

PROJECT	DESIGNATION
1600892	1600892
CONTRACT	BRIDGE FILE
B-39839	KNOX COUNTY #382

STRUCTURE INFORMATION				
STRUCTURE	TYPE	SPAN AND SKEW	OVER	STATION
KNOX COUNTY #382	COMPOSITE HYBRID BULB-TEE	SINGLE SPAN 106'-6" SKEW: 30° LEFT	CSX RAILROAD	648+60.17 "A"

KNOX COUNTY
BOARD OF COMMISSIONERS

DATE: _____

KELLIE STREETER, PRESIDENT, DISTRICT 3

TIM ELLERMAN, VICE PRESIDENT, DISTRICT 1

TRENT HINKLE, MEMBER, DISTRICT 2

ATTEST:

DATE: _____

MIKE MORRIS, COUNTY AUDITOR
RECOMMENDED FOR APPROVAL

DATE: _____

BENJI BOYD, P.E., HIGHWAY SUPERINTENDENT

INDIANA DEPARTMENT OF TRANSPORTATION



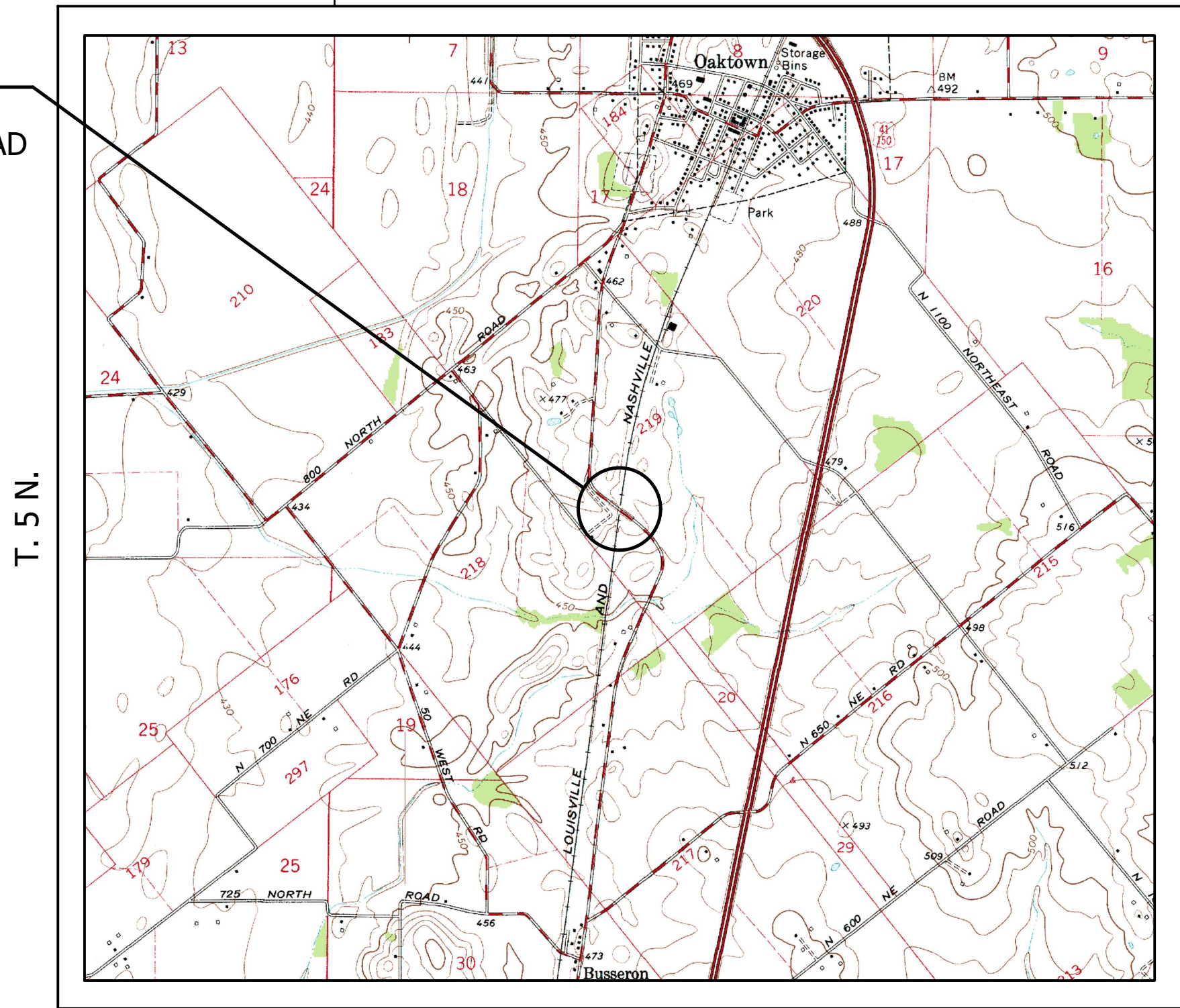
BRIDGE PLANS

FOR SPANS OVER 20 FEET
OLD U.S. 41
over CSX RAILROAD
PROJECT NO. 1600892 P.E.
1600892 R/W
1600892 CONST.

Replacement of Structure on Old U.S. 41 over CSX Railroad Located 0.72 Miles South of Co-Op Road, in Section 219, of Township 5 North, Range 9 West, Busseron Township, in Knox County Indiana.

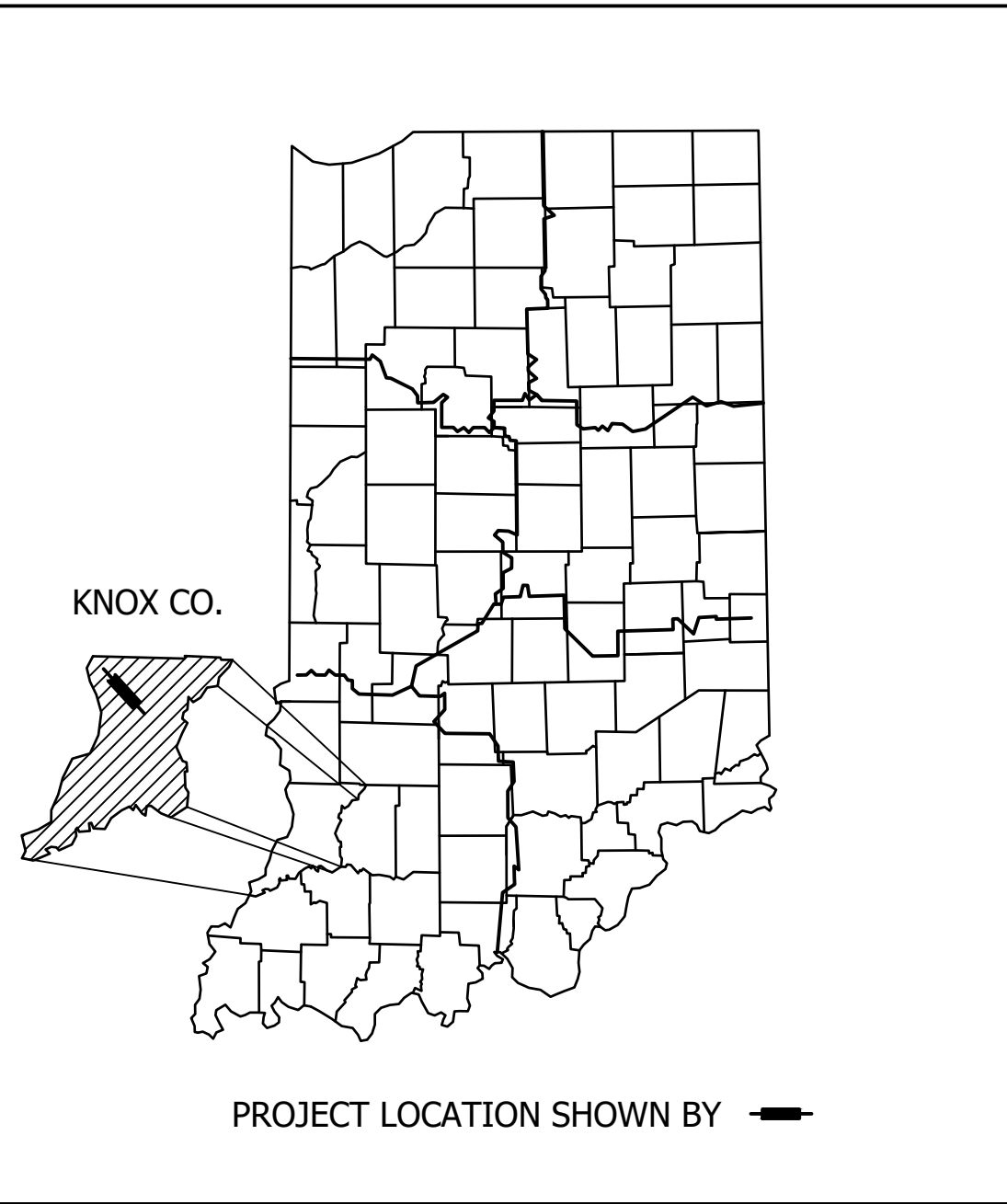
R. 10 W. | R. 9 W.

PROJECT LOCATION
KNOX COUNTY #382
OLD U.S. 41 OVER CSX RAILROAD



LOCATION MAP
KNOX COUNTY

TRAFFIC DATA	OLD U.S. 41
A.D.T. (2021)	190 V.P.D.
A.D.T. (2041)	230 V.P.D.
DIRECTIONAL DISTRIBUTION	50%
TRUCKS	9% D.H.V.
DESIGN DATA	
DESIGN SPEED	45 M.P.H.
PROJECT DESIGN CRITERIA	3R (NON-FREEWAY)
FUNCTIONAL CLASSIFICATION	LOCAL ROAD
RURAL/URBAN	RURAL
TERRAIN	ROLLING
ACCESS CONTROL	NONE



LATITUDE: 38°51'16.8"N LONGITUDE: 87°26'48.0"W

BRIDGE LENGTH : 0.017 MI.
ROADWAY LENGTH : 0.135 MI.
TOTAL LENGTH : 0.152 MI.
MAX GRADE : +6.37%

HUC: 05120111180020

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



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Phone 317-895-2585
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PLANS PREPARED BY:	UNITED CONSULTING	(317) 895-2585 PHONE NUMBER
CERTIFIED BY:	_____	DATE
APPROVED FOR LETTING:	INDIANA DEPARTMENT OF TRANSPORTATION	DATE

BRIDGE FILE	
KNOX COUNTY #382	
DESIGNATION	
1600892	
SURVEY BOOK	SHEETS
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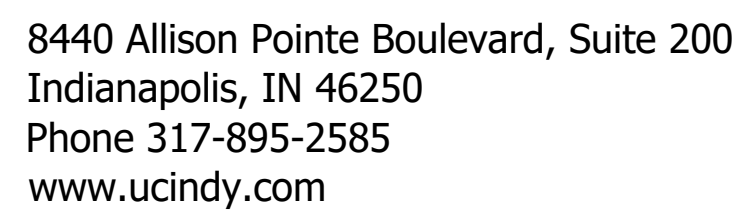
UTILITIES	
ELECTRIC:	Duke Energy 4535 Jane Blvd. New Castle, IN 47362 Ph: (765) 593-2110
FIBER OPTIC:	MCI 115 West Washington St. Indianapolis, IN 46204 (317) 685-8050 Zayo Bandwidth 9209 Castlegate Dr. Indianapolis, IN 46256 (765) 341-1199

FIBER OPTIC: MCI
115 West Washington St.
Indianapolis, IN 46204
(317) 685-8050

MCI

[illegible]

Call 811 or 800-382-5544



DESIGNED: <u>AIB</u>	DRAWN: <u>DJZ</u>
CHECKED: <u>JDG</u>	CHECKED: <u>JDG</u>

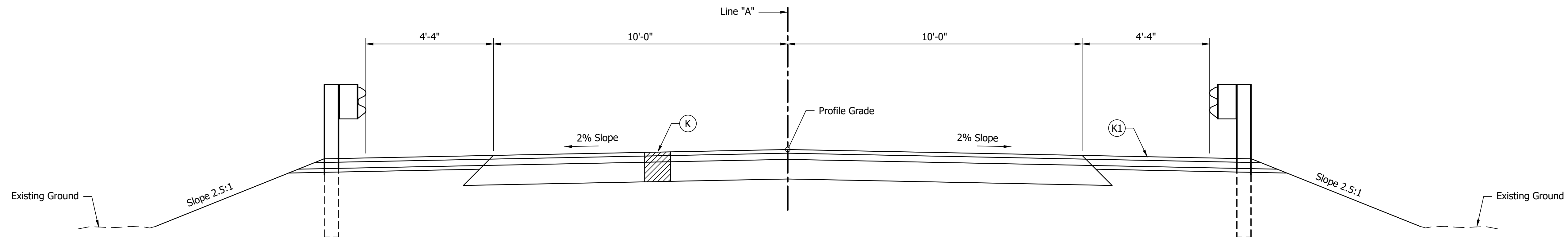
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OLD US 41 OVER CSX RAILROAD

HORIZONTAL SCALE		BRIDGE FILE	
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File Name: P:\C3D\17-218\Bridge\Drawings\Typical.dwg Plot Date: 9/25/2019 Plotted By: Rich Jones



TYPICAL ROADWAY SECTION - S.R. 41

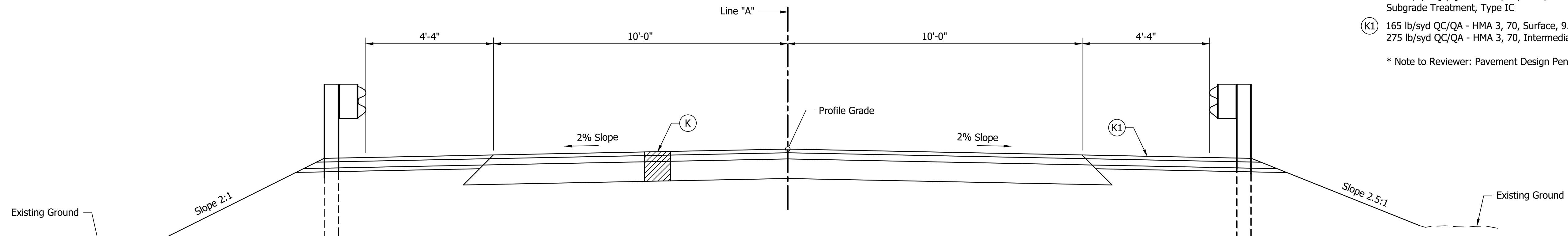
Scale: 1/2" = 1'-0"

Sta. 644+25 to Sta. 647+76.60 Line "A"

LEGEND

- (K) 165 lb/syd QC/QA - HMA 3, 70, Surface, 9.5 mm over
275 lb/syd QC/QA - HMA 3, 70, Intermediate, 19.0 mm over
660 lb/syd QC/QA - HMA 3, 64, Base, 19.0 mm over
Subgrade Treatment, Type IC
- (K1) 165 lb/syd QC/QA - HMA 3, 70, Surface, 9.5 mm over
275 lb/syd QC/QA - HMA 3, 70, Intermediate, 19.0 mm

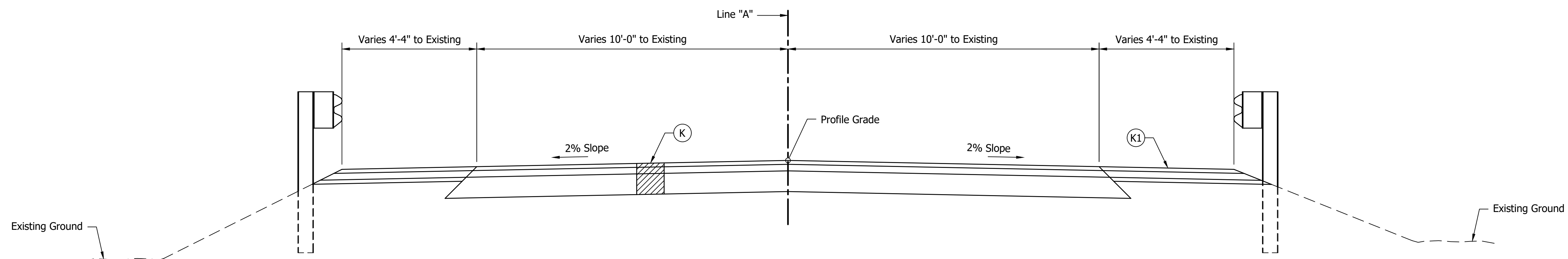
* Note to Reviewer: Pavement Design Pending



TYPICAL ROADWAY SECTION - S.R. 41

Scale: 1/2" = 1'-0"

Sta. 649+43.74 to Sta. 650+85 Line "A"



INCIDENTAL CONSTRUCTION ROADWAY SECTION

Scale: 1/2" = 1'-0"

Sta. 643+40 to Sta. 644+25 Line "A"

Sta. 650+85 to Sta. 651+70 Line "A"



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DESIGN ENGINEER _____ DATE _____

DESIGNED: AIB DRAWN: DJZ

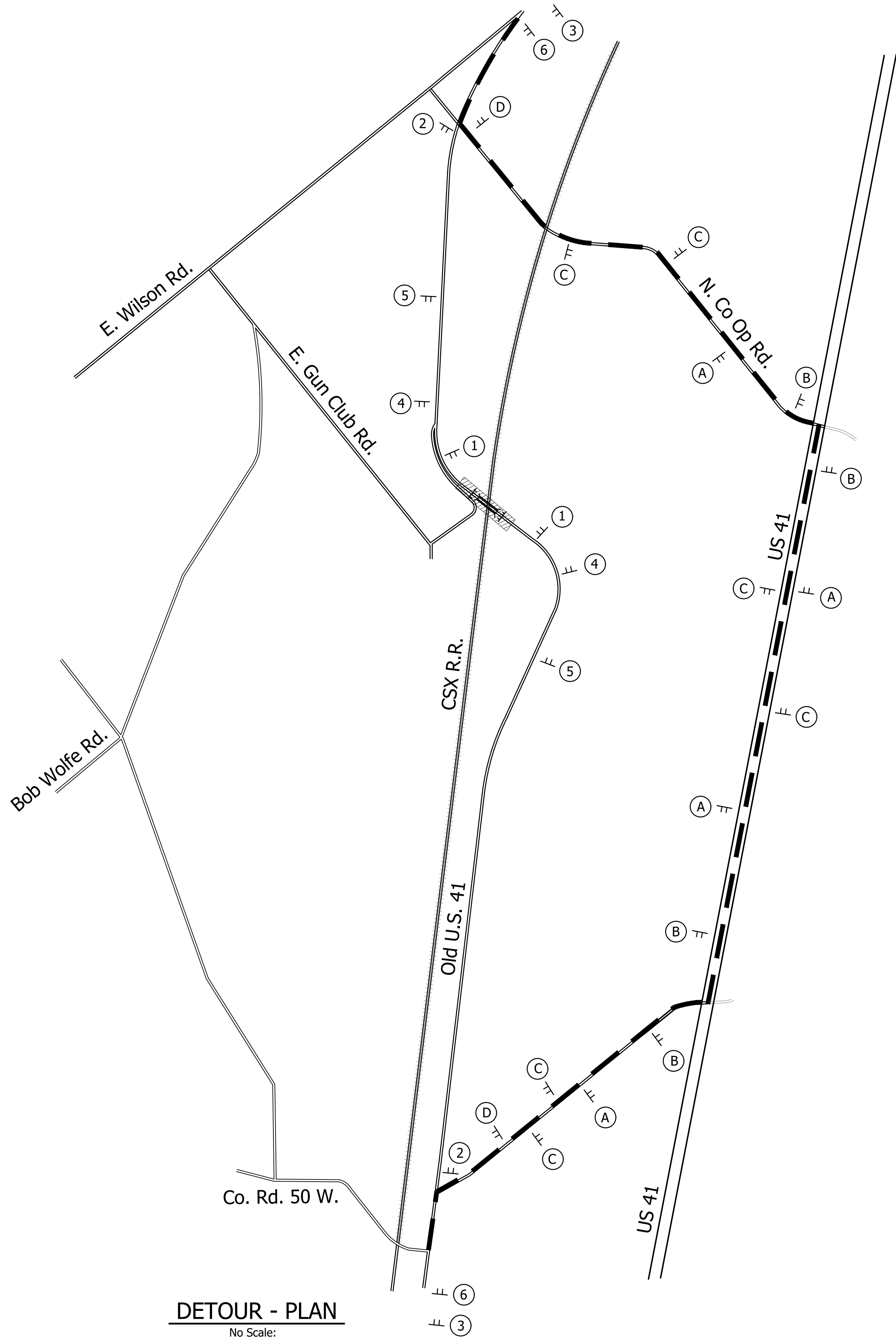
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INDIANA
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTION
OLD US 41 OVER CSX RAILROAD

HORIZONTAL SCALE	BRIDGE FILE
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File Name: P:\C3D\17-218\Bridge\Drawg\Plans\Route Detour.dwg Plot Date: 9/25/2019 Plotted By: Rich Jones



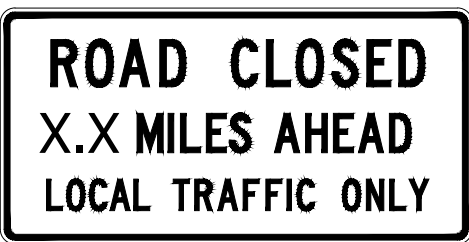
DETOUR - PLAN
No Scale:

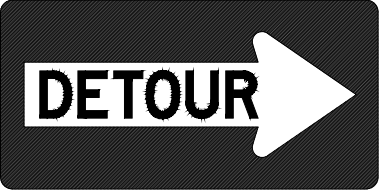
CONSTRUCTION SIGN SUMMARY	
TYPE	QUANTITY
Construction Sign, A	10 Ea.
Barricade, III-A	48 Lft.
Barricade, III-B	48 Lft.
Road Closure Sign Assembly	4 Ea.
Detour Route Marker Assembly	17 Ea.

LEGEND

- ① Type III-A Barricade and Road Closure Sign Assembly (with R11-2)
- ② Type III-B Barricade and Road Closure Sign Assembly (with R11-3, XM 4-10)
- ③ XW20-3 (Road Closed Ahead)
- ④ XW20-3 (Road Closed, 500')
- ⑤ XW20-3 (Road Closed, 1000')
- ⑥ XW20-2 (Detour Ahead)
- Construction Area

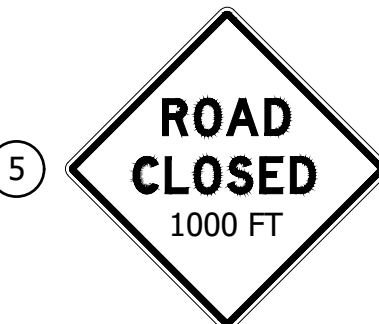
①  (R11-2)

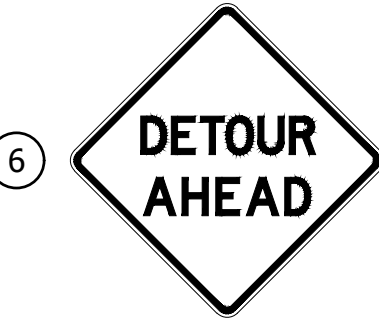
②  (R11-3)

 (XM4-10)

③  (XW20-3)

④  (XW20-3)

⑤  (XW20-3)

⑥  (XW20-2)

- NOTES:
- For detour route marker assemblies (A), (B), (C) and (D) see Std. Dwg. E-801-TCDT-04.
 - "Road Closure Notice" Signs (XG 20-5) to be placed as directed by the engineer prior to construction.



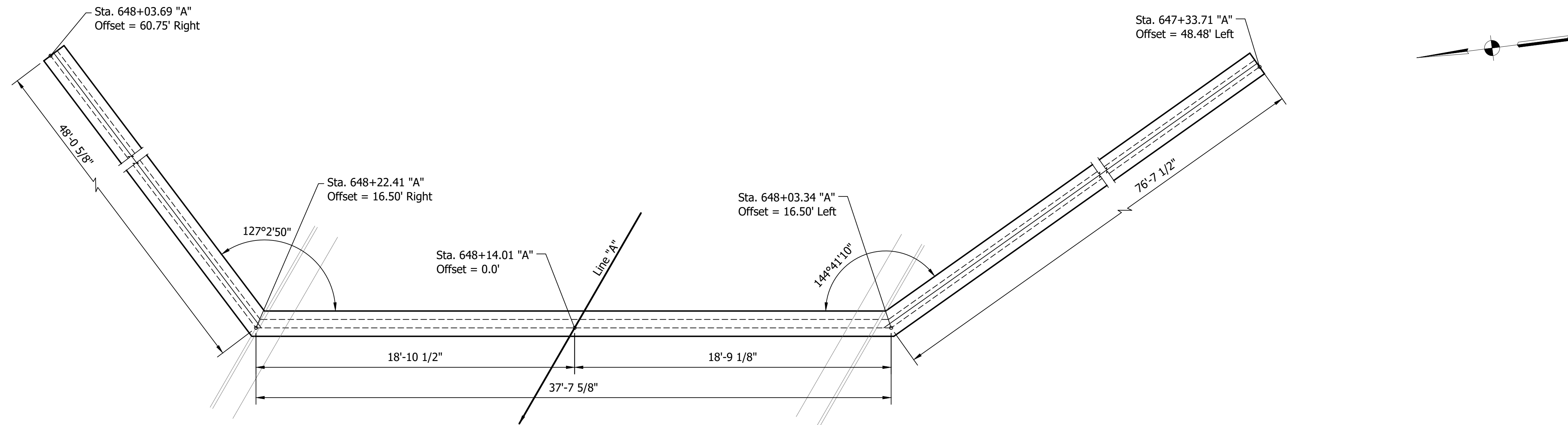
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DESIGN ENGINEER _____ DATE _____	
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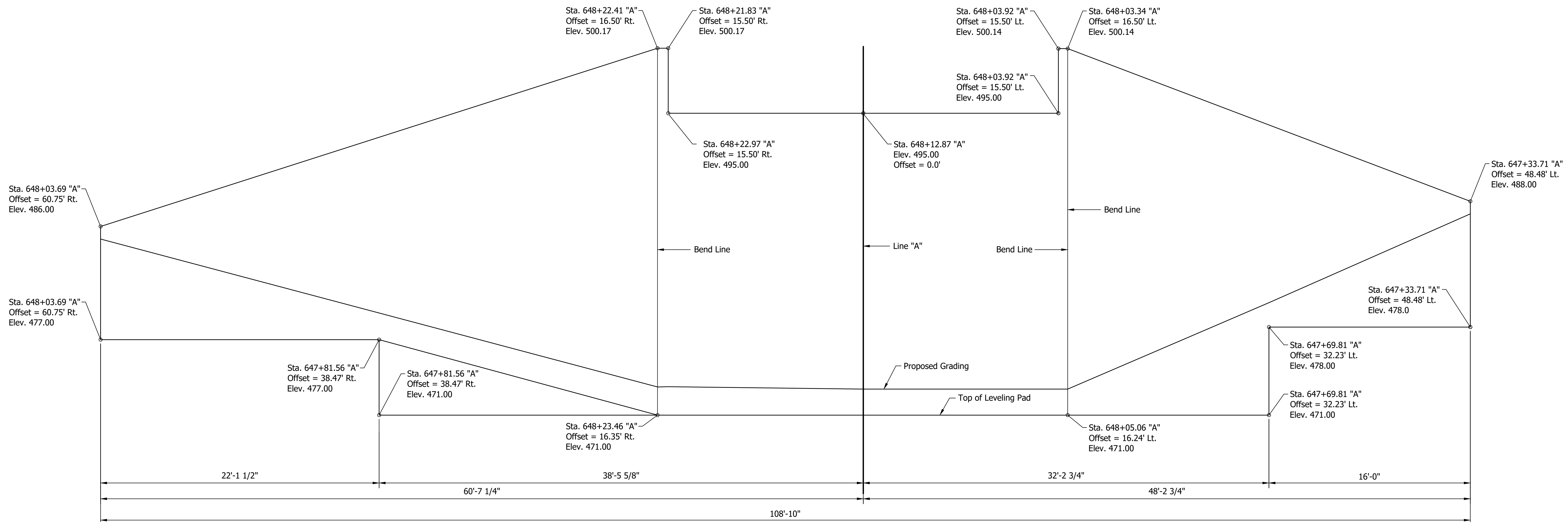
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DETOUR ROUTE
OLD US 41 OVER CSX RAILROAD

HORIZONTAL SCALE	BRIDGE FILE		
AS NOTED	KNOX COUNTY #382		
VERTICAL SCALE	DESIGNATION		
AS NOTED	1600892		
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PLAN - MSE WALL BENT No. 1
Scale: 1/4" = 1'-0"



ELEVATION - MSE WALL BENT No. 1
Scale: 1/4" = 1'-0"

File Name: P:\CDD\17-218\Bridges\Drawings\Plans\MSE Walls.dwg Plot Date: 9/25/2019 Plotted By: Rich Jones

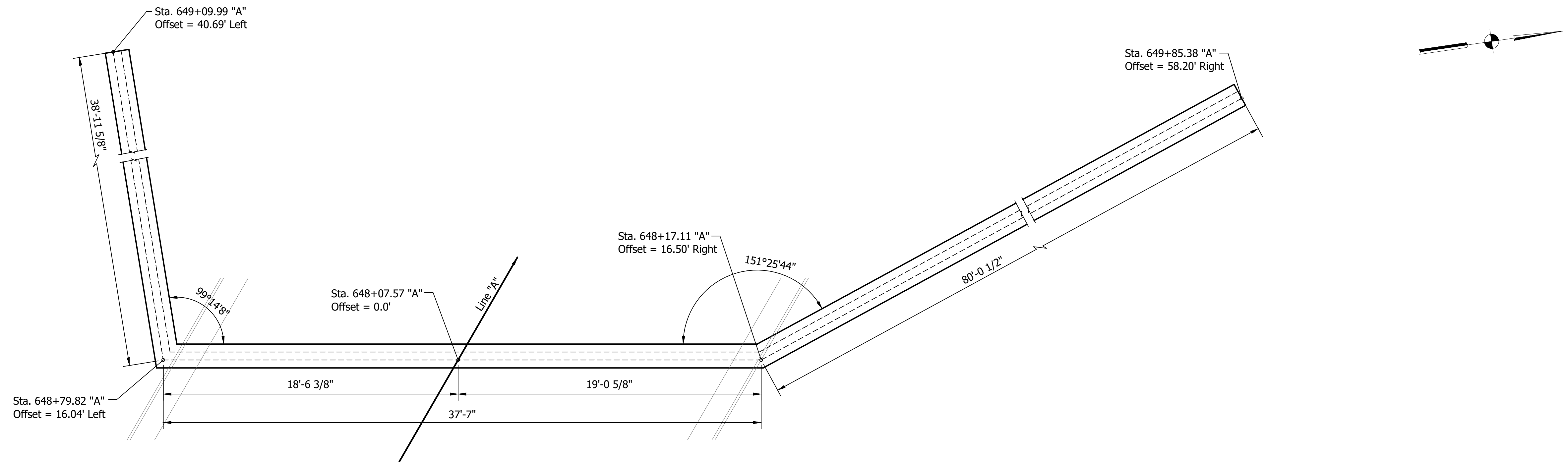


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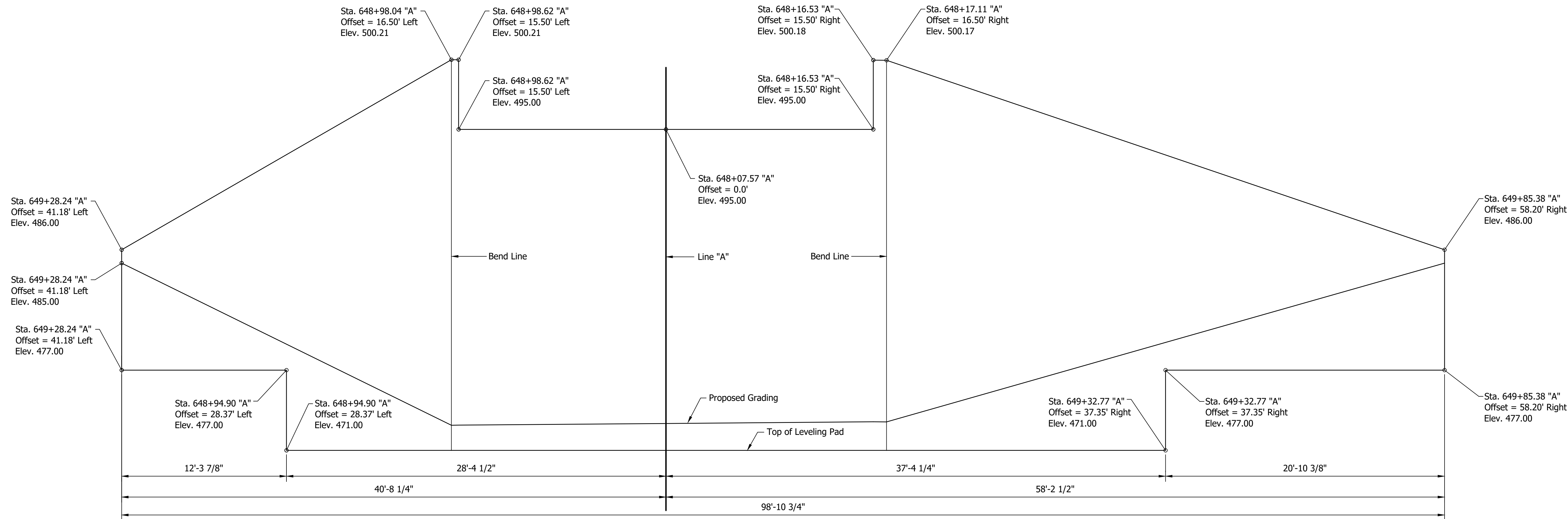
INDIANA DEPARTMENT OF TRANSPORTATION	
MSE WALL DETAILS OLD US 41 OVER CSX RAILROAD	

HORIZONTAL SCALE 1" = 30'	BRIDGE FILE KNOX COUNTY #382
VERTICAL SCALE 1" = 10'	DESIGNATION 1600892
SURVEY BOOK ---	SHEETS 5 of 18
CONTRACT B-39839	PROJECT 1600892



PLAN - MSE WALL BENT No. 2

Scale: 1/4" = 1'-0"



ELEVATION - MSE WALL BENT No. 2

Scale: 1/4" = 1'-0"



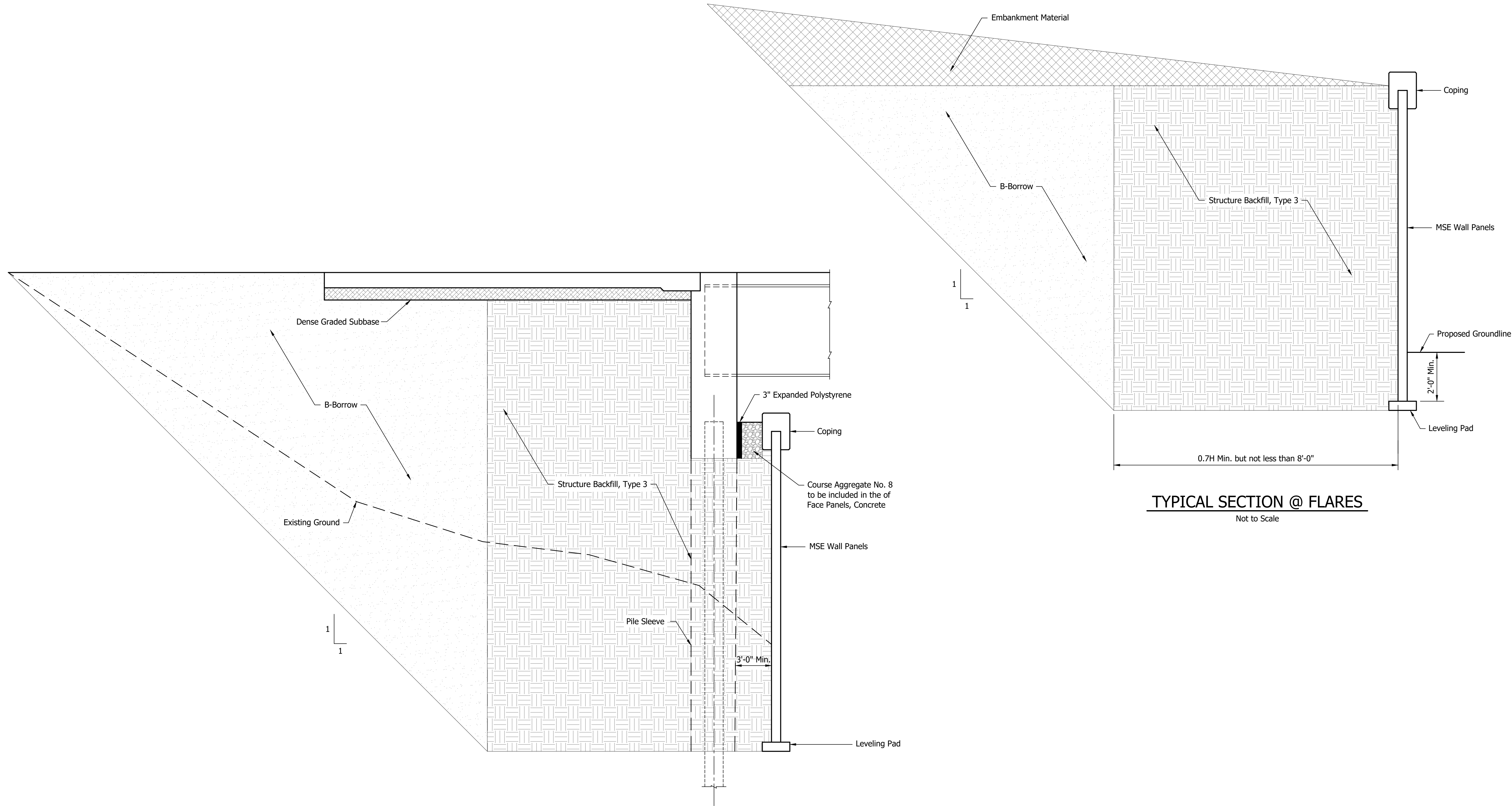
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MSE WALL DETAILS
OLD US 41 OVER CSX RAILROAD

HORIZONTAL SCALE	BRIDGE FILE		
1" = 30'	KNOX COUNTY #382		
VERTICAL SCALE	DESIGNATION		
1" = 10'	1600892		
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TYPICAL SECTION @ BRIDGES
Not to Scale

TYPICAL SECTION @ FLARES
Not to Scale

NOTES:
All stations, offsets & dimensions are measured to the front face of wall.
For Additional MSE Wall details, see sheets 5-6.



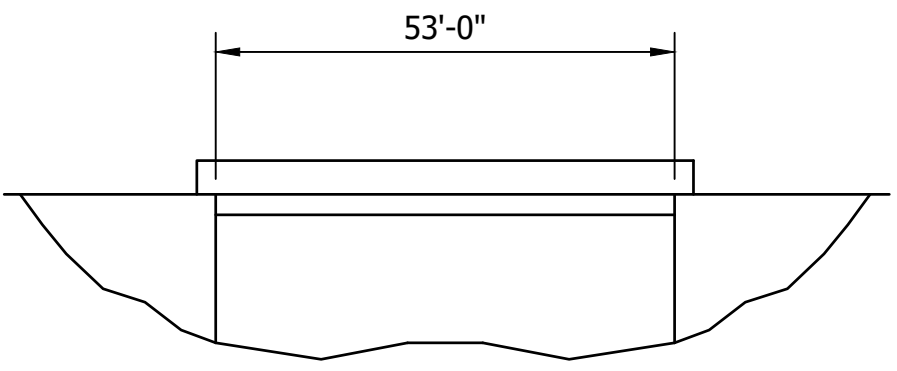
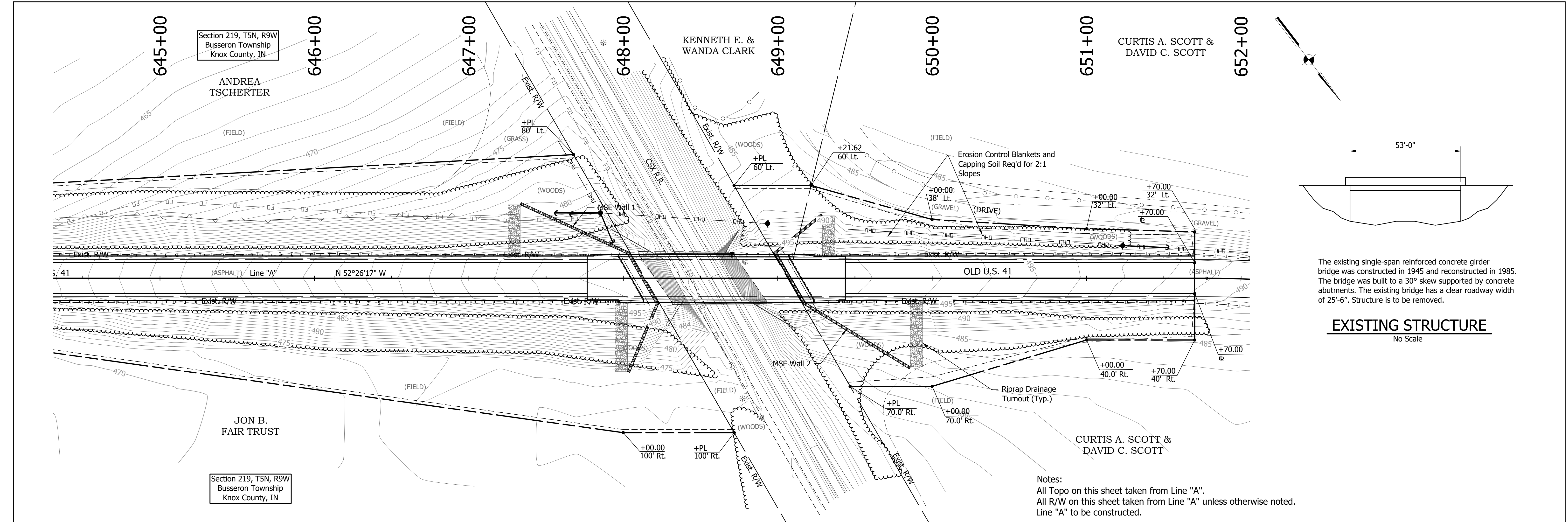
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MSE WALL DETAILS
OLD US 41 OVER CSX RAILROAD

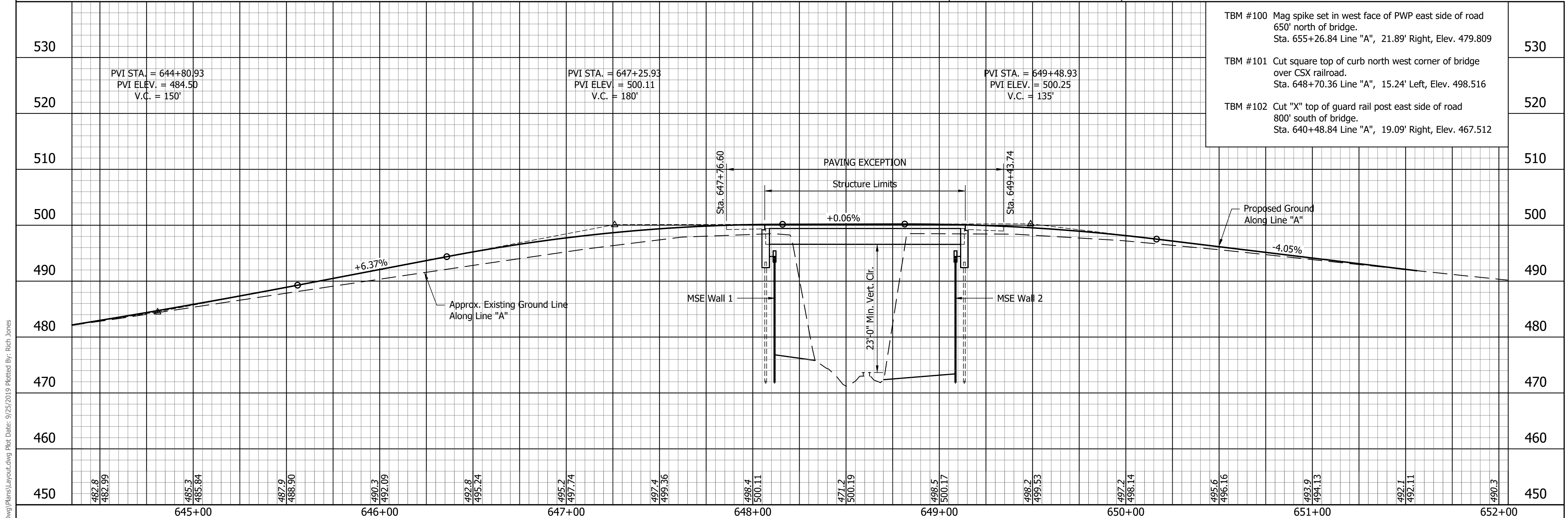
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VERTICAL SCALE 1" = 10'	DESIGNATION 1600892		
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The existing single-span reinforced concrete girder bridge was constructed in 1945 and reconstructed in 1985. The bridge was built to a 30° skew supported by concrete abutments. The existing bridge has a clear roadway width of 25'-6". Structure is to be removed.

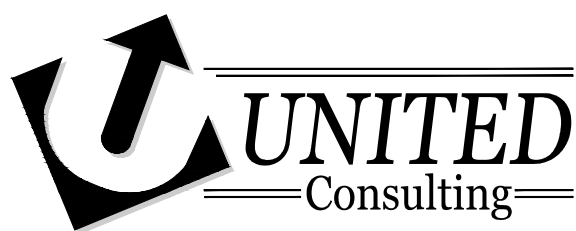
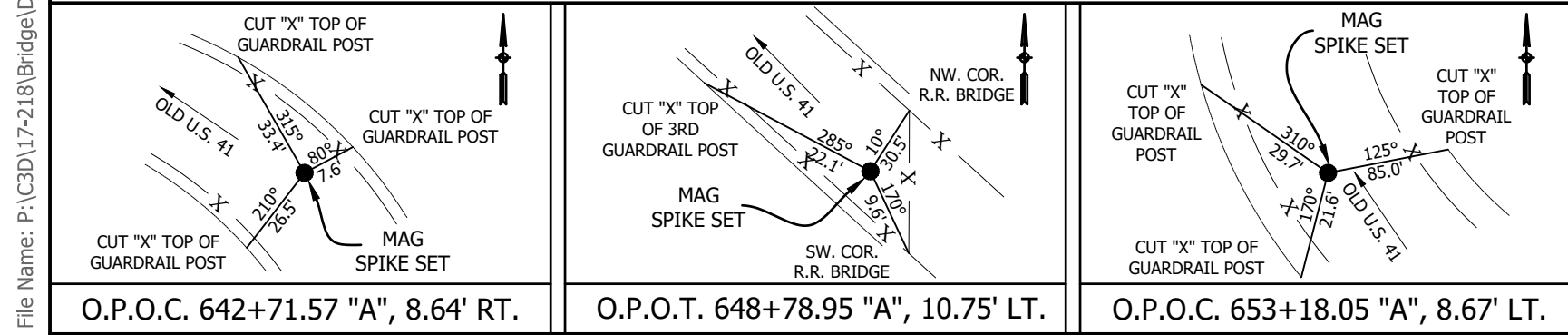
EXISTING STRUCTURE
No Scale

Notes:
All Topo on this sheet taken from Line "A".
All R/W on this sheet taken from Line "A" unless otherwise noted.
Line "A" to be constructed.



- TBM #100 Mag spike set in west face of PWP east side of road 650' north of bridge. Sta. 655+26.84 Line "A", 21.89' Right, Elev. 479.809
- TBM #101 Cut square top of curb north west corner of bridge over CSX railroad. Sta. 648+70.36 Line "A", 15.24' Left, Elev. 498.516
- TBM #102 Cut "X" top of guard rail post east side of road 800' south of bridge. Sta. 640+48.84 Line "A", 19.09' Right, Elev. 467.512

COMPOSITE
HYBRID BULB-TEE BEAM BRIDGE
SINGLE SPAN: 106'-6"
SKEW: 30° LEFT
CLEAR ROADWAY: 28'-0"
OLD U.S. 41 OVER CSX RAILROAD
KNOX COUNTY



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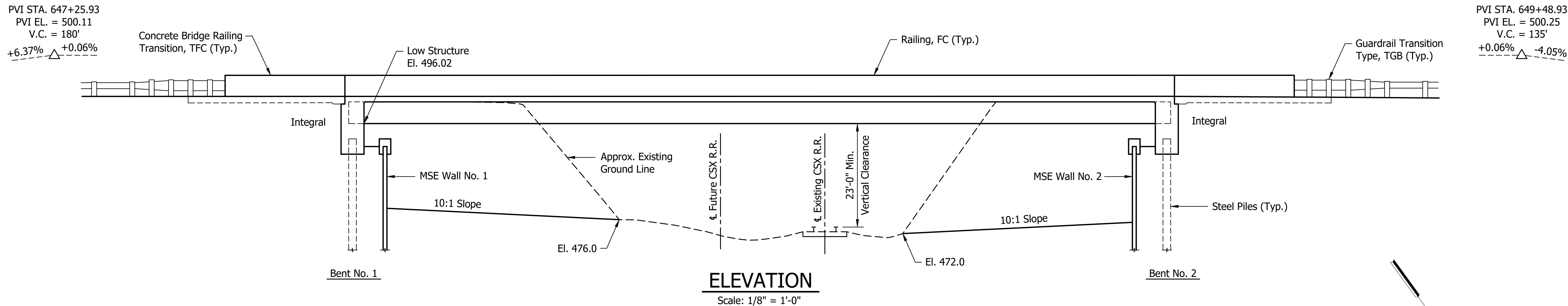
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DESIGN ENGINEER	DATE
DESIGNED: AIB	DRAWN: DJZ
CHECKED: JDG	CHECKED: JDG

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DEPARTMENT OF TRANSPORTATION

LAYOUT
OLD US 41 OVER CSX RAILROAD

HORIZONTAL SCALE 1" = 30'	BRIDGE FILE KNOX COUNTY #382
VERTICAL SCALE 1" = 10'	DESIGNATION 1600892
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File Name: P:\C3D\17-218\Bridge\Drawings\General Plan.dwg Plot Date: 9/25/2019 Plotted By: Rich Jones



GENERAL NOTES

Reinforcing steel covering shall be 2 1/2" in top and 1" min. in bottom of floor slabs, and 2" required in all other parts unless noted.

Surface seal all exposed surfaces of bents, wingwalls, top of bridge deck, face of deck coping and underside of deck from coping to exterior beam face. (Estimated Quantity = XX Sys.)

Chamfer Exposed Edges 1" Unless Noted.

DESIGN DATA

Live Load:

Superstructure and Substructure designed for HL-93 Loading, in accordance with the AASHTO LRFD Bridge Design Specifications, Sixth Edition, 2012, and its Subsequent Interims.

Dead Load:

Actual loads plus 35 psf allowance for future wearing surfaces and additional 15 psf for permanent metal forms.

Floor slab designed with a 7.5 inch structural depth and a 0.5 in integral wearing surface.

CONSTRUCTION LOADING

The exterior girder has been checked for strength, deflection, and overturning using the construction loads shown below. Cantilever overhanging brackets were assumed for support of the deck overhanging past the edge of the exterior girder. The finishing machine was assumed to be supported 6 in. past the outside of the vertical coping form. The top overhanging brackets were assumed to be located 6 in. past the edge of the vertical coping form. The bottom overhanging brackets were assumed to be braced against the intersection of the girder bottom flange and web.

Deck Falsework Loads: Designed for 15 lb/ft² for permanent metal stay-in-place deck forms, removable deck forms, and 2-ft exterior walkway

Construction Live Load: Designed for 20 lb/ft² extending 2-ft past the edge of coping and 75 lb/ft vertical force applied at a distance of 6 in. outside the face of coping over a 30-ft length of the deck centered with the finishing machine

Finishing-Machine Load: 4500 lb distributed over 10 ft along the coping

Wind Load: Designed for 70 mph horizontal wind loading in accordance with LRFD 3.8.1

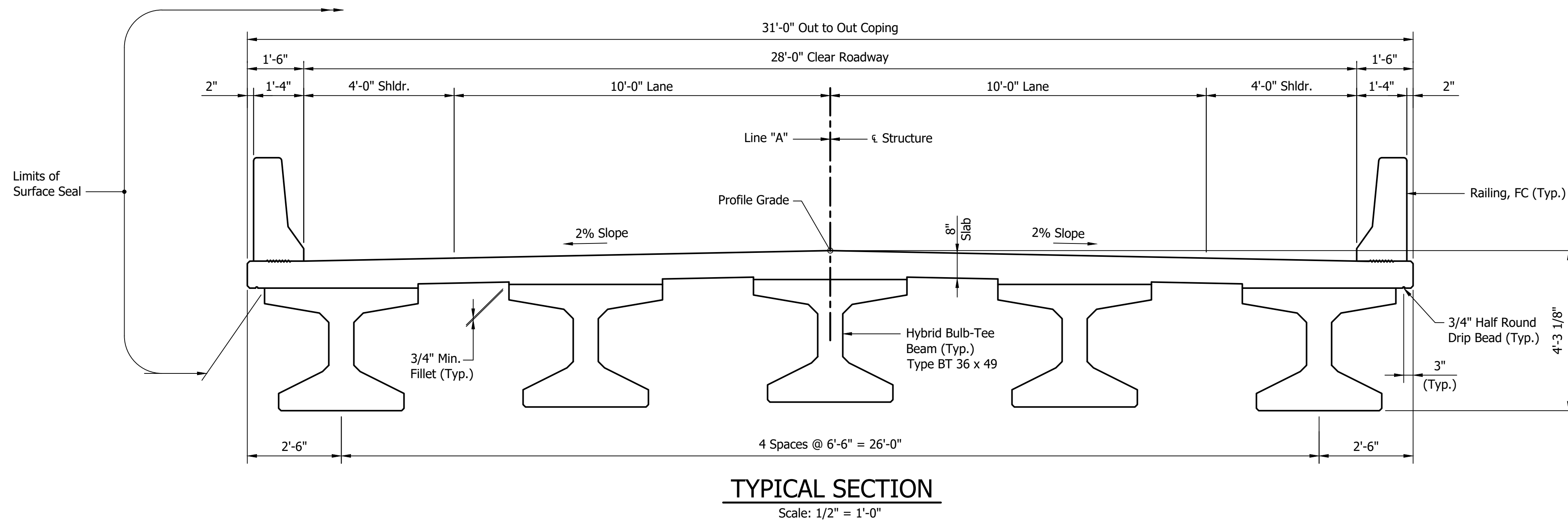
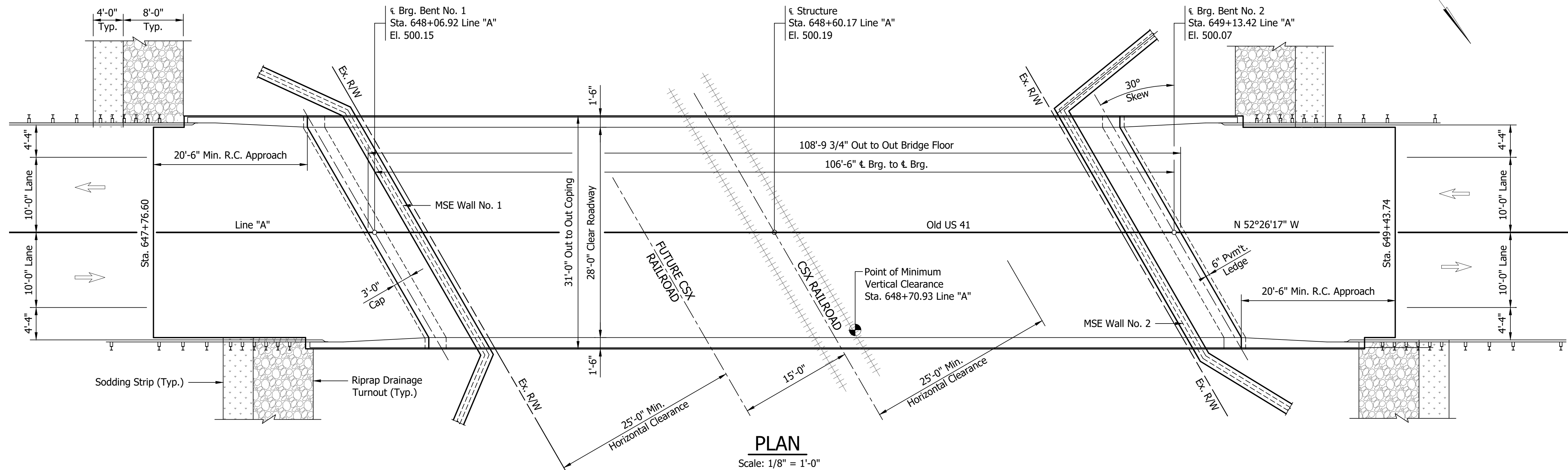
SEISMIC DESIGN DATA

Seismic Performance Zone TBD
Acceleration Coefficient = TBD
Seismic Soil Profile Type Site Class TBD

UNIT STRESSES

Class "A" Concrete $f'_c = 3,500$ p.s.i.
Class "B" Concrete $f'_c = 3,000$ p.s.i.
Class "C" Concrete $f'_c = 4,000$ p.s.i.
Reinforcing Steel (Grade 60) $f_y = 60,000$ p.s.i.

**CONTINUOUS COMPOSITE
HYBRID BULB-TEE BEAM BRIDGE
SINGLE SPAN: 106'-6"
SKEW: 30° LEFT
CLEAR ROADWAY: 28'-0"
OLD U.S. 41 OVER CSX RAILROAD
KNOX COUNTY**



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RECOMMENDED
FOR APPROVAL

DESIGN ENGINEER DATE

DESIGNED: AIB

DRAWN: DJZ

CHECKED: JDG

CHECKED: JDG

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DEPARTMENT OF TRANSPORTATION

GENERAL PLAN
OLD US 41 OVER CSX RAILROAD

HORIZONTAL SCALE	BRIDGE FILE
AS NOTED	KNOX COUNTY #382
VERTICAL SCALE	DESIGNATION
AS NOTED	1600892
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SUMMARY OF BRIDGE QUANTITIES

[illegible]

** ESTIMATED QUANTITY



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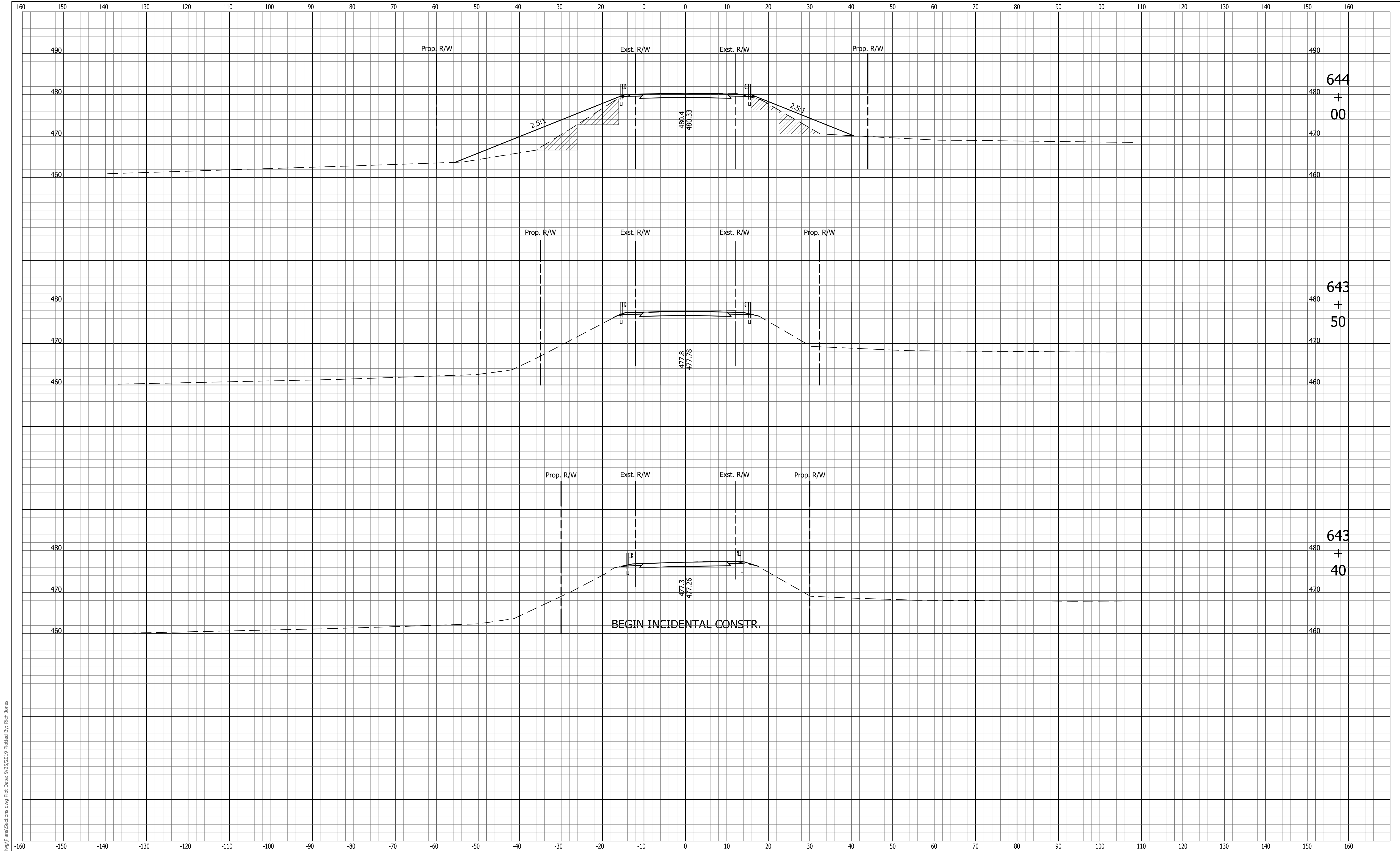
RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
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DESIGNED: AIB	DRAWN: DJZ
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BRIDGE SUMMARY
OLD US 41 OVER CSX RAILROAD

HORIZONTAL SCALE		BRIDGE FILE	
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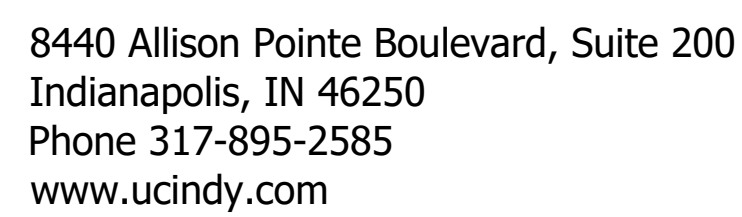
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CROSS SECTIONS LINE "A"
OLD US 41 OVER CSX RAILROAD

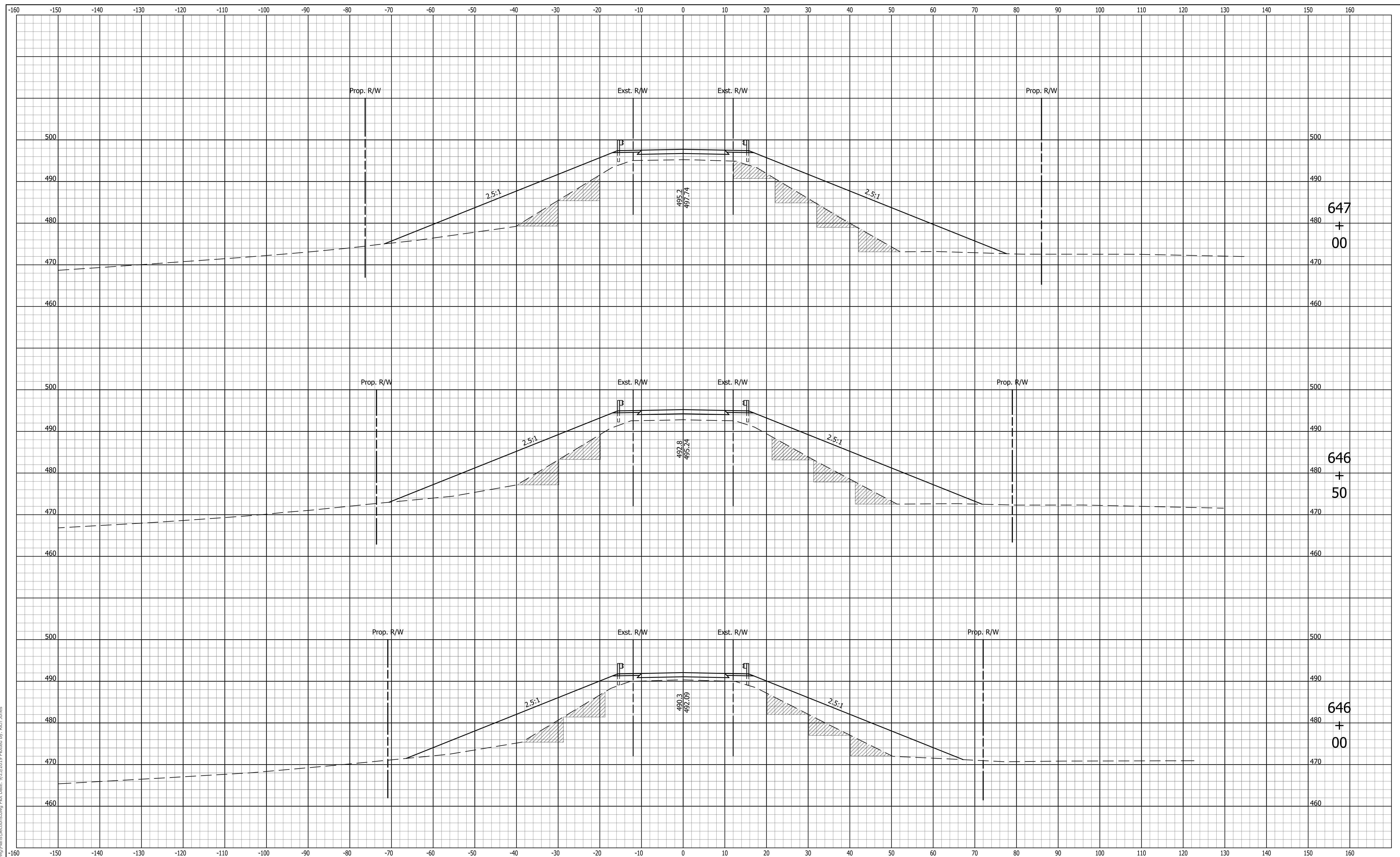
HORIZONTAL SCALE 1" = 10'	BRIDGE FILE KNOX COUNTY #382		
VERTICAL SCALE 1" = 10'	DESIGNATION 1600892		
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CROSS SECTIONS LINE "A"
OLD US 41 OVER CSX RAILROAD

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1" = 10'		1600892	
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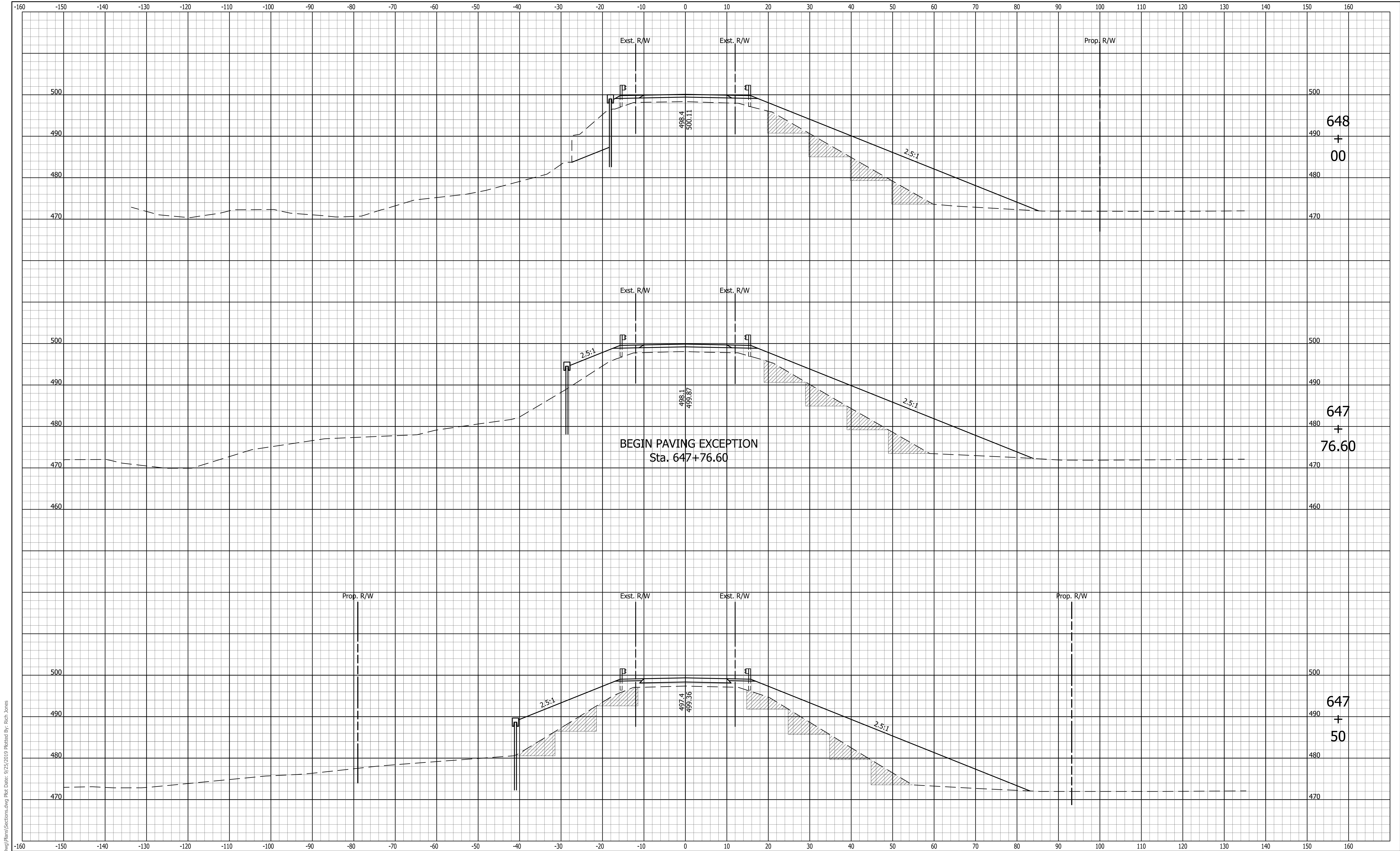
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CROSS SECTIONS LINE "A"
OLD US 41 OVER CSX RAILROAD

HORIZONTAL SCALE		BRIDGE FILE	
1" = 10'		KNOX COUNTY #382	
VERTICAL SCALE		DESIGNATION	
1" = 10'		1600892	
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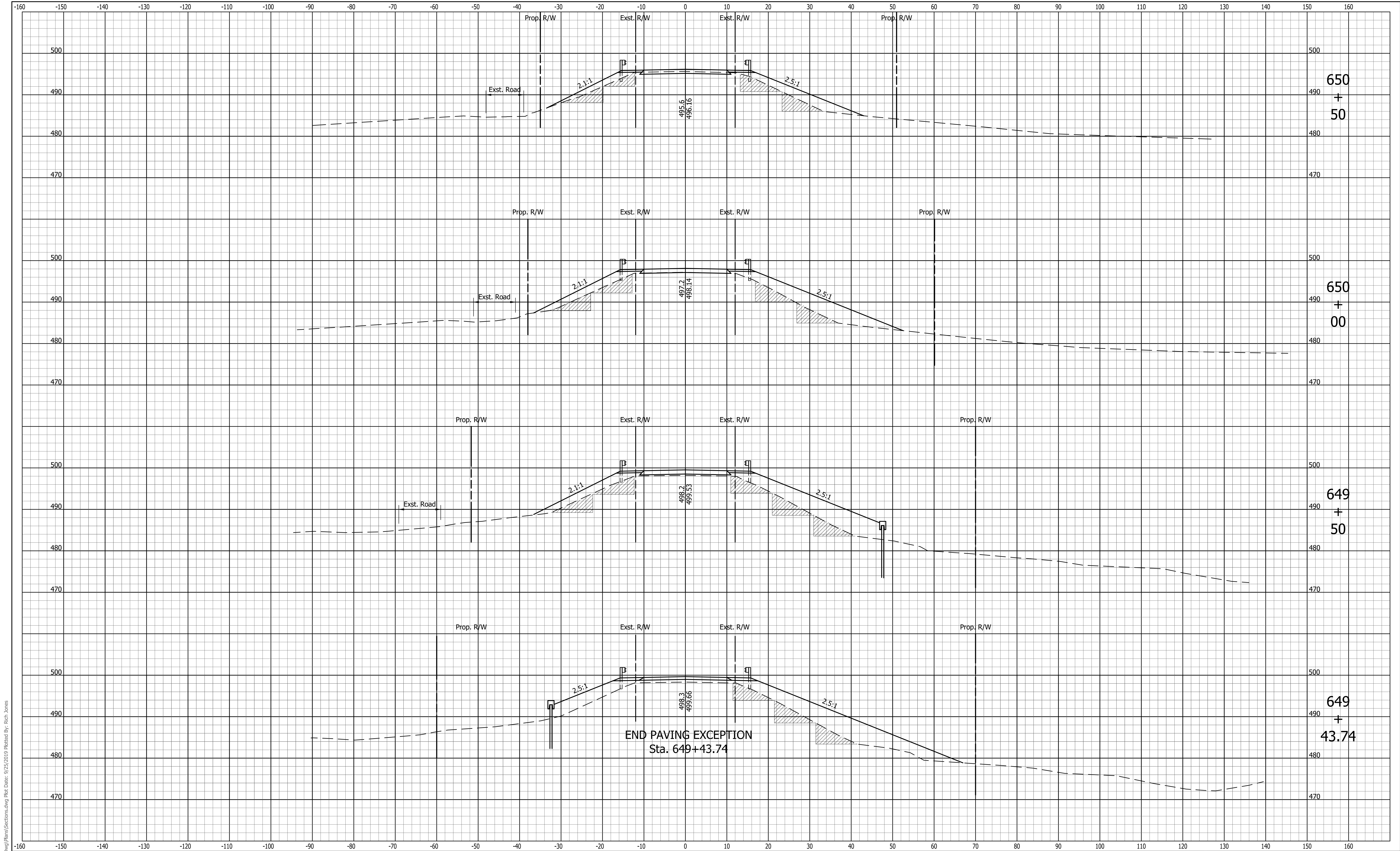
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DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS LINE "A"
OLD US 41 OVER CSX RAILROAD

HORIZONTAL SCALE 1" = 10'	BRIDGE FILE KNOX COUNTY #382		
VERTICAL SCALE 1" = 10'	DESIGNATION 1600892		
SURVEY BOOK ----	16	of	18
CONTRACT B-39839	PROJECT 1600892		



File Name: P:\CDD\17-218 Bridge\Drawings\Sections.dwg Plot Date: 9/25/2019 Plotted By: Rich Jones



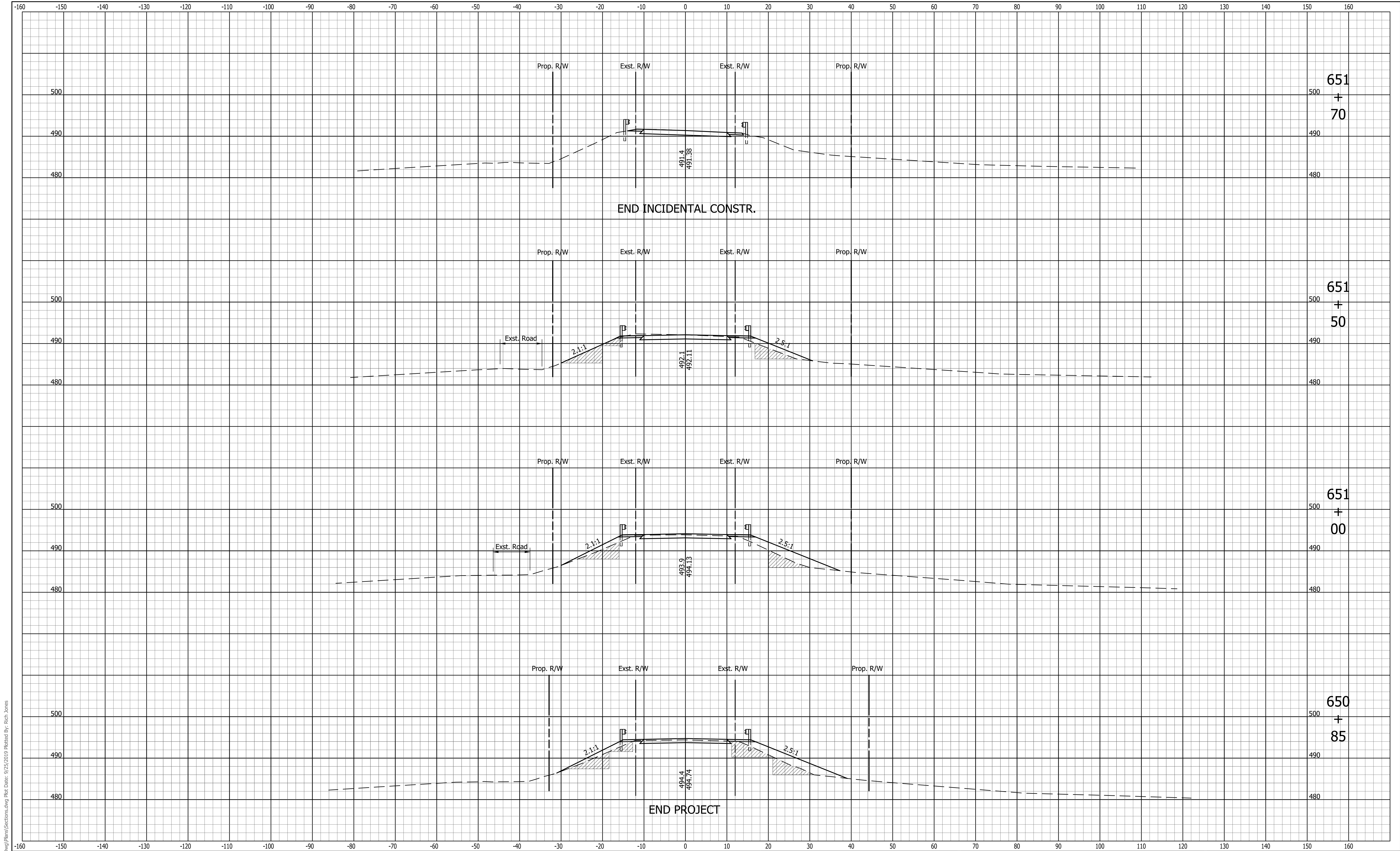
8440 Allison Pointe Boulevard, Suite 200
Indianapolis, IN 46250
Phone 317-895-2585
www.ucindy.com

DESIGNED: AIB
DRAWN: DJZ
CHECKED: JDG
CHECKED: JDG

INDIANA
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS LINE "A"
OLD US 41 OVER CSX RAILROAD

HORIZONTAL SCALE 1" = 10'	BRIDGE FILE KNOX COUNTY #382		
VERTICAL SCALE 1" = 10'	DESIGNATION 1600892		
SURVEY BOOK ---	17	of	18
CONTRACT B-39839	PROJECT 1600892		



File Name: P:\CDD\17-218 Bridge\Drawings\Plans\Sections.dwg Plot Date: 9/25/2019 Plotted By: Rich Jones



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CROSS SECTIONS LINE "A"
OLD US 41 OVER CSX RAILROAD

HORIZONTAL SCALE 1" = 10'	BRIDGE FILE KNOX COUNTY #382
VERTICAL SCALE 1" = 10'	DESIGNATION 1600892
SURVEY BOOK ----	SHEETS 18 of 18
CONTRACT B-39839	PROJECT 1600892