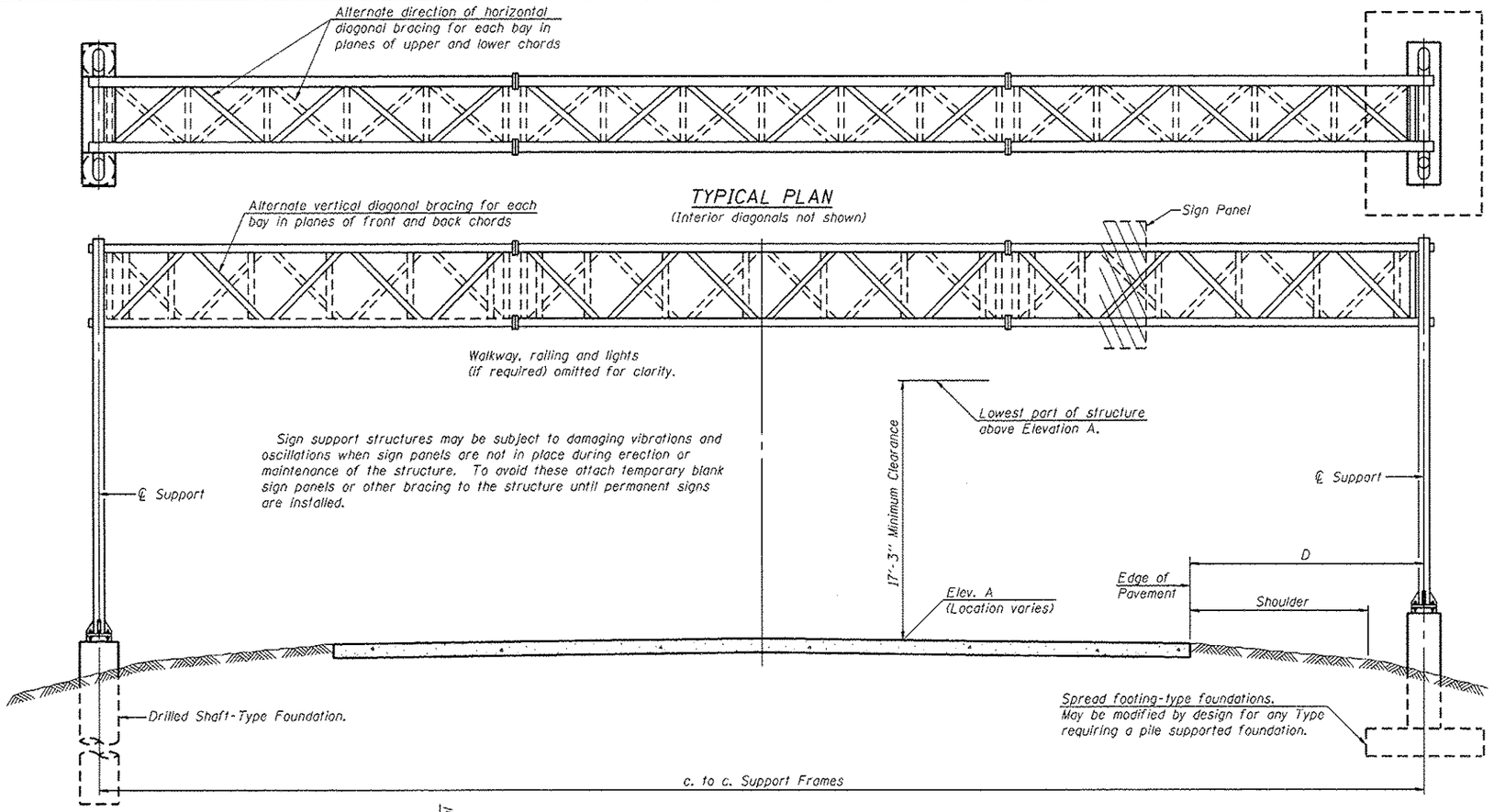
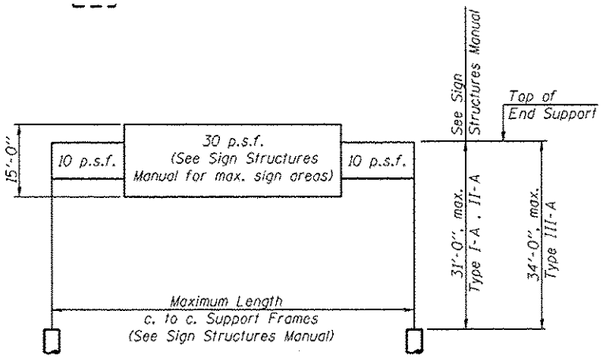


TYPICAL PLAN

(Interior diagonals not shown)



DESIGN WIND LOADING DIAGRAM

Parameters shown are basis for I.D.O.T. Standards and Sign Manual Tables. Installations not within dimensional limits shown require special analysis for all components.

TYPICAL ELEVATION

(Looking at Face of Signs**)

Elev. A = Elevation at point of minimum clearance to sign, walkway support or truss.

Structure Number	Station	Design Truss Type	c. to c. Supports	Elev. A	Dim. D	Height of Tallest Sign	Total Sign Area
ISO221290R004.9	124+30 G1	I-A	54'-0"	744.12	17'-0"	11'-6"	333.8
ISO221290R005.1	135+99 G1	I-A	56'-4 3/8"	763.33	11'-8 3/8"	11'-6"	333.8

** Looking upstation for structures with signs both sides.

* If M270 Gr. 50W (M222) steel is proposed, chemistry for plate to be used shall first be approved by the Engineer as suitable for galvanizing and welding.

GENERAL NOTES

DESIGN: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals. ("AASHTO Specifications")

CONSTRUCTION: Current (at time of letting) Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, Supplemental Specifications and Special Provisions. ("Standard Specifications")

LOADING: 90 M.P.H. WIND VELOCITY

WALKWAY LOADING: Dead load plus 500 lbs. concentrated live load.

DESIGN STRESSES:
Field Units
f'_c = 3,500 p.s.i.
f_y = 60,000 p.s.i. (reinforcement)

WELDING: All welds to be continuous unless otherwise shown. All welding to be done in accordance with current AWS D1.1 and D1.2 Structural Welding Codes (Steel and Aluminum) and the Standard Specifications.

MATERIALS: Aluminum Alloys as shown throughout plans. All Structural Steel Pipe shall be ASTM A53 Grade B or A500 Grade B or C. If A500 pipe is substituted for A53, then the outside diameter shall be as detailed and wall thickness greater than or equal to A53. All Structural Steel Plates and Shapes shall conform to AASHTO M270 Gr. 36, Gr. 50 or Gr. 50W*. Stainless steel for shims, sleeves and handhole covers shall be ASTM A240, Type 302 or 304, or another alloy suitable for exterior exposure and acceptable to the Engineer.
The steel pipe and stiffening ribs at the base plate for the column shall have a minimum longitudinal Charpy V-Notch (CVN) energy of 15 lb.-ft. at 40° F. (Zone 2) before galvanizing.

FASTENERS FOR ALUMINUM TRUSSES: All bolts noted as "high strength" must satisfy the requirements of AASHTO M164 (ASTM A325), or approved alternate, and must have matching lock nuts. Threaded studs for splices (if Members interfere) must satisfy the requirements of ASTM A449, ASTM A193, Grade B7, or approved alternate, and must have matching lock nuts. Bolts and lock nuts not required to be high strength must satisfy the requirements of ASTM A307. All bolts and lock nuts must be hot dip galvanized per AASHTO M232. The lock nuts must have nylon or steel inserts. A stainless steel flat washer conforming to ASTM A240 Type 302 or 304, is required under both head and nut or under both nuts where threaded studs are used. High strength bolt installation shall conform to Article 505.04 (f) (2)d of the IDOT Standard Specifications for Road and Bridge Construction. Rotational capacity ("ROCAP") testing of bolts will not be required.

U-BOLTS AND EYEBOLTS: U-Bolts and Eyebolts must be produced from ASTM A276 Type 304, 304L, 316 or 316L, Condition A, cold finished stainless steel, or an equivalent material acceptable to the Engineer. All nuts for U-Bolts and Eyebolts must be lock nuts equivalent to ASTM A307 with nylon or steel inserts and hot dip galvanized per AASHTO M232. A stainless steel flat washer conforming to ASTM A240, Type 302 or 304, is required under each U-Bolt and Eyebolt lock nut.

GALVANIZING: All Steel Grating, Plates, Shapes and Pipe shall be Hot Dip Galvanized after fabrication in accordance with AASHTO M111. Painting is not permitted.

ANCHOR RODS: Shall conform to ASTM F1554 Gr. 105.

CONCRETE SURFACES: All concrete surfaces above an elevation 6" below the lowest final ground line at each foundation shall be cleaned and coated with Concrete Sealer in accordance with the Standard Specifications.

REINFORCEMENT BARS: Reinforcement Bars designated (E) shall be epoxy coated in accordance with the Standard Specifications.

FOUNDATIONS: The contract unit price for Concrete Foundations and Drilled Shaft Concrete Foundations shall include reinforcement bars complete in place.

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
OVERHEAD SIGN STRUCTURE SPAN TYPE I-A	Foot	110
OVERHEAD SIGN STRUCTURE SPAN TYPE II-A	Foot	
OVERHEAD SIGN STRUCTURE SPAN TYPE III-A	Foot	
OVERHEAD SIGN STRUCTURE WALKWAY TYPE A	Foot	41
CONCRETE FOUNDATIONS	Cu. Yds.	
DRILLED SHAFT CONCRETE FOUNDATIONS	Cu. Yds.	11.3

OS-A-1 8-21-13

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		DRAWN - XXX	REVISED -
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CH2MHILL	PLOT DATE = 11/18/2014	DATE - 07/07/2014	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURES – GENERAL PLAN & ELEVATION – ALUMINUM TRUSS & STEEL SUPPORTS

SCALE: NONE | SHEET NO. 3 OF 12 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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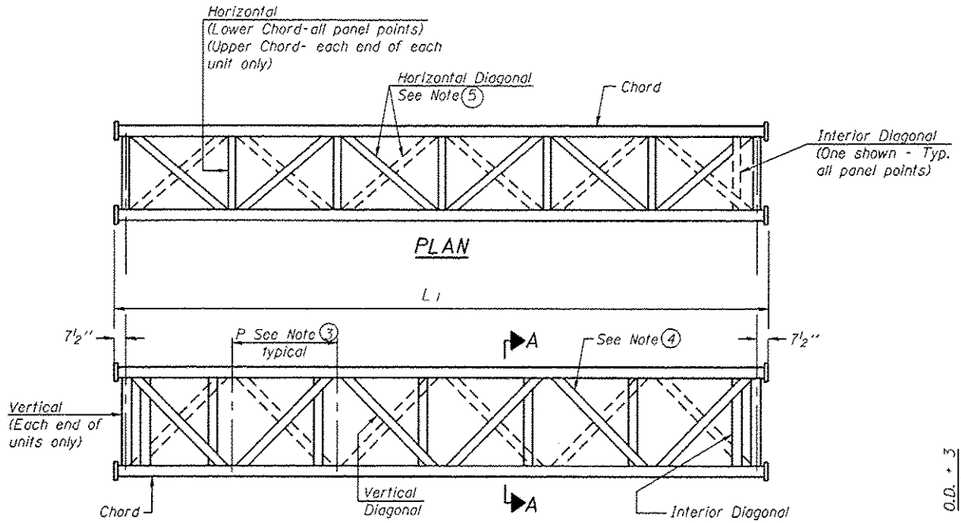
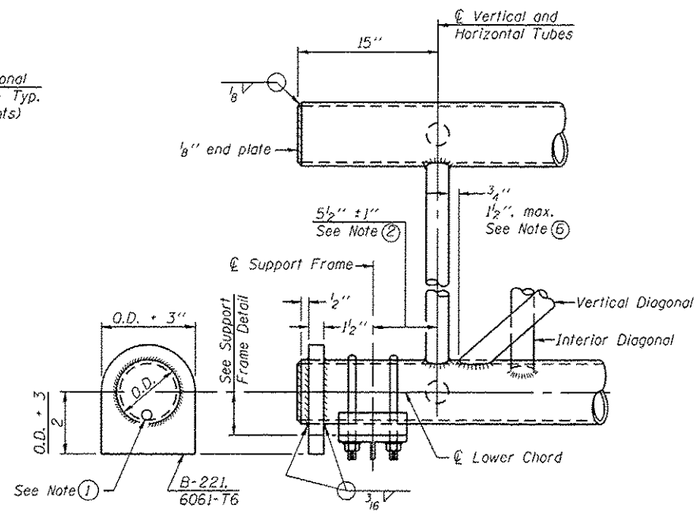
	DRAWING NO. SSD-3	CONTRACT NO. 60Y95		
	ILLINOIS FED. AID PROJECT			

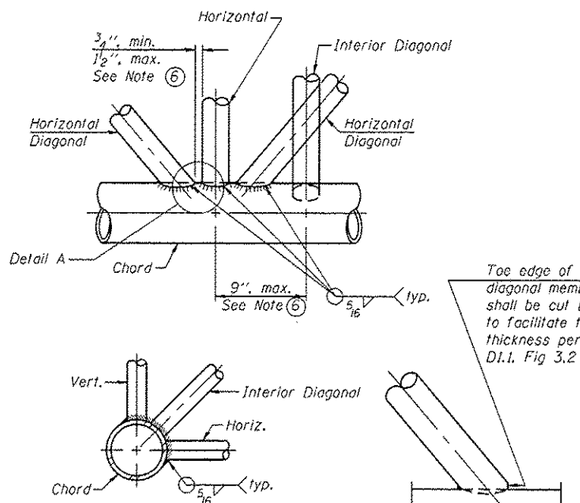


ELEVATION
TYPICAL INTERIOR UNIT

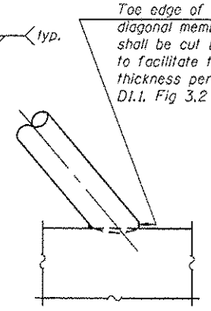
Even number of panels/interior unit required.



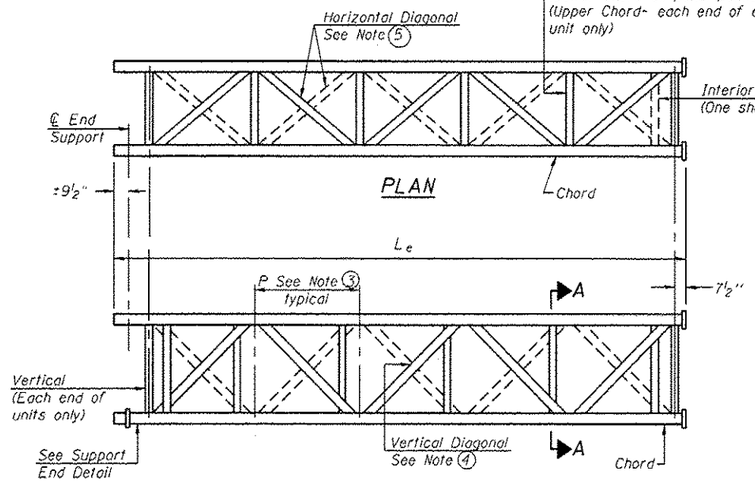
SUPPORT END DETAIL FOR EXTERIOR UNIT



TYPICAL JOINT DETAILS

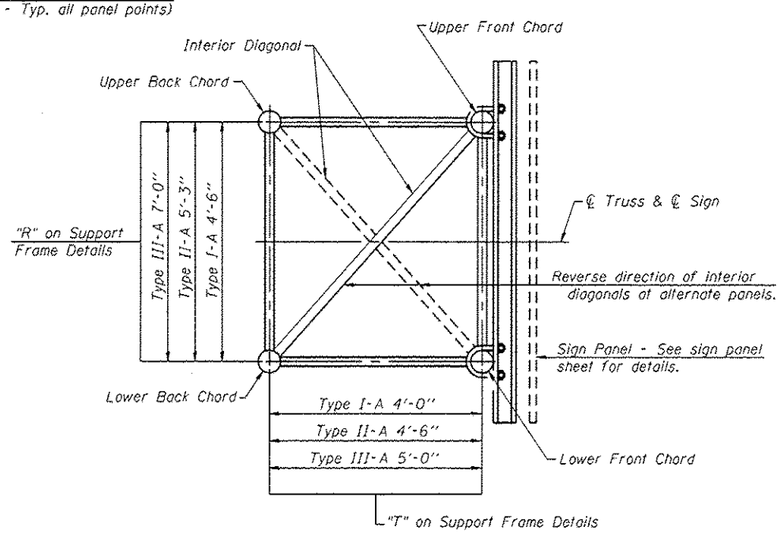


DETAIL A



ELEVATION
TYPICAL EXTERIOR UNIT

Even or odd number of panels/exterior units allowed.



SECTION A-A

1. Contractor may alternatively use standard aluminum drive-fit cap to close end. ½" ϕ drain hole in end plate/drive-fit cap. (Typ. at ends of all chords)
2. 5½" end dimension may vary by ±1" to provide uniform panel spacing (P).
3. Panel spacing (P) shall be uniform for entire truss and between 4'-0" and 5'-0" for Type I-A or 4'-0" and 5'-6" for Types II-A and III-A.
4. Vertical Diagonals in front and back face shall alternate.
5. Hidden lines show wind bracing alternates direction between planes of top and bottom chords.
6. All diagonals shall be detailed for minimum offset from the panel point based on the following: Offset shall be such as to provide a ¾" minimum to 1½" maximum clearance between any diagonal and any horizontal or vertical member, and to provide clearance for U-bolt connections of signs or walkway brackets.

OS-A-2 6-1-12

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CH2MHILL		DRAWN - IDOT	REVISED -
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	PLOT DATE = 11/18/2014	DATE - 07/07/2014	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

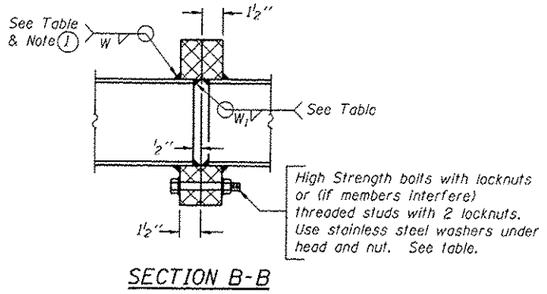
OVERHEAD SIGN STRUCTURES – ALUMINUM TRUSS
DETAILS FOR TRUSS TYPES I-A, II-A AND III-A

SCALE: NONE | SHEET NO. 4 OF 12 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	302
	DRAWING NO. SSD-4	CONTRACT NO. 60Y95		
	ILLINOIS FED. AID PROJECT			

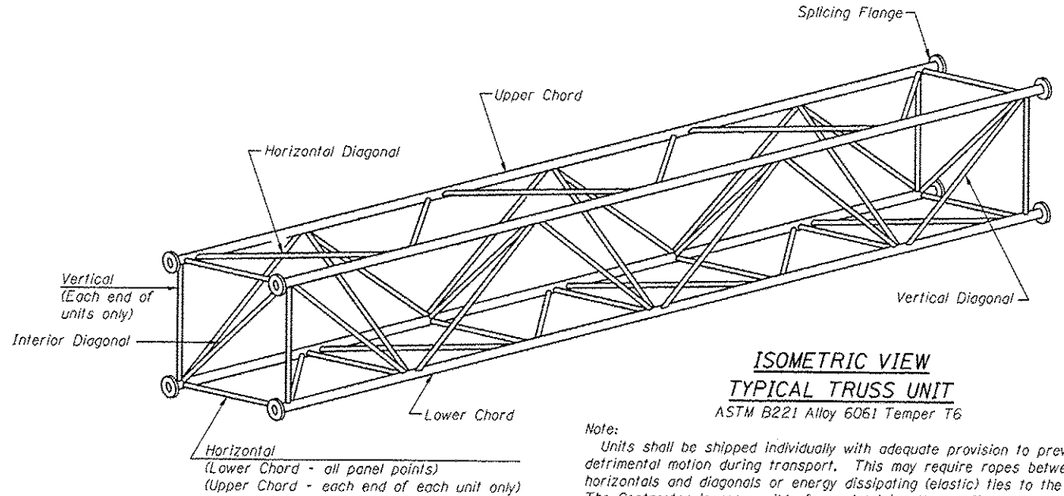
TRUSS UNIT TABLE

Structure Number	Station	Design Truss Type	Exterior Units (2)			Interior Unit				Upper & Lower Chord		Verticals: Horizontals: Vertical, Horizontal, and Interior Diagonals		Camber at Midspan	Splicing Flange					
			No. Panels per Unit	Unit Lgth.(L_e)	Panel Lgth.(P)	No. Req'd.	No. Panels per Unit	Unit Lgth.(L_i)	Panel Lgth.(P)	O.D.	Wall	O.D.	Wall		Bolts		Weld Sizes		A	B
															No./Splice	Dia.	W	W_1		
IS0221290R004.9	124+30 RAMP G1	I-A	6	27'-10½"	4'-4"	0	-	-	-	5"	¼"	2½"	¼"	⅝"	6	⅞"	5/16"	¼"	8-¾"	11-¾"
IS0221290R005.1	135+99 RAMP G1	I-A	6	29'-0"	4'-6¼"	0	-	-	-	5"	¼"	2½"	¼"	¾"	6	⅞"	5/16"	¼"	8¾"	11¾"



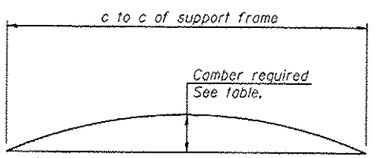
SECTION B-B

(1) Splicing Flanges shall be attached to each truss unit with the truss shop assembled to camber shown. Truss units shall be in proper alignment and flange surfaces shall be shop bolted into full contact before welding. Sufficient external welds or tacks shall be made to secure flanges until remaining welds are made after disassembly. Adjacent flanges shall be "match marked" to insure proper field assembly.



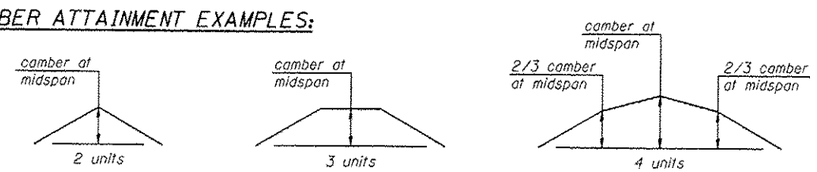
ISOMETRIC VIEW
TYPICAL TRUSS UNIT
ASTM B221 Alloy 6061 Temper T6

Note:
Units shall be shipped individually with adequate provision to prevent detrimental motion during transport. This may require ropes between horizontals and diagonals or energy dissipating (elastic) ties to the vehicle. The Contractor is responsible for maintaining the configuration and protection of the units.

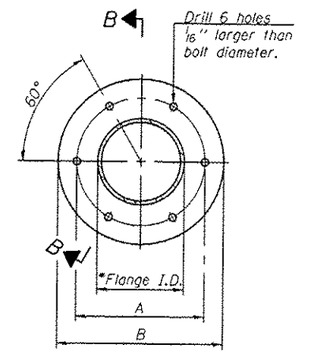


CAMBER DIAGRAM
Camber curve shown is theoretical. Actual camber attained by slope changes at splices between units.

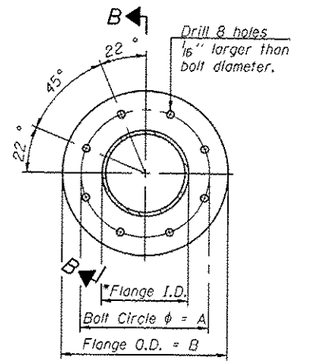
CAMBER ATTAINMENT EXAMPLES:



Camber shown is for fabrication only, measured with truss fully supported. (No-load condition)



TRUSS TYPES I-A, II-A, & III-A



TRUSS TYPES II-A & III-A

SPLICING FLANGES
ASTM B221, Alloy 6061-T6
or ASTM B209, Alloy 6061-T651
*To fit O.D. of Chord with maximum gap of 1/16".

OS4-A-2 6-1-12

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		DRAWN - XXX	REVISED -
	PLOT SCALE = 100.0001 ' / in.	CHECKED - SML, BCG	REVISED -
	PLOT DATE = 11/18/2014	DATE - 07/07/2014	REVISED -

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURES – ALUMINUM TRUSS DETAILS FOR TRUSS TYPES I-A, II-A AND III-A

SCALE: NONE | SHEET NO. 5 OF 12 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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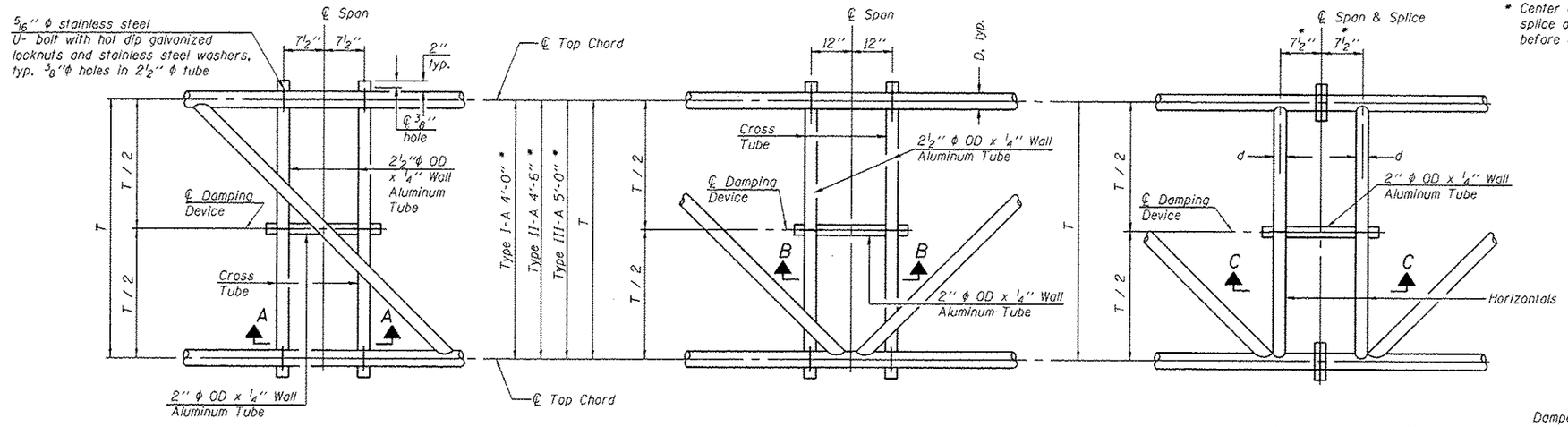
	ILLINOIS FED. AID PROJECT			



* Center of horizontal to center of splice dimension may vary. Verify before drilling holes in mounting tube.

PLAN DETAIL "A"
℄ Span between Panel Points

PLAN DETAIL "B"
℄ Span at Panel Point

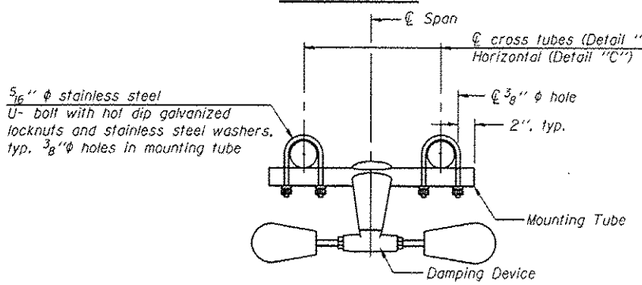
PLAN DETAIL "C"
℄ Span at ℄ Chord Splice

NOTES

Damper: One damper per truss. (31 lbs. minimum Stockbridge-Type Aluminum - 29" minimum between ends of weights) Cost included in Overhead Sign Structure...

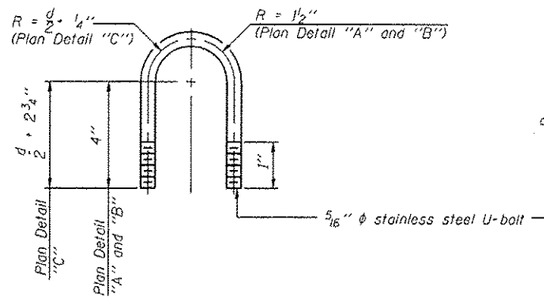
Materials: Materials: Aluminum tubes shall be ASTM B221 alloy 6061 temper T6. Cost included in Overhead Sign Structure...

SECTION A-A



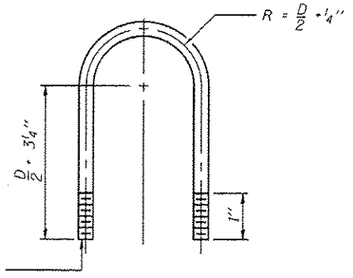
TRUSS DAMPING DEVICE CONNECTION DETAIL
(Typical)

SECTION B-B

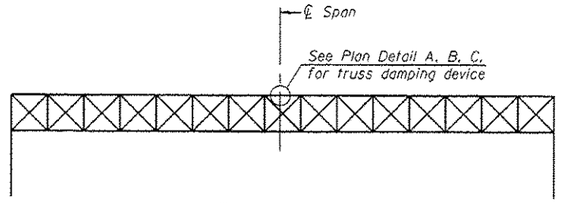


DAMPING DEVICE MOUNTING TUBE U-BOLT DETAIL
(Typical)

SECTION C-C



TOP CHORD TO CROSS TUBE U-BOLT DETAIL
(Typical - Detail "A" and "B")



ELEVATION
Aluminum Overhead Sign Truss

OS-A-D 6-1-12

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CH2MHILL		DRAWN - IDOT	REVISED -
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	PLOT DATE = 11/18/2014	DATE - 07/07/2014	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURE
DAMPING DEVICE

SCALE: NONE | SHEET NO. 6 OF 12 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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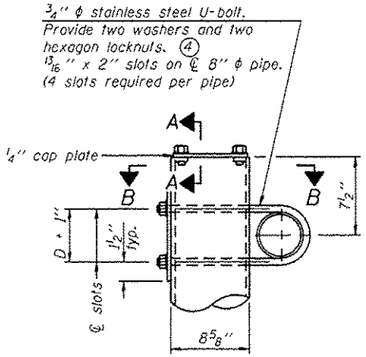
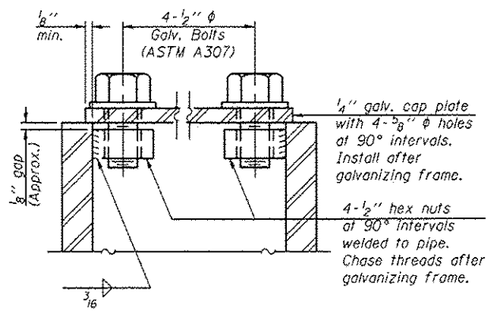
	ILLINOIS FED. AID PROJECT			

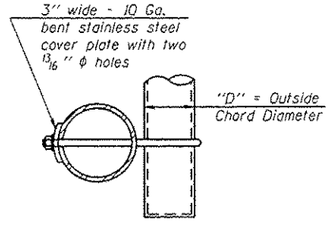


DETAIL A

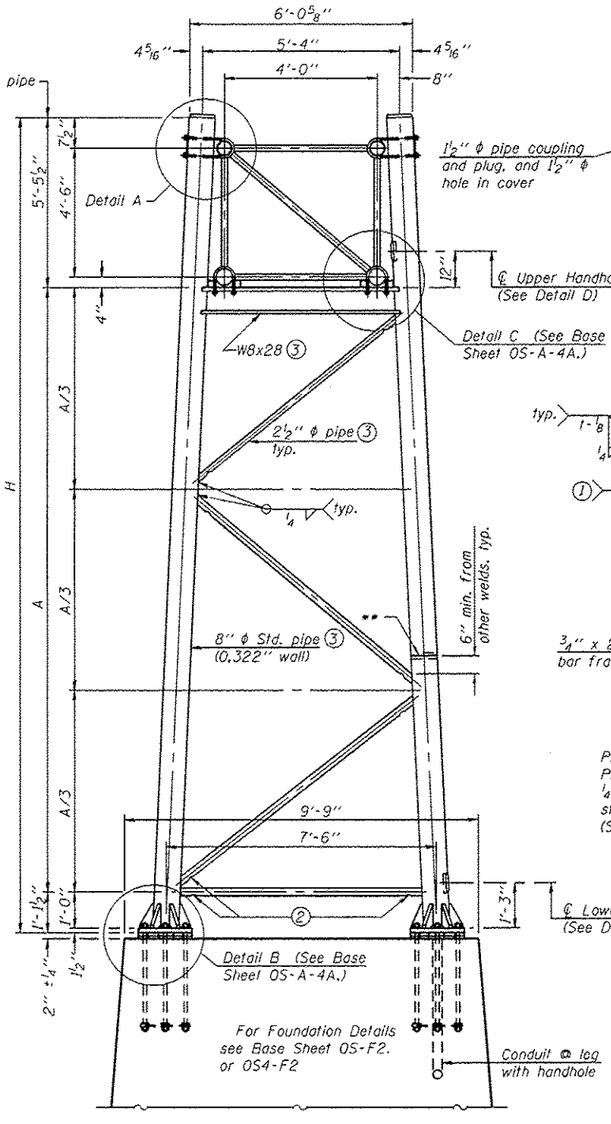


SECTION A-A

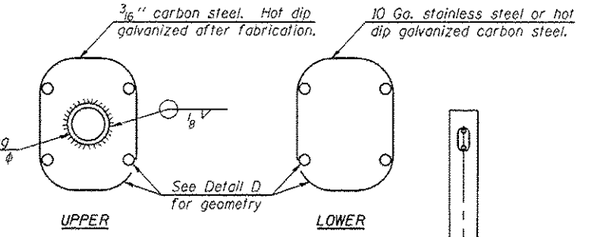
As an alternate to bolts, may use galvanized drive-fit caps installed after galvanizing frame.



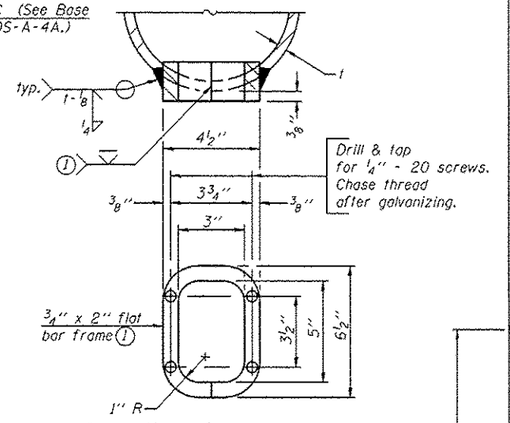
SECTION B-B



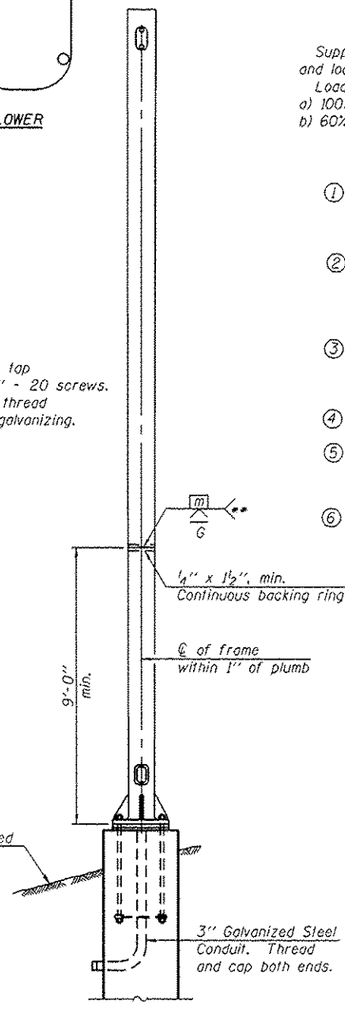
SIDE ELEVATION



HANDHOLE COVERS



DETAIL D



END ELEVATION

Support Design Loads: See Base Sheet OS-A-1 for design and loading criteria.
Load combinations checked include deadload plus:
a) 100% wind normal to sign, 20% parallel to sign
b) 60% wind normal to sign, 30% parallel to sign

(1) In lieu of fabricated handhole frame as shown, may cut from 2" plate (rolling direction vertical). All cut faces to be ground to ANSI Roughness of 500 μin or less.

(2) Galvanizing vent holes of adequate size shall be provided on underside at each end of bracing pipes. Alternately, holes may be provided in wall of pipe column. All vent holes shall be drilled and de-burred, typ.

(3) Steel pipe, plate, carbon steel handhole covers and rolled sections shall be hot dip galvanized after fabrication. Painting is not permitted. See Base Sheet OS-A-1.

(4) See General Notes for fasteners.

(5) Dimensions shown are based on selection criteria in the Sign Structures Manual. Nonstandard applications must have dimensions verified or amended as appropriate.

(6) "H" based on 15'-0" or actual sign height, whichever is greater.

8" ϕ PIPE TRUSS SUPPORT FRAME

** One butt welded joint is allowed only on one post per support frame. If used, weld procedure must be pre-approved by Engineer and joint shall receive 100% RT or UT (tension criteria) at Contractor's expense.

Structure Number	Station	Support Left	Support Right	H (6)	A
IS0221290R004.9	124+30 G1	X		28.09'	21.51'
			X	26.33'	19.75'
IS0221290R005.1	135+99 G1	X		28.40'	21.82'
			X	25.21'	18.63'

OS-A-4 6-1-12

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CH2MHILL		DRAWN - XXX	REVISED -
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	PLOT DATE = 11/18/2014	DATE - 07/07/2014	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURES
SUPPORT FRAME FOR TYPE I-A ALUMINUM TRUSS

SCALE: NONE | SHEET NO. 7 OF 12 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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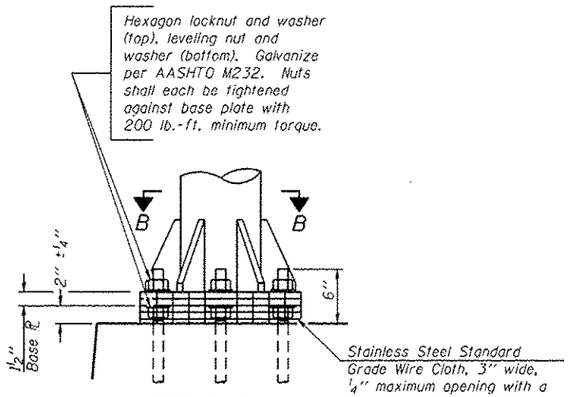
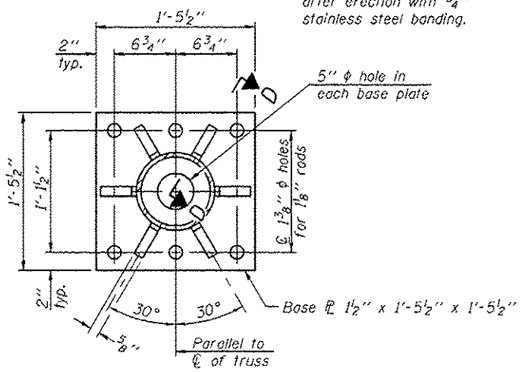
	ILLINOIS FED. AID PROJECT			

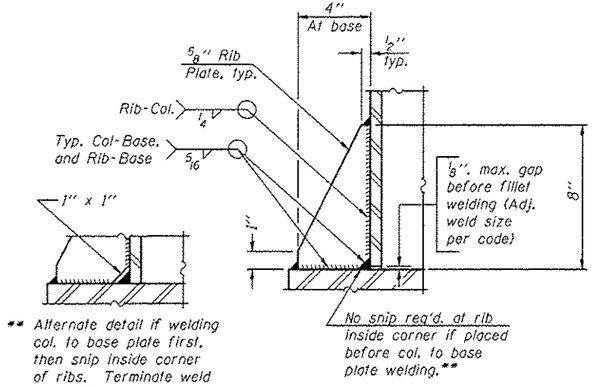


DETAIL B

Ribs shall be cut to fit slope of pipe.

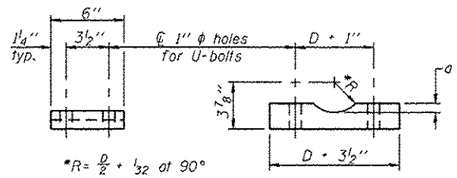


SECTION B-B



** Alternate detail if welding col. to base plate first, then snip inside corner of ribs. Terminate weld on rib 1/4" from snip.

SECTION D-D



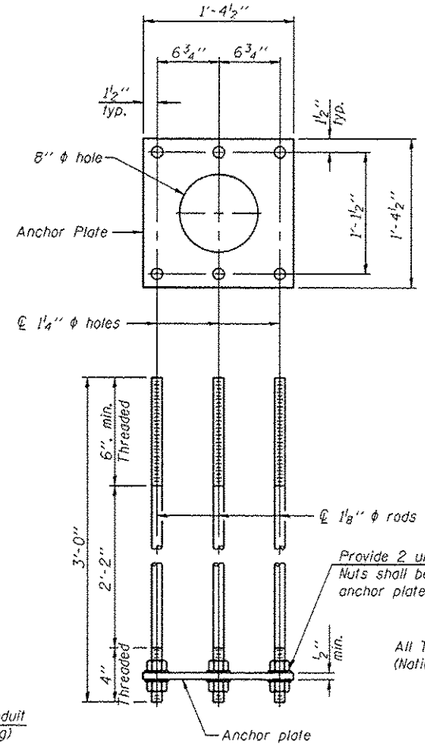
*R = D/2 + 1/32 at 90°

D = Outside Diameter of Chord.

SADDLE SHIM DETAIL

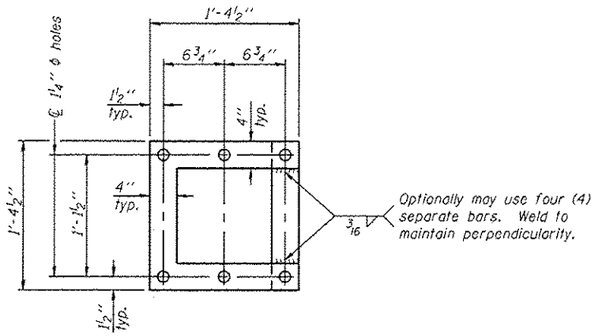
ASTM B26 Alloy 356-F
or
ASTM B209 Alloy 6061-T651
(4 required per sign truss)

Truss Chord Nominal Dia.	a
5"	3/4"
5 1/2"	13/16"
6"	7/8"
6 1/2"	15/16"

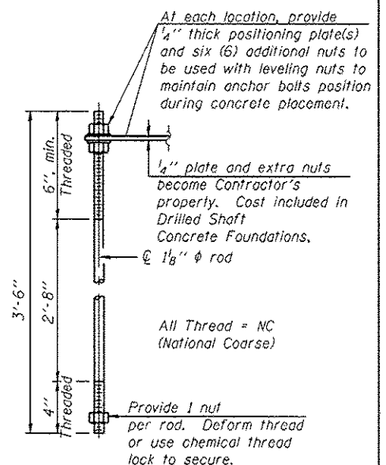


ANCHOR ROD DETAIL

Spread Footing Foundation



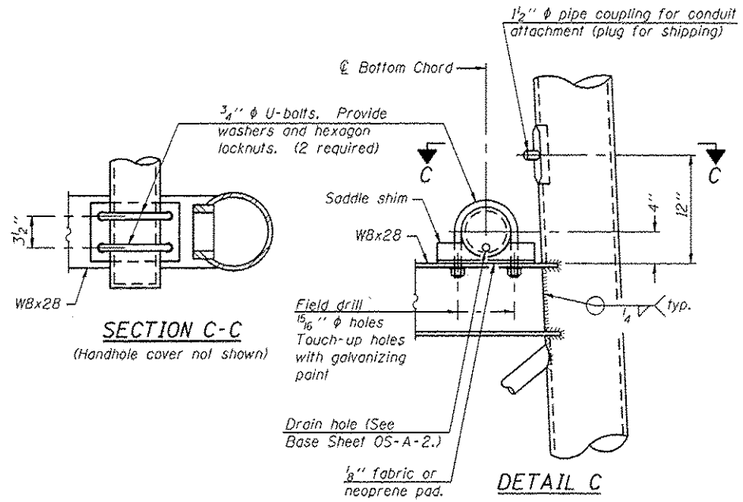
POSITIONING PLATE(S)



ANCHOR ROD DETAIL

Drilled Shaft Foundation

Anchor rods shall conform to ASTM F1554 Grade 105. Galvanize upper 12" minimum per AASHTO M232. No welding shall be permitted on rods.



SECTION C-C

(Handhole cover not shown)

DETAIL C

TYPE I-A TRUSS
8" ϕ PIPE SUPPORT FRAME DETAILS

OS-A-4A 6-1-12

FILE NAME = D16BY95-Ga-sht-sign-structures-08.dgn	USER NAME = eeantieg	DESIGNED - IDOT	REVISED -
		DRAWN - IDOT	REVISED -
	PLOT SCALE = 100.0001 ' / in.	CHECKED - IDOT	REVISED -
CH2MHILL	PLOT DATE = 11/18/2014	DATE - 07/07/2014	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURES
SUPPORT FRAME DETAILS – ALUMINUM TRUSS

SCALE: NONE | SHEET NO. 8 OF 12 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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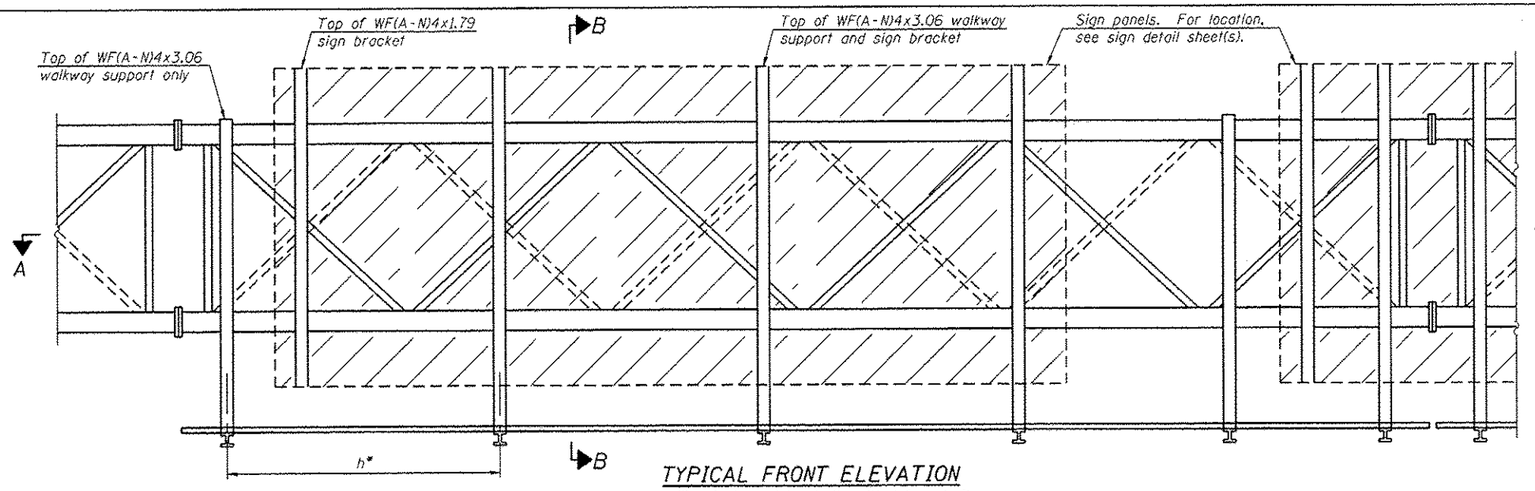
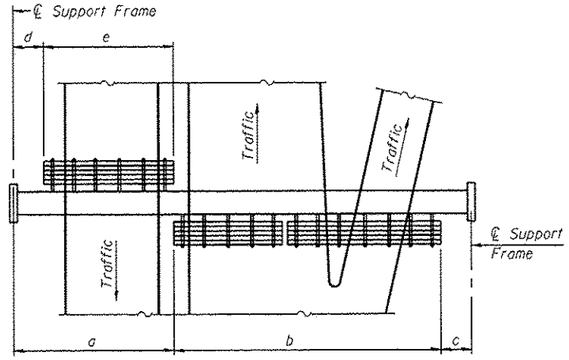
	DRAWING NO. SSD-8	CONTRACT NO. 60Y95		
	ILLINOIS FED. AID PROJECT			



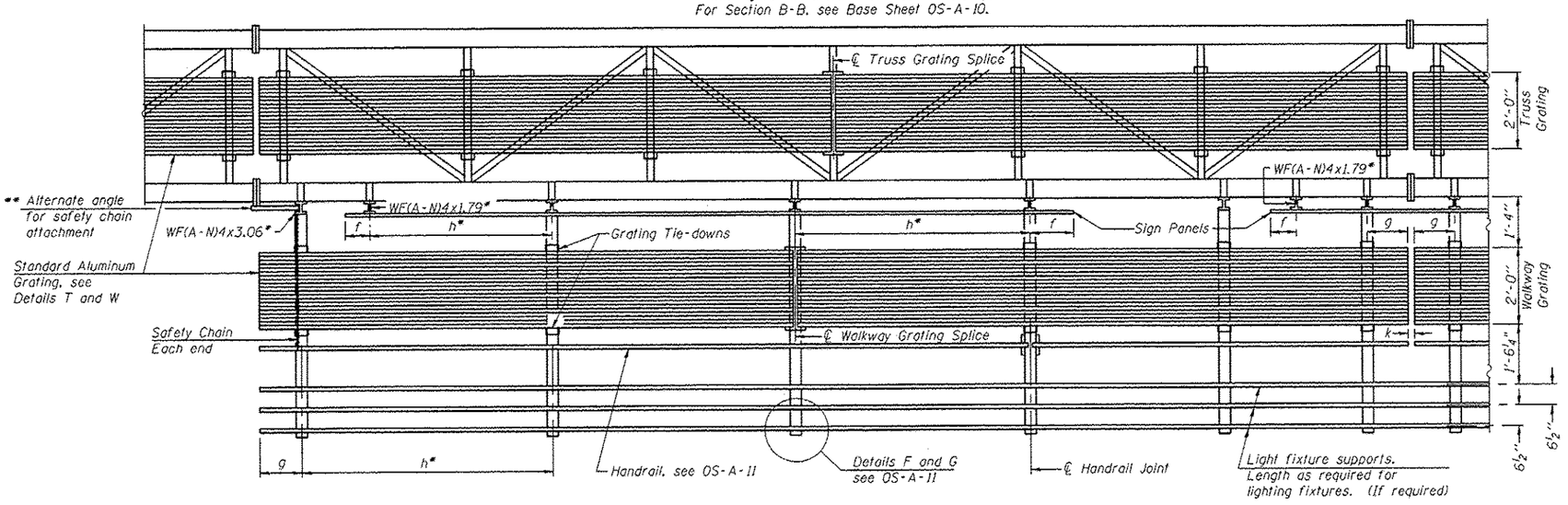
TYPICAL FRONT ELEVATION

With lights and handrail omitted for clarity.
For Section B-B, see Base Sheet OS-A-10.



PLAN
WALKWAY AND HANDRAIL SKETCH

(Road plan beneath truss varies)



SECTION A-A

Handrail and walkway shall span a minimum of three brackets between splices and/or gap joints.
Place all sign and walkway brackets as close to panel points as practical.
Handrail joints, grating, and light support splices placed as needed.

BRACKET TABLE

WF(A-N)4x1.79 or WF(A-N)4x3.06 ASTM B308, Alloy 6061-T6		
Sign Width		Number Brackets Required
Greater Than	Less Than or Equal To	
	8'-0"	2
8'-0"	14'-0"	3
14'-0"	20'-0"	4
20'-0"	26'-0"	5
26'-0"	32'-0"	6

Notes:

* *Space walkway brackets WF(A-N)4x3.06 and sign brackets WF(A-N)4x1.79 for efficiency and within limits shown:*

f = 12" maximum, 4" minimum (End of sign to ℄ of nearest bracket)
g = 12" maximum, 4" minimum (End of walkway grating to ℄ of nearest support bracket)
h = 6'-0" maximum (℄ to ℄ sign and/or walkway support brackets. WF(A-N)4x1.79 or WF(A-N)4x3.06)
k = 2" maximum gap between adjacent walkway grating sections and handrail ends

** *If walkway bracket at safety chain location is behind sign, add angle to bracket, see Alternate Safety Chain Attachment on Base Sheet OS-A-11.*

For Details T and W, Section B-B and Grating Splice Details see Base Sheet OS-A-10.
For Handrail Details see Base Sheet OS-A-11.

Structure Number	Station	a	b	c	d	e	Walkway Grating and Handrail Lengths
IS0221290R005.1	135+99 G1	8'-0"	41'-0"	7'-4 3/8"	-	-	41'-0"
IS0221290R004.9	124+30 G1	WALKWAY IS NOT REQUIRED.					

Truss grating to facilitate inspection shall run full length (center to center of support frames) ±12" on overhead trusses. Cost of truss grating is included in "Overhead Sign Structure".

Walkway and Truss Grating width dimensions are nominal and may vary ±½" based on available standard widths.

OS-A-9 6-1-12

FILE NAME = D160795-Ga-sht-sign-structures-09.dgn	USER NAME = asantiag	DESIGNED - MS	REVISED -
		DRAWN - XXX	REVISED -
	PLOT SCALE = 100.0000 ' / in.	CHECKED - SML, BCG	REVISED -
CH2MHILL®	PLOT DATE = 11/18/2014	DATE - 07/07/2014	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURES
ALUMINUM WALKWAY DETAILS

SCALE: NONE | SHEET NO. 9 OF 12 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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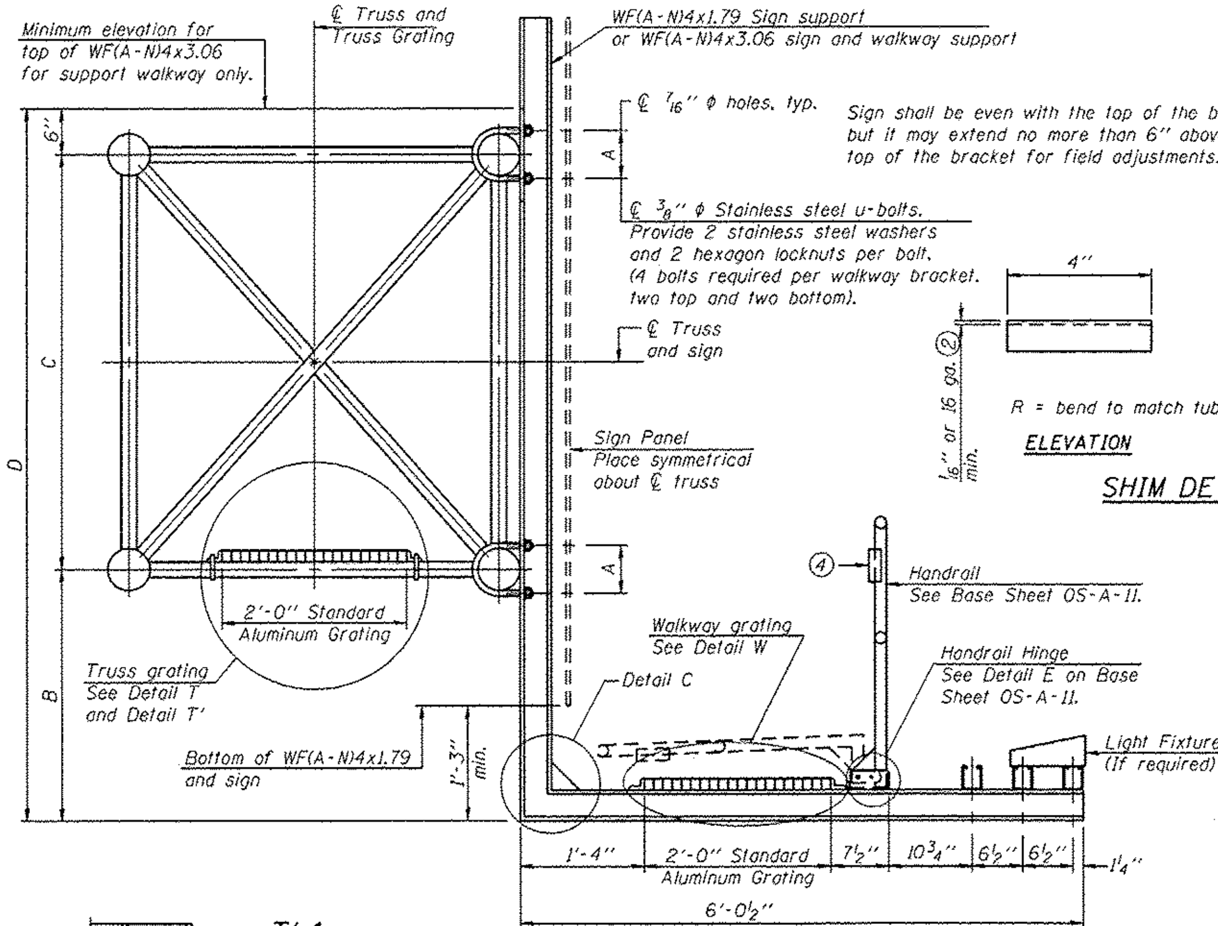
	DRAWING NO. SSD-9	CONTRACT NO. 60Y95		
	ILLINOIS FED. AID PROJECT			



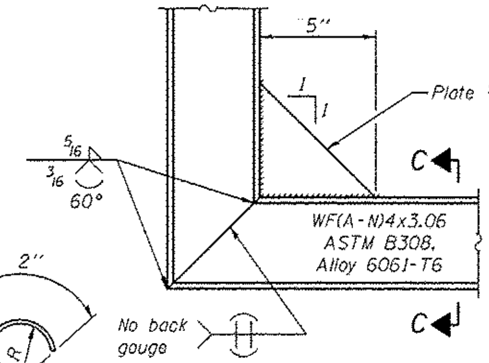
SECTION B-B

R = bend to match tube (approximately)

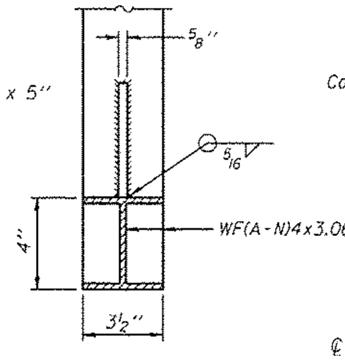
ELEVATION

END VIEW

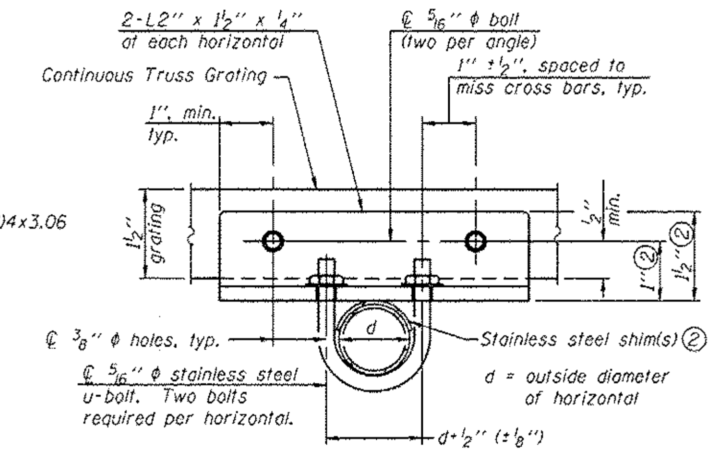
SHIM DETAIL



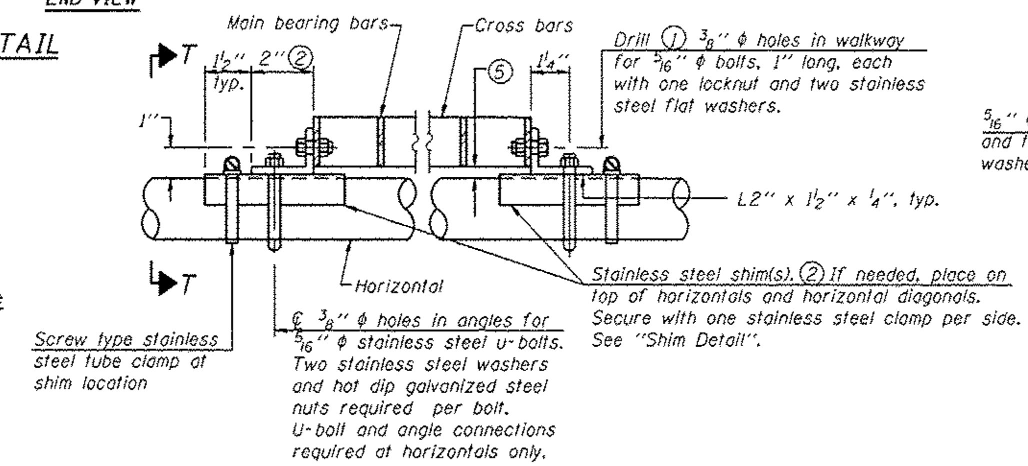
DETAIL C



SECTION C-C

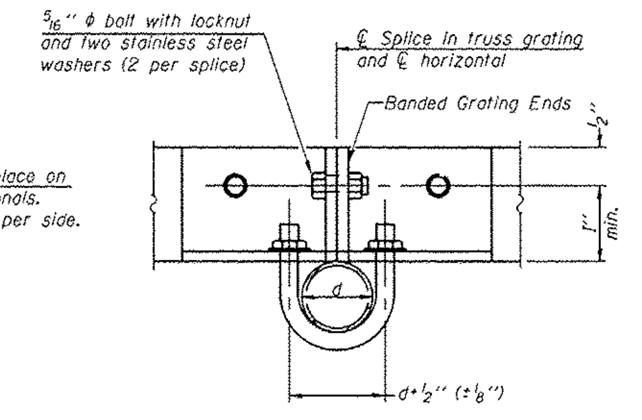


SECTION T-T

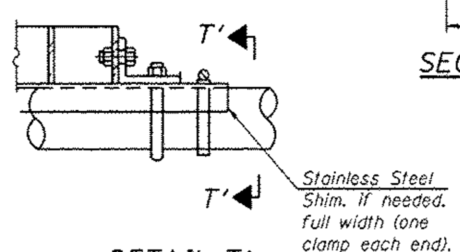


DETAIL T

(Continuous Truss grating)

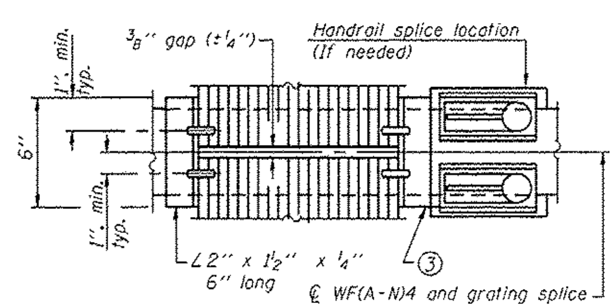


SECTION T'-T'

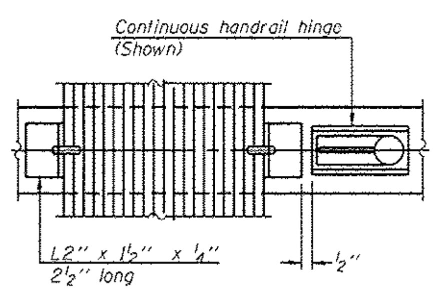


DETAIL T'

(Truss grating splice)
Details not shown same as Detail T.
Alternate materials may be used subject to the Engineer's review and approval.

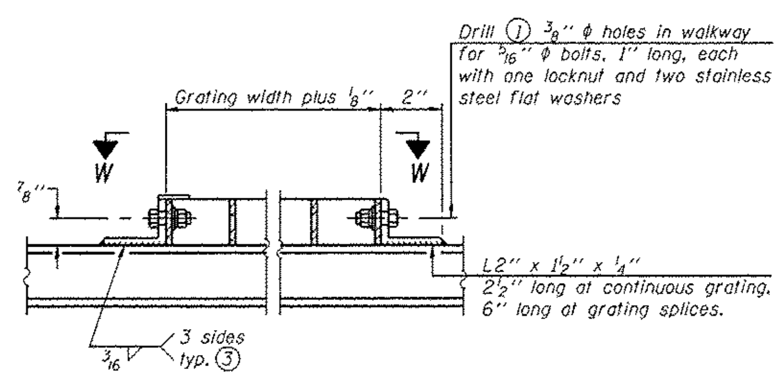


(AT WALKWAY GRATING SPLICE)



(CONTINUOUS WALKWAY GRATING)

SECTION W-W



DETAIL W

(Walkway grating)

SPECIFICATIONS FOR STANDARD ALUMINUM GRATING

Main Bearing Bars shall be 3/16" x 1½" on 1 3/16" centers and conform to ASTM B221 Alloy 6061-T6.
Cross bars shall be 3/16" x 1½" on 4" centers and conform to ASTM B221 Alloy 6063-T5 or 6061-T6.

OR

Aluminum Grating with modified "I" sections for main bearing bars shall meet the following requirements:
Main bars shall conform to ASTM B221 Alloy 6061-T6 and have a minimum section modulus equal to 0.0705 in.^{3} per bar, a depth of 1½", spaced on 1 3/16" centers.
Cross bars shall conform to ASTM B221 Alloy 6063-T5 or T-42 and spaced on 4" centers.

Structure Number	Station	A	(6) B	C	(6) D
IS022I290R005.1	135+99 GI	5½" MIN.	4'-9"	4'-6"	9'-9"
IS022I290R004.9	124+30 GI	WALKWAY IS NOT REQUIRED.			

(1) Drilling holes in grating may be done in shop or field, based on Contractor's preference and subject to accurate alignment.

(2) Stainless steel shims shall be placed as shown in Detail T if needed to compensate for alignment variations between horizontal and diagonal pipes beyond adjustment provided by angles. Thicker shims may be used subject to shims performing properly.

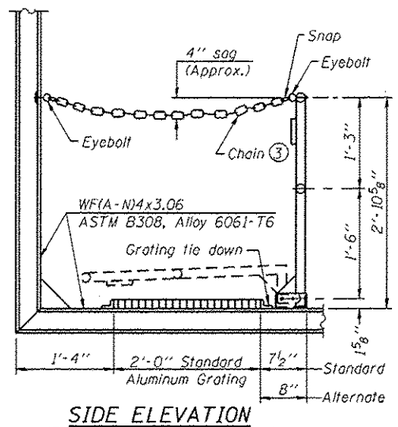
(3) If Handrail Joint present, weld angle to WF(A-N)4 and ¼" extension bars. (See Base Sheet OS-A-11.)

(4) ℞ ⅛" x ½" x 2" welded to handrail posts to protect locations that contact grating.

(5) Tube to grating gap may vary from 0 to ½", max. to align walkway, allow for camber, etc.

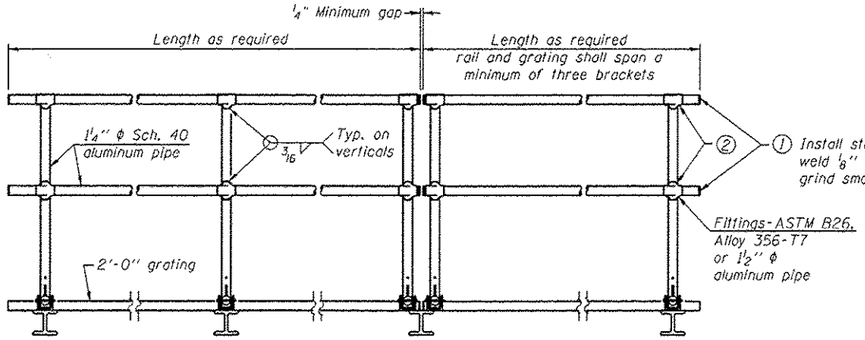
(6) Based on actual height of tallest sign given on OS-A-1.

OS-A-10 6-1-12



SIDE ELEVATION

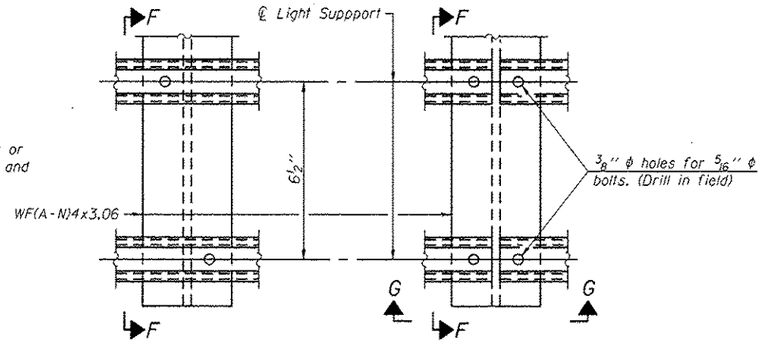
(Showing safety chain w/o sign)



FRONT ELEVATION

(1) Install standard force-fit end caps or weld ⅛" end plates with ⅛" c.f.w. and grind smooth. (All rail ends)

(2) Horizontal handrail member shall be continuous thru fitting. Provide 7/16" ϕ hole in fitting for ⅜" ϕ bolt. Field drill 7/16" ϕ hole in horizontal rail member. Provide locknut and two stainless steel washers for bolt. (Use 5/16" eyebolts in 7/16"ϕ holes on top rail at ends only.)

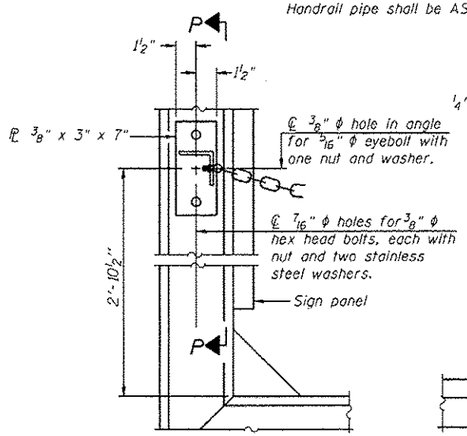


DETAIL F

DETAIL G

HANDRAIL DETAILS

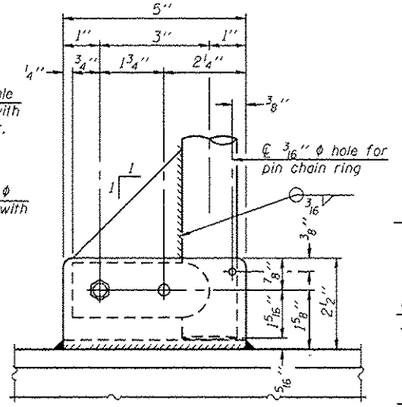
Handrail pipe shall be ASTM B241 or B429, Alloy 6063-T6 or Alloy 6061-T6.



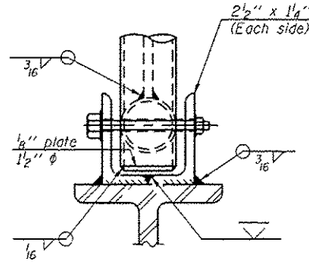
ALTERNATE SAFETY CHAIN ATTACHMENT

(With Sign Present)

Items not shown same as "Side Elevation" of "Handrail Details"

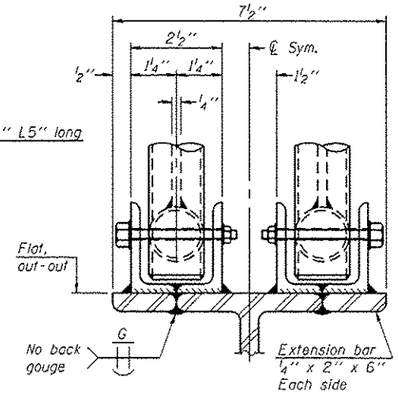


SIDE ELEVATION

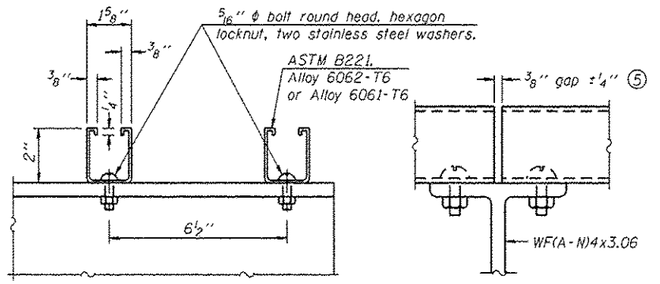


FRONT ELEVATION

See "Elevation" at right for dimensions.



ELEVATION AT HANDRAIL JOINT (4)

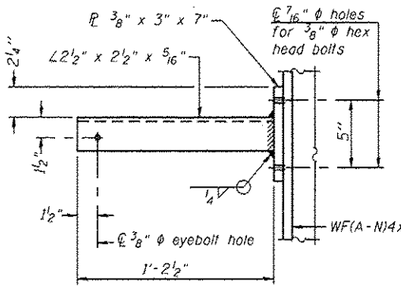


SECTION F-F

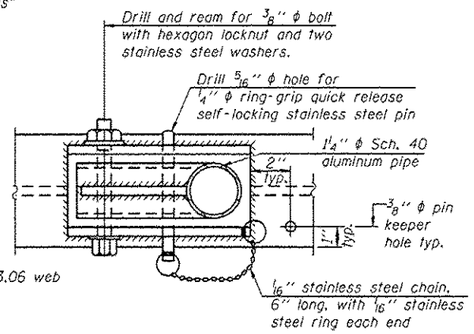
SECTION G-G

LIGHTING FIXTURE MOUNTS (IF REQUIRED)

(5) Field cut ends of light support channels shall be free of burrs or hazardous projections and coated with zinc-rich primer or equivalent.

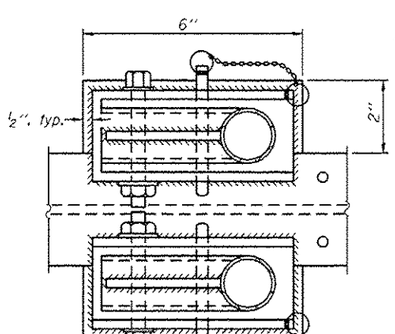


SECTION P-P



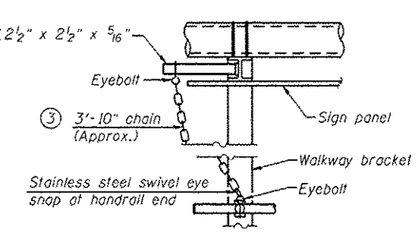
PLAN

DETAIL E HANDRAIL HINGE



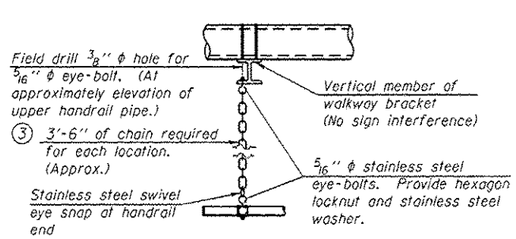
PLAN AT HANDRAIL JOINT

Details not shown same as "PLAN"



ALTERNATE SAFETY CHAIN ATTACHMENT

Details not shown similar to "Safety Chain" Details (Walkway omitted for clarity)



SAFETY CHAIN

One required for each end of each walkway.

(3) 3/16" Type 304L stainless steel chain, approximately 12 links per foot.

(4) Extrusions may be used in lieu of the details shown, with approval of the Engineer.

OS-A-11 6-1-12

FILE NAME = 0160Y95-Ga-sht-sign-structures-11.dgn	USER NAME = asantieg	DESIGNED - MS	REVISED -
CH2MHILL		DRAWN - XXX	REVISED -
	PLOT SCALE = 100.0000 ' / in.	CHECKED - SML, BCG	REVISED -
	PLOT DATE = 11/18/2014	DATE - 07/07/2014	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURES
ALUMINUM HANDRAIL DETAILS

SCALE: NONE | SHEET NO. 11 OF 12 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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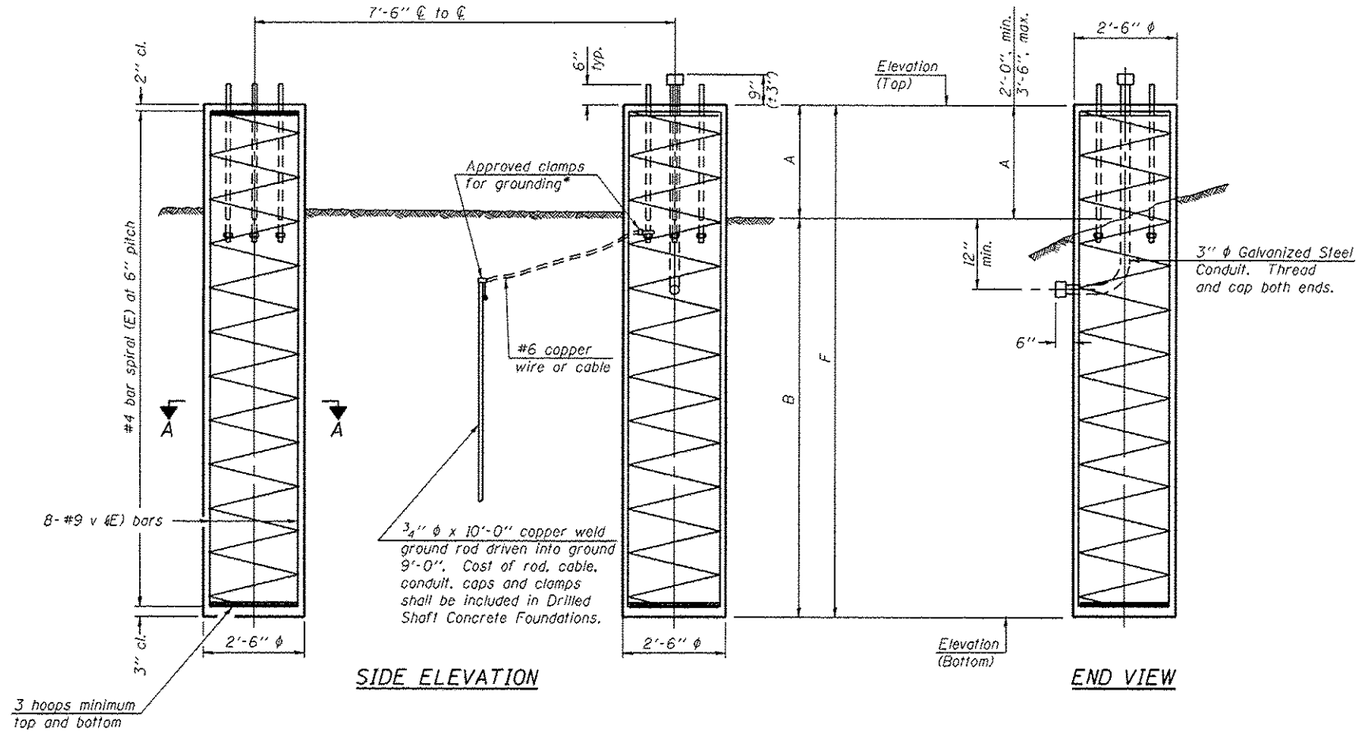
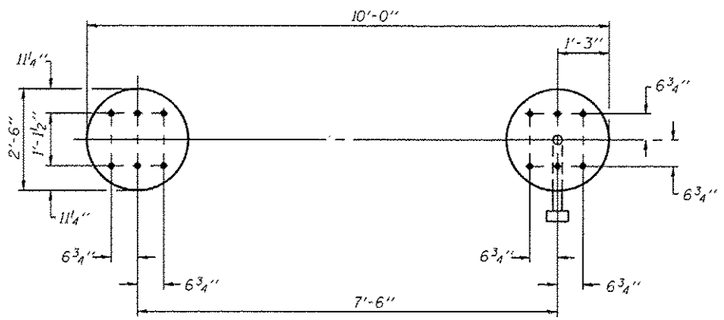
	DRAWING NO. SSD-11	CONTRACT NO. 60Y95		
	ILLINOIS FED. AID PROJECT			





PLAN

For anchor rod size and placement, see Support Frame Detail Sheet.

* Anchor rod shall be ground or filed to bright metal at clamp and cable connection location.

BAR LIST - EACH FOUNDATION

Bar	Number	Size	Length	Shape
v (E)	16	#9	F less 5"	——
#4 bar spiral (E) - see Side Elevation				

NOTES:

The foundation dimensions shown are based on the presence of mostly cohesive soils with an average Unconfined Compressive Strength (Qu) of at least 1.25 tsf, which must be determined by previous soil investigations at the jobsite. When other conditions are indicated, the boring data will be included in the plans and the foundation dimensions shown will be the result of site specific designs.

If the conditions encountered are different than those indicated, the Contractor shall notify the Engineer to determine if the foundation dimensions need to be modified. If dimensions "B" or "F" are revised by more than 12" by the Contractor, "as-built" plans shall be prepared and submitted to the District Bureau of Operations for future reference.

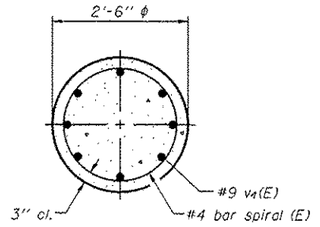
No sonotubes or decomposable forms shall be used below the lower conduit entrance.

Permanent metal forms or other shielding may not be left in place below that elevation without the Engineer's written permission.

Concrete shall be placed monolithically, without construction joints.

Backfill shall be placed per Article 502 of Standard Specification and prior to erection of support column.

A normal surface finish followed by a Concrete Sealer application will be required on concrete surfaces above the lowest elevation 6" below finished ground line. Cost included in Drilled Shaft Concrete Foundation.



SECTION A-A

DETAILS FOR 8" ϕ SUPPORT FRAME TYPE I-A TRUSS

Structure Number	Station	Left Foundation					Right Foundation					Class DS Concrete (Cu. Yds.)
		Elevation Top	Elevation Bottom	A	B	F	Elevation Top	Elevation Bottom	A	B	F	
IS0221290R004.9	124+30 G1	743.50	728.00	2.0'	13.5'	15.5'	745.26	729.76	2.0'	13.5'	15.5'	11.3
IS0221290R005.1	135+99 G1	(SEE STRUCTURE DRAWINGS FOR FOUNDATION DETAILS)										

OS4-F2 8-21-13

FILE NAME = D1G0Y95-6a-sht-sign-structures-12.dgn	USER NAME = esantag	DESIGNED - MS	REVISED -
CH2MHILL		DRAWN - XXX	REVISED -
	PLOT SCALE = 100.000' / in.	CHECKED - SML, BCG	REVISED -
	PLOT DATE = 11/18/2014	DATE - 07/07/2014	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURES
DRILLED SHAFT DETAILS

SCALE: NONE | SHEET NO. 12 OF 12 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	310
	DRAWING NO. SSD-12	CONTRACT NO. 60Y95		
	ILLINOIS FED. AID PROJECT			

PROPOSED SIGNING SCHEDULE

SIGN NUMBER	LOCATION	STATION	W WIDTH (FT)	H HEIGHT (FT)	PANEL AREA (SQ FT)	MUTCD CODE	72000100 SIGN PANEL - TYPE 1 (SQ FT)	72000200 SIGN PANEL - TYPE 2 (SQ FT)	72000300 SIGN PANEL - TYPE 3 (SQ FT)	73000100 WOOD SIGN SUPPORT 4"x6" L1 (FT)	L2 (FT)	PAY LENGTH (FT)	BREAK-AWAY POST SIZE	POST LENGTH L1 + Stub Post (FT)	L2 + Stub Post (FT)	73400100 CONCRETE FOUNDATIONS (CU YD)	72700100 STRUCTURAL STEEL SIGN SUPPORT - BREAKAWAY (POUNDS)	50800205 REINFORCEMENT BARS, EPOXY COATED (POUNDS)
EB-G1-LP-200(P)	EB G1	119+60	4	4	16	W1-2L		16										
			2.5	2.5	6.25	W13-1P	6.25											
EB-K3-WP-207(P)	EB K3	310+00	4	5	20	W13-3		20		17	17	34						
EB-G1-WP-208(P)	EB G1	143+50	6	5	30	E5-1			30	17	17	34						
EB-G6-BS-209(P)	EB G6	621+25	13.5	7	94.5				94.5				W8X18	18.3	21.1	1.40	710	156
						TOTAL	6.3	36	124.5			68		39		1.4	710	156

OVERHEAD SIGN STRUCTURE SCHEDULE

SIGN NUMBER	LOCATION	STATION	W WIDTH (FT)	H HEIGHT (FT)	PANEL AREA (SQ FT)	72000300 SIGN PANEL - TYPE 3 (SQ FT)	73300100 OVERHEAD SIGN STRUCTURE - SPAN, TYPE I-A (4'-0" X 4'-6") (FT)	73301810 OVERHEAD SIGN STRUCTURE WALKWAY, TYPE A (FT)	73400200 DRILLED SHAFT CONCRETE FOUNDATIONS (CU YD)
EB-G1-TR-202(P)	RAMP G1	124+25	13.5	11.5	155.25	155.25	54		11.3
EB-G1-TR-205(P)	RAMP G1	135+99	13.5	11.5	155.25	155.25	56	41	SEE STRUCTURAL PLANS
TOTAL						310.5	110	41	11.3

OVERHEAD SIGN OVERLAY SCHEDULE

SIGN NUMBER	LOCATION	STATION	W WIDTH (FT)	H HEIGHT (FT)	PANEL AREA (SQ FT)	72000300 SIGN PANEL - TYPE 3 (SQ FT)
EB-G1-OL-203(P)	EB G1	124+25	13.5	2.5	33.75	33.75
EB-G1-OL-206(P)	EB G1	135+99	13.5	2.5	33.75	33.75
					TOTAL	67.5

SIGN PANEL SUMMARY SCHEDULE

	72000100 SIGN PANEL - TYPE 1 (SQ FT)	72000200 SIGN PANEL - TYPE 2 (SQ FT)	72000300 SIGN PANEL - TYPE 3 (SQ FT)
OVERHEAD SIGN PANELS TOTAL	0	0	310.5
OVERHEAD SIGN PANELS OVERLAY TOTAL	0	0	67.5
GROUND MOUNT SIGN PANELS TOTAL	6.3	36.0	124.5
PROJECT TOTAL	6	36	503

FILE NAME = D160Y95-6a-sht-sign-structure-schedule-01.dgn	USER NAME = asantiag	DESIGNED - MS	REVISED -
CH2MHILL®	PLOT SCALE = 100.0000 ' / in.	DRAWN - CAK	REVISED -
	PLOT DATE = 10/28/2014	CHECKED - SML	REVISED -
		DATE - 07/07/2014	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROPOSED SIGNING SCHEDULE

SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	311
	DRAWING NO. SSQ-1	CONTRACT NO. 60Y95		
	ILLINOIS FED. AID PROJECT			

SYMBOL LIST

- EXISTING LIGHT POLE TO REMAIN
- LIGHT POLE, ALUMINUM, 47.5 FT. M.H., DAVIT ARM LENGTH AS NOTED (83050715 AND 83050825) AND LUMINAIRE, SODIUM VAPOR, HORIZONTAL MOUNT, 400 WATT (82102400), TYPE MCII, UNLESS OTHERWISE NOTED
- LIGHT POLE INSTALLED UNDER A SEPARATE CONTRACT.
- EXISTING LIGHTING CONTROLLER
- NEW LIGHTING JUNCTION BOX, TYPE AND SIZE AS NOTED
- GROUND ROD
- UNIT DUCT, NO. AND SIZE OF WIRES AS NOTED ON PLANS
- WIRING IN CONDUIT ATTACHED TO STRUCTURE
- WIRING IN CONDUIT EMBEDDED IN STRUCTURE
- [ ] UNDERGROUND CONDUIT
- UNDERPASS LUMINAIRE, HIGH PRESSURE SODIUM VAPOR
- SIGN LUMINAIRE (LED), 76 WATT
- H HEAVY DUTY HANDHOLE (81400200)
- X A 12 / X B 12 LIGHTING UNIT DESIGNATION
  - POLE NUMBER
  - CIRCUITRY
  - CONTROL CABINET
- TOLLWAY LIGHT POLE

GENERAL NOTES

1. SPLICING OF CONDUCTORS SHALL BE IN POLE BASES OR WEATHER TIGHT JUNCTION BOXES ONLY. SPLICES BELOW GRADE WILL NOT BE PERMITTED.
2. LIGHTING CIRCUITS SHALL BE WIRED IN ACCORDANCE WITH THE PLANS. DEVIATIONS WILL NOT BE PERMITTED WITHOUT PRIOR APPROVAL OF THE ENGINEER.
3. THE CONTRACTOR SHALL REQUEST A FORMAL MAINTENANCE TRANSFER BEFORE ANY WORK BEGINS. THE CONTRACTOR SHALL CONTACT THE ILLINOIS DEPARTMENT OF TRANSPORTATION - NEIL THAKKAR AT (708) 524-2145. WORK SHALL BE COORDINATED WITH CONTRACTOR(S) FOR THE ADJACENT CONTRACT(S).
4. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO RESTORE ANY SPECIALIZED LANDSCAPING (DECORATIVE ROCKS, PLANTS, ETC.).
5. ALL WORK SHALL CONFORM TO THE LATEST IDOT AND DISTRICT 1 STANDARDS, SPECIAL PROVISIONS, SUPPLEMENTAL SPECIFICATIONS, THE NATIONAL ELECTRICAL CODE, AND THE NATIONAL ELECTRICAL SAFETY CODE.
6. ALL ELECTRICAL EQUIPMENT SHALL BE UL LISTED AND LABELED.
7. ALL CONDUITS SHALL BE SEALED.
8. ALL CIRCUIT WIRES SHALL BE LABELED WITH CIRCUIT IDENTIFICATION.
9. ALL LAMPS SHALL BE FURNISHED AS PART OF THE CONTRACT.
10. CIRCUITS SHALL BE TESTED PER SPECIFICATIONS.
11. THE LOCATIONS OF ALL PROPOSED EQUIPMENT ARE ILLUSTRATED DIAGRAMMATICALLY. THE ACTUAL LOCATION IN THE FIELD SHALL MEET THE APPROVAL OF THE ENGINEER.
12. ALL MEASUREMENTS ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY MEASUREMENTS IN THE FIELD.
13. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTING INSTALLATIONS AND DATA PRIOR TO BIDDING.
14. GROUNDING CONDUCTORS SHALL BE CONTINUOUS.
15. ALL NEW UNIT DUCTS AND CONDUITS SHALL BE PLACED A MINIMUM OF 30" BENEATH THE GROUND SURFACE (FINAL GRADE).

BILL OF MATERIALS

PAY ITEM NO.	PAY ITEM NAME	UNIT OF MEASURE	QTY.
81028220	UNDERGROUND CONDUIT, GALVANIZED STEEL, 3" DIA.	FOOT	420
81028390	UNDERGROUND CONDUIT, PVC, 4" DIA.	FOOT	60
81100805	CONDUIT ATTACHED TO STRUCTURE, 3" DIA., PVC COATED GALVANIZED STEEL	FOOT	75
81200230	CONDUIT EMBEDDED IN STRUCTURE, 2" DIA., PVC	FOOT	3,083
81200250	CONDUIT EMBEDDED IN STRUCTURE, 3" DIA., PVC	FOOT	120
81300900	JUNCTION BOX, STAINLESS STEEL, ATTACHED TO STRUCTURE, 20" X 16" X 6"	EACH	4
81400200	HEAVY-DUTY HANDHOLE	EACH	1
81603081	UNIT DUCT, 600V, 3-1C NO.2, 1/C NO.4 GROUND, (XLP-TYPE USE), 1 1/2" DIA. POLYETHYLENE	FOOT	3,887
81702140	ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 4	FOOT	3,283
81702150	ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 2	FOOT	9,849
82102400	LUMINAIRE, SODIUM VAPOR, HORIZONTAL MOUNT, 400 WATT	EACH	31
83050715	LIGHT POLE, ALUMINUM, 47.5 FT. M.H., 6 FT. DAVIT ARM	EACH	19
83050825	LIGHT POLE, ALUMINUM, 47.5 FT. M.H., 15 FT. DAVIT ARM	EACH	12
83600200	LIGHT POLE FOUNDATION, 24" DIAMETER	FOOT	108
83800205	BREAKAWAY DEVICE, TRANSFORMER BASE, 15 INCH BOLT CIRCLE	EACH	9
X8040100	ELECTRIC CONNECTION TO SIGN STRUCTURE	EACH	1
Z0033020	LUMINAIRE SAFETY CABLE ASSEMBLY	EACH	31
Z0033028	MAINTENANCE OF LIGHTING SYSTEM	CAL MO	24
	SIGN LUMINAIRE (LED), 76 WATT	EACH	4

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USER NAME = asantiag	DESIGNED - MCP	REVISED - 11/14/2014
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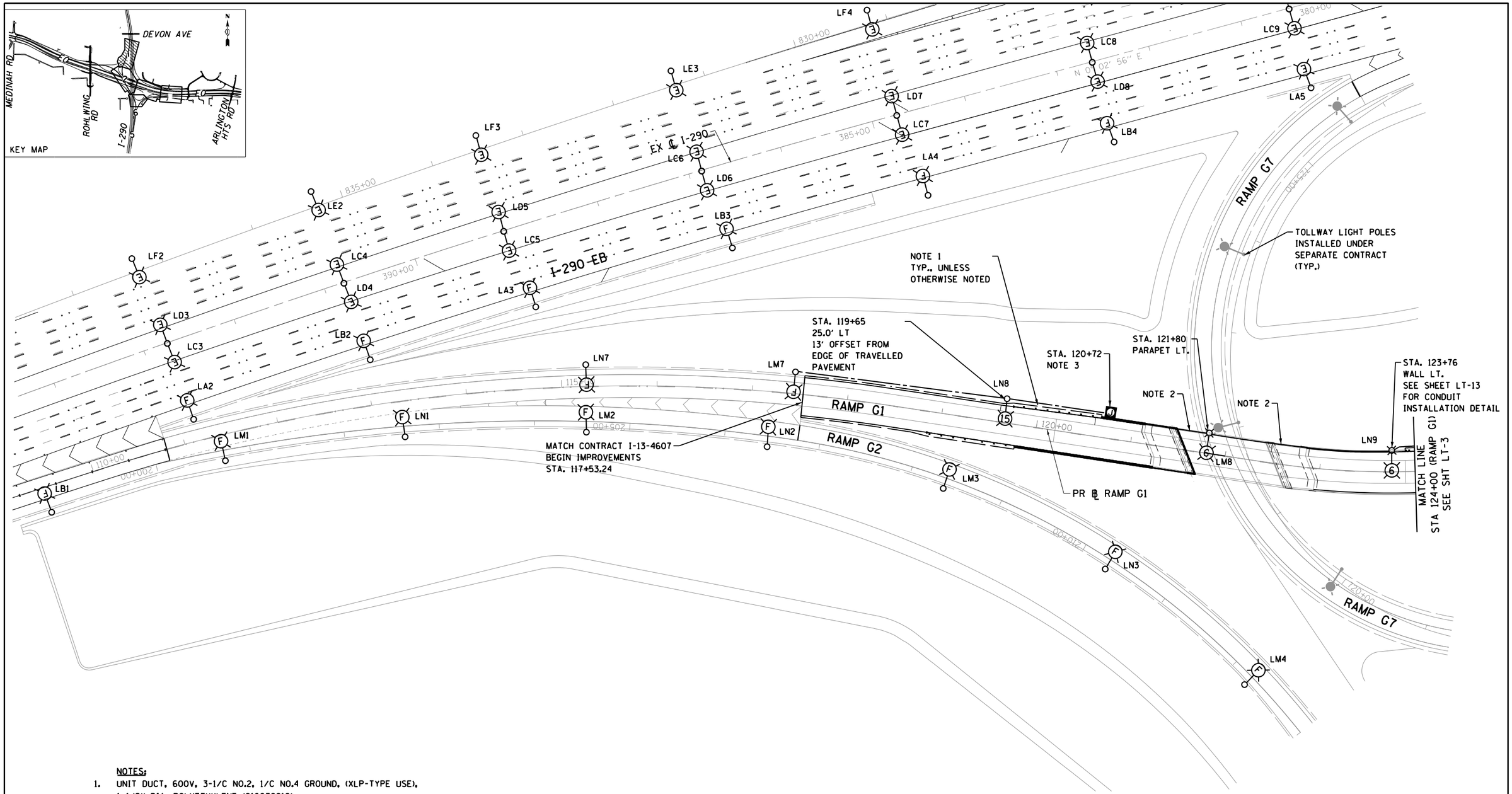
PLOT DATE = 11/18/2014	DATE - 10/28/2014	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SYMBOL LIST, GENERAL NOTES AND BILL OF MATERIALS

SCALE: | SHEET NO. OF SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	312
	SHEET NO. LT-1	CONTRACT NO. 60Y95		
	ILLINOIS FED. AID PROJECT			

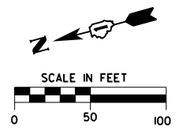


NOTES:

1. UNIT DUCT, 600V, 3-1/C NO.2, 1/C NO.4 GROUND, (XLP-TYPE USE), 1 1/2" DIA. POLYETHYLENE (816030810).

2. (3) ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 2 (81702150) AND ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 4 (81702140) GROUND IN CONDUIT EMBEDDED IN STRUCTURE, 2" DIA., PVC. (81200230). COORDINATE WITH STRUCTURAL FOR EXPANSION JOINT LOCATION WHERE EXPANSION/DEFLECTION COUPLINGS ARE REQUIRED. SEE DRAWINGS LT-9 AND LT-10 FOR DETAILS.

3. JUNCTION BOX, STAINLESS STEEL, ATTACHED TO STRUCTURE, 18" X 12" X 6" (81300900). SEE SHEET LT-12 FOR INSTALLATION DETAILS.



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USER NAME = esantiag	DESIGNED - MCP	REVISED -
	DRAWN - MLB	REVISED -
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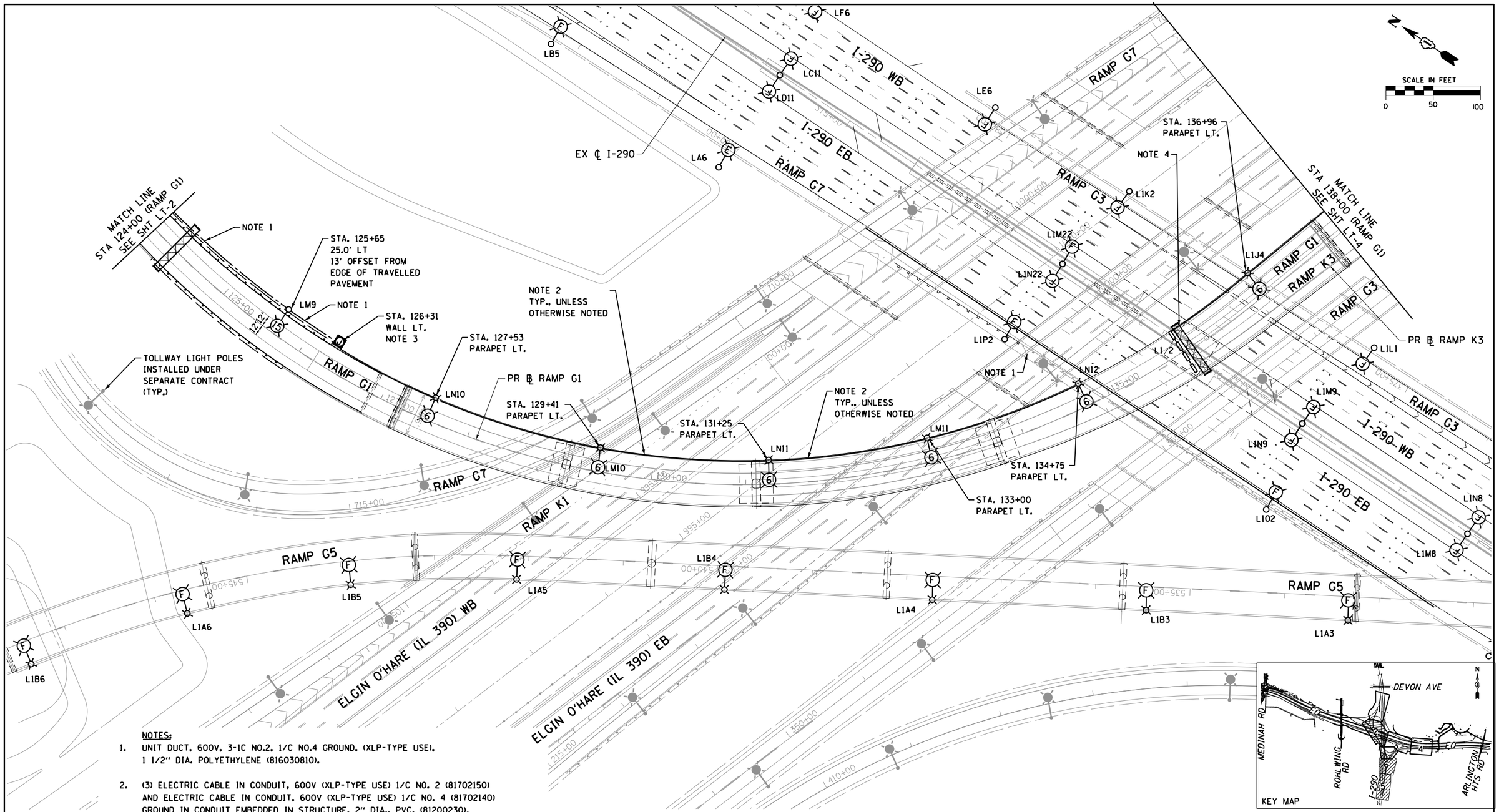
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RAMP G1
ROADWAY LIGHTING PLAN

SCALE: | SHEET NO. OF SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	313
	SHEET NO. LT-2	CONTRACT NO. 60Y95		
	ILLINOIS FED. AID PROJECT			



NOTES:

1. UNIT DUCT, 600V, 3-1C NO.2, 1/C NO.4 GROUND, (XLP-TYPE USE), 1 1/2" DIA. POLYETHYLENE (816030810).

2. (3) ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 2 (81702150) AND ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 4 (81702140) GROUND IN CONDUIT EMBEDDED IN STRUCTURE, 2" DIA., PVC. (81200230). COORDINATE WITH STRUCTURAL FOR EXPANSION JOINT LOCATION WHERE EXPANSION/DEFLECTION COUPLINGS ARE REQUIRED. SEE DRAWINGS LT-9 AND LT-10 FOR DETAILS.

3. JUNCTION BOX, STAINLESS STEEL, ATTACHED TO STRUCTURE, 20" X 16" X 6" (81300900). SEE SHEET LT-12 FOR INSTALLATION DETAILS.

4. ELECTRIC CONNECTION TO SIGN STRUCTURE (X8040100). SEE STRUCTURAL PLANS FOR CONDUIT ROUTING INSIDE SIGN BASE DETAIL.

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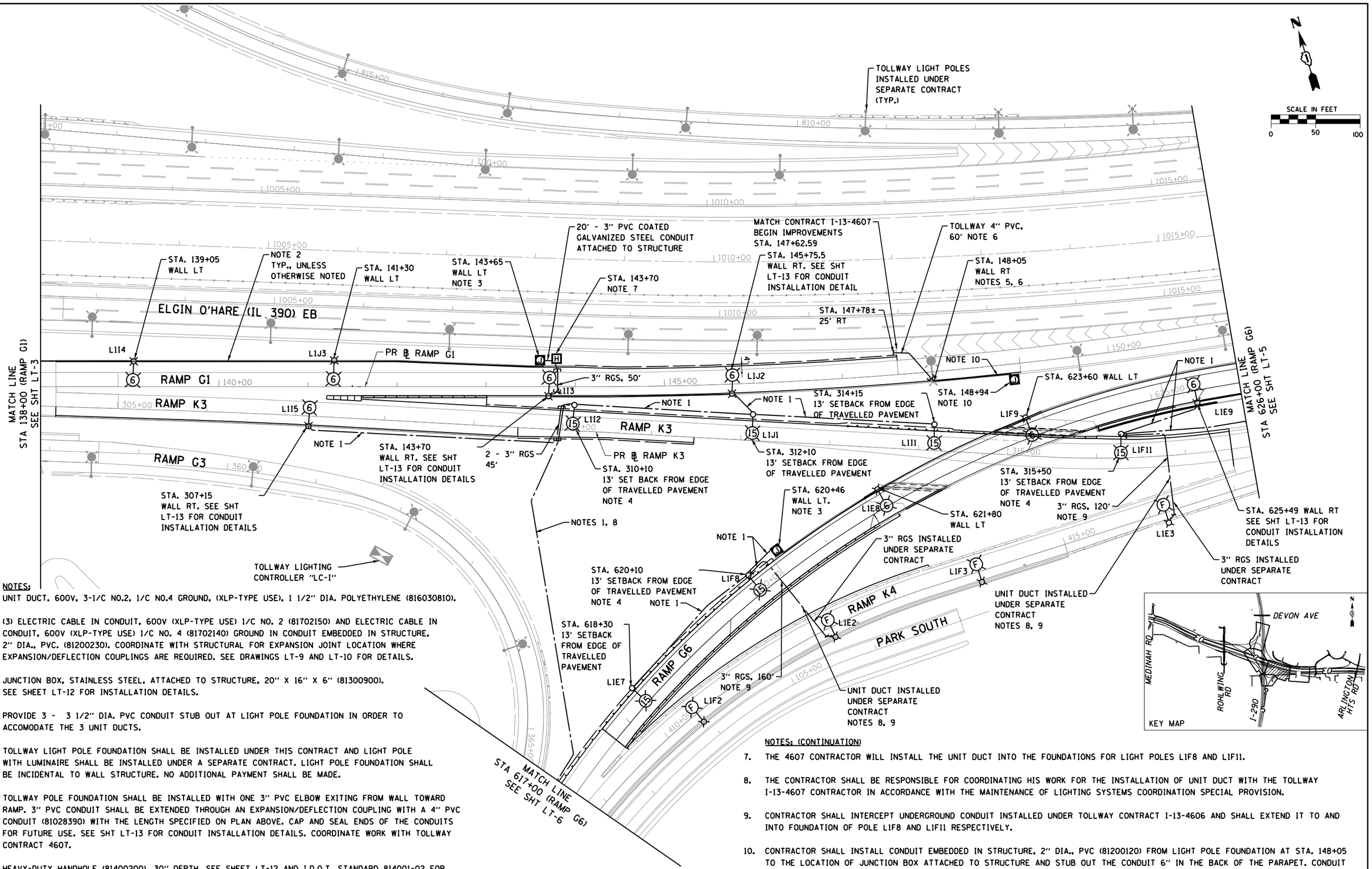
PLOT DATE = 10/28/2014	DATE - --/--/----	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RAMP G1
ROADWAY LIGHTING PLAN

SCALE: | SHEET NO. OF SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	314
	SHEET NO. LT-3	CONTRACT NO. 60Y95		
	ILLINOIS FED. AID PROJECT			



NOTES:

1. UNIT DUCT, 600V, 3-1/C NO.2, 1/C NO.4 GROUND, (XLP-TYPE USE), 1 1/2" DIA. POLYETHYLENE (81603081O).

2. (3) ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 2 (81702150) AND ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 4 (81702140) GROUND IN CONDUIT EMBEDDED IN STRUCTURE, 2" DIA., PVC. (81200230). COORDINATE WITH STRUCTURAL FOR EXPANSION JOINT LOCATION WHERE EXPANSION/DEFLECTION COUPLINGS ARE REQUIRED. SEE DRAWINGS LT-9 AND LT-10 FOR DETAILS.

3. JUNCTION BOX, STAINLESS STEEL, ATTACHED TO STRUCTURE, 20" X 16" X 6" (81300900). SEE SHEET LT-12 FOR INSTALLATION DETAILS.

4. PROVIDE 3 - 3 1/2" DIA. PVC CONDUIT STUB OUT AT LIGHT POLE FOUNDATION IN ORDER TO ACCOMODATE THE 3 UNIT DUCTS.

5. TOLLWAY LIGHT POLE FOUNDATION SHALL BE INSTALLED UNDER THIS CONTRACT AND LIGHT POLE WITH LUMINAIRE SHALL BE INSTALLED UNDER A SEPARATE CONTRACT. LIGHT POLE FOUNDATION SHALL BE INCIDENTAL TO WALL STRUCTURE. NO ADDITIONAL PAYMENT SHALL BE MADE.

6. TOLLWAY POLE FOUNDATION SHALL BE INSTALLED WITH ONE 3" PVC ELBOW EXITING FROM WALL TOWARD RAMP. 3" PVC CONDUIT SHALL BE EXTENDED THROUGH AN EXPANSION/DEFLECTION COUPLING WITH A 4" PVC CONDUIT (81028390) WITH THE LENGTH SPECIFIED ON PLAN ABOVE. CAP AND SEAL ENDS OF THE CONDUITS FOR FUTURE USE. SEE SHT LT-13 FOR CONDUIT INSTALLATION DETAILS. COORDINATE WORK WITH TOLLWAY CONTRACT 4607.

7. HEAVY-DUTY HANDHOLE (81400200), 30" DEPTH. SEE SHEET LT-12 AND I.D.O.T. STANDARD 814001-02 FOR INSTALLATION DETAILS. EDGE OF HANDHOLE SHALL BE MIN. 2 FT. FROM MSE WALL.

NOTES: (CONTINUATION)

7. THE 4607 CONTRACTOR WILL INSTALL THE UNIT DUCT INTO THE FOUNDATIONS FOR LIGHT POLES L1F8 AND L1F11.

8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING HIS WORK FOR THE INSTALLATION OF UNIT DUCT WITH THE TOLLWAY I-13-4607 CONTRACTOR IN ACCORDANCE WITH THE MAINTENANCE OF LIGHTING SYSTEMS COORDINATION SPECIAL PROVISION.

9. CONTRACTOR SHALL INTERCEPT UNDERGROUND CONDUIT INSTALLED UNDER TOLLWAY CONTRACT I-13-4606 AND SHALL EXTEND IT TO AND INTO FOUNDATION OF POLE L1F8 AND L1F11 RESPECTIVELY.

10. CONTRACTOR SHALL INSTALL CONDUIT EMBEDDED IN STRUCTURE, 2" DIA., PVC (81200120) FROM LIGHT POLE FOUNDATION AT STA. 148+05 TO THE LOCATION OF JUNCTION BOX ATTACHED TO STRUCTURE AND STUB OUT THE CONDUIT 6" IN THE BACK OF THE PARAPET. CONDUIT SHALL BE BENT WITH A MIN. 12" RADIUS, CAPPED AND SEALED FOR FUTURE USE. JUNCTION BOX AND WIRING SHALL BE INSTALLED UNDER TOLLWAY CONTRACT I-13-4607. COORDINATE WORK WITH THE TOLLWAY I-13-4607 CONTRACTOR. SEE INSTALLATION DETAIL ON SHEET LT-12.

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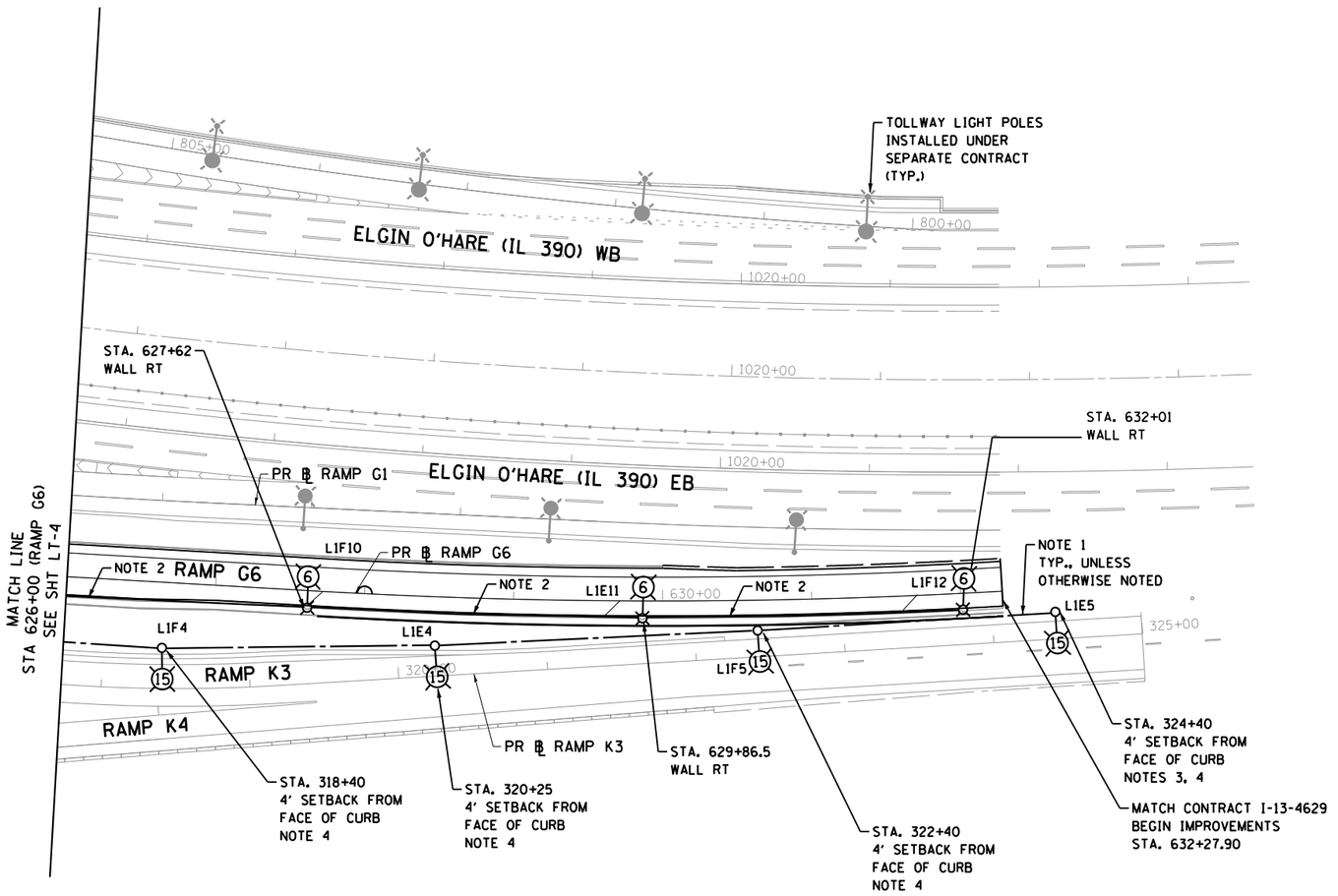
PLOT DATE = 11/18/2014	DATE - 10/28/2014	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RAMP G1
ROADWAY LIGHTING PLAN

SCALE: | SHEET NO. OF SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	315
	SHEET NO. LT-4	CONTRACT NO. 60Y95		
	ILLINOIS FED. AID PROJECT			



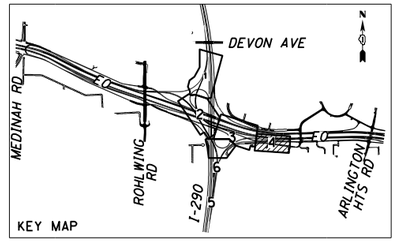
NOTES:

1. UNIT DUCT, 600V, 3-1/C NO.2, 1/C NO.4 GROUND, (XLP-TYPE USE), 1 1/2" DIA. POLYETHYLENE (816030810).

2. (3) ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 2 (81702150) AND ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 4 (81702140) GROUND IN CONDUIT EMBEDDED IN STRUCTURE, 2" DIA., PVC. (81200230). COORDINATE WITH STRUCTURAL FOR EXPANSION JOINT LOCATIONS. EXPANSION/DEFLECTION COUPLINGS SHALL BE INSTALLED AT EACH STRUCTURAL JOINT WHERE CONDUIT IS CROSSING. SEE DRAWINGS LT-9 AND LT-10 FOR DETAILS.

3. PROVIDE EXTRA ELBOW IN FOUNDATION TO CONTINUE WIRING TO NEXT POLE AT EAST UNDER DIFFERENT CONTRACT.

4. LUMINAIRE SHALL BE PROVIDED WITH RESIDENTIAL SHIELD.



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Engineers & Architects

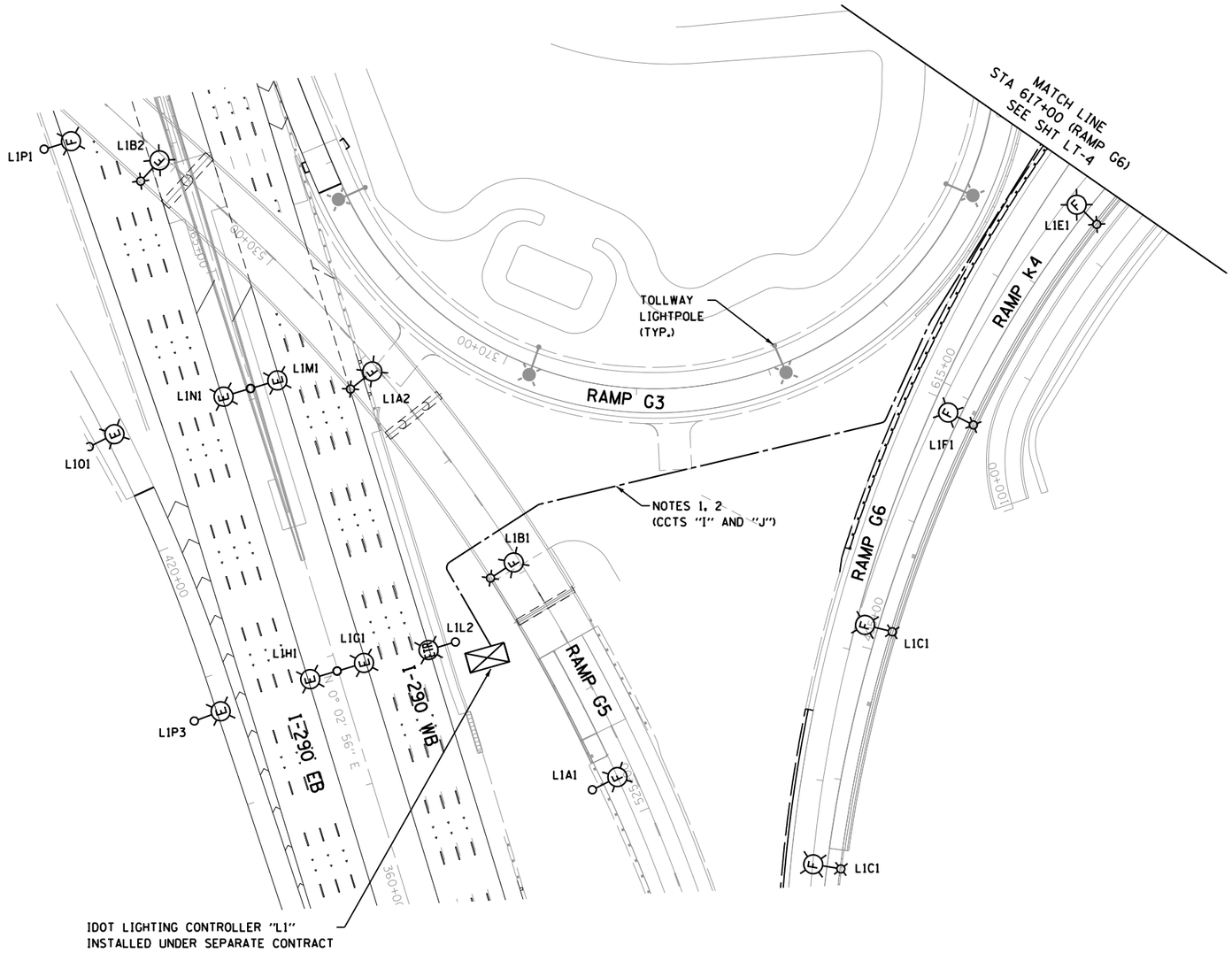
USER NAME = esantiag	DESIGNED - MCP	REVISED - 11/14/2014
	DRAWN - MLB	REVISED -
PLOT SCALE = 100.0000 ' / in.	CHECKED - MCP	REVISED -
PLOT DATE = 11/18/2014	DATE - 10/28/2014	REVISED -

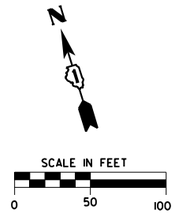
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

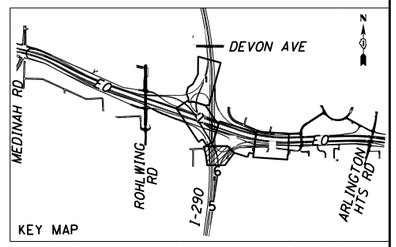
RAMP G1
ROADWAY LIGHTING PLAN

SCALE: | SHEET NO. OF SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	316
	SHEET NO. LT-5	CONTRACT NO. 60Y95		
	ILLINOIS FED. AID PROJECT			







NOTES:

1. UNIT DUCT, 600V, 3-1/C NO.2, 1/C NO.4 GROUND, (XLP-TYPE USE), 1 1/2" DIA. POLYETHYLENE (816030810).

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING HIS WORK FOR THE INSTALLATION OF UNIT DUCT WITH THE TOLLWAY I-13-4607 CONTRACTOR IN ACCORDANCE WITH THE MAINTENANCE OF LIGHTING SYSTEMS COORDINATION SPECIAL PROVISION. UNIT DUCT SHALL BE PULLED INTO LIGHTING CONTROLLER AND CONNECTION TO RESPECTIVE CIRCUIT(S) SHALL BE MADE BY THE TOLLWAY I-13-4607 CONTRACTOR.

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Engineers & Architects

USER NAME = esantiag	DESIGNED - MCP	REVISED - 11/14/2014
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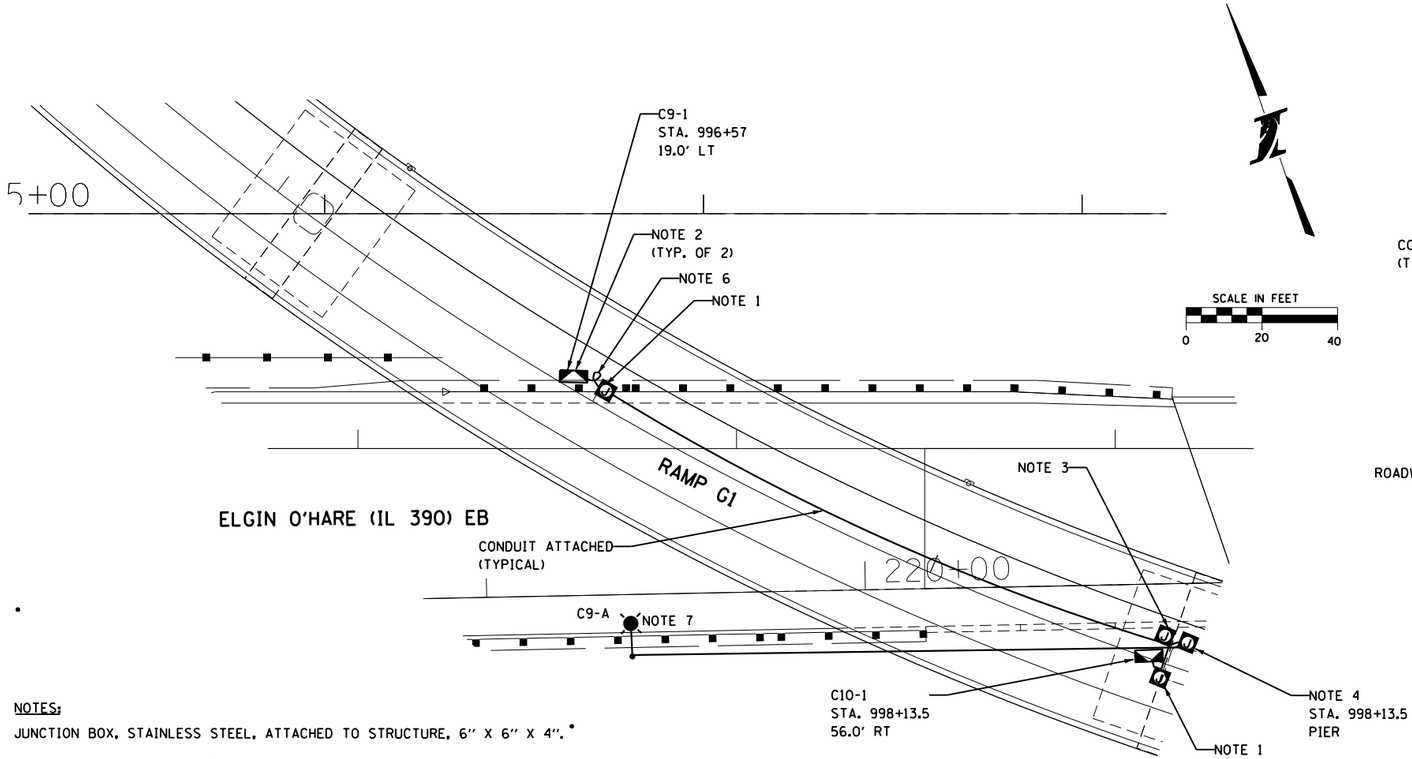
PLOT DATE = 11/18/2014	DATE - 10/28/2014	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RAMP G1
ROADWAY LIGHTING PLAN

SCALE: | SHEET NO. OF SHEETS | STA. | TO STA.

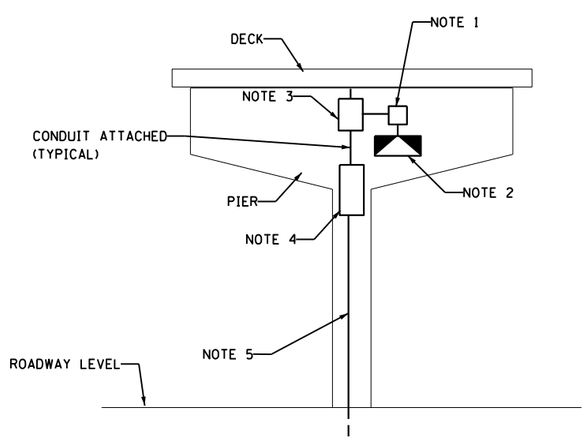
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	317
	SHEET NO. LT-6	CONTRACT NO. 60Y95		
	ILLINOIS FED. AID PROJECT			



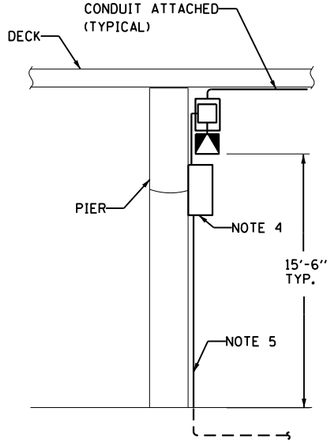
NOTES;

1. JUNCTION BOX, STAINLESS STEEL, ATTACHED TO STRUCTURE, 6" X 6" X 4".
2. UNDERPASS LUMINAIRE, LED (INSTALLED UNDER SEPARATE CONTRACT)
3. JUNCTION BOX, STAINLESS STEEL, ATTACHED TO STRUCTURE, 12" X 10" X 6". JUNCTION BOX SHALL BE PLACED IN THE MIDDLE OF PIER CAP, AS SHOWN ON ELEVATION DETAIL.
4. JUNCTION BOX, STAINLESS STEEL, ATTACHED TO STRUCTURE, 24" X 24" X 9".
5. UNIT DUCT, WITH 4-1/C NO. 2 AND 1/C NO. 4 GROUND, 600V (XLP-TYPE USE), 2" DIA. CNC (UNDER SEPARATE CONTRACT) IN CONDUIT ATTACHED TO STRUCTURE, 3" DIA. PVC COATED GALVANIZED STEEL. CONDUIT SHALL END IN THE GROUND WITH A 2'-0" RADIUS ELBOW.
6. 1" LIQUIDTIGHT METALLIC FLEXIBLE CONDUIT WITH 2 #10, 1 #10 GRD., MAX. 6'-0" LENGTH.
7. WIRING AND ADJACENT TOLLWAY POLE SHALL BE INSTALLED UNDER SEPARATE CONTRACT.

PLAN SHEET IS SHOWN FOR LOCATION OF SINGLE COIL FLARED LOOP INSERTS TO BE CAST IN RAMP G1 STRUCTURE ONLY. THE INSERTS AND THEIR INSTALLATION SHALL BE INCLUDED IN THE COST OF THE STRUCTURE. ALL CONDUIT, JUNCTION BOXES AND LUMINAIRES SHALL BE INSTALLED UNDER TOLLWAY CONTRACT I-13-4607.

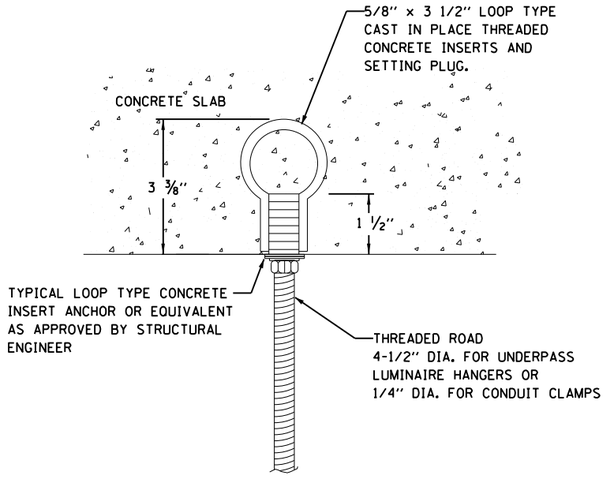


ELEVATION
PIER LOOKING SOUTH-EAST
NOT TO SCALE

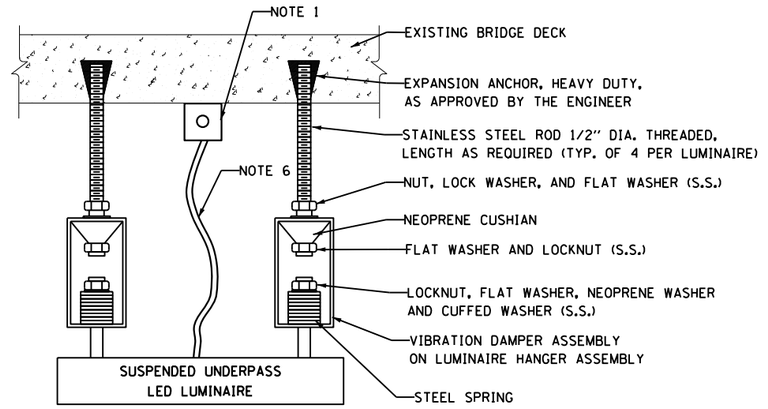


SIDE VIEW
AT PIER LOOKING SOUTH-WEST
NOT TO SCALE

TO TOLLWAY LIGHT POLE



SINGLE COIL FLARED LOOP INSERT CAST IN CONCRETE DETAIL



SUSPENDED UNDERPASS LUMINAIRE MOUNTING DETAIL
NOT TO SCALE

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USER NAME = esantiag	DESIGNED - MCP	REVISED -
	DRAWN - MLB	REVISED -
PLOT SCALE = 40.0000 ' / in.	CHECKED - MCP	REVISED -
PLOT DATE = 10/28/2014	DATE - --/--/----	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

UNDERPASS LIGHTING PLAN
RAMP G1 OVER ELGIN O'HARE (IL 390) EB

SCALE: | SHEET NO. OF SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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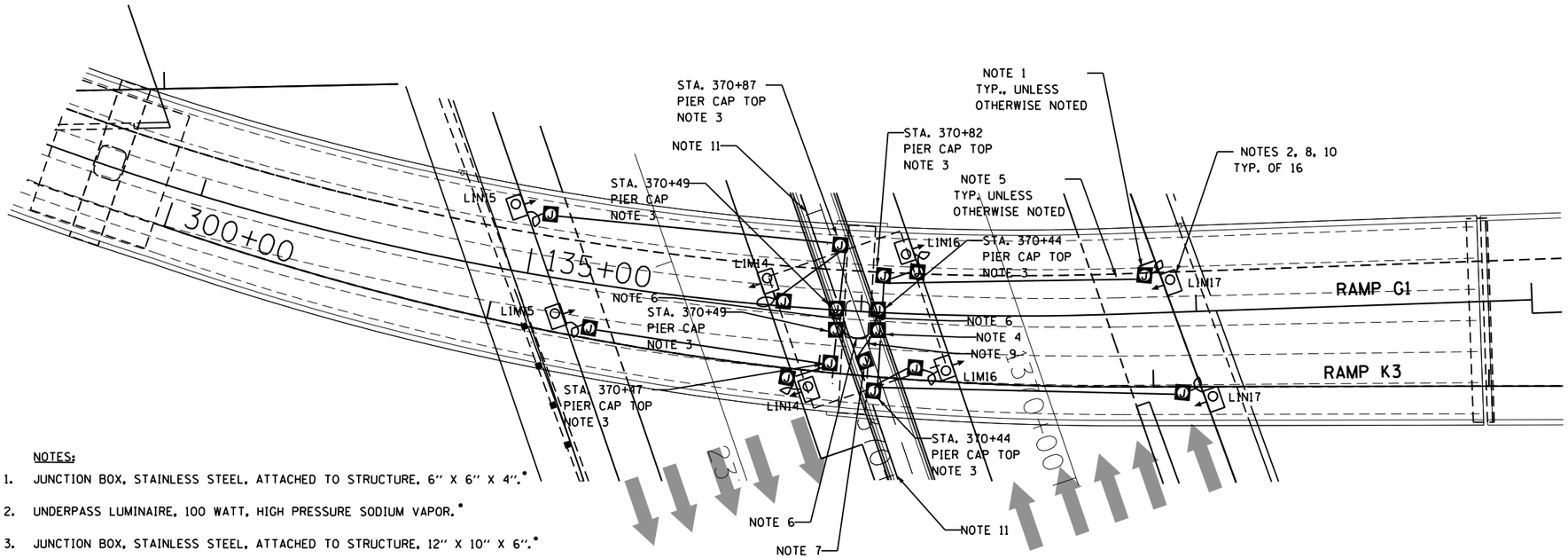
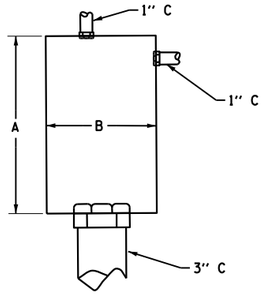
	SHEET NO. LT-7	CONTRACT NO. 60Y95		
	ILLINOIS FED. AID PROJECT			





I.D.O.T. D1 REQD. (A X B X C) = 16" X 14" X 6"
DIMENSION "A" REQD. BY NEC = 3" X 8 = 24"
J.B. DIMENSIONS: 24" X 14" X 6"

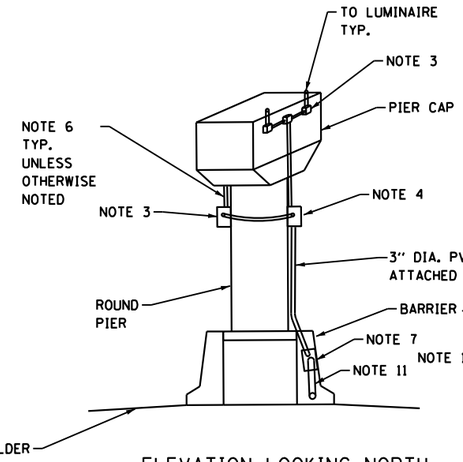
JUNCTION BOX, (SPECIAL) SIZING
NOT TO SCALE

NOTES:

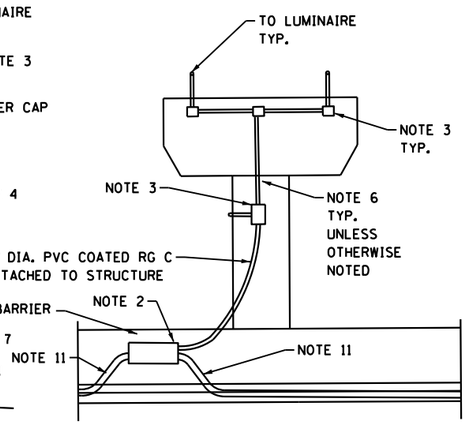
1. JUNCTION BOX, STAINLESS STEEL, ATTACHED TO STRUCTURE, 6" X 6" X 4".•
2. UNDERPASS LUMINAIRE, 100 WATT, HIGH PRESSURE SODIUM VAPOR.•
3. JUNCTION BOX, STAINLESS STEEL, ATTACHED TO STRUCTURE, 12" X 10" X 6".•
4. JUNCTION BOX (SPECIAL), STAINLESS STEEL, ATTACHED TO STRUCTURE, 24" X 14" X 6".• WITH UNDERPASS LIGHTING PROTECTION. SEE DETAIL THIS SHEET FOR SIZING.
5. 3 - ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 10• IN CONDUIT ATTACHED TO STRUCTURE, 1" DIA., PVC COATED GALVANIZED STEEL.•
6. 4 - ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 10• IN CONDUIT ATTACHED TO STRUCTURE, 1" DIA., PVC COATED GALVANIZED STEEL.•
7. JUNCTION BOX, NON-METALLIC, EMBEDDED IN STRUCTURE, 21" X 11" X 8".•
8. LUMINAIRE SHALL BE 2' SET BACK FROM THE PAVED SHOULDER AND SHALL BE INSTALLED NO LOWER THAN THE BOTTOM BEAM FLANGE.
9. 3 - ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 2• AND ELECTRIC CABLE IN CONDUIT, 600V (XLP TYPE USE) 1/C NO. 4• IN CONDUIT ATTACHED TO STRUCTURE, 3" DIA., PVC COATED GALVANIZED STEEL.•
10. MOUNTING HEIGHT OF UNDERPASS LUMINAIRES UNDER RAMP G1/K3 BRIDGE OVER I-290 IS APPROX. 38 FT.
11. 3 - ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 2• AND ELECTRIC CABLE IN CONDUIT, 600V (XLP TYPE USE) 1/C NO. 4• IN CONDUIT EMBEDDED IN STRUCTURE, 2" DIA., PVC•
12. SEE IDOT D1 STANDARD DRAWINGS BE-900 AND BE-902 FOR INSTALLATION DETAILS.
13. CONDUITS ATTACHED TO BRIDGE DECK SHALL BE RUN BETWEEN THE 2 EXTERIOR GIRDERS ON EACH SIDE OF THE BRIDGES. SUPPORT HARDWARE SHALL BE PROVIDED AS PER N.E.C..
14. ALL CONDUIT AND JUNCTION BOXES SHALL BE ATTACHED USING SINGLE COIL FLARED LOOP INSERTS CAST IN PIER AND/OR DECK AS SHOWN ON SHEET LT-6 DETAIL.

PLAN SHEET IS SHOWN FOR LOCATION OF SINGLE COIL FLARED LOOP INSERTS TO BE CAST IN RAMP G1/K3 STRUCTURE ONLY. THE INSERTS AND THEIR INSTALLATION SHALL BE INCLUDED IN THE COST OF THE STRUCTURE. ALL CONDUIT, JUNCTION BOXES AND LUMINAIRES SHALL BE INSTALLED UNDER TOLLWAY CONTRACT I-13-4607.

UNDERPASS LUMINAIRE	WATTAGE	STATION	OFFSET	INSTALLATION
L1N14	100W	370+53	2' FROM EOP	SUSPENDED
L1M14	100W	370+88	2' FROM EOP	SUSPENDED
L1N15	100W	371+28	2' FROM EOP	SUSPENDED
L1M15	100W	370+93	2' FROM EOP	SUSPENDED
L1M16	100W	370+44	2' FROM EOP	SUSPENDED
L1N16	100W	370+79	2' FROM EOP	SUSPENDED
L1M17	100W	370+45	2' FROM EOP	SUSPENDED
L1N17	100W	370+10	2' FROM EOP	SUSPENDED



ELEVATION LOOKING NORTH
RAMPS G1/K3 OVER I-290
NOT TO SCALE



ELEVATION LOOKING WEST
RAMPS G1/K3 OVER I-290
NOT TO SCALE

SCALE IN FEET
0 20 40

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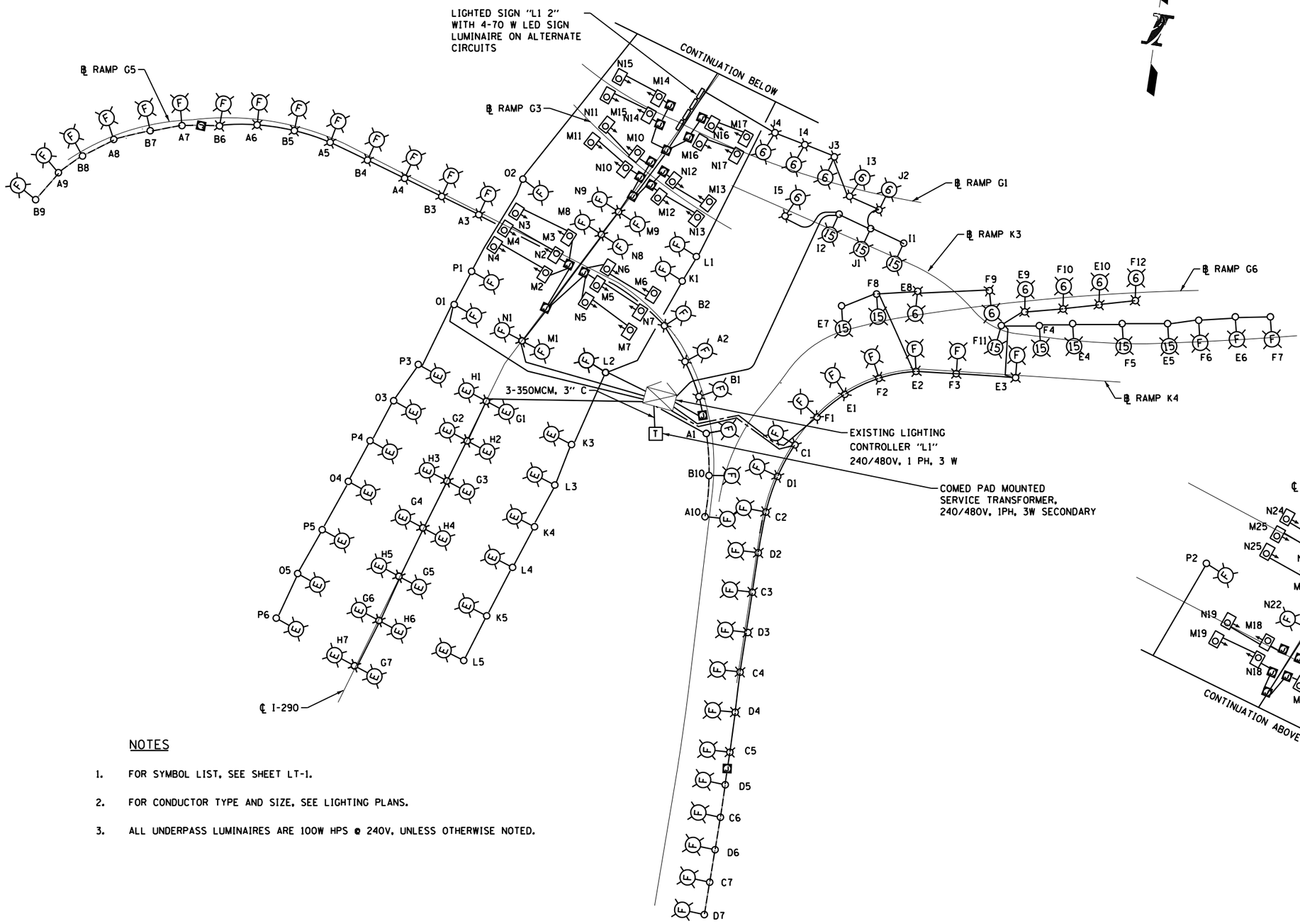
PLOT DATE = 10/28/2014	DATE - --/--/----	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

UNDERPASS LIGHTING PLAN
RAMPS G1, K3 AND G3 OVER I-290

SCALE: | SHEET NO. OF SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	319
	SHEET NO. LT-8	CONTRACT NO. 60Y95		
	ILLINOIS FED. AID PROJECT			



PANEL SCHEDULE AND LOAD TABULATION LIGHTING CONTROLLER L1 240/480VAC, 1-PHASE, 3-WIRE

MAIN BREAKER: 175A

CIRCUIT	BREAKER TRIP AMPS @ 240V	AMPS RED	AMPS BLACK
A	70-1P	18.3	
B	70-1P		18.3
C	70-1P	12.8	
D	70-1P		12.8
E	70-1P	18.3	
F	70-1P		21.9
G	70-1P	12.8	
H	70-1P		12.8
I	70-1P	9.7	
J	70-1P		7.9
K	70-1P	11	
L	70-1P		11
M	70-1P	17.6	
N	70-1P		17.6
O	70-1P	9.2	
P	70-1P		11
	TOTAL	111.5A @ 480V (53.5 kW)	

NOTES

1. FOR SYMBOL LIST, SEE SHEET LT-1.
2. FOR CONDUCTOR TYPE AND SIZE, SEE LIGHTING PLANS.
3. ALL UNDERPASS LUMINAIRES ARE 100W HPS @ 240V, UNLESS OTHERWISE NOTED.

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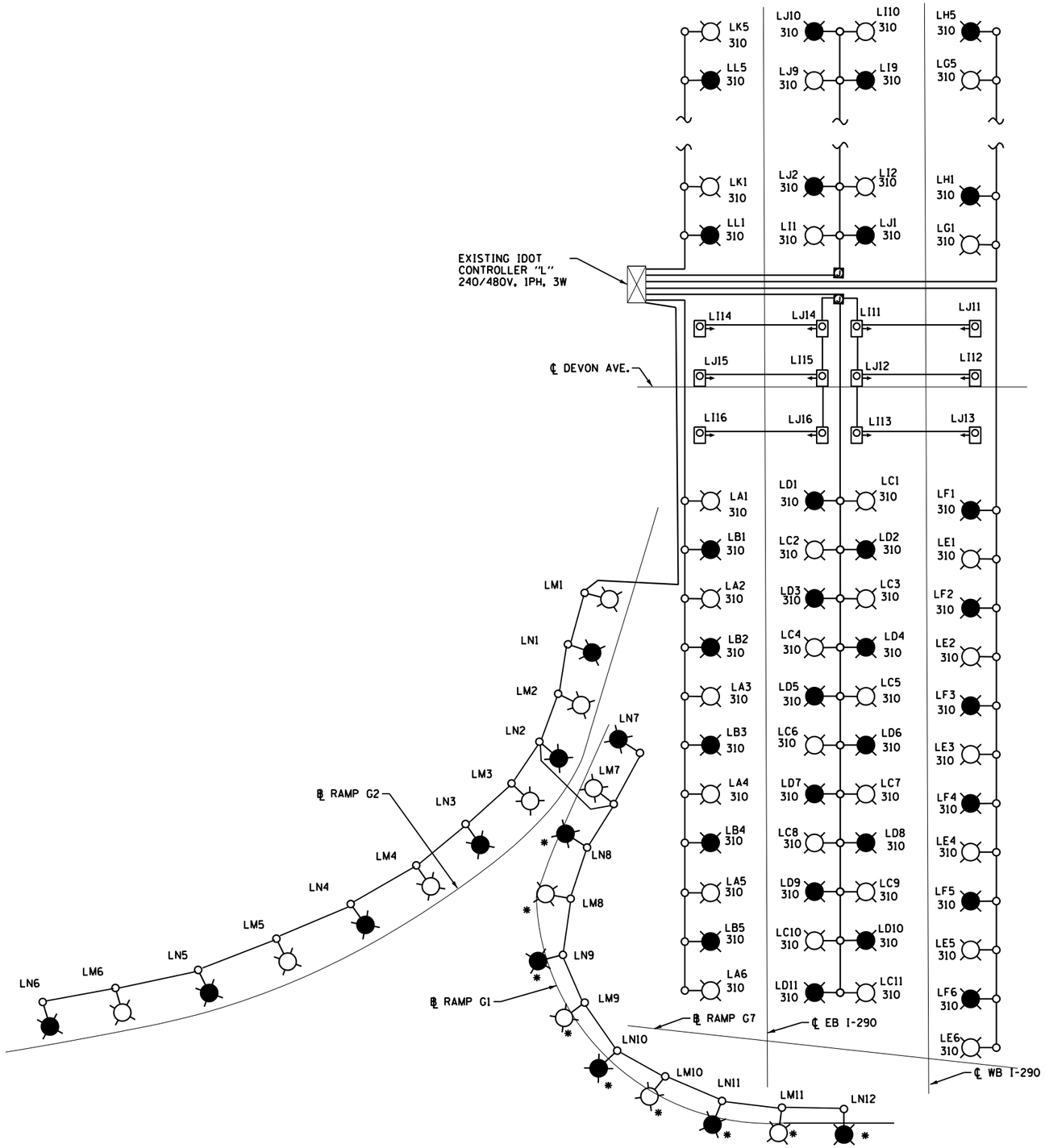
	DRAWN - MLB	REVISED -	
PLOT SCALE = 2.0000 ' / in.	CHECKED - MCP	REVISED -	
PLOT DATE = 11/18/2014	DATE - 10/28/2014	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SINGLE LINE DIAGRAM
IDOT LIGHTING CONTROLLER L1

SCALE: | SHEET NO. OF SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	320
	SHEET NO. LT-9	CONTRACT NO. 60Y95		
	ILLINOIS FED. AID PROJECT			



LIGHTING CONTROLLER "L" SINGLE LINE DIAGRAM

LEGEND

- 310 — EXISTING 310W HPS LUMINAIRE ON RED CABLE (UNLESS OTHERWISE NOTED)
- 310 — EXISTING 310W HPS LUMINAIRE ON BLACK CABLE (UNLESS OTHERWISE NOTED)
- PROPOSED 100W HPS UNDERPASS LUMINAIRE INSTALLED UNDER SEPARATE CONTRACT
- EXISTING LIGHTING CONTROL CABINET
- JUNCTION BOX
- 400W HPS LUMINAIRE ON RED/BLACK CABLE
- * DENOTES INSTALLATION UNDER THIS CONTRACT

PANEL SCHEDULE AND LOAD TABULATION LIGHTING CONTROLLER L 240/480VAC, 1-PHASE, 3-WIRE

MAIN BREAKER: 175A

CIRCUIT	BREAKER TRIP AMPS @ 240V	AMPS RED	AMPS BLACK
A	70-1P	9.1	
B	70-1P		7.6
C	70-1P	16.5	
D	70-1P		16.5
E	70-1P	9	
F	70-1P		9
G	70-1P	23	
H	70-1P		23
I	70-1P	18.9	
J	70-1P		18.9
K	70-1P	7.5	
L	70-1P		7.5
M	70-1P	21.3	
N	70-1P		23.2
	TOTAL	105.5A @480V (50.6kW)	

NOTES

1. FOR SYMBOL LIST, SEE SHEET LT-1.
2. FOR CONDUCTOR TYPE AND SIZE, SEE LIGHTING PLANS.

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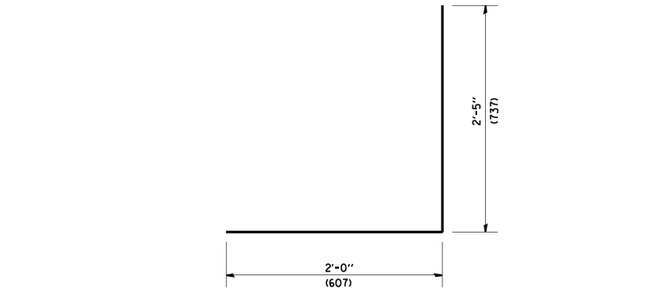
	DRAWN - MLB	REVISED -
PLOT SCALE = 2.0000 ' / in.	CHECKED - MCP	REVISED -
PLOT DATE = 10/28/2014	DATE - --/--/----	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

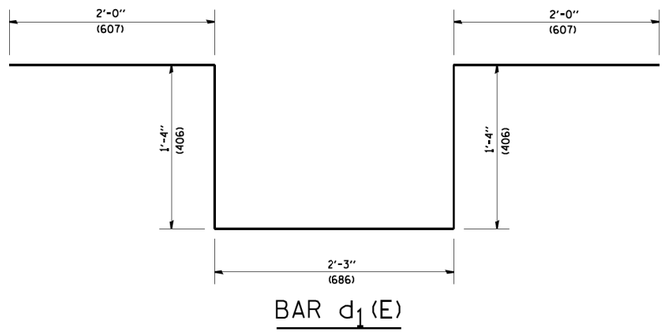
SINGLE LINE DIAGRAM
IDOT LIGHTING CONTROLLER L

SCALE: | SHEET NO. OF SHEETS | STA. | TO STA.

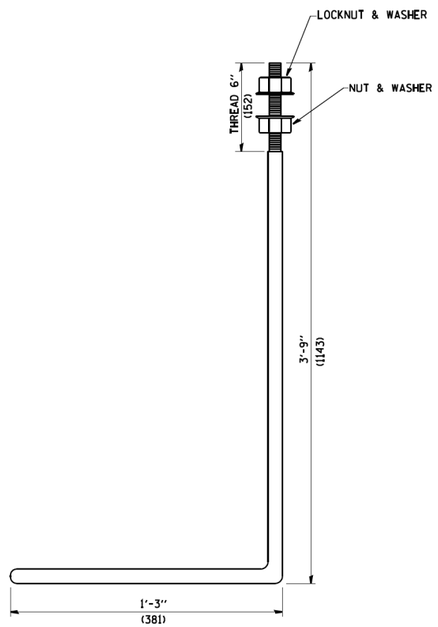
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	321
	SHEET NO. LT-10	CONTRACT NO. 60Y95		
	ILLINOIS FED. AID PROJECT			



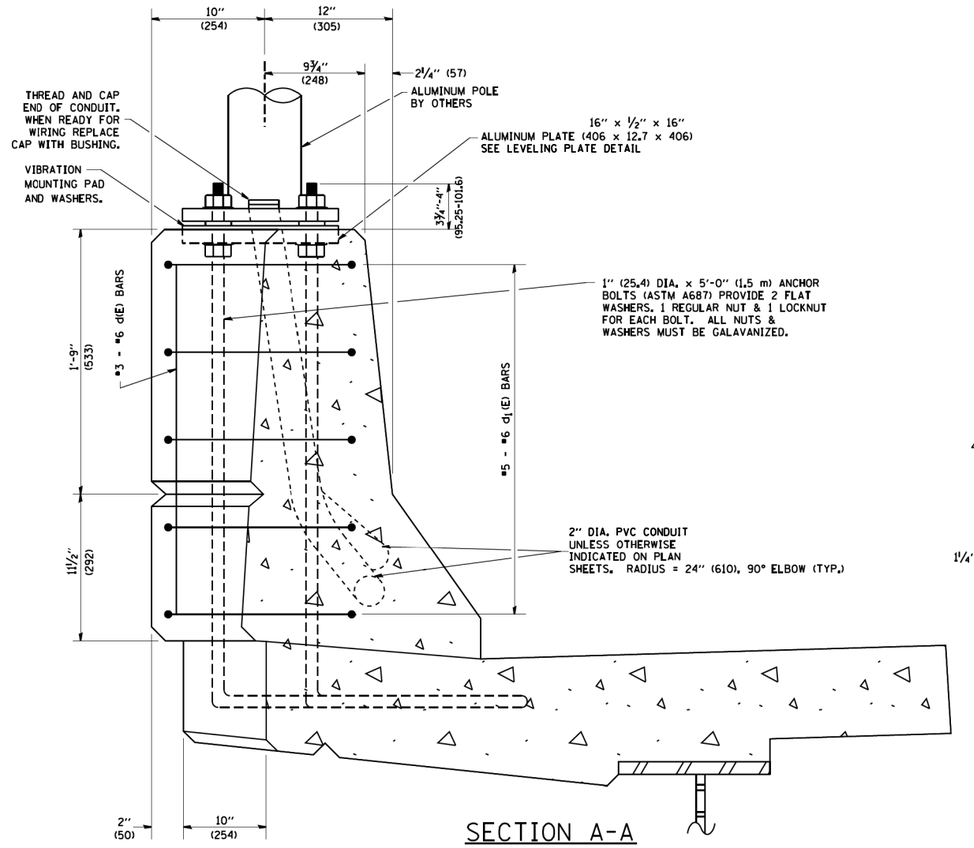
BAR d (E)



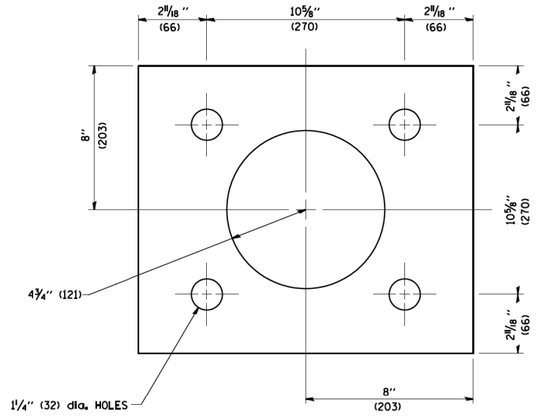
BAR d_1 (E)



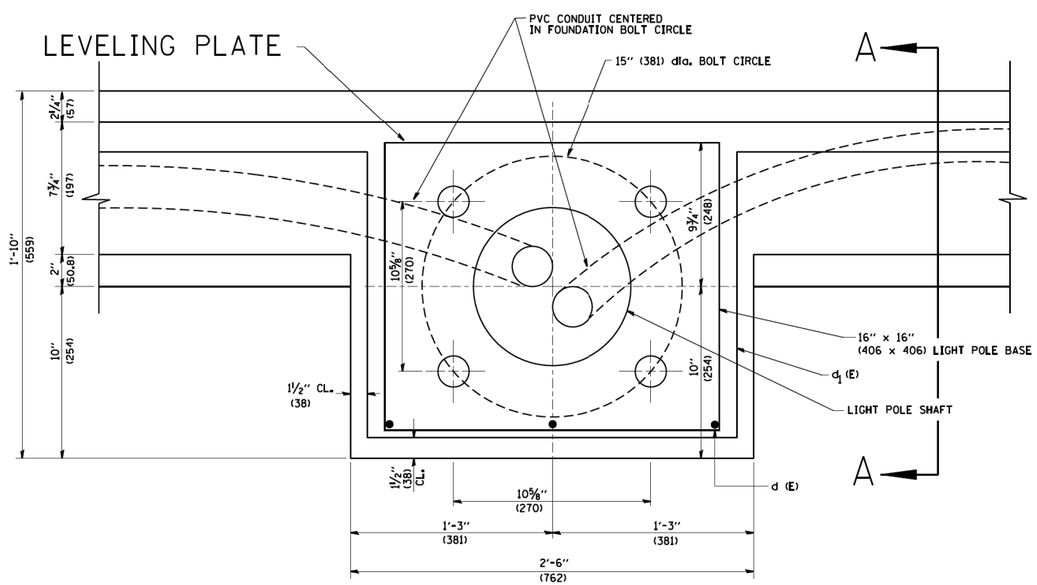
1" (25.4) dia. ANCHOR BOLT



SECTION A-A



LEVELING PLATE DETAIL



PLAN

NOTES

1. ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.
2. LEVEL LIGHT POLE PLATES, USING THE FLANGE NUTS, PRIOR TO POURING THE PARAPET WALL. THE TOP OF THE PLATE SHALL BE AT THE SAME ELEVATION AS THE FINISHED CONCRETE PARAPET.
3. THE COST OF ANCHOR BOLTS, LEVELING PLATE AND FOUNDATION IS INCLUDED IN THE COST OF THE BRIDGE STRUCTURE.

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	DRAWN - MLB	REVISED -
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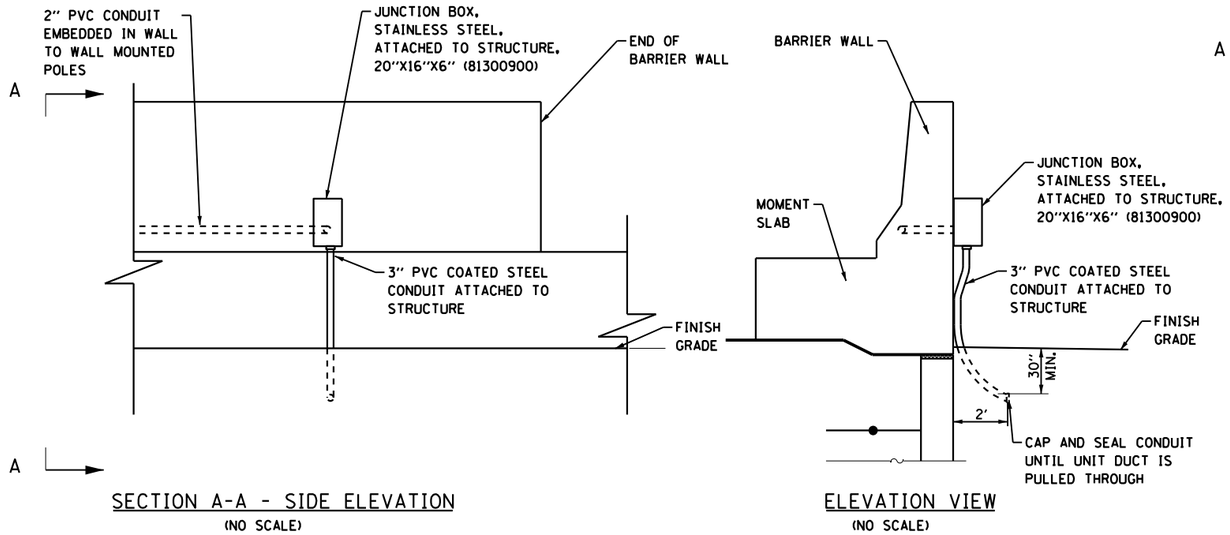
PLOT DATE = 10/28/2014	DATE - --/--/----	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHT POLE MOUNTED ON CONCRETE PARAPET WALL
15" (381 mm) BOLT CIRCLE

SCALE: | SHEET NO. OF SHEETS | STA. | TO STA.

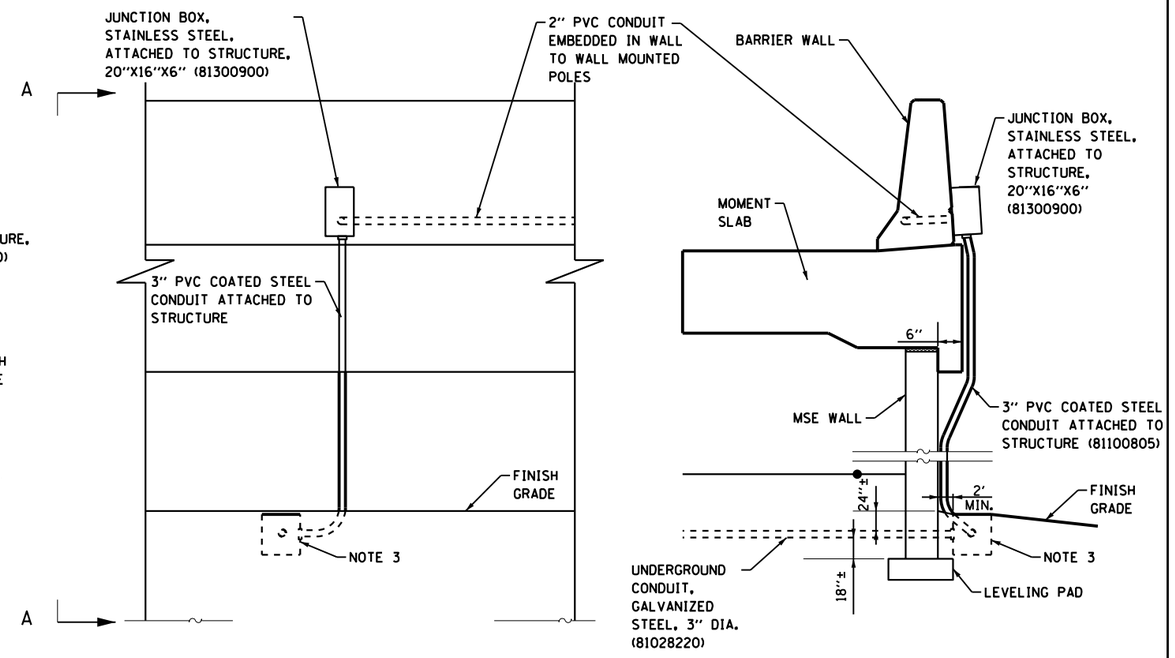
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	322
	SHEET NO. LT-11	CONTRACT NO. 60Y95		
	ILLINOIS FED. AID PROJECT			



SECTION A-A - SIDE ELEVATION
(NO SCALE)

ELEVATION VIEW
(NO SCALE)

WALL TO OUTSIDE UNDERGROUND CONDUIT TRANSITION DETAIL
STA. 120+72 (RAMP G1), STA. 126+31 (RAMP G1) AND STA. 620+46 (RAMP G6)



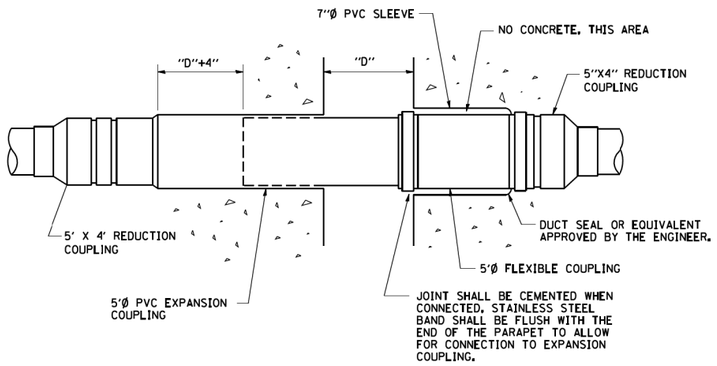
SECTION A-A - SIDE ELEVATION
(NO SCALE)

ELEVATION VIEW
(NO SCALE)

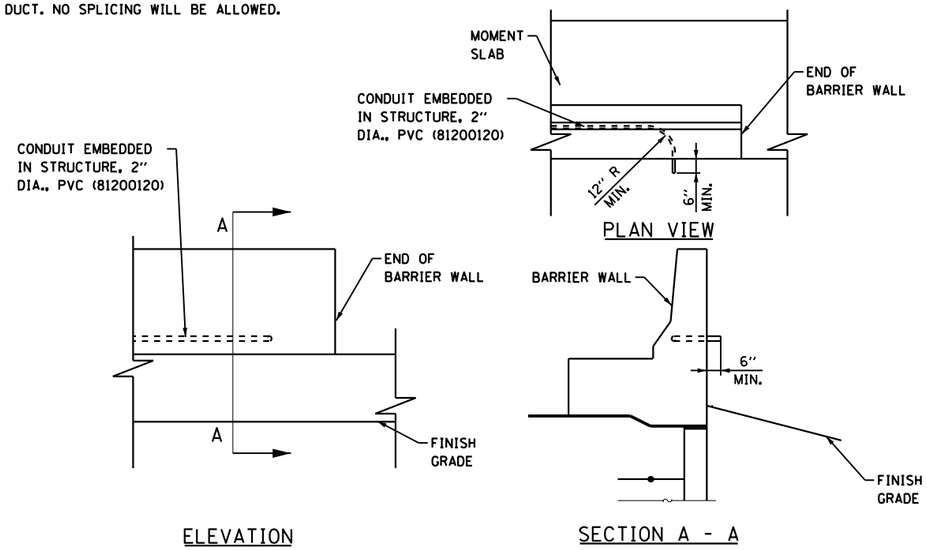
WALL TO OPPOSITE SIDE CONDUIT TRANSITION DETAIL
STA. 143+65 (RAMP G1)

NOTES:

1. SEE SHEET LT-1 FOR ELECTRICAL SYMBOLS.
2. THE FLEXIBLE CONDUIT, COUPLING AND ASSOCIATED HARDWARE SHALL BE INCIDENTAL TO JUNCTION BOX, STAINLESS STEEL, ATTACHED TO STRUCTURE, 18"X12"X6" (81300800) PAY ITEM. NO SEPARATE PAYMENT WILL BE MADE.
3. HEAVY-DUTY HANDHOLE (81400200). HANDHOLE SHALL BE USED ONLY FOR PULLING THE UNIT DUCT. NO SPLICING WILL BE ALLOWED.
4. FOR REINFORCEMENT, SEE STRUCTURAL DRAWINGS.



INSTALLATION OF CONDUIT
IN BRIDGE PARAPET EXPANSION JOINT
(N.T.S.)



JUNCTION BOX AT STA. 148+94 (RAMP G1) INSTALLATION DETAIL
(NO SCALE)

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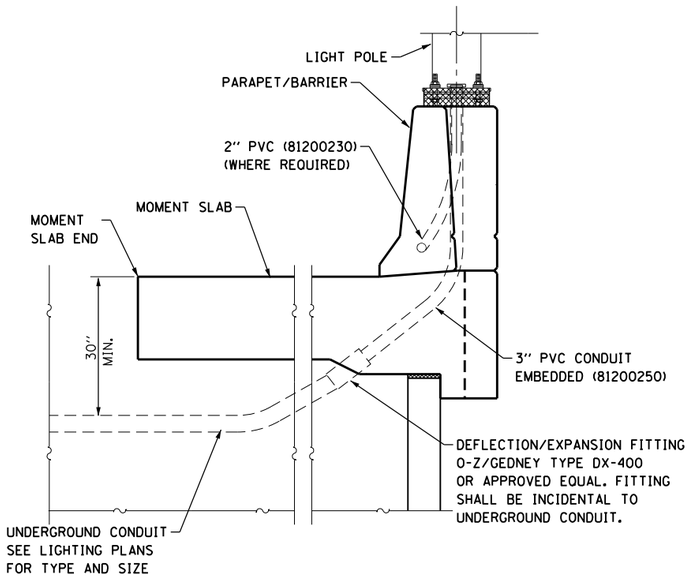
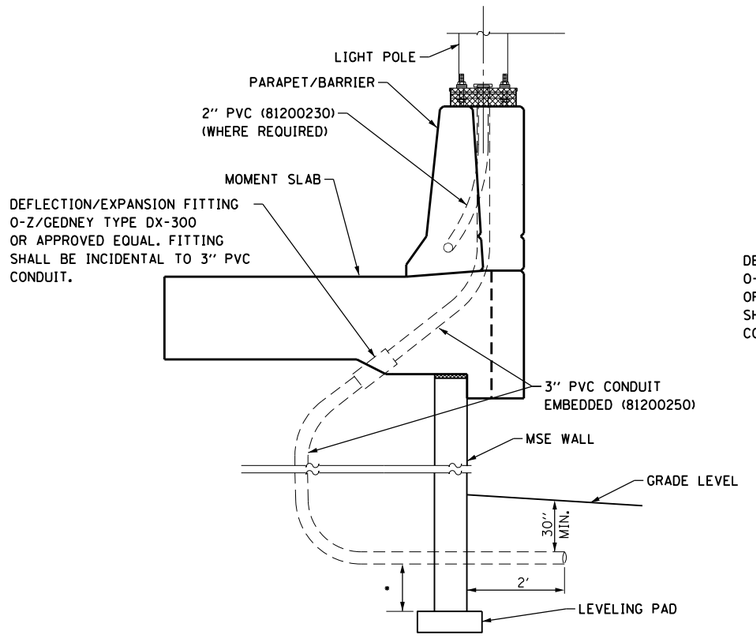
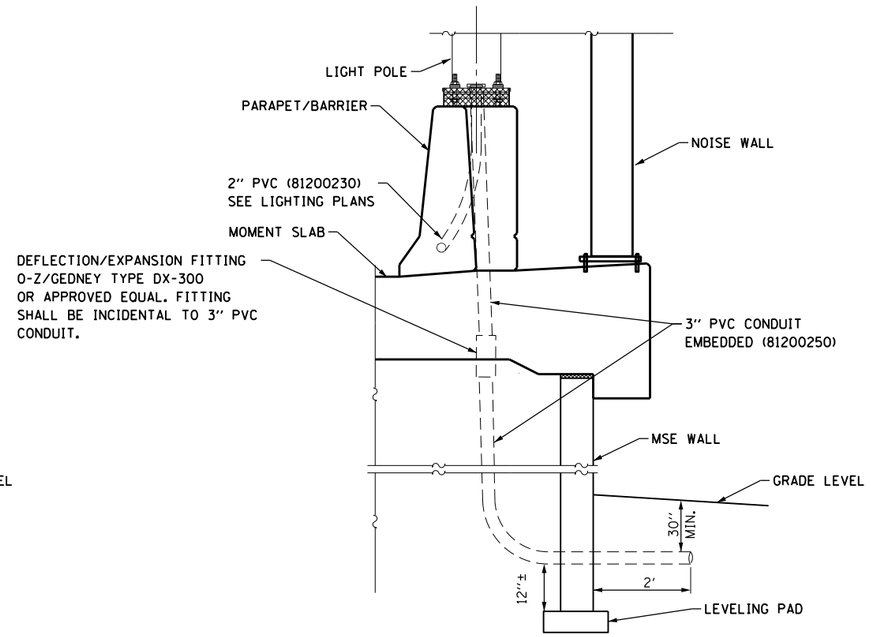
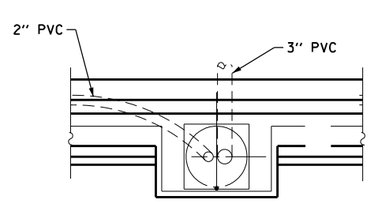
		DRAWN - MLB	REVISED -		
	PLOT SCALE = 2.0000 ' / in.	CHECKED - MCP	REVISED -		SCALE: / SHEET NO. OF SHEETS / STA. TO STA.
	PLOT DATE = 11/18/2014	DATE - 10/28/2014	REVISED -		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	323
	SHEET NO. LT-12	CONTRACT NO. 60Y95		
	ILLINOIS FED. AID PROJECT			



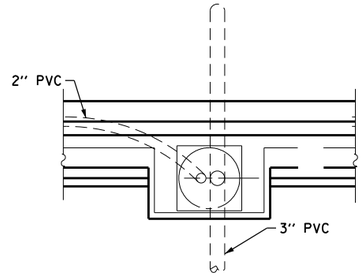






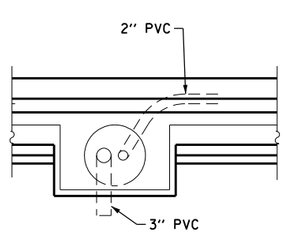
STA. 143+70 (RAMP G1)
STA. 148+05 (RAMP G1) (NO 2" PVC CONDUIT EMBEDDED REQUIRED)

3" CONDUIT
POLE ON WALL ACROSS ROAD



STA. 123+75 (RAMP G1) - •=18"±
STA. 145+75.5 (RAMP G1) - •=12"±
STA. 307+15 (RAMP K3)- •=12"± (NO 2" PVC CONDUIT EMBEDDED REQUIRED)

3" CONDUIT
POLE ON WALL TO BACK OF WALL



STA. 625+49 (RAMP G6)

3" CONDUIT
POLE ON WALL TO BACK OF WALL

NOTE:

FOR REINFORCEMENT, SEE STRUCTURAL DETAILS.

NON-TYPICAL CONDUIT/WIRING ROUTING FOR POLES ON TOP OF RETAINING WALLS

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PLOT DATE = 11/18/2014	DATE - 10/28/2014	REVISED -

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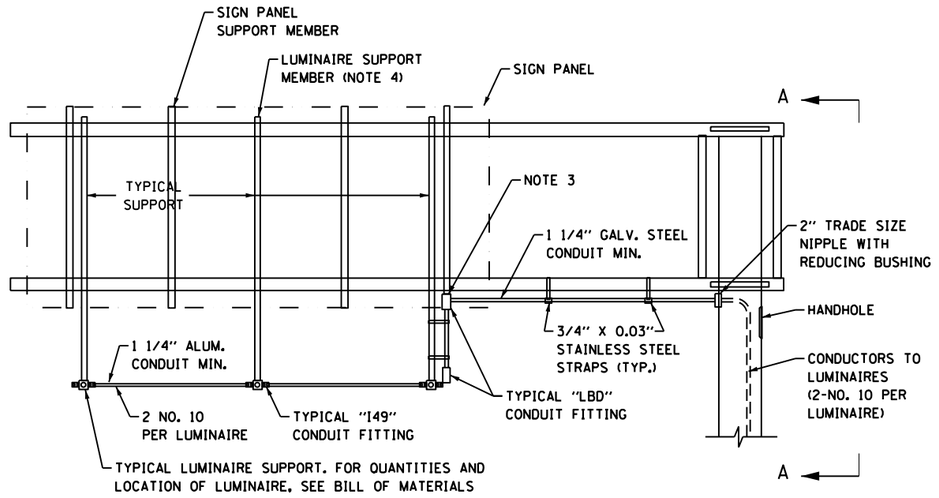
DEPARTMENT OF TRANSPORTATION

CONDUIT TRANSITION
AT POLE FOUNDATIONS

SCALE: | SHEET NO. OF SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	324
	SHEET NO. LT-13	CONTRACT NO. 60Y95		
	ILLINOIS FED. AID PROJECT			

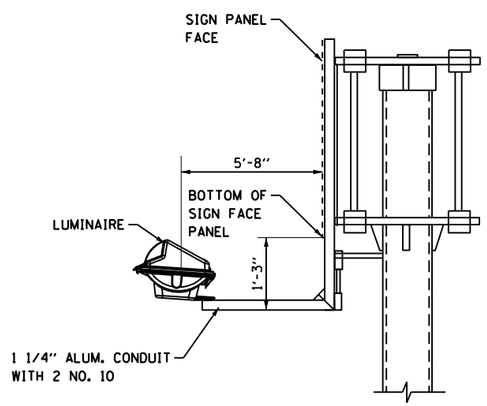


FRONT ELEVATION

(LUMINAIRES NOT SHOWN)
(NO SCALE)

NOTES;

1. A GROUND WIRE (NO. 12 AWG.) WILL BE RUN FROM THE GROUNDING BUSHING (OVERHEAD SUPPORT) TO THE GROUNDING BUSHING IN THE JUNCTION BOX.
2. ALL EQUIPMENT SHALL BE GROUNDED AND BONDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND THE NATIONAL ELECTRICAL SAFETY CODE.
3. CONDUIT AND FITTINGS ATTACHED TO THE ALUMINUM LUMINAIRE SUPPORTS SHALL BE ALUMINUM. GALVANIZED STEEL CONDUIT AND CAST IRON ALLOY FITTINGS SHALL BE UTILIZED WHERE ATTACHED TO THE STEEL SIGN SUPPORT TRUSS. THREADED JOINTS BETWEEN DISSIMILAR METALS SHALL BE COATED WITH AN APPROVED THREAD LUBRICANT.
4. LUMINAIRE SUPPORT MEMBERS TO BE INSTALLED ONLY WHEN SIGN STRUCTURE IS TO BE ILLUMINATED.
5. 4 LUMINAIRES SHALL BE EQUALLY SPACED CENTER TO CENTER AND HALF SPACING FROM THE EDGE OF THE SIGN(S). ILLUMINANCE LEVEL FOR THE SIGNS SHALL BE BETWEEN 10 AND 20 FOOTCANDLE.
6. SEE OVERHEAD SIGN STRUCTURE DETAILS AND I.D.O.T. DI STANDARD DRAWING BE-600 FOR ADDITIONAL INFORMATION.



SECTION A-A - SIDE ELEVATION

(NO SCALE)

KNIGHT
Engineers & Architects

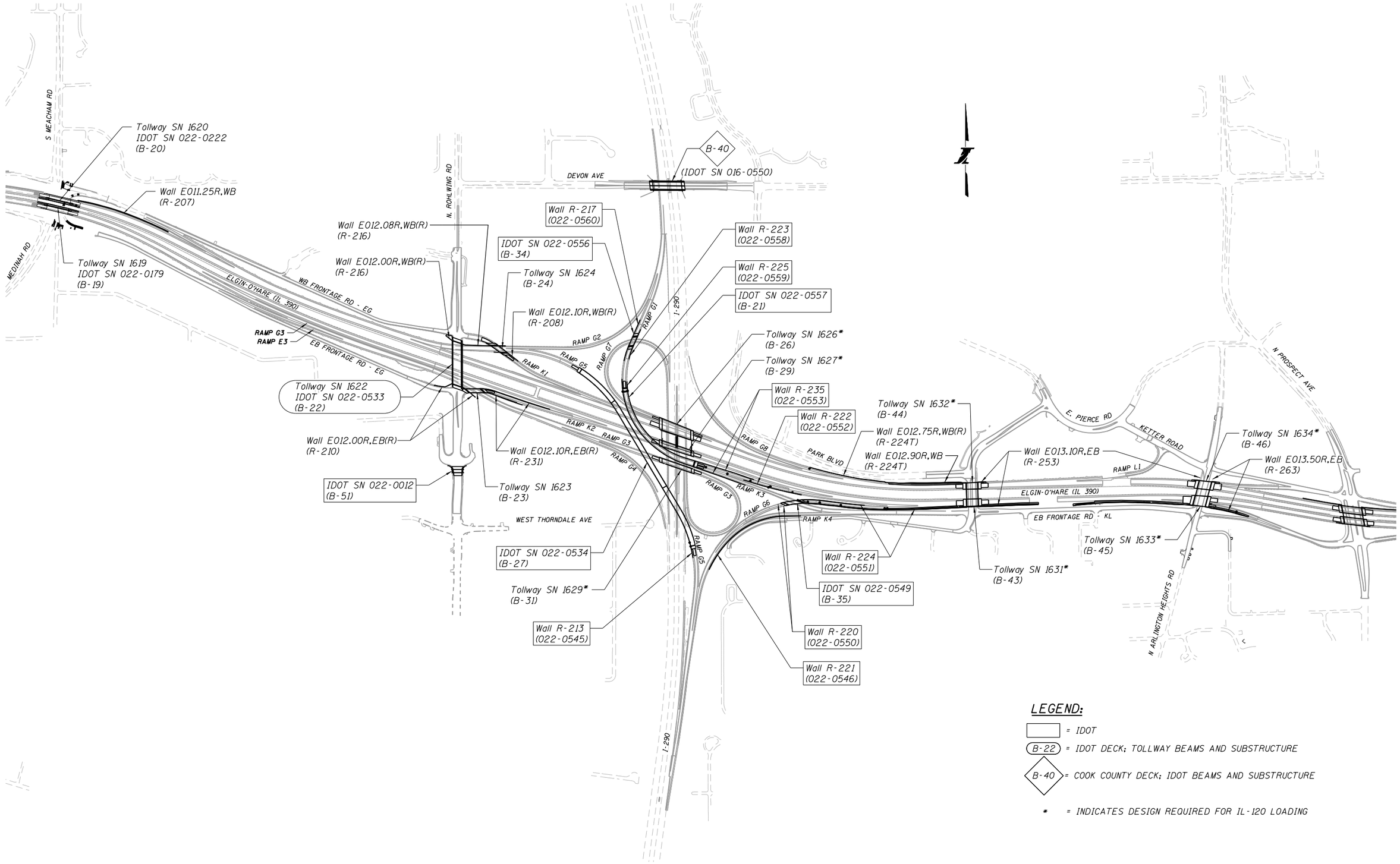
USER NAME = asantiag	DESIGNED - MCP	REVISED -
	DRAWN - MLB	REVISED -
PLOT SCALE = 2.0000 ' / in.	CHECKED - MCP	REVISED -
PLOT DATE = 11/18/2014	DATE - 10/28/2014	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SIGN LIGHTING DETAIL

SCALE: | SHEET NO. OF SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	325
	SHEET NO. LT-14	CONTRACT NO. 60Y95		
	ILLINOIS FED. AID PROJECT			



LEGEND:

- [ ] = IDOT
- (B-22) = IDOT DECK; TOLLWAY BEAMS AND SUBSTRUCTURE
- ◇ B-40 = COOK COUNTY DECK; IDOT BEAMS AND SUBSTRUCTURE
- * = INDICATES DESIGN REQUIRED FOR IL-120 LOADING

FILE NAME = D14607i-6a-sht-structural-key-plan-01.dgn	USER NAME = asantiag	DESIGNED - MS	REVISED -
CH2MHILL®		DRAWN - CAK	REVISED -
	PLOT SCALE = 900.0000 ' / in.	CHECKED - SML	REVISED -
	PLOT DATE = 10/28/2014	DATE - 07/07/2014	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE AND RETAINING WALL KEY MAP

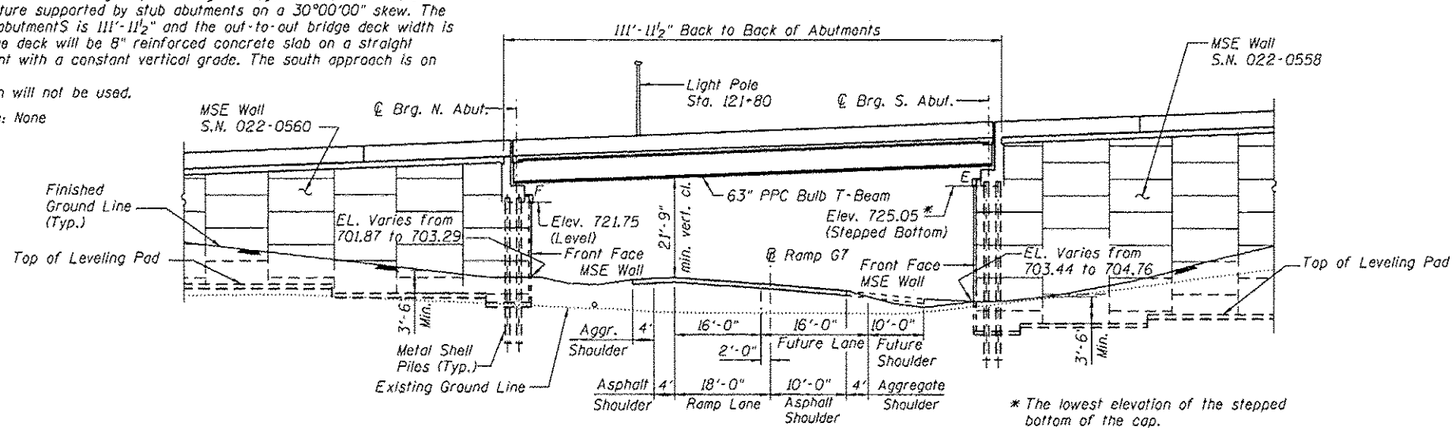
SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	326
	DRAWING NO. SKP-1	CONTRACT NO. 60Y95		
	ILLINOIS FED. AID PROJECT			

Bench Mark: BM#716 Cut square in the northwest end of bridge wall. Approximately 65 feet north of the centerline of Thorndale Ave. and 168 feet west of the centerline of I-290, approximately 12 feet west of bridge deck.
Elevation: 731.40 (NAVD88).

The proposed structure is a single-span straight bridge on 63" PPC Bulb T Beams superstructure supported by stub abutments on a 30°00'00" skew. The back-to-back of obutmentS is 111'-11½" and the out-to-out bridge deck width is 45'-2". The bridge deck will be 8" reinforced concrete slab on a straight horizontal alignment with a constant vertical grade. The south approach is on curved alignment.
Stage Construction will not be used.

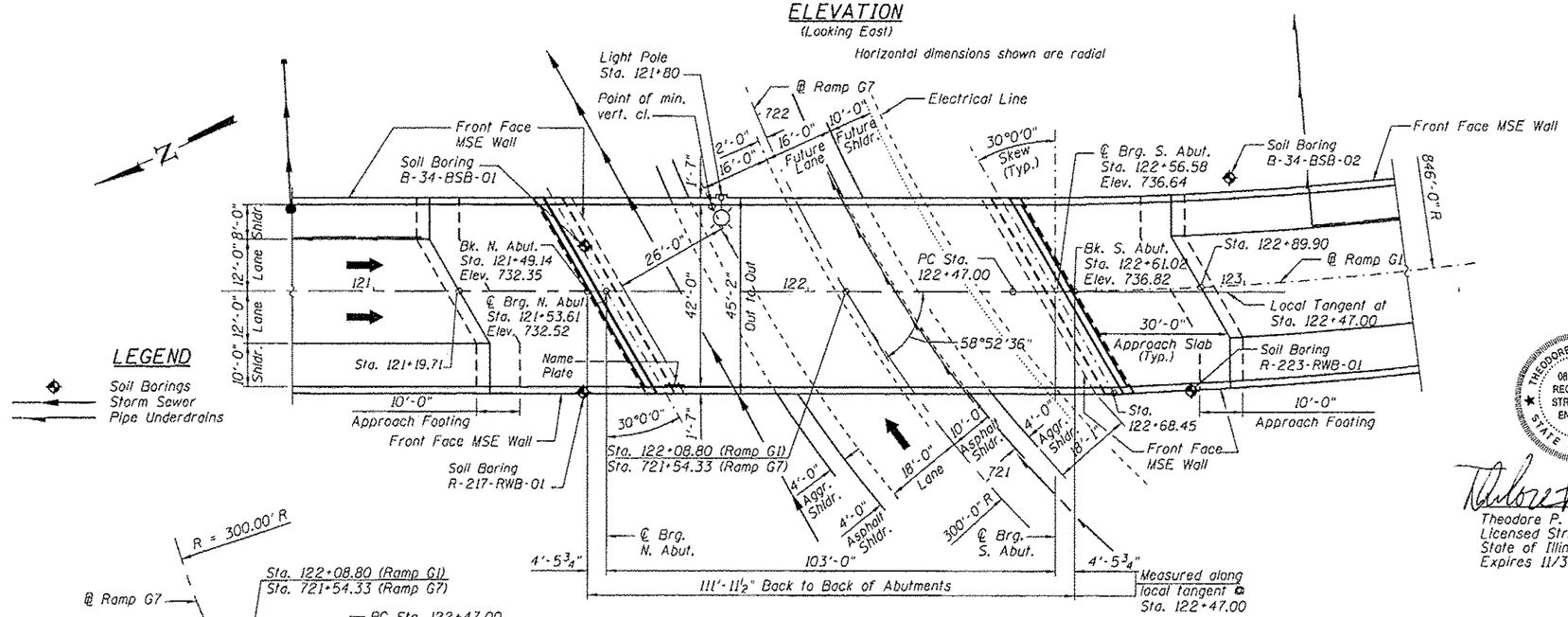
Existing Structure: None



* The lowest elevation of the stepped bottom of the cap.

ELEVATION
(Looking East)

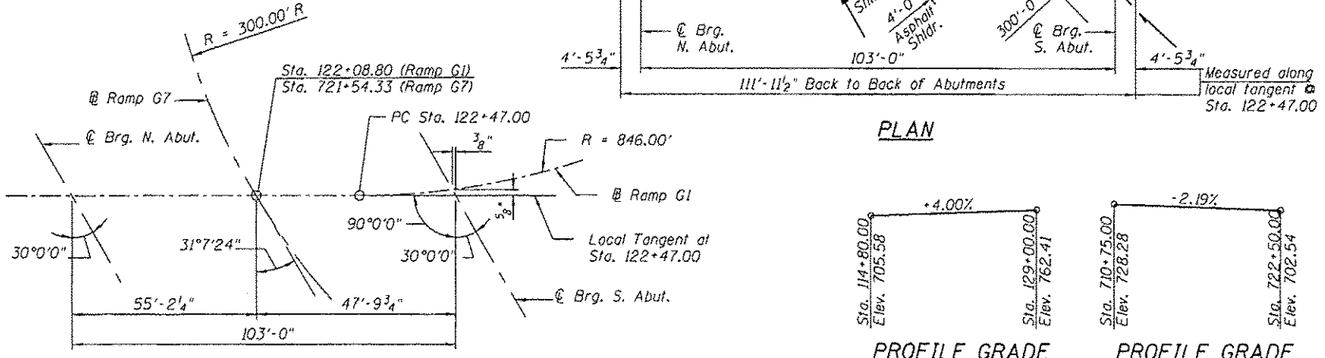
Horizontal dimensions shown are radial



LEGEND

- Soil Borings
- Storm Sewer
- Pipe Underdrains

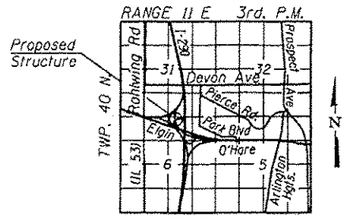
PLAN



OFFSET SKETCH

PROFILE GRADE
(Ramp G1)

PROFILE GRADE
(Ramp G7)



LOCATION SKETCH

LOADING HL-93

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

DESIGN SPECIFICATIONS

2012 AASHTO LRFD Bridge Design Specifications with 2013 Interims.
Illinois Department of Transportation Bridge Manual, January 2012.

DESIGN STRESSES

FIELD UNITS
f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)

PRECAST PRESTRESSED UNIT
f'c = 6,000 psi
f'ci = 5,000 psi
fpu = 270,000 psi (½"ϕ Low relax. strands)
fpbt = 201,960 psi (½"ϕ Low relax. strands)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S o1) = 0.085g
Design Spectral Acceleration at 0.2 sec. (S os) = 0.150g
Soil Site Class = D

CURVE DATA

Ramp G1	Ramp G7
P.I. Sta. = 132+00.31	P.I. Sta. = 720+83.19**
Δ = 96°49'35.08"	Δ = 205°15'57.74"
D = 6°46'21.18"	D = 19°05'54.94"
R = 846.00'	R = 300.00'
T = 953.32'	T = 1,338.50'
L = 1,429.69'	L = 1,074.77'
E = 428.57'	E = 1,671.61'
e = 6.0%	e = 7.5%
P.C. Sta. = 122+47.00	P.C. Sta. = 715+45.80
P.T. Sta. = 136+76.69	P.T. Sta. = 726+20.58
S.E. Run = 121+75 to 122+85	

** Indicates station is a point on the curve.

STATION 122+08.80
BUILT BY
STATE OF ILLINOIS
F.A.P. RT. 345 SEC. 2013-083-R&B
LOADING HL-93
STR. NO. 022-0556

THEODORE P. GEORGAS 081-004609 REGISTERED STRUCTURAL ENGINEER STATE OF ILLINOIS

Theodore P. Georgas 11-26-14
Theodore P. Georgas Date
Licensed Structural Engineer
State of Illinois 081-4609
Expires 11/30/2016

NAME PLATE
See Std. 515001

APPROVED
For Structural Adequacy Only
Engineer of Bridges & Structures

GENERAL PLAN
RAMP G1 OVER RAMP G7
ELGIN O'HARE (IL-390) AT I-290
DUPAGE COUNTY
STATION 122+08.80
STRUCTURE NO. 022-0556

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PLOT DATE = 11/26/2014	CHECKED - JPM/TPG/MMH	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION
STRUCTURE NO. 022-0556
SHEET NO. 01 OF 26 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	327
	DRAWING NO. SC-01	CONTRACT NO. 60Y95		
	ILLINOIS FED. AID PROJECT			

INDEX OF SHEETS

GENERAL NOTES

1. Reinforcement bars designated (E) shall be epoxy coated.
2. Reinforcement bar bending dimensions are out to out.
3. Bars noted thus, 3x2-#5 indicates 3 lines of bars with 2 lengths of bars per line.
4. All exposed concrete edges shall have a $\frac{3}{4}$"x45°chamfer, except where shown otherwise. Chamfer on vertical edges shall be continued a minimum of one foot below finished ground level.
5. Concrete Sealer shall be applied to the exposed surfaces of backwalls, bridge seats and front face of pile caps.
6. Cover from the face of the concrete to face of reinforcement bars shall be 3" for surfaces formed against earth and 2" for all other surfaces unless otherwise shown.
7. Bridge seat reinforcement shall be carefully placed as detailed in the plans to avoid interference with drilling holes for anchor rods. The beams shall be erected in final position prior to drilling holes for and placing anchor rods.
8. Contractor shall not scale dimensions from the contract plans for construction purposes. Scales shown are for information only.
9. No construction joints except those shown on the plans will be allowed unless approved by the Engineer.
10. Upon completion of each structure, the Contractor shall measure the resulting horizontal and vertical clearances and submit them to the CM for review and inclusion in the As Built Plans (Record Drawings).
11. Slipforming of parapet is not allowed.
12. All bearing and side retainer anchor rods shall be set before permanently bolting diaphragms or cross frames over supports.
13. All side retainers shall be installed and bolted down prior to forming and pouring the deck slab.
14. The soil boring logs represent point information. Presentation of this information in no way implies that subsurface conditions are the same at locations other than the exact location of the boring.
15. After the beams are set, all elevations for determining fillet heights shall be taken at one time.
16. Whenever any material is deposited into a drainage system or drainage structures, the deposited material shall be removed at the close of each working day. At the conclusion of construction operations, all drainage systems and structures shall be free from dirt and debris deposited during the various construction operations. The work specified above will not be paid for separately, but shall be considered included in the cost of cleaning of existing scuppers and drain pipes.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Structures	Cu. Yd.	-	157.9	157.9
Concrete Superstructure	Cu. Yd.	290.6	29.1	319.7
Bridge Deck Grooving	Sq. Yd.	740	-	740
Protective Coat	Sq. Yd.	977	-	977
Furnishing and Erecting Precast Prestressed Concrete Bulb T-Beams 63"	Foot	731	-	731
Furnishing and Erecting Structural Steel	Pound	1,830	-	1,830
Reinforcement Bars, Epoxy Coated	Pound	81,850	13,610	95,460
Bar Splicers	Each	-	106	106
Furnishing Metal Shell Piles 12" x 0.250"	Foot	-	3,375	3,375
Driving Piles	Foot	-	3,375	3,375
Test Pile Metal Shells	Each	-	2	2
Pile Shoes	Each	-	52	52
Name Plates	Each	1	-	1
Preformed Joint Strip Seal	Foot	102	-	102
Elastomeric Bearing Assembly, Type I	Each	7	-	7
Anchor Bolts, 1"	Each	-	14	14
Anchor Bolts, 1 1/4"	Each	-	14	14
Concrete Sealer	Sq. Ft.	-	1,845	1,845

17. The fabricator, the Contractor and the beam transportation company shall provide adequate bracing and support for the PPC beams during handling, transporting, storing and erecting to ensure the safety of personnel associated with the project construction.
18. Precast Prestressed Concrete Bulb T Beams may be delivered to the site as soon as the beam reaches sufficient strength for transportation or a minimum of 5 days after casting, whichever is longer. A minimum period of 60 days between casting of the beam and placing of concrete deck shall be provide.
19. The erection plans and procedures shall be submitted to the CM for review and acceptance prior to starting the work. Review, acceptance and/or comments by the CM shall not be construed to guarantee the safety or final acceptability of the work or compliance with all applicable specifications, codes, or contract requirements, and shall neither relieve the Contractor of the responsibility and liability to comply with these requirements, nor create liability for the Tollway. Significant changes to the erection plan in the field must be approved by the Erection Engineer and accepted by the CM.
20. Concrete Superstructure shall have a seven days minimum cure.

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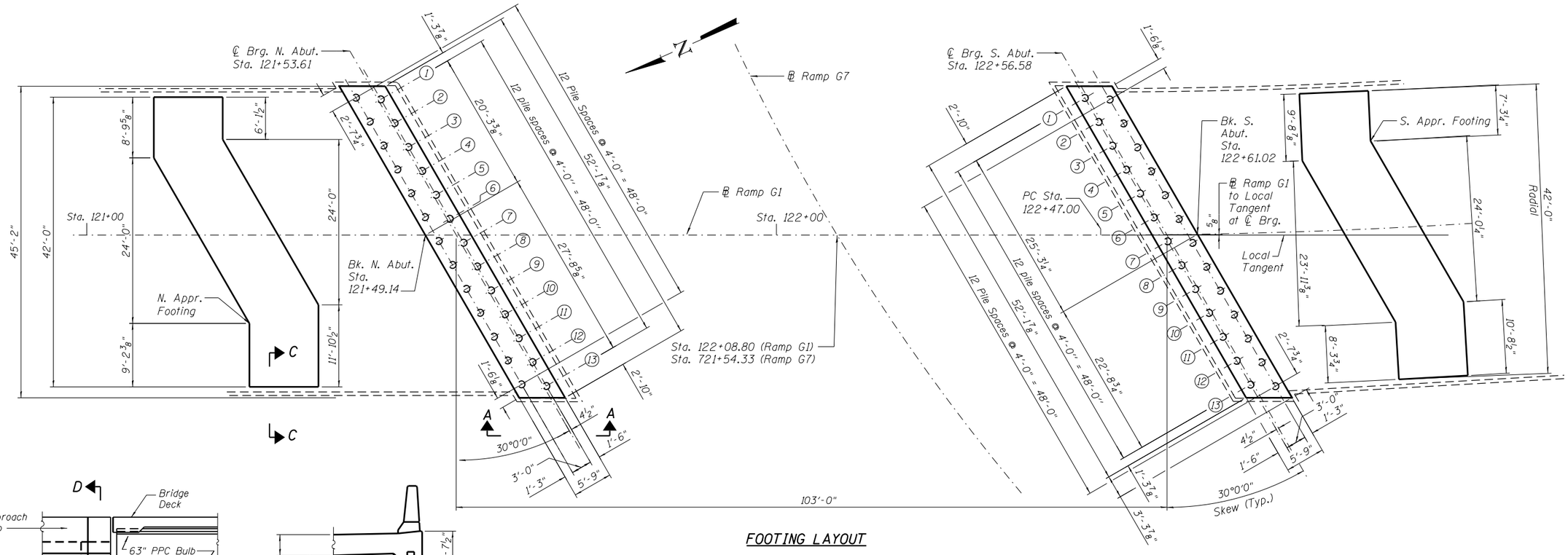
PLOT SCALE =	DRAWN - MPS	REVISED ___	
PLOT DATE = 10/28/2014	CHECKED - JPM/TPG/MMH	REVISED ___	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES AND TOTAL BILL OF MATERIAL
STRUCTURE NO. 022-0556
SHEET NO. 02 OF 26 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	328
DRAWING NO. SC-02		CONTRACT NO. 60Y95		
ILLINOIS FED. AID PROJECT				



END VIEW A-A

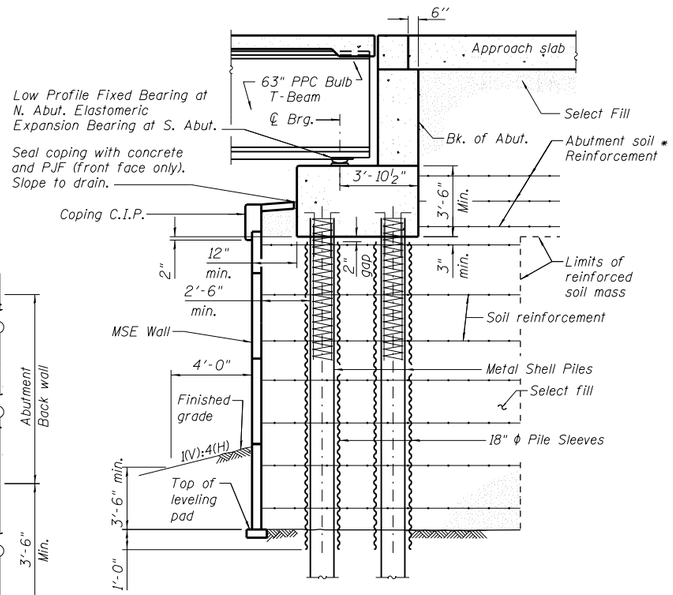
SECTION C-C

SECTION B-B

SECTION D-D

(typical at four corners)

FOOTING LAYOUT



SECTION THRU ABUTMENTS

Dimensions shown are at right angle.

* The MSE wall supplier shall design the abutment soil reinforcement to resist a horizontal force of 3.6 kips/ft of abutment.

PILE INSTALLATION NOTES:

1- Excavate existing soil and/or construct new embankment to top of the leveling pad.

2- Drive piles.

3- Install oversize casings around the piles from one foot below the top of the leveling pad to 2" below the bottom of the abutment cap.

4- Construct MSE wall around the casings.

5- Restrike piles.

6- Fill the entire annular space between the piles and casings with dry loose clean sand or fine aggregate. Cost included with Furnishing Metal Shell Piles 12"x0.250".

NOTES:

1- The bottom of the sleeve, which is a steel Pile gage 10 min., should extend at least 1' below the bottom of the structural backfill as shown on the plans. The pile sleeve should extend thru the entire height of the structural backfill, up to the bottom of the concrete cap.

2- Provide 2" gap between the bottom of the pile cap and the top of the Steel Pile Sleeve to allow independent movement of the piles within the pile sleeve.

3- The cost of Furnishing and Installation of 18" dia. pile sleeve casing shall be included in the cost of Furnishing Metal Shell Piles, 12" x 0.250", such cost includes the furnishing and placing of backfill material at the entire annular space between metal pile and pile sleeve. The length of the pile sleeve is based on pile sleeve extending from 2" below the bottom of the abutment cap to one foot below the bottom of the MSE wall leveling pad. The pile sleeve wall shall meet the requirements for pile sleeve entrance under 23 feet of fill. The fine aggregate shall be as according to the special provisions.

4- Backfill at the top of pile sleeve is required to maintain position of pile sleeve casing during the MSE wall placement.

5- Construction of Bridge B-34 (SN 022-0556) and MSE walls R-217 (SN 022-0560) and R-223 (SN 022-0558) should be coordinated.

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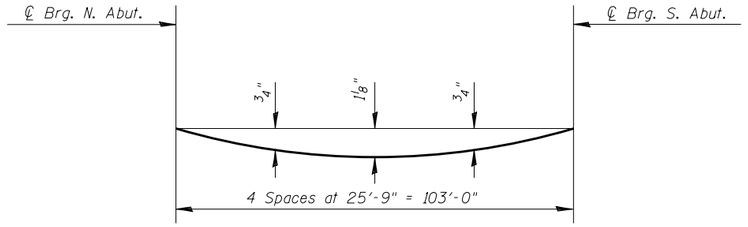
PLOT SCALE =	DRAWN - MPS	REVISED	
PLOT DATE = 10/28/2014	CHECKED - JPM/TPG/MMH	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FOOTING LAYOUT
STRUCTURE NO. 022-0556
SHEET NO. 03 OF 26 SHEETS

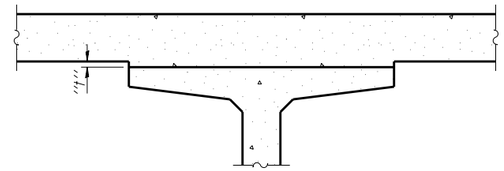
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	329
DRAWING NO. SC-03		CONTRACT NO. 60Y95		
ILLINOIS FED. AID PROJECT				



DEAD LOAD DEFLECTION DIAGRAM

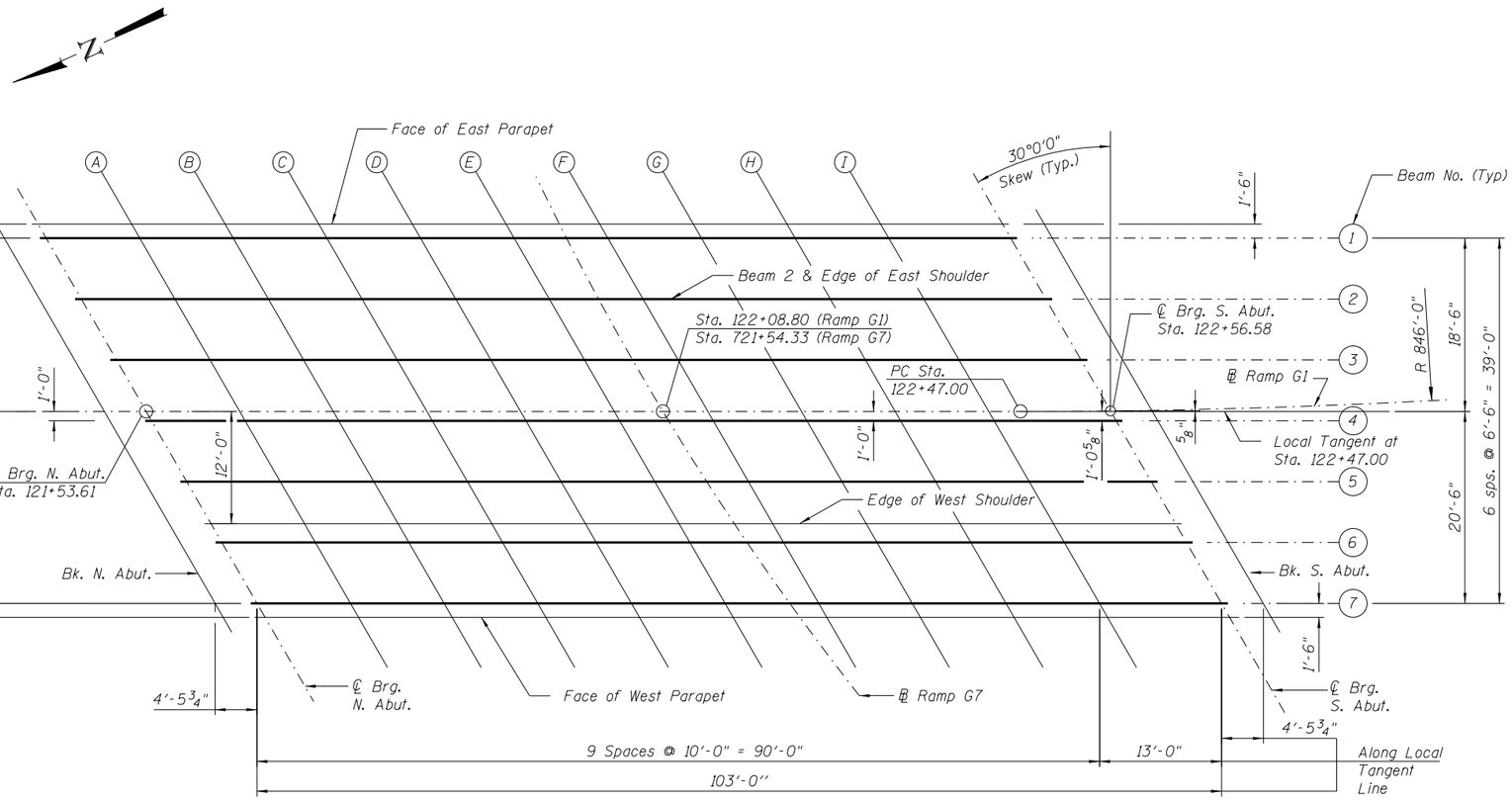
(Includes weight of concrete, excluding beams).

Note:
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown in the tables on Drawing Nos. SC-04 & SC-05.



To determine "t": After all precast prestressed beams have been erected, elevations of the top flanges of the beams shall be taken at intervals shown below. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflections" shown below and on Drawing No. SC-05, minus slab thickness, equals the fillet heights "t" above top flanges of beams.

FILLET HEIGHTS



TOP OF DECK PLAN

FACE OF EAST PARAPET

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abutment	121+37.59	-20.00	731.58	731.58
℄ CL Brg N. Abut.	121+42.06	-20.00	731.76	731.76
A	121+52.06	-20.00	732.16	732.19
B	121+62.06	-20.00	732.56	732.62
C	121+72.06	-20.00	732.96	733.04
D	121+82.06	-20.00	733.30	733.39
E	121+92.06	-20.00	733.62	733.72
F	122+02.06	-20.00	733.94	734.03
G	122+12.06	-20.00	734.26	734.34
H	122+22.06	-20.00	734.58	734.64
I	122+32.06	-20.00	734.90	734.93
℄ CL Brg S. Abut.	122+45.06	-20.00	735.31	735.31
Bk S. Abut.	122+49.60	-20.00	735.45	735.45

BEAM 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abutment	121+38.45	-18.50	731.64	731.64
℄ CL Brg N. Abut.	121+42.93	-18.50	731.82	731.82
A	121+52.93	-18.50	732.22	732.25
B	121+62.93	-18.50	732.62	732.67
C	121+72.93	-18.50	733.02	733.09
D	121+82.93	-18.50	733.36	733.45
E	121+92.93	-18.50	733.68	733.78
F	122+02.93	-18.50	734.01	734.10
G	122+12.93	-18.50	734.33	734.41
H	122+22.93	-18.50	734.66	734.72
I	122+32.93	-18.50	734.98	735.02
℄ CL Brg S. Abut.	122+45.93	-18.50	735.40	735.40
Bk S. Abut.	122+50.48	-18.49	735.55	735.55

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PLOT DATE = 10/28/2014	CHECKED - JPM/TPG/MMH	REVISED ___	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS 1
STRUCTURE NO. 022-0556
SHEET NO. 04 OF 26 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	330
	DRAWING NO. SC-04		CONTRACT NO. 60Y95	
	ILLINOIS FED. AID PROJECT			

BEAM 2 / EDGE OF EAST SHOULDER

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abutment	121+42.21	-12.00	731.89	731.89
℄ CL Brg N. Abut.	121+46.68	-12.00	732.07	732.07
A	121+56.68	-12.00	732.47	732.49
B	121+66.68	-12.00	732.87	732.92
C	121+76.68	-12.00	733.26	733.33
D	121+86.68	-12.00	733.61	733.70
E	121+96.68	-12.00	733.96	734.05
F	122+06.68	-12.00	734.31	734.40
G	122+16.68	-12.00	734.66	734.74
H	122+26.68	-12.00	735.01	735.07
I	122+36.68	-12.00	735.36	735.40
℄ CL Brg S. Abut.	122+49.72	-12.00	735.82	735.82
Bk S. Abut.	122+54.26	-11.97	735.98	735.98

BEAM 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abutment	121+45.96	-5.50	732.14	732.14
℄ CL Brg N. Abut.	121+50.43	-5.50	732.31	732.31
A	121+60.43	-5.50	732.71	732.74
B	121+70.43	-5.50	733.11	733.17
C	121+80.43	-5.50	733.50	733.58
D	121+90.43	-5.50	733.88	733.97
E	122+00.43	-5.50	734.26	734.35
F	122+10.43	-5.50	734.64	734.73
G	122+20.43	-5.50	735.01	735.09
H	122+30.43	-5.50	735.39	735.45
I	122+40.43	-5.50	735.77	735.80
℄ CL Brg S. Abut.	122+53.47	-5.48	736.26	736.26
Bk S. Abut.	122+57.98	-5.43	736.43	736.43

BASELINE G1 (PGL)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abutment	121+49.14	0.00	732.35	732.35
℄ CL Brg N. Abut.	121+53.61	0.00	732.52	732.52
A	121+63.61	0.00	732.92	732.95
B	121+73.61	0.00	733.32	733.38
C	121+83.61	0.00	733.72	733.80
D	121+93.61	0.00	734.12	734.21
E	122+03.61	0.00	734.52	734.62
F	122+13.61	0.00	734.92	735.01
G	122+23.61	0.00	735.32	735.40
H	122+33.61	0.00	735.72	735.78
I	122+43.61	0.00	736.12	736.16
℄ CL Brg S. Abut.	122+56.58	0.00	736.64	736.64
Bk S. Abut.	122+61.02	0.00	736.82	736.82

BEAM 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abutment	121+49.71	1.00	732.38	732.38
℄ CL Brg N. Abut.	121+54.19	1.00	732.56	732.56
A	121+64.19	1.00	732.96	732.99
B	121+74.19	1.00	733.36	733.42
C	121+84.19	1.00	733.77	733.84
D	121+94.19	1.00	734.17	734.26
E	122+04.19	1.00	734.57	734.67
F	122+14.19	1.00	734.98	735.07
G	122+24.19	1.00	735.38	735.46
H	122+34.19	1.00	735.79	735.85
I	122+44.19	1.00	736.19	736.23
℄ CL Brg S. Abut.	122+57.17	1.06	736.72	736.72
Bk S. Abut.	122+61.64	1.13	736.90	736.90

BEAM 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abutment	121+53.47	7.50	732.63	732.63
℄ CL Brg N. Abut.	121+57.94	7.50	732.81	732.81
A	121+67.94	7.50	733.21	733.24
B	121+77.94	7.50	733.62	733.67
C	121+87.94	7.50	734.05	734.12
D	121+97.94	7.50	734.48	734.57
E	122+07.94	7.50	734.91	735.00
F	122+17.94	7.50	735.34	735.43
G	122+27.94	7.50	735.77	735.85
H	122+37.94	7.50	736.20	736.26
I	122+47.93	7.50	736.61	736.65
℄ CL Brg S. Abut.	122+60.82	7.61	737.19	737.19
Bk S. Abut.	122+65.25	7.70	737.39	737.39

EDGE OF WEST SHOULDER

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abutment	121+56.06	12.00	732.80	732.80
℄ CL Brg N. Abut.	121+60.54	12.00	732.98	732.98
A	121+70.54	12.00	733.38	733.41
B	121+80.54	12.00	733.81	733.86
C	121+90.54	12.00	734.26	734.33
D	122+00.54	12.00	734.71	734.79
E	122+10.54	12.00	735.16	735.25
F	122+20.54	12.00	735.61	735.70
G	122+30.54	12.00	736.05	736.13
H	122+40.54	12.00	736.50	736.56
I	122+50.49	12.00	736.95	736.99
℄ CL Brg S. Abut.	122+63.22	12.00	737.52	737.52
Bk S. Abut.	122+67.58	12.00	737.72	737.72

BEAM 6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abutment	121+57.22	14.00	132.88	732.88
℄ CL Brg N. Abut.	121+61.69	14.00	733.06	733.06
A	121+71.69	14.00	733.46	733.49
B	121+81.69	14.00	733.90	733.95
C	121+91.69	14.00	734.35	734.43
D	122+01.69	14.00	734.81	734.90
E	122+11.69	14.00	735.27	735.36
F	122+21.69	14.00	735.73	735.82
G	122+31.69	14.00	736.18	736.26
H	122+41.69	14.00	736.64	736.70
I	122+51.62	14.01	737.07	737.10
℄ CL Brg S. Abut.	122+64.40	14.18	737.69	737.69
Bk S. Abut.	122+68.80	14.29	737.89	737.89

BEAM 7

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abutment	121+60.97	20.50	733.13	733.13
℄ CL Brg N. Abut.	121+65.45	20.50	733.31	733.31
A	121+75.45	20.50	733.71	733.74
B	121+85.45	20.50	734.20	734.25
C	121+95.45	20.50	734.68	734.75
D	122+05.45	20.50	735.16	735.25
E	122+15.45	20.50	735.65	735.74
F	122+25.45	20.50	736.13	736.22
G	122+35.45	20.50	736.61	736.69
H	122+45.45	20.50	737.10	737.16
I	122+55.25	20.54	737.57	737.61
℄ CL Brg S. Abut.	122+67.93	20.77	738.20	738.20
Bk S. Abut.	122+72.30	20.89	738.42	738.42

FACE OF WEST PARAPET

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abutment	121+61.84	22.00	733.19	733.19
℄ CL Brg N. Abut.	121+66.31	22.00	733.37	733.37
A	121+76.31	22.00	733.78	733.80
B	121+86.31	22.00	734.27	734.32
C	121+96.31	22.00	734.76	734.83
D	122+06.31	22.00	735.25	735.33
E	122+16.31	22.00	735.74	735.83
F	122+26.31	22.00	736.22	736.32
G	122+36.31	22.00	736.71	736.79
H	122+46.31	22.00	737.20	737.26
I	122+56.08	22.05	737.69	737.72
℄ CL Brg S. Abut.	122+68.74	22.29	738.33	738.33
Bk S. Abut.	122+73.03	22.29	738.53	738.53

NORTH APPROACH SLAB

FACE OF EAST PARAPET

Location	Station	Offset	Theoretical Grade Elevations
N. End N. Appr. Slab	121+12.78	-20.00	730.59
A1	121+18.17	-20.00	730.81
A2	121+28.17	-20.00	731.21
S. End N. Appr. Slab	121+38.17	-20.00	731.61

EDGE OF EAST SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
N. End N. Appr. Slab	121+12.78	-12.00	730.71
A1	121+22.78	-12.00	731.11
A2	121+32.78	-12.00	731.51
S. End N. Appr. Slab	121+42.78	-12.00	731.91

℄ Ramp G1 AND PROFILE GRADE

Location	Station	Offset	Theoretical Grade Elevations
N. End N. Appr. Slab	121+19.71	0.00	731.17
A1	121+29.71	0.00	731.57
A2	121+39.71	0.00	731.97
S. End N. Appr. Slab	121+49.71	0.00	732.37

EDGE OF WEST SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
N. End N. Appr. Slab	121+26.64	12.00	731.63
A1	121+36.64	12.00	732.03
A2	121+46.64	12.00	732.43
S. End N. Appr. Slab	121+56.64	12.00	732.83

FACE OF WEST PARAPET

Location	Station	Offset	Theoretical Grade Elevations
N. End N. Appr. Slab	121+26.64	22.00	731.78
A1	121+42.41	22.00	732.41
A2	121+52.41	22.00	732.81
S. End N. Appr. Slab	121+62.41	22.00	733.21

SOUTH APPROACH SLAB

FACE OF EAST PARAPET

Location	Station	Offset	Theoretical Grade Elevations
N. End S. Appr. Slab	122+49.01	-20.00	735.43
A3	122+59.20	-20.00	735.76
A4	122+69.32	-20.00	736.08
S. End S. Appr. Slab	122+83.65	-20.00	736.54

EDGE OF EAST SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
N. End S. Appr. Slab	122+53.66	-12.00	735.96
A3	122+63.72	-12.00	736.31
A4	122+73.72	-12.00	736.66
S. End S. Appr. Slab	122+83.65	-12.00	737.01

℄ RAMP G1 AND PROFILE GRADE

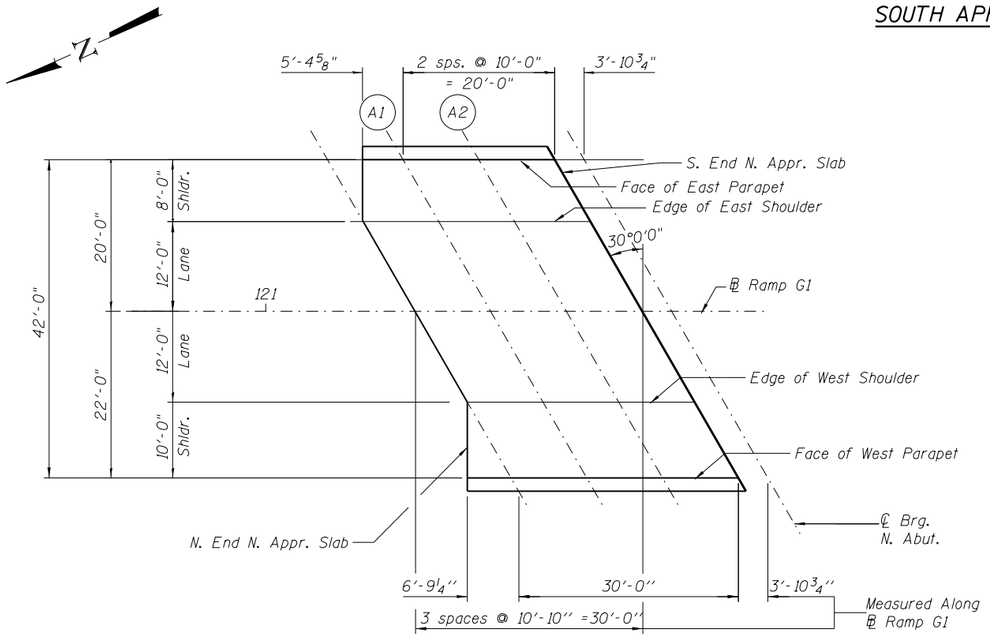
Location	Station	Offset	Theoretical Grade Elevations
N. End S. Appr. Slab	122+60.45	0.00	736.80
A3	122+70.32	0.00	737.19
A4	122+80.14	0.00	737.59
S. End S. Appr. Slab	122+89.89	0.00	737.98

EDGE OF WEST SHOULDER

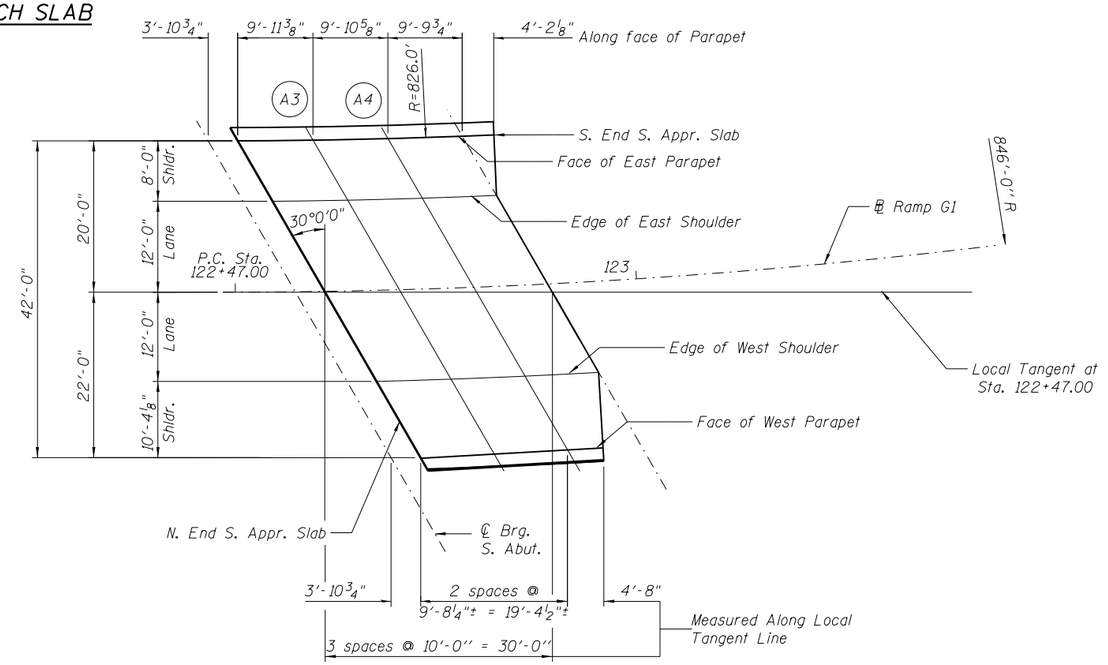
Location	Station	Offset	Theoretical Grade Elevations
N. End S. Appr. Slab	122+67.01	12.00	737.69
A3	122+76.71	12.00	738.13
A4	122+86.35	12.00	738.55
S. End S. Appr. Slab	122+95.94	12.00	738.94

FACE OF WEST PARAPET

Location	Station	Offset	Theoretical Grade Elevations
N. End S. Appr. Slab	122+72.49	22.30	738.50
A3	122+81.94	22.10	738.96
A4	122+91.39	22.01	739.36
S. End S. Appr. Slab	122+95.94	22.00	739.54



NORTH APPROACH SLAB PLAN



SOUTH APPROACH SLAB PLAN

USER NAME =	DESIGNED - JPM	REVISED ___	
	CHECKED - TPG/MMH	REVISED ___	
PLOT SCALE =	DRAWN - PDS	REVISED ___	
PLOT DATE = 10/28/2014	CHECKED - JPM/TPG/MMH	REVISED ___	

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STATE OF ILLINOIS
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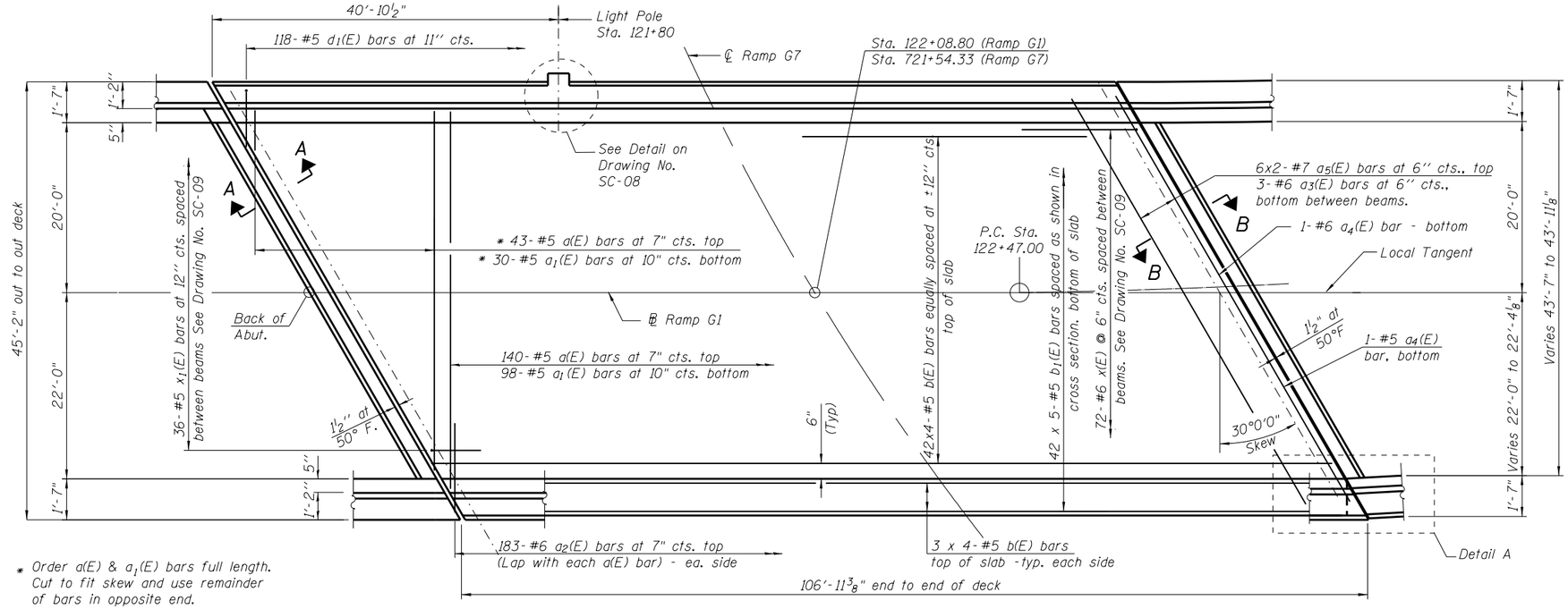
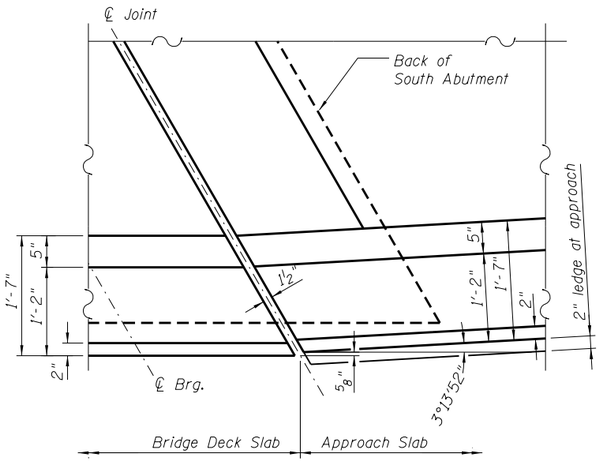
NORTH & SOUTH APPROACH SLAB ELEVATIONS
STRUCTURE NO. 022-0556
SHEET NO. 06 OF 26 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	332
	DRAWING NO. SC-06		CONTRACT NO. 60Y95	
	ILLINOIS FED. AID PROJECT			

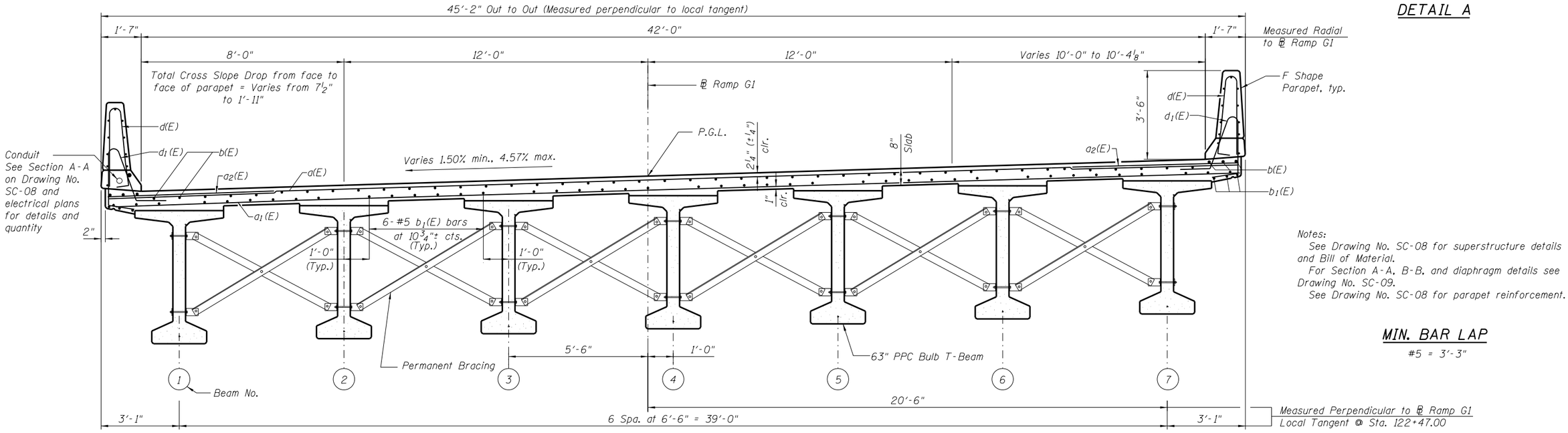


* Order a(E) & a_1(E) bars full length. Cut to fit skew and use remainder of bars in opposite end.

DECK PLAN



DETAIL A



CROSS SECTION

(Looking South)

Notes:

See Drawing No. SC-08 for superstructure details and Bill of Material.

For Section A-A, B-B, and diaphragm details see Drawing No. SC-09.

See Drawing No. SC-08 for parapet reinforcement.

MIN. BAR LAP

#5 = 3'-3"

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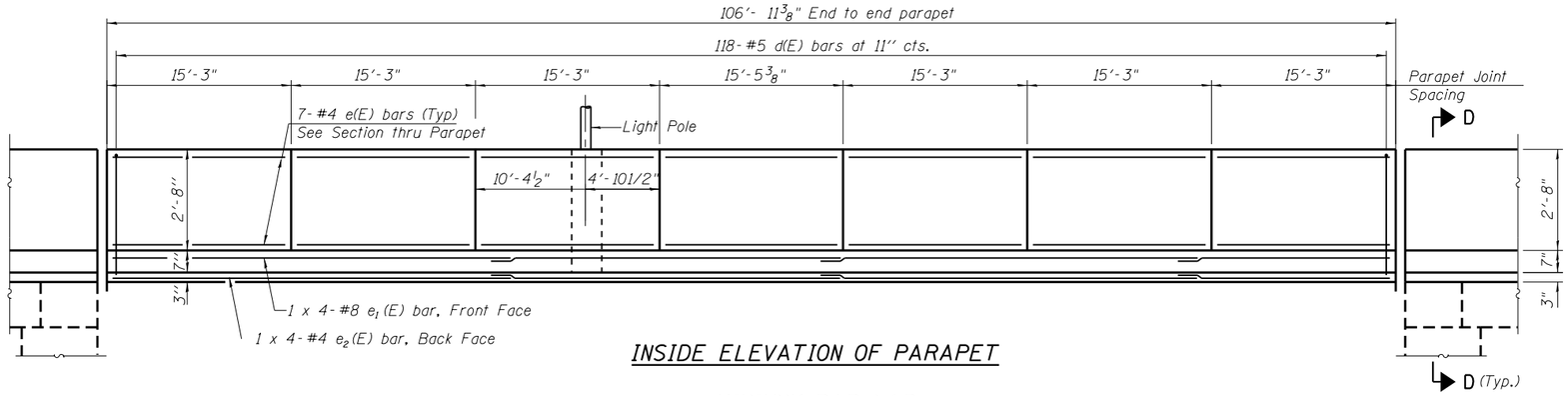
	CHECKED - TPG/MMH	REVISED	
PLOT SCALE =	DRAWN - MPS	REVISED	
PLOT DATE = 10/28/2014	CHECKED - JPM/TPG/MMH	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK PLAN & CROSS SECTION
STRUCTURE NO. 022-0556
SHEET NO. 07 OF 26 SHEETS

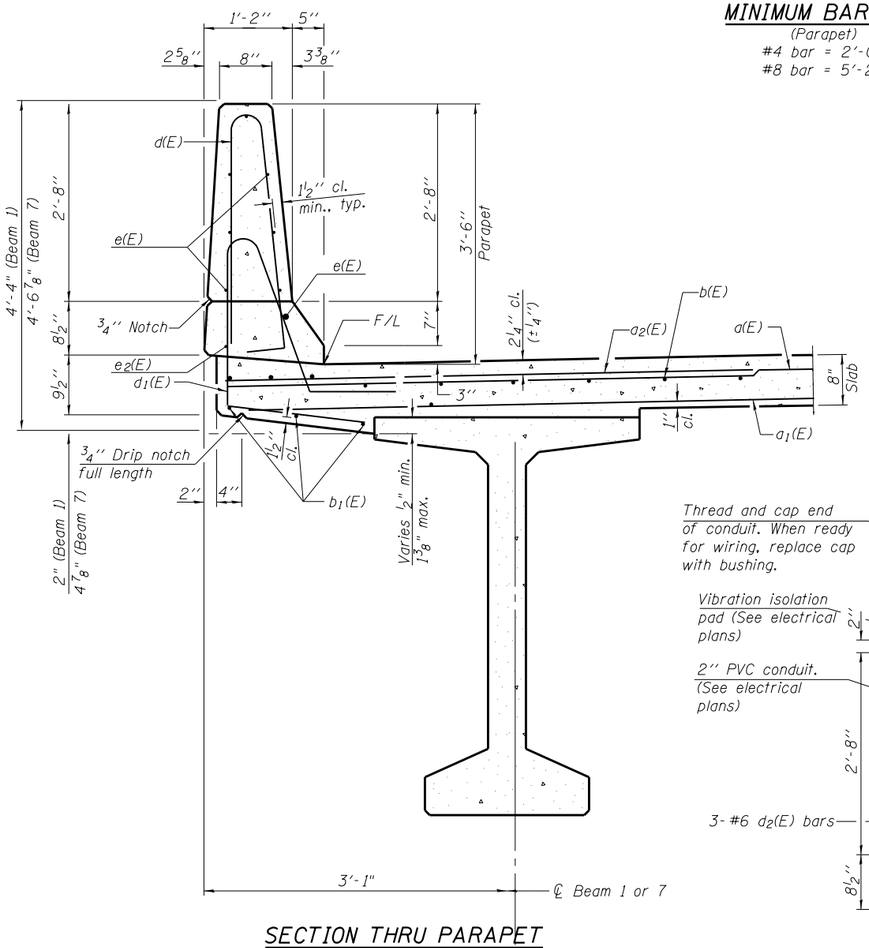
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	333
	DRAWING NO. SC-07	CONTRACT NO. 60Y95		
	ILLINOIS FED. AID PROJECT			



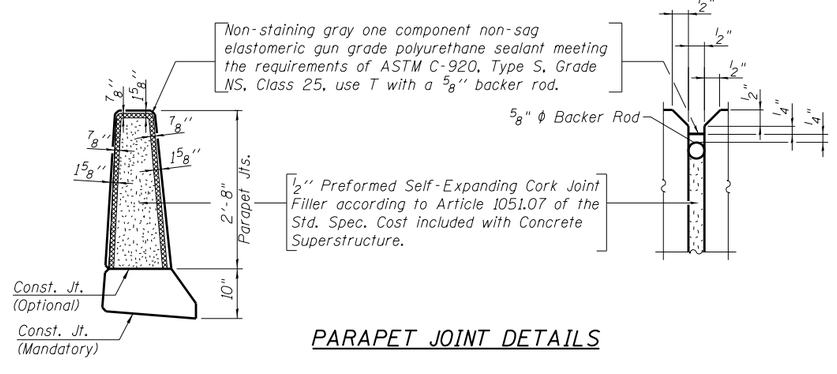
INSIDE ELEVATION OF PARAPET

MINIMUM BAR LAP

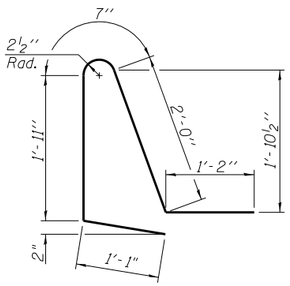
(Parapet)
#4 bar = 2'-0"
#8 bar = 5'-2"



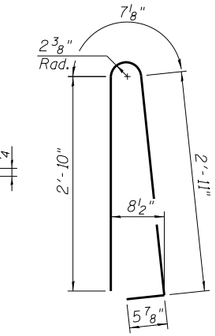
SECTION THRU PARAPET



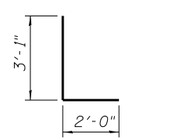
PARAPET JOINT DETAILS



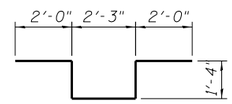
BAR d1(E)



BAR d(E)



BAR d2(E)



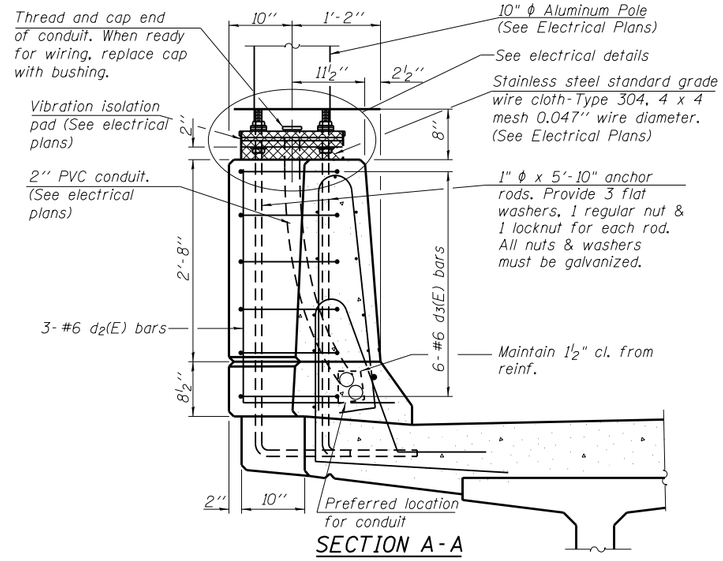
BAR d3(E)

SUPERSTRUCTURE BILL OF MATERIAL

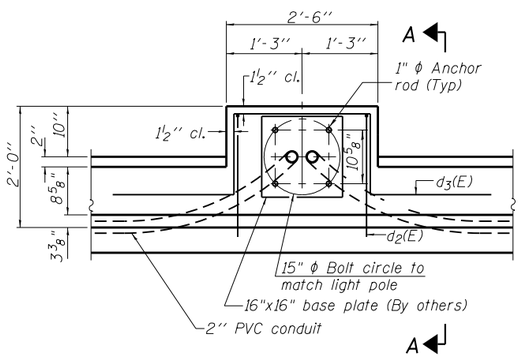
Bar	No.	Size	Length	Shape
a(E)	183	#5	44'-7"	
a1(E)	128	#5	43'-11"	
a2(E)	366	#6	6'-6"	
a3(E)	18	#6	6'-8"	
a4(E)	1	#6	45'-1"	
a5(E)	12	#7	27'-5"	
a6(E)	15	#6	4'-6"	
b(E)	192	#5	29'-2"	
b1(E)	210	#5	24'-0"	
b2(E)	416	#4	5'-7"	
b3(E)	32	#4	27'-2"	
d(E)	236	#5	6'-10"	
d1(E)	236	#5	6'-9"	
d2(E)	3	#6	5'-1"	
d3(E)	6	#6	8'-11"	
e(E)	98	#4	15'-0"	
e1(E)	8	#8	30'-7"	
e2(E)	8	#4	28'-2"	
m(E)	24	#4	6'-9"	
m1(E)	6	#6	5'-0"	
m2(E)	2	#6	24'-2"	
m3(E)	8	#4	23'-10"	
s(E)	24	#4	12'-10"	
x(E)	72	#6	11'-9"	
x1(E)	36	#5	5'-3"	
Reinforcement Bars, Epoxy Coated		Lbs.	39,410	
Concrete Superstructure		Cu. Yds.	149.5	
Bridge Deck Grooving		Sq. Yd.	475	
Protective Coat		Sq. Yd.	640	

Bars indicated thus 1 x 4- #8 etc. indicates 1 line of bars with 4 lengths per line.

Note:
See Drawing No. SC-03 for Section D-D
See Drawing No. SC-14 for bar b2(E) bend diagram details

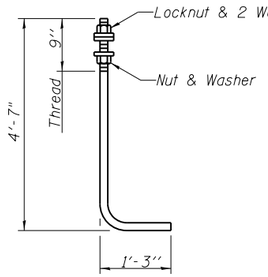


SECTION A-A



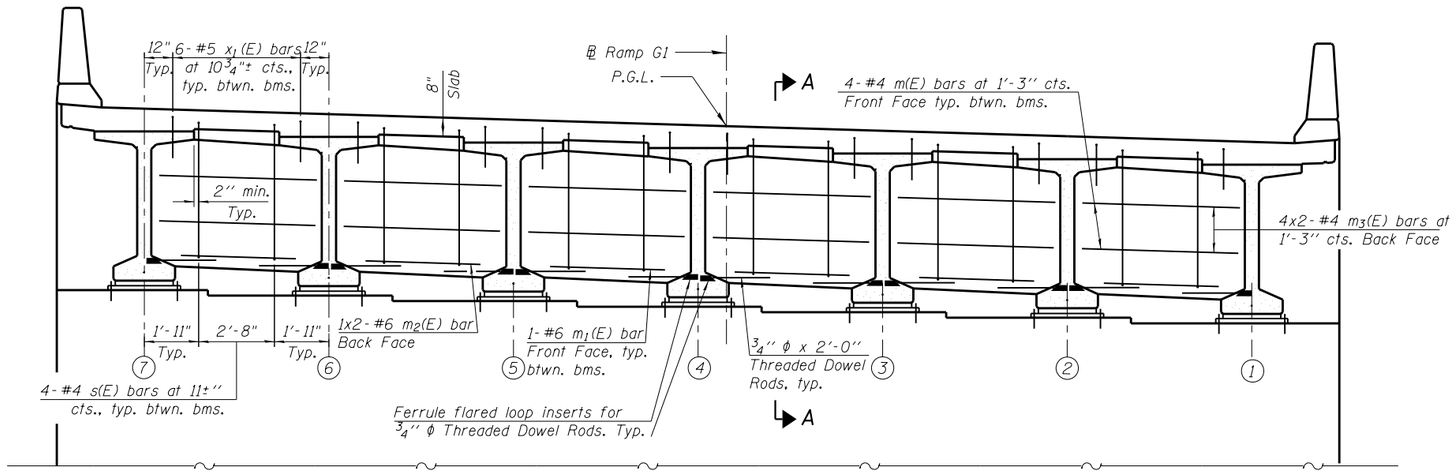
PLAN

Note:
Cost of anchor rods is incidental to the cost of Concrete Superstructure.
PVC conduit is quantified and included in the electrical plans.



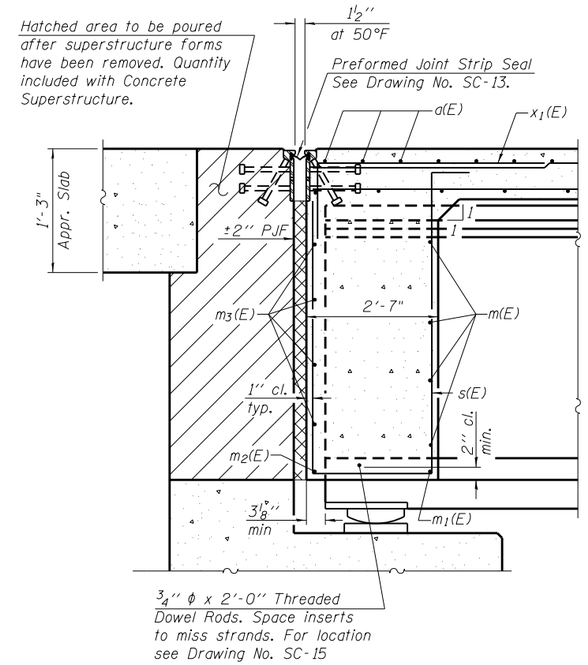
ANCHOR ROD

Diameter as specified for light poles. (ASTM F 1554 Grade 105). Full length hot dipped galvanized



DIAPHRAGM AT NORTH ABUTMENT

(Fixed)

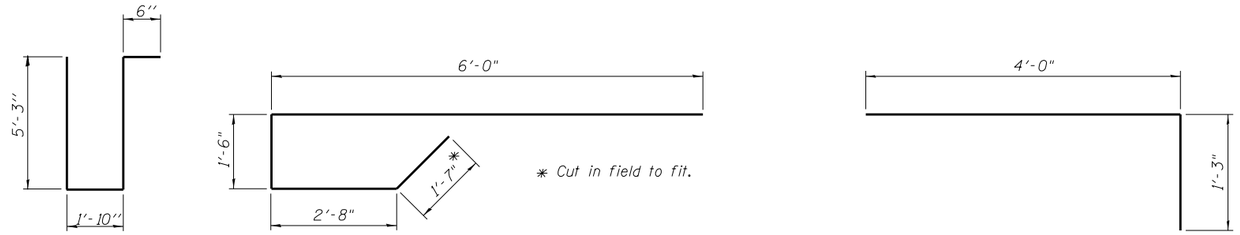


SECTION A-A AT NORTH ABUTMENT

(at Rt. Ls)

MIN. BAR LAP

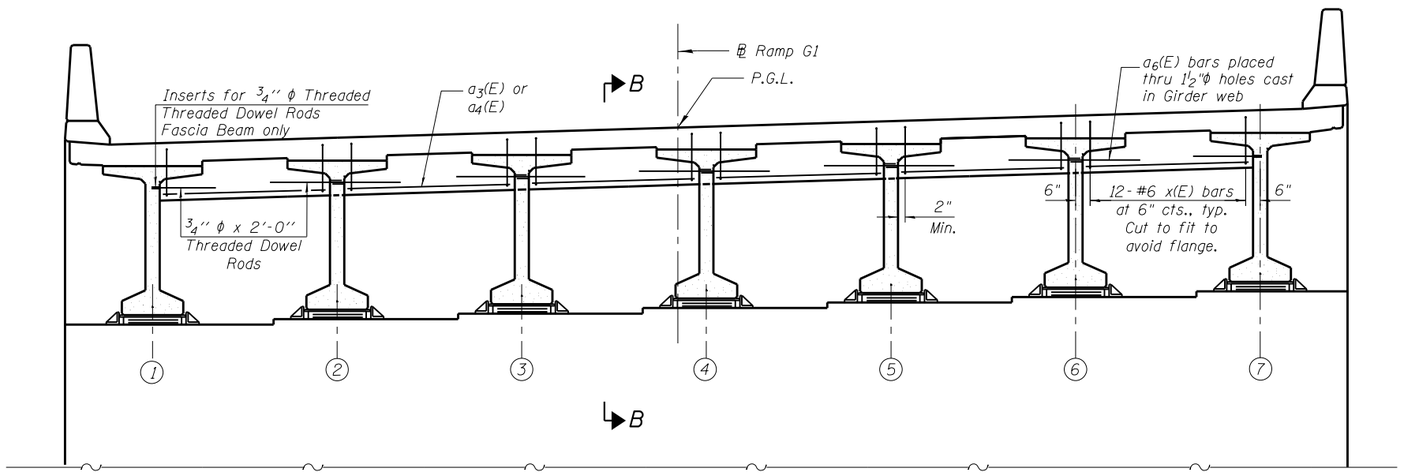
#4 = 2'-0"
#6 = 3'-0"



BARS s(E)

BAR x(E)

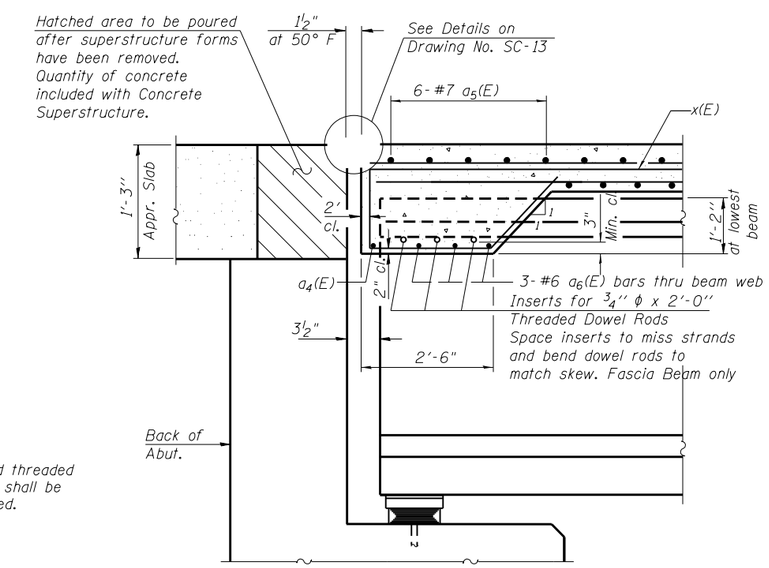
BAR x_1(E)



DIAPHRAGM AT SOUTH ABUTMENT

(Expansion)

Note:
Inserts and threaded dowel rods shall be epoxy coated.



SECTION B-B AT SOUTH ABUTMENT

(at Rt. Ls)

USER NAME =	DESIGNED - JPM	REVISED ___	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	CHECKED - TPG/MMH	REVISED ___	DIAPHRAGM DETAILS STRUCTURE NO. 022-0556
PLOT SCALE =	DRAWN - MPS	REVISED ___	SHEET NO. 09 OF 26 SHEETS
PLOT DATE = 10/28/2014	CHECKED - JPM/TPG/MMH	REVISED ___	

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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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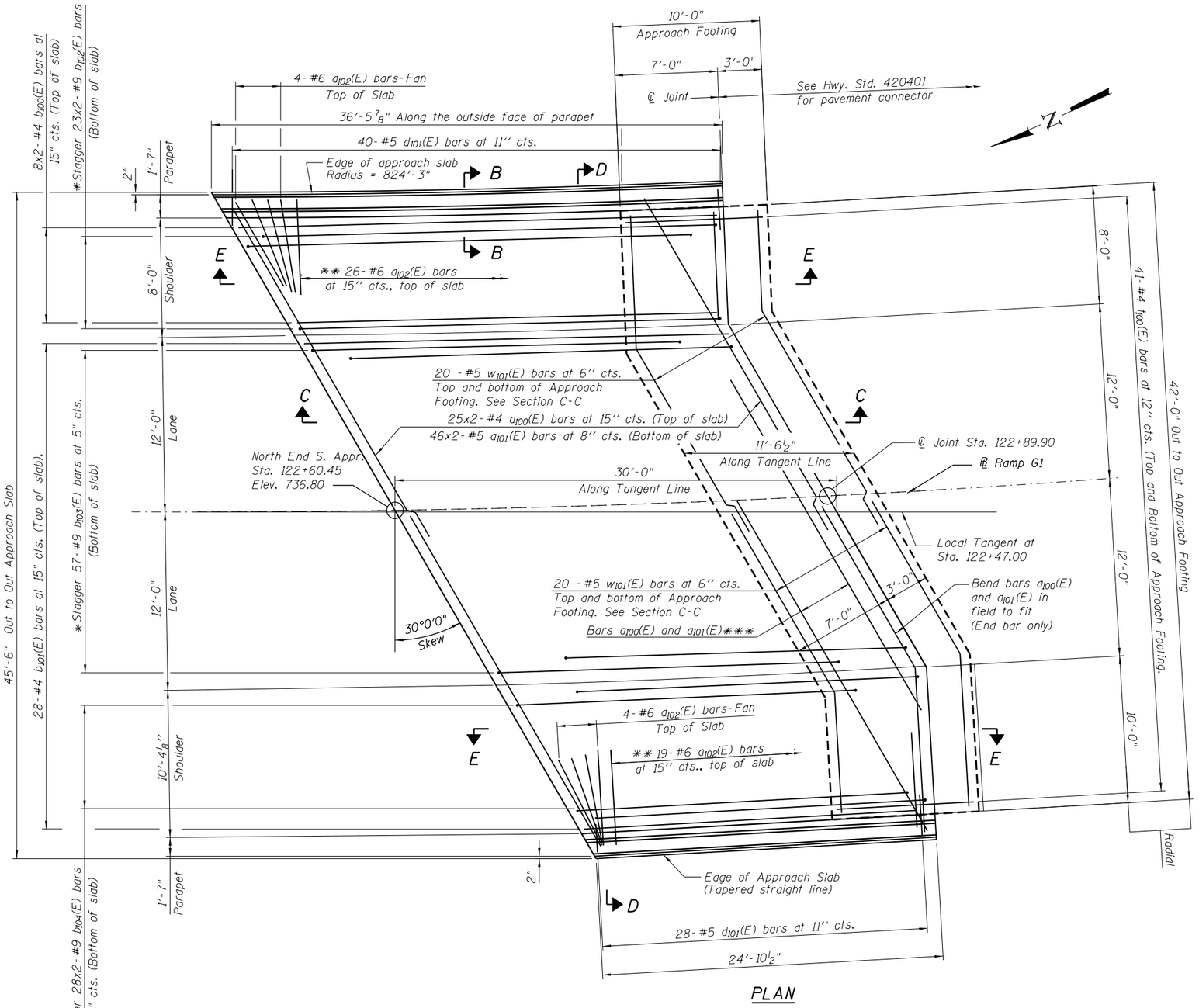
	DRAWING NO. SC-09	CONTRACT NO. 60Y95		
	ILLINOIS FED. AID PROJECT			



PLAN

* Tilt #9 b_{102}(E) bars as required to maintain clearance.

** Space between a_{100}(E) bars, typ. each parapet.

*** Bars a_{100}(E) and a_{101}(E) to have longer lap to fit skew.
Cut bars b_{101}(E) in field to fit skew.

Note:
See Drawing No. SC-11 for Bill of Material, notes, and expansion joint details.

See Drawing No. SC-12 for Approach Sections and details.

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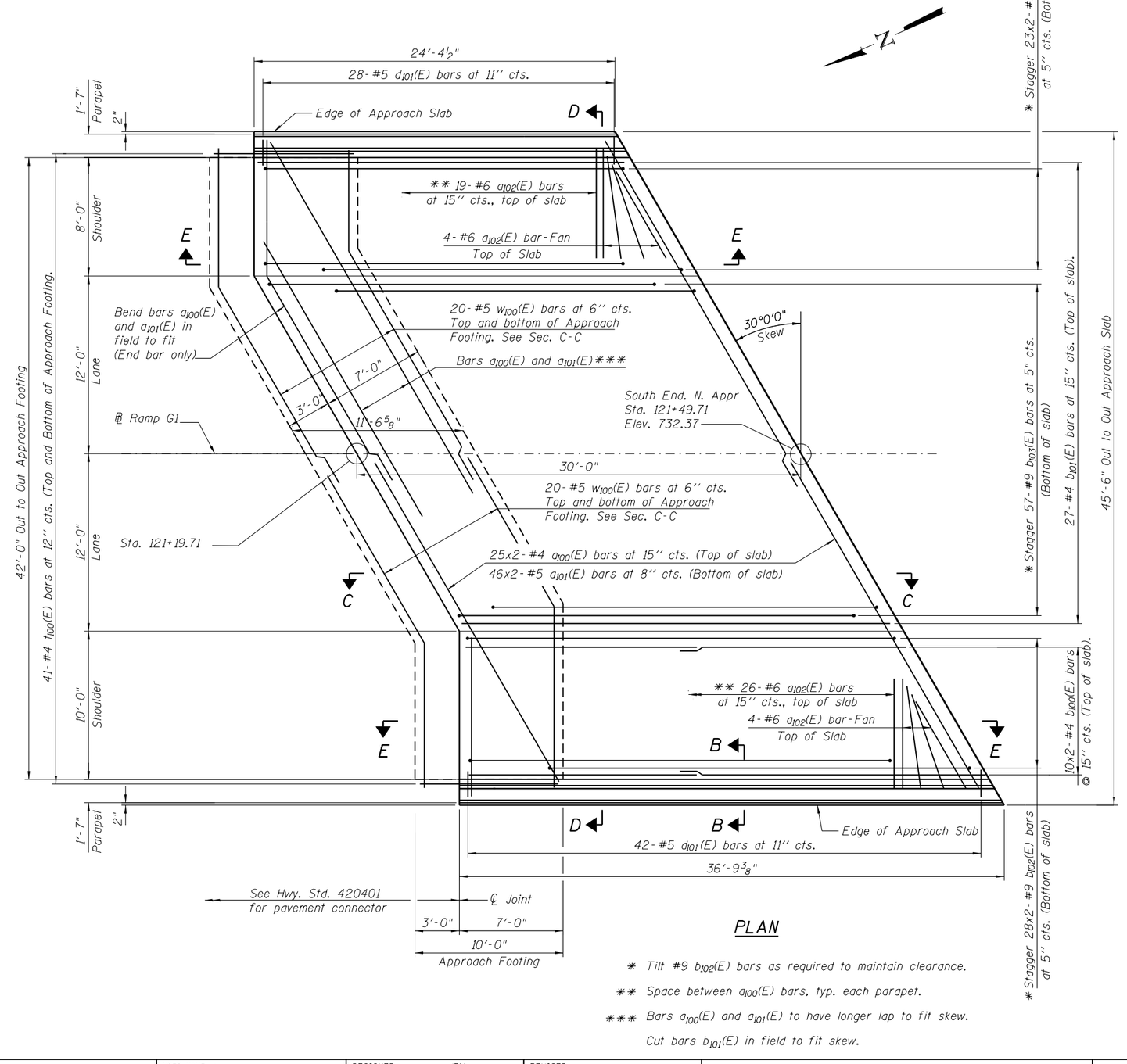
PLOT SCALE =	DRAWN - MPS	REVISED	
PLOT DATE = 10/28/2014	CHECKED - JPM/TPG/MMH	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH APPROACH SLAB PLAN
STRUCTURE NO. 022-0556
SHEET NO. 10 OF 26 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	336
	DRAWING NO. SC-10		CONTRACT NO. 60Y95	
	ILLINOIS FED. AID PROJECT			



PLAN

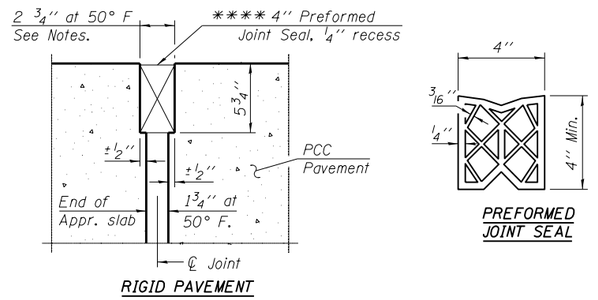
* Tilt #9 $b_{102}(E)$ bars as required to maintain clearance.

** Space between $a_{100}(E)$ bars, typ. each parapet.

*** Bars $a_{100}(E)$ and $a_{101}(E)$ to have longer lap to fit skew. Cut bars $b_{101}(E)$ in field to fit skew.

Notes:
See Drawing No. SC-12 for Sections B-B, C-C & D-D and View E-E.
$a_{100}(E)$ and $a_{101}(E)$ bar spacings measured along ℄ Rdwy.
The joint opening shall be determined per Article 520.04

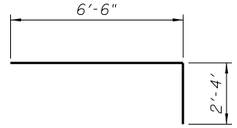
**** Cost included with Concrete Superstructure.



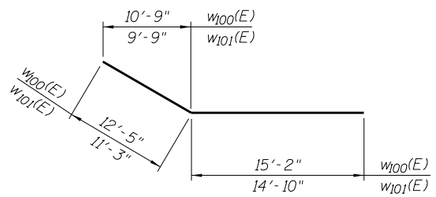
DETAIL A

TWO APPROACHES BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$a_{100}(E)$	100	#4	27'-2"	
$a_{101}(E)$	184	#5	27'-5"	
$a_{102}(E)$	106	#6	6'-6"	
$b_{100}(E)$	36	#4	19'-3"	
$b_{101}(E)$	56	#4	29'-8"	
$b_{102}(E)$	102	#9	22'-7"	
$b_{103}(E)$	114	#9	29'-9"	
$b_{104}(E)$	102	#9	19'-2"	
$d_{100}(E)$	138	#5	6'-10"	
$d_{101}(E)$	138	#5	7'-11"	
$e_{100}(E)$	1	#4	24'-1"	
$e_{101}(E)$	14	#4	11'-11"	
$e_{102}(E)$	1	#8	24'-1"	
$e_{103}(E)$	1	#4	36'-6"	
$e_{104}(E)$	14	#4	18'-3"	
$e_{105}(E)$	1	#8	36'-6"	
$e_{106}(E)$	1	#4	36'-2"	
$e_{107}(E)$	14	#4	18'-1"	
$e_{108}(E)$	1	#8	36'-2"	
$e_{109}(E)$	1	#4	24'-7"	
$e_{110}(E)$	14	#4	12'-2"	
$e_{111}(E)$	1	#8	24'-7"	
$t_{100}(E)$	164	#4	9'-6"	
$w_{100}(E)$	40	#5	27'-7"	
$w_{101}(E)$	40	#5	26'-1"	
Concrete Superstructure		Cu. Yd.	141.1	
Concrete Structures		Cu. Yd.	42.0	
Reinforcement Bars, Epoxy Coated		Pound	42,440	
Protective Coat		Sq. Yd.	337	
Bridge Deck Grooving		Sq. Yd.	265	



BARS a 102(E)



BARS w100(E) & w101(E)

MIN. BAR LAP

#9 = 8'-7"
#5 = 2'-7"
#4 = 2'-1"

Note:
Order $w_{100}(E)$ & $w_{101}(E)$ bars in full length and cut in field to fit.

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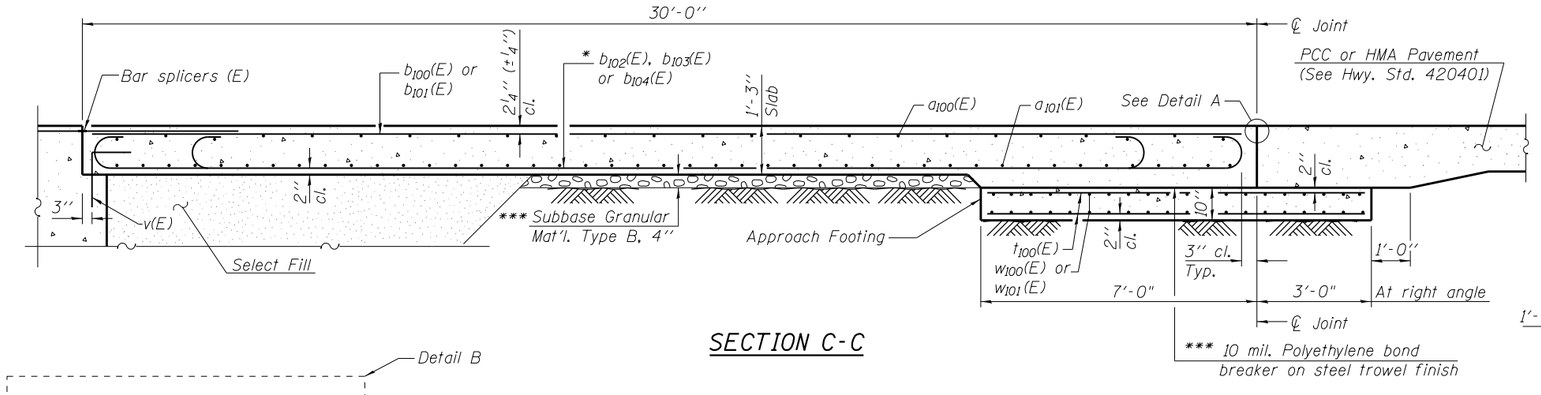
PLOT DATE = 10/28/2014	CHECKED - JPM/TPG/MMH	REVISED ___	

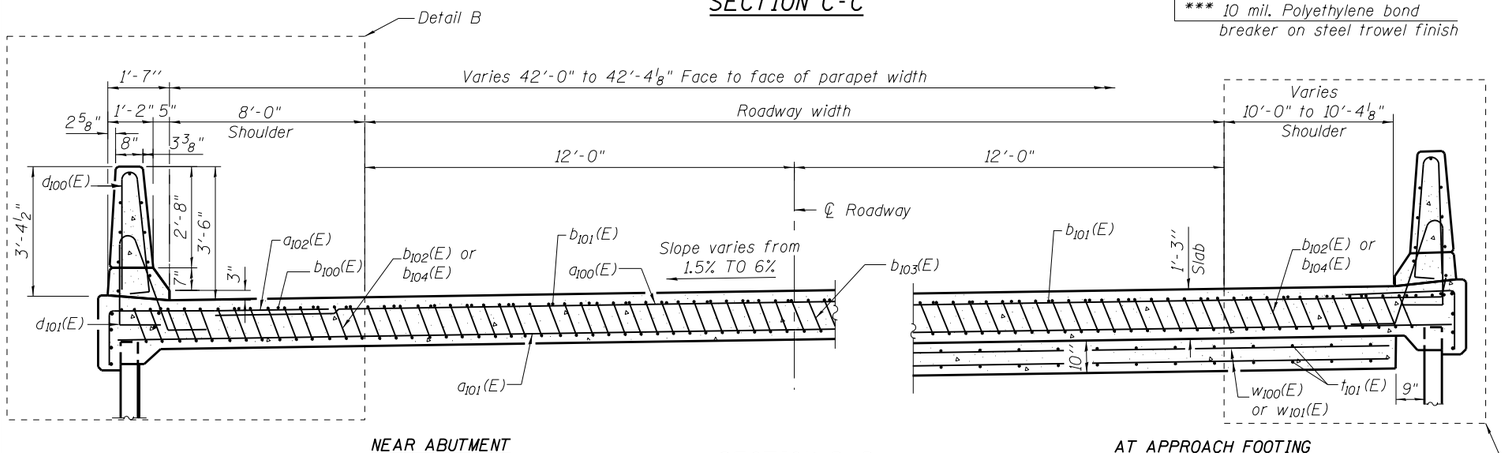
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH APPROACH SLAB PLAN
STRUCTURE NO. 022-0556
SHEET NO. 11 OF 26 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	337
	DRAWING NO. SC-11		CONTRACT NO. 60Y95	
	ILLINOIS FED. AID PROJECT			



SECTION C-C

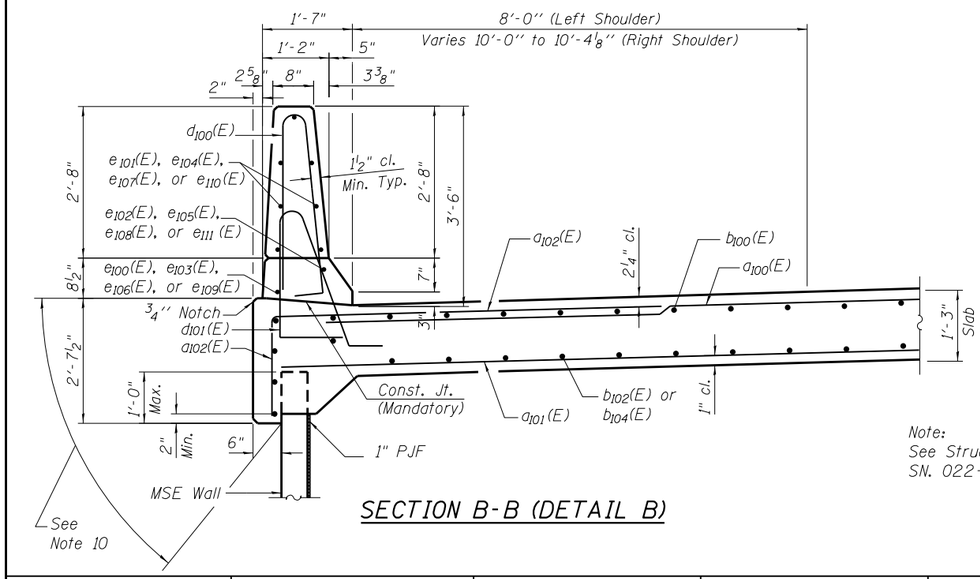


NEAR ABUTMENT

SECTION D-D

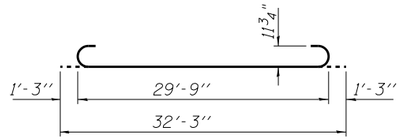
(See Plan for dimensions not shown)

AT APPROACH FOOTING

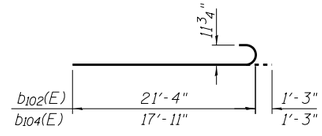


SECTION B-B (DETAIL B)

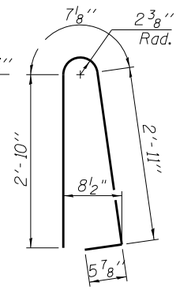
Notes:
1. See Drawing No. SC-11 for Detail A.
2. Approach slab and parapet concrete shall be paid for as Concrete Superstructure.
3. Approach footing concrete shall be paid for as Concrete Structures.
4. Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
5. For v(E) bar details, see Drawing Nos. SC-18 & SC-19.
6. The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
7. For bar splicer details, see Drawing No. SC-22.
8. Cost of excavation for approach footing included with Concrete Structures.
9. For parapet joint details, see Drawing No. SC-13.
10. Apply concrete stain entire length of approach slab, see Form Liner Special Provisions. Cost of stain included with "Concrete Superstructure"



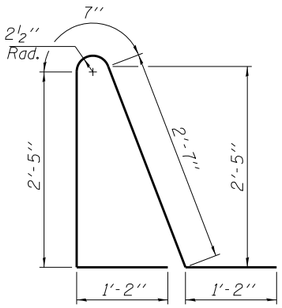
BAR $b_{103}(E)$



BAR $b_{102}(E)$ & $b_{104}(E)$



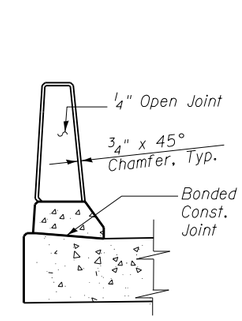
BAR $d_{100}(E)$



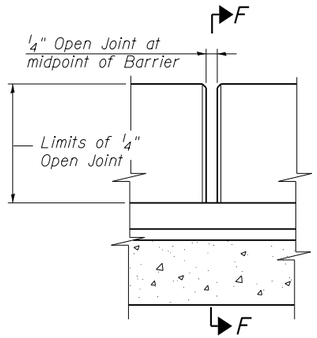
BAR $d_{101}(E)$

* Tilt #9 $b_{102}(E)$, $b_{103}(E)$ and $b_{104}(E)$ bars as required to maintain clearance.

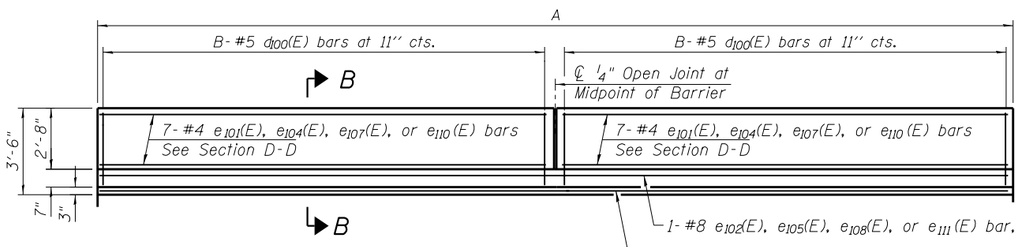
*** Cost included with Concrete Superstructure.



SECTION F-F



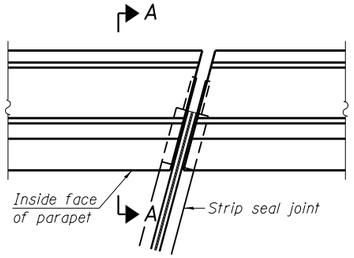
ELEVATION OF BARRIER JOINTS



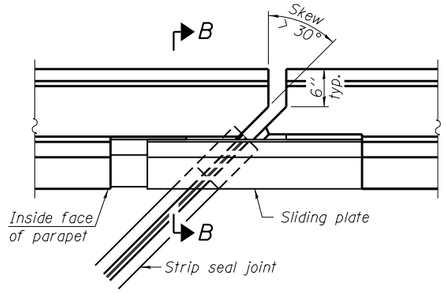
VIEW E-E

Parapet Location	A	B
NE	24'-4½"	14
NW	36'-9⅜"	21
SE	36'-5⅞"	20
SW	24'-10½"	14

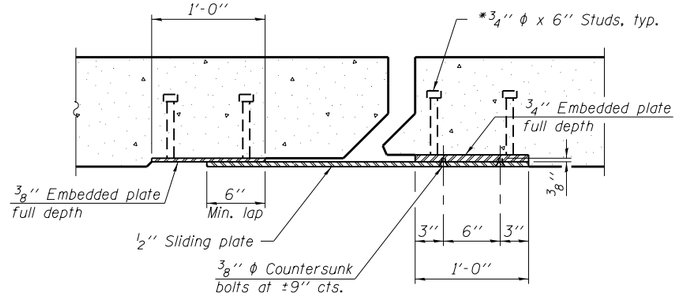
Note:
See Structure SN. 022-0560 (North Wall) and SN. 022-0558 (South Wall) for MSE Wall plans.



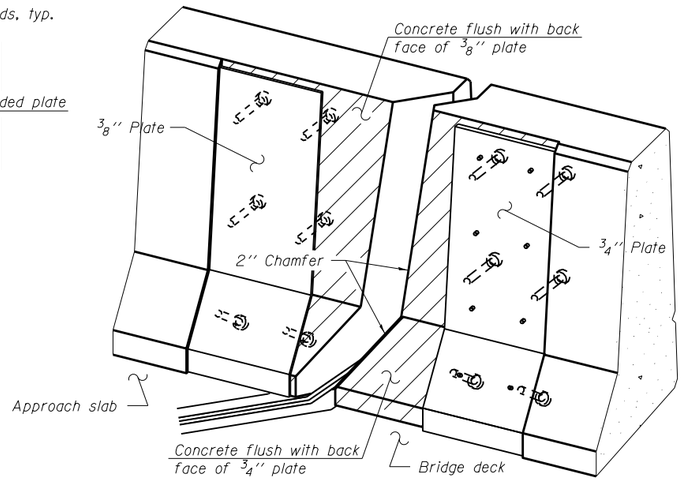
PLAN
(For skews ≤ 30°)



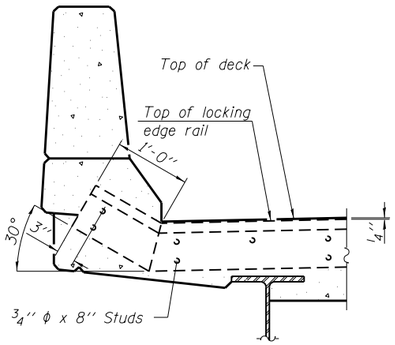
PLAN
(For skews > 30°)
Showing point block



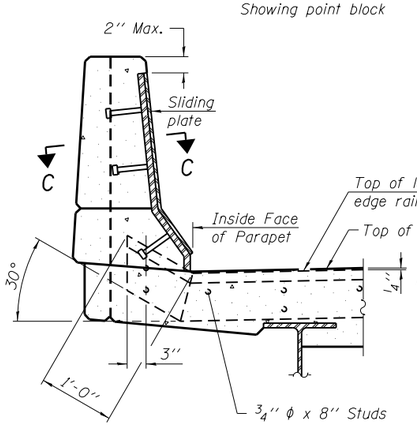
SECTION C-C



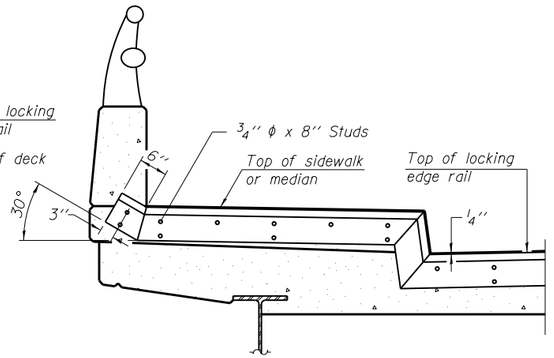
TRIMETRIC VIEW
(Showing back plates only)



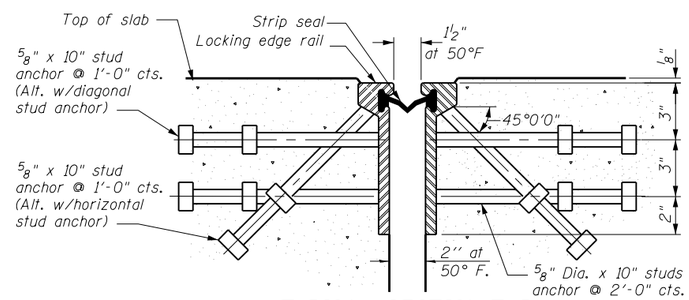
SECTION A-A



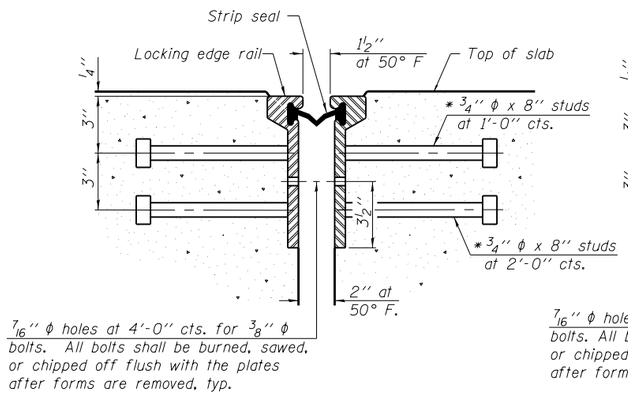
SECTION B-B



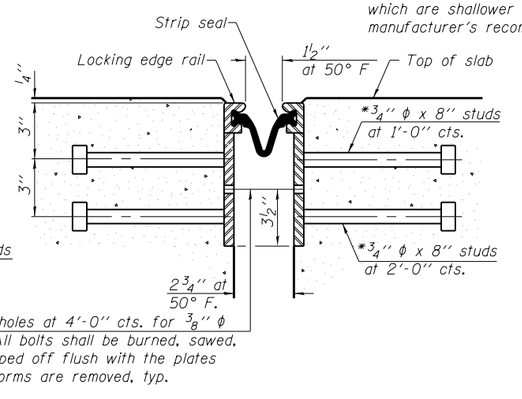
TYPICAL END TREATMENT
AT SIDEWALK OR MEDIAN
Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.



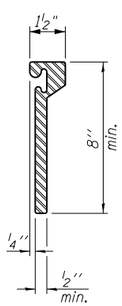
TYPICAL SECTION THRU
JOINT AT NORTH ABUTMENT



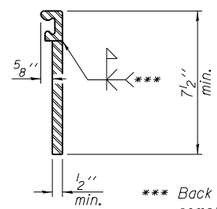
SECTION THRU ROLLED RAIL
JOINT AT SOUTH ABUTMENT



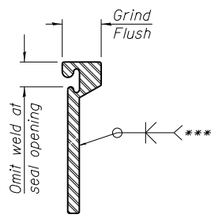
SECTION THRU
WELDED RAIL JOINT



ROLLED
EXTRUDED RAIL



WELDED RAIL



*** Back gouge not required if complete joint penetration is verified by mock-up.

LOCKING EDGE
RAIL SPLICE
The inside of the locking edge rail groove shall be free of weld residue. Rolled rail shown, welded rail similar.

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

TYPICAL SECTION THRU
JOINT AT THE S. ABUTMENT

LOCKING EDGE RAILS

Notes:

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

The Locking Edge Rails depicted are conceptual only, except for the minimum dimensions shown. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities.

The manufacturer's recommended installation methods shall be followed.

The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications shall be made at no additional cost to the State.

All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

Maximum space between rail segments shall be 3/16", sealed with a suitable sealant. Joints in rails within 10 ft. of curbs shall be welded.

Parapet plates and anchorage studs included in the cost of Preformed Joint Strip Seal.

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	102.0

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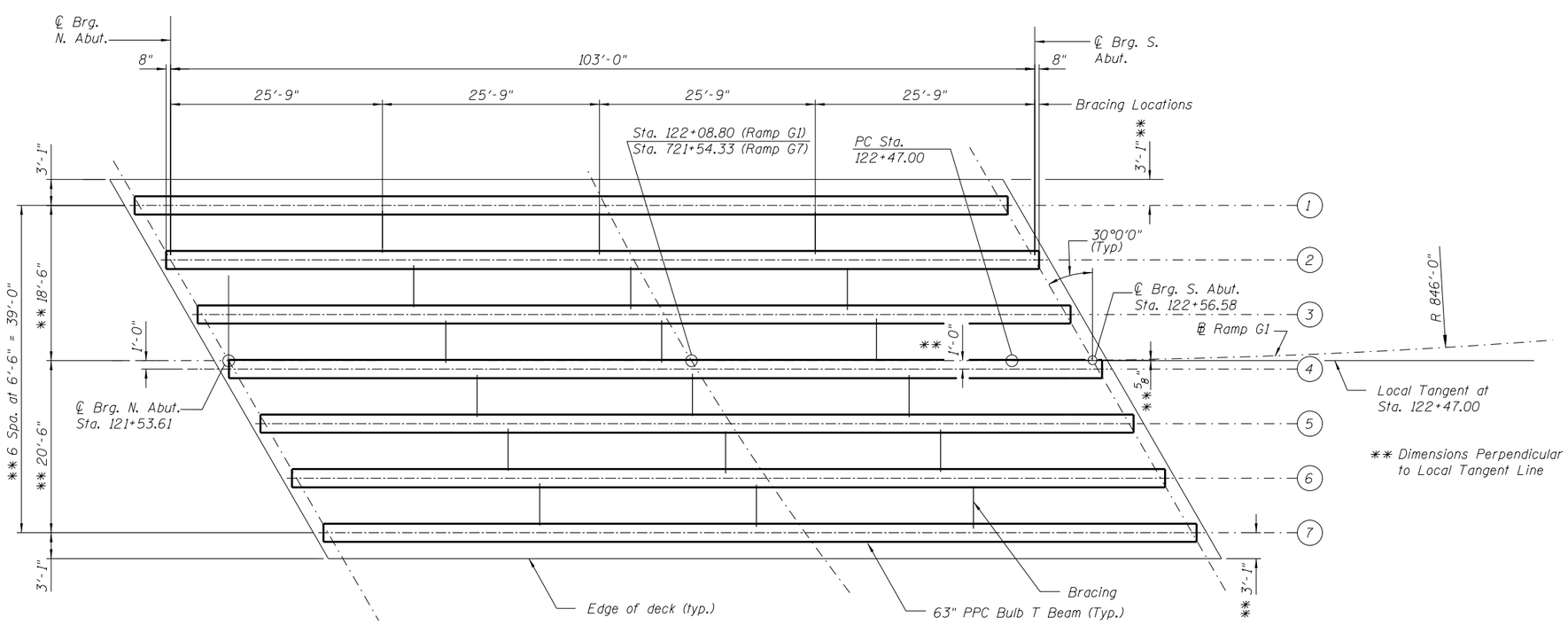
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 022-0556
SHEET NO. 13 OF 26 SHEETS

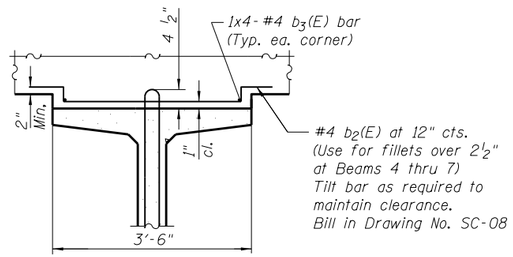
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	339
DRAWING NO. SC-13		CONTRACT NO. 60Y95		
ILLINOIS FED. AID PROJECT				

INTERIOR BEAM MOMENT TABLE		
		0.5 Span
I	(in^4)	392638
I'	(in^4)	732651
S_b	(in^3)	12224
S_b'	(in^3)	16015
S_t	(in^3)	12715
S_t'	(in^3)	42464
$DC1$	($k/'$)	1.44
M_{DC1}	('k)	1905
$DC2$	($k/'$)	0.17
M_{DC2}	('k)	229
DW	($k/'$)	0.30
M_{DW}	('k)	398
M_{L+IM}	('k)	1771

INTERIOR BEAM REACTION TABLE		
		N. & S. Abut.
R_{DC1}	(k)	74.0
R_{DC2}	(k)	8.9
R_{DW}	(k)	16.7
R_{L+IM}	(k)	92.0
R_{Total}	(k)	191.6



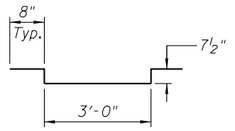
FRAMING PLAN



FILLET REINFORCEMENT

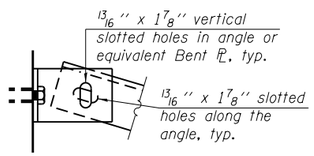
MIN. BAR LAP

#4 = 1'-6"

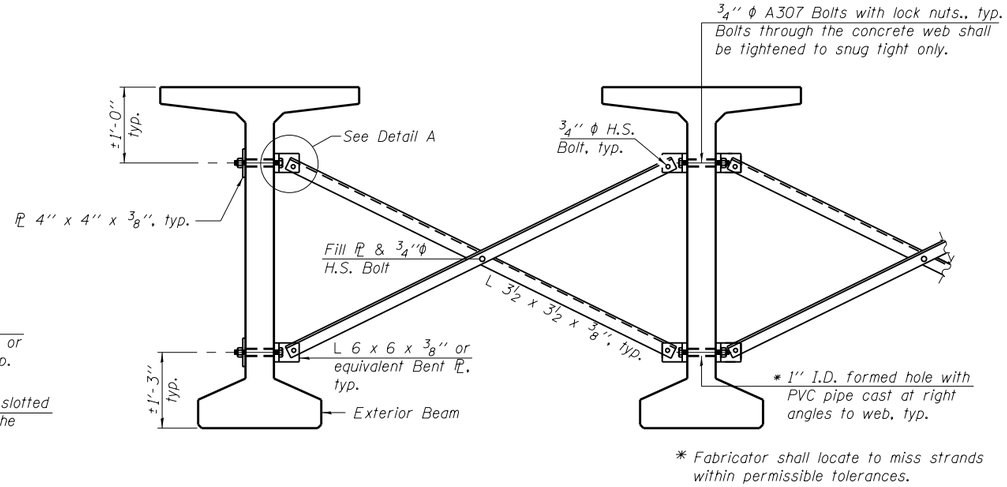


BAR $b_2(E)$

No. required = 416 ea.



DETAIL A



* Fabricator shall locate to miss strands within permissible tolerances.

PERMANENT BRACING DETAILS FOR BULB-T BEAMS

I: Non-composite moment of inertia of beam section ($in.^4$).
I': Composite moment of inertia of beam section ($in.^4$).
S_b: Non-composite section modulus for the bottom fiber of the prestressed beam ($in.^3$).
S_b': Composite section modulus for the bottom fiber of the prestressed beam ($in.^3$).
S_t: Non-composite section modulus for the top fiber of the prestressed beam ($in.^3$).
S_t': Composite section modulus for the top fiber of the prestressed beam ($in.^3$).
$DC1$: 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).
M_{L+IM}: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).

Notes:

All material for bracing shall be hot dip galvanized according to AASHTO M111 unless otherwise noted.

Two hardened washers are required for each set of oversized holes.

All holes shall be 15/16"ϕ unless otherwise noted.

5/16" x 3" x 3" plate washers are required over all slotted holes.

All bolts shall be galvanized according to AASHTO M232.

Bracing shall be installed as beams are erected and tightened as soon as possible during erection.

Permanent bracing shall not be paid for separately, but shall be included in the cost of Furnishing and Erecting Precast Prestressed Concrete Bulb T-Beams.

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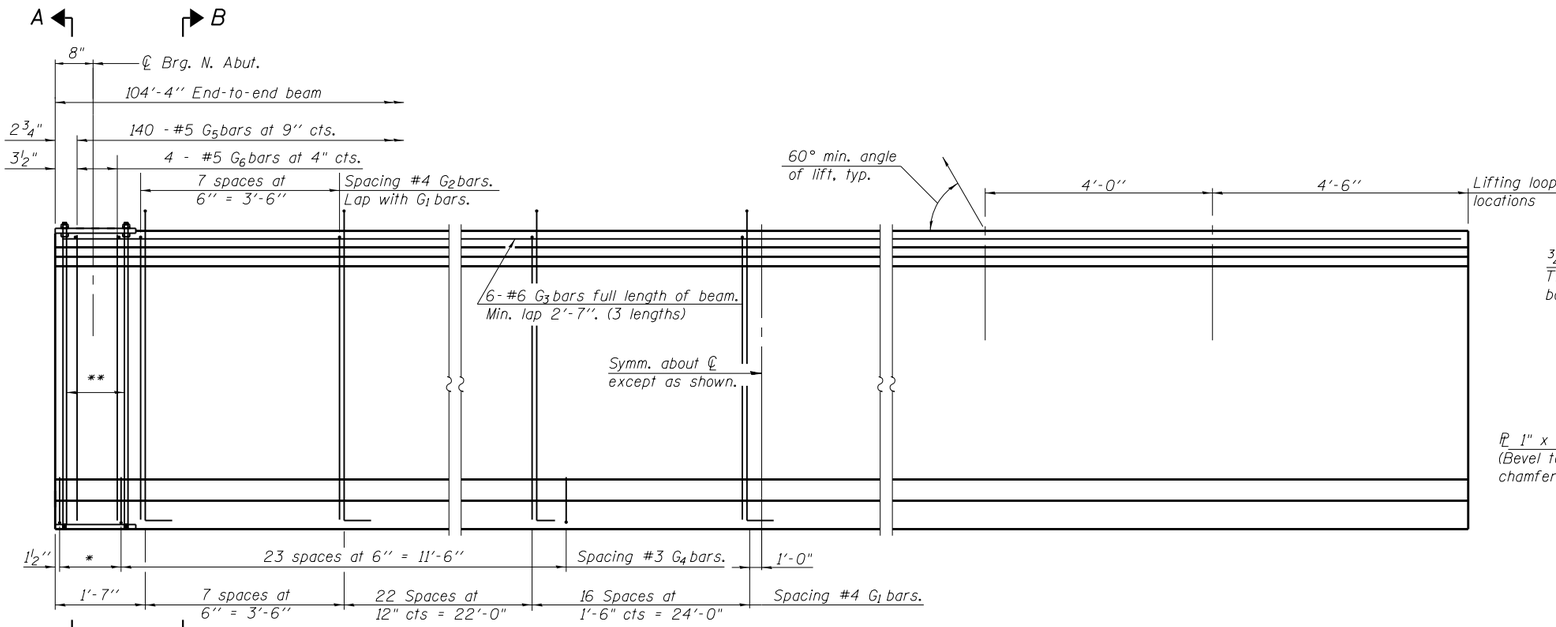
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FRAMING PLAN & DETAILS
STRUCTURE NO. 022-0556
SHEET NO. 14 OF 26 SHEETS

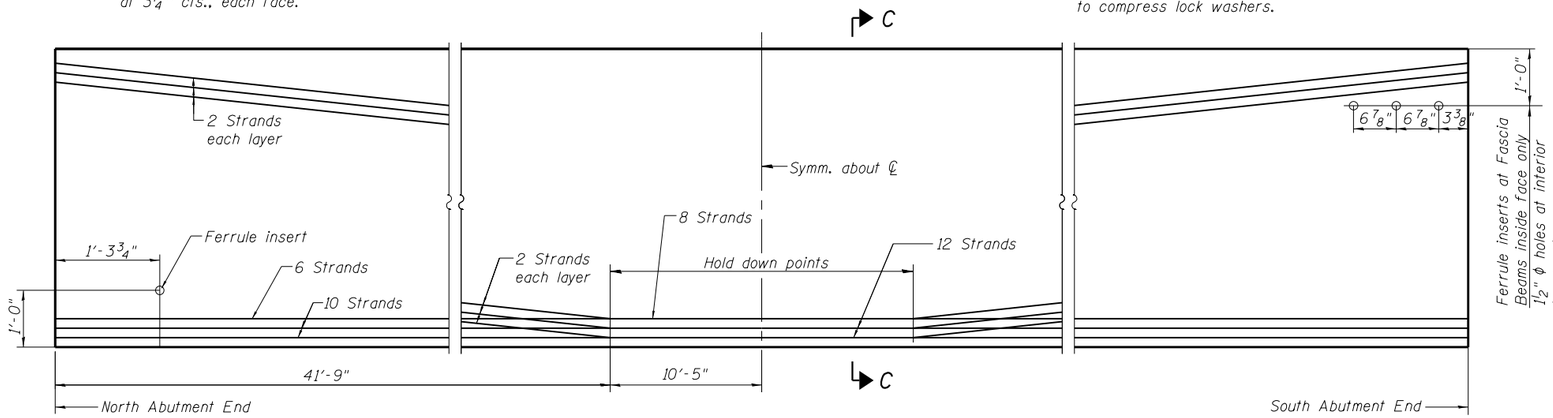
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	340
	DRAWING NO. SC-14		CONTRACT NO. 60Y95	
	ILLINOIS FED. AID PROJECT			



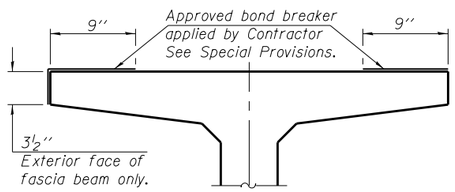
* 4 spaces at 3 1/4" = 1'-1".
** 5-3/4" ϕ threaded dowel rods at 3 1/4" cts., each face.

ELEVATION OF BEAM
(Showing reinforcement & dimensions)

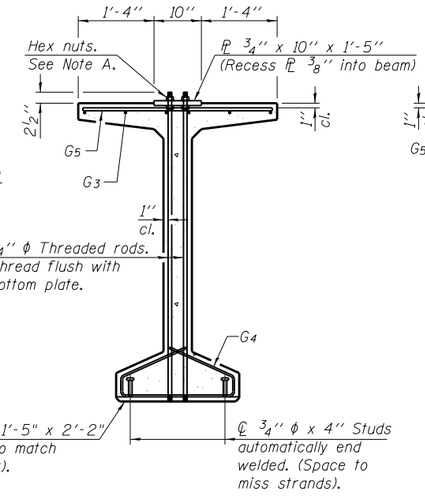
Note A:
Hex nuts (top and bottom) with lock washers (top). Only tighten sufficiently to compress lock washers.



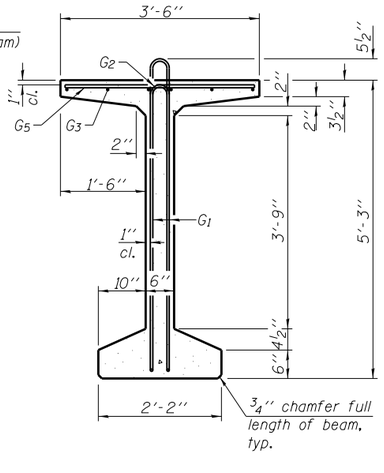
ELEVATION OF BEAM
(Showing prestressing steel)



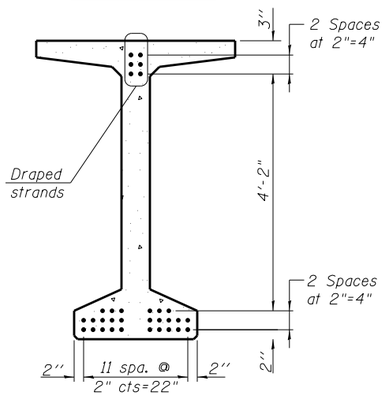
SECTION THRU TOP FLANGE
(Showing limits of bond breaker)



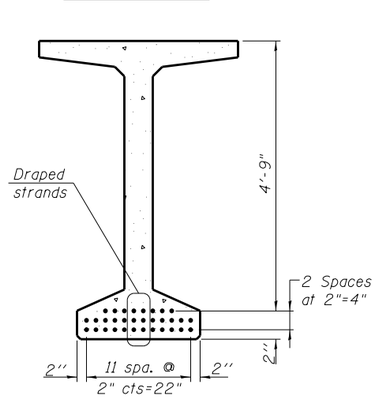
SECTION A-A



SECTION B-B



SECTION B-B



SECTION C-C

*** BAR LIST
ONE BEAM ONLY

Bar	No.	Size	Length	Shape
G_1	92	#4	12'-1"	⊓L
G_2	16	#4	10'-2"	⊓
G_3	18	#6	36'-6"	——
G_4	56	#3	4'-11"	⌓
G_5	140	#5	3'-4"	——
G_6	8	#5	12'-1"	⊓L

*** For information only

Notes:
See Drawing No. SC-16 for additional details and Bill of Material.
Required release strength, f'ci, shall be 5,000 psi.
Apply approved bond breaker as shown in Section thru Top Flange full length of beam. See Special Provisions.

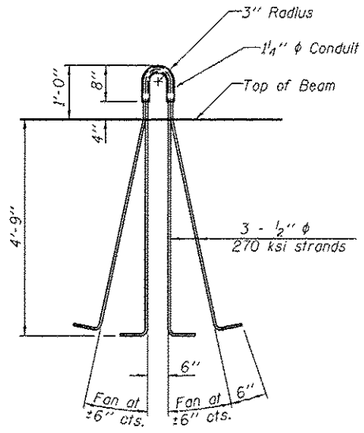
Primera
100 S. Wacker Drive, Suite 700 • Chicago, IL 60606 • P 312/606-0913 • F 312/606-3415

USER NAME =	DESIGNED - JPM	REVISED	
	CHECKED - TPG/MMH	REVISED	
PLOT SCALE =	DRAWN - MPS	REVISED	
PLOT DATE = 10/28/2014	CHECKED - JPM/TPG/MMH	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

63" PPC BULB T BEAM
STRUCTURE NO. 022-0556
SHEET NO. 15 OF 26 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	341
DRAWING NO. SC-15		CONTRACT NO. 60Y95		
ILLINOIS FED. AID PROJECT				



LIFTING LOOP DETAIL

NOTES

Inserts for ¾" ϕ threaded dowel rods, when specified, are to be two strut, ferrule type for interior beams and single ferrule, flared loop type for exterior beams.

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be ½" and the nominal cross-sectional area shall be 0.153 sq. in.

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

A minimum 2½" ϕ lifting pin shall be used to engage the lifting loops during handling.

Tilt G6 bars when necessary to maintain 1½" clearance.

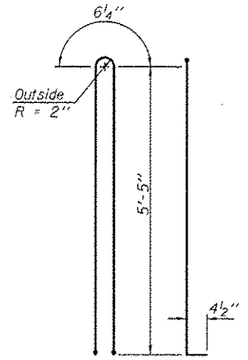
The top and bottom plates shall be AASHTO M270 Grade 50.

The bottom plates and studs shall be galvanized according to AASHTO M111. Top plates and threaded rods need not be galvanized.

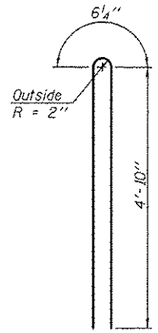
Threaded rods shall be ASTM F 1554 Grade 55.

The G6 bar assembly shall be capable of developing 125 percent of the yield strength of the grade 60 reinforcement bar components. The assembly shall allow completion of the splice without turning of the hook bar. The hook bar shall be threaded such that the entire coupler can be threaded onto the hook bar.

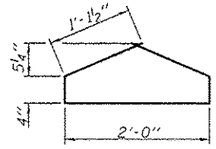
Beams requiring G6 bar assemblies shall not be released from the fabricator until they have attained 45 days of age or older.



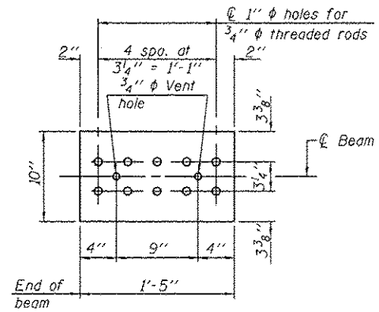
BAR G1



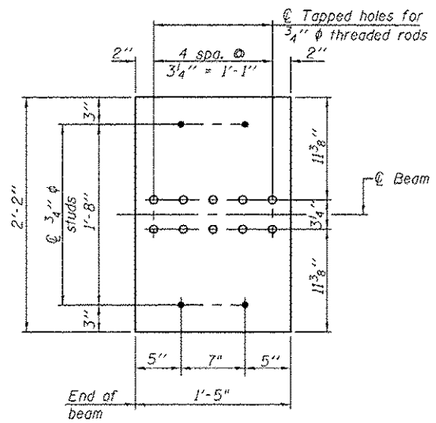
BAR G2 or G6



BAR G4



TOP PLATE



BOTTOM PLATE

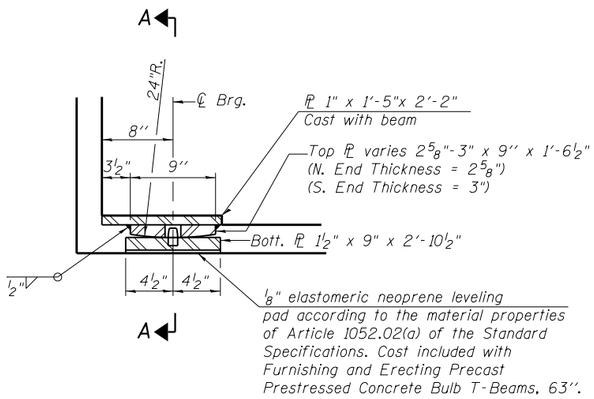
See bearing details on Drawing No. SC-17 for pintle hole locations.

BILL OF MATERIAL

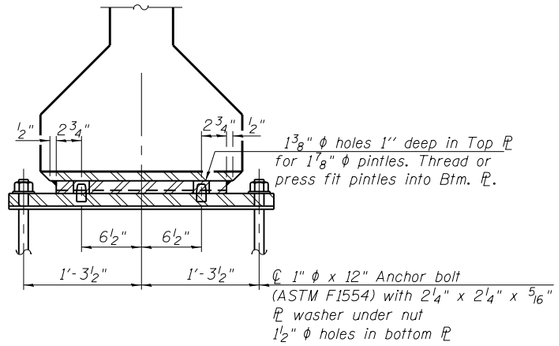
Item	Unit	Total
Furnishing and Erecting Precast Prestressed Concrete Bulb T-Beams, 63"	Ft.	731

Primera	USER NAME =	DESIGNED - JPM	REVISED	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	63" PPC BULB T BEAM DETAILS STRUCTURE NO. 022-0556
		CHECKED - TPG/MMH	REVISED		
	PLOT SCALE =	DRAWN - MPS/PDS	REVISED		
	PLOT DATE = 11/14/14	CHECKED - JPM/TPG/MMH	REVISED		SHEET NO. 16 OF 26 SHEETS

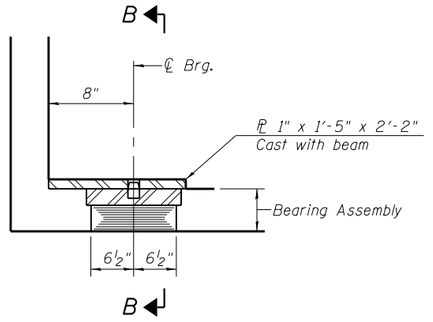
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	342
	DRAWING NO. SC-16	CONTRACT NO. 60Y95		
	ILLINOIS FED. AID PROJECT			



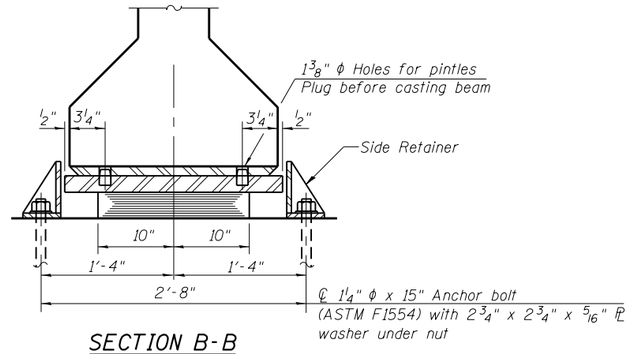
SECTION AT N. ABUT.



SECTION A-A



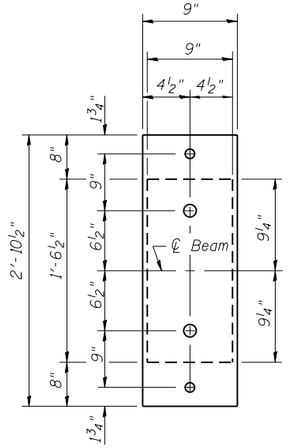
SECTION AT S. ABUT.



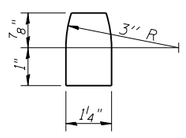
SECTION B-B

TYPE I ELASTOMERIC EXP. BRG.

FIXED BEARING



PLAN OF
TOP & BOTTOM PLATES



PINTLE

Notes:

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

Anchor bolts for side retainers may be cast in place or installed in holes drilled after members are in place.

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

Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

Side retainers and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I, except the Anchor Bolts 1¼", which is paid separately

All steel member required for the fixed bearing assembly are included in Furnishing and Erecting Structural Steel, except the Anchor Bolts 1", which is paid separately

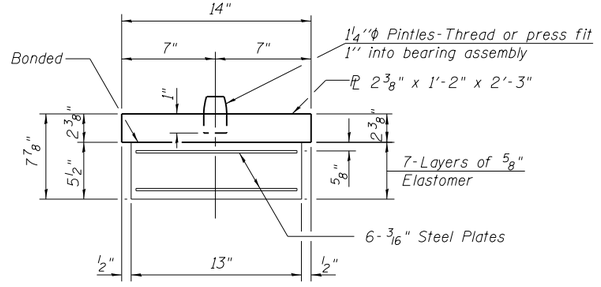
See Drawing No. SC-16 for additional details of plate cast with beam.

The structural steel plates of the Bearing Assembly shall conform to the requirements of AASHTO M 270 Grade 50.

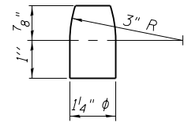
Two ⅛ in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

All bearing plates, side retainers, anchor bolts, nuts, washers and pintles shall be galvanized according to AASHTO M111 or M232 as applicable.

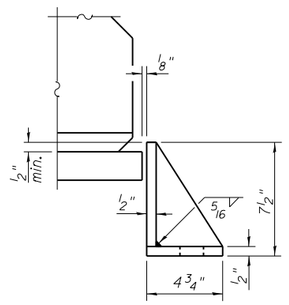
H.S. bolts in bearing assembly shall be galvanized according to AASHTO M298 Class 50.

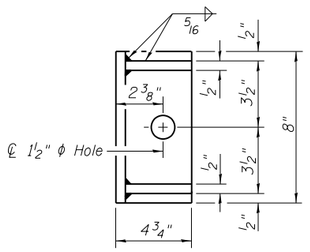


BEARING ASSEMBLY



PINTLE



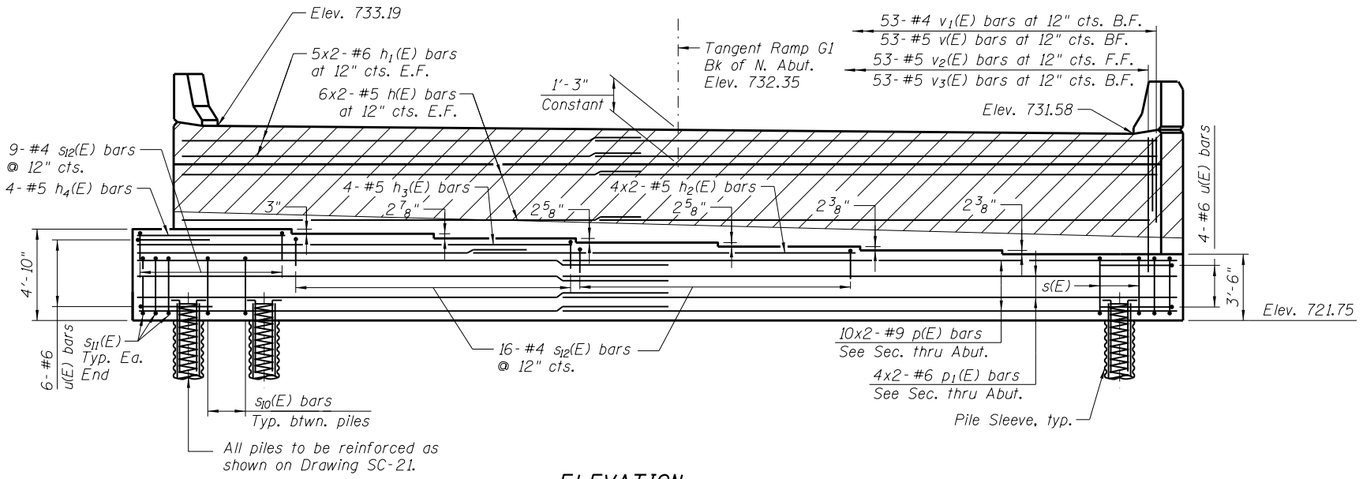


SIDE RETAINER

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

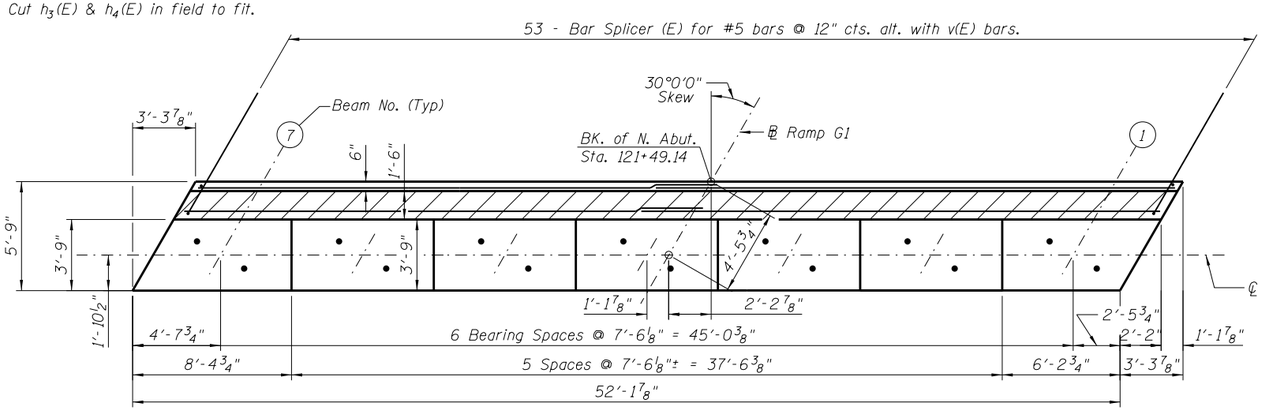
BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly, Type I	Each	7
Anchor Bolts 1"	Each	14
Anchor Bolts 1¼"	Each	14
Furnishing & Erecting Structural Steel	Pound	1,830

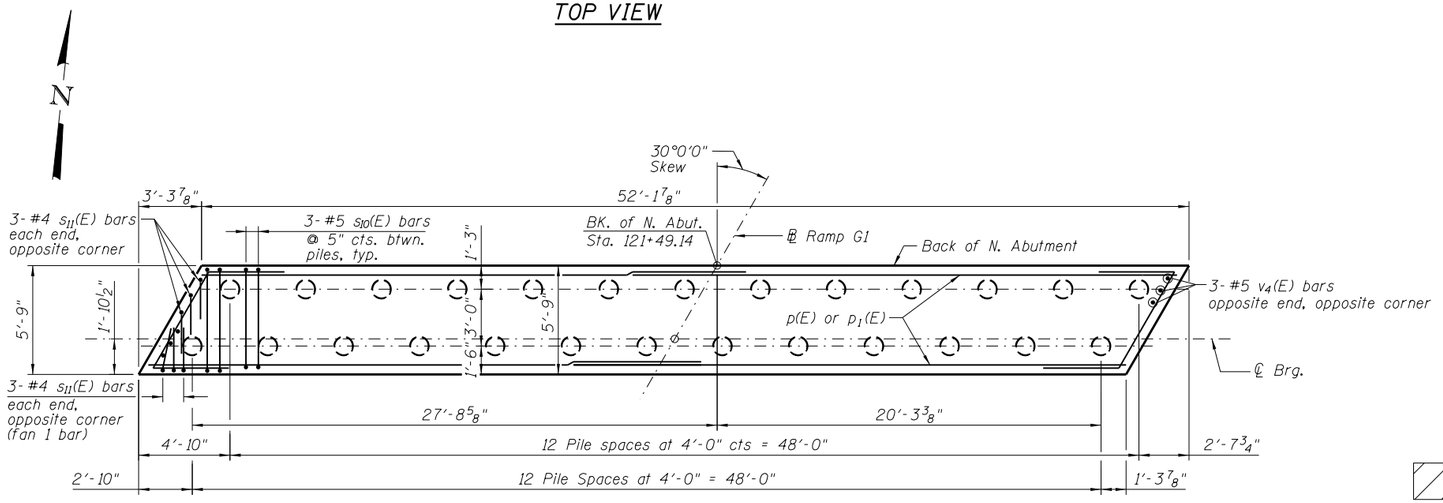


ELEVATION

Note:
Cut h_3(E) & h_4(E) in field to fit.

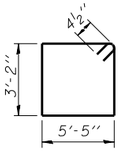


TOP VIEW

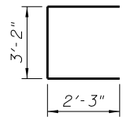


PLAN - PILE CAP

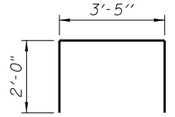
Note:
Cut v_4(E) in field to fit.



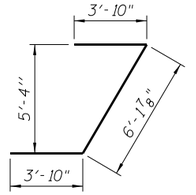
BARS s_{10}(E)



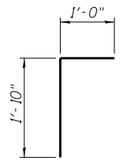
BARS s_{11}(E)



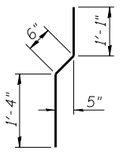
BARS s_{12}(E)



BAR u(E)



BAR v(E)



BAR v_1(E)

LEGEND

To be paid as Concrete Superstructure.
See Drawing No. SC-09 for details

NORTH ABUTMENT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	24	#5	27'-7"	
h_1(E)	10	#6	27'-11"	
h_2(E)	8	#5	20'-8"	
h_3(E)	4	#5	23'-2"	
h_4(E)	4	#5	8'-1"	
p(E)	20	#9	30'-3"	
p_1(E)	8	#6	27'-11"	
s_{10}(E)	73	#5	17'-11"	
s_{11}(E)	12	#4	7'-8"	
s_{12}(E)	41	#4	7'-5"	
u(E)	10	#6	13'-10"	
v(E)	53	#5	2'-10"	
v_1(E)	53	#4	2'-11"	
v_2(E)	53	#5	8'-1"	
v_3(E)	53	#5	6'-10"	
v_4(E)	6	#5	4'-7"	
Concrete Structures			Cu. Yd.	49.0
Concrete Superstructure			Cu. Yd.	25.4
Reinforcement Bars, Epoxy Coated			Pound	6,760
Furnishing Metal Shell Piles 12" x 0.25"			Foot	1,600
Driving Piles			Foot	1,600
Test Pile Metal Shells			Each	1
Concrete Sealer			Sq. Ft.	912
Pile Shoes			Each	26

For details of piles, see Drawing Nos. SC-03 & SC-21.

PILE DATA

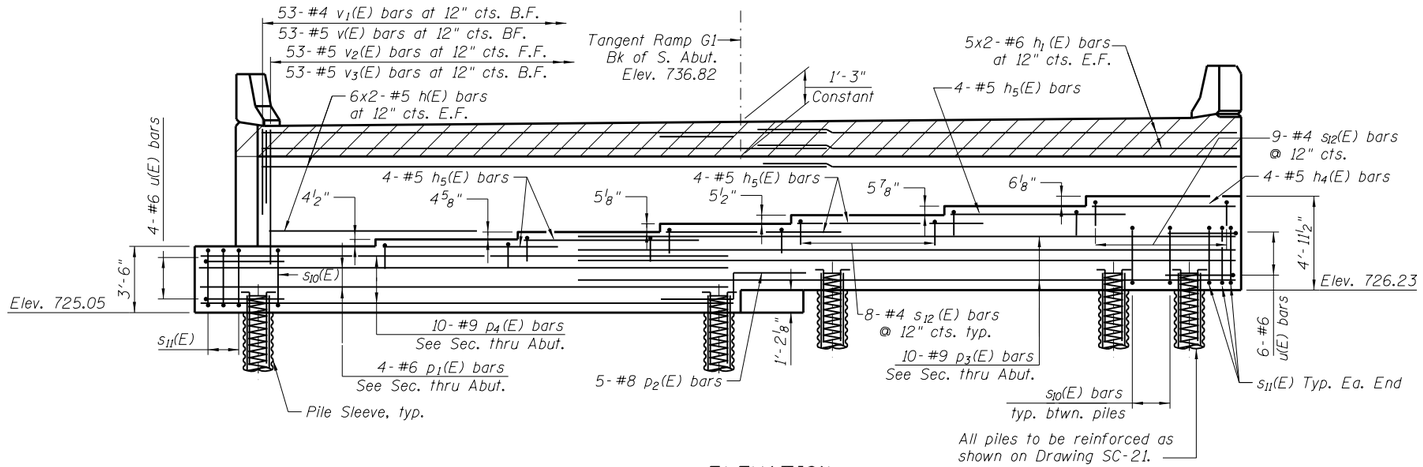
Type: Metal Shell Pile 12" x 0.25" with pile shoes
Nominal Required Bearing: 353 K
Factored Resistance Available: 194 K
Est. Length: 64 ft.
No. Production Piles: 25
No. Test Piles: 1

MIN. BAR LAP

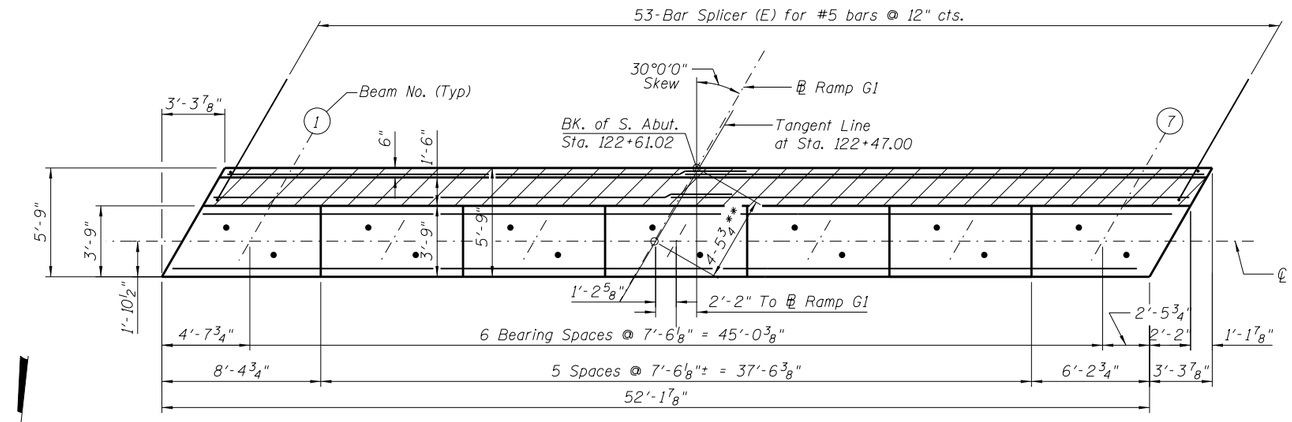
#5 Bar = 3'-3"
#6 Bar = 3'-10"
#9 Bar = 8'-7"

BRG. SEAT ELEVATIONS

Beam	Elevation
1	725.25
2	725.44
3	725.65
4	725.87
5	726.09
6	726.33
7	726.58

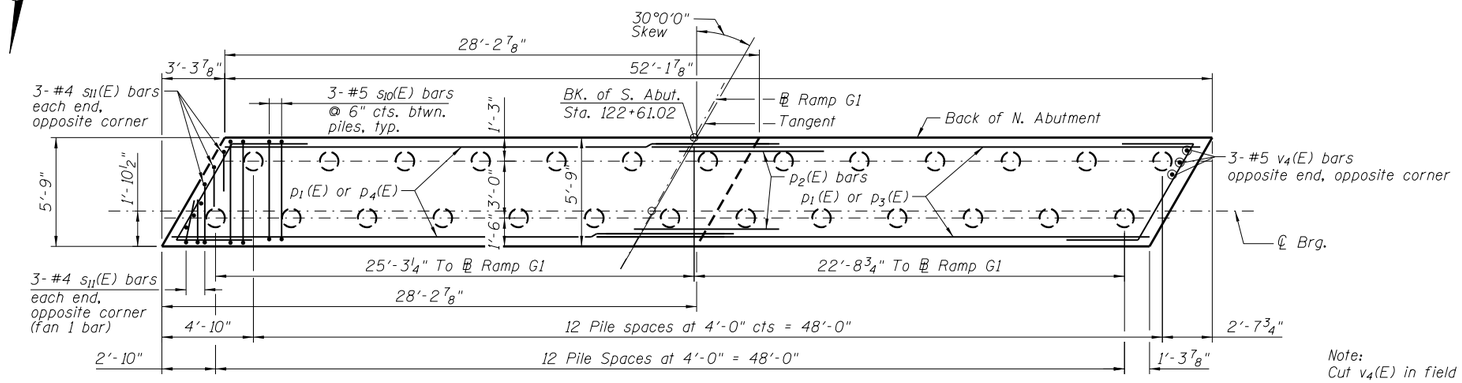


ELEVATION

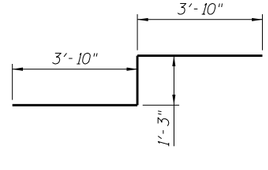


TOP VIEW

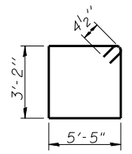
** Dimension is along the tangent line



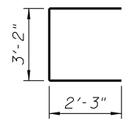
PLAN - PILE CAP



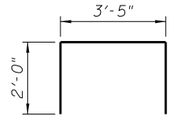
BARS p2(E)



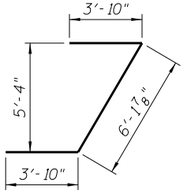
BARS s10(E)



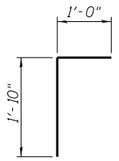
BARS s11(E)



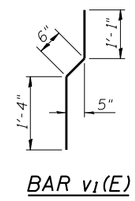
BARS s12(E)



BAR u(E)



BAR v(E)



BAR v1(E)

SOUTH ABUTMENT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	24	#5	27'-7"	
h1(E)	10	#6	27'-11"	
h4(E)	4	#5	8'-1"	
h5(E)	20	#5	10'-9"	
p1(E)	8	#6	27'-11"	
p2(E)	5	#6	8'-11"	
p3(E)	10	#9	32'-4"	
p4(E)	10	#9	28'-0"	
s10(E)	73	#5	17'-11"	
s11(E)	12	#4	7'-8"	
s12(E)	49	#4	7'-5"	
u(E)	10	#6	13'-10"	
v(E)	53	#5	2'-10"	
v1(E)	53	#4	2'-11"	
v2(E)	53	#5	8'-1"	
v3(E)	53	#5	6'-10"	
v4(E)	6	#5	4'-7"	
Concrete Structures		Cu. Yd.	66.9	
Concrete Superstructure		Cu. Yd.	3.6	
Reinforcement Bars, Epoxy Coated		Pound	6,850	
Furnishing Metal Shell Piles 12" x 0.25"		Foot	1,775	
Driving Piles		Foot	1,775	
Test Pile Metal Shells		Each	1	
Concrete Sealer		Sq. Ft.	933	
Pile Shoes		Each	26	

For details of Bar Splicers, see Drawing No. SC-22.
For details of piles, see Drawing Nos. SC-03 & 21.

PILE DATA

Type: Metal Shell Pile 12" x 0.25" with pile shoes
Nominal Required Bearing: 353 K
Factored Resistance Available: 194 K
Est. Length: 71 ft.
No. Production Piles: 25
No. Test Piles: 1

MIN. BAR LAP

#5 Bar = 3'-3"
#6 Bar = 3'-10"
#9 Bar = 8'-7"

BRG. SEAT ELEVATIONS

Beam	Elevation
1	728.55
2	728.91
3	729.31
4	729.73
5	730.19
6	730.67
7	731.19

Note:
Cut v4(E) in field to fit

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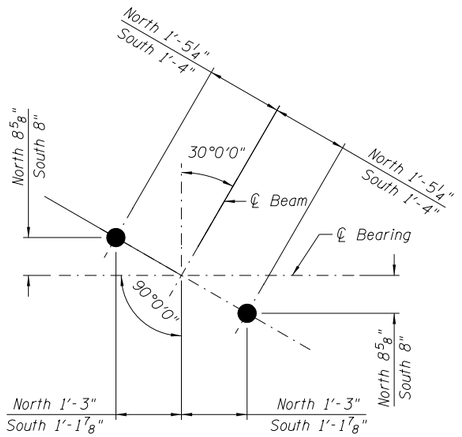
USER NAME =	DESIGNED - JPM	REVISED	
	CHECKED - TPG/MMH	REVISED	
PLOT SCALE =	DRAWN - MPS/PDS/MMZ	REVISED	
PLOT DATE = 10/28/2014	CHECKED - JPM/TPG/MMH	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

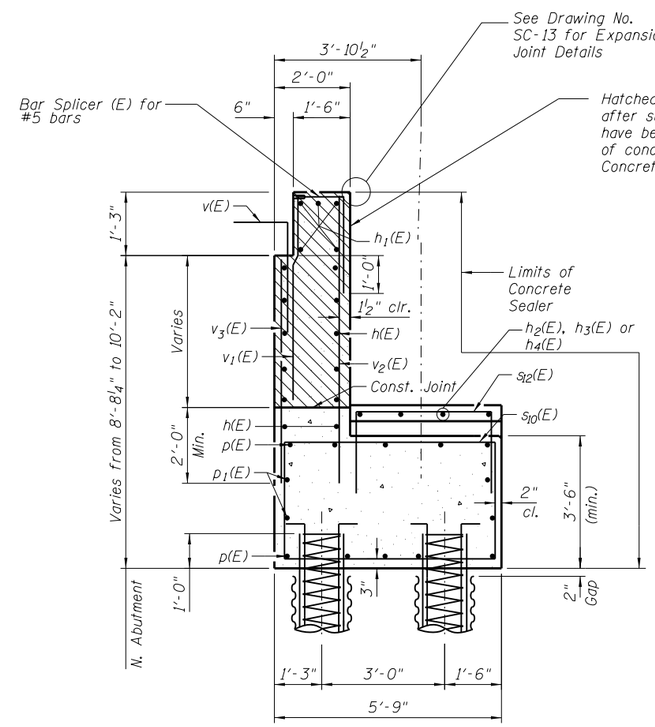
SOUTH ABUTMENT PLAN & ELEVATION
STRUCTURE NO. 022-0556
SHEET NO. 19 OF 26 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	345
	DRAWING NO. SC-19	CONTRACT NO. 60Y95		
	ILLINOIS FED. AID PROJECT			



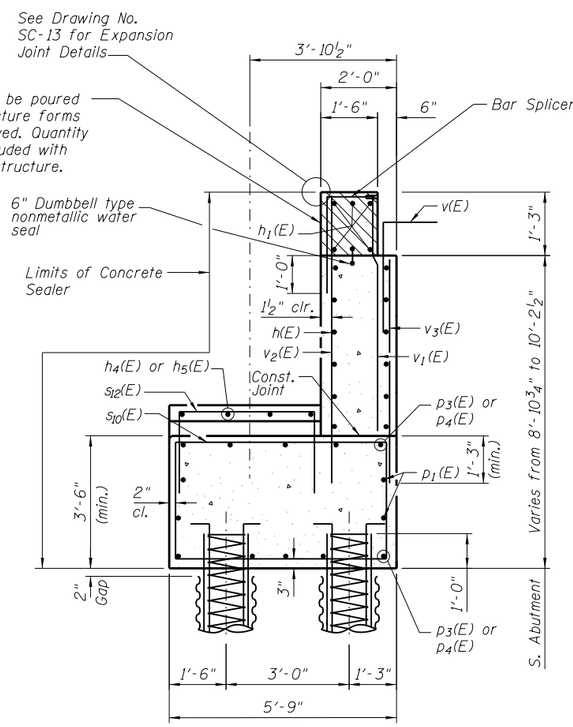
ANCHOR BOLT LAYOUT

North & South Abutments



SECTION THRU NORTH ABUTMENT

(Dimensions at right angle)



SECTION THRU SOUTH ABUTMENT

(Dimensions at right angle)

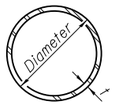
Notes:
Studs and locking rails are not shown for clarity.

Space reinforcement in cap to miss anchor bolts.

Pour steps monolithically with cap.

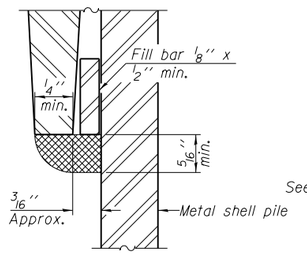
Cut $v_1(E)$ bar in field to fit.

See piles reinforcing details on Drawing SC-21.

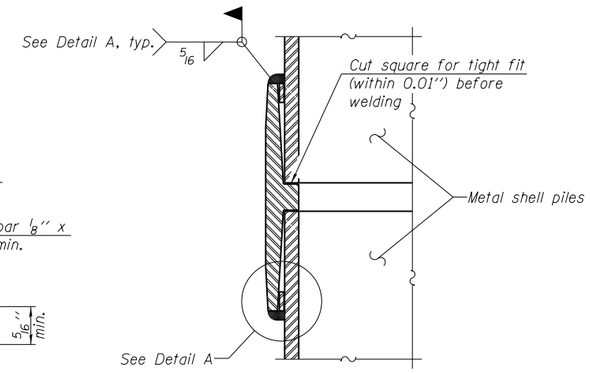


METAL SHELL PILE TABLE

Designation and outside diameter	Wall thickness t	Weight per foot (Lbs./ft.)	Inside volume ($yd.^3$/ft.)
PP12	0.179''	22.60	0.0274
PP12	0.250''	31.37	0.0267
PP14	0.250''	36.71	0.0368
PP14	0.312''	45.61	0.0361

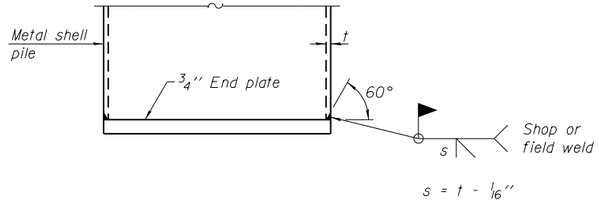


DETAIL A



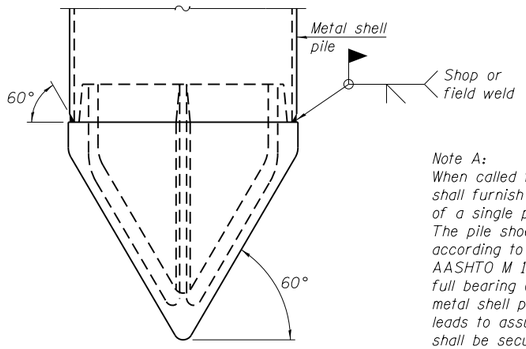
Notes:
The 1/8'' x 1/2'' min. fill bar may be constructed of 2 bars with a 1/8'' max. gap between them.
Pile segments shall be driven to solid contact with splicer before welding.

WELDED COMMERCIAL SPLICE



s = t - 1/16''

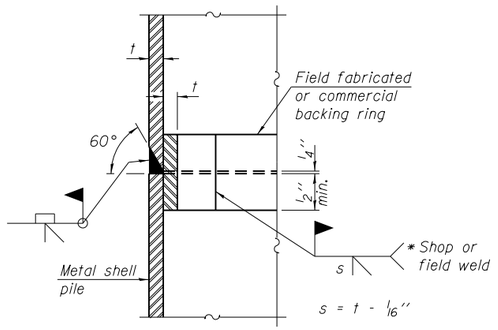
END PLATE ATTACHMENT



Note A:
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 90-60 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.

METAL SHELL PILE SHOE ATTACHMENT

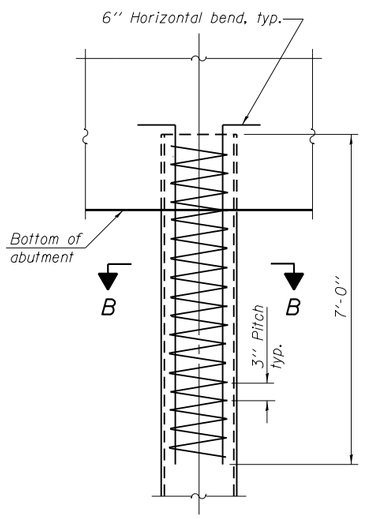
(See Note A)



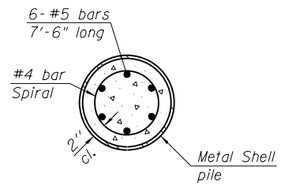
s = t - 1/16''

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.



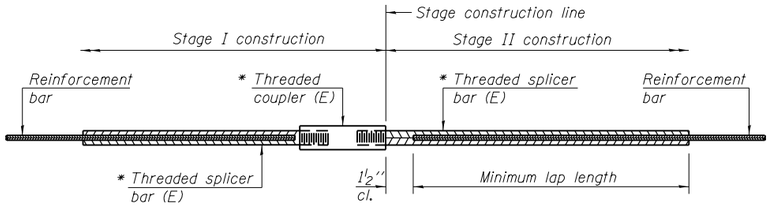
ELEVATION



SECTION B-B

METAL SHELL REINFORCEMENT AT ABUTMENTS

Note:
The metal shell piles shall be according to ASTM A 252 Grade 3.
Cost of pile reinforcement bars and filling of concrete in metal shell piles is included with Furnishing Metal Shell Piles 12"x0.250" pay item.



STANDARD BAR SPLICER ASSEMBLY

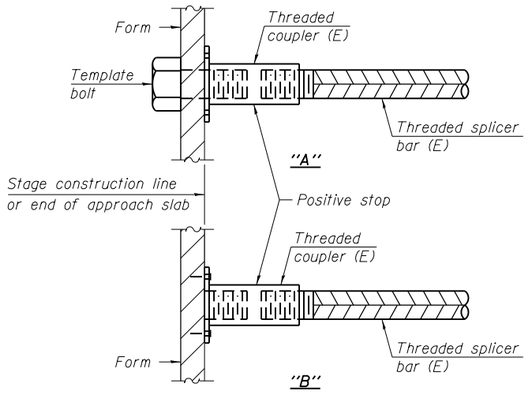
Minimum Lap Lengths						
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5	Table 6
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-7"	2'-11"
5	1'-9"	2'-5"	2'-7"	2'-11"	3'-3"	3'-8"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-10"	4'-5"
7	2'-9"	3'-10"	4'-2"	4'-8"	5'-2"	5'-10"
8	3'-8"	5'-1"	5'-5"	6'-2"	6'-9"	7'-8"
9	4'-7"	6'-5"	6'-10"	7'-9"	8'-7"	9'-8"

Table 1: Black bar, 0.8 Class C
Table 2: Black bar, Top bar lap, 0.8 Class C
Table 3: Epoxy bar, 0.8 Class C
Table 4: Epoxy bar, Top bar lap, 0.8 Class C
Table 5: Epoxy bar, Class C
Table 6: Epoxy bar, Top bar top, Class C

Threaded splicer bar length = min. lap length + 1½" + thread length

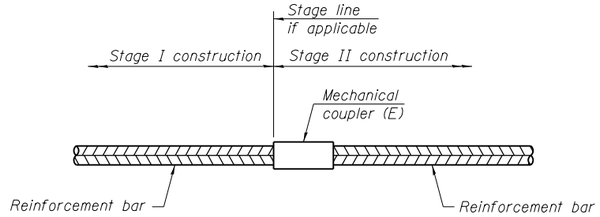
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length



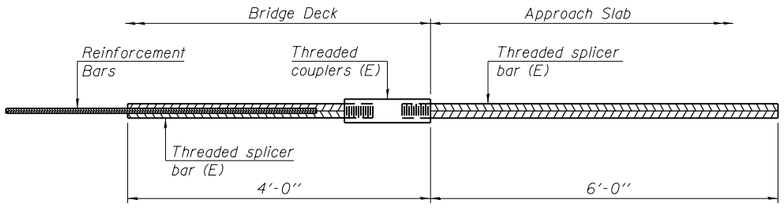
INSTALLATION AND SETTING METHODS

"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.



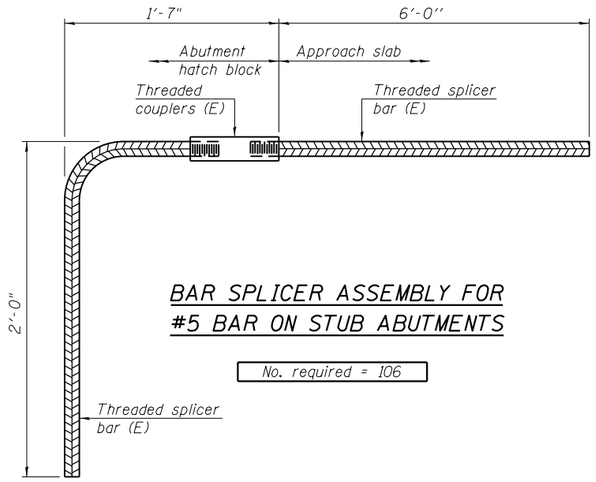
STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required



BAR SPLICER ASSEMBLY FOR #5 BAR ON INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

No. required =



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required = 106

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.

BSD-1

1-27-12

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USER NAME =	DESIGNED -	REVISED ___
	CHECKED -	REVISED ___
PLOT SCALE =	DRAWN -	REVISED ___
PLOT DATE = 10/28/2014	CHECKED -	REVISED ___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER DETAILS
STRUCTURE NO. 022-0556
SHEET NO. 22 OF 26 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	348
	DRAWING NO. SC-22		CONTRACT NO. 60Y95	
	ILLINOIS FED. AID PROJECT			

SOIL BORING LOG

Date 5/14/13

CONTRACT I-11-4031 DESCRIPTION Bridge B-34, Ramp G1 over Ramp G7 LOGGED BY E. Slusser

ROUTE Elgin O'Hare (IL 390) SECTION _____ LOCATION NW 1/4 SEC. 6 TWP. 40N RNG. 11E PM. 3rd

COUNTY DuPage DRILLING METHOD Hollow Stem Auger HAMMER TYPE Automatic

STRUCT. NO. 022-0556
Station 122+08.80
BORING NO. B-34-BSB-01
Station 121+48.51
Offset 10.4 ft LT.
Northing 1,938,489.14
Easting 1,068,117.24
Ground Surface Elev. 699.5 ft

Surface Water Elev. _____ ft
Stream Bed Elev. _____ ft

Groundwater Elev.:
First Encounter 651.0 ft
Upon Completion 684.5 ft
After 24 Hrs. 682.5 ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
TOPSOIL 699.2			
Very Stiff, Black, Brown and Gray SILTY CLAY trace - organics, gravel	2		
	3 3	3.7 B	20
	2		
-5	3 5	2.5 B	21
	2		
691.5 Stiff to Hard, Gray CLAY trace - gravel	4 7	2.5 B	21
	2		
-10	4 6	2.1 B	18
	2		
	4 5	2.2 B	19
	1		
▽ -15	4 6	3.0 B	17
	2		
▼	4 5	2.9 B	19
	2		
-20	3 4	1.6 B	17
Stiff to Hard, Gray CLAY trace - gravel *(continued)*	2		
	3 5	2.5 B	16
	4		
-25	6 8	2.3 B	20
	4		
	6 7	2.9 B	19
	2		
-30	3 4	2.7 B	21
	5		
	8 9	3.5 B	20
	4		
-35	7 9	2.6 B	19
	5		
-40	8 11	4.0 B	14

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

SOIL BORING LOG

Date 5/14/13

CONTRACT I-11-4031 DESCRIPTION Bridge B-34, Ramp G1 over Ramp G7 LOGGED BY E. Slusser

ROUTE Elgin O'Hare (IL 390) SECTION _____ LOCATION NW 1/4 SEC. 6 TWP. 40N RNG. 11E PM. 3rd

COUNTY DuPage DRILLING METHOD Hollow Stem Auger HAMMER TYPE Automatic

STRUCT. NO. 022-0556
Station 122+08.80
BORING NO. B-34-BSB-01
Station 121+48.51
Offset 10.4 ft LT.
Northing 1,938,489.14
Easting 1,068,117.24
Ground Surface Elev. 699.5 ft

Surface Water Elev. _____ ft
Stream Bed Elev. _____ ft

Groundwater Elev.:
First Encounter 651.0 ft
Upon Completion 684.5 ft
After 24 Hrs. 682.5 ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Stiff to Hard, Gray CLAY trace - gravel *(continued)*	8		
	13 18	5.6 B	20
652.5 Medium Dense to Very Dense, Gray Fine to Coarse SAND trace to little - gravel ▽	2		
-50	4 6		17
	5		
-55	6 9		14
	7		
-60	8 10		18
Medium Dense to Very Dense, Gray Fine to Coarse SAND trace to little - gravel *(continued)*	15		
	27 30		13
-65			
-70	12 16 18		14
	13		
-75	26 29		10
	8		
-80	3 26		19
END OF BORING 619.5			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

SOIL BORING LOG

Date 3/28/13

CONTRACT I-11-4031 DESCRIPTION Bridge B-34, Ramp G1 over Ramp G7 LOGGED BY J. Frederick

ROUTE Elgin O'Hare (IL 390) SECTION _____ LOCATION NW 1/4 SEC. 6 TWP. 40N RNG. 11E PM. 3rd

COUNTY DuPage DRILLING METHOD Solid Stem Auger / Mud Rotary below 10 feet HAMMER TYPE Automatic

STRUCT. NO. 022-0556
Station 122+08.80
BORING NO. B-34-BSB-02
Station 122+97.93
Offset 24.8 ft LT.
Northing 1,938,347.23
Easting 1,068,072.01
Ground Surface Elev. 709.5 ft

Surface Water Elev. _____ ft
Stream Bed Elev. _____ ft
Groundwater Elev.:
First Encounter Mud Rotary ft
Upon Completion Mud Rotary ft
After _____ Hrs. _____ ft

DEPTH (ft)		BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
	CRUSHED STONE			
	708.5			
	Hard, Brown SILTY CLAY trace - gravel	4		
		6	5.2	15
		9	B	
	706.5			
	Brown and Gray below 3 feet	3		
		4	4.0	20
-5		7	P	
		7		
	703.0			
	Very Stiif to Hard, Brown and Gray CLAY trave - gravel	7	3.2	20
		7	B	
		4		
		5	3.9	18
-10		6	B	
		4		
		8	4.1	20
		11	B	
		6		
		8	4.5	20
-15		11	B	
		3		
		8	2.1	13
		7	B	
		4		
		5	2.5	18
-20		8	B	

DEPTH (ft)		BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
	688.5			
	Gray below 21 feet	4		
		6	5.0	18
		10	B	
		6		
		6	3.9	18
-25		10	B	
		3		
		5	2.1	22
		7	B	
		4		
		5	2.0	20
-30		7	B	
		4		
		5	2.2	20
		8	B	
		5		
		7	3.1	20
-35		9	B	
		4		
		5	2.2	15
		7	B	
		5		
		6	2.5	16
-40		7	B	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

SOIL BORING LOG

Date 3/28/13

CONTRACT I-11-4031 DESCRIPTION Bridge B-34, Ramp G1 over Ramp G7 LOGGED BY J. Frederick

ROUTE Elgin O'Hare (IL 390) SECTION _____ LOCATION NW 1/4 SEC. 6 TWP. 40N RNG. 11E PM. 3rd

COUNTY DuPage DRILLING METHOD Solid Stem Auger / Mud Rotary below 10 feet HAMMER TYPE Automatic

STRUCT. NO. 022-0556
Station 122+08.80
BORING NO. B-34-BSB-02
Station 122+97.93
Offset 24.8 ft LT.
Northing 1,938,347.23
Easting 1,068,072.01
Ground Surface Elev. 709.5 ft

Surface Water Elev. _____ ft
Stream Bed Elev. _____ ft
Groundwater Elev.:
First Encounter Mud Rotary ft
Upon Completion Mud Rotary ft
After _____ Hrs. _____ ft

DEPTH (ft)		BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
	Gray below 21 feet *(continued)*			
		5		
		8	3.5	17
		9	B	
	666.5			
	Medium Dense, Gray LOAM little - gravel	5		
		8		17
-45		12		
	664.0			
	Medium Dense, Gray Medium to Coarse SAND and Gravel	10		
		11		13
		9		
		9		
		9		16
-50		9		
	659.0			
	Hard, Gray CLAY trace - gravel	11		
		11	5.4	14
		14	B	
	656.5			
	Dense, Gray, SANDY LOAM trace - gravel	17		
		15		21
-55		16		
		17		
		22		16
		21		
		17		
		18		18
-60		18		

DEPTH (ft)		BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
	649.0			
	Hard, Gray CLAY trace - gravel	6		
		10	5.0	16
		16	B	
		6		
		10	4.5	19
-65	Sand parting at 64.3 feet	14	B	
	644.0			
	Medium Dense, Gray SANDY LOAM trace - gravel sand seam at 66.8 feet	10		
		12		10
		16		
	641.5			
	Very Stiff, Gray SILTY CLAY trace - gravel	7		
		7	2.5	12
-70		10	B	
	639.0			
	Medium Dense, Gray Fine SAND trace - gravel	9		
		15		12
		12		
	636.5			
	Very Stiff, Gray SILTY CLAY trace - gravel	9		
		9	2.8	11
-75		11	B	
		20		
		15	3.5	10
		12	B	
		13		
		12	3.3	10
-80	END OF BORING 629.5	10	B	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

SOIL BORING LOG

Date 10/8/13

CONTRACT I-11-4031 DESCRIPTION Retaining Wall R-217, Ramp G1 LOGGED BY M. Baig

ROUTE Elgin O'Hare (IL 390) SECTION _____ LOCATION NW 1/4 SEC. 6 TWP. 40N RNG. 11E PM. 3rd

COUNTY DuPage DRILLING METHOD Hollow Stem Auger HAMMER TYPE Automatic

STRUCT. NO. 022-0560
Station 119+80 to 121+47.75
BORING NO. R-217-RWB-01
Station 121+48.18
Offset 23.3 ft RT.
Northing 1,938,503.08
Easting 1,068,086.47
Ground Surface Elev. 702.1 ft

Surface Water Elev. _____ ft
Stream Bed Elev. _____ ft

Groundwater Elev.:
First Encounter 673.1 ft
Upon Completion 682.1 ft
After 24 Hrs. 689.1 ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
TOPSOIL			
701.1			
Very Stiff to Hard, Brown and Gray CLAY trace - gravel	5		
	5	4.0	16
	5	P	
Grain Size LL=43, PI=22, A-7-6(19)	3		
	4	4.5	18
-5	5	S	
	2		
	2	2.1	20
	4	B	
694.1			
Gray below 8 feet	3		
	4	2.2	18
-10	6	B	
	2		
	3	2.6	19
	5	B	
▼			
	3		
	4	3.0	17
-15	6	B	
	3		
	5	2.9	16
	6	B	
	3		
	3	2.7	16
▽ -20	4	B	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Gray below 8 feet *(continued)*			
	3		
	4	2.5	21
	6	B	
	3		
	4	3.1	21
-25	7	B	
	4		
	6	3.2	20
	9	B	
▽	2		
	4	2.7	21
-30	7	B	
	5		
	6	3.1	21
	8	B	
669.1			
Very Stiff to Hard, Gray SILTY CLAY trace - gravel	3		
	5	2.4	16
-35	7	B	
	6		
	9	4.0	16
	1	B	
664.1			
Medium Dense, Gray SILTY LOAM little - gravel Grain Size LL=43, PI=22, A-4(3)	5		
	7	0.8	18
-40	8	B	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

SOIL BORING LOG

Date 10/8/13

CONTRACT I-11-4031 DESCRIPTION Retaining Wall R-217, Ramp G1 LOGGED BY M. Baig

ROUTE Elgin O'Hare (IL 390) SECTION _____ LOCATION NW 1/4 SEC. 6 TWP. 40N RNG. 11E PM. 3rd

COUNTY DuPage DRILLING METHOD Hollow Stem Auger HAMMER TYPE Automatic

STRUCT. NO. 022-0560
Station 119+80 to 121+47.75
BORING NO. R-217-RWB-01
Station 121+48.18
Offset 23.3 ft RT.
Northing 1,938,503.08
Easting 1,068,086.47
Ground Surface Elev. 702.1 ft

Surface Water Elev. _____ ft
Stream Bed Elev. _____ ft

Groundwater Elev.:
First Encounter 673.1 ft
Upon Completion 682.1 ft
After 24 Hrs. 689.1 ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
661.6			
Very Stiff to Hard, Gray SILTY CLAY trace - gravel	5		
	5	2.7	20
2-inch sand layer at 42 feet	6	B	
	10		
	10	4.1	19
2 - inch gravel layer at 44.2 feet	8	B	
-45			
	8		
	13	4.7	24
	14	B	
653.6			
Medium Dense, Brown and Gray SAND trace - gravel	7		
	12		12
652.1 -50	4		
END OF BORING			
-55			
-60			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

SOIL BORING LOG

Date 9/18/13

CONTRACT I-11-4031 **DESCRIPTION** Retaining Wall R-223, Ramp G1 **LOGGED BY** E. Slusser

ROUTE Elgin O'Hare (IL 390) **SECTION** **LOCATION** NW 1/4 **SEC.** 6 **TWP.** 40N **RNG.** 11E **PM.** 3rd

COUNTY DuPage **DRILLING METHOD** Hollow Stem Auger **HAMMER TYPE** Automatic

STRUCT. NO.
Station 125+95.00 to 127+25.00
BORING NO. R-223-RWB-01
Station 121+86.81
Offset 23.7 ft RT.
Northing 1,938,375.03
Easting 1,068,030.55
Ground Surface Elev. 699.4 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 695.4 ft
Upon Completion 696.4 ft
After 24 **Hrs.** 698.2 ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
699.1 TOPSOIL				Stiff to Hard, Gray CLAY*(continued)*			
Very Stiff, Brown and Gray SILTY CLAY trace - gravel	4				2		
	5 6	2.7 B	20		3 5	1.8 B	23
696.4 ▽							
Loose to Medium Dense, Gray Fine to Coarse SAND trace to little - gravel	3				3		
	3 4		16	-25	5 7	2.7 B	16
-5							
	2				5		
	3 3		16		7 9	3.3 B	17
	11				5		
	14 14		15	fine sand partings from 28.8 to 29.5 feet	10 12	2.1 B	17
-10				-30			
688.9							
Medium Dense, Gray SANDY LOAM little - gravel	10			trace - gravel below 31 feet	10		
	9 9		13		10 10	2.3 B	15
686.4							
Medium Dense, Gray Fine to Coarse SAND trace - gravel	3				5		
	5 5		16	-35	7 7	2.9 B	23
-15							
683.9							
Stiff to Hard, Gray CLAY	5				3		
	5 6	2.6 B	23		4 6	2.6 B	24
	5				4		
	6 7	2.1 B	23	-40	4 6	2.9 B	17
-20							

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

SOIL BORING LOG

Date 9/18/13

CONTRACT I-11-4031 **DESCRIPTION** Retaining Wall R-223, Ramp G1 **LOGGED BY** E. Slusser

ROUTE Elgin O'Hare (IL 390) **SECTION** **LOCATION** NW 1/4 **SEC.** 6 **TWP.** 40N **RNG.** 11E **PM.** 3rd

COUNTY DuPage **DRILLING METHOD** Hollow Stem Auger **HAMMER TYPE** Automatic

STRUCT. NO.
Station 125+95.00 to 127+25.00
BORING NO. R-223-RWB-01
Station 121+86.81
Offset 23.7 ft RT.
Northing 1,938,375.03
Easting 1,068,030.55
Ground Surface Elev. 699.4 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 695.4 ft
Upon Completion 696.4 ft
After 24 **Hrs.** 698.2 ft

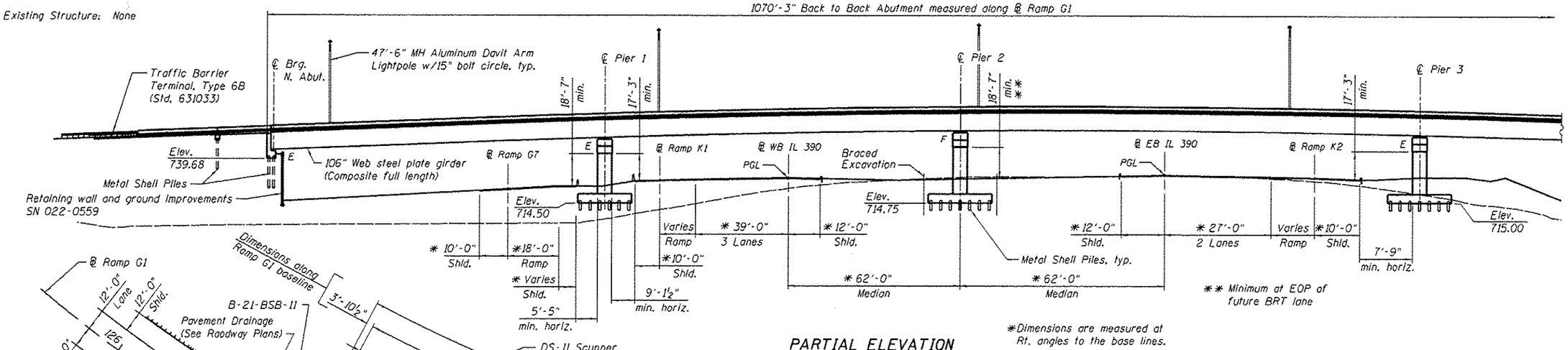
DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Stiff to Hard, Gray CLAY*(continued)*			
	8		
	13 19	4.1 B	23
656.4			
Very Stiff, Gray CLAY LOAM trace - gravel	12		
	13 13	2.9 B	13
-45			
	8		
	16 27	3.1 B	11
651.4			
Hard, Gray CLAY trace - gravel	10		
	17 29	4.3 B	16
-50			
	9		
	15 22	4.1 B	16
646.4			
Medium Dense, Gray LOAM little - gravel	5		
	7 9		13
-55			
643.9			
Medium Dense to Dense, Gray SANDY LOAM little - gravel	7		
	15 17		10
	10		
	8 10		11
END OF BORING 639.4 -60			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

Bench Mark: BM #716 Cut square in the northwest end of bridge wall. Approximateley 65 feet north of the centerline of Thorndale Ave. and 168 feet west of the centerline of I-290, approximately 12 feet west of bridge deck. Elev. 731.40 NAVD88

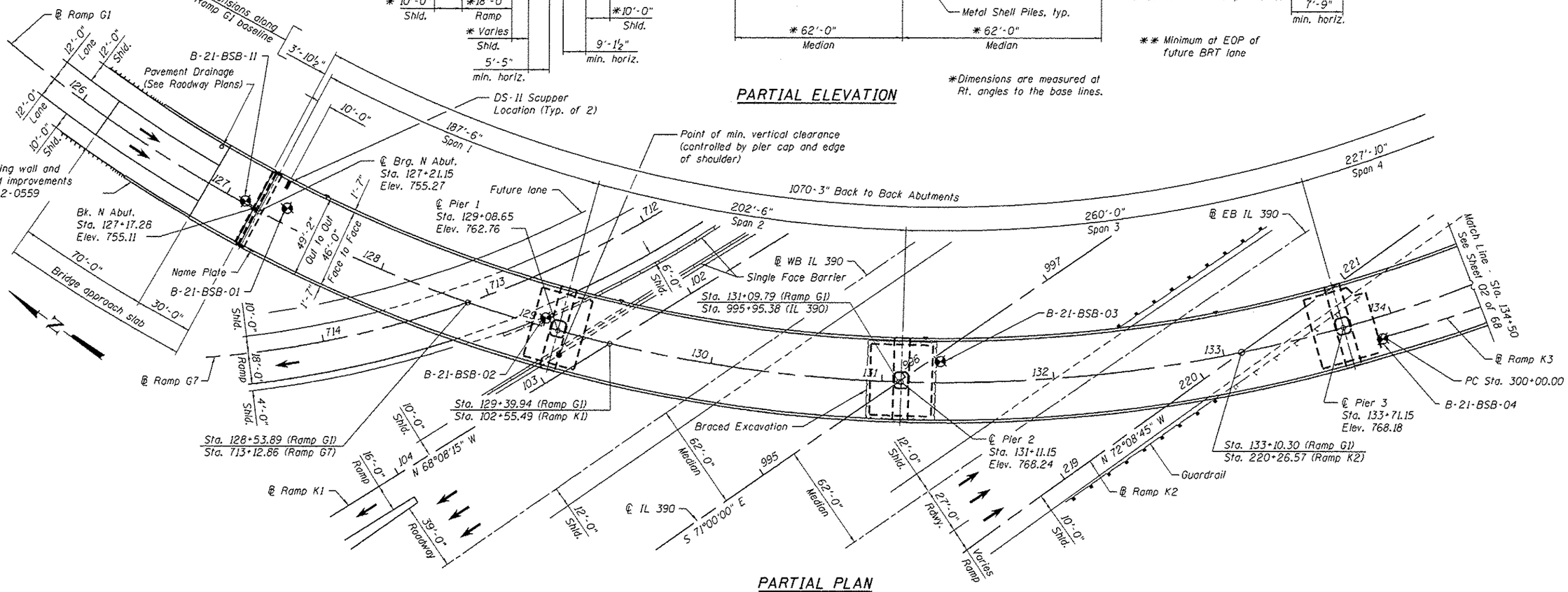
Existing Structure: None

1070'-3" Back to Back Abutment measured along ℄ Ramp G1



PARTIAL ELEVATION

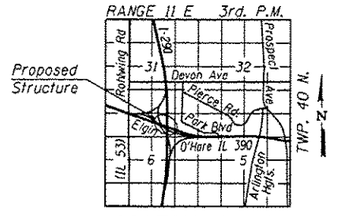
*Dimensions are measured at Rt. angles to the base lines.



PARTIAL PLAN

APPROVED
For Structural Adequacy Only
Engineer of Bridges & Structures

KEITH S. MOCKENHAUPT
081-005457
LICENSED STRUCTURAL ENGINEER
STATE OF ILLINOIS



LOCATION SKETCH

GENERAL PLAN & ELEVATION-I
RAMP G1 OVER RAMP G7, IL 390 & I-290
F.A.P. RTE. 345
SECTION 2013-083-R&B
DUPAGE COUNTY
STATION 995+95.38
STRUCTURE NO. 022-0557

FILE NAME = 0220557-60Y95-001-GPE.dgn	USER NAME = asantiag	DESIGNED - KSM	REVISED -
		CHECKED - CK/CM	REVISED -
	PLOT SCALE = 60.0006 ' / in.	DRAWN - MRW	REVISED -
	PLOT DATE = 11/25/2014	CHECKED - KSM	REVISED -

CH2MHILL

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION I
STRUCTURE NO. 022-0557
SHEET NO. 01 OF 68 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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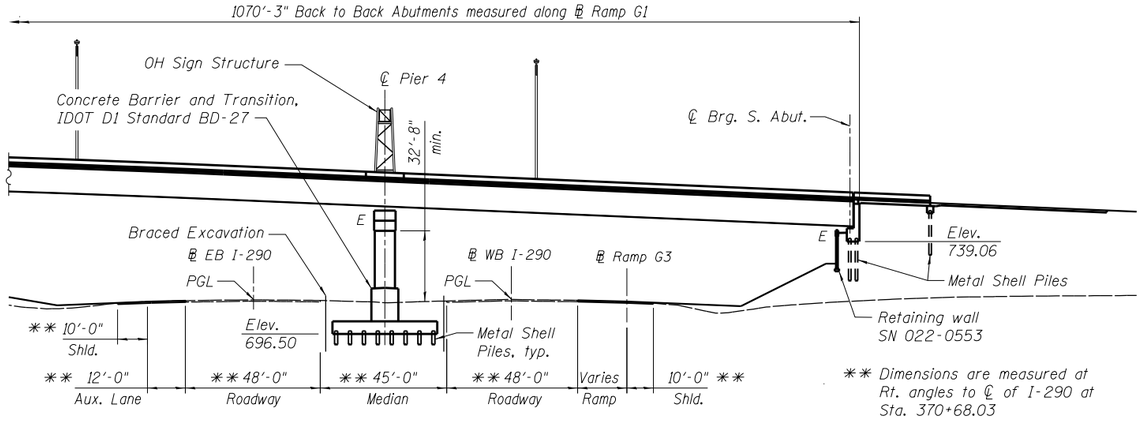
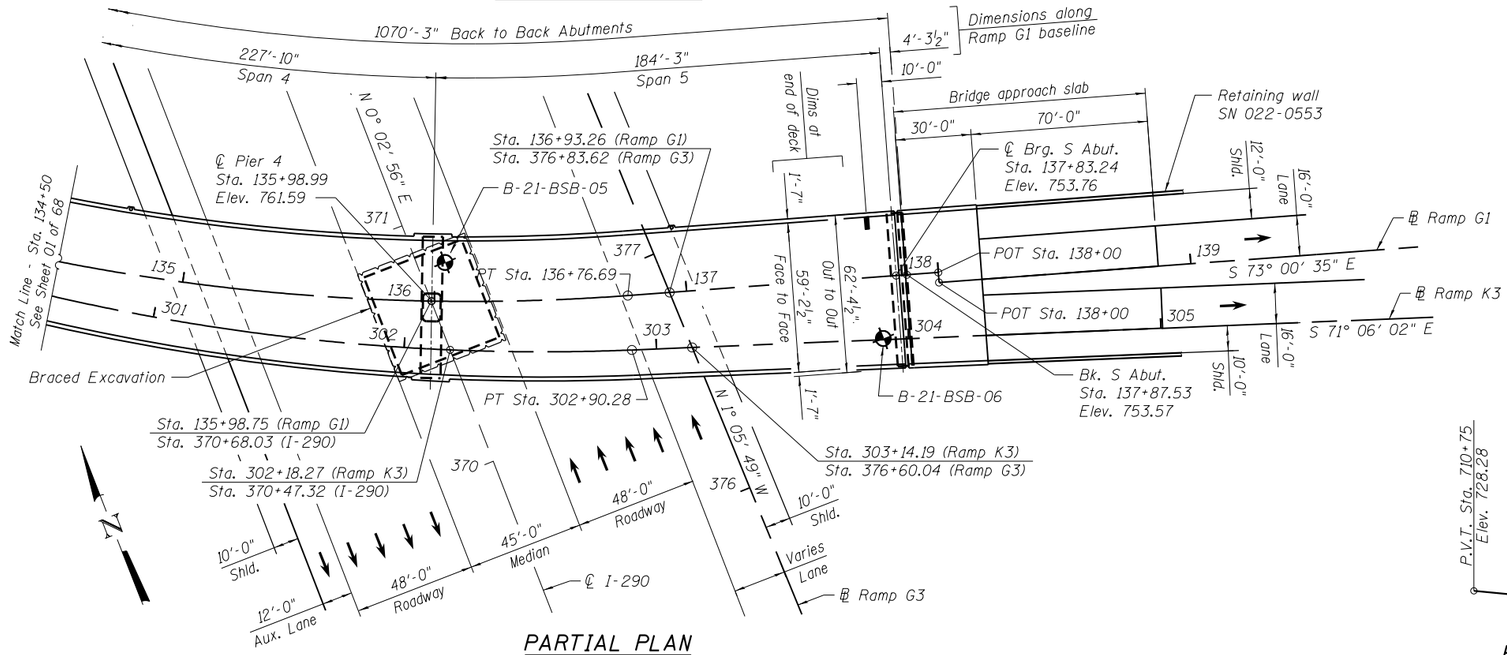
	DRAWING NO. SD-01	CONTRACT NO. 60Y95		
		ILLINOIS FED. AID PROJECT		



PARTIAL ELEVATION



PARTIAL PLAN

HORIZONTAL CURVE DATA
(Along ℄ Ramp G1)

PI Sta. = 132+00.31
Δ = 96°49'35" (LT)
D = 6°46'21"
R = 846.00'
L = 1429.69'
E = 428.57'
T = 953.32'
S.E. = 6.0%
S.E. RUN = 136+35 to 137+65
P.C. STA. = 122+47.00
P.T. STA. = 136+76.69

HORIZONTAL CURVE DATA
(Along ℄ Ramp K3)

PI Sta. = 301+46.52
Δ = 19°12'34" (LT)
D = 6°37'03"
R = 865.81'
L = 290.28'
E = 12.31'
T = 146.52'
S.E. = varies 6.0% to 2.0%
P.C. STA. = 300+00.00
P.T. STA. = 302+90.28

HORIZONTAL CURVE DATA
(Along ℄ Ramp G7)

PI Sta. = 713+70.30
Δ = 34°36'39" (RT)
D = 9°32'57"
R = 600.00'
L = 362.44'
E = 28.45'
T = 186.94'
S.E. = 5.6%
P.C. STA. = 711+83.36
P.T. STA. = 715+45.80

LOADING HL-93

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

DESIGN SPECIFICATIONS

2012 AASHTO LRFD Bridge Design Specifications & 2013 Interims

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration @ 1.0 sec (S_{D1}) = 0.085 g
Design Spectral Acceleration @ 0.2 sec (S_{DS}) = 0.150 g
Soil Site Class = D

DESIGN STRESSES

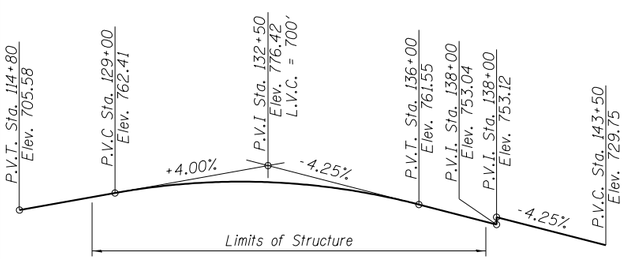
Field Units

Concrete
f'c = 3,500 psi

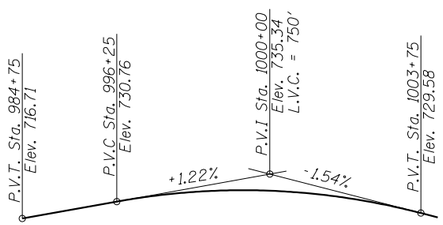
Structural steel:
fy = 50,000 psi (M270 Grade 50)

Reinforcement:
fy = 60,000 psi

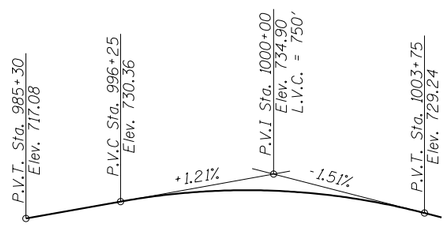
Design Note: This bridge, which includes the girders, crossframes, pier caps, pier columns, footings and piling has been designed to handle a future loading condition. That future loading condition is the staged removal and replacement of the existing deck/slab while one (1) lane of live load traffic utilizes the other half of the bridge deck/slab.



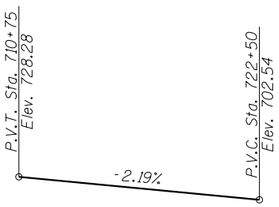
PROFILE GRADE
(Ramp G1)



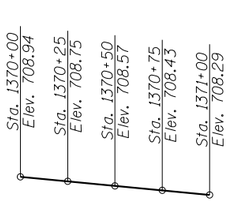
PROFILE GRADE
(EB IL 390)



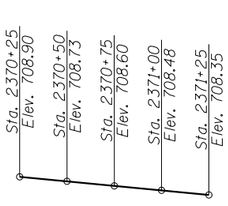
PROFILE GRADE
(WB IL 390)



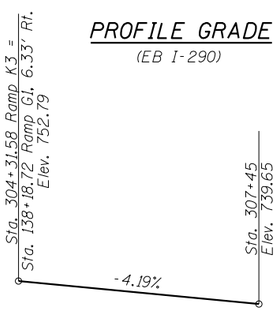
PROFILE GRADE
(Ramp G7)



PROFILE GRADE
(WB I-290)



PROFILE GRADE
(EB I-290)



PROFILE GRADE
(Ramp K3)

FILE NAME = 02201557-60Y95-002-GPE.dgn	USER NAME = asantiag	DESIGNED - KSM	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL PLAN & ELEVATION II STRUCTURE NO. 022-0557	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH2MHILL		CHECKED - CK/CM	REVISED -			345	2013-083-R&B	DUPAGE	759	354
	PLOT SCALE = 60.0006 ' / in.	DRAWN - MRW	REVISED -				DRAWING NO. SD-02		CONTRACT NO. 60Y95	
	PLOT DATE = 11/19/2014	CHECKED - KSM	REVISED -		SHEET NO. 02 OF 68 SHEETS			ILLINOIS FED. AID PROJECT		

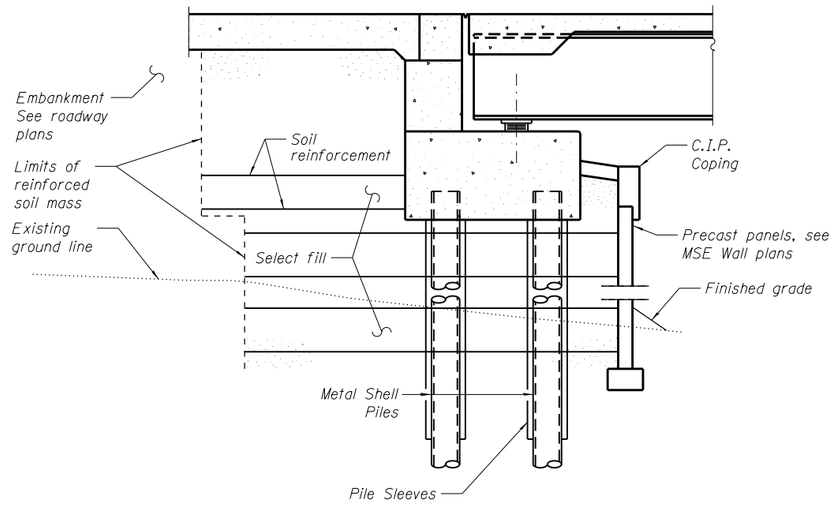
GENERAL NOTES

1. Concrete superstructure shall have a seven day minimum cure.
2. Fasteners shall be A325 Type 1, mechanically galvanized bolts. Bolts $^{7}/_{8}$" ϕ, holes $^{15}/_{16}$" ϕ, unless otherwise noted.
3. All structural steel shall be AASHTO M270 Grade 50.
4. Calculated weight of Structural Steel = 3,493,350 Pounds
5. No field welding is permitted except as specified in the contract documents.
6. Reinforcement bars designated (E) shall be epoxy coated.
7. 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.
8. Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of $^{1}/_{8}$" (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.
9. Concrete sealer shall be applied to the designated areas of the abutments.
10. The Organic Zinc Rich Primer / Epoxy / Urethane Paint System shall be used for painting of new structural steel except where otherwise noted. The entire system shall be shop applied, with the exception of the exterior surface and the bottom flange of facia 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.
11. Slipforming of the parapets is not allowed.
12. The Contractor is alerted that camber and dead load deflections values shown on the girder detail drawings were developed based on the deck pouring sequence shown in the Contract Drawings. Any deviation from this pouring sequence will result in changes to camber and elevations that reflect dead load deflections. If the Contractor wishes to change the sequence, then the proposed plan revisions and design calculations shall be submitted to the Engineer for review and approval. The calculations shall be prepared and sealed by a Licensed Structural Engineer in Illinois.
13. The erection of the structural steel shall be accomplished by a steel erection contractor or sub-contractor certified as an Advanced Certified Steel Erector (ACSE) by AISC. See special provision for "Erection of Complex Steel Structures".
14. Erection of the structural steel shall begin from the fixed pier, Pier 2.
15. Prior to the placement of the joint blockout, the Contractor shall coordinate with the Modular Joint manufacturer to ensure that the joint will be properly supported and that the reinforcement bars will not interfere with the joint components. Any necessary adjustments to the reinforcement layout shall be submitted to the Engineer for approval.

INDEX OF DRAWINGS

TOTAL BILL OF MATERIAL

PAY ITEM NUMBER	ITEM	UNIT	SUPER	SUB	TOTAL	RECORD QUANT.
50200100	Structure Excavation	Cu. Yd.		472	472	
50300225	Concrete Structures	Cu. Yd.		2,581.9	2,581.9	
50300255	Concrete Superstructure	Cu. Yd.	1,851.9		1,851.9	
50300260	Bridge Deck Grooving	Sq. Yd.	5,816		5,816	
50300300	Protective Coat	Sq. Yd.	7,160		7,160	
50500105	Furnishing and Erecting Structural Steel	L Sum	0.92		0.92	
50500505	Stud Shear Connectors	Each	14,324		14,324	
50800205	Reinforcement Bars, Epoxy Coated	Pound	575,290	503,490	1,078,780	
50800515	Bar Splicers	Each		105	105	
51200959	Furnishing Metal Shell Piles 14" x 0.312"	Foot		17,494	17,494	
51202305	Driving Piles	Foot		17,494	17,494	
51203200	Test Pile Metal Shells	Each		8	8	
51204650	Pile Shoes	Each		274	274	
51500100	Name Plates	Each	1		1	
52100520	Anchor Bolts, 1"	Each		78	78	
52100530	Anchor Bolts, 1¼"	Each		52	52	
58700300	Concrete Sealer	Sq. Ft.		2,033	2,033	
X2020502	Braced Excavation	Cu. Yd.		1,871	1,871	
X5210120	High Load Multi-Rotational Bearings, Guided Expansion, 250K	Each	7		7	
X5210140	High Load Multi-Rotational Bearings, Guided Expansion, 350K	Each	6		6	
X5210210	High Load Multi-Rotational Bearings, Guided Expansion, 700K	Each	13		13	
X5210230	High Load Multi-Rotational Bearings, Guided Expansion, 800K	Each	7		7	
X5210365	High Load Multi-Rotational Bearings, Fixed - 750K	Each	6		6	
Z0018002	Drainage Scuppers, DS-11	Each	2		2	
Z0034809	Modular Expansion Joint - Swivel 9"	Foot	46		46	
Z0034812	Modular Expansion Joint - Swivel 12"	Foot	59		59	



SECTION THRU PILE SUPPORTED
STUB ABUTMENT

STATION 995+95.38
BUILT 20__ BY
STATE OF ILLINOIS
F.A.P. RT. 345 SEC. 2013-083-R&B
LOADING HL-93
STRUCTURE NO. 022-0557

NAME PLATE
See Std. 515001

FILE NAME = 0220557-60Y95-003-GenNotes.dgn	USER NAME = esantiag	DESIGNED - KSM	REVISED -
CH2MHILL®		CHECKED - CK/CM	REVISED -
	PLOT SCALE = 2.0000 ' / in.	DRAWN - MRW	REVISED -
	PLOT DATE = 11/19/2014	CHECKED - KSM	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES, QUANTITIES & INDEX
STRUCTURE NUMBER - 022-0557
SHEET NO. 03 OF 68 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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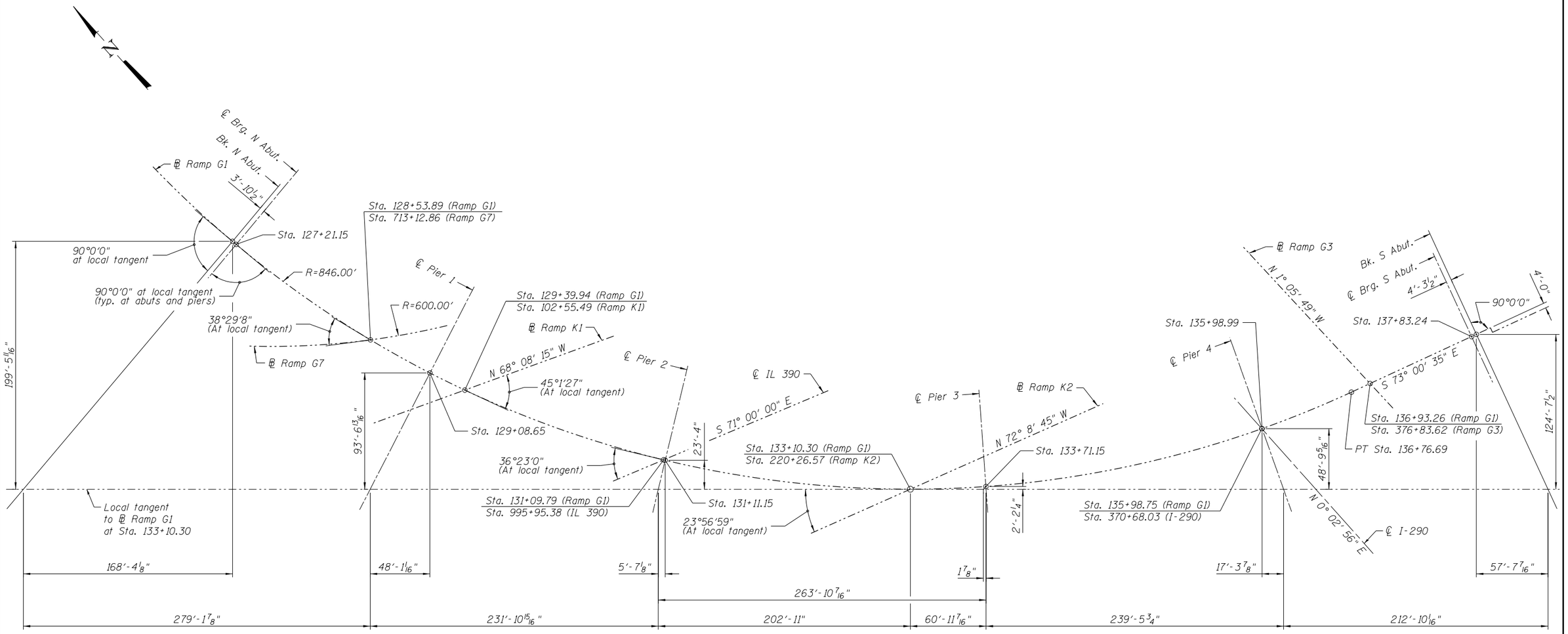
DRAWING NO. SD-03		CONTRACT NO. 60Y95		
ILLINOIS	FED. AID PROJECT			



OFFSET SKETCH

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CH2MHILL®		CHECKED - CK/CM	REVISED -			345	2013-083-R&B	DUPAGE	759	356
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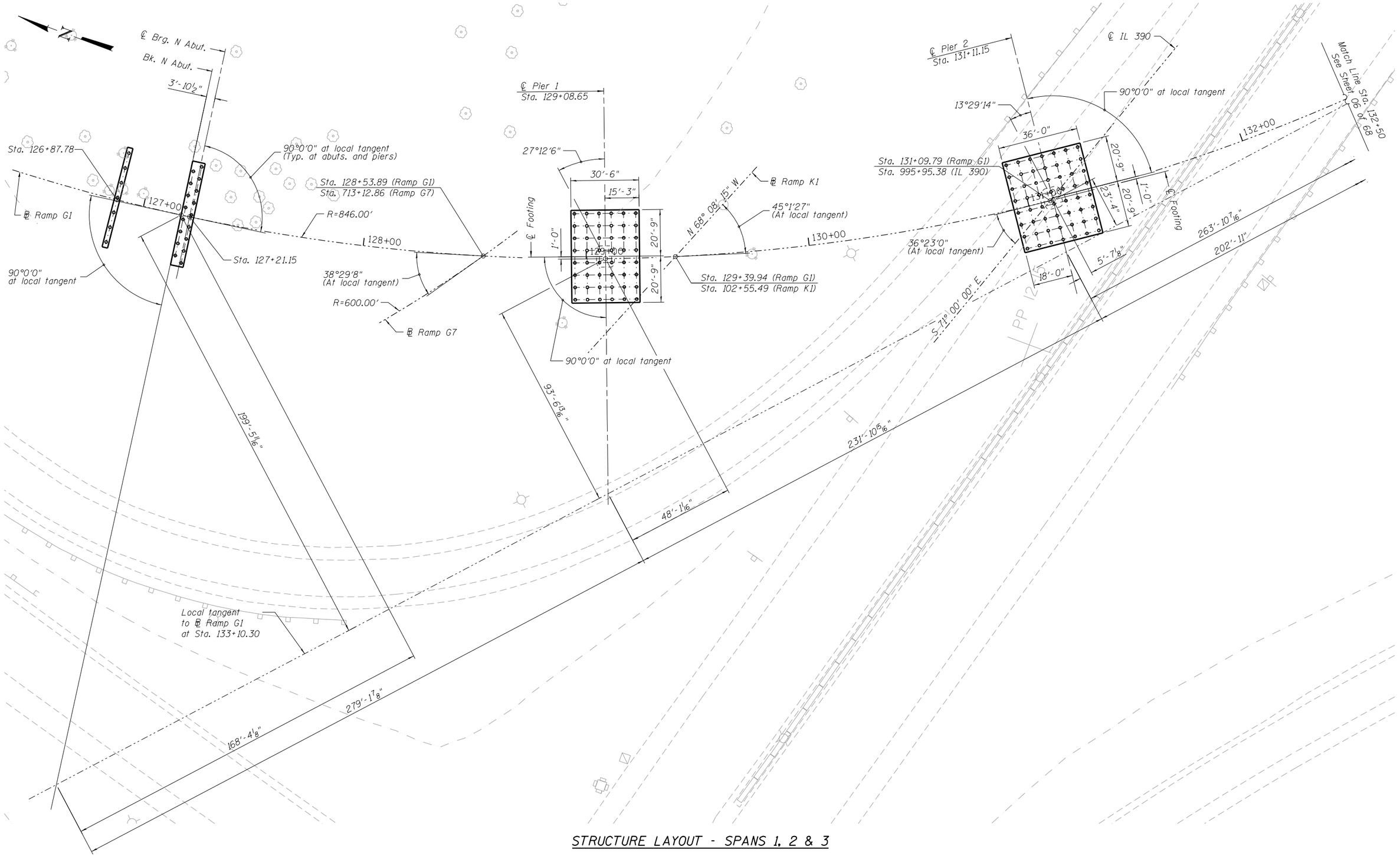
	PLOT DATE = 11/19/2014	CHECKED - KSM	REVISED -			ILLINOIS FED. AID PROJECT				



STRUCTURE LAYOUT - SPANS 1, 2 & 3

FILE NAME = 0220557-60Y95-005-SubLayout.dgn	USER NAME = asantiag	DESIGNED - KSM	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUBSTRUCTURE LAYOUT SPANS 1, 2 & 3 STRUCTURE NUMBER – 022–0557	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH2MHILL®		CHECKED - CK/CM	REVISED -			345	2013-083-R&B	DUPAGE	759	357
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	PLOT DATE = 11/19/2014	CHECKED - KSM	REVISED -		SHEET NO. 05 OF 68 SHEETS	ILLINOIS FED. AID PROJECT				

N

℄ Pier 3
Sta. 133+71.15

Match Line Sta. 132+50
See Sheet 05 of 68

133+00

N 72° 8' 45" W

23°56'59"
(At local tangent)

Sta. 133+10.30 (Ramp G1)
Sta. 220+26.57 (Ramp K2)

℄ Ramp K2

4°7'37"

36'-0"

90°0'0" at local tangent

20'-9"

1'-0"

2'-2¼"

℄ Footing

℄ Ramp G1

Detail A

135+00

R = 846.00'

Detail B

℄ Pier 4
Sta. 135+98.99

22°12'14"

℄ I-290

Sta. 135+98.99 (Ramp G1)
Sta. 370+68.03 (I-290)

41'-6"

20'-9"

90°0'0" at local tangent

22°12'20"

136+00

2'-3⅜"

8½"

℄ Footing

20'-9"

N 0° 02' 56" E

48'-9⅝"

℄ Ramp G3

N 1° 05' 49" W

Sta. 136+93.26 (Ramp G1)
Sta. 376+83.62 (Ramp G3)

137+00

S 73° 00' 35" E

PT Sta. 136+76.69

Bk. S Abut.

℄ Brg. S Abut.

4'-3½"

90°0'0"

138+00

Sta. 137+83.24

Sta. 138+17.03

4'-0"

124'-7½"

239'-5¾"

212'-10⅛"

57'-7⅞"

Local tangent
to ℄ Ramp G1
at Sta. 133+10.30

17'-3⅞"

202'-11"

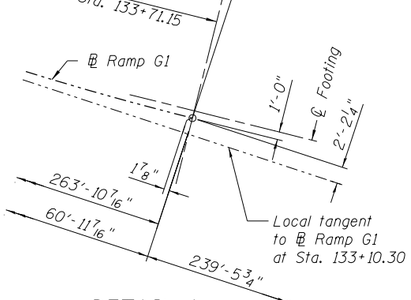
263'-10⅞"

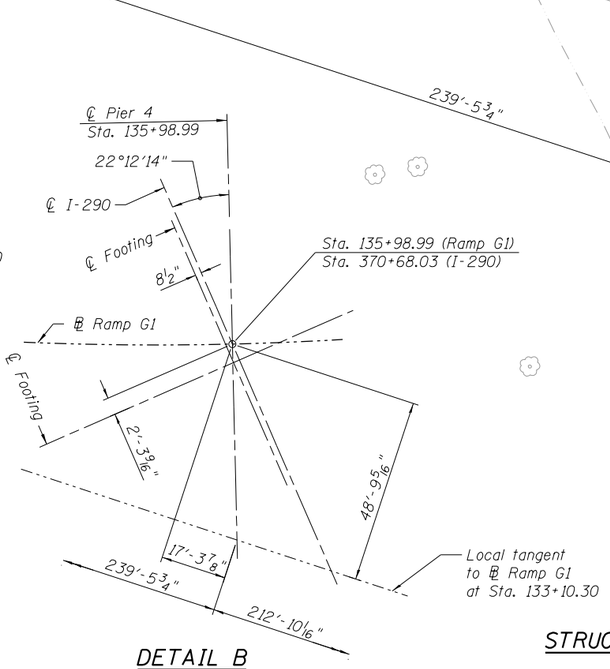
60'-11⅞"

17⅛"

18'-0"

DETAIL A





DETAIL B

STRUCTURE LAYOUT - SPANS 3, 4 & 5

FILE NAME = 0220557-60Y95-006-SubLayout.dgn	USER NAME = esantiag	DESIGNED - KSM	REVISED -
CH2MHILL®		CHECKED - CK/CM	REVISED -
	PLOT SCALE = 40.0000 ' / in.	DRAWN - MRW	REVISED -
	PLOT DATE = 11/19/2014	CHECKED - KSM	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

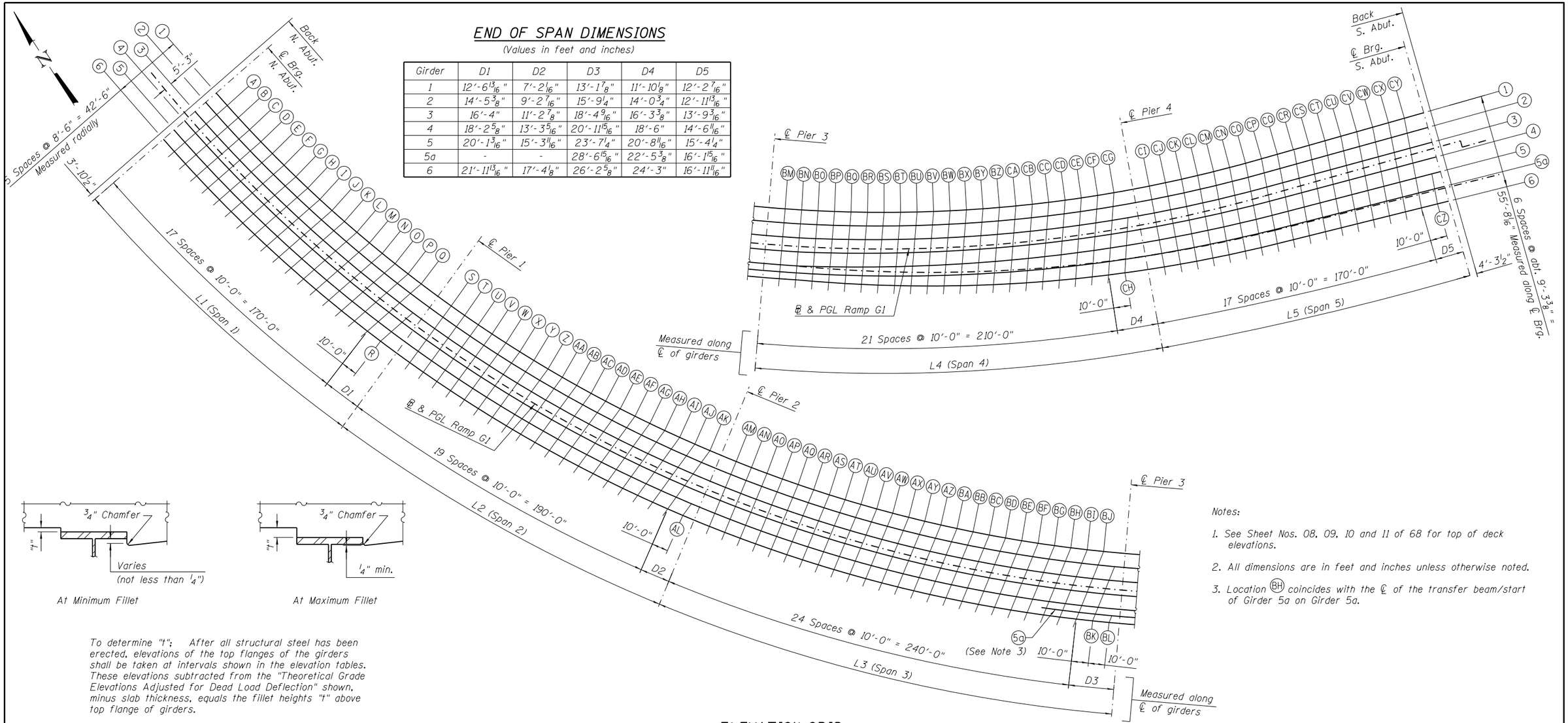
SUBSTRUCTURE LAYOUT SPANS 3, 4 & 5
STRUCTURE NUMBER – 022-0557
SHEET NO. 06 OF 68 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	358
	DRAWING NO. SD-06	CONTRACT NO. 60Y95		
	ILLINOIS FED. AID PROJECT			

END OF SPAN DIMENSIONS

(Values in feet and inches)

Girder	D1	D2	D3	D4	D5
1	12′-6 13/16″	7′-2 1/16″	13′-1 7/8″	11′-10 1/8″	12′-2 7/16″
2	14′-5 3/8″	9′-2 7/16″	15′-9 1/4″	14′-0 3/4″	12′-11 13/16″
3	16′-4″	11′-2 7/8″	18′-4 9/16″	16′-3 3/8″	13′-9 3/16″
4	18′-2 5/8″	13′-3 5/16″	20′-11 5/16″	18′-6″	14′-6 11/16″
5	20′-1 3/16″	15′-3 11/16″	23′-7 1/4″	20′-8 11/16″	15′-4 1/4″
5a	-	-	28′-6 15/16″	22′-5 3/8″	16′-1 15/16″
6	21′-11 13/16″	17′-4 1/8″	26′-2 5/8″	24′-3″	16′-11 11/16″

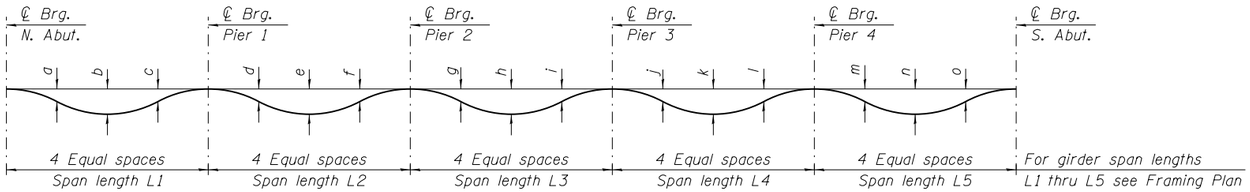


At Minimum Fillet

At Maximum Fillet

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

FILLET HEIGHTS



For girder span lengths L1 thru L5 see Framing Plan drawings Sheets Nos. 34, 35, 36, 37 and 38 of 68

DEAD LOAD DEFLECTIONS DIAGRAM

(Includes weight of slab, parapet & 10 psf allowance for formwork -no future wearing surface)

ELEVATION GRID

Notes:

1. *See Sheet Nos. 08, 09, 10 and 11 of 68 for top of deck elevations.*
2. *All dimensions are in feet and inches unless otherwise noted.*
3. *Location (BH) coincides with the ℄ of the transfer beam/start of Girder 5a on Girder 5a.*

DEAD LOAD DEFLECTIONS TABLE

(Values in inches. Negative values correlate to upward deflections)

Deflection / Girder No.	Span 1 (L1)			Span 2 (L2)			Span 3 (L3)			Span 4 (L4)			Span 5 (L5)		
	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
1	1 9/16″	1 15/16″	1 1/16″	1/4″	5/8″	3/16″	2 5/16″	3 3/4″	2 5/16″	1/2″	1 1/4″	3/4″	1/16″	2 1/16″	1 11/16″
2	1 7/8″	2 3/8″	1 5/16″	1/8″	7/16″	0″	2 5/8″	4 3/16″	2 9/16″	7/16″	1 1/4″	3/4″	1 1/8″	2 1/8″	1 3/4″
3	2 3/16″	2 13/16″	1 5/8″	0″	1/4″	- 1/8″	2 7/8″	4 11/16″	2 3/4″	3/8″	1 3/16″	11/16″	1 1/8″	2 3/16″	1 13/16″
4	2 9/16″	3 1/4″	1 7/8″	- 3/16″	1/8″	- 1/4″	3 3/16″	5 1/8″	3″	1/4″	1 1/8″	11/16″	1 13/16″	2 1/4″	1 7/8″
5	2 7/8″	3 11/16″	2 1/8″	- 5/16″	- 1/16″	- 7/16″	3 1/2″	5 9/16″	3 3/16″	3/16″	1 1/8″	11/16″	1 13/16″	2 5/16″	1 7/8″
5a	-	-	-	-	-	-	-	-	-	1/8″	1 1/16″	11/16″	1 1/4″	2 7/16″	2″
6	3 1/4″	4 3/16″	2 7/16″	- 7/16″	- 3/16″	- 9/16″	3 7/8″	6 1/16″	3 7/16″	1/16″	1 1/16″	3/4″	1 1/4″	2 9/16″	2 1/16″

Note: The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown in the "Top of Slab Elevations" tables. Additionally, deflections are based on the pour sequence shown on Sheet 14 of 68. Should the contractor deviate from the proposed pour sequence, the contractor must retain the services of an Illinois Licensed Structural Engineer to analyze the structure for the revised Pouring Sequence to determine the deflections associated with the revised pouring sequence. Details and calculations with the required signature and seal shall be submitted to the Engineer for review and approval. Cost included in the pay item "Furnishing and Erecting Structural Steel".

FILE NAME = 0220557-60Y95-007-TOS-Layout.dgn	USER NAME = esantiag	DESIGNED - KSM	REVISED -
CH2MHILL®		CHECKED - CK/CM	REVISED -
	PLOT SCALE = 60.0000 ' / in.	DRAWN - MRW	REVISED -
	PLOT DATE = 11/19/2014	CHECKED - KSM	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF DECK ELEVATIONS LAYOUT
STRUCTURE NUMBER – 022-0557
SHEET NO. 07 OF 68 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	359
	DRAWING NO. SD-07	CONTRACT NO. 60Y95		
	ILLINOIS FED. AID PROJECT			

GIRDER 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	127+17.17	-22.25	753.77	753.77
CL Brg. N. Abut	127+21.15	-22.25	753.93	753.93
A	127+31.42	-22.25	754.34	754.37
B	127+41.69	-22.25	754.75	754.81
C	127+51.96	-22.25	755.16	755.25
D	127+62.23	-22.25	755.57	755.68
E	127+72.50	-22.25	755.98	756.11
F	127+82.77	-22.25	756.40	756.54
G	127+93.04	-22.25	756.81	756.96
H	128+03.31	-22.25	757.22	757.37
I	128+13.58	-22.25	757.63	757.78
J	128+23.85	-22.25	758.04	758.18
K	128+34.12	-22.25	758.45	758.58
L	128+44.39	-22.25	758.86	758.98
M	128+54.66	-22.25	759.27	759.37
N	128+64.93	-22.25	759.68	759.76
O	128+75.20	-22.25	760.09	760.15
P	128+85.47	-22.25	760.50	760.54
Q	128+95.74	-22.25	760.91	760.93
R	-	-	-	-
CL Pier 1	129+08.65	-22.25	761.43	761.43
S	129+18.92	-22.25	761.82	761.82
T	129+29.19	-22.25	762.20	762.20
U	129+39.46	-22.25	762.57	762.58
V	129+49.73	-22.25	762.93	762.94
W	129+60.00	-22.25	763.27	763.29
X	129+70.27	-22.25	763.60	763.64
Y	129+80.54	-22.25	763.92	763.96
Z	129+90.81	-22.25	764.23	764.27
AA	130+01.08	-22.25	764.53	764.57
AB	130+11.35	-22.25	764.81	764.85
AC	130+21.62	-22.25	765.08	765.12
AD	130+31.89	-22.25	765.34	765.37
AE	130+42.16	-22.25	765.58	765.61
AF	130+52.43	-22.25	765.81	765.83
AG	130+62.70	-22.25	766.03	766.04
AH	130+72.97	-22.25	766.24	766.24
AI	130+83.24	-22.25	766.44	766.43
AJ	130+93.51	-22.25	766.62	766.61
AK	131+03.78	-22.25	766.79	766.78
AL	-	-	-	-
CL Pier 2	131+11.15	-22.25	766.90	766.90
AM	131+21.42	-22.25	767.05	767.07
AN	131+31.69	-22.25	767.19	767.23
AO	131+41.96	-22.25	767.31	767.38
AP	131+52.23	-22.25	767.43	767.53
AQ	131+62.50	-22.25	767.52	767.66
AR	131+72.77	-22.25	767.61	767.78
AS	131+83.04	-22.25	767.69	767.88
AT	131+93.31	-22.25	767.75	767.97
AU	132+03.58	-22.25	767.80	768.05
AV	132+13.85	-22.25	767.83	768.10
AW	132+24.12	-22.25	767.86	768.14
AX	132+34.39	-22.25	767.87	768.16
AY	132+44.66	-22.25	767.87	768.16
AZ	132+54.93	-22.25	767.86	768.14
BA	132+65.20	-22.25	767.83	768.11
BB	132+75.47	-22.25	767.80	768.05
BC	132+85.74	-22.25	767.75	767.98
BD	132+96.01	-22.25	767.68	767.89
BE	133+06.28	-22.25	767.61	767.79
BF	133+16.55	-22.25	767.52	767.67
BG	133+26.82	-22.25	767.42	767.53
BH	133+37.09	-22.25	767.31	767.39
BI	133+47.36	-22.25	767.19	767.23
BJ	133+57.63	-22.25	767.05	767.07
BK	-	-	-	-
BL	-	-	-	-
CL Pier 3	133+71.15	-22.25	766.85	766.85
BM	133+81.42	-22.25	766.68	766.68

GIRDER 1 - CONT'D

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BN	133+91.69	-22.25	766.51	766.50
BO	134+01.96	-22.25	766.32	766.32
BP	134+12.23	-22.25	766.11	766.13
BQ	134+22.50	-22.25	765.90	765.93
BR	134+32.77	-22.25	765.67	765.71
BS	134+43.04	-22.25	765.43	765.49
BT	134+53.31	-22.25	765.18	765.25
BU	134+63.58	-22.25	764.91	765.00
BV	134+73.85	-22.25	764.63	764.73
BW	134+84.12	-22.25	764.34	764.44
BX	134+94.39	-22.25	764.04	764.14
BY	135+04.66	-22.25	763.73	763.82
BZ	135+14.93	-22.25	763.40	763.49
CA	135+25.20	-22.25	763.06	763.14
CB	135+35.47	-22.25	762.71	762.78
CC	135+45.74	-22.25	762.34	762.40
CD	135+56.01	-22.25	761.97	762.00
CE	135+66.28	-22.25	761.58	761.60
CF	135+76.55	-22.25	761.17	761.18
CG	135+86.82	-22.25	760.76	760.76
CH	-	-	-	-
CL Pier 4	135+98.99	-22.25	760.25	760.25
CI	136+09.26	-22.25	759.82	759.83
CJ	136+19.53	-22.25	759.38	759.41
CK	136+29.80	-22.25	758.94	758.99
CL	136+40.07	-22.25	758.54	758.61
CM	136+50.34	-22.25	758.18	758.27
CN	136+60.61	-22.25	757.81	757.92
CO	136+70.88	-22.25	757.44	757.58
CP	136+81.03	-22.25	757.08	757.23
CQ	136+91.03	-22.25	756.72	756.88
CR	137+01.03	-22.25	756.37	756.53
CS	137+11.03	-22.25	756.01	756.17
CT	137+21.03	-22.25	755.66	755.81
CU	137+31.03	-22.25	755.30	755.44
CV	137+41.03	-22.25	754.94	755.07
CW	137+51.03	-22.25	754.59	754.69
CX	137+61.03	-22.25	754.23	754.30
CY	137+71.03	-22.25	753.83	753.87
CZ	-	-	-	-
CL Brg. S. Abut.	137+83.24	-22.25	753.31	753.31
Bk. S. Abut.	137+87.53	-22.25	753.13	753.13

GIRDER 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	127+17.22	-13.75	754.28	754.28
CL Brg. N. Abut	127+21.15	-13.75	754.44	754.44
A	127+31.32	-13.75	754.85	754.88
B	127+41.48	-13.75	755.25	755.33
C	127+51.65	-13.75	755.66	755.76
D	127+61.81	-13.75	756.07	756.20
E	127+71.98	-13.75	756.47	756.63
F	127+82.14	-13.75	756.88	757.05
G	127+92.31	-13.75	757.29	757.47
H	128+02.47	-13.75	757.69	757.88
I	128+12.64	-13.75	758.10	758.29
J	128+22.80	-13.75	758.51	758.69
K	128+32.97	-13.75	758.91	759.08
L	128+43.13	-13.75	759.32	759.47
M	128+53.30	-13.75	759.73	759.85
N	128+63.46	-13.75	760.13	760.23
O	128+73.63	-13.75	760.54	760.61
P	128+83.79	-13.75	760.95	760.99
Q	128+93.96	-13.75	761.35	761.38
R	-	-	-	-
CL Pier 1	129+08.65	-13.75	761.94	761.94
S	129+18.82	-13.75	762.33	762.32
T	129+28.98	-13.75	762.70	762.70
U	129+39.15	-13.75	763.07	763.07
V	129+49.31	-13.75	763.42	763.43
W	129+59.48	-13.75	763.77	763.78
X	129+69.64	-13.75	764.09	764.11
Y	129+79.81	-13.75	764.41	764.44
Z	129+89.97	-13.75	764.72	764.75
AA	130+00.14	-13.75	765.01	765.04
AB	130+10.30	-13.75	765.29	765.32
AC	130+20.47	-13.75	765.56	765.59
AD	130+30.63	-13.75	765.81	765.84
AE	130+40.80	-13.75	766.06	766.08
AF	130+50.96	-13.75	766.29	766.30
AG	130+61.13	-13.75	766.51	766.51
AH	130+71.29	-13.75	766.72	766.71
AI	130+81.46	-13.75	766.91	766.90
AJ	130+91.62	-13.75	767.10	767.08
AK	131+01.79	-13.75	767.27	767.26
AL	-	-	-	-
CL Pier 2	131+11.15	-13.75	767.41	767.41
AM	131+21.32	-13.75	767.56	767.58
AN	131+31.48	-13.75	767.70	767.74
AO	131+41.65	-13.75	767.82	767.90
AP	131+51.81	-13.75	767.93	768.05
AQ	131+61.98	-13.75	768.03	768.18
AR	131+72.14	-13.75	768.12	768.30
AS	131+82.31	-13.75	768.19	768.41
AT	131+92.47	-13.75	768.25	768.50
AU	132+02.64	-13.75	768.30	768.58
AV	132+12.80	-13.75	768.34	768.64
AW	132+22.97	-13.75	768.37	768.68
AX	132+33.13	-13.75	768.38	768.70
AY	132+43.30	-13.75	768.38	768.71
AZ	132+53.46	-13.75	768.37	768.69
BA	132+63.63	-13.75	768.35	768.66
BB	132+73.79	-13.75	768.31	768.60
BC	132+83.96	-13.75	768.27	768.53
BD	132+94.12	-13.75	768.21	768.44
BE	133+04.29	-13.75	768.13	768.34
BF	133+14.45	-13.75	768.05	768.22
BG	133+24.62	-13.75	767.95	768.08
BH	133+34.78	-13.75	767.85	767.94
BI	133+44.95	-13.75	767.73	767.79
BJ	133+55.11	-13.75	767.59	767.63
BK	133+65.28	-13.75	767.45	767.46
BL	-	-	-	-
CL Pier 3	133+71.15	-13.75	767.36	767.36
BM	133+81.32	-13.75	767.20	767.19

GIRDER 2 - CONT'D

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BN	133+91.48	-13.75	767.02	767.01
BO	134+01.65	-13.81	766.83	766.83
BP	134+11.81	-13.86	766.62	766.64
BQ	134+21.98	-13.92	766.41	766.43
BR	134+32.15	-13.96	766.18	766.22
BS	134+42.31	-14.00	765.94	765.99
BT	134+52.48	-14.04	765.69	765.76
BU	134+62.65	-14.07	765.43	765.51
BV	134+72.82	-14.10	765.15	765.24
BW	134+82.99	-14.12	764.86	764.96
BX	134+93.16	-14.14	764.56	764.66
BY	135+03.32	-14.15	764.25	764.35
BZ	135+13.49	-14.15	763.93	764.02
CA	135+23.66	-14.15	763.60	763.68
CB	135+33.83	-14.15	763.25	763.32
CC	135+44.00	-14.14	762.89	762.95
CD	135+54.17	-14.13	762.52	762.56
CE	135+64.34	-14.11	762.14	762.16
CF	135+74.51	-14.08	761.75	761.76
CG	135+84.68	-14.06	761.34	761.34
CH	-	-	-	-
CL Pier 4	135+98.99	-14.01	760.75	760.75
CI	136+09.15	-13.96	760.32	760.33
CJ	136+19.32	-13.92	759.89	759.92
CK	136+29.49	-13.87	759.46	759.51
CL	136+39.65	-13.81	759.05	759.12
CM	136+49.82	-13.75	758.67	758.76
CN	136+59.98	-13.68	758.28	758.40
CO	136+70.14	-13.61	757.89	758.03
CP	136+80.25	-13.54	757.51	757.66
CQ	136+90.25	-13.49	757.13	757.29
CR	137+00.25	-13.43	756.75	756.91
CS	137+10.25	-13.38	756.37	756.53
CT	137+20.25	-13.32	755.98	756.14
CU	137+30.25	-13.27	755.60	755.75
CV	137+40.25	-13.21	755.22	755.35
CW	137+50.25	-13.15	754.84	754.94
CX	137+60.25	-13.10	754.45	754.53
CY	137+70.25	-13.04	754.05	754.09
CZ	-	-	-	-
CL Brg. S. Abut.	137+83.24	-12.97	753.50	753.50
Bk. S. Abut.	137+87.53	-12.95	753.32	753.32

Notes:

1. All elevations and offsets are in decimal feet.
2. See Sheet 07 of 68 for location diagram.
3. Theoretical Grade Elevations Adjusted For Dead Load Deflection are based on the pour sequence shown on Sheet 14 of 68. Should the contractor deviate from the proposed pour sequence, the contractor must retain the services of an Illinois Licensed Structural Engineer to analyze the structure for the revised Pouring Sequence to determine the Theoretical Grade Elevations Adjusted For Dead Load Deflection. Details and calculations with the required signature and seal shall be submitted to the Engineer for review and approval. Cost included in the pay item "Furnishing and Erecting Structural Steel".

GIRDER 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	127+17.26	-5.25	754.80	754.80
CL Brg. N. Abut	127+21.15	-5.25	754.95	754.95
A	127+31.21	-5.25	755.35	755.40
B	127+41.27	-5.25	755.76	755.84
C	127+51.34	-5.25	756.16	756.28
D	127+61.40	-5.25	756.56	756.71
E	127+71.46	-5.25	756.96	757.14
F	127+81.52	-5.25	757.37	757.57
G	127+91.59	-5.25	757.77	757.98
H	128+01.65	-5.25	758.17	758.39
I	128+11.71	-5.25	758.57	758.79
J	128+21.77	-5.25	758.98	759.19
K	128+31.84	-5.25	759.38	759.58
L	128+41.90	-5.25	759.78	759.96
M	128+51.96	-5.25	760.18	760.33
N	128+62.02	-5.25	760.59	760.71
O	128+72.08	-5.25	760.99	761.08
P	128+82.15	-5.25	761.39	761.45
Q	128+92.21	-5.25	761.79	761.83
R	129+02.27	-5.25	762.20	762.21
CL Pier 1	129+08.65	-5.25	762.45	762.45
S	129+18.71	-5.25	762.83	762.82
T	129+28.77	-5.25	763.21	763.19
U	129+38.84	-5.25	763.57	763.56
V	129+48.90	-5.25	763.92	763.91
W	129+58.96	-5.25	764.26	764.26
X	129+69.02	-5.25	764.59	764.59
Y	129+79.09	-5.25	764.90	764.91
Z	129+89.15	-5.25	765.20	765.22
AA	129+99.21	-5.25	765.49	765.51
AB	130+09.27	-5.25	765.77	765.79
AC	130+19.34	-5.25	766.04	766.06
AD	130+29.40	-5.25	766.29	766.31
AE	130+39.46	-5.25	766.54	766.55
AF	130+49.52	-5.25	766.77	766.77
AG	130+59.58	-5.25	766.99	766.98
AH	130+69.65	-5.25	767.19	767.18
AI	130+79.71	-5.25	767.39	767.37
AJ	130+89.77	-5.25	767.57	767.55
AK	130+99.83	-5.25	767.75	767.73
AL	-	-	-	-
CL Pier 2	131+11.15	-5.25	767.92	767.92
AM	131+21.21	-5.25	768.07	768.09
AN	131+31.27	-5.25	768.20	768.26
AO	131+41.34	-5.25	768.33	768.41
AP	131+51.40	-5.25	768.44	768.56
AQ	131+61.46	-5.25	768.53	768.70
AR	131+71.52	-5.25	768.62	768.83
AS	131+81.59	-5.25	768.70	768.94
AT	131+91.65	-5.25	768.76	769.04
AU	132+01.71	-5.25	768.81	769.12
AV	132+11.77	-5.25	768.85	769.18
AW	132+21.84	-5.25	768.87	769.22
AX	132+31.90	-5.25	768.89	769.25
AY	132+41.96	-5.25	768.89	769.25
AZ	132+52.02	-5.25	768.88	769.24
BA	132+62.08	-5.25	768.86	769.20
BB	132+72.15	-5.25	768.83	769.15
BC	132+82.21	-5.25	768.78	769.08
BD	132+92.27	-5.25	768.73	768.99
BE	133+02.33	-5.25	768.66	768.89
BF	133+12.40	-5.25	768.58	768.77
BG	133+22.46	-5.25	768.49	768.63
BH	133+32.52	-5.25	768.38	768.49
BI	133+42.58	-5.25	768.27	768.34
BJ	133+52.64	-5.25	768.14	768.18
BK	133+62.71	-5.25	768.00	768.01
BL	-	-	-	-
CL Pier 3	133+71.15	-5.25	767.87	767.87
BM	133+81.22	-5.25	767.71	767.70

GIRDER 3 - CONT'D

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BN	133+91.28	-5.25	767.53	767.52
BO	134+01.34	-5.36	767.34	767.34
BP	134+11.41	-5.47	767.14	767.14
BQ	134+21.47	-5.58	766.92	766.94
BR	134+31.54	-5.67	766.69	766.72
BS	134+41.61	-5.75	766.45	766.50
BT	134+51.67	-5.82	766.20	766.26
BU	134+61.74	-5.89	765.94	766.01
BV	134+71.82	-5.94	765.67	765.75
BW	134+81.89	-5.98	765.38	765.47
BX	134+91.96	-6.02	765.09	765.18
BY	135+02.03	-6.04	764.78	764.87
BZ	135+12.10	-6.05	764.46	764.55
CA	135+22.18	-6.06	764.13	764.21
CB	135+32.25	-6.05	763.79	763.86
CC	135+42.32	-6.04	763.44	763.49
CD	135+52.39	-6.01	763.07	763.11
CE	135+62.46	-5.97	762.70	762.72
CF	135+72.54	-5.93	762.31	762.32
CG	135+82.61	-5.87	761.91	761.92
CH	135+92.68	-5.81	761.50	761.50
CL Pier 4	135+98.99	-5.76	761.24	761.24
CI	136+09.06	-5.68	760.82	760.83
CJ	136+19.12	-5.59	760.40	760.42
CK	136+29.19	-5.49	759.98	760.02
CL	136+39.25	-5.38	759.56	759.63
CM	136+49.32	-5.26	759.16	759.25
CN	136+59.38	-5.13	758.75	758.87
CO	136+69.44	-4.98	758.35	758.49
CP	136+79.48	-4.85	757.94	758.10
CQ	136+89.48	-4.74	757.54	757.70
CR	136+99.48	-4.62	757.13	757.30
CS	137+09.48	-4.51	756.72	756.90
CT	137+19.48	-4.40	756.32	756.48
CU	137+29.48	-4.29	755.91	756.06
CV	137+39.47	-4.18	755.50	755.63
CW	137+49.47	-4.07	755.09	755.20
CX	137+59.47	-3.96	754.68	754.76
CY	137+69.47	-3.85	754.27	754.31
CZ	-	-	-	-
CL Brg. S. Abut.	137+83.24	-3.69	753.68	753.68
Bk. S. Abut.	137+87.53	-3.64	753.50	753.50

℄ RAMP G1 & P.G. LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	127+17.28	0.00	755.11	755.11
CL Brg. N. Abut	127+21.15	0.00	755.27	755.27
A	127+31.15	0.00	755.67	755.71
B	127+41.15	0.00	756.07	756.16
C	127+51.15	0.00	756.47	756.60
D	127+61.15	0.00	756.87	757.04
E	127+71.15	0.00	757.27	757.47
F	127+81.15	0.00	757.67	757.90
G	127+91.15	0.00	758.07	758.31
H	128+01.15	0.00	758.47	758.72
I	128+11.15	0.00	758.87	759.12
J	128+21.15	0.00	759.27	759.51
K	128+31.15	0.00	759.67	759.90
L	128+41.15	0.00	760.07	760.27
M	128+51.15	0.00	760.47	760.65
N	128+61.15	0.00	760.87	761.01
O	128+71.15	0.00	761.27	761.38
P	128+81.15	0.00	761.67	761.75
Q	128+91.15	0.00	762.07	762.11
R	129+01.15	0.00	762.47	762.48
CL Pier 1	129+08.65	0.00	762.76	762.76
S	129+18.65	0.00	763.15	763.13
T	129+28.65	0.00	763.52	763.50
U	129+38.65	0.00	763.88	763.86
V	129+48.65	0.00	764.23	764.21
W	129+58.65	0.00	764.56	764.55
X	129+68.65	0.00	764.89	764.88
Y	129+78.65	0.00	765.20	765.20
Z	129+88.65	0.00	765.50	765.51
AA	129+98.65	0.00	765.79	765.80
AB	130+08.65	0.00	766.07	766.08
AC	130+18.65	0.00	766.34	766.34
AD	130+28.65	0.00	766.59	766.59
AE	130+38.65	0.00	766.83	766.83
AF	130+48.65	0.00	767.06	767.05
AG	130+58.65	0.00	767.28	767.26
AH	130+68.65	0.00	767.49	767.47
AI	130+78.65	0.00	767.69	767.66
AJ	130+88.65	0.00	767.87	767.84
AK	130+98.65	0.00	768.04	768.02
AL	-	-	-	-
CL Pier 2	131+11.15	0.00	768.24	768.24
AM	131+21.15	0.00	768.38	768.41
AN	131+31.15	0.00	768.52	768.58
AO	131+41.15	0.00	768.64	768.74
AP	131+51.15	0.00	768.75	768.89
AQ	131+61.15	0.00	768.85	769.03
AR	131+71.15	0.00	768.93	769.16
AS	131+81.15	0.00	769.01	769.27
AT	131+91.15	0.00	769.07	769.37
AU	132+01.15	0.00	769.12	769.46
AV	132+11.15	0.00	769.16	769.52
AW	132+21.15	0.00	769.19	769.57
AX	132+31.15	0.00	769.20	769.60
AY	132+41.15	0.00	769.21	769.60
AZ	132+51.15	0.00	769.20	769.59
BA	132+61.15	0.00	769.18	769.56
BB	132+71.15	0.00	769.15	769.50
BC	132+81.15	0.00	769.11	769.43
BD	132+91.15	0.00	769.05	769.34
BE	133+01.15	0.00	768.98	769.24
BF	133+11.15	0.00	768.90	769.12
BG	133+21.15	0.00	768.81	768.98
BH	133+31.15	0.00	768.71	768.84
BI	133+41.15	0.00	768.60	768.68
BJ	133+51.15	0.00	768.47	768.52
BK	133+61.15	0.00	768.33	768.36
BL	-	-	-	-
CL Pier 3	133+71.15	0.00	768.18	768.18
BM	133+81.15	0.00	768.02	768.02

℄ RAMP G1 & P.G. LINE - CONT'D

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BN	133+91.15	0.00	767.85	767.84
BO	134+01.15	0.00	767.67	767.66
BP	134+11.15	0.00	767.47	767.47
BQ	134+21.15	0.00	767.26	767.27
BR	134+31.15	0.00	767.04	767.07
BS	134+41.15	0.00	766.81	766.85
BT	134+51.15	0.00	766.57	766.62
BU	134+61.15	0.00	766.31	766.38
BV	134+71.15	0.00	766.04	766.12
BW	134+81.15	0.00	765.76	765.85
BX	134+91.15	0.00	765.47	765.56
BY	135+01.15	0.00	765.17	765.26
BZ	135+11.15	0.00	764.86	764.94
CA	135+21.15	0.00	764.53	764.61
CB	135+31.15	0.00	764.19	764.26
CC	135+41.15	0.00	763.84	763.90
CD	135+51.15	0.00	763.48	763.52
CE	135+61.15	0.00	763.11	763.13
CF	135+71.15	0.00	762.72	762.74
CG	135+81.15	0.00	762.33	762.33
CH	135+91.15	0.00	761.92	761.92
CL Pier 4	135+98.99	0.00	761.59	761.59
CI	136+08.99	0.00	761.16	761.17
CJ	136+18.99	0.00	760.74	760.77
CK	136+28.99	0.00	760.31	760.36
CL	136+38.99	0.00	759.89	759.96
CM	136+48.99	0.00	759.46	759.56
CN	136+58.99	0.00	759.04	759.16
CO	136+68.99	0.00	758.61	758.76
CP	136+78.99	0.00	758.19	758.35
CQ	136+88.99	0.00	757.76	757.93
CR	136+98.99	0.00	757.34	757.51
CS	137+08.99	0.00	756.91	757.09
CT	137+18.99	0.00	756.49	756.66
CU	137+28.99	0.00	756.06	756.22
CV	137+38.99	0.00	755.64	755.78
CW	137+48.99	0.00	755.21	755.33
CX	137+58.99	0.00	754.79	754.87
CY	137+68.99	0.00	754.36	754.41
CZ	-	-	-	-
CL Brg. S. Abut.	137+83.24	0.00	753.76	753.76
Bk. S. Abut.	137+87.53	0.00	753.57	753.57

Notes:

1. All elevations and offsets are in decimal feet.
2. See Sheet 07 of 68 for location diagram.
3. Theoretical Grade Elevations Adjusted For Dead Load Deflection are based on the pour sequence shown on Sheet 14 of 68. Should the contractor deviate from the proposed pour sequence, the contractor must retain the services of an Illinois Licensed Structural Engineer to analyze the structure for the revised Pouring Sequence to determine the Theoretical Grade Elevations Adjusted For Dead Load Deflection. Details and calculations with the required signature and seal shall be submitted to the Engineer for review and approval. Cost included in the pay item "Furnishing and Erecting Structural Steel".

GIRDER 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	127+17.29	3.25	755.31	755.31
CL Brg. N. Abut	127+21.15	3.25	755.46	755.46
A	127+31.11	3.25	755.86	755.91
B	127+41.07	3.25	756.26	756.35
C	127+51.03	3.25	756.66	756.79
D	127+61.00	3.25	757.05	757.23
E	127+70.96	3.25	757.45	757.66
F	127+80.92	3.25	757.85	758.08
G	127+90.88	3.25	758.25	758.50
H	128+00.84	3.25	758.65	758.90
I	128+10.80	3.25	759.05	759.30
J	128+20.77	3.25	759.45	759.69
K	128+30.73	3.25	759.84	760.07
L	128+40.69	3.25	760.24	760.45
M	128+50.65	3.25	760.64	760.82
N	128+60.61	3.25	761.04	761.19
O	128+70.57	3.25	761.44	761.55
P	128+80.54	3.25	761.84	761.92
Q	128+90.50	3.25	762.23	762.28
R	129+00.46	3.25	762.63	762.65
CL Pier 1	129+08.65	3.25	762.96	762.96
S	129+18.61	3.25	763.34	763.33
T	129+28.57	3.25	763.71	763.69
U	129+38.53	3.25	764.07	764.05
V	129+48.50	3.25	764.42	764.40
W	129+58.46	3.25	764.75	764.74
X	129+68.42	3.25	765.08	765.07
Y	129+78.38	3.25	765.39	765.39
Z	129+88.34	3.25	765.69	765.69
AA	129+98.30	3.25	765.98	765.99
AB	130+08.27	3.25	766.25	766.26
AC	130+18.23	3.25	766.52	766.53
AD	130+28.19	3.25	766.77	766.78
AE	130+38.15	3.25	767.02	767.01
AF	130+48.11	3.25	767.25	767.24
AG	130+58.07	3.25	767.47	767.45
AH	130+68.04	3.25	767.67	767.65
AI	130+78.00	3.25	767.87	767.84
AJ	130+87.96	3.25	768.05	768.03
AK	130+97.92	3.25	768.22	768.20
AL	-	-	-	-
CL Pier 2	131+11.15	3.25	768.43	768.43
AM	131+21.11	3.25	768.58	768.61
AN	131+31.07	3.25	768.71	768.77
AO	131+41.03	3.25	768.83	768.93
AP	131+51.00	3.25	768.94	769.08
AQ	131+60.96	3.25	769.04	769.22
AR	131+70.92	3.25	769.13	769.35
AS	131+80.88	3.25	769.20	769.47
AT	131+90.84	3.25	769.26	769.57
AU	132+00.80	3.25	769.32	769.65
AV	132+10.77	3.25	769.35	769.72
AW	132+20.73	3.25	769.38	769.76
AX	132+30.69	3.25	769.40	769.79
AY	132+40.65	3.25	769.40	769.80
AZ	132+50.61	3.25	769.40	769.78
BA	132+60.57	3.25	769.38	769.75
BB	132+70.54	3.25	769.35	769.70
BC	132+80.50	3.25	769.30	769.63
BD	132+90.46	3.25	769.25	769.54
BE	133+00.42	3.25	769.18	769.44
BF	133+10.38	3.25	769.11	769.32
BG	133+20.34	3.25	769.02	769.19
BH	133+30.30	3.25	768.92	769.04
BI	133+40.27	3.25	768.80	768.89
BJ	133+50.23	3.25	768.68	768.73
BK	133+60.19	3.25	768.54	768.57
BL	-	-	-	-
CL Pier 3	133+71.15	3.25	768.38	768.38
BM	133+81.12	3.25	768.22	768.21

GIRDER 4 - CONT'D

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BN	133+91.08	3.25	768.05	768.04
BO	134+01.04	3.09	767.85	767.85
BP	134+11.00	2.92	767.65	767.65
BQ	134+20.97	2.77	767.43	767.44
BR	134+30.93	2.63	767.20	767.23
BS	134+40.90	2.51	766.97	767.01
BT	134+50.87	2.40	766.72	766.77
BU	134+60.85	2.30	766.46	766.52
BV	134+70.82	2.22	766.18	766.26
BW	134+80.79	2.15	765.90	765.99
BX	134+90.77	2.10	765.61	765.70
BY	135+00.74	2.07	765.31	765.40
BZ	135+10.72	2.04	764.99	765.08
CA	135+20.70	2.04	764.67	764.75
CB	135+30.67	2.04	764.33	764.40
CC	135+40.65	2.06	763.98	764.04
CD	135+50.62	2.10	763.63	763.67
CE	135+60.60	2.15	763.26	763.28
CF	135+70.57	2.22	762.88	762.89
CG	135+80.55	2.30	762.49	762.49
CH	135+90.52	2.39	762.09	762.09
CL Pier 4	135+98.99	2.48	761.74	761.74
CI	136+08.96	2.60	761.32	761.33
CJ	136+18.93	2.74	760.90	760.93
CK	136+28.89	2.89	760.49	760.54
CL	136+38.86	3.05	760.07	760.15
CM	136+48.82	3.23	759.65	759.75
CN	136+58.78	3.43	759.23	759.35
CO	136+68.73	3.63	758.80	758.95
CP	136+78.70	3.84	758.38	758.54
CQ	136+88.69	4.01	757.95	758.12
CR	136+98.69	4.18	757.52	757.70
CS	137+08.69	4.34	757.09	757.26
CT	137+18.69	4.51	756.66	756.82
CU	137+28.69	4.68	756.22	756.38
CV	137+38.69	4.84	755.79	755.92
CW	137+48.69	5.01	755.35	755.46
CX	137+58.68	5.18	754.91	755.00
CY	137+68.68	5.34	754.48	754.53
CZ	-	-	-	-
CL Brg. S. Abut.	137+83.24	5.59	753.87	753.87
Bk. S. Abut.	137+87.53	5.66	753.69	753.69

GIRDER 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	127+17.33	11.75	755.82	755.82
CL Brg. N. Abut	127+21.15	11.75	755.97	755.97
A	127+31.01	11.75	756.37	756.42
B	127+40.88	11.75	756.76	756.87
C	127+50.74	11.75	757.15	757.31
D	127+60.60	11.75	757.55	757.75
E	127+70.46	11.75	757.94	758.18
F	127+80.33	11.75	758.34	758.60
G	127+90.19	11.75	758.73	759.01
H	128+00.05	11.75	759.13	759.42
I	128+09.92	11.75	759.52	759.81
J	128+19.78	11.75	759.92	760.20
K	128+29.64	11.75	760.31	760.58
L	128+39.50	11.75	760.71	760.95
M	128+49.37	11.75	761.10	761.31
N	128+59.23	11.75	761.49	761.67
O	128+69.09	11.75	761.89	762.03
P	128+78.96	11.75	762.28	762.38
Q	128+88.82	11.75	762.68	762.74
R	128+98.68	11.75	763.07	763.10
CL Pier 1	129+08.65	11.75	763.47	763.47
S	129+18.51	11.75	763.85	763.83
T	129+28.38	11.75	764.21	764.19
U	129+38.24	11.75	764.57	764.54
V	129+48.10	11.75	764.91	764.88
W	129+57.96	11.75	765.25	765.22
X	129+67.83	11.75	765.57	765.55
Y	129+77.69	11.75	765.88	765.86
Z	129+87.55	11.75	766.18	766.17
AA	129+97.42	11.75	766.46	766.46
AB	130+07.28	11.75	766.74	766.74
AC	130+17.14	11.75	767.00	767.00
AD	130+27.00	11.75	767.25	767.25
AE	130+36.87	11.75	767.50	767.48
AF	130+46.73	11.75	767.73	767.70
AG	130+56.59	11.75	767.94	767.92
AH	130+66.46	11.75	768.15	768.12
AI	130+76.32	11.75	768.35	768.31
AJ	130+86.18	11.75	768.53	768.50
AK	130+96.04	11.75	768.70	768.68
AL	131+05.91	11.75	768.86	768.85
CL Pier 2	131+11.15	11.75	768.94	768.94
AM	131+21.01	11.75	769.09	769.12
AN	131+30.88	11.75	769.22	769.28
AO	131+40.74	11.75	769.34	769.45
AP	131+50.60	11.75	769.45	769.60
AQ	131+60.46	11.75	769.55	769.74
AR	131+70.33	11.75	769.63	769.88
AS	131+80.19	11.75	769.71	770.00
AT	131+90.05	11.75	769.77	770.10
AU	131+99.92	11.75	769.82	770.19
AV	132+09.78	11.75	769.86	770.25
AW	132+19.64	11.75	769.89	770.30
AX	132+29.50	11.75	769.91	770.33
AY	132+39.37	11.75	769.91	770.34
AZ	132+49.23	11.75	769.91	770.33
BA	132+59.09	11.75	769.89	770.30
BB	132+68.96	11.75	769.86	770.25
BC	132+78.82	11.75	769.82	770.18
BD	132+88.68	11.75	769.77	770.09
BE	132+98.54	11.75	769.71	769.99
BF	133+08.41	11.75	769.63	769.87
BG	133+18.27	11.75	769.55	769.73
BH	133+28.13	11.75	769.45	769.59
BI	133+38.00	11.75	769.34	769.44
BJ	133+47.86	11.75	769.22	769.28
BK	133+57.72	11.75	769.09	769.12
BL	-	-	-	-
CL Pier 3	133+71.15	11.75	768.89	768.89
BM	133+81.02	11.75	768.73	768.72

GIRDER 5 - CONT'D

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BN	133+90.88	11.75	768.56	768.55
BO	134+00.74	11.54	768.37	768.35
BP	134+10.61	11.32	768.16	768.15
BQ	134+20.47	11.12	767.94	767.95
BR	134+30.34	10.93	767.72	767.73
BS	134+40.21	10.77	767.48	767.51
BT	134+50.09	10.62	767.23	767.28
BU	134+59.96	10.50	766.97	767.03
BV	134+69.84	10.39	766.70	766.78
BW	134+79.72	10.30	766.42	766.51
BX	134+89.60	10.23	766.13	766.22
BY	134+99.48	10.18	765.83	765.92
BZ	135+09.36	10.14	765.52	765.61
CA	135+19.24	10.13	765.20	765.28
CB	135+29.12	10.14	764.87	764.94
CC	135+39.00	10.16	764.53	764.59
CD	135+48.88	10.21	764.18	764.22
CE	135+58.76	10.27	763.81	763.84
CF	135+68.64	10.35	763.44	763.46
CG	135+78.52	10.46	763.06	763.06
CH	135+88.39	10.58	762.67	762.66
CL Pier 4	135+98.99	10.73	762.23	762.23
CI	136+08.86	10.89	761.82	761.83
CJ	136+18.73	11.06	761.41	761.44
CK	136+28.60	11.26	761.01	761.06
CL	136+38.46	11.48	760.59	760.66
CM	136+48.32	11.71	760.15	760.25
CN	136+58.18	11.97	759.71	759.83
CO	136+68.04	12.24	759.26	759.41
CP	136+77.90	12.52	758.82	758.99
CQ	136+87.90	12.75	758.37	758.54
CR	136+97.90	12.97	757.91	758.09
CS	137+07.90	13.19	757.45	757.64
CT	137+17.89	13.41	757.00	757.17
CU	137+27.89	13.63	756.54	756.70
CV	137+37.89	13.86	756.08	756.22
CW	137+47.89	14.08	755.62	755.73
CX	137+57.88	14.30	755.15	755.24
CY	137+67.88	14.52	754.70	754.76
CZ	137+77.88	14.75	754.28	754.30
CL Brg. S. Abut.	137+83.24	14.87	754.05	754.05
Bk. S. Abut.	137+87.53	14.96	753.87	753.87

Notes:

1. All elevations and offsets are in decimal feet.
2. See Sheet 07 of 68 for location diagram.
3. Theoretical Grade Elevations Adjusted For Dead Load Deflection are based on the pour sequence shown on Sheet 14 of 68. Should the contractor deviate from the proposed pour sequence, the contractor must retain the services of an Illinois Licensed Structural Engineer to analyze the structure for the revised Pouring Sequence to determine the Theoretical Grade Elevations Adjusted For Dead Load Deflection. Details and calculations with the required signature and seal shall be submitted to the Engineer for review and approval. Cost included in the pay item "Furnishing and Erecting Structural Steel".

GIRDER 5a

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BH	133+23.48	16.00	769.75	769.92
BI	133+33.29	16.00	769.65	769.77
BJ	133+43.11	16.00	769.53	769.62
BK	133+52.92	16.00	769.41	769.46
BL	133+62.74	16.00	769.27	769.29
CL Pier 3	133+71.15	16.00	769.14	769.14
BM	133+80.97	16.00	768.99	768.98
BN	133+90.78	16.00	768.82	768.80
BO	134+00.60	16.04	768.64	768.63
BP	134+10.41	16.09	768.45	768.44
BQ	134+20.22	16.15	768.25	768.25
BR	134+30.03	16.22	768.04	768.06
BS	134+39.84	16.30	767.82	767.85
BT	134+49.65	16.39	767.59	767.63
BU	134+59.46	16.49	767.34	767.40
BV	134+69.27	16.60	767.09	767.16
BW	134+79.08	16.72	766.83	766.91
BX	134+88.88	16.85	766.55	766.64
BY	134+98.68	16.99	766.27	766.36
BZ	135+08.49	17.14	765.97	766.06
CA	135+18.28	17.30	765.66	765.74
CB	135+28.08	17.47	765.34	765.42
CC	135+37.88	17.65	765.02	765.08
CD	135+47.67	17.83	764.68	764.72
CE	135+57.46	18.03	764.33	764.36
CF	135+67.25	18.24	763.97	763.98
CG	135+77.03	18.45	763.60	763.60
CH	135+86.82	18.68	763.22	763.21
CL Pier 4	135+98.99	18.97	762.73	762.73
CI	136+08.76	19.22	762.33	762.34
CJ	136+18.54	19.47	761.93	761.96
CK	136+28.31	19.74	761.53	761.58
CL	136+38.07	20.01	761.11	761.19
CM	136+47.84	20.29	760.65	760.76
CN	136+57.60	20.59	760.19	760.32
CO	136+67.35	20.89	759.73	759.88
CP	136+77.12	21.20	759.26	759.44
CQ	136+87.11	21.47	758.79	758.97
CR	136+97.11	21.75	758.31	758.50
CS	137+07.11	22.03	757.83	758.02
CT	137+17.10	22.31	757.34	757.53
CU	137+27.10	22.58	756.86	757.03
CV	137+37.09	22.86	756.37	756.52
CW	137+47.09	23.14	755.88	756.01
CX	137+57.09	23.42	755.39	755.49
CY	137+67.08	23.70	754.92	754.98
CZ	137+77.08	23.97	754.50	754.52
CL Brg. S. Abut.	137+83.24	24.14	754.24	754.24
Bk. S. Abut	137+87.53	24.26	754.06	754.06

GIRDER 6

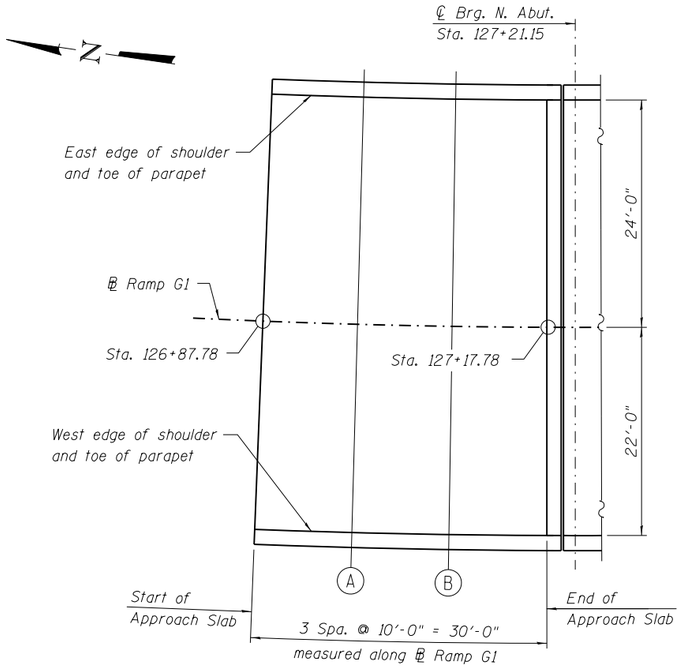
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	127+17.37	20.25	756.33	756.33
CL Brg. N. Abut	127+21.15	20.25	756.48	756.48
A	127+30.92	20.25	756.87	756.93
B	127+40.68	20.25	757.26	757.38
C	127+50.45	20.25	757.65	757.83
D	127+60.21	20.25	758.04	758.27
E	127+69.98	20.25	758.43	758.70
F	127+79.75	20.25	758.82	759.12
G	127+89.51	20.25	759.22	759.53
H	127+99.28	20.25	759.61	759.93
I	128+09.04	20.25	760.00	760.32
J	128+18.81	20.25	760.39	760.71
K	128+28.58	20.25	760.78	761.08
L	128+38.34	20.25	761.17	761.45
M	128+48.11	20.25	761.56	761.80
N	128+57.87	20.25	761.95	762.16
O	128+67.64	20.25	762.34	762.50
P	128+77.41	20.25	762.73	762.85
Q	128+87.17	20.25	763.12	763.20
R	128+96.94	20.25	763.51	763.55
CL Pier 1	129+08.65	20.25	763.98	763.98
S	129+18.42	20.25	764.35	764.33
T	129+28.18	20.25	764.72	764.68
U	129+37.95	20.25	765.07	765.03
V	129+47.71	20.25	765.41	765.37
W	129+57.48	20.25	765.74	765.70
X	129+67.25	20.25	766.06	766.03
Y	129+77.01	20.25	766.37	766.34
Z	129+86.78	20.25	766.66	766.64
AA	129+96.54	20.25	766.95	766.93
AB	130+06.31	20.25	767.22	767.21
AC	130+16.08	20.25	767.48	767.47
AD	130+25.84	20.25	767.74	767.72
AE	130+35.61	20.25	767.98	767.95
AF	130+45.37	20.25	768.20	768.17
AG	130+55.14	20.25	768.42	768.38
AH	130+64.91	20.25	768.63	768.59
AI	130+74.67	20.25	768.82	768.78
AJ	130+84.44	20.25	769.01	768.97
AK	130+94.21	20.25	769.18	769.15
AL	131+03.97	20.25	769.34	769.33
CL Pier 2	131+11.15	20.25	769.45	769.45
AM	131+20.92	20.25	769.60	769.63
AN	131+30.68	20.25	769.73	769.80
AO	131+40.45	20.25	769.85	769.96
AP	131+50.21	20.25	769.95	770.12
AQ	131+59.98	20.25	770.05	770.27
AR	131+69.75	20.25	770.14	770.40
AS	131+79.51	20.25	770.21	770.52
AT	131+89.28	20.25	770.27	770.63
AU	131+99.04	20.25	770.33	770.72
AV	132+08.81	20.25	770.37	770.79
AW	132+18.58	20.25	770.40	770.85
AX	132+28.34	20.25	770.42	770.88
AY	132+38.11	20.25	770.42	770.89
AZ	132+47.87	20.25	770.42	770.88
BA	132+57.64	20.25	770.40	770.85
BB	132+67.41	20.25	770.38	770.80
BC	132+77.17	20.25	770.34	770.74
BD	132+86.94	20.25	770.29	770.65
BE	132+96.71	20.25	770.23	770.54
BF	133+06.47	20.25	770.16	770.42
BG	133+16.24	20.25	770.07	770.29
BH	133+26.00	20.25	769.98	770.14
BI	133+35.77	20.25	769.88	769.99
BJ	133+45.54	20.25	769.76	769.83
BK	133+55.30	20.25	769.63	769.67
BL	133+65.07	20.25	769.49	769.51
CL Pier 3	133+71.15	20.25	769.40	769.40
BM	133+80.92	20.25	769.24	769.23

GIRDER 6 - CONT'D

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BN	133+90.69	20.25	769.07	769.06
BO	134+00.45	20.52	768.91	768.89
BP	134+10.20	20.85	768.74	768.73
BQ	134+19.96	21.17	768.56	768.56
BR	134+29.70	21.49	768.36	768.37
BS	134+39.45	21.82	768.16	768.18
BT	134+49.19	22.14	767.94	767.98
BU	134+58.93	22.47	767.72	767.77
BV	134+68.66	22.79	767.48	767.55
BW	134+78.39	23.12	767.23	767.31
BX	134+88.12	23.45	766.97	767.06
BY	134+97.84	23.77	766.70	766.79
BZ	135+07.56	24.10	766.42	766.51
CA	135+17.28	24.43	766.12	766.21
CB	135+26.99	24.76	765.82	765.90
CC	135+36.70	25.09	765.50	765.57
CD	135+46.40	25.42	765.18	765.23
CE	135+56.10	25.75	764.84	764.87
CF	135+65.80	26.08	764.49	764.51
CG	135+75.50	26.41	764.14	764.14
CH	135+85.19	26.74	763.77	763.76
CL Pier 4	135+98.99	27.21	763.22	763.22
CI	136+08.67	27.54	762.83	762.84
CJ	136+18.35	27.88	762.44	762.47
CK	136+28.02	28.21	762.05	762.10
CL	136+37.69	28.54	761.63	761.72
CM	136+47.36	28.87	761.15	761.27
CN	136+57.02	29.20	760.68	760.81
CO	136+66.68	29.53	760.20	760.36
CP	136+76.33	29.86	759.71	759.89
CQ	136+86.32	30.19	759.21	759.40
CR	136+96.31	30.53	758.71	758.91
CS	137+06.30	30.86	758.20	758.40
CT	137+16.30	31.19	757.69	757.89
CU	137+26.29	31.53	757.18	757.36
CV	137+36.29	31.86	756.67	756.83
CW	137+46.28	32.19	756.16	756.29
CX	137+56.28	32.52	755.64	755.74
CY	137+66.27	32.86	755.14	755.20
CZ	137+76.27	33.19	754.72	754.74
CL Brg. S. Abut.	137+83.24	33.42	754.43	754.43
Bk. S. Abut.	137+87.53	33.57	754.25	754.25

Notes:

1. *All elevations and offsets are in decimal feet.*
2. *See Sheet 07 of 68 for location diagram.*
3. *Theoretical Grade Elevations Adjusted For Dead Load Deflection are based on the pour sequence shown on Sheet 14 of 68. Should the contractor deviate from the proposed pour sequence, the contractor must retain the services of an Illinois Licensed Structural Engineer to analyze the structure for the revised Pouring Sequence to determine the Theoretical Grade Elevations Adjusted For Dead Load Deflection. Details and calculations with the required signature and seal shall be submitted to the Engineer for review and approval. Cost included in the pay item "Furnishing and Erecting Structural Steel".*



PLAN - NORTH APPROACH

EAST EDGE OF SHOULDER

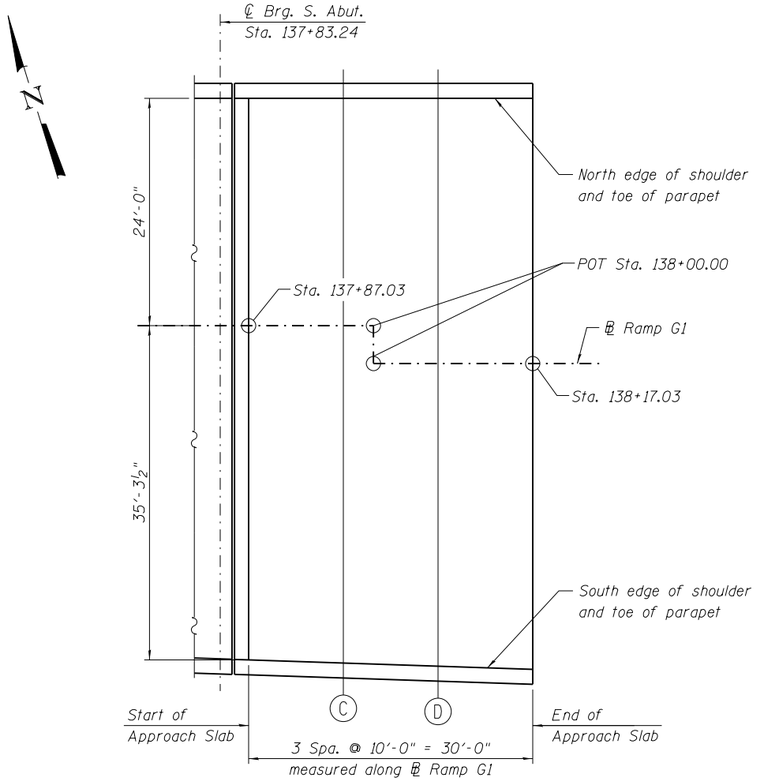
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Start App Slab	126+87.78	-24.00	752.49	752.49
A	126+97.78	-24.00	752.89	752.89
B	127+07.78	-24.00	753.29	753.29
End App. Slab	127+17.68	-24.00	753.69	753.69

℄ RAMP G1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Start App Slab	126+87.78	0.00	753.93	753.93
A	126+97.78	0.00	754.33	754.33
B	127+07.78	0.00	754.73	754.73
End App. Slab	127+17.78	0.00	755.13	755.13

WEST EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Start App Slab	126+87.78	22.00	755.25	755.25
A	126+97.78	22.00	755.65	755.65
B	127+07.78	22.00	756.05	756.05
End App. Slab	127+17.86	22.00	756.45	756.45



PLAN - SOUTH APPROACH

NORTH EDGE OF SHOULDER

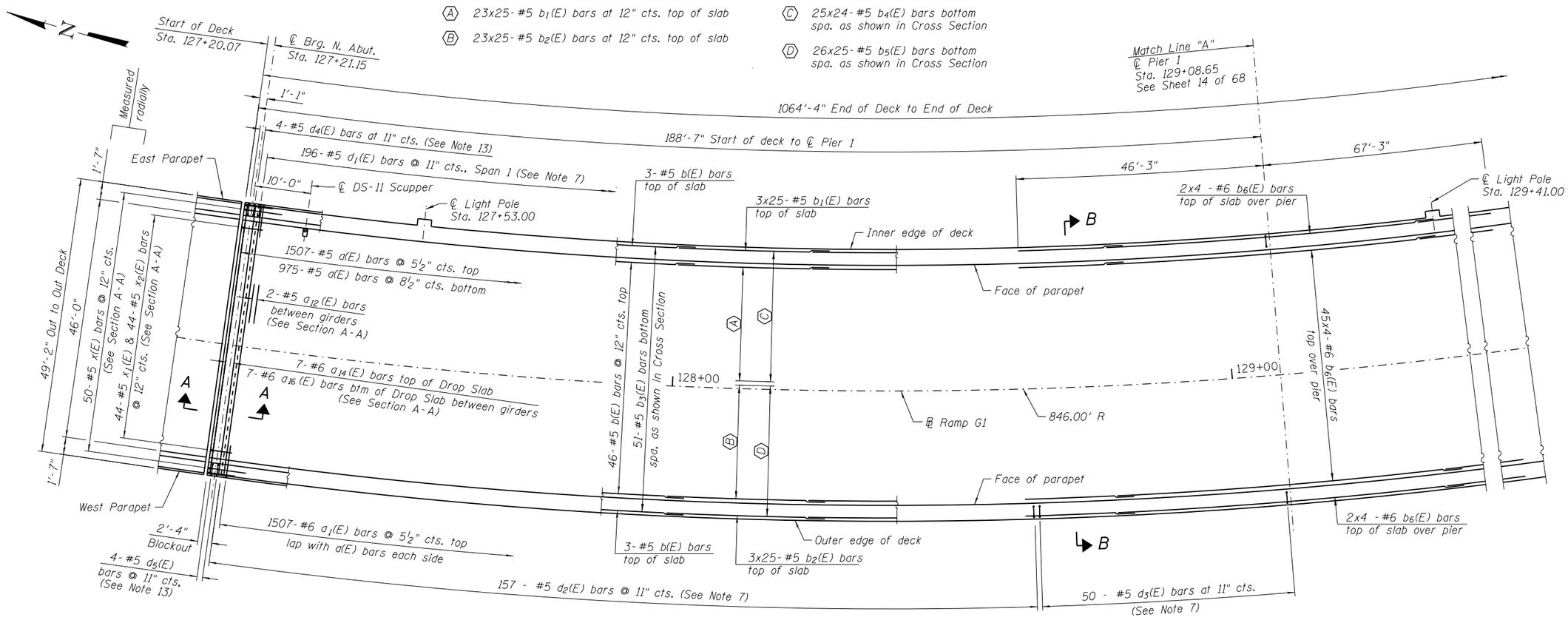
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Start App Slab	137+87.03	-24.00	753.12	753.12
C	137+97.03	-24.00	752.69	752.69
D	138+07.03	-28.00	752.26	752.26
End App. Slab	138+17.03	-28.00	751.84	751.84

℄ RAMP G1

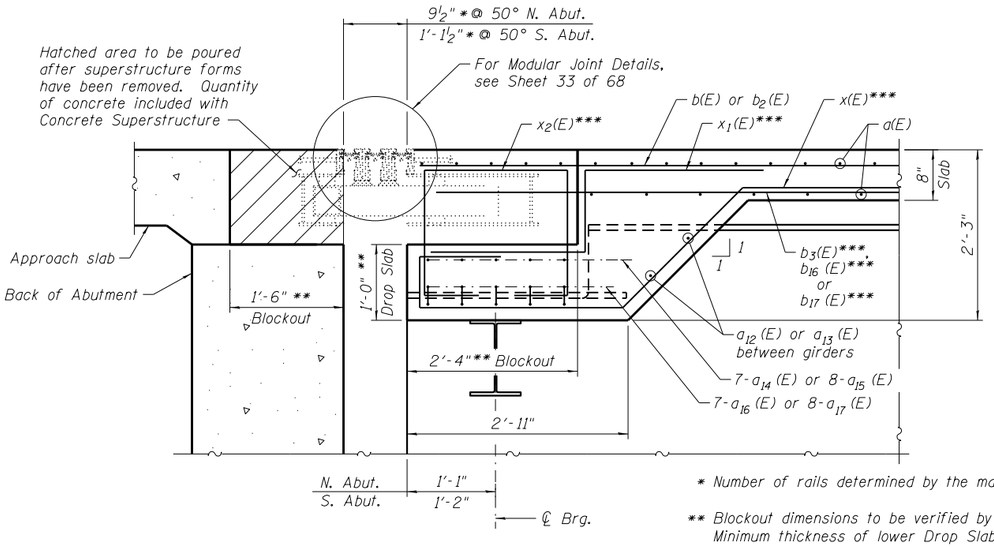
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Start App Slab	137+87.03	0.00	753.60	753.60
C	137+97.03	0.00	753.17	753.17
D	138+07.03	0.00	752.82	752.82
End App. Slab	138+17.03	0.00	752.40	752.40

SOUTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Start App Slab	137+87.03	35.30	754.30	754.30
C	137+97.03	35.63	753.88	753.88
D	138+07.03	31.97	753.46	753.46
End App. Slab	138+17.03	32.30	753.04	753.04



DECK PLAN - SPAN 1



SECTION A-A

* Number of rails determined by the manufacturer.

** Blockout dimensions to be verified by contractor with joint manufacturer. Minimum thickness of lower Drop Slab to be 1'-0" as shown.

*** Bars to be adjusted and/or cut in field to miss support boxes or beam webs.

Notes:

1. Span dimensions given along baseline.
2. Minimum lap length:
   #5 - 3'-3"
   #6 - 3'-10"
3. Bars indicated thus "12x5-#5 etc." indicate 12 lines of bars with 5 lengths per line.
4. Transverse reinforcement spacing is at the outer edge of the deck. The transverse bars shall be placed radially in the curved secions of the bridge and the approximate spacing along the inner edge of the deck due to curvature is:

Outer Spa.	Inner Spa.
5½"	5⅛"
8½"	8"

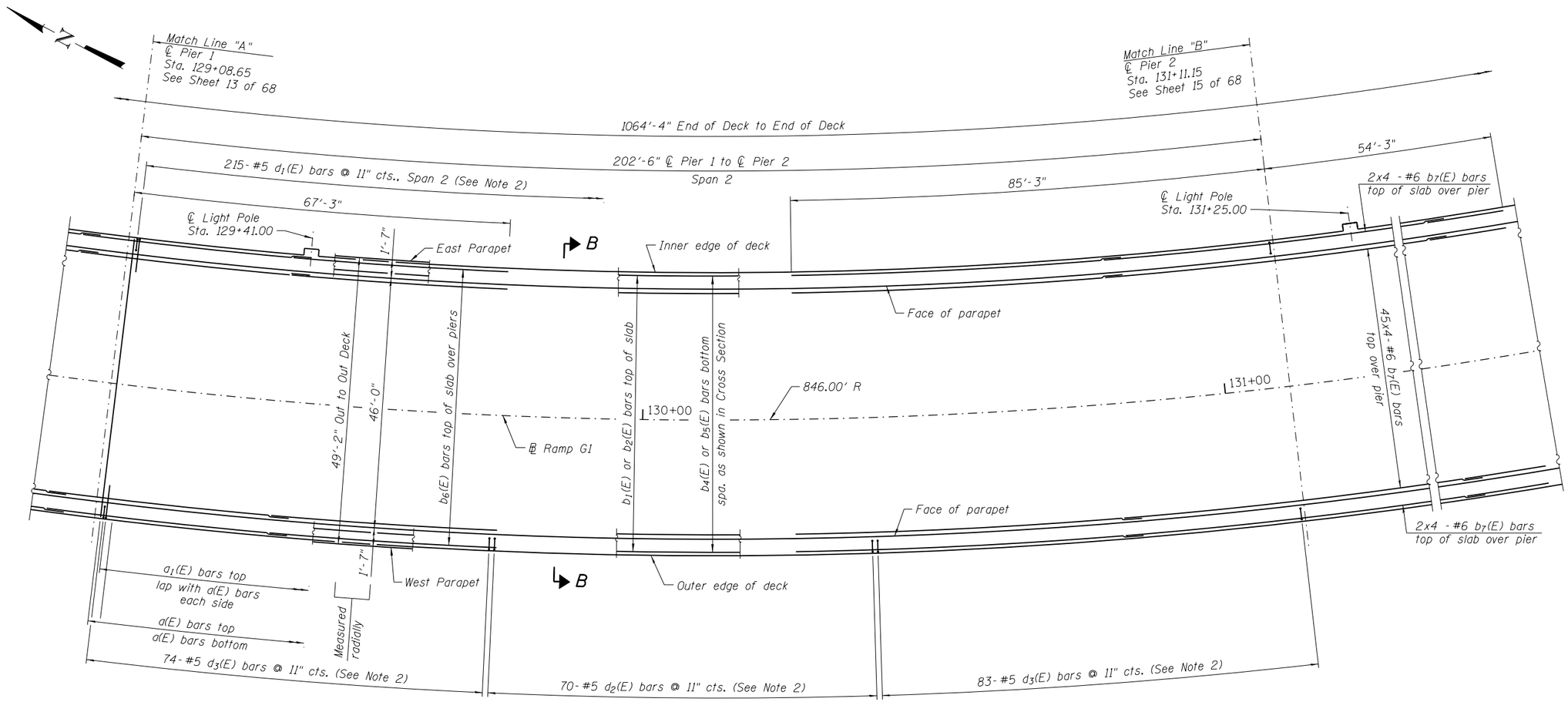
5. Longitudinal bars shall be sprung into place to be concentric at the spacing noted.
6. Place d (E) series parapet bars to avoid Aluminum Sheeted joints in lower parapet section and cork filled joints in upper parapet sections.
7. For localized scupper reinforcement and Bill of Material, see Sheet 24 of 68.
8. For light pole base reinforcement, see Sheet 22 of 68.
9. For Drainage Scupper details, see Sheets 31 and 32 of 68.
10. See Roadway Lighting Plans for conduit and junction boxes on east parapet quantities and details.
11. For cross sections B-B, C-C and D-D see Sheets 18 & 19 of 68.
12. For parapet reinforcement, see Sheets 20 thru 22 of 68.
13. Place d4(E) & d5(E) bars to maintain 1½" cover behind embedded plates in parapets. See Sheet 33 of 68 for details of embedded plates.

FILE NAME = 0220557-60Y95-013-DeckPlan.dgn	USER NAME = esantiag	DESIGNED - KSM	REVISED -
CH2MHILL®		CHECKED - CK/CM	REVISED -
	PLOT SCALE = 20.0000 ' / in.	DRAWN - MRW	REVISED -
	PLOT DATE = 12/5/2014	CHECKED - KSM	REVISED -

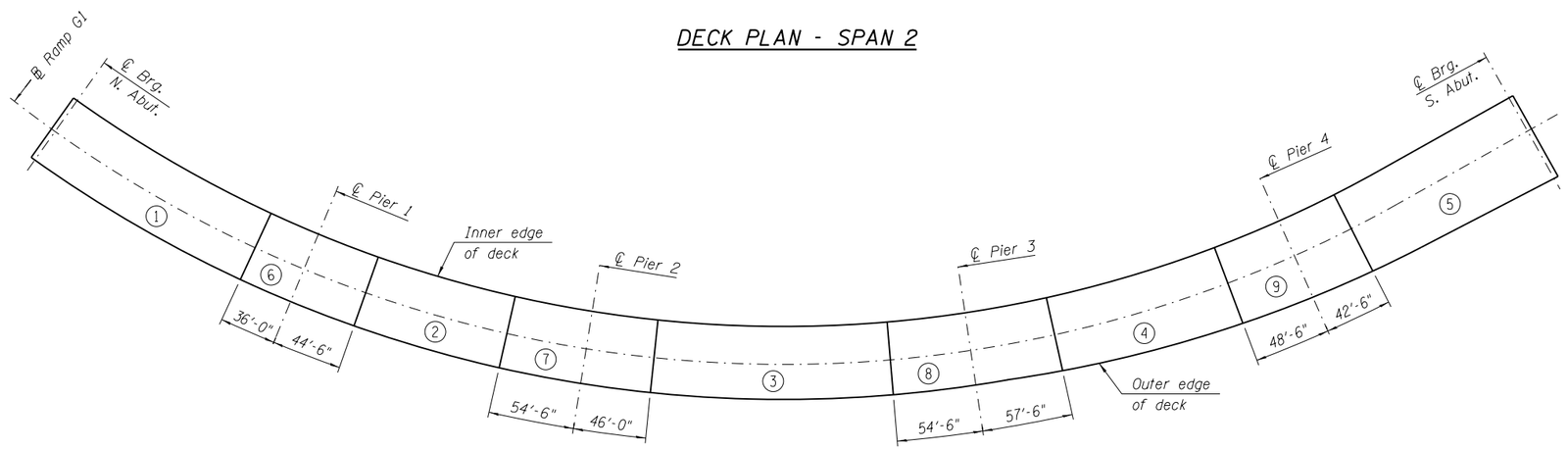
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK PLAN SPAN 1
STRUCTURE NUMBER - 022-0557
SHEET NO. 13 OF 68 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	365
DRAWING NO. SD-13		CONTRACT NO. 60Y95		
ILLINOIS FED. AID PROJECT				



DECK PLAN - SPAN 2



DECK POURING SEQUENCE

Notes:

1. *See Sheet 13 of 68 for deck notes.*
2. *Place d (E) series parapet bars to avoid Aluminum Sheeted joints in lower parapet section and cork filled joints in upper parapet sections.*
3. *When the deck pour is stopped for the day at one or more of the transverse bonded construction joints in the deck pouring sequence as shown, the next pour shall not be made until both of the following are met:*
   - A. *At least 72 hours shall have elapsed from The end of the previous pour.*
   - B. *The concrete strength shall have attained a minimum flexural strength of 650 psi or a minimum compressive strength of 3500 psi.*

FILE NAME = 0220557-60Y95-014-DeckPlan.dgn	USER NAME = esantiag	DESIGNED - KSM	REVISED -
CH2MHILL		CHECKED - CK/CM	REVISED -
	PLOT SCALE = 20.0000 ' / in.	DRAWN - MRW	REVISED -
	PLOT DATE = 11/19/2014	CHECKED - KSM	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK PLAN SPAN 2
STRUCTURE NUMBER – 022-0557
SHEET NO. 14 OF 68 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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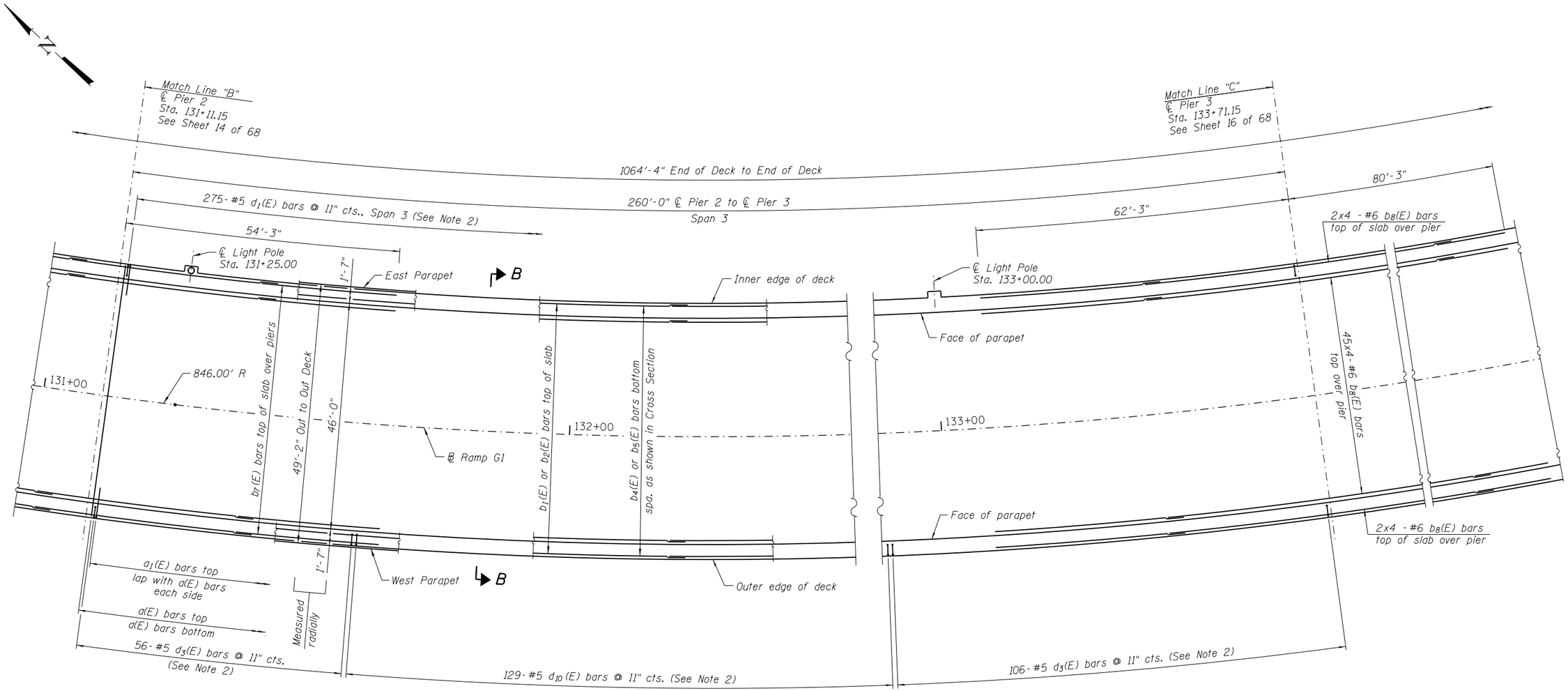
DRAWING NO. SD-14		CONTRACT NO. 60Y95		
ILLINOIS FED. AID PROJECT				



DECK PLAN - SPAN 3

Notes:

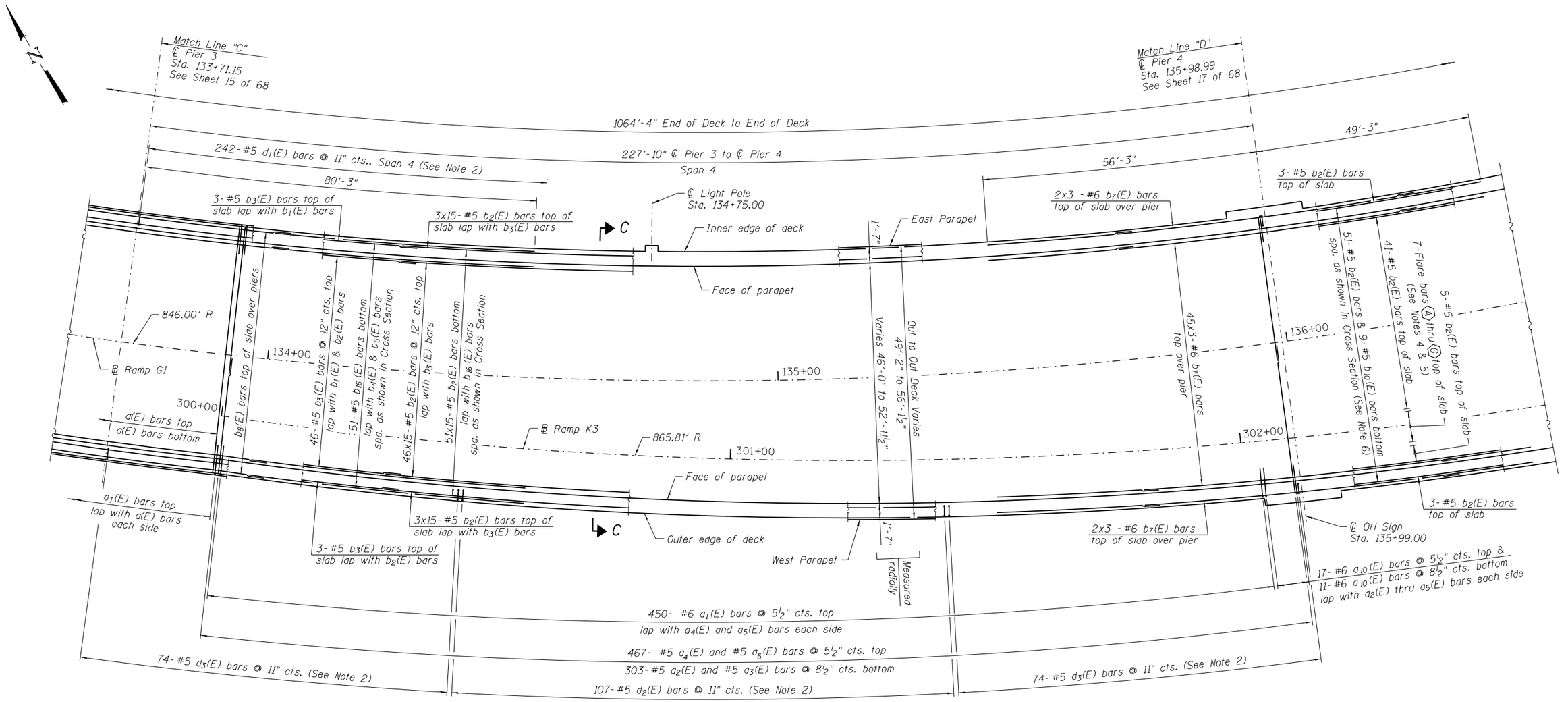
1. See Sheet 13 of 68 for deck notes.
2. Place d (E) series parapet bars to avoid Aluminum Sheeted joints in lower parapet section and cork filled joints in upper parapet sections.

FILE NAME = 0220557-60Y95-015-DeckPlan.dgn	USER NAME = asantiag	DESIGNED - KSM	REVISED -
CH2MHILL®		CHECKED - CK/CM	REVISED -
	PLOT SCALE = 20.0000 ' / in.	DRAWN - MRW	REVISED -
	PLOT DATE = 11/19/2014	CHECKED - KSM	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK PLAN SPAN 3
STRUCTURE NUMBER – 022-0557
SHEET NO. 15 OF 68 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	367
DRAWING NO. SD-15		CONTRACT NO. 60Y95		
ILLINOIS	FED. AID PROJECT			



DECK PLAN - SPAN 4

Notes:

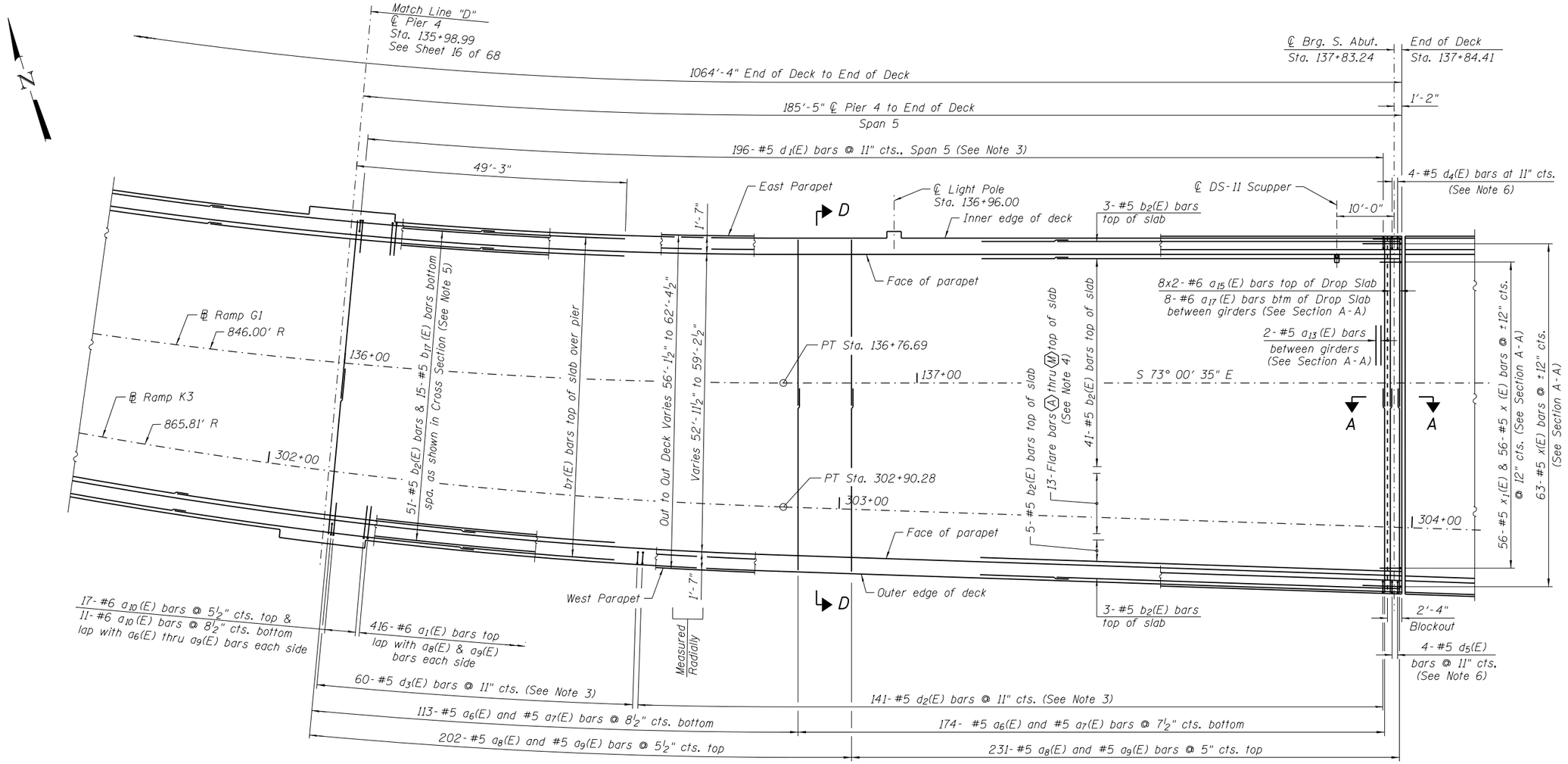
1. See Sheet 13 of 68 for deck notes.
2. Place d (E) series parapet bars to avoid Aluminum Sheeted joints in lower parapet section and cork filled joints in upper parapet sections.
3. See Sheet 23 of 68 for OH Sign Support details.
4. Flare bar marks Ⓐ thru Ⓖ. See Sheet 17 of 68 for bar information.
5. Flared bars sets to be placed starting at South end of deck. Maintain maximum 12"± spacing between adjacent rows.
6. b_{10} (E) bars in bottom of slab start at Sta. 134+85 with each line of bars having four (4) bars per line.

FILE NAME = 0220557-60Y95-016-DeckPlan.dgn	USER NAME = esantiag	DESIGNED - KSM	REVISED -
CH2MHILL®		CHECKED - CK/CM	REVISED -
	PLOT SCALE = 20.0000 ' / in.	DRAWN - MRW	REVISED -
	PLOT DATE = 11/19/2014	CHECKED - KSM	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK PLAN SPAN 4
STRUCTURE NUMBER – 022-0557
SHEET NO. 16 OF 68 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	368
DRAWING NO. SD-16		CONTRACT NO. 60Y95		
ILLINOIS	FED. AID PROJECT			



DECK PLAN - SPAN 5

TABLE OF FLARED BAR SETS
(TOP REINFORCEMENT)

Ⓐ & Ⓖ	1-#5 b_3(E) bar & 11-#5 b_{12}(E) bars
Ⓑ & Ⓕ	1-#5 b_{10}(E) bar & 13-#5 b_2(E) bars
Ⓒ & Ⓔ	1-#5 b_3(E) bar & 12-#5 b_{11}(E) bars
Ⓓ	1-#5 b(E) bar & 14-#5 b_9(E) bars
Ⓗ & Ⓙ	1-#5 b_{13}(E) bar & 5-#5 b_4(E) bars
Ⓘ	1-#5 b_3(E) bar & 6-#5 b_1(E) bars
Ⓚ & Ⓜ	1-#5 b_{13}(E) bar & 2-#5 b_2(E) bars
Ⓛ	1-#5 b_3(E) bar & 4-#5 b_{16}(E) bars

Notes:

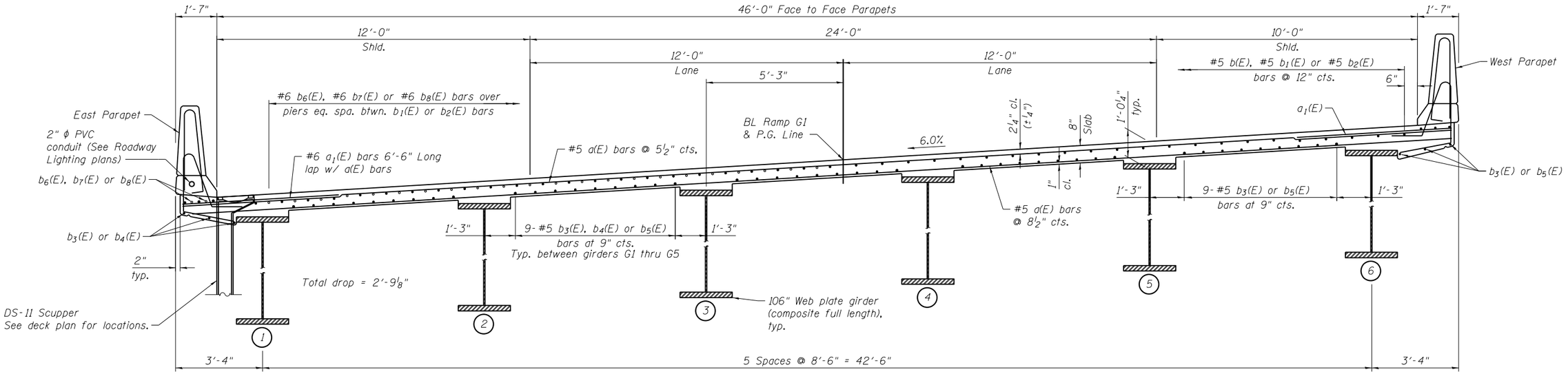
1. See Sheet 13 of 68 for deck notes.
2. For Section A-A, see Sheet 13 of 68.
3. Place d (E) series parapet bars to avoid Aluminum Sheeted joints in lower parapet section and cork filled joints in upper parapet sections.
4. Flared bars sets to be placed starting at South end of deck. Maintain maximum 12"± spacing between adjacent rows.
5. b_{17}(E) bars in bottom of slab consist of eleven (11) bars per line. Place bars starting at South end of deck.
6. Place d_4(E) & d_5(E) bars to maintain 1½" cover behind embedded plates in parapets. See Sheet 33 of 68 for details of embedded plates.

FILE NAME = 0220557-60Y95-017-DeckPlan.dgn	USER NAME = esantiag	DESIGNED - KSM	REVISED -
CH2MHILL®		CHECKED - CK/CM	REVISED -
	PLOT SCALE = 20.0000 ' / in.	DRAWN - MRW	REVISED -
	PLOT DATE = 12/5/2014	CHECKED - KSM	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK PLAN SPAN 5
STRUCTURE NUMBER – 022-0557
SHEET NO. 17 OF 68 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	369
DRAWING NO. SD-17		CONTRACT NO. 60Y95		
ILLINOIS	FED. AID PROJECT			

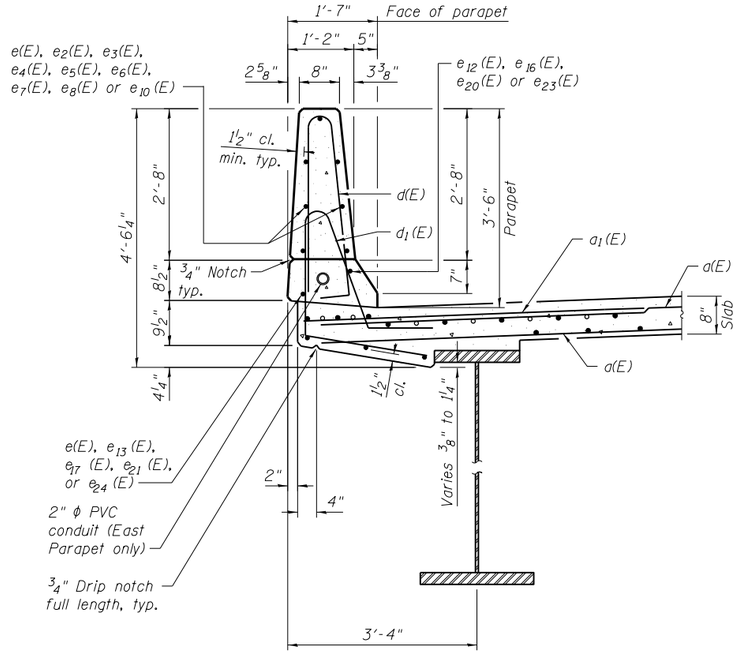


Near Pier

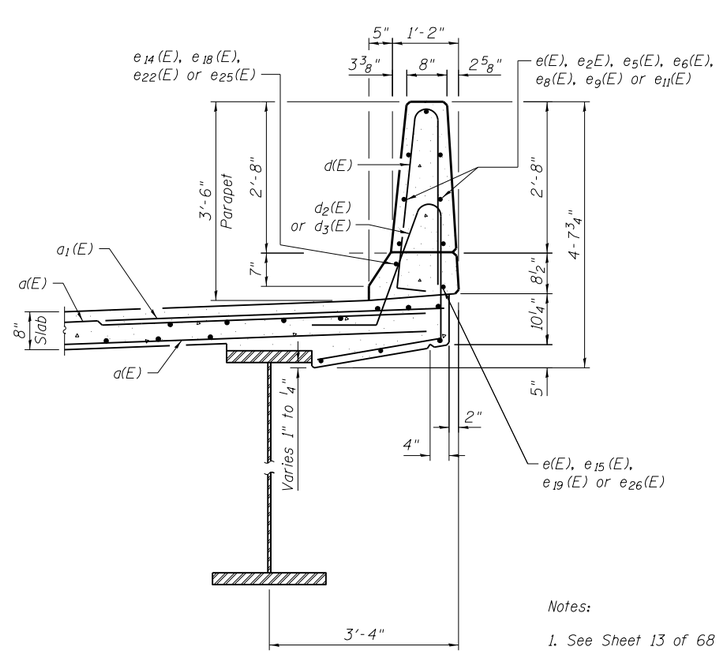
CROSS SECTION B-B

Looking upstation (Spans 1, 2 & 3)
All dimensions are measured radially

Near Midspan



SECTION THRU EAST PARAPET



SECTION THRU WEST PARAPET

Notes:

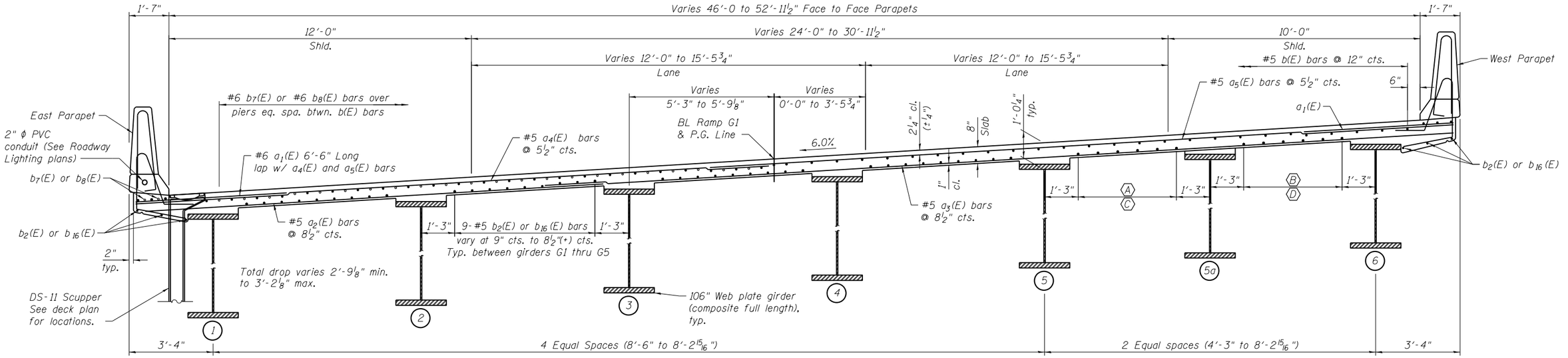
1. See Sheet 13 of 68 for deck notes.
2. Work this sheet with Sheets 13 thru 17 & 20 thru 22 of 68.

FILE NAME = 0220557-60Y95-018-DeclSect.dgn	USER NAME = asantiag	DESIGNED - KSM	REVISED -
CH2MHILL®		CHECKED - CK/CM	REVISED -
	PLOT SCALE = 4.0000 ' / in.	DRAWN - MRW	REVISED -
	PLOT DATE = 11/19/2014	CHECKED - KSM	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK CROSS SECTION & DETAILS I
STRUCTURE NUMBER – 022-0557
SHEET NO. 18 OF 68 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	370
DRAWING NO. SD-18		CONTRACT NO. 60Y95		
ILLINOIS FED. AID PROJECT				



Near Pier

Near Midspan

CROSS SECTION C-C

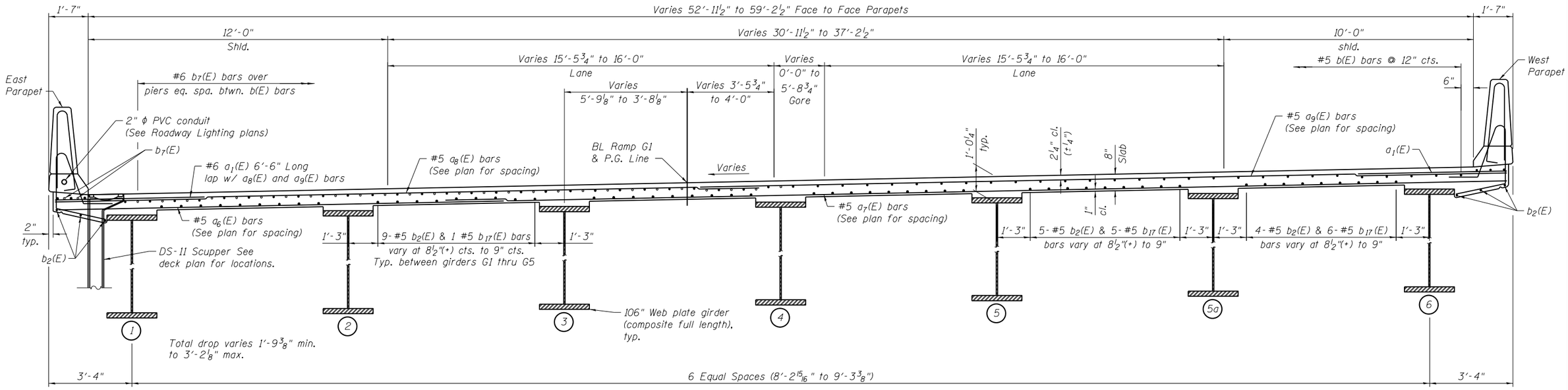
Looking upstation (Span 4)
All dimensions are measured radially

Ⓐ 5-#5 b_{16}(E) bars at 5¼" cts. @ Pier 3

Ⓑ 4-#5 b_{16}(E) bars at 7" cts. @ Pier 3

Ⓒ 5-#5 b_2(E) & 4-#5 b_{10}(E) bars at 9" cts. @ Pier 4

Ⓓ 4-#5 b_2(E) & 5-#5 b_{10}(E) bars at 9" cts. @ Pier 4



Near Pier

Near Midspan

CROSS SECTION D-D

Looking upstation (Span 5)
All dimensions are measured radially

Notes:

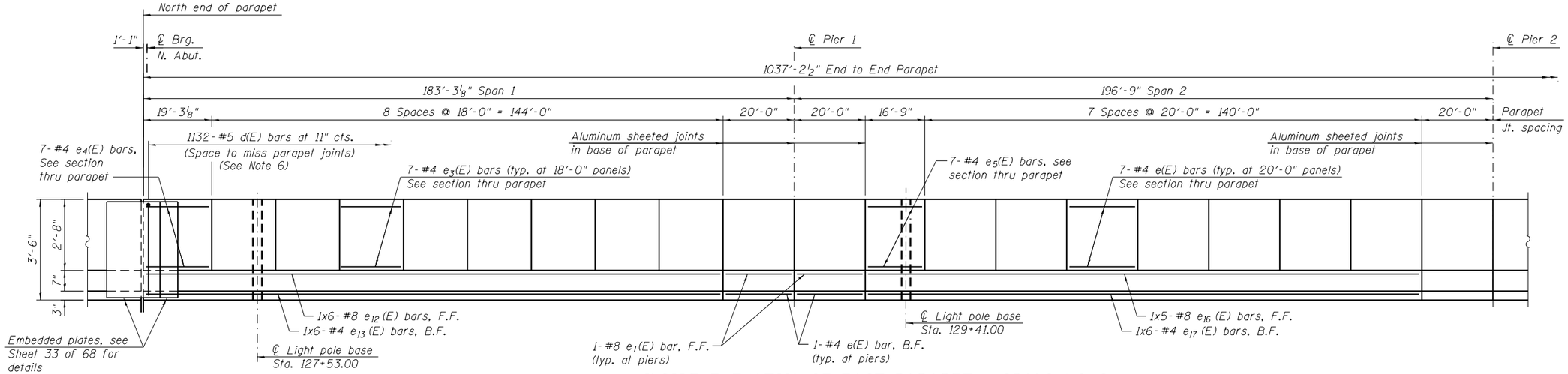
1. See Sheet 13 of 68 for deck notes.
2. Work this sheet with Sheets 13 thru 17 & 20 thru 22 of 68.

FILE NAME = 0220557-60Y95-019-DeclSect.dgn	USER NAME = esantiag	DESIGNED - KSM	REVISED -
CH2MHILL®		CHECKED - CK/CM	REVISED -
	PLOT SCALE = 4.0000 ' / in.	DRAWN - MRW	REVISED -
	PLOT DATE = 11/19/2014	CHECKED - KSM	REVISED -

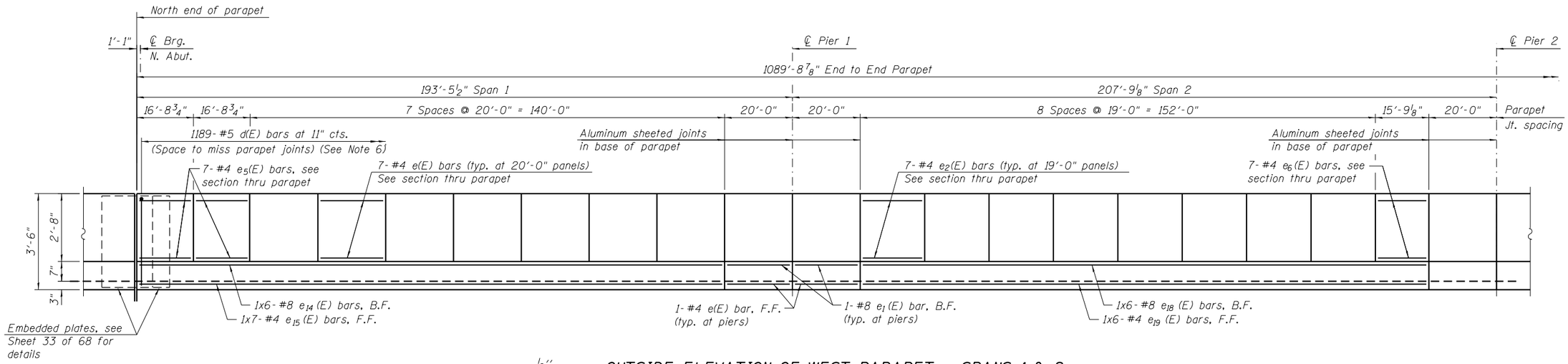
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK CROSS SECTION & DETAILS II
STRUCTURE NUMBER – 022-0557
SHEET NO. 19 OF 68 SHEETS

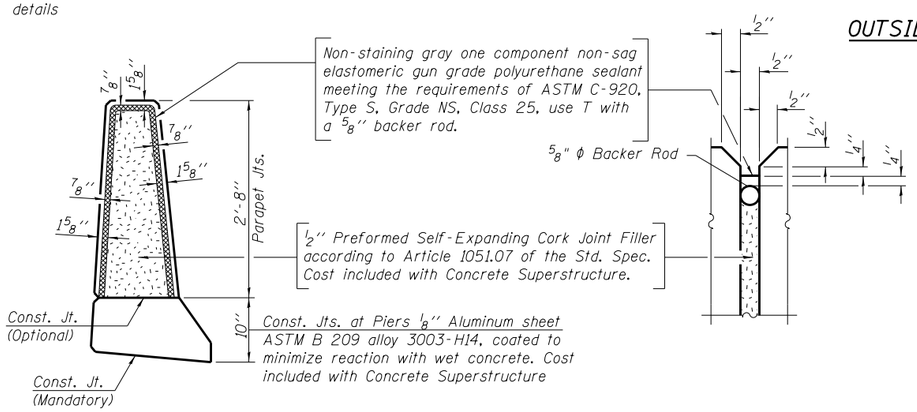
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	371
DRAWING NO. SD-19		CONTRACT NO. 60Y95		
ILLINOIS FED. AID PROJECT				



INSIDE ELEVATION OF EAST PARAPET - SPANS 1 & 2



OUTSIDE ELEVATION OF WEST PARAPET - SPANS 1 & 2



PARAPET JOINT DETAILS

Notes:

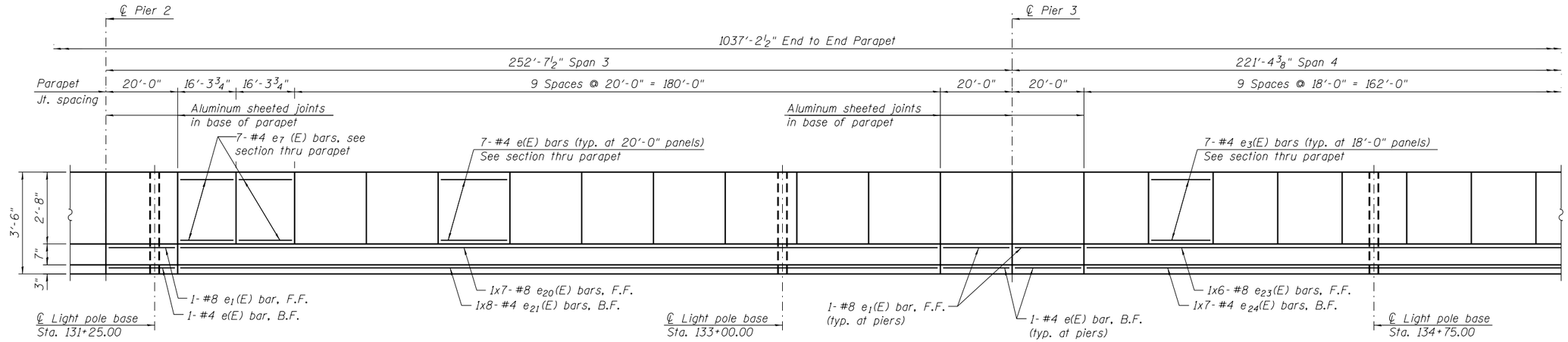
1. See Sheet 13 of 68 for deck notes.
2. Min bar laps:
   #4 - 2'-1"
   #8 - 5'-5"
3. All horizontal dimensions shown taken at toe of parapet.
4. Provide expansion/deflection couplings for embedded conduit at parapet expansion joint locations. See Roadway Lighting Plans for quantities and details of conduits and couplings.
5. For section thru parapet, see Sheet 18 of 68.
6. Place d (E) & e (E) series bars to maintain 1½" cover behind embedded plates at both ends of bridge. See Sheet 33 of 68 for details of embedded plates.

FILE NAME = 0220557-60Y95-020-Parapet.dgn	USER NAME = esantiag	DESIGNED - KSM	REVISED -
CH2MHILL®		CHECKED - CK/CM	REVISED -
	PLOT SCALE = 32.0000 ' / in.	DRAWN - MRW	REVISED -
	PLOT DATE = 12/5/2014	CHECKED - KSM	REVISED -

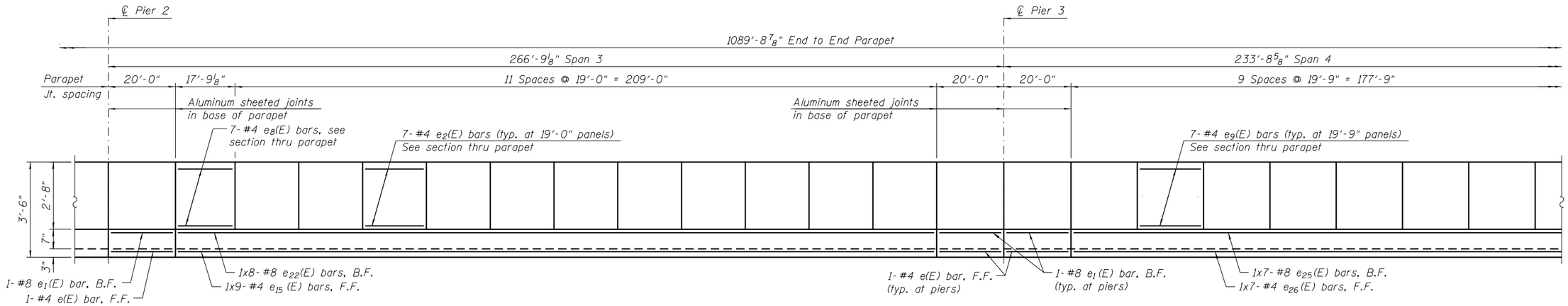
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PARAPET ELEVATIONS I
STRUCTURE NUMBER - 022-0557
SHEET NO. 20 OF 68 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	372
DRAWING NO. SD-20		CONTRACT NO. 60Y95		
ILLINOIS FED. AID PROJECT				



INSIDE ELEVATION OF EAST PARAPET - SPANS 3 & 4

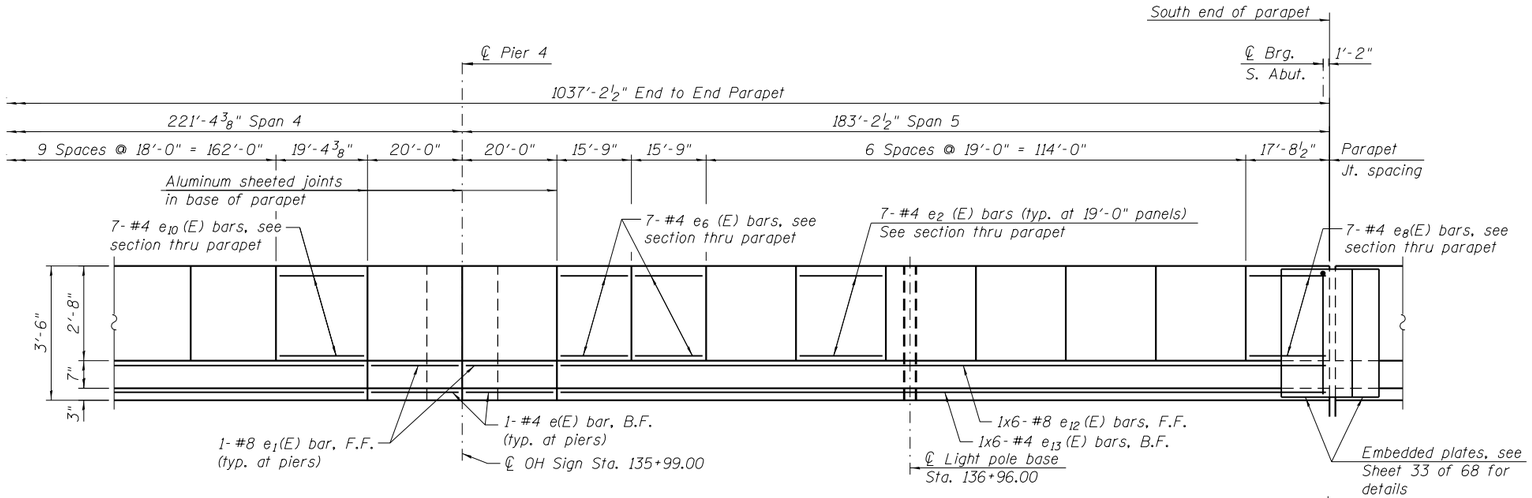


OUTSIDE ELEVATION OF WEST PARAPET - SPANS 3 & 4

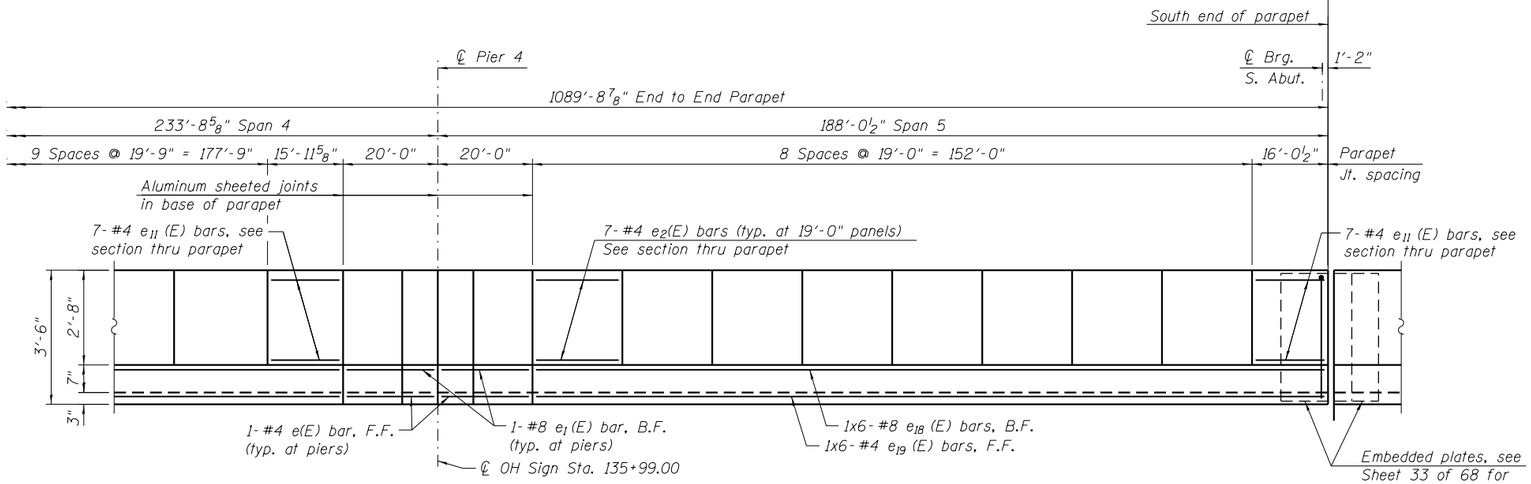
Notes:

1. See Sheet 20 of 68 for parapet notes.

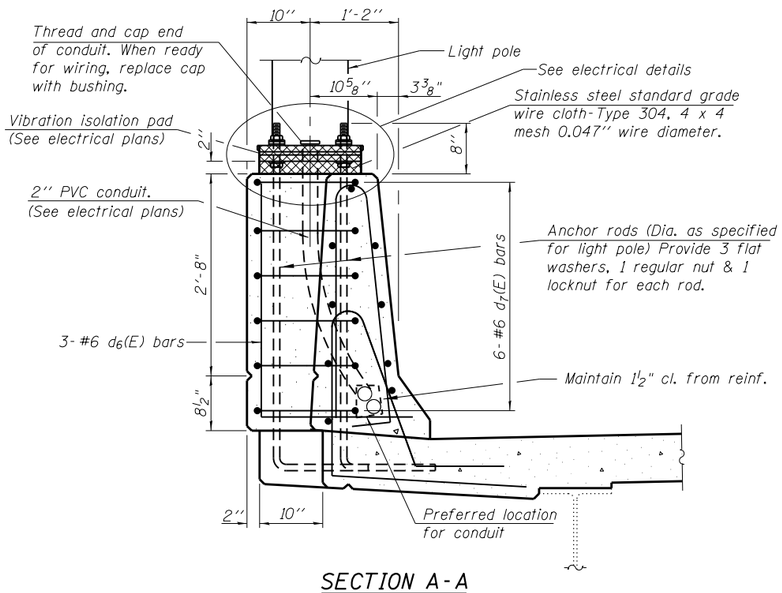
FILE NAME = 0220557-60Y95-021-Parapet.dgn	USER NAME = esantiag	DESIGNED - KSM	REVISED -	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**	**PARAPET ELEVATIONS II STRUCTURE NUMBER – 022–0557**	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH2MHILL®		CHECKED - CK/CM	REVISED -			345	2013-083-R&B	DUPAGE	759	373
	PLOT SCALE = 32.0000 ' / in.	DRAWN - MRW	REVISED -		SHEET NO. 21 OF 68 SHEETS	DRAWING NO. SD-21		CONTRACT NO. 60Y95		
	PLOT DATE = 11/19/2014	CHECKED - KSM	REVISED -			ILLINOIS	FED. AID PROJECT			



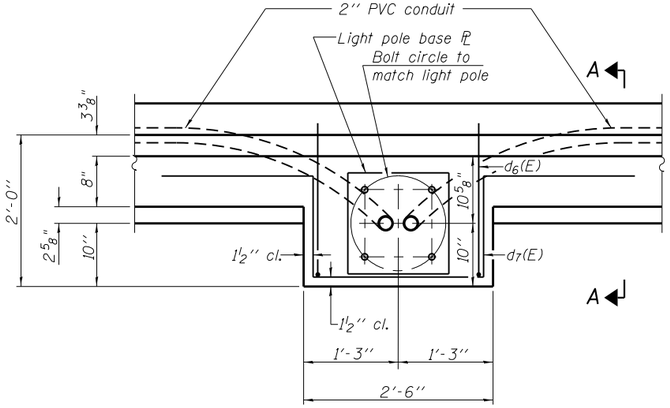
INSIDE ELEVATION OF EAST PARAPET - SPAN 5



OUTSIDE ELEVATION OF WEST PARAPET - SPAN 5



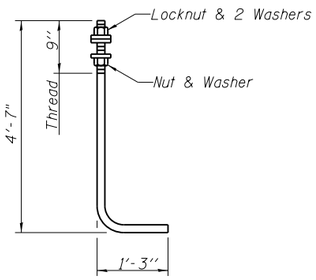
SECTION A-A



PLAN

Note:
Cost of anchor rods is included with Concrete Superstructure.

LIGHT POLE BASE DETAILS



ANCHOR ROD

Diameter as specified for light poles.
(ASTM F 1554 Grade 105)
Full length hot dipped galvanized

Notes:

1. See Sheet 20 of 68 for parapet notes.

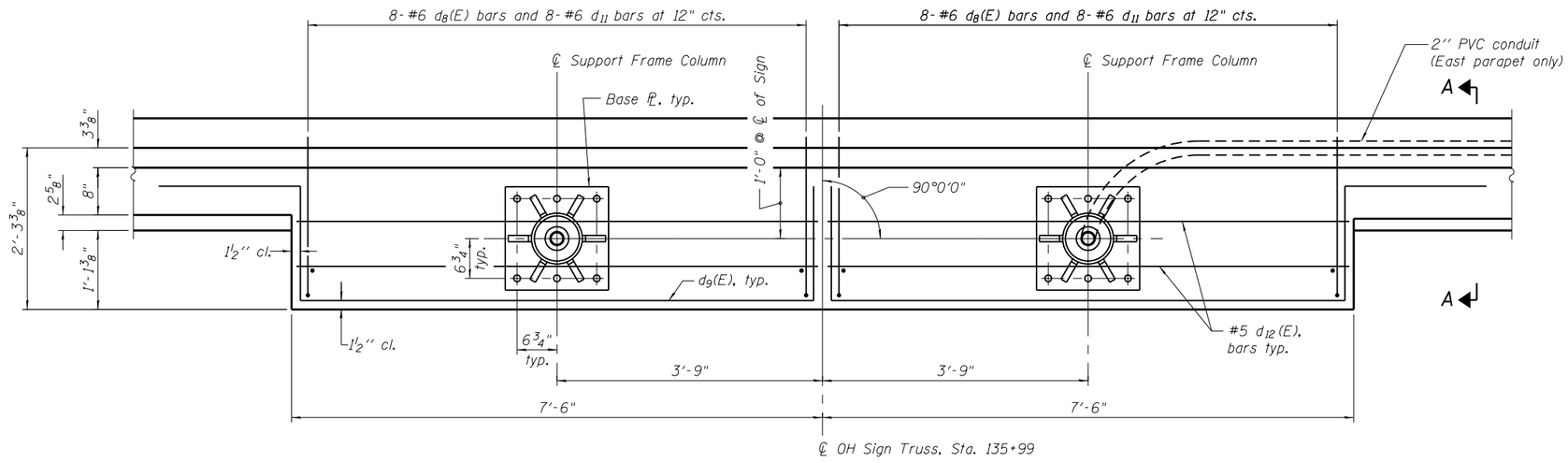
FILE NAME = 0220557-60Y95-022-Parapet.dgn	USER NAME = asantiag	DESIGNED - KSM	REVISED -
		CHECKED - CK/CM	REVISED -
	PLOT SCALE = 32.0000 ' / in.	DRAWN - MRW	REVISED -
	PLOT DATE = 11/19/2014	CHECKED - KSM	REVISED -

CH2MHILL®

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

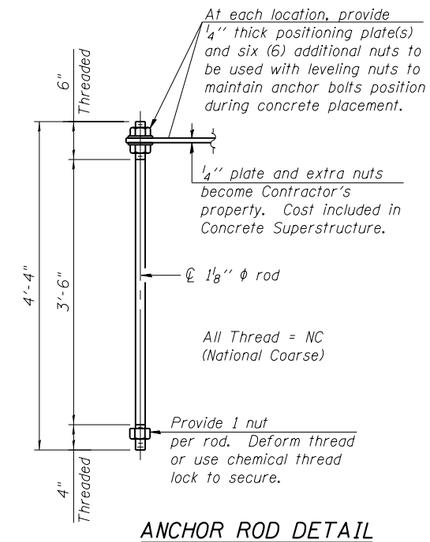
PARAPET ELEVATIONS III
STRUCTURE NUMBER – 022-0557
SHEET NO. 22 OF 68 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	374
DRAWING NO. SD-22		CONTRACT NO. 60Y95		
	ILLINOIS FED. AID PROJECT			



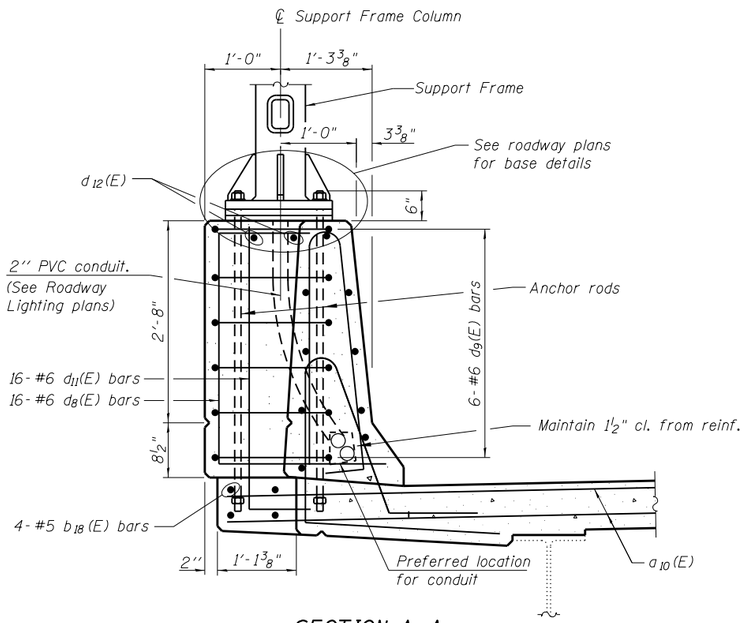
PLAN - OH SIGN SUPPORT

(West parapet as shown, east parapet similar)

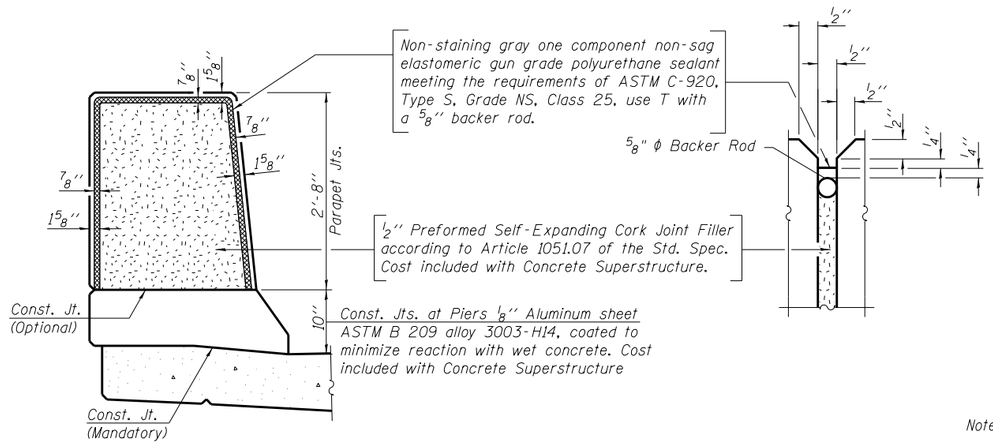


ANCHOR ROD DETAIL

Anchor rods shall conform to ASTM F1554 Grade 105. Galvanize upper 12" minimum per AASHTO M232. No welding shall be permitted on rods. Cost of anchor rods is included with Concrete Superstructure.



SECTION A-A



PARAPET JOINT DETAILS AT PIER 4 Sta. 135+98.99

Notes:

1. See Sheet 20 of 68 for parapet notes.

FILE NAME = 0220557-60Y95-023-SignSupport.dgn	USER NAME = asantiag	DESIGNED - KSM	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	OH SIGN SUPPORT DETAILS STRUCTURE NUMBER – 022-0557	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH2MHILL		CHECKED - CK/CM	REVISED -			345	2013-083-R&B	DUPAGE	759	375
	PLOT SCALE = 2.0000 ' / in.	DRAWN - MRW	REVISED -			DRAWING NO. SD-23		CONTRACT NO. 60Y95		
	PLOT DATE = 11/19/2014	CHECKED - KSM	REVISED -		SHEET NO. 23 OF 68 SHEETS	ILLINOIS	FED. AID PROJECT			

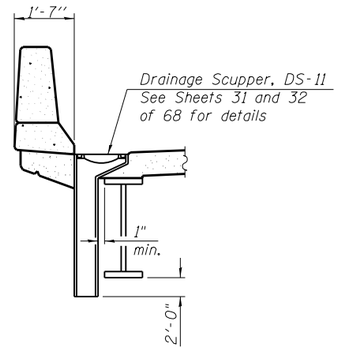
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d(E)	2482	#5	48'-7"	
a_1(E)	4746	#6	6'-6"	
a_2(E)	303	#5	16'-6"	
a_3(E)	303	#5	39'-4"	
a_4(E)	467	#5	23'-8"	
a_5(E)	467	#5	35'-2"	
a_6(E)	287	#5	21'-8"	
a_7(E)	287	#5	43'-5"	
a_8(E)	433	#5	26'-4"	
a_9(E)	433	#5	38'-9"	
a_{10} (E)	112	#6	7'-6"	
a_{11} (E)	16	#5	1'-6"	
a_{12} (E)	10	#5	8'-3"	
a_{13} (E)	12	#5	9'-0"	
a_{14} (E)	7	#6	48'-7"	
a_{15} (E)	16	#6	33'-0"	
a_{16} (E)	35	#6	12'-6"	
a_{17} (E)	48	#6	13'-3"	
b(E)	53	#5	22'-0"	
b_1(E)	656	#5	29'-3"	
b_2(E)	2915	#5	30'-0"	
b_3(E)	155	#5	15'-0"	
b_4(E)	610	#5	29'-9"	
b_5(E)	650	#5	29'-5"	
b_6(E)	196	#6	31'-3"	
b_7(E)	392	#6	37'-9"	
b_8(E)	196	#6	38'-6"	
b_9(E)	14	#5	29'-8"	
b_{10} (E)	38	#5	28'-0"	
b_{11} (E)	24	#5	28'-3"	
b_{12} (E)	22	#5	26'-6"	
b_{13} (E)	4	#5	20'-0"	
b_{14} (E)	4	#5	26'-0"	
b_{15} (E)	16	#5	7'-3"	
b_{16} (E)	51	#5	25'-0"	
b_{17} (E)	165	#5	20'-6"	
b_{18} (E)	8	#5	14'-8"	
d(E)	2321	#5	6'-10"	
d_1(E)	1124	#5	7'-8"	
d_2(E)	475	#5	7'-9"	
d_3(E)	577	#5	7'-8"	
d_4(E)	8	#5	8'-10"	
d_5(E)	8	#5	8'-6"	
d_6(E)	15	#6	5'-1"	
d_7(E)	30	#6	8'-11"	
d_8(E)	32	#6	6'-11"	
d_9(E)	24	#6	11'-2"	
d_{10} (E)	129	#5	7'-7"	
d_{11} (E)	32	#6	4'-10"	
d_{12} (E)	8	#5	7'-3"	

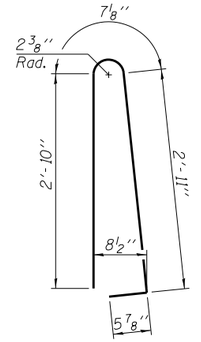
BILL OF MATERIAL - CONT'D

Bar	No.	Size	Length	Shape
e(E)	289	#4	19'-9"	
e_1(E)	16	#8	19'-9"	
e_2(E)	231	#4	18'-9"	
e_3(E)	119	#4	17'-9"	
e_4(E)	7	#4	19'-0"	
e_5(E)	21	#4	16'-5"	
e_6(E)	21	#4	15'-6"	
e_7(E)	14	#4	16'-0"	
e_8(E)	14	#4	17'-6"	
e_9(E)	63	#4	19'-6"	
e_{10} (E)	7	#4	19'-1"	
e_{11} (E)	14	#4	15'-8"	
e_{12} (E)	12	#8	31'-9"	
e_{13} (E)	12	#4	29'-0"	
e_{14} (E)	6	#8	34'-2"	
e_{15} (E)	16	#4	27'-2"	
e_{16} (E)	5	#8	35'-9"	
e_{17} (E)	6	#4	27'-11"	
e_{18} (E)	12	#8	32'-7"	
e_{19} (E)	12	#4	29'-9"	
e_{20}(E)	7	#8	35'-1"	
e_{21} (E)	8	#4	28'-5"	
e_{22}(E)	8	#8	33'-1"	
e_{23}(E)	6	#8	34'-9"	
e_{24}(E)	7	#4	27'-9"	
e_{25}(E)	7	#8	32'-4"	
e_{26}(E)	7	#4	29'-6"	
x(E)	113	#5	9'-7"	
x_1(E)	100	#5	5'-11"	
x_2(E)	100	#5	7'-6"	

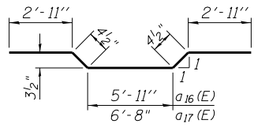
ITEM	UNIT	QUANTITY
Concrete Superstructure	Cu. Yd.	1552.2
Reinforcement Bars, Epoxy Coated	Pound	533,300
Bridge Deck Grooving	Sq. Yd.	5490
Protective Coat	Sq. Yd.	6747



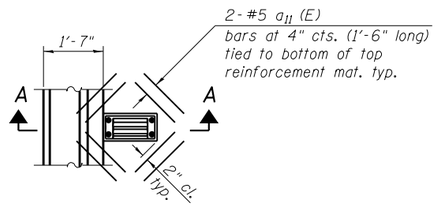
SECTION A-A



BAR d(E)

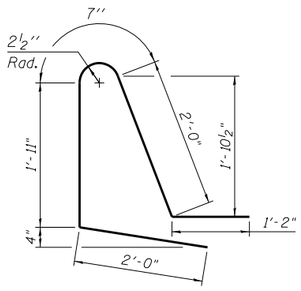


BAR a_{16}(E) & a_{17}(E)

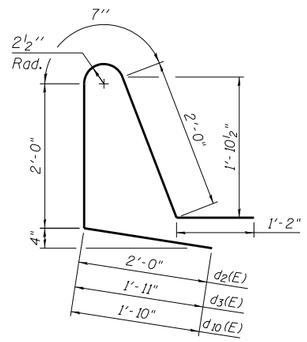


SCUPPER PLAN

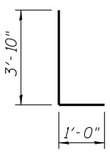
Note:
Cut longitudinal reinforcement to clear drainage scuppers.



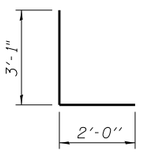
BAR d_1(E)



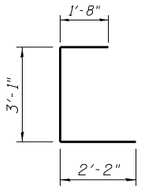
BAR d_2(E), d_3(E) & d_{10}(E)



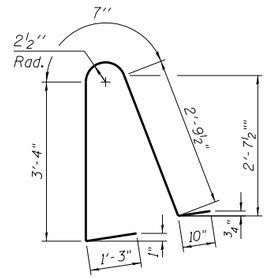
BAR d_{11} (E)



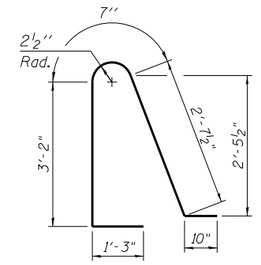
BAR d_6(E)



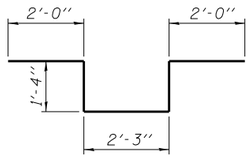
BAR d_8(E)



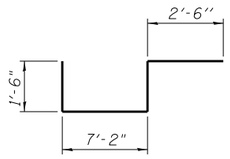
BAR d4(E)



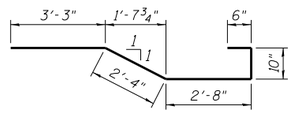
BAR d5(E)



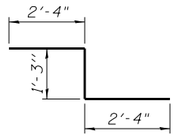
BAR d_7(E)



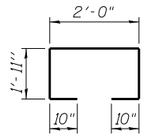
BAR d_9(E)



BAR x(E)



BAR x_1(E)



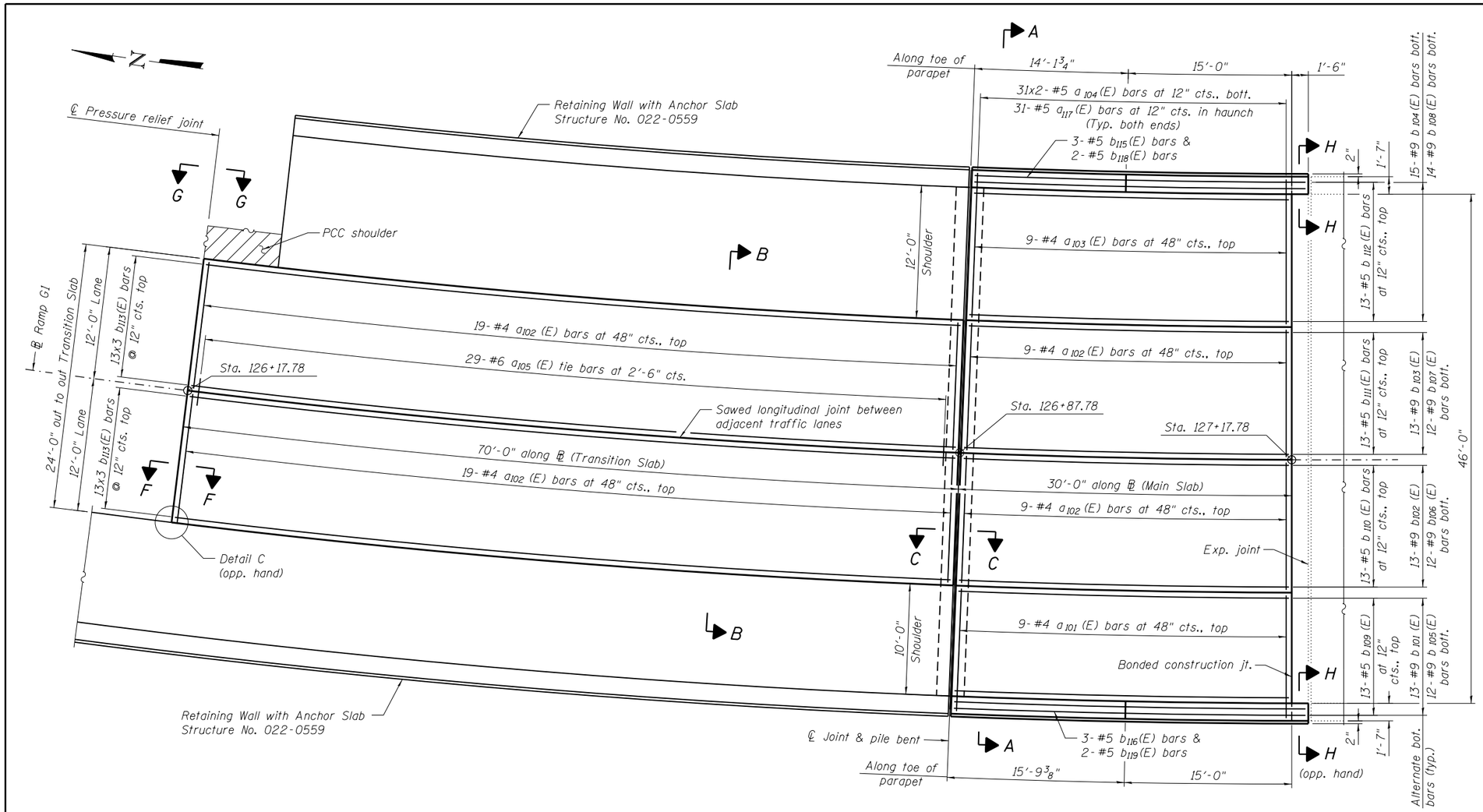
BAR x_2(E)

FILE NAME = 02220557-60Y95-024-DeckDet.dgn	USER NAME = asantiag	DESIGNED - KSM	REVISED -
CH2MHILL®		CHECKED - CK/CM	REVISED -
	PLOT SCALE = 2.0000 ' / in.	DRAWN - MRW	REVISED -
	PLOT DATE = 11/19/2014	CHECKED - KSM	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK DETAILS & BILL OF MATERIALS
STRUCTURE NUMBER - 022-0557
SHEET NO. 24 OF 68 SHEETS

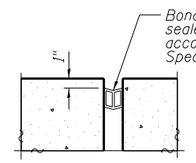
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	376
DRAWING NO. SD-24		CONTRACT NO. 60Y95		
ILLINOIS	FED. AID PROJECT			



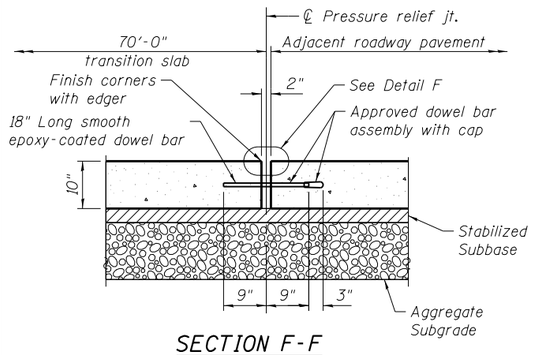
PLAN - NORTH APPROACH SLAB

Notes:

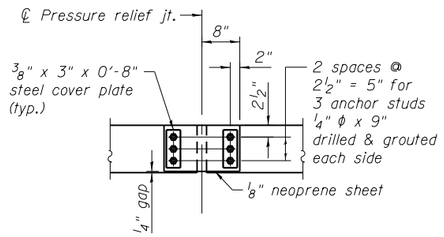
1. Tilt hook of #9 bars in main slab for minimum $3\frac{1}{2}$" clearance.
2. Use 2'-7" min. lap for #4 bars. Use 3'-3" min lap for #5 bars.
3. Tool edges of pressure relief joints to $\frac{1}{4}$" radius.
4. Expansion anchors and drilled and grouted dowels shall conform to Art. 584 of the the Standard Specifications. Minimum embedment = 9".
5. As approved by the Engineer, the contractor may elect to reduce the widths of the pour by use of the optional longitudinal construction joint shown. Joints shall be located at the edge of a traffic lane. See Sheet 28 of 64 for optional joint details.
6. Longitudinal bars shall be sprung into place to be concentric at the spacing noted.
7. Transverse bars shall be placed radially at the spacing noted. The spacing is measured at the outer edge of the lane/shoulder.
8. Bridge Deck Grooving and Protective Coat shall only apply to the main slabs.
9. See Sheet 28 of 68 for Bill of Material.
10. For longitudinal Section, transverse Sections A-A and B-B, and Section C-C see Sheet 27 of 68.
11. See Sheet 28 of 68 for Section H-H & Detail E.
12. Bars indicated thus "12x5-#5 etc." indicate 12 lines of bars with 5 lengths per line.
13. The dimension T is the thickness of the main slab (1'-3") or the transition slab (10").
14. Miscellaneous materials and work, including but not limited to joint fillers, sealants and backer rod; neoprene sheet at joints; miscellaneous fasteners, appurtenances and steel items at joints; miscellaneous aluminum sheets at joints; anchor bolts and studs; expansion anchors; dowel bars; preformed joint filler and saw cutting shall be considered as included in the cost of Concrete Superstructure.



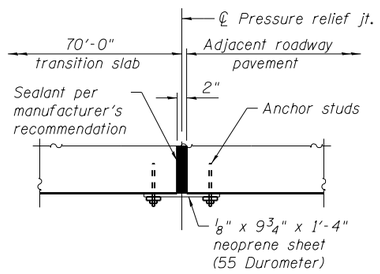
DETAIL F
BONDED PREFORMED JOINT SEALER



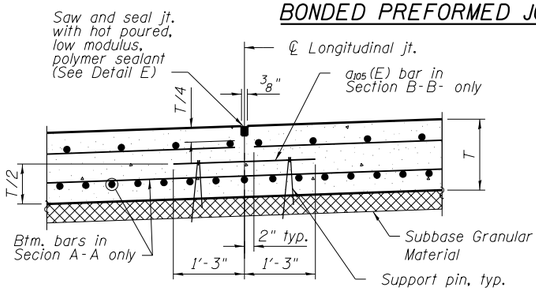
SECTION F-F
PRESSURE RELIEF JOINT



VIEW G-G
END ELEVATION OF
PRESSURE RELIEF JOINT



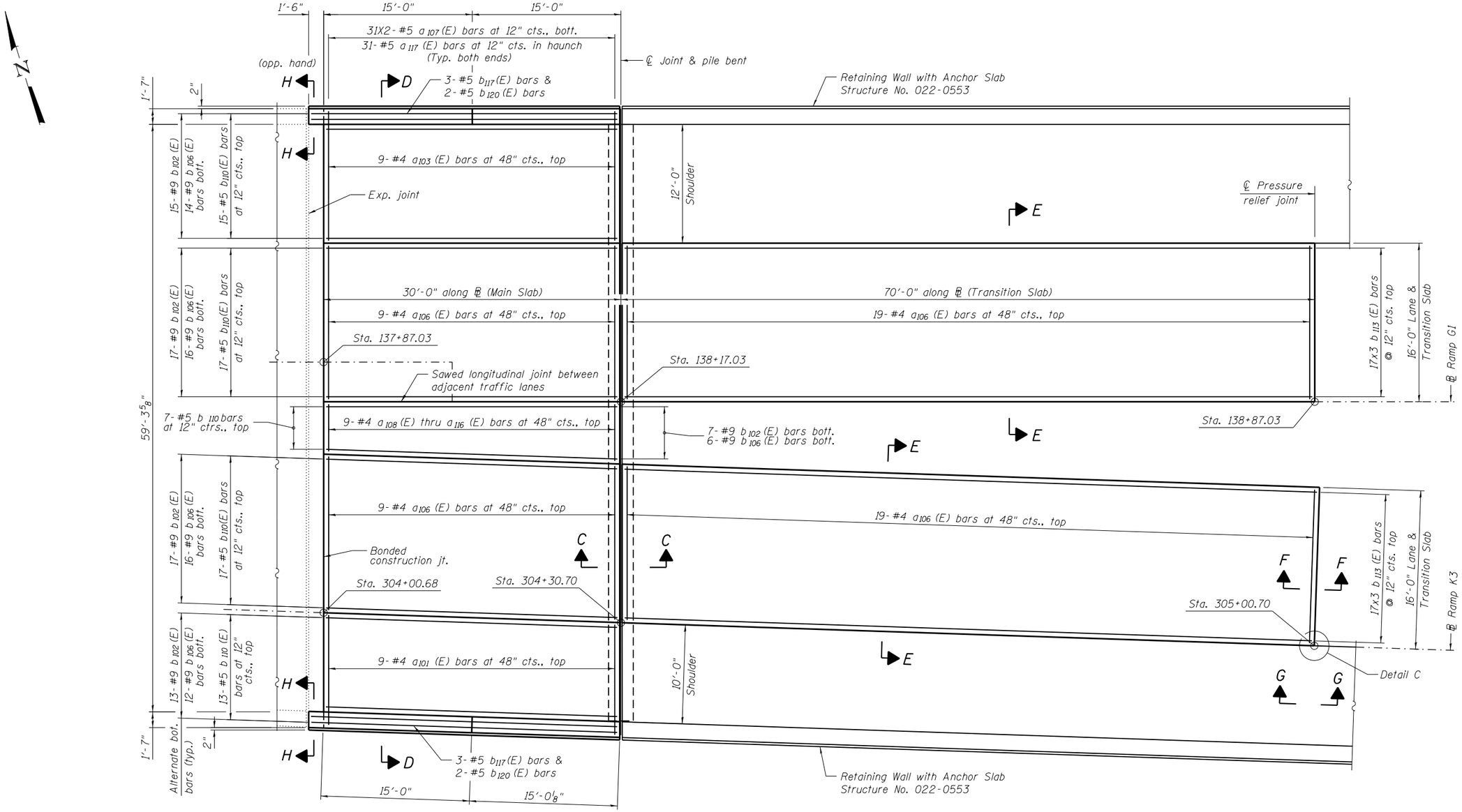
DETAIL C
END PLAN OF PRESSURE RELIEF JOINT



DETAIL A
TYPICAL LONGITUDINAL JOINT

FILE NAME = 0220557-60Y95-025-ApprSlab.dgn	USER NAME = esantiag	DESIGNED - KSM	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	NORTH APPROACH SLAB PLAN STRUCTURE NUMBER - 022-0557
CH2MHILL		CHECKED - CK/CM	REVISED -		SHEET NO. 25 OF 68 SHEETS
	PLOT SCALE = 10.6667 ' / in.	DRAWN - MRW	REVISED -		
	PLOT DATE = 11/19/2014	CHECKED - KSM	REVISED -		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	377
DRAWING NO. SD-25		CONTRACT NO. 60Y95		
ILLINOIS FED. AID PROJECT				



PLAN - SOUTH APPROACH SLAB

Notes:

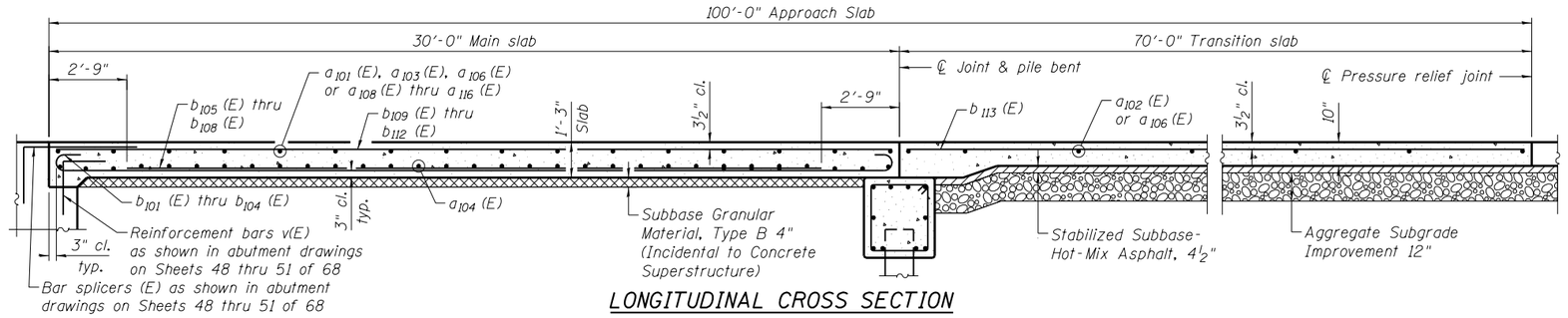
1. See Sheet 25 of 68 for Approach Slab notes.
2. See Sheet 27 of 68 for longitudinal and transverse Sections C-C, D-D and E-E.
3. See Sheet 25 of 68 for Detail C, Section F-F and View G-G.
4. See Sheet 28 of 68 for Section H-H.

FILE NAME = 02220557-60Y95-026-ApprSlab.dgn	USER NAME = asantiag	DESIGNED - KSM	REVISED -
CH2MHILL		CHECKED - CK/CM	REVISED -
	PLOT SCALE = 10.6667 ' / in.	DRAWN - MRW	REVISED -
	PLOT DATE = 11/19/2014	CHECKED - KSM	REVISED -

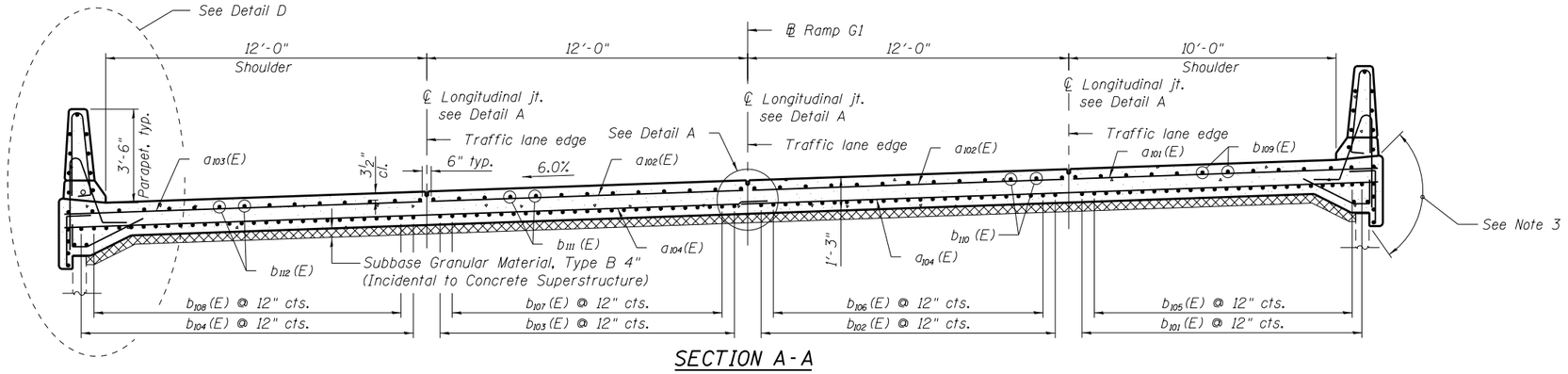
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH APPROACH SLAB PLAN
STRUCTURE NUMBER - 022-0557
SHEET NO. 26 OF 68 SHEETS

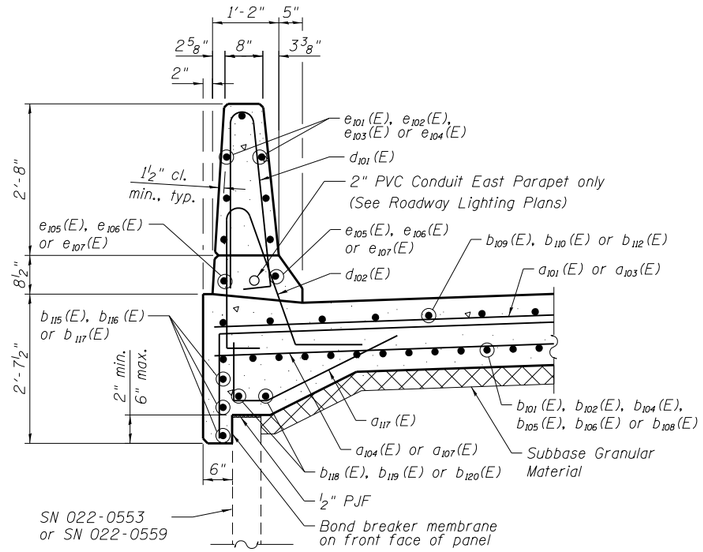
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	378
	DRAWING NO. SD-26	CONTRACT NO. 60Y95		
	ILLINOIS FED. AID PROJECT			



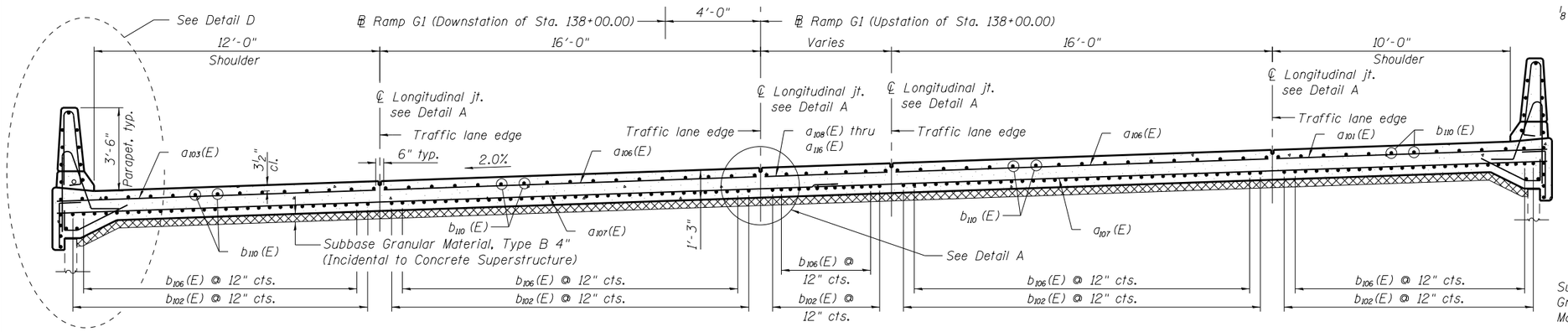
LONGITUDINAL CROSS SECTION



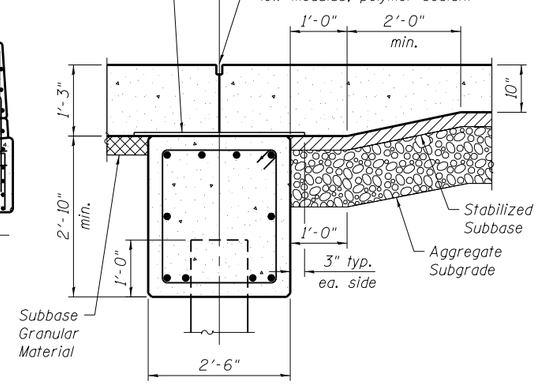
SECTION A-A



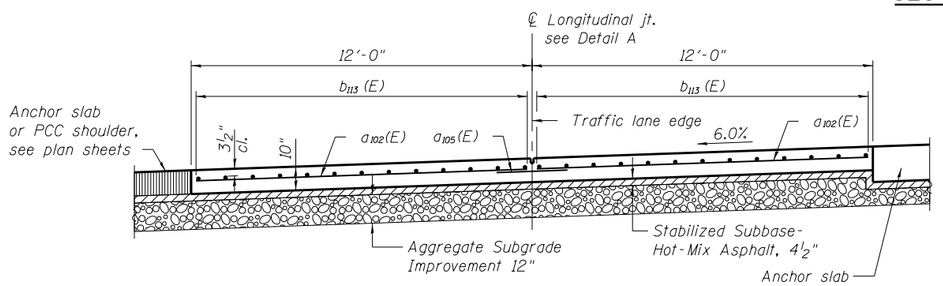
DETAIL D



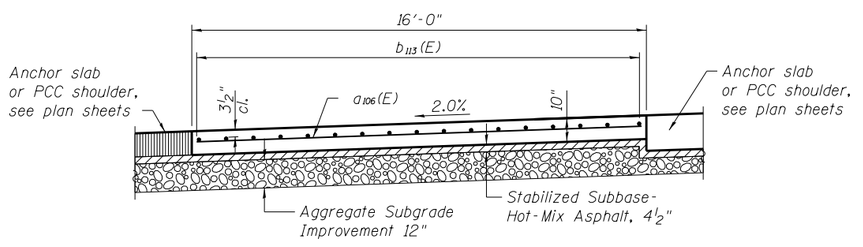
SECTION D-D



SECTION C-C



SECTION B-B



SECTION E-E

Notes:

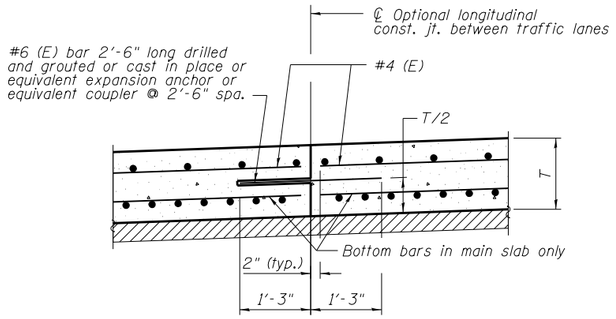
1. Work this sheet with Sheets 25, 26 and 28 of 68.
2. See Sheet 25 of 68 for Detail A.
3. Apply concrete stain to edge of approach slab full length, both parapets, both approaches. Cost of stain included with Concrete Superstructures.

FILE NAME = 0220557-60Y95-027-ApprDet.dgn	USER NAME = asantiag	DESIGNED - KSM	REVISED -
		CHECKED - CK/CM	REVISED -
CH2MHILL®	PLOT SCALE = 5.3334 ' / in.	DRAWN - MRW	REVISED -
	PLOT DATE = 11/19/2014	CHECKED - KSM	REVISED -

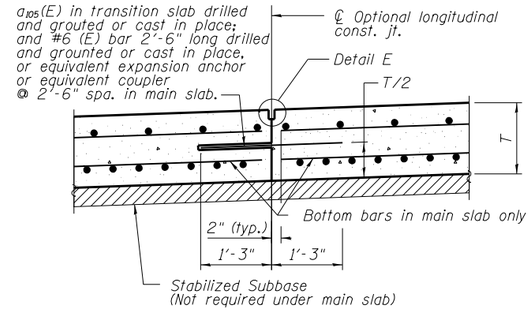
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

APPROACH SLAB SECTIONS & DETAILS I
STRUCTURE NUMBER – 022-0557
SHEET NO. 27 OF 68 SHEETS

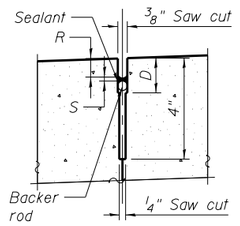
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	379
	DRAWING NO. SD-27	CONTRACT NO. 60Y95		
	ILLINOIS FED. AID PROJECT			



CROSS SECTION THRU OPTIONAL LONGITUDINAL CONSTRUCTION JOINT BETWEEN TRAFFIC LANES

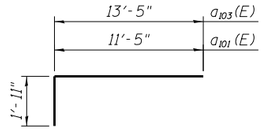


CROSS SECTION THRU LONGITUDINAL JOINT WITH OPTIONAL CONSTRUCTION JOINT

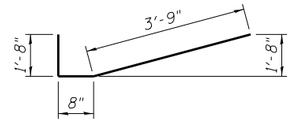


Note:
Dimensions D, R & S are as recommended by the sealant manufacturer.

DETAIL E



BARS a_{101}(E) & a_{103}(E)

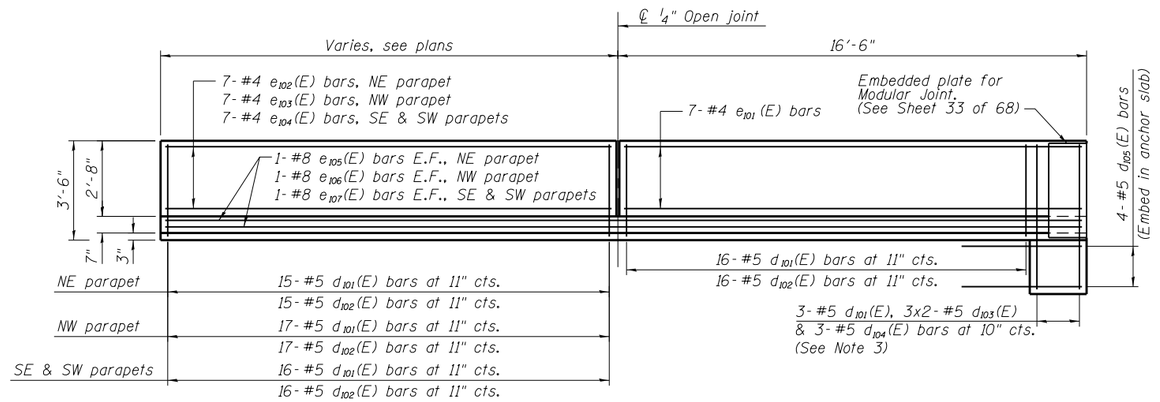


BAR a_{117}(E)

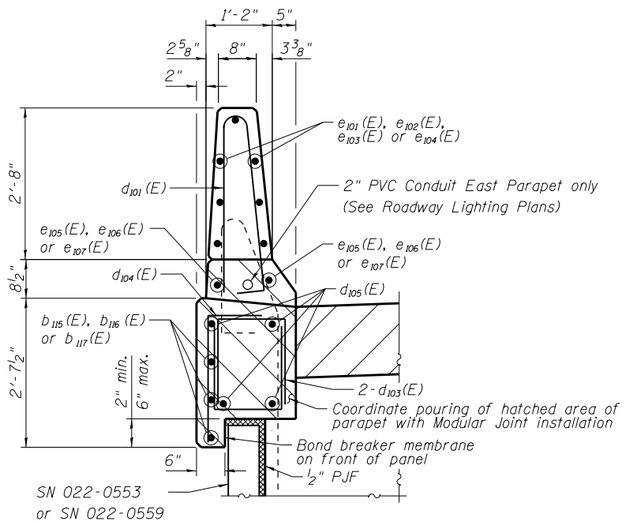
TWO APPROACHES BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a_{101}(E)	18	#4	13'-4"	
a_{102}(E)	56	#4	11'-8"	
a_{103}(E)	18	#4	15'-4"	
a_{104}(E)	62	#5	26'-5"	
a_{105}(E)	29	#6	2'-6"	
a_{106}(E)	56	#4	15'-8"	
a_{107}(E)	62	#5	33'-6"	
a_{108}(E)	1	#4	4'-11"	
a_{109}(E)	1	#4	5'-0"	
a_{110}(E)	1	#4	5'-2"	
a_{111}(E)	1	#4	5'-3"	
a_{112}(E)	1	#4	5'-5"	
a_{113}(E)	1	#4	5'-6"	
a_{114}(E)	1	#4	5'-8"	
a_{115}(E)	1	#4	5'-9"	
a_{116}(E)	1	#4	5'-11"	
a_{117}(E)	124	#5	6'-1"	
b_{101}(E)	13	#9	32'-8"	
b_{102}(E)	82	#9	32'-3"	
b_{103}(E)	13	#9	31'-9"	
b_{104}(E)	15	#9	31'-4"	
b_{105}(E)	13	#9	24'-11"	
b_{106}(E)	76	#9	24'-6"	
b_{107}(E)	12	#9	24'-1"	
b_{108}(E)	14	#9	23'-7"	
b_{109}(E)	13	#5	30'-2"	
b_{110}(E)	82	#5	29'-9"	
b_{111}(E)	13	#5	29'-4"	
b_{112}(E)	15	#5	28'-10"	
b_{113}(E)	180	#5	26'-3"	
b_{115}(E)	3	#5	30'-3"	
b_{116}(E)	3	#5	32'-0"	
b_{117}(E)	6	#5	31'-2"	
b_{118}(E)	2	#5	28'-9"	
b_{119}(E)	2	#5	30'-6"	
b_{120}(E)	4	#5	29'-8"	
d_{101}(E)	140	#5	6'-10"	
d_{102}(E)	128	#5	8'-0"	
d_{103}(E)	24	#5	3'-0"	
d_{104}(E)	12	#5	2'-10"	
d_{105}(E)	16	#5	3'-6"	
e_{101}(E)	28	#4	16'-3"	
e_{102}(E)	7	#4	13'-10"	
e_{103}(E)	7	#4	15'-6"	
e_{104}(E)	14	#4	14'-9"	
e_{105}(E)	2	#8	30'-4"	
e_{106}(E)	2	#8	32'-0"	
e_{107}(E)	4	#8	31'-3"	

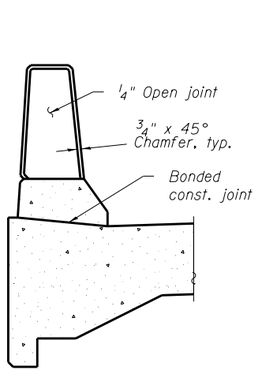
ITEM	UNIT	QUANTITY
Bridge Deck Grooving	Sq. Yd.	326
Protective Coat	Sq. Yd.	413
Concrete Superstructure	Cu. Yd.	299.7
Reinforcement Bars, Epoxy Coated	Pound	41,990



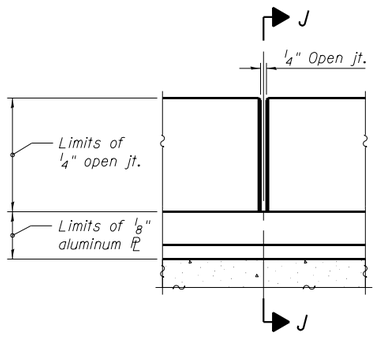
BARRIER ELEVATION



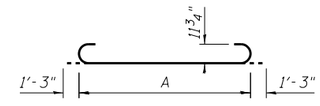
SECTION H-H



SECTION J-J

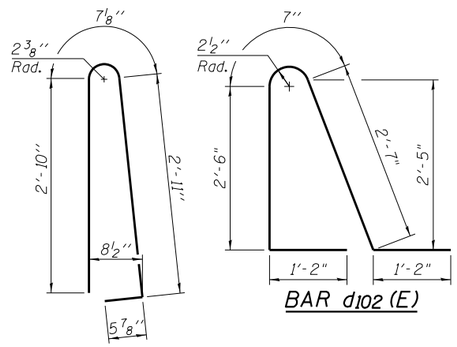


ELEVATION DETAIL OF BARRIER JOINT



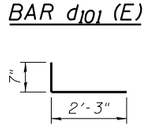
BARS A DIMENSIONS

Bar	A
b_{101}(E)	30'-2"
b_{102}(E)	29'-9"
b_{103}(E)	29'-3"
b_{104}(E)	28'-10"

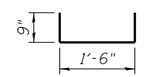


BAR d_{101} (E)

BAR d_{102} (E)



BAR d_{104}(E)



BAR d_{103}(E)

Notes:

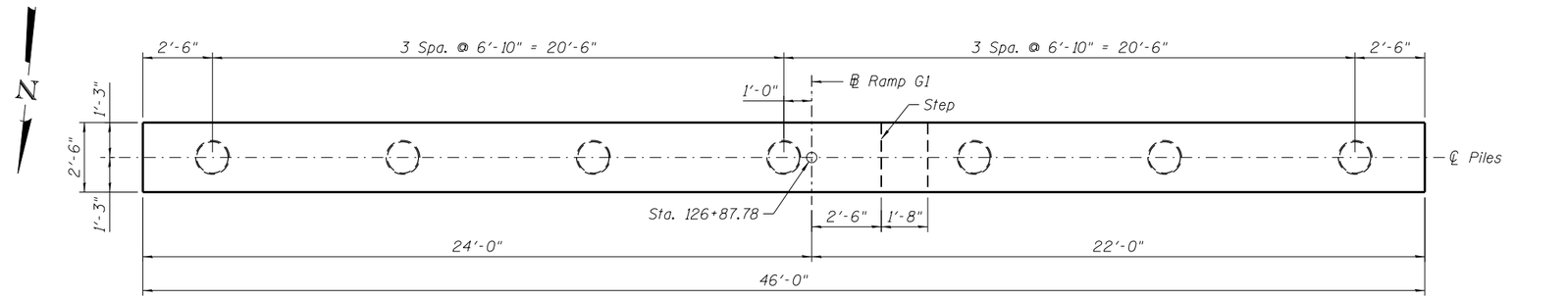
1. Work this sheet with Sheets 25 thru 27 of 68.
2. The dimension T is the thickness of the main slab (1'-3") or the transition slab (10").
3. Place d_{101}(E) and e (E) series bars to maintain 1 1/2" cover behind embedded plates. See Sheet 33 of 68 for details.

FILE NAME = 0220557-60Y95-028-ApprDet.dgn	USER NAME = esantiag	DESIGNED - KSM	REVISED -
CH2MHILL		CHECKED - CK/CM	REVISED -
	PLOT SCALE = 10.6667 ' / in.	DRAWN - MRW	REVISED -
	PLOT DATE = 12/5/2014	CHECKED - KSM	REVISED -

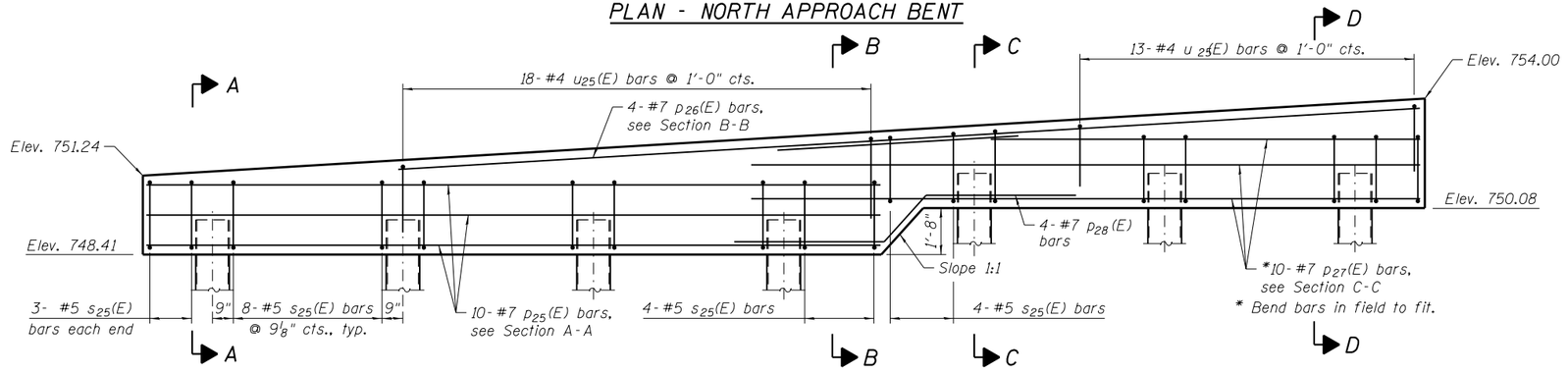
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

APPROACH SLAB SECTIONS & DETAILS II
STRUCTURE NUMBER – 022–0557
SHEET NO. 28 OF 68 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	380
DRAWING NO. SD-28		CONTRACT NO. 60Y95		
	ILLINOIS FED. AID PROJECT			



PLAN - NORTH APPROACH BENT

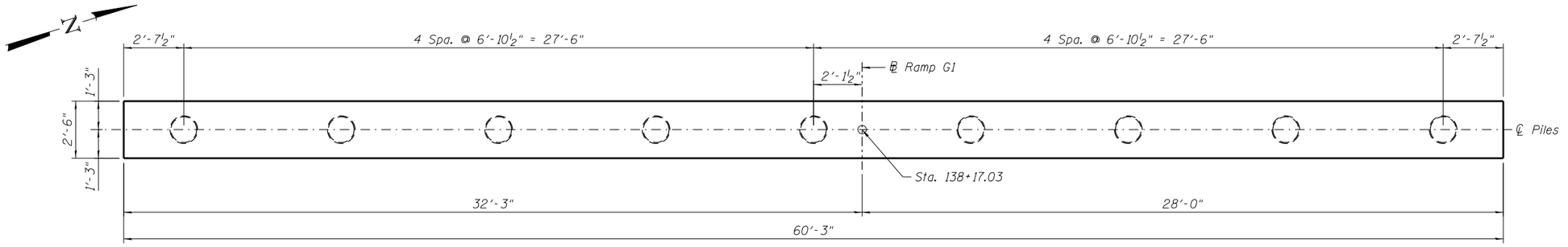


ELEVATION - NORTH APPROACH BENT

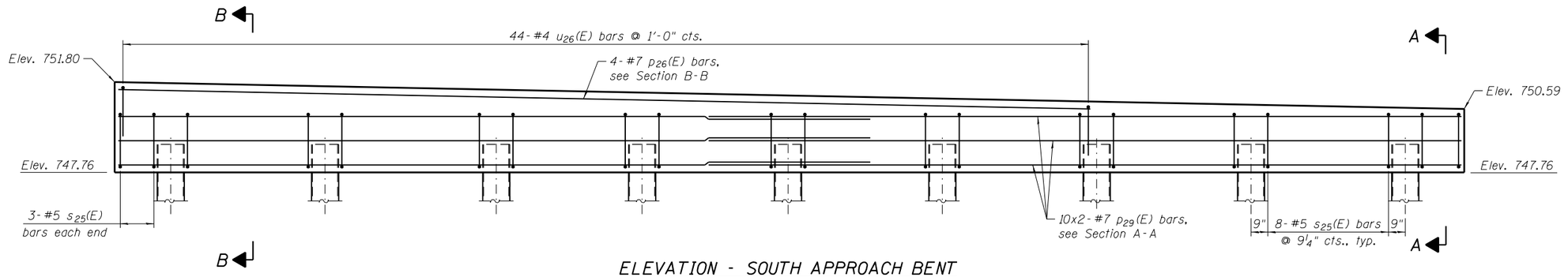
Notes:

1. Bars indicated thus "12x5- #5 etc." indicate 12 lines or bars with 5 lengths per line.

2. Work this Sheet with Sheet 30 of 68.



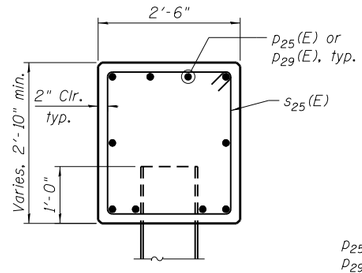
PLAN - SOUTH APPROACH BENT



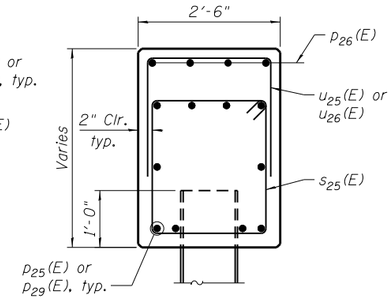
ELEVATION - SOUTH APPROACH BENT

FILE NAME = 0220557-60Y95-029-ApprBent.dgn	USER NAME = asantiag	DESIGNED - KSM	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	APPROACH BENT PLANS & ELEVATIONS STRUCTURE NUMBER – 022-0557
CH2MHILL®		CHECKED - CK/CM	REVISED -		
	PLOT SCALE = 5.3334 ' / in.	DRAWN - MRW	REVISED -		SHEET NO. 29 OF 68 SHEETS
	PLOT DATE = 11/19/2014	CHECKED - KSM	REVISED -		

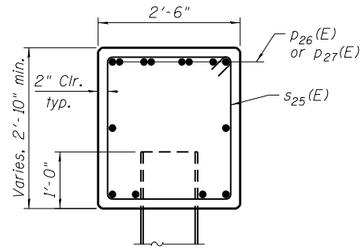
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	381
DRAWING NO. SD-29		CONTRACT NO. 60Y95		
ILLINOIS FED. AID PROJECT				



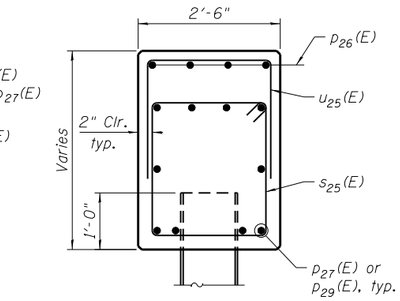
SECTION A-A



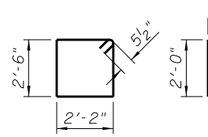
SECTION B-B



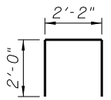
SECTION C-C



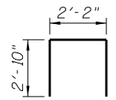
SECTION D-D



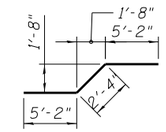
BAR s_{25}(E)



BAR u_{25}(E)



BAR u_{26}(E)



BAR p_{28}(E)

PILE DATA

Type: Metal Shell 14 in. dia. x 0.312 in. walls with pile shoes
Nominal Required Bearing: 365 kips
Factored Resistance Available: 200 kips
Est. Length: 88' South Approach
109' North Approach
No. Production Piles: 8 South Approach
6 North Approach
No. Test Piles: 1 South Approach
1 North Approach

Pile installation notes:

1. All piles shall be reinforced. See Sheet 60 of 68 for details.
2. Refer to Sheets 49 and 51 of 68 for pile installation requirements.

NORTH APPROACH BENT

REINFORCEMENT BAR LIST

Bar	No.	Size	Length	Shape
p_{25}(E)	10	#7	23'-6"	—
p_{26}(E)	4	#7	38'-0"	—
p_{27}(E)	10	#7	25'-0"	—
p_{28}(E)	4	#7	12'-8"	⌐
s_{25}(E)	54	#5	10'-3"	□
u_{25}(E)	31	#4	6'-2"	⌐

BILL OF MATERIAL

Reinforcement Bars, Epoxy Coated	Pound	2110
Furnishing Metal Shell Piles 14" x 0.312"	Foot	654
Test Pile Metal Shells	Each	1
Driving Piles	Foot	654
Concrete Structures	Cu. Yd.	15.1
Pile Shoes	Each	7

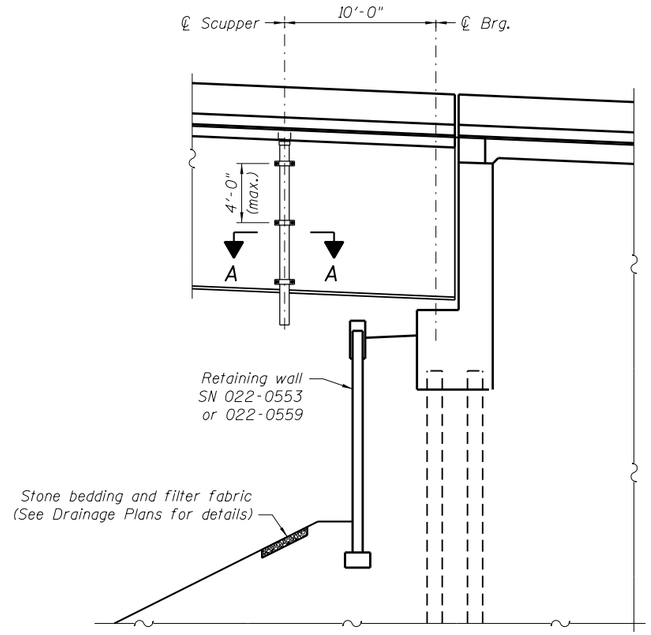
SOUTH APPROACH BENT

REINFORCEMENT BAR LIST

Bar	No.	Size	Length	Shape
p_{26}(E)	4	#7	38'-0"	—
p_{29}(E)	20	#7	33'-6"	—
s_{25}(E)	70	#5	10'-3"	□
u_{26}(E)	44	#4	7'-10"	⌐

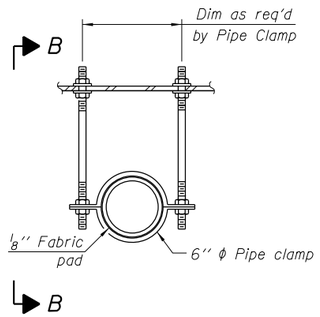
BILL OF MATERIAL

Reinforcement Bars, Epoxy Coated	Pound	2660
Furnishing Metal Shell Piles 14" x 0.312"	Foot	704
Test Pile Metal Shells	Each	1
Driving Piles	Foot	704
Concrete Structures	Cu. Yd.	19.2
Pile Shoes	Each	9

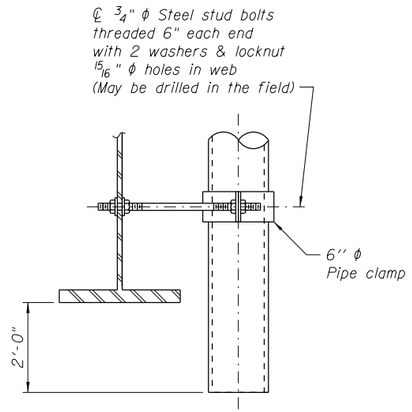


ELEVATION VIEW - ABUTMENT

(South abutment as shown, North abutment similar)



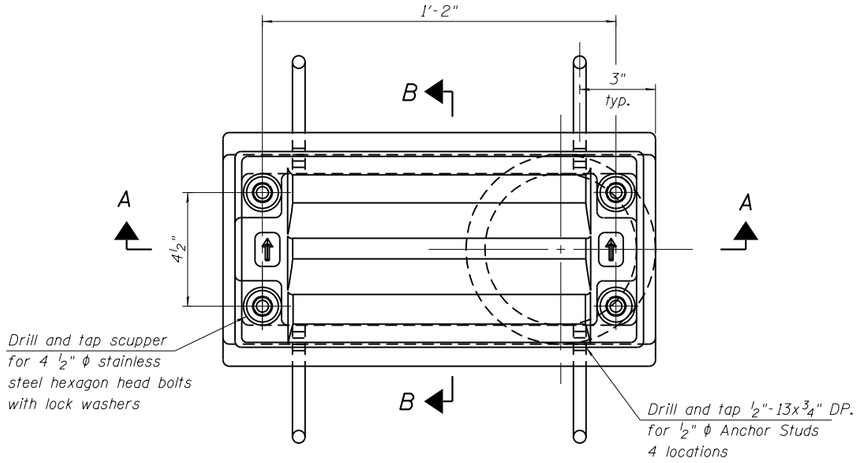
SECTION A-A



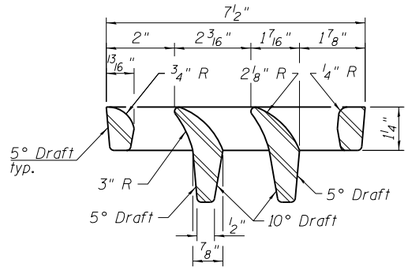
VIEW B-B

Note: Costs for pipe clamps, fabric pads, steel stud bolts, locknuts, washers and drilling holes are all included with Drainage Scuppers, DS-11

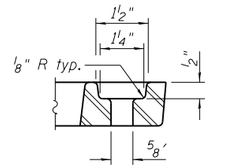
FILE NAME = 0220557-60Y95-031-DrainDet.dgn	USER NAME = asantiag	DESIGNED - KSM	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DRAINAGE DETAILS STRUCTURE NUMBER – 022–0557	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH2MHILL®		CHECKED - CK/CM	REVISED -			345	2013-083-R&B	DUPAGE	759	383
	PLOT SCALE = 10.0000 ' / in.	DRAWN - MRW	REVISED -		SHEET NO. 31 OF 68 SHEETS		DRAWING NO. SD-31		CONTRACT NO. 60Y95	
	PLOT DATE = 11/19/2014	CHECKED - KSM	REVISED -				ILLINOIS	FED. AID PROJECT		



PLAN

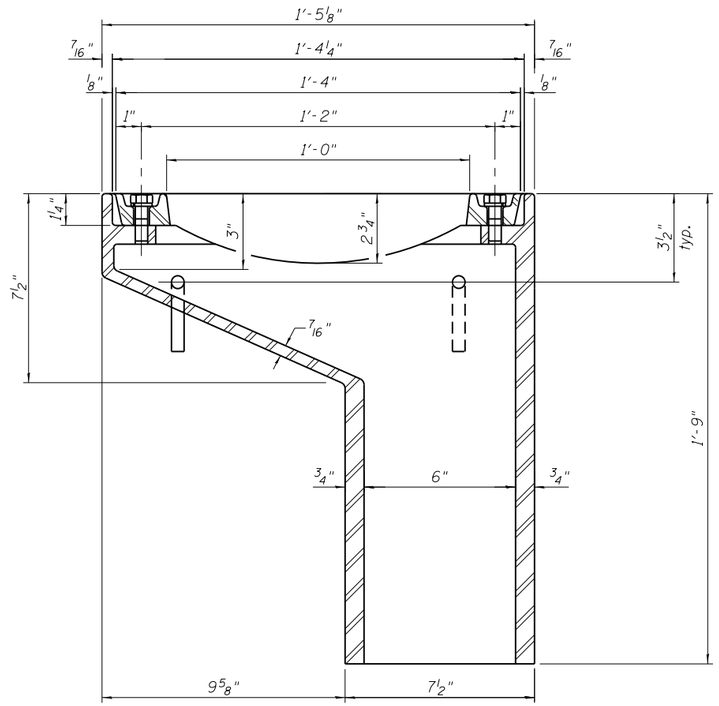


VANE GRATE DETAIL

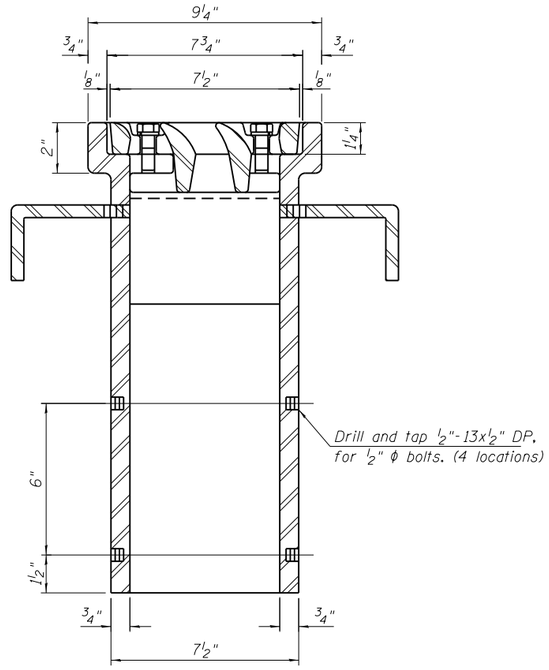


BOLT HOLE DETAIL

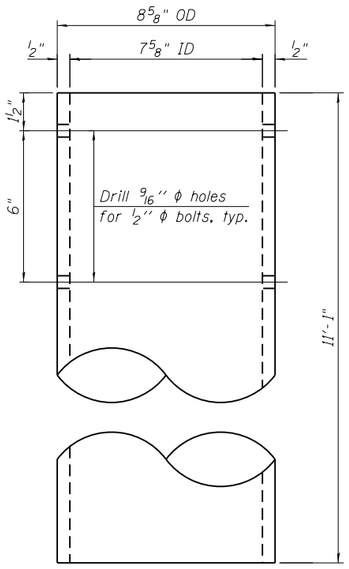
Notes:
All cast iron parts shall be gray iron conforming to the requirements of AASHTO M 105, Class 35B.
Bolts, anchor studs, washers and nuts shall conform to the requirements of ASTM A 307 and shall be galvanized according to AASHTO M 232.
Downspouts located on the exterior side of a painted steel fascia beam shall be painted with the finish coat specified for the exterior side of the fascia beam.
As an alternate, bolts, anchor studs, washers and nuts may be stainless steel 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 frame. Fillet or full penetration welds shall be used for the weldments. Details shall be submitted to the Engineer for approval. Structural steel weldments shall not be substituted for the cast iron scupper grate. Structural steel frames and downspouts shall be galvanized according to AASHTO M111.
The Contractor shall take appropriate measures to assure that Protective Coat is not applied to the scupper.
Cost of the Grate, Frame, Downspout, Anchor Studs, Bolts, Washers and Nuts including complete installation of the scupper shall be paid for at the contract unit price each for Drainage Scupper, DS-11.
Alternate fiberglass downspout conforming to ASTM D 2996 with a short-time rupture strength hoop tensile stress of 30,000 psi min. may be used in lieu of the cast iron or steel equivalent.



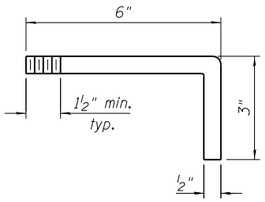
SECTION A-A
See Sheet 24 of 68 for scupper location relative to parapet



SECTION B-B



DOWNSPOUT



ANCHOR STUD DETAIL

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANT.
Drainage Scupper, DS-11	Each	2

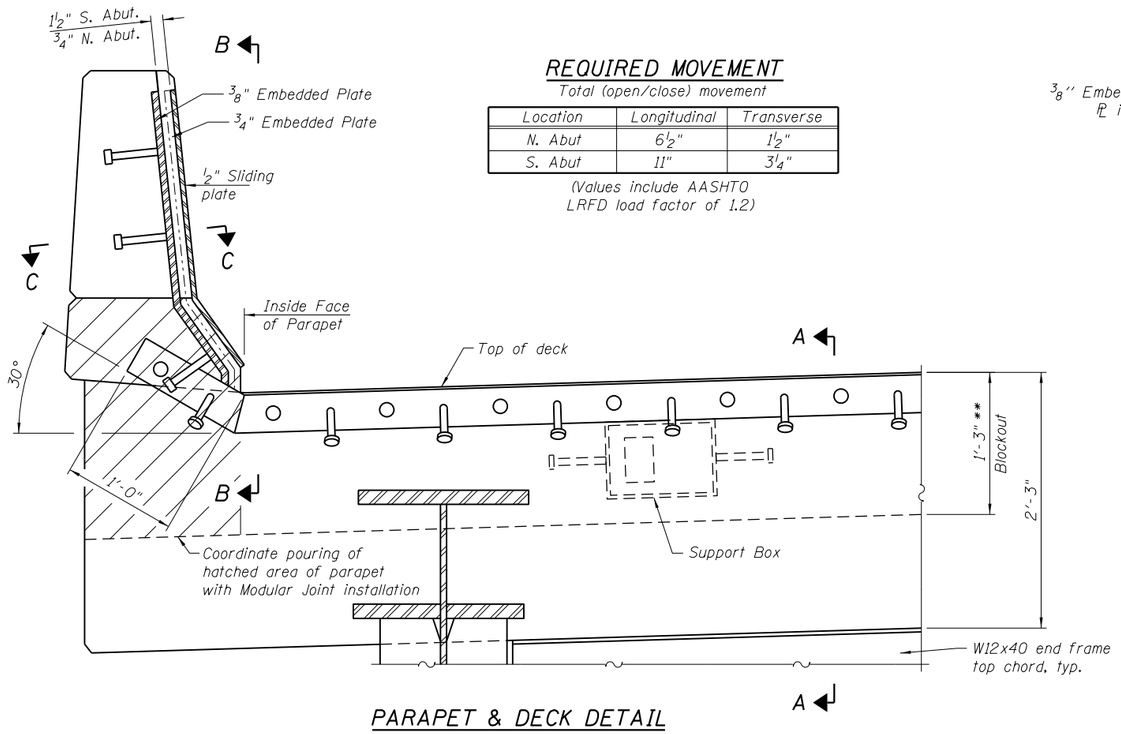
DS-11 7-1-10

FILE NAME = 0220557-60Y95-032-Scupper.dgn	USER NAME = esantiag	DESIGNED - KSM	REVISED -
		CHECKED - CK/CM	REVISED -
CH2MHILL	PLOT SCALE = 0.5000 ' / in.	DRAWN - MRW	REVISED -
	PLOT DATE = 11/19/2014	CHECKED - KSM	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DRAINAGE SCUPPER
STRUCTURE NUMBER - 022-0557
SHEET NO. 32 OF 68 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	384
	DRAWING NO. SD-32		CONTRACT NO. 60Y95	
	ILLINOIS FED. AID PROJECT			



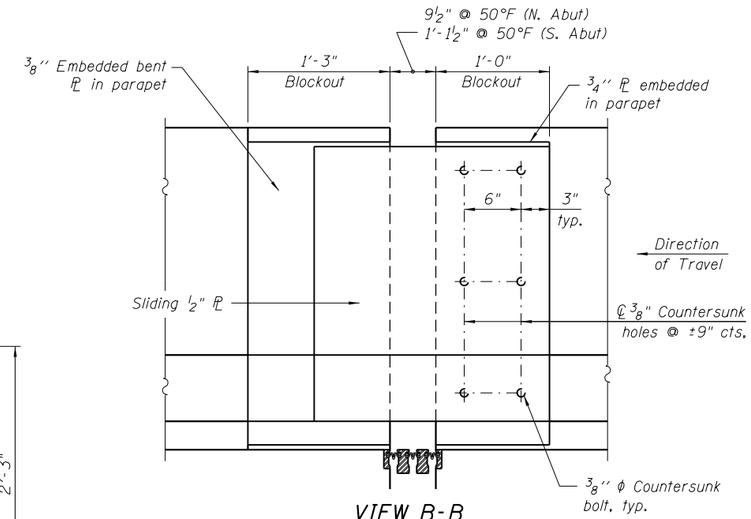
PARAPET & DECK DETAIL

REQUIRED MOVEMENT

Total (open/close) movement

Location	Longitudinal	Transverse
N. Abut	6½"	1½"
S. Abut	11"	3¼"

(Values include AASHTO LRFD load factor of 1.2)

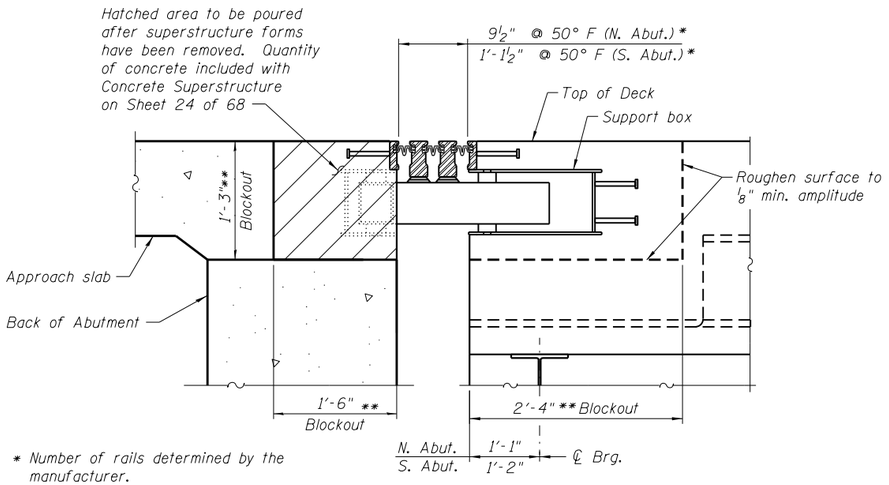


VIEW B-B

Parapet shown. Studs not shown for clarity.

Notes:

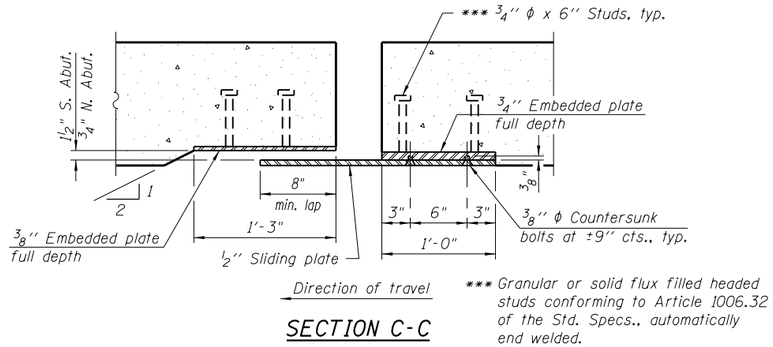
1. The expansion joint device shall be a prefabricated modular assembly with multiple support bars and separator beams providing a continuous seal across the deck.
2. Joint openings shall be adjusted according to article 520.04 of the Standard Specifications when the concrete blockout is cast at an ambient temperature other than 50° F.
3. The cost of furnishing and installing the barrier plate assemblies shall be included in the cost of Modular Expansion Joints.
4. Countersunk bolts shall be in accordance with ASTM A307, Grade A.
5. Countersunk bolts and concrete inserts shall be hot-dipped galvanized according to AASHTO M232.
6. The modular joints shall be fabricated to conform to the roadway profile and cross slope.
7. The joints shall be fabricated and installed according to the manufacturer's recommendations and as shown in the special provisions and as approved by the Engineer.
8. Concrete in end of the deck to be placed after the modular joint is fixed in position.
9. Modular expansion joints shall be assembled in their final relative position with the ends in place for shop inspection and acceptance.



SECTION A-A

* Number of rails determined by the manufacturer.

** Blockout dimensions to be verified by contractor with joint manufacturer. See additional details in Section A-A on Sheet 13 of 68.



SECTION C-C

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

BILL OF MATERIAL

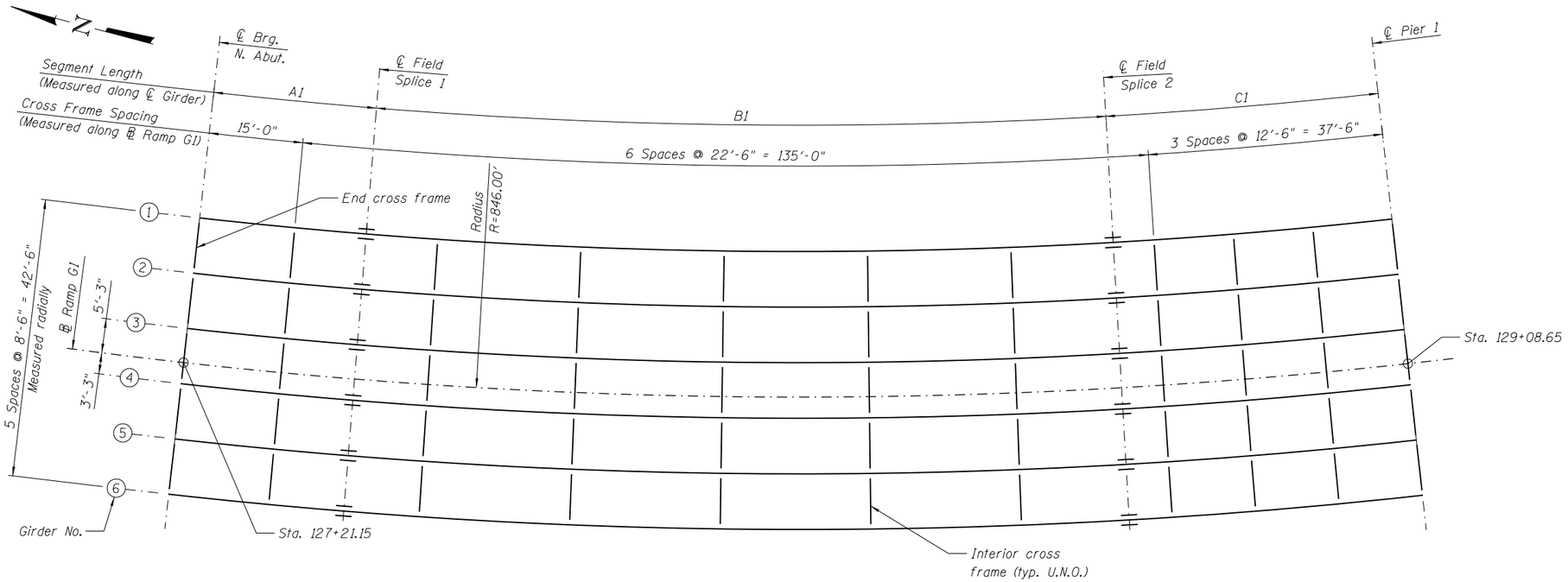
Item	Unit	Total
Modular Expansion Joint-Swivel 9"	Foot	46
Modular Expansion Joint-Swivel 12"	Foot	59

FILE NAME = 0220557-60Y95-033-ExpJoint.dgn	USER NAME = esantiag	DESIGNED - KSM	REVISED -
CH2MHILL®		CHECKED - CK/CM	REVISED -
	PLOT SCALE = 5.3332 ' / in.	DRAWN - MRW	REVISED -
	PLOT DATE = 12/5/2014	CHECKED - KSM	REVISED -

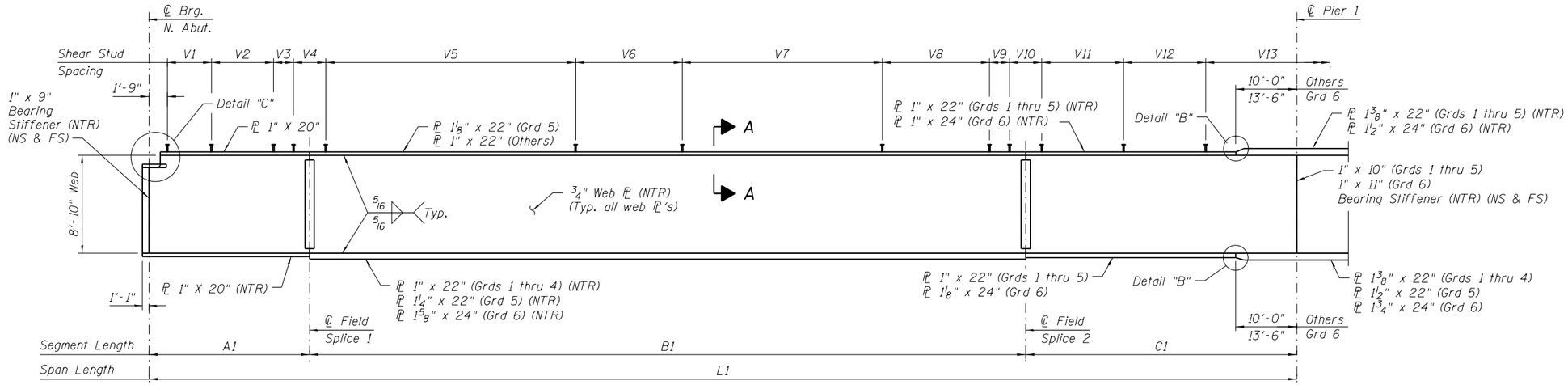
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SWIVEL MODULAR EXPASION JOINT DETAILS
STRUCTURE NUMBER - 022-0557
SHEET NO. 33 OF 68 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	385
DRAWING NO. SD-33		CONTRACT NO. 60Y95		
ILLINOIS FED. AID PROJECT				



FRAMING PLAN - SPAN 1



GIRDER ELEVATION - SPAN 1

Notes:

1. All flange plates, web plates and bearing stiffeners shall be AASHTO M270, Grade 50.
2. Work this sheet with Sheets 35 thru 39 of 68.
3. Place all cross frames radially with respect to ℄ Ramp G1.
4. Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.
5. See Sheet 44 of 68 for Cross Frame Details.
6. All cross frames or diaphragms between girders shall be installed with erection pins and bolts in accordance with the erection plan approved by the Engineer. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
7. See Sheet 39 of 68 for Section A-A, Detail B & Detail C.
8. See Sheet 39 of 68 for Bearing Stiffener Details.

GIRDER DIMENSIONS

Girder	Radius	L1	A1	B1	C1
1	823.75	182'-6 13/16"	25'-6 11/16"	114'-3"	42'-9 1/8"
2	832.25	184'-5 3/8"	25'-9 7/8"	115'-5 1/16"	43'-2 7/16"
3	840.75	186'-4"	26'-1 1/16"	116'-7 1/4"	43'-7 11/16"
4	849.25	188'-2 5/8"	26'-4 3/16"	117'-9 7/16"	44'-1"
5	857.75	190'-1 3/16"	26'-7 3/8"	118'-11 9/16"	44'-6 1/4"
6	866.25	191'-11 13/16"	26'-10 9/16"	120'-1 11/16"	44'-11 9/16"

SHEAR STUD SPACING SPAN 1

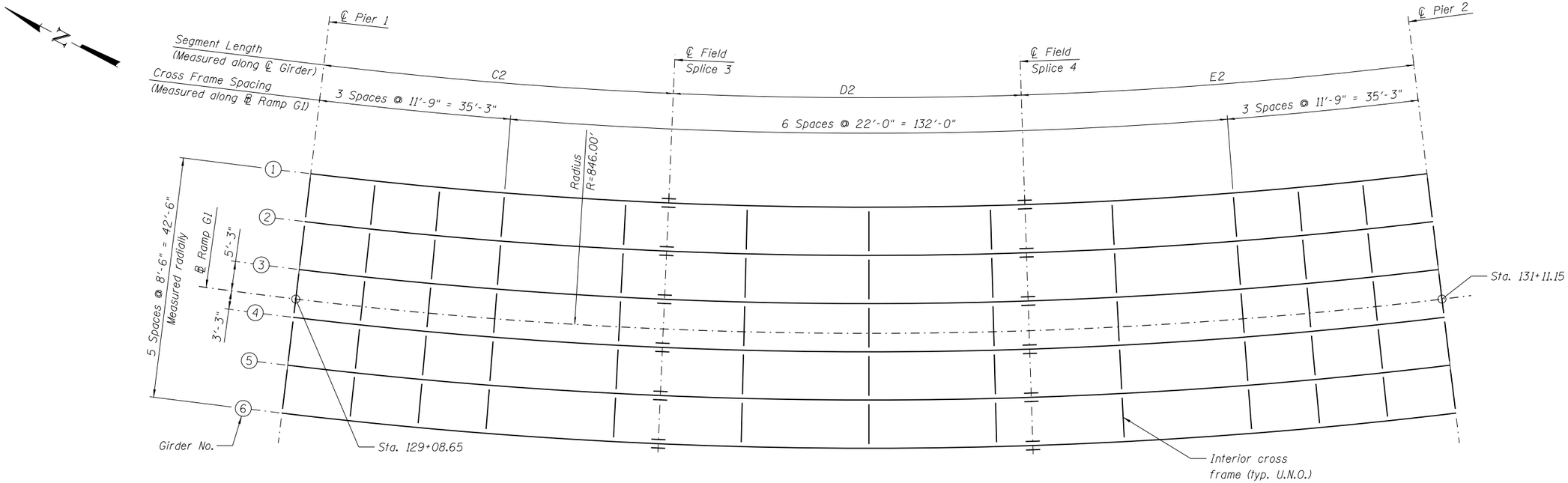
* Adjust last stud before 5" spacing to obtain minimum of 5" spacing between rows.

Girder	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12	V13
1	11 Spa @ 24"	-	1 Spa @ 5"	1 Spa @ 34"	55 Spa @ 24"	-	-	-	1 Spa @ 14"	1 Spa @ 40"	51 Spa @ 24"	-	-
2	11 Spa @ 24"	-	1 Spa @ 8"	1 Spa @ 34"	56 Spa @ 24"	-	-	-	1 Spa @ 5" *	1 Spa @ 40"	51 Spa @ 24"	-	-
3	11 Spa @ 24"	-	1 Spa @ 11"	1 Spa @ 34"	13 Spa @ 24"	47 Spa @ 22"	-	-	1 Spa @ 16"	1 Spa @ 40"	3 Spa @ 22"	49 Spa @ 24"	-
4	11 Spa @ 24"	-	1 Spa @ 14"	1 Spa @ 34"	4 Spa @ 24"	12 Spa @ 20"	47 Spa @ 19"	7 Spa @ 20"	1 Spa @ 7"	1 Spa @ 40"	2 Spa @ 20"	49 Spa @ 24"	2 Spa @ 21"
5	11 Spa @ 24"	-	1 Spa @ 17"	1 Spa @ 34"	13 Spa @ 24"	49 Spa @ 22"	-	-	-	1 Spa @ 41"	2 Spa @ 22"	50 Spa @ 24"	1 Spa @ 21"
6	4 Spa @ 19"	10 Spa @ 20"	1 Spa @ 9"	1 Spa @ 34"	8 Spa @ 24"	17 Spa @ 22"	40 Spa @ 21"	-	-	1 Spa @ 35"	5 Spa @ 21"	16 Spa @ 22"	16 Spa @ 19"

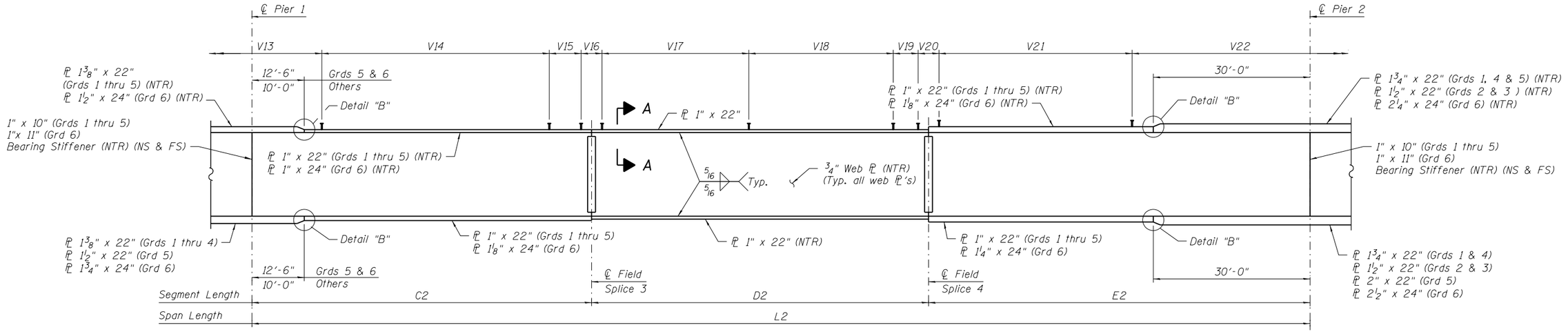
FILE NAME = 0220557-60Y95-034-Framing.dgn	USER NAME = esantiag	DESIGNED - KSM	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
CH2MHILL		CHECKED - CK/CM	REVISED -	
	PLOT SCALE = 20:0 '1' / in.	DRAWN - MRW	REVISED -	
	PLOT DATE = 11/19/2014	CHECKED - KSM	REVISED -	

FRAMING PLAN & GIRDER ELEVATION, SPAN 1
STRUCTURE NUMBER – 022-0557
SHEET NO. 34 OF 68 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	386
DRAWING NO. SD-34		CONTRACT NO. 60Y95		
ILLINOIS	FED. AID PROJECT			



FRAMING PLAN - SPAN 2



GIRDER ELEVATION - SPAN 2

GIRDER DIMENSIONS

Girder	Radius	L2	C2	D2	E2
1	823.75	197'-2 1/16"	63'-3 1/2"	62'-9 5/8"	71'-0 15/16"
2	832.25	199'-2 7/16"	63'-11 5/16"	63'-5 3/8"	71'-9 3/4"
3	840.75	201'-2 7/8"	64'-7 1/8"	64'-1 3/16"	72'-6 9/16"
4	849.25	203-3 5/16"	65'-3"	64'-8 15/16"	73'-3 3/8"
5	857.75	205'-3 11/16"	65'-10 13/16"	65'-4 3/4"	74'-0 1/8"
6	866.25	207'-4 1/8"	66'-6 11/16"	66'-0 1/2"	74'-8 15/16"

SHEAR STUD SPACING SPAN 2

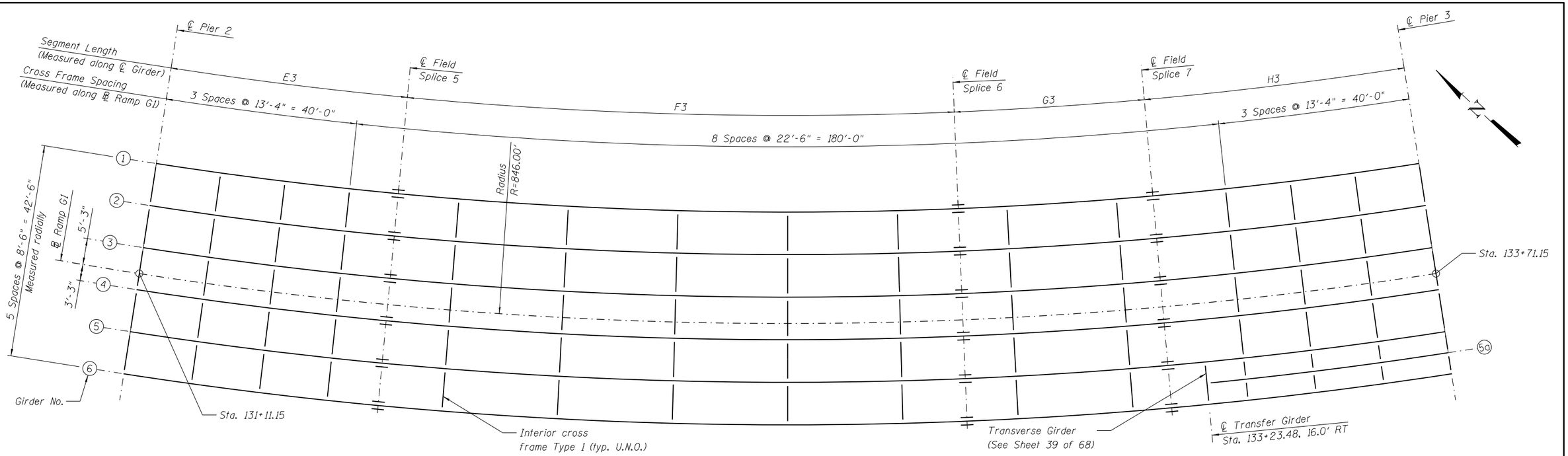
* Adjust last stud before 5" spocing to obtain minimum of 5" spacing between rows.

Girder	V14	V15	V16	V17	V18	V19	V20	V21	V22
1	-	1 Spa @ 8"	1 Spa @ 40"	29 Spa @ 24"	-	1 Spa @ 18"	1 Spa @ 40"	58 Spa @ 24"	-
2	-	1 Spa @ 22"	1 Spa @ 40"	30 Spa @ 24"	-	-	1 Spa @ 41"	58 Spa @ 24"	-
3	-	1 Spa @ 17"	1 Spa @ 40"	33 Spa @ 22"	-	1 Spa @ 5" *	1 Spa @ 40"	17 Spa @ 22"	43 Spa @ 24"
4	-	1 Spa @ 15"	1 Spa @ 40"	6 Spa @ 21"	32 Spa @ 19"	1 Spa @ 5" *	1 Spa @ 40"	7 Spa @ 19"	11 Spa @ 20"
5	-	1 Spa @ 20"	1 Spa @ 40"	35 Spa @ 21"	-	1 Spa @ 10"	1 Spa @ 40"	18 Spa @ 21"	44 Spa @ 24"
6	27 Spa @ 20"	1 Spa @ 5" *	1 Spa @ 34"	7 Spa @ 20"	32 Spa @ 19"	1 Spa @ 10"	1 Spa @ 34"	25 Spa @ 21"	25 Spa @ 24"

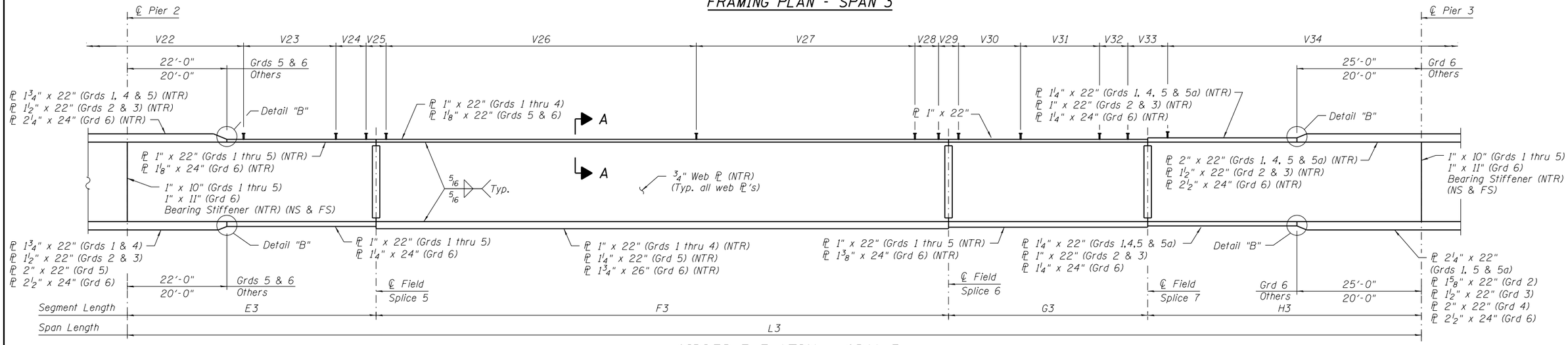
Notes:
1. See Sheet 34 of 68 for Notes.
2. See Sheet 39 of 68 for Section A-A and Detail B.
3. See Sheet 39 of 68 for Bearing Stiffener Details.

FILE NAME = 0220557-60Y95-035-Framing.dgn	USER NAME = asantiag	DESIGNED - KSM	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	FRAMING PLAN & GIRDER ELEVATION, SPAN 2 STRUCTURE NUMBER - 022-0557
CH2MHILL		CHECKED - CK/CM	REVISED -		SHEET NO. 35 OF 68 SHEETS
	PLOT SCALE = 20.0 '/ in.	DRAWN - MRW	REVISED -		
	PLOT DATE = 11/19/2014	CHECKED - KSM	REVISED -		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	387
DRAWING NO. SD-35		CONTRACT NO. 60Y95		
ILLINOIS FED. AID PROJECT				



FRAMING PLAN - SPAN 3



GIRDER ELEVATION - SPAN 3

GIRDER DIMENSIONS

Girder	Radius	L3	E3	F3	G3	H3
1	823.75	253'-1 7/8"	48'-8 1/4"	111'-11 11/16"	38'-11 3/8"	53'-6 9/16"
2	832.25	255'-9 1/4"	49'-2 1/4"	113'-1 9/16"	39'-4 3/16"	54'-1 1/4"
3	840.75	258'-4 9/16"	49'-8 5/16"	114'-3 7/16"	39'-9"	54'-7 13/16"
4	849.25	260'-11 15/16"	50'-2 5/16"	115'-5 1/4"	40'-1 13/16"	55'-2 9/16"
5	857.75	263'-7 1/4"	50'-8 5/16"	116'-7 1/8"	40'-6 11/16"	55'-9 1/8"
5a	862.00	-	-	-	-	48'-6 15/16"
6	866.25	266'-2 5/8"	51'-2 3/8"	117'-9"	40'-11 1/2"	56'-3 3/4"

SHEAR STUD SPACING SPAN 3

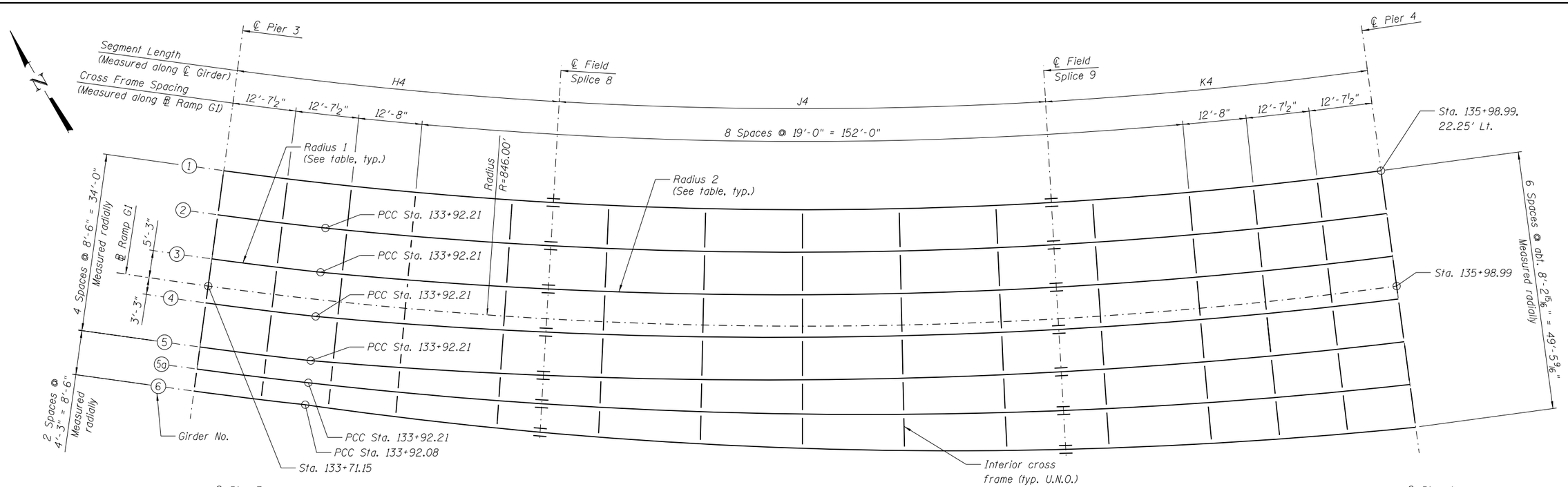
* First stud row starts 1'-0" from ℄ of Transfer Girder

Girder	V23	V24	V25	V26	V27	V28	V29	V30	V31	V32	V33	V34
1	-	1 Spa @ 5"	1 Spa @ 40"	54 Spa @ 24"	-	1 Spa @ 8"	1 Spa @ 40"	17 Spa @ 24"	-	1 Spa @ 19"	1 Spa @ 40"	56 Spa @ 24"
2	-	1 Spa @ 20"	1 Spa @ 40"	54 Spa @ 24"	-	1 Spa @ 22"	1 Spa @ 40"	18 Spa @ 24"	-	-	1 Spa @ 40"	57 Spa @ 24"
3	-	1 Spa @ 21"	1 Spa @ 40"	11 Spa @ 24"	48 Spa @ 22"	1 Spa @ 12"	1 Spa @ 40"	19 Spa @ 22"	-	1 Spa @ 19"	1 Spa @ 40"	57 Spa @ 24"
4	45 Spa @ 24"	1 Spa @ 8"	1 Spa @ 40"	29 Spa @ 20"	40 Spa @ 19"	1 Spa @ 6"	1 Spa @ 40"	9 Spa @ 19"	13 Spa @ 20"	1 Spa @ 11"	1 Spa @ 40"	15 Spa @ 20"
5	-	1 Spa @ 22"	1 Spa @ 40"	12 Spa @ 24"	48 Spa @ 22"	1 Spa @ 15"	1 Spa @ 40"	20 Spa @ 22"	-	1 Spa @ 7"	1 Spa @ 40"	59 Spa @ 24"
5a	-	-	-	-	-	-	-	-	-	-	-	6 Spa @ 21" *
6	16 Spa @ 21"	1 Spa @ 13"	1 Spa @ 40"	65 Spa @ 21"	-	1 Spa @ 8"	1 Spa @ 40"	12 Spa @ 20"	10 Spa @ 21"	-	1 Spa @ 42"	9 Spa @ 21"

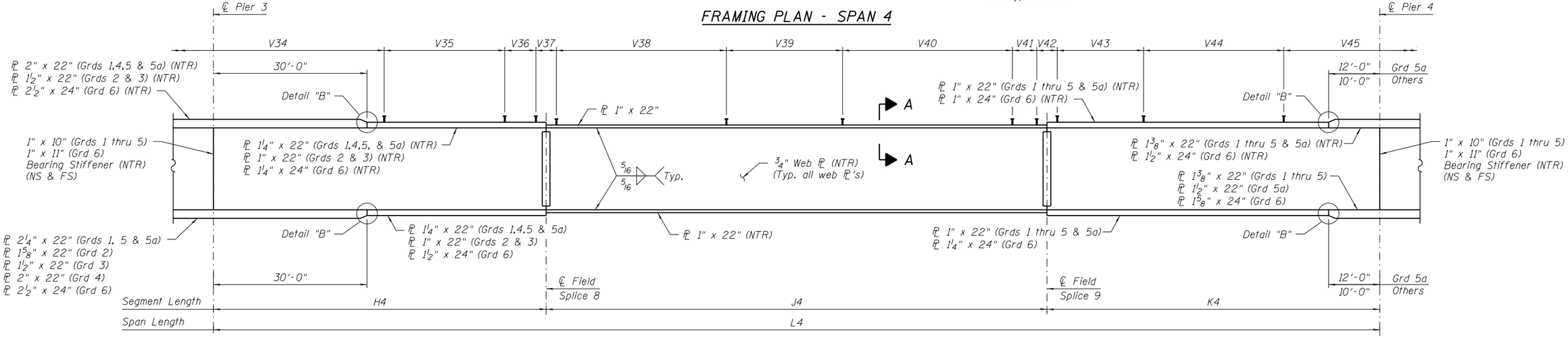
Notes:
1. See Sheet 34 of 68 for Notes.
2. See Sheet 39 of 68 for Section A-A and Detail B.
3. See Sheet 39 of 68 for Bearing Stiffener Details.

FILE NAME = 0220557-60Y95-036-Framing.dgn	USER NAME = asantiag	DESIGNED - KSM	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
CH2MHILL	PLOT SCALE = 20.0 '/ in.	CHECKED - CK/CM	REVISED -	FRAMING PLAN & GIRDER ELEVATION, SPAN 3
	PLOT DATE = 11/19/2014	DRAWN - MRW	REVISED -	STRUCTURE NUMBER - 022-0557
		CHECKED - KSM	REVISED -	SHEET NO. 36 OF 68 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	388
DRAWING NO. SD-36		CONTRACT NO. 60Y95		
ILLINOIS FED. AID PROJECT				



FRAMING PLAN - SPAN 4



GIRDER ELEVATION - SPAN 4

GIRDER DIMENSIONS

Girder	Radius 1	Radius 2	L4	H4	J4	K4
1	823.75	823.75	221'-10⅛"	63'-3½"	95'-3⅛"	63'-3½"
2	832.25	868.3199	224'-0¾"	63'-11 5/16"	96'-2 7/16"	63'-11"
3	840.75	916.1847	226'-3⅜"	64'-7 1/16"	97'-1¾"	64'-6 9/16"
4	849.25	967.6968	228'-6"	65'-2 7/8"	98'-1 1/16"	65'-2 1/16"
5	857.75	1023.2633	230'-8 11/16"	65'-10 11/16"	99'-0⅜"	65'-9⅝"
5a	862.00	941.4304	232'-5⅜"	66'-2 7/8"	99'-9½"	66'-5"
6	866.25	874.0648	234'-3"	66'-7½"	100'-7"	67'-0½"

SHEAR STUD SPACING SPAN 4

* Adjust last stud before 5" spacing to obtain minimum of 5" spacing between rows.

Girder	V35	V36	V37	V38	V39	V40	V41	V42	V43	V44	V45
1	-	1 Spa @ 18"	1 Spa @ 40"	45 Spa @ 24"	-	-	1 Spa @ 23"	1 Spa @ 40"	55 Spa @ 24"	-	-
2	-	1 Spa @ 8"	1 Spa @ 40"	18 Spa @ 24"	13 Spa @ 21"	17 Spa @ 24"	-	1 Spa @ 42"	55 Spa @ 24"	-	-
3	-	1 Spa @ 22"	1 Spa @ 40"	15 Spa @ 24"	21 Spa @ 21"	13 Spa @ 24"	1 Spa @ 13"	1 Spa @ 40"	56 Spa @ 24"	-	-
4	46 Spa @ 24"	-	1 Spa @ 40"	56 Spa @ 20"	-	-	1 Spa @ 17"	1 Spa @ 40"	11 Spa @ 20"	47 Spa @ 24"	-
5	-	1 Spa @ 5" *	1 Spa @ 40"	11 Spa @ 24"	44 Spa @ 20"	-	1 Spa @ 5" *	1 Spa @ 40"	57 Spa @ 24"	-	-
5a	50 Spa @ 24"	1 Spa @ 20"	1 Spa @ 40"	57 Spa @ 20"	-	-	1 Spa @ 17"	1 Spa @ 40"	58 Spa @ 24"	-	-
6	51 Spa @ 24"	1 Spa @ 22"	1 Spa @ 40"	22 Spa @ 20"	21 Spa @ 19"	15 Spa @ 21"	1 Spa @ 16"	1 Spa @ 34"	9 Spa @ 21"	11 Spa @ 24"	30 Spa @ 21"

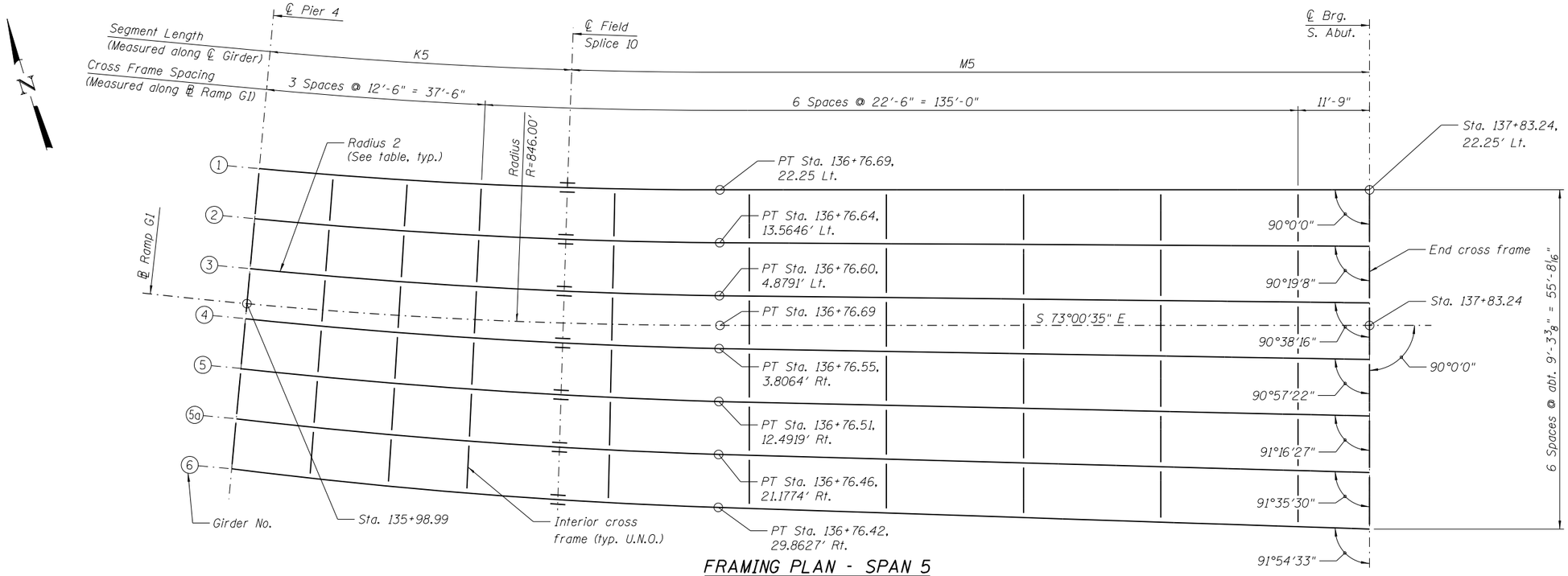
Notes:
1. See Sheet 34 of 68 for Notes.
2. See Sheet 39 of 68 for Section A-A and Detail B.
3. See Sheet 39 of 68 for Bearing Stiffener Details.

FILE NAME = 0220557-60Y95-037-Framing.dgn	USER NAME = esantiag	DESIGNED - KSM	REVISED -
CH2MHILL®		CHECKED - CK/CM	REVISED -
	PLOT SCALE = 20.0 '/ in.	DRAWN - MRW	REVISED -
	PLOT DATE = 11/19/2014	CHECKED - KSM	REVISED -

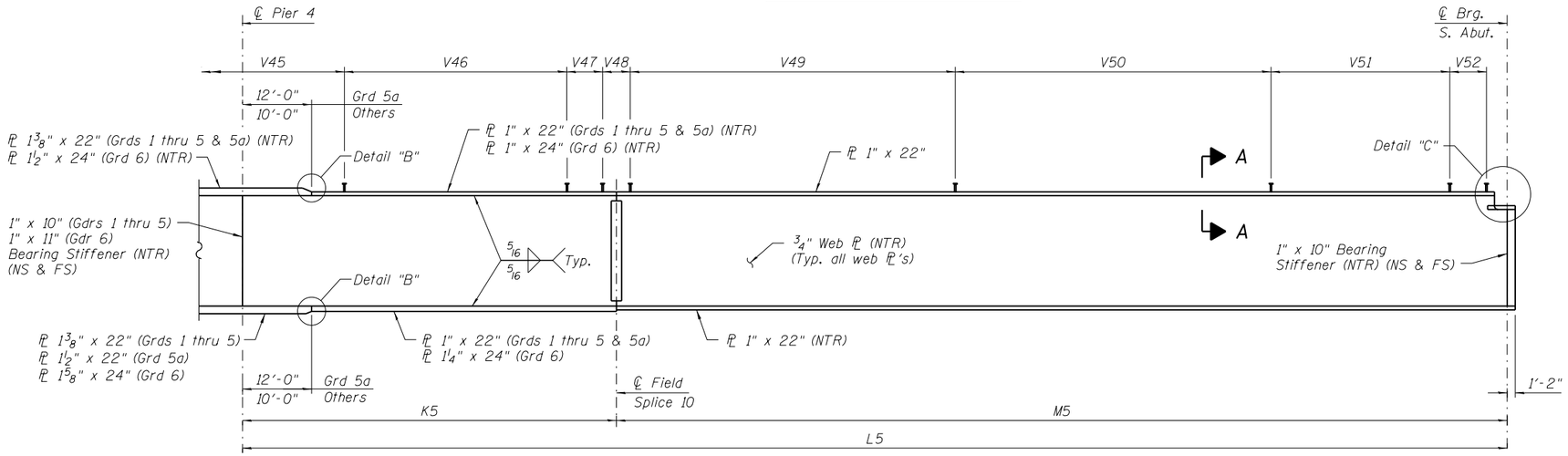
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FRAMING PLAN & GIRDER ELEVATION, SPAN 4
STRUCTURE NUMBER – 022-0557
SHEET NO. 37 OF 68 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	389
	DRAWING NO. SD-37		CONTRACT NO. 60Y95	
	ILLINOIS FED. AID PROJECT			



FRAMING PLAN - SPAN 5



GIRDER ELEVATION - SPAN 5

GIRDER DIMENSIONS

Girder	Radius 2	L5	K5	M5
1	823.75	182'-2 7/16"	50'-7 9/16"	131'-6 7/8"
2	868.3199	182'-11 13/16"	51'-1 3/4"	131'-10 1/16"
3	916.1847	183'-9 3/16"	51'-7 15/16"	132'-1 1/4"
4	967.6968	184'-6 11/16"	52'-2 1/8"	132'-4 9/16"
5	1023.2633	185'-4 1/4"	52'-8 3/8"	132'-7 7/8"
5a	941.4304	186'-1 15/16"	53'-2 11/16"	132'-11 1/4"
6	874.0648	186'-11 11/16"	53'-9 1/16"	133'-2 5/8"

SHEAR STUD SPACING SPAN 5

Girder	V46	V47	V48	V49	V50	V51	V52
1	-	1 Spa @ 7"	1 Spa @ 40"	64 Spa @ 24"	-	-	-
2	-	1 Spa @ 21"	1 Spa @ 40"	64 Spa @ 24"	-	-	-
3	-	1 Spa @ 11"	1 Spa @ 40"	64 Spa @ 24"	1 Spa @ 8"	-	-
4	-	1 Spa @ 20"	1 Spa @ 40"	33 Spa @ 20"	37 Spa @ 24"	-	-
5	-	1 Spa @ 14"	1 Spa @ 40"	8 Spa @ 24"	22 Spa @ 22"	36 Spa @ 24"	1 Spa @ 11"
5a	-	1 Spa @ 5" *	1 Spa @ 40"	32 Spa @ 21"	36 Spa @ 24"	1 Spa @ 18"	-
6	13 Spa @ 24"	1 Spa @ 21"	1 Spa @ 34"	29 Spa @ 21"	39 Spa @ 24"	1 Spa @ 15"	-

* Adjust last stud before 5" spacing to obtain minimum of 5" spacing between rows.

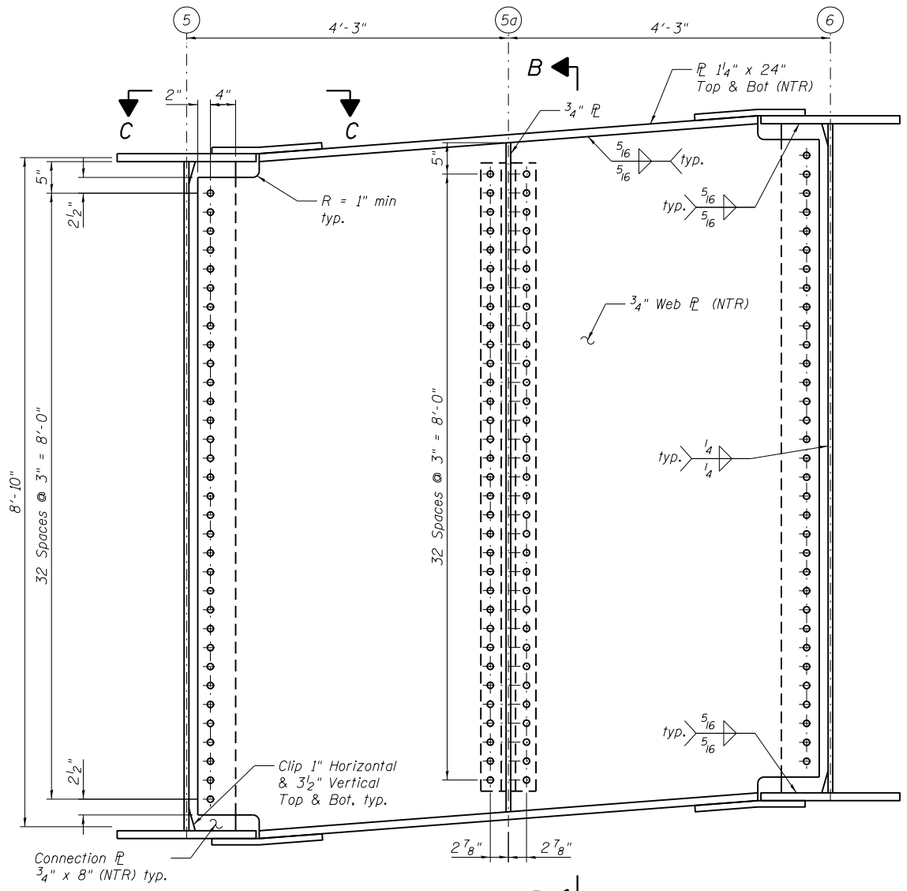
Notes:
1. See Sheet 34 of 68 for Notes.
2. See Sheet 39 of 68 for Section A-A and Detail B.
3. See Sheet 39 of 68 for Bearing Stiffener Details.
4. See Sheet 39 of 68 for Detail C.

FILE NAME = 0220557-60Y95-038-Framing.dgn	USER NAME = esantiag	DESIGNED - KSM	REVISED -
CH2MHILL		CHECKED - CK/CM	REVISED -
	PLOT SCALE = 20.0 '' / in.	DRAWN - MRW	REVISED -
	PLOT DATE = 11/19/2014	CHECKED - KSM	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

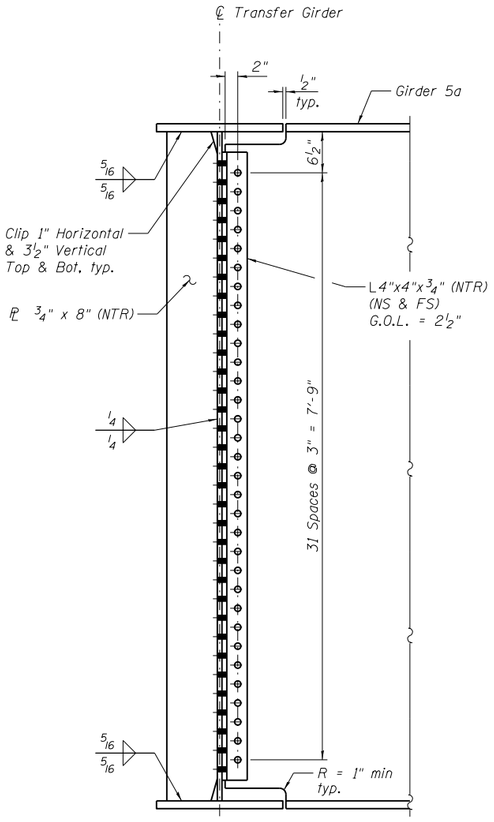
FRAMING PLAN & GIRDER ELEVATION, SPAN 5
STRUCTURE NUMBER - 022-0557
SHEET NO. 38 OF 68 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	390
	DRAWING NO. SD-38		CONTRACT NO. 60Y95	
	ILLINOIS FED. AID PROJECT			

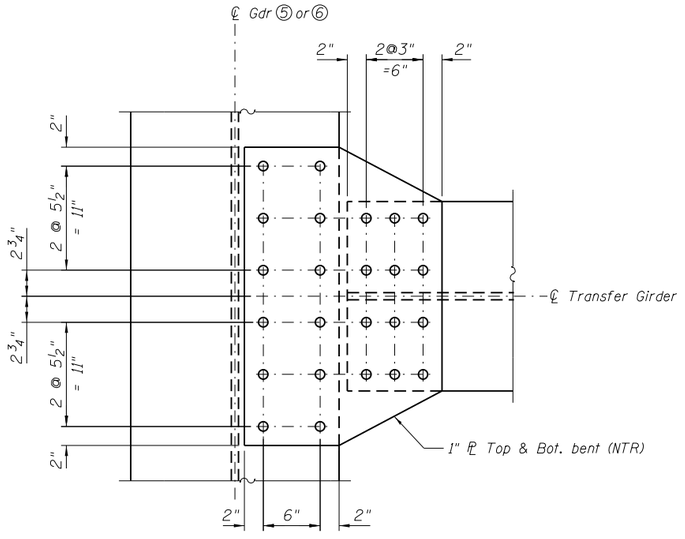


TRANSFER GIRDER ELEVATION

(Looking Up Station/South)



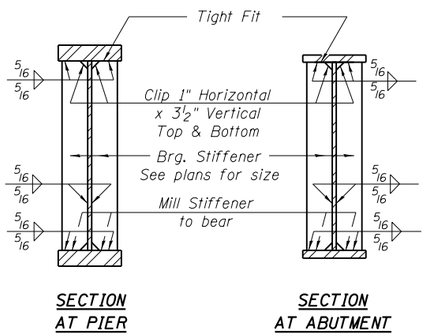
SECTION B-B



VIEW C-C

Transfer Girder Notes:

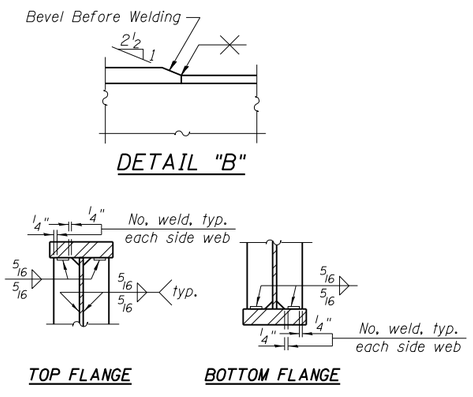
1. *Transfer Girder is considered a System Redundant Member. Fabrication of the girder and it's connections shall be in accordance with the requirements of Chapter 12 of AWS D1.5 Bridge Welding Code.*
2. *All structural steel for the Transfer Girder, including all connection plates, shall be AASHTO M270 Grade 50 and meet NTR.*
3. *Load carrying components desginated "NTR" shall conform to the Impact Testing Requirement, Zone 2.*



SECTION AT PIER

SECTION AT ABUTMENT

BEARING STIFFENERS

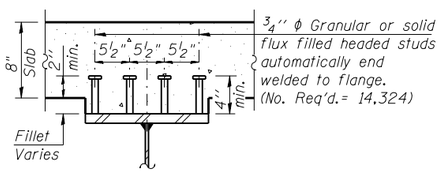


DETAIL "B"

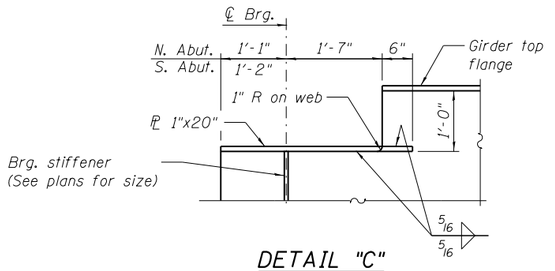
TOP FLANGE

BOTTOM FLANGE

STIFFENER TO FLANGE WELD



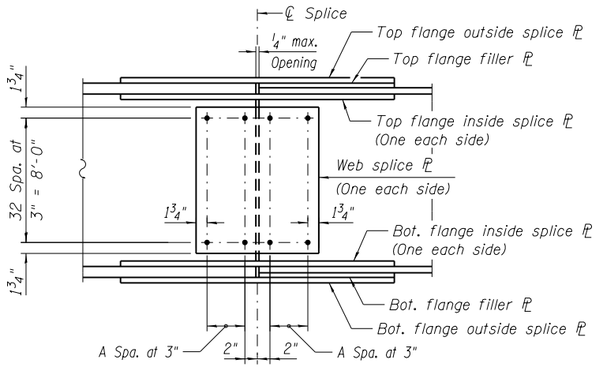
SECTION A-A



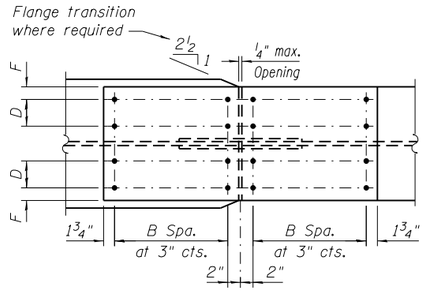
DETAIL "C"

FILE NAME = 0220557-60Y95-039-GirderDetails.dgn	USER NAME = esantiag	DESIGNED - KSM	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GIRDER DETAILS STRUCTURE NUMBER - 022-0557
CH2MHILL®		CHECKED - CK/CM	REVISED -		
	PLOT SCALE = 20.0000 ' / in.	DRAWN - MRW	REVISED -		SHEET NO. 39 OF 68 SHEETS
	PLOT DATE = 11/19/2014	CHECKED - KSM	REVISED -		

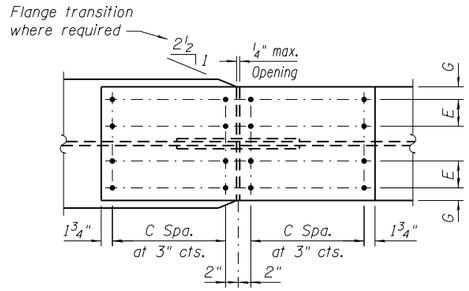
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	391
DRAWING NO. SD-39		CONTRACT NO. 60Y95		
ILLINOIS	FED. AID PROJECT			



WEB PLATES



TOP FLANGE SPLICE



BOTTOM FLANGE SPLICE

FIELD SPLICES 1 THRU 10

TABLE OF DIMENSIONS

Field Splice No.	Girder Location	Web Splice PL Dimensions	Top Flange Splice PL Dimensions		Bottom Flange Splice PL Dimensions		Filler PL Dimensions		Bolt Spacing Dimensions						
			Outside PL	Inside PL	Outside PL	Inside PL	Top PL	Bottom PL	A	B	C	D	E	F	G
1	G1-G4	3/8"x19 1/2"x8'-3 1/2"	1/2"x20"x2'-7 1/2"	1/2"x9"x2'-7 1/2"	1/2"x20"x2'-7 1/2"	1/2"x9"x2'-7 1/2"	-	-	2 at 3"	4 at 3"	4 at 3"	5 1/2"	5 1/2"	1 3/4"	1 3/4"
	G5	3/8"x19 1/2"x8'-3 1/2"	1/2"x20"x2'-7 1/2"	1/2"x9"x2'-7 1/2"	1/2"x20"x2'-7 1/2"	1/2"x9"x2'-7 1/2"	1/8"x20"x1'-3 1/2"	1/4"x20"x1'-3 1/2"	2 at 3"	4 at 3"	4 at 3"	5 1/2"	5 1/2"	1 3/4"	1 3/4"
	G6	3/8"x19 1/2"x8'-3 1/2"	1/2"x20"x2'-7 1/2"	1/2"x9"x2'-7 1/2"	1/2"x20"x3'-1 1/2"	1/2"x9"x3'-1 1/2"	-	5/8"x20"x1'-6 1/2"	2 at 3"	4 at 3"	5 at 3"	5 1/2"	5 1/2"	1 3/4"	1 3/4"
2	G1-G4	3/8"x19 1/2"x8'-3 1/2"	1/2"x22"x3'-1 1/2"	1/2"x10"x3'-1 1/2"	1/2"x22"x3'-1 1/2"	1/2"x10"x3'-1 1/2"	-	-	2 at 3"	5 at 3"	5 at 3"	6"	6"	2"	2"
	G5	3/8"x19 1/2"x8'-3 1/2"	1/2"x22"x3'-1 1/2"	1/2"x10"x3'-1 1/2"	1/2"x22"x3'-1 1/2"	1/2"x10"x3'-1 1/2"	1/8"x22"x1'-6 1/2"	1/4"x22"x1'-6 1/2"	2 at 3"	5 at 3"	5 at 3"	6"	6"	2"	2"
	G6	3/8"x19 1/2"x8'-3 1/2"	1/2"x22"x2'-7 1/2"	1/2"x10"x2'-7 1/2"	9/16"x24"x3'-7 1/2"	9/16"x11"x3'-7 1/2"	-	1/2"x24"x1'-9 1/2"	2 at 3"	4 at 3"	6 at 3"	6"	6 1/2"	2"	2 1/4"
3	G1-G5	3/8"x19 1/2"x8'-3 1/2"	1/2"x22"x3'-1 1/2"	1/2"x10"x3'-1 1/2"	1/2"x22"x3'-1 1/2"	1/2"x10"x3'-1 1/2"	-	-	2 at 3"	5 at 3"	5 at 3"	6"	6"	2"	2"
	G6	3/8"x19 1/2"x8'-3 1/2"	1/2"x22"x2'-7 1/2"	1/2"x10"x2'-7 1/2"	1/2"x22"x3'-1 1/2"	1/2"x10"x3'-1 1/2"	-	1/8"x22"x1'-6 1/2"	2 at 3"	4 at 3"	5 at 3"	6"	6"	2"	2"
4	G1-G5	3/8"x19 1/2"x8'-3 1/2"	1/2"x22"x3'-1 1/2"	1/2"x10"x3'-1 1/2"	1/2"x22"x3'-1 1/2"	1/2"x10"x3'-1 1/2"	-	-	2 at 3"	5 at 3"	5 at 3"	6"	6"	2"	2"
	G6	3/8"x19 1/2"x8'-3 1/2"	1/2"x22"x2'-7 1/2"	1/2"x10"x2'-7 1/2"	1/2"x22"x3'-1 1/2"	1/2"x10"x3'-1 1/2"	1/8"x22"x1'-3 1/2"	1/4"x22"x1'-6 1/2"	2 at 3"	4 at 3"	5 at 3"	6"	6"	2"	2"
5	G1-G4	3/8"x19 1/2"x8'-3 1/2"	1/2"x22"x3'-1 1/2"	1/2"x10"x3'-1 1/2"	1/2"x22"x3'-1 1/2"	1/2"x10"x3'-1 1/2"	-	-	2 at 3"	5 at 3"	5 at 3"	6"	6"	2"	2"
	G5	3/8"x19 1/2"x8'-3 1/2"	1/2"x22"x3'-1 1/2"	1/2"x10"x3'-1 1/2"	1/2"x22"x3'-1 1/2"	1/2"x10"x3'-1 1/2"	1/8"x22"x1'-6 1/2"	1/4"x22"x1'-6 1/2"	2 at 3"	5 at 3"	5 at 3"	6"	6"	2"	2"
	G6	3/8"x19 1/2"x8'-3 1/2"	9/16"x22"x3'-1 1/2"	9/16"x10"x3'-1 1/2"	5/8"x24"x4'-7 1/2"	5/8"x11"x4'-7 1/2"	-	1/2"x24"x2'-3 1/2"	2 at 3"	5 at 3"	8 at 3"	6"	6 1/2"	2"	2 1/4"
6	G1-G4	3/8"x19 1/2"x8'-3 1/2"	1/2"x22"x3'-1 1/2"	1/2"x10"x3'-1 1/2"	1/2"x22"x3'-1 1/2"	1/2"x10"x3'-1 1/2"	-	-	2 at 3"	5 at 3"	5 at 3"	6"	6"	2"	2"
	G5	3/8"x19 1/2"x8'-3 1/2"	1/2"x22"x3'-1 1/2"	1/2"x10"x3'-1 1/2"	1/2"x22"x3'-1 1/2"	1/2"x10"x3'-1 1/2"	1/8"x22"x1'-6 1/2"	1/4"x22"x1'-6 1/2"	2 at 3"	5 at 3"	5 at 3"	6"	6"	2"	2"
	G6	7/16"x25 1/2"x8'-3 1/2"	1/2"x22"x3'-1 1/2"	1/2"x10"x3'-1 1/2"	3/4"x24"x5'-7 1/2"	3/4"x11"x5'-7 1/2"	1/8"x22"x1'-6 1/2"	3/8"x24"x2'-9 1/2"	3 at 3"	5 at 3"	10 at 3"	6"	6 1/2"	2"	2 1/4"
7	G1, G4 & G5	3/8"x19 1/2"x8'-3 1/2"	1/2"x22"x3'-1 1/2"	1/2"x10"x3'-1 1/2"	1/2"x22"x3'-1 1/2"	1/2"x10"x3'-1 1/2"	1/4"x22"x1'-6 1/2"	1/4"x22"x1'-6 1/2"	2 at 3"	5 at 3"	5 at 3"	6"	6"	2"	2"
	G2 & G3	3/8"x19 1/2"x8'-3 1/2"	1/2"x22"x3'-1 1/2"	1/2"x10"x3'-1 1/2"	1/2"x22"x3'-1 1/2"	1/2"x10"x3'-1 1/2"	-	-	2 at 3"	5 at 3"	5 at 3"	6"	6"	2"	2"
	G6	3/8"x19 1/2"x8'-3 1/2"	1/2"x22"x3'-1 1/2"	1/2"x10"x3'-1 1/2"	5/8"x24"x3'-7 1/2"	5/8"x11"x3'-7 1/2"	1/4"x22"x1'-6 1/2"	1/8"x24"x1'-9 1/2"	2 at 3"	5 at 3"	6 at 3"	6"	6 1/2"	2"	2 1/4"
8	G1, G4, G5 & G5a	3/8"x19 1/2"x8'-3 1/2"	1/2"x22"x3'-1 1/2"	1/2"x10"x3'-1 1/2"	1/2"x22"x3'-1 1/2"	1/2"x10"x3'-1 1/2"	1/4"x22"x1'-6 1/2"	1/4"x22"x1'-6 1/2"	2 at 3"	5 at 3"	5 at 3"	6"	6"	2"	2"
	G2 & G3	3/8"x19 1/2"x8'-3 1/2"	1/2"x22"x3'-1 1/2"	1/2"x10"x3'-1 1/2"	1/2"x22"x3'-1 1/2"	1/2"x10"x3'-1 1/2"	-	-	2 at 3"	5 at 3"	5 at 3"	6"	6"	2"	2"
	G6	3/8"x19 1/2"x8'-3 1/2"	1/2"x22"x3'-1 1/2"	1/2"x10"x3'-1 1/2"	1/2"x22"x3'-7 1/2"	1/2"x10"x3'-7 1/2"	1/4"x22"x1'-6 1/2"	1/2"x22"x1'-9 1/2"	2 at 3"	5 at 3"	6 at 3"	6"	6"	2"	2"
9 & 10	G1-G5a	3/8"x19 1/2"x8'-3 1/2"	1/2"x22"x3'-1 1/2"	1/2"x10"x3'-1 1/2"	1/2"x22"x3'-1 1/2"	1/2"x10"x3'-1 1/2"	-	-	2 at 3"	5 at 3"	5 at 3"	6"	6"	2"	2"
	G6	3/8"x19 1/2"x8'-3 1/2"	1/2"x22"x2'-7 1/2"	1/2"x10"x2'-7 1/2"	1/2"x22"x3'-1 1/2"	1/2"x10"x3'-1 1/2"	-	1/4"x22"x1'-6 1/2"	2 at 3"	4 at 3"	5 at 3"	6"	6"	2"	2"

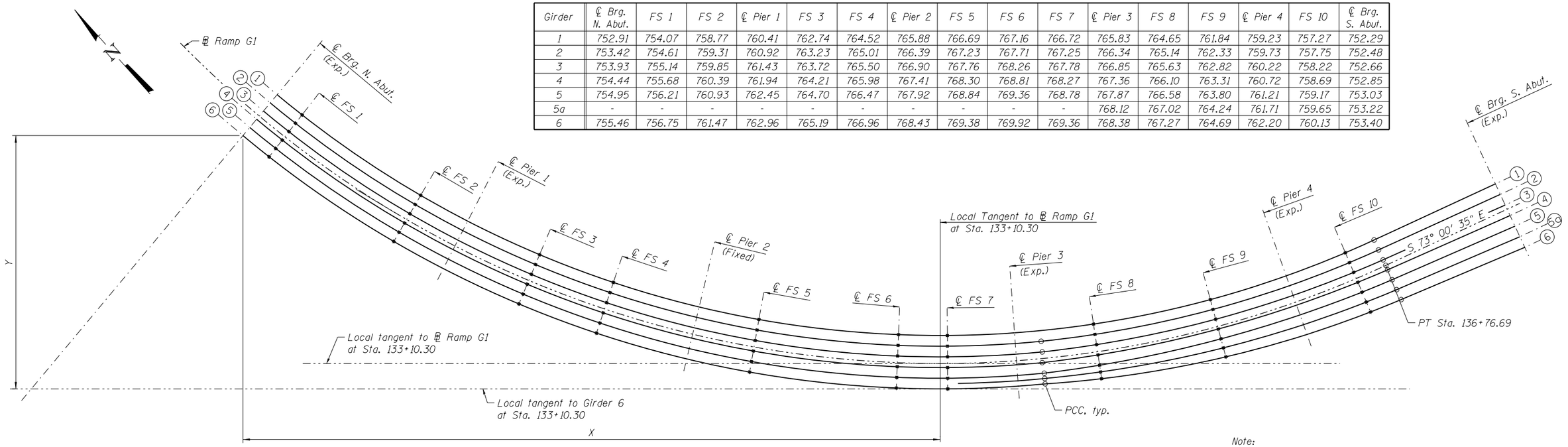
Field Splice notes:

1. *All field splice plates, except fill plates, to be AASHTO M270 Grade 50 and meet NTR.*
2. *Bolt spacing F & G is measured from the edge of the smaller width flange when flange plates at field splices are different widths.*
3. *Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.*

TOP OF WEB ELEVATIONS TABLE

(For fabrication only)

Girder	℄ Brg. N. Abut.	FS 1	FS 2	℄ Pier 1	FS 3	FS 4	℄ Pier 2	FS 5	FS 6	FS 7	℄ Pier 3	FS 8	FS 9	℄ Pier 4	FS 10	℄ Brg. S. Abut.
1	752.91	754.07	758.77	760.41	762.74	764.52	765.88	766.69	767.16	766.72	765.83	764.65	761.84	759.23	757.27	752.29
2	753.42	754.61	759.31	760.92	763.23	765.01	766.39	767.23	767.71	767.25	766.34	765.14	762.33	759.73	757.75	752.48
3	753.93	755.14	759.85	761.43	763.72	765.50	766.90	767.76	768.26	767.78	766.85	765.63	762.82	760.22	758.22	752.66
4	754.44	755.68	760.39	761.94	764.21	765.98	767.41	768.30	768.81	768.27	767.36	766.10	763.31	760.72	758.69	752.85
5	754.95	756.21	760.93	762.45	764.70	766.47	767.92	768.84	769.36	768.78	767.87	766.58	763.80	761.21	759.17	753.03
5a	-	-	-	-	-	-	-	-	-	-	768.12	767.02	764.24	761.71	759.65	753.22
6	755.46	756.75	761.47	762.96	765.19	766.96	768.43	769.38	769.92	769.36	768.38	767.27	764.69	762.20	760.13	753.40



GIRDER LAYOUT PLAN

Note:
1. See Sheets 34 thru 38 of 68 for Framing Plans.
2. Layout dimensions utilize local tangent at Sta. 133+10.30 for each girder.

LAYOUT DIMENSIONS

Girder	Radius	Brg N. Abut. 127+21.15		FS 1 127+47.40		FS 2 128+64.73		Pier 1 129+08.65		FS 3 129+73.65		FS 4 130+38.15		Pier 2 131+11.15		FS 5 131+61.15	
		X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
1	823.75	528'-4 3/4"	191'-9 5/8"	508'-6 7/16"	175'-8 9/16"	414'-0 13/16"	111'-7 9/16"	376'-6 11/16"	91'-1 1/4"	319'-2 9/16"	64'-4 3/8"	260'-5 5/16"	42'-3 1/16"	192'-1 1/2"	22'-8 5/8"	144'-5 11/16"	12'-9 1/4"
2	832.25	533'-10 3/16"	193'-9 3/8"	513'-9 7/16"	177'-6 5/16"	418'-4 1/16"	112'-9 3/8"	380'-5 5/16"	92'-0 9/16"	322'-6 1/16"	65'-0 5/16"	263'-1 9/16"	42'-8 5/16"	194'-1 5/16"	22'-11 7/16"	145'-11 5/8"	12'-10 13/16"
3	840.75	539'-3 5/8"	195'-9 1/8"	519'-0 3/8"	179'-4 1/16"	422'-7 5/16"	113'-11 3/16"	384'-3 15/16"	92'-11 13/16"	325'-9 9/16"	65'-8 5/16"	265'-9 13/16"	43'-1 9/16"	196'-1 1/16"	23'-2 1/4"	147'-5 1/2"	13'-0 3/8"
4	849.25	544'-9 1/16"	197'-8 7/8"	524'-3 3/8"	181'-1 13/16"	426'-10 5/8"	115'-1 1/16"	388'-2 9/16"	93'-11 1/8"	329'-1 1/8"	66'-4 1/4"	268'-6 1/16"	43'-6 3/4"	198'-0 7/8"	23'-5 1/16"	148'-11 3/8"	13'-1 15/16"
5	857.75	550'-2 1/2"	199'-8 5/8"	529'-6 5/16"	182'-11 9/16"	431'-1 7/8"	116'-2 7/8"	392'-1 3/16"	94'-10 3/8"	332'-4 5/8"	67'-0 1/4"	271'-2 5/16"	44'-0"	200'-0 11/16"	23'-7 7/8"	150'-5 1/4"	13'-3 9/16"
5a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	866.25	555'-7 15/16"	201'-8 3/8"	534'-9 5/16"	184'-9 5/16"	435'-5 1/8"	117'-4 11/16"	395'-11 13/16"	95'-9 11/16"	335'-8 3/16"	67-8 3/16"	273'-10 9/16"	44'-5 1/4"	202'-0 7/16"	23'-10 11/16"	151'-11 1/8"	13'-5 1/8"

Girder	Radius 1	Radius 2	FS 6 132+76.15		FS 7 133+16.15		Pier 3 133+71.15		FS 8 134+36.15		FS 9 135+33.99		Pier 4 135+98.99		FS 10 136+50.99		Brg. S. Abut. 137+83.24	
			X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
1	823.75	823.75	33'-2 7/8"	0'-8 1/16"	5'-8 3/8"	0'-0 1/4"	59'-2 7/16"	2'-1 9/16"	122'-1 1/16"	9'-1 3/16"	215'-3 1/4"	28'-7 1/2"	275'-8"	47'-5 15/16"	322'-10"	65'-10 3/4"	442'-5"	120'-9 3/16"
2	832.25	868.32	33'-7"	0'-8 1/8"	5'-9 1/16"	0'-0 1/4"	59'-9 3/4"	2'-1 13/16"	123'-3 13/16"	9'-5"	217'-4 11/16"	29'-3 11/16"	278'-5 1/8"	48'-2 3/4"	326'-2"	66'-6 13/16"	446'-3 11/16"	120'-10 1/8"
3	840.75	916.18	33'-11 1/8"	0'-8 3/16"	5'-9 3/4"	0'-0 1/4"	60'-5 1/16"	2'-2 1/16"	124'-6 1/2"	9'-8 7/8"	219'-6 1/16"	29'-11 7/8"	281'-2 1/4"	48'-11 1/2"	329'-6"	67'-2 7/8"	450'-2 7/16"	120'-11 1/16"
4	849.25	967.70	34'-3 1/4"	0'-8 5/16"	5'-10 1/2"	0'-0 1/4"	61'-0 3/8"	2'-2 3/8"	125'-9 3/16"	10'-0 11/16"	221'-7 1/2"	30'-8 1/16"	283'-11 3/8"	49'-8 1/4"	332'-10"	67'-10 15/16"	454'-1 3/16"	121'-0"
5	857.75	1023.26	34'-7 3/8"	0'-8 3/8"	5'-11 3/16"	0'-0 1/4"	61'-7 11/16"	2'-2 5/8"	126'-11 15/16"	10'-4 9/16"	223'-8 7/8"	31'-4 1/4"	286'-8 7/16"	50'-5 1/16"	336'-2"	68'-7"	457'-11 7/8"	121'-0 15/16"
5a	862.00	941.43	-	-	-	-	61'-11 3/8"	2'-2 3/4"	127'-9 9/16"	9'-3 1/16"	225'-8 3/16"	28'-5 1/4"	289'-5 9/16"	46'-10 15/16"	339'-6 1/2"	64'-11"	461'-10 5/8"	116'-10 7/8"
6	866.25	874.06	34'-11 1/2"	0'-8 7/16"	5'-11 7/8"	0'-0 1/4"	62'-3 1/16"	2'-2 7/8"	128'-7 1/4"	8'-11 1/2"	227'-7 7/16"	25'-6 1/4"	292'-2 11/16"	43'-4 5/8"	342'-10 15/16"	61'-3"	465'-9 5/16"	112'-8 13/16"

FILE NAME = 02220557-60Y95-041-GrdLayout.dgn	USER NAME = asantiag	DESIGNED - KSM	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GIRDER LAYOUT PLAN & TOP OF WEB ELEVATIONS STRUCTURE NUMBER - 022-0557	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED - CK/CM	REVISED -			345	2013-083-R&B	DUPAGE	759	393
CH2MHILL®	PLOT SCALE = 80.0000 ' / in.	DRAWN - MRW	REVISED -		SHEET NO. 41 OF 68 SHEETS		DRAWING NO. SD-41		CONTRACT NO. 60Y95	
	PLOT DATE = 12/3/2014	CHECKED - KSM	REVISED -				ILLINOIS FED. AID PROJECT			

EXTERIOR GIRDER MOMENT TABLE

GIRDER 6

		0.4 Sp. 1	Pier 1	0.5 Sp. 2	Pier 2	0.5 Sp. 3	Pier 3	0.5 Sp. 4	Pier 4	0.6 Sp. 5
I_s	(in^4)	244,306	299,683	200,379	408,696	269,060	427,665	200,379	291,220	200,379
$I_c(n)$	(in^4)	491,851	524,899	392,128	647,208	529,848	605,792	376,453	505,276	394,674
$I_c(3n)$	(in^4)	355,286	398,292	288,783	509,103	384,431	498,301	279,096	384,970	290,414
$I_c(cr)$	(in^4)		330,277		439,215		448,521		320,310	
S_s	(in^3)	5082.8	5690.0	3710.7	7599.0	5696.4	7705.7	3710.7	5436.7	3710.7
$S_c(n)$	(in^3)	6638.2	6971.7	4939.2	8817.8	7297.8	8640.7	4868.9	6662.6	4950.3
$S_c(3n)$	(in^3)	5947.2	6364.7	4394.6	8205.6	6575.7	8129.6	4331.7	6079.1	4404.9
$S_c(cr)$	(in^3)		5924.5		7801.7		7839.5		5659.3	
S_{xc}	(in^3)	5981.2	5836.5	4792.2	7724.5	6647.8	7788.5	4616.9	5574.2	4500.1
DC1	(k/')	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35
M_{DC1}	('k)	5793.5	6237.9	1212.6	8557.3	6195.9	8744.5	2210.0	6134.5	3603.7
DC2	(k/')	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
M_{DC2}	('k)	691.2	876.0	124.3	1089.4	722.8	1052.9	214.2	796.1	426.1
DW	(k/')	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32
M_{DW}	('k)	1474.1	1555.1	318.3	1991.5	1681.6	1967.2	560.8	1548.9	1039.4
M_{L+IM}	('k)	6316.8	5832.1	4522.0	7387.8	6850.4	5992.1	4334.7	5355.9	4537.6
f_l (Strength I)	('k)	83.9	126.2	33.1	75.5	85.3	116.9	24.4	99.5	10.0
$M_u + \frac{1}{3} f_l S_{xc}$	('k)	22,638.7	22,892.4	10,717.0	28,784.0	24,117.7	26,947.7	11,922.2	21,544.2	14,723.6
$\phi_f M_n$	('k)									
f_s DC1	(ksi)	13.68	13.16	3.92	13.51	13.05	13.62	7.15	13.54	11.65
f_s DC2	(ksi)	1.39	1.77	0.34	1.68	1.32	1.61	0.59	1.69	1.16
f_s DW	(ksi)	2.97	3.15	0.87	3.06	3.07	3.01	1.55	3.28	2.83
f_s (L+IM)	(ksi)	11.66	13.12	10.57	10.58	10.87	7.50	10.05	12.29	11.01
f_l (Service II)	(ksi)	5.75	6.72	3.66	2.83	3.94	4.37	2.73	5.73	1.12
$f_s + f_l/2$ (Service II)	(ksi)	35.77	36.80	21.24	34.44	34.05	32.35	24.55	36.14	30.51
$0.95 R_h F_{yf}$	(ksi)	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5
$f_s + f_l/3$ (Total)(Strength I)	(ksi)	45.83	47.06	27.50	44.72	44.01	41.55	31.91	46.39	40.01
$\phi_f F_n$	(ksi)	50.0	49.78	50.0	49.64	50.0	49.63	50.0	49.61	50.0
Vr	(k)	86.2	88.6	88.6	88.6	88.6	85.6	85.6	85.6	84.2

EXTERIOR GIRDER REACTION TABLE

GIRDER 6

		N. Abut.	Pier 1	Pier 2	Pier 3	Pier 4	S. Abut.
R_{DC1}	(k)	131.1	295.8	329.5	266.9	289.3	102.3
R_{DC2}	(k)	23.4	58.3	60.3	50.0	55.6	18.8
R_{DW}	(k)	35.8	78.1	80.5	51.5	73.5	27.9
R_{L+IM}	(k)	155.8	272.1	292.1	226.0	232.1	106.8
R_{Total}	(k)	346.1	704.3	762.4	594.4	650.5	255.8

INTERIOR GIRDER MOMENT TABLE

GIRDER 4

		0.4 Sp. 1	Pier 1	0.5 Sp. 2	Pier 2	0.5 Sp. 3	Pier 3	0.5 Sp. 4	Pier 4	0.6 Sp. 5
I_s	(in^4)	200,379	248,828	200,379	297,949	200,379	331,073	200,379	248,828	200,379
$I_c(n)$	(in^4)	407,571	467,586	407,571	526,790	407,571	565,947	402,499	463,717	411,997
$I_c(3n)$	(in^4)	298,937	349,931	298,937	401,157	298,937	435,492	295,531	347,471	301,965
$I_c(cr)$	(in^4)		281,159		330,493		363,737		280,247	
S_s	(in^3)	3710.7	4576.2	3710.7	5442.0	3710.7	6019.5	3710.7	4576.2	3710.7
$S_c(n)$	(in^3)	5005.1	5850.1	5005.1	6696.7	5005.1	7261.8	4983.8	5834.7	5023.4
$S_c(3n)$	(in^3)	4457.8	5286.6	4457.8	6120.6	4457.8	6679.1	4436.9	5272.3	4476.2
$S_c(cr)$	(in^3)		4834.2		5682.7		6250.2		4827.4	
S_{xc}	(in^3)	4499.3	4737.3	4840.3	5584.0	4484.6	6150.7	4721.1	4729.4	4577.7
DC1	(k/')	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41
M_{DC1}	('k)	3930.3	5214.0	1298.7	6745.2	3969.1	7878.3	2078.5	5517.1	3444.6
DC2	(k/')	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
M_{DC2}	('k)	451.5	512.9	133.0	695.0	517.4	778.9	228.7	435.7	319.8
DW	(k/')	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
M_{DW}	('k)	1069.5	1429.1	339.8	1856.5	1153.9	2076.4	567.4	1563.0	1049.2
M_{L+IM}	('k)	2952.8	3281.7	2678.5	3976.5	3048.9	3717.7	2416.5	2736.1	2432.5
f_l (Strength I)	('k)	41.0	80.5	26.3	44.6	56.8	78.8	21.0	45.2	5.1
$M_u + \frac{1}{3} f_l S_{xc}$	('k)	13,010.2	16,190.6	7511.7	19,631.9	13,726.2	21,443.8	8372.7	15,216.1	10,632.2
$\phi_f M_n$	('k)									
f_s DC1	(ksi)	12.71	13.67	4.20	14.87	12.84	15.71	6.72	14.47	11.14
f_s DC2	(ksi)	1.22	1.27	0.36	1.47	1.39	1.50	0.62	1.08	0.86
f_s DW	(ksi)	2.88	3.55	0.91	3.92	3.11	3.99	1.53	3.89	2.81
f_s (L+IM)	(ksi)	7.08	8.15	6.42	8.40	7.31	7.14	5.82	6.80	5.81
f_l (Service II)	(ksi)	4.61	6.46	2.92	2.83	6.41	4.40	2.34	3.63	0.56
$f_s + f_l/2$ (Service II)	(ksi)	28.31	32.31	15.28	32.59	30.04	32.67	17.61	30.09	22.64
$0.95 R_h F_{yf}$	(ksi)	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5
$f_s + f_l/3$ (Total)(Strength I)	(ksi)	36.15	41.16	19.61	42.27	38.05	41.93	22.70	38.80	29.64
$\phi_f F_n$	(ksi)	50.0	49.07	50.0	48.84	50.0	49.01	50.0	49.02	50.0
Vr	(k)	61.1	63.1	63.1	63.1	63.1	63.1	63.1	63.1	59.6

INTERIOR GIRDER REACTION TABLE

GIRDER 4

		N. Abut.	Pier 1	Pier 2	Pier 3	Pier 4	S. Abut.
R_{DC1}	(k)	103.4	294.4	329.2	348.1	299.3	100.9
R_{DC2}	(k)	8.8	22.1	25.6	24.4	16.7	5.3
R_{DW}	(k)	29.6	84.9	94.2	93.1	87.7	30.5
R_{L+IM}	(k)	94.0	181.1	190.9	169.6	159.6	88.7
R_{Total}	(k)	235.8	582.5	639.9	635.2	563.3	225.4

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.).

$I_c(3n)$, $S_c(3n)$: 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 (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_{xc}: Section modulus about the major axis of 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.).

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

M_u (Strength I): Factored design moment (kip-ft.).
$1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_{L+IM}$

f_l: Factored calculated normal stress at edge of flange for controlling flange plate due to lateral bending, Strength I or Service II as applicable (kip-ft.).

$M_u + \frac{1}{3} f_l S_{xc}$: Factored combined flexural force in terms of the section major-axis bending moment, M_u , and the flange lateral bending stress, f_l , computed from an elastic analysis. (kip-ft)

$\phi_f M_n$: Factored resistance available according to Article 6.10.7.1 (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_{nc}

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 plus impact loads as calculated below (ksi).
$M_{L+IM} / S_c(n)$ or $M_{L+IM} / S_c(cr)$ as applicable.

$f_s + f_l/2$ (Service II): Sum of stresses as computed below (ksi).
$f_{sDC1} + f_{sDC2} + f_{sDW} + 1.3 f_s(L+IM) + f_l/2$

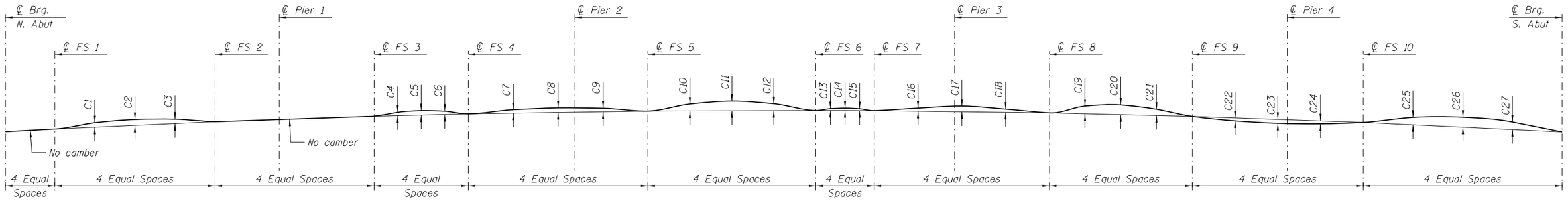
$0.95 R_h F_y f$: Composite stress capacity for Service II loading according to Article 6.10.4.2 (ksi).

$f_s + f_l/3$ (Total)(Strength I): Sum of stresses as computed below on non-compact section (ksi).
$1.25 (f_{sDC1} + f_{sDC2}) + 1.5 f_{sDW} + 1.75 f_s(L+IM) + f_l/3$

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

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

Note:
M_{L+IM} and R_{L+IM} include the effects of centrifugal force and superelevation.



CAMBER DIAGRAM

Girder	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19	C20	C21	C22	C23	C24	C25	C26	C27
1	1 1/16"	1 3/8"	1"	3/4"	1"	3/4"	1 1/16"	1 1/16"	13/16"	2 3/4"	3 13/16"	2 15/16"	0	0	0	5/8"	3/4"	3/4"	1 3/4"	2 3/8"	1 13/16"	- 3/16"	- 5/8"	- 1 1/4"	1 5/8"	2 11/16"	2 1/2"
2	1 1/4"	1 11/16"	1 3/16"	11/16"	15/16"	3/4"	15/16"	15/16"	11/16"	2 7/8"	4 1/16"	3 1/16"	0	0	0	0	0	0	1 3/4"	2 3/8"	1 13/16"	- 1/4"	- 1/2"	- 15/16"	1 11/16"	2 1/2"	2 1/8"
3	1 1/2"	2"	1 3/8"	11/16"	15/16"	11/16"	7/8"	7/8"	5/8"	3 1/16"	4 1/4"	3 1/4"	0	0	0	0	0	0	1 3/4"	2 3/8"	1 3/4"	0	0	0	1 3/4"	2 7/16"	1 13/16"
4	1 11/16"	2 1/4"	1 5/8"	11/16"	15/16"	11/16"	3/4"	3/4"	9/16"	3 3/16"	4 1/2"	3 7/16"	0	0	0	15/16"	1 1/8"	1 1/8"	2	2 1/2"	1 7/8"	0	0	0	1 13/16"	2 5/16"	1 7/16"
5	1 15/16"	2 9/16"	1 13/16"	11/16"	15/16"	11/16"	0	0	0	3 3/8"	4 11/16"	3 9/16"	1/2"	3/4"	13/16"	1 1/16"	1 1/4"	1 1/4"	2 1/16"	2 9/16"	1 7/8"	0	0	0	1 7/8"	2 3/16"	1 1/8"
5a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	1 1/16"	1 15/16"	1 5/8"	0	0	0	1 7/8"	2 1/8"	3/4"
6	2 3/16"	2 15/16"	2 1/16"	11/16"	15/16"	11/16"	0	0	0	3 1/2"	4 15/16"	3 3/4"	0	0	0	0	0	0	1 13/16"	2 9/16"	1 15/16"	0	0	0	2"	2"	1/2"

Camber notes:

1. *Cambers include an allowance of 10 psf for deck formwork.*
2. *Cambers are based on pour sequence shown on Sht. 14 of 68. Should the contractor deviate from the proposed pouring sequence, the contractor must retain the services of an Illinois Licensed Structural Engineer to analyze the structure for the revised Pouring Sequence to determine the cambers associated with the revised pouring sequence. Details and calculations with the required signature and seal shall be submitted to the Engineer for review and approval. Cost included in the pay item "Furnishing and Erecting Structural Steel".*

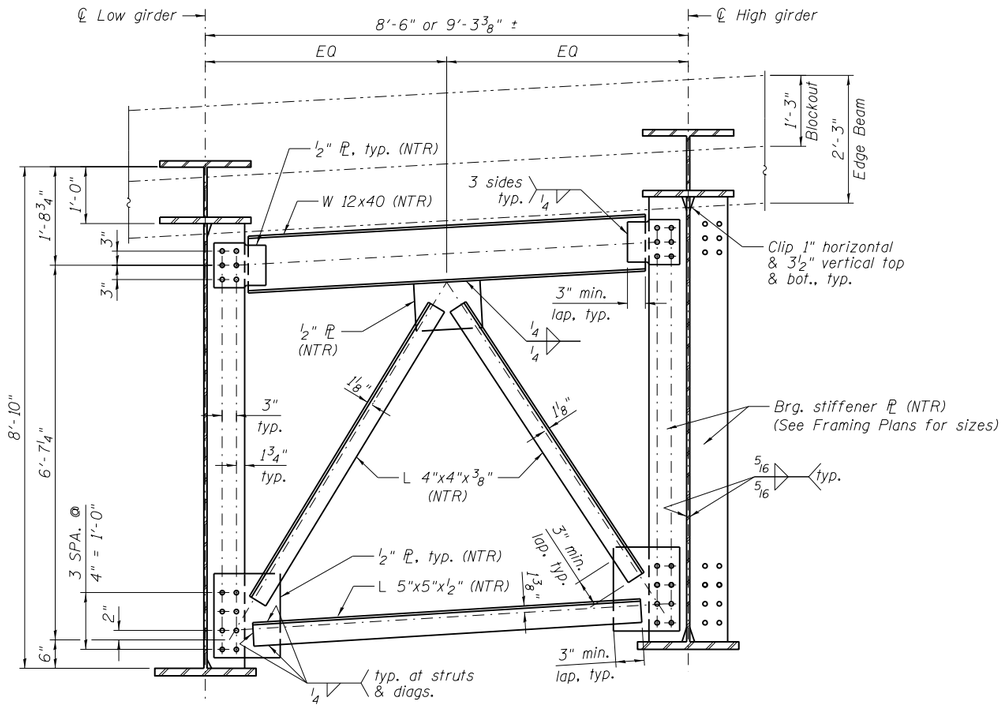
STRUCTURAL STEEL SELF-WEIGHT DEFLECTIONS TABLE

(Values in decimal inches)

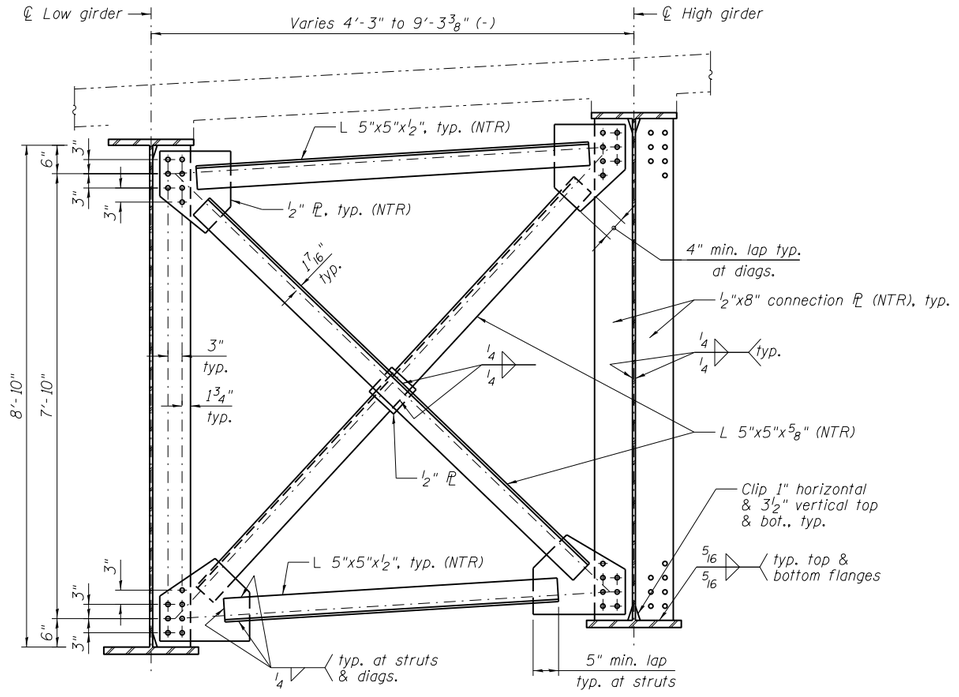
Girder	Span 1			Span 2			Span 3			Span 4			Span 5		
	1/4 PT	1/2 PT	3/4 PT	1/4 PT	1/2 PT	3/4 PT	1/4 PT	1/2 PT	3/4 PT	1/4 PT	1/2 PT	3/4 PT	1/4 PT	1/2 PT	3/4 PT
1	0.6040	0.7470	0.4038	0.1345	0.2564	0.0705	0.9039	1.4768	0.8867	0.2128	0.5111	0.2828	0.4397	0.8513	0.7013
2	0.7451	0.9305	0.5160	0.0648	0.1682	0.0000	1.0495	1.6669	0.9699	0.2417	0.5746	0.3249	0.4384	0.8595	0.7095
3	0.8837	1.1115	0.6280	-0.0062	0.0764	-0.0731	1.1933	1.8531	1.0471	0.2681	0.6351	0.3673	0.4356	0.8663	0.7171
4	1.0230	1.2931	0.7408	-0.0792	-0.0193	-0.1509	1.3365	2.0384	1.1152	0.2916	0.6936	0.4102	0.4315	0.8716	0.7239
5	1.1664	1.4792	0.8553	-0.1547	-0.1183	-0.2329	1.4814	2.2268	1.1770	0.3153	0.7520	0.4540	0.4262	0.8755	0.7297
5a	-	-	-	-	-	-	-	-	-	0.3269	0.8001	0.4966	0.4149	0.8784	0.7348
6	1.3156	1.6718	0.9716	-0.2328	-0.2183	-0.3201	1.6293	2.4210	1.2400	0.3295	0.8503	0.5404	0.3967	0.8809	0.7393

Deflection notes:

1. *The calculated deflections of the primary girders/beams under steel self-weight shall be used to detail the diaphragm, cross frame and lateral bracing connections, and to erect the structural steel such that the girders/beams will be plumb within a tolerance of ±1/8 in. per vertical ft. throughout when supporting their own weight.*
2. *The Contractor shall either:*
   - A. *Ream diaphragm and/or cross frame connection holes during shop assembly, or*
   - B. *Provide detailing and fabrication controls acceptable to the Engineer which ensures accuracy such that field reaming will not exceed the amount permitted in Article 505.08(I) of the Standard Specifications.*
3. *Negative values indicate upward deflections.*



END CROSS FRAME AT ABUTMENT



TYPICAL INTERIOR CROSS FRAMES

Notes:

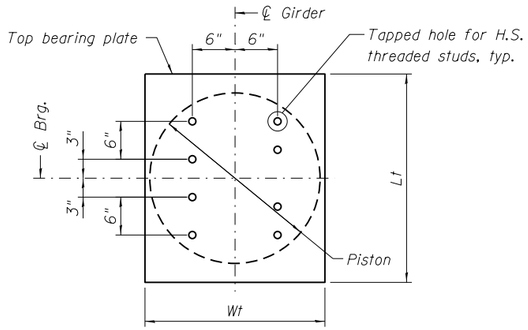
1. All structural steel for cross frames, including their connection plates, shall be AASHTO M270 Grade 50 and meet NTR.
2. Terminate welds 1/4" from ends of members and edges of gusset plates. See Sheet 39 of 68 for details.
3. Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.

FILE NAME = 0220557-60Y95-044-CrossFrame.dgn	USER NAME = asantiag	DESIGNED - KSM	REVISED -
CH2MHILL®		CHECKED - CK/CM	REVISED -
	PLOT SCALE = 2:7.999 '' / in.	DRAWN - MRW	REVISED -
	PLOT DATE = 11/19/2014	CHECKED - KSM	REVISED -

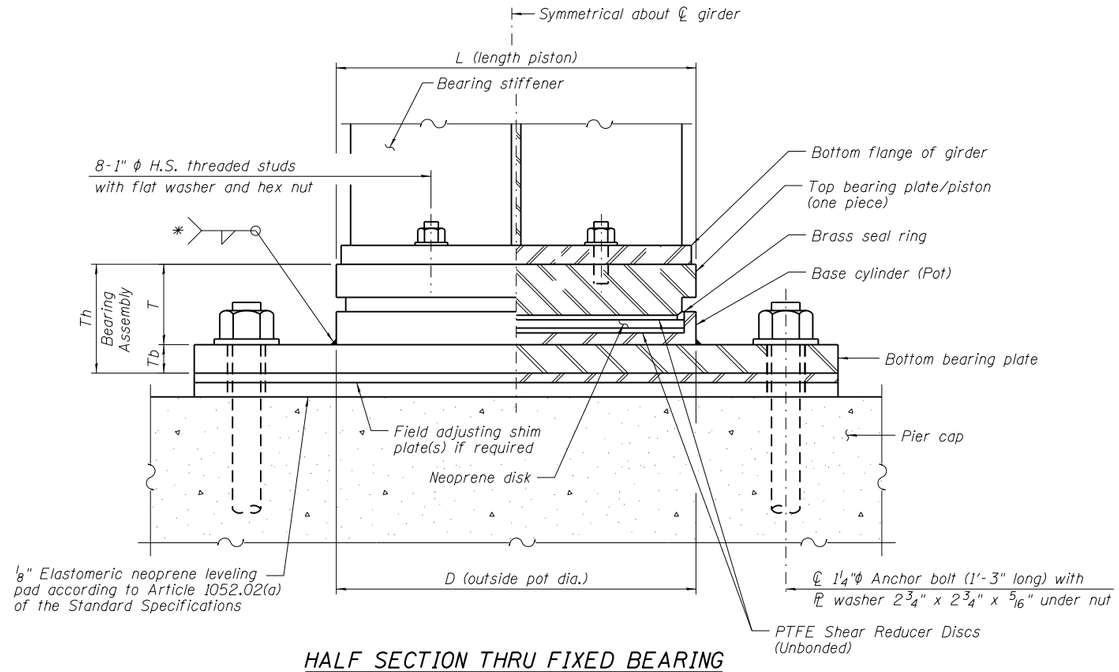
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS FRAME DETAILS
STRUCTURE NUMBER – 022–0557
SHEET NO. 44 OF 68 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	396
DRAWING NO. SD-44		CONTRACT NO. 60Y95		
ILLINOIS	FED. AID PROJECT			

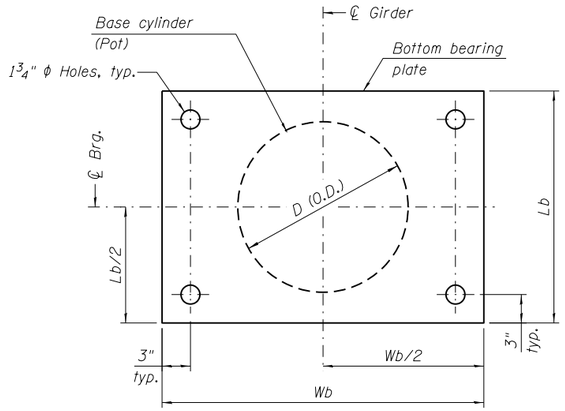


TOP BEARING PLATE / PISTON PLAN

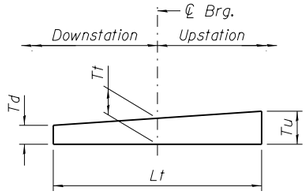


HALF SECTION THRU FIXED BEARING

* Weld may be omitted if base cylinder is recessed into bottom bearing plate.



BOTTOM BEARING PLATE AND BASE CYLINDER PLAN



TOP BEARING PLATE / PISTON BEVEL

BEARING ASSEMBLY DIMENSIONS

Member	Dimension	Location Pier 2
Top Plate	Wt (G1-G5)	1'-11"
	Wt (G6)	2'-1"
	Lt	2'-2"
	Td	2 5/16"
	Tt	2 1/2"
	Tu	2 11/16"
Bearing	D	17 1/4"
	L	17 1/4"
	T	8"
Bottom Plate	Wb (G1-G5)	3'-0"
	Wb (G6)	3'-2"
	Lb	1'-10"
	Tb	2 3/4"
Bearing Assembly	Th	10 3/4"

BEARING DESIGN INFORMATION

Design Information	Location Pier 2
Vertical Design Load (kips)	725
Pay Item Size (kips)	750
Longitudinal Lateral Load (kips)	145
Req'd Factored Strength Design Rotation	0.02R

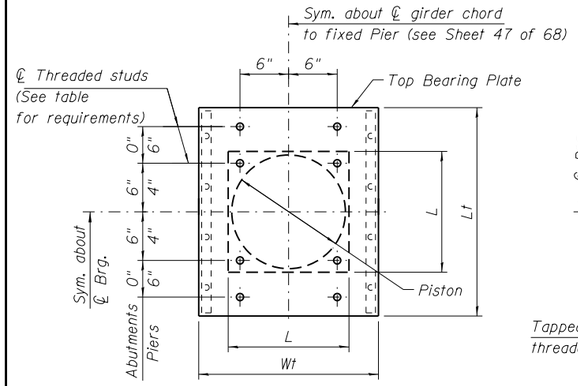
Note:
Vertical Design Load = Total vertical dead load + live load (No impact) at service level

Notes:

1. All dimensions are in feet and inches unless noted otherwise.
2. The structural steel for the top bearing plate/piston and bottom bearing plate shall be AASHTO M270, Grade 50.
3. Cost of top and bottom bearing plates, 1/8" elastomeric neoprene and threaded studs with washer shall be included in the cost of High Load Multi-Rotational Bearings Pay Items.
4. Anchor Bolts shall be ASTM F1554, Grade 36.
5. 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.
6. Top plate thickness Tt is the minimum thickness required excluding any recess required for a two-part piston. Tt, Tu and Td must be adjusted accordingly should a recess be required without changing overall bearing height Th.

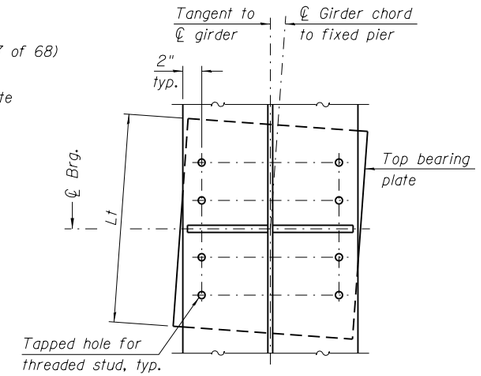
BILL OF MATERIAL

Item	Unit	Quantity
High Load Multi-Rotational Bearings, Fixed - 750k	Each	6
Anchor Bolts, 1 1/4"	Each	24



TOP BEARING PLATE / PISTON PLAN

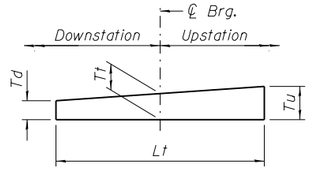
Note: Bearing is symmetrical about and parallel to the ℄ girder chord, not the ℄ of the girder. (See Bearing Orientation Sheet)



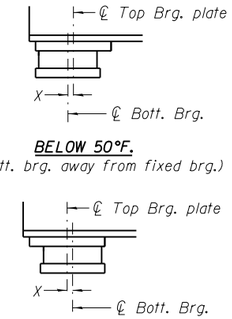
SECTION A-A

THREADED STUD TABLE

Location	Size	Number
Abutments	1" ϕ	4
Pier 1	1" ϕ	8
Pier 3	1" ϕ	8
Pier 4	1" ϕ	8



TOP BEARING PLATE BEVEL

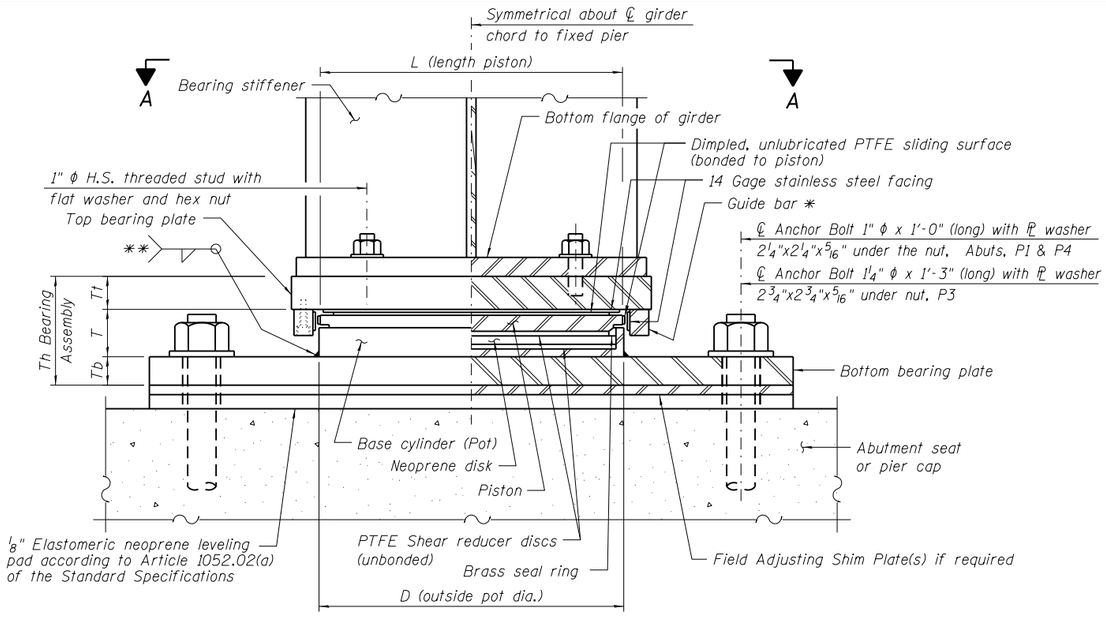


BELOW 50°F.
(Move bott. brg. away from fixed brg.)

ABOVE 50°F.
(Move bott. brg. toward fixed brg.)

SETTING ANCHOR BOLTS AT EXP. BRG.

$X = \frac{1}{8}''$ per each 100′ of expansion for every 15° temp. change from the normal temp. of 50°F.



HALF SECTION THRU EXPANSION BEARING

* As alternatives to the bolted connection shown, the guide bars may be connected to the top bearing plate by groove welds or the guide bars and top bearing plate may be fabricated as a single piece.

** Weld may be omitted if base cylinder is recessed into bottom bearing plate.

BEARING ASSEMBLY DIMENSIONS

Member	Dimension	Location				
		N. Abut.	Pier 1	Pier 3	Pier 4	S. Abut.
Top Plate	Wt (G1-G5a)	1'-9"	1'-11"	1'-11"	1'-11"	1'-11"
	Wt (G6)	1'-9"	2'-1"	2'-1"	2'-1"	1'-11"
	Lt	2'-2"	2'-5"	2'-8"	2'-9"	2'-4"
	Td	1"	1¾"	2¾"	2 15/16"	2 1/16"
	Tt	1½"	2¼"	2½"	2¼"	1½"
	Tu	2"	2¾"	2¼"	1 9/16"	15/16"
Bearing	D	12¼"	16⅛"	17¼"	16⅛"	10¾"
	L	12¼"	16⅛"	17¼"	16⅛"	10¾"
	T	6"	8"	9"	8"	6"
Bottom Plate	Wb (G1-G5a)	2'-10"	3'-0"	3'-0"	3'-0"	3'-0"
	Wb (G6)	2'-10"	3'-2"	3'-2"	3'-2"	3'-0"
	Lb (G1-G5a)	1'-8"	2'-0"	2'-2"	2'-0"	1'-8"
	Lb (G6)	1'-8"	2'-3"	2'-6"	2'-3"	1'-8"
	Tb	2¼"	2½"	2½"	2½"	2¼"
Bearing Assembly	Th	9¾"	12¾"	14"	12¾"	9¾"

BEARING DESIGN INFORMATION

Design Information	Location				
	N. Abut.	Pier 1	Pier 3	Pier 4	S. Abut.
Vertical Design Load (kips)	325	660	795	650	240
Pay Item Size (kips)	350	700	800	700	250
Longitudinal Lateral Load (kips)	65	135	160	130	50
Total Req'd Movement	6½"	3¾"	4½"	8"	11"
Req'd Factored Strength Design Rotation	0.02R	0.02R	0.02R	0.02R	0.02R

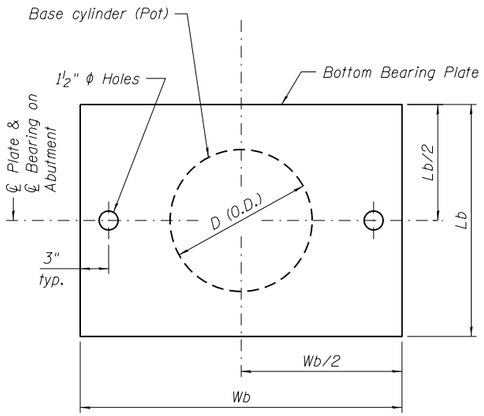
Note:
Vertical Design Load = total vertical dead load + live load (no impact) at service level

Notes:

1. All dimensions are in feet and inches unless noted otherwise.
2. The structural steel for the top bearing plate/piston and bottom bearing plate shall be AASHTO M270, Grade 50.
3. Cost of top and bottom bearing plates, ⅛" elastomeric neoprene and threaded studs with washer shall be included with High Load Multi-Rotational Bearings Pay Items.
4. 1" ϕ Anchor bolts shall be ASTM F1554, Grade 55. 1¼" ϕ Anchor bolts shall be ASTM F1554, Grade 36.
5. Two ⅛" adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

BILL OF MATERIAL

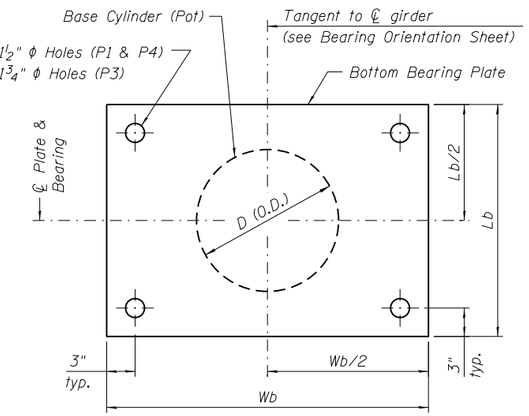
Item	Unit	Quantity
High Load Multi-Rotational Bearings, Guided Expansion, 250k	Each	7
High Load Multi-Rotational Bearings, Guided Expansion, 350k	Each	6
High Load Multi-Rotational Bearings, Guided Expansion, 700k	Each	13
High Load Multi-Rotational Bearings, Guided Expansion, 800k	Each	7
Anchor Bolts, 1"	Each	78
Anchor Bolts, 1¼"	Each	28



BOTTOM BEARING PLATE AND BASE CYLINDER PLAN

(Abut's)

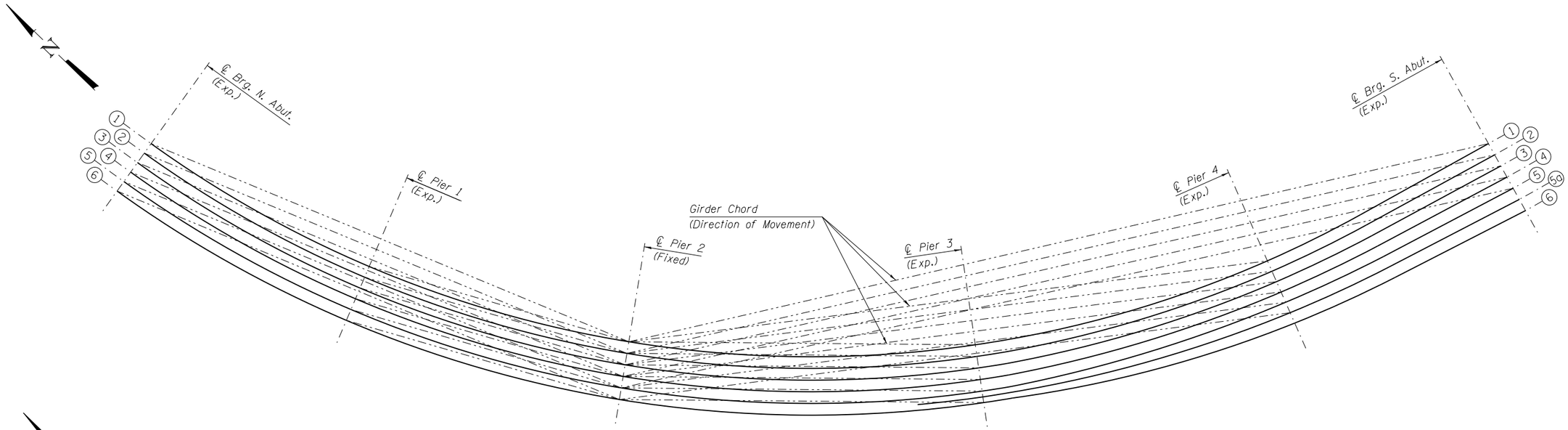
Note: Bottom plate anchor bolts to be parallel to ℄ bearing on Abutment.



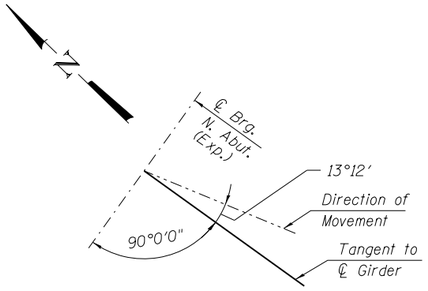
BOTTOM BEARING PLATE AND BASE CYLINDER PLAN

(Piers 1, 3 & 4)

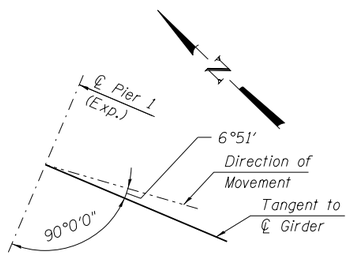
Note: Bottom plate anchor bolt pattern to be orthogonal with ℄ bearing on Piers and Girder Tangent.



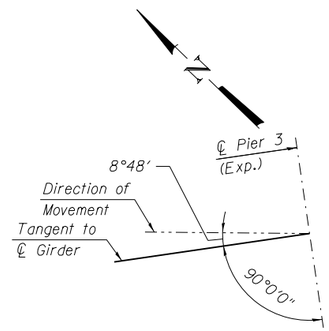
BEARING LAYOUT PLAN



NORTH ABUTMENT

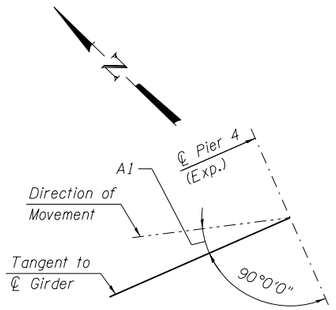


PIER 1



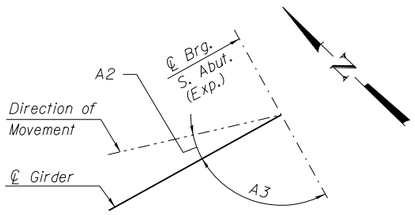
PIER 3

BEARING ORIENTATION



PIER 4

Girder	A1
1	16°31′
2	16°29′
3	16°28′
4	16°26′
5	16°24′
5a	16°51′
6	17°18′



SOUTH ABUTMENT

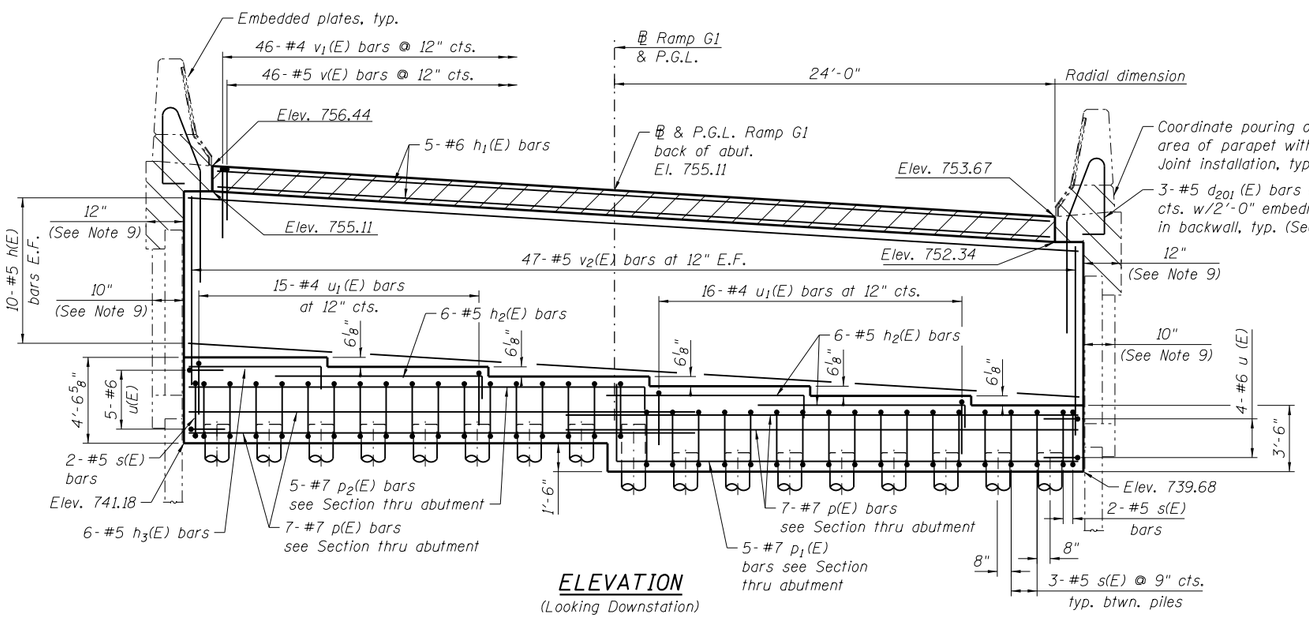
Girder	A2	A3
1	16°02′	90°00′00"
2	15°48′	90°19′08"
3	15°35′	90°38′16"
4	15°21′	90°57′22"
5	15°07′	91°16′27"
5a	15°14′	91°35′30"
6	15°20′	91°54′33"

FILE NAME = 0220557-60Y95-047-BrgOrient.dgn	USER NAME = esantiag	DESIGNED - KSM	REVISED -
CH2MHILL®		CHECKED - CK/CM	REVISED -
	PLOT SCALE = 80.0000 ' / in.	DRAWN - MRW	REVISED -
	PLOT DATE = 11/19/2014	CHECKED - KSM	REVISED -

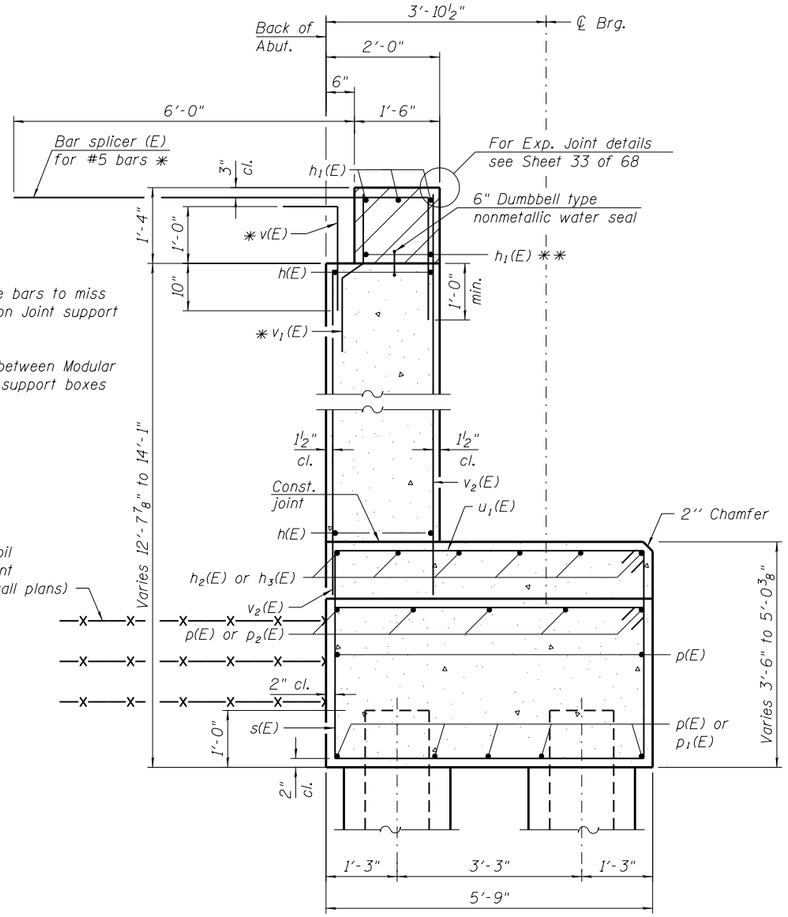
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEARING ORIENTATION DETAILS
STRUCTURE NUMBER – 022-0557
SHEET NO. 47 OF 68 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	399
	DRAWING NO. SD-47	CONTRACT NO. 60Y95		
	ILLINOIS FED. AID PROJECT			



ELEVATION
(Looking Downstation)



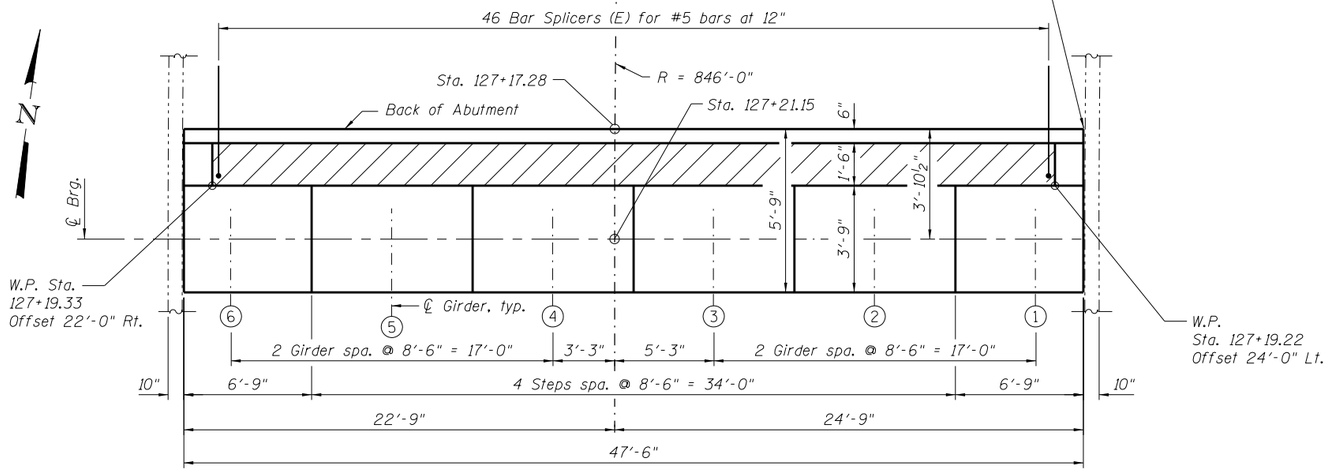
✳ Coordinate/locate bars to miss Modular Expansion Joint support boxes.

✳✳ Cut bars to fit between Modular Expansion Joint support boxes as required.

Minimum at EOP of future BRT lane

SEC. THRU ABUT.

Girder No.	Seat Elev.
1	743.18
2	743.69
3	744.20
4	744.71
5	745.22
6	745.73



TOP VIEW

Abutment notes:

1. Hatched area to be poured after superstructure forms have been removed. Quantity of concrete included with Concrete Superstructure on Sheet 24 of 68.
2. Space reinforcement in cap to clear anchor bolts.
3. Pour steps monolithically with cap.
4. For pile cap plan and notes, see Sheet 49 of 68.
5. See Sheet 49 of 68 for Bill of Material and bar details.
6. See Sheet 60 of 68 for pile details including required reinforcement.
7. See Sheet 49 of 68 for Bar Splicer details.
8. Concrete Sealer shall be applied to the girder seats and front faces of backwall and pile cap.
9. 10" & 12" dimensions to be coordinated with final retaining wall plans
10. 6" Dumbbell type nonmetallic water seal shall be in accordance with Section 503.12 and 1054 of the Standard Specifications. Cost included with Concrete Superstructure.
11. Place d_{201}(E) bars to maintain 1 1/2" cover behind embedded plates. See Sheet 33 of 68 for details.

FILE NAME = 0220557-60Y95-048-Abut.dgn	USER NAME = esantiag	DESIGNED - KSM	REVISED -
CH2MHILL®		CHECKED - CK/CM	REVISED -
	PLOT SCALE = 8.0000 ' / in.	DRAWN - MRW	REVISED -
	PLOT DATE = 12/5/2014	CHECKED - KSM	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT PLAN, ELEVATION & SECTION
STRUCTURE NUMBER – 022-0557
SHEET NO. 48 OF 68 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
345	2013-083-R&B	DUPAGE	759	400
	DRAWING NO. SD-48	CONTRACT NO. 60Y95		
	ILLINOIS FED. AID PROJECT			