

INDEX OF SHEETS

SHEET NO. DESCRIPTION

01-16-2026 LETTING ITEM 213

1. COVER SHEET
2. TYPICAL SECTIONS AND DETAILS
3. SUMMARY OF QUANTITIES AND GENERAL NOTES
4. SCHEDULES OF QUANTITIES
5. PLAN AND PROFILE
6. INTERSECTION DETAILS
- 7-20. BRIDGE PLANS
- 21-27. STATION CROSS SECTIONS

HIGHWAY STANDARDS:

- | | |
|-----------|---|
| 000001-09 | STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS |
| 001001-02 | AREAS OF REINFORCEMENT BARS |
| 280001-07 | TEMPORARY EROSION CONTROL SYSTEMS |
| 515001-04 | NAME PLATE FOR BRIDGES |
| 542401-04 | METAL FLARED END SECTION FOR PIPE CULVERTS |
| 601001-05 | PIPE UNDERDRAINS |
| 601101-02 | CONCRETE HEADWALL FOR PIPE UNDERDRAINS |
| 701006-05 | OFF-RD OPERATIONS, 2L, 2W, 15' TO 24" FROM PAVEMENT EDGE |
| 701301-04 | LANE CLOSURE, 2L, 2W, SHORT TIME OPERATIONS |
| 701901-11 | TRAFFIC CONTROL DEVICES |
| 725001-01 | OBJECT AND TERMINAL MARKERS |
| BLR 21-9 | TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS |

UTILITIES

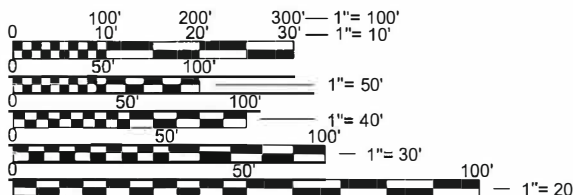
AMEREN IP
81824 KNOX HIGHWAY 9
GALESBURG, IL 61401

FRONTIER COMMUNICATIONS
214 S. 1ST STREET
MONMOUTH, IL 61462

WARNING



CALL 811
BEFORE YOU DIG
DIG NO: A1713442



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

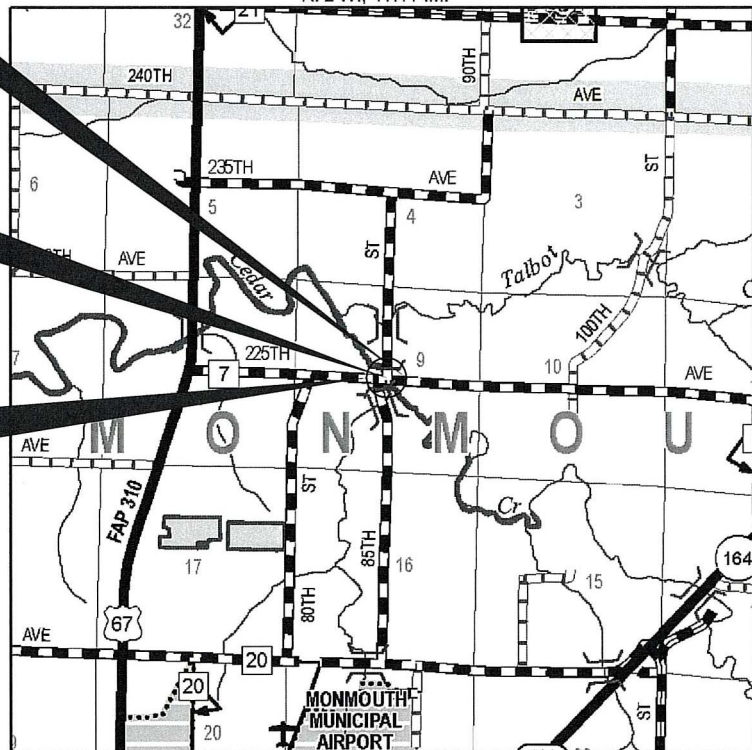
STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED BRIDGE REPLACEMENT Illinois Special Bridge Funding Program LOCAL PROJECT FUNDING PROGRAM COUNTY HIGHWAY 7 (225TH AVENUE) PROPOSED STRUCTURE NO. 094-3041 SECTION 17-00138-00-BR PROJECT RJCZ(314) WARREN COUNTY C-94-048-20

IMPROVEMENT ENDS
STATION 11+50

STA. 9+94
STEEL PLATE GIRDER BRIDGE WITH CONCRETE DECK
SINGLE SPAN AT 100'-0"
28'-0" RDWY.; SKEW = 0°
EXISTING STRUCTURE NO. 094-3014
PROPOSED STRUCTURE NO. 094-3041

IMPROVEMENT BEGINS
STATION 8+00



LOCATION MAP

APPROXIMATE SCALE: 0 1/2 MILE
GROSS LENGTH OF SECTION = 350 FEET = 0.066 MILES
NET LENGTH OF SECTION = 350 FEET = 0.066 MILES
FUNCTIONAL CLASSIFICATION: LOCAL ROAD (NON-URBAN)
DESIGN SPEED = 30 MPH
DESIGN TRAFFIC = 125 ADT
3R DESIGN GUIDELINES ARE USED

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
C.H. 7	17-00138-00-BR	WARREN	27	1
FED. ROAD DIST. NO. 7		ILLINOIS	CONTRACT NO. 89781	



LOCATION OF SECTION INDICATED THUS: —

ILLINOIS DEPARTMENT OF TRANSPORTATION

APPROVED Nov. 6 2025

COUNTY ENGINEER

PASSED 11-07 2025

Releasing For
Bid Based on
Limited Review

DISTRICT FOUR ENGINEER OF
LOCAL ROADS & STREETS

1107 2025

Kensil A. Garnett
REGION THREE ENGINEER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DATE: 11/06/2025



HAMPTON, LENZINI AND RENWICK, INC.
CIVIL ENGINEERS • STRUCTURAL ENGINEERS • LAND SURVEYORS
3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
217.546.3400 www.hlrengineering.com

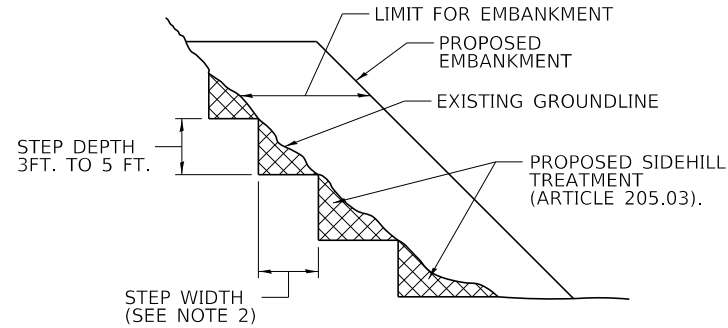
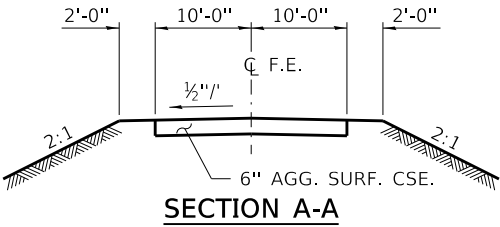
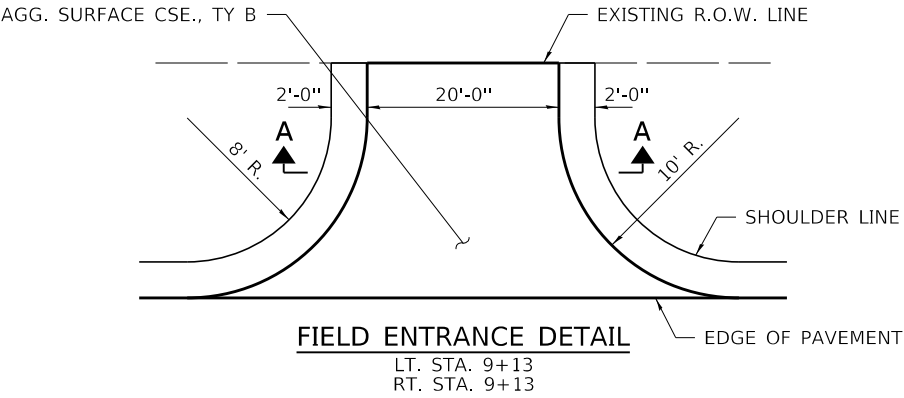
184.000558
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION

EXPIRES: 11/30/2027

PROJECT NUMBER: 18.0028.130

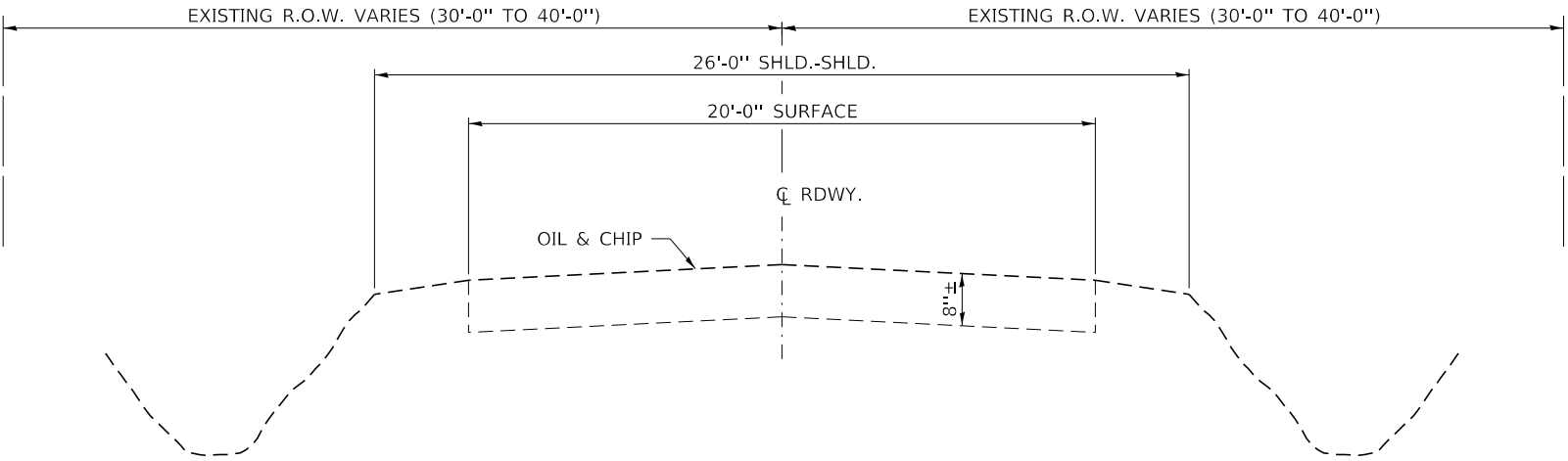
DATE: 11/06/2025

CONTRACT NO. 89781 CATALOG NO. 036020-00D PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

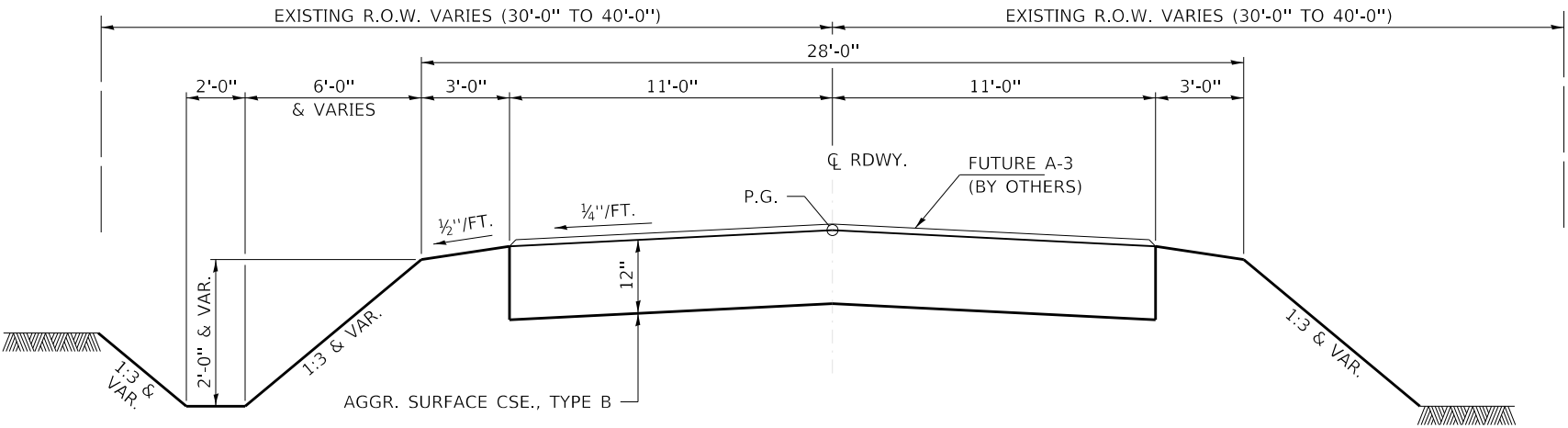


- GENERAL NOTES**
- SLOPE STEPS WILL BE REQUIRED FOR ALL 12(300) MINIMUM THICKNESS "SLIVER FILLS" AND ON ALL FILLS WITH A HEIGHT OF 10 FEET OR GREATER.
 - THE STEP WIDTH SHALL BE TWICE THE STEP DEPTH BUT NOT LESS THAN 6 FEET.
 - REFER TO ARTICLE 205.03 FOR EMBANKMENT TO BE CONSTRUCTED ON HILLSIDE OR SLOPES, OR IF EXISTING EMBANKMENTS ARE TO BE WIDENED.
-  STANDARD EMBANKMENT (IN ACCORDANCE WITH 205 OF THE STANDARD SPECIFICATION).

SLOPE STEPS DETAIL
TYPICAL CROSS-SECTION EMBANKMENT
CONSTRUCTION ON SIDEHILL



EXISTING TYPICAL CROSS SECTION
STA. 8+00 TO STA. 11+50



PROPOSED TYPICAL CROSS SECTION
STA. 8+00 TO STA. 11+50 (COUNTY HIGHWAY 7)
STA. 8+46 RT. & STA. 11+00 LT. (85TH STREET)

TRANSITIONS FROM THE PROPOSED SHOULDER TO THE EXISTING SHOULDER ARE TO BE CONSTRUCTED FROM STA. 8+00 TO STA. 8+50 AND STA. 11+25 TO STA. 11+50. SEE SHEET 7 FOR TRANSITION AT BRIDGE.

SUGGESTED FILL SECTION
CONSTRUCT AS SHOWN IN
STATION CROSS SECTIONS

FILE NAME = 180028-shit-typsec@ons.dgn		USER NAME = smierzwa	DESIGNED - J.W.F.	REVISED -	STATE OF ILLINOIS WARREN COUNTY HIGHWAY DEPARTMENT	TYPICAL CROSS SECTIONS AND DETAILS					C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959 		DRAWN - R.D.H.	REVISED -	7							17-00138-00-BR	WARREN	27	2	
PLOT SCALE = \$SCALE\$		CHECKED - S.W.M.	REVISED -	SAWMILL BRIDGE		CONTRACT NO. 89781									
PLOT DATE = 10/30/2025		DATE = 04/09/2025	REVISED -	SCALE: NONE		SHEET NO. 1 OF 1 SHEETS		STA. 8+00 TO STA. 11+50							
								ILLINOIS FED. AID PROJECT RJCZ(314)							

SUMMARY OF QUANTITIES			
CODE NO.	ITEM	CONSTRUCTION TYPE CODE 0010	
		UNIT	TOTAL QUANTITY
* 20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	100
* 20100210	TREE REMOVAL (OVER 15 UNITS DIAMETER)	UNIT	100
20200100	EARTH EXCAVATION	CU YD	550
20300100	CHANNEL EXCAVATION	CU YD	490
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	200
28000305	TEMPORARY DITCH CHECKS	FOOT	24
28000400	PERIMETER EROSION BARRIER	FOOT	390
28000500	INLET AND PIPE PROTECTION	EACH	3
28100809	STONE DUMPED RIPRAP, CLASS A5	TON	1,102
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	650
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50200100	STRUCTURE EXCAVATION	CU YD	175
50300225	CONCRETE STRUCTURES	CU YD	35.9
50300255	CONCRETE SUPERSTRUCTURE	CU YD	109.3
50300260	BRIDGE DECK GROOVING	SQ YD	300
50300300	PROTECTIVE COAT	SQ YD	393
50500105	FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	1
50500505	STUD SHEAR CONNECTORS	EACH	1,515
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	28,340
* 50900205	STEEL RAILING, TYPE S1	FOOT	204
51201610	FURNISHING STEEL PILES HP12X63	FOOT	175
51202305	DRIVING PILES	FOOT	100
51203610	TEST PILE STEEL HP12X63	EACH	1
51204650	PILE SHOES	EACH	5
51265002	DRILLING AND SETTING PILES (IN ROCK)	CU FT	78.5
51500100	NAME PLATES	EACH	1
52100520	ANCHOR BOLTS, 1"	EACH	20
54262718	METAL FLARED END SECTIONS 18"	EACH	6
542D0223	PIPE CULVERTS, CLASS D, TYPE 1 18"	FOOT	172
58600101	GRANULAR BACKFILL FOR STRUCTURES	CU YD	135
* SPECIALTY ITEM			

SUMMARY OF QUANTITIES			
CODE NO.	ITEM	CONSTRUCTION TYPE CODE 0010	
		UNIT	TOTAL QUANTITY
59100100	GEOCOMPOSITE WALL DRAIN	SQ YD	65
60146304	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	124
63200310	GUARDRAIL REMOVAL	FOOT	28
67100100	MOBILIZATION	L SUM	1
* 72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.25
X5080530	BAR TERMINATORS	EACH	284
X7010216	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	L SUM	1
Z0013798	CONSTRUCTION LAYOUT	L SUM	1

* SPECIALTY ITEM

GENERAL NOTES

- 1) ALL CLEARING, GRUBBING, FENCE REMOVAL, PAVEMENT REMOVAL, AND REMOVAL OF EXISTING DRAINAGE STRUCTURES SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION. ALL AGGREGATE AND BITUMINOUS PAVEMENT SHALL BE REMOVED AND PROPERLY DISPOSED OF BY THE CONTRACTOR IN A METHOD APPROVED BY THE ENGINEER. REMOVAL AND DISPOSAL OF PAVEMENT SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- 2) WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKS AND MONUMENTS UNTIL THE OWNER, AN AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.
- 3) ANY REFERENCE TO STANDARDS THROUGHOUT THE PLANS OR SPECIAL PROVISIONS SHALL BE INTERPRETED TO BE THE LATEST STANDARD OF THE DEPARTMENT.
- 4) THE LOCATION ON THE PLANS OF EXISTING DRAINAGE STRUCTURES, TELEPHONE LINES, ELECTRIC LINES, WATER SERVICE LINES, GAS MAINS, AND OTHER UTILITY FACILITIES AS SHOWN ON THE PLANS ARE BASED ON FIELD INVESTIGATIONS AND THE BEST INFORMATION AVAILABLE, BUT THE LOCATIONS ARE NOT GUARANTEED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN THEIR EXACT LOCATION FROM THE INDIVIDUAL UTILITY COMPANIES AND BY FIELD INSPECTION.
- 5) THE FOLLOWING RATES OF APPLICATION HAVE BEEN USED IN CALCULATING PLAN QUANTITIES
- | | |
|--------------------------|----------------|
| AGGREGATE SURFACE COURSE | 2.05 TON/CU YD |
| STONE RIPRAP | 1.75 TON/CU YD |
- 6) THE FINAL SURFACE OF ALL EMBANKMENT AREAS SHALL BE SEEDED. THE TOP 4 INCHES OF THE SEEDED AREAS SHALL BE TOPSOIL SUBJECT TO THE APPROVAL OF THE ENGINEER. THE COST OF SHAPING THE SLOPES AND PROVIDING TOP SOIL WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION.
- 7) THE AREA TO BE SEEDED SHALL CONSIST OF ALL DISTURBED EARTH SURFACES WITHIN THE RIGHT OF WAY OR AS DIRECTED BY THE ENGINEER.
- SEEDING, CLASS 2 (SPECIAL) = 0.25 ACRES
- 8) ALL WASTE MATERIAL FROM EXCAVATIONS SHALL BE DISPOSED OF BY THE CONTRACTOR. NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- 9) ALL ELEVATIONS SHOWN REFER TO U.S.G.S DATUM TO MEAN SEA LEVEL UNLESS OTHERWISE NOTED.
- 10) COMMITMENTS:
- 1) A BAT ASSESSMENT SHALL BE CONDUCTED IF WORK OCCURS TO EXISTING STRUCTURE AFTER DECEMBER 17, 2026

EARTHWORK SCHEDULE							
LOCATION	EARTH EXCAVATION	CHANNEL EXCAVATION	SHRINKAGE FACTOR	PERCENT USED	EXCAVATION ADJUSTED FOR SHRINKAGE	EMBANKMENT REQUIRED	EARTHWORK BALANCE
COUNTY HIGHWAY 7	20200100	20300100					
	CU.YD.	CU.YD.			CU.YD.	CU.YD.	CU.YD.
STA. 8+00.00 TO STA. 9+42.17	345		25.00%	100.00%	259	17	242
STA. 9+42.17 TO STA. 10+45.83		490	25.00%	20.00%	74		74
STA. 10+45.83 TO STA. 11+50.00	156		25.00%	100.00%	117	52	65
ENTRANCES	50		25.00%	100.00%	38	0	38
TOTAL	551	490			488	69	419
USE	550	490					420

(- IS SHORTAGE, + IS SURPLUS) WASTE 420 CU YDS

ROADWAY SCHEDULE	
LOCATION	AGGREGATE SURFACE COURSE, TYPE B
COUNTY HIGHWAY 7	40200800
	TON
STA. 8+00.00 TO STA. 9+42.17	238
STA. 10+45.83 TO STA. 11+50.00	174
SIDE ROAD (85TH STREET)	
STA 8+46.53 RT	94
STA 11+00.00 LT	96
ENTRANCES	
STA 9+13 RT	24
STA 9+13 LT	24
TOTAL	650

EROSION CONTROL TABLE					
LOCATION	TEMPORARY EROSION CONTROL SEEDING	TEMPORARY DITCH CHECKS	PERIMETER EROSION BARRIER	INLET AND PIPE PROTECTION	SEEDING, CLASS 2 (SPECIAL)
	28000250	28000305	28000400	28000500	X2501000
COUNTY HIGHWAY 7	POUND	FOOT	FOOT	EACH	ACRE
STA. 8+00.00 TO STA. 9+42.17	100	24	150	3	0.125
STA. 10+45.83 TO STA. 11+50.00	100		240		0.125
TOTAL	200	24	390	3	0.25

ENVIRONMENTAL REVIEWS

PRIOR TO THE USE OF ANY PROPOSED BORROW AREAS, USE AREAS (TEMPORARY ACCESS ROADS, DETOURS, RUN-AROUNDS, ETC.) AND/OR WASTE AREAS, THE CONTRACTOR SHALL FILE THE REQUIRED ENVIRONMENTAL RESOURCE REQUEST SURVEYS ACCORDING TO SECTION 107.22 OF THE STANDARD SPECIFICATIONS. THESE SURVEYS ARE REQUIRED IN ORDER FOR THE DEPARTMENT TO CONDUCT CULTURAL AND BIOLOGICAL RESOURCE SURVEYS FOR THE PROPOSED SITE.

THE REQUIRED ENVIRONMENTAL RESOURCE DOCUMENTATION SHALL INCLUDE THE FOLLOWING:

- BDE FORM 2289 (BORROW SITE REVIEW)
- BDE FORM 2290 (WASTE/USE AREA REVIEW)
- A LOCATION MAP SHOWING THE SIZE LIMITS AND LOCATION OF THE USE AREA
- COLOR PHOTOGRAPHS DEPICTING THE USE AREA
- BORROW AREA ENTRY AGREEMENT FORM - D4 PI0101

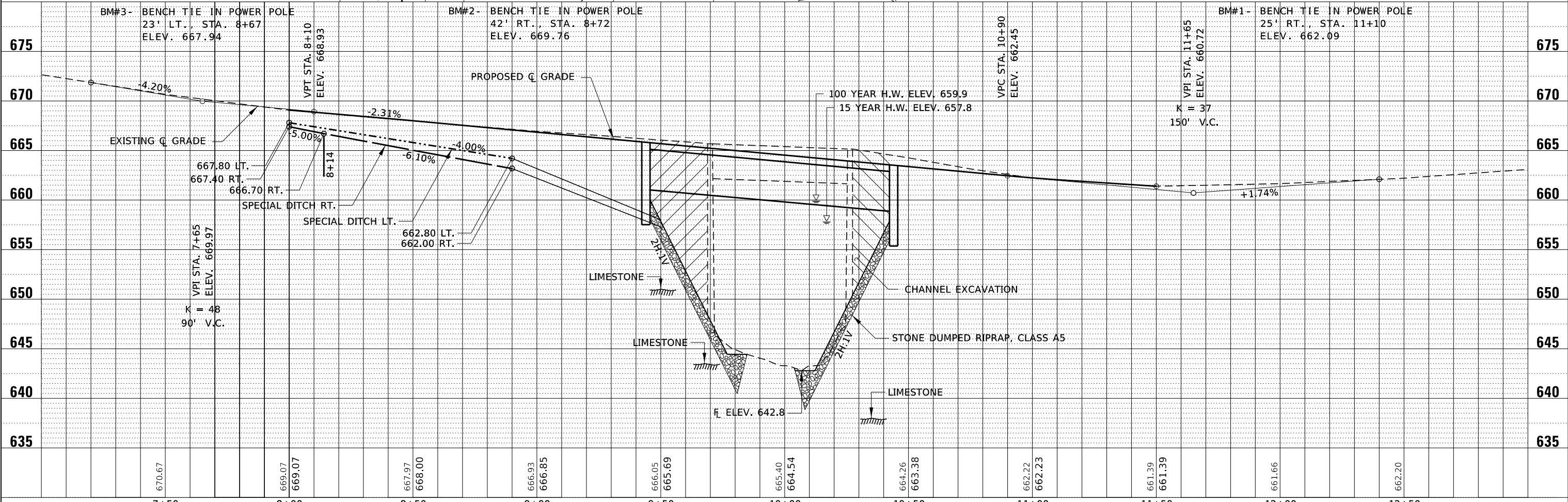
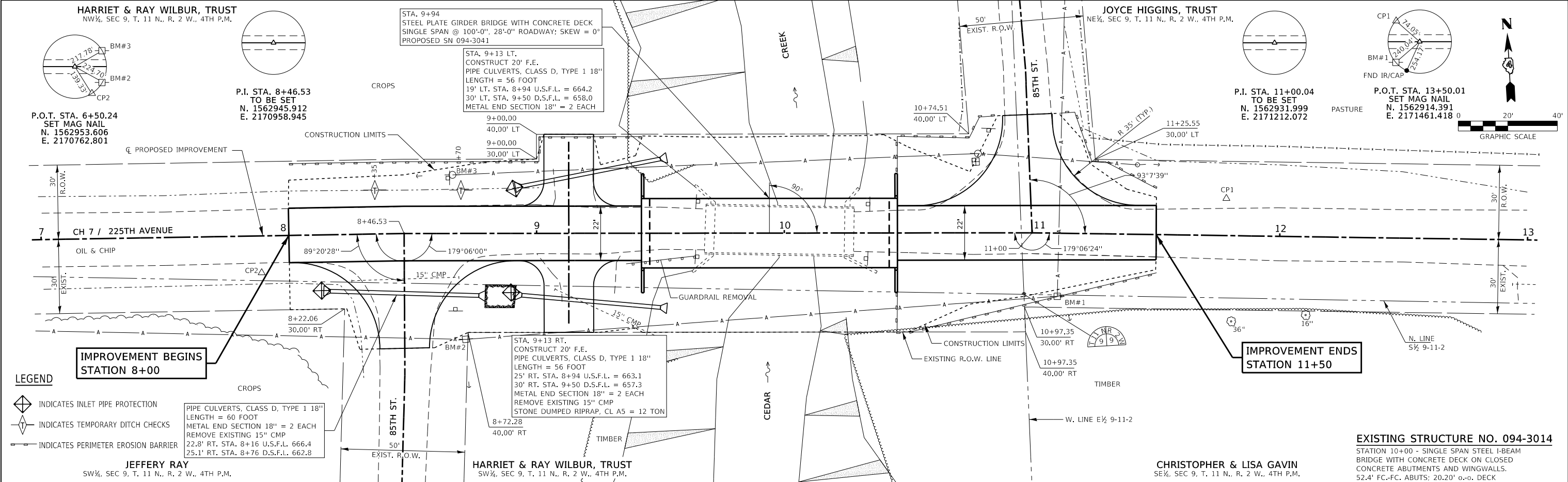
PRIOR TO ANY WASTE MATERIALS BEING REMOVED FROM THE CONSTRUCTION SITE THE REQUIRED ENVIRONMENTAL RESOURCE SURVEYS SHALL BE OBTAINED AND FILED BY THE CONTRACTOR. EXCESS WASTE PRODUCTS REMOVED FROM THE CONSTRUCTION SITE SHALL BE DISPOSED OF AS REQUIRED IN SECTION 202.03 OF THE STANDARD SPECIFICATIONS.

ANY PROTRUDING METAL BARS SHALL BE REMOVED PRIOR TO THE DISPOSAL OF BROKEN CONCRETE AT APPROVED DISPOSAL SITES.

PLEASE NOTE THAT A MINIMUM OF FOUR WEEKS SHALL BE ALLOWED FOR THE DISTRICT TO OBTAIN THE REQUIRED WASTE SITE ENVIRONMENTAL CLEARANCES AND SIX WEEKS FOR THE REQUIRED BORROW SITE ENVIRONMENTAL CLEARANCES.

PLAN	DATE	BY	NO.
SURVEYED			
PLOTTED			
ALIGNMENT CHECKED			
PROPOSED			
CADD FILE NAME			
NOTE BOOK			
NO.			

PROFILE	DATE	BY	NO.
SURVEYED			
PLOTTED			
GRADES CHECKED			
PROPOSED			
STRUCTURE NOTATIONS CHKD			
NOTE BOOK			
NO.			



7+50		8+00		8+50		9+00		9+50		10+00		10+50		11+00		11+50		12+00		12+50											
FILE NAME = 180028-sht-planprf.dgn		USER NAME = smierzwa		DESIGNED - J.W.F.		REVISED -		STATE OF ILLINOIS WARREN COUNTY HIGHWAY DEPARTMENT														C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.					
 HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM L.S. / P.E. / S.E. CORP. 184.000959		DRAWN - R.D.H.		REVISED -		7	17-00138-00-BR															WARREN	27	5							
		PLOT SCALE = \$SCALE\$		CHECKED - S.W.M.		REVISD -																SAWMILL BRIDGE					CONTRACT NO. 89781				
		PLOT DATE = 10/30/2025		DATE - 04/09/2025		REVISED -																SCALE: 20H:5V		SHEET NO. 1 OF 1 SHEETS		STA. 7+00.00 TO STA. 13+00.00		ILLINOIS FED. AID PROJECT RJC2(314)			

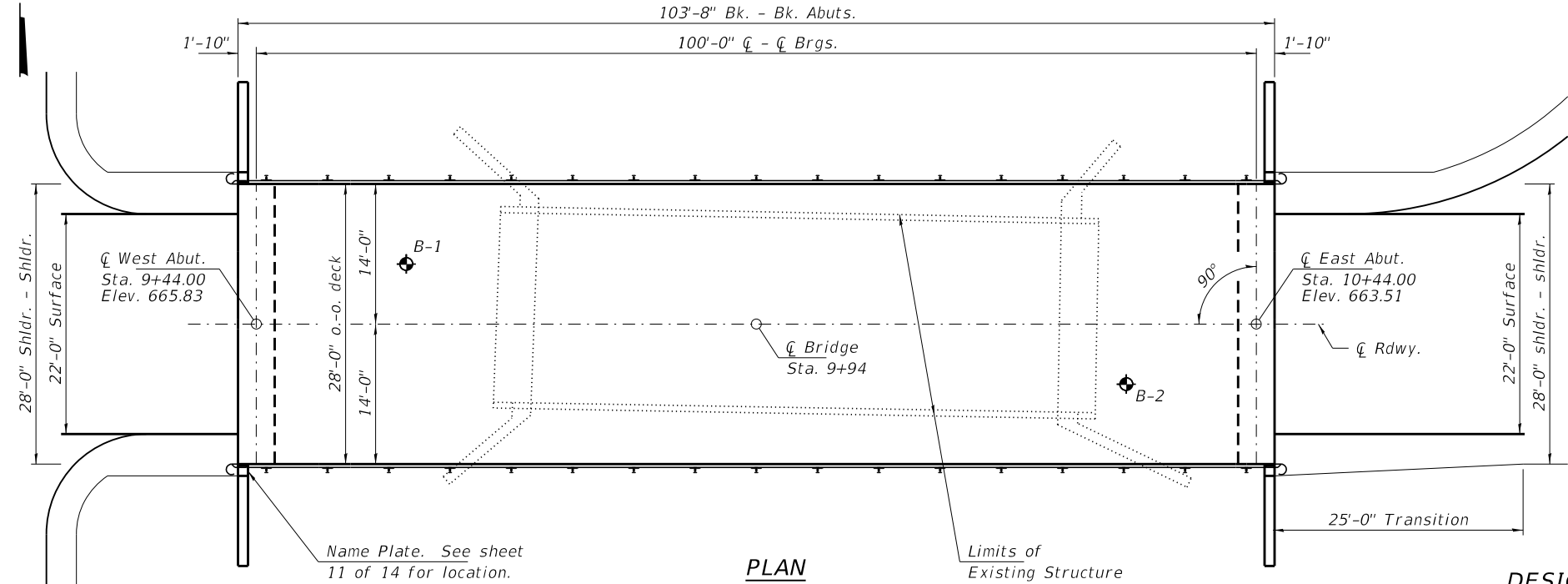
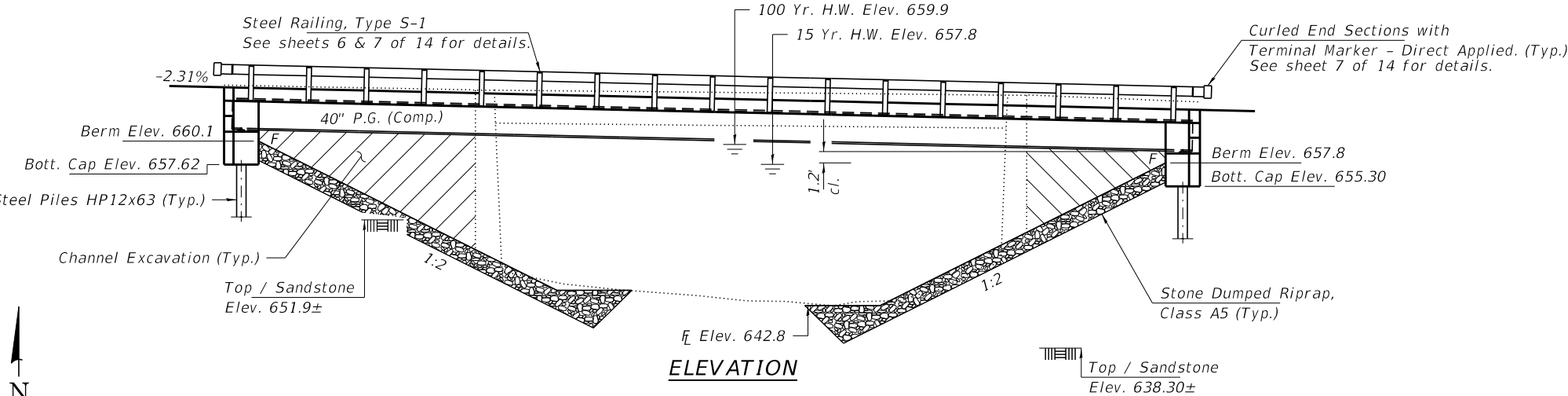


BENCHMARK: Bench tie in Power Pole. 15' Rt., Sta. 11+10. Elev. 662.09

EXISTING STRUCTURE NO. 094-3014: Sta. 10+00 - Single span Steel I-beam bridge with concrete deck, steel railing on closed concrete abutments and wingwalls. 52.4' fc.-fc. abuts., 20.2' o.-o. deck.

Structure closed to traffic during construction.

No Salvage



DESIGN SPECIFICATIONS

2024 AASHTO LRFD Bridge Design Specifications, 10th Edition with all interims.

LOADING HL-93

Allow 50#/sq. ft. for future wearing surface.

DESIGN STRESSES

FIELD UNITS

f'c = 4,000 psi (Superstructure)
f'c = 3,500 psi (Substructure)
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (Structural steel)
(M270 Gr 50W)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.041g
Design Spectral Acceleration at 0.2 sec. (SDS) = 0.089g
Soil Site Class = B

WATERWAY INFORMATION

Flood		Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater El.	
				Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Ten-Year		10	5,400	700	870	657.3	0.6	0.2	657.9	657.5
Design		15	6,040	720	920	657.8	0.7	0.2	658.8	658.0
Base		100	8,950	830	1,100	659.9	1.7	0.5	661.6	660.4
Scour Check		200	10,090	870	1,120	660.6	3.0	1.9	663.6	662.5
Max. Calc.		500	11,600	920	1,130	661.5	2.6	1.6	664.1	663.1

10 Year Velocity through Existing Bridge = 7.7 fps 10 Year Velocity through Proposed Bridge = 6.1 fps

I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current "AASHTO LRFD Specifications."

Steven W. Megginson 11/06/2025
ILLINOIS STRUCTURAL ENGINEER NO. 081-6064



Expires 11-30-2026

INDEX OF STRUCTURE SHEETS

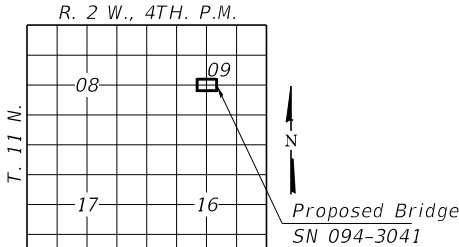
1. General Plan & Elevation
2. General Details
- 3-4. Top of Slab Elevations
5. Superstructure
6. Superstructure Details
7. Steel Railing, Type S-1
8. Structural Steel
- 9-10. Structural Steel Details
11. West Abutment
12. East Abutment
13. Steel HP Pile Details
14. Borings



CEDAR CREEK
BUILT 202_ BY
WARREN COUNTY
SEC. 17-00138-00-BR
STR. NO. 094-3041
LOADING HL-93

NAME PLATE

See Std. 515001



GENERAL PLAN & ELEVATION

C.H. 7 (225TH AVENUE)

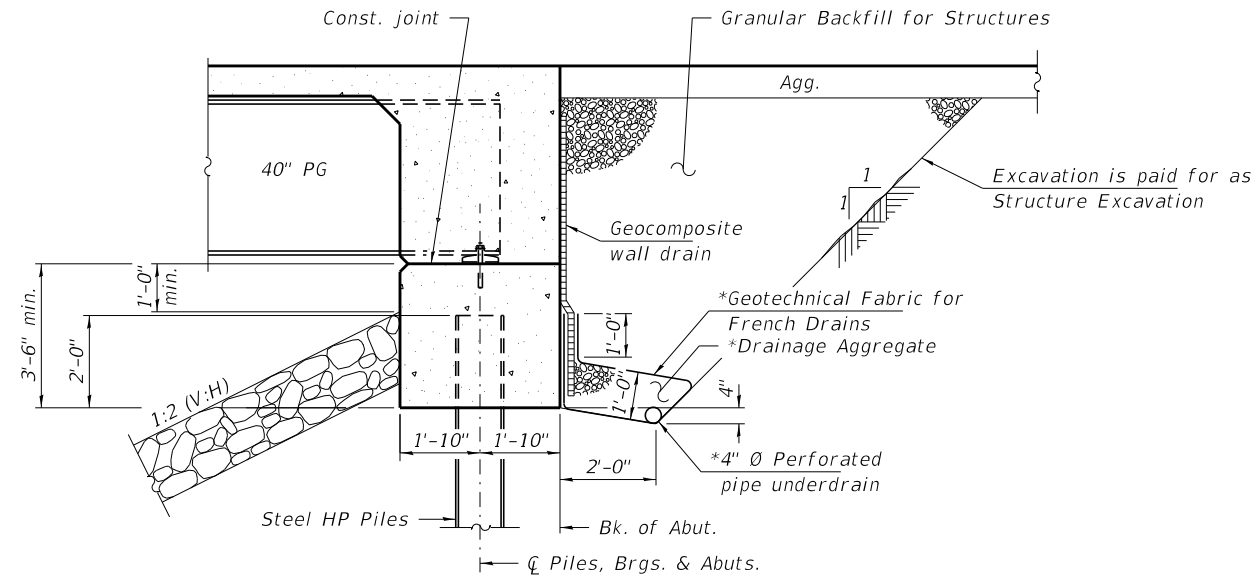
SECTION 17-00138-00-BR

WARREN COUNTY

STATION 9+94.00

STRUCTURE NO. 094-3041

FILE NAME = 180028-shl-bridge.dgn	USER NAME = smlerzwa	DESIGNED - S.T.M.	REVISED -	STATE OF ILLINOIS WARREN COUNTY HIGHWAY DEPARTMENT	GENERAL PLAN AND ELEVATION STRUCTURE NO. 094-3041	SHEET NO. 1 OF 14 SHEETS	C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 3035 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 18A.000959	PLOT SCALE = \$SCALE\$	CHECKED - S.W.M.	REVISED -				7	17-00138-00-BR	WARREN	27	7
PLOT DATE = 11/06/2025		DRAWN - R.D.H.	REVISED -				SAWMILL BRIDGE		CONTRACT NO. 89781		
		CHECKED - S.T.M./S.W.M.	REVISED -								

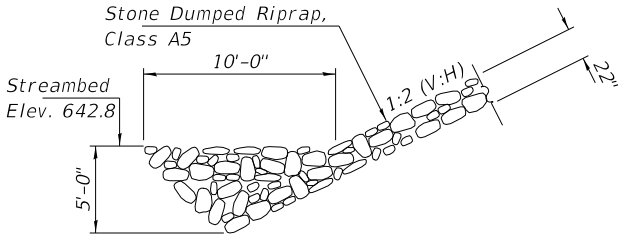


SECTION THRU INTEGRAL ABUTMENT

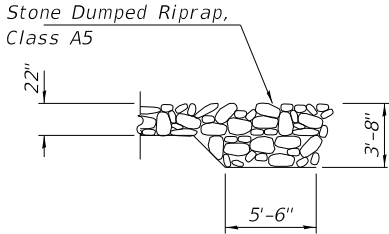
*Included in the cost of Pipe Underdrains for Structures 4"

All drainage system components shall extend to 2'-0" from the end of each wingwall except an outlet pipe shall extend until intersecting with the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).

Concrete headwalls shall be included in the cost of Pipe Underdrains for Structures 4" and shall be installed at each pipe underdrain location (4 Each).



SECTION A-A



SECTION B-B

GENERAL NOTES

Fasteners shall be ASTM F 3125 Grade A325 Type 1, mechanically galvanized bolts in painted or coated metalized areas. Fasteners shall be ASTM F 3125 Grade A325 Type 1, hot-dipped galvanized in uncoated areas. Fastners shall be ASTM F 3125 Grade A325 Type 3 weathering steel bolts in unpainted areas.

Bolts 3/4"Ø, holes 13/16"Ø, unless otherwise noted.

Calculated weight of Structural Steel = 113,514 lbs.

All structural steel shall be AASHTO M 270 Grade 50W.

No field welding is permitted except as specified in the contract documents.

Reinforcement bars designated (E) shall be epoxy coated.

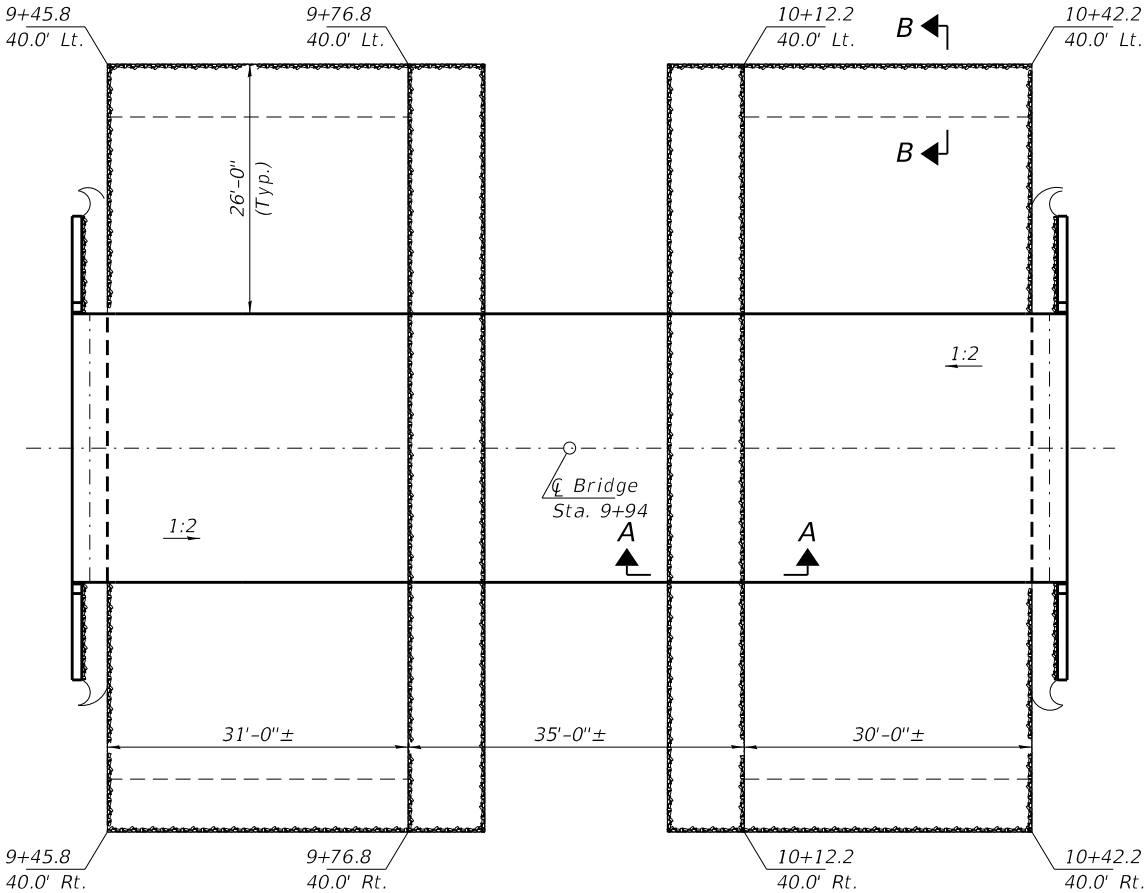
Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

Structural steel shall only be painted from distance equal to the depth of embedment into the concrete cap plus 18 inches. Painted areas shall be primed in the shop with a Department approved zinc rich primer. Field painting will not be required.

Excavation behind existing abutment walls shall be performed to balance front and back soil pressure before removing the existing superstructure.

Bridge Deck Grooving is figured 1'-0" from the face of the rail. It shall be applied to the bridge deck.

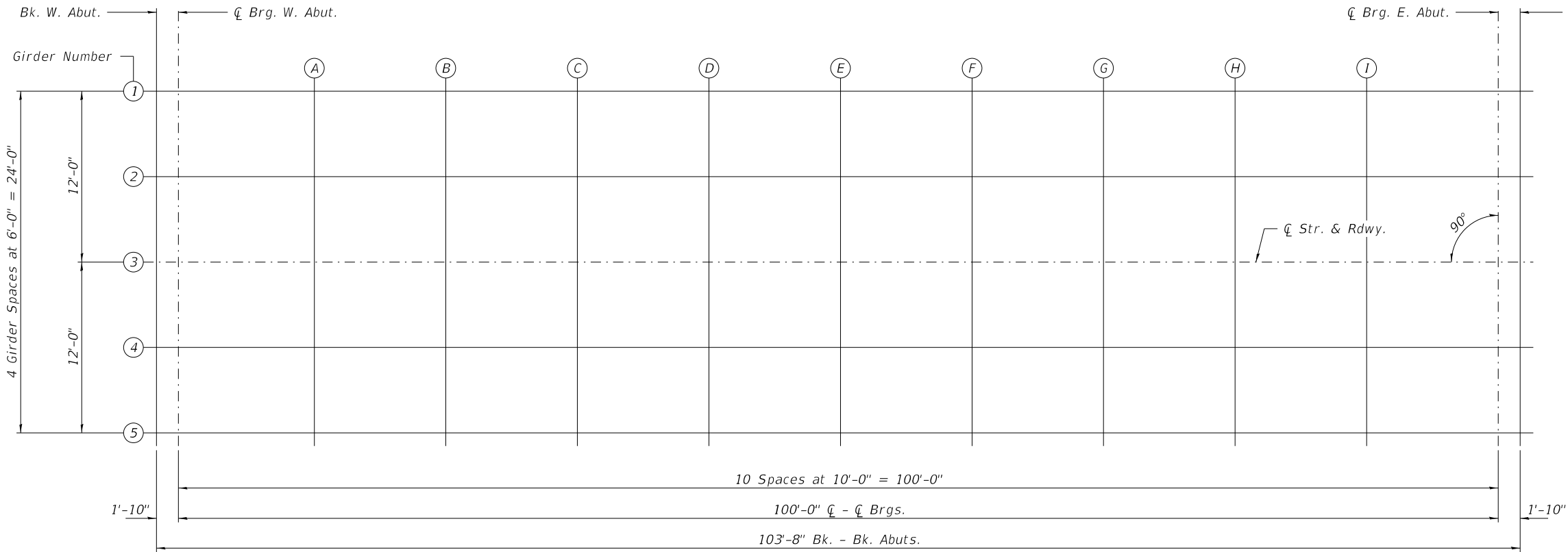
Protective coat shall be applied to the top surface and facia of the concrete deck and wingwalls.



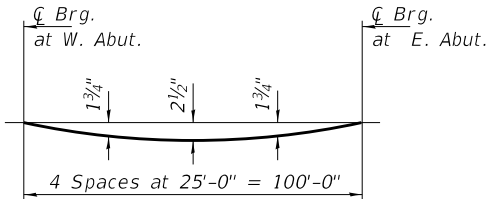
RIPRAP LAYOUT

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			490
Stone Dumped Riprap, Class A5	Ton			1,090
Removal of Existing Structures	Each			1
Structure Excavation	Cu. Yd.		175	175
Concrete Structures	Cu. Yd.		35.9	35.9
Concrete Superstructure	Cu. Yd.	109.3		109.3
Bridge Deck Grooving	Sq. Yd.	300		300
Protective Coat	Sq. Yd.	359	34	393
Furnishing and Erecting Structural Steel	L. Sum	1		1
Stud Shear Connectors	Each	1,515		1,515
Reinforcement Bars, Epoxy Coated	Pound	20,800	7,540	28,340
Steel Railing, Type S-1	Foot	204		204
Furnishing Steel Piles HP12x63	Foot		175	175
Driving Piles	Foot		100	100
Test Pile Steel HP12x63	Each		1	1
Pile Shoes	Each		5	5
Drilling and Setting Piles (in Rock)	Cu. Ft.		78.5	78.5
Name Plates	Each		1	1
Anchor Bolts, 1"	Each		20	20
Granular Backfill for Structures	Cu. Yd.			135
Geocomposite Wall Drain	Sq. Yd.			65
Pipe Underdrains for Structures 4"	Foot			124
Terminal Marker - Direct Applied	Each	4		4
Bar Terminators	Each		284	284



PLAN

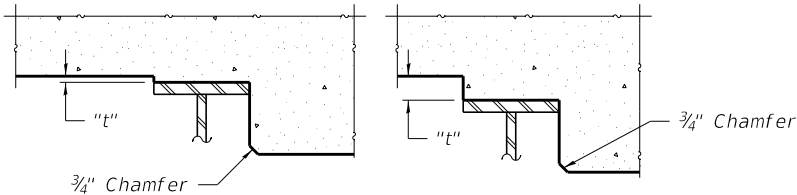


DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only.)

Note:

The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on sheet 4 of 14.



At Minimum Fillet

At Maximum Fillet

To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown above. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on sheet 4 of 14, minus slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS

FILE NAME = 180028-shl-bridge.dgn		USER NAME = smlerzwa	DESIGNED - S.T.M.	REVISED -	STATE OF ILLINOIS WARREN COUNTY HIGHWAY DEPARTMENT	TOP OF SLAB ELEVATIONS STRUCTURE NO. 094-3041				
HAMPTON, LENZINI AND RENWICK, INC. 3035 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959		CHECKED - S.W.M.	REVISED -	C.H.		SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		PLOT SCALE = \$SCALE\$	DRAWN - R.D.H.	REVISED -		7	17-00138-00-BR	WARREN	27	9
		PLOT DATE = 10/30/2025	CHECKED - S.T.M./S.W.M.	REVISED -		SAWMILL BRIDGE				
		SHEET NO. 3 OF 14 SHEETS								
						CONTRACT NO. 89781				
						ILLINOIS		FED. AID PROJECT RJCZ(314)		

GIRDER 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	9+42.17	-12.00	665.62	665.62
⌒ Brg. W. Abut.	9+44.00	-12.00	665.58	665.58
A	9+54.00	-12.00	665.35	665.41
B	9+64.00	-12.00	665.12	665.24
C	9+74.00	-12.00	664.88	665.06
D	9+84.00	-12.00	664.65	664.86
E	9+94.00	-12.00	664.42	664.64
F	10+04.00	-12.00	664.19	664.39
G	10+14.00	-12.00	663.96	664.13
H	10+24.00	-12.00	663.73	663.85
I	10+34.00	-12.00	663.50	663.56
⌒ Brg. E. Abut.	10+44.00	-12.00	663.26	663.26
Bk. E. Abut.	10+45.83	-12.00	663.22	663.22

GIRDER 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	9+42.17	-6.00	665.75	665.75
⌒ Brg. W. Abut.	9+44.00	-6.00	665.70	665.70
A	9+54.00	-6.00	665.47	665.54
B	9+64.00	-6.00	665.24	665.37
C	9+74.00	-6.00	665.01	665.18
D	9+84.00	-6.00	664.78	664.98
E	9+94.00	-6.00	664.55	664.76
F	10+04.00	-6.00	664.32	664.52
G	10+14.00	-6.00	664.08	664.26
H	10+24.00	-6.00	663.85	663.98
I	10+34.00	-6.00	663.62	663.69
⌒ Brg. E. Abut.	10+44.00	-6.00	663.39	663.39
Bk. E. Abut.	10+45.83	-6.00	663.35	663.35

⌒ STRUCTURE & GIRDER 3

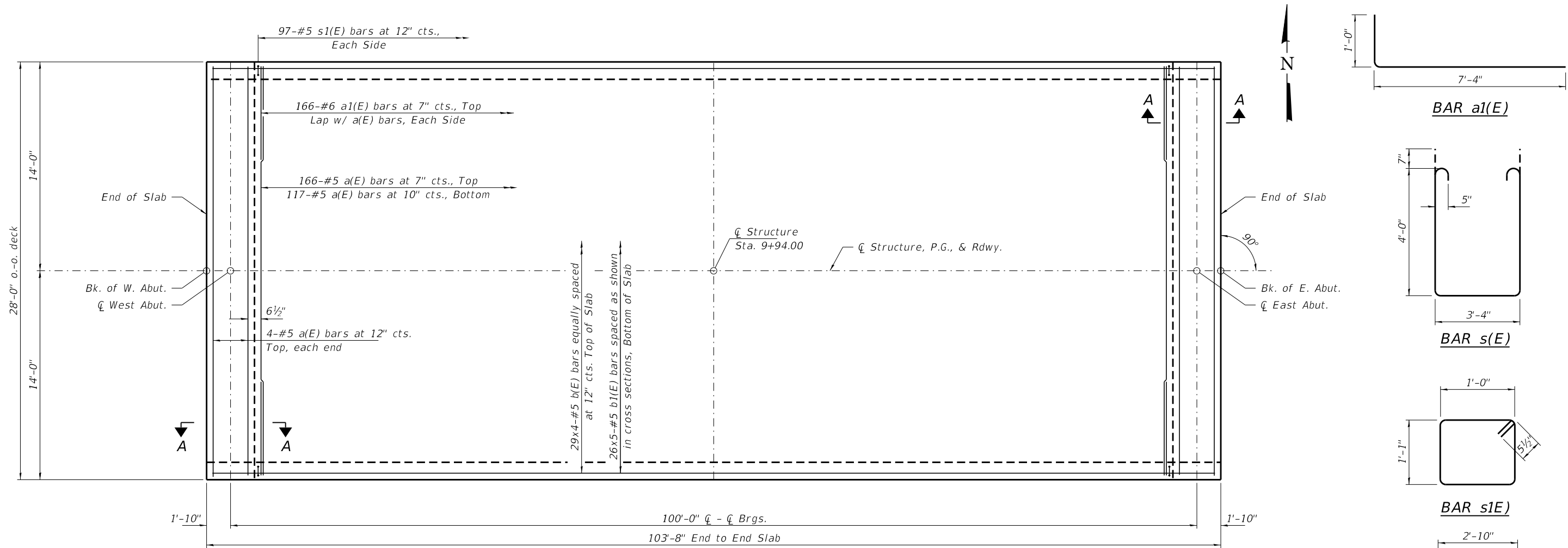
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	9+42.17	0.00	665.87	665.87
⌒ Brg. W. Abut.	9+44.00	0.00	665.83	665.83
A	9+54.00	0.00	665.60	665.66
B	9+64.00	0.00	665.37	665.49
C	9+74.00	0.00	665.13	665.31
D	9+84.00	0.00	664.90	665.11
E	9+94.00	0.00	664.67	664.89
F	10+04.00	0.00	664.44	664.64
G	10+14.00	0.00	664.21	664.38
H	10+24.00	0.00	663.98	664.10
I	10+34.00	0.00	663.75	663.81
⌒ Brg. E. Abut.	10+44.00	0.00	663.51	663.51
Bk. E. Abut.	10+45.83	0.00	663.47	663.47

GIRDER 4

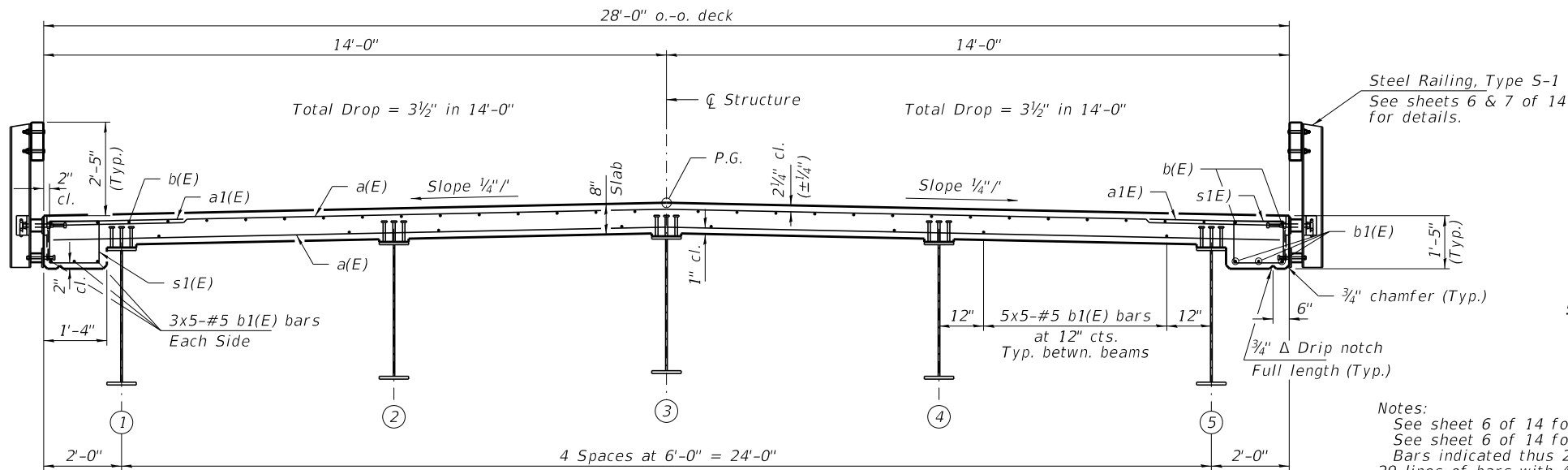
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	9+42.17	6.00	665.75	665.75
⌒ Brg. W. Abut.	9+44.00	6.00	665.70	665.70
A	9+54.00	6.00	665.47	665.54
B	9+64.00	6.00	665.24	665.37
C	9+74.00	6.00	665.01	665.18
D	9+84.00	6.00	664.78	664.98
E	9+94.00	6.00	664.55	664.76
F	10+04.00	6.00	664.32	664.52
G	10+14.00	6.00	664.08	664.26
H	10+24.00	6.00	663.85	663.98
I	10+34.00	6.00	663.62	663.69
⌒ Brg. E. Abut.	10+44.00	6.00	663.39	663.39
Bk. E. Abut.	10+45.83	6.00	663.35	663.35

GIRDER 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	9+42.17	12.00	665.62	665.62
⌒ Brg. W. Abut.	9+44.00	12.00	665.58	665.58
A	9+54.00	12.00	665.35	665.41
B	9+64.00	12.00	665.12	665.24
C	9+74.00	12.00	664.88	665.06
D	9+84.00	12.00	664.65	664.86
E	9+94.00	12.00	664.42	664.64
F	10+04.00	12.00	664.19	664.39
G	10+14.00	12.00	663.96	664.13
H	10+24.00	12.00	663.73	663.85
I	10+34.00	12.00	663.50	663.56
⌒ Brg. E. Abut.	10+44.00	12.00	663.26	663.26
Bk. E. Abut.	10+45.83	12.00	663.22	663.22



PLAN



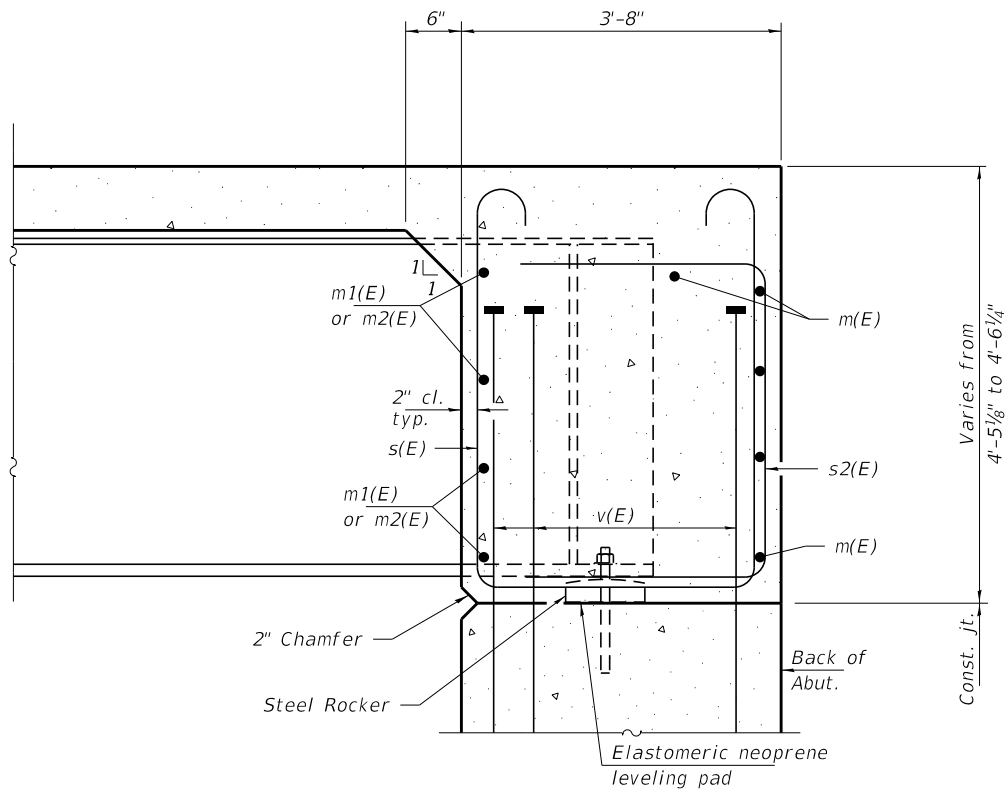
CROSS SECTION
(Looking East)

SUPERSTRUCTURE
BILL OF MATERIAL

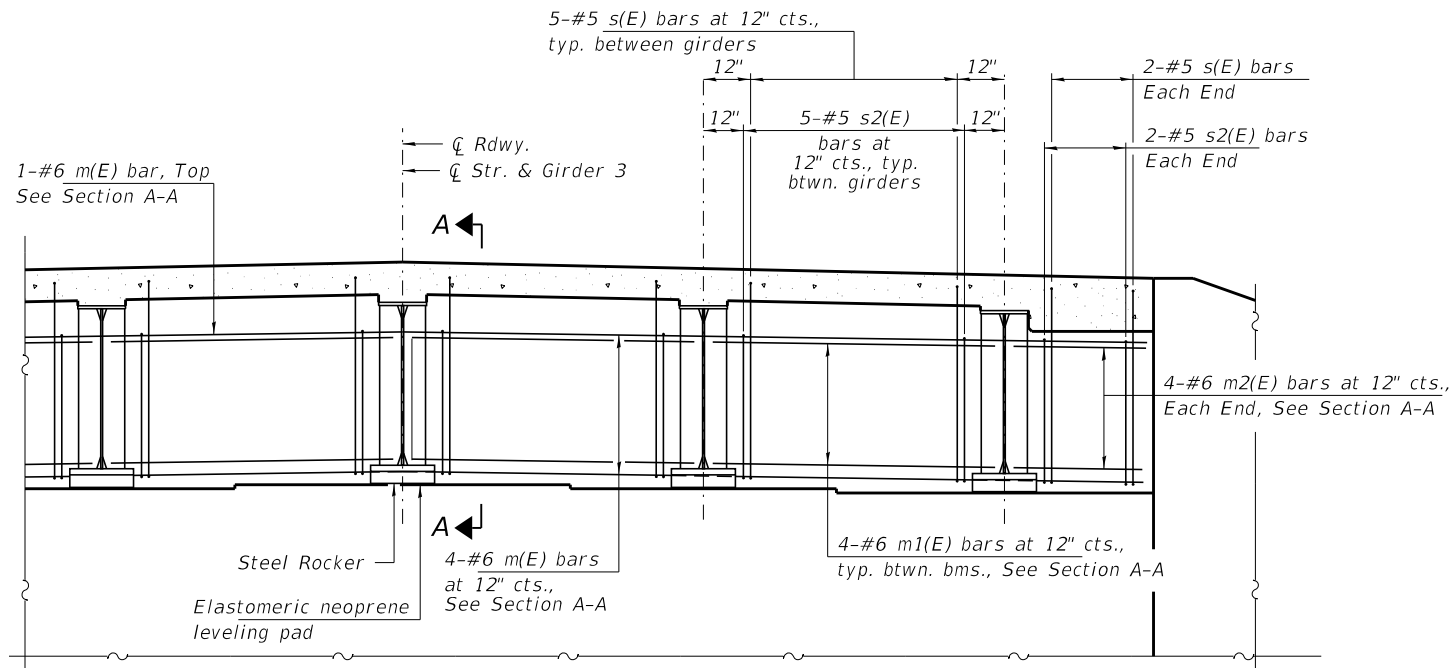
BAR	NO.	SIZE	LENGTH	SHAPE
a(E)	291	#5	27'-8"	
a1(E)	332	#5	8'-4"	
b(E)	116	#5	28'-9"	
b1(E)	130	#5	23'-9"	
m(E)	10	#6	27'-8"	
m1(E)	32	#6	5'-8"	
m2(E)	16	#6	1'-8"	
s(E)	48	#5	12'-6"	
s1(E)	194	#5	5'-1"	
s2(E)	48	#5	8'-9"	
Concrete Superstructure			Cu. Yd.	109.3
Bridge Deck Grooving			Sq. Yd.	300
Protective Coat			Sq. Yd.	359
Reinforcement Bars, Epoxy Coated			Pound	20,800

MIN. BAR LAP
#5 bars = 3'-10"

Notes:
See sheet 6 of 14 for Superstructure Details.
See sheet 6 of 14 for SECTION A-A.
Bars indicated thus 29x4-#5 etc. indicates
29 lines of bars with 4 lengths per line.

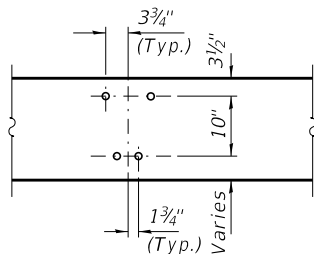


SECTION A-A

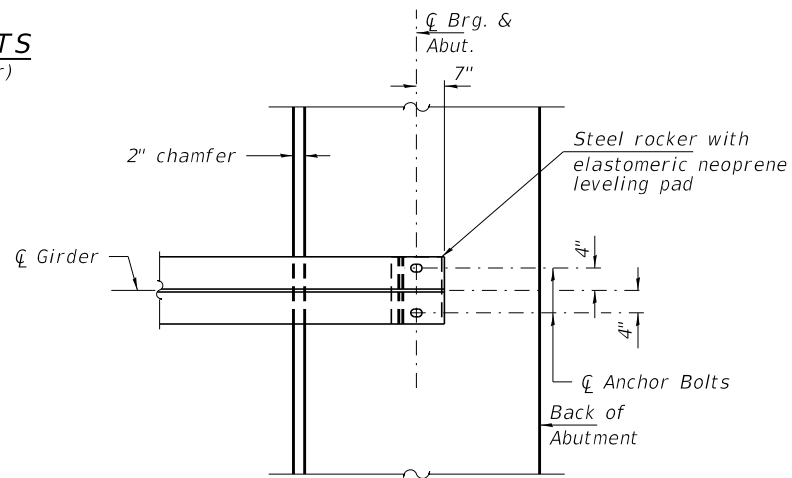


DIAPHRAGM AT ABUTMENTS
(West Abut. shown, East Abut. similar)

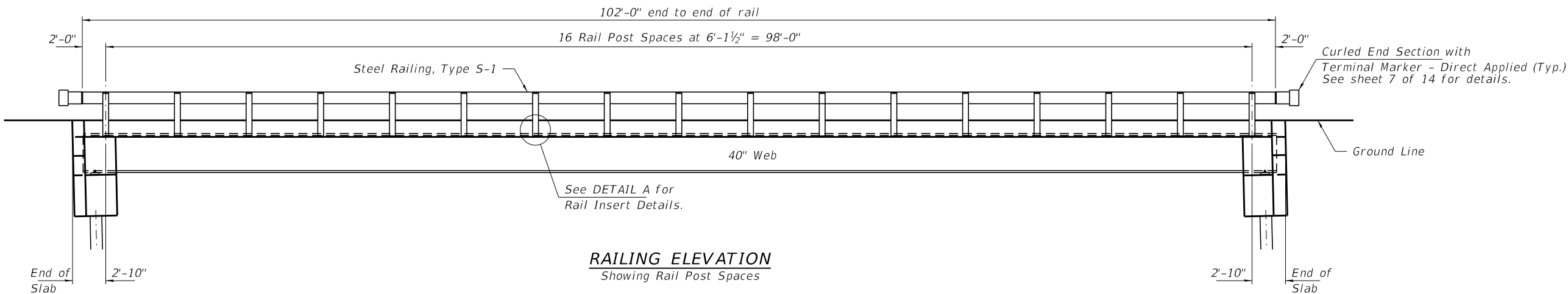
Notes:
Reinforcement bars in diaphragm are billed with Superstructure on sheet 5 of 14.
Concrete in diaphragm is included with Concrete Superstructure on sheet 5 of 14.



DETAIL A



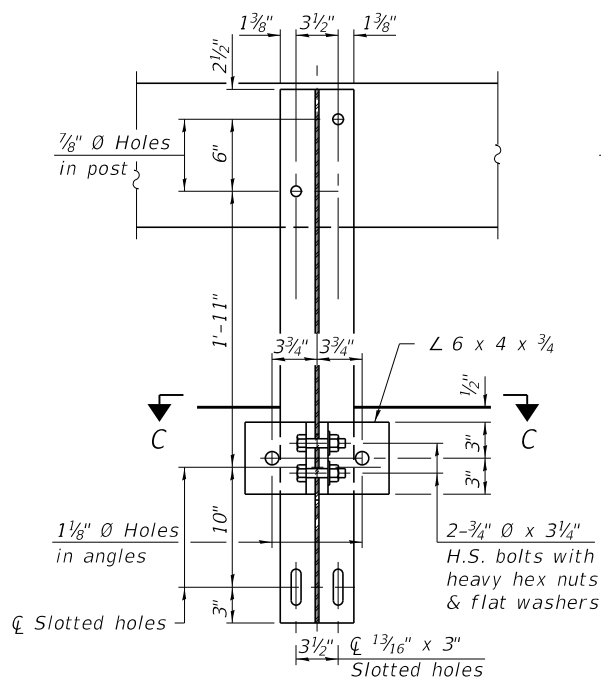
PARTIAL PLAN AT ABUTMENT
(Showing bottom flange of girder)



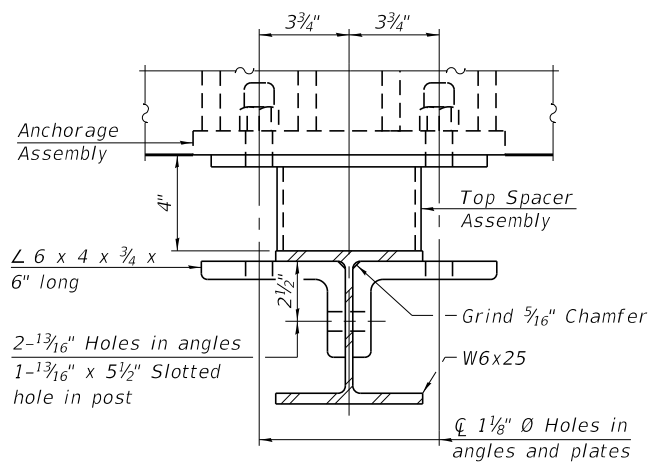
RAILING ELEVATION
Showing Rail Post Spaces

See sheet 7 of 14 for Railing Details.

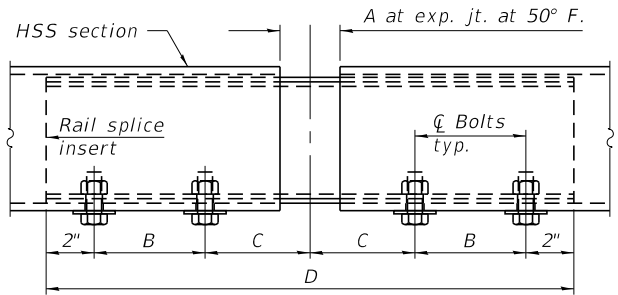
FILE NAME = 180028-shi-bridge.dgn	USER NAME = smierzwa	DESIGNED - S.T.M.	REVISED -	STATE OF ILLINOIS WARREN COUNTY HIGHWAY DEPARTMENT	SUPERSTRUCTURE DETAILS STRUCTURE NO. 094-3041	C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 3035 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959	PLOT SCALE = \$SCALE\$	CHECKED - S.W.M.	REVISED -			7	17-00138-00-BR	WARREN	27	12
PLOT DATE = 10/30/2025		DRAWN - R.D.H.	REVISED -			SAWMILL BRIDGE		CONTRACT NO. 89781		
		CHECKED - S.T.M./S.W.M.	REVISED -			SHEET NO. 6 OF 14 SHEETS		ILLINOIS FED. AID PROJECT RJCZ(314)		



SECTION B-B



SECTION C-C



RAIL SPLICE ELEVATION

RAILING CRITERIA

NCHRP 350 Test Level	2
Railing Weight (plf)	50
Max Post Spacing	10'-9"
HMA thickness range (in)	1 1/4 - 3 1/8

R-23A

10-12-2021

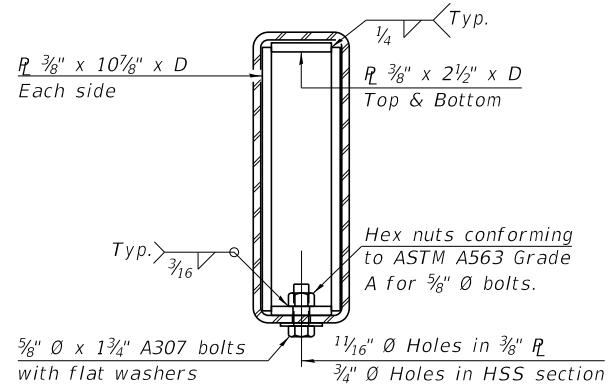
2-3/4" Ø x 6" Round Head Bolts with locknuts & flat washers. 7/8" Ø holes in HSS tubing may be drilled in the field.

2-1" Ø x 8" H.S. bolts with flat washers and lock washers

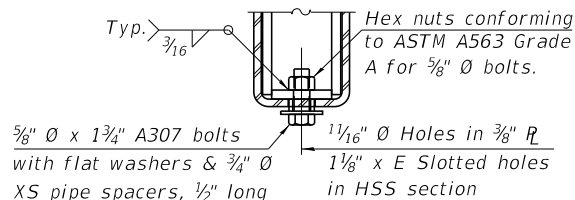
2-5/8" Ø x 6" A307 bolts with flat washers

SECTION AT RAILING POST

* The outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchorage assembly. The anchorage studs may be bent down 1/2" to accommodate the top reinforcement bar placement.



SECTION AT RAIL SPLICE

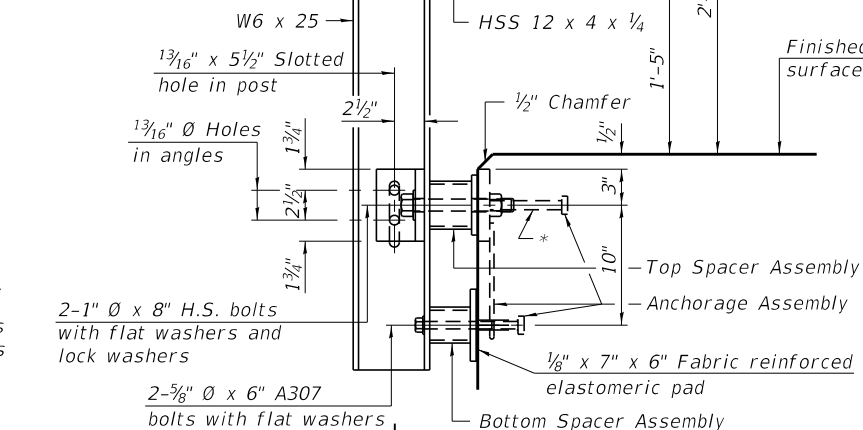


RAIL SPLICE CONNECTION AT EXPANSION JT.

SPLICE DIMENSIONS

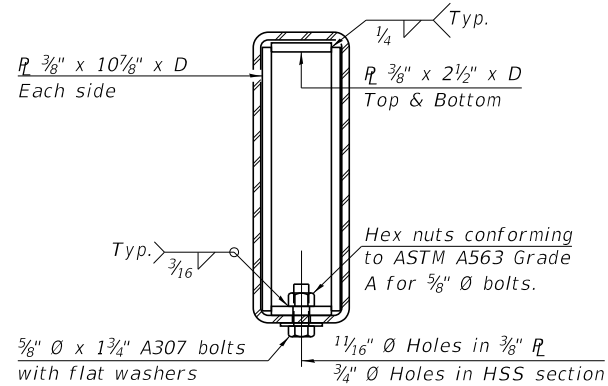
Location	T	A	B	C	D	E
All locs. not over exp. jts.	0	1/4"	4"	4"	1'-8"	-
Over Strip Seal Jt.	≤4"	2 1/2"	4 3/8"	4 3/8"	1'-10"	3 1/16"
Over Finger or Modular Jt.	≤9 1/2"	5 1/2"	7 3/8"	7 1/4"	2'-9 1/4"	5 13/16"
Over Finger or Modular Jt.	≤15"	8 1/4"	10 1/8"	10"	3'-8 1/4"	8 9/16"

T = ; total movement along centerline of roadway at expansion joint.

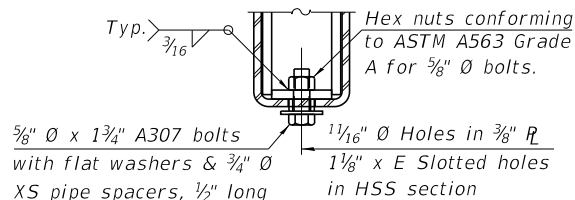


SECTION AT RAILING POST

* The outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchorage assembly. The anchorage studs may be bent down 1/2" to accommodate the top reinforcement bar placement.



SECTION AT RAIL SPLICE

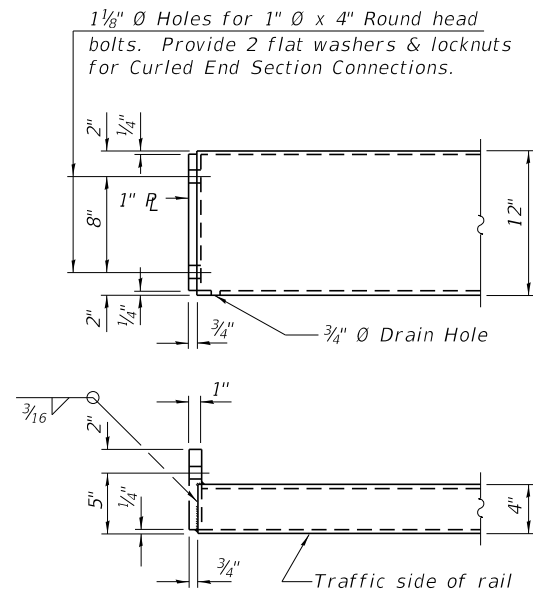


RAIL SPLICE CONNECTION AT EXPANSION JT.

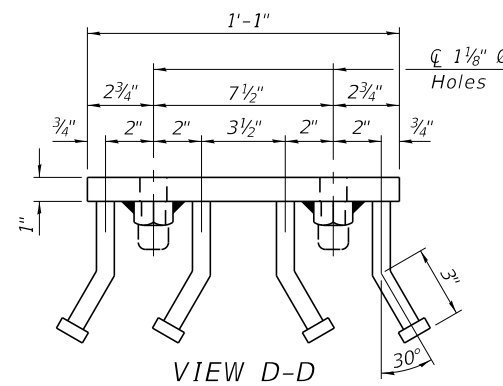
SPLICE DIMENSIONS

Location	T	A	B	C	D	E
All locs. not over exp. jts.	0	1/4"	4"	4"	1'-8"	-
Over Strip Seal Jt.	≤4"	2 1/2"	4 3/8"	4 3/8"	1'-10"	3 1/16"
Over Finger or Modular Jt.	≤9 1/2"	5 1/2"	7 3/8"	7 1/4"	2'-9 1/4"	5 13/16"
Over Finger or Modular Jt.	≤15"	8 1/4"	10 1/8"	10"	3'-8 1/4"	8 9/16"

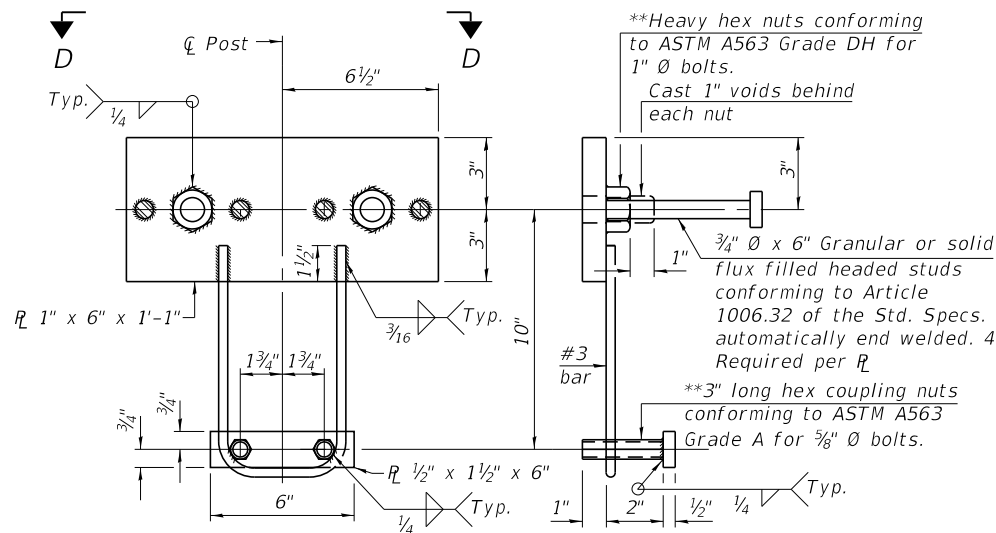
T = ; total movement along centerline of roadway at expansion joint.



END OF RAIL DETAILS



VIEW D-D



ANCHORAGE ASSEMBLY

** Threaded areas shall be plugged or blocked off during casting of concrete.

Notes:

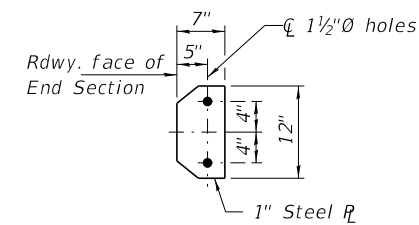
A sufficient number of shims of various thicknesses, sized to fit behind the top spacer assembly, 5" x 11 1/2", and bottom spacer assembly, 6" x 7", shall be provided to adjust posts for proper alignment. If the summation of shims is greater than 1/4" (top) or 1/2" (bottom), longer bolts are required. Cost included with Steel Railing, Type S-1.

All steel rail elements including shims shall be galvanized according to Article 509.05 of the Standard Specifications.

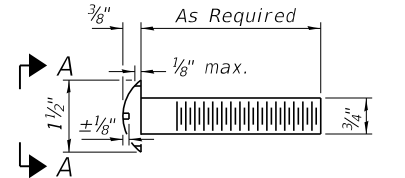
All HSS tubing serving as railing shall be CVN tested according to Article 1006.34(b) of the Standard Specifications.

Rail splice inserts may be built out of 2 - 3/8" bent plates in lieu of the 4 plate rail splice inserts shown, provided the outside dimensions are matched.

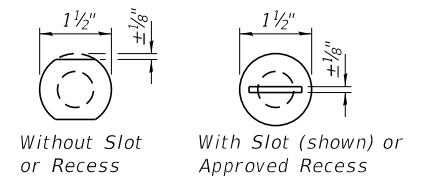
All round head bolts shall be ASTM A307 with locknuts according to ASTM A563 grade A.



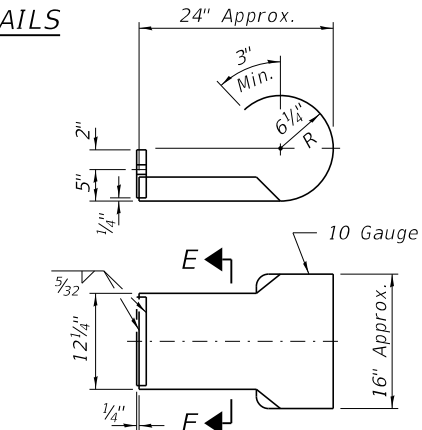
SECTION E-E



ROUND HEAD BOLT DETAIL

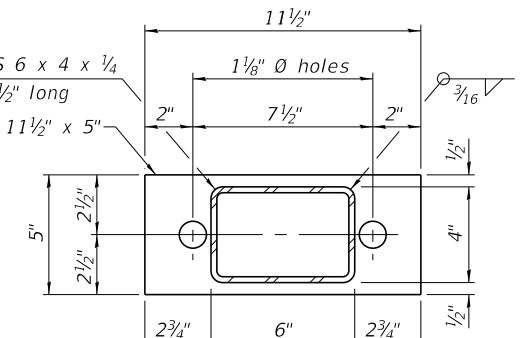


VIEW A-A

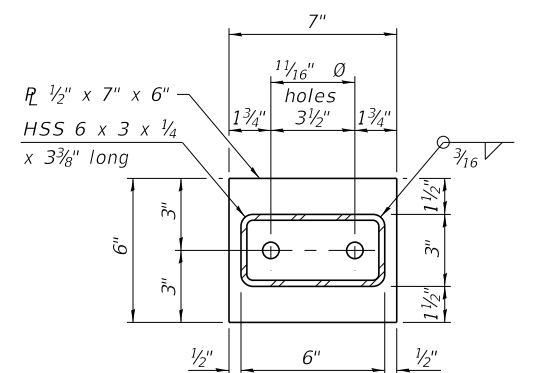


CURLLED END SECTION DETAILS

Cost included with Steel Railing, Type S-1. Terminal Markers - Direct Applied shall be placed on each end of Curled End Sections. (Typ. at Each Corner - 4 Required)



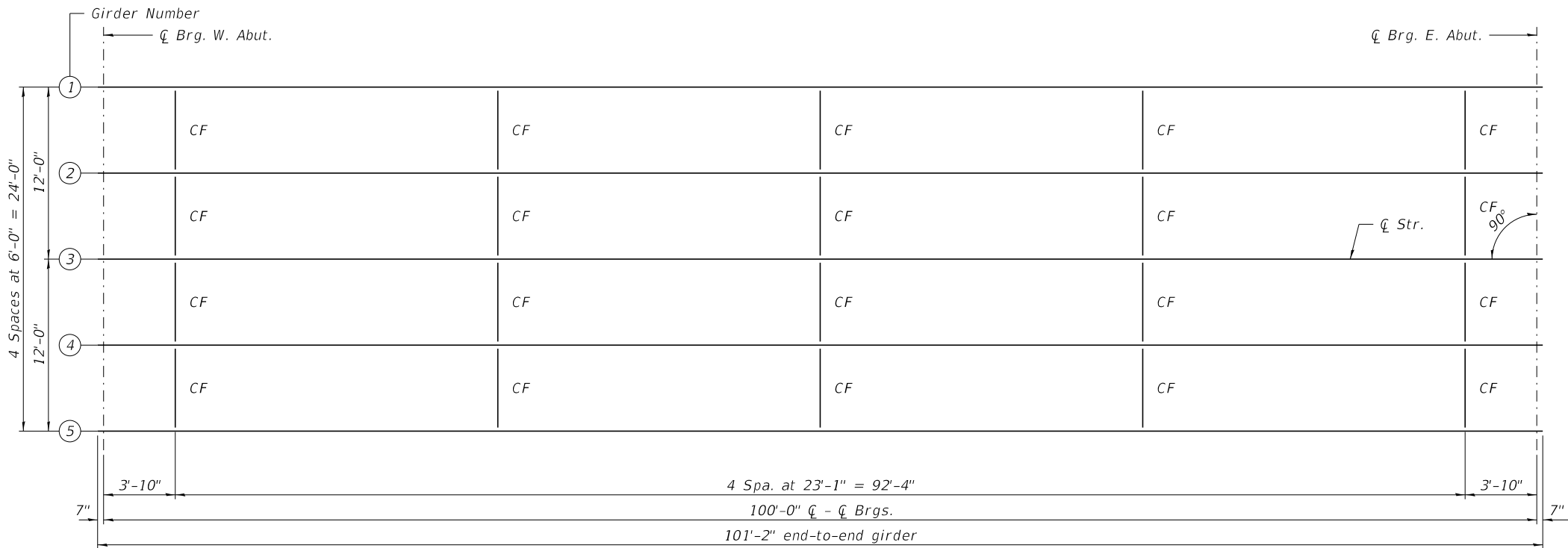
TOP SPACER ASSEMBLY



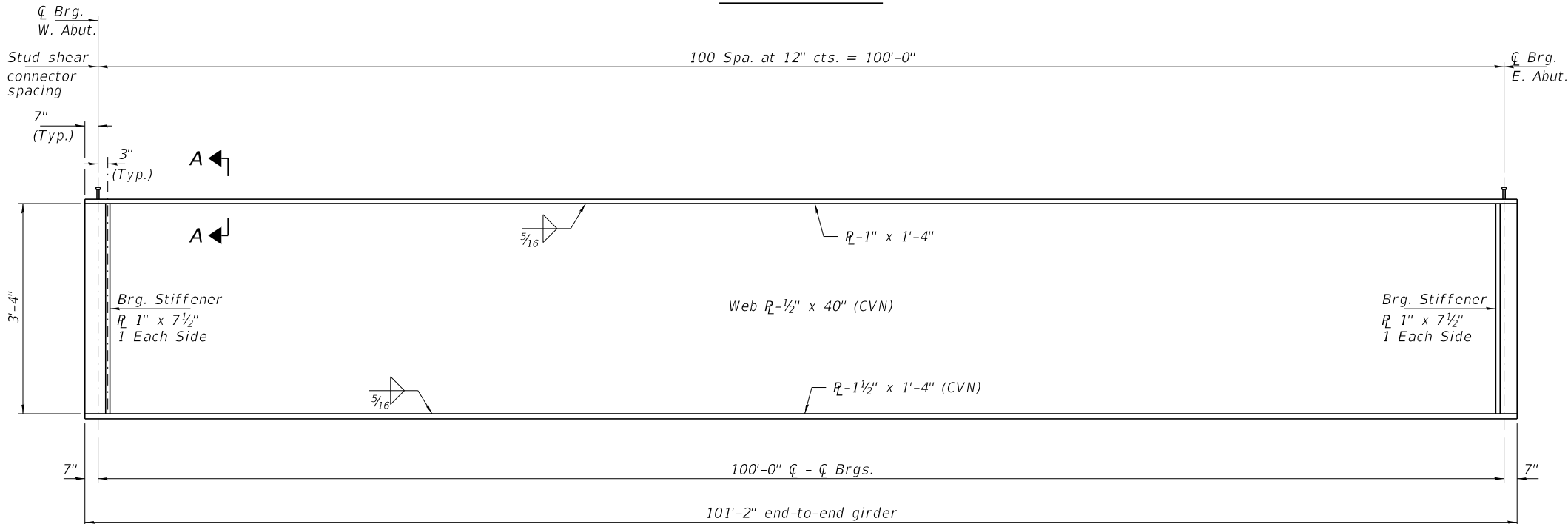
BOTTOM SPACER ASSEMBLY

BILL OF MATERIAL

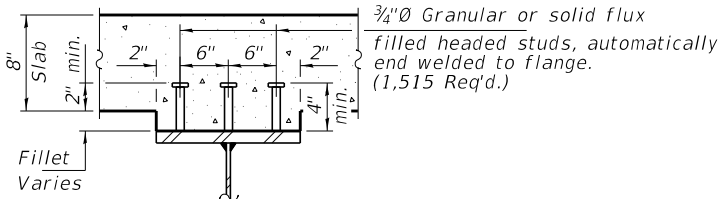
Item	Unit	Quantity
Steel Railing, Type S-1	Foot	204
Terminal Marker - DA	Each	4



FRAMING PLAN

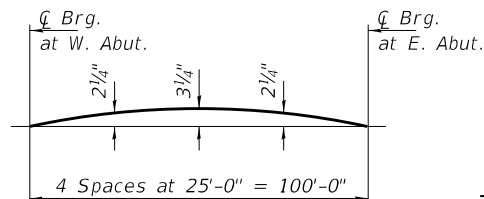


GIRDER ELEVATION



SECTION A-A

Notes:
Load carrying components designated "CVN" shall conform to the Charpy-V-Notch Impact Energy Requirement, Zone 2.
All girders including bearing stiffeners and cross-frames shall be AASHTO M270, Grade 50W.
For additional structural steel details see sheets 9 & 10 of 14.
All cross frames shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted.
Individual cross frames at supports may be temporarily disconnected to install bearing anchor bolts.

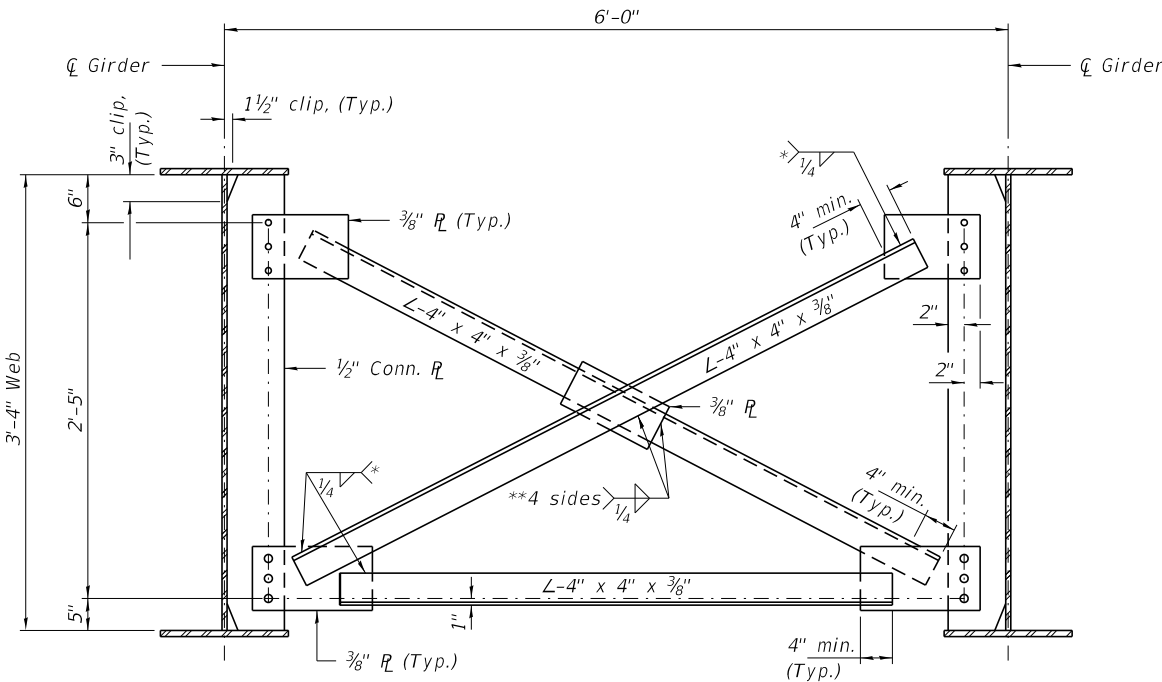


CAMBER DIAGRAM

Location	C.Brg. W. Abut.	C.Brg. E. Abut.
GIRDER 1	664.75	662.44
GIRDER 2	664.88	662.56
GIRDER 3	665.00	662.69
GIRDER 4	664.88	662.56
GIRDER 5	664.75	662.44

TOP OF WEB ELEVATIONS

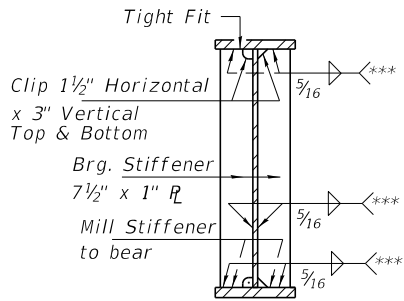
(For fabrication only)
(Does not include Dead Load Deflections)



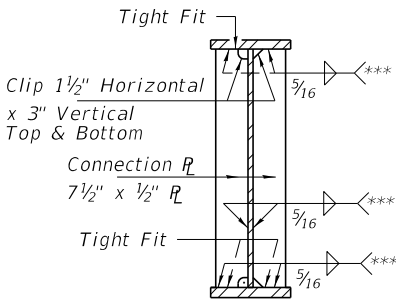
INTERIOR CROSS-FRAME
(20-required)

- * Fillet weld angles along 3 sides on one face of gusset plate; however, if cross-frames are galvanized, weld all-around.
** If cross-frames are galvanized, weld all-around.

Notes:
Bolts for cross frames shall use 1 5/16" Ø holes for all 3/4" Ø bolts.
Two hardened washers required for each set of oversized holes.



SECTION
AT ABUTMENTS
BEARING STIFFENER R'S

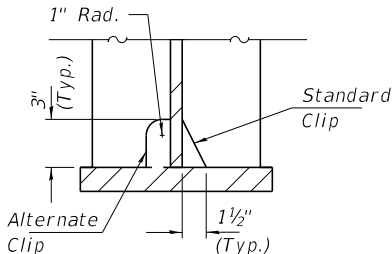


SECTION
AT CROSS-FRAME
CONNECTION R'S

- Notes:
For additional structural steel details see sheets 8 & 10 of 14.
All cross-frames, including stiffeners shall be AASHTO M270, Grade 50W.
*** Terminate 1/4" (±1/8") from the end of plate intersects

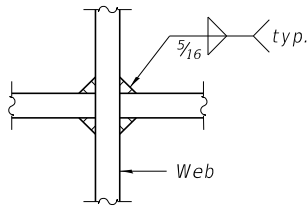
INTERIOR GIRDER MOMENT TABLE		
		0.5 Sp. 1
I_s	(in ⁴)	19,248
$I_c(n)$	(in ⁴)	49,304
$I_c(3n)$	(in ⁴)	35,897
$I_c(cr)$	(in ⁴)	-
S_s	(in ³)	1,031
$S_c(n)$	(in ³)	1,373
$S_c(3n)$	(in ³)	1,269
$S_c(cr)$	(in ³)	-
S_x	(in ³)	1,255
DC1	(k/')	0.850
MDC1	(k)	1,063
DC2	(k/')	0.040
MDC2	(k)	50
DW	(k/')	0.300
MDW	(k)	375
LLDF		0.516
$M_L + IM$	(k)	1,456
f_l (Strength I)	(ksi)	0
$M_u + 1/3 f_l S_x$	(k)	4,502
$\phi f M_n$	(k)	6,527
f_s DC1	(ksi)	12.4
f_s DC2	(ksi)	0.5
f_s DW	(ksi)	3.5
f_s ($L + IM$)	(ksi)	12.7
f_l (Service II)	(ksi)	0.0
$f_s + f_l/2$ (Service II)	(ksi)	32.9
Service II Resistance	(ksi)	47.5 ksi
$f_s + f_l/3$ (Strength I)	(ksi)	-
$\phi f F_n$	(ksi)	-
Vf	(k)	27.1

INTERIOR GIRDER REACTION TABLE	
	Abutment
LLDF	0.671
OCF	1.000
RDC1	(k) 42.5
RDC2	(k) 2.0
RDW	(k) 15.0
R_L	(k) 65.2
R_{IM}	(k) 14.4
R_{Total} (Strength I)(Impact)	(k) 217.6
R_{Total} (Strength I)(No Impact)	(k) 192.3



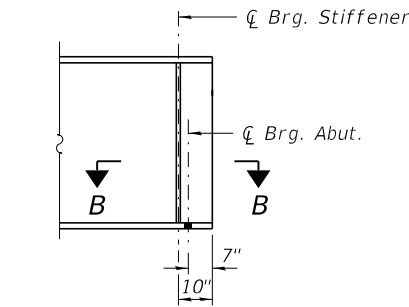
CLIP DETAIL

Use Standard Clip or Alternate Clips in all locations. Do not combine use of different clip type.

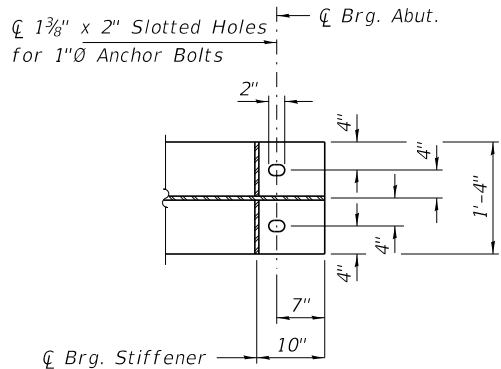


WEB WELD DETAIL

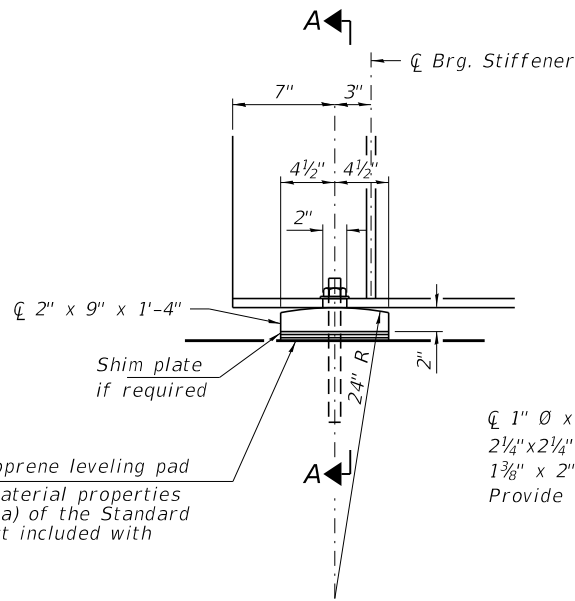
- I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total-Strength I, and Service II) due to non-composite dead loads (in.⁴ and in.³).
- $I_c(n), S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total-Strength I, and Service II) in uncracked sections due to short-term composite live loads (in.⁴ and in.³).
- $I_c(3n), S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s (Total-Strength I, and Service II) in uncracked sections, due to long-term composite (superimposed) dead loads (in.⁴ and in.³).
- $I_c(cr), S_c(cr)$: Composite moment of inertia and section modulus of the steel and longitudinal deck reinforcement, used for computing f_s (Total-Strength I and Service II) in cracked sections, due to both short-term composite live loads and long-term composite (superimposed) dead loads (in.⁴ and in.³).
- S_x : Section modulus about the major axis of the section to the controlling flange, tension or compression, taken as yield moment with respect to the controlling flange over the yield strength of the controlling flange (in.³).
- DC1: Un-factored non-composite dead load (kips/ft.).
MDC1: Un-factored moment due to non-composite dead load (kip-ft.).
DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).
MDC2: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).
DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).
MDW: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).
LLDF: Live Load Distribution Factor for moment and shear computed according to Article 4.6.2.2 and further IDOT provisions.
 $M_L + IM$: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).
 M_u : Strength I load combination of factored design moments (kip-ft.).
 $1.25 (MDC1 + MDC2) + 1.5 MDW + 1.75 M_L + IM$
 f_l : Factored calculated flange lateral bending stress as calculated using Article 6.10.1.6 and as further simplified by IDOT provisions (ksi).
 $\phi_r M_n$: Factored nominal flexural resistance of the section determined as specified in Article 6.10.7.1 or A6 as applicable (kip-ft.).
 f_s DC1: Un-factored stress at edge of flange for controlling steel flange due to vertical non-composite dead loads as calculated below (ksi).
 M_{DC1} / S_s
 f_s DC2: Un-factored stress at edge of flange for controlling steel flange due to vertical composite dead loads as calculated below (ksi).
 $M_{DC2} / S_c(3n)$ or $M_{DC2} / S_c(cr)$ as applicable.
 f_s DW: Un-factored stress at edge of flange for controlling steel flange due to vertical composite future wearing surface loads as calculated below (ksi).
 $M_{DW} / S_c(3n)$ or $M_{DW} / S_c(cr)$ as applicable.
 f_s ($L + IM$): Un-factored stress at edge of flange for controlling steel flange due to vertical composite live load plus impact loads as calculated below (ksi).
 $M_L + IM / S_c(n)$ or $M_L + IM / S_c(cr)$ as applicable.
 $f_s + f_l/2$ (Service II): Sum of stresses as computed below (ksi).
 f_s DC1 + f_s DC2 + f_s DW + 1.3 f_s ($L + IM$) + $f_l/2$
Service II Resistance: Composite (0.95 $R_h F_{Yr}$) or noncomposite (0.80 $R_h F_{Yr}$) stress capacity according to Article 6.10.4.2 (ksi).
 $f_s + f_l/3$ (Strength I): Sum of stresses as computed below on non-compact sections (ksi).
1.25 (f_s DC1 + f_s DC2) + 1.5 f_s DW + 1.75 f_s ($L + IM$) + $f_l/3$
 $\phi_r F_n$: Factored nominal flexural resistance of the section as specified in Article 6.10.7.2 or 6.10.8 as applicable (ksi).
 V_f : Maximum factored shear range in span computed according to Article 6.10.10.



TYP. END OF
GIRDER ELEVATION



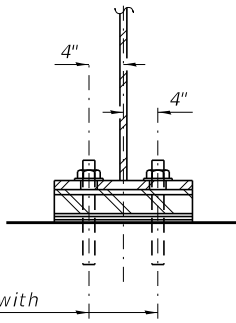
SECTION B-B



1/8" elastomeric neoprene leveling pad according to the material properties of Article 1052.02(a) of the Standard Specifications. Cost included with Structural Steel.

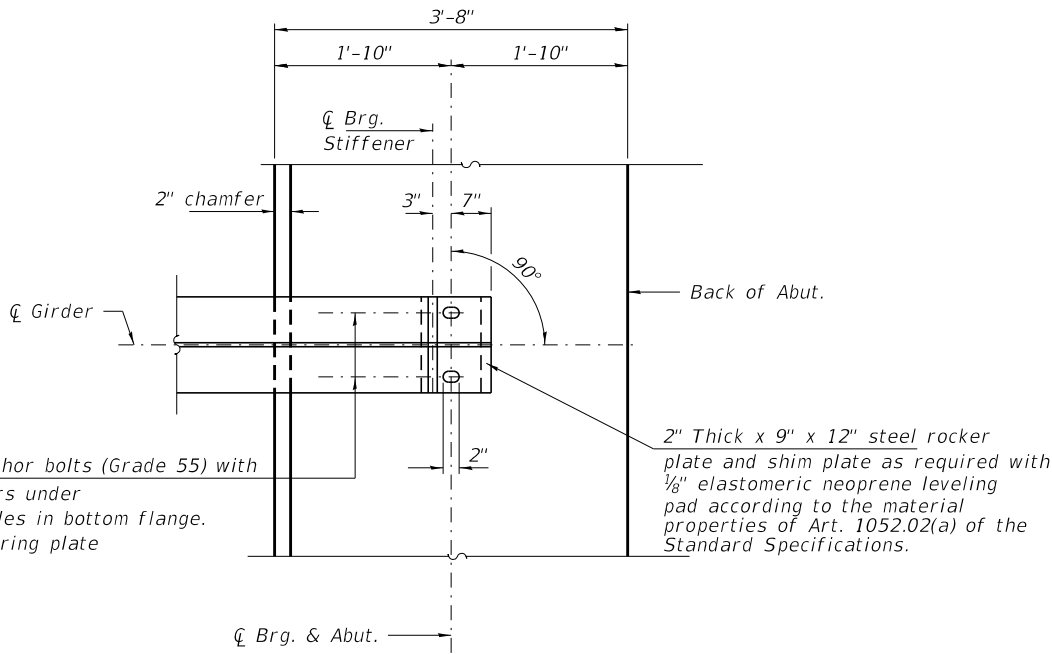
1" $\varnothing$ x 12" all-thread anchor bolts (Grade 55) with 2 1/4" x 2 1/4" x 5/16" R washers under nuts. 1 3/8" x 2" slotted hole in bottom flange. Provide 1 1/2" $\varnothing$ holes in bearing plate.

ELEVATION



SECTION A-A

FIXED BEARING AT ABUTMENTS
(10 required)



1" $\varnothing$ x 12" all-thread anchor bolts (Grade 55) with 2 1/4" x 2 1/4" x 5/16" R washers under nuts. 1 3/8" x 2" slotted holes in bottom flange. Provide 1 1/2" $\varnothing$ holes in bearing plate

2" Thick x 9" x 12" steel rocker plate and shim plate as required with 1/8" elastomeric neoprene leveling pad according to the material properties of Art. 1052.02(a) of the Standard Specifications.

PLAN

(Showing bottom flange of steel girder at abutments)

Notes:

Two 1/8" adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

Anchor bolts shall be according to Article 521.06 of the Standard Specifications.

Girders shall be braced for stability during erection and remain braced until deck is poured and cured.

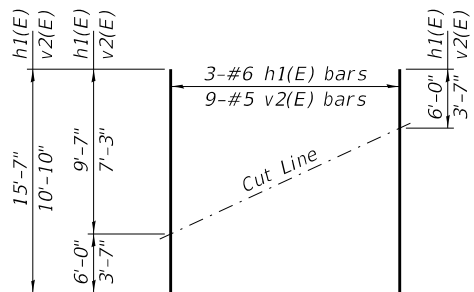
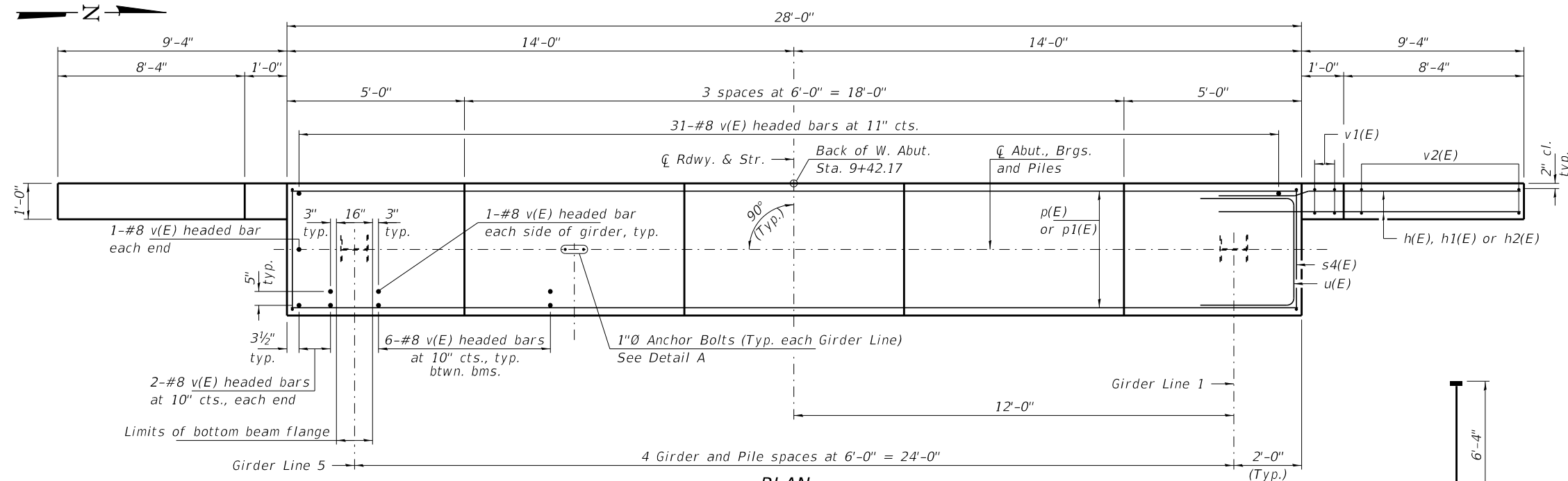
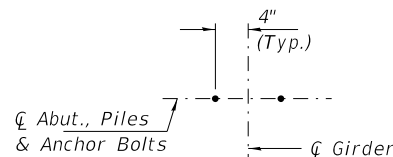
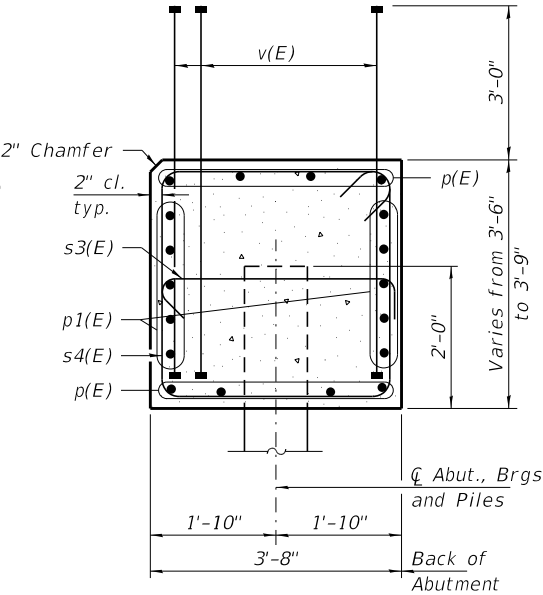
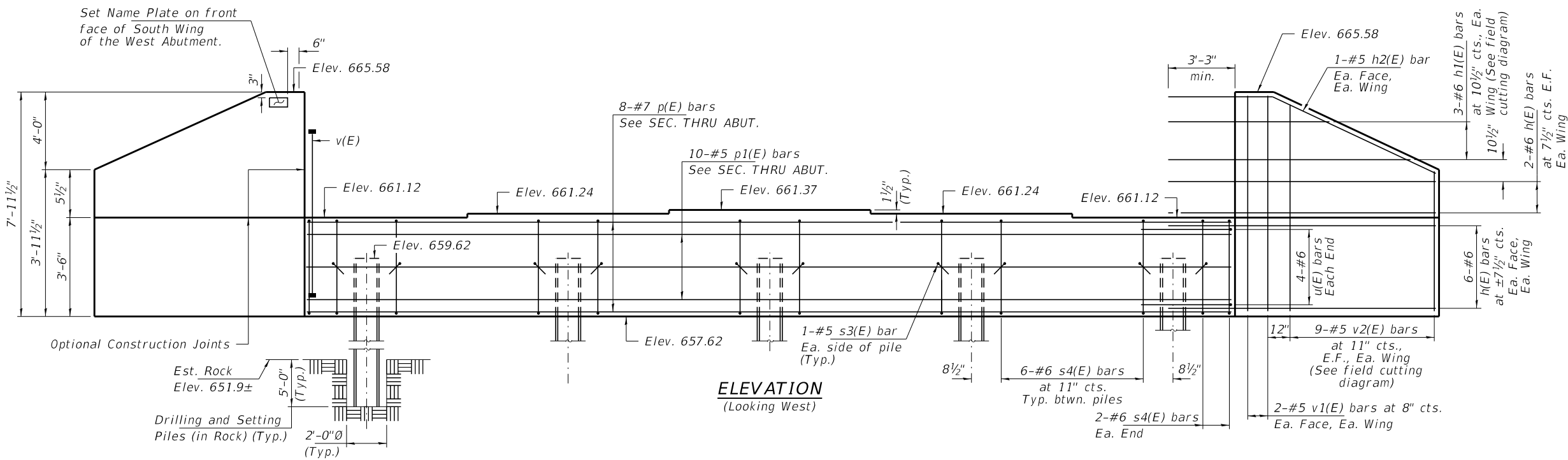
See sheet 9 of 14 for bearing stiffener dimensions and details.

Anchor bolts at all supports shall be installed as each member is erected unless an equivalent temporary means of lateral restraint is used.

All steel plates of the bearing assembly shall be M270 Grade 50W.

BILL OF MATERIAL

Item	Unit	Quantity
Anchor Bolts, 1"	Each	20



Order h1(E) and v2(E) full length. Cut as shown and use remainder of bars in opposite face.

BAR h2(E)

BAR s4(E)

BAR s3(E)

BAR u(E)

BAR v(E)

(Headed 142-#8 Bar Terminators)

Notes:

Space reinforcement in cap to miss anchor bolts.

Pour steps monolithically with cap.

Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706.

Bar Terminators, paid for separately.

Protective Coat shall be applied to the top and front face of wingwalls.

For details of piles, see sheet 13 of 14.

PILE DATA

Type: Steel HP12x63

Nominal Required Bearing: Set in Rock (497 kips)

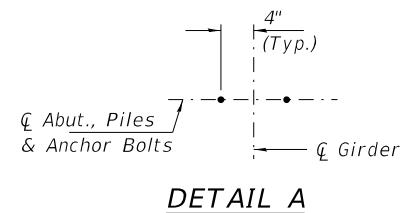
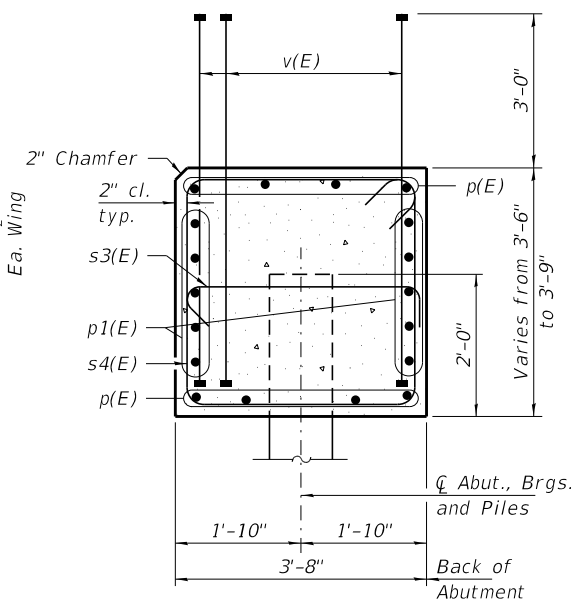
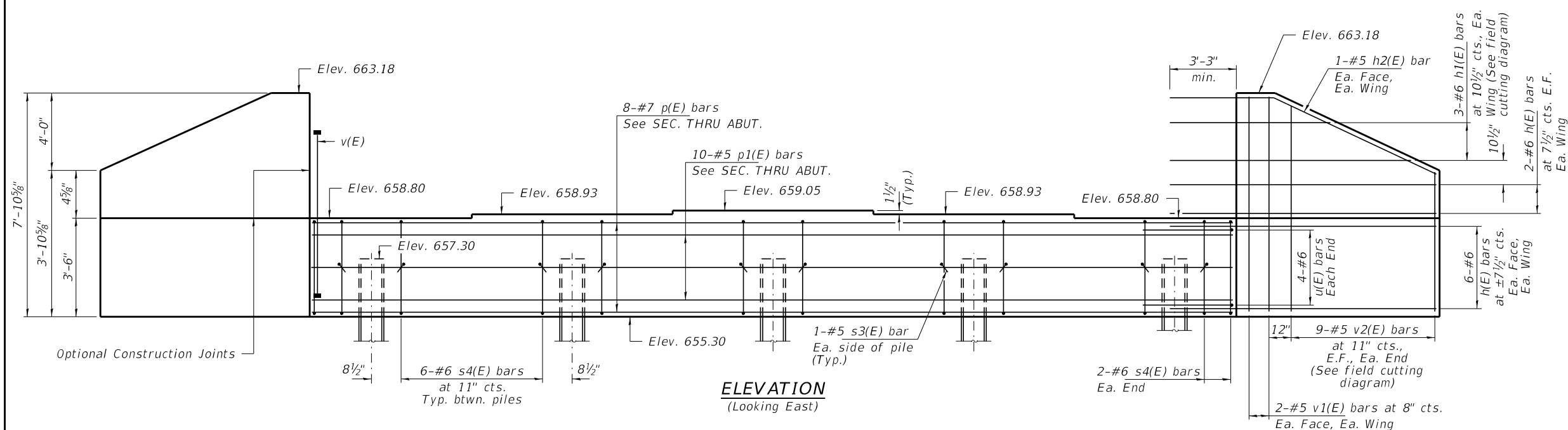
Factored Resistance Available: Set in Rock (273 kips)

Est. Length: 15'

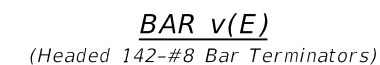
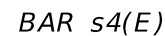
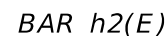
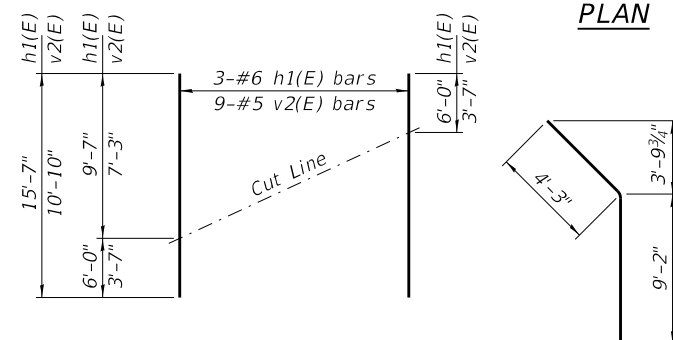
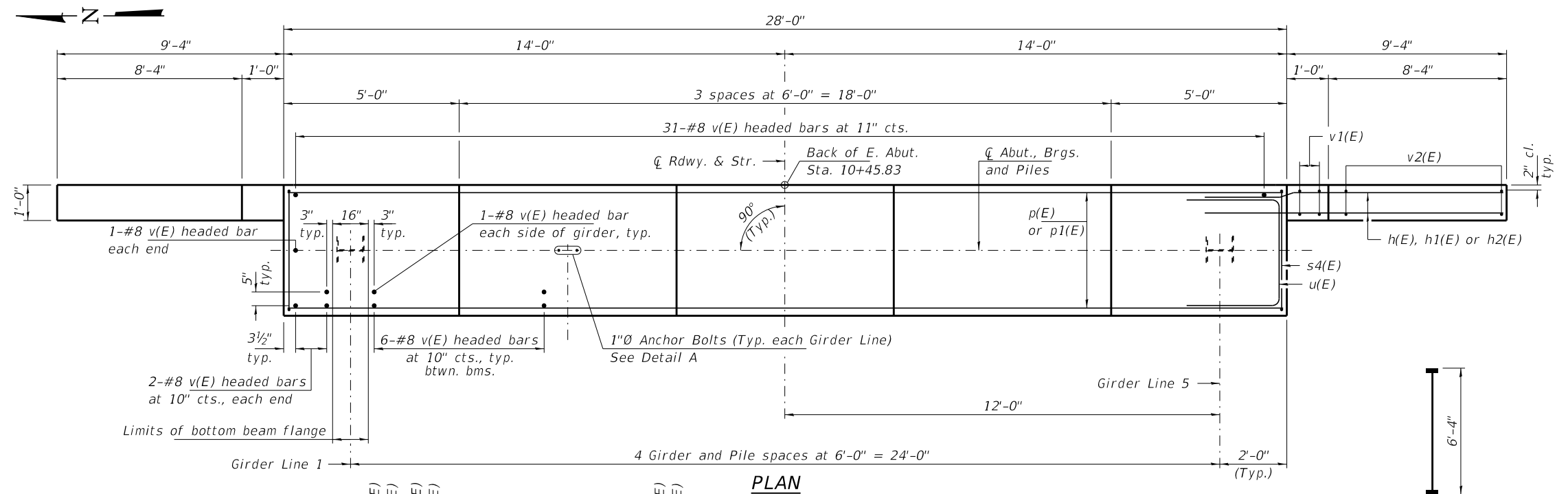
No. of Piles: 5

BILL OF MATERIAL - W. ABUT.

BAR	NO.	SIZE	LENGTH	SHAPE
h(E)	32	#6	12'-6"	
h1(E)	6	#6	15'-7"	
h2(E)	4	#5	13'-5"	
p(E)	8	#7	27'-8"	
p1(E)	10	#5	27'-8"	
s3(E)	10	#5	4'-4"	
s4(E)	28	#6	14'-4"	
u(E)	8	#6	9'-8"	
v(E)	71	#8	6'-4"	
v1(E)	8	#5	7'-7"	
v2(E)	18	#5	10'-10"	
Structure Excavation			Cu. Yd.	90
Concrete Structures			Cu. Yd.	18.0
Protective Coat			Sq. Yd.	17
Reinf. Bars, Epoxy Coated			Pound	3,770
Furnishing Steel Piles HP12x63			Foot	75
Name Plates			Each	1
Bar Terminators			Each	142
Drilling and Setting Piles (in Rock)			Cu. Ft.	78.5



BAR	NO.	SIZE	LENGTH	SHAPE
<i>h(E)</i>	32	#6	12'-6"	
<i>h1(E)</i>	6	#6	15'-7"	
<i>h2(E)</i>	4	#5	13'-5"	
<i>p(E)</i>	8	#7	27'-8"	
<i>p1(E)</i>	10	#5	27'-8"	
<i>s3(E)</i>	10	#5	4'-4"	
<i>s4(E)</i>	28	#6	14'-4"	
<i>u(E)</i>	8	#6	9'-8"	
<i>v(E)</i>	71	#8	6'-4"	
<i>v1(E)</i>	8	#5	7'-7"	
<i>v2(E)</i>	18	#5	10'-10"	
<i>Structure Excavation</i>			<i>Cu. Yd.</i>	85
<i>Concrete Structures</i>			<i>Cu. Yd.</i>	17.9
<i>Protective Coat</i>			<i>Sq. Yd.</i>	17
<i>Reinf. Bars, Epoxy Coated</i>			<i>Pound</i>	3,770
<i>Furnishing Steel Piles HP12x63</i>			<i>Foot</i>	100
<i>Driving Piles</i>			<i>Foot</i>	100
<i>Test Pile Steel HP12x63</i>			<i>Each</i>	1
<i>Pile Shoes</i>			<i>Each</i>	5
<i>Bar Terminators</i>			<i>Each</i>	142

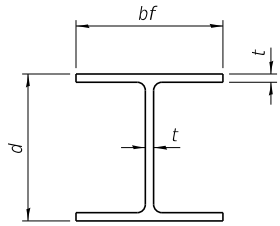


PILE DATA

Type: Steel HP12x63 w/ Pile Shoes
Nominal Required Bearing: 497 Kips/pile
Factored Resistance Available: 273 Kips/pile
Est. Length: 25'
No. Production Piles: 4
No. Test Piles: 1

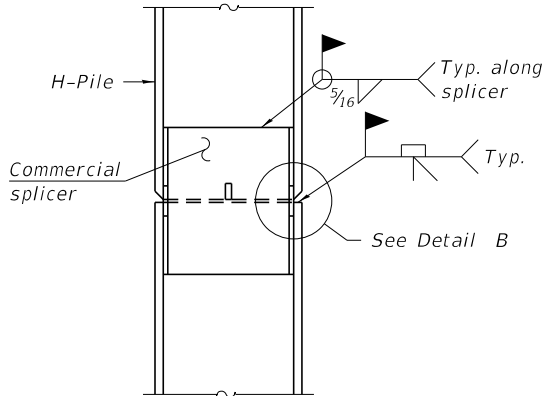
Notes:

- Space reinforcement in cap to miss anchor bolts.*
- Pour steps monolithically with cap.*
- Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706.*
- Bar Terminators, paid for separately.*
- Protective Coat shall be applied to the top and front face of wingwalls.*
- For details of piles, see sheet 13 of 14.*

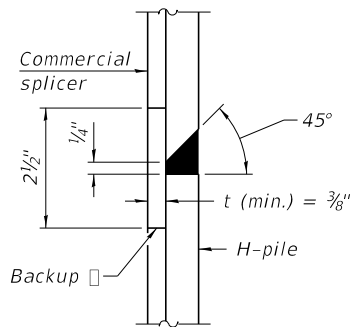


STEEL PILE TABLE

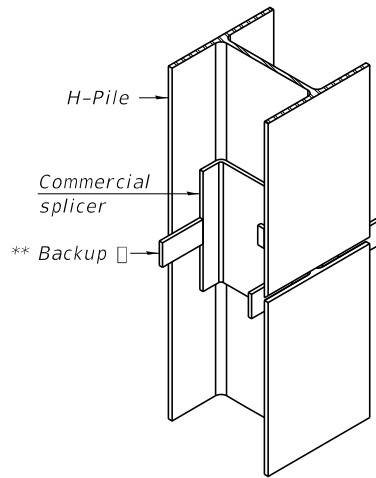
Designation	Depth d	Flange width bf	Web and Flange thickness t	Encasement diameter A
HP 18x181	18	18	1	36"
x157	17¾"	17⅞"	⅞"	36"
x135	17½"	17¾"	¾"	36"
HP 16x183	16½"	16½"	1⅞"	36"
x162	16¼"	16⅞"	1"	36"
x141	16	16	⅞"	36"
x121	15¾"	15⅞"	¾"	36"
HP 14x117	14¼"	14⅞"	1⅜"	30"
x102	14"	14¾"	1⅞"	30"
x89	13⅞"	14¾"	⅝"	30"
x73	13⅝"	14⅝"	½"	30"
HP 12x84	12¼"	12¼"	1⅞"	24"
x74	12⅞"	12¼"	⅝"	24"
x63	12"	12⅞"	½"	24"
x53	11¾"	12"	⅞"	24"
HP 10x57	10"	10¼"	⅞"	24"
x42	9¾"	10⅞"	⅞"	24"
HP 8x36	8"	8⅞"	⅞"	18"



ELEVATION

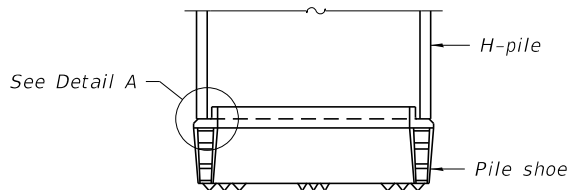


DETAIL B

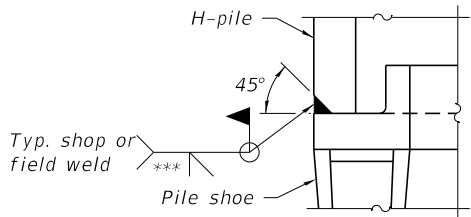


ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



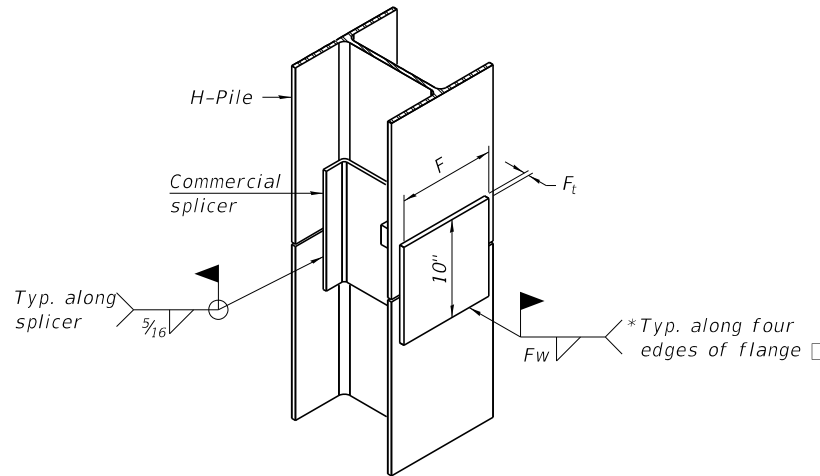
ELEVATION



DETAIL A

SHOE ATTACHMENT

Note:
The steel H-piles shall be according to
AASHTO M270 Grade 50.



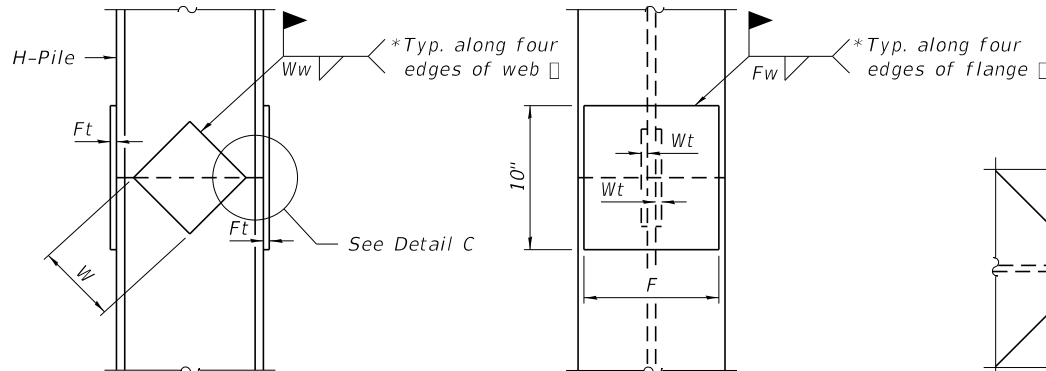
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

* Interrupt welds ¼" from end of web and/or each flange.

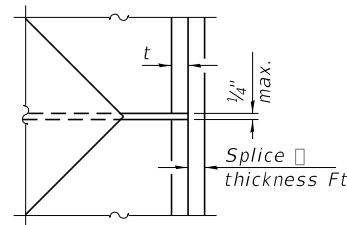
** Remove portions of backup's that extend outside the flanges.

*** Weld size per pile shoe manufacturer (⅝" min.).



ELEVATION

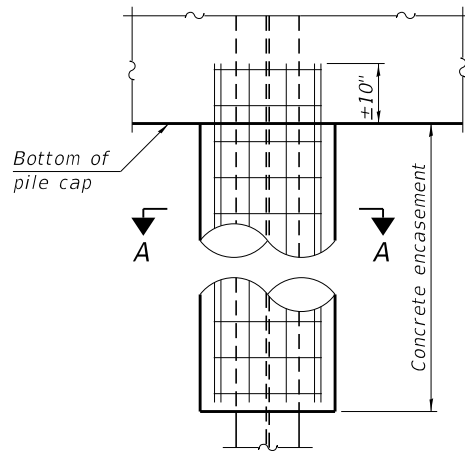
END VIEW



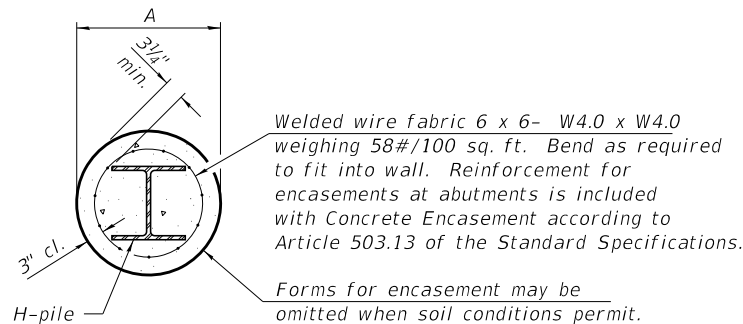
DETAIL C

Designation	F	Ft	Fw	W	Wt	Ww
HP 18x181	15½"	1½"	1"	9½"	⅞"	¾"
x157	15¼"	1¼"	1"	9½"	⅞"	¾"
x135	15¼"	1¼"	1"	9½"	⅞"	¾"
HP 16x183	13¾"	1½"	1"	8¼"	⅞"	¾"
x162	13½"	1½"	1"	8¼"	¾"	⅝"
x141	13½"	1¼"	⅞"	8¼"	¾"	⅝"
x121	13½"	1¼"	⅞"	8¼"	¾"	⅝"
HP 14x117	12½"	1¼"	⅞"	7¾"	⅝"	½"
x102	12½"	1"	¾"	7¾"	⅝"	½"
x89	12½"	⅞"	1⅞"	7¾"	⅝"	½"
x73	12½"	¾"	⅞"	7¾"	⅝"	½"
HP 12x84	10"	1"	1⅞"	6½"	⅝"	½"
x74	10"	⅞"	1⅞"	6½"	⅝"	½"
x63	10"	¾"	½"	6½"	½"	⅜"
x53	10"	¾"	½"	6½"	½"	⅜"
HP 10x57	8"	⅞"	⅞"	5¼"	½"	⅜"
x42	8"	¾"	⅞"	5¼"	½"	⅜"
HP 8x36	6¾"	⅝"	⅞"	4"	½"	⅜"

WELDED PLATE FIELD SPLICE



ELEVATION



SECTION A-A

INDIVIDUAL PILE
CONCRETE ENCASEMENT
(when specified)

F-HP

4-4-2025

FILE NAME = 180028-shi-bridge.dgn	USER NAME = smierzwa	DESIGNED - S.T.M.	REVISED -	STATE OF ILLINOIS WARREN COUNTY HIGHWAY DEPARTMENT	HP PILE DETAILS STRUCTURE NO. 094-3041	C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 3035 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM L.S. / P.E. / S.E. CORP. 184.000959	PLOT SCALE = \$SCALE\$	CHECKED - S.W.M.	REVISED -			7	17-00138-00-BR	WARREN	27	19
PLOT DATE = 10/30/2025		DRAWN - R.D.H.	REVISED -			SAWMILL BRIDGE		CONTRACT NO. 89781		
		CHECKED - S.T.M./S.W.M.	REVISED -			SHEET NO. 13 OF 14 SHEETS		ILLINOIS FED. AID PROJECT RJC2(314)		

Page 1 of 1Date 7/13/18

ROUTE	CH-7	DESCRIPTION	Sawmill Road Bridge Over Cedar Creek	LOGGED BY	Fehl
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SECTION 17-00138-00-BR LOCATION Monmouth Township, SEC. 9, TWP. T11N, RNG. R2W, 4th PM,

COUNTY	Warren	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE	CME Auto Hammer
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The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BORING-1

Page 1 of 1Date 7/13/18

ROUTE	CH-7	DESCRIPTION	Sawmill Road Bridge Over Cedar Creek	LOGGED BY	Fehl
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SECTION 17-00138-00-BR LOCATION Monmouth Township, SEC. 9, TWP. T11N, RNG. R2W, 4th PM,

COUNTY	Warren	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE	CME Auto Hammer
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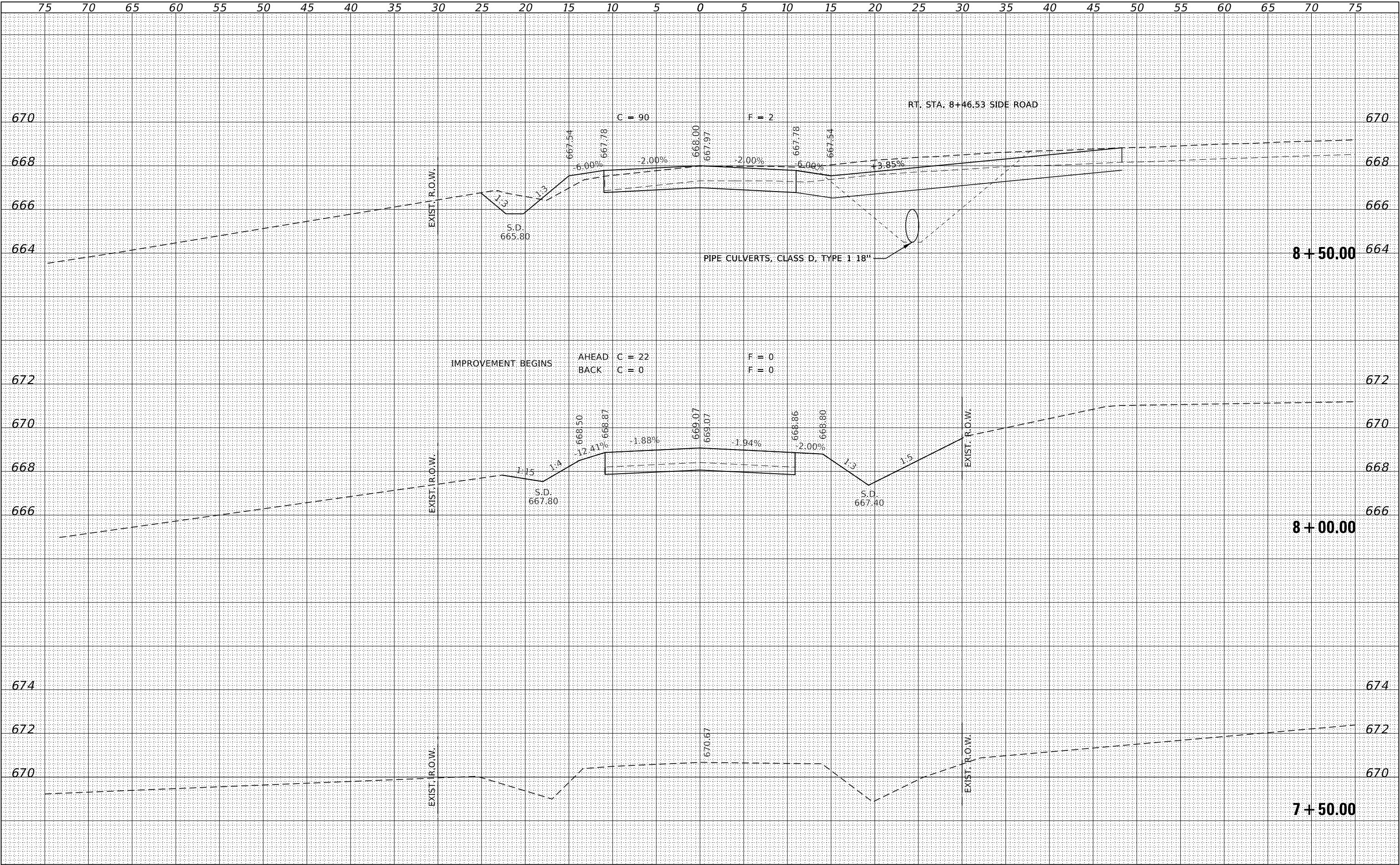
The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BORING-2

FILE NAME = 180028-shl-bridge.dgn		USER NAME = smilerzwa	DESIGNED - S.T.M.	REVISED -	STATE OF ILLINOIS WARREN COUNTY HIGHWAY DEPARTMENT	BORINGS STRUCTURE NO. 094-3041		C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM 18 / P.E. / SE. CORP. 18-030059		PLOT SCALE = \$SCALE\$	CHECKED - S.W.M.	REVISED -				7	17-00138-00-BR	WARREN	27	20
		PLOT DATE = 10/30/2025	DRAWN - R.D.H.	REVISED -		SAWMILL BRIDGE		CONTRACT NO. 89781				
		CHECKED - S.T.M./S.W.M.	REVISED -	SHEET NO. 14 OF 14 SHEETS					ILLINOIS / FED. AID PROJECT RUC2(314)			

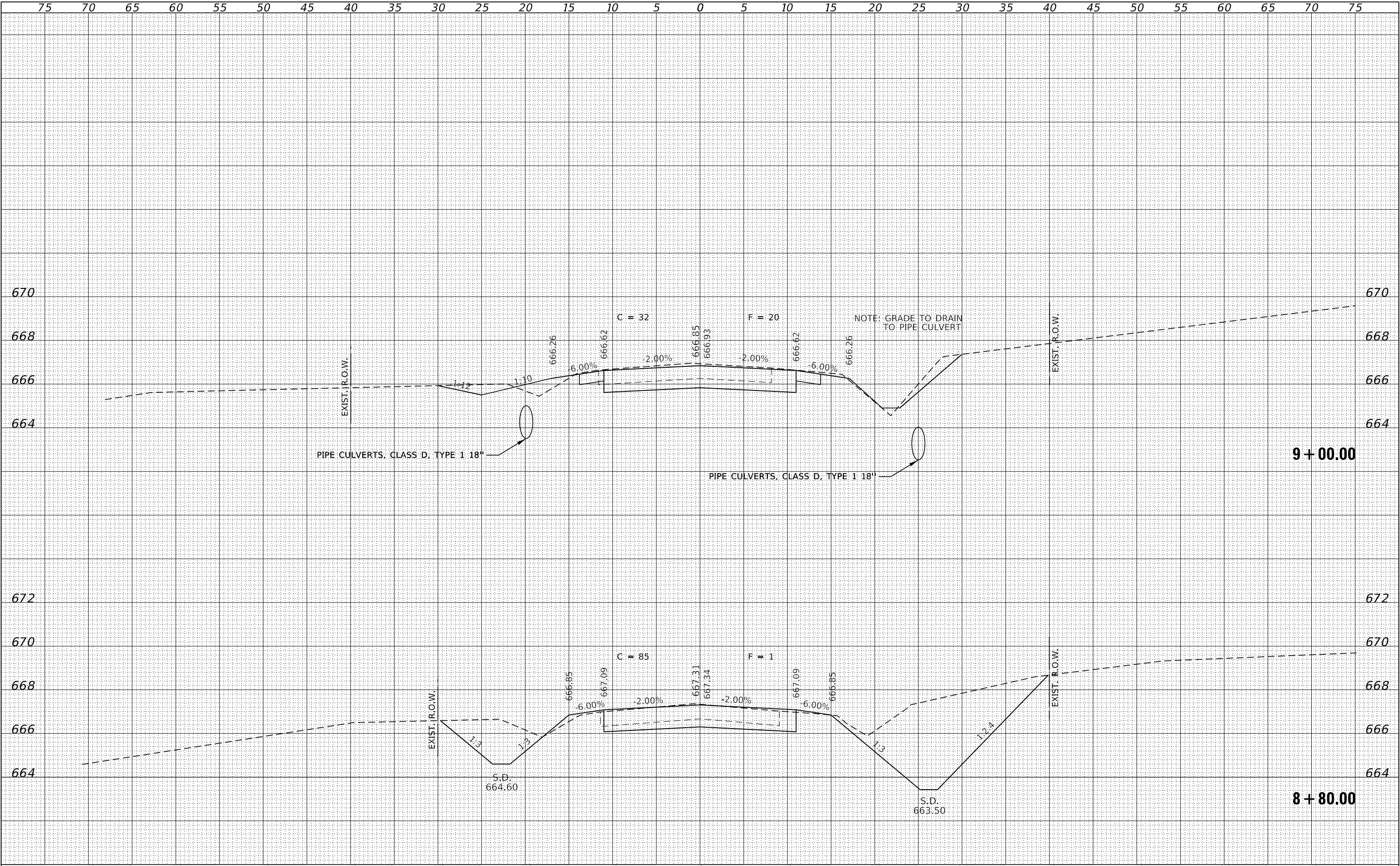
DATE	BY	SURVEYED	PLOTTED	AREAS CHECKED
		NO.	NO.	NO.

DATE	BY	SURVEYED	PLOTTED	AREAS CHECKED
		NO.	NO.	NO.



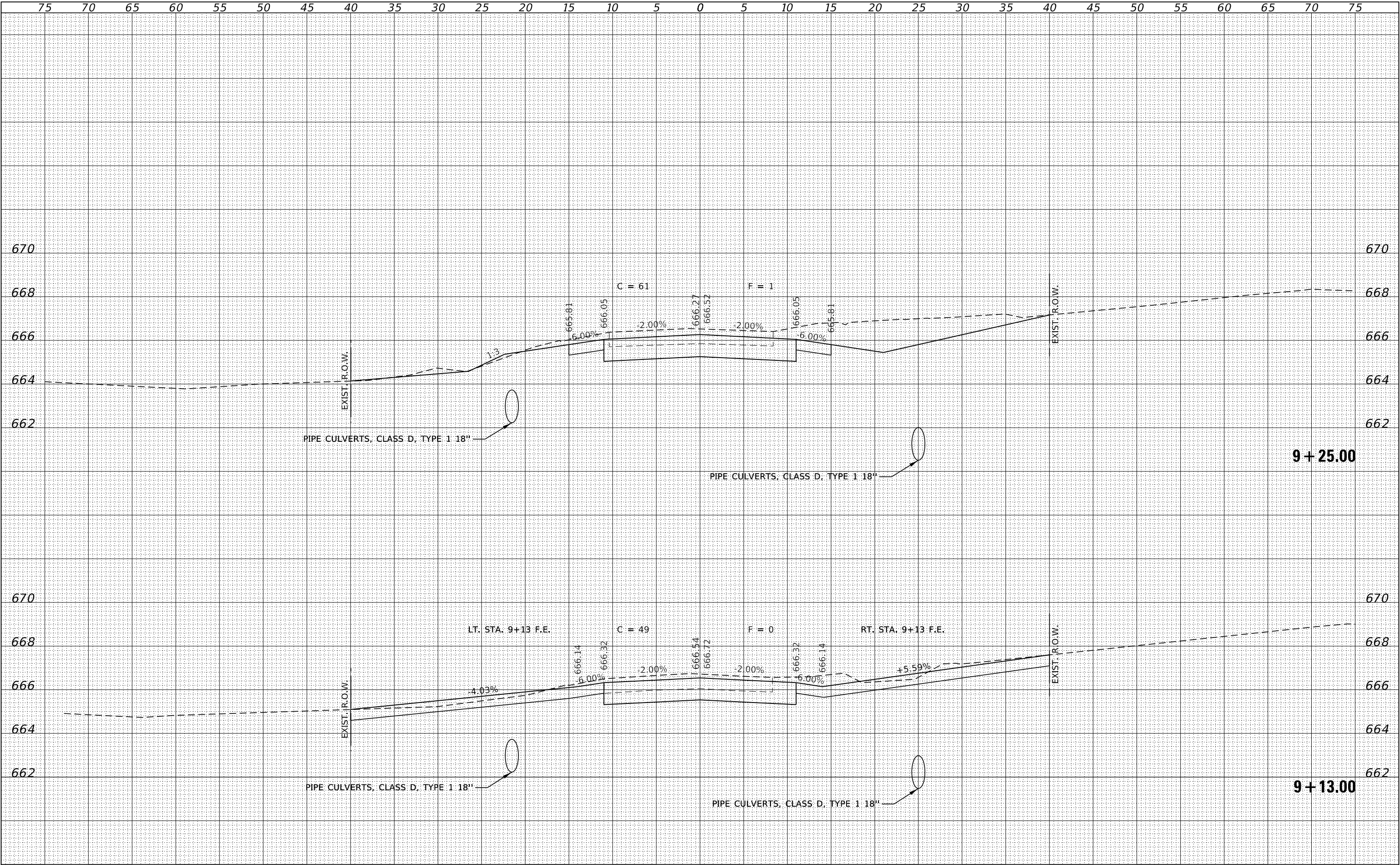
FINAL	SURVEYED	BY	DATE
SURVEY	PLOTTED		
NOTE BOOK	TEMPLATE		
NO.	AREAS CHECKED		

ORIGINAL	SURVEYED	BY	DATE
SURVEY	PLOTTED		
NOTE BOOK	TEMPLATE		
NO.	AREAS CHECKED		

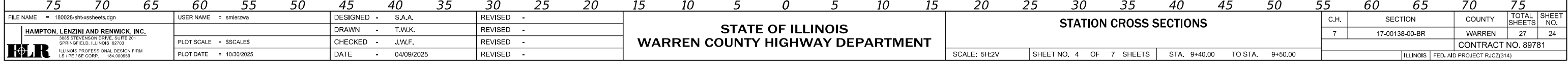


FINAL	SURVEYED	BY	DATE
SURVEY	PLOTTED		
NOTE BOOK	TEMPLATE		
NO.	AREAS CHECKED		

ORIGINAL	SURVEYED	BY	DATE
SURVEY	PLOTTED		
NOTE BOOK	TEMPLATE		
NO.	AREAS CHECKED		

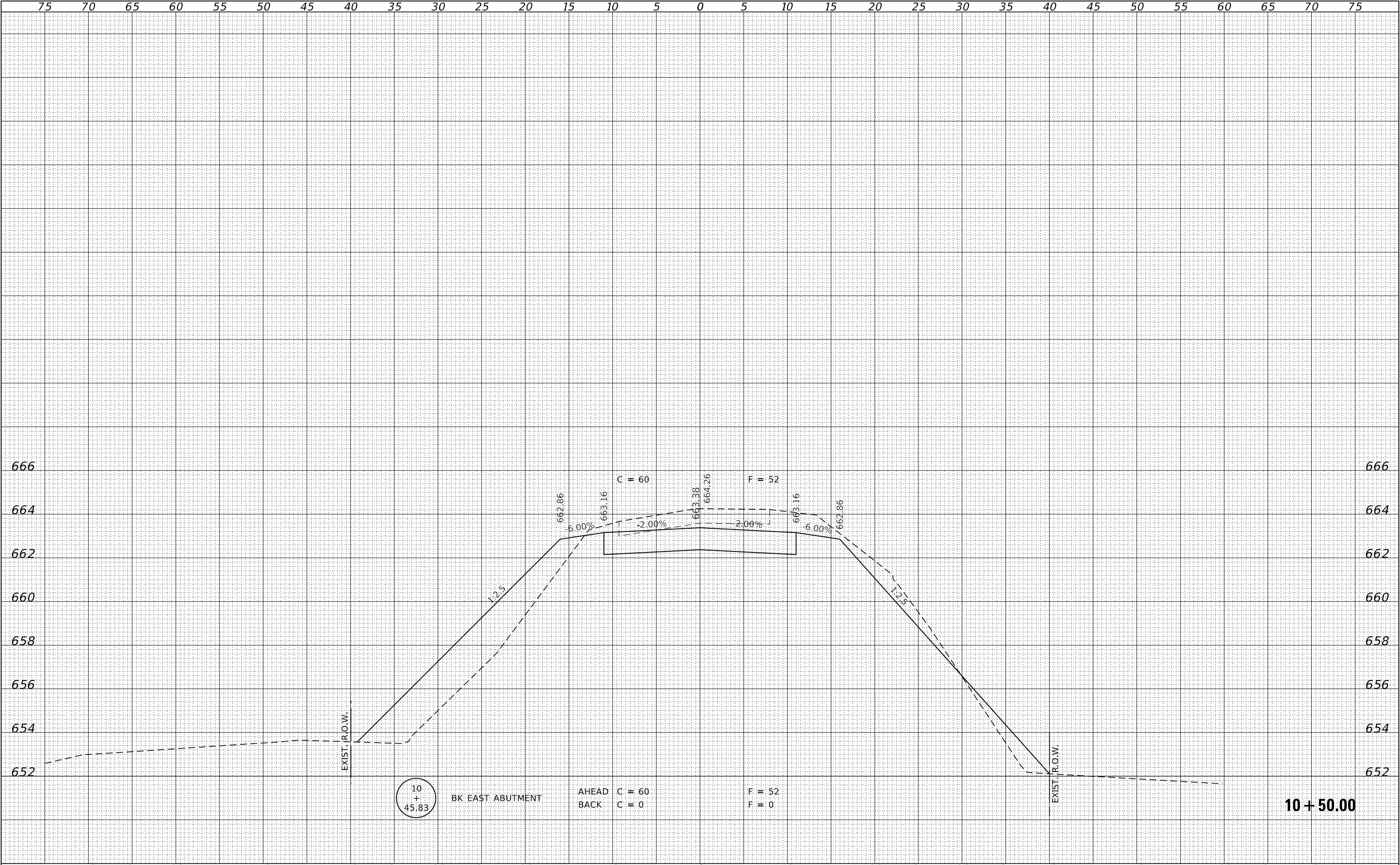


ORIGINAL SURVEY		BY _____	DATE _____
NOTE BOOK	SURVEYED _____		
	PLOTTED _____		
	TEMPLATE _____		
	AREAS _____		
NO. _____	AREAS CHECKED _____		



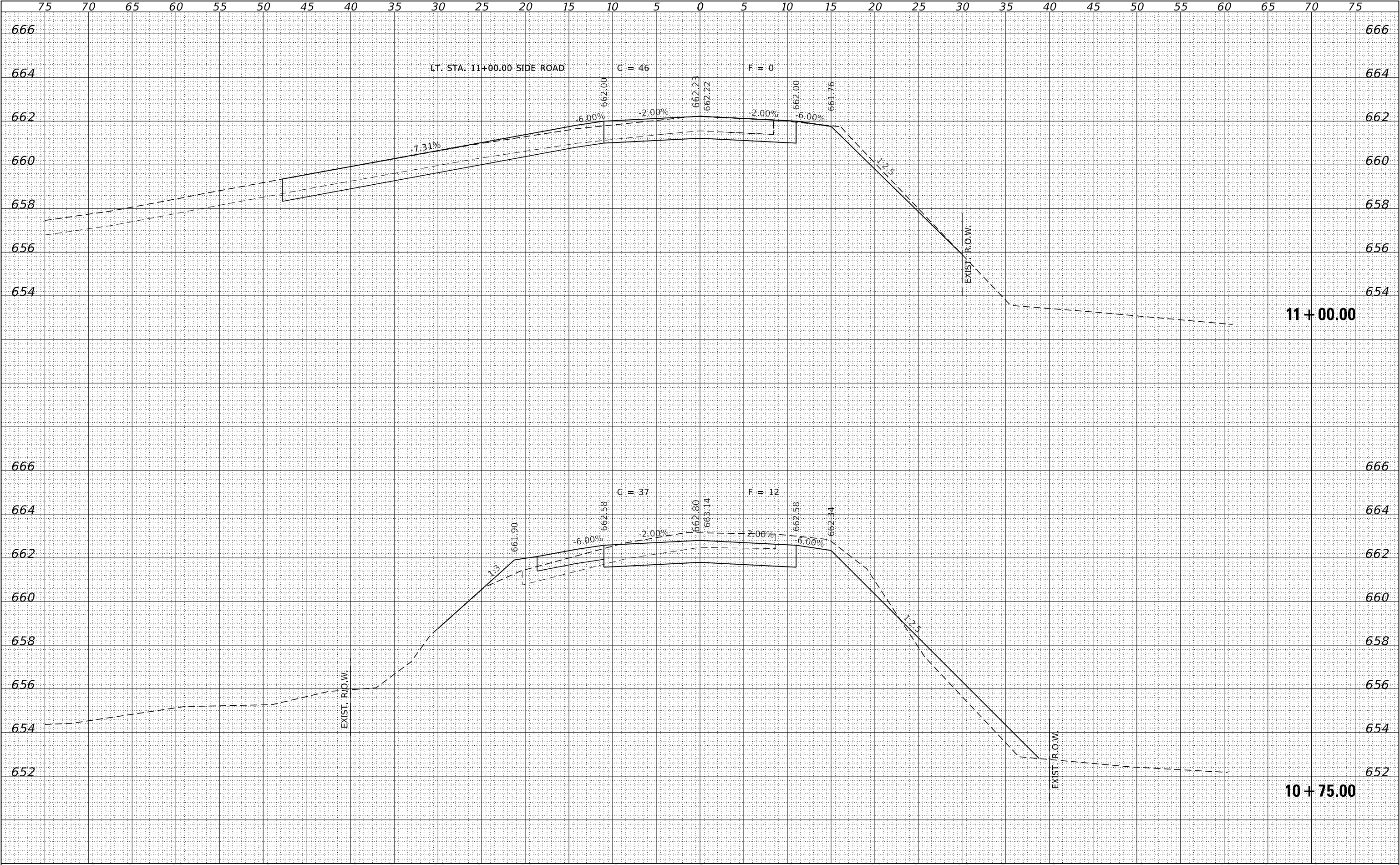
FINAL SURVEY NOTE BOOK NO.	SURVEYED PLOTTED TEMPLATE AREAS CHECKED	BY	DATE

ORIGINAL SURVEY NOTE BOOK NO.	SURVEYED PLOTTED TEMPLATE AREAS CHECKED	BY	DATE



FINAL SURVEY	SURVEYED PLOTTED NOTE BOOK NO.	BY	DATE

ORIGINAL SURVEY	SURVEYED PLOTTED NOTE BOOK NO.	BY	DATE



FILE NAME = 180028-sh1-xssheets.dgn		USER NAME = smlerzwa		DESIGNED - S.A.A.		REVISED -		STATE OF ILLINOIS WARREN COUNTY HIGHWAY DEPARTMENT						STATION CROSS SECTIONS						C.H.	SECTION		COUNTY		TOTAL SHEETS	SHEET NO.
 HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM L3 / PE / SE CORP. 184.000059		PLOT SCALE = \$SCALE\$		DRAWN - T.W.K.		REVISED -								7	17-00138-00-BR		WARREN		27	26						
		PLOT DATE = 11/25/2025		CHECKED - J.W.F.		REVISED -								CONTRACT NO. 89781												
		DATE - \$DAT\$		REVISED -		ILLINOIS FED. AID PROJECT RJCZ(314)																				
SCALE: 5H:2V		SHEET NO. 6 OF 7 SHEETS		STA. 10+75.00		TO STA. 11+00.00																				

FINAL SURVEY	SURVEYED PLOTTED NOTE BOOK	BY	DATE
NO.	AREAS CHECKED		

ORIGINAL SURVEY	SURVEYED PLOTTED NOTE BOOK	BY	DATE
NO.	AREAS CHECKED		

