

SUMMARY OF QUANTITIES			
CODE NO.	ITEM	CONSTRUCTION TYPE CODE 0010	
		UNIT	TOTAL QUANTITY
* ^ 20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	22
* ^ 20100210	TREE REMOVAL (OVER 15 UNITS DIAMETER)	UNIT	18
^ 20200100	EARTH EXCAVATION	CU YD	660
^ 20300100	CHANNEL EXCAVATION	CU YD	720
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	359
28000400	PERIMETER EROSION BARRIER	FOOT	1,385
28100209	STONE RIPRAP, CLASS A5	TON	670
35101400	AGGREGATE BASE COURSE, TYPE B	TON	408
40600275	BITUMINOUS MATERIALS (PRIME COAT)	POUND	1,319
40600290	BITUMINOUS MATERIALS (TACK COAT)	POUND	394
40603080	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50	TON	76
40604050	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5 MIX "C", N50	TON	46
42000070	PAVEMENT CONNECTOR (HMA) FOR BRIDGE APPROACH SLAB	SQ YD	76
48101500	AGGREGATE SHOULDERS, TYPE B 6"	SQ YD	448
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50200100	STRUCTURE EXCAVATION	CU YD	530
50300225	CONCRETE STRUCTURES	CU YD	66.8
^ 50300255	CONCRETE SUPERSTRUCTURE	CU YD	125.0
^ 50300260	BRIDGE DECK GROOVING	SQ YD	575
^ 50300300	PROTECTIVE COAT	SQ YD	624
50301350	CONCRETE SUPERSTRUCTURE (APPROACH SLAB)	CU YD	94.4
50500105	FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	1
50500505	STUD SHEAR CONNECTORS	EACH	1,220
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	66,160
* 50901050	STEEL RAILING, TYPE SM	FOOT	188
51201600	FURNISHING STEEL PILES HP12X53	FOOT	450
51202305	DRIVING PILES	FOOT	450
51203600	TEST PILE STEEL HP12X53	EACH	1
51500100	NAME PLATES	EACH	1
52100520	ANCHOR BOLTS, 1"	EACH	20
^ 58600101	GRANULAR BACKFILL FOR STRUCTURES	CU YD	145
59100100	GEOCOMPOSITE WALL DRAIN	SQ YD	70
* 63100087	TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	4
* 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	4
63200310	GUARDRAIL REMOVAL	FOOT	81

^ SEE SPECIAL PROVISIONS

* SPECIALTY ITEMS

SUMMARY OF QUANTITIES			
CODE NO.	ITEM	CONSTRUCTION TYPE CODE 0010	
		UNIT	TOTAL QUANTITY
67100100	MOBILIZATION	L SUM	1
* 72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
* 78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	1,300
* 78200005	GUARDRAIL REFLECTORS, TYPE A	EACH	8
^ X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.3
X7011800	TRAFFIC CONTROL AND PROTECTION, STANDARD BLR 21	L SUM	1
^ Z0013798	CONSTRUCTION LAYOUT	L SUM	1
# Z0076600	TRAINEES	Hour	1000
^ Z0046304	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	160
# Z0076604	TRAINEES TRAINING PROGRAM GRADUATE	Hour	1000

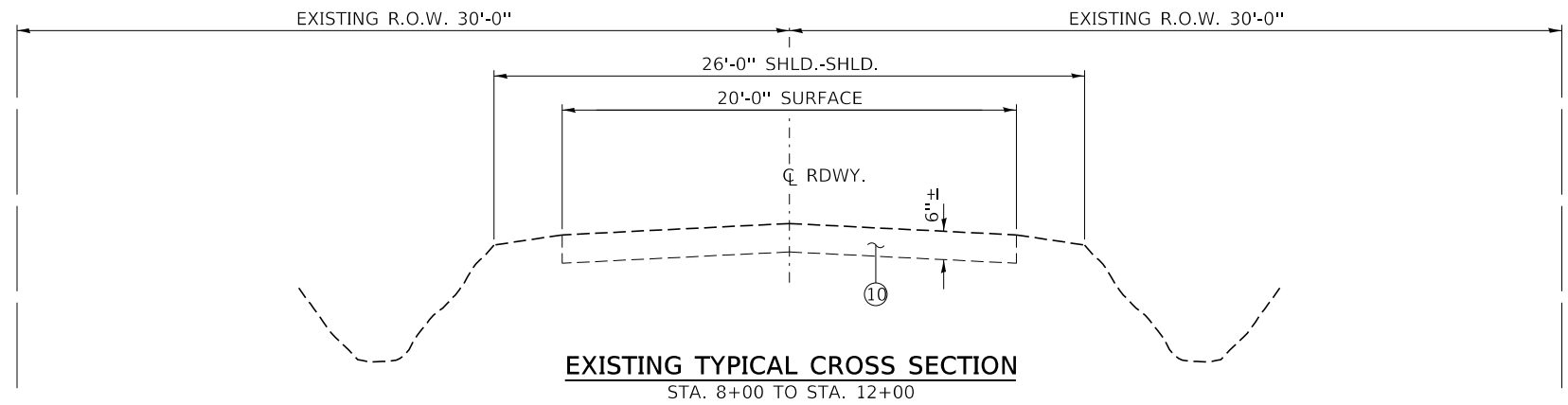
^ SEE SPECIAL PROVISIONS
* SPECIALTY ITEMS
0042

GENERAL NOTES

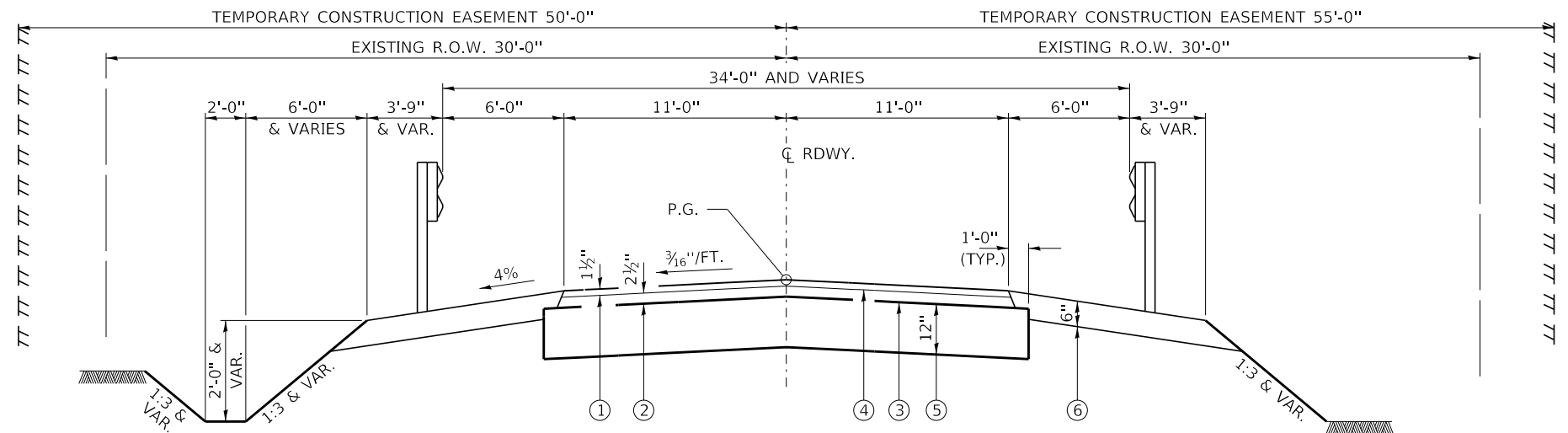
- ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE STATE OF ILLINOIS "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, ADOPTED APRIL 1, 2016", (HERE IN AFTER REFERRED TO AS THE STANDARD SPECIFICATIONS; THE LATEST EDITION OF THE "ILLINOIS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS"; THE DETAILS IN THE PLANS AND THE "SPECIAL PROVISIONS" INCLUDED IN THE DOCUMENTS.
- 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.
- ANY REFERENCE TO STANDARDS THROUGHOUT THE PLANS OR SPECIAL PROVISIONS SHALL BE INTERPRETED TO BE THE LATEST STANDARD OF THE DEPARTMENT.
- THE CONTRACTOR SHALL CONSULT THE ENGINEER IN REGARD TO THE EXACT LENGTH OF PIPE CULVERTS AND PIPE DRAINS BEFORE ORDERING THESE ITEMS.
- THE FOLLOWING RATES OF APPLICATION HAVE BEEN USED IN CALCULATING PLAN QUANTITIES

AGGREGATE BASE COURSE	2.05 TON/CU YD
HOT MIX ASPHALT	112 LBS/SQ YD/INCH THICKNESS
STONE DUMPED RIPRAP	1.75 TON/CU YD

BITUMINOUS MATERIALS RATES	
SURFACE TYPE	RESIDUAL RATE
AGGREGATE BASE (PRIME COAT)	0.250 LB/SQ FT
MILLED HMA OR PCC (TACK COAT)	0.050 LB/SQ FT
EXISTING PAVEMENT (TACK COAT)	0.050 LB/SQ FT
TACK COAT (BETWEEN LIFTS)	0.080 LB/SQ FT
- 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.
- 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) : 0.3 ACRES
- ALL WASTE MATERIAL FROM EXCAVATIONS SHALL BE DISPOSED OF BY THE CONTRACTOR. NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- COMMITMENTS:
 - TREES SHALL NOT BE CLEARED BETWEEN APRIL 1 AND SEPTEMBER 30.
 - THE BRIDGE BAT ASSESSMENT EXPIRES SEPTEMBER 21, 2022



EXISTING TYPICAL CROSS SECTION
STA. 8+00 TO STA. 12+00

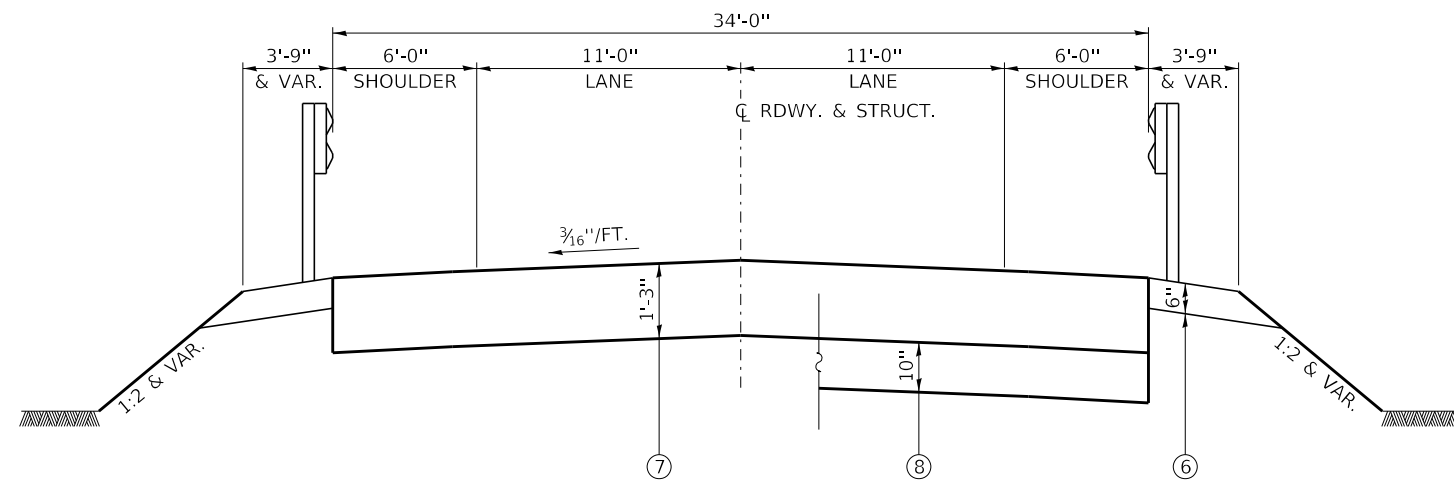


PROPOSED TYPICAL CROSS SECTION
STA. 8+00 TO 9+24 AND 10+76 TO 12+00

SUGGESTED CUT SECTION
CONSTRUCT AS SHOWN IN
STATION CROSS SECTIONS

TRANSITIONS FROM THE PROPOSED ROADWAY TO THE EXISTING
ROADWAY ARE TO BE CONSTRUCTED FROM STA. 8+00 TO 8+50
AND STA. 11+50 TO STA. 12+00. SEE SHEET 7 FOR TRANSITION
AT BRIDGE.

SUGGESTED FILL SECTION
CONSTRUCT AS SHOWN IN
STATION CROSS SECTIONS



PROPOSED TYPICAL APPROACH SLAB CROSS SECTION

STA. 9+24 TO STA. 9+54 AND
STA. 10+46 TO STA. 10+76 — ⑦
STA. 9+14 TO STA. 9+24 AND
STA. 10+76 TO STA. 10+86 — ⑨

LEGEND

- ① HMA SURFACE COURSE, IL.-9.5, MIX C, N50 (1½" THICKNESS)
- ② HMA BINDER COURSE, IL.-19.0, N50 (2½" THICKNESS)
- ③ BITUMINOUS MATERIALS (PRIME COAT)
- ④ BITUMINOUS MATERIALS (TACK COAT)
- ⑤ AGGREGATE BASE COURSE, TYPE A (12")
- ⑥ AGGREGATE SHOULDERS, TYPE B (6")
- ⑦ BRIDGE APPROACH SLAB (15")
- ⑧ BRIDGE APPROACH SLAB FOOTING (10")
- ⑨ PAVEMENT CONNECTOR HMA
- ⑩ EXISTING OIL & CHIP SURFACE ON AGGREGATE BASE

FILE NAME = 200025-shit-tysec@ons.dgn	USER NAME = rmosick	DESIGNED - I.N.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3088 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959	PLOT SCALE = \$SCALE\$	DRAWN - A.C.	REVISED -
	PLOT DATE = 8/20/2021	CHECKED - S.W.M.	REVISED -
		DATE - 08/11/2021	REVISED -

STATE OF ILLINOIS
TAZEWELL COUNTY HIGHWAY DEPARTMENT

TYPICAL CROSS SECTIONS

SCALE: NONE SHEET NO. 1 OF 1 SHEETS STA. 8+00 TO STA. 12+00

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
141	16-02126-00-BR	TAZEWELL	34	3
CINCINNATI ROAD DISTRICT		CONTRACT NO. 89721		
		ILLINOIS FED. AID PROJECT SAJG(571)		

PAVEMENT MARKING SCHEDULE			
LOCATION	PAINT PAVEMENT MARKING - LINE 4"		
	EDGE LINE WHITE	NO PASSING YELLOW	SKIP DASH CENTERLINE YELLOW
	78001110		
	FOOT	FOOT	FOOT
TR 141 / FURROW ROAD			
LT. STA. 8+00.00 TO LT. STA. 12+00.00	400		
CL. STA. 8+00.00 TO CL. STA. 12+00.00			100
RCL. STA. 8+00.00 TO LCL. STA. 12+00.00		400	
RCL. STA. 8+00.00 TO LCL. STA. 12+00.00	400		
SUBTOTAL	800	400	100
TOTAL	1300		

EARTHWORK SCHEDULE							
LOCATION	EARTH EXCAVATION	CHANNEL & STRUCTURE EXCAVATION	SHRINKAGE FACTOR	PERCENT USED	EXCAVATION ADJUSTED FOR SHRINKAGE	EMBANKMENT REQUIRED	EARTHWORK BALANCE
	CU.YD.	CU.YD.			CU.YD.	CU.YD.	CU.YD.
TR 141 / FURROW ROAD							
STA. 8+00.00 TO STA. 9+14.00	298		25.00%	100.00%	223	117	106
STA. 9+14.00 TO STA. 10+86.00		1250	25.00%	70.00%	656		656
STA. 10+86.00 TO STA. 12+00.00	360		25.00%	100.00%	270	47	223
TOTAL	658	1250			1149	164	985
USE	660	1250					985

WASTE EXCAVATION 985 CU YDS

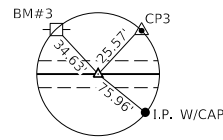
HOT-MIX ASPHALT MIXTURE REQUIREMENTS		
LOCATIONS(S)	TR 141 / FURROW ROAD	TR 141 / FURROW ROAD
MIXTURE USE(S):	HMA SURFACE COURSE	HMA BINDER COURSE
PG:	PG 64-22	PG 64-22
DESIGN AIR VOIDS:	4% @ 50 Gyr.	4% @ 50 Gyr.
MIXTURE COMPOSITION: (MIXTURE GRADATION)	IL 9.5	IL 19.0
FRICTION AGGREGATE:	MIXTURE C	NONE
DENSITY TEST METHOD	NUCLEAR GAUGE	NUCLEAR GAUGE
MIXTURE WEIGHT:	112 LBS \ SY \ INCH THICKNESS	112 LBS \ SY \ INCH THICKNESS
QUALITY MANAGEMENT PROGRAM	QC/QA	QC/QA

GUARDRAIL SCHEDULE					
LOCATION	TRAFFIC BARRIER TERMINAL, TYPE 6A	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	GUARDRAIL REMOVAL	TERMINAL MARKER - DIRECT APPLIED	GUARDRAIL REFLECTORS, TYPE A
TR 141 / FURROW ROAD	63100087	63100167	63200310	72501000	78200005
SEE SHEET 6 FOR LAYOUT	EACH	EACH	FOOT	EACH	EACH
LT. STA. 8+77.69 TO LT. STA. 11+22.31	2	2	46	2	4
RT. STA. 8+77.69 TO RT. STA. 11+22.31	2	2	35	2	4
TOTAL	4	4	81	4	8

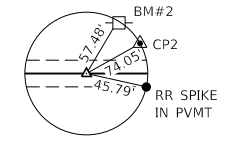
NOTE: SEE SHEET 6 FOR STATIONING AND LAYOUT

TREE REMOVAL SCHEDULE		
LOCATION	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	TREE REMOVAL (OVER 15 UNITS DIAMETER)
	UNIT	UNIT
TR 141 / FURROW ROAD		
RT. STA. 10+42	10	
RT. STA. 10+48	12	
RT. STA. 10+48		18
TOTAL	22	18
USE	22	18

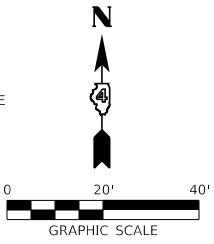
ROADWAY SCHEDULE							
LOCATION	AGGREGATE BASE COURSE, TYPE B	BITUMINOUS MATERIALS (PRIME COAT)	BITUMINOUS MATERIALS (TACK COAT)	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N70	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "C", N70	PAVEMENT CONNECTOR (HMA) FOR BRIDGE APPROACH SLAB	AGGREGATE SHOULDERS, TYPE B 6"
	TON	POUND	POUND	TON	TON	SQ YD	SQ YD
TR 141 / FURROW ROAD	35101400	40600275	40600290	40603085	40604052	42000070	48101500
STA. 8+00.00 TO STA. 9+14.00	204	660	197	38	23	38	218
STA. 10+86.00 TO STA. 12+00.00	204	659	197	38	23	38	230
TOTAL	408	1319	394	76	46	76	448
USE	408	1319	394	76	46	76	448



P.I. STA. 5+50.00
P.K. NAIL (FLUSH)
N. 1394520.076
E. 2443446.049
ELEV. 507.74

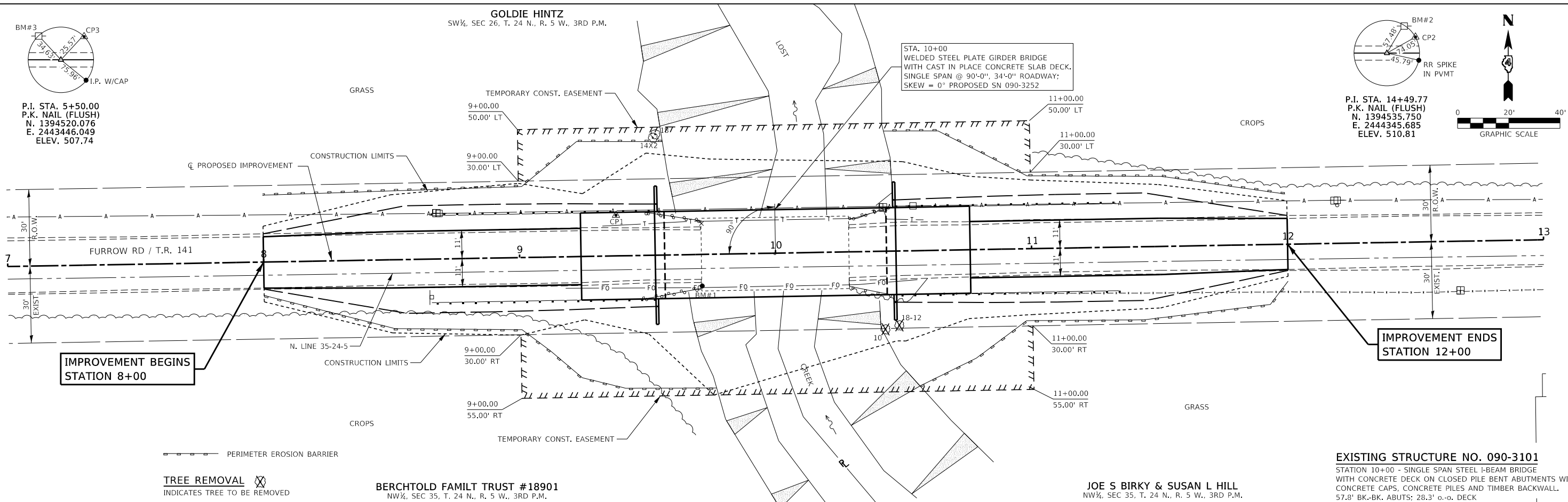


P.I. STA. 14+49.77
P.K. NAIL (FLUSH)
N. 1394535.750
E. 2444345.685
ELEV. 510.81



DATE	
BY	
REVIEWED	
PLANNED	
NOTED	
NO.	

DATE	
BY	
REVIEWED	
PLANNED	
NOTED	
NO.	



IMPROVEMENT BEGINS
STATION 8+00

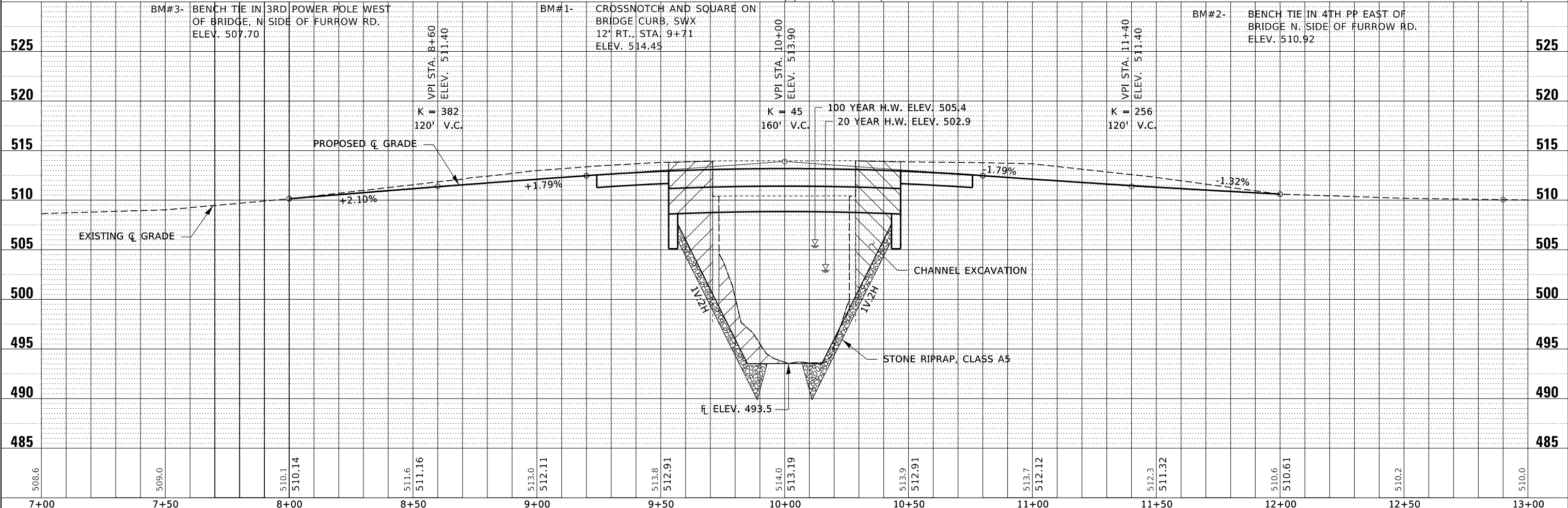
IMPROVEMENT ENDS
STATION 12+00

TREE REMOVAL INDICATES TREE TO BE REMOVED

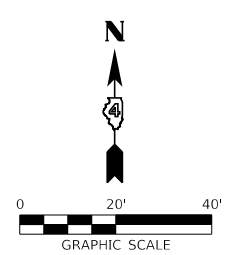
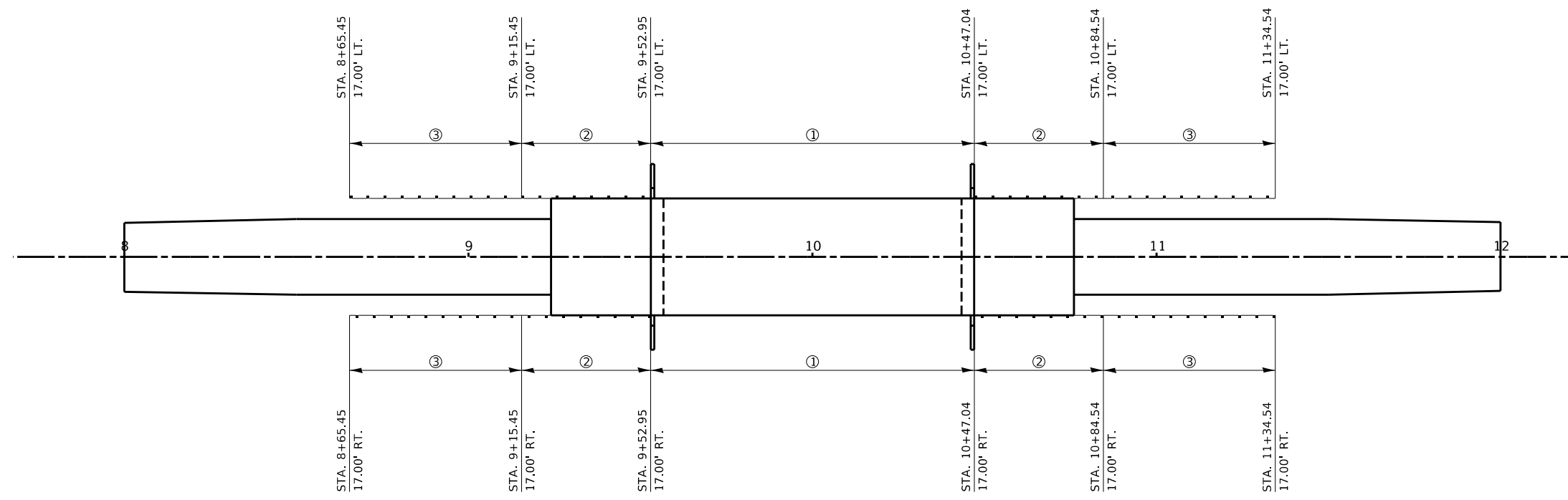
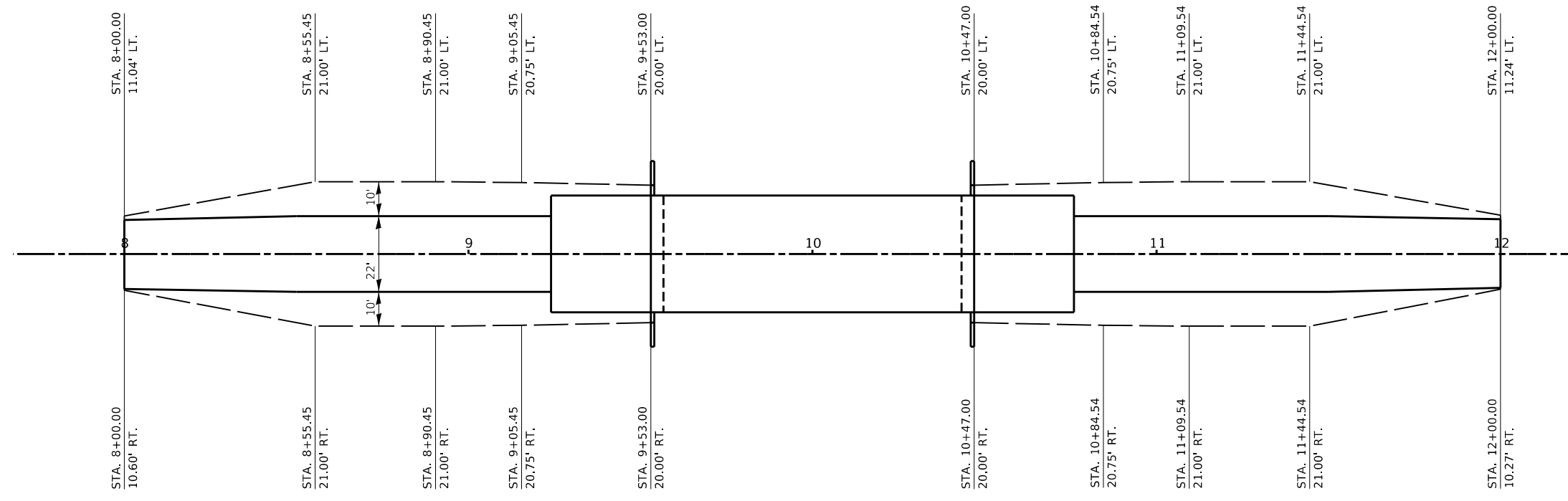
BERCHTOLD FAMILY TRUST #18901
NW¼, SEC 35, T. 24 N., R. 5 W., 3RD P.M.

JOE S BIRKY & SUSAN L HILL
NW¼, SEC 35, T. 24 N., R. 5 W., 3RD P.M.

EXISTING STRUCTURE NO. 090-3101
STATION 10+00 - SINGLE SPAN STEEL I-BEAM BRIDGE WITH CONCRETE DECK ON CLOSED PILE BENT ABUTMENTS WITH CONCRETE CAPS, CONCRETE PILES AND TIMBER BACKWALL. 57.8' BK.-BK. ABUTS; 28.3' c.-c. DECK



FILE NAME = 200025-sh1-FurPr.dgn	USER NAME = rmosick	DESIGNED - S.A.A.	REVISED -	STATE OF ILLINOIS TAZEWELL COUNTY HIGHWAY DEPARTMENT	PLAN & PROFILE FURROW ROAD	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 3065 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM L.S./P.E./S.E. CORP. 184.000959	PLOT SCALE = 5/32"=1'	DRAWN - T.W.K.	REVISED -			141	16-02126-00-BR	TAZEWELL	34	5
PLOT DATE = 8/20/2021	DATE = 08/11/2021	CHECKED - J.W.F.	REVISED -			CINCINNATI ROAD DISTRICT		CONTRACT NO. 89721		
		SCALE: 5H:2V				SHEET NO. 1 OF 1 SHEETS		STA. 7+00.00 TO STA. 13+00.00		ILLINOIS FED. AID PROJECT SAJG(571)



- LEGEND**
- ① STEEL RAILING, TYPE SM
 - ② TBT TY 6A
 - ③ TBT TY 1, SPECIAL TANGENT

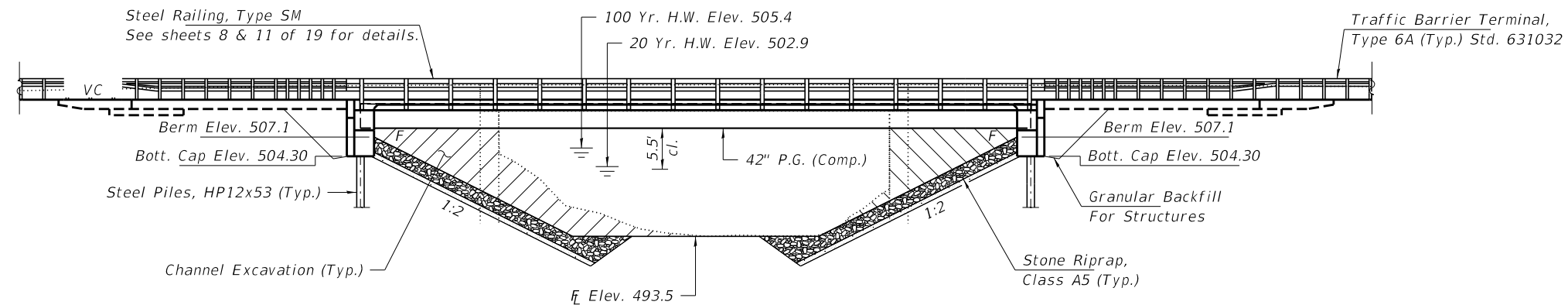
FILE NAME = 200025-shi-shdgrad.dgn	USER NAME = rmosick	DESIGNED - J.W.F.	REVISED -	STATE OF ILLINOIS TAZEWELL COUNTY HIGHWAY DEPARTMENT	SHOULDER AND GUARDRAIL LAYOUT		T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPSON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM L.S./P.E./S.E. CORP. 184.000959		DRAWN - R.D.H.	REVISED -		141	16-02126-00-BR	TAZEWELL	34	6		
PLOT SCALE = \$SCALE\$	CHECKED - S.W.M.	REVISED -	CINCINNATI ROAD DISTRICT		CONTRACT NO. 89721						
PLOT DATE = 8/20/2021	DATE - 08/11/2021	REVISED -	ILLINOIS		FED. AID PROJECT SAJG(571)						
				SCALE:	SHEET NO. 1 OF 1 SHEETS	STA. TO STA.					

BENCHMARK: Chiseled "X" on S.W. curb, 12' Rt., Sta. 9+71, Elev. 514.45

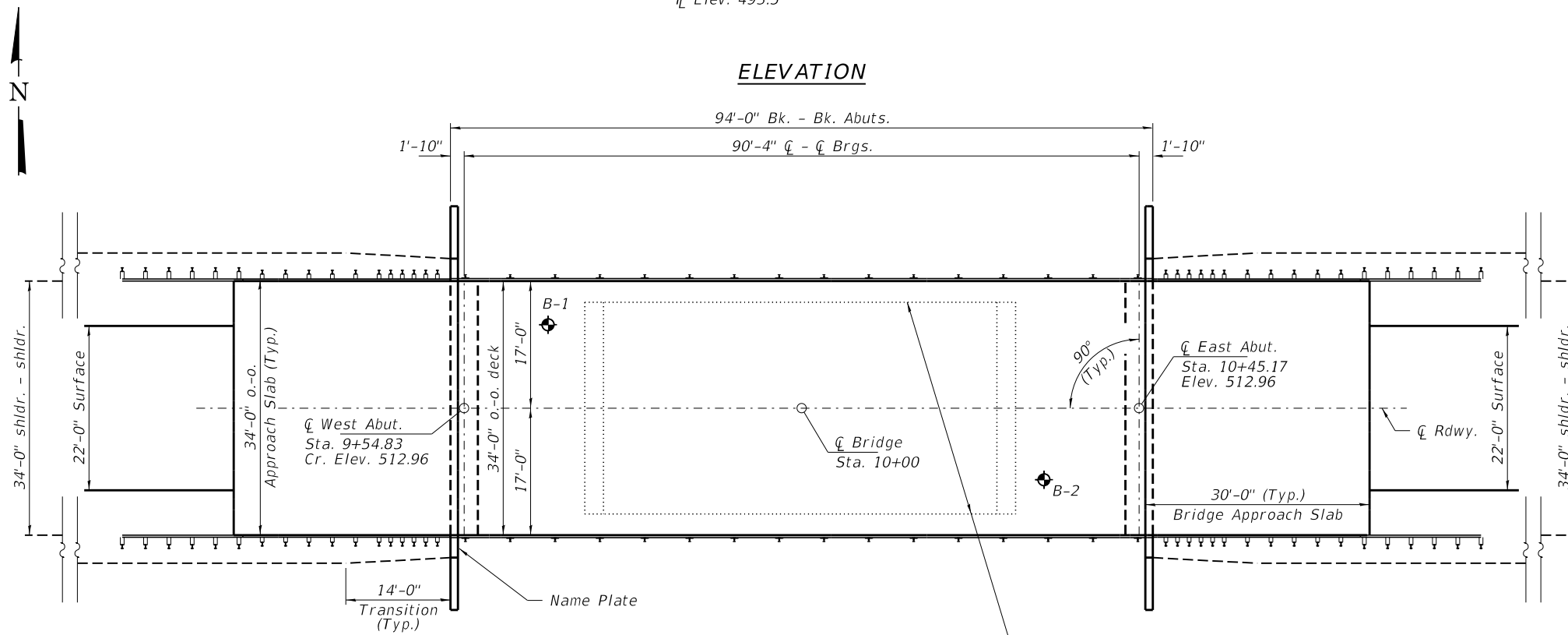
EXISTING STRUCTURE NO. 090-3101: Sta. 10+00 - Single span steel beam bridge with a C.I.P. concrete deck on spill thru concrete abutments and wingwalls. 57.8' bk.-bk. abuts., 28.3' o.-o. deck.

Structure closed to traffic during construction.

No Salvage



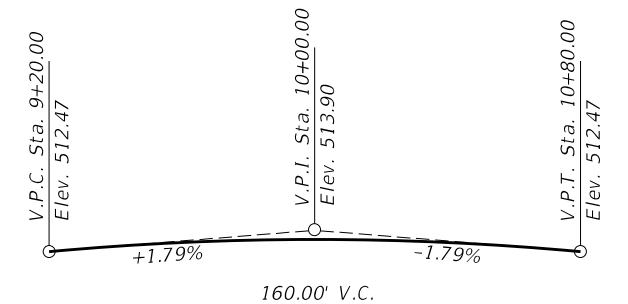
ELEVATION



PLAN

INDEX OF STRUCTURE SHEETS

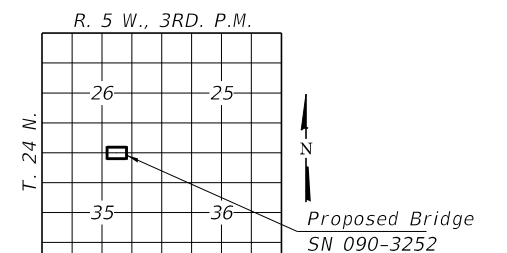
1. General Plan & Elevation
2. General Details
- 3-4. Top of Slab Elevations
5. Top of West Approach Elevations
6. Top of East Approach Elevations
7. Superstructure
8. Superstructure Details
- 9-10. Bridge Approach Slab Details
11. Steel Railing, Type SM
12. Structural Steel
- 13-14. Structural Steel Details
15. West Abutment
16. East Abutment
17. HP Pile Details
- 18-19. Borings



PROFILE GRADE
T.R. 141

LOST CREEK
BUILT 202_ BY
TAZEVELL COUNTY
SEC. 16-02126-00-BR
CINCINNATI ROAD DISTRICT
STR. NO. 090-3252
LOADING HL-93

NAME PLATE
See Std. 515001



LOCATION SKETCH

DESIGN SPECIFICATIONS

2020 AASHTO LRFD Bridge Design Specifications, 9th Edition

LOADING HL-93

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

DESIGN STRESSES

FIELD UNITS

f'c = 5,000 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) = 2
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.172
Design Spectral Acceleration at 0.2 sec. (SDS) = 0.298
Soil Site Class = E

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	2290	300	380	501.7	0.3	0.1	502.0	501.8
Design	20	2910	360	450	502.9	0.3	0.1	503.2	503.0
Base	100	4400	500	630	505.4	0.5	0.1	505.9	505.5
Scour Check	200	5110	550	720	506.5	0.5	0.2	507.0	506.7
Max. Calc.	500	6040	630	840	508.0	0.6	0.2	508.6	508.2

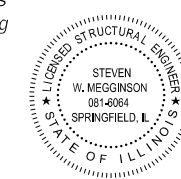
10 Year Velocity through Existing Bridge = 7.6 fps 10 Year Velocity through Proposed Bridge = 6.0 fps

DESIGN SCOUR ELEVATION TABLE

Event/Limit State	Design Scour Elev. (ft.)		Item
	W. Abut.	E. Abut.	
Q100	504.3	504.3	8
Q200	504.3	504.3	
Design	504.3	504.3	
Check	504.3	504.3	

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 08/11/2021
ILLINOIS STRUCTURAL ENGINEER NO. 081-6064

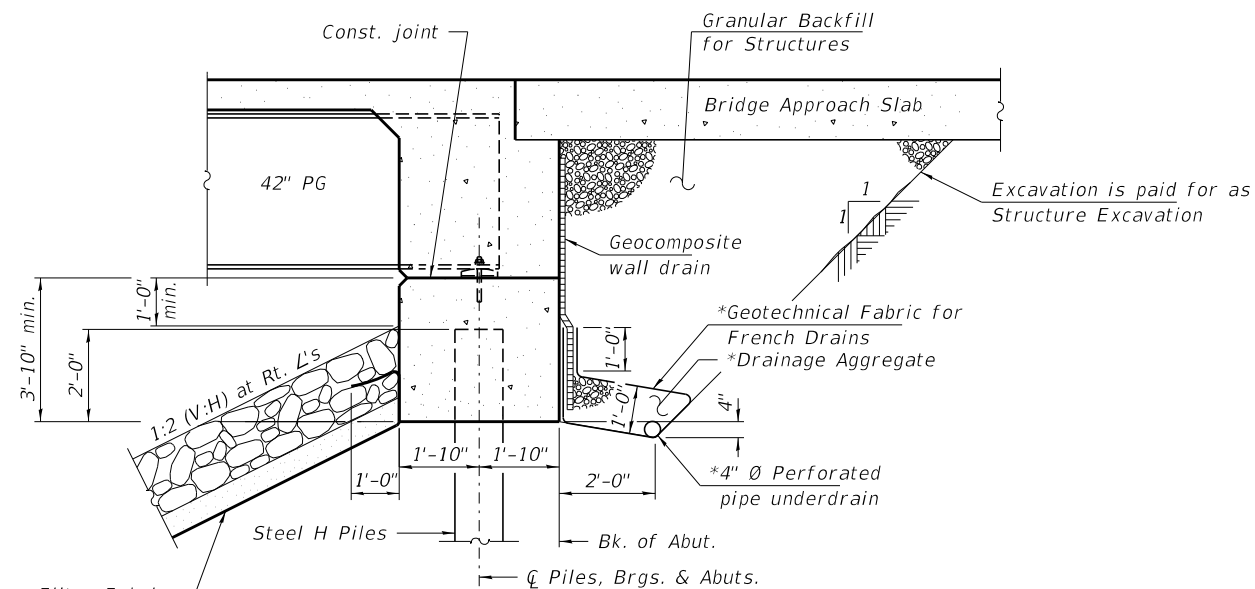


Expires 11-30-2022

GENERAL PLAN & ELEVATION

T.R. 141 / FURROW ROAD
SECTION 16-02126-00-BR
TAZEVELL COUNTY
STATION 10+00.00
STRUCTURE NO. 090-3252

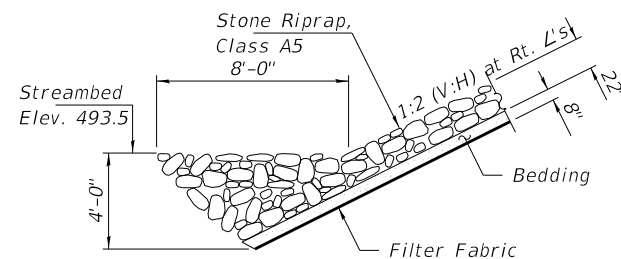
FILE NAME = 200025-shl-bridge.dgn	USER NAME = rmosick	DESIGNED - I.P.N.	REVISED -	STATE OF ILLINOIS TAZEVELL COUNTY HIGHWAY DEPARTMENT	GENERAL PLAN AND ELEVATION STRUCTURE NO. 090-3252	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 3035 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.009959	PLOT SCALE =	CHECKED - S.M.S.	REVISED -			141	16-02126-00-BR	TAZEVELL	34	7
PLOT DATE = 8/20/2021	DRAWN - A.C.	CHECKED - S.M.S.	REVISED -			CINCINNATI ROAD DISTRICT		CONTRACT NO. 89721		
						ILLINOIS		FED. AID PROJECT SAJG(571)		



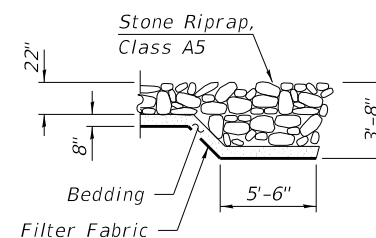
SECTION THRU INTEGRAL ABUTMENT
(Horiz. dim. at Rt. L's)

*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".



SECTION A-A



SECTION B-B

GENERAL NOTES

Fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts in painted areas and ASTM A325 Type 3 in unpainted areas. Bolts 7/8"Ø, holes 1 5/16"Ø, unless otherwise noted.

Calculated weight of Structural Steel = 97,440 lbs.
All structural steel shall be AASHTO M 270 Grade 50W.

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

The Contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at West Abutment or approved by the Engineer before ordering the remainder of piles.

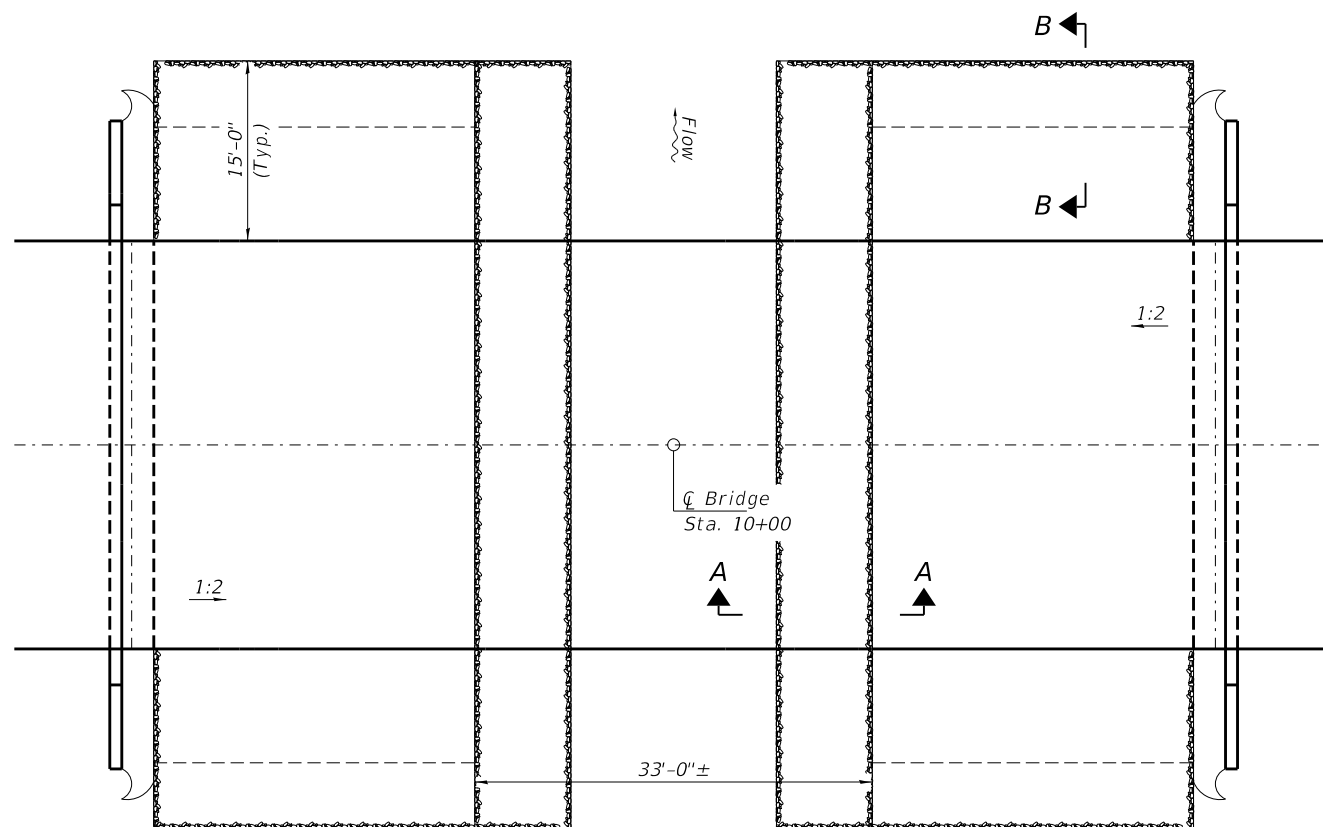
Reinforcement bars designated (E) shall be epoxy coated.

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 3 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.

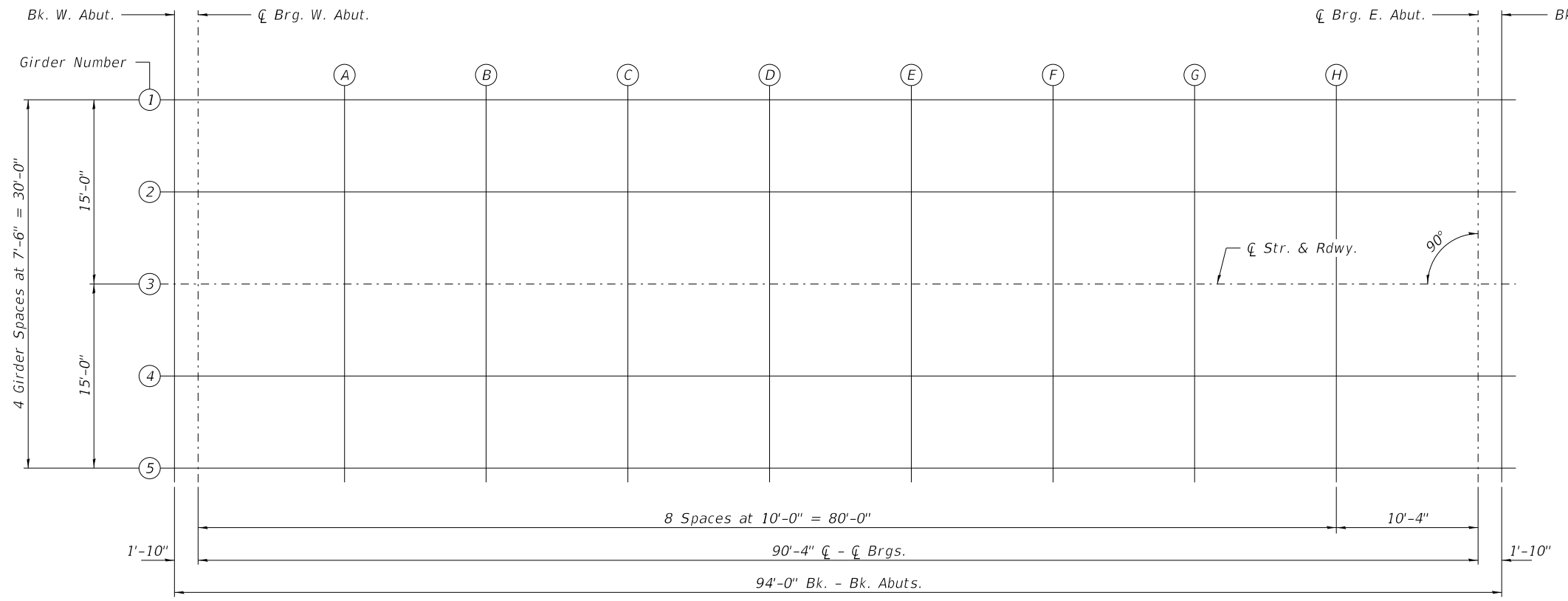
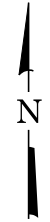
The top surface of the deck shall be screeded with a straight edge. Further finishing shall be delayed until the water sheen appears, but not to the point of rendering further manipulation ineffective. The surface then shall be roughened with a suitable stiff-bristled broom or wire brush drawn in transverse direction removing any laitance present and breaking up the water sheen. The corrugations formed shall be uniform in appearance and in no case more than 1/4" in depth.



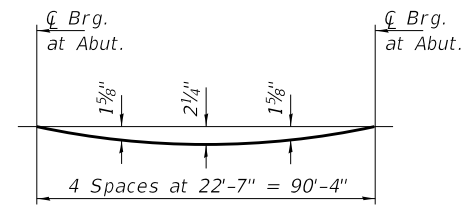
RIPRAP LAYOUT

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.		720	720
Stone Riprap, Class A5	Ton		670	670
Removal of Existing Structures	Each		1	1
Structure Excavation	Cu. Yd.		530	530
Concrete Structures	Cu. Yd.		66.8	66.8
Concrete Superstructure	Cu. Yd.	125.0		125.0
Bridge Deck Grooving	Sq. Yd.	575		575
Protective Coat	Sq. Yd.	604	20	624
Concrete Superstructure (Approach Slab)	Cu. Yd.	94.4		94.4
Furnishing and Erecting Structural Steel	L. Sum	1		1
Stud Shear Connectors	Each	1,220		1,220
Reinforcement Bars, Epoxy Coated	Pound	54,290	11,870	66,160
Steel Railing, Type SM	Foot	188		188
Furnishing Steel Piles HP12X53	Foot		450	450
Driving Piles	Foot		450	450
Test Pile Steel HP12X53	Each		1	1
Name Plates	Each		1	1
Anchor Bolts, 1"	Each		20	20
Granular Backfill for Structures	Cu. Yd.		145	145
Geocomposite Wall Drain	Sq. Yd.		70	70
Pipe Underdrains for Structures 4"	Foot		160	160



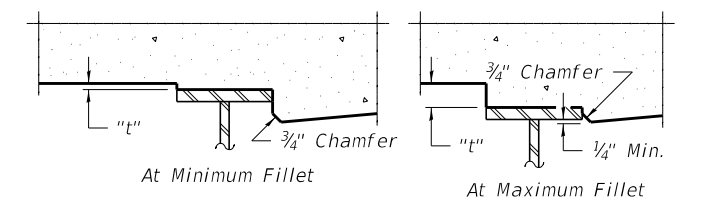
PLAN



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 19.



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 19, minus slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS

FILE NAME = 200025-shl-bridge.dgn	USER NAME = rmosick	DESIGNED - I.P.N.	REVISED -	STATE OF ILLINOIS TAZEWELL COUNTY HIGHWAY DEPARTMENT	TOP OF SLAB ELEVATIONS STRUCTURE NO. 090-3252	T.R.	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		CHECKED - S.M.S.	REVISED -			141	16-02126-00-BR	TAZEWELL	34	9
	PLOT SCALE =	DRAWN - A.C.	REVISED -			CINCINNATI ROAD DISTRICT		CONTRACT NO. 89721		
	PLOT DATE = 8/20/2021	CHECKED - S.M.S.	REVISED -					ILLINOIS FED. AID PROJECT SAJG(571)		
				SHEET NO. 3 OF 19 SHEETS						

BEAM 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	9+53.00	-15.00	512.70	512.70
End Dk. W. Abut.	9+54.00	-15.00	512.71	512.71
☒ Brg. W. Abut.	9+54.83	-15.00	512.72	512.72
A	9+64.83	-15.00	512.81	512.88
B	9+74.83	-15.00	512.88	513.00
C	9+84.83	-15.00	512.92	513.09
D	9+94.83	-15.00	512.95	513.13
E	10+04.83	-15.00	512.95	513.14
F	10+14.83	-15.00	512.93	513.09
G	10+24.83	-15.00	512.88	513.01
H	10+34.83	-15.00	512.81	513.88
☒ Brg. E. Abut.	10+45.17	-15.00	512.72	512.72
End Dk. E Abut.	10+46.00	-15.00	512.71	512.71
Bk. E. Abut.	10+47.00	-15.00	512.70	512.70

BEAM 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	9+53.00	-7.50	512.82	512.82
End Dk. W. Abut.	9+54.00	-7.50	512.83	512.83
☒ Brg. W. Abut.	9+54.83	-7.50	512.84	512.84
A	9+64.83	-7.50	512.93	512.99
B	9+74.83	-7.50	513.00	513.12
C	9+84.83	-7.50	513.04	513.21
D	9+94.83	-7.50	513.06	513.25
E	10+04.83	-7.50	513.06	513.25
F	10+14.83	-7.50	513.04	513.21
G	10+24.83	-7.50	513.00	513.12
H	10+34.83	-7.50	512.93	513.00
☒ Brg. E. Abut.	10+45.17	-7.50	512.84	512.84
End Dk. E. Abut.	10+46.00	-7.50	512.83	512.83
Bk. E. Abut.	10+47.00	-7.50	512.82	512.82

☒ STRUCTURE & BEAM 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	9+53.00	0.00	512.94	512.94
End Dk. W. Abut.	9+54.00	0.00	512.95	512.95
☒ Brg. W. Abut.	9+54.83	0.00	512.96	512.96
A	9+64.83	0.00	513.05	513.11
B	9+74.83	0.00	513.11	513.24
C	9+84.83	0.00	513.16	513.32
D	9+94.83	0.00	513.18	513.37
E	10+04.83	0.00	513.18	513.37
F	10+14.83	0.00	513.16	513.33
G	10+24.83	0.00	513.12	513.24
H	10+34.83	0.00	513.05	513.12
☒ Brg. E. Abut.	10+45.17	0.00	512.96	512.96
End Dk. E. Abut.	10+46.00	0.00	512.95	512.95
Bk. E. Abut.	10+47.00	0.00	512.94	512.94

BEAM 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	9+53.00	7.50	512.82	512.82
End Dk. W. Abut.	9+54.00	7.50	512.83	512.83
☒ Brg. W. Abut.	9+54.83	7.50	512.84	512.84
A	9+64.83	7.50	512.93	512.99
B	9+74.83	7.50	513.00	513.12
C	9+84.83	7.50	513.04	513.21
D	9+94.83	7.50	513.06	513.25
E	10+04.83	7.50	513.06	513.25
F	10+14.83	7.50	513.04	513.21
G	10+24.83	7.50	513.00	513.12
H	10+34.83	7.50	512.93	513.00
☒ Brg. E. Abut.	10+45.17	7.50	512.84	512.84
End Dk. E. Abut.	10+46.00	7.50	512.83	512.83
Bk. E. Abut.	10+47.00	7.50	512.82	512.82

BEAM 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	9+53.00	15.00	512.70	512.70
End Dk. W. Abut.	9+54.00	15.00	512.71	512.71
☒ Brg. W. Abut.	9+54.83	15.00	512.72	512.72
A	9+64.83	15.00	512.81	512.88
B	9+74.83	15.00	512.88	513.00
C	9+84.83	15.00	512.92	513.09
D	9+94.83	15.00	512.95	513.13
E	10+04.83	15.00	512.95	513.14
F	10+14.83	15.00	512.93	513.09
G	10+24.83	15.00	512.88	513.01
H	10+34.83	15.00	512.81	513.88
☒ Brg. E. Abut.	10+45.83	15.00	512.72	512.72
End Dk. E. Abut.	10+46.00	15.00	512.71	512.71
Bk. E. Abut.	10+47.00	15.00	512.70	512.70

NORTH EDGE OF SHOULDER

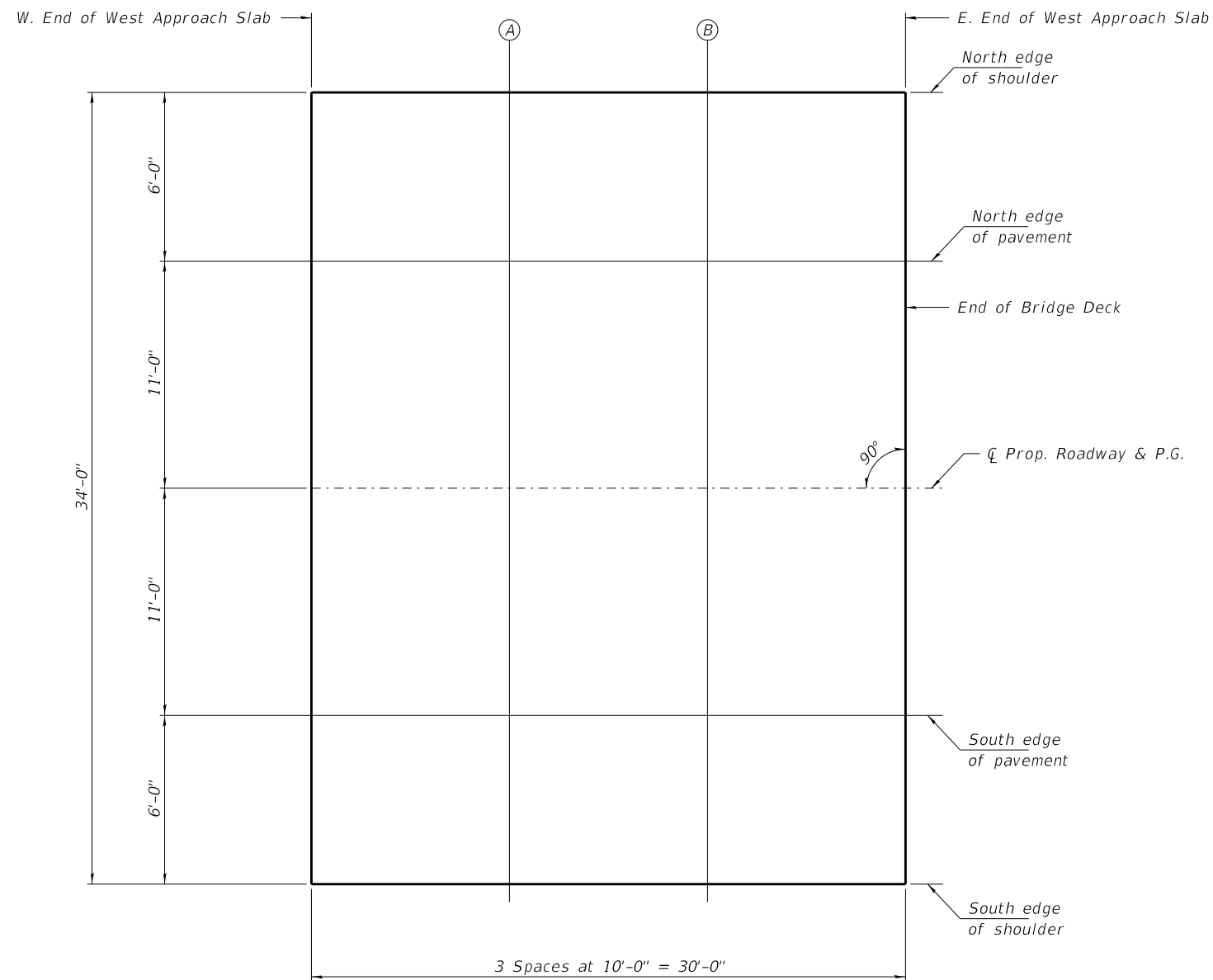
Location	Station	Offset	Theoretical Grade Elevations
W. End West Appr. Slab	9+24.00	-17.00	512.27
A	9+34.00	-17.00	512.43
B	9+44.00	-17.00	512.56
E. End West Appr. Slab	9+54.00	-17.00	512.68

NORTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
W. End West Appr. Slab	9+24.00	-11.00	512.37
A	9+34.00	-11.00	512.53
B	9+44.00	-11.00	512.66
E. End West Appr. Slab	9+54.00	-11.00	512.78

CL PROPOSED ROADWAY & P.G.

Location	Station	Offset	Theoretical Grade Elevations
W. End West Appr. Slab	9+24.00	0.00	512.54
A	9+34.00	0.00	512.70
B	9+44.00	0.00	512.83
E. End West Appr. Slab	9+54.00	0.00	512.95



WEST APPROACH SLAB - PLAN

SOUTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
W. End West Appr. Slab	9+24.00	11.00	512.37
A	9+34.00	11.00	512.53
B	9+44.00	11.00	512.66
E. End West Appr. Slab	9+54.00	11.00	512.78

SOUTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
W. End West Appr. Slab	9+24.00	17.00	512.27
A	9+34.00	17.00	512.43
B	9+44.00	17.00	512.56
E. End West Appr. Slab	9+54.00	17.00	512.68

FILE NAME = 200025-shl-bridge.dgn	USER NAME = rmosick	DESIGNED - I.P.N.	REVISED -
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 =	DRAWN - A.C.	REVISED -
	PLOT DATE = 8/20/2021	CHECKED - S.M.S.	REVISED -

**STATE OF ILLINOIS
TAZEWELL COUNTY HIGHWAY DEPARTMENT**

**TOP OF WEST APPROACH SLAB ELEVATIONS
STRUCTURE NO. 090-3252**

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
141	16-02126-00-BR	TAZEWELL	34	11
CINCINNATI ROAD DISTRICT		CONTRACT NO. 89721		

NORTH EDGE OF SHOULDER

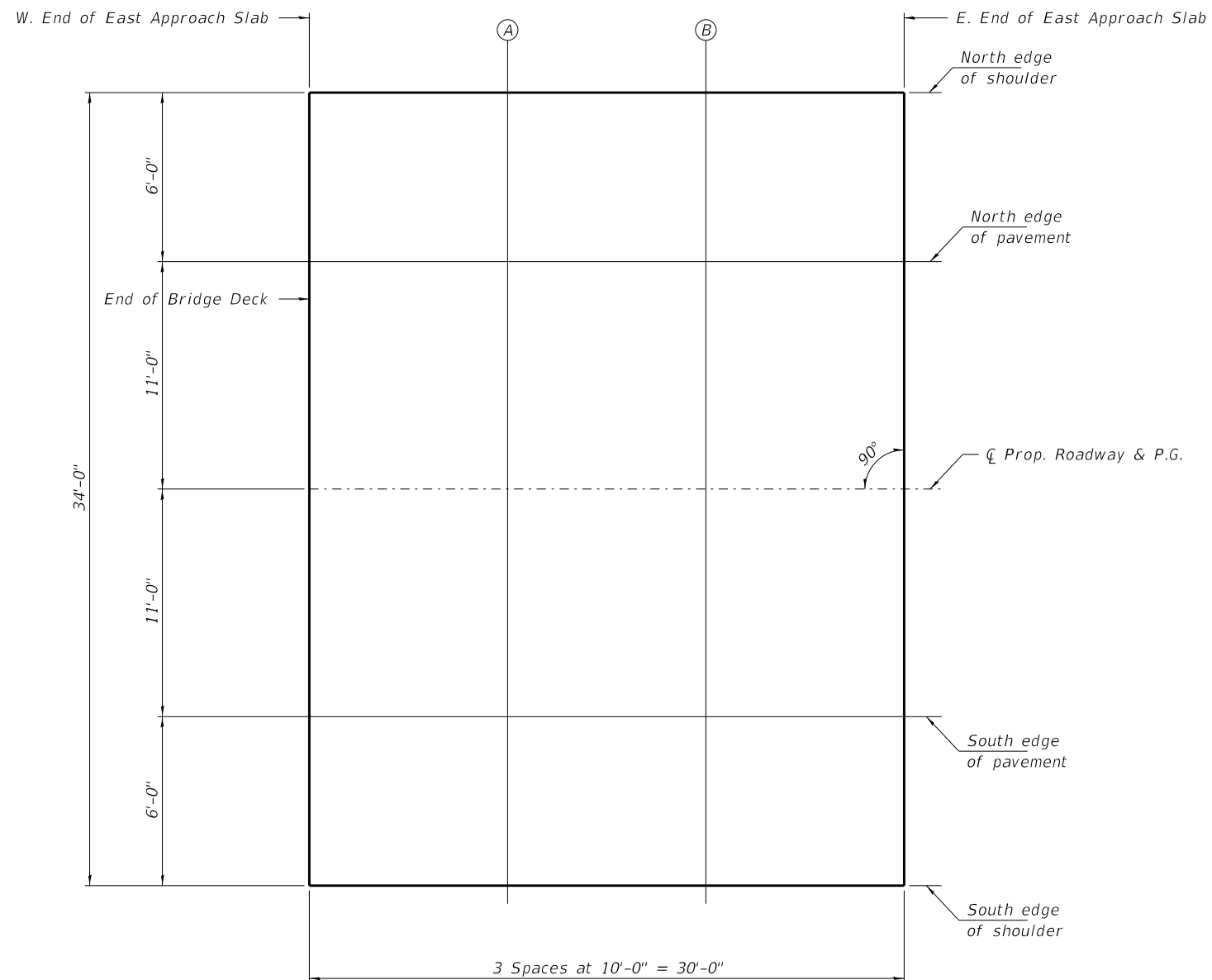
Location	Station	Offset	Theoretical Grade Elevations
W. End East Appr. Slab	10+46.00	-17.00	512.68
A	10+56.00	-17.00	512.56
B	10+66.00	-17.00	512.43
E. End East Appr. Slab	10+76.00	-17.00	512.27

NORTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
W. End East Appr. Slab	10+46.00	-11.00	512.78
A	10+56.00	-11.00	512.66
B	10+66.00	-11.00	512.53
E. End East Appr. Slab	10+76.00	-11.00	512.57

Q PROPOSED ROADWAY & P.G.

Location	Station	Offset	Theoretical Grade Elevations
W. End East Appr. Slab	10+46.00	0.00	512.95
A	10+56.00	0.00	512.83
B	10+66.00	0.00	512.70
E. End East Appr. Slab	10+76.00	0.00	512.54



EAST APPROACH SLAB - PLAN

SOUTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
W. End East Appr. Slab	10+46.00	11.00	512.78
A	10+56.00	11.00	512.66
B	10+66.00	11.00	512.53
E. End East Appr. Slab	10+76.00	11.00	512.37

SOUTH EDGE OF SHOULDER

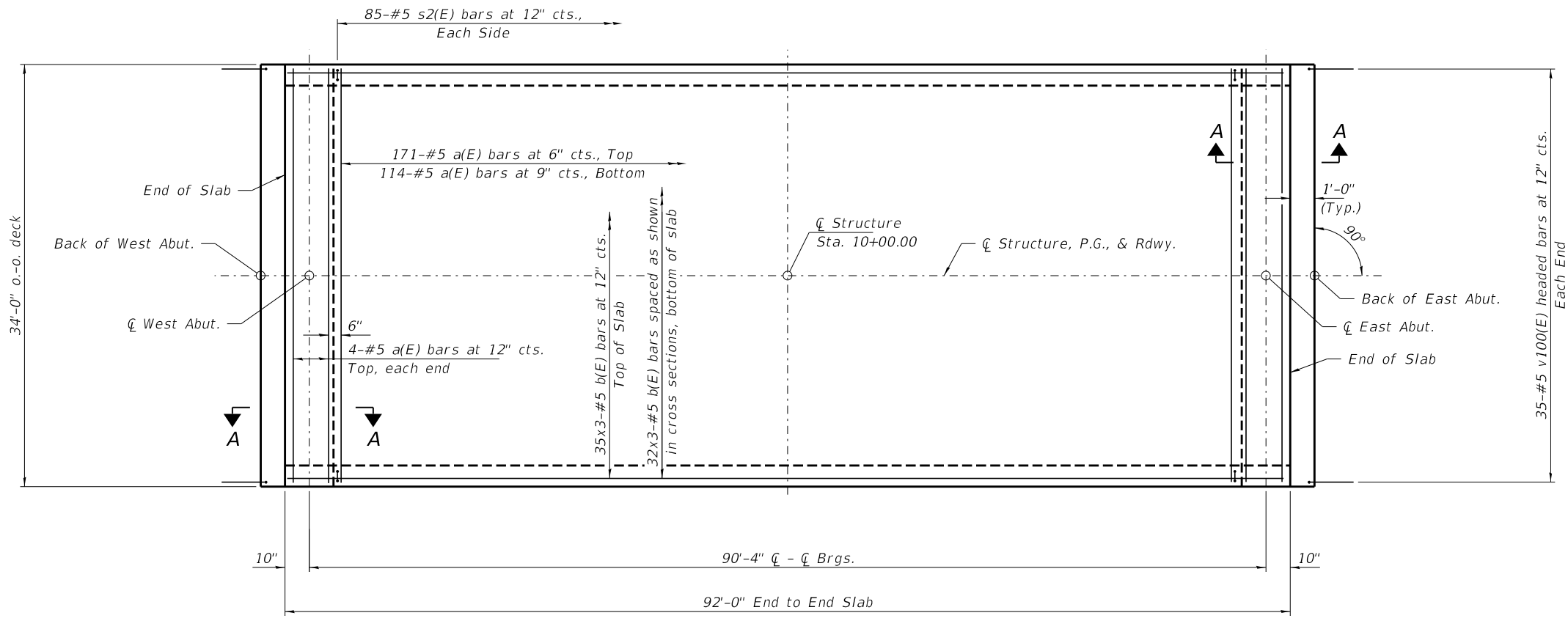
Location	Station	Offset	Theoretical Grade Elevations
W. End East Appr. Slab	10+46.00	17.00	512.68
A	10+56.00	17.00	512.56
B	10+66.00	17.00	512.43
E. End East Appr. Slab	10+76.00	17.00	512.27

FILE NAME = 200025-shl-bridge.dgn	USER NAME = rmosick	DESIGNED - I.P.N.	REVISED -
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.M.S.	REVISED -
	PLOT SCALE =	DRAWN - A.C.	REVISED -
	PLOT DATE = 8/20/2021	CHECKED - S.M.S.	REVISED -

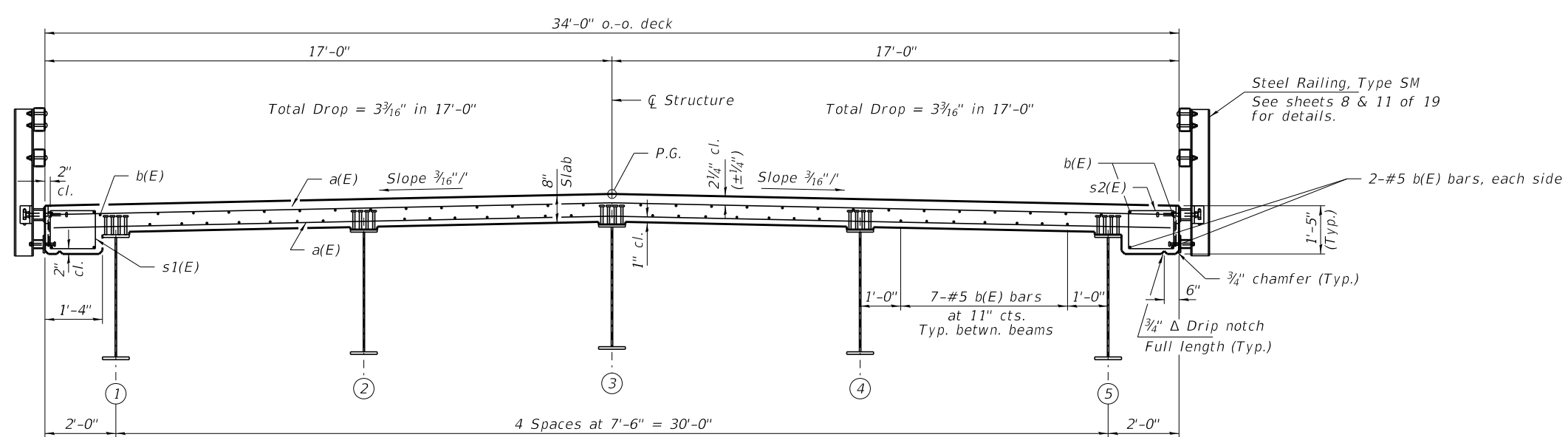
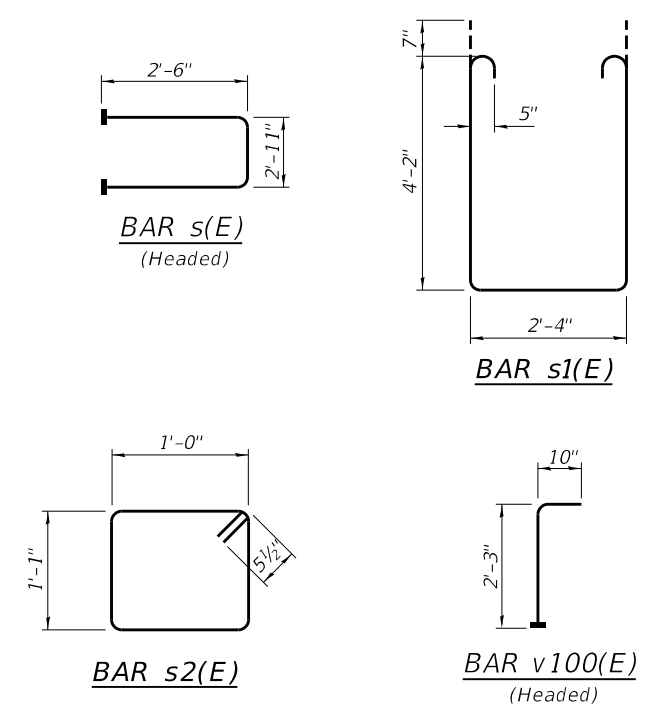
**STATE OF ILLINOIS
TAZEWELL COUNTY HIGHWAY DEPARTMENT**

**TOP OF EAST APPROACH SLAB ELEVATIONS
STRUCTURE NO. 090-3252**

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
141	16-02126-00-BR	TAZEWELL	34	12
CINCINNATI ROAD DISTRICT		CONTRACT NO. 89721		
ILLINOIS		FED. AID PROJECT SAJG(571)		



PLAN



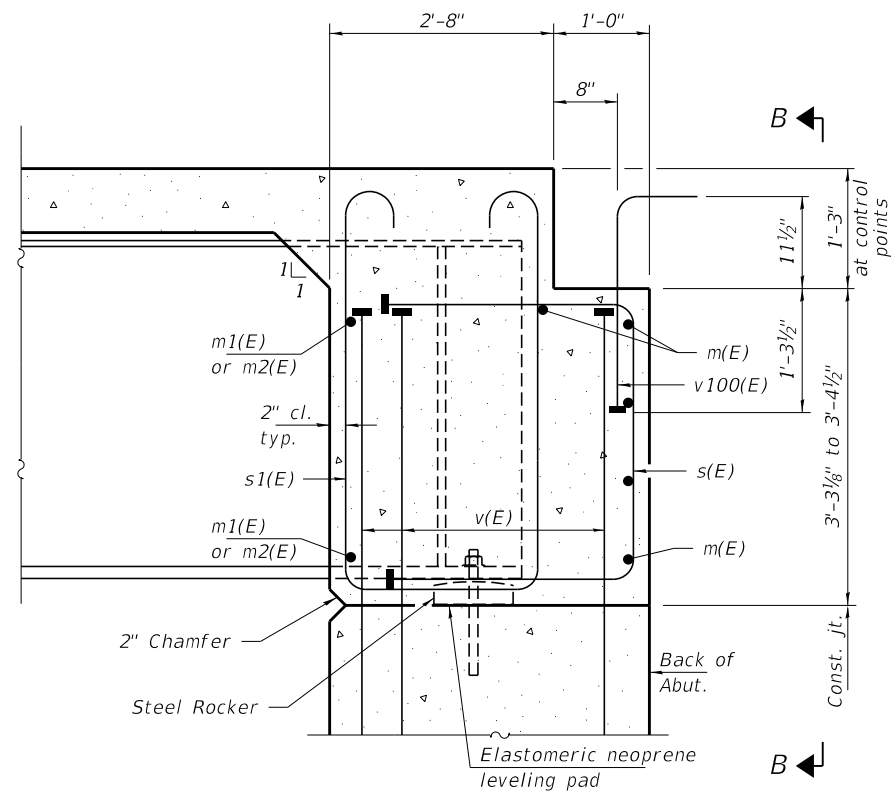
CROSS SECTION
(Looking East)

**SUPERSTRUCTURE
BILL OF MATERIAL**

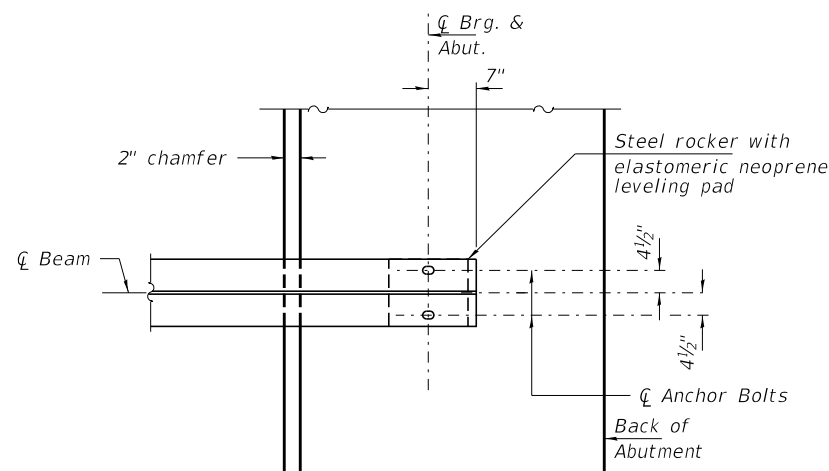
BAR NO.	SIZE	LENGTH	SHAPE
a(E)	293 #5	33'-8"	—
b(E)	201 #5	32'-11"	—
m(E)	10 #6	33'-8"	—
m1(E)	32 #6	7'-0"	—
m2(E)	16 #6	1'-7"	—
s(E)	64 #5	7'-11"	□
s1(E)	64 #5	11'-10"	□
s2(E)	170 #5	5'-1"	□
v100(E)	70 #5	3'-1"	L
Concrete Superstructure	Cu. Yd.	125.0	
Bridge Deck Grooving	Sq. Yd.	348	
Protective Coat	Sq. Yd.	377	
Reinforcement Bars, Epoxy Coated	Pound	20,510	

MIN. BAR LAP
#5 bars = 3'-6"

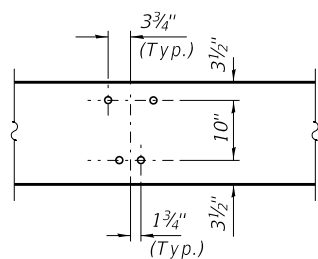
Notes:
See sheet 8 of 19 for Superstructure Details.
See sheet 8 of 19 for SECTION A-A.
Bars indicated thus 26x5-#5 etc. indicates 26 lines of bars with 5 lengths per line.



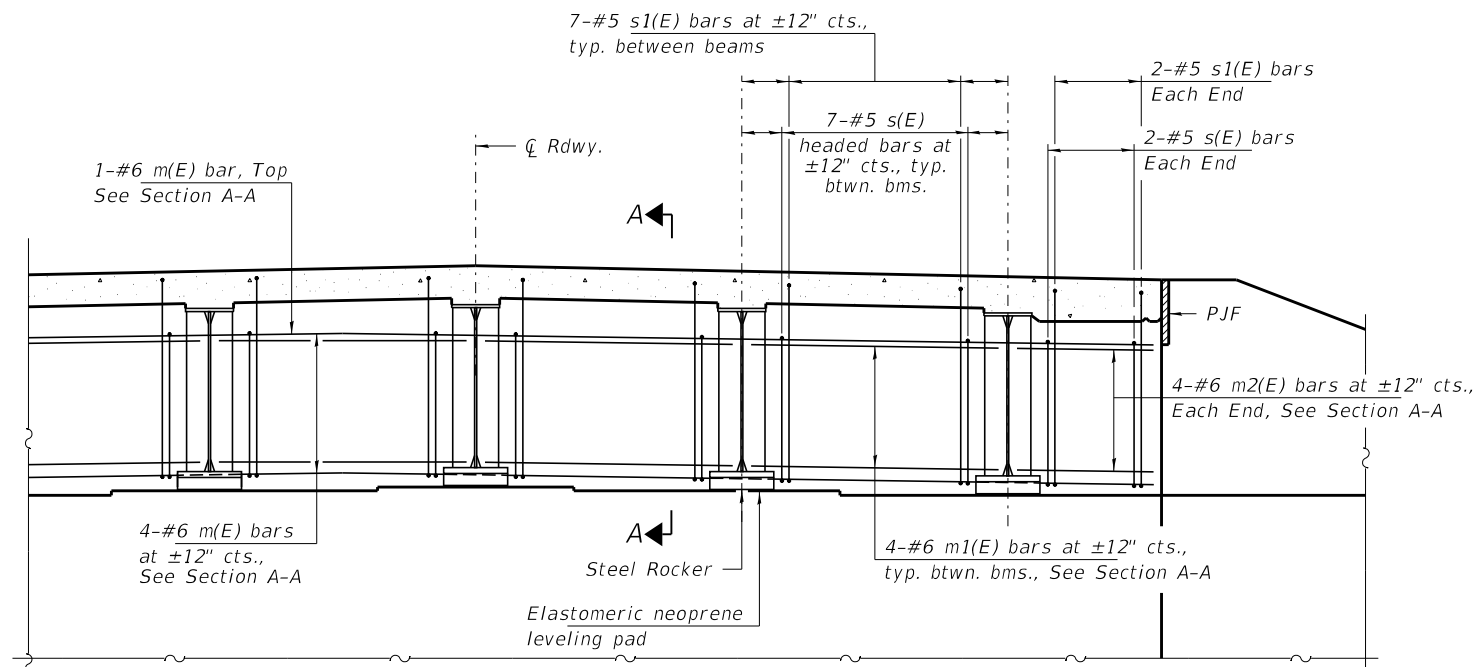
SECTION A-A



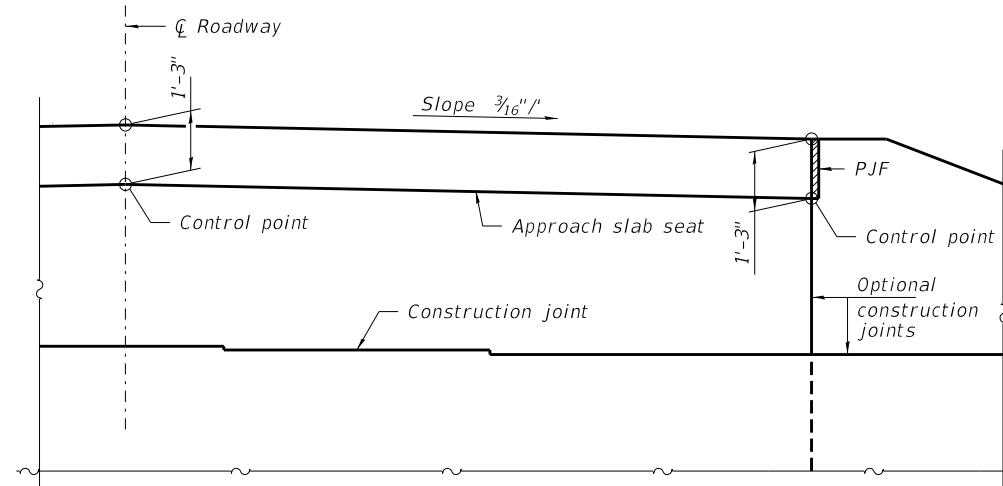
PARTIAL PLAN AT ABUTMENT
(Showing bottom flange of beam)



DETAIL A

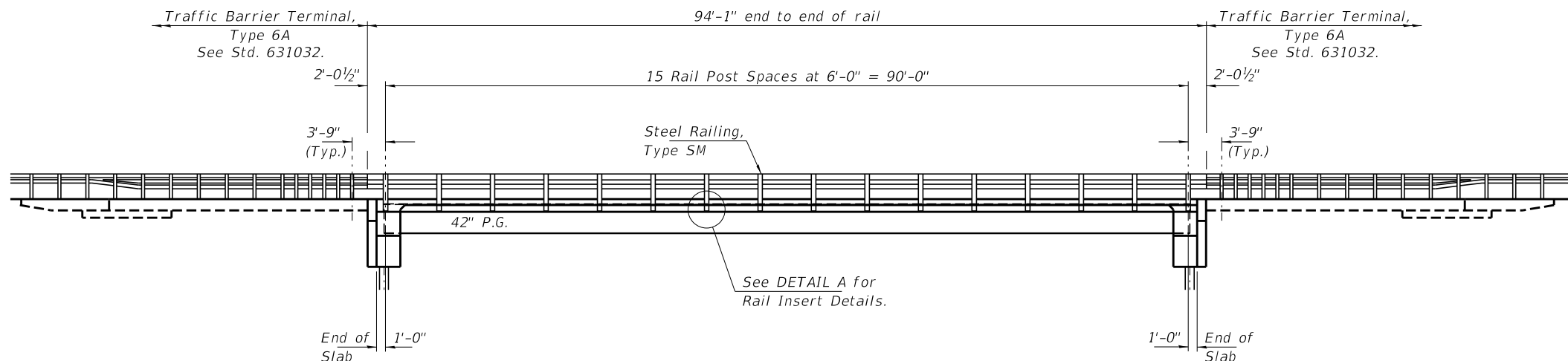


DIAPHRAGM AT ABUTMENT



VIEW B-B

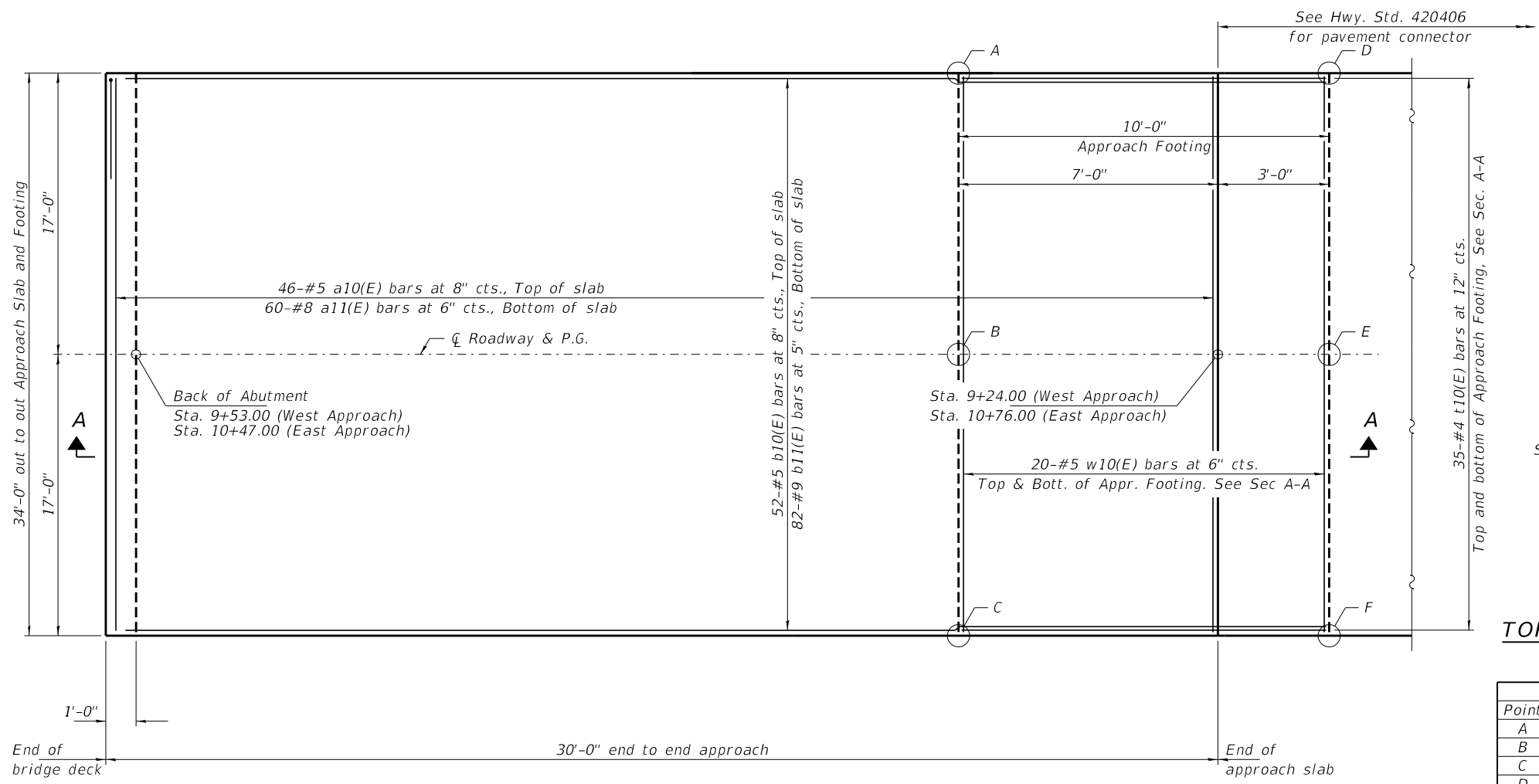
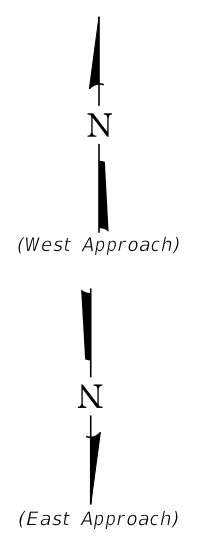
Notes:
 Reinforcement bars in diaphragm are billed with Superstructure on sheet 7 of 19.
 Concrete in diaphragm is included with Concrete Superstructure on sheet 7 of 19.
 The s(E) bars shall be placed parallel to the beams.
 Spacing for these bars shall be at right angles to the beams.



RAILING ELEVATION
Showing Rail Post Spaces

See sheet 11 of 19 for Railing Details.

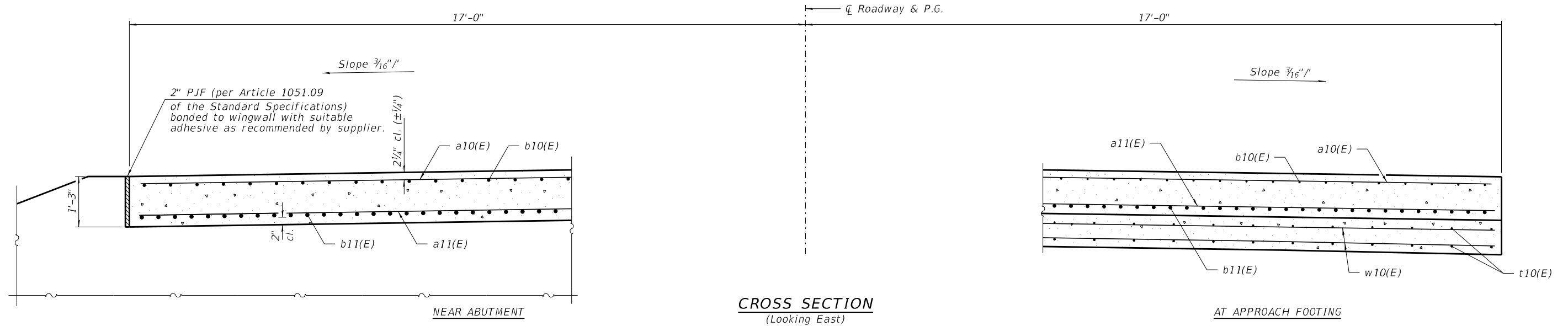
FILE NAME = 200025-shl-bridge.dgn	USER NAME = rmosick	DESIGNED - I.P.N.	REVISED -	STATE OF ILLINOIS TAZEWELL COUNTY HIGHWAY DEPARTMENT	SUPERSTRUCTURE DETAILS STRUCTURE NO. 090-3252	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 3035 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959		CHECKED - S.M.S.	REVISED -			141	16-02126-00-BR	TAZEWELL	34	14
	PLOT SCALE =	DRAWN - A.C.	REVISED -			CINCINNATI ROAD DISTRICT		CONTRACT NO. 89721		
	PLOT DATE = 8/20/2021	CHECKED - S.M.S.	REVISED -			ILLINOIS		FED. AID PROJECT SAJG(571)		



See sheet 10 of 19 for Section A-A details.

TOP AND BOTTOM ELEVATIONS FOR APPROACH FOOTING

Point	West Approach		East Approach	
	Top	Bottom	Top	Bottom
A	511.14	510.30	511.14	510.30
B	511.40	510.57	511.40	510.57
C	511.14	510.30	511.14	510.30
D	510.97	510.14	510.97	510.14
E	511.24	510.40	511.24	510.40
F	510.97	510.14	510.97	510.14



BA-CIP-R34-0 6-15-2019

(Sheet 1 of 2)

FILE NAME = 200025-shl-bridge.dgn	USER NAME = rmosick	DESIGNED - I.P.N.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959	PLOT SCALE =	CHECKED - S.M.S.	REVISED -
	PLOT DATE = 8/20/2021	DRAWN - A.C.	REVISED -
		CHECKED - S.M.S.	REVISED -

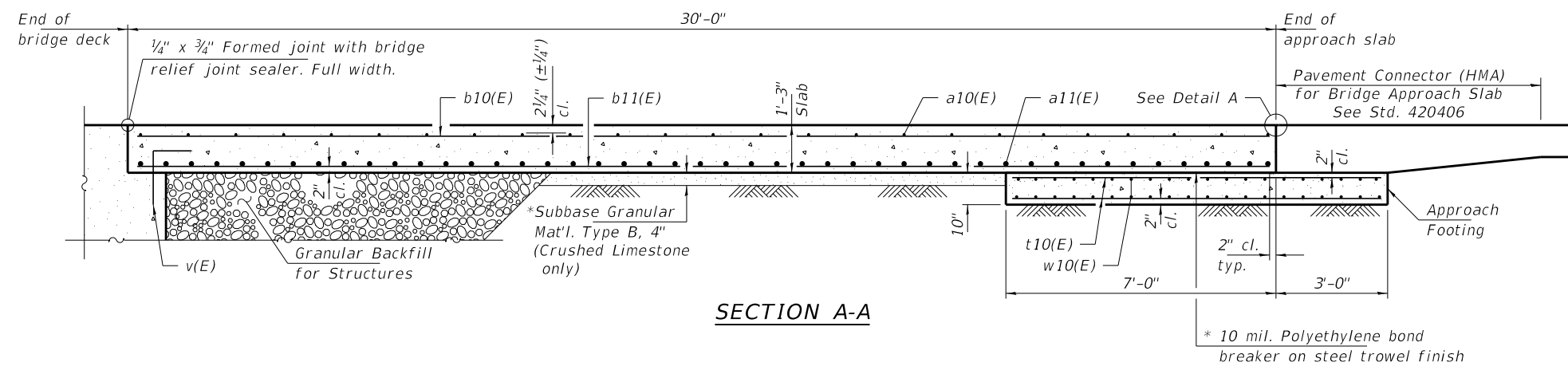
STATE OF ILLINOIS
TAZEWELL COUNTY HIGHWAY DEPARTMENT

BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 090-3252

SHEET NO. 9 OF 19 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
141	16-02126-00-BR	TAZEWELL	34	15
CINCINNATI ROAD DISTRICT		CONTRACT NO. 89721		
ILLINOIS FED. AID PROJECT SAJG(571)				

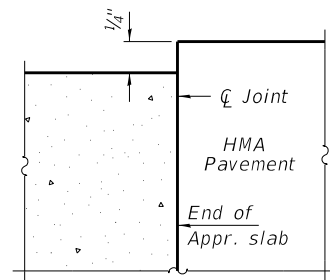
Notes:
 Approach slab shall be paid for as Concrete Superstructure (Approach Slab).
 Approach footing concrete shall be paid for as Concrete Structures.
 The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
 Cost of excavation for approach footing included with Concrete Structures.
 For Granular Backfill for Structures and drainage treatment details, see sheet 2 of 19.
 Approach footing reinforcement bars are separated in the "TOTAL BILL OF MATERIALS" on sheet 2 of 19 and included with the "SUB" total.



SECTION A-A

* 10 mil. Polyethylene bond breaker on steel trowel finish

* = Incidental to concrete superstructure (approach slab).



DETAIL A

**TWO APPROACHES
 BILL OF MATERIAL -
 SUPERSTRUCTURE**

Bar	No.	Size	Length	Shape
a10(E)	92	#5	33'-8"	————
a11(E)	120	#8	33'-8"	————
b10(E)	104	#5	29'-8"	————
b11(E)	164	#9	29'-8"	————
Bridge Deck Grooving			Sq. Yd.	227
Protective Coat			Sq. Yd.	227
Concrete Superstructure (Approach Slab)			Cu. Yd.	94.4
Reinforcement Bars, Epoxy Coated			Pound	33,780

**TWO APPROACHES
 BILL OF MATERIAL -
 SUBSTRUCTURE**

Bar	No.	Size	Length	Shape
t10(E)	140	#4	9'-8"	————
w10(E)	80	#5	33'-8"	————
Concrete Structures			Cu. Yd.	21.0
Reinforcement Bars, Epoxy Coated			Pound	3,710

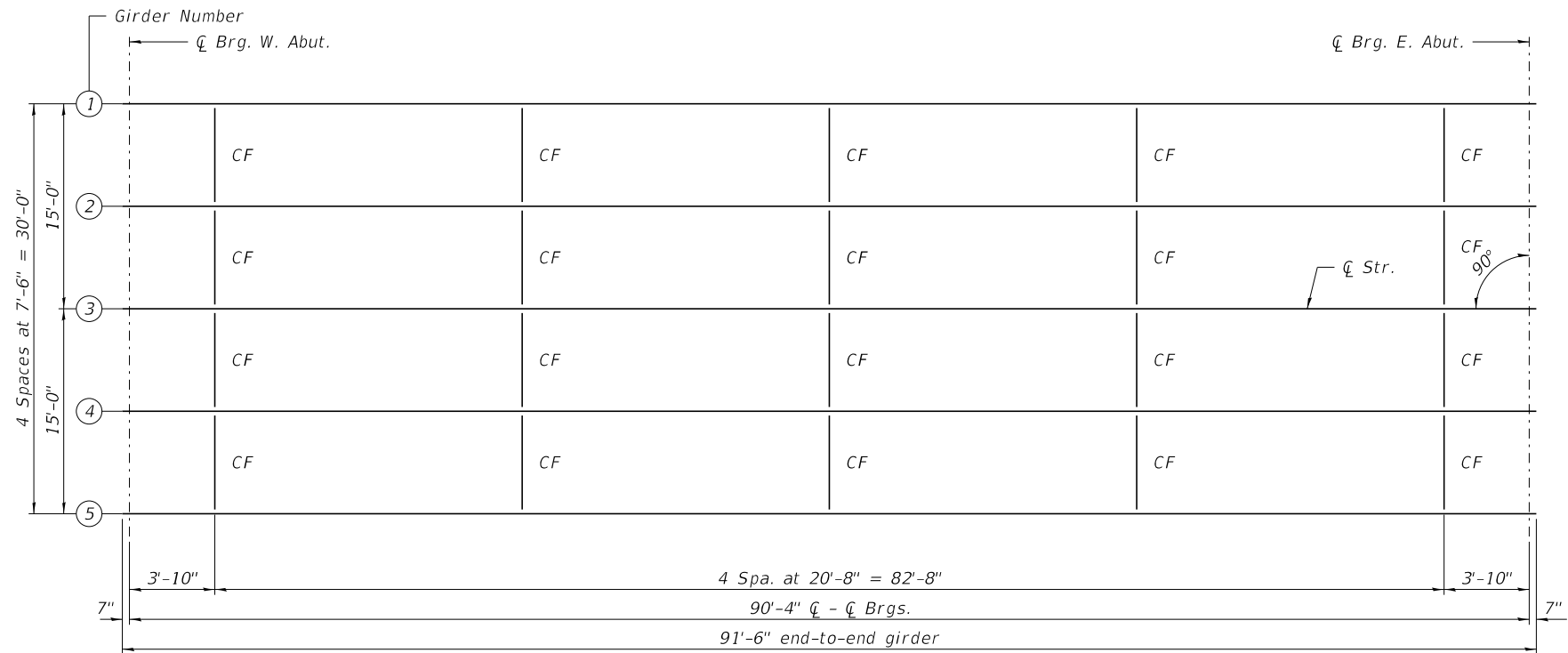
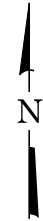
BA-CIP-R34-0

6-15-2019

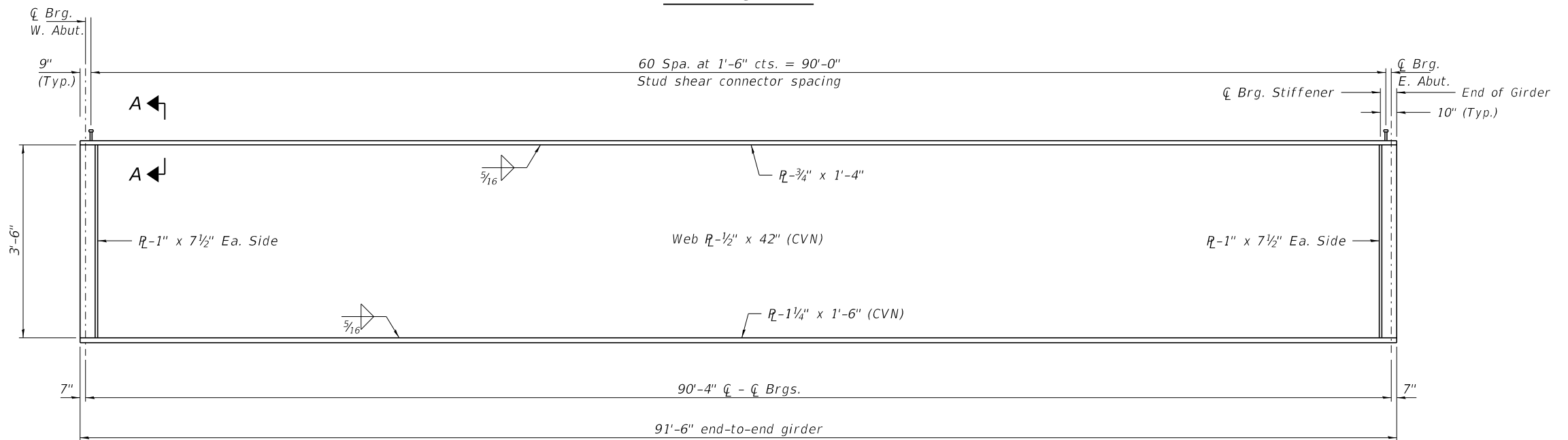
(Sheet 2 of 2)

FILE NAME = 200025-shl-bridge.dgn	USER NAME = rmosick	DESIGNED - I.P.N.	REVISED -	STATE OF ILLINOIS TAZEWELL COUNTY HIGHWAY DEPARTMENT	BRIDGE APPROACH SLAB DETAILS STRUCTURE NO. 090-3252	T.R.	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	PLOT SCALE =	CHECKED - S.M.S.	REVISED -			141	16-02126-00-BR	TAZEWELL	34	16
	PLOT DATE = 8/20/2021	DRAWN - A.C.	REVISED -			CINCINNATI ROAD DISTRICT		CONTRACT NO. 89721		
		CHECKED - S.M.S.	REVISED -			ILLINOIS		FED. AID PROJECT SAJG(571)		

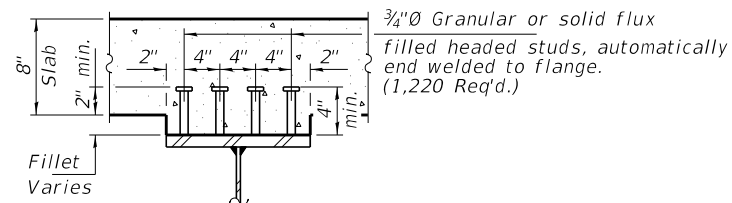
SHEET NO. 10 OF 19 SHEETS



FRAMING PLAN

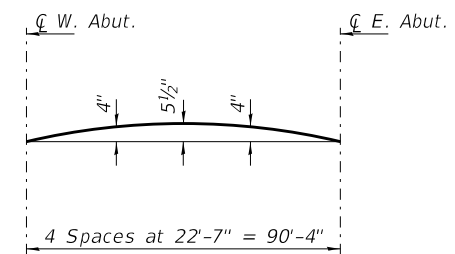


GIRDER ELEVATION



SECTION A-A

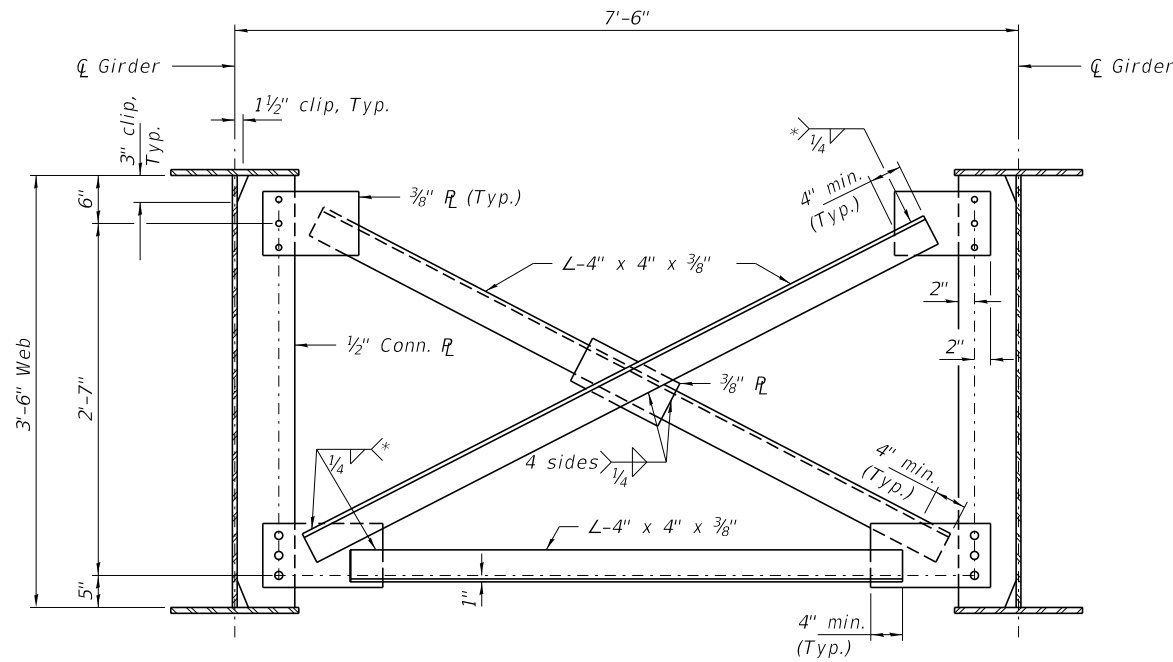
Notes:
 All girders and splices, including bearing stiffeners and cross frames shall be AASHTO M270, Grade 50W.
 For additional structural steel details see sheets 13 & 14 of 19.
 All cross frames shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted.
 "CVN" denotes Charpy-V-Notch impact energy requirements, zone 2.



CAMBER DIAGRAM

Location	Cl Brg. W. Abut.	Cl Brg. E. Abut.
BEAM 1	511.91	511.91
BEAM 2	512.03	512.03
BEAM 3	512.15	512.15
BEAM 4	512.03	512.03
BEAM 5	511.91	511.91

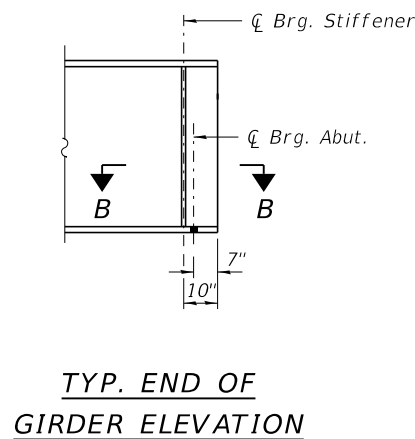
TOP OF WEB ELEVATIONS
 (For fabrication only)



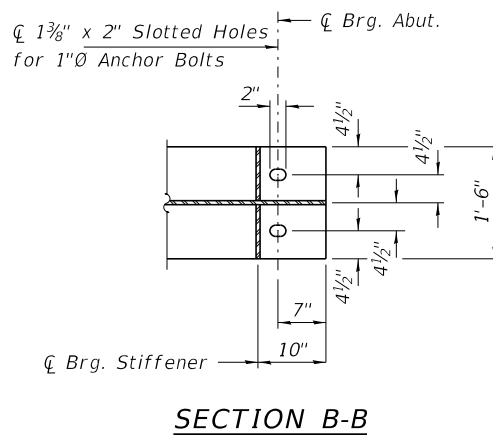
INTERIOR CROSS-FRAME
(20-required)

* Fillet weld angles along 3 sides on one face of gusset plate.

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.



TYP. END OF GIRDER ELEVATION

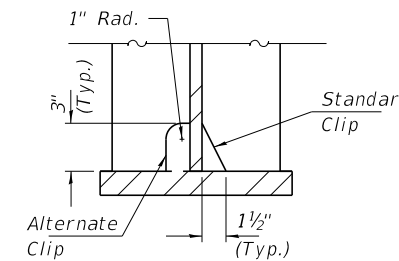


SECTION B-B

Notes:
For additional structural steel details see sheets 12 & 14 of 19.
All splices and diaphragms, including stiffeners and diaphragms shall be AASHTO M270, Grade 50W.

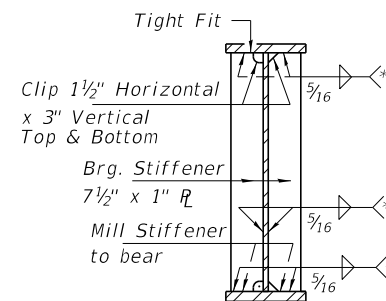
INTERIOR GIRDER MOMENT TABLE		
		0.5 Sp. 1
I_s	(in ⁴)	18,141
$I_c(n)$	(in ⁴)	51,950
$I_c(3n)$	(in ⁴)	37,637
$I_c(cr)$	(in ⁴)	18,141
S_s	(in ³)	700
$S_c(n)$	(in ³)	1,378
$S_c(3n)$	(in ³)	1,277
$S_c(cr)$	(in ³)	577
DC1	(k/ft)	0.98
MDC1	(k)	1,000
DC2	(k/ft)	0.04
MDC2	(k)	41
DW	(k/ft)	0.38
MDW	(k)	383
LLDF	(k)	0.720
$M_{\ell} + iM$	(k)	1,759
M_u (Strength I)	(k)	4,954
ϕF_n	(k)	5,225
f_s DC1	(ksi)	17.1
f_s DC2	(ksi)	0.4
f_s DW	(ksi)	3.6
f_s ($\ell + iM$)	(ksi)	15.3
f_s (Service II)	(ksi)	41.0
0.95Rh Fyf	(ksi)	47.5
f_s (Total)(Strength I)	(ksi)	-
ϕF_n	(ksi)	-
Vf	(k)	31.7

	Abutment	
	Interior	Exterior
LLDF	(k) 0.779	0.780
OCF	(k)	1.000
RDC1	(k) 44.3	43.3
RDC2	(k) 1.9	2.0
RDW	(k) 17.0	13.1
R_{ℓ}	(k) 72.9	73.0
R_{iM}	(k) 16.6	16.7
R_{Total}	(k) 152.7	148.1

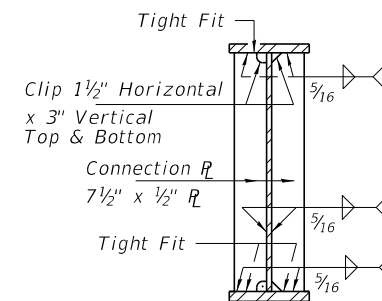


CLIP DETAIL

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



SECTION AT ABUTMENT BEARING STIFFENER R'S



SECTION AT CROSS-FRAME CONNECTION R'S

* Terminate 1/4" ($\pm 1/8$ ") from the end of plate intersects

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).

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.).

$M_{\ell} + iM$: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).

M_u (Strength I): Factored design moment (kip-ft.).
1.25 (MDC1 + MDC2) + 1.5 MDW + 1.75 $M_{\ell} + iM$

ϕF_n : Compact composite positive moment capacity computed according to Article 6.10.7.1 or non-slender negative moment capacity according to Article A6.1.1 or A6.1.2 (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).
MDC1/ S_c

f_s DC2: Un-factored stress at edge of flange for controlling steel flange due to vertical composite dead loads as calculated below (ksi).
MDC2/ $S_c(3n)$ or MDC2/ $S_c(cr)$ 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).
MDW/ $S_c(3n)$ or MDW/ $S_c(cr)$ as applicable.

f_s ($\ell + iM$): Un-factored stress at edge of flange for controlling steel flange due to vertical composite live load plus impact loads as calculated below (ksi).
 $M_{\ell} + iM$ / $S_c(n)$ or $M_{\ell} + iM$ / $S_c(cr)$ as applicable.

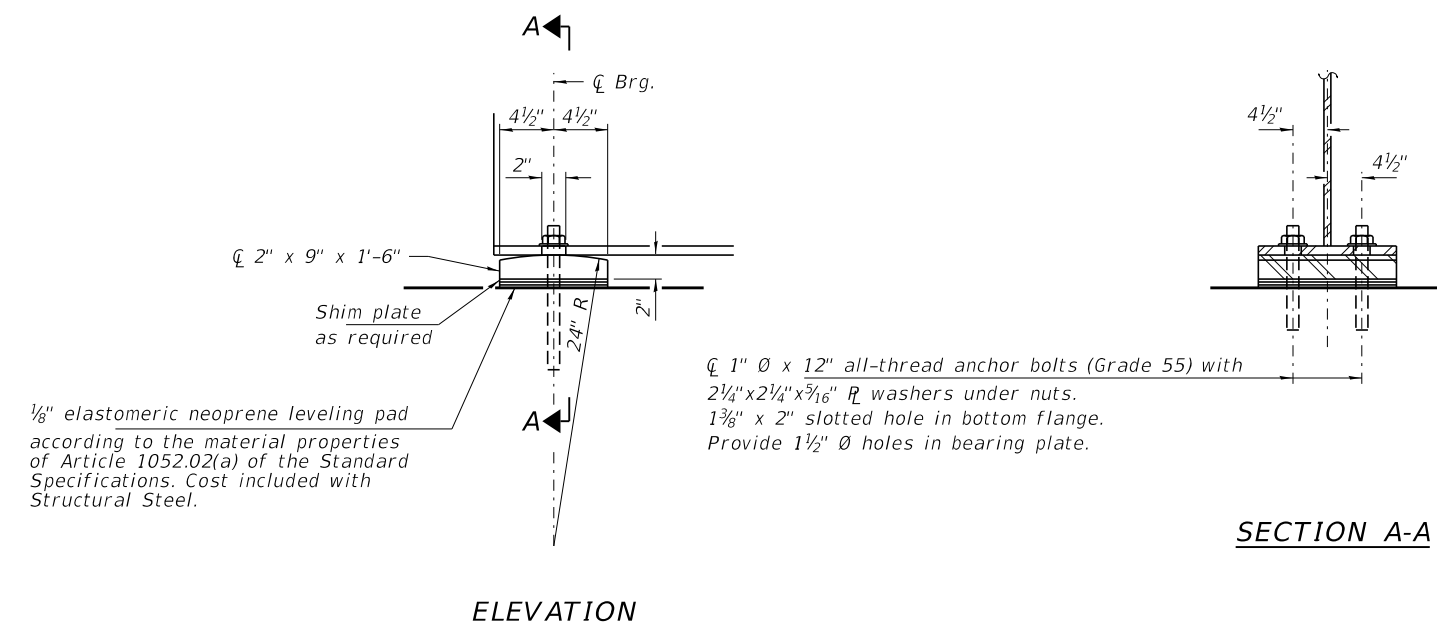
f_s (Service II): Sum of stresses as computed below (ksi).
 $f_sDC1 + f_sDC2 + f_sDW + 1.3 f_s(\ell + iM)$

0.95RhFyf: Composite stress capacity for Service II loading according to Article 6.10.4.2 (ksi).
Sum of stresses as computed below on non-compact section (ksi).
1.25 ($f_sDC1 + f_sDC2$) + 1.5 $f_sDW + 1.75 f_s(\ell + iM)$

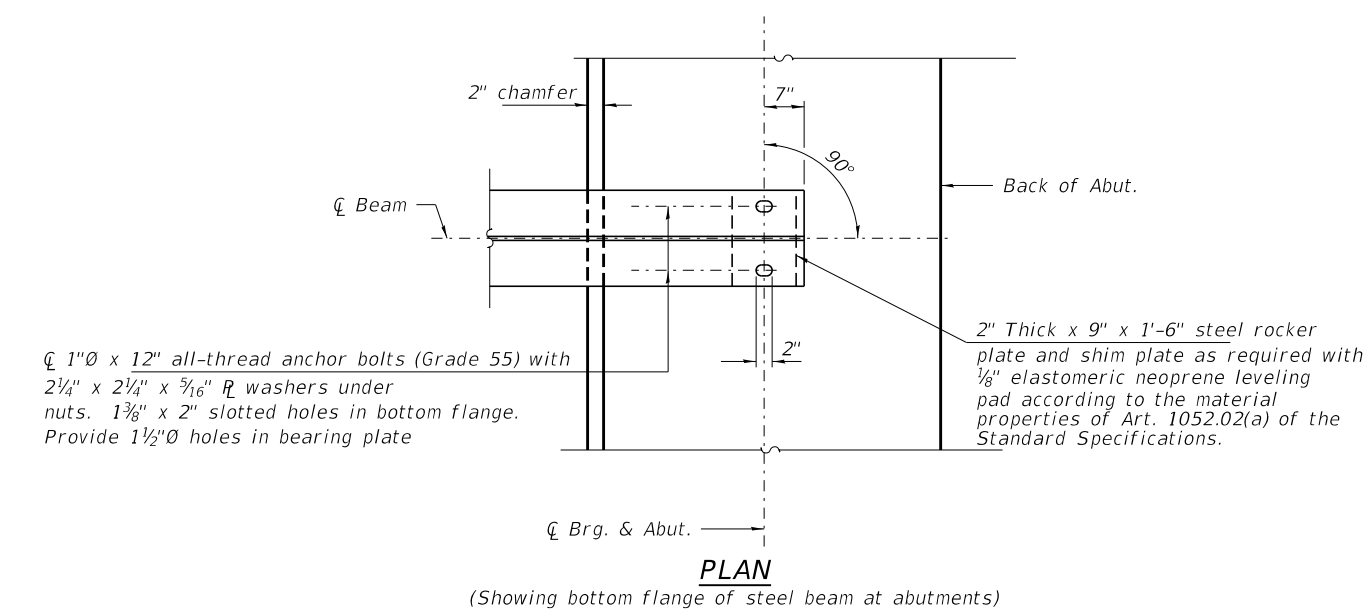
ϕF_n : Non-Compact composite positive or negative stress capacity for Strength I loading according to Article 6.10.7 or 6.10.8 (ksi).

Vf: Maximum factored shear range in span computed according to Article 6.10.10.

Note:
 M_{ℓ} and R_{ℓ} include the effects of centrifugal force and superelevation.



FIXED BEARING AT ABUTMENT
(10 required)



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.

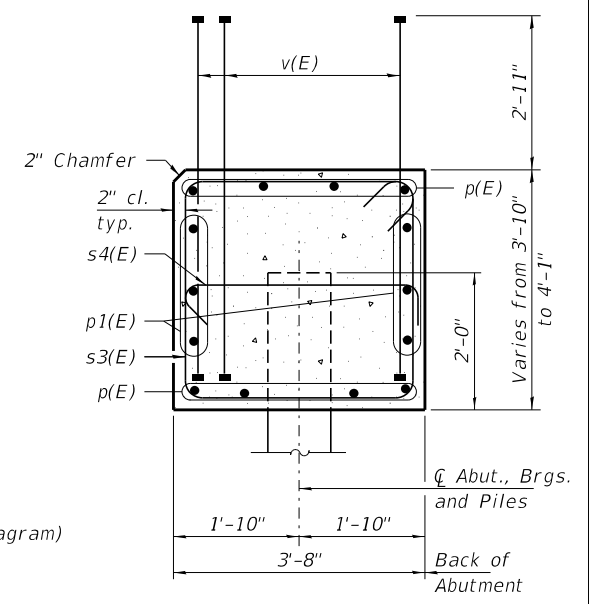
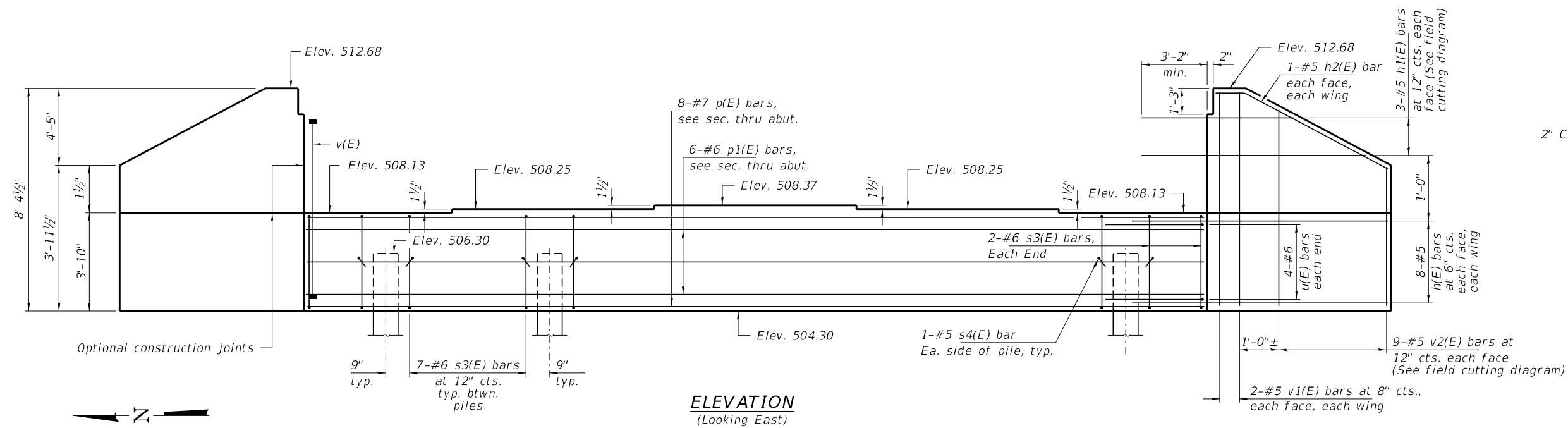
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

Anchor bolts at fixed bearings may be either cast in place or installed in holes drilled after the supported member is in place.

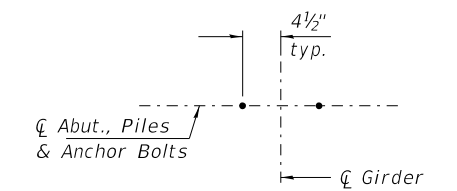
All steel plates of the bearing assembly shall be M270 Grade 50W.

BILL OF MATERIAL

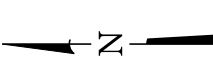
Item	Unit	Quantity
Anchor Bolts, 1"	Each	20



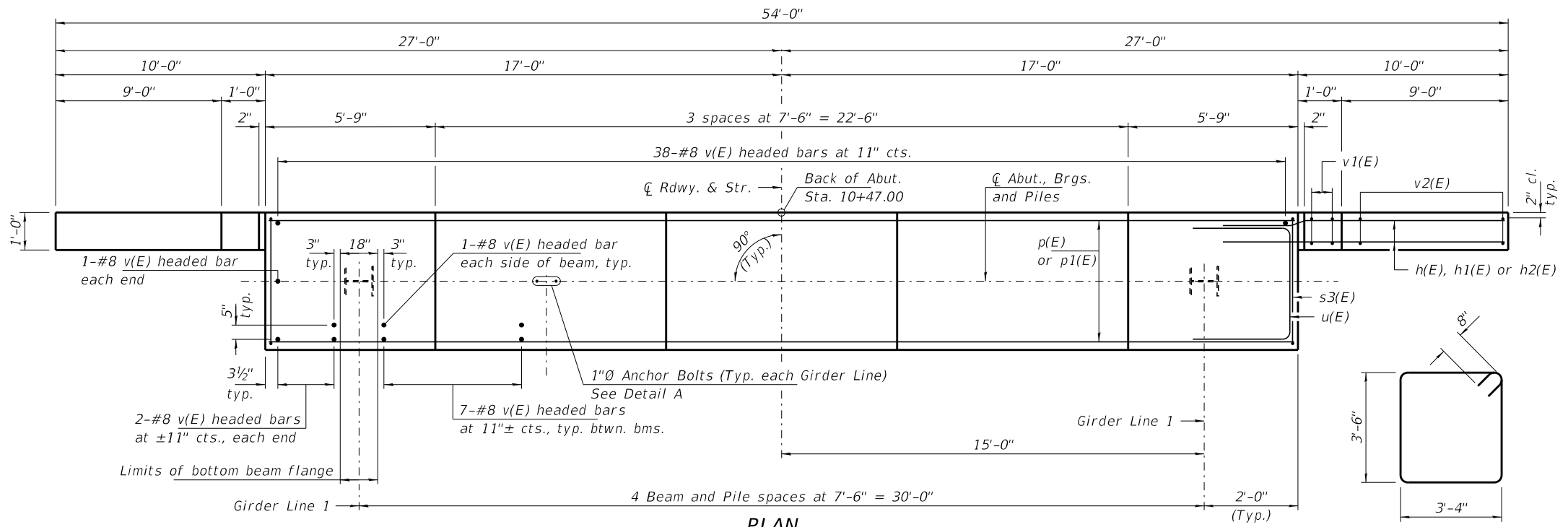
SEC. THRU ABUT.



DETAIL A



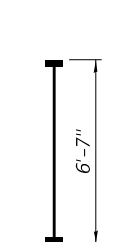
ELEVATION
(Looking East)



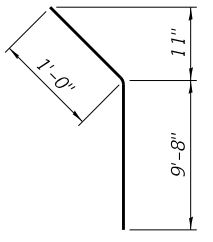
PLAN

PILE DATA

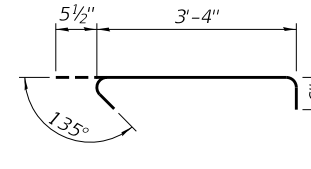
Type: Steel HP12x53
 Nominal Required Bearing: 418 Kips/Pile
 Factored Resistance Available: 230 Kips/Pile
 Est. Length: 50 Ft/Pile
 No. Production Piles: 5
 No. Test Piles: 0



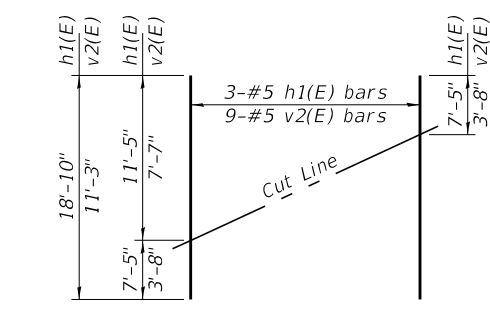
BAR v(E)
(Headed)



BAR h2(E)

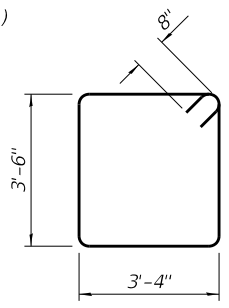


BAR s4(E)



FIELD CUTTING DIAGRAM

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



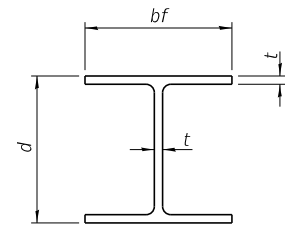
BAR s3(E)

BAR u(E)

BILL OF MATERIAL - E. ABUT.

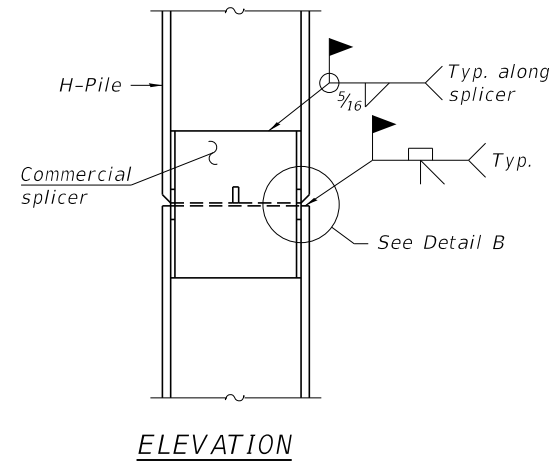
BAR	NO.	SIZE	LENGTH	SHAPE	
h(E)	32	#5	13'-0"	—	
h1(E)	6	#5	18'-10"	—	
h2(E)	4	#5	10'-8"	—	
p(E)	8	#7	33'-8"	—	
p1(E)	6	#6	33'-8"	—	
s3(E)	32	#6	15'-0"	□	
s4(E)	10	#5	4'-4"	┌	
u(E)	8	#6	11'-10"	└	
v(E)	82	#8	6'-7"	—	
v1(E)	8	#5	8'-0"	—	
v2(E)	18	#5	11'-3"	—	
Structure Excavation				Cu. Yd.	267
Concrete Structures				Cu. Yd.	22.9
Protective Coat				Sq. Yd.	10
Reinf. Bars, Epoxy Coated				Pound	4,080
Furnishing Steel Piles HP12x53				Foot	250
Driving Piles				Foot	250

Notes:
 Pour steps monolithically with cap.
 Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.
 For details of piles see sheet 17 of 19.

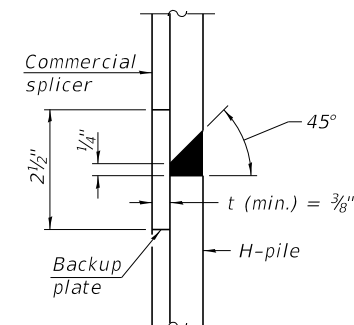


STEEL PILE TABLE

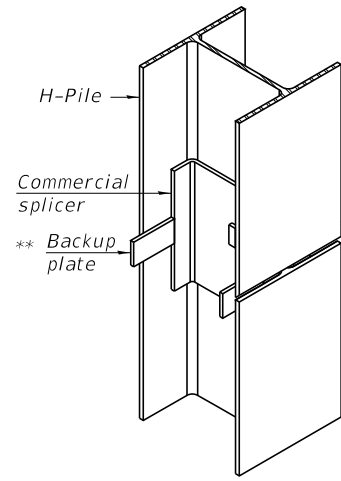
Designation	Depth d	Flange width bf	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	1 3/16"	30"
x102	14"	14 3/4"	1 1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 3/8"	14 3/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1 1/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 3/4"	12"	7/16"	24"
HP 10x57	10"	10 1/4"	9/16"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP 8x36	8"	8 1/8"	7/16"	18"



ELEVATION

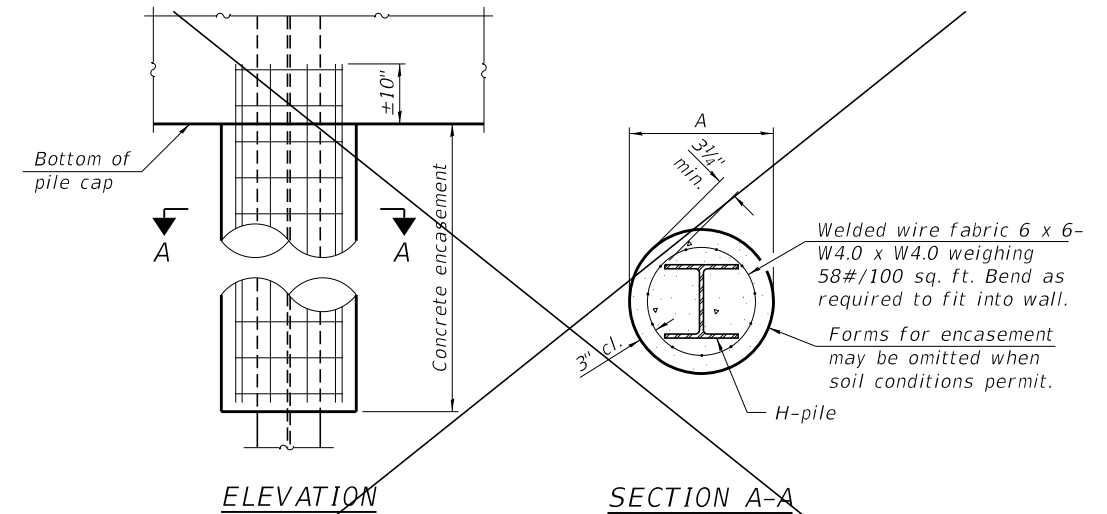


DETAIL "B"



ISOMETRIC VIEW

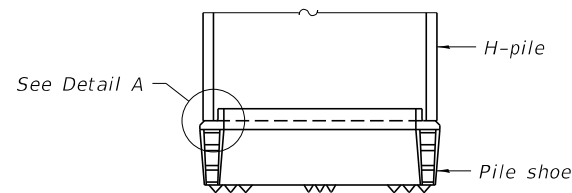
WELDED COMMERCIAL SPLICE



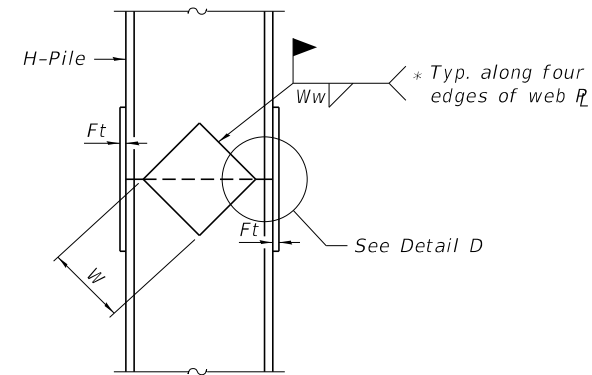
ELEVATION

SECTION A-A

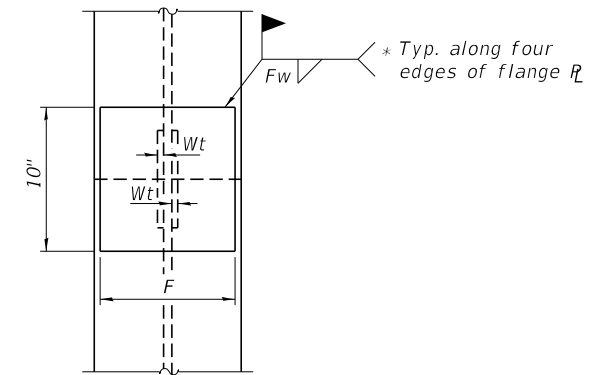
INDIVIDUAL PILE CONCRETE ENCASEMENT - (NOT REQUIRED)



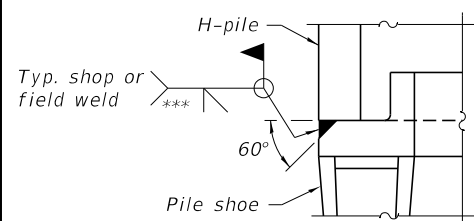
ELEVATION



ELEVATION

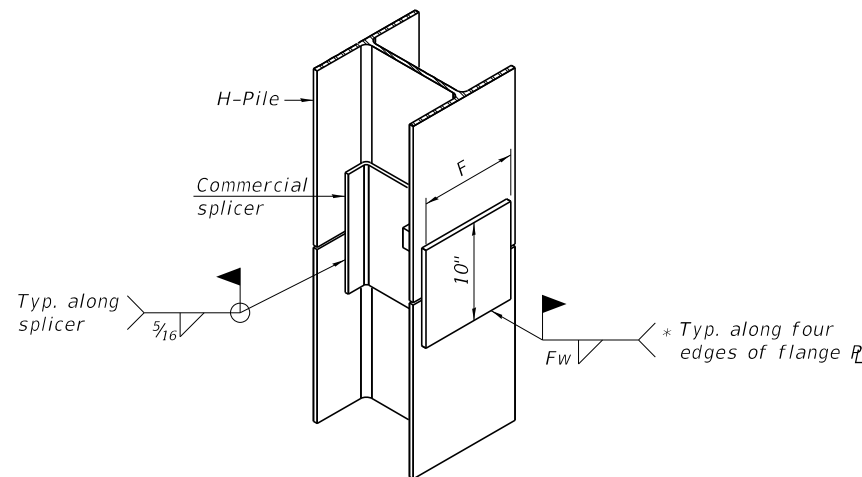


END VIEW



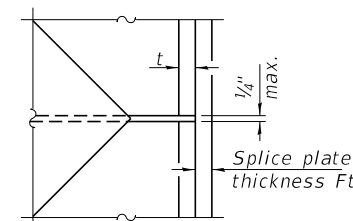
DETAIL A

SHOE ATTACHMENT



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE



DETAIL D

WELDED PLATE FIELD SPLICE

Designation	F	Ft	Fw	W	Wt	Ww
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	1 1/16"	7 3/4"	5/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5/8"	1/2"
HP 12x84	10"	7/8"	1 1/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	1 1/16"	6 1/2"	5/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	5/8"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	7"	5/8"	7/16"	4 1/4"	1/2"	3/8"

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

* Interrupt welds 1/4" from end of web and/or each flange.

** Remove portions of backup plates that extend outside the flanges.

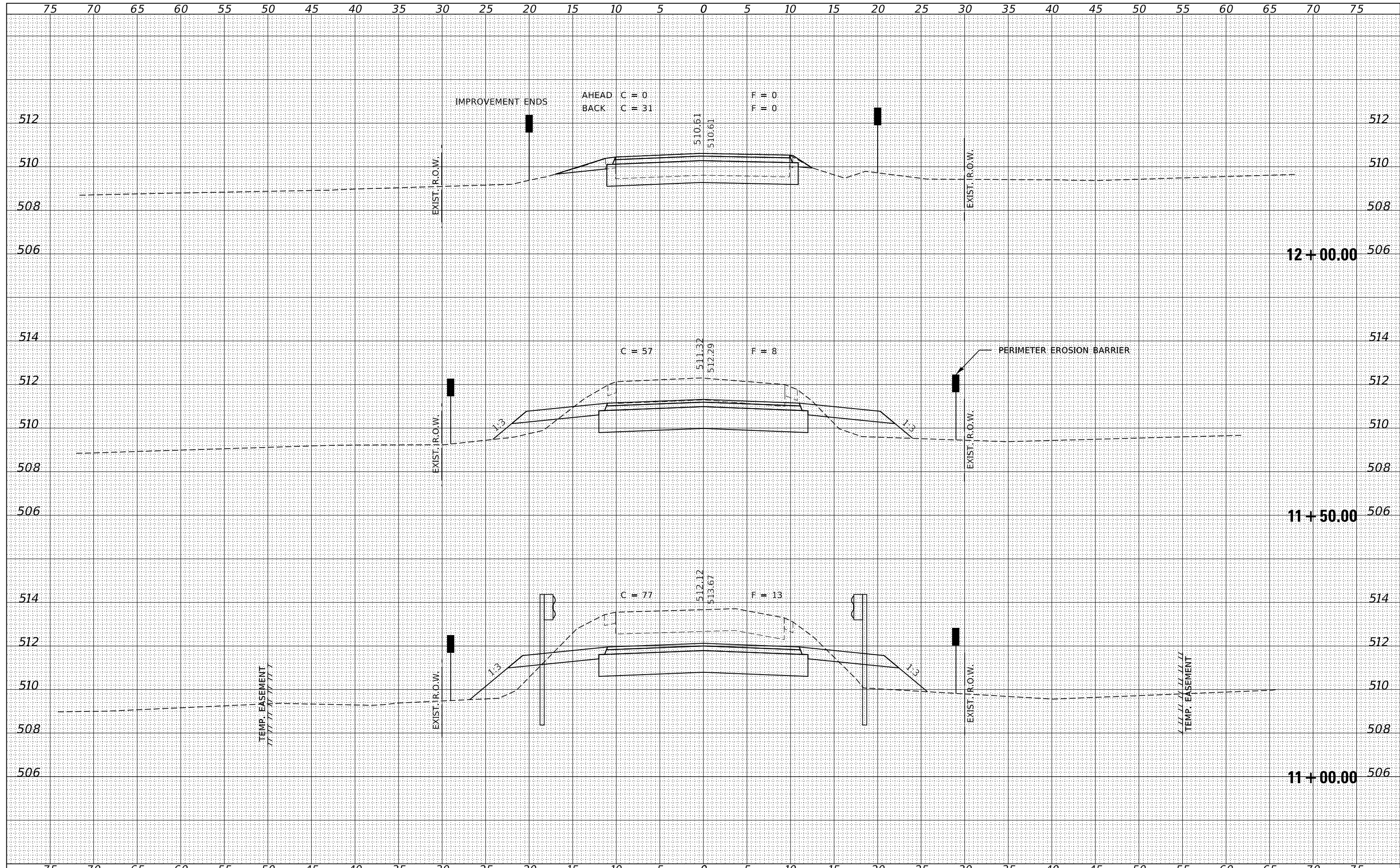
*** Weld size per pile shoe manufacturer (5/16" min.).

F-HP 1-1-2020

FILE NAME = 200025-shl-bridge.dgn	USER NAME = rmosick	DESIGNED - I.P.N.	REVISED -	STATE OF ILLINOIS TAZEWELL COUNTY HIGHWAY DEPARTMENT	HP PILE DETAILS STRUCTURE NO. 090-3252	T.R.	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	PLOT SCALE =	CHECKED - S.M.S.	REVISED -			141	16-02126-00-BR	TAZEWELL	34	23
	PLOT DATE = 8/20/2021	DRAWN - A.C.	REVISED -			CINCINNATI ROAD DISTRICT		CONTRACT NO. 89721		
		CHECKED - S.M.S.	REVISED -			ILLINOIS		FED. AID PROJECT SAJG(571)		

DATE	
BY	
ORIGINAL SURVEY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
NO.	

DATE	
BY	
ORIGINAL SURVEY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
NO.	



FILE NAME = 200025-shl-xssheets.dgn	USER NAME = rmosck	DESIGNED - S.A.A.	REVISED -	STATE OF ILLINOIS TAZEWELL COUNTY HIGHWAY DEPARTMENT	STATION CROSS SECTIONS			T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC.		DRAWN - T.W.K.	REVISED -		141	16-02126-00-BR	TAZEWELL	34	33			
3885 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM L.S. / P.E. / S.E. CORP. 184.009958		CHECKED - J.W.F.	REVISED -		CINCINNATI ROAD DISTRICT			CONTRACT NO. 89721				
		DATE - 08/11/2021	REVISED -		SCALE: 5H:2V	SHEET NO. 8 OF 9 SHEETS	STA. 11+00.00 TO STA. 12+00.00	ILLINOIS FED. AID PROJECT SAJG(571)				

