

Benchmark: Railroad spike set in power pole with light at U.S. 30
Sta. 350+00.49 Offset 39.50' (RT) South of U.S. 30 Elev. 702.56

Existing Structure: None

LOADING HL-93
Allow 50#/sq. ft. for future wearing surface.

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.091
Design Spectral Acceleration at 0.2 sec. (S_{D5}) = 0.164
Soil Site Class = D



Joel Thode
DATE SIGNED: 11-17-2022
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 of the style of structure and complies with the requirements of the current AASHTO LRFD Bridge Design Specifications.

DESIGN SPECIFICATIONS

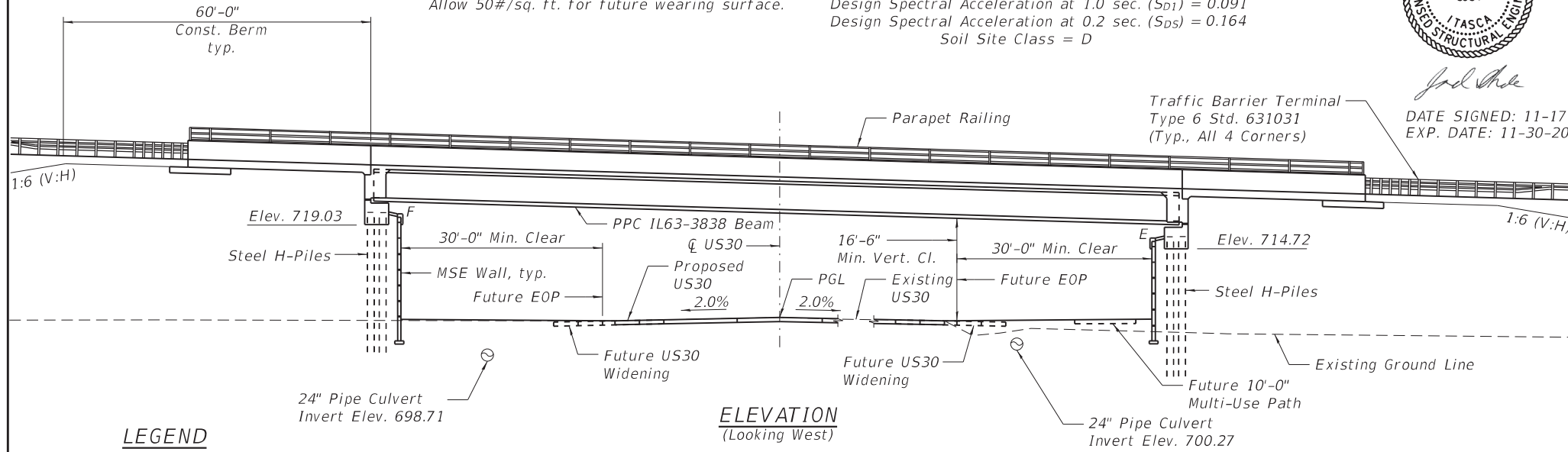
2020 AASHTO LRFD Bridge Design Specifications, 9th Edition

DESIGN STRESSES

FIELD UNITS
f'c = 4,000 psi (Bridge Deck)
f'c = 3,500 psi (typ.)
fy = 60,000 psi (Reinforcement)

PRECAST UNITS
f'c = 4,500 psi (Precast Panels)
f'c = 6,000 psi (Precast Approach Slab)
f'ci = 5,000 psi (Precast Approach Slab)

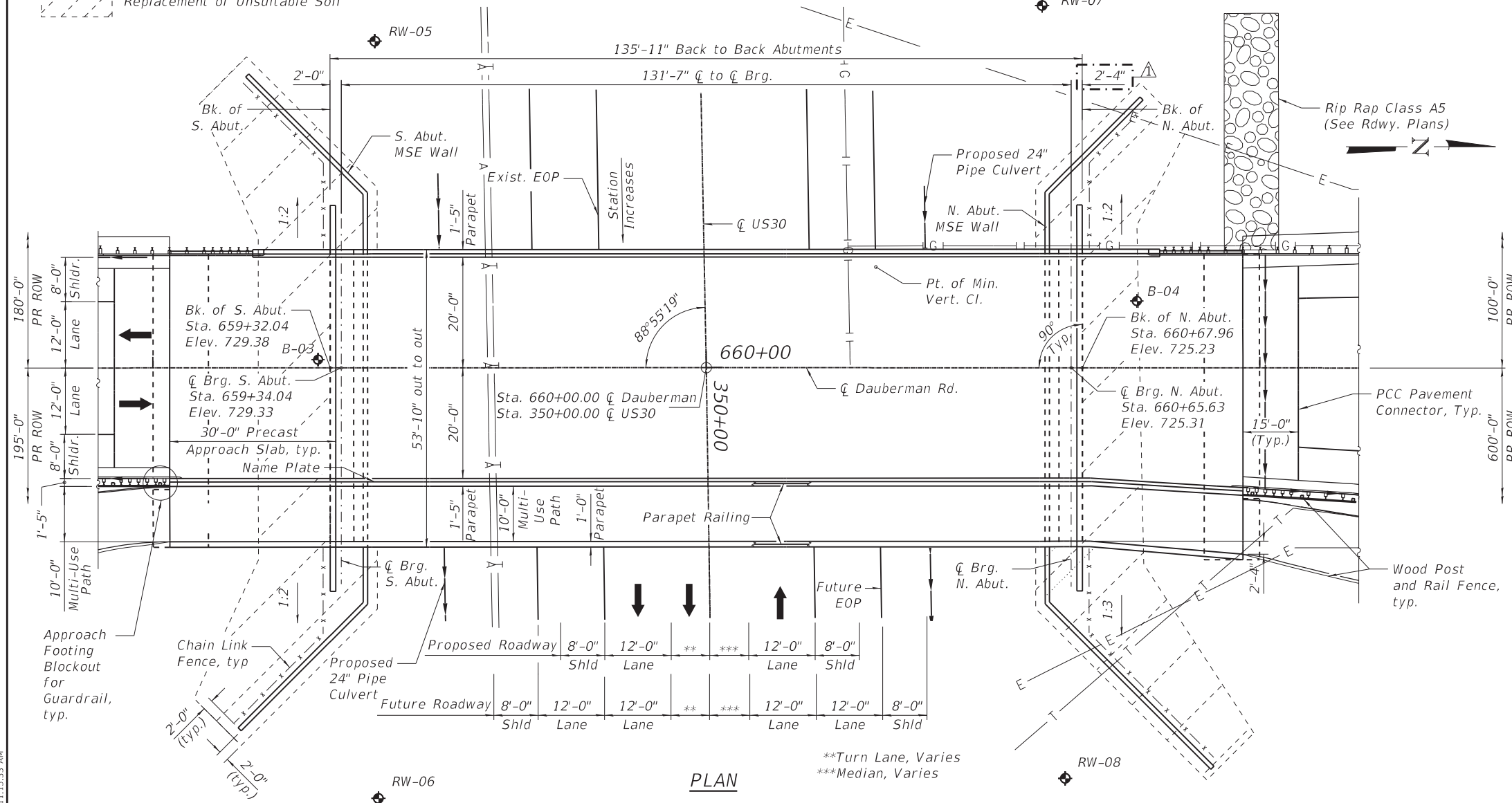
PRECAST PRESTRESSED UNITS
f'c = 8,500 psi
f'ci = 6,500 psi
fpu = 270,000 psi (0.6" \emptyset low lax strands)
fpbt = 202,300 psi (0.6" \emptyset low lax strands)



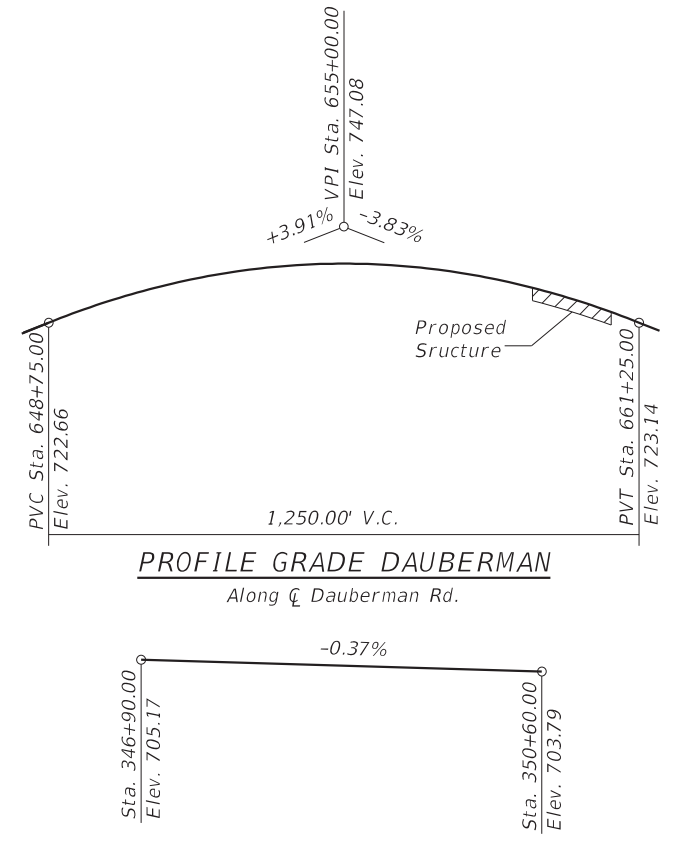
ELEVATION
(Looking West)

LEGEND

Approximate Limits of Removal and Replacement of Unsuitable Soil

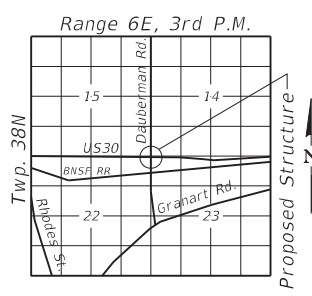


PLAN



PROFILE GRADE DAUBERMAN
Along ζ Dauberman Rd.

PROPOSED & FUTURE PROFILE GRADE US30
Along ζ US30



LOCATION SKETCH

GENERAL PLAN & ELEVATION
DAUBERMAN ROAD (F.A.S. 1107)
OVER US ROUTE 30
SECTION 15-00277-01-BR
KANE COUNTY
STATION 660+00.00
STRUCTURE NO. 045-3402

11/15/23 AM



USER NAME = dkierpiec	DESIGNED - HB	REVISED - DK 12-22-2022
PLOT SCALE = NTS	CHECKED - TJJ	REVISED -
PLOT DATE = 1/4/2023	DRAWN - HB	REVISED -
	CHECKED - TJJ	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
STRUCTURE NO. 045-3402

SHEET NO. 1 OF 38 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1107	15-00277-01-BR	KANE	542	246
CONTRACT NO. 61H95				

ILLINOIS FED. AID PROJECT

GENERAL NOTES

Reinforcement bars designated (E) shall be epoxy coated.

Slipforming of the parapets is not allowed.

The embankment configuration shown shall be the minimum that must be placed and compacted prior to construction of the abutments.

1. Locate existing utilities that are to remain. Contractor to coordinate any required improvements to or removals of existing utilities with utility owner(s). See Civil Plans.
2. Complete the Removal and Disposal of Unsuitable Materials and replace with Porous Granular Embankment.
3. Drive the Piles.
4. Construct the abutments and MSE walls.
5. Place the Precast Prestressed Concrete Beams on the abutments.
6. Construct the bridge deck, parapets, and railings.

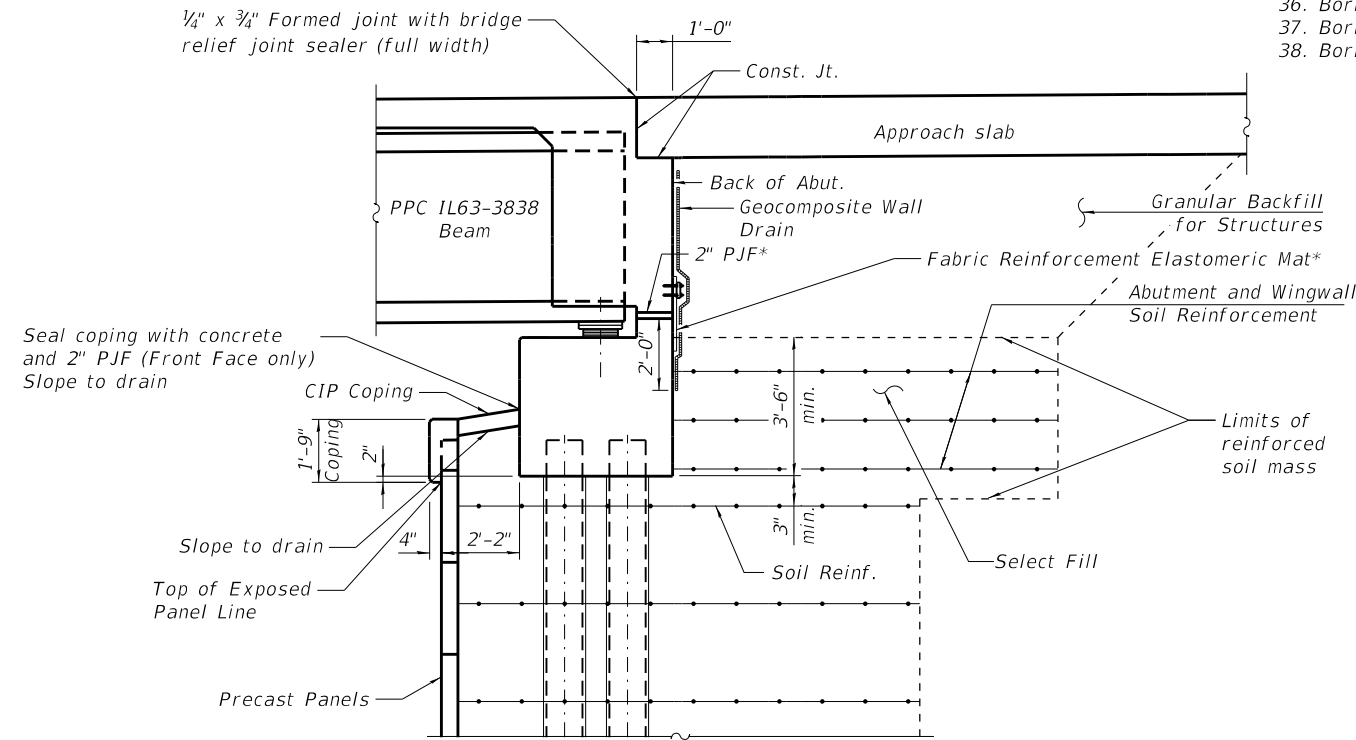
*See Diaphragm Details sht. 11 of 38.

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4. Top of Slab Elevations II
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6. Top of North Approach Slab Elevations
7. Superstructure Plan
8. Superstructure Cross Section
9. Parapet and Path Cross Sections
10. Parapet Elevations
11. Diaphragm Details
12. Superstructure Details
13. South Precast Bridge Approach Slab
14. North Precast Bridge Approach Slab
15. Precast Bridge Approach Slab Details I
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18. Bridge Approach Slab Parapet Elevations
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37. Boring Logs (4 of 5)
38. Boring Logs (5 of 5)

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment	Cu Yd	-	1087	1087
Structure Excavation	Cu Yd	-	638	638
Removal And Disposal Of Unsuitable Material For Structures	Cu Yd	-	1087	1087
Concrete Structures	Cu Yd	-	106.7	106.7
Concrete Superstructure	Cu Yd	307.0	-	307.0
Protective Coat	Sq Yd	224	-	224
Furnishing And Erecting Precast Prestressed Concrete Beams, IL63	Foot	932	-	932
Reinforcement Bars, Epoxy Coated	Pound	82,960	6,170	89,130
Parapet Railing	Foot	384	-	384
Furnishing Steel Piles Hp12X53	Foot	-	3080	3080
Driving Piles	Foot	-	3080	3080
Test Pile Steel Hp12X53	Each	-	2	2
Pile Shoes	Each	-	30	30
Name Plates	Each	1	-	1
Preformed Joint Strip Seal	Foot	110.5	-	110.5
Elastomeric Bearing Assembly, Type I	Each	7	-	7
Anchor Bolts, 1 1/2"	Each	28	-	28
Mechanically Stabilized Earth Retaining Wall	Sq Ft	-	4705	4705
Granular Backfill For Structures	Cu Yd	-	338	338
Geocomposite Wall Drain	Sq Yd	-	132	132
Chain Link Fence, 4'	Foot	209	-	209
Anti-Graffiti Coating	Sq Ft	-	4506	4506
Concrete Wearing Surface, 5"	Sq Yd	271	-	271
Precast Bridge Approach Slab	Sq Ft	3251	-	3251
Bridge Deck Thin Polymer Overlay 3/8"	Sq Yd	867	-	867



SECTION THRU ABUTMENT
 (North Abutment shown, South Abutment similar)
 (See sheets 30 thru 32 of 38 for MSE Wall details)

BUILT 202_ BY
 KANE COUNTY
 SEC. 15-00277-01-BR
 F.A.S. RT. 1107 STA. 660+00.00
 STR. NO. 045-3402 LOADING HL-93

NAME PLATE
 See Std. 515001

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DEPARTMENT OF TRANSPORTATION

GENERAL DATA
STRUCTURE NO. 045-3402

SHEET NO. 2 OF 38 SHEETS

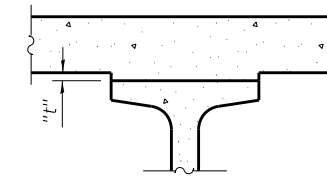
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1107	15-00277-01-BR	KANE	542	247
				CONTRACT NO. 61H95
		ILLINOIS	FED. AID PROJECT	

BEAM 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Back of South Abut.	659+32.04	-18.50	729.01	729.01
☉ Brg. South Abut.	659+34.04	-18.50	728.96	728.96
A	659+44.04	-18.50	728.69	728.73
B	659+54.04	-18.50	728.42	728.49
C	659+64.04	-18.50	728.14	728.25
D	659+74.04	-18.50	727.85	727.99
E	659+84.04	-18.50	727.56	727.71
F	659+94.04	-18.50	727.26	727.42
G	660+04.04	-18.50	726.95	727.12
H	660+14.04	-18.50	726.64	726.80
I	660+24.04	-18.50	726.32	726.47
J	660+34.04	-18.50	726.00	726.12
K	660+44.04	-18.50	725.67	725.75
L	660+54.04	-18.50	725.33	725.38
☉ Brg. North Abut.	660+65.63	-18.50	724.94	724.94
Back of North Abut.	660+67.96	-18.50	724.86	724.86

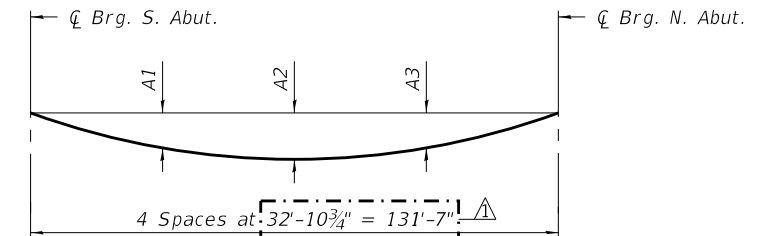
BEAM 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Back of South Abut.	659+32.04	-10.50	729.17	729.17
☉ Brg. South Abut.	659+34.04	-10.50	729.12	729.12
A	659+44.04	-10.50	728.85	728.89
B	659+54.04	-10.50	728.58	728.66
C	659+64.04	-10.50	728.30	728.42
D	659+74.04	-10.50	728.01	728.16
E	659+84.04	-10.50	727.72	727.89
F	659+94.04	-10.50	727.42	727.60
G	660+04.04	-10.50	727.11	727.30
H	660+14.04	-10.50	726.80	726.98
I	660+24.04	-10.50	726.48	726.64
J	660+34.04	-10.50	726.16	726.29
K	660+44.04	-10.50	725.83	725.92
L	660+54.04	-10.50	725.49	725.55
☉ Brg. North Abut.	660+65.63	-10.50	725.10	725.10
Back of North Abut.	660+67.96	-10.50	725.02	725.02



To determine "t": After all precast prestressed beams have been erected, elevations of the top flanges of the beams shall be taken at intervals shown below. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflections" shown below, minus slab thickness, equals the fillet heights "t" above top flanges of beams.

FILLET HEIGHTS

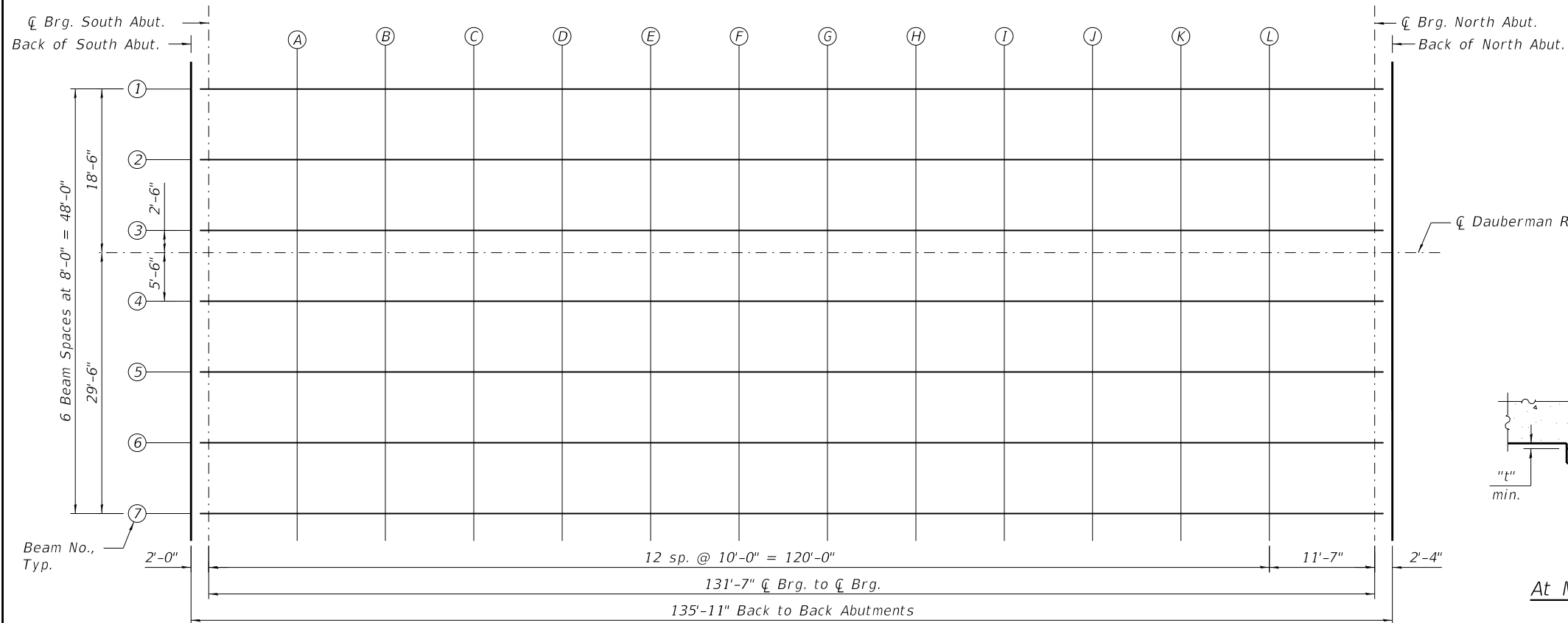
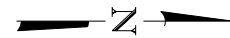


DEAD LOAD DEFLECTION DIAGRAM

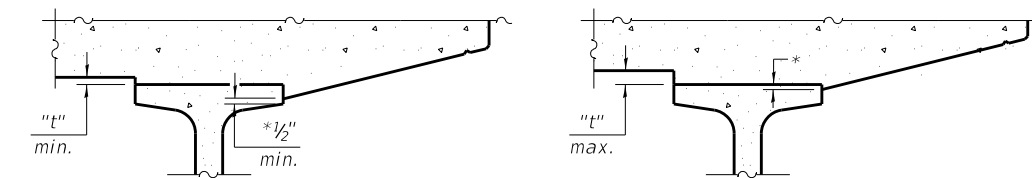
(Includes weight of concrete, excluding beams)

Note:
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown in these plans.

Beam No.	A1	A2	A3
1 & 7	1 3/8"	2"	1 3/8"
2 thru 6	1 5/8"	2 1/4"	1 5/8"



PLAN



At Minimum Fillet

At Maximum Fillet

NOTE:

Top of deck elevations shown on this sheet do not include adjustments for the 3/8" polymer overlay.

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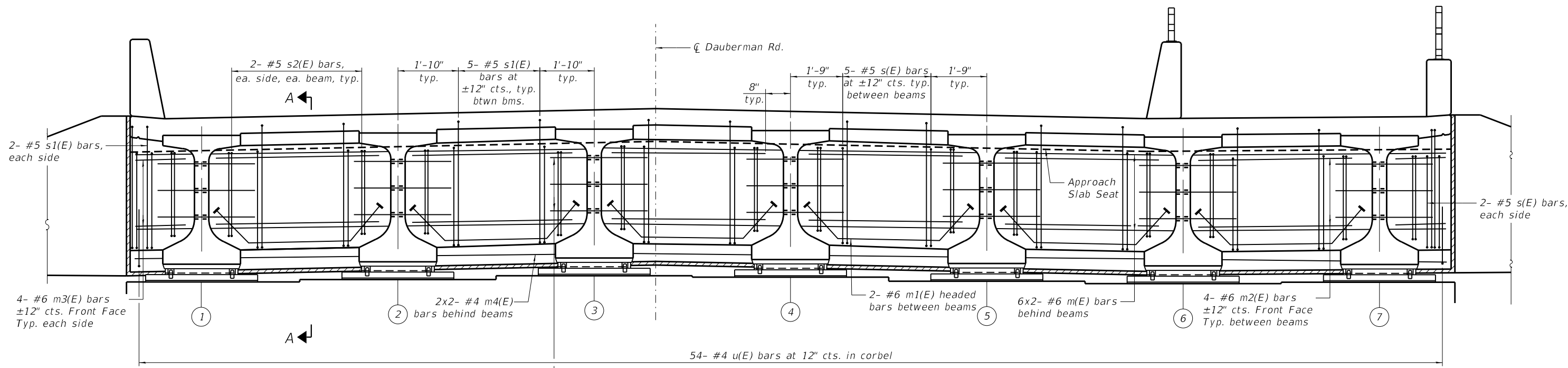
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TOP OF SLAB ELEVATIONS I
STRUCTURE NO. 045-3402**

SHEET NO. 3 OF 38 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1107	15-00277-01-BR	KANE	542	248
CONTRACT NO. 61H95				

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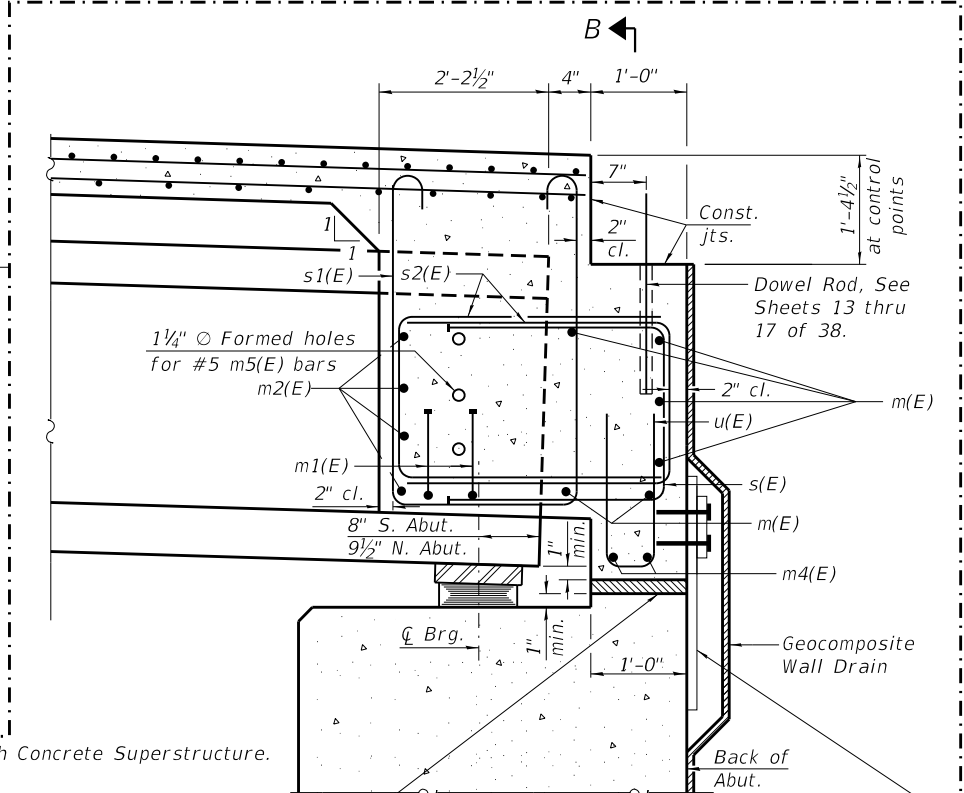


DIAPHRAGM ELEVATION AT ABUTMENT
(North Abutment Shown, South Abutment Similar)

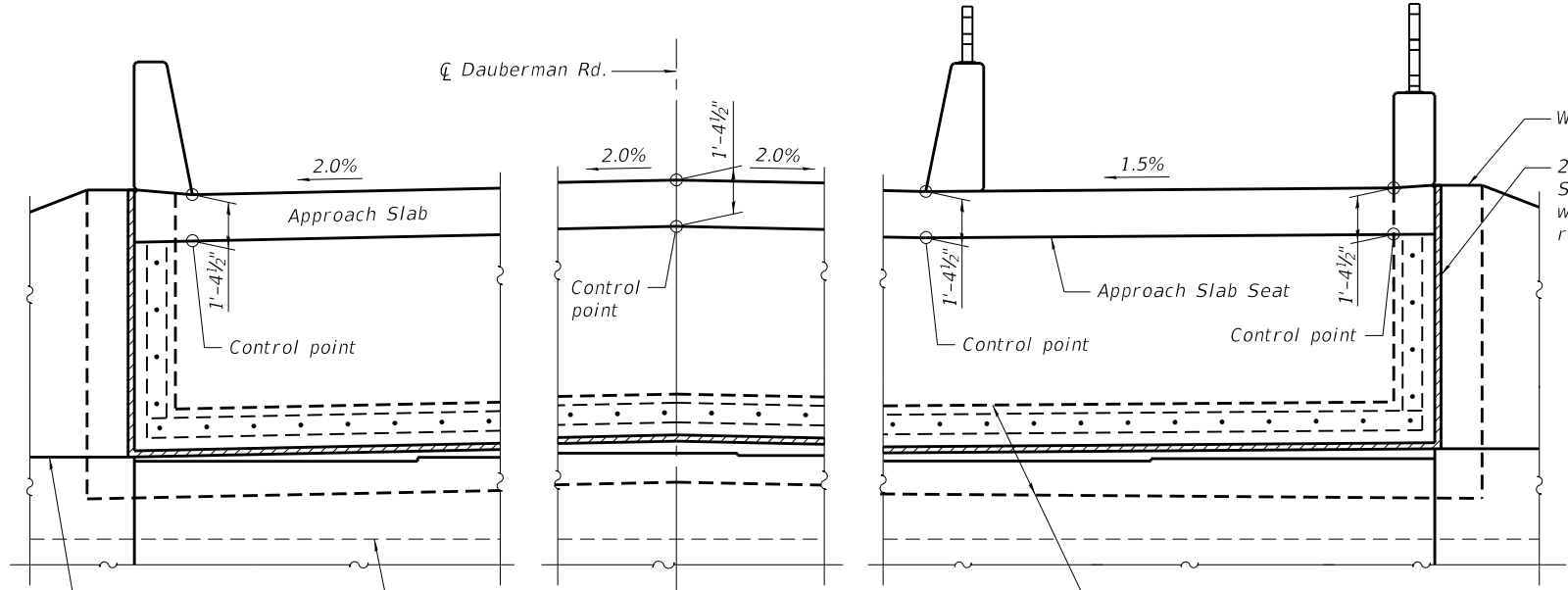
3- #5 m5(E) bars, typ. placed thru 1 1/4" \varnothing formed holes in each beam, 4-0" long. Secure bars such that they remain centered and level during the pouring of the concrete.

Notes:

Reinforcement bars in diaphragm are billed with superstructure on sheet 12 of 38. Concrete in diaphragm is included with Concrete Superstructure on sheet 12 of 38. For details of bars s(E), s1(E), s2(E) and u(E) see sheet 12 of 38. The approach slab seat shall have a constant slopes determined from the control points shown. Bars indicated thus 6x2-#6 etc. indicates 6 lines of bars with 2 lengths per line.



Fabric Reinforced Elastomeric Mat according to Section 1028 of the Standard Specifications. Fabric mat shall be 24" wide and attached full width and vertically at edges to the abutment cap with a 3/8" x 5" steel plate and 1/2" \varnothing studs with nuts and washers at 12" cts. according to Article 1006.29(d) of the Standard Specifications. *



MINIMUM BAR LAP
#4 bar = 2'-5"
#6 bar = 3'-7"

* Cost included with Concrete Superstructure.
2" PJF (per Article 1051.09 of the Standard Specifications) full width and vertically at edges bonded to abutment cap with suitable adhesive as recommended by supplier. *

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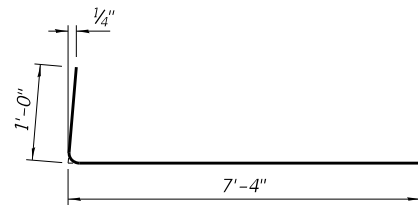
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PLOT DATE = 1/4/2023	CHECKED - TJJ	REVISIONS -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

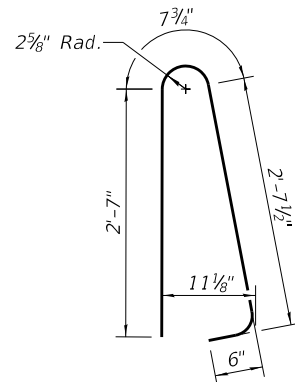
**DIAPHRAGM DETAILS
STRUCTURE NO. 045-3402**

SHEET NO. 11 OF 38 SHEETS

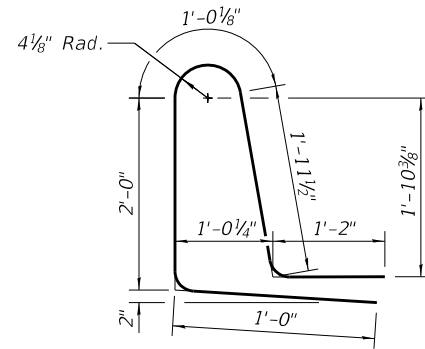
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			CONTRACT NO. 61H95	
ILLINOIS FED. AID PROJECT				



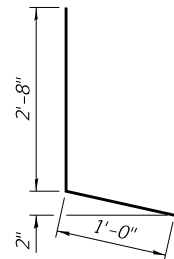
BAR a3(E)



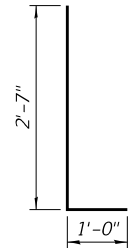
BAR d(E)



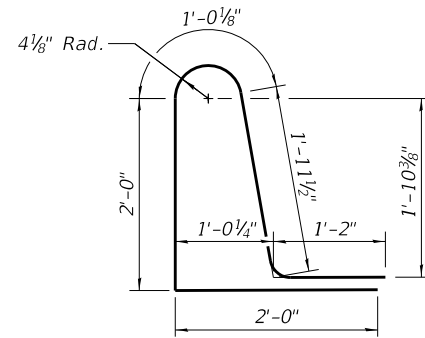
BAR d1(E)



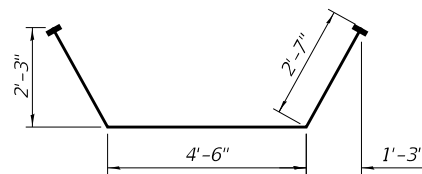
BAR d3(E)



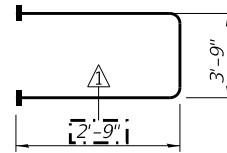
BAR d4(E)



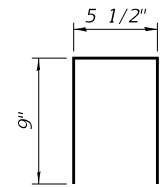
BAR d2(E)



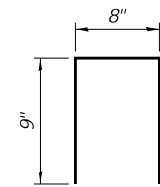
BAR m1(E)
(Headed)



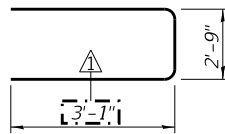
BARS s(E)
(Headed)



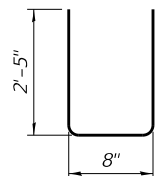
BAR d5(E)



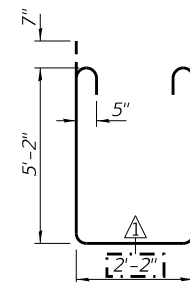
BAR d6(E)



BARS s2(E)



BAR u(E)



BAR s1(E)

**SUPERSTRUCTURE
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a(E)	360	#5	28'-7"	—
a1(E)	269	#5	32'-6"	—
a2(E)	269	#5	24'-8"	—
a3(E)	538	#6	8'-4"	└
b(E)	290	#5	29'-9"	—
b1(E)	288	#5	25'-5"	—
d(E)	404	#5	6'-5"	└
d1(E)	202	#5	7'-2"	└
d2(E)	202	#5	8'-2"	└
d3(E)	135	#4	3'-8"	└
d4(E)	135	#6	3'-7"	└
d5(E)	32	#4	1'-11 1/2"	└
d6(E)	32	#4	2'-2"	└
e(E)	160	#4	16'-4"	—
e1(E)	40	#4	28'-10"	—
m(E)	24	#6	28'-8"	—
m1(E)	24	#6	9'-8"	└
m2(E)	48	#6	6'-8"	—
m3(E)	16	#6	2'-1"	—
m4(E)	8	#4	28'-1"	—
m5(E)	42	#5	4'-0"	—
s(E)	68	#5	9'-3"	└
s1(E)	68	#5	13'-8"	└
s2(E)	56	#5	18'-11"	└
u(E)	108	#4	5'-5"	U
Reinforcement Bars, Epoxy Coated			Lbs.	64,510
Concrete Superstructure			Cu. Yd.	289.9
Protective Coat			Sq. Yd.	182
Bridge Deck Thin Polymer Overlay 3/8"			Sq. Yd.	596

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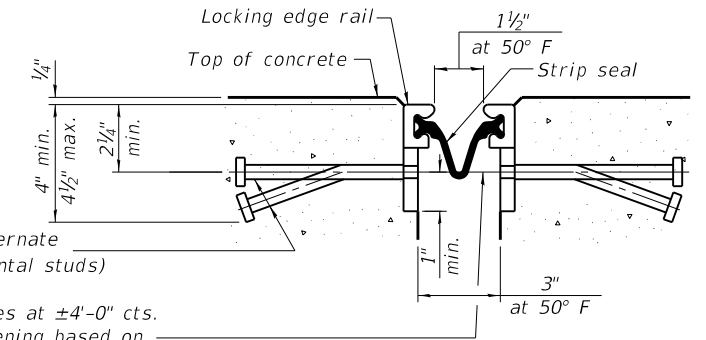
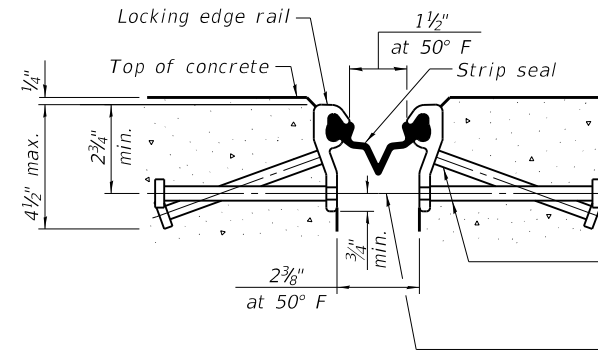
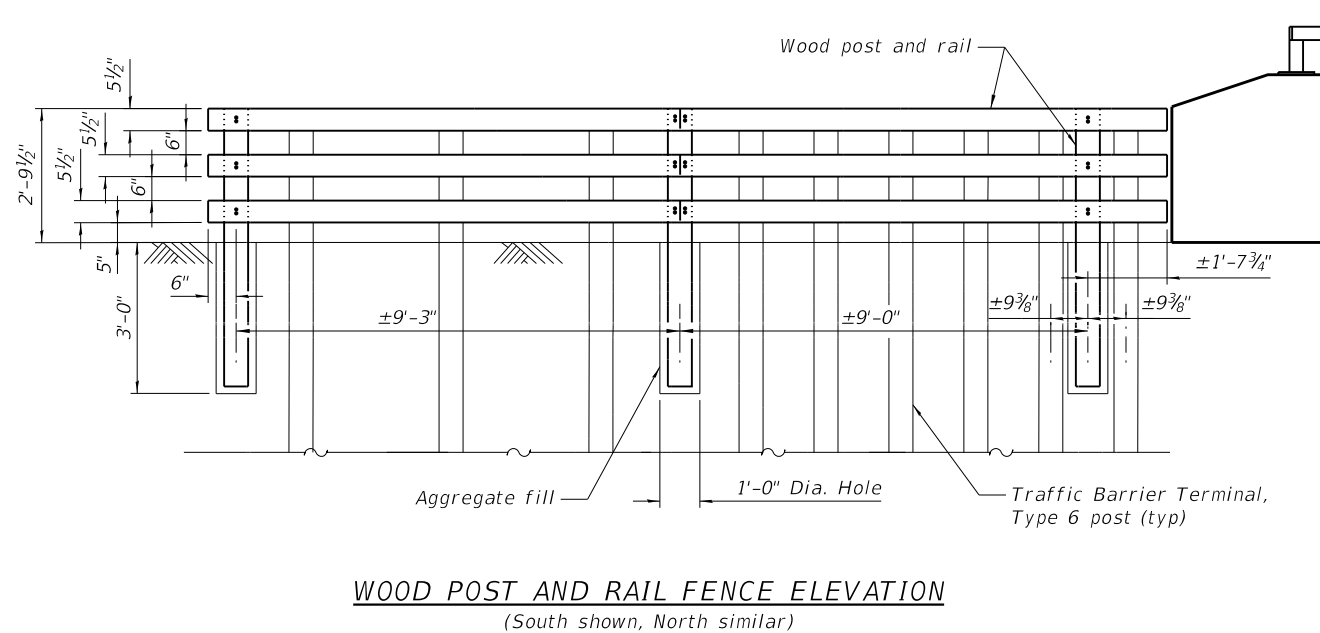
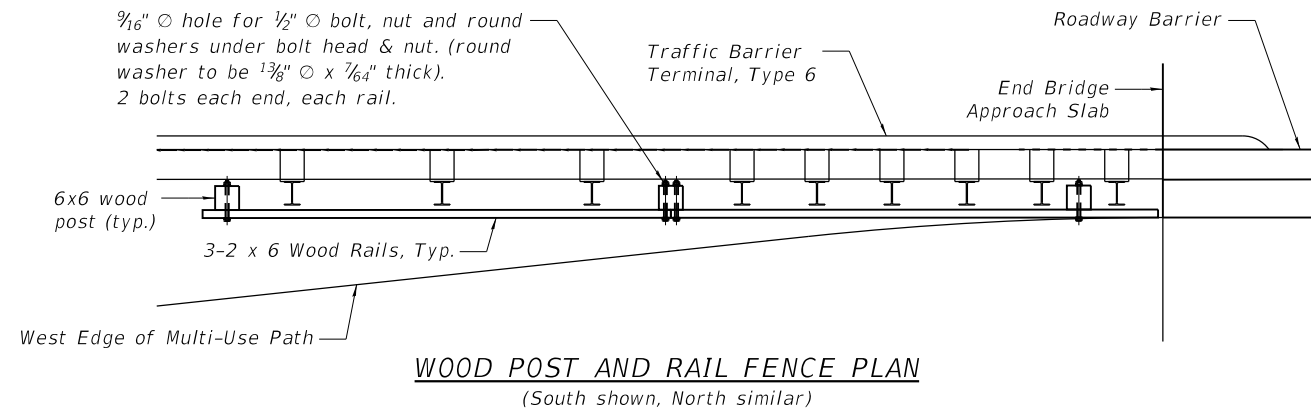
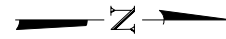
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CHECKED - TJJ	REVISIONS	
PLOT SCALE = NTS	DRAWN - HB	REVISIONS
PLOT DATE = 1/4/2023	CHECKED - TJJ	REVISIONS

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DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS
STRUCTURE NO. 045-3402

SHEET NO. 12 OF 38 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1107	15-00277-01-BR	KANE	542	257
			CONTRACT NO. 61H95	
ILLINOIS FED. AID PROJECT				

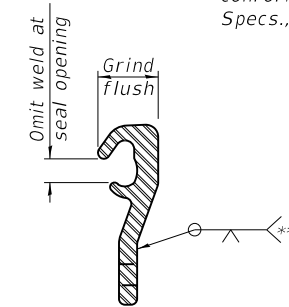


* 5/8" Ø x 6" studs @ 6" cts. (alternate angled/bent studs with horizontal studs)

3/8" Ø threaded rods in 7/16" Ø holes at ±4'-0" cts. for holding the proper joint opening based on the temperature during the deck pour. Place to miss studs. All rods shall be burned, or sawed off flush with the plates after concrete is set.

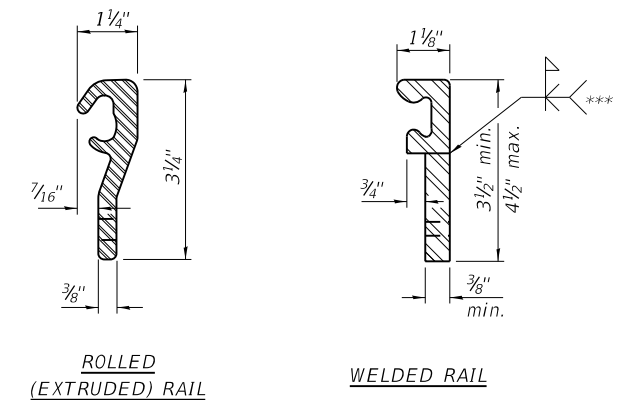
SECTION A-A

* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



LOCKING EDGE RAIL SPLICE

Rolled rail shown, welded rail similar.



LOCKING EDGE RAIL

Notes:

The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the locking edge rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

The locking edge rails depicted configured for typical applications and are conceptual only. The actual configuration of the locking edge rails and matching strip seal may vary from manufacturer to manufacturer provided they fit the application and meet the minimum anchorage shown. Flanged edge rails, however, will not be allowed. Locking edge rails may exceed the 4 1/2" maximum depth provided the anchorage system is revised according to the manufacturer's recommendation.

The manufacturer's recommended installation methods shall be followed. All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

The Maximum space between locking edge rail segments shall be 3/16" and sealed with a suitable sealant; however, any rail joint within 10' measured perpendicular to the face of the curb or parapet shall be welded as shown in the locking edge rail splice detail.

Cost of parapet sliding plates, embedded plates, and anchorage studs included with Preformed Joint Strip Seal.

39" constant slope barrier shown, 44" constant slope barrier similar as noted.

The concrete opening below the strip seal will vary based on the locking edge rail chosen by the Contractor. Deck and parapet lengths shown elsewhere in the plans are dimensioned to the concrete opening, not the joint opening, and are based on the rolled locking edge rail. If the Contractor elects to use a different locking edge rail, dimensional adjustments may be required. One exception to this would be the strip seal joint at the end of the precast bridge approach slab. For these cases the pavement connector length shall be adjusted, not the length of the bridge approach slab.

BILL OF MATERIAL

Item	Unit	Quantity
Preformed Joint Strip Seal	Foot	110.5

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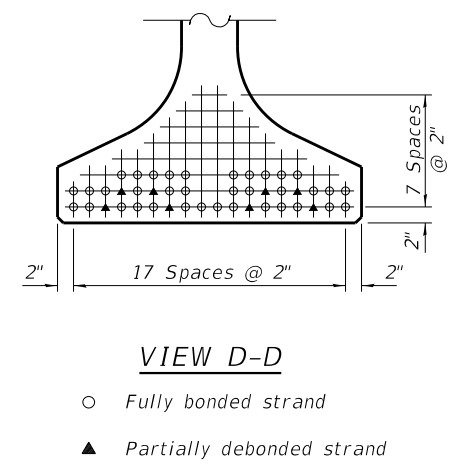
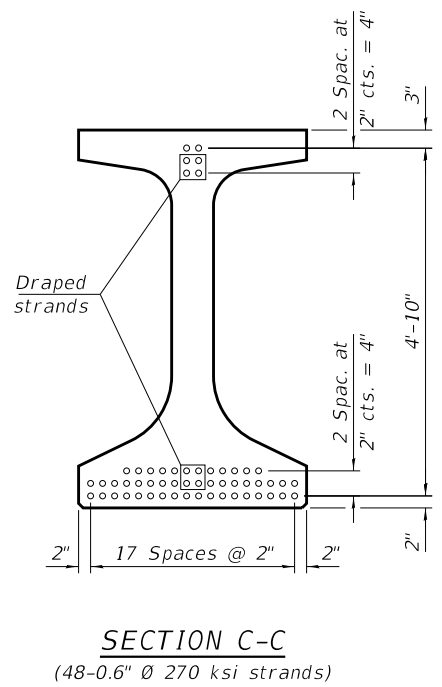
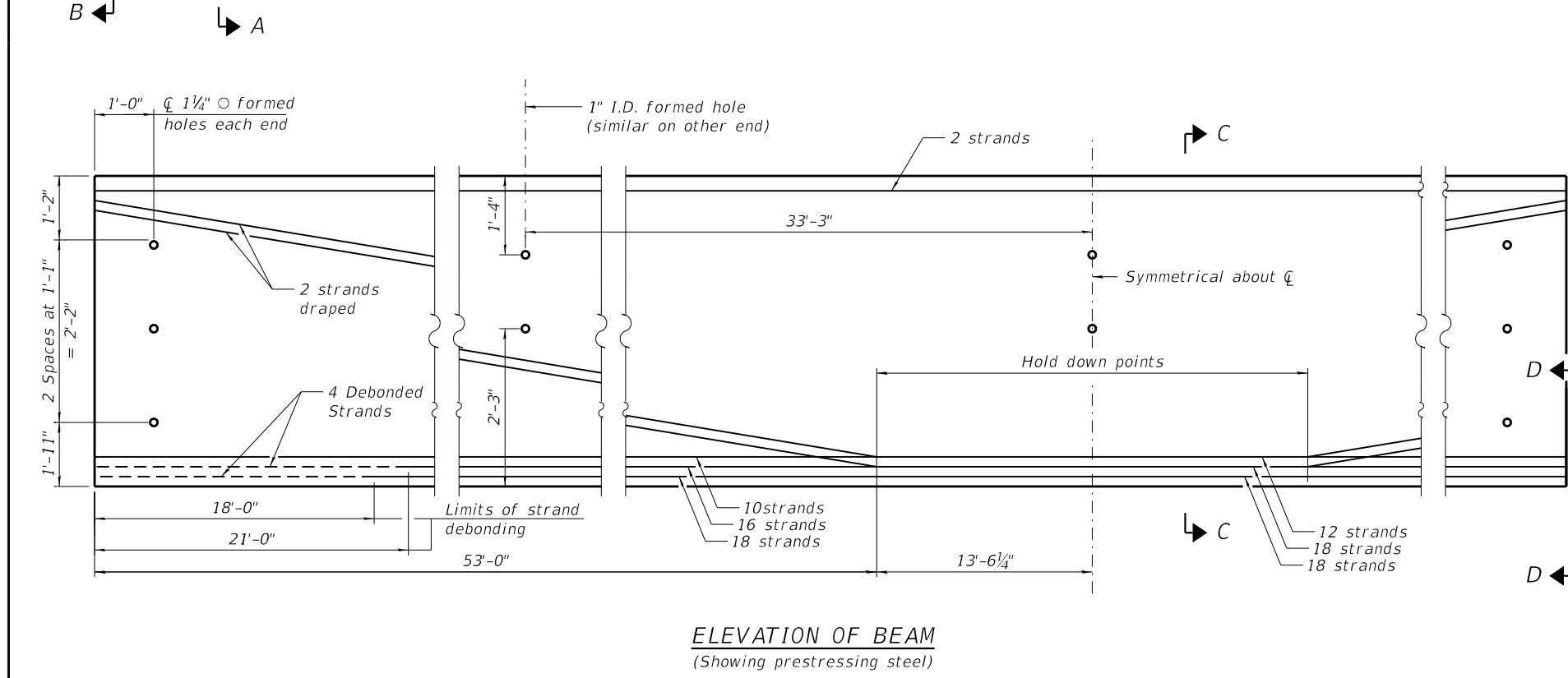
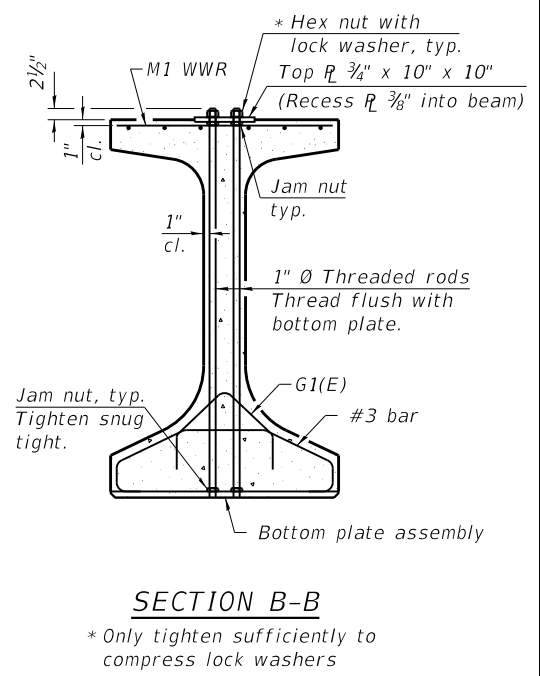
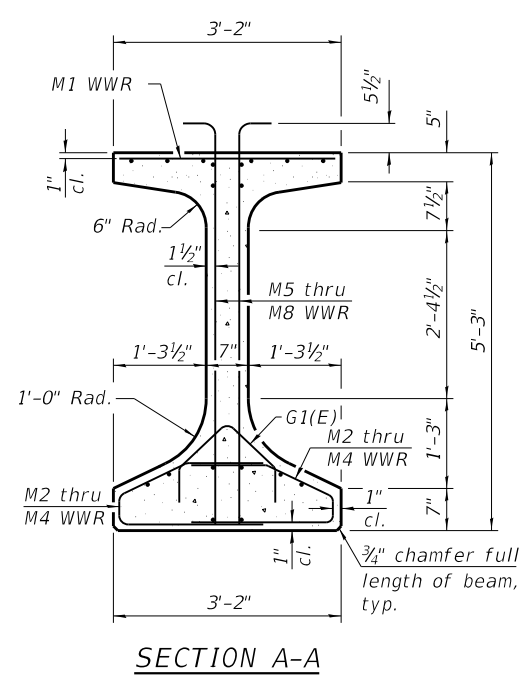
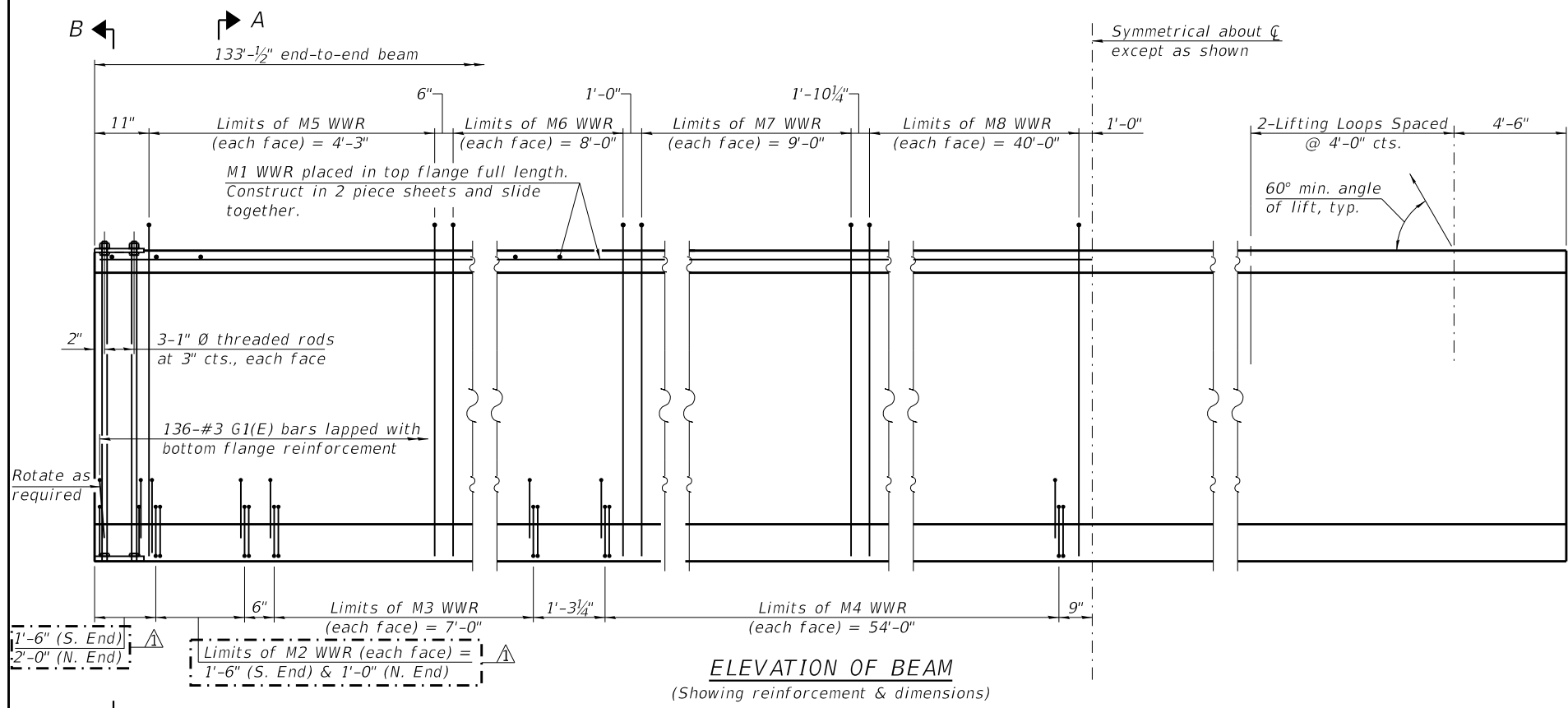
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CHECKED - TJJ	REVISIONS -	
PLOT SCALE = NTS	DRAWN - HB	REVISED -
PLOT DATE = 1/4/2023	CHECKED - TJJ	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL & WOOD RAILING DETAILS
STRUCTURE NO. 045-3402

SHEET NO. 19 OF 38 SHEETS

F.A.S. RTE. 1107	SECTION 15-00277-01-BR	COUNTY KANE	TOTAL SHEETS 542	SHEET NO. 264
			CONTRACT NO. 61H95	
ILLINOIS FED. AID PROJECT				



Note:
See sheet 23 of 38 for additional details and Bill of Material.

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IL63-3838

8-13-2021



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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL63 PPC BEAM DETAILS I
STRUCTURE NO. 045-3402

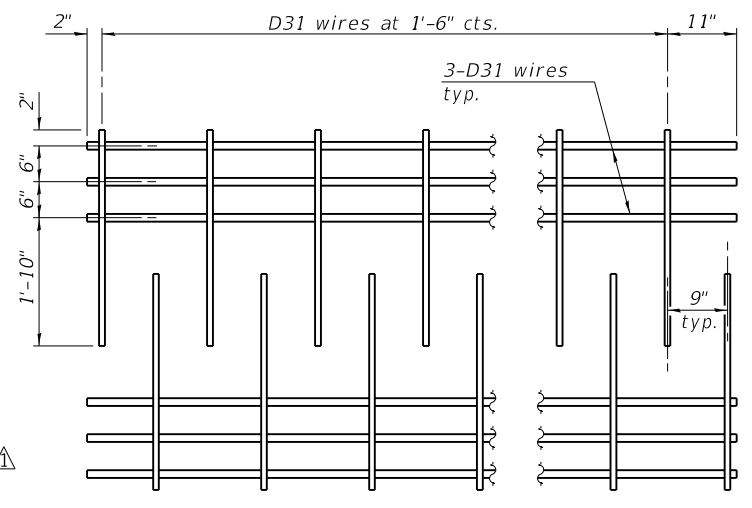
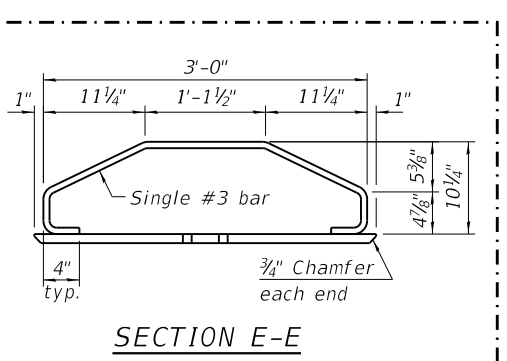
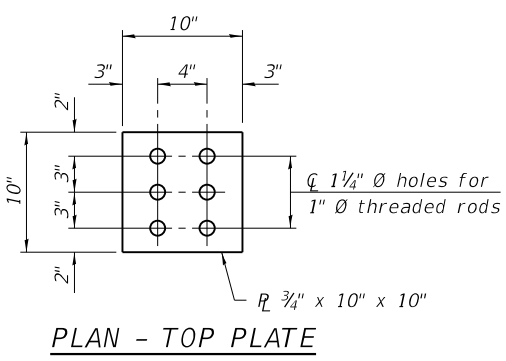
SHEET NO. 22 OF 38 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1107	15-00277-01-BR	KANE	542	267
CONTRACT NO. 61H95				

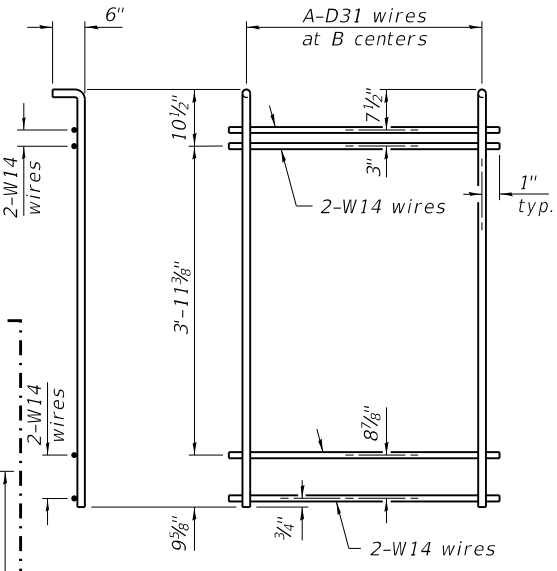
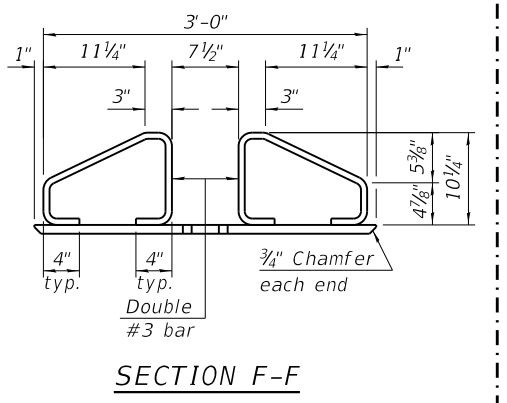
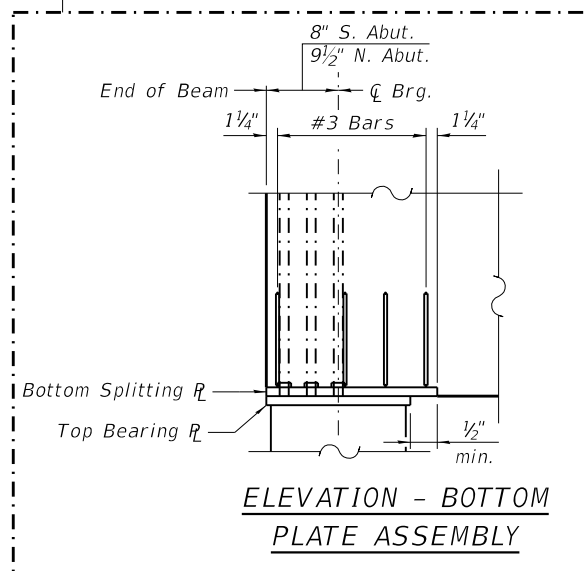
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NOTES

Inserts for 3/4" Ø threaded dowel rods, when specified, are to be two strut, ferrule type for interior beams and single ferrule, flared loop type for exterior beams. Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter for beam strands shall be 0.6" and the nominal cross-sectional area shall be 0.217 sq. in. The nominal diameter for lifting loops shall be 1/2" and the nominal cross sectional area shall be 0.153 sq. in. The beams shall have a final concrete compressive strength, f'c, of 8500 psi and a release concrete compressive strength, f'ci, of 6500 psi. A minimum 2 1/2" Ø lifting pin shall be used to engage the lifting loops during handling. Bend the extended strands inward on the fascia beams to maintain 1 1/2" clearance inside the pier diaphragm. The top and bottom plates shall be AASHTO M270 Grade 50. The top plates and bottom plate assemblies shall be galvanized according to AASHTO M111. The threaded rods, nuts and washers shall be galvanized according to AASHTO M232. Threaded rods shall be ASTM F 1554 Grade 55. Welded Wire Reinforcement (WWR) shall conform to ASTM A884 with a Class A, Type 1 epoxy coating or ASTM A1060, Table 3 galvanized coating.



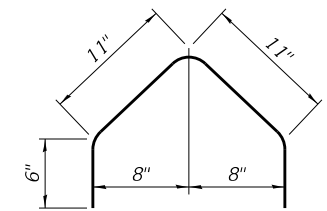
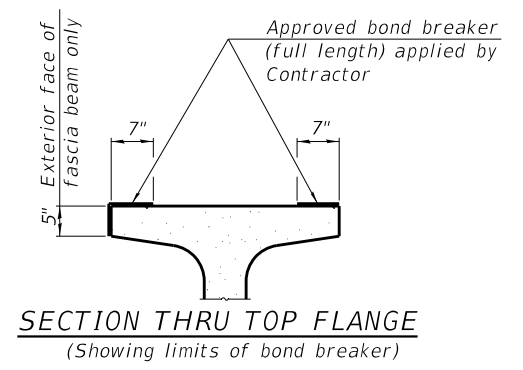
M1 WWR DETAIL
When multiple sheets of M1 WWR are required along the beam length, #5(E) bars (5'-0" long) shall be used to splice the longitudinal D31 wires together (Min. Lap 2'-2").



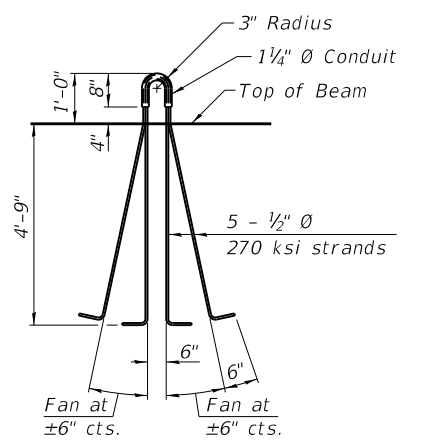
M5 THRU M8 WWR DETAIL
(See Table of Dimensions)

TABLE OF DIMENSIONS
(The WWR designs assume grade 60. If necessary, this permits the fabricator to directly substitute grade 60 rebar as detailed in the Manual for Fabrication of Precast Prestressed Concrete Products.)

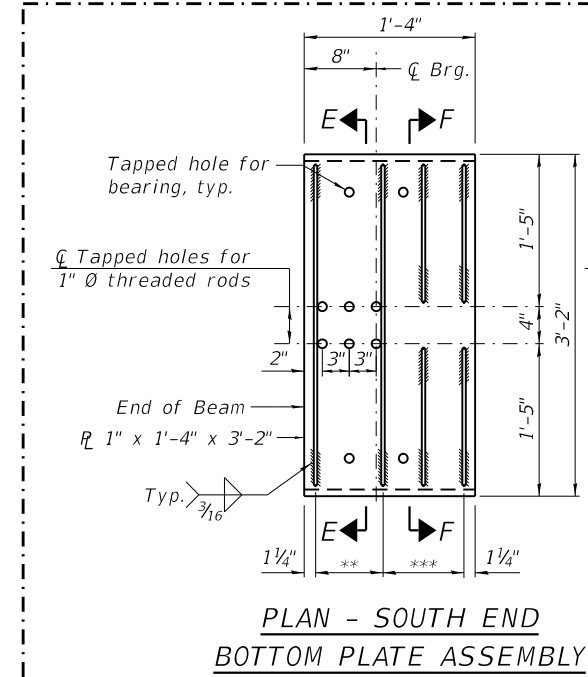
WWR	A	B
M2	7 (South End) 5 (North End)	3"
M3	15	6"
M4	37	1'-6"
M5	18	3"
M6	17	6"
M7	10	1'-0"
M8	21	2'-0"



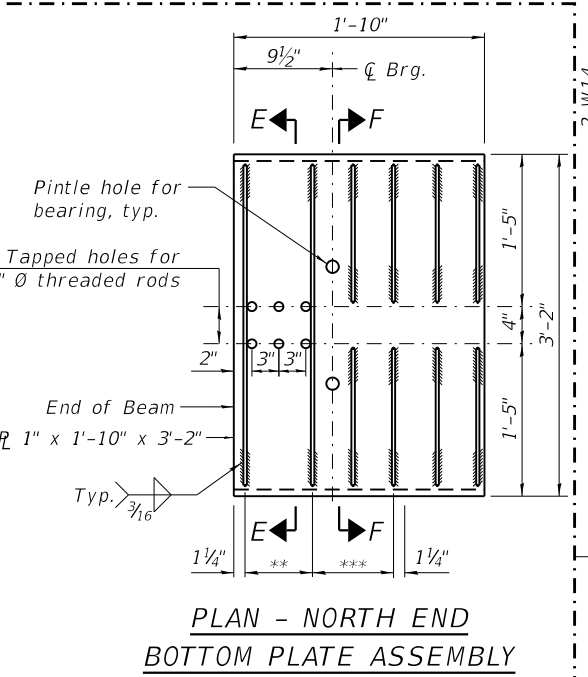
BAR G1(E)



LIFTING LOOP DETAIL



**PLAN - SOUTH END
BOTTOM PLATE ASSEMBLY**

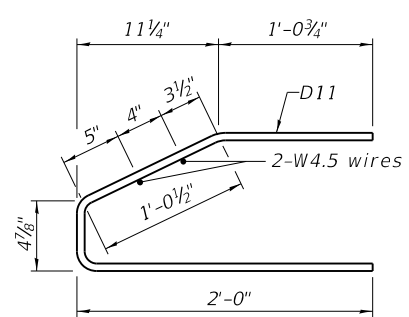


**PLAN - NORTH END
BOTTOM PLATE ASSEMBLY**

**3 Spaces at 2 1/2" = 7 1/2"
***2 Spaces at 3" = 6"

**3 Spaces at 2 1/2" = 7 1/2"
***4 Spaces at 3" = 1'-0"

Note:
See bearing details for pindle and tapped hole locations.



M2 THRU M4 WWR DETAIL
(See Table of Dimensions)

BILL OF MATERIAL

Item	Unit	Total
Furnishing and Erecting Precast Prestressed Concrete Beams, IL63	Ft.	932

11/14/2023 11:14:00 AM



USER NAME = dkierpiec	DESIGNED - HB	REVISED - DK 12-22-2022
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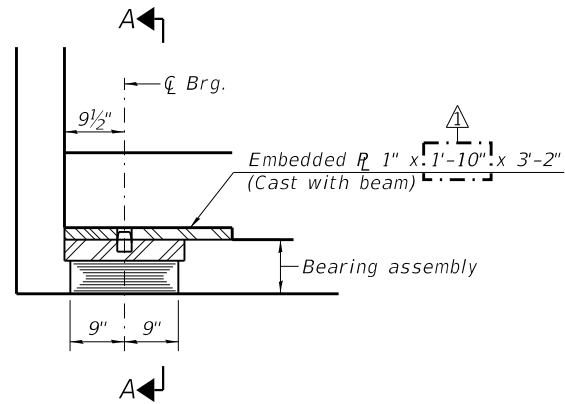
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**IL63 PPC BEAM DETAILS II
STRUCTURE NO. 045-3402**

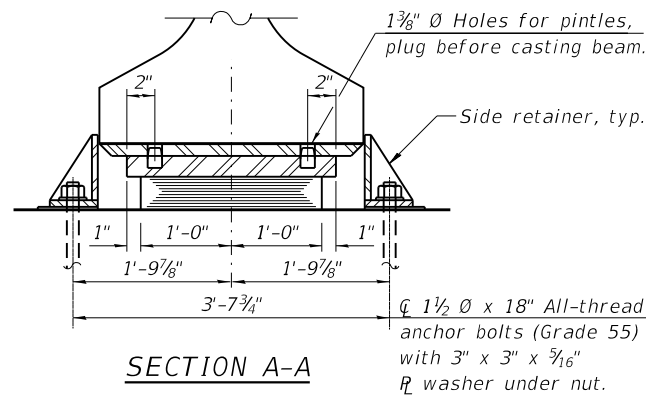
SHEET NO. 23 OF 38 SHEETS

F.A.S. RTE. 1107	SECTION 15-00277-01-BR	COUNTY KANE	TOTAL SHEETS 542	SHEET NO. 268
				CONTRACT NO. 61H95

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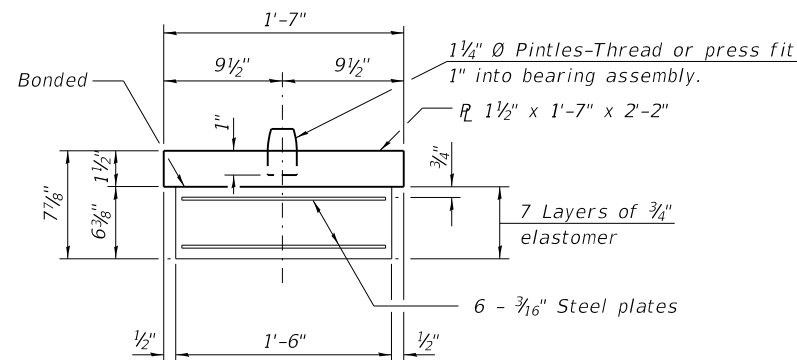


ELEVATION AT NORTH ABUTMENT

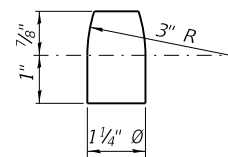


SECTION A-A

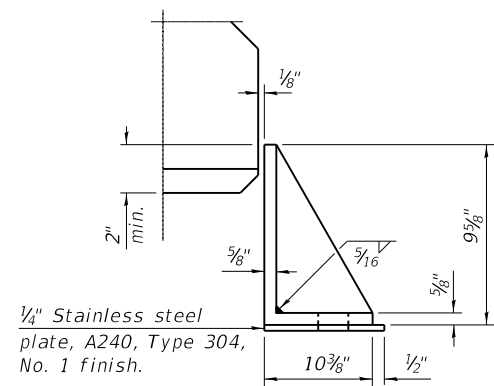
TYPE I ELASTOMERIC EXP. BRG.



BEARING ASSEMBLY



PINTLE



SIDE RETAINER

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

Notes:
 Side retainers and stainless steel plates shall be included in the cost of Elastomeric Bearing Assembly, Type I.
 See sheet 23 of 38 for additional details of embedded plate.
 Anchor bolts and side retainers at all supports shall be installed as each member is erected unless an equivalent temporary means of lateral restraint is used.
 All exposed bearing plates and side retainers shall be hot dip galvanized according to AASHTO M111.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly, Type I	Each	7
Anchor Bolts, 1 1/2"	Each	14

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PI-2E-1

6-15-2019



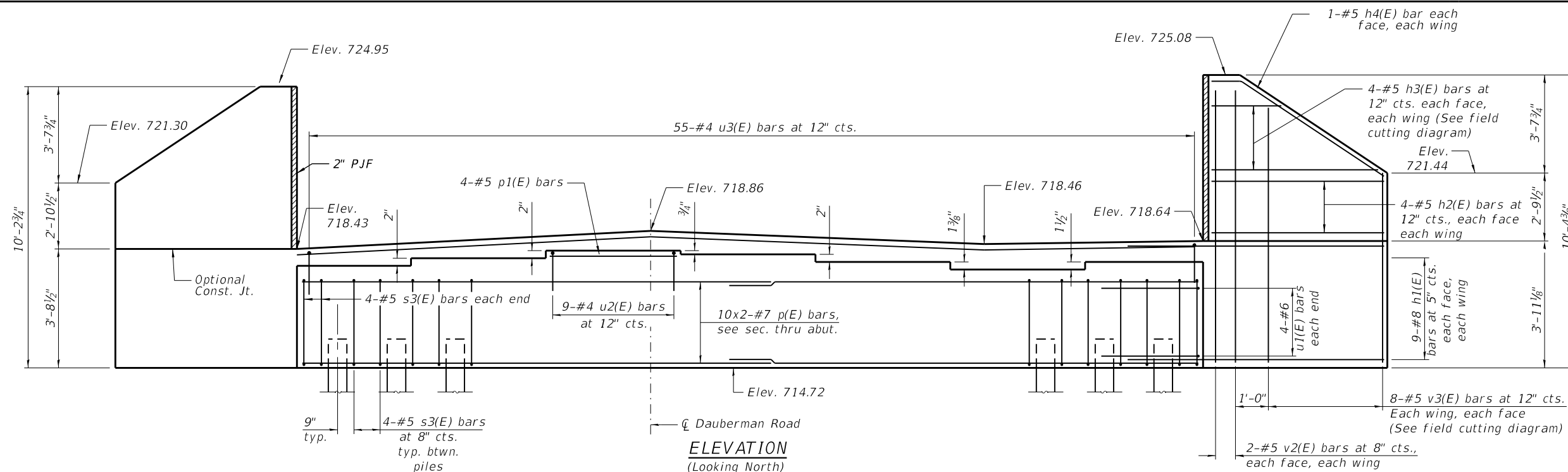
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	CHECKED - TJJ	REVISED -

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ELASTOMERIC BEARING DETAILS
 STRUCTURE NO. 045-3402

SHEET NO. 25 OF 38 SHEETS

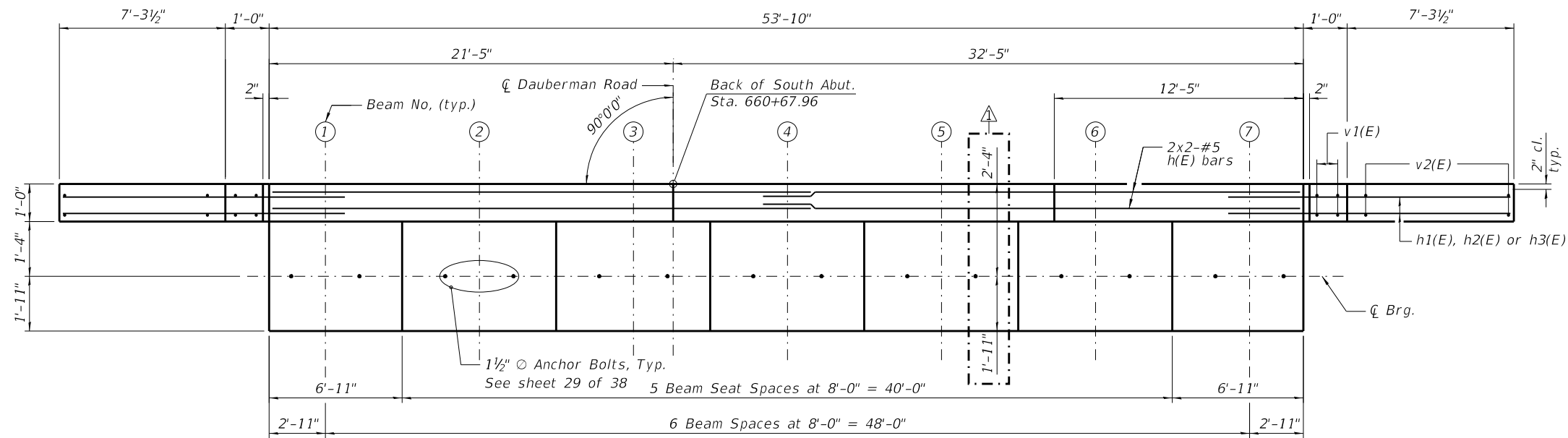
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1107	15-00277-01-BR	KANE	542	270
			CONTRACT NO. 61H95	
ILLINOIS		FED. AID PROJECT		



ELEVATION
(Looking North)

BEAM SEAT ELEVATIONS

Beam	Elev.
1	718.23
2	718.39
3	718.55
4	718.49
5	718.33
6	718.22
7	718.34



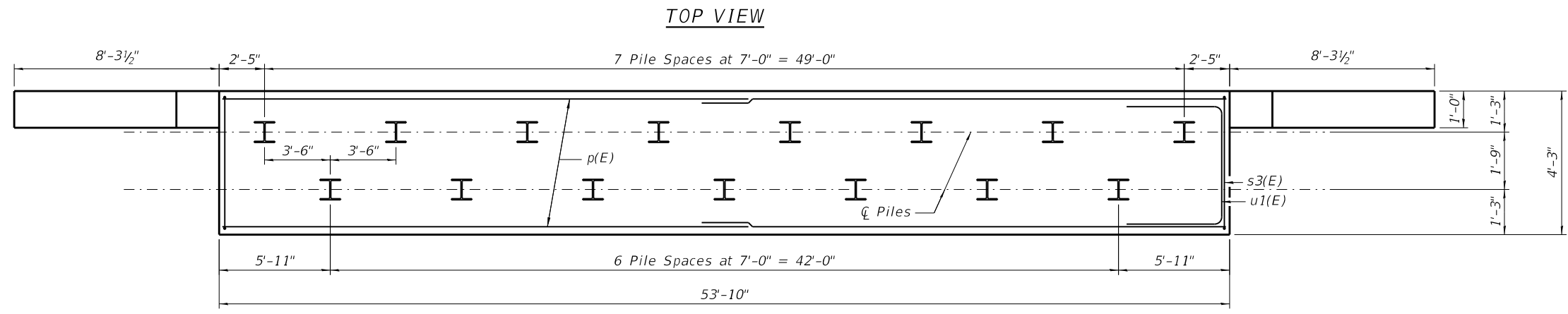
TOP VIEW

MIN. BAR LAP

#5 = 3'-7"
#7 = 5'-0"

PILE DATA

Type: HP12x53 with Pile Shoes
Nominal Required Bearing: 406 kips
Factored Resistance Available: 200 kips
Est. Length: 111 ft
No. Production Piles: 14
No. Test Piles: 1



PLAN - PILE CAP

Notes:
Pour steps monolithically with cap.
Space reinforcement in cap to miss anchor bolts
For details of piles see sheet 33 of 38.

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	CHECKED - TJJ	REVISED -

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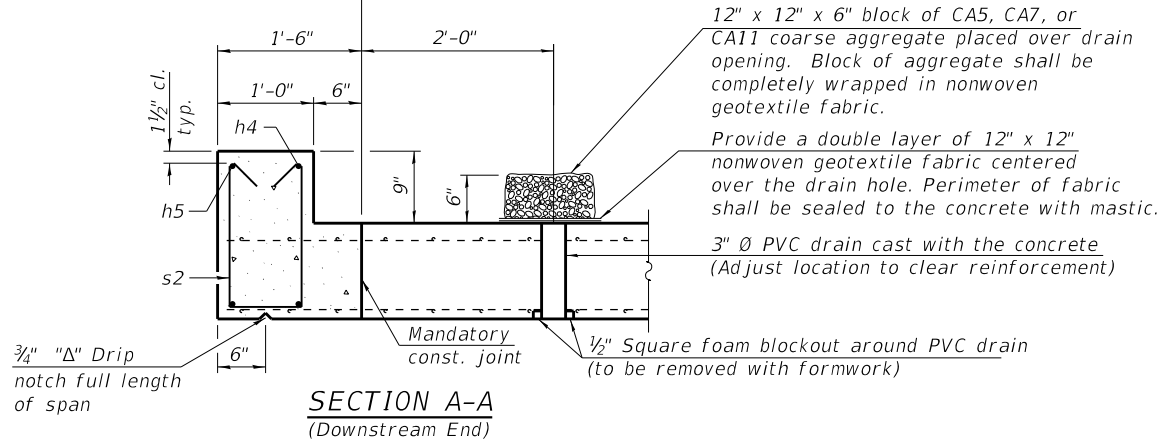
NORTH ABUTMENT PLAN AND ELEVATION
STRUCTURE NO. 045-3402

SHEET NO. 28 OF 38 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1107	15-00277-01-BR	KANE	542	273
CONTRACT NO. 61H95				

ILLINOIS FED. AID PROJECT

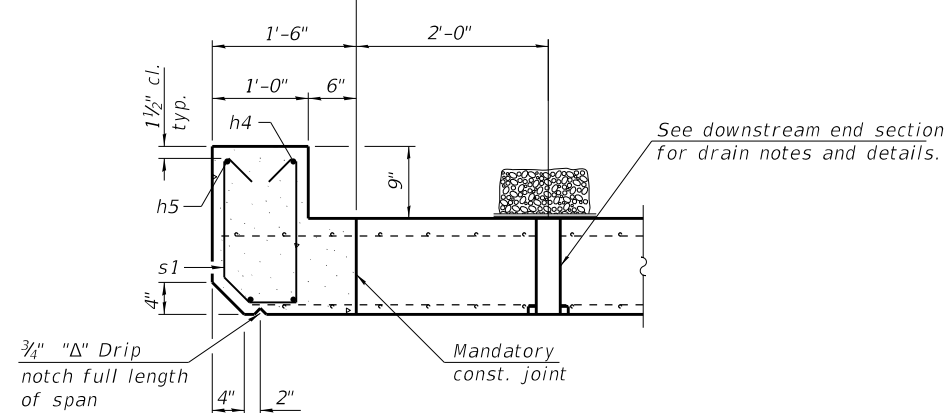
Pay Limits for Box Culvert End Sections | Pay Limits for Precast Concrete Box Culverts



SECTION A-A
(Downstream End)

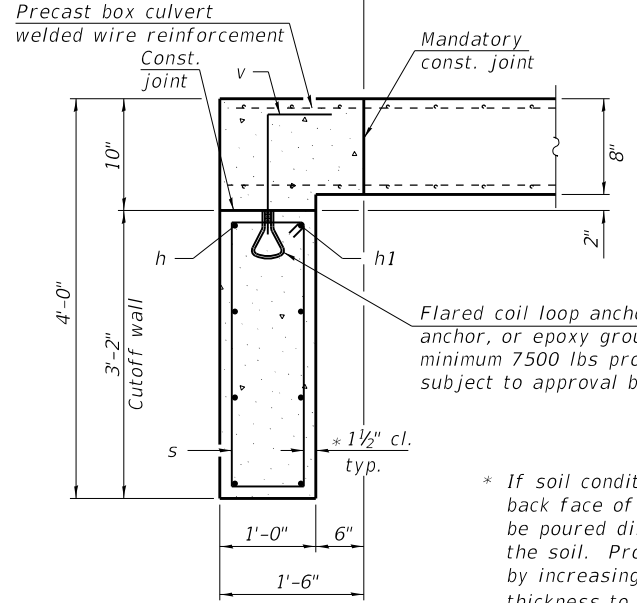
(All costs associated with furnishing and constructing the above drain detail will not be measured for payment but shall be included in the contract unit price for the associated work.)

Pay Limits for Box Culvert End Sections | Pay Limits for Precast Concrete Box Culverts



SECTION A-A
(Upstream End)

Pay Limits for Box Culvert End Sections | Pay Limits for Precast Concrete Box Culverts



SECTION B-B

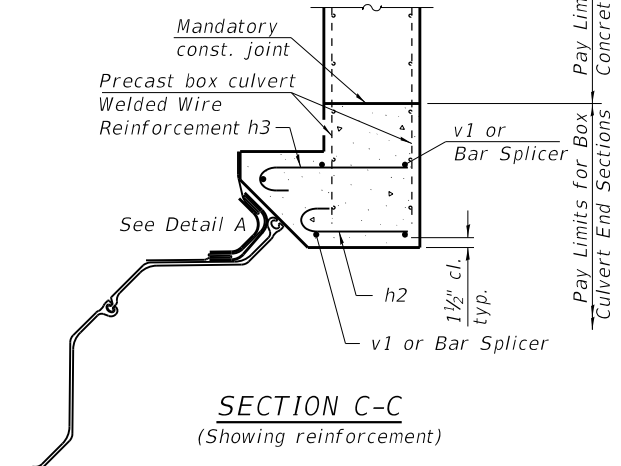
* If soil conditions permit, the back face of cutoff wall may be poured directly against the soil. Provide 3" cover by increasing cutoff wall thickness to 1'-1 1/2".

12" x 12" x 6" block of CA5, CA7, or CA11 coarse aggregate placed over drain opening. Block of aggregate shall be completely wrapped in nonwoven geotextile fabric.

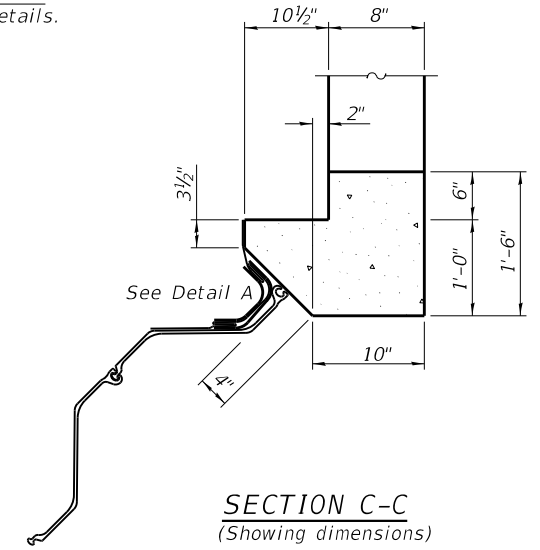
Provide a double layer of 12" x 12" nonwoven geotextile fabric centered over the drain hole. Perimeter of fabric shall be sealed to the concrete with mastic.

3" Ø PVC drain cast with the concrete (Adjust location to clear reinforcement)

1/2" Square foam blockout around PVC drain (to be removed with formwork)



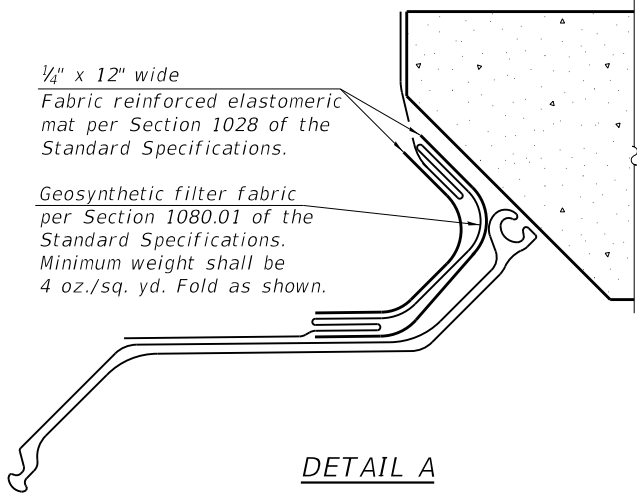
SECTION C-C
(Showing reinforcement)



SECTION C-C
(Showing dimensions)

1/4" x 12" wide Fabric reinforced elastomeric mat per Section 1028 of the Standard Specifications.

Geosynthetic filter fabric per Section 1080.01 of the Standard Specifications. Minimum weight shall be 4 oz./sq. yd. Fold as shown.

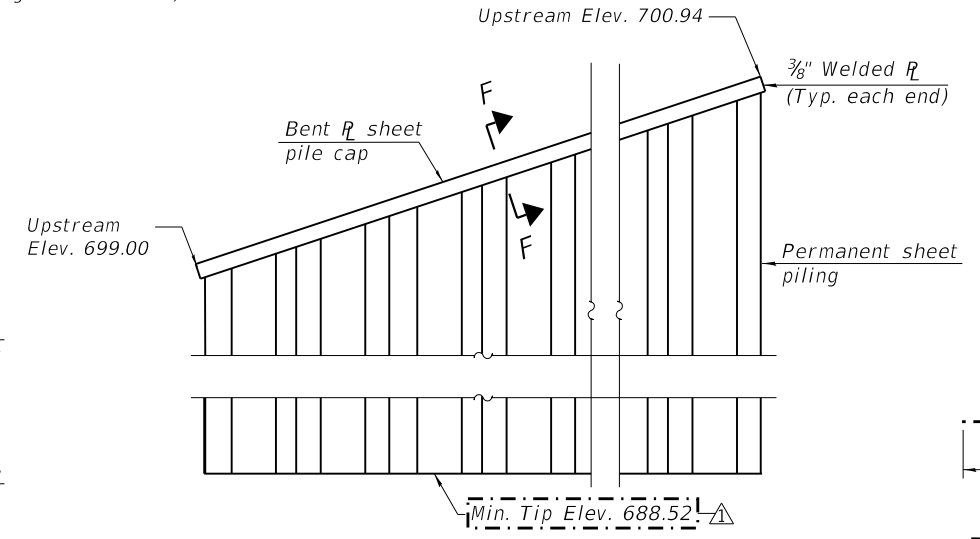


DETAIL A

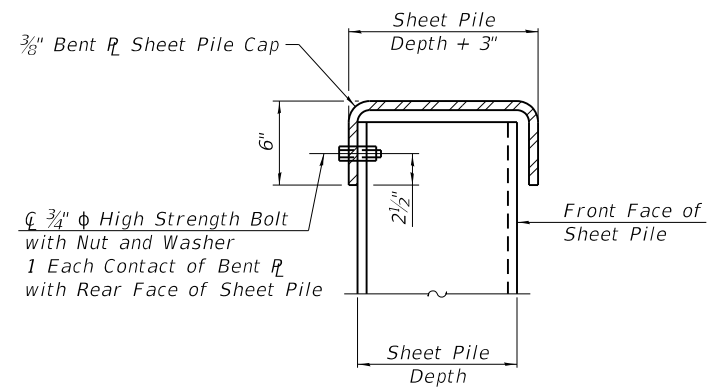
Notes:
The minimum effective section modulus of the permanent sheet pile wall shall be 5.20 in.³/ft. Δ
Sheet piling shall not be driven until the concrete strength has attained a minimum flexural strength of 650 psi or a minimum compressive strength of 3500 psi.
The cost of furnishing and installing the bent R sheet pile cap, elastomeric mat, and filter fabric shall be included in the cost of the end section.
See sheet 1 of 6 for culvert construction sequence.

ONE END SECTION
BILL OF MATERIAL
(For Information Only)

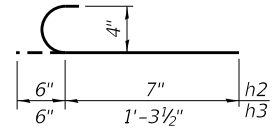
Bar	No.	Size	Length	Shape
h	4	#5	8'-5"	—
h1	4	#5	9'-10"	—
h2	18	#4	1'-1"	C
h3	18	#4	1'-9 1/2"	C
h4	2	#6	9'-10"	—
h5	2	#6	8'-5"	—
s	8	#4	8'-1"	□
s1	8	#4	3'-8"	U
v	8	#5	1'-7 1/2"	—
v1	10	#5	4'-2"	—
Concrete Box Culverts			Cu. Yd.	2.7
Reinforcement Bars			Pound	290
Bar Splicers			Each	10
Permanent Sheet Piling			Sq. Ft.	161 Δ



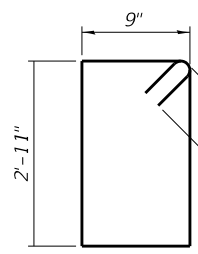
UPSTREAM WINGWALL ELEVATION
(Looking downstream)



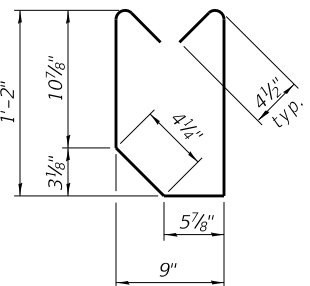
SECTION F-F



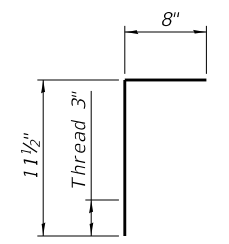
BAR h2 and h3



BAR s



BAR s1



BAR v

CIPES-PSSP-ZS-DETAILS 8-11-2017

(Sheet 4 of 6)

1/5/2023 1:54:29 PM



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	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BOX CULVERT END SECTION DETAILS
STRUCTURE NO. 045-8303 CULVERT NO. 11 UPSTREAM

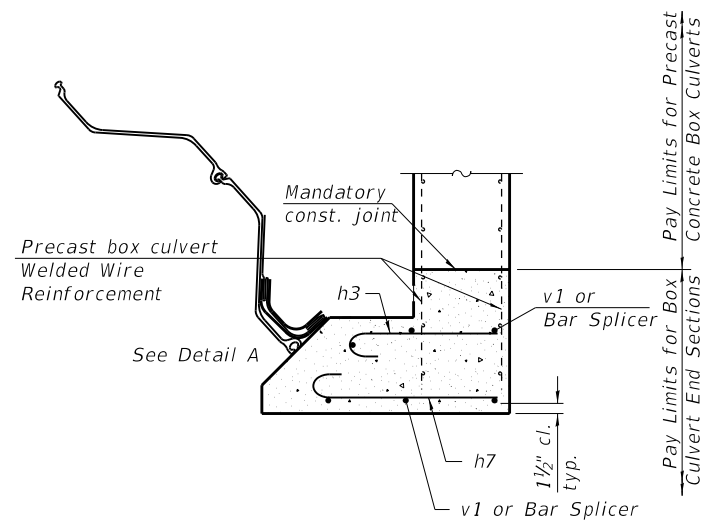
SHEET NO. 5 OF 20 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1107	15-00277-01-BR	KANE	542	288
CONTRACT NO. 61H95				
ILLINOIS FED. AID PROJECT				

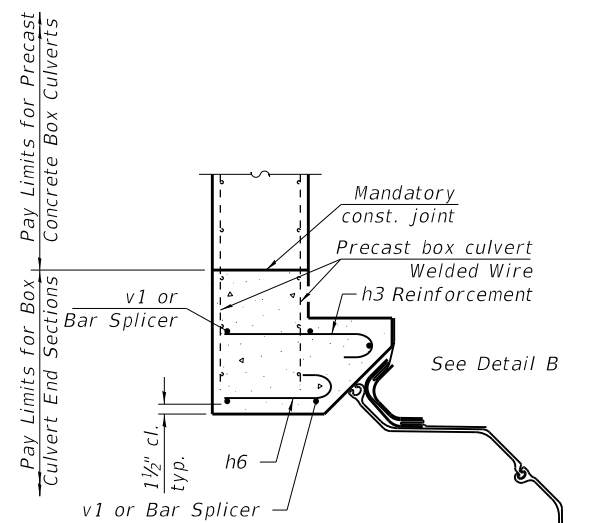
Notes:
 The minimum effective section modulus of the permanent sheet pile wall shall be $5.20 \text{ in}^3/\text{ft}$.
 Sheet piling shall not be driven until the concrete strength has attained a minimum flexural strength of 650 psi or a minimum compressive strength of 3500 psi.
 The cost of furnishing and installing the bent R sheet pile cap, elastomeric mat, and filter fabric shall be included in the cost of the end section.
 See sheet 1 of 6 for culvert construction sequence.

**ONE END SECTION
 BILL OF MATERIAL**
 (For information only)

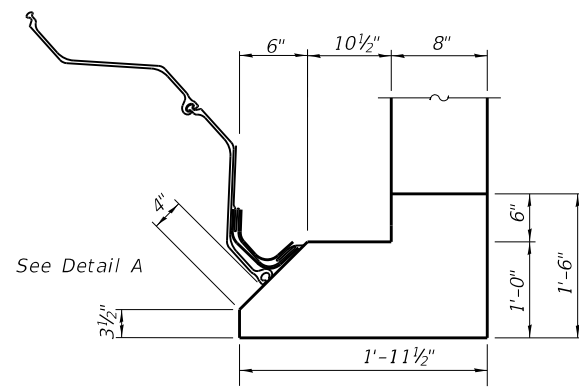
Bar	No.	Size	Length	Shape
h1	8	#5	9'-10"	—
h3	18	#4	1'-9½"	C
h6	9	#4	1'-4½"	C
h7	9	#4	2'-2½"	C
h4	4	#6	9'-10"	—
s	8	#4	8'-1"	□
s2	8	#4	3'-10"	□
v	8	#5	1'-7½"	—
v1	11	#5	4'-2"	—
Concrete Box Culverts	Cu. Yd.		2.9	
Reinforcement Bars	Pound		310	
Bar Splicers	Each		11	
Permanent Sheet Piling	Sq. Ft.		174	



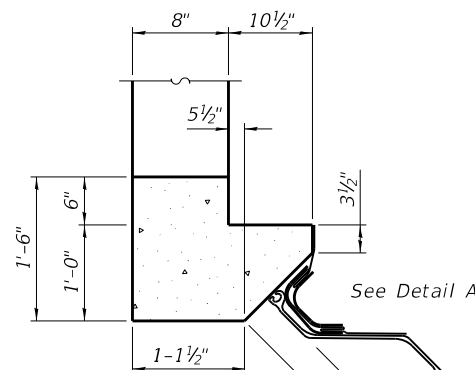
SECTION D-D
 (Showing reinforcement)



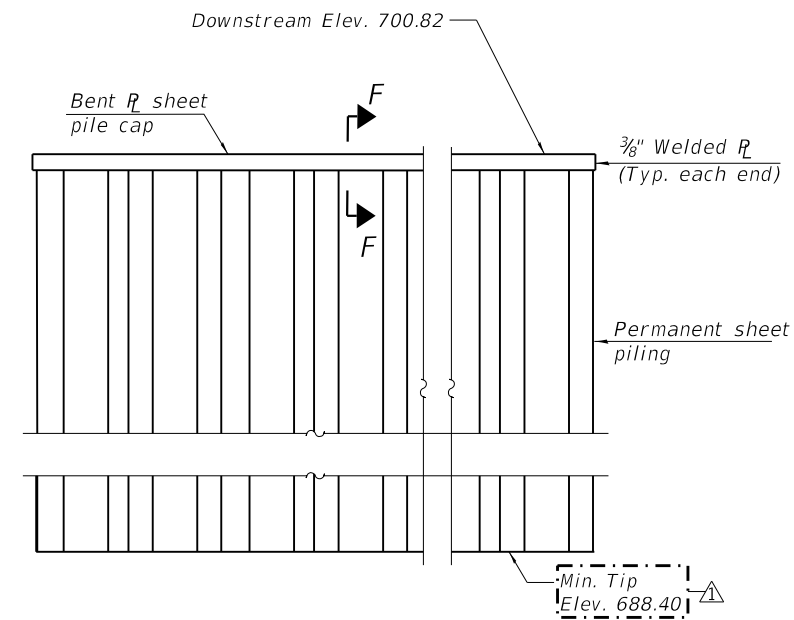
SECTION E-E
 (Showing reinforcement)



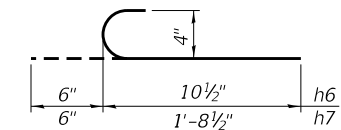
SECTION D-D
 (Showing Dimensions)



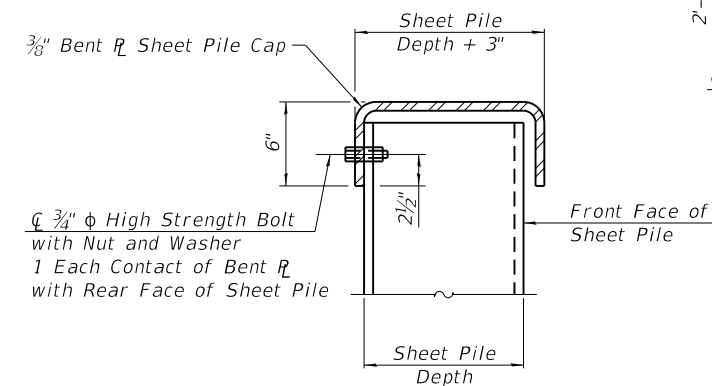
SECTION E-E
 (Showing Dimensions)



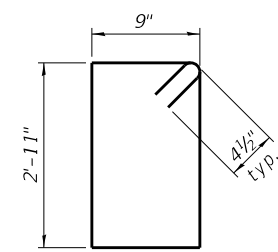
DOWNSTREAM WINGWALL ELEVATION
 (Looking upstream)



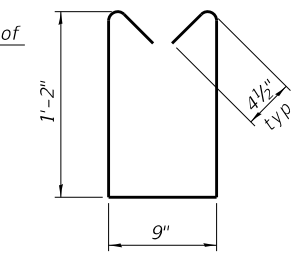
BARS h6 and h7



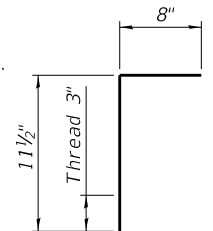
SECTION F-F



BAR s



BAR s2



BAR v

(Sheet 6 of 6)

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PLOT DATE = 1/5/2023	CHECKED -	REVISED -

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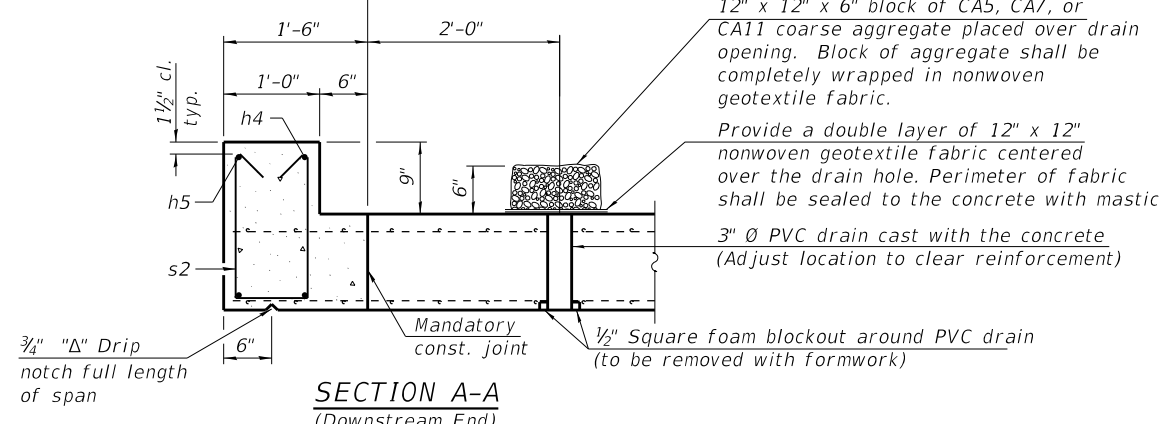
BOX CULVERT END SECTION DETAILS
 STRUCTURE NO. 045-8303 CULVERT 11 DOWNSTREAM

SHEET NO. 7 OF 20 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1107	15-00277-01-BR	KANE	542	290
				CONTRACT NO. 61H95

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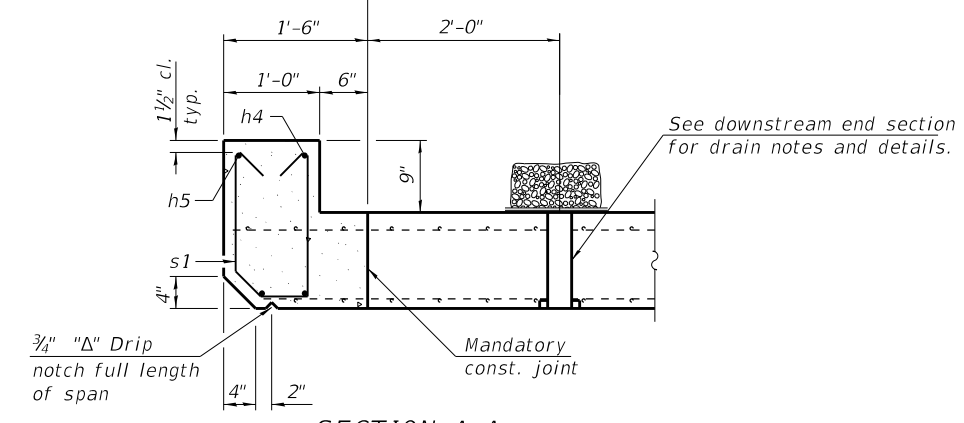
Pay Limits for Box Culvert End Sections Pay Limits for Precast Concrete Box Culverts



SECTION A-A
(Downstream End)

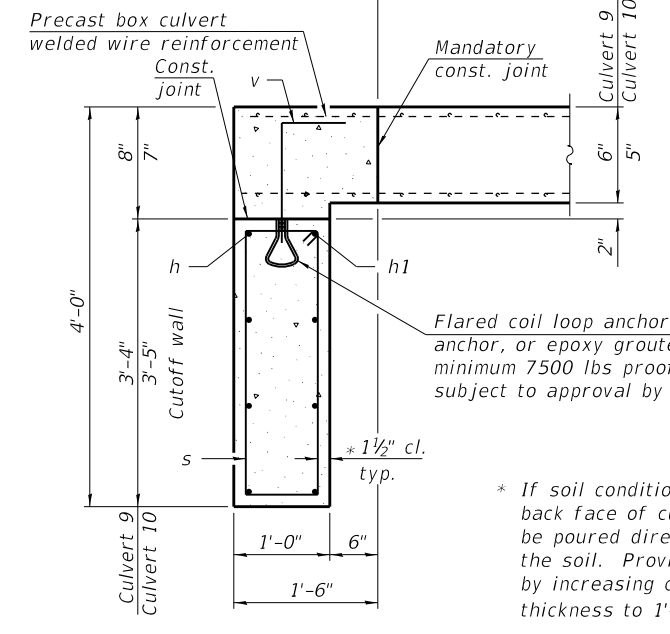
(All costs associated with furnishing and constructing the above drain detail will not be measured for payment but shall be included in the contract unit price for the associated work.)

Pay Limits for Box Culvert End Sections Pay Limits for Precast Concrete Box Culverts



SECTION A-A
(Upstream End)

Pay Limits for Box Culvert End Sections Pay Limits for Precast Concrete Box Culverts



SECTION B-B

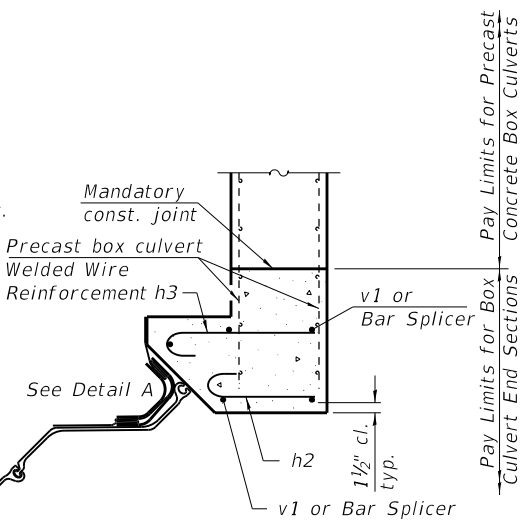
* If soil conditions permit, the back face of cutoff wall may be poured directly against the soil. Provide 3" cover by increasing cutoff wall thickness to 1'-1 1/2".

12" x 12" x 6" block of CA5, CA7, or CA11 coarse aggregate placed over drain opening. Block of aggregate shall be completely wrapped in nonwoven geotextile fabric.

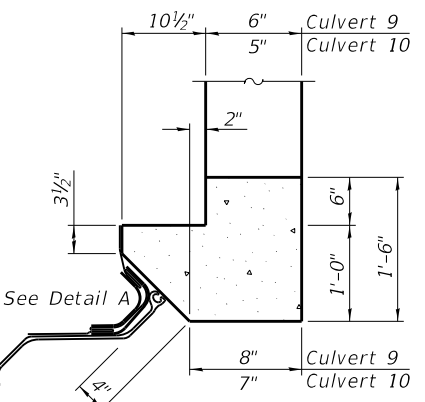
Provide a double layer of 12" x 12" nonwoven geotextile fabric centered over the drain hole. Perimeter of fabric shall be sealed to the concrete with mastic.

3" Ø PVC drain cast with the concrete (Adjust location to clear reinforcement)

1/2" Square foam blockout around PVC drain (to be removed with formwork)



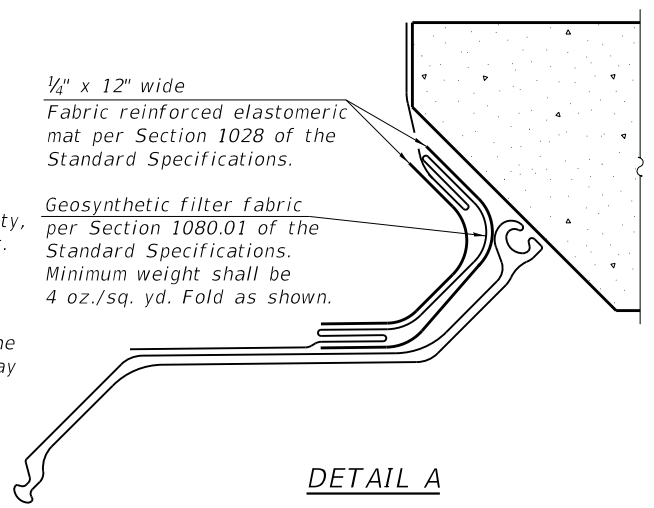
SECTION C-C
(Showing reinforcement)



SECTION C-C
(Showing dimensions)

1/4" x 12" wide Fabric reinforced elastomeric mat per Section 1028 of the Standard Specifications.

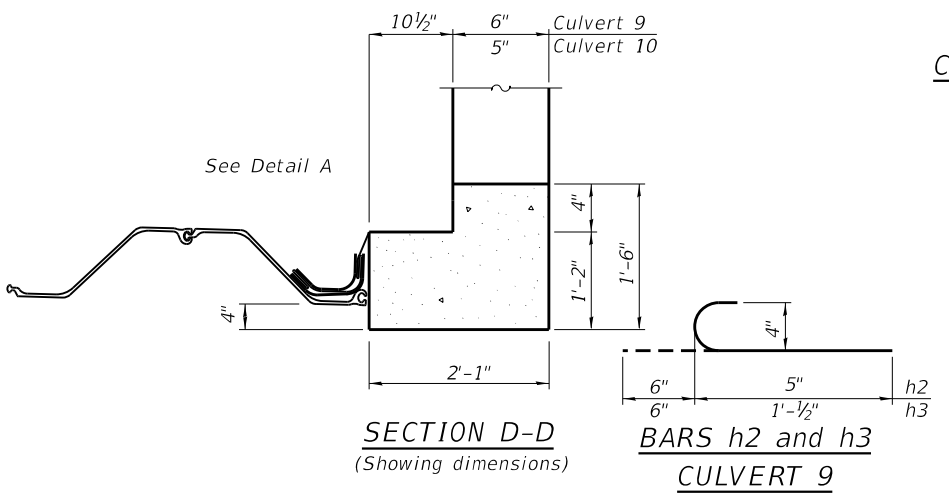
Geosynthetic filter fabric per Section 1080.01 of the Standard Specifications. Minimum weight shall be 4 oz./sq. yd. Fold as shown.



DETAIL A

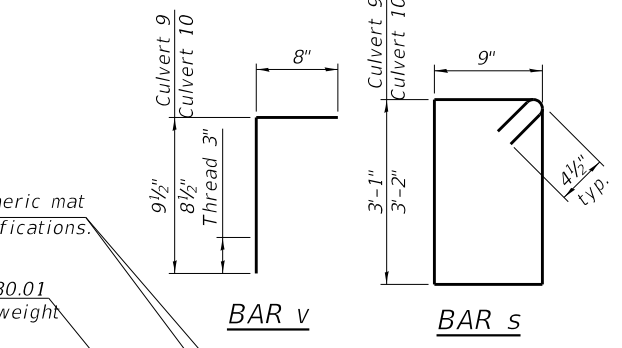
1/4" x 12" wide Fabric reinforced elastomeric mat per Section 1028 of the Standard Specifications.

Geosynthetic filter fabric per Section 1080.01 of the Standard Specifications. Minimum weight shall be 4 oz./sq. yd. Fold as shown.

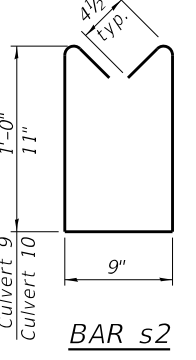


SECTION D-D
(Showing dimensions)

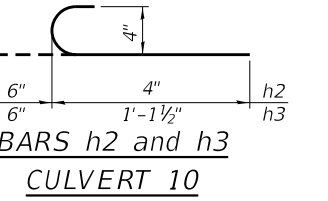
BARS h2 and h3
CULVERT 9



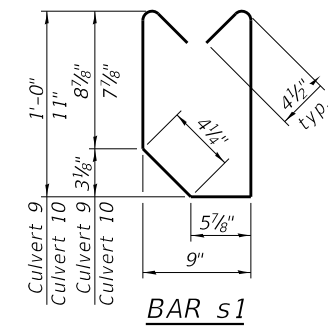
DETAIL B



BAR s2



BARS h2 and h3
CULVERT 10



BAR s1

CULVERT 9 ONE END SECTION

BILL OF MATERIAL

(For information only)

Bar	No.	Size	Length	Shape
h	4	#5	6'-9 1/2"	—
h1	4	#5	7'-6"	—
h2	8	#4	11"	C
h3	24	#4	1'-7 1/2"	C
h4	2	#6	7'-6"	—
h5	2	#6	6'-9 1/2"	—
s	6	#4	8'-5"	□
s1	6	#4	3'-4"	□
s2	6	#4	3'-6"	□
v	6	#5	1'-5 1/2"	—
v1	11	#5	3'-0"	—
Concrete Box Culverts	Cu. Yd.	1.9		
Reinforcement Bars	Pound	320		
Bar Splicers	Each	11		
Permanent Sheet Piling	Sq. Ft.	1154		

CULVERT 10 ONE END SECTION

BILL OF MATERIAL

(For information only)

Bar	No.	Size	Length	Shape
h	4	#5	5'-7 1/2"	—
h1	4	#5	6'-4"	—
h2	9	#4	10"	C
h3	27	#4	1'-6 1/2"	C
h4	2	#6	6'-4"	—
h5	2	#6	5'-7 1/2"	—
s	5	#4	8'-7"	□
s1	5	#4	3'-2"	□
s2	5	#4	3'-4"	□
v	5	#5	1'-4 1/2"	—
v1	11	#5	3'-11"	—
Concrete Box Culverts	Cu. Yd.	1.6		
Reinforcement Bars	Pound	300		
Bar Splicers	Each	11		
Permanent Sheet Piling	Sq. Ft.	1163		

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	CHECKED -	REVISED -

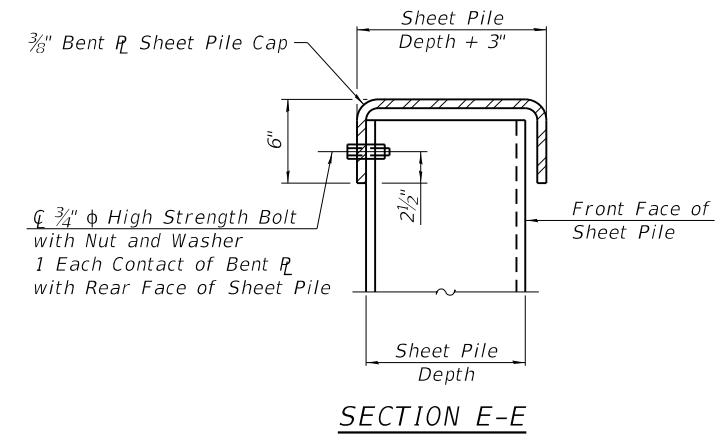
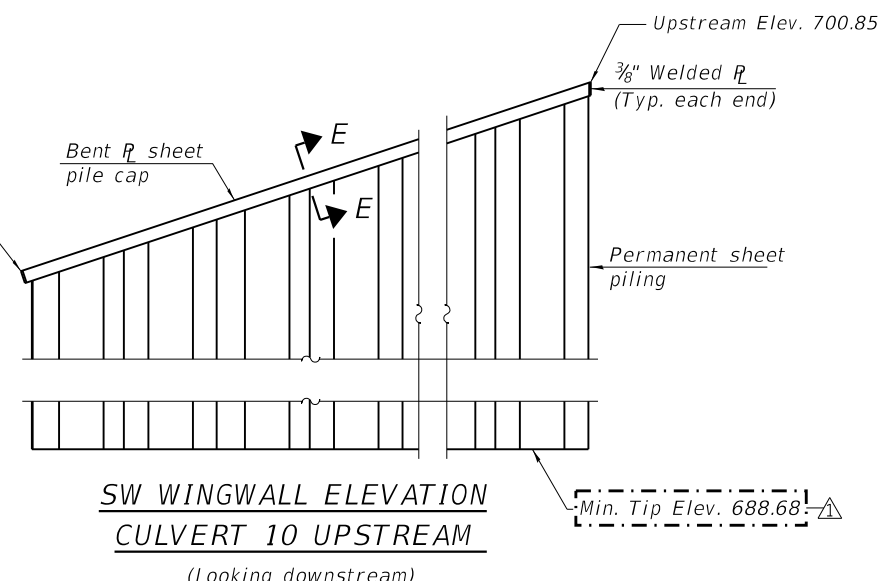
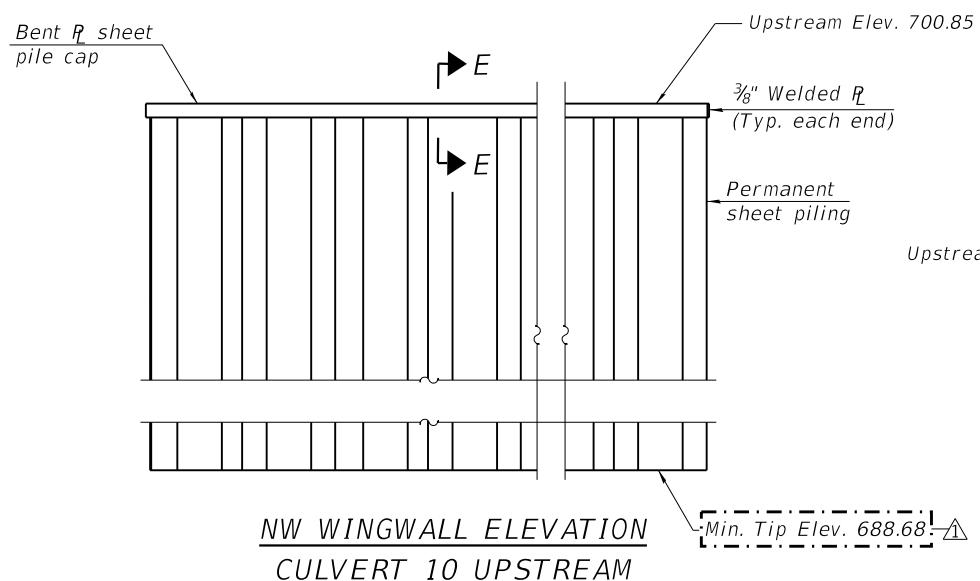
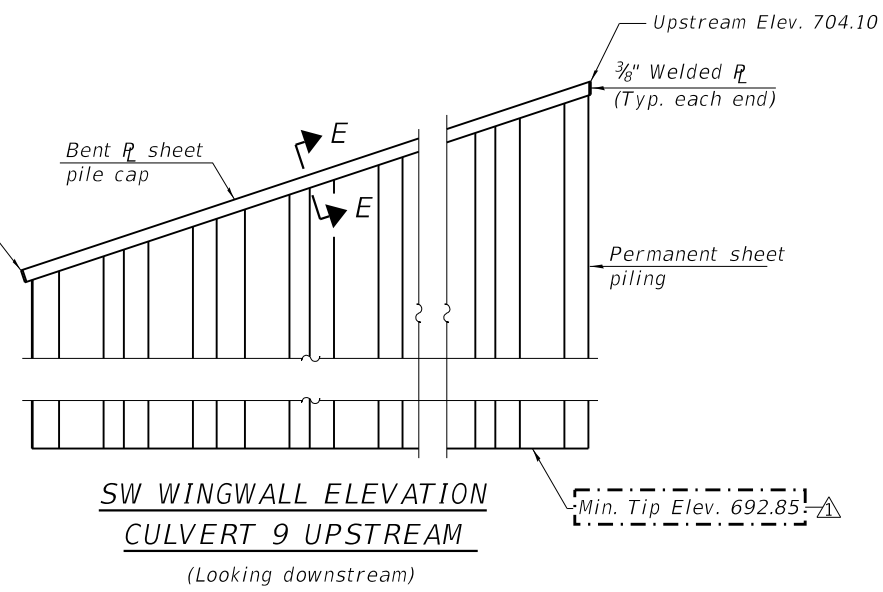
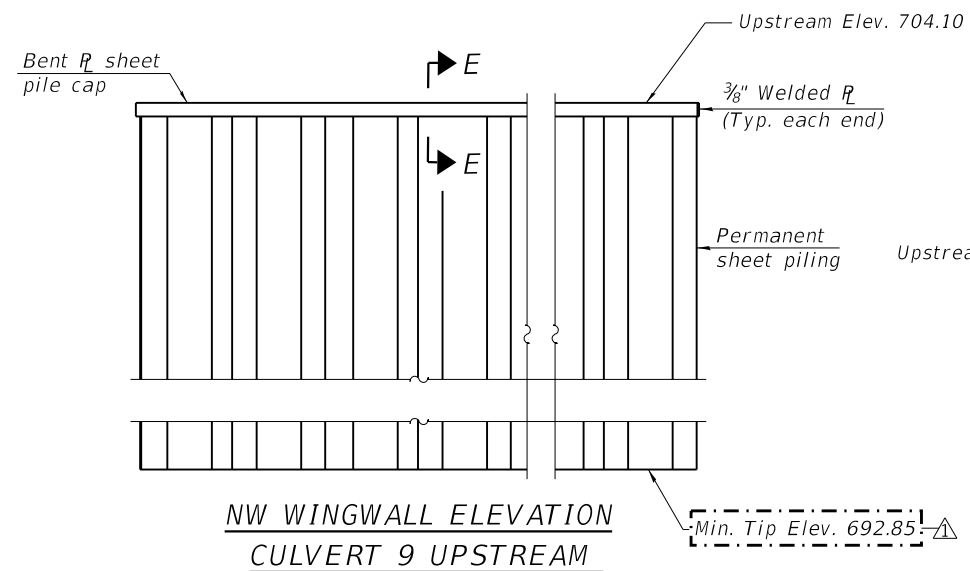
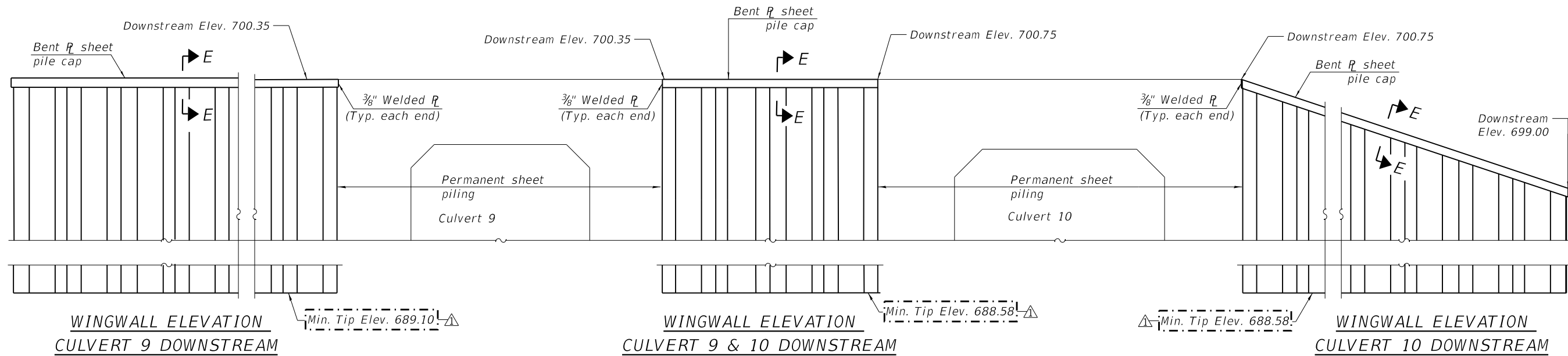
STATE OF ILLINOIS
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BOX CULVERT END SECTION DETAILS
CULVERT NO. 9 & CULVERT NO. 10

SHEET NO. 13 OF 20 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1107	15-002771-01-BR	KANE	542	296
CONTRACT NO. 61H95				
ILLINOIS FED. AID PROJECT				

(Sheet 4 of 5)



Notes:

The minimum effective section modulus of the permanent sheet pile wall shall be $5.20 \text{ in}^3/\text{ft}$.

Sheet piling shall not be driven until the concrete strength has attained a minimum flexural strength of 650 psi or a minimum compressive strength of 3500 psi.

The cost of furnishing and installing the bent R sheet pile cap, elastomeric mat, and filter fabric shall be included in the cost of the end section.

(Sheet 5 of 5)

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PLOT DATE = 1/5/2023	DRAWN -	REVISED -
	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BOX CULVERT END SECTION DETAILS
CULVERT NO. 9 AND 10

SHEET NO. 14 OF 20 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1107	15-00277-01-BR	KANE	542	297
CONTRACT NO. 61H95				
ILLINOIS FED. AID PROJECT				