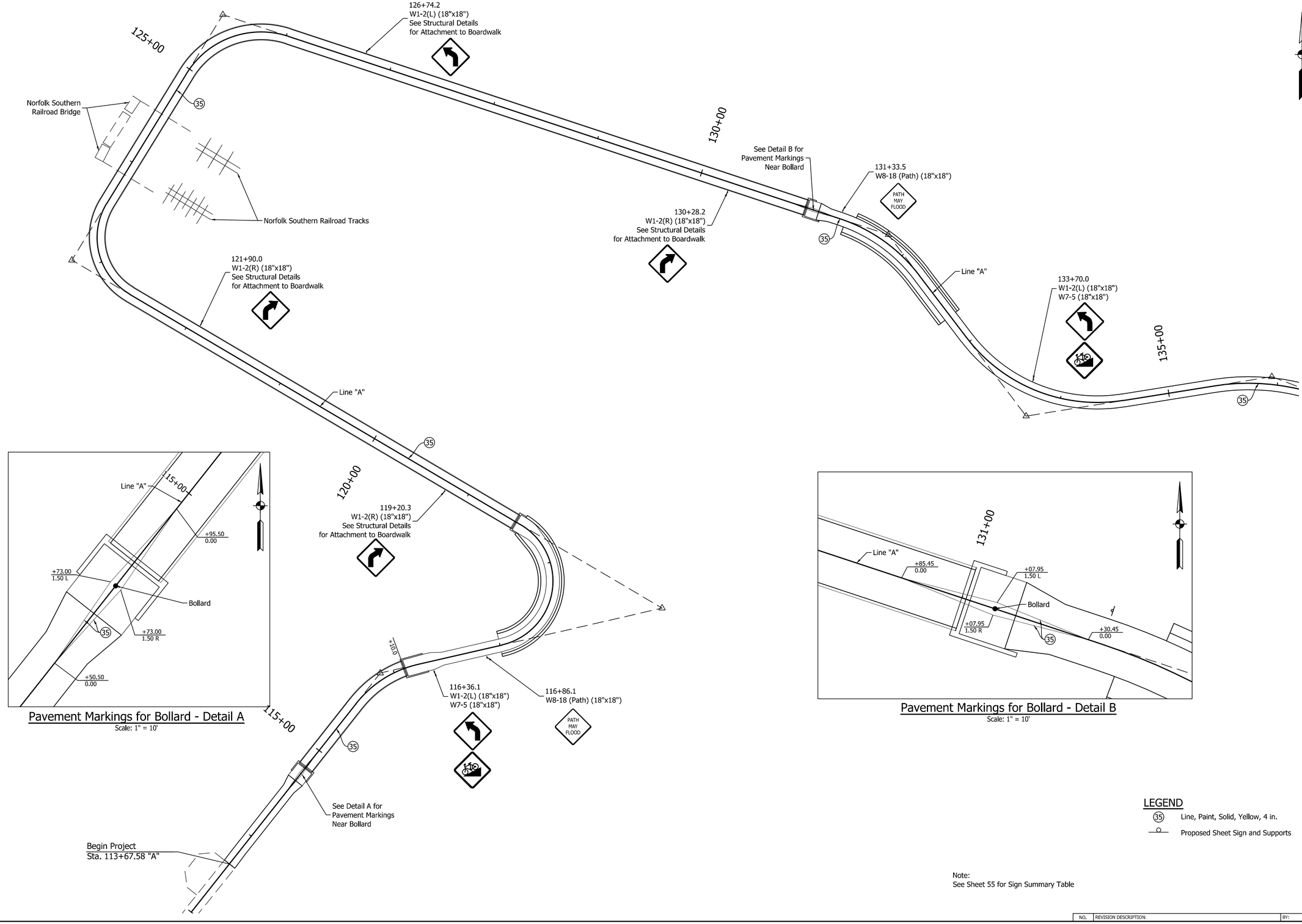

Pavement Markings for Bollard - Detail A
Scale: 1" = 10'

Pavement Markings for Bollard - Detail B
Scale: 1" = 10'

LEGEND

35 Line, Paint, Solid, Yellow, 4 in.

Proposed Sheet Sign and Supports

Note:
See Sheet 55 for Sign Summary Table

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QA/QC REVIEW: CAK
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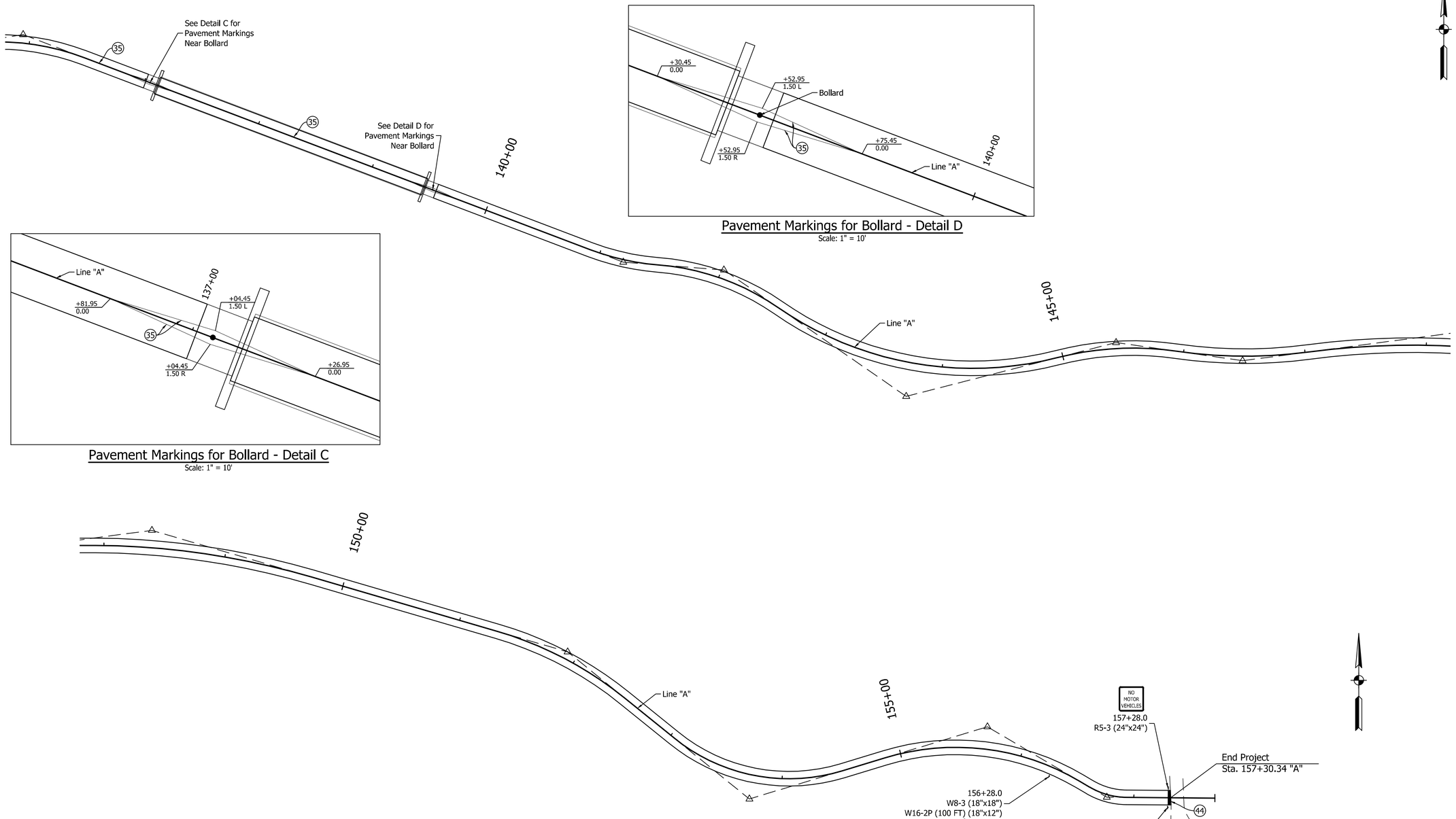

Pavement Markings for Bollard - Detail D
Scale: 1" = 10'

Pavement Markings for Bollard - Detail C
Scale: 1" = 10'

LEGEND

- (35) Line, Paint, Solid, Yellow, 4 in.
- (44) Transverse Marking, Paint, Stop Line, White, 24 in.
- Proposed Sheet Sign and Supports

Note:
See Sheet 55 for Sign Summary Table

NO.	REVISION DESCRIPTION:	BY:	DATE:

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SEAL:

PRELIMINARY

SIGNATURE:
DATE:
SCALE: 1" = 60'
ACI JOB # 24-0397
SHEET NO. 54 of 68

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STRUCTURE DATA

STRUCTURE NUMBER	LOCATION						SIZE	DESCRIPTION		LENGTH	SKEW	FLOW LINE				SERVICE LIFE	SITE DESIGNATION	pH	BACKFILL METHOD	STRUCTURE BACKFILL	TYPE	FLOWABLE BACKFILL	TYPE	GEOTEXTILES	UNIFORM RIPRAP	VIDEO INSPECTION	PIPE END SECTION	PIPE, REMOVE	CONNECT TO STR.	REMARKS
	STATION	LINE	LEFT	RIGHT	CENTER	OFFSET		PIPE TYPE	MANHOLE, INLET, CATCH BASIN, OR SPECIALTY STRUCTURE			COVER	UP STREAM	DOWN STREAM	RIM															
						FT	INCHES			LFT		LFT	ELEV.	ELEV.	ELEV.	YRS.				CYS		CYS		SYS	TON	LFT	EA.	LFT		
11	148+21.0	A		X		15.5			12" RCP	30			639.05	638.99		50		7.0									2			
12	153+25.0	A	X			14.5			12" RCP	30			638.44	638.24		50		7.0									2			
13	156+91.0	A		X		13.0			24"x18" Trench Drain	26			638.50	638.43		50		7.0												

SHEET SIGN & POST SUMMARY

PLAN SHEET NO.	SIGN LOCATION	SIGN CODE	SIGN SIZE (IN. x IN.)			GROUND - MOUNTED SIGN AREA (ft^2)			POST: SQUARE						SIGN, RELOCATE	SIGN, REMOVE
									2 1/4" X 2 1/4" - 12 GA. (TYPE 1) REINFORCED ANCHOR			2" X 2" - 12 GA. (TYPE 2) REINFORCED ANCHOR				
									POST LENGTH (LFT.)			POST LENGTH (LFT.)				
						0.080"	0.100"	0.125"	1	2	TOTAL	1	2	TOTAL	EA	EA
52	116+36.1, Rt. Line "A"	W1-2(L)	18	x	18	2.25			9.0		9.0					
52	116+36.1, Rt. Line "A"	W7-5	18	x	18	2.25			Mounted on Same Post Above							
52	116+86.1, Rt. Line "A"	W8-18	18	x	18	2.25			7.0		7.0					
52	119+20.3, Lt. Line "A"	W1-2(R)	18	x	18	2.25			Mounted on Side of Boardwalk							
52	121+90.0, Rt. Line "A"	W1-2(R)	18	x	18	2.25			Mounted on Side of Boardwalk							
52	126+74.2, Lt. Line "A"	W1-2(L)	18	x	18	2.25			Mounted on Side of Boardwalk							
52	130+28.2, Rt. Line "A"	W1-2(R)	18	x	18	2.25			Mounted on Side of Boardwalk							
52	131+33.5, Lt. Line "A"	W8-18	18	x	18	2.25										
52	133+70.0, Lt. Line "A"	W1-2(L)	18	x	18	2.25			9.0		9.0					
52	133+70.0, Lt. Line "A"	W7-5	18	x	18	2.25			Mounted on Same Post Above							
53	156+28.0, Rt. Line "A"	W8-3	18	x	18	2.25			8.0		8.0					
53	156+28.0, Rt. Line "A"	W16-2P (100 FEET)	18	x	12	1.50			Mounted on Same Post Above							
53	157+28.0, Lt. Line "A"	R5-3	24	x	24	4.00			7.0		7.0					
53	157+28.0, Rt. Line "A"	R1-1	18	x	18	2.25			7.0		7.0					
					Totals:	33					47					

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PROJECT:
MARQUETTE GREENWAY
PHASE 1B
TOWN OF BURNS HARBOR, IN

SHEET TITLE:
MISCELLANEOUS TABLES

DRAWN BY: FJP
DESIGNED BY: FJP
PM REVIEW: MSK
QA/QC REVIEW: CAK
DATE: 05/27/2025
SEAL:

PRELIMINARY

SIGNATURE:
DATE:
SCALE: N.T.S.
ACI JOB # 24-0397
SHEET NO. 55 of 68

NO.	REVISION DESCRIPTION:	BY:	DATE:

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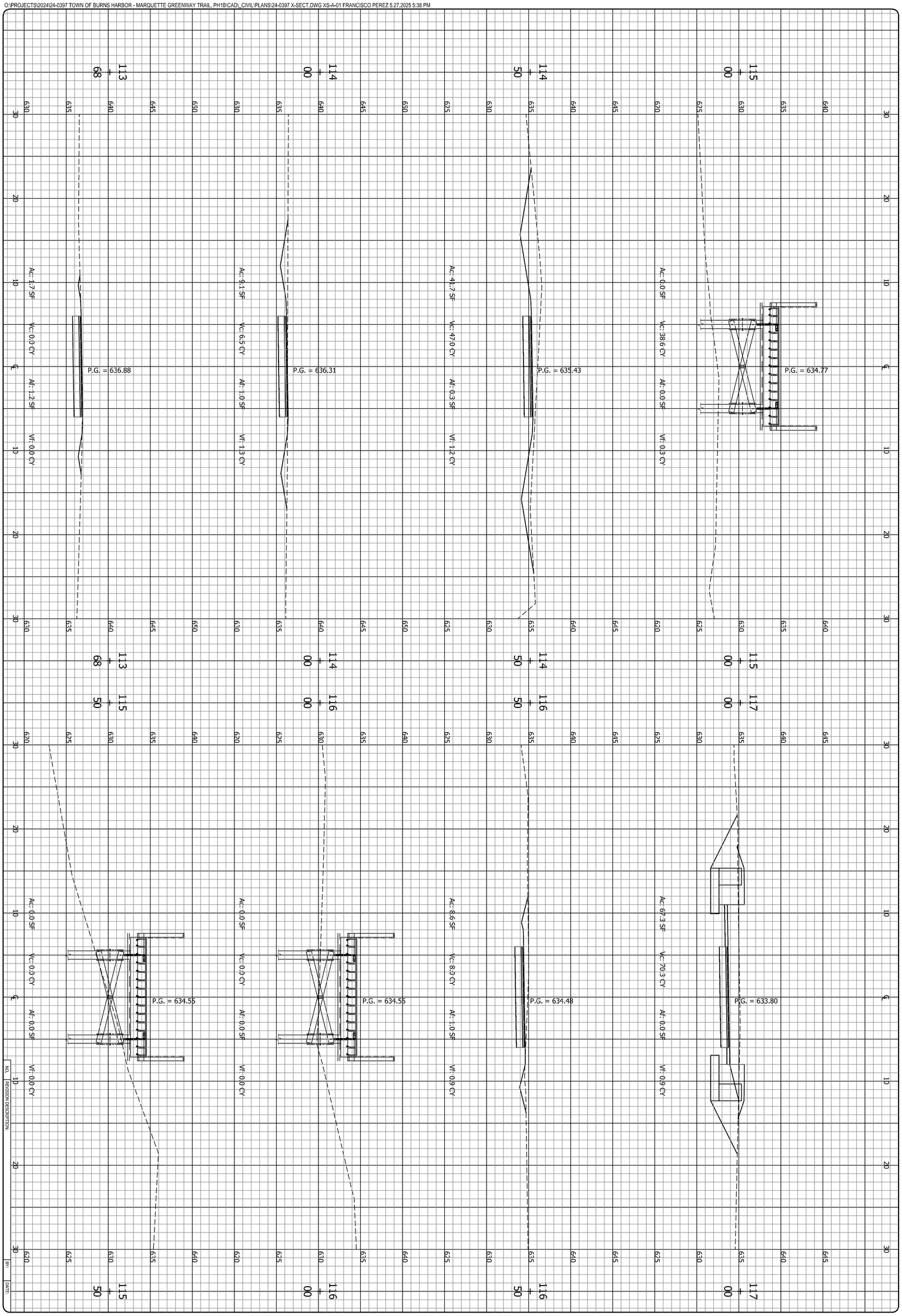

NO. | REVISION DESCRIPTION | BY | DATE

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SHEET TITLE:

CROSS SECTIONS LINE "A "

PROJECT:

MARQUETTE GREENWAY
PHASE 1B
TOWN OF BURNS HARBOR, IN

DRAWN BY: FJP
DESIGNED BY: FJP
PM REVIEW: MSK
QA/QC REVIEW: CAK
DATE: 05/27/2025
SEAL

SIGNATURE:
DATE:

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24-0397

SHEET NO.
56 of 68

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PROJECT:

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TOWN OF BURNS HARBOR, IN

SHEET TITLE:

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QA/QC REVIEW: CAK
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SHEET NO.
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TOWN OF BURNS HARBOR, IN

SHEET TITLE:

CROSS SECTIONS LINE "A "

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PROJECT:

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TOWN OF BURNS HARBOR, IN

SHEET TITLE:

CROSS SECTIONS LINE "A"

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QA/QC REVIEW: CAK
DATE: 05/27/2025
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SHEET NO.
59 of 68

NO.	REVISION DESCRIPTION:	BY:	DATE:

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SHEET TITLE:

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SHEET NO.
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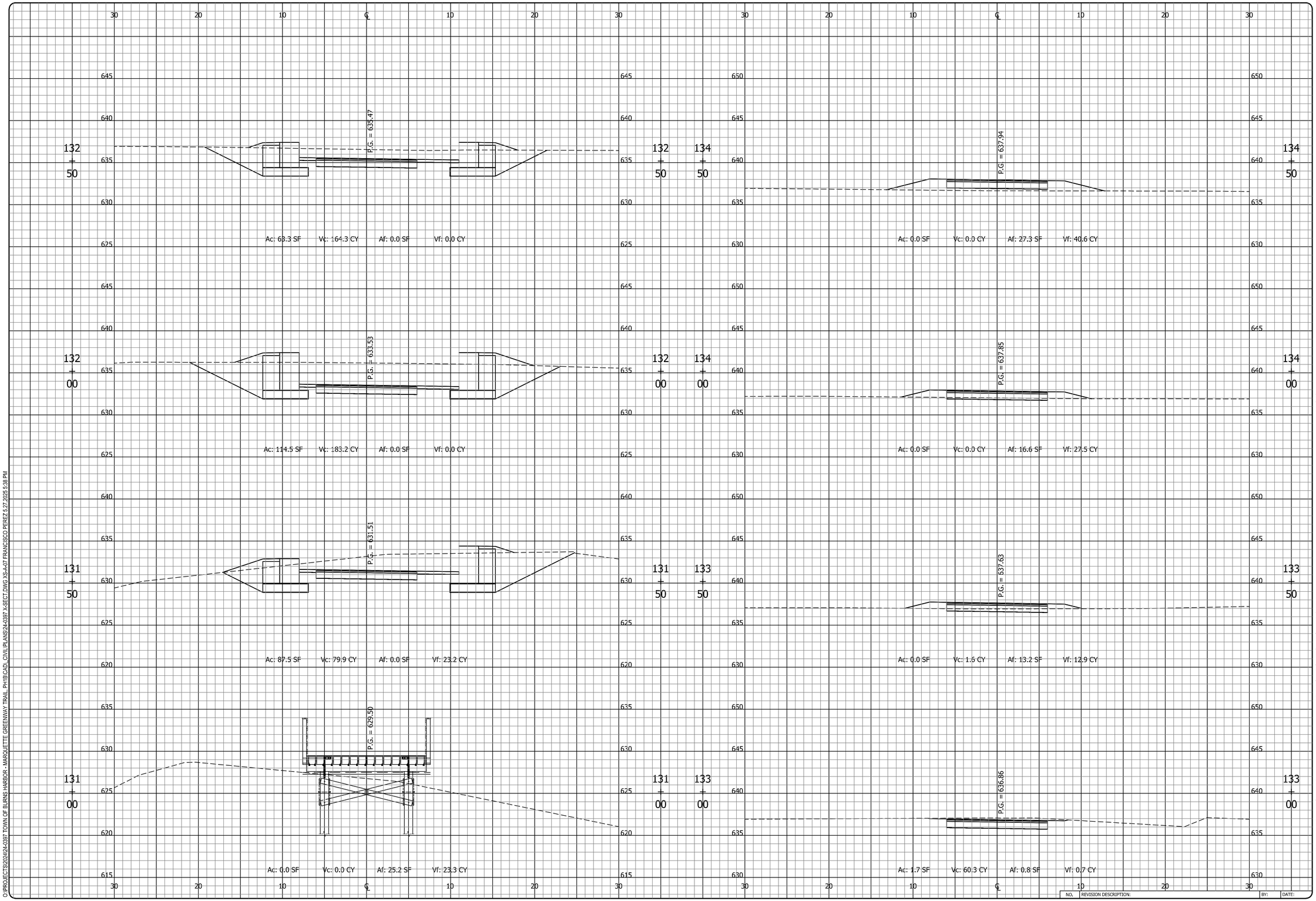

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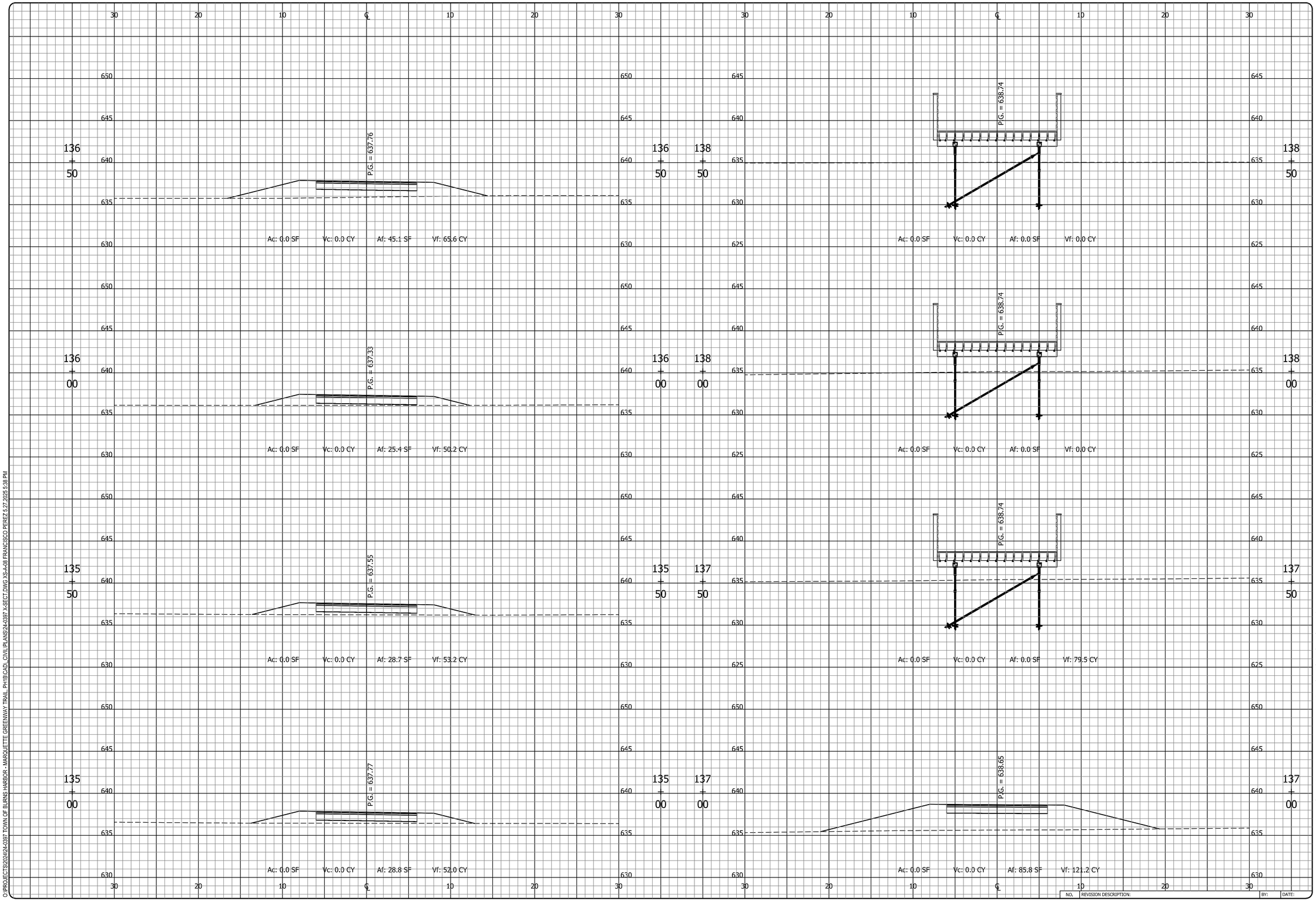
62 of 68



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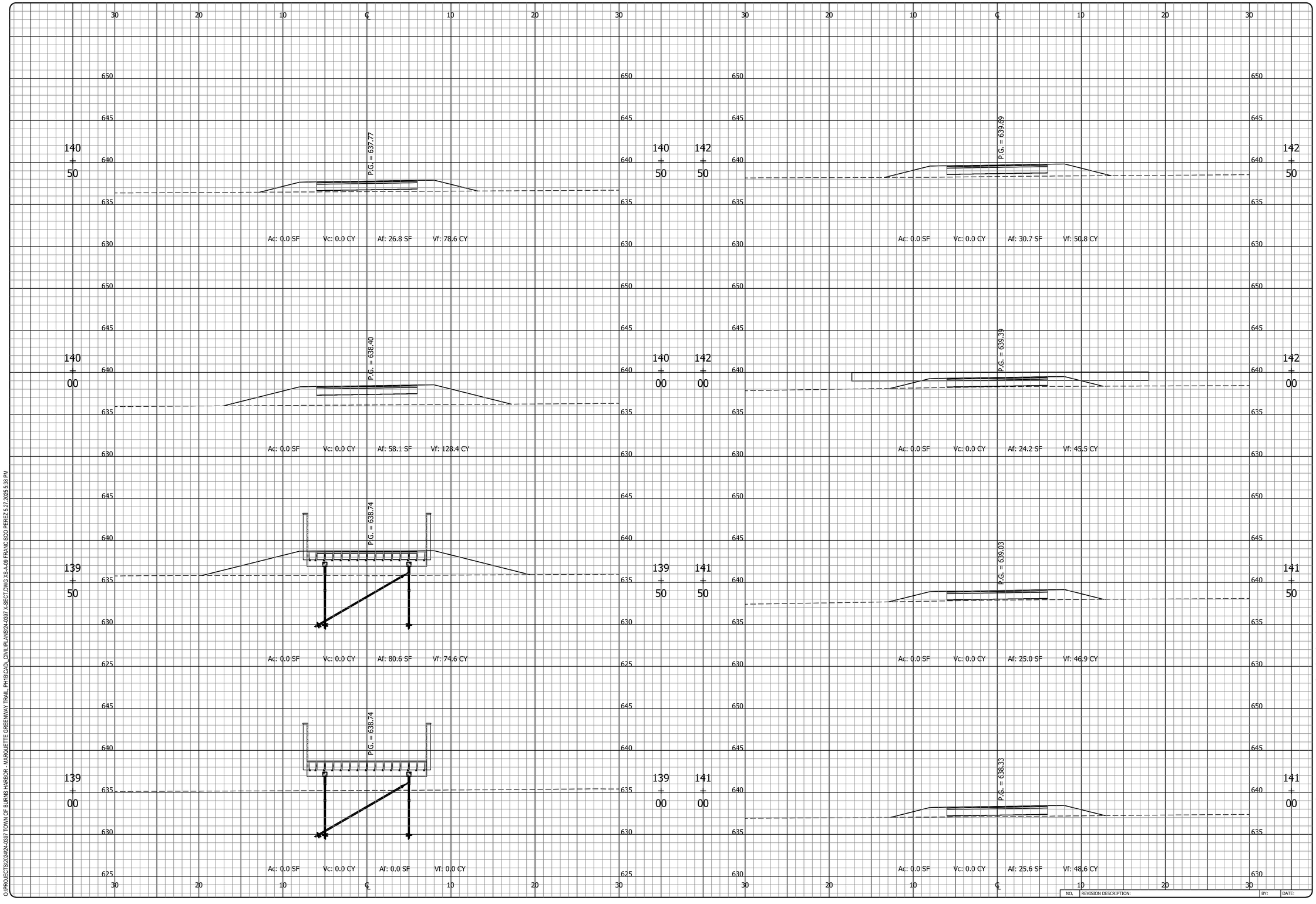
24-0397

SHEET NO.
63 of 68



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64 of 68

NO.	REVISION DESCRIPTION:	BY:	DATE:

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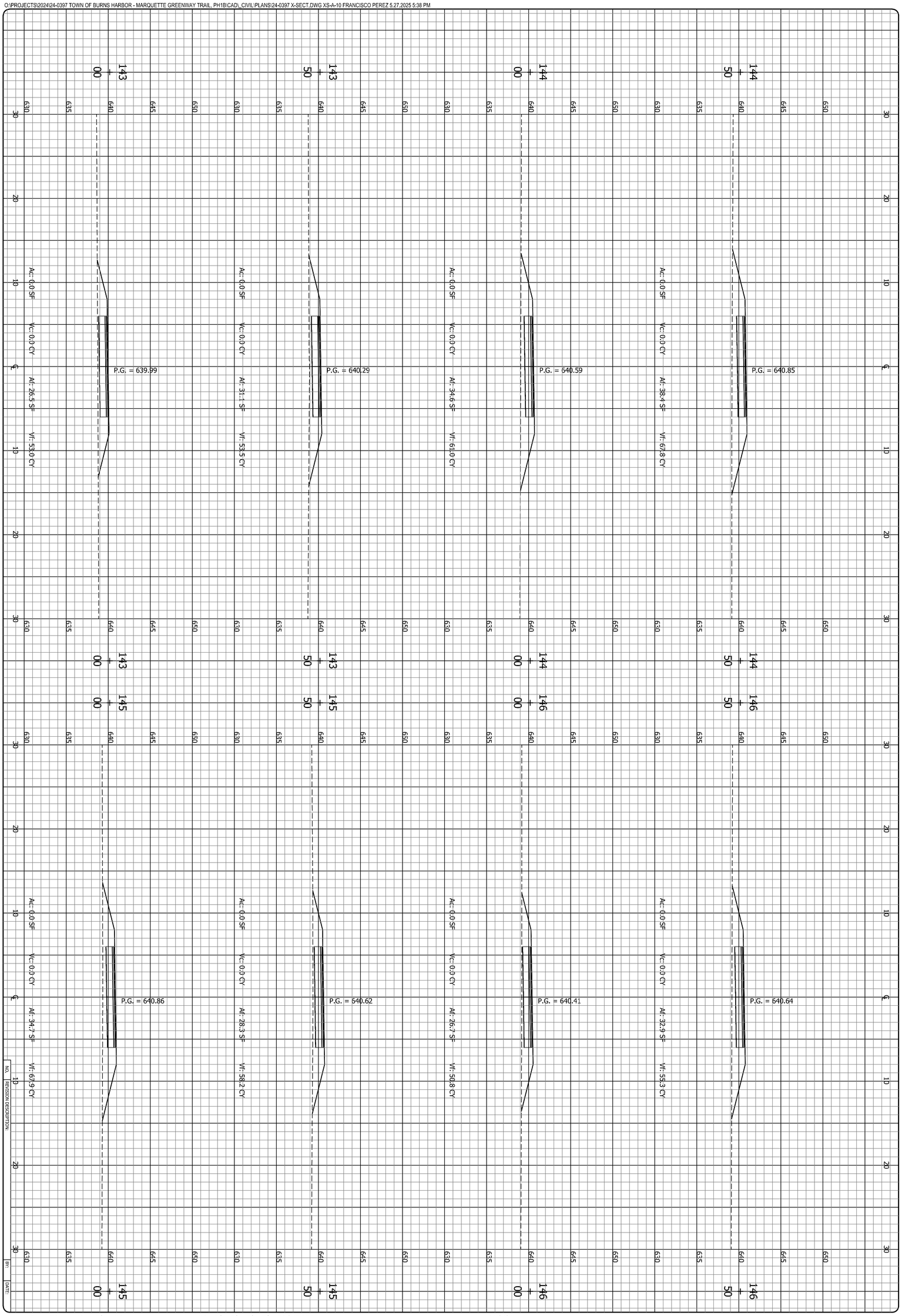

NO. REVISION DESCRIPTION BY: DATE:

SHEET TITLE:

CROSS SECTIONS LINE "A "

PROJECT:

MARQUETTE GREENWAY
PHASE 1B
TOWN OF BURNS HARBOR, IN

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SHEET NO. 65 of 68

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TOWN OF BURNS HARBOR, IN

SHEET TITLE:

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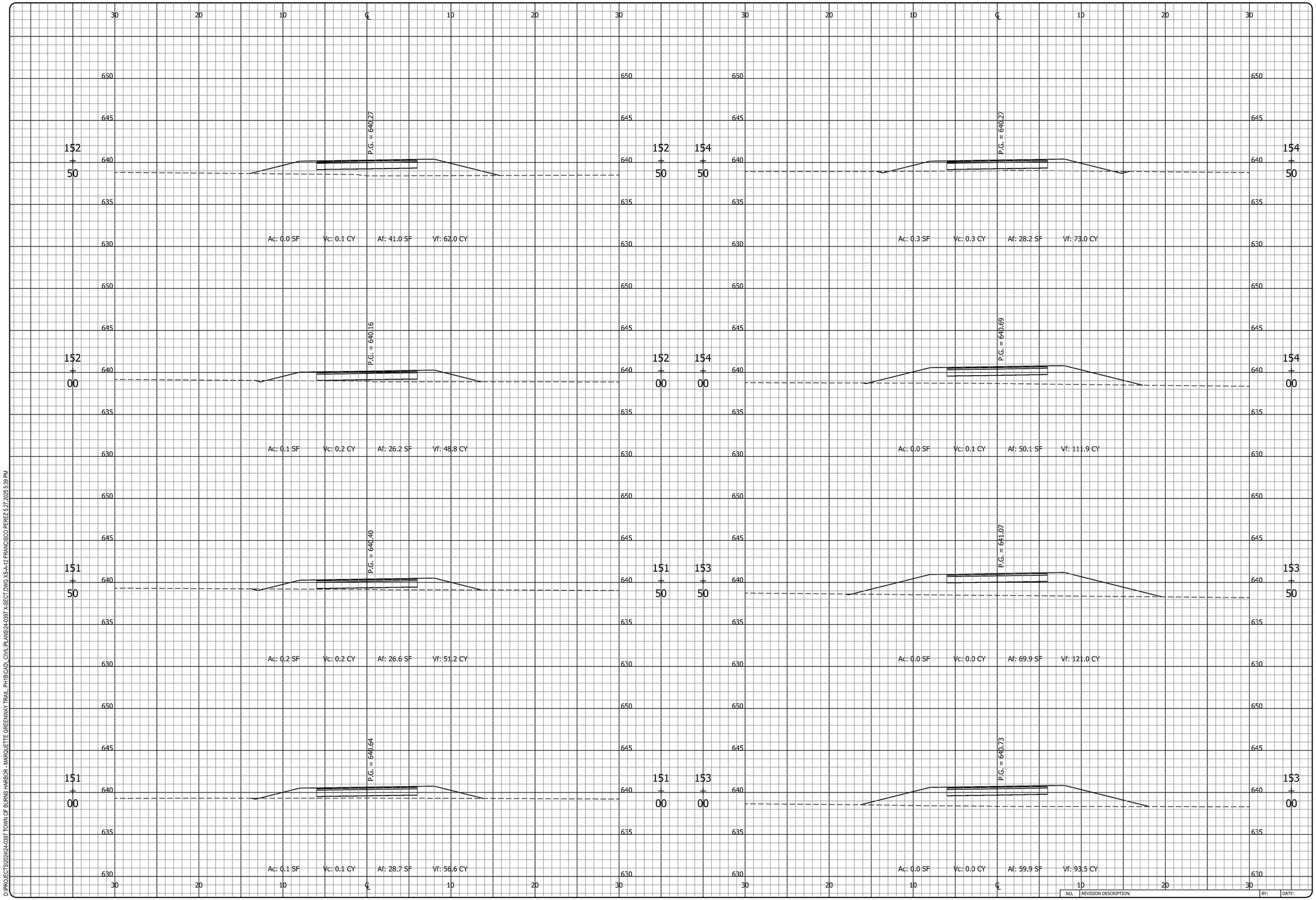

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SHEET TITLE:

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67 of 68

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68 of 68