

06-14-2024 LETTING ITEM 229

FOR INDEX OF SHEETS, SEE SHEET NO. 2
DESIGN DESIGNATION
2735 (40) EXPRESSWAY 38.76 (FD-20)

TRAFFIC DATA

US 20 (IL 31 TO ILLINOIS ST)
EXISTING ADT: 51,100 (2019)
DESIGN ADT: 64,000 (2040)

US 20 (ILLINOIS ST TO POPLAR CREEK)
EXISTING ADT: 41,400 (2019)
DESIGN ADT: 68,000 (2040)

DESIGN SPEED LIMIT: 55MPH
POSTED SPEED LIMIT: 55MPH

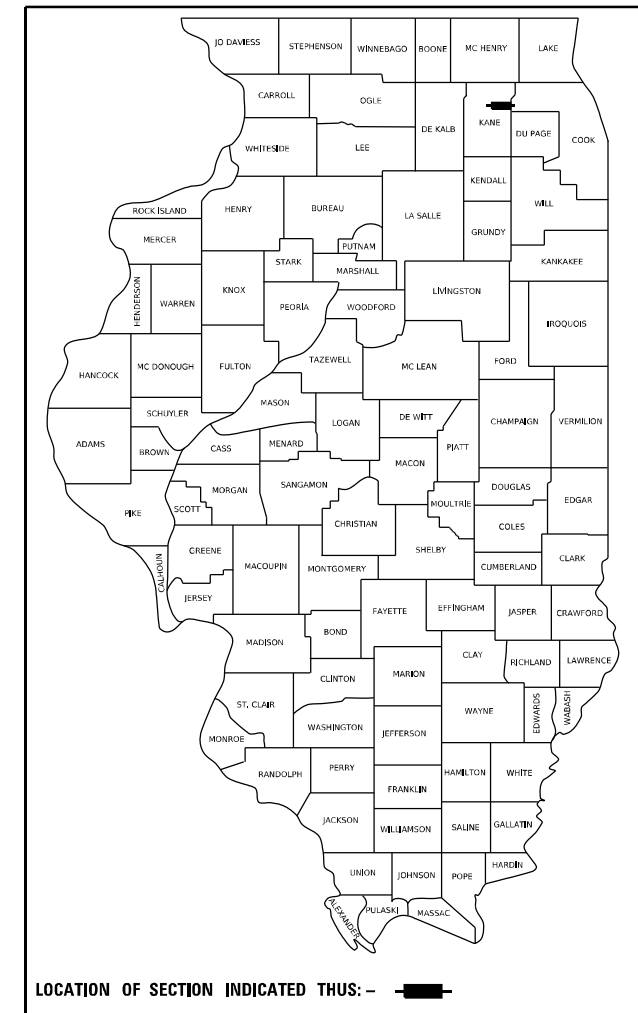
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

**PROPOSED
HIGHWAY PLANS**
FAP ROUTE 345 (US 20)
EAST OF GRACE STREET TO WEST OF SHALES PKWY
SECTION: FAP 345 23 BRIDGE
PROJECT: NHPP-ZWEL(759)
NEW BRIDGE DECK, BRIDGE WIDENING, BRIDGE
SUPERSTRUCTURE REPLACEMENT, CHANNELIZATION, SAFETY
IMPROVEMENTS & NOISE BARRIERS
KANE & COOK COUNTY

C-91-168-23

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	FAP 345 23 BRIDGE	KANE & COOK	379	1
ILLINOIS			CONTRACT NO. 62U83	
* 379 + 2 = 381 TOTAL SHEETS				

D-91-453-20



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

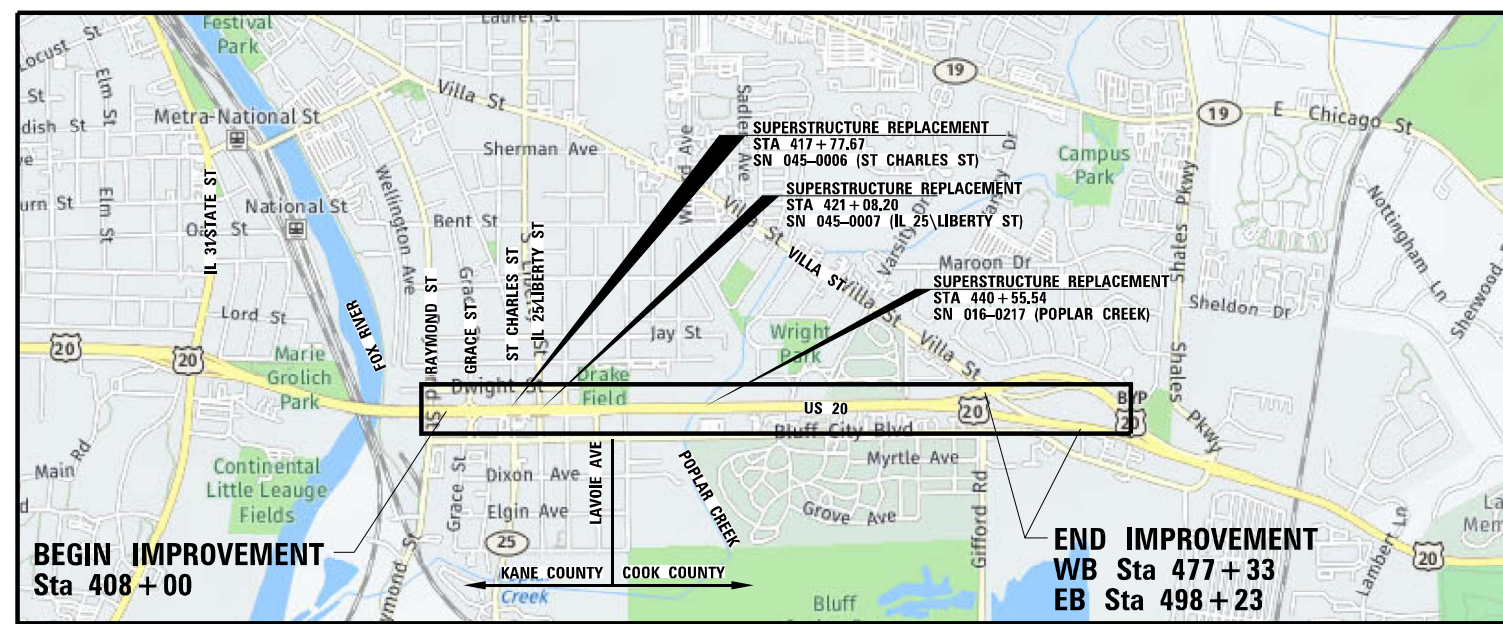
SUBMITTED June 17th 2024
Jose Rojas IR
REGIONAL ENGINEER

May 10, 2024 [Signature]
ENGINEER OF DESIGN AND ENVIRONMENT

May 10, 2024 [Signature]
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

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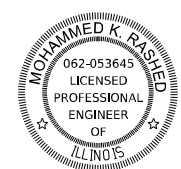
REVISED SHEET 6/10/2024



PROJECT LOCATION
NTS

GROSS LENGTH = 9,077 FT. = 1.719 MILE
NET LENGTH = 8,458 FT. = 1.602 MILE

CERTIFICATION AND SEALS



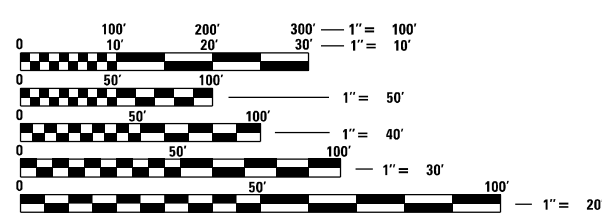
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SIGNED: [Signature] DATE: 02/02/2024 EXPIRES: 11/30/2025 SHEETS: 27-35, 82-84, 104-113

SIGNED: [Signature] DATE: 02/02/2024 EXPIRES: 11/30/2025 SHEETS: 114-130, 279-298

SIGNED: [Signature] DATE: 02/02/2024 EXPIRES: 11/30/2025 SHEETS: 68-78,

PROJECT LOCATED IN THE CITY OF ELGIN



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

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123
OR 811

PROJECT ENGINEER: SUNG BYUN (847) 705-4588
PROJECT MANAGER: KIM HARVEY (847) 705-4055

CONTRACT NO. 62U83

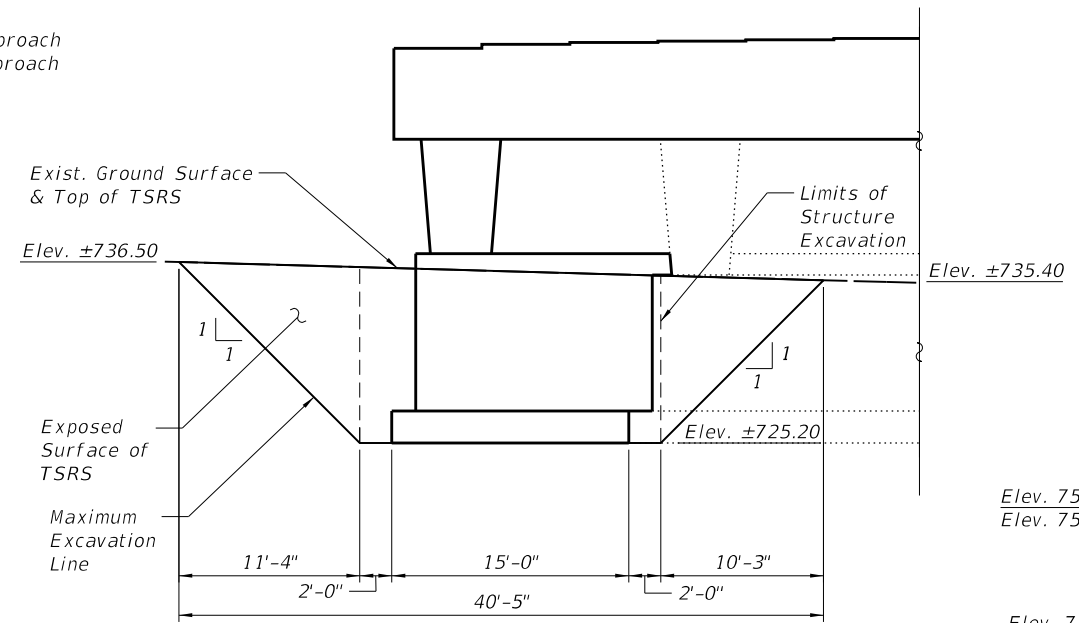
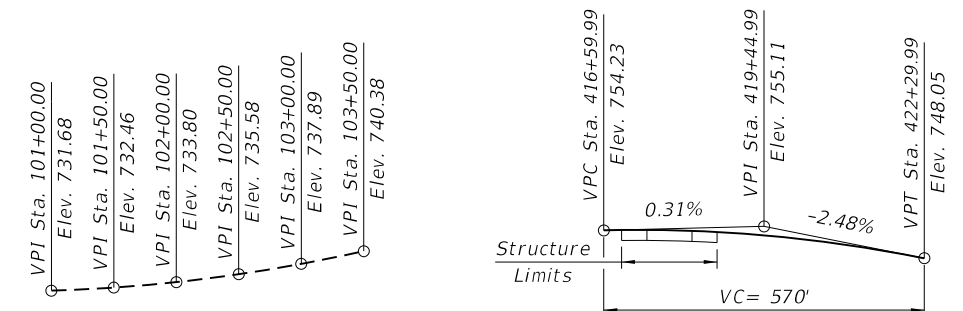


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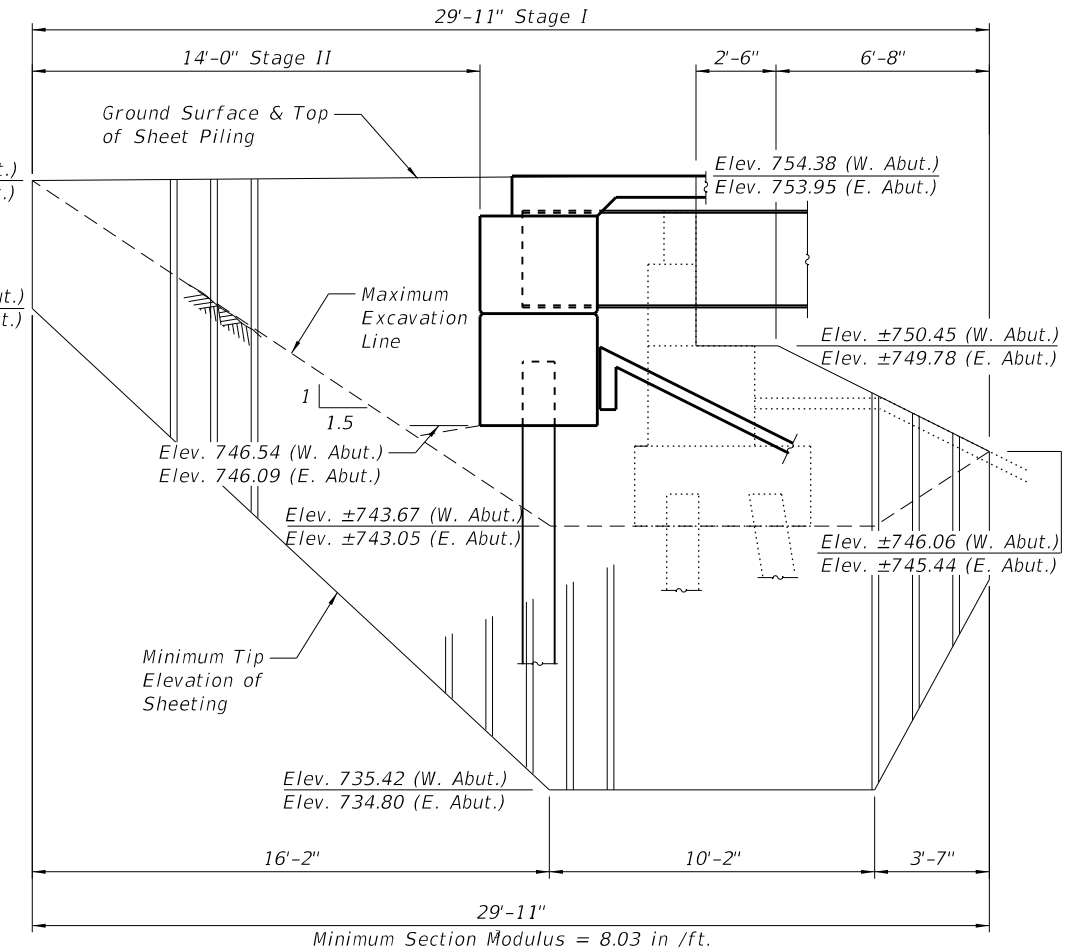
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INDEX OF SHEETS

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- 5 - Construction Staging
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- 7 - Substructure Layout
- 8 - Top of Deck Slab Elevations Layout
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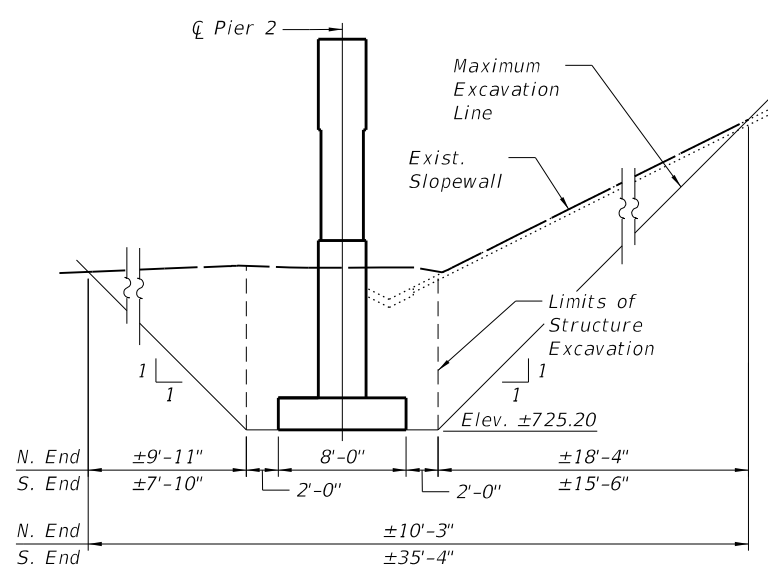


VIEW A-A
(Looking East)

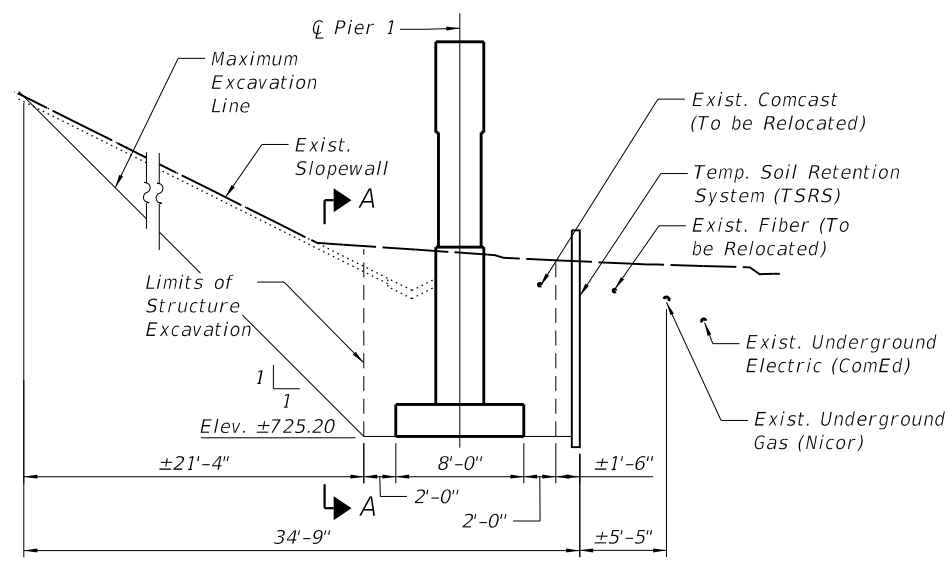


TEMPORARY SHEET PILING AT ABUTMENTS

If the Contractor chooses to alter the temporary cantilevered 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



PIER 2 EXCAVATION LIMITS
(Looking North)



PIER 1 EXCAVATION LIMITS & TSRS

(Looking North)

A cantilevered sheet piling design does not appear feasible and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan details and calculations for review and acceptance by the Engineer.

REVISD ENTIRE SHEET 6/10/2024

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PLOT DATE = 5/9/2024	DRAWN - BAH	REVISED -
	CHECKED - ECK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

INDEX OF SHEETS
STRUCTURE NO. 046-0006
SHEET 2 OF 42 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	FAP 345-23-BR	KANE	379	133
CONTRACT NO. 62U83				

ILLINOIS FED. AID PROJECT

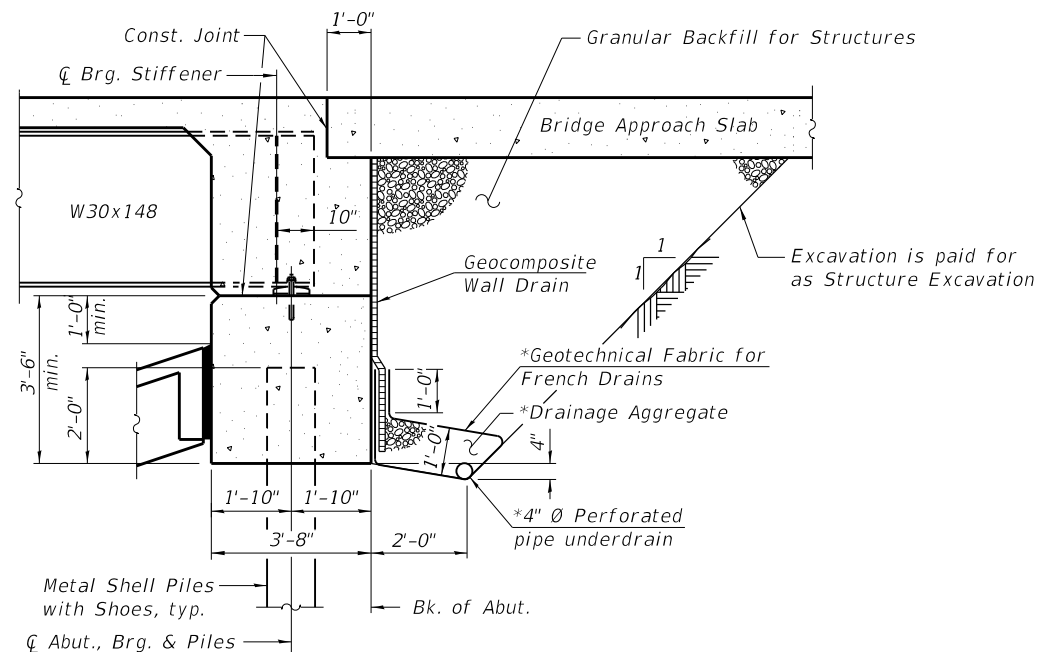
GENERAL NOTES

- Fasteners shall be ASTM F3125 Grade A325 Type 1, mechanically galvanized bolts in painted areas. Bolts 7/8 in. Ø, holes 15/16 in. Ø, unless otherwise noted.
- Calculated weight of Structural Steel = 402,240 Pounds (M270 Gr. 50)
= 42,070 Pounds (M270 Gr. 36)
- No field welding is permitted except as specified in the contract documents.
- Reinforcement bars designated (E) shall be epoxy coated.
- Plan dimensions and details relative to existing structures are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
- Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8 inch (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.
- The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
- 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 beams, 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 beams shall be Reddish Brown, Munsell No. 2.5YR 3/4.

- Removal of existing abutments, bearings, superstructure, approach piles (as needed), slopewall, temporary cribbing at abutments, and temporary HP support posts included in cost of Removal of Existing Structures No. 1. Existing Piers are to remain and to be re-used.
- Slipforming of the parapets and median barrier is not allowed.
- Slope wall shall be reinforced with welded wire fabric, 6 in. x 6 in. - W4.0 x W4.0, weighing 58 lbs. per 100 sq. ft.
- Up to 1/4 inch to be ground off the bridge deck and the bridge approach slab. The Profile Grade shows the final grade after grinding.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Removal Of Existing Structures No. 1	Each	1	-	1
Concrete Removal	Cu. Yd.	-	125.7	125.7
Protective Shield	Sq. Yd.	686	-	686
Structure Excavation	Cu. Yd.	-	919.0	919.0
Floor Drains	Each	4	-	4
Concrete Structures	Cu. Yd.	-	340.5	340.5
Concrete Superstructure	Cu. Yd.	626.9	-	626.9
Protective Coat	Sq. Yd.	2,532	-	2,532
Concrete Superstructure (Approach Slab)	Cu. Yd.	233.0	-	233.0
Furnishing And Erecting Structural Steel	L. Sum	0.49	-	0.49
Stud Shear Connectors	Each	9,765	-	9,765
Reinforcement Bars, Epoxy Coated	Pound	254,210	47,960	302,170
Bar Splicers	Each	698	140	838
Slope Wall 4 Inch	Sq. Yd.	-	900	900
Furnishing Metal Shell Piles 12" X 0.250"	Foot	-	826	826
Driving Piles	Foot	-	826	826
Test Pile Metal Shells	Each	-	2	2
Pile Shoes	Each	-	30	30
Name Plates	Each	1	-	1
Elastomeric Bearing Assembly, Type I	Each	30	-	30
Anchor Bolts, 1"	Each	60	-	60
Anchor Bolts, 1 1/4"	Each	60	-	60
Temporary Sheet Piling	Sq. Ft.	-	760	760
Temporary Soil Retention System	Sq. Ft.	-	324	324
Drainage System for Structures	L. Sum.	1	-	1
Granular Backfill For Structures	Cu. Yd.	-	267.0	267.0
Geocomposite Wall Drain	Sq. Yd.	-	138	138
Pipe Underdrains For Structures 4"	Foot	-	198	198
Noise Abatement Wall Anchor Rod Assembly	Each	48	-	48
Bridge Deck Grooving (Longitudinal)	Sq. Yd.	1,662	-	1,662
Bar Terminators	Each	474	800	1,274
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 Inches)	Sq. Ft.	-	14	14
Deck Slab Repair (Partial)	Sq. Yd.	10	-	10
Drainage Scuppers, DS-11	Each	18	-	18
Diamond Grinding (Bridge Section)	Sq. Yd.	1,746	-	1,746
Temporary Shoring and Cribbing	Each	-	2	2

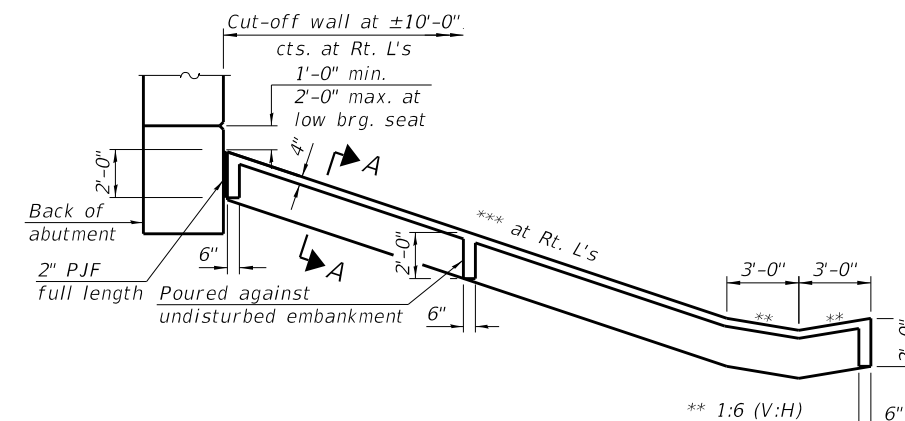
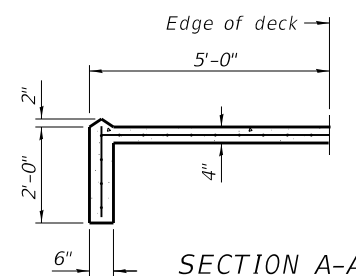


SECTION THRU INTEGRAL ABUTMENT

(Horiz. dim. @ Rt. L's)

*Included in cost of Pipe Underdrains for Structures

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



SECTION THRU CONCRETE SLOPEWALL

*** West Abut: Var. 1:2.75 to 1:28 (V:H) from N. to S.
East Abut: Var. 1:2.64 to 1:36 (V:H) from N. to S.

REVISD ENTIRE SHEET 6/10/2024

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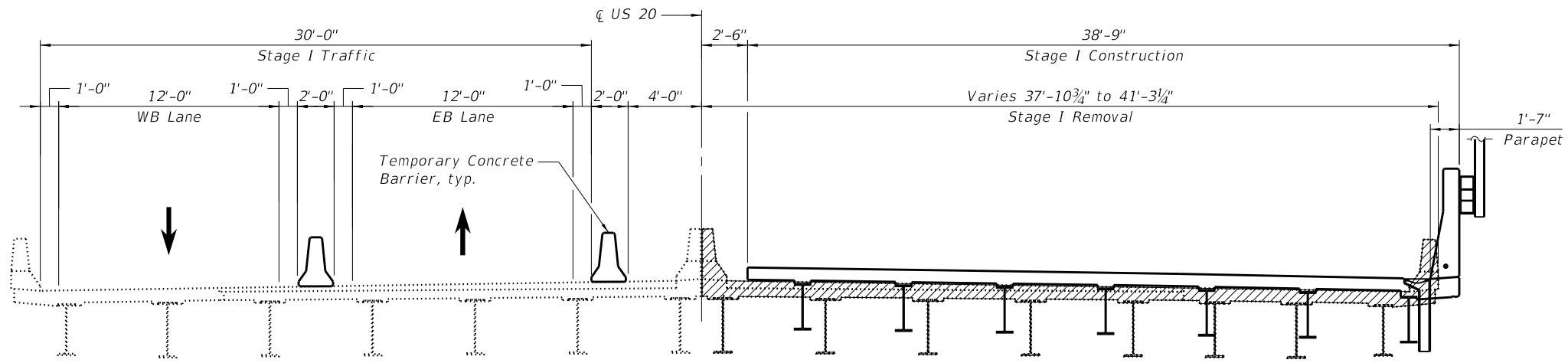
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

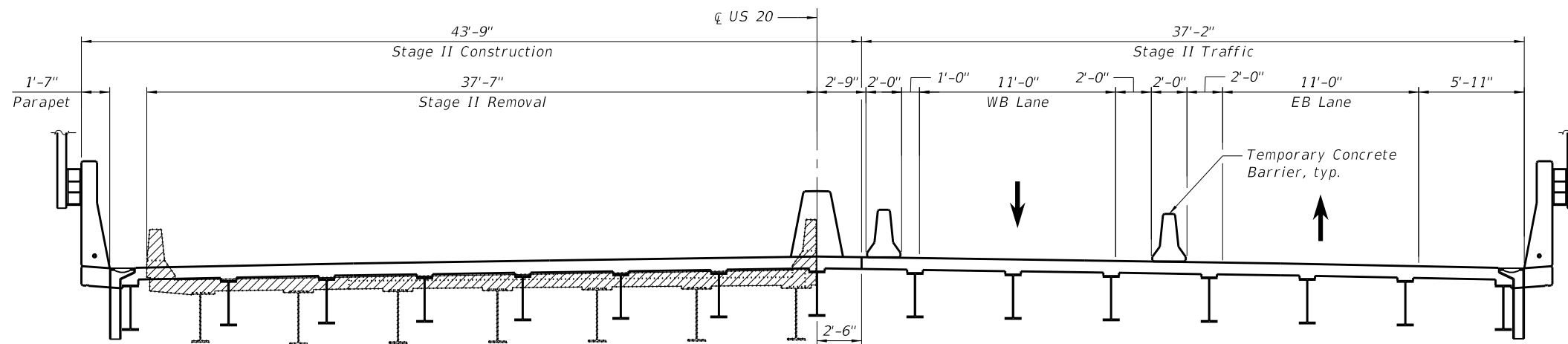
GENERAL NOTES & TOTAL BILL OF MATERIAL
STRUCTURE NO. 045-0006

SHEET 3 OF 42 SHEETS

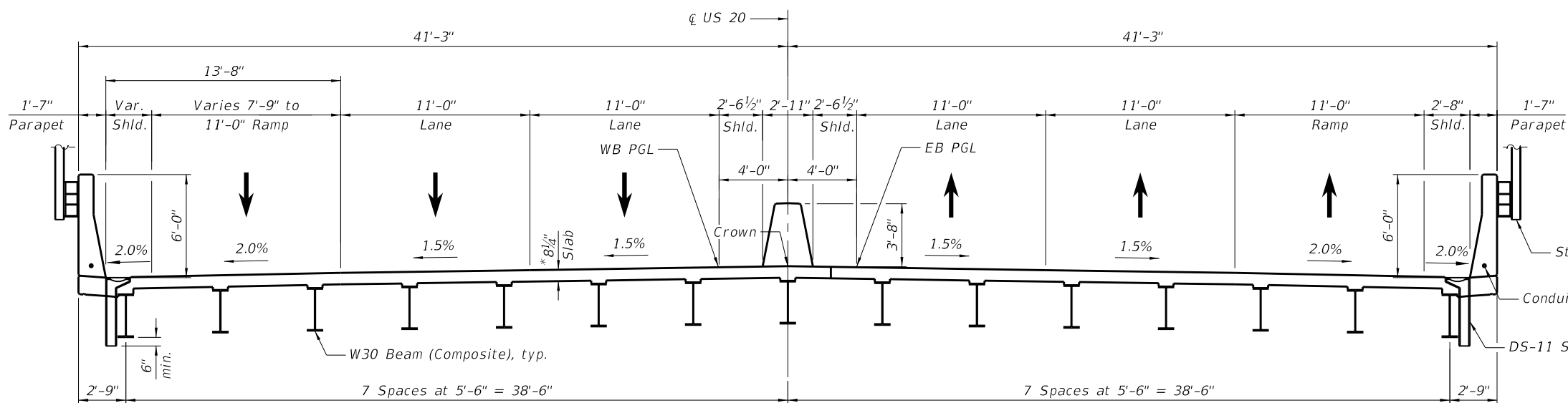
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	FAP 345-23-BR	KANE	379	134
CONTRACT NO. 62U83				
ILLINOIS FED. AID PROJECT				



STAGE I CROSS SECTION
(Looking East)



STAGE II CROSS SECTION
(Looking East)



FINAL CROSS SECTION
(Looking East)

LEGEND

Removal (See Note 1)

NOTES:

1. Hatched area indicates removal of Existing Structures No. 1.
2. For Temporary Concrete Barrier details see Sheet 6 of 42.
3. See Roadway Plans for quantity of Temporary Concrete Barrier.

REVISED ENTIRE SHEET 6/10/2024

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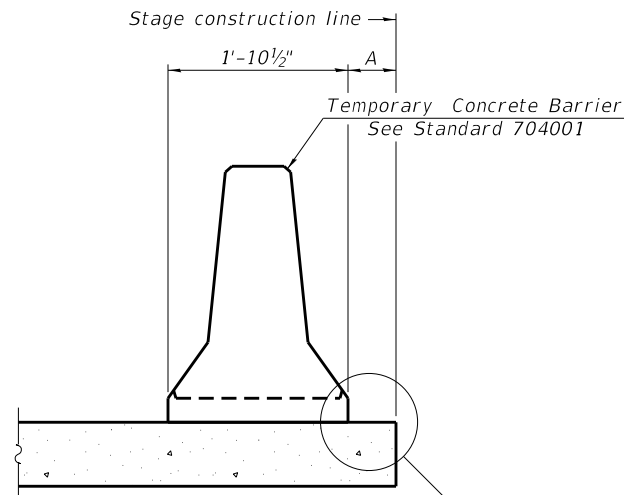
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONSTRUCTION STAGING
STRUCTURE NO. 045-0006

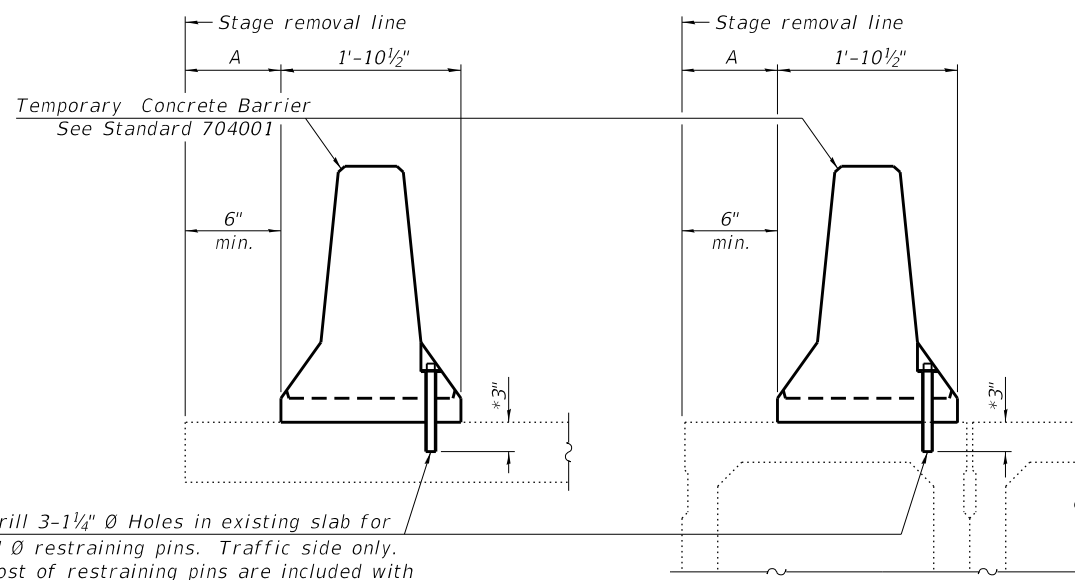
SHEET 5 OF 42 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	FAP 345-23-BR	KANE	379	136
CONTRACT NO. 62U83				
ILLINOIS FED. AID PROJECT				



When "A" is 3'-1" or less, the temporary concrete barrier shall be restrained to the new slab according to Detail I, II or III. No restraint is required when "A" is greater than 3'-1".

NEW SLAB OR NEW DECK BEAM



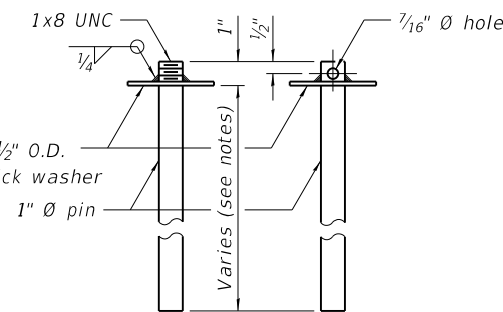
Drill 3-1/4" Ø Holes in existing slab for 1" Ø restraining pins. Traffic side only. Cost of restraining pins are included with Temporary Concrete Barrier. No restraint is required when "A" is greater than 3'-1".

EXISTING SLAB

* When hot-mix asphalt wearing surface is present, embedment shall be 3" plus the wearing surface depth.

EXISTING DECK BEAM

SECTIONS THRU SLAB OR DECK BEAM

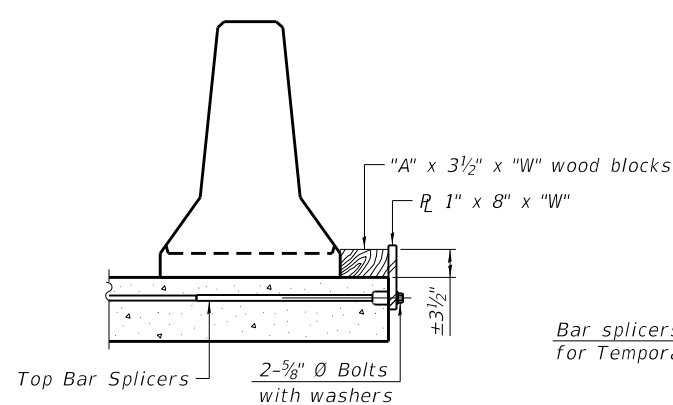


RESTRAINING PIN

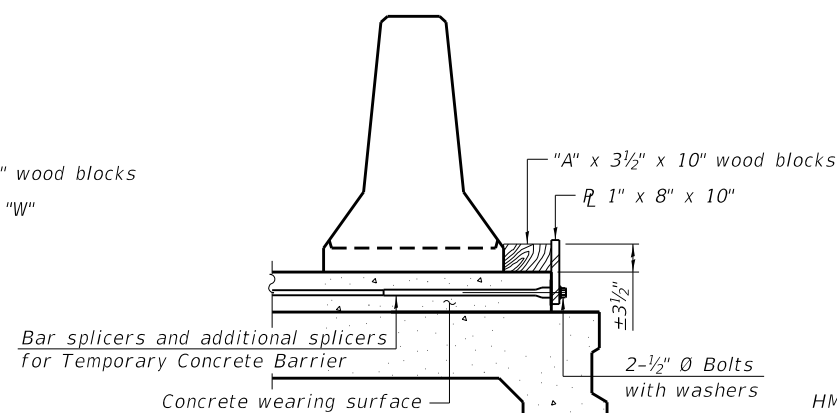
US Std. 1 1/16" I.D. x 2 1/2" O.D. x approx. 8 gauge thick washer

1" Ø pin

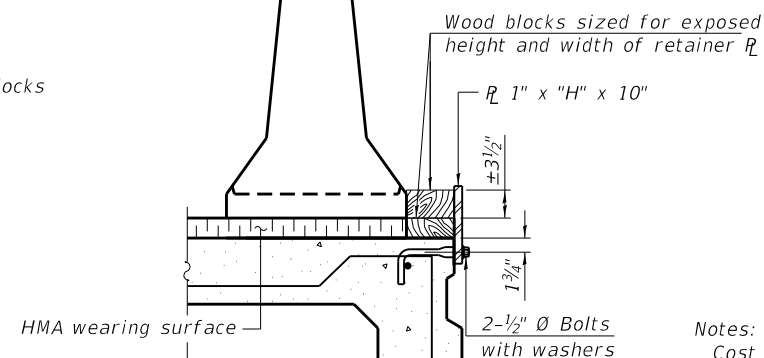
Varies (see notes)



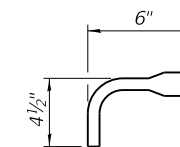
DETAIL I



DETAIL II



DETAIL III

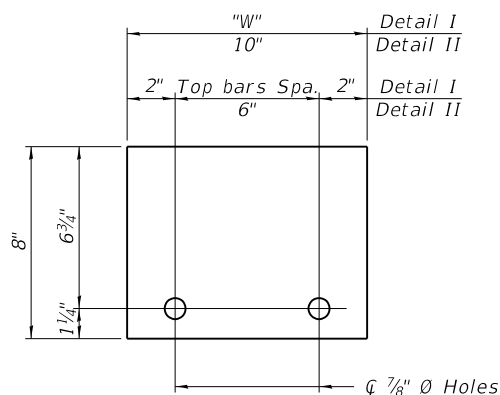


BAR SPLICER FOR #4 BAR - DETAIL III

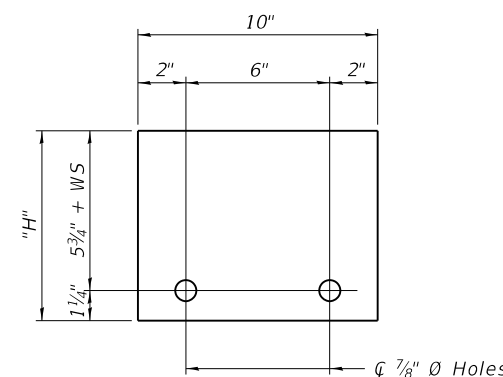
NOTES:

Notes:
 Cost of retainer assembly is included with Temporary Concrete Barrier.
 A retainer assembly shall be located at the approximate center of each temporary concrete barrier.
 The retainer plate shall not be removed until the concrete on the adjacent stage is ready to be poured. For Detail III applications the retainer plate shall not be removed until just prior to placing the adjacent beam.
 When the 'A' dimension is less than 1 1/2', the wood block shall be omitted and the barrier shall be placed in direct contact with the steel retainer plate. For deck beam applications the minimum required 'A' distance is 6" to accommodate the shear key clamping device.

Detail I - Installation for a new bridge deck or bridge slab.
 Detail II - Installation for a new deck beam with an initial concrete wearing surface. Additional bar splicers shall be provided at 6'-0" centers and paired with the bar splicers of the concrete wearing surface reinforcement to accommodate the installation of the retainer assemblies. The cost of the additional bar splicers is included with the concrete wearing surface.
 Detail III - Installation for a new deck beam with no initial wearing surface or with an initial hot-mix asphalt (HMA) wearing surface present. The deck beam directly beneath the temporary concrete barrier shall be fabricated with bar splicer inserts in the side of the beam, as detailed, to accommodate the installation of the retainer assemblies. A pair of bar splicers, 6" apart, shall be placed at 6'-0" centers along the length of the beam. The cost of the bar splicers is included with the deck beam.



STEEL RETAINER 1" x 8" x "W"
(Detail I and II)



STEEL RETAINER 1" x "H" x 10"
(Detail III)

RAILING CRITERIA

NCHRP 350 Test Level	3
Railing Weight (plf)	440

R-27 10-12-2021

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE BARRIER
STRUCTURE NO. 045-0006

SHEET 6 OF 42 SHEETS

REVISED ENTIRE SHEET 6/10/2024

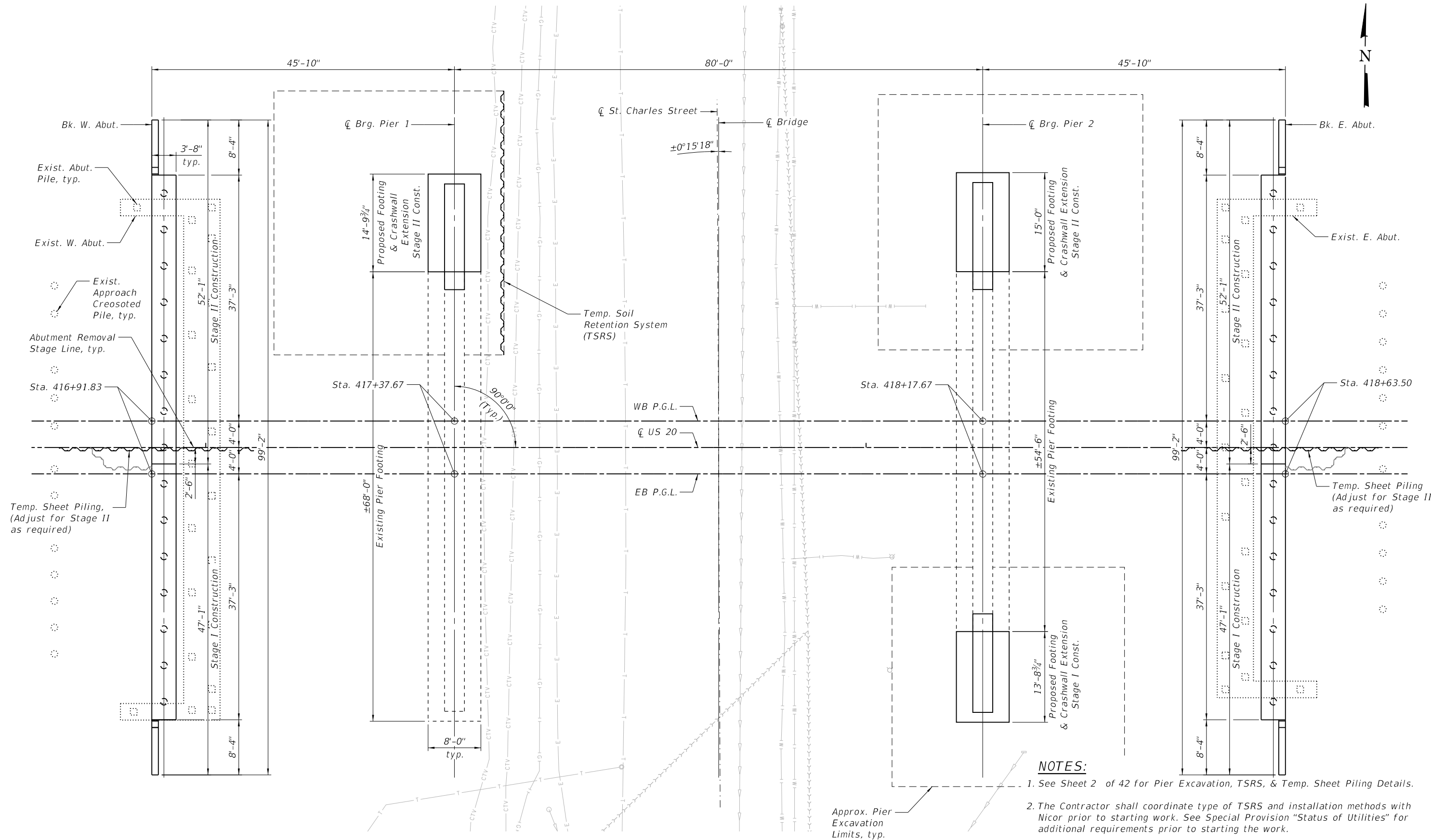
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	FAP 345-23-BR	KANE	379	137
CONTRACT NO. 62U83				

ILLINOIS FED. AID PROJECT

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PLAN

REVISED ENTIRE SHEET 6/10/2024

NOTES:

1. See Sheet 2 of 42 for Pier Excavation, TSRS, & Temp. Sheet Piling Details.
2. The Contractor shall coordinate type of TSRS and installation methods with Nicor prior to starting work. See Special Provision "Status of Utilities" for additional requirements prior to starting the work.
3. The Contractor shall coordinate type of TSRS and installation methods with ComEd prior to starting work. See Special Provision "Status of Utilities" for additional requirements prior to starting the work.



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STATE OF ILLINOIS
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SUBSTRUCTURE LAYOUT
 STRUCTURE NO. 045-0006

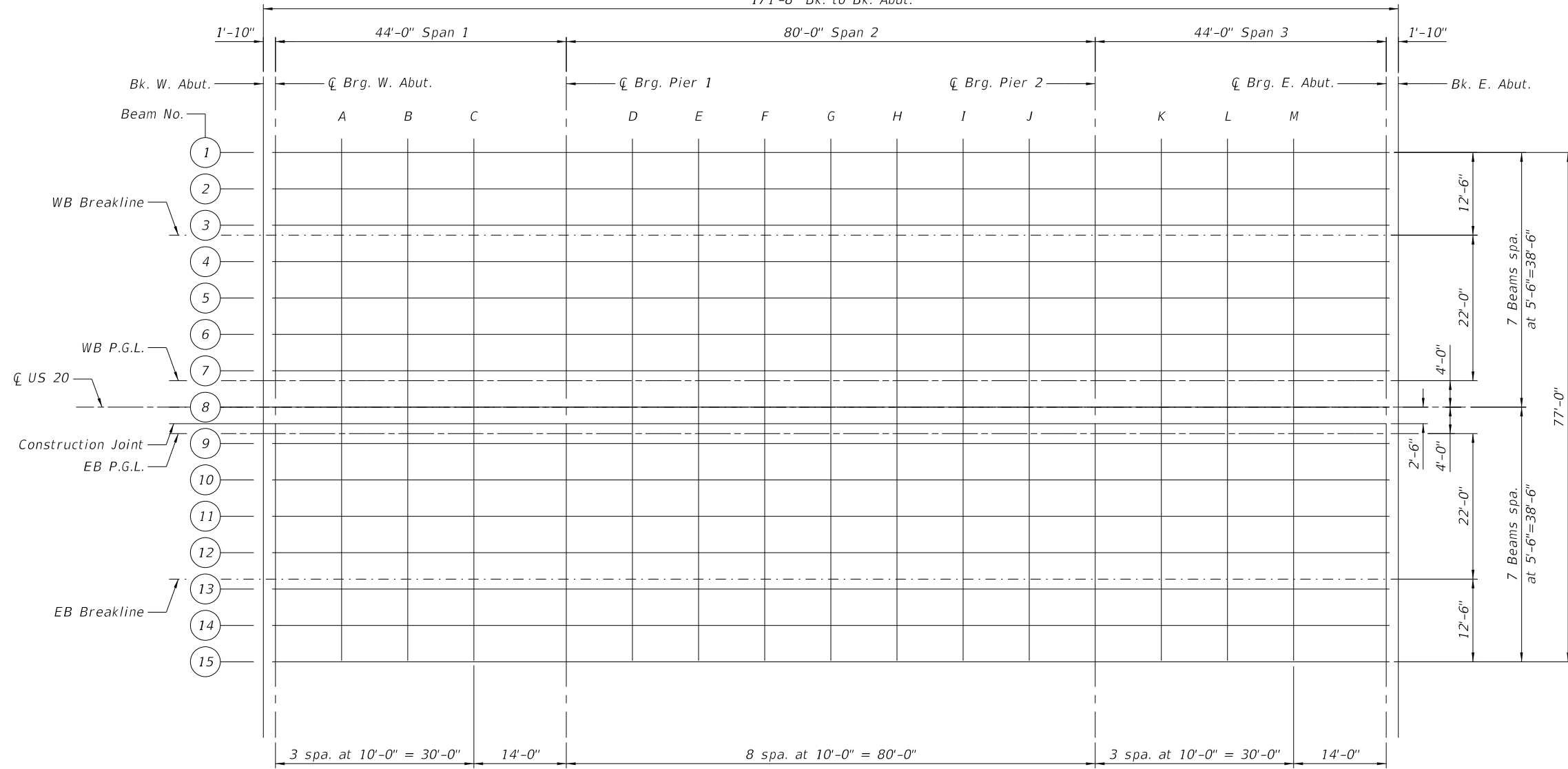
SHEET 7 OF 42 SHEETS

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CONTRACT NO. 62U83				

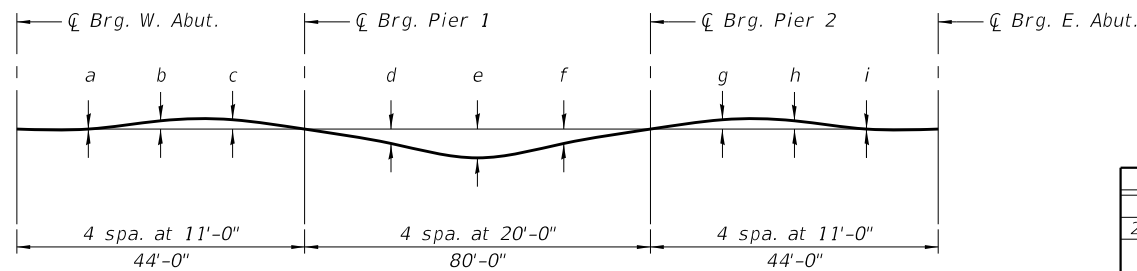
ILLINOIS FED. AID PROJECT

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171'-8" Bk. to Bk. Abut.



PLAN



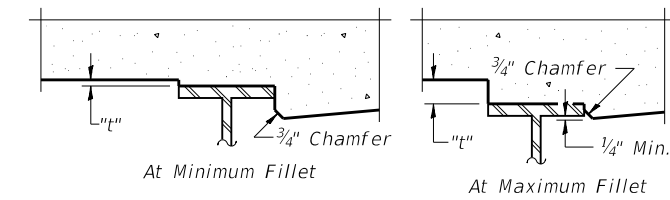
DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only.)

The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on sheet 9 & 10 of 42.

Beam No.	a	b	c	d	e	f	g	h	i
1 & 15	0"	1/16"	1/8"	15/16"	1 1/2"	1 5/16"	1/8"	1/16"	0"
2, 3, 13 & 14	0"	1/16"	1/8"	1 3/16"	1 3/16"	1 3/16"	1/8"	1/16"	0"
4, 5, 6, 10, 11 & 12	0"	1/16"	1/16"	9/16"	7/8"	9/16"	1/16"	1/16"	0"
7, 8 & 9	0"	1/16"	1/8"	3/4"	1 3/16"	3/4"	1/8"	1/16"	0"

DEAD LOAD DEFLECTION TABLE



To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown on sheet 9 & 10 of 42. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on sheet 9 & 10 of 42 minus slab thickness, equals the fillet heights "t" above top flange of beams.

The slab is to be ground after curing to achieve smoothness, but the slab is not to be ground to elevations below the "Theoretical Grade Elevations" shown on sheets 9 & 10 of 42. For grinding the deck, see Special Provisions.

FILLET HEIGHTS

REVISED ENTIRE SHEET 6/10/2024



USER NAME = eckay	DESIGNED - ECK	REVISED -
PLOT SCALE = 20,0000' / in.	CHECKED - GEK	REVISED -
PLOT DATE = 5/9/2024	DRAWN - BAH	REVISED -
	CHECKED - ECK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF DECK SLAB ELEVATIONS LAYOUT
STRUCTURE NO. 045-0006

SHEET 8 OF 42 SHEETS

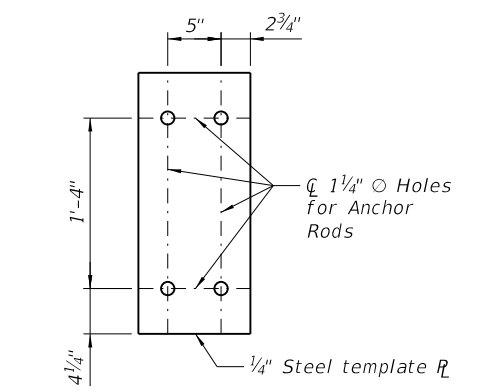
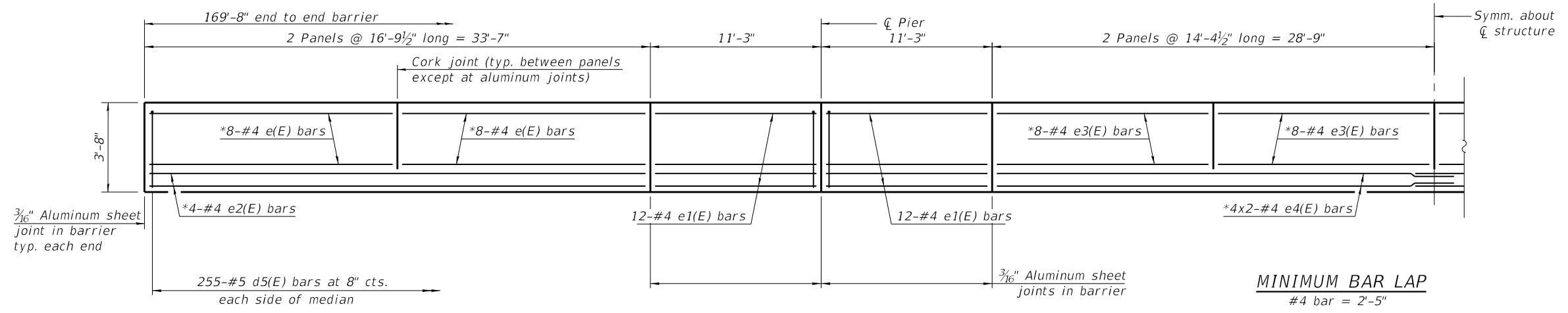
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	FAP 345-23-BR	KANE	379	139
CONTRACT NO. 62U83				

ILLINOIS FED. AID PROJECT

2

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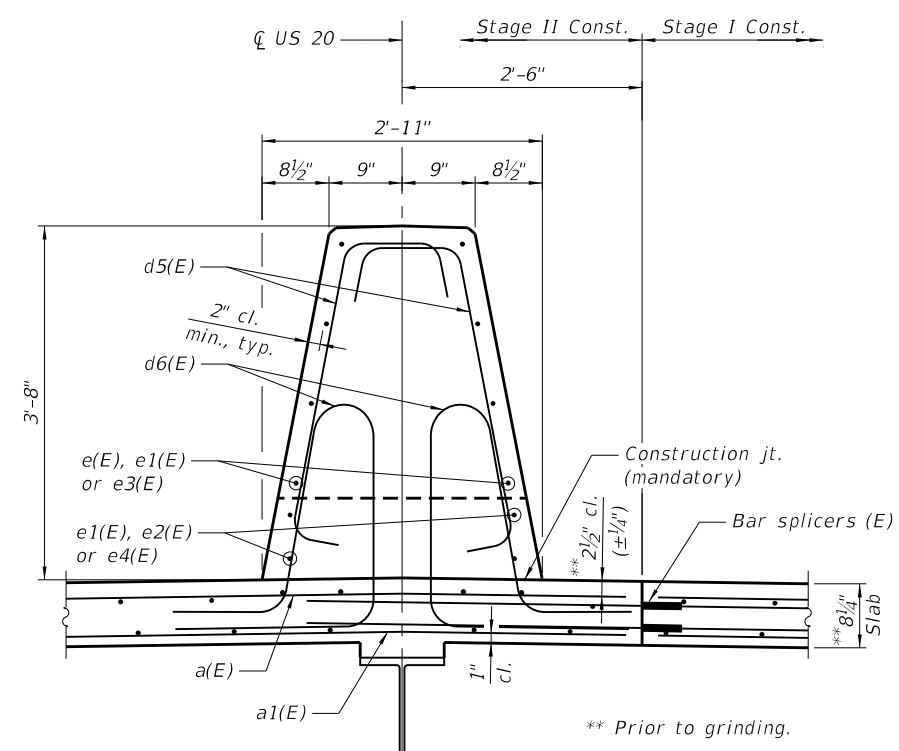


MINIMUM BAR LAP
#4 bar = 2'-5"

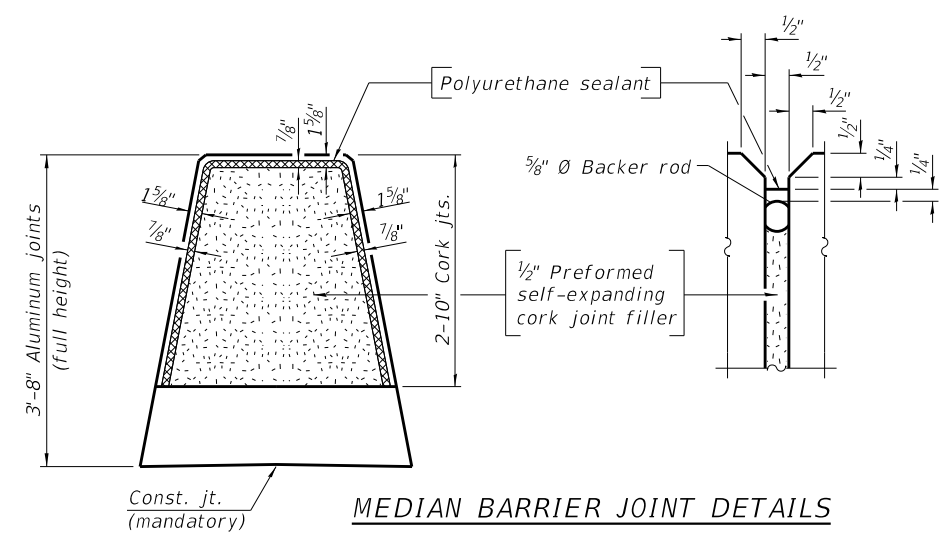
TEMPLATE PLATE FOR NOISE ABATEMENT WALL ANCHOR ROD ASSEMBLY

* See Section thru Median Barrier

ELEVATION OF MEDIAN BARRIER



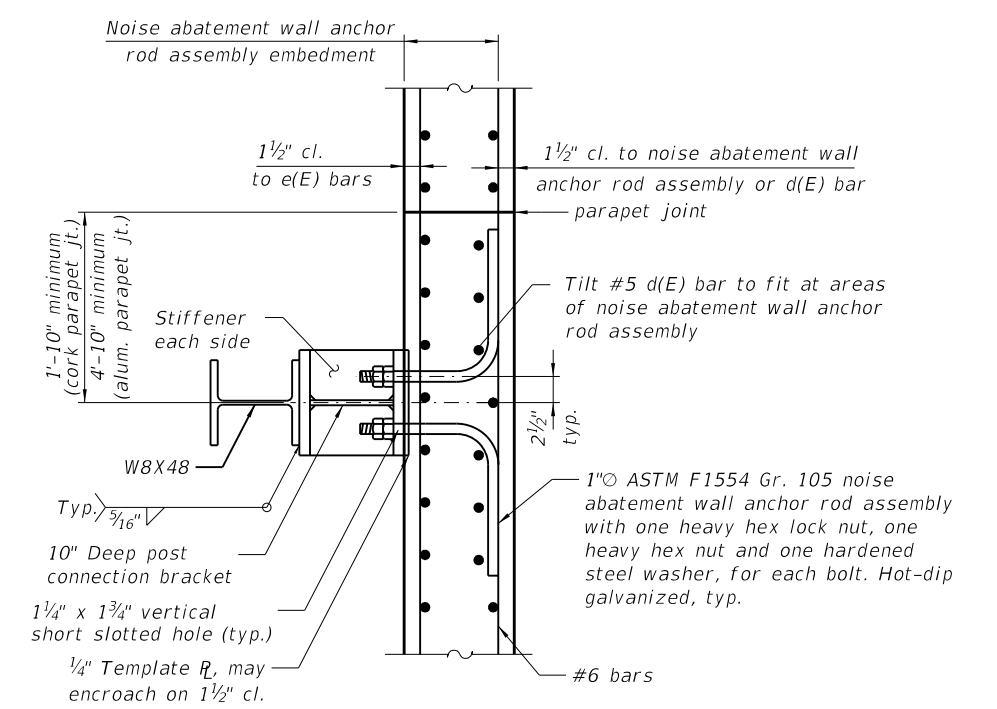
SECTION THRU MEDIAN BARRIER
(Looking East)



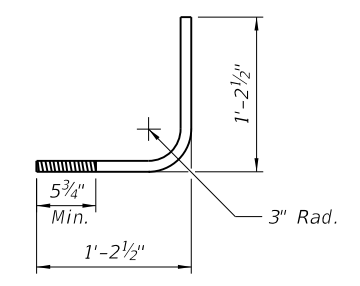
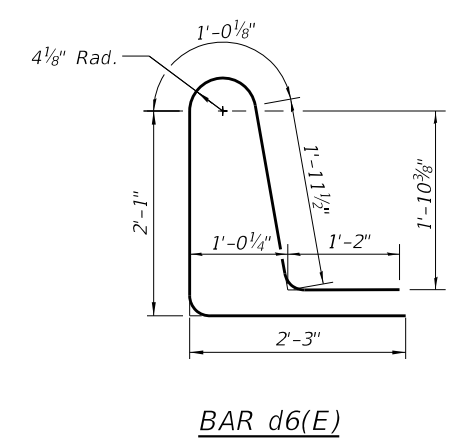
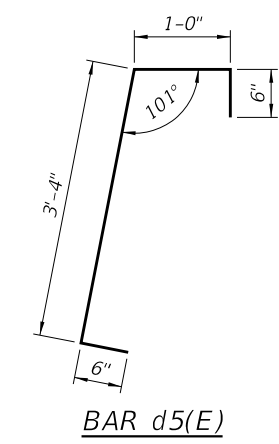
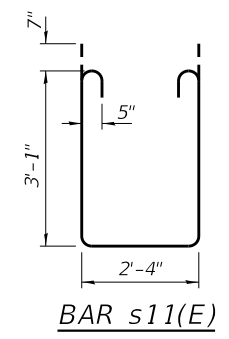
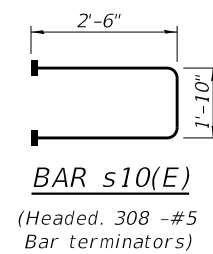
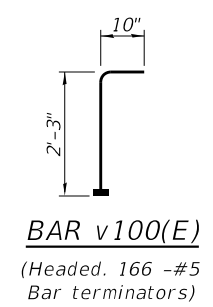
MEDIAN BARRIER JOINT DETAILS

NOTES:

1. The 3/16" min. aluminum sheet shall be ASTM B 209 alloy 3003-H14 and coated with 5 mils of either bitumen paint or epoxy paint to minimize reaction with wet concrete. Cost included with Concrete Superstructure.
2. The polyurethane sealant shall be according to Article 1050.04 of the Std. Spec. and the color shall be gray.
3. Bar terminators will be paid for separately. See Total Bill of Material.



SECTION A-A



NOISE ABATEMENT WALL ANCHOR ROD ASSEMBLY

REVISD ENTIRE SHEET 6/10/2024

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PLOT DATE = 5/9/2024	DRAWN - BAH	REVISED -
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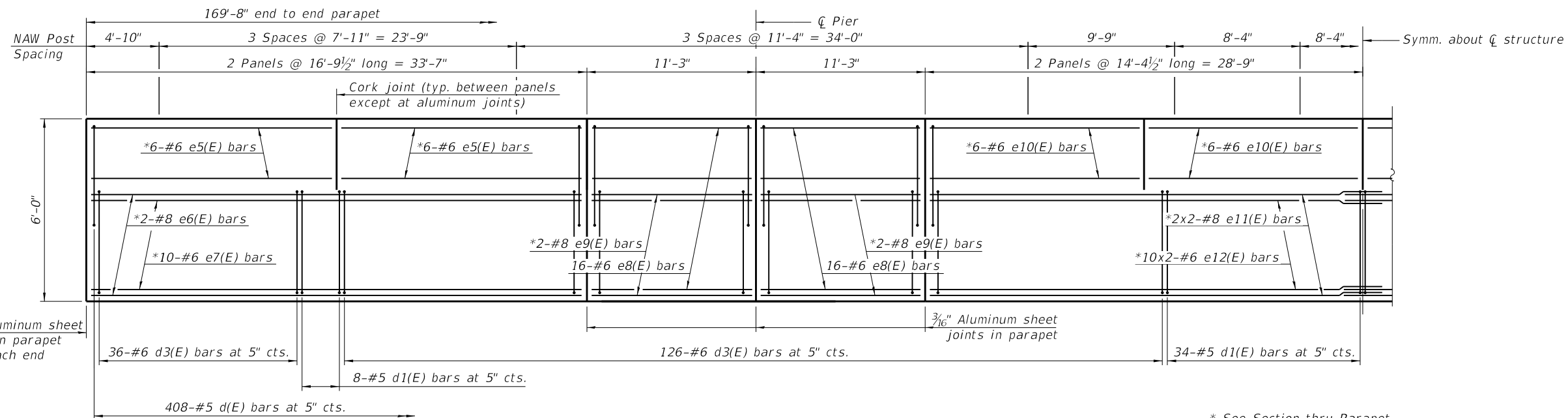
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**SUPERSTRUCTURE DETAILS I
STRUCTURE NO. 045-0006**

SHEET 15 OF 42 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	FAP 345-23-BR	KANE	379	146
CONTRACT NO. 62U83				

ILLINOIS FED. AID PROJECT



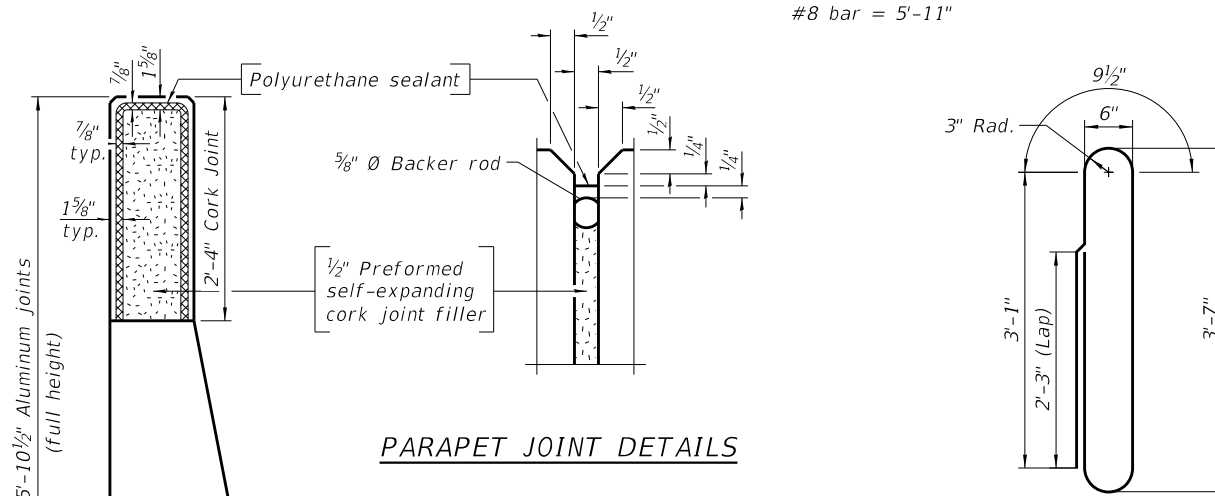
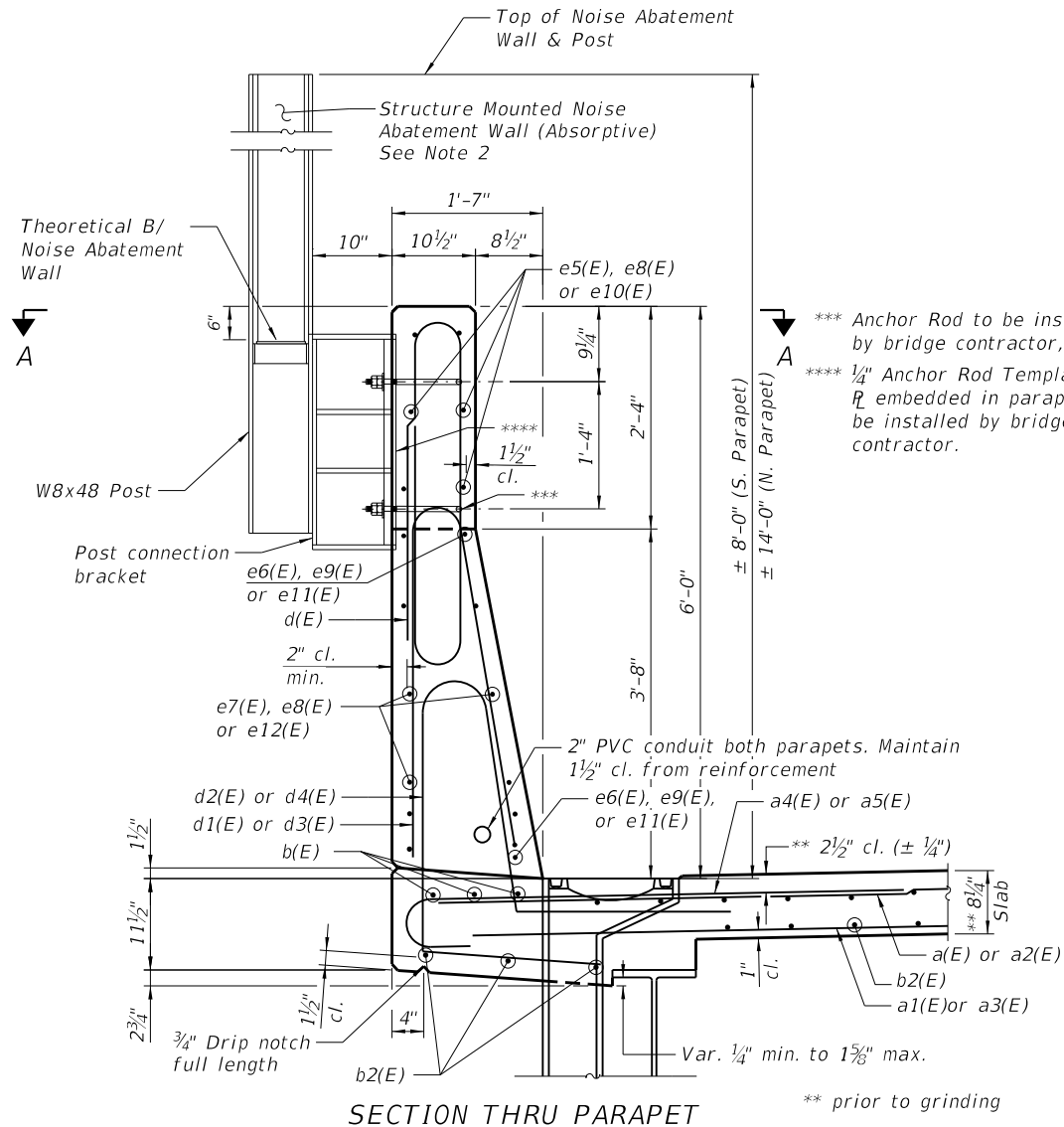
**SUPERSTRUCTURE
 BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a(E)	268	#5	43'-3"	
a1(E)	204	#5	42'-11"	
a2(E)	268	#5	38'-3"	
a3(E)	204	#5	37'-11"	
a4(E)	648	#8	10'-0"	
a5(E)	168	#6	7'-5"	
a6(E)	144	#5	1'-6"	
b(E)	510	#5	31'-2"	
b1(E)	156	#6	41'-4"	
b2(E)	380	#5	36'-8"	
d(E)	816	#5	10'-0"	
d1(E)	168	#5	8'-1"	
d2(E)	168	#5	9'-10"	
d3(E)	648	#6	8'-7"	
d4(E)	648	#6	10'-4"	
d5(E)	510	#5	5'-4"	
d6(E)	510	#5	8'-6"	
e(E)	32	#4	16'-5"	
e1(E)	48	#4	10'-11"	
e2(E)	8	#4	33'-3"	
e3(E)	32	#4	14'-0"	
e4(E)	8	#4	29'-10"	
e5(E)	48	#6	16'-5"	
e6(E)	8	#8	33'-3"	
e7(E)	40	#6	33'-3"	
e8(E)	128	#6	10'-11"	
e9(E)	16	#8	10'-11"	
e10(E)	48	#6	14'-0"	
e11(E)	8	#8	31'-7"	
e12(E)	40	#6	30'-5"	
m10(E)	8	#6	43'-5"	
m11(E)	78	#6	5'-2"	
m12(E)	8	#6	38'-5"	
m13(E)	12	#6	2'-5"	
s10(E)	154	#5	6'-10"	
s11(E)	154	#5	9'-8"	
v100(E)	166	#5	3'-1"	
Reinforcement Bars, Epoxy Coated		Lbs.	153,720	
Concrete Superstructure		Cu. Yds.	580.2	
Protective Coat		Sq. Yd.	1,870	
Diamond Grinding (Bridge Section)		Sq. Yd.	1,290	
Bridge Deck Grooving (Longitudinal)		Sq. Yd.	1,233	
Noise Abatement Wall Anchor Rod Assembly		Each	36	

INSIDE ELEVATION OF PARAPET

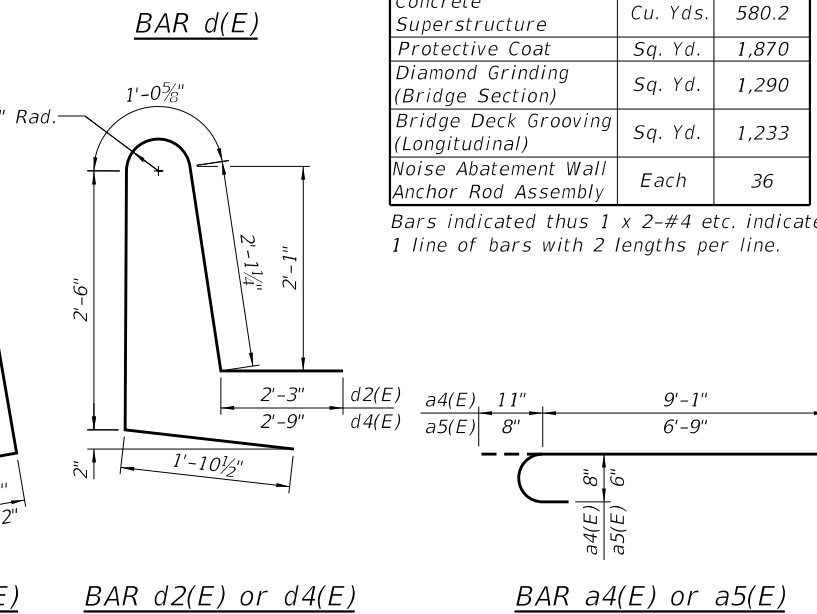
MINIMUM BAR LAP

#6 bar = 3'-7"
 #8 bar = 5'-11"



NOTES:

- The ¾" aluminum sheet shall be ASTM B 209 alloy 3003-H14 and coated with 5 mils of either bitumen paint or epoxy paint to minimize reaction with wet concrete. Cost included with Concrete Superstructure.
- The polyurethane sealant shall be according to Article 1050.04 of the Std. Spec. and the color shall be gray.
- Post and post connection details shown on bridge plans for information only. See Noise Abatement Wall plans for full details.
- See Sheet 15 of 42 for NAW Anchor Rod Assembly and Section A-A.
- See Sheet 1, 22 & 23 of 42 for Floor Drain and Scupper locations and details.



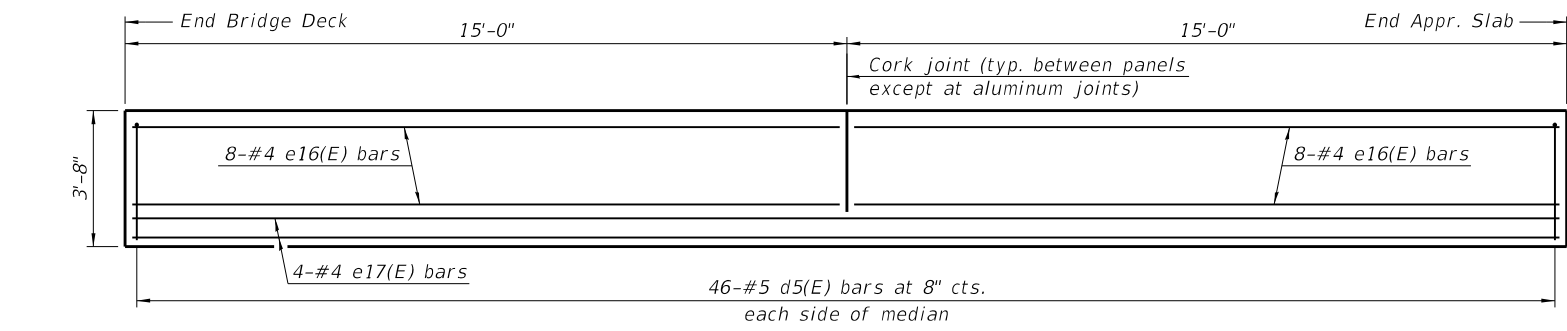
REVISIONS
 2 REVISED ENTIRE SHEET 6/10/2024

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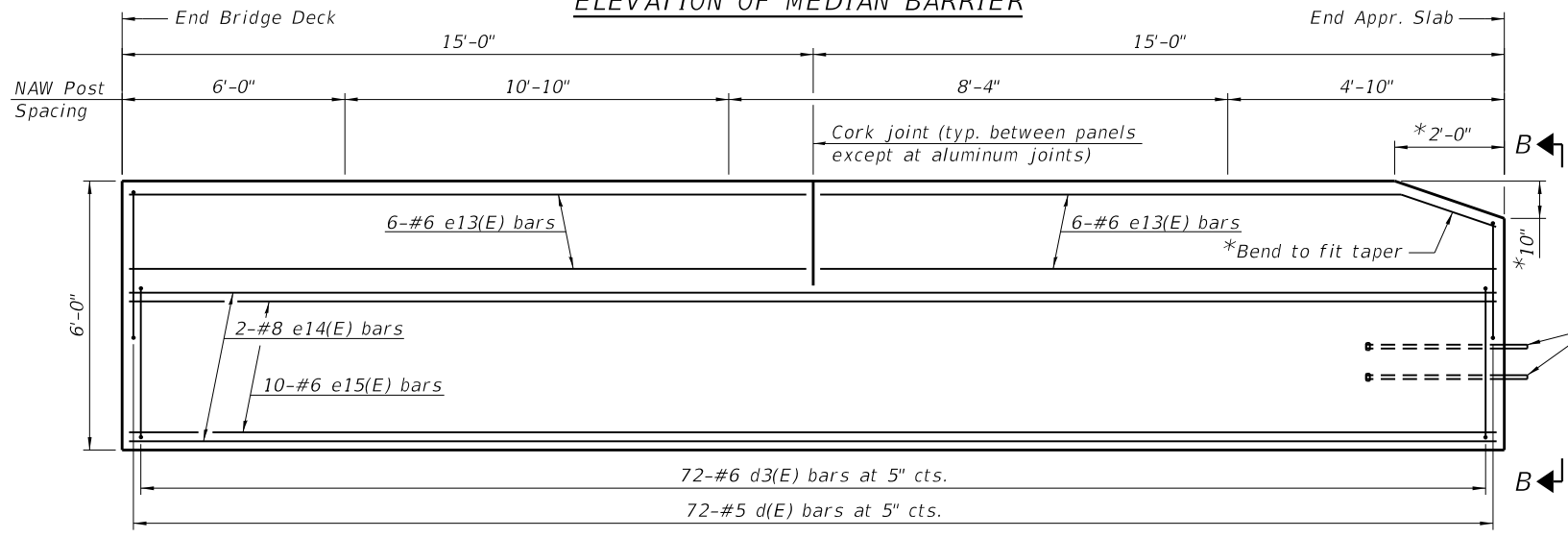
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	PLOT SCALE = 2.0000' / in.	DRAWN - BAH	REVISD -			SHEET 16 OF 42 SHEETS			CONTRACT NO. 62U83	
	PLOT DATE = 5/9/2024	CHECKED - ECK	REVISD -	ILLINOIS FED. AID PROJECT						

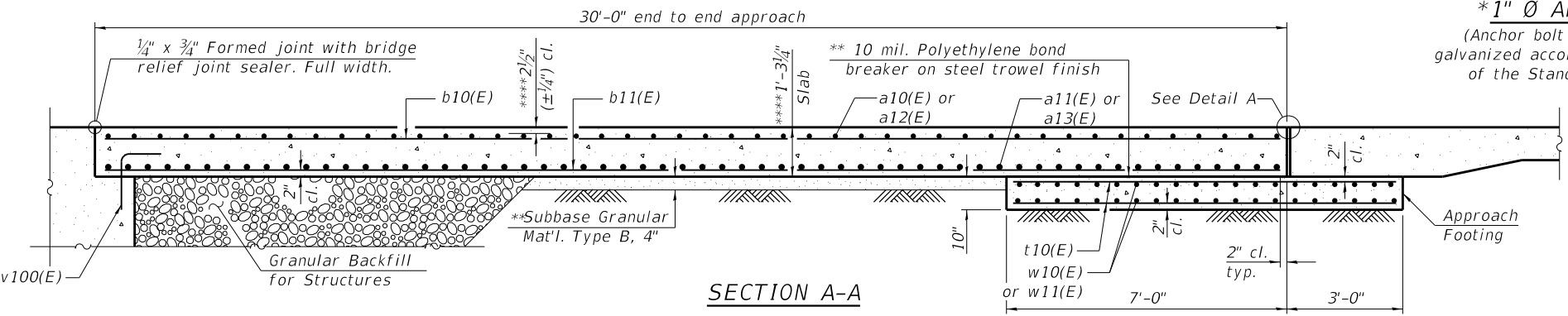
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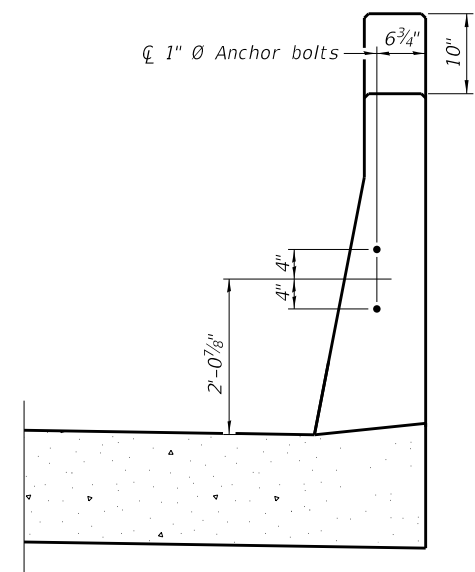
ELEVATION OF MEDIAN BARRIER



INSIDE ELEVATION AT PARAPET

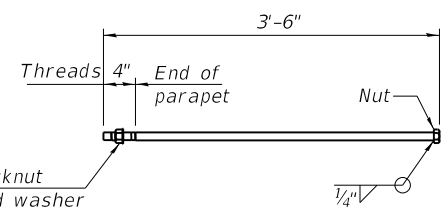


SECTION A-A



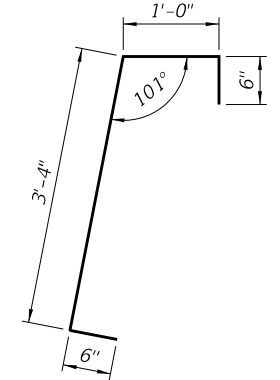
VIEW B-B

1" Ø Anchor bolts for Type 5 terminal connections only, see View B-B and Highway Standard 631026. For Type 6 terminal connections see Highway Standard 631031. (Only for east approach)



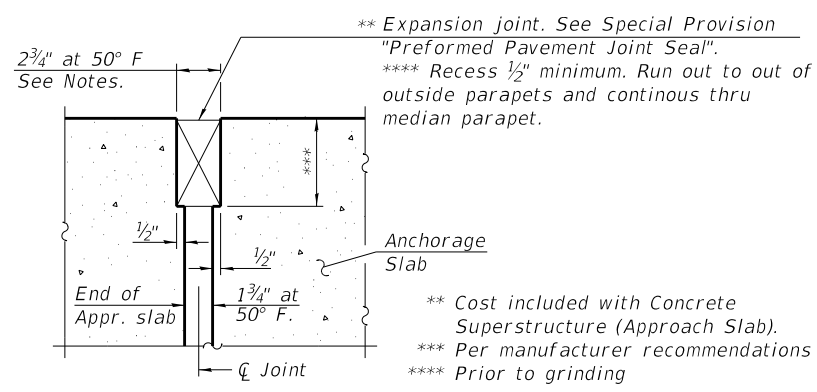
*** 1" Ø ANCHOR BOLT**

(Anchor bolt assemblies shall be galvanized according to Article 1006.09 of the Standard Specifications)



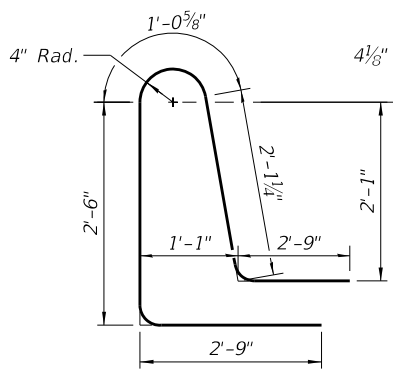
BAR d5(E)

BAR a14(E)

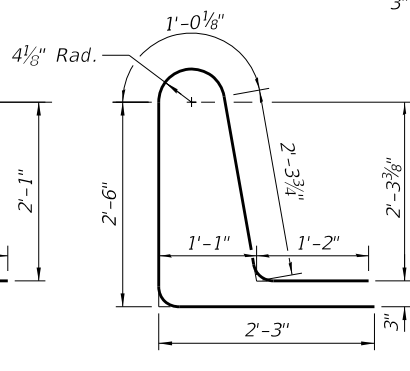


DETAIL A

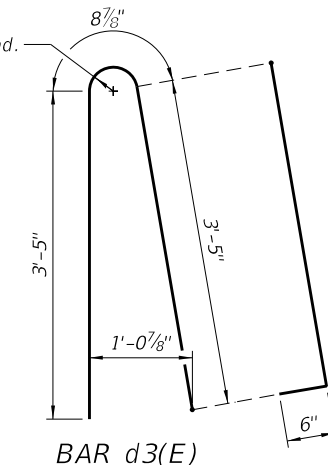
** Expansion joint. See Special Provision "Preformed Pavement Joint Seal".
 **** Recess 1/2" minimum. Run out to out of outside parapets and continuous thru median parapet.
 ** Cost included with Concrete Superstructure (Approach Slab).
 *** Per manufacturer recommendations
 **** Prior to grinding



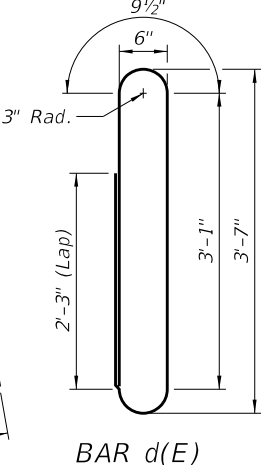
BAR d7(E)



BAR d8(E)



BAR d3(E)



BAR d(E)

NOTES:

- The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach slab.
- Parapet concrete shall be paid for as Concrete Superstructure.
- Approach slab shall be paid for as Concrete Superstructure (Approach Slab).
- Approach footing concrete shall be paid for as Concrete Structures.
- The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
- Cost of excavation for approach footing included with Concrete Structures.
- For Granular Backfill for Structures and drainage treatment details, see sheet 3 of 42.
- For Median Parapet Joint details, see sheet 15 of 42. For Parapet Joint details, see sheet 16 of 42.
- For NAW anchor rod assembly, see sheet 15 of 42.

**TWO APPROACHES
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a10(E)	92	#5	38'-5"	
a11(E)	120	#8	38'-5"	
a12(E)	92	#5	43'-5"	
a13(E)	120	#8	43'-5"	
a14(E)	184	#5	7'-4"	
b10(E)	258	#5	29'-8"	
b11(E)	384	#9	29'-8"	
d(E)	288	#5	10'-0"	
d3(E)	288	#6	8'-7"	
d5(E)	184	#5	5'-4"	
d7(E)	288	#6	11'-2"	
d8(E)	184	#5	9'-3"	
e13(E)	48	#6	14'-8"	
e14(E)	8	#8	29'-8"	
e15(E)	40	#6	29'-8"	
e16(E)	32	#4	14'-8"	
e17(E)	8	#4	29'-8"	
t10(E)	332	#4	9'-8"	
w10(E)	80	#5	38'-4"	
w11(E)	80	#5	43'-4"	
Reinforcement Bars, Epoxy Coated		Lbs.		109,450
Concrete Structures		Cu. Yd.		49.9
Concrete Superstructure		Cu. Yd.		46.7
Concrete Superstructure (Approach Slab)		Cu. Yd.		233.0
Protective Coat		Sq. Yd.		662
Diamond Grinding (Bridge Section)		Sq. Yd.		456
Bridge Deck Grooving (Longitudinal)		Sq. Yd.		429
Noise Abatement Wall Anchor Rod Assembly		Each		12

REVISIONS: REVISED ENTIRE SHEET 6/10/2024



USER NAME = eckay	DESIGNED - ECK	REVISED -
PLOT SCALE = 2.0000' / in.	CHECKED - GEK	REVISED -
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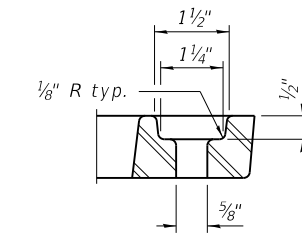
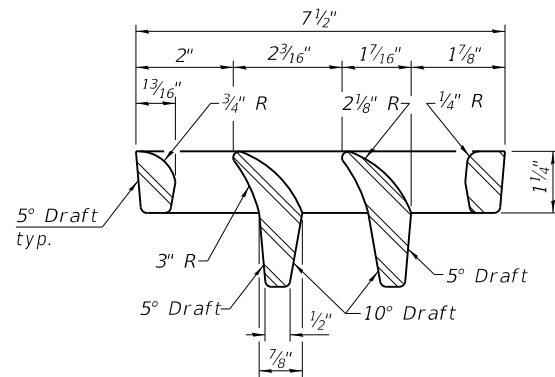
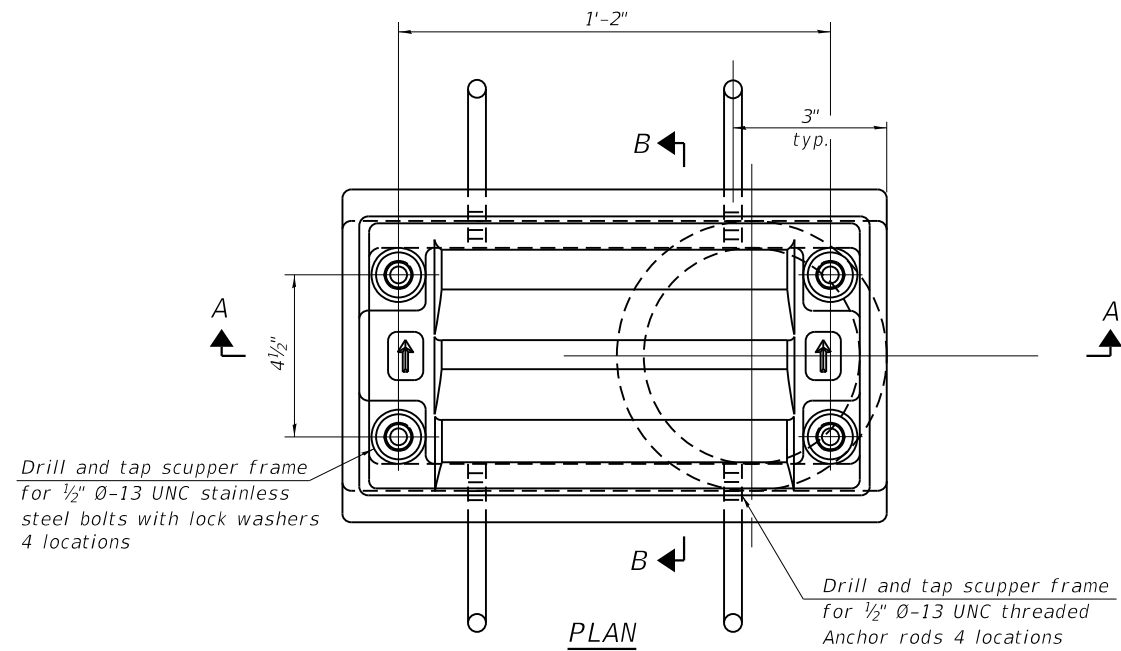
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS II
STRUCTURE NO. 045-0006

SHEET 21 OF 42 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	FAP 345-23-BR	KANE	379	152
CONTRACT NO. 62U83				

ILLINOIS FED. AID PROJECT



Notes:

All cast iron parts shall be gray iron conforming to the requirements of AASHTO M105, Class 35B and AASHTO M306.

Bolts, anchor rods, nuts and washers shall be according to ASTM A307 and shall be galvanized according to AASHTO M232. As an alternate stainless steel may be used.

Stainless steel hardware shall be according to Article 1006.29(d) of the Standard Specifications.

Structural steel weldments of equal sections and of the same configuration may be substituted for the cast iron scupper frames and downspouts; however, the scupper grates shall remain cast iron. Fillet or full penetration welds shall be used for the weldments. Details shall be submitted to the Engineer for approval.

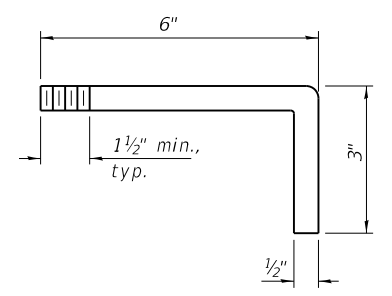
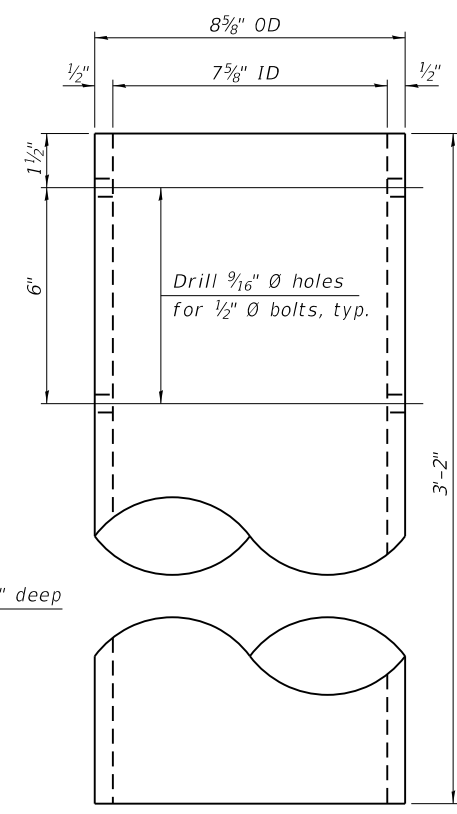
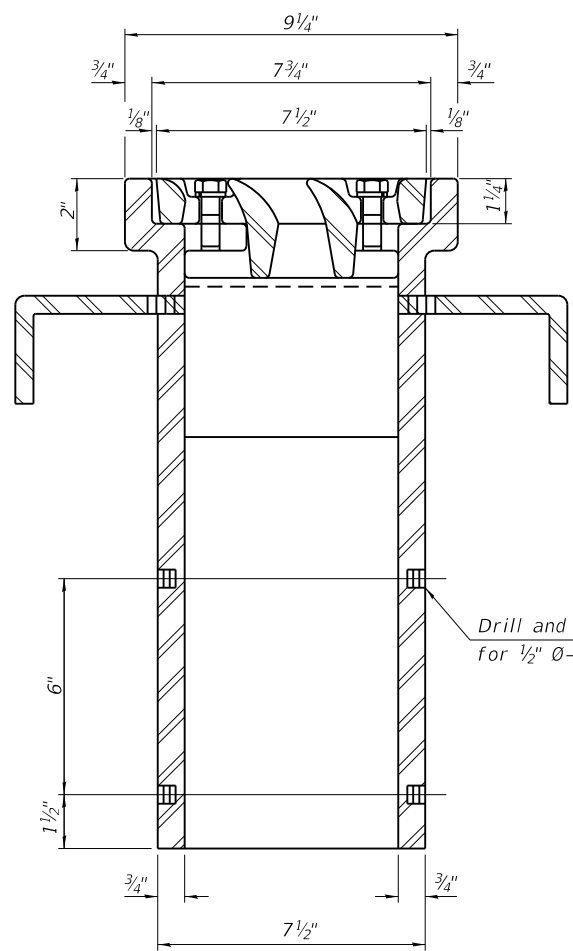
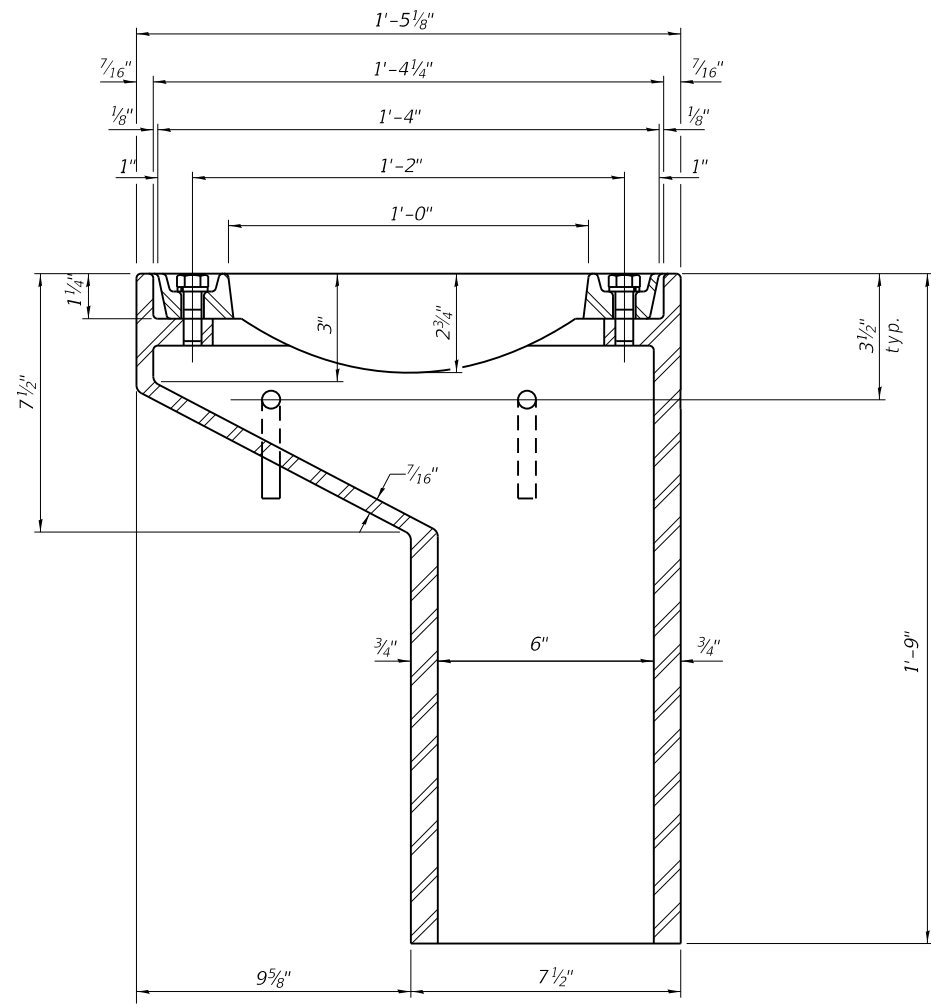
Structural steel scupper frames and downspouts, when utilized, shall be galvanized according to AASHTO M111.

As an alternate, fiberglass may be used for downspouts according to ASTM D2996 with a short-time rupture strength hoop tensile stress of 30,000 psi min. in lieu of the cast iron or structural steel.

Exterior surfaces of downspouts and exterior exposed surfaces of the scupper frame below deck shall be treated as specified on sheet 22 of 42.

The Contractor shall take appropriate measures to assure that Protective Coat is not applied to the scupper.

Cost of the grate, frame, downspout, anchor rods, nuts and washers including complete installation of the scupper shall be paid for at the contract unit price for Drainage Scuppers, DS-11.



See sheet 22 of 42 for scupper location relative to parapet.

Drill and tap 4 holes 1/2" deep for 1/2" Ø-13 UNC bolts.

BILL OF MATERIAL

Item	Unit	Quantity
Drainage Scuppers, DS-11	Each	18

REVISED ENTIRE SHEET 6/10/2024

DS-11

2-1-2023

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

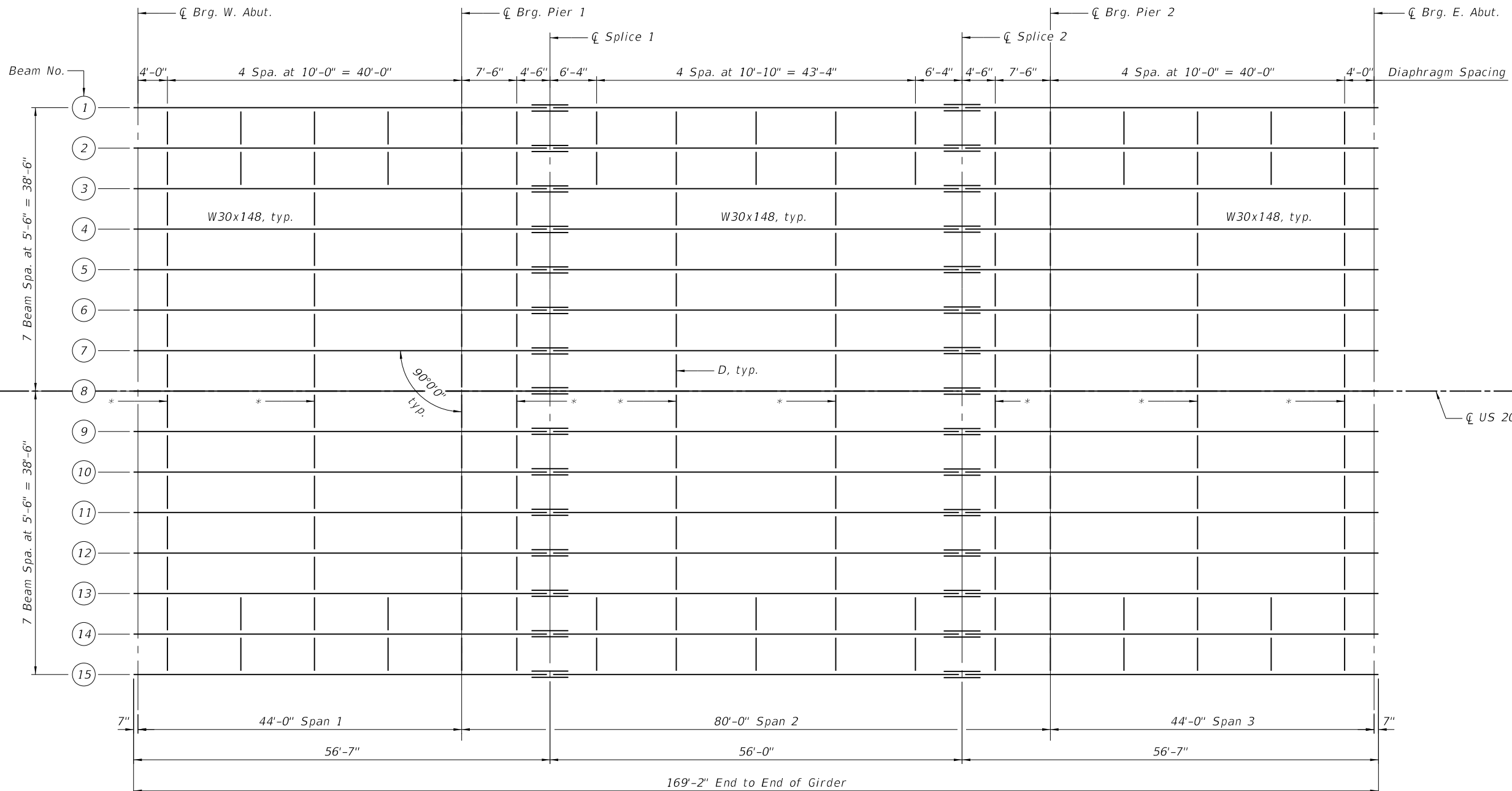
DRAINAGE SCUPPER, DS-11
STRUCTURE NO. 045-0006

SHEET 23 OF 42 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	FAP 345-23-BR	KANE	379	154
CONTRACT NO. 62U83				

ILLINOIS FED. AID PROJECT

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FRAMING PLAN

NOTES:

- See sheet 25 of 42 for notes, splice and diaphragm details.
- Use $1\frac{3}{16}$ " x $1\frac{7}{8}$ " vert. long-slotted holes in one end of the diaphragm (adjacent to Beam 8) and standard oversize holes at the other end (adjacent to Beam 9) and in the connection plates at locations designated with (*) only. The bolts for the slotted holes shall be finger tightened prior to the deck pour for Stage II Construction. Tighten bolts after deck is poured. Position slots so bolts start at one end of slotted holes before the Stage II pour is poured and finish near the opposite end after the Stage II pour. See detail on sheet 25 of 42.

REVISION 2 REVISED ENTIRE SHEET 6/10/2024

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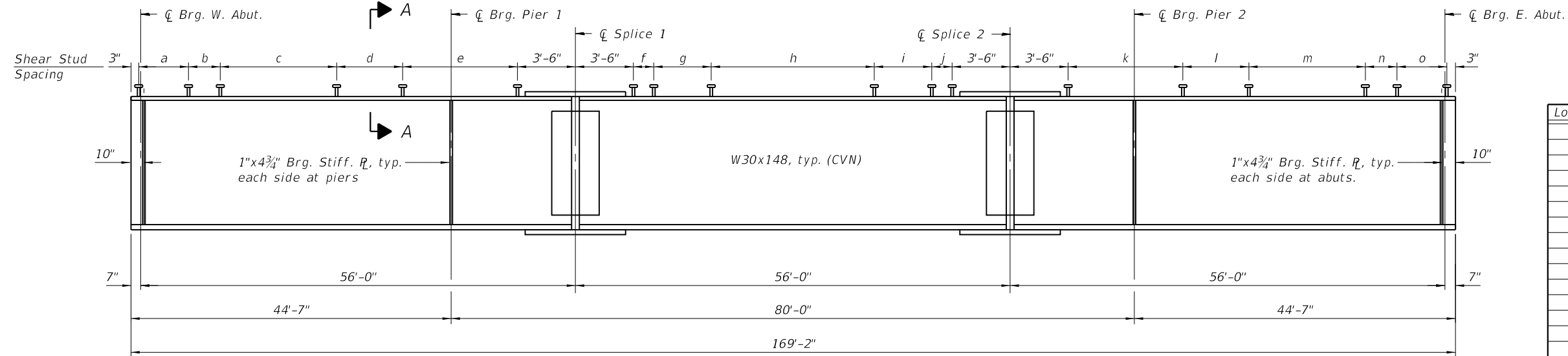
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PLOT DATE = 5/9/2024	CHECKED - ECK	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**FRAMING PLAN
STRUCTURE NO. 045-0006**

SHEET 24 OF 42 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	FAP 345-23-BR	KANE	379	155
CONTRACT NO. 62U83				
ILLINOIS FED. AID PROJECT				

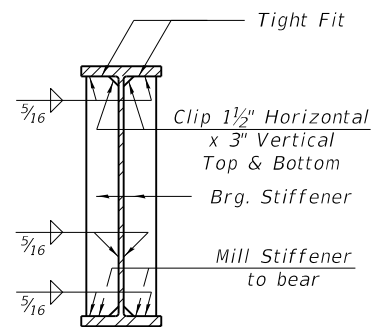


BEAM ELEVATION

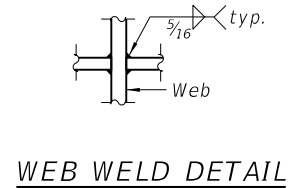
SHEAR STUD TABLE

Location	Stud Spacing
a	13 Spa. at 6" = 6'-6"
b	5 Spa. at 8" = 3'-4"
c	21 Spa. at 9" = 15'-9"
d	17 Spa. at 6" = 8'-6"
e	15 Spa. at 15" = 18'-9"
f	8 Spa. at 7" = 4'-8"
g	14 Spa. at 8" = 9'-4"
h	28 Spa. at 9" = 21'-0"
i	14 Spa. at 8" = 9'-4"
j	8 Spa. at 7" = 4'-8"
k	15 Spa. at 15" = 18'-9"
l	17 Spa. at 6" = 8'-6"
m	21 Spa. at 9" = 15'-9"
n	5 Spa. at 8" = 3'-4"
o	13 Spa. at 6" = 6'-6"

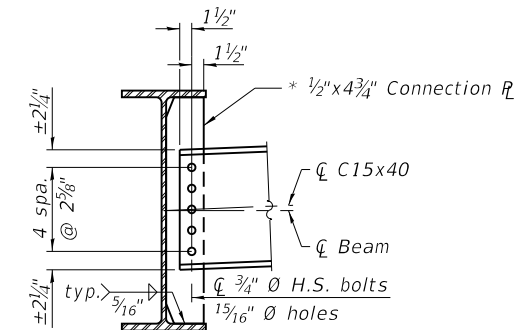
2



BEARING STIFFENER DETAIL

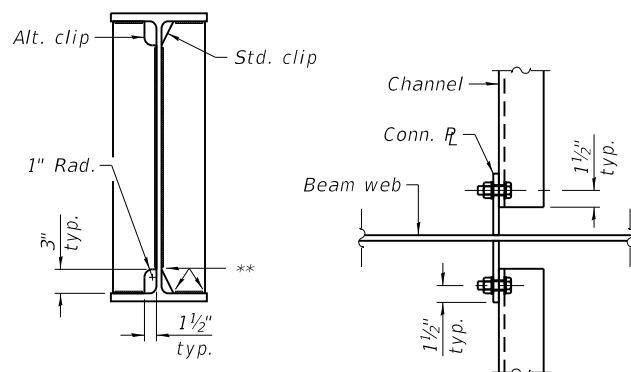


WEB WELD DETAIL



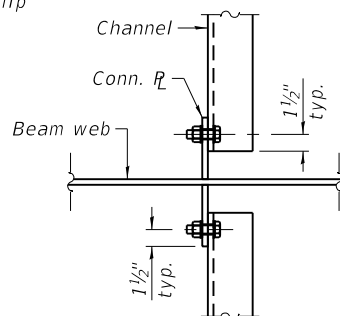
INTERIOR DIAPHRAGM - D (168 Required)

* Brg. Stiffener shall be used in lieu of Connection R at piers.

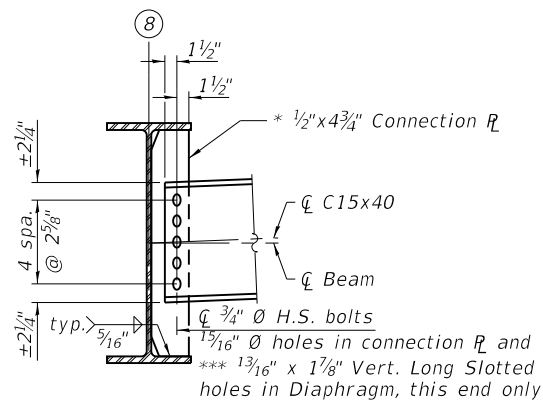


WELD LIMITS AND CLIP DETAILS

** Stop welds 1/4" (±1/8") from edges as shown, typ.



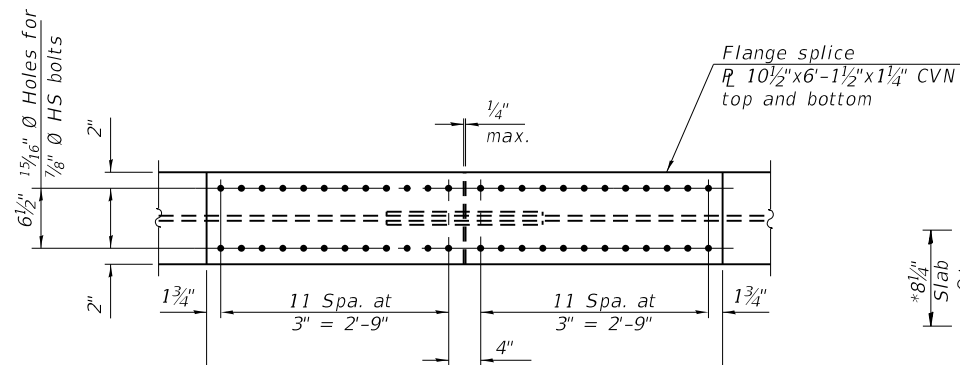
DETAIL A



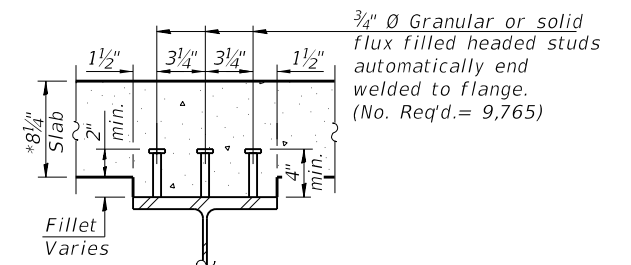
DIAPHRAGM SLOTTED HOLE DETAIL (Along Construction Line)

* Brg. Stiffener shall be used in lieu of Connection R at piers.

*** See note (*) on Sheet 24 of 42.

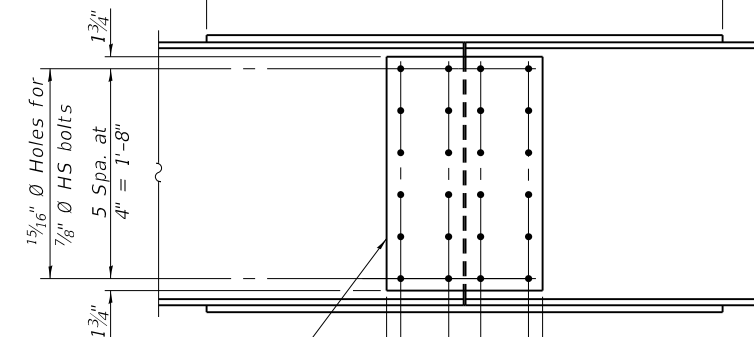


PLAN



SECTION A-A

*Prior to Grinding.



ELEVATION

Web splice
R 1/2"x1'-11 1/2"x1'-1 1/2" CVN
each side

SPLICE DETAIL (30 Required)

NOTES:

1. Load carrying components designated "CVN" shall conform to the Charpy-V-Notch Impact Energy Requirement, Zone 2.
2. Two hardened washers required for each set of oversized holes.
3. Alternate channels of equal depth and larger weight are permitted to facilitate material acquisition. Alternate channels, if utilized, shall be provided at no additional cost to the Department.
4. All W sections, splice plates and bearing stiffeners shall be AASHTO M270, Grade 50.
5. All diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual diaphragms at supports may be temporarily disconnected to install bearing anchor rods.

REVISED ENTIRE SHEET 6/10/2024

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BURNS & MCDONNELL

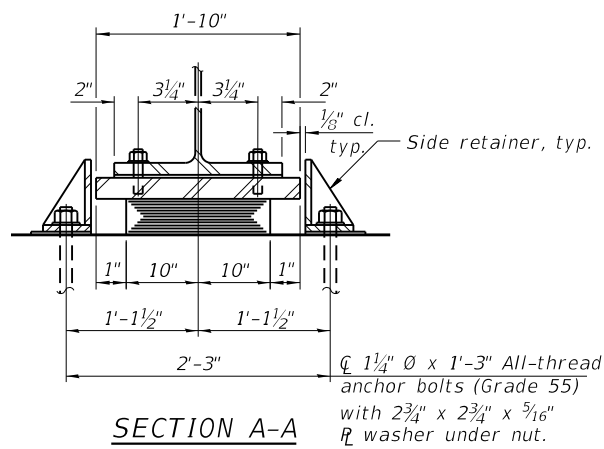
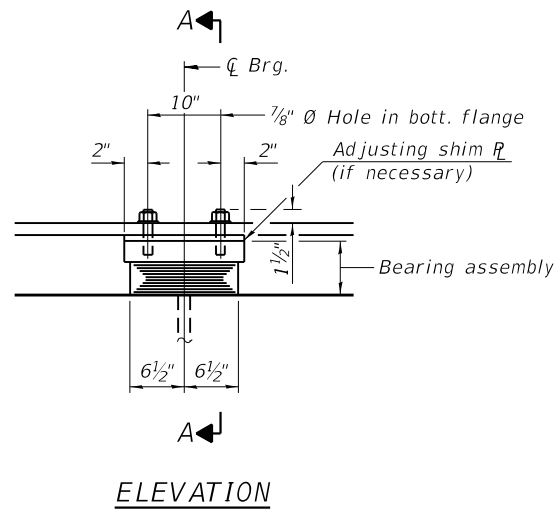
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

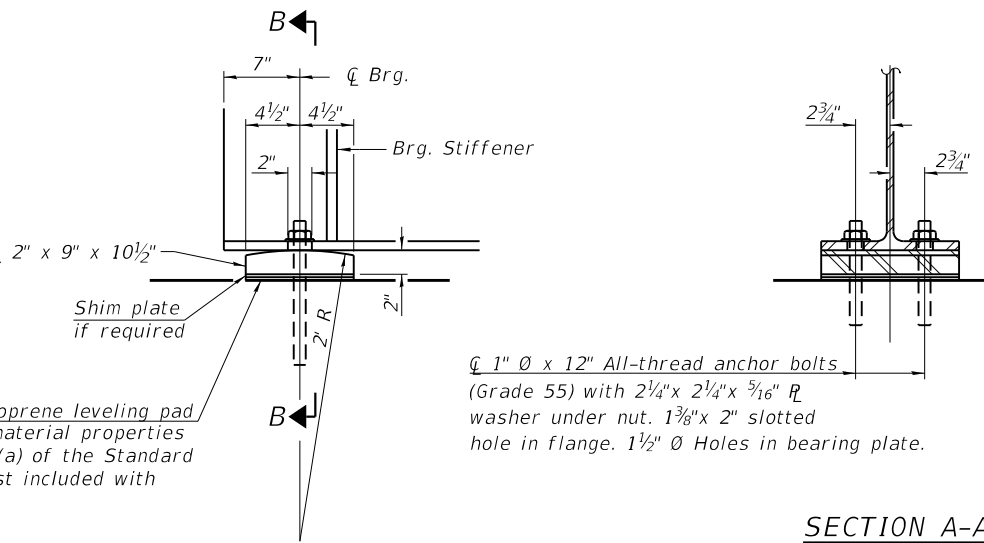
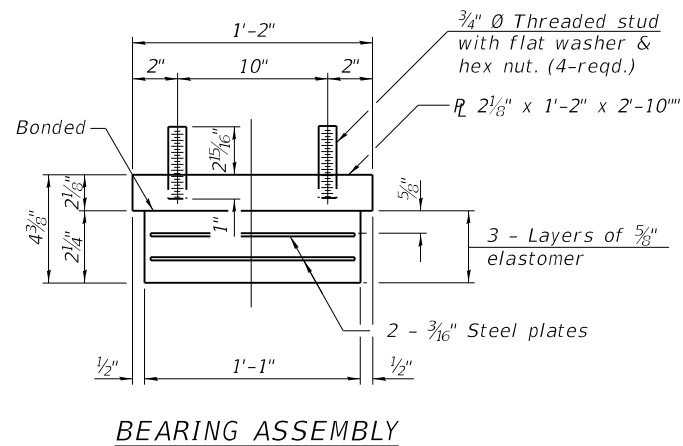
**STRUCTURAL STEEL
STRUCTURE NO. 045-0006**

SHEET 25 OF 42 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	FAP 345-23-BR	KANE	379	156
CONTRACT NO. 62U83				
ILLINOIS FED. AID PROJECT				



TYPE I ELASTOMERIC EXP. BRG.
(Piers 1 & 2)



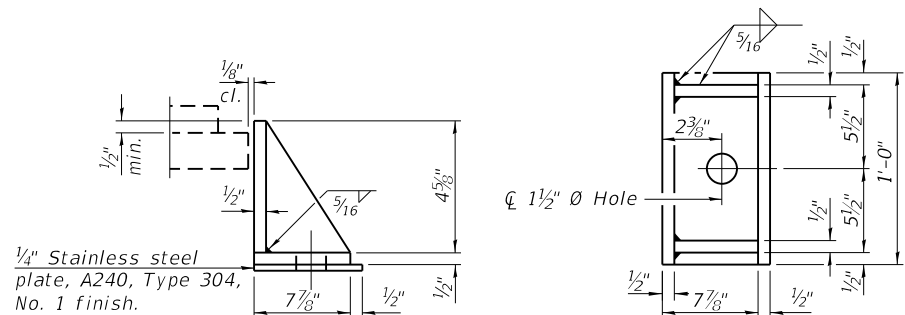
ELEVATION AT ABUTMENT

FIXED BEARING

(E. & W. Abut.)
(30 req'd)

NOTES:

- Structural steel plates of the Bearing assembly and the structural steel plates for the fixed bearings shall conform to the requirement of AASHTO M270 Grade 50.
- Side retainers and stainless steel plates shall be included in the cost of Elastomeric Bearing Assembly, Type I.
- 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.
- Two $\frac{1}{8}$ " adjusting shims shall be provided for each bearing in addition to all other plates and shims and placed as shown on the bearing details.
- Shim plates shall not be placed under bearing assembly.
- Drilled and set anchors shall be installed according to Article 521.06 of the Standard Specifications.
- The cost of fabricating and installing the fixed bearing assembly and shim plates will be paid for as Furnishing and Erecting Structural Steel.
- Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.



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

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	30
Anchor Bolts, 1"	Each	60
Anchor Bolts, 1 $\frac{1}{4}$ "	Each	60

REVISD ENTIRE SHEET 6/10/2024

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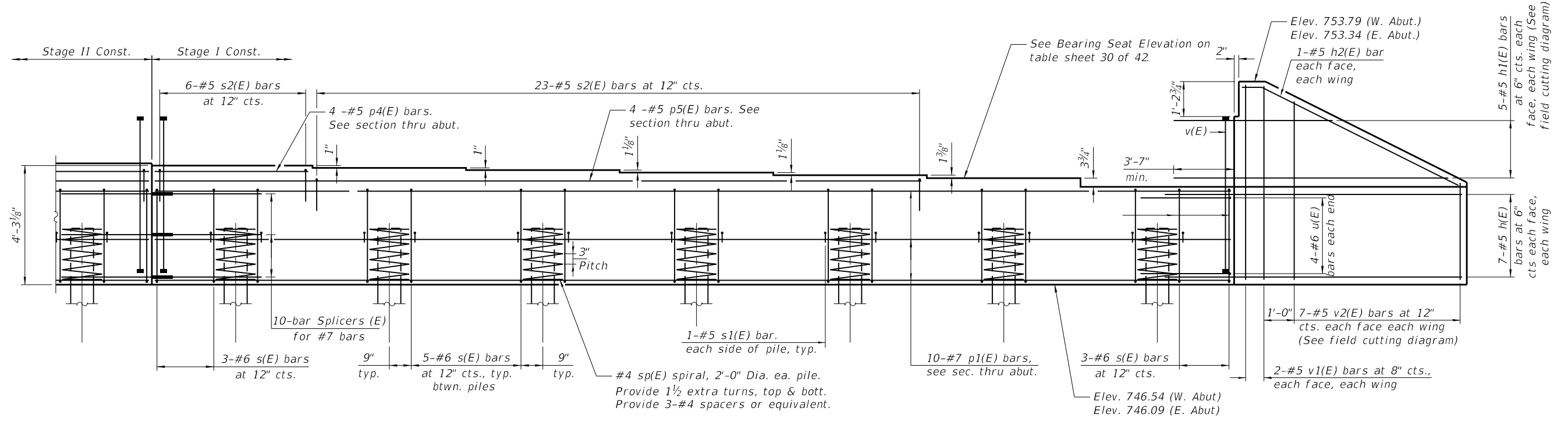
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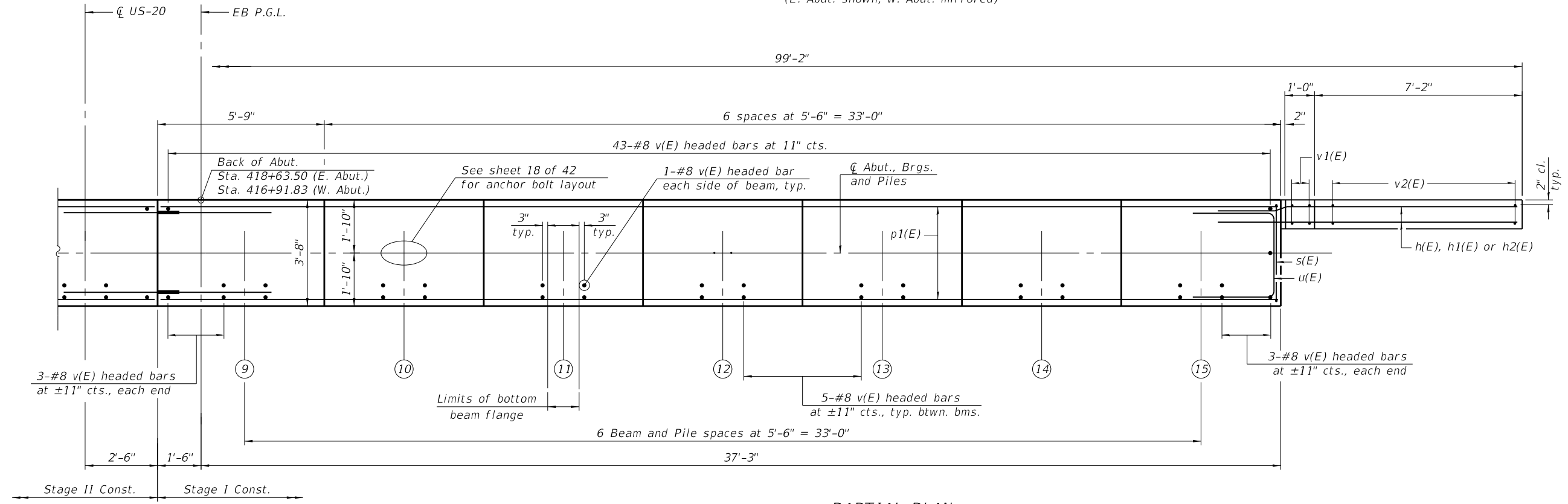
BEARING DETAILS
STRUCTURE NO. 045-0006

SHEET 27 OF 42 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	FAP 345-23-BR	KANE	379	158
CONTRACT NO. 62U83				
ILLINOIS FED. AID PROJECT				



PARTIAL ELEVATION
(E. Abut. shown, W. Abut. mirrored)



PARTIAL PLAN
(E. Abut. shown, W. Abut. mirrored)

- NOTE:**
1. See Sheet 30 of 42 for pile data, bill of materials and additional notes.
 2. See Sheet 30 of 42 for Section thru Abutment.

REVISED ENTIRE SHEET 6/10/2024

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STATE OF ILLINOIS
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ABUTMENTS I
STRUCTURE NO. 045-0006

SHEET 28 OF 42 SHEETS

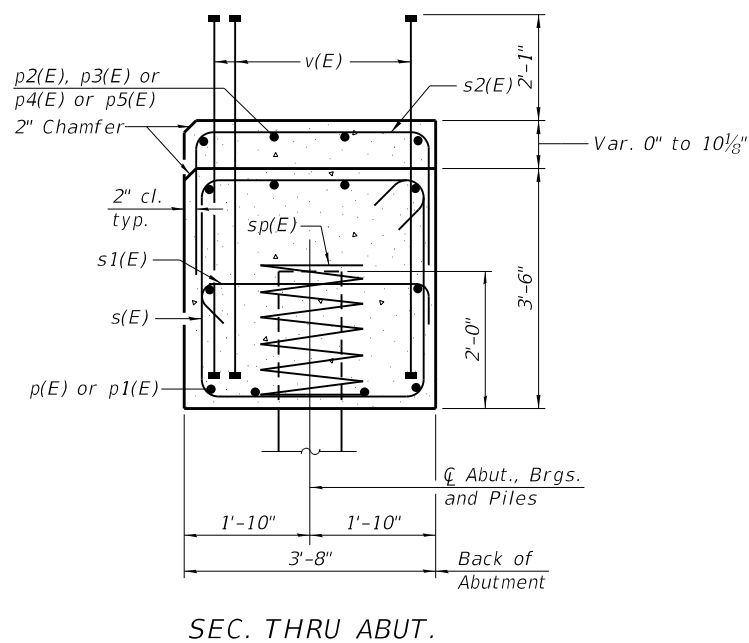
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	FAP 345-23-BR	KANE	379	159
CONTRACT NO. 62U83				
ILLINOIS FED. AID PROJECT				

PILE DATA (W. ABUT.)

Type: Metal Shell - 12 in. dia. x 0.25 in. walls with pile shoes
 Nominal Required Bearing: 392 kip
 Factored Resistance Available: 216 kip
 Est. Length: 35 ft.
 No. Production Piles: 14
 No. Test Piles: 1

PILE DATA (E. ABUT.)

Type: Metal Shell - 12 in. dia. x 0.25 in. walls with pile shoes
 Nominal Required Bearing: 392 kip
 Factored Resistance Available: 216 kip
 Est. Length: 24 ft.
 No. Production Piles: 14
 No. Test Piles: 1



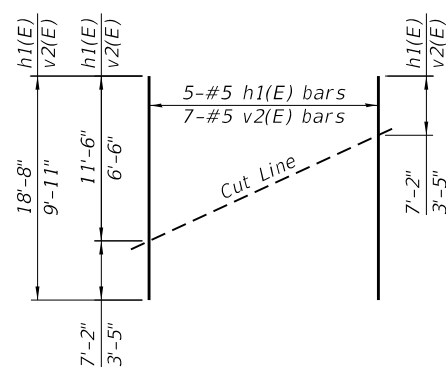
**BEARING SEAT
ELEVATION TABLE**

Location	W. Abut.	E. Abut.
Beam 1	750.04	749.59
Beam 2	750.35	749.90
Beam 3	750.46	750.01
Beam 4	750.55	750.10
Beam 5	750.64	750.19
Beam 6	750.72	750.27
Beam 7	750.80	750.35
Beam 8	750.88	750.43
Beam 9	750.80	750.35
Beam 10	750.72	750.27
Beam 11	750.64	750.19
Beam 12	750.55	750.10
Beam 13	750.46	750.01
Beam 14	750.35	749.90
Beam 15	750.04	749.59

**BOTH ABUTMENTS
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h(E)	56	#5	11'-9"	▬
h1(E)	20	#5	18'-8"	▬
h2(E)	8	#5	8'-8"	▬
p(E)	20	#7	43'-5"	▬
p1(E)	20	#7	38'-5"	▬
p2(E)	8	#5	32'-5"	▬
p3(E)	8	#5	10'-5"	▬
p4(E)	8	#5	5'-5"	▬
p5(E)	8	#5	27'-5"	▬
s(E)	154	#6	14'-4"	□
s1(E)	60	#5	4'-4"	▬
s2(E)	126	#5	9'-10"	▬
* sp(E)	30	#4	2'-0"	▬
u(E)	16	#6	11'-10"	▬
v(E)	400	#8	5'-3"	▬
v1(E)	16	#5	6'-11"	▬
v2(E)	28	#5	9'-11"	▬
Structure Excavation		Cu. Yd.	658	
Concrete Structures		Cu. Yd.	95.0	
Reinforcement Bars, Epoxy Coated		Pound	17,690	
Furnishing Metal Shell Piles 12" x 0.250"		Foot	826	
Driving Piles		Foot	826	
Test Pile Metal Shells		Each	2	
Pile Shoes		Each	30	
Granular Backfill for Structures		Cu. Yd.	250	
Geocomposite Wall Drain		Sq Yd.	138	
Pipe Underdrains for Structures 4"		Foot	198	

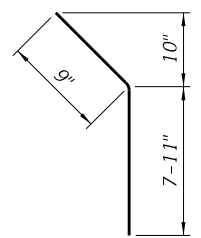
* Length is height of spiral.



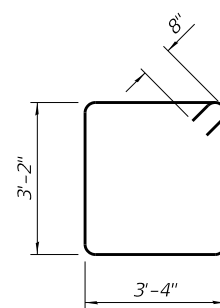
FIELD CUTTING DIAGRAM

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

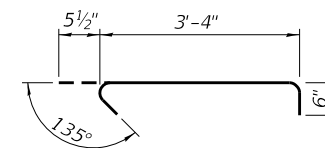
BAR v(E)
(Headed. 800 - #8
Bar terminators)



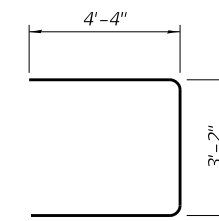
BAR h2(E)



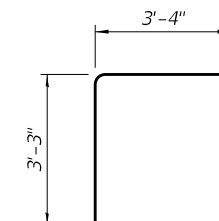
BAR s(E)



BAR s1(E)



BAR u(E)



BAR s2(E)

NOTES:

1. Pour steps monolithically with cap.
2. Bar terminators will be paid for separately. See Total Bill of Material.
3. For details of piles see sheet 35 of 42.

2 REVISED ENTIRE SHEET 6/10/2024

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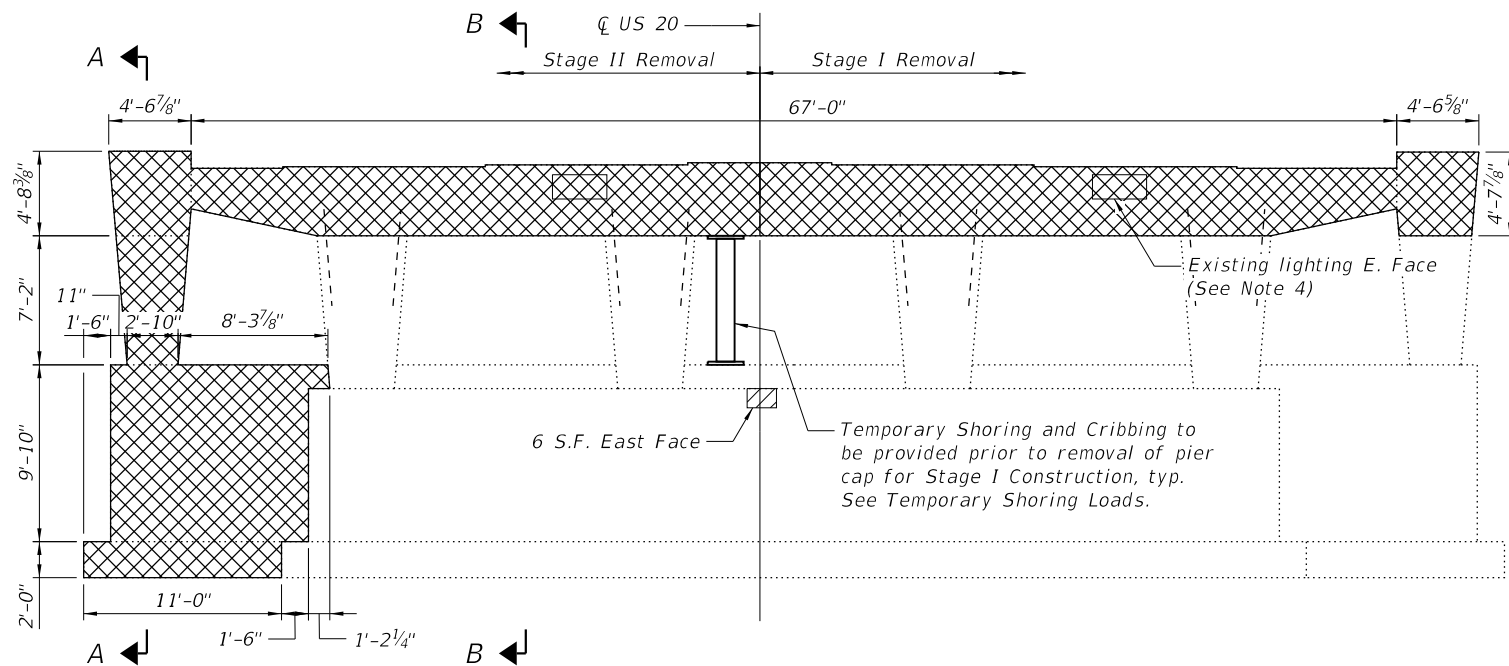
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STATE OF ILLINOIS
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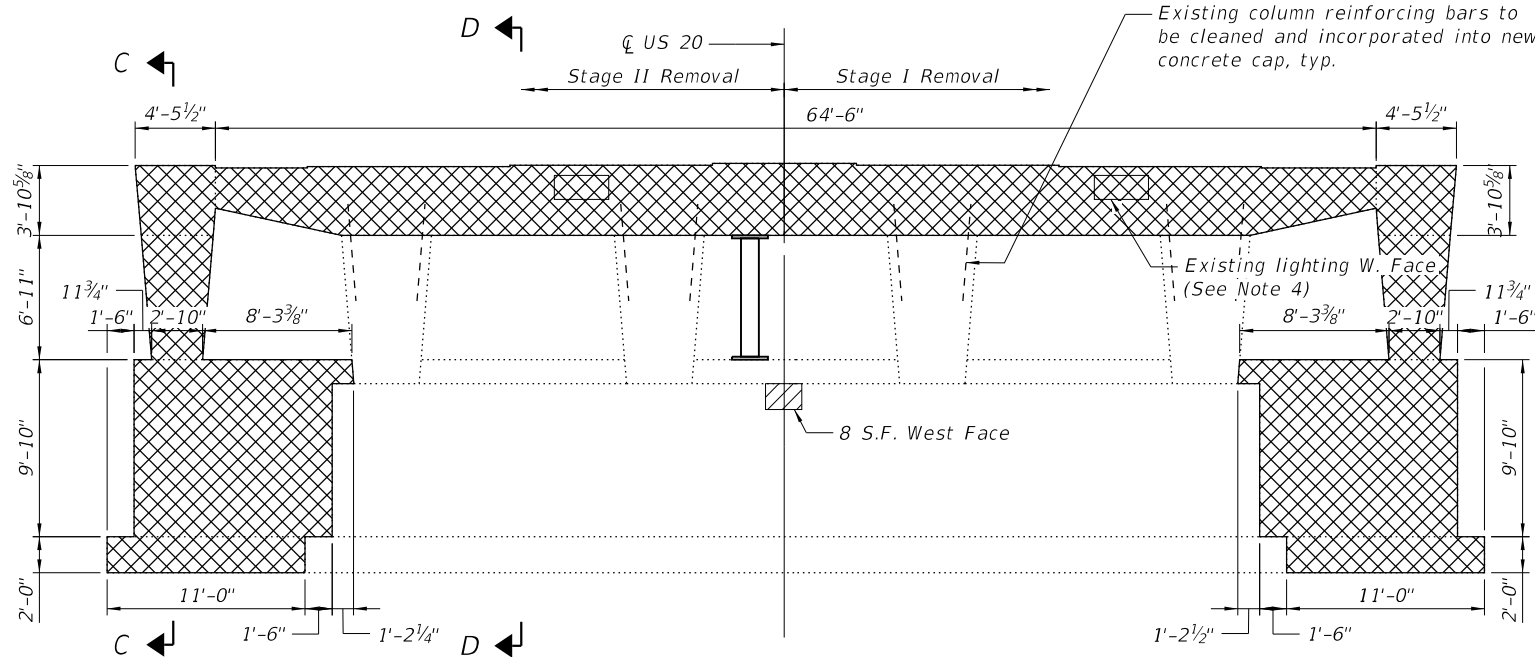
ABUTMENT DETAILS
STRUCTURE NO. 045-0006

SHEET 30 OF 42 SHEETS

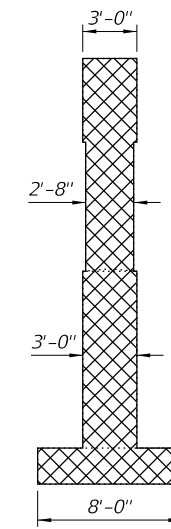
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345	FAP 345-23-BR	KANE	379	161
CONTRACT NO. 62U83				
ILLINOIS FED. AID PROJECT				



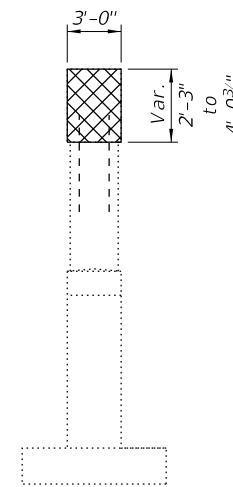
PIER 1 ELEVATION
(Looking East)



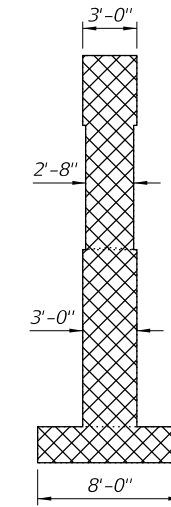
PIER 2 ELEVATION
(Looking East)



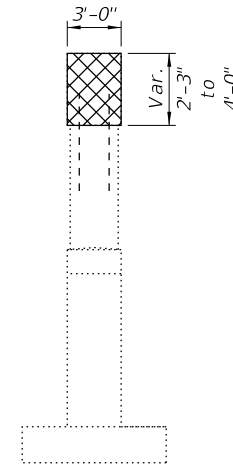
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

NOTES:

- Existing reinforcement bars extending into concrete removal areas shall be cleaned, straightened and incorporated into new concrete. Cost included in "Concrete Removal".
- Any reinforcement bars to be incorporated that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system. Cost included with "Concrete Removal".
- The ends of existing reinforcement bars which are cut & exposed shall be coated with epoxy. Cost included with "Concrete Removal".
- Temporary lighting to be maintained during construction, see electrical plans.

TEMPORARY SHORING SERVICE LOADS

	Piers 1 & 2
R _q (k)	72.3
R _h (HS20-44) (k)	38.4
R _{IM} (HS20-44) (k)	10.4
R _{Total} (k)	121.1

LEGEND

- Concrete Removal
- Structural Repair of Concrete (Depth δ 5")

BILL OF MATERIAL

Item	Unit	Total
Concrete Removal	Cu. Yd.	125.7
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	14
Temporary Shoring and Cribbing	Each	2

REVISD ENTIRE SHEET 6/10/2024

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PIER CONCRETE REMOVAL & REPAIRS
STRUCTURE NO. 045-0006

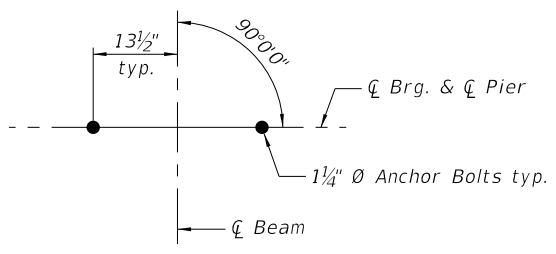
SHEET 31 OF 42 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	FAP 345-23-BR	KANE	379	162
CONTRACT NO. 62U83				

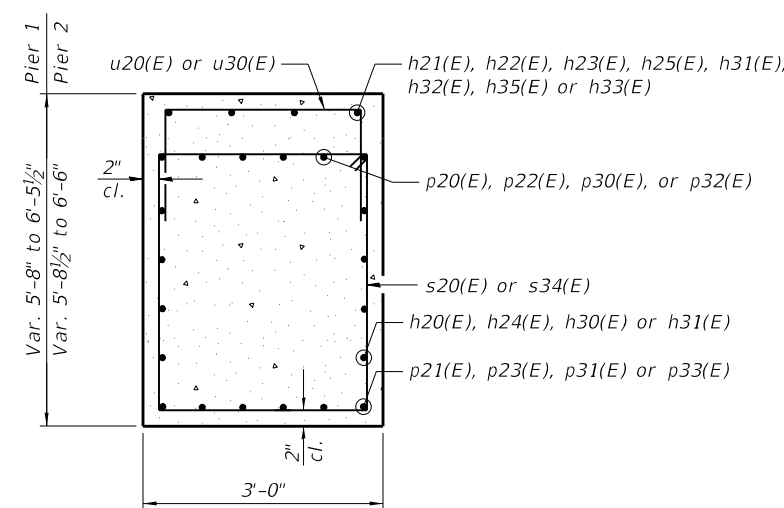
ILLINOIS FED. AID PROJECT

BURNS
MCDONNELL

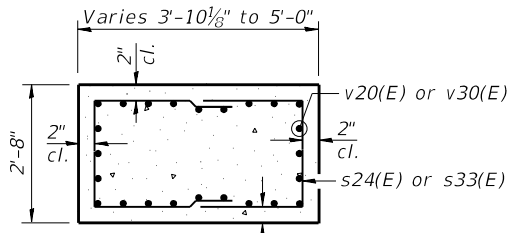
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DETAIL A



SECTION A-A



SECTION B-B

**PIER 1
BILL OF MATERIAL**

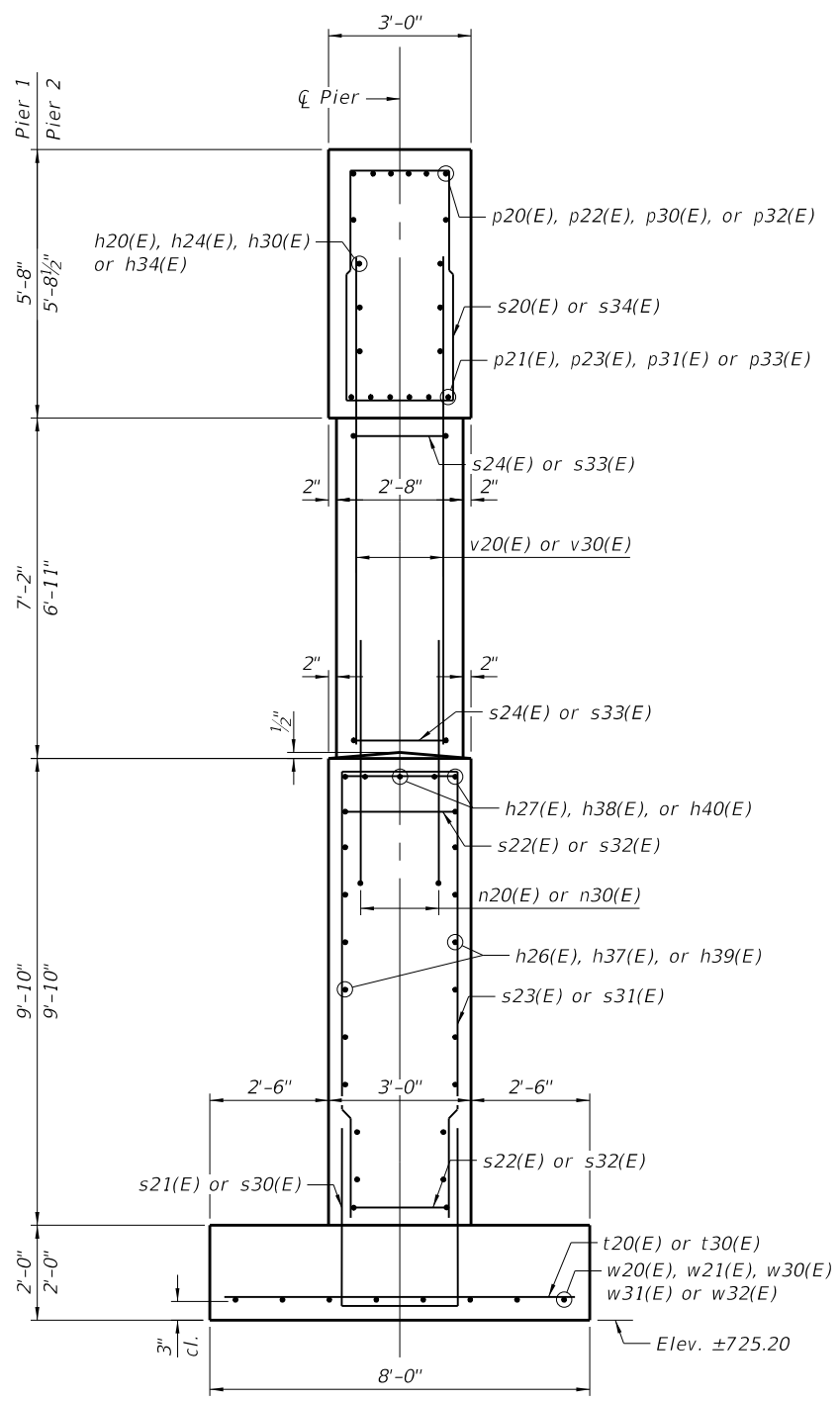
Bar	No.	Size	Length	Shape
h20(E)	8	#5	38'-5"	—
h21(E)	4	#5	5'-5"	—
h22(E)	4	#5	27'-5"	—
h23(E)	4	#5	32'-5"	—
h24(E)	8	#5	43'-5"	—
h25(E)	4	#5	10'-5"	—
h26(E)	18	#5	14'-5"	—
h27(E)	7	#5	15'-6"	—
h28(E)	18	#7	4'-6"	—
n20(E)	24	#7	8'-10"	C
p20(E)	6	#9	40'-0"	—
p21(E)	6	#9	38'-5"	—
p22(E)	6	#9	45'-0"	—
p23(E)	6	#9	43'-5"	—
s20(E)	111	#5	16'-11"	□
s21(E)	14	#5	12'-10"	□
s22(E)	11	#5	8'-10"	□
s23(E)	15	#5	21'-8"	□
s24(E)	16	#4	9'-4"	□
t20(E)	15	#5	7'-8"	—
u20(E)	61	#5	7'-8"	□
u21(E)	12	#5	9'-0"	□
v20(E)	24	#7	10'-4"	—
w20(E)	8	#5	14'-5"	—
w21(E)	8	#5	3'-10"	—
Structure Excavation		Cu. Yd.	112	
Concrete Structures		Cu. Yd.	84.3	
Reinforcement Bars, Epoxy Coated		Pound	9,460	
Granular Backfill for Structures		Cu. Yd.	17	

**PIER 2
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h30(E)	8	#5	38'-5"	—
h31(E)	4	#5	5'-5"	—
h32(E)	4	#5	27'-5"	—
h33(E)	4	#5	32'-5"	—
h34(E)	8	#5	43'-5"	—
h35(E)	4	#5	10'-5"	—
h36(E)	36	#7	4'-6"	—
h37(E)	18	#5	13'-4"	—
h38(E)	7	#5	14'-6"	—
h39(E)	18	#5	14'-8"	—
h40(E)	7	#5	15'-8"	—
n30(E)	48	#7	8'-10"	C
p30(E)	6	#9	40'-0"	—
p31(E)	6	#9	38'-5"	—
p32(E)	6	#9	45'-0"	—
p33(E)	6	#9	43'-5"	—
s30(E)	27	#5	12'-10"	□
s31(E)	29	#5	21'-8"	□
s32(E)	22	#5	8'-10"	□
s33(E)	32	#4	9'-4"	□
s34(E)	111	#5	16'-11"	□
t30(E)	29	#5	7'-8"	—
u30(E)	61	#5	7'-8"	□
u31(E)	12	#5	9'-0"	□
v30(E)	48	#7	10'-1"	—
w30(E)	8	#5	13'-5"	—
w31(E)	16	#5	3'-10"	—
w32(E)	8	#5	14'-8"	—
Structure Excavation		Cu. Yd.	149	
Concrete Structures		Cu. Yd.	111.3	
Reinforcement Bars, Epoxy Coated		Pound	11,850	

A & B DIMENSIONS

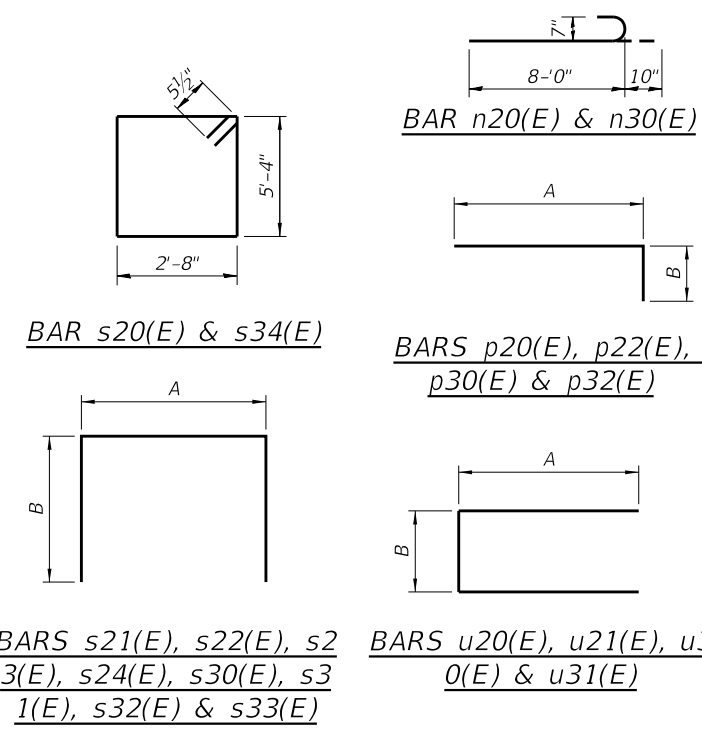
Bar	A	B
p20(E)	38'-5"	1'-7"
p30(E)	38'-5"	1'-7"
p22(E)	43'-5"	1'-7"
p32(E)	43'-5"	1'-7"
s21(E)	2'-8"	5'-1"
s30(E)	2'-8"	5'-1"
s22(E)	2'-8"	3'-1"
s32(E)	2'-8"	3'-1"
s23(E)	2'-8"	9'-6"
s31(E)	2'-8"	9'-6"
s24(E)	2'-4"	3'-6"
s33(E)	2'-4"	3'-6"
u20(E)	2'-6"	2'-8"
u30(E)	2'-6"	2'-8"
u21(E)	3'-2"	2'-8"
u31(E)	3'-2"	2'-8"



END VIEW

NOTES:

1. Pour steps monolithically with cap.
2. Space reinforcement in cap to miss anchor bolts.
3. Slope to drain between bearing seats.
4. See sheet 36 of 42 for Bar Splicer Details.
5. For Drill & Grout bars h28(E), h36(E), w21(E) & w31(E) and adjust spacing as required to clear existing anchor bolts. Holes shall be drilled a minimum of 9" deep and a minimum of 6" from the edge of concrete according to Section 584 of the Standard Specifications. Cost shall be included with Reinforcement Bars, Epoxy Coated.
6. Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.



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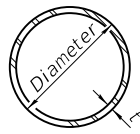
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PLOT DATE = 5/9/2024	CHECKED - ECK	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**PIER DETAILS
STRUCTURE NO. 045-0006**

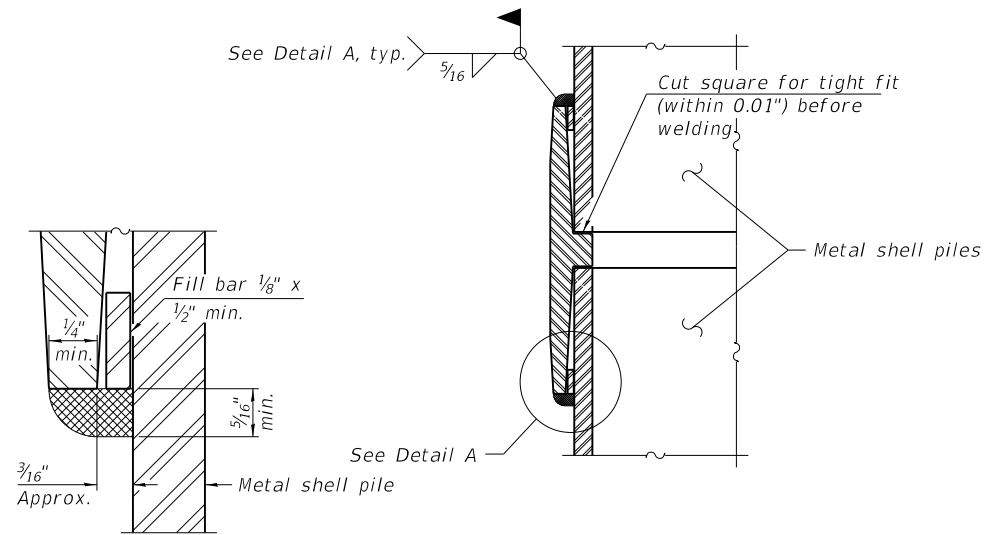
SHEET 34 OF 42 SHEETS

REVISIONS			
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS
345	FAP 345-23-BR	KANE	379 165
			CONTRACT NO. 62U83
ILLINOIS FED. AID PROJECT			

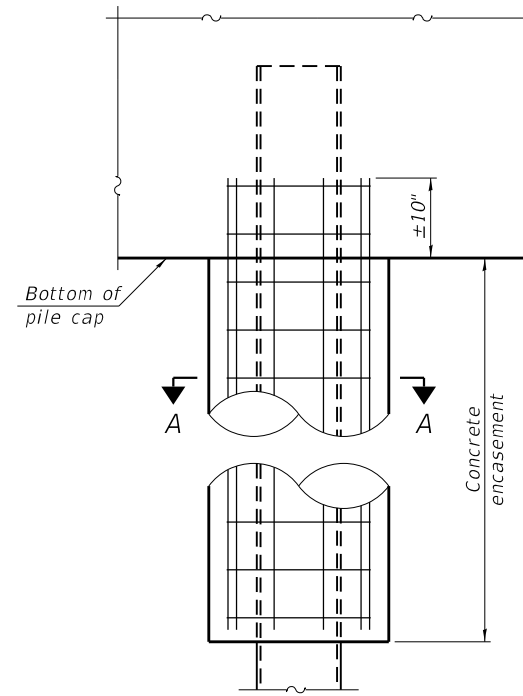


METAL SHELL PILE TABLE

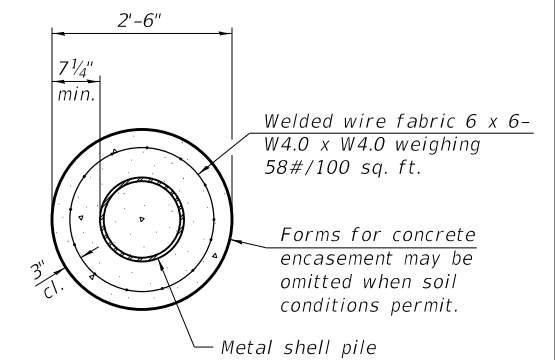
Designation and outside diameter	Wall thickness t	Weight per foot (Lbs./ft.)	Inside volume (yd. ³ /ft.)
PP12	0.250"	31.40	0.0267
PP14	0.250"	36.75	0.0368
PP14	0.312"	45.65	0.0361
PP16	0.312"	52.32	0.0478
PP16	0.375"	62.64	0.0470



DETAIL A



ELEVATION

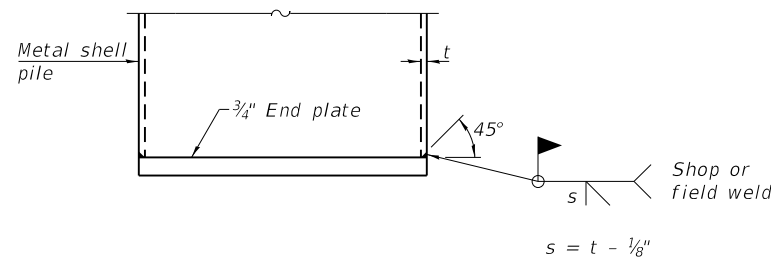


SECTION A-A

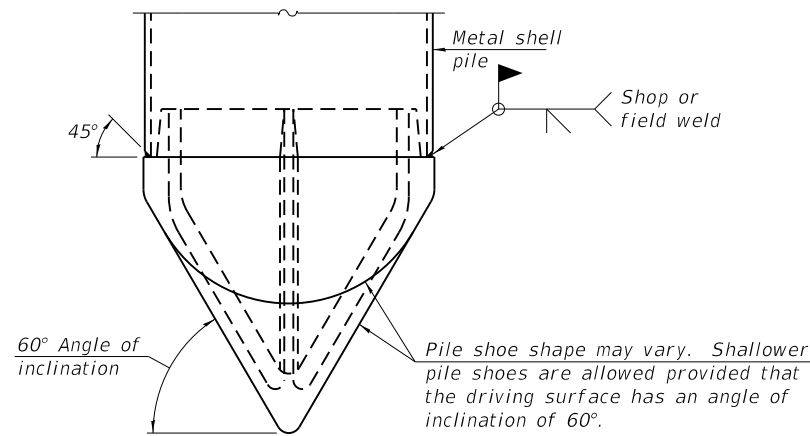
INDIVIDUAL PILE CONCRETE ENCASUREMENT
(When specified)

WELDED COMMERCIAL SPLICE

Notes:
The 1/8" x 1/2" min. fill bar may be constructed of 2 bars with a 1/8" max. gap between them.
Pile segments shall be driven to solid contact with splicer before welding.

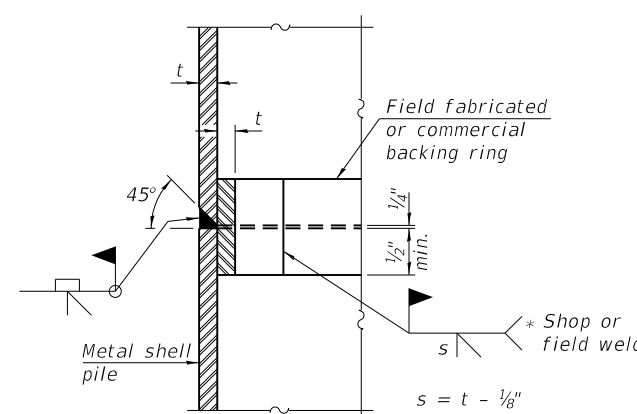


END PLATE ATTACHMENT



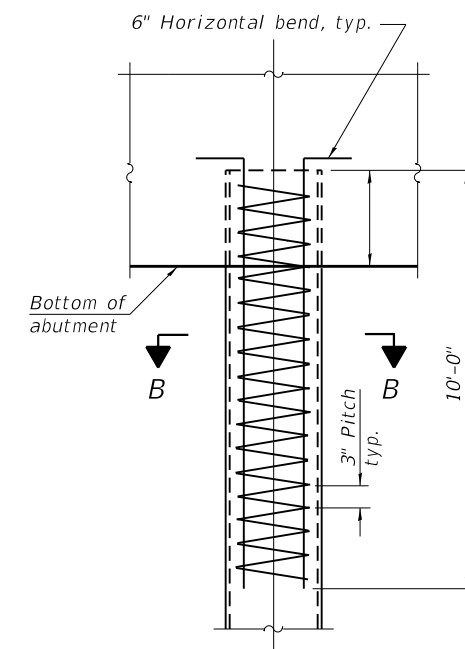
PILE SHOE ATTACHMENT

(When called for on the plans, the Contractor shall furnish metal shell pile shoes consisting of a single piece conical pile point as shown. The pile shoes shall be cast in one piece steel according to either ASTM A 148 Grade 80-50 or AASHTO M 103 Grade 65-35 and shall provide full bearing over the full circumference of the metal shell pile. The pile shoe shall have tapered leads to assure proper alignment and fitting and shall be secured to the pile with a circumferential weld).



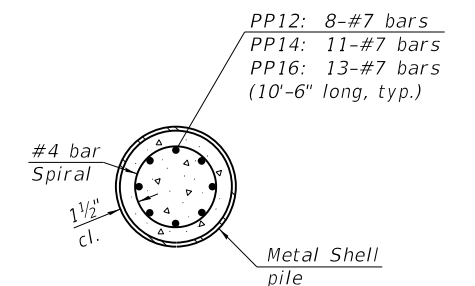
COMPLETE PENETRATION WELD SPLICE

* Field fabricated backing ring may be made from pile shell by removing segment to allow reducing circumference and vertically rejoin with partial joint penetration weld.



ELEVATION

REINFORCEMENT AT ABUTMENTS
(Omit when concrete encasement is specified)



SECTION B-B

Note:
The metal shell piles shall be according to Article 1006.05 of the Standard Specifications.

F-MS 2-1-2023



USER NAME = eckay	DESIGNED - ECK	REVISED -
PLOT SCALE = 2.0000' / in.	CHECKED - GEK	REVISED -
PLOT DATE = 5/9/2024	DRAWN - BAH	REVISED -
	CHECKED - ECK	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

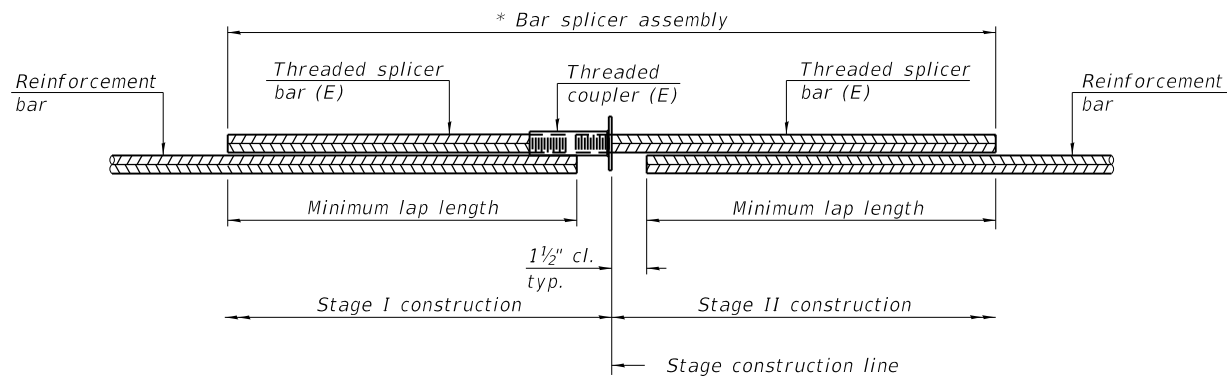
**METAL SHELL PILE DETAILS
STRUCTURE NO. 045-0006**

SHEET 35 OF 42 SHEETS

F.A.P. RTE. 345	SECTION FAP 345-23-BR	COUNTY KANE	TOTAL SHEETS 379	SHEET NO. 166
CONTRACT NO. 62U83				

REVISOR'S MARK: **REVISOR'S MARK** REVISED ENTIRE SHEET 6/10/2024

ILLINOIS FED. AID PROJECT



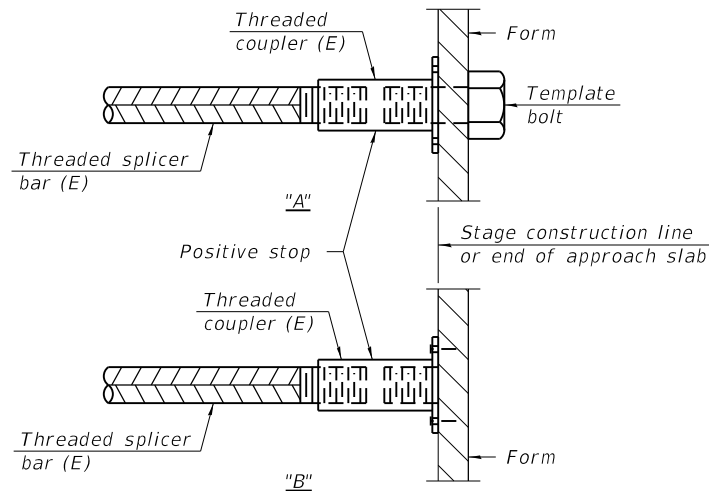
STANDARD BAR SPLICER ASSEMBLY PLAN

Only bar splicer assemblies are presented on the approved QPL list may be used.

Threaded splicer bar length = min. lap length + 1 1/2" + thread length

* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Minimum lap length
Top of Deck	#5	268	3'-0"
Bottom of Deck	#5	204	3'-6"
West Approach	#5	46	3'-0"
West Approach	#8	60	4'-9"
W. Appr. Footing	#5	40	3'-2"
East Approach	#5	46	3'-0"
East Approach	#8	60	4'-9"
E. Appr. Footing	#5	40	3'-2"
West Diaphragm	#6	4	4'-0"
East Diaphragm	#6	4	4'-0"
West Abutment	#7	10	5'-0"
East Abutment	#7	10	5'-0"
Pier 1	#5	8	3'-7"
Pier 1	#9	12	6'-5"
Pier 2	#5	8	3'-7"
Pier 2	#9	12	6'-5"

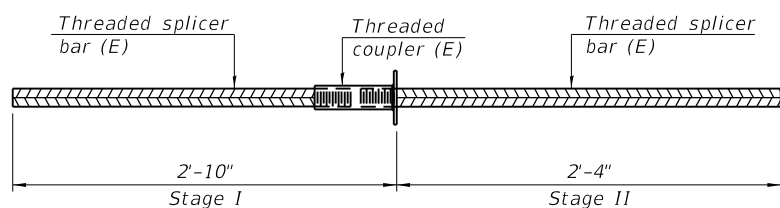


INSTALLATION AND SETTING METHODS

"A" : Set bar splicer assembly by means of a template bolt.

"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.

(E) : Indicates epoxy coating.



SPLICER BAR FOR CONCRETE DIAPHRAGM

Location	Bar size	No. assemblies required
West Diaphragm	#6	3
East Diaphragm	#6	3

NOTES:

- Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.
- All reinforcement shall be lapped and tied to the splicer bars.
- Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.
- See approved list of bar splicer assemblies and mechanical splicers for alternatives.

REVISION 2 REVISED ENTIRE SHEET 6/10/2024

2

MODEL: Default
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USER NAME = eckay	DESIGNED - ECK	REVISED -
	CHECKED - GEK	REVISED -
PLOT SCALE = 2.0000' / in.	DRAWN - BAH	REVISED -
PLOT DATE = 5/9/2024	CHECKED - ECK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY DETAILS
STRUCTURE NO. 045-0006

F.A.P. RTE. 345	SECTION FAP 345-23-BR	COUNTY KANE	TOTAL SHEETS 379	SHEET NO. 167
CONTRACT NO. 62U83				

SHEET 36 OF 42 SHEETS

ILLINOIS FED. AID PROJECT

GENERAL NOTES

Fasteners shall be ASTM F3125 Grade A325 Type 1, mechanically galvanized bolts in painted areas. Bolts 7/8-in. Ø, holes 1 1/16-in. Ø, unless otherwise noted.

Calculated weight of Structural Steel = 262,980 pounds (M270 Grade 50)
36,450 pounds (M270 Grade 36)

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

Reinforcement bars designated (E) shall be epoxy coated.

Slipforming the outside parapets and median barrier is not allowed.

Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8 inch (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.

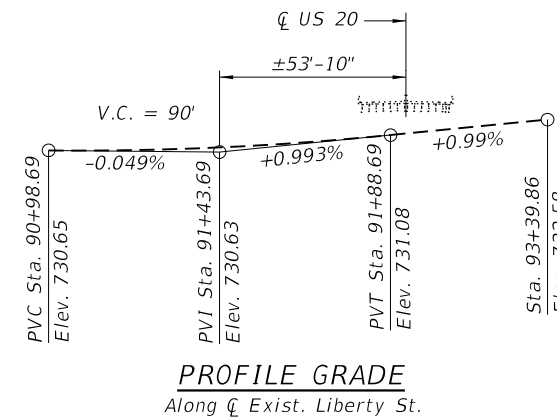
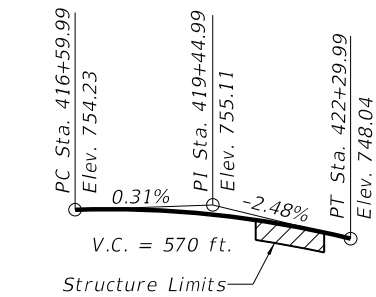
Plan dimensions and details relative to existing structure have been taken from existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

The existing structural steel coating contains lead. Contractor shall take appropriate precautions to address the presence of lead on this project.

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 beams, masked off connection surfaces, and field installed fasteners shall all be touched up and finish coated 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 beams shall be Reddish Brown, Munsell No. 2.5YR 3/4.

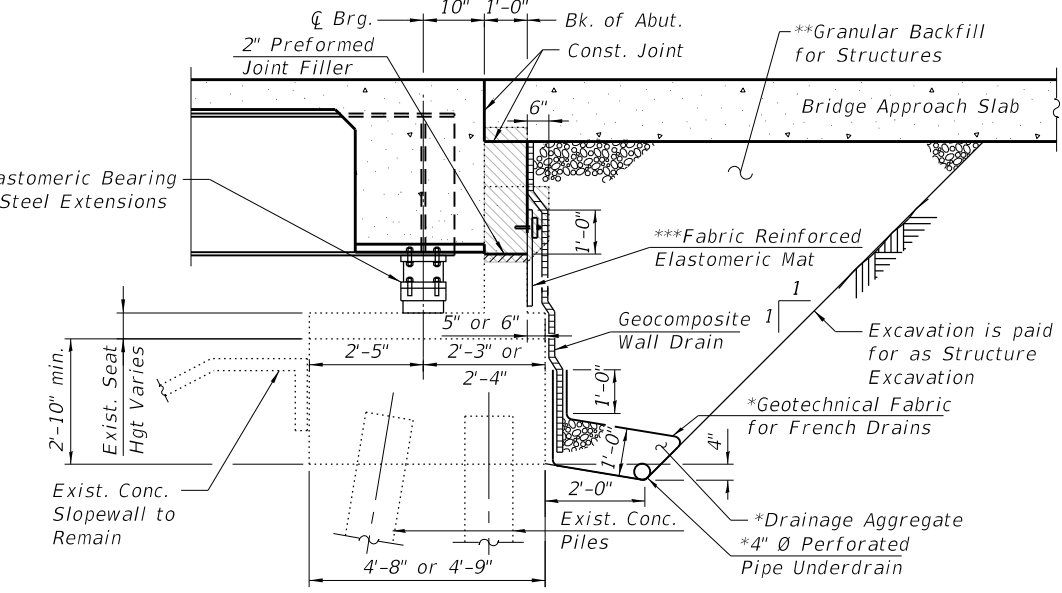
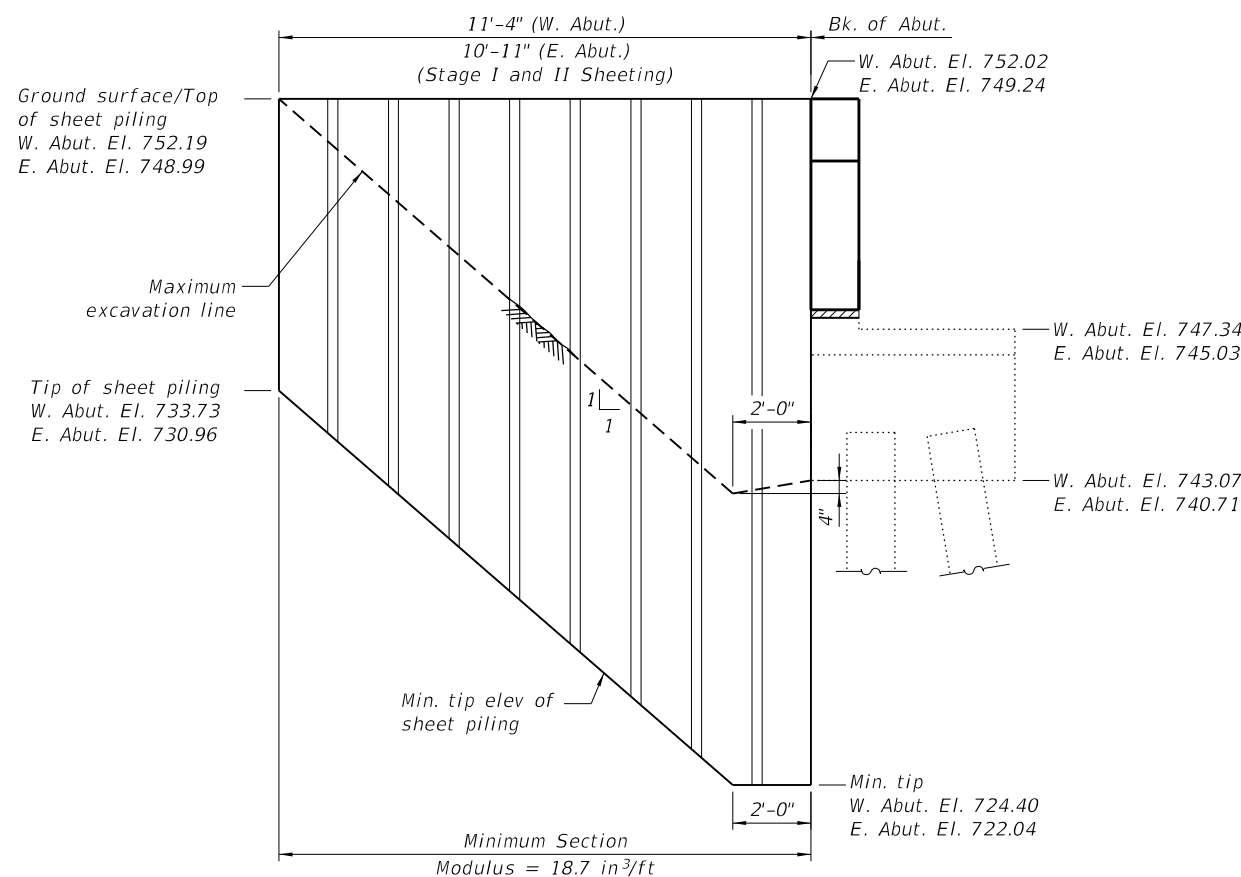
INDEX OF SHEETS

1	General Plan & Elevation
2	General Data
3	Pre-Stage Deck Repairs
4	Construction Staging
5	Temporary Concrete Barrier
6	Top Of Slab Elevations Layout
7	Top of Slab Elevations I
8	Top of Slab Elevations II
9	Top of Slab Elevations III
10	Top of West Approach Slab Elevations
11	Top of East Approach Slab Elevations
12	Superstructure Plan
13	Superstructure Cross Section
14	Superstructure Details I
15	Superstructure Details II
16	West Abutment Diaphragm
17	East Abutment Diaphragm
18	Abutment Diaphragm Details
19	Bridge Approach Slab Plan
20	Bridge Approach Slab Sections
21	Bridge Approach Slab Details
22	Drainage Scuppers, DS-12
23	Framing Plan
24	Structural Steel
25	West Abutment Bearing Details
26	East Abutment Bearing Details
27	Pier Bearing Details
28	Abutment Removal
29	West Abutment Plan & Elevation
30	East Abutment Plan & Elevation
31	Abutment Details
32	Pier Removal & Repairs
33	Pier 1 Details
34	Pier 2 Details
35	Bar Splicer Assembly and Mechanical Splicer Details



TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Superstructures No. 1	Each	1	-	1
Concrete Removal	Cu Yd	-	73.9	73.9
Protective Shield	Sq Yd	670	-	670
Structure Excavation	Cu Yd	-	189.0	189.0
Concrete Structures	Cu Yd	-	123.9	123.9
Concrete Superstructure	Cu Yd	496.4	-	496.4
Bridge Deck Grooving	Sq Yd	1,555	-	1,555
Protective Coat	Sq Yd	2,167	-	2,167
Concrete Superstructure (Approach Slab)	Cu Yd	213.4	-	213.4
Furnishing and Erecting Structural Steel	L Sum	0.33	-	0.33
Stud Shear Connectors	Each	11,130	-	11,130
Reinforcement Bars, Epoxy Coated	Pound	237,290	14,490	251,780
Bar Splicers	Each	738	40	778
Name Plates	Each	1	-	1
Elastomeric Bearing Assembly, Type I	Each	42	-	42
Anchor Bolts, 3/4"	Each	56	-	56
Anchor Bolts, 1"	Each	56	-	56
Epoxy Crack Injection	Foot	-	13	13
Temporary Sheet Piling	Sq Ft	-	527	527
Granular Backfill for Structures	Cu Yd	-	262.1	262.1
Geocomposite Wall Drain	Sq Yd	-	127	127
Pipe Underdrains for Structures 4"	Foot	-	215	215
Slope Wall Crack Sealing	Foot	-	128	128
Noise Abatement Wall Anchor Rod Assembly	Each	42	-	42
Bar Terminators	Each	517	-	517
Structural Repair of Concrete (Depth equal to or less than 5 inches)	Sq Ft	-	5	5
Structural Repair of Concrete (Depth greater than 5 inches)	Sq Ft	-	8	8
Deck Slab Repair (Partial)	Sq Yd	20	-	20
Drainage Scuppers, DS-12	Each	4	-	4
Temporary Shoring and Cribbing	Each	-	2	2



STATION 421+08.20
RE-BUILT 20__ BY
STATE OF ILLINOIS
F.A.P. RT. 345 SEC. 345-23-BR
LOADING HL-93
STRUCTURE NO. 045-0007

NAME PLATE
See Std. 515001

Existing Name Plate shall be cleaned and relocated next to new Name Plate. Cost included with Name Plates.

REVISOR'S MARK: **2** REVISED ENTIRE SHEET 6/10/2024

TEMPORARY SHEET PILING
(Along Centerline US 20 at each abutment)
If the Contractor chooses to alter the temporary cantilevered 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.

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**GENERAL DATA
STRUCTURE NO. 045-0007**

SHEET 2 OF 35 SHEETS

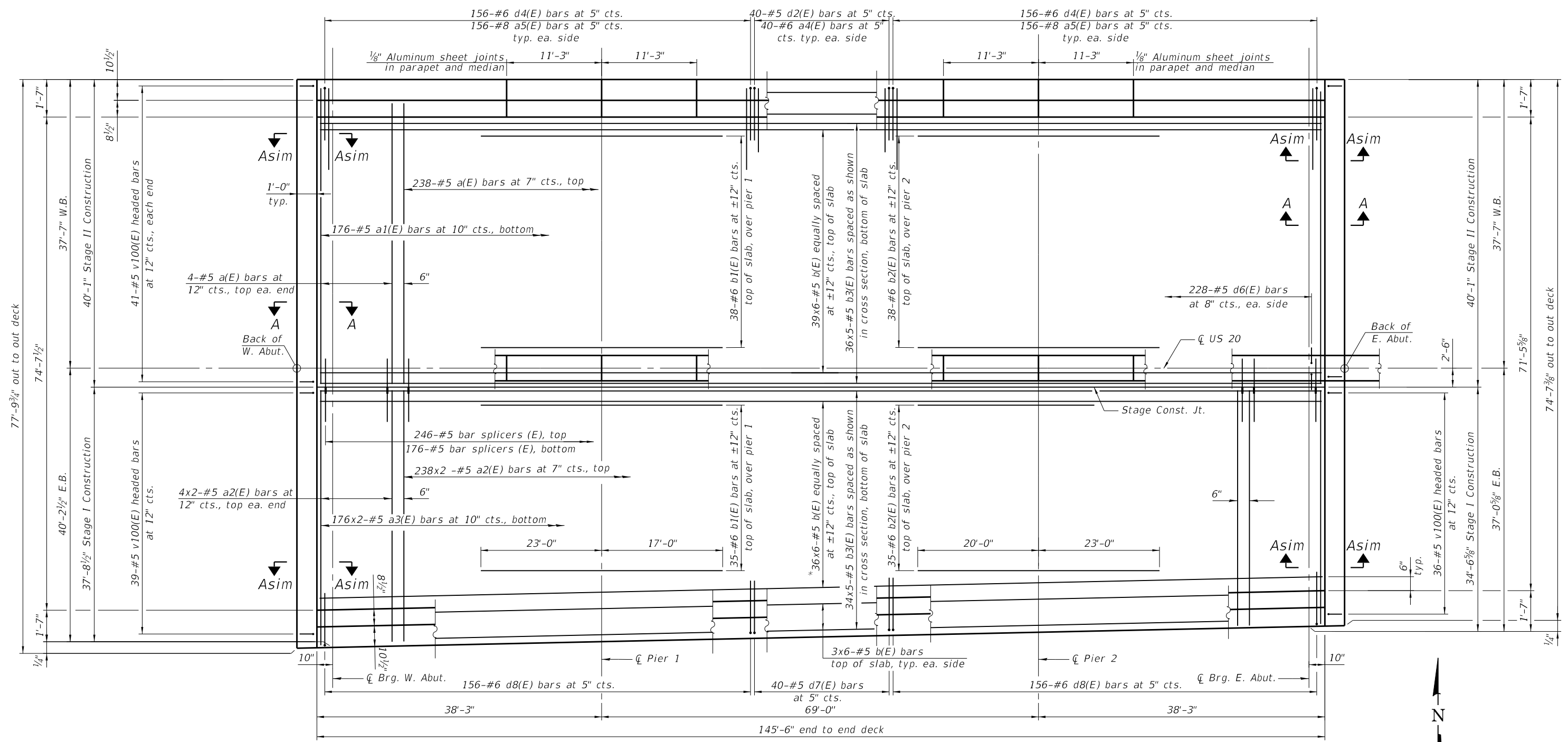
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	FAP 345-23-BR	KANE	379	175
CONTRACT NO. 62U83				

ILLINOIS FED. AID PROJECT

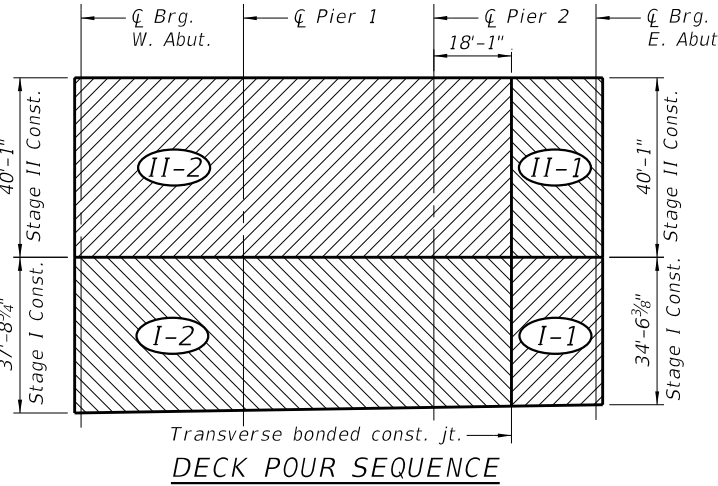
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PLAN



DECK POUR SEQUENCE

DECK POUR NOTES

- Each pour sequence shall begin from the abutment.
- When the deck pour is stopped for the day at the transverse bonded construction joint in the deck pouring sequence as shown, the next pour shall not be made until both of the following are met:
 - At least 72 hours shall have elapsed from the end of the previous pour.
 - The concrete strength shall have attained a minimum flexural strength of 675 psi or a minimum compressive strength of 4000 psi.

MINIMUM BAR LAP

#5 bar = 3'-6"

* Flare bars at east end to ±6" cts. to fit taper.

Notes:
 See sheet 13 of 35 for superstructure cross section.
 See sheet 14 of 35 for superstructure details and Bill of Material.
 See sheet 18 of 35 for Section A-A and Section Asim-Asim.
 Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
 Modifications to the deck pour sequence requires analysis by the Contractor prior to the deck pour as approved by the Engineer. The Contractor may elect to pour the deck starting from either abutment and continuing for the length of the bridge, however this sequence produces an uplift force at the far abutment. Modifications to the pouring sequence needed, such as temporary hold downs or analysis of the deck pour, shall be included in the cost of Concrete Superstructures. If a temporary retainer or other designed element is utilized, the Contractor shall provide a submittal prepared and sealed by an IL licensed Structural Engineer for review and approval.

2 REVISED ENTIRE SHEET 6/10/2024



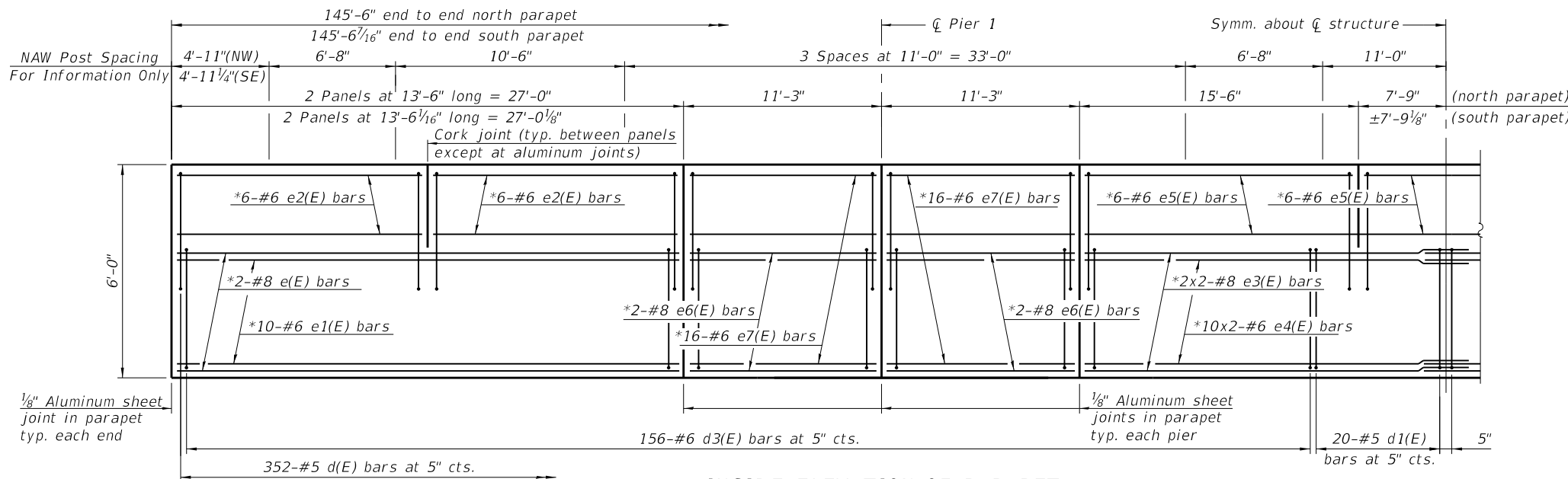
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STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

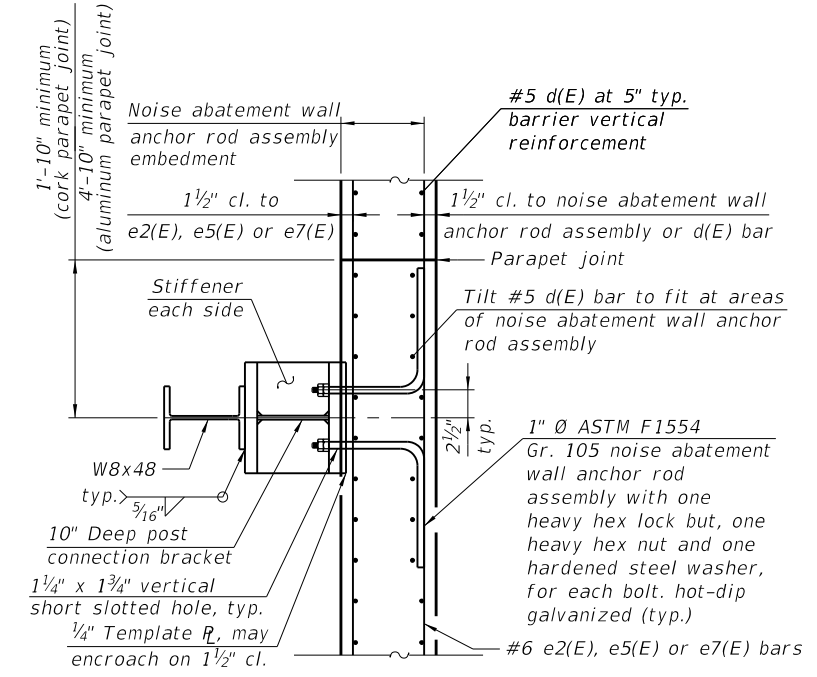
SUPERSTRUCTURE PLAN
 STRUCTURE NO. 045-0007

SHEET 12 OF 35 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	FAP 345-23-BR	KANE	379	185
CONTRACT NO. 62U83				
ILLINOIS FED. AID PROJECT				



INSIDE ELEVATION OF PARAPET



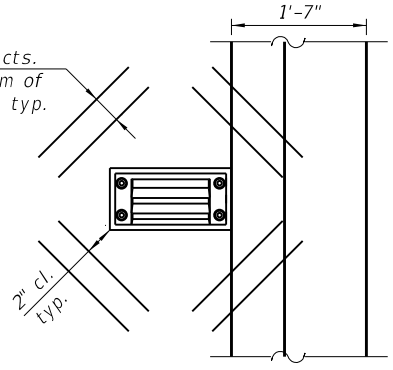
SECTION X-X

MINIMUM BAR LAP

- #6 bar = 3'-7"
- #8 bar = 5'-11"

- * See Section thru Parapet.
- ** Anchor Rod to be installed by bridge contractor, typ.
- *** 1/4" Anchor Rod Template R embedded in parapet, to be installed by bridge contractor.

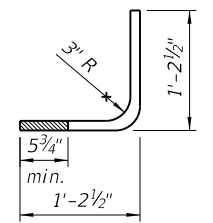
2-#5 a6(E) bars at 4" cts. (1'-6" lg.) tied to bottom of top reinforcement mat. typ.



SCUPPER PLAN

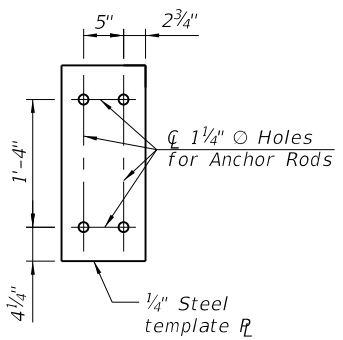
Cut longitudinal reinforcement to clear drainage scupper.

NOISE ABATEMENT WALL ANCHOR ROD ASSEMBLY



NOISE ABATEMENT WALL ANCHOR ROD ASSEMBLY

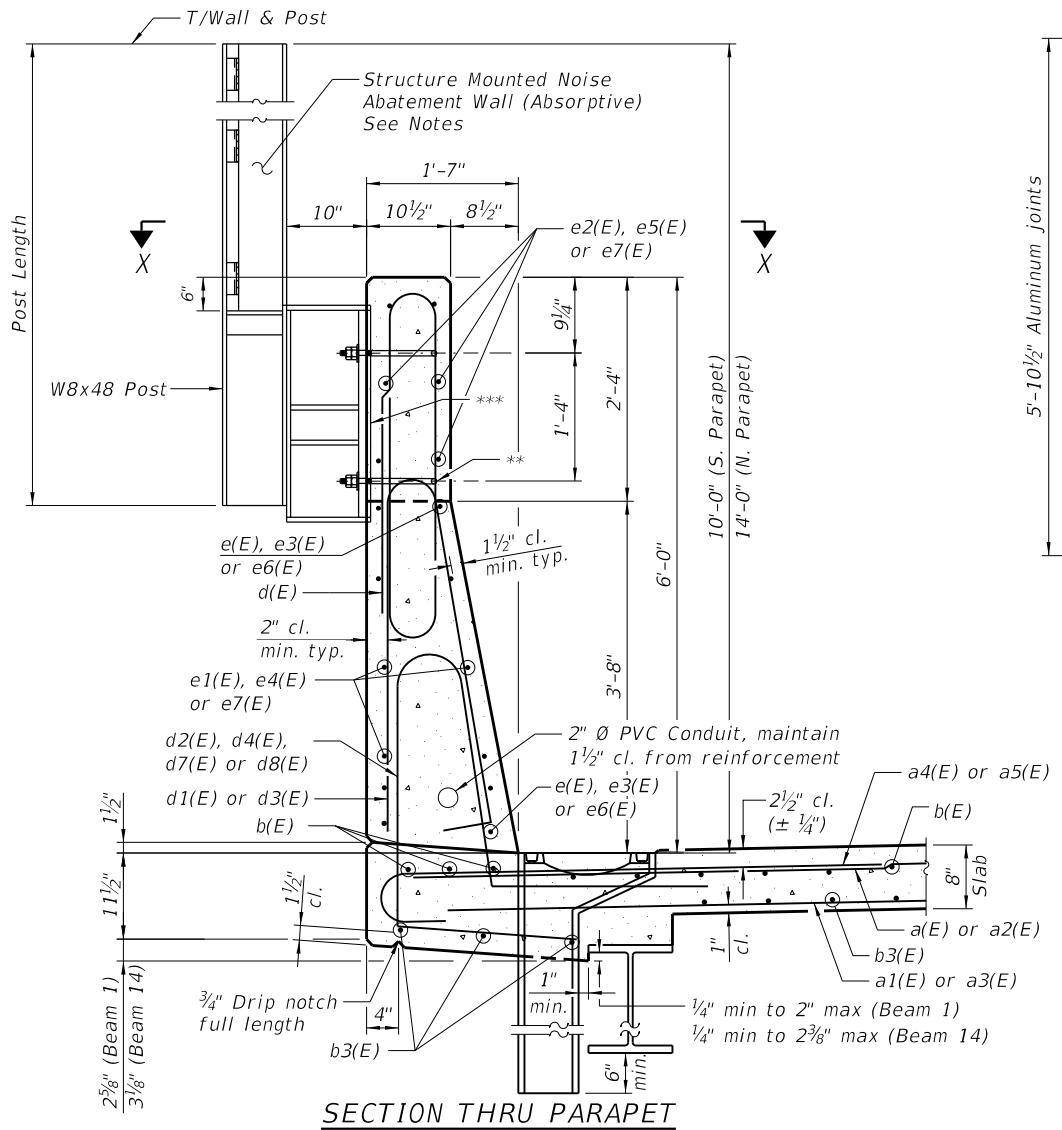
TEMPLATE PLATE FOR NOISE ABATEMENT WALL ANCHOR ROD ASSEMBLY



TEMPLATE PLATE FOR NOISE ABATEMENT WALL ANCHOR ROD ASSEMBLY

Notes:

- The 1/8" aluminum sheet shall be ASTM B 209 alloy 3003-H14 and coated to minimize reaction with wet concrete.
- The polyurethane sealant shall be according to Article 1050.04 of the Std. Spec. and the color shall be gray.
- Bars indicated thus 1 x 2-#4 etc. indicates 1 line of bars with 2 lengths per line.
- Post and post connection details shown on bridge plans for information only. See Noise Abatement Wall plans for full details.



SECTION THRU PARAPET

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**SUPERSTRUCTURE DETAILS I
STRUCTURE NO. 045-007**

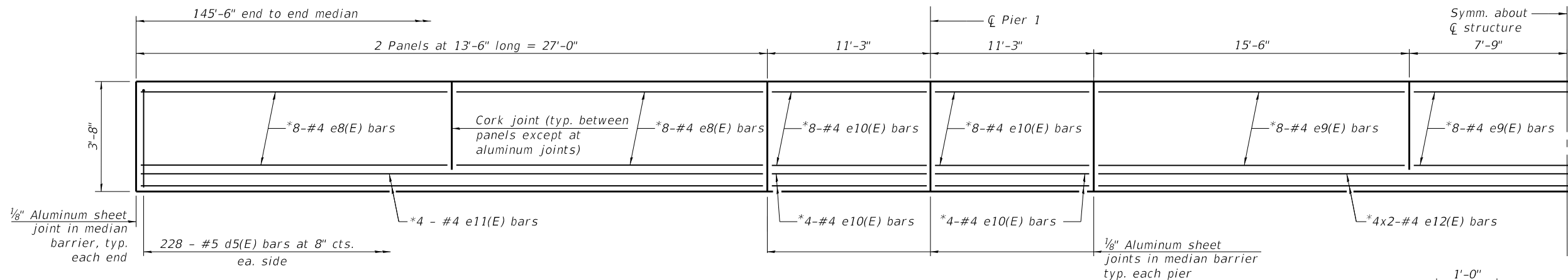


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PLOT SCALE =	CHECKED - MZ	REVISED -
PLOT DATE = 5/8/2024	DRAWN - LAM	REVISED -
	CHECKED - MZ	REVISED -

SHEET 14 OF 35 SHEETS

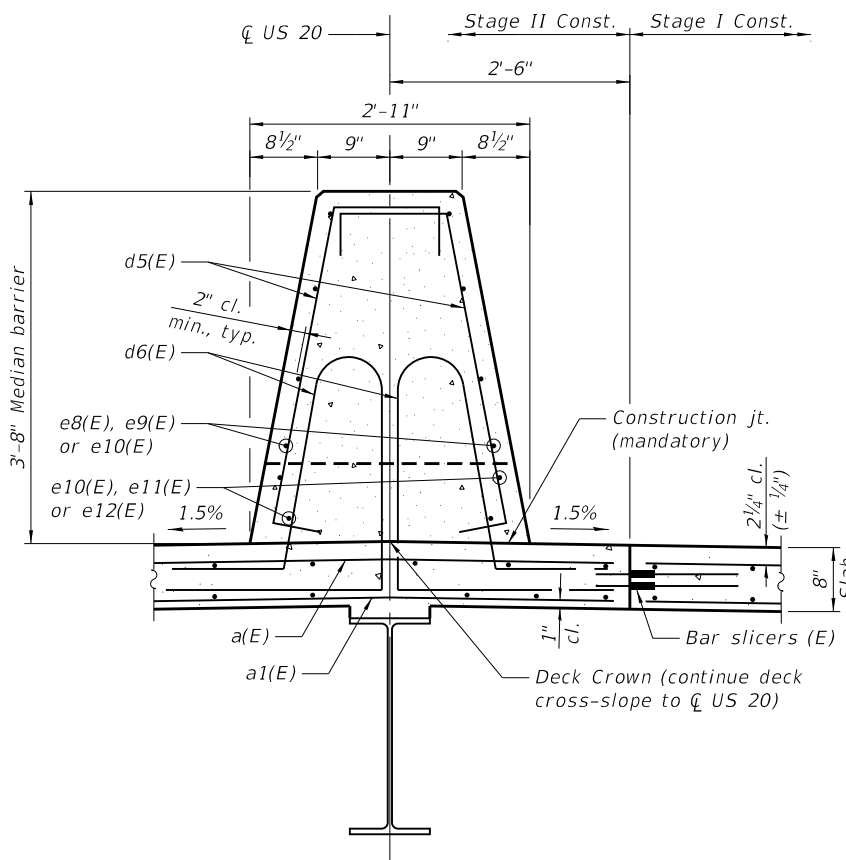
F.A.P. RTE. 345	SECTION FAP 345-23-BR	COUNTY KANE	TOTAL SHEETS 379	SHEET NO. 187
CONTRACT NO. 62U83				
ILLINOIS FED. AID PROJECT				

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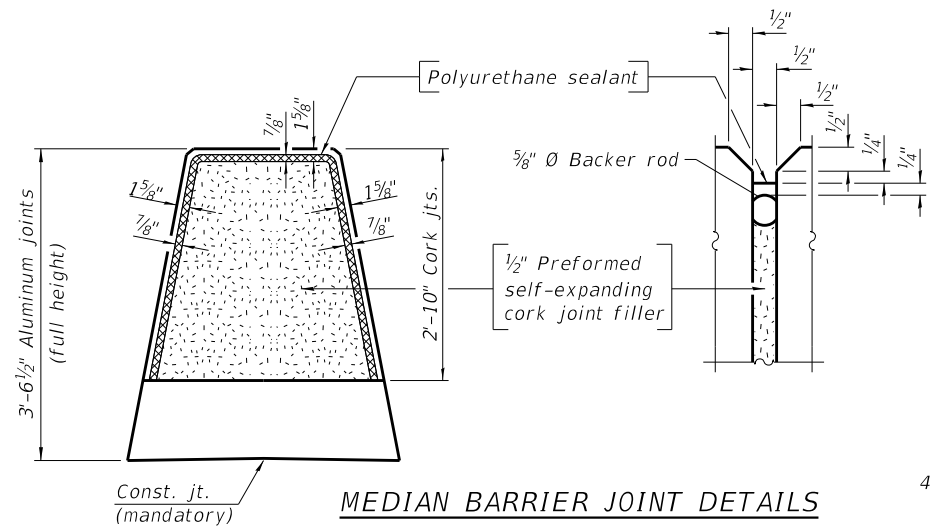


ELEVATION OF MEDIAN BARRIER

* See Section thru median barrier



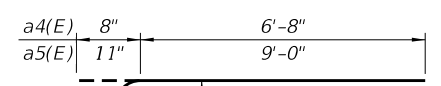
SECTION THRU MEDIAN BARRIER
(Looking East)



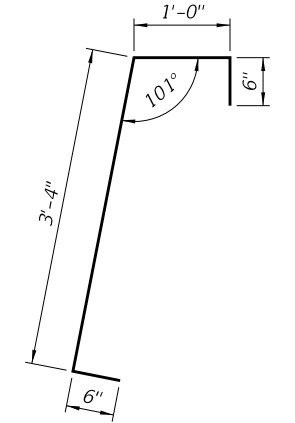
MEDIAN BARRIER JOINT DETAILS

Notes:
See sheet 14 of 35 for notes.

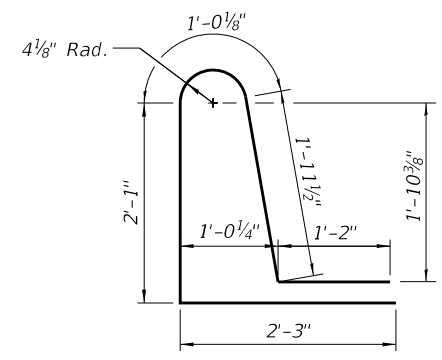
MINIMUM BAR LAP
#4 bar = 2'-5"



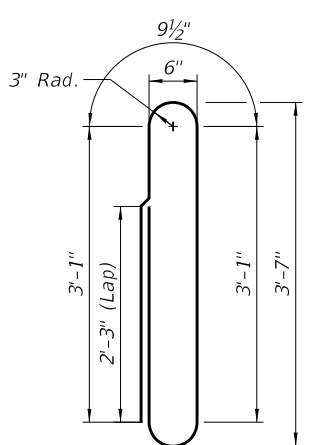
BAR a4(E) or a5(E)



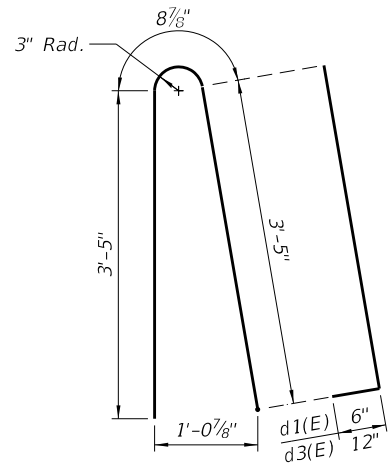
BAR d5(E)



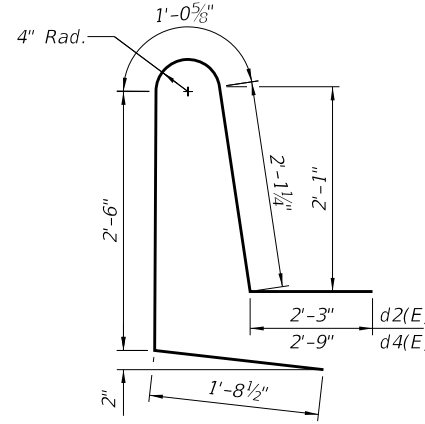
BAR d6(E)



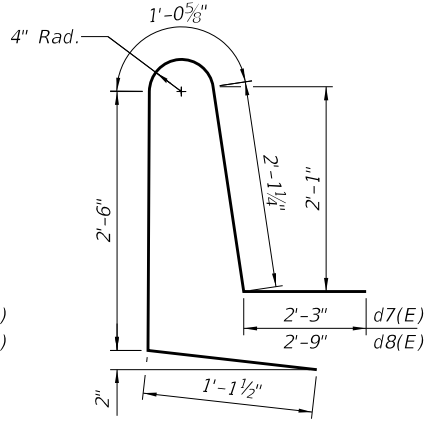
BAR d(E)



BAR d1(E) or d3(E)



BAR d2(E) or d4(E)



BAR d7(E) or d8(E)

SUPERSTRUCTURE
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	246	#5	39'-9"	—
a1(E)	176	#5	39'-6"	—
a2(E)	492	#5	20'-4"	—
a3(E)	352	#5	20'-2"	—
a4(E)	80	#6	7'-4"	—
a5(E)	624	#8	9'-11"	—
a6(E)	32	#5	1'-6"	—
b(E)	486	#5	27'-2"	—
b1(E)	73	#6	40'-0"	—
b2(E)	73	#6	43'-0"	—
b3(E)	350	#5	31'-10"	—
d(E)	704	#5	10'-0"	—
d1(E)	80	#5	8'-1"	—
d2(E)	40	#5	9'-7"	—
d3(E)	624	#6	8'-7"	—
d4(E)	312	#6	10'-1"	—
d5(E)	456	#5	5'-4"	—
d6(E)	456	#5	8'-6"	—
d7(E)	40	#5	9'-1"	—
d8(E)	312	#6	9'-7"	—
e(E)	8	#8	26'-8"	—
e1(E)	40	#6	26'-8"	—
e2(E)	48	#6	13'-2"	—
e3(E)	8	#8	26'-1"	—
e4(E)	40	#6	24'-11"	—
e5(E)	36	#6	15'-2"	—
e6(E)	16	#8	10'-11"	—
e7(E)	128	#6	10'-11"	—
e8(E)	32	#4	13'-2"	—
e9(E)	24	#4	15'-2"	—
e10(E)	48	#4	10'-11"	—
e11(E)	8	#4	26'-8"	—
e12(E)	8	#4	24'-4"	—
m10(E)	5	#6	35'-3"	—
m11(E)	44	#6	5'-6"	—
m12(E)	4	#6	4'-2"	—
m13(E)	44	#6	5'-6"	—
m14(E)	4	#6	4'-2"	—
m15(E)	8	#6	0'-9"	—
m16(E)	4	#4	18'-11"	—
m17(E)	10	#6	38'-2"	—
m18(E)	8	#4	20'-4"	—
m19(E)	5	#6	32'-1"	—
m20(E)	4	#6	2'-7"	—
m21(E)	4	#6	2'-7"	—
m22(E)	4	#4	17'-3"	—
s10(E)	128	#5	7'-8"	—
s11(E)	128	#5	9'-0"	—
u10(E)	128	#4	4'-6"	—
v100(E)	157	#5	3'-1"	—
Concrete Superstructure		Cu. Yd.	449.8	
Bridge Deck Grooving		Sq. Yd.	1,071	
Protective Coat		Sq. Yd.	1,504	
Reinforcement Bars, Epoxy Coated		Pound	134,800	
Noise Abatement Wall Anchor Rod Assembly		Each	30	

REVISED ENTIRE SHEET 6/10/2024

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS II
STRUCTURE NO. 045-0007

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	FAP 345-23-BR	KANE	379	188
CONTRACT NO. 62U83				

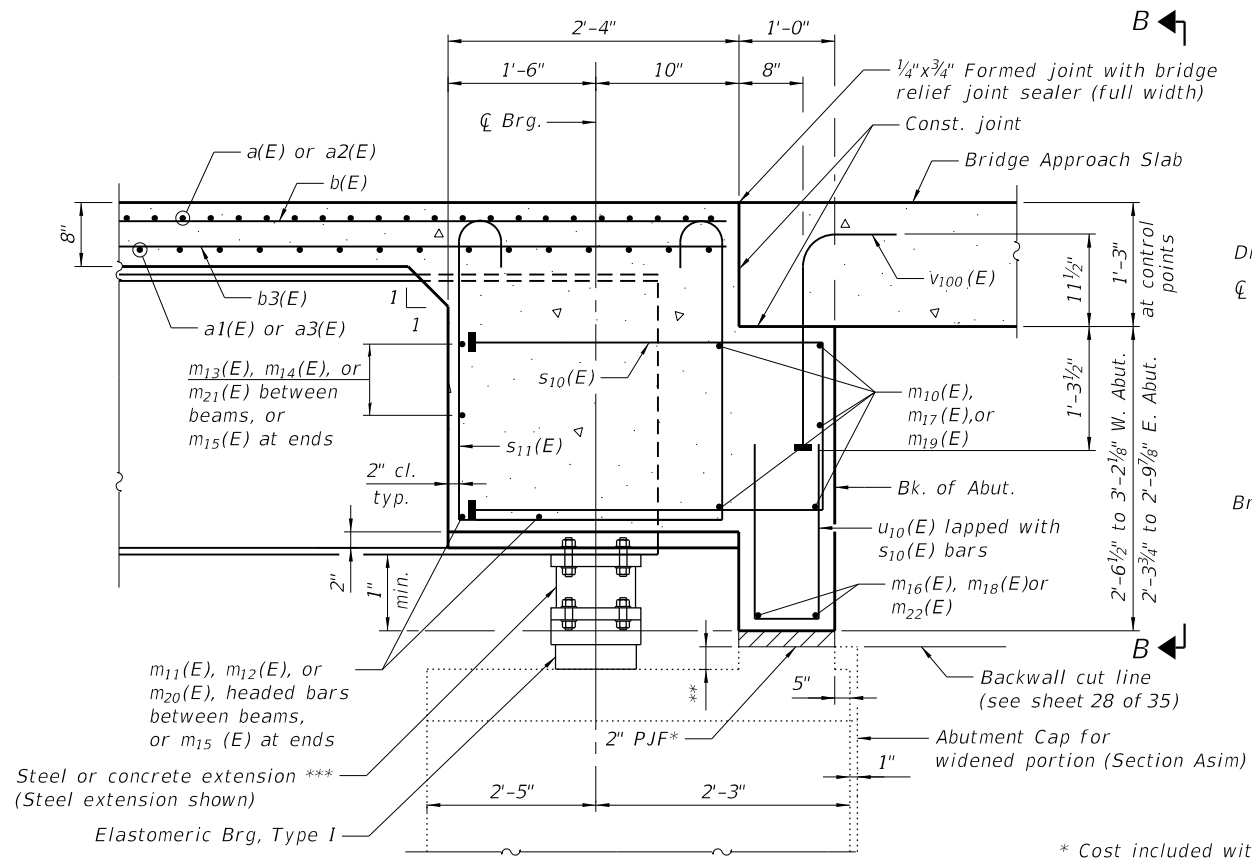
SHEET 15 OF 35 SHEETS

ILLINOIS FED. AID PROJECT



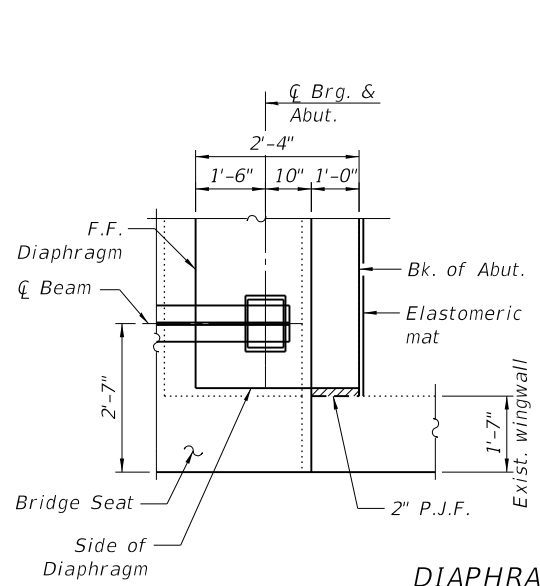
USER NAME	DESIGNED	REVISIONS
mzelisko	SS	-
	MZ	-
	LAM	-
	MZ	-

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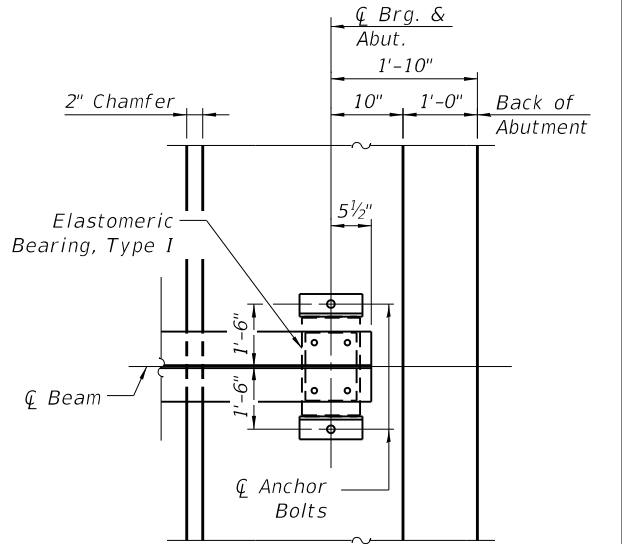
SECTION A-A

Dimensions at right angles to abutment, unless noted otherwise.
 Section Asim depicts widened portion of abutment on either side of original construction showing difference in abutment cap and backwall widths.
 See diaphragm corner detail for diaphragm ends.



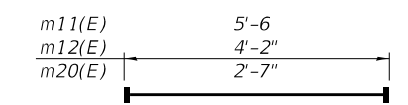
DIAPHRAGM CORNER DETAILS

(Typical each end of bridge)
 (See sheet 12 of 35 for south edge of deck taper)
 (Galvanized plate not shown for clarity)



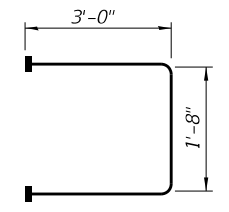
PLAN AT ABUTMENT

(Showing bottom flange of beam)
 (See sheet 23 of 35 for beams 13 & 14 taper)



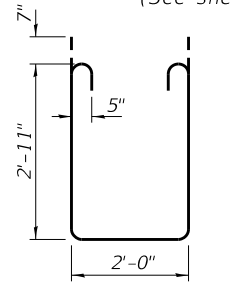
BAR m11(E), m12(E) or m20(E)

(Headed)
 (88 - #6 Bar Terminators - m11(E))
 (8 - #6 Bar Terminators - m12(E))
 (8 - #6 Bar Terminators - m20(E))

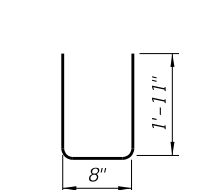


BAR s10(E)

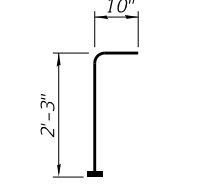
(Headed)
 (256 - #5 Bar Terminators)



BAR s11(E)

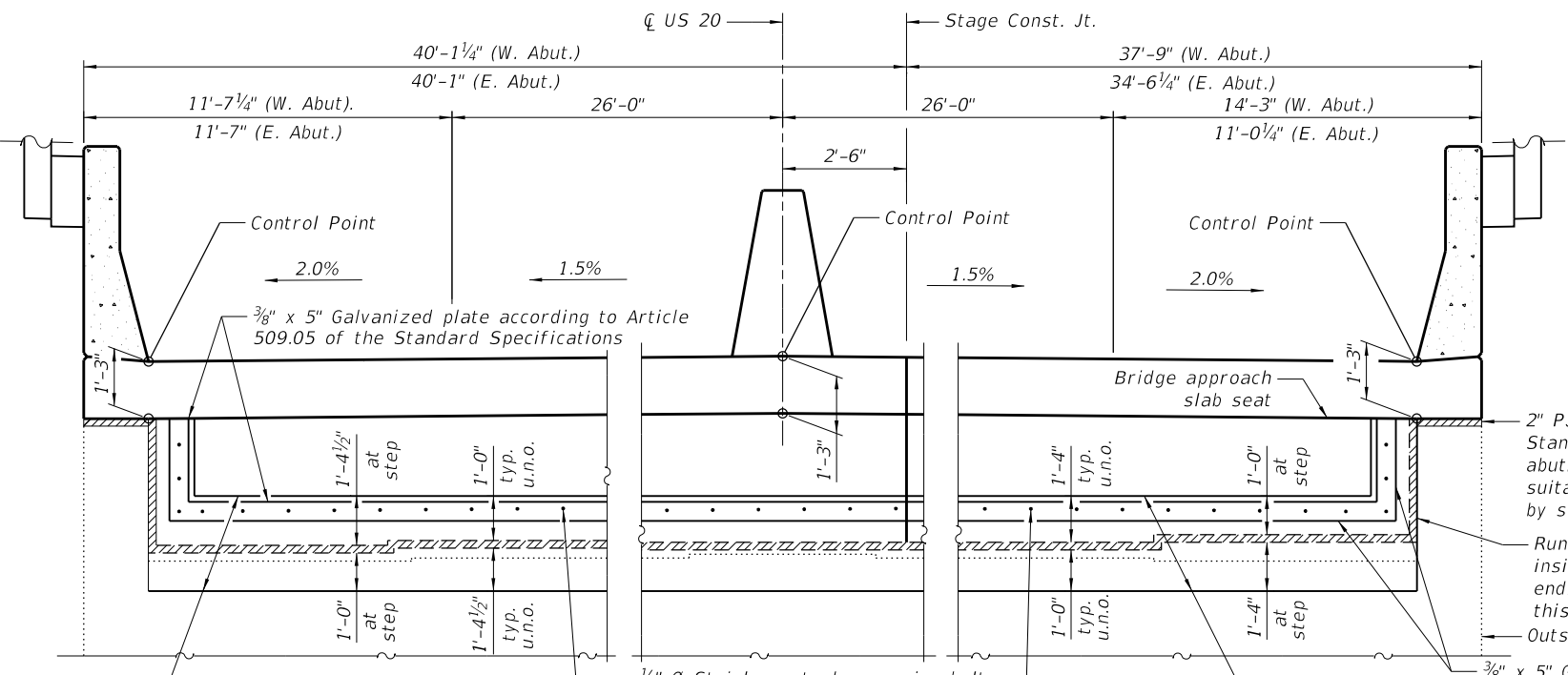


BAR u10(E)



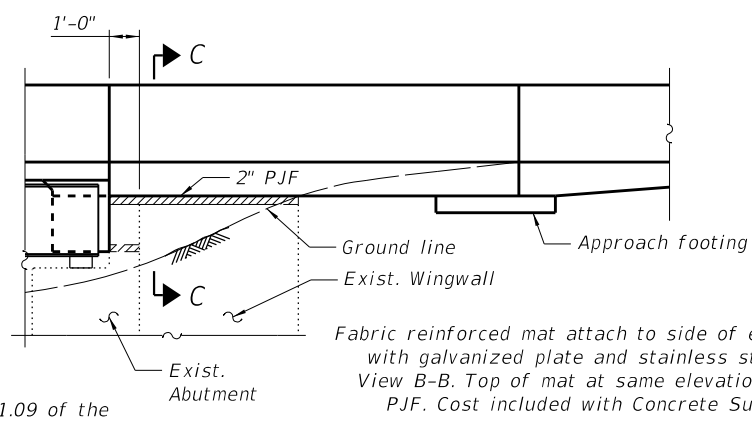
BAR v100(E)

(Headed)
 (157 - #5 Bar Terminators)



VIEW B-B

(Looking at back of W. Abut.)
 (Reflected view at back of E. Abut.)



WINGWALL ELEVATION

Notes:
 See sheet 15 of 35 for Bill of Material.
 Bar terminators will be paid for separately. See Total Bill of Material on sheet 2 of 35.
 The s10(E) and s11(E), U10(E) and v100(E) bars shall be placed parallel to the beams.
 Spacing for these bars shall be at right angles to the beams.
 The approach slab seat shall have a constant slope determined from the control points shown.
 Cost of fabric reinforced elastomeric mat, galvanized plate, stainless steel expansion bolts with nuts and washers and installation are included in the cost of Concrete Superstructure.
 See sheet 31 of 35 for concrete removal at back of abutment to permit installation of Elastomeric Mat at 2" P.J.F.

SECTION C-C



USER NAME = mzelsko	DESIGNED - SS	REVISD -
PLOT SCALE =	CHECKED - MZ	REVISD -
PLOT DATE = 5/8/2024	DRAWN - LAM	REVISD -
	CHECKED - MZ	REVISD -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

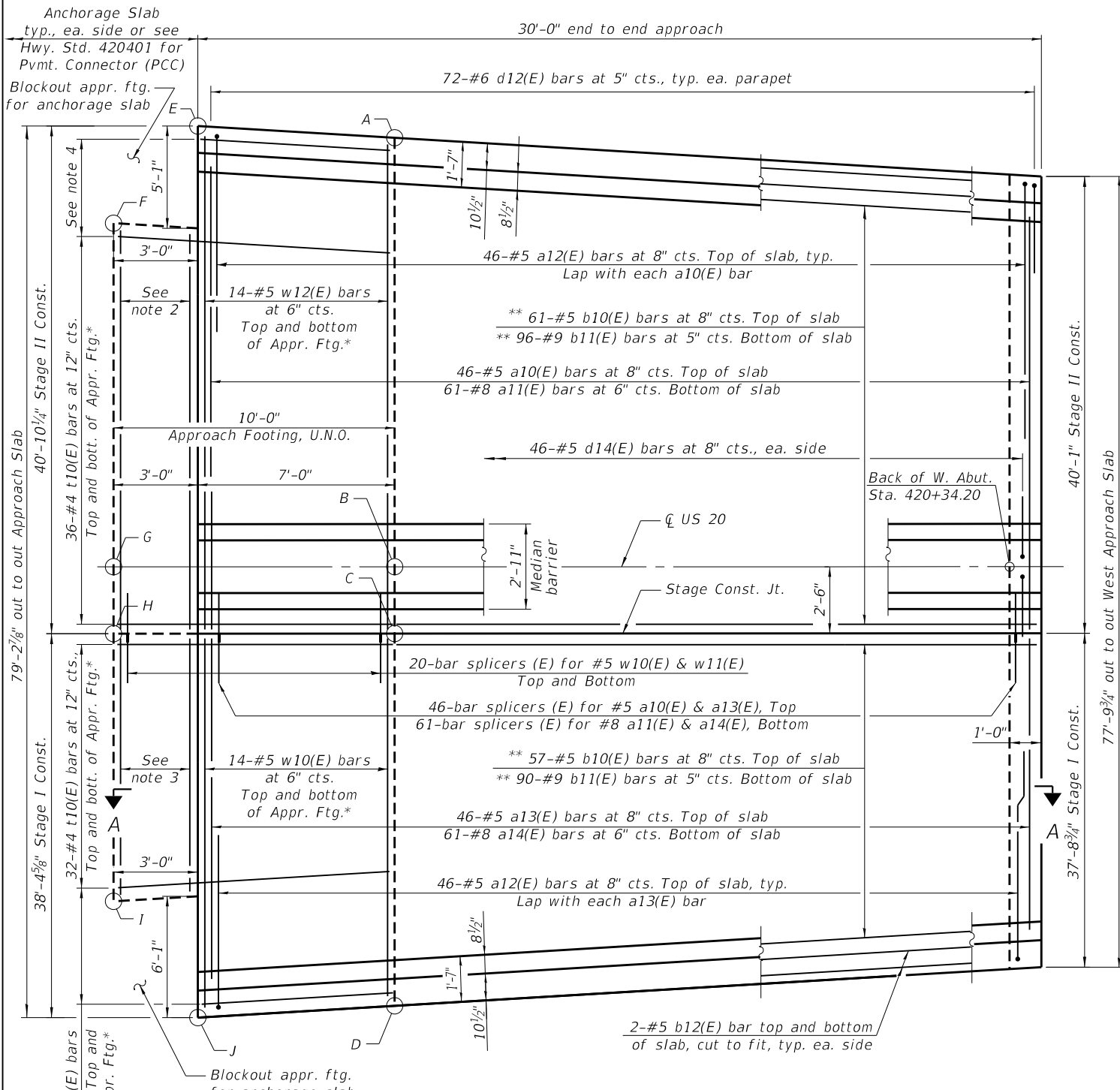
**ABUTMENT DIAPHRAGM DETAILS
 STRUCTURE NO. 045-0007**

SHEET 18 OF 35 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	FAP 345-23-BR	KANE	379	190
CONTRACT NO. 62U83				

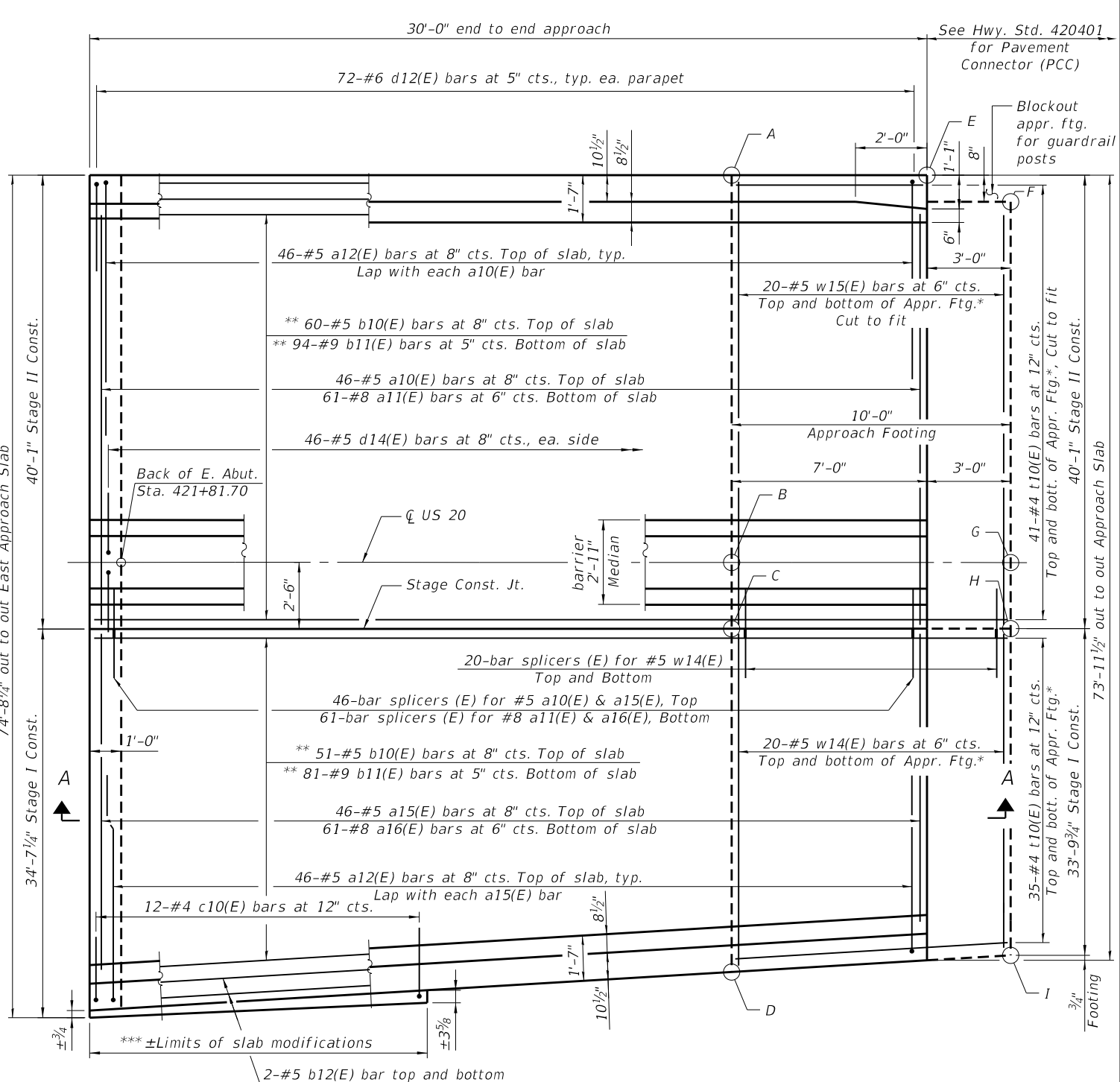
REVISD ENTIRE SHEET 6/10/2024

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WEST APPROACH PLAN

West corners of approach footing modified to fit anchorage slab foundation



EAST APPROACH PLAN

NE corner of approach footing modified to fit guardrail posts

TOP AND BOTTOM ELEVATIONS FOR APPROACH FOOTING

West Approach			East Approach		
Point/ Location	Top	Bottom	Point/ Location	Top	Bottom
A - N. Edge of Appr.	750.49	749.66	A - N. Edge of Appr.	746.90	746.06
B - \bar{C} US 20	751.09	750.26	B - \bar{C} US 20	747.49	746.65
C - Stage Const. Jt.	751.05	750.22	C - Stage Const. Jt.	747.45	746.61
D - S. Edge of Appr.	750.41	749.57	D - S. Edge of Appr.	746.88	746.05
E - N. Edge of Appr.	750.58	749.75	E - N. Edge of Appr.	746.73	745.90
F - NW Appr. Ftg.	750.70	749.86	F - NE Appr. Ftg.	746.67	745.84
G - \bar{C} US 20	751.23	750.40	G - \bar{C} US 20	747.25	746.41
H - Stage Const. Jt.	751.19	750.36	H - Stage Const. Jt.	747.21	746.38
I - SW Appr. Ftg.	750.67	749.83	I - S. Edge of Appr.	746.65	745.82
J - S. Edge of Appr.	750.50	749.67			

NOTES

- For Section A-A see sheet 20 of 35. * See Section A-A.
- Use 6-#5 w13(E) bars at 6" cts., Top and bottom of Appr. Ftg.* ** Taper bars to fit.
- Use 6-#5 w11(E) bars at 6" cts., Top and bottom of Appr. Ftg.* *** See sheet 20 of 35 for south edge of approach slab modification details.
- Use 6-#4 t11(E) bars at 12" cts., Top and bottom of Appr. Ftg.*

REVISD ENTIRE SHEET 6/10/2024

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB PLAN
STRUCTURE NO. 045-0007

SHEET 19 OF 35 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	FAP 345-23-BR	KANE	379	192
CONTRACT NO. 62U83				

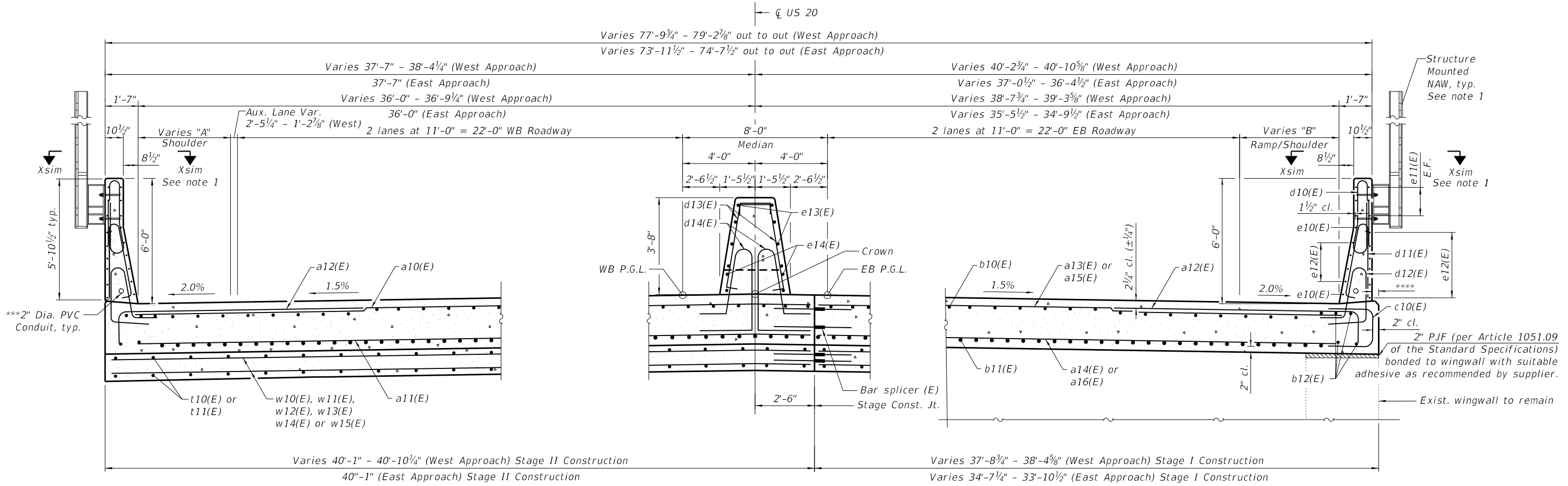


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CHECKED - MZ	DRAWN - LAM	REVISED -
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PLOT DATE = 5/8/2024		

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AT APPROACH FOOTING

CROSS SECTION

(Looking East)

See Approach Slab Plan for West/East Approach footing modifications

NEAR ABUTMENT

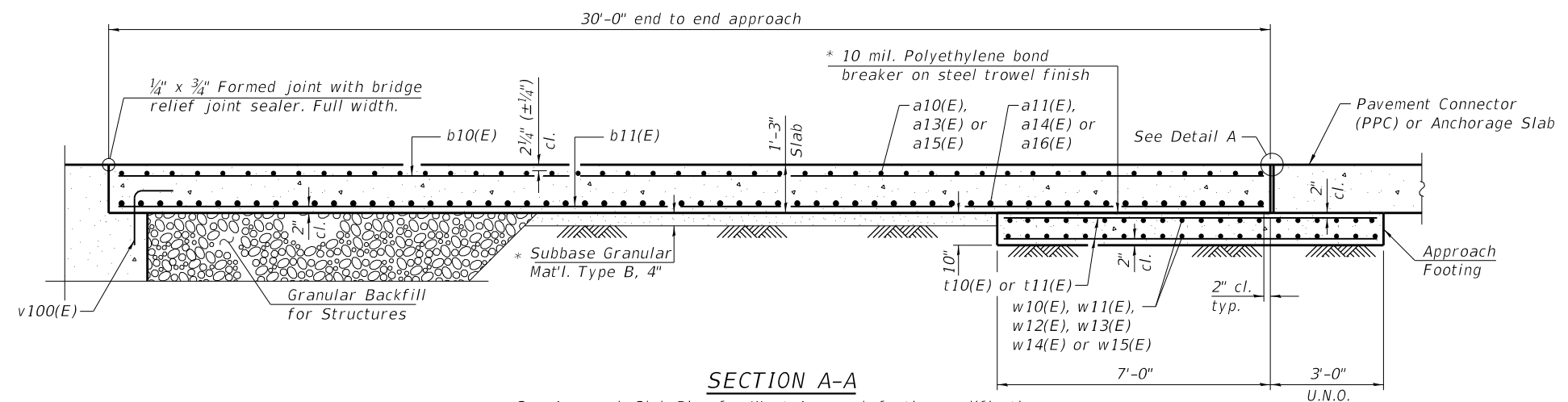
Location	Location	"A"
West Approach	West End	8'-4"
	East End	8'-9 ¹ / ₈ "
East Approach	West End	10'-0"
	East End	10'-0"

Location	Location	"B"
West Approach	West End	13'-3 ⁵ / ₈ "
	East End	12'-7 ³ / ₈ "
East Approach	West End	9'-5 ³ / ₈ "
	East End	8'-9 ¹ / ₂ "

NOTES

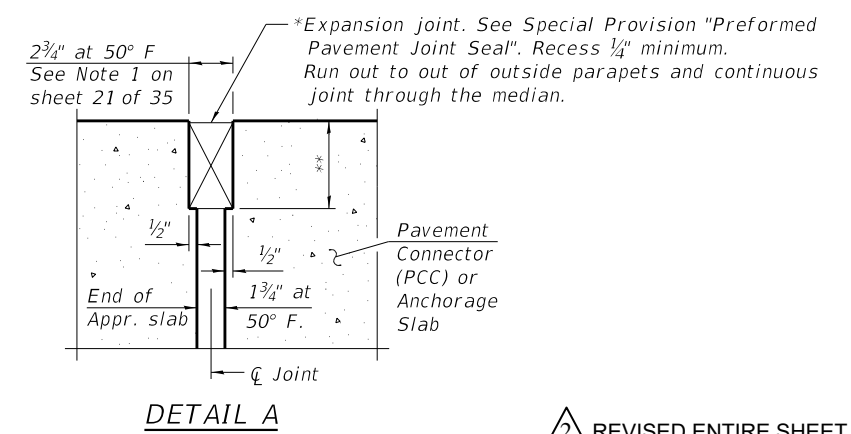
1. Contractor shall install NAW anchor rod assemblies and template plate for NAW anchor rod assembly. See sheet 14 of 35 for Section X-X, anchor rod and template details. Note spacing shall be as specified on sheet 21 of 35.

- * Cost included with Concrete Superstructure (Approach Slab).
- ** Per manufacturer recommendations.
- *** North and south parapet, see electrical plans. Maintain 1¹/₂" cl. from reinforcement.
- **** Extend south edge of east approach slab to outside edge of existing wingwall. Extension width varies approx. ±³/₄" to ±3⁵/₈".



SECTION A-A

See Approach Slab Plan for West Approach footing modifications



DETAIL A

REVISIONS: REVISED ENTIRE SHEET 6/10/2024



USER NAME = mzelsko	DESIGNED - SS	REVISIONS -
PLOT SCALE = 2.0000' / in.	CHECKED - MZ	REVISIONS -
PLOT DATE = 5/8/2024	DRAWN - LAM	REVISIONS -
	CHECKED - MZ	REVISIONS -

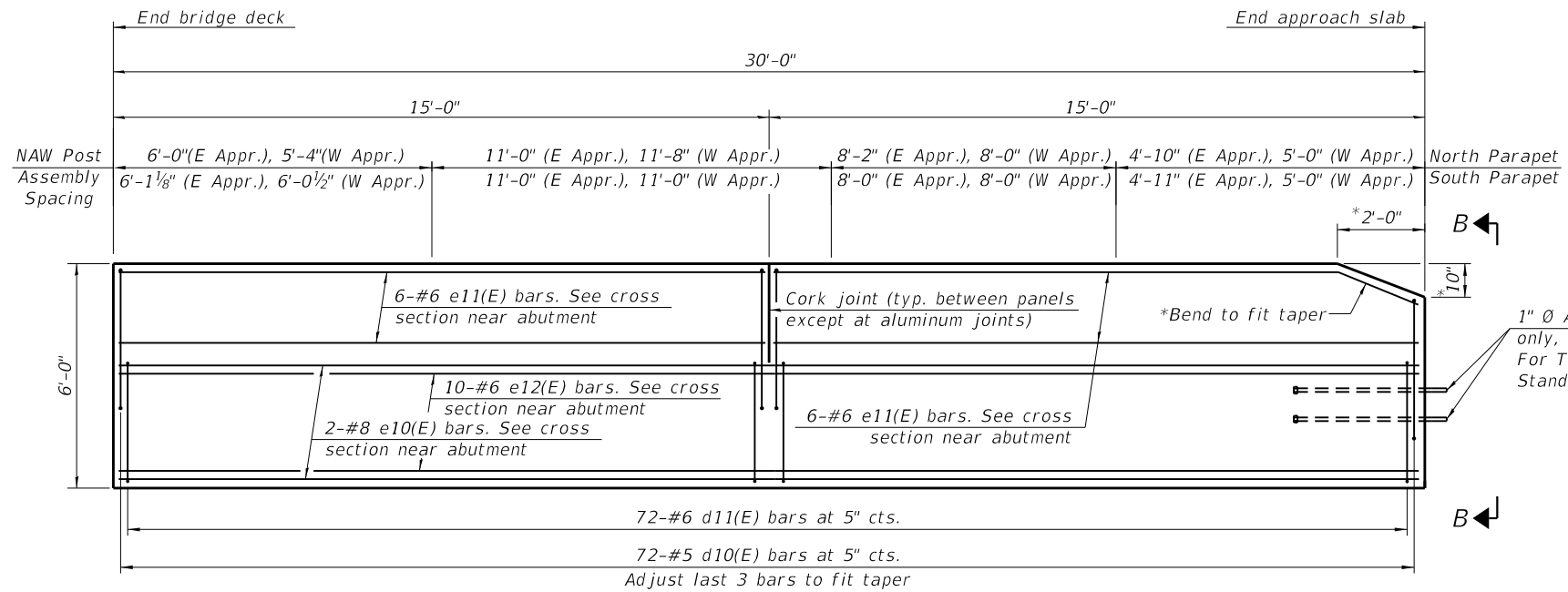
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB SECTIONS
STRUCTURE NO. 045-0007

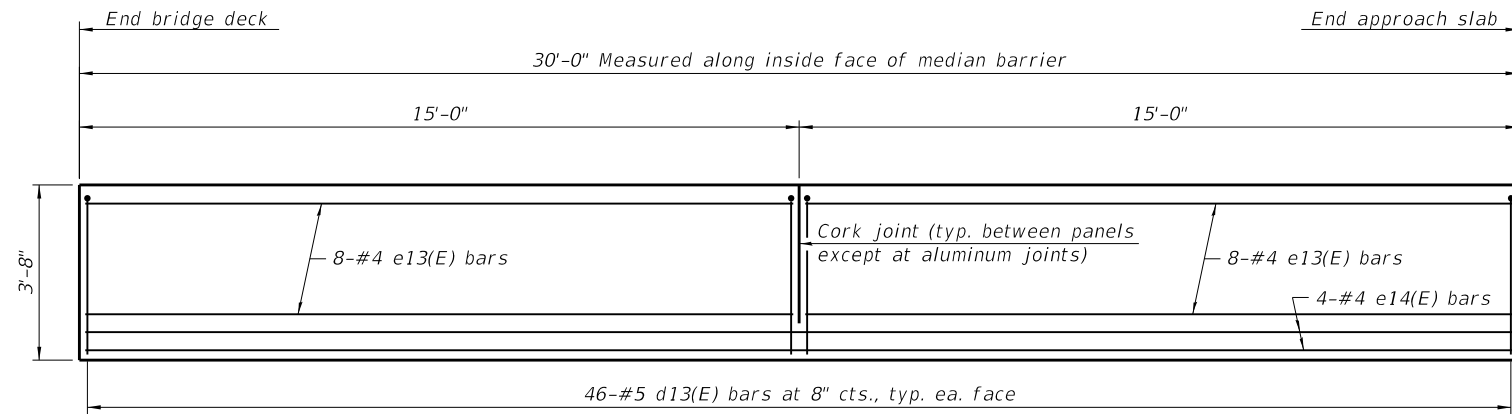
SHEET 20 OF 35 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	FAP 345-23-BR	KANE	379	193
CONTRACT NO. 62U83				

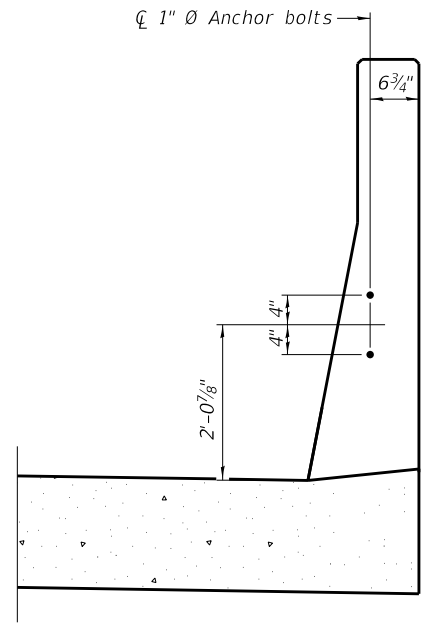
ILLINOIS FED. AID PROJECT



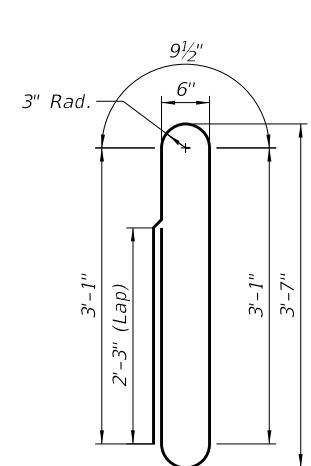
INSIDE ELEVATION OF PARAPET



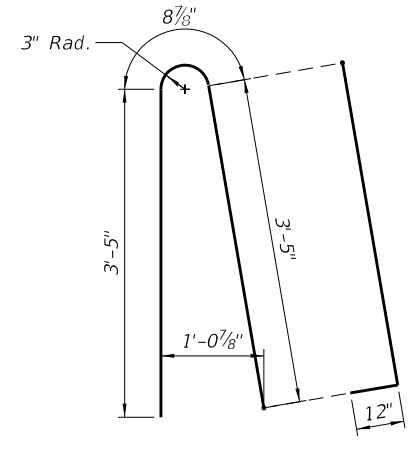
INSIDE ELEVATION OF MEDIAN BARRIER



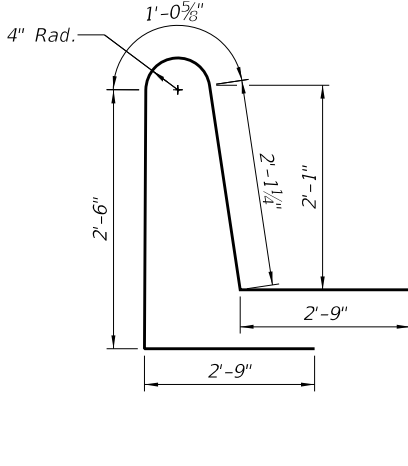
VIEW B-B



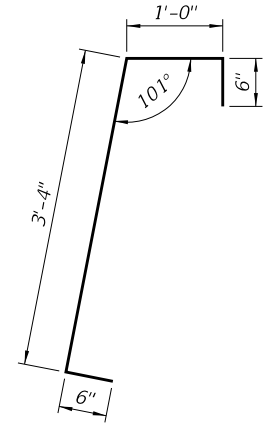
BAR d10(E)



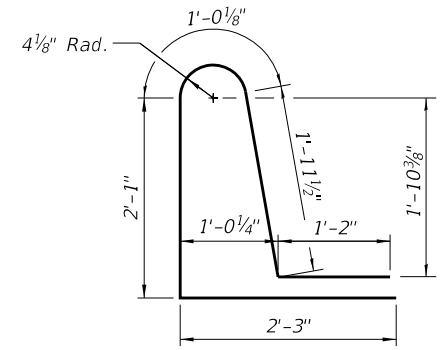
BAR d11(E)



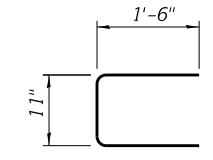
BAR d12(E)



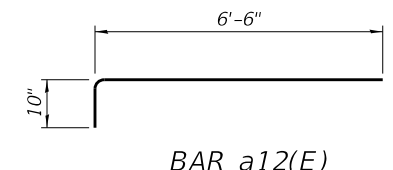
BAR d13(E)



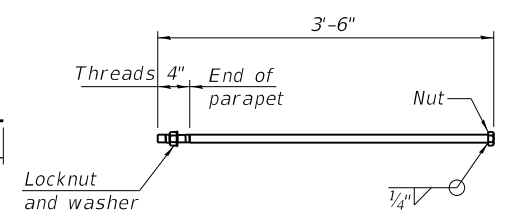
BAR d14(E)



BAR c10(E)



BAR a12(E)



1" ∅ ANCHOR BOLT

(Anchor bolt assemblies shall be galvanized according to Article 1006.09 of the Standard Specifications. Cost included with Concrete Superstructure (Approach Slab))

TWO APPROACHES
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a10(E)	92	#5	39'-9"	—
a11(E)	122	#8	39'-9"	—
a12(E)	184	#5	7'-4"	—
a13(E)	46	#5	37'-3"	—
a14(E)	61	#8	37'-3"	—
a15(E)	46	#5	33'-5"	—
a16(E)	61	#8	33'-5"	—
b10(E)	229	#5	29'-8"	—
b11(E)	361	#9	29'-8"	—
b12(E)	16	#5	29'-8"	—
c10(E)	12	#4	3'-11"	C
d10(E)	288	#5	10'-0"	I
d11(E)	288	#6	8'-7"	I
d12(E)	288	#6	11'-2"	I
d13(E)	184	#5	5'-4"	I
d14(E)	184	#5	8'-6"	I
e10(E)	8	#8	29'-8"	—
e11(E)	48	#6	14'-8"	—
e12(E)	40	#6	29'-8"	—
e13(E)	32	#4	14'-8"	—
e14(E)	8	#4	29'-8"	—
w10(E)	28	#5	37'-10"	—
w11(E)	12	#5	31'-9"	—
w12(E)	28	#5	40'-6"	—
w13(E)	12	#5	35'-5"	—
w14(E)	40	#5	33'-4"	—
w15(E)	40	#5	39'-9"	—
t10(E)	288	#4	9'-8"	—
t11(E)	26	#4	6'-8"	—
Concrete Structures		Cu. Yd.	46.3	
Concrete Superstructure		Cu. Yd.	46.6	
Bridge Deck Grooving		Sq. Yd.	484	
Protective Coat		Sq. Yd.	663	
Concrete Superstructure (Approach Slab)		Cu. Yd.	213.4	
Reinforcement Bars, Epoxy Coated		Pound	102,490	
Noise Abatement Wall		Each	12	
Anchor Rod Assembly				

REVISION 2 REVISED ENTIRE SHEET 6/10/2024

2

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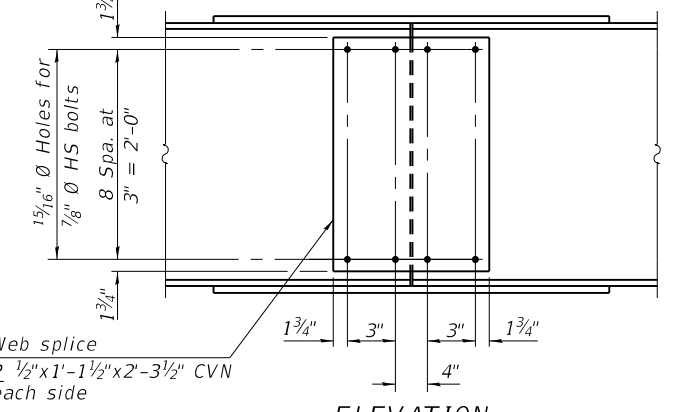
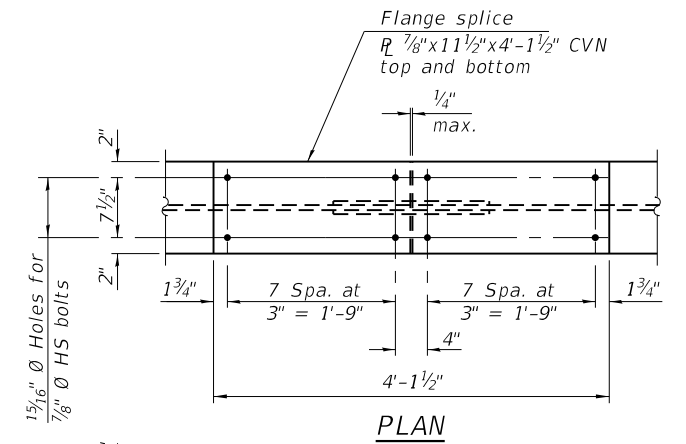
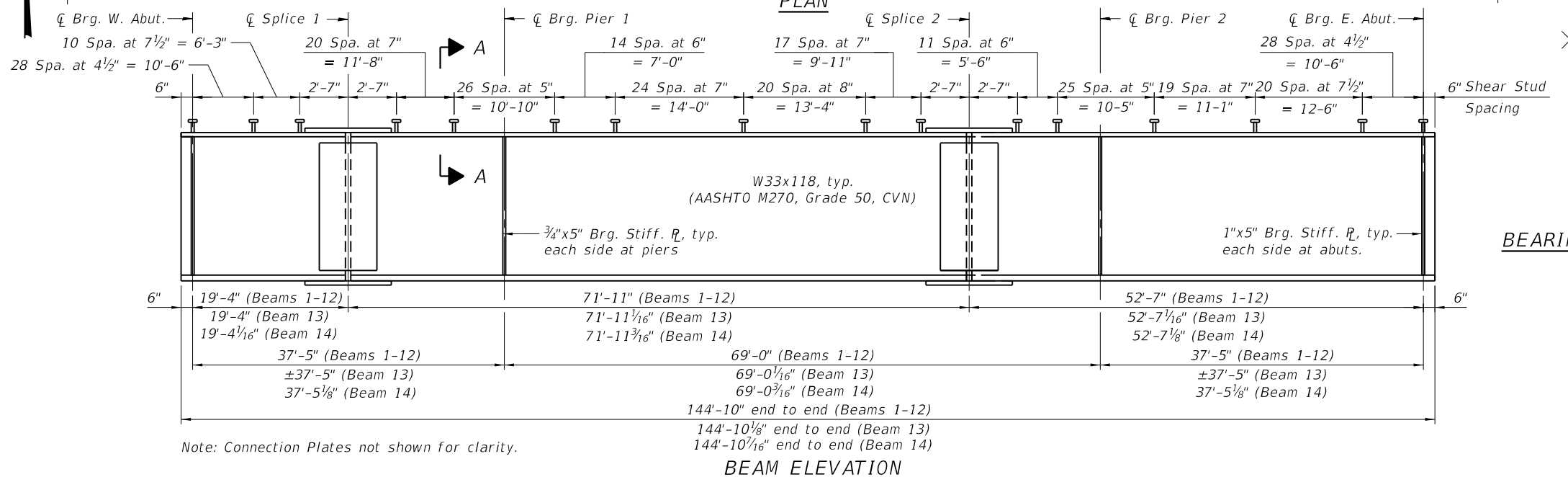
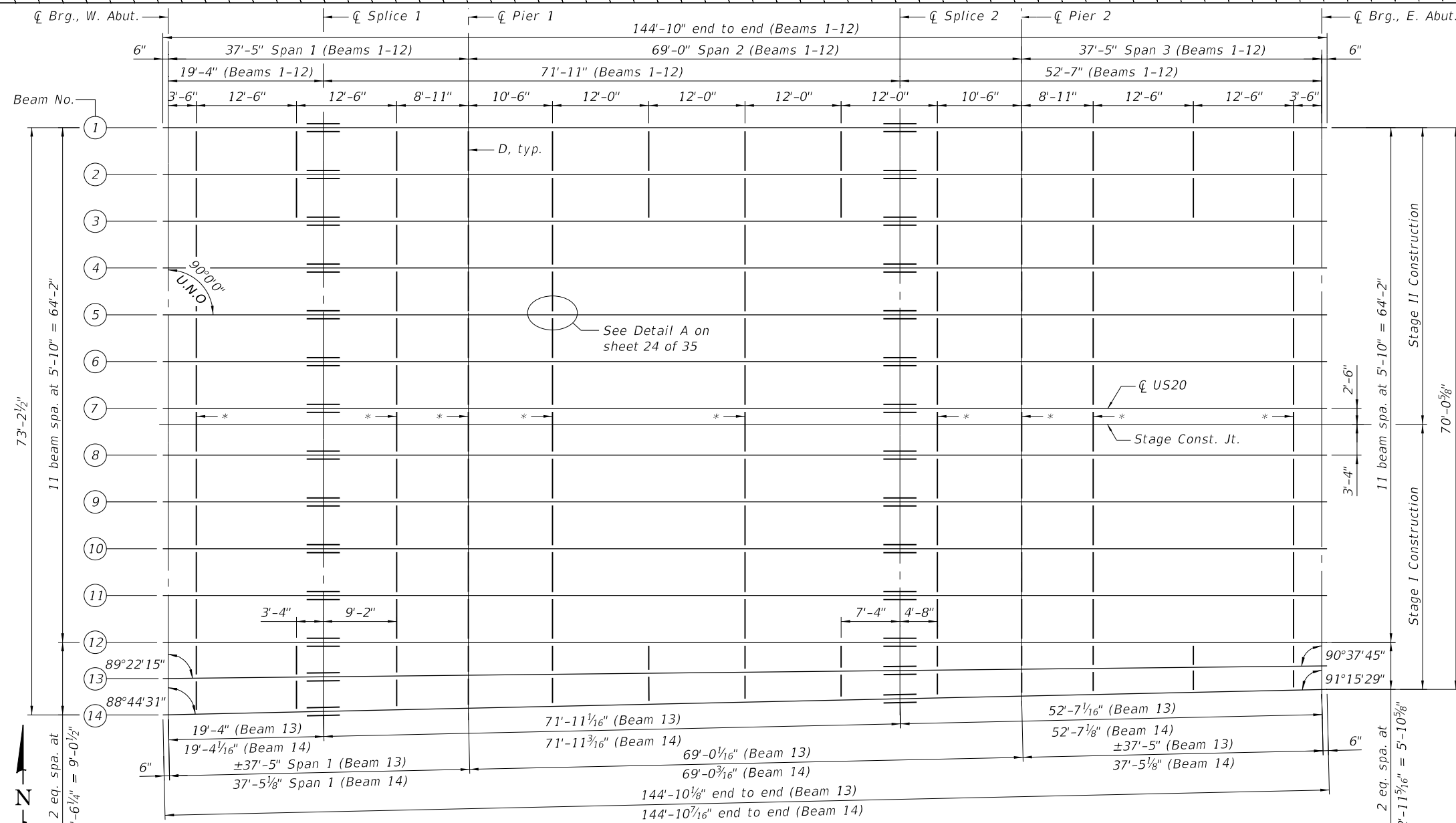
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	CHECKED - MZ	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

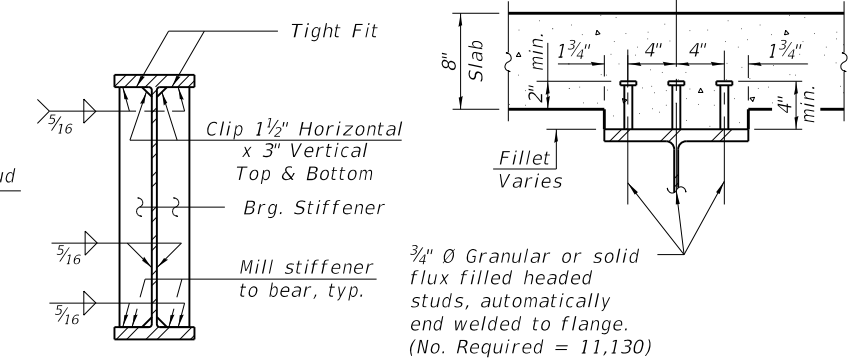
BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 045-0007

SHEET 21 OF 35 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	FAP 345-23-BR	KANE	379	194
CONTRACT NO. 62U83				
ILLINOIS FED. AID PROJECT				



* Use 1 3/16" x 1 7/8" vert. long-slotted holes in one end of the diaphragm (adjacent to Beam 7) and standard oversize holes at the other end (adjacent to Beam 8) and in the connection plates at locations designated with (*) only. The bolts for the slotted holes shall be finger tightened prior to the deck pour for Stage II Construction. Tighten bolts after deck is poured. Position slots so bolts start at one end of slotted holes before the Stage II concrete is poured and finish near the opposite end after the Stage II pour. See detail on sheet 24 of 35.



- Notes:
- See sheet 24 of 35 for additional notes and details.
 - All diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
 - CVN denotes Charpy-V-Notch impact energy requirements, zone 2.

REVISD ENTIRE SHEET 6/10/2024

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PLOT DATE =	5/8/2024	CHECKED -	MZ	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FRAMING PLAN
STRUCTURE NO. 045-0007

SHEET 23 OF 35 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	FAP 345-23-BR	KANE	379	196
CONTRACT NO. 62U83				
ILLINOIS FED. AID PROJECT				

INTERIOR GIRDER MOMENT TABLE				
		0.26 Sp. 1 or 0.74 Sp. 3	Pier	0.5 Sp. 2
I_s	(in ⁴)	5,900	5,900	5,900
$I_c(n)$	(in ⁴)	16,811	-	16,811
$I_c(3n)$	(in ⁴)	12,514	-	12,514
$I_c(cr)$	(in ⁴)	-	8,288	-
S_s	(in ³)	359	359	359
$S_c(n)$	(in ³)	544	-	544
$S_c(3n)$	(in ³)	493	-	493
$S_c(cr)$	(in ³)	-	421	-
S_x	(in ³)	537	408	507
DC1	(k/')	0.74	0.74	0.74
M _{DC1}	(k)	35	250	190
DC2	(k/')	0.72	0.72	0.72
M _{DC2}	(k)	34	242	184
DW	(k/')	0.29	0.29	0.29
M _{DW}	(k)	14	99	75
LLDF		0.600	0.564	0.539
M _{ℓ + IM}	(k)	342	466	498
f_t (Strength I)	(ksi)	-	-	-
M _u + 1/3 f _t S _x	(k)	712	1,579	1,452
Ø _r M _n	(k)	2,893	2,124	2,742
f _s DC1	(ksi)	1.17	8.36	6.36
f _s DC2	(ksi)	0.83	6.90	4.48
f _s DW	(ksi)	0.45	2.82	1.83
f _s (ℓ+IM)	(ksi)	7.5	13.3	11.0
f _s + f _t /2 (Service II)	(ksi)	12.3	35.4	26.9
Service II Resistance	(ksi)	47.5	47.5	47.5
f _s + f _t /3 (Strength I)	(ksi)	-	-	-
Ø _r F _n	(ksi)	-	-	-
V _f	(k)	45.7	54.9	33.7

I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total-Strength I, and Service II) due to non-composite dead loads (in.⁴ and in.³).

$I_c(n), S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total-Strength I, and Service II) in uncracked sections due to short-term composite live loads (in.⁴ and in.³).

$I_c(3n), S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s (Total-Strength I, and Service II) in uncracked sections, due to long-term composite (superimposed) dead loads (in.⁴ and in.³).

$I_c(cr), S_c(cr)$: Composite moment of inertia and section modulus of the steel and longitudinal deck reinforcement, used for computing f_s (Total-Strength I and Service II) in cracked sections, due to both short-term composite live loads and long-term composite (superimposed) dead loads (in.⁴ and in.³).

S_x : Section modulus about the major axis of the section to the controlling flange, tension or compression, taken as yield moment with respect to the controlling flange over the yield strength of the controlling flange (in.³).

DC1: Un-factored non-composite dead load (kips/ft.).

M_{DC1}: Un-factored moment due to non-composite dead load (kip-ft.).

DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).

M_{DC2}: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).

DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).

M_{DW}: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).

LLDF: Live Load Distribution Factor for moment and shear computed according to Article 4.6.2.2 and further IDOT provisions.

M_{ℓ + IM}: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).

f_t: Factored calculated flange lateral bending stress as calculated using Article 6.10.1.6 and as further simplified by IDOT provisions (ksi).

M_u: Strength I load combination of factored design moments (kip-ft.).

1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_{ℓ + IM}

Ø_r M_n: Factored nominal flexural resistance of the section determined as specified in Article 6.10.7.1 or A6 as applicable (kip-ft.).

f_s DC1: Un-factored stress at edge of flange for controlling steel flange due to vertical non-composite dead loads as calculated below (ksi).

M_{DC1} / S_s

f_s DC2: Un-factored stress at edge of flange for controlling steel flange due to vertical composite dead loads as calculated below (ksi).

M_{DC2} / S_{c(3n)} or M_{DC2} / S_{c(cr)} as applicable.

f_s DW: Un-factored stress at edge of flange for controlling steel flange due to vertical composite future wearing surface loads as calculated below (ksi).

M_{DW} / S_{c(3n)} or M_{DW} / S_{c(cr)} as applicable.

f_s (ℓ + IM): Un-factored stress at edge of flange for controlling steel flange due to vertical composite live load plus impact loads as calculated below (ksi).

M_{ℓ + IM} / S_{c(n)} or M_{ℓ + IM} / S_{c(cr)} as applicable.

f_s + f_t/2 (Service II): Sum of stresses as computed below (ksi).

f_s DC1 + f_s DC2 + f_s DW + 1.3 f_s (ℓ + IM) + f_t/2

Service II Resistance: Composite (0.95R_nF_{yr}) or noncomposite (0.80R_nF_{yr}) stress capacity according to Article 6.10.4.2 (ksi).

f_s + f_t/3 (Strength I): Sum of stresses as computed below on non-compact sections (ksi).

1.25 (f_s DC1 + f_s DC2) + 1.5 f_s DW + 1.75 f_s (ℓ + IM) + f_t/3

Ø_r F_n: Factored nominal flexural resistance of the section as specified in Article 6.10.7.2 or 6.10.8 as applicable (ksi).

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

OCF: Obtuse Correction Factor according to Article 4.6.2.2.3c or as further simplified by IDOT provisions.

R_{DC1}: Un-factored reaction due to non-composite dead load (kip).

R_{DC2}: Un-factored reaction due to long-term composite (superimposed excluding future wearing surface) dead load (kip).

R_{DW}: Un-factored reaction due to long-term composite (superimposed future wearing surface only) dead load (kip).

R_ℓ: Un-factored live load reaction (kip).

R_{IM}: Un-factored dynamic load allowance (impact) (kip).

R_{Total} (Strength I)(Impact): Strength I load combination of factored design reactions (kip).

1.25 (R_{DC1} + R_{DC2}) + 1.5 R_{DW} + 1.75 (R_ℓ + R_{IM})

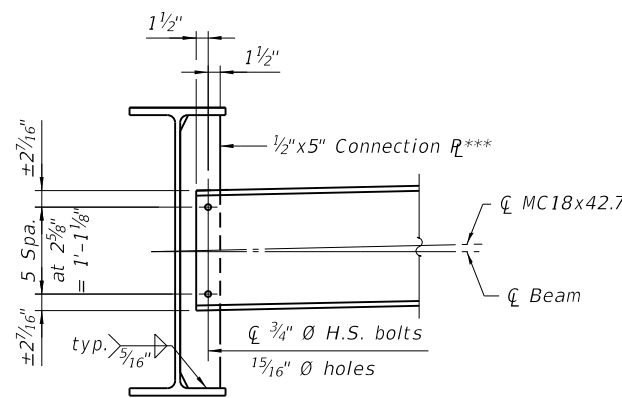
R_{Total} (Strength I)(No Impact): Strength I load combination of factored design reactions, not including dynamic load allowance (Impact) (kip).

1.25 (R_{DC1} + R_{DC2}) + 1.5 R_{DW} + 1.75 (R_ℓ)

GIRDER REACTION TABLE		
	W. & E. Abut.	Pier 1 & 2
LLDF	0.658	0.658
OCF	1.00	-
R _{DC1}	(k) 13.1	46.4
R _{DC2}	(k) 6.9	44.6
R _{DW}	(k) 2.8	18.2
R _ℓ	(k) 41.3	73.3
R _{IM}	(k) 11.4	15.3
R _{Total} (Strength I)(Impact)	(k) 121.5	295.9
R _{Total} (Strength I)(No Impact)	(k) 101.5	269.2

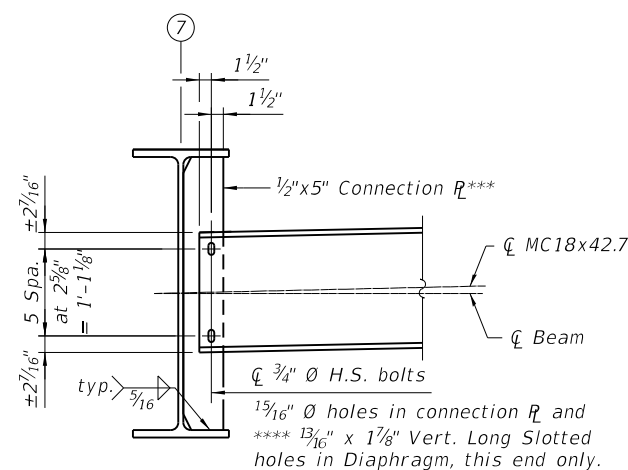
**Top of Beam Elevations						
Beam No.	℄ Brg. W. Abut.	℄ Splice 1	℄ Pier 1	℄ Splice 2	℄ Pier 2	℄ Brg. E. Abut.
1	750.45	750.08	749.74	748.74	748.45	747.74
2	750.82	750.44	750.11	749.11	748.82	748.11
3	750.92	750.55	750.21	749.21	748.92	748.22
4	751.01	750.63	750.30	749.30	749.01	748.31
5	751.10	750.72	750.39	749.38	749.10	748.39
6	751.19	750.81	750.48	749.48	749.19	748.48
7	751.27	750.90	750.56	749.55	749.27	748.56
8	751.19	750.81	750.48	749.48	749.19	748.48
9	751.10	750.72	750.39	749.38	749.10	748.39
10	751.01	750.63	750.30	749.30	749.01	748.31
11	750.92	750.55	750.21	749.21	748.92	748.22
12	750.82	750.44	750.11	749.11	748.82	748.11
13	750.73	750.35	750.02	749.02	748.73	748.02
14	750.39	750.01	749.68	748.68	748.39	747.69

** For fabrication only.



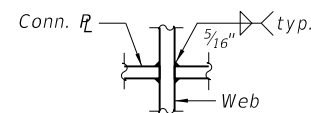
INTERIOR DIAPHRAGM - D
(133 Required)

***Brg. Stiff. shall be used in lieu of Connection R at piers
**** See note (*) on sheet 23 of 35, and Diaphragm Slotted Hole Detail this sheet.

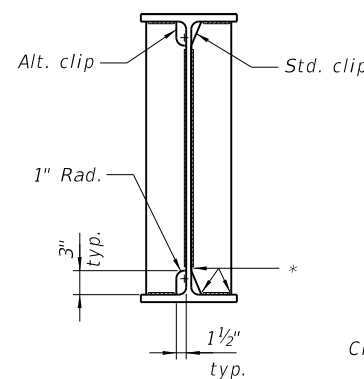


DIAPHRAGM SLOTTED HOLE DETAIL
(Along Construction Line)

*** Brg. Stiff. shall be used in lieu of Connection R at piers

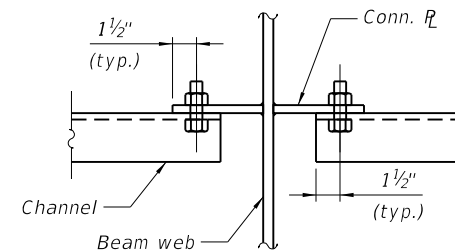


WEB WELD DETAIL



WELD LIMITS AND CLIP DETAILS

* Stop welds 1/4" (±1/8") from edges as shown, typ.



DETAIL A

See sheet 23 of 35 for location.

Notes:

- All beam structural steel members, bearing stiffener plates and splice plates shall be AASHTO M270, Grade 50.
- Two hardened washers required for each set of oversized holes.
- Alternate channels of equal depth and larger weight are permitted to facilitate material acquisition. Alternate channels if utilized, shall be provided at no additional cost to the Department.

REVISED ENTIRE SHEET 6/10/2024

GANNETT FLEMING	USER NAME = mzelsko	DESIGNED - MZ	REVISED -
	PLOT SCALE =	CHECKED - SS	REVISED -
	PLOT DATE = 5/8/2024	DRAWN - LAM	REVISED -
		CHECKED - MZ	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

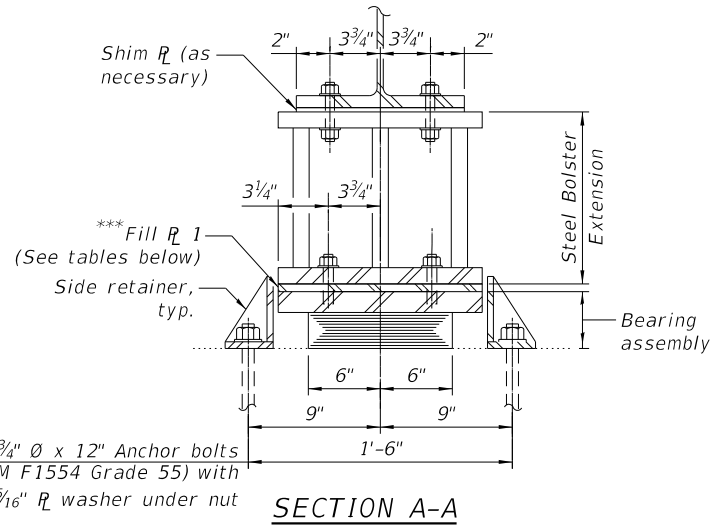
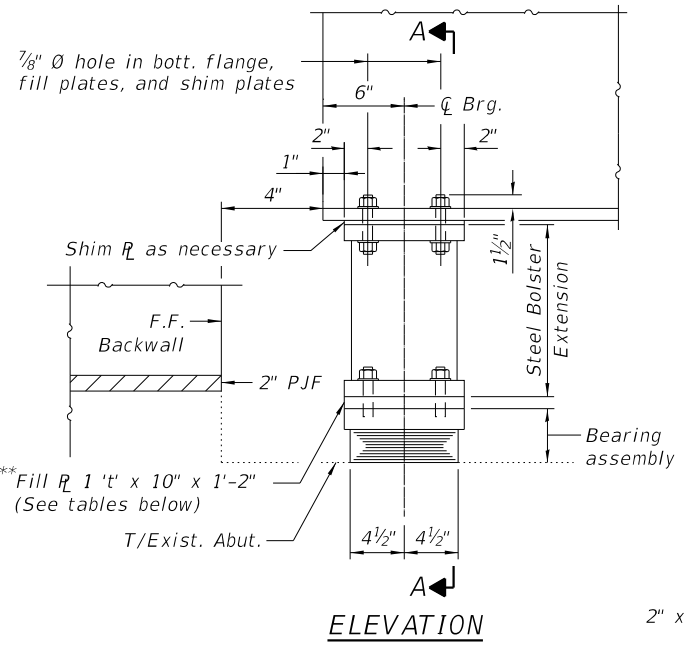
**STRUCTURAL STEEL
STRUCTURE NO. 045-0007**

F.A.P. RTE. 345	SECTION FAP 345-23-BR	COUNTY KANE	TOTAL SHEETS 379	SHEET NO. 197
CONTRACT NO. 62U83				

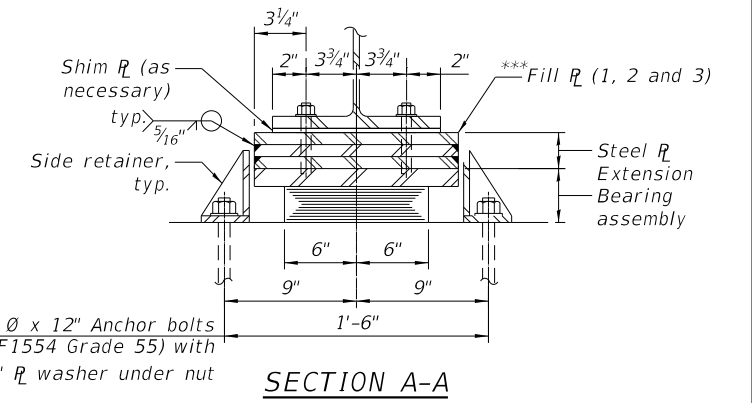
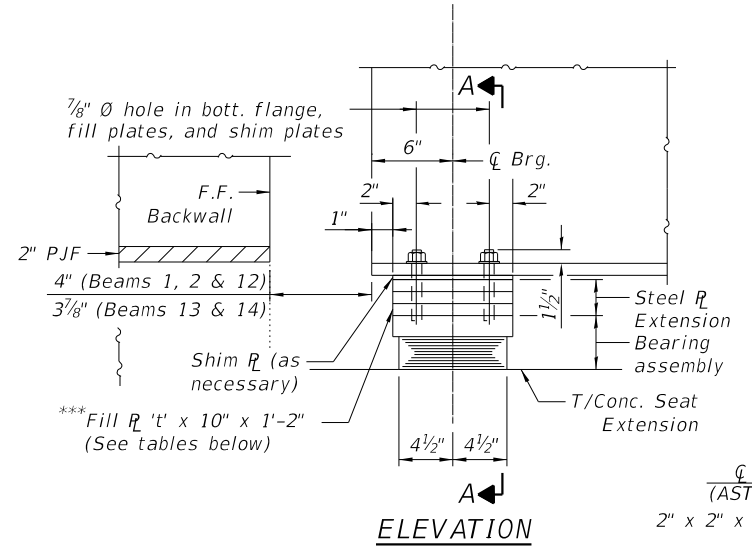
SHEET 24 OF 35 SHEETS

ILLINOIS FED. AID PROJECT

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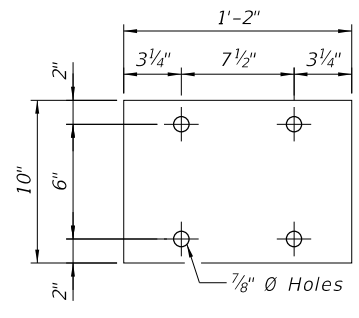


TYPE I ELASTOMERIC EXP. BRG.
(Beams 3 thru 11)

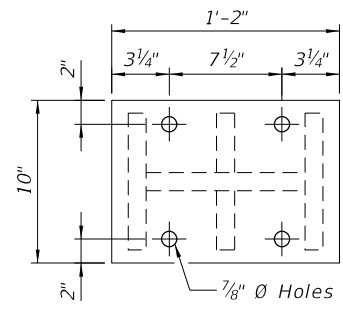


TYPE I ELASTOMERIC EXP. BRG.
(Beams 2, 12 & 13)

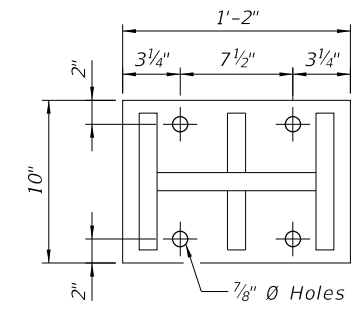
(Beams 1 & 14 similar, see East Abutment Type I Elastomeric Expansion Detail for Beams 1 & 14 on sheet 26 of 35 for fill plate details without steel plate extensions)



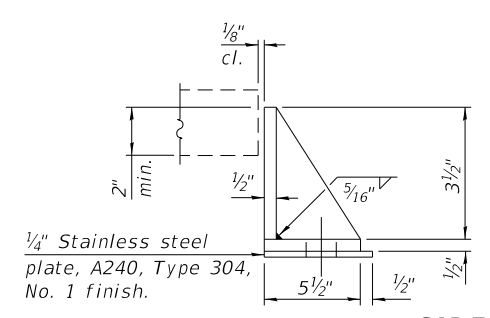
PLAN FILL R
(Shim R similar if required)



PLAN TOP R

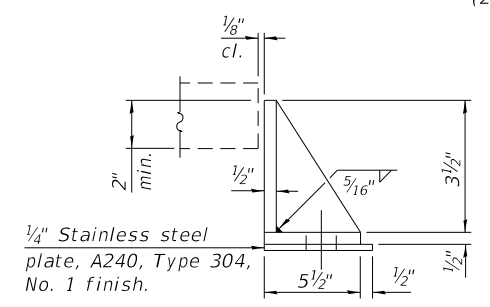


PLAN BOTTOM R



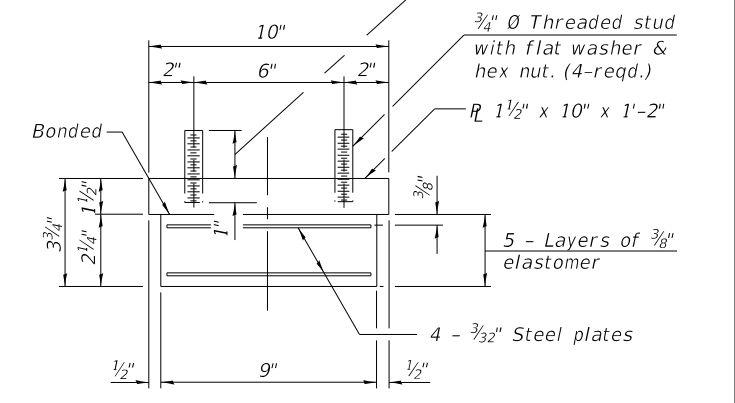
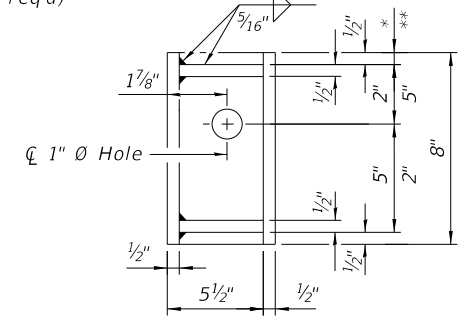
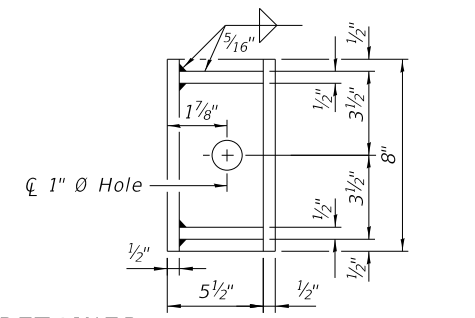
SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. (22 req'd)



MODIFIED SIDE RETAINER
(at Beams 2, 3, 11 & 12)

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. See sheets 29 & 30 of 35 for locations. (6 req'd)



BEARING ASSEMBLY

Note: Shim plates shall not be placed under bearing assembly.
*** See West Abutment Extension & Fill R Dimensions tables.

Notes:
Prior to ordering any material, the Contractor shall verify in the field all bearing & steel extension heights and fill plate & shim plate thicknesses.
Side retainers and other steel members required for the bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.
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.
The structural steel plates of the Bearing Assembly, the structural steel plates of the fixed bearings, pintles, and steel extensions shall conform to the requirements of AASHTO M270, Grade 50. The structural steel for the shim plates, fill plates, and side retainers may conform to the requirements of AASHTO M270, Grade 36, unless otherwise noted.
Two 1/8 inch adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.
The cost for fabricating and installing the fixed bearing, steel extensions, fill plates, and shim plates will be paid for as Furnishing and Erecting Structural Steel.
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	14
Anchor Bolts, 3/4"	Each	28

***** WEST ABUTMENT EXTENSION & FILL R DIMENSIONS**

	BM 1	BM 2	BM 3	BM 4	BM 5	BM 6	BM 7	BM 8	BM 9	BM 10	BM 11	BM 12	BM 13	BM 14
Fill Plate 1 't'	3/4"	2"	3/8"	-	1/8"	1/8"	1/4"	5/8"	5/8"	5/8"	5/8"	2"	2"	-
Fill Plate 2 't'	-	2"	-	-	-	-	-	-	-	-	-	2"	2"	-
Fill Plate 3 't'	-	1 1/4"	-	-	-	-	-	-	-	-	-	1 1/4"	-	-
Bolster Dim. 'A'	-	-	8"	9"	9"	10"	10"	10"	9"	9"	8"	-	-	-
Bolster Dim. 'B'	-	-	6"	7"	7"	8"	8"	8"	7"	7"	6"	-	-	-
Threaded Stud Length (excluding 1" embedded into top R)	3 5/8"	8"	3 5/8"	3 5/8"	3 5/8"	3 5/8"	3 5/8"	3 5/8"	3 5/8"	3 5/8"	3 5/8"	8"	8"	3 5/8"

REVISD ENTIRE SHEET 6/10/2024

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WEST ABUTMENT BEARING DETAILS
STRUCTURE NO. 045-0007

SHEET 25 OF 35 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	FAP 345-23-BR	KANE	379	198
CONTRACT NO. 62U83				
ILLINOIS FED. AID PROJECT				

GANNETT FLEMING

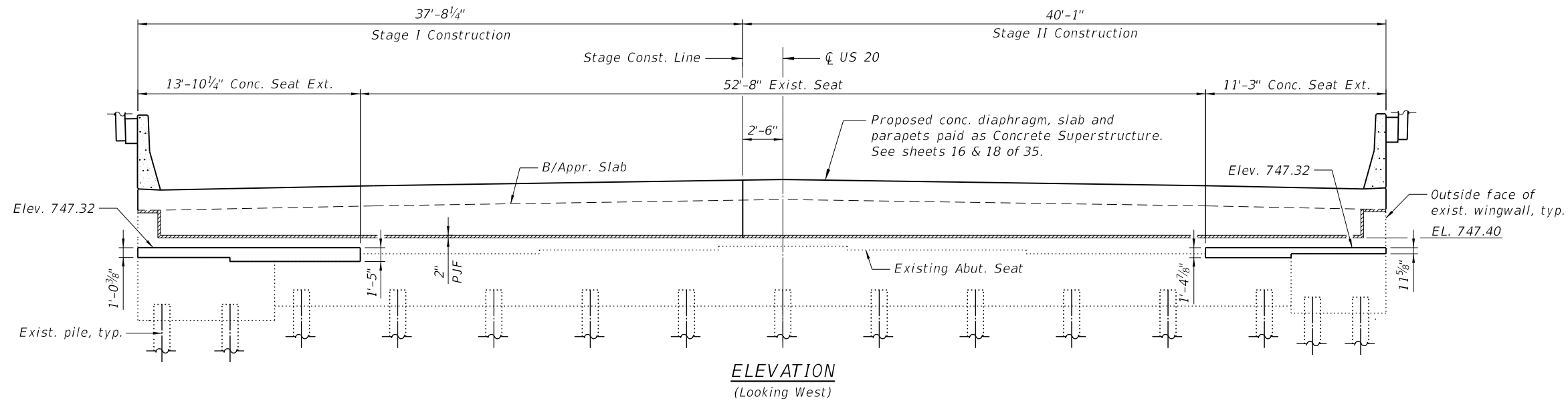
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PLOT SCALE = 2.0000' / in.	CHECKED - MZ	REVISED -
PLOT DATE = 5/8/2024	DRAWN - MDA	REVISED -
	CHECKED - MZ	REVISED -

***EXISTING SEAT ELEV**

(For Information Only)

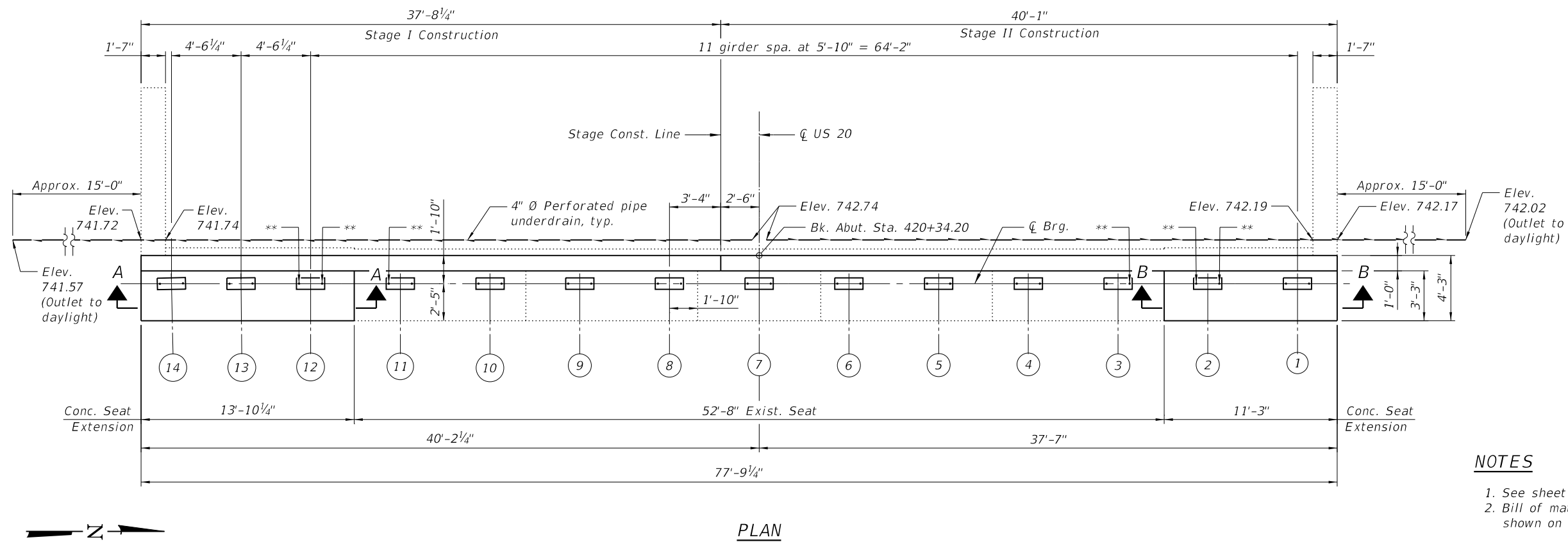
Exist. Beam No.	W. Abut.
1	746.35
2	745.91
3	747.16
4	747.19
5	747.27
6	747.27
7	747.35
8	747.34
9	747.23
10	747.23
11	747.14
12	747.14
13	745.90
14	745.93
15	746.29

*As Surveyed Seat Elev. Contractor shall verify prior to ordering bearing materials and fill plates. See sheet 28 of 35 for existing beam locations.



**BILL OF MATERIAL
AT WEST ABUTMENT**

Bar	No.	Size	Length	Shape
h20(E)	6	#5	13'-6"	—
h21(E)	2	#5	7'-9"	—
h22(E)	2	#5	5'-0"	—
h23(E)	6	#5	10'-11"	—
d20(E)	12	#5	1'-7"	—
d21(E)	15	#5	1'-11"	—
u20(E)	8	#5	5'-11"	□
u21(E)	12	#5	4'-5"	□
u22(E)	15	#5	5'-3"	□
Concrete Removal		Cu. Yd.	15.4	
Structure Excavation		Cu. Yd.	98.1	
Concrete Structures		Cu. Yd.	3.7	
Reinforcement Bars, Epoxy Coated		Pound	420	
Granular Backfill for Structures		Cu. Yd.	140.9	
Geocomposite Wall Drain		Sq. Yd.	67	
Pipe Underdrains		Foot	109	
Slope Wall Crack Sealing		Foot	63	



NOTES

1. See sheet 31 of 35 for details and sections.
2. Bill of material includes slopewall repair quantity shown on sheet 31 of 35.

**Modified retainer shall be used for this side of bearing to miss exist. anchor bolt at Beams 2, 3, 11 & 12. See sheet 25 of 35 for additional details and quantities.

REVISD ENTIRE SHEET 6/10/2024



USER NAME = mzellisko	DESIGNED - SS	REVISED -
CHECKED - MZ	REVISD -	
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PLOT DATE = 5/8/2024	CHECKED - MZ	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WEST ABUTMENT PLAN & ELEVATION
STRUCTURE NO. 045-0007

SHEET 29 OF 35 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	FAP 345-23-BR	KANE	379	202
CONTRACT NO. 62U83				

ILLINOIS FED. AID PROJECT

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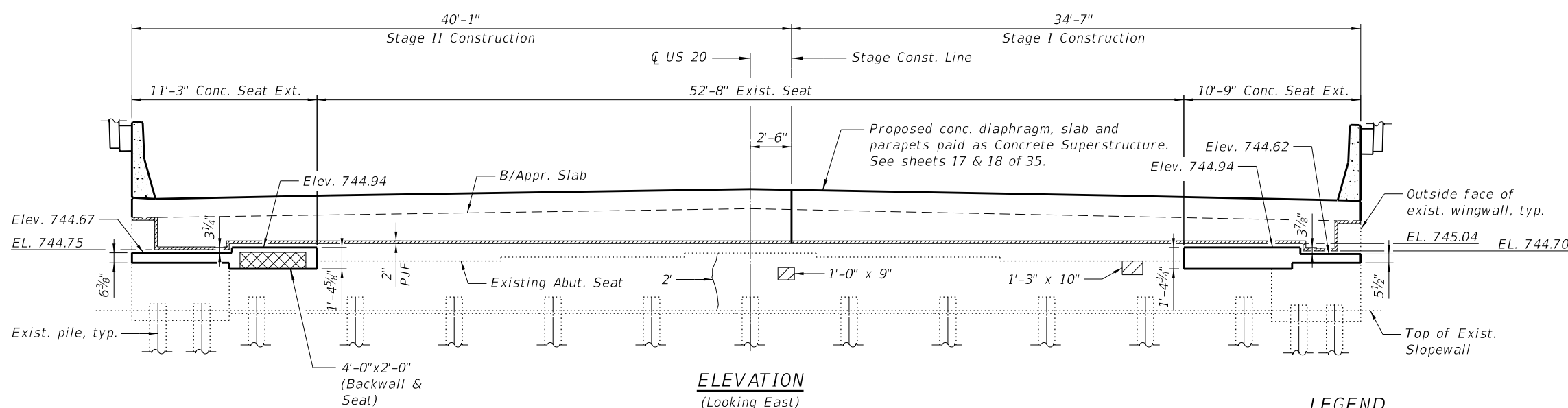
***EXISTING SEAT ELEV**
(For Information Only)

Exist. Beam No.	E. Abut.
1	744.14
2	743.55
3	744.89
4	744.89
5	744.95
6	744.98
7	745.03
8	745.03
9	744.94
10	744.94
11	744.86
12	744.85
13	743.54
14	743.50
15	744.16

*As Surveyed Seat Elev. Contractor shall verify prior to ordering bearing materials and fill plates. See sheet 28 of 35 for existing beam locations.

BILL OF MATERIAL
AT EAST ABUTMENT

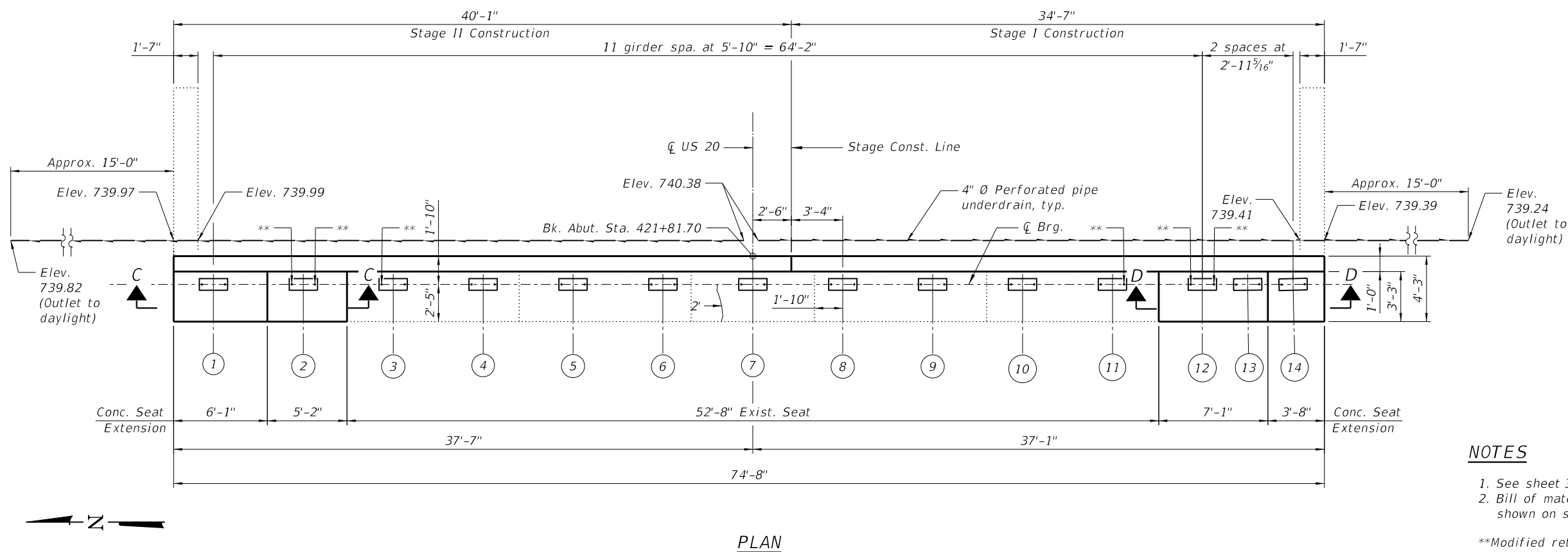
Bar	No.	Size	Length	Shape
h22(E)	2	#5	5'-0"	—
h23(E)	4	#5	10'-11"	—
h24(E)	2	#5	6'-3"	—
h25(E)	4	#5	10'-5"	—
d21(E)	14	#5	1'-11"	—
d22(E)	10	#5	1'-2"	—
u20(E)	6	#5	5'-11"	□
u22(E)	14	#5	5'-3"	□
u23(E)	10	#5	3'-5"	□
Concrete Removal		Cu. Yd.	15.3	
Structure Excavation		Cu. Yd.	90.9	
Concrete Structures		Cu. Yd.	2.7	
Reinforcement Bars, Epoxy Coated		Pound	300	
Epoxy Crack Injection		Foot	4	
Granular Backfill for Structures		Cu. Yd.	121.2	
Geocomposite Wall Drain		Sq. Yd.	60	
Pipe Underdrains		Foot	106	
Slope Wall Crack Sealing		Foot	65	
Structural Repair of Concrete (Depth equal to or less than 5 inches)		Sq. Ft.	2	
Structural Repair of Concrete (Depth greater than 5 inches)		Sq. Ft.	8	



ELEVATION
(Looking East)

LEGEND

- Structural Repair of Concrete (D<=5")
- Structural Repair of Concrete (D>5")
- Epoxy Crack Injection



PLAN

NOTES

- See sheet 31 of 35 for details and sections.
- Bill of material includes slopewall repair quantity shown on sheet 31 of 35.

**Modified retainer shall be used for this side of bearing to miss exist. anchor bolt at Beams 2, 3, 11 & 12. See sheet 25 of 35 for additional details and quantities.

REVISIONS
2 REVISED ENTIRE SHEET 6/10/2024

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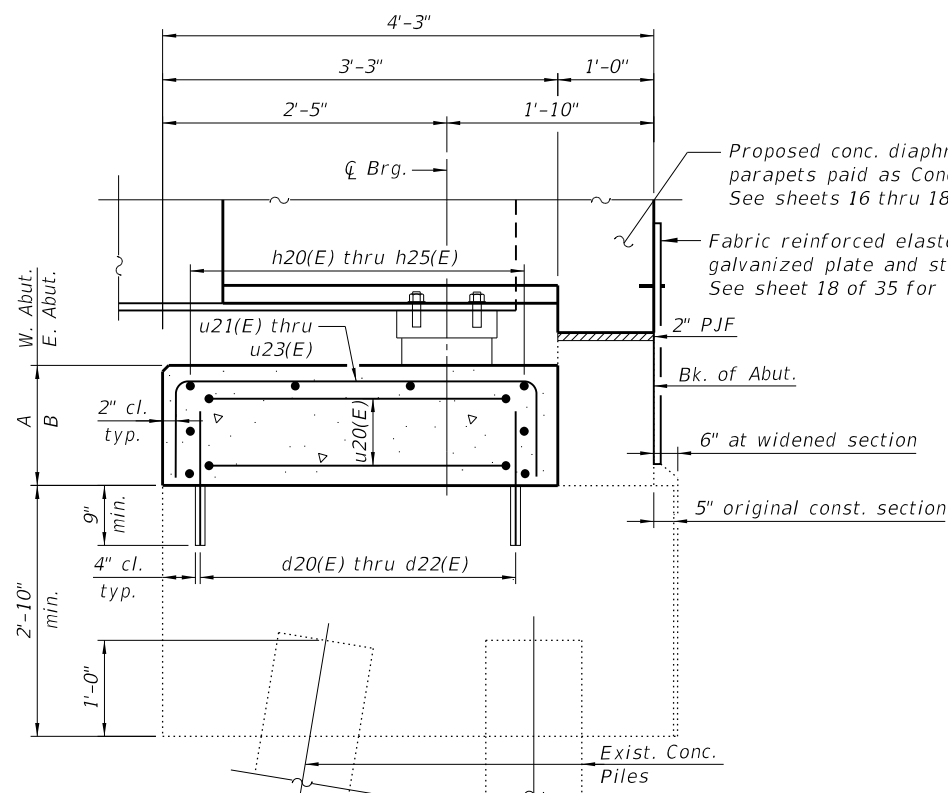
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT PLAN & ELEVATION
STRUCTURE NO. 045-0007

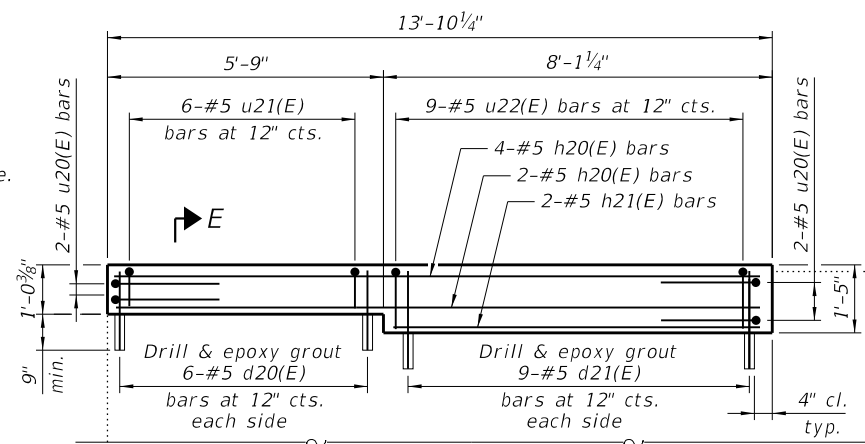
SHEET 30 OF 35 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	FAP 345-23-BR	KANE	379	203
CONTRACT NO. 62U83				

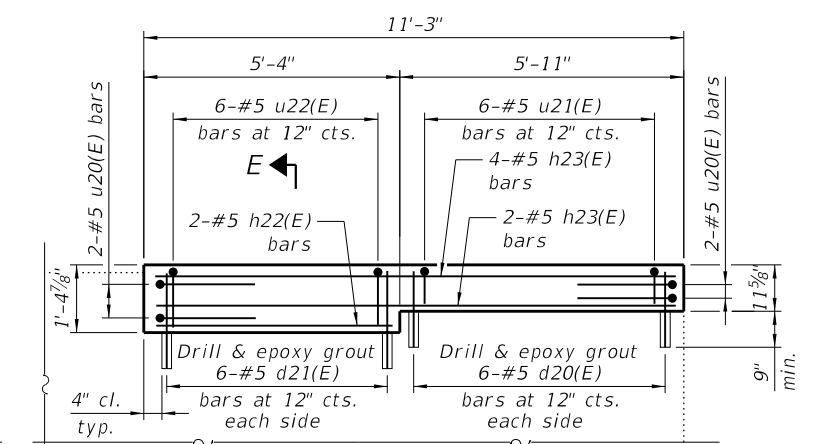
ILLINOIS FED. AID PROJECT



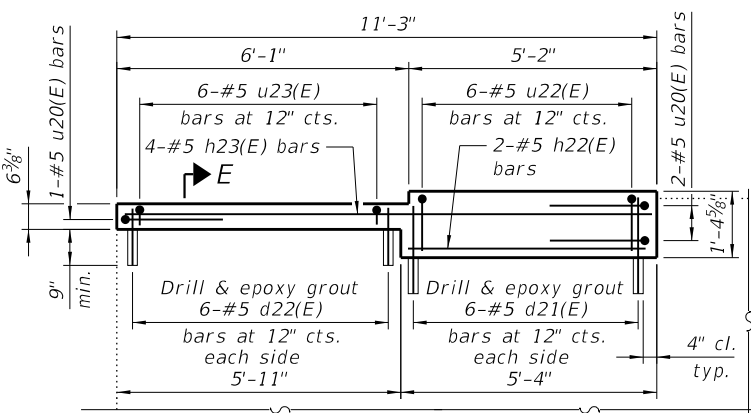
SECTION E-E
 Dim A varies 11 5/8" to 1'-5" at W. Abut.
 Dim B varies 5 1/2" to 1'-4 5/8" at E. Abut.
 See sheet 29 & 30 of 35 for seat elevations.



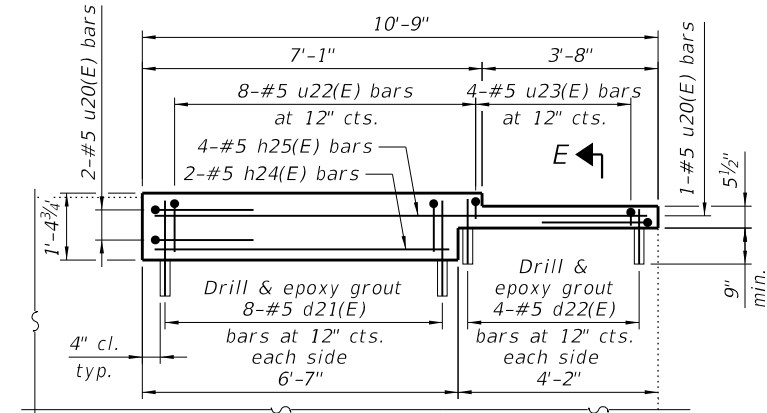
SECTION A-A
 (West Abutment)



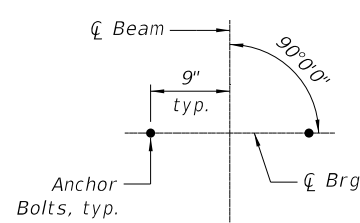
SECTION B-B
 (West Abutment)



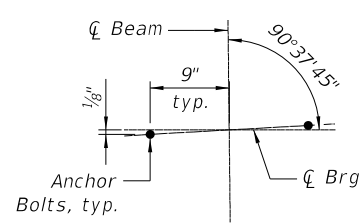
SECTION C-C
 (East Abutment)



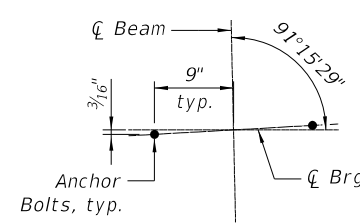
SECTION D-D
 (East Abutment)



ANCHOR BOLT LOCATION DETAIL
 (Beams 1-12)



ANCHOR BOLT LOCATION DETAIL
 (Beam 13)

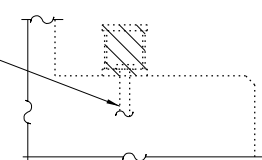


ANCHOR BOLT LOCATION DETAIL
 (Beam 14)

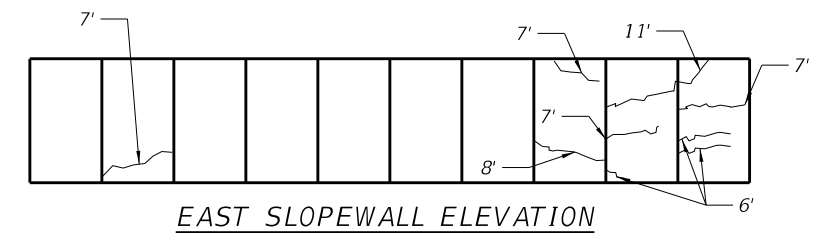
	A	B
u20(E)	2'-11"	1'-6"
u21(E)	2'-11"	9"
u22(E)	2'-11"	1'-2"
u23(E)	2'-11"	3"

BARS u20(E) thru u23(E)

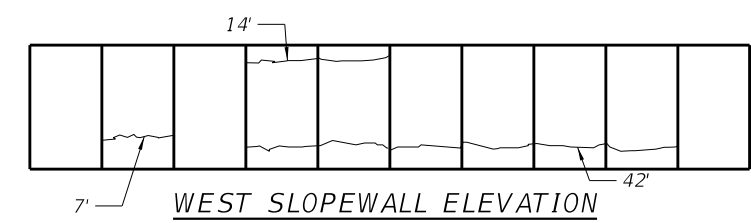
Burn existing anchor bolts flush with existing concrete surface. Grind existing anchor bolt smooth and seal with epoxy. Cost included with Removal of Existing Superstructures, No. 1.



BEARING ANCHOR BOLT REMOVAL



EAST SLOPEWALL ELEVATION



WEST SLOPEWALL ELEVATION

LEGEND

Slope Wall Crack Sealing

Notes:

The quantity of slopewall crack repairs are based on a 2023 visual inspection. A portion of cracks shown have previous repairs, but may need additional repairs. The length and locations of repairs shall be determined by the Engineer at the time of construction.
 For Drill & Grout bars, adjust spacing as required to clear existing anchor bolts. Holes shall be drilled a minimum of 9" deep and in accordance with Section 584 of the Standard Specifications. Cost shall be included with Reinforcement Bars, Epoxy Coated.

REVISION 2 REVISED ENTIRE SHEET 6/10/2024

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PLOT DATE =	5/8/2024	DRAWN -	LAM	REVISED -	
		CHECKED -	MZ	REVISED -	

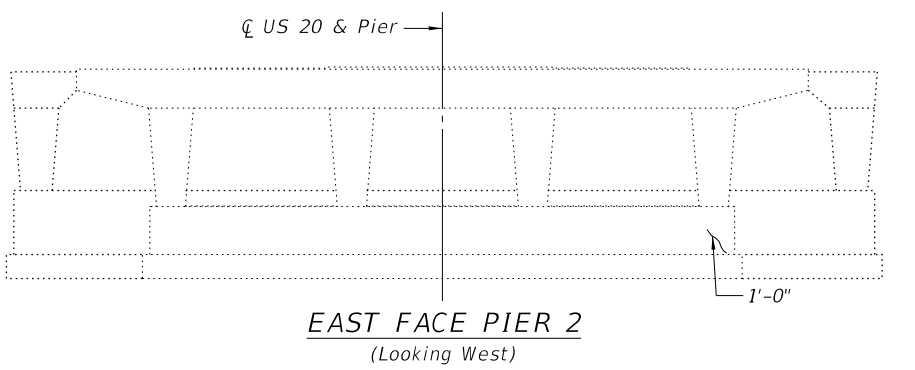
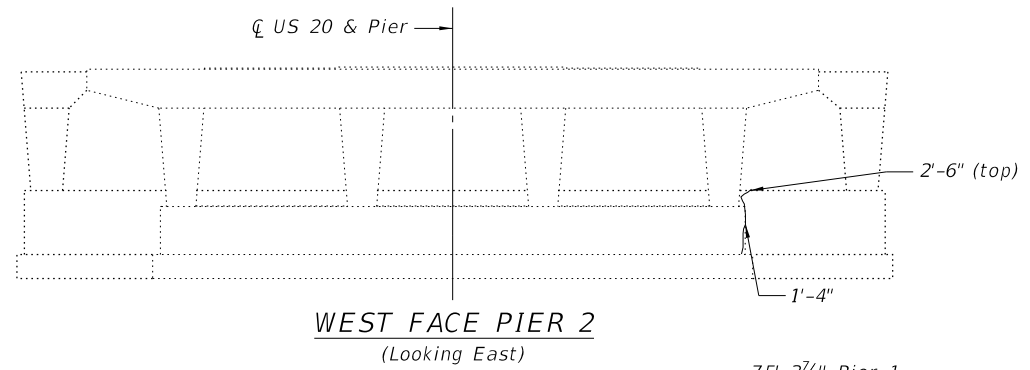
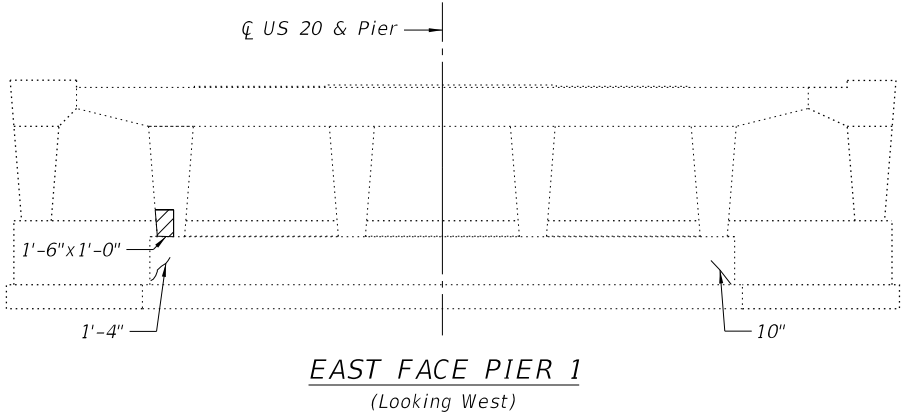
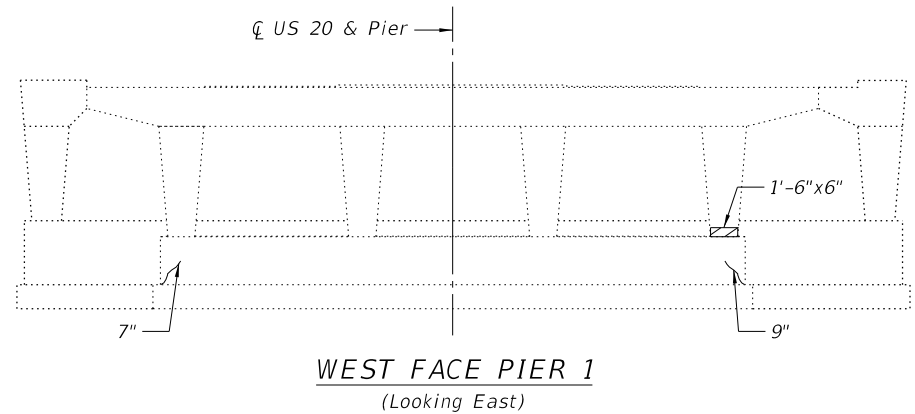
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ABUTMENT DETAILS
STRUCTURE NO. 045-0007

SHEET 31 OF 35 SHEETS

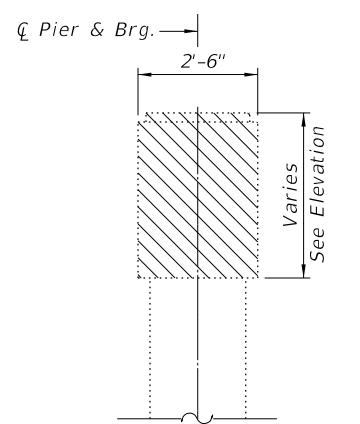
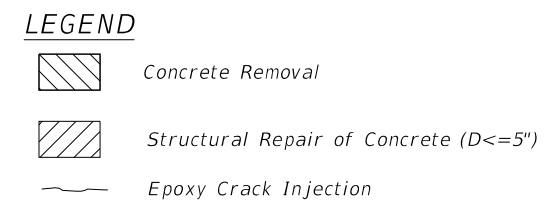
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	345-23-BR	KANE	379	204
CONTRACT NO. 62U83				

ILLINOIS FED. AID PROJECT

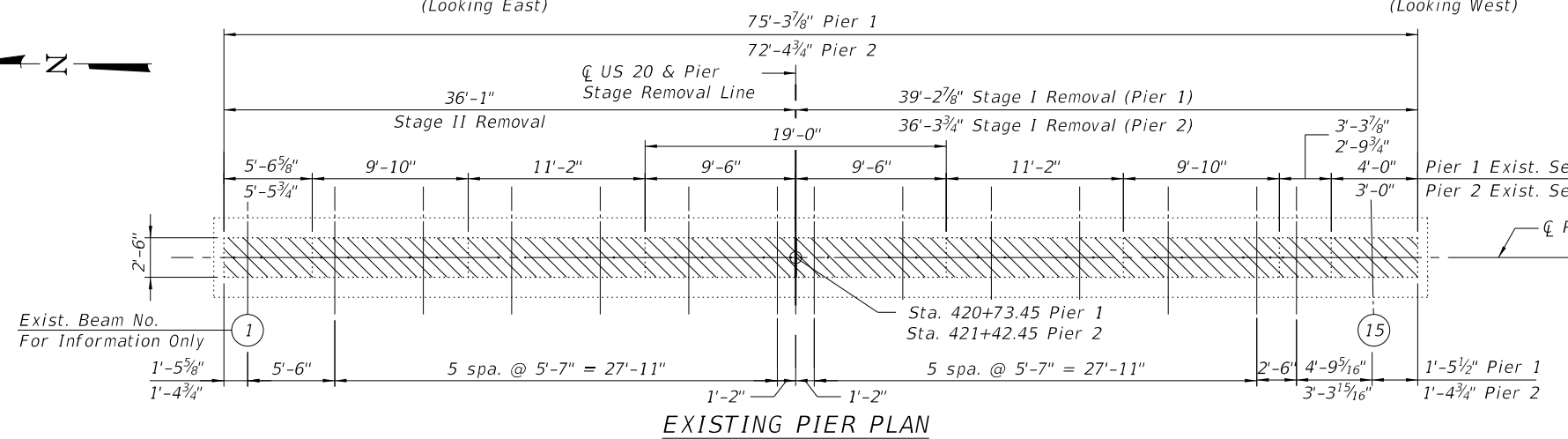


BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Removal	Cu Yd	43.2
Epoxy Crack Injection	Foot	9
Structural Repair of Concrete (Depth equal to or less than 5 inches)	Sq Ft	3
Temporary Shoring and Cribbing	Each	2



TYP. PIER CAP CROSS SECTION



TEMPORARY SHORING & CRIBBING SERVICE LOADS

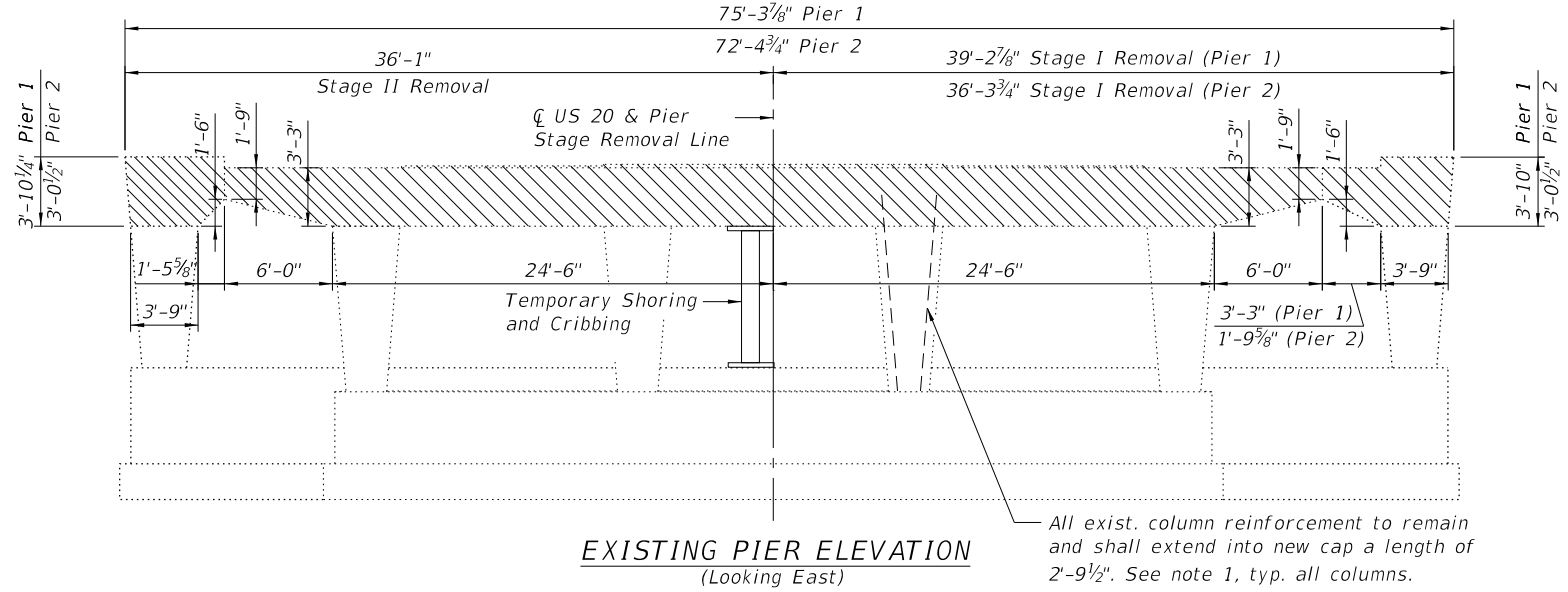
	Loads
R _{DL} (k)	61.8
R _{±+IM} (k)	81.8

***EXISTING SEAT ELEV (For Information Only)**

Exist. Beam No.	Pier 1	Pier 2
1	745.81	744.05
2	745.21	744.22
3	745.23	744.22
4	745.31	744.32
5	745.30	744.31
6	745.40	744.42
7	745.39	744.38
8	745.39	744.40
9	745.39	744.39
10	745.30	744.26
11	745.28	744.27
12	745.21	744.16
13	745.19	744.15
14	745.16	743.99
15	745.73	743.91

NOTES

- Existing vertical reinforcement bars extending into concrete removal areas shall be cleaned, straightened and incorporated into new concrete. Cost included with Concrete Removal.
- Any reinforcement bars to be incorporated that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system. Cost included with Concrete Removal.
- The ends of existing reinforcement bars which are cut & exposed shall be coated with epoxy. Cost included with Concrete Removal.
- Temporary lighting to be maintained during construction, see electrical plans.



All exist. column reinforcement to remain and shall extend into new cap a length of 2'-9 1/2". See note 1, typ. all columns.

*As Surveyed Seat Elev. Contractor shall verify prior to ordering bearing materials, fabricating extensions, and fill plates.

REVISED ENTIRE SHEET 6/10/2024

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PLOT DATE = 5/8/2024	DRAWN - EBP	REVISED -
	CHECKED - MZ	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER REMOVAL & REPAIRS
STRUCTURE NO. 045-0007

SHEET 32 OF 35 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	FAP 345-23-BR	KANE	379	205

CONTRACT NO. 62U83

ILLINOIS FED. AID PROJECT

GENERAL NOTES

Fasteners shall be ASTM F3125 Grade A325 Type 1, mechanically galvanized bolts in painted areas. Bolts 7/8-in. Ø, holes 15/16-in. Ø, unless otherwise noted.

Calculated weight of Structural Steel = 145,720 pounds (AASHTO M270 Grade 50) = 10,610 pounds (AASHTO M270 Grade 36)

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

Reinforcement bars designated (E) shall be epoxy coated.

Slipforming of the median barrier is not allowed.

If the Contractor elects to use cantilever forming brackets on the exterior beams or girders, the brackets shall be placed at the same locations as required for the hardwood blocks in Article 503.06(b) of the Standard Specifications. If additional cantilever forming brackets are required, hardwood blocking shall be wedged between the exterior and first interior beam at each of these additional bracket locations.

The finishing machine rails shall be placed on the top flange of the exterior beams within the deck pour. Beam blocks shall be placed between beams at all tie locations in each bay for the full width of the deck pour.

Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8 inch (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.

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

Plan dimensions and details relative to existing structure have been taken from existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

The existing structural steel coating contains lead. Contractor shall take appropriate precautions to address the presence of lead on this project.

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 beams, masked off connection surfaces, and field installed fasteners shall all be touched up and finish coated 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 beams shall be Reddish Brown, Munsell No. 2.5YR 3/4.

This project requires a US Army Corps of Engineers permit, and the Contractor shall adhere to the conditions, requirements, and Commitments regarding the work at Poplar Creek.

A Cofferdam (Type I) (In-Stream/Wetland Work) is identified to divert stream flow to complete the riprap work. It is anticipated that the Cofferdam will be placed on top of the streambead and not penetrate or disturb the streambed. All erosion control measures identified in the erosion control plans should be implemented when performing this work.

The removal of cribbing at both abutments shall be included in the cost of Removal of Existing Superstructure No. 2.

REVISED ENTIRE SHEET 6/10/2024

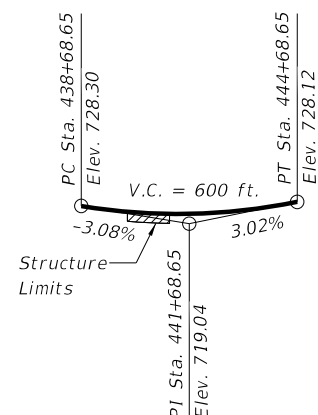
INDEX OF SHEETS

1	General Plan & Elevation
2	General Data
3	Pre-Stage Deck Repairs
4	Construction Staging
5	Temporary Concrete Barrier for Stage Construction
6	Top of Slab Elevations Layout
7	Top of Slab Elevations I
8	Top of Slab Elevations II
9	Top of Slab Elevations III
10	Top of West Approach Slab Elevations
11	Top of East Approach Slab Elevations
12	Superstructure Plan
13	Superstructure Cross Section
14	Superstructure Details I
15	Superstructure Details II
16	Abutment Diaphragm Details I
17	Abutment Diaphragm Details II
18	Bridge Approach Slab Plan
19	Bridge Approach Slab Details
20	Drainage Scupper, DS-11
21	Framing Plan & Beam Elevation
22	Beam Details
23	Abutment Bearing I
24	Abutment Bearing II
25	Pier Bearing
26	Abutment Removal
27	Abutment Repairs
28	Sloped Wall Repairs
29	Pier Repair
30	Pier Details
31	Bar Splicer Assembly and Mechanical Splicer Details
32	Concrete Parapet Slipforming Option

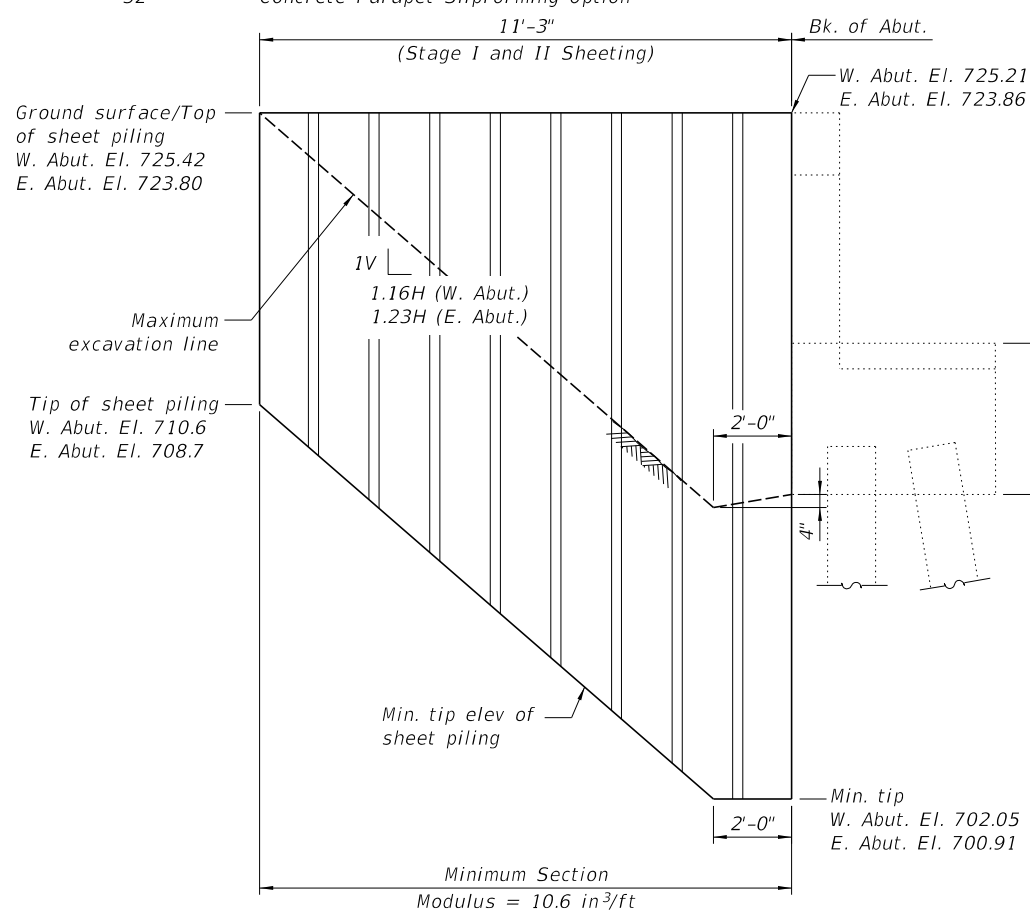
STA. 440+55.54
REBUILT 20__ BY
STATE OF ILLINOIS
F.A.P. RT. 345 SEC. 345-23-BR
LOADING HL-93
STR. NO. 016-0217

NAME PLATE
See Std. 515001

Existing Name Plate shall be cleaned and relocated next to new Name Plate. Cost included with Name Plates.



PROFILE GRADE - US 20
4-ft offset (Eastbound & Westbound)



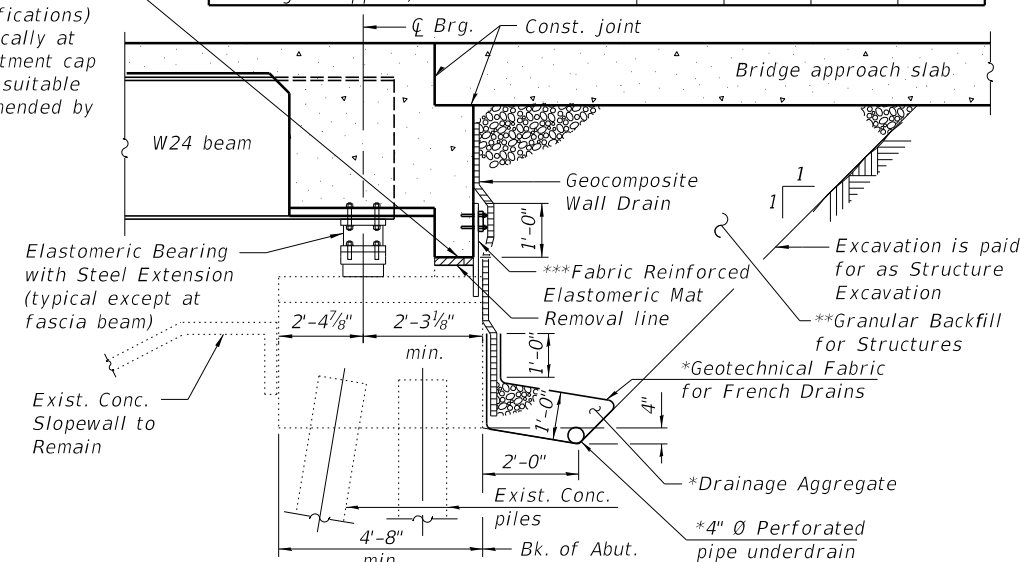
TEMPORARY SHEET PILING
(Along \bar{C} US 20 at each abutment)

If the Contractor chooses to alter the temporary cantilevered 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.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment	Cu Yd	-	50	50
Stone Riprap, Class A5	Sq Yd	-	164	164
Filter Fabric	Sq Yd	-	164	164
Removal of Existing Superstructures No. 2	Each	1	-	1
Concrete Removal	Cu Yd	-	35.1	35.1
Slope Wall Removal	Sq Yd	-	80	80
Protective Shield	Sq Yd	976	-	976
Structure Excavation	Cu Yd	-	213	213
Concrete Structures	Cu Yd	-	47.6	47.6
Concrete Superstructure	Cu Yd	356.6	-	356.6
Bridge Deck Grooving	Sq Yd	1,278	-	1,278
Protective Coat	Sq Yd	1,665	-	1,665
Concrete Superstructure (Approach Slab)	Cu Yd	206.4	-	206.4
Furnishing and Erecting Structural Steel	L Sum	0.18	-	0.18
Stud Shear Connectors	Each	10,491	-	10,491
Reinforcement Bars, Epoxy Coated	Pound	235,790	970	236,760
Bar Splicers	Each	673	-	673
Slope Wall, 4 Inch	Sq Yd	-	80	80
Name Plates	Each	1	-	1
Elastomeric Bearing Assembly, Type I	Each	39	-	39
Anchor Bolts, 3/4"	Each	104	-	104
Epoxy Crack Injection	Foot	-	101	101
Temporary Sheet Piling	Sq Ft	-	444	444
Granular Backfill for Structures	Cu Yd	-	239	239
Geocomposite Wall Drain	Sq Yd	-	135	135
Pipe Underdrains for Structures 4"	Foot	-	212	212
Cofferdam (Type 1) (In-Stream/Wetland Work)	Each	-	2	2
Bar Terminators	Each	506	-	506
Structural Repair of Concrete (Depth equal to or less than 5 inches)	Sq Ft	-	23	23
Structural Repair of Concrete (Depth greater than 5 inches)	Sq Ft	-	8	8
Deck Slab Repair (Partial)	Sq Yd	30	-	30
Drainage Scuppers, DS-11	Each	3	-	3

2" PJF (per Article 1051.09 of the Standard Specifications) full width and vertically at edge bonded to abutment cap and wingwalls with suitable adhesive as recommended by supplier.



SECTION THRU SEMI-INTEGRAL ABUTMENT
(Horiz. dim. @ Rt. L's)

- * Included in the cost of Pipe Underdrains for Structures, 4"
 - ** Granular Backfill for Structures shall follow Std. Spec. 586 except the coarse aggregate shall be Grad CA7, CA11 or CA14. Granular backfill behind the abutments shall be compacted according to Article 205.06 of the Standard Specifications.
 - *** Cost included with Concrete Superstructure. Fabric mat shall be 24" wide and attached full width of vertically at edges to the abutment cap with a 3/8" x 5" steel plate and 1/2" Ø studs with nuts and washers at 12" centers according to Section 1028 of the Std. Specs. Further details of the 1/2" expansion bolts and galvanized plate may be found on sheet 17 of 32. Note:
- All drainage system components shall extend from inside face to inside face of existing wingwalls. Place pipe drain under existing wingwall footing and extend through until intersecting with the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).

2

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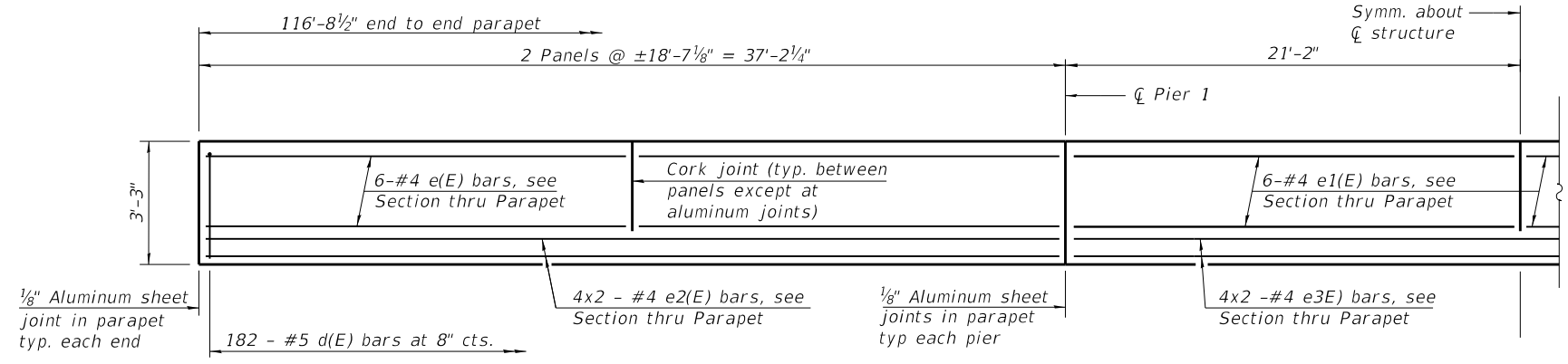
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**STATE OF ILLINOIS
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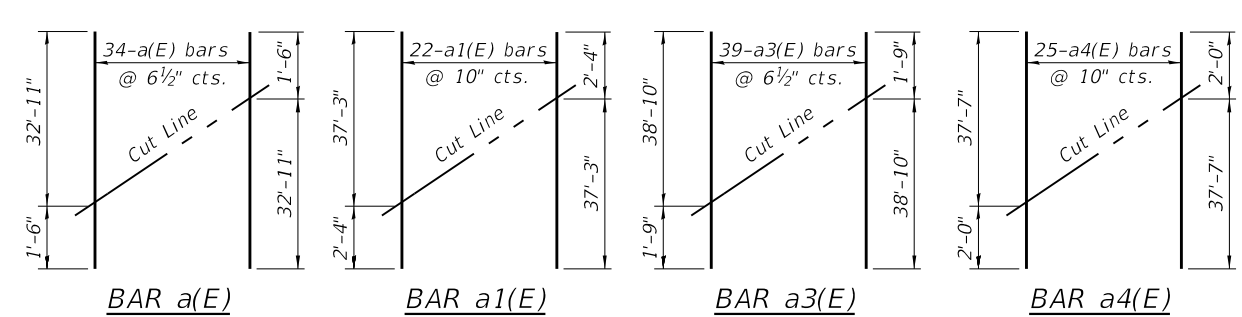
**GENERAL DATA
STRUCTURE NO. 016-0217**

SHEET 2 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	FAP 345-23-BR	COOK	379	210
CONTRACT NO. 62U83			ILLINOIS FED. AID PROJECT	



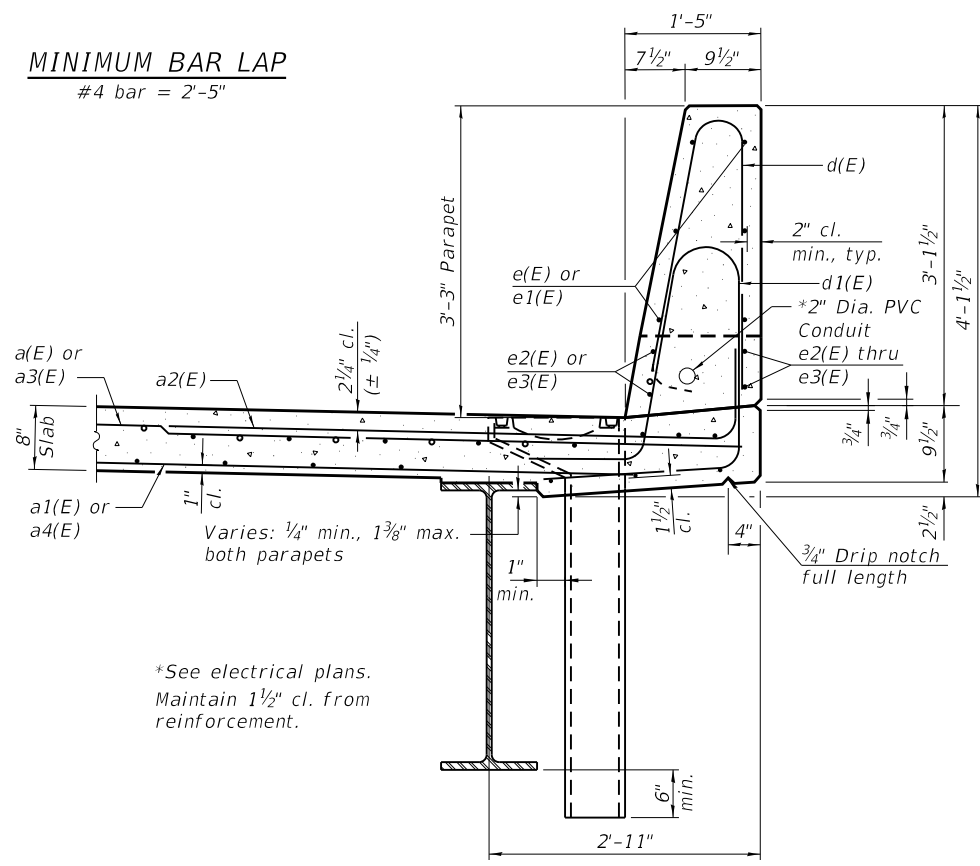
INSIDE ELEVATION OF PARAPET



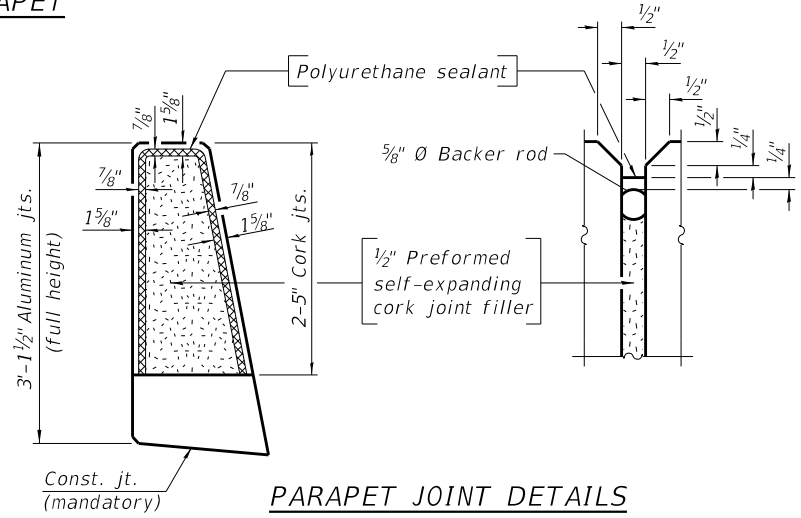
FIELD CUTTING DIAGRAM

Order a(E), a1(E), a3(E), and a4(E) bars full length.
Cut as shown and use remainder of bars in opposite end of deck.

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



SECTION THRU PARAPET



PARAPET JOINT DETAILS

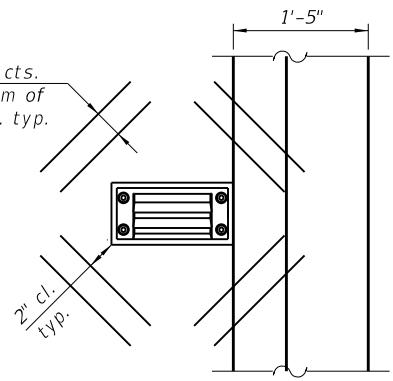
Notes:
The 1/8" aluminum sheet shall be ASTM B 209 alloy 3003-H14 and coated to minimize reaction with wet concrete. Cost included with Concrete Superstructure.
The polyurethane sealant shall be according to Article 1050.04 of the Std. Spec. and the color shall be gray.
Bars indicated thus 1 x 2-#4 etc. indicates 1 line of bars with 2 lengths per line.

SUPERSTRUCTURE BILL OF MATERIAL

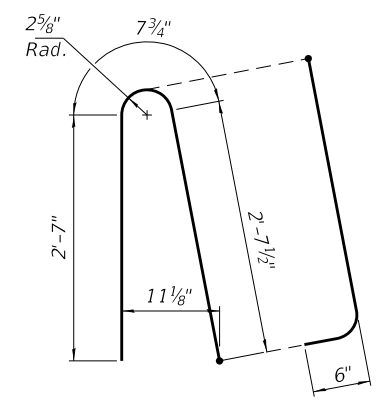
Bar	No.	Size	Length	Shape
a(E)	214	#5	34'-5"	—
a1(E)	139	#5	34'-2"	—
a2(E)	414	#6	8'-5"	└
a3(E)	214	#5	39'-8"	—
a4(E)	139	#5	39'-8"	—
a5(E)	4	#5	39'-5"	—
a6(E)	4	#5	45'-4"	—
a7(E)	24	#5	1'-6"	—
b(E)	395	#5	26'-1"	—
b1(E)	142	#6	31'-0"	—
b2(E)	264	#5	31'-9"	—
d(E)	364	#5	6'-5"	└
d1(E)	364	#5	8'-5"	└
d2(E)	364	#5	5'-4"	└
d3(E)	364	#5	8'-6"	└
e(E)	80	#4	18'-4"	—
e1(E)	40	#4	20'-10"	—
e2(E)	48	#4	19'-8"	—
e3(E)	24	#4	22'-3"	—
m10(E)	10	#6	37'-9"	—
m11(E)	48	#6	6'-3"	—
m12(E)	48	#6	6'-3"	—
m13(E)	16	#6	1'-3"	—
m14(E)	8	#4	20'-4"	—
m15(E)	10	#6	43'-6"	—
m16(E)	8	#4	23'-2"	—
s10(E)	128	#5	6'-11"	└
s11(E)	128	#5	7'-0"	└
u10(E)	128	#4	3'-8"	└
v100(E)	154	#5	3'-1"	└
Reinforcement Bars, Epoxy Coated		Pound	145,130	
Concrete Superstructure		Cu. Yd.	330.8	
Protective Coat		Sq. Yd.	1,113	
Bridge Deck Grooving		Sq. Yd.	844	

2-#5 a6(E) bars at 4" cts. (1'-6" lg.) tied to bottom of top reinforcement mat. typ.

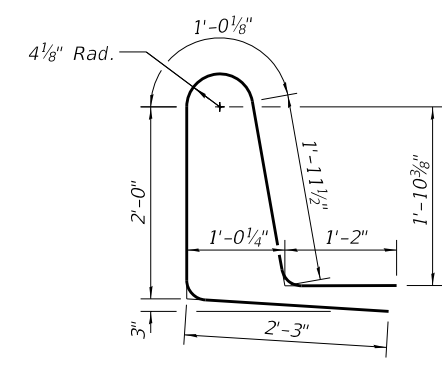
Note: Cut longitudinal reinforcement to clear drainage scuppers.



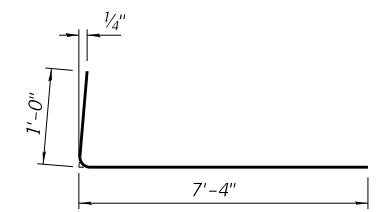
SCUPPER PLAN



BAR d(E)



BAR d1(E)



BAR a2(E)

REVISED ENTIRE SHEET 6/10/2024



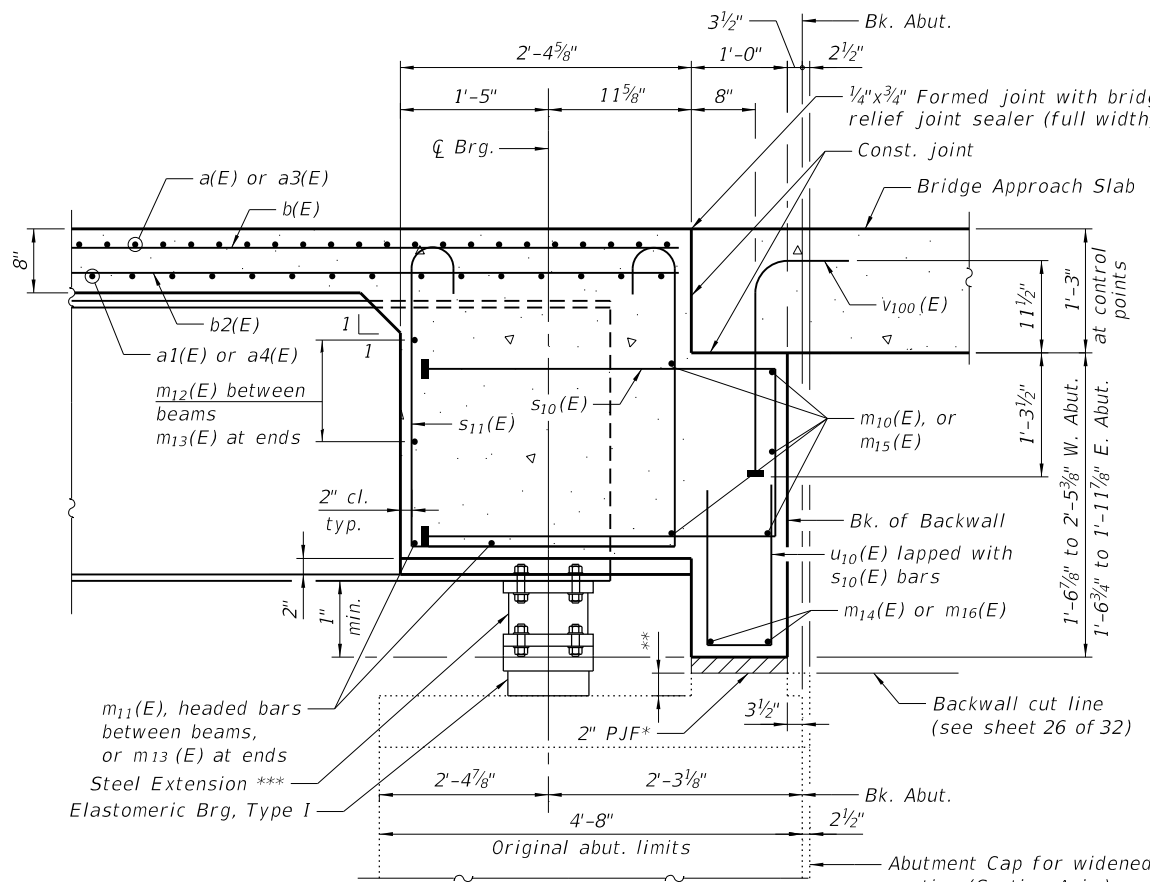
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PLOT DATE = 5/8/2024	CHECKED - MZ	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS I
STRUCTURE NO. 016-0217

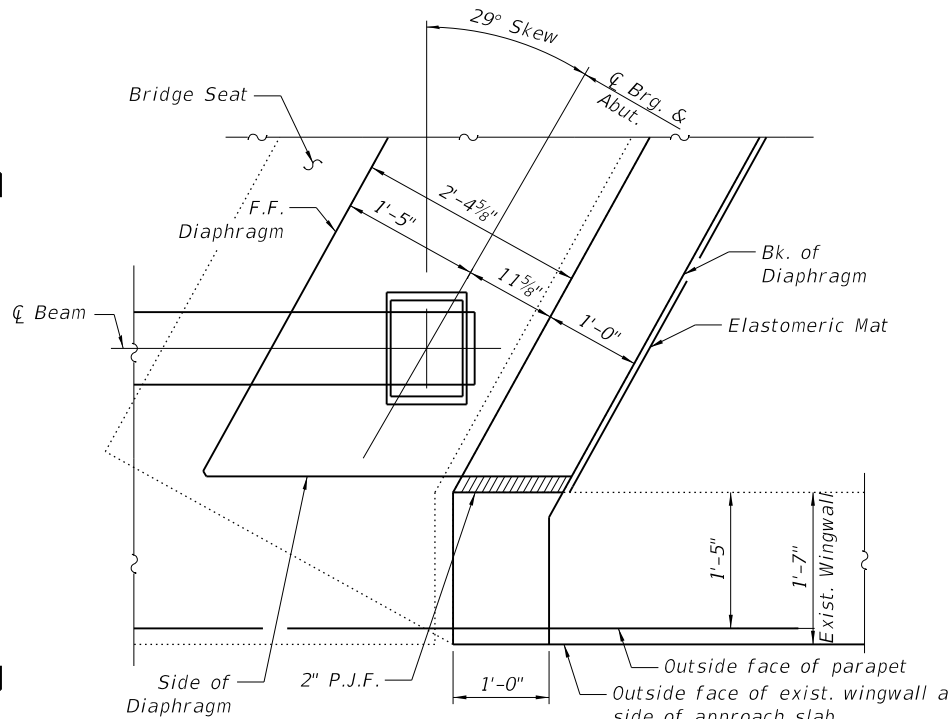
SHEET 14 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	FAP 345-23-BR	COOK	379	222
CONTRACT NO. 62U83				
ILLINOIS FED. AID PROJECT				



SECTION A-A

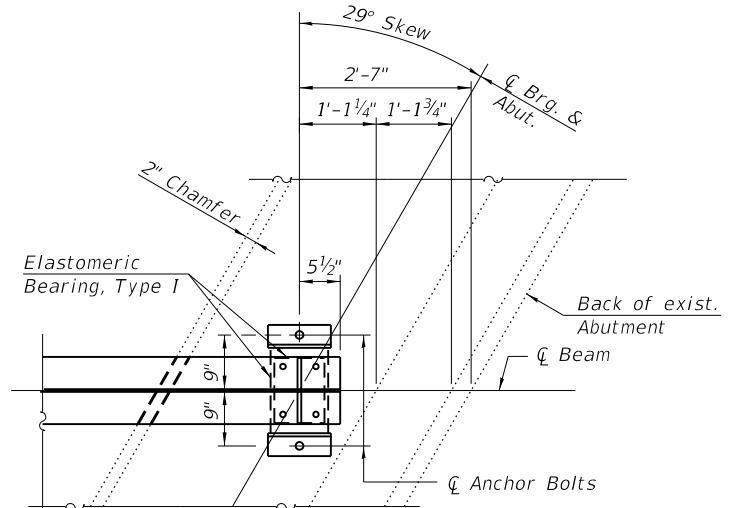
Dimensions at right angles to abutment, unless noted otherwise.
 Section Asim depicts widened portion of abutment on either side of original construction showing difference in abutment cap and backwall widths, see sheet 12 of 32 for locations.
 See diaphragm corner detail for diaphragm ends.



DIAPHRAGM CORNER DETAIL

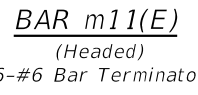
(Typical each end both sides)
 (Galvanized plate not shown for clarity)

* Cost included with Concrete Superstructure
 ** Varies 1 3/4" to 11 3/8" E. Abut. & 2 1/8" to 8 3/8" W. Abut.
 *** If required, see sheet 23 of 32 .

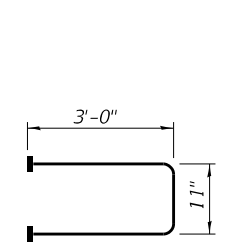


PLAN AT ABUTMENT

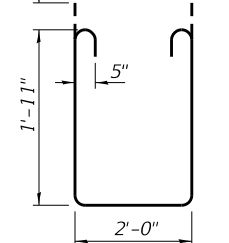
(Showing bottom flange of beam)



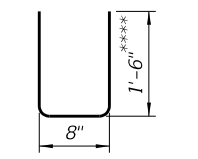
BAR m11(E)
 (Headed)
 (96-#6 Bar Terminators)



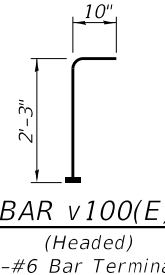
BAR s10(E)
 (Headed)
 (256-#6 Bar Terminators)



BAR s11(E)
 (Headed)
 (256-#6 Bar Terminators)

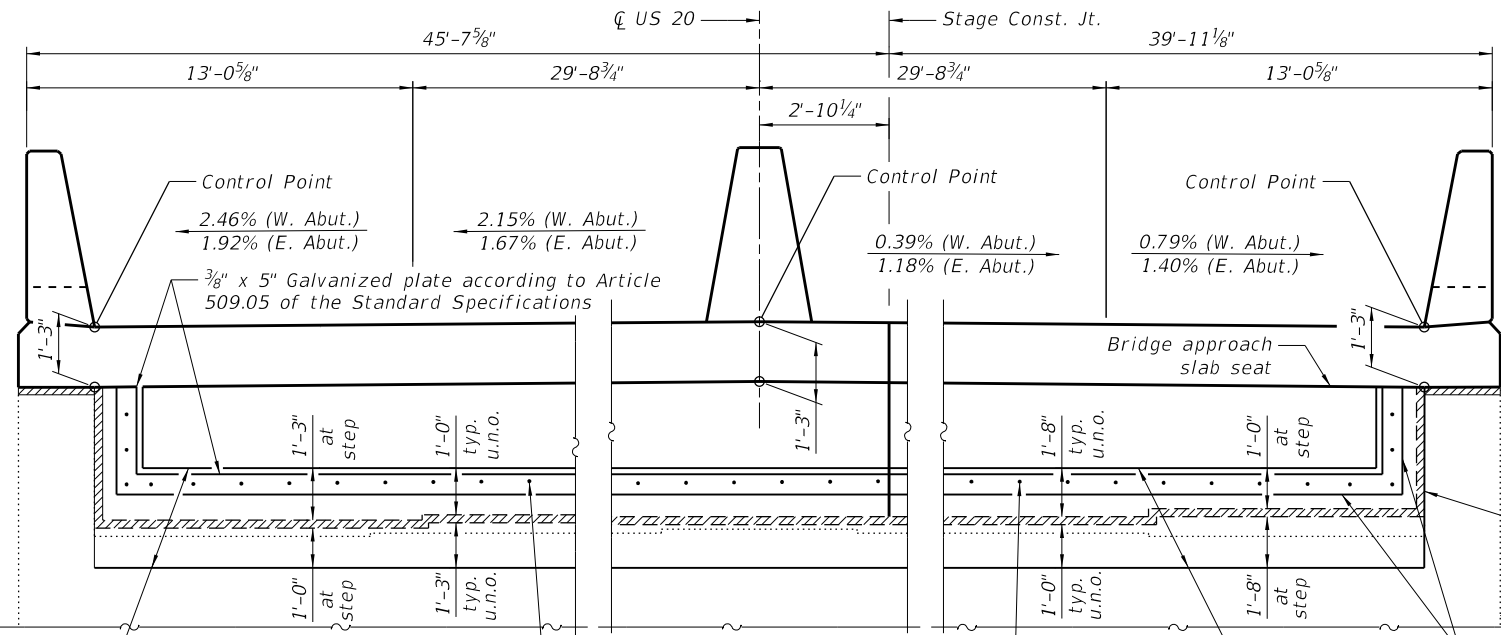


BAR u10(E)
 (Headed)
 (256-#6 Bar Terminators)



BAR v100(E)
 (Headed)
 (154-#6 Bar Terminators)

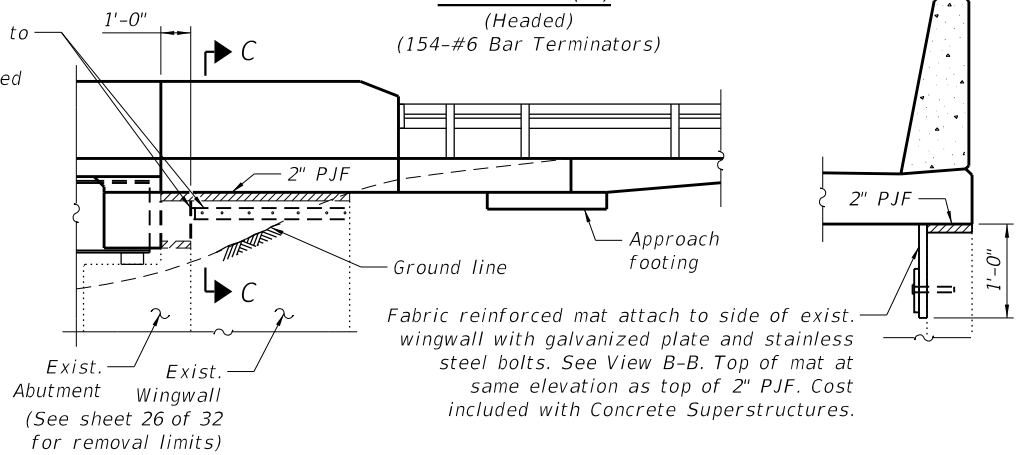
****Cut bars to fit in field as needed between Beams 1 & 3 and 11 & 13. Cost included in the cost of Reinforcement Bars, Epoxy Coated.



VIEW B-B

(Looking at back of W. Abut.)
 (Reflected view at back of E. Abut.)

Control Point
 2.46% (W. Abut.)
 1.92% (E. Abut.)
 2.15% (W. Abut.)
 1.67% (E. Abut.)
 0.39% (W. Abut.)
 1.18% (E. Abut.)
 0.79% (W. Abut.)
 1.40% (E. Abut.)
 3/8" x 5" Galvanized plate according to Article 509.05 of the Standard Specifications
 Bridge approach slab seat
 2" P.J.F. (per Article 1051.09 of the Standard Specifications) bonded to abutment cap and wingwall with suitable adhesive as recommended by supplier (see wingwall elevation)
 Run elastomeric mat straight to inside face of exist. wingwall, typ ea end. See Diaphragm Corner Detail this sheet.
 Outside edge of exist. wingwall
 3/8" x 5" Galvanized plate according to Article 509.05 of the Standard Specifications
 Limits of fabric reinforced elastomeric mat according to Section 1028 of the Standard Specifications and installed according to applicable requirements of Article 520.09 of the Standard Specifications
 1/2" Ø Stainless steel expansion bolts with nuts and washes at 12" cts. according to Article 1006.29(d) of the Standard Specifications



WINGWALL ELEVATION

Notes:
 See sheet 14 of 32 for Bill of Material.
 Bar terminators will be paid for separately. See Total Bill of Material on sheet 2 of 32.
 The s10(E) and s11(E), U10(E) and v100(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.
 The approach slab seat shall have a constant slope determined from the control points shown.
 Cost of fabric reinforced elastomeric mat, galvanized plate, stainless steel expansion bolts with nuts and washers and installation are included in the cost of Concrete Superstructure.

SECTION C-C

MODEL: Default
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USER NAME = mzelsko	DESIGNED - SS	REVISD -
PLOT SCALE =	CHECKED - MZ	REVISD -
PLOT DATE = 5/8/2024	DRAWN - EBP	REVISD -
	CHECKED - MZ	REVISD -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

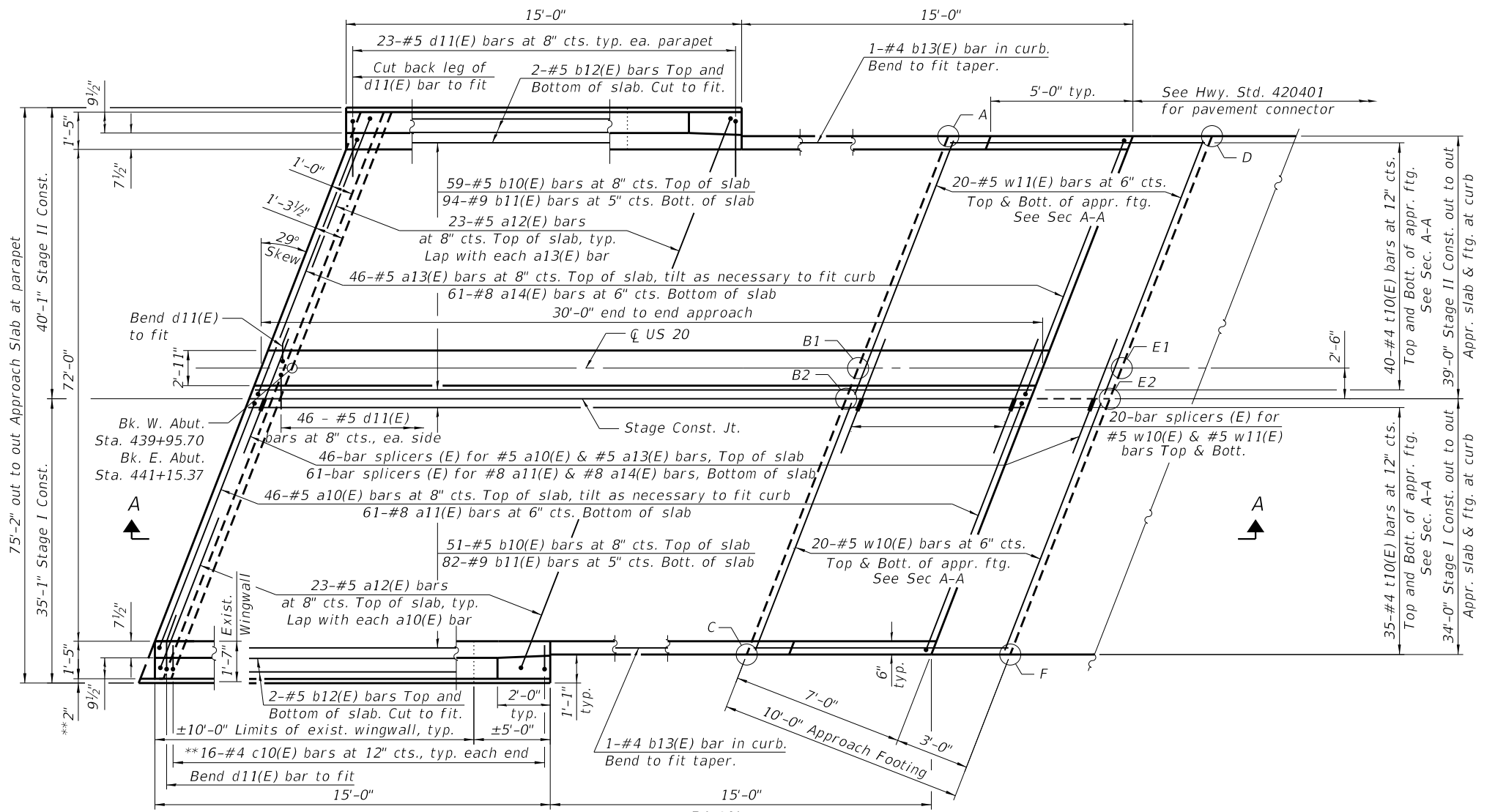
**ABUTMENT DIAPHRAGM DETAILS II
 STRUCTURE NO. 016-0217**

SHEET 17 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	FAP 345-23-BR	COOK	379	225
CONTRACT NO. 62U83				

ILLINOIS FED. AID PROJECT

2 REVISED ENTIRE SHEET 6/10/2024



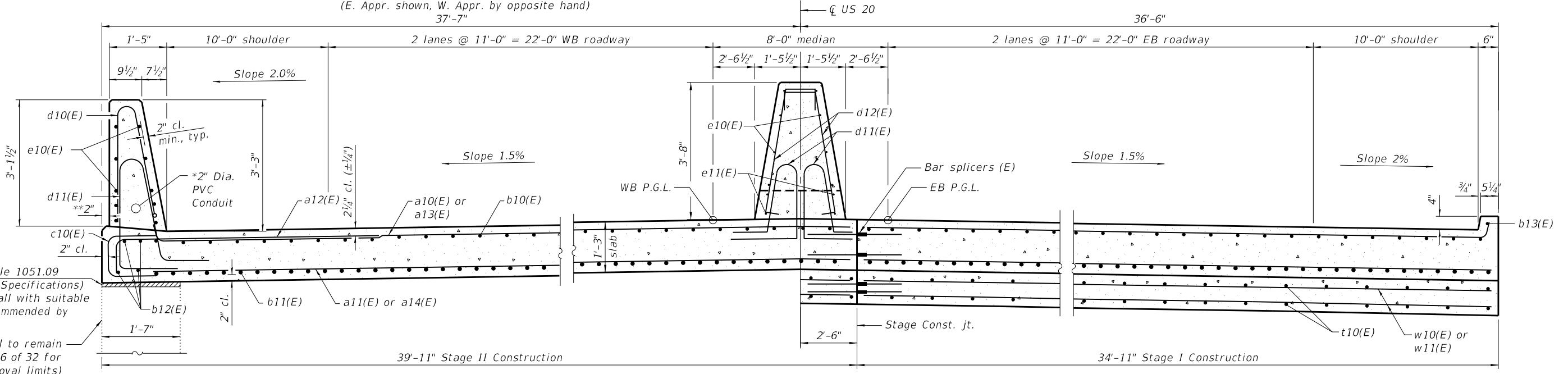
TOP AND BOTTOM ELEVATIONS FOR APPROACH FOOTING

Point	Station	Offset	Top	Bottom
West Approach				
A	439+95.41	36.5' Lt.	723.42	722.58
B1	439+75.18	0'	724.40	723.57
B2	439+73.79	4.0' Rt.	724.39	723.56
C	439+54.95	36.5' Rt.	724.23	723.39
D	439+83.98	36.5' Lt.	723.63	722.79
E1	439+63.75	0'	724.64	723.80
E2	439+62.36	4.0' Rt.	724.63	723.79
F	439+43.51	36.5' Rt.	724.48	723.65
East Approach				
A	441+56.13	36.5' Lt.	721.85	721.01
B1	441+35.90	0'	722.50	721.67
B2	441+34.51	4.0' Rt.	722.47	721.63
C	441+15.66	36.5' Rt.	721.99	721.16
D	441+67.56	36.5' Lt.	721.84	721.00
E1	441+47.33	0'	722.46	721.63
E2	441+45.94	4.0' Rt.	722.43	721.60
F	441+27.10	36.5' Rt.	721.94	721.10

NOTES

- For Section A-A see sheet 19 of 32.
- See electrical plans. Maintain 1/2" cl. from reinforcement.
- Extend outside edge of east and west approach slabs to outside edge of existing wingwall, ea. side. Proposed parapet length is 15'-0". Adjust c10(E) bars as needed.

PLAN



NEAR ABUTMENT

CROSS SECTION
(Looking East)

AT APPROACH FOOTING



USER NAME = mzelsko	DESIGNED - SS	REVISED -
DESIGNED - MZ	CHECKED - MZ	REVISED -
DRAWN - LAM	CHECKED - MZ	REVISED -
PLOT DATE = 5/8/2024	CHECKED - MZ	REVISED -

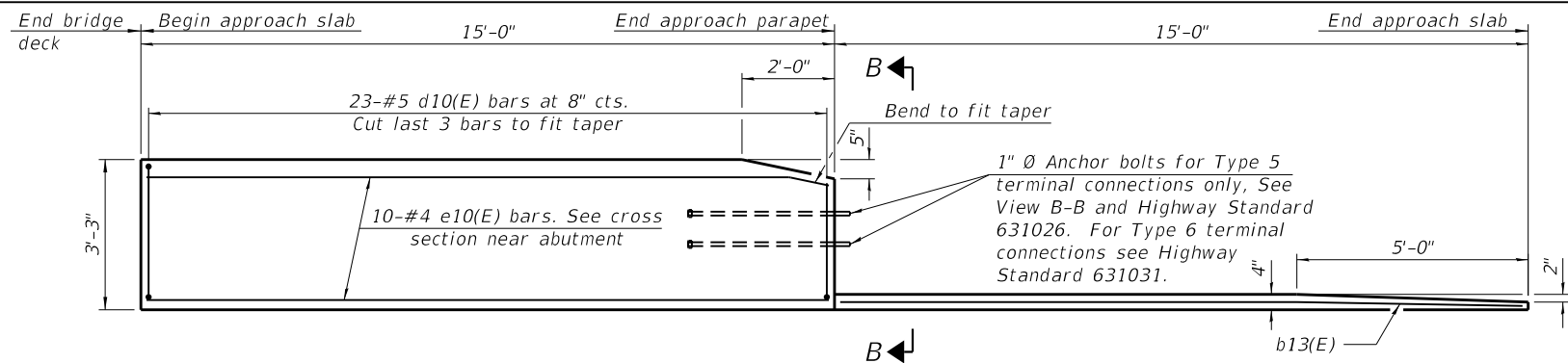
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB PLAN
STRUCTURE NO. 016-0217

SHEET 18 OF 32 SHEETS

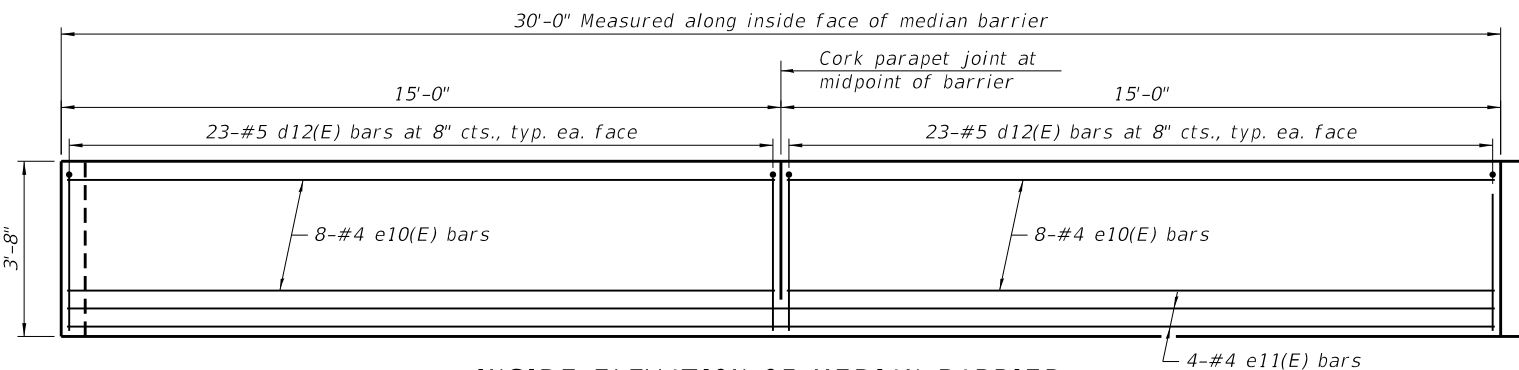
F.A.P. RTE. 345	SECTION FAP 345-23-BR	COUNTY COOK	TOTAL SHEETS 379	SHEET NO. 226
CONTRACT NO. 62U83				

REVISION 6/10/2024

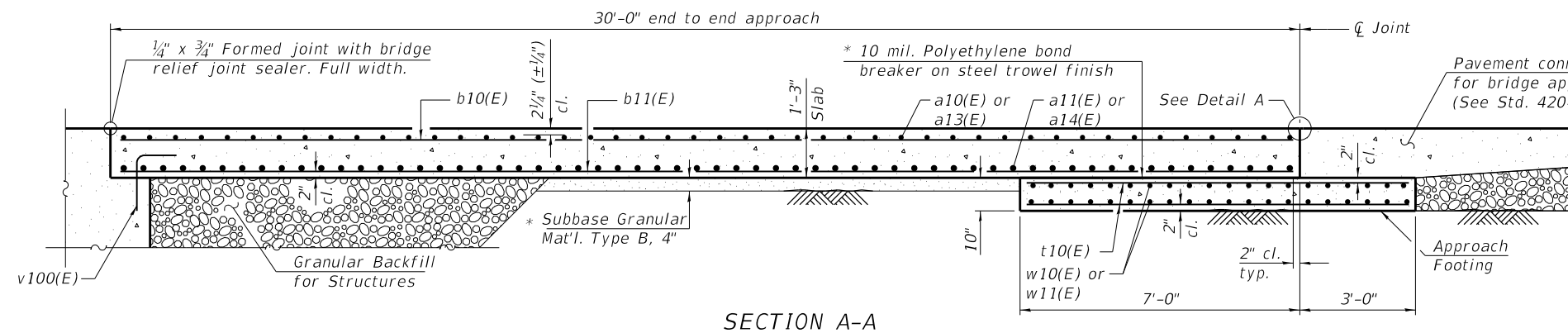
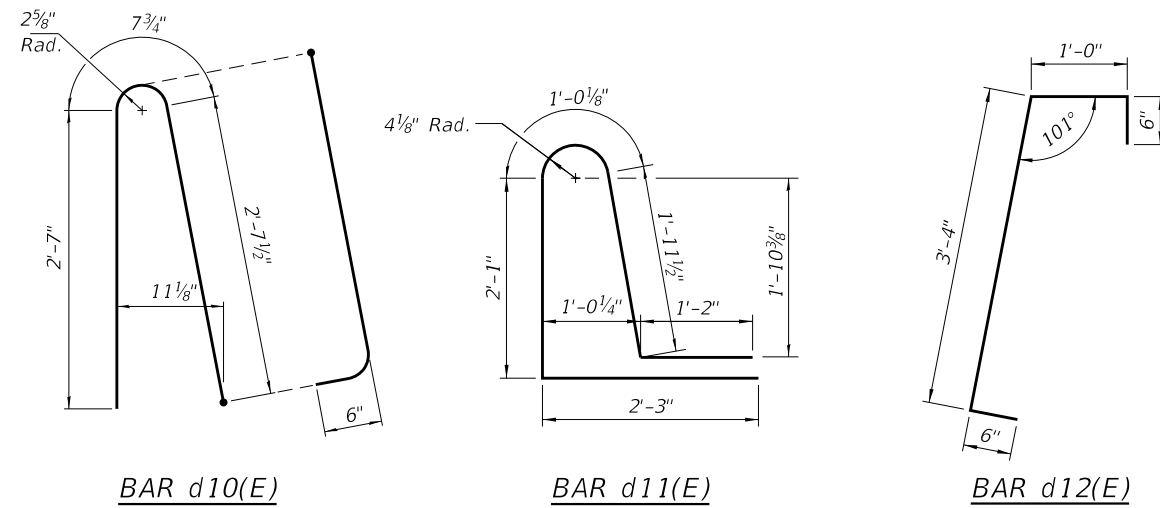


INSIDE ELEVATION OF PARAPET AND CURB

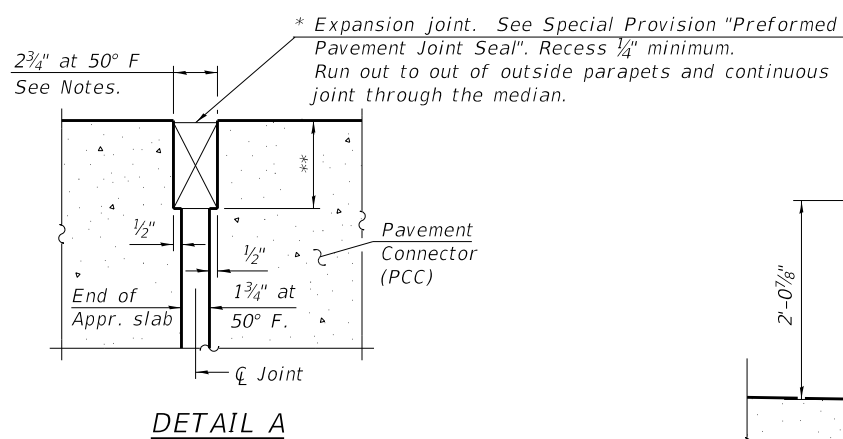
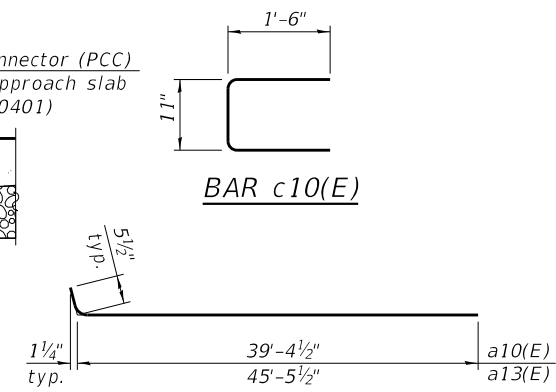
Notes:
 The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach slab.
 Parapet and median barrier concrete shall be paid for as Concrete Superstructure. Approach slab shall be paid for as Concrete Superstructure (Approach Slab). Approach footing concrete shall be paid for as Concrete Structures. The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf. Cost of excavation for approach footing included with Concrete Structures. For Granular Backfill for Structures and drainage treatment details, see sheet 2 of 32.



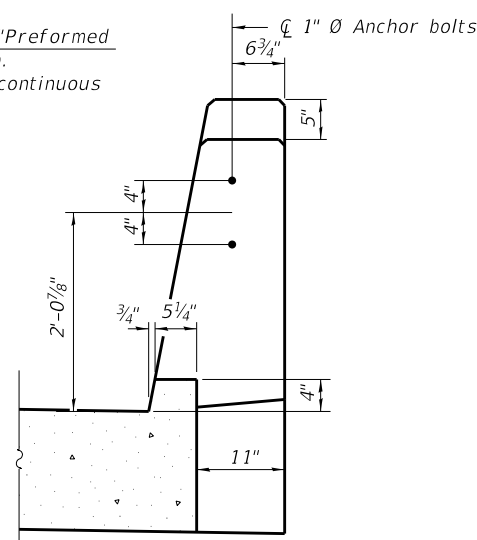
INSIDE ELEVATION OF MEDIAN BARRIER



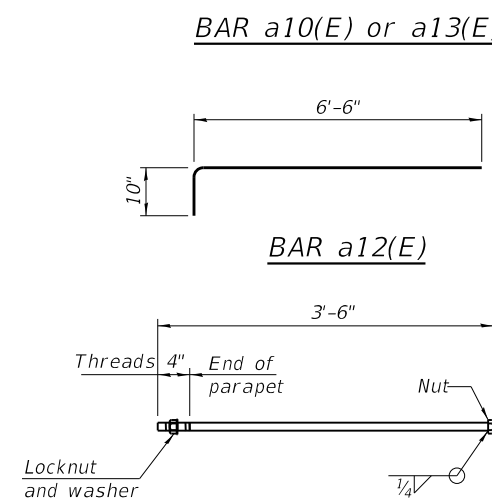
SECTION A-A



DETAIL A



VIEW B-B



*** 1" Ø ANCHOR BOLT**
 (Anchor bolt assemblies shall be galvanized according to Article 1006.09 of the Standard Specifications)

**TWO APPROACHES
 BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a10(E)	92	#5	38'-9"	┌───┐
a11(E)	122	#8	38'-5"	┌───┐
a12(E)	92	#5	7'-4"	┌───┐
a13(E)	92	#5	45'-10"	┌───┐
a14(E)	122	#8	45'-6"	┌───┐
b10(E)	220	#5	29'-9"	┌───┐
b11(E)	352	#9	29'-9"	┌───┐
b12(E)	16	#5	14'-8"	┌───┐
b13(E)	4	#4	14'-8"	┌───┐
c10(E)	64	#4	3'-11"	┌───┐
d10(E)	92	#5	6'-5"	┌───┐
d11(E)	276	#5	8'-6"	┌───┐
d12(E)	184	#5	5'-4"	┌───┐
e10(E)	72	#4	14'-8"	┌───┐
e11(E)	8	#4	29'-9"	┌───┐
t10(E)	300	#4	9'-8"	┌───┐
w10(E)	80	#5	38'-5"	┌───┐
w11(E)	80	#5	44'-4"	┌───┐
Concrete Superstructure		Cu. Yd.	25.8	
Concrete Superstructure (Approach Slab)		Cu. Yd.	206.4	
Concrete Structures		Cu. Yd.	45.1	
Reinforcement Bars, Epoxy Coated		Pound	90,660	
Bridge Deck Grooving		Sq. Yd.	434	
Protective Coat		Sq. Yd.	552	

* Cost included with Concrete Superstructure (Approach Slab).
 ** Per manufacturer recommendations

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**BRIDGE APPROACH SLAB DETAILS
 STRUCTURE NO. 016-0217**

REVISD ENTIRE SHEET 6/10/2024

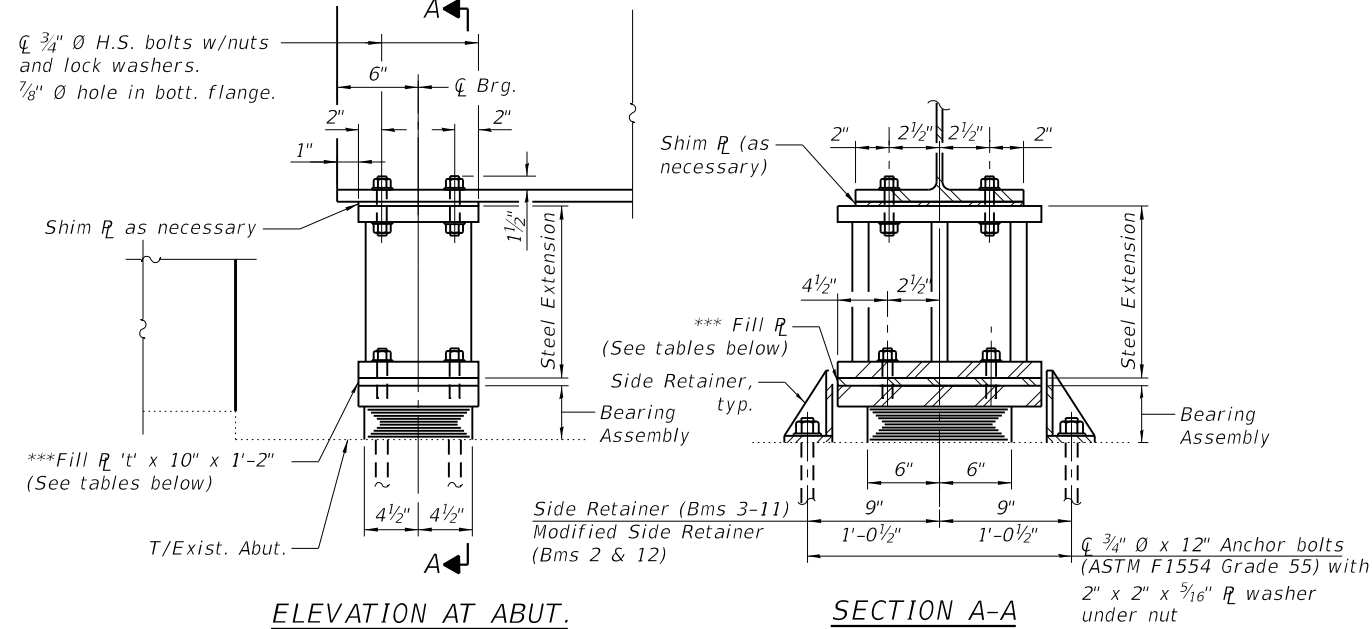
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	FAP 345-23-BR	COOK	379	227
CONTRACT NO. 62U83				

ILLINOIS FED. AID PROJECT



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CHECKED -	MZ	REVISD -			
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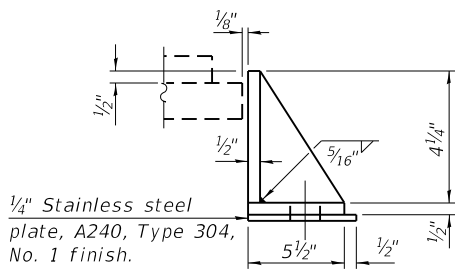
ELEVATION AT ABUT.

SECTION A-A

TYPE I ELASTOMERIC EXP. BRG.

AT ABUTMENTS

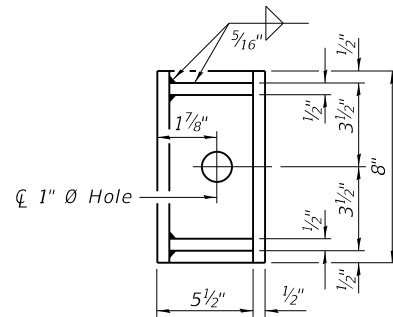
(Bms 2 thru 12 only, see sheet 24 of 32 for Bms 1 & 13)



1/4" Stainless steel plate, A240, Type 304, No. 1 finish.

SIDE RETAINER

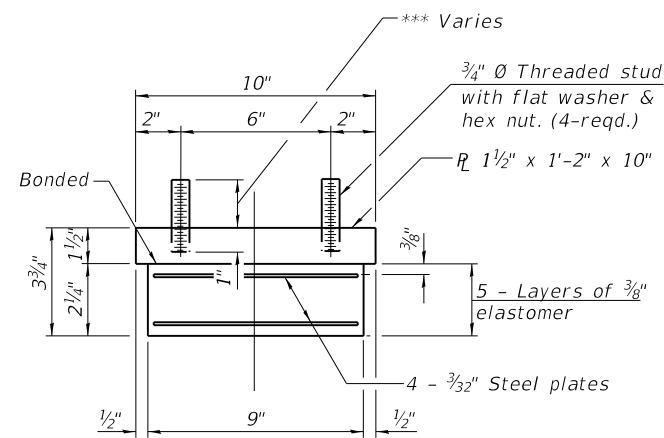
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. (40 req'd)



1/4" Stainless steel plate, A240, Type 304, No. 1 finish.

MODIFIED SIDE RETAINER

(at Bms 1, 2, 12, & 13) Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. See sheet 26 of 32 for locations. (12 req'd)

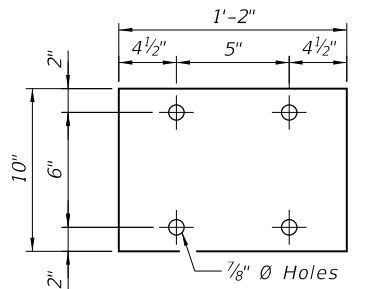


BEARING ASSEMBLY

Note: Shim plates shall not be placed under bearing assembly.

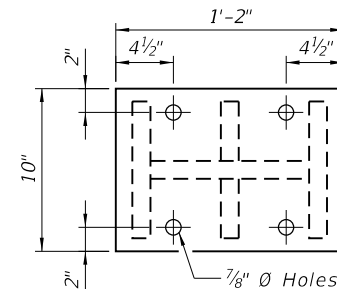
*** See West and East Abutment Extension & Fill R Dimensions tables this sheet.

Notes:
Prior to ordering any material, the Contractor shall verify in the field all bearing & steel extension heights and fill plate & shim plate thicknesses.
Side retainers and other steel members required for the bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.
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.
The structural steel plates of the Bearing Assembly, the structural steel plates of the fixed bearings, pintles, and steel extensions shall conform to the requirements of AASHTO M270, Grade 50. The structural steel for the shim plates, fill plates, and side retainers may conform to the requirements of AASHTO M270, Grade 36, unless otherwise noted.
Two 1/8" adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.
The cost for fabricating and installing the fixed bearing, steel extensions, fill plates, and shim plates will be paid for as Furnishing and Erecting Structural Steel.
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

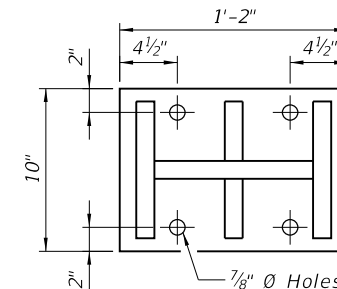


PLAN FILL R

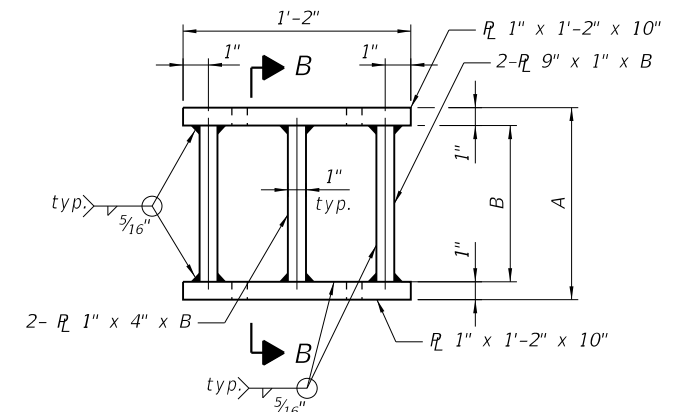
(Shim R similar if required)



PLAN TOP R

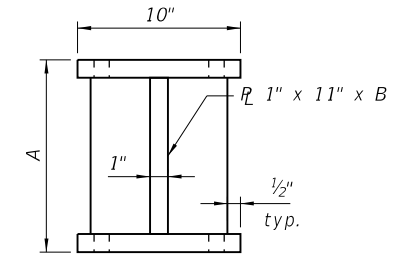


PLAN BOTTOM R



ELEVATION

(Beam lines 2 thru 12 only)



SECTION B-B

***** WEST ABUTMENT EXTENSION & FILL R DIMENSIONS**

	BM 2	BM 3	BM 4	BM 5	BM 6	BM 7	BM 8	BM 9	BM 10	BM 11	BM 12
Fill Plate 't'	-	-	3/8"	-	-	1/4"	1/4"	3/8"	1/4"	-	-
Steel Extension 'A'	9 3/8"	10 3/8"	10 3/8"	11 1/2"	12"	12"	11 1/2"	11"	11"	10 3/8"	10 1/2"
Steel Extension 'B'	7 3/8"	8 3/8"	8 3/8"	9 1/2"	10"	10"	9 1/2"	9"	9"	8 3/8"	8 1/2"
Threaded Stud Length (excluding 1" embedded into top R)	2 7/8"	2 7/8"	2 7/8"	2 7/8"	2 7/8"	2 7/8"	2 7/8"	2 7/8"	2 7/8"	2 7/8"	2 7/8"

***** EAST ABUTMENT EXTENSION & FILL R DIMENSIONS**

	BM 2	BM 3	BM 4	BM 5	BM 6	BM 7	BM 8	BM 9	BM 10	BM 11	BM 12
Fill Plate 't'	-	-	-	3/8"	1/8"	-	1/4"	-	-	-	-
Steel Extension 'A'	9"	10 1/2"	10 1/2"	11 3/4"	11 3/4"	11 3/4"	11 3/4"	11 1/4"	10 1/2"	10 1/8"	9 1/2"
Steel Extension 'B'	7"	8 1/2"	8 1/2"	9 3/4"	9 3/4"	9 3/4"	9 3/4"	9 1/4"	8 1/2"	8 1/8"	7 1/2"
Threaded Stud Length (excluding 1" embedded into top R)	2 7/8"	2 7/8"	2 7/8"	2 7/8"	2 7/8"	2 7/8"	2 7/8"	2 7/8"	2 7/8"	2 7/8"	2 7/8"

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	26
Anchor Bolts, 3/4"	Each	52

REVISION 2 REVISED ENTIRE SHEET 6/10/2024



USER NAME = mzelsko	DESIGNED - SS/DF	REVISED -
PLOT SCALE =	CHECKED - MZ	REVISED -
PLOT DATE = 5/8/2024	DRAWN - EBP	REVISED -
	CHECKED - MZ	REVISED -

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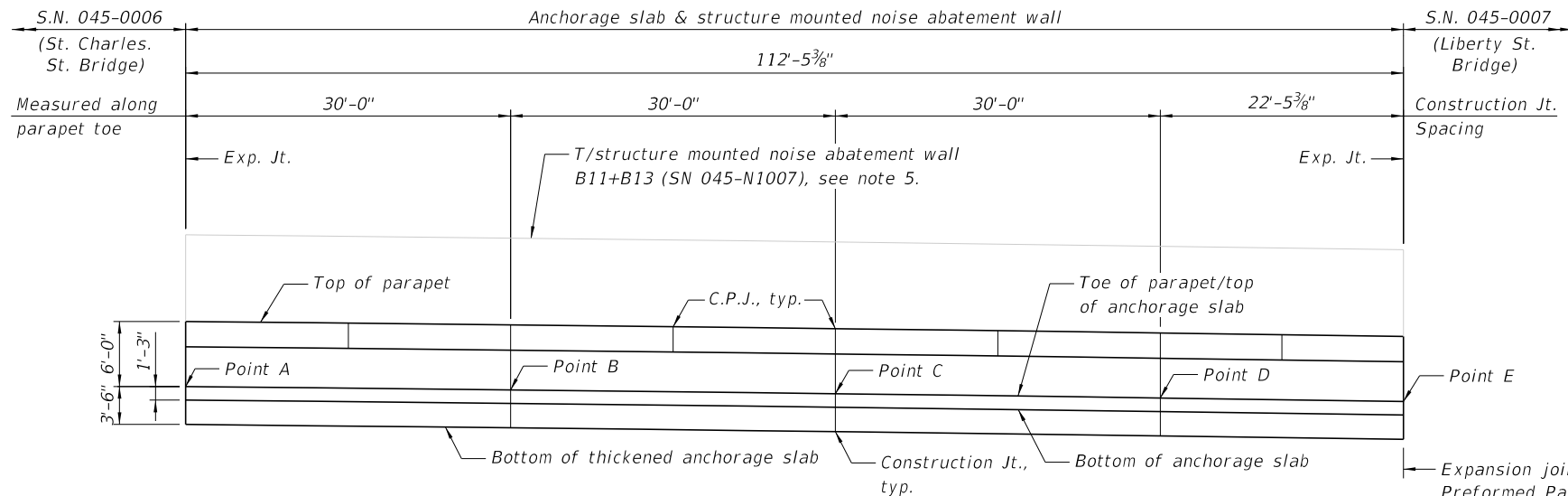
ABUTMENT BEARING I
STRUCTURE NO. 016-0217

SHEET 23 OF 32 SHEETS

F.A.P. RTE. 345	SECTION FAP 345-23-BR	COUNTY COOK	TOTAL SHEETS 379	SHEET NO. 231
ILLINOIS			CONTRACT NO. 62U83	

Benchmark: Cut "□" on top of Pier 2 crashwall located 8-ft north of SW corner of Pier 2, east side of Liberty St. Elev. 734.02. (BM #506)

Existing Structure: None



ELEVATION
(Looking North)

INDEX OF SHEETS

- 1 General Plan & Elevation
- 2 Detailed Plan & Elevation
- 3 Section & Details
- 3A Noise Abatement Wall Section Details

DESIGN SPECIFICATIONS

2020 AASHTO LRFD Bridge Design Specifications, 9th Edition

DESIGN STRESSES

FIELD UNITS

$f'_c = 4,000$ psi (Parapet) (Superstructure)
 $f'_c = 4,000$ psi (Anchorage Slab) (Superstructure)
 $f_y = 60,000$ psi (Reinforcement)

DESIGN LOADS

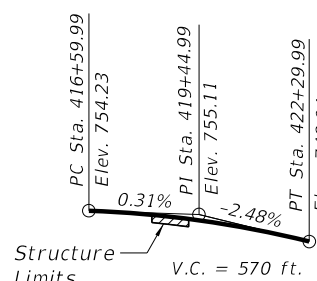
Impact Load (Static) = 106 kip (TL-5 Loading 6 ft parapet)

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Concrete Superstructure	Cu Yd	115.2
Protective Coat	Sq Yd	181
Reinforcement Bars, Epoxy Coated	Pound	25,850
Name Plates	Each	2
Noise Abatement Wall Anchor Rod Assembly	Each	11

ANCHORAGE SLAB CONTROL POINTS

Description	Station	Offset	Elev. @ Toe of Parapet
Point A	418+92.64	39.66	753.02
Point B	419+22.63	38.89	752.76
Point C	419+52.62	38.12	752.47
Point D	419+82.61	37.35	752.12
Point E	420+05.06	36.77	751.84

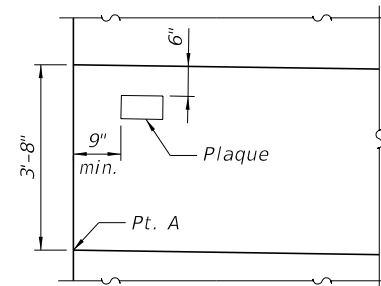


PROFILE GRADE - US 20
(Along WB PGL US 20)

PLAQUE --
 ANCHORAGE SLAB AREA
 SEC 345-23-BR
 DO NOT OPEN-CUT
 ROADWAY FROM
 PLAQUE 1 TO PLAQUE 2

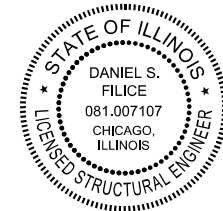
PLAQUE

(Paid for as Name Plate)



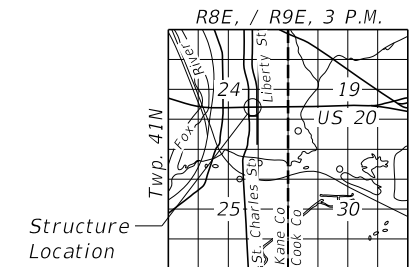
PLAQUE DETAIL

(Shown for Plaque 1, Plaque 2 similar)

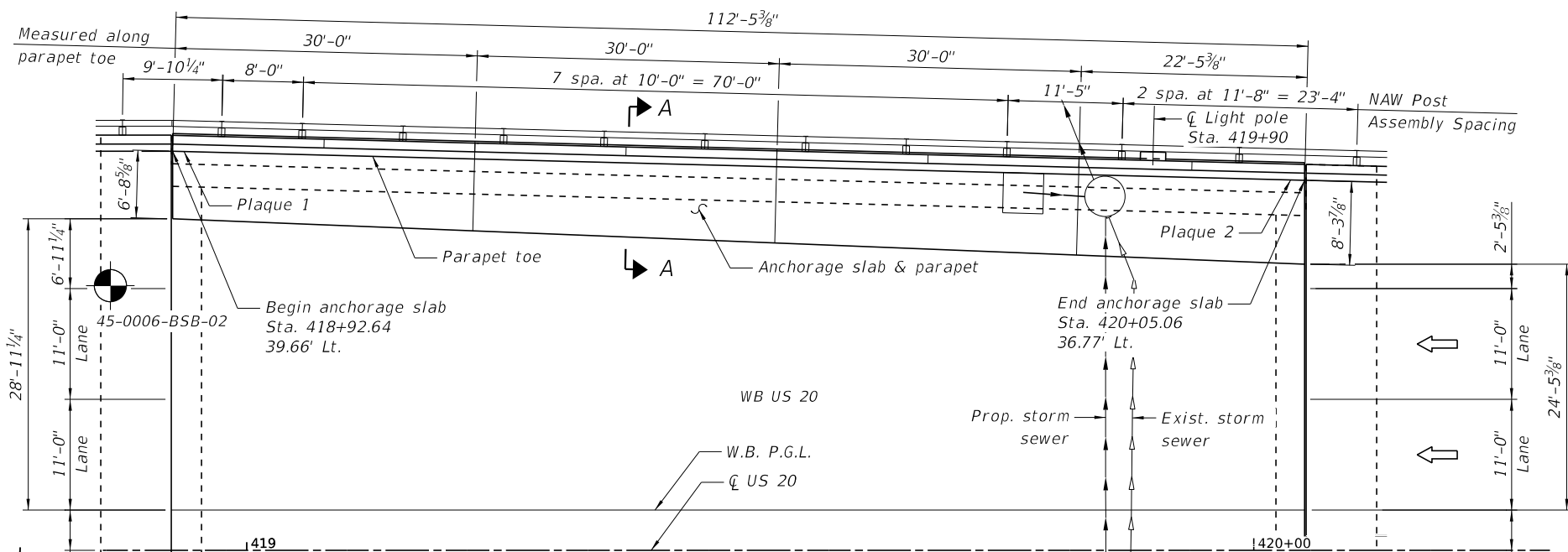


Dan Filice
 SIGNATURE:

DATE: **March 20, 2024**
 EXPIRES: November 30, 2024
 SHEETS:



LOCATION SKETCH



PLAN

LEGEND

- Boring Location
- Inlet & Catch Basin

2

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PLOT DATE = 5/13/2024	DRAWN - LAM	REVISED -
	CHECKED - MZ	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**GENERAL PLAN & ELEVATION
 ANCHORAGE SLAB ON GRADE - WB**

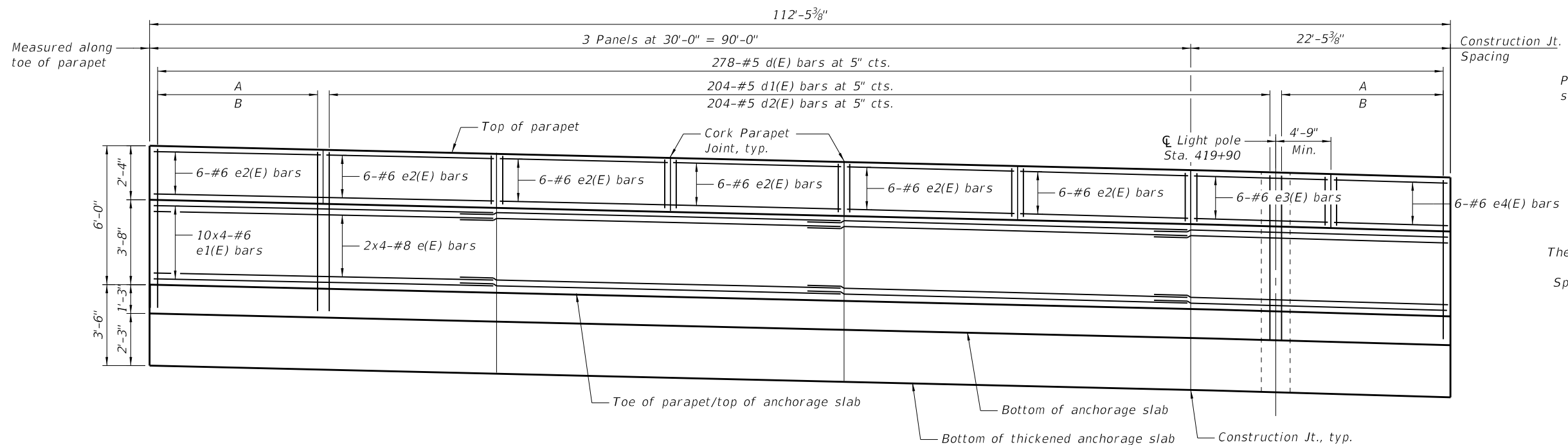
SHEET 1 OF 3 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	FAP 345-23-BR	KANE	379	252
CONTRACT NO. 62U83				

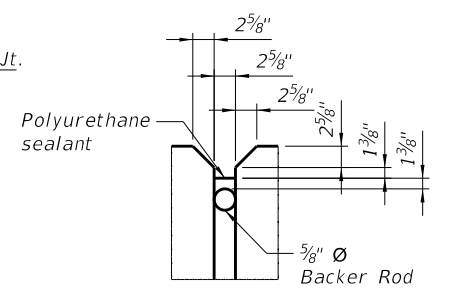
ILLINOIS FED. AID PROJECT

REVISED ENTIRE SHEET 6/10/2024

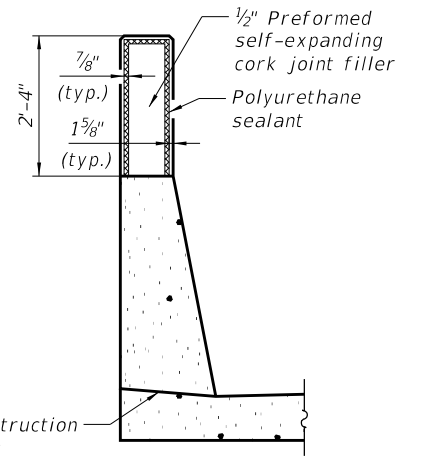
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ELEVATION
 (Looking North)
 Only parapet reinforcement shown for clarity
 A: 37-#6 d3(E) bars at 5" cts.
 B: 37-#6 d4(E) bars at 5" cts.

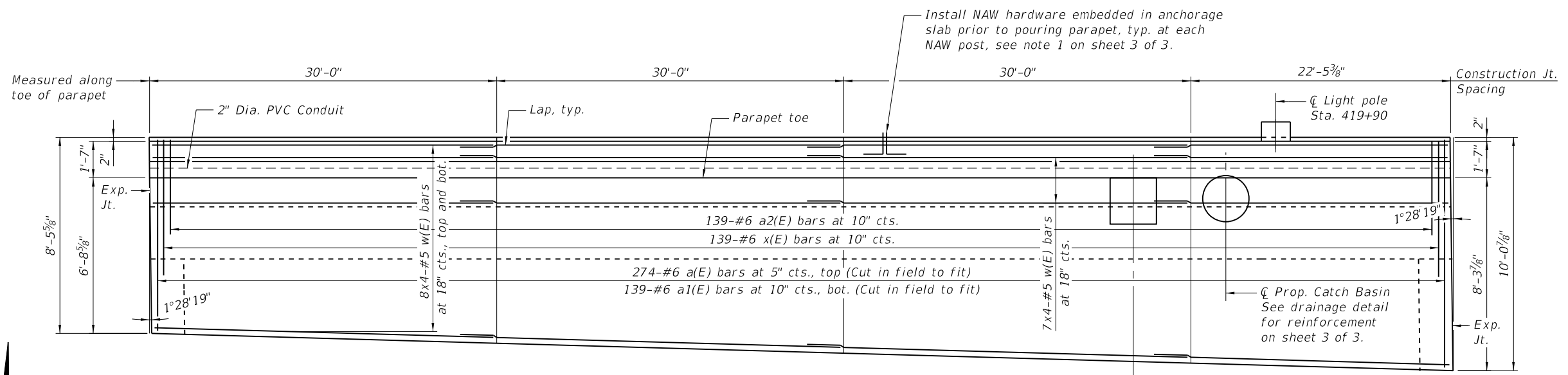


SEALANT DETAIL
 The polyurethane sealant shall be according to Article 1050.04 of the Standard Specifications and the color shall be gray.



CORK PARAPET JOINT DETAILS
 (Construction Jt. similar)

MINIMUM BAR LAP
 #5 Bar = 3'-0"
 #6 Bar = 3'-7"
 #8 Bar = 5'-11"



PLAN
 Only slab reinforcement shown for clarity

- NOTES**
1. Bars indicated thus 8x2-#5 bar etc. indicates 8 lines of bars with 2 lengths per line.
 2. See sheet 3 of 3 for sections, details, reinforcing bar list, and drainage details.
 3. Structure mounted noise abatement wall posts not shown for clarity.

REVISED ENTIRE SHEET 6/10/2024



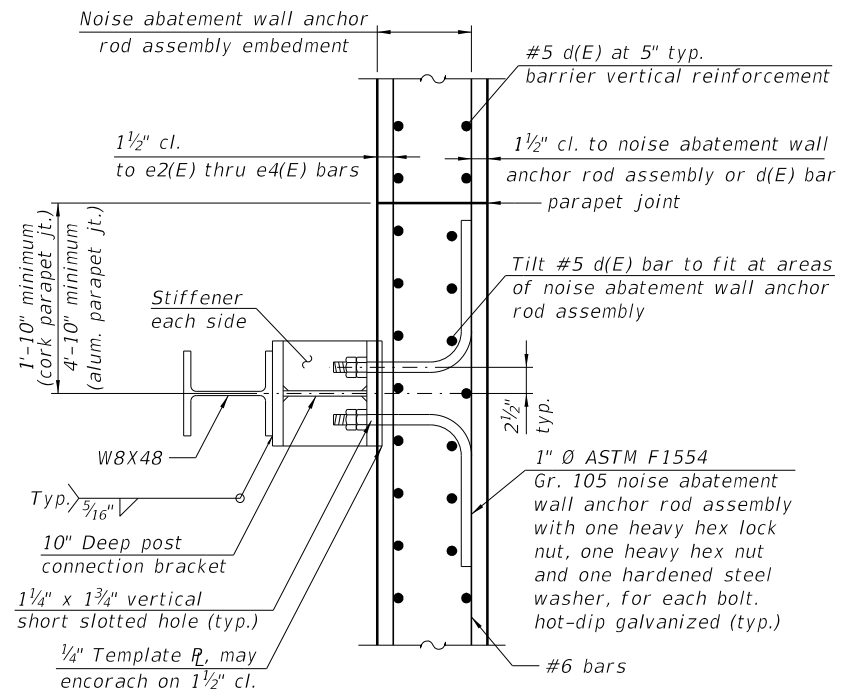
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PLOT SCALE = 10,6667' / in.	CHECKED - JGC	REVISED -
PLOT DATE = 5/9/2024	DRAWN - MDA	REVISED -
	CHECKED - MZ	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

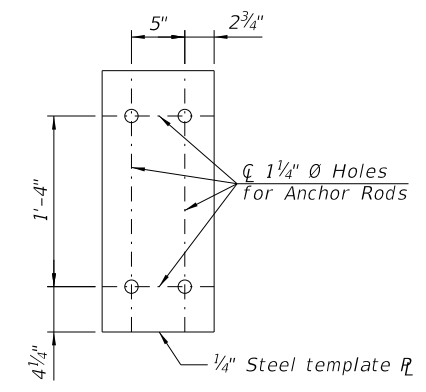
DETAILED PLAN & ELEVATION
 ANCHORAGE SLAB ON GRADE - WB

SHEET 2 OF 3 SHEETS

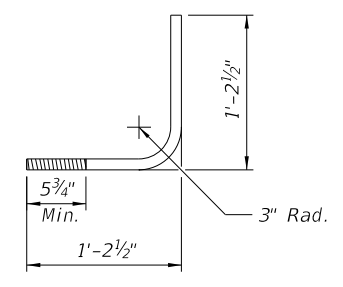
F.A.P. RTE. 345	SECTION FAP 345-23-BR	COUNTY KANE	TOTAL SHEETS 379	SHEET NO. 253
CONTRACT NO. 62U83				
ILLINOIS FED. AID PROJECT				



SECTION X-X



TEMPLATE PLATE FOR NOISE ABATEMENT WALL ANCHOR ROD ASSEMBLY



NOISE ABATEMENT WALL ANCHOR ROD ASSEMBLY

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Noise Abatement Wall Anchor Rod Assembly	Each	11

NOTES

- For location of Section X-X, see sheet 254 of 379.
- Cost of four anchor rods, template plate, and associated hardware included in the cost for one each of Noise Abatement Wall Anchor Rod Assembly.
- See noise abatement wall plans on sheet 267 thru 278 of 379 for additional details.

REVISOR'S MARK: A triangle containing the number 2. REVISED ENTIRE SHEET 6/10/2024



USER NAME = mzelsko	DESIGNED - MZ	REVISED -
PLOT SCALE = 2.0000' / in.	CHECKED - JGC	REVISED -
PLOT DATE = 5/13/2024	DRAWN - MDA	REVISED -
	CHECKED - MZ	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NOISE ABATEMENT WALL SECTION DETAILS
ANCHORAGE SLAB ON GRADE - WB

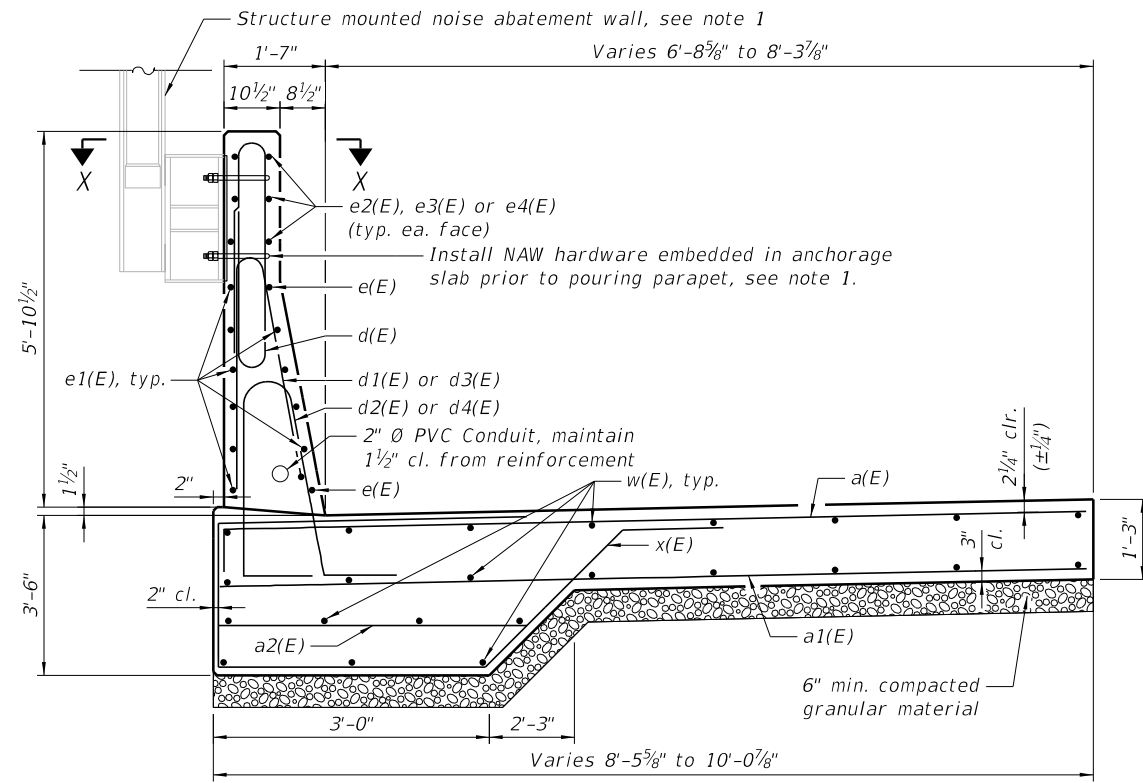
SHEET 3A OF 3 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	FAP 345-23-BR	KANE	379	254A
CONTRACT NO. 62U83				

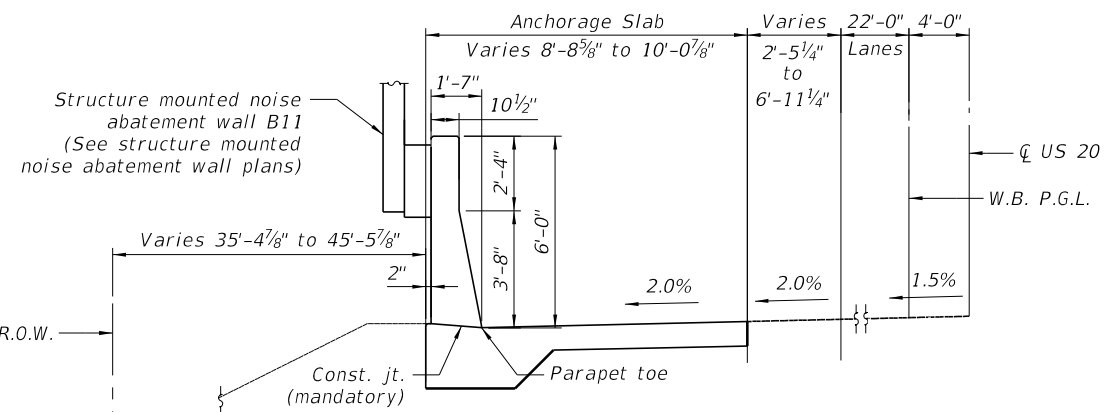
ILLINOIS FED. AID PROJECT

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	274	#6	10'-10"	┌
a1(E)	139	#6	9'-9"	┌
a2(E)	139	#6	3'-9"	┌
a3(E)	32	#6	2'-6"	┌
d(E)	278	#5	10'-6"	┌
d1(E)	204	#5	8'-1"	┌
d2(E)	204	#5	9'-0"	┌
d3(E)	74	#6	8'-7"	┌
d4(E)	74	#6	9'-0"	┌
d5(E)	3	#6	7'-9"	┌
d6(E)	11	#6	8'-11"	┌
d7(E)	3	#6	5'-1"	┌
e(E)	8	#8	32'-6"	┌
e1(E)	40	#6	30'-9"	┌
e2(E)	36	#6	14'-8"	┌
e3(E)	6	#6	11'-9"	┌
e4(E)	6	#6	10'-0"	┌
w(E)	92	#5	30'-4"	┌
x(E)	139	#6	15'-2"	┌
Concrete Superstructure	115.2		Cu Yd	
Protective Coat	181		Sq Yd	
Reinforcement Bars, Epoxy Coated	25,850		Pound	



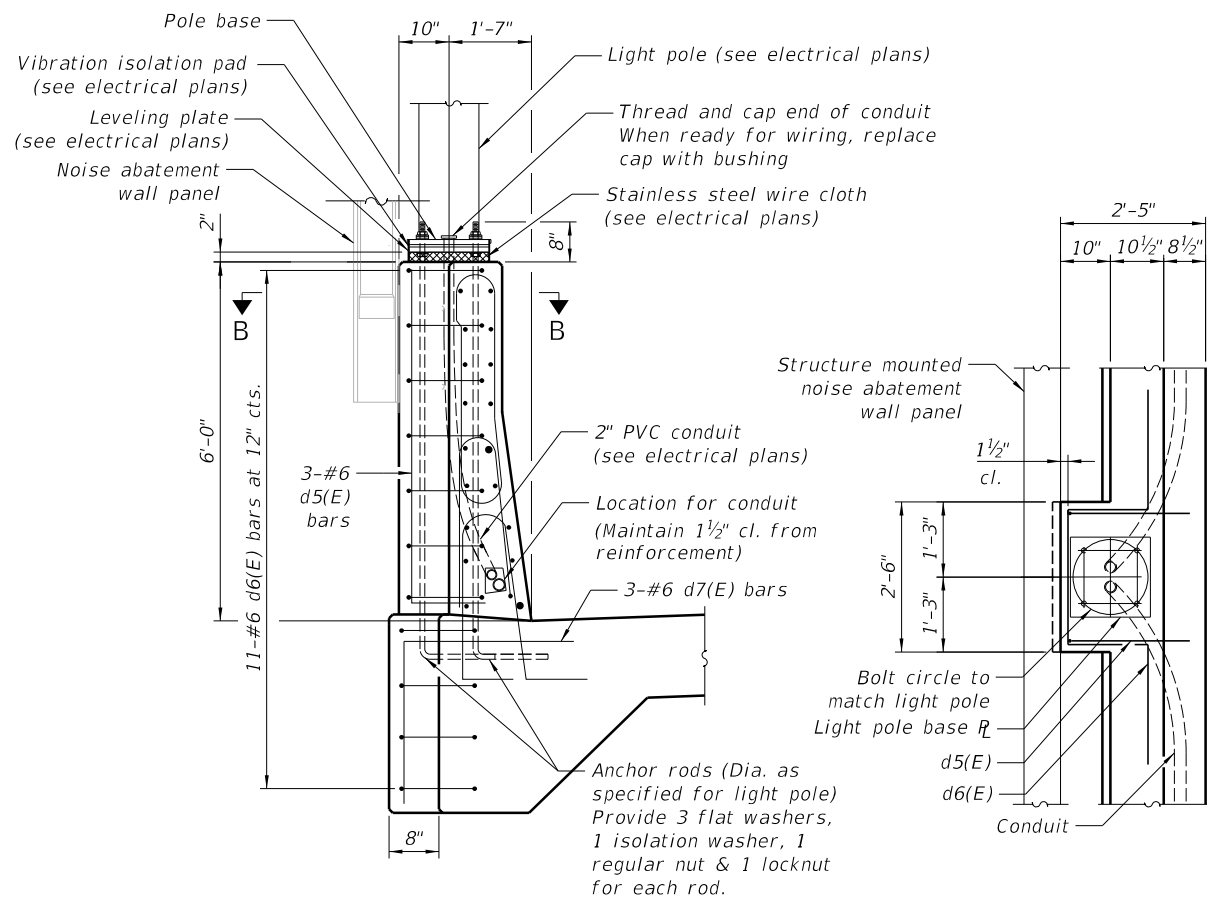
SECTION A-A



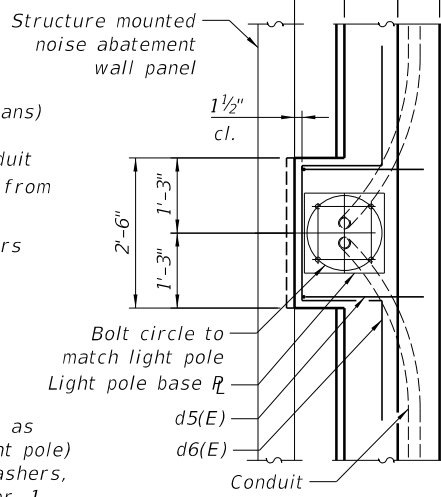
TYPICAL SECTION THRU ANCHORAGE SLAB ON GRADE

NOTE

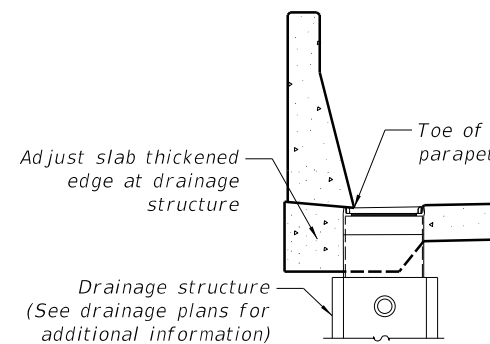
1. For Section X-X, noise abatement wall anchor rod assembly, template plate, and associated hardware, see sheet 254A of 379.



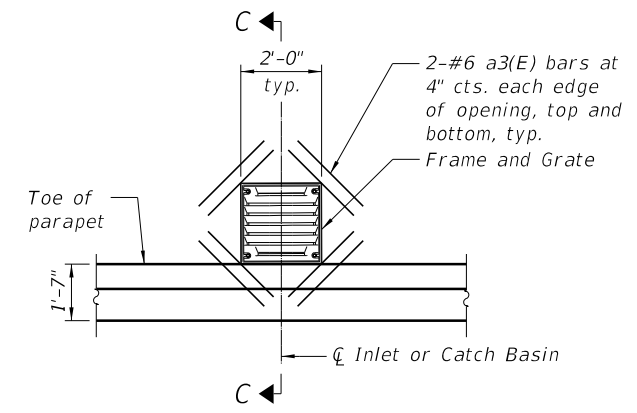
TYPICAL ANCHORAGE SLAB SECTION AT LIGHT POLE FOUNDATION



SECTION B-B
(Anchorage slab edge not shown for clarity)



SECTION C-C

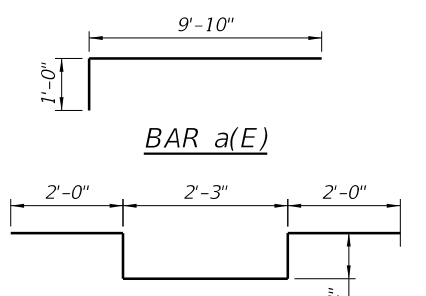


DRAINAGE DETAIL

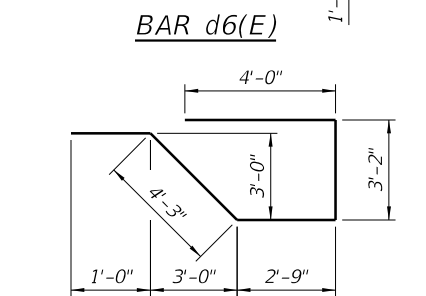
Cut longitudinal reinforcement to clear Inlet & Catch Basin. Inlet frame and grate shown. Catch Basin frame & lid similar.

ANCHOR ROD

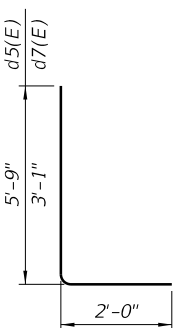
Diameter as specified for light poles. (ASTM F1554 Grade 105). Cost included with Concrete Superstructure.



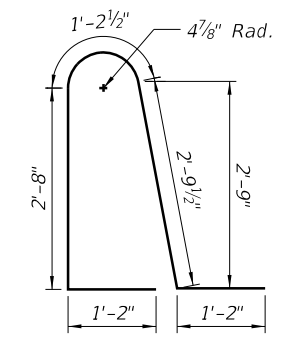
BAR a(E)



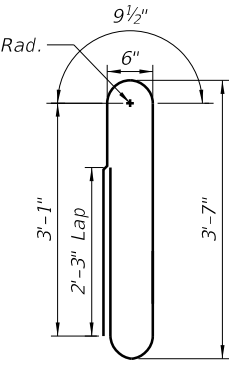
BAR d6(E)



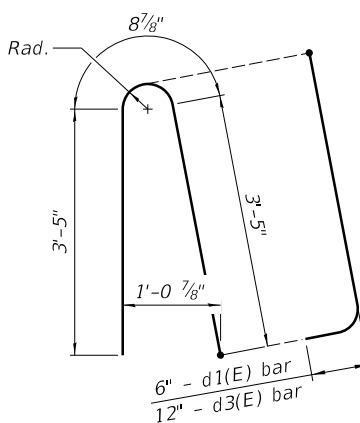
BAR d5(E) or d7(E)



BAR d2(E) or d4(E)
Back leg to extend 9 1/2" into anchorage slab



BAR d(E)



BAR d1(E) or d3(E)

BAR x(E)

REVISED ENTIRE SHEET 6/10/2024



USER NAME = mzelsko	DESIGNED - MZ	REVISED -
CHECKED - JGC	REVISIONS -	
PLOT SCALE = 2.0000' / in.	DRAWN - MDA	REVISED -
PLOT DATE = 5/13/2024	CHECKED - MZ	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**SECTION & DETAILS
ANCHORAGE SLAB ON GRADE - WB**

SHEET 3 OF 3 SHEETS

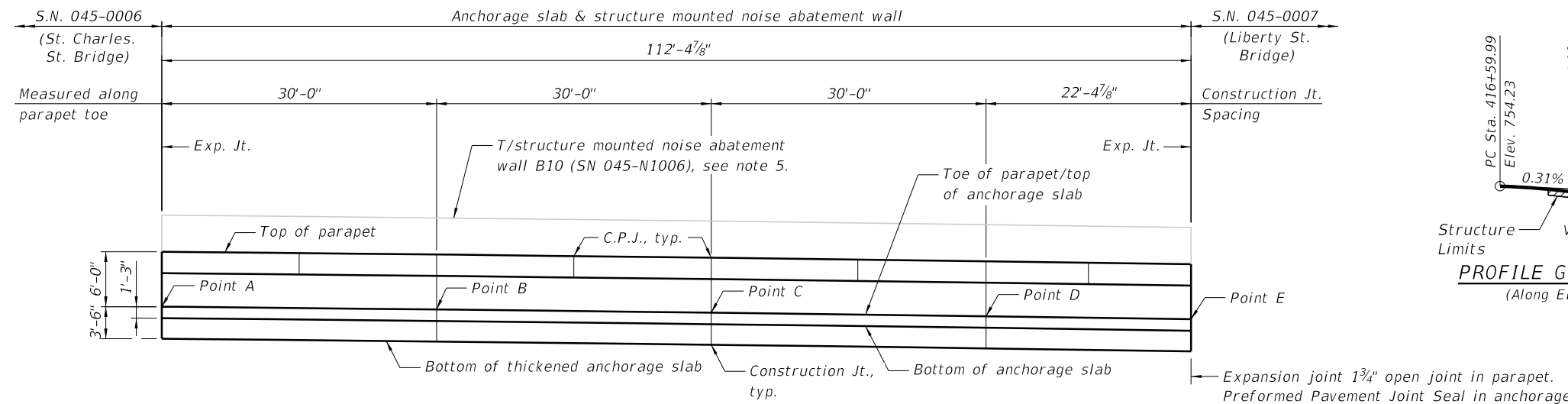
F.A.P. RTE. 345	SECTION FAP 345-23-BR	COUNTY KANE	TOTAL SHEETS 379	SHEET NO. 254
CONTRACT NO. 62U83				

ILLINOIS FED. AID PROJECT

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5/13/2024 3:56:27 AM

Benchmark: Cut "□" on top of Pier 2 crashwall located 8-ft north of SW corner of Pier 2, east side of Liberty St. Elev. 734.02. (BM #506)

Existing Structure: None



REFLECTED ELEVATION
(Looking North)

INDEX OF SHEETS

- 1 General Plan & Elevation
- 2 Detailed Plan & Elevation
- 3 Section & Details
- 3A Noise Abatement Wall Section Details

DESIGN SPECIFICATIONS

2020 AASHTO LRFD Bridge Design Specifications,
9th Edition

DESIGN STRESSES

FIELD UNITS

$f'_c = 4,000$ psi (Parapet) (Superstructure)
 $f'_c = 4,000$ psi (Anchorage Slab) (Superstructure)
 $f_y = 60,000$ psi (Reinforcement)

DESIGN LOADS

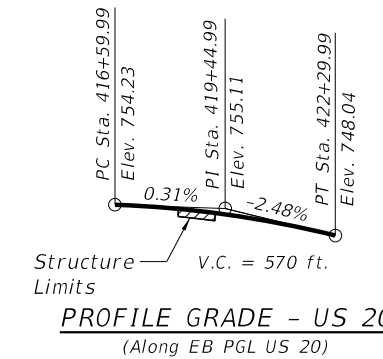
Impact Load (Static) = 106 kip (TL-5 Loading 6 ft parapet)

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Concrete Superstructure	Cu Yd	171.1
Protective Coat	Sq Yd	258
Reinforcement Bars, Epoxy Coated	Pound	32,670
Name Plates	Each	2
Noise Abatement Wall Anchor Rod Assembly	Each	12

ANCHORAGE SLAB CONTROL POINTS

Description	Station	Offset	Elev. @ Toe of Parapet
Point A	418+92.65	39.67 Rt.	753.02
Point B	419+22.65	39.67 Rt.	752.75
Point C	419+52.65	39.67 Rt.	752.43
Point D	419+82.65	39.67 Rt.	752.08
Point E	420+05.06	39.31 Rt.	751.79

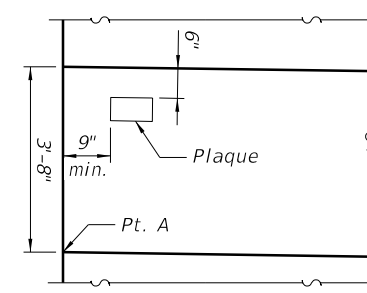


PROFILE GRADE - US 20
(Along EB PGL US 20)

PLAQUE --
ANCHORAGE SLAB AREA
SEC 345-23-BR
DO NOT OPEN-CUT
ROADWAY FROM
PLAQUE 1 TO PLAQUE 2

PLAQUE

(Paid for as Name Plate)



PLAQUE DETAIL

(Reflected Elevation,
Shown for Plaque 1,
Plaque 2 similar)

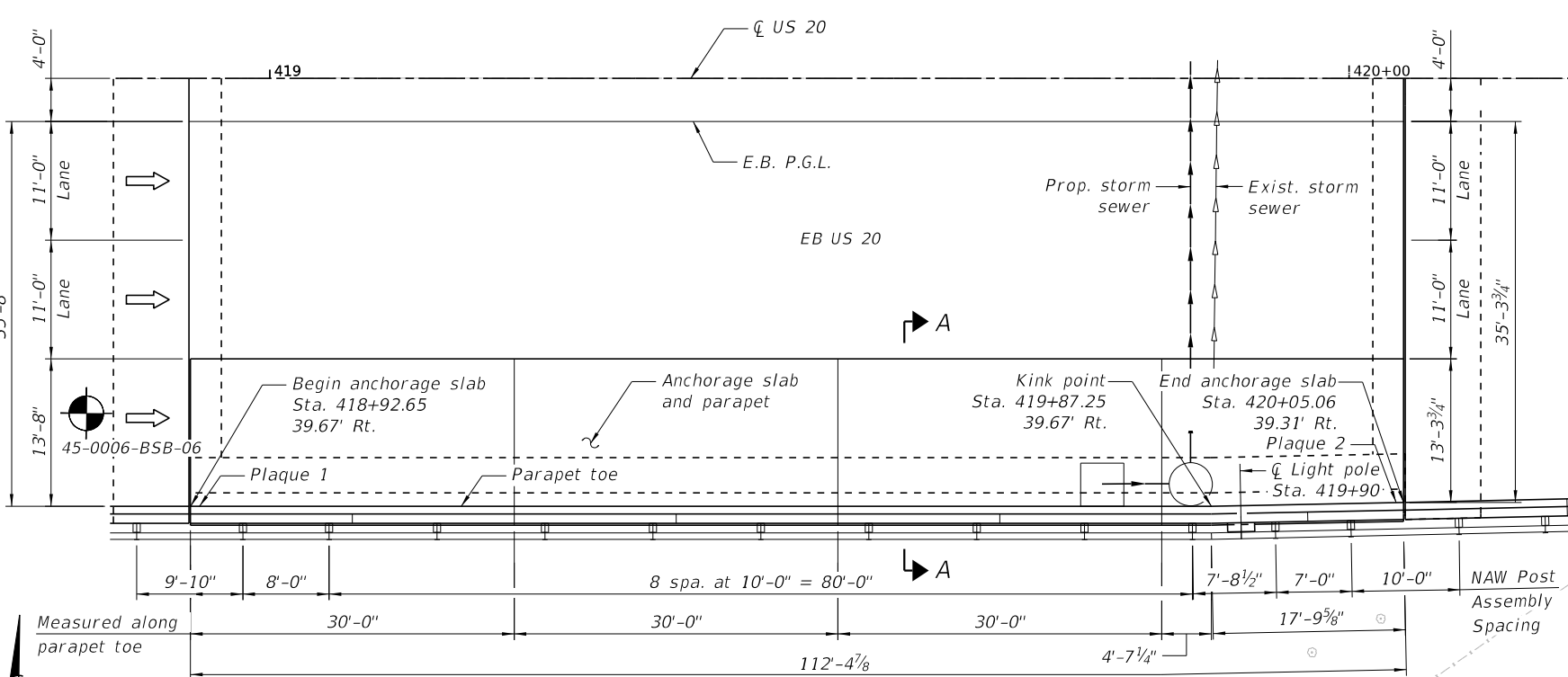


Dan Filice
SIGNATURE:

DATE: **March 20, 2024**
EXPIRES: November 30, 2024
SHEETS:

NOTES

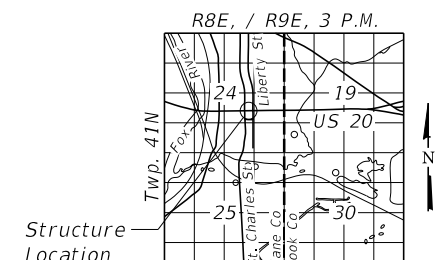
- Stations and offsets are measured relative to \bar{C} US 20 at the parapet toe u.n.o.
- C.P.J. - Cork Parapet Joint.
- For Section A-A, anchorage slab and parapet reinforcement, light pole, and drainage details see sheets 2 and 3.
- See drainage plans for location of inlet and catch basin.
- Structure mounted NAW B10 (SN 045-N1006) is attached to this anchorage slab. For NAW post spacing and attachment details, see sheet 258 thru 266 of 379. The Contractor shall be aware that mounting hardware is embedded in the parapet portion of the anchorage slab and shall be installed prior to pouring the parapet.



PLAN

LEGEND

- Boring Location
- Inlet & Catch Basin



LOCATION SKETCH

	USER NAME = mzellisko	DESIGNED - MDA	REVISED -
	PLOT SCALE = 16,0000' / in.	CHECKED - MZ	REVISED -
	PLOT DATE = 5/13/2024	DRAWN - LAM	REVISED -
		CHECKED - MZ	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

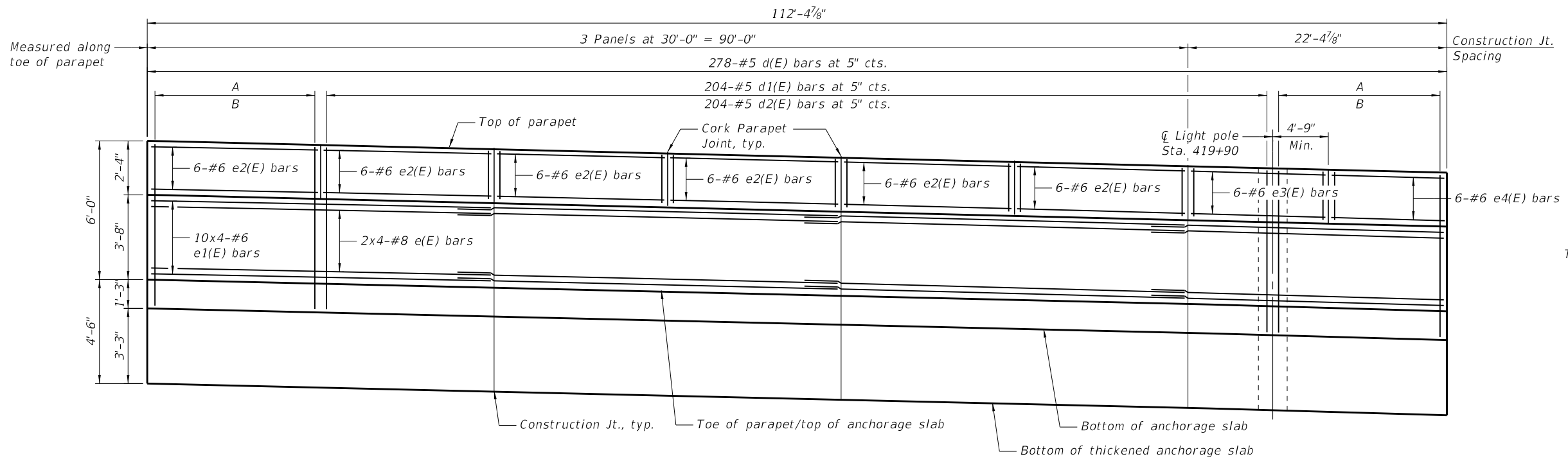
GENERAL PLAN & ELEVATION
ANCHORAGE SLAB ON GRADE - EB

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	FAP 345-23-BR	KANE	379	255
CONTRACT NO. 62U83				
ILLINOIS FED. AID PROJECT				

SHEET 1 OF 3 SHEETS

REVISI... ENTIRE SHEET 6/10/2024

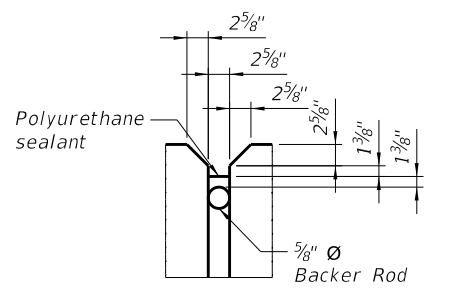
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REFLECTED ELEVATION

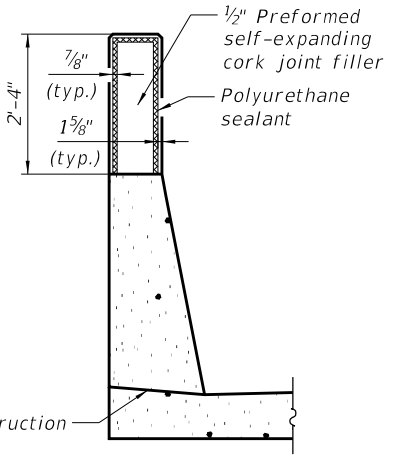
(Looking North)

Only parapet reinforcement shown for clarity
 A: 37-#6 d3(E) bars at 5" cts.
 B: 37-#6 d4(E) bars at 5" cts.



SEALANT DETAIL

The polyurethane sealant shall be according to Article 1050.04 of the Standard Specifications and the color shall be gray.

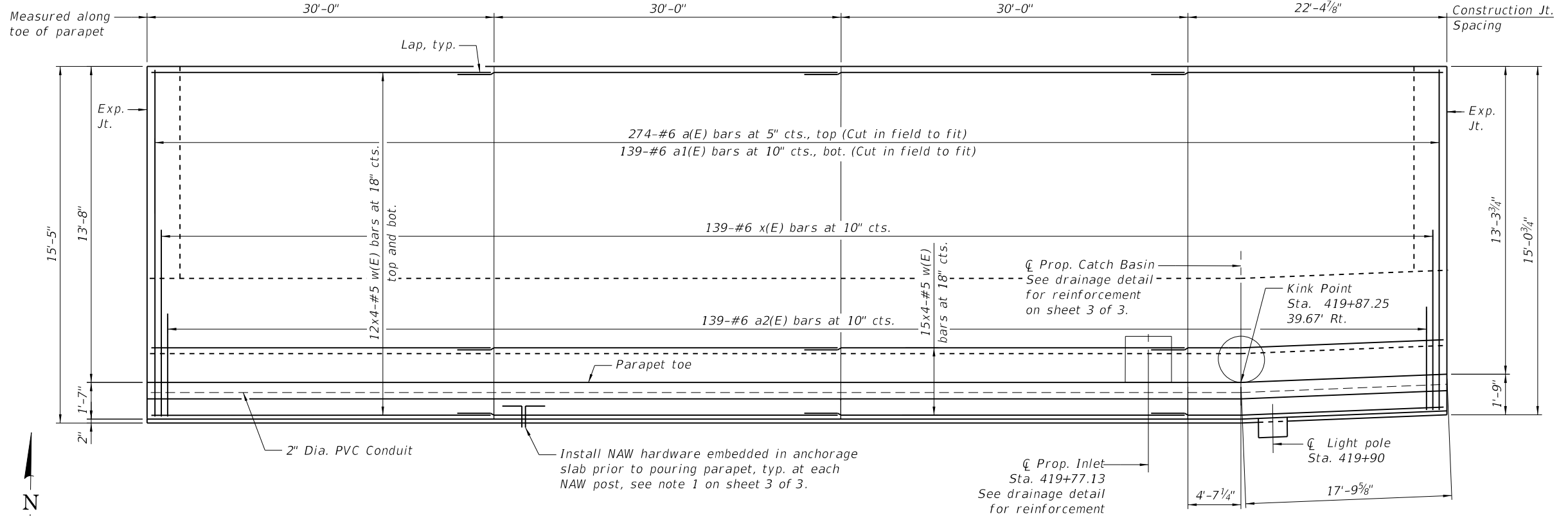


CORK PARAPET JOINT DETAILS

(Construction Jt. similar)

MINIMUM BAR LAP

- #5 Bar = 3'-0"
- #6 Bar = 3'-7"
- #8 Bar = 5'-11"



PLAN

Only slab reinforcement shown for clarity

NOTES

1. Bars indicated thus 8x2-#5 bar etc. indicates 8 lines of bars with 2 lengths per line.
2. See sheet 3 of 3 for sections, details, reinforcing bar list, and drainage details.
3. Structure mounted noise abatement wall posts not shown for clarity.

REVISI 2 ENTIRE SHEET 6/10/2024

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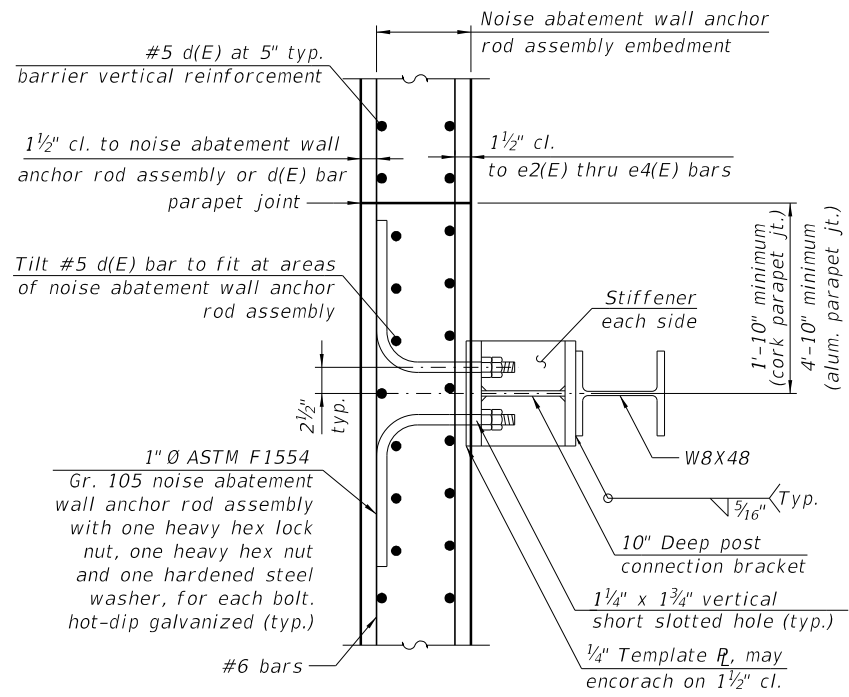
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CHECKED - JGC	REVISED -	
PLOT SCALE = 10,6667' / in.	DRAWN - MDA	REVISED -
PLOT DATE = 5/9/2024	CHECKED - MZ	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

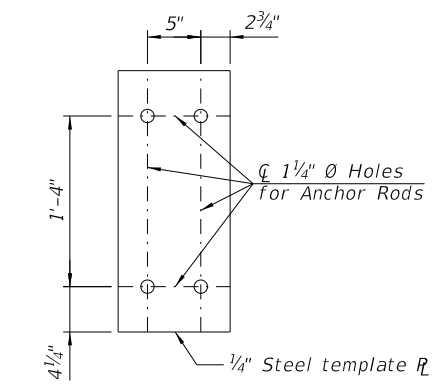
DETAILED PLAN & ELEVATION
 ANCHORAGE SLAB ON GRADE - EB

SHEET 2 OF 3 SHEETS

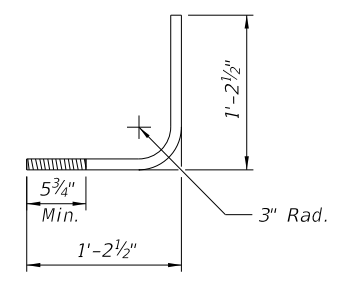
F.A.P. RTE. 345	SECTION FAP 345-23-BR	COUNTY KANE	TOTAL SHEETS 379	SHEET NO. 256
CONTRACT NO. 62U83				
ILLINOIS FED. AID PROJECT				



SECTION X-X



TEMPLATE PLATE FOR NOISE ABATEMENT WALL ANCHOR ROD ASSEMBLY



NOISE ABATEMENT WALL ANCHOR ROD ASSEMBLY

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Noise Abatement Wall Anchor Rod Assembly	Each	12

NOTES

- For location of Section X-X, see sheet 257 of 379.
- Cost of four anchor rods, template plate, and associated hardware included in the cost for one each of Noise Abatement Wall Anchor Rod Assembly.
- See noise abatement wall plans on sheet 258 thru 266 of 379 for additional details.

2

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PLOT DATE = 5/13/2024	DRAWN - MDA	REVISED -
	CHECKED - MZ	REVISED -

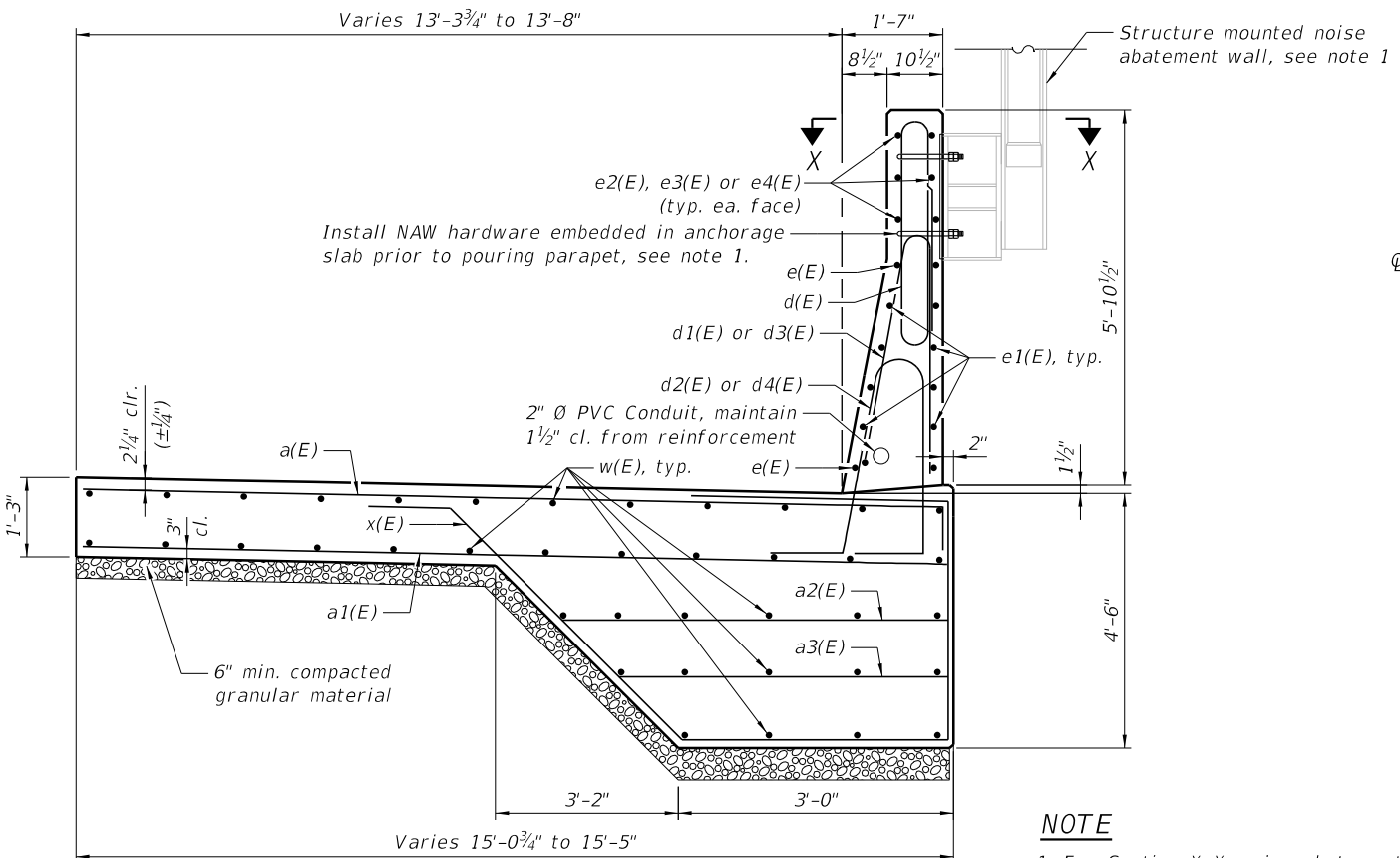
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NOISE ABATEMENT WALL SECTION DETAILS
ANCHORAGE SLAB ON GRADE - EB

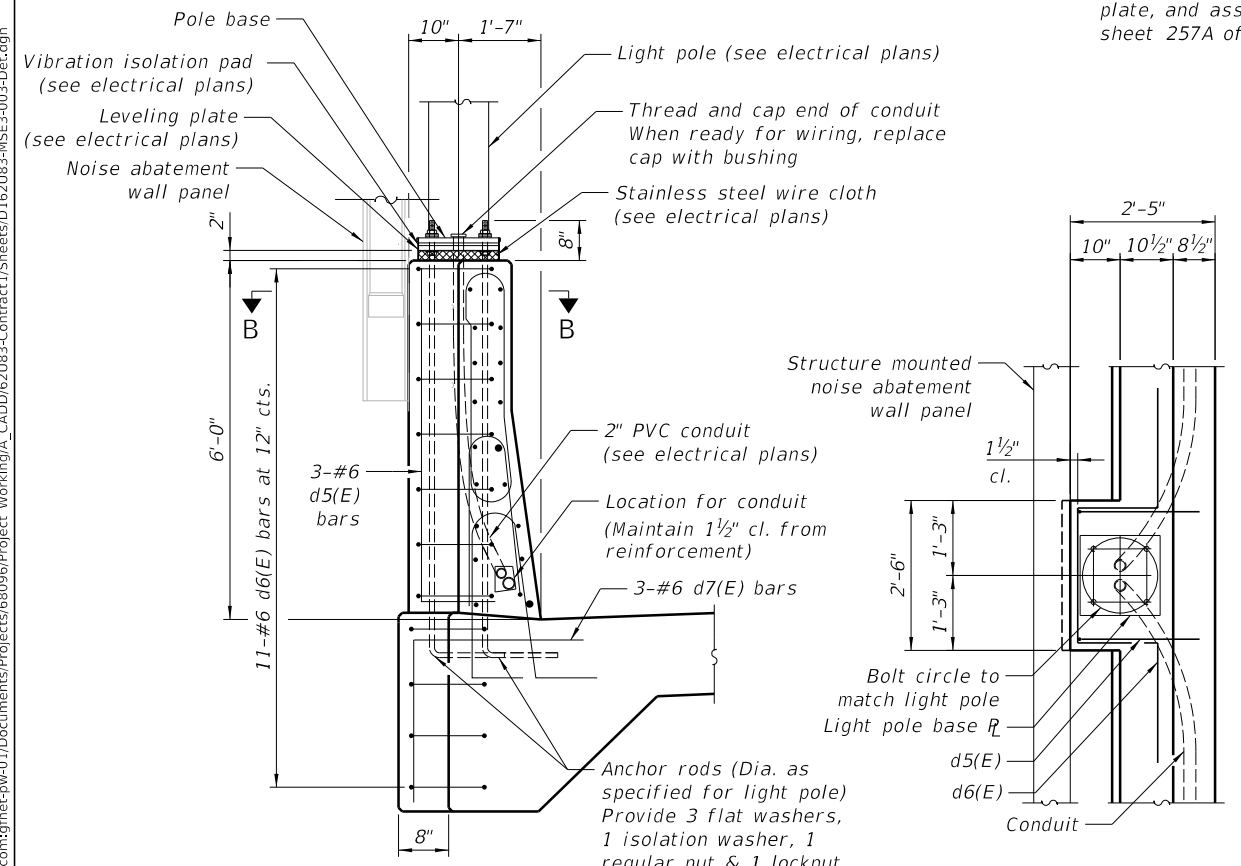
SHEET 3A OF 3 SHEETS

2 REVISED ENTIRE SHEET 6/10/2024

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	FAP 345-23-BR	KANE	379	257A
CONTRACT NO. 62U83				
ILLINOIS FED. AID PROJECT				

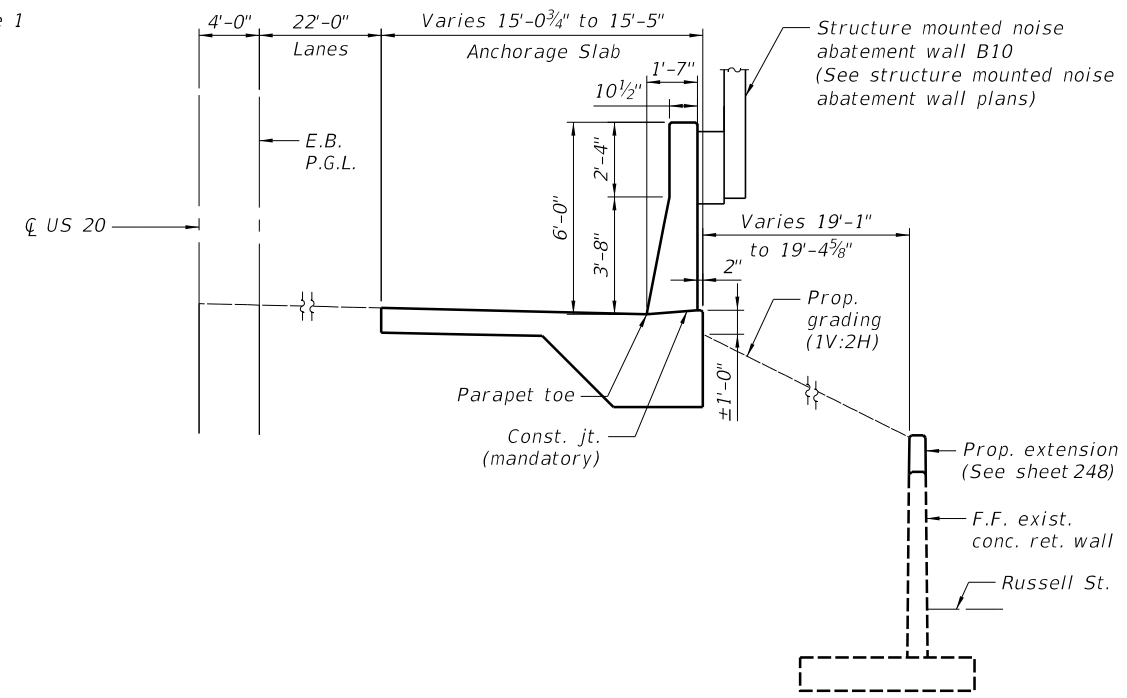


SECTION A-A



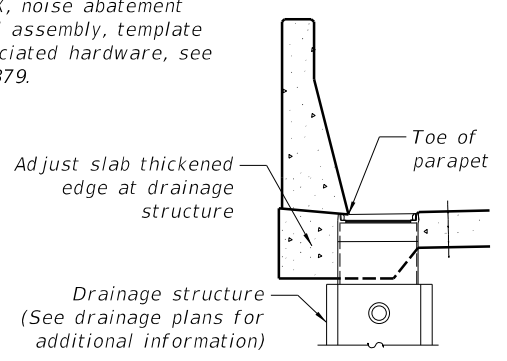
TYPICAL ANCHORAGE SLAB SECTION AT LIGHT POLE FOUNDATION

SECTION B-B
(Anchorage slab edge not shown for clarity)

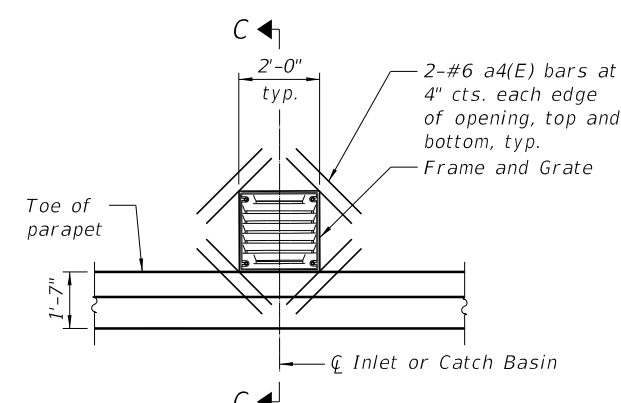


TYPICAL SECTION THRU ANCHORAGE SLAB ON GRADE

NOTE
1. For Section X-X, noise abatement wall anchor rod assembly, template plate, and associated hardware, see sheet 257A of 379.



SECTION C-C



DRAINAGE DETAIL

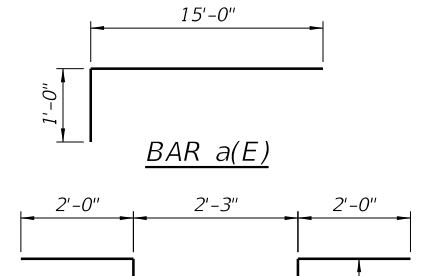
Cut longitudinal reinforcement to clear Inlet & Catch Basin. Inlet frame & grate shown. Catch Basin frame & lid similar.

BILL OF MATERIAL

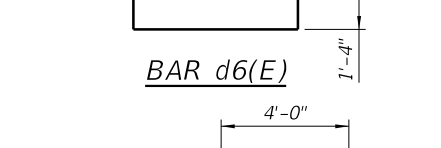
Bar	No.	Size	Length	Shape
a(E)	274	#6	16'-0"	┌
a1(E)	139	#6	15'-0"	┌
a2(E)	139	#6	4'-11"	┌
a3(E)	139	#6	3'-11"	┌
a4(E)	32	#6	2'-6"	┌
d(E)	278	#5	10'-6"	┌
d1(E)	204	#5	8'-1"	┌
d2(E)	204	#5	9'-0"	┌
d3(E)	74	#6	8'-7"	┌
d4(E)	74	#6	9'-0"	┌
d5(E)	3	#6	7'-9"	┌
d6(E)	11	#6	8'-11"	┌
d7(E)	3	#6	6'-1"	┌
e(E)	8	#8	32'-6"	┌
e1(E)	40	#6	30'-9"	┌
e2(E)	36	#6	14'-8"	┌
e3(E)	6	#6	11'-10"	┌
e4(E)	6	#6	9'-11"	┌
w(E)	156	#5	30'-4"	┌
x(E)	139	#6	17'-7"	┌
Concrete Superstructure	171.1			Cu Yd
Protective Coat	258			Sq Yd
Reinforcement Bars, Epoxy Coated	32,670			Pound

ANCHOR ROD

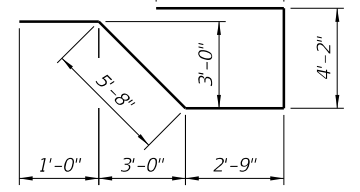
Diameter as specified for light poles. (ASTM F1554 Grade 105). Cost included with Concrete Superstructure.



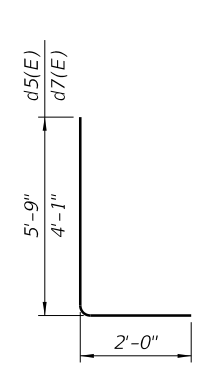
BAR a(E)



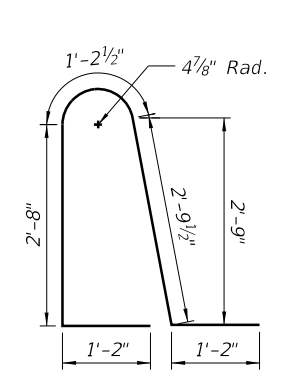
BAR d6(E)



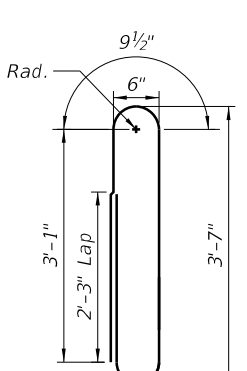
BAR x(E)



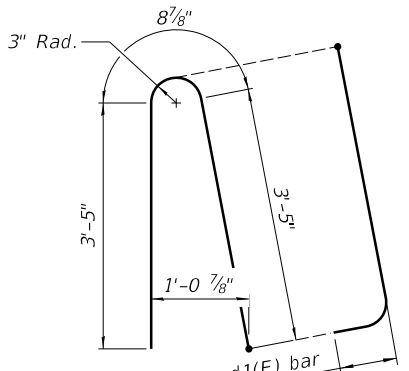
BAR d5(E) or d7(E)



BAR d2(E) or d4(E)
Back leg to extend 9 1/2\"/>



BAR d(E)



BAR d1(E) or d3(E)

REVISD ENTIRE SHEET 6/10/2024

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USER NAME =	mzellisko	DESIGNED -	MDA	REVISED -	
CHECKED -	MZ	CHECKED -	MZ	REVISED -	
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PLOT DATE =	5/13/2024	CHECKED -	MZ	REVISED -	

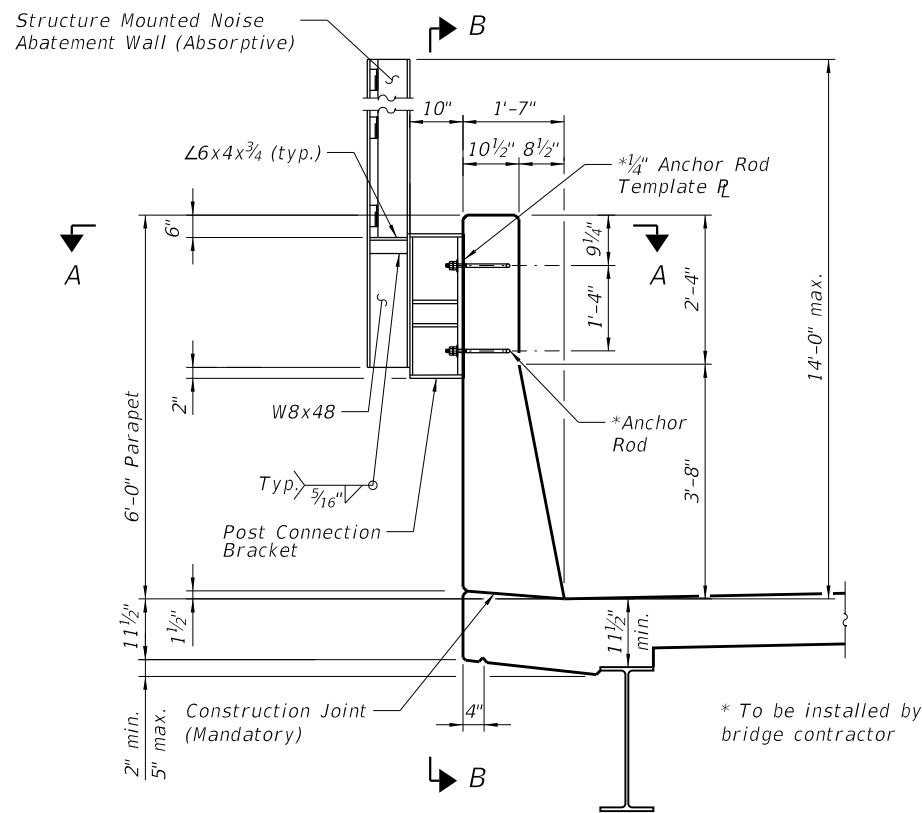
STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

SECTION & DETAILS ANCHORAGE SLAB ON GRADE - EB

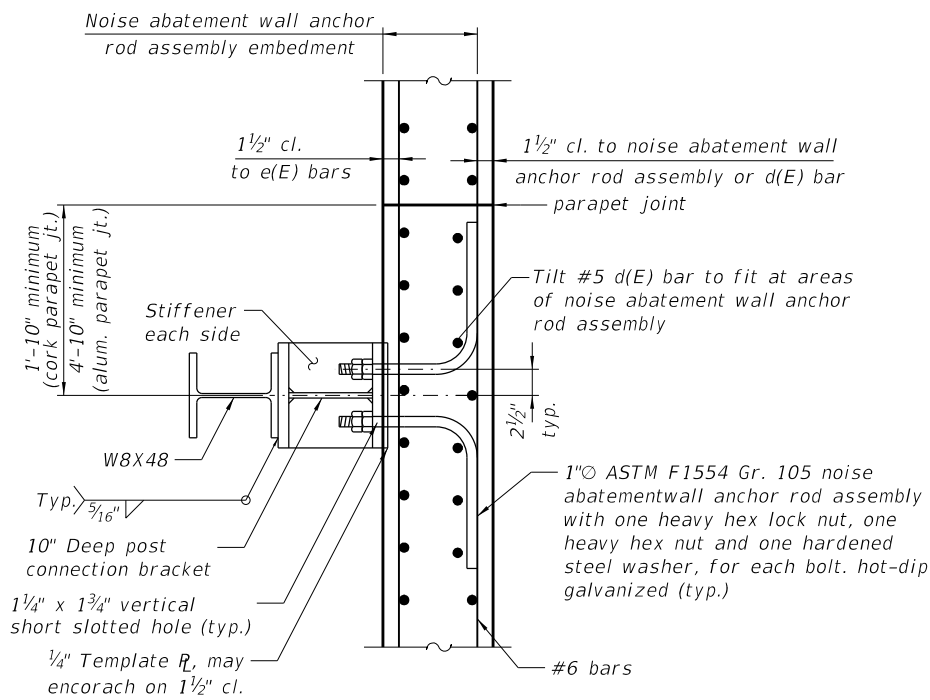
SHEET 3 OF 3 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	FAP 345-23-BR	KANE	379	257
CONTRACT NO. 62U83				
ILLINOIS FED. AID PROJECT				

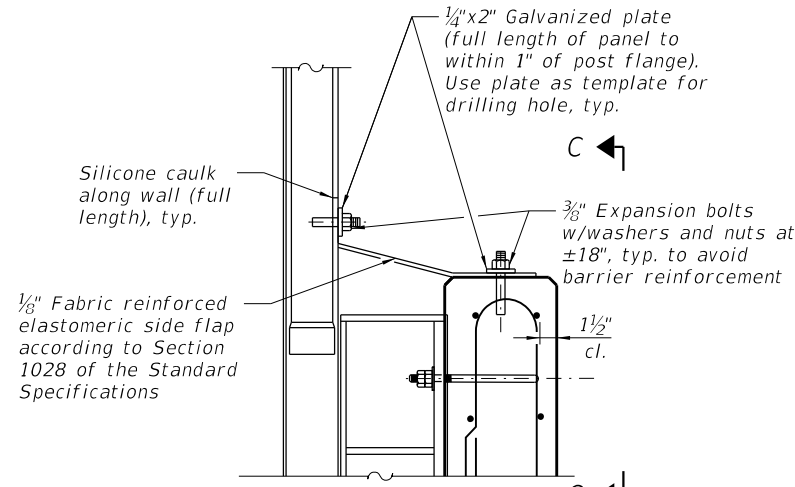
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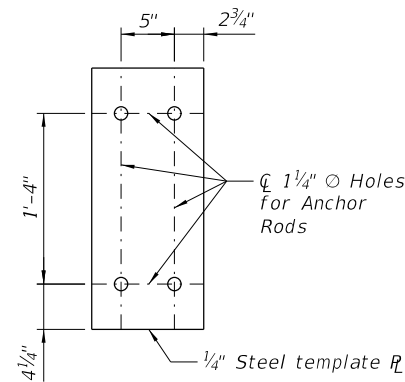
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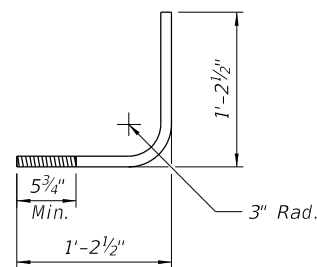
SECTION A-A



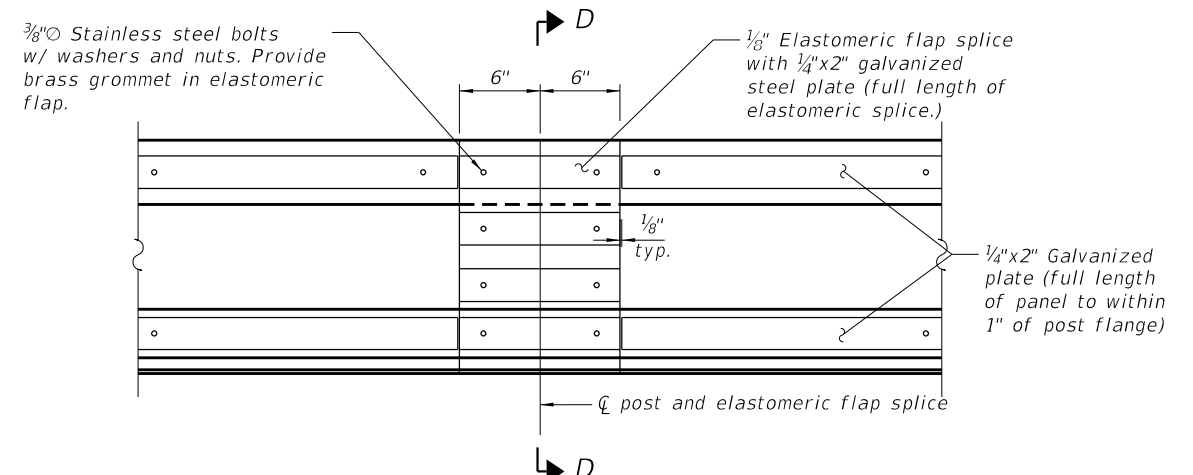
TYPICAL SECTION THRU DEBRIS SHIELD



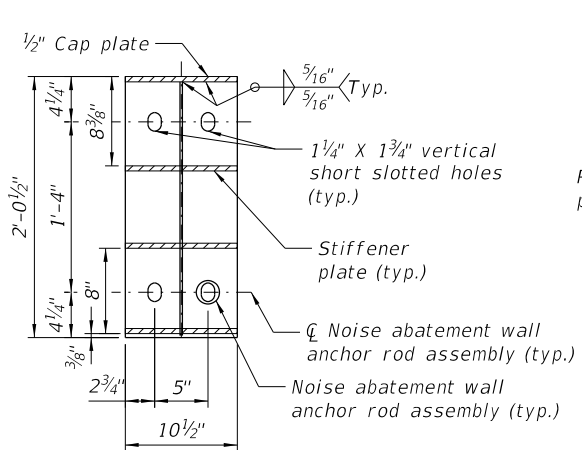
TEMPLATE PLATE FOR NOISE ABATEMENT WALL ANCHOR ROD ASSEMBLY



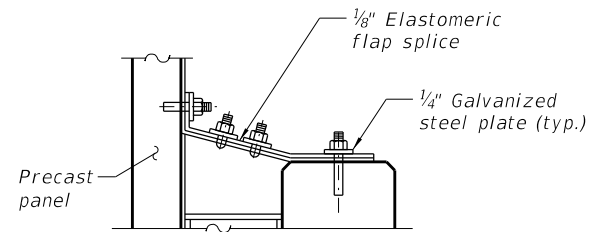
NOISE ABATEMENT WALL ANCHOR ROD ASSUMBLY



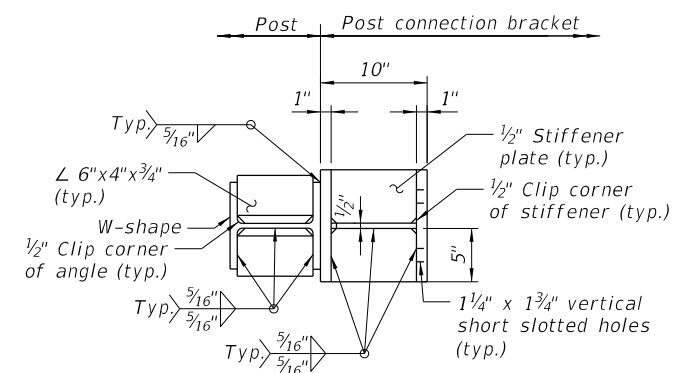
SECTION C-C



SECTION B-B



SECTION D-D



SECTION THRU POST AND POST CONNECTION BRACKET

(Template R not shown for clarity)

NOTE:

1. Template Plate and the NAW Anchor Rod Assembly details are shown for information only. These items are paid with the structure plans.

2 REVISED ENTIRE SHEET 6/10/2024



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PLOT DATE = 5/13/2024	DRAWN - BAH	REVISED -
	CHECKED - ECK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

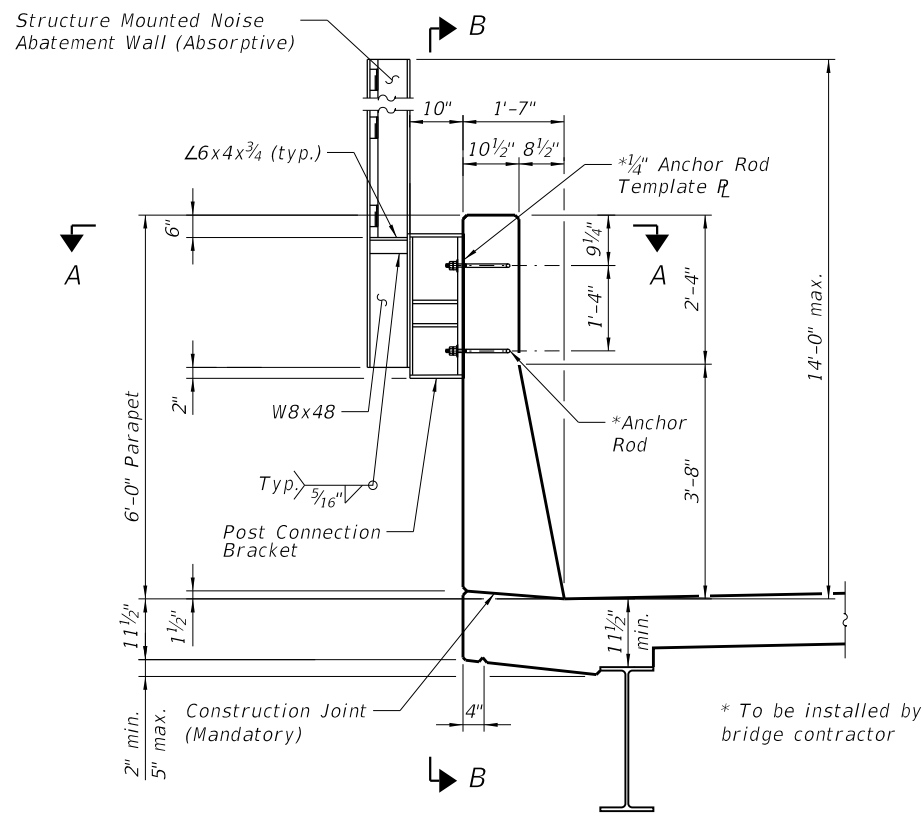
DETAILS I
STRUCTURE NO. 045-N1006

SHEET 4 OF 9 SHEETS

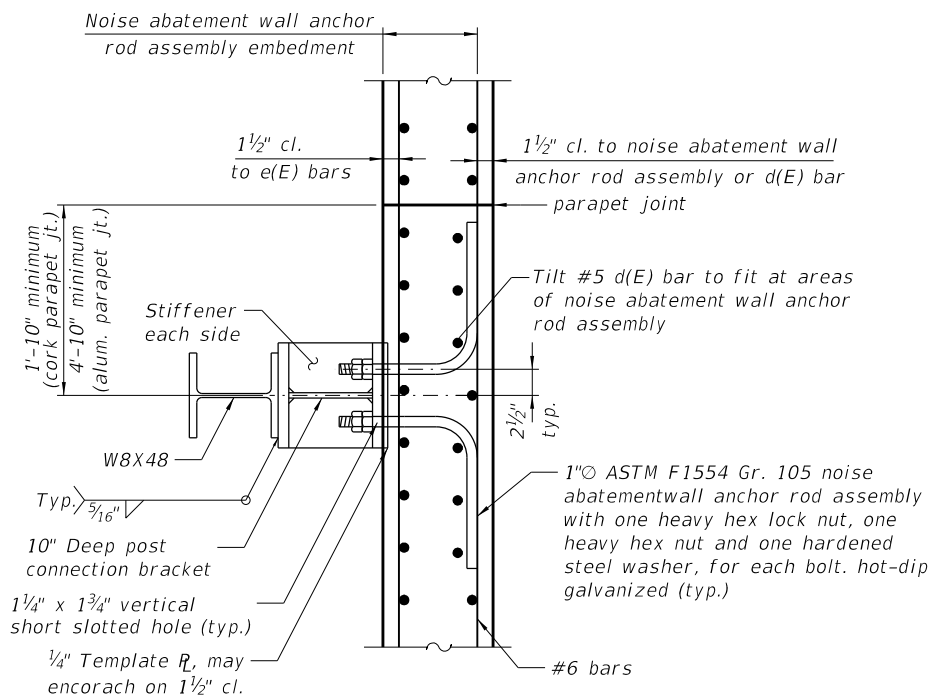
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345	FAP 345-23-BR	KANE	379	261
CONTRACT NO. 62U83				

ILLINOIS FED. AID PROJECT

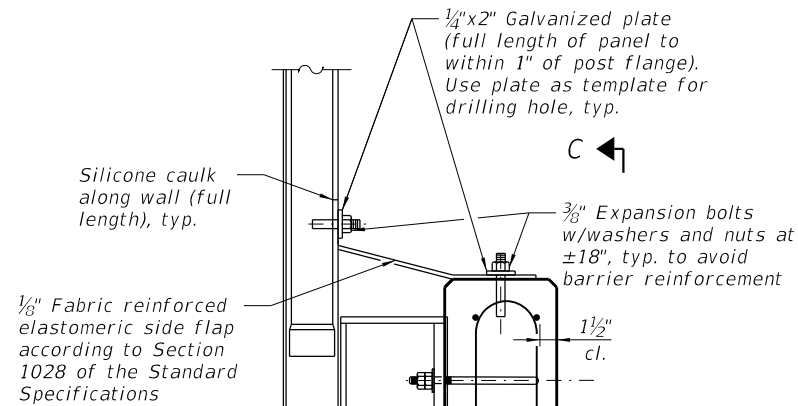
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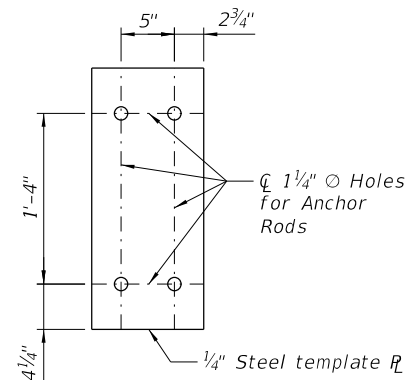
STRUCTURE MOUNTED NOISE ABATEMENT WALL



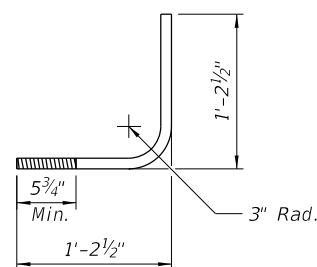
SECTION A-A



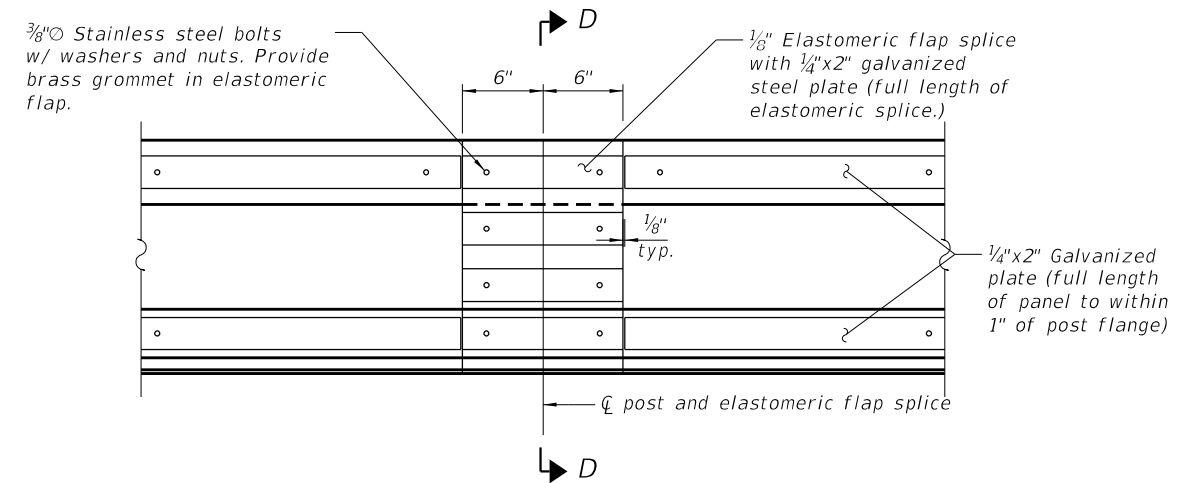
TYPICAL SECTION THRU DEBRIS SHIELD



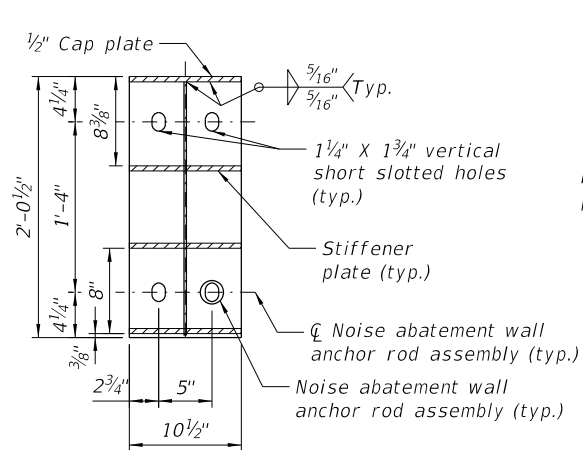
TEMPLATE PLATE FOR NOISE ABATEMENT WALL ANCHOR ROD ASSEMBLY



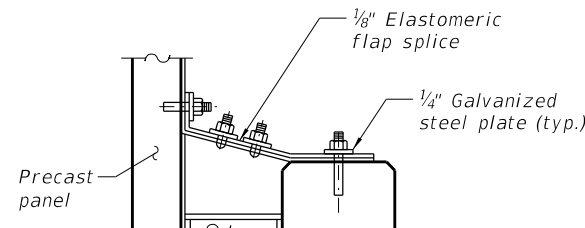
NOISE ABATEMENT WALL ANCHOR ROD ASSUMBLY



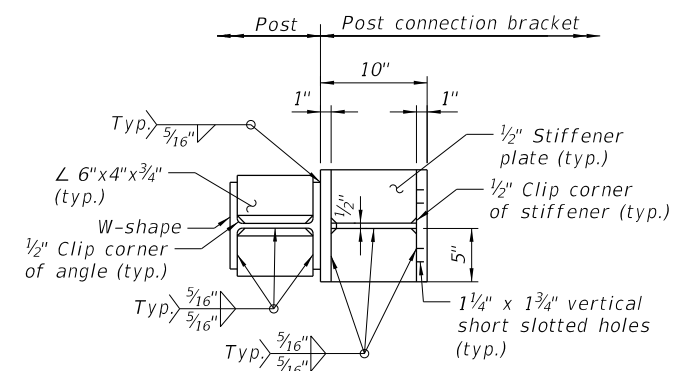
SECTION C-C



SECTION B-B



SECTION D-D



SECTION THRU POST AND POST CONNECTION BRACKET

(Template R not shown for clarity)

NOTE:

1. Template Plate and the NAW Anchor Rod Assembly details are shown for information only. These items are paid with the structure plans.

REVISED ENTIRE SHEET 6/10/2024

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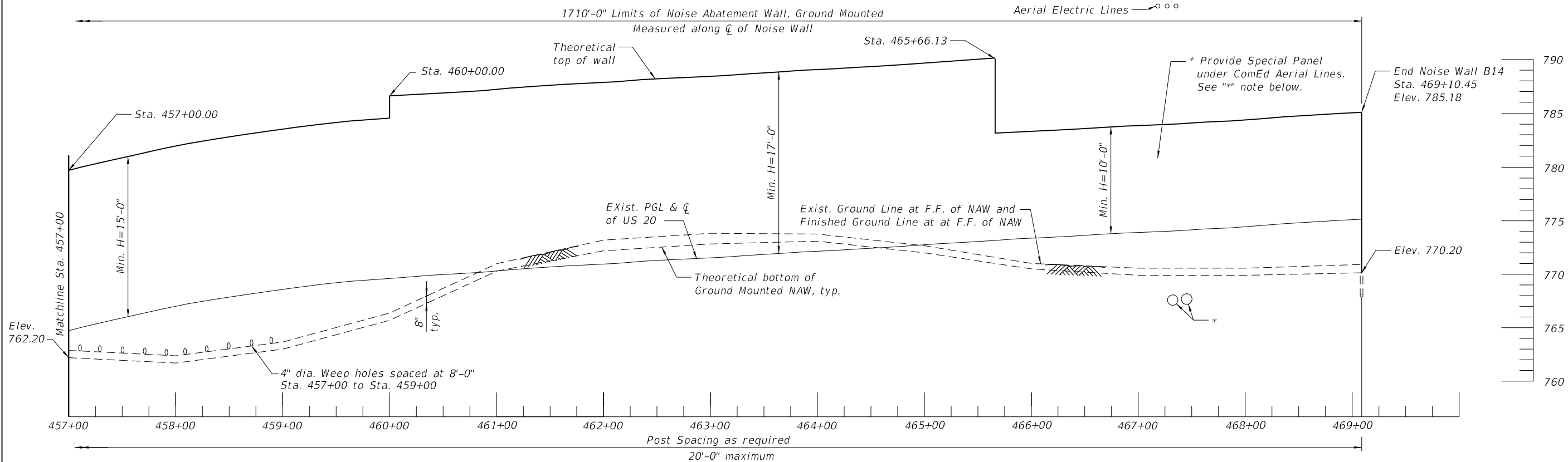
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PLOT DATE = 5/13/2024	DRAWN - BAH	REVISED -
	CHECKED - ECK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DETAILS I
STRUCTURE NO. 045-N1007

SHEET 5 OF 12 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	FAP 345-23-BR	KANE / COOK	379	271
CONTRACT NO. 62U83				
ILLINOIS FED. AID PROJECT				

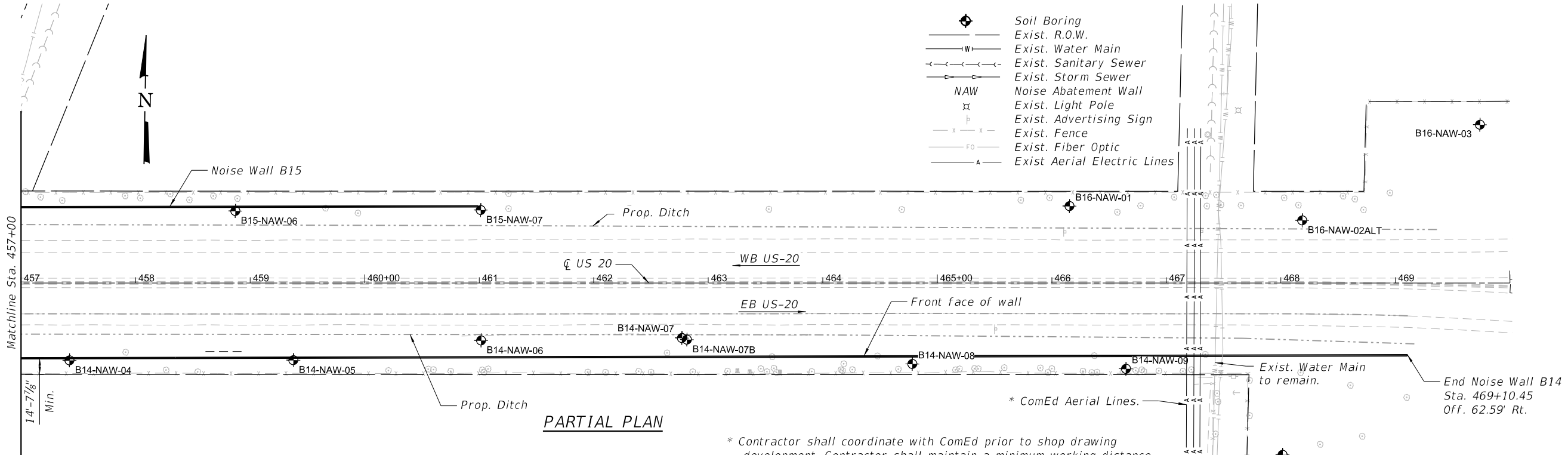


REFLECTED PARTIAL ELEVATION

*Exist. utility to remain. Depth of utility to be confirmed by the Contractor prior to starting work.

LEGEND

- ◆ Soil Boring
- W — Exist. R.O.W.
- W — Exist. Water Main
- S — Exist. Sanitary Sewer
- S — Exist. Storm Sewer
- NAW Noise Abatement Wall
- ⊗ Exist. Light Pole
- ⊕ Exist. Advertising Sign
- X — Exist. Fence
- FO — Exist. Fiber Optic
- A — Exist. Aerial Electric Lines



PARTIAL PLAN

* Contractor shall coordinate with ComEd prior to shop drawing development. Contractor shall maintain a minimum working distance from the aerial lines as directed by ComEd. Contractor may use 5-ft high wall panels to install NAW underneath ComEd electric aerial lines. Contractor's means and methods, including additional accommodations and equipment required to install the NAW under the electric lines shall be included in the cost of Noise Abatement Wall.

REVISED ENTIRE SHEET 6/10/2024

TranSmart
100 S. Wacker Drive Suite 400
Chicago, Illinois 60606

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CHECKED - JK	REVISED -	
PLOT SCALE = 100,0000' / in.	DRAWN - JK	REVISED -
PLOT DATE = 5/9/2024	CHECKED - ZC	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**GENERAL PLAN & ELEVATION II
STRUCTURE NO. 016-N1002**

SHEET 2 OF 9 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	FAP 345-23-BR	COOK/KANE	379	285
CONTRACT NO. 62U83				
ILLINOIS FED. AID PROJECT				

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GENERAL NOTES:

- Stations and Offsets are measured from ϕ US 20 to front face of the proposed noise wall.
- 4" ϕ weep hole shall be provided through wall panels at the ground level at a spacing of 8 ft as shown on the contract plans. Cost of weep holes included with Noise Abatement Wall, of the type specified.
- Type, size and spacing of posts, noise wall panels, drilled shaft and size embedment length, reinforcement details, lifting bars and wall limits including top and bottom of wall shall be determined by the Contractor and shall be designed to avoid conflicts with the existing facilities. Cost included with Noise Abatement Wall, of the type specified.
- The contractor shall review the maintenance of traffic plans. The Construction of Noise Abatement Wall may need to be sequenced to match the roadway sequence of construction. and the Contractor may not be able to construct the NAW in one continuous operation. Additional mobilization/demobilization required will not be measured for payment, but shall be included in the cost of Noise Abatement Wall, of the type specified.
- The Contractor shall verify locations of all existing utilities and structures and shall take all necessary precautions to perform the work in such a manner as to not damage existing utilities or structures, located near or beneath the Noise Abatement Wall. Any damage to existing utilities or structures shall be repaired at no cost to the Department.
- It is anticipated that temporary casing is required for each drilled shaft foundation due to soil condition. The temporary casing will not be measured separately for payment, and shall be included in the cost of Noise Abatement Wall, of the type specified.
- It shall be the Contractor's responsibility to field verify existing ground elevations at the locations of the proposed ground mounted noise abatement walls and compare to that shown on the plans. Adjustments to NAW heights as required to accommodate actual field conditions shall be made by the Contractor at no additional cost and as approved by the Engineer. Cost to comply with this requirement is included in the cost of Noise Abatement Wall, of the type specified.
- See special provisions for additional requirements.
- In addition to the special provisions, the panels shall be designed to be vertically supported between foundations such that the excavation beneath the panels does not require additional supports. When panels span a utility crossing, the maximum post spacing shall be used to maximize the horizontal clearance between the posts and the utility. The cost for this work shall be included in the cost of Noise Abatement Wall of the type specified.
- Theoretical Top of NAW Elev., Theoretical Bottom of NAW Elev., Existing Grade Elev. at front face of NAW, and Finished Grade Elev. at front face of NAW shall be taken as straight lines in the segments between each pair of stations shown in the Wall Elevation Information table on Sheet 1 of 9.

AESTHETIC FINISH GENERAL NOTES:

- Precast Concrete Noise Abatement Wall Random Ashlar Limestone Formliner Pattern.

The formliner used to create the random ashlar limestone pattern shall be of high quality and capable of withstanding anticipated concrete pour pressures without causing leakage or causing physical defects. The liner shall be made from high-strength elastomeric urethane material which shall not compress more than 0.02 feet when poured at a rate of 10 vertical feet per hour. The form release agents shall be non-staining, non-residual and non-reactive.

Precast Concrete Noise Abatement Wall Panels shall be constructed with a square cut random ashlar rusticated limestone surface with a maximum relief along each side as shown the details. The panel(s) height selected by the Fabricator should be compatible with Random Ashlar Limestone Formliner Pattern.

The maximum architectural aesthetic surface treatment thickness along one side cannot exceed $\frac{3}{4}$ inches. The relief, on each side of precast concrete panel, is permitted to vary from 0 to $\frac{3}{4}$ inches, but the total architectural relief thickness, on both sides of the precast concrete panel, must not be greater than $1\frac{1}{2}$ inches.

Angular distortion with regards to panel squareness, defines as the difference between the two diagonals, shall not exceed $\frac{1}{2}$ in. Panel dimensions shall be within $\frac{1}{4}$ in. all hardware embedded in panels shall be within $\frac{1}{4}$ in.

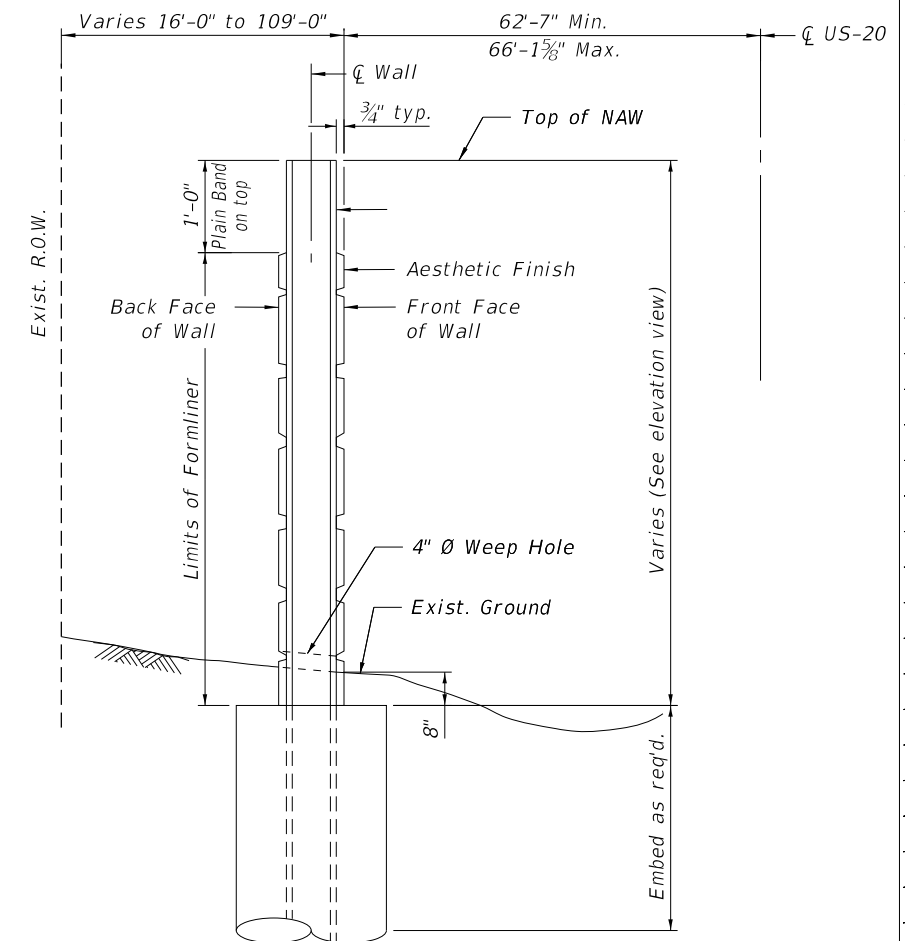
The Random Ashlar Limestone Pattern shall be continuous for the full height of a wall section except the top 1'-0", regardless of the number of panels in a wall section. All exposed concrete edges shall have a $\frac{3}{4}$ " chamfer except at horizontal edges between successive panels.
- The color of the wall panels and support posts is identified by Federal Standard 595-B color number 30372.
- Formliner treatment will not be measured for payment, but shall be included in the cost of Noise Abatement Wall, of the type specified.
- Aesthetic finish for the precast panels and staining for the panels and steel posts will not be measured separately for payment, and shall be included in the cost of Noise Abatement Wall, of the type specified. The stain color and aesthetic textured finish pattern shall be approved by the Roadside Development Unit prior to ordering materials or beginning fabrication. Submittal shall be made 30 days in advance prior to ordering materials.

NOISE REDUCTION DATA TABLE

Noise Wall Structure Number	Face	From Sta.	To Sta.	Noise Reduction Coefficient
016-N1002	Front Face	452+00.45	469+10.45	Reflective
	Back Face	452+00.45	469+10.45	Reflective

TOTAL BILL OF MATERIAL

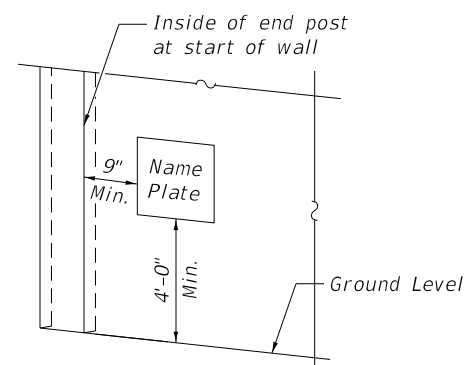
Item	Unit	Total
Noise Abatement Wall, Ground Mounted	Sq. Ft.	26,665
Name Plates	Each	1



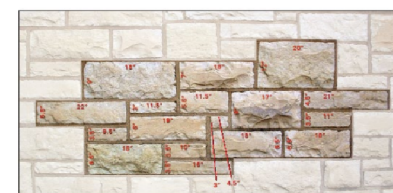
TYPICAL SECTION

Looking West

REVISED ENTIRE SHEET 6/10/2024



NAME PLATE LOCATION

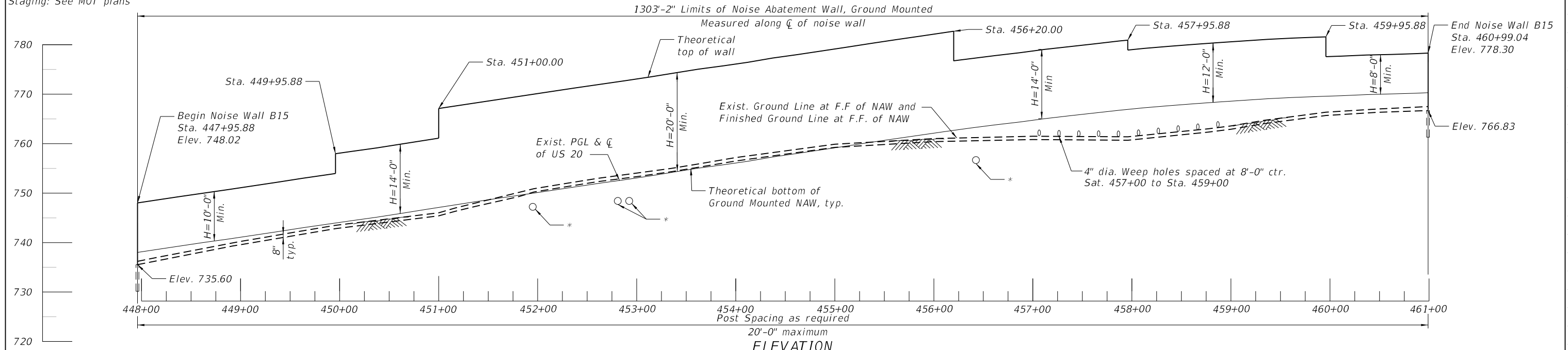


FORMLINER PATTERN DETAIL

NOISE ABATEMENT WALL
 BUILT 202_ BY
 STATE OF ILLINOIS
 F.A.P. RTE. 345
 SEC 345-23-BR
 FROM STA. 452+00.45 TO STA. 469+08.87
 STRUCTURE NO. 016-N1002

NAME PLATE
 See Std. 515001

Benchmark: Cut "Γ" on NW corner of Pier 1 on E side of St. Charles St. & 38 feet N of US 20. Elev. = 737.093
 Existing Structure: None
 Staging: See MOT plans



WALL ELEVATION INFORMATION

Station	Offset	Theo. Top of NAW Elev. (ft)	Theo. Bottom of NAW Elev. (ft)	Finished Grade at F.F. of NAW Elev. (ft)	Exist. P.G.L. Elev. at C of US 20 (ft)
447+95.88	63.98' Lt.	748.02	735.60	736.27	738.02
449+00.00	64.17' Lt.	751.09	739.58	740.25	741.09
449+95.88	64.35' Lt.	753.96	742.83	743.50	743.96
449+95.88	64.35' Lt.	757.96	742.83	743.50	743.96
451+00.00	64.54' Lt.	761.10	745.40	746.07	747.10
451+00.00	64.54' Lt.	767.10	745.40	746.07	747.10
451+95.88	64.72' Lt.	770.00	750.20	750.87	750.00
453+00.00	64.91' Lt.	773.07	753.33	754.00	753.07
454+00.00	65.09' Lt.	776.08	756.50	757.17	756.08
455+00.00	65.27' Lt.	779.14	759.20	759.87	759.14

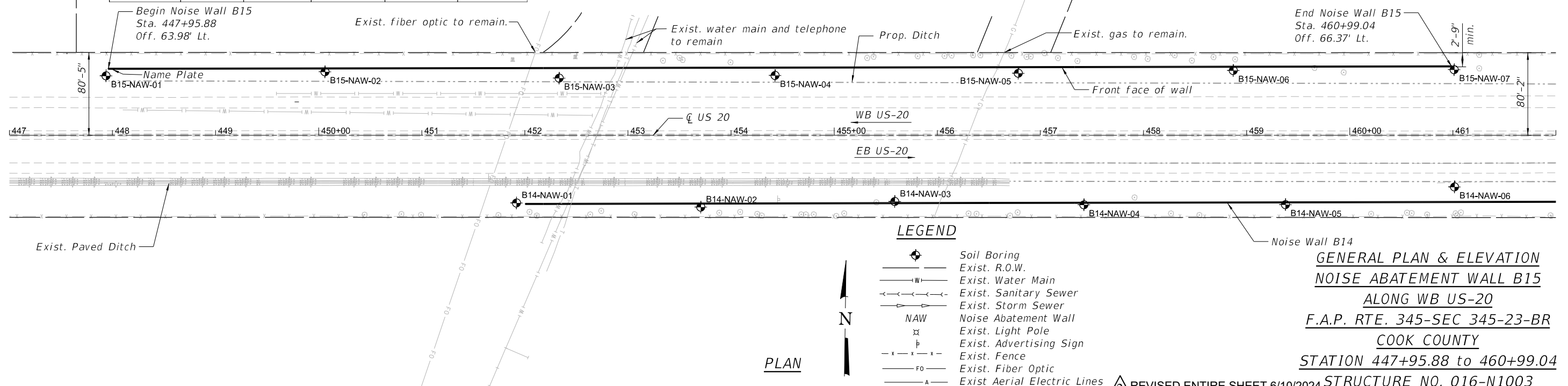
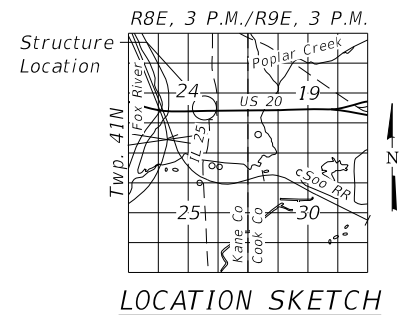
WALL ELEVATION INFORMATION

Station	Offset	Theo. Top of NAW Elev. (ft)	Theo. Bottom of NAW Elev. (ft)	Finished Grade at F.F. of NAW Elev. (ft)	Exist. P.G.L. Elev. at C of US 20 (ft)
456+20.00	65.49' Lt.	782.70	760.40	761.07	762.70
456+20.00	65.49' Lt.	776.70	760.40	761.07	762.70
457+00.00	65.64' Lt.	778.73	760.83	761.50	764.73
457+95.88	65.81' Lt.	780.92	760.70	761.37	766.92
457+95.88	65.81' Lt.	778.92	760.70	761.37	766.92
459+00.00	66.00' Lt.	780.59	762.90	763.57	768.59
459+95.88	66.18' Lt.	781.58	765.70	766.37	769.58
459+95.88	66.18' Lt.	777.58	765.70	766.37	769.58
460+99.04	66.37' Lt.	778.30	766.83	767.50	770.30

* Exist. utility to remain. Depth of utility to be confirmed by the Contractor prior to starting work.

INDEX OF SHEETS

- 1 - General Plan & Elevation
- 2 - Section & Details
- 3 - Soil Boring Logs I
- 4 - Soil Boring Logs II
- 5 - Soil Boring Logs III
- 6 - Soil Boring Logs IV



LEGEND

- Soil Boring
- Exist. R.O.W.
- Exist. Water Main
- Exist. Sanitary Sewer
- Exist. Storm Sewer
- Noise Abatement Wall
- Exist. Light Pole
- Exist. Advertising Sign
- Exist. Fence
- Exist. Fiber Optic
- Exist. Aerial Electric Lines

PLAN

GENERAL PLAN & ELEVATION
 NOISE ABATEMENT WALL B15
 ALONG WB US-20
 F.A.P. RTE. 345-SEC 345-23-BR
 COOK COUNTY
 STATION 447+95.88 to 460+99.04
 STRUCTURE NO. 016-N1003

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TranSmart
 100 S. Wacker Drive Suite 400
 Chicago, Illinois 60606

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PLOT SCALE = 100,0000' / in.	CHECKED - JK	REVISED -
PLOT DATE = 5/9/2024	DRAWN - JK	REVISED -
	CHECKED - ZC	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION
 STRUCTURE NO. 016-N1003

SHEET 1 OF 6 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	FAP 345-23-BR	COOK/KANE	379	293
CONTRACT NO. 62U83				
ILLINOIS FED. AID PROJECT				

GENERAL NOTES:

- Stations and Offsets are measured from CL US 20 to front face of the proposed noise wall.
- 4" \O weep hole shall be provided through wall panels at the ground level at a spacing of 8 ft as shown on the contract plans. Cost of weep holes included with Noise Abatement Wall, of the type specified.
- Type, size and spacing of posts, noise wall panels, drilled shaft and size embedment length, reinforcement details, lifting bars and wall limits including top and bottom of wall shall be determined by the Contractor and shall be designed to avoid conflicts with the existing facilities. Cost included with Noise Abatement Wall, of the type specified.
- The contractor shall review the maintenance of traffic plans. The Construction of Noise Abatement Wall may need to be sequenced to match the roadway sequence of construction and the Contractor may not be able to construct the NAW in one continuous operation. Additional mobilization/demobilization required will not be measured for payment, but shall be included in the cost of Noise Abatement Wall, of the type specified.
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- In addition to the special provisions, the panels shall be designed to be vertically supported between foundations such that the excavation beneath the panels does not require additional supports. When panels span a utility crossing, the maximum post spacing shall be used to maximize the horizontal clearance between the posts and the utility. The cost for this work shall be included in the cost of Noise Abatement Wall of the type specified.
- Theoretical Top of NAW Elev., Theoretical Bottom of NAW Elev., Existing Grade Elev. at front face of NAW, and Finished Grade Elev. at front face of NAW shall be taken as straight lines in the segments between each pair of stations shown in the Wall Elevation Information table on Sheet 1 of 6.

AESTHETIC FINISH GENERAL NOTES:

- Precast Concrete Noise Abatement Wall Random Ashlar Limestone Formliner Pattern.

The formliner used to create the random ashlar limestone pattern shall be of high quality and capable of withstanding anticipated concrete pour pressures without causing leakage or causing physical defects. The liner shall be made from high-strength elastomeric urethane material which shall not compress more than 0.02 feet when poured at a rate of 10 vertical feet per hour. The form release agents shall be non-staining, non-residual and non-reactive.

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- The color of the wall panels and support posts is identified by Federal Standard 595-B color number 30372.
- Formliner treatment will not be measured for payment, but shall be included in the cost of Noise Abatement Wall, of the type specified.
- Aesthetic finish for the precast panels and staining for the panels and steel posts will not be measured separately for payment, and shall be included in the cost of Noise Abatement Wall, of the type specified. The stain color and aesthetic textured finish pattern shall be approved by the Roadside Development Unit prior to ordering materials or beginning fabrication. Submittal shall be made 30 days in advance prior to ordering materials.

DESIGN SPECIFICATIONS

2020 AASHTO LRFD Bridge Design Specifications, 9th Edition

DESIGN STRESSES

FIELD UNITS

$f'_c = 4,000$ psi
 $f_y = 60,000$ psi (Reinforcement)
 $f_y = 50,000$ psi (M270 Grade 50, posts)
 $f_y = 36,000$ psi (M270 Grade 36, all other structural steel)

PRECAST UNITS

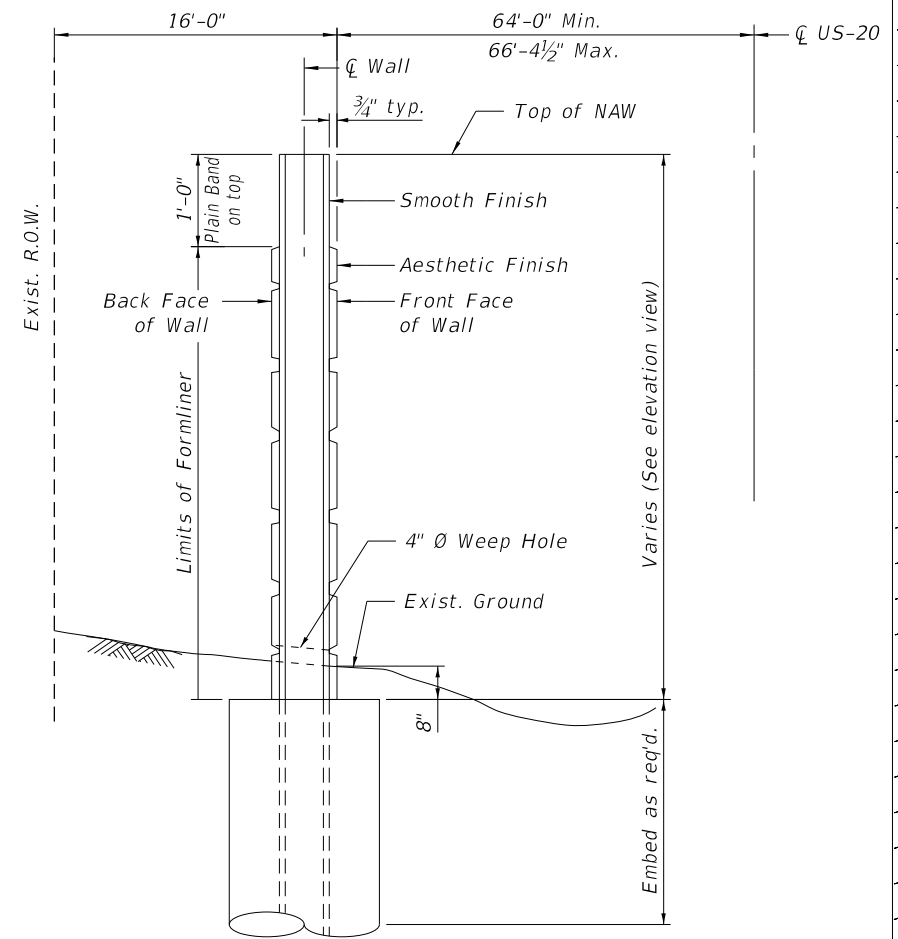
$f'_c = 4,500$ psi
 $f_y = 60,000$ psi (Reinforcement)
 $f_y = 65,000$ psi (Welded Wire Reinforcement)

DESIGN LOADING

Strength III or V Wind: 35 psf
 Service I Wind: 15 psf

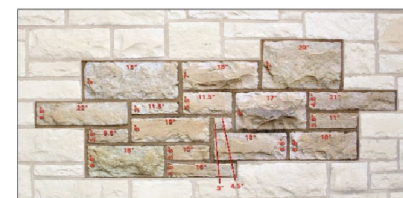
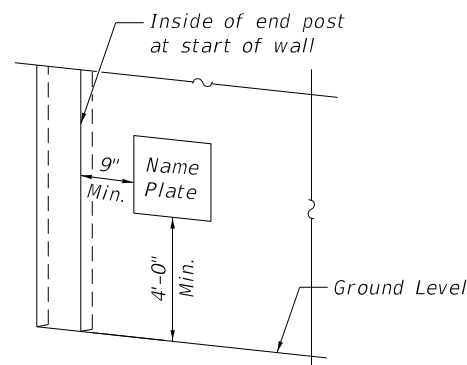
TOTAL BILL OF MATERIAL

Item	Unit	Total
Noise Abatement Wall, Ground Mounted	Sq. Ft.	22,398
Name Plates	Each	1



NOISE REDUCTION DATA TABLE

Noise Wall Structure Number	Face	From Sta.	To Sta.	Noise Reduction Coefficient
016-N1003	Front Face	447+95.88	460+99.04	Reflective
	Back Face	447+95.88	460+99.04	Reflective



NOISE ABATEMENT WALL
 BUILT 202_ BY
 STATE OF ILLINOIS
 F.A.P. RTE. 345
 SEC 345-23-BR
 FROM STA. 447+95.88 TO STA. 460+99.04
 STRUCTURE NO. 016-N1003

NAME PLATE
 See Std. 515001

NAME PLATE LOCATION

FORMLINER PATTERN DETAIL

TYPICAL SECTION

Looking East

REVISOR: [Symbol] REVISED ENTIRE SHEET 6/10/2024