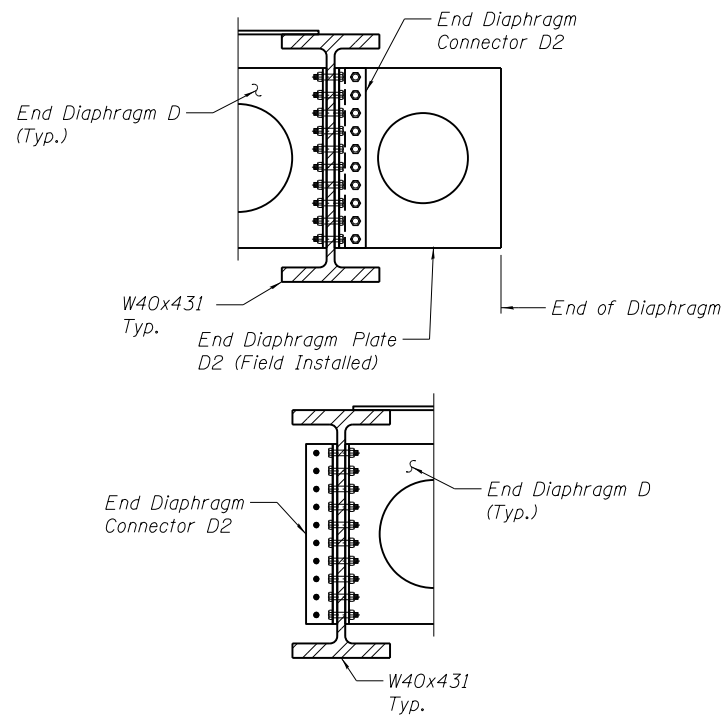
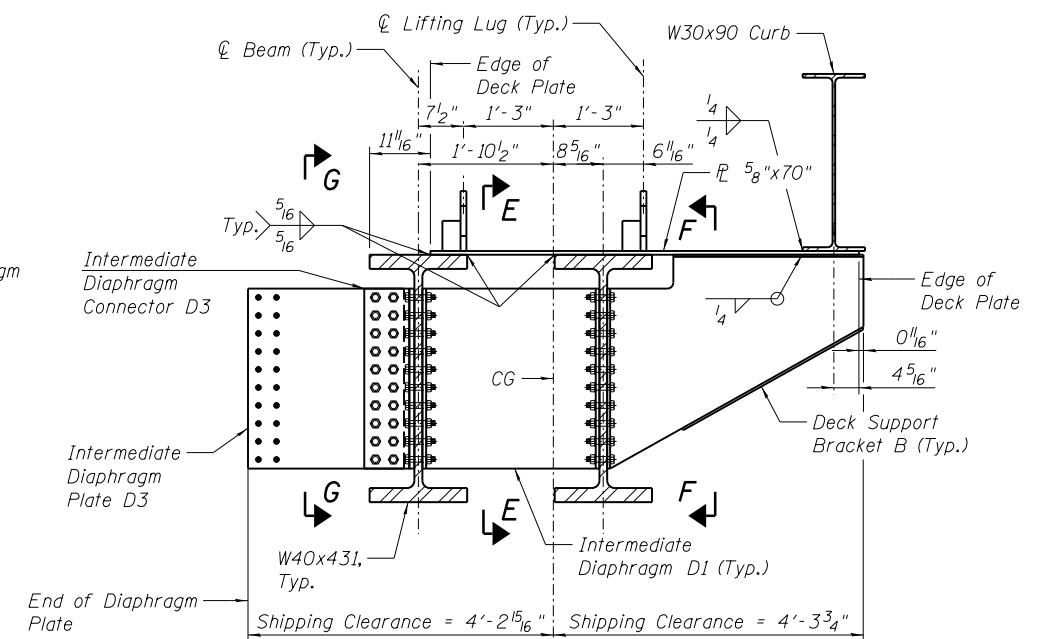


AT INTERIOR DIAPHRAGM UNIT 1
(Looking South)

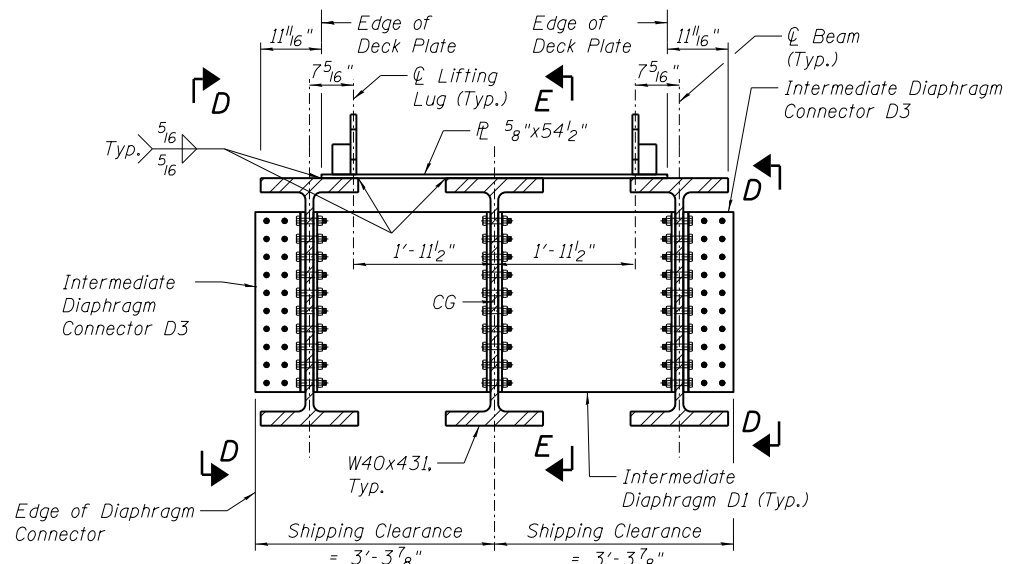


AT END DIAPHRAGM

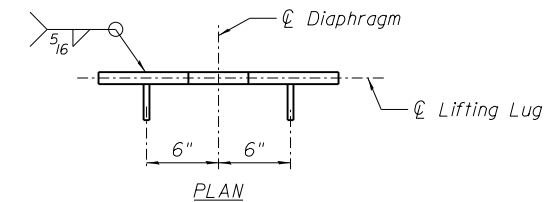
(Partial Section shown, End Diaphragm Sections are similar to Interior Diaphragm Sections except as noted above)



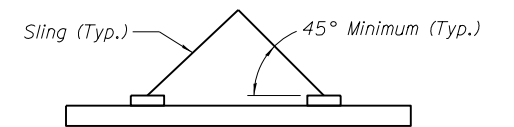
AT INTERIOR DIAPHRAGM UNIT 3
(Looking South)



AT INTERIOR DIAPHRAGM UNIT 2
(Looking South)

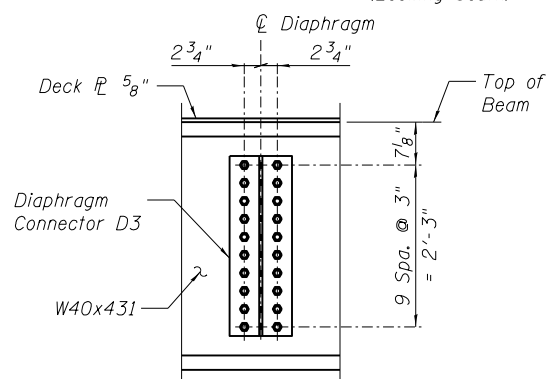


LIFTING LUG DETAIL

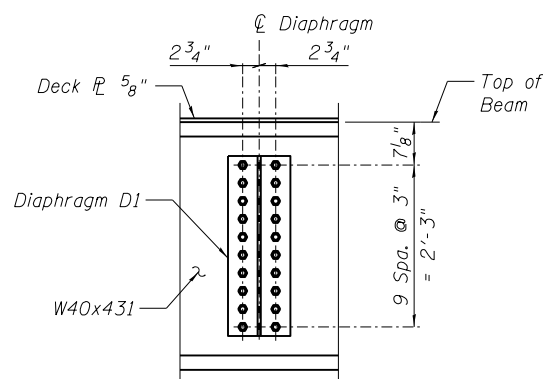


TYPICAL ELEVATION
LIFTING DIAGRAM

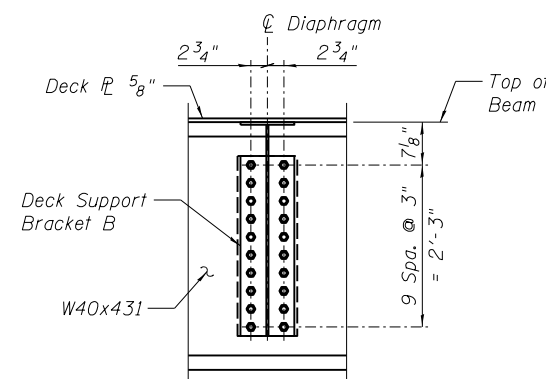
Notes:
Bolts shall be 7/8" ϕ placed in 1 5/16" ϕ holes unless otherwise noted.
Steel shall conform to ASTM A709 Gr. 50, unless otherwise noted.
After assembled span is in final position, lifting lugs shall be burned or ground off in a manner that will not damage the waterproofing system.



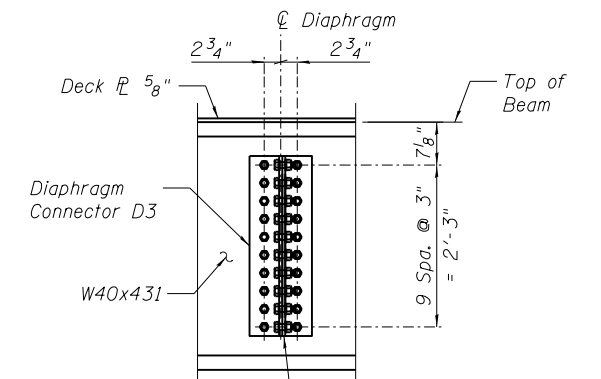
SECTION D-D



SECTION E-E



SECTION F-F



SECTION G-G

pw:\hansoninc-pw-bentley.com\hanson-pw-01\Documents\09Jobs\09L0179B\Usable Segments III - V - V\CAD\Struct\Usable Segment V\Cook\Sheet\084-9964-09L0179B-007-Structural Steel Det.02

FINAL



USER NAME = Pop00275
DESIGNED - MJW
CHECKED - CGP
PLOT SCALE = 1/8" = 1'-0"
PLOT DATE = 1/18/2021

DESIGNED - MJW
CHECKED - CGP
DRAWN - CDP
CHECKED - MJW

REVISED -
REVISED -
REVISED -
REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL DETAILS (2 OF 3)
STRUCTURE NO. 084-9964

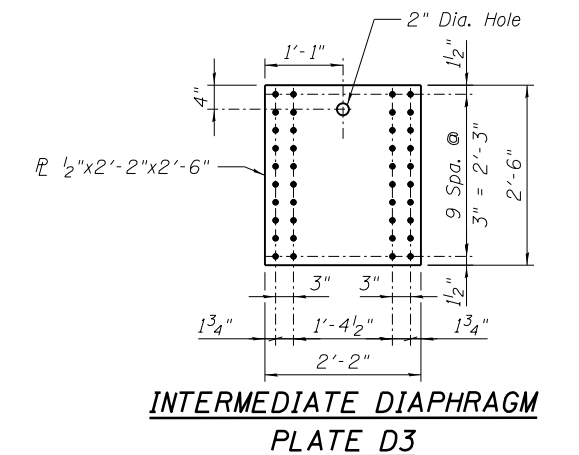
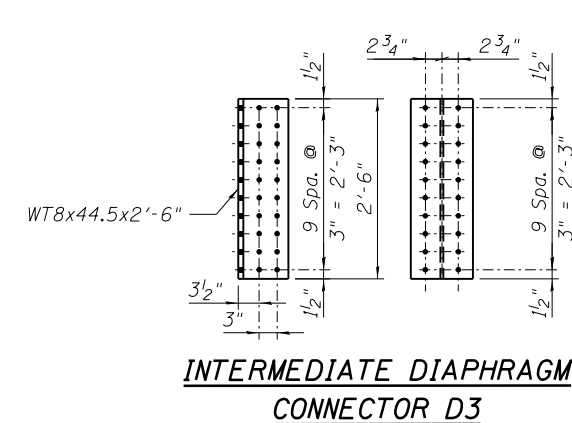
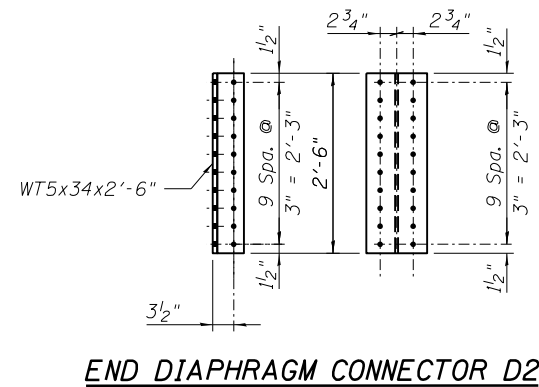
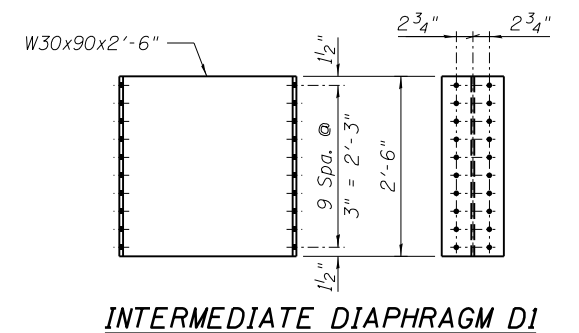
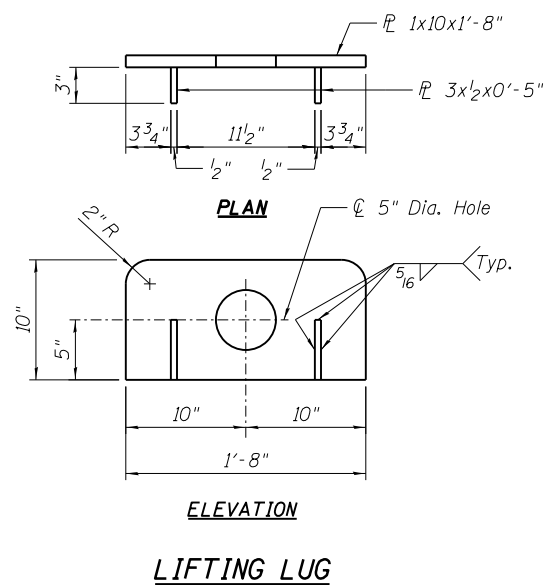
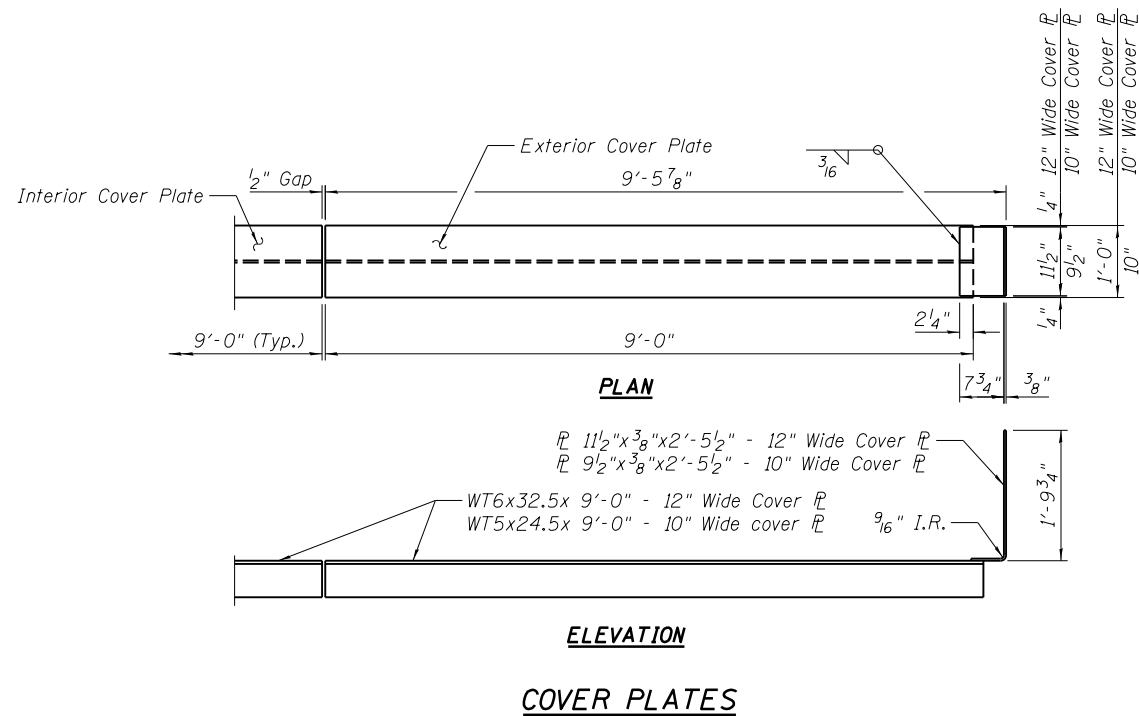
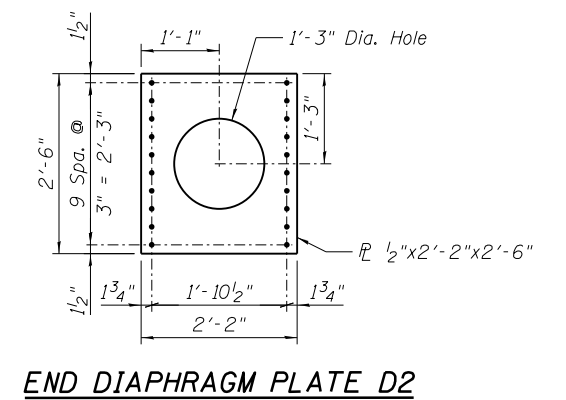
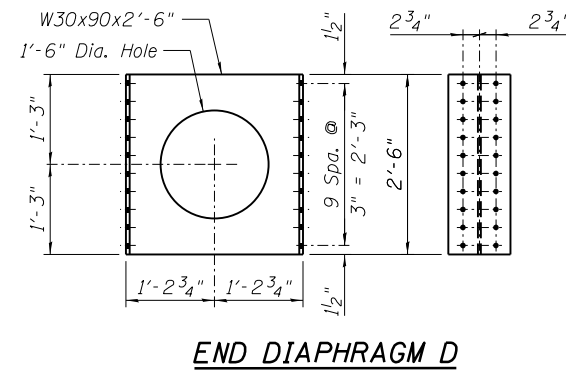
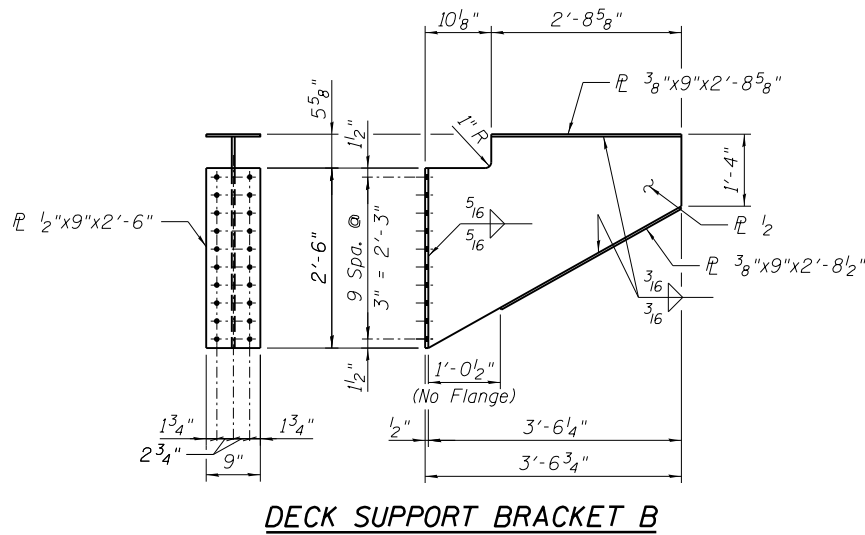
SHEET NO. 7 OF 18 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
•	19-00488-00-BR	SANGAMON	347	201
• 7985A & 8168 ILLINOIS FED. AID PROJECT			CONTRACT NO. 93747	

INTERIOR BEAM MOMENT & SHEAR TABLE

Description	Max Moment	Max Shear
Dead Load	710.2 ft.-k	45.8 k
Live Load	1,104.5 ft.-k	80.4 k
Impact	408.9 ft.-k	29.8 k
Total	2,223.6 ft.-k	156.0 k
Section	W40x431	
Steel	ASTM A709, Gr. 50, NTR Zone 2	
Net I	33,804 in ⁴	
Net S (Bott.)	1,637 in ³	
FST (Bott.)	16.3 ksi	
Gross I	34,800 in ⁴	
Gross S (Top)	1,690 in ³	
FSC (Top)	15.8 ksi	
(LL+I) Deflection	0.98 in	
Allowable (LL+I) Deflection	1.16 in	

I - Non-composite moment of inertia of the steel section
 S - Non-composite section modulus of the steel section
 FST - Max unfactored tension stress in the section due to DL+LL+Impact
 FSC - Max unfactored compression stress in the section due to DL+LL+Impact



Notes:

All diaphragms shall be installed at the fabricators shop except as otherwise noted. Individual diaphragms at supports may be temporarily disconnected to install bearing anchor rods.

Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.

Bolts shall be 7/8" φ placed in 15/16" φ holes unless otherwise noted. Steel shall conform to ASTM A709 Gr. 50, unless otherwise noted.

FINAL



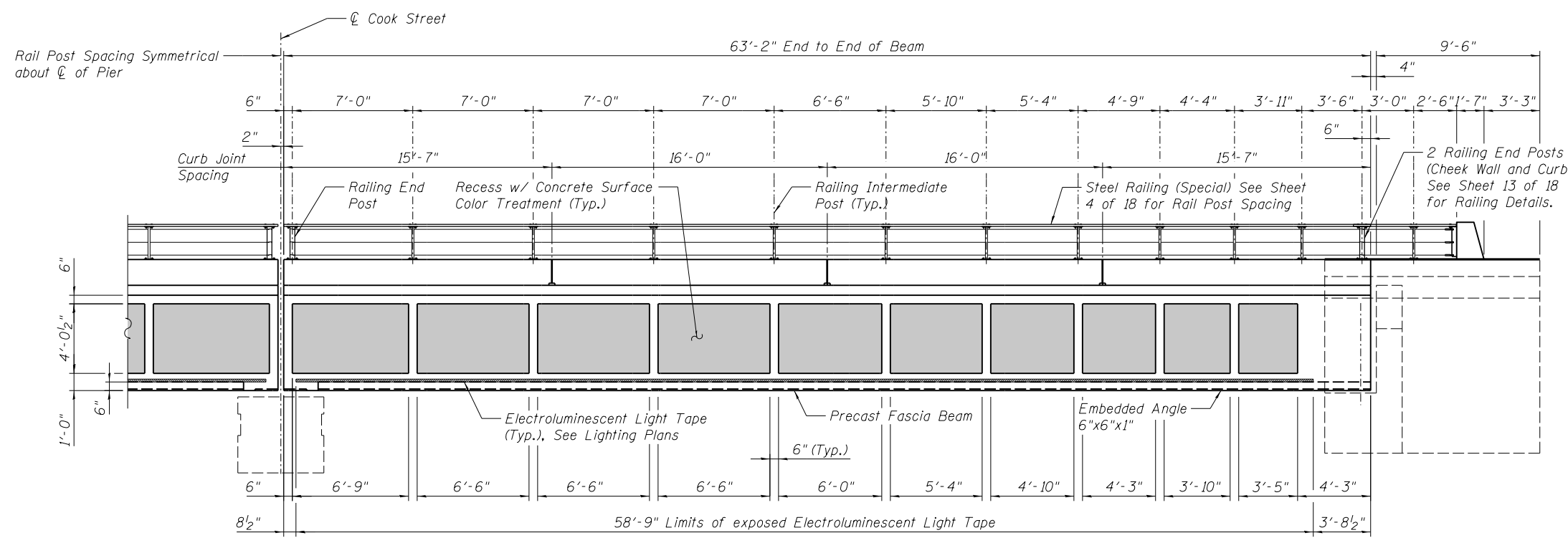
USER NAME = Pop00275	DESIGNED - MJW	REVISED -
PLOT SCALE = 1/8" = 1'-0"	CHECKED - CGP	REVISED -
PLOT DATE = 1/18/2021	DRAWN - CDP	REVISED -
	CHECKED - MJW	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

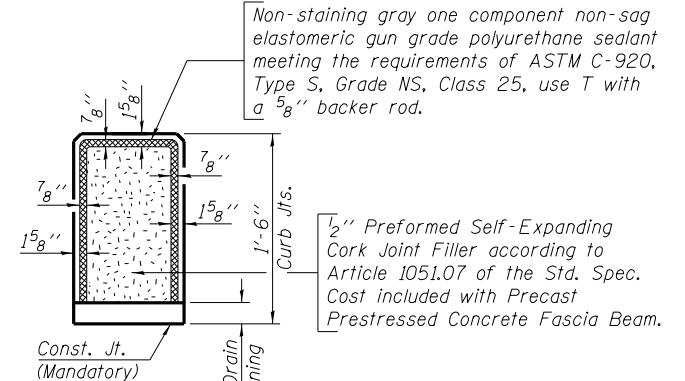
STRUCTURAL STEEL DETAILS (3 OF 3)
STRUCTURE NO. 084-9964

SHEET NO. 8 OF 18 SHEETS

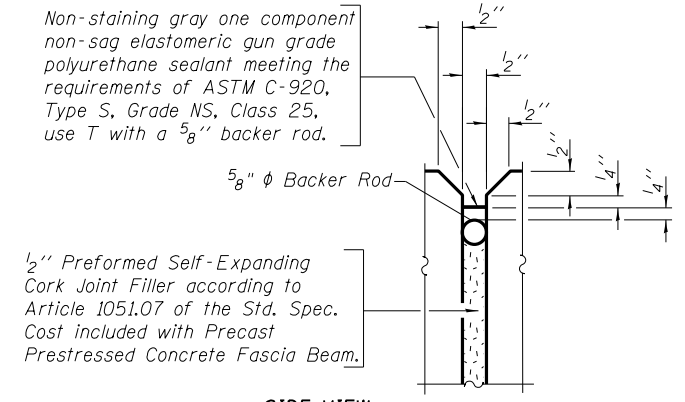
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	19-00488-00-BR	SANGAMON	347	202
CONTRACT NO.			93747	
* 7985A & 8169 ILLINOIS FED. AID PROJECT				



ELEVATION PRECAST FASCIA BEAM
(Looking East)

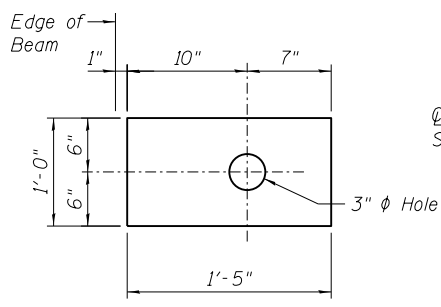


ELEVATION VIEW

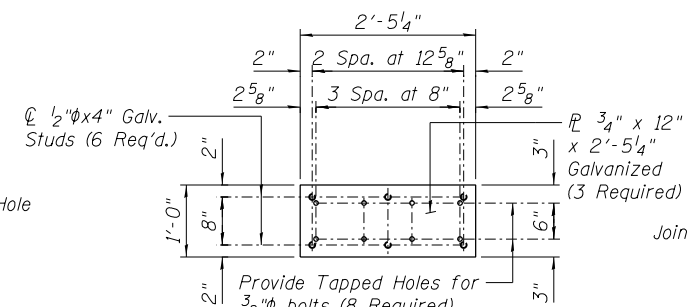


SIDE VIEW

CURB JOINT DETAILS

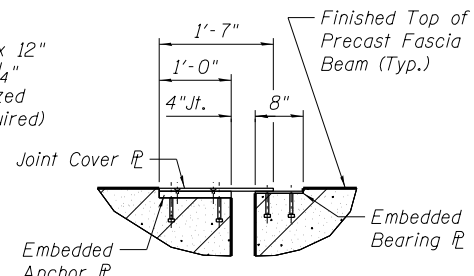


FABRIC BEARING PAD

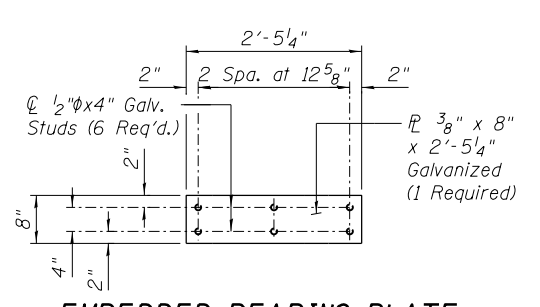


EMBEDDED ANCHOR PLATE

(1 Required at Expansion end of North Fascia Beam)
(1 Required at Each Abutment Backwall)

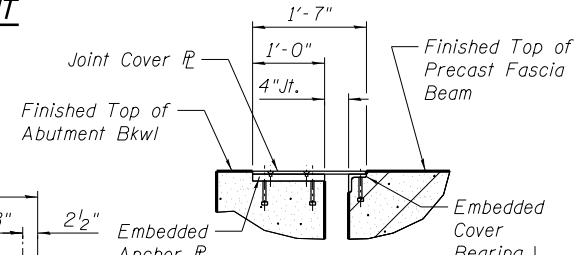


SECTION AT EXPANSION JOINT

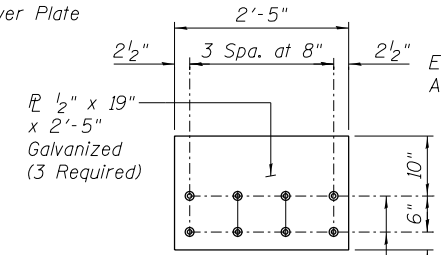


EMBEDDED BEARING PLATE

(1 Required at Expansion End of South Fascia Beam)

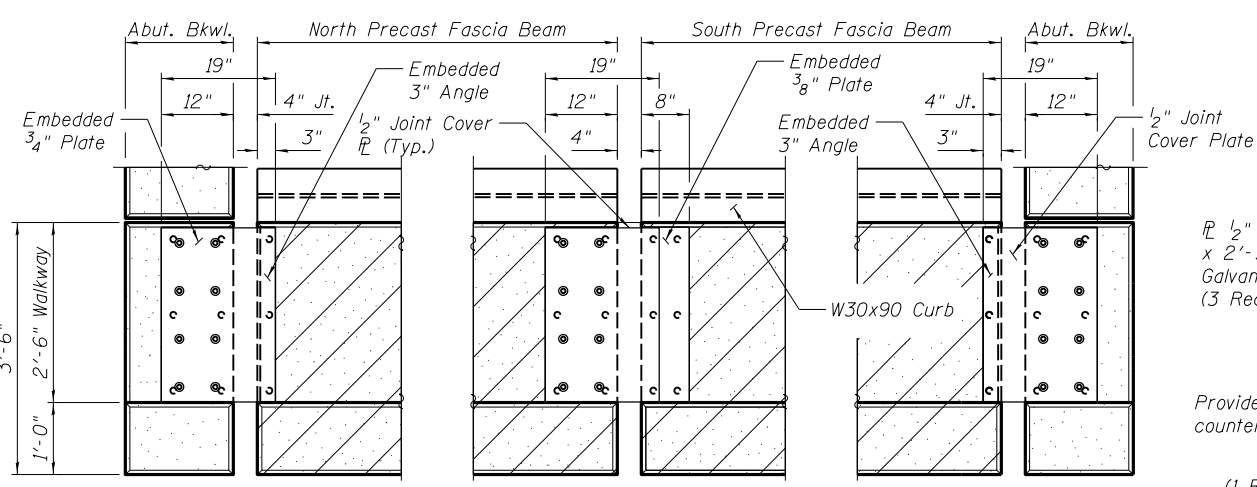


SECTION AT FIXED JOINT



JOINT COVER PLATE

(1 Required at each Fascia Beam Joint)



PLAN - FIXED JT. COVER AT NORTH ABUMENT **PLAN - EXP. JT. COVER AT PIER** **PLAN - FIXED JT. COVER AT SOUTH ABUMENT**

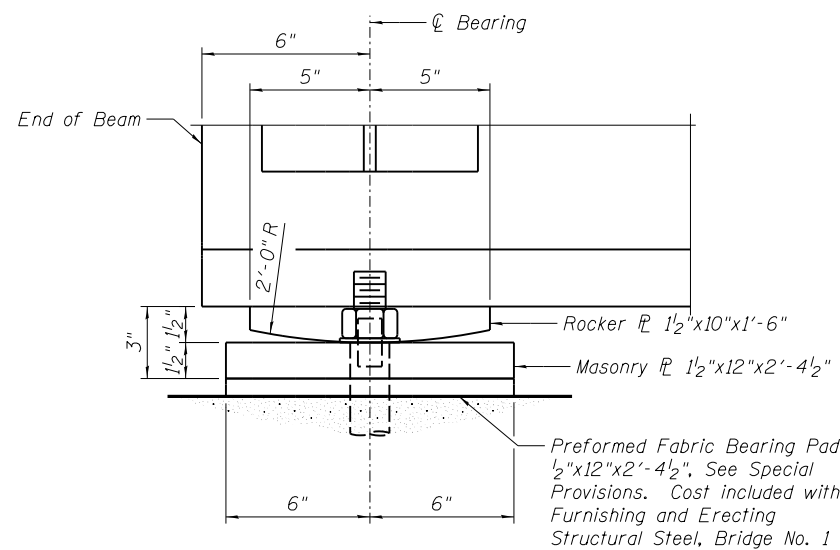
Note:

For Railing Details See Sheet 13 of 18.
All (embedded and separate) hardware, angles, bearing plates, side retainers, anchor bolts, threaded rods, nuts, washers and pintles shall be galvanized according to AASHTO M111 and ASTM 385 or M232 as applicable.
Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in.
Reinforcement bars shall conform to ASTM A 706, Grade 60.
Two 1/8" fabric adjusting shims of the dimensions of the bearing pad shall be provided for each bearing pad location.
All bearing pads shall be 1" thick at expansion bearings and 1 3/8" thick at fixed bearings. Omit holes when using expansion bearings.
Expansion bearing pad shall be bonded to the substructure.
Expansion bearing pad shall have PTFE bonded to top surface. PTFE surface shall be bonded according to manufacturers recommendations.
Corrosion Inhibitor, per Article 1020.05(b)(12) and 1021.07 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete fascia beams. Compressive strength of prestressed concrete, f'c, shall be 6500 psi. Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi. Embedded angles, Side Retainers, Anchor Bolts, plates, studs, bearing pads, Threaded Rods, Non-Shrink Grout and accessories shall be included in the cost of Precast Prestressed Concrete Fascia Beam.
Concrete curb shall be cast with the precast fascia beam and included in the cost of Precast Prestressed Concrete Fascia Beam.
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 and Threaded Rods shall be installed in blockouts with Non-Shrink Grout meeting the material requirements of Article 1024.02 of the Standard Specifications. Blockouts shall be clean prior to grouting and grout installed according to manufactures recommendations. Cost for non-shrink grout shall be included in the cost of Concrete Structures.

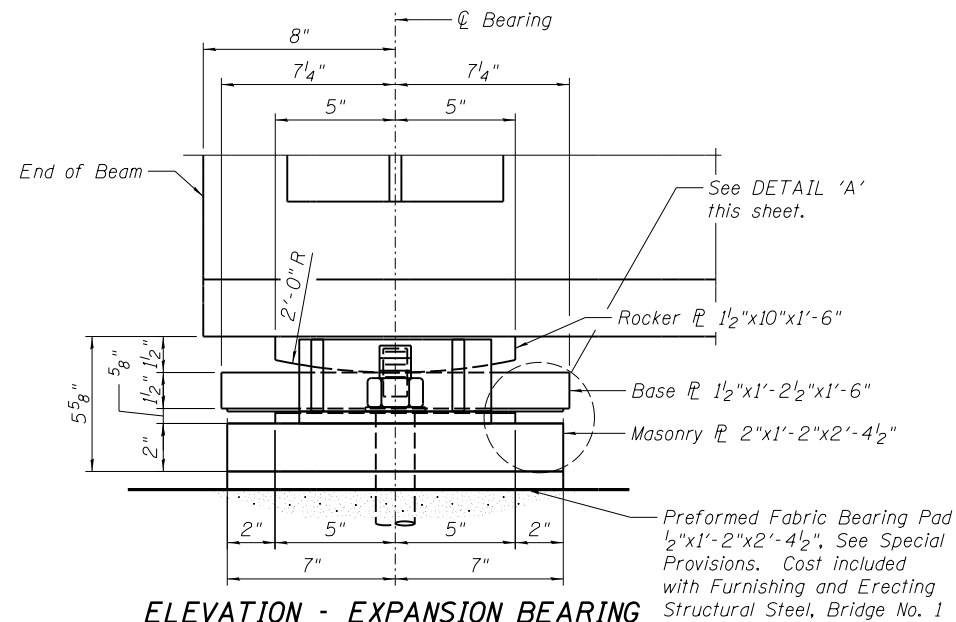
BILL OF MATERIAL

ITEM	UNIT	TOTAL
* Precast Prestressed Concrete Fascia Beam, No. 1	L. Sum	1
Concrete Surface Color Treatment	Sq. Ft.	435
Concrete Sealer	Sq. Ft.	887

*Precast Prestressed Concrete Fascia Beam, No. 1 includes two beams



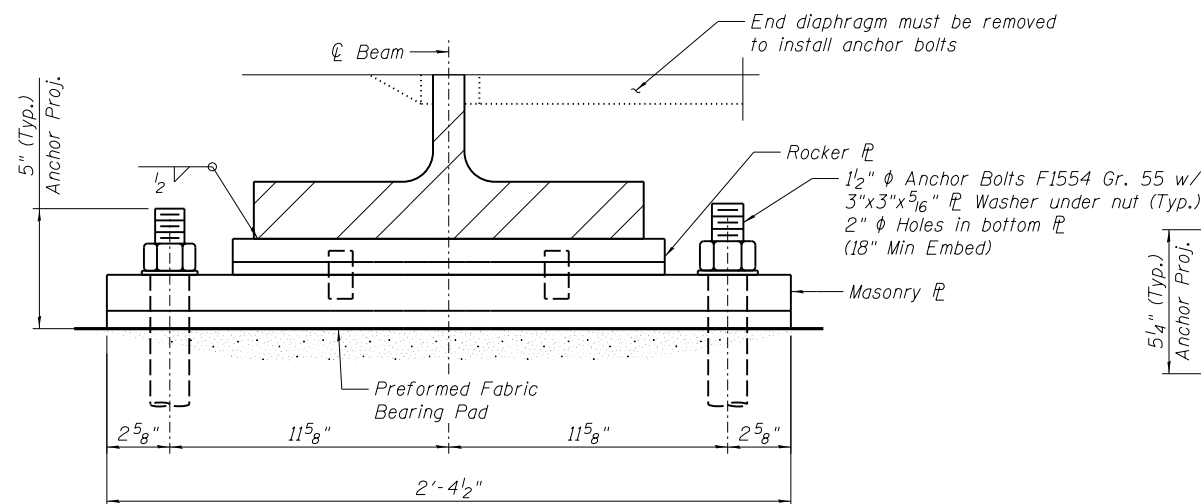
ELEVATION - FIXED BEARING



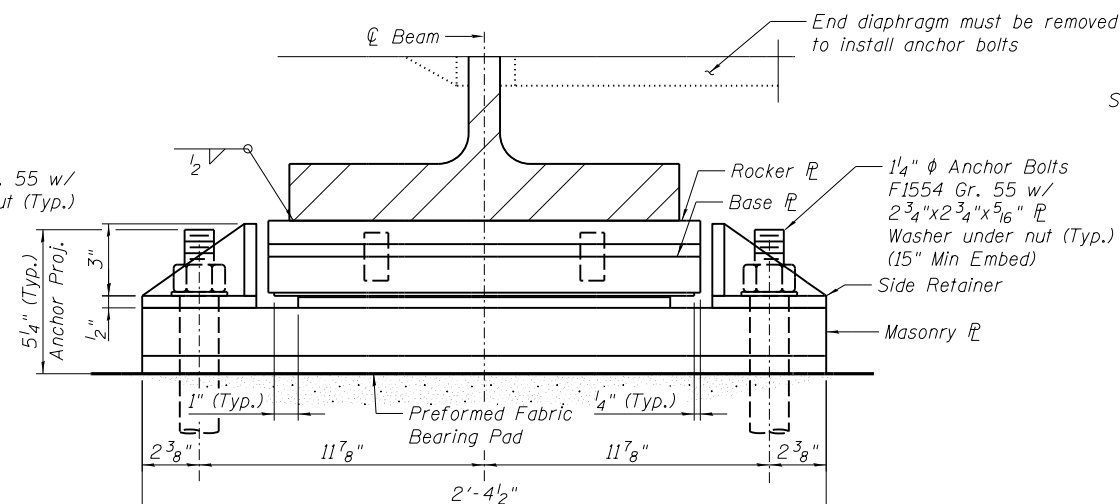
ELEVATION - EXPANSION BEARING

Notes:

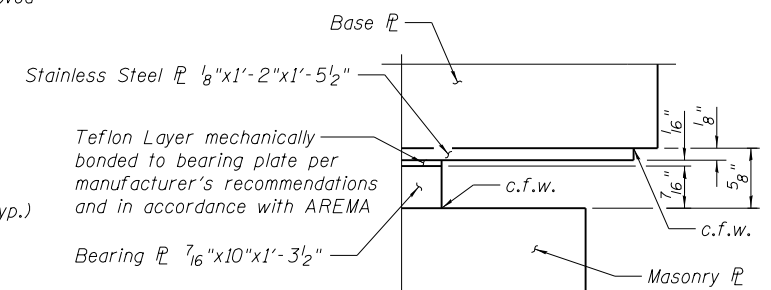
1. The structural steel plates of the Bearing Assembly shall conform to the requirements of ASTM A709, Grade 50.
2. Teflon Layer shall be composed of virgin unfilled TFE resin, unfilled TFE sheets, or unfilled TFE fabric. Filler material, such as milled glass fibers, will not be allowed. Teflon layer shall conform to the requirements of AREMA Chapter 15.
3. The bearing assembly shall be according to Section 521 of the Standard Specifications where applicable. The bearing assembly and anchor bolts will not be paid for separately but included in the weight of Structural Steel for payment as "Furnishing and Erecting Structural Steel, Bridge No. 1".
4. 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.
5. Anchor bolts shall be installed in blockouts with Non-Shrink Grout meeting the material requirements of Article 1024.02 of the Standard Specifications. Blockouts shall be clean prior to grouting and grout installed according to manufacturer's recommendations. Cost for non-shrink grout shall be included in the cost of Concrete Structures.
6. Two 1/8" adjusting shims shall be provided for each bearing assembly in addition to all other plates or shims and placed as shown on bearing details.



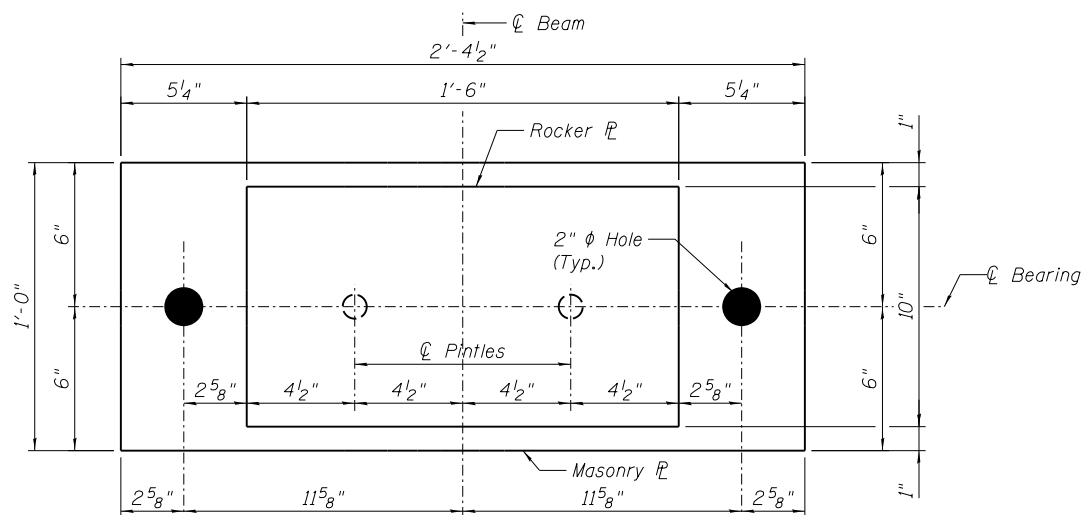
END VIEW - FIXED BEARING



END VIEW - EXPANSION BEARING

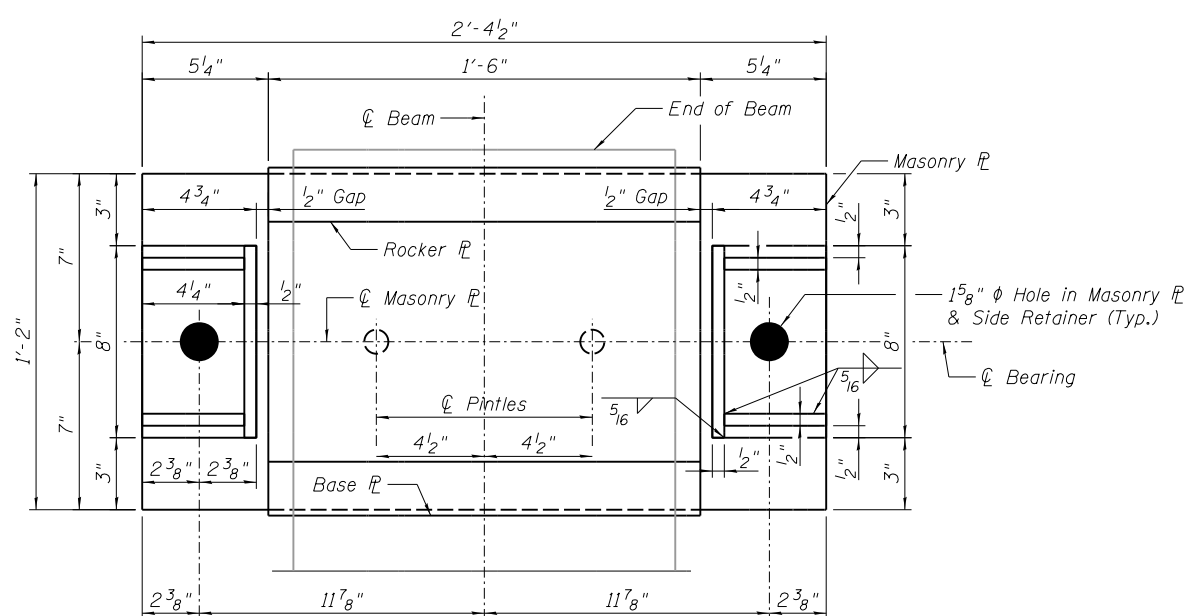


DETAIL 'A'



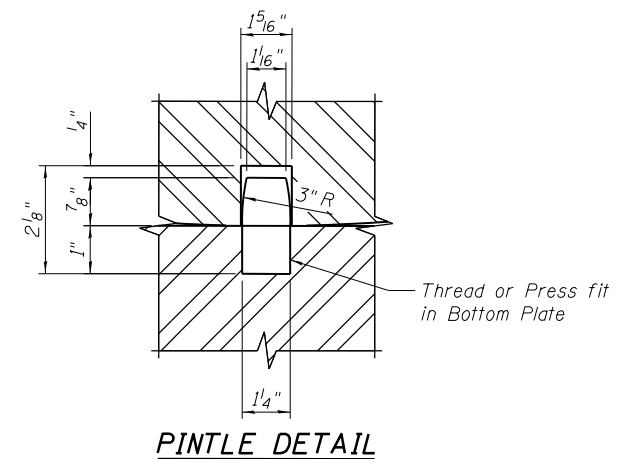
PLAN VIEW - FIXED BEARING

(Abutment Bearings - 26 required)



PLAN VIEW - EXPANSION BEARING

(Pier Bearings - 26 required)



PINTLE DETAIL

pw:\hansoninc-pw-bentley.com\hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - V\CAD\Struct\Usable Segment V\Cook\Sheet\084-9964-09L01798-011-Brg Det

FINAL



USER NAME = Pop02275
 PLOT SCALE = 0:2" = 1'-0"
 PLOT DATE = 1/18/2021

DESIGNED - CGP
 CHECKED - JGT
 DRAWN - CDP
 CHECKED - MJW

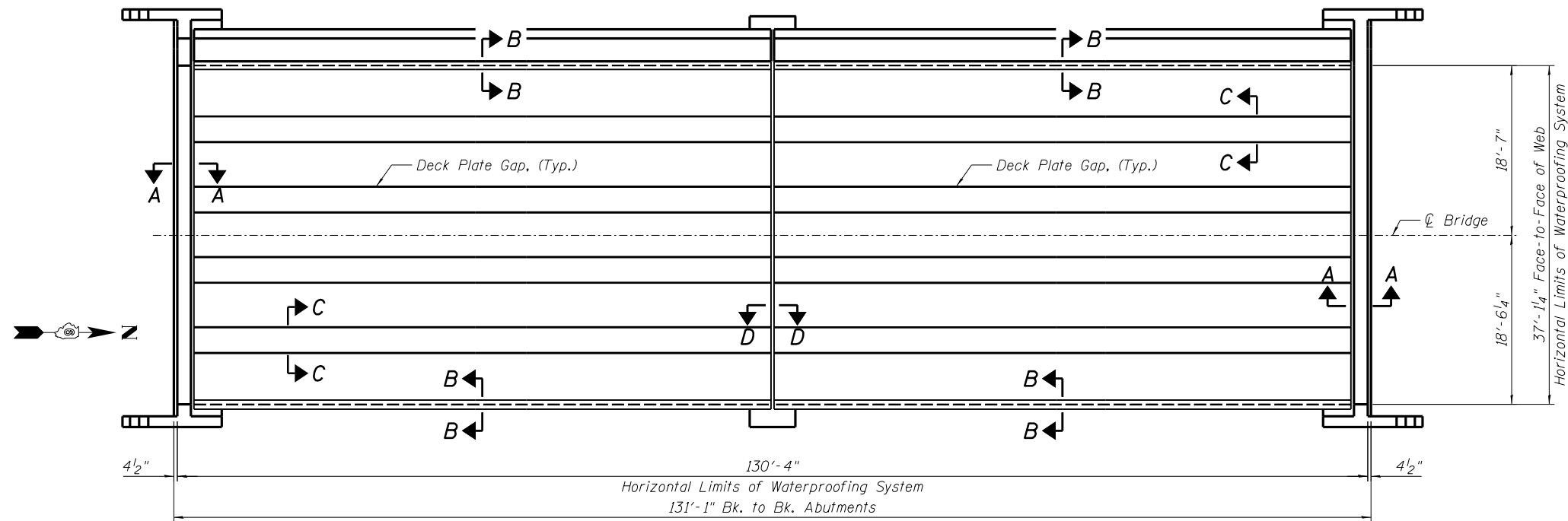
REVISED -
 REVISED -
 REVISED -
 REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

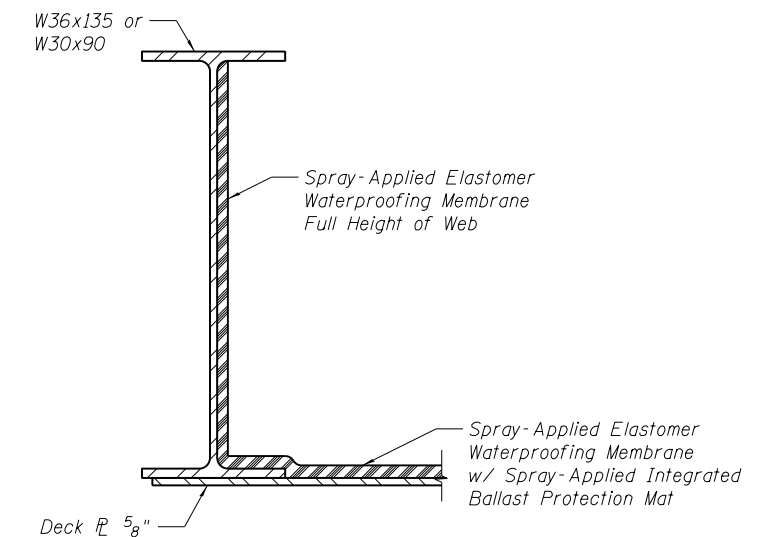
BEARING DETAILS
 STRUCTURE NO. 084-9964

SHEET NO. 11 OF 18 SHEETS

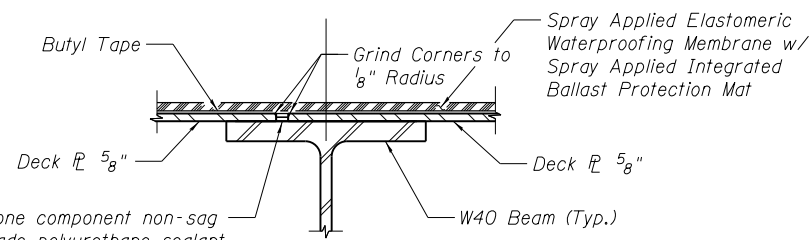
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
•	19-00488-00-BR	SANGAMON	347	205
• 7985A & 8172 ILLINOIS FED. AID PROJECT			CONTRACT NO. 93747	



WATERPROOFING LIMITS PLAN



SECTION B-B

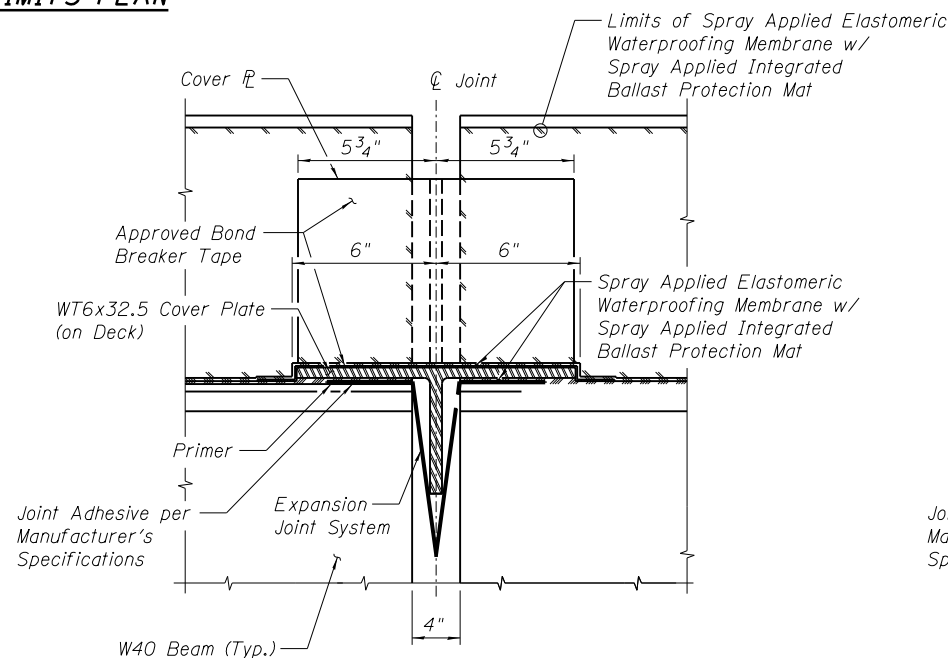


Non-staining grey one component non-sag elastomeric gun grade polyurethane sealant meeting the requirements of ASTM C-920, Type S, Grade NS, Class 25. Cost included with Membrane Waterproofing (Special)

SECTION C-C

Notes:

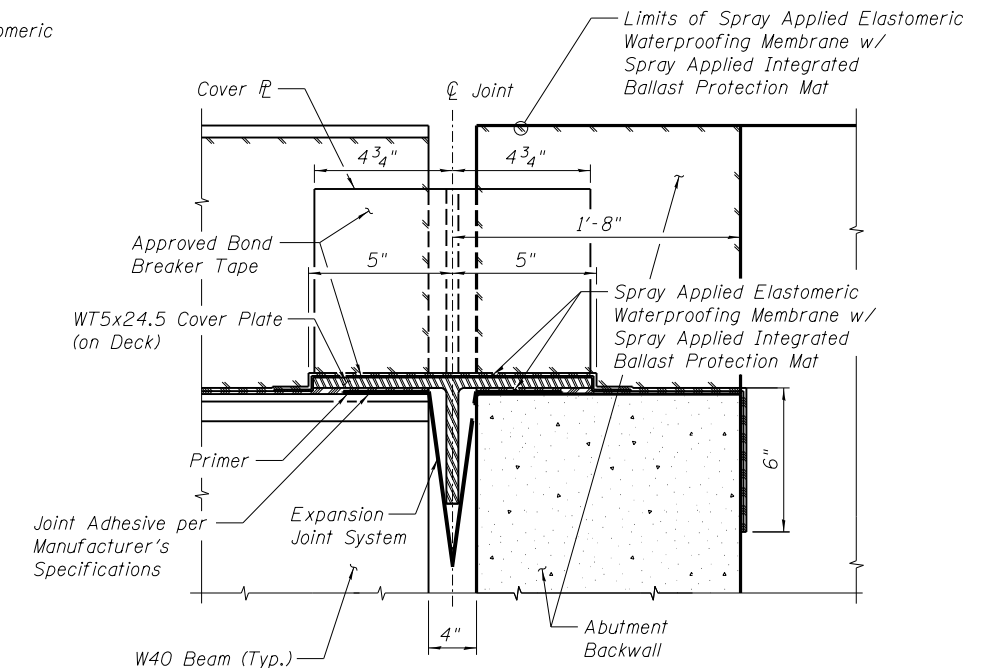
1. Prepare surfaces and apply in accordance with Manufacturer's recommendations.
2. Structural steel cover plates shall be galvanized.
3. Cost of adhesive and bond breaker tape shall be included in the cost of "Membrane Waterproofing (Special)".
4. The cover plate is included in the weight of the Structural Steel and will be paid for as "Furnishing and Erecting Structural Steel, Bridge No. 1".
5. For cover plate details see Sheet 8 of 18.
6. Structural steel surfaces coated with spray-applied elastomer waterproofing membrane shall not be primed or painted.



Note:

1. Bridge deck membrane continuous thru joint.
2. Typical Joint Detail shown for information only. Waterproofing installer shall determine final details in accordance with the manufacturer's recommendations.

SECTION D-D



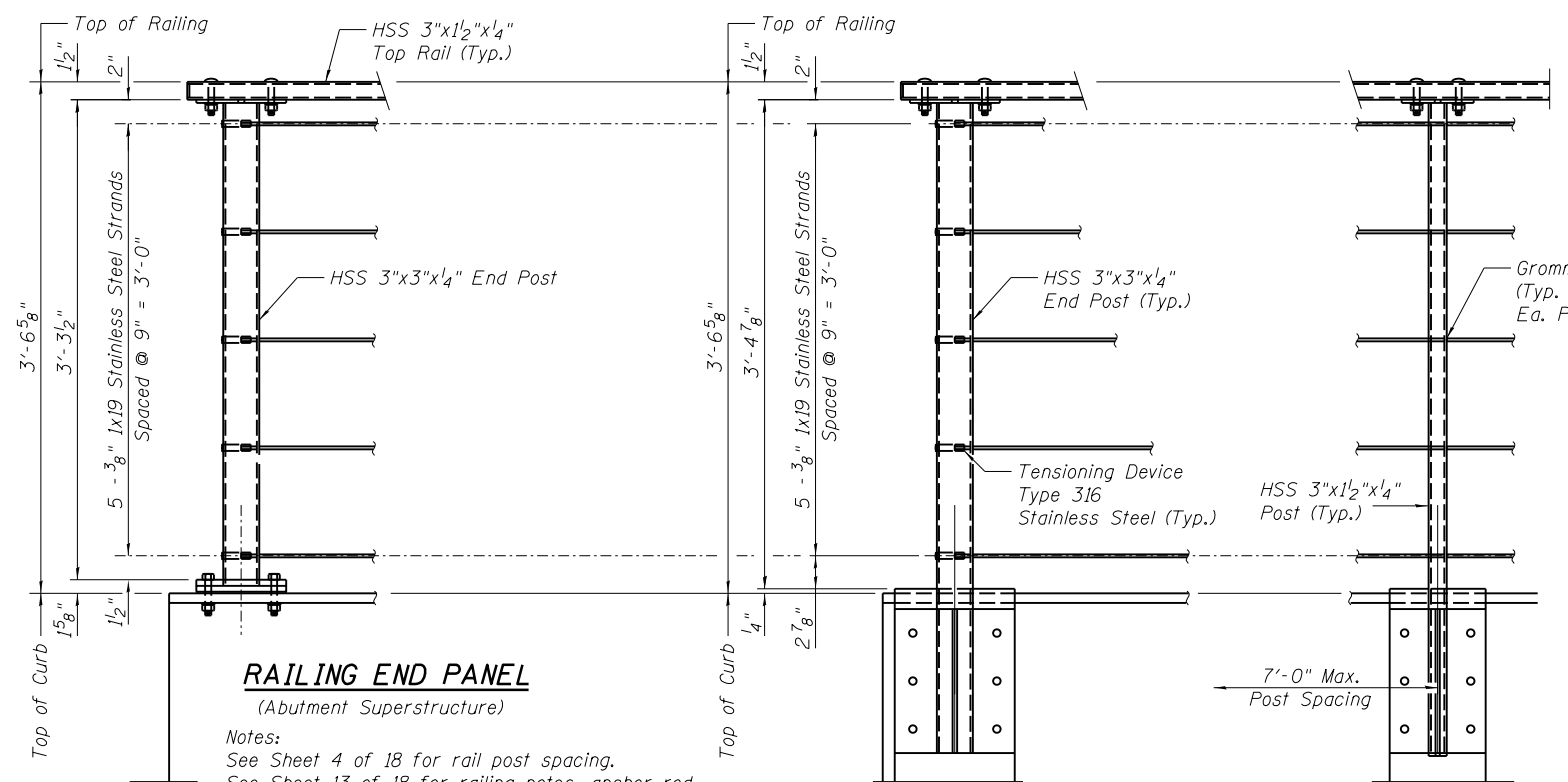
Note:

1. Bridge deck membrane continuous thru joint.
2. Typical Joint Detail shown for information only. Waterproofing installer shall determine final details in accordance with the manufacturer's recommendations.

SECTION A-A

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Membrane Waterproofing (Special)	Sq. Ft.	4836

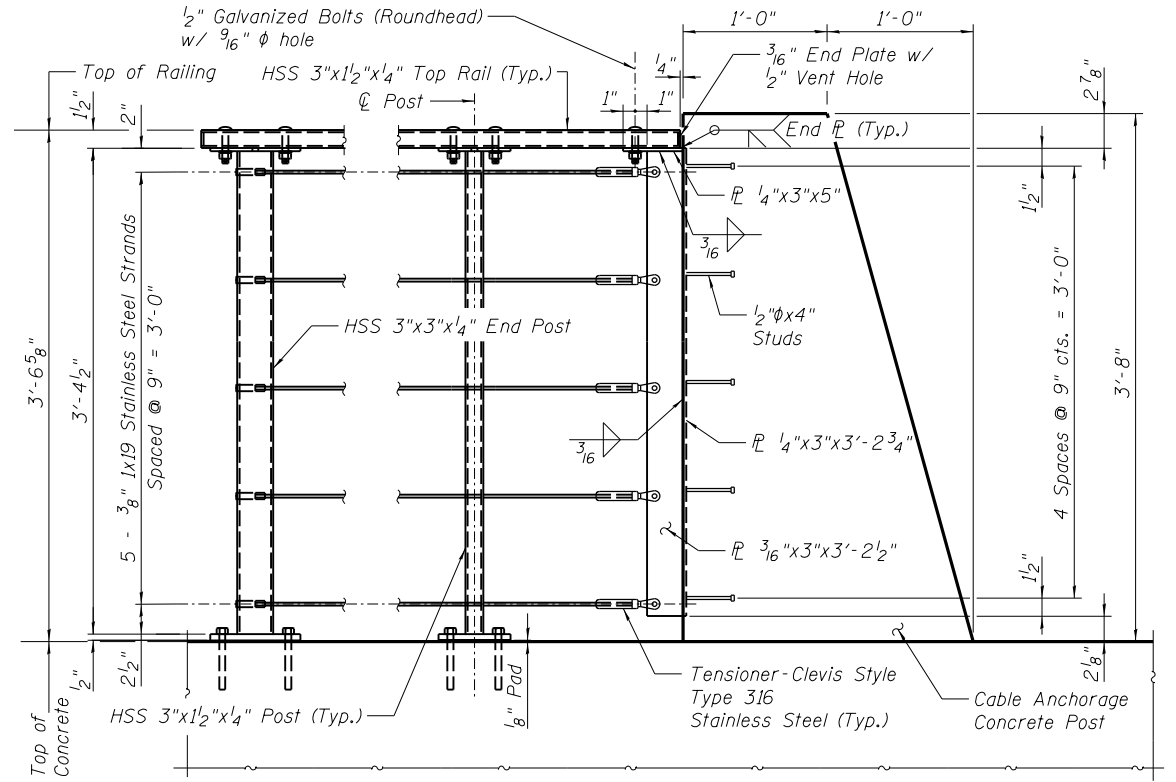


RAILING END PANEL
(Abutment Superstructure)

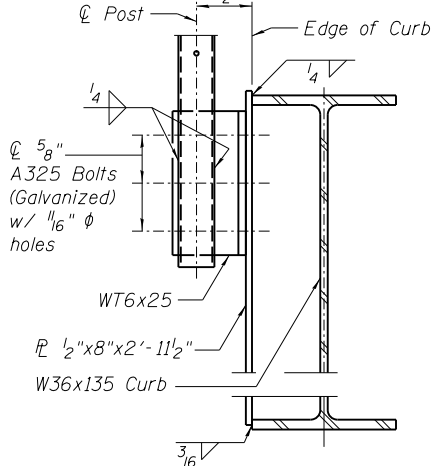
Notes:
See Sheet 4 of 18 for rail post spacing.
See Sheet 13 of 18 for railing notes, anchor rod details and Typical Rail/End Post Connection.

RAILING END PANEL
(Pier Superstructure)

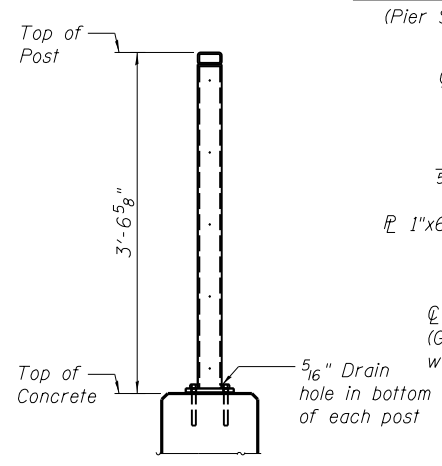
RAILING INTERMEDIATE POST
(Along Superstructure)



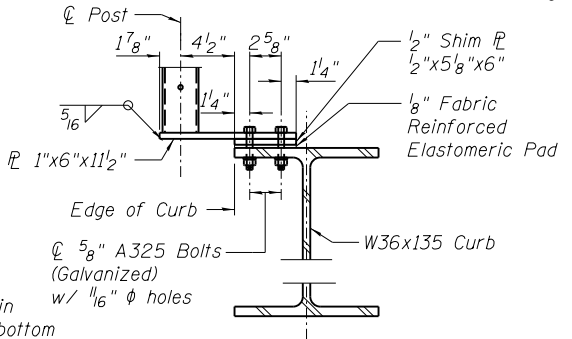
RAILING END PANEL - WINGWALL AND CHEEKWALL



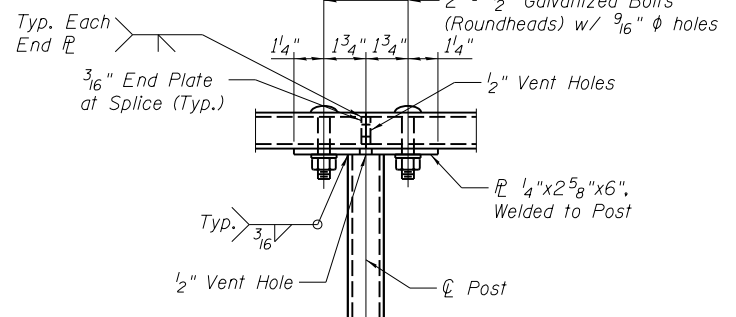
INTERMEDIATE POST (1/2")
(Along Superstructure)



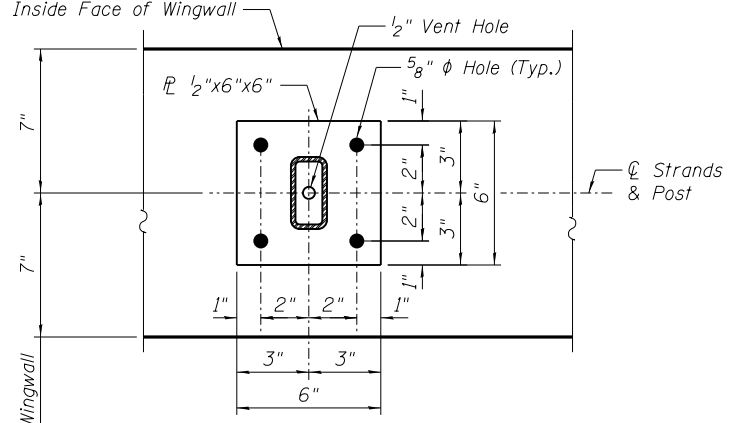
POST DETAIL - EAST SIDE
(On Cheek Wall and Wing Wall)



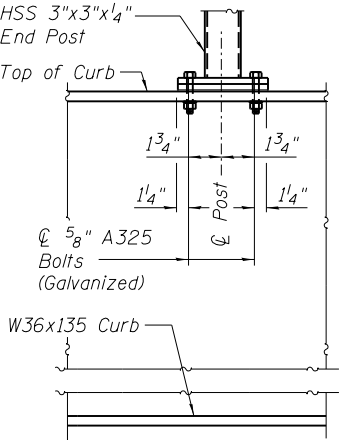
END POST AT ABUT
(Abutment Superstructure)



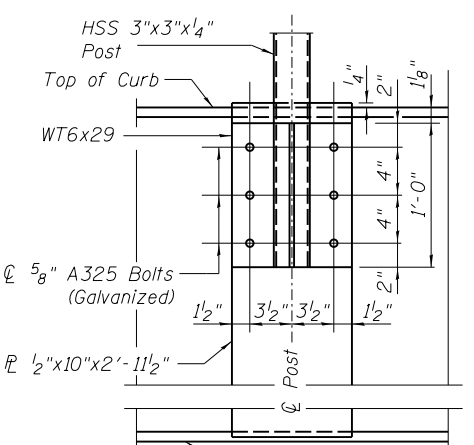
TOP RAIL - WITH SPLICE



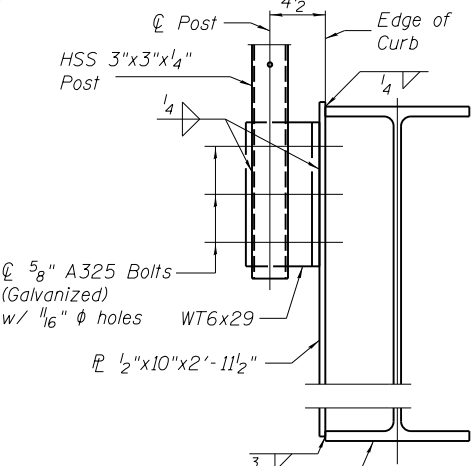
INTERMEDIATE POST



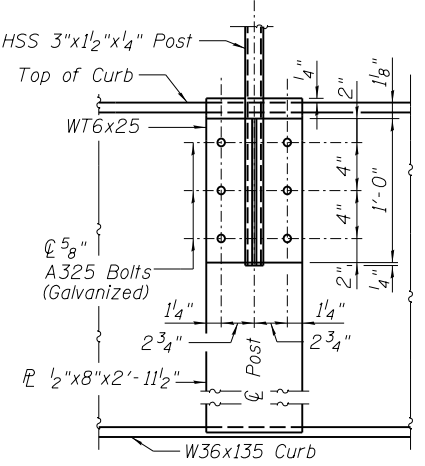
END POST AT ABUT
(Abutment Superstructure)



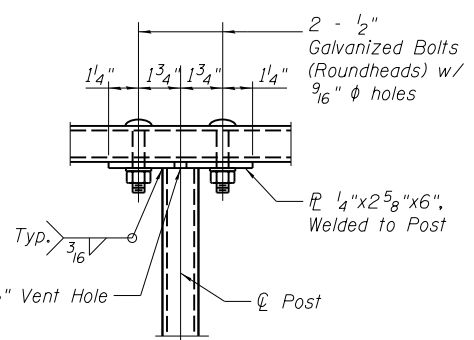
END POST AT PIER



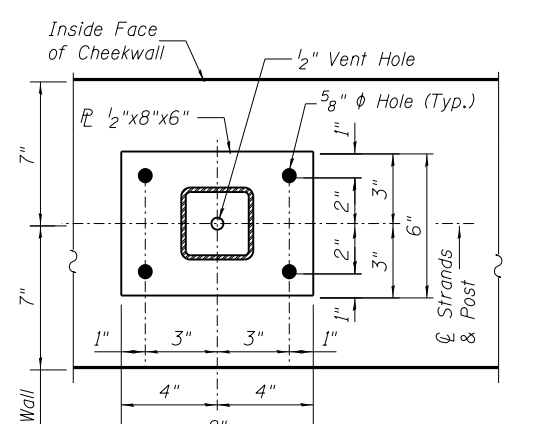
END POST AT PIER



INTERMEDIATE POST (1/2")
(Along Superstructure)



TYPICAL RAIL/POST CONNECTION
(Strands not shown for clarity.)



END POST

FINAL



USER NAME = Pop00275
PLOT SCALE = 1/8" = 1'-0"
PLOT DATE = 1/18/2021

DESIGNED - MJW
CHECKED - CGP
DRAWN - CDP
CHECKED - MJW

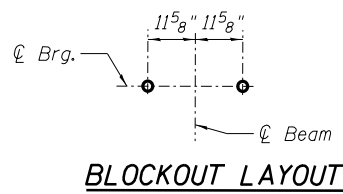
REVISED -
REVISED -
REVISED -
REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

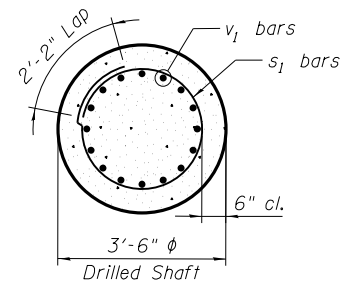
STEEL RAILING (SPECIAL) EASTSIDE
STRUCTURE NO. 084-9964

SHEET NO. 14 OF 18 SHEETS

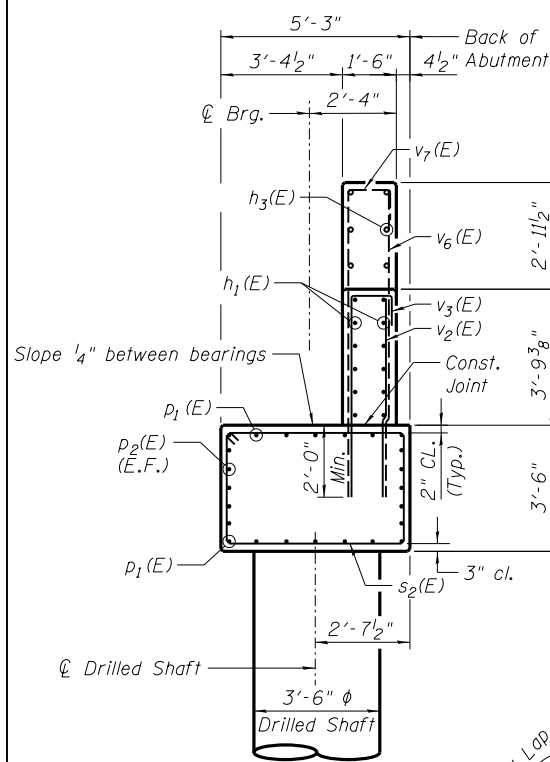
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
•	19-00488-00-BR	SANGAMON	347	208
CONTRACT NO.			93747	
• 7985A & 8175 ILLINOIS FED. AID PROJECT				



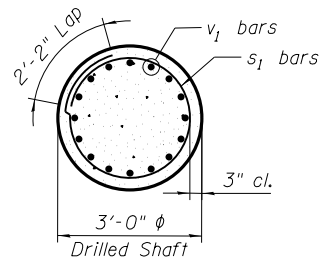
BLOCKOUT LAYOUT



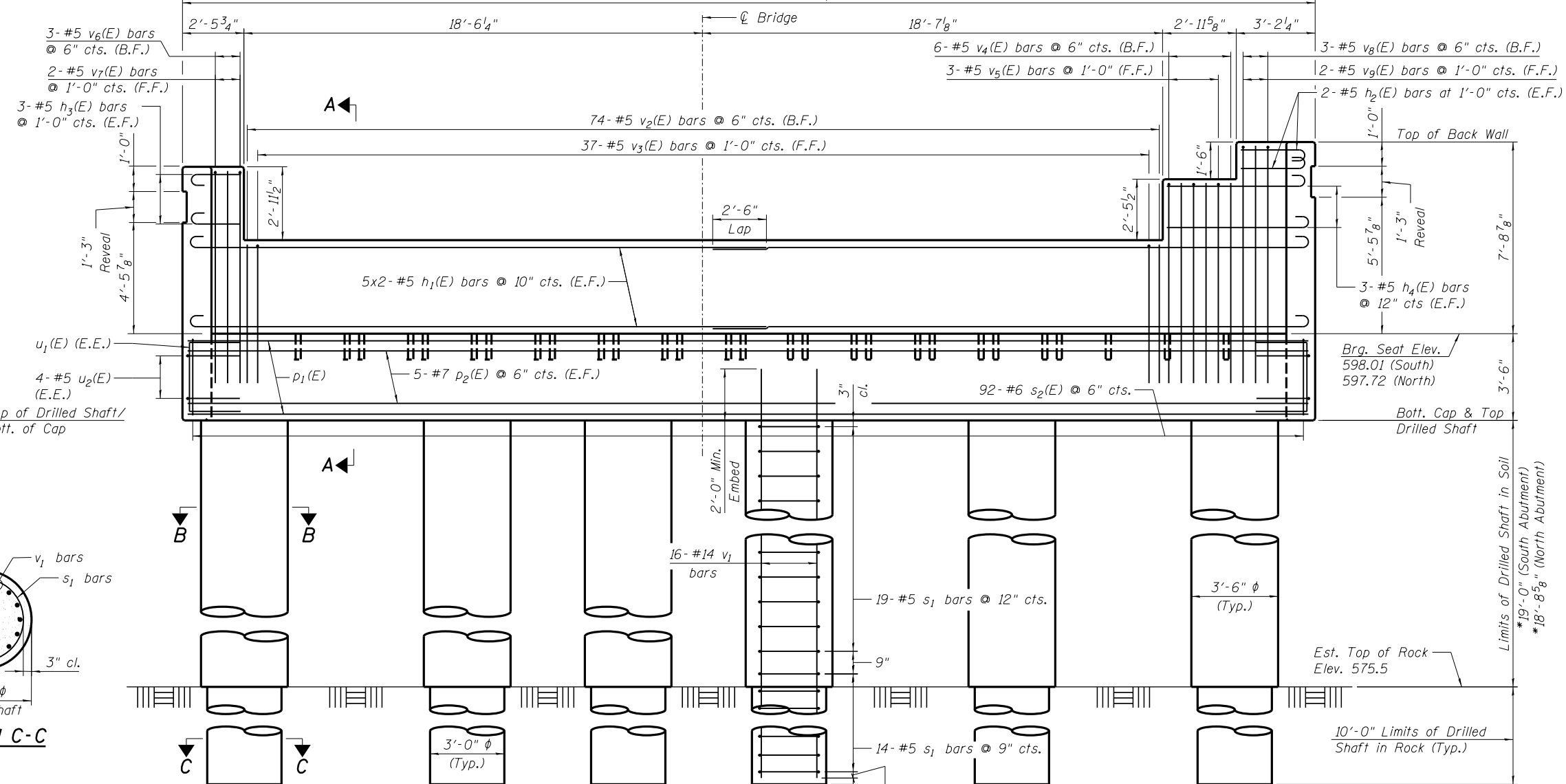
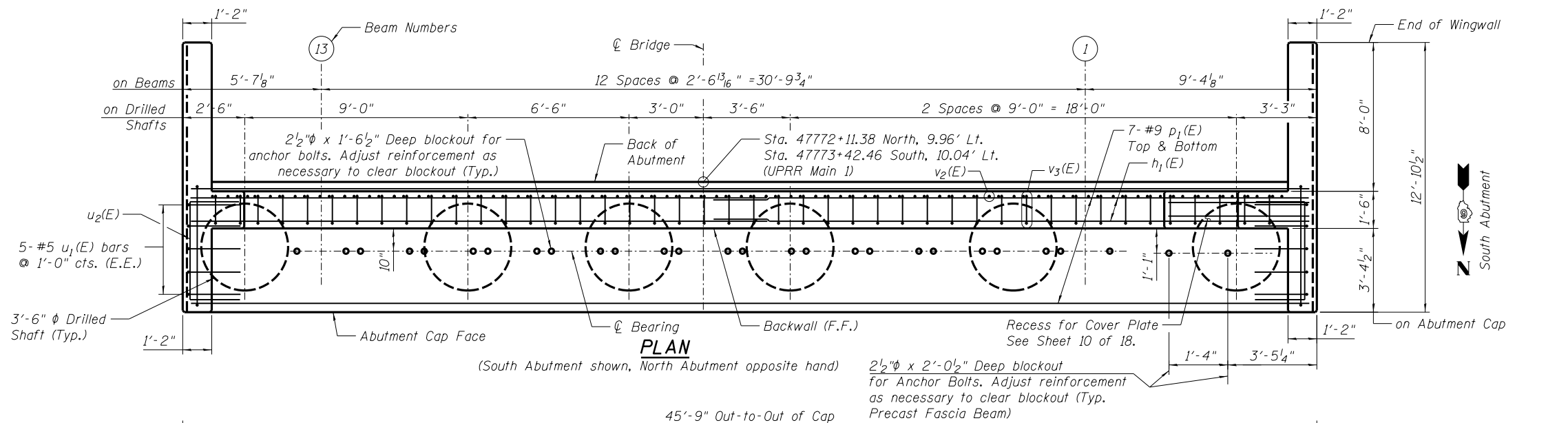
SECTION B-B



SECTION A-A

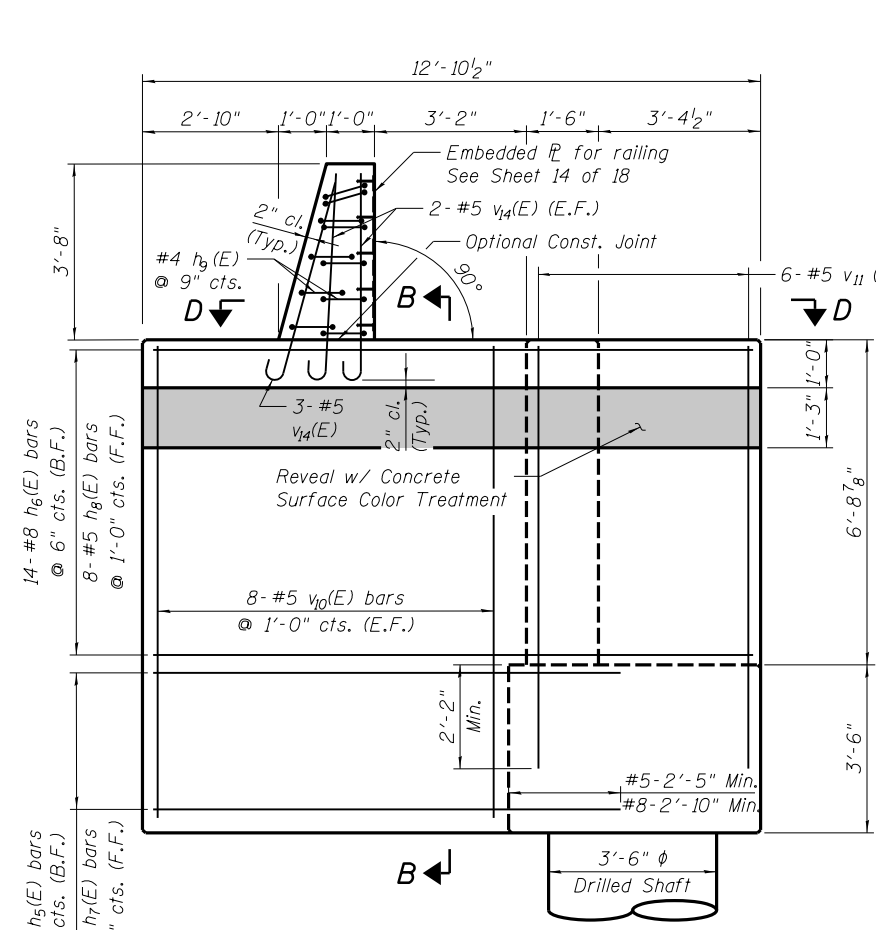


SECTION C-C

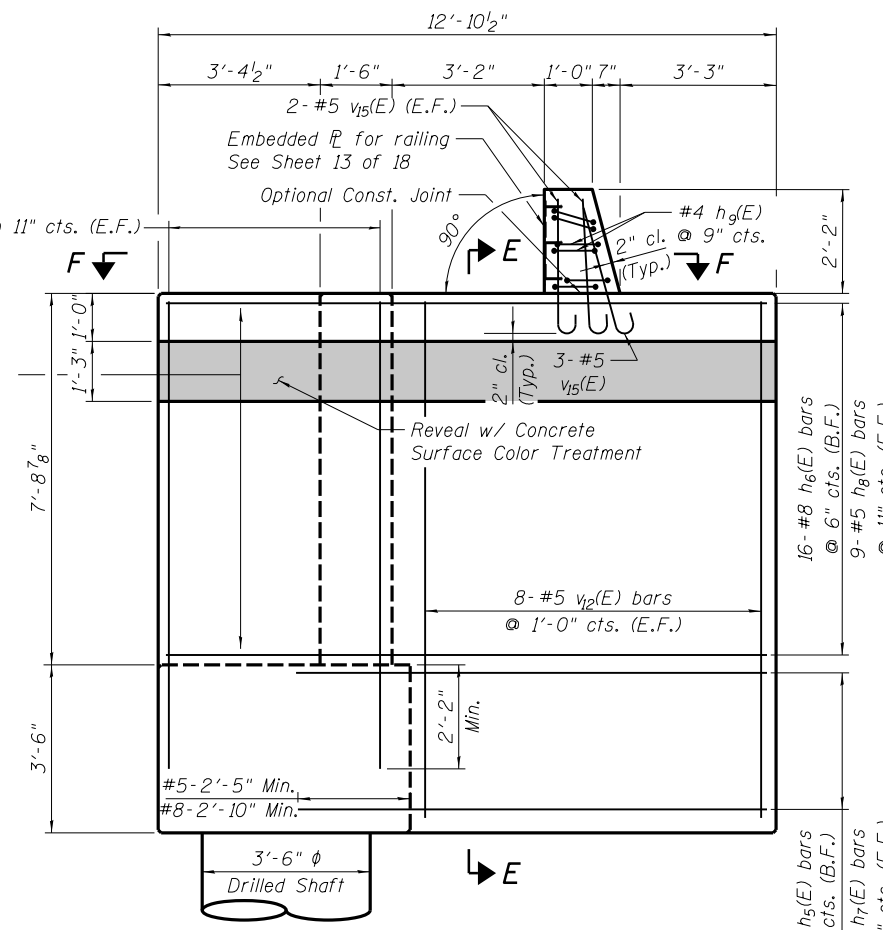


* The quantities and reinforcement detailing are based on the top of shaft and the estimated top of rock elevations shown and may change based on the actual top of rock encountered at each shaft and the final top of shaft elevation.

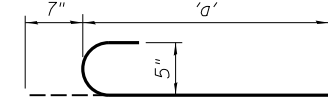
Notes:
See Sheet 16 of 18 for other details.



ELEVATION - EAST END VIEW

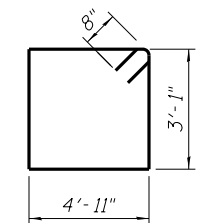


ELEVATION - WEST END VIEW

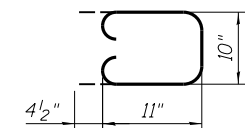


BARS $v_{14}(E)$, $v_{15}(E)$ & $h_1(E)$ thru $h_4(E)$

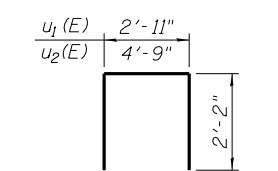
Bar	'a'
$h_1(E)$	24'-0"
$h_2(E)$	2'-8"
$h_3(E)$	1'-11"
$h_4(E)$	5'-7"
$v_4(E)$	4'-4"
$v_5(E)$	2'-10"



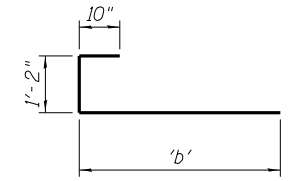
BAR $s_2(E)$



BAR $h_9(E)$



BARS $u_1(E)$, $u_2(E)$



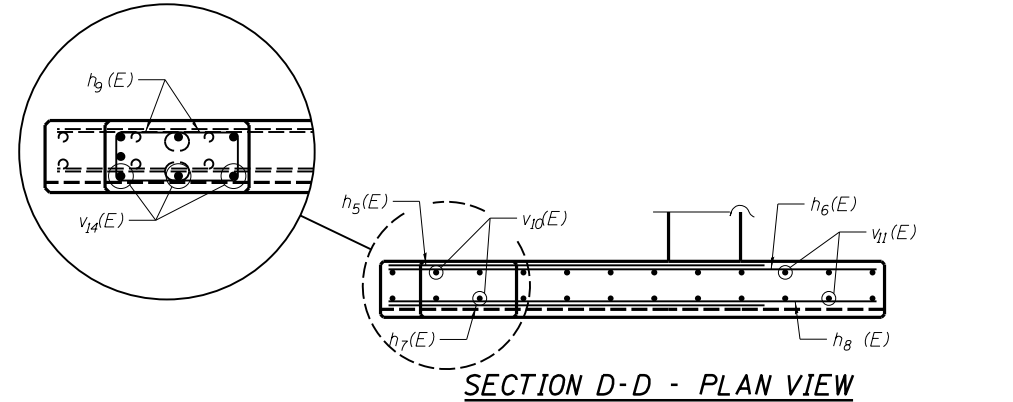
BARS $v_3(E)$, $v_5(E)$ $v_7(E)$ & $v_9(E)$

Bar	'b'
$v_3(E)$	5'-8"
$v_5(E)$	8'-1"
$v_7(E)$	8'-7"
$v_9(E)$	9'-7"

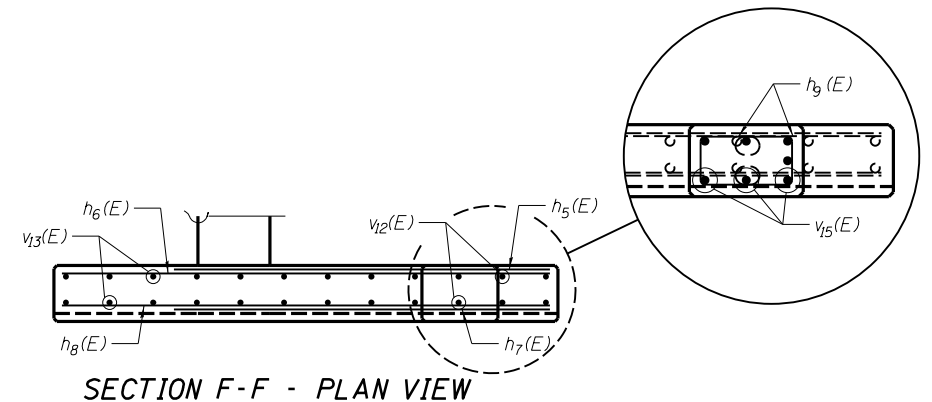
Notes:
Four steps monolithically with cap.
Space cap reinforcement to miss blockouts for anchor bolts.

BILL OF MATERIAL
NORTH & SOUTH ABUTMENTS

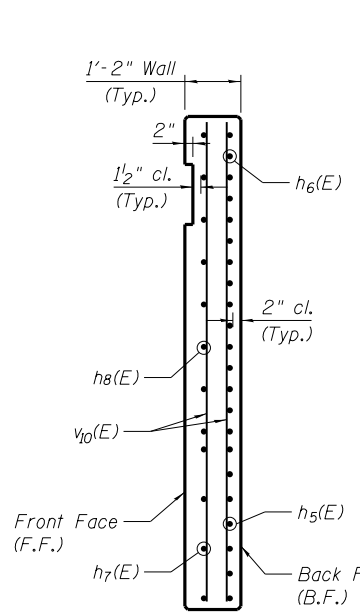
Bar	No.	Size	Length	Shape
$h_1(E)$	40	#5	24'-7"	┌
$h_2(E)$	8	#5	3'-3"	┌
$h_3(E)$	12	#5	2'-6"	┌
$h_4(E)$	12	#5	6'-2"	┌
$h_5(E)$	28	#8	10'-4"	┌
$h_6(E)$	60	#8	12'-6"	┌
$h_7(E)$	16	#5	9'-11"	┌
$h_8(E)$	34	#5	12'-6"	┌
$h_9(E)$	32	#4	3'-5"	┌
$p_1(E)$	28	#9	45'-5"	┌
$p_2(E)$	20	#7	45'-5"	┌
s_1	396	#5	10'-0"	○
$s_2(E)$	184	#6	17'-4"	□
$u_1(E)$	20	#5	7'-3"	┌
$u_2(E)$	16	#5	9'-1"	┌
v_1	192	#14	31'-0"	┌
$v_2(E)$	148	#5	5'-8"	┌
$v_3(E)$	74	#5	7'-8"	┌
$v_4(E)$	12	#5	8'-1"	┌
$v_5(E)$	6	#5	10'-1"	┌
$v_6(E)$	6	#5	8'-7"	┌
$v_7(E)$	4	#5	10'-7"	┌
$v_8(E)$	6	#5	9'-7"	┌
$v_9(E)$	4	#5	11'-7"	┌
$v_{10}(E)$	32	#5	9'-11"	┌
$v_{11}(E)$	24	#5	8'-10"	┌
$v_{12}(E)$	32	#5	10'-10"	┌
$v_{13}(E)$	24	#5	9'-9"	┌
$v_{14}(E)$	14	#5	4'-11"	┌
$v_{15}(E)$	14	#5	3'-5"	┌
Structure Excavation	Cu. Yds.	183		
Concrete Structures	Cu. Yds.	103.6		
Reinforcement Bars	Pound	49660		
Reinforcement Bars, Epoxy Coated	Pound	19010		
Drilled Shaft in Soil	Cu. Yds.	80.6		
Drilled Shaft in Rock	Cu. Yds.	31.4		
Concrete Sealer	Sq. Ft.	950		
Concrete Surface Color Treatment	Sq. Ft.	64		
Crosshole Sonic Logging Access Ducts	Foot	376		



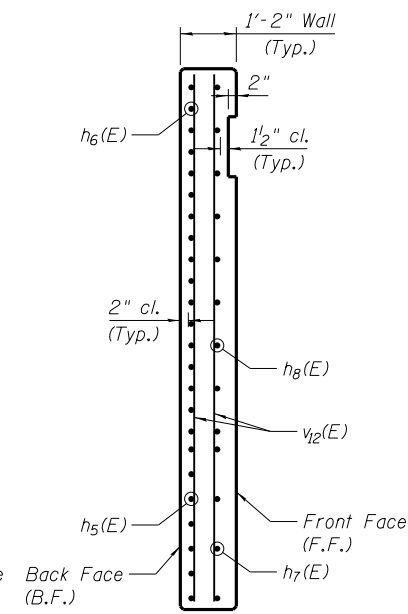
SECTION D-D - PLAN VIEW



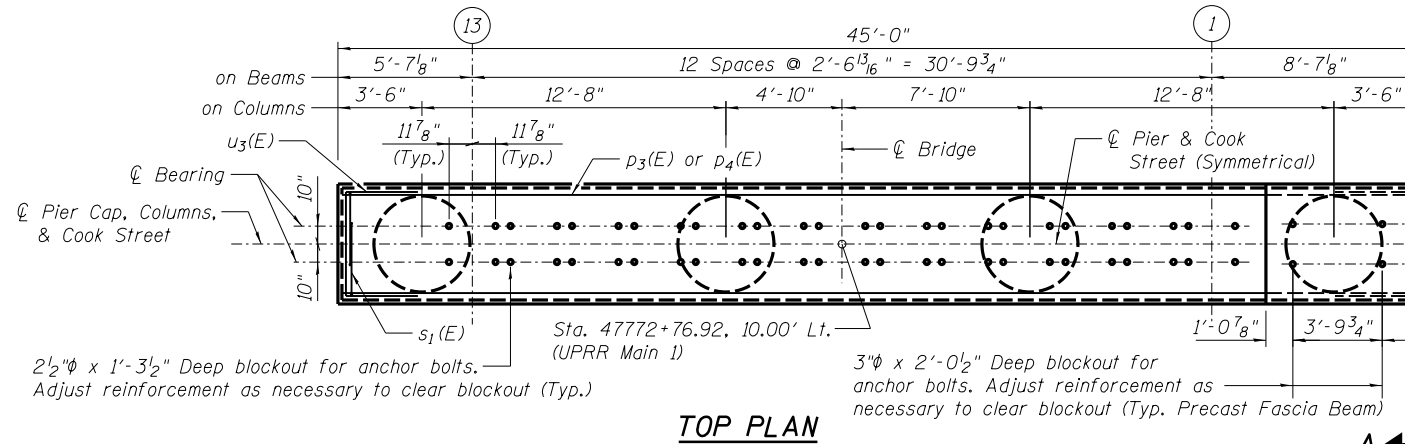
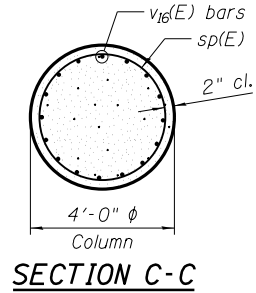
SECTION F-F - PLAN VIEW



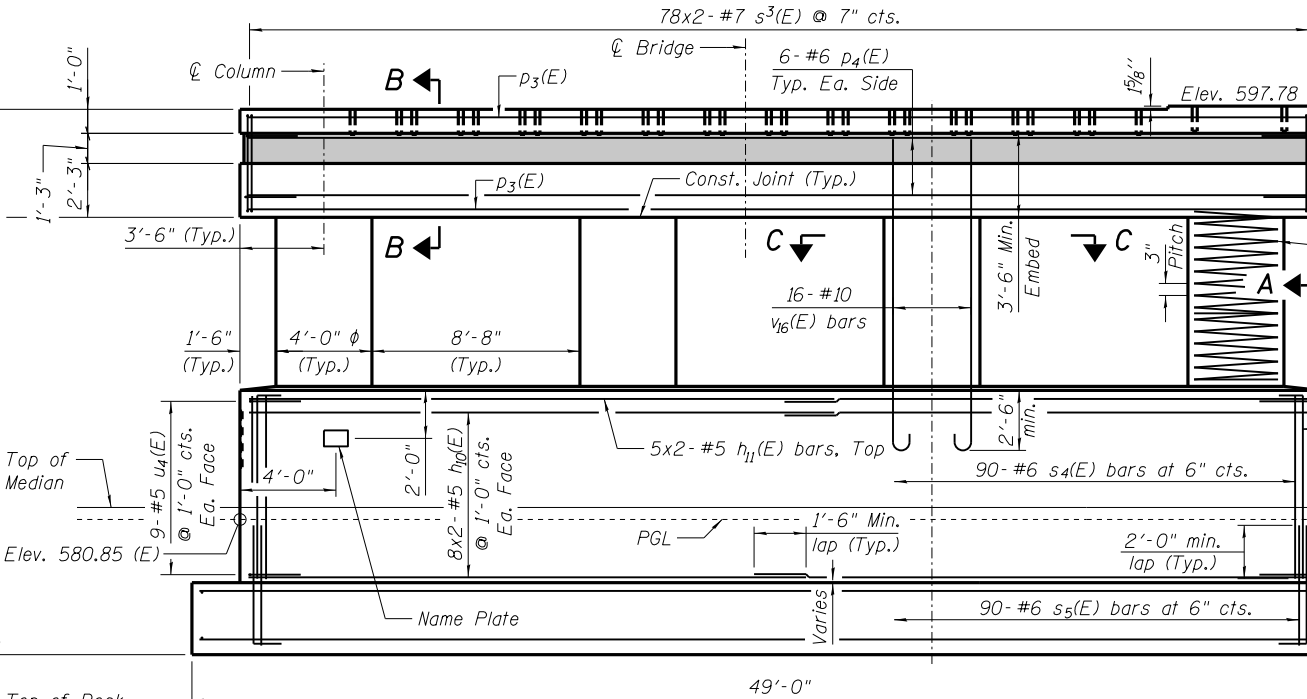
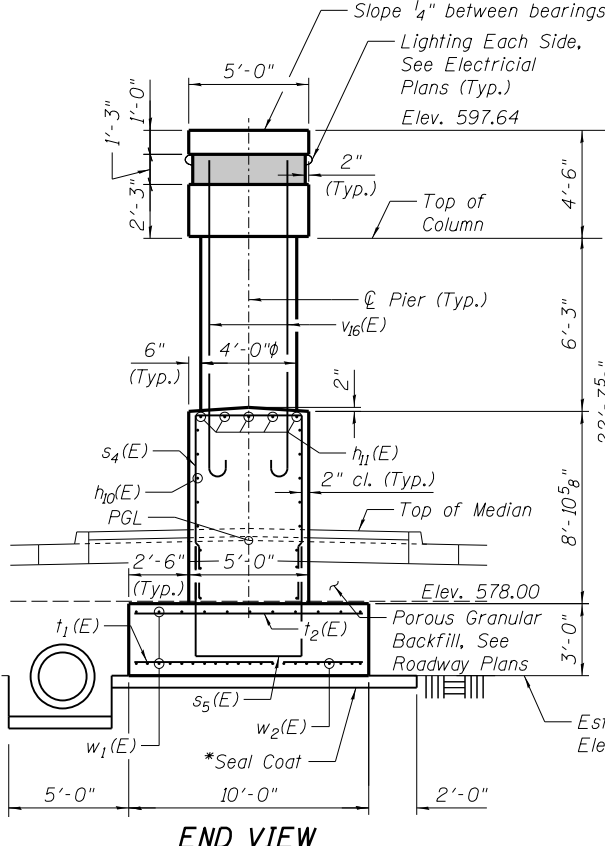
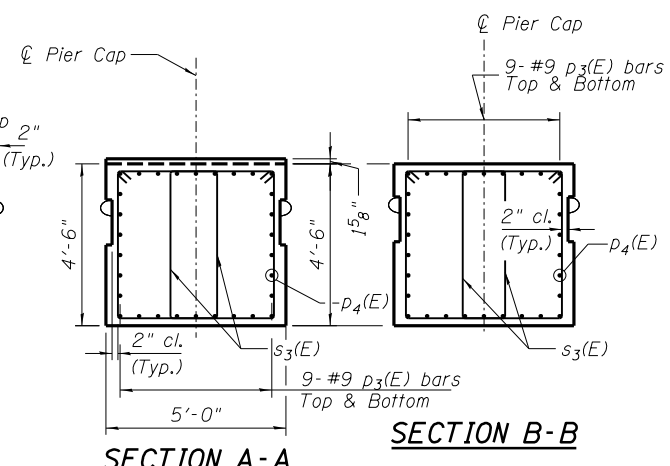
WINGWALL SECTION B-B



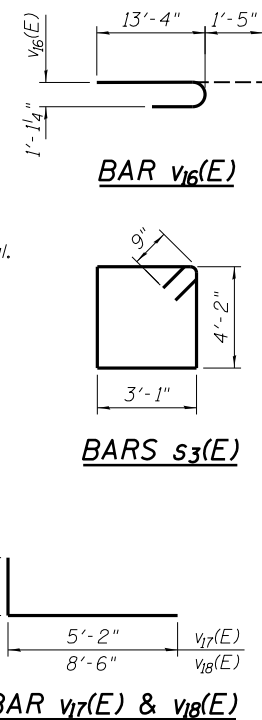
WINGWALL SECTION E-E



Reveal, w/ Concrete Surface Color Treatment (Typ. all sides)
Lighting, See Electrical Plans (Typ.)



sp(E) spiral, each column Provide 1/2" extra turns top and bottom. Extend spiral 2" into pier cap. Provide 4- #4 spacers or equivalent. ** Length is height of spiral.



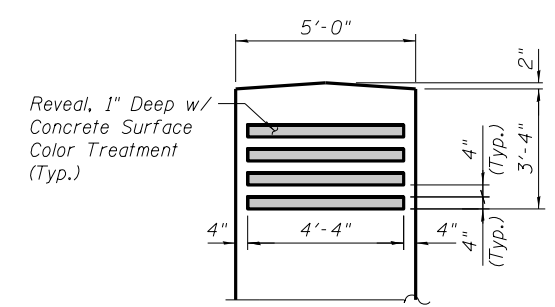
Bar	'a'	'b'
s4(E)	4'-8"	8'-6"
s5(E)	4'-8"	5'-2"
u3(E)	4'-2"	2'-2"
u4(E)	4'-6"	1'-8"

BARS s4(E), s5(E), u3(E), & u4(E)

BILL OF MATERIAL

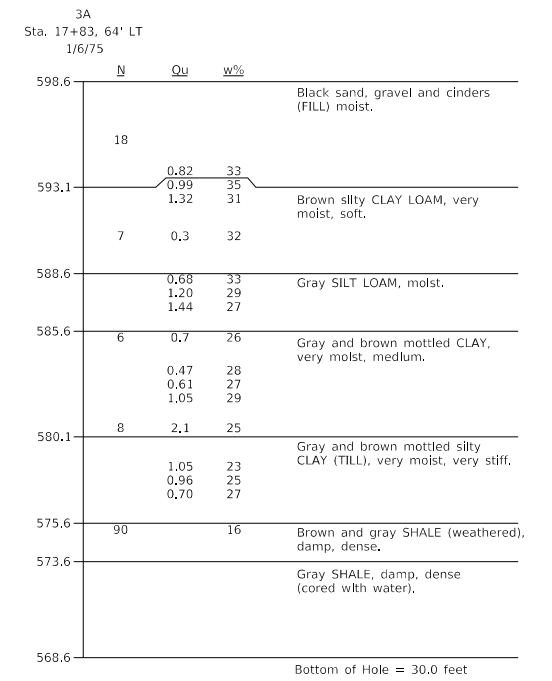
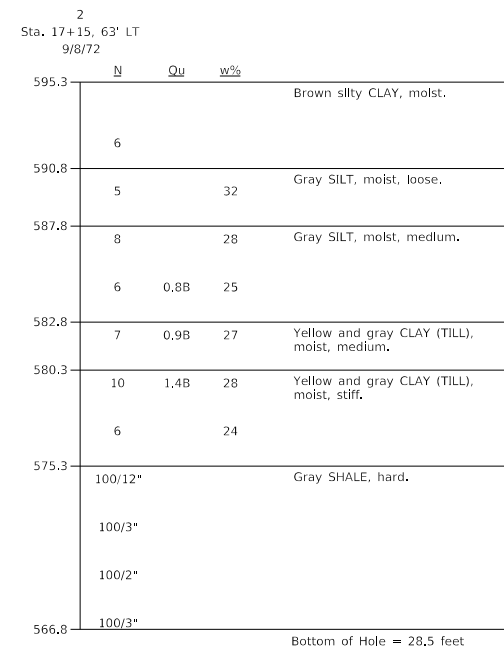
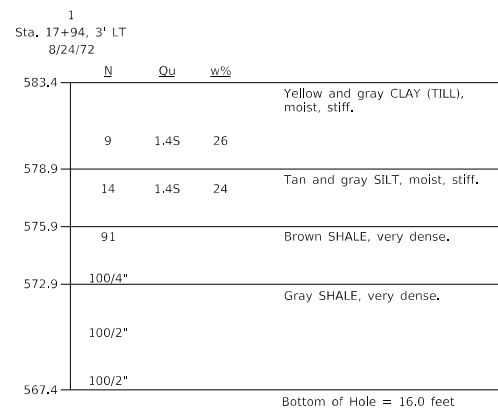
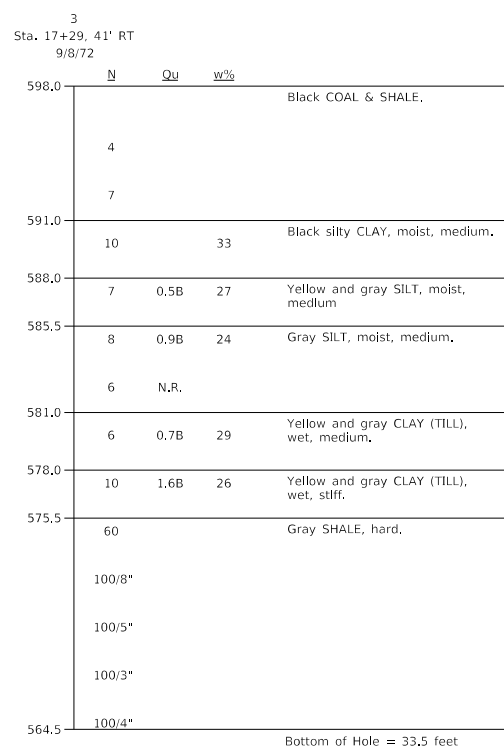
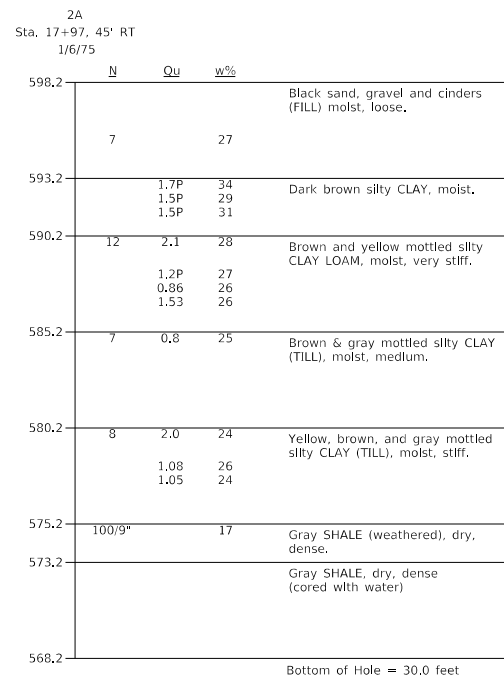
Bar	No.	Size	Length	Shape
h10(E)	32	#5	23'-2"	—
h11(E)	10	#5	23'-2"	—
p3(E)	18	#9	44'-8"	—
p4(E)	12	#6	44'-4"	—
s3(E)	156	#7	16'-0"	□
s4(E)	90	#6	21'-8"	U
s5(E)	90	#6	15'-0"	U
sp(E)	4	#4	6'-5"	~
t1(E)	66	#6	9'-8"	—
t2(E)	50	#5	9'-8"	—
u3(E)	10	#5	8'-6"	U
u4(E)	18	#5	7'-10"	U
v16(E)	64	#10	14'-9"	C
v17(E)	16	#6	6'-2"	L
v18(E)	16	#6	9'-6"	L
w1(E)	44	#5	25'-1"	—
w2(E)	20	#5	4'-8"	—
Structure Excavation		Cu. Yds.	270	
Rock Excavation for Structures		Cu. Yds.	39	
Concrete Structures		Cu. Yds.	177.6	
Seal Coat Concrete		Cu. Yds.	16.0	
Reinforcement Bars, Epoxy Coated		Pound	22810	
Concrete Sealer		Sq. Ft.	1859	
Concrete Surface Color Treatment		Sq. Ft.	135	

* The Footing Excavation shall be undercut by 6" and immediately filled with Seal Coat Concrete to prevent degradation of the exposed bedrock surface. Do not allow water to collect in excavation.



CRASH WALL REVEAL TYP. BOTH ENDS

Notes:
Space reinforcement in cap to miss blockouts for anchor bolts.
Pour steps monolithically with cap.
Bars indicated thus 7x2-#5 etc indicates 7 lines of bars with 2 lengths per line.
See Electrical Plans for Conduit embedded in cap and column.



LEGEND

N Standard Penetration Test N (blows/ft)

Qu Unconfined Strength (tsf)

w% Natural Moisture Content (%)

DD Water Surface Elevation Encountered in Boring

558.10 DD = during drilling

Oh = at completion

24h = 24 hours after completion

p:\hansoninc-pw-bentley.com\hanson-pw-01\Documents\09\Jobs\09L0179B\Usable Segments III - V - V\CAD\Struct\Usable Segment V\Cook\Sheet\084-9964-09L0179B-018-Sub Data Profile

FINAL



© Copyright Hanson Professional Services Inc., 2021

USER NAME = Pop00275	DESIGNED - MJW	REVISED -
	CHECKED - MNM/JEC	REVISED -
PLOT SCALE = 0.2" = 1' / in.	DRAWN - CDP	REVISED -
PLOT DATE = 1/18/2021	CHECKED - MJW	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSURFACE DATA PROFILE
STRUCTURE NO. 084-9964

SHEET NO. 18 OF 18 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	19-00488-00-BR	SANGAMON	347	212
CONTRACT NO.			93747	
7985A & 8179		ILLINOIS FED. AID PROJECT		

Benchmark:
 BM TJM-1: Chiseled 'X' on West Bolt of Fire Hydrant, SE quadrant of 11th St. and Edwards St., Elevation = 598.122

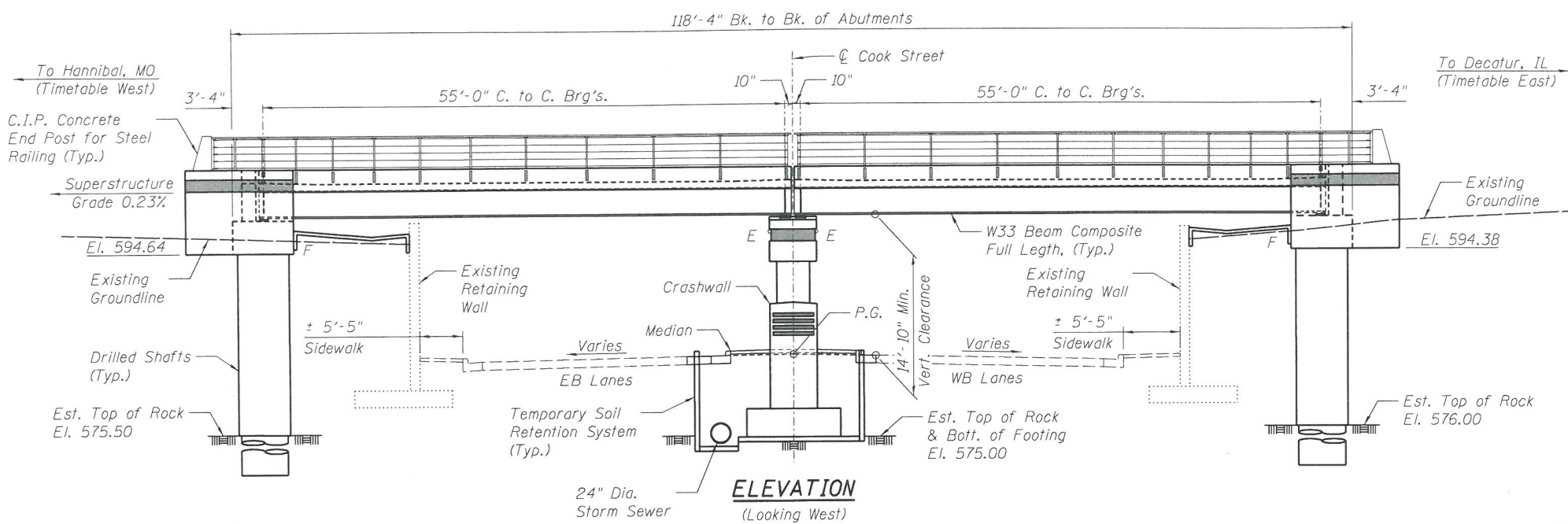
Existing NSRR Structure: SN 084-9939 - Built in 1988 under 2Z,SB-1. Two Span Steel through plate girder structure supported on closed abutments. Bk. to Bk. Abutment length is 90'-0" and ctr. to ctr. through girder width of 30'-0". Superstructure and pier to be removed and replaced. Abutments to remain in place.

Traffic Control: Temporary Lane Closures and Complete Closures.

Salvage: None

Construction Sequence: See Track Staging Plans

Railroad utilities may exist within NSRR right-of-way. Prior to the start of any construction or excavation, utility relocations will have to be coordinated with the NSRR.



HIGHWAY CLASSIFICATION

F.A.U. 7985A - Cook St.
 Functional Class: Minor Arterial
 ADT: 8,200 (2017); 11,300 (2038)
 DHV: 820 (2017); 1,130 (2038)
 ADTT: 660 (2017); 900 (2038)
 Design Speed: 30 mph
 Posted Speed: 30 mph

LOADING COOPER E-80

Impact: Diesel Impact
 Allow 6" of Additional Ballast Dead Load

DESIGN SPECIFICATIONS

2019 AREMA Specifications
 Live Load Deflection: L/640
 Composite Design for Deflection Requirements
 Design Speed: 50 m.p.h.

DESIGN STRESSES

FIELD UNITS

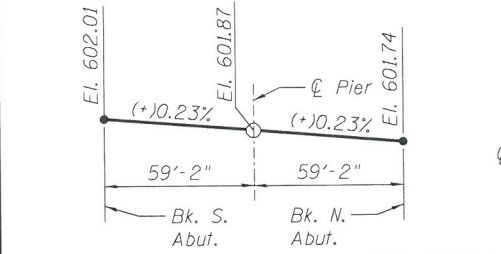
f'c = 4,000 psi
 fy = 60,000 psi (Reinforcement)
 fy = 50,000 psi (ASTM A709 Grade 50)

SEISMIC DATA

AREMA

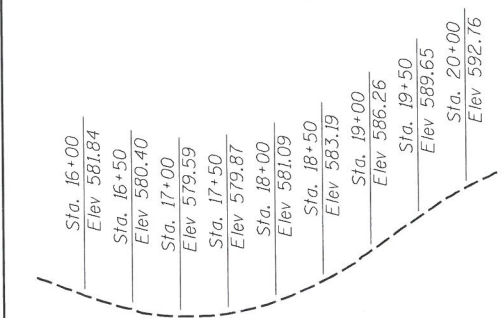
Ground Motion Level	PGA	S _s	S ₁
Level 1 (100 Year)	0.010	0.025	0.005
Level 2 (475 Year)	0.040	0.090	0.035
Level 3 (2475 Year)	0.10	0.22	0.10

Soil Site Class = C



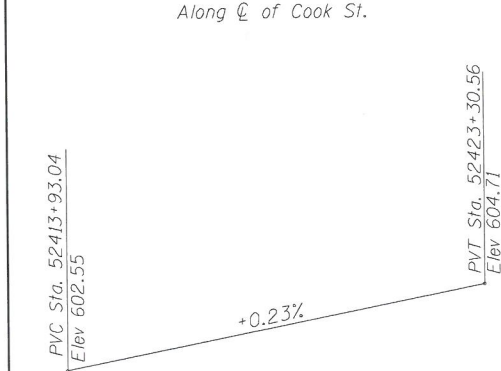
PROFILE GRADE CONCRETE DECK

(Looking West)
 (Elevations Taken along Bridge C.)



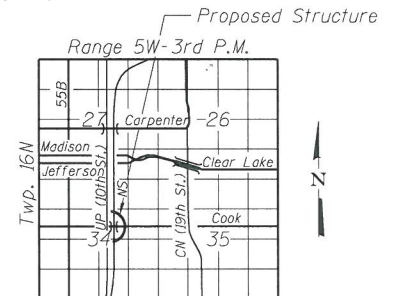
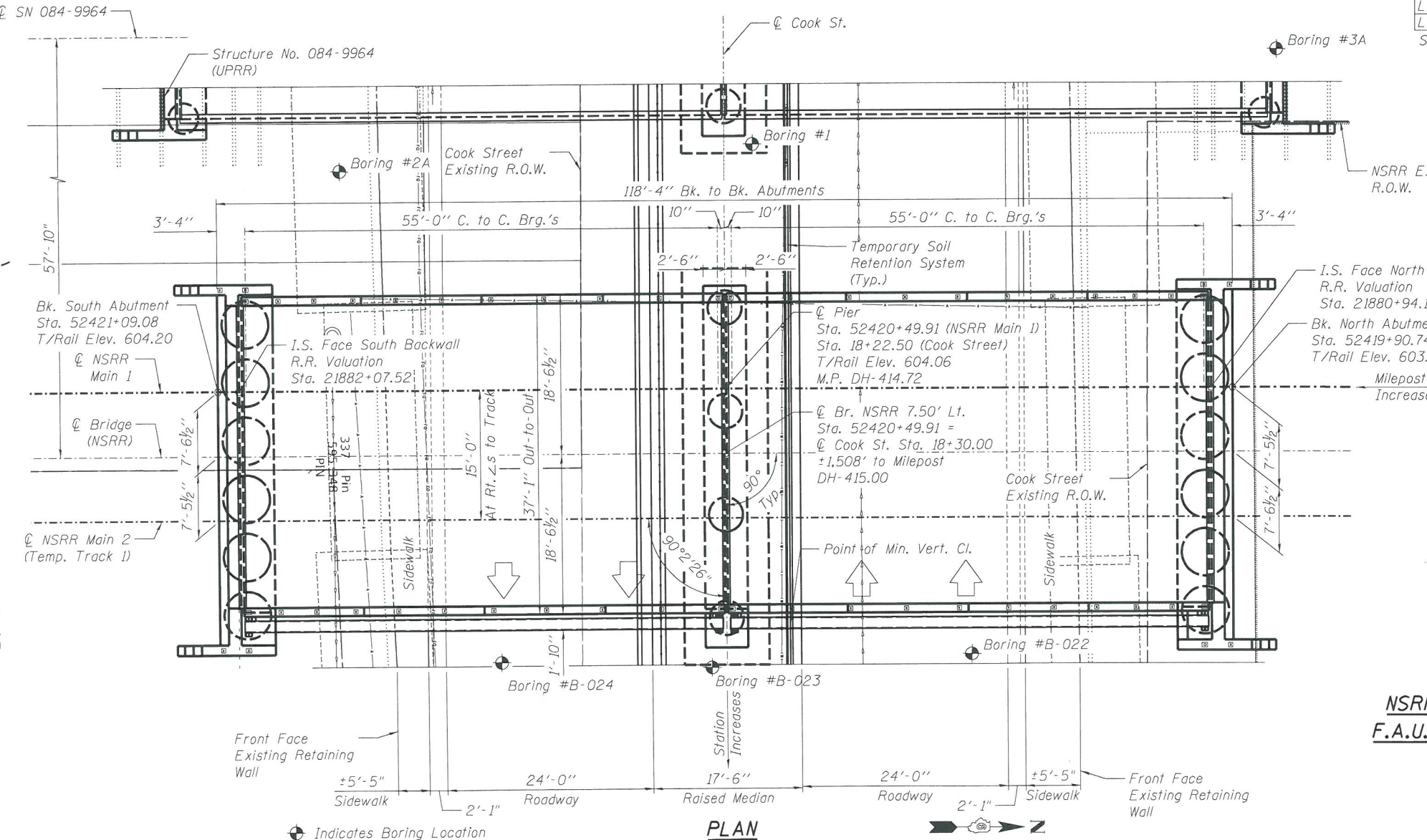
EXISTING PROFILE GRADE COOK STREET

Along C. of Cook St.

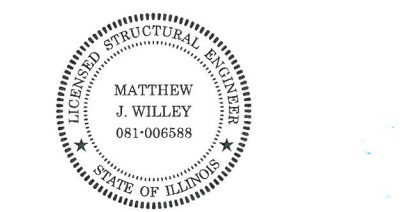


P.G. NSRR MAIN 1 RAIL

(Along Top of Rail)



LOCATION SKETCH



Matthew J. Willey
 SIGNATURE
 1-18-2021
 DATE
 LIC. EXP. DATE: 11-30-2020

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 AREMA Specifications.

GENERAL PLAN

NSRR (MP DH-414.72) OVER COOK ST.

F.A.U. 7985A-SECTION 19-00488-00-BR

SANGAMON COUNTY

STATION 52420+49.91

STRUCTURE NO. 084-9965

Indicates Boring Location

USER NAME = Pop02275	DESIGNED - MJW	REVISED -
PLDT SCALE = 1/8" = 10'-0"	CHECKED - JGT/JEC	REVISED -
PLDT DATE = 1/18/2021	DRAWN - CDP	REVISED -
	CHECKED - MJW	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
STRUCTURE NO. 084-9965
SHEET NO. 1 OF 16 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	19-00488-00-BR	SANGAMON	347	213
			CONTRACT NO. 93747	
* 7985A & B180 ILLINOIS FED. AID PROJECT				

FINAL

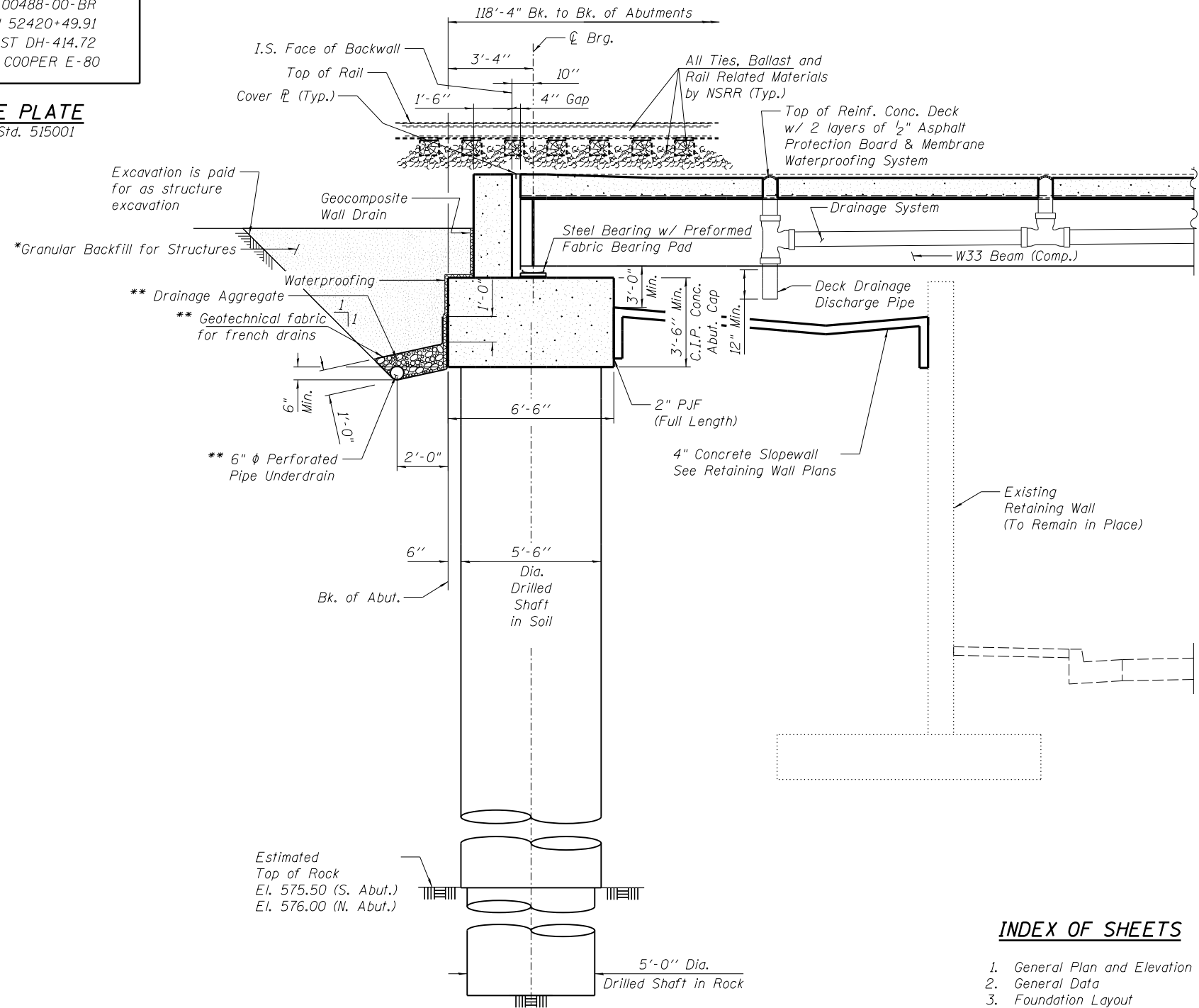


GENERAL NOTES

- Fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts. Bolts 7/8 in. φ, holes 15/16 in. φ, unless otherwise noted.
- Calculated weight of Structural Steel, ASTM A709, Gr. 50 = 462,030 lbs.
 ASTM A36, Gr. 36 = 3,180 lbs.
 ASTM A500, Gr. B (46 ksi) = 11,230 lbs.
 ASTM A240, Type 304 (30 ksi) = 2,980 lbs.
- All structural steel shall be ASTM A709 Grade 50 unless otherwise noted on the plans.
- Stainless steel plate for the deck joints shall be according to ASTM A240, Type 304, Fy=30 k.s.i.
- All substructure concrete shall have a compressive strength of 4,000 psi at 14 days.
- No field welding is permitted except as specified in the contract documents.
- Reinforcement bars designated (E) shall be epoxy coated.
- If the Contractor elects to use cantilever forming brackets on the exterior beams or girders, the brackets shall be placed at the same locations as required for the hardwood blocks in Article 503.06(b) of the Standard Specifications. If additional cantilever forming brackets are required, hardwood blocking shall be wedged between the exterior and first interior beam at each of these additional bracket locations.
- Protective coat shall not be applied to any surface.
- Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8 inch (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.
- Concrete Sealer shall be applied to the following surfaces:
 Abutments - inside face of backwall, inside face of cheekwall, top of cap (except surfaces coated with concrete surface treatment).
 Pier - entire exposed pier surface (except surfaces coated with concrete surface color treatment)
 Superstructure - top and outside vertical faces of ballast curb and outside vertical face of deck, concrete railing end post (except surfaces coated with surface color and treatment).
- Concrete Surface Color Treatment shall be applied to the following surfaces:
 Abutments - wingwall and cheekwall surfaces designated in plans.
 Pier - cap and crashwall surface designated in plans.
 Superstructure - ballast curb surfaces designated in plans.
- The Inorganic Zinc Rich Primer / Acrylic / Acrylic Paint System shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the final finish coat for all interior steel surfaces and sacrificial beam shall be gray, Munsell No. 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia beams shall be blue, Munsell No. 10B 3/6.
- Waterproofing shall be applied to the backside of the abutment cap and backwall and backside of wingwalls for surfaces below ground. This shall be according to Article 503.18 of the Std. Spec. Cost included with Concrete Structures.

NORFOLK SOUTHERN RAILROAD
 S.N. 084-9965 BUILT 20__ BY
 CITY OF SPRINGFIELD
 SEC. 19-00488-00-BR
 STATION 52420+49.91
 MILE POST DH-414.72
 LOADING COOPER E-80

NAME PLATE
 See Std. 515001



ABUTMENT SECTION
 (At Rt. L's to Back of Abutment)

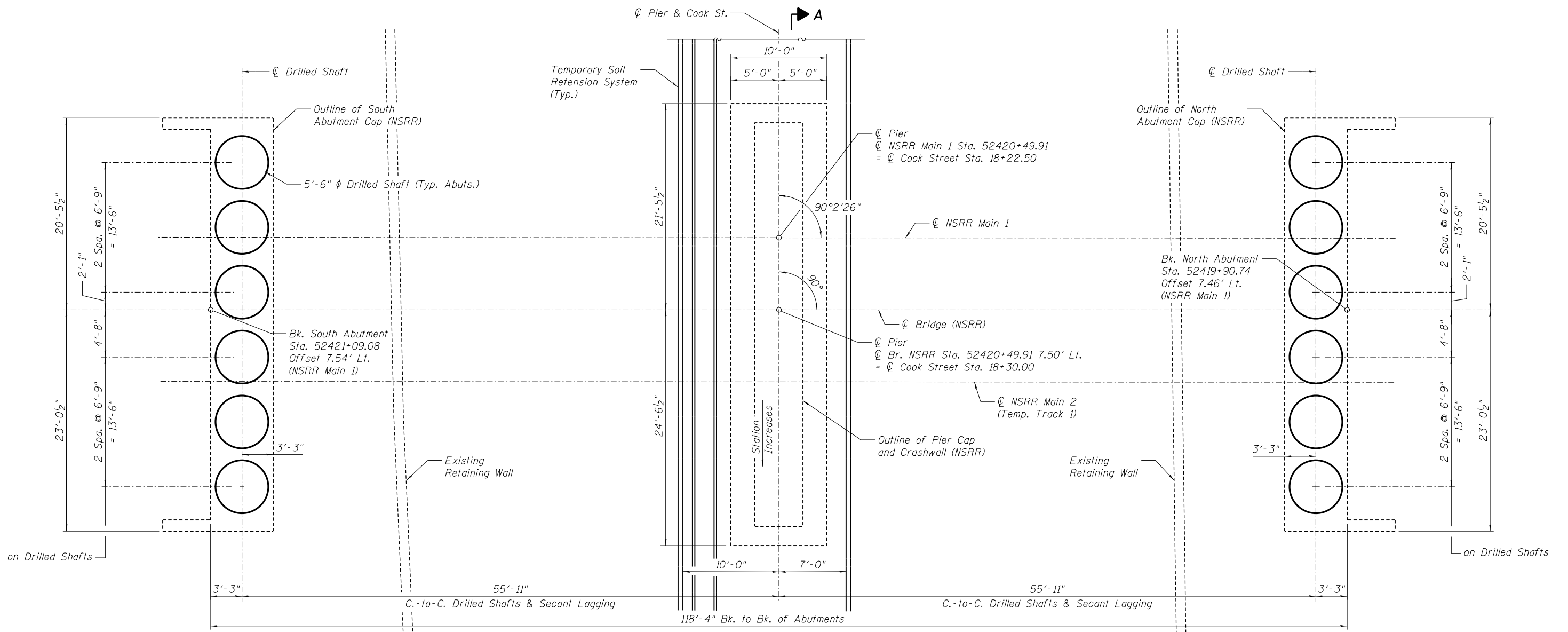
Notes:
 South Abutment Section Shown North Similar
 * Granular Backfill for Structures shall be placed and compacted according to Section 502.10 of the Standard Specifications.
 ** Included in the cost of "Pipe Underdrains for Structures, 6". For additional drainage details see Roadway Plans.

TOTAL BILL OF MATERIAL

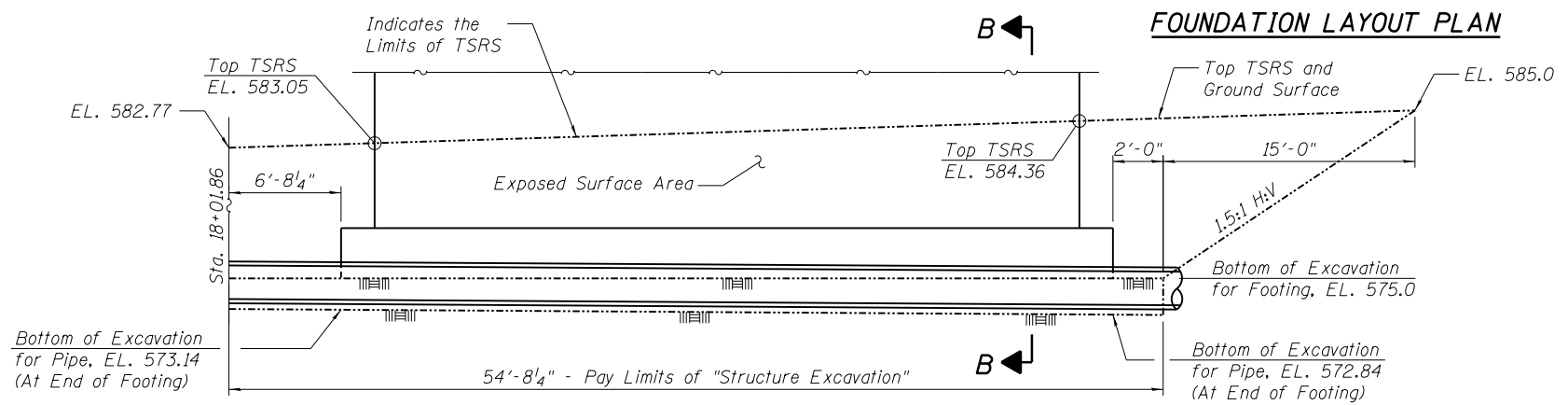
ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Structures No. 2	Each	-	-	1
Structure Excavation	Cu. Yd.	-	381	381
Rock Excavation for Structures	Cu. Yd.	-	41	41
Concrete Structures	Cu. Yd.	-	290.9	290.9
Concrete Superstructure	Cu. Yd.	127.8	-	127.8
Seal Coat Concrete	Cu. Yd.	-	15.0	15.0
Stud Shear Connectors	Each	8064	-	8064
Reinforcement Bars	Pound	-	85380	85380
Reinforcement Bars, Epoxy Coated	Pound	22100	35040	57140
Name Plates	Each	-	1	1
Drilled Shaft in Soil	Cu. Yd.	-	198.1	198.1
Drilled Shaft in Rock	Cu. Yd.	-	148.3	148.3
Temporary Soil Retention System	Sq. Ft.	-	1196	1196
Membrane Waterproofing	Sq. Ft.	4081	-	4081
Concrete Sealer	Sq. Ft.	732	2632	3364
Geocomposite Wall Drain	Sq. Yd.	-	78	78
Granular Backfill for Structures	Cu. Yd.	-	114	114
Conduit Embedded in Structure, 4" dia., PVC	Foot	224	6	230
Drainage System, No. 2	Each	1	-	1
Concrete Surface Color Treatment	Sq. Ft.	12	196	208
Floor Drains (Special)	Each	24	-	24
Furnishing and Erecting Structural Steel, Bridge No. 2	L. Sum	1	-	1
Steel Railing (Special)	Foot	255	-	255
Pipe Underdrains for Structures, 6"	Foot	-	144	144

INDEX OF SHEETS

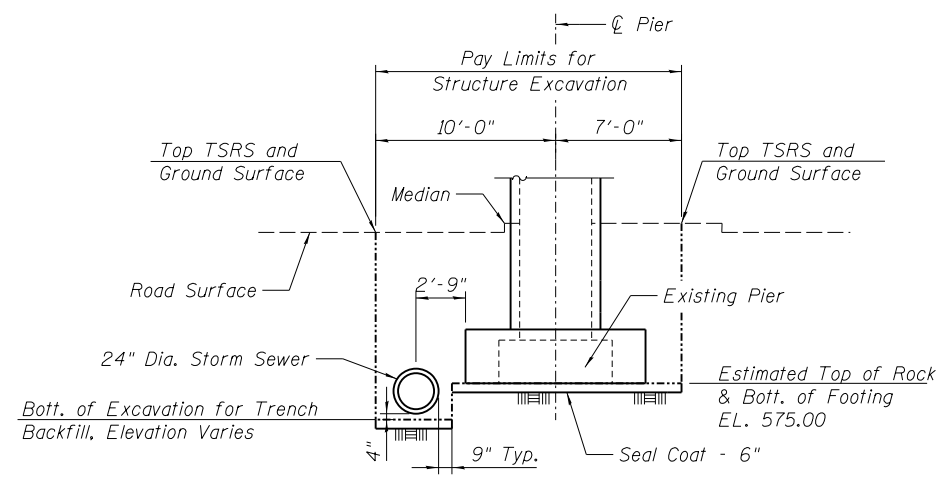
- General Plan and Elevation
- General Data
- Foundation Layout
- Superstructure
- Superstructure Details
- Structural Steel
- Structural Steel Details
- Sacrificial Beam Details
- Bearing Details
- Membrane Waterproofing
- Drainage System Details
- Steel Railing (Special)
- North and South Abutment
- North and South Abutment Details
- Pier
- Subsurface Data Profile



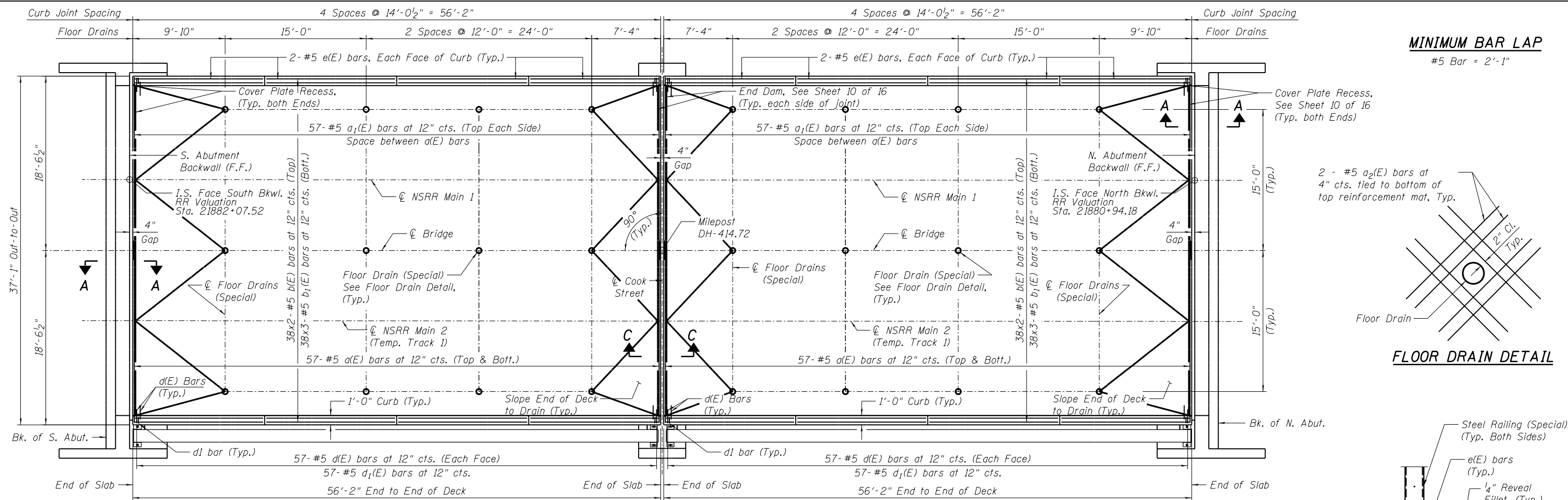
FOUNDATION LAYOUT PLAN



TEMPORARY SOIL RETENTION SYSTEM - SECTION A-A

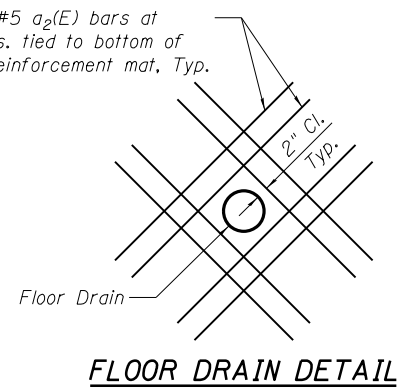


TEMPORARY SOIL RETENTION SYSTEM - SECTION B-B

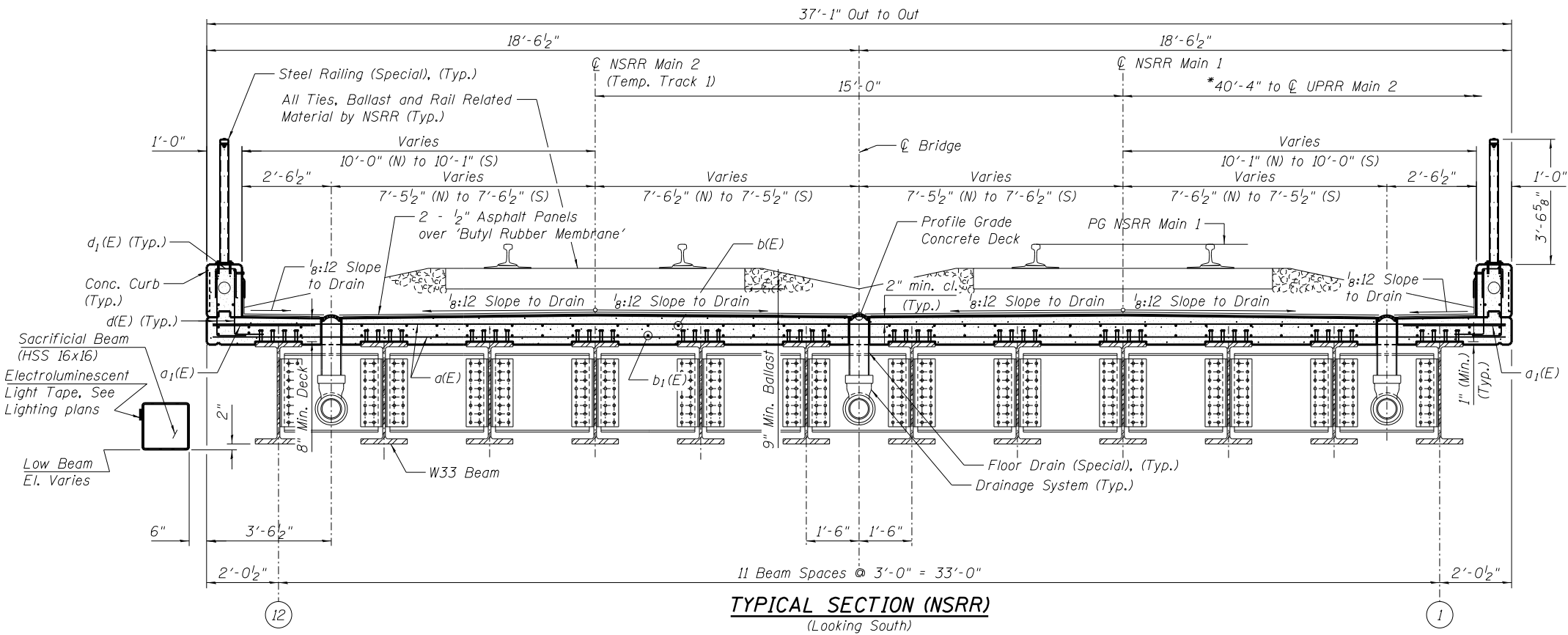


PLAN

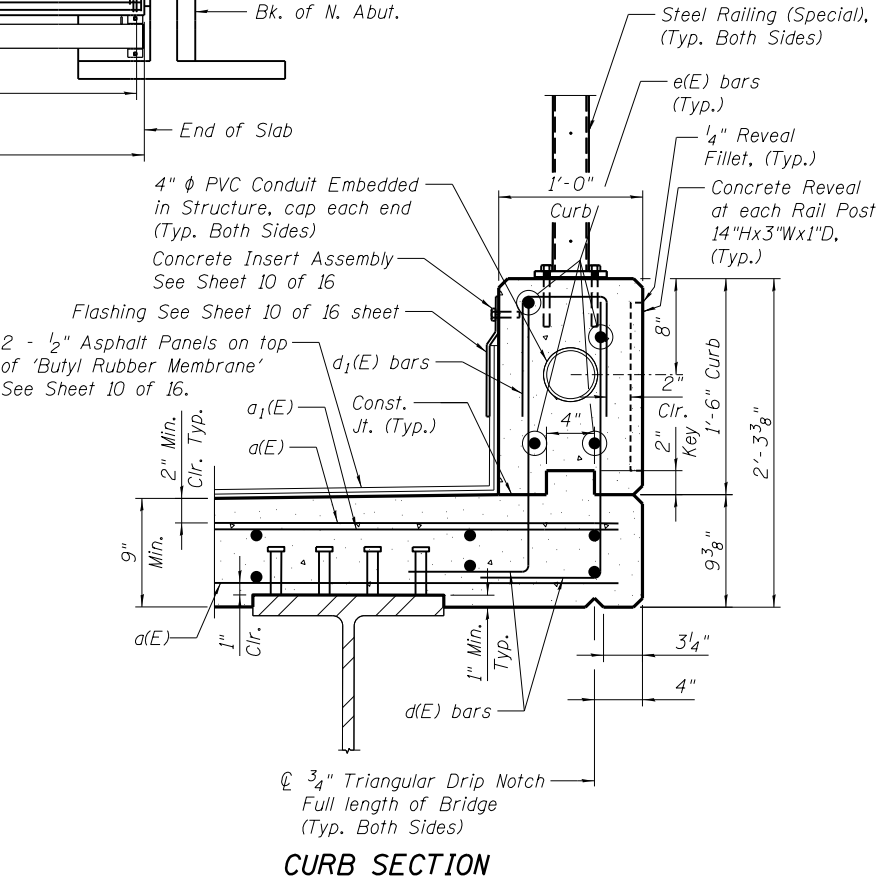
MINIMUM BAR LAP
#5 Bar = 2'-1"



FLOOR DRAIN DETAIL

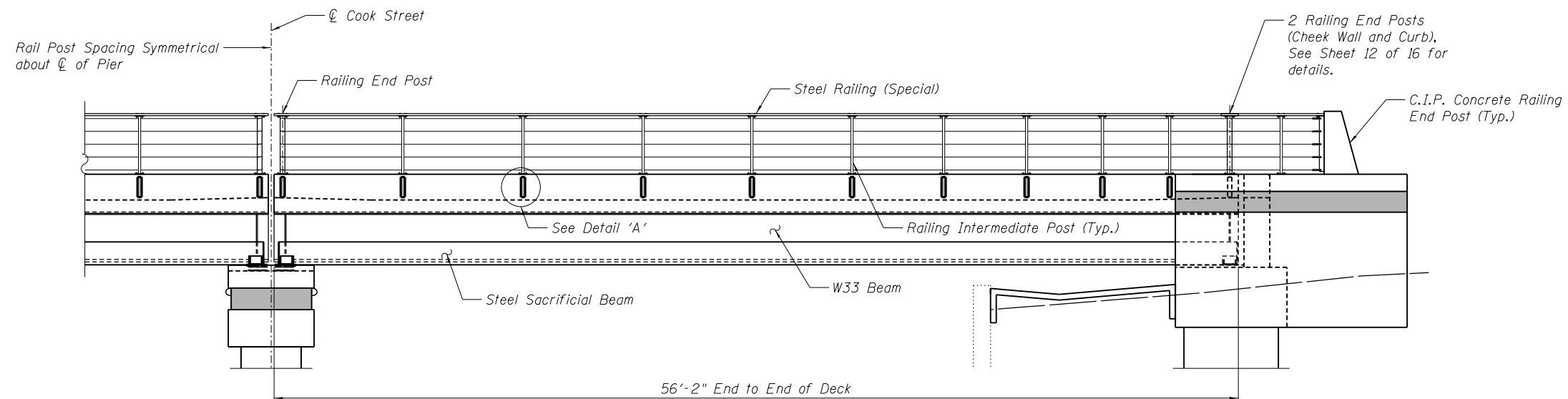


TYPICAL SECTION (NSRR)
(Looking South)
* Dimensions are Rt. Δ's to C Track

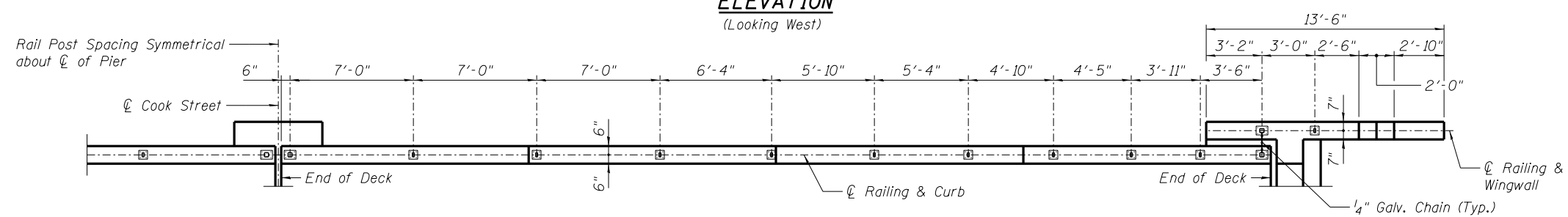


CURB SECTION

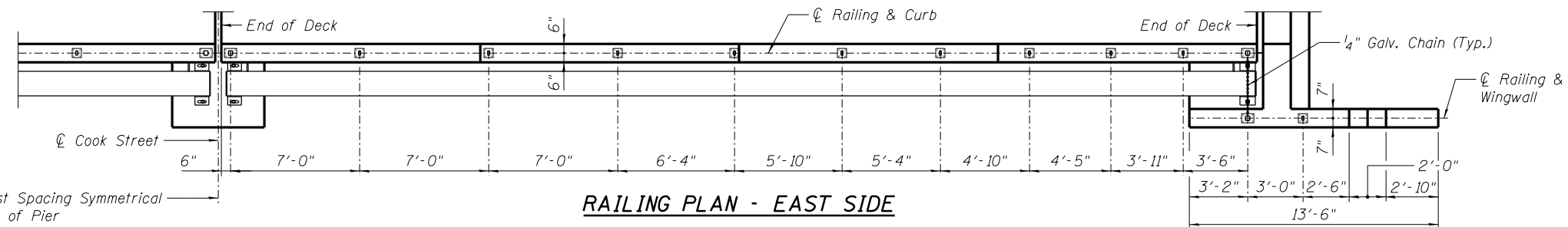
- Notes:
1. For Steel Railing Details See Sheet 12 of 16.
 2. For Membrane Waterproofing Details See Sheet 10 of 16.
 3. Shift bars to miss floor drains, do not cut.
 4. Bars indicated thus 39x2-#5 etc. indicates 39 lines of bars with 2 lengths per line.
 5. For Concrete Deck End Dam Details at Joints, Joint Details, Sections A-A and C-C. See Sheet 10 of 16.



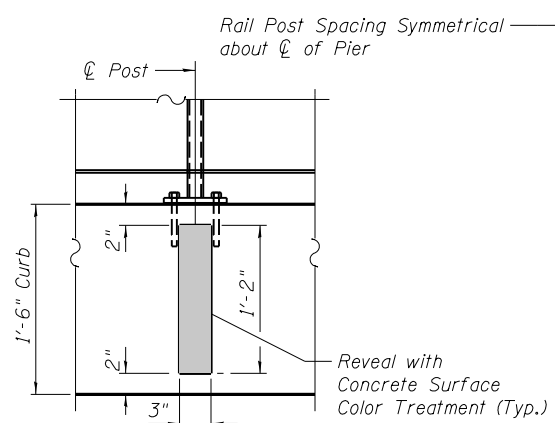
ELEVATION
(Looking West)



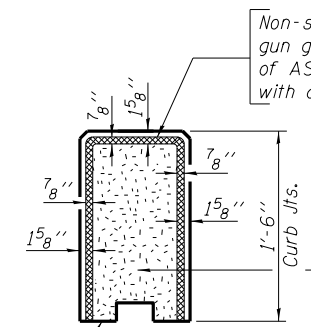
RAILING PLAN - WEST SIDE



RAILING PLAN - EAST SIDE



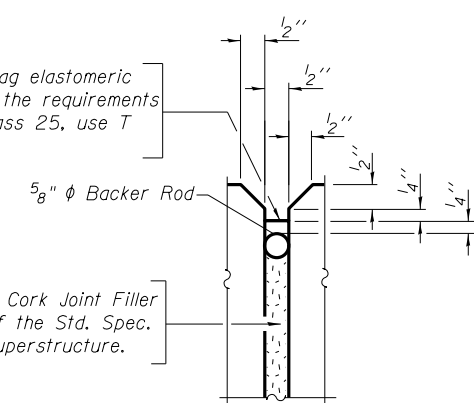
DETAIL 'A'



CURB JOINT DETAILS

Non-staining gray one component non-sag elastomeric gun grade polyurethane sealant meeting the requirements of ASTM C-920, Type S, Grade NS, Class 25, use T with a 5/8" backer rod.

1/2" Preformed Self-Expanding Cork Joint Filler according to Article 1051.07 of the Std. Spec. Cost included with Concrete Superstructure.



BAR d₁(E)

BAR d(E)

**SUPERSTRUCTURE
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a(E)	228	*5	36'-9"	—
a ₁ (E)	228	*5	2'-11"	—
a ₂ (E)	192	*5	2'-6"	—
b(E)	152	*5	29'-2"	—
b ₁ (E)	228	*5	20'-2"	—
d(E)	456	*5	2'-9"	J
d ₁ (E)	228	*5	2'-3"	J
e(E)	64	*5	13'-6"	—
Concrete Superstructure			Cu. Yds.	127.8
Reinforcement Bars, Epoxy Coated			Pound	22100
Concrete Sealer			Sq. Ft.	732
Conduit Embedded in Structure, 4" dia., PVC			Foot	224
Concrete Surface Color Treatment			Sq. Ft.	12
Floor Drains (Special)			Each	24

Note: For steel railing details see sheet 12 of 16. For concrete railing end post details see sheets 14 of 16. For 1/4" Galv. Chain details, See Sheet 12 of 16. Cost of chain and hardware shall be included in the cost of Steel Railing (Special).

pw:\hansoninc-pw\hanson.com\hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VINCAD\Struct\Usable Segment V\Cook\Sheet\084-9965-09L01798-005-Super Details

USER NAME = Pop00275	DESIGNED - MJW	REVISED -
PLOT SCALE = 1/8" = 1'-0"	CHECKED - JGT	REVISED -
PLOT DATE = 1/18/2021	DRAWN - CDP	REVISED -
	CHECKED - MJW	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**SUPERSTRUCTURE DETAILS
STRUCTURE NO. 084-9965**

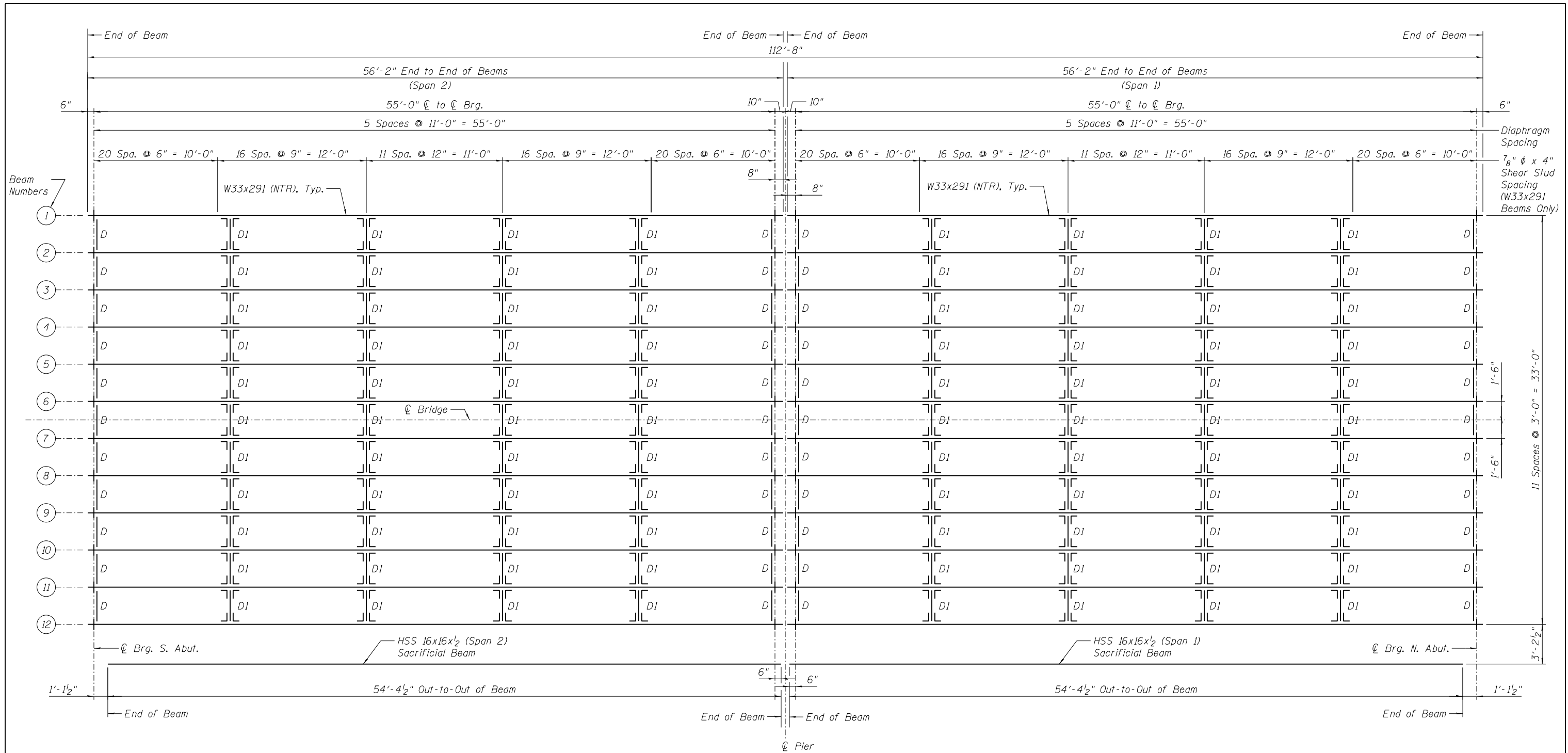
SHEET NO. 5 OF 16 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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			CONTRACT NO. 93747	
* 7985A & 8184		ILLINOIS FED. AID PROJECT		

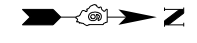
FINAL



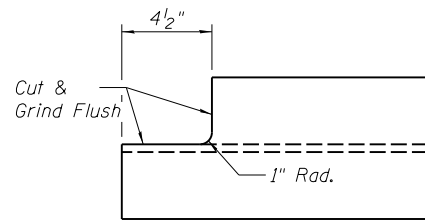
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FRAMING PLAN



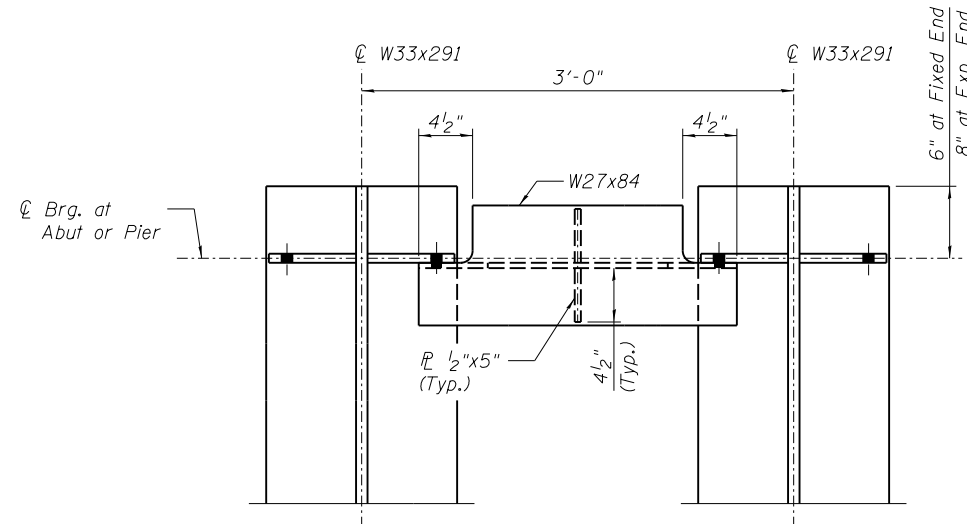
Notes:
 All diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
 Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.
 Floor Drains shall be located clear of all diaphragms.



COPE DETAIL

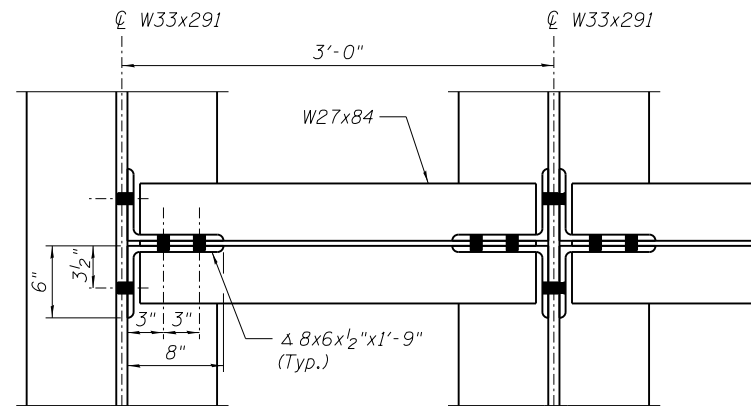
Notes:

1. All diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
2. Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.
3. Bolts shall be 7/8" ϕ placed in 15/16" ϕ holes unless otherwise noted.
4. Steel shall conform to ASTM A709 Gr. 50 unless otherwise noted.
5. See sheet 11 of 16 for holes in interior diaphragms for drainage system.



PLAN

(Top Flange not shown for clarity.)



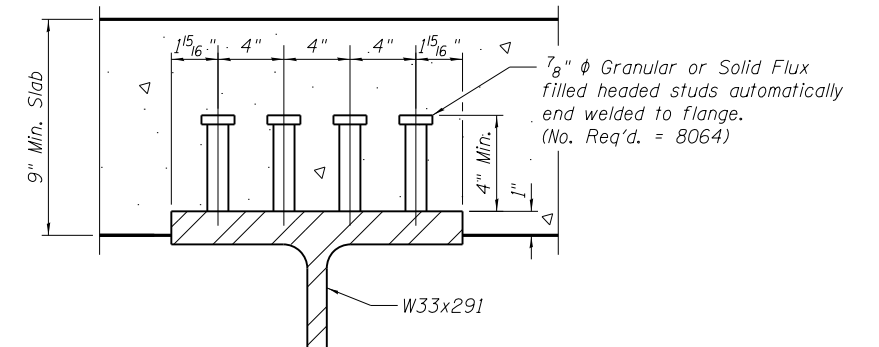
PLAN

(Top Flange not shown for clarity.)

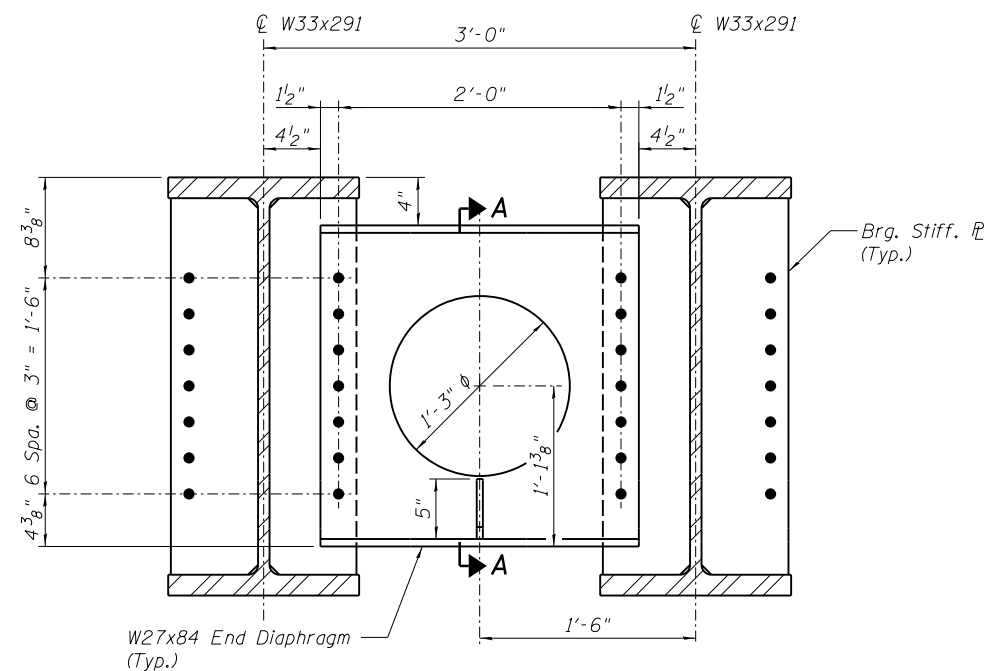
MOMENT & SHEAR TABLE FOR INTERIOR BEAMS

DESCRIPTION	MAX MOMENT	MAX SHEAR
Dead Load	544.7 Ft.-K	39.6 K
Live Load	1,116.6 Ft.-K	92.7 K
Impact	422.3 Ft.-K	35.0 K
Total	2,083.6 Ft.-K	167.3 K
Section	W33x291	
Steel	ASTM A709, GR 50, NTR ZONE 2	
Net I	17,458 IN ⁴	
Net S (Bott.)	1,003 IN ³	
FST (Bott.)	24.9 KSI	
Gross I	17,700 IN ⁴	
Gross S (Top)	1,020 IN ³	
FSC (Top)	24.5 KSI	
(LL+I) Deflection	0.98 IN	
Allowable (LL+I) Deflection	1.03 IN	

I - Non-composite moment of inertia of the steel section
 S - Non-composite section modulus of the steel section
 FST - Max unfactored tension stress in the section due to DL+LL+Impact
 FSC - Max unfactored compression stress in the section due to DL+LL+Impact

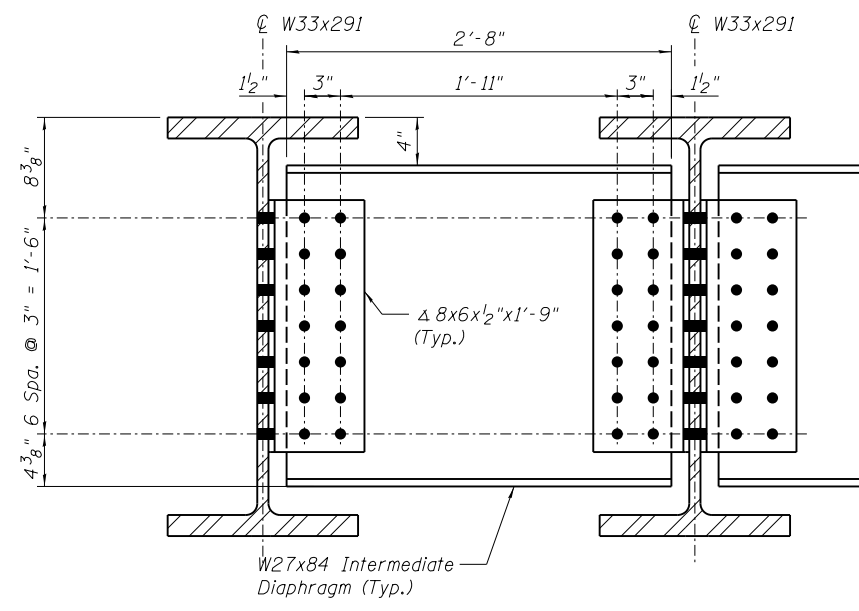


SHEAR STUD DETAIL



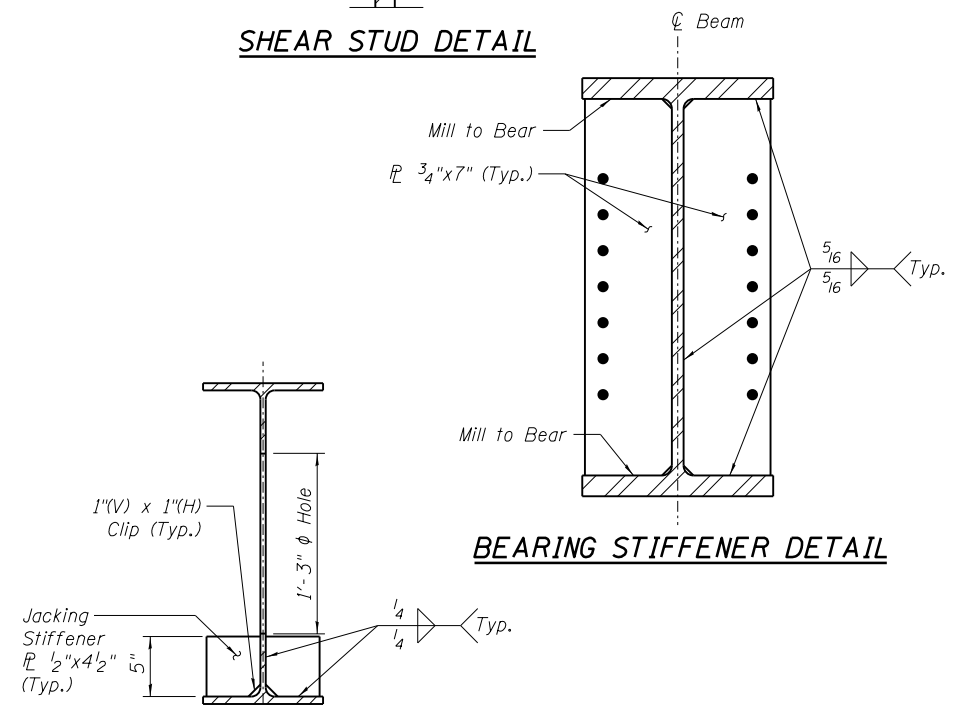
ELEVATION

END DIAPHRAGMS-D



ELEVATION

INTERMEDIATE DIAPHRAGMS-DI



BEARING STIFFENER DETAIL

SECTION A-A

pw:\hansoninc-pw.bentley.com\hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - V\CAD\Struct\Usable Segment V\Cook\Sheet\084-9965-09L01798-007-Struct Steel Det

FINAL



USER NAME = Pop00275
 PLOT SCALE = @2" = 1'-0"
 PLOT DATE = 1/18/2021

DESIGNED - MJW
 CHECKED - JGT
 DRAWN - CDP
 CHECKED - MJW

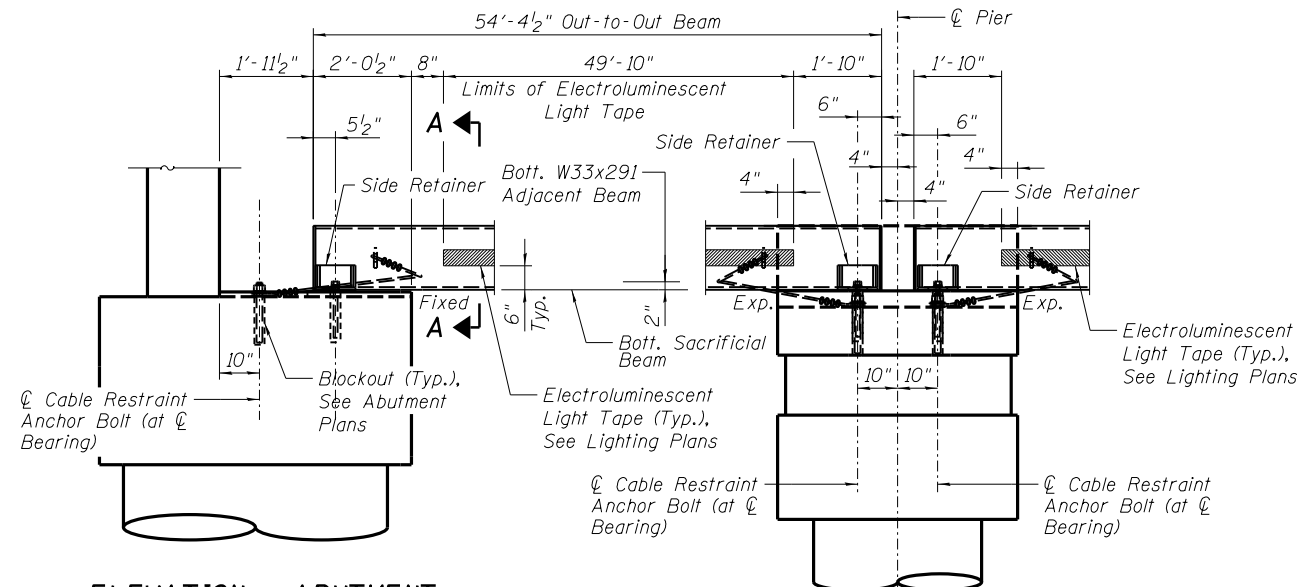
REVISED -
 REVISED -
 REVISED -
 REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL DETAILS
 STRUCTURE NO. 084-9965

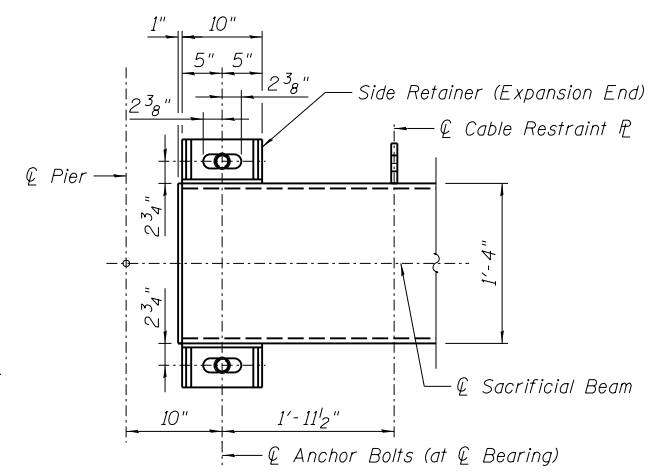
SHEET NO. 7 OF 16 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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			CONTRACT NO. 93747	
• 7985A & 8186		ILLINOIS FED. AID PROJECT		

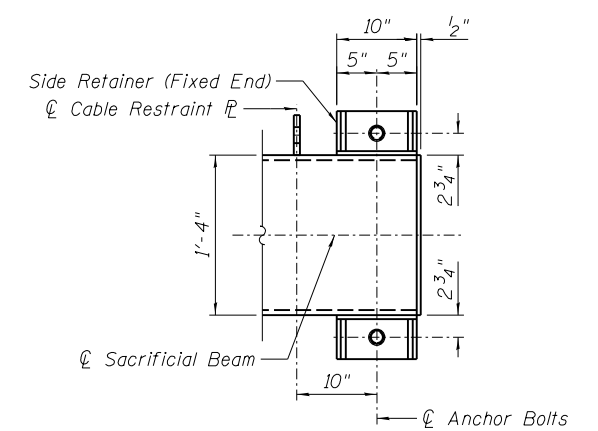


ELEVATION - ABUTMENT
(Looking West)

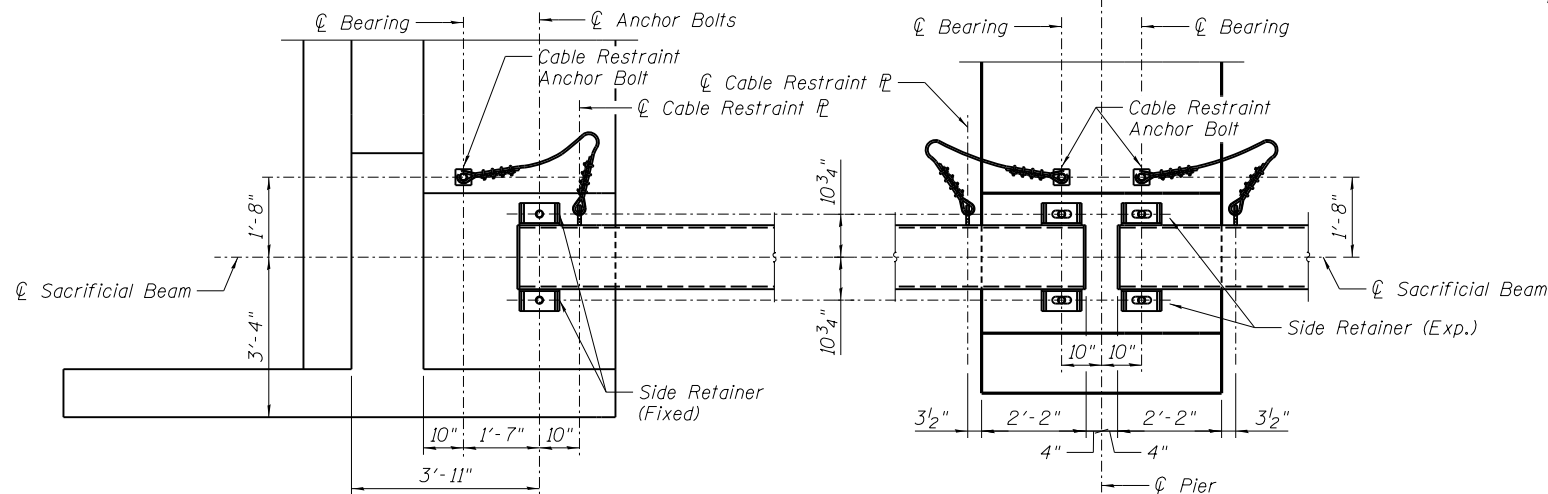
ELEVATION - PIER
(Looking West)



DETAIL - PIER

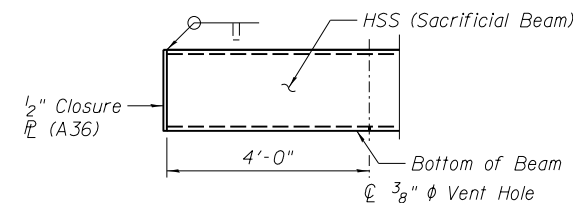


DETAIL - ABUTMENT

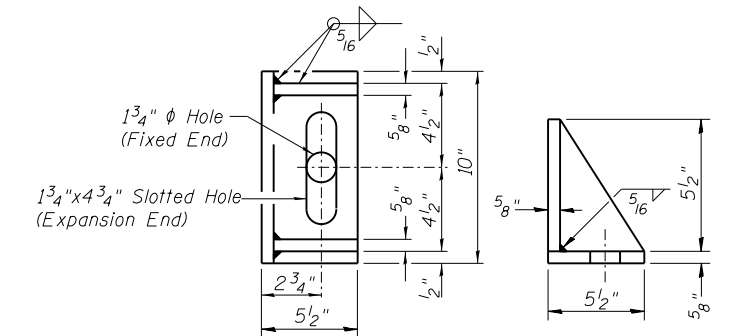


PLAN - ABUTMENT

PLAN - PIER

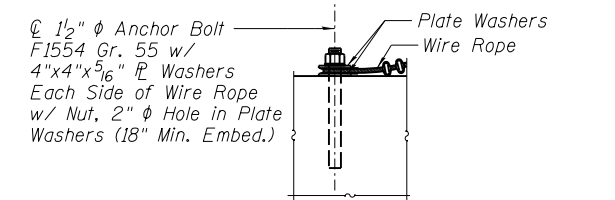


CLOSURE PLATE DETAIL

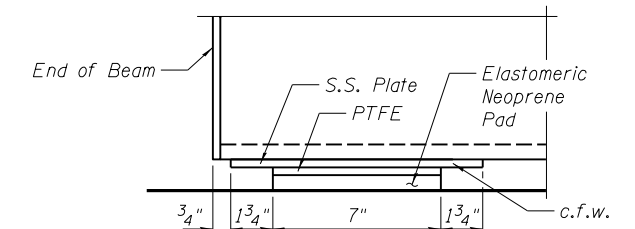


SIDE RETAINER

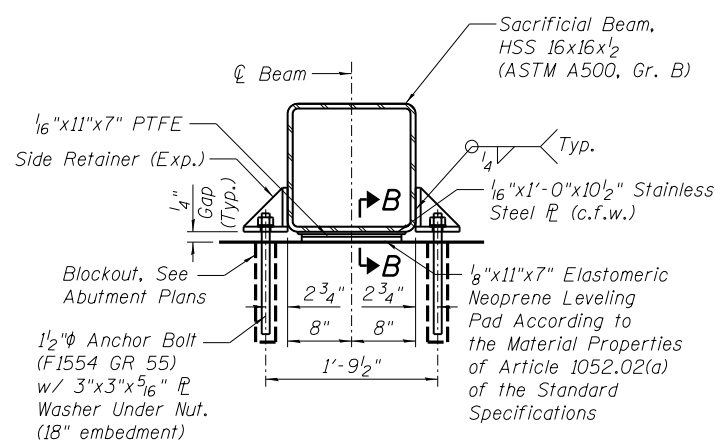
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



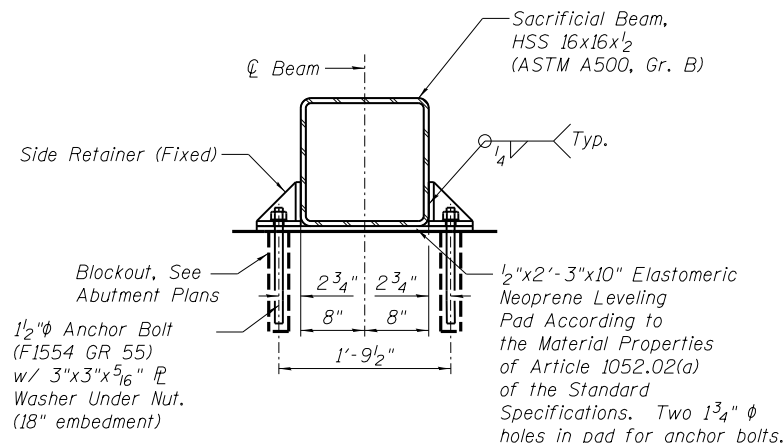
CABLE RESTRAINT ANCHOR BOLT DETAIL



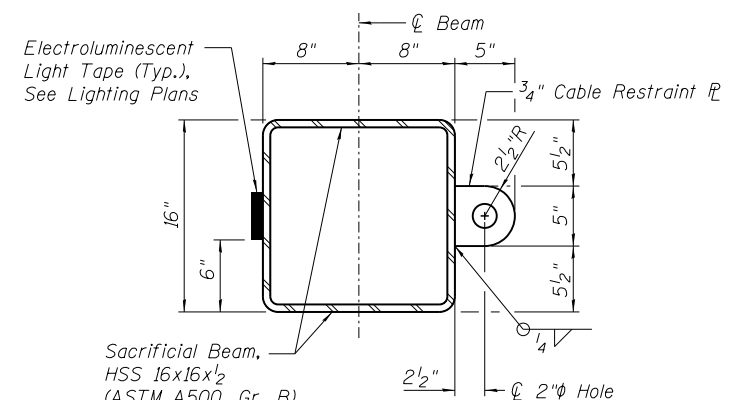
SECTION B-B
(Expansion End)



TYPICAL SECTION AT EXPANSION END



TYPICAL SECTION AT FIXED END



SECTION A-A

Notes:
 3/4" wire rope shall be according to AASHTO M30, Type II, Class A coating, EIPS. Use 1 wire rope thimble and 4 wire rope clips per end according to the manufacturer's recommendation.
 Cost for elastomeric neoprene and elastomeric neoprene leveling pad w/ PTFE surface, wire rope and accessories shall be included in the cost of "Furnishing and Erecting Structural Steel, Bridge No. 2".
 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 shall be installed in blockouts with Non-Shrink Grout meeting the material requirements of Article 1024.02 of the Standard Specifications. Blockouts shall be clean prior to grouting and grout installed according to manufacturers recommendations. The PTFE shall be bonded directly to the leveling pad according to the manufacturers recommendations.

FINAL



USER NAME = Pop00275
 PLOT SCALE = 0.2" = 1'-0"
 PLOT DATE = 1/18/2021

DESIGNED - CGP
 CHECKED - MNM
 DRAWN - CDP
 CHECKED - MJW

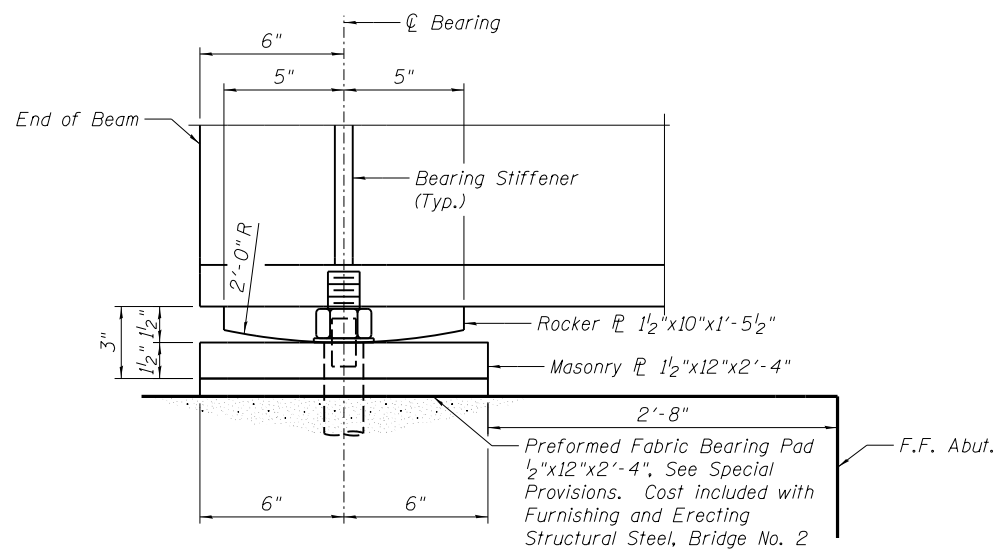
REVISED -
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STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

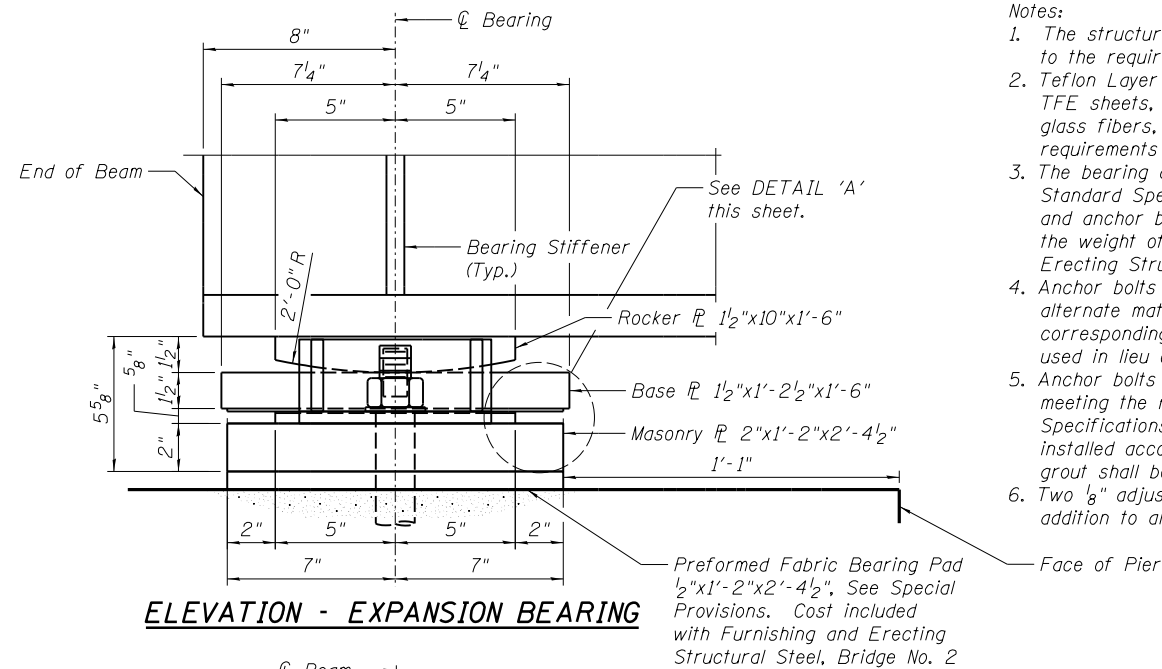
SACRIFICIAL BEAM DETAILS
 STRUCTURE NO. 084-9965

SHEET NO. 8 OF 16 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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• 7985A & 8187			CONTRACT NO. 93747	
ILLINOIS FED. AID PROJECT				

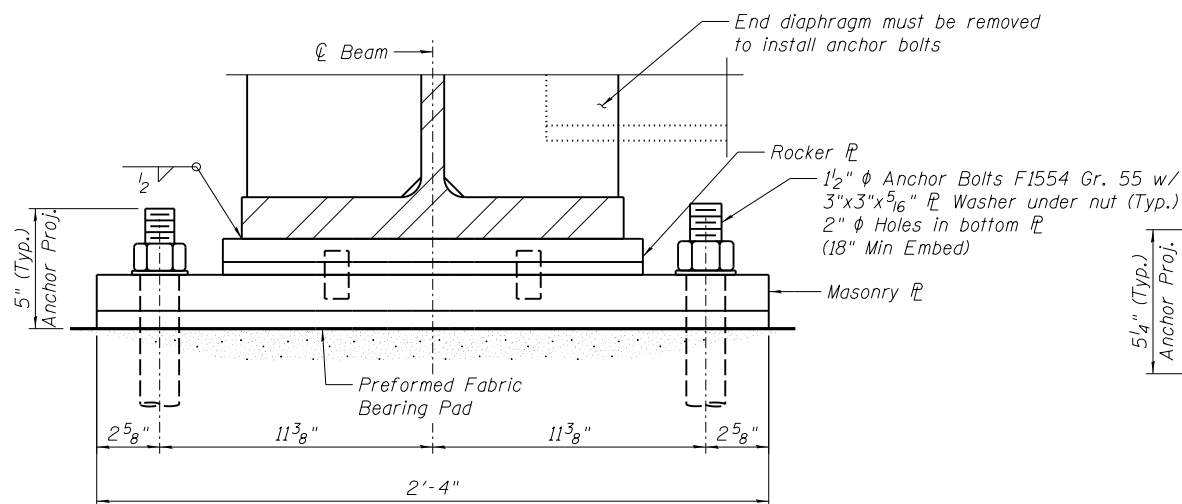


ELEVATION - FIXED BEARING

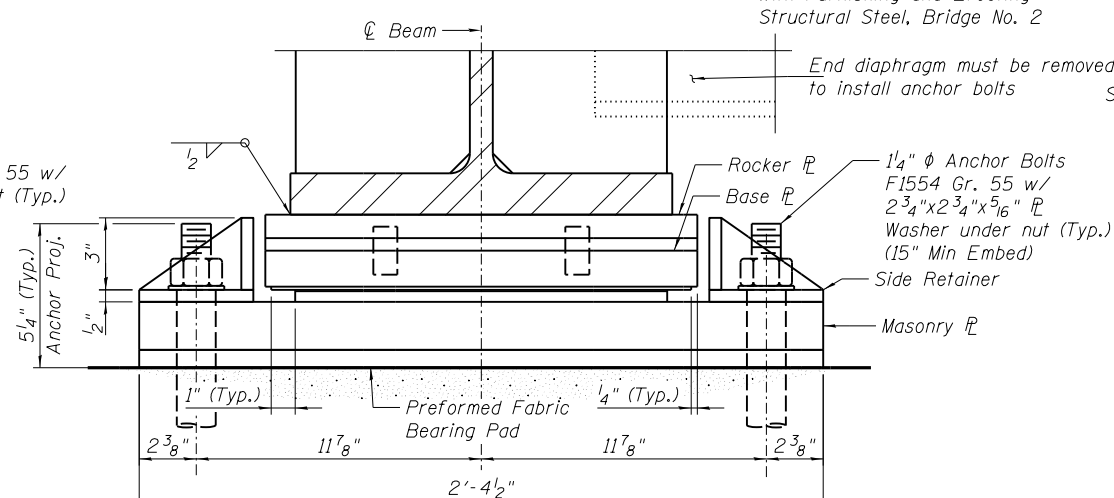


ELEVATION - EXPANSION BEARING

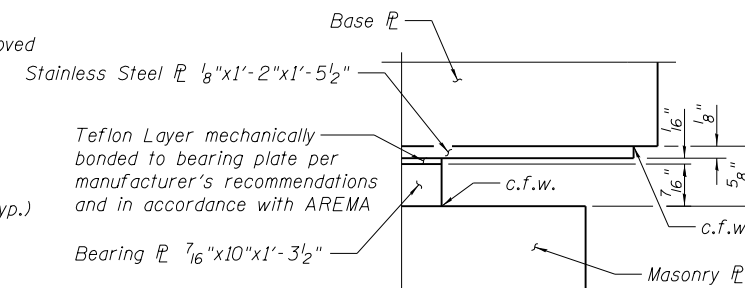
- Notes:
- The structural steel plates of the Bearing Assembly shall conform to the requirements of ASTM A709, Grade 50.
 - Teflon Layer shall be composed of virgin unfilled TFE resin, unfilled TFE sheets, or unfilled TFE fabric. Filler material, such as milled glass fibers, will not be allowed. Teflon layer shall conform to the requirements of AREMA Chapter 15.
 - The bearing assembly shall be according to Section 521 of the Standard Specifications where applicable. The bearing assembly and anchor bolts will not be paid for separately but included in the weight of Structural Steel for payment as "Furnishing and Erecting Structural Steel, Bridge No. 2".
 - 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 shall be installed in blockouts with Non-Shrink Grout meeting the material requirements of Article 1024.02 of the Standard Specifications. Blockouts shall be clean prior to grouting and grout installed according to manufacturer's recommendations. Cost for non-shrink grout shall be included in the cost of Concrete Structures.
 - Two 1/8" adjusting shims shall be provided for each bearing assembly in addition to all other plates or shims and placed as shown on bearing details.



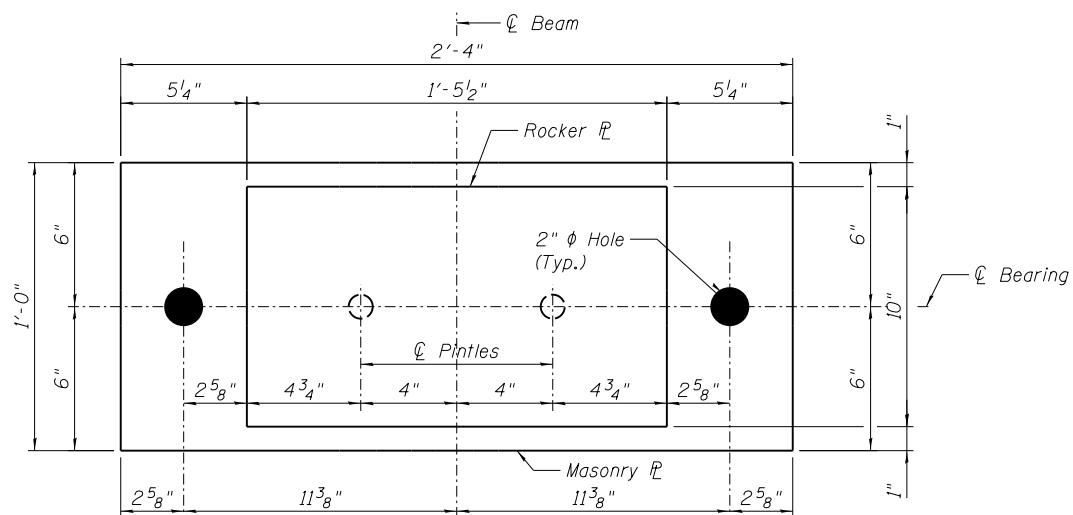
END VIEW - FIXED BEARING



END VIEW - EXPANSION BEARING

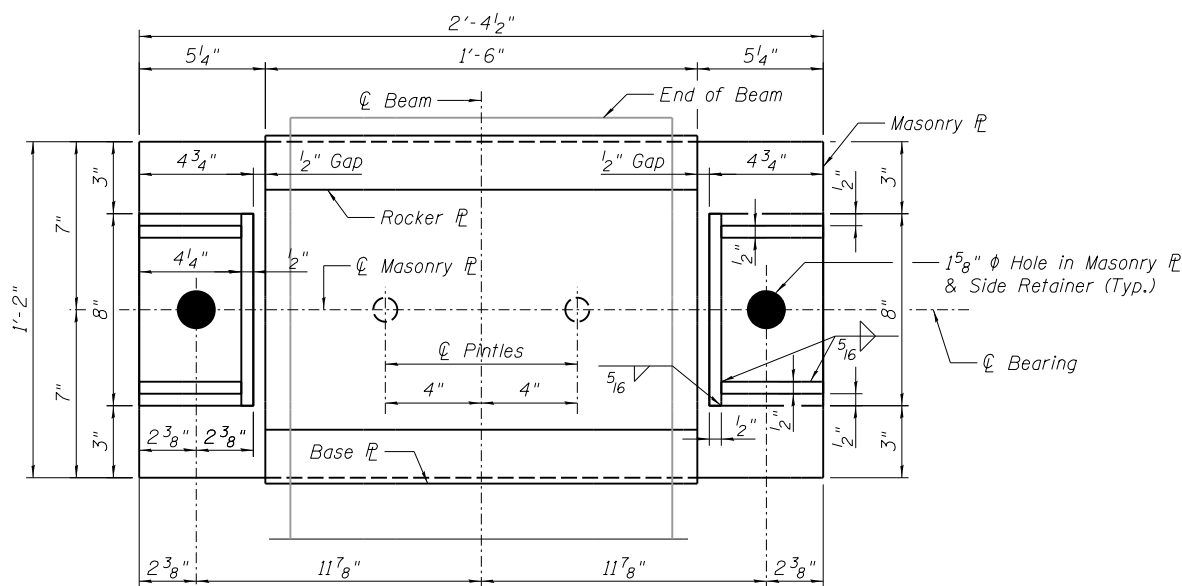


DETAIL 'A'



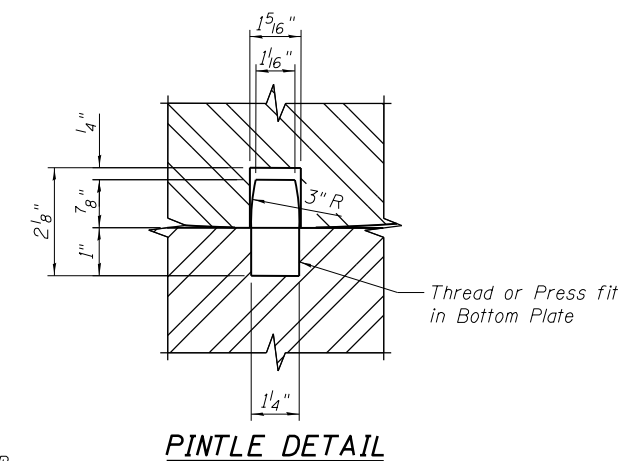
PLAN VIEW - FIXED BEARING

(Abutment Bearings - 24 required)



PLAN VIEW - EXPANSION BEARING

(Pier Bearings - 24 required)



PINTLE DETAIL

USER NAME = Pop02275	DESIGNED - CGP	REVISED -
PLOT SCALE = @2" = 1'-0"	CHECKED - JGT	REVISED -
PLOT DATE = 1/18/2021	DRAWN - CDP	REVISED -
	CHECKED - MJW	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEARING DETAILS
STRUCTURE NO. 084-9965

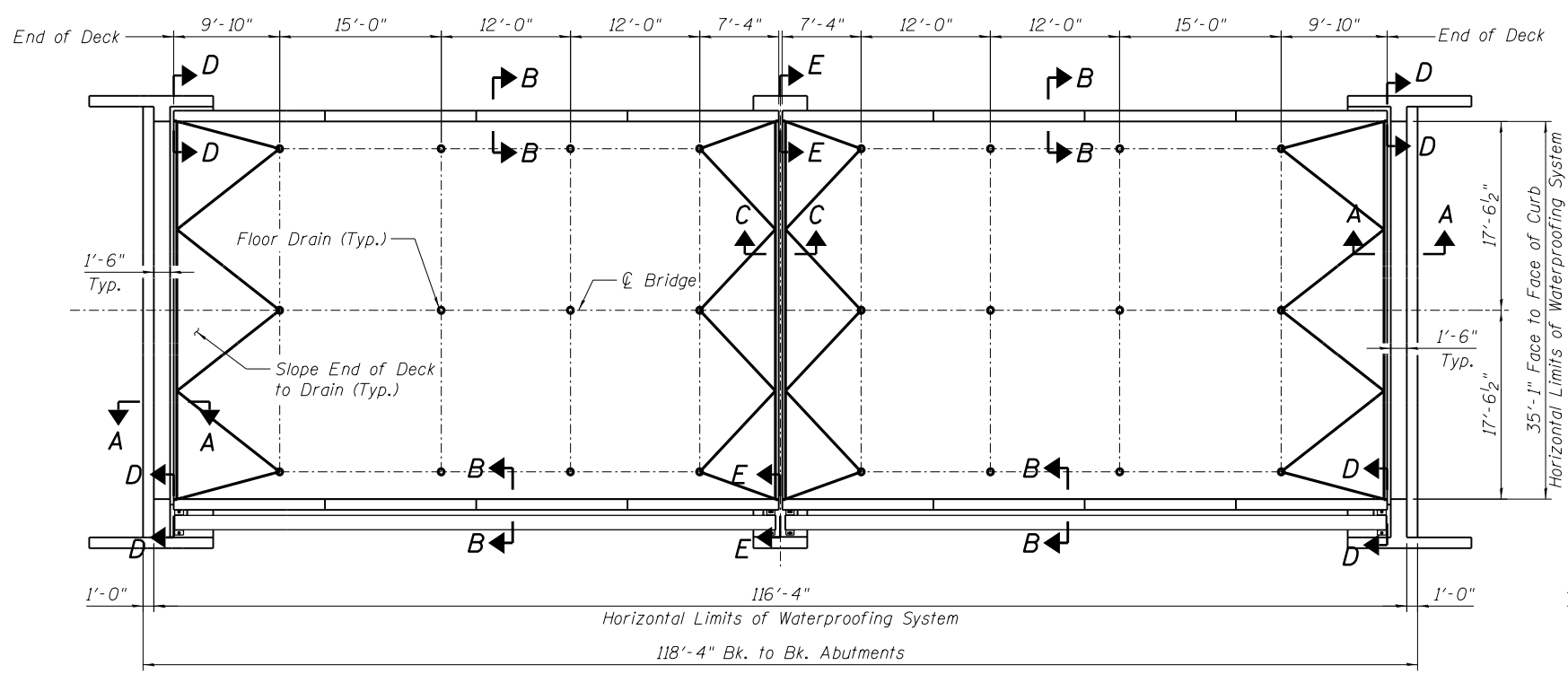
SHEET NO. 9 OF 16 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
•	19-00488-00-BR	SANGAMON	347	221
• 7985A & 8188			ILLINOIS FED. AID PROJECT	

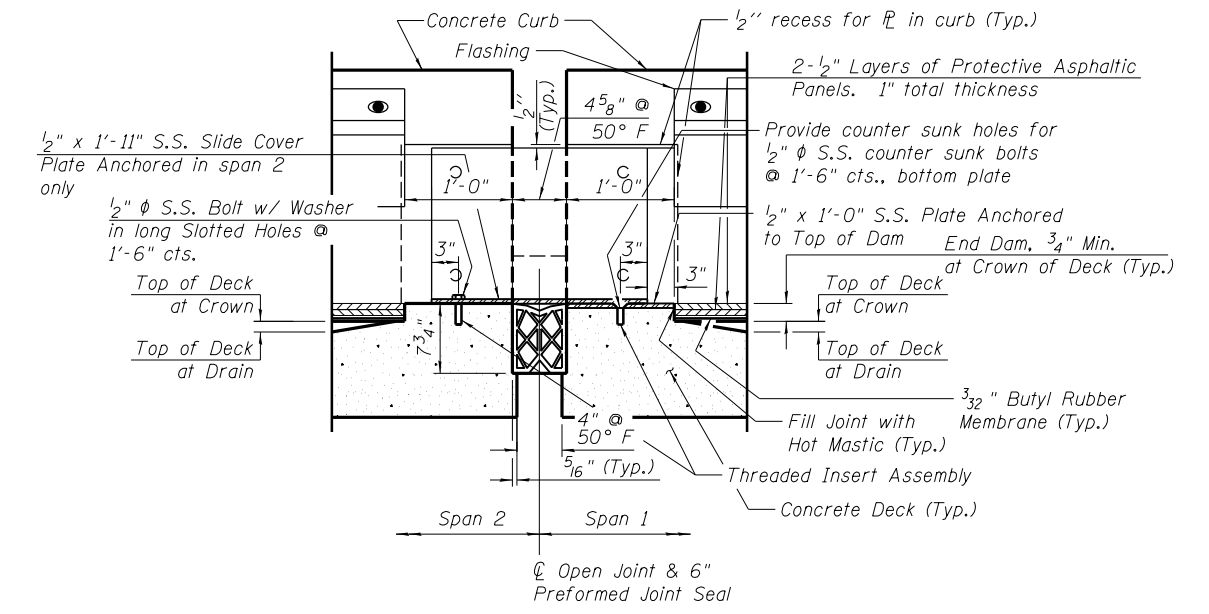
FINAL



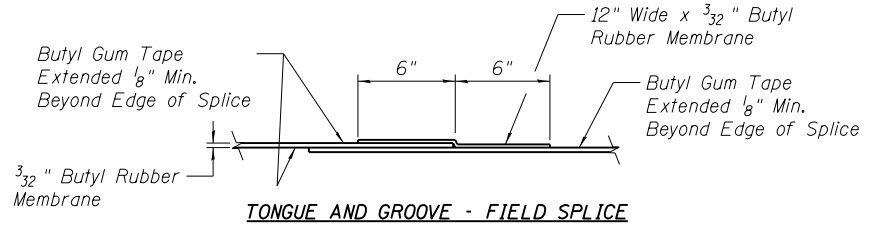
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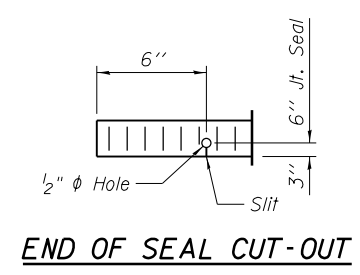
WATERPROOFING LIMITS PLAN



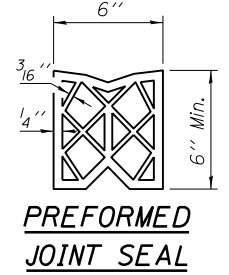
SECTION C-C



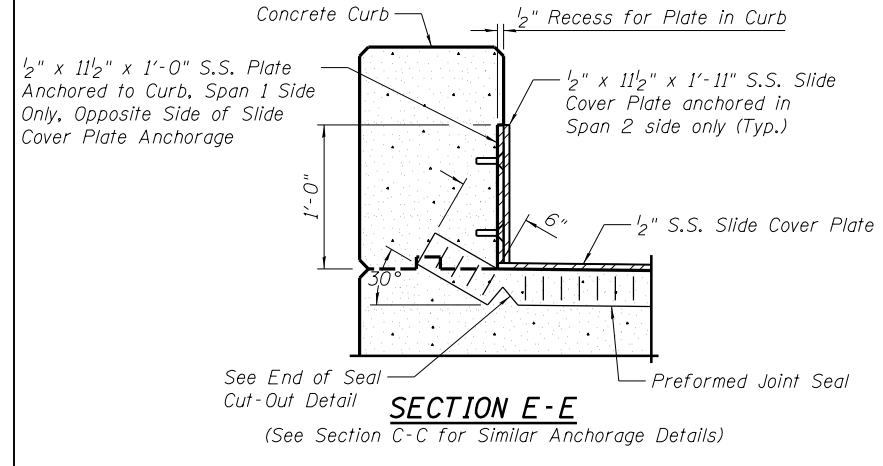
BUTYL RUBBER MEMBRANE SPLICE DETAIL



END OF SEAL CUT-OUT

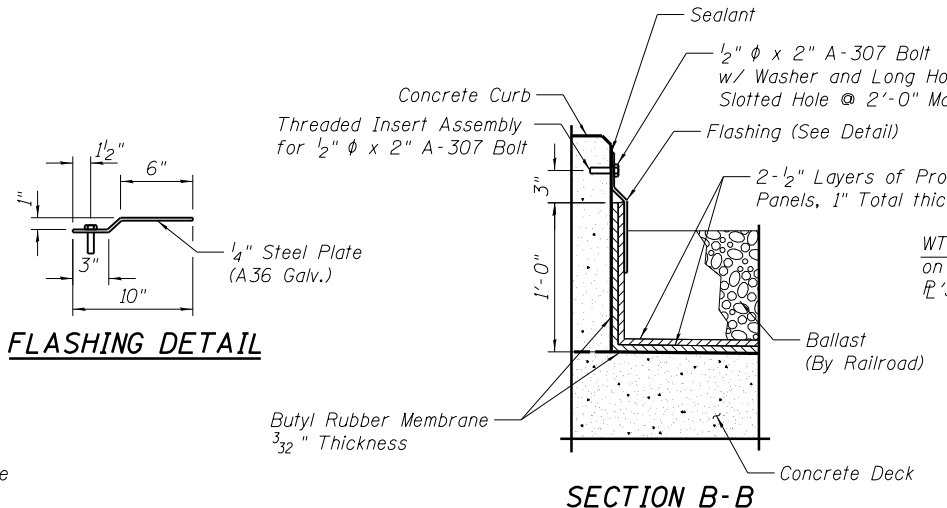


PREFORMED JOINT SEAL

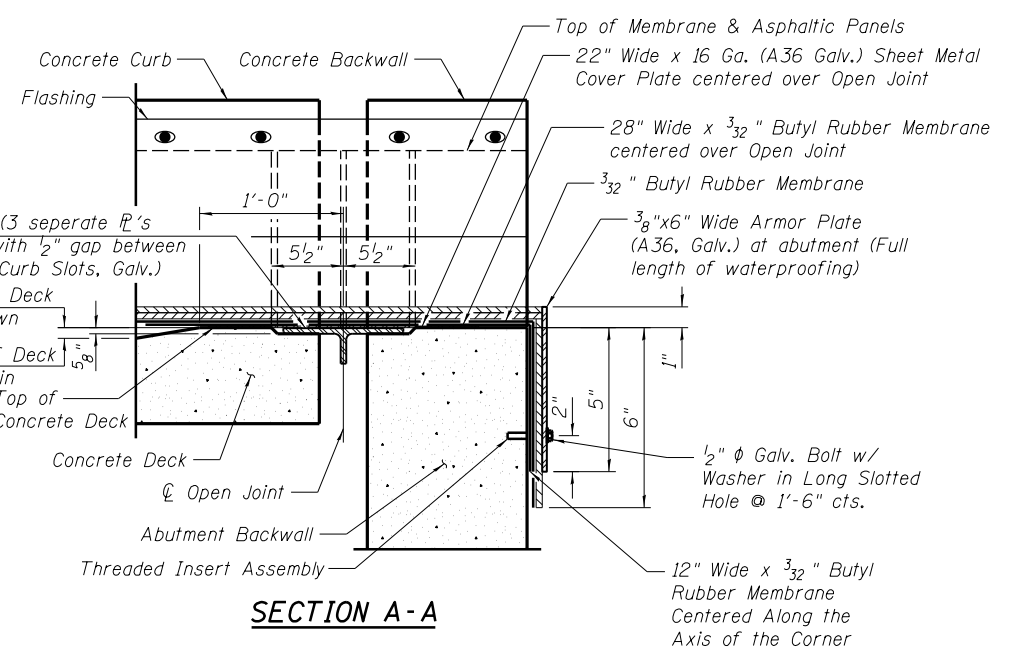


SECTION E-E

(See Section C-C for Similar Anchorage Details)



SECTION B-B



SECTION A-A

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Membrane Waterproofing	Sq. Ft.	4081

- Notes:
- All structural steel plates, bolts, and washers for cover plates and waterproofing shall be galvanized.
 - Discontinue flashing at open joint over expansion pier.
 - Cost of threaded inserts, sealant and tape shall be included in the cost of Membrane Waterproofing.
 - The cover plate, sheet metal cover, armor plate, flashing, bolts and washers are included in the weight of Structural Steel and will be paid for as "Furnishing and Erecting Structural Steel, Bridge No. 2".
 - Cost of Preformed Joint Seal is included with Concrete Superstructure.
 - Protective Asphaltic Panels shall be installed in two layers with joints staggered on the half sheet module, and shall be carefully placed to ensure tight proximity to adjacent members. No adhesive shall be used in the installation of the panels. After placing the second layer, unavoidable gaps shall be filled with a compatible sealing compound and the entire top surface of the asphaltic panels shall be given a mop coat of hot asphalt to completely fill the joints between the panels.

FINAL

HANSON

USER NAME = Pop00275
 DESIGNED - MJW
 CHECKED - CGP
 PLOT SCALE = 1/8" = 1'-0"
 PLOT DATE = 1/18/2021

DESIGNED - MJW
 CHECKED - MJW

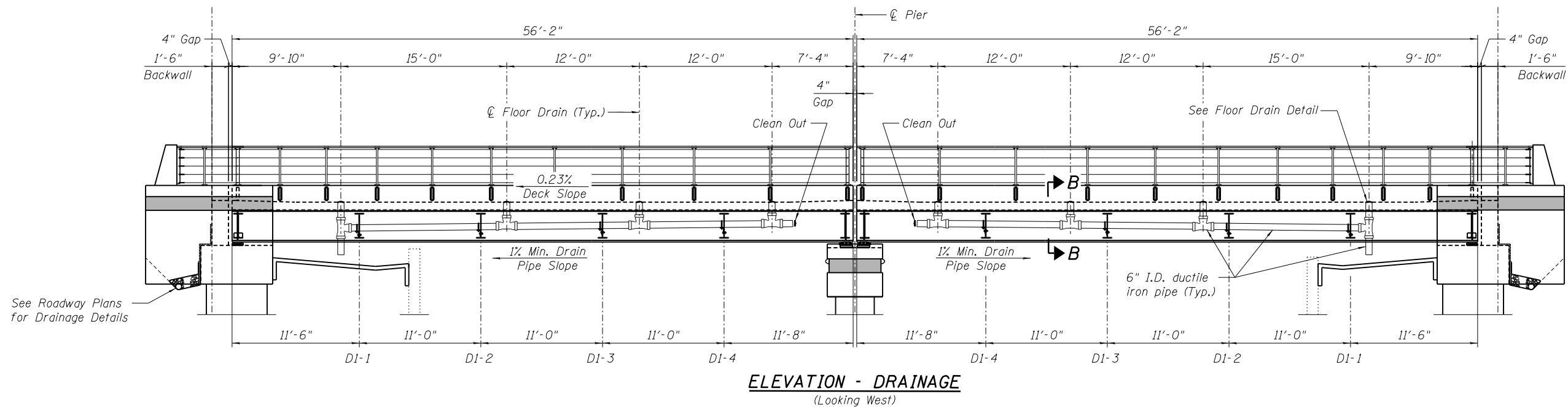
REVISED -
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 REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

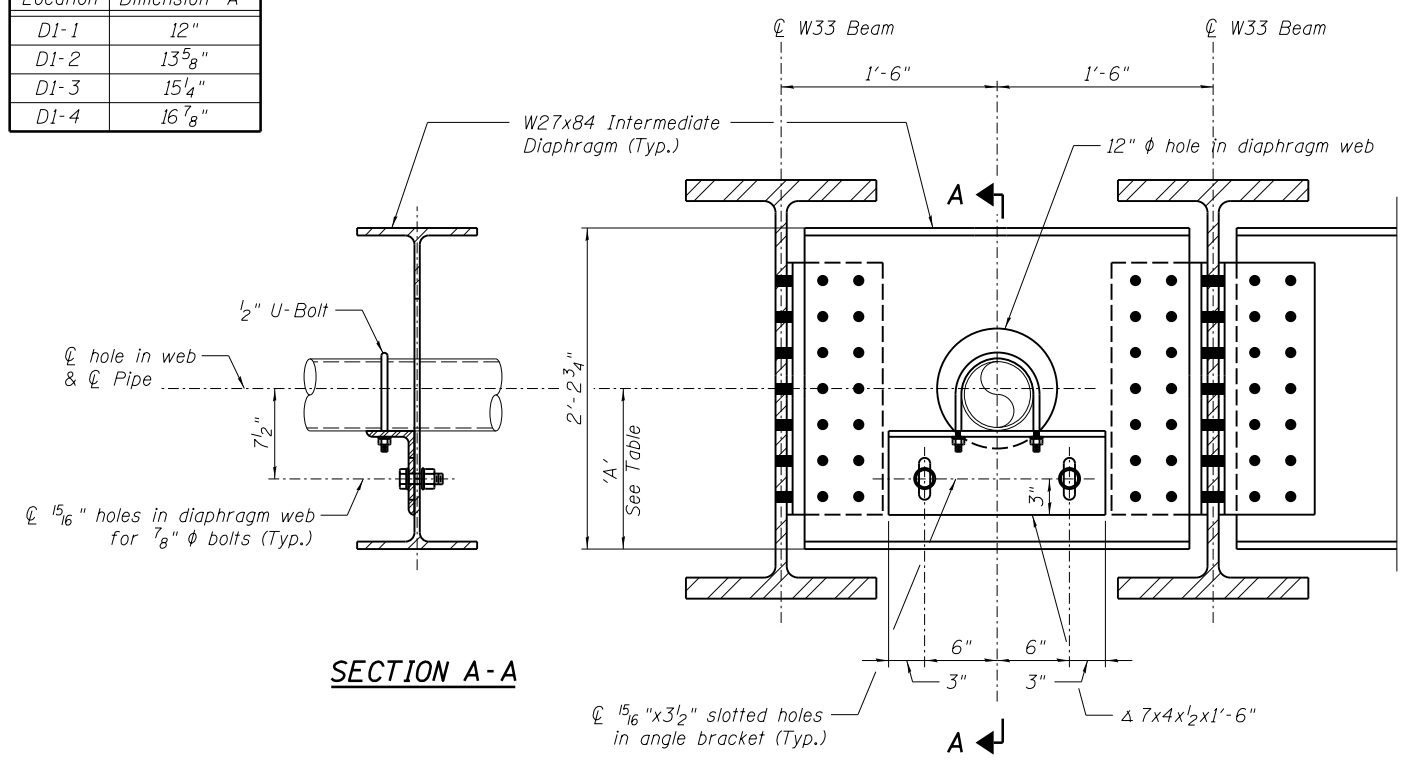
**MEMBRANE WATERPROOFING
 STRUCTURE NO. 084-9965**

SHEET NO. 10 OF 16 SHEETS

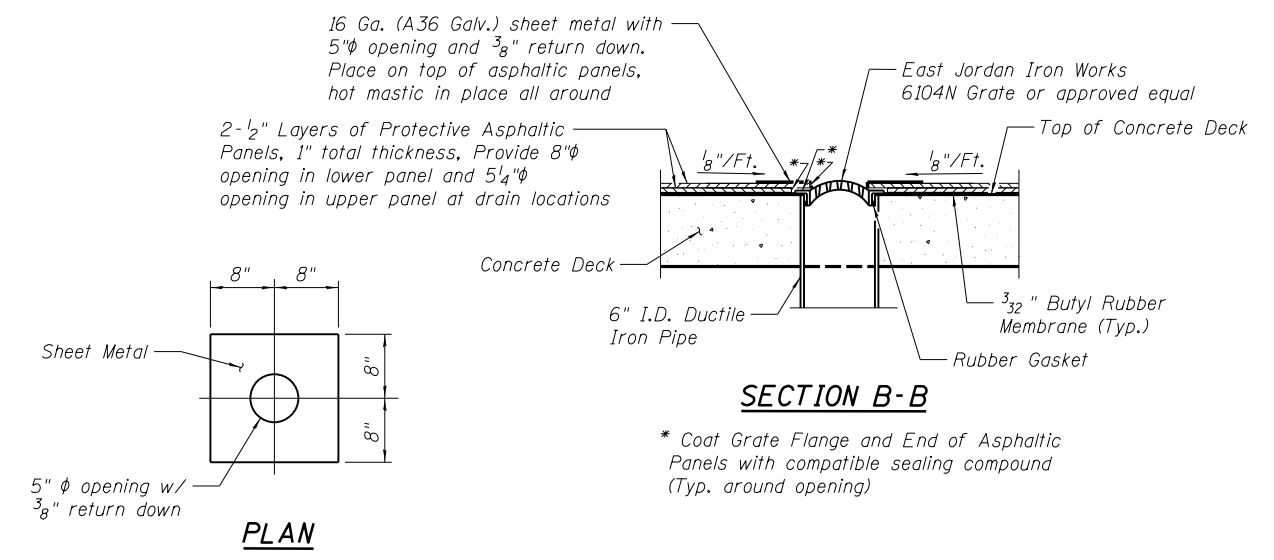
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
•	19-00488-00-BR	SANGAMON	347	222
• 7985A & 8189			ILLINOIS FED. AID PROJECT	



Location	Dimension 'A'
D1-1	12"
D1-2	13 ⁵ / ₈ "
D1-3	15 ¹ / ₄ "
D1-4	16 ⁷ / ₈ "



TYPICAL ELEVATION AT INTERMEDIATE DIAPHRAGM PENETRATION



FLOOR DRAIN DETAIL

- Notes:
- All drain pipes shall be 6" I.D. All pipes, tees, bells and bends shall be Class 54 Ductile Iron.
 - Use minimum 1/2" fall on drain pipes.
 - Cost of angle brackets, bolts, u-bolts, sheet metal, mastic and other hardware shall be included in the cost of Drainage System.
 - For additional drainage details See Roadway Plans.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Drainage System, No. 2	Each	1

Notes:
Anchor rods shall be ASTM F1554, Grade 55, galvanized steel all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor rods may be used in lieu of ASTM F1554. The anchor rods shall be hot-dipped galvanized according to AASHTO M232, Class C.

Tube segments shall have all corners ground to remove burrs or sharp projections.

All bolts, eyebolts, nuts and washers must satisfy the requirements of ASTM A307 Gr. A unless noted otherwise.

The anchor rods shall be installed according to Article 509.06 of the Standard Specifications. Embedment shall be 4" min. or according to the manufactures specifications whatever is greater.

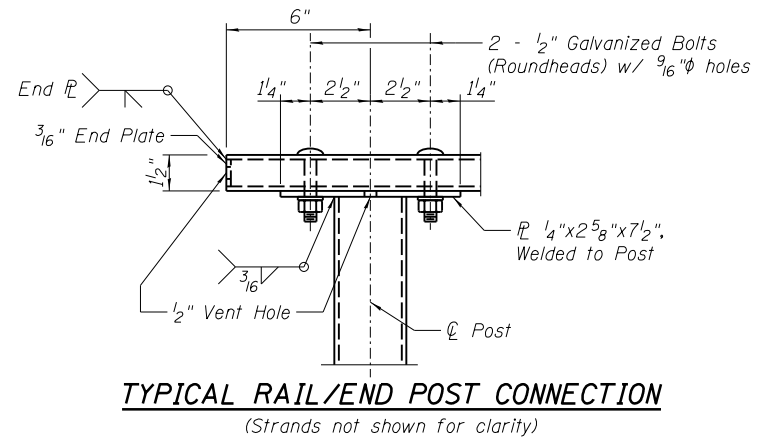
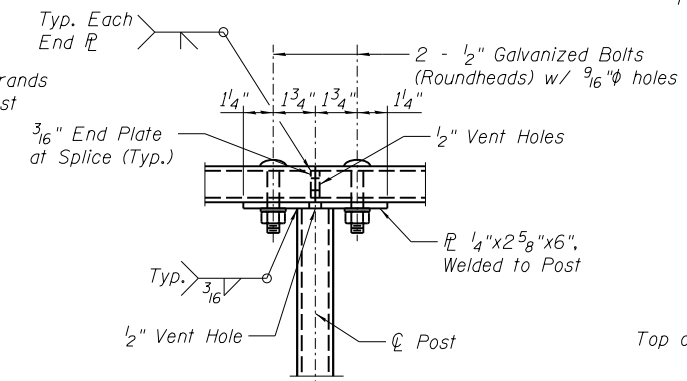
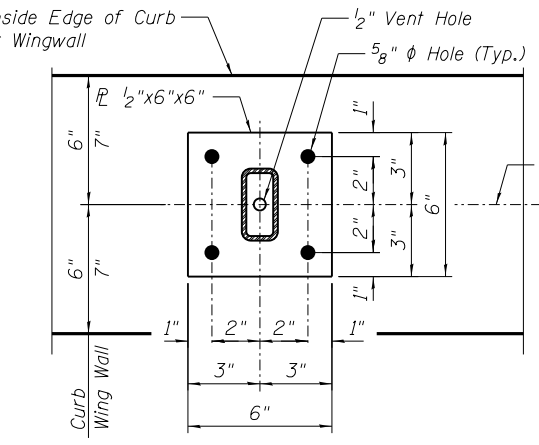
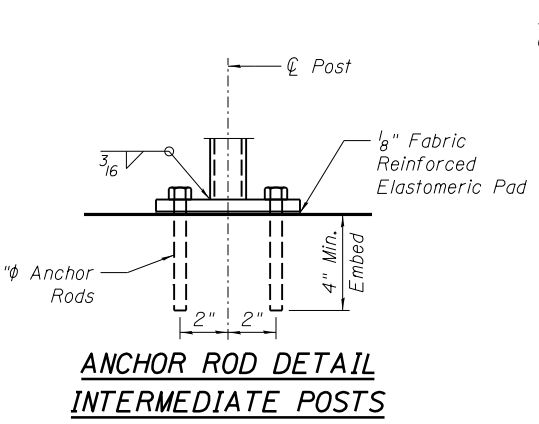
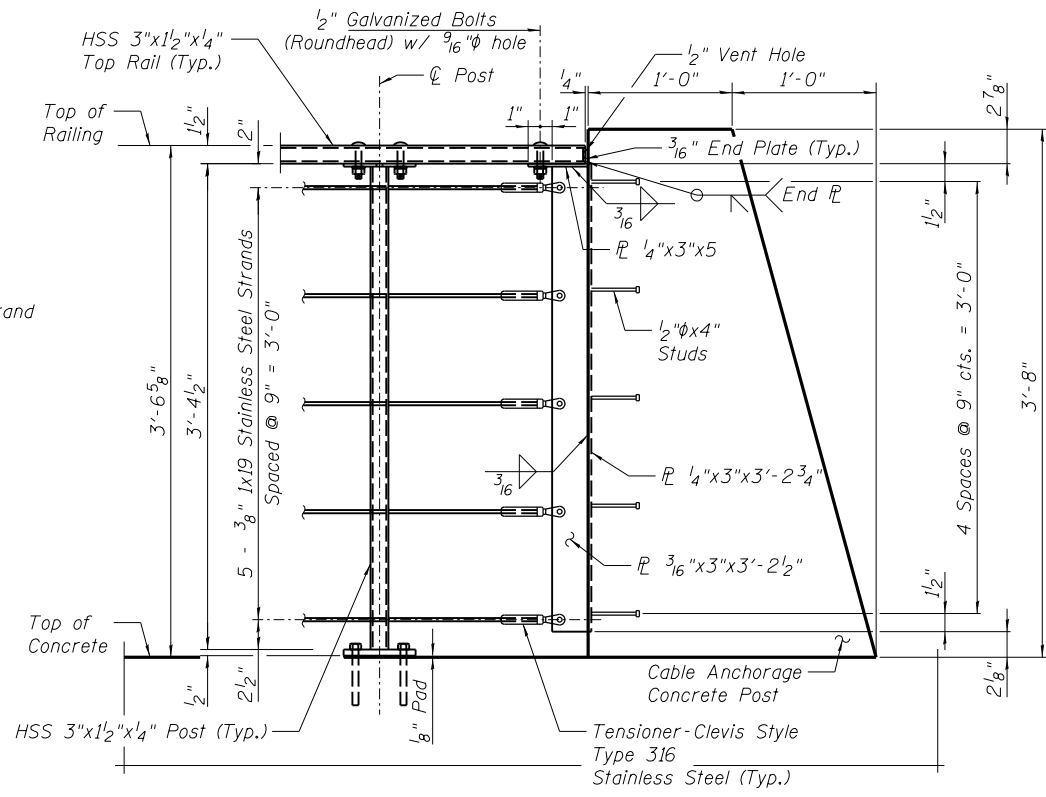
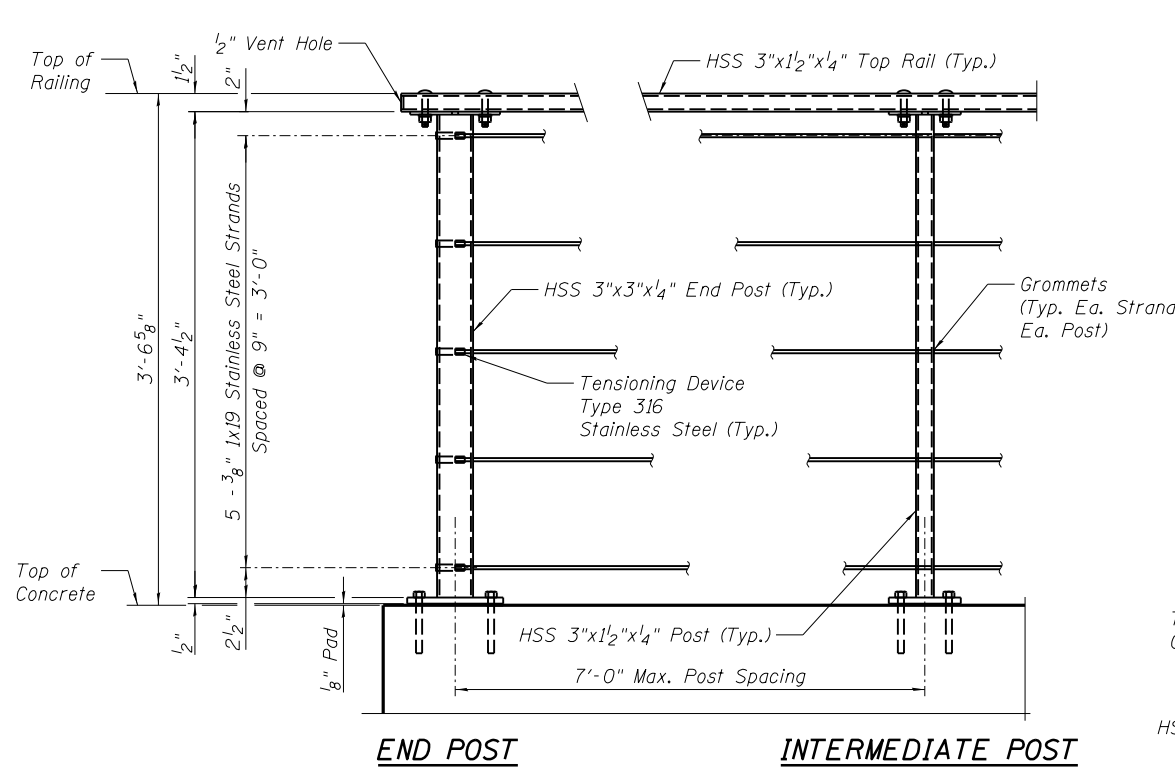
Structural steel plates and bars of the Steel Railing shall conform to the requirements of ASTM A36/36M.

Tubular steel posts shall be according to the requirements of ASTM A500, Grade B.

All steel rail members, with the exception of the stainless steel strand and fittings, shall be hot dipped galvanized according to 509.05 of the Standard Specifications.

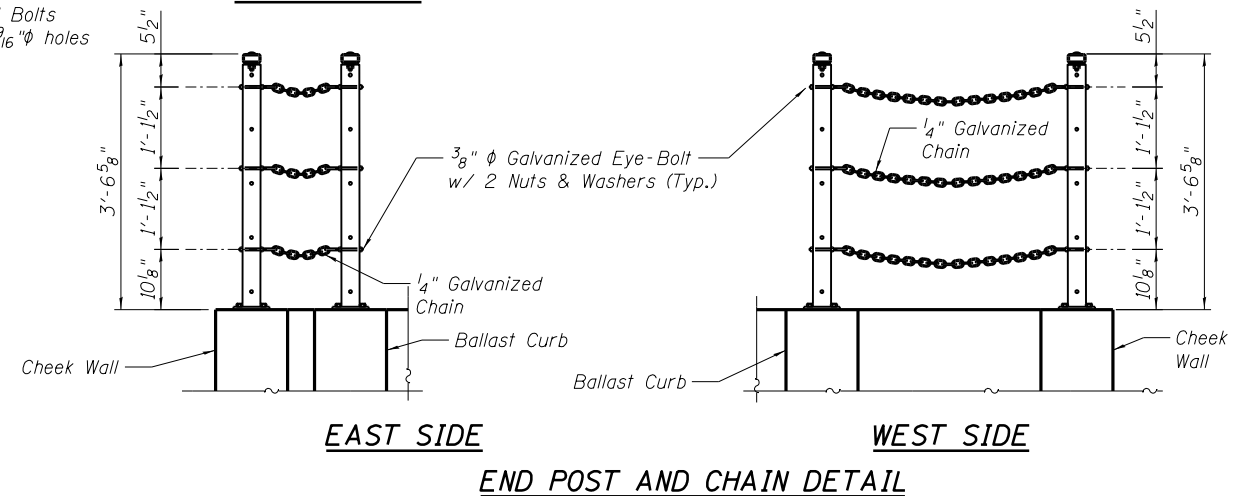
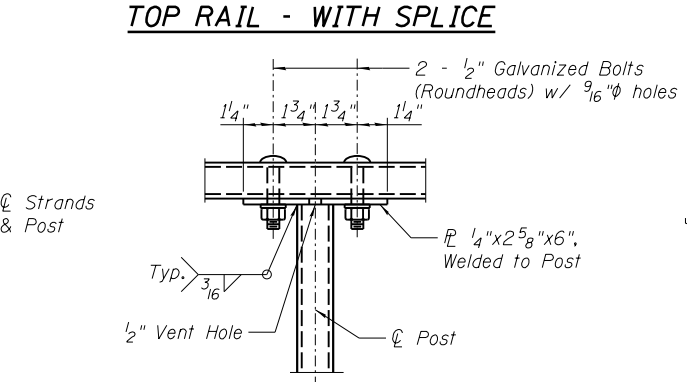
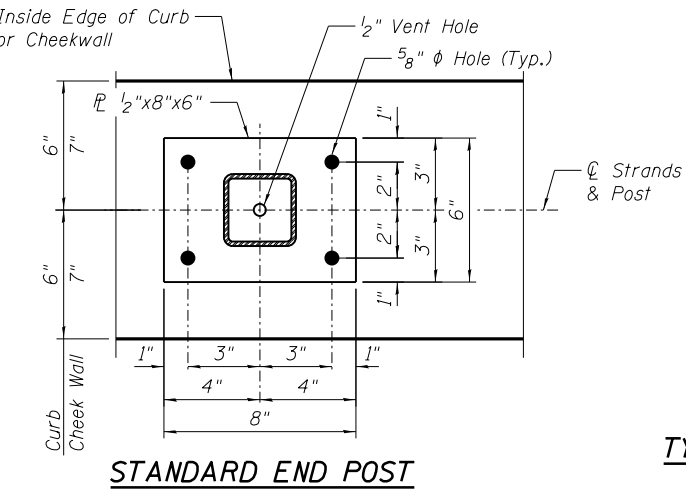
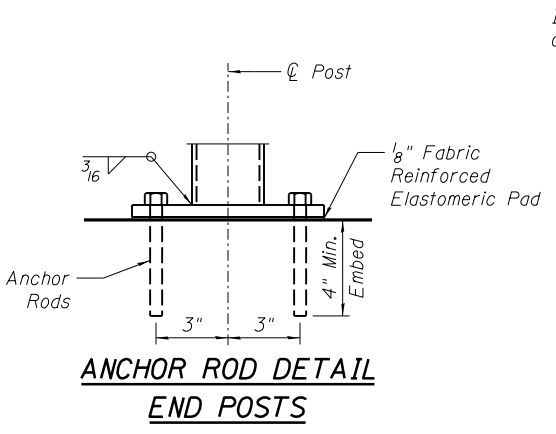
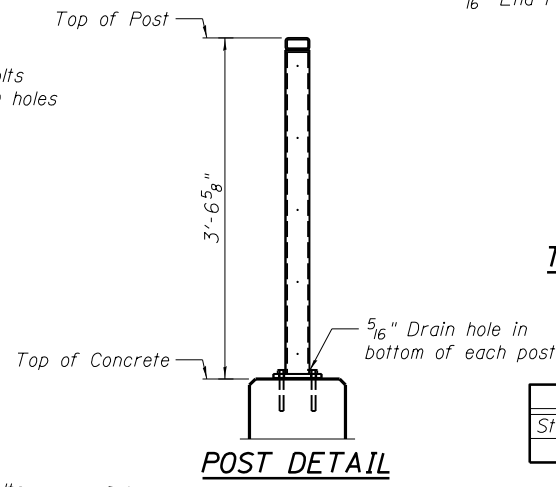
All studs shall be 1/2"x4" granular or solid flux filled headed studs automatically end welded to plates.

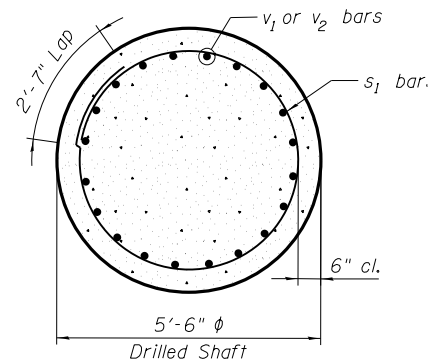
See Sheet 5 of 16 for rail post spacing.



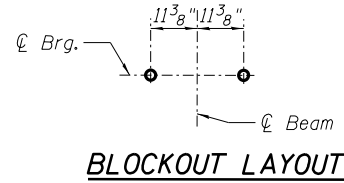
BILL OF MATERIAL

ITEM	UNIT	TOTAL
Steel Railing (Special)	Foot	255

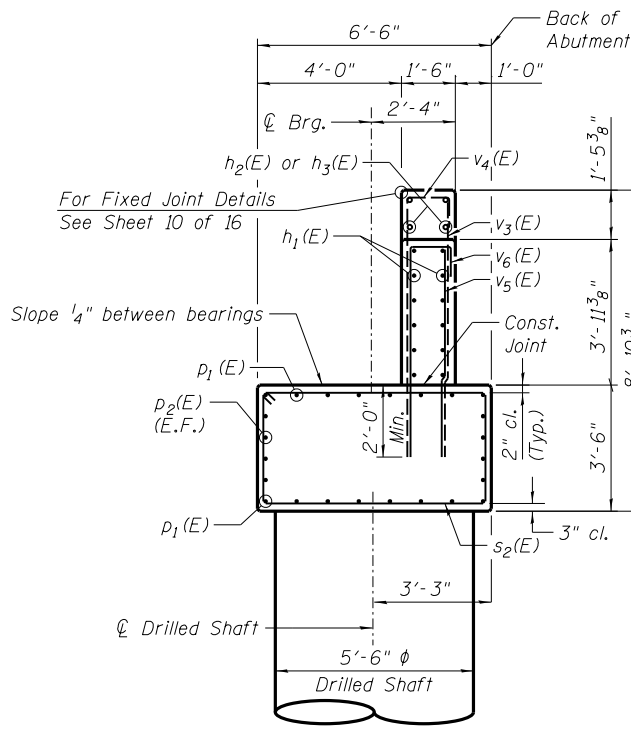




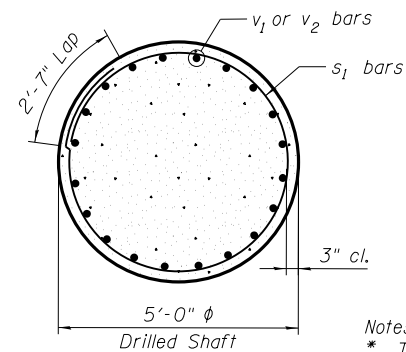
SECTION B-B



BLOCKOUT LAYOUT

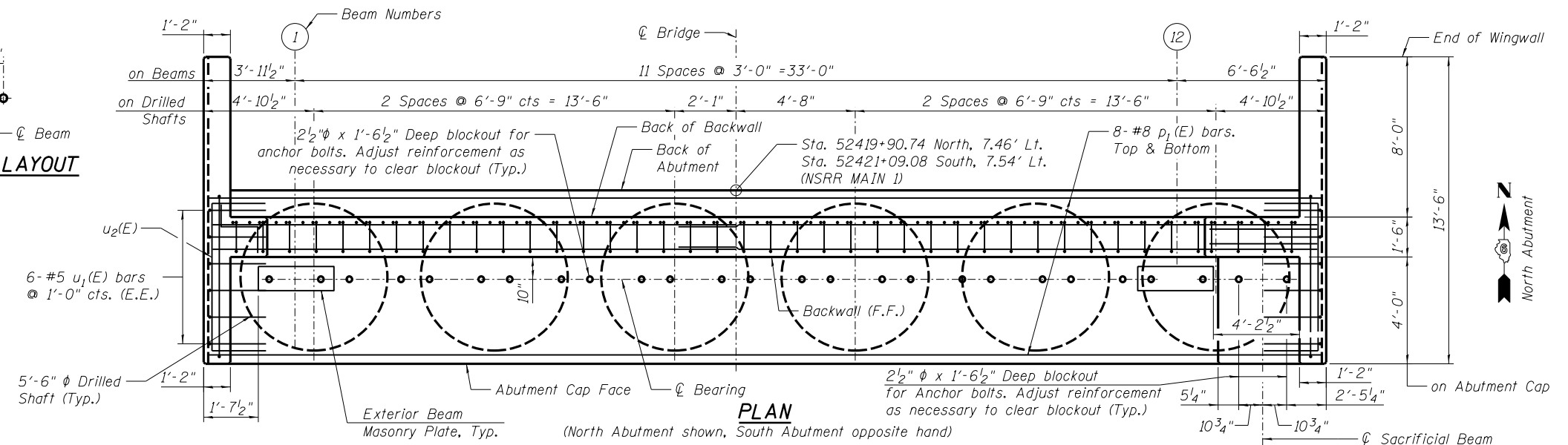


SECTION A-A

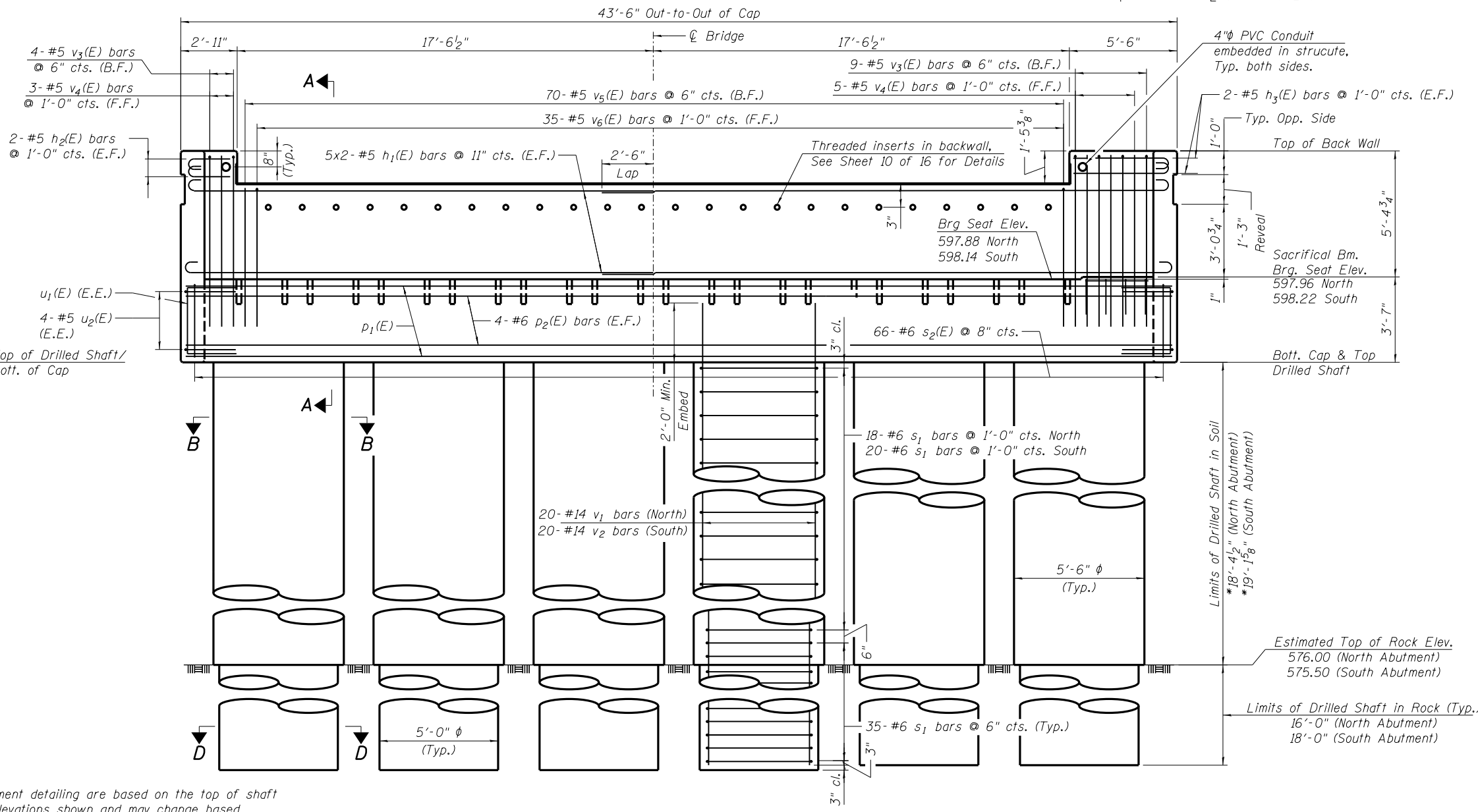


SECTION D-D

Notes:
 * The quantities and reinforcement detailing are based on the top of shaft and the estimated top of rock elevations shown and may change based on the actual top of rock encountered at each shaft and the final top of shaft elevation.



PLAN



ELEVATION - NORTH ABUTMENT, SOUTH ABUTMENT OPP. HAND
 (Looking North)

Notes:
 See Sheet 14 of 16 for other details.

pw:\hansoninc-pw-bentley.com\hanson-pw-01\Documents\09Jobs\09101798\Usable Segments III - V - V\CAD\Struct\Usable Segment V\Cook\Sheet\084-9965-09L01798-013-NorthSouthAbutment

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PLOT DATE = 1/18/2021	DRAWN - CDP	REVISED -
	CHECKED - MJW	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH AND SOUTH ABUTMENT
STRUCTURE NO. 084-9965

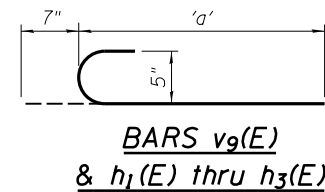
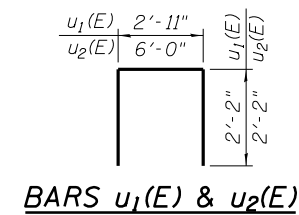
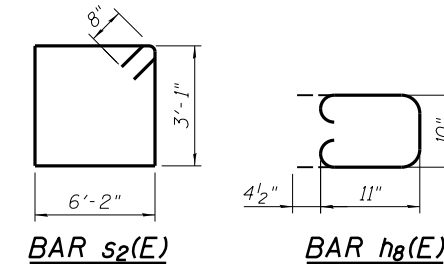
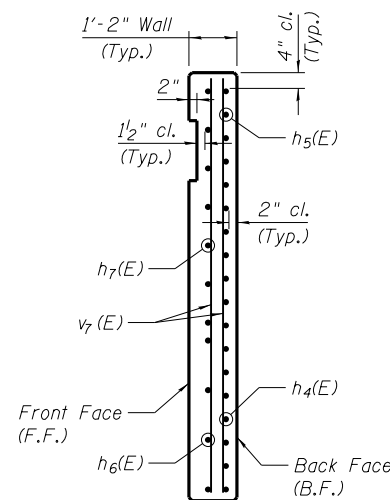
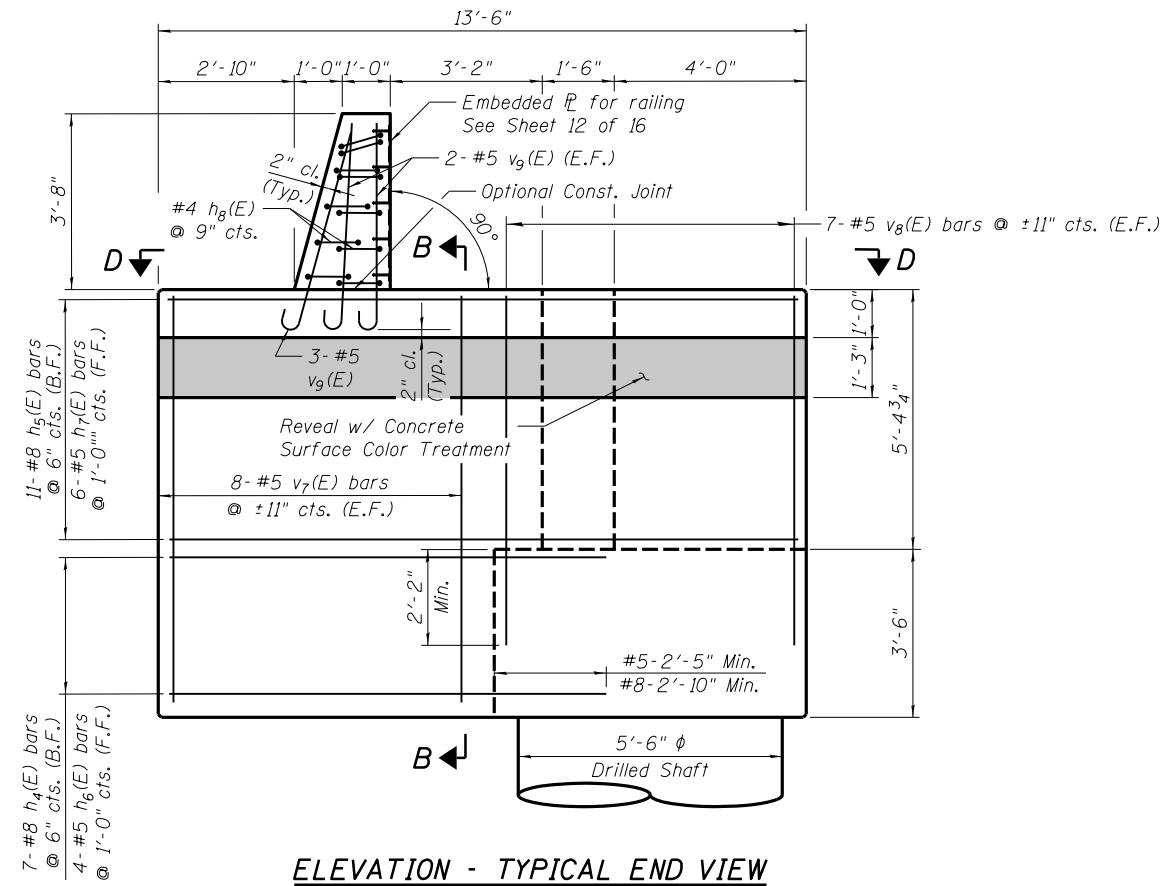
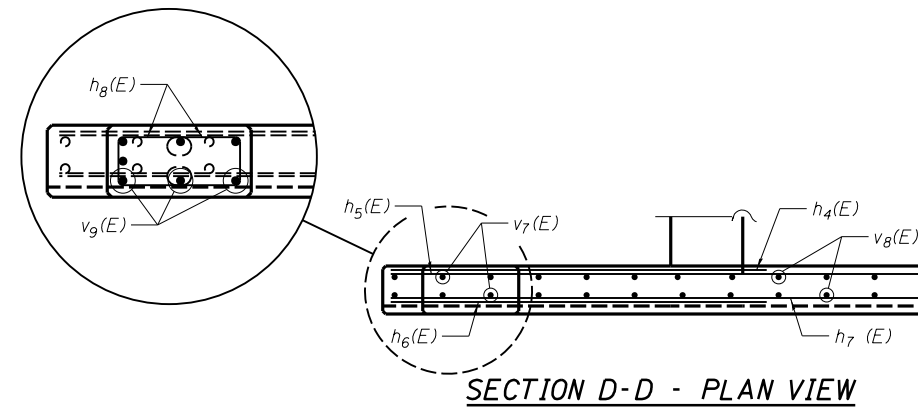
SHEET NO. 13 OF 16 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO.			93747	
7985A & 8192 ILLINOIS FED. AID PROJECT				

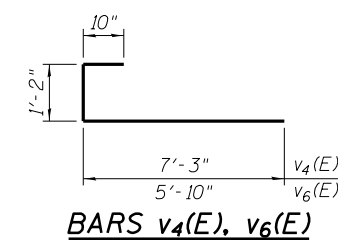
FINAL



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Bar	'a'
h1(E)	23'-0"
h2(E)	2'-5"
h3(E)	5'-0"
v9(E)	4'-4"



**BILL OF MATERIAL
NORTH & SOUTH ABUTMENTS**

Bar	No.	Size	Length	Shape
h1(E)	40	#5	23'-7"	—
h2(E)	8	#5	3'-0"	—
h3(E)	8	#5	5'-7"	—
h4(E)	28	#8	9'-8"	—
h5(E)	44	#8	13'-2"	—
h6(E)	16	#5	9'-3"	—
h7(E)	24	#5	13'-2"	—
h8(E)	40	#4	3'-5"	□
p1(E)	32	#8	43'-2"	—
p2(E)	16	#6	43'-2"	—
s1	648	#6	16'-9"	○
s2(E)	132	#6	19'-10"	□
u1(E)	24	#5	7'-3"	U
u2(E)	16	#5	10'-4"	U
v1	120	#14	36'-3"	—
v2	120	#14	39'-0"	—
v3(E)	26	#5	7'-3"	—
v4(E)	16	#5	9'-3"	—
v5(E)	140	#5	5'-10"	—
v6(E)	70	#5	7'-10"	—
v7(E)	64	#5	8'-6"	—
v8(E)	56	#5	7'-5"	—
v9(E)	28	#5	4'-11"	—
Structure Excavation			Cu. Yds.	69
Concrete Structures			Cu. Yds.	109.8
Reinforcement Bars			Pound	85380
Reinforcement Bars, Epoxy Coated			Pound	15810
Drilled Shaft in Soil			Cu. Yds.	198.1
Drilled Shaft in Rock			Cu. Yds.	148.3
Concrete Sealer			Sq. Ft.	936
Conduit Embedded in Structure, 4" Dia., PVC			Foot	6
Concrete Surface Color Treatment			Sq. Ft.	68

Notes:
Four steps monolithically with cap.
Space cap reinforcement to miss blockouts for anchor bolts.

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PLOT DATE = 1/18/2021	DRAWN - CDP	REVISED -
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH AND SOUTH ABUTMENT DETAILS
STRUCTURE NO. 084-9965

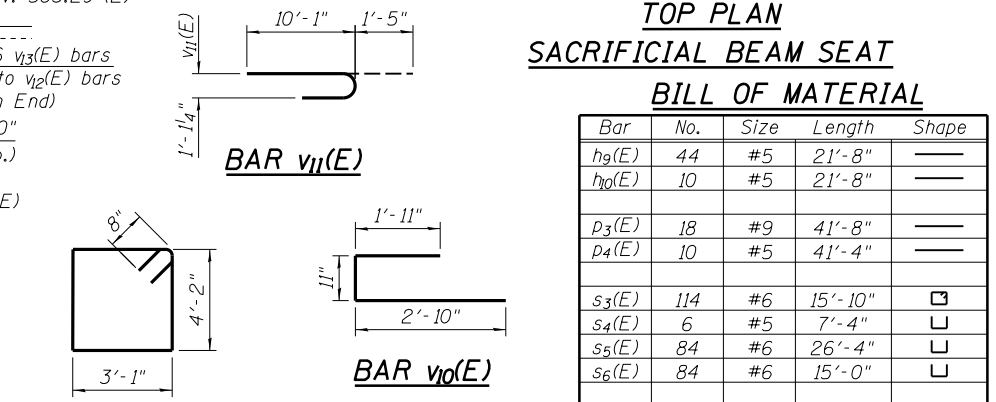
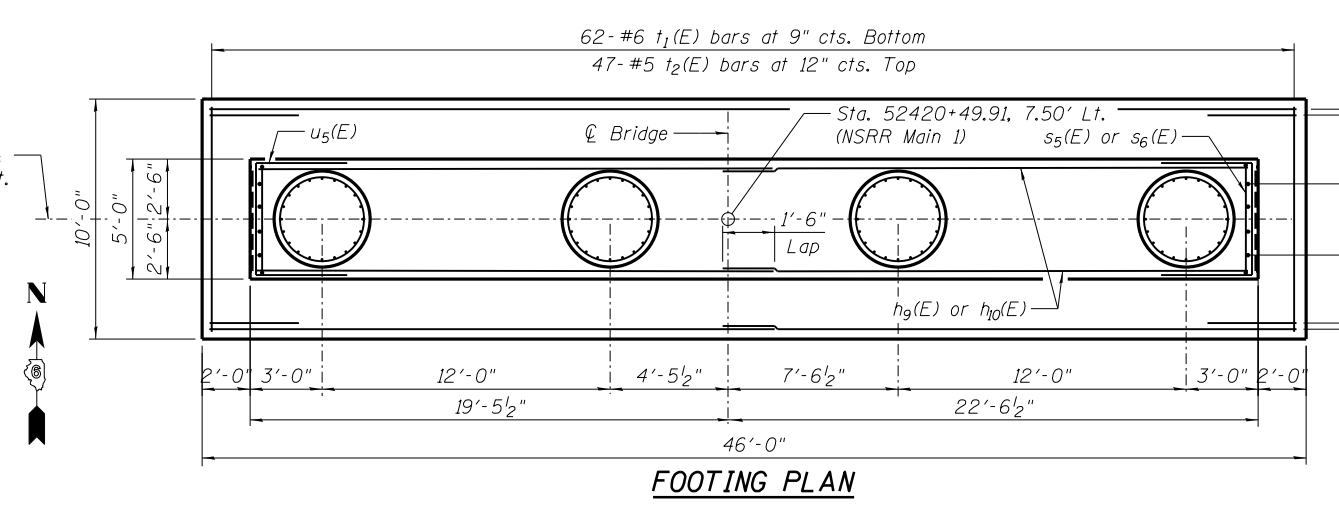
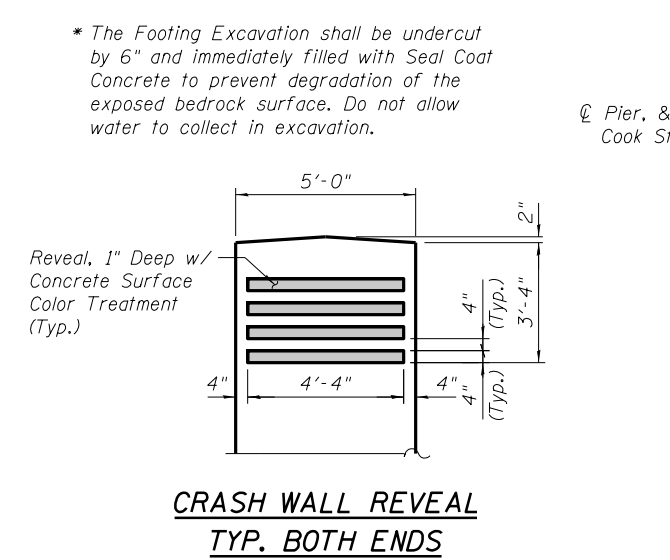
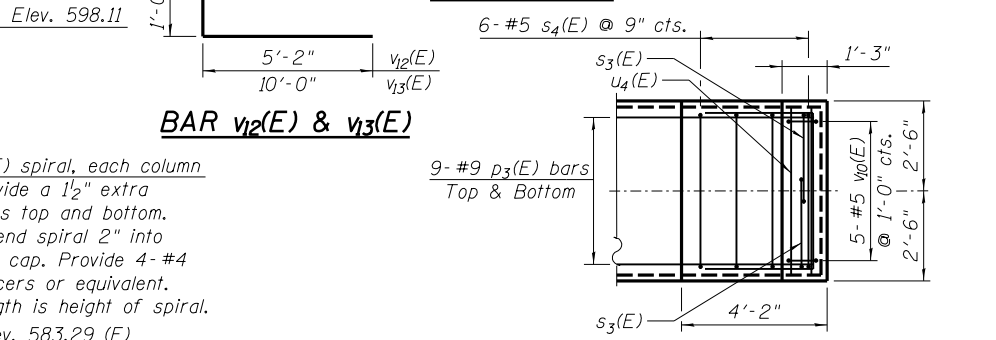
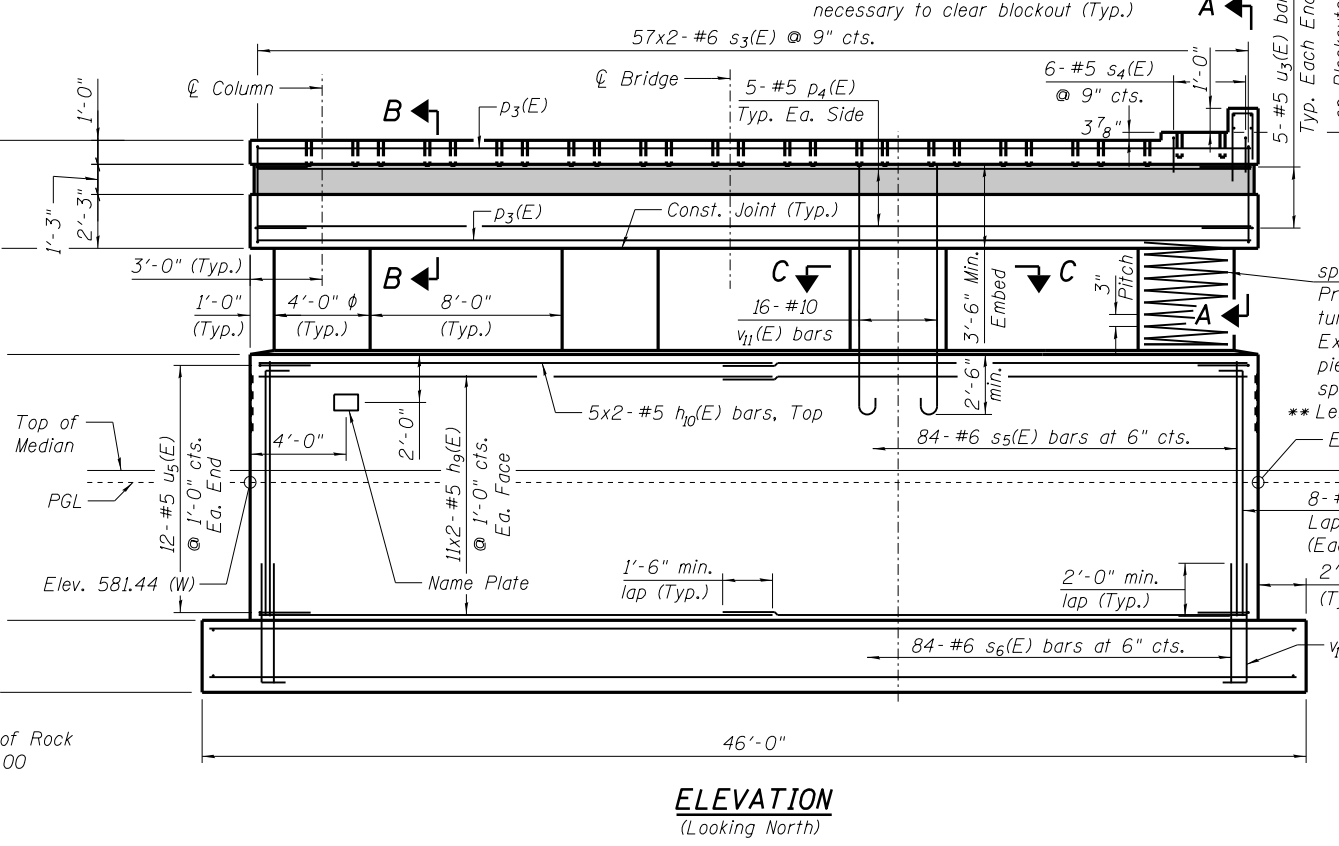
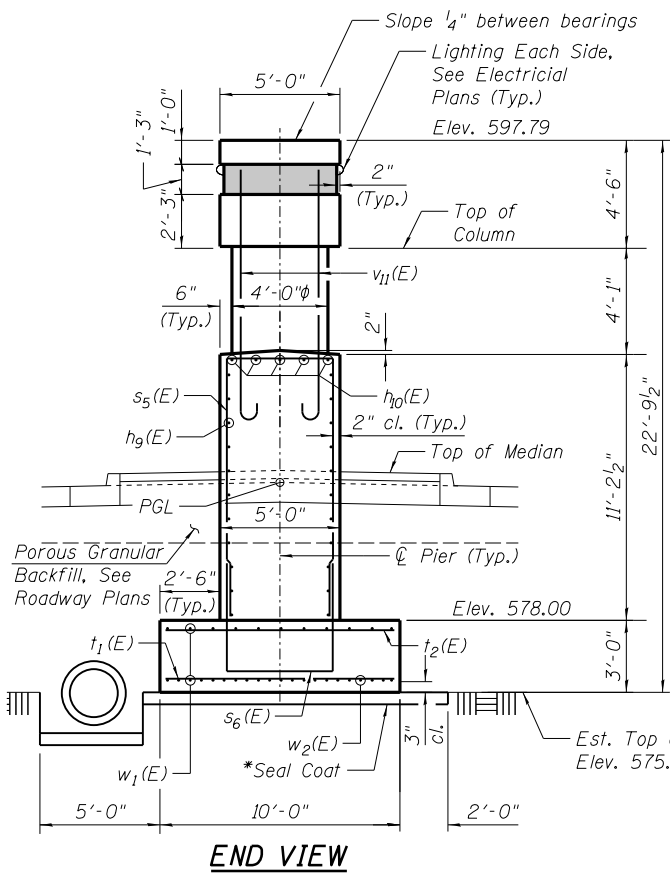
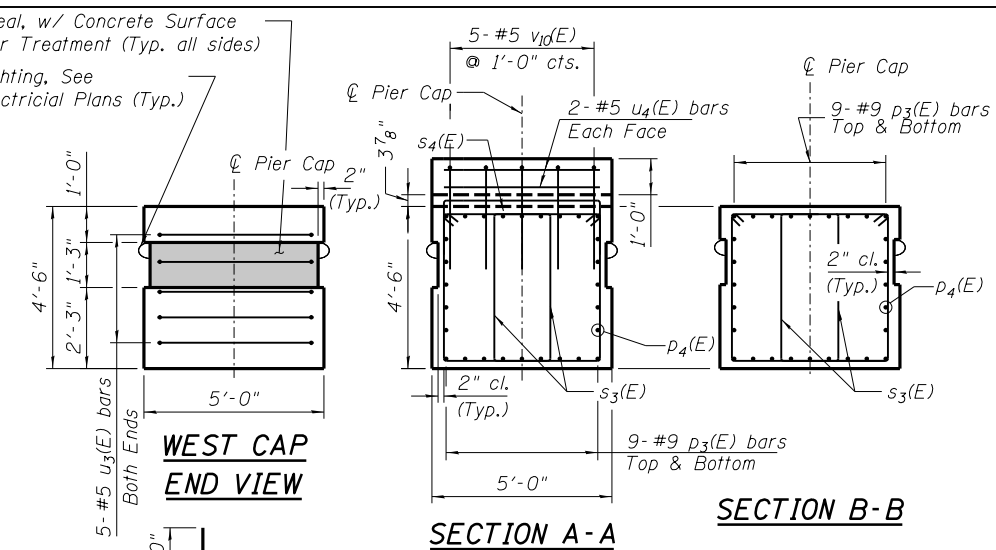
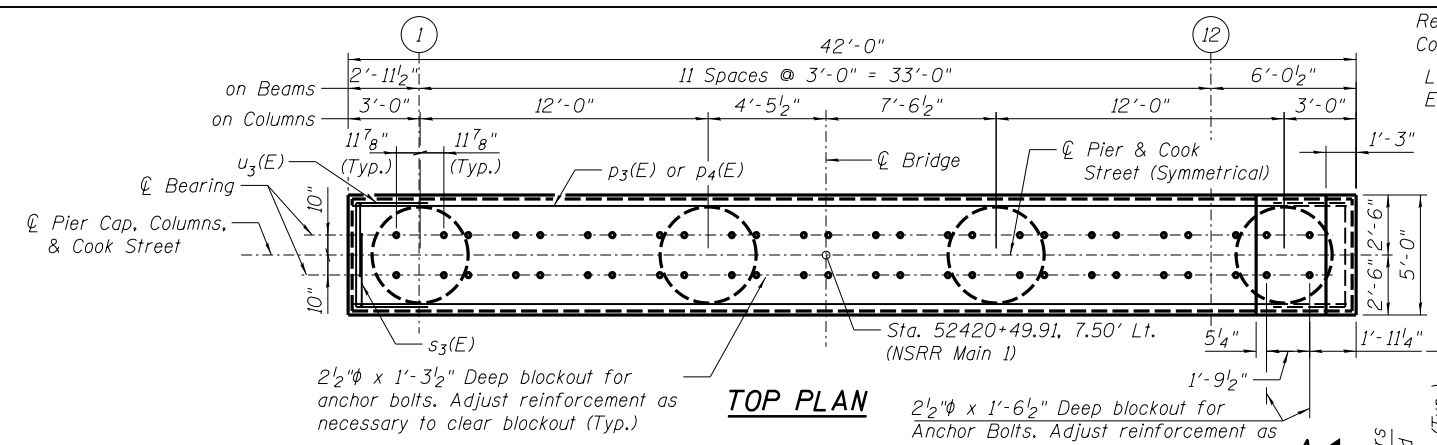
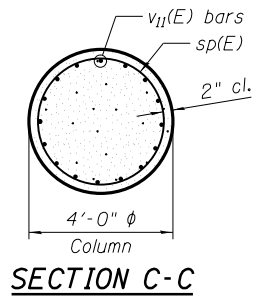
SHEET NO. 14 OF 16 SHEETS

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			CONTRACT NO. 93747	
• 7985A & 8193 ILLINOIS FED. AID PROJECT				

FINAL



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BARS s3(E)

Bar	'a'	'b'
s4(E)	4'-4"	1'-6"
s5(E)	4'-8"	10'-10"
s6(E)	4'-8"	5'-2"
u3(E)	4'-2"	2'-2"
u5(E)	4'-6"	1'-8"

BARS s4(E), s5(E), s6(E), u3(E) & u5(E)

Bar	No.	Size	Length	Shape
h9(E)	44	#5	21'-8"	—
h10(E)	10	#5	21'-8"	—
p3(E)	18	#9	41'-8"	—
p4(E)	10	#5	41'-4"	—
s3(E)	114	#6	15'-10"	□
s4(E)	6	#5	7'-4"	U
s5(E)	84	#6	26'-4"	U
s6(E)	84	#6	15'-0"	U
sp(E)	4	#4	4'-3"	—
t1(E)	62	#6	9'-8"	—
t2(E)	47	#5	9'-8"	—
u3(E)	10	#5	8'-6"	U
u4(E)	4	#5	4'-8"	—
u5(E)	24	#5	7'-10"	U
v10(E)	5	#5	5'-8"	U
v11(E)	64	#10	11'-6"	U
v12(E)	16	#6	6'-2"	U
v13(E)	16	#6	11'-10"	U
w1(E)	44	#5	23'-7"	—
w2(E)	20	#5	4'-8"	—

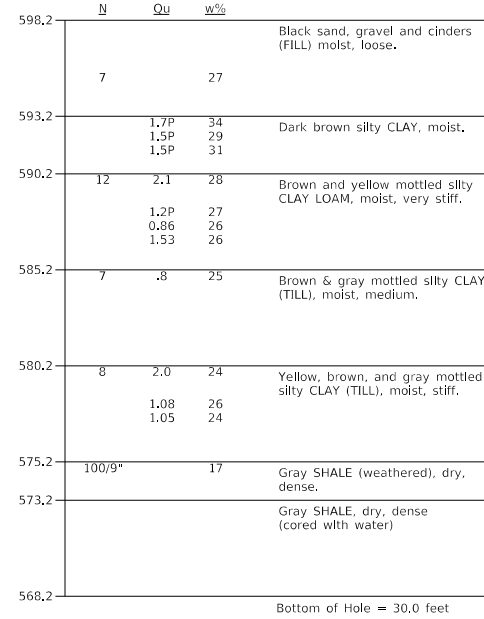
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
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h10(E)	10	#5	21'-8"	—
p3(E)	18	#9	41'-8"	—
p4(E)	10	#5	41'-4"	—
s3(E)	114	#6	15'-10"	□
s4(E)	6	#5	7'-4"	U
s5(E)	84	#6	26'-4"	U
s6(E)	84	#6	15'-0"	U
sp(E)	4	#4	4'-3"	—
t1(E)	62	#6	9'-8"	—
t2(E)	47	#5	9'-8"	—
u3(E)	10	#5	8'-6"	U
u4(E)	4	#5	4'-8"	—
u5(E)	24	#5	7'-10"	U
v10(E)	5	#5	5'-8"	U
v11(E)	64	#10	11'-6"	U
v12(E)	16	#6	6'-2"	U
v13(E)	16	#6	11'-10"	U
w1(E)	44	#5	23'-7"	—
w2(E)	20	#5	4'-8"	—

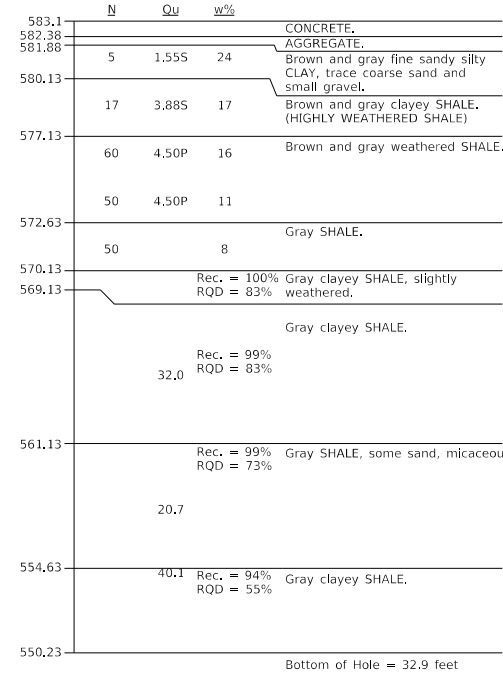
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 Rock Excavation for Structures Cu. Yds. 41
 Concrete Structures Cu. Yds. 181.1
 Seal Coat Concrete Cu. Yds. 15.0
 Reinforcement Bars, Epoxy Coated Pound 19230
 Concrete Sealer Sq. Ft. 1696
 Concrete Surface Color Treatment Sq. Ft. 128

Notes:
 Space reinforcement in cap to miss blockouts for anchor bolts.
 Pour steps monolithically with cap.
 Bars indicated thus 7x2-#5 etc indicates 7 lines of bars with 2 lengths per line.
 See Electrical Plans for Conduit embedded in cap and column.

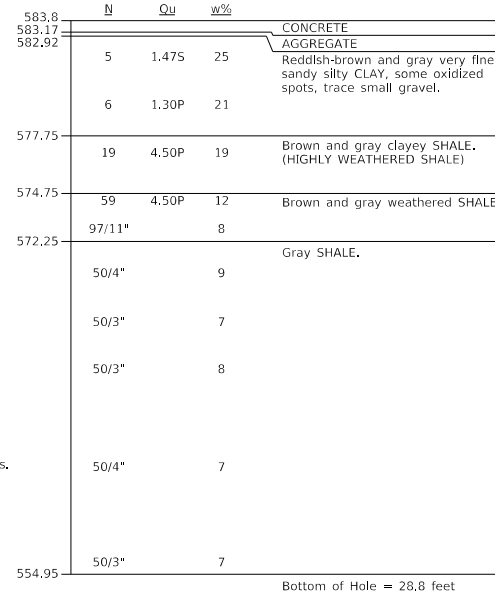
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Sta. 17+97, 45' RT
1/6/75



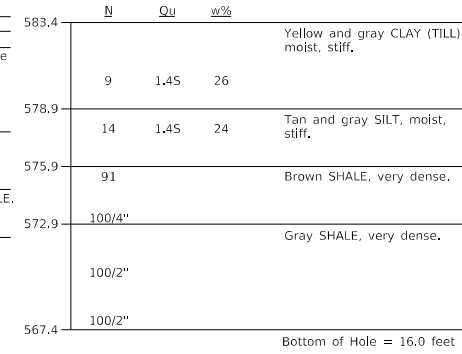
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7/1/13



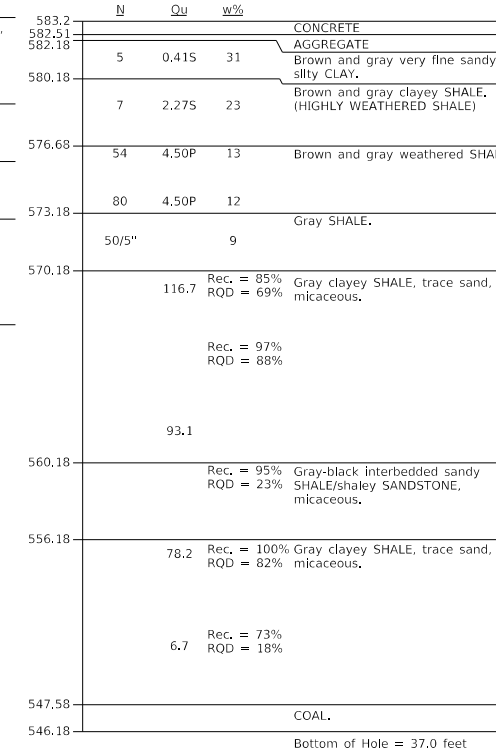
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7/1/13



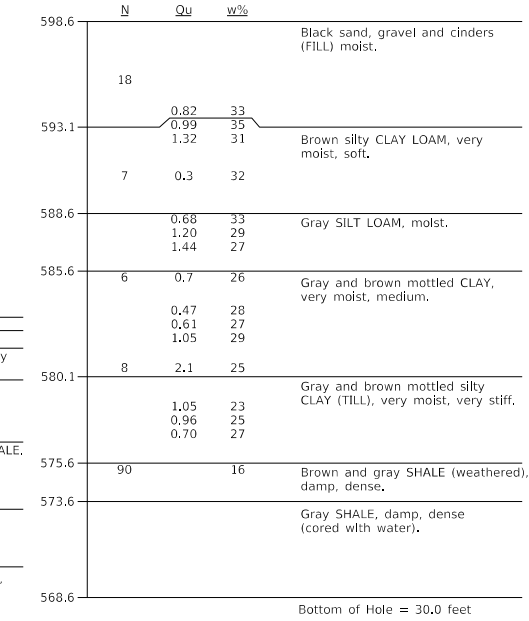
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Sta. 17+94, 3' LT
8/24/72



B-022
Sta. 18+53, 29' LT
7/2/13



3A
Sta. 17+83, 64' LT
1/6/75



LEGEND

N Standard Penetration Test N (blows/ft)

Qu Unconfined Strength (tsf)

w% Natural Moisture Content (%)

DD Water Surface Elevation Encountered in Boring
558.10 ▽ DD = during drilling
Oh = at completion
24h = 24 hours after completion

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FINAL



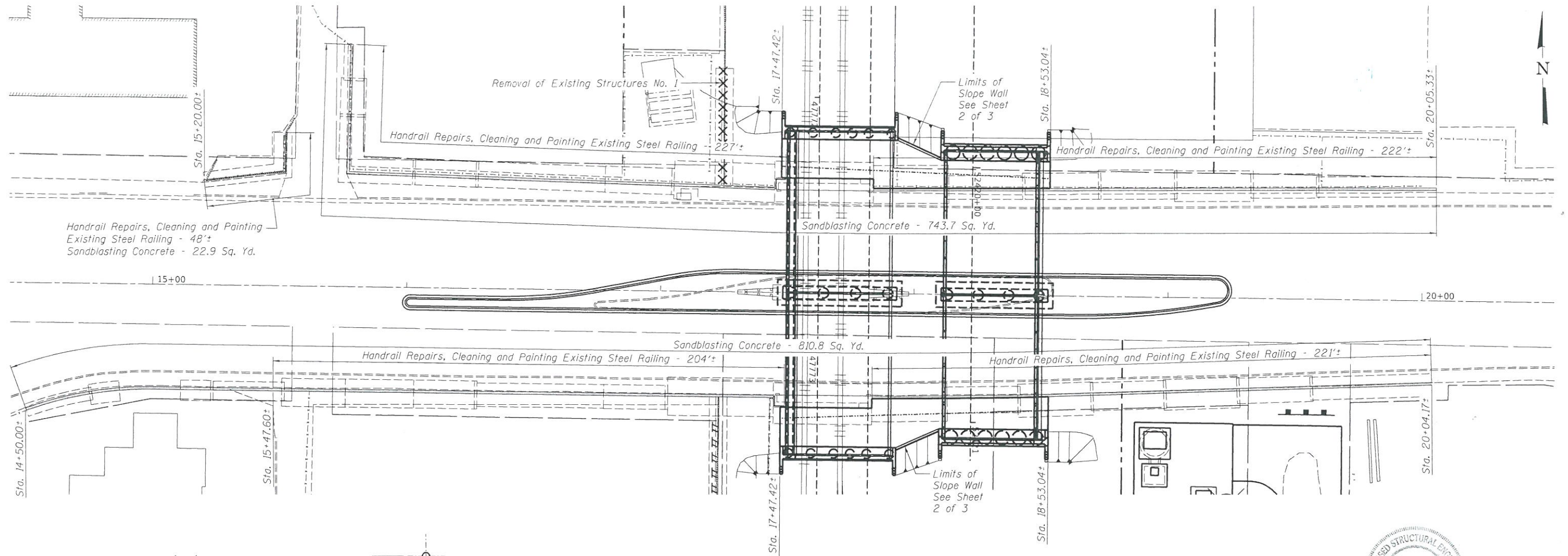
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PLOT DATE = 1/18/2021	CHECKED - MJW	REVISIED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**SUBSURFACE DATA PROFILE
STRUCTURE NO. 084-9965**

SHEET NO. 16 OF 16 SHEETS

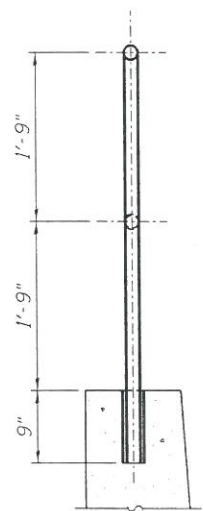
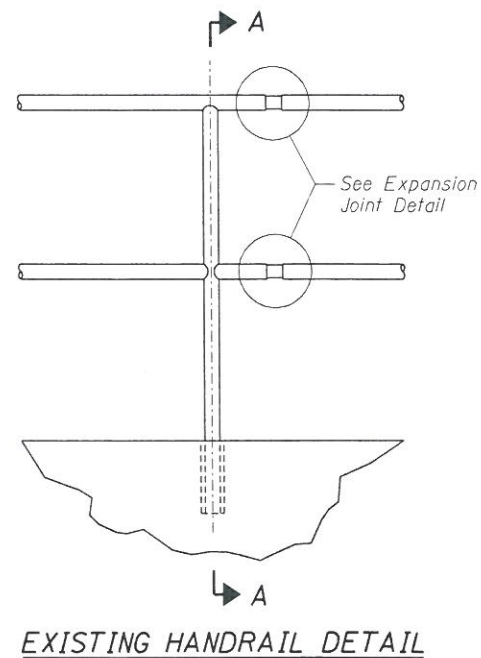
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*	19-00488-00-BR	SANGAMON	347	228
			CONTRACT NO.	93747
* 7985A & 8195		ILLINOIS FED. AID PROJECT		



PLAN

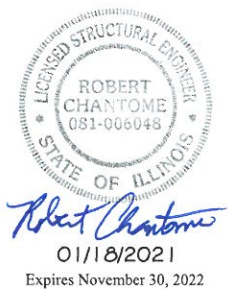
Notes:

1. Within the limits shown in the plan, all exposed faces (front, top, and back) of existing retaining walls and bridge abutments shall be cleaned by sandblasting. See Special Provisions.
2. Handrail Repairs shall include repairs, modifications, removals, and new sections for two-rail handrails within the limits shown in the plan. See Special Provisions.
3. Cleaning and painting of the existing steel railing including any new, replaced or altered sections shall be as specified in the special provision for "Cleaning and Painting Existing Steel Structures". All exposed surfaces of the railing, within the limits shown on the plans, shall be cleaned per Power Tool Cleaning Modified SP3. The areas cleaned shall be painted according to the requirements of System 2 PS/EM/U. The color of the final finish coat shall be Blue (Munsell No. 10B 3/6).
4. Containment of cleaning residue is required to control nuisance dust. See special provisions.



SECTION A-A

EXPANSION JOINT DETAIL



INDEX OF SHEETS

1. General Plan and Handrail Modifications
2. Slope Wall Details
3. Wall Modifications

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Removal of Existing Structures No. 1	Each	1
Concrete Removal	Cu. Yd.	15.8
Slope Wall 4 Inch	Sq. Yd.	331
Handrail Repairs	L. Sum	1
Sandblasting Concrete	Sq. Yd.	1577
Cleaning and Painting Existing Steel Railing	L. Sum	1
Containment and Disposal of Non-Lead Paint Cleaning Residues No. 1	L. Sum	1

FINAL



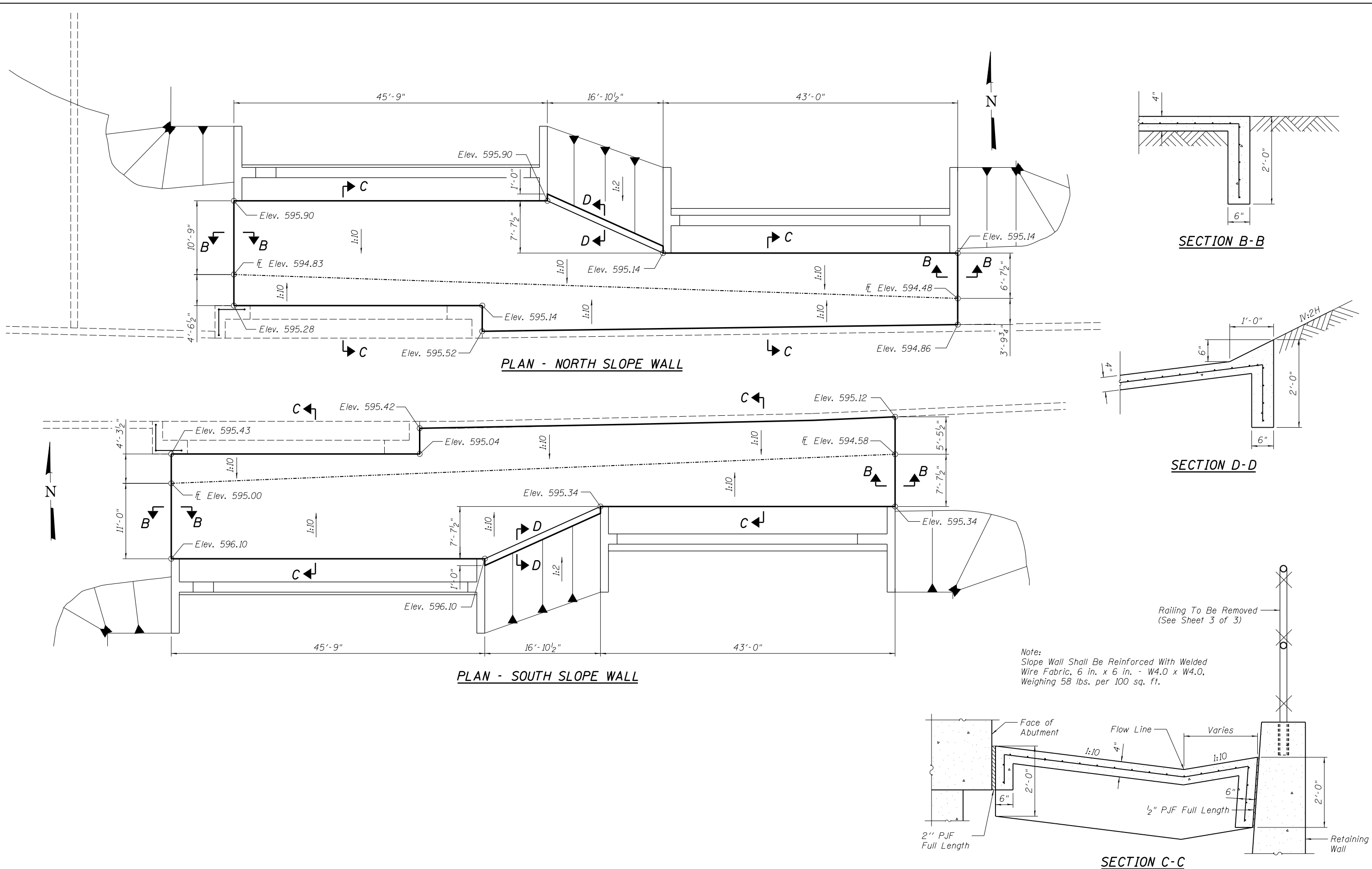
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**GENERAL PLAN AND HANDRAIL MODIFICATIONS
COOK STREET RETAINING WALLS**

SHEET NO. 1 OF 3 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	19-00488-00-BR	SANGAMON	347	229
			CONTRACT NO. 93747	
7985A & 8196		ILLINOIS FED. AID PROJECT		



Note:
Slope Wall Shall Be Reinforced With Welded
Wire Fabric, 6 in. x 6 in. - W4.0 x W4.0,
Weighing 58 lbs. per 100 sq. ft.

Railing To Be Removed
(See Sheet 3 of 3)

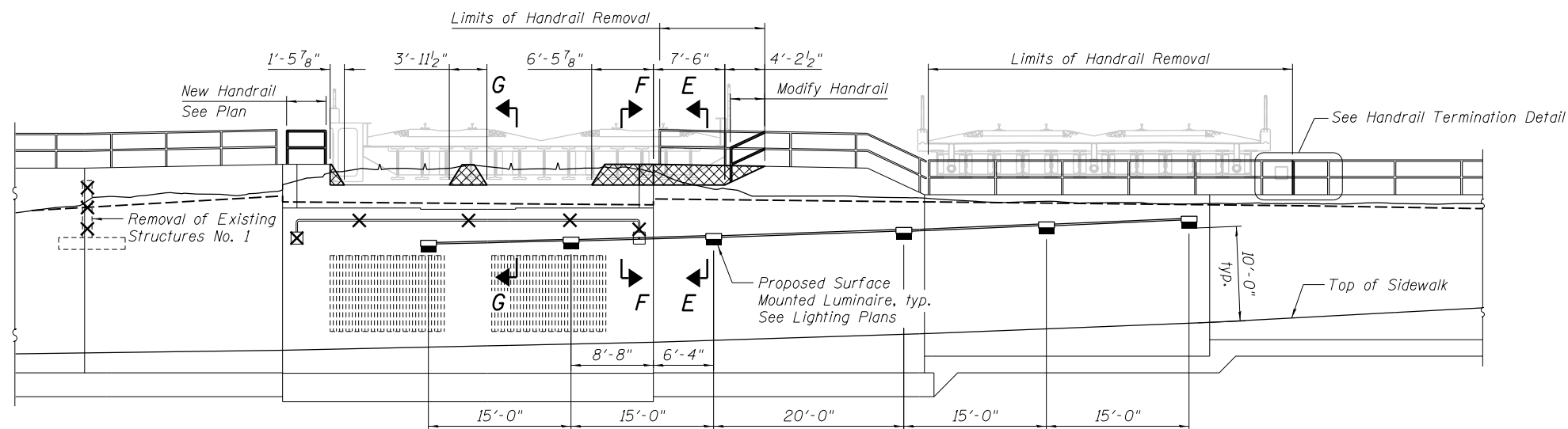
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	USER NAME = Pop00275	DESIGNED -	REVISED -
	PLOT SCALE = 0.167' / 1"	CHECKED - RGC	REVISED -
	PLOT DATE = 1/18/2021	DRAWN - EJM	REVISED -
	CHECKED - RGC	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

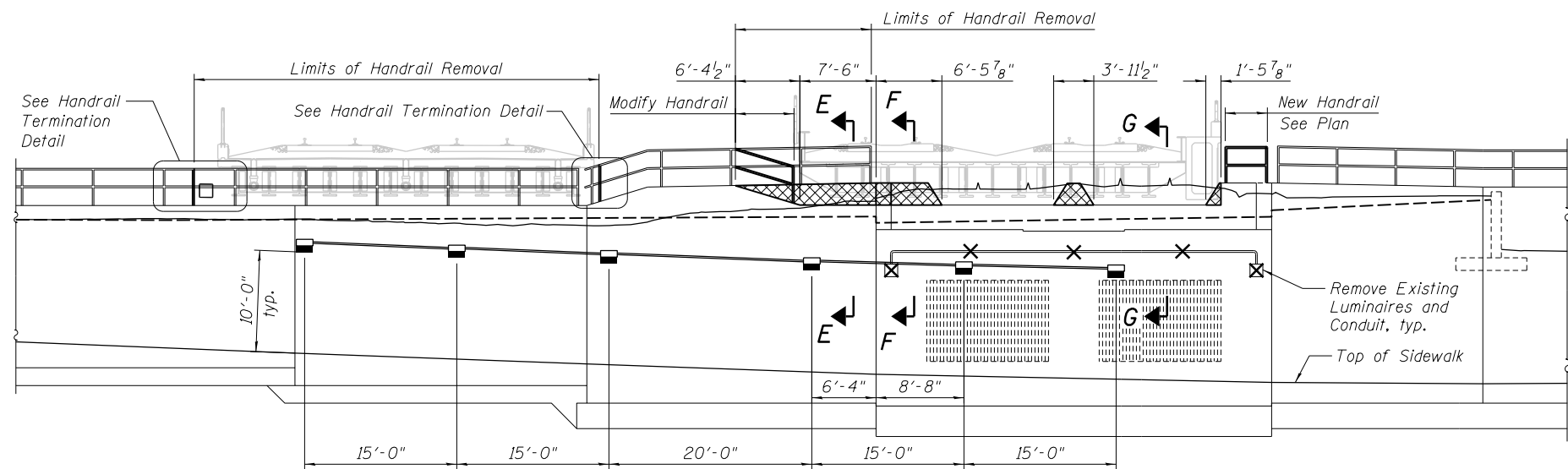
SLOPE WALL DETAILS
COOK STREET RETAINING WALLS

SHEET NO. 2 OF 3 SHEETS

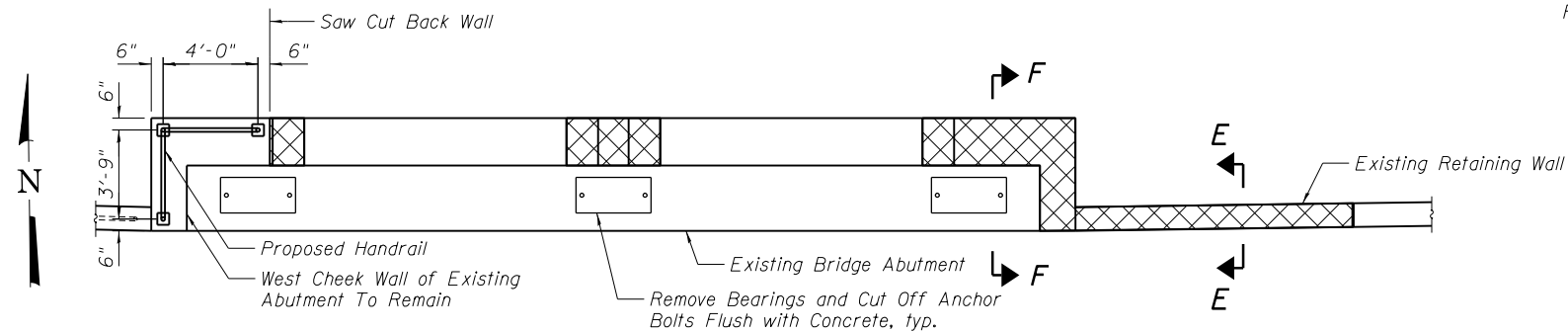
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
•	19-00488-00-BR	SANGAMON	347	230
CONTRACT NO. 93747				
• 7985A & 8197 ILLINOIS FED. AID PROJECT				



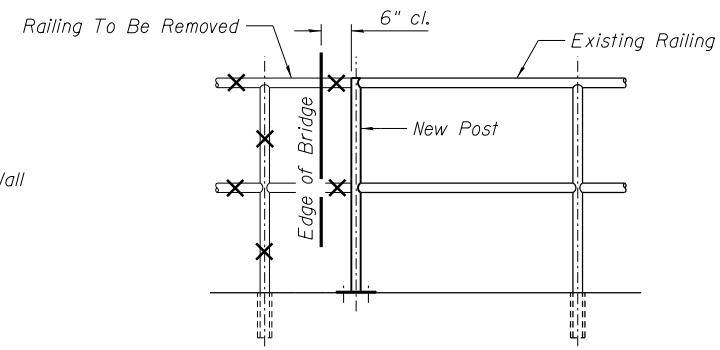
ELEVATION - NORTH WALL
(Looking North at Face of Wall)



ELEVATION - SOUTH WALL
(Looking South at Face of Wall)



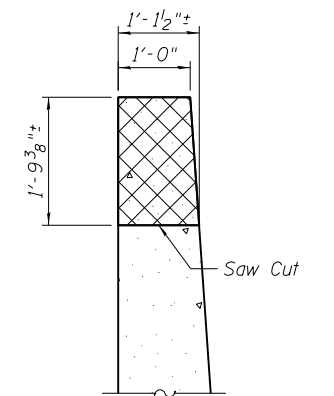
PLAN - NORTH ABUTMENT
South Abutment Similar



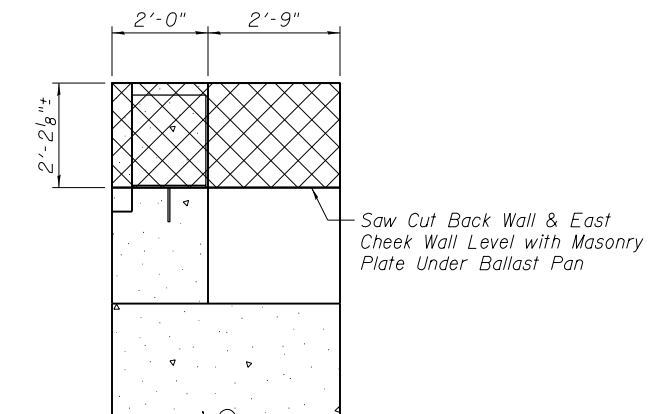
HANDRAIL TERMINATION DETAIL

LEGEND

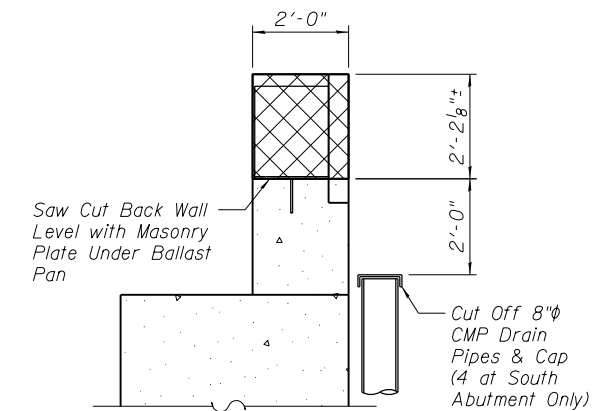
Limits of Concrete Removal



SECTION E-E - RETAINING WALL



SECTION F-F - NORTH ABUTMENT
South Abutment Similar



SECTION G-G

FINAL



USER NAME = Pop00275	DESIGNED -	REVISED -
PLOT SCALE = 0.167' / 1" =	CHECKED - RGC	REVISED -
PLOT DATE = 1/18/2021	DRAWN - EJM	REVISED -
	CHECKED - RGC	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**WALL MODIFICATIONS
COOK STREET RETAINING WALLS**

SHEET NO. 3 OF 3 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
•	19-00488-00-BR	SANGAMON	347	231
			CONTRACT NO. 93747	
• 7985A & 8198 ILLINOIS FED. AID PROJECT				

Benchmark:
 BM NGS M-13: Brass Disk on Sw Corner RR Bridge
 Abutment, South Grand Ave.
 Underpass, Elevation = 598.414

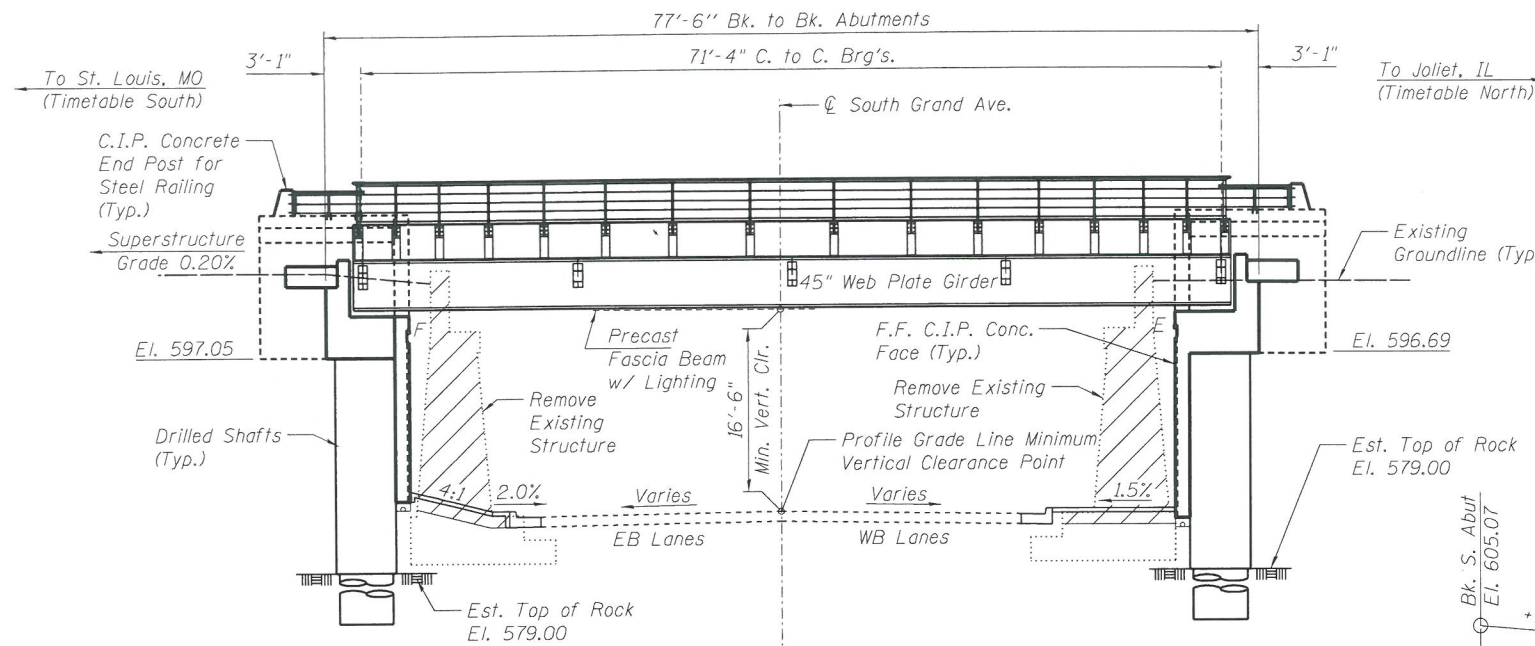
Existing NSRR Structure: SN 084-9947 - Built in
 1940. One Span Steel through plate
 girder structure supported on closed
 abutments. Bk. to Bk. Abutment
 length is 60'-0" and ctr. to ctr.
 through plate girder width varies
 from 51'-6" to 59'-0". Structure to
 be removed and replaced.

Traffic Control: Temporary Lane Closures and
 Complete Closures

Salvage: None

Construction Sequence: See Track and Retaining
 Wall Staging Plans

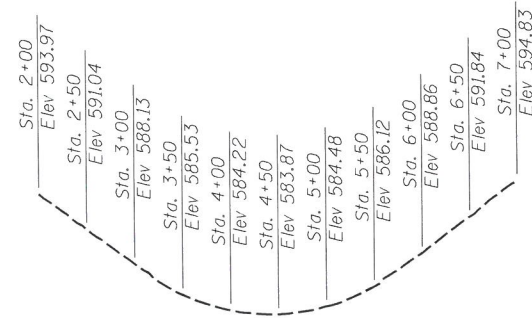
Railroad utilities may exist within NSRR
 right-of-way. Prior to the start of any
 construction or excavation, utility relocations
 will have to be coordinated with the NSRR.



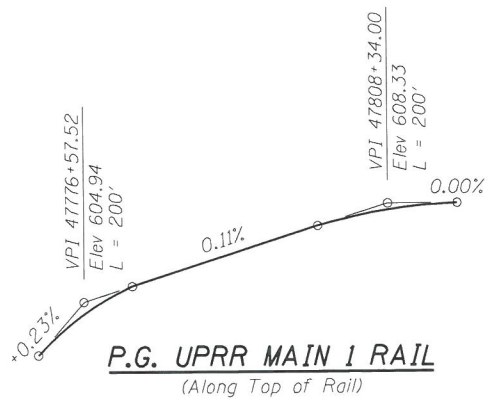
ELEVATION
 (Looking West)



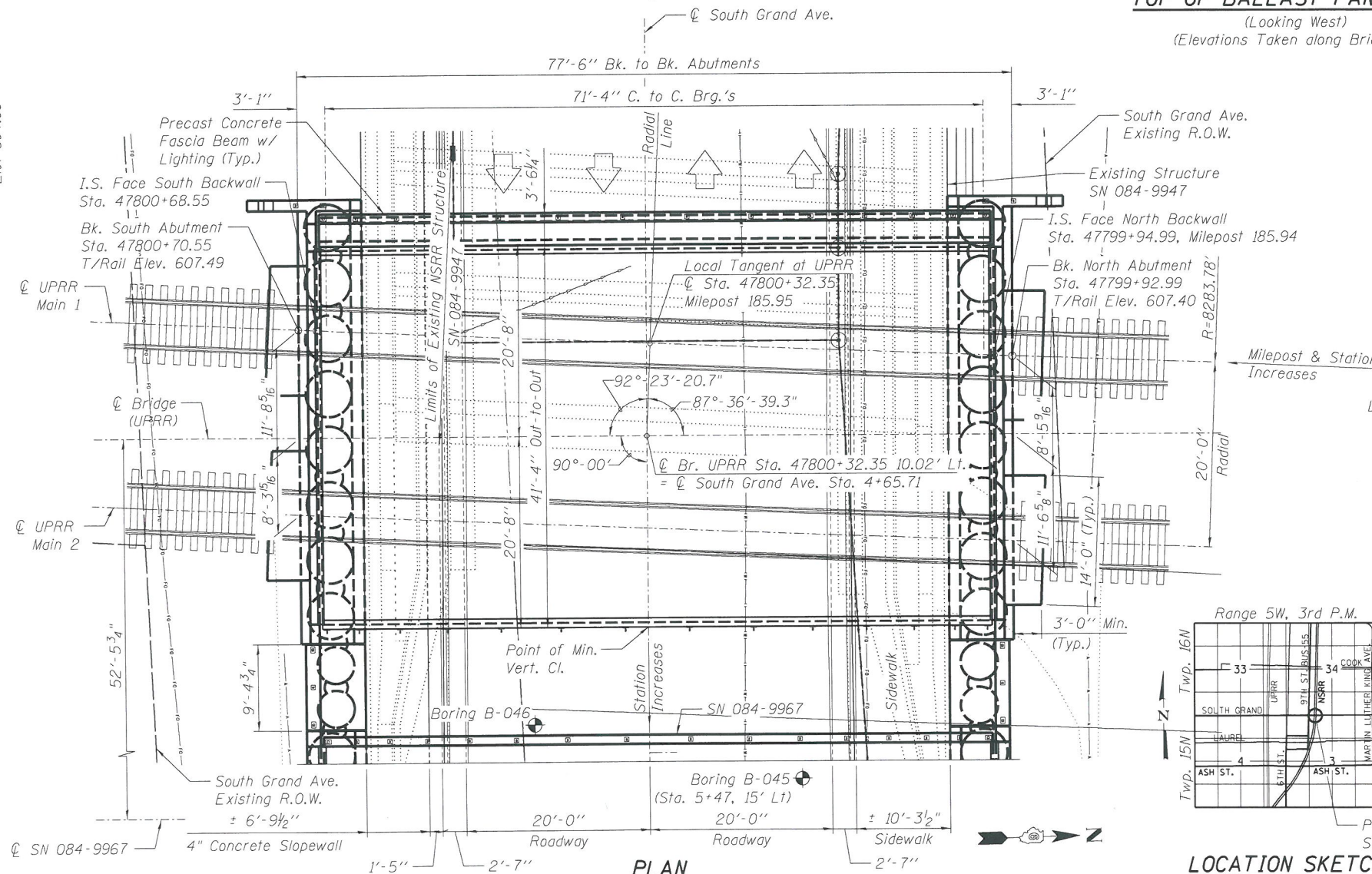
TOP OF BALLAST PAN GRADE
 (Looking West)
 (Elevations Taken along Bridge C.)



EXISTING PROFILE GRADE
SOUTH GRAND AVE.
 Along C. of South Grand Ave.



P.G. UPRR MAIN 1 RAIL
 (Along Top of Rail)



PLAN

LOCATION SKETCH

HIGHWAY CLASSIFICATION
 F.A.U. 7989 - South Grand Avenue
 Functional Class: Minor Arterial
 ADT: 13,600 (2017); 16,000 (2032)
 DHV: 1,360 (2017); 1,600 (2032)
 ADTT: 1,100 (2017); 1,280 (2032)
 Design Speed: 30 mph
 Posted Speed: 30 mph

LOADING COOPER E-80
 Impact: Diesel Impact
 Allow 30" of Ballast Dead Load

DESIGN SPECIFICATIONS
 2019 AREMA Specifications
 Live Load Deflection: L/640
 Composite Design for Deflection Requirements
 Design Speed: 50 m.p.h.

DESIGN STRESSES
FIELD UNITS
 $f'_c = 4,000$ psi
 $f_y = 60,000$ psi (Reinforcement)
 $f_y = 50,000$ psi (ASTM A709 Grade 50)

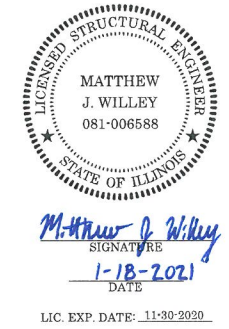
PRECAST UNITS
 $f'_c = 6,500$ psi
 $f'_ci = 5,000$ psi
 $f'_{pu} = 270,000$ psi ($\frac{1}{2}$ " ϕ Low Lax Strands)
 $f_{pbt} = 201,960$ psi ($\frac{1}{2}$ " ϕ Low Lax Strands)
 $f_y = 60,000$ psi (Reinforcement)

SEISMIC DATA
 AREMA

Ground Motion Level	PGA	S _s	S ₁
Level 1 (100 Year)	0.010	0.025	0.005
Level 2 (475 Year)	0.040	0.090	0.035
Level 3 (2475 Year)	0.10	0.22	0.10

Soil Site Class = C

CURVE DATA
 (UPRR Main 1)
 P.I. Sta. = 47824+35.33
 $\Delta = 37^\circ-24'-41"$ (Rt.)
 $D = 00^\circ-41'-30"$
 $T = 2804.81'$
 $L = 5408.86'$
 $R = 8283.78'$
 $E = 461.96'$
 Long Chord = 5313.32'
 Mid. Ord. = 437.56'
 $S.E. = \frac{3}{4}"$
 S.C. Sta. = 47796+30.51
 C.S. Sta. = 47850+39.38



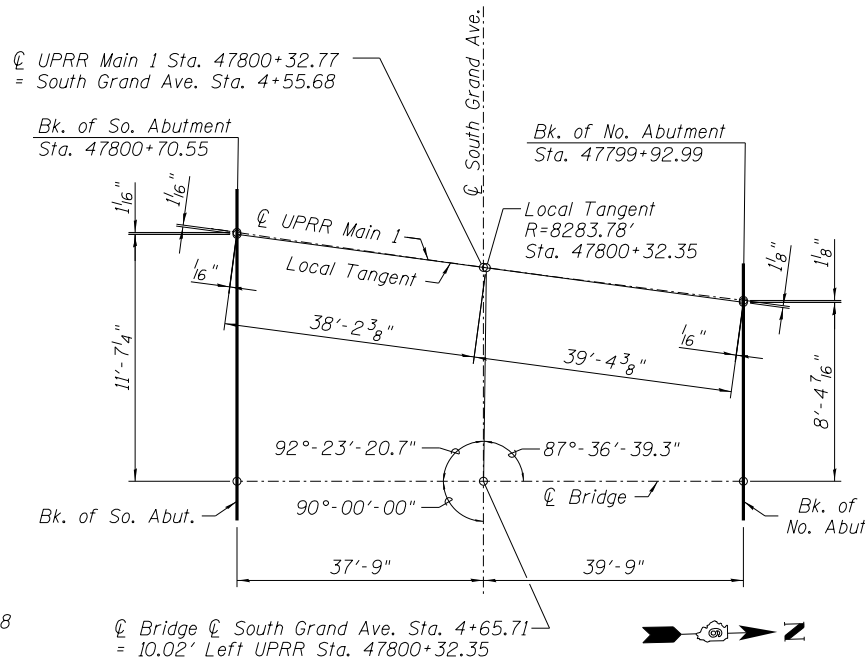
I certify that to the best of my knowledge,
 information and belief, this bridge design is
 structurally adequate for the design loading shown
 on the plans. The design is an economical one
 for the style of structure and complies with
 requirements of the current AREMA Specifications.

GENERAL PLAN
UPRR (MP 185.95) OVER SOUTH GRAND AVE.
F.A.U. 7989-SECTION 19-00488-00-BR
SANGAMON COUNTY
UPRR SUBDIVISION - SPRINGFIELD
STATION 47800+32.35
STRUCTURE NO. 084-9966

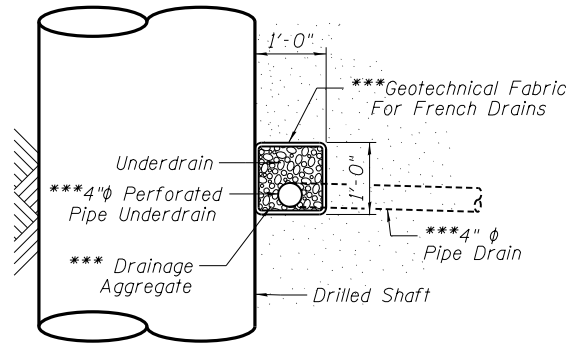
GENERAL NOTES

- Fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts. Bolts 7/8 in. φ, holes 15/16 in. φ, unless otherwise noted.
- Calculated weight of Structural Steel, ASTM A709, Gr. 50 = 543,020 lbs.
ASTM A36, Gr. 36 = 76,710 lbs.
- All structural steel shall be ASTM A709 Grade 50 unless otherwise noted on the plans. The deck plate shall be ASTM A36.
- All substructure concrete shall have a compressive strength of 4,000 psi at 14 days.
- No field welding is permitted except as specified in the contract documents.
- Reinforcement bars designated (E) shall be epoxy coated.
- Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8 inch (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.
- Concrete Sealer shall be applied to the following surfaces:
Abutments - inside face of backwall, inside face of cheekwall, top of cap, entire concrete facing attached to abutment caps and drilled shaft (except surfaces coated with surface color treatment).
Superstructure - entire exposed surface of precast prestressed fascia beam and curb (except surfaces coated with surface color treatment), concrete railing end post.
- Concrete Surface Color Treatment shall be applied to the following surfaces:
Abutments - concrete facing, wingwall and cheekwall surfaces designated in plans.
Superstructure - Precast fascia beam surfaces designated in plans.
- The Inorganic Zinc Rich Primer / Acrylic / Acrylic Paint System shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the final finish coat for all interior steel surfaces, exterior bottom of deck plate, steel curb, shall be gray, Munsell No. 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia beams and exterior cantilever support bracket shall be blue, Munsell No. 10B 3/6.
- Waterproofing shall be applied to the backside of the abutment cap and backwall and backside of wingwalls for surfaces below ground. This shall be according to Article 503.18 of the Std. Spec. Cost included with Concrete Structures.

- Drilled shaft cross-hole sonic log (CSL) testing:
A) Drilled shafts shall be evaluated by cross-hole sonic log testing. Testing pipes shall be installed in each drilled shaft to facilitate the logging process, which will follow completion of each shaft.
B) Furnish and install six standard 2 inch nominal diameter steel pipes (ASTM A53, Grade B) for use in CSL testing of each drilled shaft. Pipes shall be equally spaced around the interior of the reinforcing steel cage.
C) Pipes shall be fitted with a screw-on watertight shoe and cap and shall be securely fixed to the interior of the reinforcing steel cage. Watertight joints shall be used to achieve the required length. The pipes shall be filled with water and plugged or capped before concrete placement. The upper end of the pipe shall not be left open during or after concrete placement. The pipes shall extend at least 2'-6" above the top of the drilled shaft concrete. The lower end of the pipes shall extend to the bottom of the shaft. Do not extend pipes into rock sockets with smaller diameter than drilled shafts.
D) CSL testing will be completed by the Engineer at no cost to the Contractor. If CSL test results are unsatisfactory according to the Engineer, the Contractor shall propose a method of correction including designs if required to the Engineer for approval. The correction shall be at the expense of the Contractor.



OFFSET SKETCH



PIPE UNDERDRAIN DETAIL

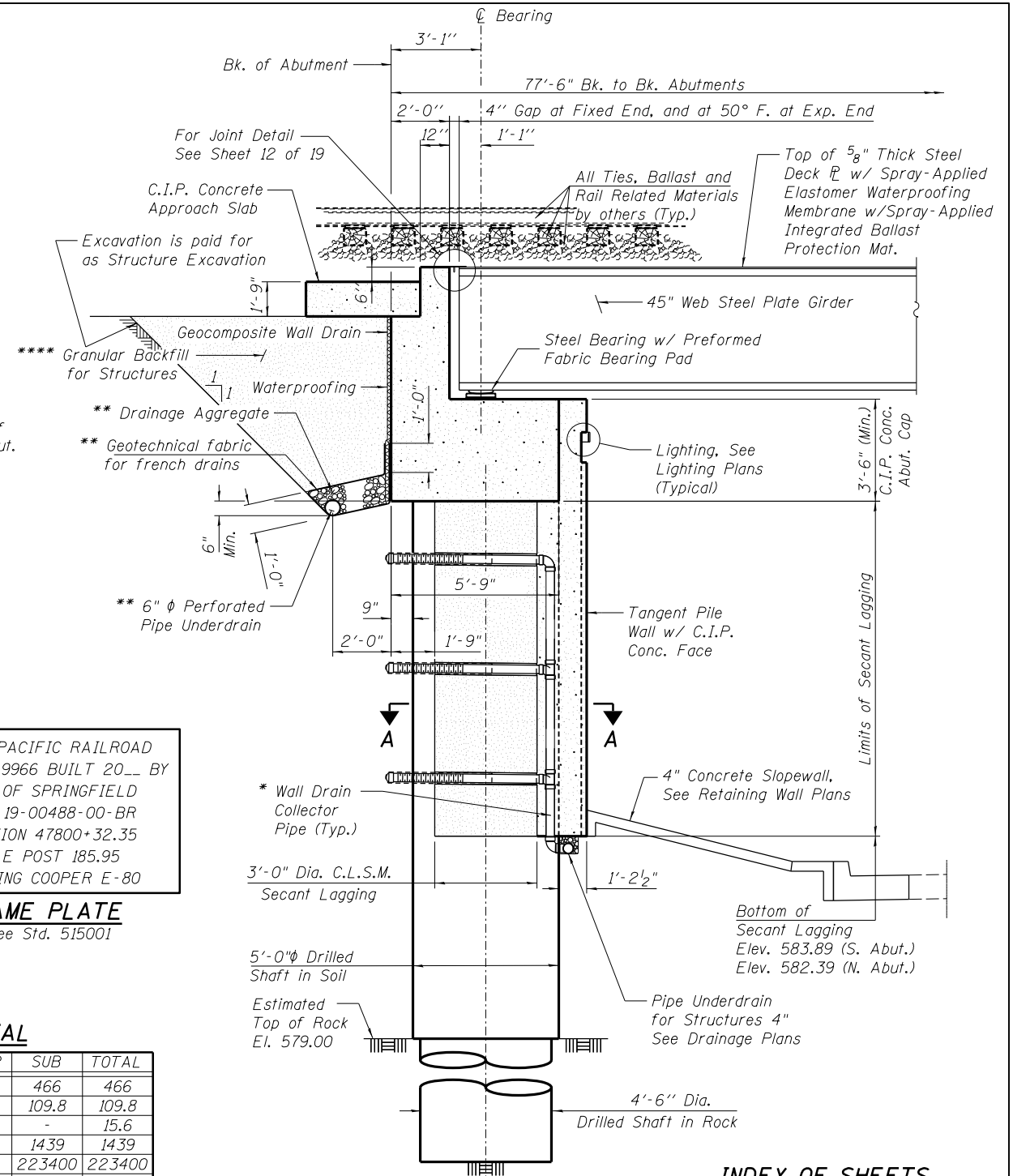
***Included in the cost of "Pipe Underdrains for Structures, 4".

UNION PACIFIC RAILROAD
S.N. 084-9966 BUILT 20__ BY
CITY OF SPRINGFIELD
SEC. 19-00488-00-BR
STATION 47800+32.35
MILE POST 185.95
LOADING COOPER E-80

NAME PLATE
See Std. 515001

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Structure Excavation	Cu. Yd.	-	466	466
Concrete Structures	Cu. Yd.	-	109.8	109.8
Concrete Superstructure	Cu. Yd.	15.6	-	15.6
Form Liner Textured Surface	Sq. Ft.	-	1439	1439
Reinforcement Bars	Pound	-	223400	223400
Reinforcement Bars, Epoxy Coated	Pound	2190	23580	25770
Name Plates	Each	-	1	1
Drilled Shaft in Soil	Cu. Yd.	-	207.9	207.9
Drilled Shaft in Rock	Cu. Yd.	-	179.0	179.0
Secant Lagging	Cu. Ft.	-	1359	1359
Granular Backfill for Structures	Cu. Yd.	-	103	103
Concrete Sealer	Sq. Ft.	1367	2721	4088
Geocomposite Wall Drain	Sq. Yd.	-	61	61
Crosshole Sonic Logging Access Ducts	Foot	-	630	630
Concrete Surface Color Treatment	Sq. Ft.	282	148	430
Membrane Waterproofing (Special)	Sq. Ft.	3128	-	3128
Furnishing and Erecting Structural Steel, Bridge No. 3	L. Sum	1	-	1
Precast Prestressed Concrete Fascia Beam, No. 3	L. Sum	1	-	1
Steel Railing (Special)	Foot	158	-	158
Pipe Underdrains for Structures, 4"	Foot	-	132	132
Pipe Underdrains for Structures, 6"	Foot	-	133	133



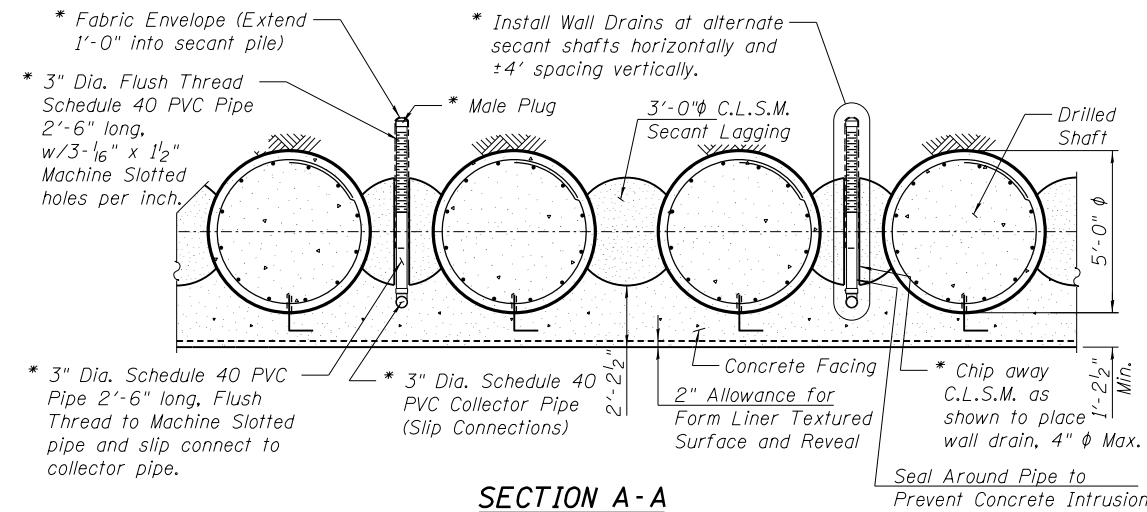
ABUTMENT SECTION

(At Rt. L's to Back of Abutment)

South Abutment section shown, North Similar
** Included in the cost of "Pipe Underdrains for Structures, 6". For additional drainage details see Roadway Plans.
**** Granular Backfill for Structures shall be placed and compacted according to Section 502.10 of the Standard Specifications.

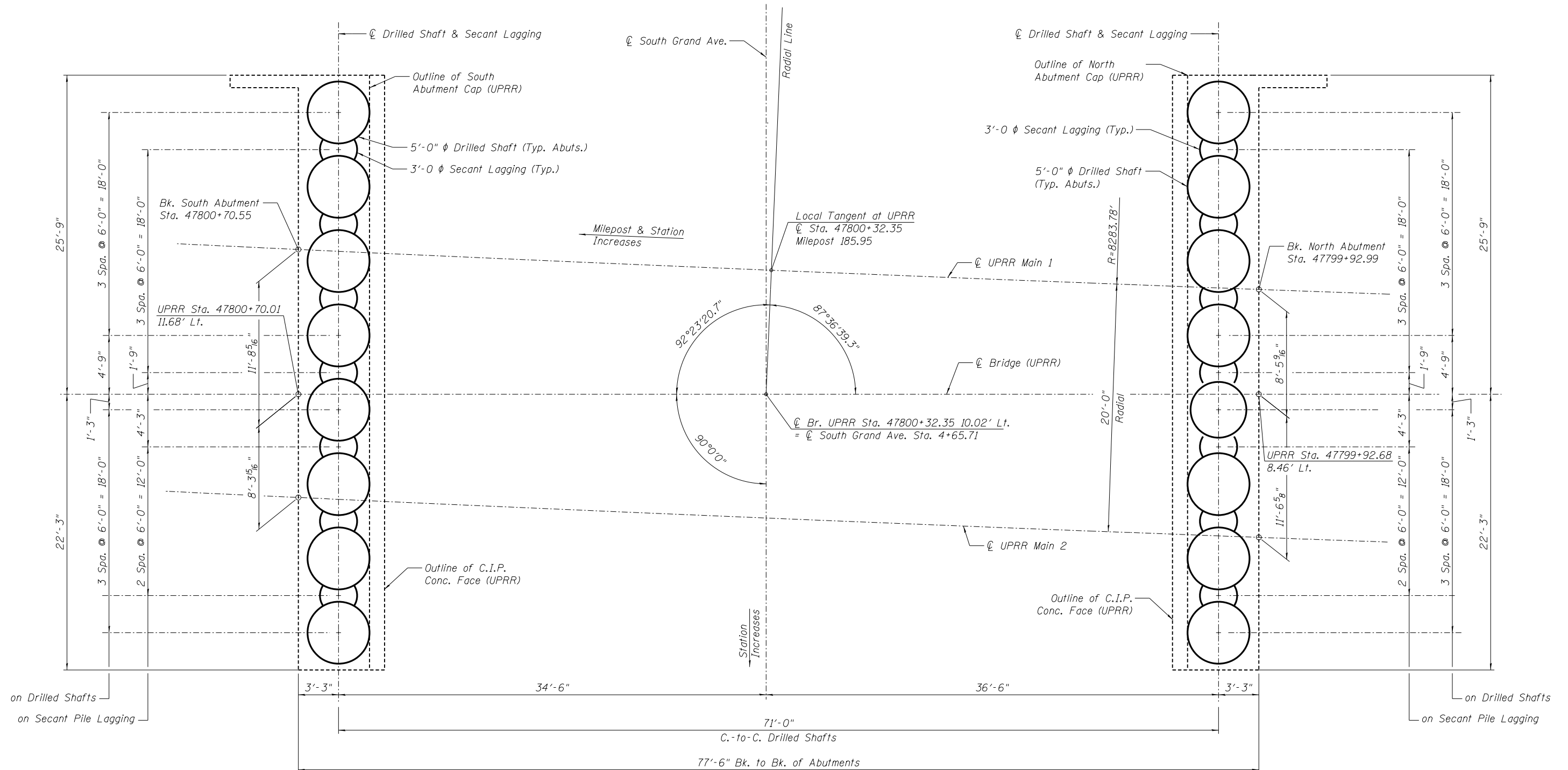
INDEX OF SHEETS

- General Plan and Elevation
- General Data
- Foundation Layout
- Superstructure
- Structural Steel
- Structural Steel Details (1 of 3)
- Structural Steel Details (2 of 3)
- Structural Steel Details (3 of 3)
- Precast Fascia Beam
- Precast Fascia Beam Details
- Bearing Details
- Membrane Waterproofing
- Steel Railing (Special) Westside
- Steel Railing (Special) Eastside
- South Abutment
- South Abutment Details
- North Abutment
- North Abutment Details
- Subsurface Data Profile



SECTION A-A

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



FOUNDATION LAYOUT PLAN



FINAL



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USER NAME = Pop00275	DESIGNED - MJW	REVISED -
	CHECKED - MRK	REVISED -
PLOT SCALE = 1/8" = 1'-0"	DRAWN - MGM	REVISED -
PLOT DATE = 1/18/2021	CHECKED - MJW	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

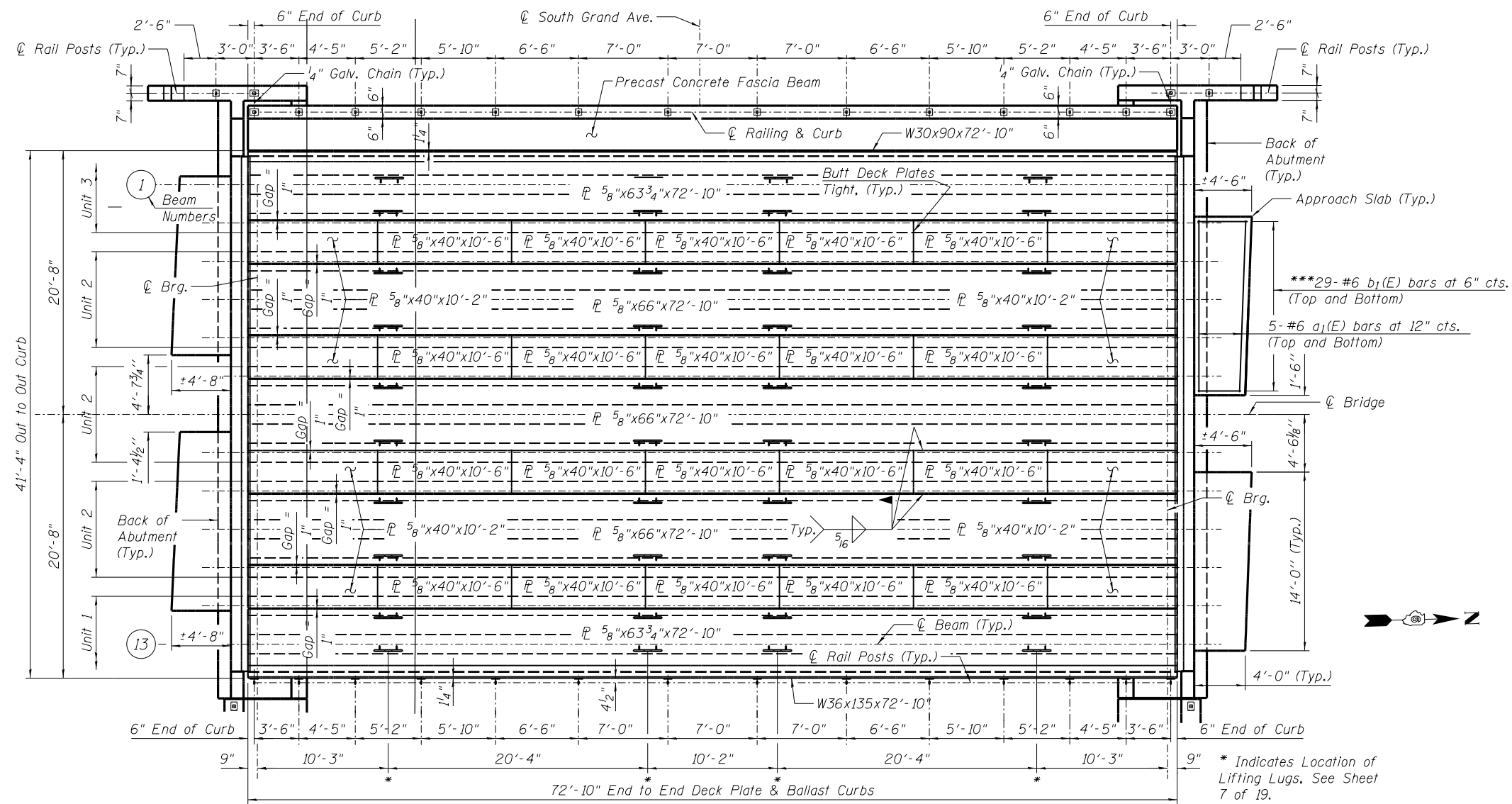
**FOUNDATION LAYOUT
STRUCTURE NO. 084-9966**

SHEET NO. 3 OF 19 SHEETS

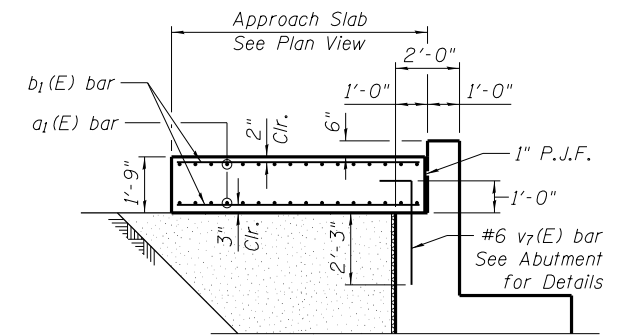
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
•	19-00488-00-BR	SANGAMON	347	234
			CONTRACT NO. 93747	

• 7985A & 8201 ILLINOIS FED. AID PROJECT

p:\hanson\inc-pw\hanson-pw\01\Documents\09\Jobs\09\101798\Usable Segments III - V - V\CAD\Struct\Usable Segment V\South Grand-10th\Sheet\084-9966-09\101798-003-FOUNDATION LAYOUT



PLAN - DECK PLATE WITH CURBS

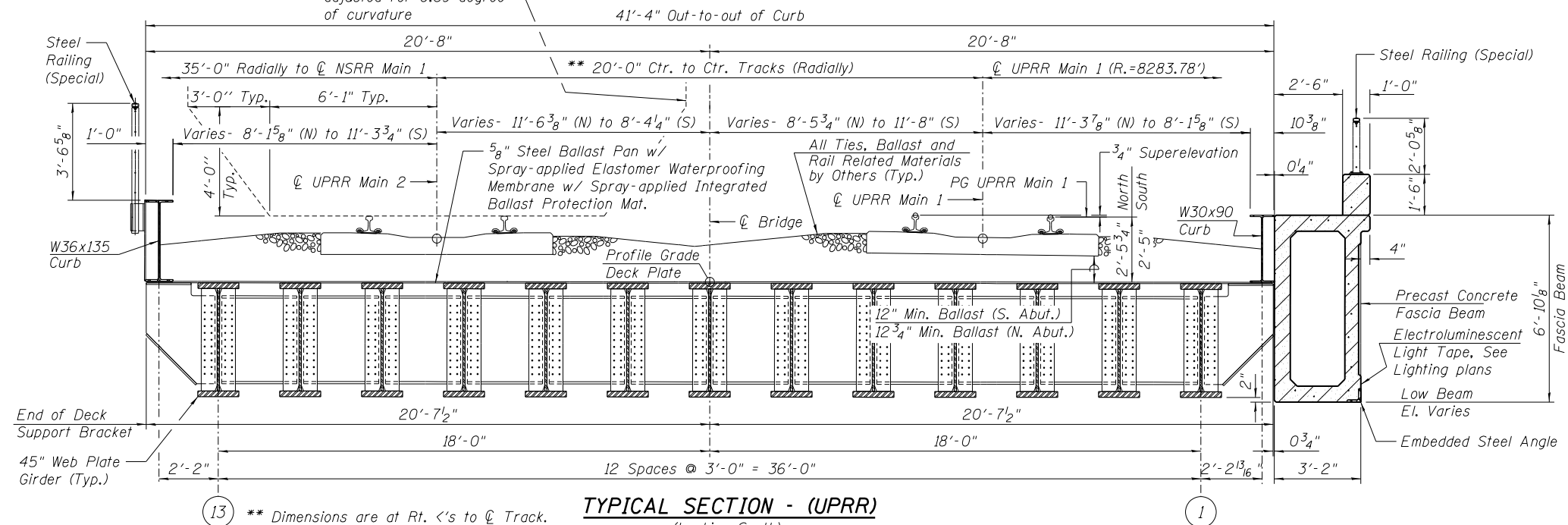


APPROACH SLAB SECTION

(Horizontal Dim. at Rt. <'s to back of abutment)

*** Order b1(E) bars full length. Cut to fit skew and use remainder of bars in opposite face.

AREMA Clearance Diagram adjusted for 0.69 degree of curvature



TYPICAL SECTION - (UPRR)

** Dimensions are at Rt. <'s to C Track.

(Looking South)

SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a1(E)	40	#6	13'-8"	
b1(E)	116	#6	7'-10"	
Concrete Superstructure		Cu. Yds.	15.6	
Reinforcement Bars, Epoxy Coated		Pound	2190	

Notes:
 For Steel Railing Details See Sheets 13 and 14 of 19.
 For Membrane Waterproofing Details See Sheet 12 of 19.
 For 1/4" Galv. Chain Details, See Sheet 13 of 19. Cost of Chain and hardware included in the cost of Steel Railing (Special).

FINAL



USER NAME = Pop00275
 PLOT SCALE = 1/8" = 1'-0"
 PLOT DATE = 1/18/2021

DESIGNED - MJW
 CHECKED - CGP
 DRAWN - MGM
 CHECKED - MJW

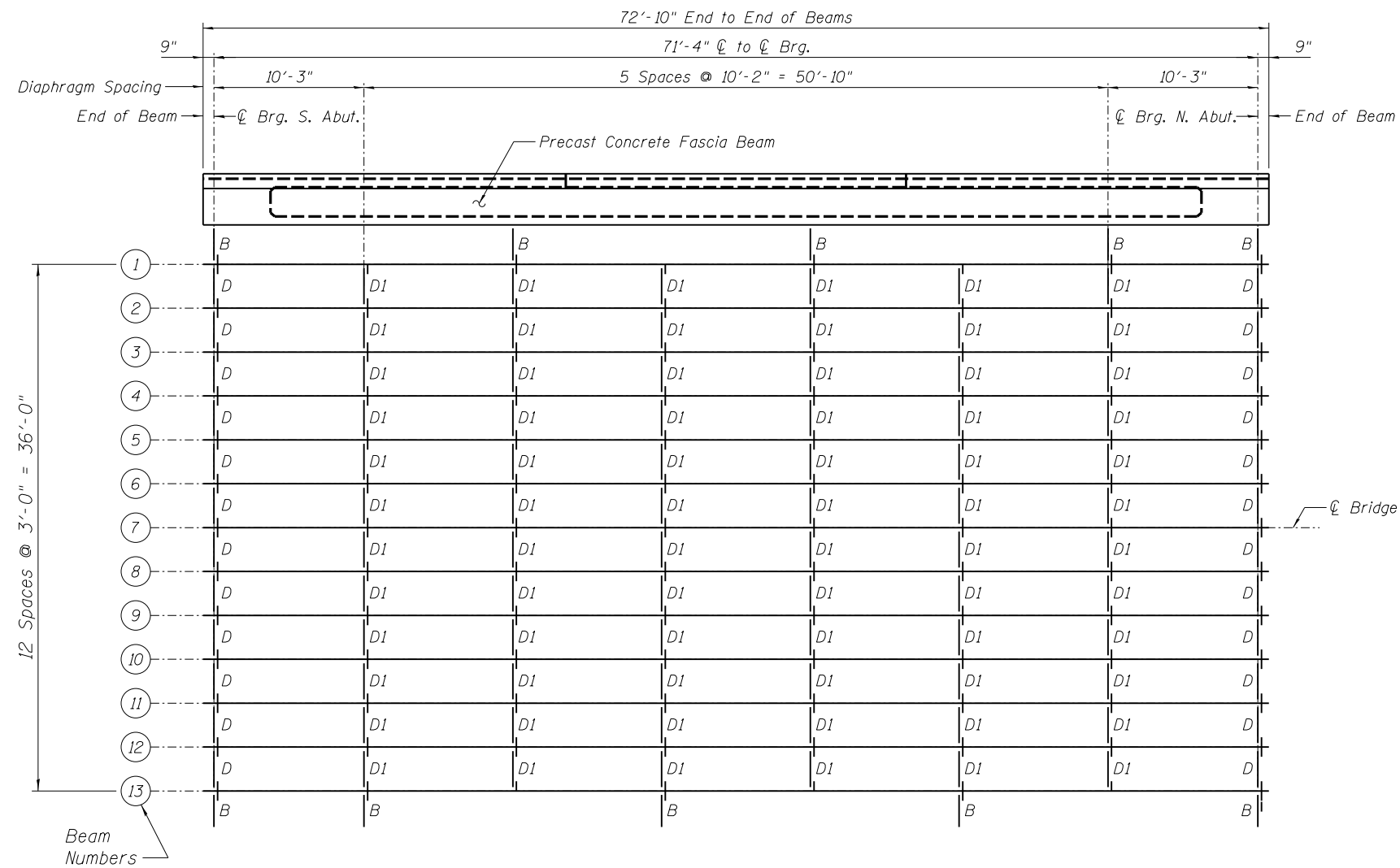
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE
 STRUCTURE NO. 084-9966

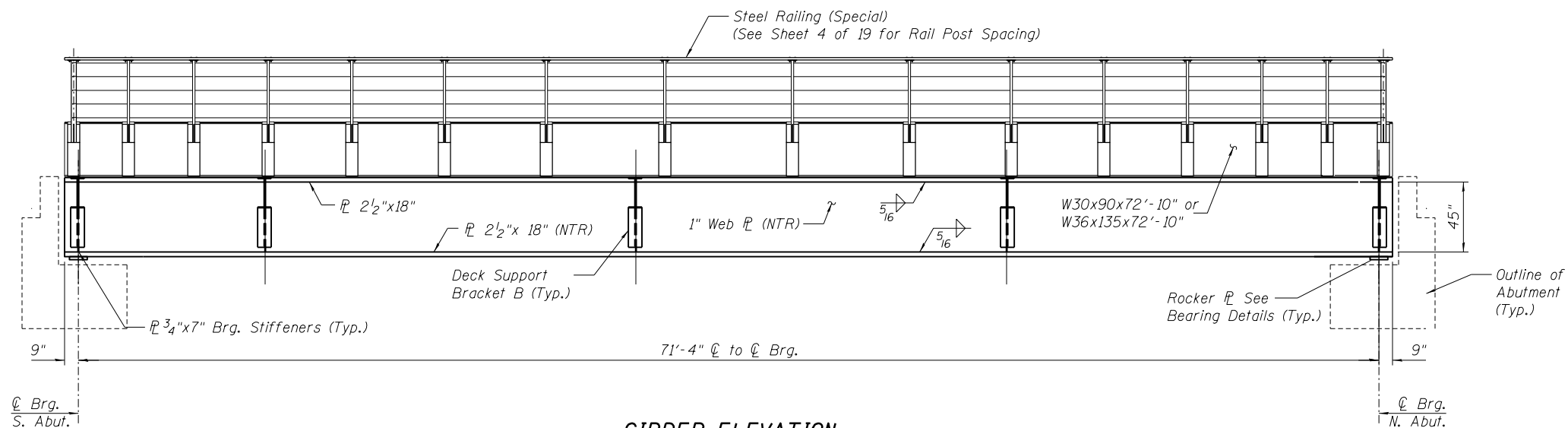
SHEET NO. 4 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
•	19-00488-00-BR	SANGAMON	347	235
			CONTRACT NO. 93747	

• 7985A & 8202 ILLINOIS FED. AID PROJECT



FRAMING PLAN



GIRDER ELEVATION

Notes:
 All diaphragms shall be installed at the fabricators shop except as otherwise noted. Individual diaphragms at supports may be temporarily disconnected to install bearing anchor rods.

Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.

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USER NAME = Pop00275	DESIGNED - MJW	REVISED -
PLOT SCALE = 0.1667' / in.	CHECKED - CGP	REVISED -
PLOT DATE = 1/18/2021	DRAWN - MGM	REVISED -
	CHECKED - MJW	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**STRUCTURAL STEEL
 STRUCTURE NO. 084-9966**

SHEET NO. 5 OF 19 SHEETS

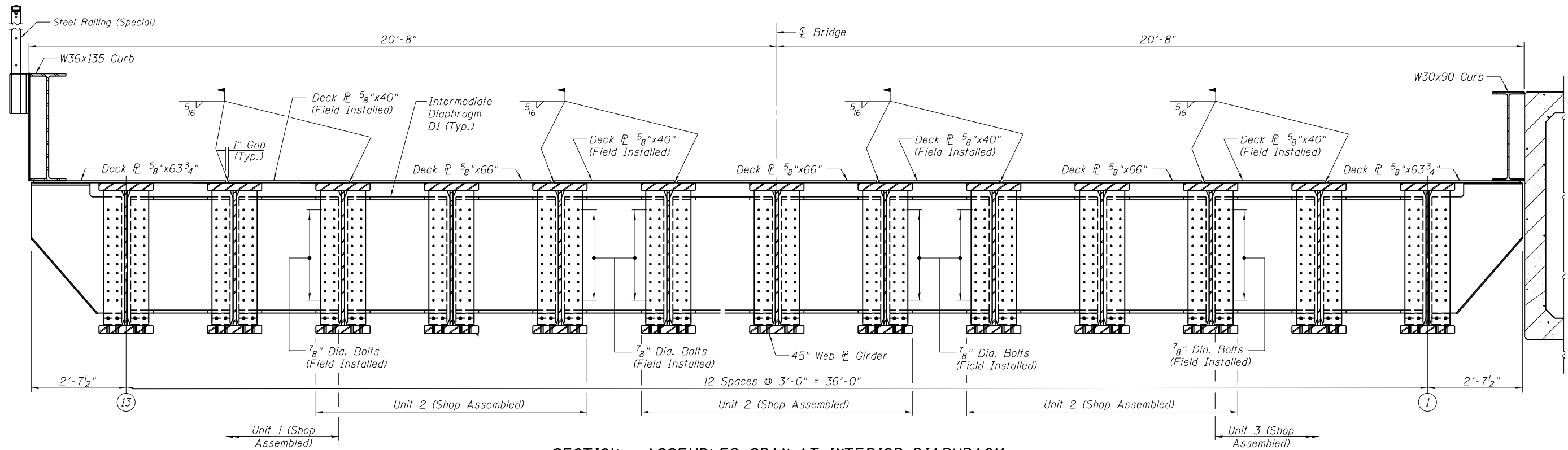
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
•	19-00488-00-BR	SANGAMON	347	236
			CONTRACT NO.	93747

• 7985A & 8203 ILLINOIS FED. AID PROJECT

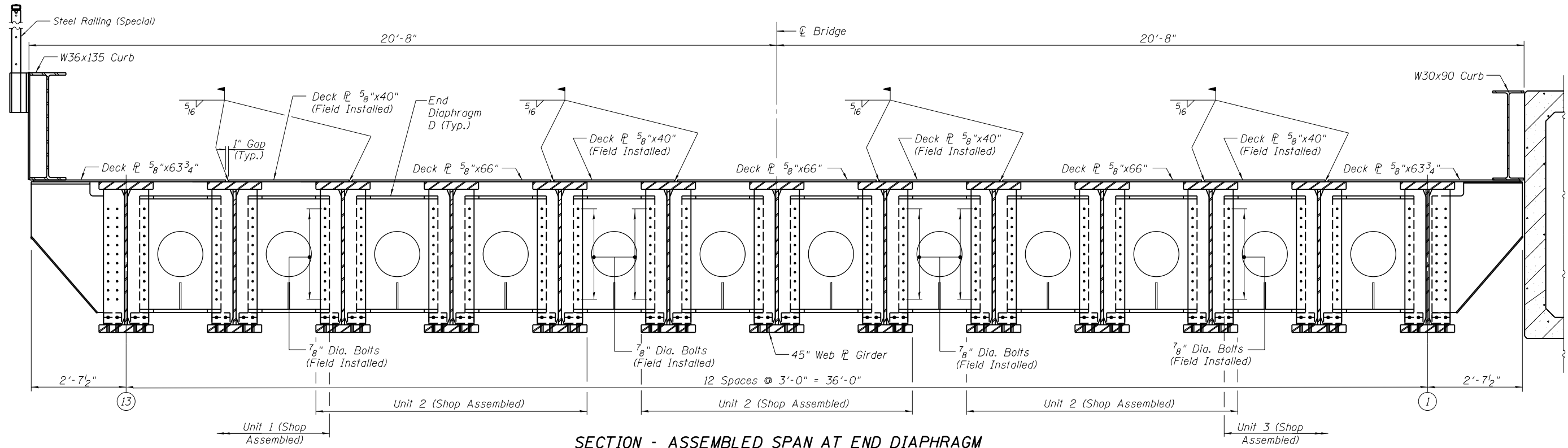
FINAL



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SECTION - ASSEMBLED SPAN AT INTERIOR DIAPHRAGM
(Looking South)



SECTION - ASSEMBLED SPAN AT END DIAPHRAGM
(Looking South)

Notes:
Bolts shall be 7/8" ϕ placed in 15/16" ϕ holes unless otherwise noted.
Steel shall conform to ASTM A709 Gr. 50, unless otherwise noted.

pw:\hansoninc-pw-bentley.com\hanson-pw-01\Documents\09Jobs\09L0179B\Usable Segments III - V - V\CAD\Struct\Usable Segment V\SouthGrand-10th\Sheet\084-9966-09L0179B-006-Struct Steel Det.01

USER NAME = Pop00275	DESIGNED - MJW	REVISED -
PLOT SCALE = 0.1999996' / in.	CHECKED - CGP	REVISED -
PLOT DATE = 1/18/2021	DRAWN - MGM	REVISED -
	CHECKED - MJW	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL DETAILS (1 OF 3)
STRUCTURE NO. 084-9966

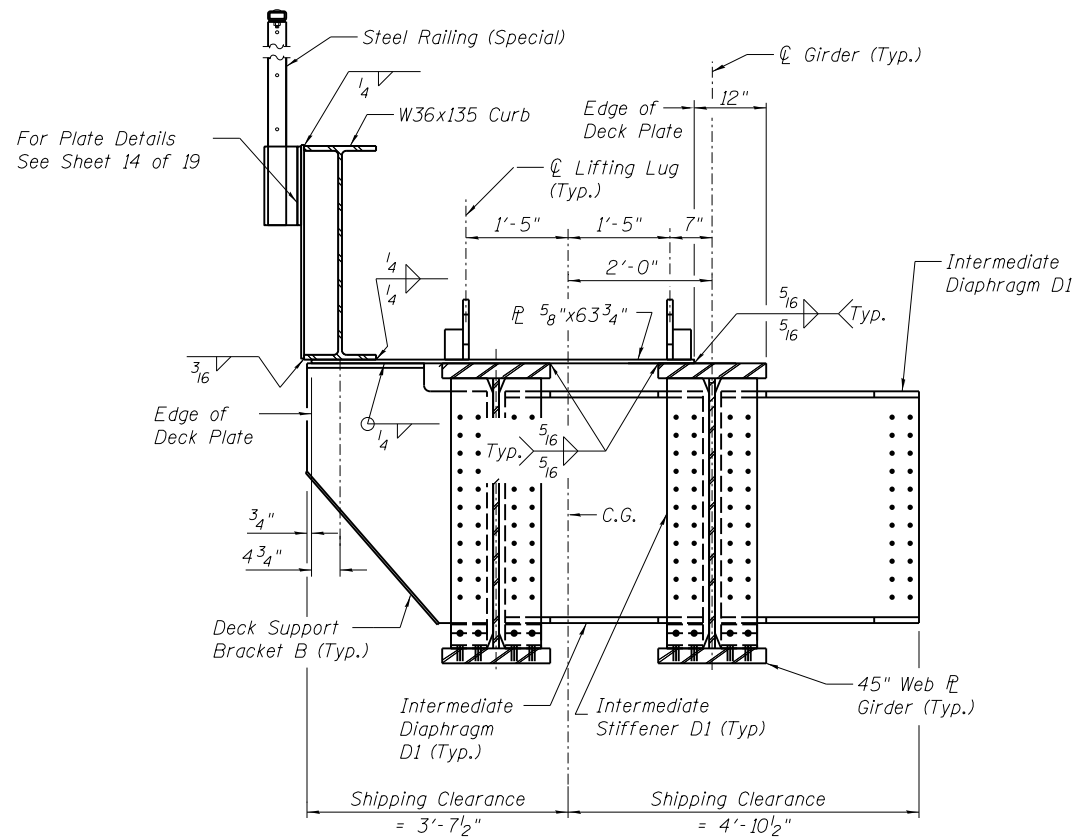
SHEET NO. 6 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 93747				
• 7985A & 8204 ILLINOIS FED. AID PROJECT				

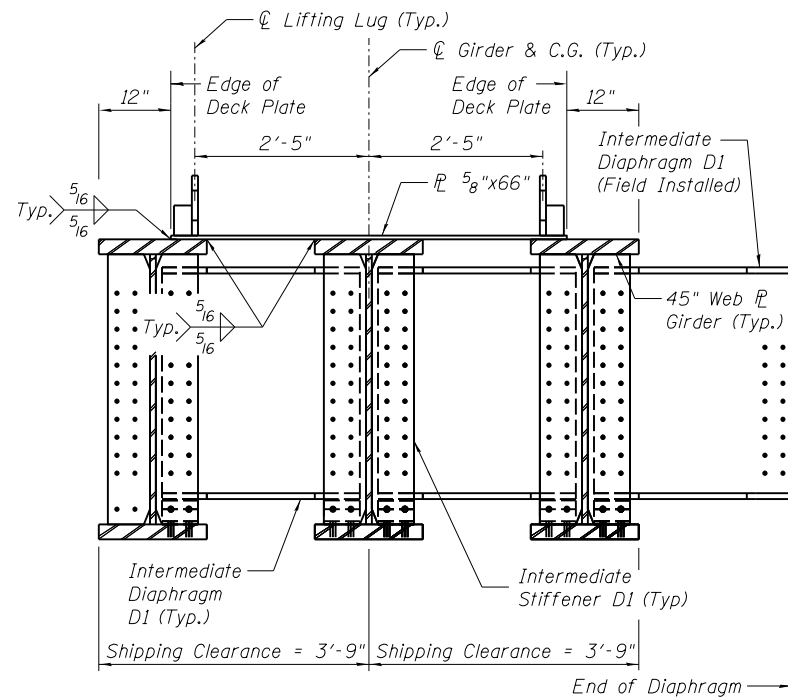
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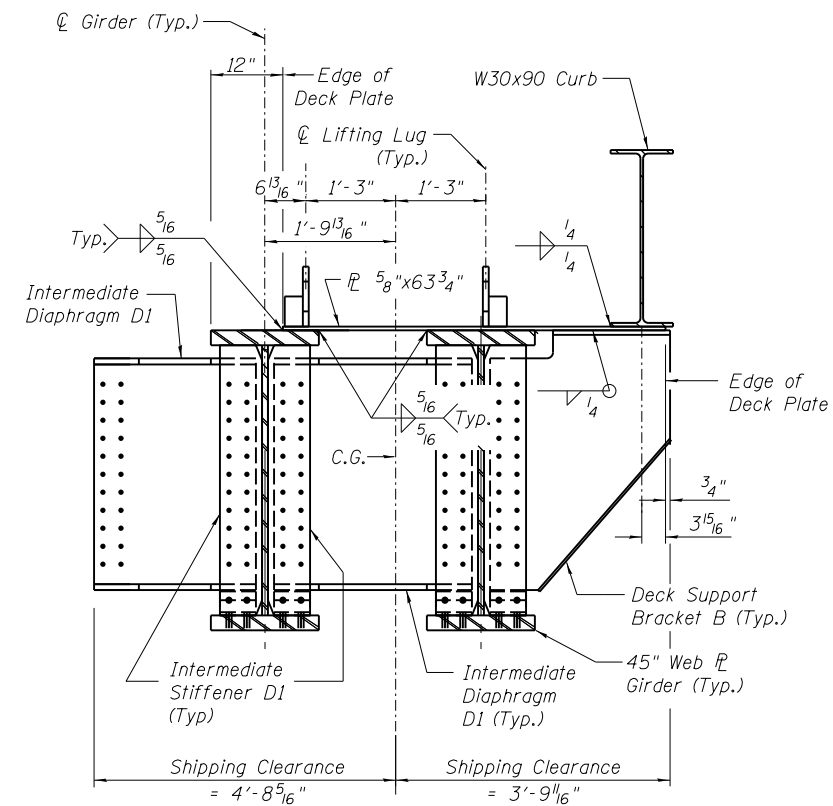
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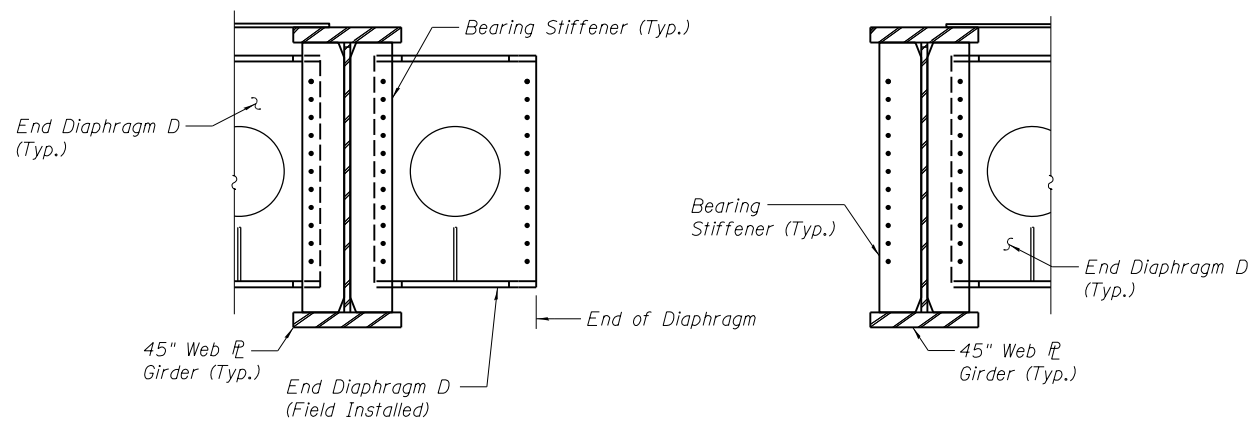
AT INTERIOR DIAPHRAGM UNIT 1
(Looking South)



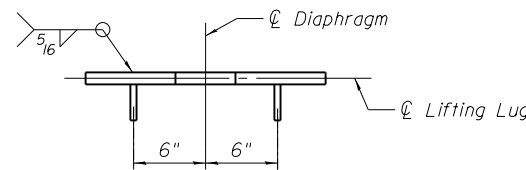
AT INTERIOR DIAPHRAGM UNIT 2
(Looking South)



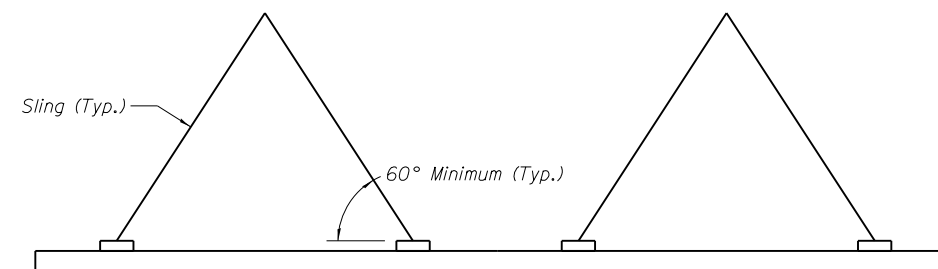
AT INTERIOR DIAPHRAGM UNIT 3
(Looking South)



AT END DIAPHRAGM
(Partial Section shown, End Diaphragm Sections are similar to Interior Diaphragm Sections except as noted above)



LIFTING LUG DETAIL



TYPICAL ELEVATION
LIFTING DIAGRAM

Notes:
Bolts shall be 7/8" φ placed in 1 5/16" φ holes unless otherwise noted.
Steel shall conform to ASTM A709 Gr. 50, unless otherwise noted.
After assembled span is in final position, lifting lugs shall be burned or ground off in a manner that will not damage the waterproofing system.

pw:\hansoninc-pw-bentley.com\hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VINCAD\Struct\Usable Segment V\SouthGrand-10th\Sheet\084-9966-09L01798-007-Struct Steel Det.02

FINAL



USER NAME = Pop00275	DESIGNED - MJW	REVISED -
PLOT SCALE = 0.1999996 'r' / in.	CHECKED - CGP	REVISED -
PLOT DATE = 1/18/2021	DRAWN - MGM	REVISED -
	CHECKED - MJW	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL DETAILS (2 OF 3)
STRUCTURE NO. 084-9966

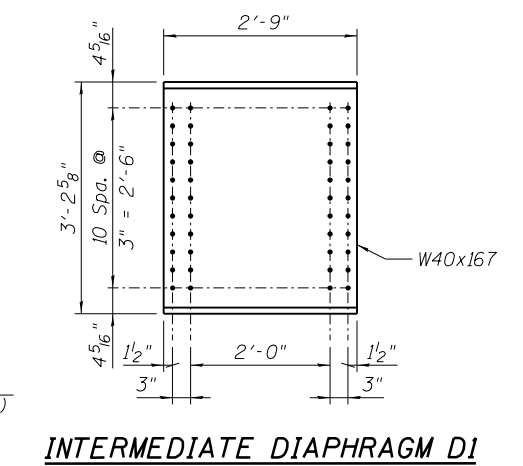
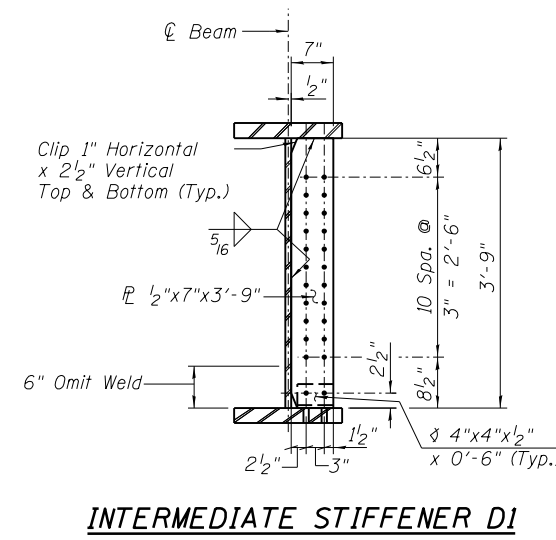
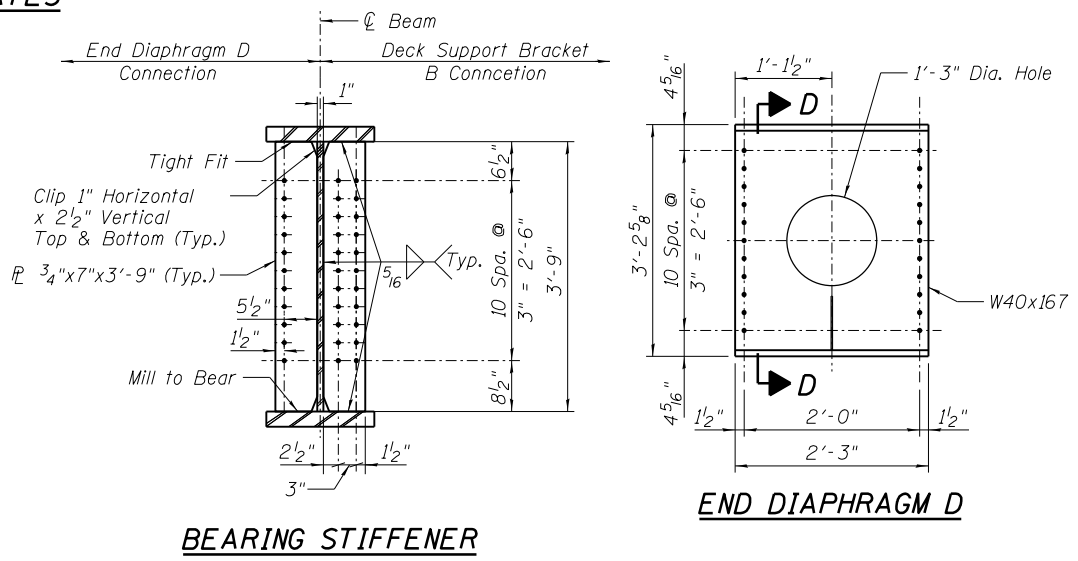
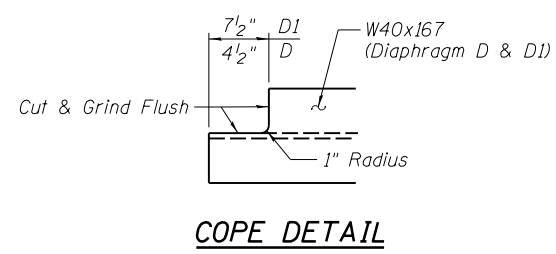
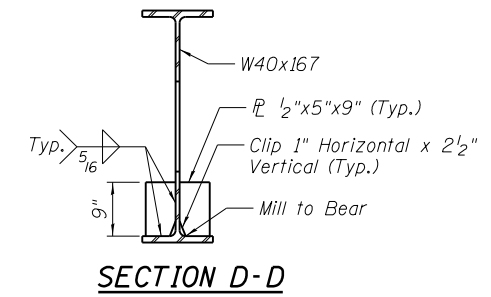
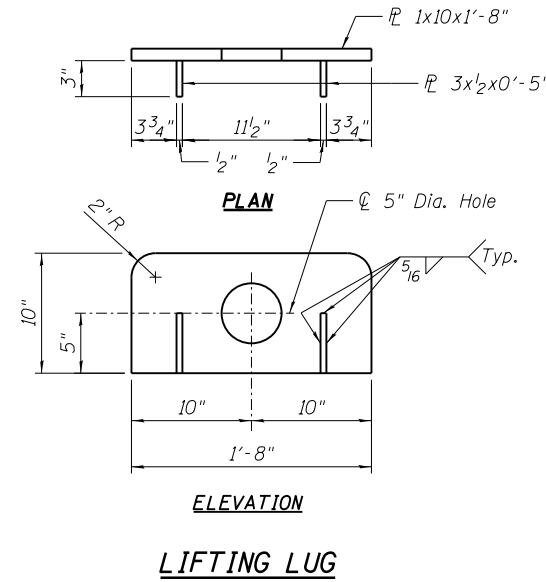
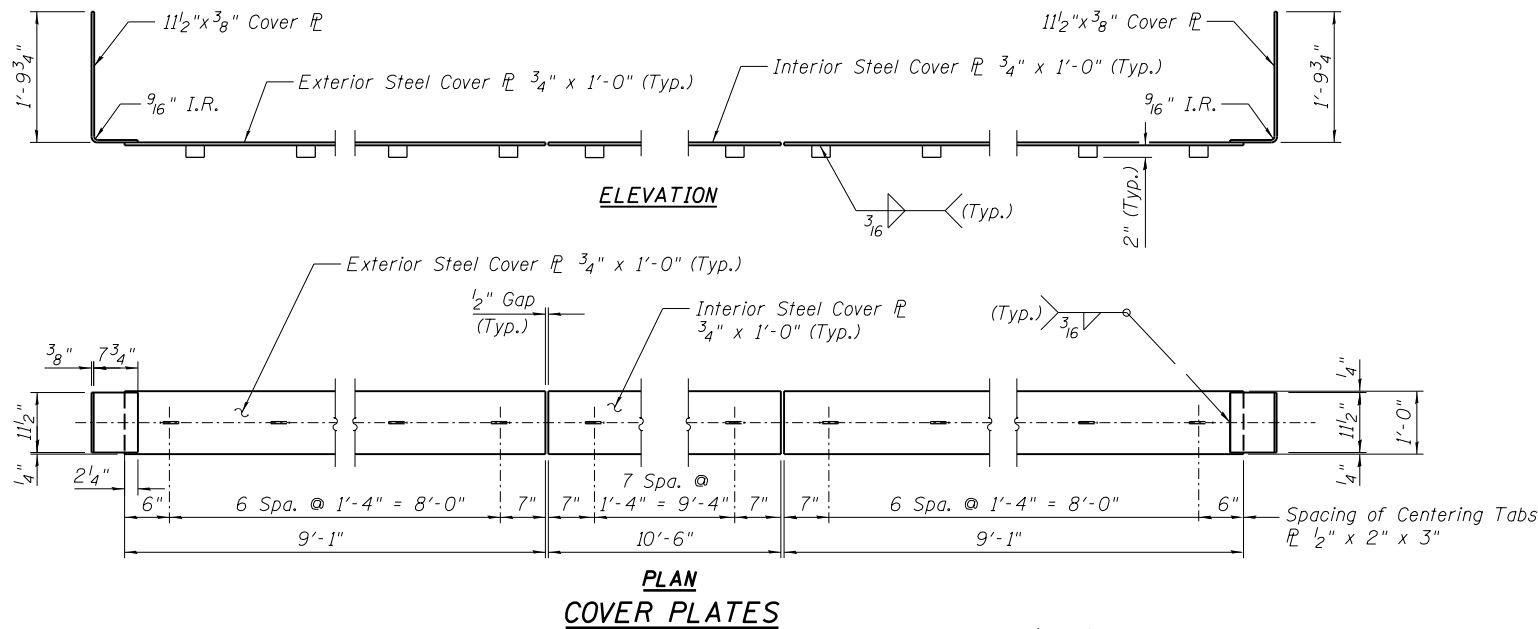
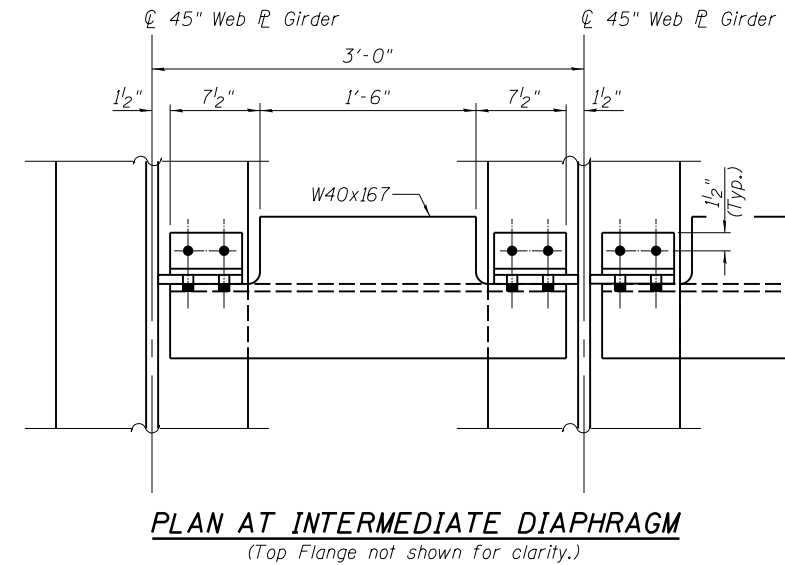
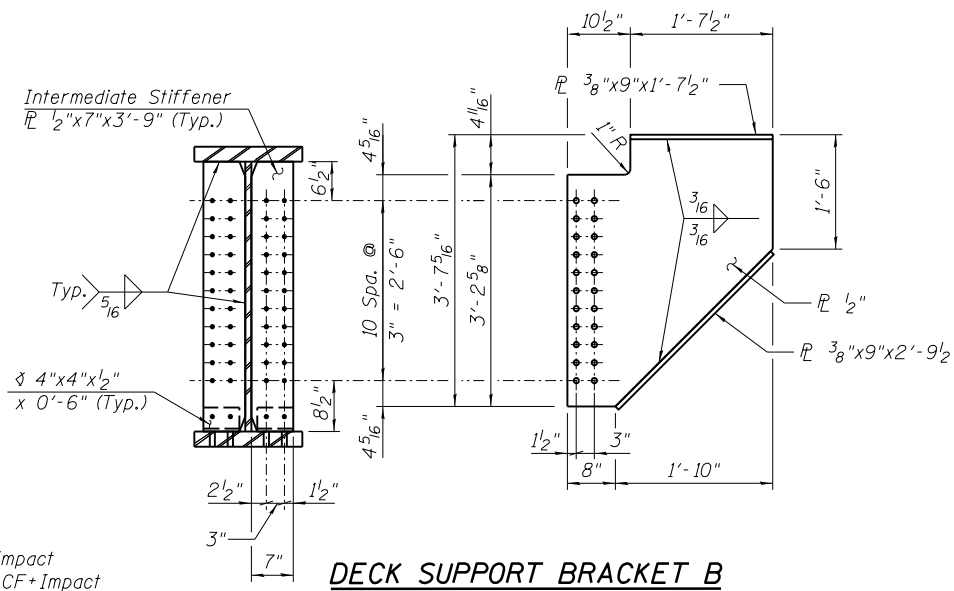
SHEET NO. 7 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
•	19-00488-00-BR	SANGAMON	347	238
			CONTRACT NO. 93747	
• 7985A & 8205 ILLINOIS FED. AID PROJECT				

INTERIOR BEAM MOMENT & SHEAR TABLE

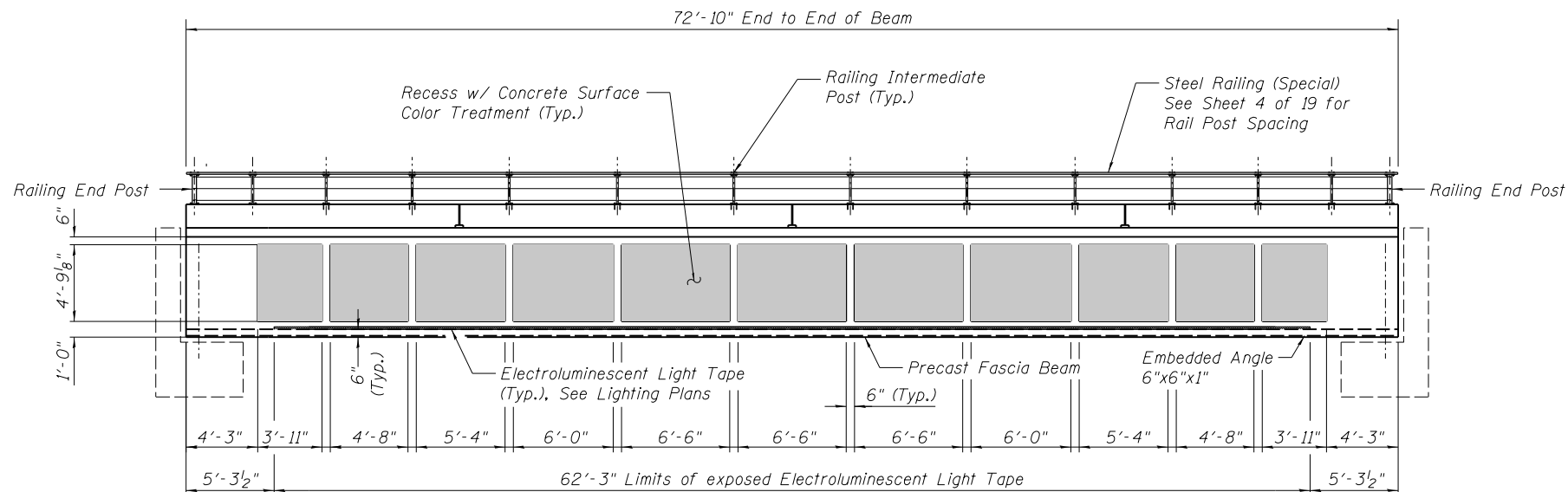
Description	Max Moment	Max Shear
Dead Load	1,048.3 ft.-k	58.2 k
Live Load	1,797.9 ft.-k	113.3 k
Centrifugal Force	21.5 ft.-k	1.2 k
Impact	605.5 ft.-k	38.1 k
Total	3,473.2 ft.-k	210.8 k
Section	45" Web PL Girder	
Steel	ASTM A709, Gr. 50, ITR Zone 2	
Net I	52,309 in ⁴	
Net S (Bott.)	1,945 in ³	
FST (Bott.)	21.4 ksi	
Gross I	58,406 in ⁴	
Gross S (Top)	2,336 in ³	
FSC (Top)	17.8 ksi	
(LL+I) Deflection	1.26 in	
Allowable (LL+I) Deflection	1.35 in	

I - Non-composite moment of inertia of the steel section
 S - Non-composite section modulus of the steel section
 FST - Max unfactored tension stress in the section due to DL+LL+CF+Impact
 FSC - Max unfactored compression stress in the section due to DL+LL+CF+Impact



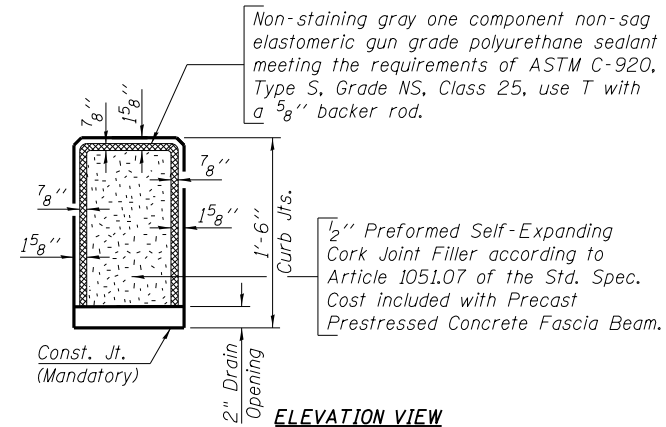
Notes:
 All diaphragms shall be installed at the fabricators shop except as otherwise noted. Individual diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
 Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.
 Bolts shall be 7/8" ϕ placed in 1 5/16" ϕ holes unless otherwise noted.
 Steel shall conform to ASTM A709 Gr. 50, unless otherwise noted.

FINAL



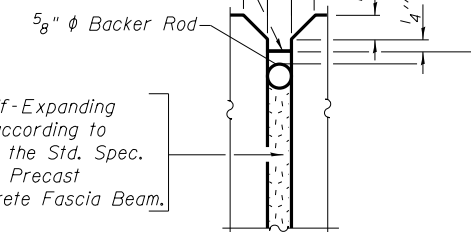
ELEVATION PRECAST FASCIA BEAM

(Looking East, Horizontal Dimensions along outside face of web)



ELEVATION VIEW

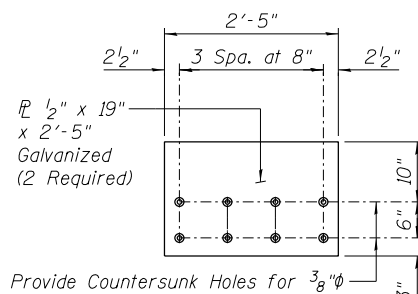
Non-staining gray one component non-sag elastomeric gun grade polyurethane sealant meeting the requirements of ASTM C-920, Type S, Grade NS, Class 25, use T with a 5/8" backer rod.



SIDE VIEW

CURB JOINT DETAILS

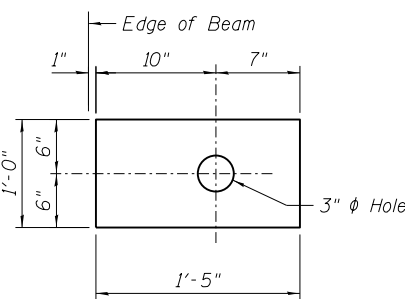
1/2" Preformed Self-Expanding Cork Joint Filler according to Article 1051.07 of the Std. Spec. Cost included with Precast Prestressed Concrete Fascia Beam.



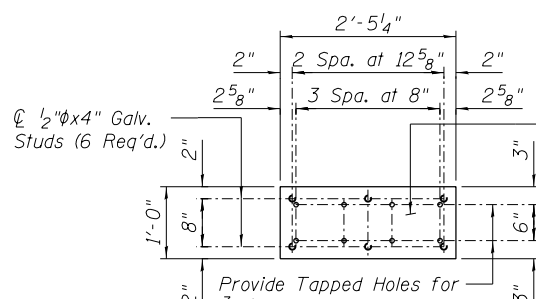
JOINT COVER PLATE

(1 Required at each Fascia Beam Joint)

Provide Countersunk Holes for countersunk bolts (8 Required)



FABRIC BEARING PAD

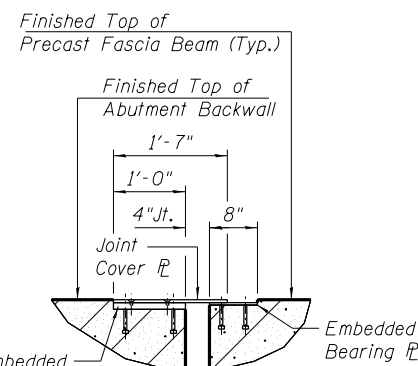


EMBEDDED ANCHOR PLATE

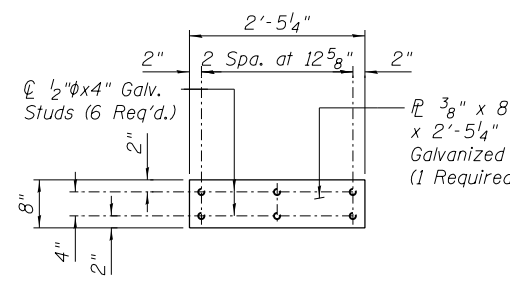
(1 Required at Each Abutment Backwall)

1/2" x 4" Galv. Studs (6 Req'd.)

Provide Tapped Holes for 3/8" bolts (8 Required)



SECTION AT EXPANSION JOINT

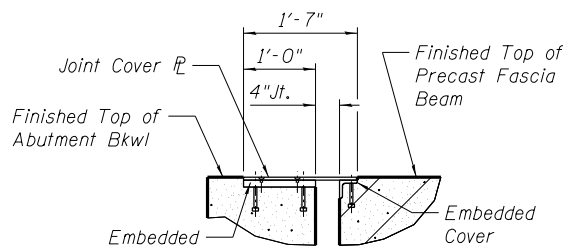


EMBEDDED BEARING PLATE

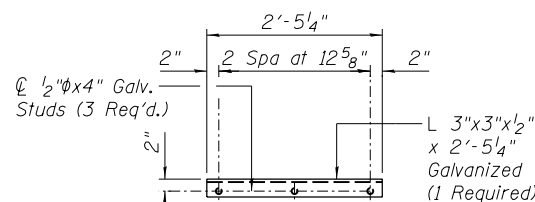
(1 Required at Expansion End of Fascia Beam)

1/2" x 4" Galv. Studs (6 Req'd.)

3/8" x 8" x 2'-5 1/4" Galvanized (1 Required)



SECTION AT FIXED JOINT

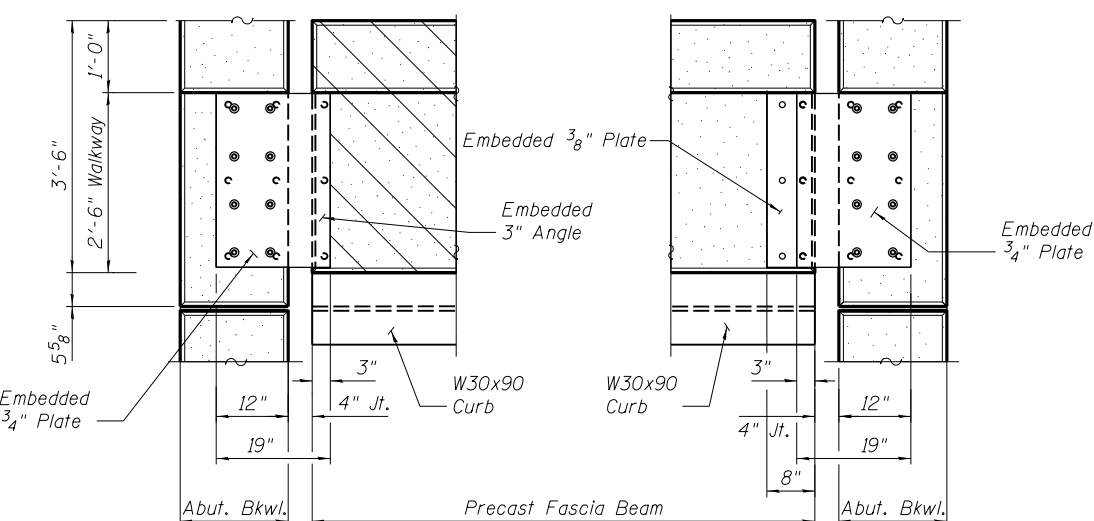


EMBEDDED BEARING ANGLE

(1 Required at Fixed End of Fascia Beam)

1/2" x 4" Galv. Studs (3 Req'd.)

L 3" x 3" x 1/2" x 2'-5 1/4" Galvanized (1 Required)



PLAN - FIXED JT. COVER AT SOUTH ABUMENT

PLAN - EXPANSION JT. COVER AT NORTH ABUMENT

Note:

For Railing Details See Sheet 13 of 19. All (embedded and separate) hardware, angles, bearing plates, side retainers, anchor bolts, threaded rods, nuts, washers and pintles shall be galvanized according to AASHTO M111 and ASTM 385 or M232 as applicable.

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in.

Reinforcement bars shall conform to ASTM A 706, Grade 60.

Two 1/8" fabric adjusting shims of the dimensions of the bearing pad shall be provided for each bearing pad location.

All bearing pads shall be 1" thick. Omit holes when using expansion bearings. Expansion bearing pad shall be bonded to the substructure.

Expansion bearing pad shall have PTFE bonded to top surface. PTFE surface shall be bonded according to manufacturers recommendations.

Corrosion Inhibitor, per Article 1020.05(b)(12) and 1021.07 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete fascia beams. Compressive strength of prestressed concrete, f'c, shall be 6500 psi. Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi. Embedded angles, Side Retainers, Anchor Bolts, plates, studs, bearing pads, Threaded Rods, Non-Shrink Grout and accessories shall be included in the cost of Precast Prestressed Concrete Fascia Beam.

Concrete curb shall be cast with the precast fascia beam and included in the cost of Precast Prestressed Concrete Fascia Beam.

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 and Threaded Rods shall be installed in blockouts with Non-Shrink Grout meeting the material requirements of Article 1024.02 of the Standard Specifications. Blockouts shall be clean prior to grouting and grout installed according to manufactures recommendations. Cost for non-shrink grout shall be included in the cost of Concrete Structures.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Concrete Sealer	Sq. Ft.	1367
Concrete Surface Color Treatment	Sq. Ft.	282
Precast Prestressed Concrete Fascia Beam, No. 3	L. Sum	1

FINAL



USER NAME = Pop00275
 PLOT SCALE = 0.1:1.0
 PLOT DATE = 1/18/2021

DESIGNED - CGP
 CHECKED - JGT
 DRAWN - MGM
 CHECKED - MJW

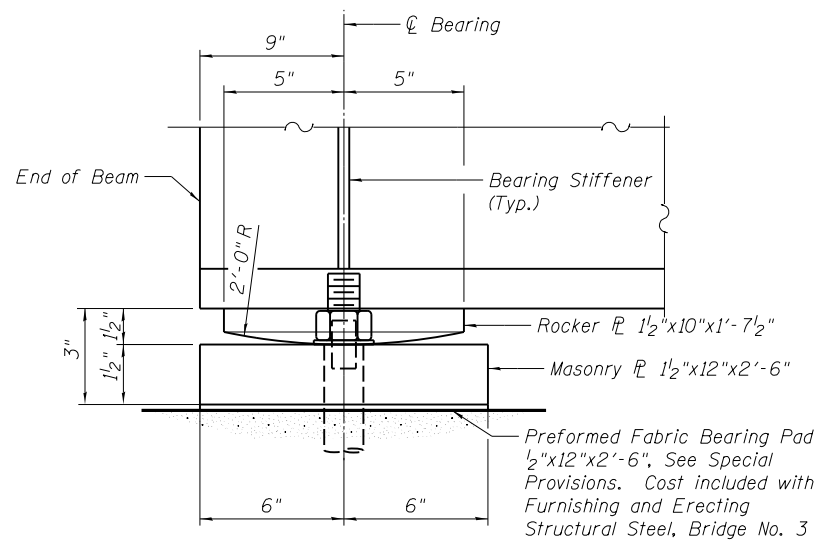
REVISED -
 REVISED -
 REVISED -
 REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

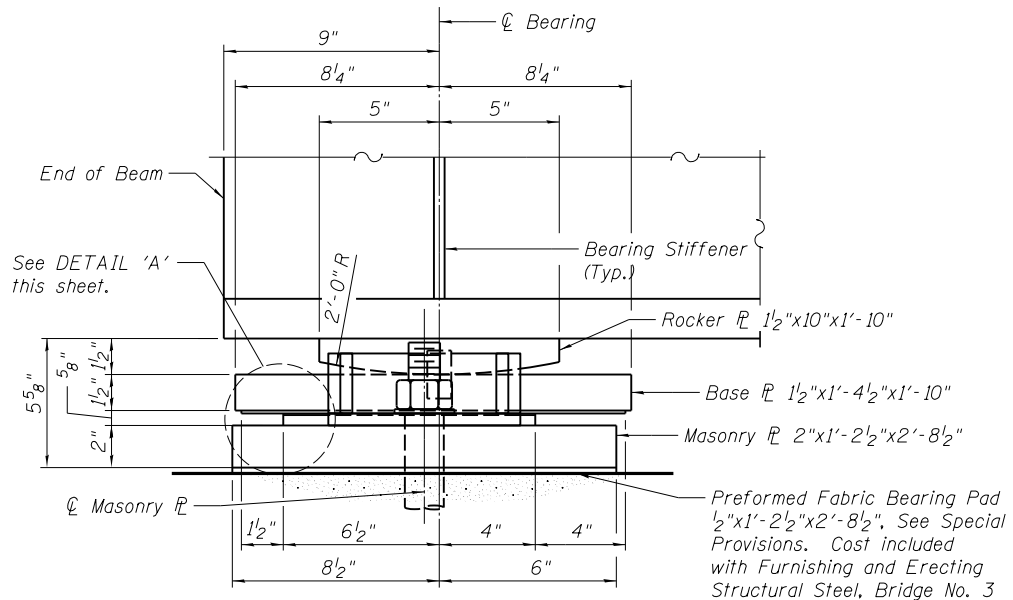
PRECAST FASCIA BEAM DETAILS
 STRUCTURE NO. 084-9966

SHEET NO. 10 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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			CONTRACT NO. 93747	
• 7985A & 8208		ILLINOIS FED. AID PROJECT		

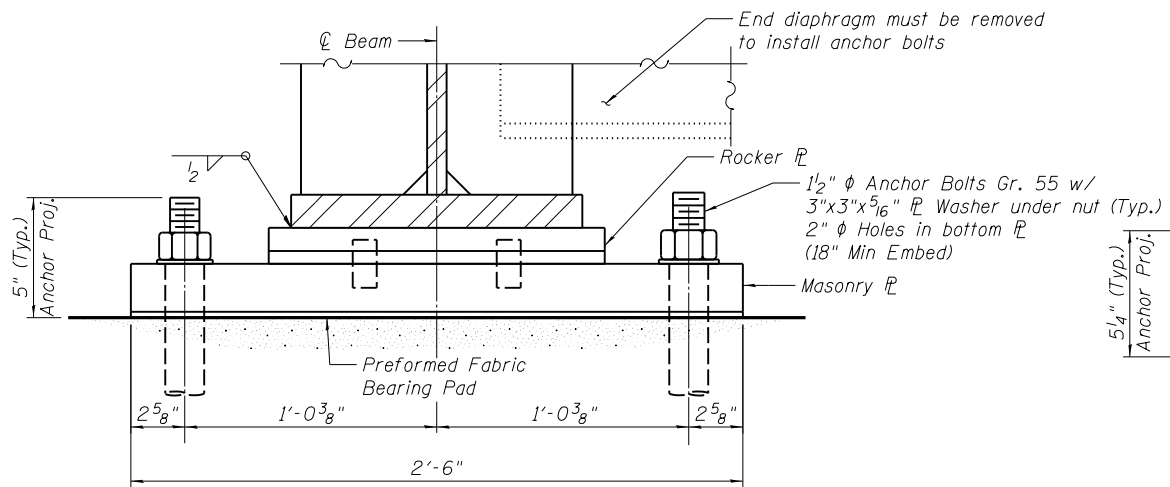


ELEVATION - FIXED BEARING

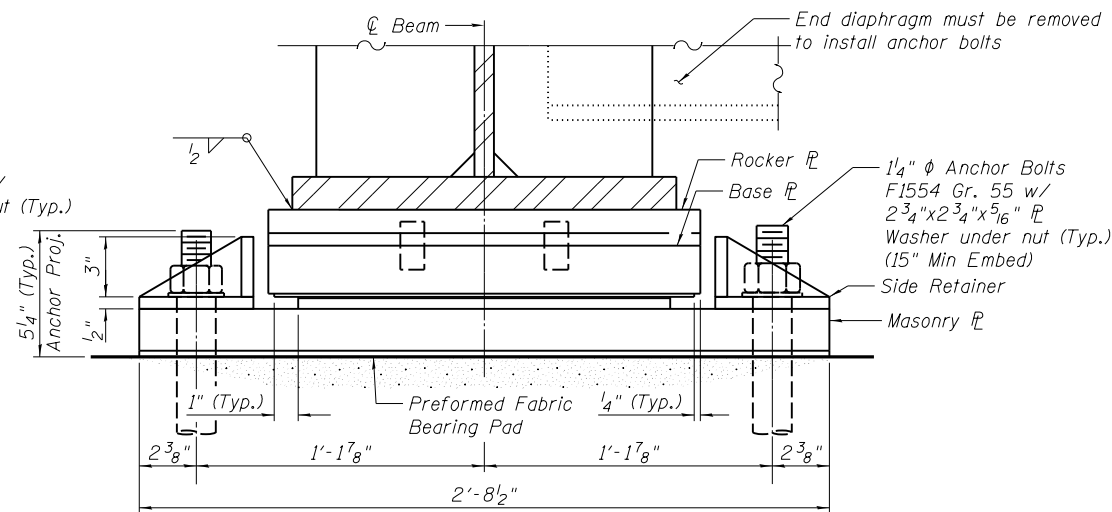


ELEVATION - EXPANSION BEARING

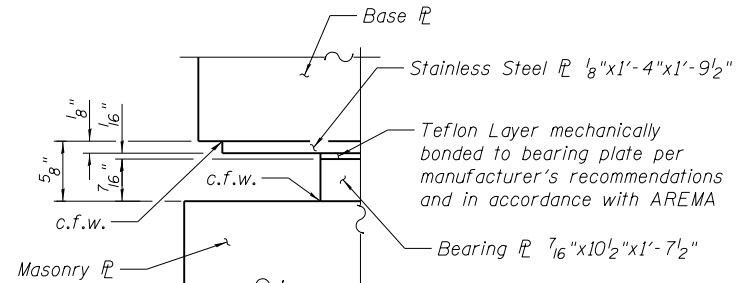
- Notes:
1. The structural steel plates of the Bearing Assembly shall conform to the requirements of ASTM A709, Grade 50.
 2. Teflon Layer shall be composed of virgin unfilled TFE resin, unfilled TFE sheets, or unfilled TFE fabric. Filler material, such as milled glass fibers, will not be allowed. Teflon layer shall conform to the requirements of AREMA Chapter 15.
 3. The bearing assembly shall be according to Section 521 of the Standard Specifications where applicable. The bearing assembly and anchor bolts will not be paid for separately but included in the weight of Structural Steel for payment as "Furnishing and Erecting Structural Steel, Bridge No. 3".
 4. 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.
 5. Anchor bolts shall be installed in blockouts with Non-Shrink Grout meeting the material requirements of Article 1024.02 of the Standard Specifications. Blockouts shall be clean prior to grouting and grout installed according to manufactures recommendations. Cost for non-shrink grout shall be included in the cost of Concrete Structures.
 6. Two $\frac{1}{8}$ " adjusting shims shall be provided for each bearing assembly in addition to all other plates or shims and placed as shown on bearing details.



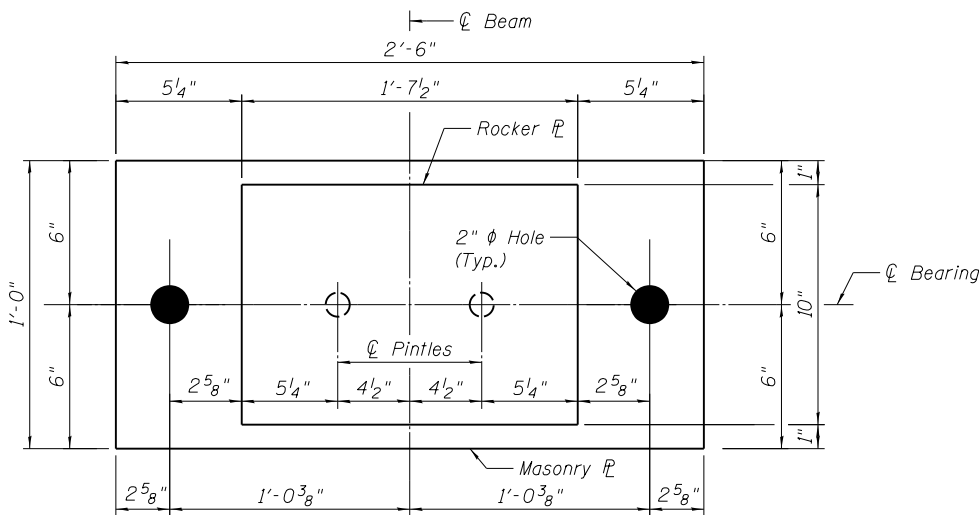
END VIEW - FIXED BEARING



END VIEW - EXPANSION BEARING

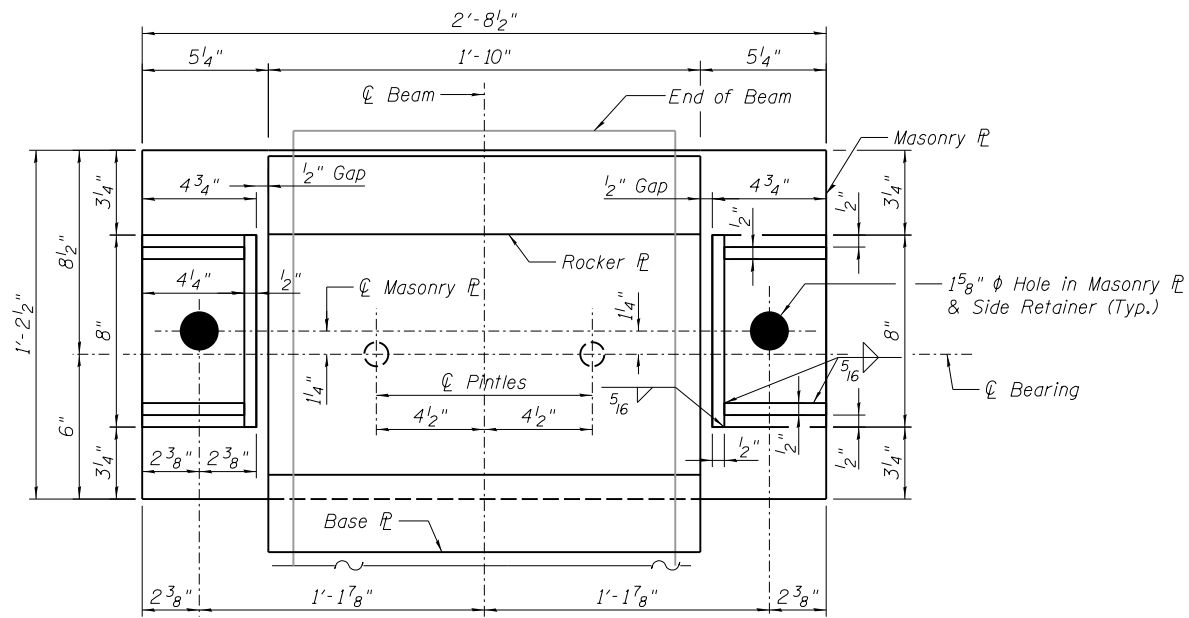


DETAIL 'A'



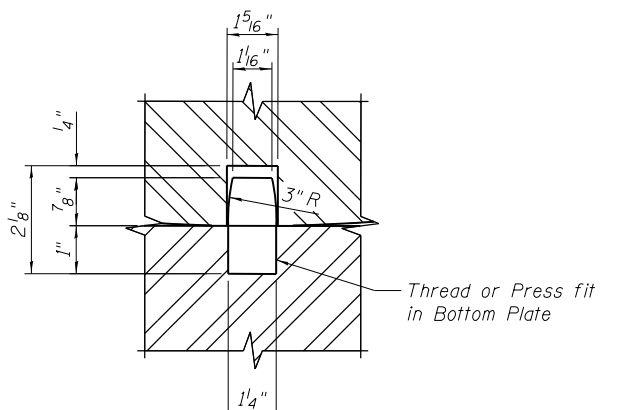
PLAN VIEW - FIXED BEARING

(S. Abutment Bearings - 13 required)

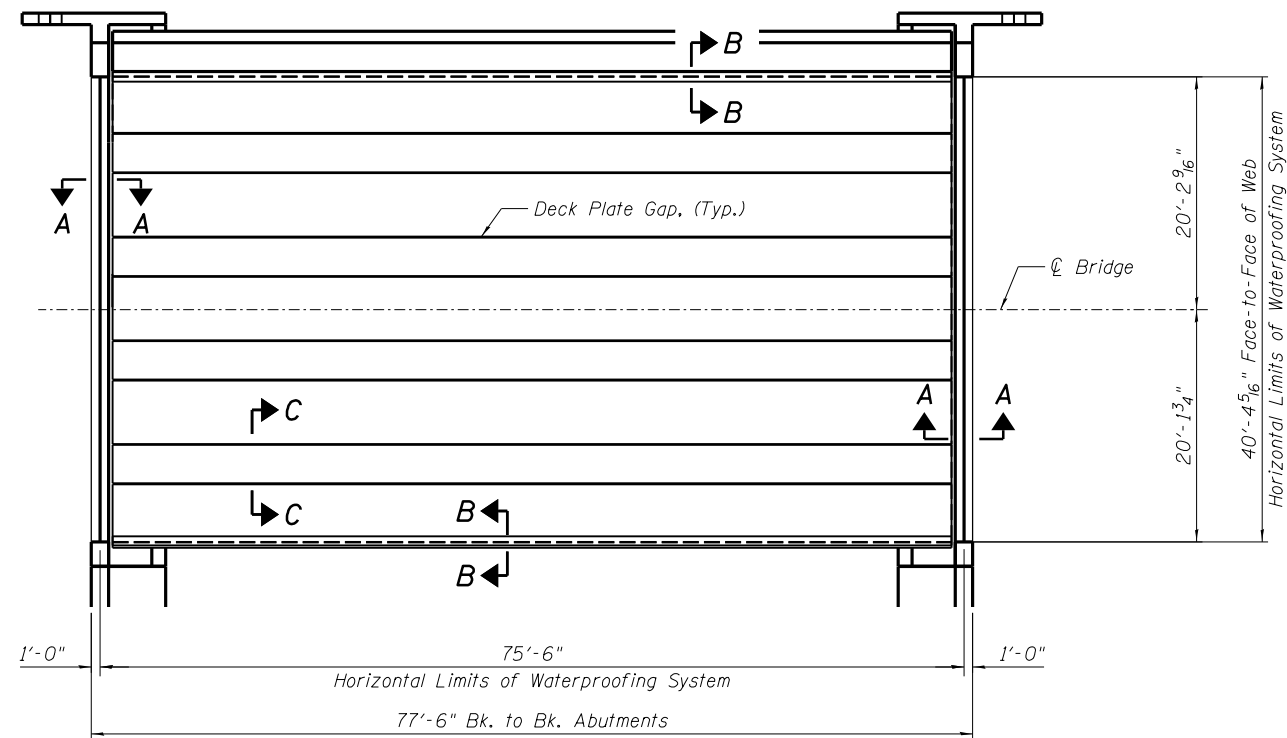


PLAN VIEW - EXPANSION BEARING

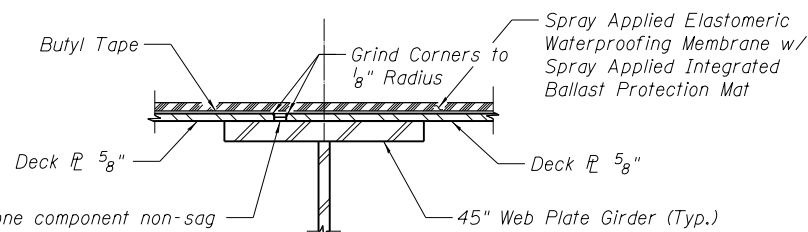
(N. Abutment Bearings - 13 required)



PINTLE DETAIL



WATERPROOFING LIMITS PLAN

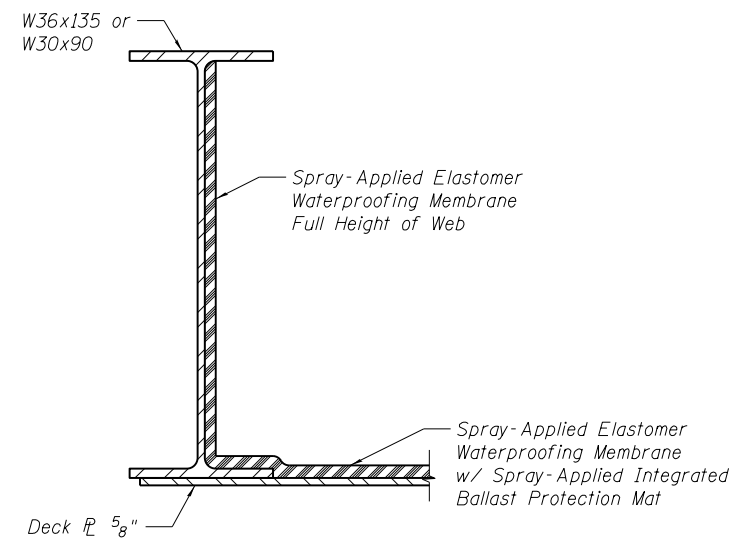


Non-staining grey one component non-sag elastomeric gun grade polyurethane sealant meeting the requirements of ASTM C-920, Type S, Grade NS, Class 25. Cost included with Membrane Waterproofing (Special)

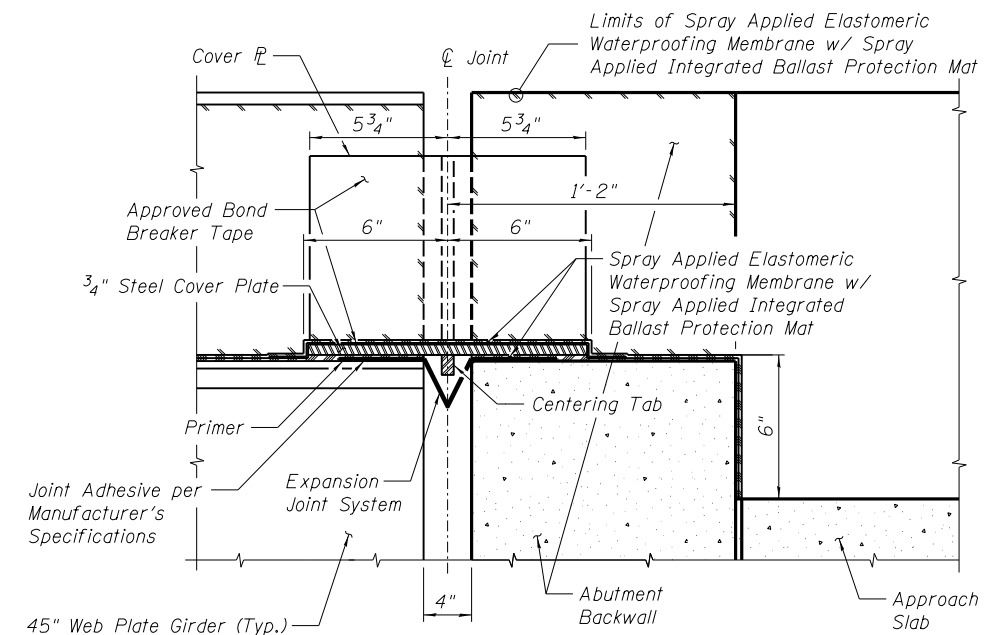
SECTION C-C

Notes:

1. Prepare surfaces and apply in accordance with Manufacturer's recommendations..
2. Structural steel cover plates shall be galvanized.
3. Cost of adhesive and bond breaker tape shall be included in the cost of "Membrane Waterproofing (Special)".
4. The cover plate is included in the weight of the Structural Steel and will be paid for as "Furnishing and Erecting Structural Steel, Bridge No. 3".
5. For cover plate details see Sheet 8 of 19.
6. Structural steel surfaces coated with spray-applied elastomer waterproofing membrane shall not be primed or painted.



SECTION B-B



Note:

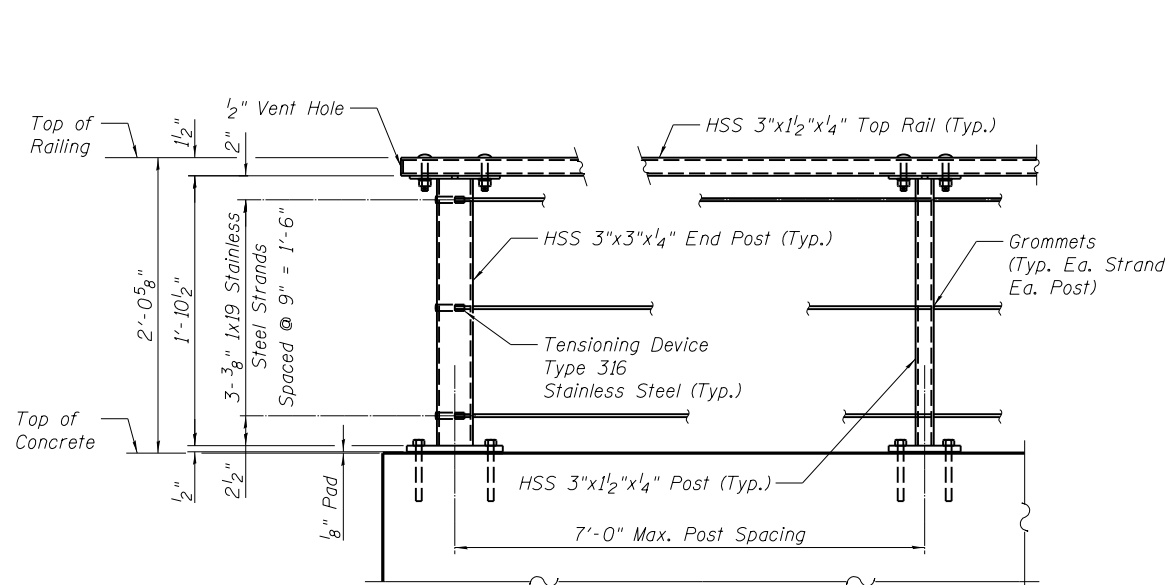
1. Bridge deck membrane continuous thru joint.
2. Typical Joint Detail shown for information only. Waterproofing installer shall determine final details in accordance with the manufacturer's recommendations.

SECTION A-A

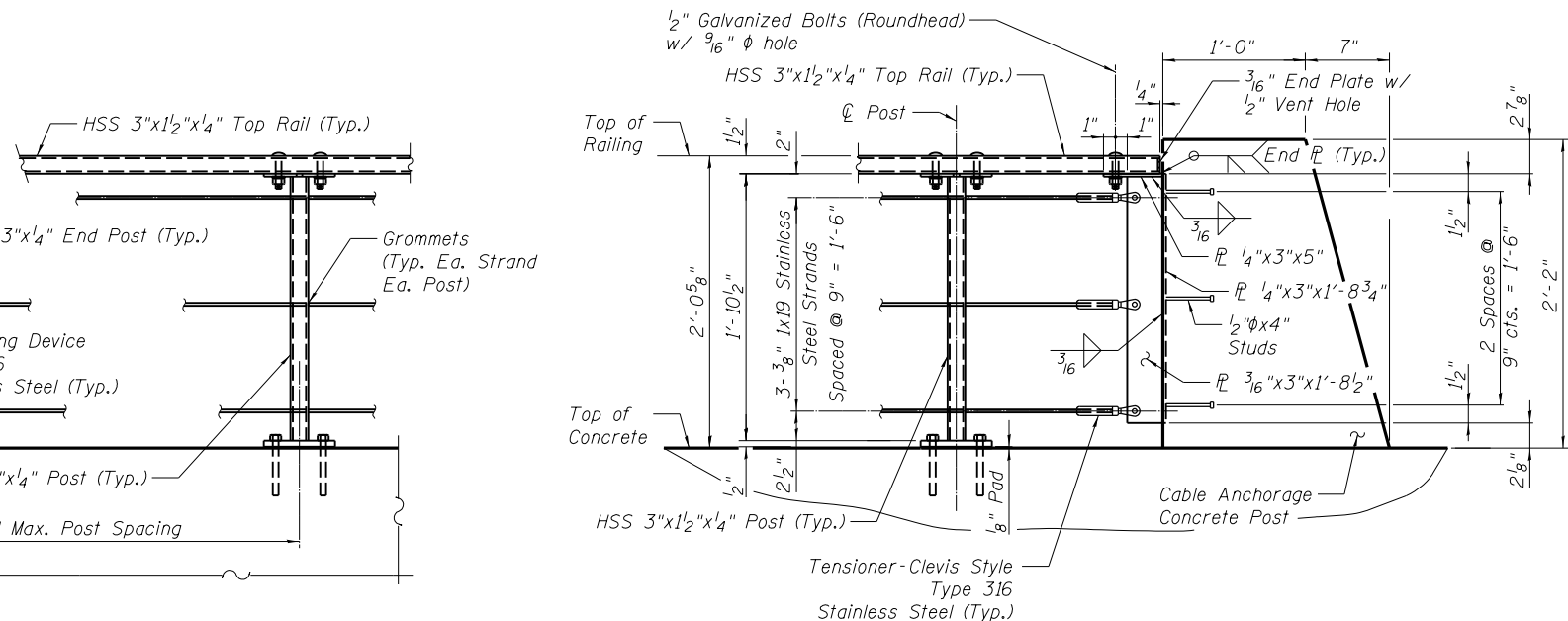
(At Rt. 4's to Bk. of Abut.)

BILL OF MATERIAL

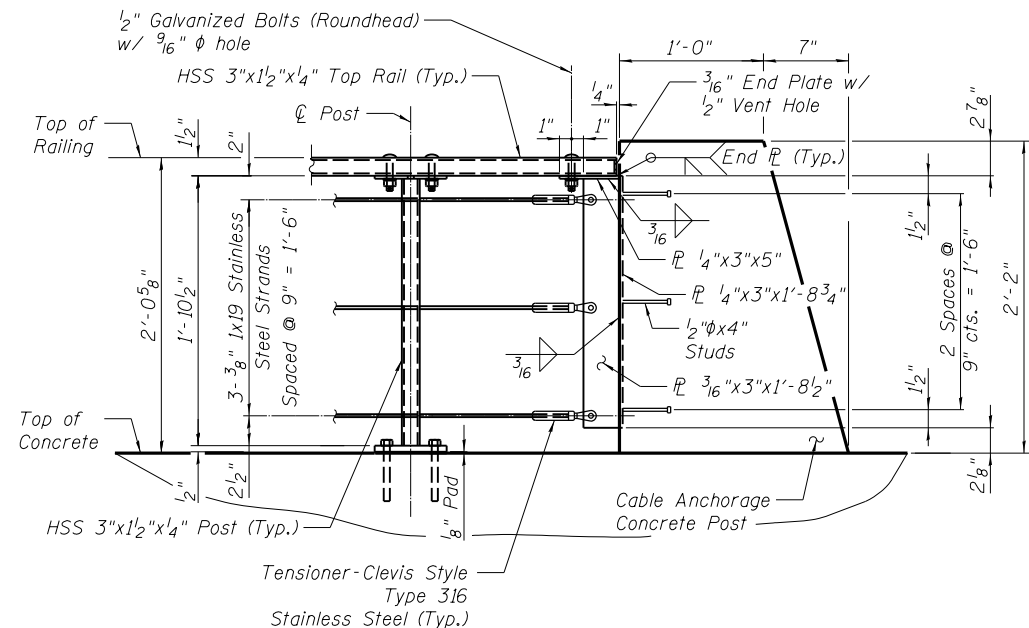
ITEM	UNIT	TOTAL
Membrane Waterproofing (Special)	Sq. Ft.	3128



END POST



INTERMEDIATE POST



CABLE RAILING END PANEL

Notes:

Anchor rods shall be ASTM F1554, Gr. 55, galvanized steel 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. The anchor rods shall be hot-dipped galvanized according to ASTM M232, Class C.

Tube segments shall have all corners ground to remove burrs or sharp projections.

All bolts, eyebolts, nuts and washers must satisfy the requirements of ASTM A307 Gr. A unless noted otherwise.

The Anchor rods shall be installed according to Article 509.06 of the Standard Specifications. Embedment shall be 4" min. or according to the manufactures specifications whatever is greater.

Structural steel plates and bars of the Steel Railing shall conform to the requirements of ASTM A36/36M.

Tubular steel posts shall be according to the requirements of ASTM A500, Grade B.

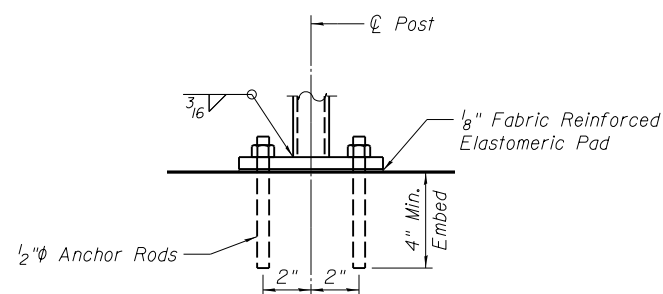
All steel rail members, with the exception of the stainless steel strand and fittings, shall be hot dipped galvanized according to 509.05 of the Standard Specifications.

All studs shall be 1/2" phi x 4" granular or solid flux filled headed studs automatically end welded to plates.

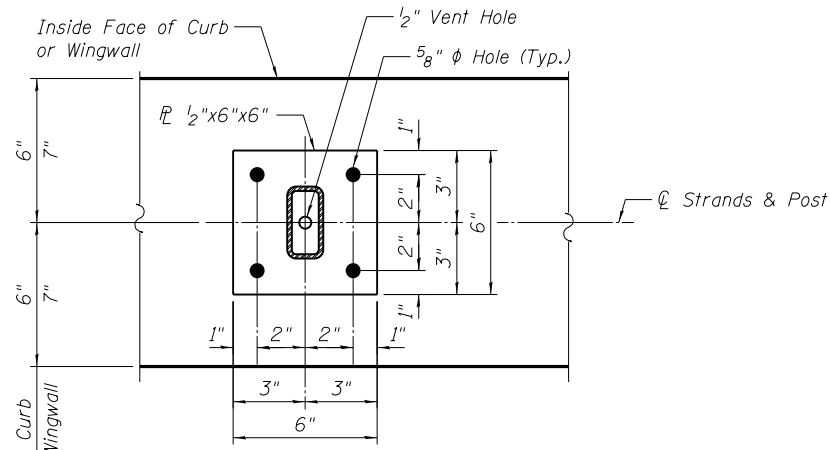
For top rail and post connection details See Sheet 14 of 19.

See Sheet 4 of 19 for rail post spacing.

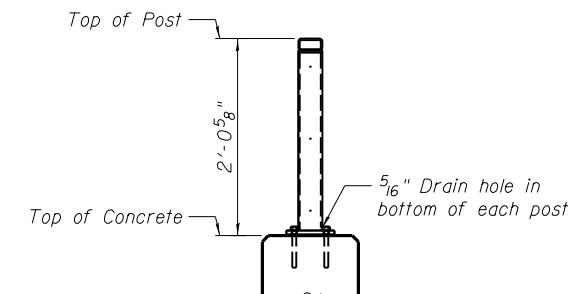
See Retaining Wall Plans for chain attachment details.



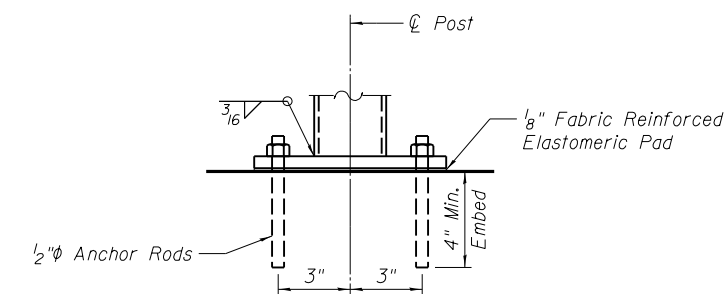
ANCHOR ROD DETAIL INTERMEDIATE POSTS



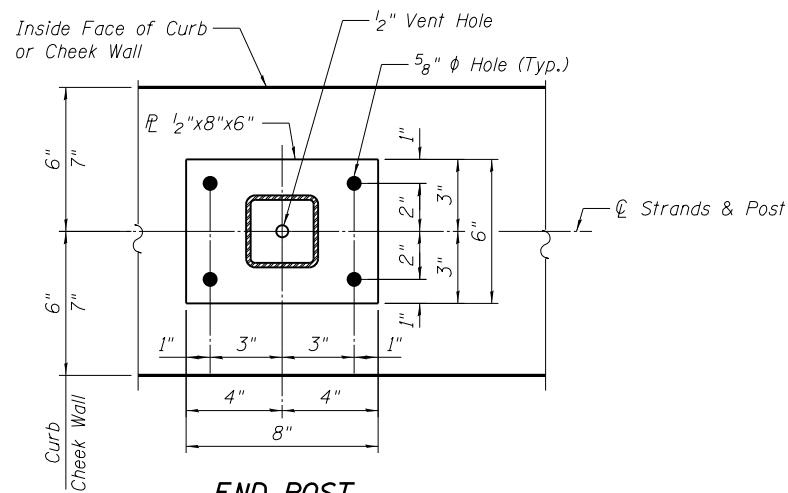
INTERMEDIATE POST



POST DETAIL - WEST SIDE



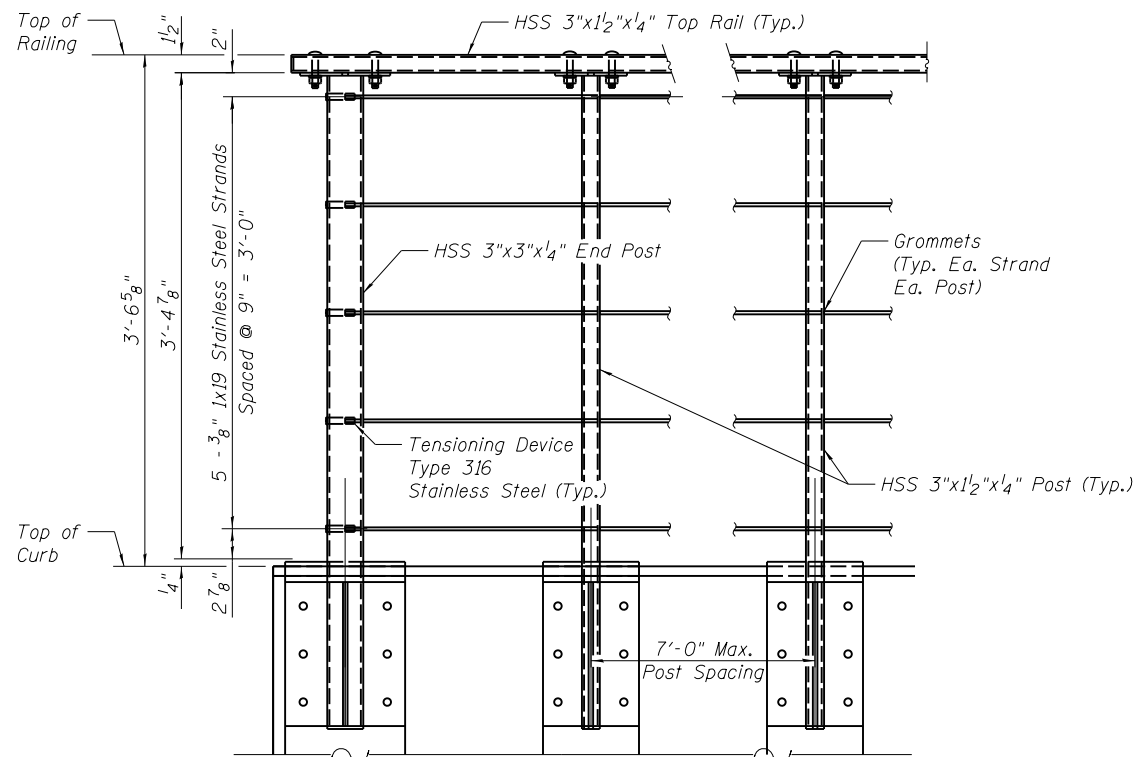
ANCHOR ROD DETAIL END POSTS



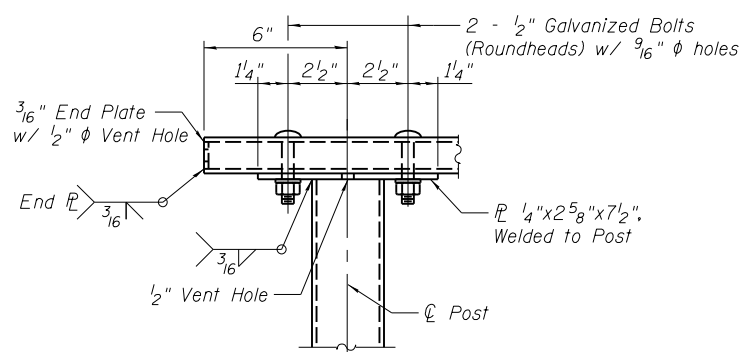
END POST

BILL OF MATERIAL
(Includes Railing along West & East side)

ITEM	UNIT	TOTAL
Steel Railing (Special)	Foot	158

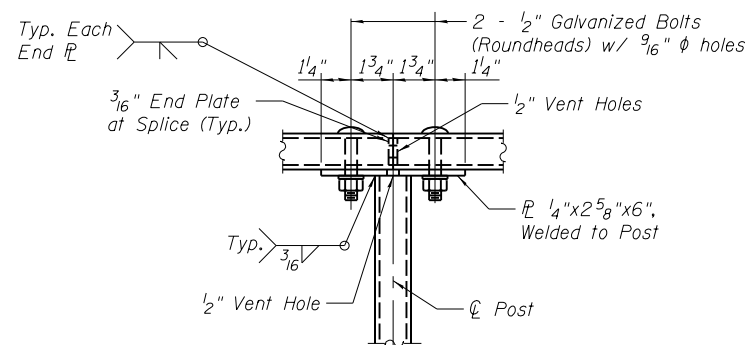


RAILING END PANEL - SUPERSTRUCTURE

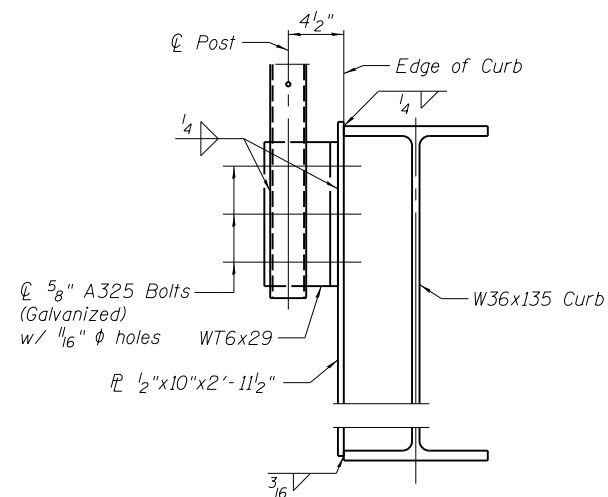


TYPICAL RAIL/END POST CONNECTION
(Strands not shown for clarity.)

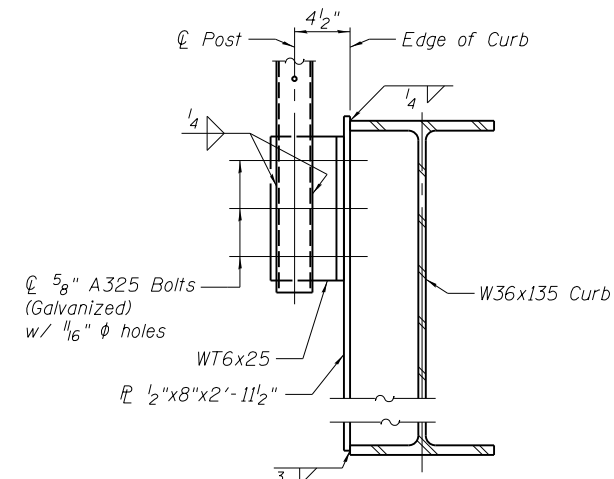
Notes:
See Sheet 4 of 19 for rail post spacing.
See Sheet 13 of 19 for railing notes and anchor rod details.



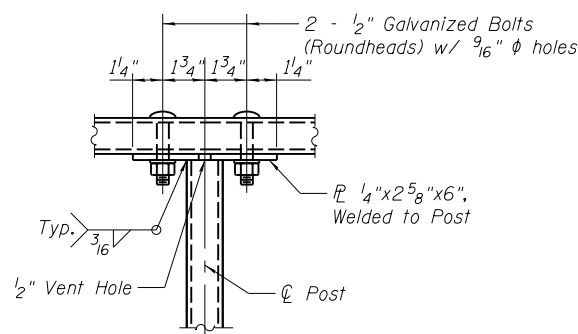
TOP RAIL - WITH SPLICE



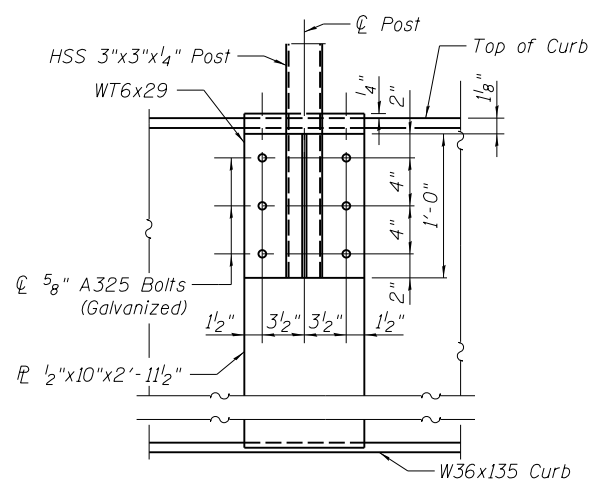
END POST (3")



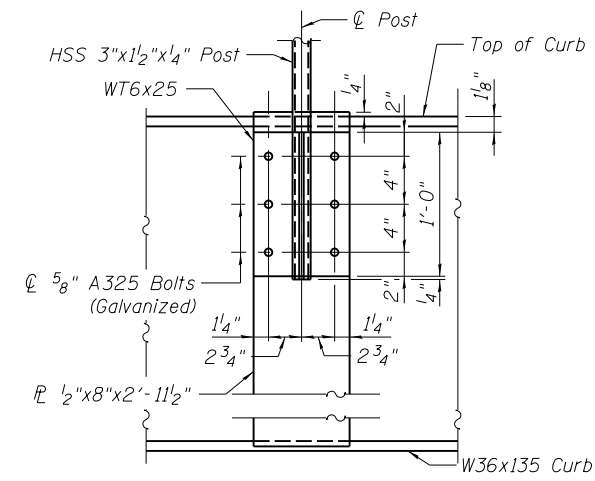
INTERMEDIATE POST (1 1/2")
(Along Superstructure)



TOP RAIL - NO SPLICE



END POST (3")



INTERMEDIATE POST (1 1/2")
(Along Superstructure)

TYPICAL RAIL/POST CONNECTION
(Strands not shown for clarity.)

pw:\hansoninc-pw-bentley.com\hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VINCAD\Struct\Usable Segment V\SouthGrand-10th\Sheet\084-9966-09L01798-014-Steel Rail-East

FINAL



USER NAME = Pop00275
PLOT SCALE = 0:1.999996 ' = 1/16" in.
PLOT DATE = 1/18/2021

DESIGNED - MJW
CHECKED - CGP
DRAWN - MGM
CHECKED - MJW

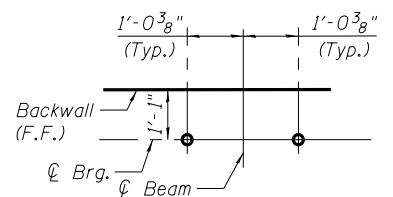
REVISED -
REVISED -
REVISED -
REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

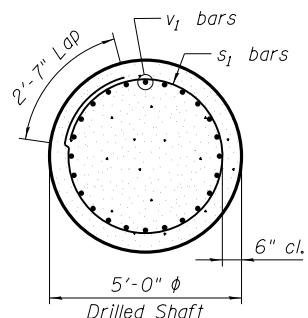
STEEL RAILING (SPECIAL) EASTSIDE
STRUCTURE NO. 084-9966

SHEET NO. 14 OF 19 SHEETS

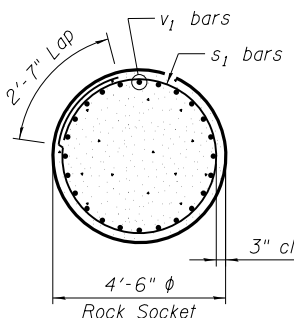
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
•	19-00488-00-BR	SANGAMON	347	245
			CONTRACT NO. 93747	
• 7985A & 8212		ILLINOIS FED. AID PROJECT		



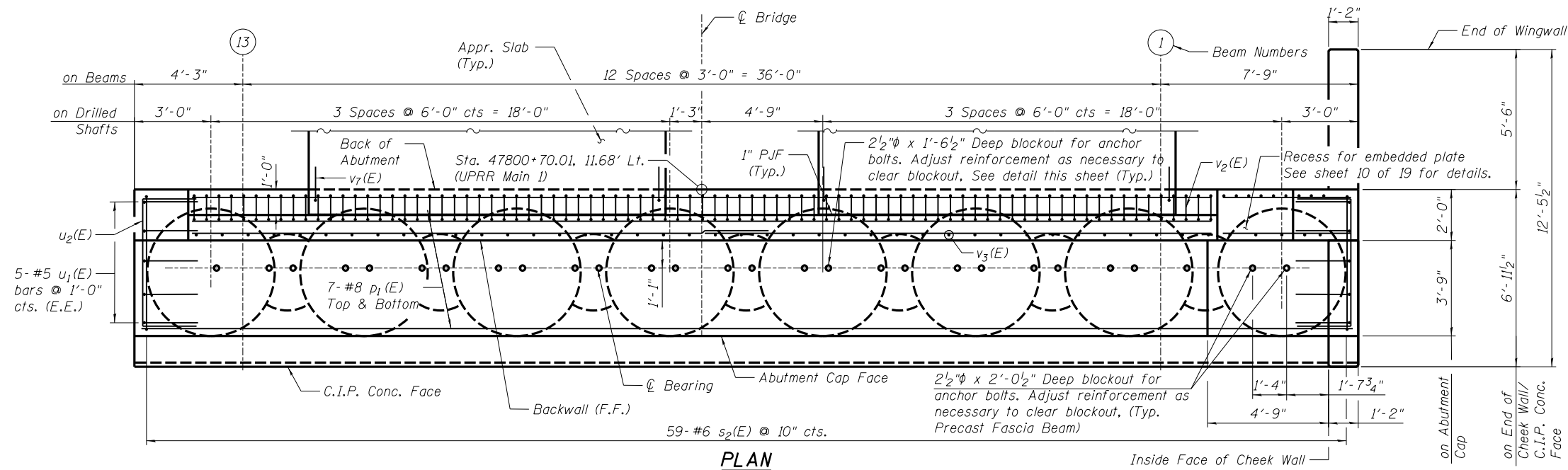
BLOCKOUT LAYOUT



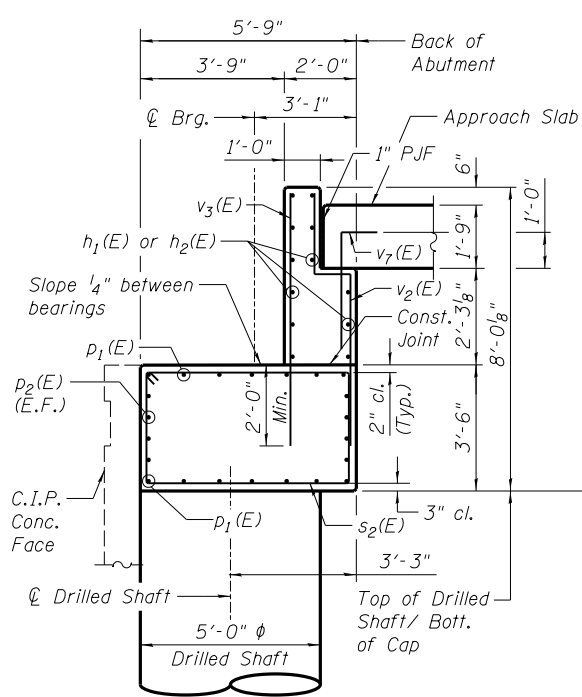
SECTION B-B



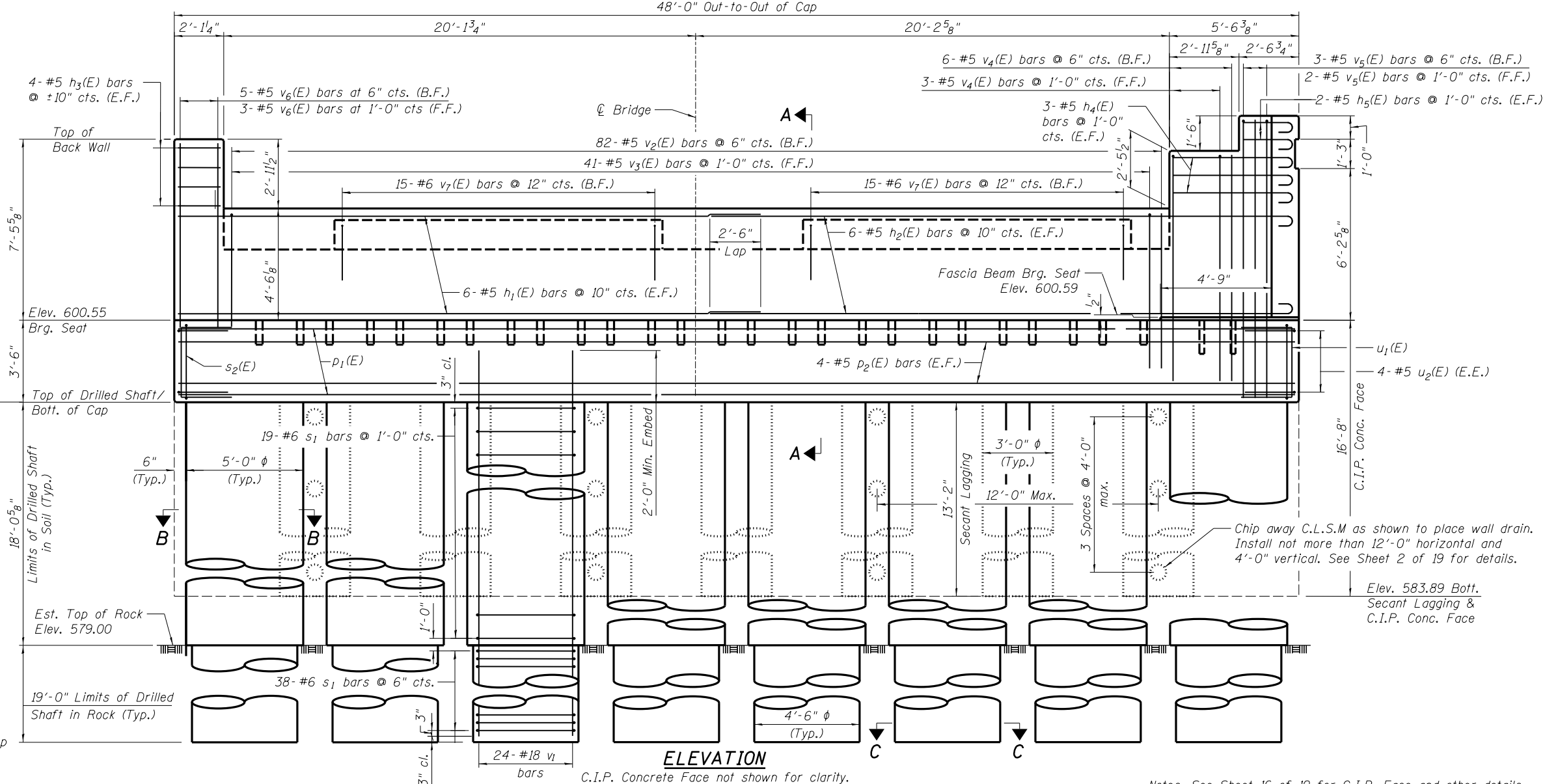
SECTION C-C



PLAN



SECTION A-A



ELEVATION

* The quantities and reinforcement detailing are based on the top of shaft and the estimated top of rock elevations shown and may change based on the actual top of rock encountered at each shaft and the final top of shaft elevation.

Notes: See Sheet 16 of 19 for C.I.P. Face and other details.

FINAL



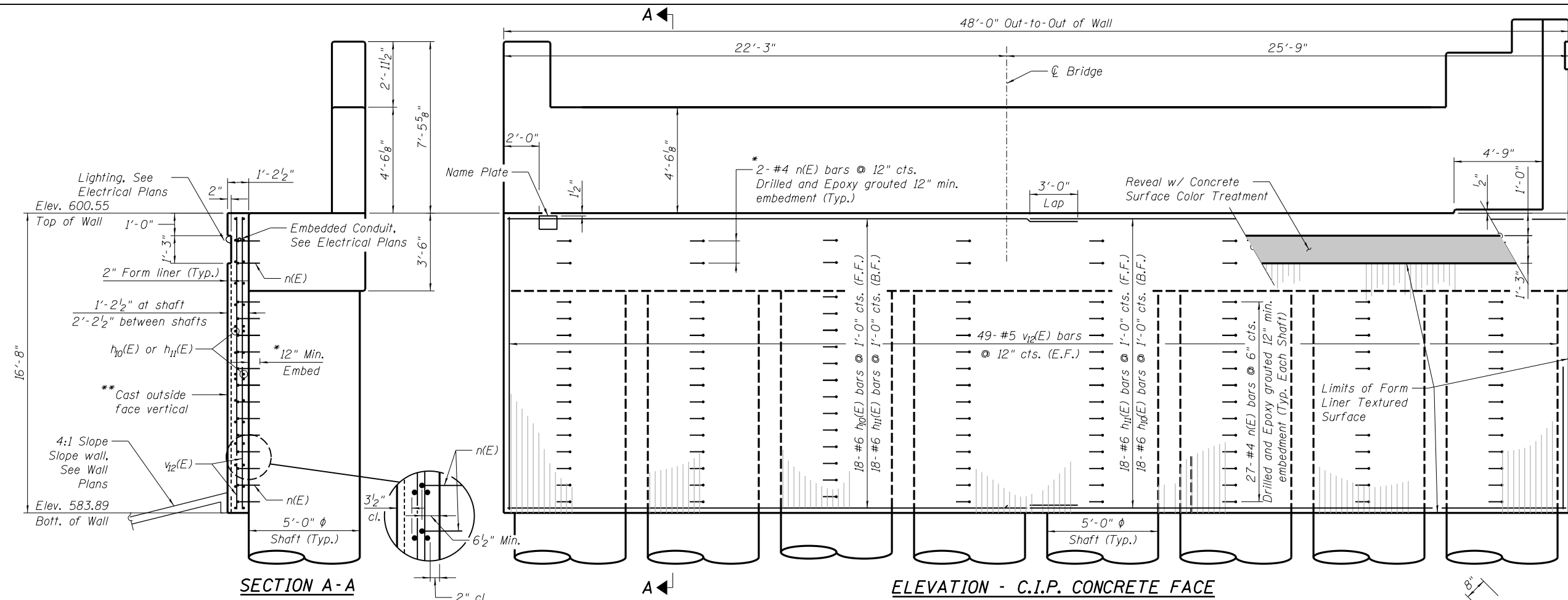
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PLOT DATE = 1/18/2021	DRAWN - MGM	REVISD -
	CHECKED - MJW	REVISD -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT
STRUCTURE NO. 084-9966

SHEET NO. 15 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
•	19-00488-00-BR	SANGAMON	347	246
• 7985A & 8213 ILLINOIS FED. AID PROJECT			CONTRACT NO. 93747	

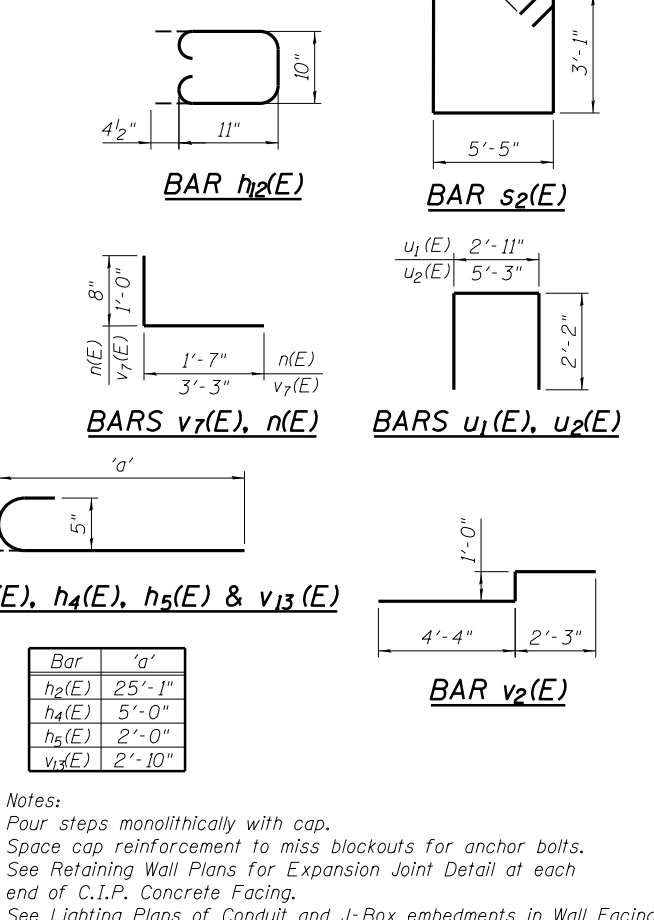
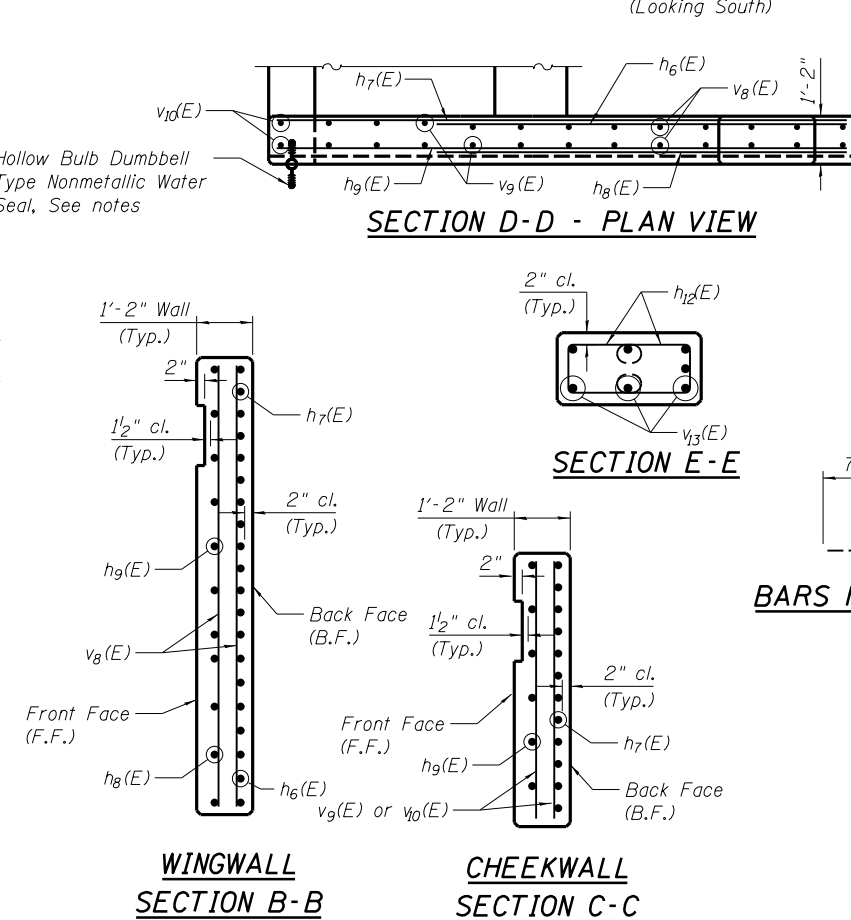
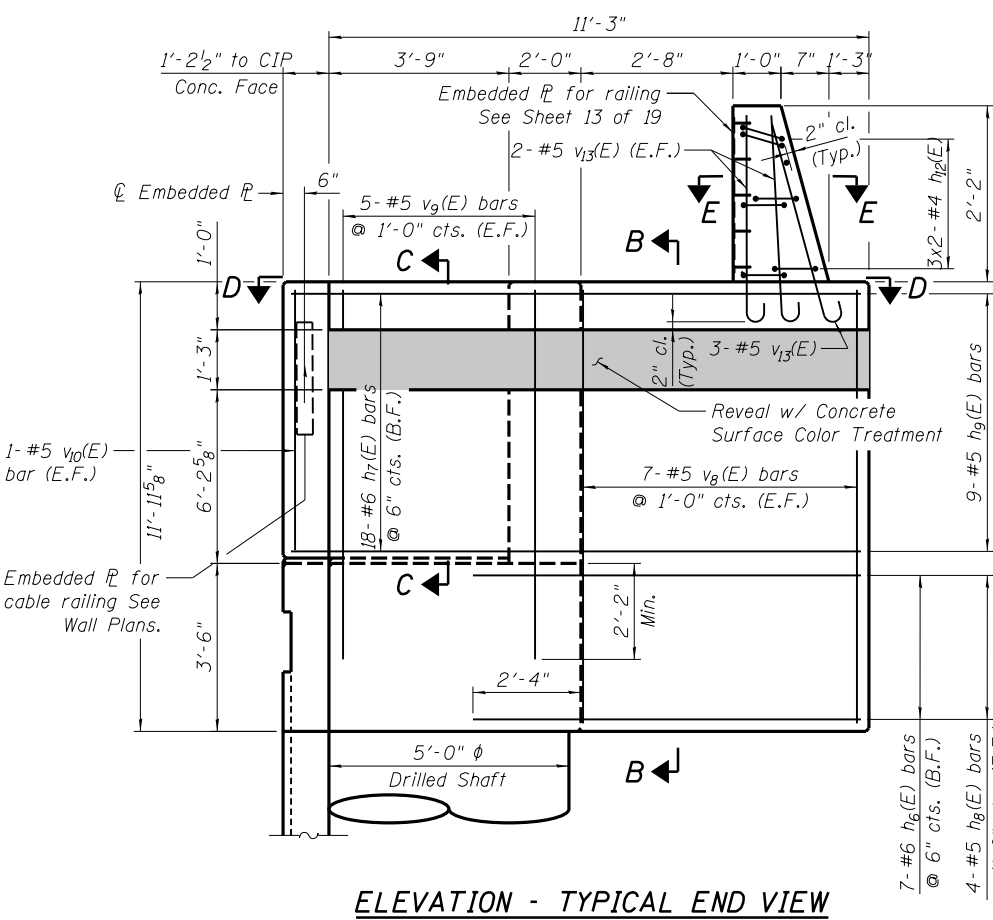


* Bars epoxy grouted shall have an embedment sufficient to develop 1.25 times the full capacity of the reinforcement bar.

** Concrete wall face shall be cast vertically. Thickness of wall may vary due to abutment deflection. The Min. wall thickness shall be 11 1/2".

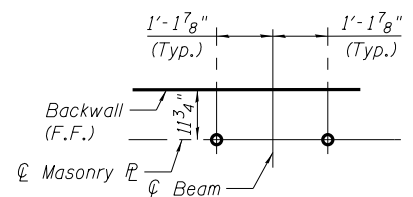
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h1(E)	12	#5	25'-1"	—
h2(E)	12	#5	25'-8"	—
h3(E)	8	#5	1'-9"	—
h4(E)	6	#5	5'-7"	—
h5(E)	4	#5	2'-7"	—
h6(E)	7	#6	7'-10"	—
h7(E)	18	#6	12'-0"	—
h8(E)	4	#5	7'-10"	—
h9(E)	9	#5	12'-0"	—
h10(E)	36	#6	22'-0"	—
h11(E)	36	#6	28'-8"	—
h12(E)	6	#4	3'-5"	—
n(E)	232	#4	2'-3"	L
p1(E)	14	#8	47'-8"	—
p2(E)	8	#5	47'-8"	—
s1	456	#6	15'-2"	O
s2(E)	59	#6	18'-4"	□
u1(E)	10	#5	7'-3"	U
u2(E)	8	#5	9'-7"	U
v1	192	#18	38'-10"	—
v2(E)	82	#5	7'-7"	—
v3(E)	41	#5	6'-8"	—
v4(E)	9	#5	9'-1"	—
v5(E)	5	#5	10'-7"	—
v6(E)	8	#5	9'-7"	—
v7(E)	30	#6	4'-3"	—
v8(E)	14	#5	11'-7"	—
v9(E)	10	#5	10'-9"	—
v10(E)	2	#5	8'-1"	—
v11(E)	98	#5	16'-4"	—
v12(E)	7	#5	3'-5"	—
Structure Excavation		Cu. Yds.	227	
Concrete Structures		Cu. Yds.	54.9	
Form Liner Textured Surface		Sq. Ft.	692	
Reinforcement Bars		Pound	111790	
Reinforcement Bars, Epoxy Coated		Pound	11650	
Drilled Shaft in Soil		Cu. Yds.	105.0	
Drilled Shaft in Rock		Cu. Yds.	89.5	
Secant Lagging		Cu. Ft.	651	
Concrete Sealer		Sq. Ft.	1328	
Concrete Surface Color Treatment		Sq. Ft.	74	
Crosshole Sonic Logging Access Ducts		Foot	316	

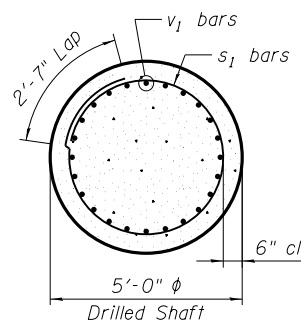


Bar	'a'
h2(E)	25'-1"
h4(E)	5'-0"
h5(E)	2'-0"
v13(E)	2'-10"

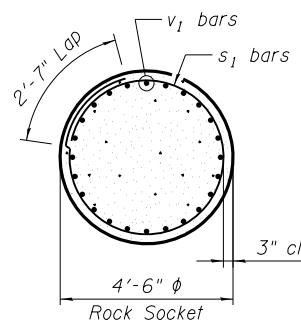
Notes:
 Pour steps monolithically with cap.
 Space cap reinforcement to miss blockouts for anchor bolts.
 See Retaining Wall Plans for Expansion Joint Detail at each end of C.I.P. Concrete Facing.
 See Lighting Plans of Conduit and J-Box embedments in Wall Facing.



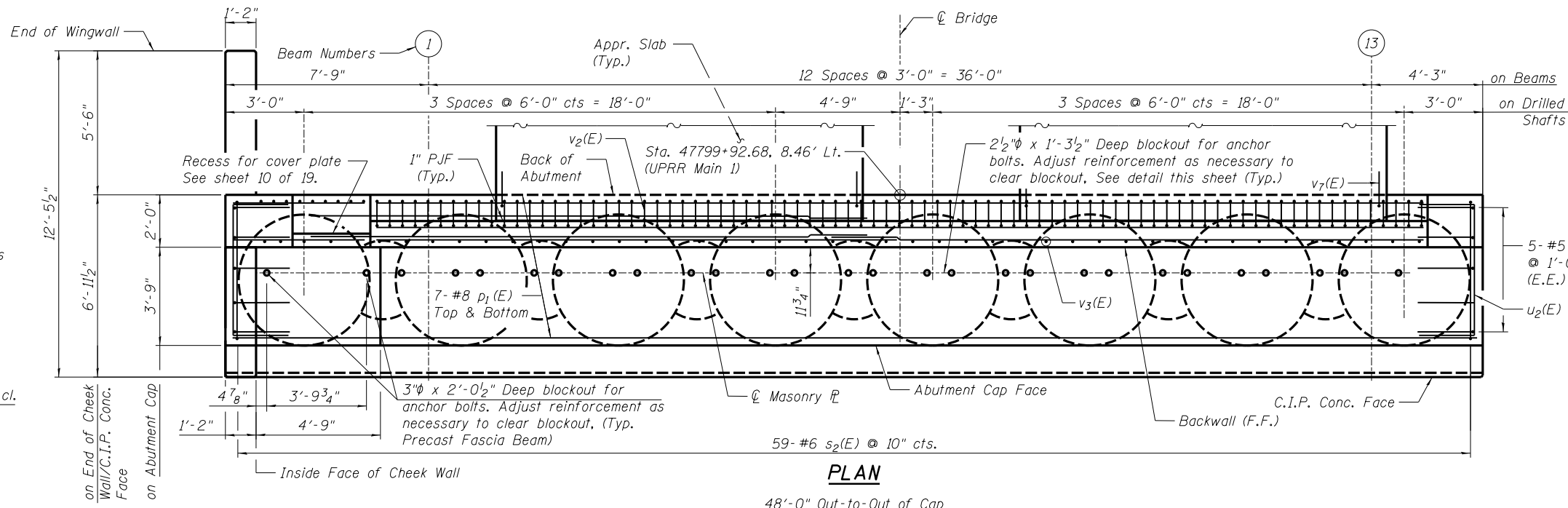
BLOCKOUT LAYOUT



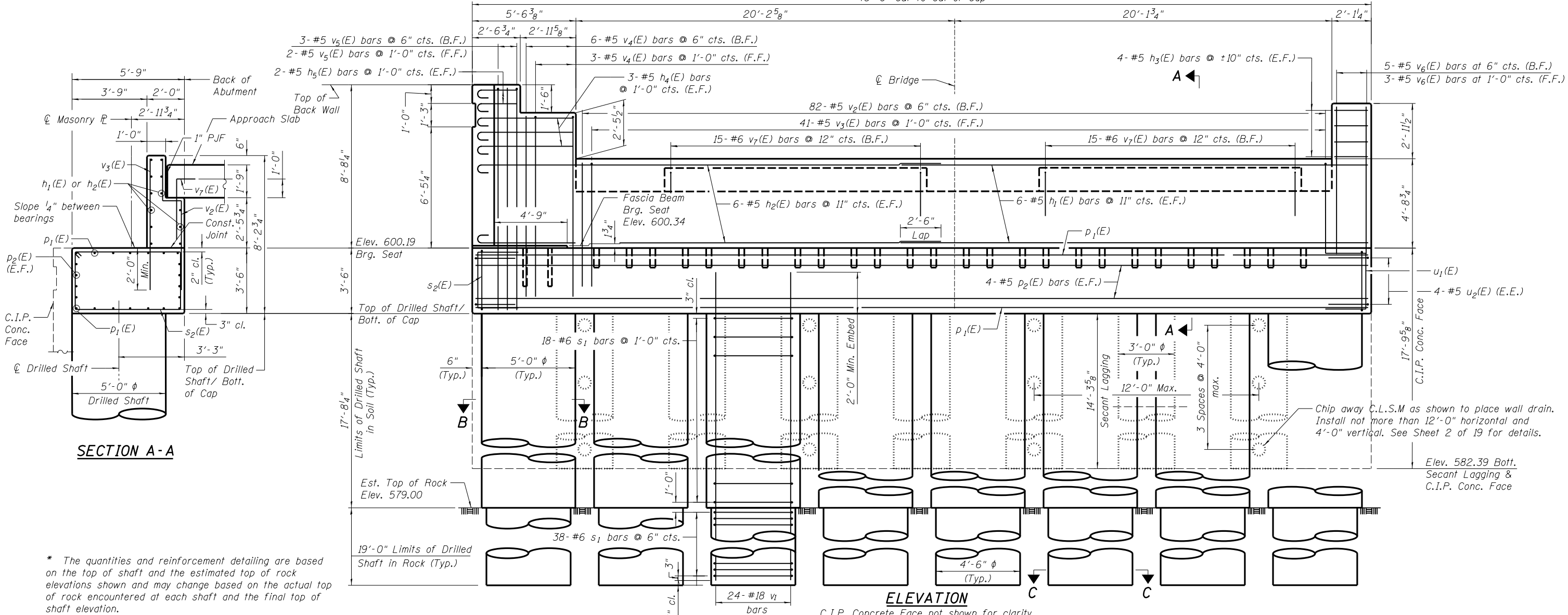
SECTION B-B



SECTION C-C



PLAN



ELEVATION

C.I.P. Concrete Face not shown for clarity. (Looking North)

Notes: See Sheet 16 of 19 for C.I.P. Face and other details.

* The quantities and reinforcement detailing are based on the top of shaft and the estimated top of rock elevations shown and may change based on the actual top of rock encountered at each shaft and the final top of shaft elevation.

FINAL



USER NAME = Pop00275
 PLOT SCALE = 0.1999996" = 1' / in.
 PLOT DATE = 1/18/2021

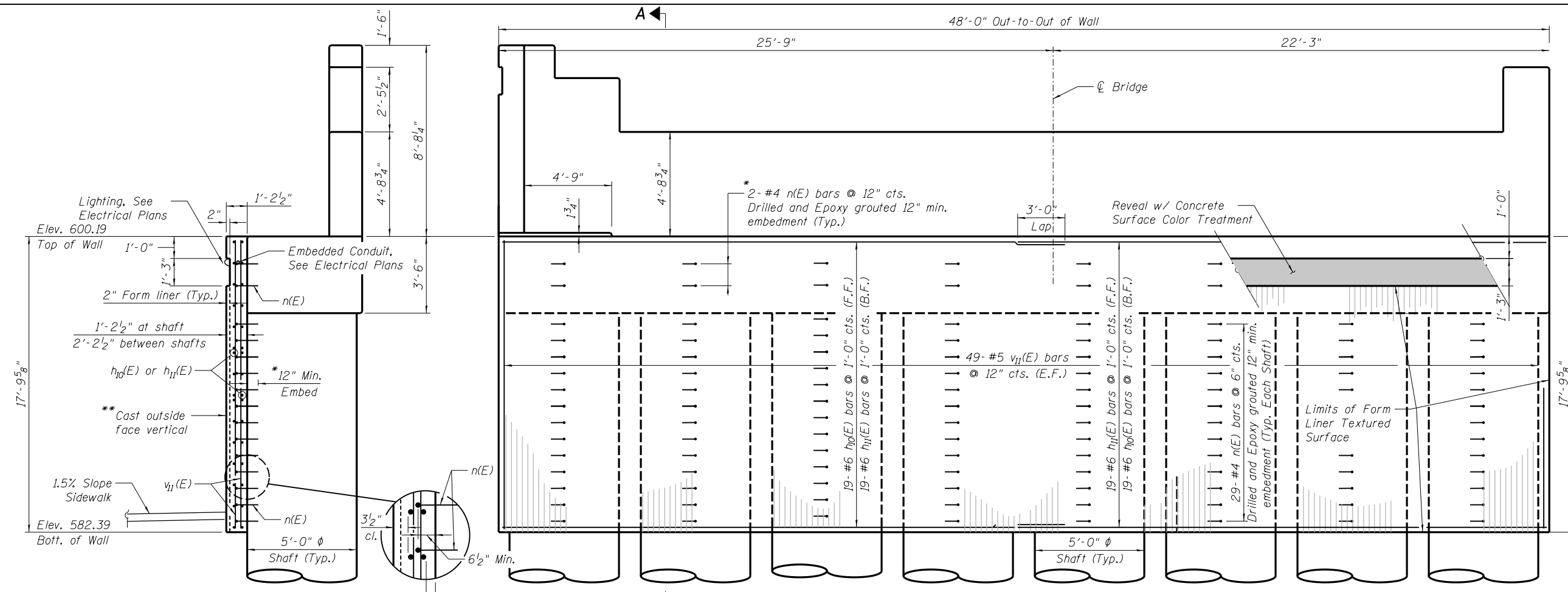
DESIGNED - MJW/CGP
 CHECKED - MNM/MRK
 DRAWN - MGM
 CHECKED - MJW

REVISED -
 REVISED -
 REVISED -
 REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT
 STRUCTURE NO. 084-9966
 SHEET NO. 17 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
•	19-00488-00-BR	SANGAMON	347	248
CONTRACT NO.			93747	
• 7985A & 8215 ILLINOIS FED. AID PROJECT				

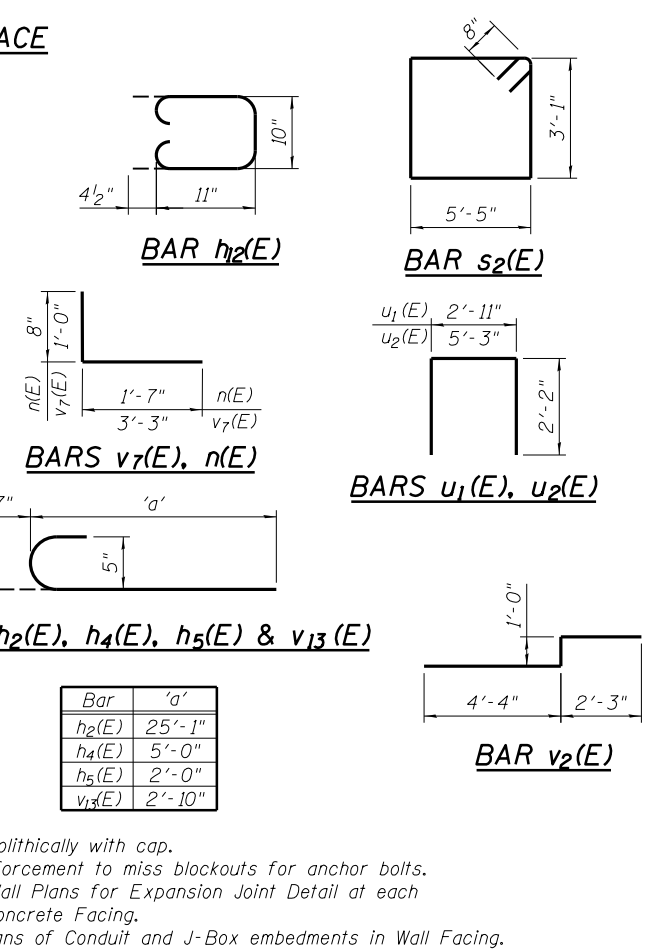
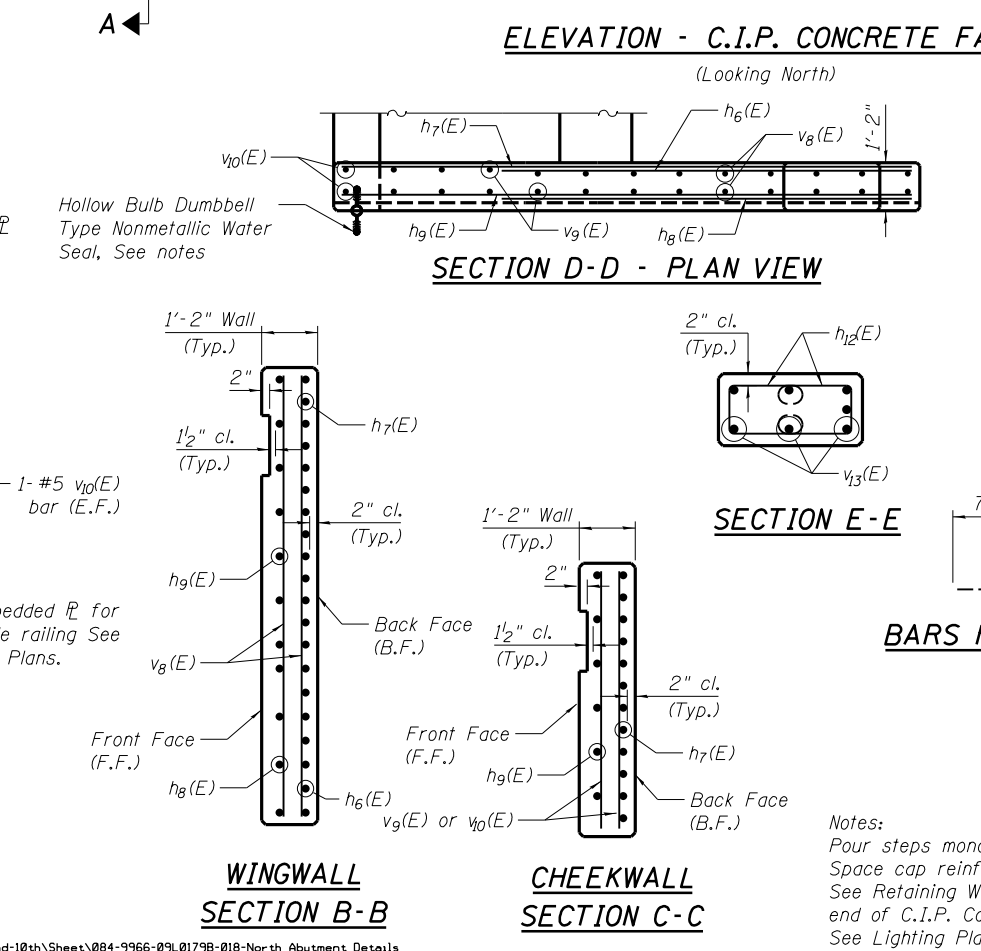
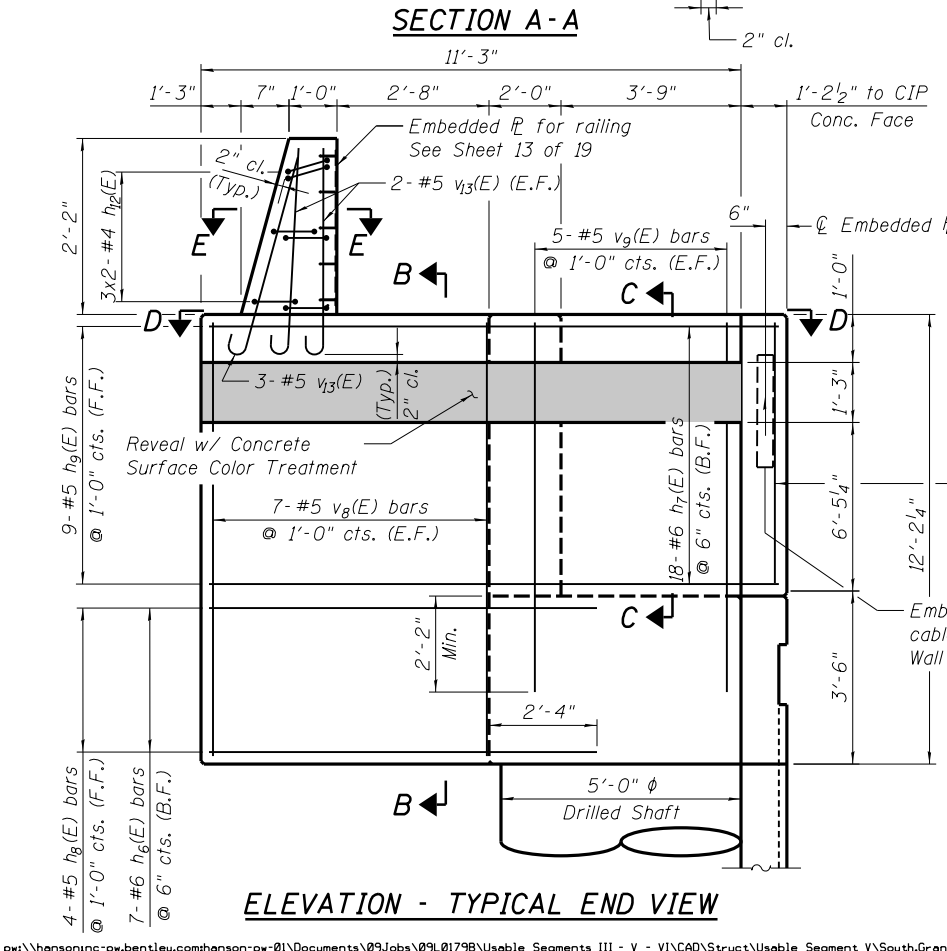


* Bars epoxy grouted shall have an embedment sufficient to develop 1.25 times the full capacity of the reinforcement bar.

** Concrete wall face shall be cast vertically. Thickness of wall may vary due to abutment deflection. The Min. wall thickness shall be 11 1/2\".

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h ₁ (E)	12	#5	25'-1"	—
h ₂ (E)	12	#5	25'-8"	—
h ₃ (E)	8	#5	1'-9"	—
h ₄ (E)	6	#5	5'-7"	—
h ₅ (E)	4	#5	2'-7"	—
h ₆ (E)	7	#6	7'-10"	—
h ₇ (E)	18	#6	12'-0"	—
h ₈ (E)	4	#5	7'-10"	—
h ₉ (E)	9	#5	12'-0"	—
h ₁₀ (E)	38	#6	22'-0"	—
h ₁₁ (E)	38	#6	28'-8"	—
h ₁₂ (E)	6	#4	3'-5"	—
n(E)	248	#4	2'-3"	—
p ₁ (E)	14	#8	47'-8"	—
p ₂ (E)	8	#5	47'-8"	—
s ₁	448	#6	15'-2"	—
s ₂ (E)	59	#6	18'-4"	—
u ₁ (E)	10	#5	7'-3"	—
u ₂ (E)	8	#5	9'-7"	—
v ₁	192	#18	38'-10"	—
v ₂ (E)	82	#5	7'-7"	—
v ₃ (E)	41	#5	6'-8"	—
v ₄ (E)	9	#5	9'-1"	—
v ₅ (E)	5	#5	10'-7"	—
v ₆ (E)	8	#5	9'-7"	—
v ₇ (E)	30	#6	4'-3"	—
v ₈ (E)	14	#5	11'-7"	—
v ₉ (E)	10	#5	10'-9"	—
v ₁₀ (E)	2	#5	8'-1"	—
v ₁₁ (E)	98	#5	17'-5"	—
v ₁₃ (E)	7	#5	3'-5"	—
Structure Excavation	Cu. Yds.		239	
Concrete Structures	Cu. Yds.		54.9	
Form Liner Textured Surface	Sq. Ft.		747	
Reinforcement Bars, Epoxy Coated	Pound		111610	
Reinforcement Bars, Epoxy Coated	Pound		11930	
Drilled Shaft in Soil	Cu. Yds.		102.9	
Drilled Shaft in Rock	Cu. Yds.		89.5	
Secant Lagging	Cu. Ft.		708	
Concrete Sealer	Sq. Ft.		1393	
Concrete Surface Color Treatment	Sq. Ft.		74	
Crosshole Sonic Logging Access Ducts	Foot		314	



Notes:
 Pour steps monolithically with cap.
 Space cap reinforcement to miss blockouts for anchor bolts.
 See Retaining Wall Plans for Expansion Joint Detail at each end of C.I.P. Concrete Facing.
 See Lighting Plans of Conduit and J-Box embedments in Wall Facing.

B-046
7/8/13
Sta. 4+97.12' RT

	N	Qu	w%	
584.6				CONCRETE.
583.80				AGGREGATE - Crushed stone.
583.47	16	8		Brown silty fine to coarse SAND, trace small gravel - FILL.
581.55	69	4.50P	15	Brown and gray weathered SHALES.
577.05	50	4.50P	14	Gray SHALE.
	50/4"		10	
	50/3"		8	
	50/2"		8	
	50/4"		7	
	50/4"		7	
564.55				Rec. = 85% RQD = 63% Gray clayey SHALE.
563.55				Rec. = 87% RQD = 62% Gray sandy SHALE, micaceous.
				Rec. = 97% RQD = 72%
				Rec. = 88% RQD = 54%
				Rec. = 98% RQD = 57%
549.15				COAL
				106.7 Rec. = 77% RQD = 33%
544.55				Bottom of Hole = 40.0 feet

B-045
7/9/13
Sta. 5+47.15' LT

	N	Qu	w%	
586.2				CONCRETE.
585.43				AGGREGATE.
585.10	9	5		Brown silty fine to coarse SAND, trace small gravel - FILL.
583.18	27	4.50P	17	Brown and gray weathered SHALES.
	50/5"	4.50P	11	
	50/3"	4.50P	13	
575.18	50/4"		9	Gray SHALE.
571.18	50/3"		8	
				Rec. = 100% RQD = 85% Gray clayey SHALE, trace sand, micaceous.
				103.6 Rec. = 92% RQD = 30%
				16.7 Rec. = 100% RQD = 60%
				Rec. = 67% RQD = 65%
551.18				Bottom of Hole = 35.0 feet

LEGEND

N Standard Penetration Test N (blows/ft)

Qu Unconfined Strength (tsf)

w% Natural Moisture Content (%)

DD Water Surface Elevation Encountered in Boring

558.10 DD = during drilling

Oh = at completion

24h = 24 hours after completion

p:\hansoninc-pw\hanson.com\hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - V\CAD\Struct\Usable Segment V\SouthGrand-10th\Sheet\084-9966-09L01798-019-Sub Data Profile

FINAL



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USER NAME = Pop00275	DESIGNED - MJW	REVISED -
	CHECKED - MNM/MRK	REVISED -
PLOT SCALE = 0.2" = 1' / in.	DRAWN - MGM	REVISED -
PLOT DATE = 1/18/2021	CHECKED - MJW	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSURFACE DATA PROFILE
STRUCTURE NO. 084-9966

SHEET NO. 19 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	19-00488-00-BR	SANGAMON	347	250
CONTRACT NO.			93747	
7985A & 8217		ILLINOIS FED. AID PROJECT		

Benchmark:
 BM NGS M-13: Brass Disk on Sw Corner RR Bridge
 Abutment, South Grand Ave.
 Underpass, Elevation = 598.414

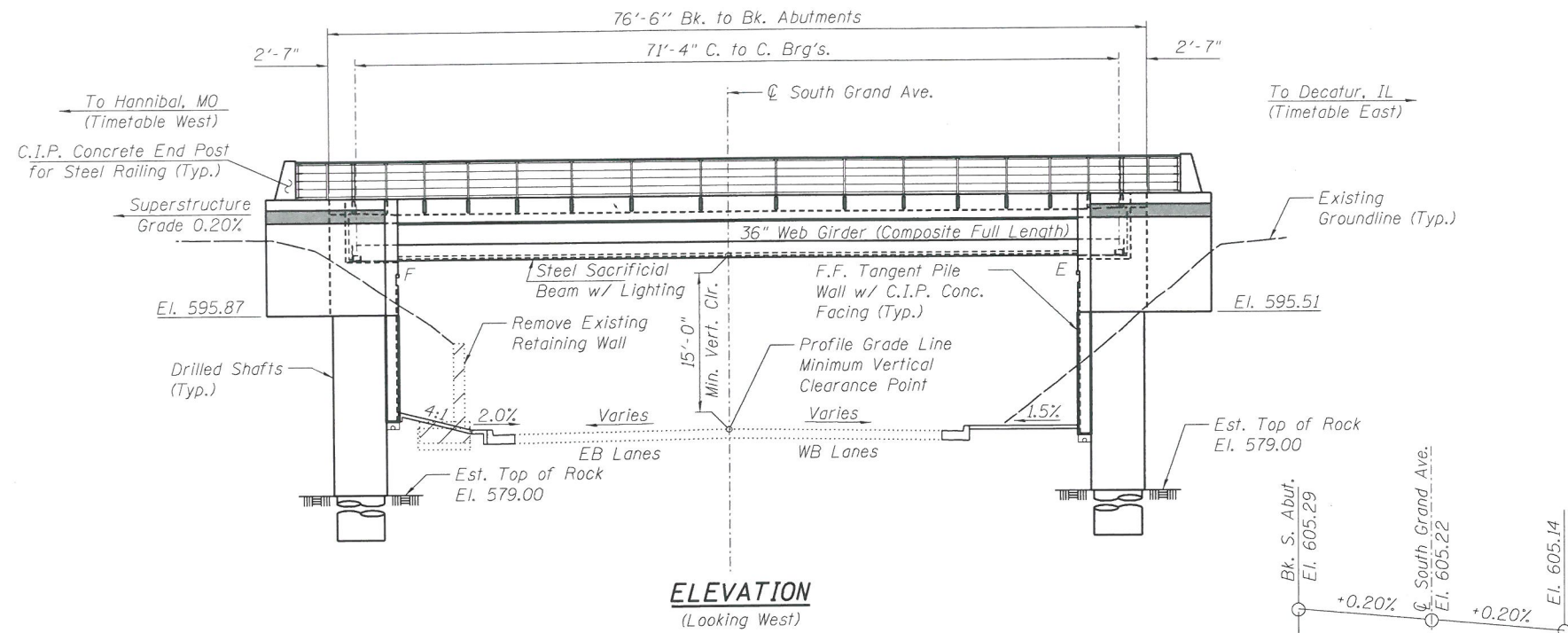
Existing NSRR Structure: SN 084-9947 - Built in
 1940. One Span Steel through plate
 girder structure supported on closed
 abutments. Bk. to Bk. Abutment
 length is 60'-0" and ctr. to ctr.
 through plate girder width varies
 from 51'-6" to 59'-0". Structure to
 be removed and replaced.

Traffic Control: Temporary Lane Closures and
 Complete Closures

Salvage: None

Construction Sequence: See Track and Retaining
 Wall Staging Plans

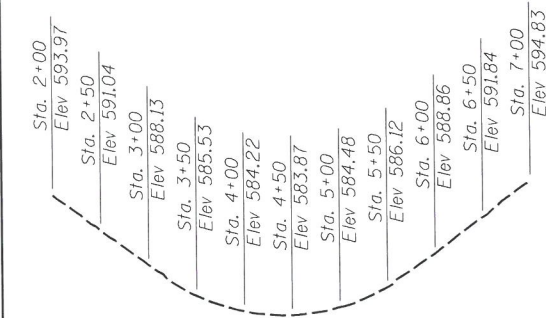
Railroad utilities may exist within NSRR
 right-of-way. Prior to the start of any
 construction or excavation, utility relocations
 will have to be coordinated with the NSRR.



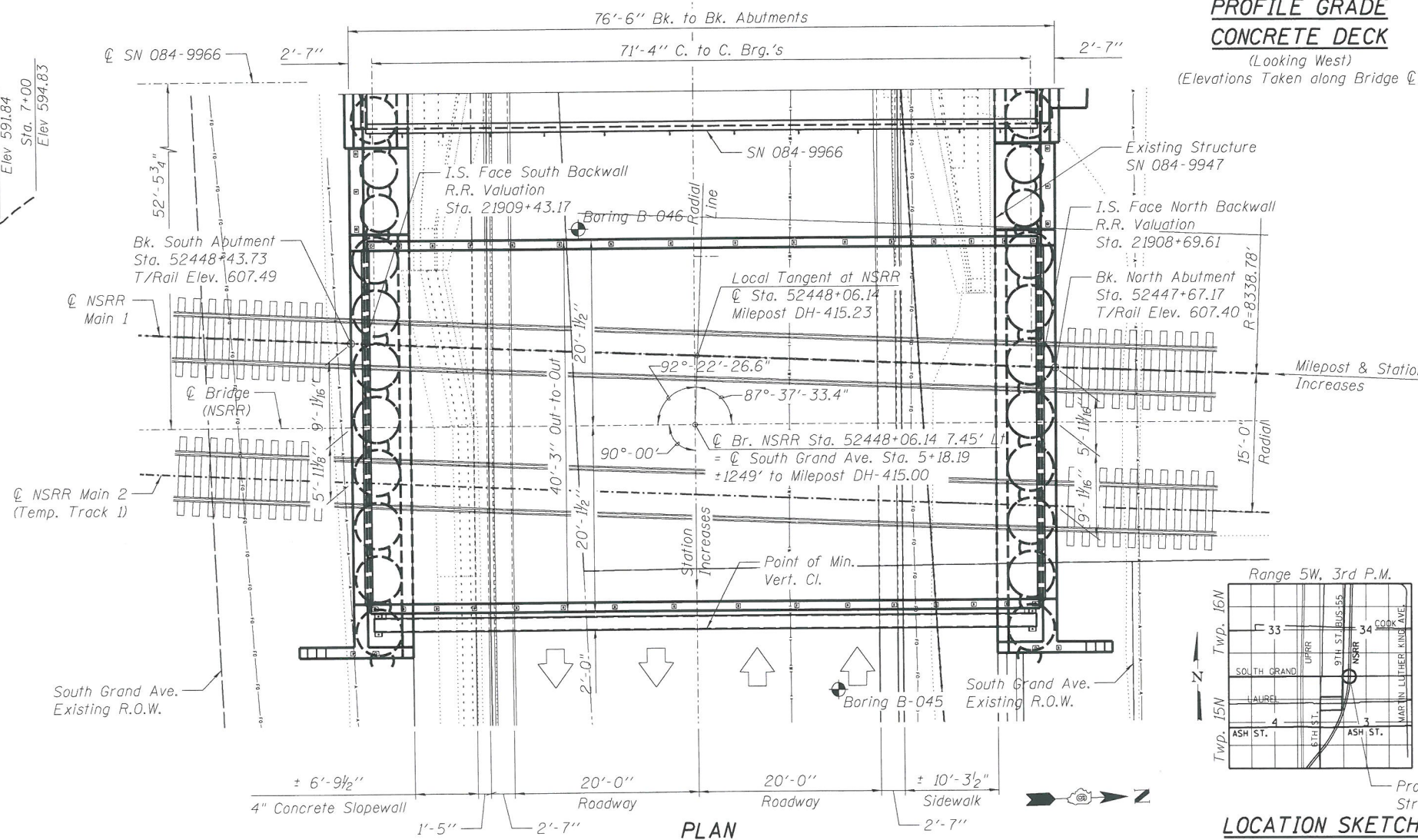
ELEVATION
 (Looking West)



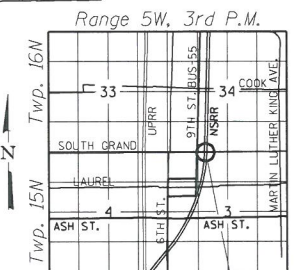
**PROFILE GRADE
 CONCRETE DECK**
 (Looking West)
 (Elevations Taken along Bridge C)



**EXISTING PROFILE GRADE
 SOUTH GRAND AVE.**
 Along C of South Grand Ave.



PLAN



LOCATION SKETCH

HIGHWAY CLASSIFICATION

F.A.U. 7989 - South Grand Avenue
 Functional Class: Minor Arterial
 ADT: 13,600 (2017); 16,000 (2032)
 DHV: 1,360 (2017); 1,600 (2032)
 ADTT: 1,100 (2017); 1,280 (2032)
 Design Speed: 30 mph
 Posted Speed: 30 mph

LOADING COOPER E-80

Impact: Diesel Impact
 Allow 6" of Additional Ballast Dead Load

DESIGN SPECIFICATIONS

2019 AREMA Specifications
 Live Load Deflection: L/640
 Composite Design for Deflection Requirements
 Design Speed: 50 m.p.h.

DESIGN STRESSES

FIELD UNITS

f'c = 4,000 psi
 fy = 60,000 psi (Reinforcement)
 fy = 50,000 psi (ASTM A709 Grade 50)

SEISMIC DATA

AREMA

Ground Motion Level	PGA	S _s	S ₁
Level 1 (100 Year)	0.010	0.025	0.005
Level 2 (475 Year)	0.040	0.090	0.035
Level 3 (2475 Year)	0.10	0.22	0.10

Soil Site Class = C

CURVE DATA

(NSRR Main 1)

P.I. Sta. = 52473+56.94
 $\Delta = 35^\circ-24'-58''$ (Rt.)
 D = 00°-41'-14"
 T = 2662.53'
 L = 5154.41'
 R = 8338.78'
 E = 414.75'
 Long Chord = 5072.76'
 Mid. Ord. = 395.10'
 S.E. = 1"
 S.C. Sta. = 52446+94.42
 C.S. Sta. = 52498+48.80



Matthew J. Willey
 SIGNATURE
 1-18-2021
 DATE

LIC. EXP. DATE: 11-30-2020

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 AREMA Specifications.

GENERAL PLAN

NSRR (MP DH-415.23) OVER SOUTH GRAND AVE.

F.A.U. 7989-SECTION 19-00488-00-BR

SANGAMON COUNTY

STATION 52448+06.14

STRUCTURE NO. 084-9967

**GENERAL PLAN AND ELEVATION
 STRUCTURE NO. 084-9967**

SHEET NO. 1 OF 17 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	19-00488-00-BR	SANGAMON	347	251
CONTRACT NO. 93747				
* 7985A & 8218 [ILLINOIS] FED. AID PROJECT				

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

USER NAME	DESIGNED	REVISIONS
Pepp02275	MJW	-
	JGT/MRK	REVISIONS
	CDP	REVISIONS
	MJW	REVISIONS

PLOT SCALE = 1/8" = 1'-0"
 PLOT DATE = 1/18/2021

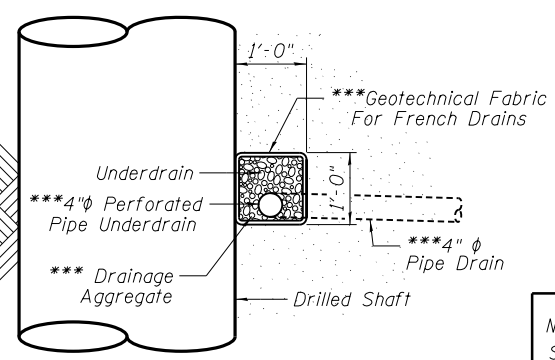
FINAL



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GENERAL NOTES

- Fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts. Bolts 7/8 in. ϕ , holes 9/16 in. ϕ , unless otherwise noted.
- Calculated weight of Structural Steel, ASTM A709, Gr. 50 = 467,120 lbs.
 ASTM A36, Gr. 36 = 1,940 lbs.
 ASTM A500, Gr. B (46 ksi) = 12,380 lbs.
 ASTM A240, Type 304 (30 ksi) = 2,440 lbs.
- All structural steel shall be ASTM A709 Grade 50 unless otherwise noted on the plans.
- Stainless steel plate for the deck joints shall be according to ASTM A240, Type 304, Fy=30 k.s.i.
- All substructure concrete shall have a compressive strength of 4,000 psi at 14 days.
- No field welding is permitted except as specified in the contract documents.
- Reinforcement bars designated (E) shall be epoxy coated.
- If the Contractor elects to use cantilever forming brackets on the exterior beams or girders, the brackets shall be placed at the same locations as required for the hardwood blocks in Article 503.06(b) of the Standard Specifications. If additional cantilever forming brackets are required, hardwood blocking shall be wedged between the exterior and first interior beam at each of these additional bracket locations.
- Protective coat shall not be applied to any surface.
- Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8 inch (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.
- Concrete Sealer shall be applied to the following surfaces:
 Abutments - inside face of backwall, inside face of cheekwall, top of cap, entire concrete facing attached to abutment caps and drilled shafts (except surfaces coated with concrete surface treatment).
 Superstructure - top and outside vertical faces of ballast curb and outside vertical face of deck, concrete railing end post (except surfaces coated with surface color and treatment).
- Concrete Surface Color Treatment shall be applied to the following surfaces:
 Abutments - concrete facing, wingwall and cheekwall surfaces designated in plans.
 Superstructure - ballast curb surfaces designated in plans..
- The Inorganic Zinc Rich Primer / Acrylic / Acrylic Paint System shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the final finish coat for all interior steel surfaces and sacrificial beam shall be gray, Munsell No. 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia beams shall be blue, Munsell No. 10B 3/6.
- All fracture critical members (FCM) shall be fabricated in accordance with the Fracture Control Plan stated in AREMA Specifications, Chapter 15, Section 1.14.
- Waterproofing shall be applied to the backside of the abutment cap and backwall and backside of wingwalls for surfaces below ground. This shall be according to Article 503.18 of the Std. Spec. Cost included with Concrete Structures.

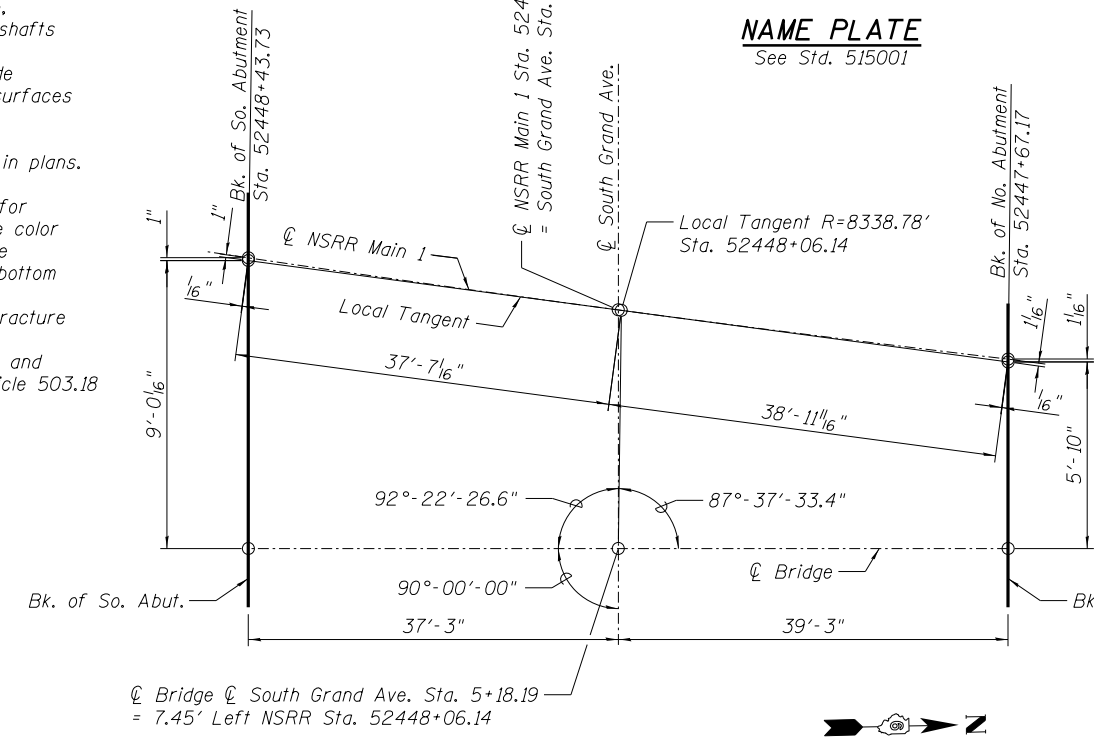


PIPE UNDERDRAIN DETAIL

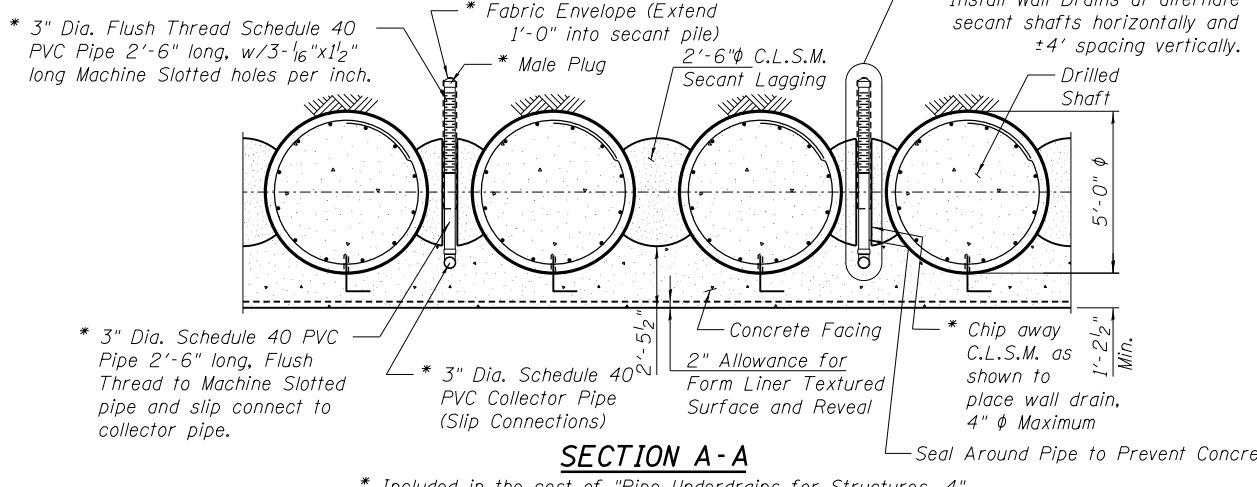
***Included in the cost of "Pipe Underdrains for Structures, 4".

NORFOLK SOUTHERN RAILROAD
 S.N. 084-9967 BUILT 20... BY
 CITY OF SPRINGFIELD
 SEC. 19-00488-00-BR
 STATION 52448+06.14
 MILE POST DH-415.23
 LOADING COOPER E-80

NAME PLATE
 See Std. 515001

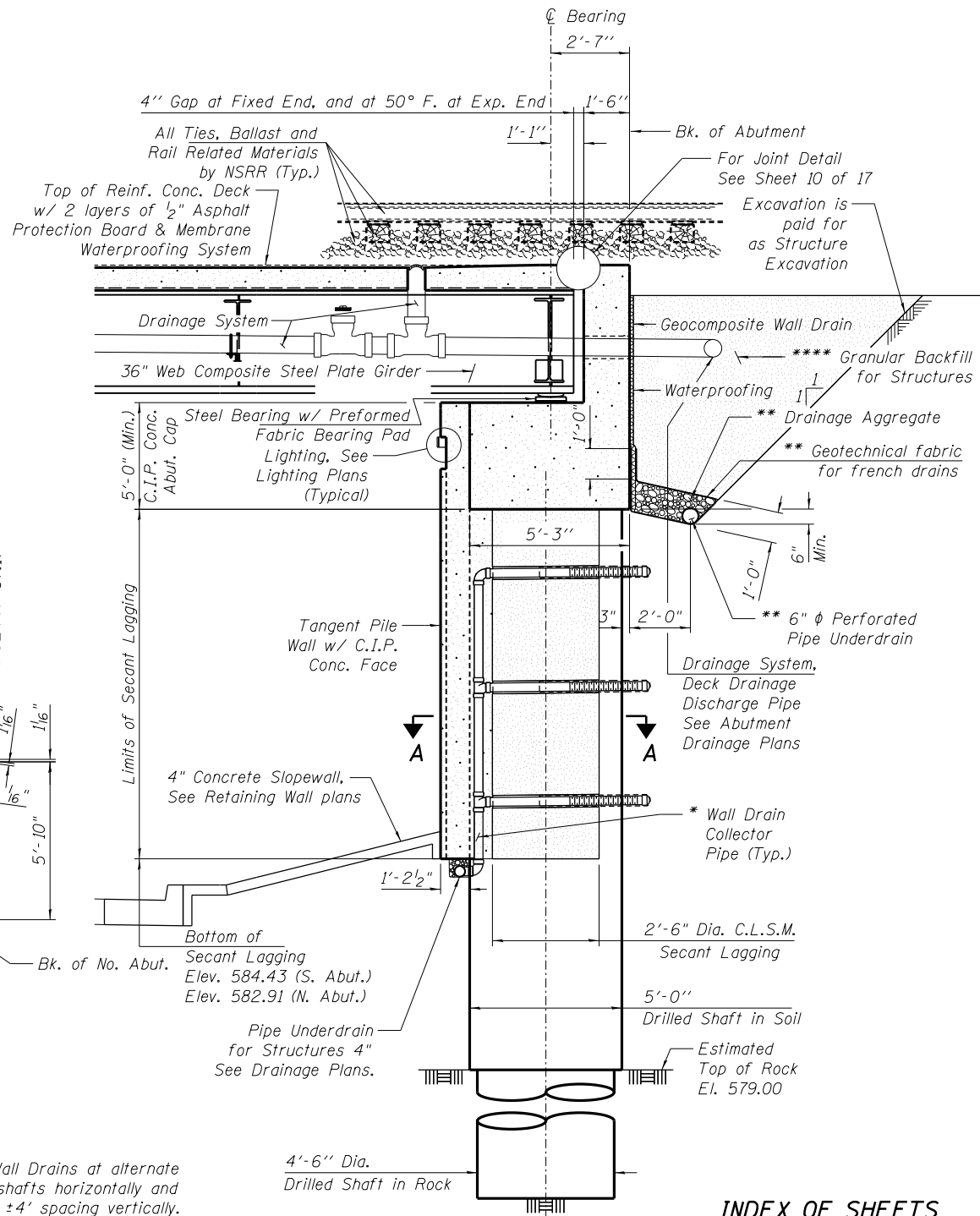


OFFSET SKETCH



SECTION A-A

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



ABUTMENT SECTION
 (At Rt. L's to Back of Abutment)

Notes:
 North Abutment Section Shown South Similar
 (No Deck Drainage Discharge Pipe at S. Abut.)

**** Granular Backfill for Structures shall be placed and compacted according to section 502.10 of the Standard Specifications.

** Included in the cost of "Pipe Underdrains for Structures, 6". For additional drainage details see Roadway Plans.

INDEX OF SHEETS

- General Plan and Elevation
- General Data
- Foundation Layout
- Superstructure
- Superstructure Details
- Structural Steel
- Structural Steel Details
- Sacrificial Beam Details
- Bearing Details
- Membrane Waterproofing
- Drainage System Details
- Steel Railing (Special)
- North Abutment
- North Abutment Details
- South Abutment
- South Abutment Details
- Subsurface Data Profile

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Structure Excavation	Cu. Yd.	-	257	257
Concrete Structures	Cu. Yd.	-	190.8	190.8
Concrete Superstructure	Cu. Yd.	89.0	-	89.0
Form Liner Textured Surface	Sq. Ft.	-	1322	1322
Stud Shear Connectors	Each	4312	-	4312
Reinforcement Bars	Pound	-	215480	215480
Reinforcement Bars, Epoxy Coated	Pound	15300	22960	38260
Name Plates	Each	-	1	1
Drilled Shaft in Soil	Cu. Yd.	-	194.3	194.3
Drilled Shaft in Rock	Cu. Yd.	-	179.0	179.0
Secant Lagging	Cu. Ft.	-	827	827
Membrane Waterproofing	Sq. Ft.	2818	-	2818
Concrete Sealer	Sq. Ft.	471	2426	2897
Geocomposite Wall Drain	Sq. Yd.	-	85	85
Conduit Embedded in Structure, 4" dia., PVC	Foot	146	6	152
Removal of Existing Structures No. 4	Each	-	-	1
Granular Backfill for Structures	Cu. Yd.	-	182	182
Drainage System, No. 4	Each	1	-	1
Concrete Surface Color Treatment	Sq. Ft.	7	142	149
Floor Drains (Special)	Each	18	-	18
Furnishing and Erecting Structural Steel, Bridge No. 4	L. Sum	1	-	1
Steel Railing (Special)	Foot	164	-	164
Pipe Underdrains for Structures, 4"	Foot	-	92	92
Pipe Underdrains for Structures, 6"	Foot	-	193	193

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FINAL



USER NAME = Pop00275
 PLOT SCALE = 1/8" = 1'-0"
 PLOT DATE = 1/18/2021

DESIGNED - MJW
 CHECKED - JGT/MRK
 DRAWN - CDP
 CHECKED - MJW

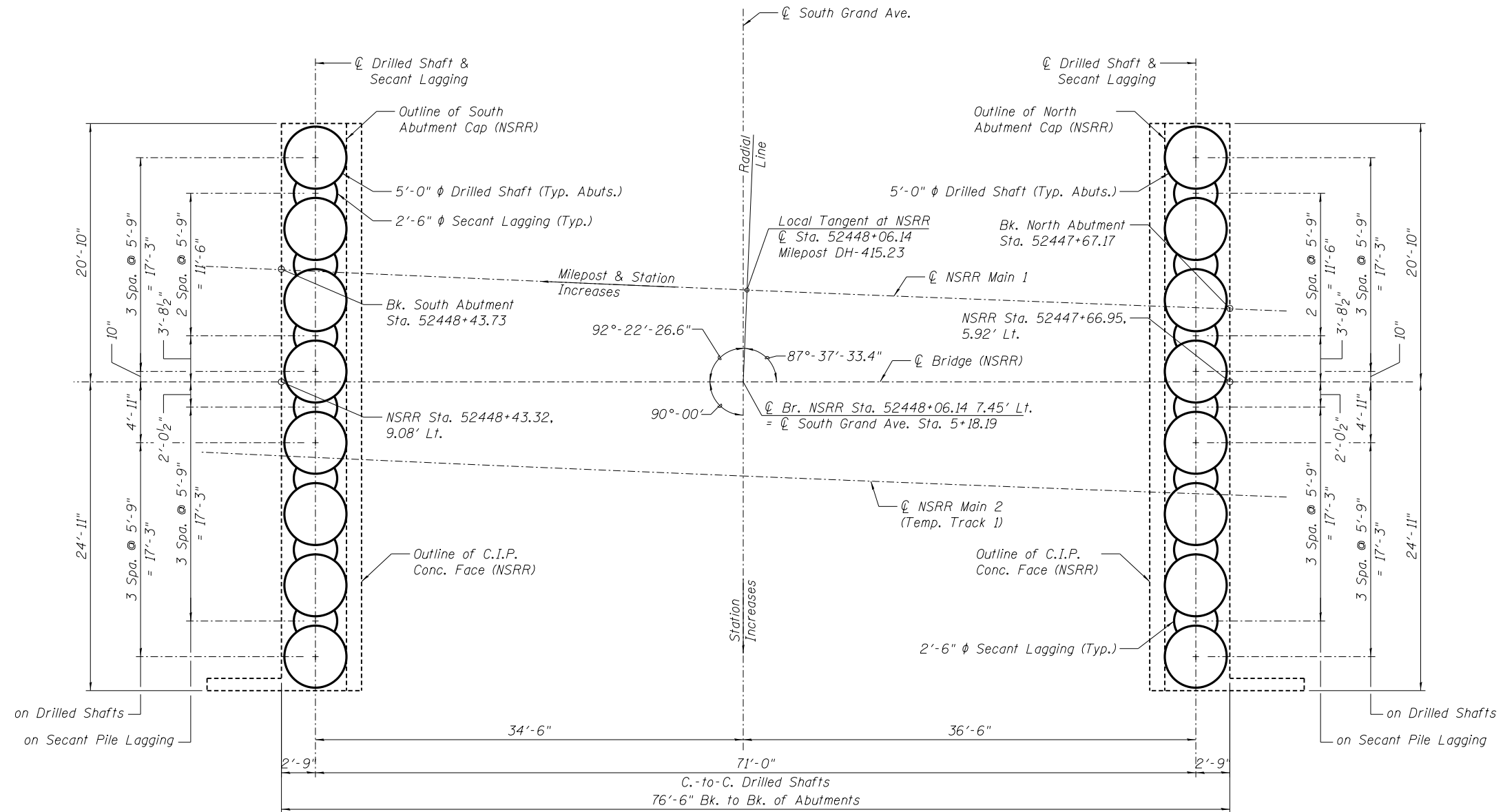
REVISED -
 REVISED -
 REVISED -
 REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

GENERAL DATA
 STRUCTURE NO. 084-9967

SHEET NO. 2 OF 17 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
•	19-00488-00-BR	SANGAMON	347	252
			CONTRACT NO. 93747	
• 7985A & 8219 ILLINOIS FED. AID PROJECT				



FOUNDATION LAYOUT PLAN



FINAL



USER NAME = Pop00275	DESIGNED - MJW	REVISED -
	CHECKED - MRK	REVISED -
PLOT SCALE = 0.2" = 1' / in.	DRAWN - CDP	REVISED -
PLOT DATE = 1/18/2021	CHECKED - MJW	REVISED -

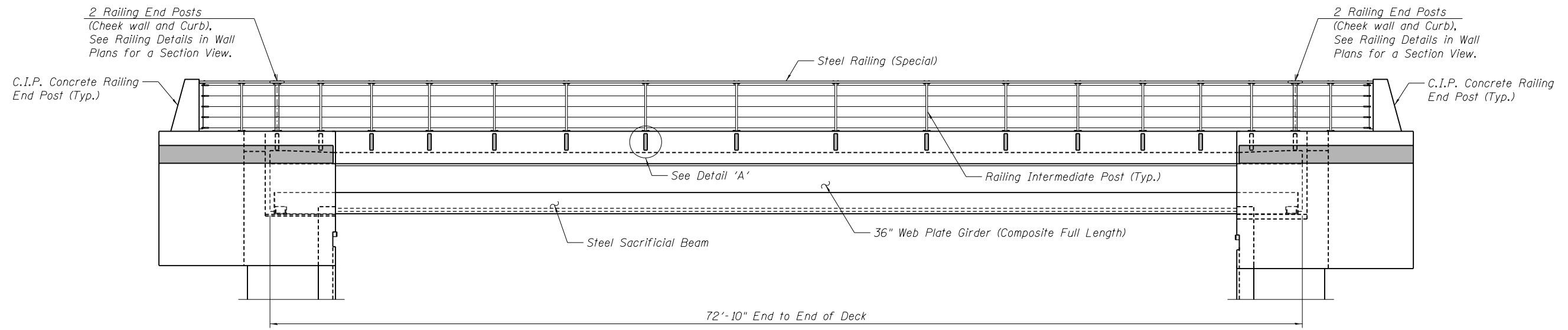
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**FOUNDATION LAYOUT
STRUCTURE NO. 084-9967**

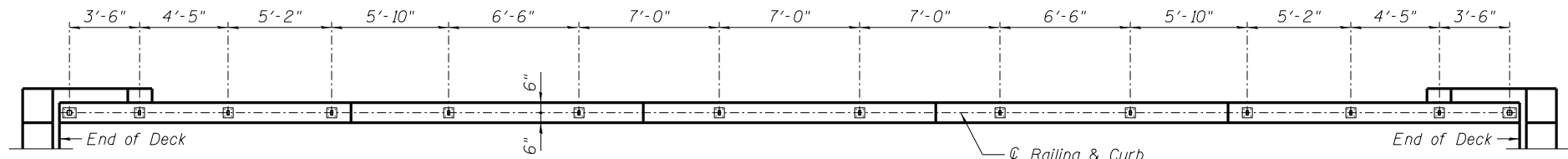
SHEET NO. 3 OF 17 SHEETS

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CONTRACT NO.			93747	

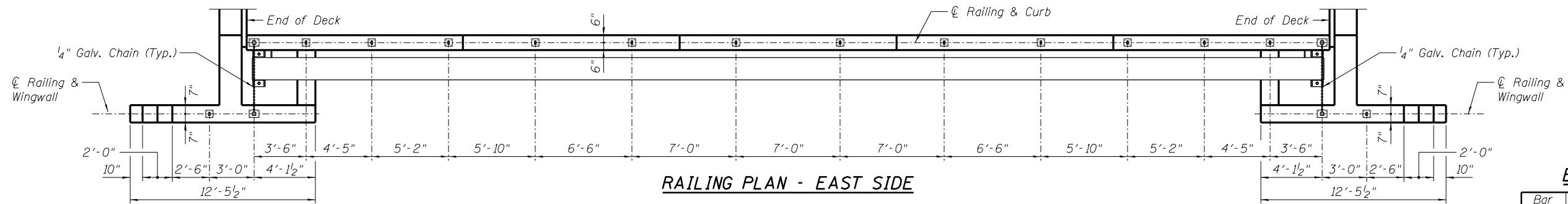
• 7985A & 8220 ILLINOIS FED. AID PROJECT



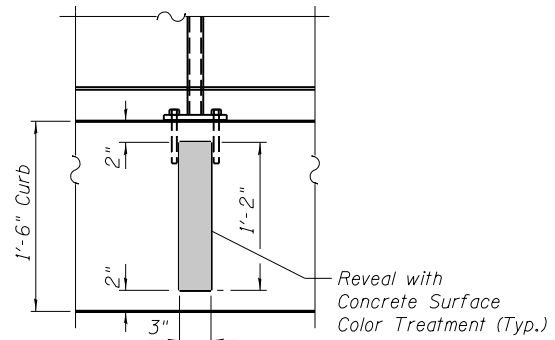
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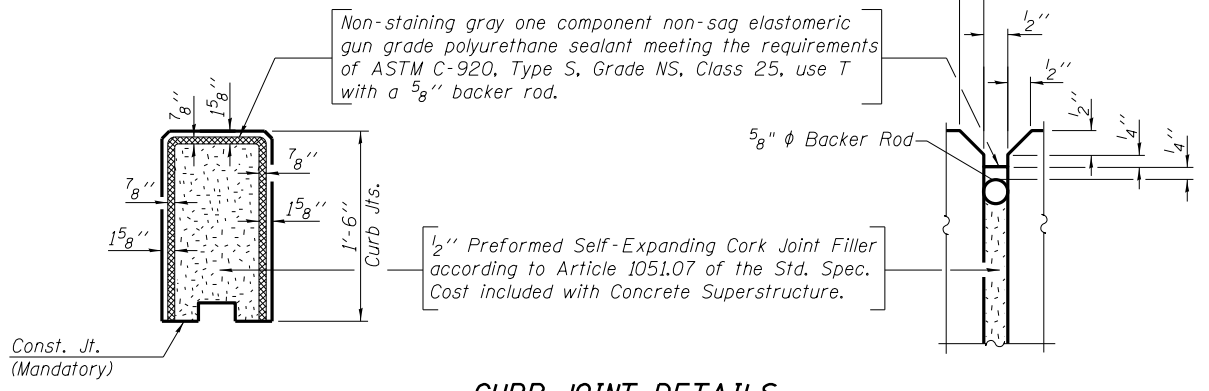
RAILING PLAN - WEST SIDE



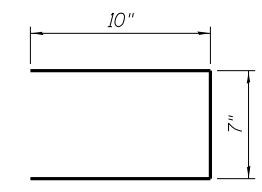
RAILING PLAN - EAST SIDE



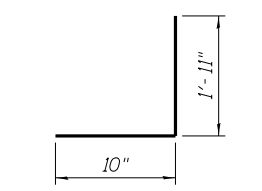
DETAIL 'A'



CURB JOINT DETAILS



BAR d1(E)



BAR d(E)

**SUPERSTRUCTURE
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a(E)	148	#5	39'-11"	—
a1(E)	148	#5	3'-0"	—
a2(E)	144	#5	2'-6"	—
b(E)	82	#5	37'-6"	—
b1(E)	123	#5	25'-9"	—
d(E)	296	#5	2'-9"	J
d1(E)	148	#5	2'-3"	J
e(E)	32	#5	17'-10"	—
Concrete Superstructure		Cu. Yds.	89.0	
Reinforcement Bars, Epoxy Coated		Pound	15300	
Concrete Sealer		Sq. Ft.	471	
Conduit Embedded in Structure, 4" dia., PVC		Foot	146	
Concrete Surface Color Treatment		Sq. Ft.	7	
Floor Drains (Special)		Each	18	

Note: For steel railing details see sheet 12 of 17. For concrete railing end post details see sheets 14 & 16 of 17. For 1/4" Galv. Chain details, see retaining wall plans. Cost of chain and hardware shall be included in the cost of Steel Railing (Special).

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FINAL



USER NAME = Pop00275	DESIGNED - MJW	REVISED -
PLOT SCALE = 1/8" = 1'-0"	CHECKED - JGT	REVISED -
PLOT DATE = 1/18/2021	DRAWN - CDP	REVISED -
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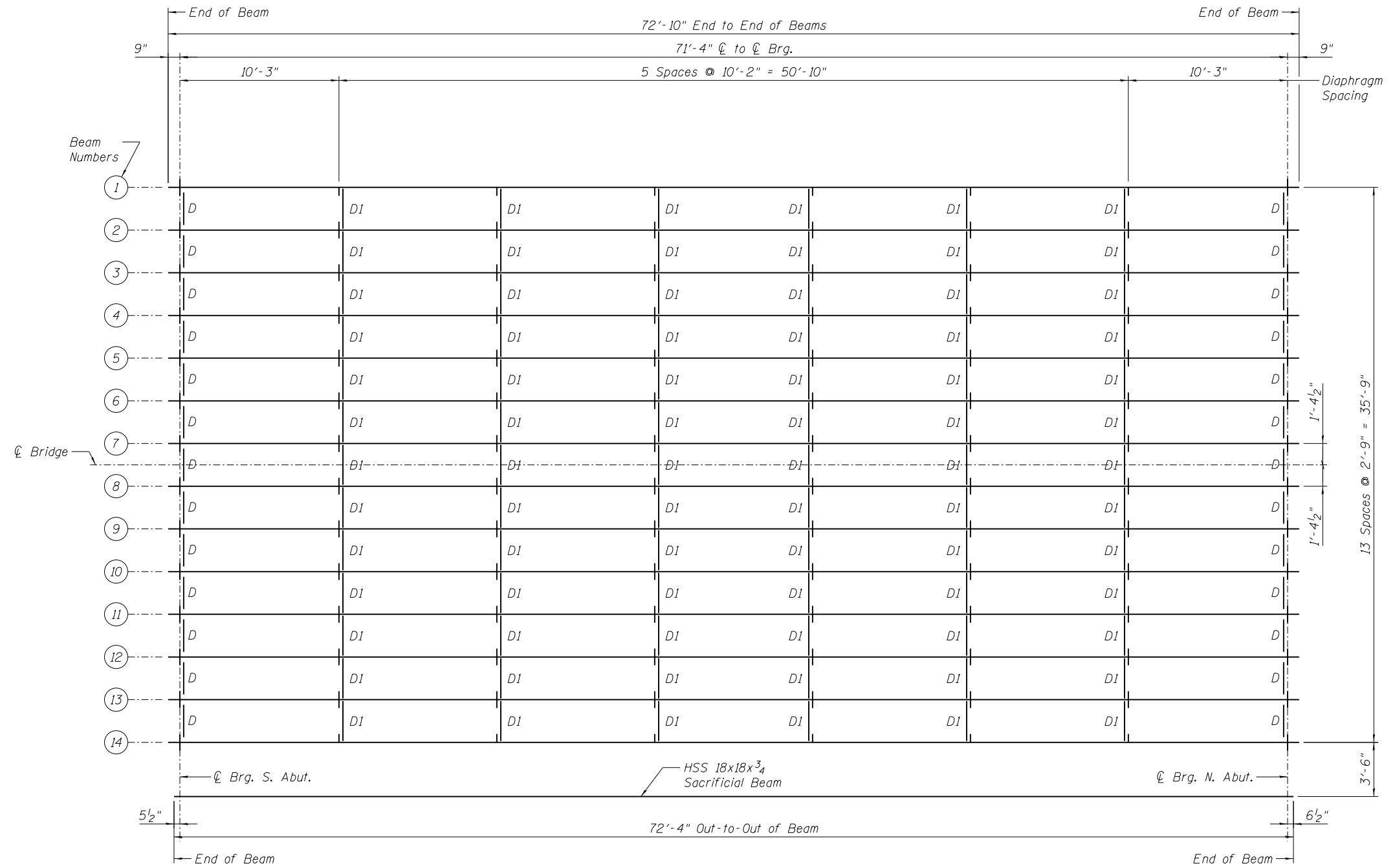
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**SUPERSTRUCTURE DETAILS
STRUCTURE NO. 084-9967**

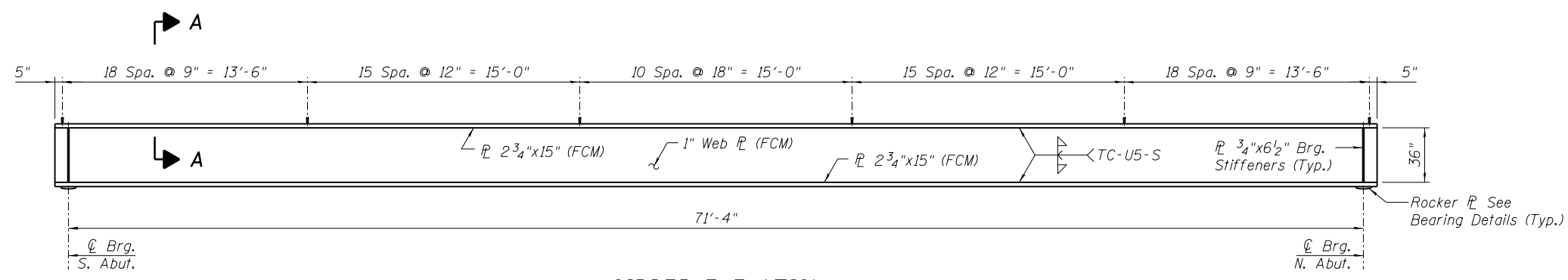
SHEET NO. 5 OF 17 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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			CONTRACT NO. 93747	

• 7985A & 8222 ILLINOIS FED. AID PROJECT

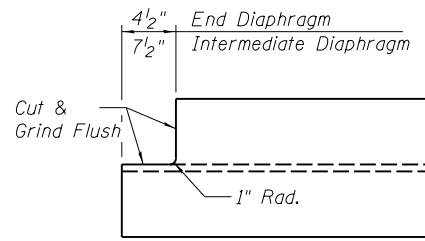


FRAMING PLAN



GIRDER ELEVATION

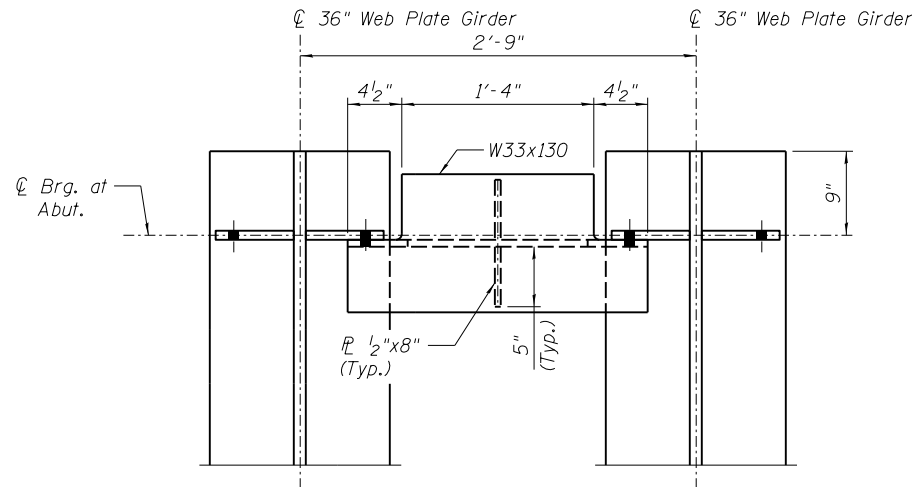
Notes:
 All diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
 Load carrying components designated Fracture Critical Members "FCM" shall conform to the AREMA Impact Testing Requirement, Zone 2.
 Floor Drains shall be located clear of all diaphragms.
 For Section A-A, See Sheet 7 of 17.



COPE DETAIL

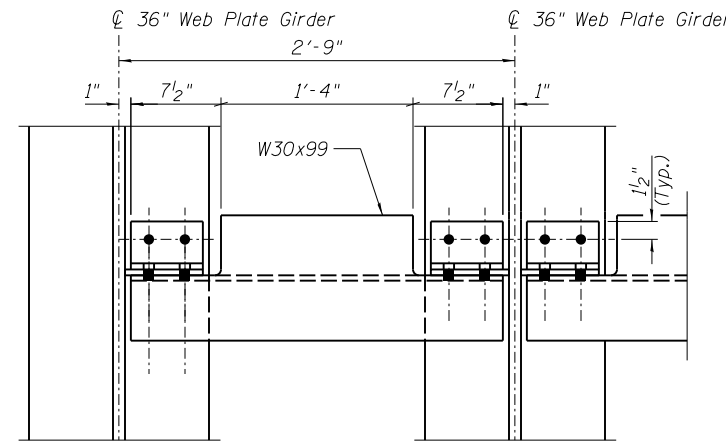
Notes:

1. All diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
2. Load carrying components designated Fracture Critical Members "FCM" shall conform to the AREMA Impact Testing Requirement, Zone 2.
3. Bolts shall be 7/8" ϕ placed in 15/16" ϕ holes unless otherwise noted.
4. Steel shall conform to ASTM A709 Gr. 50 unless otherwise noted.
5. See sheet 11 of 17 for holes in interior diaphragms for drainage system.



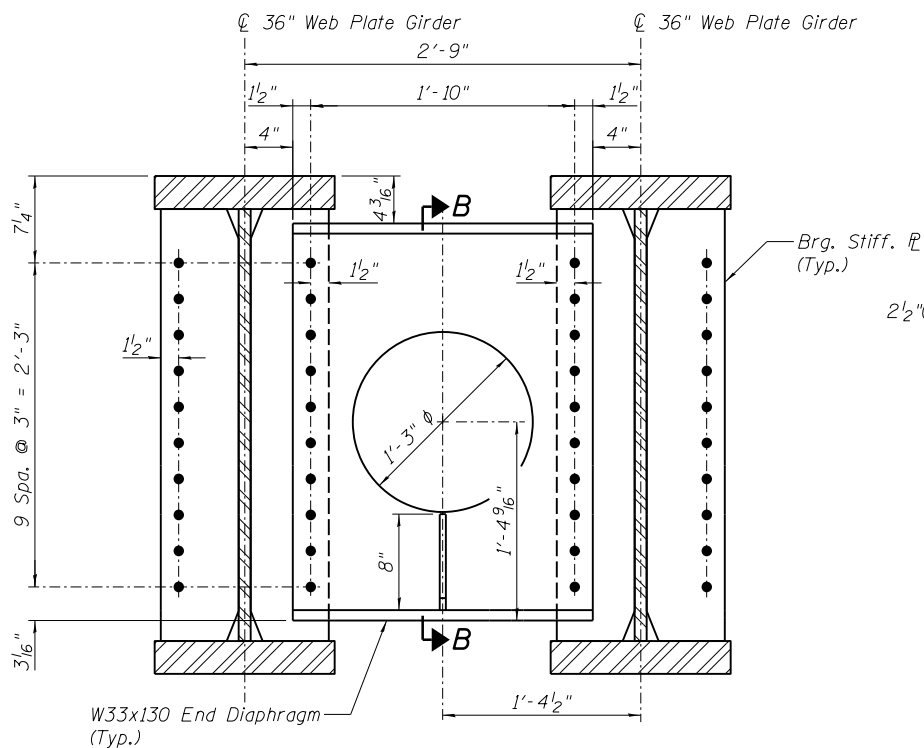
PLAN

(Top Flange not shown for clarity.)



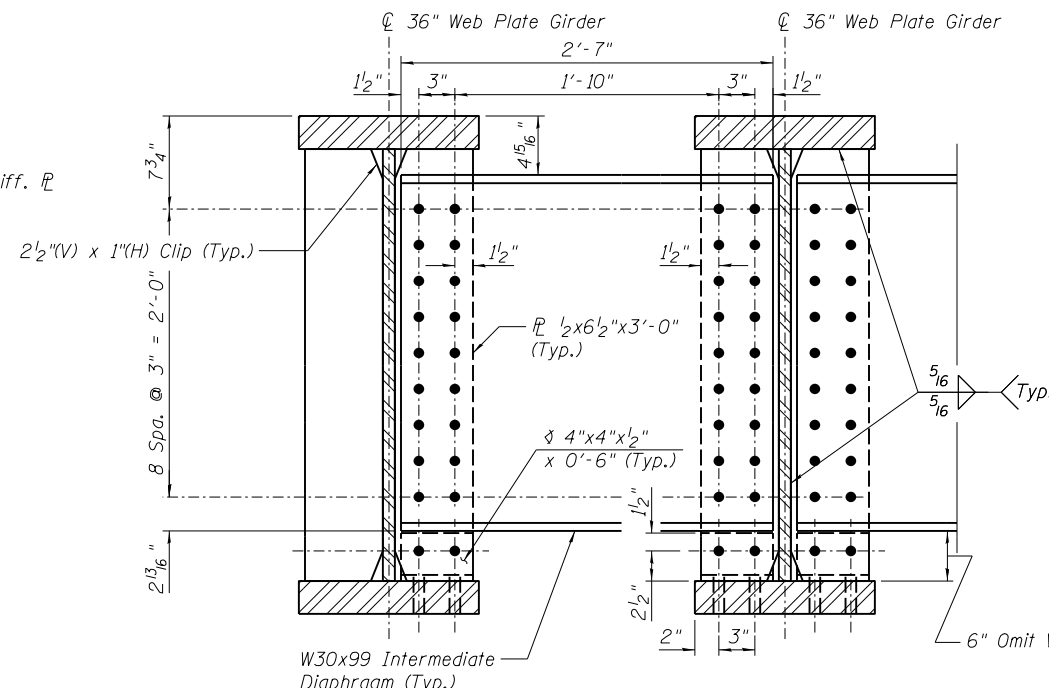
PLAN

(Top Flange not shown for clarity.)



ELEVATION

END DIAPHRAGMS-D



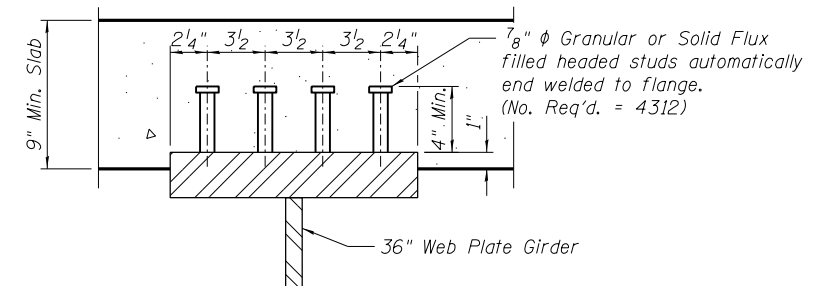
ELEVATION

INTERMEDIATE DIAPHRAGMS-D1

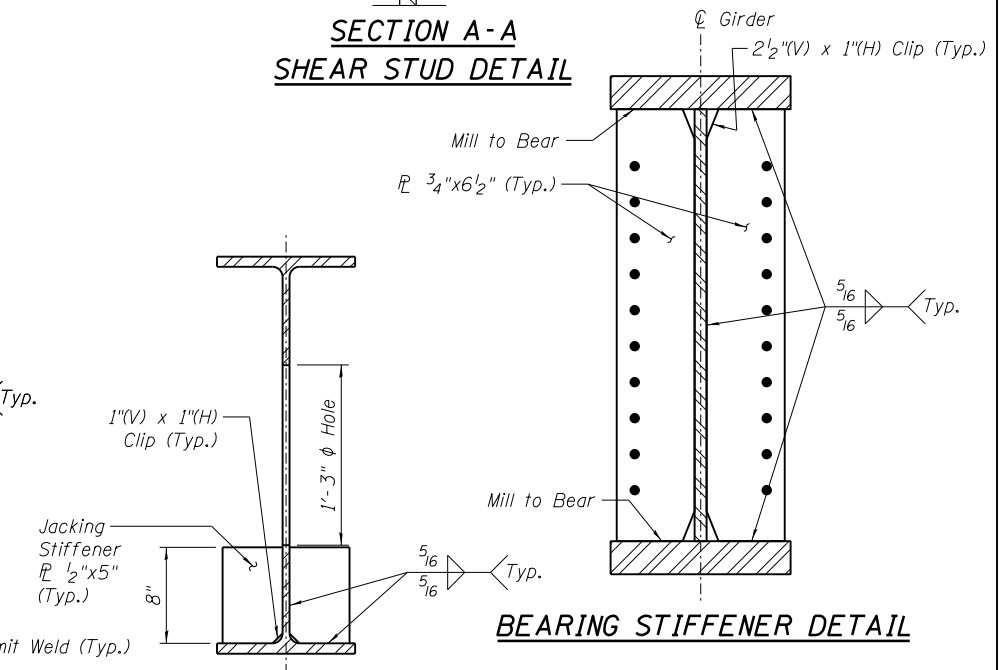
MOMENT & SHEAR TABLE FOR INTERIOR BEAMS

DESCRIPTION	MAX MOMENT	MAX SHEAR
Dead Load	948.9 Ft.-K	52.7 K
Live Load	1,438.3 Ft.-K	90.6 K
Centrifugal Force	15.8 Ft.-K	0.9 K
Impact	486.1 Ft.-K	30.6 K
Total	2,889.1 Ft.-K	174.8 K
Section	36" PG	
Steel	ASTM A709, GR 50, FCM ZONE 2	
Net I	30,351 IN ⁴	
Net S (Bott.)	1,335 IN ³	
FST (Bott.)	26.0 KSI	
Gross I	34,910 IN ⁴	
Gross S (Top)	1,682 IN ³	
FSC (Top)	20.6 KSI	
(LL+I) Deflection	1.23 IN	
Allowable (LL+I) Deflection	1.35 IN	

I - Non-composite moment of inertia of the steel section
 S - Non-composite section modulus of the steel section
 FST - Max unfactored tension stress in the section due to DL+LL+CF+Impact
 FSC - Max unfactored compression stress in the section due to DL+LL+CF+Impact



SECTION A-A
SHEAR STUD DETAIL



SECTION B-B

BEARING STIFFENER DETAIL

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FINAL



USER NAME = Pop02275
 PLOT SCALE = 0.2" = 1'-0"
 PLOT DATE = 1/18/2021

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 CHECKED - JGT
 DRAWN - CDP
 CHECKED - MJW

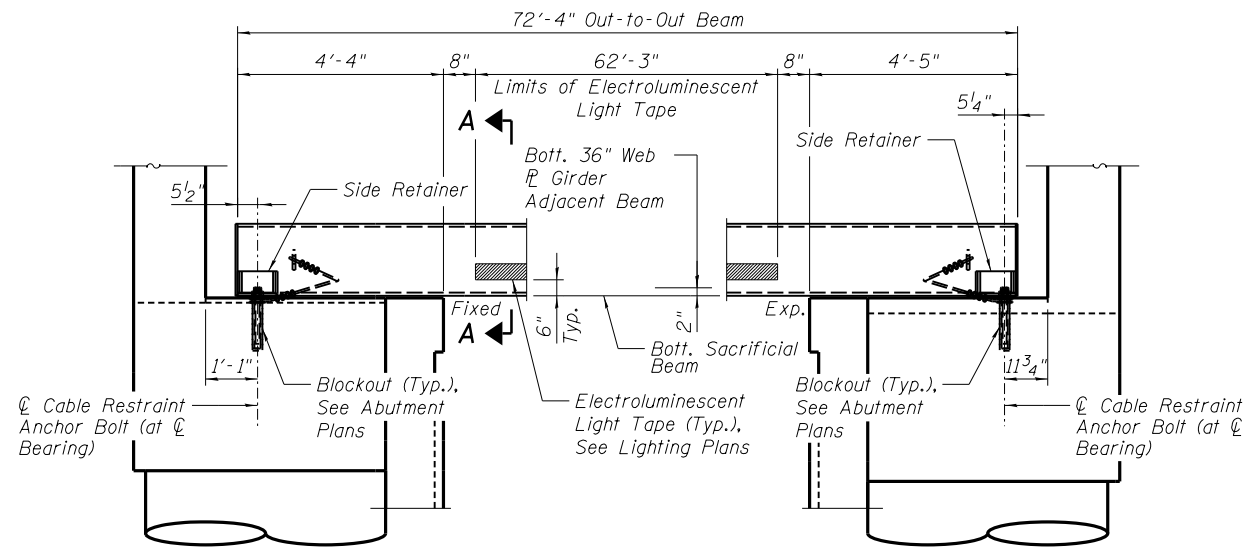
REVISED -
 REVISED -
 REVISED -
 REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL DETAILS
STRUCTURE NO. 084-9967

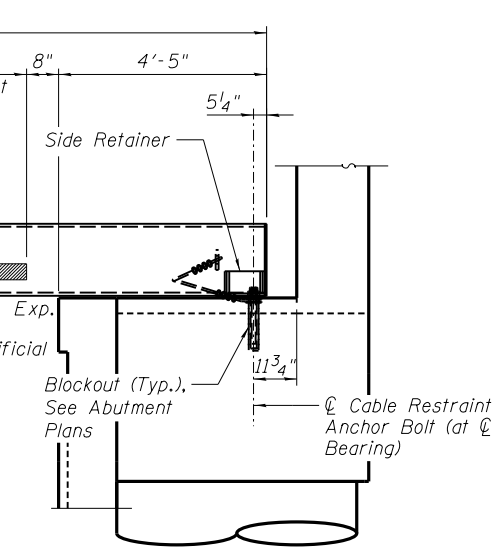
SHEET NO. 7 OF 17 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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			CONTRACT NO. 93747	
• 7985A & 8224 ILLINOIS FED. AID PROJECT				



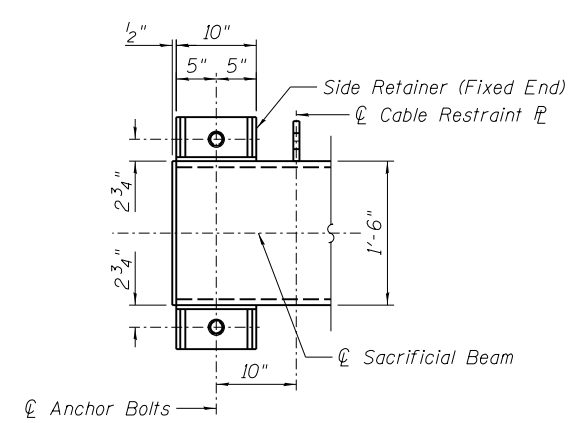
ELEVATION - SOUTH ABUTMENT

Cheek Wall Not Shown for Clarity.
(Looking West)

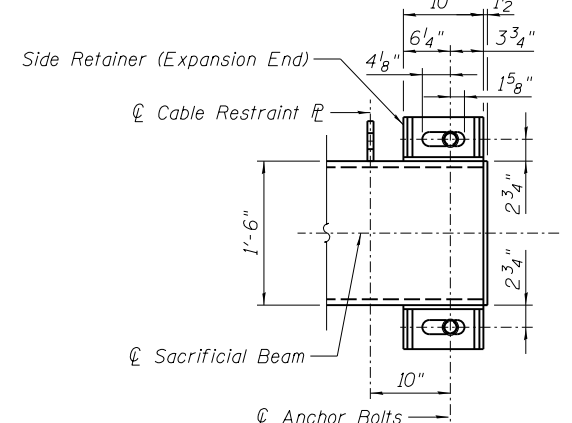


ELEVATION - NORTH ABUTMENT

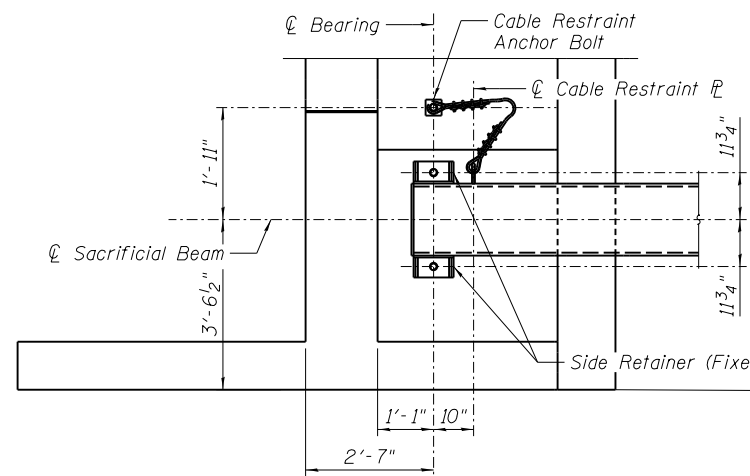
Cheek Wall Not Shown for Clarity.
(Looking West)



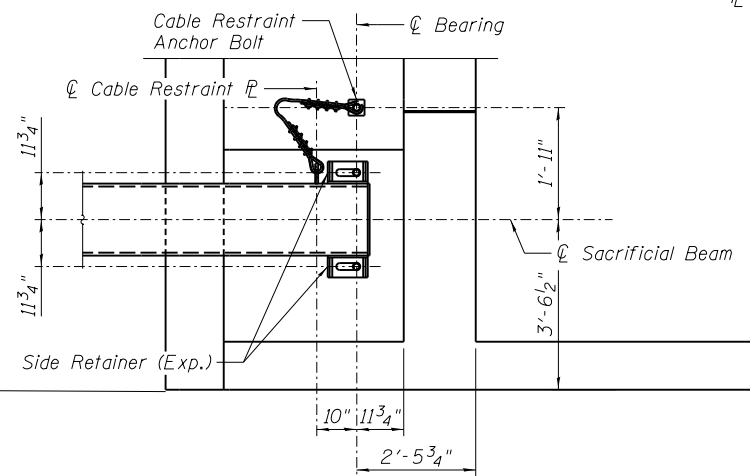
DETAIL - SOUTH ABUTMENT



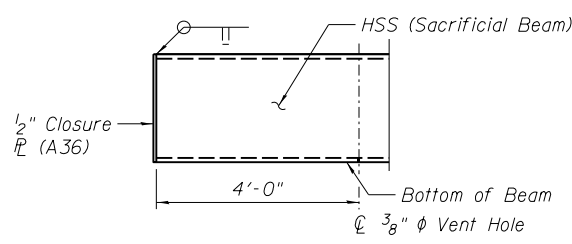
DETAIL - NORTH ABUTMENT



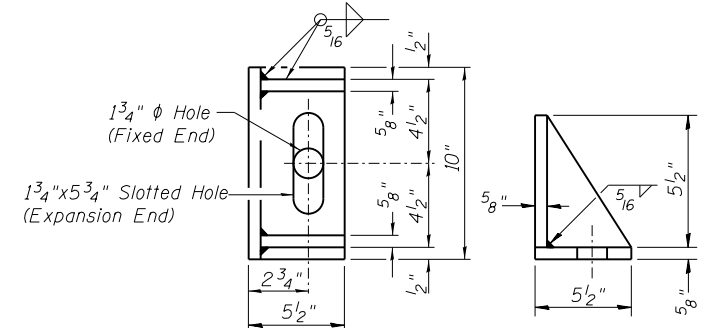
PLAN - SOUTH ABUTMENT



PLAN - NORTH ABUTMENT

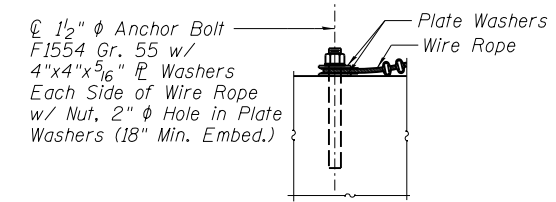


CLOSURE PLATE DETAIL

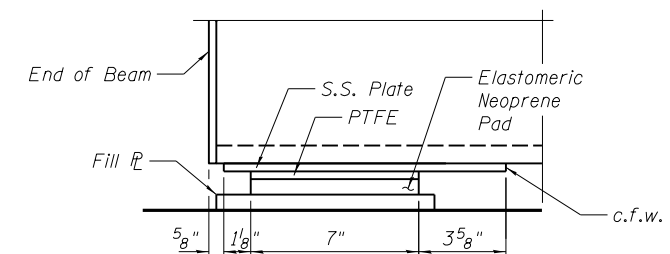


SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

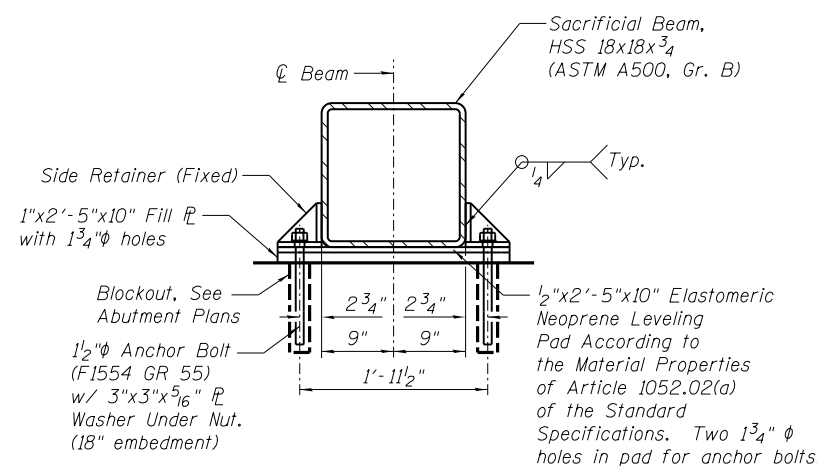


CABLE RESTRAINT ANCHOR BOLT DETAIL

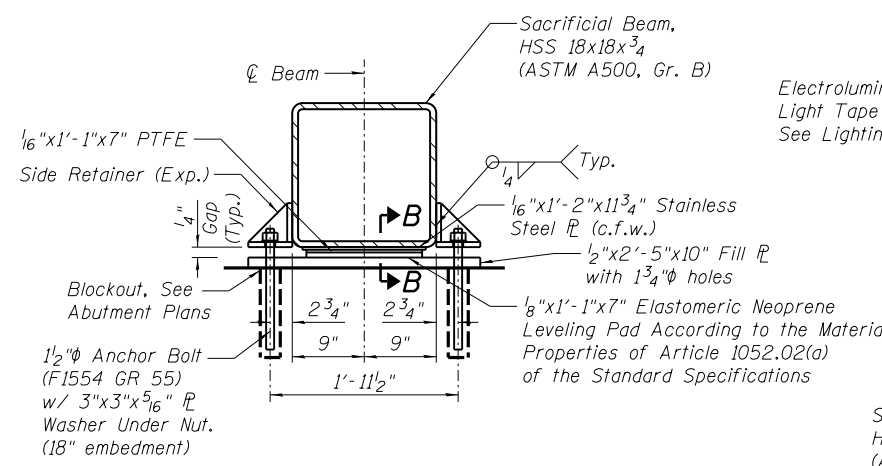


SECTION B-B

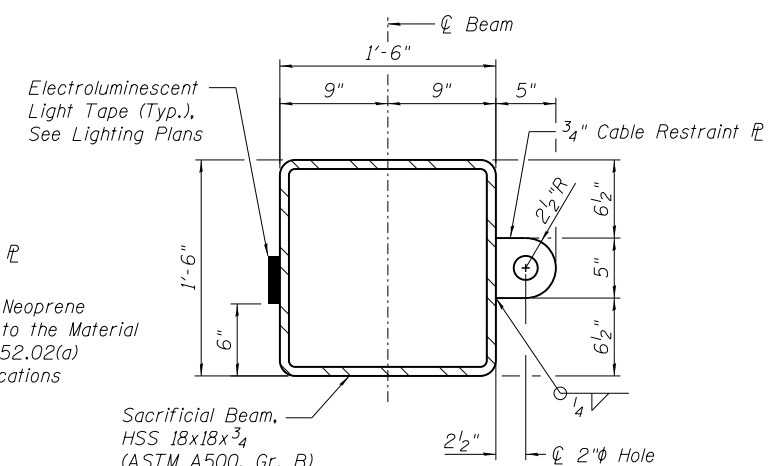
(Expansion End)



TYPICAL SECTION AT FIXED END

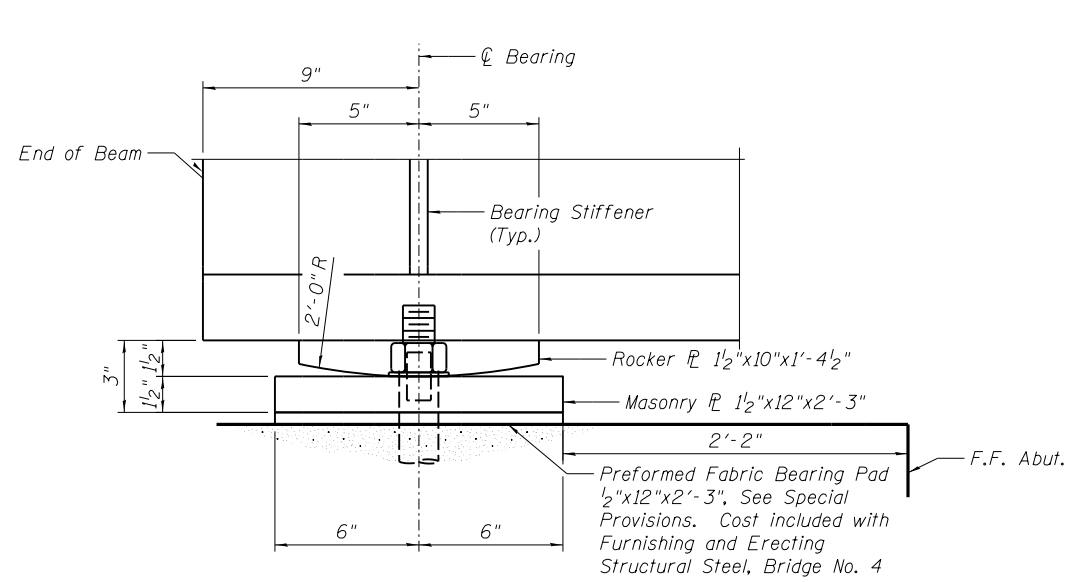


TYPICAL SECTION AT EXPANSION END

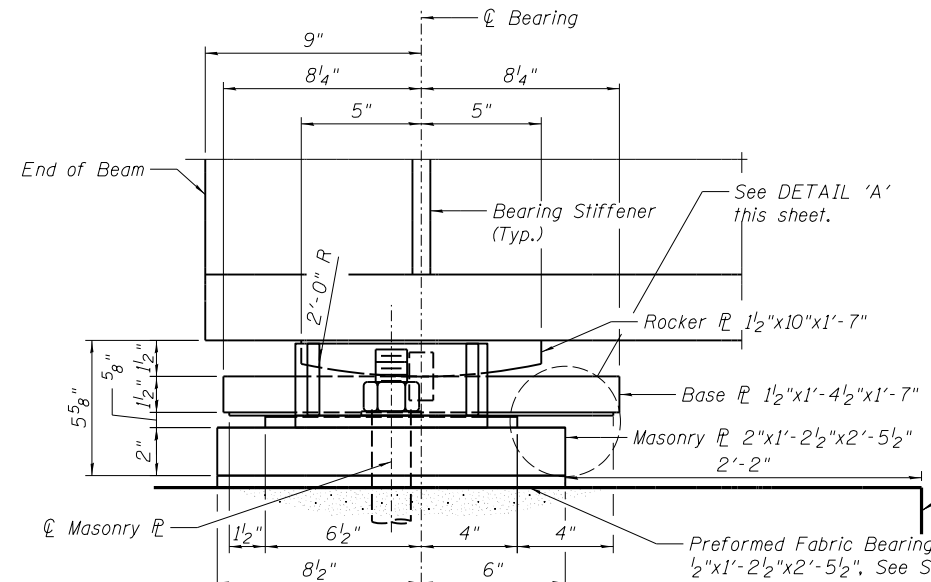


SECTION A-A

Notes:
 3/4" wire rope shall be according to AASHTO M30, Type II, Class A coating, EIPS. Use 1 wire rope thimble and 4 wire rope clips per end according to the manufacturer's recommendation.
 Cost for elastomeric neoprene and elastomeric neoprene leveling pad w/ PTFE surface, wire rope and accessories shall be included in the cost of "Furnishing and Erecting Structural Steel, Bridge No. 4".
 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 shall be installed in blockouts with Non-Shrink Grout meeting the material requirements of Article 1024.02 of the Standard Specifications. Blockouts shall be clean prior to grouting and grout installed according to manufacturers recommendations. The PTFE shall be bonded directly to the leveling pad according to the manufacturers recommendations.

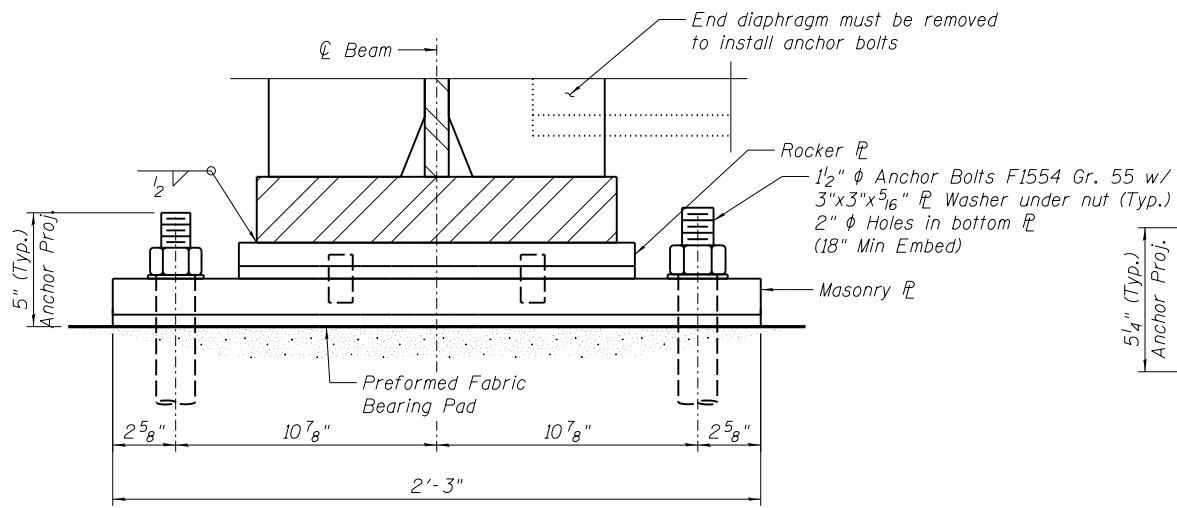


ELEVATION - FIXED BEARING

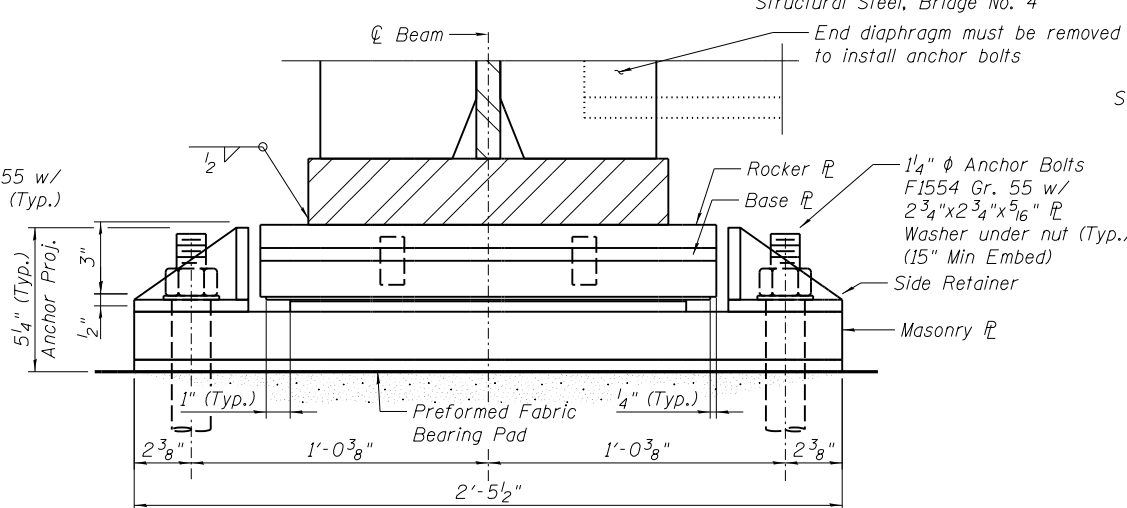


ELEVATION - EXPANSION BEARING

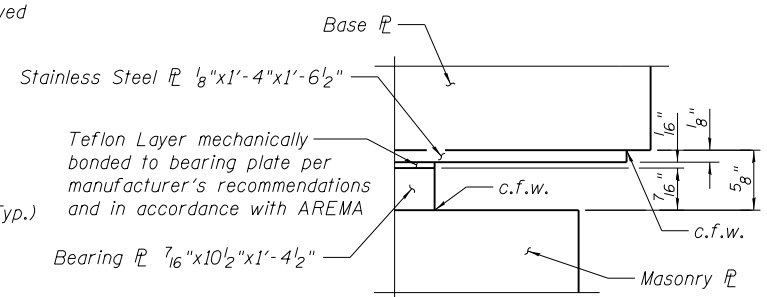
- Notes:
- The structural steel plates of the Bearing Assembly shall conform to the requirements of ASTM A709, Grade 50.
 - Teflon Layer shall be composed of virgin unfilled TFE resin, unfilled TFE sheets, or unfilled TFE fabric. Filler material, such as milled glass fibers, will not be allowed. Teflon layer shall conform to the requirements of AREMA Chapter 15.
 - The bearing assembly shall be according to Section 521 of the Standard Specifications where applicable. The bearing assembly and anchor bolts will not be paid for separately but included in the weight of Structural Steel for payment as "Furnishing and Erecting Structural Steel, Bridge No. 4".
 - 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 shall be installed in blockouts with Non-Shrink Grout meeting the material requirements of Article 1024.02 of the Standard Specifications. Blockouts shall be clean prior to grouting and grout installed according to manufacturer's recommendations. Cost for non-shrink grout shall be included in the cost of Concrete Structures.
 - Two 1/8" adjusting shims shall be provided for each bearing assembly in addition to all other plates or shims and placed as shown on bearing details.



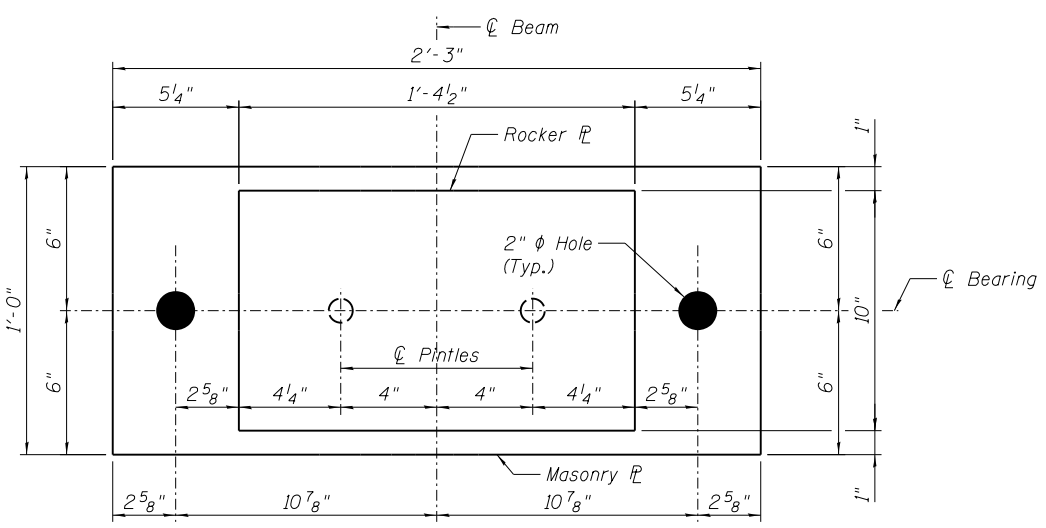
END VIEW - FIXED BEARING



END VIEW - EXPANSION BEARING

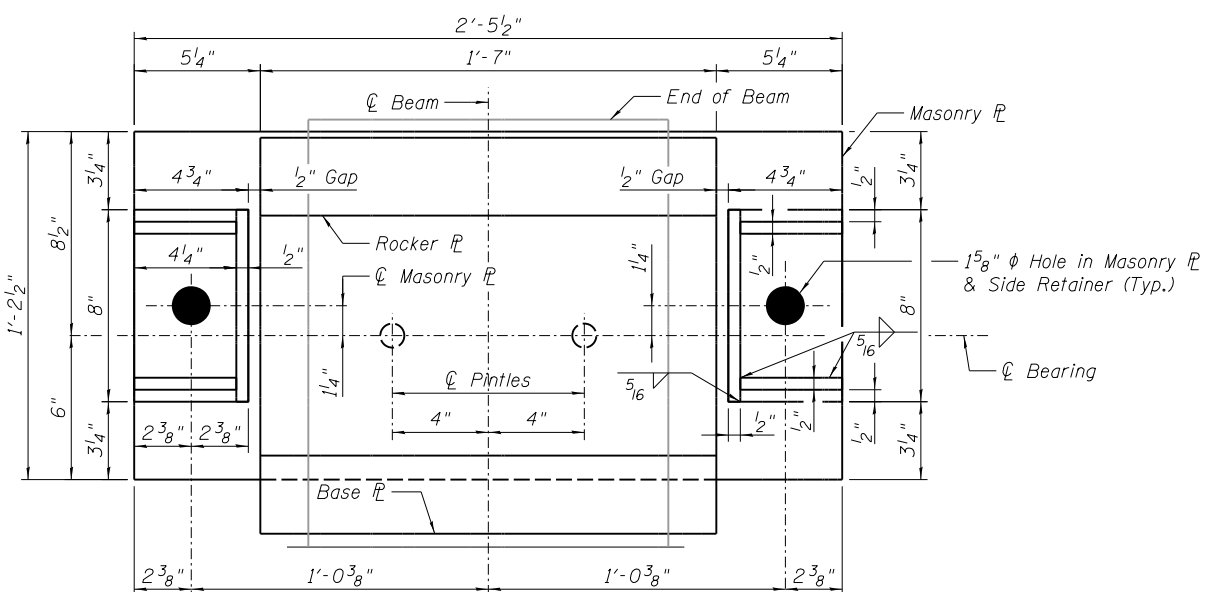


DETAIL 'A'



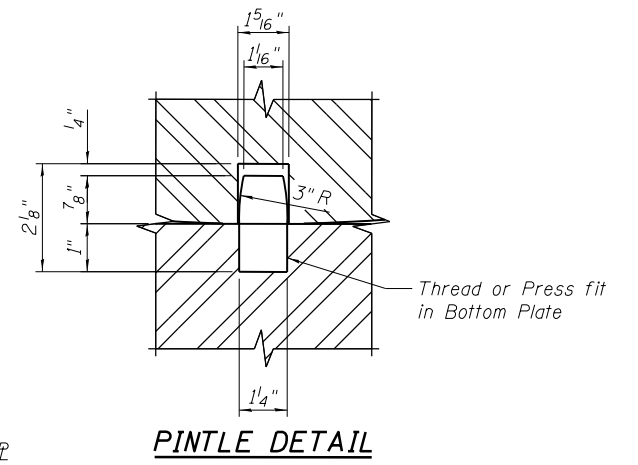
PLAN VIEW - FIXED BEARING

(S. Abutment Bearings - 14 required)



PLAN VIEW - EXPANSION BEARING

(N. Abutment Bearings - 14 required)



PINTLE DETAIL

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FINAL



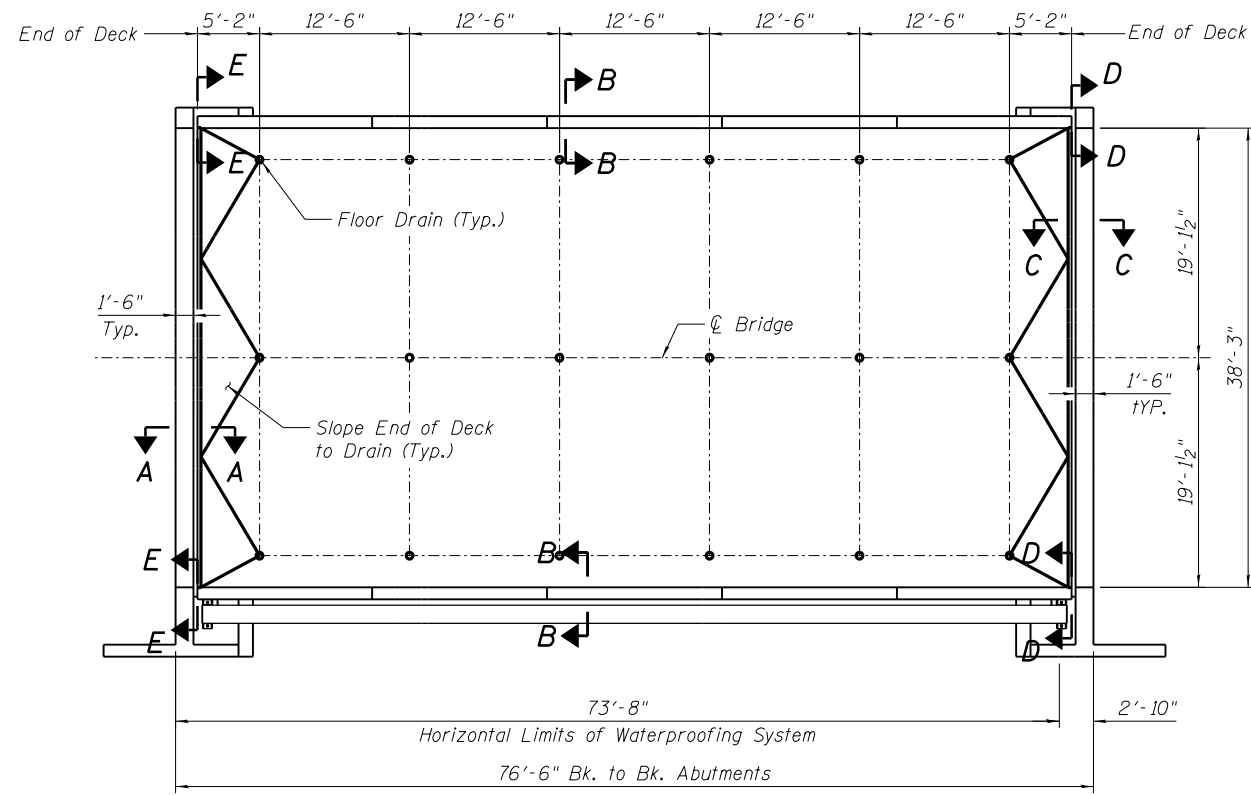
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

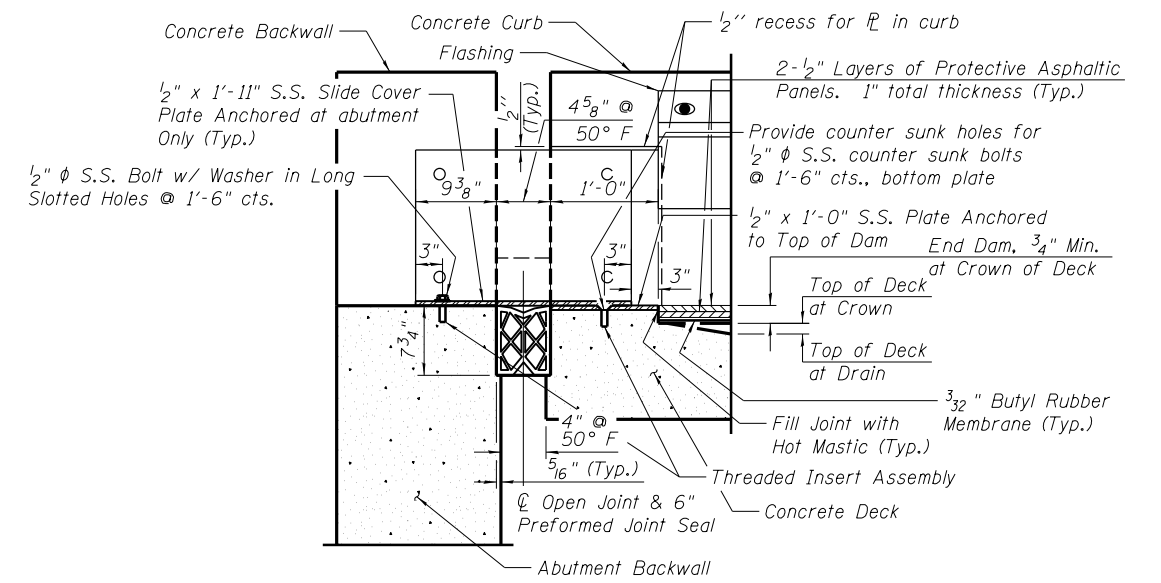
BEARING DETAILS
STRUCTURE NO. 084-9967

SHEET NO. 9 OF 17 SHEETS

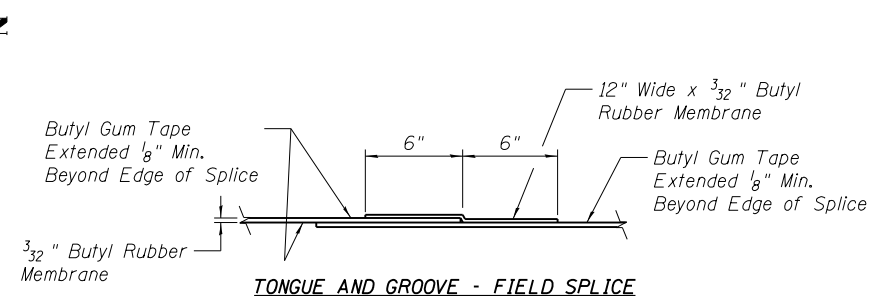
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			CONTRACT NO. 93747	
• 7985A & 8226 ILLINOIS FED. AID PROJECT				



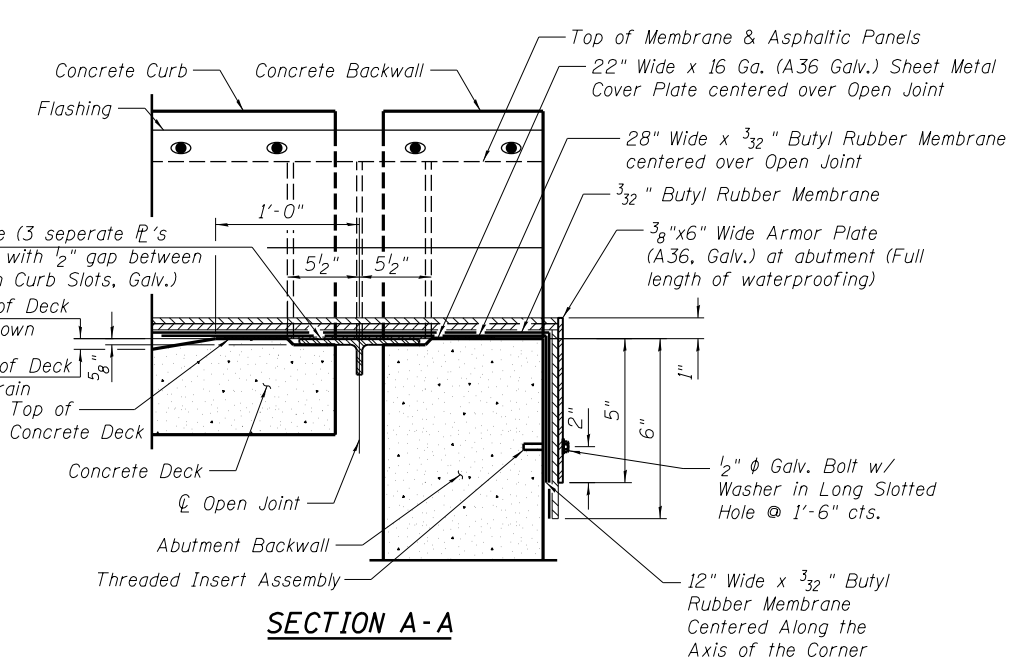
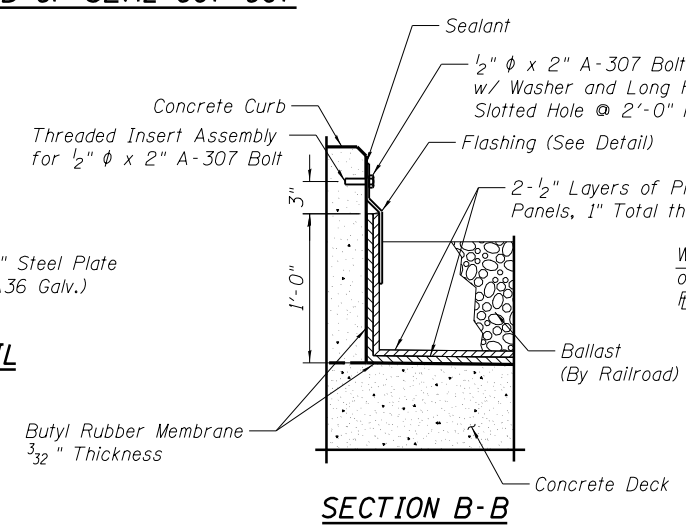
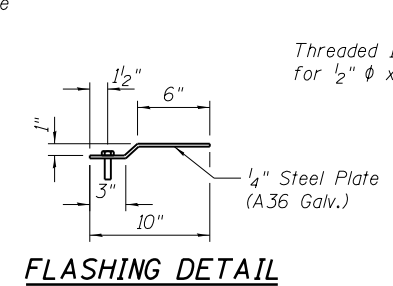
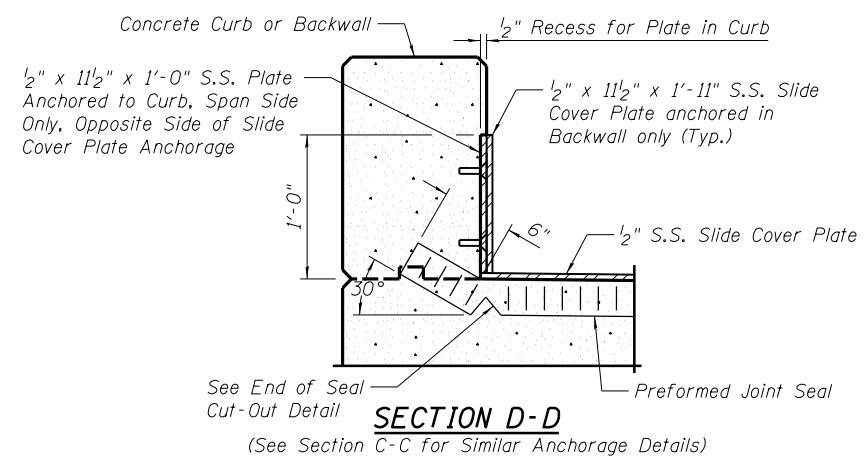
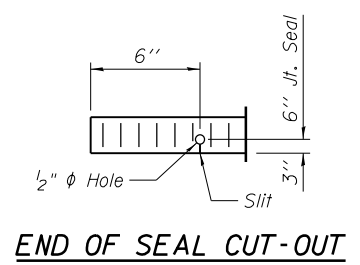
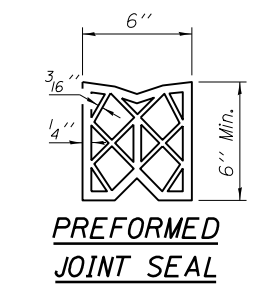
WATERPROOFING LIMITS PLAN



SECTION C-C



BUTYL RUBBER MEMBRANE SPLICE DETAIL



BILL OF MATERIAL

ITEM	UNIT	TOTAL
Membrane Waterproofing	Sq. Ft.	2818

- Notes:
- All structural steel plates, bolts, and washers for cover plates and waterproofing shall be galvanized.
 - Discontinue flashing at open joint over expansion abutment.
 - Cost of threaded inserts, sealant and tape shall be included in the cost of Membrane Waterproofing.
 - The cover plate, sheet metal cover, armor plate, flashing, bolts and washers are included in the weight of Structural Steel and will be paid for as "Furnishing and Erecting Structural Steel, Bridge No. 4".
 - Cost of Preformed Joint Seal is included with Concrete Superstructure.
 - Protective Asphaltic Panels shall be installed in two layers with joints staggered on the half sheet module, and shall be carefully placed to ensure tight proximity to adjacent members. No adhesive shall be used in the installation of the panels. After placing the second layer, unavoidable gaps shall be filled with a compatible sealing compound and the entire top surface of the asphaltic panels shall be given a mop coat of hot asphalt to completely fill the joints between the panels.

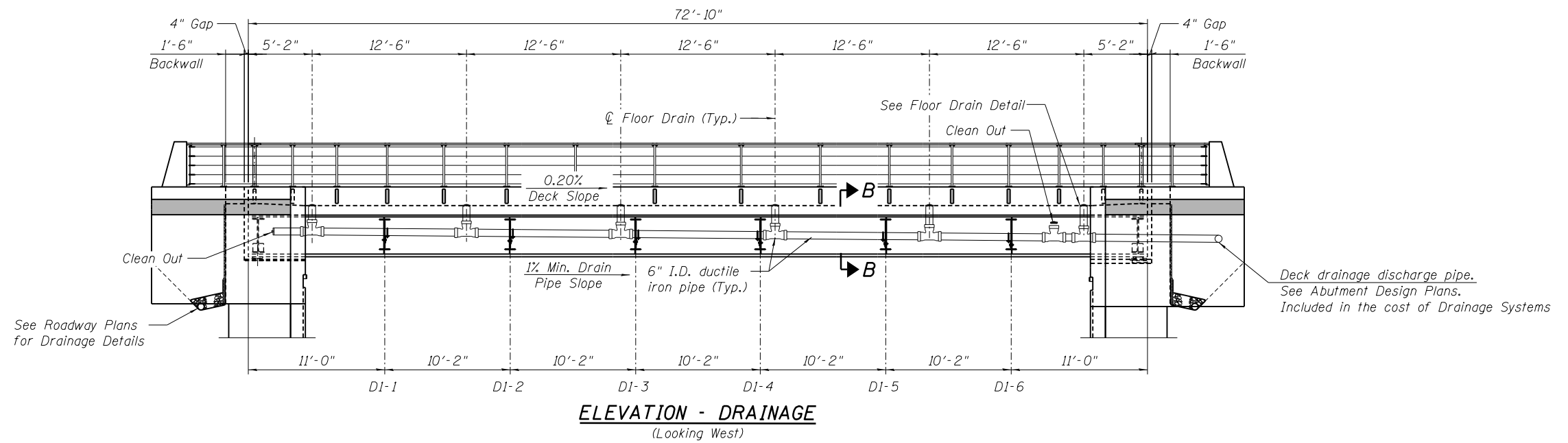


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PLOT DATE = 1/18/2021	DRAWN - CDP	REVISED -
	CHECKED - MJW	REVISED -

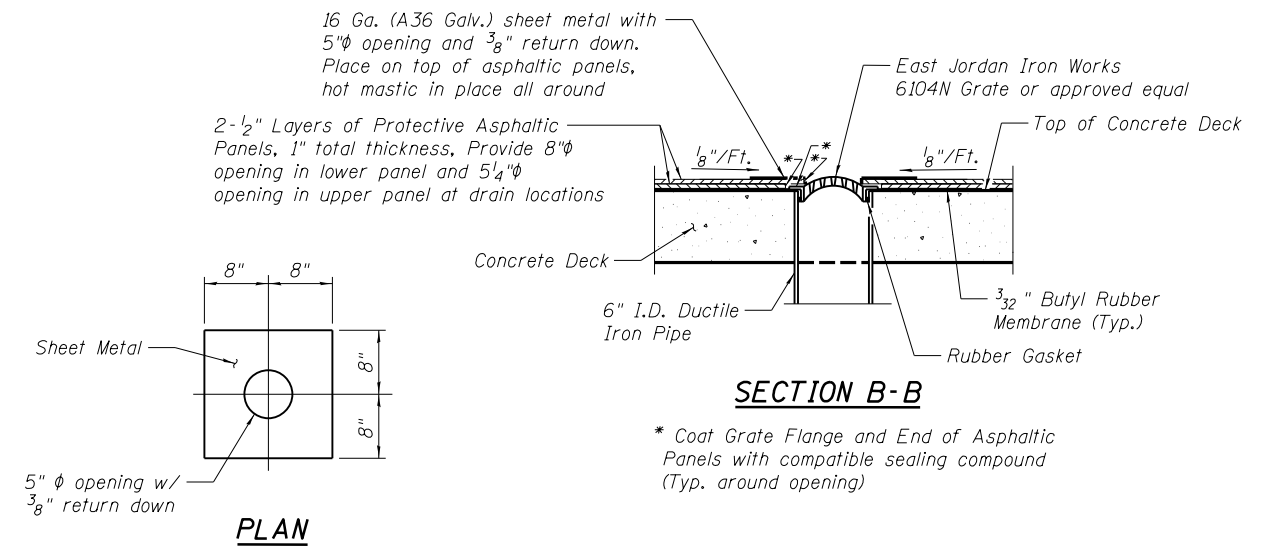
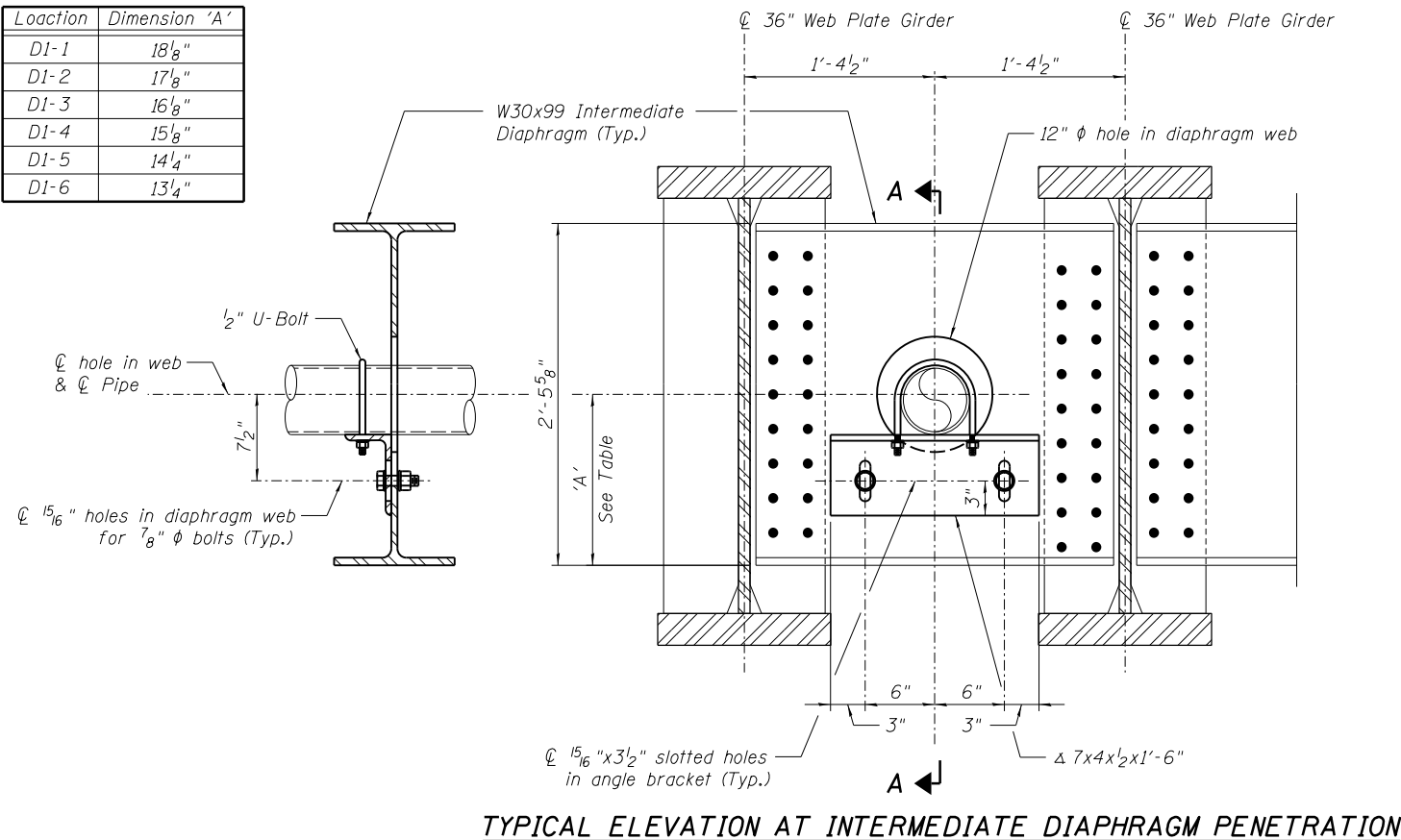
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MEMBRANE WATERPROOFING
STRUCTURE NO. 084-9967
SHEET NO. 10 OF 17 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	19-00488-00-BR	SANGAMON	347	260
7985A & 8227			ILLINOIS FED. AID PROJECT	
			CONTRACT NO. 93747	



Location	Dimension 'A'
D1-1	18 1/8"
D1-2	17 1/8"
D1-3	16 1/8"
D1-4	15 1/8"
D1-5	14 1/4"
D1-6	13 1/4"



- Notes:
1. All drain pipes shall be 6" I.D. All pipes, tees, bells and bends shall be Class 54 Ductile Iron.
 2. Use minimum 1% fall on drain pipes.
 3. Cost of angle brackets, bolts, u-bolts, sheet metal, mastic and other hardware shall be included in the cost of Drainage System.
 4. For additional drainage details See Roadway Plans.
 5. The Drainage System shall allow a movement of 2 1/4" each way between the superstructure and substructure.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Drainage System, No. 4	Each	1

FINAL



USER NAME = Pop00275	DESIGNED - MJW	REVISED -
	CHECKED - CGP	REVISED -
PLOT SCALE = 0/2" = 1' / in.	DRAWN - CDP	REVISED -
PLOT DATE = 1/18/2021	CHECKED - MJW	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DRAINAGE SYSTEM DETAILS
STRUCTURE NO. 084-9967

SHEET NO. 11 OF 17 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	19-00488-00-BR	SANGAMON	347	261
			CONTRACT NO.	93747
7985A & 8228		ILLINOIS FED. AID PROJECT		

Notes:
 Anchor rods shall be ASTM F1554, Grade 55, galvanized steel all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor rods may be used in lieu of ASTM F1554. The anchor rods shall be hot-dipped galvanized according to AASHTO M232, Class C.

Tube segments shall have all corners ground to remove burrs or sharp projections.

All bolts, eyebolts, nuts and washers must satisfy the requirements of ASTM A307 Gr. A unless noted otherwise.

The anchor rods shall be installed according to Article 509.06 of the Standard Specifications. Embedment shall be 4" min. or according to the manufactures specifications whatever is greater.

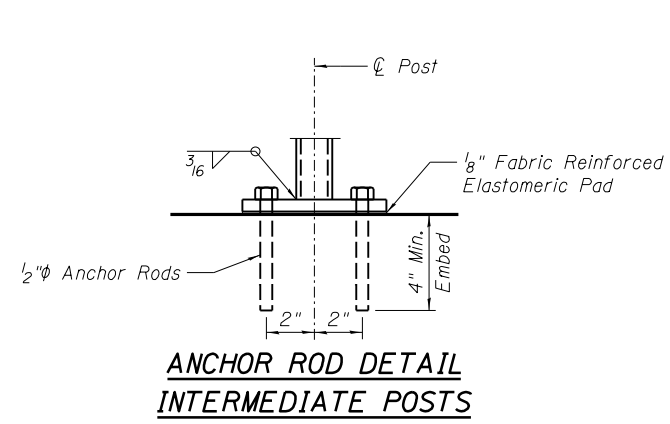
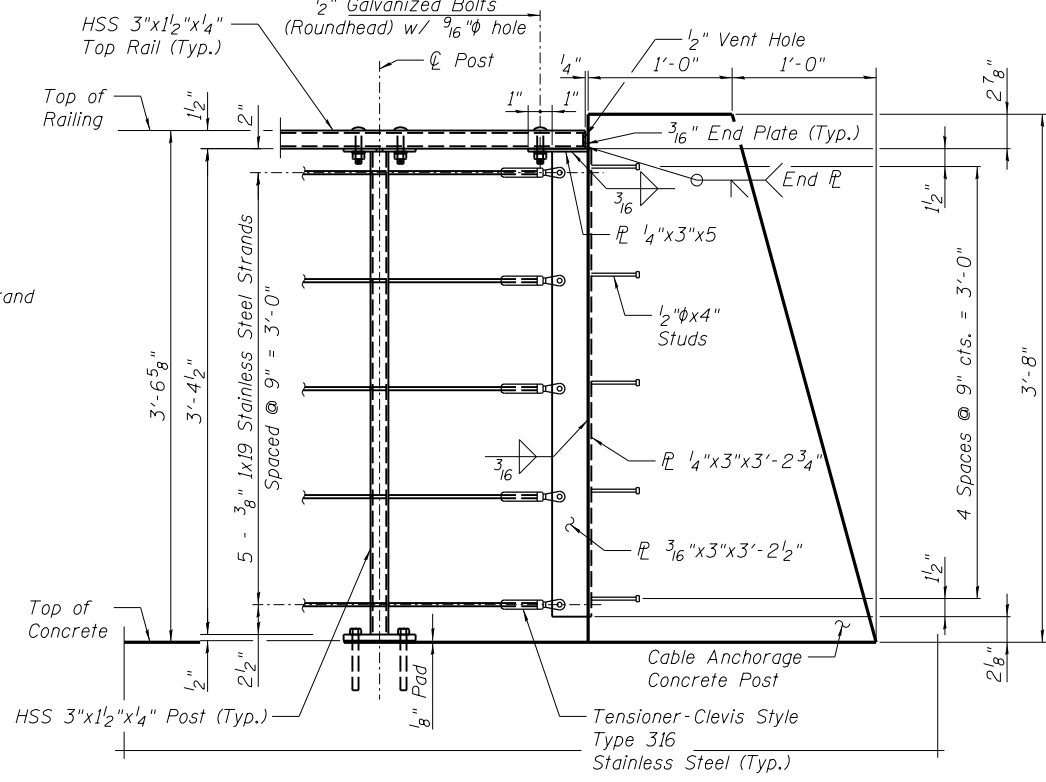
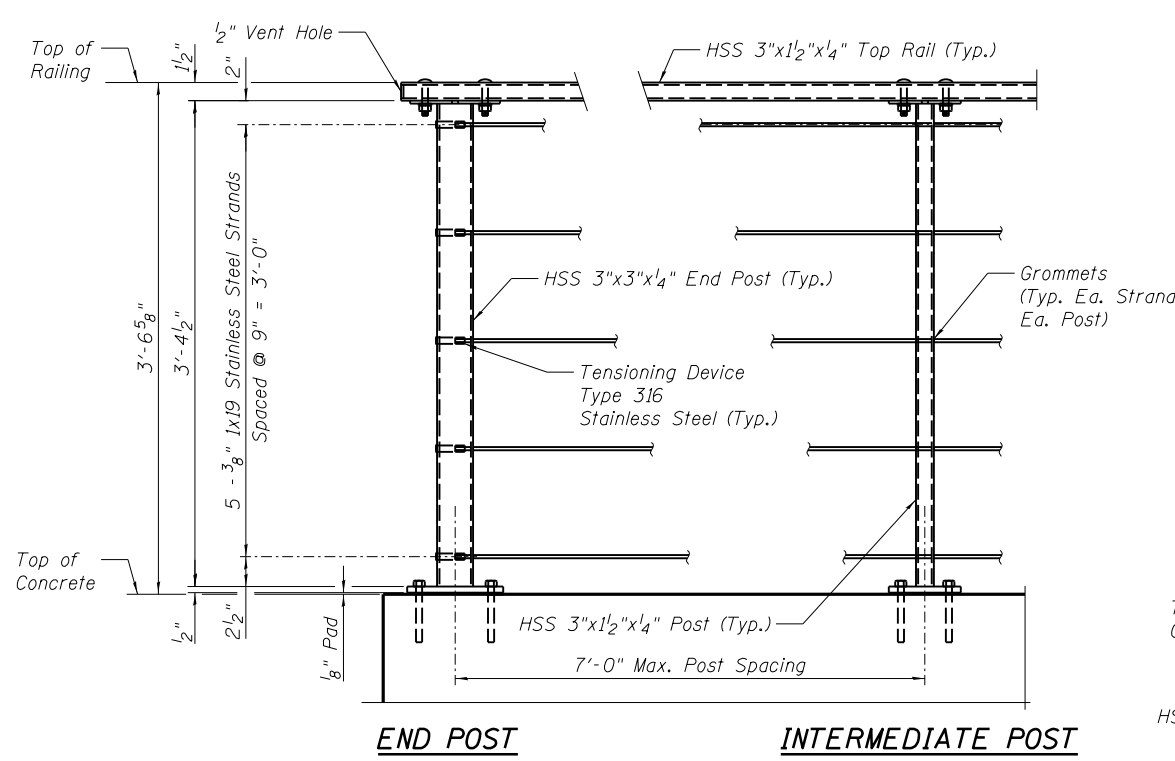
Structural steel plates and bars of the Steel Railing shall conform to the requirements of ASTM A36/36M.

Tubular steel posts shall be according to the requirements of ASTM A500, Grade B.

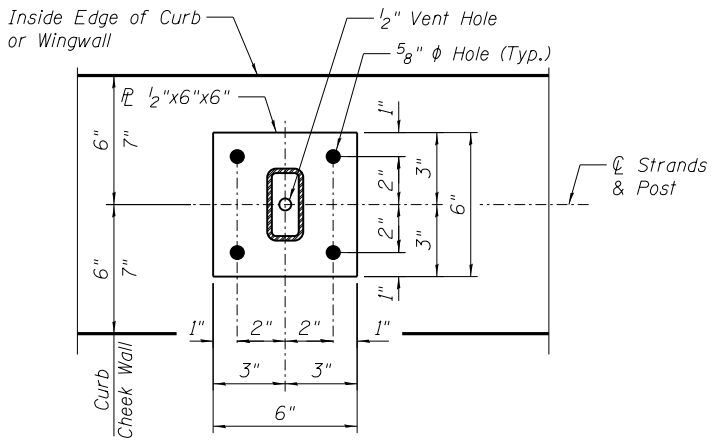
All steel rail members, with the exception of the stainless steel strand and fittings, shall be hot dipped galvanized according to 509.05 of the Standard Specifications.

All studs shall be 1/2"φx4" granular or solid flux filled headed studs automatically end welded to plates.

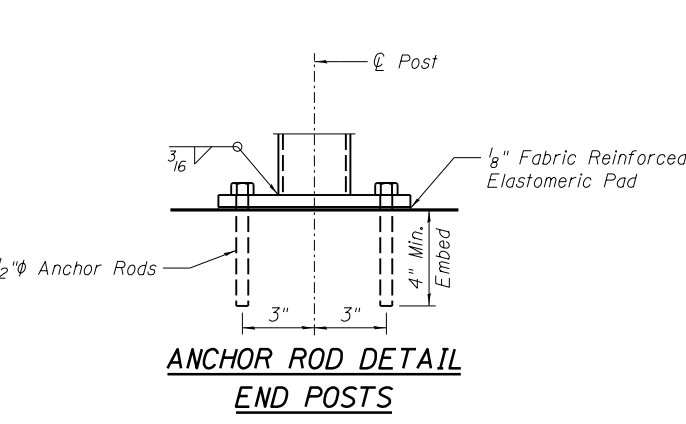
See Sheet 5 of 17 for rail post spacing. See retaining wall plans for chain attachment details.



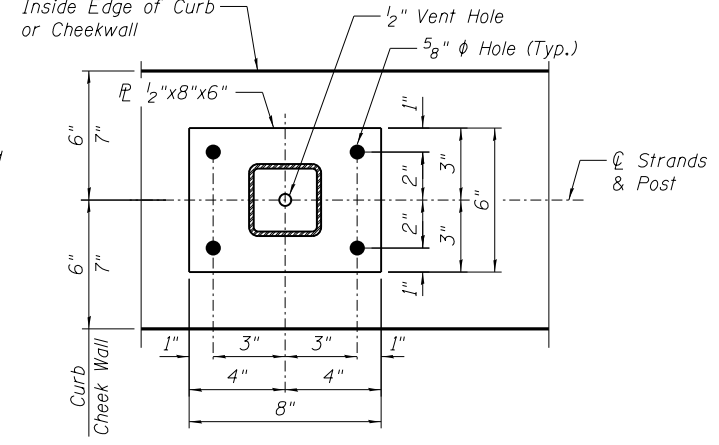
**ANCHOR ROD DETAIL
INTERMEDIATE POSTS**



STANDARD INTERMEDIATE POST

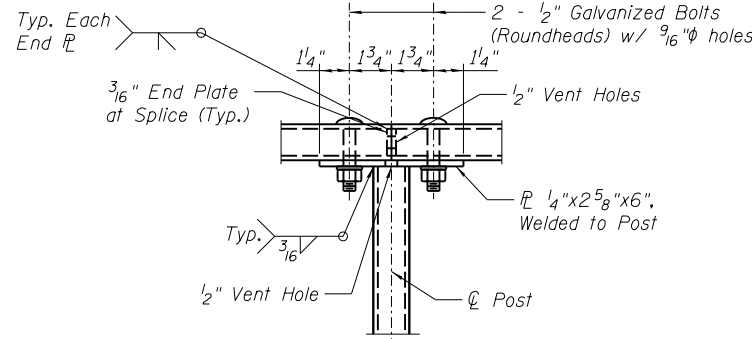


**ANCHOR ROD DETAIL
END POSTS**

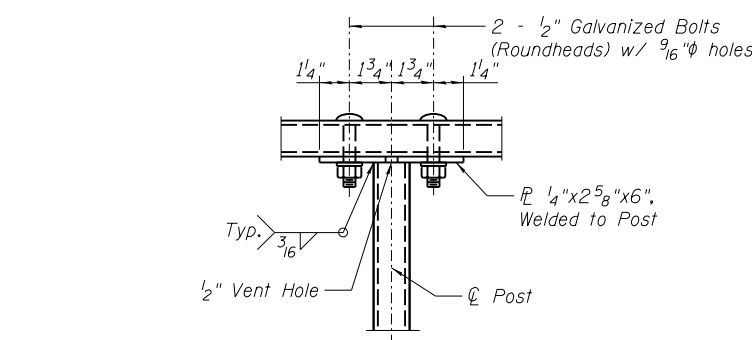


STANDARD END POST

**CABLE RAILING END PANEL
RAILROAD BRIDGE**

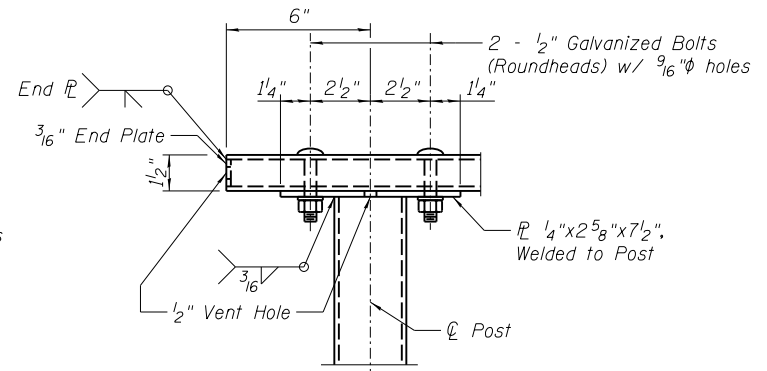


TOP RAIL - WITH SPLICE

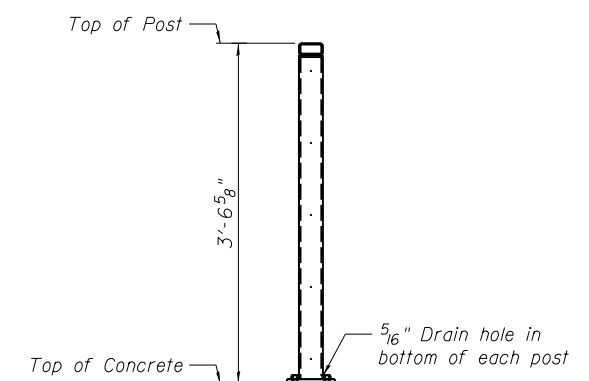


TOP RAIL - NO SPLICE

TYPICAL RAIL/POST CONNECTION
(Strands not shown for clarity)



TYPICAL RAIL/END POST CONNECTION
(Strands not shown for clarity)



POST DETAIL

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Steel Railing (Special)	Foot	164

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FINAL



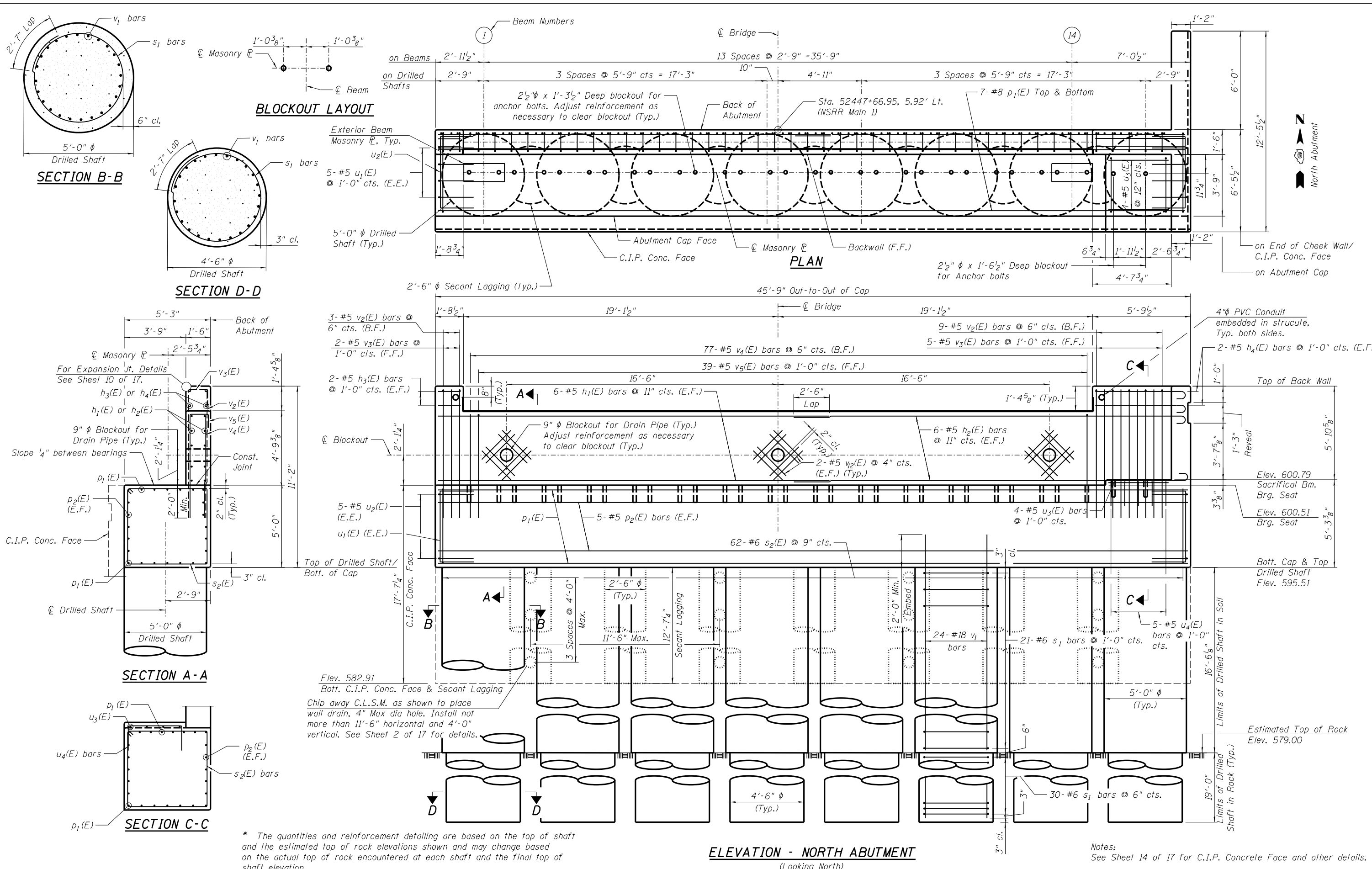
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PLOT DATE = 1/18/2021	DRAWN - CDP	REVISED -
	CHECKED - MJW	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**STEEL RAILING (SPECIAL)
STRUCTURE NO. 084-9967**

SHEET NO. 12 OF 17 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	19-00488-00-BR	SANGAMON	347	262
7985A & 8229 ILLINOIS FED. AID PROJECT			CONTRACT NO. 93747	



* The quantities and reinforcement detailing are based on the top of shaft and the estimated top of rock elevations shown and may change based on the actual top of rock encountered at each shaft and the final top of shaft elevation.

pw:\hanson\nc-pw\entley\com\hanson-pw\01\Documents\09\Jobs\09\01798\Usable Segments III - V - V\CAD\Struct\Usable Segment V\SouthGrand-10th\Sheet\084-9967-09\01798-013-North Abutment

USER NAME = Pop00275	DESIGNED - MJW/CGP	REVISED -
	CHECKED - MNM/MRK	REVISED -
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PLOT DATE = 1/18/2021	CHECKED - MJW	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

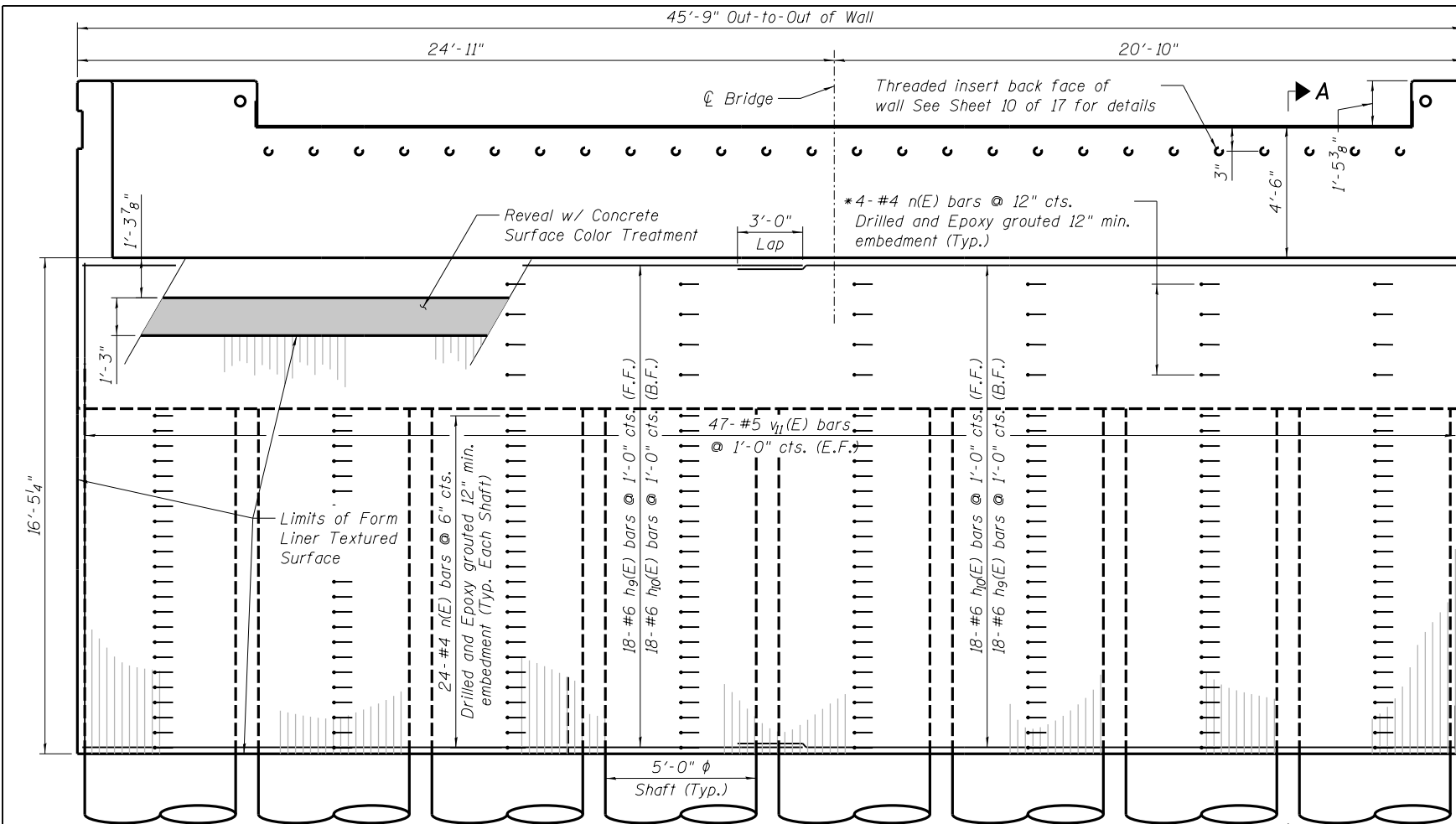
NORTH ABUTMENT
STRUCTURE NO. 084-9967
SHEET NO. 13 OF 17 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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• 7985A & 8230 ILLINOIS FED. AID PROJECT			CONTRACT NO. 93747	

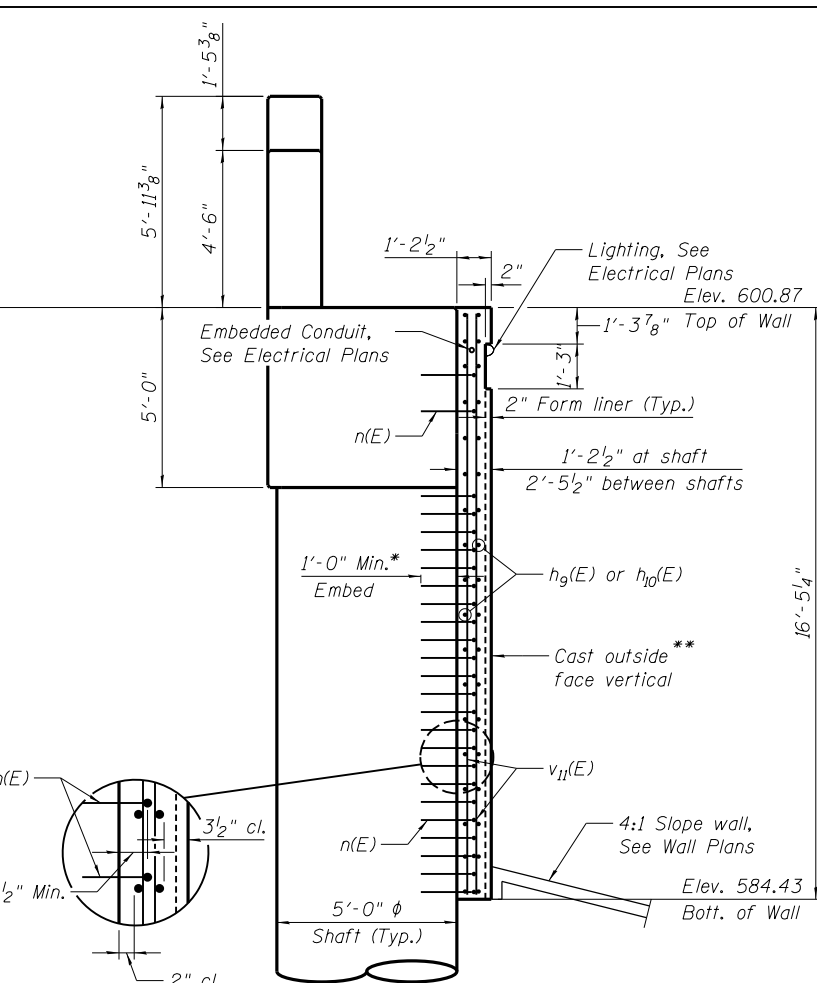
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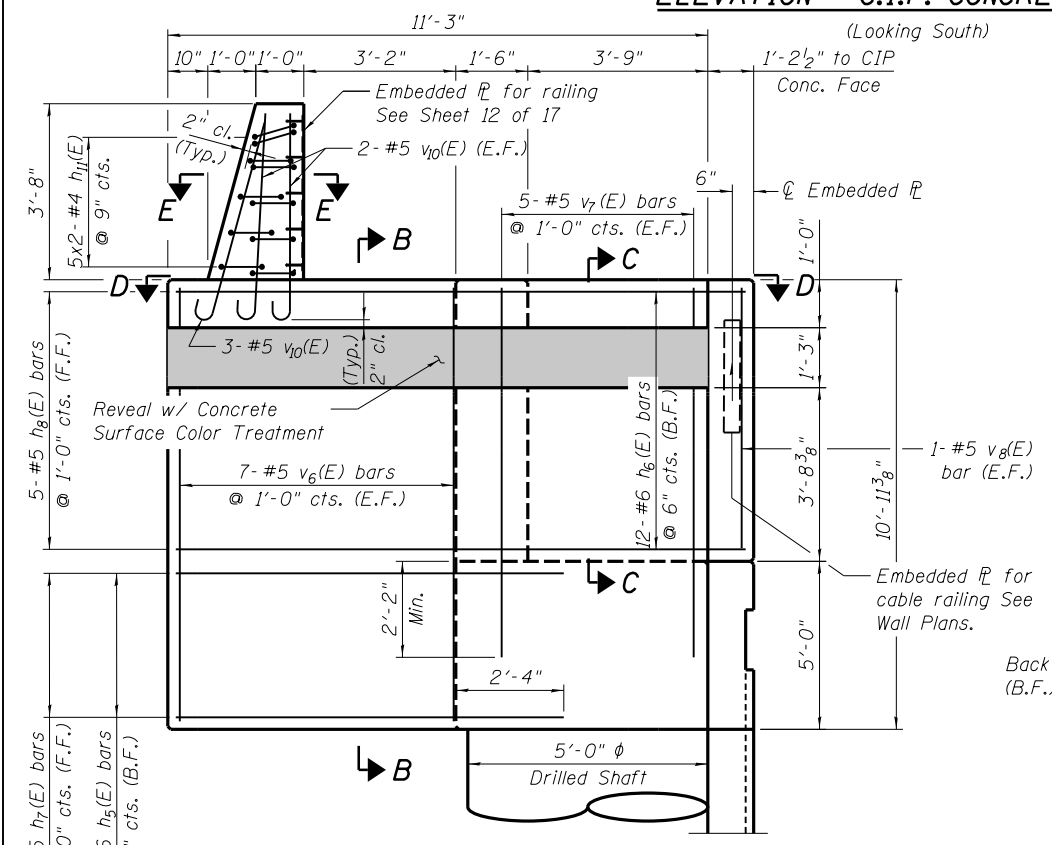
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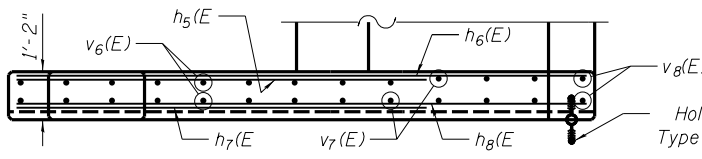
ELEVATION - C.I.P. CONCRETE FACE



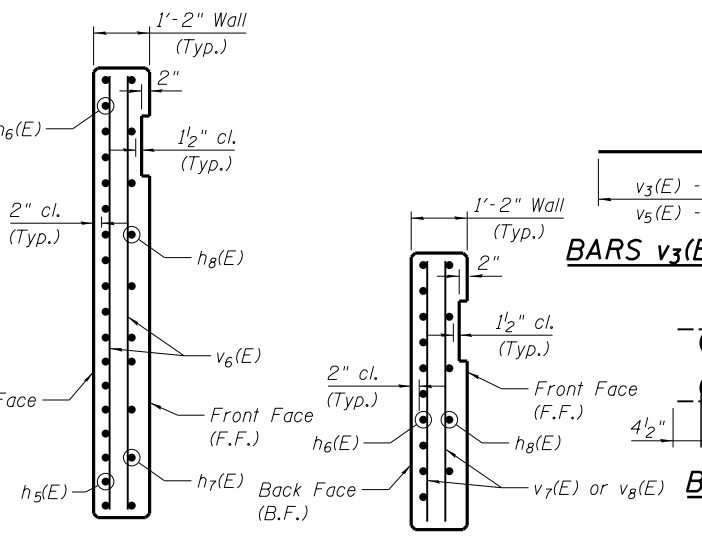
SECTION A-A



ELEVATION - TYPICAL END VIEW

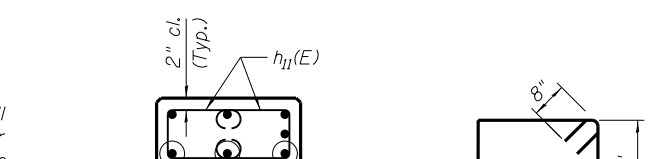


SECTION D-D - PLAN VIEW

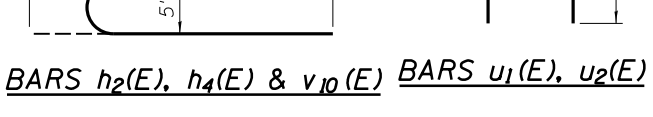
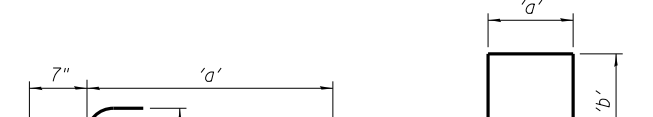


WINGWALL SECTION B-B

CHEEKWALL SECTION C-C



SECTION E-E



Bar	'a'
h ₂ (E)	24'-0"
h ₄ (E)	5'-3"
v ₁₀ (E)	4'-4"

Bar	'a'	'b'
u ₁ (E)	4'-5"	2'-2"
u ₂ (E)	4'-9"	2'-2"

Notes:
 Space cap reinforcement to miss blockouts for anchor bolts.
 See Retaining Wall Plans for Expansion Joint Detail at each end of C.I.P. Concrete Facing.
 See Lighting Plans of Conduit and J-Box embedments in Wall Facing.

* Bars epoxy grouted shall have an embedment sufficient to develop 1.25 times the full capacity of the reinforcement bar.
 ** Concrete wall face shall be cast vertically. Thickness of wall may vary due to abutment deflection. The Min. wall thickness shall be 11 1/2".

BILL OF MATERIAL SOUTH ABUTMENT

Bar	No.	Size	Length	Shape
h ₁ (E)	12	#5	24'-0"	—
h ₂ (E)	12	#5	24'-7"	—
h ₃ (E)	4	#5	1'-4"	—
h ₄ (E)	4	#5	5'-10"	—
h ₅ (E)	11	#6	8'-4"	—
h ₆ (E)	12	#6	12'-0"	—
h ₇ (E)	6	#5	8'-4"	—
h ₈ (E)	5	#5	12'-0"	—
h ₉ (E)	36	#6	20'-0"	—
h ₁₀ (E)	36	#6	28'-5"	—
h ₁₁ (E)	10	#4	3'-5"	□
n(E)	224	#4	2'-3"	L
p ₁ (E)	14	#8	45'-5"	—
p ₂ (E)	10	#5	45'-5"	—
s ₁	416	#6	15'-2"	○
s ₂ (E)	62	#6	20'-4"	□
u ₁ (E)	10	#5	8'-9"	□
u ₂ (E)	10	#5	9'-1"	□
v ₁	192	#18	37'-8"	—
v ₂ (E)	12	#5	8'-0"	—
v ₃ (E)	7	#5	10'-0"	—
v ₄ (E)	77	#5	6'-7"	—
v ₅ (E)	39	#5	8'-7"	—
v ₆ (E)	14	#5	10'-8"	—
v ₇ (E)	10	#5	8'-3"	—
v ₈ (E)	2	#5	5'-6"	—
v ₁₀ (E)	7	#5	4'-11"	—
v ₁₁ (E)	94	#5	16'-1"	—
Structure Excavation		Cu. Yds.	163	
Concrete Structures		Cu. Yds.	93.7	
Form Liner Textured Surface		Sq. Ft.	634	
Reinforcement Bars		Pound	107830	
Reinforcement Bars, Epoxy Coated		Pound	11250	
Drilled Shaft in Soil		Cu. Yds.	98.2	
Drilled Shaft in Rock		Cu. Yds.	89.5	
Secant Lagging		Cu. Ft.	394	
Concrete Sealer		Sq. Ft.	1179	
Conduit Embedded in Structure, 4" dia., PVC		Foot	3	
Concrete Surface Color Treatment		Sq. Ft.	71	

B-046
7/8/13
Sta. 4+97, 12' RT

	N	Qu	w%	
584.6				CONCRETE.
583.80				AGGREGATE - Crushed stone.
583.47	16	8		Brown silty fine to coarse SAND, trace small gravel - FILL.
581.55				Brown and gray weathered SHALE.
	69	4,50P	15	
	50	4,50P	14	
577.05				Gray SHALE.
	50/4"		10	
	50/3"		8	
	50/2"		8	
	50/4"		7	
	50/4"		7	
564.55				Rec. = 85% Gray clayey SHALE.
563.55				RQD = 63% Gray sandy SHALE, micaceous.
				Rec. = 87% RQD = 62%
				Rec. = 97% RQD = 72%
				Rec. = 88% RQD = 54%
				Rec. = 98% RQD = 57%
549.15				COAL
				106.7
544.55				Rec. = 77% RQD = 33%
				Bottom of Hole = 40.0 feet

B-045
7/9/13
Sta. 5+47, 15' LT

	N	Qu	w%	
586.2				CONCRETE.
585.43				AGGREGATE.
585.10	9	5		Brown silty fine to coarse SAND, trace small gravel - FILL.
583.18				Brown and gray weathered SHALE.
	27	4,50P	17	
	50/5"	4,50P	11	
	50/3"	4,50P	13	
575.18				Gray SHALE.
	50/4"		9	
	50/3"		8	
571.18				Rec. = 100% RQD = 85% Gray clayey SHALE, trace sand, micaceous.
				Rec. = 92% RQD = 78%
				103.6
				Rec. = 92% RQD = 30%
				Rec. = 100% RQD = 60%
				16.7
				Rec. = 67% RQD = 65%
551.18				Bottom of Hole = 35.0 feet

LEGEND

N Standard Penetration Test N (blows/ft)

Qu Unconfined Strength (tsf)

w% Natural Moisture Content (%)

DD Water Surface Elevation Encountered in Boring

558.10 ▽ DD = during drilling

Oh = at completion

24h = 24 hours after completion

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FINAL



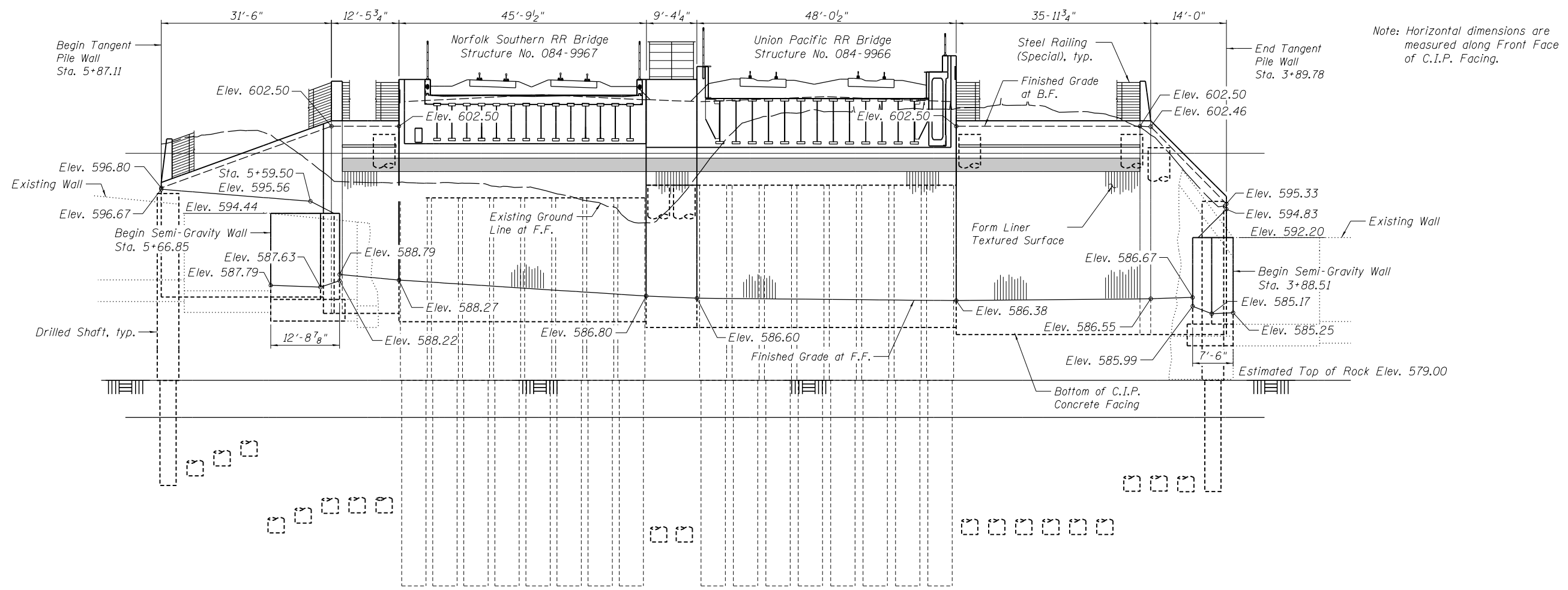
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PLOT DATE = 1/18/2021	CHECKED - MJW	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

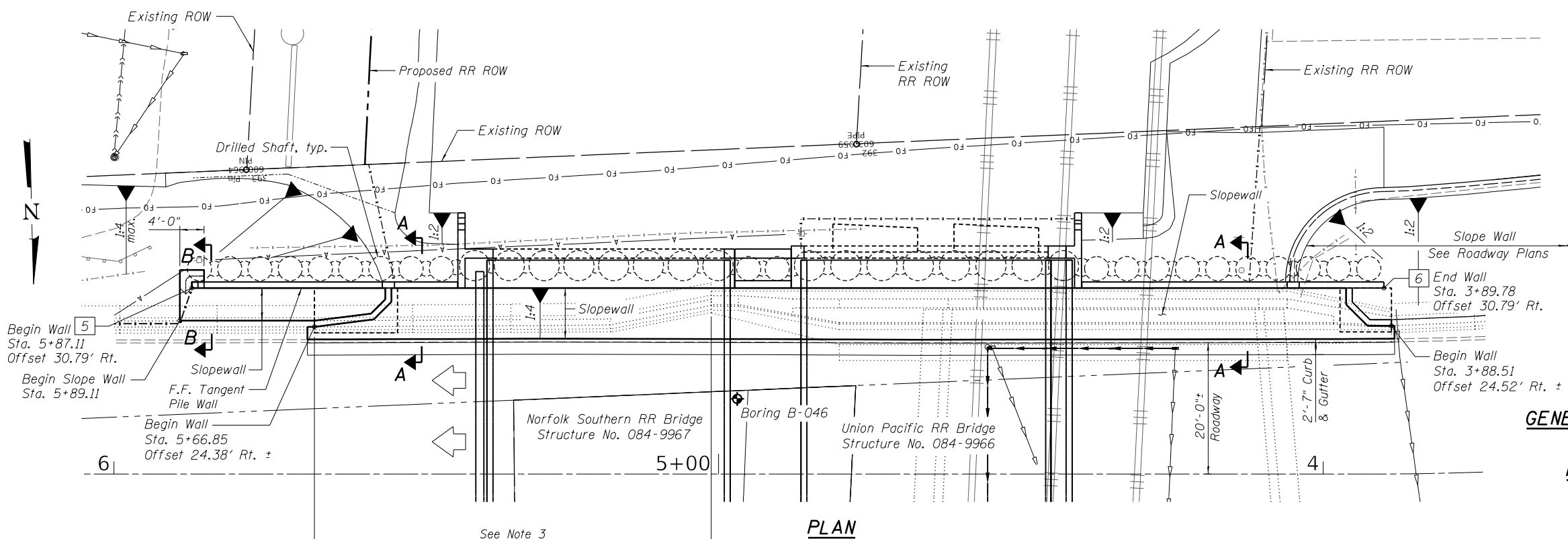
SUBSURFACE DATA PROFILE
STRUCTURE NO. 084-9967

SHEET NO. 17 OF 17 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	19-00488-00-BR	SANGAMON	347	267
CONTRACT NO. 93747				
7985A & 8234		ILLINOIS FED. AID PROJECT		



Note: Horizontal dimensions are measured along Front Face of C.I.P. Facing.



- Notes:
1. Wall offsets are measured from \odot South Grand Avenue to the front face of C.I.P. Facing.
 2. See Sheet 4 of 19 for Sections A-A & B-B.
 3. Removal of Existing Structures No. 3 Sta. 5+01.21 to Sta. 5+66.85 (Location of Expansion Joints To Be Verified In Field Prior to Removal)
- F.F. - Front Face
B.F. - Back Face

GENERAL PLAN & ELEVATION (SHEET 2 OF 2)
SOUTH WALL SOUTH GRAND AVE.
F.A.U. 7989-SECTION 19-00488-00-BR
SANGAMON COUNTY
STATION 3+88.51 TO 5+87.11

<p>FINAL</p> <p>HANSON</p> <p>© Copyright Hanson Professional Services Inc., 2021</p>	<p>USER NAME = Pop00275</p> <p>PLOT SCALE = 21.333' / in.</p> <p>PLOT DATE = 1/18/2021</p>	<p>DESIGNED - KMS</p> <p>CHECKED - RGC</p> <p>DRAWN - EJM</p> <p>CHECKED - RGC</p>	<p>REVISED -</p> <p>REVISED -</p> <p>REVISED -</p> <p>REVISED -</p>	<p>STATE OF ILLINOIS</p> <p>DEPARTMENT OF TRANSPORTATION</p>	<p>GENERAL PLAN & ELEVATION - SOUTH WALL</p> <p>SOUTH GRAND RETAINING WALLS</p> <p>SHEET NO. 2 OF 19 SHEETS</p>	<table border="1"> <tr> <th>F.A.P. RTE.</th> <th>SECTION</th> <th>COUNTY</th> <th>TOTAL SHEETS</th> <th>SHEET NO.</th> </tr> <tr> <td>•</td> <td>19-00488-00-BR</td> <td>SANGAMON</td> <td>347</td> <td>269</td> </tr> <tr> <td colspan="3"></td> <td colspan="2">CONTRACT NO. 93747</td> </tr> </table> <p>• 7985A & 8236 ILLINOIS FED. AID PROJECT</p>	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	•	19-00488-00-BR	SANGAMON	347	269				CONTRACT NO. 93747	
	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.																
	•	19-00488-00-BR	SANGAMON	347	269																
				CONTRACT NO. 93747																	

GENERAL NOTES

1. Reinforcement bars designated (E) shall be epoxy coated.
2. All substructure concrete shall have a compressive strength of 4,000 psi at 14 days.
3. Waterproofing shall be applied to the backside of the false abutment cap and backwall for surfaces below ground. This shall be according to Article 503.18 of the Std. Spec. Cost included with Concrete Structures (Retaining Wall).

CONSTRUCTION SEQUENCE

Stage 1

1. Rail traffic on existing bridge and roadway traffic shall be maintained during construction.
2. NSRR Bridge and east ends of retaining walls.
 - a. Drill and place the Secant Lagging to existing ground surface at North and South Abutments, North Retaining Wall, east of Drilled Shaft 16 including Secant Lagging between Shaft 16 and the UPRR North Abutment, and South Retaining Wall, east of Drilled Shaft 11, including the Secant Lagging between Drilled Shaft 11 and the UPRR South Abutment.
 - b. Install Drilled Shafts 16 through 28 of the North Wall, along with North Abutment, and install Drilled Shafts 1 through 11 of the South Wall, along with South Abutment, forming above existing ground as required.
 - c. Construct cast-in-place concrete bridge abutments and false abutment caps over retaining wall drilled shafts.
 - d. Remove Existing Retaining Wall in front of South Retaining Wall Sta. 5+01.21 to Sta. 5+66.85.
 - e. Install pipe underdrain and cast-in-place concrete facing panels N5-N6 and S1-S2.
 - f. Construct southeast semi-gravity wall.
 - g. Place fill behind new abutments and retaining walls.
 - h. Set Bridge superstructure.
 - i. Complete bridge construction. Complete NSRR embankment and subballast placement.
 - j. NSRR places ballast and shifts tracks to new bridge.

Stage 2

1. Maintain rail traffic on the newly constructed NSRR bridge.
2. Remove Existing Bridge and construct UPRR Bridge and west ends of retaining walls.
 - a. Drill and place the Secant Lagging to existing ground surface at both abutments and at North Retaining Wall between Drilled Shafts 1 through 15, and at South Retaining Wall between Drilled Shafts 12 through 21.
 - b. Install drilled shafts for the North and South Abutments, Drilled Shafts 1 through 15 of the North Wall and Drilled Shafts 12 through 21 of the South Wall, forming above existing ground as required.
 - c. Remove existing bridge superstructure.
 - d. Remove the existing bridge abutments.
 - e. Construct cast-in-place concrete abutments.
 - f. Install pipe underdrain and cast-in-place concrete facing panels at N1-N4, S3-S5, and at the North and South Abutments for both the NSRR and UPRR Bridges.
 - g. Construct southwest semi-gravity wall.
 - h. Place fill behind new abutments and retaining walls.
 - i. Set bridge superstructure.
 - j. Complete bridge construction. Complete UPRR embankment and subballast placement.

Note: See Railroad Plans for stages and items not affecting these structures.

WALL CONTROL POINTS

Control Point	Station	Offset
1	3+89.52	71.70' LT
2	4+27.96	32.79' LT
3	5+55.11	32.79' LT
4	5+76.90	63.92' LT
5	5+87.11	30.79' RT
6	3+89.78	30.79' RT

Control Points are to Front Face of C.I.P. Facing.

INDEX OF SHEETS

1. General Plan & Elevation - North Wall
2. General Plan & Elevation - South Wall
3. General Data
4. Typical Sections
5. Typical Sections
6. Drilled Shafts - North Wall
7. Drilled Shafts - South Wall
8. Drilled Shaft Details
9. Concrete Facing - North Wall
10. Concrete Facing - North Wall
11. Concrete Facing - South Wall
12. Concrete Facing - South Wall
13. Concrete Facing Details
14. Concrete Facing Details
15. Semi-Gravity Wall - South Wall
16. Railing Details
17. Railing Details
18. Railing Details
19. Subsurface Data Profile

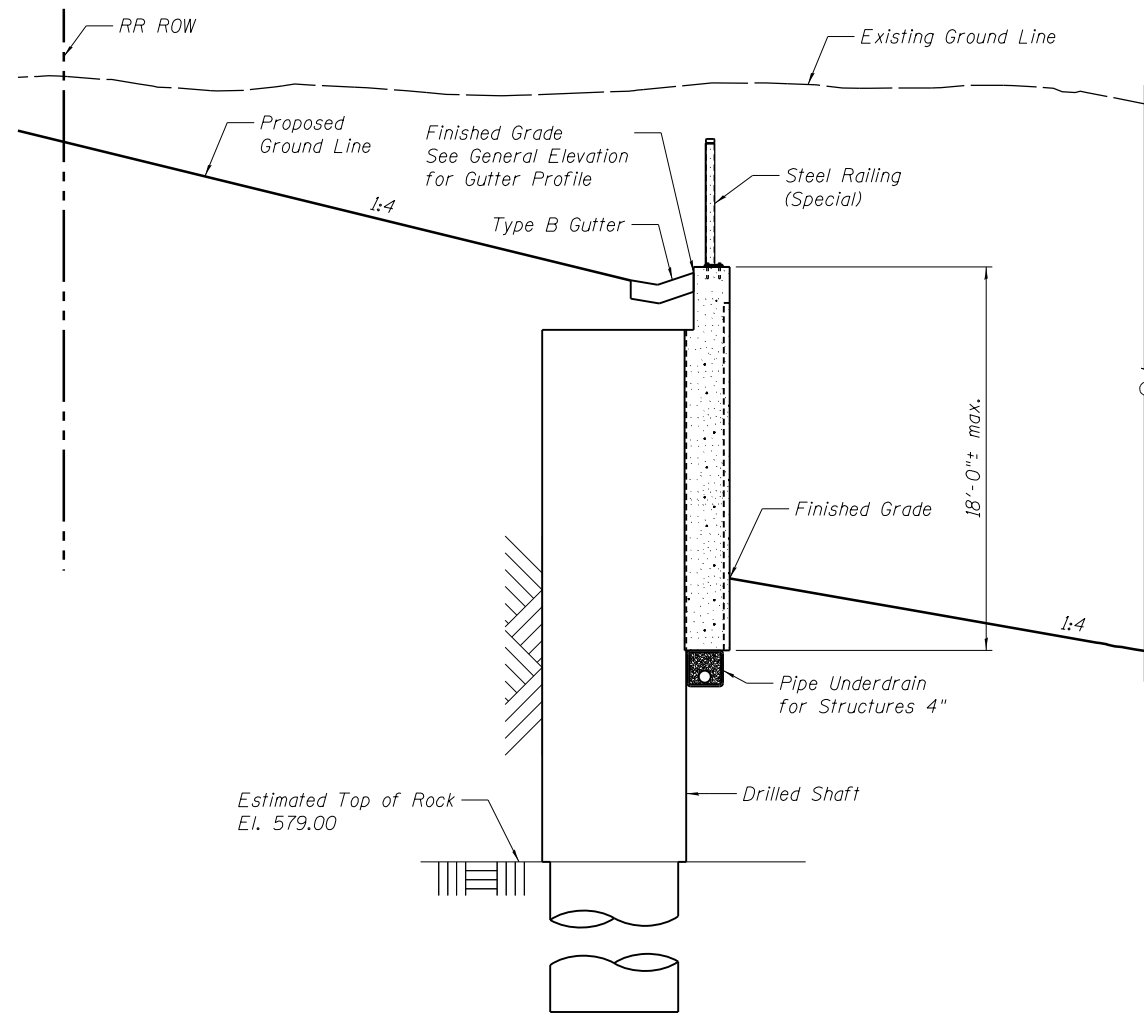
TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Removal of Existing Structures No. 3	Each	1
Granular Backfill for Structures	Cu. Yd.	77
Structure Excavation	Cu. Yd.	502
Form Liner Textured Surface	Sq. Ft.	2037
Reinforcement Bars	Pound	125280
Reinforcement Bars, Epoxy Coated	Pound	21710
Slope Wall 4 Inch	Sq. Yd.	176
Drilled Shafts In Soil	Cu. Yd.	377.4
Drilled Shafts In Rock	Cu. Yd.	162.6
Secant Lagging	Cu. Ft.	3060
Concrete Structures (Retaining Wall)	Cu. Yd.	233.1
Concrete Sealer	Sq. Ft.	4257
Geocomposite Wall Drain	Sq. Yd.	33
Concrete Gutter, Type B	Foot	121
Concrete Surface Color Treatment	Sq. Ft.	116
Steel Railing (Special)	Foot	200
Pipe Underdrains for Structures 4"	Foot	249

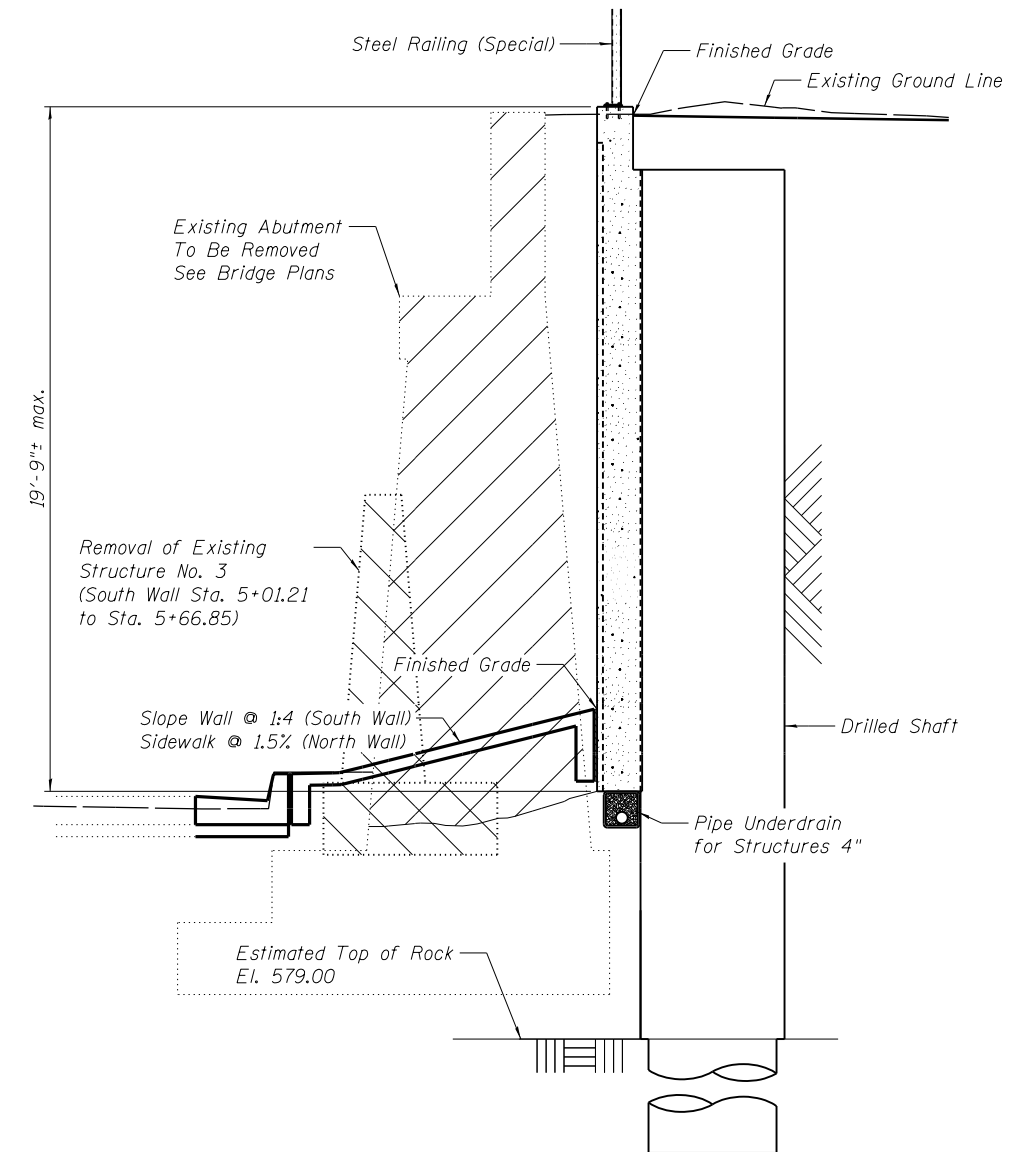
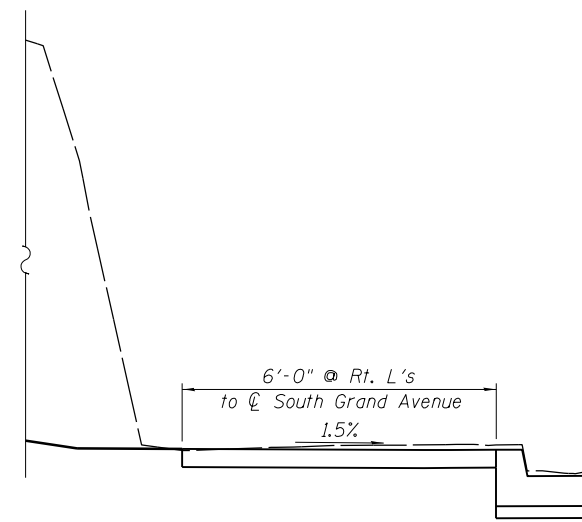


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PLOT DATE = 1/18/2021	CHECKED - RGC	REVISED -

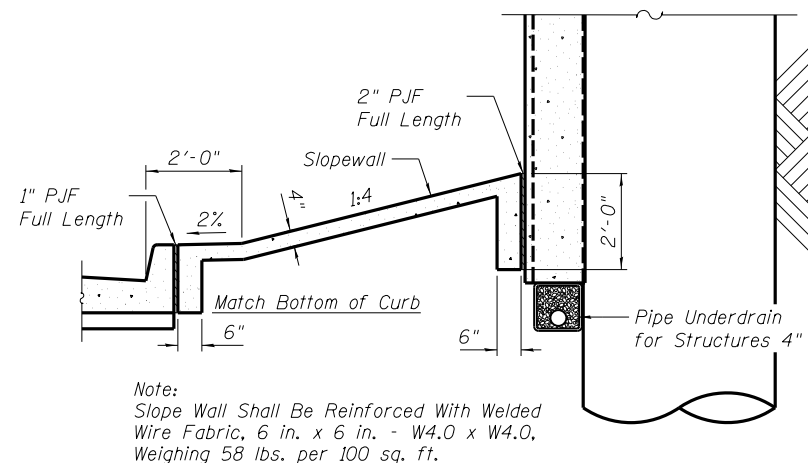
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*	19-00488-00-BR	SANGAMON	347	270
			CONTRACT NO.	93747
* 7985A & 8237		ILLINOIS FED. AID PROJECT		



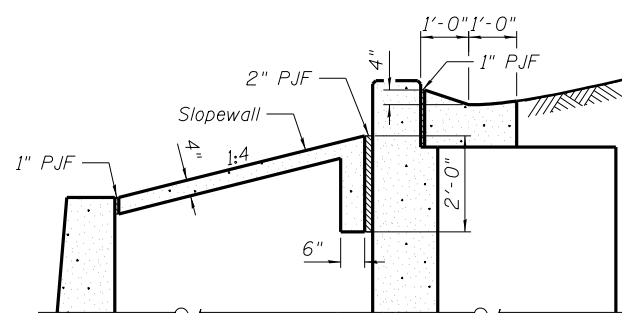
TYPICAL WALL SECTION ANGLED TO STREET
 N. Wall Sta. 3+89.52 to 4+27.96 & 5+55.11 to 5+76.90



TYPICAL WALL SECTION PARALLEL TO STREET
 N. Wall Sta. 4+27.96 to 5+55.11
 S. Wall Sta. 3+89.78 to 5+87.11



SECTION A-A - SLOPEWALL
 N. Wall Sta. 3+88.00 to 5+68.00 Rt.



SECTION B-B - SLOPEWALL

pw:\hansoninc-pw.bentley.com\hanson-pw-01\Documents\09Jobs\09L0179B\Usable Segments III - V - V\CAD\Struct\Usable Segment V\SouthGrand-10th\Sheet\09L0179B-SouthGrand-Retaining-Wall-Plans

FINAL



USER NAME = Pop00275	DESIGNED - KMS	REVISED -
	CHECKED - RGC	REVISED -
PLOT SCALE = 0.167' / 1" =	DRAWN - EJM	REVISED -
PLOT DATE = 1/18/2021	CHECKED - RGC	REVISED -

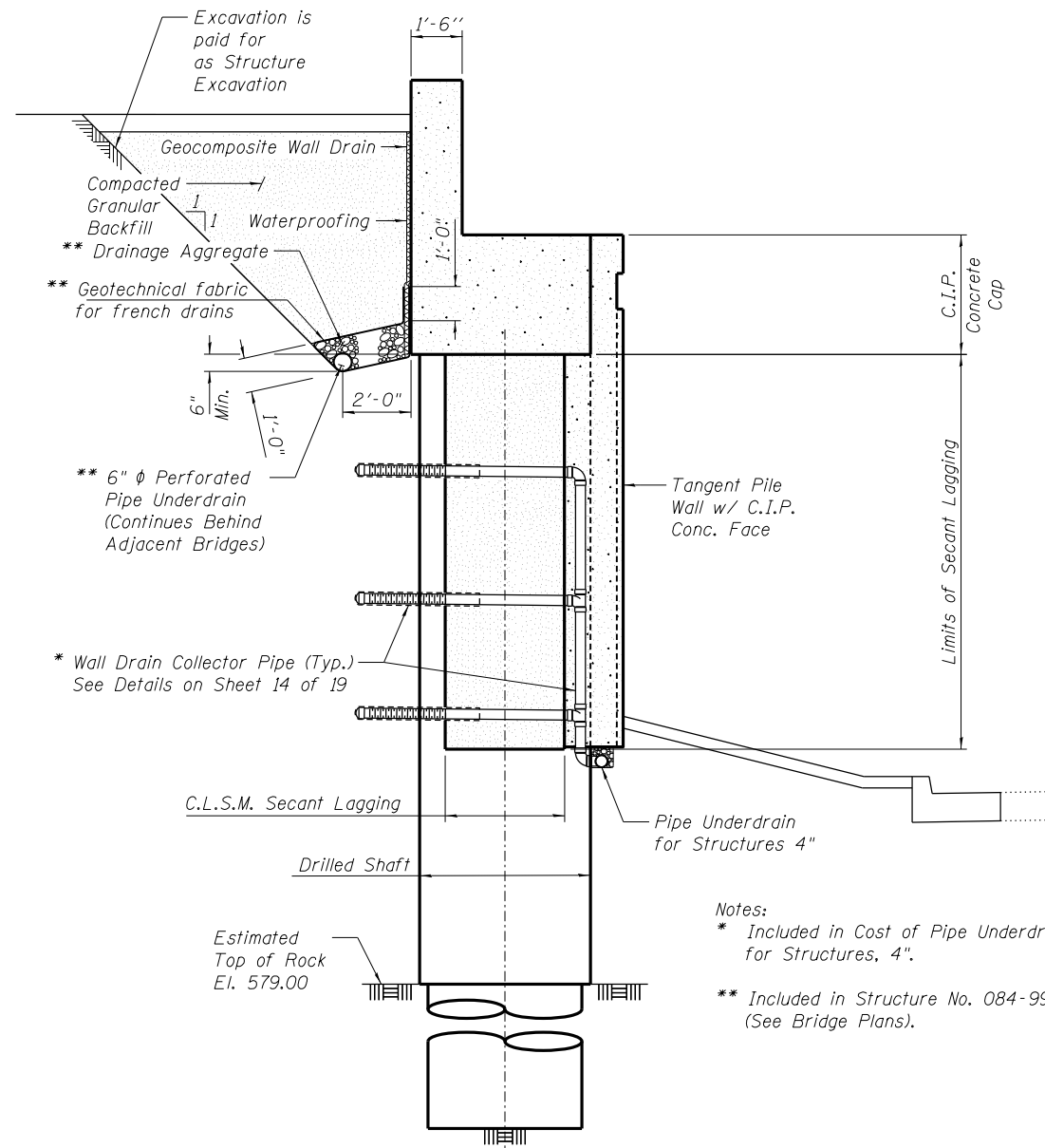
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS
 SOUTH GRAND RETAINING WALLS

SHEET NO. 4 OF 19 SHEETS

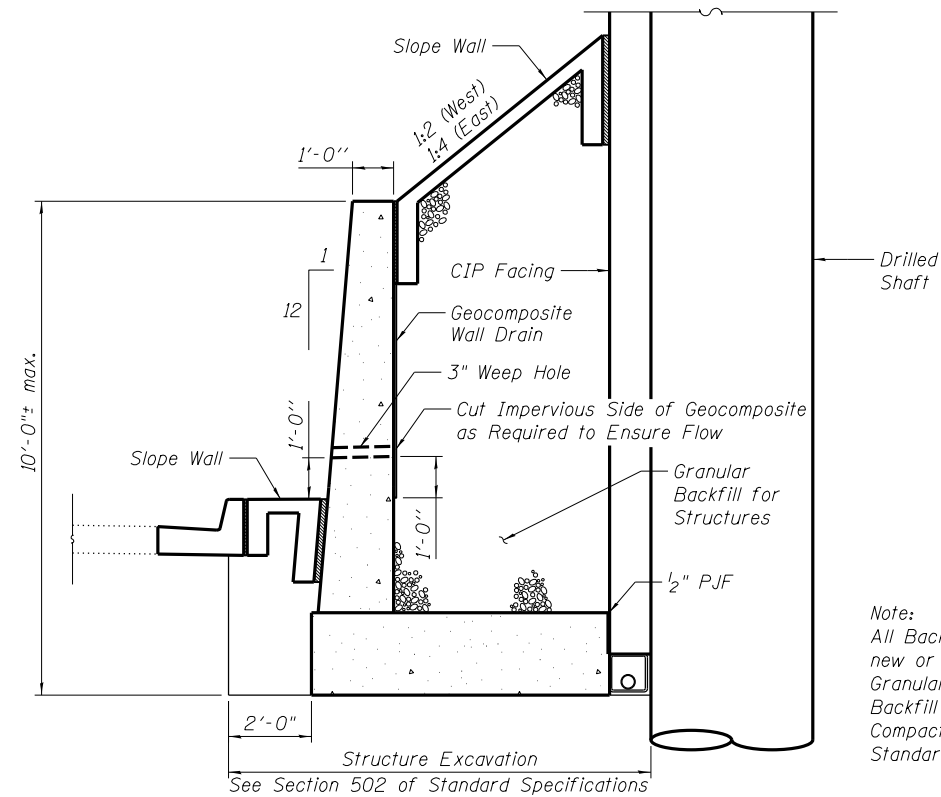
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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			CONTRACT NO. 93747	

7985A & 8238 ILLINOIS FED. AID PROJECT



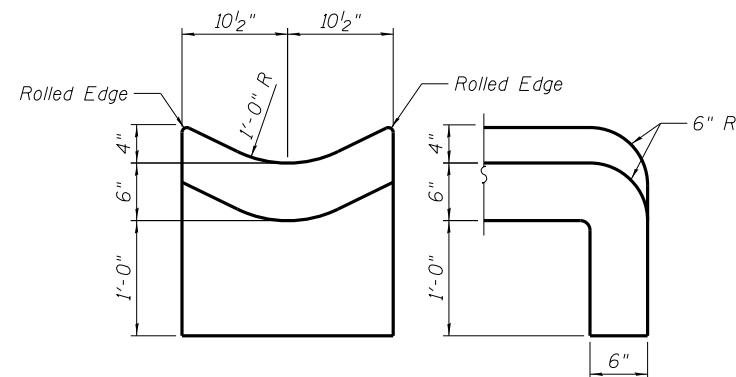
TYPICAL SECTION BETWEEN BRIDGES

Notes:
 * Included in Cost of Pipe Underdrains for Structures, 4".
 ** Included in Structure No. 084-9967 (See Bridge Plans).

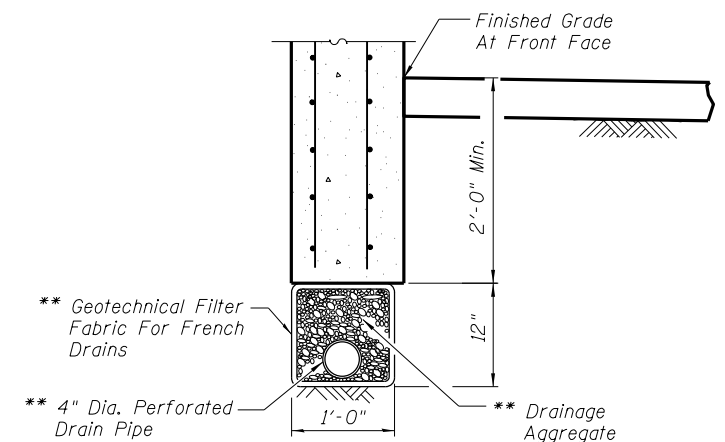


TYPICAL SECTION AT SEMI-GRAVITY WALL

Note:
 All Backfill Placed Between Tangent Pile Wall and new or existing Semi-Gravity Wall Shall be Granular Backfill for Structures. Granular Backfill for Structures Shall be Placed and Compacted According to Section 502.10 of the Standard Specifications.



SECTION AT END OF TYPE B GUTTER
 End Treatment Shall Be Measured and Paid as Concrete Gutter, Type B



UNDERDRAIN DETAIL

** Included in the Cost of Pipe Underdrains for Structures. See Drainage Plans for Outlet Locations.

FINAL



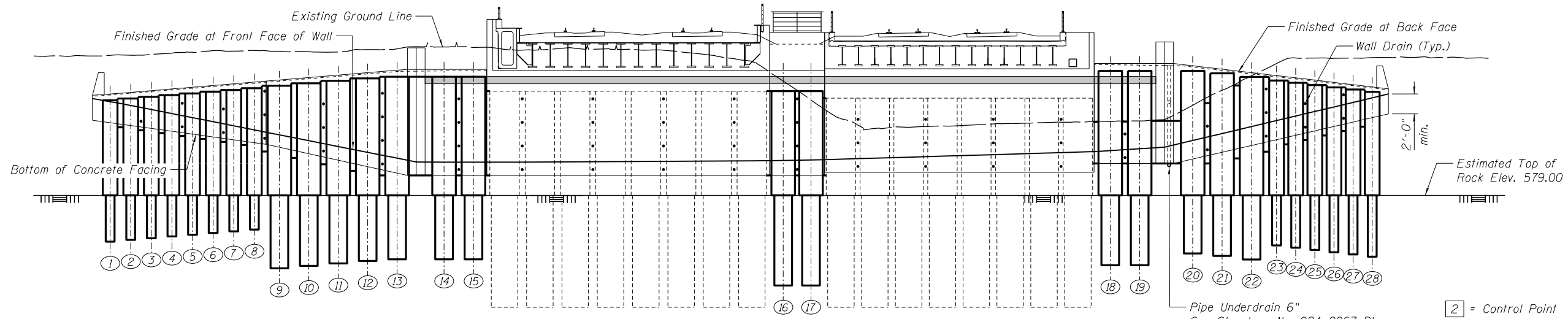
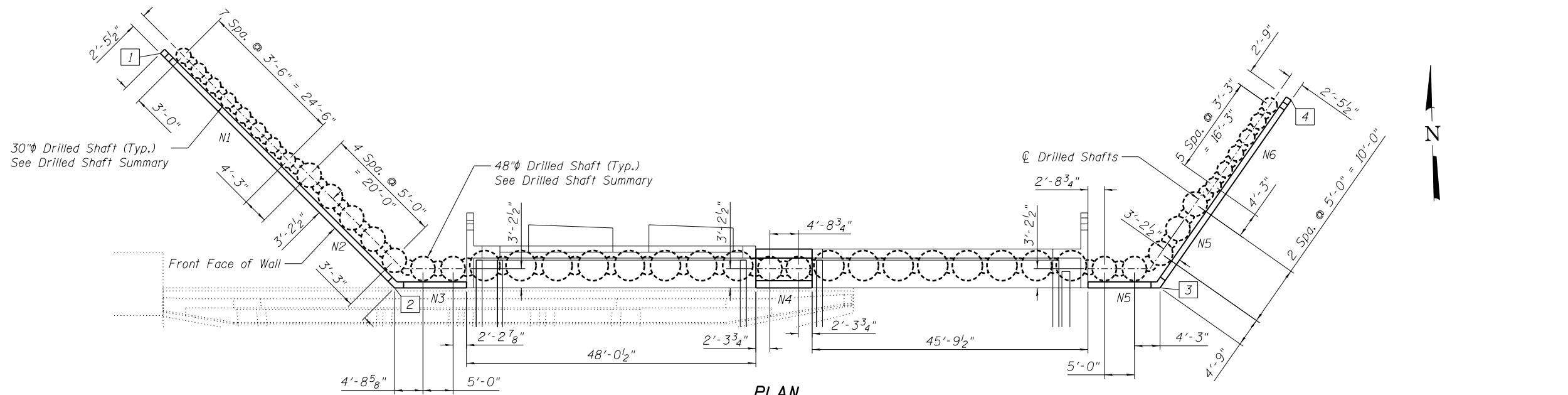
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PLOT DATE = 1/18/2021	DRAWN - EJM	REVISED -
	CHECKED - RGC	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS
 SOUTH GRAND RETAINING WALLS

SHEET NO. 5 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	19-00488-00-BR	SANGAMON	347	272
CONTRACT NO.			93747	
* 7985A & 8239 ILLINOIS FED. AID PROJECT				



**SOUTH WALL
d(E) BARS REQUIRED**

Shaft No.	Number Required on Each Shaft
1	5
2	6
3-4	7
5	8
6	9
7	10
8	11
9	12
10	14
11	15
12	17
13-15	18
16-17	18*
18-20	17
21	15
22	14
23	12
24	11
25	10
26	8
27	7
28	6

Space at 12" Max. cts.

* 15- #4 d(E) Drilled Shaft/Facing
3- #4 d(E) Wall Seat/Facing

DRILLED SHAFT SUMMARY

SHAFT NO.	CAGE DESIGNATION	LENGTH	BOTTOM ELEVATION	TOP ELEVATION	SHAFT NO.	CAGE DESIGNATION	LENGTH	BOTTOM ELEVATION	TOP ELEVATION
1	A1	24'-0"	571.15	595.15	15	B1	31'-0"	568.15	599.15
2	A1	24'-0"	571.44	595.44	16	B2	33'-0"	563.69	596.69
3	A1	24'-0"	571.73	595.73	17	B2	33'-0"	563.69	596.69
4	A1	24'-0"	572.02	596.02	18	B3	33'-0"	567.15	600.15
5	A1	24'-0"	572.32	596.32	19	B3	33'-0"	567.15	600.15
6	A1	24'-0"	572.61	596.61	20	B1	31'-0"	569.15	600.15
7	A1	24'-0"	572.90	596.90	21	B1	31'-0"	568.72	599.72
8	A1	24'-0"	573.19	597.19	22	B1	31'-0"	568.13	599.13
9	B1	31'-0"	566.61	597.61	23	A2	28'-0"	570.50	598.50
10	B1	31'-0"	567.02	598.02	24	A2	28'-0"	570.12	598.12
11	B1	31'-0"	567.44	598.44	25	A2	28'-0"	569.74	597.74
12	B1	31'-0"	567.86	598.86	26	A2	28'-0"	569.35	597.35
13	B1	31'-0"	568.15	599.15	27	A2	28'-0"	568.97	596.97
14	B1	31'-0"	568.15	599.15	28	A2	28'-0"	568.59	596.59

SECANT LAGGING SUMMARY

BETWEEN SHAFTS NO.	DIAMETER	LENGTH	BOTTOM ELEV.	TOP ELEV.	BETWEEN SHAFTS NO.	DIAMETER	LENGTH	BOTTOM ELEV.	TOP ELEV.
1-2	24"	4'-10"	590.61	595.44	BR-16	30"	14'-4"	582.36	596.69
2-3	24"	5'-8"	590.07	595.73	16-17	30"	14'-4"	582.36	596.69
3-4	24"	6'-5"	589.61	596.02	17-BR	30"	13'-2"	582.34	595.51
4-5	24"	7'-3"	589.07	596.32	BR-18	30"	7'-1"	584.43	591.51
5-6	24"	8'-0"	588.61	596.61	18-19	30"	7'-3"	584.40	591.65
6-7	24"	8'-10"	588.07	596.90	19-20	30"	10'-3"	584.41	594.66
7-8	24"	9'-8"	587.52	597.19	20-21	30"	13'-3"	584.42	597.67
8-9	30"	11'-2"	586.44	597.61	21-22	30"	14'-5"	585.30	599.72
9-10	30"	12'-8"	585.36	598.02	22-23	30"	12'-8"	586.46	599.13
10-11	30"	14'-2"	584.27	598.44	23-24	24"	10'-10"	587.67	598.50
11-12	30"	15'-8"	583.19	598.86	24-25	24"	9'-9"	588.37	598.12
12-13	30"	16'-9"	582.40	599.15	25-26	24"	8'-7"	589.15	597.74
13-14	30"	16'-9"	582.40	599.15	26-27	24"	7'-5"	589.94	597.35
14-15	30"	16'-9"	582.40	599.15	27-28	24"	6'-4"	590.64	596.97
15-BR	30"	14'-4"	582.36	596.69					

BAR d(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d(E)	345	#4	2'-4"	L
Drilled Shafts in Soil			Cu. Yd.	174.1
Drilled Shafts in Rock			Cu. Yd.	71.7
Secant Lagging			Cu. Ft.	1398
Reinforcement Bars Epoxy Coated			Pound	540

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USER NAME = Pop0275	DESIGNED - KMS	REVISED -
PLOT SCALE = 0.167' / 1"	CHECKED - RGC	REVISED -
PLOT DATE = 1/18/2021	DRAWN - EJM	REVISED -
	CHECKED - RGC	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**DRILLED SHAFTS - NORTH WALL
SOUTH GRAND RETAINING WALLS**

SHEET NO. 6 OF 19 SHEETS

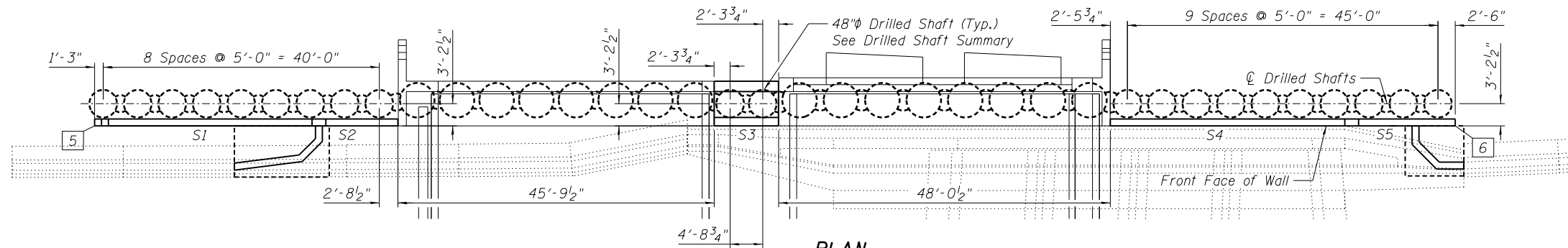
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	19-00488-00-BR	SANGAMON	347	273
			CONTRACT NO. 93747	

7985A & 8240 ILLINOIS FED. AID PROJECT

FINAL

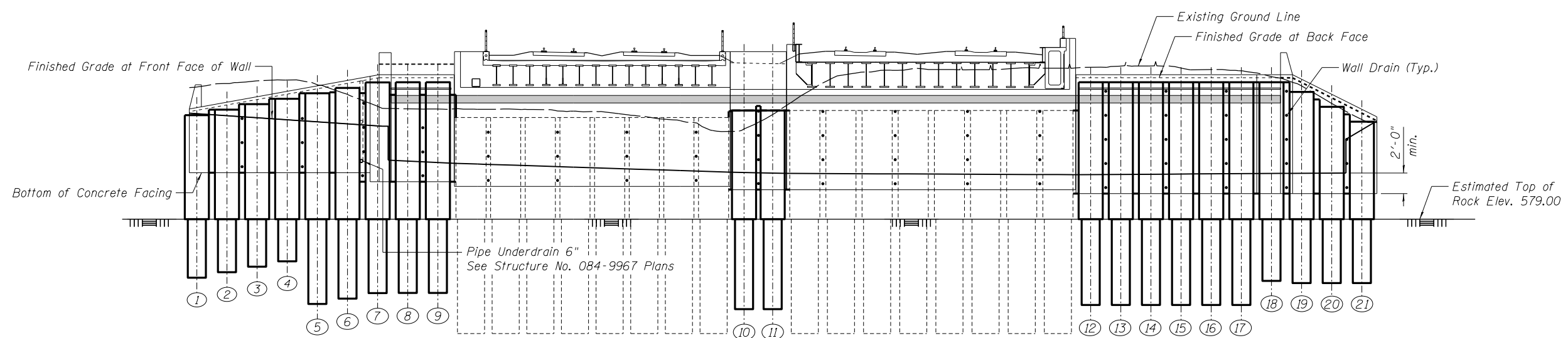


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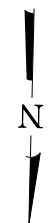
PLAN

Note: All Dimensions are Measured Along Front Face of Wall



ELEVATION

Unfolded Along Face of Wall



**SOUTH WALL
d(E) BARS REQUIRED**

Shaft No.	Number Required on Each Shaft
1-2	11
3	12
4	13
5	14
6	15
7-9	18
10-11	17*
12-18	19
19	18
20	16
21	13

[6] = Control Point

DRILLED SHAFT SUMMARY

SHAFT NO.	CAGE DESIGNATION	LENGTH	BOTTOM ELEVATION	TOP ELEVATION	SHAFT NO.	CAGE DESIGNATION	LENGTH	BOTTOM ELEVATION	TOP ELEVATION
1	B11	27'-0"	569.28	596.28	12	B6	37'-0"	564.75	601.75
2	B11	27'-0"	570.18	597.18	13	B6	37'-0"	564.75	601.75
3	B11	27'-0"	571.09	598.09	14	B6	37'-0"	564.75	601.75
4	B11	27'-0"	571.99	598.99	15	B6	37'-0"	564.75	601.75
5	B4	35'-0"	564.90	599.90	16	B6	37'-0"	564.75	601.75
6	B4	35'-0"	565.80	600.80	17	B6	37'-0"	564.75	601.75
7	B4	35'-0"	566.70	601.70	18	B7	33'-0"	568.75	601.75
8	B5	35'-0"	566.75	601.75	19	B8	31'-9"	568.38	600.13
9	B5	35'-0"	566.75	601.75	20	B9	29'-4"	568.38	597.63
10	B2	33'-0"	564.05	597.05	21	B10	26'-10"	568.38	595.21
11	B2	33'-0"	564.05	597.05					

SECANT LAGGING SUMMARY

BETWEEN SHAFTS NO.	DIAMETER	LENGTH	BOTTOM ELEV.	TOP ELEV.	BETWEEN SHAFTS NO.	DIAMETER	LENGTH	BOTTOM ELEV.	TOP ELEV.
1-2	30"	10'-6"	586.68	597.18	11-BR	30"	13'-2"	583.89	597.05
2-3	30"	11'-5"	586.59	598.09	BR-12	30"	18'-6"	583.25	601.75
3-4	30"	12'-3"	586.74	598.99	12-13	30"	18'-6"	583.25	601.75
4-5	30"	13'-2"	586.73	599.90	13-14	30"	18'-6"	583.25	601.75
5-6	30"	13'-4"	586.73	600.06	14-15	30"	18'-6"	583.25	601.75
6-7	30"	14'-9"	585.19	599.94	15-16	30"	18'-6"	583.25	601.75
7-8	30"	14'-6"	585.16	599.66	16-17	30"	18'-6"	583.25	601.75
8-9	30"	14'-6"	585.16	599.66	17-18	30"	18'-6"	583.25	601.75
9-BR	30"	14'-6"	585.16	599.66	18-19	30"	18'-6"	583.25	601.75
BR-10	30"	13'-0"	583.92	596.92	19-20	30"	15'-8"	583.21	598.88
10-11	30"	13'-2"	583.88	597.80	20-21	30"	13'-2"	583.26	596.42

Space at 12" Max. cts.
* 14-#4 d(E) Drilled Shaft/Facing
3-#4 d(E) Wall Seat/Facing

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d(E)	344	#4	2'-4"	L
Drilled Shafts in Soil			Cu. Yd.	203.3
Drilled Shafts in Rock			Cu. Yd.	90.9
Secant Lagging			Cu. Ft.	1662
Reinforcement Bars Epoxy Coated			Pound	540

FINAL



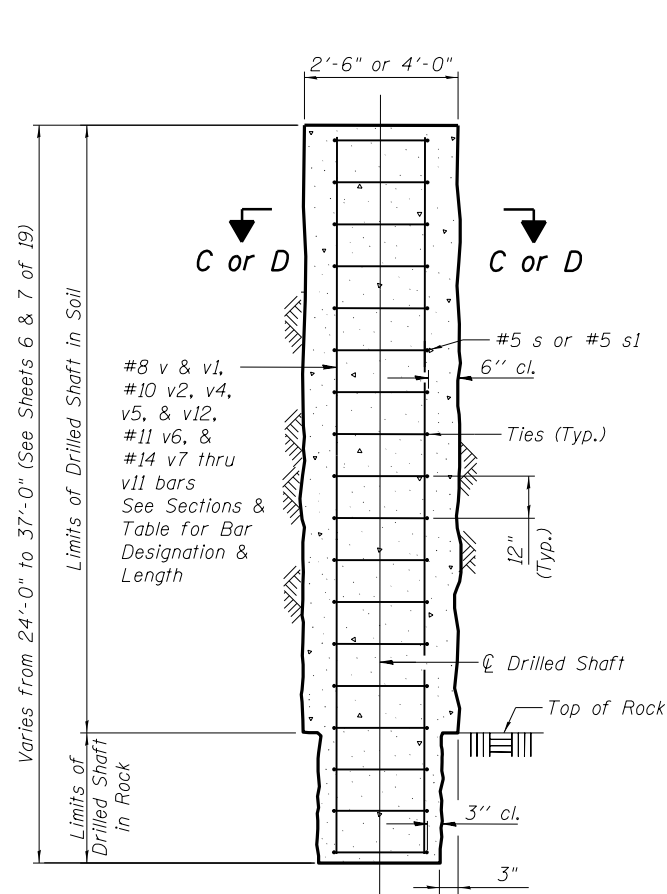
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PLOT DATE = 1/18/2021	DRAWN - EJM	REVISED -
	CHECKED - RGC	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

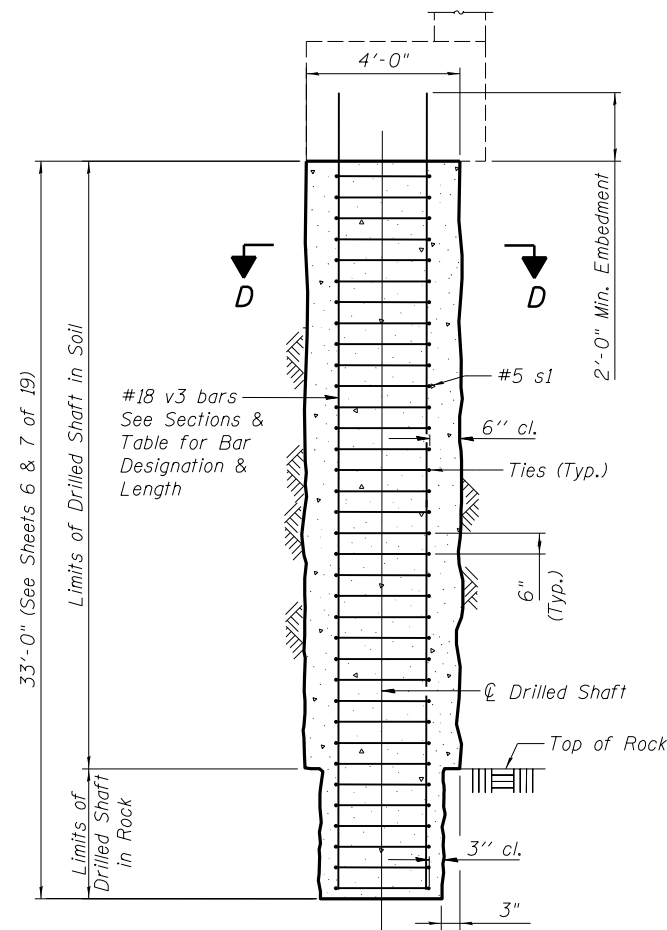
**DRILLED SHAFTS - SOUTH WALL
SOUTH GRAND RETAINING WALLS**

SHEET NO. 7 OF 19 SHEETS

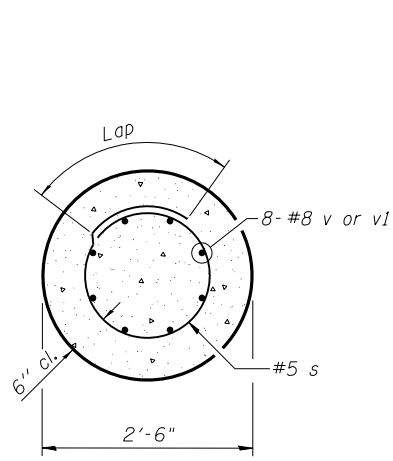
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			CONTRACT NO. 93747	
* 7985A & 8241 ILLINOIS FED. AID PROJECT				



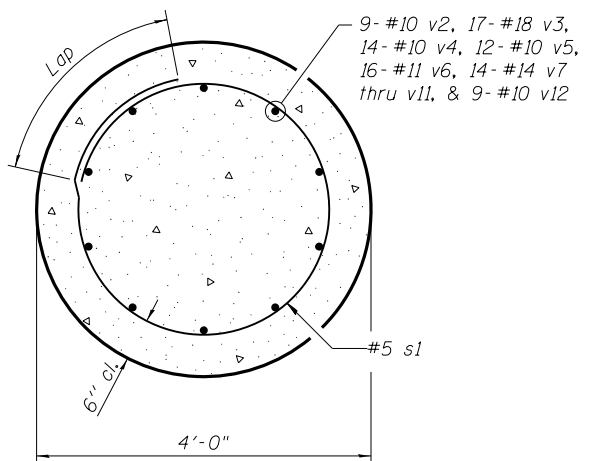
DRILLED SHAFT ELEVATION IN ROCK
Showing Reinforcement



DRILLED SHAFT ELEVATION BETWEEN BRIDGES
Showing Reinforcement (Cage B2)



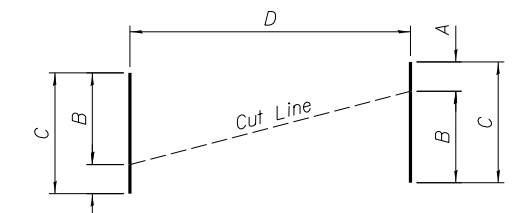
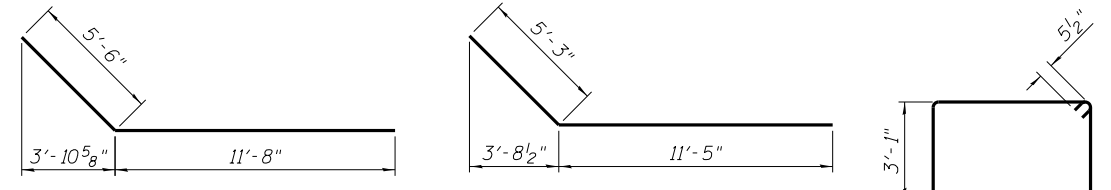
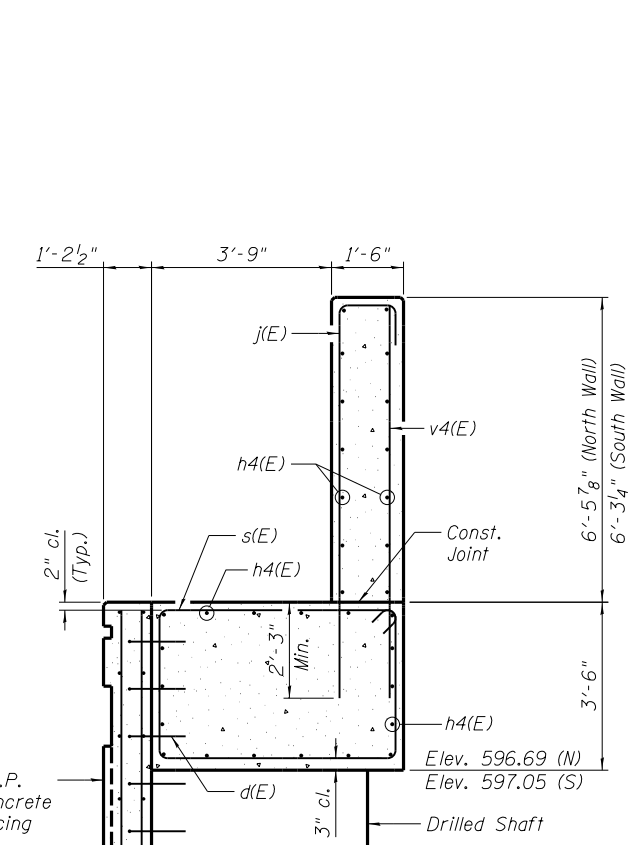
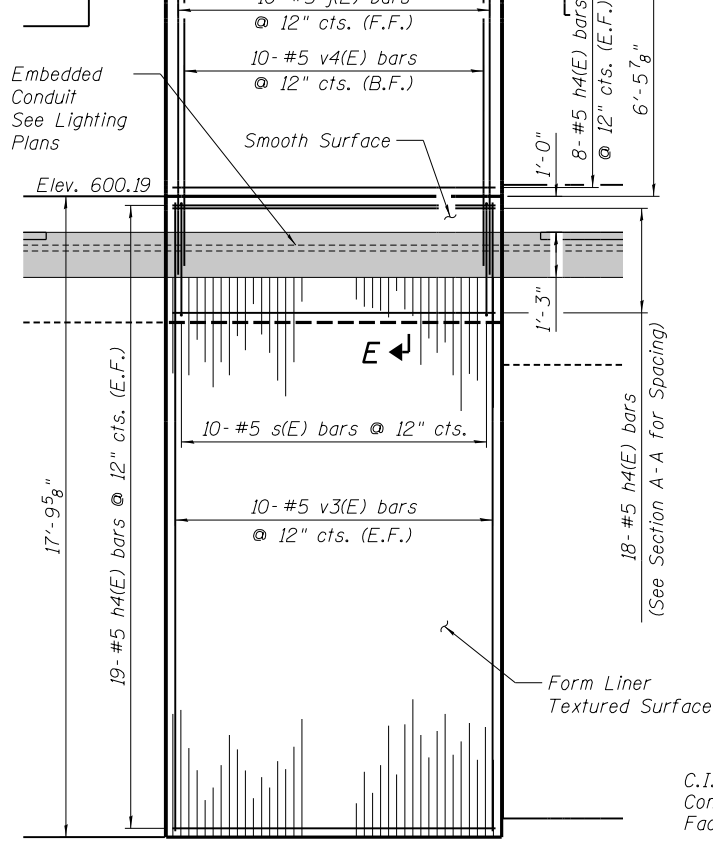
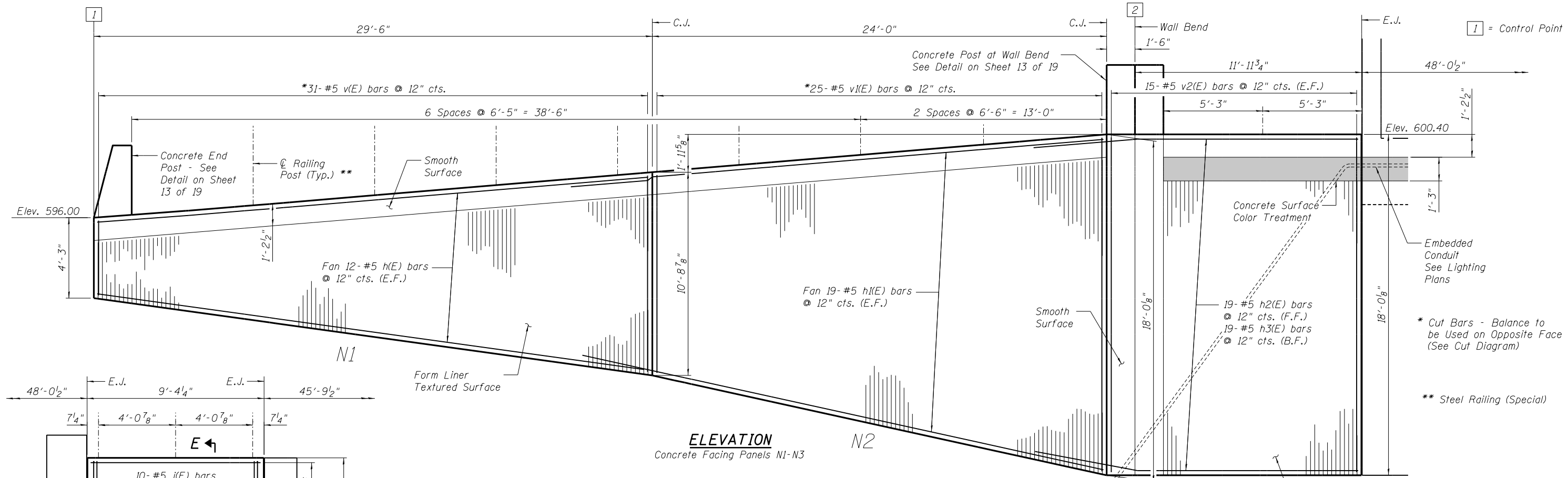
SECTION C-C
2'-6" Dia. Shafts
(Cage Designation A1 & A2)



SECTION D-D
4'-0" Dia. Shafts
(Cage Designations B1-B11)

MIN. BAR LAP FOR TIES
#5 Bars = 2'-2"

Cage Designation	Cages Required	n	Bar	No.	Size	Length	Shape
A1	8	8	v	64	#8	23'-6"	—
A2	6	8	v1	48	#8	27'-6"	—
B1	10	9	v2	90	#10	30'-6"	—
B2	4	17	v3	68	#18	34'-9"	—
B3	2	14	v4	28	#10	32'-6"	—
B4	3	12	v5	36	#10	34'-6"	—
B5	2	16	v6	32	#11	34'-6"	—
B6	6	14	v7	84	#14	36'-6"	—
B7	1	14	v8	14	#14	32'-6"	—
B8	1	14	v9	14	#14	31'-3"	—
B9	1	14	v10	14	#14	28'-10"	—
B10	1	14	v11	14	#14	26'-4"	—
B11	4	9	v12	36	#10	26'-6"	—
A1	8	25	s	200	#5	6'-11"	○
A2	6	29	s	174	#5	6'-11"	○
B1	10	32	s1	320	#5	11'-7"	○
B2	4	66	s1	264	#5	11'-7"	○
B3	2	34	s1	68	#5	11'-7"	○
B4	3	36	s1	108	#5	11'-7"	○
B5	2	36	s1	72	#5	11'-7"	○
B6	6	38	s1	228	#5	11'-7"	○
B7	1	34	s1	34	#5	11'-7"	○
B8	1	33	s1	33	#5	11'-7"	○
B9	1	30	s1	30	#5	11'-7"	○
B10	1	28	s1	28	#5	11'-7"	○
B11	4	28	s1	112	#5	11'-7"	○
Reinforcement Bars						Pound	125280



Bar	A	B	C	D
v(E)	3'-11"	10'-4"	14'-3"	30 Spaces @ 12" cts.
v(I(E)	10'-5"	17'-7"	28'-0"	24 Spaces @ 12" cts.

Note: E.J. = Expansion Joint
C.J. = Construction Joint
E.F. = Each Face

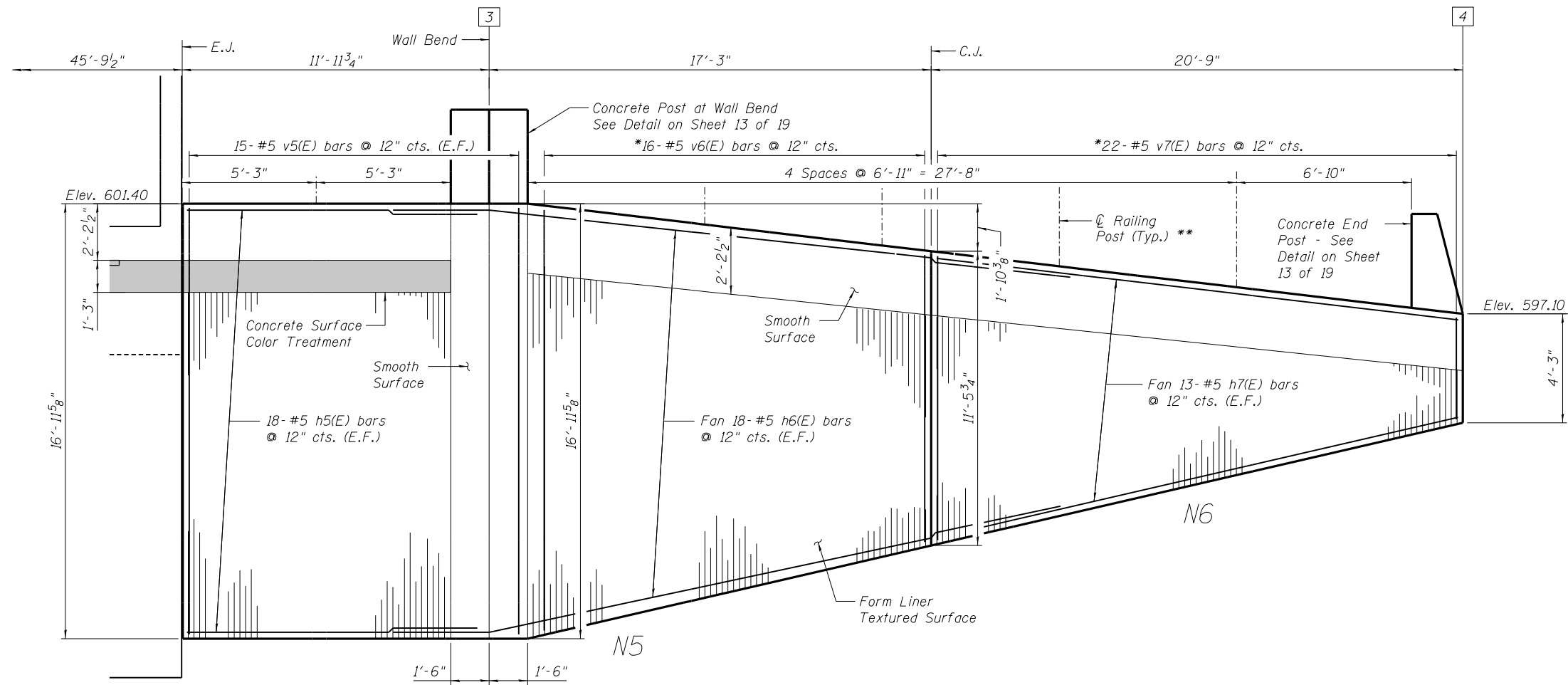
MIN. BAR LAPS
#5 Bars = 3'-4"

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	24	#5	29'-2"	—
h(I(E)	38	#5	28'-3"	—
h2(E)	19	#5	17'-2"	↘
h3(E)	19	#5	16'-8"	↘
h4(E)	72	#5	8'-11"	—
j(E)	10	#5	10'-7"	┌
s(E)	10	#5	16'-11"	□
v(E)	31	#5	14'-3"	—
v(I(E)	25	#5	28'-0"	—
v2(E)	30	#5	17'-8"	—
v3(E)	20	#5	17'-5"	—
v4(E)	10	#5	8'-7"	—
Reinforcement Bars Epoxy Coated			Pound	5670
Concrete Structures (Retaining Wall)			Cu. Yd.	64.7

ELEVATION
Concrete Facing Panel N4

SECTION E-E

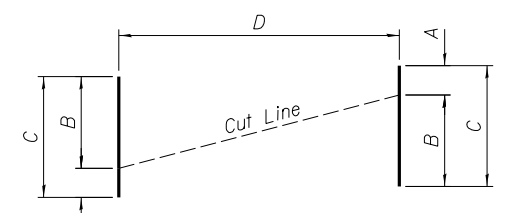
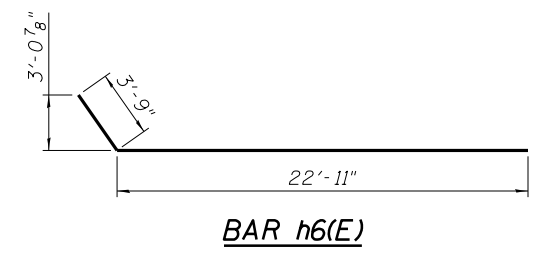


4 = Control Point

* Cut Bars - Balance to be Used on Opposite Face (See Cut Diagram)

** Steel Railing (Special)

ELEVATION
Concrete Facing Panels N5 & N6



v6(E) & v7(E) BARS
Cut Bars to be Placed E.F.

Bar	A	B	C	D
v6(E)	11'-2"	16'-4"	27'-6"	15 Spaces @ 12" cts.
v7(E)	3'-11"	11'-1"	15'-0"	21 Spaces @ 12" cts.

Note: E.J. = Expansion Joint
C.J. = Construction Joint
E.F. = Each Face

MIN. BAR LAPS
#5 Bars = 3'-4"

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h5(E)	36	#5	11'-4"	—
h6(E)	36	#5	26'-8"	—
h7(E)	26	#5	20'-5"	—
v5(E)	30	#5	16'-7"	—
v6(E)	16	#5	27'-6"	—
v7(E)	22	#5	15'-0"	—
Reinforcement Bars Epoxy Coated			Pound	3300
Concrete Structures (Retaining Wall)			Cu. Yd.	33.0

pw:\hansoninc-pw-bentley.com\hanson-pw-01\Documents\09Jobs\09L0179B\Usable Segments III - V - V\CAD\Struct\Usable Segment V\SouthGrand-10th\Sheet\09L0179B-SouthGrand-Retaining-Wall-Plans

USER NAME = Pop00275	DESIGNED - KMS	REVISED -
PLOT SCALE = 0.167' / 1" =	CHECKED - RGC	REVISED -
PLOT DATE = 1/18/2021	DRAWN - EJM	REVISED -
	CHECKED - RGC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONCRETE FACING - NORTH WALL
SOUTH GRAND RETAINING WALLS

SHEET NO. 10 OF 19 SHEETS

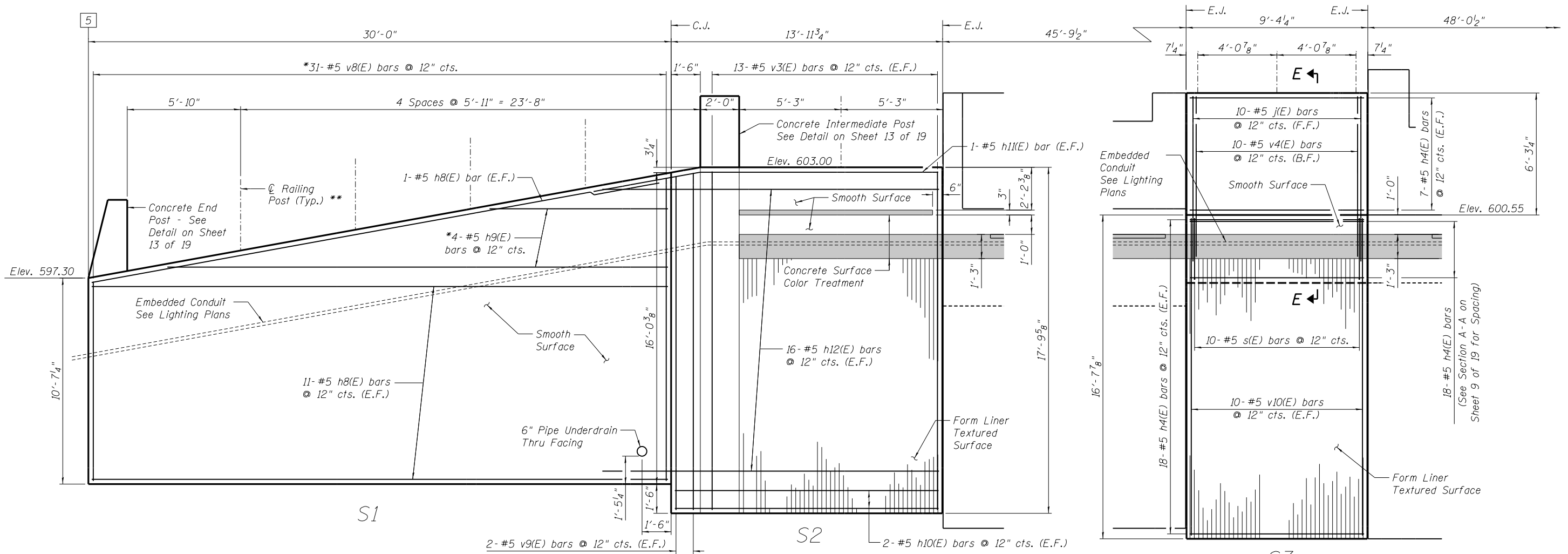
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	19-00488-00-BR	SANGAMON	347	277
			CONTRACT NO. 93747	
7985A & 8244		ILLINOIS FED. AID PROJECT		

FINAL



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5 = Control Point



ELEVATION
Concrete Facing Panels S1 & S2

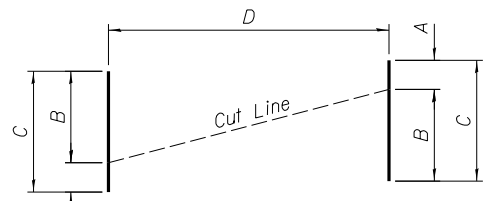
ELEVATION
Concrete Facing Panel S3

* Cut Bars - Balance to be Used on Opposite Face (See Cut Diagram)

** Steel Railing (Special)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape	
h4(E)	68	#5	8'-11"	—	
h8(E)	24	#5	29'-8"	—	
h9(E)	4	#5	34'-11"	—	
h10(E)	4	#5	13'-7"	—	
h11(E)	2	#5	17'-10"	—	
h12(E)	32	#5	17'-4"	—	
j(E)	10	#5	10'-7"	□	
s(E)	10	#5	16'-11"	□	
v3(E)	26	#5	17'-5"	—	
v4(E)	10	#5	8'-7"	—	
v8(E)	31	#5	25'-10"	—	
v9(E)	4	#5	17'-3"	—	
v10(E)	20	#5	16'-3"	—	
Reinforcement Bars Epoxy Coated				Pound	4290
Concrete Structures (Retaining Wall)				Cu. Yd.	55.4

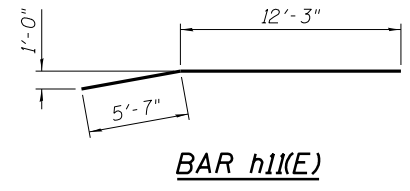


v8(E) & h9(E) BARS
Cut Bars to be Placed E.F.

Bar	A	B	C	D
v8(E)	10'-3"	15'-7"	25'-10"	31 Spaces @ 12" cts.
h9(E)	9'-2"	25'-9"	34'-11"	4 Spaces @ 12" cts.

Note: E.J. = Expansion Joint
C.J. = Construction Joint
E.F. = Each Face

MIN. BAR LAPS
#5 Bars = 3'-4"



BAR h11(E)

FINAL



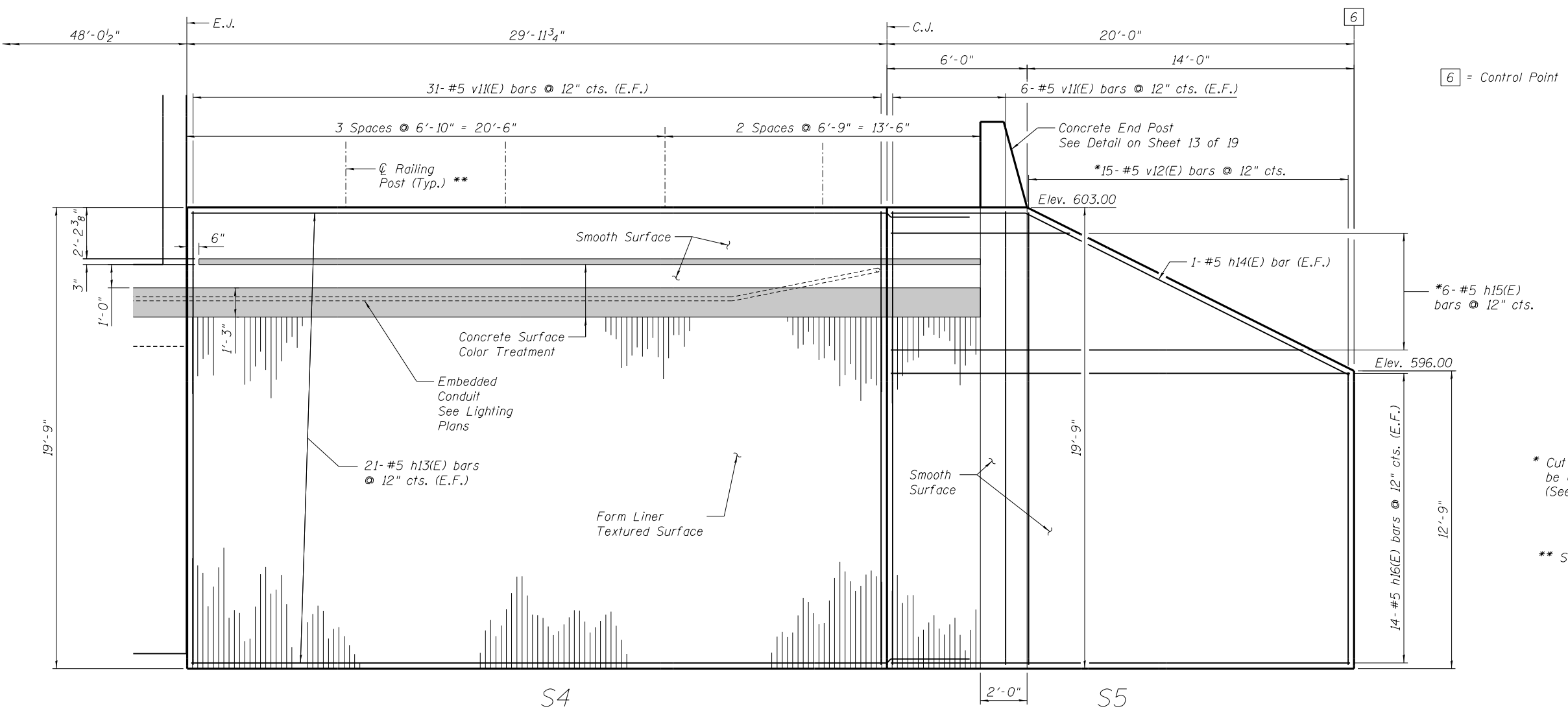
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PLOT SCALE = 0.167' / 1"	CHECKED - RGC	REVISD -
PLOT DATE = 1/18/2021	DRAWN - EJM	REVISD -
	CHECKED - RGC	REVISD -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONCRETE FACING - SOUTH WALL
SOUTH GRAND RETAINING WALLS

SHEET NO. 11 OF 19 SHEETS

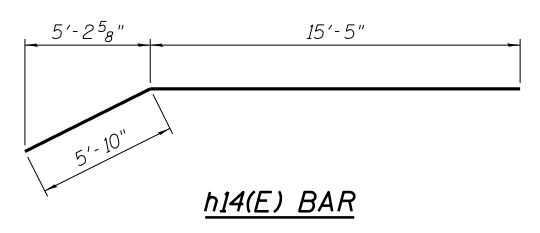
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
•	19-00488-00-BR	SANGAMON	347	278
• 7985A & 8245 ILLINOIS FED. AID PROJECT			CONTRACT NO. 93747	



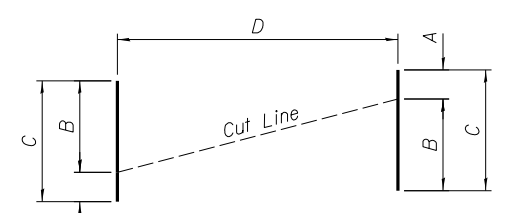
6 = Control Point

* Cut Bars - Balance to be Used on Opposite Face (See Cut Diagram)
 ** Steel Railing (Special)

ELEVATION
 Concrete Facing Panels S4 & S5



h14(E) BAR



h15(E) & v12(E) BARS
 Cut Bars to be Placed E.F.

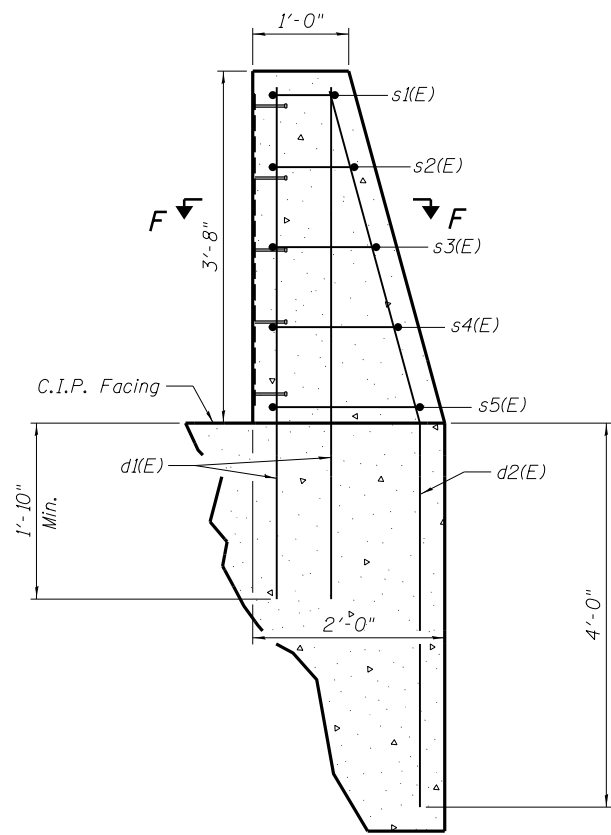
Bar	A	B	C	D
h15(E)	7'-8"	17'-8"	25'-4"	5 Spaces @ 12" cts.
v12(E)	12'-5"	19'-4"	31'-9"	24 Spaces @ 12" cts.

Note: E.J. = Expansion Joint
 C.J. = Construction Joint
 E.F. = Each Face

MIN. BAR LAPS
 #5 Bars = 3'-4"

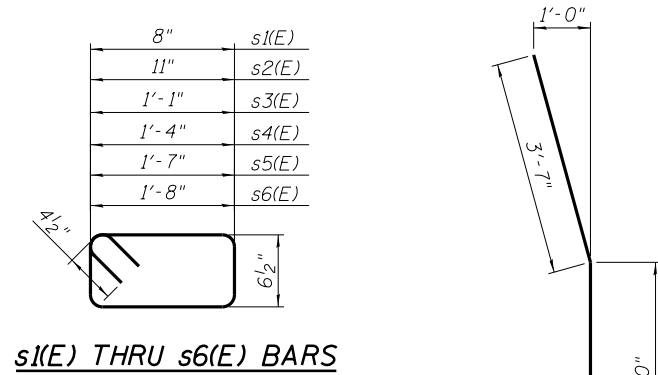
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h13(E)	42	#5	33'-4"	—
h14(E)	2	#5	21'-3"	—
h15(E)	6	#5	25'-4"	—
h16(E)	28	#5	19'-8"	—
v11(E)	74	#5	19'-5"	—
v12(E)	15	#5	31'-9"	—
Reinforcement Bars Epoxy Coated			Pound	4230
Concrete Structures (Retaining Wall)			Cu. Yd.	55.5

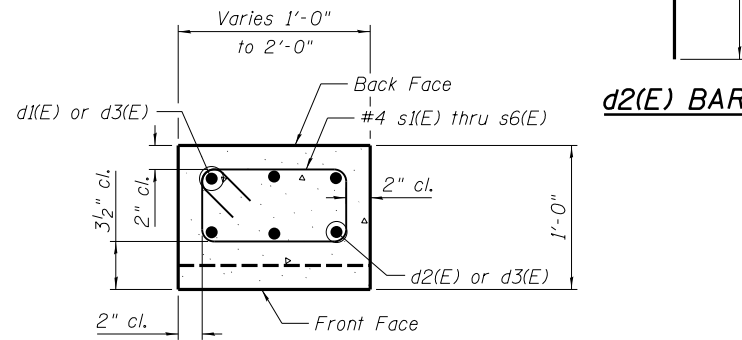


CABLE ANCHORAGE CONCRETE END POST DETAIL

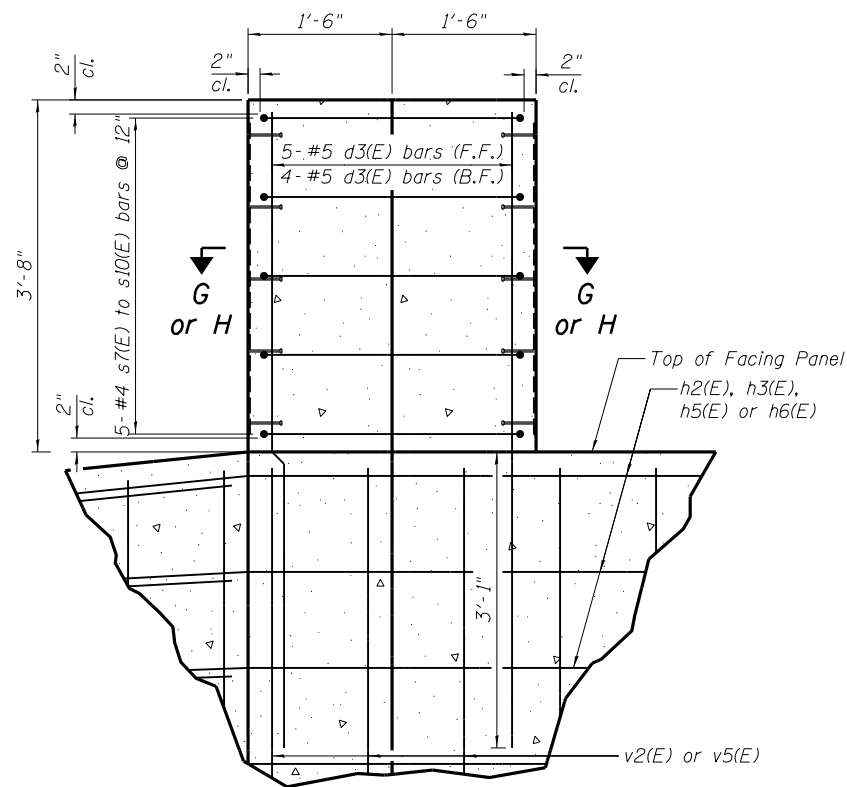
Typ. of 4 Posts on Concrete Facing
See Sheet 17 of 19 for Railing Connection Details



s1(E) THRU s6(E) BARS

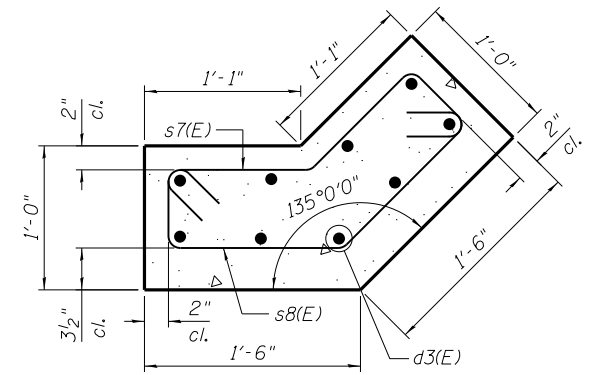


SECTION F-F

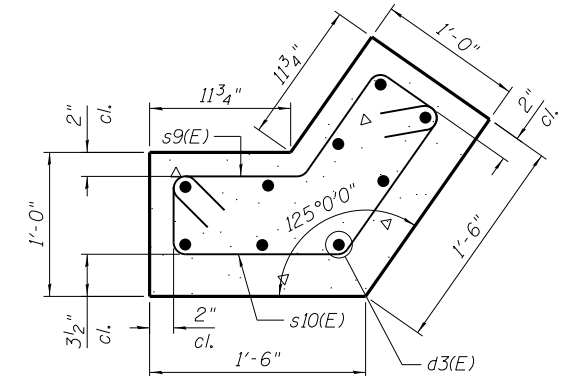


CABLE ANCHORAGE CONCRETE POST AT WALL BENDS - UNFOLDED VIEW

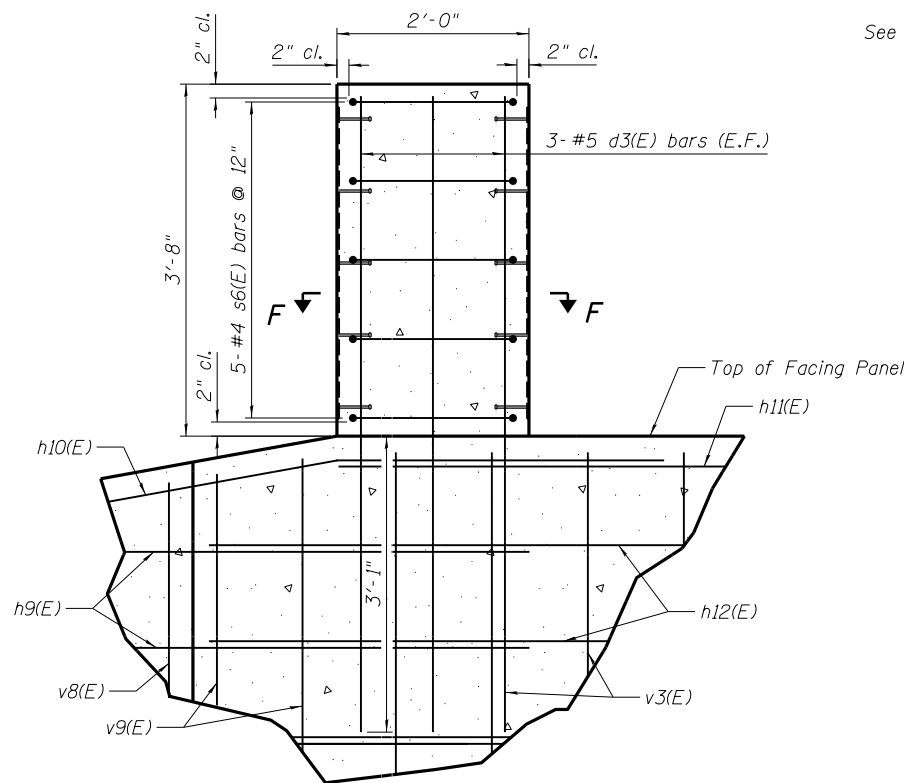
Typ. of 2 Posts on Concrete Facing
See Sheet 17 of 19 for Railing Connection Details



SECTION G-G
North Wall - West Bend

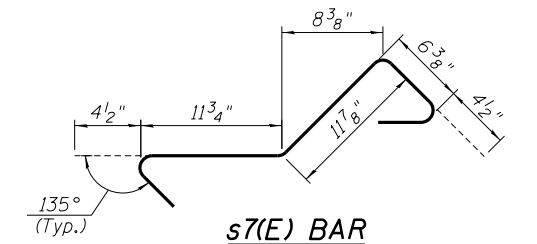


SECTION H-H
North Wall - East Bend

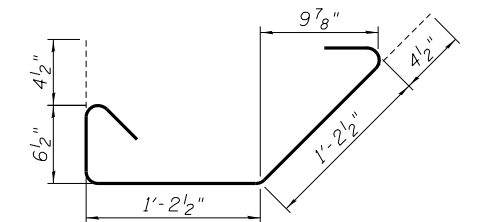


CABLE ANCHORAGE CONCRETE INTERMEDIATE POST DETAIL

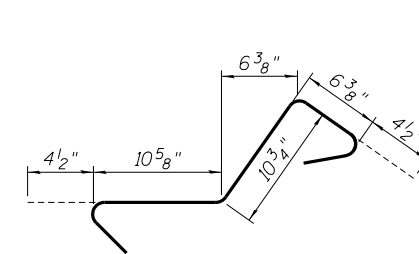
See Sheet 17 of 19 for Railing Connection Details



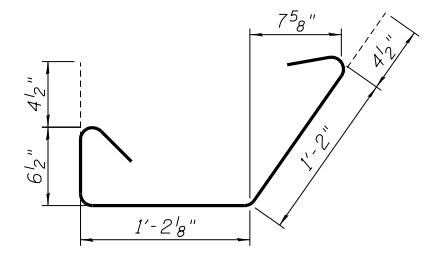
s7(E) BAR



s8(E) BAR



s9(E) BAR



s10(E) BAR

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d1(E)	16	#4	5'-5"	—
d2(E)	8	#6	7'-7"	—
d3(E)	24	#5	6'-7"	—
s1(E)	4	#4	3'-2"	□
s2(E)	4	#4	3'-8"	□
s3(E)	4	#4	4'-0"	□
s4(E)	4	#4	4'-6"	□
s5(E)	4	#4	5'-0"	□
s6(E)	5	#4	5'-2"	□
s7(E)	5	#4	3'-3"	□
s8(E)	5	#4	3'-9"	□
s9(E)	5	#4	3'-1"	□
s10(E)	5	#4	3'-8"	□
Reinforcement Bars Epoxy Coated		Pound	430	
Concrete Structures (Retaining Wall)		Cu. Yd.	1.8	

Note: E.J. = Expansion Joint
C.J. = Construction Joint
E.F. = Each Face

FINAL



USER NAME = Pop00275
PLOT SCALE = 0.167' / 1" = 1/6"
PLOT DATE = 1/18/2021

DESIGNED - KMS
CHECKED - RGC
DRAWN - EJM
CHECKED - RGC

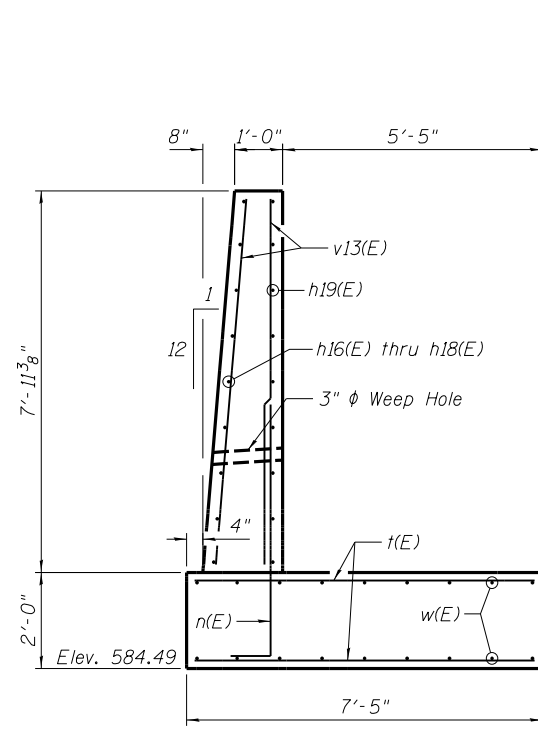
REVISED -
REVISED -
REVISED -
REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

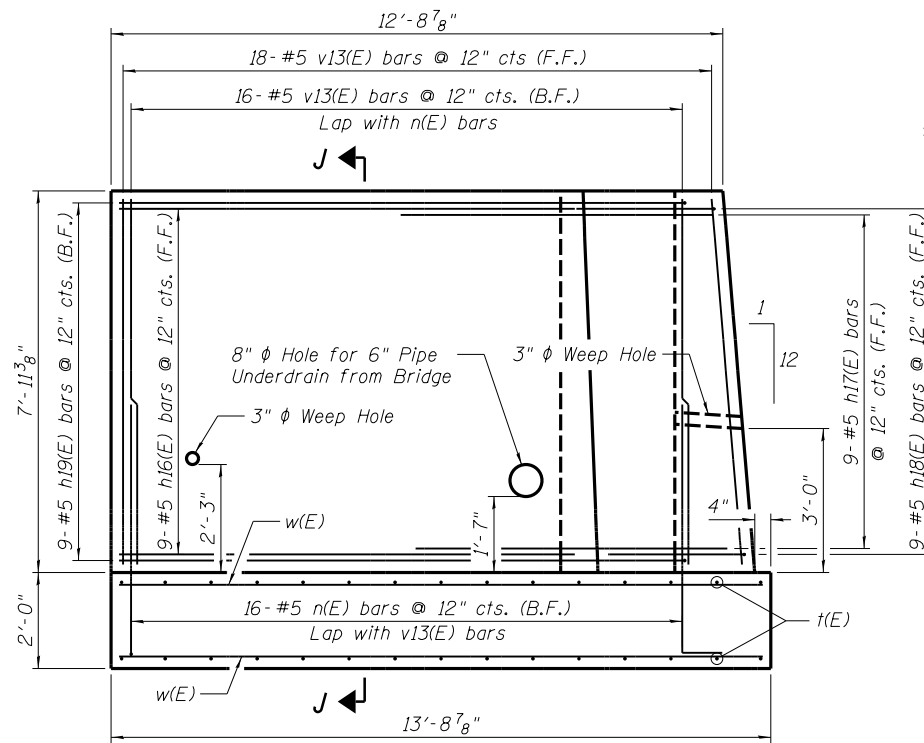
CONCRETE FACING DETAILS
SOUTH GRAND RETAINING WALLS

SHEET NO. 13 OF 19 SHEETS

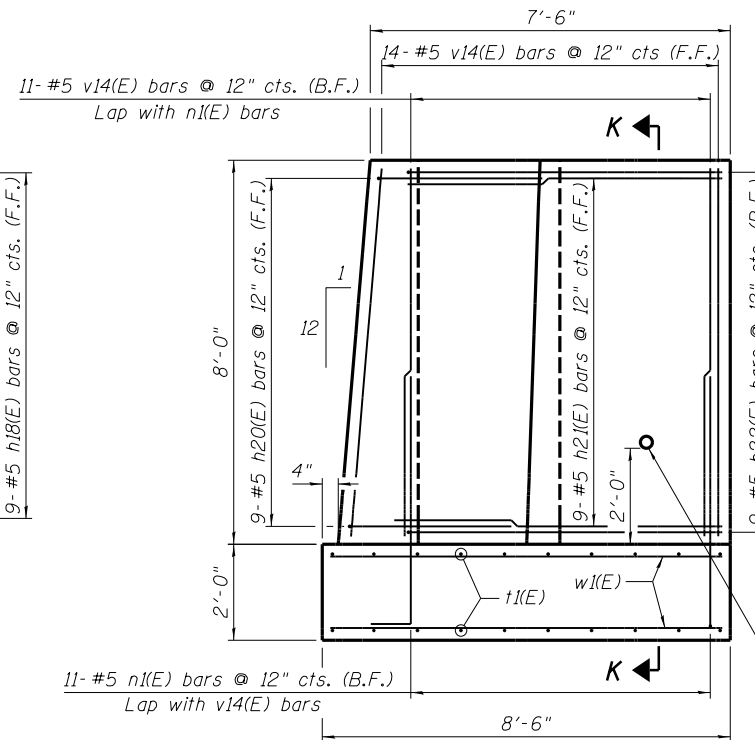
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
•	19-00488-00-BR	SANGAMON	347	280
• 7985A & 8247			ILLINOIS FED. AID PROJECT	



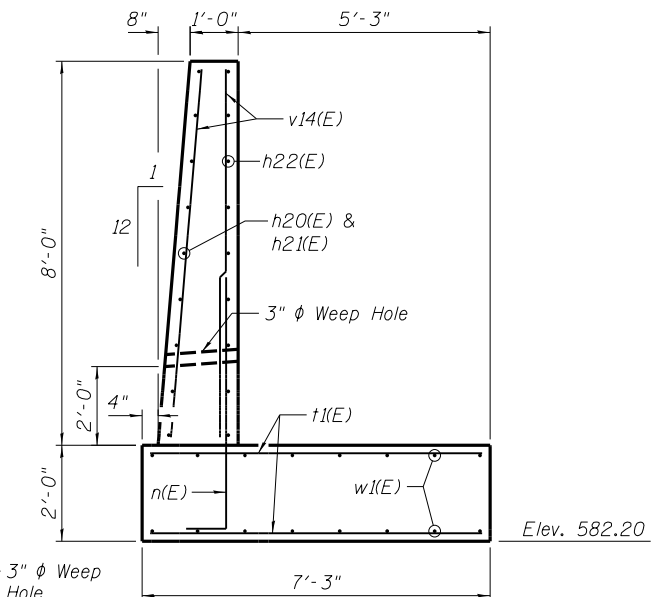
SECTION J-J



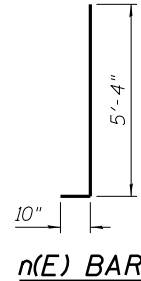
ELEVATION - SE SEMI-GRAVITY WALL



ELEVATION - SW SEMI-GRAVITY WALL



SECTION K-K

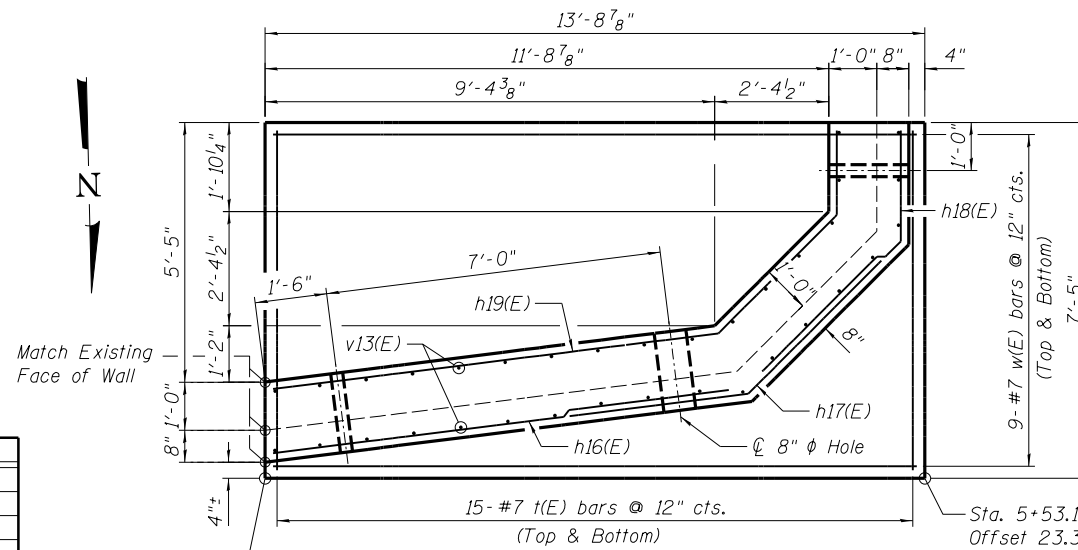


n(E) BAR

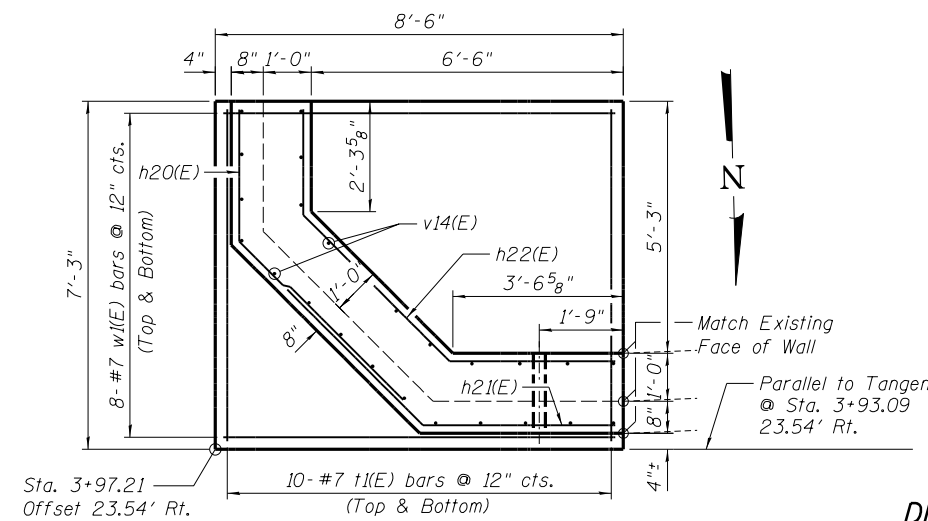
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h16(E)	9	#5	9'-7"	—
h17(E)	9	#5	7'-8"	—
h18(E)*	9	#5	6'-2"	—
h19(E)	9	#5	14'-7"	—
h20(E)*	9	#5	7'-6"	—
h21(E)*	9	#5	8'-0"	—
h22(E)	9	#5	9'-11"	—
n(E)	27	#5	6'-2"	—
t(E)	30	#7	7'-1"	—
t1(E)	20	#7	6'-11"	—
v13(E)	34	#5	7'-7"	—
v14(E)	25	#5	7'-8"	—
w(E)	18	#7	13'-4"	—
w1(E)	16	#7	8'-2"	—
Reinforcement Bars		Pound	2710	
Concrete Structures (Retaining Wall)		Cu. Yd.	22.7	

* Cut to Fit

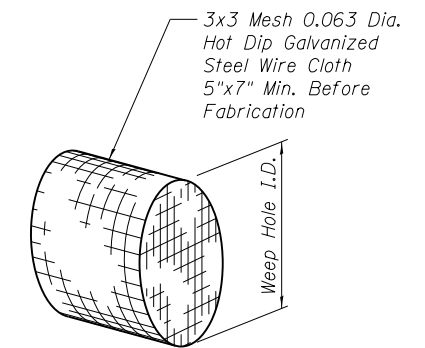


PLAN - SE SEMI-GRAVITY WALL

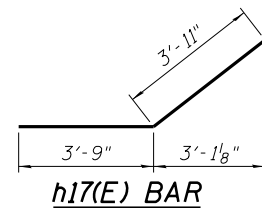


PLAN - SW SEMI-GRAVITY WALL

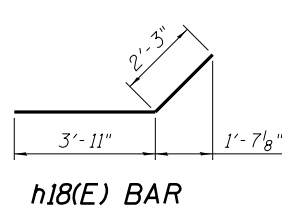
Maximum Applied Service Bearing Pressure = 1.0 tsf



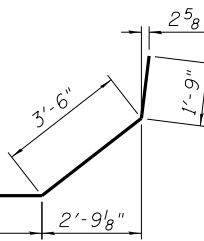
DETAIL OF RODENT SHIELD



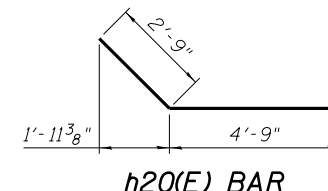
h17(E) BAR



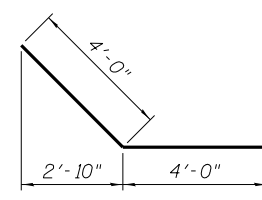
h18(E) BAR



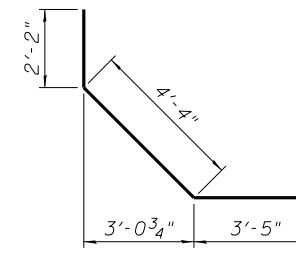
h19(E) BAR



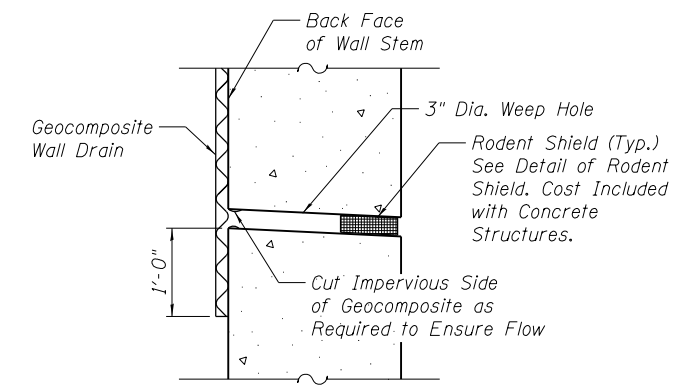
h20(E) BAR



h21(E) BAR



h22(E) BAR



WEEP HOLE DRAIN DETAIL

Note: B.F. = Back Face
F.F. = Front Face

MIN. BAR LAPS

#5 Bars = 3'-4"

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SEMI-GRAVITY WALL - SOUTH WALL
SOUTH GRAND RETAINING WALLS

SHEET NO. 15 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
•	19-00488-00-BR	SANGAMON	347	282
CONTRACT NO.			93747	

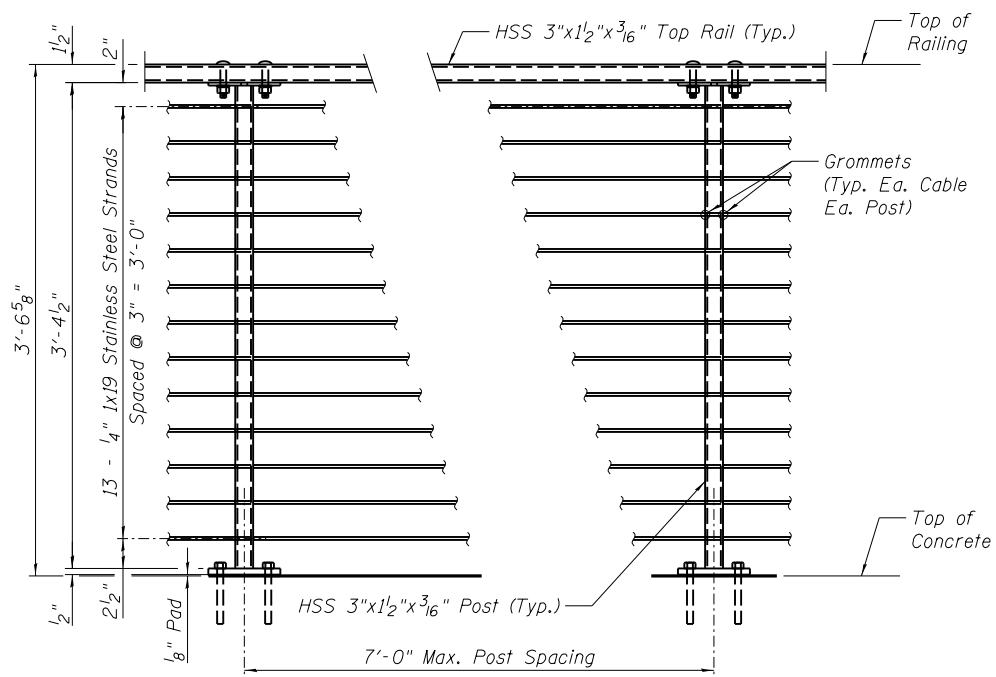
7985A & 8249 ILLINOIS FED. AID PROJECT

FINAL

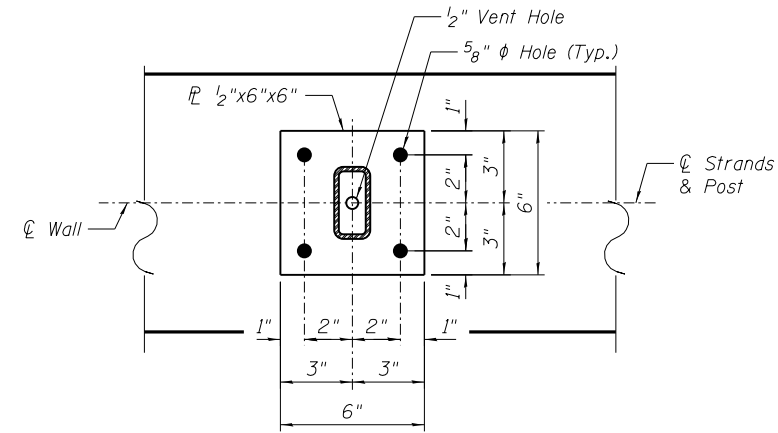


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PLOT SCALE = 0.167' / 1"	CHECKED - RGC	REVISED -
PLOT DATE = 1/18/2021	DRAWN - EJM	REVISED -
	CHECKED - RGC	REVISED -

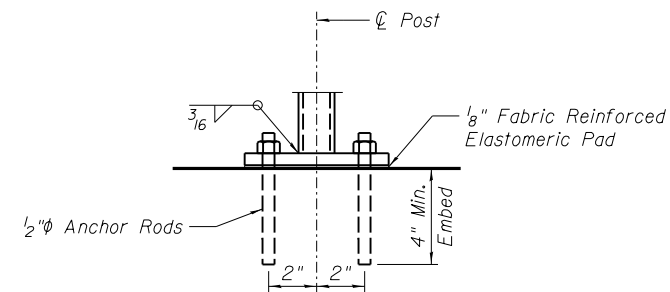
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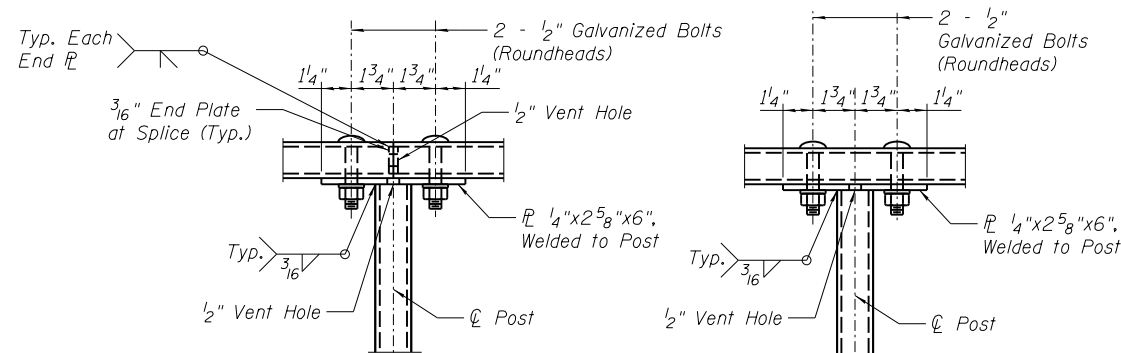
TYPICAL RAILING PANEL



STANDARD INTERMEDIATE POST

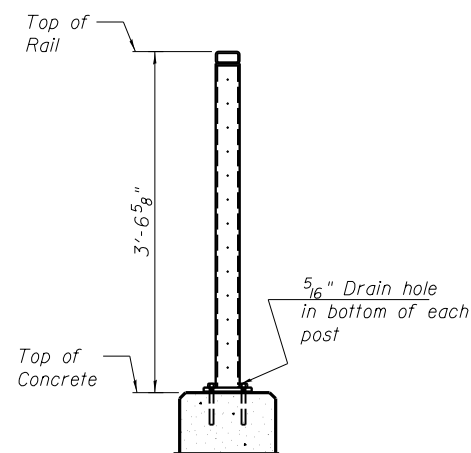


**ANCHOR ROD DETAIL
INTERMEDIATE POSTS**



TOP RAIL - WITH SPLICE TOP RAIL - NO SPLICE

TYPICAL RAIL/POST CONNECTION
(Strands not shown for clarity.)



POST DETAIL

Notes:

Railing posts shall be vertical.

Anchor rods shall be ASTM F1554, Gr. 55, galvanized steel all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor rods may be used in lieu of ASTM F1554. The anchor rods shall be hot-dipped galvanized according to AASHTO M232, Class C.

Tube segments shall have all corners ground to remove burrs or sharp projections.

All bolts, eyebolts, nuts and washers must satisfy the requirements of ASTM A307 Gr. A unless noted otherwise.

The anchor rods shall be installed according to Article 509.06 of the Standard Specifications. Embedment shall be 4" min. or according to the manufactures specifications whatever is greater.

Structural steel plates and bars of the Steel Railing shall conform to the requirements of ASTM A36/36M.

Tubular steel posts shall be according to the requirements of ASTM A500, Grade B.

All steel rail members, with the exception of the stainless steel strand and fittings, shall be hot dipped galvanized according to 509.05 of the Standard Specifications.

All studs shall be 1/2" diameter granular or solid flux filled headed studs automatically end welded to plates.

See Sheets 9 thru 12 of 19 for rail post spacing.

FINAL



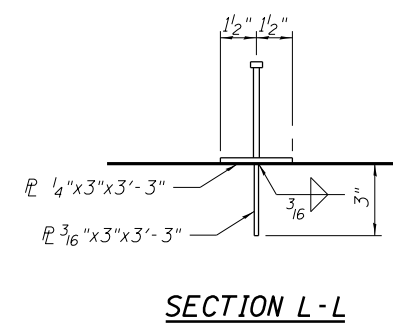
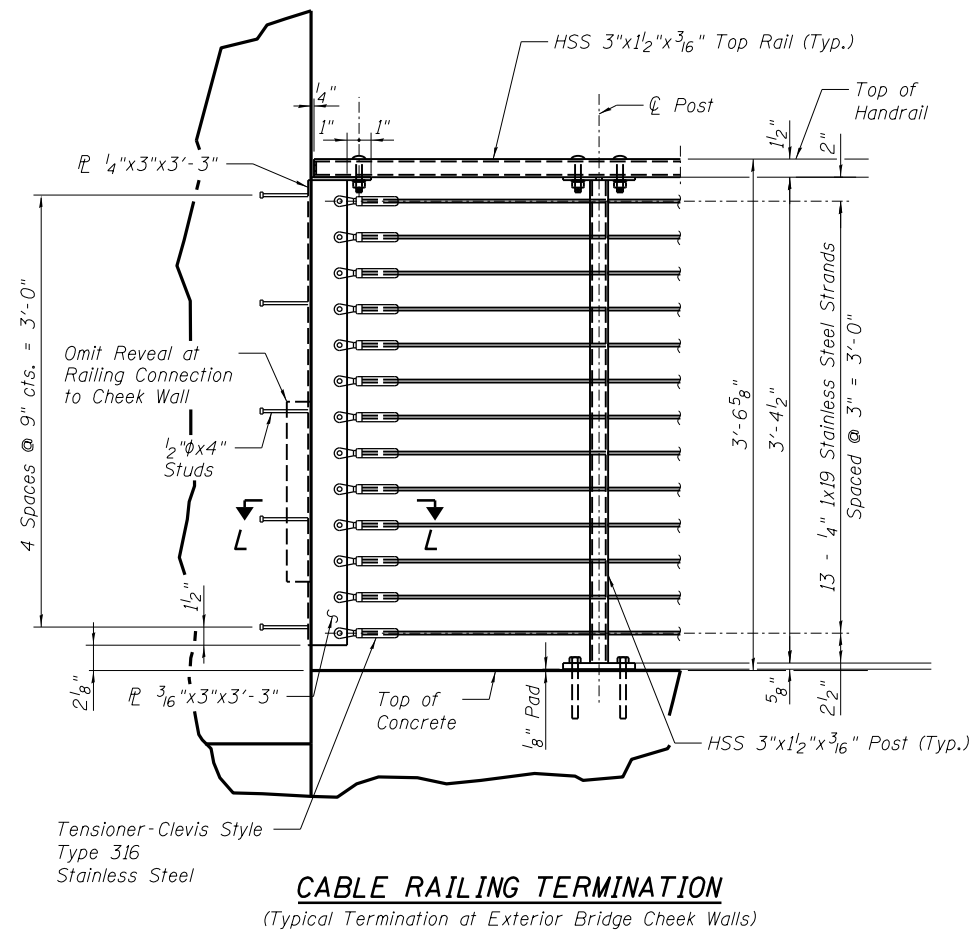
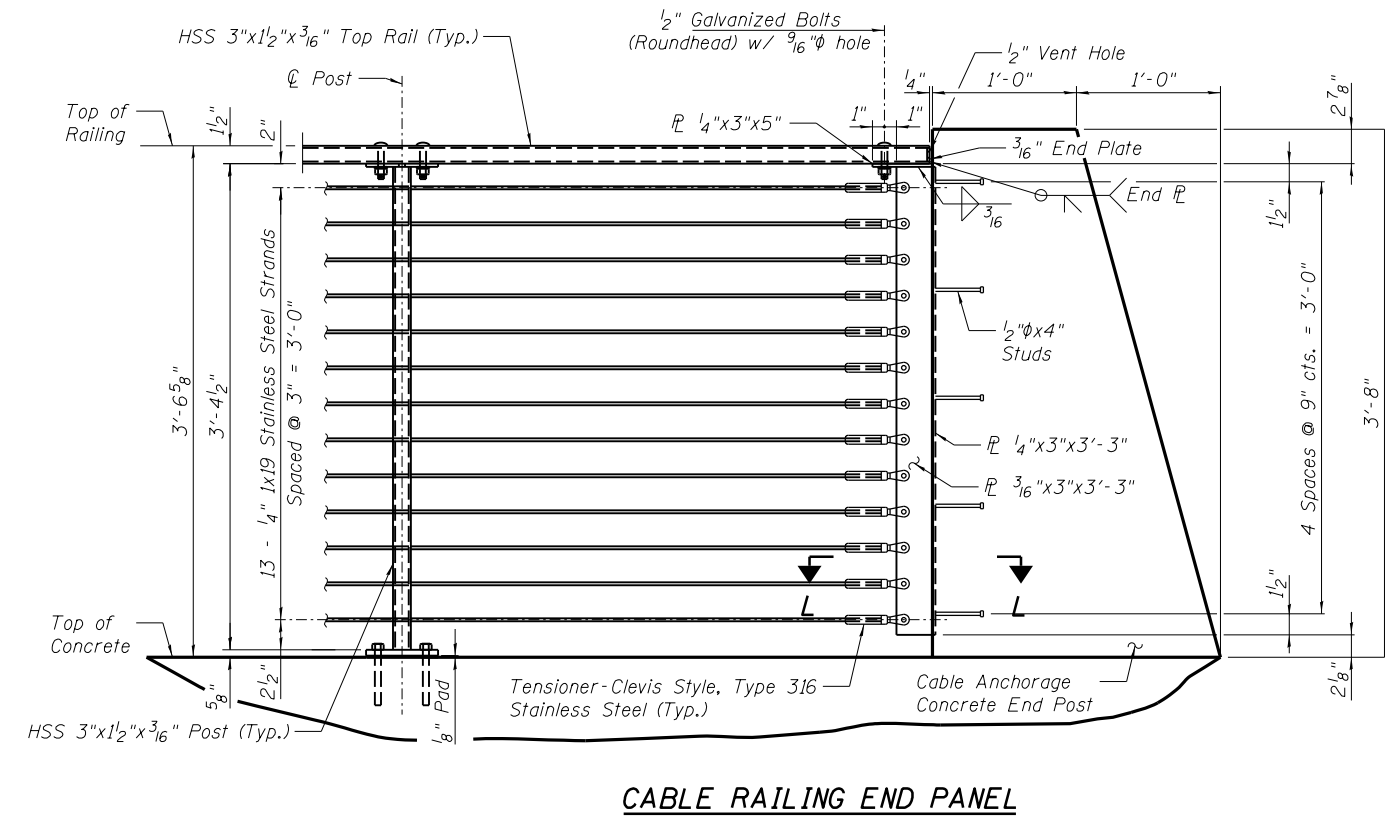
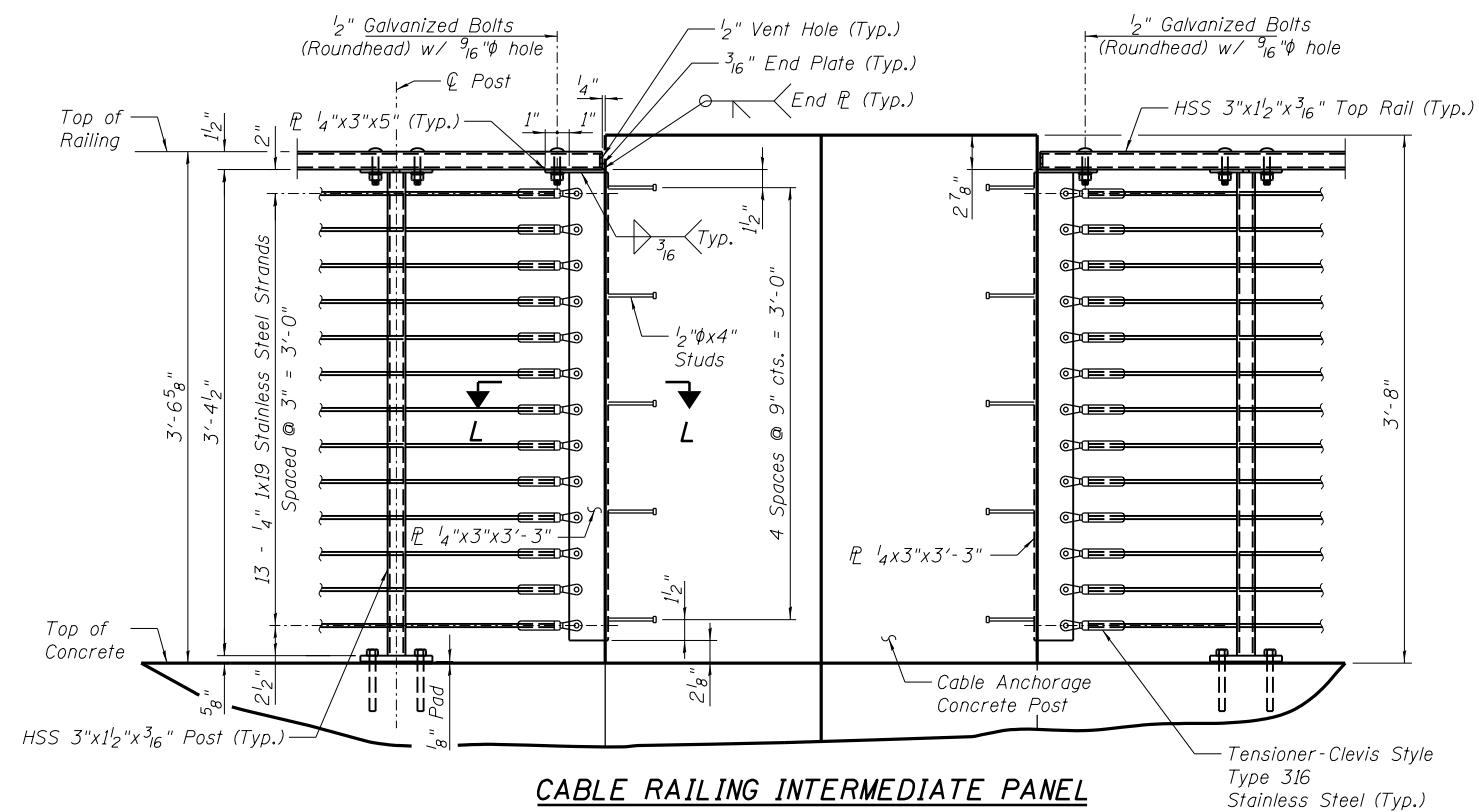
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PLOT SCALE = 0.167' / 1" =	CHECKED - RGC	REVISED -
PLOT DATE = 1/18/2021	DRAWN - EJM	REVISED -
	CHECKED - RGC	REVISED -

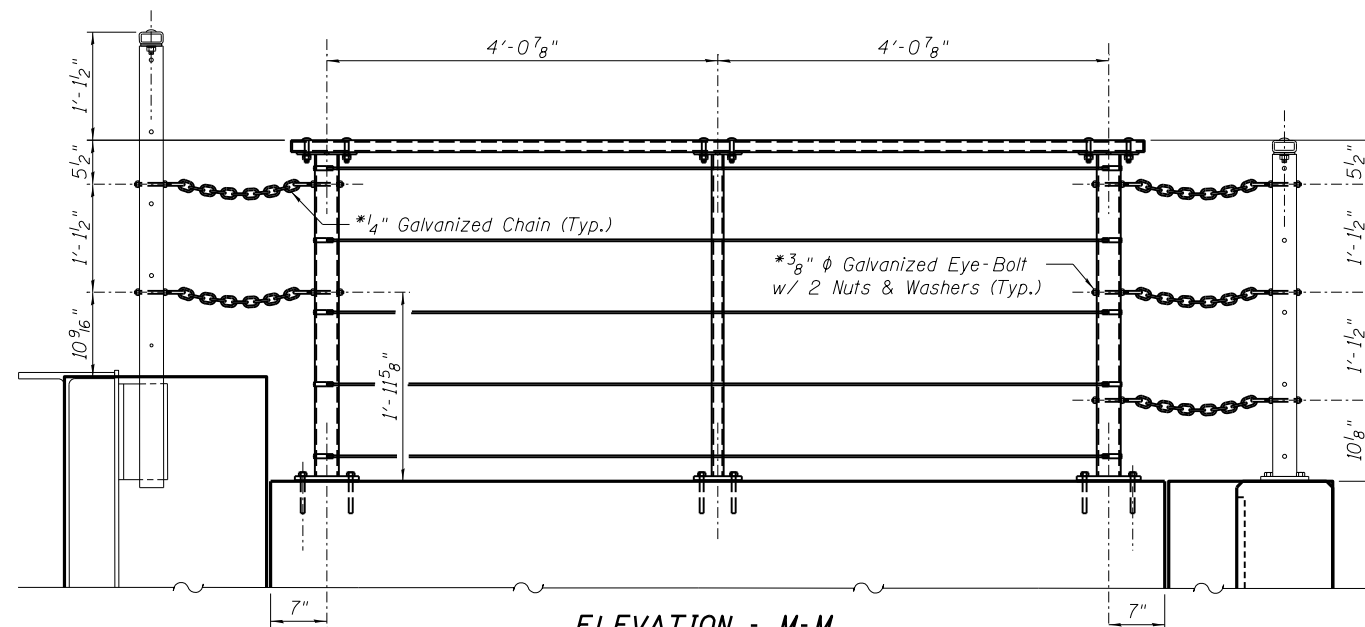
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**RAILING DETAILS
SOUTH GRAND RETAINING WALLS**

SHEET NO. 16 OF 19 SHEETS

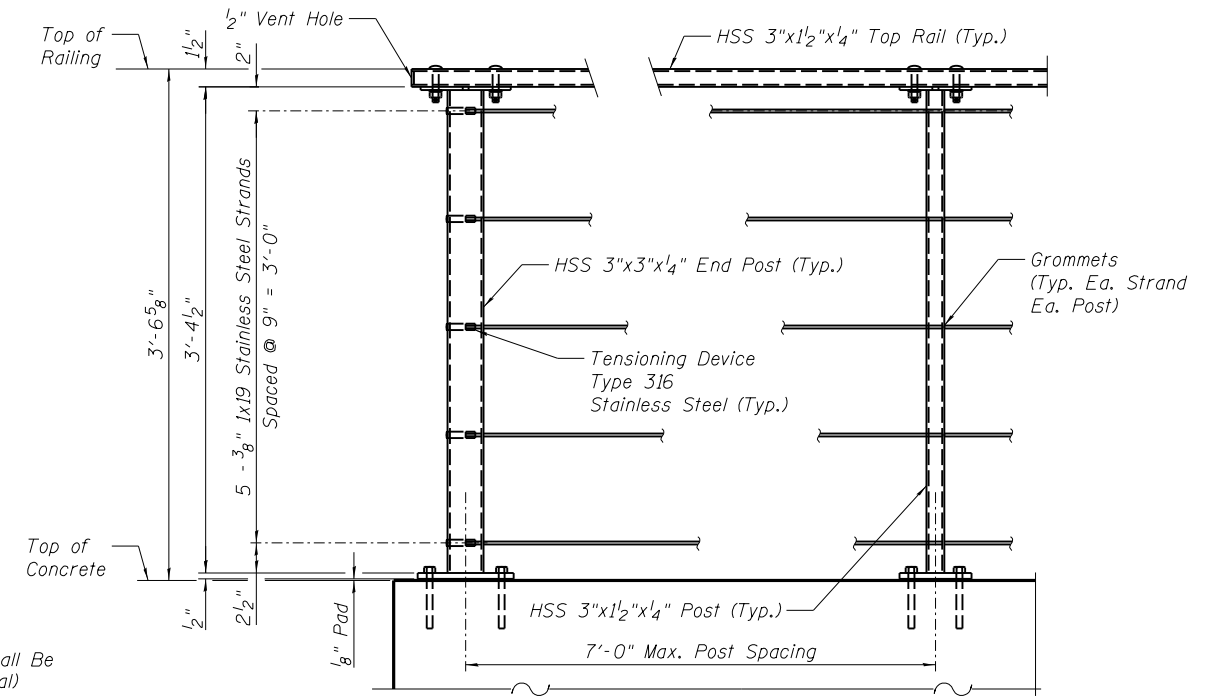
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
•	19-00488-00-BR	SANGAMON	347	283
			CONTRACT NO. 93747	
• 7985A & 8250		ILLINOIS FED. AID PROJECT		



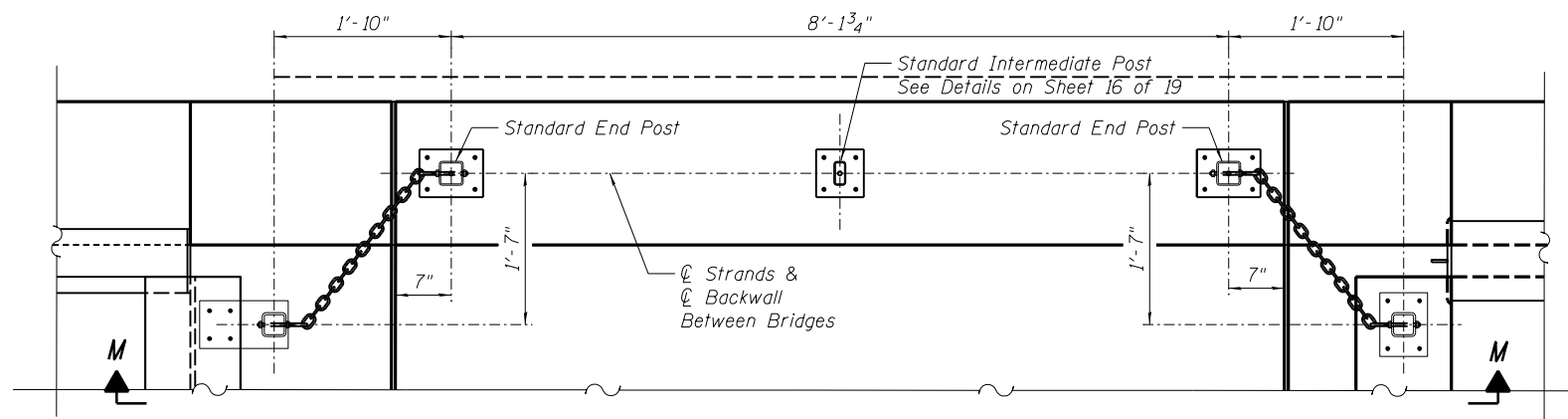


ELEVATION - M-M
(North Wall Shown - South Wall Similar)

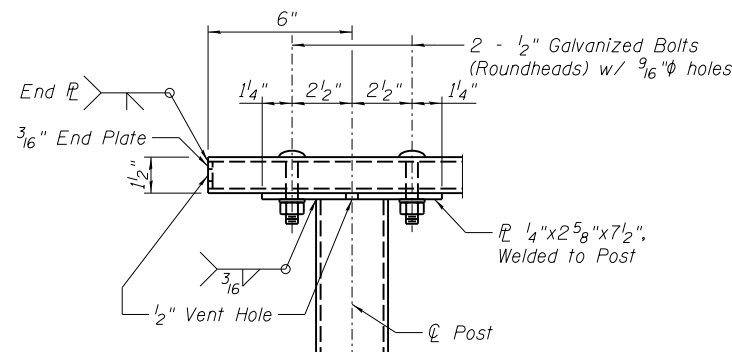
* Cost of Chain and Attachment Shall Be Included with Steel Railing (Special)



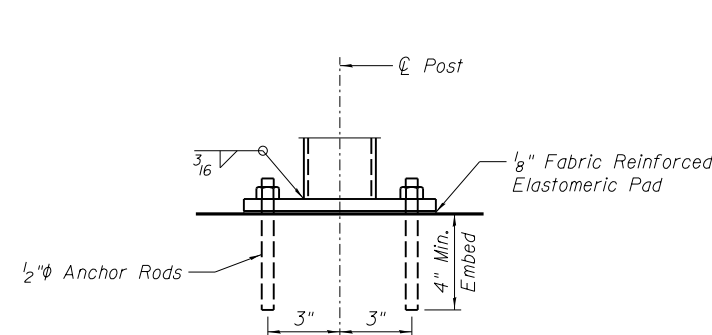
END POST **INTERMEDIATE POST**
RAILING BETWEEN BRIDGES



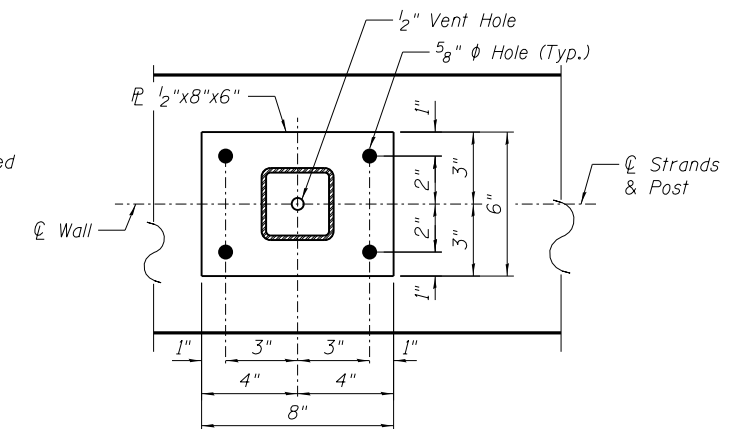
PLAN - POSTS BETWEEN BRIDGES
(North Wall Shown - South Wall Similar)



TOP RAIL - AT END POST



ANCHOR ROD DETAIL
END POSTS



STANDARD END POST

FINAL



USER NAME = Pop00275
PLOT SCALE = 0.167' / 1" = 1/6"
PLOT DATE = 1/18/2021

DESIGNED - KMS
CHECKED - RGC
DRAWN - EJM
CHECKED - RGC

REVISED -
REVISED -
REVISED -
REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RAILING DETAILS
SOUTH GRAND RETAINING WALLS

SHEET NO. 18 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
•	19-00488-00-BR	SANGAMON	347	285
			CONTRACT NO. 93747	

• 7985A & 8252 ILLINOIS FED. AID PROJECT

B-046
7/8/13
Sta. 4+97.12' RT

	N	Qu	w%	
584.6				CONCRETE.
583.80				AGGREGATE - Crushed stone.
583.47	16	8		Brown silty fine to coarse SAND, trace small gravel - FILL.
581.55	69	4,50P	15	Brown and gray weathered SHALE.
577.05	50	4,50P	14	Gray SHALE.
	50/4"		10	
	50/3"		8	
	50/2"		8	
	50/4"		7	
	50/4"		7	
564.55				Rec. = 85% RQD = 63% Gray clayey SHALE.
563.55				Rec. = 87% RQD = 62% Gray sandy SHALE, micaceous.
				Rec. = 97% RQD = 72%
				Rec. = 88% RQD = 54%
				Rec. = 98% RQD = 57%
549.15				COAL
				106.7 Rec. = 77% RQD = 33%
544.55				Bottom of Hole = 40.0 feet

B-045
7/9/13
Sta. 5+47.15' LT

	N	Qu	w%	
586.2				CONCRETE.
585.43				AGGREGATE.
585.10	9	5		Brown silty fine to coarse SAND, trace small gravel - FILL.
583.18	27	4,50P	17	Brown and gray weathered SHALE.
	50/5"	4,50P	11	
	50/3"	4,50P	13	
575.18	50/4"		9	Gray SHALE.
	50/3"		8	
571.18				Rec. = 100% RQD = 85% Gray clayey SHALE, trace sand, micaceous.
				Rec. = 92% RQD = 78%
				103.6
				Rec. = 92% RQD = 30%
				Rec. = 100% RQD = 60%
				16.7
				Rec. = 67% RQD = 65%
551.18				Bottom of Hole = 35.0 feet

LEGEND

N Standard Penetration Test N (blows/ft)

Qu Unconfined Strength (tsf)

w% Natural Moisture Content (%)

DD Water Surface Elevation Encountered in Boring

558.10 ▽ DD = during drilling

Oh = at completion

24h = 24 hours after completion

p:\hansoninc-pw\hanson.com\hanson-pw-01\Documents\09Jobs\09L0179B\Usable Segments III - V - V\CAD\Struct\Usable Segment V\SouthGrand-10th\Sheet\09L0179B-SouthGrand-Retaining-Wall-Plans

FINAL



USER NAME = Pop00275	DESIGNED - KMS	REVISIED -
	CHECKED - RGC	REVISIED -
PLOT SCALE = 10.000' / in.	DRAWN - EJM	REVISIED -
PLOT DATE = 1/18/2021	CHECKED - RGC	REVISIED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

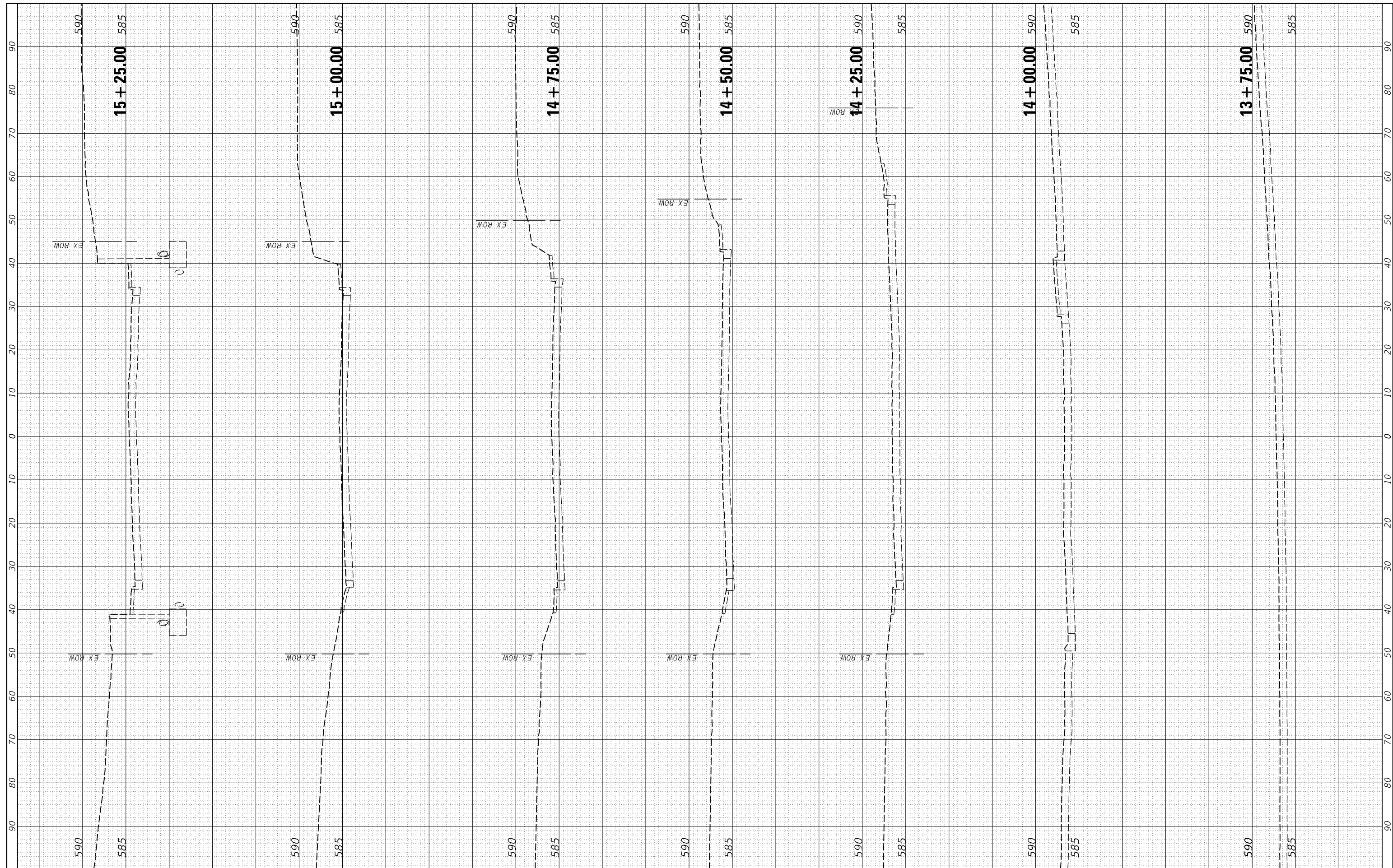
SUBSURFACE DATA PROFILE
SOUTH GRAND RETAINING WALLS

SHEET NO. 19 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	19-00488-00-BR	SANGAMON	347	286
CONTRACT NO. 93747				
7985A & 8253		ILLINOIS FED. AID PROJECT		

FINAL SURVEY NO.	SURVEYED PLOTTED AREAS CHECKED	BY	DATE

ORIGINAL SURVEY NO.	SURVEYED PLOTTED AREAS CHECKED	BY	DATE



FINAL

Veenstra & Kimm, Inc.
Springfield, IL Phone: (217)544-8033

USER NAME = Pop00275	DESIGNED -	REVISED -
PLOT SCALE = 20.0000' / in.	DRAWN -	REVISED -
PLOT DATE = 1/18/2021	CHECKED -	REVISED -
	DATE = 1/18/2021	REVISED -

DESIGNED -	REVISED -
DRAWN -	REVISED -
CHECKED -	REVISED -
DATE = 1/18/2021	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

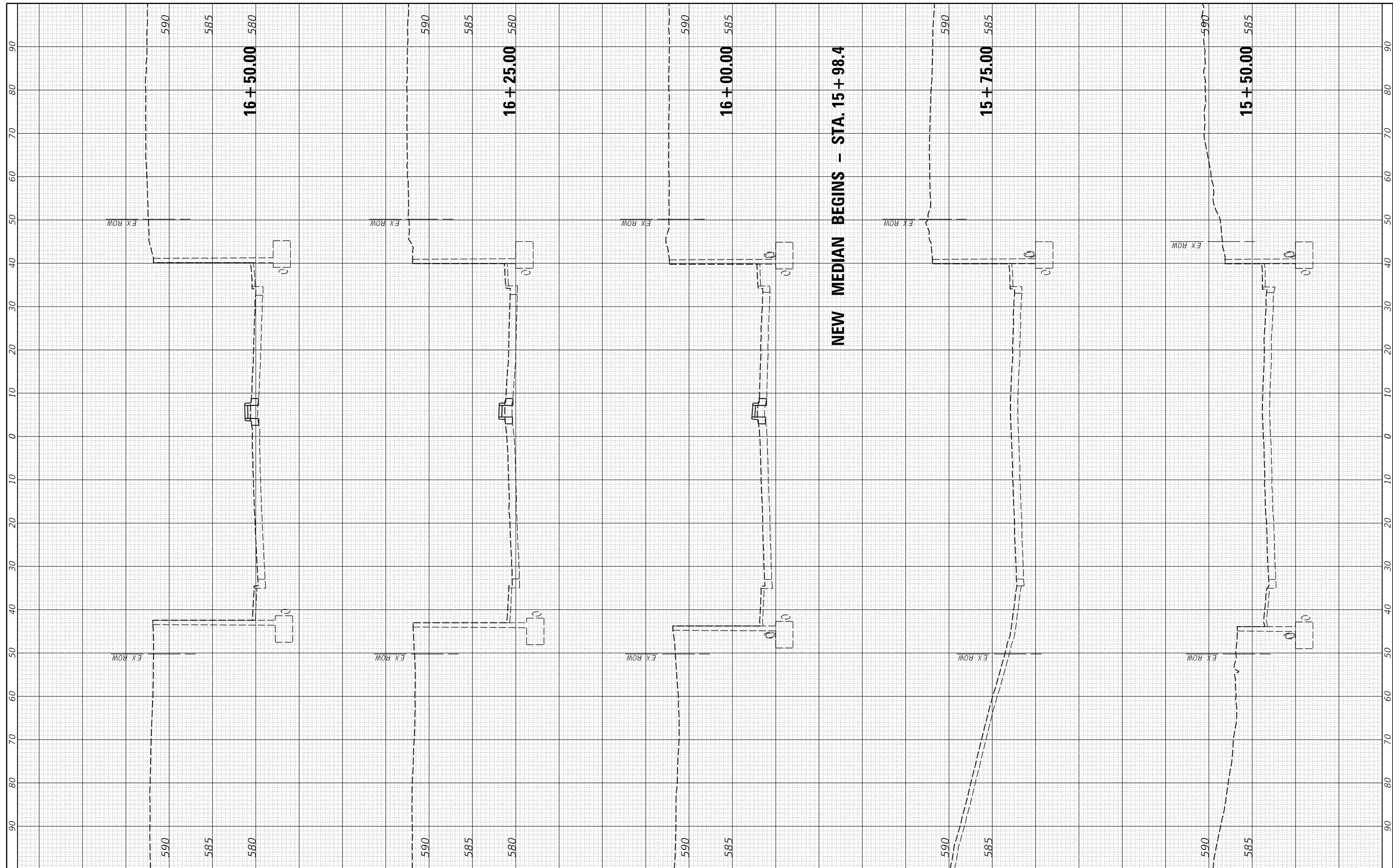
**SPRINGFIELD RAIL IMPROVEMENTS PROJECT
SPRINGFIELD, SANGAMON COUNTY, ILLINOIS
CROSS SECTIONS - COOK ST**

SCALE: SHEET 1 OF 6 SHEETS STA. 13+75.00 TO STA. 15+25.00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	19-00488-00-BR	SANGAMON	347	287
	09L0179B	CONTRACT NO.	93747	
7985A & 8254		ILLINOIS FED. AID PROJECT		

FINAL SURVEY NO.	SURVEYED PLOTTED TEMPLATE AREAS CHECKED	BY	DATE

ORIGINAL SURVEY NO.	SURVEYED PLOTTED TEMPLATE AREAS CHECKED	BY	DATE



FINAL



USER NAME = Pop00275
 PLOT SCALE = 20.0000' / in.
 PLOT DATE = 1/18/2021

DESIGNED -
 DRAWN -
 CHECKED -
 DATE - 1/18/2021

REVISED -
 REVISED -
 REVISED -
 REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

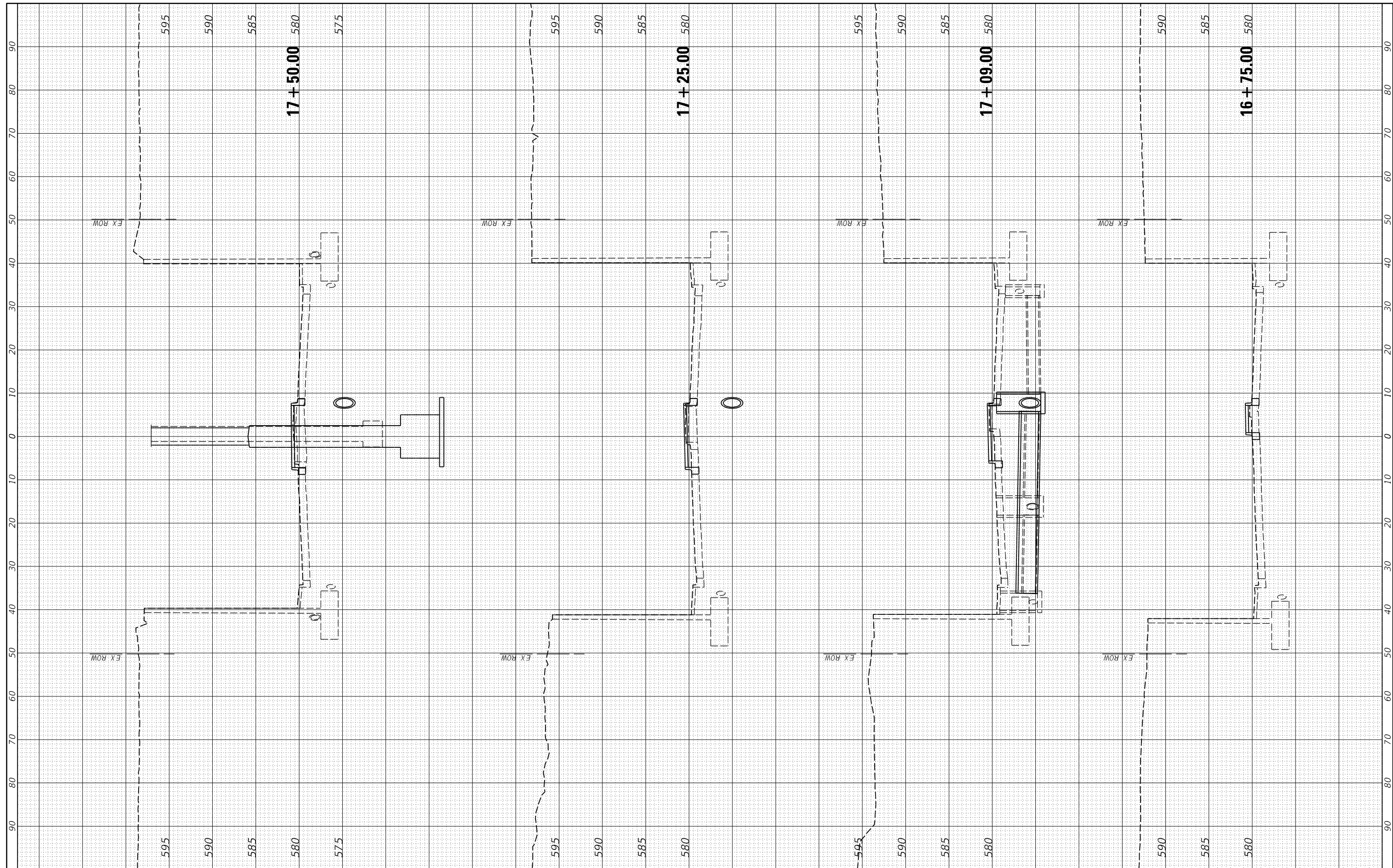
SPRINGFIELD RAIL IMPROVEMENTS PROJECT
 SPRINGFIELD, SANGAMON COUNTY, ILLINOIS
 CROSS SECTIONS - COOK ST

SCALE: SHEET 2 OF 6 SHEETS STA. 15+50.00 TO STA. 16+50.00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	19-00488-00-BR	SANGAMON	347	288
	09L0179B	CONTRACT NO.	93747	
7985A & 8255		ILLINOIS FED. AID PROJECT		

FINAL SURVEY NO.	SURVEYED PLOTTED TEMPLATE AREAS CHECKED	BY	DATE

ORIGINAL SURVEY NO.	SURVEYED PLOTTED TEMPLATE AREAS CHECKED	BY	DATE



FINAL



USER NAME = Pop00275	DESIGNED -	REVIS	-
PLOT SCALE = 20.0000' / in.	DRAWN -	REVIS	-
PLOT DATE = 1/18/2021	CHECKED -	REVIS	-
	DATE - 1/18/2021	REVIS	-

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

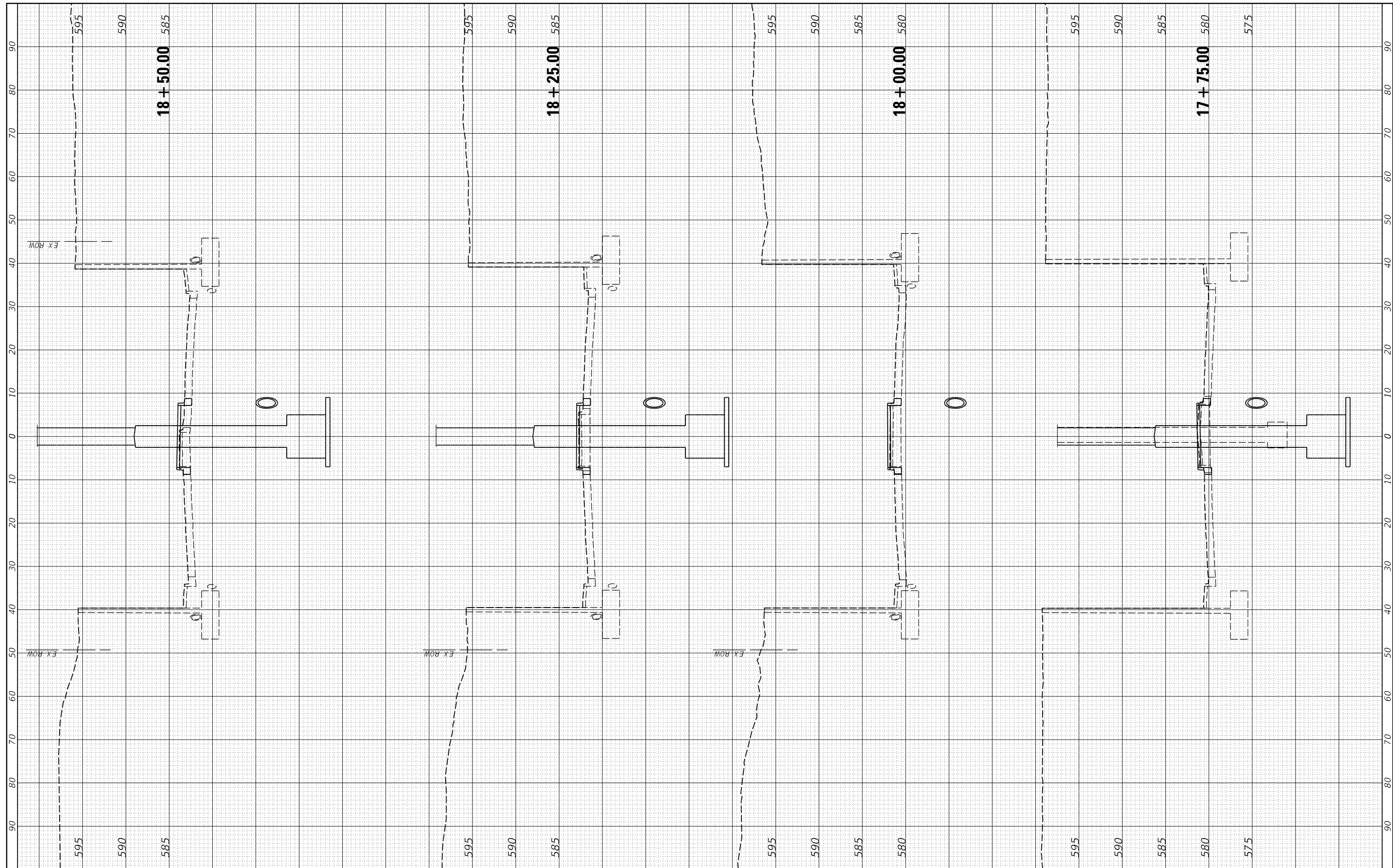
SPRINGFIELD RAIL IMPROVEMENTS PROJECT
SPRINGFIELD, SANGAMON COUNTY, ILLINOIS
CROSS SECTIONS - COOK ST

SCALE: SHEET 3 OF 6 SHEETS STA. 16+75.00 TO STA. 17+50.00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	19-00488-00-BR	SANGAMON	347	289
	09L0179B	CONTRACT NO.	93747	
7985A & 8256		ILLINOIS FED. AID PROJECT		

FINAL SURVEY NO.	SURVEYED PLOTTED AREAS CHECKED	BY	DATE

ORIGINAL SURVEY NO.	SURVEYED PLOTTED AREAS CHECKED	BY	DATE



FINAL

Veenstra & Kimm, Inc.
Springfield, IL Phone: (217)544-8033

USER NAME = Pop00275	DESIGNED -	REVISIED -
PLOT SCALE = 20.0000' / in.	DRAWN -	REVISIED -
PLOT DATE = 1/18/2021	CHECKED -	REVISIED -
	DATE = 1/18/2021	REVISIED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

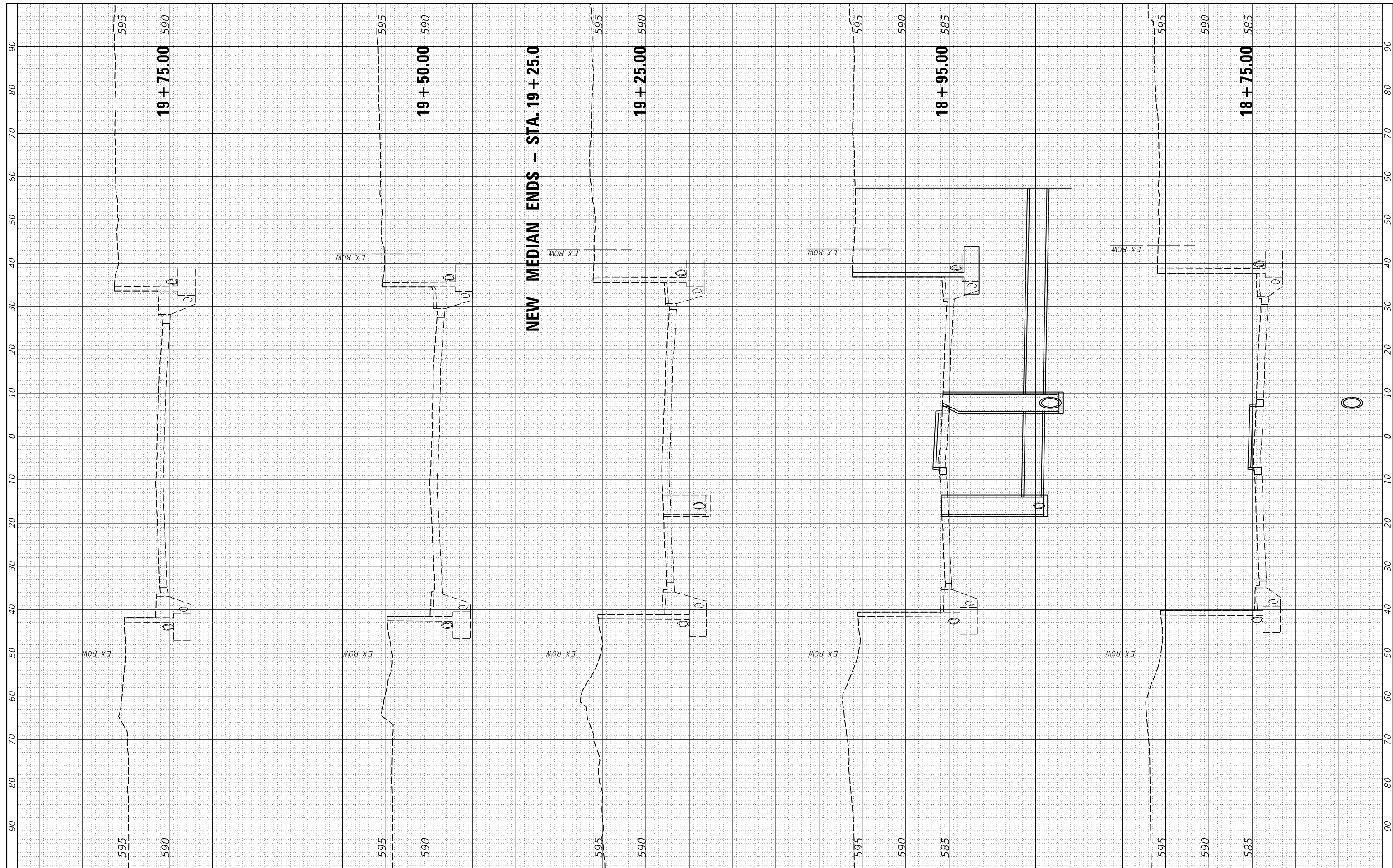
**SPRINGFIELD RAIL IMPROVEMENTS PROJECT
SPRINGFIELD, SANGAMON COUNTY, ILLINOIS
CROSS SECTIONS - COOK ST**

SCALE: SHEET 4 OF 6 SHEETS STA. 17+75.00 TO STA. 18+50.00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	19-00488-00-BR	SANGAMON	347	290
	09L0179B	CONTRACT NO.	93747	
* 7985A & 8257		ILLINOIS FED. AID PROJECT		

FINAL SURVEY NO.	SURVEYED PLOTTED AREAS CHECKED	BY	DATE

ORIGINAL SURVEY NO.	SURVEYED PLOTTED AREAS CHECKED	BY	DATE



NEW MEDIAN ENDS -- STA. 19 + 25.0

FINAL



USER NAME = Pop00275	DESIGNED -	REVISED -
PLOT SCALE = 20.0000' / in.	DRAWN -	REVISED -
PLOT DATE = 1/18/2021	CHECKED -	REVISED -
	DATE = 1/18/2021	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

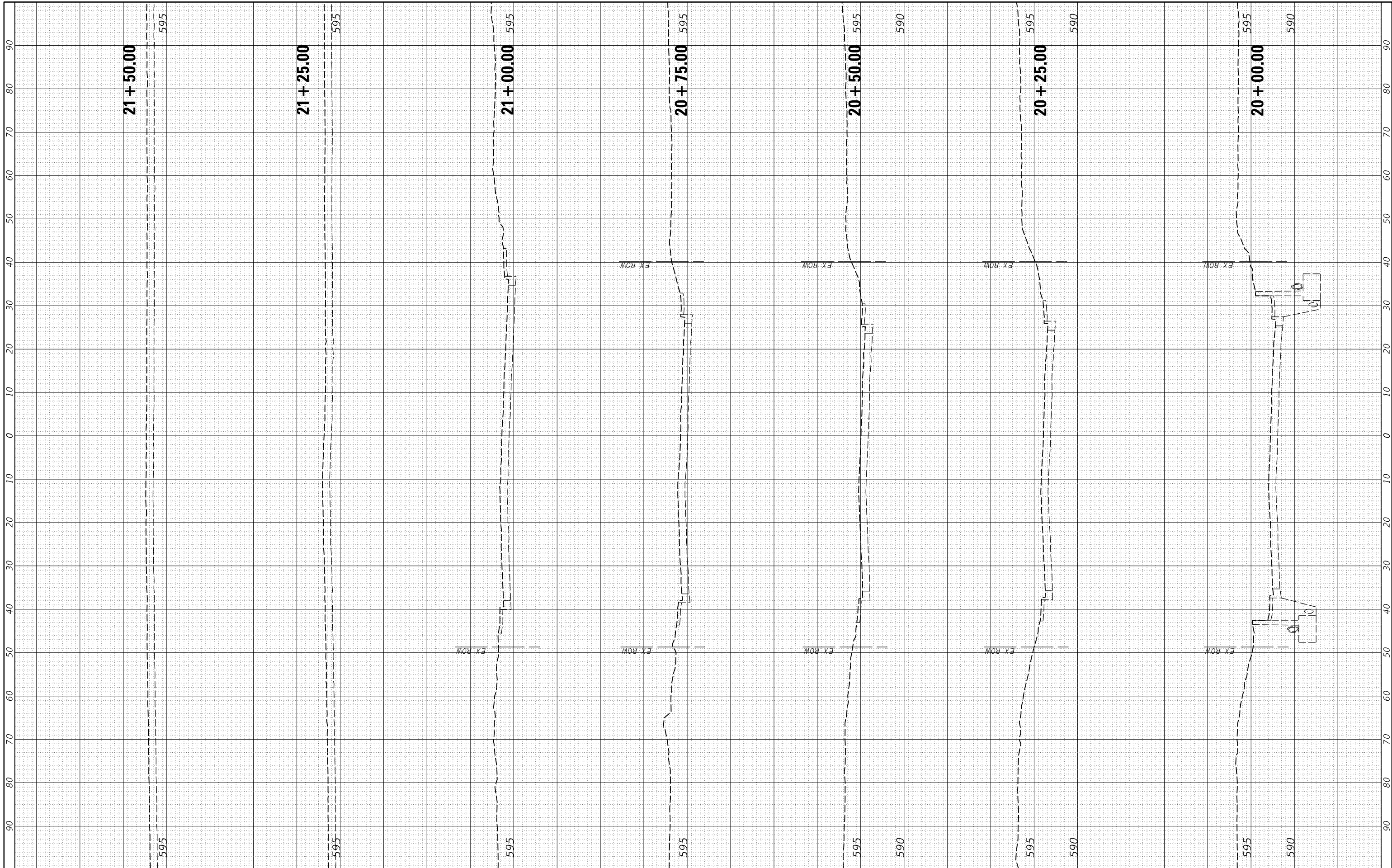
**SPRINGFIELD RAIL IMPROVEMENTS PROJECT
SPRINGFIELD, SANGAMON COUNTY, ILLINOIS
CROSS SECTIONS - COOK ST**


SCALE: SHEET 5 OF 6 SHEETS, 09TA. TO STA. 19+75.00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	19-00488-00-BR	SANGAMON	347	291
	09L0179B	CONTRACT NO.	93747	
7985A & 8258		ILLINOIS FED. AID PROJECT		

FINAL SURVEY NO.	SURVEYED PLOTTED AREAS CHECKED	BY	DATE

ORIGINAL SURVEY NO.	SURVEYED PLOTTED AREAS CHECKED	BY	DATE



FINAL	 Veenstra & Kimm, Inc. Springfield, IL Phone: (217)544-8033	USER NAME = Pop00275	DESIGNED -	REVISED -
		PLOT SCALE = 20.0000' / in.	DRAWN -	REVISED -
		PLOT DATE = 1/18/2021	CHECKED -	REVISED -
			DATE = 1/18/2021	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

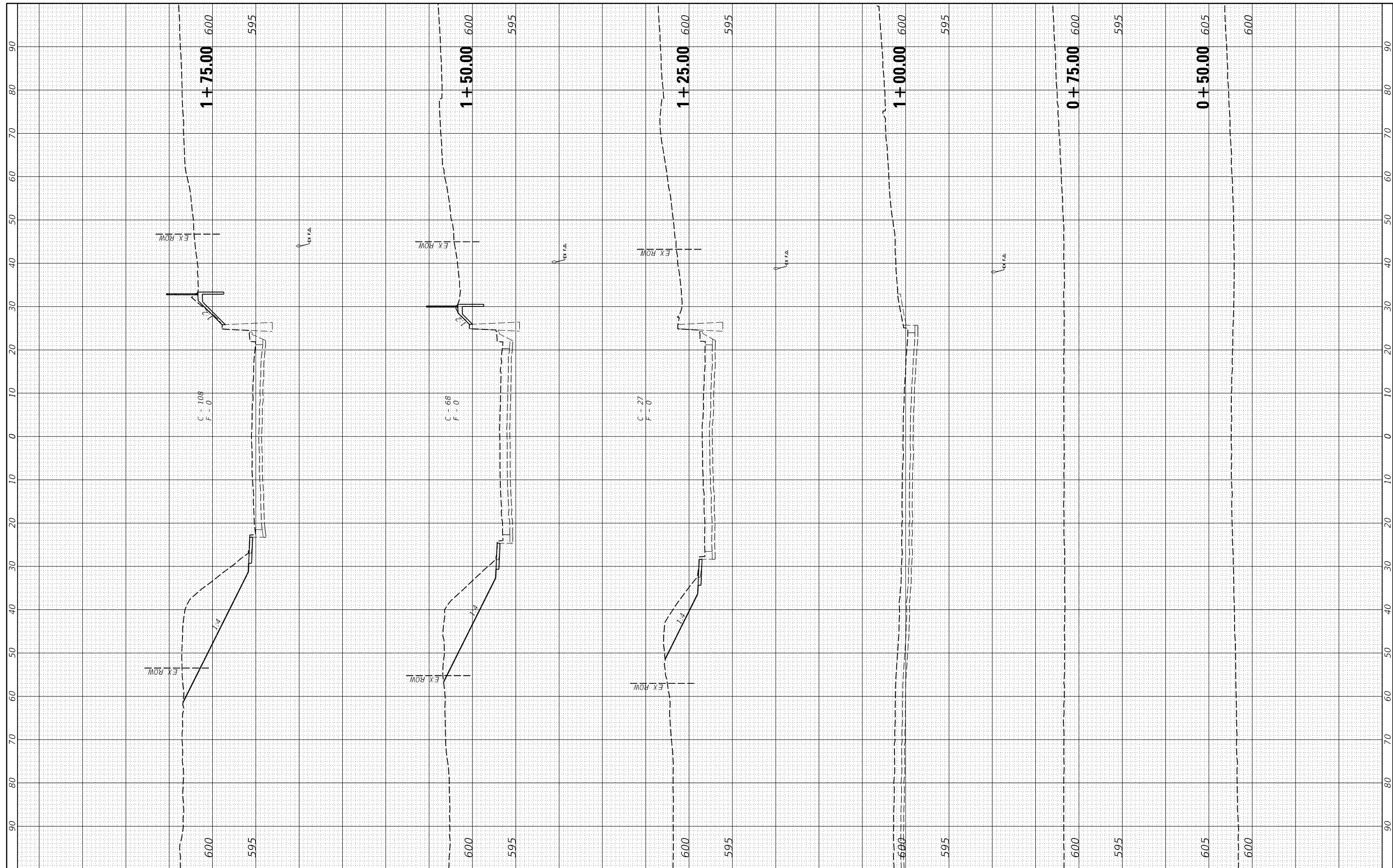
**SPRINGFIELD RAIL IMPROVEMENTS PROJECT
SPRINGFIELD, SANGAMON COUNTY, ILLINOIS
CROSS SECTIONS - COOK ST**

SCALE: SHEET 6 OF 6 SHEETS STA. 20+00.00 TO STA. 21+50.00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	19-00488-00-BR	SANGAMON	347	292
	09L0179B	CONTRACT NO.	93747	
* 7985A & 8259		ILLINOIS FED. AID PROJECT		

FINAL SURVEY NO.	SURVEYED PLOTTED AREAS CHECKED	BY	DATE

ORIGINAL SURVEY NO.	SURVEYED PLOTTED AREAS CHECKED	BY	DATE



FINAL



USER NAME = Pop00275	DESIGNED -	REVISED -
PLOT SCALE = 20.0000' / in.	DRAWN -	REVISED -
PLOT DATE = 1/18/2021	CHECKED -	REVISED -
	DATE = 1/18/2021	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

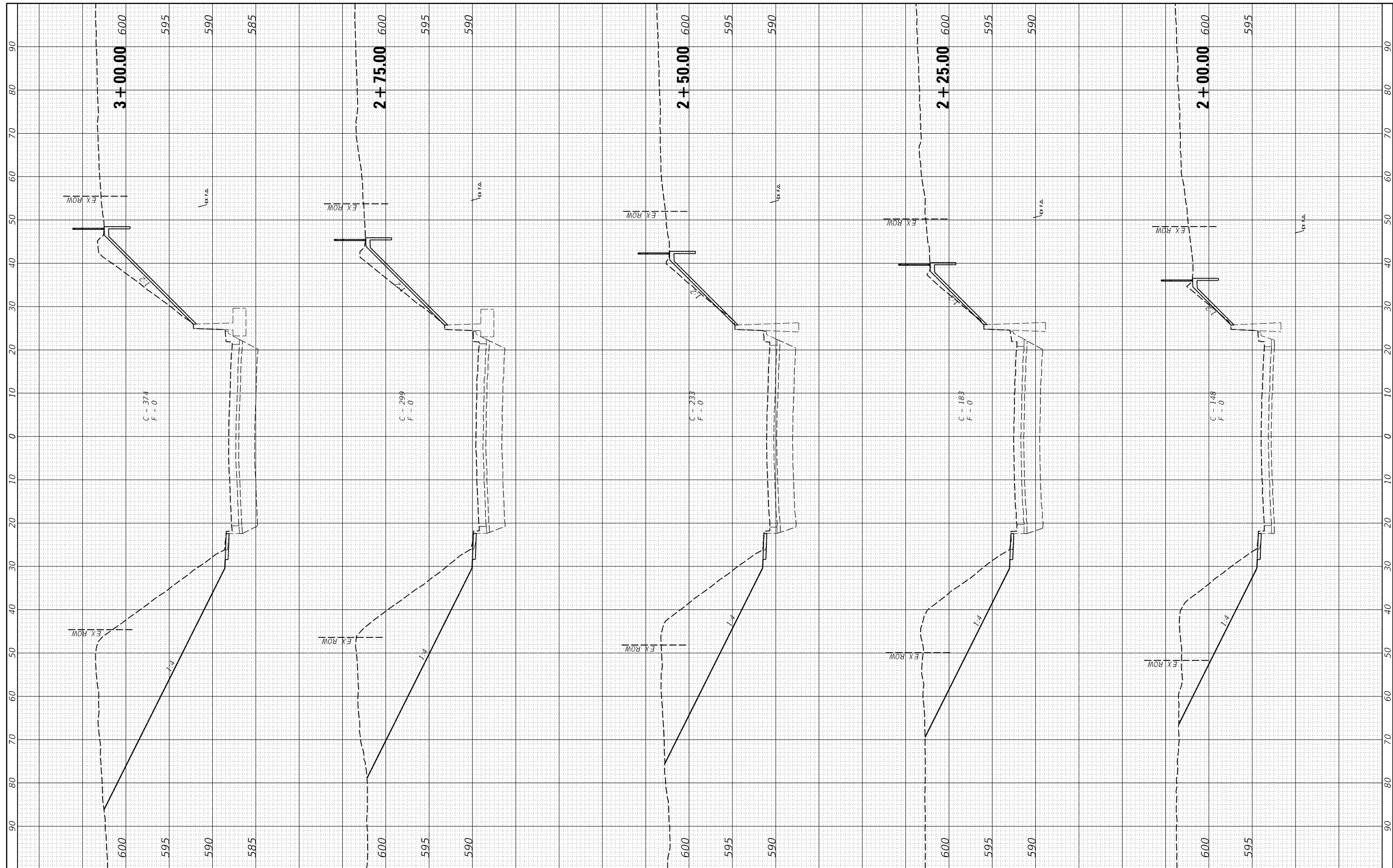
SCALE:	SHEET 1 OF 8 SHEETS	STA. +00.00	TO STA. 1+50.00
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SPRINGFIELD RAIL IMPROVEMENTS PROJECT
SPRINGFIELD, SANGAMON COUNTY, ILLINOIS
CROSS SECTIONS - SOUTH GRAND AVE

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	19-00488-00-BR	SANGAMON	347	293
	09L0179B	CONTRACT NO.	93747	
7985A & 8260	ILLINOIS FED. AID PROJECT			

FINAL SURVEY NO.	SURVEYED PLOTTED AREAS CHECKED	BY	DATE

ORIGINAL SURVEY NO.	SURVEYED PLOTTED AREAS CHECKED	BY	DATE



FINAL



USER NAME = Pop00275
 PLOT SCALE = 20.0000' / in.
 PLOT DATE = 1/18/2021

DESIGNED -
 DRAWN -
 CHECKED -
 DATE - 1/18/2021

REVISED -
 REVISED -
 REVISED -
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STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

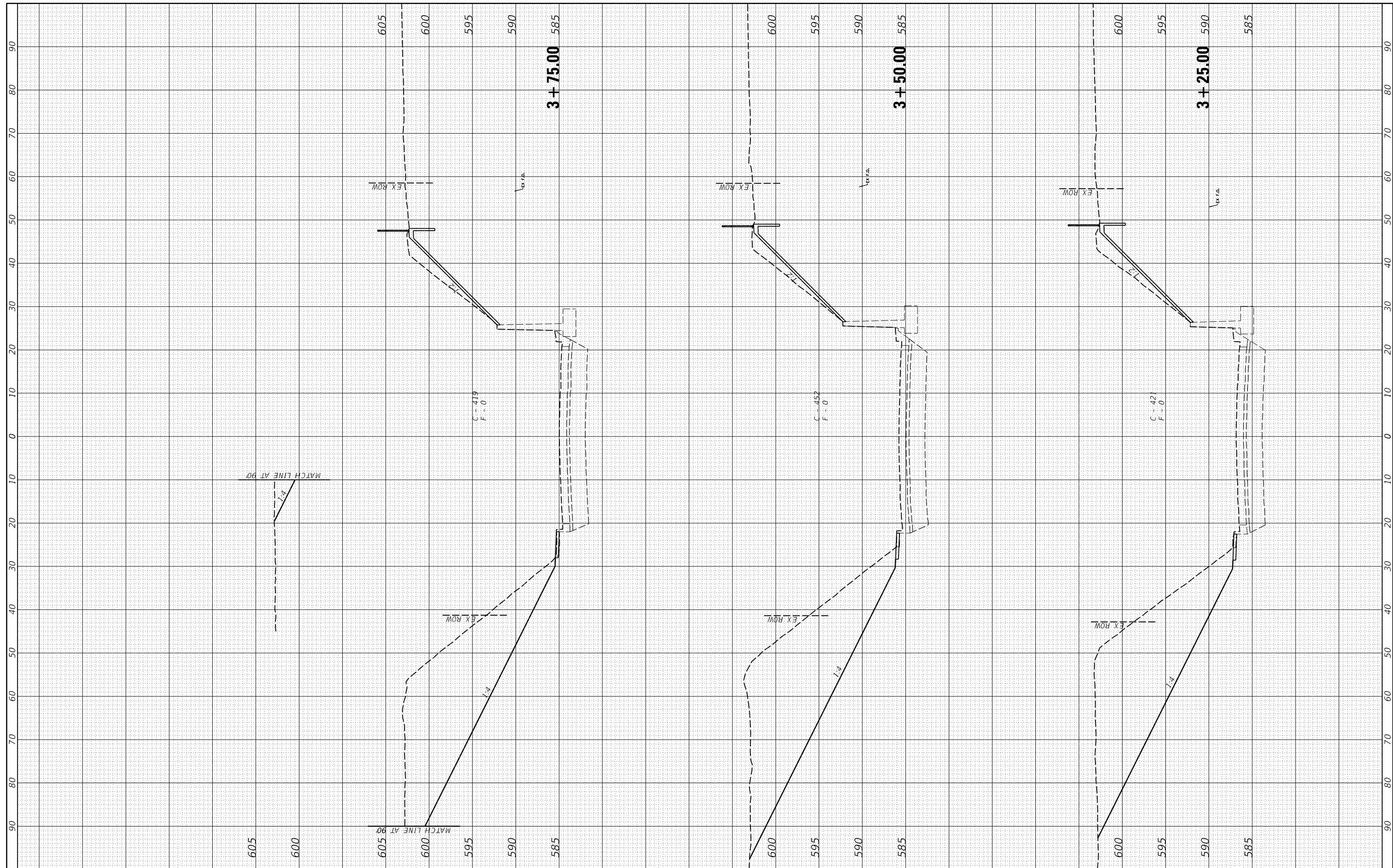
SPRINGFIELD RAIL IMPROVEMENTS PROJECT
 SPRINGFIELD, SANGAMON COUNTY, ILLINOIS
 CROSS SECTIONS - SOUTH GRAND AVE

SCALE: SHEET 2 OF 8 SHEETS STA. 1+75.00 TO STA. 2+75.00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	19-00488-00-BR	SANGAMON	347	294
	09L0179B	CONTRACT NO.	93747	
7985A & 8261	ILLINOIS FED. AID PROJECT			

FINAL SURVEY NO.	SURVEYED PLOTTED AREAS CHECKED	BY	DATE

ORIGINAL SURVEY NO.	SURVEYED PLOTTED AREAS CHECKED	BY	DATE



FINAL



USER NAME = Pop00275	DESIGNED -	REVISED -
PLOT SCALE = 20.0000' / in.	DRAWN -	REVISED -
PLOT DATE = 1/18/2021	CHECKED -	REVISED -
	DATE = 1/18/2021	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

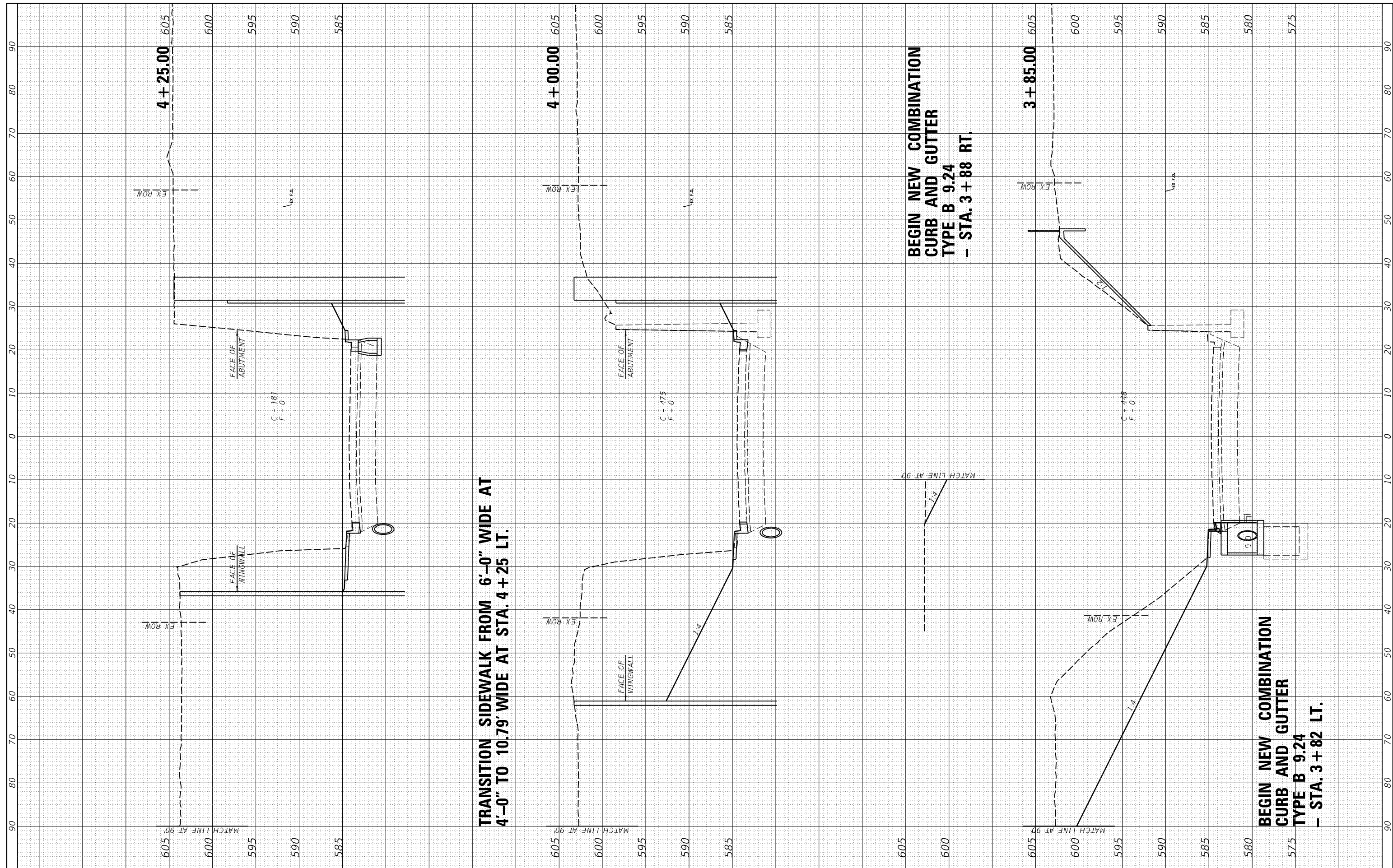
SPRINGFIELD RAIL IMPROVEMENTS PROJECT
SPRINGFIELD, SANGAMON COUNTY, ILLINOIS
CROSS SECTIONS - SOUTH GRAND AVE

SCALE: SHEET 3 OF 8 SHEETS STA. 3+00.00 TO STA. 3+75.00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	19-00488-00-BR	SANGAMON	347	295
	09L0179B	CONTRACT NO.		93747
7985A & 8262	ILLINOIS FED. AID PROJECT			

FINAL SURVEY NO.	SURVEYED PLOTTED TEMPLATE AREAS CHECKED	BY	DATE

ORIGINAL SURVEY NO.	SURVEYED PLOTTED TEMPLATE AREAS CHECKED	BY	DATE



TRANSITION SIDEWALK FROM 6'-0" WIDE AT 4'-0" TO 10.79' WIDE AT STA. 4+25 LT.

BEGIN NEW COMBINATION CURB AND GUTTER TYPE B 9.24 - STA. 3+88 RT.

BEGIN NEW COMBINATION CURB AND GUTTER TYPE B 9.24 - STA. 3+82 LT.

FINAL

 Veenstra & Kimm, Inc.
 Springfield, IL Phone: (217)544-8033

USER NAME = Pop00275	DESIGNED -	REVISED -
PLOT SCALE = 20.0000' / in.	DRAWN -	REVISED -
PLOT DATE = 1/18/2021	CHECKED -	REVISED -
	DATE = 1/18/2021	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

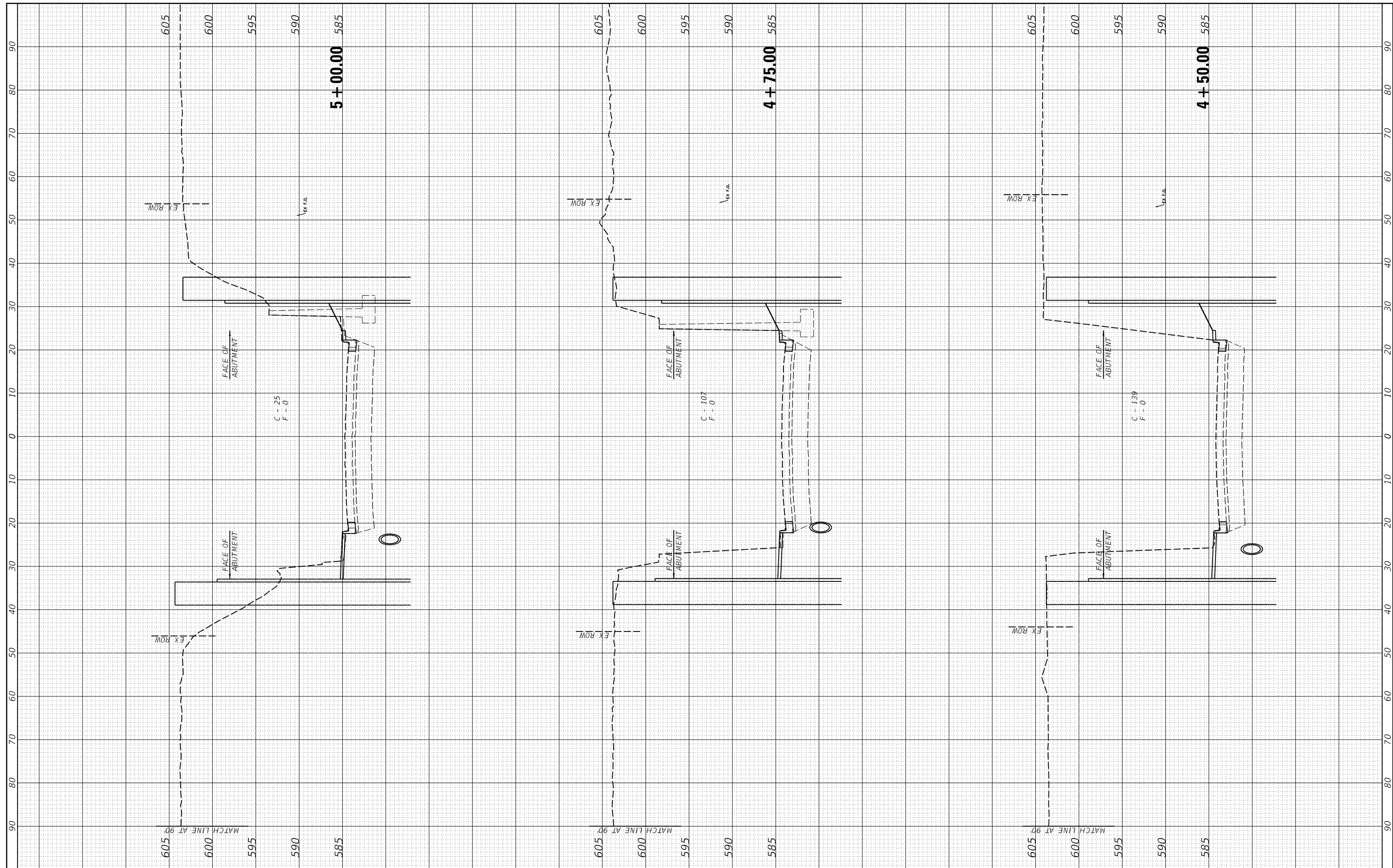
**SPRINGFIELD RAIL IMPROVEMENTS PROJECT
 SPRINGFIELD, SANGAMON COUNTY, ILLINOIS
 CROSS SECTIONS - SOUTH GRAND AVE**

SCALE: SHEET 4 OF 8 SHEETS STA. 3+85.00 TO STA. 4+25.00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	19-00488-00-BR	SANGAMON	347	296
	09L0179B	CONTRACT NO.		93747
7985A & 8263	ILLINOIS FED. AID PROJECT			

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

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



FINAL



USER NAME = Pop00275	DESIGNED -	REVISED -
PLOT SCALE = 20.0000' / in.	DRAWN -	REVISED -
PLOT DATE = 1/18/2021	CHECKED -	REVISED -
	DATE = 1/18/2021	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SPRINGFIELD RAIL IMPROVEMENTS PROJECT
SPRINGFIELD, SANGAMON COUNTY, ILLINOIS
CROSS SECTIONS - SOUTH GRAND AVE

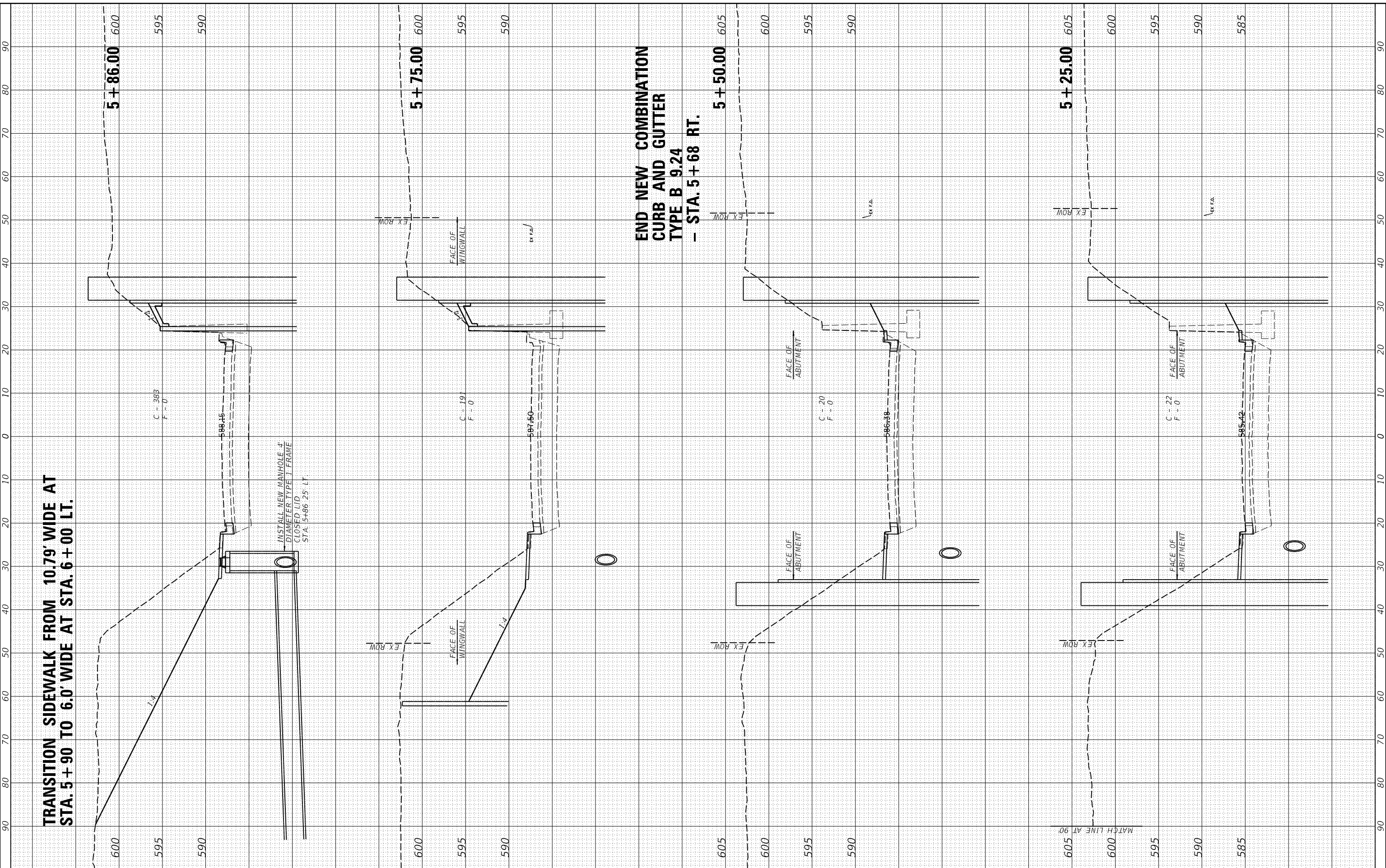
SCALE: SHEET 5 OF 8 SHEETS STA. 4+50.00 TO STA. 5+00.00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	19-00488-00-BR	SANGAMON	347	297
	09L0179B	CONTRACT NO.		93747
7985A & 8264	ILLINOIS FED. AID PROJECT			

FINAL SURVEY NO.	SURVEYED PLOTTED TEMPLATE AREAS CHECKED	BY	DATE

ORIGINAL SURVEY NO.	SURVEYED PLOTTED TEMPLATE AREAS CHECKED	BY	DATE

TRANSITION SIDEWALK FROM 10.79' WIDE AT STA. 5+90 TO 6.0' WIDE AT STA. 6+00 LT.



END NEW COMBINATION CURB AND GUTTER TYPE B 9.24 - STA. 5+68 RT.

FINAL



USER NAME = Pop00275	DESIGNED -	REVISED -
PLOT SCALE = 20.0000' / in.	DRAWN -	REVISED -
PLOT DATE = 1/18/2021	CHECKED -	REVISED -
	DATE = 1/18/2021	REVISED -

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

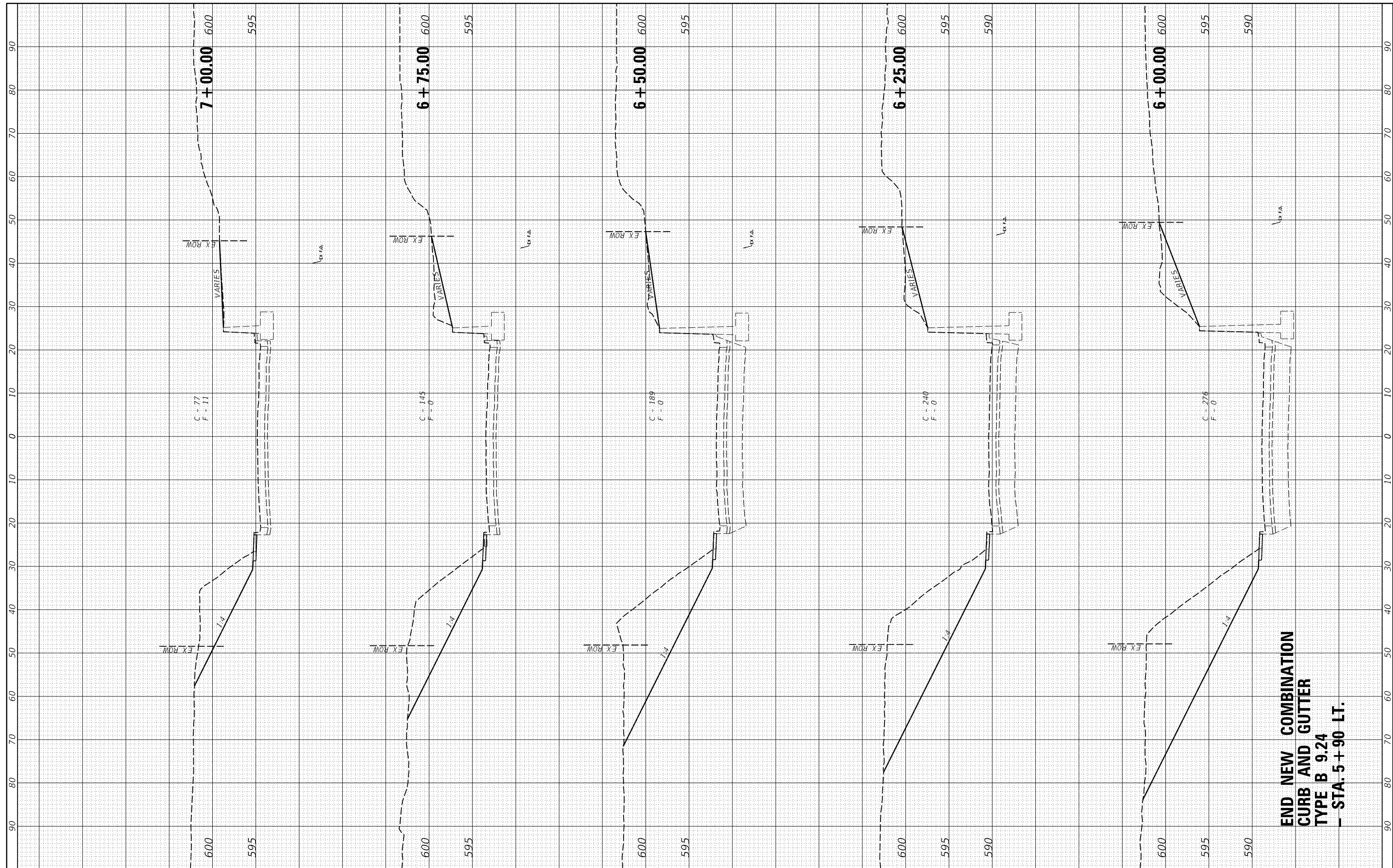
SCALE: SHEET 6 OF 8 SHEETS STA. 5+25.00 TO STA. 5+86.00

**SPRINGFIELD RAIL IMPROVEMENTS PROJECT
SPRINGFIELD, SANGAMON COUNTY, ILLINOIS
CROSS SECTIONS - SOUTH GRAND AVE**

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	19-00488-00-BR	SANGAMON	347	298
	09L0179B	CONTRACT NO.	93747	
7985A & 8265	ILLINOIS FED. AID PROJECT			

FINAL SURVEY NO.	SURVEYED PLOTTED AREAS CHECKED	BY	DATE

ORIGINAL SURVEY NO.	SURVEYED PLOTTED AREAS CHECKED	BY	DATE



END NEW COMBINATION CURB AND GUTTER TYPE B 9.24 -- STA. 5+90 LT.

FINAL



USER NAME = Pop00275	DESIGNED -	REVISED -
PLOT SCALE = 20.0000' / in.	DRAWN -	REVISED -
PLOT DATE = 1/18/2021	CHECKED -	REVISED -
	DATE = 1/18/2021	REVISED -

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

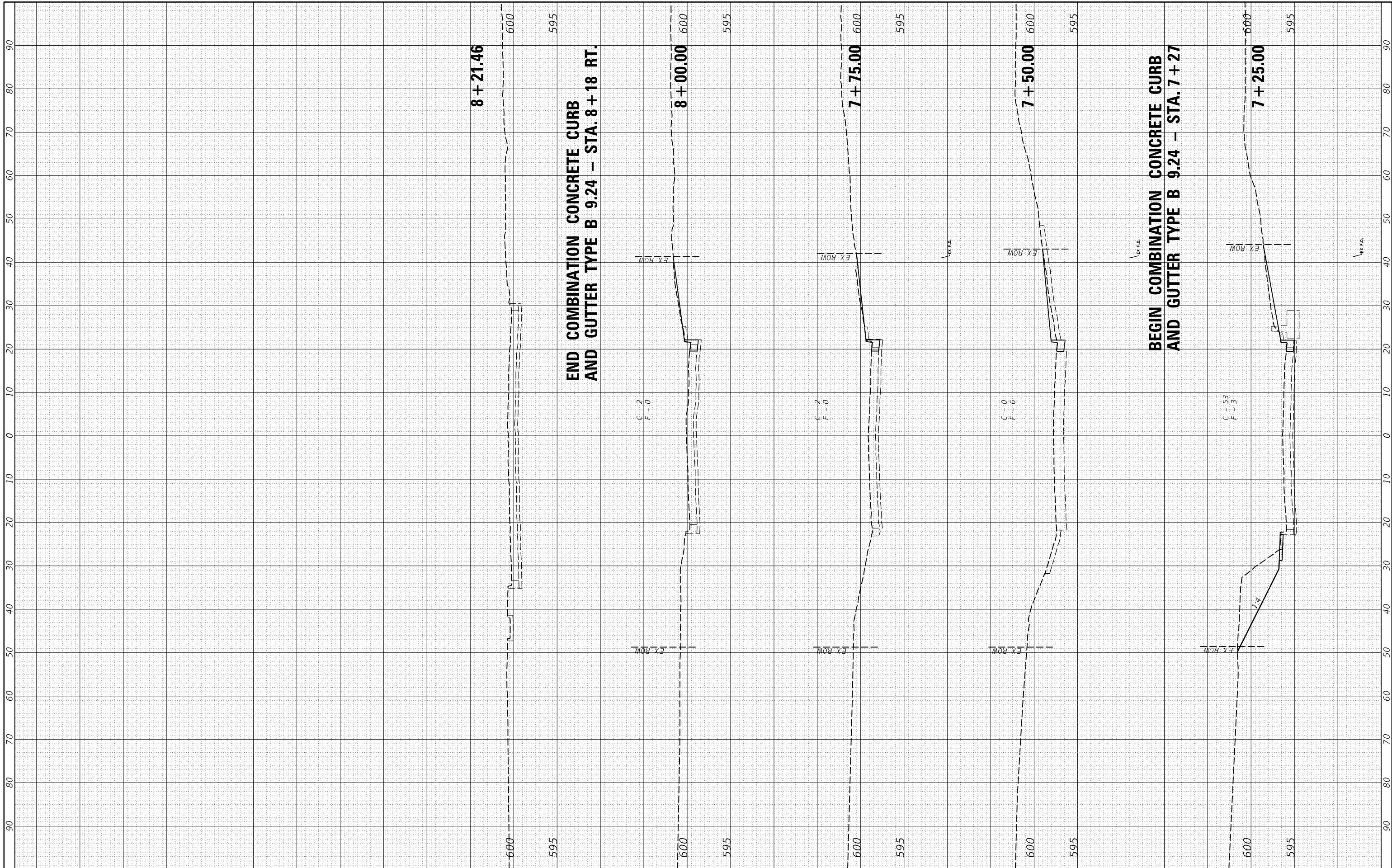
**SPRINGFIELD RAIL IMPROVEMENTS PROJECT
SPRINGFIELD, SANGAMON COUNTY, ILLINOIS
CROSS SECTIONS - SOUTH GRAND AVE**

SCALE: SHEET 7 OF 8 SHEETS STA. 6+00.00 TO STA. 7+00.00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	19-00488-00-BR	SANGAMON	347	299
	09L0179B	CONTRACT NO.		93747
7985A & 8266	ILLINOIS FED. AID PROJECT			

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

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



FINAL



Springfield, IL Phone: (217)544-8033

USER NAME = Pop00275	DESIGNED -	REVISED -
PLOT SCALE = 20.0000' / in.	DRAWN -	REVISED -
PLOT DATE = 1/18/2021	CHECKED -	REVISED -
	DATE = 1/18/2021	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SPRINGFIELD RAIL IMPROVEMENTS PROJECT
SPRINGFIELD, SANGAMON COUNTY, ILLINOIS
CROSS SECTIONS - SOUTH GRAND AVE

SCALE: SHEET 8 OF 8 SHEETS STA. 7+25.00 TO STA. 8+21.46

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	19-00488-00-BR	SANGAMON	347	300
	09L0179B	CONTRACT NO.		93747
7985A & 8267	ILLINOIS FED. AID PROJECT			