B-115
Sta. 299+64, 19' LT

	N	Qu	w%	
605.2				
604.47				CONCRETE.
604.22	17		18	AGGREGATE.
601.72	11		5	Black and brown very fine sandy silty CLAY, trace concrete fragments - FILL.
599.22	5		6	Brown fine to medium SAND, some coarse sand.
596.72	5	1.65B	25	Brown fine to medium SAND, some coarse sand, trace silty sand.
594.22	4	1.36B	22	Brown and gray very fine sandy SILT.
591.72	3	0.58B	25	Brown and gray very fine to fine sandy clayey SILT.
589.22	3	0.82S	23	Brown and gray very fine to fine sandy silty CLAY.
	5	0.58B	28	Brown and black fine sandy silty CLAY, trace small gravel.
581.72	50/5"	1.50P	14	Brown and olive gray silty fine SAND (highly weathered SANDSTONE).
576.72	50/5"		10	Gray interbedded SANDSTONE and SHALE.
DD 573.2 ▽				
	50/3"	1.50P	13	
570.22	Rec. = 85%			Gray-black interbedded sandy SHALE/
568.72		73.9		shaley SANDSTONE, micaceous - weathered.
	Rec. = 97%			Gray-black interbedded sandy SHALE/
		70.0		shaley SANDSTONE, micaceous.
	Rec. = 97%			
556.22				Bottom of Hole = 49.0 feet

B-124
Sta. 300+45, 19' RT

	N	Qu	w%	
605.3				
604.6				CONCRETE.
	21	3.80P	7	Brown silty coarse SAND and small GRAVEL and black very fine sandy silty clay - FILL.
601.8	7	1.85B	30	Dark brown and brown very fine sandy silty CLAY.
599.3	6	1.48B	26	Brown and gray very fine sandy SILT, some clay, trace calcareous concretions.
	6	2.27B	26	
594.3	4	2.30P	24	Brown and gray very fine sandy SILT, some clay.
591.8	4	0.39B	26	Brown and gray very fine to fine sandy clayey SILT, trace small gravel.
589.3	4	0.97B	25	Brown and gray very fine to fine sandy silty CLAY, trace small gravel.
586.8	6	1.65B	27	Brown and gray very fine to fine sandy silty CLAY, trace small gravel and shale fragments.
581.8	72	4.50P	11	Brown and gray SHALE - highly weathered.
576.8				
DD 574.3 ▽	50/3"	4.50P	10	Gray SHALE.
570.32	Rec. = 77%			Gray-black interbedded sandy SHALE/
	RQD = 37%			shaley SANDSTONE, micaceous - weathered.
567.12		122.9		
566.72				Soft SHALE/clay seam.
	Rec. = 98%			Gray-black interbedded sandy SHALE/
	RQD = 23%			shaley SANDSTONE, micaceous.
	Rec. = 100%			
	RQD = 68%			
555.32				Bottom of Hole = 50.0 feet

LEGEND

N	Standard Penetration Test N (blows/ft)
Qu	Unconfined Strength (tsf)
w%	Natural Moisture Content (%)
DD 558.10 ▽	Water Surface Elevation Encountered in Boring DD = during drilling Oh = at completion 24h = 24 hours after completion

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Madison\Sheet\084-9968_09L01798_019.Sub Data Profile.dgn

FINAL

HANSON

USER NAME = thoel01490	DESIGNED - JGT	REVISED -
	CHECKED - CGP	REVISED -
PLOT SCALE = 0:2 '1' / in.	DRAWN - RSJ	REVISED -
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSURFACE DATA PROFILE
STRUCTURE NO. 084-9968
SHEET NO. 19 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	301
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			

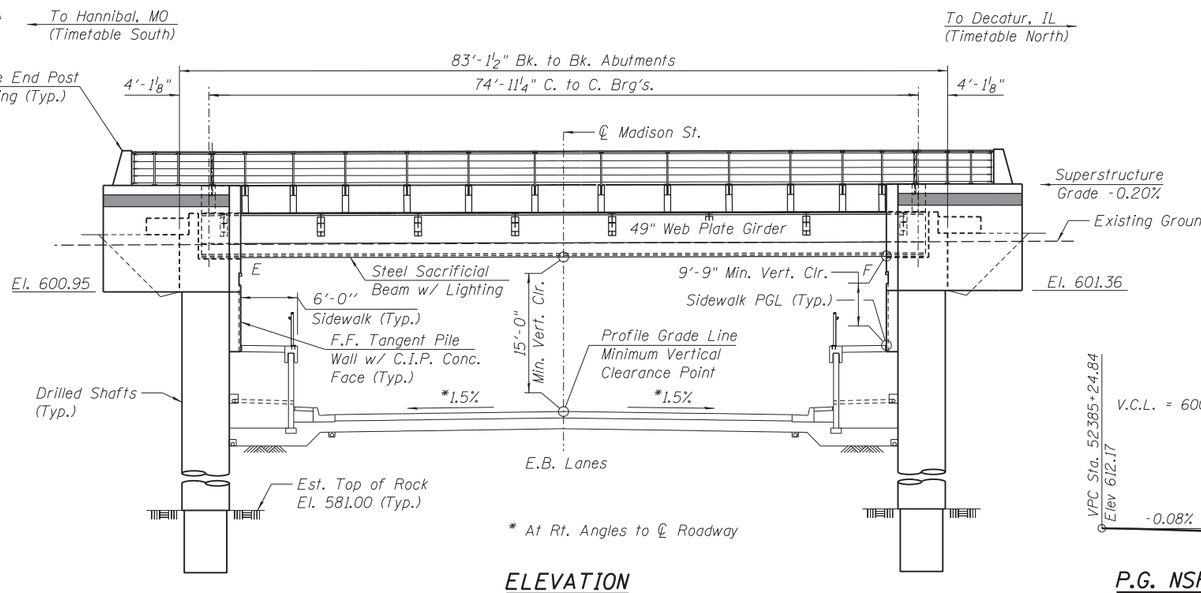
Benchmark: Chiseled 'X' on SW Bolt of Fire Hydrant SE quadrant of 9th Street and Mason Street. Elevation = 605.652

Existing Structure: None

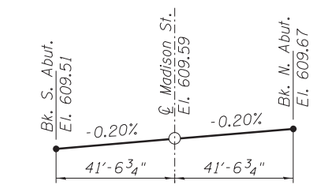
Traffic Control: Temporary Lane Closures and Complete Closures

Construction Sequence: See Track Staging Plans

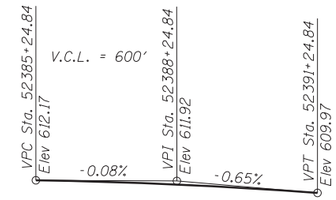
Railroad utilities may exist within NSRR right-of-way. Prior to the start of any construction or excavation, utility relocations will have to be coordinated with the NSRR.



ELEVATION
(Looking West)



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



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

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)

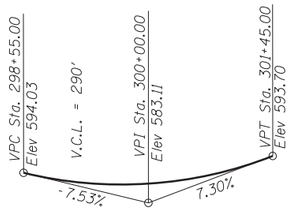
SEISMIC DATA
AREMA

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

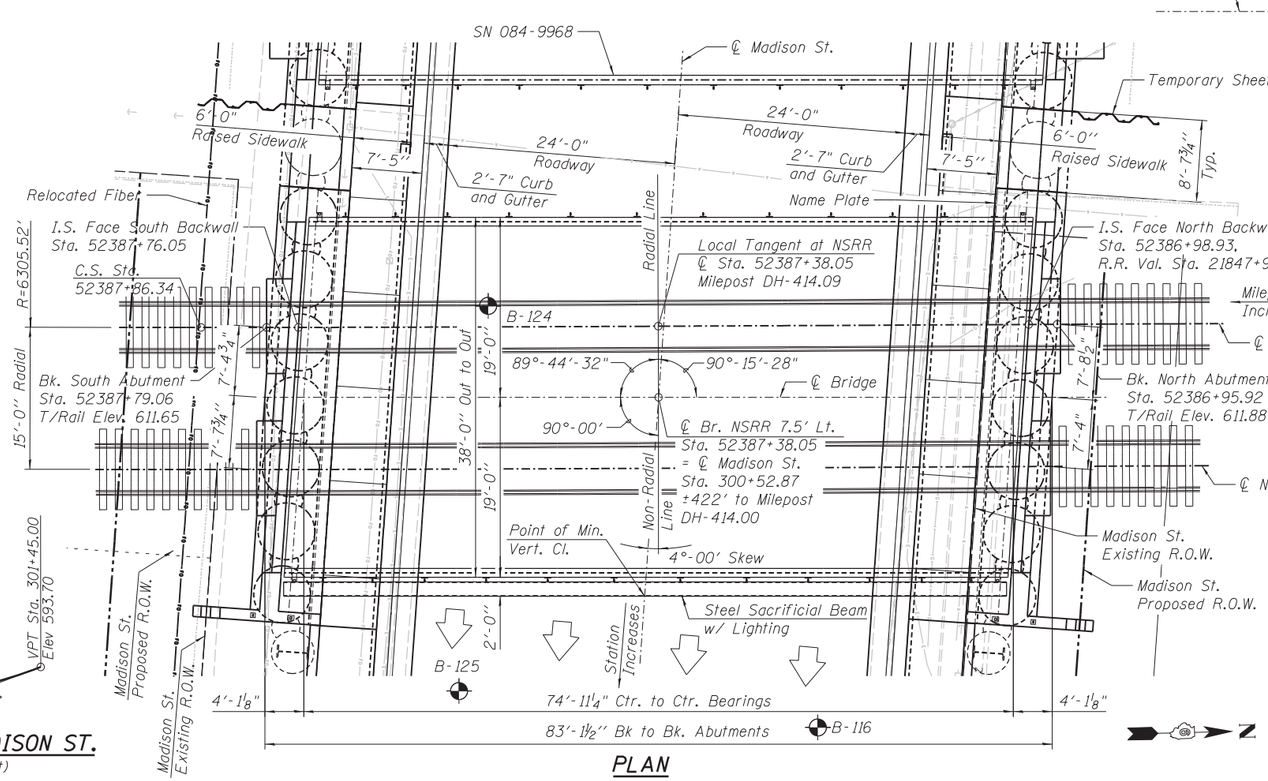
Soil Site Class = C

P.G.L. NORTH SIDEWALK
(Along Face of Tangent Pile Wall)

P.G.L. SOUTH SIDEWALK
(Along Face of Tangent Pile Wall)



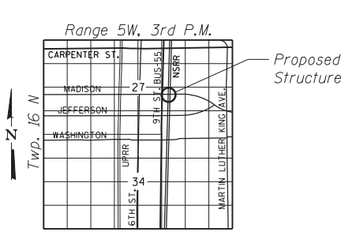
PROFILE GRADE - MADISON ST.
(Along ℄ Madison Street)



PLAN

CURVE DATA
(NSRR Main 1)

P.I. Sta. = 52389+87.75
Δ = 3°-39'-33" (Rt.)
D = 00°-54'-31"
T = 201.41'
L = 402.68'
R = 6305.52'
E = 3.22'
Long Chord = 402.62'
Mid. Ord. = 3.21'
S.E. = 1"
S.C. Sta. = 52387+86.34
C.S. Sta. = 52391+89.02



LOCATION SKETCH

APPROVED
For Structural Adequacy Only
Engineer of Bridges & Structures

JARED G. THOELE
081-007841
LICENSED STRUCTURAL ENGINEER
STATE OF ILLINOIS
SIGNATURE
12/20/2021
DATE
LIC. EXP. DATE: 11/30/2022

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 & ELEVATION
NSRR (MP DH-414.09) OVER MADISON ST.
F.A.P. 67 - SECTION 20-00491-00-BR
SANGAMON COUNTY
STATION 52387+38.05
STRUCTURE NO. 084-9969

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L0179B\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Madison\Sheet\084-9969_09L0179B_001.GPE.dgn

FINAL

HANSON

USER NAME = thoel01490	DESIGNED - CGP	REVISED -	
	CHECKED - MNM	REVISED -	
PLOT SCALE = 16.0000 '/ in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/20/2021	CHECKED - MNM	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
STRUCTURE NO. 084-9969
SHEET NO. 1 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	302
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			

GENERAL NOTES

1. Fasteners shall be ASTM F3125 Grade A325 Type 1, mechanically galvanized bolts. Bolts $\frac{7}{8}$in. ϕ, holes $\frac{15}{16}$ in. ϕ, unless otherwise noted.
2. Calculated weight of Structural Steel. ASTM A709 Gr. 50 = 497,030 lbs. ASTM A572 Gr. 50 = 74,200 lbs. ASTM A36 Gr. 36 = 90 lbs. ASTM A500, Gr. B 46 = 12,980 lbs.
3. All structural steel shall be ASTM A709 Grade 50 unless otherwise noted on the plans. The deck plate shall be ASTM A572 Grade 50.
4. All substructure concrete shall have a compressive strength of 4,000 psi at 14 days.
5. No field welding is permitted except as specified in the contract documents.
6. Reinforcement bars designated (E) shall be epoxy coated.
7. Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of $\frac{1}{8}$ inch (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.
8. 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.
9. 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.
10. The Organic Zinc Rich Primer / Epoxy / Urethane Paint System shall be used for painting of new structural steel except where otherwise noted. The entire system shall be shop applied, with the exception of the exterior surface and the bottom of the bottom flange of fascia girders, masked off connection surfaces, field installed fasteners and damaged areas shall be touched up in the field. The color of the final finish coat for all interior steel surfaces shall be gray, Munsell No. 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia girders and exterior cantilever support bracket shall be blue, Munsell No. 10B 3/6.
11. 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.
12. Elevation and location of re-located fiber shown on plans are approximate. The Contractor shall coordinate with the fiber company on depth and location of fiber prior to construction.

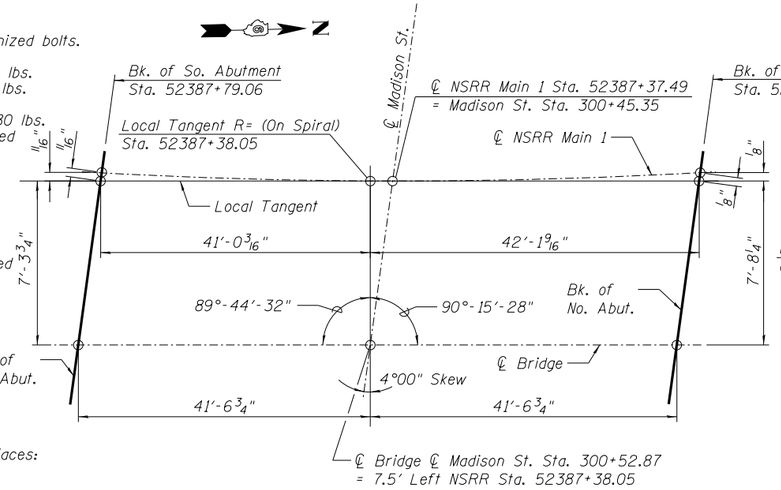
Drilled shaft cross-hole sonic log (CSL) testing:

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.

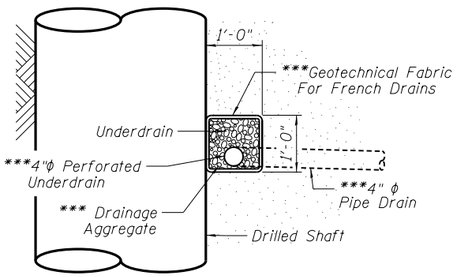
B) Furnish and install six standard 2 inch nominal diameter steel pipes (ASTM A53, Grade B) for use in CSL testing of each drilled shaft. Pipes shall be equally spaced around the interior of the reinforcing steel cage.

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.

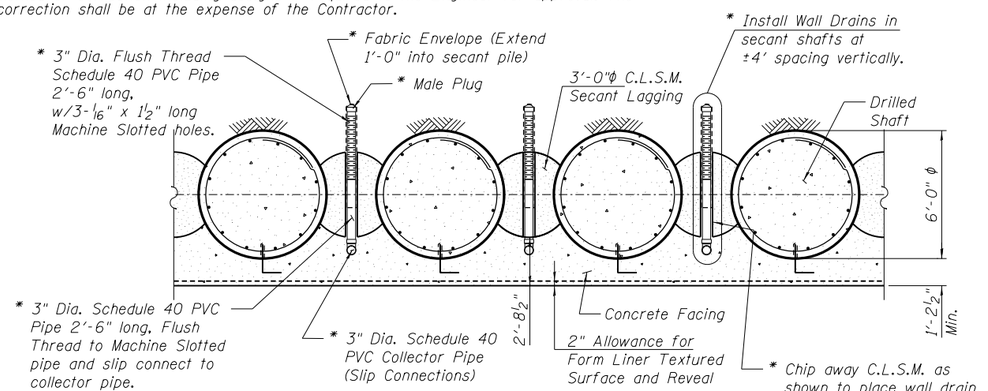


OFFSET SKETCH



PIPE UNDERDRAIN DETAIL

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



SECTION A-A

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

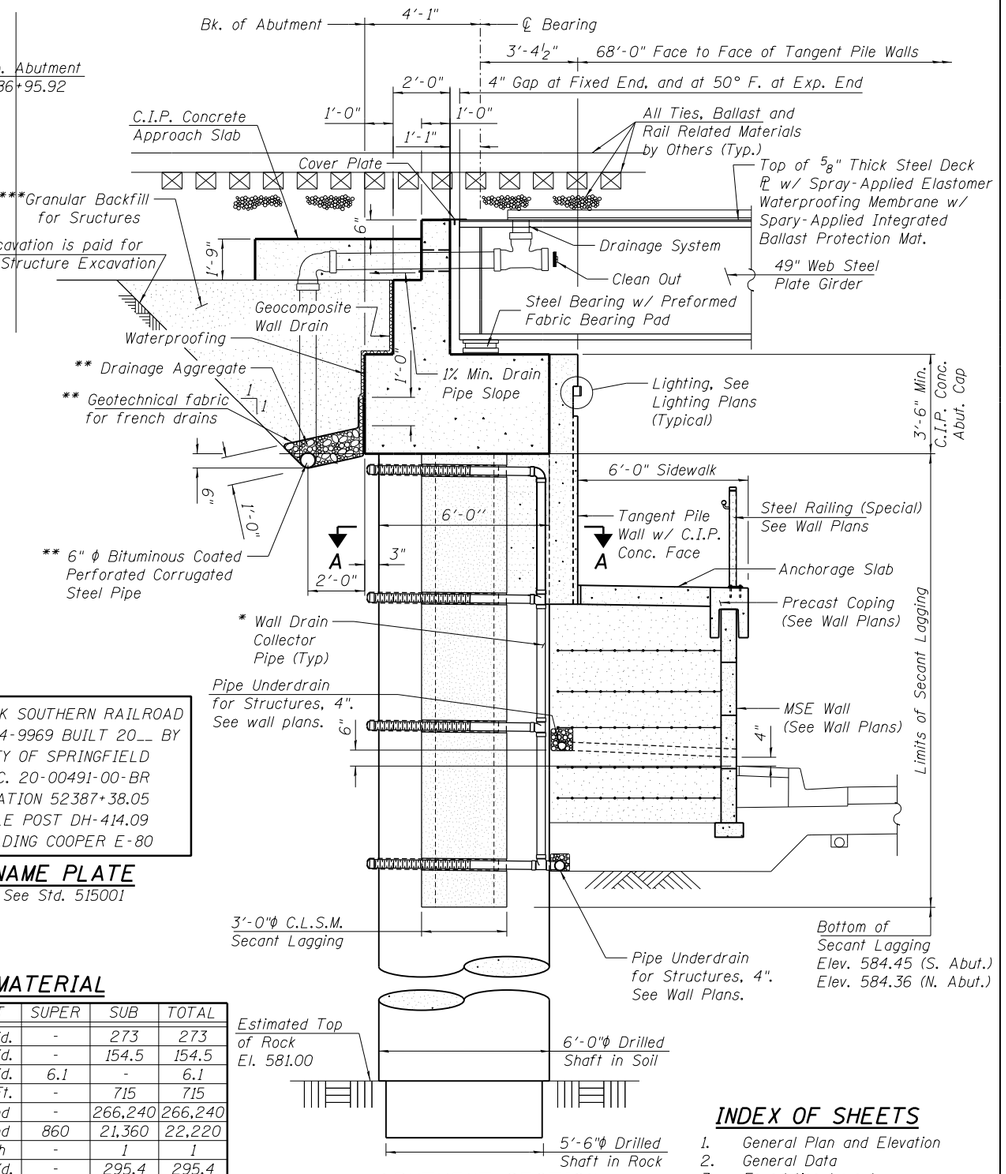
NOLFOLK SOUTHERN RAILROAD
S.N. 084-9969 BUILT 20__ BY
CITY OF SPRINGFIELD
SEC. 20-00491-00-BR
STATION 52387+38.05
MILE POST DH-414.09
LOADING COOPER E-80

NAME PLATE

See Std. 515001

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Structure Excavation	Cu. Yd.	-	273	273
Concrete Structures	Cu. Yd.	-	154.5	154.5
Concrete Superstructure	Cu. Yd.	6.1	-	6.1
Form Liner Textured Surface	Sq. Ft.	-	715	715
Reinforcement Bars	Pound	-	266,240	266,240
Reinforcement Bars, Epoxy Coated	Pound	860	21,360	22,220
Name Plates	Each	-	1	1
Drilled Shaft in Soil	Cu. Yd.	-	295.4	295.4
Drilled Shaft in Rock	Cu. Yd.	-	283.4	283.4
Secant Lagging	Cu. Ft.	-	1,421	1,421
Granular Backfill for Structures	Cu. Yd.	-	119	119
Concrete Sealer	Sq. Ft.	-	1,953	1,953
Geocomposite Wall Drain	Sq. Yd.	-	75	75
Drainage System, No. 2	Each	1	-	1
Concrete Surface Color Treatment	Sq. Ft.	-	146	146
Membrane Waterproofing (Special)	Sq. Ft.	2,927	-	2,927
Furnishing and Erecting Structural Steel, Bridge No. 2	L. Sum	1	-	1
Steel Railing (Special)	Foot	168	-	168
Pipe Underdrains for Structures, 6''	Foot	-	106	106
Pipe Underdrains for Structures, 6'' (Special)	Foot	-	47	47
Temporary Sheet Piling	Sq. Ft.	-	225	225



ABUTMENT SECTION

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

Notes:
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

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Madison\Sheet\084-9969.09L01798.002.General Data.dgn

FINAL

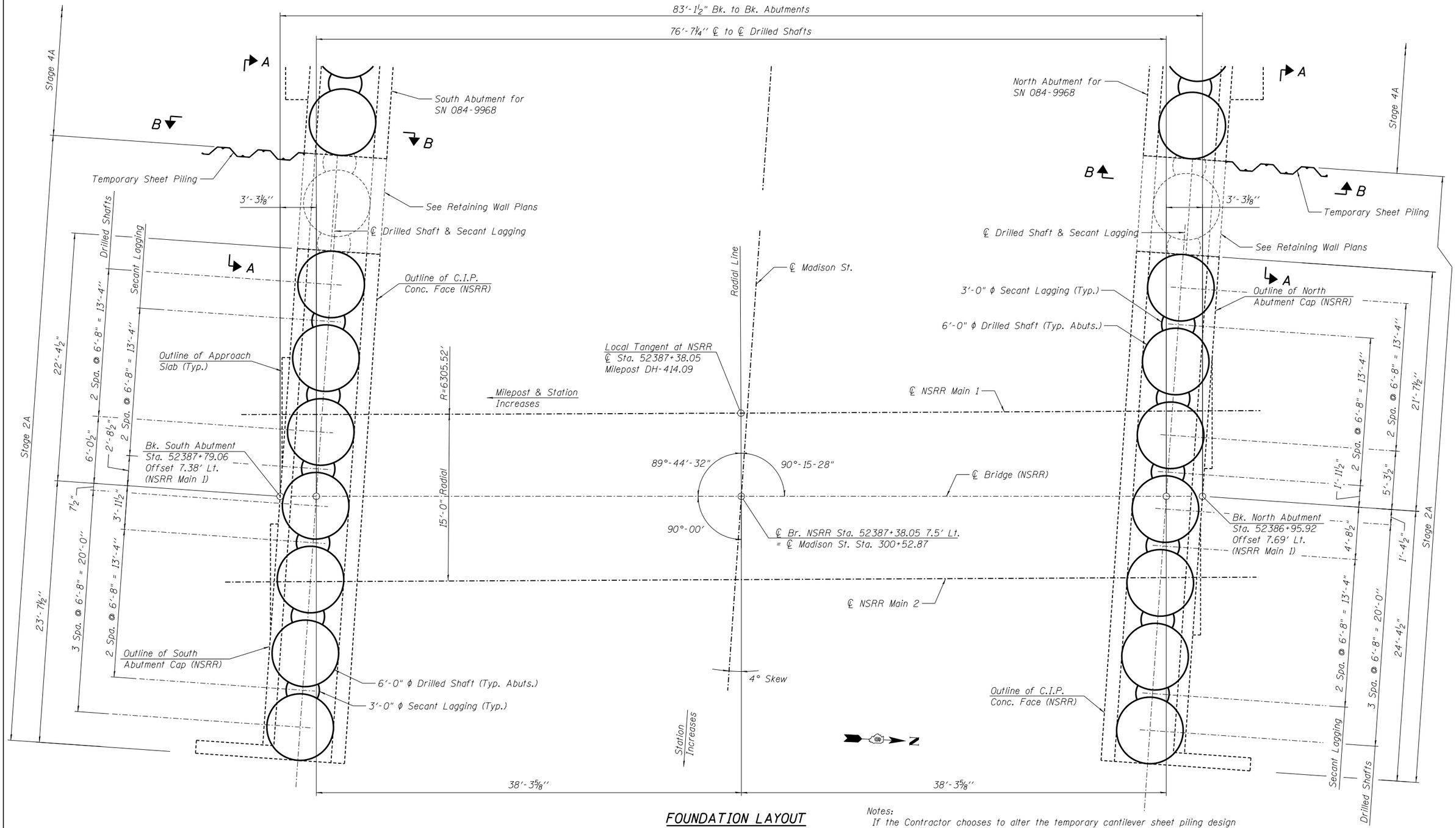
HANSON

USER NAME = thoel01490	DESIGNED - CGP	REVISED -	
	CHECKED - MNM	REVISED -	
PLOT SCALE = 0:2.0000 '' / in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/20/2021	CHECKED - MNM	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL DATA
STRUCTURE NO. 084-9969
SHEET NO. 2 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	303
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			



FOUNDATION LAYOUT

Notes:

If the Contractor chooses to alter the temporary cantilever sheet piling design requirements shown on the plans, a design submittal including plan details and calculations will be required for review and acceptance by the Engineer.

The Contractor shall connect the sheet piling to the retaining wall cap to ensure stability. The connection shall be reviewed and accepted by the Engineer and included in the cost of Temporary Sheet Piling.

For Sections A-A and B-B see Sheet 4 of 19.

For Construction Sequence see Sheet 4 of 19.

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Madison\Sheet\084-9969_09L01798_003_Fondation Layout.dgn

FINAL

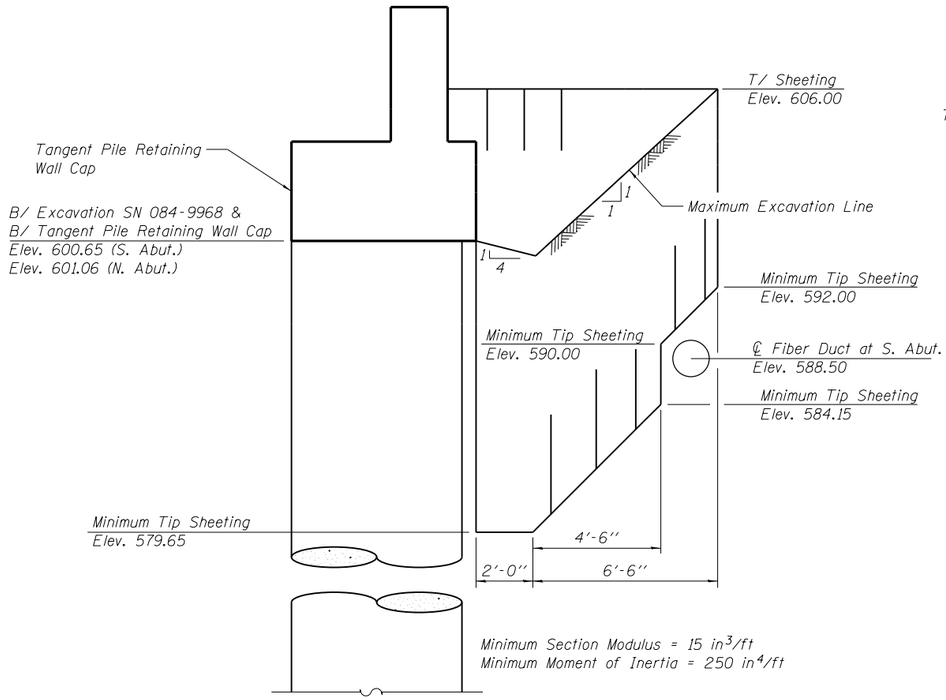
HANSON

USER NAME = thoel01498	DESIGNED - CGP	REVISED -	
	CHECKED - JGT	REVISED -	
PLOT SCALE = 0.2.0000 '' / in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

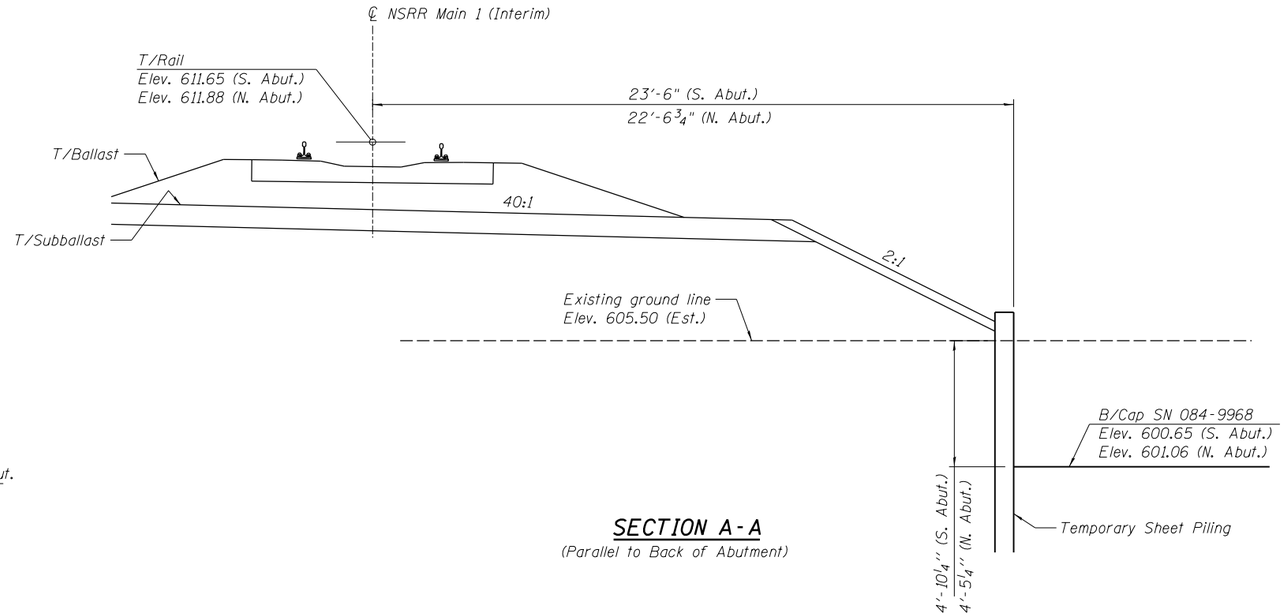
FOUNDATION LAYOUT
STRUCTURE NO. 084-9969
SHEET NO. 3 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67.67A	20-00491-00-BR	SANGAMON	509	304
		CONTRACT NO. 93762		
		ILLINOIS	FED. AID PROJECT	



SECTION B-B

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



SECTION A-A

(Parallel to Back of Abutment)

Note:
Construction sequence provided here includes only structure steps. See Staging Plans for complete underpass construction sequence.

CONSTRUCTION SEQUENCE

Stage 2A:

1. NSRR Structure:
   - Excavate down to the elevation at bottom of abutment caps.
   - Drill and place the soldier piles and drilled shafts for north and south abutments.

   Retaining Walls:
   - Excavate down to the top of soldier piles or drilled shafts.
   - Drill and place the soldier piles and drilled shafts for the retaining wall where clear of existing NSRR tracks.
2. Construct cast-in-place abutment caps for NSRR structure and adjacent retaining wall.
3. Excavate down to the bottom elevation at the cast-in-place concrete facing for the abutments and construct the facing.
4. Place granular backfill for structures behind abutments.
5. Place superstructure for the NSRR structure.
6. Install Temporary Sheet Piling behind North and South Abutments.

Stage 4A:

1. UPRR Structure:
   - Excavate down to the elevation at bottom of abutment caps.
   - Drill and place the secant lagging and drilled shafts for north and south abutments.

   Retaining Walls:
   - Excavate down to the top of the remaining soldier piles.
   - Drill and place the remaining soldier piles.
2. Construct cast-in-place abutment caps for UPRR structure.
3. Excavate down to the bottom elevation at the cast-in-place concrete facing for the abutments and construct the facing.
4. Place granular backfill for structures behind abutments.
5. Place superstructure for the UPRR structure.

FINAL

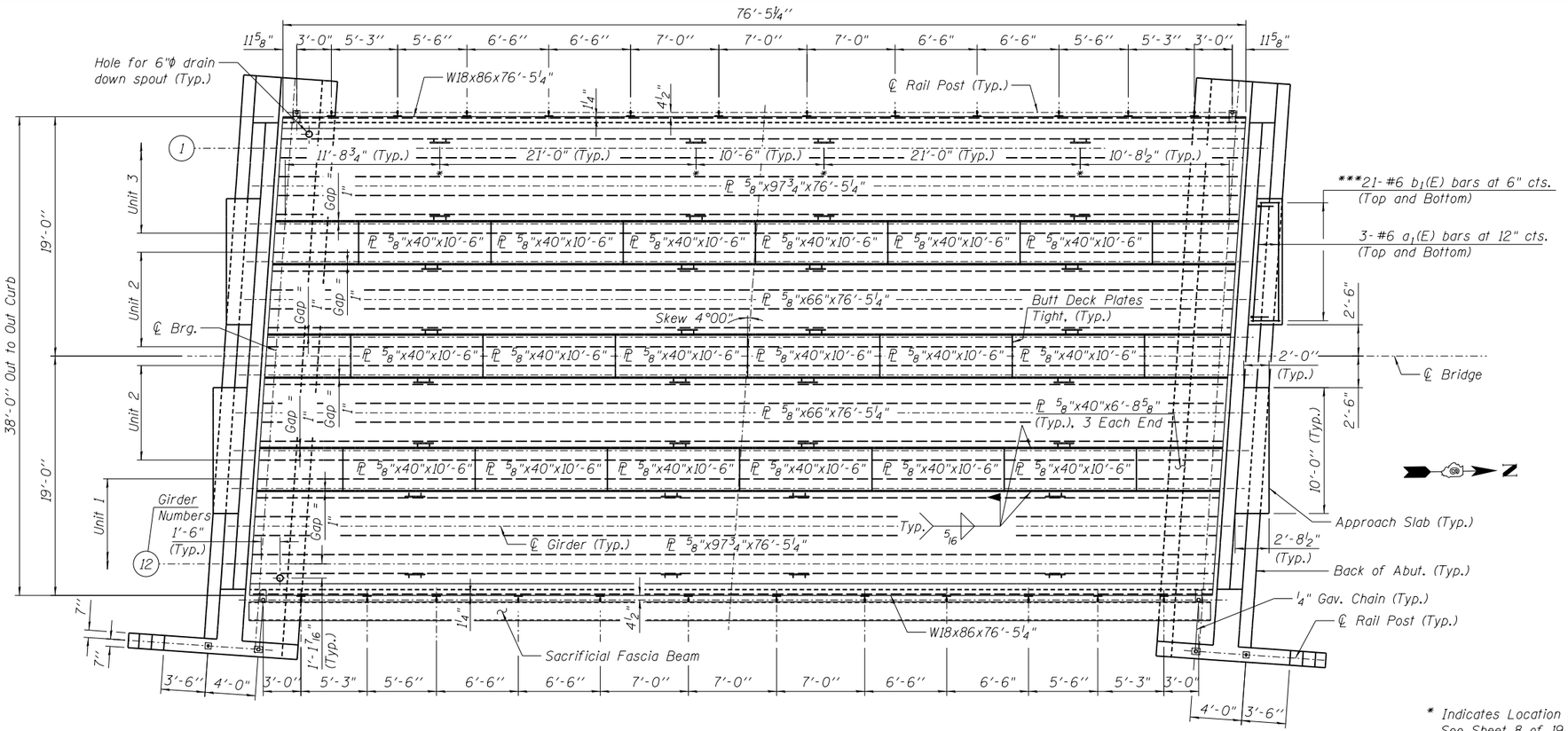
pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L0179B\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Madison\Sheet\084-9969_09L0179B_003b_Sheet Piling.dgn

USER NAME = thoel01490	DESIGNED - CGP	REVISED -	
	CHECKED - JGT	REVISED -	
PLOT SCALE = 0:2.0000 ' / in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY SHEET PILING
STRUCTURE NO. 084-9969
SHEET NO. 4 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	305
		CONTRACT NO. 93762		
	ILLINOIS	FED. AID PROJECT		



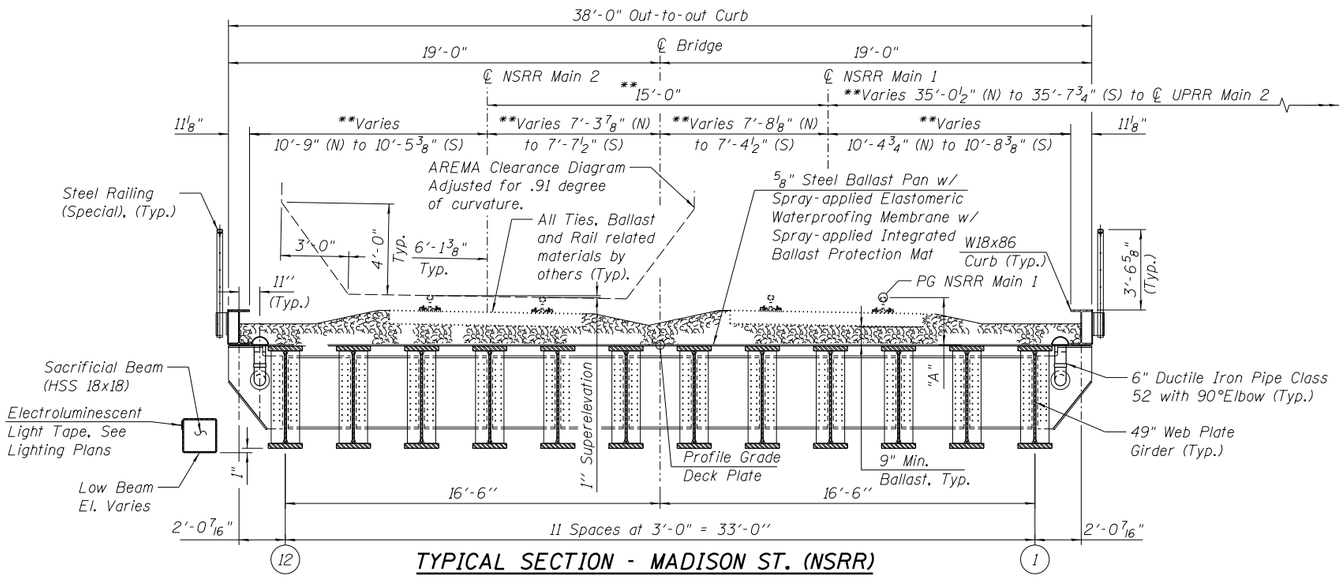
APPROACH SLAB SECTION

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

*** Order b_1(E) bars full length. Cut to fit skew and use remainder of bars in opposite face.

PLAN - DECK PLATE WITH CURBS

* Indicates Location of Lifting Lugs. See Sheet 8 of 19. Dimensions along ℄ Girder 3 for Unit 3. ℄ Girders 6 and 9 for Unit 2, and ℄ Girder 12 for Unit 1.



TYPICAL SECTION - MADISON ST. (NSRR)

(Looking South)

** Dimensions are Rt. ℄'s to ℄ Track

"A" = Varies 2'-2½" (N), 2'-1⅝" (S)

SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a_1(E)	24	#6	9'-8"	——
b_1(E)	84	#6	4'-1"	——
Concrete Superstructure			Cu. Yds.	6.1
Reinforcement Bars, Epoxy Coated			Pound	860

Notes:

For Steel Railing Details See Sheets 13 and 14 of 19.

For Membrane Waterproofing Details See Sheet 12 of 19.

For ¼" Galv. Chain Details, See Sheet 13 of 19. Cost of Chain and hardware included in the cost of Steel Railing (Special).

Drain pipe on south end only near low end of bridge deck.

With the ductile iron pipe fitted to the bottom of the deck drain bottom pan downspout, drill 4 holes through the ductile iron pipe and downspout. Holes shall be aligned with the 4 quadrants of the pipe. Attach ductile iron pipe to downspout with 4 stainless steel carriage bolts. Rounded heads of carriage bolts shall be oriented towards the center of the pipe.

Cost of the drain pipe, bottom pan, downspout, brackets and other hardware shall be included in the cost of Drainage System.

FINAL

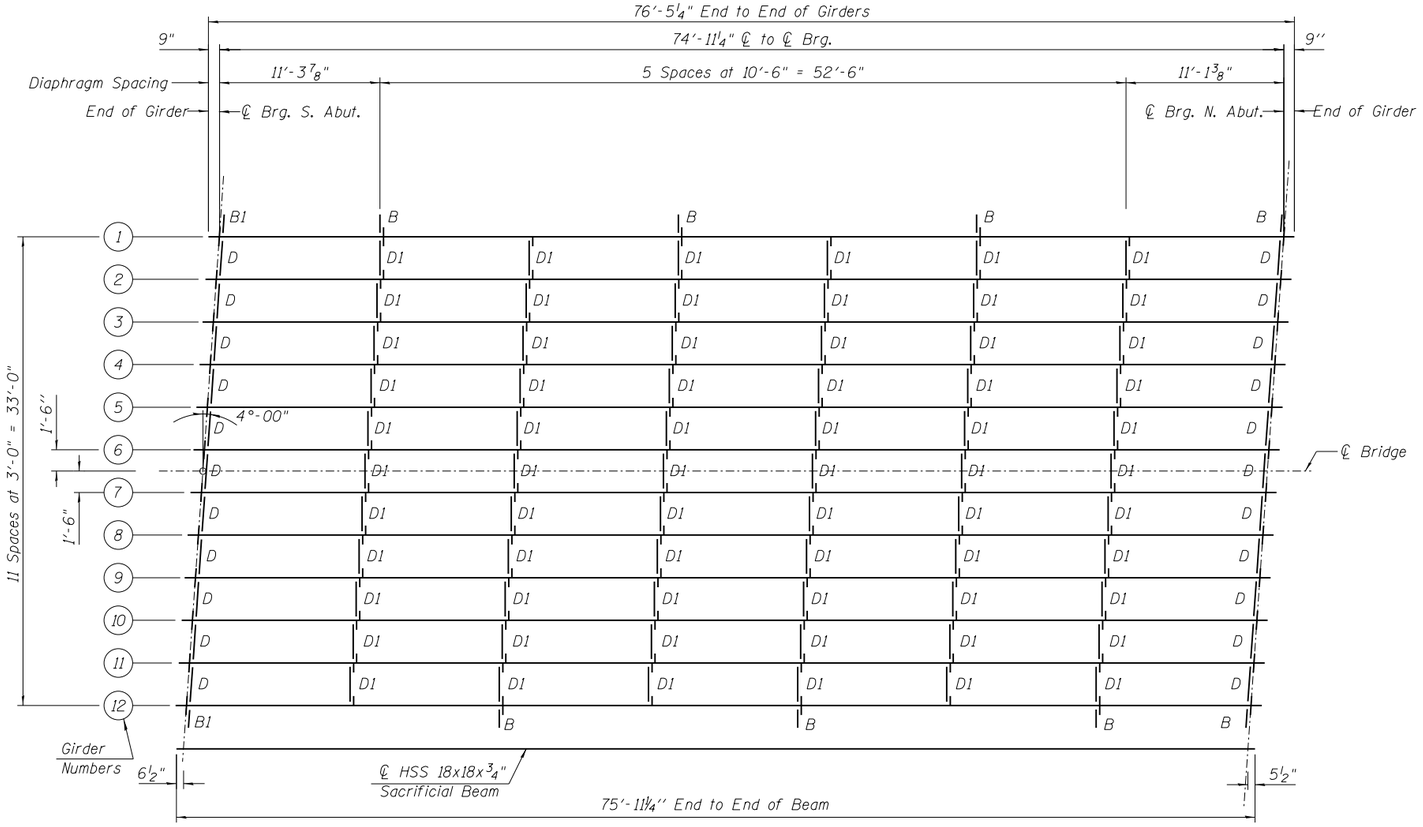
pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Madison\Sheet\084-9969_09L01798_004_Superstructure.dgn

USER NAME = thoel01490	DESIGNED - JGT	REVISED -	
	CHECKED - CGP	REVISED -	
PLOT SCALE = 0:2.0000 '/ in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -	

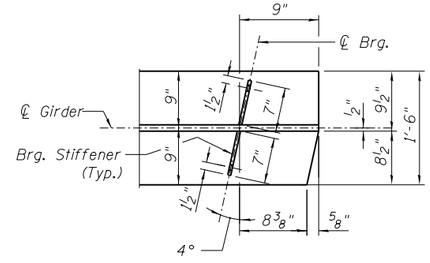
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE
STRUCTURE NO. 084-9969
SHEET NO. 5 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	306
		CONTRACT NO. 93762		
		ILLINOIS	FED. AID PROJECT	



FRAMING PLAN



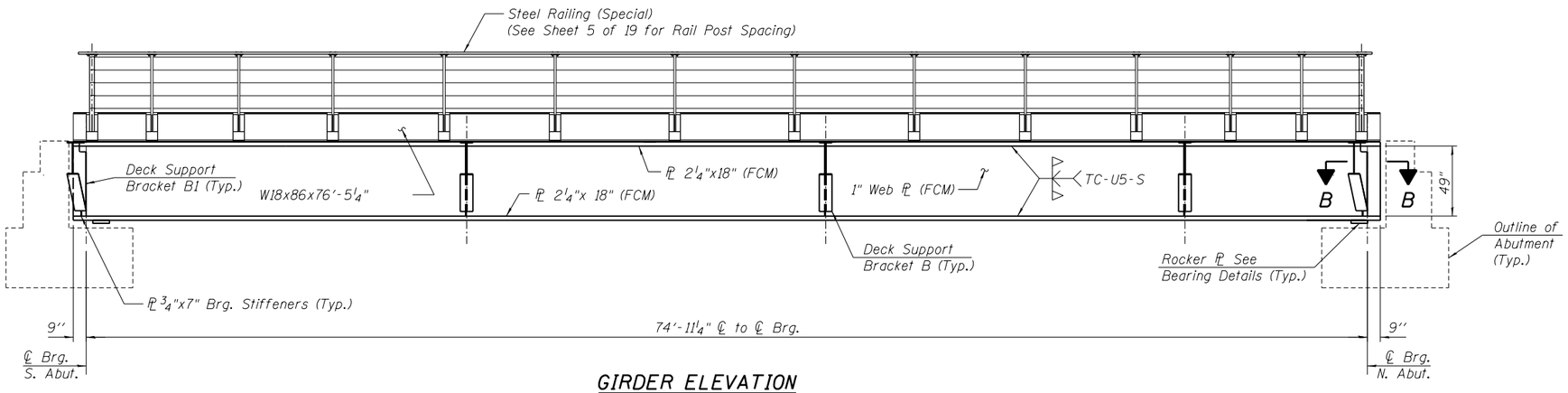
SECTION B-B

(Clip Top & Bottom Flange)

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 "FCM" shall conform to the Impact Testing Requirement, Zone 2.



GIRDER ELEVATION

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Madison\Sheet\084-9969_09L01798_005_Steel Details.dgn

FINAL

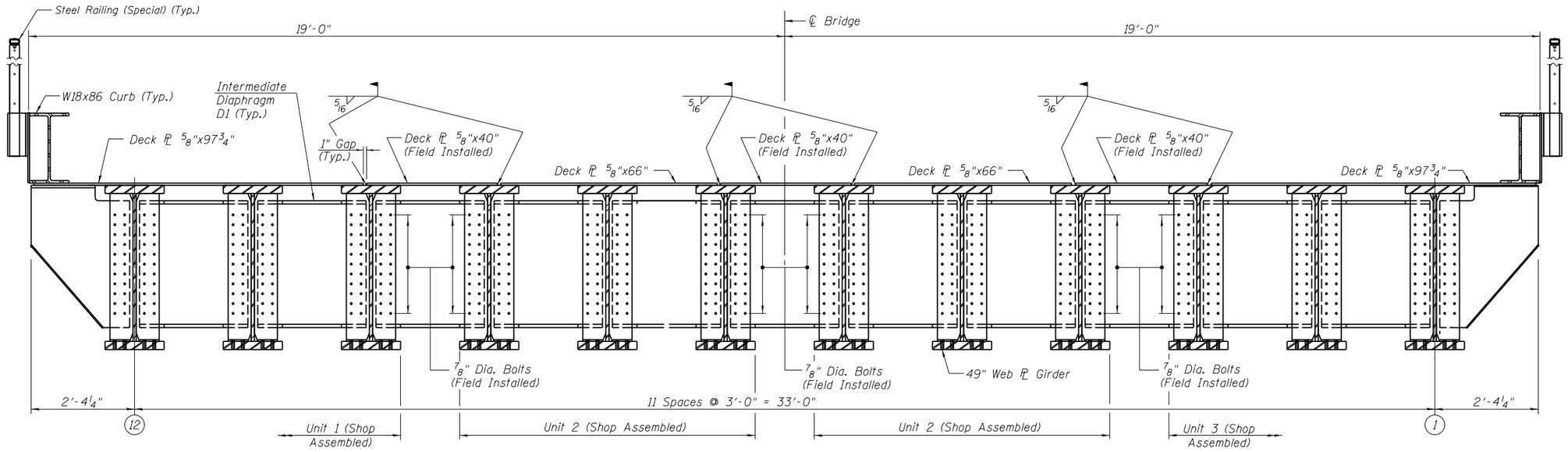
HANSON

USER NAME = thoe101490	DESIGNED - JGT	REVISED -
	CHECKED - CGP	REVISED -
PLOT SCALE = 0:2.0000 '' / in.	DRAWN - RSJ	REVISED -
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

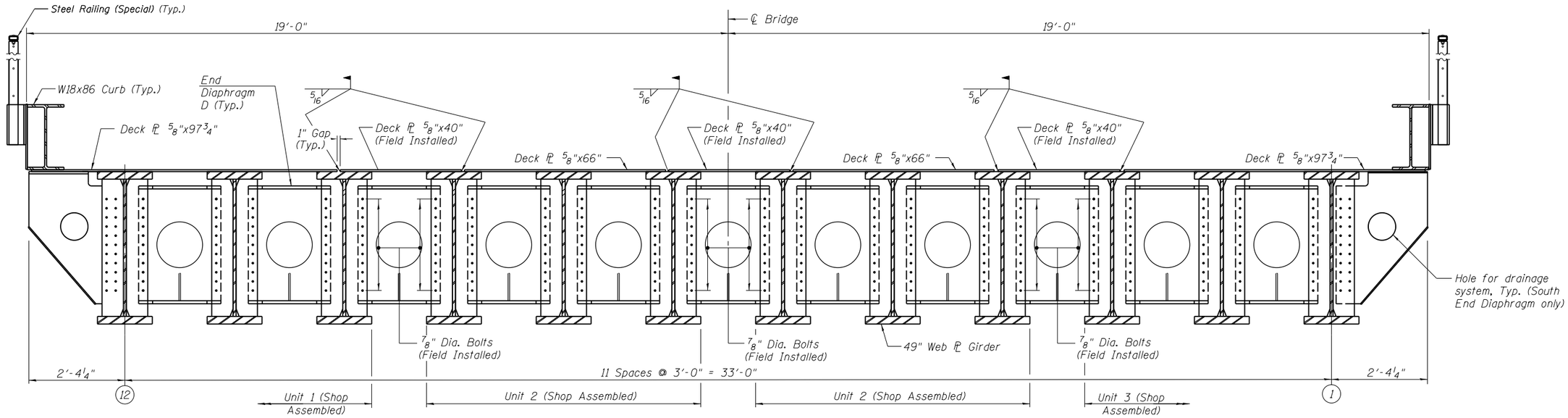
STRUCTURAL STEEL
STRUCTURE NO. 084-9969
SHEET NO. 6 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67.67A	20-00491-00-BR	SANGAMON	509	307
		CONTRACT NO. 93762		
		ILLINOIS FED. AID PROJECT		



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:\\hansonmc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Madison\Sheet\084-9969_09L01798_006_Struct Steel Det_01.dgn

FINAL

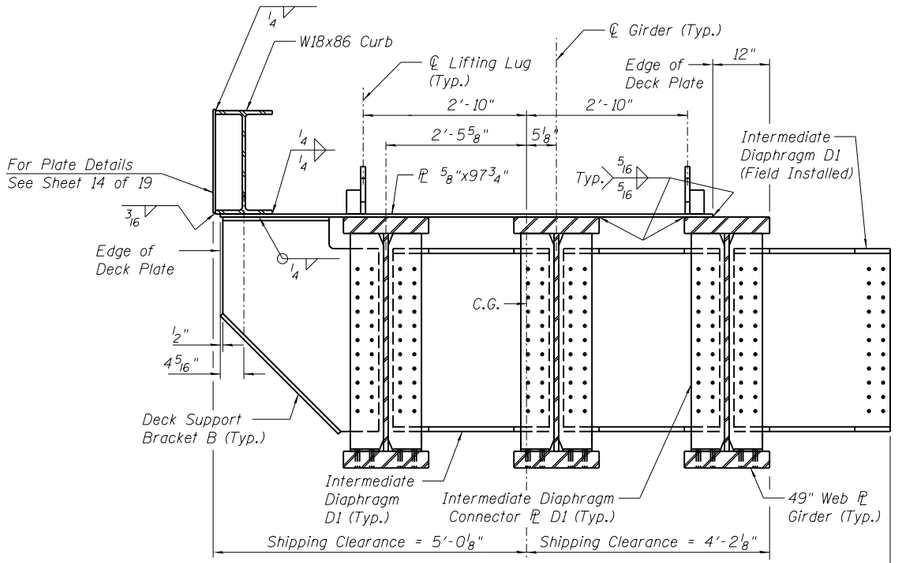
HANSON

USER NAME = thoel01490	DESIGNED - JGT	REVISED -	
	CHECKED - CGP	REVISED -	
PLOT SCALE = 81.999996 ':' / in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

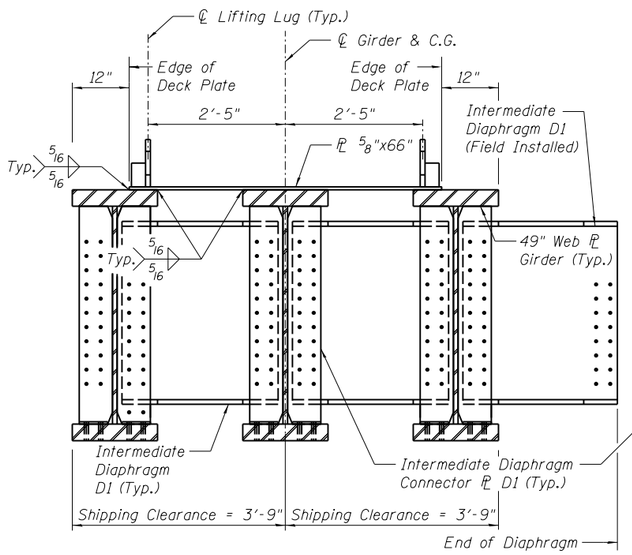
STRUCTURAL STEEL DETAILS (1 OF 3)
STRUCTURE NO. 084-9969
SHEET NO. 7 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	308
		CONTRACT NO. 93762		
	ILLINOIS	FED. AID PROJECT		



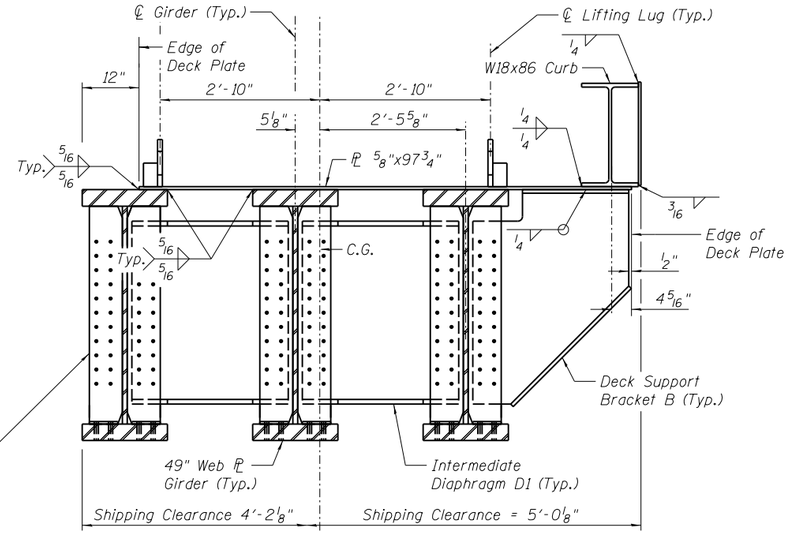
AT INTERIOR DIAPHRAGM UNIT 1

(Looking South)



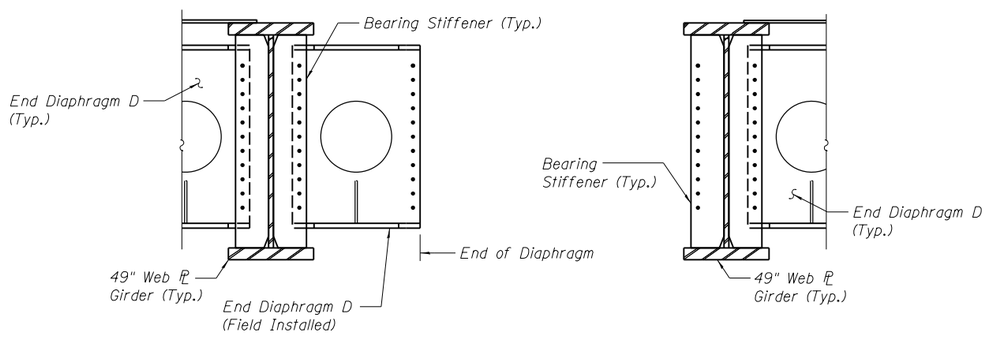
AT INTERIOR DIAPHRAGM UNIT 2

(Looking South)



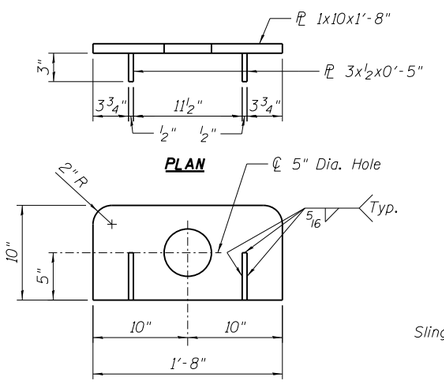
AT INTERIOR DIAPHRAGM UNIT 3

(Looking South)

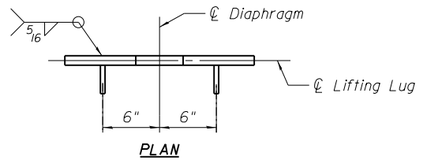


AT END DIAPHRAGM

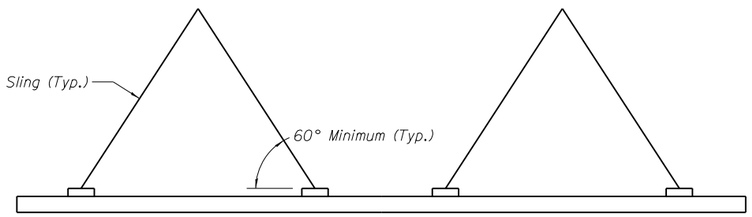
(Partial Section shown, End Diaphragm Sections are similar to Interior Diaphragm Sections except as noted above)



LIFTING LUG



LIFTING LUG DETAIL



TYPICAL ELEVATION

LIFTING DIAGRAM

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.
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\09L0179B\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Madison\Sheet\084-9969_09L0179B_007_Struct Steel Det_02.dgn

FINAL

HANSON

USER NAME = thoel01490	DESIGNED - JGT	REVISED -
	CHECKED - CGP	REVISED -
PLOT SCALE = 0:1.999996 '' / in.	DRAWN - RSJ	REVISED -
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

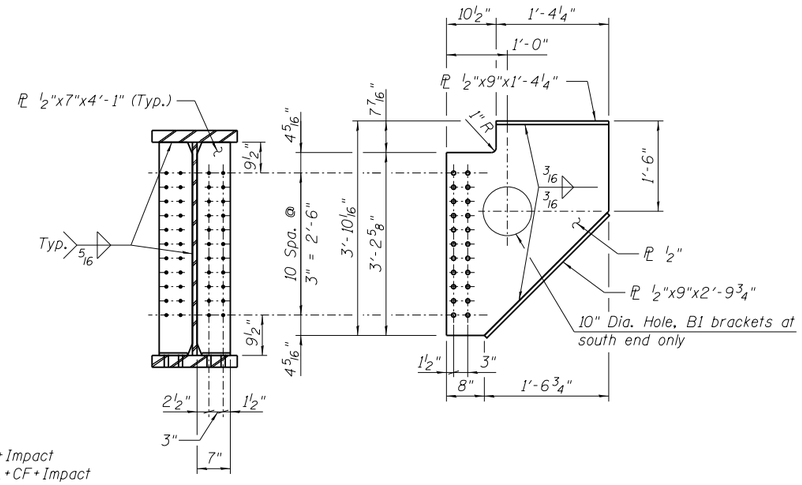
STRUCTURAL STEEL DETAILS (2 OF 3)
STRUCTURE NO. 084-9969
SHEET NO. 8 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	309
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			

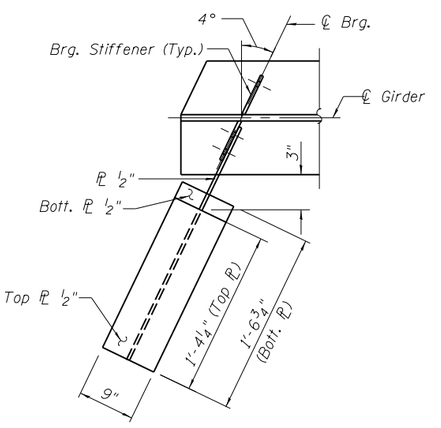
INTERIOR BEAM MOMENT & SHEAR TABLE

Description	Max Moment	Max Shear
Dead Load	947.6 ft.-k	50.6 k
Live Load	1,930.7 ft.-k	117.5 k
Centrifugal Force	34.4 ft.-k	1.8 k
Impact	645.7 ft.-k	39.3 k
Total	3,558.4 ft.-k	209.2 k
Section	49" Web PL Girder	
Steel	ASTM A709, Gr. 50, CVN Zone 2	
Net I	56,673 in^4	
Net S (Bott.)	1,978 in^3	
FST (Bott.)	21.6 ksi	
Gross I	63,026 in^4	
Gross S (Top)	2,356 in^3	
FSC (Top)	18.1 ksi	
(LL+I) Deflection	1.35 in	
Allowable (LL+I) Deflection	1.41 in	

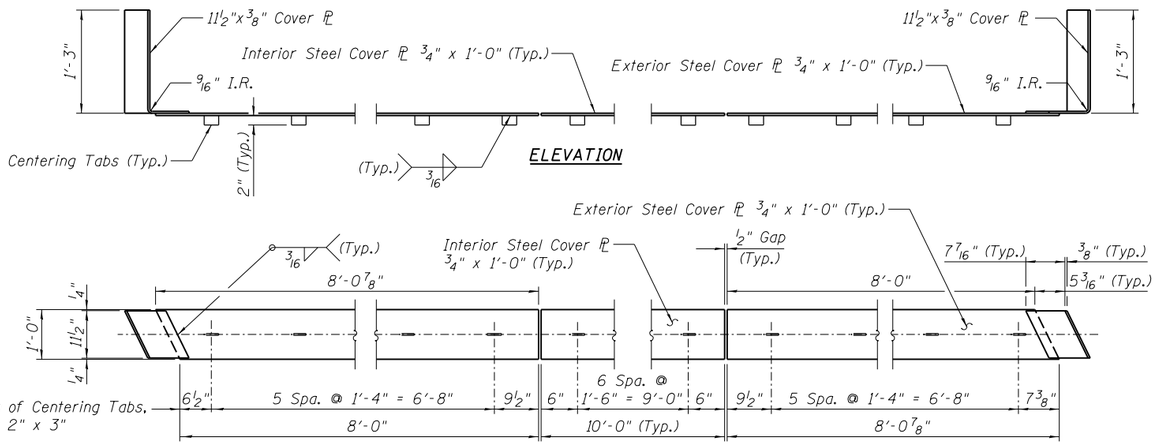
I - Non-composite moment of inertia of the steel section
S - Non-composite section modulus of the steel section
FST - Max unfactored tension stress in the section due to DL+LL+CF+Impact
FSC - Max unfactored compression stress in the section due to DL+LL+CF+Impact



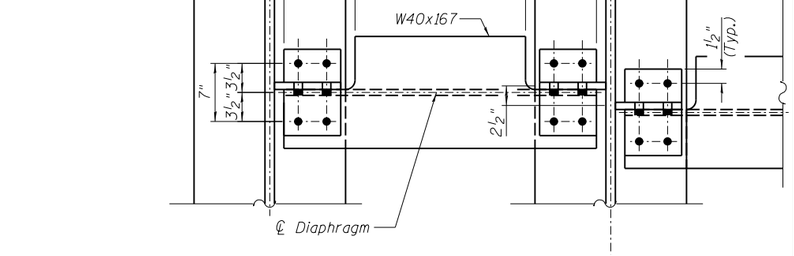
DECK SUPPORT BRACKET B & B1



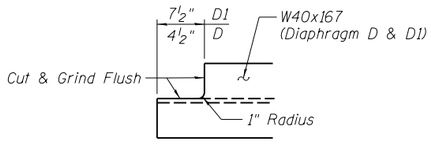
PLAN VIEW
DECK SUPPORT BRACKET B
AT END DIAPHRAGM



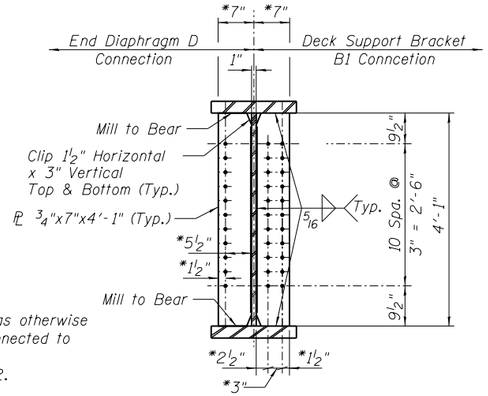
PLAN
COVER PLATES



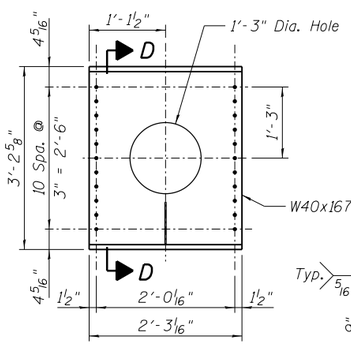
PLAN AT INTERMEDIATE DIAPHRAGM
(Top Flange not shown for clarity.)



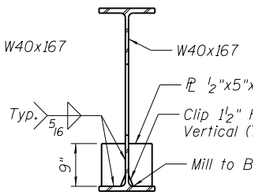
COPE DETAIL



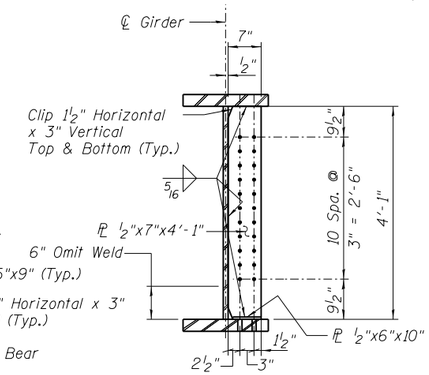
BEARING STIFFENER
*Dimesions along skew



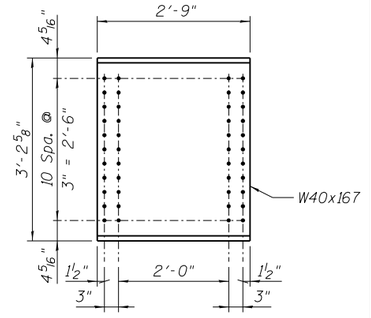
END DIAPHRAGM D



SECTION D-D



INTERMEDIATE DIAPHRAGM
CONNECTOR PLATE D1



INTERMEDIATE DIAPHRAGM D1

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.
"CVN" denotes Charpy-V-Notch impact energy requirements, Zone 2.
Bolts shall be ⅞" 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\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Madison\Sheet\084-9969_09L01798_008_Struct Steel Det_03.dgn

FINAL

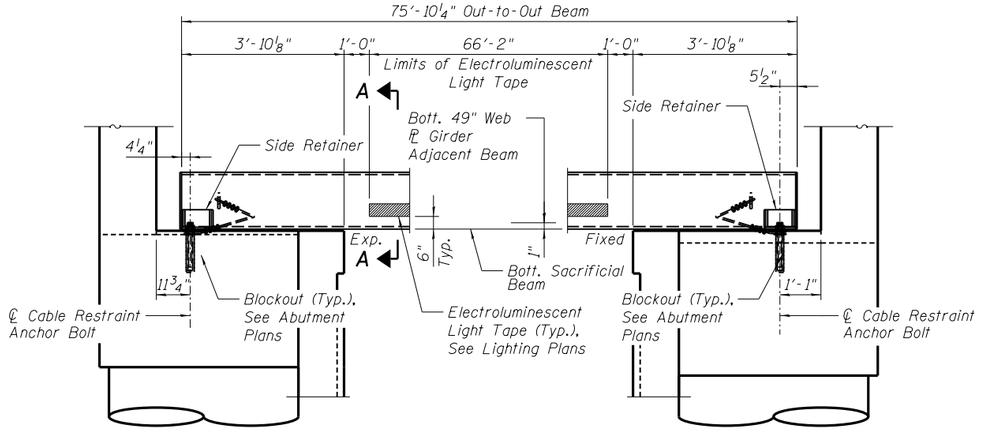
HANSON

USER NAME = thoel01490	DESIGNED - JGT	REVISED -	
	CHECKED - CGP	REVISED -	
PLOT SCALE = 81.999996 '' / in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL DETAILS (3 OF 3)
STRUCTURE NO. 084-9969
SHEET NO. 9 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67.67A	20-00491-00-BR	SANGAMON	509	310
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			

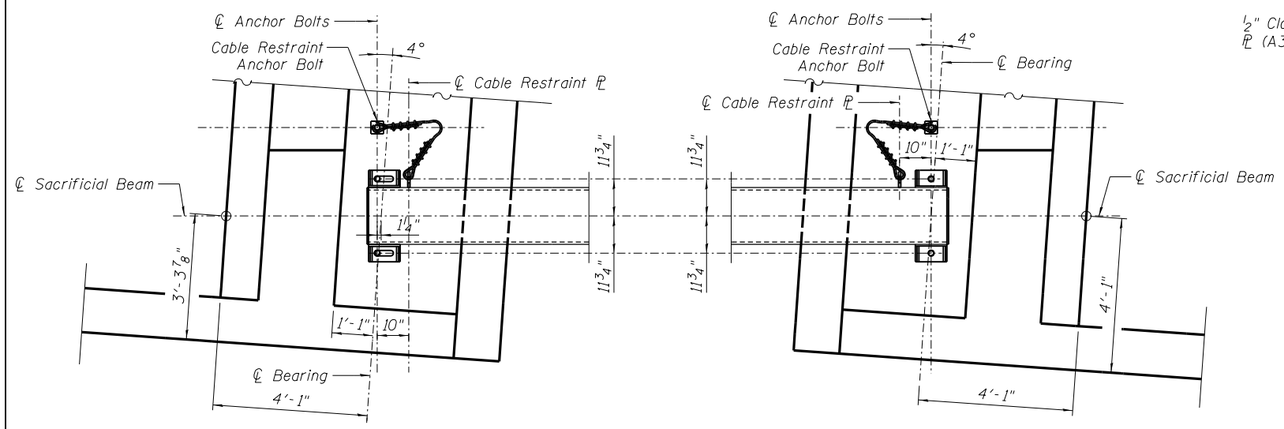


ELEVATION - SOUTH ABUTMENT

Cheek Wall Not Shown for Clarity.
(Looking West)

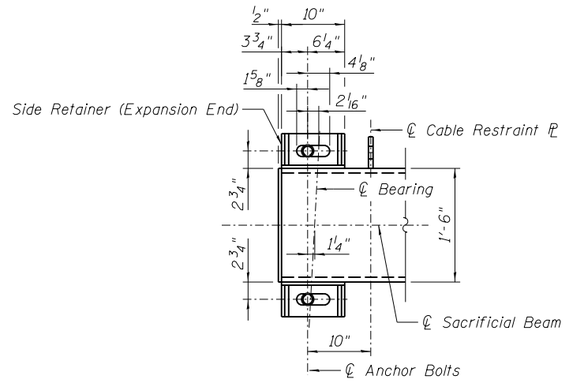
ELEVATION - NORTH ABUTMENT

Cheek Wall Not Shown for Clarity.
(Looking West)

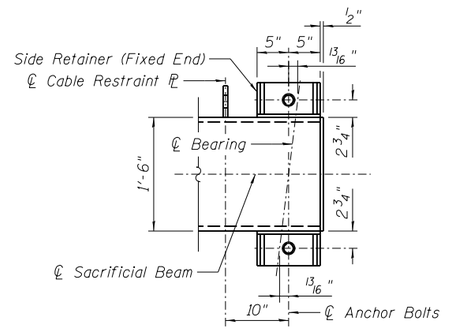


PLAN - SOUTH ABUTMENT

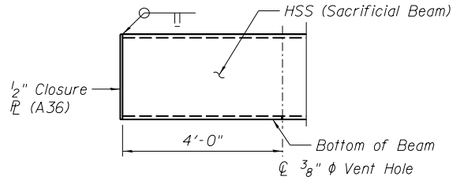
PLAN - NORTH ABUTMENT



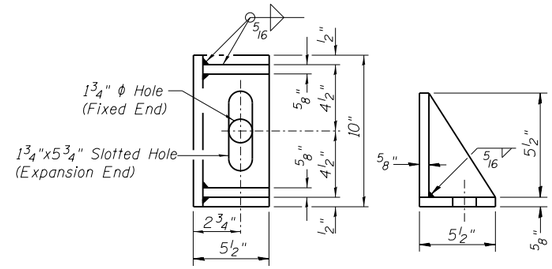
DETAIL - SOUTH ABUTMENT



DETAIL - NORTH ABUTMENT



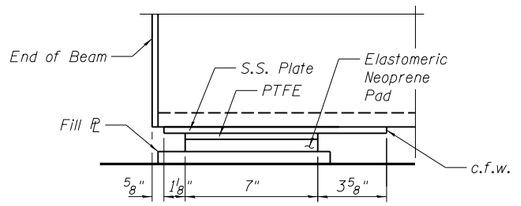
CLOSURE PLATE DETAIL



SIDE RETAINER

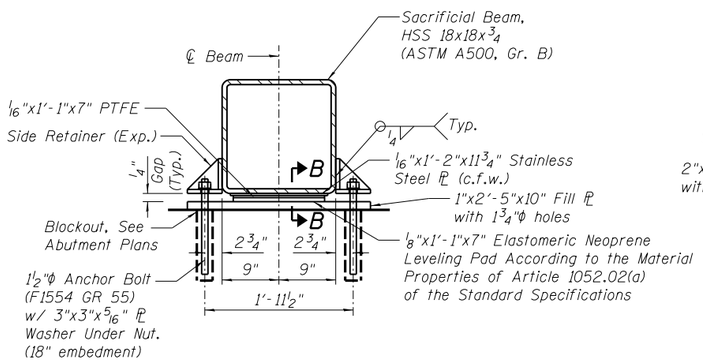
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

CABLE RESTRAINT ANCHOR BOLT DETAIL

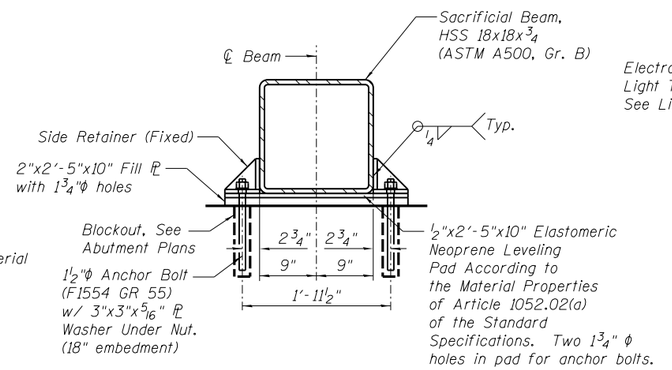


SECTION B-B

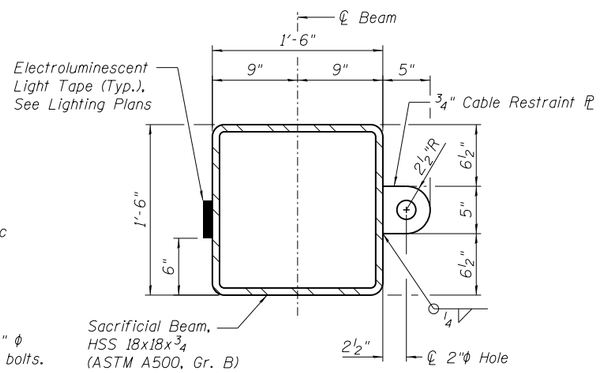
(Expansion End)



TYPICAL SECTION AT 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 manufactures recommendations.

The PTFE shall be bonded directly to the leveling pad according to the manufacturers recommendations.

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Madison\Sheet\084-9969_09L01798_009_Sacrificial Beam Det

FINAL

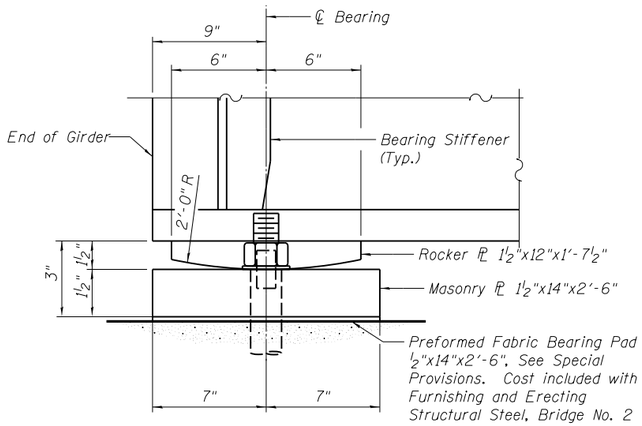
HANSON

USER NAME = thoel01490	DESIGNED - JGT	REVISED -	
	CHECKED - CGP	REVISED -	
PLOT SCALE = 0.2 '' / in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -	

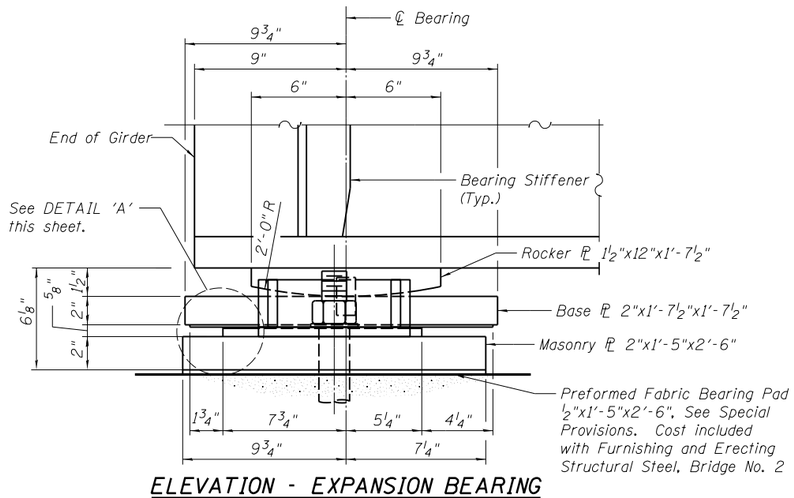
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SACRIFICIAL BEAM DETAILS
STRUCTURE NO. 084-9969
SHEET NO. 10 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67.67A	20-00491-00-BR	SANGAMON	509	311
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			



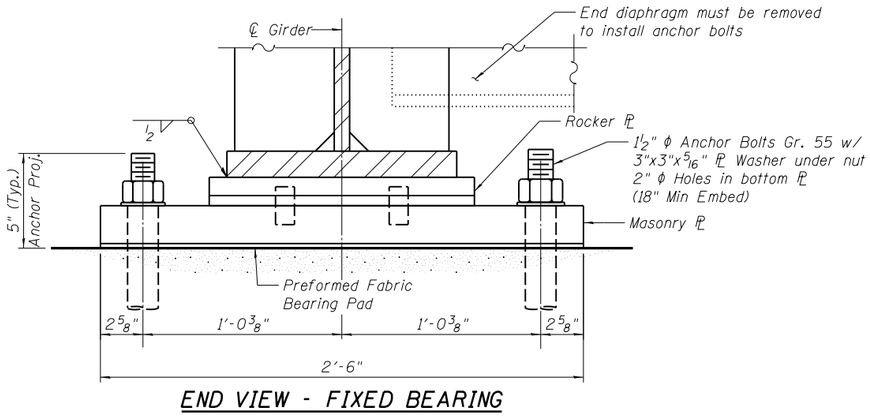
ELEVATION - FIXED BEARING



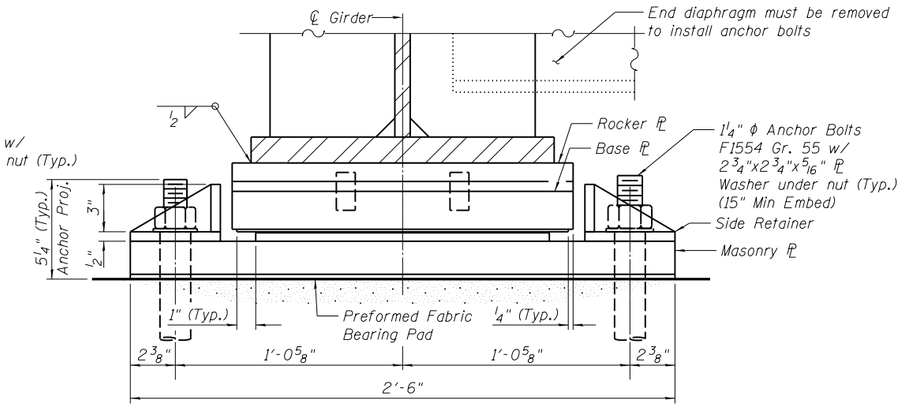
ELEVATION - EXPANSION BEARING

Notes:

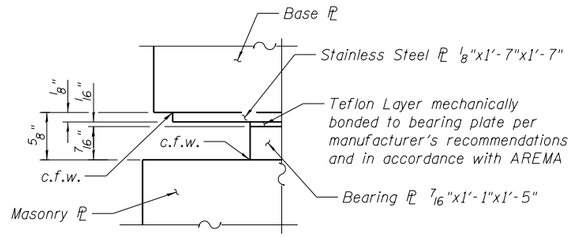
1. *The structural steel plates of the Bearing Assembly shall conform to the requirements of ASTM A709, Grade 50.*
2. *Teflon Layer shall be composed of virgin unfilled TFE resin, unfilled TFE sheets, or unfilled TFE fabric. Filler material, such as milled glass fibers, will not be allowed. Teflon layer 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. 2".*
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 ⅛" adjusting shims shall be provided for each bearing assembly in addition to all other plates or shims and placed as shown on bearing details.*



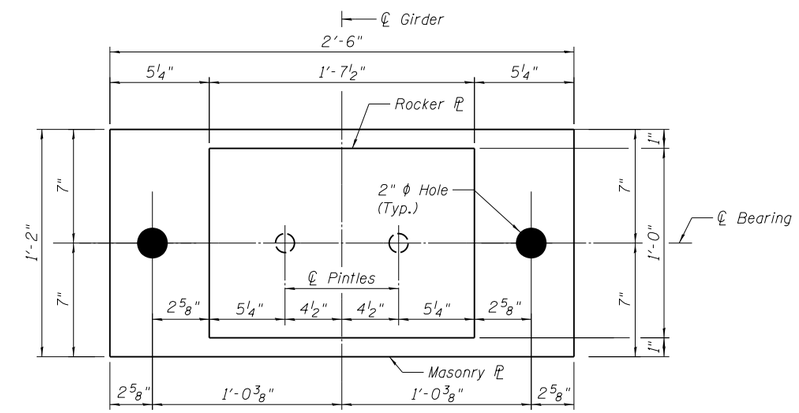
END VIEW - FIXED BEARING



END VIEW - EXPANSION BEARING

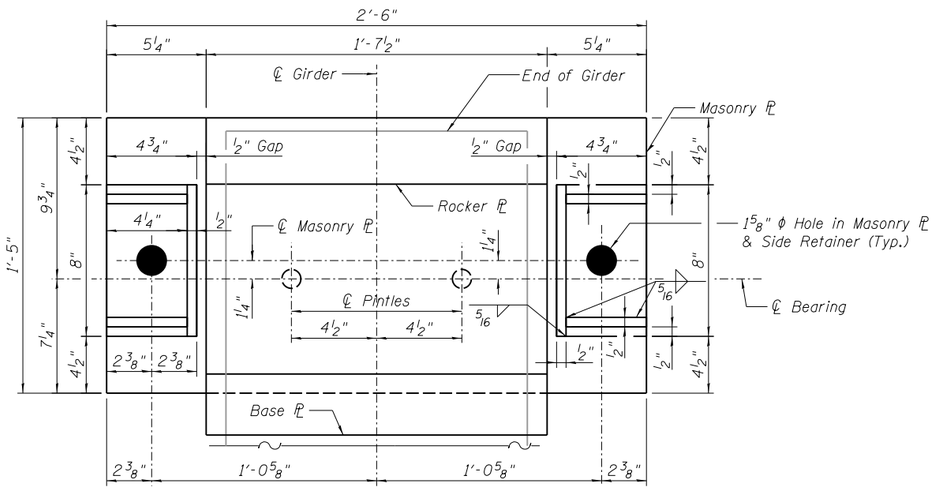


DETAIL 'A'



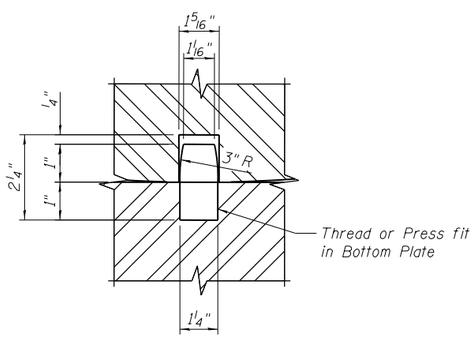
PLAN VIEW - FIXED BEARING

(N. Abutment Bearings - 12 required)



PLAN VIEW - EXPANSION BEARING

(S. Abutment Bearings - 12 required)



PINTLE DETAIL

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Madison\Sheet\084-9969_09L01798_010_Brg Det.dgn

FINAL

HANSON

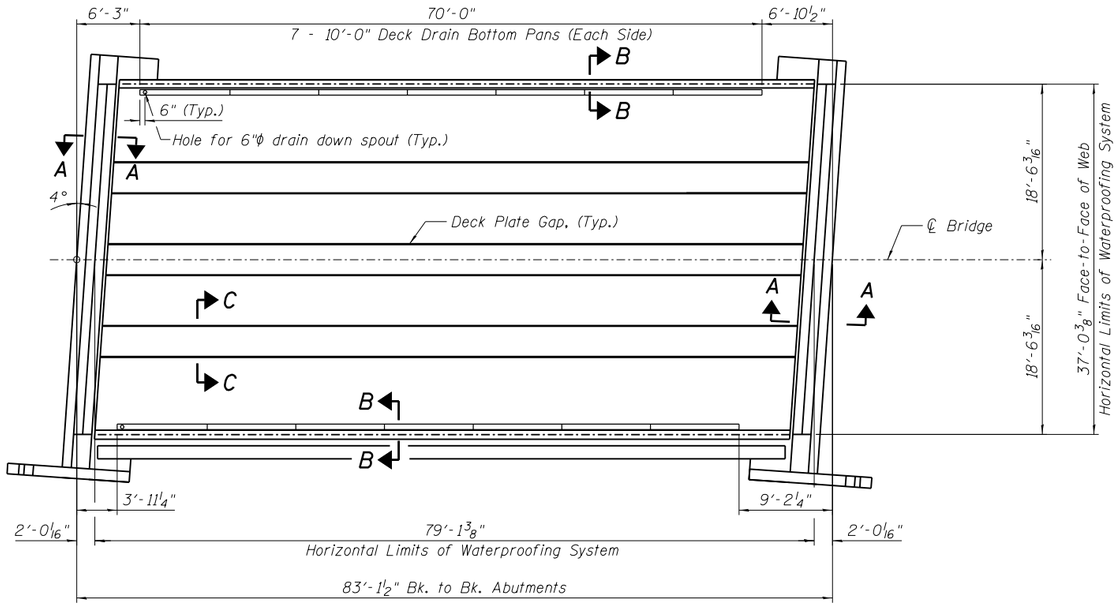
USER NAME = thoel01490	DESIGNED - JGT	REVISED -	
	CHECKED - CGP	REVISED -	
PLOT SCALE = 81.999996 '' / in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

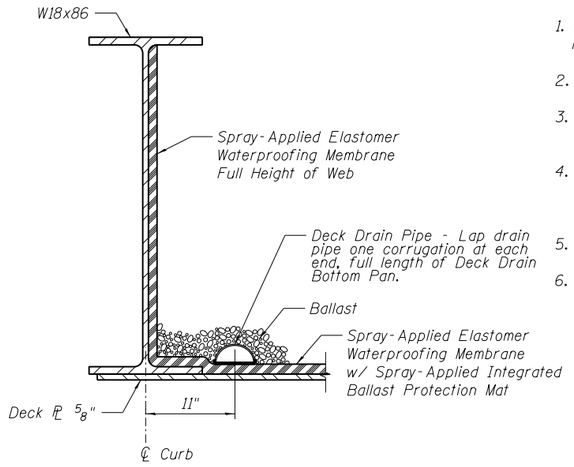
BEARING DETAILS
STRUCTURE NO. 084-9969

SHEET NO. 11 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67.67A	20-00491-00-BR	SANGAMON	509	312
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			



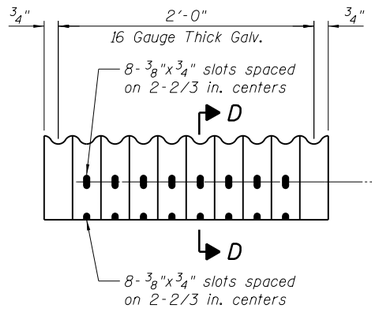
WATERPROOFING LIMITS PLAN

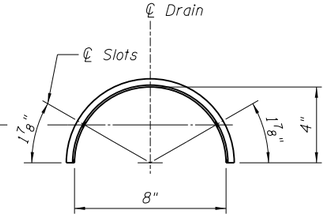


SECTION B-B

Notes:

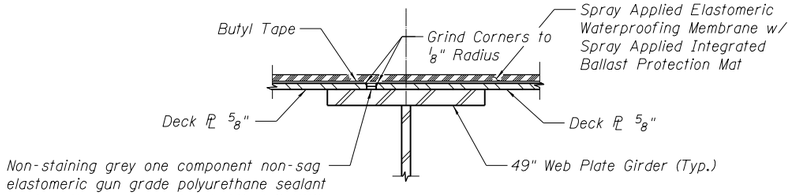
1. Prepare surfaces and apply in accordance with Manufacturer's recommendations.
2. Structural steel cover plates shall be galvanized.
3. Cost of adhesive and bond breaker tape shall be included in the cost of "Membrane Waterproofing (Special)".
4. The cover plate is included in the weight of the Structural Steel and will be paid for as "Furnishing and Erecting Structural Steel, Bridge No. 2".
5. For cover plate details see Sheet 9 of 19.
6. Structural steel surfaces coated with spray-applied elastomer waterproofing membrane shall not be primed or painted.



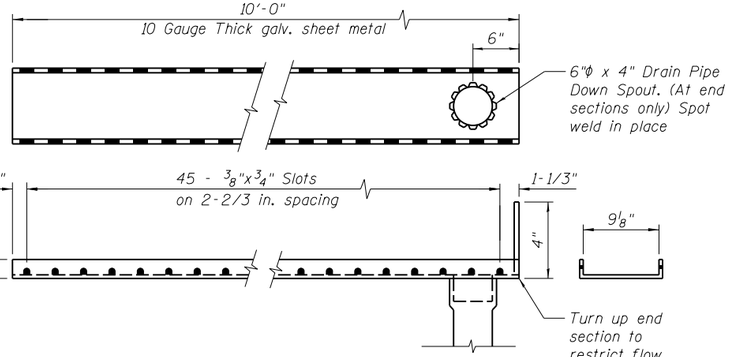


SECTION D-D

DETAIL - DECK DRAIN PIPE



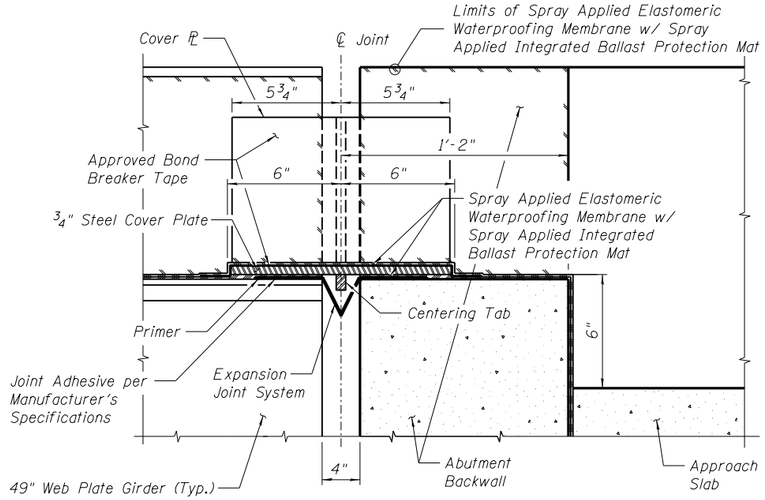
SECTION C-C



DETAIL - DECK DRAIN BOTTOM PAN

Notes:

1. Lap Drain Pipe one corrugation at each end.
2. Coordinate outside diameter of drain pipe down spout with 6" ϕ Ductile Iron Pipe.
3. Cost for deck drain pipe and bottom pan shall be included in the cost of "Drainage System".



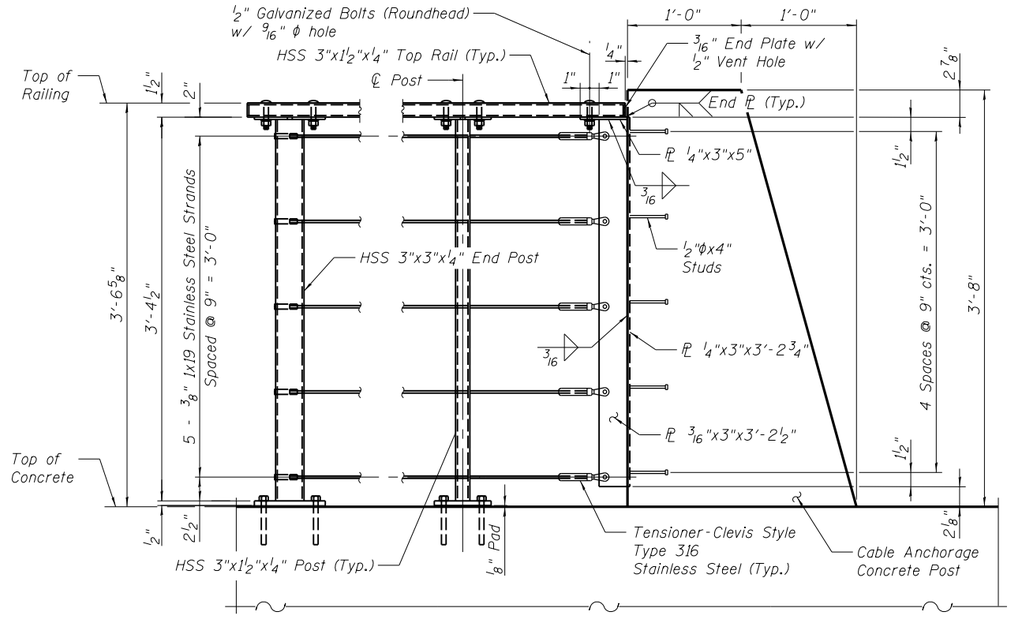
Note:

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.

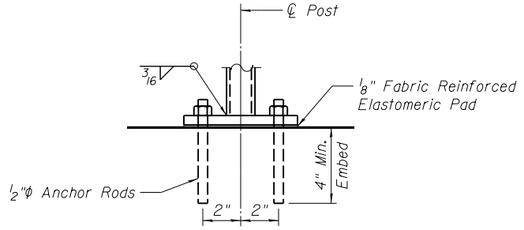
SECTION A-A

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Membrane Waterproofing (Special)	Sq. Ft.	2927

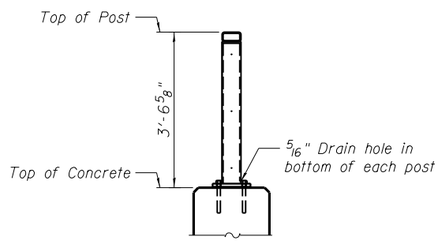


RAILING END PANEL - WINGWALL AND CHEEKWALL

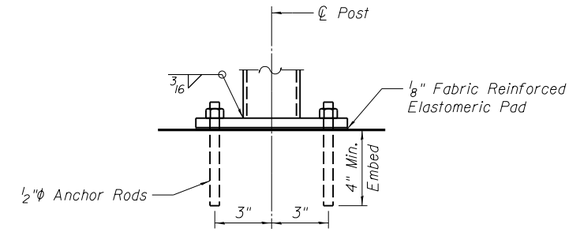


ANCHOR ROD DETAIL INTERMEDIATE POSTS

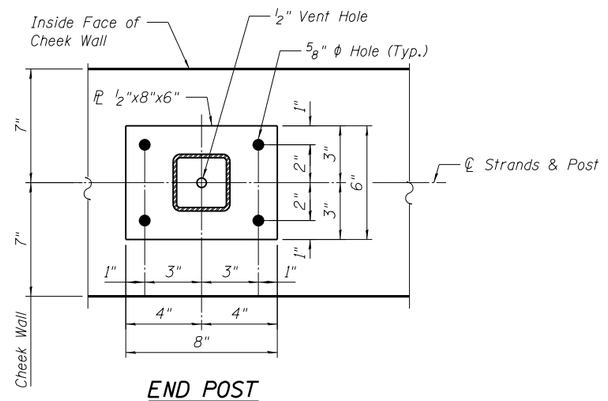
INTERMEDIATE POST



POST DETAIL



ANCHOR ROD DETAIL END POSTS



END POST

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"ϕx4" 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 5 of 19 for rail post spacing.

See Retaining Wall Plans for chain attachment details.

BILL OF MATERIAL

(Includes Railing along West & East side)

ITEM	UNIT	TOTAL
Steel Railing (Special)	Foot	168

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Madison\Sheet\084-9969_09L01798_012_Steel Rail.dgn

FINAL

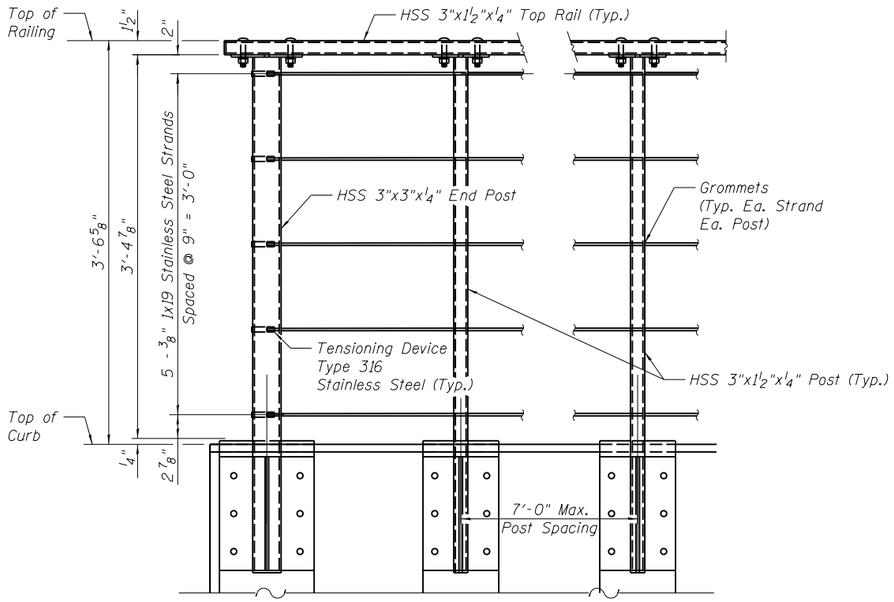
HANSON

USER NAME = thoel01490	DESIGNED - JGT	REVISED -	
	CHECKED - CGP	REVISED -	
PLOT SCALE = 01.999996 '' / in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -	

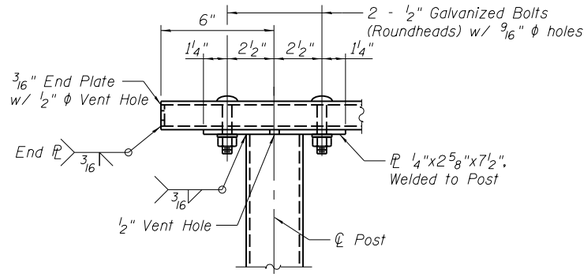
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL RAILING (SPECIAL) (1 OF 2)
STRUCTURE NO. 084-9969
SHEET NO. 13 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	314
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			



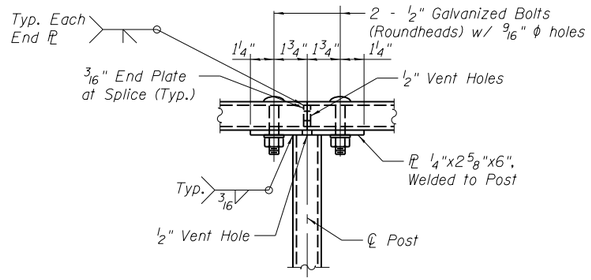
RAILING END PANEL - SUPERSTRUCTURE



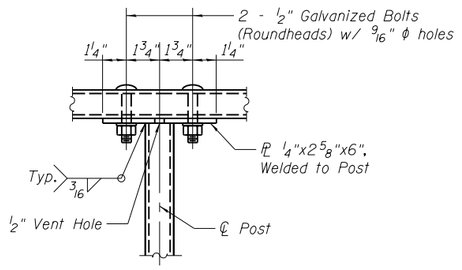
TYPICAL RAIL/END POST CONNECTION

(Strands not shown for clarity.)

Notes:
See Sheet 5 of 19 for rail post spacing.
See Sheet 13 of 19 for railing notes and anchor rod details.



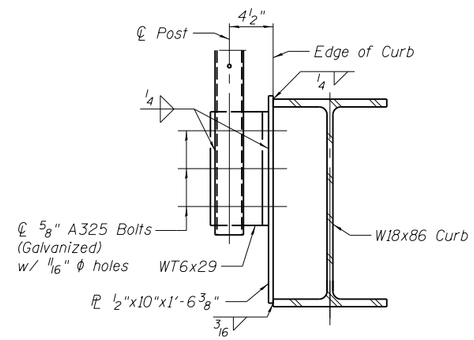
TOP RAIL - WITH SPLICE



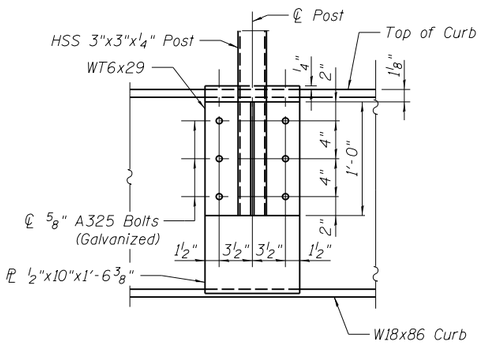
TOP RAIL - NO SPLICE

TYPICAL RAIL/POST CONNECTION

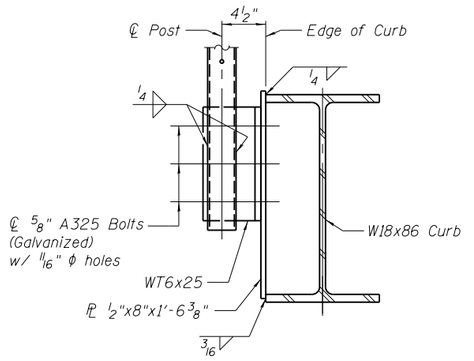
(Strands not shown for clarity.)



END POST (3")

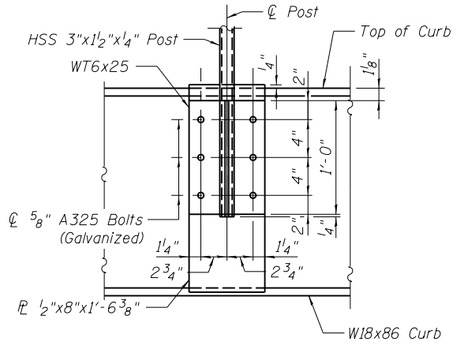


END POST (3")



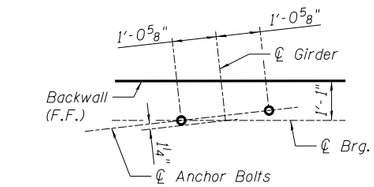
INTERMEDIATE POST (1 1/2")

(Along Superstructure)

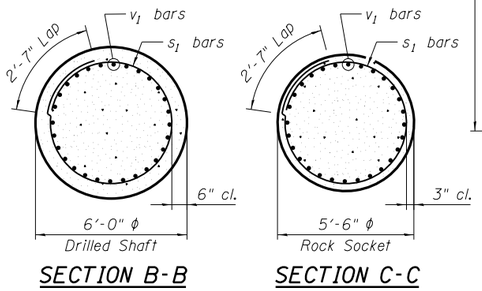


INTERMEDIATE POST (1 1/2")

(Along Superstructure)

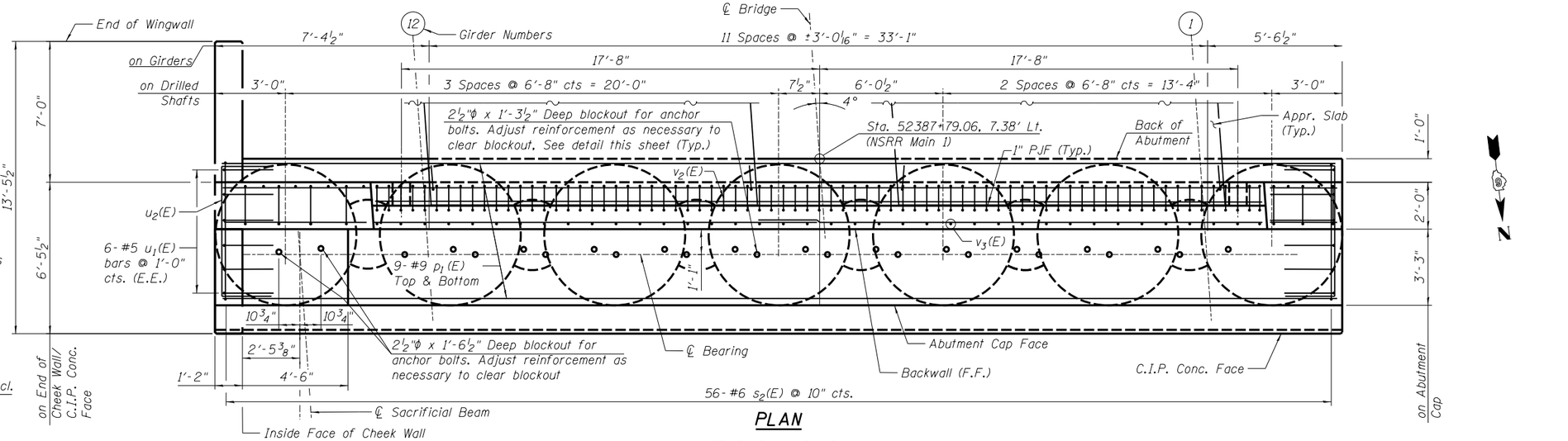


BLOCKOUT LAYOUT

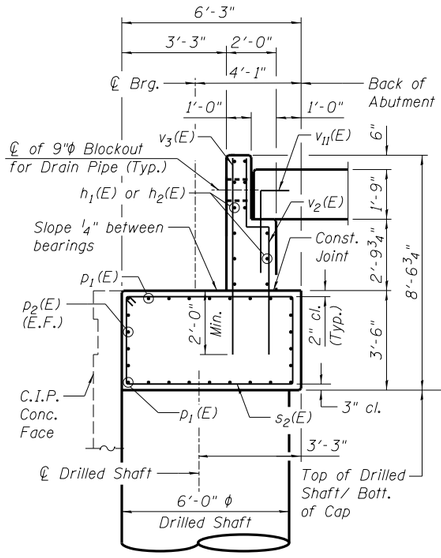


SECTION B-B

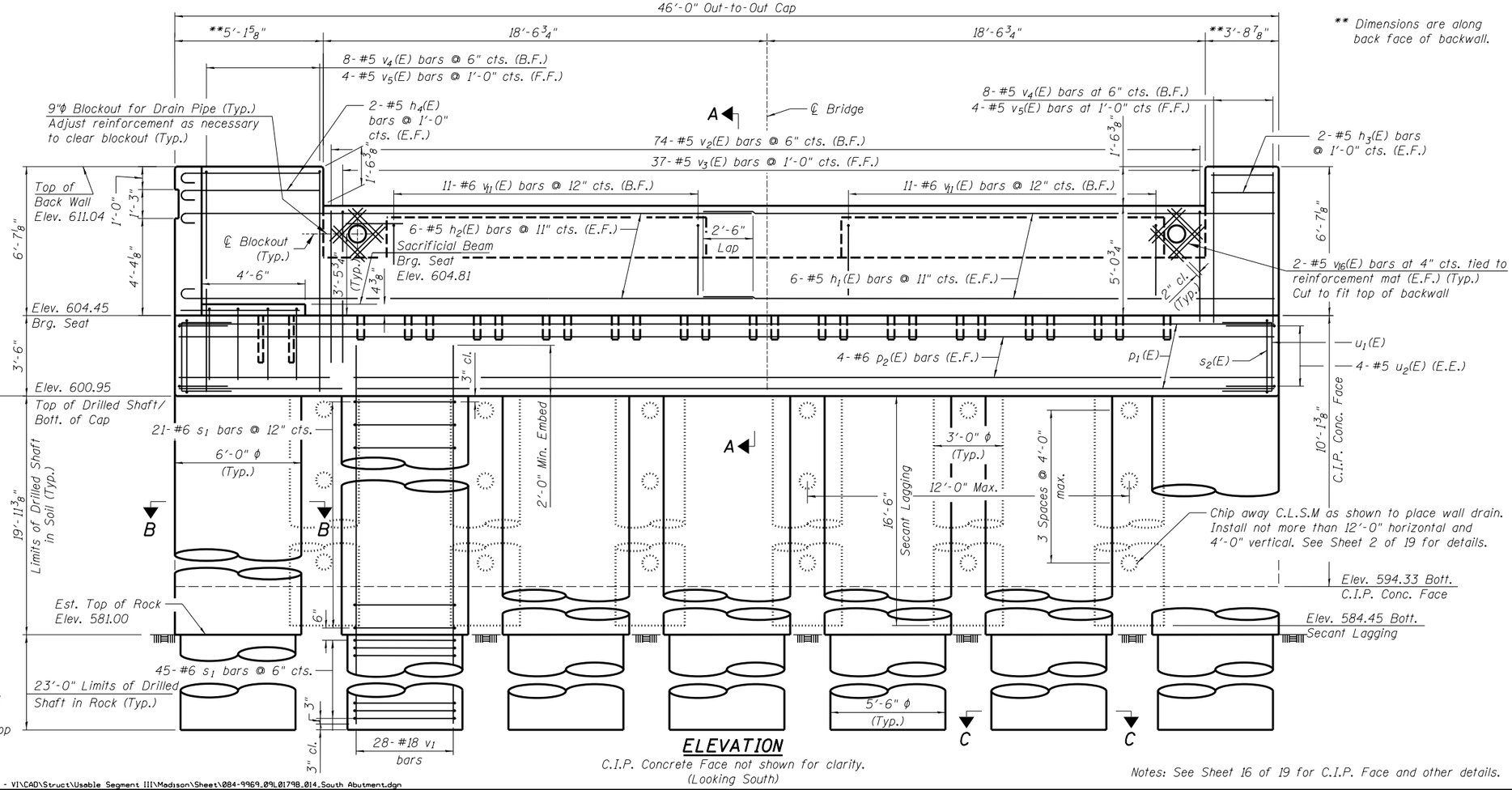
SECTION C-C



PLAN



SECTION A-A



ELEVATION

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

** Dimensions are along back face of backwall.

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.

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L0179B\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Madison\Sheet\084-9969_09L0179B_014_South Abutment.dgn

FINAL

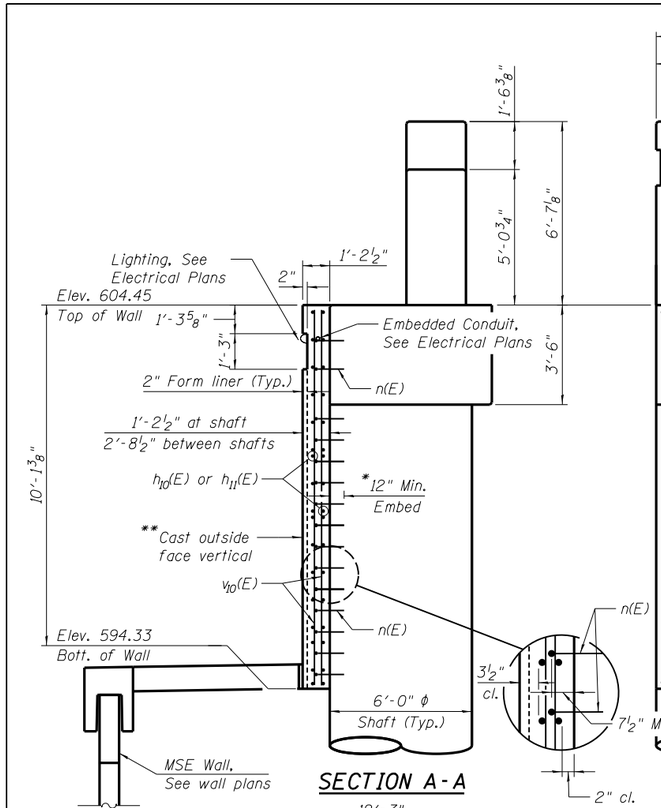
HANSON

USER NAME = thoel01490	DESIGNED - CGP	REVISED -
	CHECKED - JGT	REVISED -
PLOT SCALE = 01.999996 '' / in.	DRAWN - RSJ	REVISED -
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -

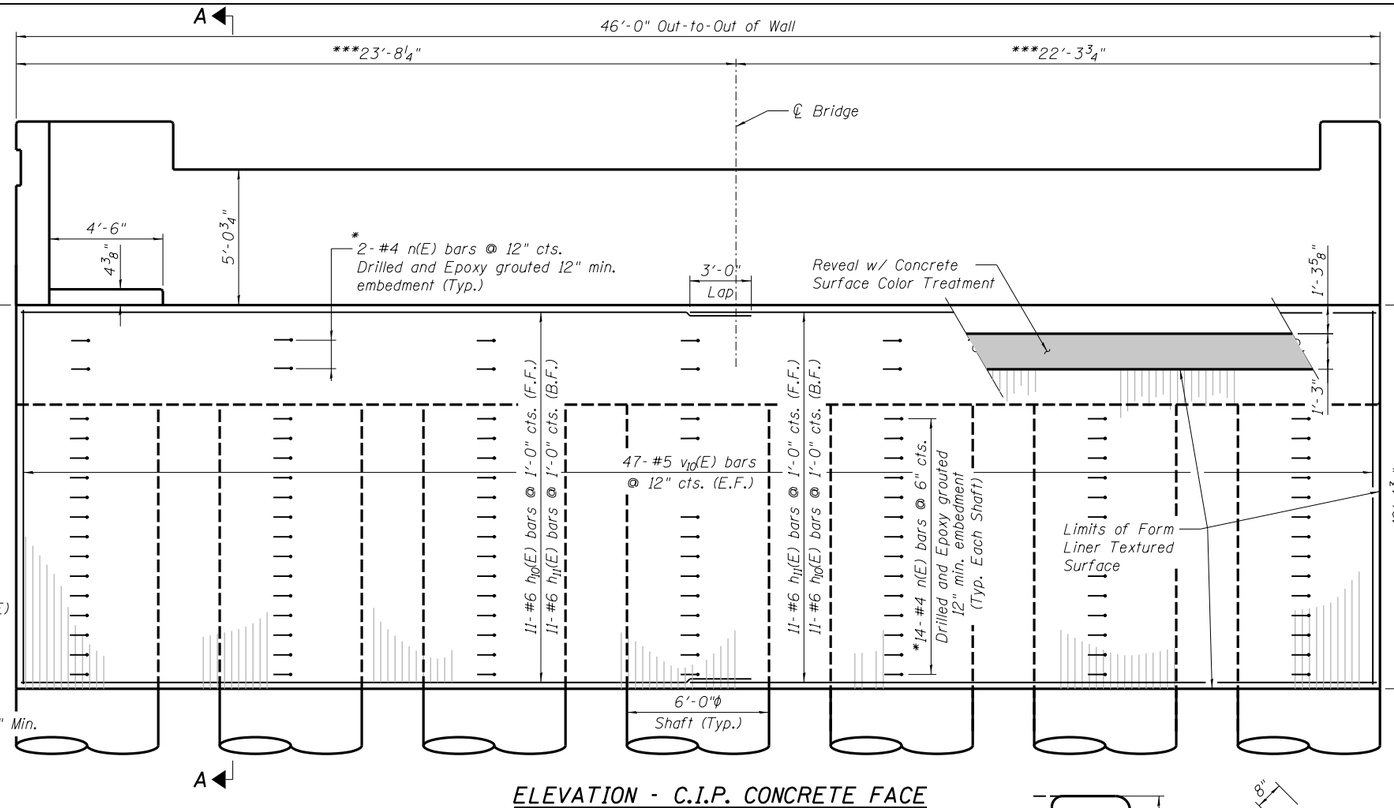
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT
STRUCTURE NO. 084-9969
SHEET NO. 15 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67.67A	20-00491-00-BR	SANGAMON	509	316
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			

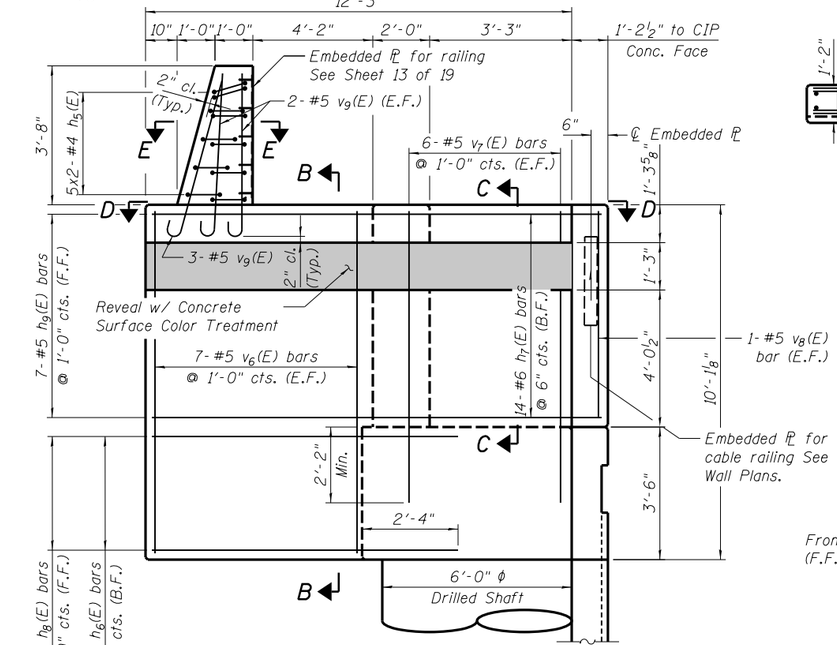


SECTION A-A

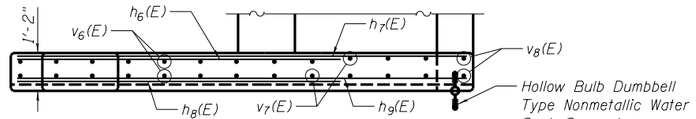


ELEVATION - C.I.P. CONCRETE FACE

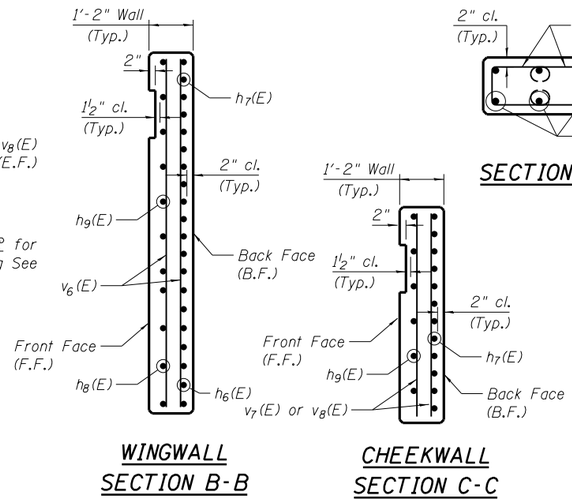
(Looking South)



ELEVATION - TYPICAL END VIEW



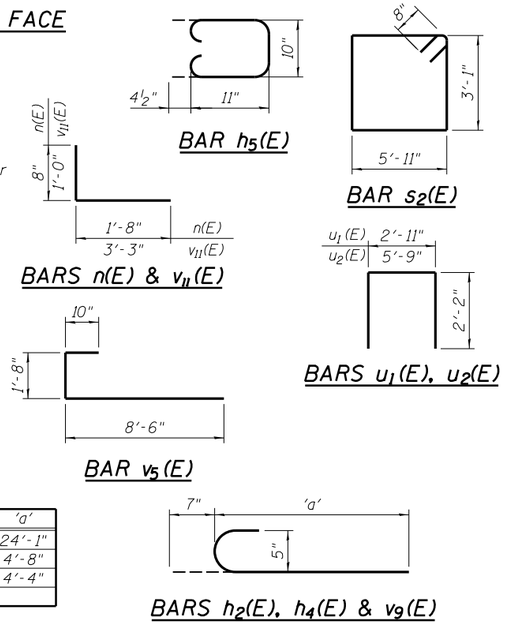
SECTION D-D - PLAN VIEW



WINGWALL SECTION B-B

CHEEKWALL SECTION C-C

SECTION E-E



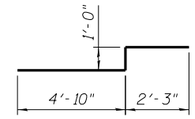
Bar	'a'
h2(E)	24'-1"
h4(E)	4'-8"
v9(E)	4'-4"

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.

* 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".

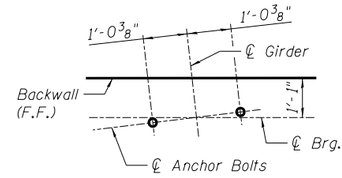
*** Dimensions are along back face of backwall



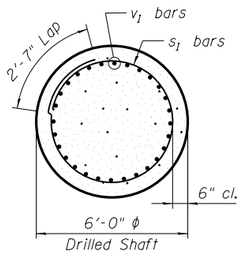
BAR v2(E)

BILL OF MATERIAL

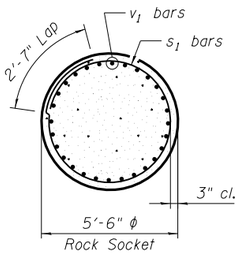
Bar	No.	Size	Length	Shape
h1(E)	12	#5	24'-1"	
h2(E)	12	#5	24'-8"	
h3(E)	4	#5	3'-5"	
h4(E)	4	#5	5'-3"	
h5(E)	10	#4	3'-5"	
h6(E)	7	#6	8'-4"	
h7(E)	14	#6	13'-1"	
h8(E)	4	#5	8'-4"	
h9(E)	7	#5	13'-1"	
h10(E)	22	#6	21'-0"	
h11(E)	22	#6	27'-8"	
n(E)	112	#4	2'-4"	
p1(E)	18	#9	45'-8"	
p2(E)	8	#6	45'-8"	
s1	462	#6	18'-4"	
s2(E)	56	#6	19'-4"	
u1(E)	12	#5	7'-3"	
u2(E)	8	#5	10'-1"	
v1	196	#18	45'-2"	
v2(E)	74	#5	8'-1"	
v3(E)	37	#5	7'-0"	
v4(E)	16	#5	8'-6"	
v5(E)	8	#5	11'-0"	
v6(E)	14	#5	9'-9"	
v7(E)	12	#5	8'-8"	
v8(E)	2	#5	6'-3"	
v9(E)	7	#5	4'-11"	
v10(E)	94	#5	9'-9"	
v11(E)	22	#6	4'-3"	
v16(E)	32	#5	2'-6"	
Structure Excavation		Cu. Yds.	140	
Concrete Structures		Cu. Yds.	77.4	
Form Liner Textured Surface		Sq. Ft.	348	
Reinforcement Bars		Pound	133,120	
Reinforcement Bars, Epoxy Coated		Pound	10,700	
Drilled Shaft in Soil		Cu. Yds.	146.2	
Drilled Shaft in Rock		Cu. Yds.	141.7	
Secant Lagging		Cu. Ft.	700	
Concrete Sealer		Sq. Ft.	974	
Concrete Surface Color Treatment		Sq. Ft.	73	



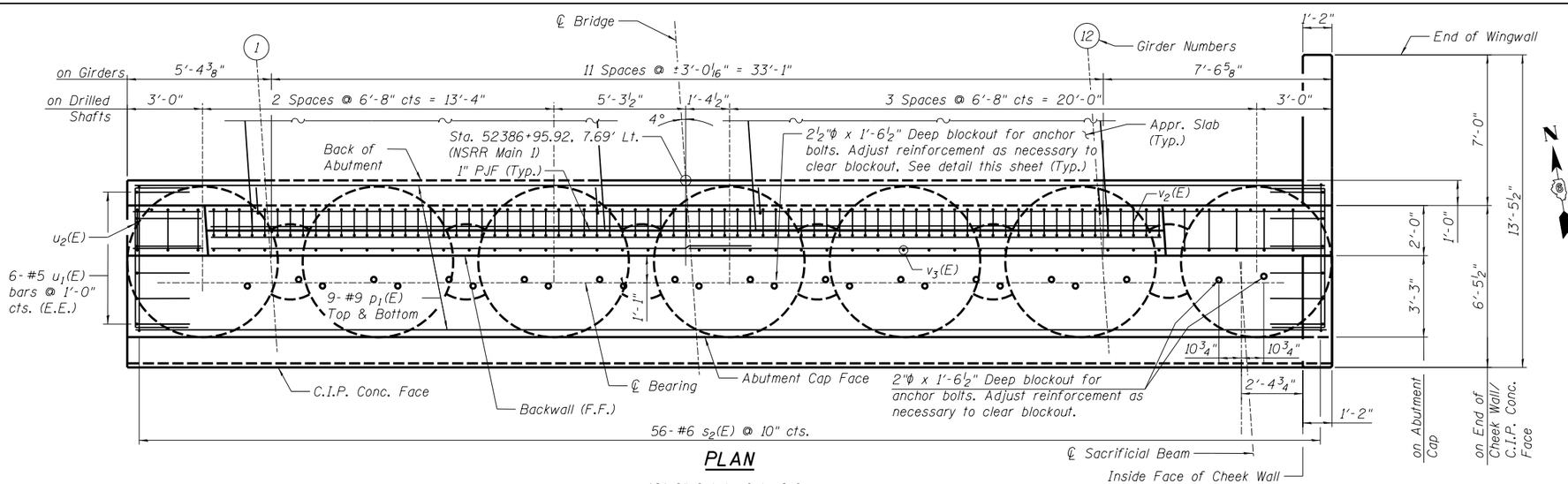
BLOCKOUT LAYOUT



SECTION B-B

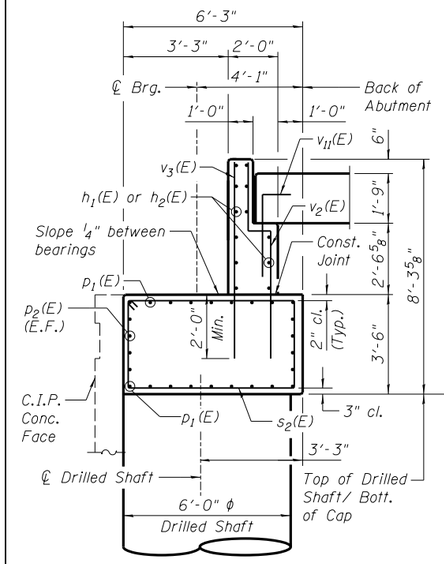


SECTION C-C

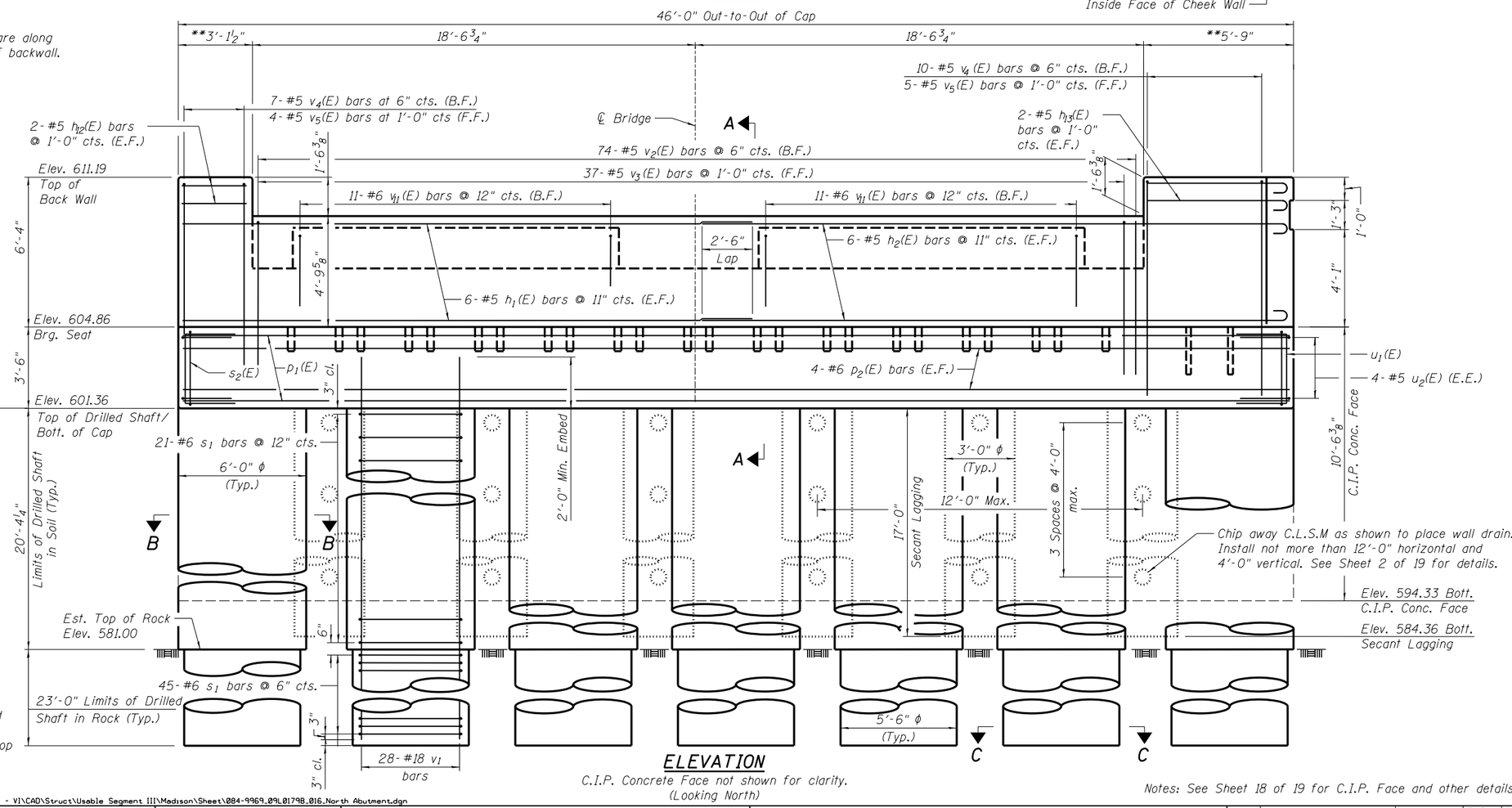


PLAN

** Dimensions are along back face of backwall.



SECTION A-A



ELEVATION

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

* 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 18 of 19 for C.I.P. Face and other details.

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L0179B\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Madison\Sheet\084-9969_09L0179B_016_North Abutment.dgn

FINAL

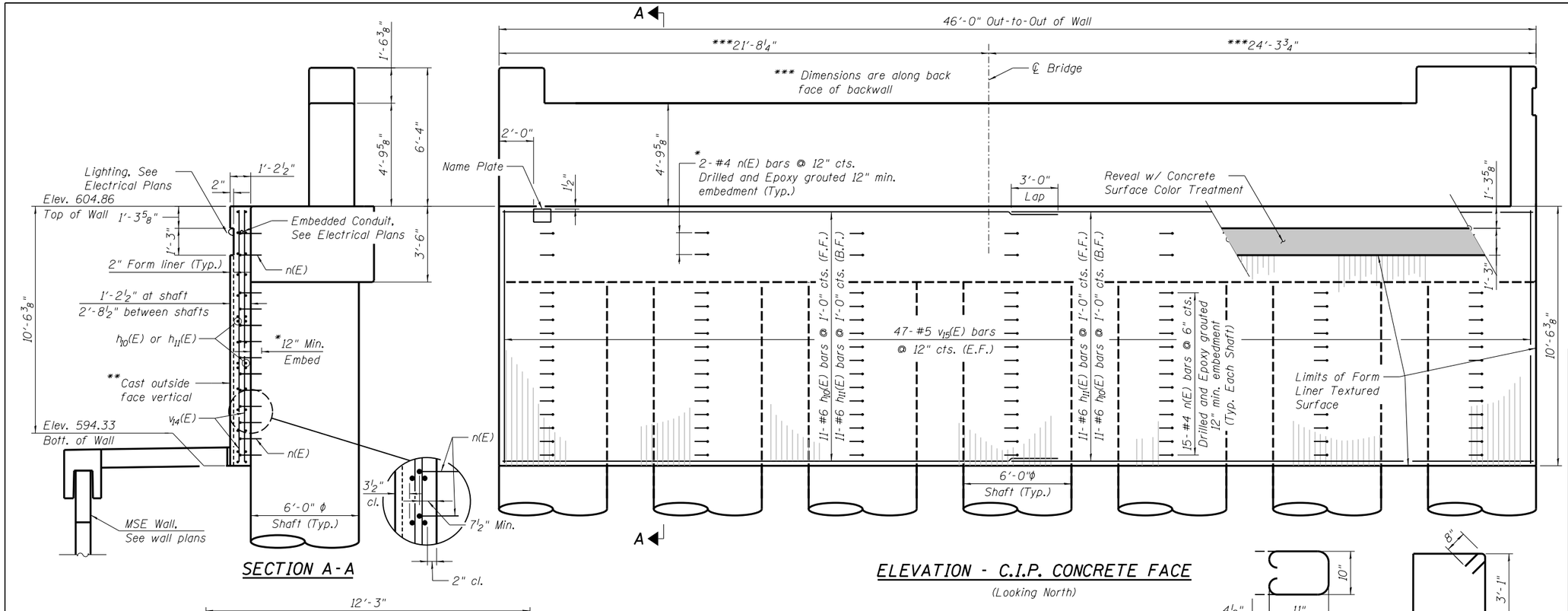
HANSON

USER NAME = thoel01490	DESIGNED - CGP	REVISED -
	CHECKED - JGT	REVISED -
PLOT SCALE = 81.999996 '' / in.	DRAWN - RSJ	REVISED -
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT
STRUCTURE NO. 084-9969
SHEET NO. 17 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67.67A	20-00491-00-BR	SANGAMON	509	318
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			



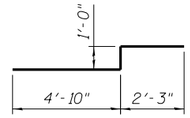
SECTION A-A

ELEVATION - C.I.P. CONCRETE FACE

(Looking North)

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

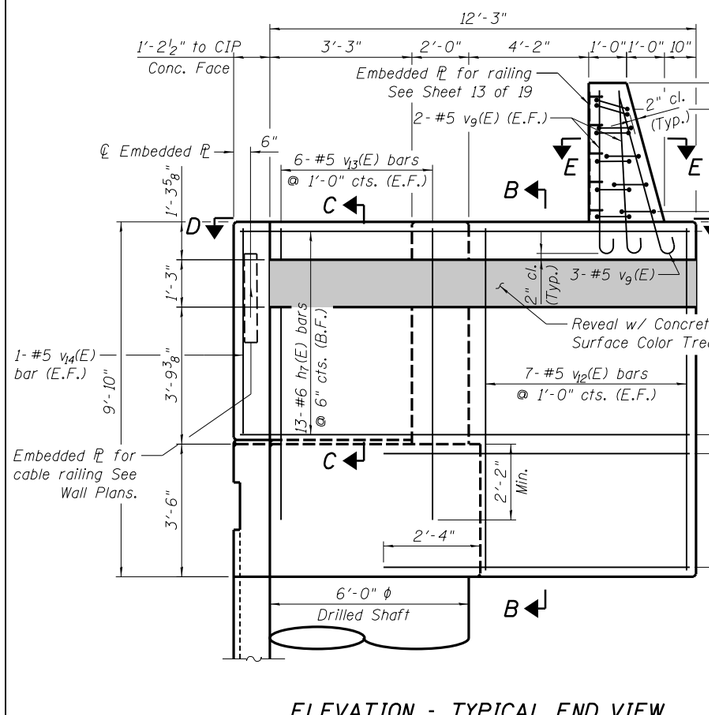
** Concrete wall face shall be cast vertically. Thickness of wall may vary due to abutment deflection. The Min. wall thickness shall be 11½".



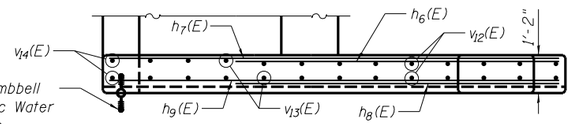
BAR $v_2(E)$

BILL OF MATERIAL

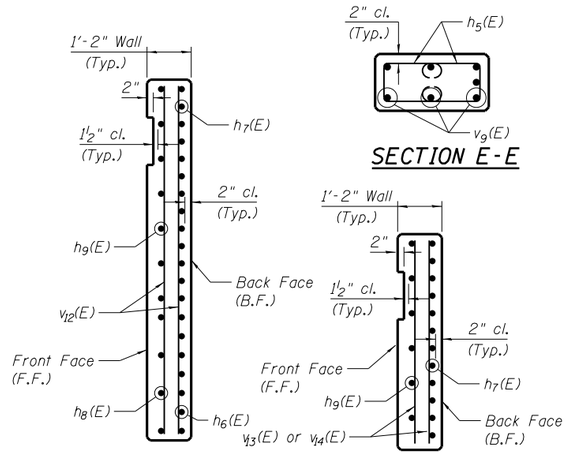
Bar	No.	Size	Length	Shape
$h_1(E)$	12	#5	24'-1"	
$h_2(E)$	12	#5	24'-8"	
$h_5(E)$	10	#4	3'-5"	
$h_6(E)$	7	#6	8'-4"	
$h_7(E)$	13	#6	13'-1"	
$h_8(E)$	4	#5	8'-4"	
$h_9(E)$	7	#5	13'-1"	
$h_{10}(E)$	22	#6	21'-0"	
$h_{11}(E)$	22	#6	27'-8"	
$h_{12}(E)$	4	#5	2'-9"	
$h_{13}(E)$	4	#5	5'-10"	
$n(E)$	119	#4	2'-4"	
$p_1(E)$	18	#9	45'-8"	
$p_2(E)$	8	#6	45'-8"	
s_1	462	#6	18'-4"	
$s_2(E)$	56	#6	19'-4"	
$u_1(E)$	12	#5	7'-3"	
$u_2(E)$	8	#5	10'-1"	
v_1	196	#18	45'-2"	
$v_2(E)$	74	#5	8'-1"	
$v_3(E)$	37	#5	7'-0"	
$v_4(E)$	17	#5	8'-6"	
$v_5(E)$	9	#5	11'-0"	
$v_9(E)$	7	#5	4'-11"	
$v_{11}(E)$	22	#6	4'-3"	
$v_{12}(E)$	14	#5	9'-6"	
$v_{13}(E)$	12	#5	8'-5"	
$v_{14}(E)$	2	#5	6'-0"	
$v_{15}(E)$	94	#5	10'-2"	
Structure Excavation		Cu. Yds.	133	
Concrete Structures		Cu. Yds.	77.1	
Form Liner Textured Surface		Sq. Ft.	367	
Reinforcement Bars		Pound	133,120	
Reinforcement Bars, Epoxy Coated		Pound	10,660	
Drilled Shaft in Soil		Cu. Yds.	149.2	
Drilled Shaft in Rock		Cu. Yds.	141.7	
Secant Lagging		Cu. Ft.	721	
Concrete Sealer		Sq. Ft.	979	
Concrete Surface Color Treatment		Sq. Ft.	73	



ELEVATION - TYPICAL END VIEW



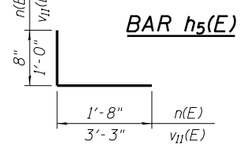
SECTION D-D - PLAN VIEW



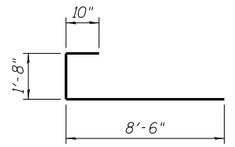
WINGWALL SECTION B-B

CHEEKWALL SECTION C-C

SECTION E-E

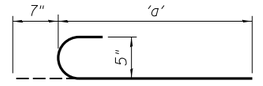


BARS n(E) & $v_{11}(E)$



BAR $v_5(E)$

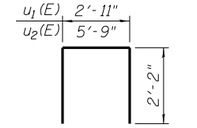
Bar	'a'
$h_2(E)$	24'-1"
$h_{13}(E)$	5'-3"
$v_9(E)$	4'-4"



BARS $h_2(E)$, $h_{13}(E)$ & $v_9(E)$

BAR $h_5(E)$

BAR $s_2(E)$



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

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.

FINAL

HANSON

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Madison\Sheet\084-9969_09L01798_017_North Abutment Details.dgn

USER NAME = thoel01490	DESIGNED - CGP	REVISED -	
	CHECKED - JGT	REVISED -	
PLOT SCALE = 01.999996 '' / in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT DETAILS
STRUCTURE NO. 084-9969

SHEET NO. 18 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	319
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			

B-116
Sta. 300+85, 19' LT

	N	Qu	w%	
604.7				CONCRETE.
603.95				AGGREGATE.
603.70	15	1.50P	27	Black fine sandy SILT, some cinders, trace clay - FILL.
601.20	6	0.74B	33	Brown and gray very fine sandy silty CLAY, trace oxidized spots.
598.70	6	2.27B	25	Brown and gray very fine sandy SILT, trace oxidized spots.
	6	2.72S	24	
593.70	6	0.78B	24	Brown and gray very fine sandy clayey SILT.
591.20	4	0.78B	25	Brownish-gray very fine to fine sandy silty CLAY, trace oxidized spots.
588.70 DD ▽				
588.2	3		38	Brown and gray very fine sandy silty CLAY.
586.20	3	1.17B	21	Olive brown and gray fine sandy silty CLAY, some shale fragments.
581.20				Brownish-gray fine sandy SHALE - highly weathered.
579.70	57	4.50P	12	
				Bottom of Hole = 25.0 feet

B-124
Sta. 300+45, 19' RT

	N	Qu	w%	
605.3				CONCRETE.
604.6	21	3.80P	7	Brown silty coarse SAND and small GRAVEL and black very fine sandy silty clay - FILL.
601.8	7	1.85B	30	Dark brown and brown very fine sandy silty CLAY.
599.3	6	1.48B	26	Brown and gray very fine sandy SILT, some clay, trace calcareous concretions.
	6	2.27B	26	
594.3	4	2.30P	24	Brown and gray very fine sandy SILT, some clay.
591.8	4	0.39B	26	Brown and gray very fine to fine sandy clayey SILT, trace small gravel.
589.3	4	0.97B	25	Brown and gray very fine to fine sandy silty CLAY, trace small gravel.
586.8	6	1.65B	27	Brown and gray very fine to fine sandy silty CLAY, trace small gravel and shale fragments.
581.8	72	4.50P	11	Brown and gray SHALE - highly weathered.
576.8				
DD	50/3"	4.50P	10	Gray SHALE.
574.3 ▽				
570.32	Rec. = 77%			Gray-black interbedded sandy SHALE/
	ROD = 37%			shaley SANDSTONE, micaceous - weathered.
		122.9		
567.12				Soft SHALE/clay seam.
566.72	Rec. = 98%			Gray-black interbedded sandy SHALE/
	ROD = 23%			shaley SANDSTONE, micaceous.
	Rec. = 100%			
	ROD = 68%			
555.32				Bottom of Hole = 50.0 feet

B-125
Sta. 300+85, 19' RT

	N	Qu	w%	
605.0				CONCRETE.
604.25	21		9	Brown fine to coarse SAND and GRAVEL - FILL.
601.50	7	1.65B	29	Brown and dark brown very fine sandy silty CLAY, trace organics.
599.00	5	1.03B	25	Brown and gray very fine sandy SILT, some clay.
596.50	6	1.94B	27	Brown and gray very fine sandy SILT.
594.00	5	1.65B	22	Brown and gray very fine sandy SILT, some clay.
591.50	3	0.78B	25	Brown and gray very fine sandy clayey SILT, trace small gravel.
589.00	4	0.74B	27	Brown, dark brown and gray very fine sandy clayey SILT, trace small gravel, some oxidized spots.
586.50	5	1.55B	25	Brown and gray very fine sandy silty CLAY, trace small gravel and shale fragments.
581.50				
580.00	41	4.50P	13	Brown and gray SHALE - highly weathered.
				Bottom of Hole = 25.0 feet

LEGEND

N	Standard Penetration Test N (blows/ft)
Qu	Unconfined Strength (tsf)
w%	Natural Moisture Content (%)
DD ▽ 558.10	Water Surface Elevation Encountered in Boring DD = during drilling Oh = at completion 24h = 24 hours after completion

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Madison\Sheet\084-9969_09L01798_018_Sub Data Profile.dgn

FINAL

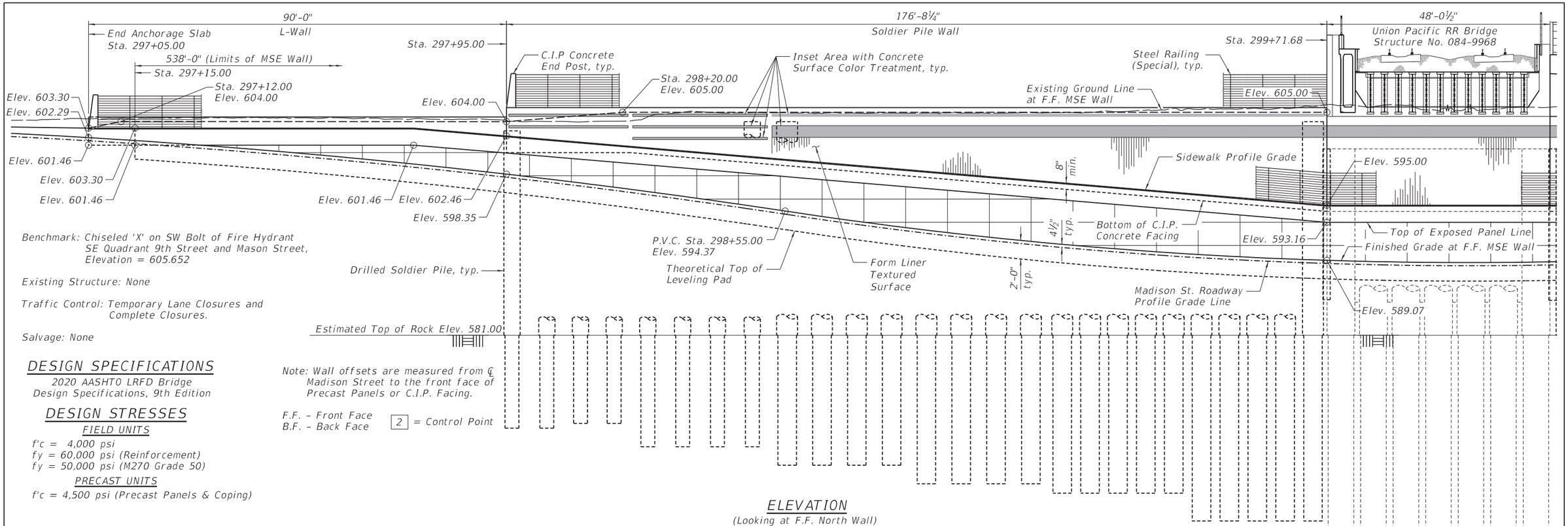
HANSON

USER NAME = thoel01490	DESIGNED - CGP	REVISED -	
	CHECKED - JGT	REVISED -	
PLOT SCALE = 0:2 '1' / in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSURFACE DATA PROFILE
STRUCTURE NO. 084-9969
SHEET NO. 19 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67.67A	20-00491-00-BR	SANGAMON	509	320
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			



Benchmark: Chiseled 'X' on SW Bolt of Fire Hydrant SE Quadrant 9th Street and Mason Street, Elevation = 605.652

Existing Structure: None

Traffic Control: Temporary Lane Closures and Complete Closures.

Salvage: None

DESIGN SPECIFICATIONS

2020 AASHTO LRFD Bridge Design Specifications, 9th Edition

DESIGN STRESSES

FIELD UNITS

f'c = 4,000 psi
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50)

PRECAST UNITS

f'c = 4,500 psi (Precast Panels & Coping)

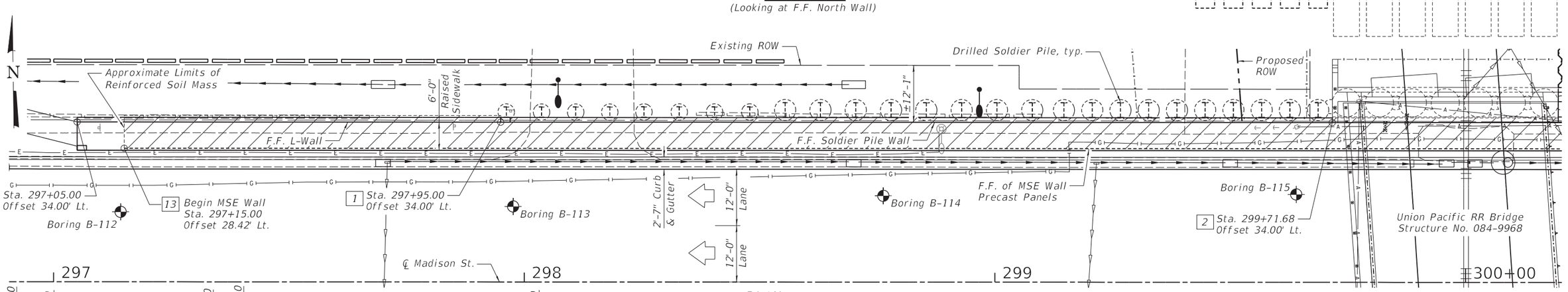
Note: Wall offsets are measured from ℄ Madison Street to the front face of Precast Panels or C.I.P. Facing.

F.F. – Front Face
B.F. – Back Face

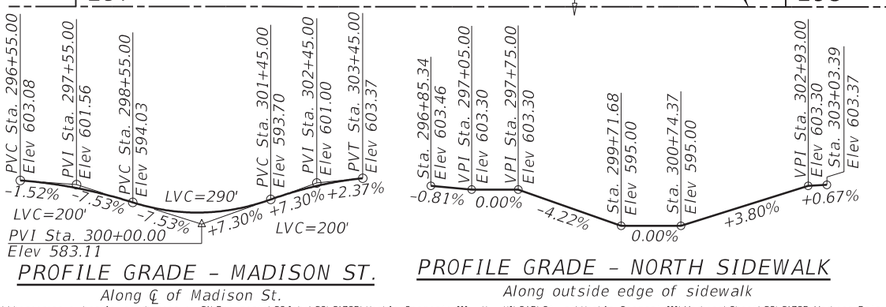
2 = Control Point

ELEVATION

(Looking at F.F. North Wall)



PLAN

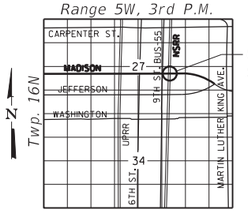


PROFILE GRADE – MADISON ST.

Along ℄ of Madison St.

PROFILE GRADE – NORTH SIDEWALK

Along outside edge of sidewalk



LOCATION SKETCH

APPROVED
For Structural Adequacy Only
Engineer of Bridges & Structures

LICENSED STRUCTURAL ENGINEER
ROBERT CHANTOME
081-006048
STATE OF ILLINOIS

11/01/2021
Expires November 30, 2022

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

GENERAL PLAN (SHEET 1 OF 4)
NORTH WALL – MADISON ST.
F.A.P. 67 – SECTION 20-00491-00-BR
SANGAMON COUNTY
STATION 297+05.00 TO 302+98.00

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Madison\Sheet\09L01798-Madison-Retaining-Wall-Plans.dgn

HANSON

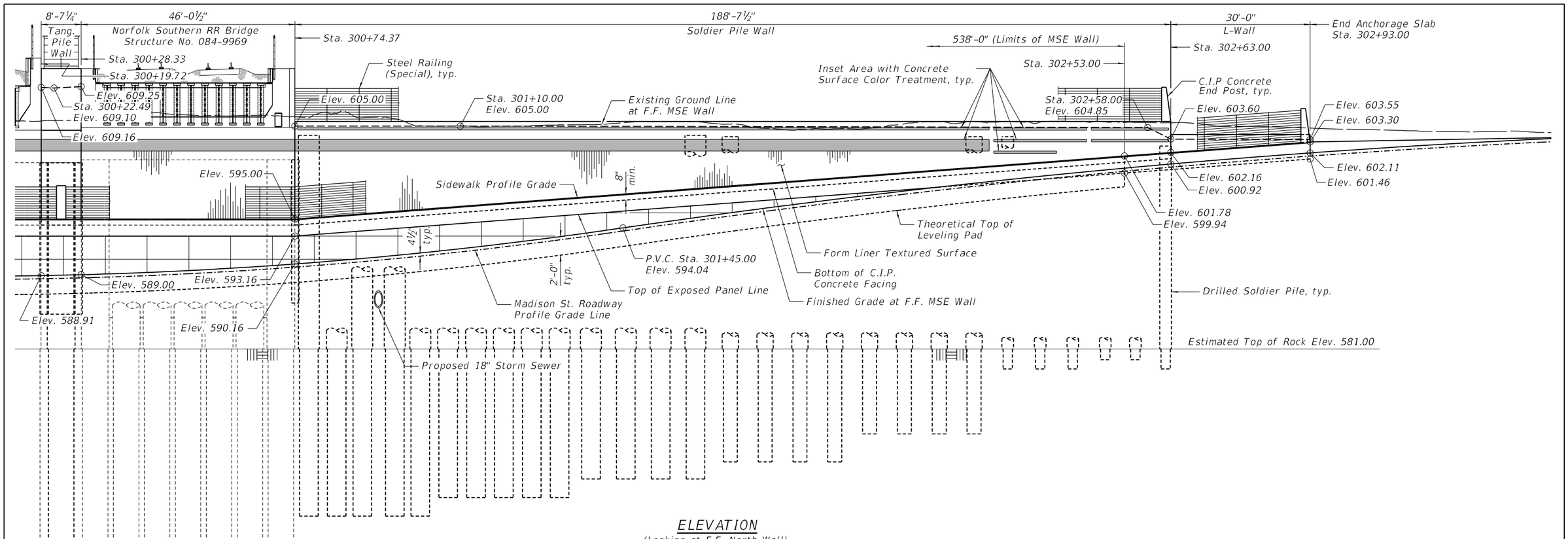
USER NAME = Johns00944	DESIGNED - KMS	REVISED -	
	CHECKED - RGC	REVISED -	
PLOT SCALE = 21.333 ' / in.	DRAWN - EJM	REVISED -	
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION – NORTH WALL
RETAINING WALLS – MADISON STREET

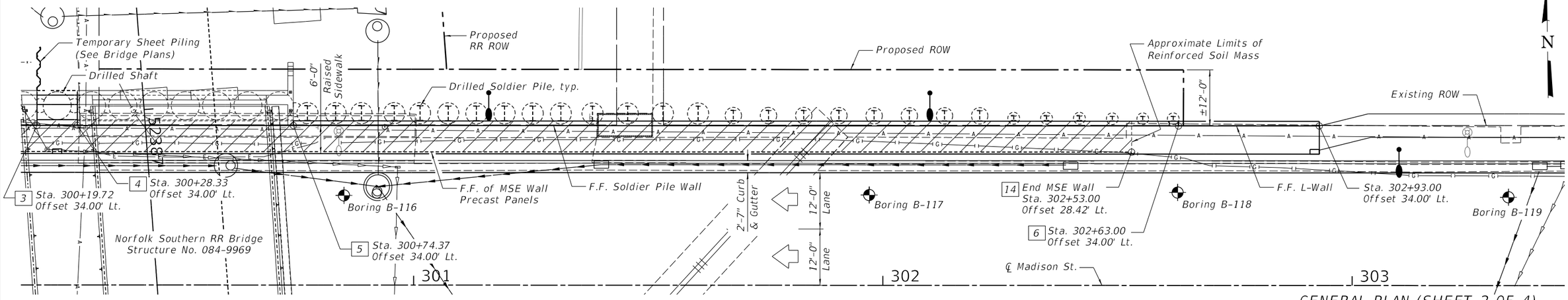
SHEET NO. 1 OF 34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	321
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			



ELEVATION

(Looking at F.F. North Wall)



PLAN

Note: Wall offsets are measured from ℄ Madison Street to the front face of Precast Panels or C.I.P. Facing.

F.F. - Front Face
B.F. - Back Face

5 = Control Point

GENERAL PLAN (SHEET 2 OF 4)
NORTH WALL - MADISON ST.
F.A.P. 67 - SECTION 20-00491-00-BR
SANGAMON COUNTY
STATION 297+05.00 TO 302+98.00

p:\\hansoninc-pw.bentley.com\hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Madison\Sheet\09L01798-Madison-Retaining-Wall-Plans.dgn

HANSON

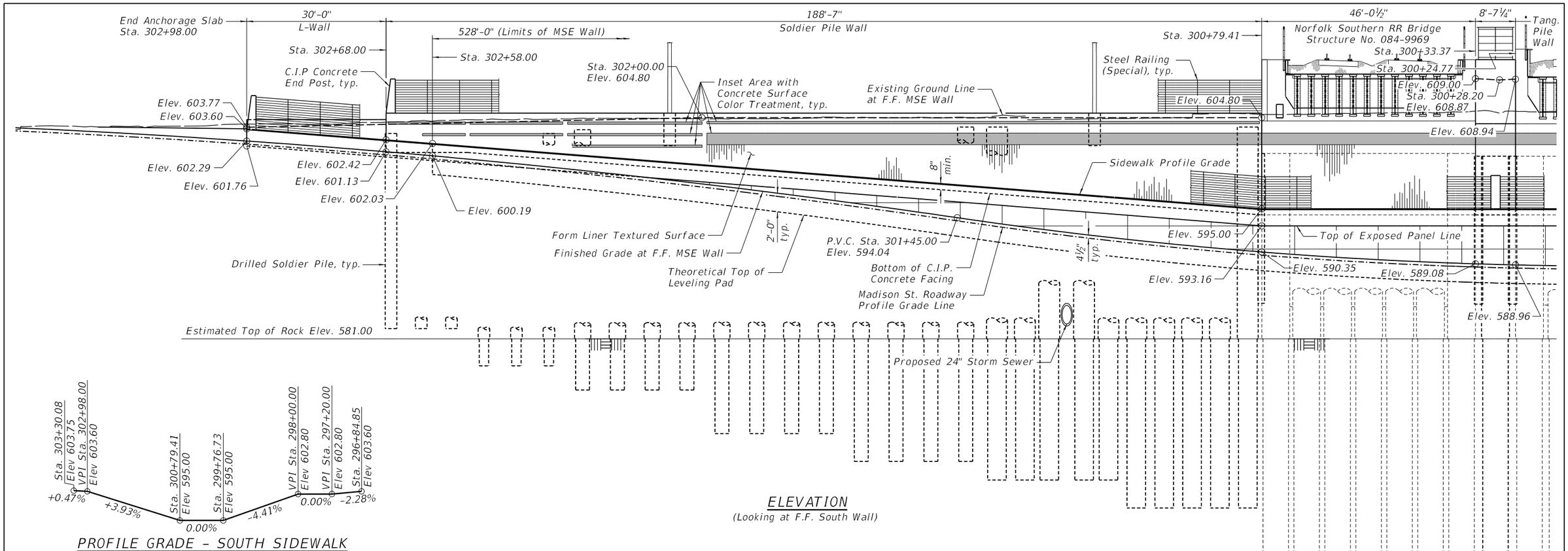
USER NAME = Johns00944	DESIGNED - KMS	REVISED -
	CHECKED - RGC	REVISED -
PLOT SCALE = 21.333 ' / in.	DRAWN - EJM	REVISED -
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION – NORTH WALL
RETAINING WALLS – MADISON STREET

SHEET NO. 2 OF 34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	322
		CONTRACT NO. 93762		
		ILLINOIS	FED. AID PROJECT	

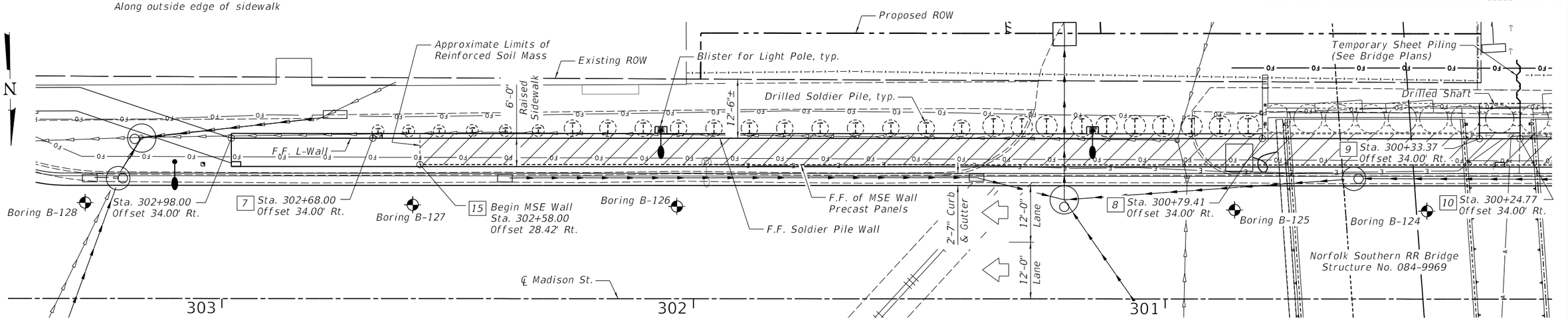


PROFILE GRADE - SOUTH SIDEWALK

Along outside edge of sidewalk

ELEVATION

(Looking at F.F. South Wall)



PLAN

Note: Wall offsets are measured from ℄ Madison Street to the front face of Precast Panels or C.I.P. Facing.

F.F. - Front Face
B.F. - Back Face

7 = Control Point

GENERAL PLAN (SHEET 3 OF 4)
SOUTH WALL - MADISON ST.
F.A.P. 67 - SECTION 20-00491-00-BR
SANGAMON COUNTY
STATION 297+05.00 TO 302+98.00

px:\\hansoninc-px.bentley.com\hanson-px-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Madison\Sheet\09L01798-Madison-Retaining-Wall-Plans.dgn

HANSON

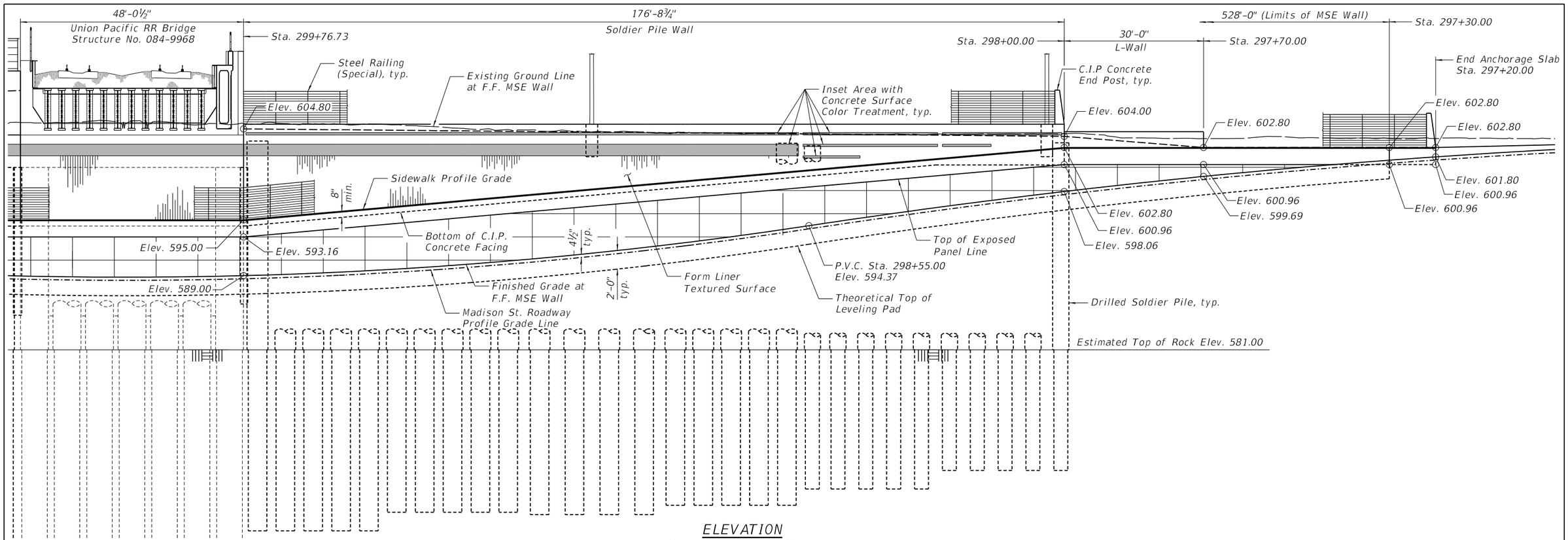
USER NAME = Johns00944	DESIGNED - KMS	REVISED -
	CHECKED - RGC	REVISED -
PLOT SCALE = 21.333 ' / in.	DRAWN - EJM	REVISED -
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

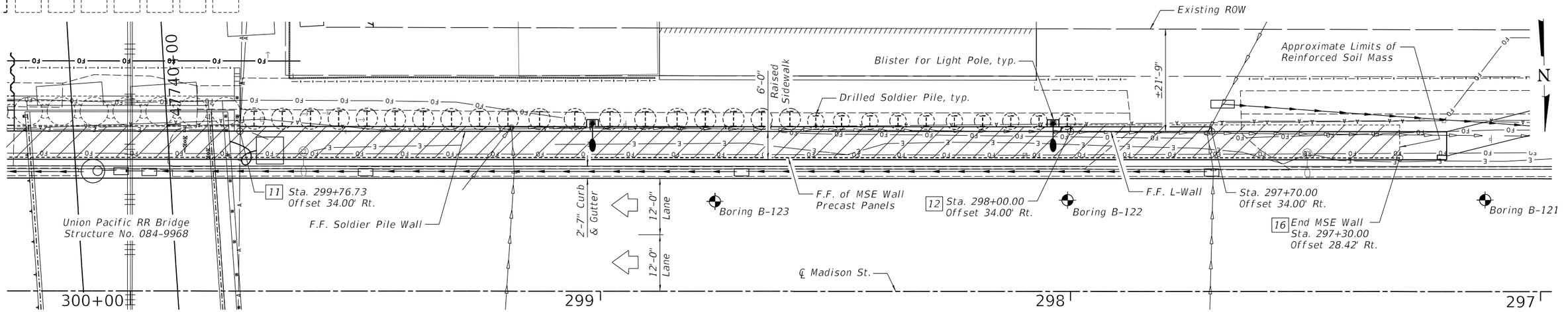
GENERAL PLAN & ELEVATION - SOUTH WALL
RETAINING WALLS - MADISON STREET

SHEET NO. 3 OF 34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	323
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			



ELEVATION
(Looking at F.F. South Wall)



PLAN

Note: Wall offsets are measured from ℄ Madison Street to the front face of Precast Panels or C.I.P. Facing.

F.F. - Front Face
B.F. - Back Face
11 = Control Point

GENERAL PLAN (SHEET 4 OF 4)
SOUTH WALL - MADISON ST.
F.A.P. 67 - SECTION 20-00491-00-BR
SANGAMON COUNTY
STATION 297+05.00 TO 302+98.00

p:\\hansoninc-pw.bentley.com\hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Madison\Sheet\09L01798-Madison-Retaining-Wall-Plans.dgn

HANSON

USER NAME = Johns00944	DESIGNED - KMS	REVISED -
	CHECKED - RGC	REVISED -
PLOT SCALE = 21.333 ' / in.	DRAWN - EJM	REVISED -
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION – SOUTH WALL
RETAINING WALLS – MADISON STREET
SHEET NO. 4 OF 34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	324
		CONTRACT NO. 93762		
		ILLINOIS FED. AID PROJECT		

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. The Contractor is responsible for the design and performance of the Untreated Timber Lagging using no less than a 3 in. nominal rough-sawn thickness and timber with a minimum allowable bending stress of 1000 psi.

ASSUMED SEQUENCE OF CONSTRUCTION

1. Install secant lagging and drilled shafts for S.N. 084-9968, 084-9969, and cap between structures.*
2. Drill and set soldier piles for north and south walls.*
3. Excavate for Jefferson Street pavement, installing temporary timber lagging from top down as excavation progresses. Lay back temporary slopes in areas beyond soldier pile walls.*
4. Place aggregate subgrade improvement layer and lower underdrain up to base of MSE wall.
5. Construct MSE wall up to bottom of upper underdrain.
6. Install geocomposite wall drain and upper underdrain.
7. Continue MSE wall construction up to bottom of concrete facing.
8. Construct cast-in-place concrete facing.
9. Set precast coping and place remainder of select fill.
10. Construct anchorage slab and L-wall.
11. Backfill to finish grade behind L-wall and soldier pile.

*See Track Staging Plans for maintenance of traffic on NSRR. See Sheet 7 of 34 for excavation restriction near active, at-grade track. See Special Provisions for restrictions on soldier pile and drilled shaft installation near active track.

WALL CONTROL POINTS

Control Point	Station	Offset
1	297+95.00	34.00' LT
2	299+71.68	34.00' LT
3	300+19.72	34.00' LT
4	300+28.33	34.00' LT
5	300+74.37	34.00' LT
6	302+63.00	34.00' LT
7	302+68.00	34.00' RT
8	300+79.41	34.00' RT
9	300+33.37	34.00' RT
10	300+24.77	34.00' RT
11	299+76.73	34.00' RT
12	298+00.00	34.00' RT
13	297+15.00	28.42' LT
14	302+53.00	28.42' LT
15	302+58.00	28.42' RT
16	297+30.00	28.42' RT

Control Points 1-12 are to Front Face of C.I.P. Facing.
Control Points 13-16 are to Front Face of Precast Panels.

INDEX OF SHEETS

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structure Excavation	Cu. Yd.	69
Concrete Structures	Cu. Yd.	148.4
Form Liner Textured Surface	Sq. Ft.	2590
Stud Shear Connectors	Each	529
Reinforcement Bars	Pound	22150
Reinforcement Bars, Epoxy Coated	Pound	38040
Drilled Shafts In Soil	Cu. Yd.	41.6
Drilled Shafts In Rock	Cu. Yd.	47.2
Furnishing Soldier Piles (W Section)	Foot	3996
Drilling and Setting Soldier Piles (In Soil)	Cu. Ft.	33391.2
Drilling and Setting Soldier Piles (In Rock)	Cu. Ft.	20026.7
Untreated Timber Lagging	Sq. Ft.	7160
Secant Lagging	Cu. Ft.	898
Mechanically Stabilized Earth Retaining Wall	Sq. Ft.	4998
Concrete Structures (Retaining Wall)	Cu. Yd.	246.5
Granular Backfill for Structures	Cu. Yd.	32
Concrete Sealer	Sq. Ft.	19876
Geocomposite Wall Drain	Sq. Yd.	425
Concrete Surface Color Treatment	Sq. Ft.	862
Steel Railing (Special)	Foot	1892
Pipe Underdrains for Structures 4"	Foot	2002
Pipe Underdrains for Structures 4" (Special)	Foot	171

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Madison\Sheet\09L01798-Madison-Retaining-Wall-Plans.dgn

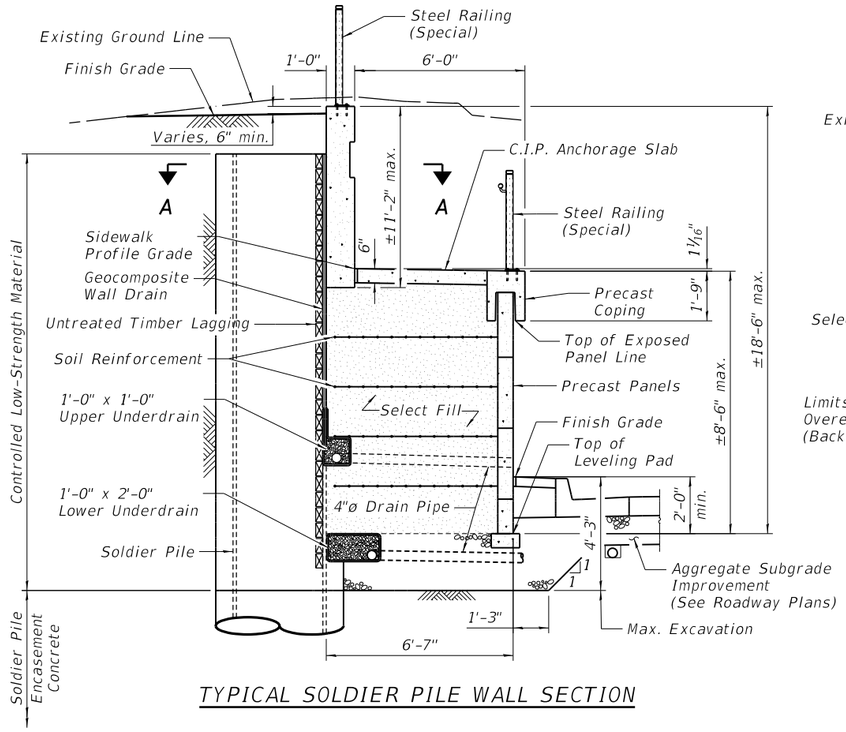
HANSON

USER NAME = Johns00944	DESIGNED - KMS	REVISED -	
	CHECKED - RGC	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN - EJM	REVISED -	
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -	

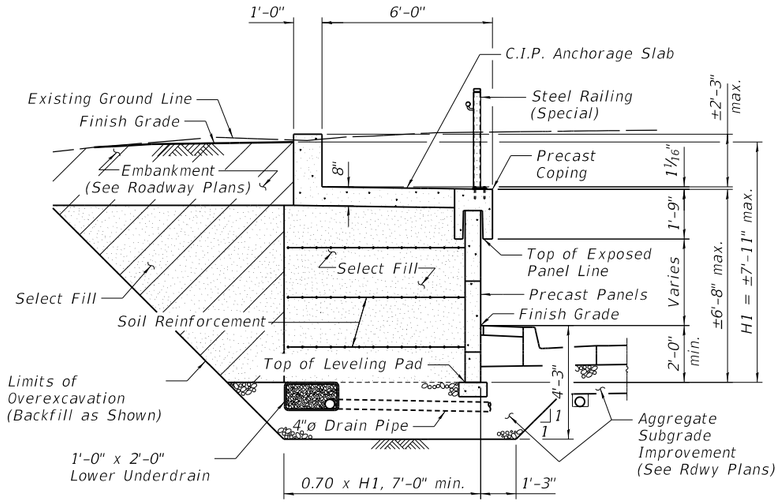
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL DATA
RETAINING WALLS - MADISON STREET
SHEET NO. 5 OF 34 SHEETS

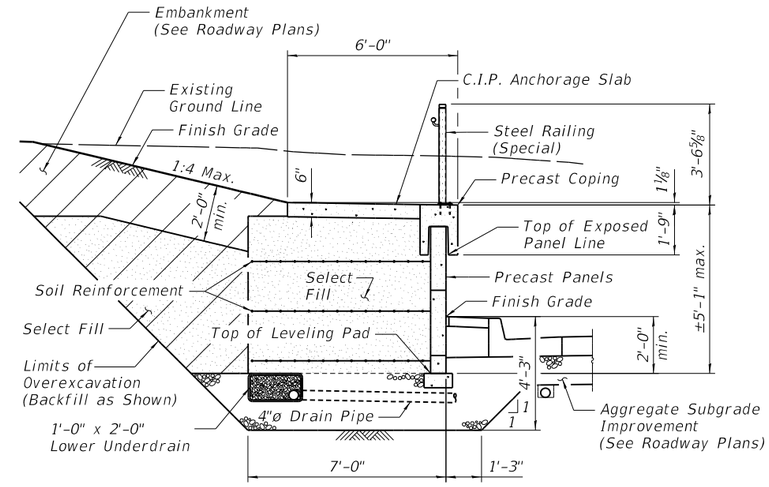
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	325
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			



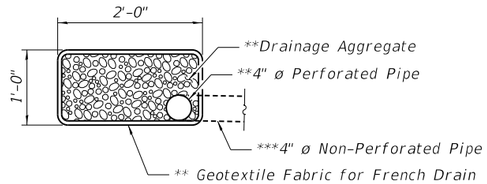
TYPICAL SOLDIER PILE WALL SECTION



TYPICAL L-WALL SECTION

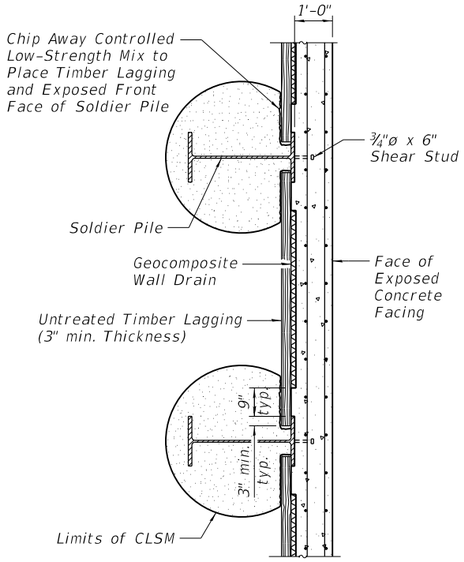


TYPICAL MSE WALL SECTION

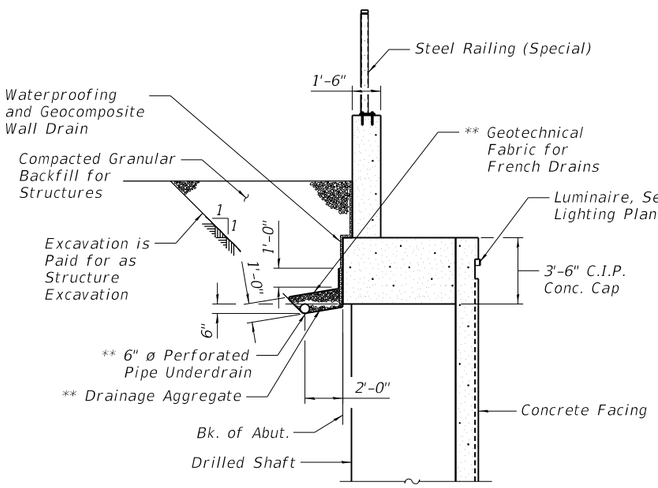


LOWER UNDERDRAIN DETAIL

** Included in the cost of Pipe Underdrains for Structures 4".
*** Included in the cost of Pipe Underdrains for Structures 4" (Special).

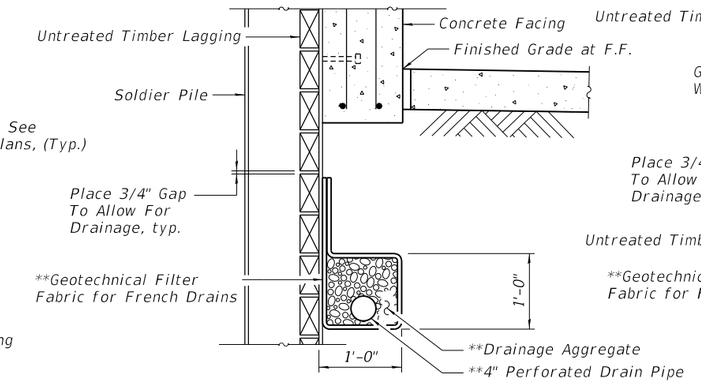


SECTION A-A
DRILLED SOLDIER PILE WALL

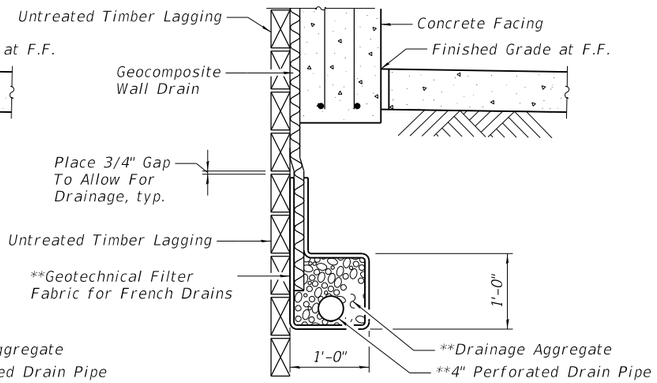


SECTION THRU TOP OF WALL BETWEEN ABUTMENTS

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



AT SOLDIER PILES



BETWEEN SOLDIER PILES

UPPER UNDERDRAIN DETAIL

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

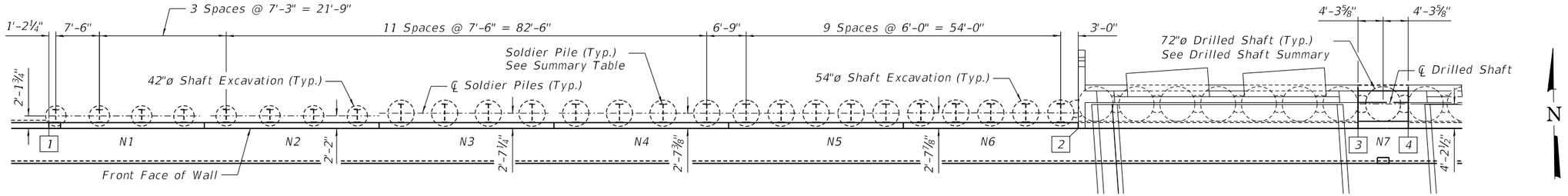
p:\\hansoninc-pw.bentley.com\hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Madison\Sheet\09L01798-Madison-Retaining-Wall-Plans.dgn

USER NAME = Johns00944	DESIGNED - KMS	REVISED -
	CHECKED - RGC	REVISED -
PLOT SCALE = 0.167 ' / in.	DRAWN - EJM	REVISED -
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -

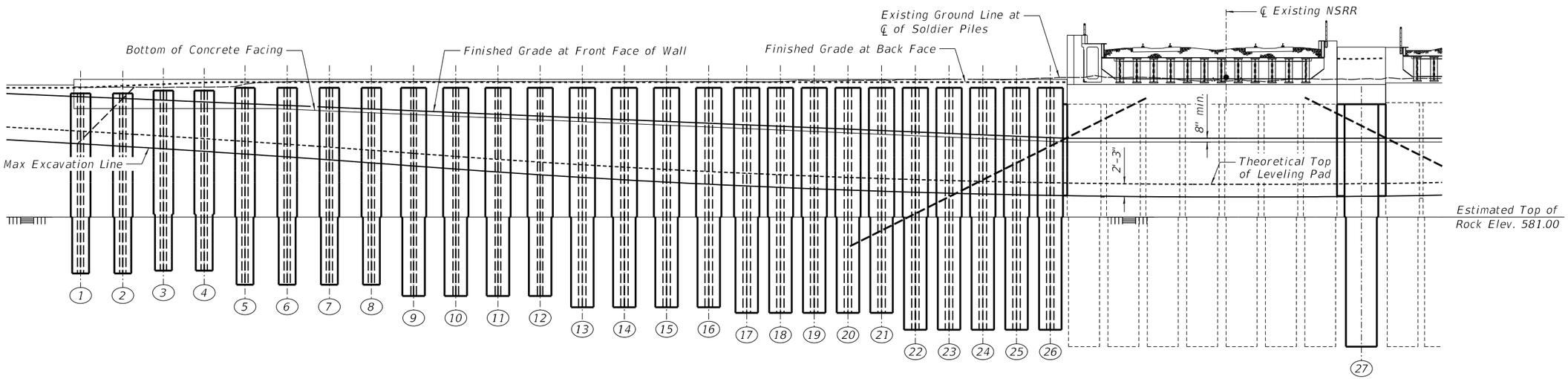
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS & DETAILS
RETAINING WALLS – MADISON STREET
SHEET NO. 6 OF 34 SHEETS

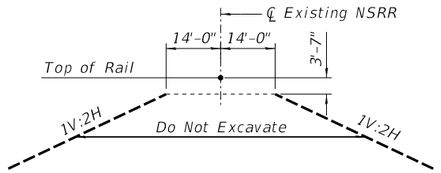
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	326
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			



PLAN



ELEVATION



EXCAVATION NEAR ACTIVE TRACK

NORTH WALL STUD SHEAR CONNECTORS REQUIRED

Pile No.	Number Required on Each Pile
1-5	3
6-10	4
11-15	5
16-20	6
21-26	7

Space at 1'-6" Max. cts.

SOLDIER PILE SUMMARY

PILE NO.	PILE SIZE	LENGTH	BOTTOM ELEVATION	TOP ELEVATION	PILE NO.	PILE SIZE	LENGTH	BOTTOM ELEVATION	TOP ELEVATION
1	W27x146	32'-0"	571.00	603.00	14	W40x199	39'-0"	565.00	604.00
2	W27x146	32'-0"	571.00	603.00	15	W40x199	39'-0"	565.00	604.00
3	W27x146	32'-0"	571.50	603.50	16	W40x199	39'-0"	565.00	604.00
4	W27x146	32'-0"	571.50	603.50	17	W40x199	40'-0"	564.00	604.00
5	W27x194	35'-0"	569.00	604.00	18	W40x199	40'-0"	564.00	604.00
6	W27x194	35'-0"	569.00	604.00	19	W40x199	40'-0"	564.00	604.00
7	W27x194	35'-0"	569.00	604.00	20	W40x199	40'-0"	564.00	604.00
8	W27x194	35'-0"	569.00	604.00	21	W40x199	40'-0"	564.00	604.00
9	W40x167	37'-0"	567.00	604.00	22	W40x277	43'-0"	561.00	604.00
10	W40x167	37'-0"	567.00	604.00	23	W40x277	43'-0"	561.00	604.00
11	W40x167	37'-0"	567.00	604.00	24	W40x277	43'-0"	561.00	604.00
12	W40x167	37'-0"	567.00	604.00	25	W40x277	43'-0"	561.00	604.00
13	W40x199	39'-0"	565.00	604.00	26	W40x277	43'-0"	561.00	604.00

DRILLED SHAFT SUMMARY

SHAFT NO.	LENGTH	BOTTOM ELEVATION	TOP ELEVATION
27	43'-0¾""	558.00	601.06

SECANT LAGGING SUMMARY

BETWEEN SHAFTS NO.	DIAMETER	LENGTH	BOTTOM ELEV.	TOP ELEV.
26-BR	36"	16'-3"	584.81	601.06
BR-27	36"	16'-4"	584.73	601.06
27-BR	36"	16'-4"	584.73	601.06

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Stud Shear Connectors	Each	132
Drilled Shafts In Soil	Cu. Yd.	21.0
Drilled Shafts In Rock	Cu. Yd.	23.6
Furnishing Soldier Piles (W Section)	Foot	987
Drilling and Setting Soldier Piles (In Soil)	Cu. Ft.	8748.7
Drilling and Setting Soldier Piles (In Rock)	Cu. Ft.	5506.2
Untreated Timber Lagging	Sq. Ft.	3671.0
Secant Lagging	Cu. Ft.	346

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Madison\Sheet\09L01798-Madison-Retaining-Wall-Plans.dgn

HANSON

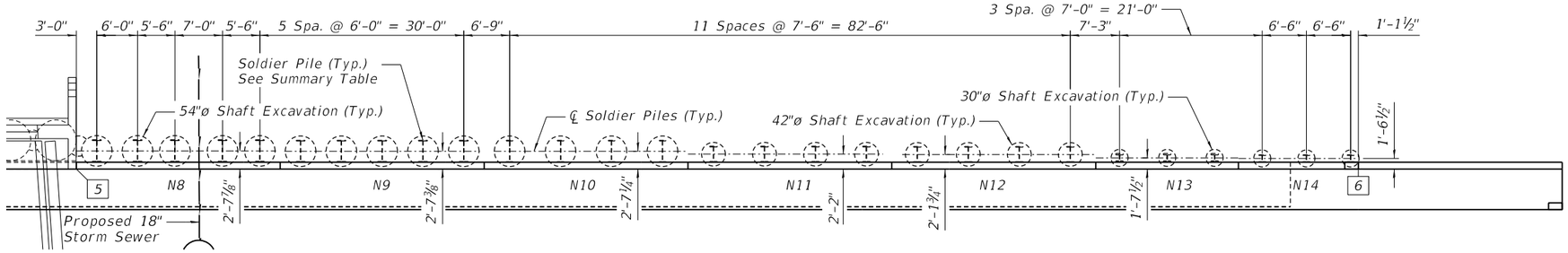
USER NAME = Johns00944	DESIGNED - KMS	REVISED -	
	CHECKED - RGC	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN - EJM	REVISED -	
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

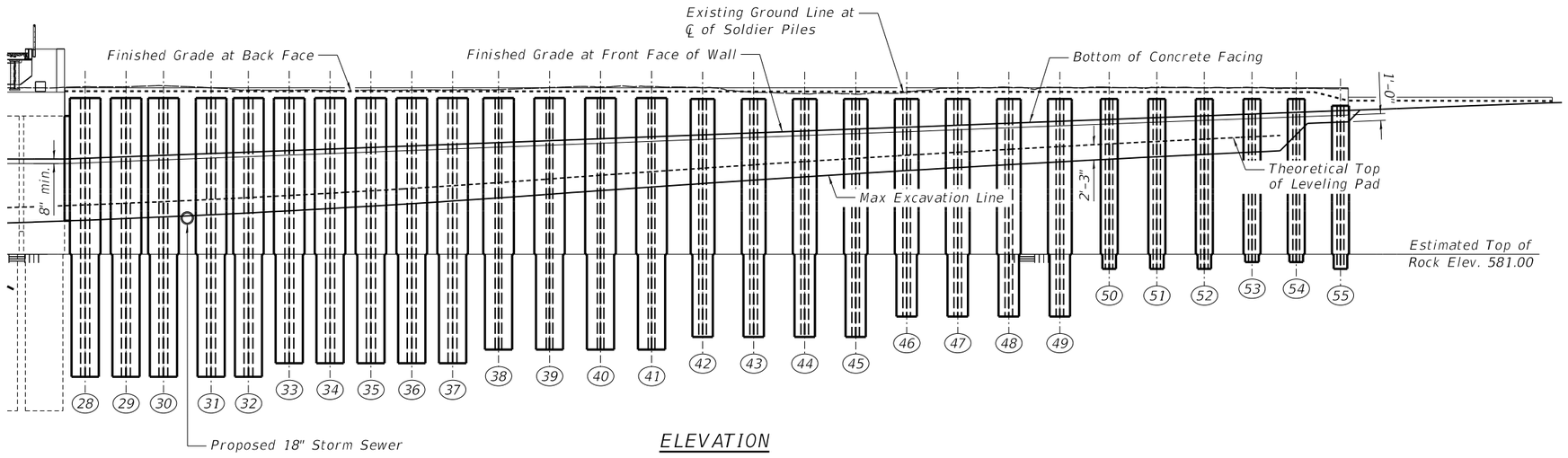
SOLDIER PILES – NORTH WALL
RETAINING WALLS – MADISON STREET

SHEET NO. 7 OF 34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	327
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			



PLAN



ELEVATION

6 = Control Point

N

NORTH WALL STUD SHEAR CONNECTORS REQUIRED

Pile No.	Number Required on Each Pile
28-33	7
34-39	6
40-44	5
45-49	4
50-54	3
55	2

Space at 1'-6" Max. cts.

SOLDIER PILE SUMMARY

PILE NO.	PILE SIZE	LENGTH	BOTTOM ELEVATION	TOP ELEVATION	PILE NO.	PILE SIZE	LENGTH	BOTTOM ELEVATION	TOP ELEVATION
28	W40x277	41'-0"	563.00	604.00	42	W27x194	35'-0"	568.85	603.85
29	W40x277	41'-0"	563.00	604.00	43	W27x194	35'-0"	568.85	603.85
30	W40x277	41'-0"	563.00	604.00	44	W27x194	35'-0"	568.85	603.85
31	W40x277	41'-0"	563.00	604.00	45	W27x194	35'-0"	568.85	603.85
32	W40x277	41'-0"	563.00	604.00	46	W27x146	32'-0"	571.85	603.85
33	W40x199	39'-0"	565.00	604.00	47	W27x146	32'-0"	571.85	603.85
34	W40x199	39'-0"	565.00	604.00	48	W27x146	32'-0"	571.85	603.85
35	W40x199	39'-0"	565.00	604.00	49	W27x146	32'-0"	571.85	603.85
36	W40x199	39'-0"	565.00	604.00	50	W12x230	25'-0"	578.85	603.85
37	W40x199	39'-0"	565.00	604.00	51	W12x230	25'-0"	578.85	603.85
38	W40x167	37'-0"	567.00	604.00	52	W12x230	25'-0"	578.85	603.85
39	W40x167	37'-0"	567.00	604.00	53	W12x106	24'-0"	579.85	603.85
40	W40x167	37'-0"	567.00	604.00	54	W12x106	24'-0"	579.85	603.85
41	W40x167	37'-0"	567.00	604.00	55	W12x106	24'-0"	578.85	602.85

SECANT LAGGING SUMMARY

BETWEEN SHAFTS NO.	DIAMETER	LENGTH	BOTTOM ELEV.	TOP ELEV.
BR-28	36"	15'-5"	585.94	601.36

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Stud Shear Connectors	Each	140
Furnishing Soldier Piles (W Section)	Foot	963
Drilling and Setting Soldier Piles (In Soil)	Cu. Ft.	8007.1
Drilling and Setting Soldier Piles (In Rock)	Cu. Ft.	4303.2
Secant Lagging	Cu. Ft.	109

p:\\hansoninc-pw.bentley.com\hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Madison\Sheet\09L01798-Madison-Retaining-Wall-Plans.dgn

HANSON

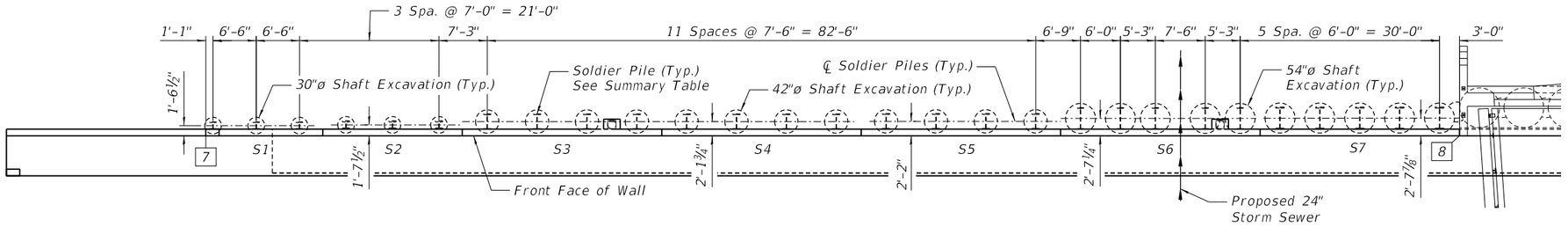
USER NAME = Johns00944	DESIGNED - KMS	REVISED -	
	CHECKED - RGC	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN - EJM	REVISED -	
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOLDIER PILES – NORTH WALL
RETAINING WALLS – MADISON STREET

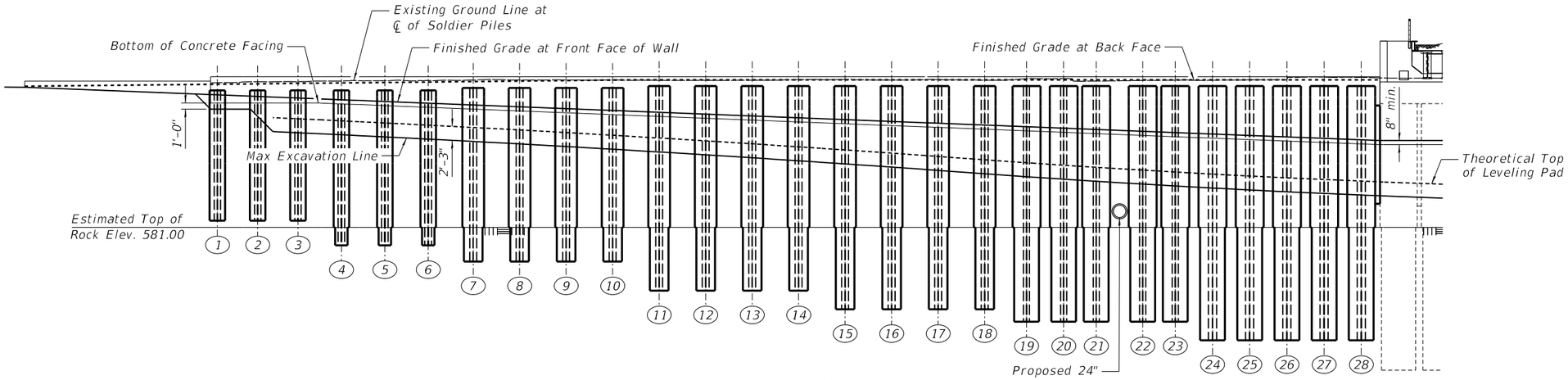
SHEET NO. 8 OF 34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67.67A	20-00491-00-BR	SANGAMON	509	328
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			



8 = Control Point

PLAN



ELEVATION

SOUTH WALL STUD SHEAR CONNECTORS REQUIRED

Pile No.	Number Required on Each Pile
1-4	2
5-8	3
9-12	4
13-17	5
18-23	6
24-28	7

Space at 1'-6" Max. cts.

SOLDIER PILE SUMMARY

PILE NO.	PILE SIZE	LENGTH	BOTTOM ELEVATION	TOP ELEVATION	PILE NO.	PILE SIZE	LENGTH	BOTTOM ELEVATION	TOP ELEVATION
1	W12x106	21'-0"	582.10	603.10	15	W27x194	36'-0"	567.80	603.80
2	W12x106	21'-0"	582.10	603.10	16	W27x194	36'-0"	567.80	603.80
3	W12x106	21'-0"	582.10	603.10	17	W27x194	36'-0"	567.80	603.80
4	W12x230	25'-0"	578.10	603.10	18	W27x194	36'-0"	567.80	603.80
5	W12x230	25'-0"	578.10	603.10	19	W40x167	38'-0"	565.80	603.80
6	W12x230	25'-0"	578.10	603.10	20	W40x167	38'-0"	565.80	603.80
7	W27x146	28'-0"	575.50	603.50	21	W40x167	38'-0"	565.80	603.80
8	W27x146	28'-0"	575.50	603.50	22	W40x167	38'-0"	565.80	603.80
9	W27x146	28'-0"	575.50	603.50	23	W40x167	38'-0"	565.80	603.80
10	W27x146	28'-0"	575.50	603.50	24	W40x277	41'-0"	562.80	603.80
11	W27x146	33'-0"	570.80	603.80	25	W40x277	41'-0"	562.80	603.80
12	W27x146	33'-0"	570.80	603.80	26	W40x277	41'-0"	562.80	603.80
13	W27x146	33'-0"	570.80	603.80	27	W40x277	41'-0"	562.80	603.80
14	W27x146	33'-0"	570.80	603.80	28	W40x277	41'-0"	562.80	603.80

SECANT LAGGING SUMMARY

BETWEEN SHAFTS NO.	DIAMETER	LENGTH	BOTTOM ELEV.	TOP ELEV.
28-BR	36"	16'-1"	584.87	600.95

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Stud Shear Connectors	Each	132
Furnishing Soldier Piles (W Section)	Foot	921
Drilling and Setting Soldier Piles (In Soil)	Cu. Ft.	7200.5
Drilling and Setting Soldier Piles (In Rock)	Cu. Ft.	3666.4
Secant Lagging	Cu. Ft.	114

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Madison\Sheet\09L01798-Madison-Retaining-Wall-Plans.dgn

HANSON

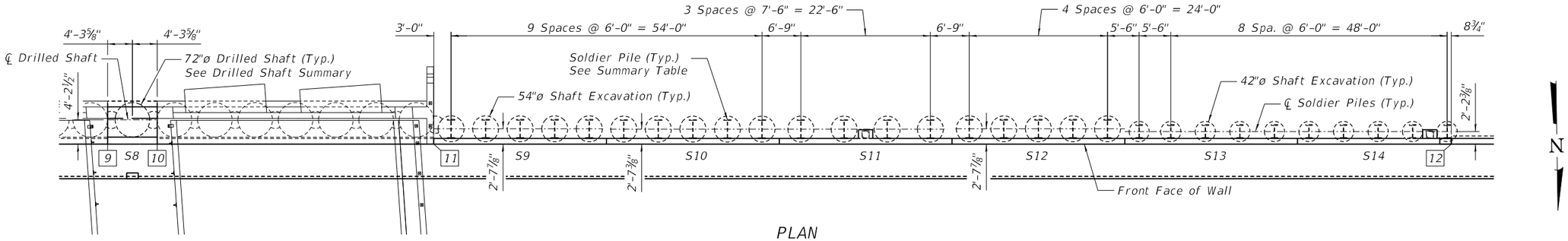
USER NAME = Johns00944	DESIGNED - KMS	REVISED -	
	CHECKED - RGC	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN - EJM	REVISED -	
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOLDIER PILES – SOUTH WALL
RETAINING WALLS – MADISON STREET

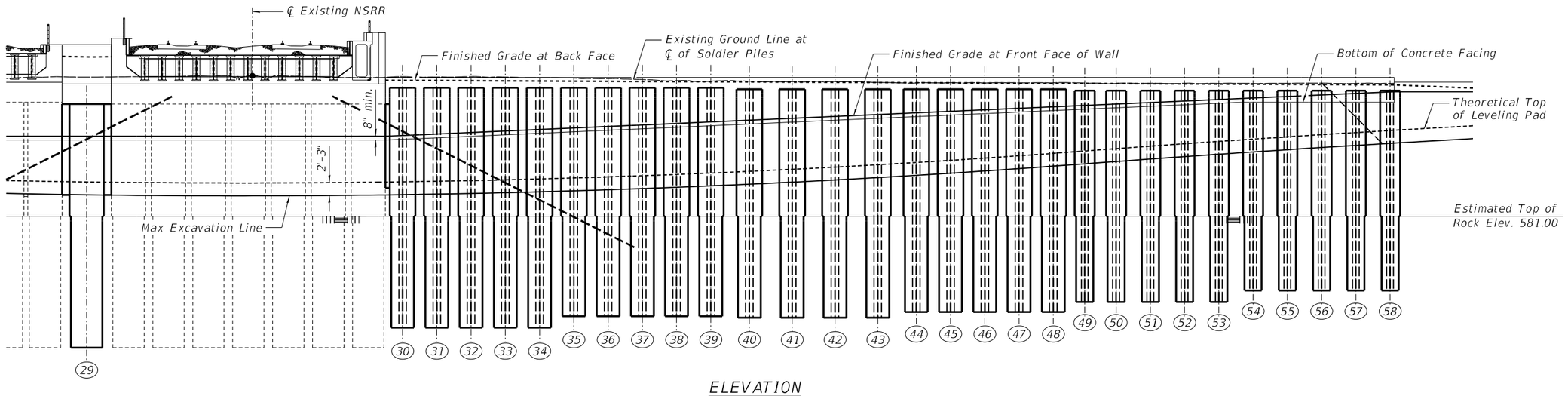
SHEET NO. 9 OF 34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	329
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			



12 = Control Point

PLAN



ELEVATION

SOLDIER PILE SUMMARY

PILE NO.	PILE SIZE	LENGTH	BOTTOM ELEVATION	TOP ELEVATION	PILE NO.	PILE SIZE	LENGTH	BOTTOM ELEVATION	TOP ELEVATION
30	W40x277	42'-0"	561.50	603.50	45	W40x277	39'-0"	564.25	603.25
31	W40x277	42'-0"	561.50	603.50	46	W40x277	39'-0"	564.25	603.25
32	W40x277	42'-0"	561.50	603.50	47	W40x277	39'-0"	564.25	603.25
33	W40x277	42'-0"	561.50	603.50	48	W40x277	39'-0"	564.25	603.25
34	W40x277	42'-0"	561.50	603.50	49	W27x235	37'-0"	566.00	603.00
35	W40x199	40'-0"	563.50	603.50	50	W27x235	37'-0"	566.00	603.00
36	W40x199	40'-0"	563.50	603.50	51	W27x235	37'-0"	566.00	603.00
37	W40x199	40'-0"	563.50	603.50	52	W27x235	37'-0"	566.00	603.00
38	W40x199	40'-0"	563.50	603.50	53	W27x235	37'-0"	566.00	603.00
39	W40x199	40'-0"	563.50	603.50	54	W27x235	35'-0"	568.00	603.00
40	W40x199	40'-0"	563.25	603.25	55	W27x235	35'-0"	568.00	603.00
41	W40x199	40'-0"	563.25	603.25	56	W27x235	35'-0"	568.00	603.00
42	W40x199	40'-0"	563.25	603.25	57	W27x235	35'-0"	568.00	603.00
43	W40x199	40'-0"	563.25	603.25	58	W27x235	35'-0"	568.00	603.00
44	W40x277	39'-0"	564.30	603.25					

DRILLED SHAFT SUMMARY

SHAFT NO.	LENGTH	BOTTOM ELEVATION	TOP ELEVATION
29	42'-7¾"	558.00	600.65

SECANT LAGGING SUMMARY

BETWEEN SHAFTS NO.	DIAMETER	LENGTH	BOTTOM ELEV.	TOP ELEV.
BR-29	36"	15'-11"	584.73	600.65
29-BR	36"	15'-11"	584.73	600.65
BR-30	36"	14'-8"	585.98	600.65

SOUTH WALL STUD SHEAR CONNECTORS REQUIRED

Pile No.	Number Required on Each Pile
30-32	7
33-38	6
39-42	5
43-48	4
49-52	3
53-58	2

Space at 1'-6" Max. cts.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Stud Shear Connectors	Each	125
Drilled Shafts In Soil	Cu. Yd.	20.6
Drilled Shafts In Rock	Cu. Yd.	23.6
Furnishing Soldier Piles (W Section)	Foot	1125
Drilling and Setting Soldier Piles (In Soil)	Cu. Ft.	9434.9
Drilling and Setting Soldier Piles (In Rock)	Cu. Ft.	6550.9
Untreated Timber Lagging	Sq. Ft.	3488.5
Secant Lagging	Cu. Ft.	329

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

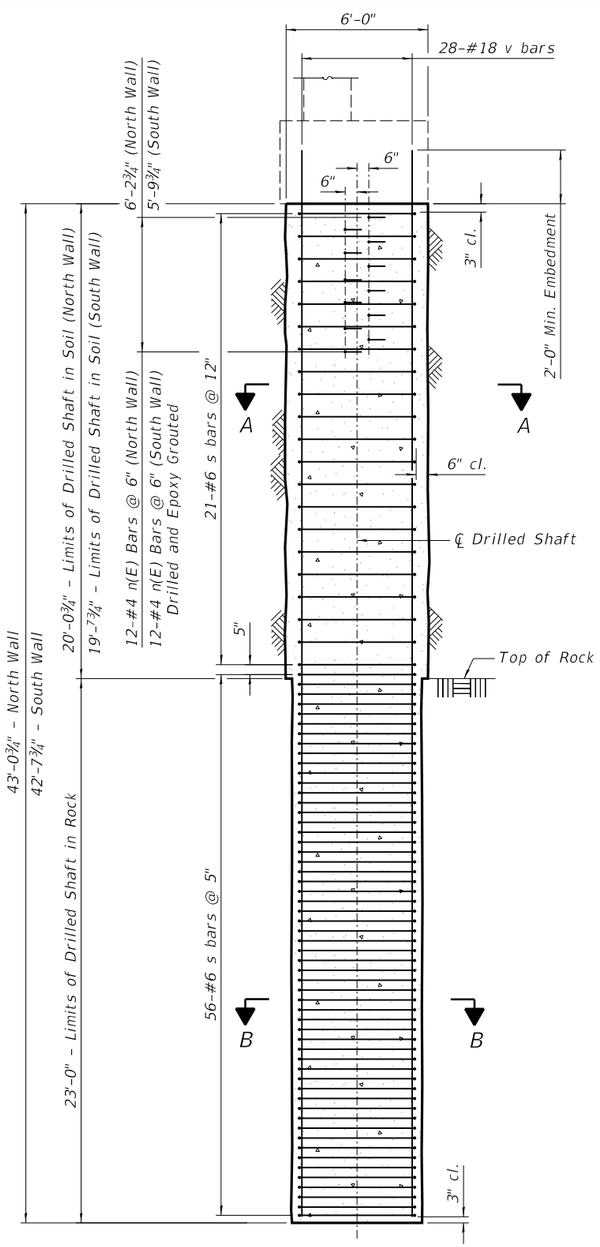
HANSON

USER NAME = Johns00944	DESIGNED - KMS	REVISED -
	CHECKED - RGC	REVISED -
PLOT SCALE = 0.167 ' / in.	DRAWN - EJM	REVISED -
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

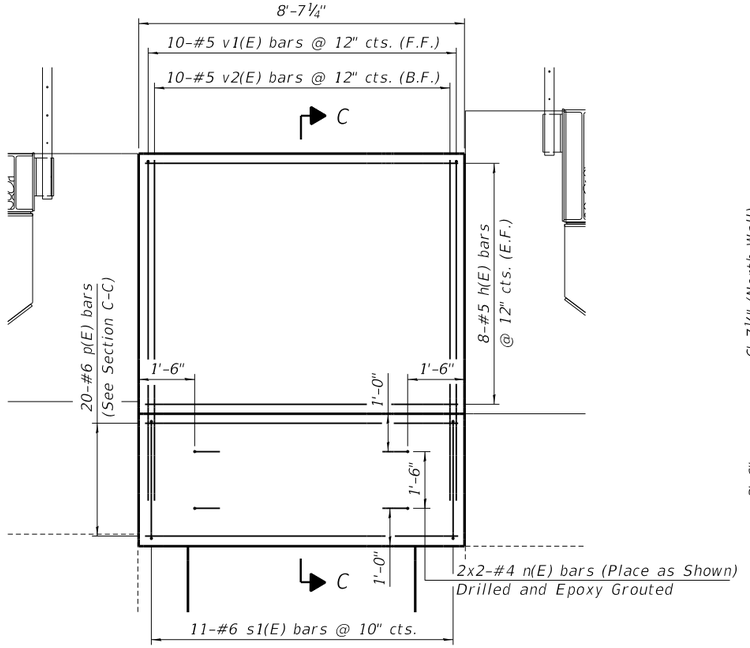
SOLDIER PILES – SOUTH WALL
RETAINING WALLS – MADISON STREET
SHEET NO. 10 OF 34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	330
		CONTRACT NO. 93762		
		ILLINOIS	FED. AID PROJECT	



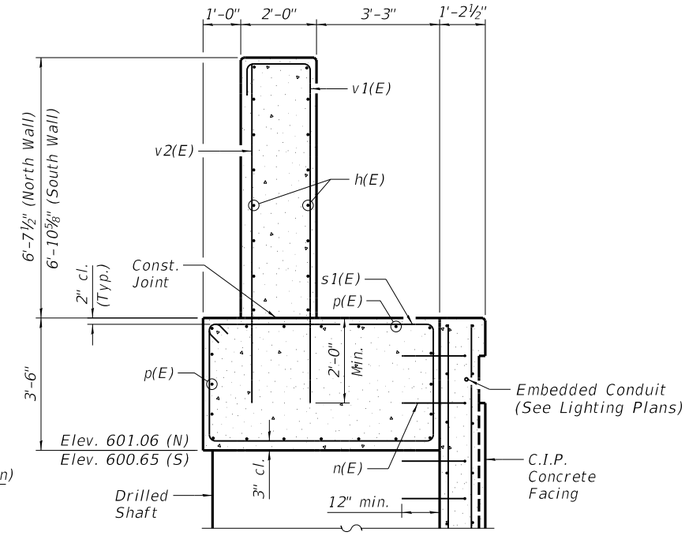
DRILLED SHAFT ELEVATION

Showing Reinforcement



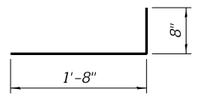
ELEVATION AT CAP

South Wall Shown (North Wall Similar)
(Facing Not Shown)

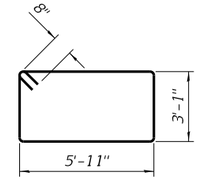


SECTION C-C

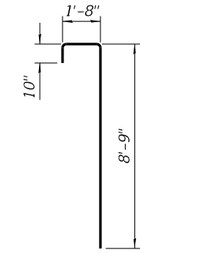
South Wall Shown (North Wall Similar)



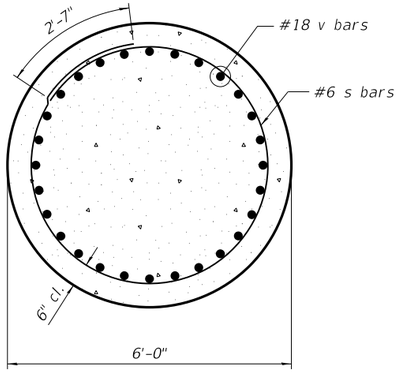
BAR n(E)



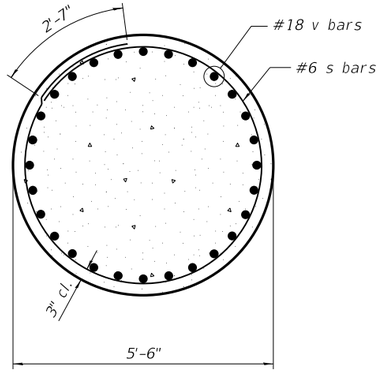
BAR s1(E)



BAR v1(E)



SECTION A-A



SECTION B-B

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	32	#5	8'-3"	———
n(E)	32	#4	2'-4"	⌐¬
p(E)	40	#6	8'-3"	———
s	154	#6	18'-4"	○
s1(E)	22	#6	19'-4"	▭
v	56	#18	44'-10"	———
v1(E)	20	#5	11'-3"	⌐——¬
v2(E)	20	#5	8'-9"	———
Reinforcement Bars			Pound	22150
Reinforcement Bars Epoxy Coated			Pound	1880
Concrete Structures (Retaining Wall)			Cu. Yd.	27.0

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Madison\Sheet\09L01798-Madison-Retaining-Wall-Plans.dgn

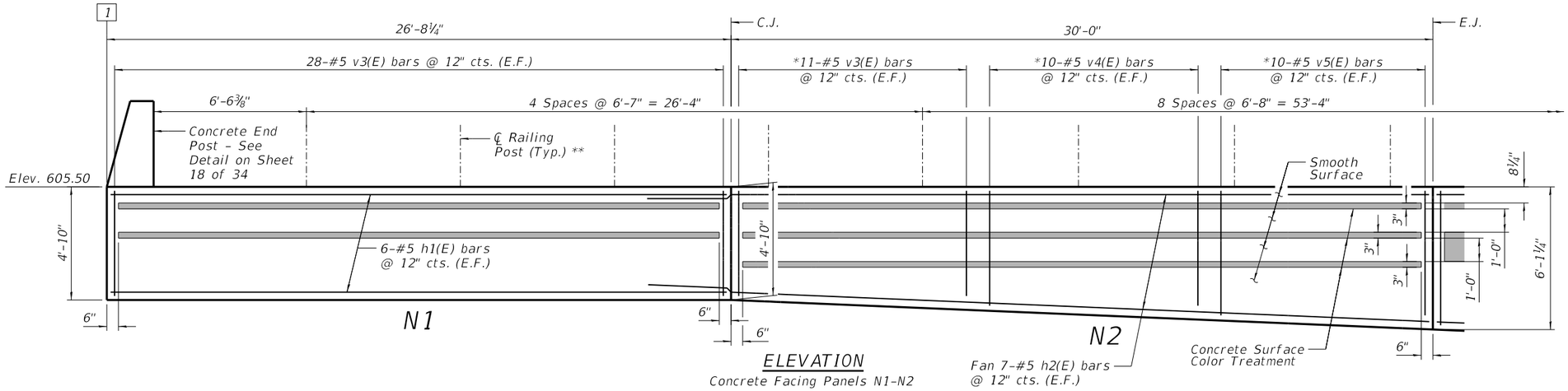
USER NAME = Johns00944	DESIGNED - KMS	REVISED -	
	CHECKED - RGC	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN - EJM	REVISED -	
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DRILLED SHAFT AND CAP DETAILS
RETAINING WALLS – MADISON STREET

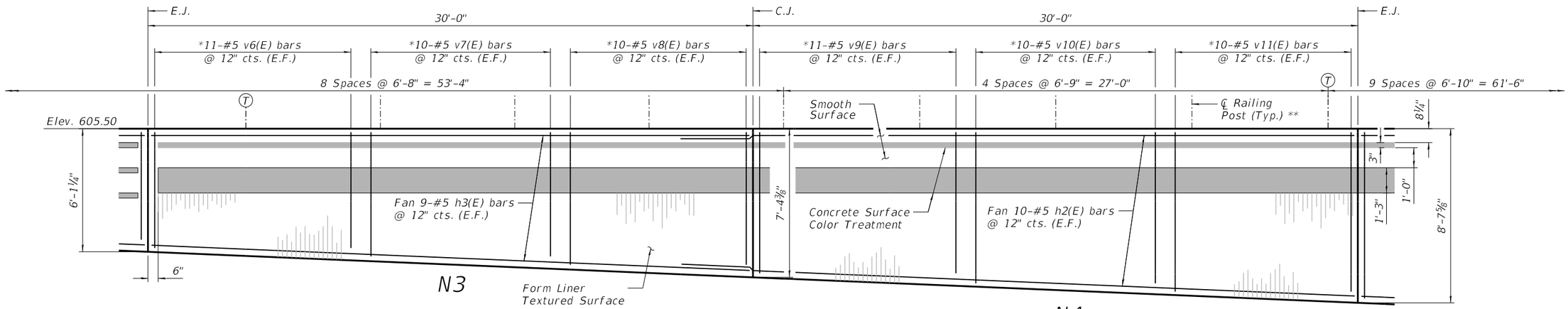
SHEET NO. 11 OF 34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	331
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			



ELEVATION

Concrete Facing Panels N1-N2



ELEVATION

Concrete Facing Panels N3-N4

Ⓣ = Intermediate Tensioning Posts

* Stagger Bars

** Steel Railing (Special) Adjust as Necessary to Avoid C.J.'s.

1 = Control Point

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
h1(E)	12	#5	26'-4"	———
h2(E)	34	#5	33'-5"	———
h3(E)	18	#5	29'-8"	———
v3(E)	78	#5	4'-6"	———
v4(E)	20	#5	4'-11"	———
v5(E)	20	#5	5'-4"	———
v6(E)	22	#5	5'-9"	———
v7(E)	20	#5	6'-2"	———
v8(E)	20	#5	6'-7"	———
v9(E)	22	#5	7'-0"	———
v10(E)	20	#5	7'-5"	———
v11(E)	20	#5	7'-10"	———
Reinforcement Bars Epoxy Coated			Pound	3530
Concrete Structures (Retaining Wall)			Cu. Yd.	28.6

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

HANSON

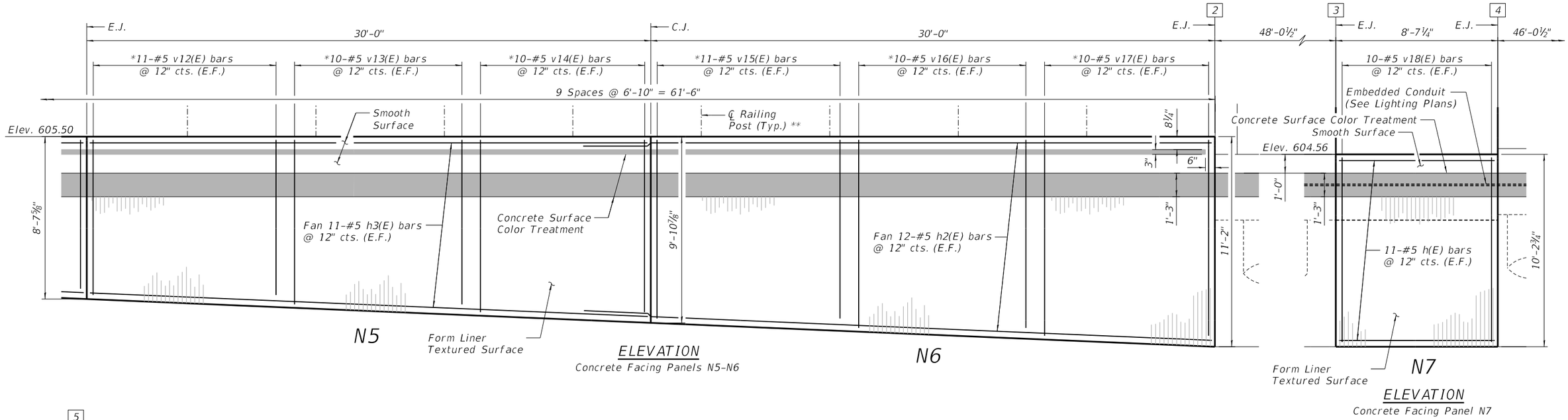
USER NAME = Johns00944	DESIGNED - KMS	REVISED -	
	CHECKED - RGC	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN - EJM	REVISED -	
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONCRETE FACING - NORTH WALL
RETAINING WALLS - MADISON STREET

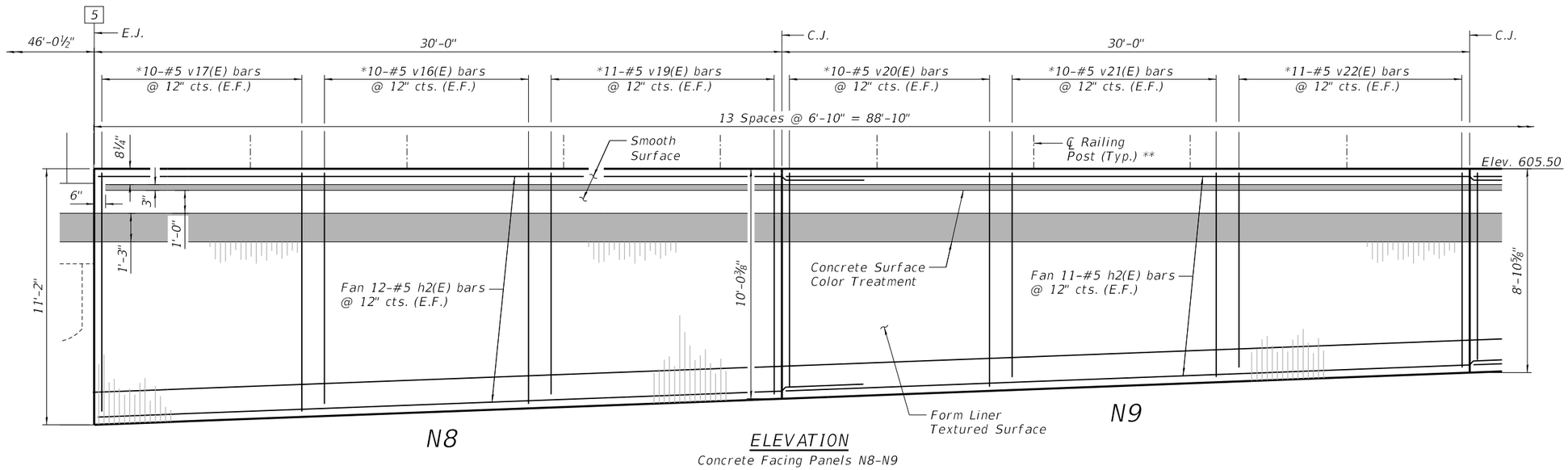
SHEET NO. 12 OF 34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67.67A	20-00491-00-BR	SANGAMON	509	332
		CONTRACT NO. 93762		
		ILLINOIS	FED. AID PROJECT	



ELEVATION
Concrete Facing Panels N5-N6

ELEVATION
Concrete Facing Panel N7



ELEVATION
Concrete Facing Panels N8-N9

Note:
See Sheet 28 of 34 for Railing Details & Sheet 11 of 34 for Cap Details.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	22	#5	8'-3"	———
h2(E)	70	#5	33'-5"	———
h3(E)	22	#5	29'-8"	———
v12(E)	22	#5	8'-2"	———
v13(E)	20	#5	8'-8"	———
v14(E)	20	#5	9'-1"	———
v15(E)	22	#5	9'-6"	———
v16(E)	40	#5	10'-0"	———
v17(E)	40	#5	10'-5"	———
v18(E)	20	#5	9'-10"	———
v19(E)	22	#5	9'-8"	———
v20(E)	20	#5	9'-3"	———
v21(E)	20	#5	8'-11"	———
v22(E)	22	#5	8'-5"	———
Reinforcement Bars Epoxy Coated			Pound	5940
Concrete Structures (Retaining Wall)			Cu. Yd.	50.1

2 = Control Point

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

* Stagger Bars

** Steel Railing (Special) Adjust as Necessary to Avoid C.J.'s.

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

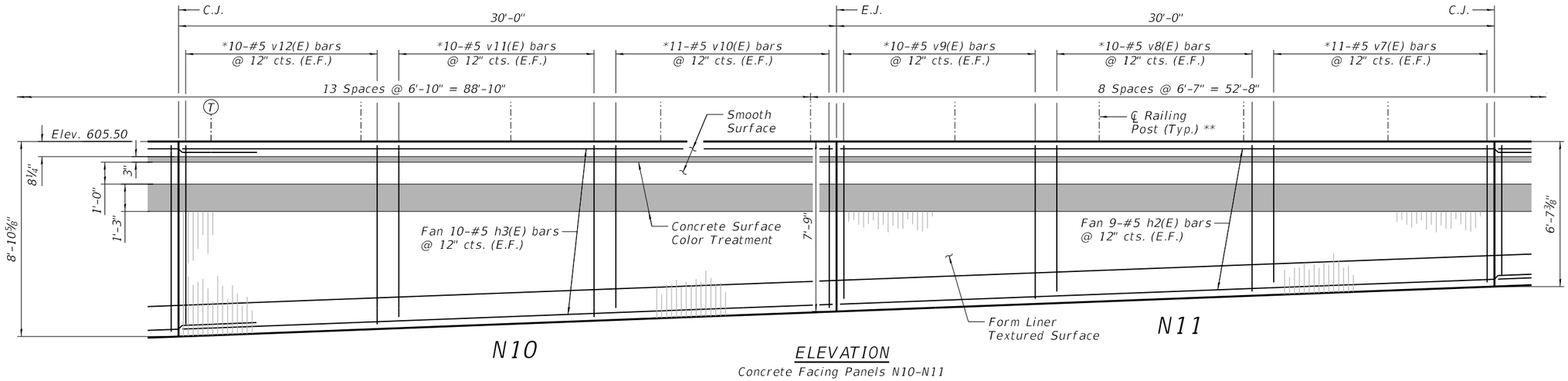
pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Madison\Sheet\09L01798-Madison-Retaining-Wall-Plans.dgn

USER NAME = Johns00944	DESIGNED - KMS	REVISED -	
	CHECKED - RGC	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN - EJM	REVISED -	
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

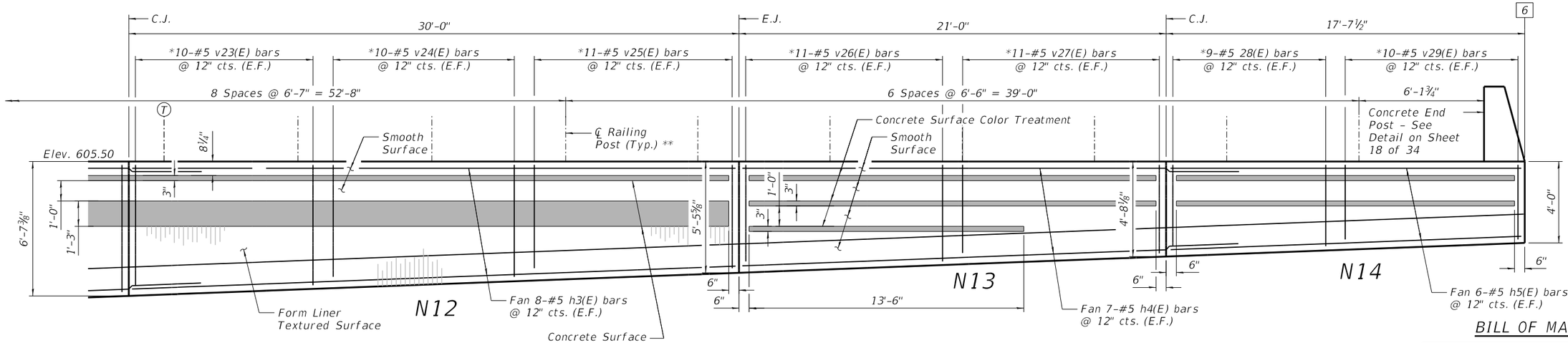
CONCRETE FACING – NORTH WALL
RETAINING WALLS – MADISON STREET
SHEET NO. 13 OF 34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	333
		CONTRACT NO. 93762		
		ILLINOIS FED. AID PROJECT		



ELEVATION

Concrete Facing Panels N10-N11



ELEVATION

Concrete Facing Panels N12-N14

T = Intermediate Tensioning Posts

* Stagger Bars

** Steel Railing (Special) Adjust as Necessary to Avoid C.J.'s.

6 = Control Point

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
h2(E)	18	#5	33'-5"	———
h3(E)	36	#5	29'-8"	———
h4(E)	14	#5	24'-5"	———
h5(E)	12	#5	17'-3"	———
v7(E)	22	#5	6'-2"	———
v8(E)	20	#5	6'-7"	———
v9(E)	20	#5	7'-0"	———
v10(E)	22	#5	7'-5"	———
v11(E)	20	#5	7'-10"	———
v12(E)	20	#5	8'-2"	———
v23(E)	20	#5	5'-11"	———
v24(E)	20	#5	5'-6"	———
v25(E)	22	#5	5'-1"	———
v26(E)	22	#5	4'-8"	———
v27(E)	22	#5	4'-4"	———
v28(E)	18	#5	4'-0"	———
v29(E)	20	#5	3'-8"	———
Reinforcement Bars Epoxy Coated			Pound	3960
Concrete Structures (Retaining Wall)			Cu. Yd.	32.4

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

HANSON

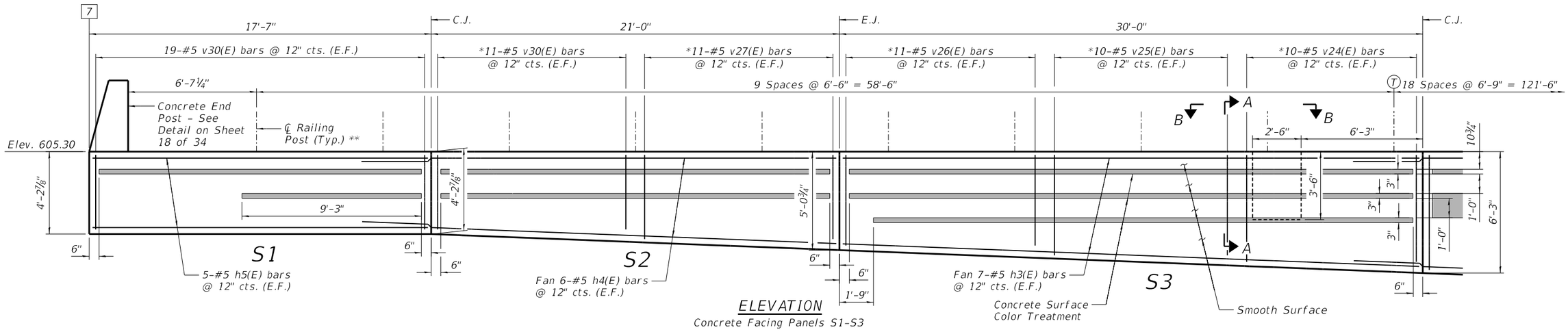
USER NAME = Johns00944	DESIGNED - KMS	REVISED -	
	CHECKED - RGC	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN - EJM	REVISED -	
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONCRETE FACING - NORTH WALL
RETAINING WALLS - MADISON STREET

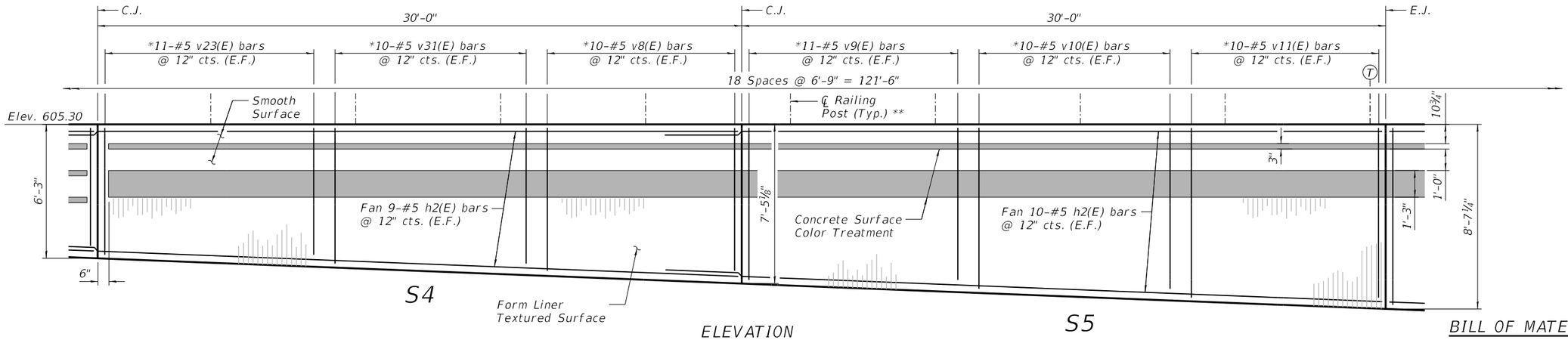
SHEET NO. 14 OF 34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	334
		CONTRACT NO. 93762		
		ILLINOIS FED. AID PROJECT		



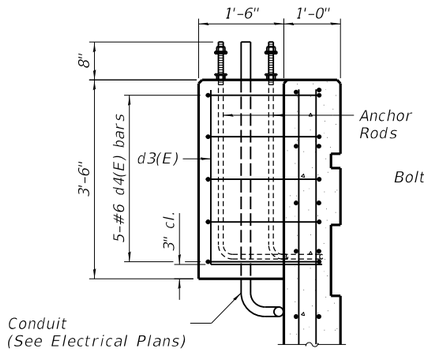
ELEVATION

Concrete Facing Panels S1-S3

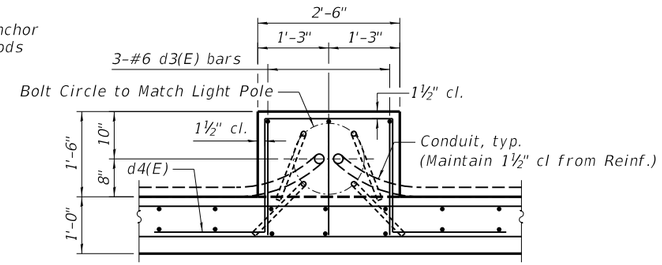


ELEVATION

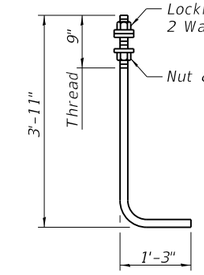
Concrete Facing Panels S4-S5



SECTION A-A

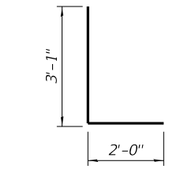


SECTION B-B

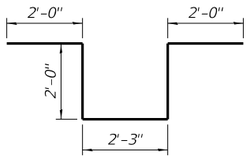


ANCHOR ROD

Diameter as specified for light poles. (ASTM F 1554 Grade 105)



BAR d3(E)



BAR d4(E)

Ⓣ = Intermediate Tensioning Posts

* Stagger Bars

** Steel Railing (Special) Adjust as Necessary to Avoid C.J.'s.

7 = Control Point

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
d3(E)	3	#6	5'-1"	
d4(E)	5	#6	10'-3"	
h2(E)	38	#5	33'-5"	
h3(E)	14	#5	29'-8"	
h4(E)	12	#5	24'-5"	
h5(E)	10	#5	17'-3"	
v8(E)	20	#5	6'-7"	
v9(E)	22	#5	7'-0"	
v10(E)	20	#5	7'-5"	
v11(E)	20	#5	7'-10"	
v23(E)	22	#5	5'-11"	
v24(E)	20	#5	5'-6"	
v25(E)	20	#5	5'-1"	
v26(E)	22	#5	4'-8"	
v27(E)	22	#5	4'-4"	
v30(E)	60	#5	3'-10"	
v31(E)	20	#5	6'-4"	
Reinforcement Bars Epoxy Coated		Pound	3890	
Concrete Structures (Retaining Wall)		Cu. Yd.	31.4	

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

HANSON

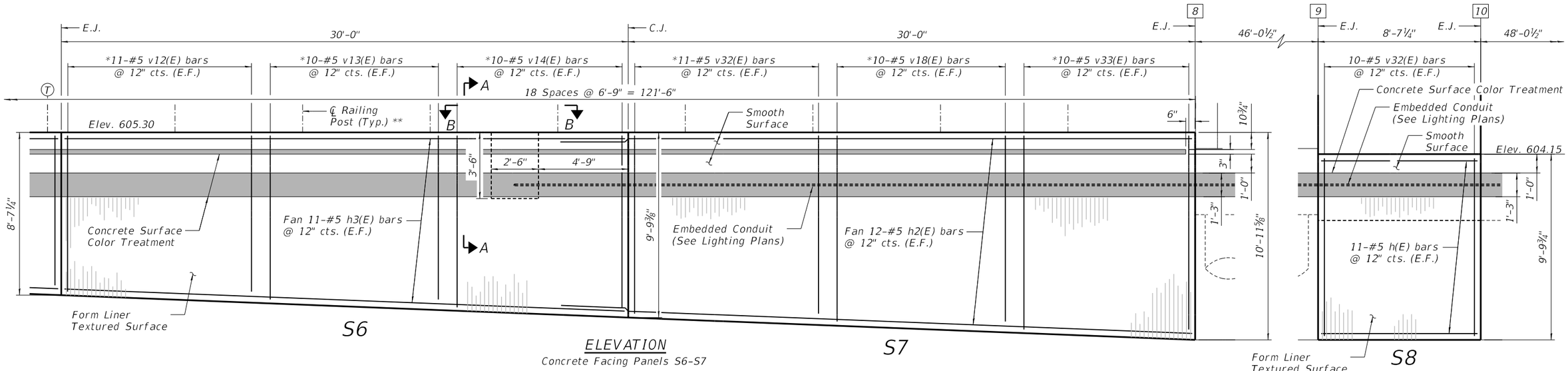
USER NAME = Johns00944	DESIGNED - KMS	REVISED -
	CHECKED - RGC	REVISED -
PLOT SCALE = 0.167 ' / in.	DRAWN - EJM	REVISED -
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONCRETE FACING - SOUTH WALL
RETAINING WALLS - MADISON STREET

SHEET NO. 15 OF 34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67.67A	20-00491-00-BR	SANGAMON	509	335
		CONTRACT NO. 93762		
		ILLINOIS	FED. AID PROJECT	

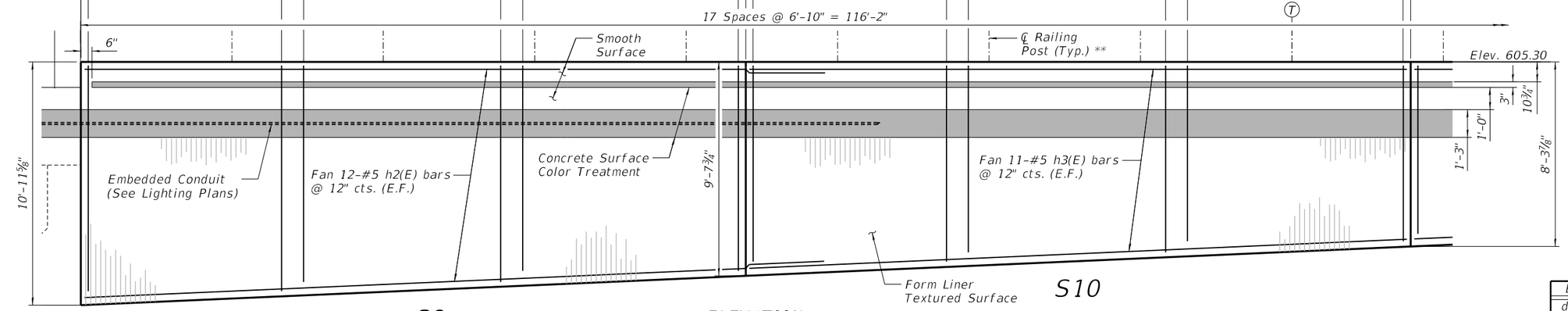


ELEVATION

Concrete Facing Panels S6-S7

ELEVATION

Concrete Facing Panel S8



ELEVATION

Concrete Facing Panels S9-S10

T = Intermediate Tensioning Posts

* Stagger Bars

** Steel Railing (Special)
Adjust as Necessary
to Avoid C.J.'s.

10 = Control Point

Note:
See Sheet 28 of 34
for Railing Details &
Sheet 11 of 34 for
Cap Details.

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
d3(E)	3	#6	5'-1"	L
d4(E)	5	#6	10'-3"	⊔
h(E)	22	#5	8'-3"	———
h2(E)	48	#5	33'-5"	———
h3(E)	44	#5	29'-8"	———
v2(E)	20	#5	8'-10"	———
v11(E)	22	#5	7'-10"	———
v12(E)	22	#5	8'-2"	———
v13(E)	20	#5	8'-8"	———
v14(E)	20	#5	9'-1"	———
v18(E)	20	#5	9'-10"	———
v19(E)	20	#5	9'-8"	———
v20(E)	22	#5	9'-3"	———
v22(E)	20	#5	8'-5"	———
v32(E)	42	#5	9'-5"	———
v33(E)	40	#5	10'-2"	———
Reinforcement Bars Epoxy Coated			Pound	5880
Concrete Structures (Retaining Wall)			Cu. Yd.	49.1

HANSON

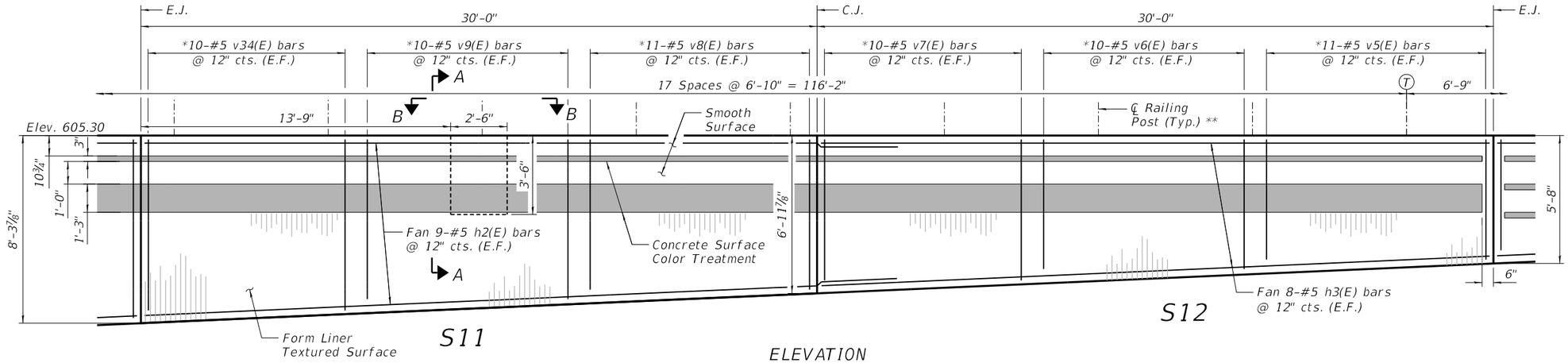
USER NAME = Johns00944	DESIGNED - KMS	REVISED -	
	CHECKED - RGC	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN - EJM	REVISED -	
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONCRETE FACING – SOUTH WALL
RETAINING WALLS – MADISON STREET

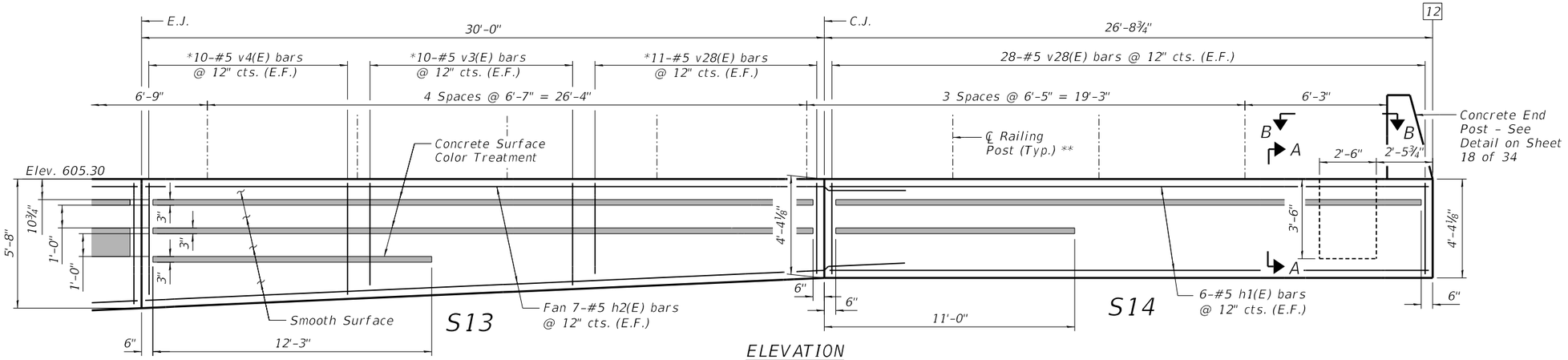
SHEET NO. 16 OF 34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	336
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			



ELEVATION

Concrete Facing Panels S11-S12



ELEVATION

Concrete Facing Panels S13-S14

Ⓣ = Intermediate Tensioning Posts

6 = Control Point

* Stagger Bars

** Steel Railing (Special) Adjust as Necessary to Avoid C.J.'s.

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
d3(E)	6	#6	5'-1"	⌊
d4(E)	10	#6	10'-3"	⌐⌙
h1(E)	12	#5	26'-4"	———
h2(E)	32	#5	33'-5"	———
h3(E)	16	#5	29'-8"	———
v3(E)	20	#5	4'-6"	———
v4(E)	20	#5	4'-11"	———
v5(E)	22	#5	5'-4"	———
v6(E)	20	#5	5'-9"	———
v7(E)	20	#5	6'-2"	———
v8(E)	22	#5	6'-7"	———
v9(E)	20	#5	7'-0"	———
v28(E)	78	#5	4'-0"	———
v34(E)	20	#5	7'-7"	———
Reinforcement Bars Epoxy Coated			Pound	3490
Concrete Structures (Retaining Wall)			Cu. Yd.	27.1

HANSON

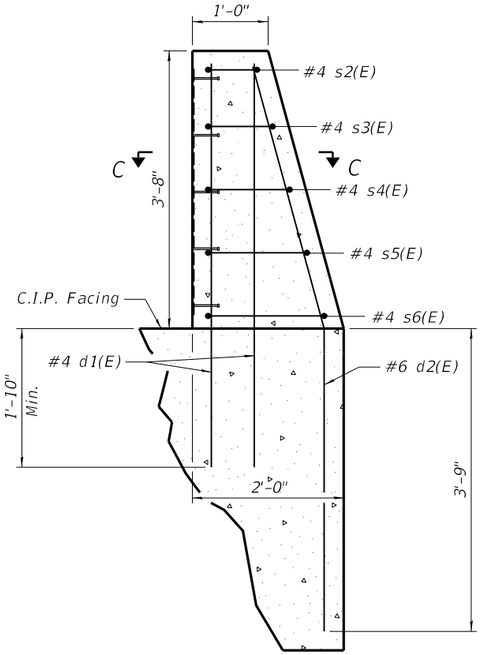
USER NAME = Johns00944	DESIGNED - KMS	REVISED -	
	CHECKED - RGC	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN - EJM	REVISED -	
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONCRETE FACING - SOUTH WALL
RETAINING WALLS - MADISON STREET

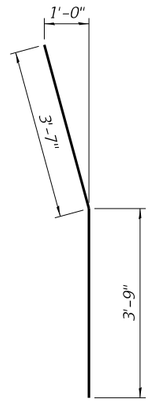
SHEET NO. 17 OF 34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	337
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			

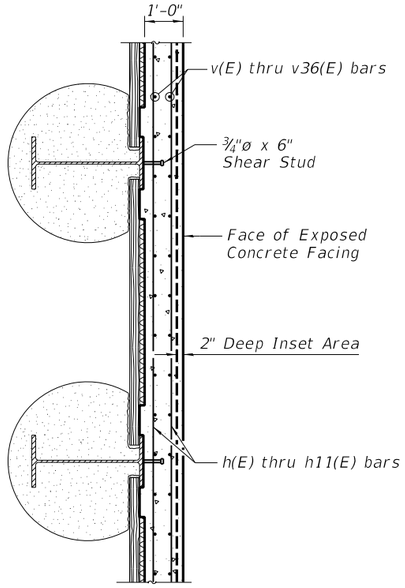


CABLE ANCHORAGE CONCRETE END POST DETAIL

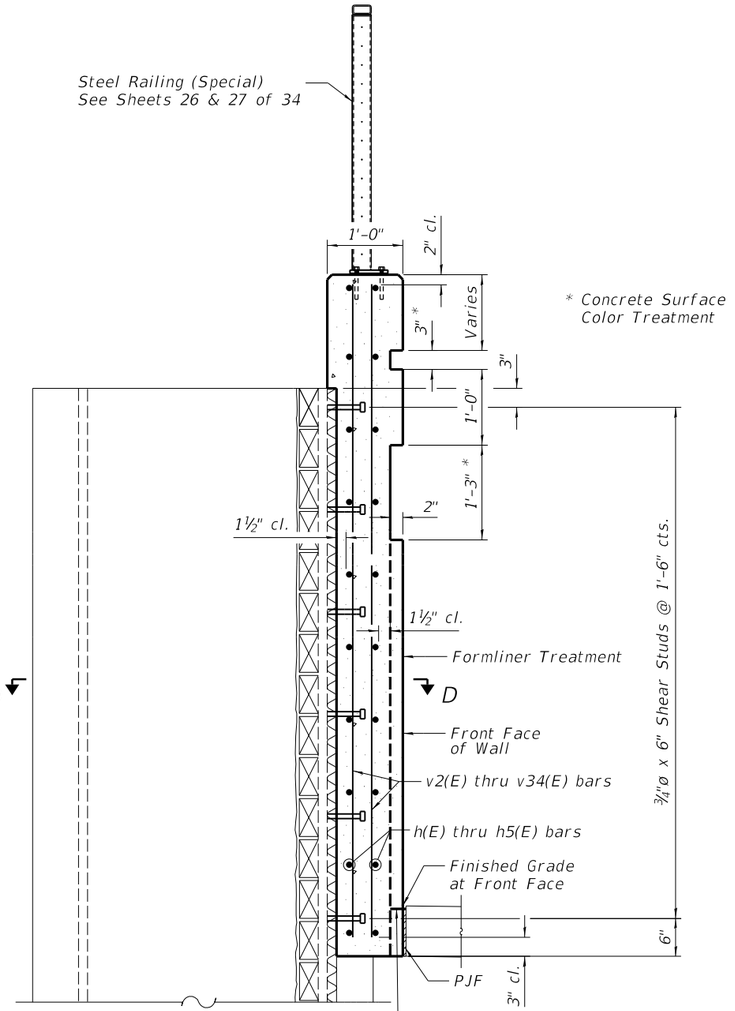
Typ. of 4 Posts on Concrete Facing
See Sheet 27 of 34 for Railing Connection Details



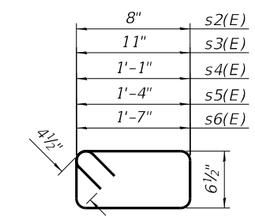
d2(E) BAR



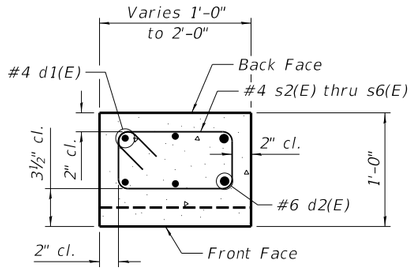
SECTION D-D



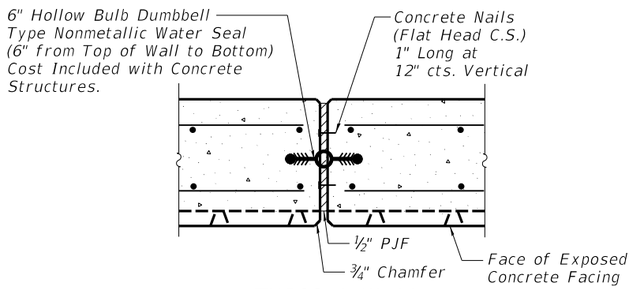
TYPICAL SECTION THRU CONCRETE FACING



s2(E) THRU s6(E) BARS



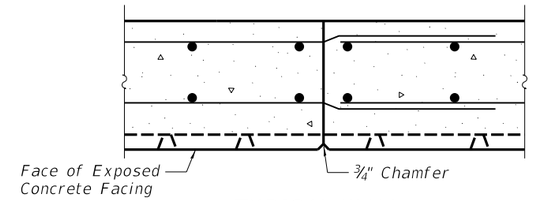
SECTION C-C



TYPICAL WALL EXPANSION JOINT DETAIL

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d1(E)	16	#4	5'-5"	
d2(E)	8	#6	7'-4"	
s2(E)	4	#4	3'-2"	
s3(E)	4	#4	3'-8"	
s4(E)	4	#4	4'-0"	
s5(E)	4	#4	4'-6"	
s6(E)	4	#4	5'-0"	
Reinforcement Bars Epoxy Coated		Pound	200	
Concrete Structures (Retaining Wall)		Cu. Yd.	0.8	



TYPICAL WALL CONSTRUCTION JOINT DETAIL

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Madison\Sheet\09L01798-Madison-Retaining-Wall-Plans.dgn

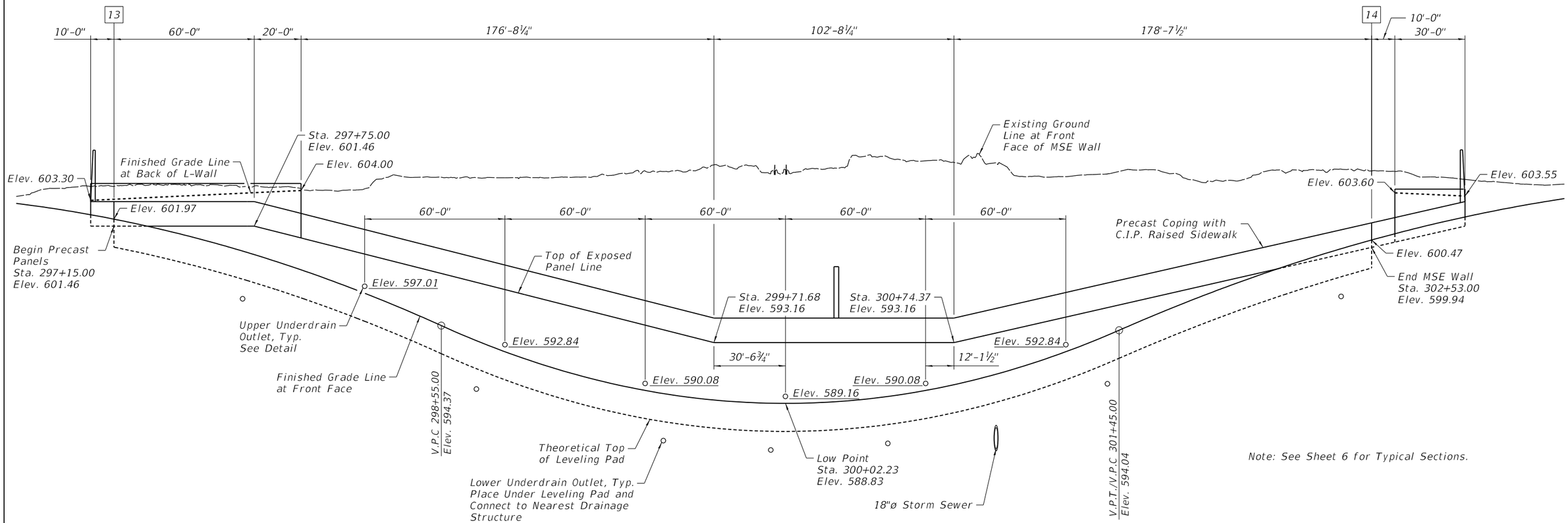
HANSON

USER NAME = Johns00944	DESIGNED - KMS	REVISED -
	CHECKED - RGC	REVISED -
PLOT SCALE = 0.167 ' / in.	DRAWN - EJM	REVISED -
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONCRETE FACING DETAILS
RETAINING WALLS – MADISON STREET
SHEET NO. 18 OF 34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	338
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			



NORTH WALL ELEVATION

MSE Wall Notes

1. The MSE Wall supplier's internal stability design shall account for the L-Wall anchorage slab's factored bearing pressure of 0.40 ksf and horizontal factored sliding force of 0.65 kips/ft. of wall. This loading includes all live loads.

2. Apply Concrete Sealer to exposed faces of Precast Panels, Coping, and Anchorage Slab.

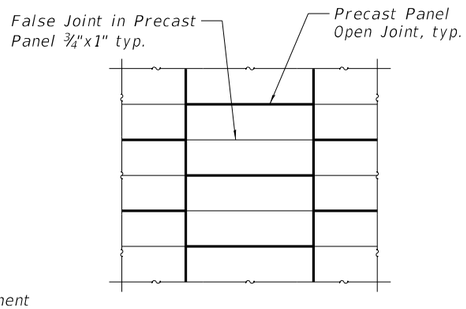
MSE Wall Design Loads

1. Native soil behind select fill
   Unit Weight = 125 pcf, ø = 30°

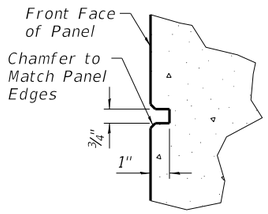
2. Vertical Live Load on Sidewalk = 75 pcf

3. Vertical Live Load behind upper wall
   Cooper E-80 at railroad tracks
   240 psf traffic surcharge elsewhere.

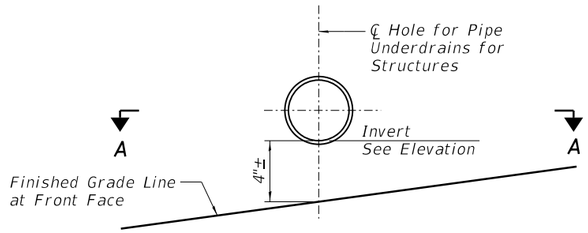
External stability of the MSE Wall in front of the permanent soldier pile retaining wall has been evaluated for the greater of the active pressure including surcharge behind the tangent pile wall applied only through the gaps between the drilled shafts or 35 psf/ft applied to the entire reinforced soil mass.



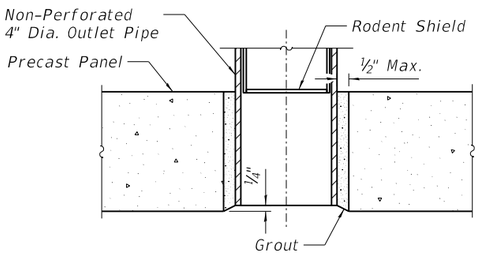
MSE WALL PRECAST PANEL PATTERN



FALSE JOINT RUSTICATION



UPPER UNDERDRAIN OUTLET DETAIL



SECTION A-A

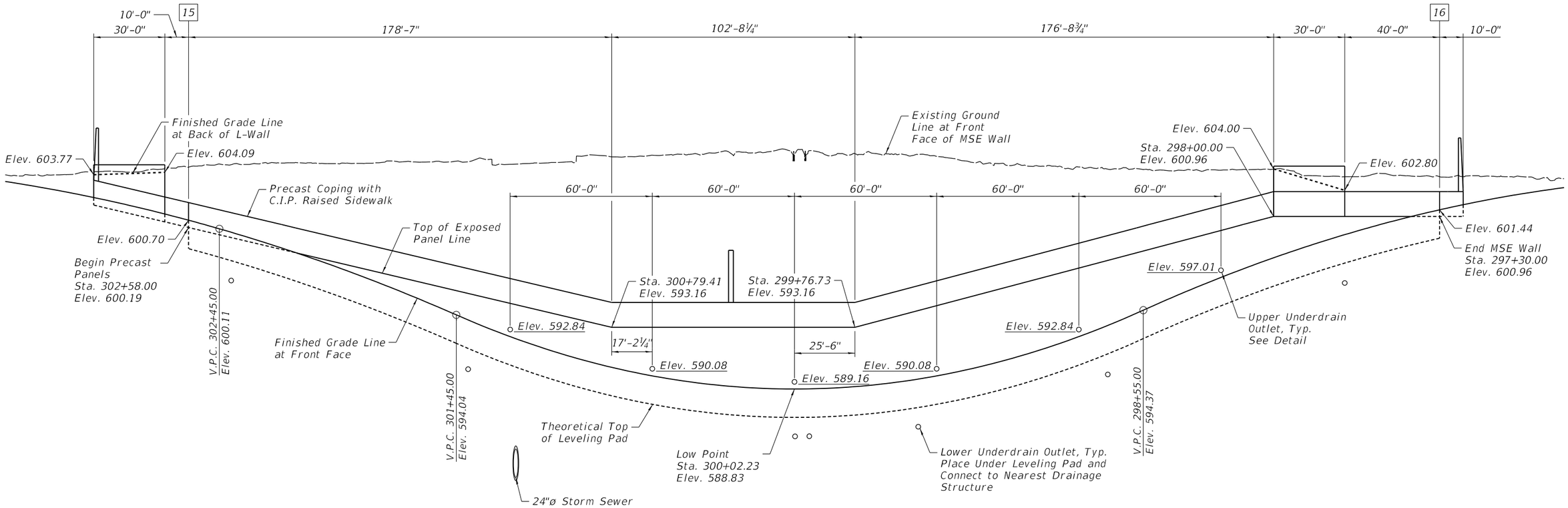
pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L0179B\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Madison\Sheet\09L0179B-Madison-Retaining-Wall-Plans.dgn

HANSON	USER NAME = Johns00944	DESIGNED - KMS	REVISED -
		CHECKED - RGC	REVISED -
	PLOT SCALE = 0.167 ' / in.	DRAWN - EJM	REVISED -
	PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MSE ELEVATION – NORTH WALL
RETAINING WALLS – MADISON STREET
SHEET NO. 19 OF 34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	339
		CONTRACT NO. 93762		
		ILLINOIS	FED. AID PROJECT	



Note: See Sheet 6 for Typical Sections.

SOUTH WALL ELEVATION

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Madison\Sheet\09L01798-Madison-Retaining-Wall-Plans.dgn

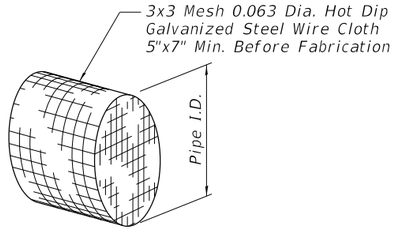
USER NAME = Johns00944	DESIGNED - KMS	REVISED -	
	CHECKED - RGC	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN - EJM	REVISED -	
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

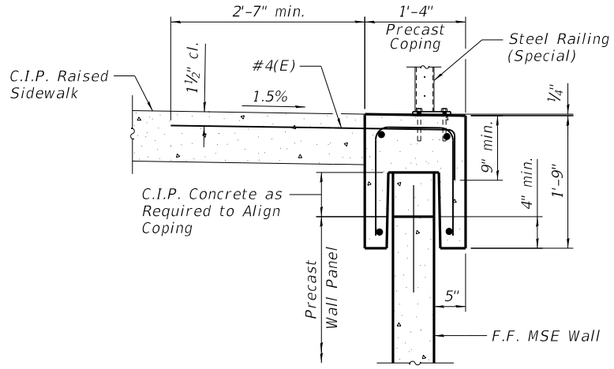
MSE ELEVATION – SOUTH WALL
RETAINING WALLS – MADISON STREET

SHEET NO. 20 OF 34 SHEETS

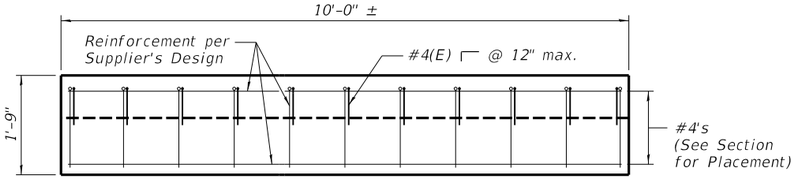
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	340
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			



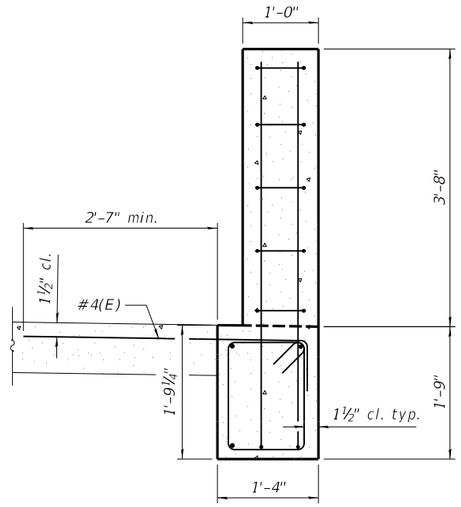
DETAIL OF RODENT SHIELD



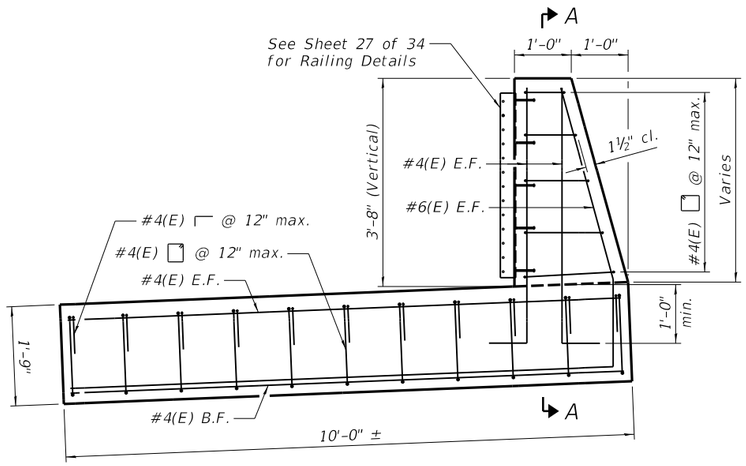
STANDARD COPING SECTION



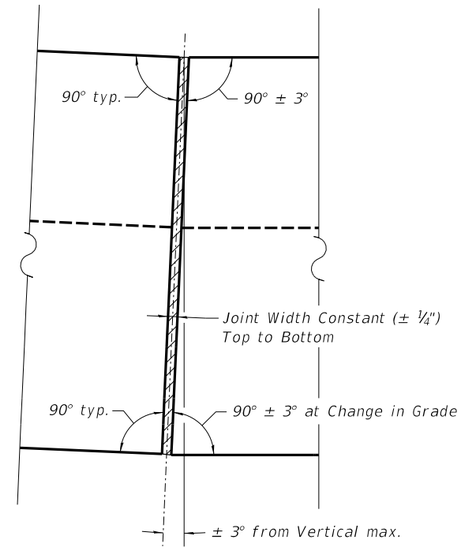
TYPICAL PRE-CAST COPING ELEVATION



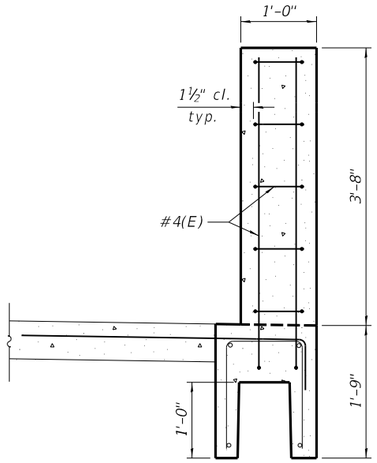
SECTION A-A



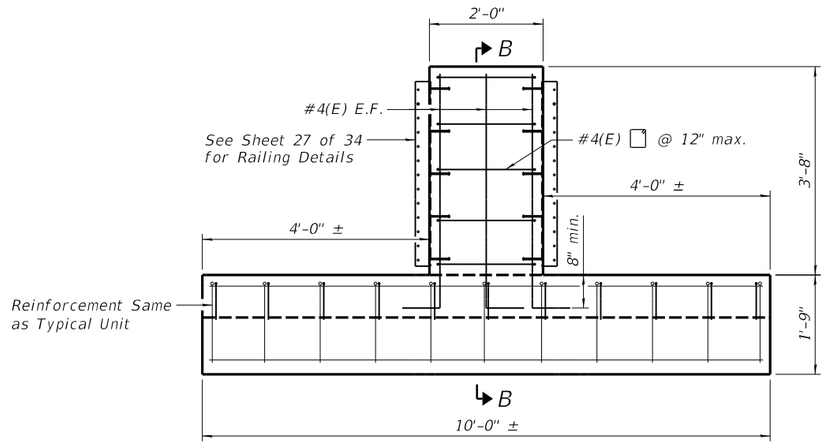
END POST UNIT ELEVATION



PRECAST UNIT JOINT ELEVATION



SECTION B-B



INTERMEDIATE POST UNIT ELEVATION

Notes:

1. *Precast coping, end posts, and intermediate posts shall be included in the cost of Mechanically Stabilized Earth Retaining Wall.*
2. *Embeds for railing shall be included in the cost of Steel Railing (Special).*
3. *Reinforcement for concrete end posts and for embedment into cast-in-place raised sidewalk shall be as shown, minimum. Other reinforcement shall be per supplier design.*

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

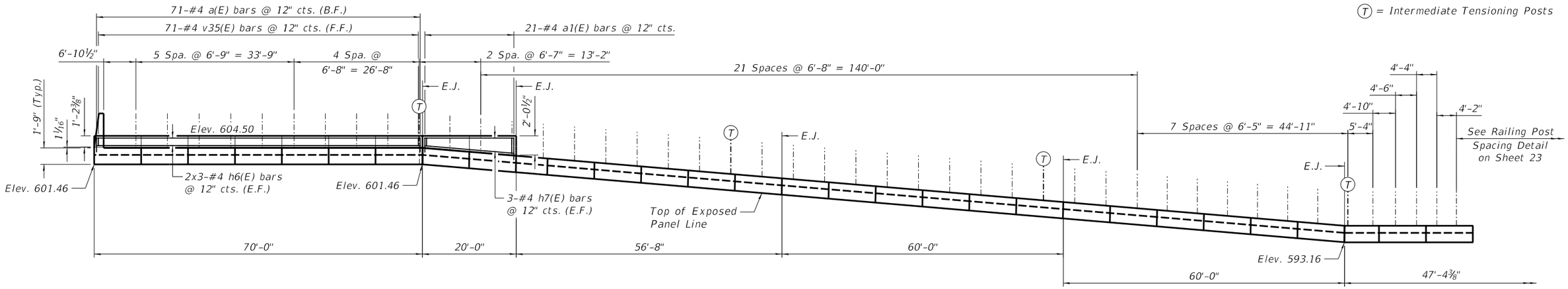
HANSON

USER NAME = Johns00944	DESIGNED - KMS	REVISED -
	CHECKED - RGC	REVISED -
PLOT SCALE = 0.167 ' / in.	DRAWN - EJM	REVISED -
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -

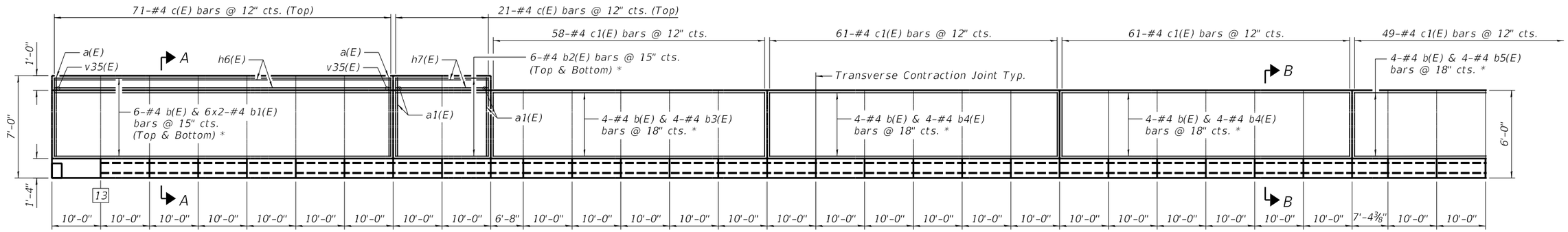
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MSE DETAILS
RETAINING WALLS – MADISON STREET
SHEET NO. 21 OF 34 SHEETS

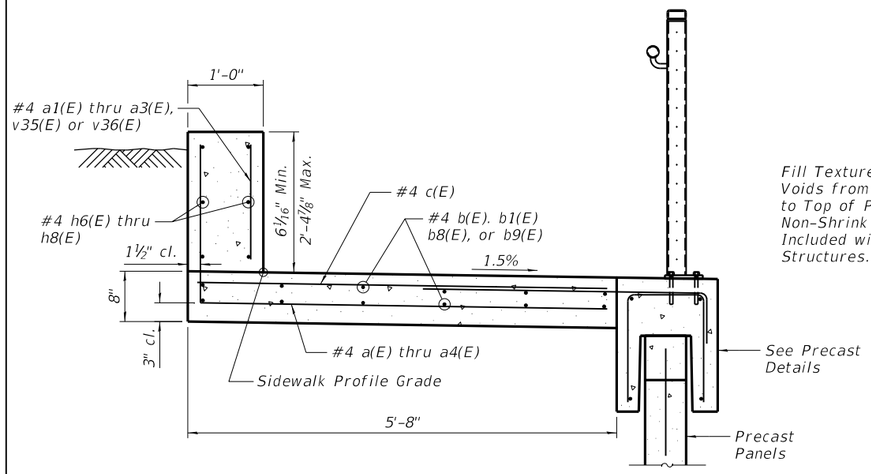
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	341
		CONTRACT NO. 93762		
		ILLINOIS	FED. AID PROJECT	



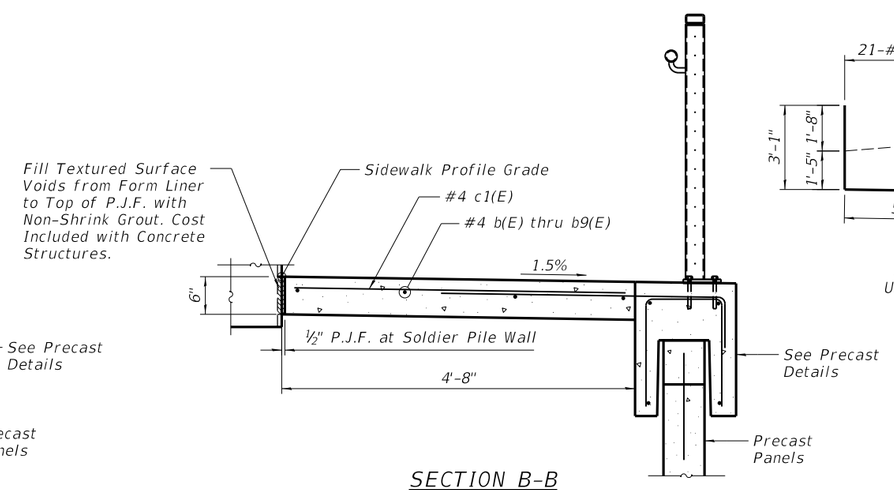
ELEVATION - NORTH WALL ANCHORAGE SLAB (WEST)



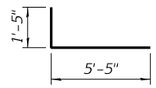
PLAN - NORTH WALL ANCHORAGE SLAB (WEST)



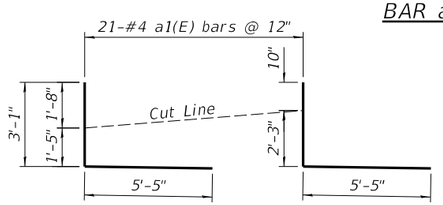
SECTION A-A



SECTION B-B



BAR a(E)



BARS a1(E)

Bars Above Cut Line To Be Used at Front Face of L-Wall

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	71	#4	6'-10"	⌞
a1(E)	21	#4	8'-6"	⌞
b(E)	28	#4	34'-0"	———
b1(E)	24	#4	20'-6"	———
b2(E)	12	#4	19'-8"	———
b3(E)	4	#4	25'-6"	———
b4(E)	8	#4	28'-6"	———
b5(E)	4	#4	15'-6"	———
c(E)	92	#4	5'-5"	———
c1(E)	229	#4	4'-5"	———
h6(E)	12	#4	24'-10"	———
h7(E)	6	#4	19'-8"	———
v35(E)	71	#4	0'-10"	———
Reinforcement Bars Epoxy Coated		Pound	3070	
Concrete Structures		Cu. Yd.	40.4	

Note: E.J. = Expansion Joint
E.F. = Each Face
* = Stagger Laps

13 = Control Point

MIN. BAR LAPS

#4 Bars = 2'-5"

HANSON

USER NAME = Johns00944	DESIGNED - KMS	REVISED -
	CHECKED - RGC	REVISED -
PLOT SCALE = 0.167 ' / in.	DRAWN - EJM	REVISED -
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -

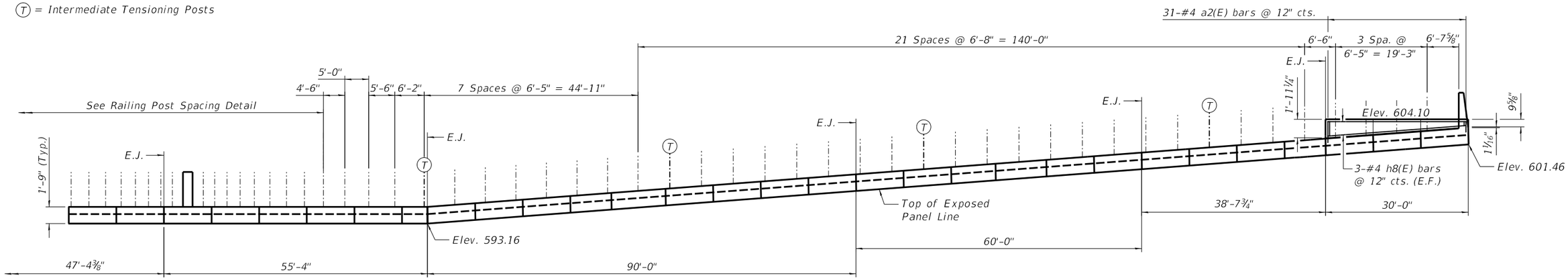
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ANCHORAGE SLAB - NORTH WALL
RETAINING WALLS - MADISON STREET

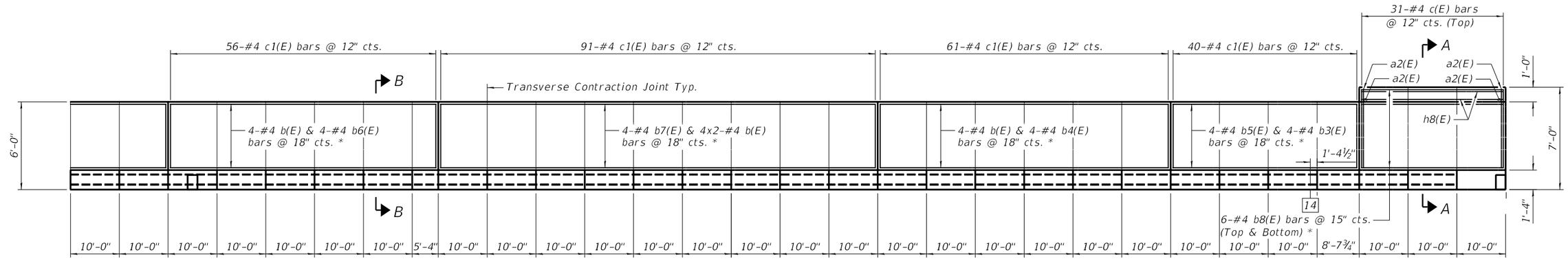
SHEET NO. 22 OF 34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	342
		CONTRACT NO. 93762		
		ILLINOIS	FED. AID PROJECT	

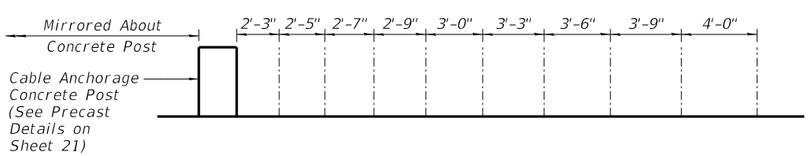
(T) = Intermediate Tensioning Posts



ELEVATION - NORTH WALL ANCHORAGE SLAB (EAST)

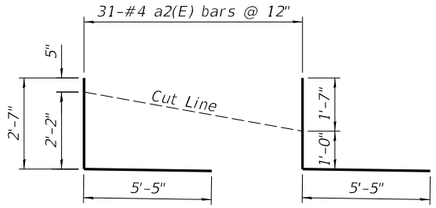


PLAN - NORTH WALL ANCHORAGE SLAB (EAST)



RAILING POST SPACING DETAIL

Typical for North and South Wall Anchorage Slabs



BARS a2(E)

Bars Above Cut Line To Be Used at Front Face of L-Wall

MIN. BAR LAPS

#4 Bars = 2'-5"

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a2(E)	31	#4	8'-0"	
b(E)	16	#4	34'-0"	
b3(E)	4	#4	25'-6"	
b4(E)	4	#4	28'-6"	
b5(E)	4	#4	15'-6"	
b6(E)	4	#4	23'-6"	
b7(E)	4	#4	26'-8"	
b8(E)	12	#4	29'-8"	
c(E)	31	#4	5'-5"	
c1(E)	248	#4	4'-5"	
h8(E)	6	#4	29'-8"	
Reinforcement Bars Epoxy Coated			Pound	2050
Concrete Structures			Cu. Yd.	36.3

Note: E.J. = Expansion Joint
E.F. = Each Face
* = Stagger Laps
14 = Control Point

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Madison\Sheet\09L01798-Madison-Retaining-Wall-Plans.dgn

HANSON

USER NAME = Johns00944	DESIGNED - KMS	REVISED -	
	CHECKED - RGC	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN - EJM	REVISED -	
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -	

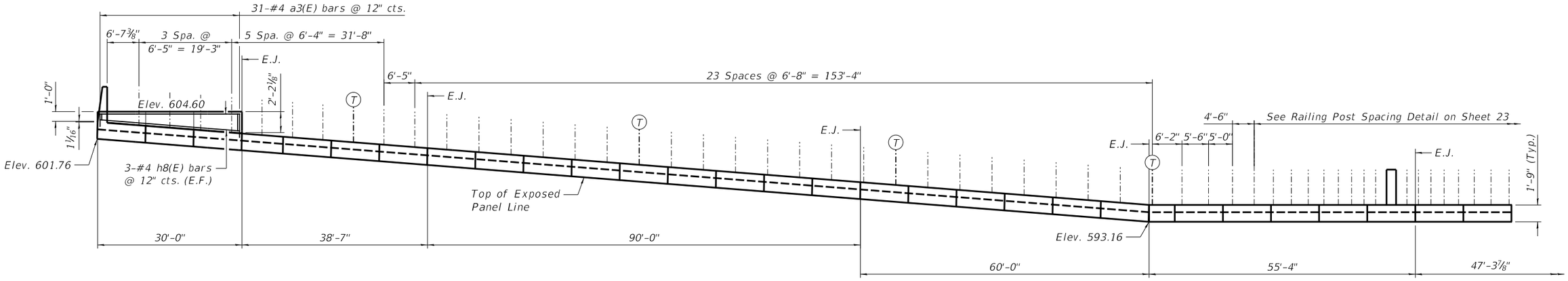
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ANCHORAGE SLAB - NORTH WALL
RETAINING WALLS - MADISON STREET

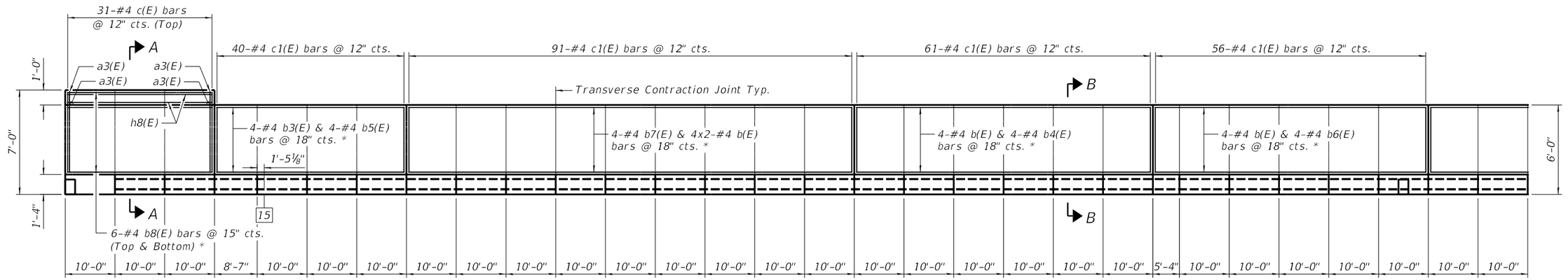
SHEET NO. 23 OF 34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	343
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			

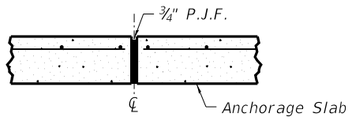
Ⓣ = Intermediate Tensioning Posts



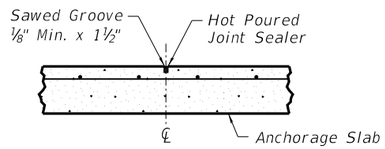
ELEVATION - SOUTH WALL ANCHORAGE SLAB (EAST)



PLAN - SOUTH WALL ANCHORAGE SLAB (EAST)

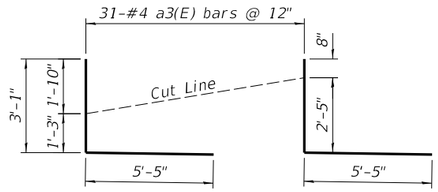


EXPANSION JOINT



TRANSVERSE CONTRACTION JOINT

See Article 420.05(c) of Standard Specifications.



BARS a3(E)

Bars Above Cut Line To Be Used at Front Face of L-Wall

MIN. BAR LAPS

#4 Bars = 2'-5"

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a3(E)	31	#4	8'-6"	⌊
b(E)	16	#4	34'-0"	———
b3(E)	4	#4	25'-6"	———
b4(E)	4	#4	28'-6"	———
b5(E)	4	#4	15'-6"	———
b6(E)	4	#4	23'-6"	———
b7(E)	4	#4	26'-8"	———
b8(E)	12	#4	29'-8"	———
c(E)	31	#4	5'-5"	———
c1(E)	248	#4	4'-5"	———
h8(E)	6	#4	29'-8"	———
Reinforcement Bars Epoxy Coated			Pound	2060
Concrete Structures			Cu. Yd.	36.6

Note: E.J. = Expansion Joint
E.F. = Each Face
* = Stagger Laps
15 = Control Point

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Madison\Sheet\09L01798-Madison-Retaining-Wall-Plans.dgn

HANSON

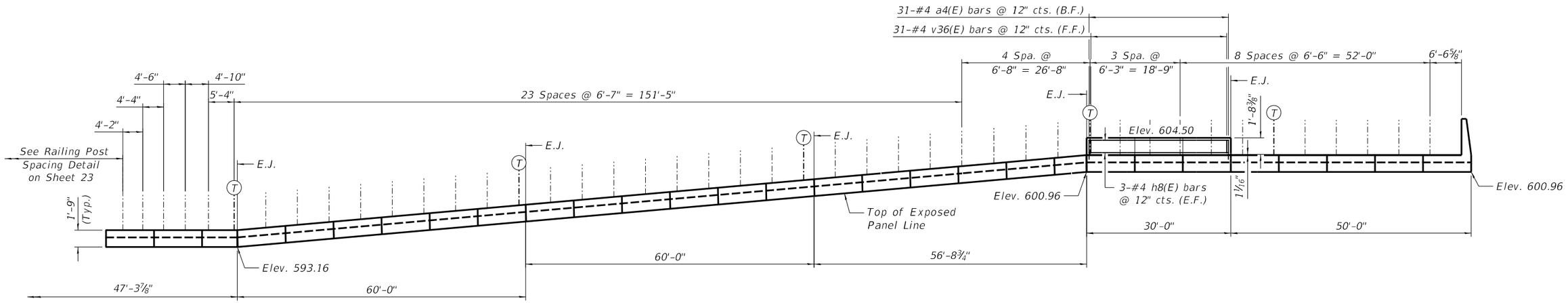
USER NAME = Johns00944	DESIGNED - KMS	REVISED -
	CHECKED - RGC	REVISED -
PLOT SCALE = 0.167 ' / in.	DRAWN - EJM	REVISED -
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

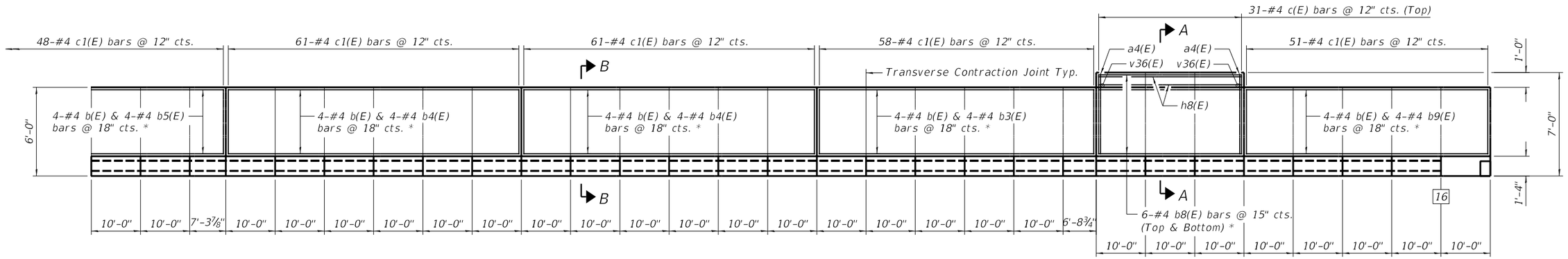
ANCHORAGE SLAB - SOUTH WALL
RETAINING WALLS - MADISON STREET
SHEET NO. 24 OF 34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	344
		CONTRACT NO. 93762		
		ILLINOIS FED. AID PROJECT		

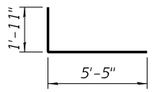
T = Intermediate Tensioning Posts



ELEVATION – SOUTH WALL ANCHORAGE SLAB (WEST)



PLAN – SOUTH WALL ANCHORAGE SLAB (WEST)



BAR a4(E)

MIN. BAR LAPS

#4 Bars = 2'-5"

Note: E.J. = Expansion Joint
E.F. = Each Face
* = Stagger Laps

16 = Control Point

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a4(E)	31	#4	7'-4"	⌊
b(E)	20	#4	34'-0"	———
b3(E)	4	#4	25'-6"	———
b4(E)	8	#4	28'-6"	———
b5(E)	4	#4	15'-6"	———
b8(E)	12	#4	29'-8"	———
b9(E)	4	#4	18'-6"	———
c(E)	31	#4	5'-5"	———
c1(E)	279	#4	4'-5"	———
h8(E)	6	#4	29'-8"	———
v36(E)	31	#4	1'-4"	———
Reinforcement Bars Epoxy Coated			Pound	2230
Concrete Structures			Cu. Yd.	35.1

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

HANSON

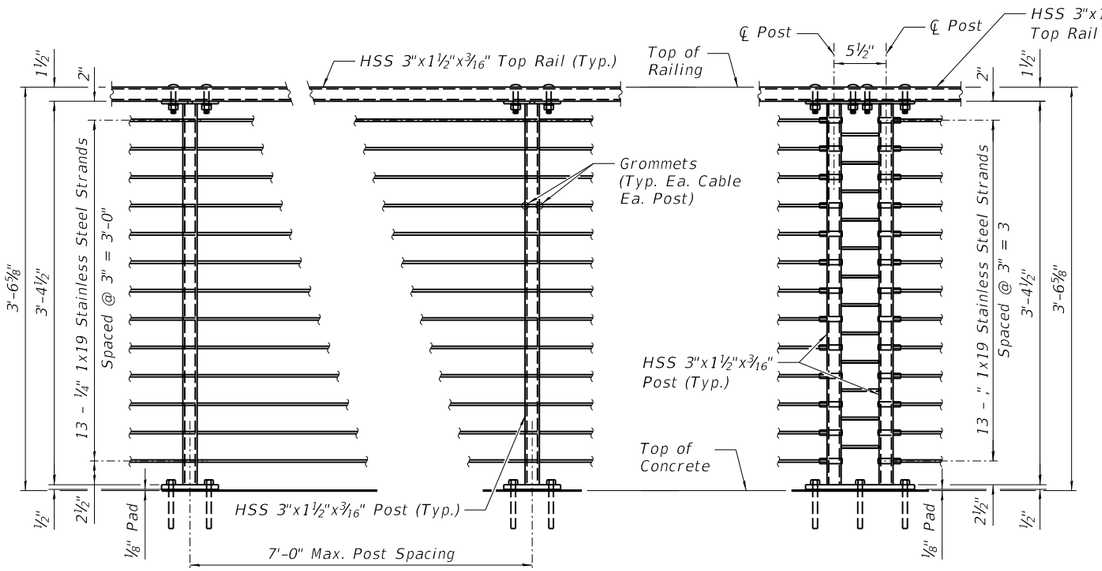
USER NAME = Johns00944	DESIGNED - KMS	REVISED -
	CHECKED - RGC	REVISED -
PLOT SCALE = 0.167 ' / in.	DRAWN - EJM	REVISED -
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

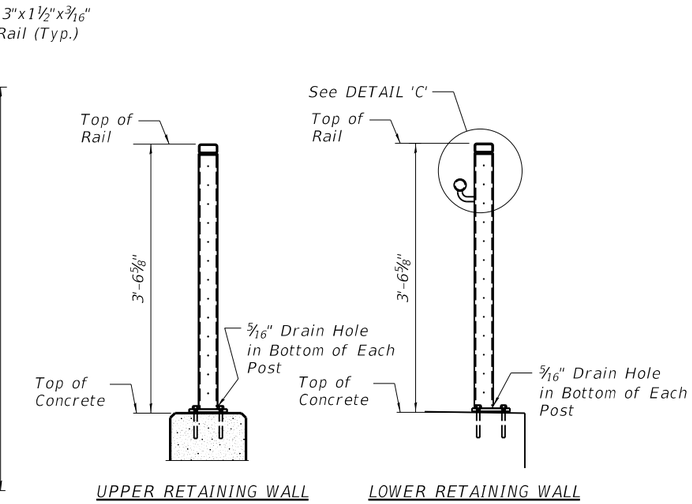
ANCHORAGE SLAB – SOUTH WALL
RETAINING WALLS – MADISON STREET

SHEET NO. 25 OF 34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67.67A	20-00491-00-BR	SANGAMON	509	345
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			



TYPICAL RAILING PANEL



INTERMEDIATE TENSIONING POSTS

UPPER RETAINING WALL LOWER RETAINING WALL

POST DETAILS

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 Article 509.05 of the Standard Specifications.

All studs shall be ½"ø x4 " granular or solid flux filled headed studs automatically end welded to plates.

See Sheets 12 thru 17 and 22 thru 25 of 34 for rail post spacing.

TOP RAIL - WITH SPLICE

DETAIL 'C'

INTERMEDIATE TENSIONING POSTS
(At Grade Change Only)

TOP RAIL - NO SPLICE

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

TOP PLATE
INTERMEDIATE TENSIONING POSTS

HANDRAIL DETAIL

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

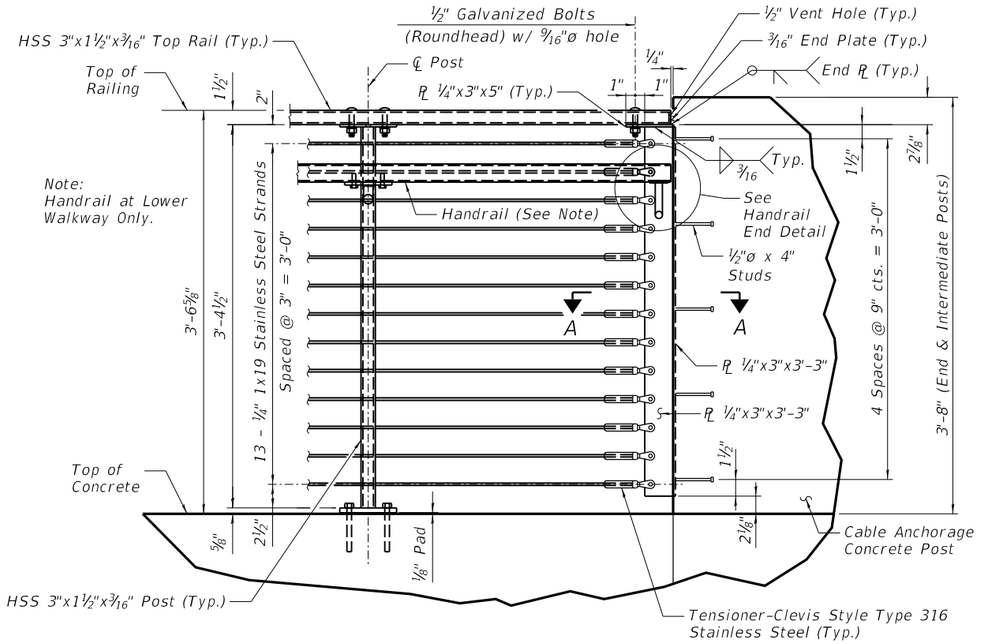
HANSON

USER NAME = Johns00944	DESIGNED - KMS	REVISED -
	CHECKED - RGC	REVISED -
PLOT SCALE = 0.167 ' / in.	DRAWN - EJM	REVISED -
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

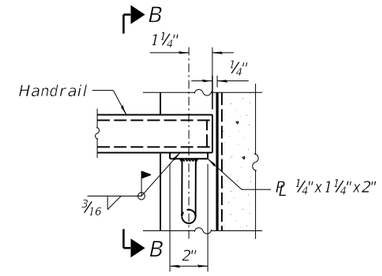
RAILING DETAILS
RETAINING WALLS - MADISON STREET
SHEET NO. 26 OF 34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	346
		CONTRACT NO. 93762		
		ILLINOIS FED. AID PROJECT		

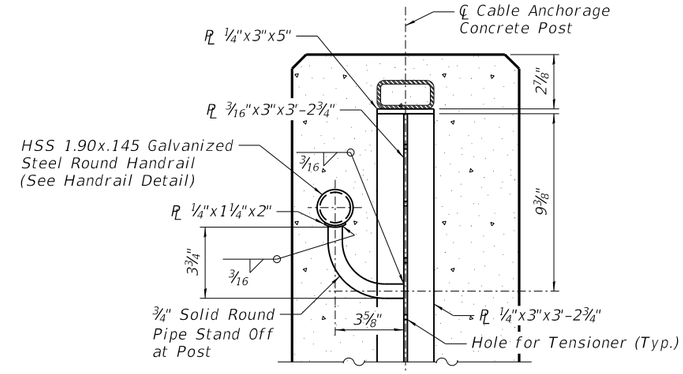


CABLE RAILING TERMINATION

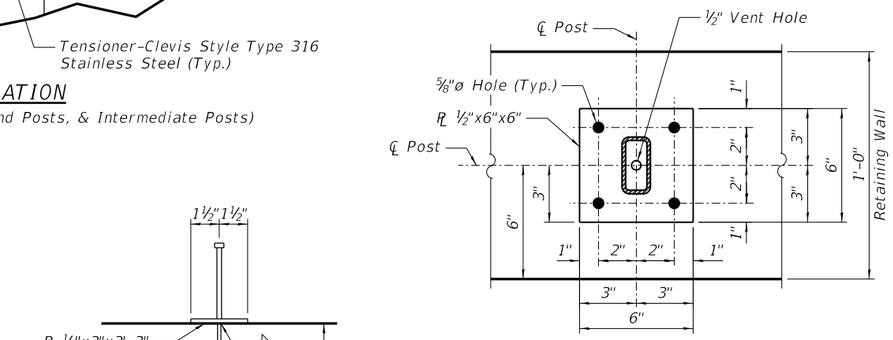
(Typical Termination at Exterior Bridge Cheek Walls, End Posts, & Intermediate Posts)



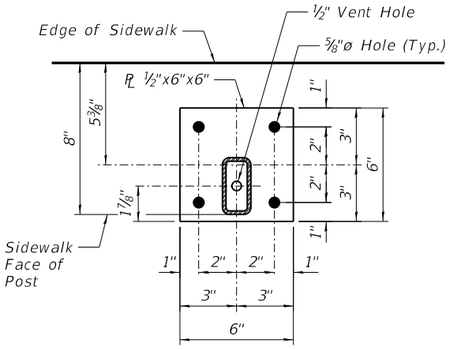
HANDRAIL END DETAIL
CABLE ANCHORAGE CONCRETE POST



SECTION B-B

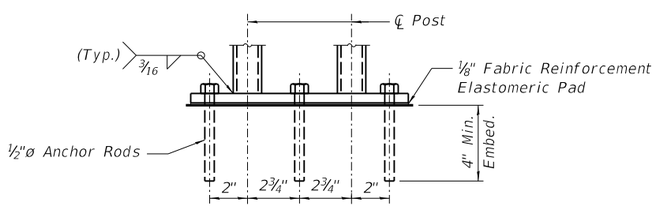


STANDARD POSTS



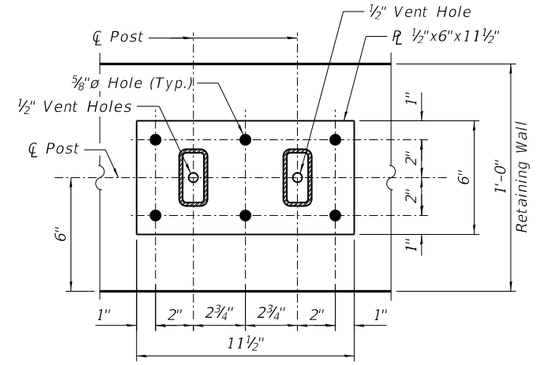
STANDARD POSTS

SECTION A-A



INTERMEDIATE TENSIONING POSTS

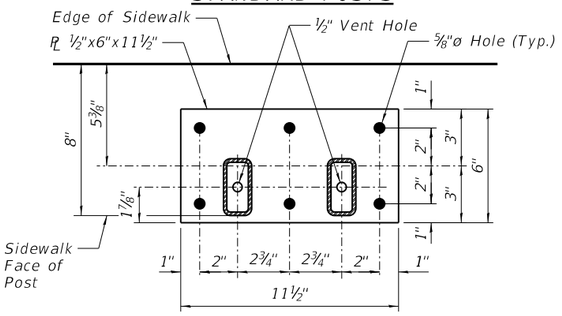
TYPICAL ANCHOR ROD DETAILS



INTERMEDIATE TENSIONING POSTS

BASE PLATE DETAILS

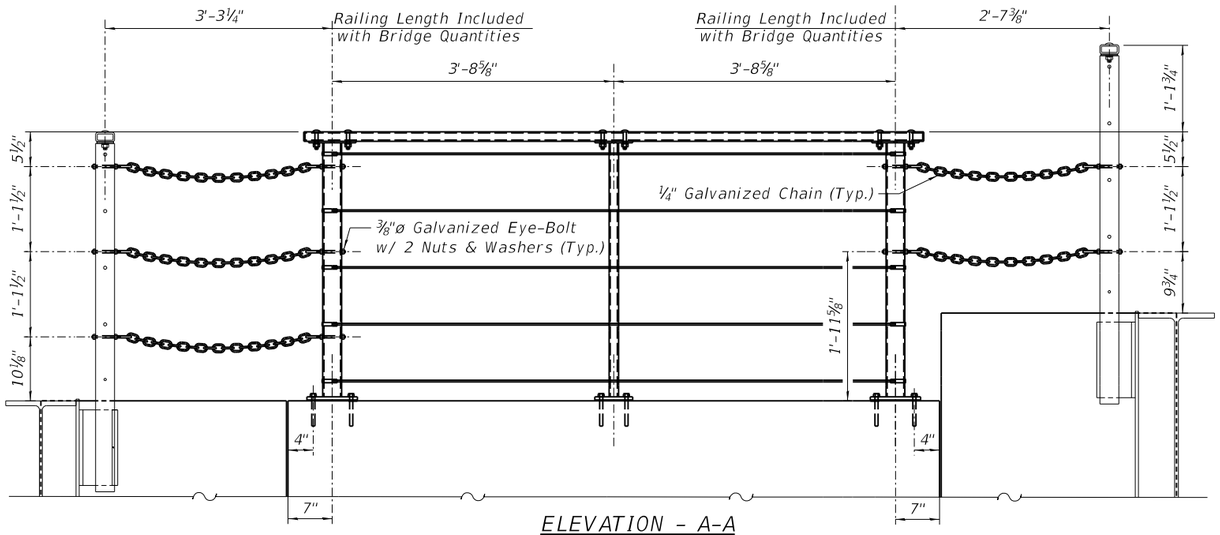
(Upper Retaining Walls)



INTERMEDIATE TENSIONING POSTS

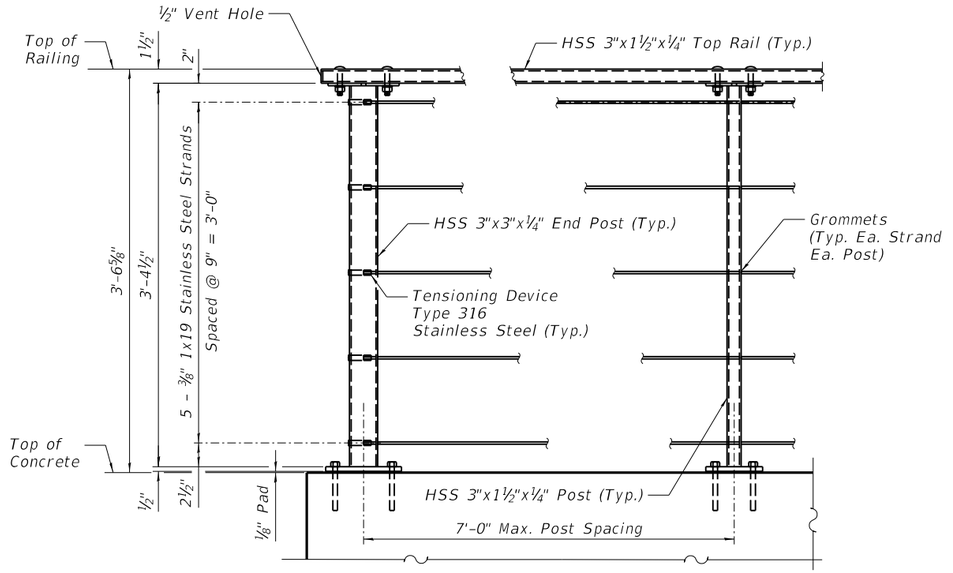
BASE PLATE DETAILS

(Lower Retaining Walls)



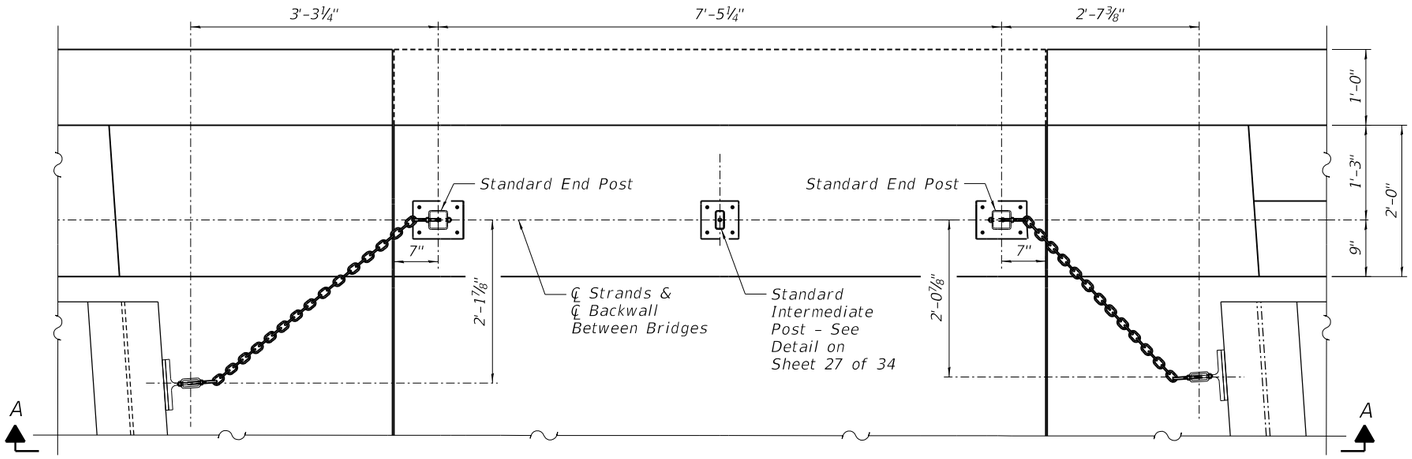
ELEVATION – A-A

(South Wall Shown – North Wall Similar)



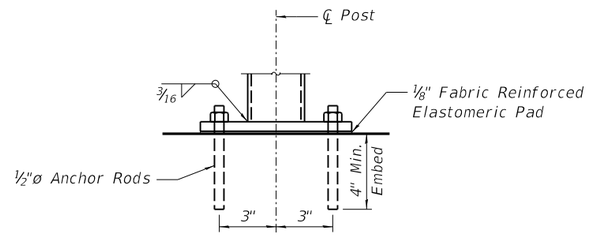
END POST — INTERMEDIATE POST

RAILING BETWEEN BRIDGES

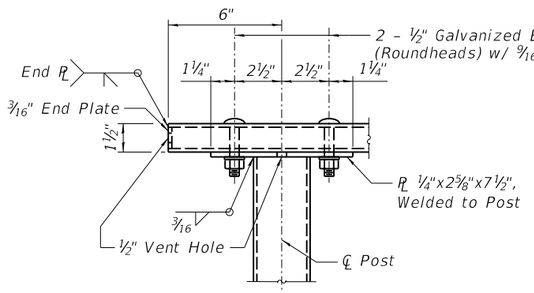


PLAN – POSTS BETWEEN BRIDGES

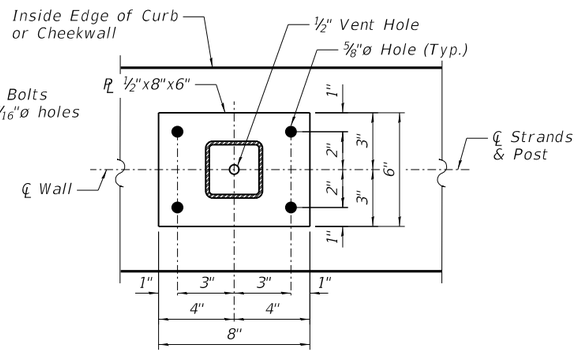
(South Wall Shown – North Wall Similar)



ANCHOR ROD DETAIL END POSTS



TOP RAIL – AT END POST



END POST

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

USER NAME = Johns00944	DESIGNED - KMS	REVISED -	
	CHECKED - RGC	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN - EJM	REVISED -	
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RAILING DETAILS
RETAINING WALLS – MADISON STREET
SHEET NO. 28 OF 34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	348
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			

B-112
Sta. 297+14, 15' LT

	N	Qu	w%	
603.7				
602.95				CONCRETE.
	10	4.50P	22	Black very fine sandy silty CLAY, trace cinders - FILL.
600.20				
	6	1.16B	25	Brown and gray very fine sandy SILT, some clay.
597.70				
	6	2.68S	23	Brown and gray very fine sandy SILT.
596.20				
				Bottom of Hole = 7.5 feet

B-113
Sta. 297+98, 16' LT

	N	Qu	w%	
603.8				
603.16				ASPHALT.
	9	3.92S	22	Black very fine sandy silty CLAY - FILL.
600.33				
	7	1.44B	28	Brown and gray very fine sandy silty CLAY, some oxidized spots.
597.83				
	5	0.30P	26	Brown and gray very sandy SILT, trace clay and oxidized spots.
	4	1.44B	28	
592.83				Reddish-brown and gray very fine sandy
	4	0.81B	23	SILT, some clay and oxidized spots.
590.33				Brown, gray and black very fine sandy
588.83	4	1.32B	24	silty CLAY.
				Bottom of Hole = 15.0 feet

B-114
Sta. 298+76, 18' LT

	N	Qu	w%	
604.1				
603.38				CONCRETE.
	11	2.00P	23	Black very fine sandy silty CLAY, trace wood fragments and cinders - FILL.
600.63				
	4	0.82B	30	Brown and gray very fine sandy SILT, some clay and oxidation.
598.13				
	5	1.85S	29	Brown and gray very fine sandy SILT.
595.63				
	4	0.78B	22	Brown and gray very fine to fine sandy clayey SILT, trace small gravel.
	4	1.16B	25	
590.63				
	6	1.00P	24	Reddish-brown and gray very fine to fine sandy silty CLAY, trace small gravel.
588.13				
	9	1.50P	23	Brown and gray very fine sandy clayey SILT, trace organics.
585.63				
	27	2.50P	17	Brown and olive gray micaceous fine sandy SILT (highly weathered SANDSTONE).
				Olive gray weathered SANDSTONE and
580.63				micaceous sandy SHALE.
579.80	50/4"	3.30S	19	
				Bottom of Hole = 24.3 feet

LEGEND

N	Standard Penetration Test N (blows/ft)
Qu	Unconfined Strength (tsf)
w%	Natural Moisture Content (%)
DD ▽ 558.10	Water Surface Elevation Encountered in Boring DD = during drilling Oh = at completion 24h = 24 hours after completion

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Madison\Sheet\09L01798-Madison-Retaining-Wall-Plans.dgn

HANSON

USER NAME = Johns00944	DESIGNED - KMS	REVISED -	
	CHECKED - RGC	REVISED -	
PLOT SCALE = 10.000 ' / in.	DRAWN - EJM	REVISED -	
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSURFACE DATA PROFILE
RETAINING WALLS – MADISON STREET

SHEET NO. 29 OF 34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	349
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			

B-115
Sta. 299+64, 19' LT

Elev.	N	Qu	w%	
605.2				
604.47				CONCRETE.
604.22	17		18	AGGREGATE.
601.72	11		5	Black and brown very fine sandy silty CLAY, trace concrete fragments - FILL.
599.22	5		6	Brown fine to medium SAND, some coarse sand.
596.72	5	1.65B	25	Brown fine to medium SAND, some coarse sand, trace silty sand.
594.22	4	1.36B	22	Brown and gray very fine sandy SILT.
591.72	3	0.58B	25	Brown and gray very fine to fine sandy clayey SILT.
589.22	3	0.82S	23	Brown and gray very fine to fine sandy silty CLAY.
	5	0.58B	28	Brown and black fine sandy silty CLAY, trace small gravel.
581.72	50/5"	1.50P	14	Brown and olive gray silty fine SAND (highly weathered SANDSTONE).
576.72	50/5"		10	Gray interbedded SANDSTONE and SHALE.
DD 573.2				
	50/3"	1.50P	13	
570.22	Rec. = 85% 73.9			Gray-black interbedded sandy SHALE/ shaley SANDSTONE, micaceous - weathered.
568.72	Rec. = 97% 70.0			Gray-black interbedded sandy SHALE/ shaley SANDSTONE, micaceous.
	Rec. = 97%			
556.22				Bottom of Hole = 49.0 feet

B-116
Sta. 300+85, 19' LT

Elev.	N	Qu	w%	
604.7				
603.95				CONCRETE.
603.70	15	1.50P	27	AGGREGATE.
601.20	6	0.74B	33	Black fine sandy SILT, some cinders, trace clay - FILL.
598.70	6	2.27B	25	Brown and gray very fine sandy silty CLAY, trace oxidized spots.
	6	2.72S	24	Brown and gray very fine sandy SILT, trace oxidized spots.
593.70	6	0.78B	24	Brown and gray very fine sandy clayey SILT.
591.20	4	0.78B	25	Brownish-gray very fine to fine sandy silty CLAY, trace oxidized spots.
DD 588.70				
588.2	3		38	Brown and gray very fine sandy silty CLAY.
586.20	3	1.17B	21	Olive brown and gray fine sandy silty CLAY, some shale fragments.
581.20	57	4.50P	12	Brownish-gray fine sandy SHALE - highly weathered.
579.70				Bottom of Hole = 25.0 feet

B-117
Sta. 10301+97, 19' LT

Elev.	N	Qu	w%	
604.7				
604.05	11	4.50P	26	CONCRETE. BRICK, ASPHALT and black fine sandy SILT, some cinders - FILL.
601.22	8	1.65B	32	Black and gray very fine sandy silty CLAY.
598.72	4	1.05B	24	Brown and gray very fine sandy clayey SILT.
	8	3.49S	24	
	6	1.94B	24	
591.22	4	0.39B	27	Brown and gray very fine sandy silty CLAY.
589.72				Bottom of Hole = 15.0 feet

LEGEND

N	Standard Penetration Test N (blows/ft)
Qu	Unconfined Strength (tsf)
w%	Natural Moisture Content (%)
DD ▽ 558.10	Water Surface Elevation Encountered in Boring DD = during drilling Oh = at completion 24h = 24 hours after completion

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Madison\Sheet\09L01798-Madison-Retaining-Wall-Plans.dgn

HANSON

USER NAME = Johns00944	DESIGNED - KMS	REVISED -	
	CHECKED - RGC	REVISED -	
PLOT SCALE = 10.000 ' / in.	DRAWN - EJM	REVISED -	
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSURFACE DATA PROFILE
RETAINING WALLS – MADISON STREET
SHEET NO. 30 OF 34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	350
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			

B-118
Sta. 302+63, 20' LT

	N	Qu	w%	
604.6				
	12	4.00P	26	Black fine sandy SILT, some cinders - FILL.
601.05				
	6	1.24B	32	Brown and gray very fine sandy silty CLAY.
598.55				
	5	1.94B	24	Brown and gray very fine sandy clayey SILT.
594.55				
	5	1.00P	26	
				Bottom of Hole = 10.0 feet

B-119
Sta. 303+33, 19' LT

	N	Qu	w%	
603.8				
603.06				CONCRETE.
	6	2.00P	28	Black very fine sandy silty CLAY, trace cinders and brick - FILL.
600.31				
	6	1.50P	27	Brown and gray very fine sandy silty CLAY.
598.81				
				Bottom of Hole = 5.0 feet

LEGEND

N	Standard Penetration Test N (blows/ft)
Qu	Unconfined Strength (tsf)
w%	Natural Moisture Content (%)
DD ▽ 558.10	Water Surface Elevation Encountered in Boring DD = during drilling Oh = at completion 24h = 24 hours after completion

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Madison\Sheet\09L01798-Madison-Retaining-Wall-Plans.dgn

HANSON

USER NAME = Johns00944	DESIGNED - KMS	REVISED -	
	CHECKED - RGC	REVISED -	
PLOT SCALE = 10.000 ' / in.	DRAWN - EJM	REVISED -	
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSURFACE DATA PROFILE
RETAINING WALLS – MADISON STREET

SHEET NO. 31 OF 34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	351
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			

B-128
Sta. 303+29, 20' RT

	N	Qu	w%	
603.8				CONCRETE.
603.00	13		15	Black very fine sandy silty CLAY, some cinders, coarse sand and small gravel - FILL.
600.25	4		7	Brown fine to medium SAND, trace coarse sand, small gravel and very fine sandy silty clay seams - FILL.
598.75				Bottom of Hole = 5.0 feet

B-127
Sta. 302+60, 20' RT

	N	Qu	w%	
604.0				CONCRETE.
603.26	9	4.65B	25	Black very fine sandy silty CLAY, trace cinders and black fragments - FILL.
	4		17	
598.01	6	2.52B	24	Brown and gray very fine sandy SILT, trace oxidized spots.
594.01	6	1.75B	24	
				Bottom of Hole = 10.0 feet

B-126
Sta. 302+04, 20' RT

	N	Qu	w%	
604.4				CONCRETE.
603.69	7	2.40P	26	Black very fine sandy silty CLAY, trace cinders - FILL.
600.94	8	1.65B	28	Brown and gray very fine sandy silty CLAY, trace organics.
598.44	5	0.97B	26	Brown and gray very fine sandy SILT, some clay.
595.94	6	2.89B	23	Brown and gray very fine sandy SILT.
593.44	5	1.75B	22	Brown and gray very fine to fine sandy clayey SILT, trace small gravel.
589.44	4	0.74B	27	
				Bottom of Hole = 15.0 feet

LEGEND

N	Standard Penetration Test N (blows/ft)
Qu	Unconfined Strength (tsf)
w%	Natural Moisture Content (%)
DD ▽ 558.10	Water Surface Elevation Encountered in Boring DD = during drilling Oh = at completion 24h = 24 hours after completion

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Madison\Sheet\09L01798-Madison-Retaining-Wall-Plans.dgn

HANSON

USER NAME = Johns00944	DESIGNED - KMS	REVISED -	
	CHECKED - RGC	REVISED -	
PLOT SCALE = 10.000 ' / in.	DRAWN - EJM	REVISED -	
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSURFACE DATA PROFILE
RETAINING WALLS – MADISON STREET
SHEET NO. 32 OF 34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	352
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			

B-125
Sta. 300+85, 19' RT

	N	Qu	w%	
605.0				
604.25				CONCRETE.
	21		9	Brown fine to coarse SAND and GRAVEL - FILL.
601.50				
	7	1.65B	29	Brown and dark brown very fine sandy silty CLAY, trace organics.
599.00				
	5	1.03B	25	Brown and gray very fine sandy SILT, some clay.
596.50				
	6	1.94B	27	Brown and gray very fine sandy SILT.
594.00				
	5	1.65B	22	Brown and gray very fine sandy SILT, some clay.
591.50				
	3	0.78B	25	Brown and gray very fine sandy clayey SILT, trace small gravel.
589.00				
	4	0.74B	27	Brown, dark brown and gray very fine sandy clayey SILT, trace small gravel, some oxidized spots.
586.50				
	5	1.55B	25	Brown and gray very fine sandy silty CLAY, trace small gravel and shale fragments.
581.50				
	41	4.50P	13	Brown and gray SHALE - highly weathered.
580.00				Bottom of Hole = 25.0 feet

B-124
Sta. 300+45, 19' RT

	N	Qu	w%	
605.3				
604.6				CONCRETE.
	21	3.80P	7	Brown silty coarse SAND and small GRAVEL and black very fine sandy silty clay - FILL.
601.8				
	7	1.85B	30	Dark brown and brown very fine sandy silty CLAY.
599.3				
	6	1.48B	26	Brown and gray very fine sandy SILT, some clay, trace calcareous concretions.
	6	2.27B	26	
594.3				
	4	2.30P	24	Brown and gray very fine sandy SILT, some clay.
591.8				
	4	0.39B	26	Brown and gray very fine to fine sandy clayey SILT, trace small gravel.
589.3				
	4	0.97B	25	Brown and gray very fine to fine sandy silty CLAY, trace small gravel.
586.8				
	6	1.65B	27	Brown and gray very fine to fine sandy silty CLAY, trace small gravel and shale fragments.
581.8				
	72	4.50P	11	Brown and gray SHALE - highly weathered.
576.8				
DD	50/3"	4.50P	10	Gray SHALE.
574.3 ▽				
570.32				
	Rec. = 77%			Gray-black interbedded sandy SHALE/
	RQD = 37%			shaley SANDSTONE, micaceous - weathered.
	122.9			
567.12				
566.72				Soft SHALE/clay seam.
	Rec. = 98%			Gray-black interbedded sandy SHALE/
	RQD = 23%			shaley SANDSTONE, micaceous.
	Rec. = 100%			
	RQD = 68%			
555.32				
				Bottom of Hole = 50.0 feet

B-123
Sta. 298+76, 19' RT

	N	Qu	w%	
604.2				
603.42				CONCRETE.
	7		27	Black very fine sandy silty CLAY, some coarse sand, small gravel and brick fragments - FILL.
600.67				
	7	1.71B	28	Brown very fine sandy clayey SILT.
598.17				
	6	1.09B	28	Brown and gray very fine sandy SILT, trace clay and oxidized spots.
595.67				
	6	2.80P	30	Brown and gray very fine sandy SILT, trace small gravel and organics.
593.17				
	4	0.58B	24	Brown and gray very fine to fine sandy clayey SILT, trace small gravel.
	4	0.58B	25	
588.17				
	5	1.67B	24	Brown and gray fine sandy silty CLAY, trace small gravel.
	6	1.30P	23	
580.67				
579.42	50/3"	2.84S	11	Yellowish-gray very fine sandy SHALE - highly weathered.
				Bottom of Hole = 24.75 feet

LEGEND

N	Standard Penetration Test N (blows/ft)
Qu	Unconfined Strength (tsf)
w%	Natural Moisture Content (%)
DD ▽ 558.10	Water Surface Elevation Encountered in Boring DD = during drilling Oh = at completion 24h = 24 hours after completion

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

HANSON

USER NAME = Johns00944	DESIGNED - KMS	REVISED -	
	CHECKED - RGC	REVISED -	
PLOT SCALE = 10.000 ' / in.	DRAWN - EJM	REVISED -	
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSURFACE DATA PROFILE
RETAINING WALLS – MADISON STREET
SHEET NO. 33 OF 34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	353
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			

B-122
Sta. 298+01, 19' RT

	N	Qu	w%	
603.9				CONCRETE.
603.19	11	3.30P	23	Black very fine sandy silty CLAY, trace cinders - FILL.
600.44	7	1.16B	27	Brown and gray very fine sandy silty CLAY.
597.94	6	1.85B	27	Brown and gray very fine sandy SILT.
	8	3.09B	27	
592.94	5	0.89B	22	Brownish-gray very fine to fine sandy SILT, some clay, trace small gravel.
590.44	4	1.28B	27	Brown and gray very fine to fine sandy silty CLAY, trace small gravel.
588.94				Bottom of Hole = 15.0 feet

B-121
Sta. 297+12, 19' RT

	N	Qu	w%	
603.5				CONCRETE.
602.70	9	3.5P	27	Black very fine sandy silty CLAY.
599.95	5	2.47B	23	Brown and gray very fine sandy SILT, trace clay.
597.45	8	1.5P	26	Brown very fine sandy silty CLAY.
595.95				Bottom of Hole = 7.5 feet

LEGEND

N	Standard Penetration Test N (blows/ft)
Qu	Unconfined Strength (tsf)
w%	Natural Moisture Content (%)
DD ▽ 558.10	Water Surface Elevation Encountered in Boring DD = during drilling Oh = at completion 24h = 24 hours after completion

p:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Madison\Sheet\09L01798-Madison-Retaining-Wall-Plans.dgn

HANSON

USER NAME = Johns00944	DESIGNED - KMS	REVISED -
	CHECKED - RGC	REVISED -
PLOT SCALE = 10.000 ' / in.	DRAWN - EJM	REVISED -
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSURFACE DATA PROFILE
RETAINING WALLS – MADISON STREET

SHEET NO. 34 OF 34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	354
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			

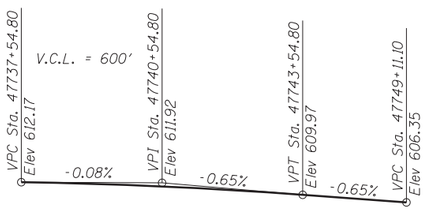
Benchmark: Chiseled 'X' on West Bolt of Fire Hydrant, NE quadrant of 9th St. and Jefferson St., Elevation = 603.007

Existing Structure : None

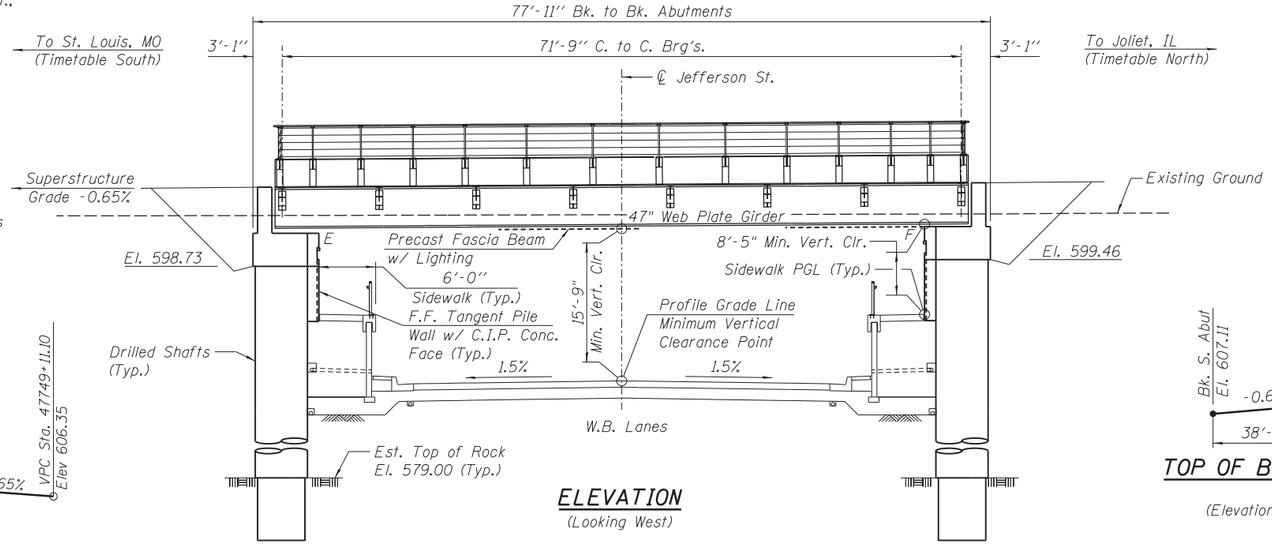
Traffic Control: Temporary Lane Closures and Complete Closures

Construction Sequence: See Track Staging Plans

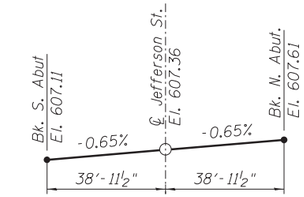
Railroad utilities may exist within NSRR right-of-way. Prior to the start of any construction or excavation, utility relocations will have to be coordinated with the NSRR.



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



ELEVATION
(Looking West)



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

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.

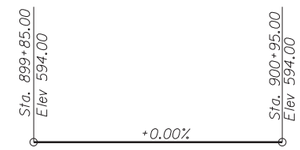
DESIGN STRESSES
FIELD UNITS
f'c = 4,000 psi
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (ASTM A709 Grade 50)

PRECAST UNITS
f'c = 6,500 psi
f'ci = 5,000 psi
f'pu = 270,000 psi (½" ϕ Low Lax Strands)
fpbt = 201,960 psi (½" ϕ Low Lax Strands)
fy = 60,000 psi (Reinforcement)

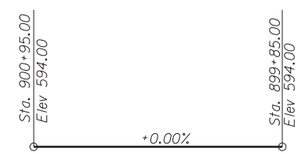
SEISMIC DATA
AREMA

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

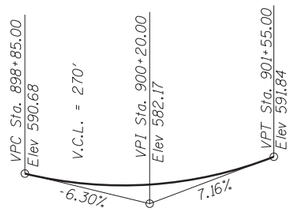
Soil Site Class = C



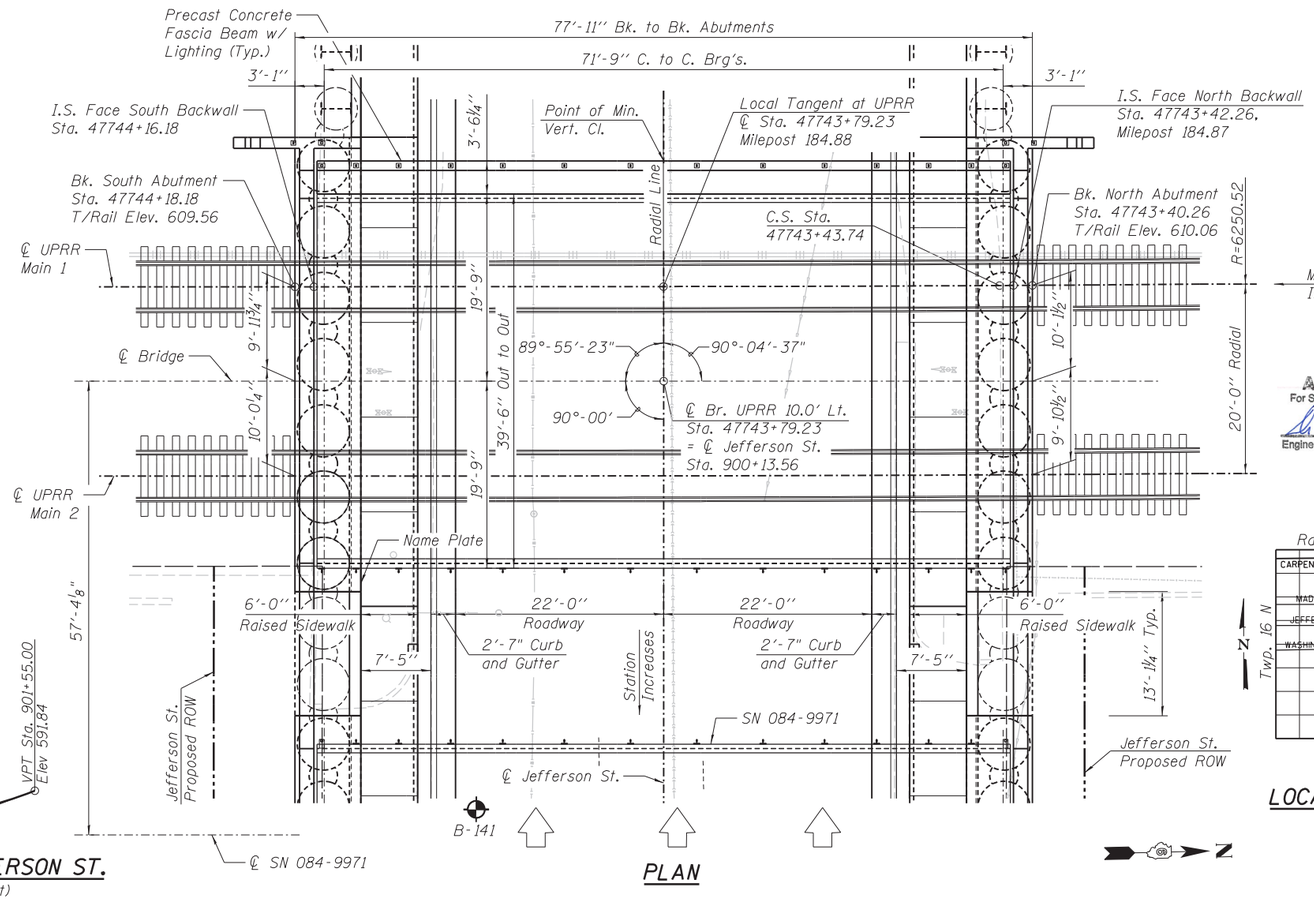
P.G.L. NORTH SIDEWALK
(Along Face of Tangent Pile Wall)



P.G.L. SOUTH SIDEWALK
(Along Face of Tangent Pile Wall)



PROFILE GRADE - JEFFERSON ST.
(Along ℄ Jefferson Street)



PLAN

Milepost & Station Increases

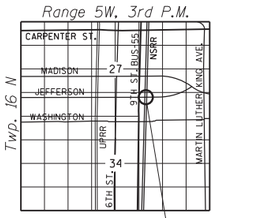
CURVE DATA
(UPRR Main 1)

P.I. Sta. = 47741+44.50
Δ = 3°-39'-15" (Rt.)
D = 00°-55'-00"
T = 199.38'
L = 398.63'
R = 6250.52'
E = 3.18'
Long Chord = 398.56'
Mid. Ord. = 3.18'
S.E. = ¾"
S.C. Sta. = 47739+45.11
C.S. Sta. = 47743+43.74

APPROVED
For Structural Adequacy Only
Engineer of Bridges & Structures

JARED G. THOELE 081-007841 LICENSED STRUCTURAL ENGINEER STATE OF ILLINOIS

SIGNATURE
12/20/2021
DATE
LIC. EXP. DATE : 11/30/2022



LOCATION SKETCH

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 & ELEVATION
UPRR (MP 184.88) OVER JEFFERSON STREET
F.A.P. 67A - SECTION 20-00491-00-BR
SANGAMON COUNTY
UPRR SUBDIVISION - SPRINGFIELD
STATION 47743+79.23
STRUCTURE NO. 084-9970

FINAL

HANSON

p:\\hansoninc-pw.bentley.com\hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\084-9970_09L01798_001_GPE.dgn

USER NAME = thoel01490	DESIGNED - CGP	REVISED -	
	CHECKED - MNM	REVISED -	
PLOT SCALE = 16:0.0000 '=' / in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/20/2021	CHECKED - MNM	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
STRUCTURE NO. 084-9970
SHEET NO. 1 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67.67A	20-00491-00-BR	SANGAMON	509	355
		CONTRACT NO. 93762		
		ILLINOIS FED. AID PROJECT		

GENERAL NOTES

1. Fasteners shall be ASTM F3125 Grade A325 Type 1, mechanically galvanized bolts. Bolts $\frac{7}{8}$ in. ϕ, holes $\frac{15}{16}$ in. ϕ, unless otherwise noted.
2. Calculated weight of Structural Steel, ASTM A709, Gr. 50 = 542,910 lbs.
   ASTM A36, Gr. 36 = 76,710 lbs.
3. All structural steel shall be ASTM A709 Grade 50 unless otherwise noted on the plans. The deck plate shall be ASTM A36.
4. All substructure concrete shall have a compressive strength of 4,000 psi at 14 days.
5. No field welding is permitted except as specified in the contract documents.
6. Reinforcement bars designated (E) shall be epoxy coated.
7. Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of $\frac{1}{8}$ inch (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.
8. 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.
9. 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.
10. The Organic Zinc Rich Primer / Epoxy / Urethane Paint System shall be used for painting of new structural steel except where otherwise noted. The entire system shall be shop applied, with the exception of the exterior surface and the bottom of the bottom flange of fascia girders, masked off connection surfaces, field installed fasteners and damaged areas shall be touched up in the field. The color of the final finish coat for all interior steel surfaces shall be gray, Munsell No. 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia girders and exterior cantilever support bracket shall be blue, Munsell No. 10B 3/6.
11. 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.

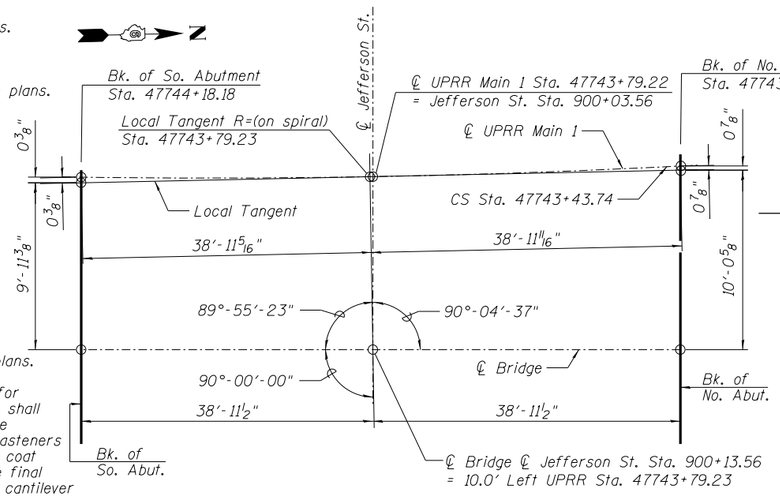
Drilled shaft cross-hole sonic log (CSL) testing:

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.

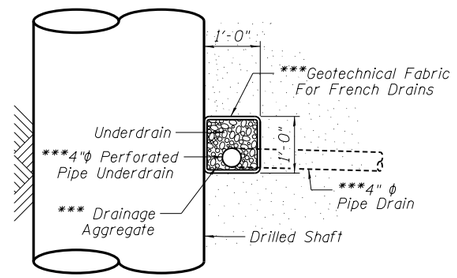
B) Furnish and install six standard 2 inch nominal diameter steel pipes (ASTM A53, Grade B) for use in CSL testing of each drilled shaft. Pipes shall be equally spaced around the interior of the reinforcing steel cage.

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



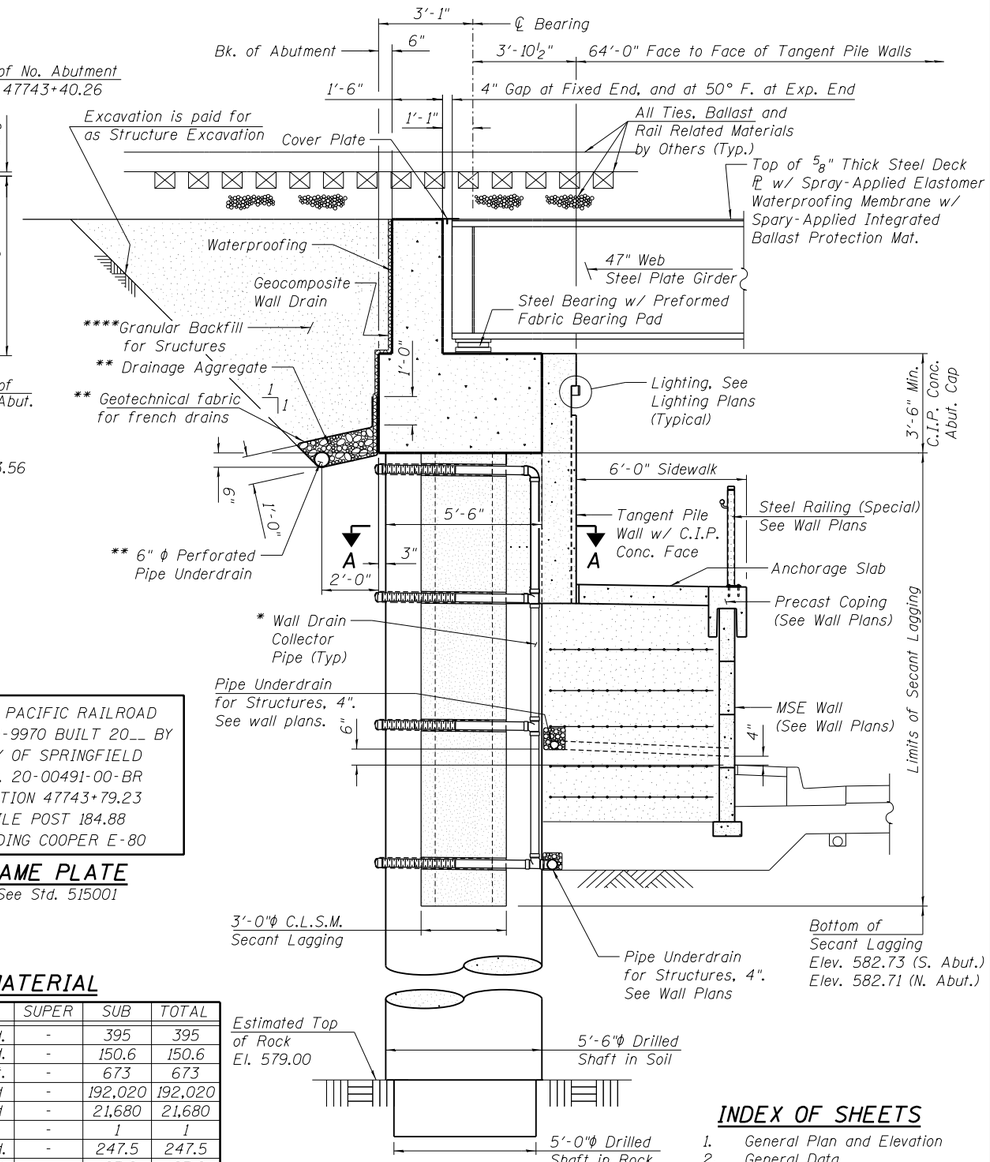
PIPE UNDERDRAIN DETAIL

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

UNION PACIFIC RAILROAD
S.N. 084-9970 BUILT 20__ BY
CITY OF SPRINGFIELD
SEC. 20-00491-00-BR
STATION 47743+79.23
MILE POST 184.88
LOADING COOPER E-80

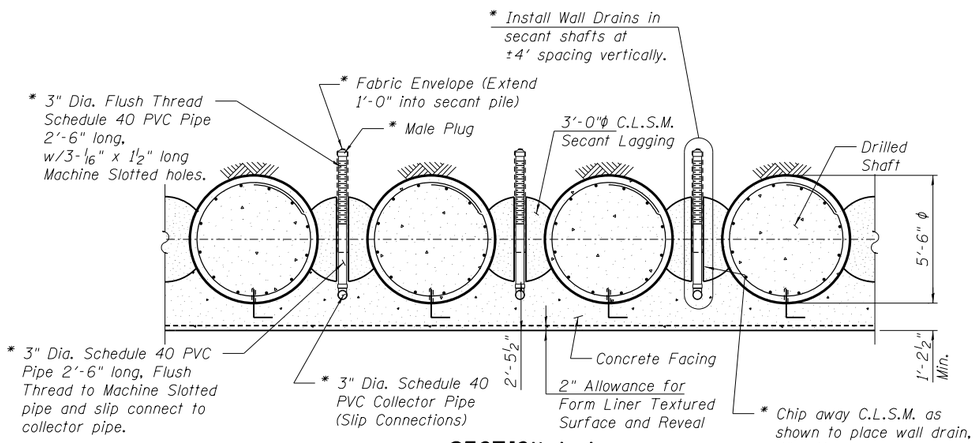
NAME PLATE

See Std. 515001



ABUTMENT SECTION

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



SECTION A-A

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

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Structure Excavation	Cu. Yd.	-	395	395
Concrete Structures	Cu. Yd.	-	150.6	150.6
Form Liner Textured Surface	Sq. Ft.	-	673	673
Reinforcement Bars	Pound	-	192,020	192,020
Reinforcement Bars, Epoxy Coated	Pound	-	21,680	21,680
Name Plates	Each	-	1	1
Drilled Shaft in Soil	Cu. Yd.	-	247.5	247.5
Drilled Shaft in Rock	Cu. Yd.	-	183.2	183.2
Secant Lagging	Cu. Ft.	-	1,389	1,389
Granular Backfill for Structures	Cu. Yd.	-	201	201
Concrete Sealer	Sq. Ft.	1,386	2,013	3,399
Geocomposite Wall Drain	Sq. Yd.	-	97	97
Crosshole Sonic Logging Access Ducts	Foot	-	569	569
Concrete Surface Color Treatment	Sq. Ft.	291	151	442
Membrane Waterproofing (Special)	Sq. Ft.	2,963	-	2,963
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	161	-	161
Pipe Underdrains for Structures, 6"	Foot	-	116	116
Pipe Underdrains for Structures, 6'' (Special)	Foot	-	44	44

Notes:
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

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\084-9970_09L01798_002_General Data.dgn

FINAL

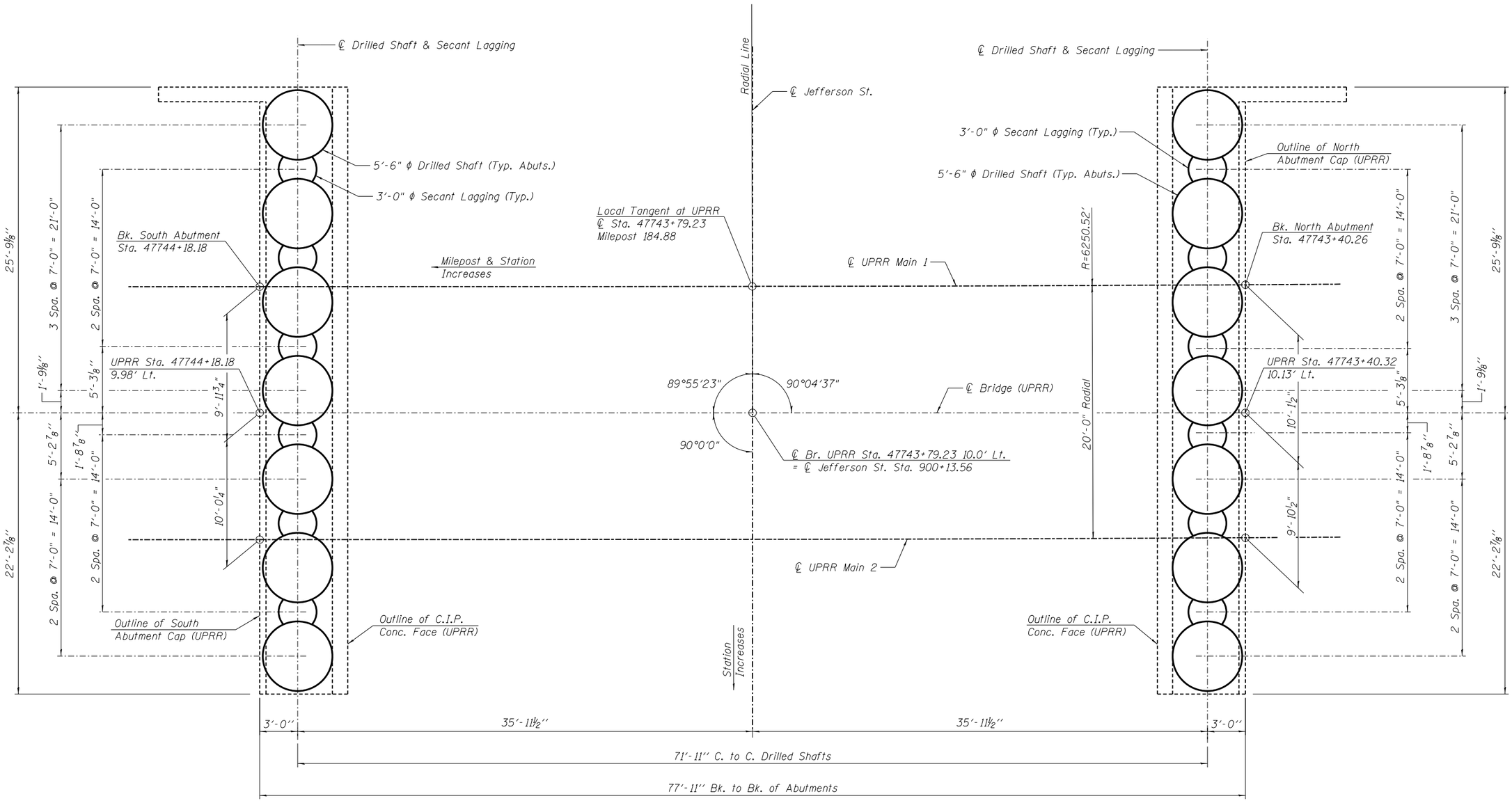
HANSON

USER NAME = thoel01490	DESIGNED - CGP	REVISED -	
	CHECKED - MNM	REVISED -	
PLOT SCALE = 0:2.0000 '' / in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/20/2021	CHECKED - MNM	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL DATA
STRUCTURE NO. 084-9970
SHEET NO. 2 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67.67A	20-00491-00-BR	SANGAMON	509	356
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			



FOUNDATION LAYOUT

FINAL

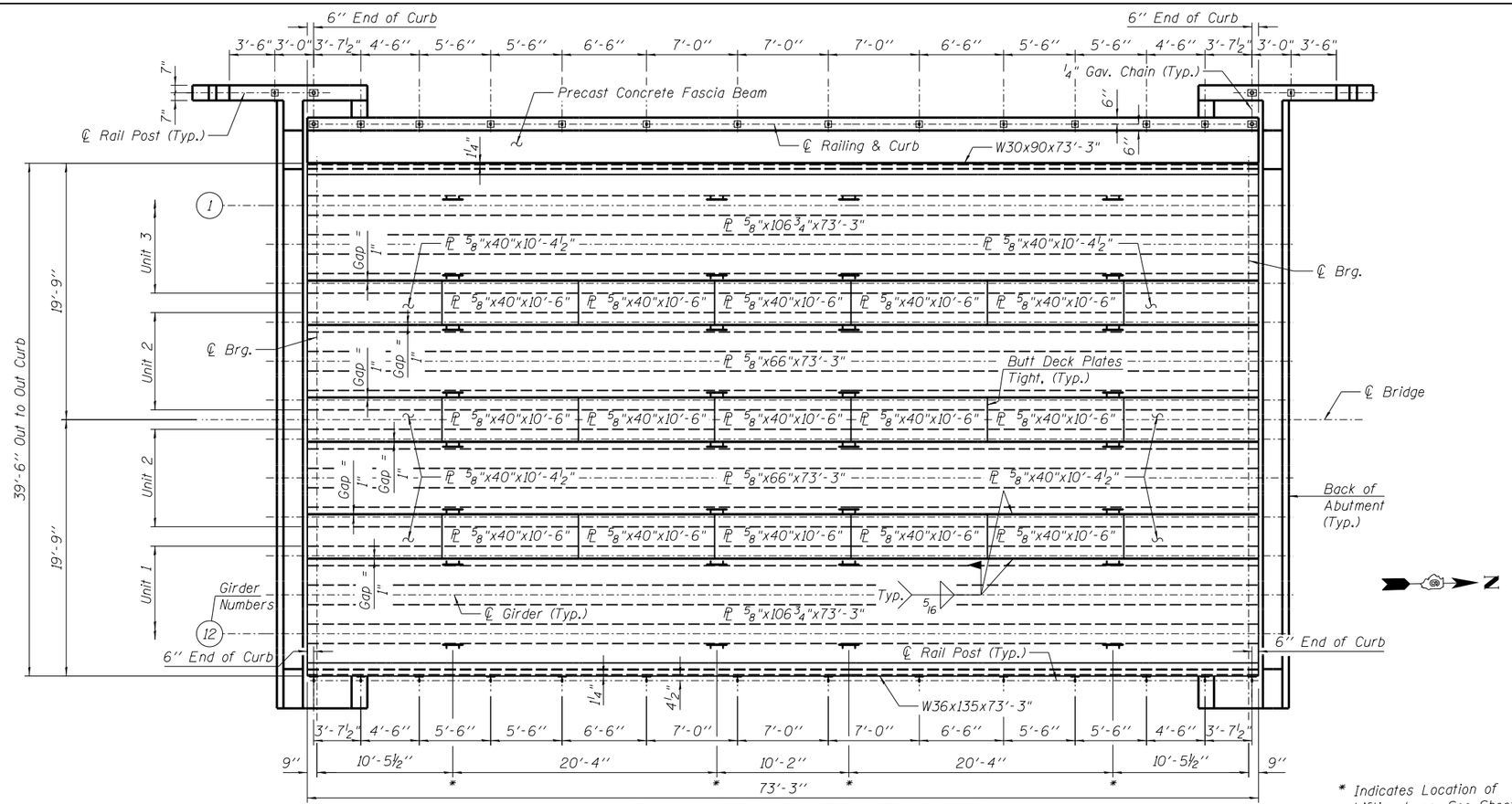
pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L81798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\084-9970.09L81798_003_Fondation Layout.dgn

USER NAME = thoel01490	DESIGNED - JGT	REVISED -	
	CHECKED - CGP	REVISED -	
PLOT SCALE = 0:2.0000 ':' / in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

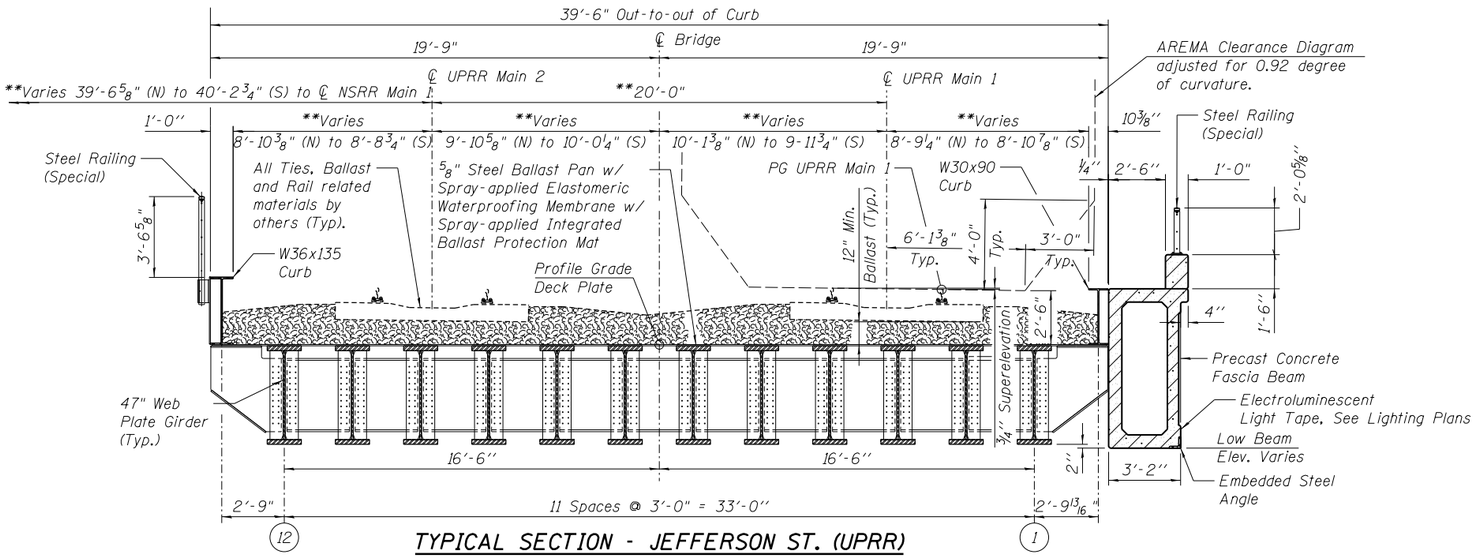
FOUNDATION LAYOUT
STRUCTURE NO. 084-9970
SHEET NO. 3 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	357
		CONTRACT NO. 93762		
		ILLINOIS	FED. AID PROJECT	



PLAN - DECK PLATE WITH CURBS

* Indicates Location of Lifting Lugs. See Sheet 7 of 19.



TYPICAL SECTION - JEFFERSON ST. (UPRR)

(Looking South)

** Dimensions are Rt. L's to ℄ Track

Notes:
For Steel Railing Details See Sheets 13 and 14 of 19.
For Membrane Waterproofing Details See Sheet 12 of 19.
For ¼" Galv. Chain Details, See Sheet 13 of 19. Cost of Chain and hardware included in the cost of Steel Railing (Special).

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\084-9970.09L01798.004_Superstructure.dgn

FINAL

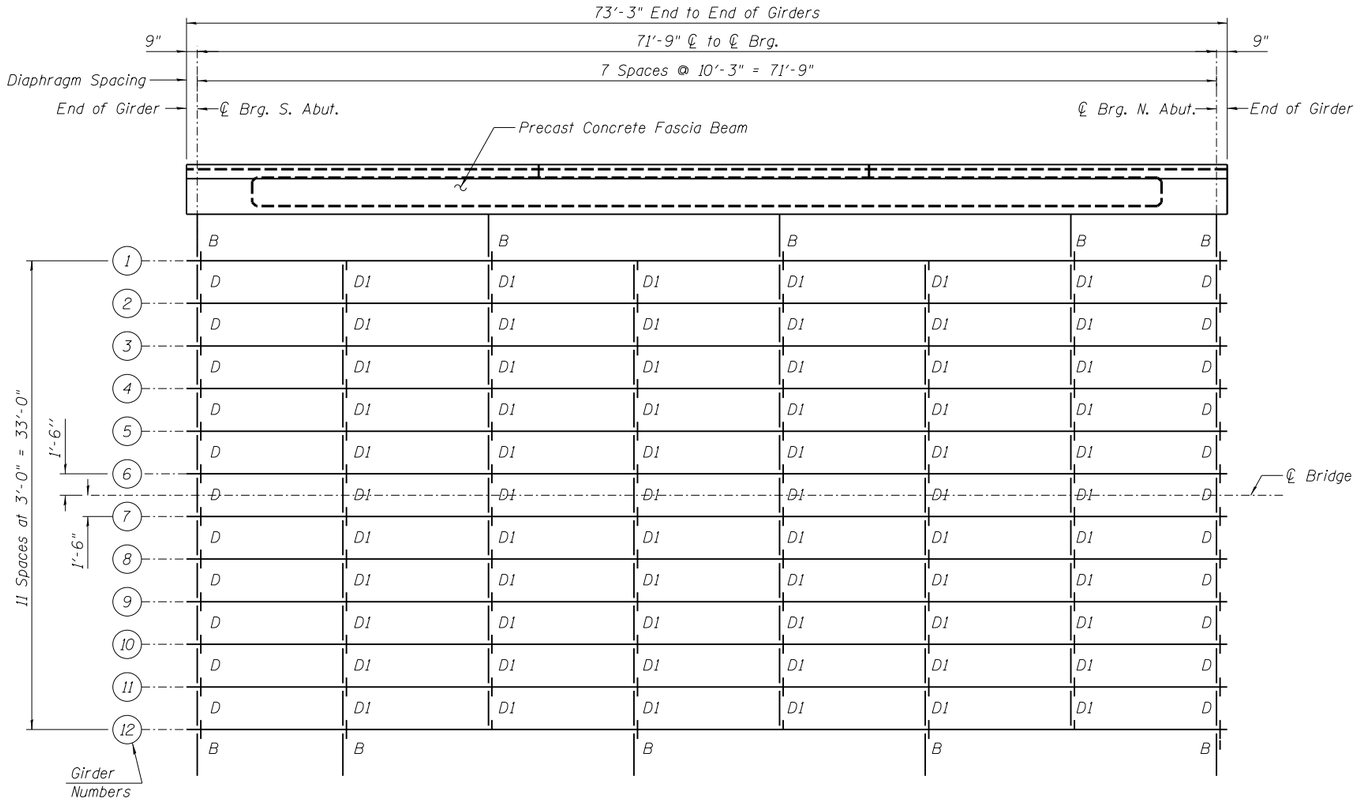
HANSON

USER NAME = thoel01490	DESIGNED - JGT	REVISED -	
	CHECKED - CGP	REVISED -	
PLOT SCALE = 0:2.0000 '' / '' in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -	

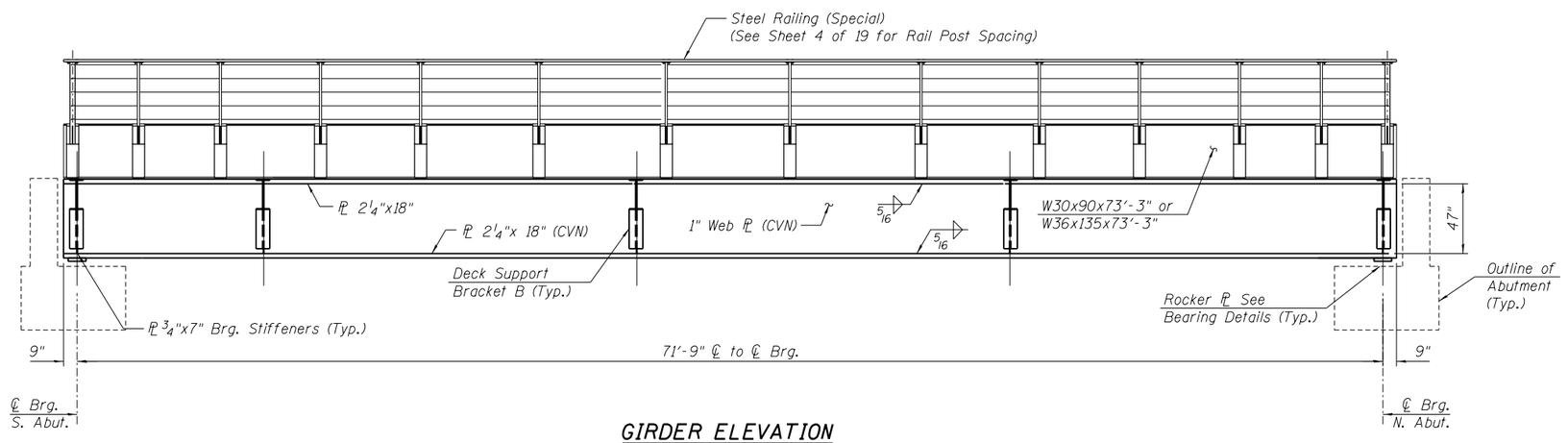
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE
STRUCTURE NO. 084-9970
SHEET NO. 4 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	358
		CONTRACT NO. 93762		
	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.

"CVN" denotes Charpy-V-Notch impact energy requirements. Zone 2.

FINAL

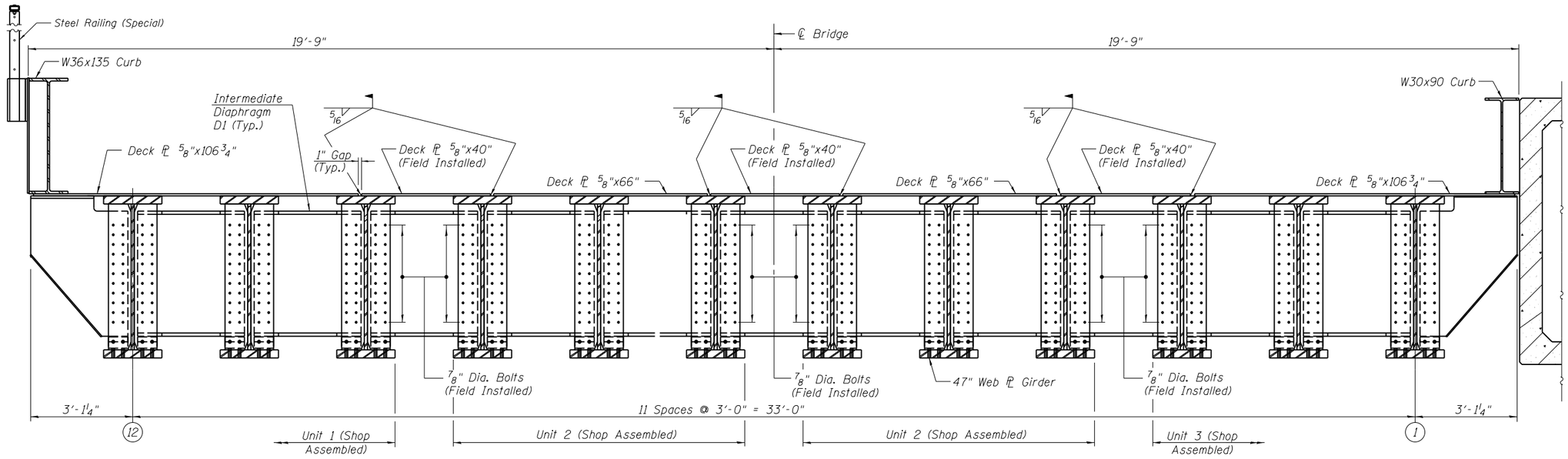
pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L0179B\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\084-9970.09L0179B.005.Steel Details.dgn

USER NAME = thoel01490	DESIGNED - JGT	REVISED -	
	CHECKED - CGP	REVISED -	
PLOT SCALE = 0:2.0000 '' / in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

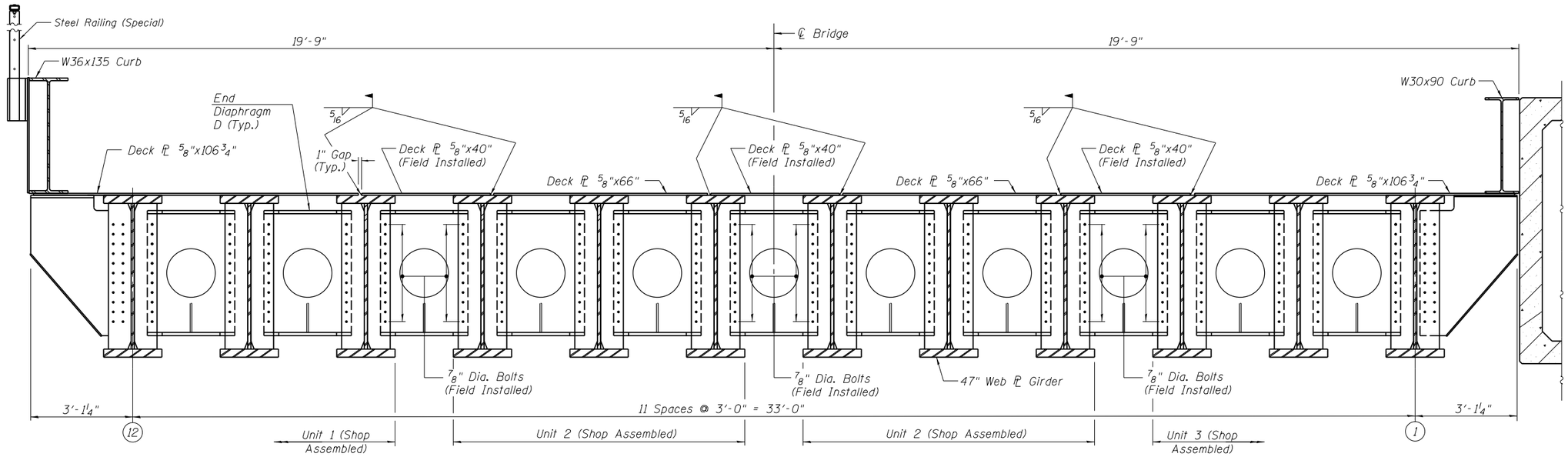
STRUCTURAL STEEL
STRUCTURE NO. 084-9970
SHEET NO. 5 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67.67A	20-00491-00-BR	SANGAMON	509	359
		CONTRACT NO. 93762		
	ILLINOIS	FED. AID PROJECT		



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.

FINAL

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\084-9970.09L01798.006.Struct Steel Det.01.dgn

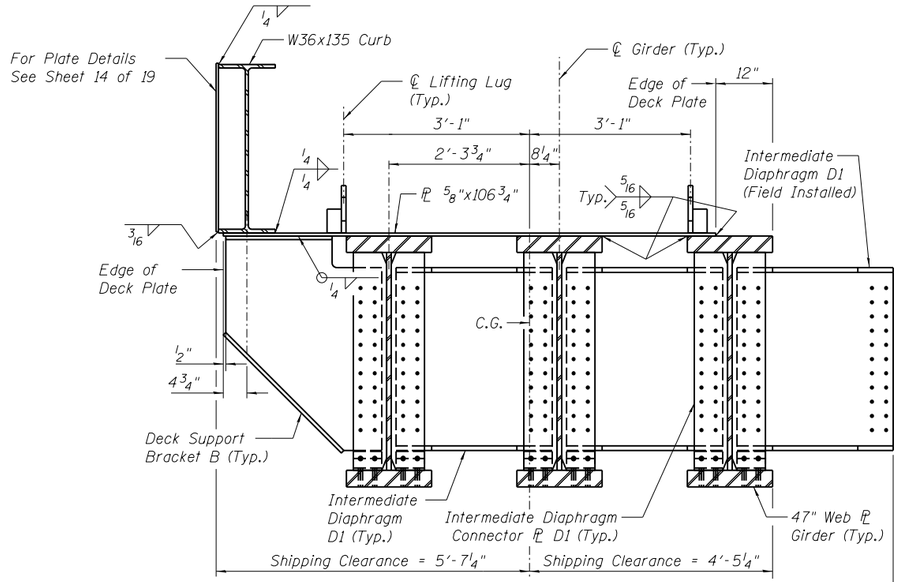
HANSON

USER NAME = thoel01490	DESIGNED - JGT	REVISED -
	CHECKED - CGP	REVISED -
PLOT SCALE = 0.1.999996 '' / in.	DRAWN - RSJ	REVISED -
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

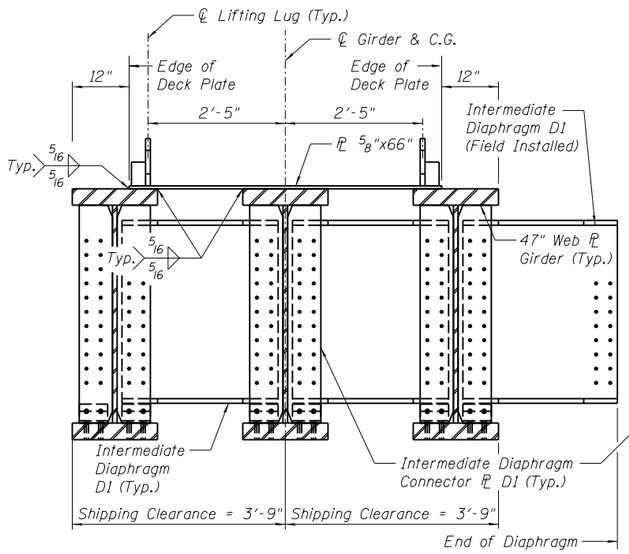
STRUCTURAL STEEL DETAILS (1 OF 3)
STRUCTURE NO. 084-9970
SHEET NO. 6 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	360
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			



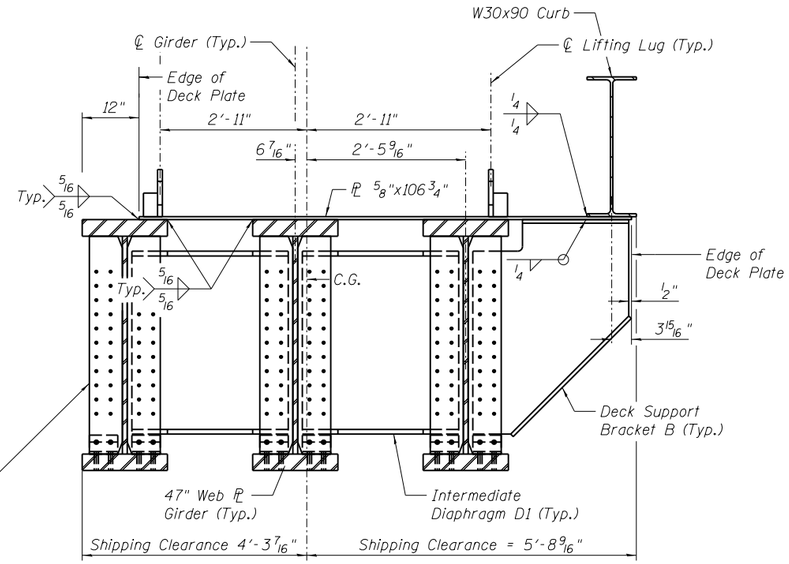
AT INTERIOR DIAPHRAGM UNIT 1

(Looking South)



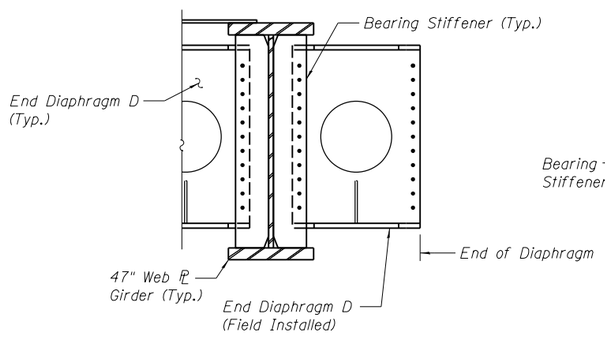
AT INTERIOR DIAPHRAGM UNIT 2

(Looking South)



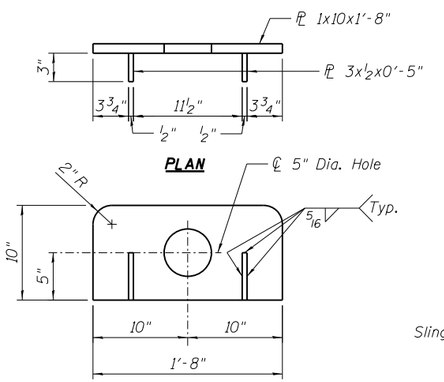
AT INTERIOR DIAPHRAGM UNIT 3

(Looking South)

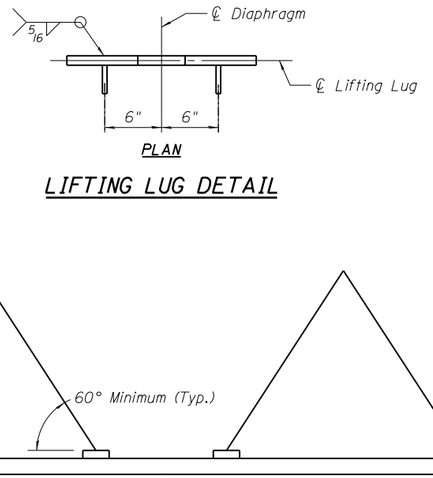


AT END DIAPHRAGM

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



LIFTING LUG



LIFTING DIAGRAM

LIFTING LUG DETAIL

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.
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.

FINAL

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L0179B\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\084-9970.09L0179B.007_Struct Steel Det_02.dgn

USER NAME = thoel01490	DESIGNED - JGT	REVISED -
	CHECKED - CGP	REVISED -
PLOT SCALE = 0:1.999996 '' / in.	DRAWN - RSJ	REVISED -
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

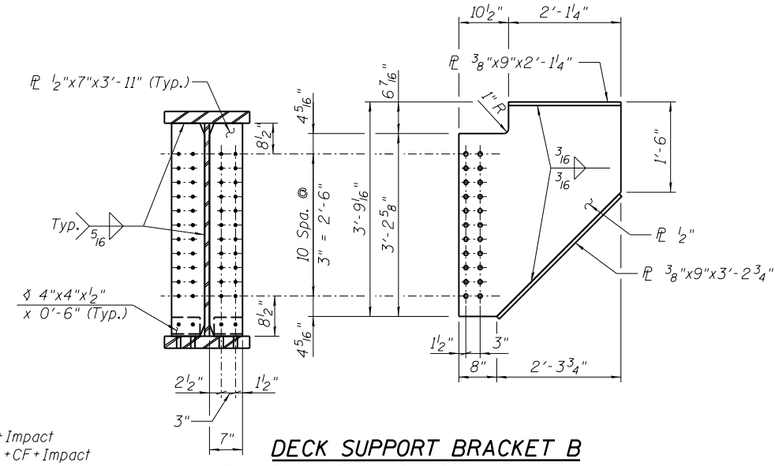
STRUCTURAL STEEL DETAILS (2 OF 3)
STRUCTURE NO. 084-9970
SHEET NO. 7 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	361
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			

INTERIOR BEAM MOMENT & SHEAR TABLE

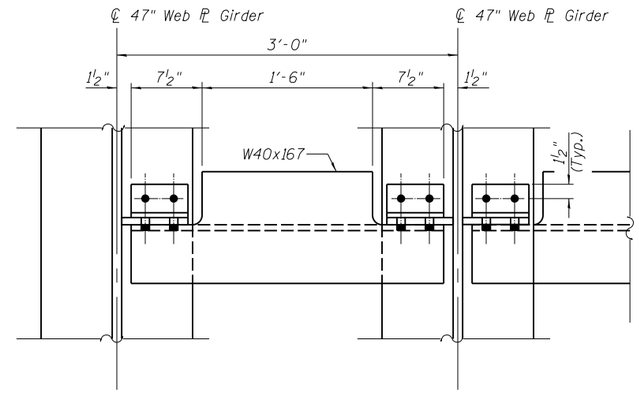
Description	Max Moment	Max Shear
Dead Load	1,052.2 ft.-k	58.7 k
Live Load	1,786.6 ft.-k	112.9 k
Centrifugal Force	21.0 ft.-k	1.2 k
Impact	611.7 ft.-k	38.7 k
Total	3,471.5 ft.-k	211.5 k
Section	47" Web PL Girder	
Steel	ASTM A709, Gr. 50, CVN Zone 2	
Net I	51,930 in^4	
Net S (Bott.)	1,881 in^3	
FST (Bott.)	22.2 ksi	
Gross I	57,804 in^4	
Gross S (Top)	2,245 in^3	
FSC (Top)	18.6 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



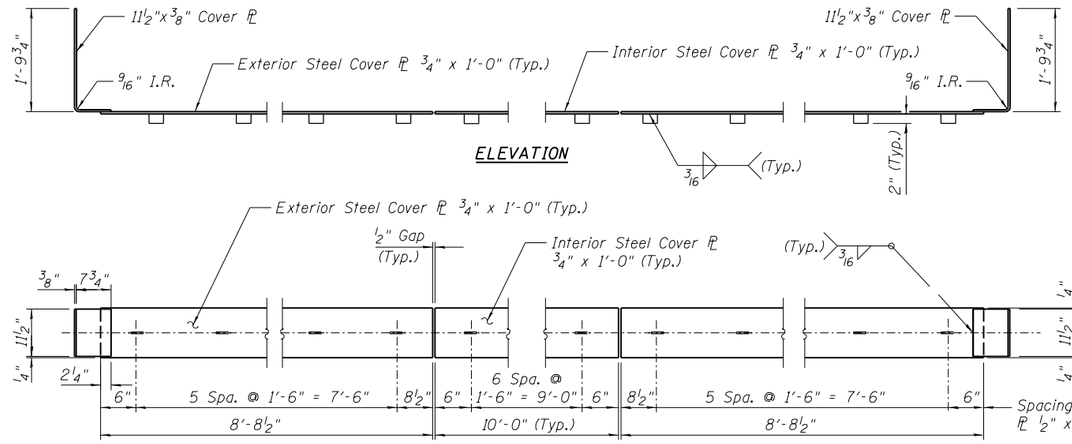
DECK SUPPORT BRACKET B

(Deck Support Bracket B at Intermediate Diaphragm shown, Deck Support Bracket B at End Diaphragm similar.)

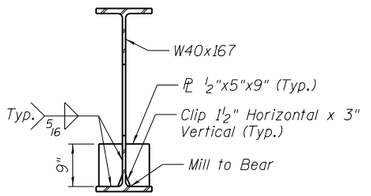


PLAN AT INTERMEDIATE DIAPHRAGM

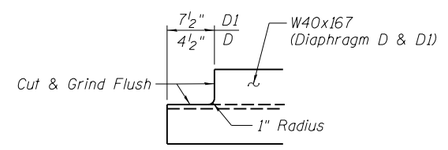
(Top Flange not shown for clarity.)



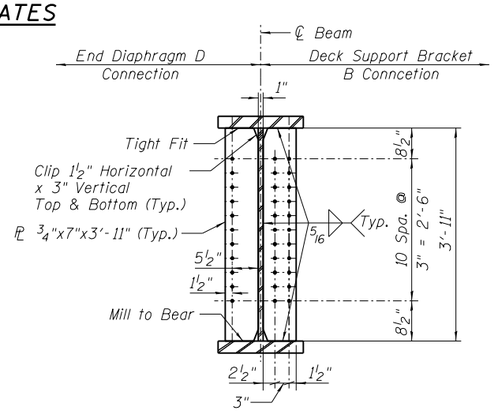
COVER PLATES



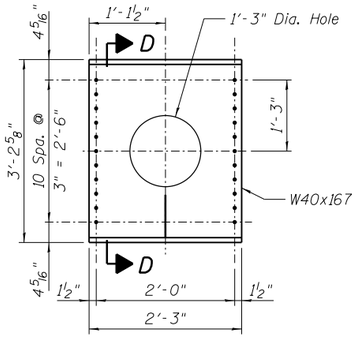
SECTION D-D



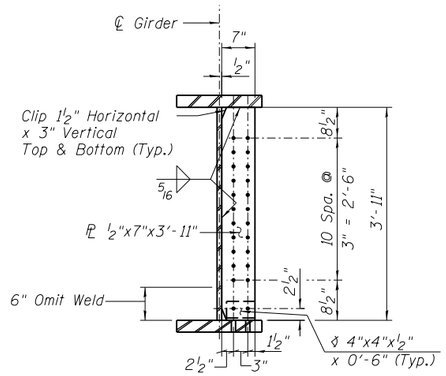
COPE DETAIL



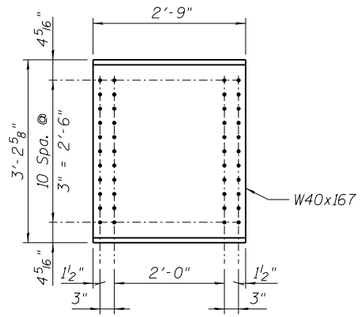
BEARING STIFFENER



END DIAPHRAGM D



INTERMEDIATE DIAPHRAGM CONNECTOR PLATE D1



INTERMEDIATE DIAPHRAGM D1

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.
"CVN" denotes Charpy-V-Notch impact energy requirements, Zone 2.
Bolts shall be ⅞" 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\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\084-9970.09L01798.008.Struct Steel Det.03.dgn

FINAL

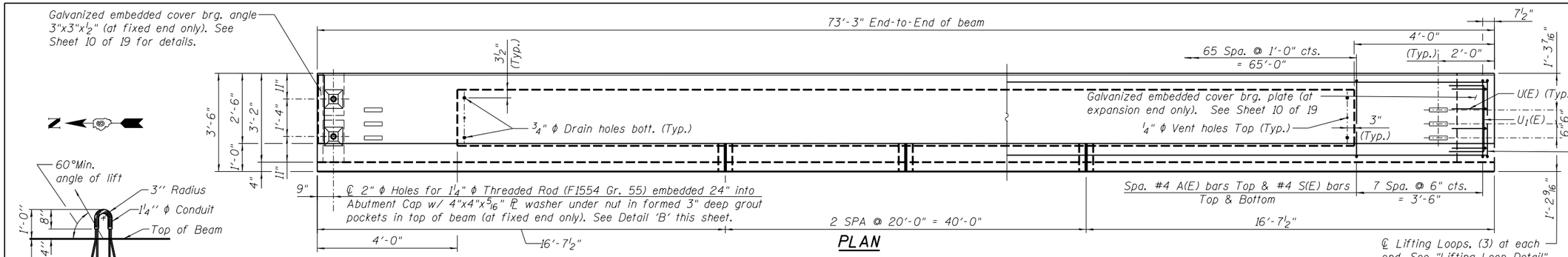
HANSON

USER NAME = thoel01490	DESIGNED - JGT	REVISED -	
	CHECKED - CGP	REVISED -	
PLOT SCALE = 81.999996 '' / in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL DETAILS (3 OF 3)
STRUCTURE NO. 084-9970
SHEET NO. 8 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	362
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			



BAR LIST ONE BEAM ONLY

(For Fabrication Only)

Bar	No.	Size	Length	Shape
A(E)	80	#4	5'-3"	
B(E)	60	#7	38'-10"	
B_1(E)	8	#4	16'-3"	
B_2(E)	8	#4	19'-8"	
D(E)	74	#4	5'-5"	
S(E)	164	#4	11'-6"	
U(E)	8	#4	8'-11"	
U_1(E)	10	#4	5'-1"	

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\084-9970.09L01798.009-Precast Fascia Beam.dgn

FINAL

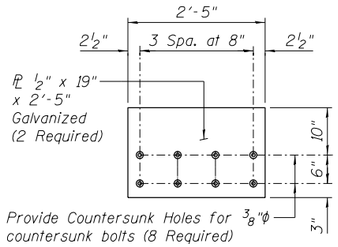
HANSON

USER NAME = thoel01490	DESIGNED - JGT	REVISED -
	CHECKED - CGP	REVISED -
PLOT SCALE = 0:2.000000 '' / in.	DRAWN - RSJ	REVISED -
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

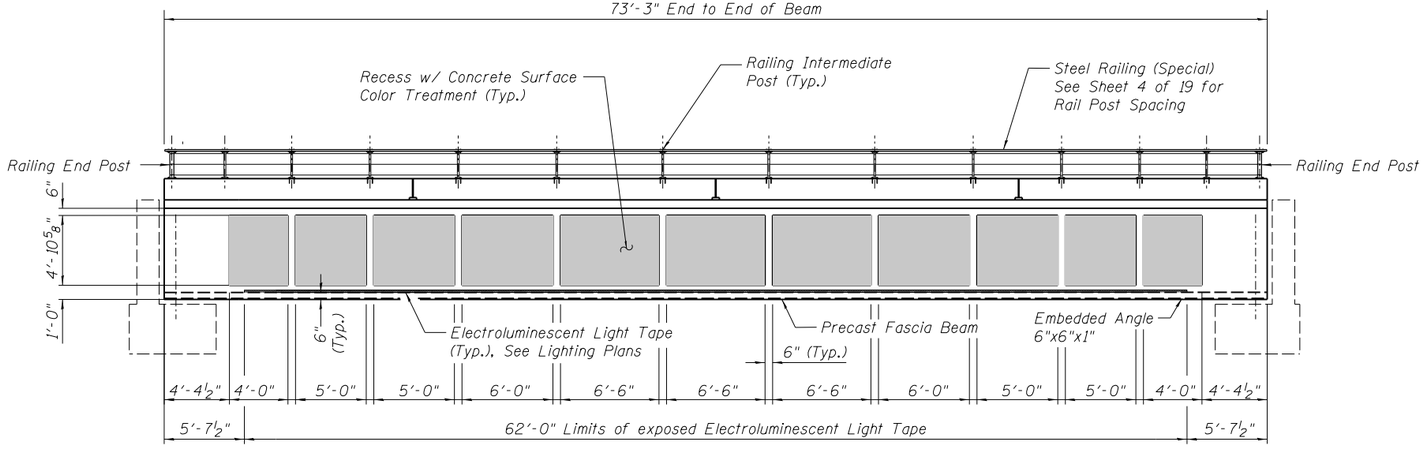
PRECAST FASCIA BEAM
STRUCTURE NO. 084-9970
SHEET NO. 9 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	363
		CONTRACT NO. 93762		
		ILLINOIS FED. AID PROJECT		



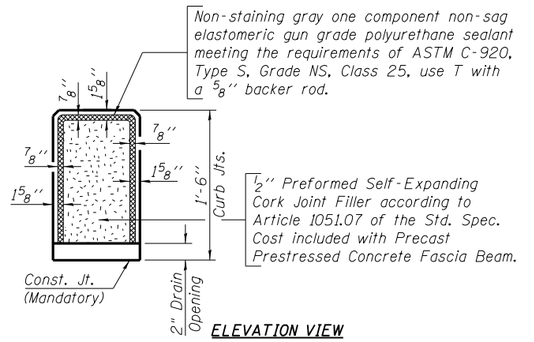
JOINT COVER PLATE

(1 Required at each Fascia Beam Joint)

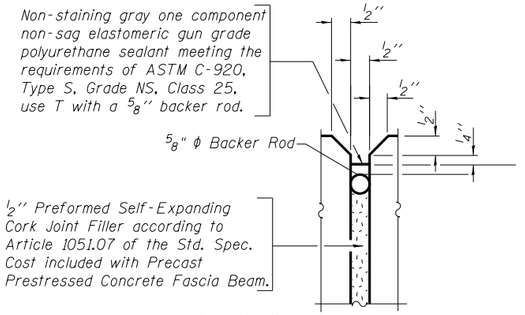


ELEVATION PRECAST FASCIA BEAM

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

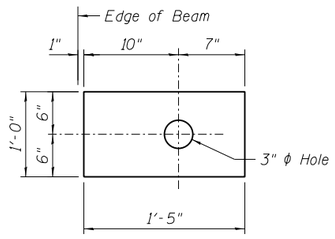


ELEVATION VIEW

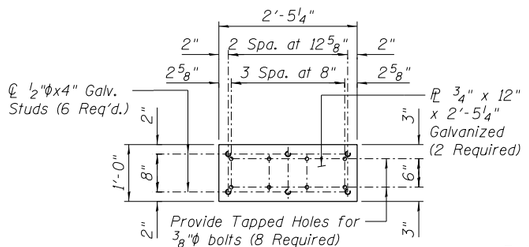


SIDE VIEW

CURB JOINT DETAILS

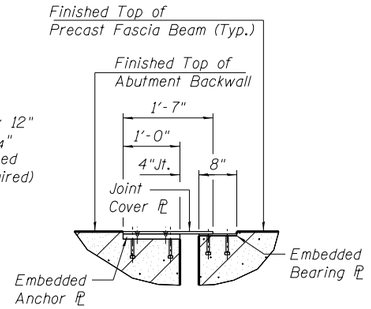


FABRIC BEARING PAD

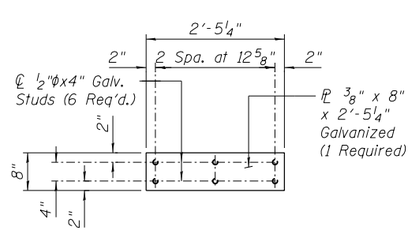


EMBEDDED ANCHOR PLATE

(1 Required at Each Abutment Backwall)

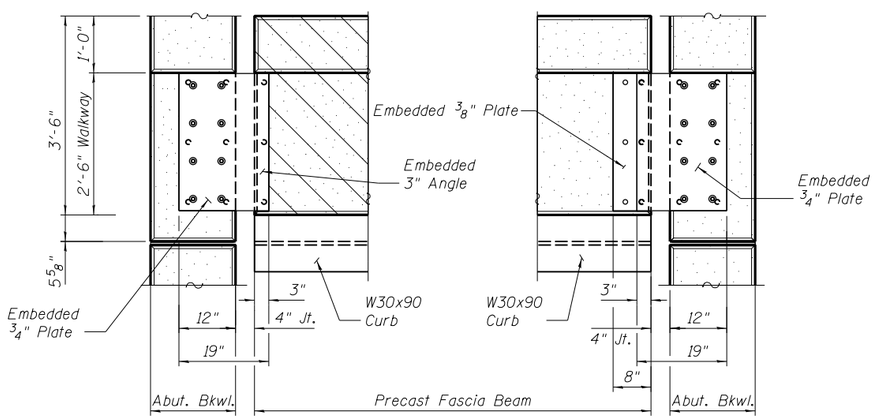


SECTION AT EXPANSION JOINT



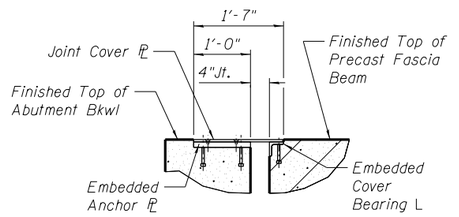
EMBEDDED BEARING PLATE

(1 Required at Expansion End of Fascia Beam)

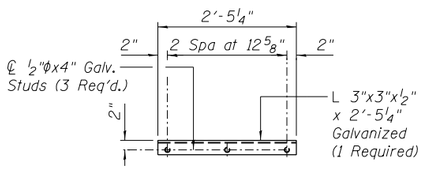


PLAN - FIXED JT. COVER AT SOUTH ABUMENT

PLAN - EXPANSION JT. COVER AT NORTH ABUMENT



SECTION AT FIXED JOINT



EMBEDDED BEARING ANGLE

(1 Required at Fixed End of Fascia Beam)

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 ½" and the nominal cross-sectional area shall be 0.153 sq. in.

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

Two ⅛" 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)(10) 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.	1,386
Concrete Surface Color Treatment	Sq. Ft.	291
Precast Prestressed Concrete Fascia Beam, No. 3	L. Sum	1

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L0179B\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\084-9970_09L0179B_010_Fascia Beam Details.dgn

FINAL

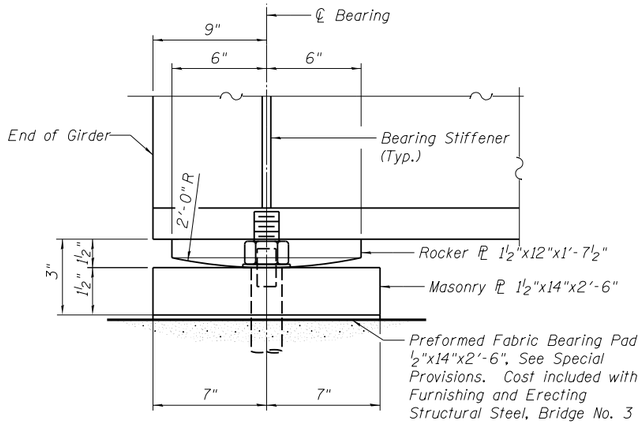
HANSON

USER NAME = thoe101490	DESIGNED - JGT	REVISED -	
	CHECKED - CGP	REVISED -	
PLOT SCALE = 0:2.000000 ':' / in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -	

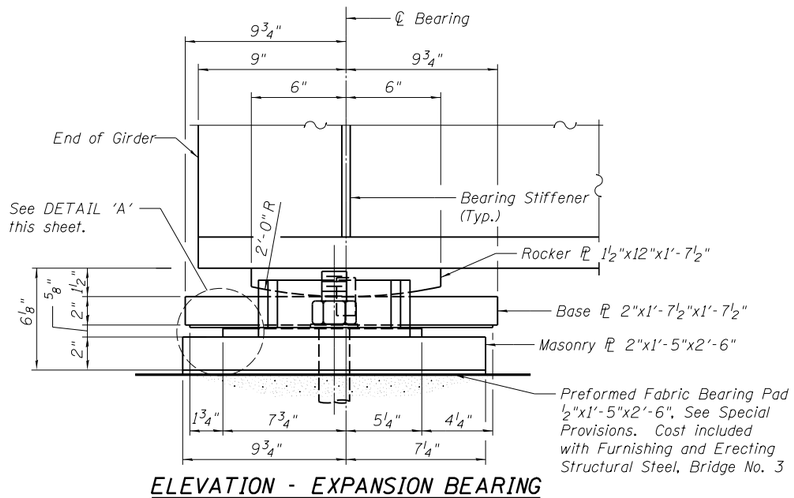
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PRECAST FASCIA BEAM DETAILS
STRUCTURE NO. 084-9970
SHEET NO. 10 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	364
		CONTRACT NO. 93762		
		ILLINOIS FED. AID PROJECT		



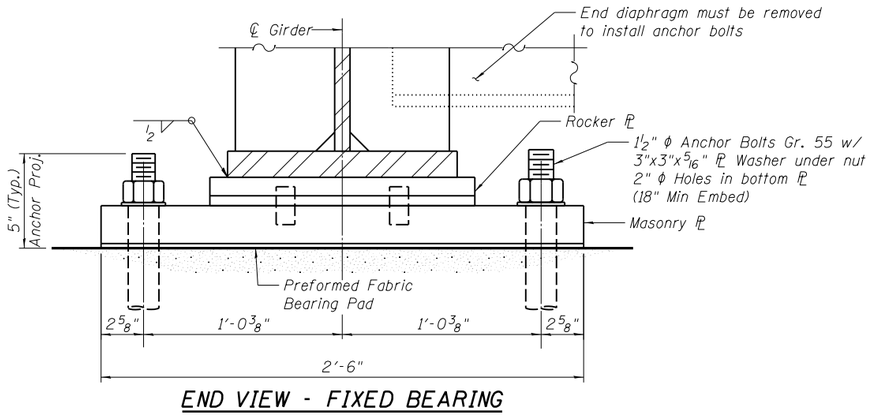
ELEVATION - FIXED BEARING



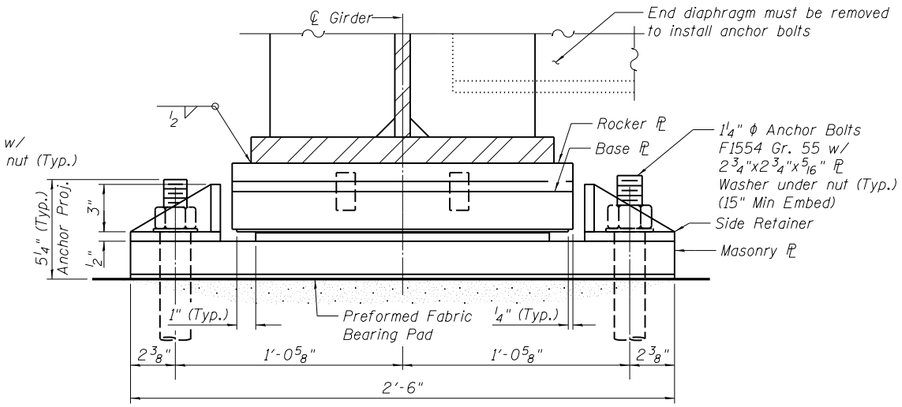
ELEVATION - EXPANSION BEARING

Notes:

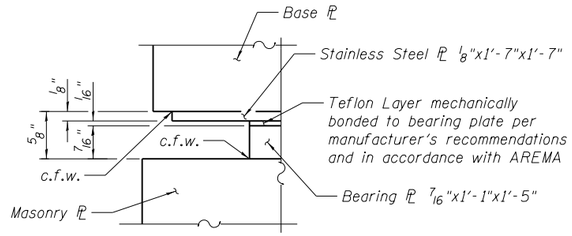
1. *The structural steel plates of the Bearing Assembly shall conform to the requirements of ASTM A709, Grade 50.*
2. *Teflon Layer shall be composed of virgin unfilled TFE resin, unfilled TFE sheets, or unfilled TFE fabric. Filler material, such as milled glass fibers, will not be allowed. Teflon layer 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 ⅛" adjusting shims shall be provided for each bearing assembly in addition to all other plates or shims and placed as shown on bearing details.*



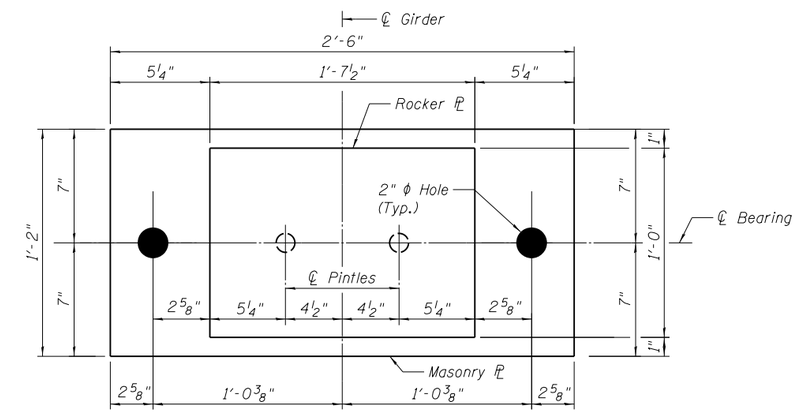
END VIEW - FIXED BEARING



END VIEW - EXPANSION BEARING

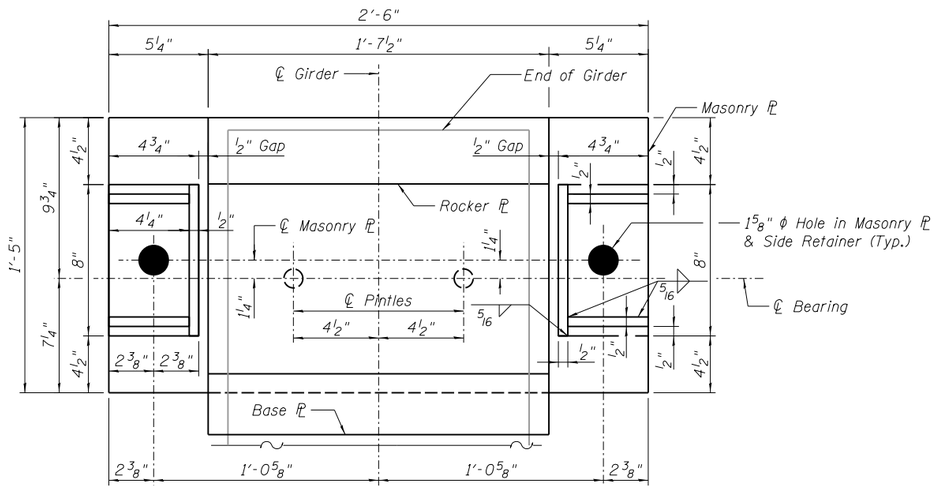


DETAIL 'A'



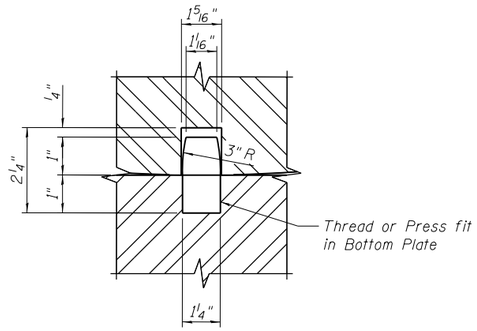
PLAN VIEW - FIXED BEARING

(N. Abutment Bearings - 12 required)



PLAN VIEW - EXPANSION BEARING

(S. Abutment Bearings - 12 required)



PINTLE DETAIL

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\084-9970_09L01798_011_Brg Det.dgn

FINAL

HANSON

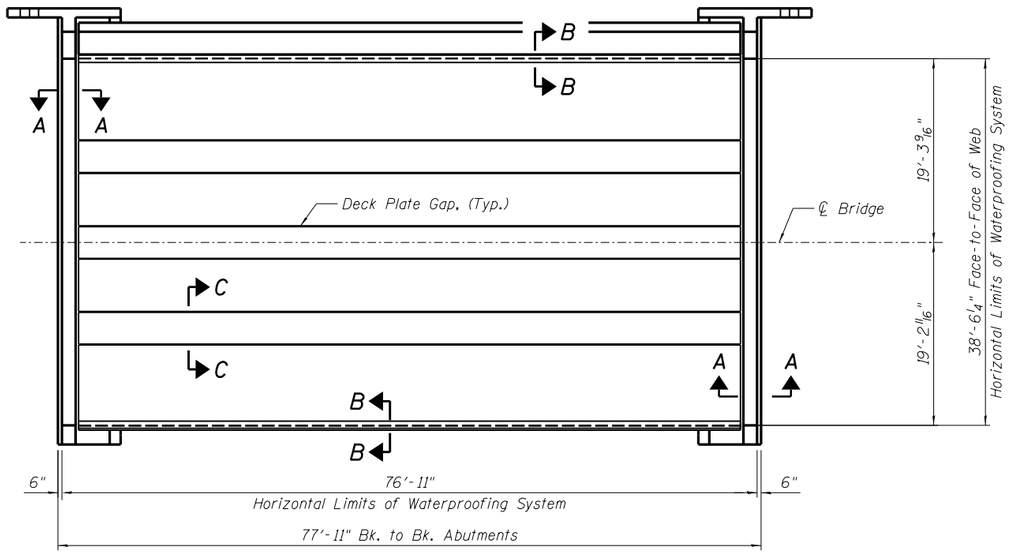
USER NAME = thoel01490	DESIGNED - JGT	REVISED -	
	CHECKED - CGP	REVISED -	
PLOT SCALE = 0:2.000000 ':' / in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

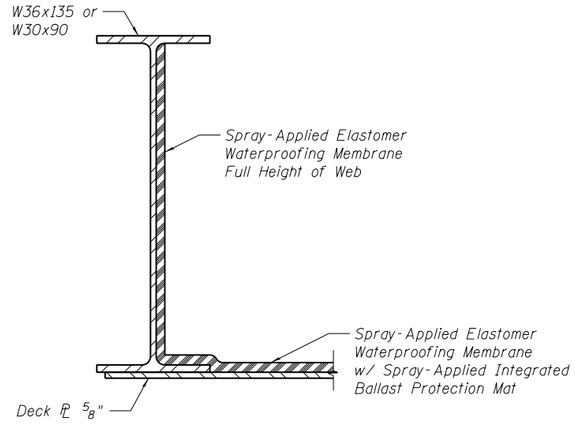
BEARING DETAILS
STRUCTURE NO. 084-9970

SHEET NO. 11 OF 19 SHEETS

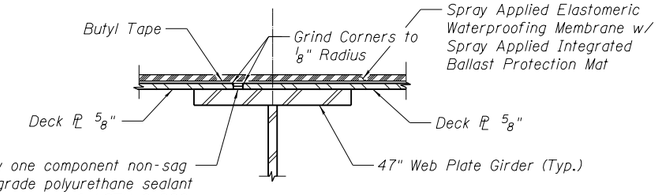
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67.67A	20-00491-00-BR	SANGAMON	509	365
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			



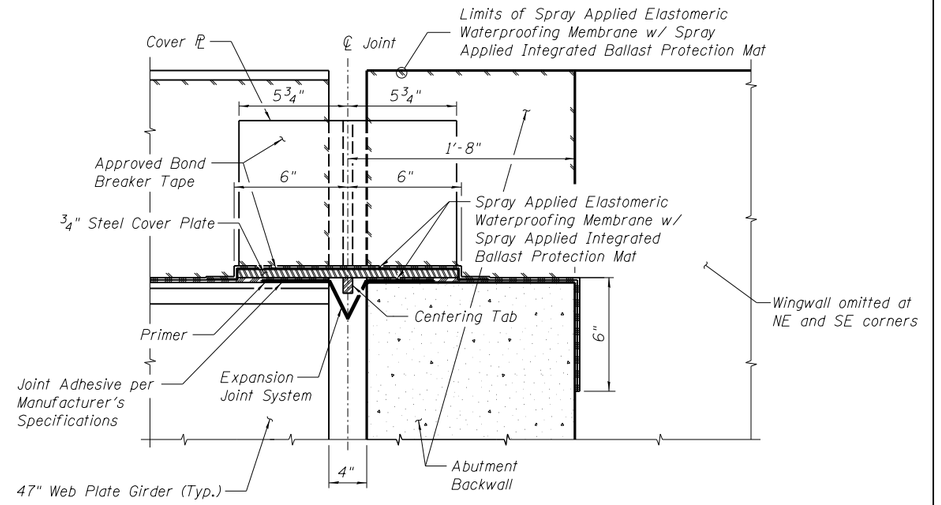
WATERPROOFING LIMITS PLAN



SECTION B-B



SECTION C-C



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

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.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Membrane Waterproofing (Special)	Sq. Ft.	2963

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L0179B\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\084-9970_09L0179B_012_Waterproofing.dgn

FINAL

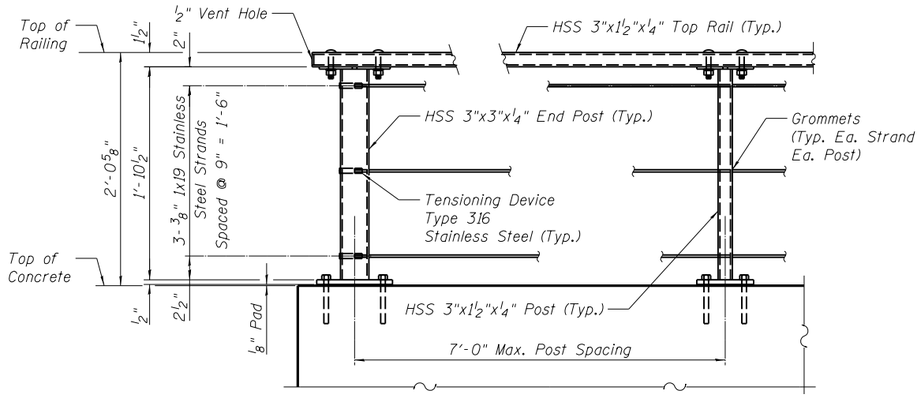
HANSON

USER NAME = thoel01490	DESIGNED - JGT	REVISED -
	CHECKED - CGP	REVISED -
PLOT SCALE = 0:2.000000 ':' / in.	DRAWN - RSJ	REVISED -
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -

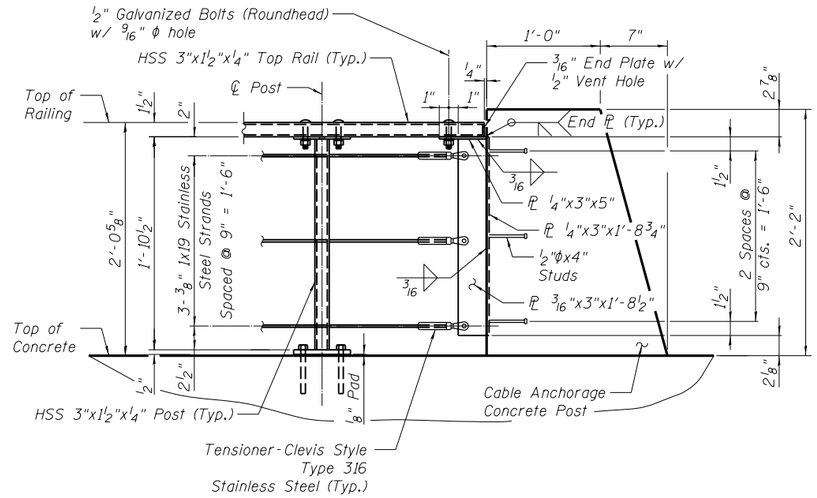
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MEMBRANE WATERPROOFING
STRUCTURE NO. 084-9970
SHEET NO. 12 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67.67A	20-00491-00-BR	SANGAMON	509	366
		CONTRACT NO. 93762		
		ILLINOIS	FED. AID PROJECT	



END 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.

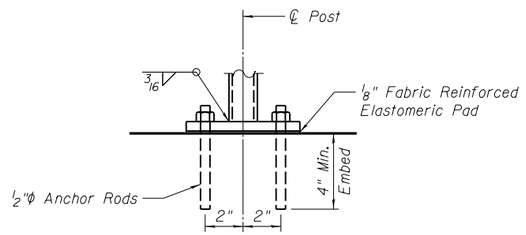
All steel rail members, with the exception of the stainless steel strand and fittings, shall be hot dipped galvanized according to 509.05 of the Standard Specifications.

All studs shall be ½"ϕx4" granular or solid flux filled headed studs automatically end welded to plates.

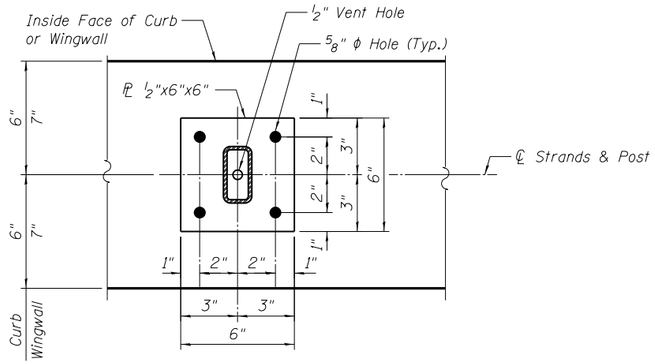
For top rail and post connection details See Sheet 14 of 19.

See Sheet 4 of 19 for rail post spacing.

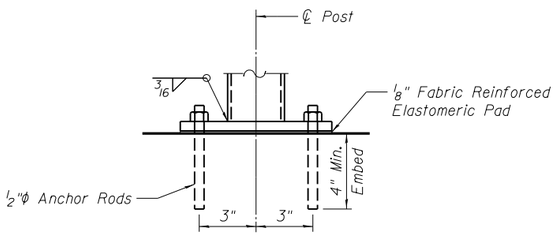
See Retaining Wall Plans for chain attachment details.



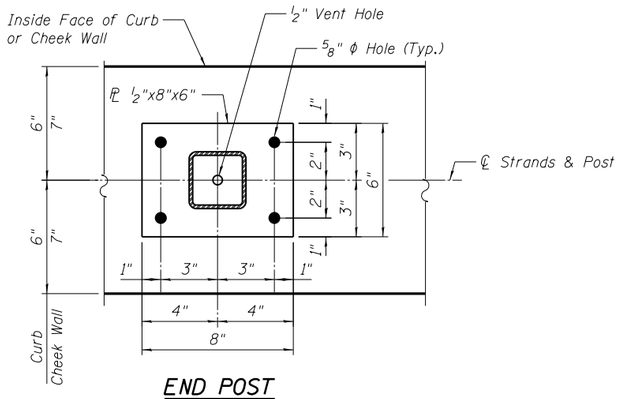
ANCHOR ROD DETAIL
INTERMEDIATE POSTS



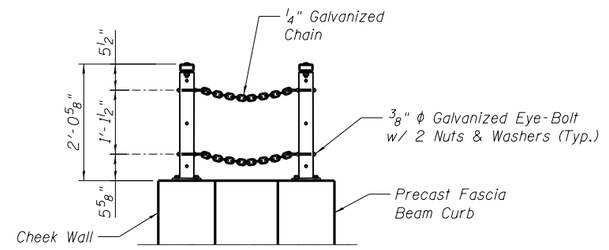
INTERMEDIATE POST



ANCHOR ROD DETAIL
END POSTS



END POST



WEST SIDE

END POST AND CHAIN DETAIL

BILL OF MATERIAL

(Includes Railing along West & East side)

ITEM	UNIT	TOTAL
Steel Railing (Special)	Foot	161

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\084-9970_09L01798_013_Steel Rail-West.dgn

FINAL

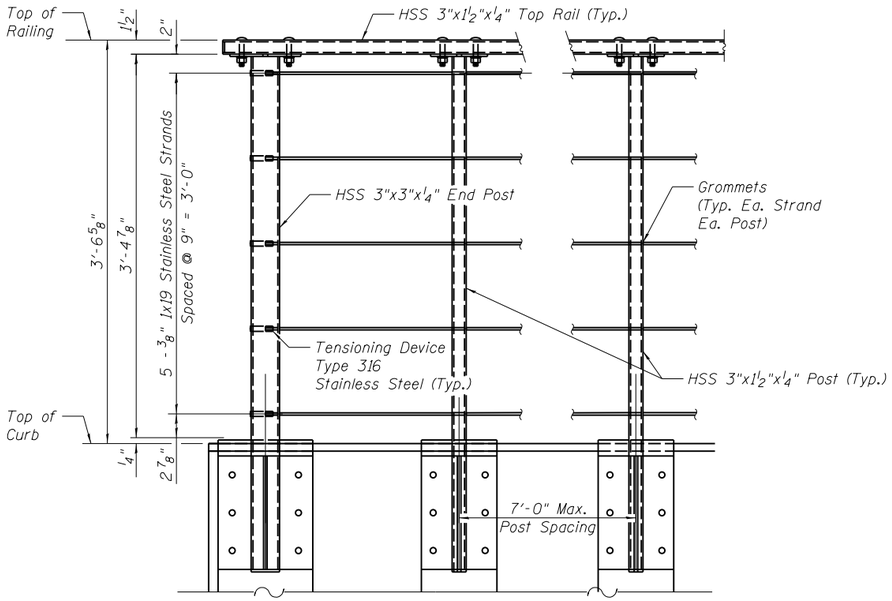
HANSON

USER NAME = thoel01490	DESIGNED - JGT	REVISED -	
	CHECKED - CGP	REVISED -	
PLOT SCALE = 0:2.000000 '' / in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -	

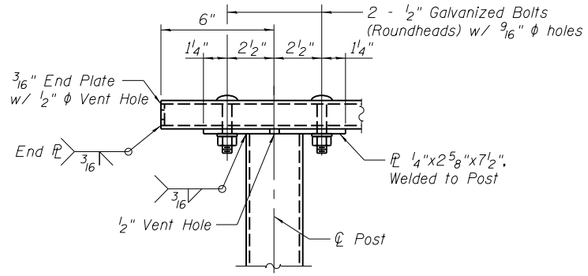
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL RAILING (SPECIAL) WESTSIDE
STRUCTURE NO. 084-9970
SHEET NO. 13 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	367
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			



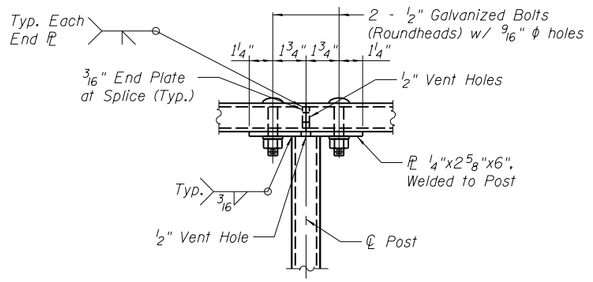
RAILING END PANEL - SUPERSTRUCTURE



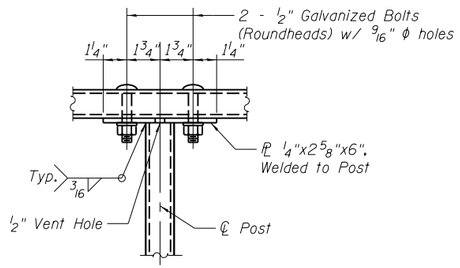
TYPICAL RAIL/END POST CONNECTION

(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.



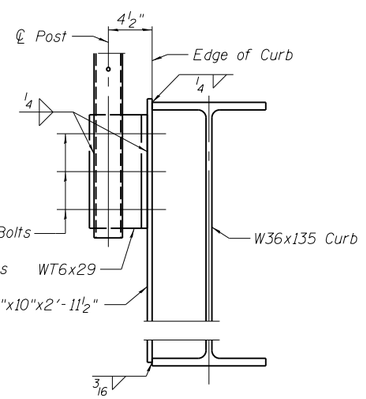
TOP RAIL - WITH SPLICE



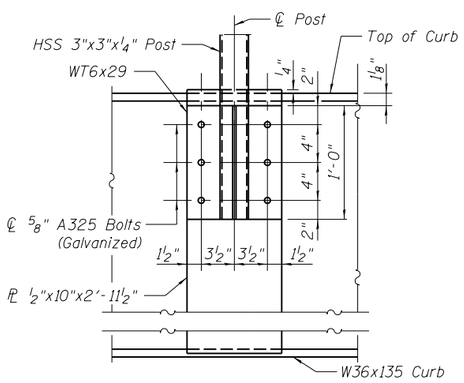
TOP RAIL - NO SPLICE

TYPICAL RAIL/POST CONNECTION

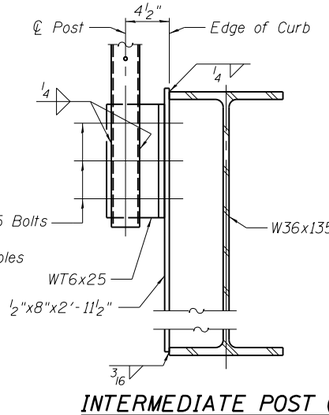
(Strands not shown for clarity.)



END POST (3")

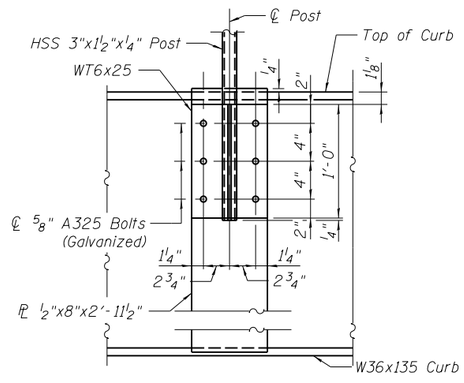


END POST (3")



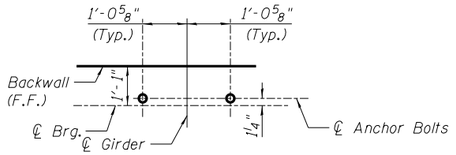
INTERMEDIATE POST (1½")

(Along Superstructure)

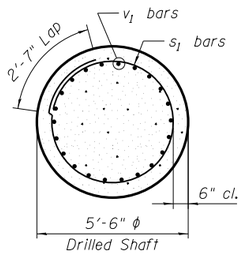


INTERMEDIATE POST (1½")

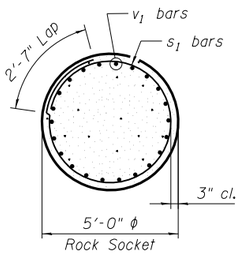
(Along Superstructure)



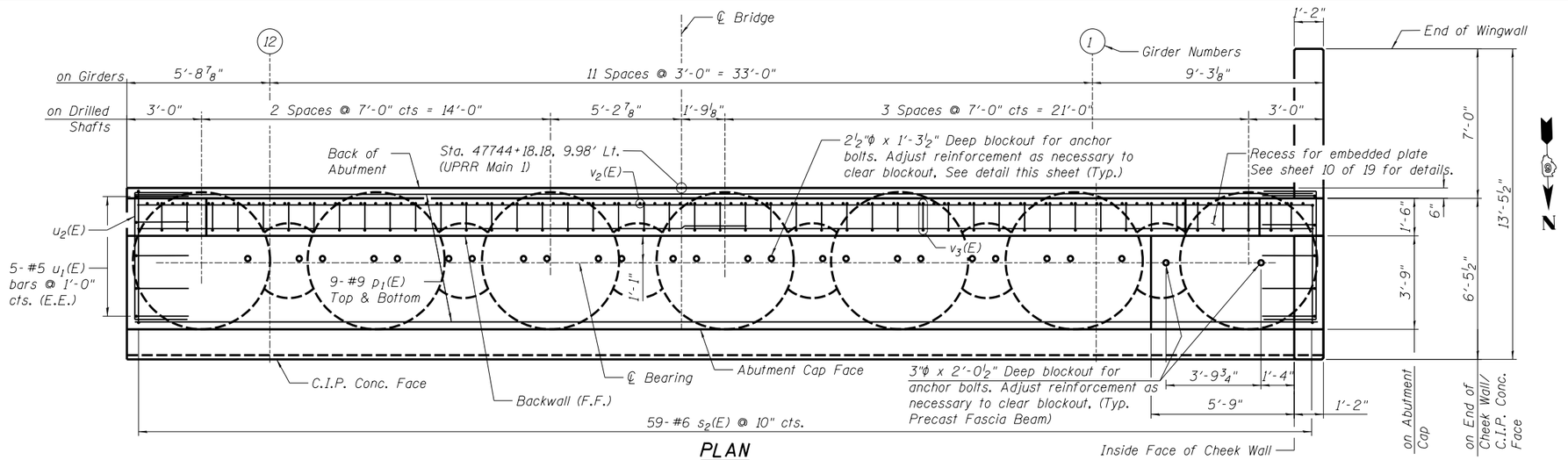
BLOCKOUT LAYOUT



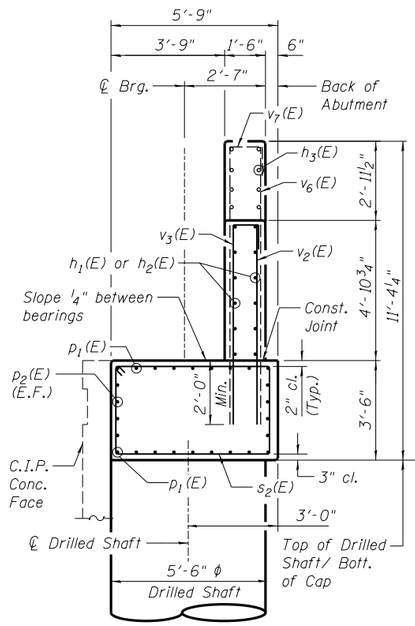
SECTION B-B



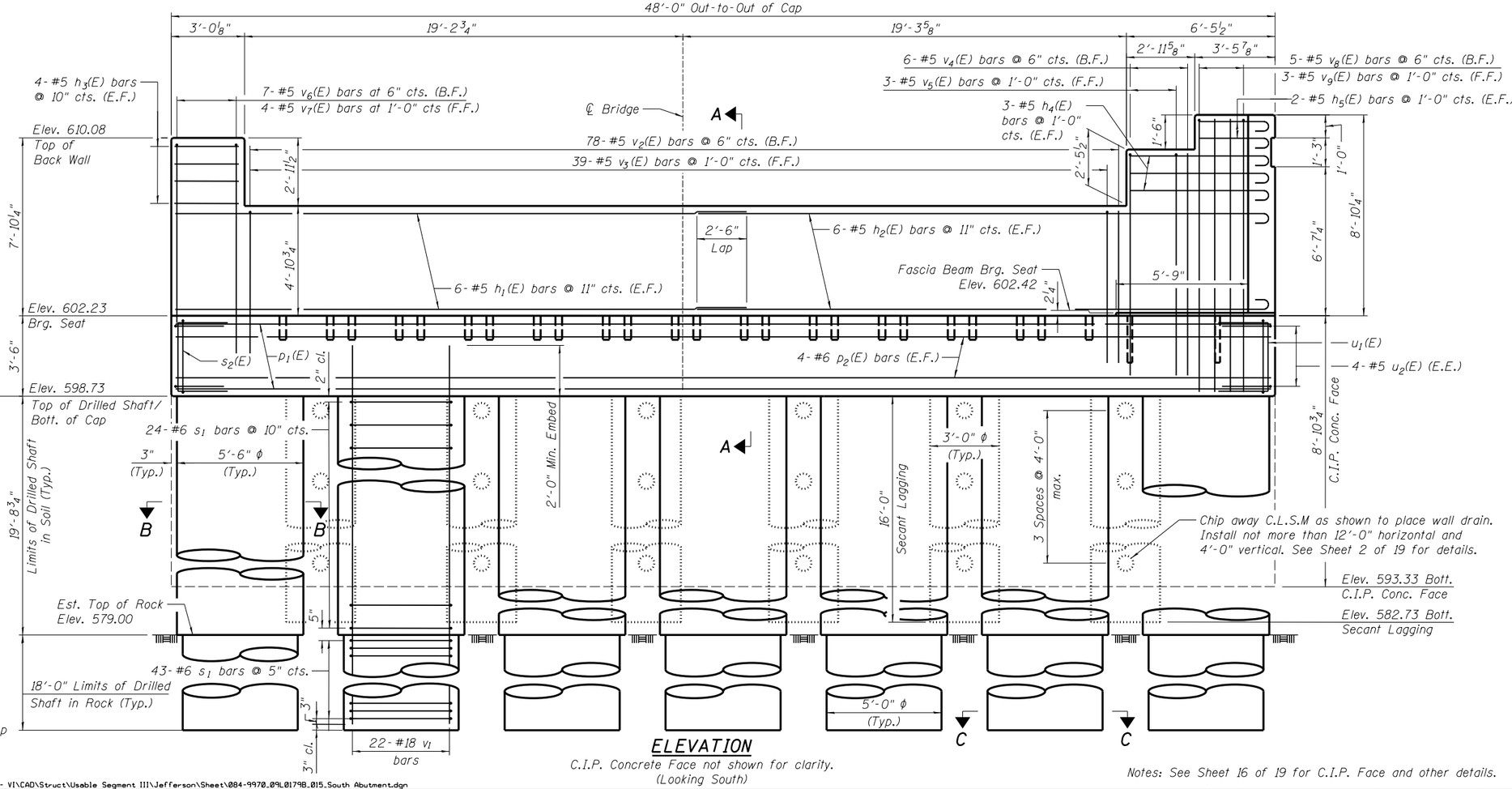
SECTION C-C



PLAN



SECTION A-A



ELEVATION

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

* 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.

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L0179B\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\084-9970.09L0179B_015_South Abutment.dgn

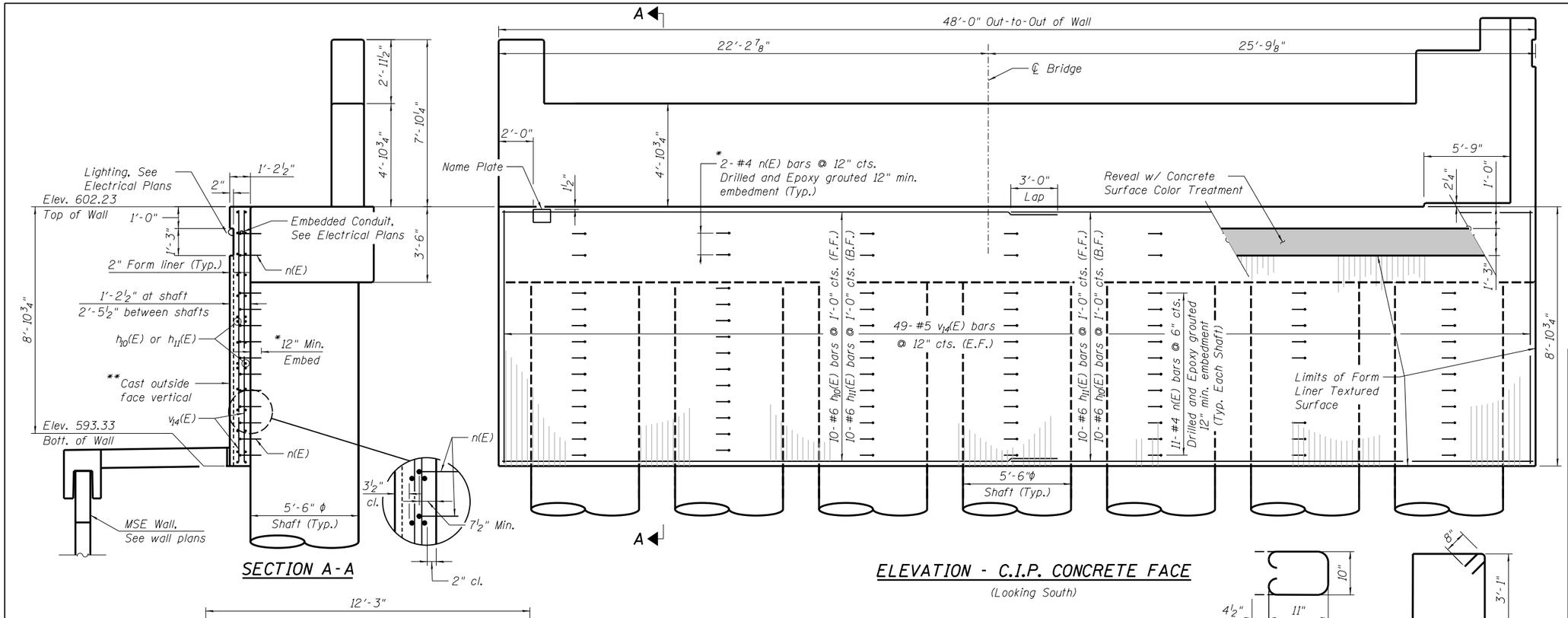
FINAL

USER NAME = thoel01490	DESIGNED - JGT	REVISED -
	CHECKED - CGP	REVISED -
PLOT SCALE = 0:2.000000 '' / in.	DRAWN - RSJ	REVISED -
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT
STRUCTURE NO. 084-9970
SHEET NO. 15 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67.67A	20-00491-00-BR	SANGAMON	509	369
		CONTRACT NO. 93762		
		ILLINOIS FED. AID PROJECT		



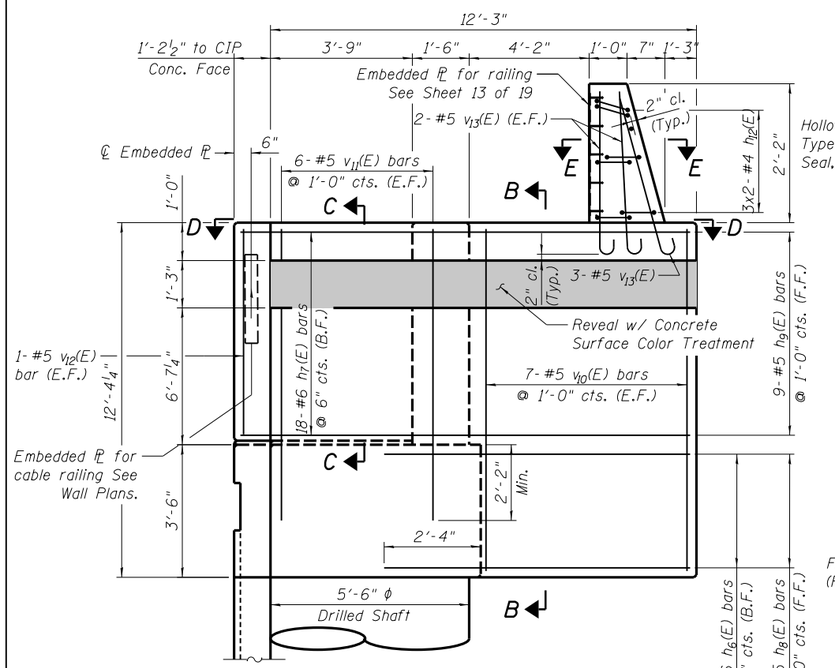
SECTION A-A

ELEVATION - C.I.P. CONCRETE FACE

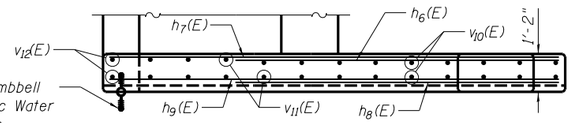
(Looking South)

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

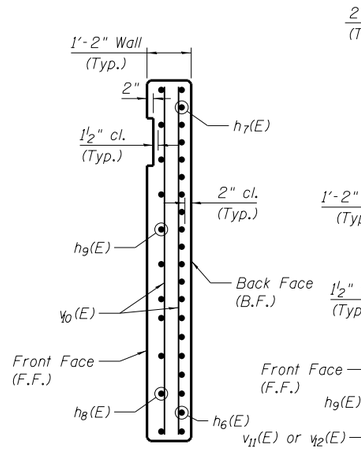
** Concrete wall face shall be cast vertically. Thickness of wall may vary due to abutment deflection. The Min. wall thickness shall be 11 1/2".



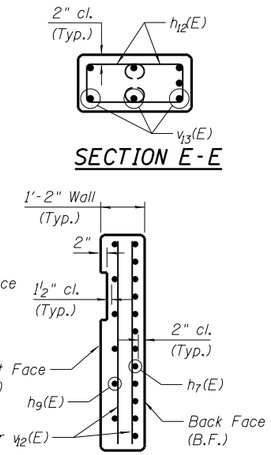
ELEVATION - TYPICAL END VIEW



SECTION D-D - PLAN VIEW



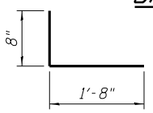
WINGWALL SECTION B-B



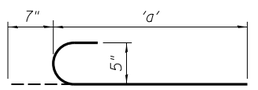
SECTION E-E

CHEEKWALL SECTION C-C

BAR h12(E)

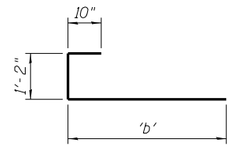


BAR n(E)



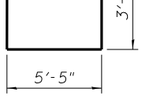
BARS h2(E), h4(E), h5(E) & v13(E)

Bar	'a'
h2(E)	25'-1"
h4(E)	6'-0"
h5(E)	3'-0"
v13(E)	2'-10"

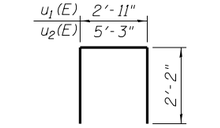


BARS v3(E), v5(E), v7(E) & v9(E)

Bar	'b'
v3(E)	6'-10"
v5(E)	9'-4"
v7(E)	9'-10"
v9(E)	10'-10"



BAR s2(E)



BARS u1(E), u2(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h1(E)	12	#5	25'-1"	—
h2(E)	12	#5	25'-8"	⊃
h3(E)	8	#5	2'-8"	⊃
h4(E)	6	#5	6'-7"	⊃
h5(E)	4	#5	3'-7"	⊃
h6(E)	7	#6	8'-10"	—
h7(E)	18	#6	13'-1"	—
h8(E)	4	#5	8'-10"	—
h9(E)	9	#5	13'-1"	—
h10(E)	20	#6	22'-0"	—
h11(E)	20	#6	28'-8"	—
h12(E)	6	#4	3'-5"	⊃
n(E)	91	#4	2'-4"	L
p1(E)	18	#9	47'-8"	—
p2(E)	8	#6	47'-8"	—
s1	469	#6	16'-9"	○
s2(E)	59	#6	18'-4"	□
u1(E)	10	#5	7'-3"	⊔
u2(E)	8	#5	9'-7"	⊔
v1	154	#18	40'-2"	—
v2(E)	78	#5	6'-10"	—
v3(E)	39	#5	8'-10"	⊏
v4(E)	6	#5	9'-4"	—
v5(E)	3	#5	11'-4"	⊏
v6(E)	7	#5	9'-10"	—
v7(E)	4	#5	11'-10"	⊏
v8(E)	5	#5	10'-10"	—
v9(E)	3	#5	12'-10"	⊏
v10(E)	14	#5	12'-0"	—
v11(E)	12	#5	11'-0"	—
v12(E)	2	#5	8'-6"	—
v13(E)	7	#5	3'-5"	⊃
v14(E)	98	#5	8'-6"	—
Structure Excavation		Cu. Yds.	198	
Concrete Structures		Cu. Yds.	75.0	
Form Liner Textured Surface		Sq. Ft.	319	
Reinforcement Bars		Pound	95920	
Reinforcement Bars, Epoxy Coated		Pound	10720	
Drilled Shaft in Soil		Cu. Yds.	121.5	
Drilled Shaft in Rock		Cu. Yds.	91.6	
Secant Lagging		Cu. Ft.	679	
Concrete Sealer		Sq. Ft.	996	
Concrete Surface Color Treatment		Sq. Ft.	75	
Crosshole Sonic Logging Access Ducts		Foot	282	

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.

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\084-9970.09L01798.016.South Abutment Details.dgn

FINAL

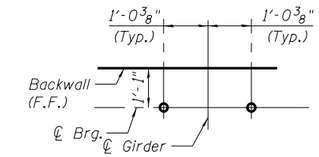
HANSON

USER NAME = thoel01490	DESIGNED - JGT	REVISED -	
	CHECKED - CGP	REVISED -	
PLOT SCALE = 0:2.000000 '' / in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -	

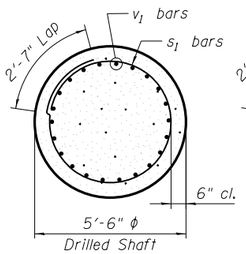
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT DETAILS
STRUCTURE NO. 084-9970
SHEET NO. 16 OF 19 SHEETS

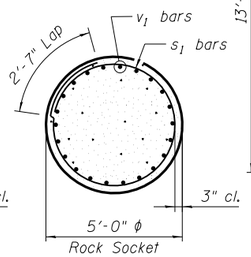
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	370
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			



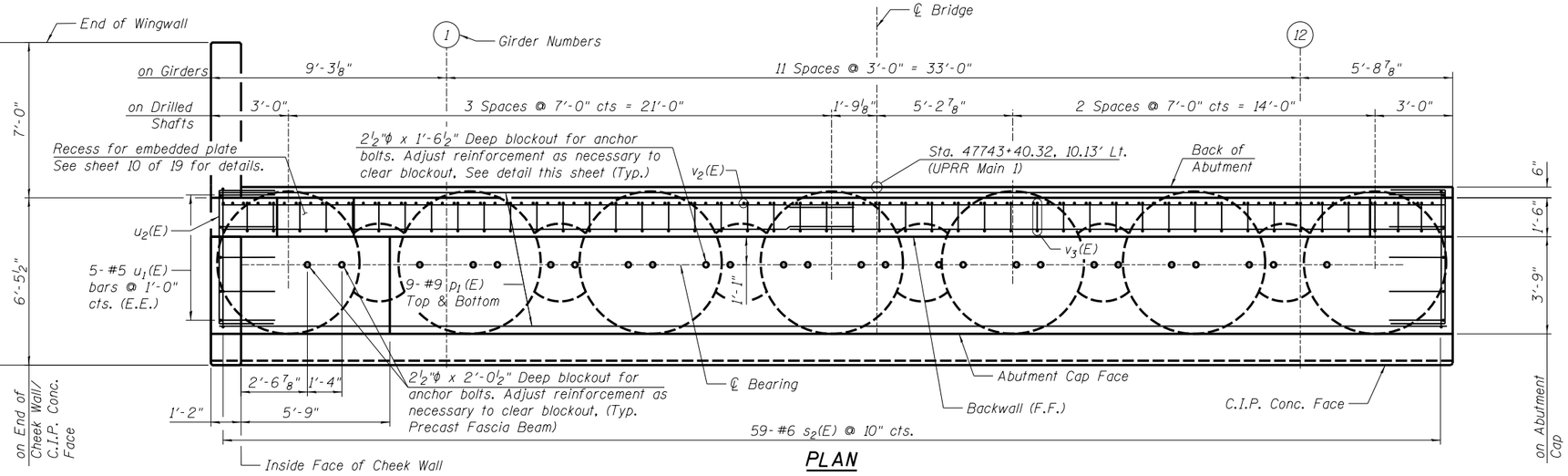
BLOCKOUT LAYOUT



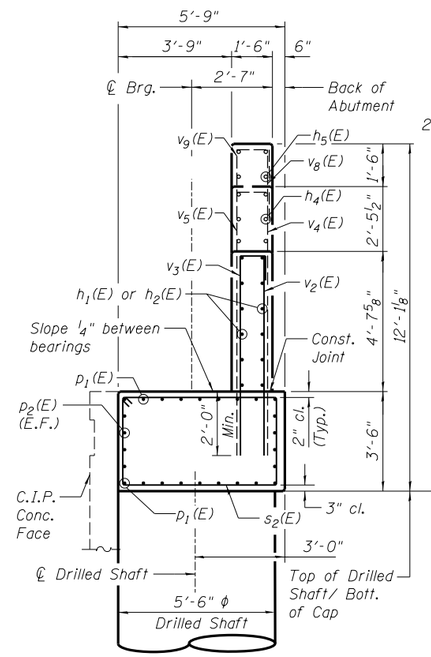
SECTION B-B



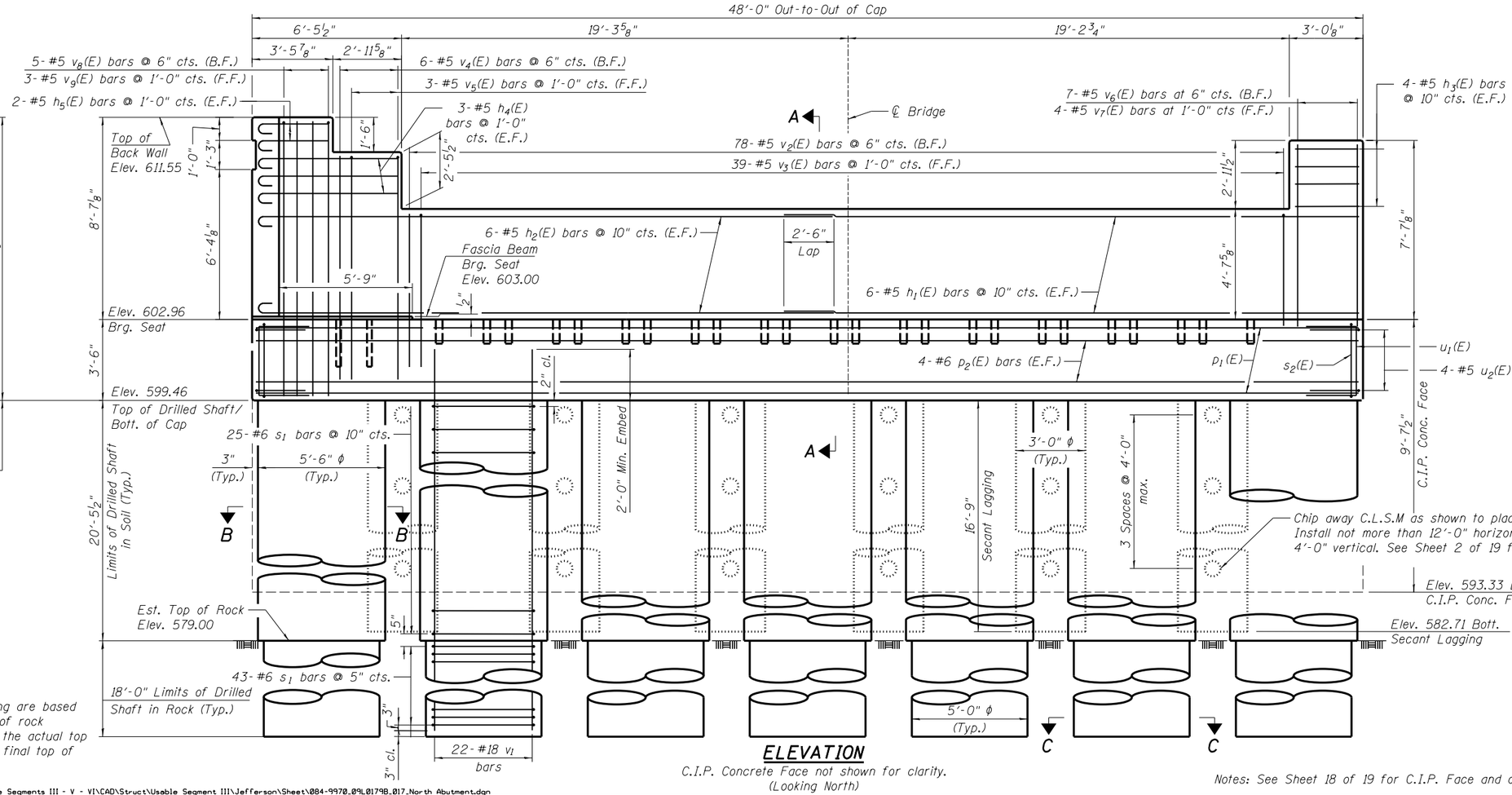
SECTION C-C



PLAN



SECTION A-A



ELEVATION

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

* 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 18 of 19 for C.I.P. Face and other details.

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\084-9970_09L01798_017_North Abutment.dgn

FINAL

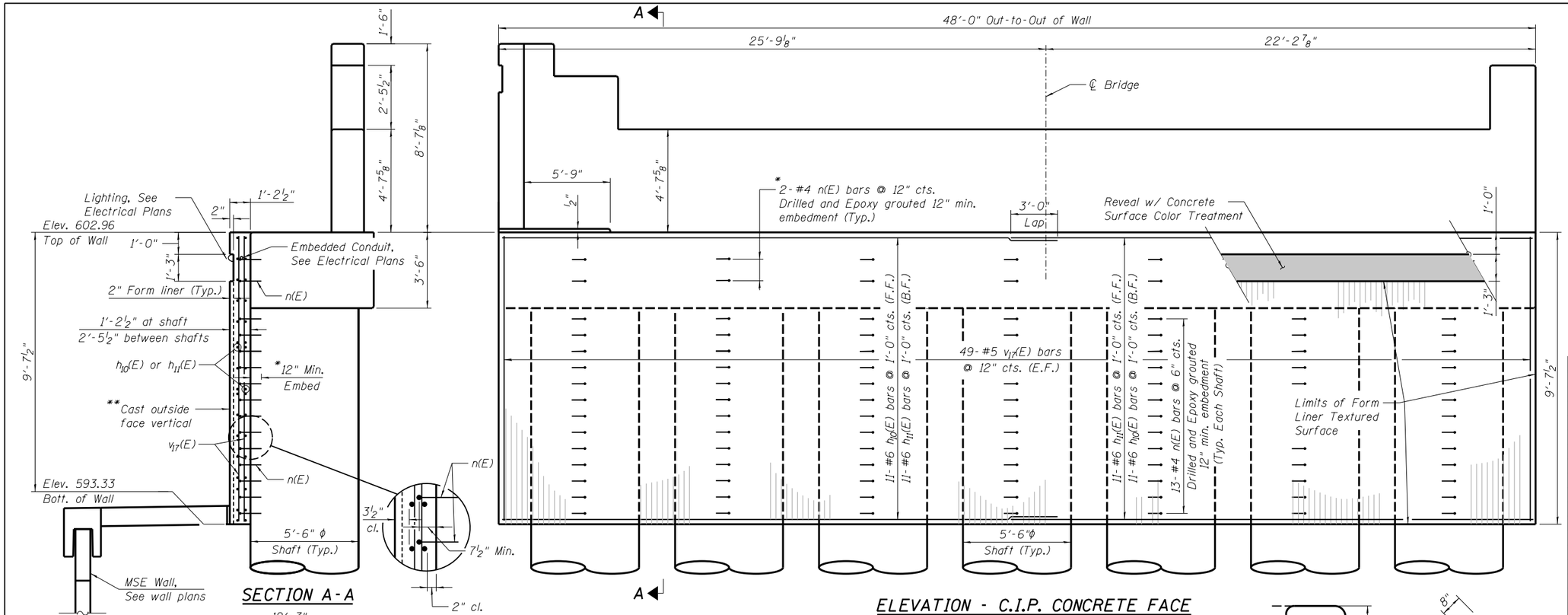
HANSON

USER NAME = thoel01490	DESIGNED - JGT	REVISED -	
	CHECKED - CGP	REVISED -	
PLOT SCALE = 0:2.000000 ':' / in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT
STRUCTURE NO. 084–9970
SHEET NO. 17 OF 19 SHEETS

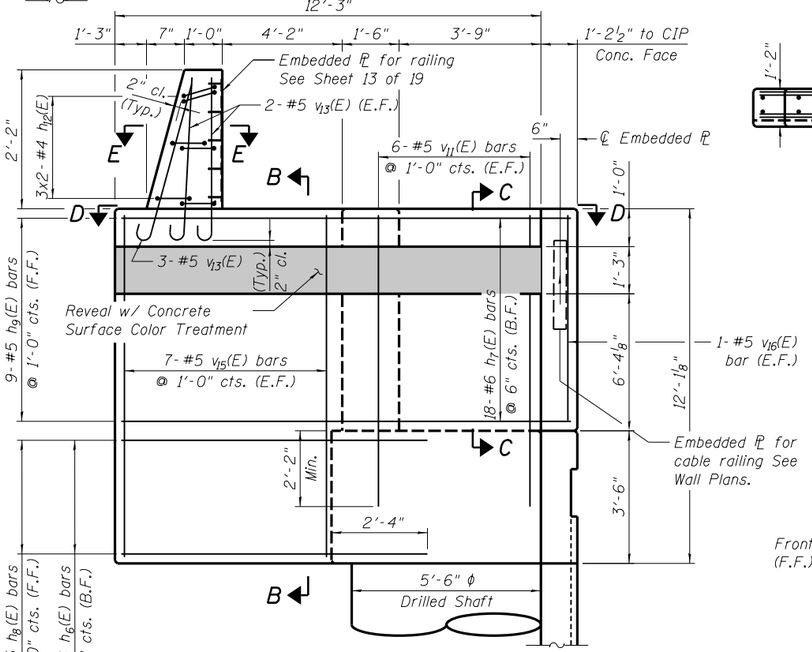
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	371
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			



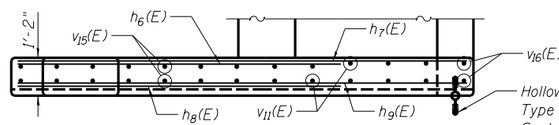
ELEVATION - C.I.P. CONCRETE FACE

(Looking North)

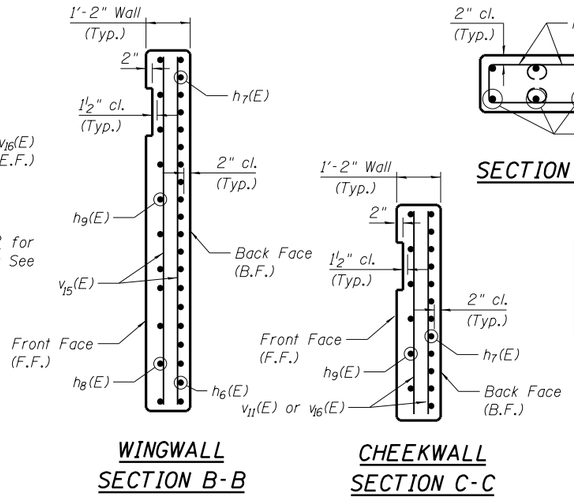
SECTION A-A



ELEVATION - TYPICAL END VIEW



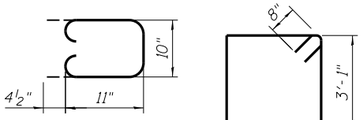
SECTION D-D - PLAN VIEW



WINGWALL SECTION B-B

CHEEKWALL SECTION C-C

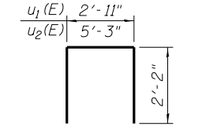
SECTION E-E



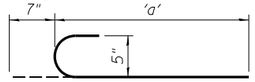
BAR h12(E)

BAR s2(E)

BAR n(E)

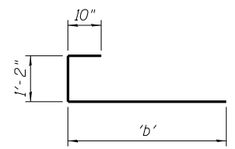


BARS u1(E), u2(E)



BARS h2(E), h4(E), h5(E) & v13(E)

Bar	'a'
h2(E)	25'-1"
h4(E)	6'-0"
h5(E)	3'-0"
v13(E)	2'-10"



BARS v3(E), v5(E), v7(E) & v9(E)

Bar	'b'
v3(E)	6'-10"
v5(E)	9'-4"
v7(E)	9'-10"
v9(E)	10'-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.

* 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	2'-8"	
h4(E)	6	#5	6'-7"	
h5(E)	4	#5	3'-7"	
h6(E)	7	#6	8'-10"	
h7(E)	18	#6	13'-1"	
h8(E)	4	#5	8'-10"	
h9(E)	9	#5	13'-1"	
h10(E)	22	#6	22'-0"	
h11(E)	22	#6	28'-8"	
h12(E)	6	#4	3'-5"	
n(E)	105	#4	2'-4"	
p1(E)	18	#9	47'-8"	
p2(E)	8	#6	47'-8"	
s1	476	#6	16'-9"	
s2(E)	59	#6	18'-4"	
u1(E)	10	#5	7'-3"	
u2(E)	8	#5	9'-7"	
v1	154	#18	40'-2"	
v2(E)	78	#5	6'-10"	
v3(E)	39	#5	8'-10"	
v4(E)	6	#5	9'-4"	
v5(E)	3	#5	11'-4"	
v6(E)	7	#5	9'-10"	
v7(E)	4	#5	11'-10"	
v8(E)	5	#5	10'-10"	
v9(E)	3	#5	12'-10"	
v11(E)	12	#5	11'-0"	
v13(E)	7	#5	3'-5"	
v15(E)	14	#5	11'-9"	
v16(E)	2	#5	8'-3"	
v17(E)	98	#5	9'-2"	
Structure Excavation	Cu. Yds.	197		
Concrete Structures	Cu. Yds.	75.6		
Form Liner Textured Surface	Sq. Ft.	354		
Reinforcement Bars	Pound	96100		
Reinforcement Bars, Epoxy Coated	Pound	10960		
Drilled Shaft in Soil	Cu. Yds.	126.0		
Drilled Shaft in Rock	Cu. Yds.	91.6		
Secant Lagging	Cu. Ft.	710		
Concrete Sealer	Sq. Ft.	1017		
Concrete Surface Color Treatment	Sq. Ft.	76		
Crosshole Sonic Logging Access Ducts	Foot	287		

FINAL

HANSON

px:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\084-9970.09L01798.018_North Abutment Details.dgn

USER NAME = thoel01490	DESIGNED - JGT	REVISED -	
	CHECKED - CGP	REVISED -	
PLOT SCALE = 0:2.000000 ' / in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT DETAILS
STRUCTURE NO. 084-9970
SHEET NO. 18 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	372
		CONTRACT NO. 93762		
		ILLINOIS FED. AID PROJECT		

B-141
Sta. 900+59, 20' RT

	N	Qu	w%	
603.4				
603.08				ASPHALT.
602.33				CONCRETE.
	8	1.50P	12	Brown fine to medium SAND and black very fine sandy silty CLAY - FILL.
599.91				
	7	1.50P	30	Dark gray very fine sandy silty CLAY.
597.41				
	4	1.32S	28	Brown and gray very fine sandy SILT, some clay and oxidized spots.
	6	3.10S	27	
592.41				
	4	0.62B	24	Brown and gray very fine sandy silty CLAY.
	3		26	
587.41				
	4	0.89B	25	Brown and gray sandy silty CLAY, trace coarse sand and small gravel.
	6	1.16B	27	
579.91				
	50/5"		12	Gray and black micaceous fine sandy SHALE - highly weathered.
573.41				
	Rec. = 84% ROD = 70%			Gray sandy SHALE, micaceous.
570.41				
	40.1			Gray clayey SHALE, micaceous.
	Rec. = 98% ROD = 68%			
565.41				
	136.2			Gray sandy SHALE, micaceous.
	Rec. = 100% ROD = 83%			
	Rec. = 98% ROD = 28%			
553.91				
				Bottom of Hole = 49.5 feet

LEGEND

N	Standard Penetration Test N (blows/ft)
Qu	Unconfined Strength (tsf)
w%	Natural Moisture Content (%)
DD ▽ 558.10	Water Surface Elevation Encountered in Boring DD = during drilling 0h = at completion 24h = 24 hours after completion

FINAL

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\084-9970_09L01798_019_Sub Data Profile.dgn

HANSON

USER NAME = thoel01490	DESIGNED - JGT	REVISED -	
	CHECKED - CGP	REVISED -	
PLOT SCALE = 0.2 '' / in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSURFACE DATA PROFILE
STRUCTURE NO. 084-9970
SHEET NO. 19 OF 19 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	373
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			

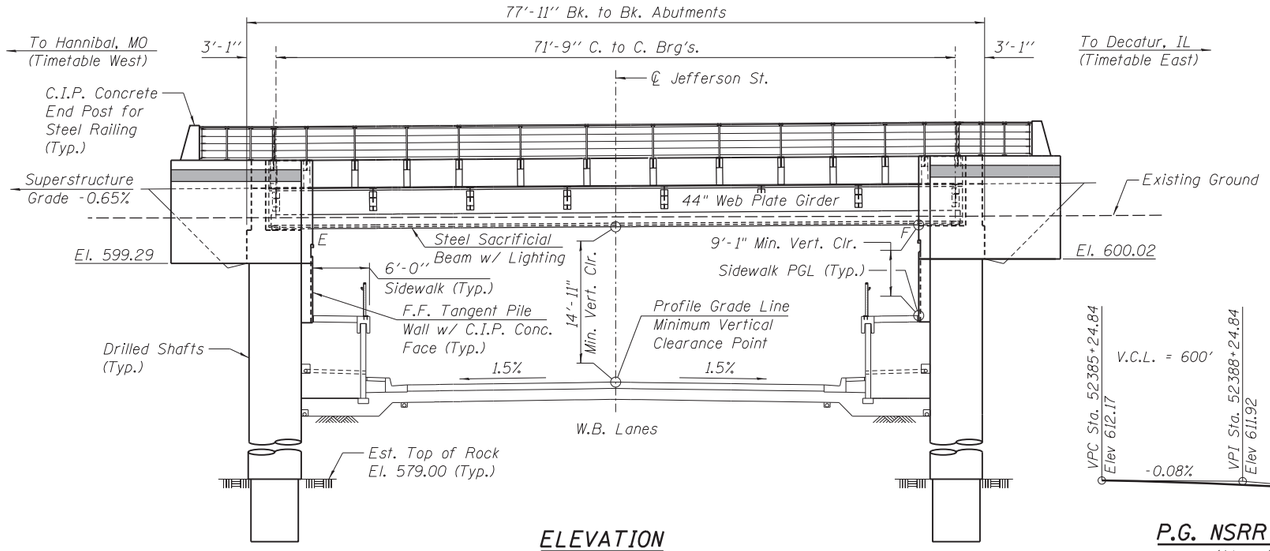
Benchmark: Chiseled 'X' on West Bolt of Fire Hydrant NE quadrant of 9th Street and Jefferson Street, Elevation = 603.007

Existing Structure: None

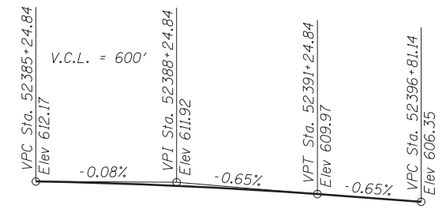
Traffic Control: Temporary Lane Closures and Complete Closures

Construction Sequence: See Track Staging Plans

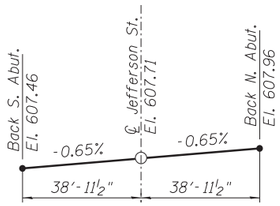
Railroad utilities may exist within NSRR right-of-way. Prior to the start of any construction or excavation, utility relocations will have to be coordinated with the NSRR.



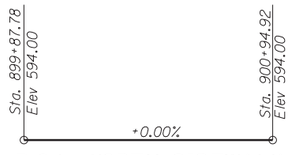
ELEVATION
(Looking West)



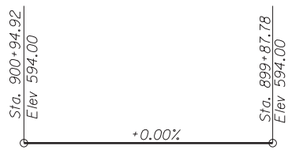
P.G. NSRR MAIN 1 RAIL
(Along Top of Rail)



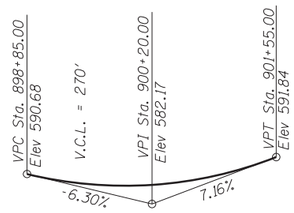
TOP OF BALLAST PAN GRADE
(Looking West)
(Elevations Taken along Bridge ℄)



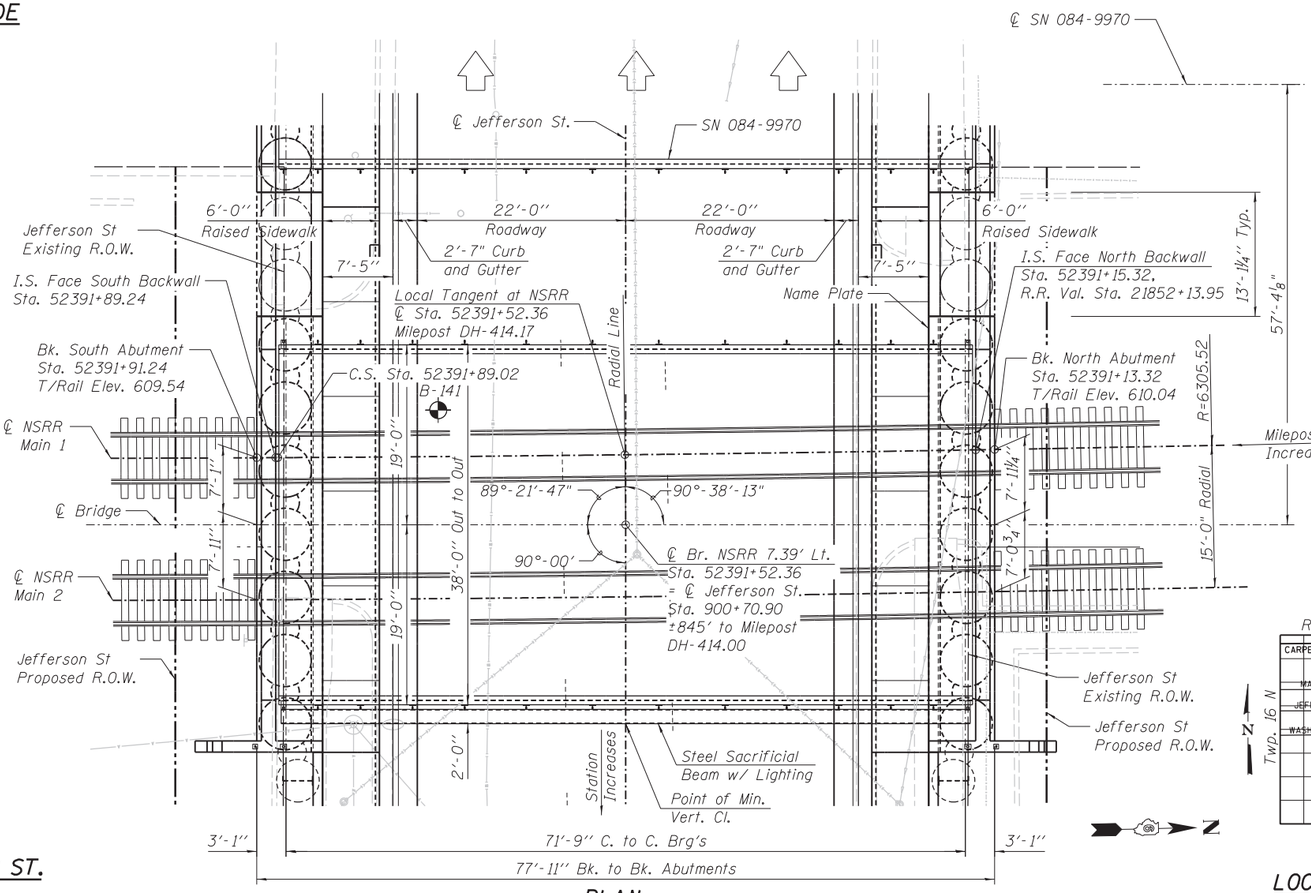
P.G.L. NORTH SIDEWALK
(Along Face of Tangent Pile Wall)



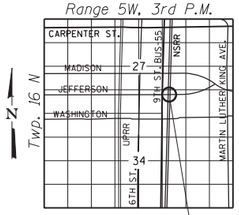
P.G.L. SOUTH SIDEWALK
(Along Face of Tangent Pile Wall)



PROFILE GRADE - JEFFERSON ST.
(Along ℄ Jefferson Street)



PLAN



LOCATION SKETCH

LOADING COOPER E-80
Impact: Diesel Impact
Allow 6" of Additional Future 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

APPROVED
For Structural Adequacy Only
Engineer of Bridges & Structures

CURVE DATA
(NSRR Main 1)

P.I. Sta. = 52389+87.75
Δ = 3°-39'-33" (Rt.)
D = 00°-54'-31"
T = 201.41'
L = 402.68'
R = 6305.52'
E = 3.22'
Long Chord = 402.62'
Mid. Ord. = 3.21'
S.E. = 1"
S.C. Sta. = 52387+86.34
C.S. Sta. = 52391+89.02

LICENSED STRUCTURAL ENGINEER
JARED G. THOELE
081-007841
STATE OF ILLINOIS

SIGNATURE
12/20/2021
DATE

LIC. EXP. DATE : 11/30/2022

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 & ELEVATION
NSRR (MP DH-414.17) OVER JEFFERSON ST.
F.A.P. 67A - SECTION 20-00491-00-BR
SANGAMON COUNTY
STATION 52391+52.36
STRUCTURE NO. 084-9971

pw:\\hansonnc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L0179B\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\084-9971_09L0179B_001_GPE.dgn

FINAL

HANSON

USER NAME = thoel01490	DESIGNED - CGP	REVISED -	
	CHECKED - MNM	REVISED -	
PLOT SCALE = 16:0.0000 '' / in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/20/2021	CHECKED - MNM	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
STRUCTURE NO. 084-9971
SHEET NO. 1 OF 18 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	374
		CONTRACT NO. 93762		
		ILLINOIS	FED. AID PROJECT	

GENERAL NOTES

1. Fasteners shall be ASTM F3125 Grade A325 Type 1, mechanically galvanized bolts. Bolts $\frac{7}{8}$in. ϕ, holes $\frac{15}{16}$in. ϕ, unless otherwise noted.
2. Calculated weight of Structural Steel, ASTM A709, Gr. 50 = 490,200 lbs.
   ASTM A572, Gr. 50 = 71,110 lbs.
   ASTM A36, Gr. 36 = 90 lbs.
   ASTM A500, Gr. B 46 = 12,450 lbs.
3. All structural steel shall be ASTM A709 Grade 50 unless otherwise noted on the plans. The deck plate shall be ASTM A572 Grade 50.
4. All substructure concrete shall have a compressive strength of 4,000 psi at 14 days.
5. No field welding is permitted except as specified in the contract documents.
6. Reinforcement bars designated (E) shall be epoxy coated.
7. Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of $\frac{1}{8}$ inch (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.
8. 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.
9. 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.
10. The Organic Zinc Rich Primer / Epoxy / Urethane Paint System shall be used for painting of new structural steel except where otherwise noted. The entire system shall be shop applied, with the exception of the exterior surface and the bottom of the bottom flange of fascia girders, masked off connection surfaces, field installed fasteners and damaged areas shall be touched up in the field. The color of the final finish coat for all interior steel surfaces shall be gray, Munsell No. 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia girders and exterior cantilever support bracket shall be blue, Munsell No. 10B 3/6.
11. 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.

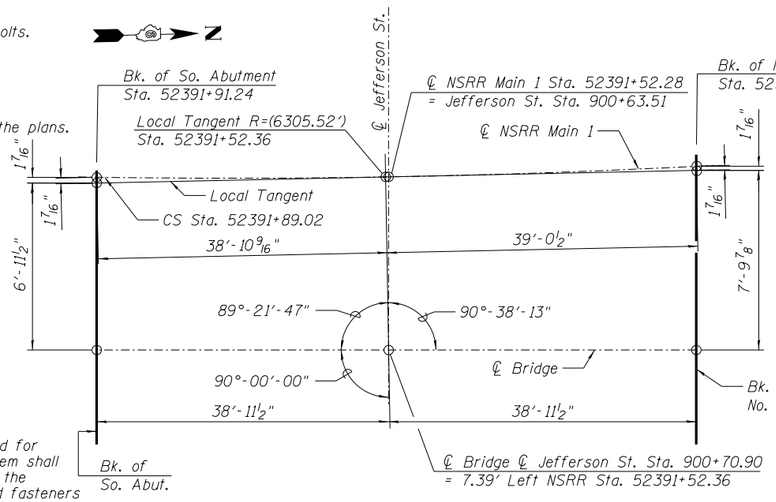
Drilled shaft cross-hole sonic log (CSL) testing:

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.

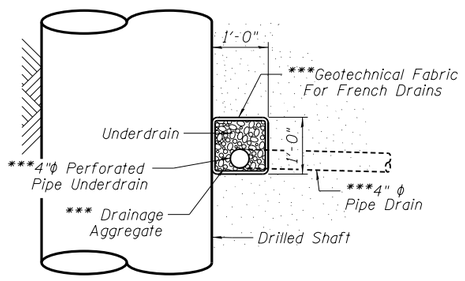
B) Furnish and install six standard 2 inch nominal diameter steel pipes (ASTM A53, Grade B) for use in CSL testing of each drilled shaft. Pipes shall be equally spaced around the interior of the reinforcing steel cage.

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



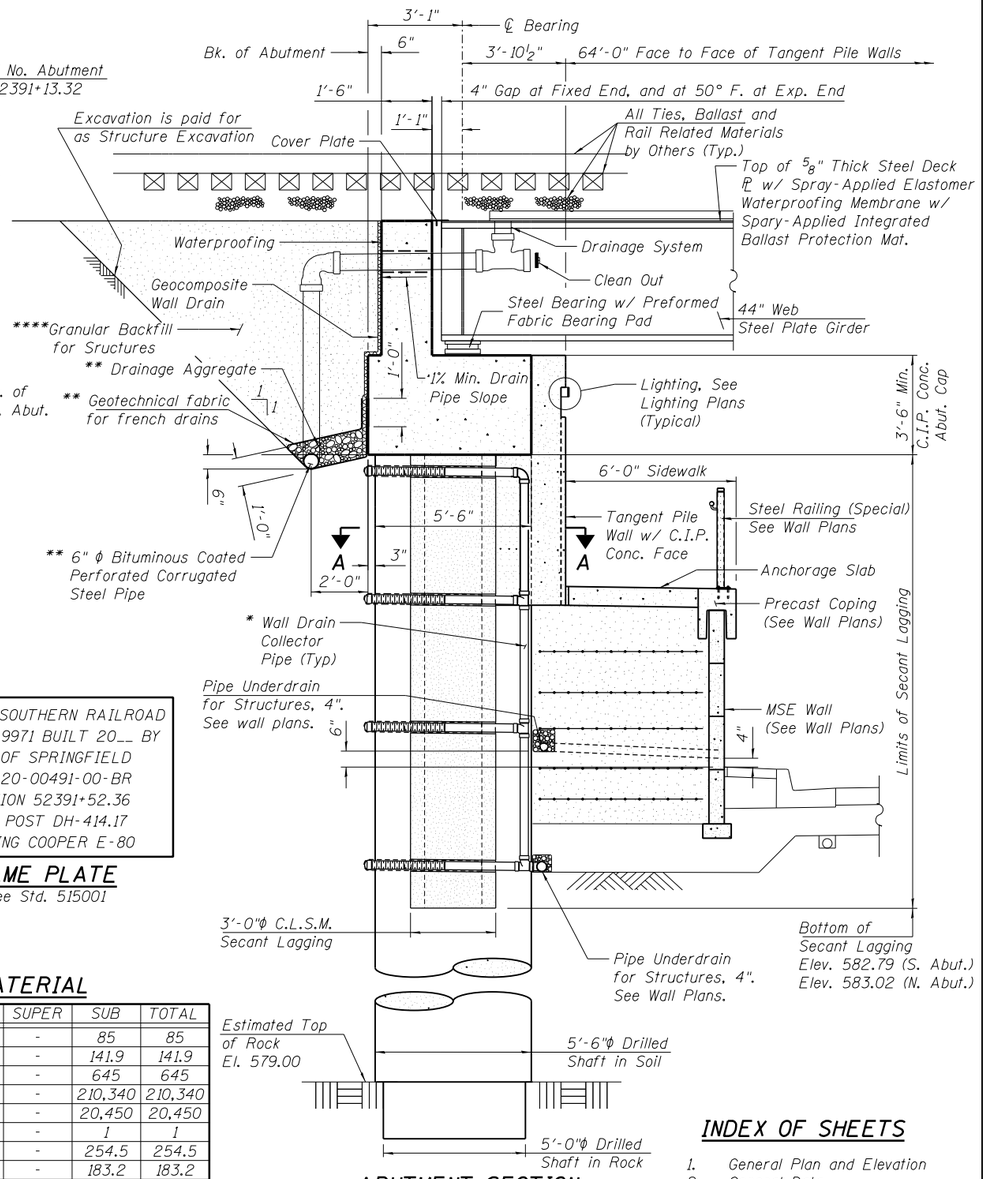
PIPE UNDERDRAIN DETAIL

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

NOLFOLK SOUTHERN RAILROAD
S.N. 084-9971 BUILT 20__ BY
CITY OF SPRINGFIELD
SEC. 20-00491-00-BR
STATION 52391+52.36
MILE POST DH-414.17
LOADING COOPER E-80

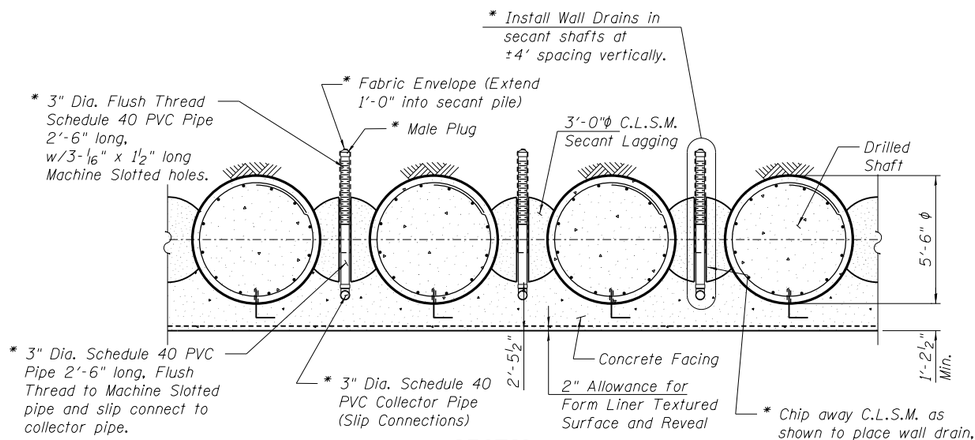
NAME PLATE

See Std. 515001



ABUTMENT SECTION

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



SECTION A-A

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

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Structure Excavation	Cu. Yd.	-	85	85
Concrete Structures	Cu. Yd.	-	141.9	141.9
Form Liner Textured Surface	Sq. Ft.	-	645	645
Reinforcement Bars	Pound	-	210,340	210,340
Reinforcement Bars, Epoxy Coated	Pound	-	20,450	20,450
Name Plates	Each	-	1	1
Drilled Shaft in Soil	Cu. Yd.	-	254.5	254.5
Drilled Shaft in Rock	Cu. Yd.	-	183.2	183.2
Secant Lagging	Cu. Ft.	-	1,421	1,421
Granular Backfill for Structures	Cu. Yd.	-	192	192
Concrete Sealer	Sq. Ft.	-	1,923	1,923
Geocomposite Wall Drain	Sq. Yd.	-	85	85
Drainage System, No. 4	Each	1	-	1
Concrete Surface Color Treatment	Sq. Ft.	-	146	146
Membrane Waterproofing (Special)	Sq. Ft.	2,848	-	2,848
Furnishing and Erecting Structural Steel, Bridge No. 4	L. Sum	1	-	1
Steel Railing (Special)	Foot	160	-	160
Pipe Underdrains for Structures, 6"	Foot	-	111	111
Pipe Underdrains for Structures, 6" (Special)	Foot	-	44	44

Notes:
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

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L0179B\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\084-9971.09L0179B.002.General Data.dgn

FINAL

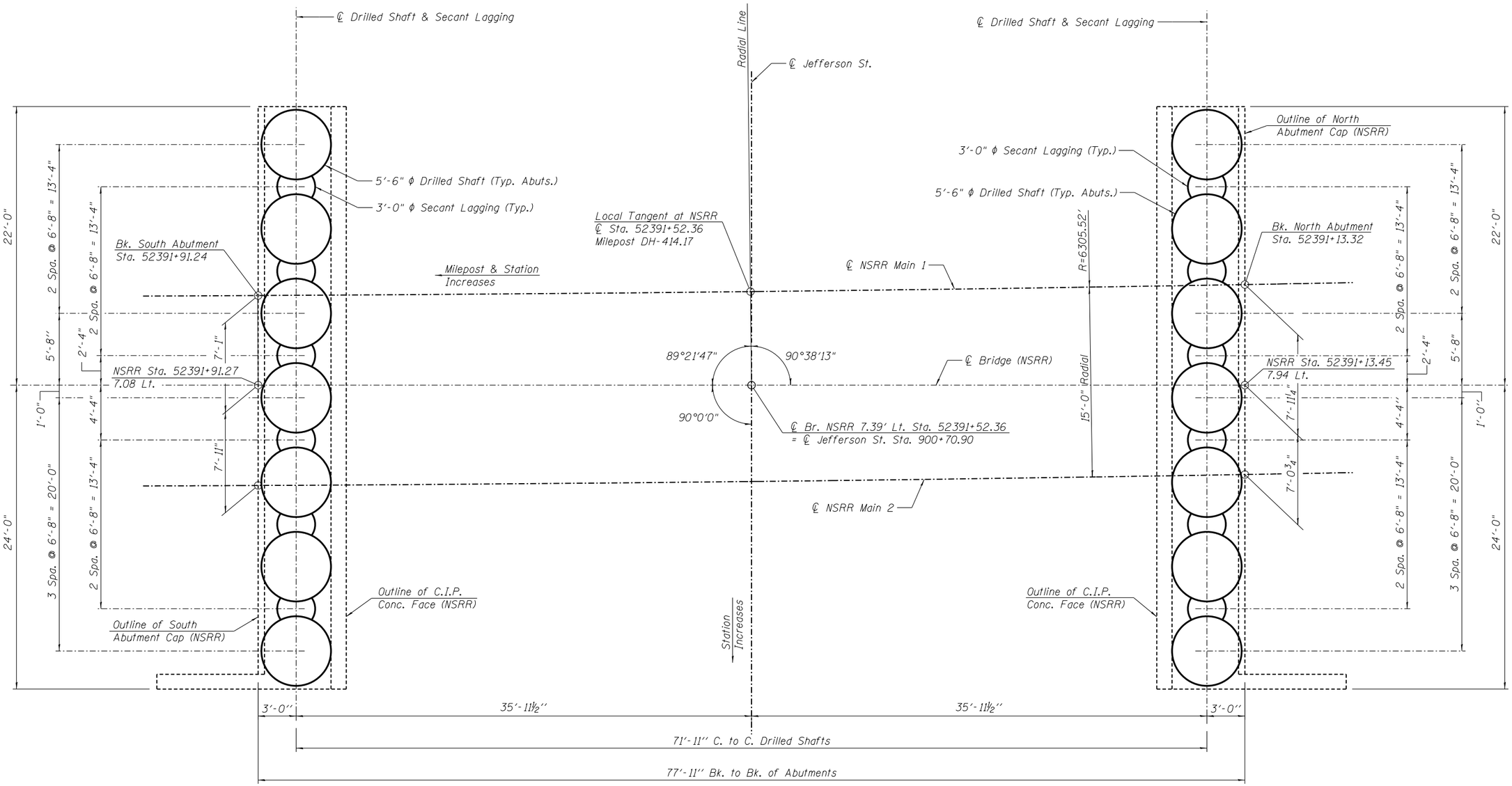
HANSON

USER NAME = thoel01490	DESIGNED - CGP	REVISED -	
	CHECKED - MNM	REVISED -	
PLOT SCALE = 0:2.0000 '' / in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/20/2021	CHECKED - MNM	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL DATA
STRUCTURE NO. 084-9971
SHEET NO. 2 OF 18 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67.67A	20-00491-00-BR	SANGAMON	509	375
		CONTRACT NO. 93762		
		ILLINOIS FED. AID PROJECT		



FOUNDATION LAYOUT

N

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\084-9971_09L01798_003_Fondation Layout.dgn

FINAL

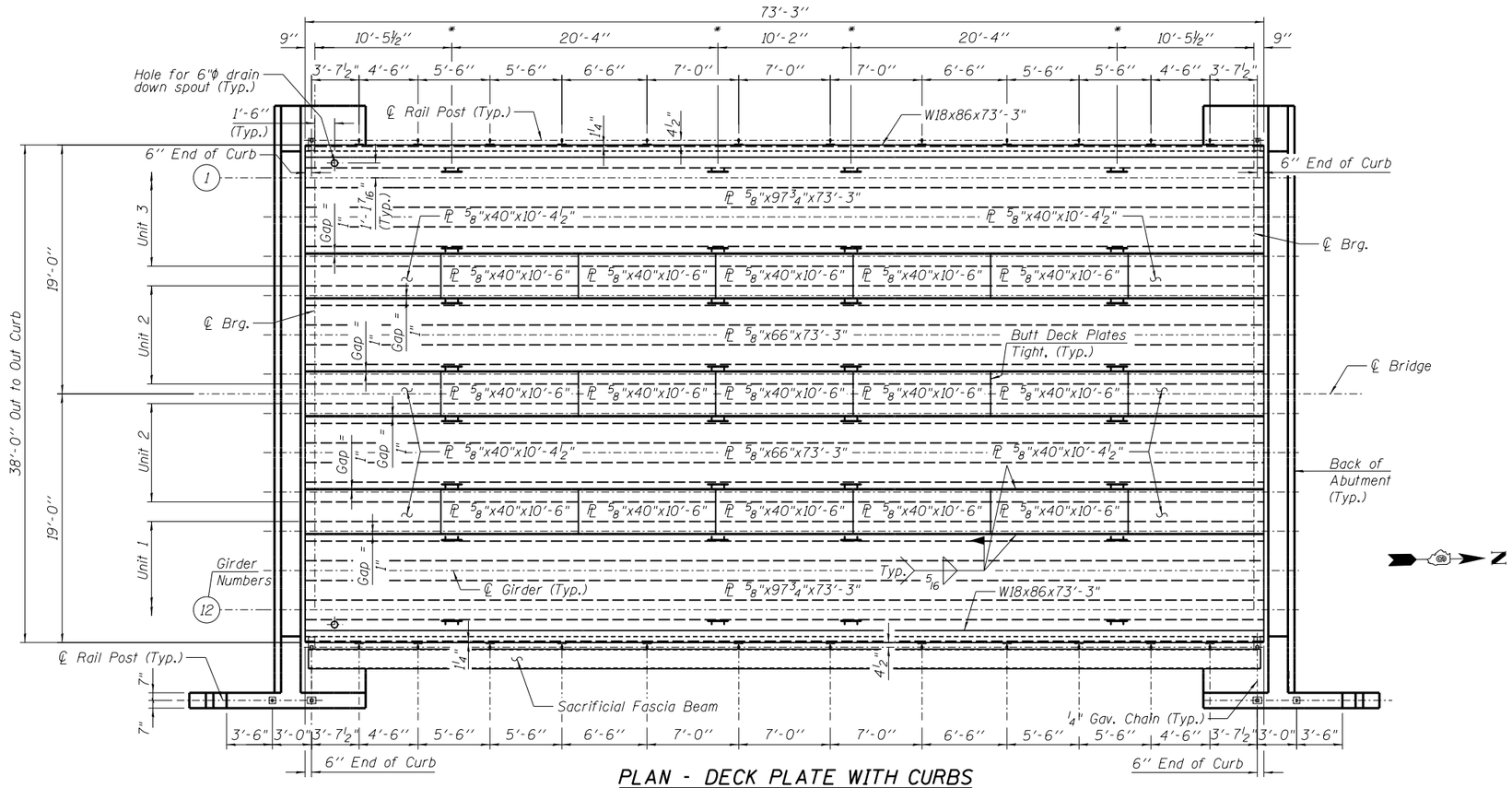
HANSON

USER NAME = thoel01490	DESIGNED - CGP	REVISED -	
	CHECKED - JGT	REVISED -	
PLOT SCALE = 0.2.0000 '' / in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -	

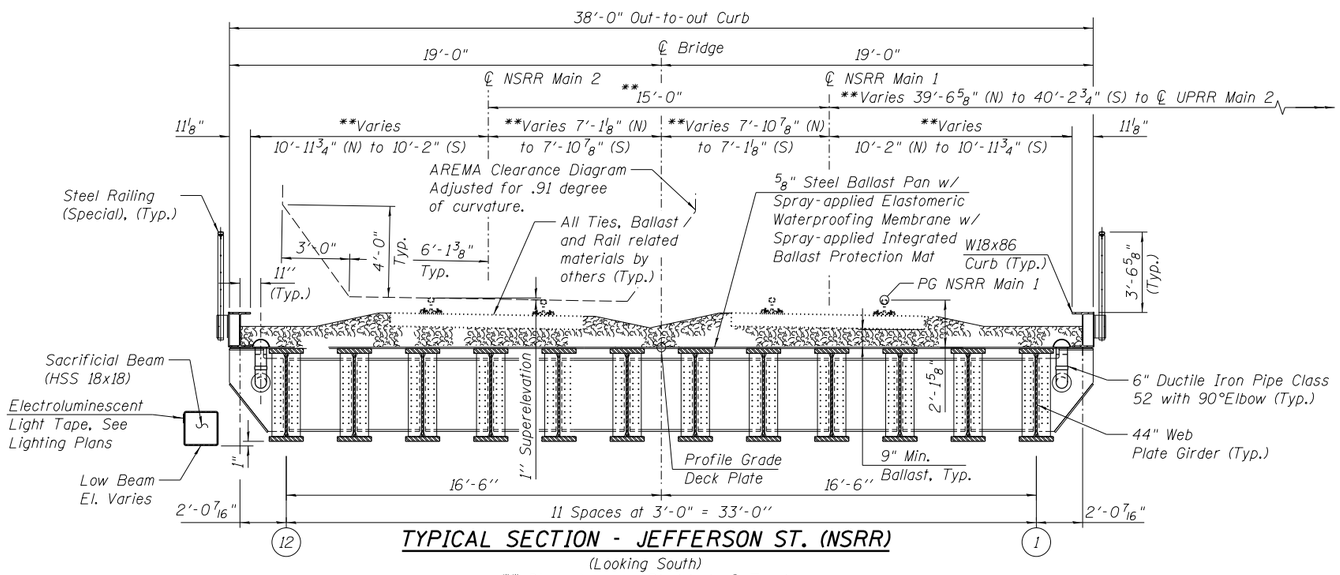
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FOUNDATION LAYOUT
STRUCTURE NO. 084-9971
SHEET NO. 3 OF 18 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67.67A	20-00491-00-BR	SANGAMON	509	376
		CONTRACT NO. 93762		
		ILLINOIS FED. AID PROJECT		



PLAN - DECK PLATE WITH CURBS



TYPICAL SECTION - JEFFERSON ST. (NSRR)

(Looking South)

** Dimensions are Rt. L's to ℄ Track

* Indicates Location of Lifting Lugs. See Sheet 7 of 18.

Notes:

For Steel Railing Details See Sheets 12 and 13 of 18.
For Membrane Waterproofing Details See Sheet 11 of 18.
For ¼" Galv. Chain Details, See Sheet 12 of 18. Cost of Chain and hardware included in the cost of Steel Railing (Special).
Drain pipe on south end only near low end of bridge deck.
With the ductile iron pipe fitted to the bottom of the deck drain bottom pan downspout, drill 4 holes through the ductile iron pipe and downspout. Holes shall be aligned with the 4 quadrants of the pipe. Attach ductile iron pipe to downspout with 4 stainless steel carriage bolts. Rounded heads of carriage bolts shall be oriented towards the center of the pipe.
Cost of the drain pipe, bottom pan, downspout, brackets and other hardware shall be included in the cost of Drainage System

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L0179B\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\084-9971.09L0179B.004.Superstructure.dgn

FINAL

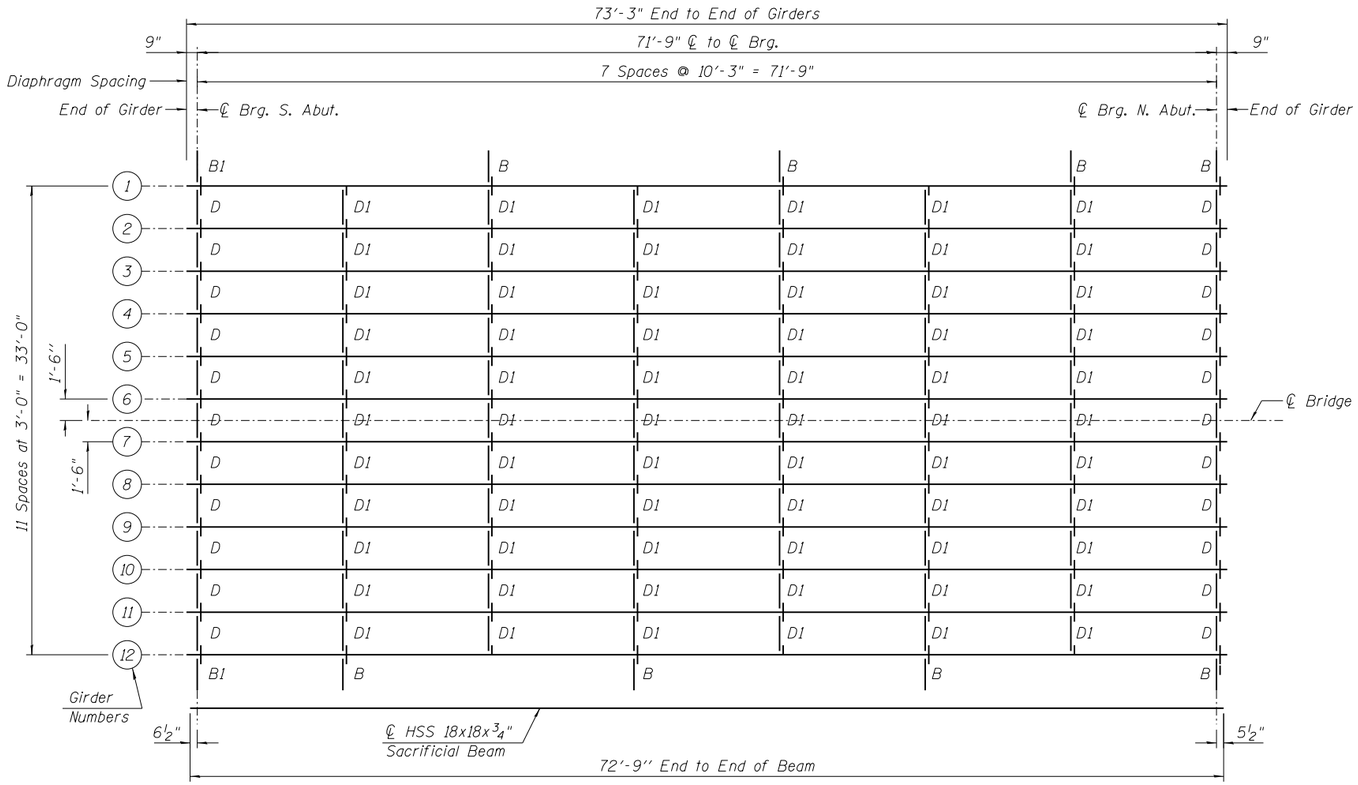
HANSON

USER NAME = thoel01498	DESIGNED - JGT	REVISED -	
	CHECKED - CGP	REVISED -	
PLOT SCALE = 0x2.0000 '' / in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -	

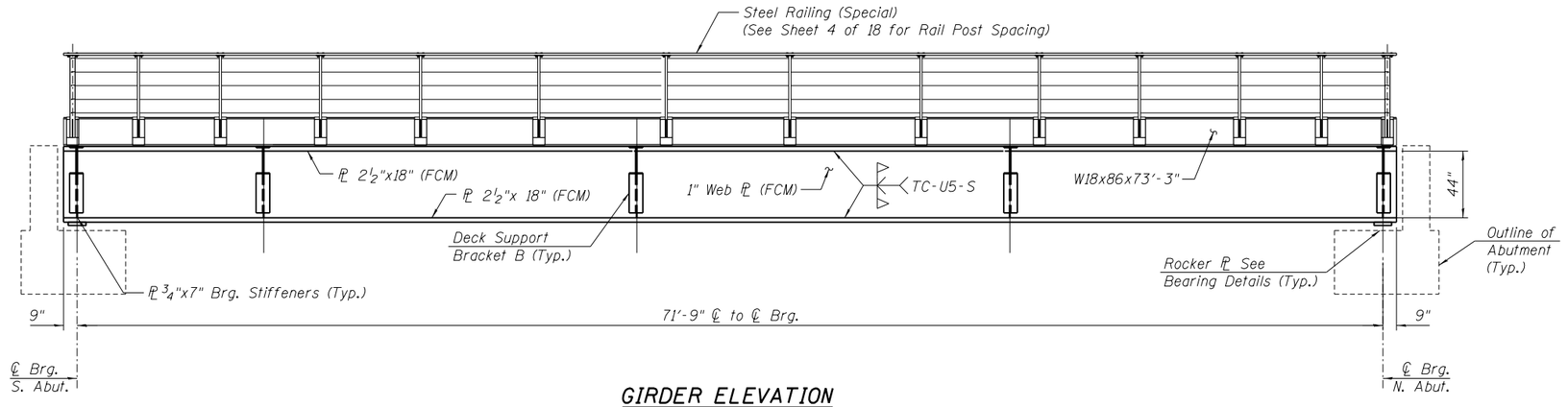
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE
STRUCTURE NO. 084-9971
SHEET NO. 4 OF 18 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67.67A	20-00491-00-BR	SANGAMON	509	377
		CONTRACT NO. 93762		
	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 "FCM" shall conform to the Impact Testing Requirement, Zone 2.

FINAL

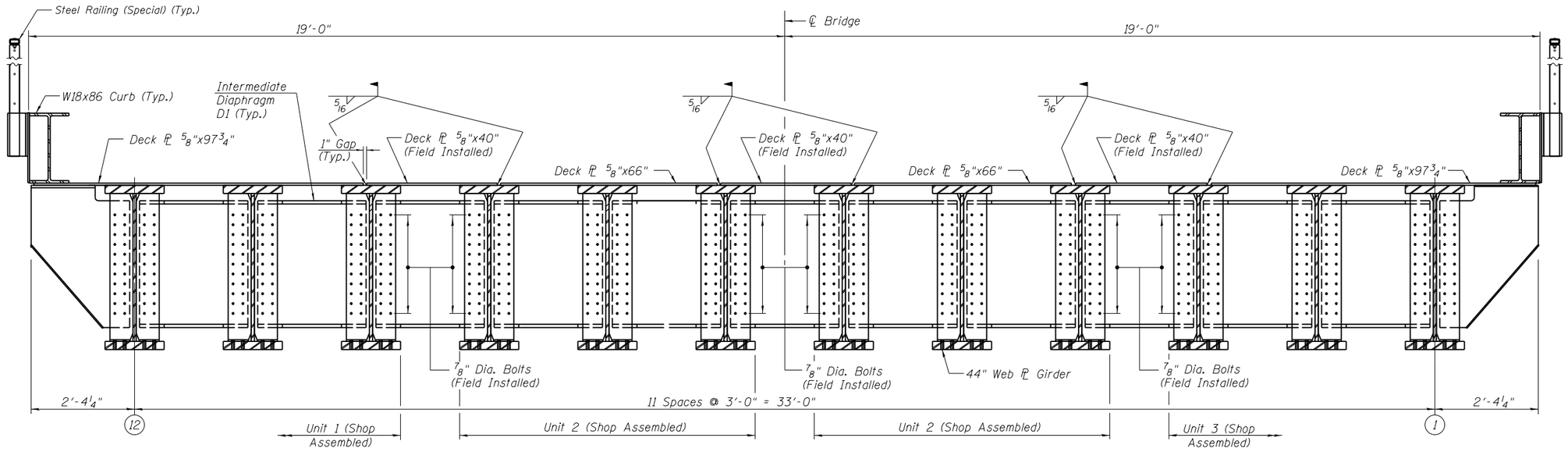
pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L0179B\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\084-9971_09L0179B_005_Steel Details.dgn

USER NAME = thoel01490	DESIGNED - JGT	REVISED -	
	CHECKED - CGP	REVISED -	
PLOT SCALE = 0:2.0000 '' / in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

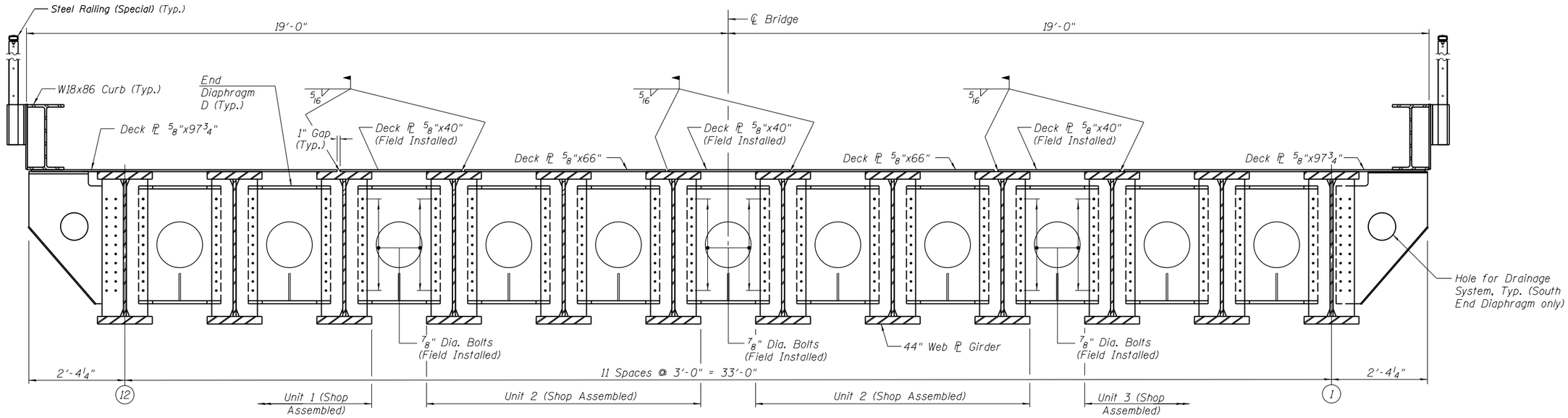
STRUCTURAL STEEL
STRUCTURE NO. 084-9971
SHEET NO. 5 OF 18 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	378
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			



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\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\084-9971_09L01798_006_Struct Steel Det_01.dgn

FINAL

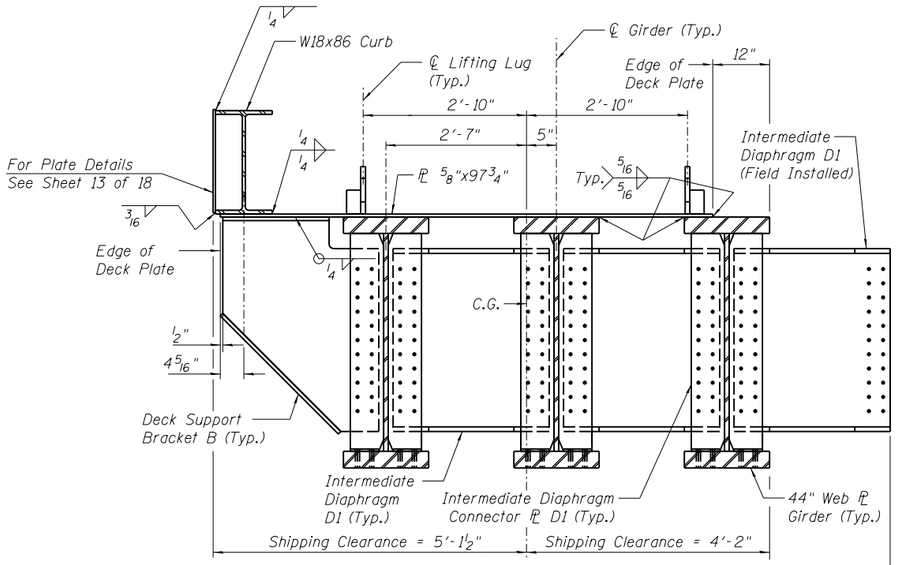
HANSON

USER NAME = thoel01490	DESIGNED - JGT	REVISED -
	CHECKED - CGP	REVISED -
PLOT SCALE = 81.999996 ' / in.	DRAWN - RSJ	REVISED -
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

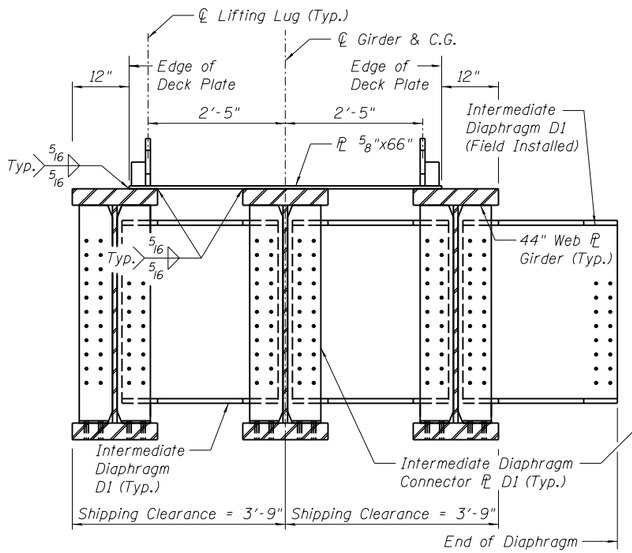
STRUCTURAL STEEL DETAILS (1 OF 3)
STRUCTURE NO. 084-9971
SHEET NO. 6 OF 18 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	379
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			



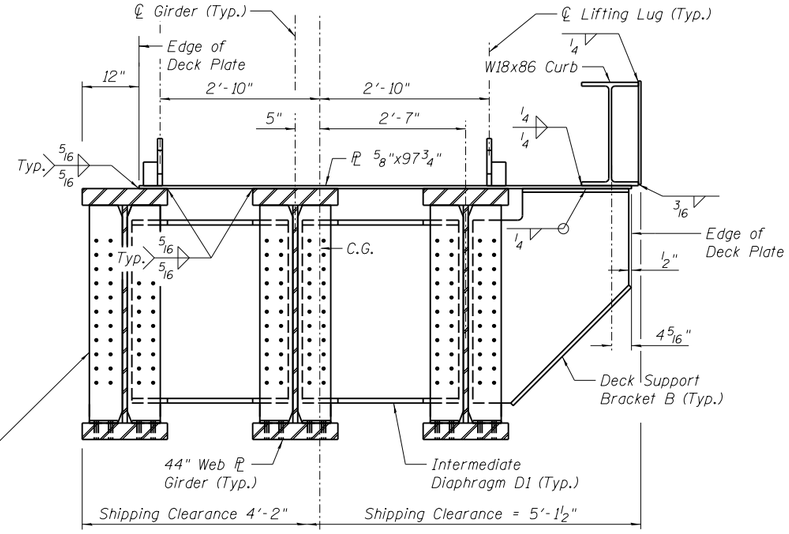
AT INTERIOR DIAPHRAGM UNIT 1

(Looking South)



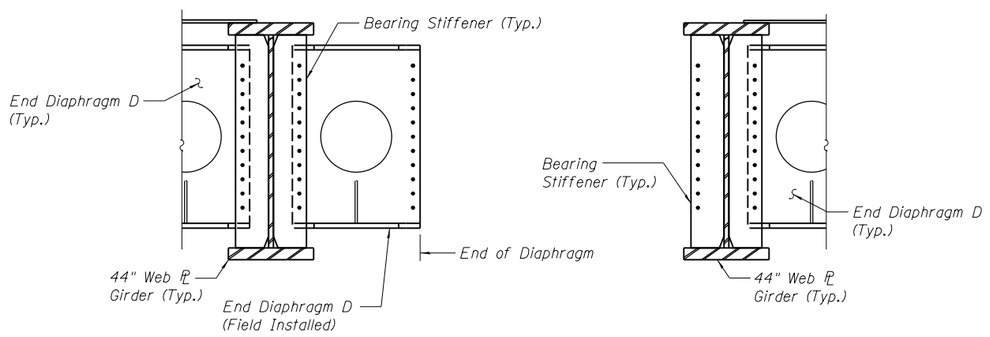
AT INTERIOR DIAPHRAGM UNIT 2

(Looking South)



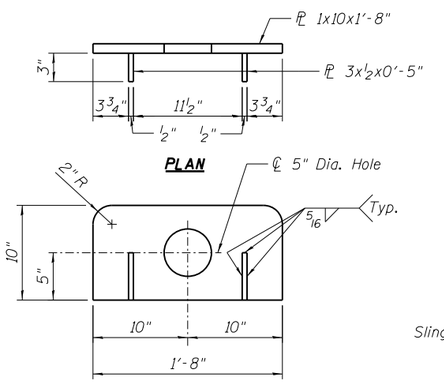
AT INTERIOR DIAPHRAGM UNIT 3

(Looking South)



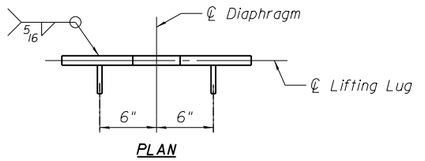
AT END DIAPHRAGM

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



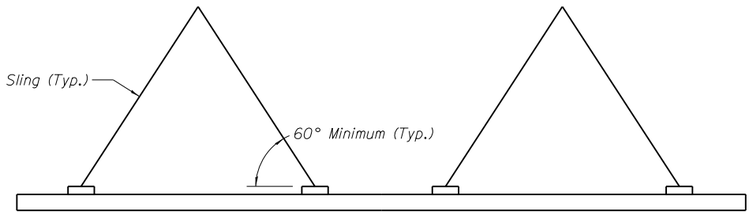
ELEVATION

LIFTING LUG



PLAN

LIFTING LUG DETAIL



TYPICAL ELEVATION

LIFTING DIAGRAM

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.
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.

FINAL

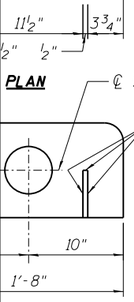
pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L0179B\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\084-9971_09L0179B_007_Struct Steel Det_02.dgn

USER NAME = thoel01490	DESIGNED - JGT	REVISED -
	CHECKED - CGP	REVISED -
PLOT SCALE = 0:1.999996 '' / in.	DRAWN - RSJ	REVISED -
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL DETAILS (2 OF 3)
STRUCTURE NO. 084-9971
SHEET NO. 7 OF 18 SHEETS

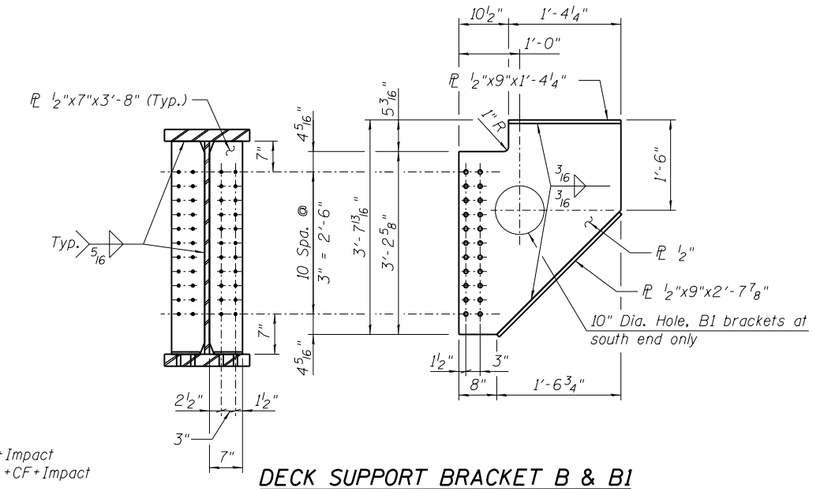
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	380
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			



INTERIOR BEAM MOMENT & SHEAR TABLE

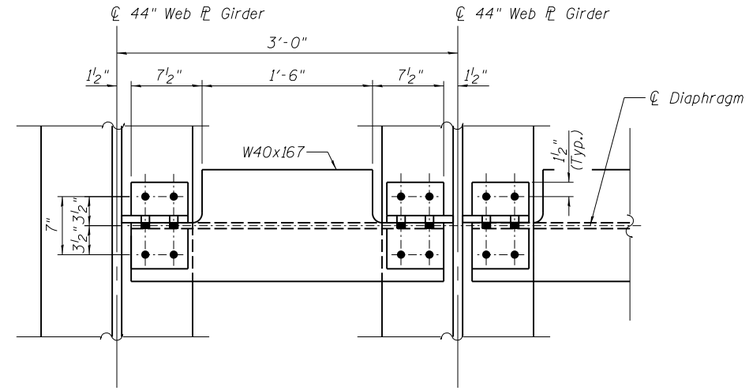
Typ. Description	Max Moment	Max Shear
Dead Load	879.5 ft.-k	49.0 k
Live Load	1,786.6 ft.-k	112.9 k
Centrifugal Force	28.0 ft.-k	1.6 k
Impact	611.7 ft.-k	38.7 k
Total	3,305.8 ft.-k	202.2 k
Section	44" Web PL Girder	
Steel	ASTM A709, Gr. 50, CVN Zone 2	
Net I	49,949 in^4	
Net S (Bott.)	1,894 in^3	
FST (Bott.)	20.9 ksi	
Gross I	55,796 in^4	
Gross S (Top)	2,277 in^3	
FSC (Top)	17.4 ksi	
(LL+I) Deflection	1.31 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



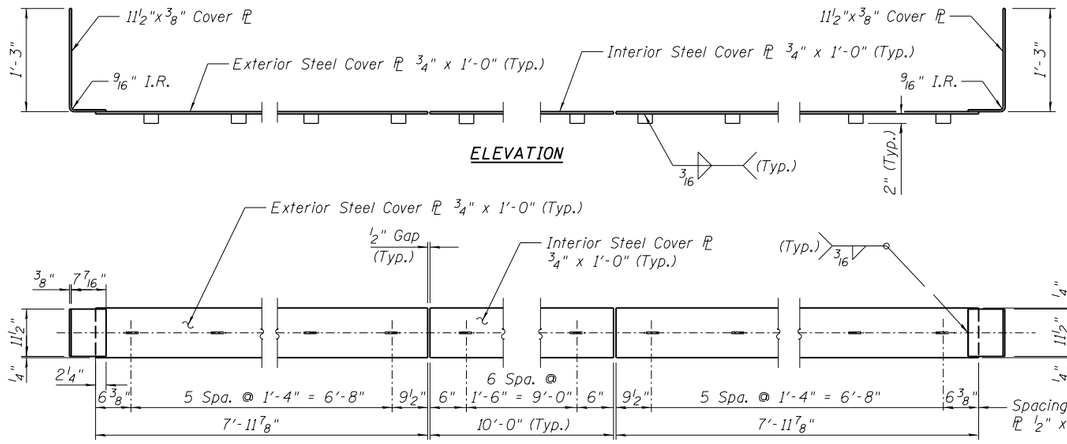
DECK SUPPORT BRACKET B & B1

(Deck Support Bracket B at Intermediate Diaphragm shown. Deck Support Bracket B at End Diaphragm similar.)

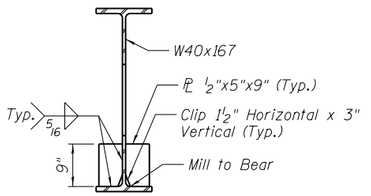


PLAN AT INTERMEDIATE DIAPHRAGM

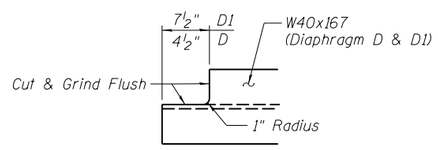
(Top Flange not shown for clarity.)



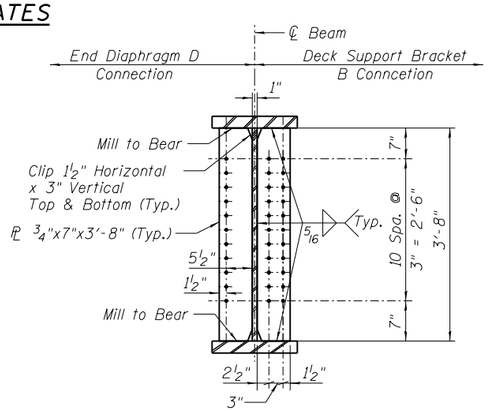
COVER PLATES



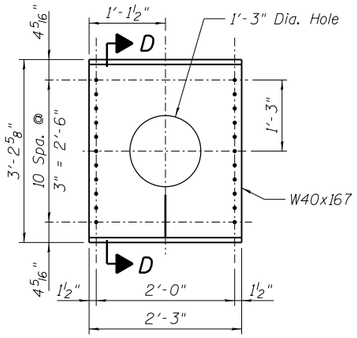
SECTION D-D



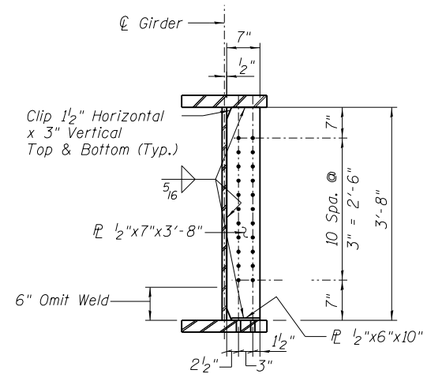
COPE DETAIL



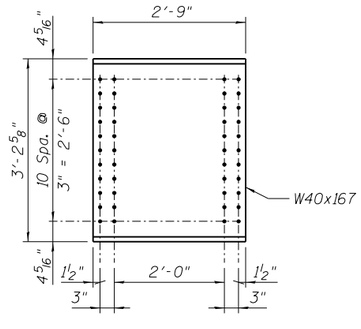
BEARING STIFFENER



END DIAPHRAGM D



INTERMEDIATE DIAPHRAGM CONNECTOR PLATE D1



INTERMEDIATE DIAPHRAGM D1

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.
"CVN" denotes Charpy-V-Notch impact energy requirements, 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.

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\084-9971_09L01798_008_Struct Steel Det_03.dgn

FINAL

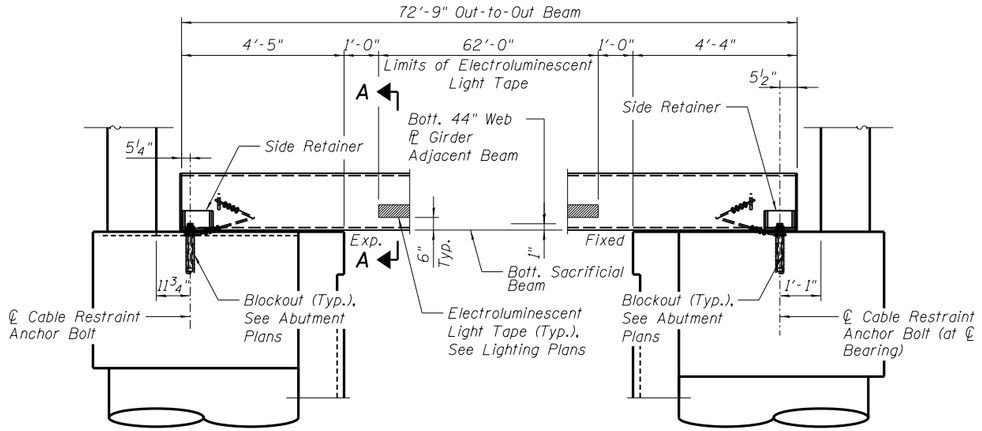
HANSON

USER NAME = thoel01490	DESIGNED - JGT	REVISED -	
	CHECKED - CGP	REVISED -	
PLOT SCALE = 81.999996 '' / in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL DETAILS (3 OF 3)
STRUCTURE NO. 084-9971
SHEET NO. 8 OF 18 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	381
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			

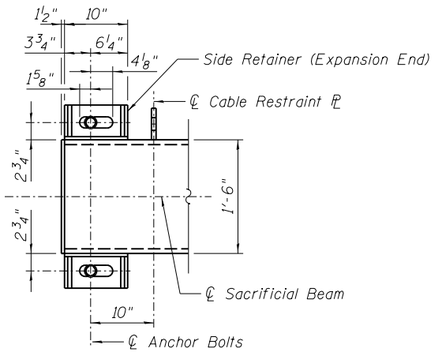


ELEVATION - SOUTH ABUTMENT

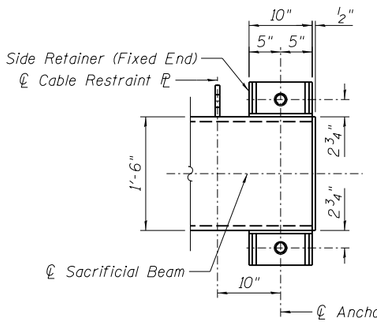
Cheek Wall Not Shown for Clarity.
(Looking West)

ELEVATION - NORTH ABUTMENT

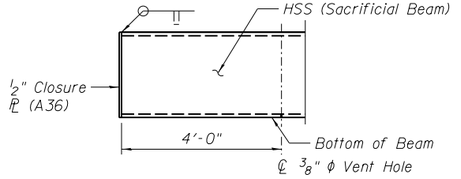
Cheek Wall Not Shown for Clarity.
(Looking West)



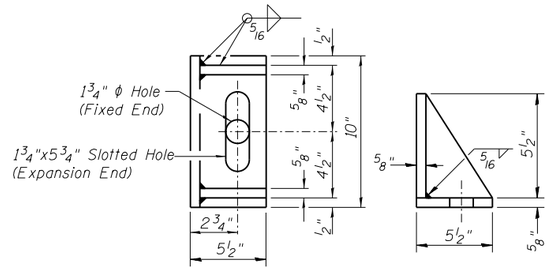
DETAIL - SOUTH ABUTMENT



DETAIL - NORTH ABUTMENT

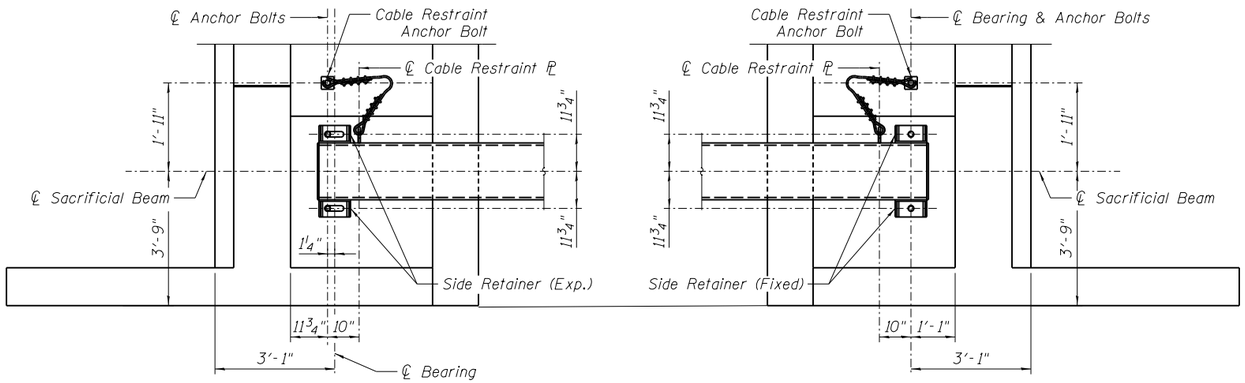


CLOSURE PLATE DETAIL



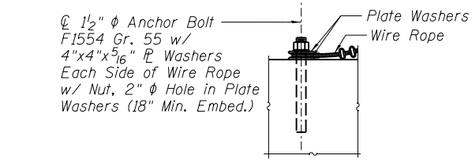
SIDE RETAINER

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

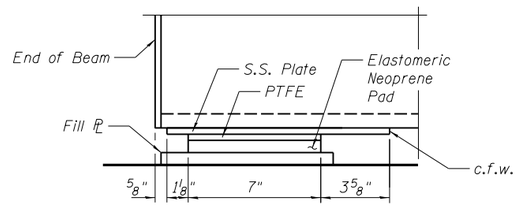


PLAN - SOUTH ABUTMENT

PLAN - NORTH ABUTMENT

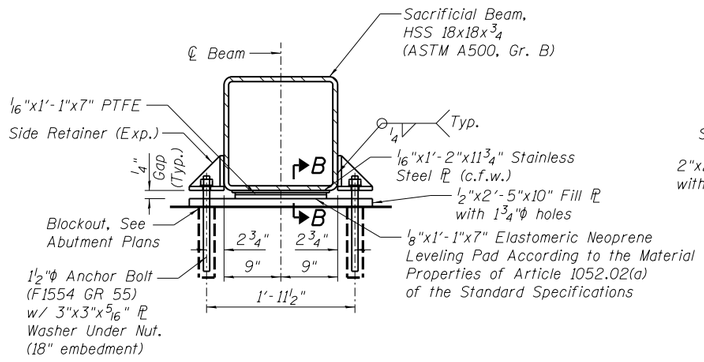


CABLE RESTRAINT ANCHOR BOLT DETAIL

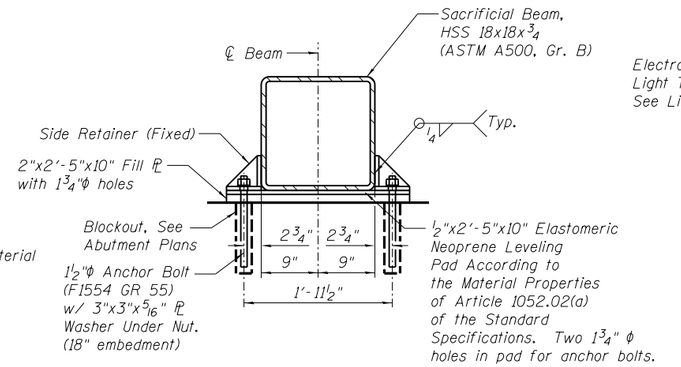


SECTION B-B

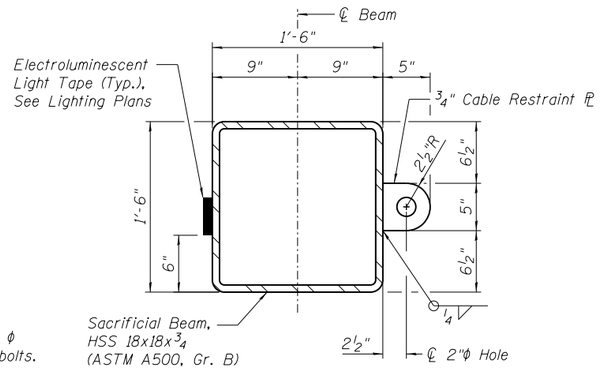
(Expansion End)



TYPICAL SECTION AT EXPANSION END



TYPICAL SECTION AT FIXED END



SECTION A-A

Notes:

¾" 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 manufactures recommendations.

The PTFE shall be bonded directly to the leveling pad according to the manufacturers recommendations.

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\084-9971_09L01798_009_Sacrificial Beam Det.dgn

FINAL

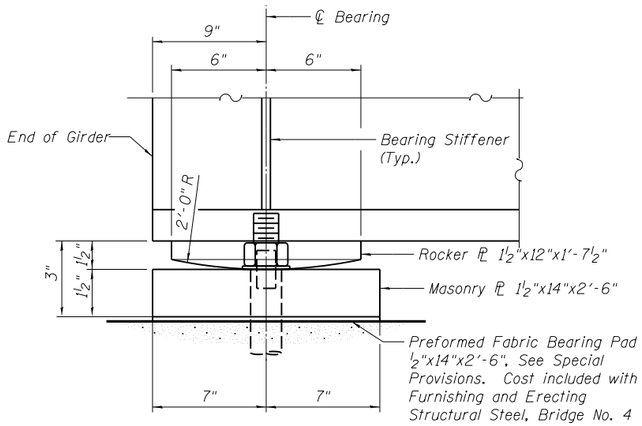
HANSON

USER NAME = thoel01490	DESIGNED - JGT	REVISED -	
	CHECKED - CGP	REVISED -	
PLOT SCALE = 0.2 '' / in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -	

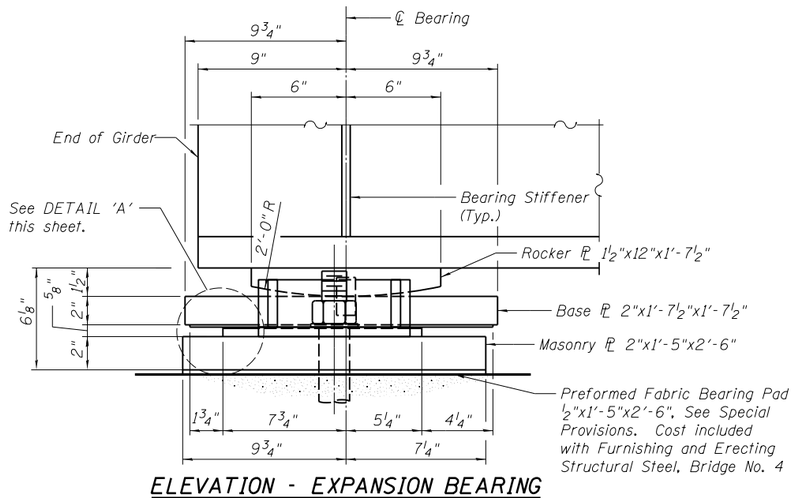
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SACRIFICIAL BEAM DETAILS
STRUCTURE NO. 084-9971
SHEET NO. 9 OF 18 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	382
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			



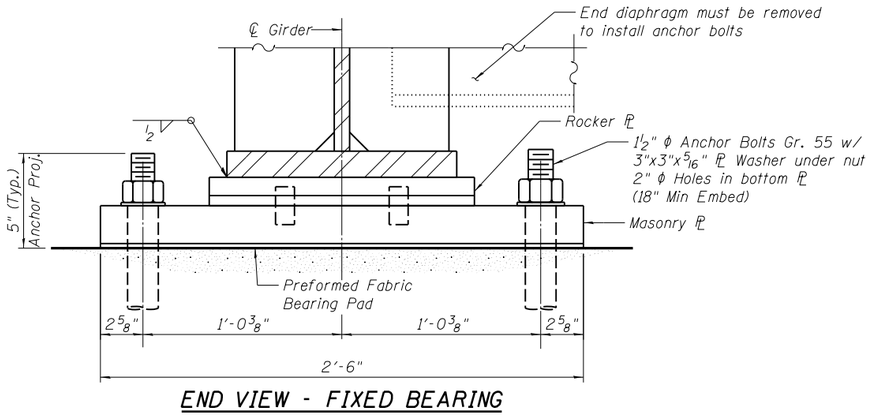
ELEVATION - FIXED BEARING



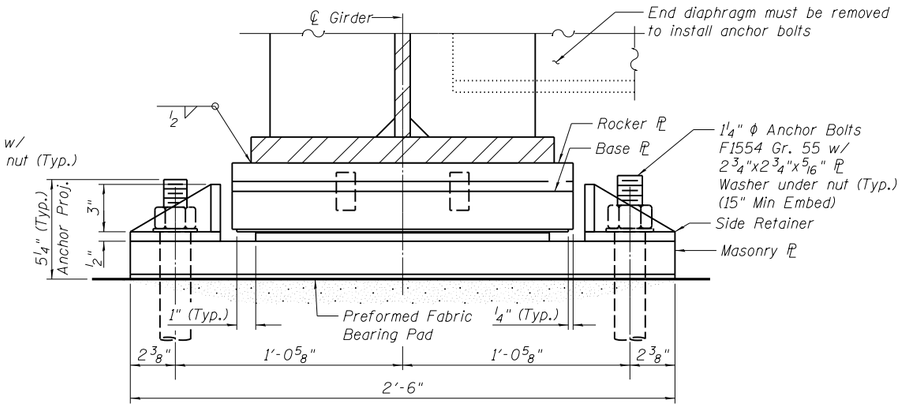
ELEVATION - EXPANSION BEARING

Notes:

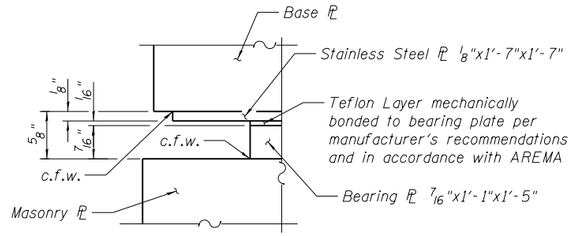
1. *The structural steel plates of the Bearing Assembly shall conform to the requirements of ASTM A709, Grade 50.*
2. *Teflon Layer shall be composed of virgin unfilled TFE resin, unfilled TFE sheets, or unfilled TFE fabric. Filler material, such as milled glass fibers, will not be allowed. Teflon layer 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. 4".*
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 ⅛" adjusting shims shall be provided for each bearing assembly in addition to all other plates or shims and placed as shown on bearing details.*



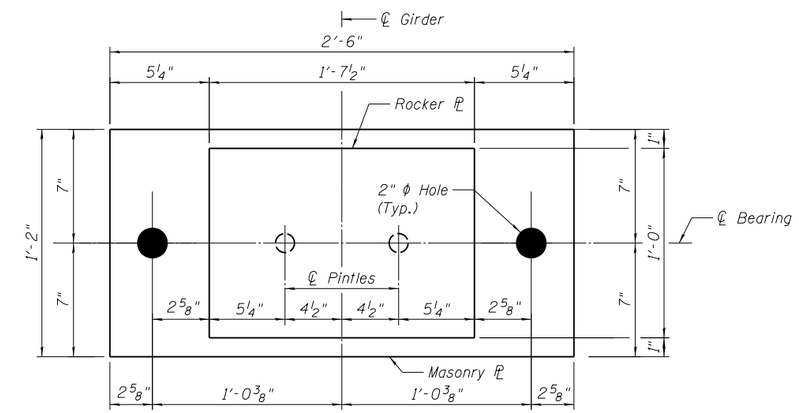
END VIEW - FIXED BEARING



END VIEW - EXPANSION BEARING

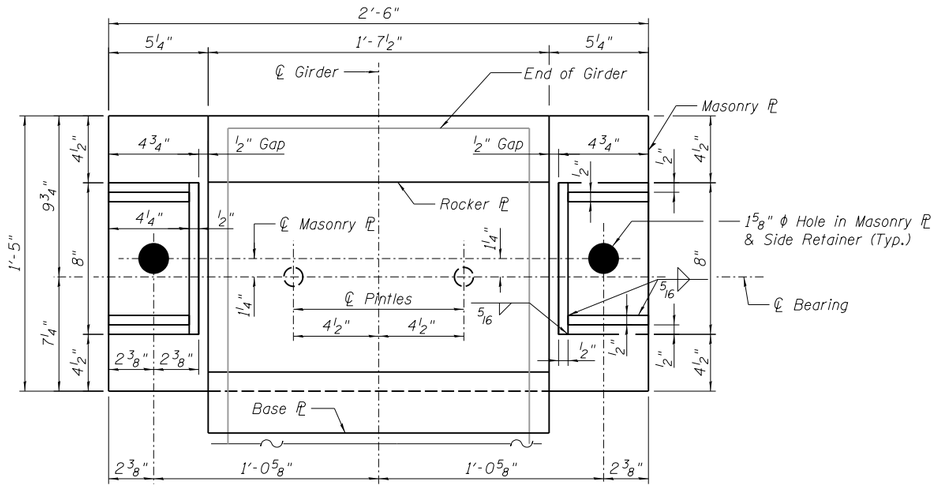


DETAIL 'A'



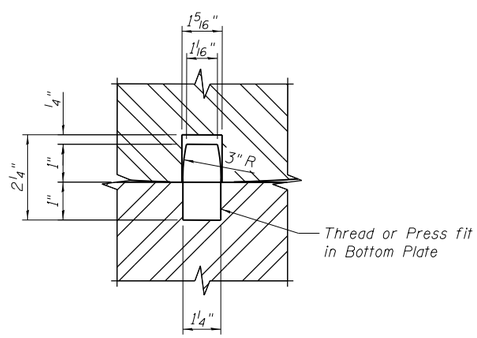
PLAN VIEW - FIXED BEARING

(N. Abutment Bearings - 12 required)



PLAN VIEW - EXPANSION BEARING

(S. Abutment Bearings - 12 required)



PINTLE DETAIL

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\084-9971_09L01798_010_Brg Det.dgn

FINAL

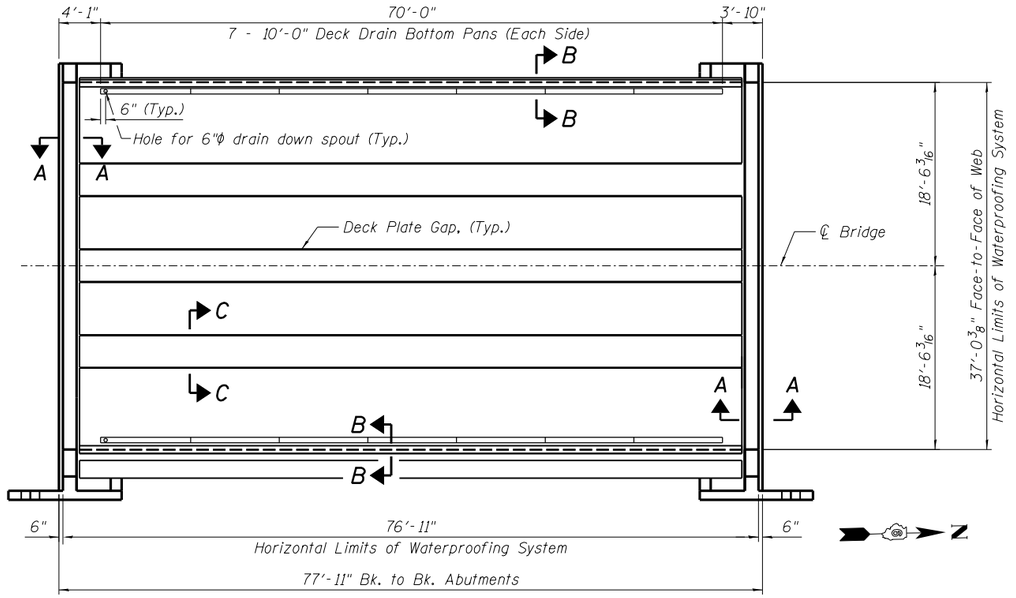
HANSON

USER NAME = thoel01490	DESIGNED - JGT	REVISED -	
	CHECKED - CGP	REVISED -	
PLOT SCALE = 01.999996 '' / in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -	

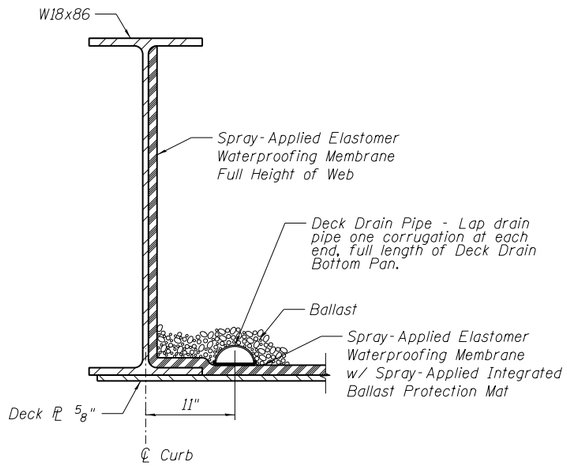
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEARING DETAILS
STRUCTURE NO. 084-9971
SHEET NO. 10 OF 18 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67.67A	20-00491-00-BR	SANGAMON	509	383
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			



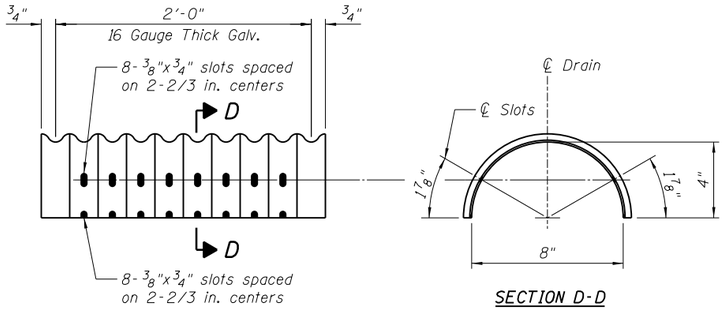
WATERPROOFING LIMITS PLAN



SECTION B-B

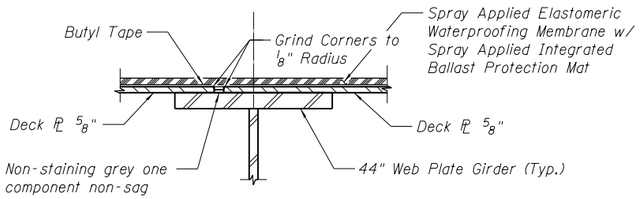
Notes:

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. 4".
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.

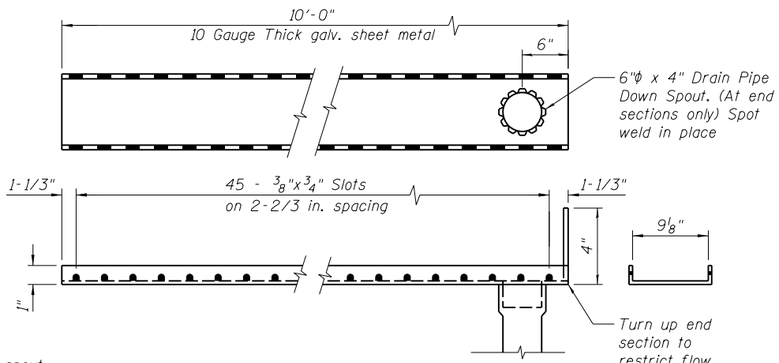


DETAIL - DECK DRAIN PIPE

SECTION D-D



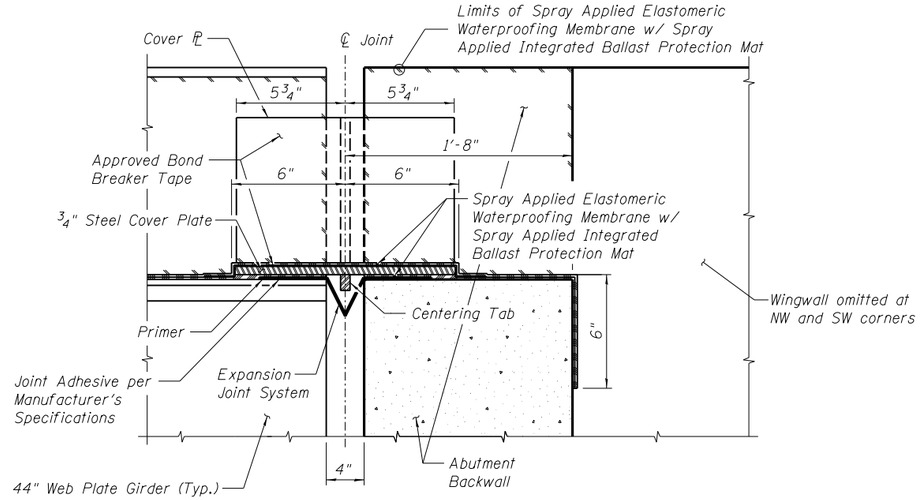
SECTION C-C



DETAIL - DECK DRAIN BOTTOM PAN

Notes:

1. Lap Drain Pipe one corrugation at each end.
2. Coordinate outside diameter of drain pipe down spout with 6" ϕ Ductile Iron Pipe.
3. Cost for deck drain pipe and bottom pan shall be included in the cost of "Drainage System".



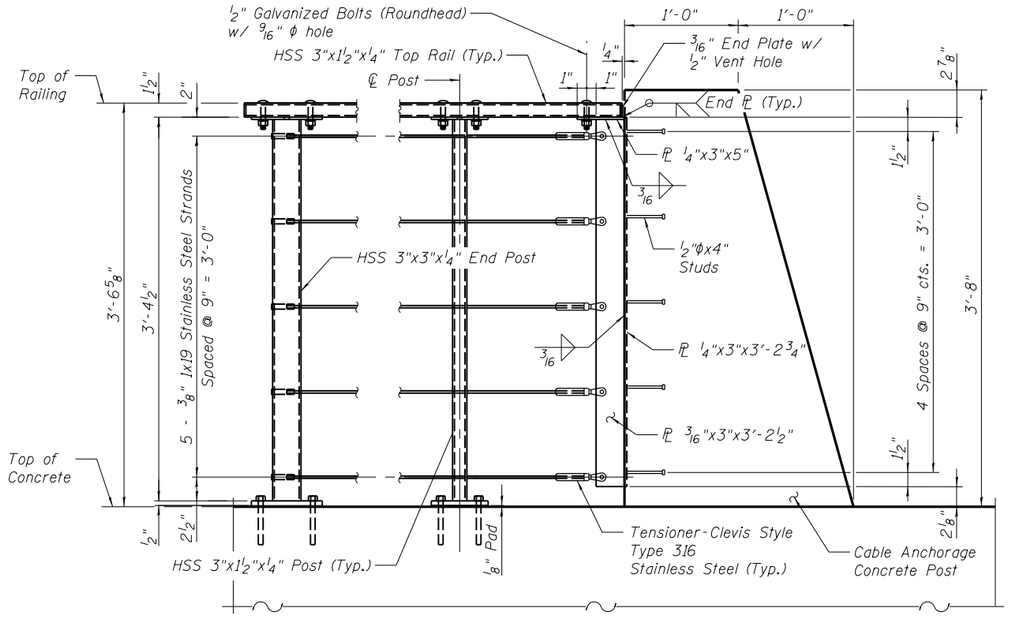
Note:

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.

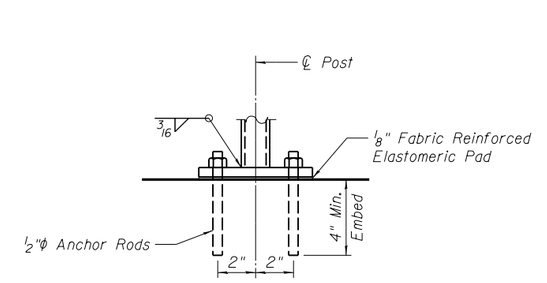
SECTION A-A

BILL OF MATERIAL

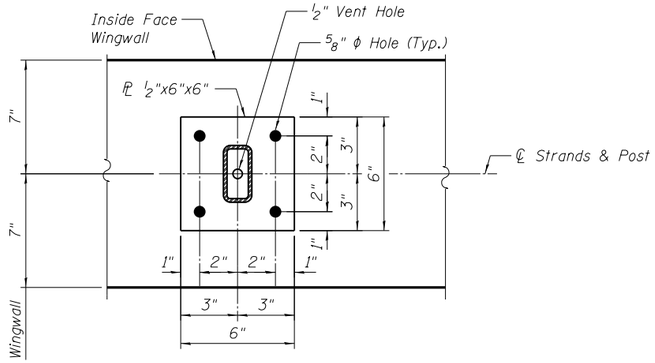
ITEM	UNIT	TOTAL
Membrane Waterproofing (Special)	Sq. Ft.	2848



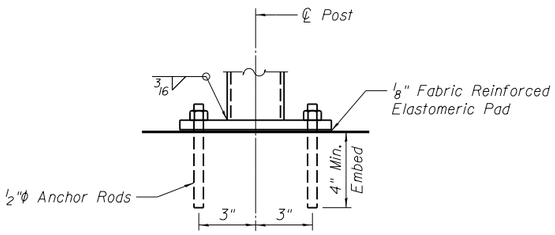
RAILING END PANEL - WINGWALL AND CHEEKWALL



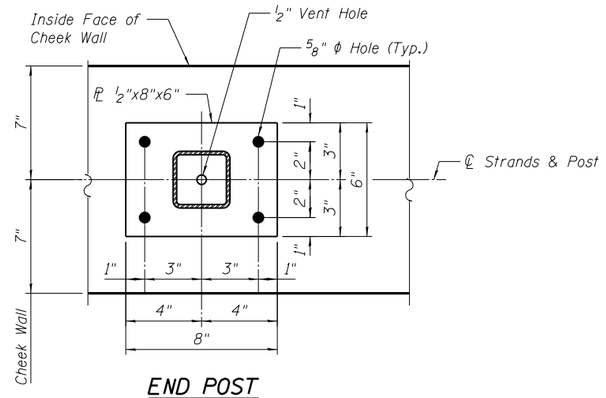
ANCHOR ROD DETAIL INTERMEDIATE POSTS



INTERMEDIATE POST



ANCHOR ROD DETAIL END POSTS



END POST

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.

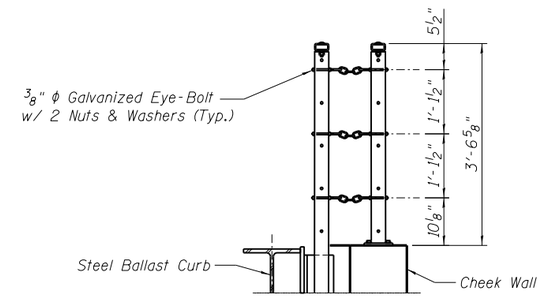
All steel rail members, with the exception of the stainless steel strand and fittings, shall be hot dipped galvanized according to 509.05 of the Standard Specifications.

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

For top rail and post connection details See Sheet 13 of 18.

See Sheet 4 of 18 for rail post spacing.

See Retaining Wall Plans for chain attachment details.



END POST AND CHAIN DETAIL

BILL OF MATERIAL

(Includes Railing along West & East side)

ITEM	UNIT	TOTAL
Steel Railing (Special)	Foot	160

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L0179B\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\084-9971.09L0179B.012.Steel Rail.dgn

FINAL

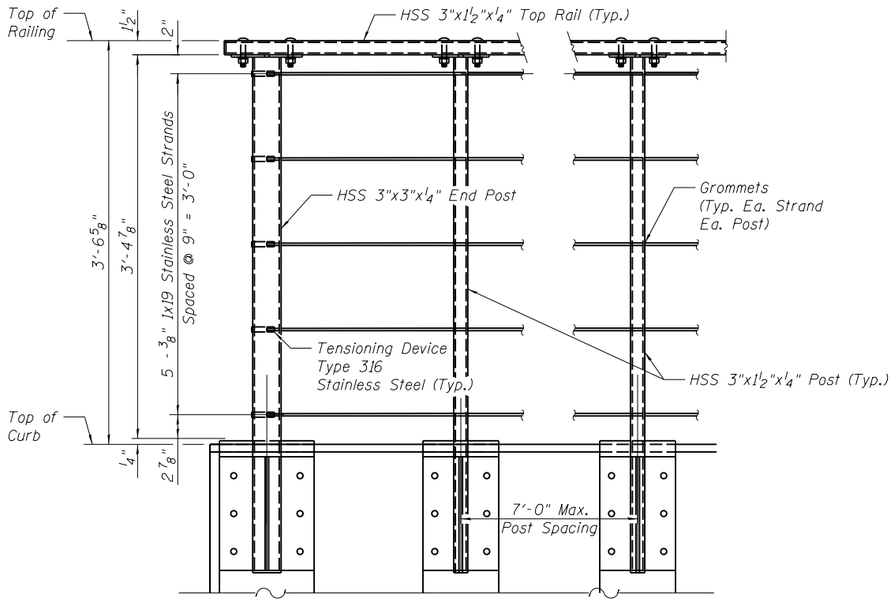
HANSON

USER NAME = thoel01490	DESIGNED - JGT	REVISED -	
	CHECKED - CGP	REVISED -	
PLOT SCALE = 01.999996 '' / in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -	

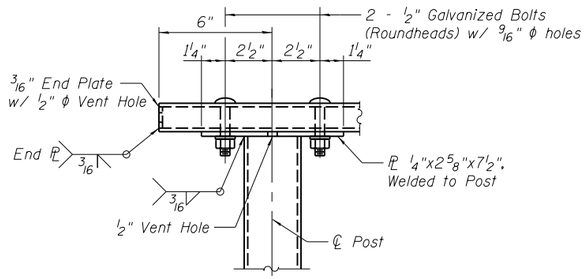
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL RAILING (SPECIAL) (1 OF 2)
STRUCTURE NO. 084-9971
SHEET NO. 12 OF 18 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	385
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			



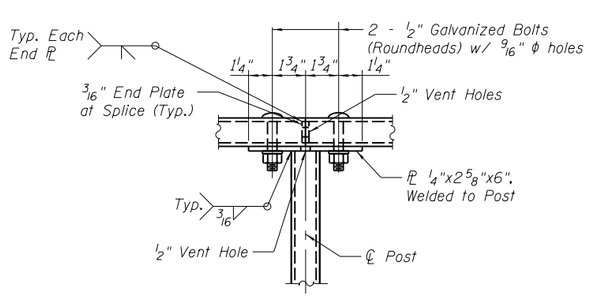
RAILING END PANEL - SUPERSTRUCTURE



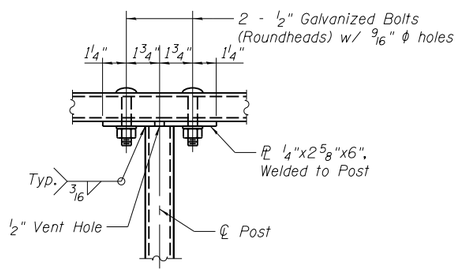
TYPICAL RAIL/END POST CONNECTION

(Strands not shown for clarity.)

Notes:
See Sheet 4 of 19 for rail post spacing.
See Sheet 12 of 18 for railing notes and anchor rod details.



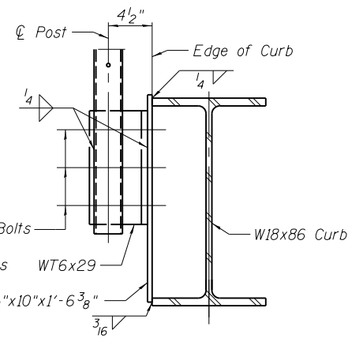
TOP RAIL - WITH SPLICE



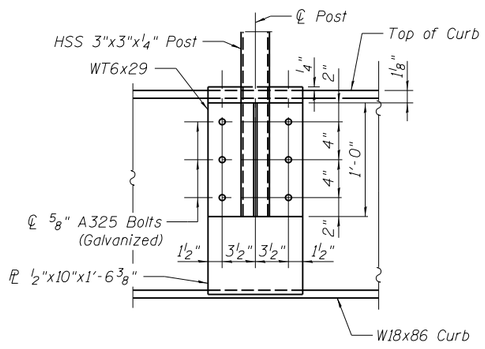
TOP RAIL - NO SPLICE

TYPICAL RAIL/POST CONNECTION

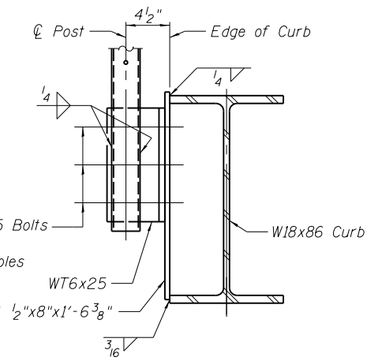
(Strands not shown for clarity.)



END POST (3")

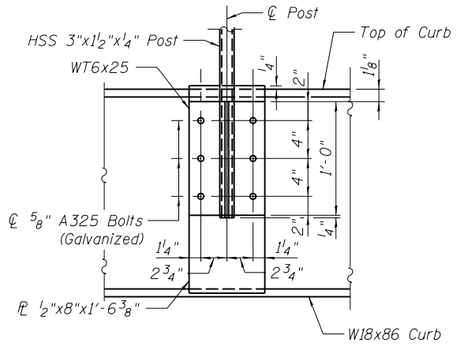


END POST (3")



INTERMEDIATE POST (1 1/2")

(Along Superstructure)



INTERMEDIATE POST (1 1/2")

(Along Superstructure)

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\084-9971_09L01798_013_Steel Rail.dgn

FINAL

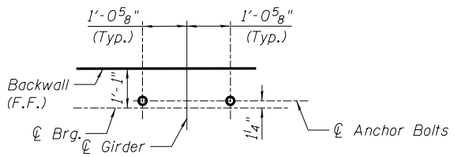
HANSON

USER NAME = thoel01490	DESIGNED - JGT	REVISED -	
	CHECKED - CGP	REVISED -	
PLOT SCALE = 01.999996 '' / in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -	

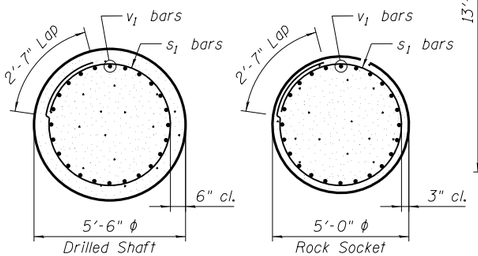
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL RAILING (SPECIAL) (2 OF 2)
STRUCTURE NO. 084-9971
SHEET NO. 13 OF 18 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67.67A	20-00491-00-BR	SANGAMON	509	386
		CONTRACT NO. 93762		
		ILLINOIS FED. AID PROJECT		

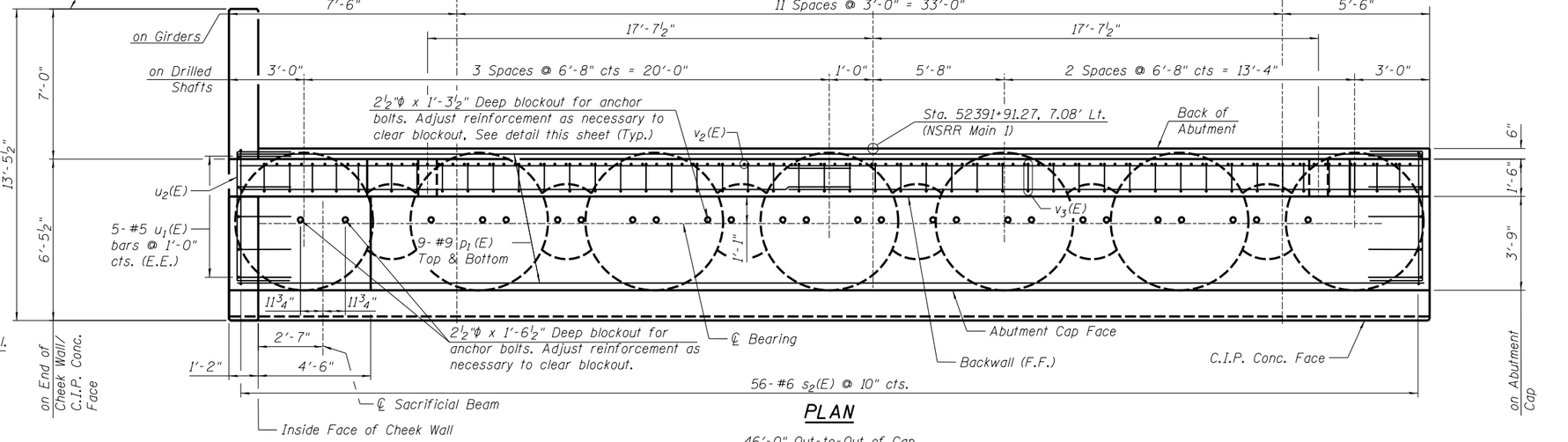


BLOCKOUT LAYOUT

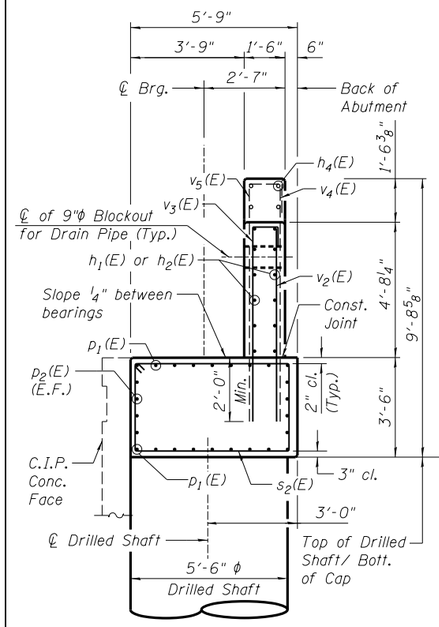


SECTION B-B

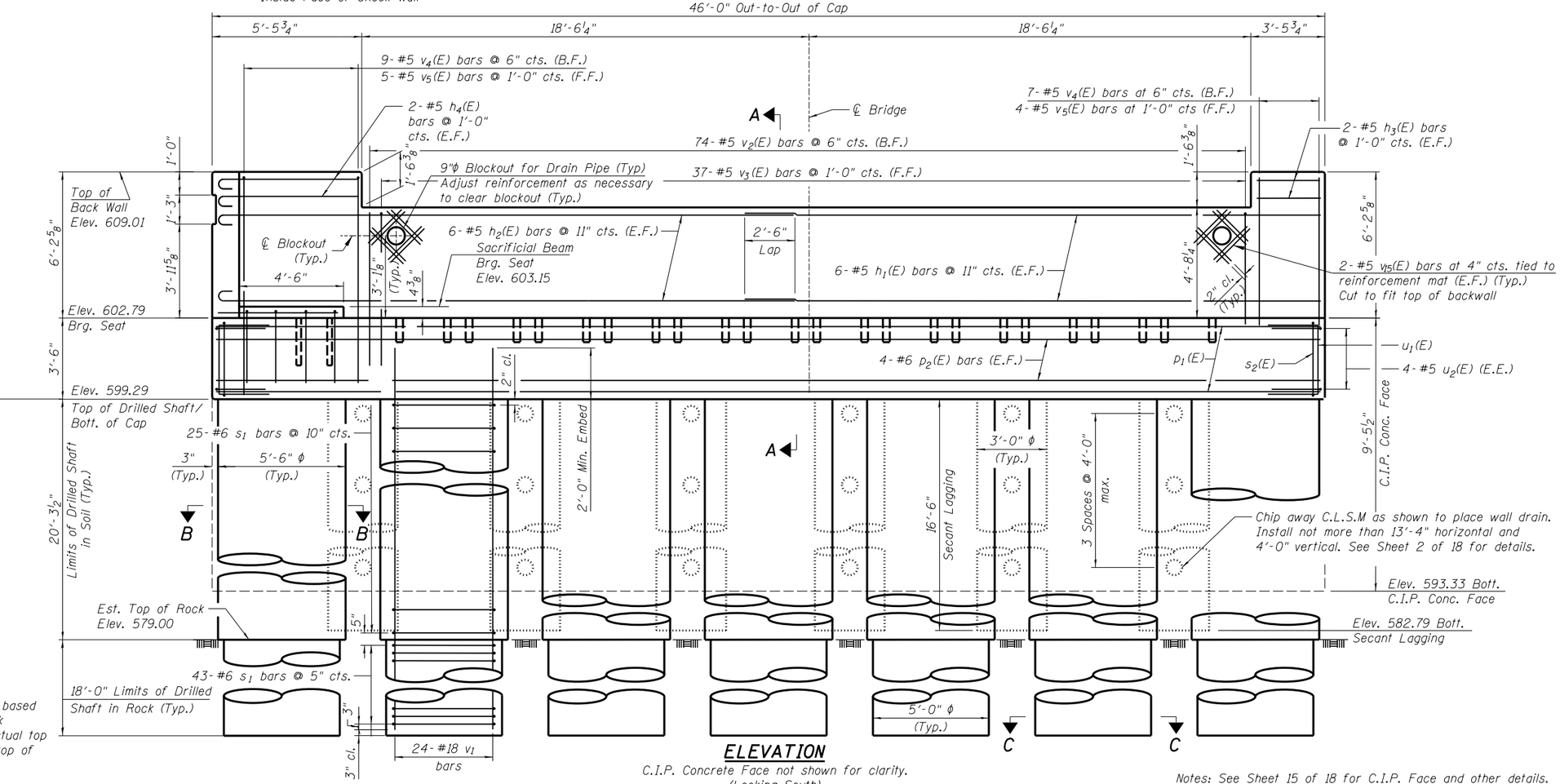
SECTION C-C



PLAN



SECTION A-A



ELEVATION

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

* 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 15 of 18 for C.I.P. Face and other details.

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\084-9971_09L01798_014_South Abutment.dgn

FINAL

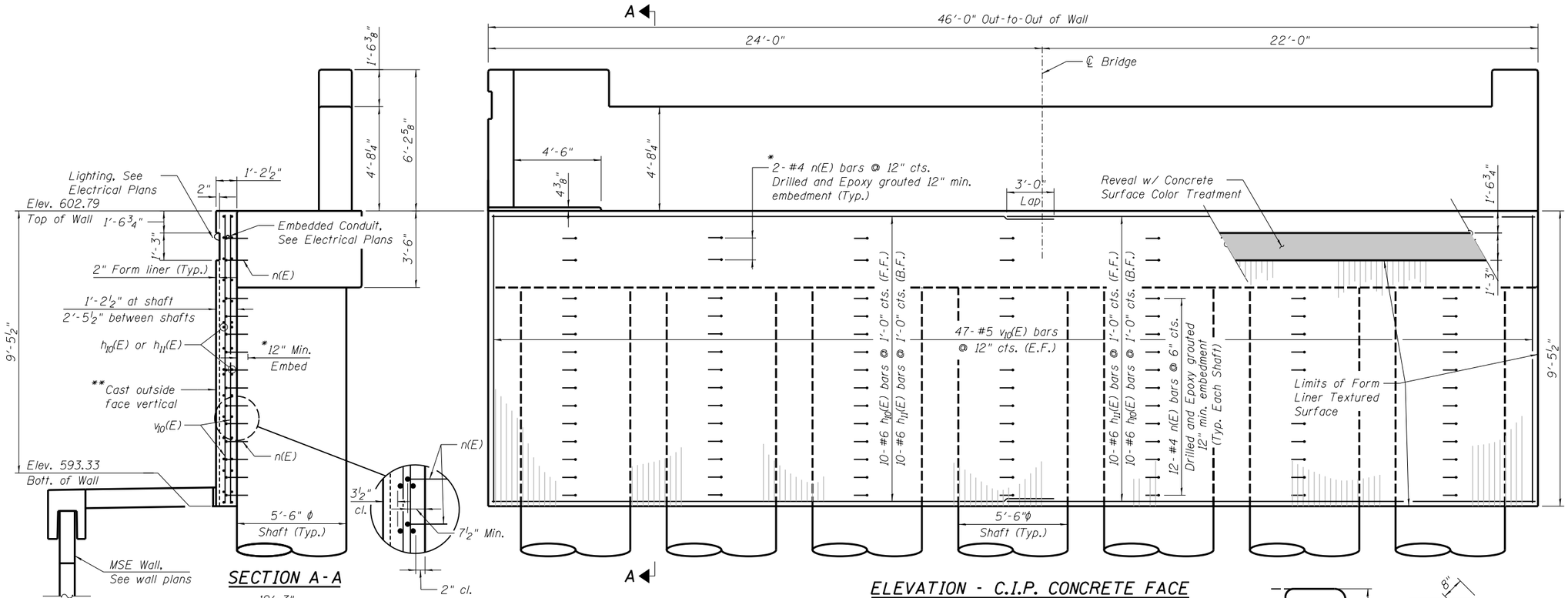
HANSON

USER NAME = thoel01490	DESIGNED - CGP	REVISED -	
	CHECKED - JGT	REVISED -	
PLOT SCALE = 01.999996 '' / in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT
STRUCTURE NO. 084–9971
SHEET NO. 14 OF 18 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	387
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			



BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$h_1(E)$	12	#5	24'-1"	
$h_2(E)$	12	#5	24'-8"	
$h_3(E)$	4	#5	3'-1"	
$h_4(E)$	4	#5	5'-7"	
$h_5(E)$	10	#4	3'-5"	
$h_6(E)$	7	#6	8'-10"	
$h_7(E)$	13	#6	13'-1"	
$h_8(E)$	4	#5	8'-10"	
$h_9(E)$	7	#5	13'-1"	
$h_{10}(E)$	20	#6	21'-0"	
$h_{11}(E)$	20	#6	27'-8"	
$n(E)$	98	#4	2'-4"	
$p_1(E)$	18	#9	45'-8"	
$p_2(E)$	8	#6	45'-8"	
s_1	476	#6	16'-9"	
$s_2(E)$	56	#6	18'-4"	
$u_1(E)$	10	#5	7'-3"	
$u_2(E)$	8	#5	9'-7"	
v_1	168	#18	40'-9"	
$v_2(E)$	74	#5	6'-8"	
$v_3(E)$	37	#5	8'-8"	
$v_4(E)$	16	#5	8'-2"	
$v_5(E)$	9	#5	10'-2"	
$v_6(E)$	14	#5	9'-4"	
$v_7(E)$	12	#5	8'-4"	
$v_8(E)$	2	#5	5'-10"	
$v_9(E)$	7	#5	4'-11"	
$v_{10}(E)$	94	#5	9'-1"	
$v_{15}(E)$	32	#5	2'-6"	
Structure Excavation		Cu. Yds.	54	
Concrete Structures		Cu. Yds.	70.7	
Form Liner Textured Surface		Sq. Ft.	306	
Reinforcement Bars		Pound	105080	
Reinforcement Bars, Epoxy Coated		Pound	10150	
Drilled Shaft in Soil		Cu. Yds.	125.0	
Drilled Shaft in Rock		Cu. Yds.	91.6	
Secant Lagging		Cu. Ft.	700	
Concrete Sealer		Sq. Ft.	951	
Concrete Surface Color Treatment		Sq. Ft.	73	

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.

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\084-9971.09L01798.015.South Abutment Details.dgn

FINAL

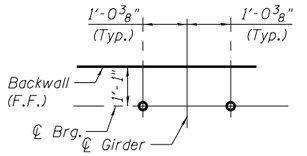
HANSON

USER NAME = thoel01490	DESIGNED - CGP	REVISED -
	CHECKED - JGT	REVISED -
PLOT SCALE = 01.999996 ':' / in.	DRAWN - RSJ	REVISED -
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -

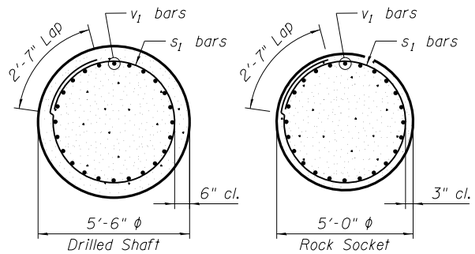
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT DETAILS
STRUCTURE NO. 084-9971
SHEET NO. 15 OF 18 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67.67A	20-00491-00-BR	SANGAMON	509	388
		CONTRACT NO. 93762		
		ILLINOIS FED. AID PROJECT		

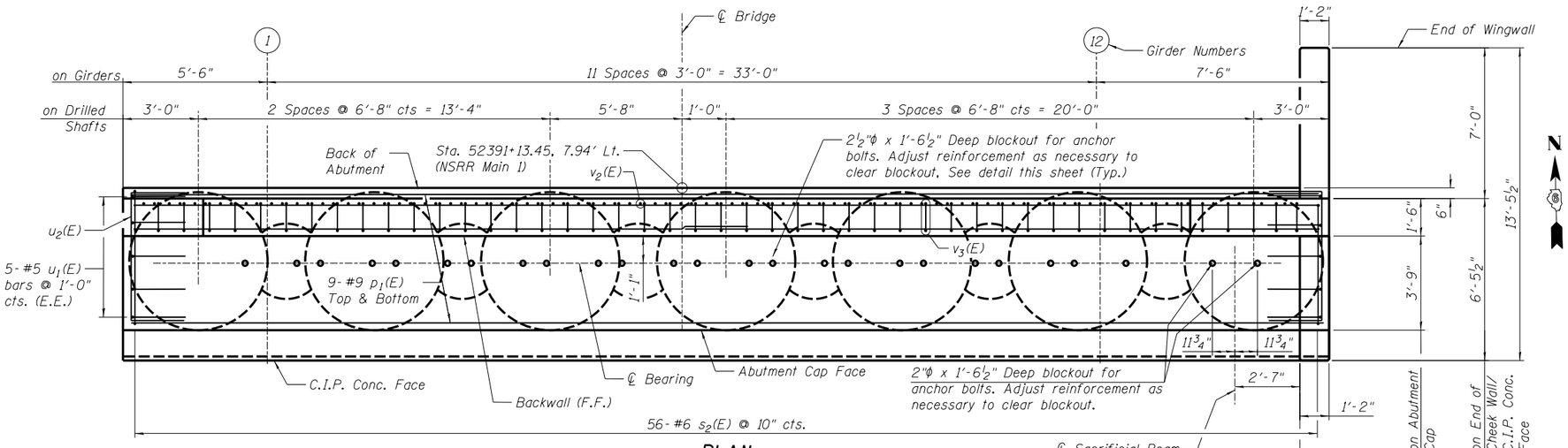


BLOCKOUT LAYOUT

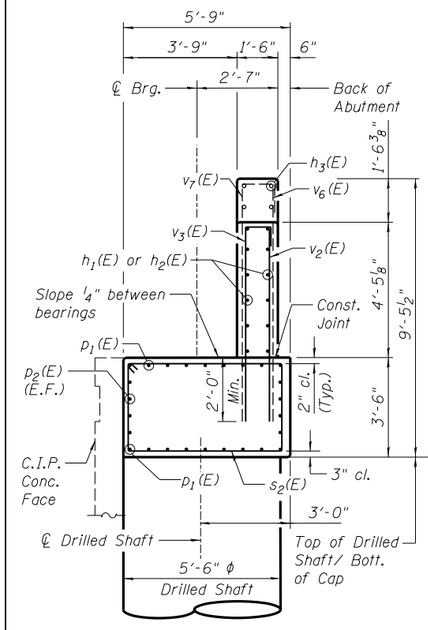


SECTION B-B

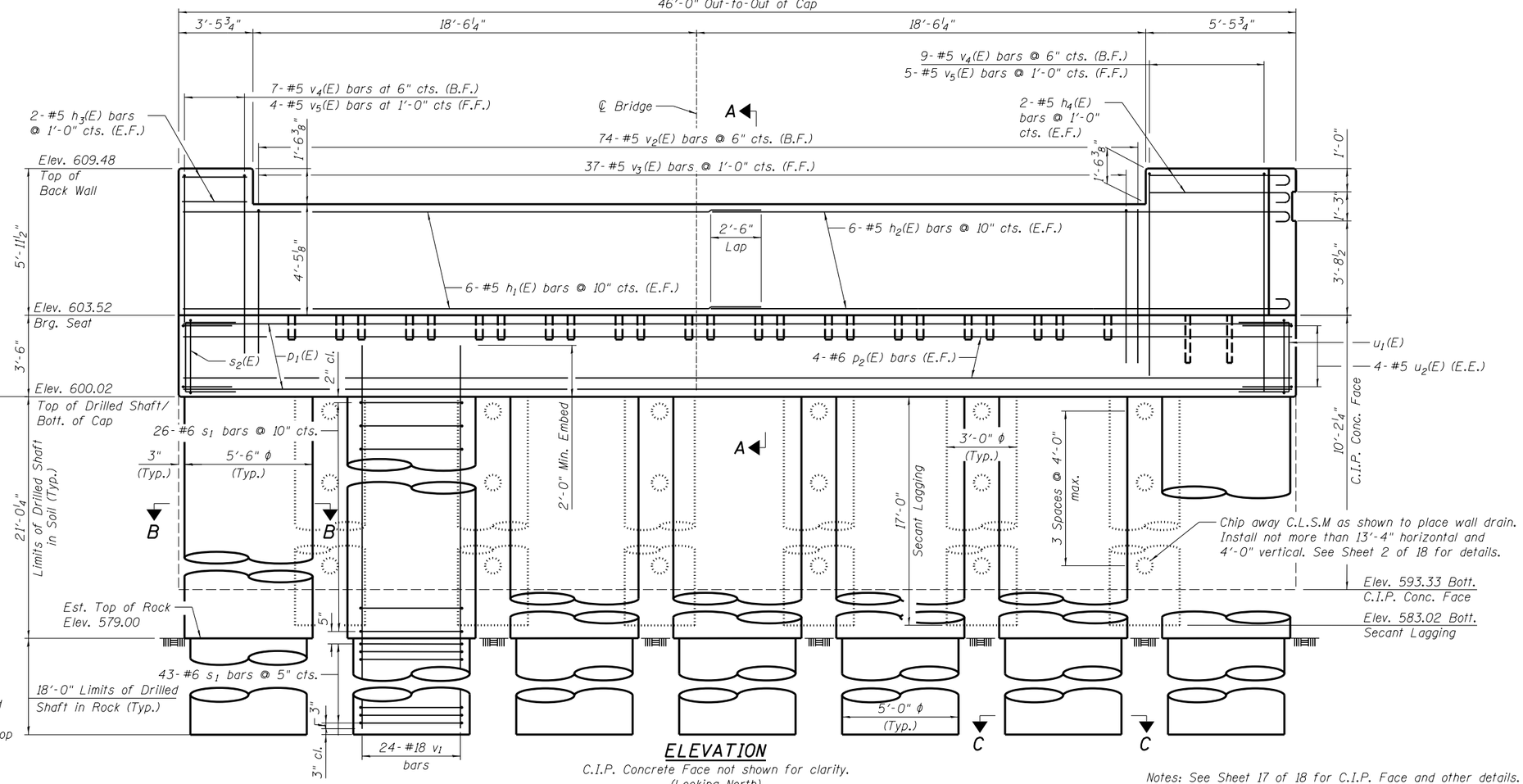
SECTION C-C



PLAN



SECTION A-A



ELEVATION

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

* 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 17 of 18 for C.I.P. Face and other details.

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L0179B\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\084-9971_09L0179B_016_North Abutment.dgn

FINAL

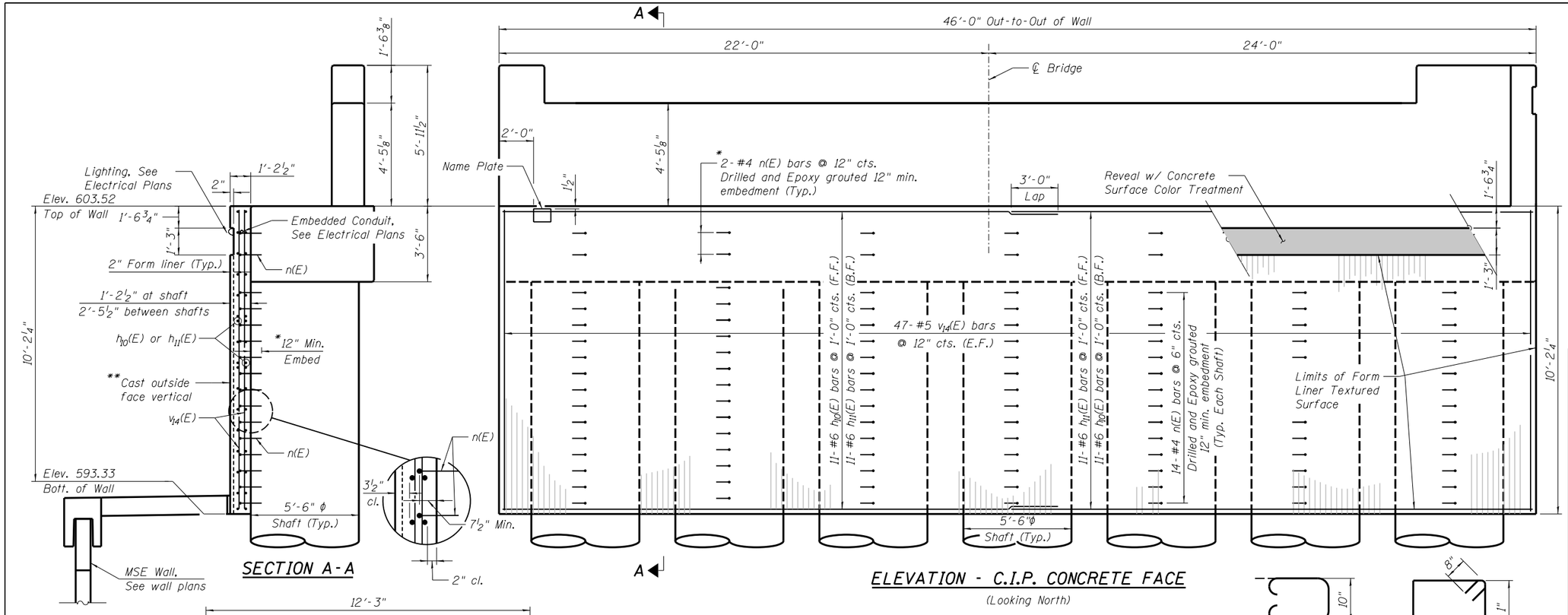
HANSON

USER NAME = thoel01490	DESIGNED - CGP	REVISED -	
	CHECKED - JGT	REVISED -	
PLOT SCALE = 01.999996 '' / in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT
STRUCTURE NO. 084-9971
SHEET NO. 16 OF 18 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	389
		CONTRACT NO. 93762		
		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 11½".

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$h_1(E)$	12	#5	24'-1"	
$h_2(E)$	12	#5	24'-8"	
$h_3(E)$	4	#5	3'-1"	
$h_4(E)$	4	#5	5'-7"	
$h_5(E)$	10	#4	3'-5"	
$h_6(E)$	7	#6	8'-10"	
$h_7(E)$	13	#6	13'-1"	
$h_8(E)$	4	#5	8'-10"	
$h_9(E)$	7	#5	13'-1"	
$h_{10}(E)$	22	#6	21'-0"	
$h_{11}(E)$	22	#6	27'-8"	
n(E)	112	#4	2'-4"	
$p_1(E)$	18	#9	45'-8"	
$p_2(E)$	8	#6	45'-8"	
s_1	483	#6	16'-9"	
$s_2(E)$	56	#6	18'-4"	
$u_1(E)$	10	#5	7'-3"	
$u_2(E)$	8	#5	9'-7"	
v_1	168	#18	40'-9"	
$v_2(E)$	74	#5	6'-8"	
$v_3(E)$	37	#5	8'-8"	
$v_4(E)$	16	#5	8'-2"	
$v_5(E)$	9	#5	10'-2"	
$v_9(E)$	7	#5	4'-11"	
$v_{11}(E)$	14	#5	9'-1"	
$v_{12}(E)$	12	#5	8'-1"	
$v_{13}(E)$	2	#5	5'-7"	
$v_{14}(E)$	94	#5	9'-10"	
Structure Excavation		Cu. Yds.	31	
Concrete Structures		Cu. Yds.	71.2	
Form Liner Textured Surface		Sq. Ft.	339	
Reinforcement Bars		Pound	105260	
Reinforcement Bars, Epoxy Coated		Pound	10300	
Drilled Shaft in Soil		Cu. Yds.	129.5	
Drilled Shaft in Rock		Cu. Yds.	91.6	
Secant Lagging		Cu. Ft.	721	
Concrete Sealer		Sq. Ft.	972	
Concrete Surface Color Treatment		Sq. Ft.	73	

Bar	'a'
$h_2(E)$	24'-1"
$h_4(E)$	5'-0"
$v_9(E)$	4'-4"

Bar	'b'
$v_3(E)$	6'-8"
$v_5(E)$	8'-2"

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.

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\084-9971_09L01798_017_North Abutment Details.dgn

FINAL

HANSON

USER NAME = thoel01490	DESIGNED - CGP	REVISED -
	CHECKED - JGT	REVISED -
PLOT SCALE = 81.999996 ':' / in.	DRAWN - RSJ	REVISED -
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT DETAILS
STRUCTURE NO. 084-9971
SHEET NO. 17 OF 18 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	390
		CONTRACT NO. 93762		
		ILLINOIS FED. AID PROJECT		

B-141
Sta. 900+59, 20' RT

	N	Qu	w%	
603.4				
603.08				ASPHALT.
602.33				CONCRETE.
	8	1.50P	12	Brown fine to medium SAND and black very fine sandy silty CLAY - FILL.
599.91				
	7	1.50P	30	Dark gray very fine sandy silty CLAY.
597.41				
	4	1.32S	28	Brown and gray very fine sandy SILT, some clay and oxidized spots.
	6	3.10S	27	
592.41				
	4	0.62B	24	Brown and gray very fine sandy silty CLAY.
	3		26	
587.41				
	4	0.89B	25	Brown and gray sandy silty CLAY, trace coarse sand and small gravel.
	6	1.16B	27	
579.91				
	50/5"		12	Gray and black micaceous fine sandy SHALE - highly weathered.
573.41				
	Rec. = 84% ROD = 70%			Gray sandy SHALE, micaceous.
570.41				
	40.1			Gray clayey SHALE, micaceous.
	Rec. = 98% ROD = 68%			
565.41				
	136.2			Gray sandy SHALE, micaceous.
	Rec. = 100% ROD = 83%			
	Rec. = 98% ROD = 28%			
553.91				Bottom of Hole = 49.5 feet

LEGEND

N	Standard Penetration Test N (blows/ft)
Qu	Unconfined Strength (tsf)
w%	Natural Moisture Content (%)
DD ▽ 558.10	Water Surface Elevation Encountered in Boring DD = during drilling Oh = at completion 24h = 24 hours after completion

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\084-9971_09L01798_018_Sub Data Profile.dgn

FINAL

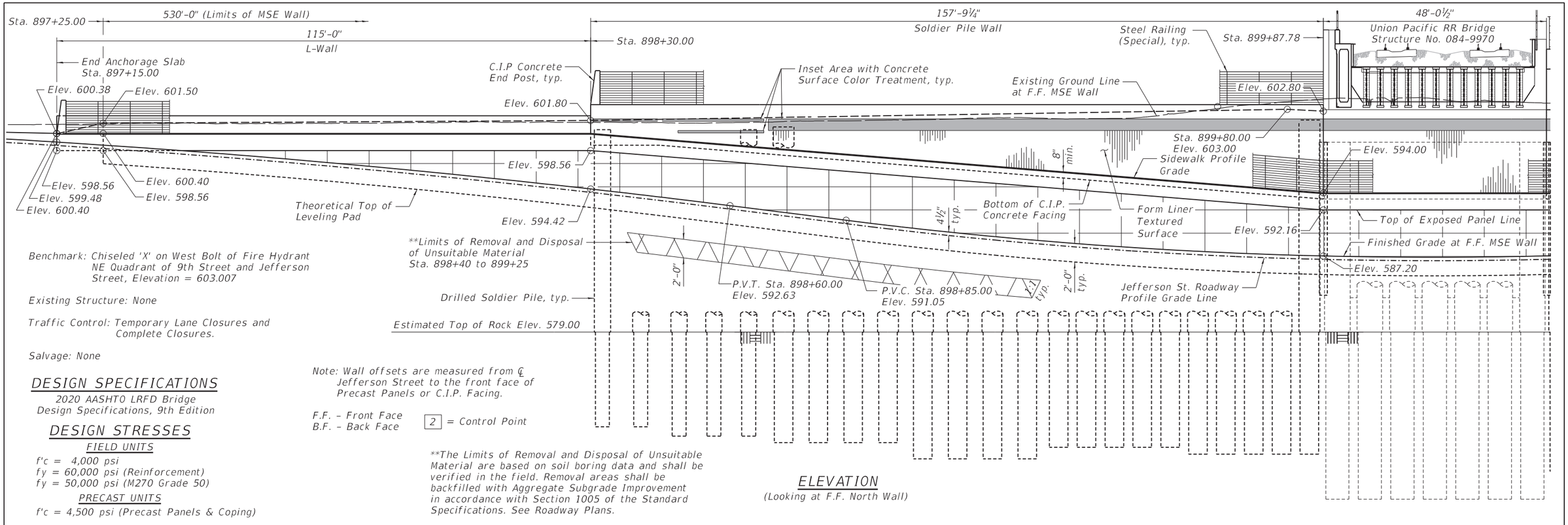
HANSON

USER NAME = thoel01490	DESIGNED - CGP	REVISED -	
	CHECKED - JGT	REVISED -	
PLOT SCALE = 0.2 '' / in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/20/2021	CHECKED - JGT	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSURFACE DATA PROFILE
STRUCTURE NO. 084-9971
SHEET NO. 18 OF 18 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67.67A	20-00491-00-BR	SANGAMON	509	391
		CONTRACT NO. 93762		
	ILLINOIS	FED. AID PROJECT		



Benchmark: Chiseled 'X' on West Bolt of Fire Hydrant NE Quadrant of 9th Street and Jefferson Street, Elevation = 603.007

Existing Structure: None

Traffic Control: Temporary Lane Closures and Complete Closures.

Salvage: None

DESIGN SPECIFICATIONS

2020 AASHTO LRFD Bridge Design Specifications, 9th Edition

DESIGN STRESSES

FIELD UNITS

f'c = 4,000 psi
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50)

PRECAST UNITS

f'c = 4,500 psi (Precast Panels & Coping)

Note: Wall offsets are measured from ℄ Jefferson Street to the front face of Precast Panels or C.I.P. Facing.

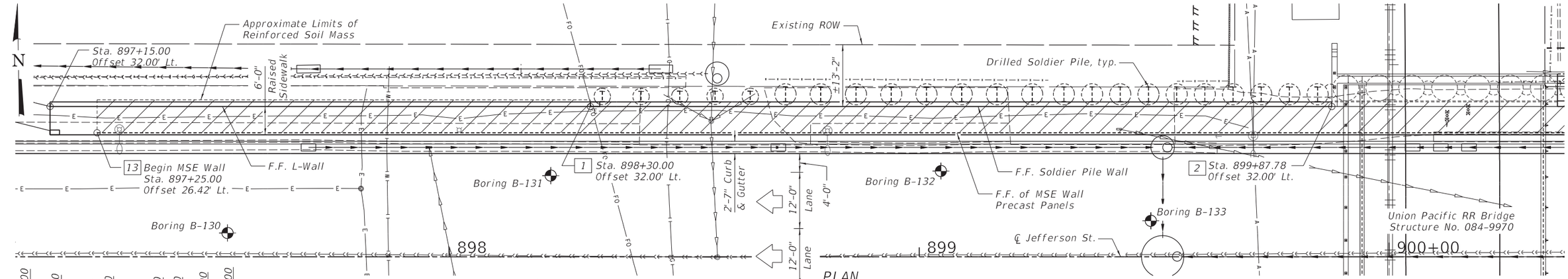
F.F. – Front Face
B.F. – Back Face

2 = Control Point

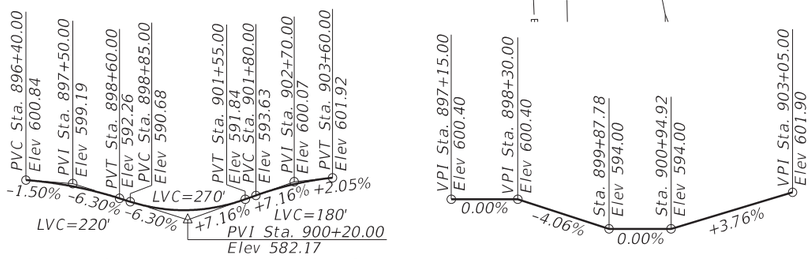
**The Limits of Removal and Disposal of Unsuitable Material are based on soil boring data and shall be verified in the field. Removal areas shall be backfilled with Aggregate Subgrade Improvement in accordance with Section 1005 of the Standard Specifications. See Roadway Plans.

ELEVATION

(Looking at F.F. North Wall)



PLAN

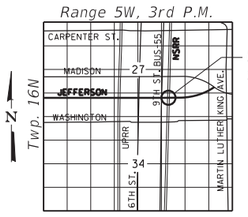


PROFILE GRADE – JEFFERSON ST.

Along ℄ of Jefferson St.

PROFILE GRADE – SIDEWALKS

Along outside edge of sidewalk



LOCATION SKETCH

APPROVED
For Structural Adequacy Only
Engineer of Bridges & Structures

LICENSED STRUCTURAL ENGINEER
ROBERT CHANTOME
081-006048
STATE OF ILLINOIS

11/01/2021
Expires November 30, 2022

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

GENERAL PLAN (SHEET 1 OF 4)
NORTH WALL – JEFFERSON ST.
F.A.P. 67A – SECTION 20-00491-00-BR
SANGAMON COUNTY
STATION 897+15.00 TO 903+05.00

p:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L0179B\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\09L0179B-Jefferson-Retaining-Wall-Plans.dgn

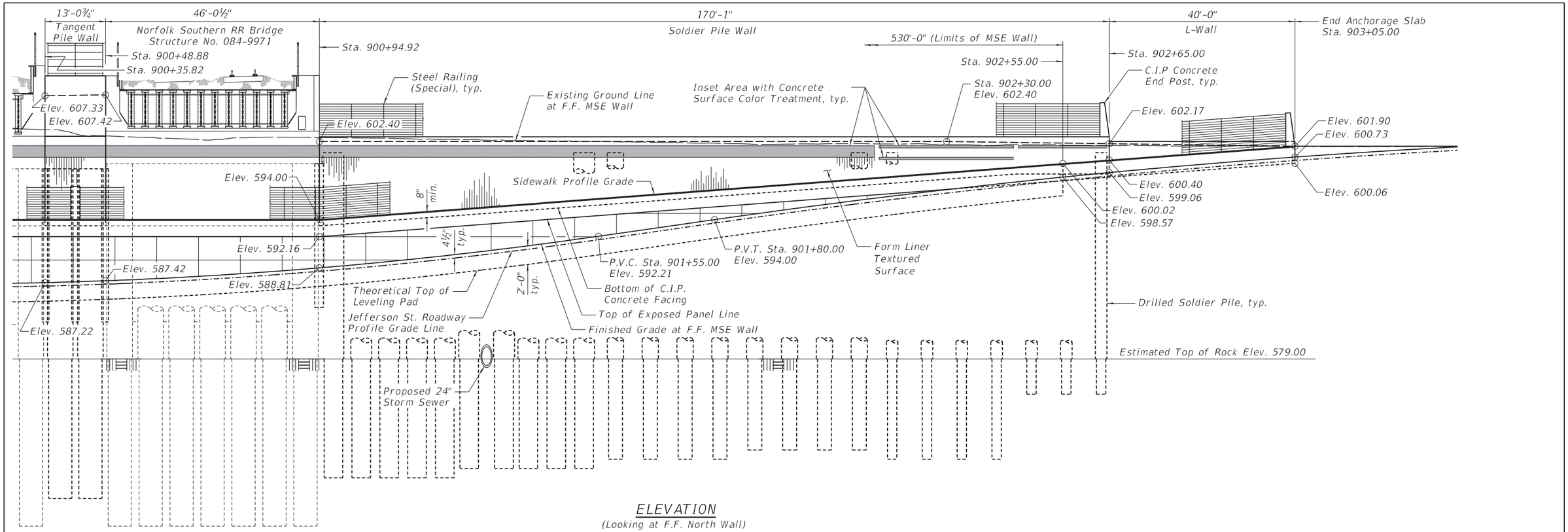
HANSON

USER NAME = Johns00944	DESIGNED - KMS	REVISED -
	CHECKED - RGC	REVISED -
PLOT SCALE = 21.333 ' / in.	DRAWN - EJM	REVISED -
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

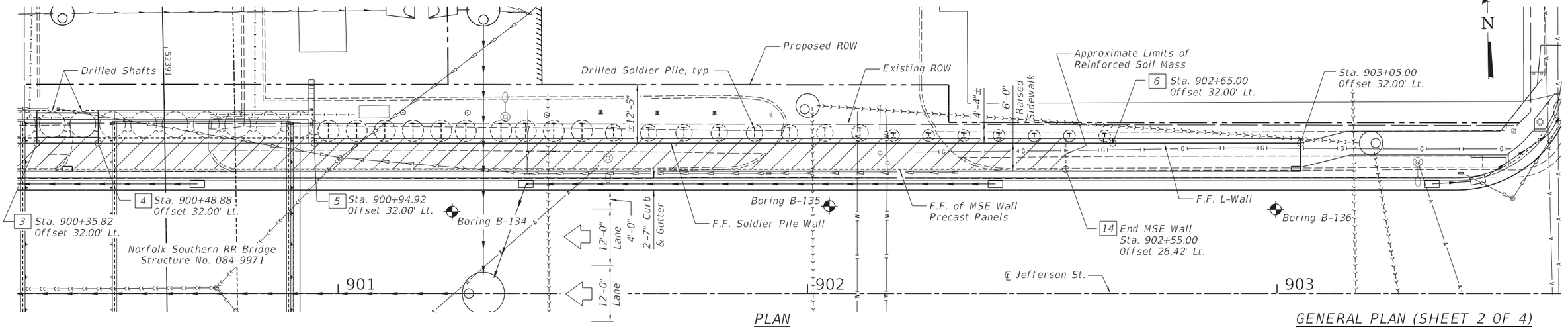
GENERAL PLAN & ELEVATION – NORTH WALL
RETAINING WALLS – JEFFERSON STREET
SHEET NO. 1 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	392
		CONTRACT NO. 93762		
		ILLINOIS FED. AID PROJECT		



ELEVATION

(Looking at F.F. North Wall)



PLAN

Note: Wall offsets are measured from ℄ Jefferson Street to the front face of Precast Panels or C.I.P. Facing.

F.F. - Front Face
B.F. - Back Face

5 = Control Point

GENERAL PLAN (SHEET 2 OF 4)
NORTH WALL - JEFFERSON ST.
F.A.P. 67A - SECTION 20-00491-00-BR
SANGAMON COUNTY
STATION 897+15.00 TO 903+05.00

p:\\hansoninc-pw.bentley.com\hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\09L01798-Jefferson-Retaining-Wall-Plans.dgn

HANSON

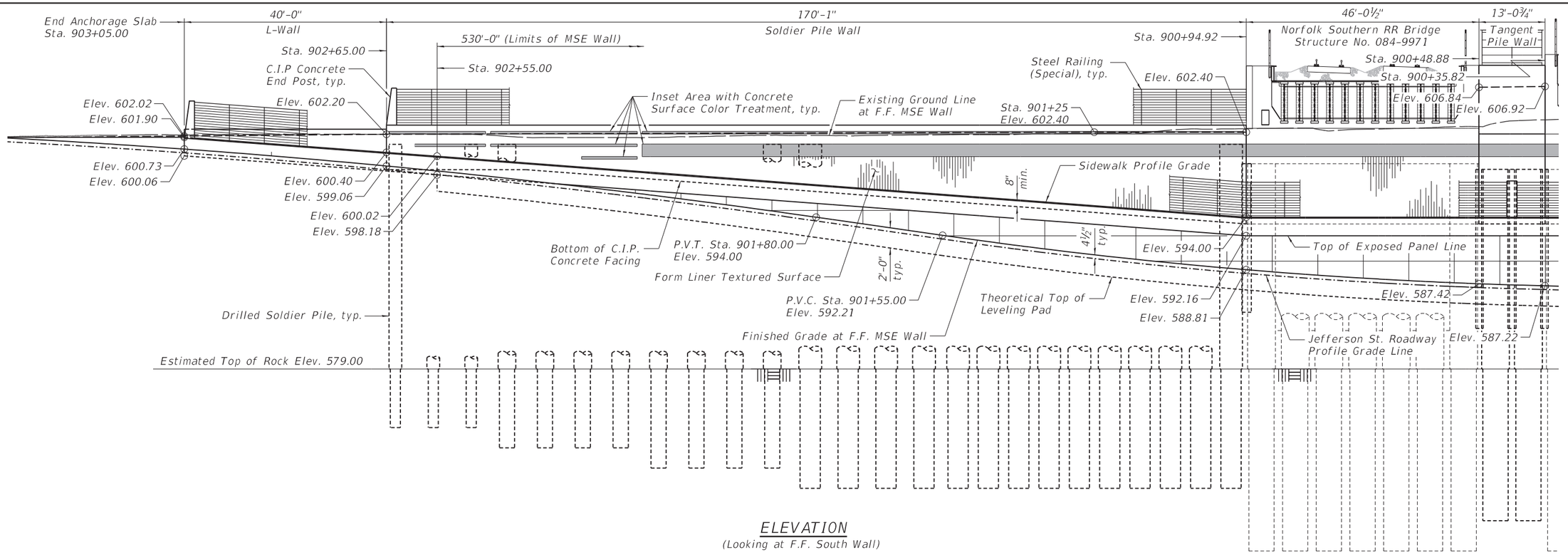
USER NAME = Johns00944	DESIGNED - KMS	REVISED -
	CHECKED - RGC	REVISED -
PLOT SCALE = 21.333 ' / in.	DRAWN - EJM	REVISED -
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

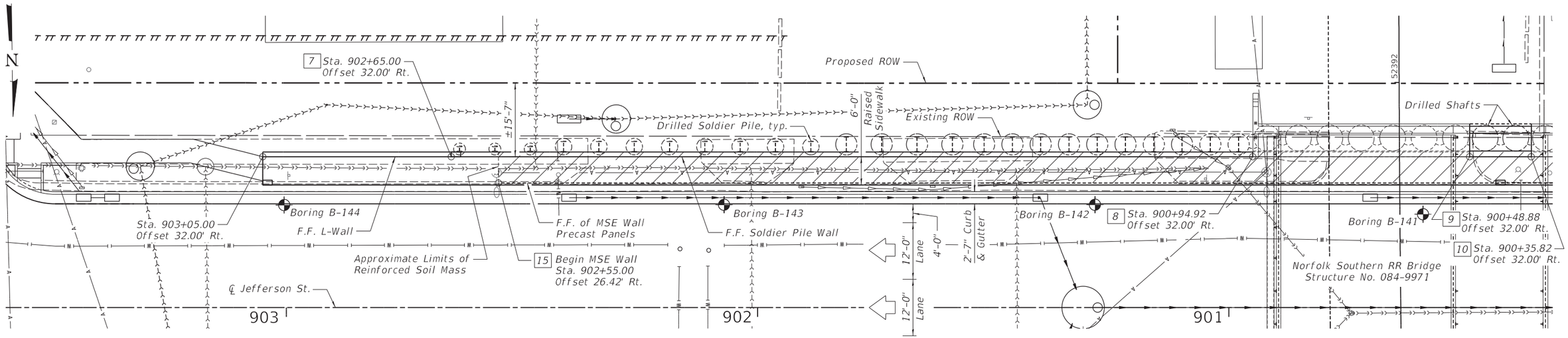
GENERAL PLAN & ELEVATION - NORTH WALL
RETAINING WALLS - JEFFERSON STREET

SHEET NO. 2 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	393
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			



ELEVATION
(Looking at F.F. South Wall)



PLAN

Note: Wall offsets are measured from ℄ Jefferson Street to the front face of Precast Panels or C.I.P. Facing.

F.F. - Front Face
B.F. - Back Face

7 = Control Point

GENERAL PLAN (SHEET 3 OF 4)
SOUTH WALL - JEFFERSON ST.
F.A.P. 67A - SECTION 20-00491-00-BR
SANGAMON COUNTY
STATION 897+15.00 TO 903+05.00

p:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L0179B\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\09L0179B-Jefferson-Retaining-Wall-Plans.dgn

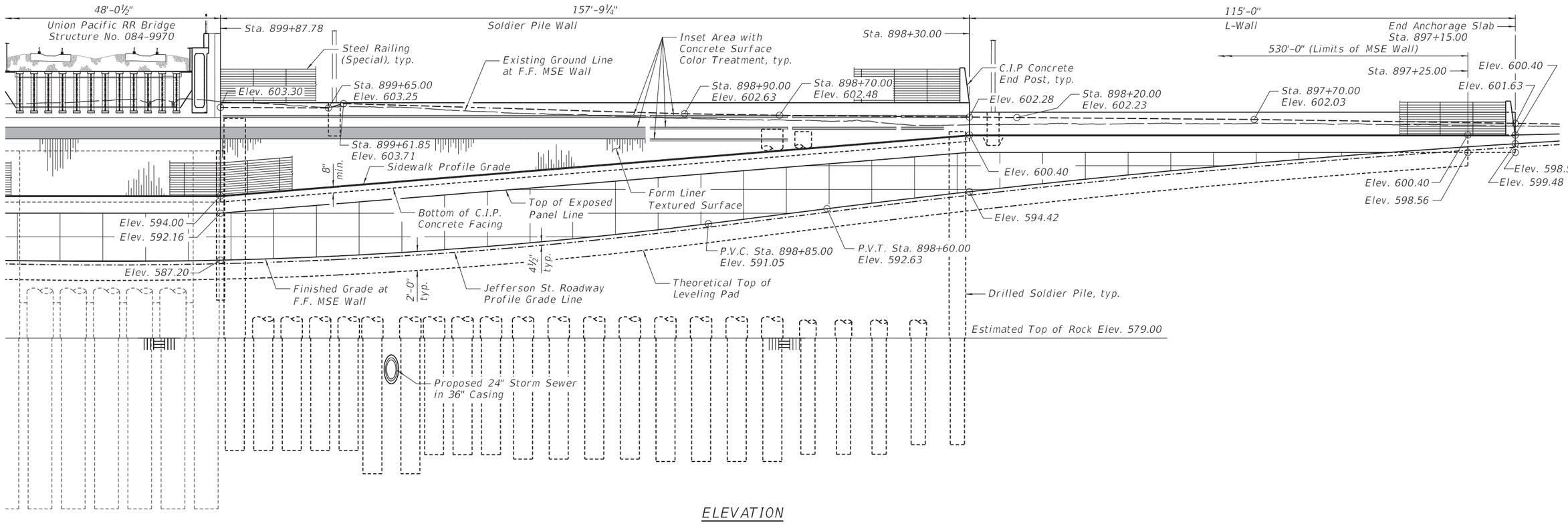
HANSON

USER NAME = Johns00944	DESIGNED - KMS	REVISED -
	CHECKED - RGC	REVISED -
PLOT SCALE = 21.333 ' / in.	DRAWN - EJM	REVISED -
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

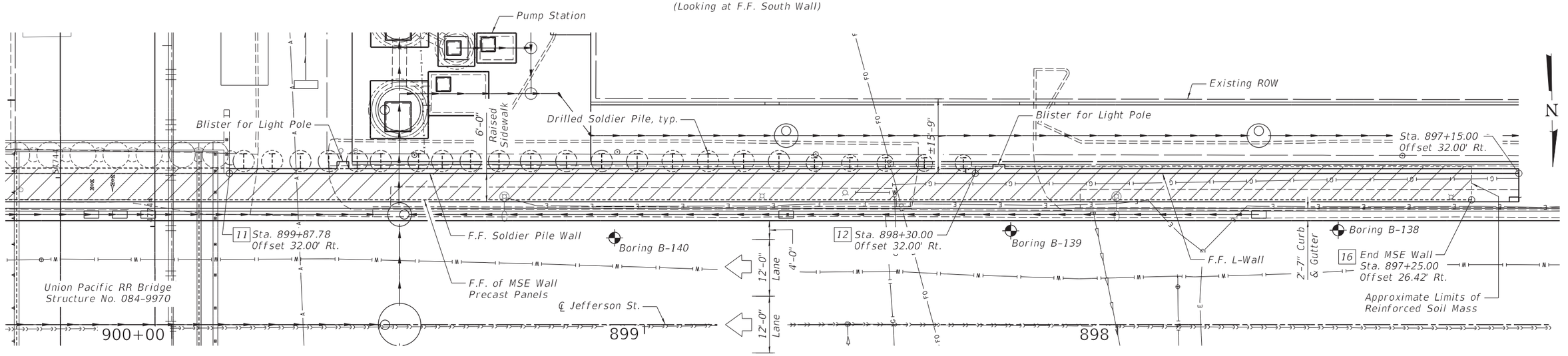
GENERAL PLAN & ELEVATION - SOUTH WALL
RETAINING WALLS - JEFFERSON STREET
SHEET NO. 3 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	394
		CONTRACT NO. 93762		
		ILLINOIS	FED. AID PROJECT	



ELEVATION

(Looking at F.F. South Wall)



PLAN

Note: Wall offsets are measured from ℄ Jefferson Street to the front face of Precast Panels or C.I.P. Facing.

F.F. - Front Face
B.F. - Back Face

11 = Control Point

GENERAL PLAN (SHEET 4 OF 4)
SOUTH WALL - JEFFERSON ST.
F.A.P. 67A - SECTION 20-00491-00-BR
SANGAMON COUNTY
STATION 897+15.00 TO 903+05.00

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\09L01798-Jefferson-Retaining-Wall-Plans.dgn

HANSON

USER NAME = Johns00944	DESIGNED - KMS	REVISED -
	CHECKED - RGC	REVISED -
PLOT SCALE = 21.333 ' / in.	DRAWN - EJM	REVISED -
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION - SOUTH WALL
RETAINING WALLS - JEFFERSON STREET

SHEET NO. 4 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	395
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			

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. The Contractor is responsible for the design and performance of the Untreated Timber Lagging using no less than a 3 in. nominal rough-sawn thickness and timber with a minimum allowable bending stress of 1000 psi.

ASSUMED SEQUENCE OF CONSTRUCTION

1. Install secant lagging and drilled shafts for S.N. 084-9970, 084-9971 and cap between structures.*
2. Drill and set soldier piles for north and south walls.*
3. Excavate for Jefferson Street pavement, installing temporary timber lagging from top down as excavation progresses. Lay back temporary slopes in areas beyond soldier pile walls.*
4. Place aggregate subgrade improvement layer and lower underdrain up to base of MSE wall.
5. Construct MSE wall up to bottom of upper underdrain.
6. Install geocomposite wall drain and upper underdrain.
7. Continue MSE wall construction up to bottom of concrete facing.
8. Construct cast-in-place concrete facing.
9. Set precast coping and place remainder of select fill.
10. Construct anchorage slab and L-wall.
11. Backfill to finish grade behind L-wall and soldier pile.

*See Track Staging Plans for maintenance of traffic on NSRR. See Sheet 7 of 32 for excavation restriction near active, at-grade track. See Special Provisions for restrictions on soldier pile and drilled shaft installation near active track.

WALL CONTROL POINTS

Control Point	Station	Offset
1	898+30.00	32.00' LT
2	899+87.78	32.00' LT
3	900+35.82	32.00' LT
4	900+48.88	32.00' LT
5	900+94.92	32.00' LT
6	902+65.00	32.00' LT
7	902+65.00	32.00' RT
8	900+94.92	32.00' RT
9	900+48.88	32.00' RT
10	900+35.82	32.00' RT
11	899+87.78	32.00' RT
12	898+30.00	32.00' RT
13	897+25.00	26.42' LT
14	902+55.00	26.42' LT
15	902+55.00	26.42' RT
16	897+25.00	26.42' RT

Control Points 1-12 are to Front Face of C.I.P. Facing.
Control Points 13-16 are to Front Face of Precast Panels.

INDEX OF SHEETS

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structure Excavation	Cu. Yd.	63
Concrete Structures	Cu. Yd.	167.3
Form Liner Textured Surface	Sq. Ft.	2274
Stud Shear Connectors	Each	411
Reinforcement Bars	Pound	26850
Reinforcement Bars, Epoxy Coated	Pound	37070
Drilled Shafts In Soil	Cu. Yd.	70.8
Drilled Shafts In Rock	Cu. Yd.	51.0
Furnishing Soldier Piles (W Section)	Foot	3223
Drilling and Setting Soldier Piles (In Soil)	Cu. Ft.	29368.6
Drilling and Setting Soldier Piles (In Rock)	Cu. Ft.	14148.9
Untreated Timber Lagging	Sq. Ft.	6597
Secant Lagging	Cu. Ft.	1126
Mechanically Stabilized Earth Retaining Wall	Sq. Ft.	5592
Concrete Structures (Retaining Wall)	Cu. Yd.	218.1
Granular Backfill for Structures	Cu. Ft.	43
Concrete Sealer	Sq. Ft.	19466
Geocomposite Wall Drain	Sq. Yd.	387
Concrete Surface Color Treatment	Sq. Ft.	717
Steel Railing (Special)	Foot	1840
Pipe Underdrains for Structures 4"	Foot	1930
Pipe Underdrains for Structures 4" (Special)	Foot	185

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

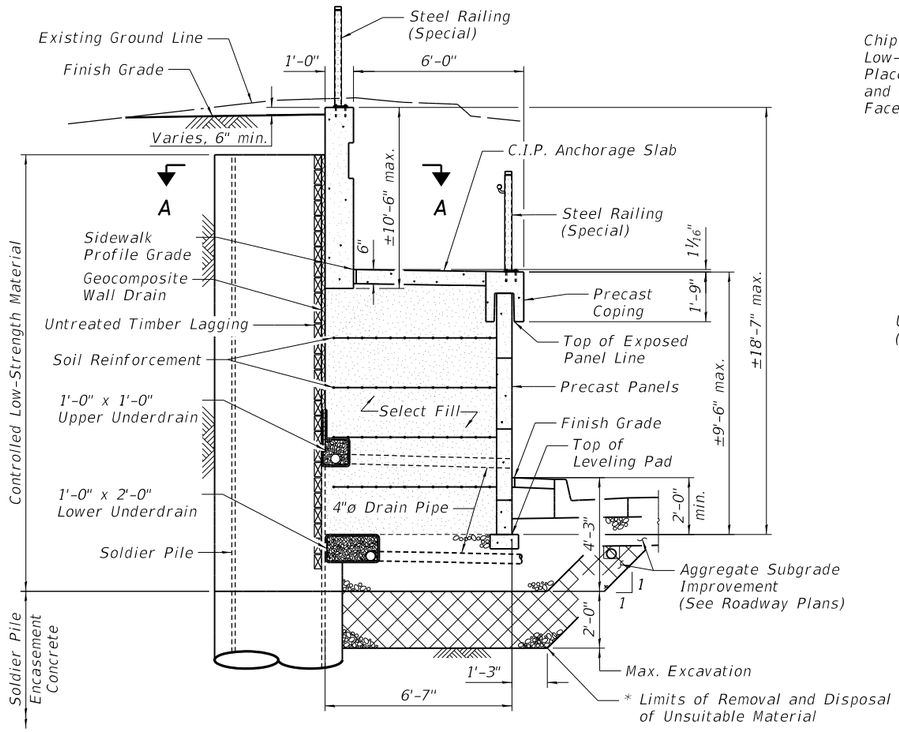
HANSON

USER NAME = Johns00944	DESIGNED - KMS	REVISED -	
	CHECKED - RGC	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN - EJM	REVISED -	
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

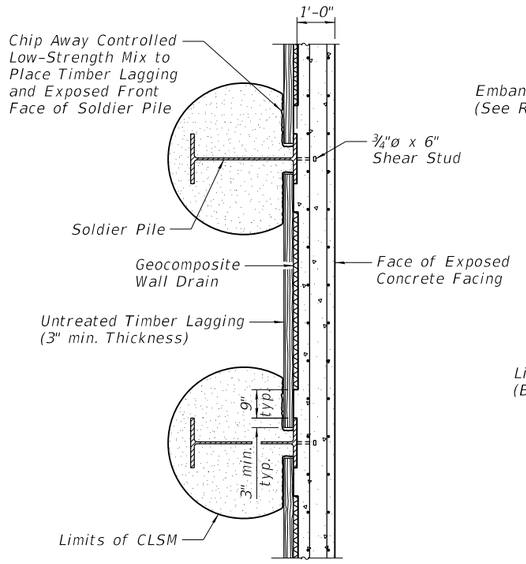
GENERAL DATA
RETAINING WALLS - JEFFERSON STREET
SHEET NO. 5 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	396
		CONTRACT NO. 93762		
	ILLINOIS	FED. AID PROJECT		

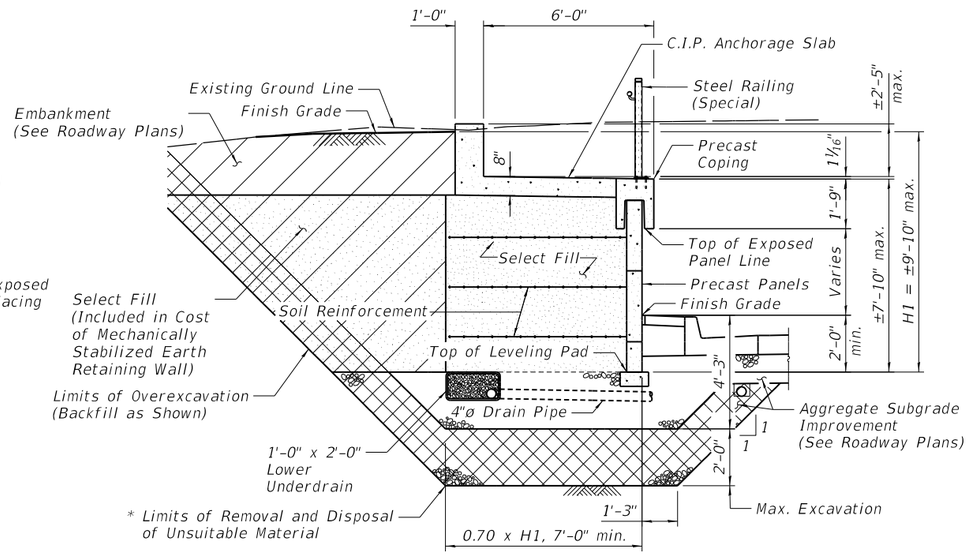


TYPICAL SOLDIER PILE WALL SECTION

* See General Plan and Elevation for anticipated limits.
See Roadway Plans for estimated quantity.

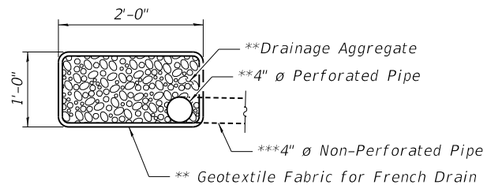


SECTION A-A
DRILLED SOLDIER PILE WALL



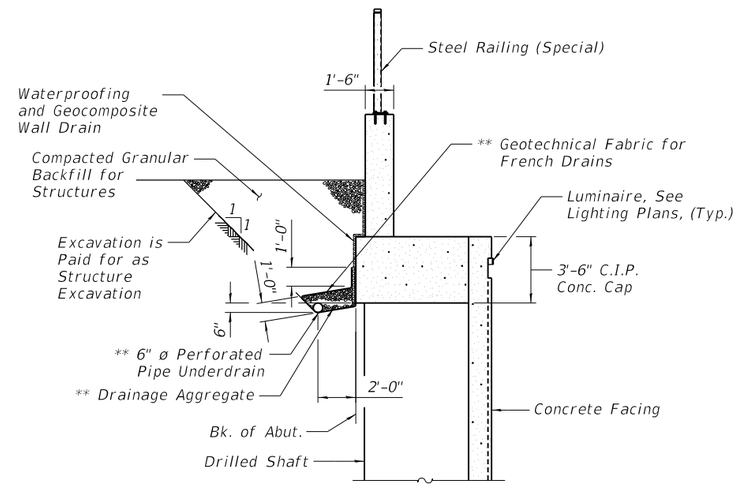
TYPICAL L-WALL SECTION

* See General Plan and Elevation for anticipated limits.
See Roadway Plans for estimated quantity.



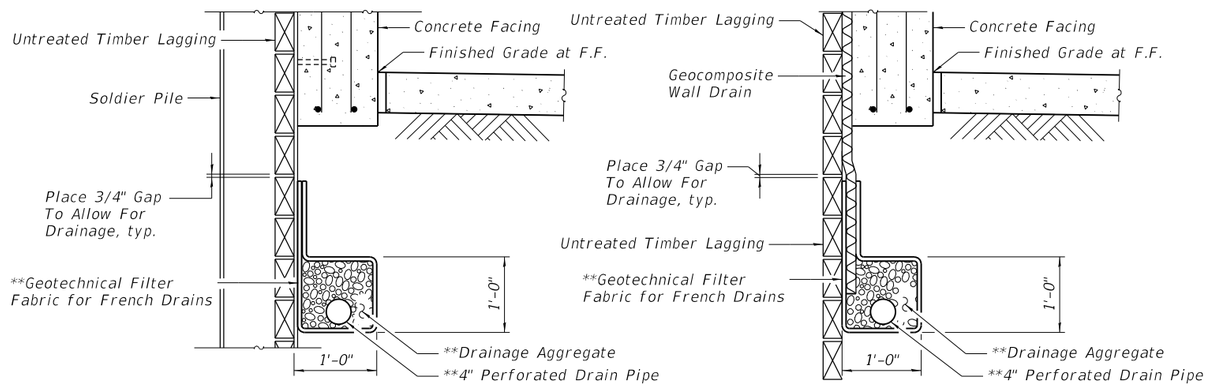
LOWER UNDERDRAIN DETAIL

** Included in the cost of Pipe Underdrains for Structures 4".
*** Included in the cost of Pipe Underdrains for Structures 4" (Special).



SECTION THRU TOP OF WALL BETWEEN ABUTMENTS

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



AT SOLDIER PILES

BETWEEN SOLDIER PILES

UPPER UNDERDRAIN DETAIL

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

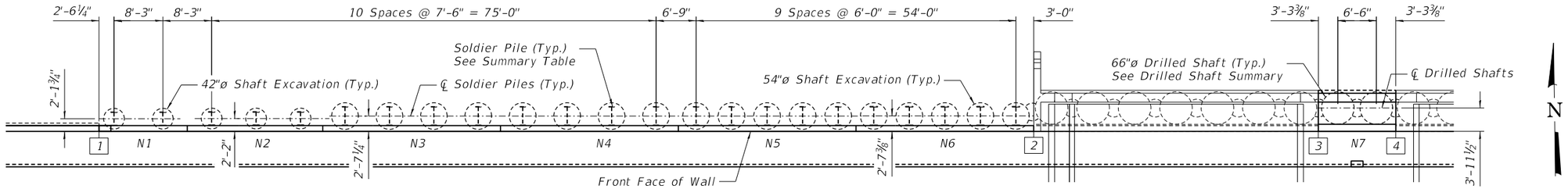
pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L0179B\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\09L0179B-Jefferson-Retaining-Wall-Plans.dgn

USER NAME = Johns00944	DESIGNED - KMS	REVISED -	
	CHECKED - RGC	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN - EJM	REVISED -	
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

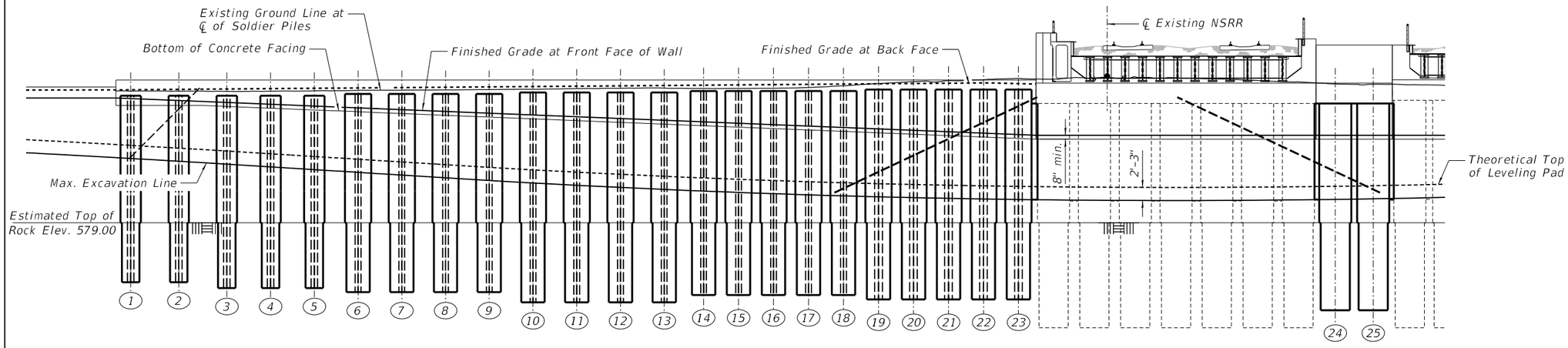
TYPICAL SECTIONS & DETAILS
RETAINING WALLS – JEFFERSON STREET
SHEET NO. 6 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	397
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			

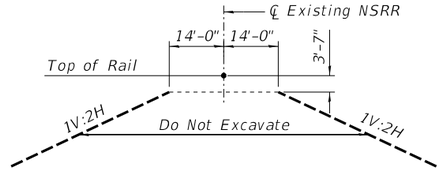


2 = Control Point

PLAN



ELEVATION



EXCAVATION NEAR ACTIVE TRACK

NORTH WALL STUD SHEAR CONNECTORS REQUIRED

Pile No.	Number Required on Each Pile
1-4	2
5-8	3
9-12	4
13-17	5
18-22	6
23	7

Space at 1'-6" Max. cts.

SOLDIER PILE SUMMARY

PILE NO.	PILE SIZE	LENGTH	BOTTOM ELEVATION	TOP ELEVATION	PILE NO.	PILE SIZE	LENGTH	BOTTOM ELEVATION	TOP ELEVATION
1	W27x146	32'-0"	568.80	600.80	13	W40x167	36'-0"	565.35	601.35
2	W27x146	32'-0"	568.80	600.80	14	W40x167	35'-0"	566.60	601.60
3	W27x194	33'-0"	567.80	600.80	15	W40x167	35'-0"	566.60	601.60
4	W27x194	33'-0"	567.80	600.80	16	W40x167	35'-0"	566.60	601.60
5	W27x194	33'-0"	567.80	600.80	17	W40x167	35'-0"	566.60	601.60
6	W40x167	34'-0"	567.10	601.10	18	W40x167	35'-0"	566.60	601.60
7	W40x167	34'-0"	567.10	601.10	19	W40x199	36'-0"	565.85	601.85
8	W40x167	34'-0"	567.10	601.10	20	W40x199	36'-0"	565.85	601.85
9	W40x167	34'-0"	567.10	601.10	21	W40x199	36'-0"	565.85	601.85
10	W40x167	36'-0"	565.35	601.35	22	W40x199	36'-0"	565.85	601.85
11	W40x167	36'-0"	565.35	601.35	23	W40x199	36'-0"	565.85	601.85
12	W40x167	36'-0"	565.35	601.35					

DRILLED SHAFT SUMMARY

SHAFT NO.	LENGTH	BOTTOM ELEVATION	TOP ELEVATION
24	35'-5½"	564.00	599.46
25	35'-5½"	564.00	599.46

SECANT LAGGING SUMMARY

BETWEEN SHAFTS NO.	DIAMETER	LENGTH	BOTTOM ELEV.	TOP ELEV.
23-BR	36"	16'-6"	582.96	599.46
BR-24	36"	16'-6"	582.96	599.46
24-25	36"	16'-6"	582.96	599.46
25-BR	36"	16'-6"	582.96	599.46

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Stud Shear Connectors	Each	98
Drilled Shafts In Soil	Cu. Yd.	36.0
Drilled Shafts In Rock	Cu. Yd.	25.5
Furnishing Soldier Piles (W Section)	Foot	798
Drilling and Setting Soldier Piles (In Soil)	Cu. Ft.	7778.6
Drilling and Setting Soldier Piles (In Rock)	Cu. Ft.	4009.9
Untreated Timber Lagging	Sq. Ft.	3272.1
Secant Lagging	Cu. Ft.	467

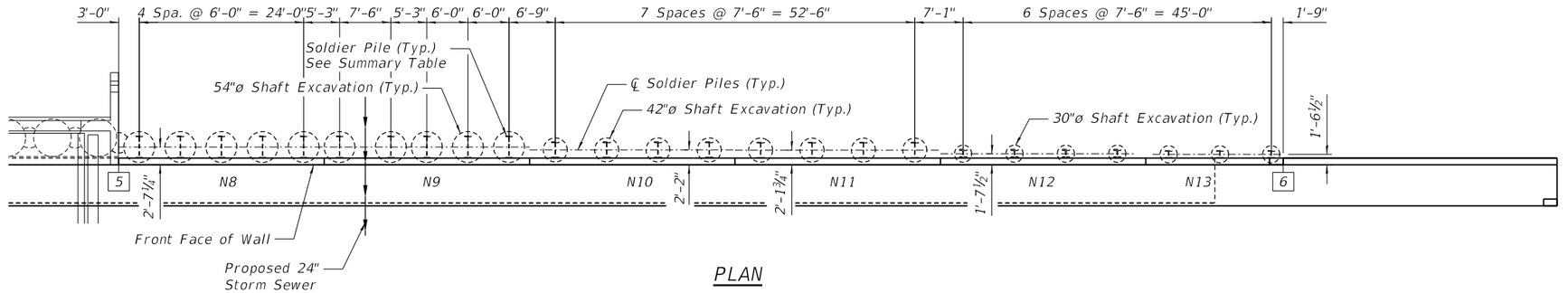
p:\\hansoninc-pw.bentley.com\hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\09L01798-Jefferson-Retaining-Wall-Plans.dgn

USER NAME = Johns00944	DESIGNED - KMS	REVISED -
	CHECKED - RGC	REVISED -
PLOT SCALE = 0.167 ' / in.	DRAWN - EJM	REVISED -
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOLDIER PILES – NORTH WALL
RETAINING WALLS – JEFFERSON STREET
SHEET NO. 7 OF 32 SHEETS

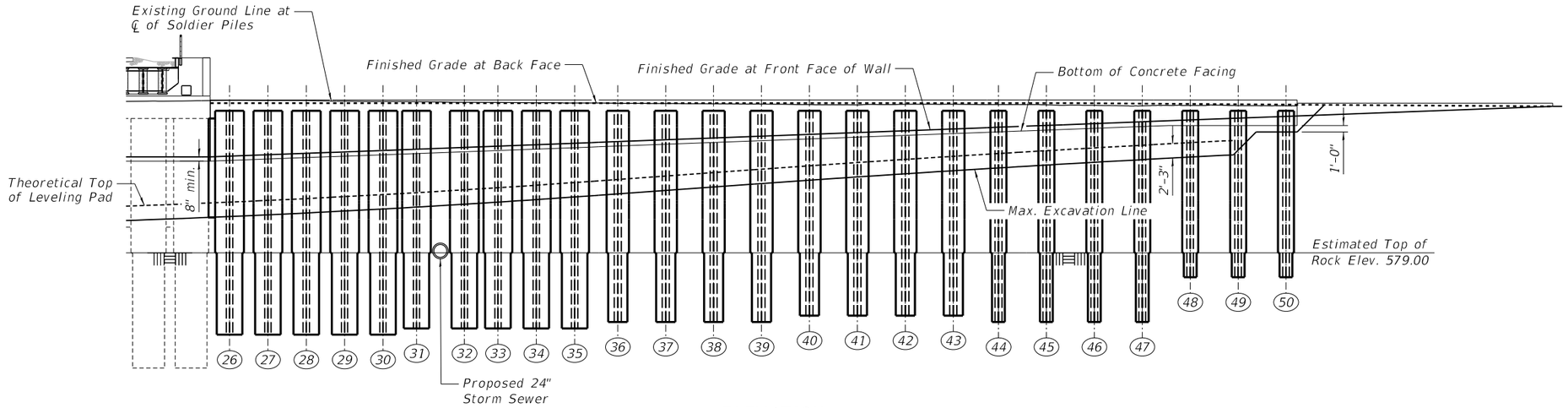
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	398
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			



PLAN

4 = Control Point

N



ELEVATION

SOLDIER PILE SUMMARY

PILE NO.	PILE SIZE	LENGTH	BOTTOM ELEVATION	TOP ELEVATION	PILE NO.	PILE SIZE	LENGTH	BOTTOM ELEVATION	TOP ELEVATION
26	W40x167	35'-0"	566.20	601.20	39	W27x194	33'-0"	568.20	601.20
27	W40x167	35'-0"	566.20	601.20	40	W27x146	32'-0"	569.20	601.20
28	W40x167	35'-0"	566.20	601.20	41	W27x146	32'-0"	569.20	601.20
29	W40x167	35'-0"	566.20	601.20	42	W27x146	32'-0"	569.20	601.20
30	W40x167	35'-0"	566.20	601.20	43	W27x146	32'-0"	569.20	601.20
31	W40x167	34'-0"	567.20	601.20	44	W12x230	33'-0"	568.20	601.20
32	W40x167	34'-0"	567.20	601.20	45	W12x230	33'-0"	568.20	601.20
33	W40x167	34'-0"	567.20	601.20	46	W12x230	33'-0"	568.20	601.20
34	W40x167	34'-0"	567.20	601.20	47	W12x230	33'-0"	568.20	601.20
35	W40x167	34'-0"	567.20	601.20	48	W12x106	26'-0"	575.20	601.20
36	W27x194	33'-0"	568.20	601.20	49	W12x106	26'-0"	575.20	601.20
37	W27x194	33'-0"	568.20	601.20	50	W12x106	26'-0"	575.20	601.20
38	W27x194	33'-0"	568.20	601.20					

SECANT LAGGING SUMMARY

BETWEEN SHAFTS NO.	DIAMETER	LENGTH	BOTTOM ELEV.	TOP ELEV.
BR-26	36"	15'-5"	584.54	600.02

NORTH WALL STUD SHEAR CONNECTORS REQUIRED

Pile No.	Number Required on Each Pile
26-30	6
31-36	5
37-42	4
43-50	3

Space at 1'-6" Max. cts.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Stud Shear Connectors	Each	108
Furnishing Soldier Piles (W Section)	Foot	815
Drilling and Setting Soldier Piles (In Soil)	Cu. Ft.	6342.4
Drilling and Setting Soldier Piles (In Rock)	Cu. Ft.	2881.8
Secant Lagging	Cu. Ft.	109

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\09L01798-Jefferson-Retaining-Wall-Plans.dgn

HANSON

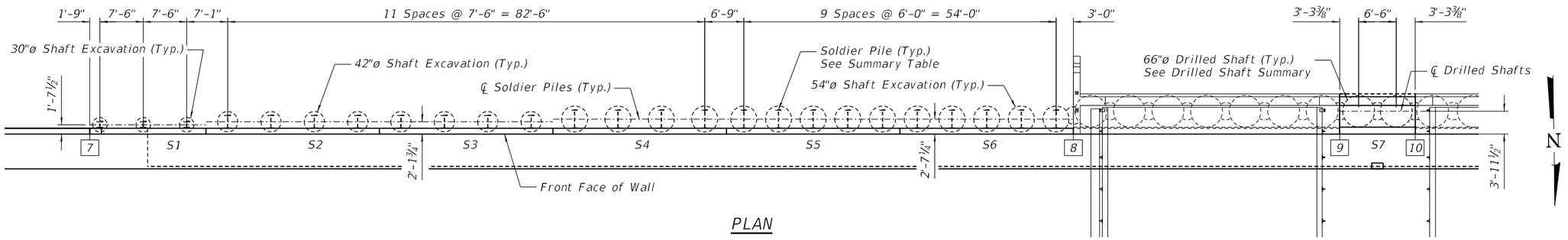
USER NAME = Johns00944	DESIGNED - KMS	REVISED -
	CHECKED - RGC	REVISED -
PLOT SCALE = 0.167 ' / in.	DRAWN - EJM	REVISED -
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOLDIER PILES – NORTH WALL
RETAINING WALLS – JEFFERSON STREET

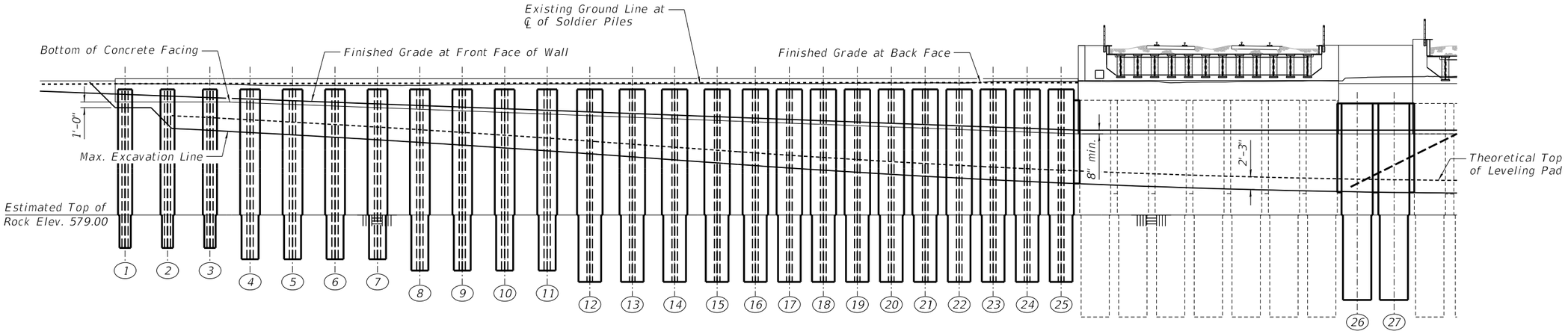
SHEET NO. 8 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	399
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			



8 = Control Point

PLAN



ELEVATION

SOUTH WALL STUD SHEAR CONNECTORS REQUIRED

Pile No.	Number Required on Each Pile
1-3	2
4-8	3
9-14	4
15-20	5
21-25	6

Space at 1'-6" Max. cts.

SOLDIER PILE SUMMARY

PILE NO.	PILE SIZE	LENGTH	BOTTOM ELEVATION	TOP ELEVATION	PILE NO.	PILE SIZE	LENGTH	BOTTOM ELEVATION	TOP ELEVATION
1	W12x230	28'-0"	573.20	601.20	14	W40x167	34'-0"	567.20	601.20
2	W12x230	28'-0"	573.20	601.20	15	W40x167	34'-0"	567.20	601.20
3	W12x230	28'-0"	573.20	601.20	16	W40x167	34'-0"	567.20	601.20
4	W27x146	30'-0"	571.20	601.20	17	W40x167	34'-0"	567.20	601.20
5	W27x146	30'-0"	571.20	601.20	18	W40x167	34'-0"	567.20	601.20
6	W27x146	30'-0"	571.20	601.20	19	W40x167	34'-0"	567.20	601.20
7	W27x146	30'-0"	571.20	601.20	20	W40x167	34'-0"	567.20	601.20
8	W27x146	32'-0"	569.20	601.20	21	W40x167	34'-0"	567.20	601.20
9	W27x146	32'-0"	569.20	601.20	22	W40x167	34'-0"	567.20	601.20
10	W27x146	32'-0"	569.20	601.20	23	W40x167	34'-0"	567.20	601.20
11	W27x146	32'-0"	569.20	601.20	24	W40x167	34'-0"	567.20	601.20
12	W40x167	34'-0"	567.20	601.20	25	W40x167	34'-0"	567.20	601.20
13	W40x167	34'-0"	567.20	601.20					

DRILLED SHAFT SUMMARY

SHAFT NO.	LENGTH	BOTTOM ELEVATION	TOP ELEVATION
26	34'-8¾"	564.00	598.73
27	34'-8¾"	564.00	598.73

SECANT LAGGING SUMMARY

BETWEEN SHAFTS NO.	DIAMETER	LENGTH	BOTTOM ELEV.	TOP ELEV.
25-BR	36"	14'-8"	584.60	599.27
BR-26	36"	15'-9"	583.00	598.75
26-27	36"	15'-9"	583.00	598.75
27-BR	36"	15'-9"	583.00	598.75

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Stud Shear Connectors	Each	105
Drilled Shafts In Soil	Cu. Yd.	34.8
Drilled Shafts In Rock	Cu. Yd.	25.5
Furnishing Soldier Piles (W Section)	Foot	808
Drilling and Setting Soldier Piles (In Soil)	Cu. Ft.	7305.1
Drilling and Setting Soldier Piles (In Rock)	Cu. Ft.	3232.2
Untreated Timber Lagging	Sq. Ft.	3324.6
Secant Lagging	Cu. Ft.	438

pw:\\hansoninc-pw.bentley.com:hanson-pw-01\Documents\09Jobs\09L01798\Usable Segments III - V - VI\CAD\Struct\Usable Segment III\Jefferson\Sheet\09L01798-Jefferson-Retaining-Wall-Plans.dgn

HANSON

USER NAME = Johns00944	DESIGNED - KMS	REVISED -
	CHECKED - RGC	REVISED -
PLOT SCALE = 0.167 ' / in.	DRAWN - EJM	REVISED -
PLOT DATE = 11/1/2021	CHECKED - RGC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOLDIER PILES – SOUTH WALL
RETAINING WALLS – JEFFERSON STREET

SHEET NO. 9 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
67,67A	20-00491-00-BR	SANGAMON	509	400
		CONTRACT NO. 93762		
	ILLINOIS FED. AID PROJECT			