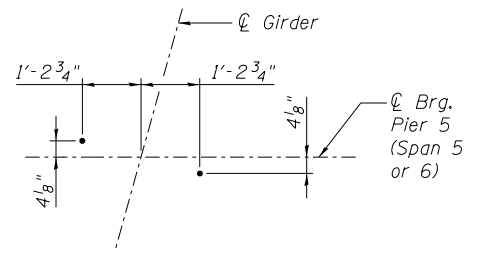


PLAN OF PIER CAP

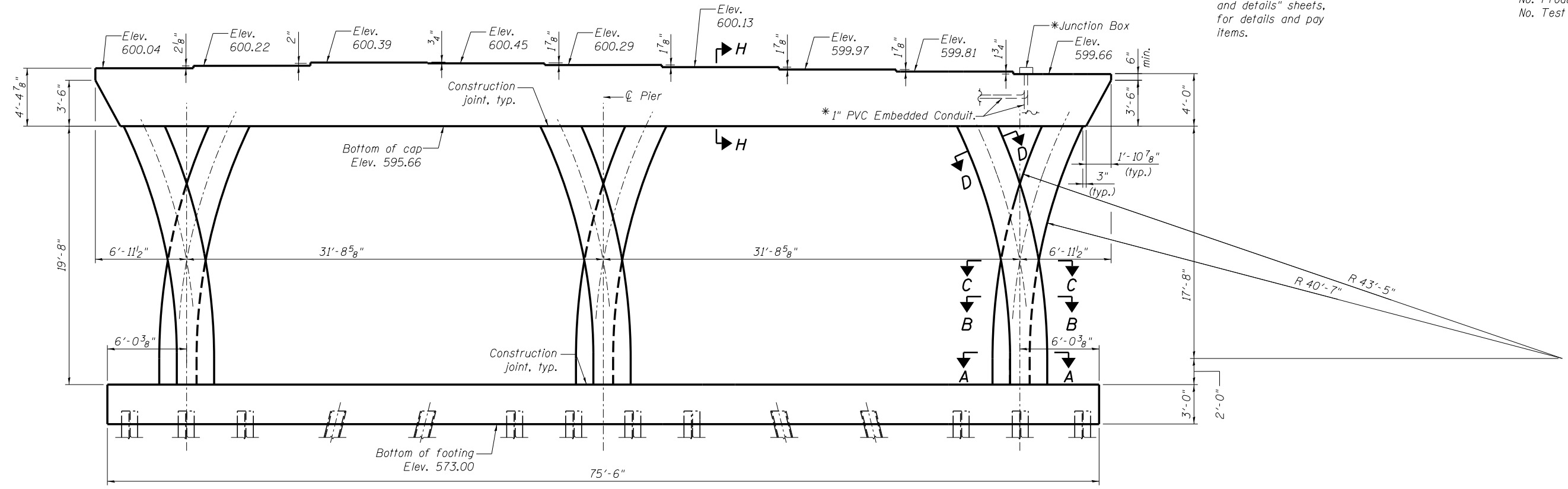


ANCHOR BOLT LAYOUT

PILE DATA - PIER 5

Type: HP14x89 with pile shoes
 Nominal Required Bearing: 848 kips
 Factored Resistance Available: 551 kips
 Est. Length: 18 feet
 No. Production Piles: 27
 No. Test Piles: 1

* See "Lighting plans and details" sheets, for details and pay items.



PIER 5 ELEVATION

(Looking South)

NOTES:

1. See sheet S113 for reinforcing details.
2. See sheet S121 for pier notes.
3. See sheet S122 for bar list and bill of material.
4. See sheet S120 For sections A-A, B-B, C-C, D-D, & H-H.

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FILE NAME = 081-0178-C00AB-112-Pier 5 Plan and Elevation.dgn	USER NAME = ksnider	DESIGNED - AWH	REVISED -
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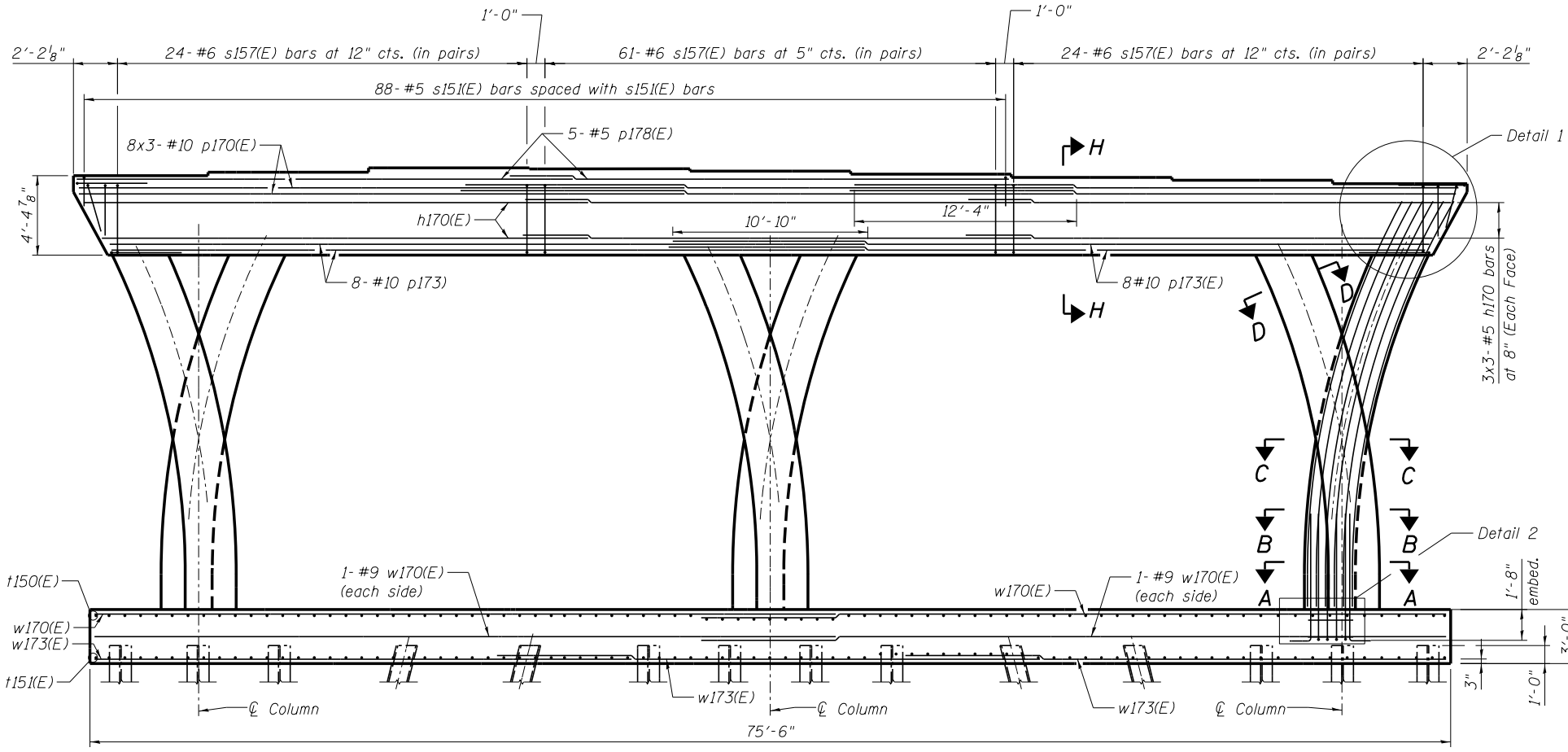
**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**PIER 5 PLAN AND ELEVATION
 STRUCTURE NO. 081-0178 (EASTBOUND)**

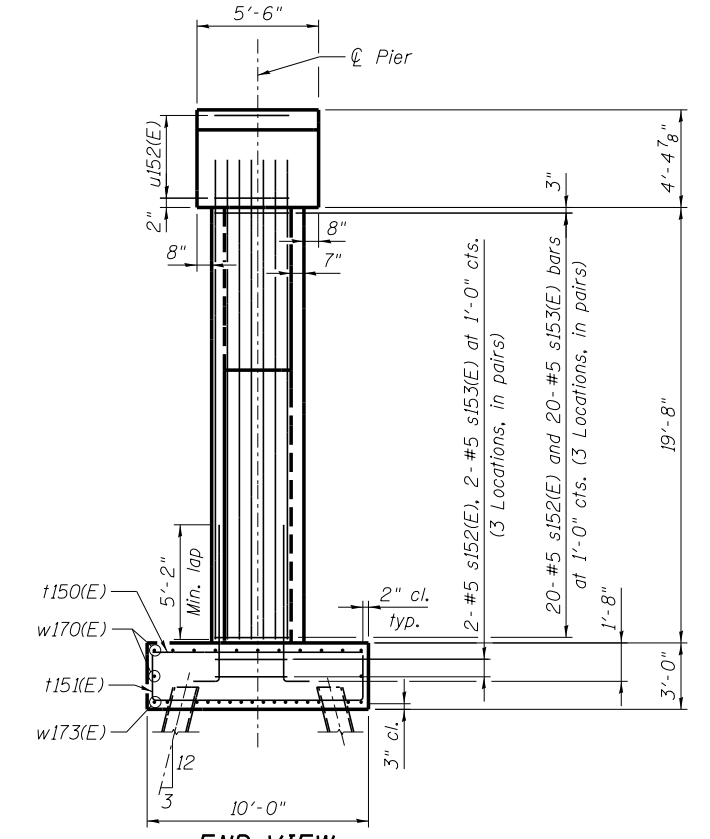
SHEET NO. S112 OF S138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1HVBR	ROCK ISLAND	1504	1001
			CONTRACT NO. 64C08	

ILLINOIS FED. AID PROJECT

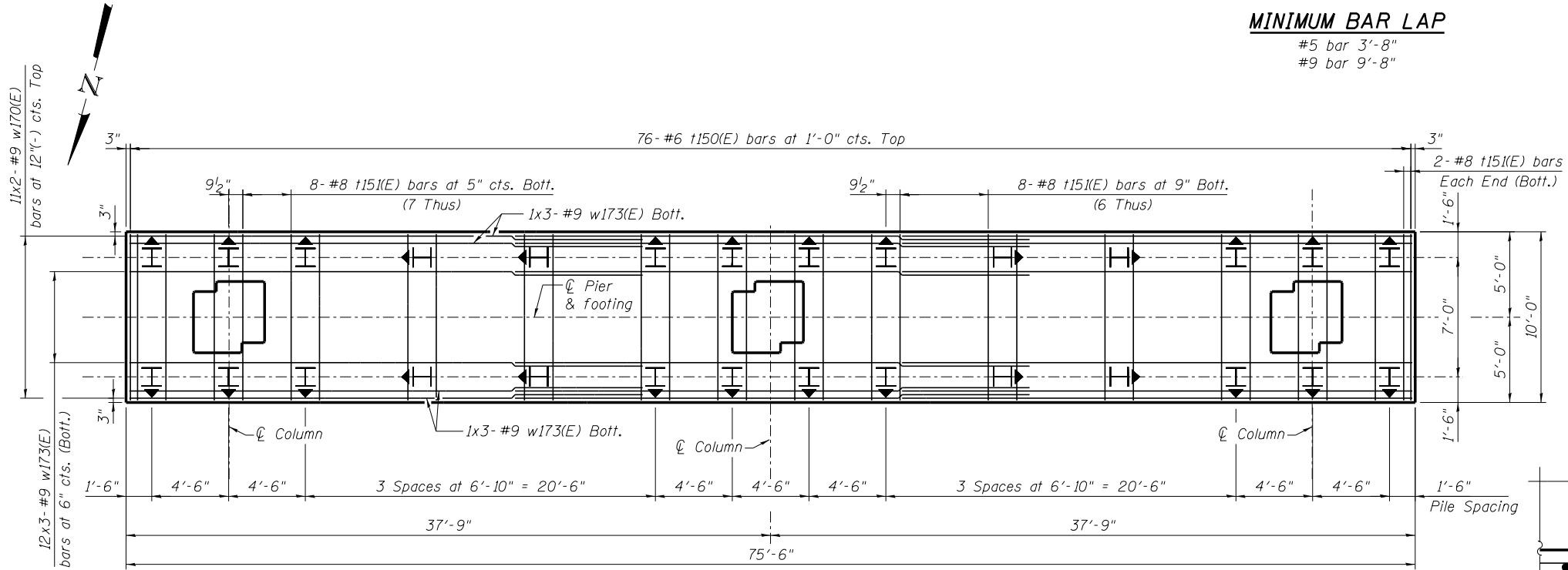


PIER ELEVATION
(Looking South)

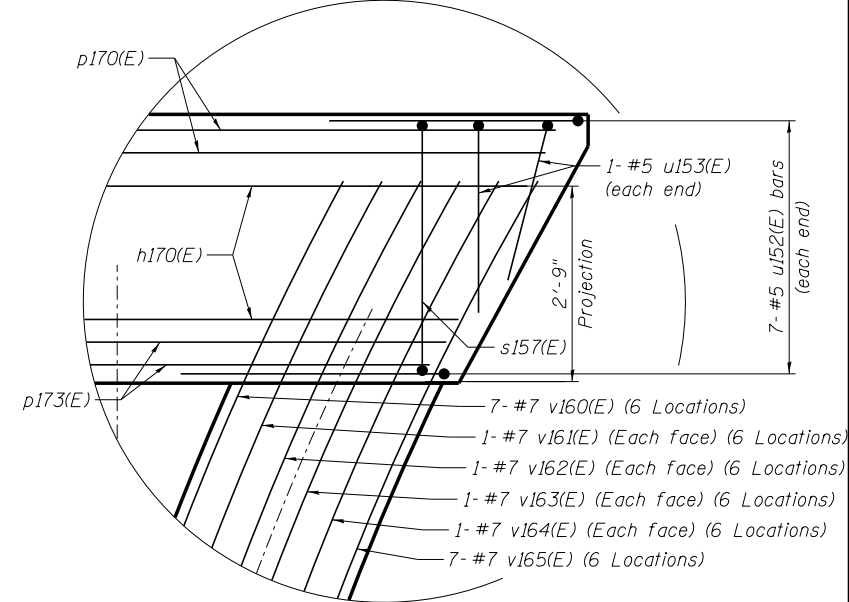


END VIEW

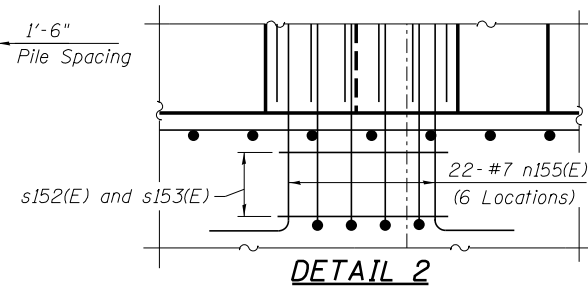
MINIMUM BAR LAP
#5 bar 3'-8"
#9 bar 9'-8"



FOOTING PLAN



DETAIL 1



DETAIL 2

NOTES:

- For sections A-A, B-B, C-C, D-D, & H-H see sheet S120.
- See sheet S121 for pier notes.
- See sheets S8 and S9 for footing and pile layout.



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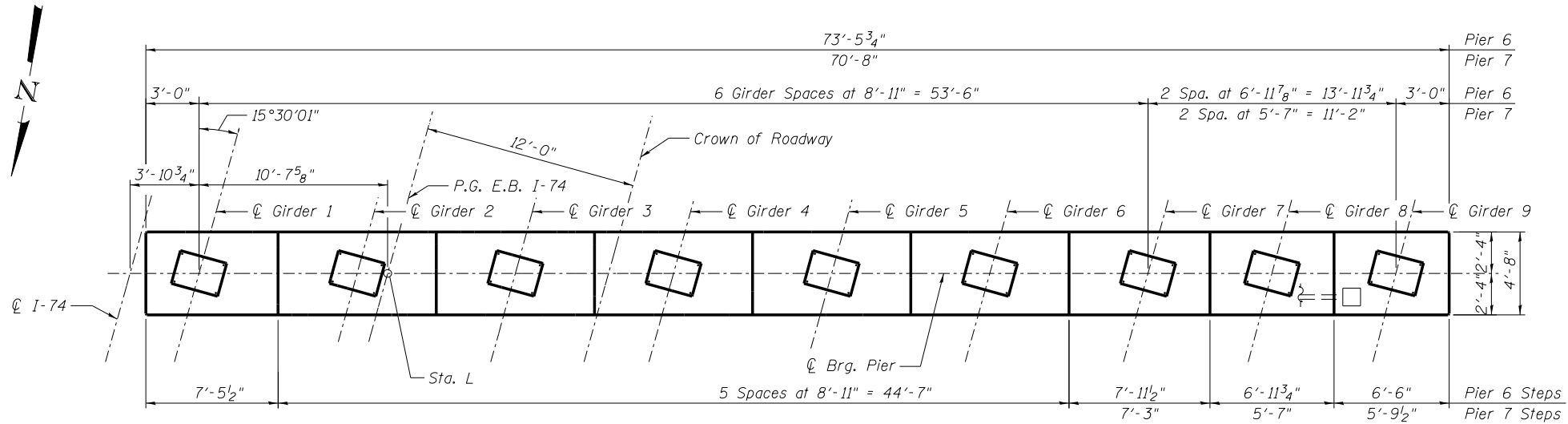
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

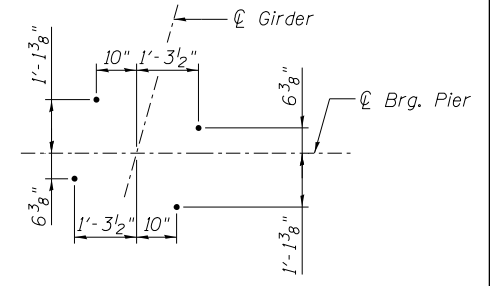
PIER 5 REINFORCEMENT DETAILS
STRUCTURE NO. 081-0178 (EASTBOUND)

SHEET NO. S113 OF S138 SHEETS

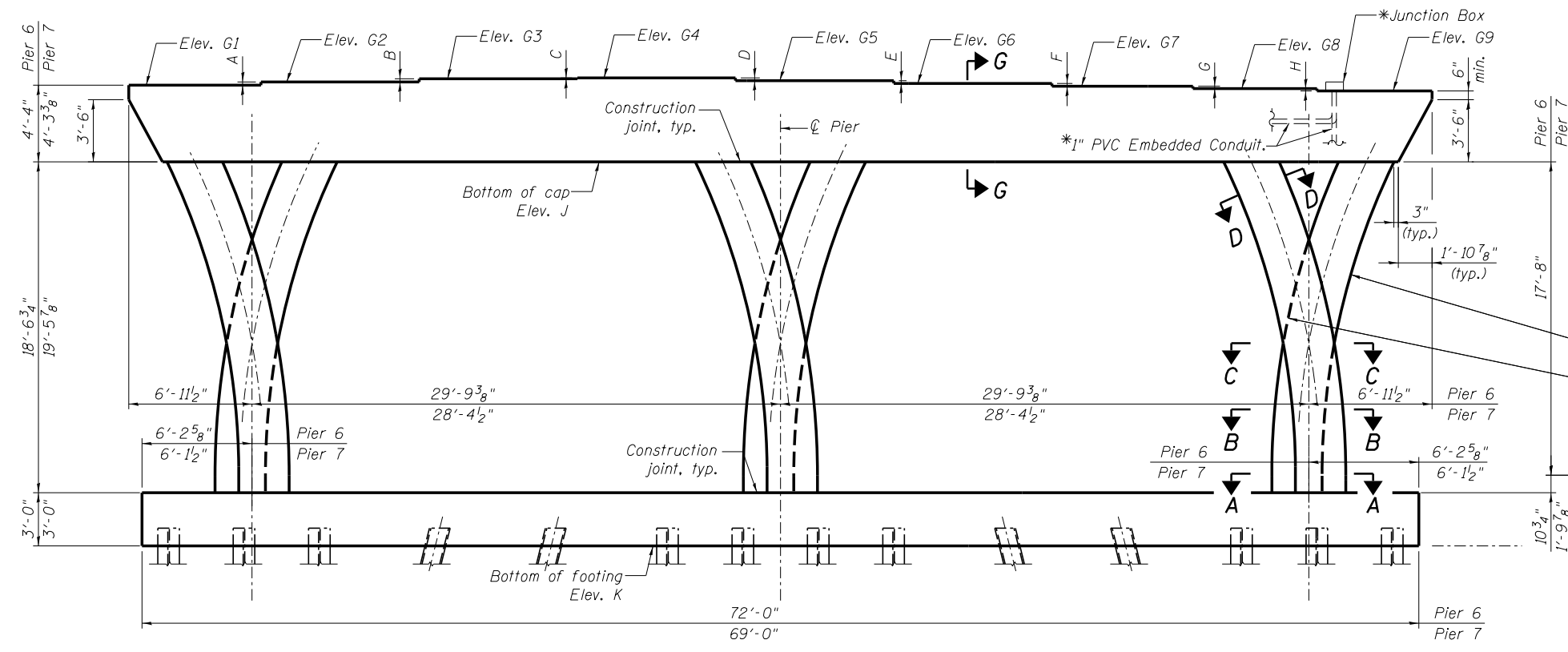
F.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1HVBR	ROCK ISLAND	1504	1002
ILLINOIS FED. AID PROJECT			CONTRACT NO. 64C08	



PLAN OF PIER CAP



ANCHOR BOLT LAYOUT



* See "Lighting plans and details" sheets, for details and pay items.

PIERS 6 & 7 ELEVATION
(Looking South)

PILE DATA - PIER 6

Type: HP14x89 with pile shoes
 Nominal Required Bearing: 848 kips
 Factored Resistance Available: 551 kips
 Est. Length: 24 feet
 No. Production Piles: 27
 No. Test Piles: 1

PILE DATA - PIER 7

Type: HP14x73 with pile shoes
 Nominal Required Bearing: 695 kips
 Factored Resistance Available: 452 kips
 Est. Length: 18 feet
 No. Production Piles: 27
 No. Test Piles: 1

NOTES:

1. See sheet S115 for reinforcing details.
2. See sheet S121 for pier notes.
3. See sheet S123 for bar list and bill of material.
4. See sheet S120 For sections A-A, B-B, C-C, D-D, & G-G.

PIER	A	B	C	D	E	F	G	H	J	K	L	G1	G2	G3	G4	G5	G6	G7	G8	G9
Pier 6	2 1/4"	2"	3/4"	2"	1 7/8"	2"	1 5/8"	1 1/2"	596.56	575.00	40+44.88	600.89	601.08	601.25	601.31	601.14	600.98	600.81	600.68	600.56
Pier 7	2 1/8"	2"	3/4"	1 7/8"	1 7/8"	2"	1 3/8"	1 1/8"	597.49	575.00	42+34.88	601.77	601.95	602.12	602.18	602.02	601.86	601.69	601.58	601.49

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FILE NAME = 081-0178-C00AB-114-Piers 6 and 7 Plan and Elevation.dgn	USER NAME = ksnider	DESIGNED - AWH	REVISED -
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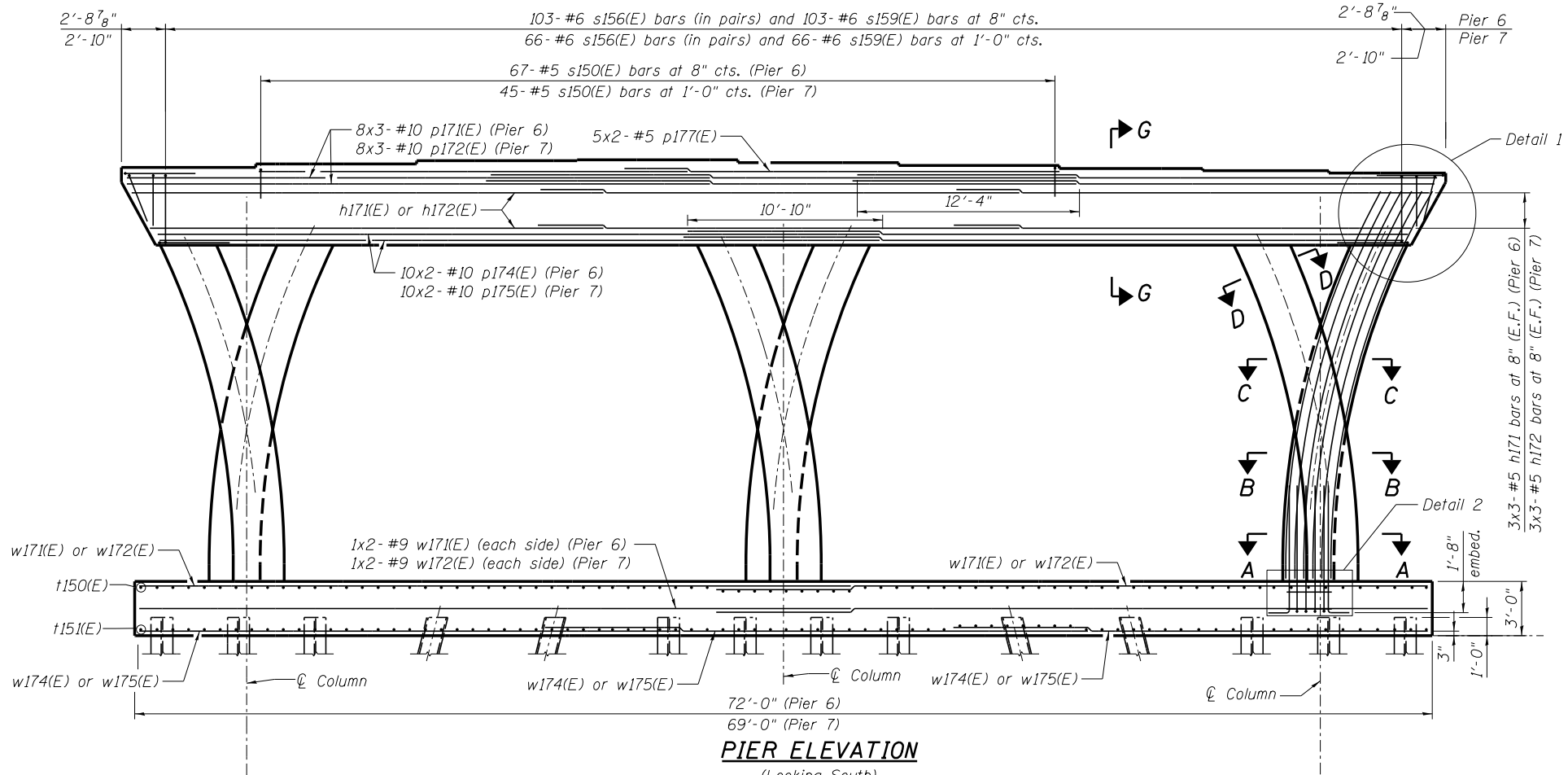
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIERS 6 AND 7 PLAN AND ELEVATION
STRUCTURE NO. 081-0178 (EASTBOUND)

SHEET NO. S114 OF S138 SHEETS

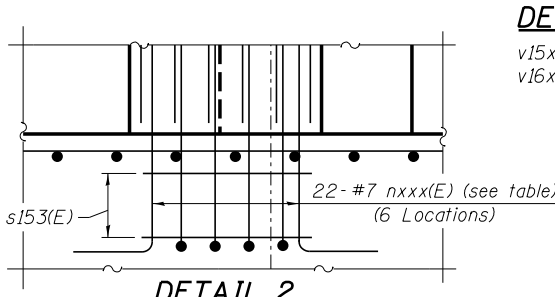
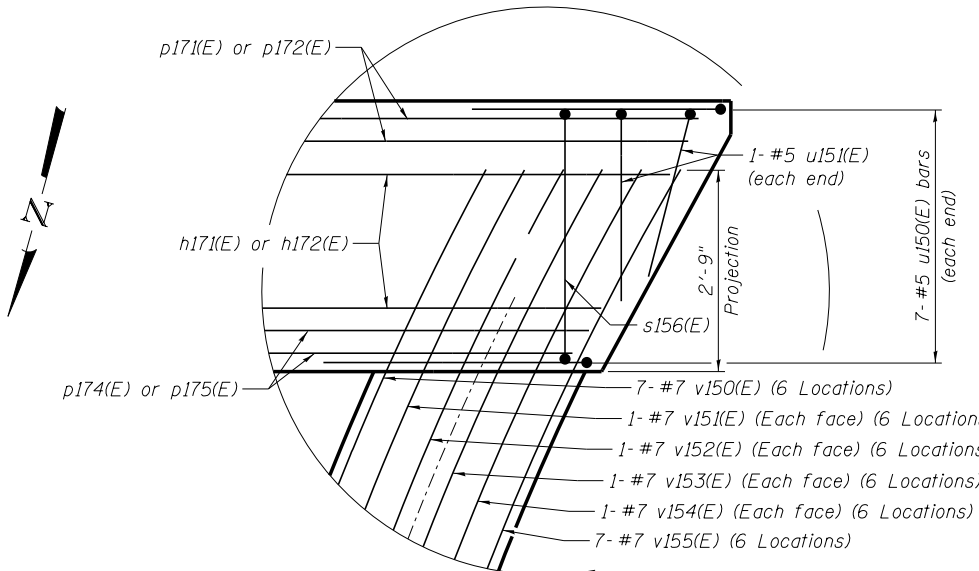
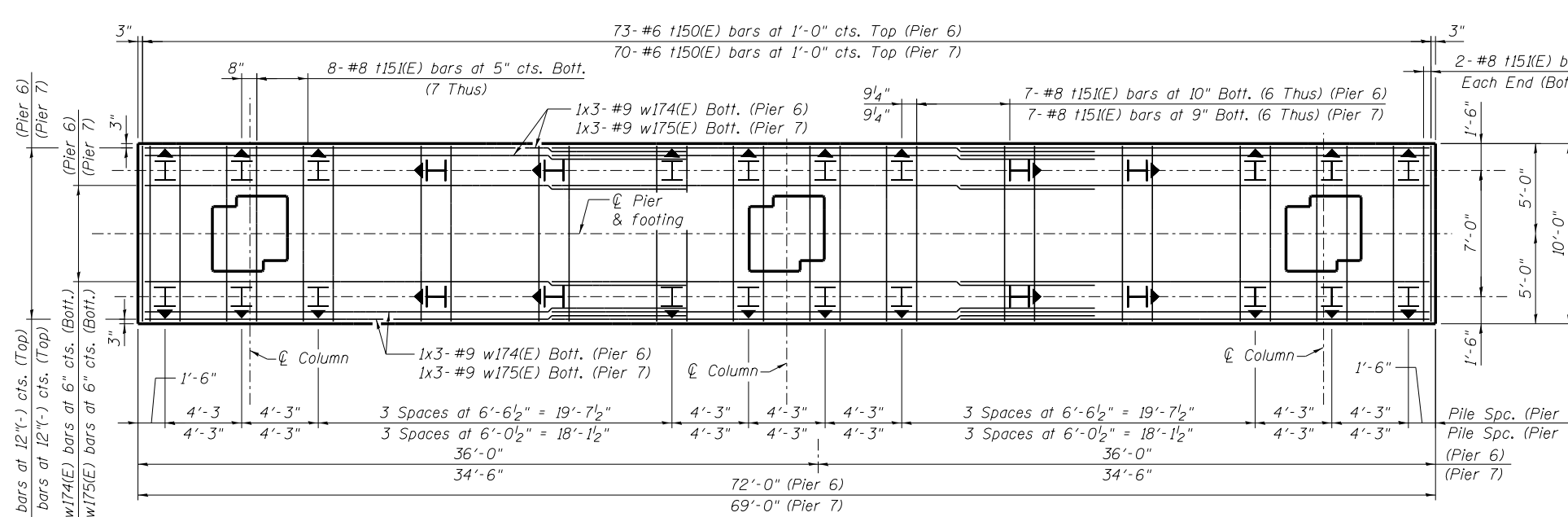
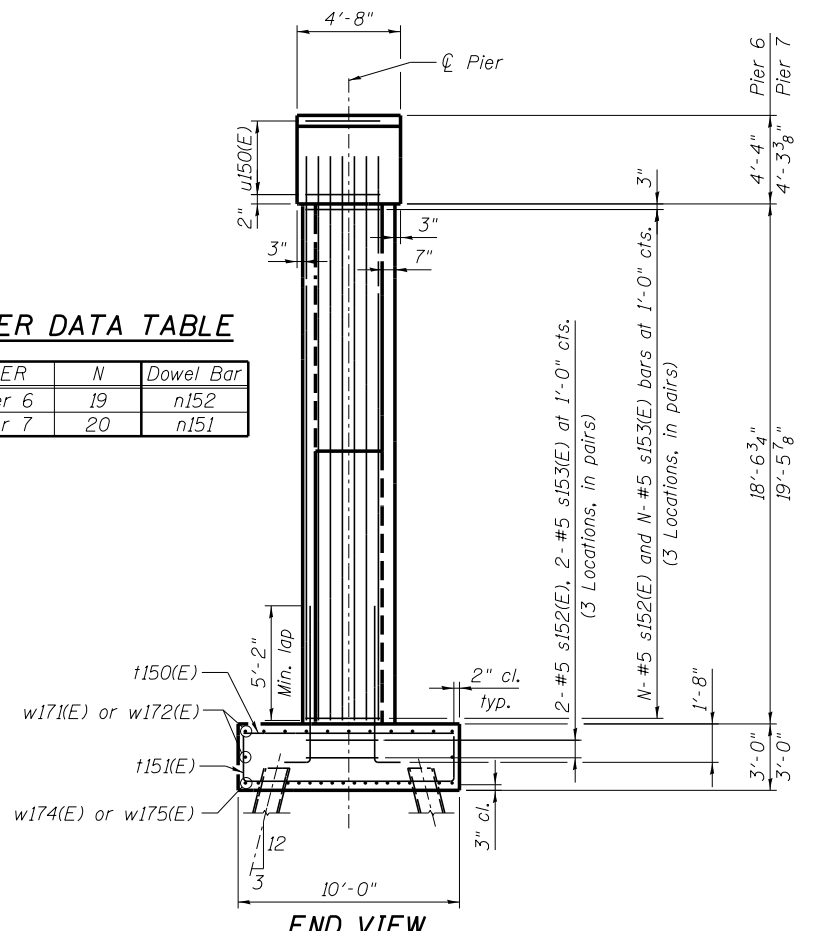
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1HVBR	ROCK ISLAND	1504	1003
ILLINOIS FED. AID PROJECT			CONTRACT NO. 64C08	

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PIER DATA TABLE

PIER	N	Dowel Bar
Pier 6	19	n152
Pier 7	20	n151



MINIMUM BAR LAP
 #5 bar 3'-8"
 #9 bar 9'-8"

DETAIL 1
 v15x series shown for Pier 6. Use v16x series for Pier 7. See Bar List.

- NOTES:**
- For sections A-A, B-B, C-C, D-D, & G-G see sheet S120.
 - See sheet S121 for pier notes.
 - See sheets S8 and S9 for footing and pile layout.

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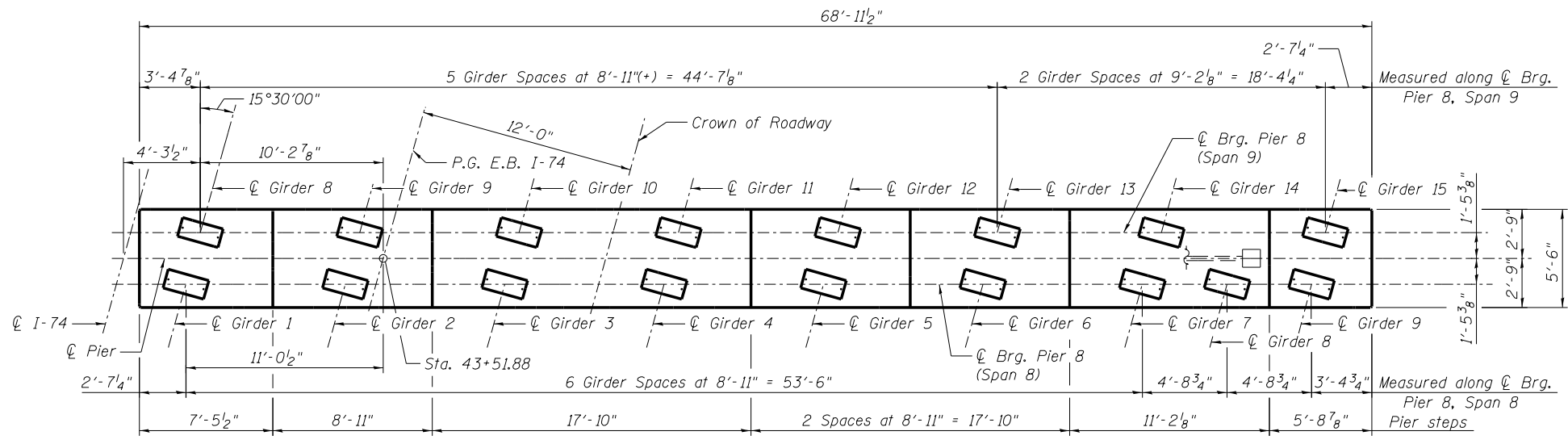
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 DEPARTMENT OF TRANSPORTATION**

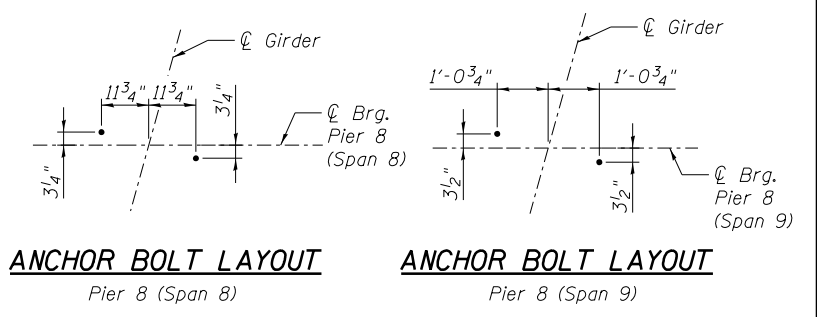
**PIERS 6 AND 7 REINFORCEMENT DETAILS
 STRUCTURE NO. 081-0178 (EASTBOUND)**

SHEET NO. S115 OF S138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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ILLINOIS FED. AID PROJECT			CONTRACT NO. 64C08	

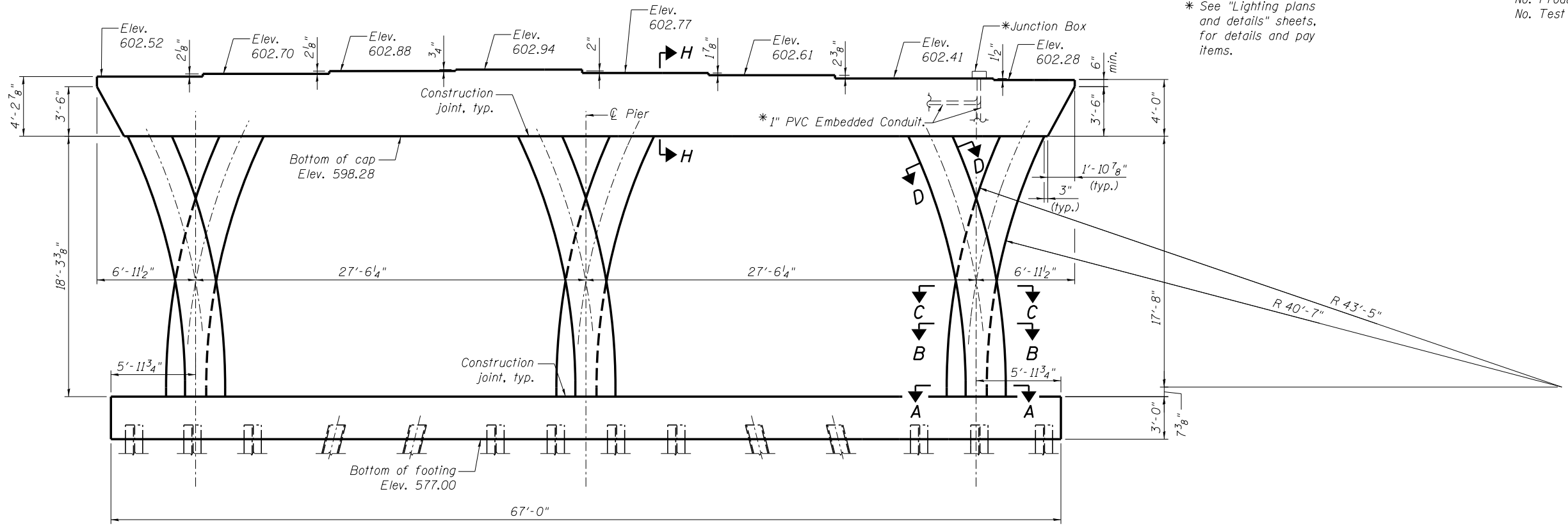


PLAN OF PIER CAP



ANCHOR BOLT LAYOUT
Pier 8 (Span 8)

ANCHOR BOLT LAYOUT
Pier 8 (Span 9)



PIER 8 ELEVATION
(Looking South)

* See "Lighting plans and details" sheets, for details and pay items.

PILE DATA - PIER 8
Type: HP14x73 with pile shoes
Nominal Required Bearing: 695 kips
Factored Resistance Available: 452 kips
Est. Length: 20 feet
No. Production Piles: 27
No. Test Piles: 1

- NOTES:**
1. See sheet S117 for reinforcing details.
 2. See sheet S121 for pier notes.
 3. See sheet S123 for bar list and bill of material.
 4. See sheet S120 for sections A-A, B-B, C-C, D-D, & H-H.

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FILE NAME = 081-0178-C00AB-116-Pier 8 Plan and Elevation.dgn
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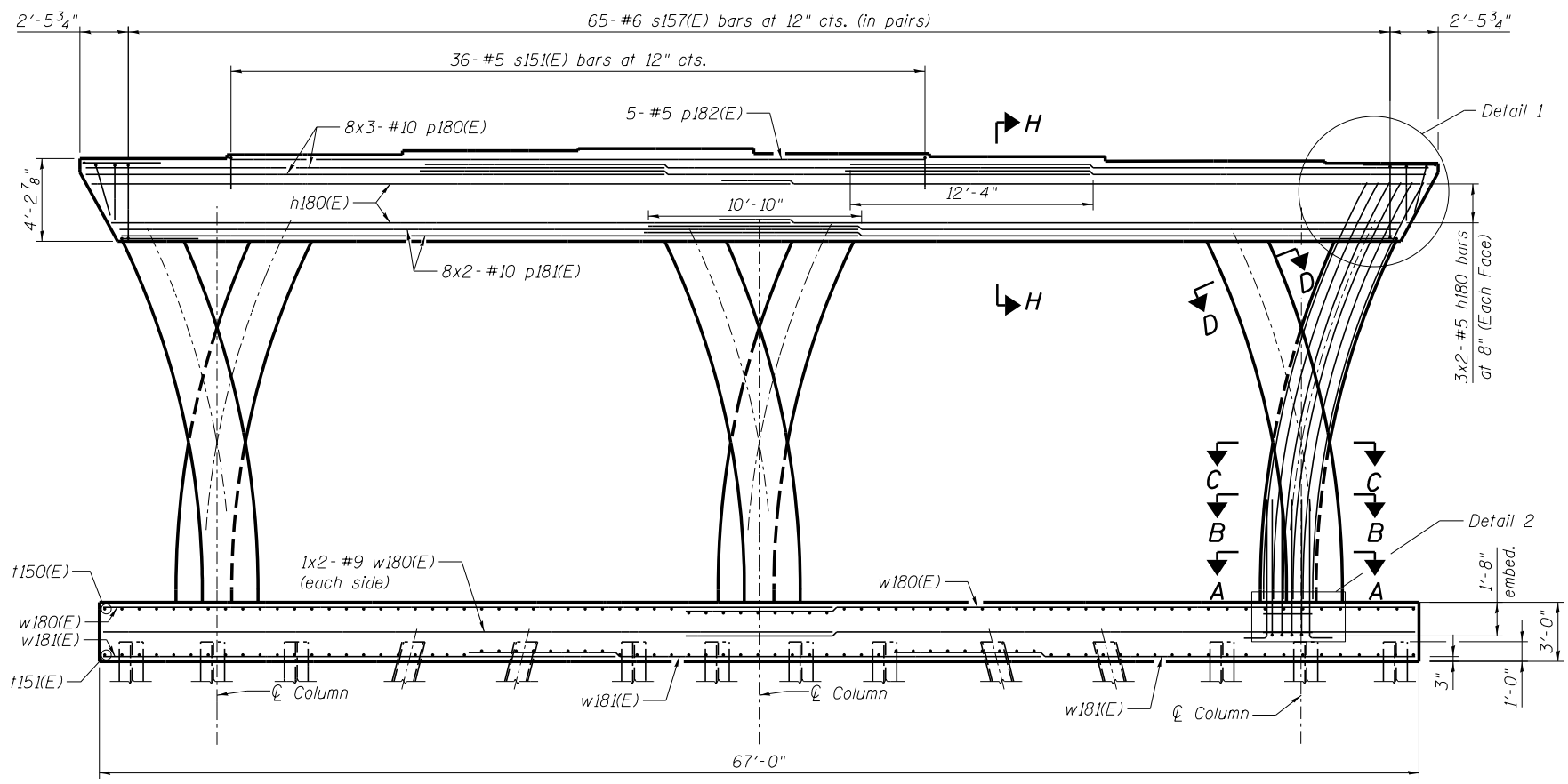
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 8 PLAN AND ELEVATION
STRUCTURE NO. 081-0178 (EASTBOUND)

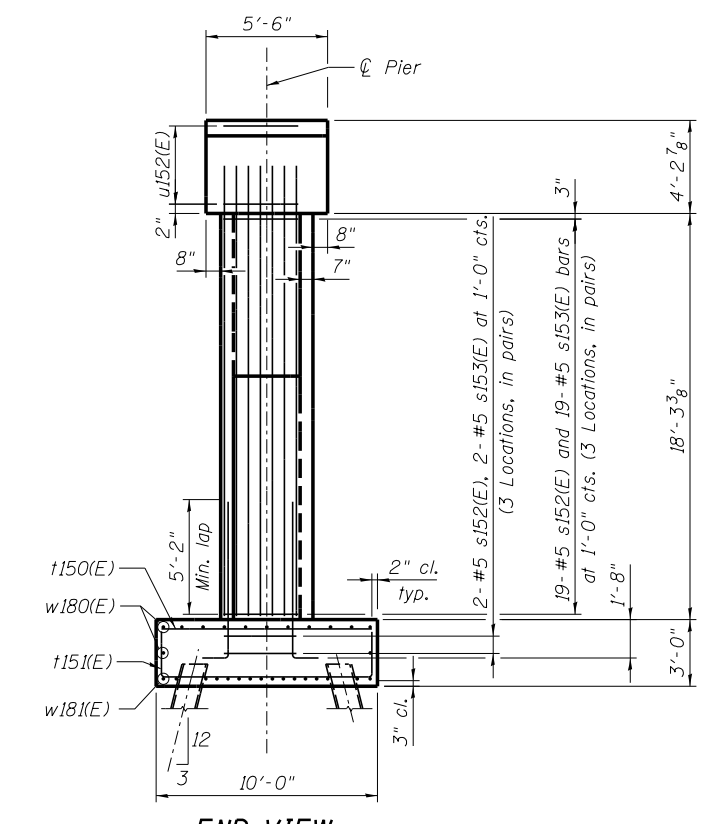
SHEET NO. S116 OF S138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1HVBR	ROCK ISLAND	1504	1005
CONTRACT NO. 64C08			ILLINOIS FED. AID PROJECT	

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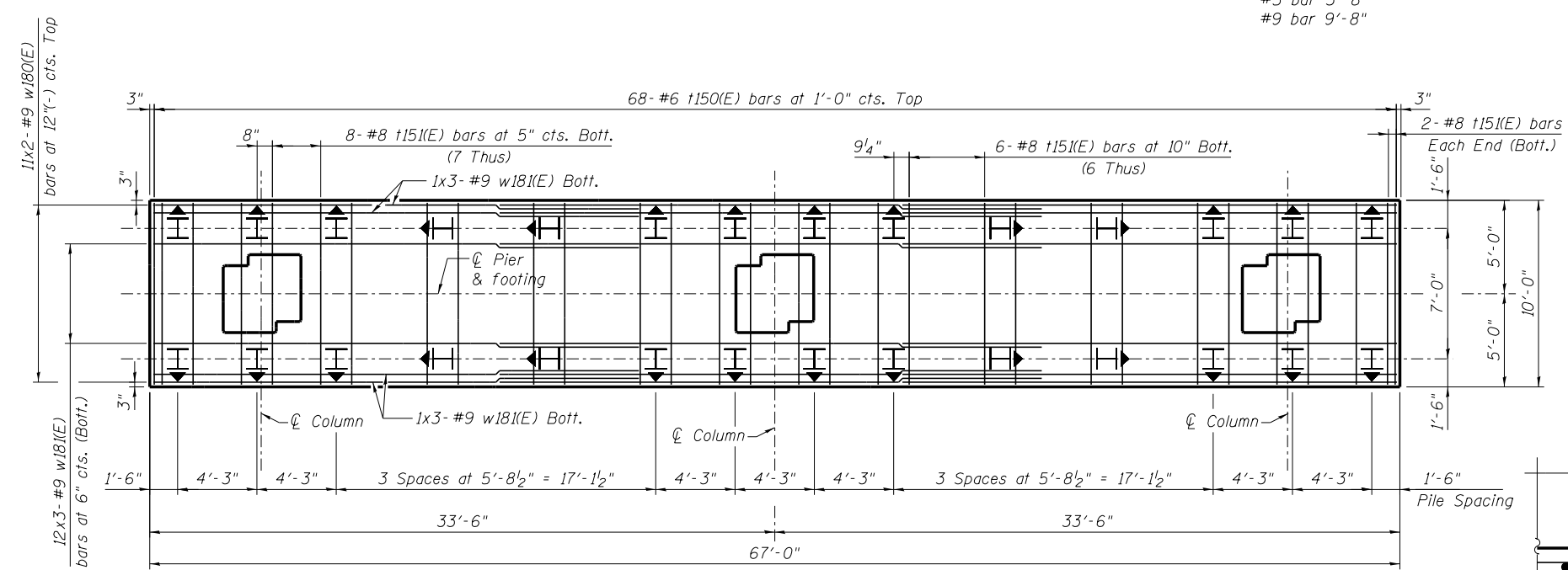


PIER ELEVATION
(Looking South)

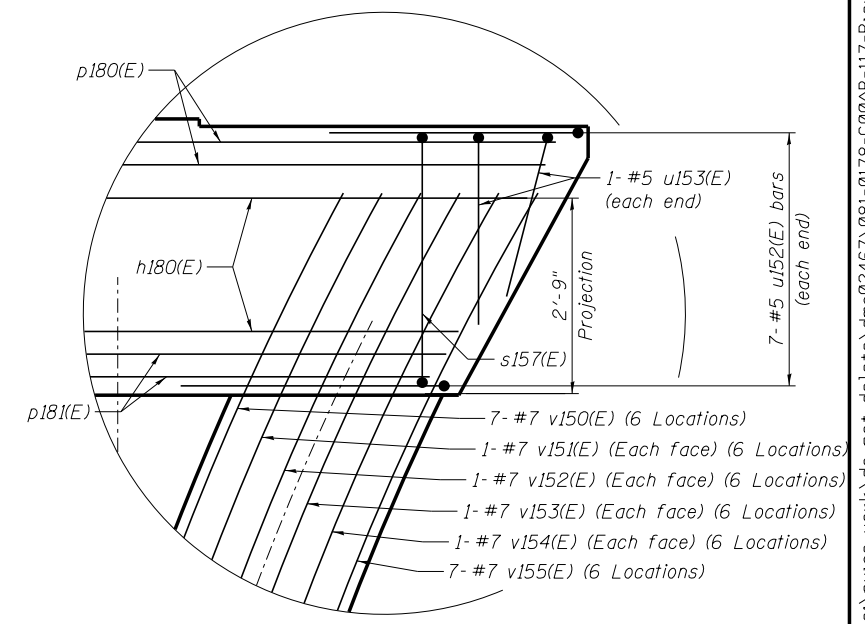


END VIEW

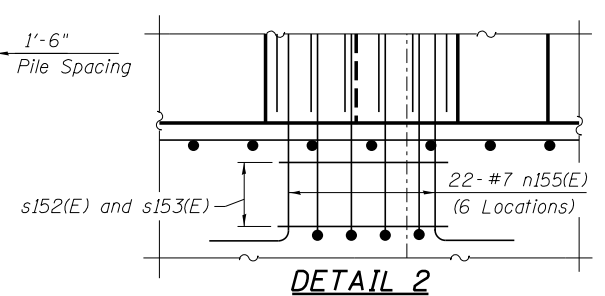
MINIMUM BAR LAP
#5 bar 3'-8"
#9 bar 9'-8"



FOOTING PLAN



DETAIL 1



DETAIL 2

NOTES:

1. For sections A-A, B-B, C-C, D-D, & H-H see sheet S120.
2. See sheet S121 for pier notes.
3. See sheets S8 and S9 for footing and pile layout.

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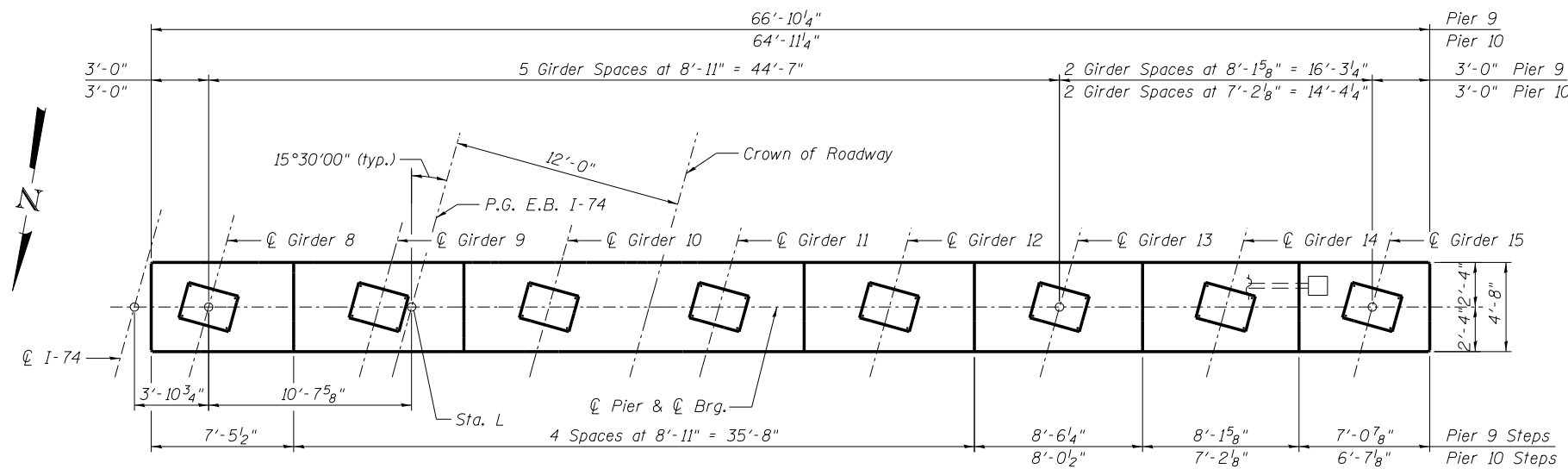
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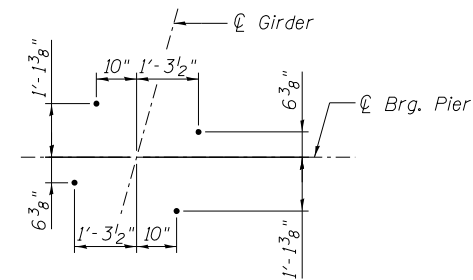
PIER 8 REINFORCEMENT DETAILS
STRUCTURE NO. 081-0178 (EASTBOUND)

SHEET NO. S117 OF S138 SHEETS

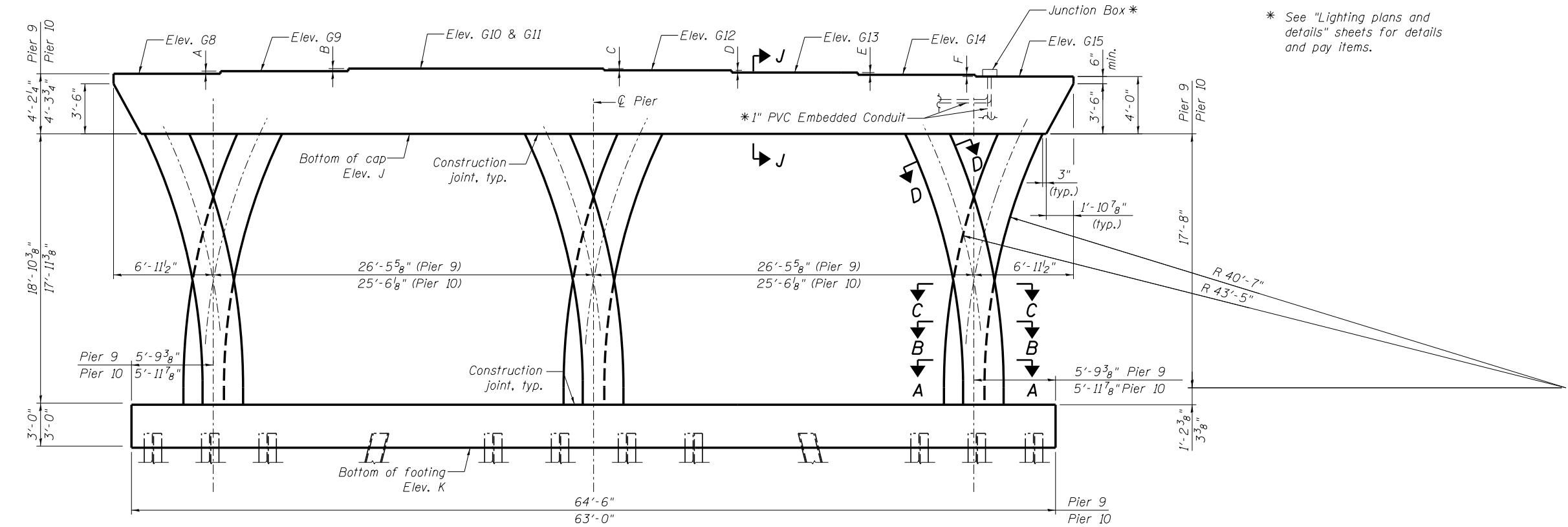
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74	81-1HVBR	ROCK ISLAND	1504	1006
ILLINOIS FED. AID PROJECT			CONTRACT NO. 64C08	



PLAN OF PIER CAP



ANCHOR BOLT LAYOUT



* See "Lighting plans and details" sheets for details and pay items.

PILE DATA - PIER 9

Type: HP14x73 with pile shoes
 Nominal Required Bearing: 695 kips
 Factored Resistance Available: 452 kips
 Est. Length: 20 feet
 No. Production Piles: 23
 No. Test Piles: 1

PILE DATA - PIER 10

Type: HP14x73 with pile shoes
 Nominal Required Bearing: 695 kips
 Factored Resistance Available: 452 kips
 Est. Length: 22 feet
 No. Production Piles: 23
 No. Test Piles: 1

PIERS 9 & 10 ELEVATION

(Looking South)

NOTES:

1. See sheet S119 for reinforcing details.
2. See sheet S120 for Sections A-A, B-B, C-C, D-D and J-J.
3. See sheet S121 for pier notes.
4. See sheet S123 for bar list and bill of material.

PIER	A	B	C	D	E	F	J	K	L	G8	G9	G10	G11	G12	G13	G14	G15
Pier 9	2 1/4"	2 3/8"	1 3/8"	1 7/8"	1 3/4"	1 5/8"	598.86	577.00	44+84.88	603.05	603.24	603.42	603.42	603.31	603.15	603.00	602.86
Pier 10	2"	0 3/4"	1 3/4"	2"	1 1/4"	1 1/2"	599.95	579.00	46+69.88	604.26	604.43	604.49	604.49	604.34	604.17	604.07	603.95

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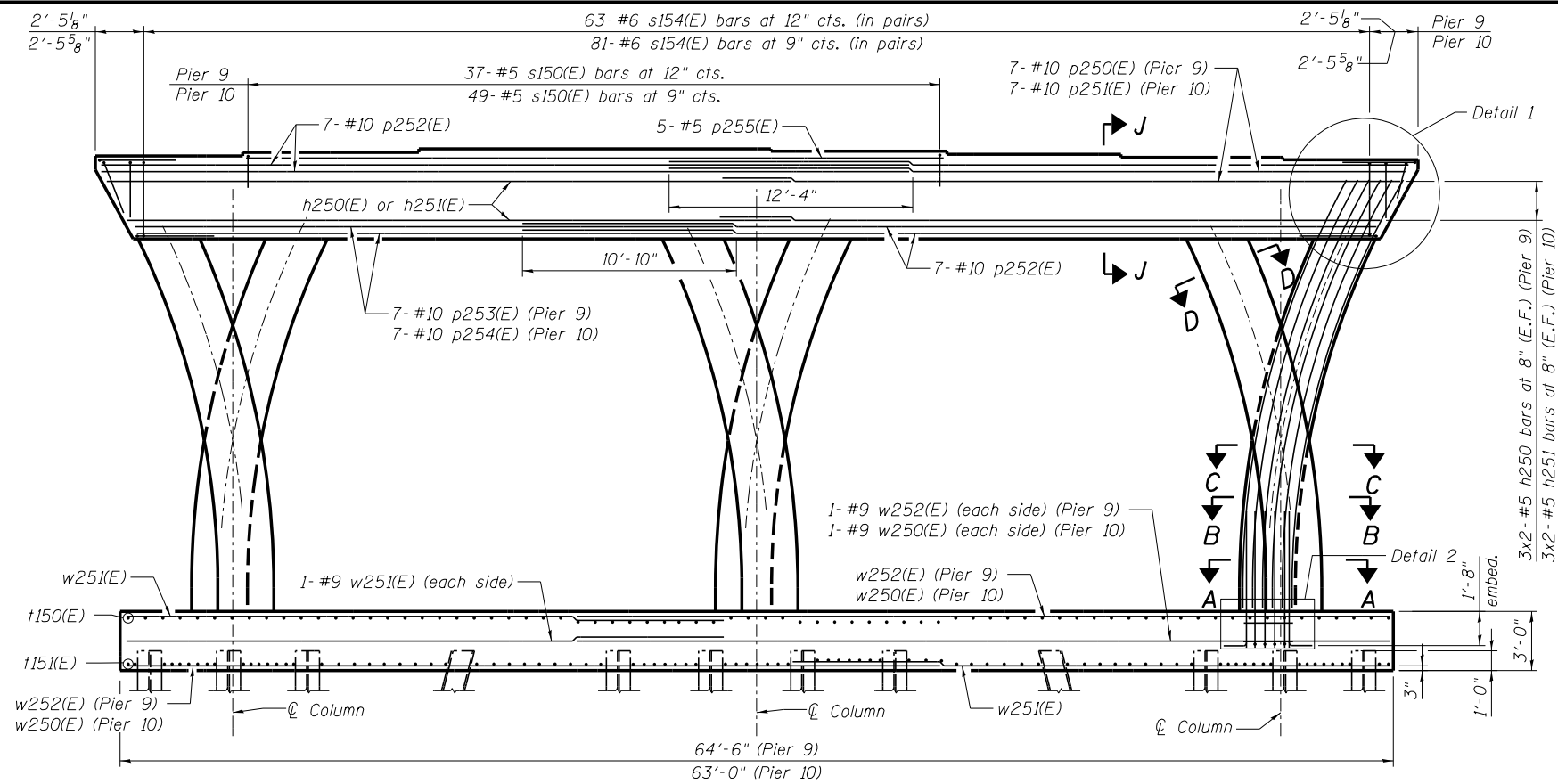
**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**PIERS 9 AND 10 PLAN AND ELEVATION
 STRUCTURE NO. 081-0178 (EASTBOUND)**

SHEET NO. S118 OF S138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1HVBR	ROCK ISLAND	1504	1007
ILLINOIS FED. AID PROJECT			CONTRACT NO. 64C08	

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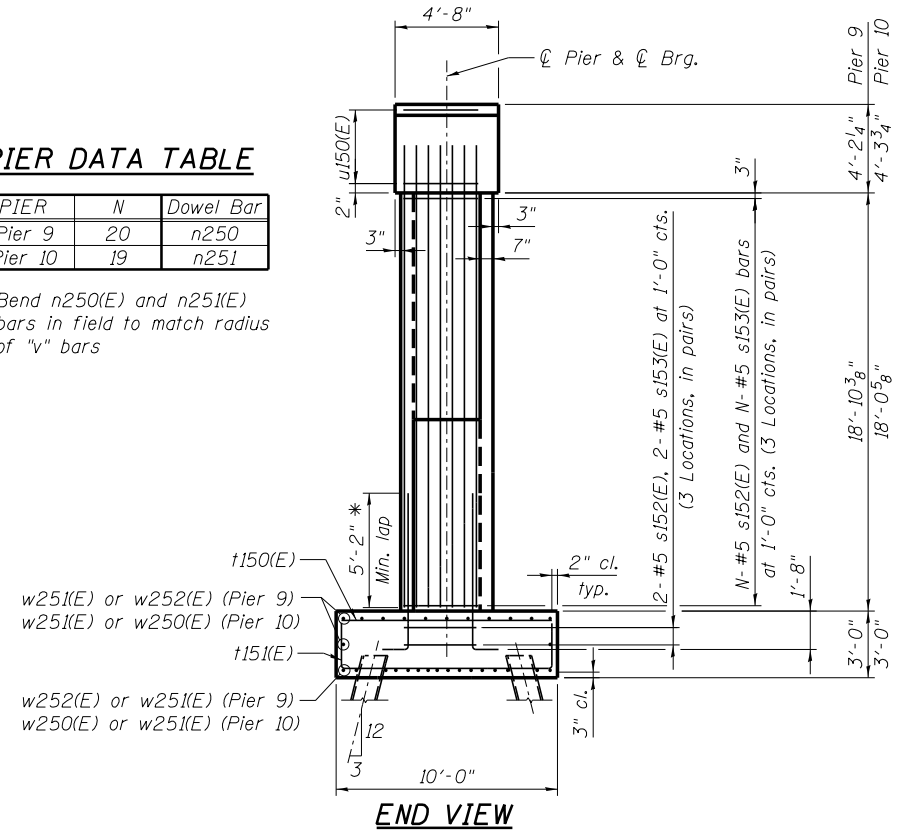


PIER ELEVATION
(Looking South)

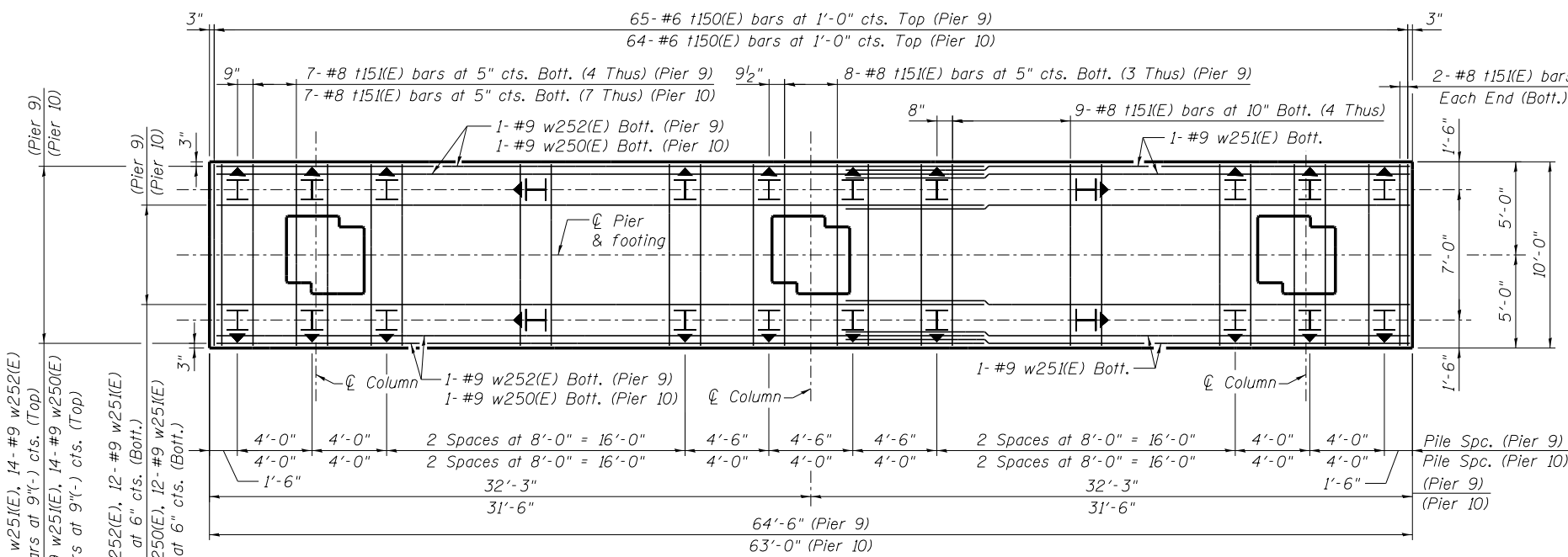
PIER DATA TABLE

PIER	N	Dowel Bar
Pier 9	20	n250
Pier 10	19	n251

* Bend n250(E) and n251(E) bars in field to match radius of "v" bars



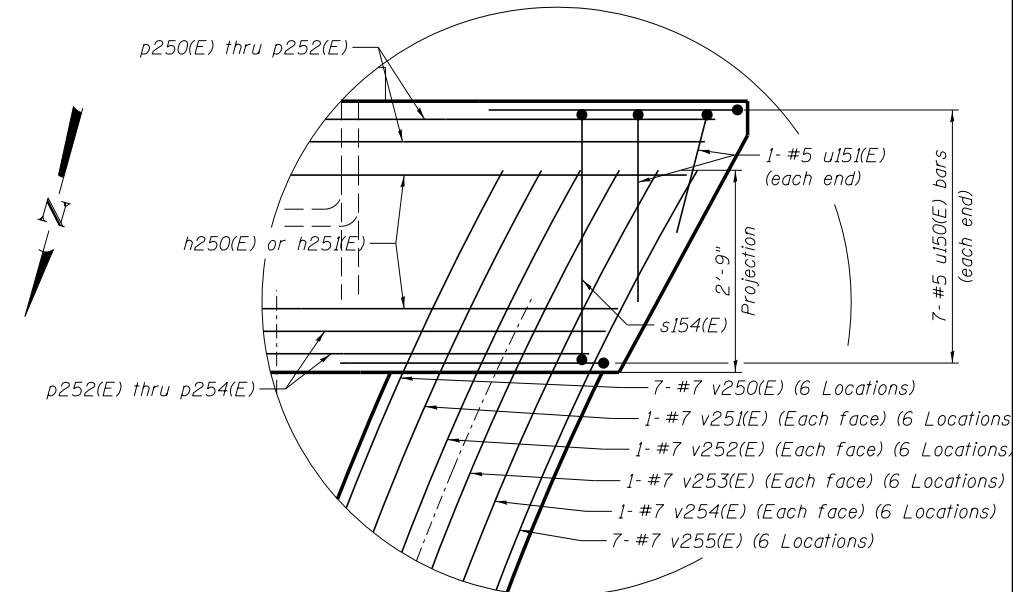
END VIEW



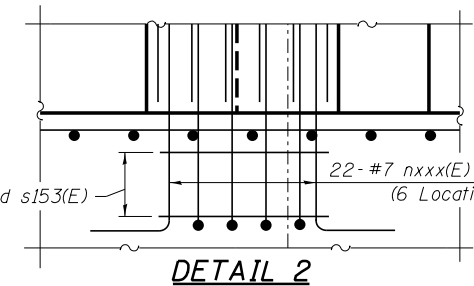
FOOTING PLAN

MINIMUM BAR LAP

#5 bar 3'-8"
#9 bar 9'-8"



DETAIL 1



DETAIL 2

NOTES:

- For sections A-A, B-B, C-C, D-D, & J-J see sheet S120.
- See sheet S121 for pier notes.
- See sheets S8 & S10 for footing and pile layout.

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312-565-0450 Job No. 10061

FILE NAME = 081-0178-C00AB-119-Piers 9 and 10 Reinforcement Details	USER NAME = ksnider	DESIGNED - AWH	REVISED -
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIERS 9 AND 10 REINFORCEMENT DETAILS
STRUCTURE NO. 081-0178 (EASTBOUND)

SHEET NO. S119 OF S138 SHEETS

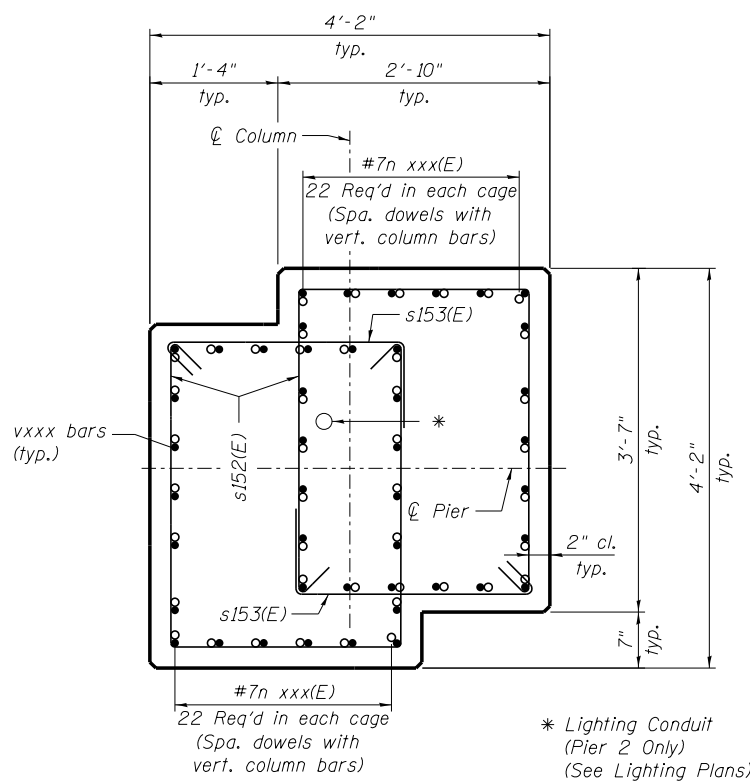
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1HVBR	ROCK ISLAND	1504	1008
			CONTRACT NO. 64C08	
ILLINOIS FED. AID PROJECT				

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1/18/2017

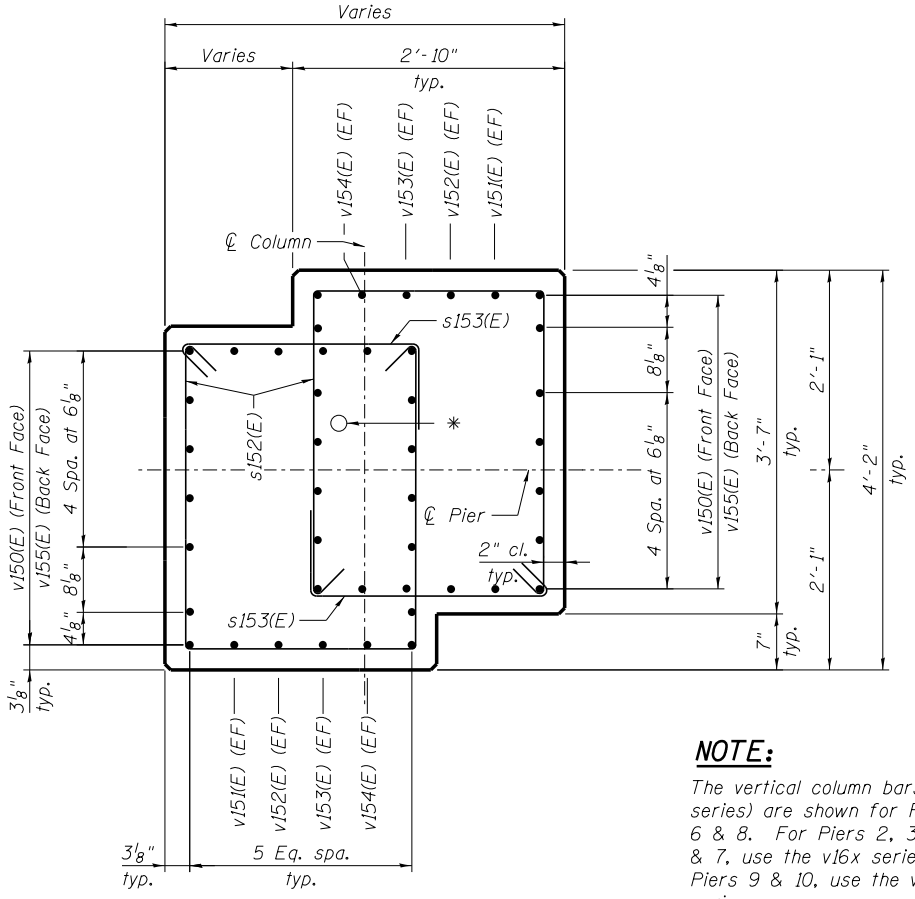
NOTE:
"EF" abbreviation indicates each face of the indicated reinforcement cage.



SECTION A-A

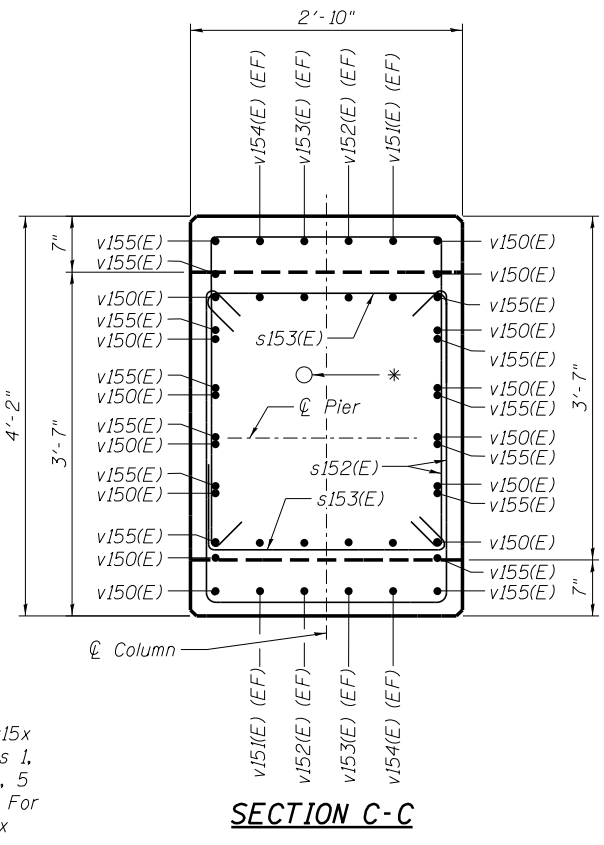
(Only dowels called out in this section for clarity. Main vertical bars same as called out and spaced in Section B-B)

* Lighting Conduit (Pier 2 Only) (See Lighting Plans)

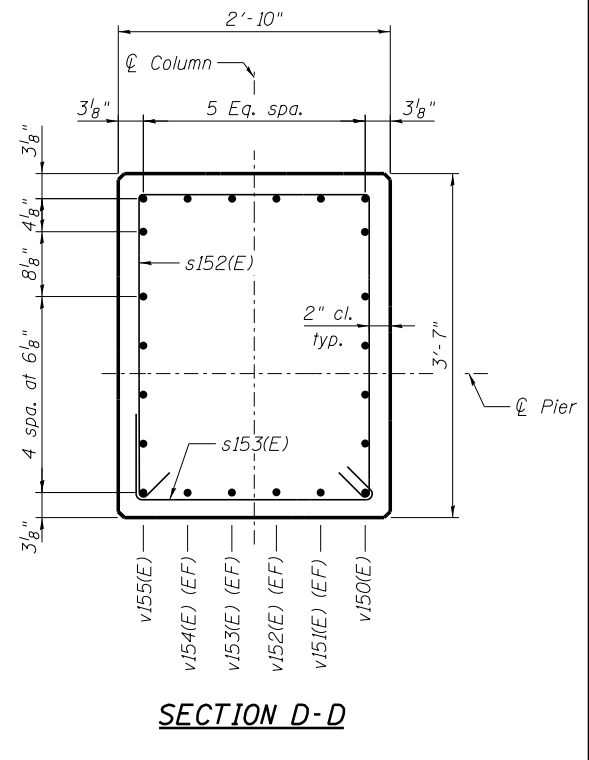


SECTION B-B

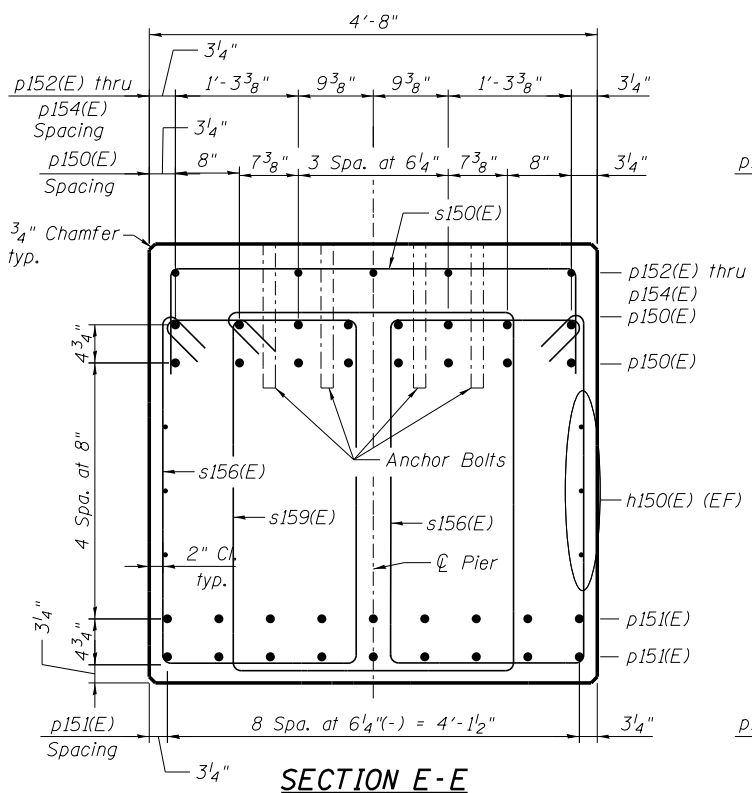
NOTE:
The vertical column bars (v15x series) are shown for Piers 1, 6 & 8. For Piers 2, 3, 4, 5 & 7, use the v16x series. For Piers 9 & 10, use the v25x series.



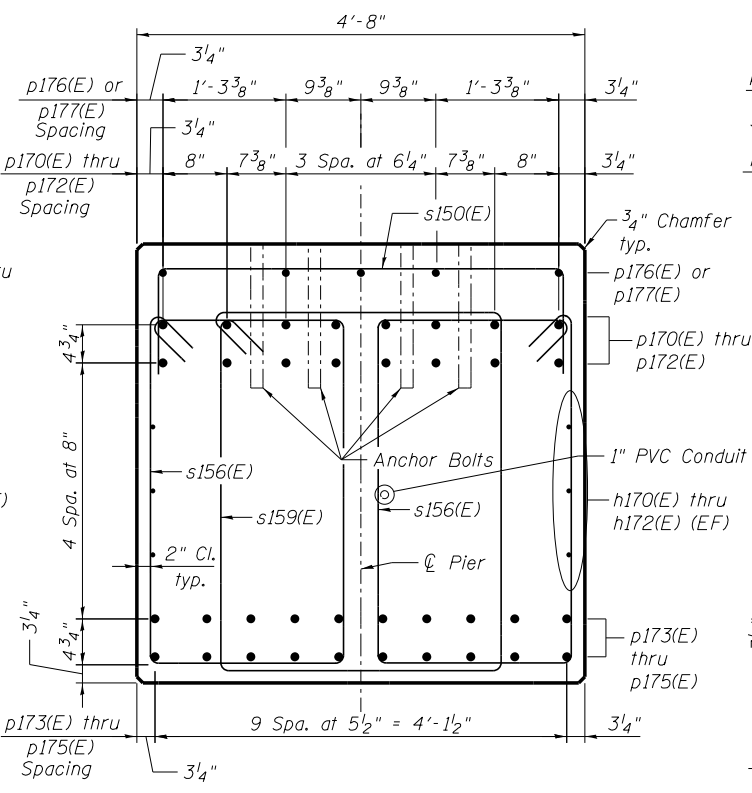
SECTION C-C



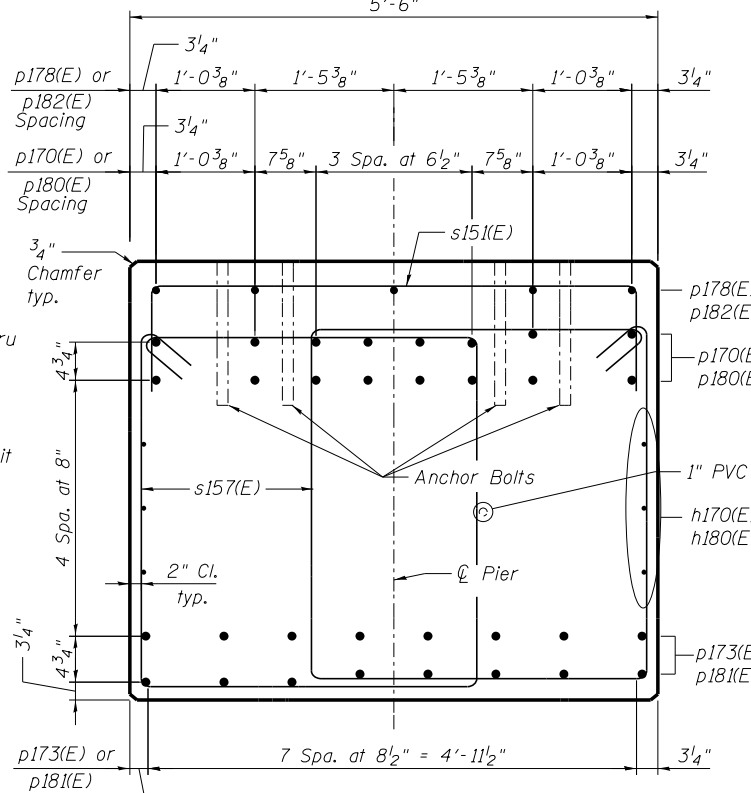
SECTION D-D



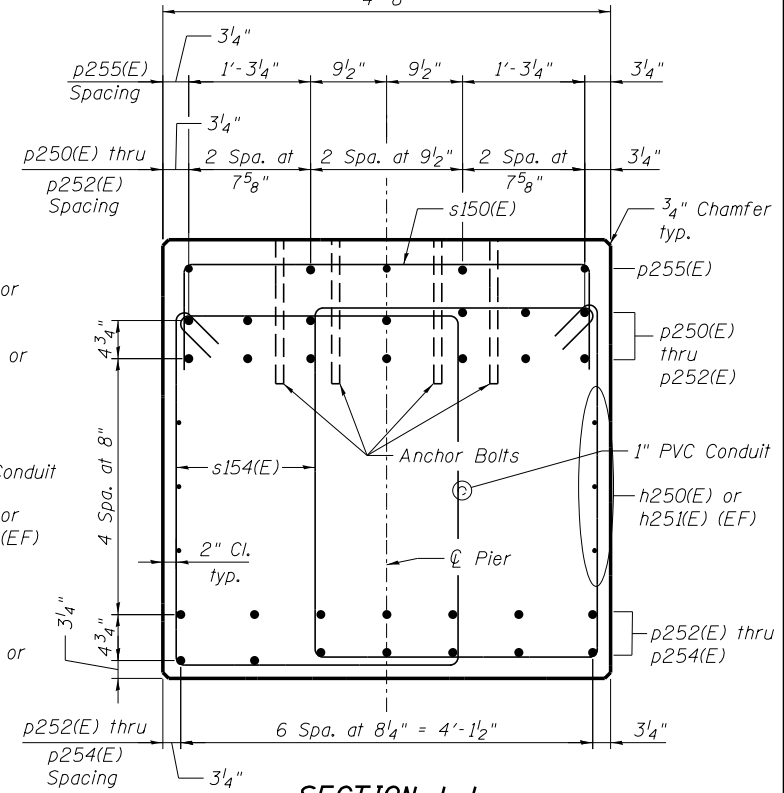
SECTION E-E



SECTION G-G



SECTION H-H



SECTION J-J

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Chicago, Illinois 60601
312-565-0450 Job No. 10061

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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

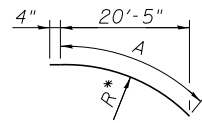
**PIER CROSS SECTIONS
STRUCTURE NO. 081-0178 (EASTBOUND)**

SHEET NO. S120 OF S138 SHEETS

F.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1HVBR	ROCK ISLAND	1504	1009
ILLINOIS FED. AID PROJECT			CONTRACT NO. 64C08	

081-0178-C00AB-120-Pier Cross Sections.dgn 4:00:45 PM 1/19/2017

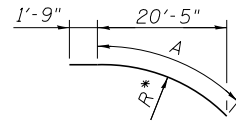
BENT BAR DETAILS



v150(E)-v155(E)

BAR	A	R*
v150(E)	21'-3"	43'-1 ³ / ₈ "
v151(E)	21'-3"	42'-7 ¹ / ₈ "
v152(E)	21'-4"	42'-2 ³ / ₈ "
v153(E)	21'-4"	41'-8 ³ / ₄ "
v154(E)	21'-4"	41'-3 ¹ / ₄ "
v155(E)	21'-5"	40'-9 ⁵ / ₈ "

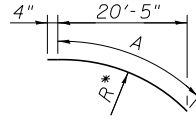
R* = Inside Radius.



v160(E)-v165(E)

BAR	A	R*
v160(E)	21'-3"	43'-1 ³ / ₈ "
v161(E)	21'-3"	42'-7 ¹ / ₈ "
v162(E)	21'-4"	42'-2 ³ / ₈ "
v163(E)	21'-4"	41'-8 ³ / ₄ "
v164(E)	21'-4"	41'-3 ¹ / ₄ "
v165(E)	21'-5"	40'-9 ⁵ / ₈ "

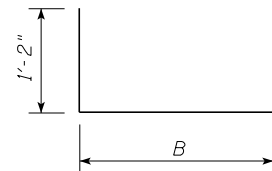
R* = Inside Radius.



v250(E)-v255(E)

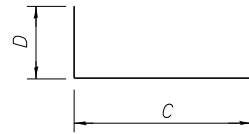
BAR	A	R*
v250(E)	21'-3"	43'-1 ³ / ₈ "
v251(E)	21'-3"	42'-7 ¹ / ₈ "
v252(E)	21'-4"	42'-2 ³ / ₈ "
v253(E)	21'-4"	41'-8 ³ / ₄ "
v254(E)	21'-4"	41'-3 ¹ / ₄ "
v255(E)	21'-5"	40'-9 ⁵ / ₈ "

R* = Inside Radius.



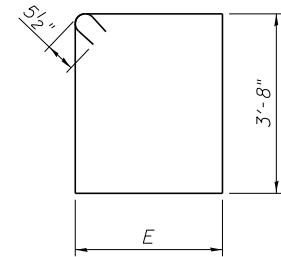
**n15(E), n152(E), n154(E),
n155(E), n250(E) & n251(E)**

BAR	B
n15(E)	7'-0"
n152(E)	7'-8"
n154(E)	8'-3"
n155(E)	7'-4"
n250(E)	7'-9"
n251(E)	6'-10"



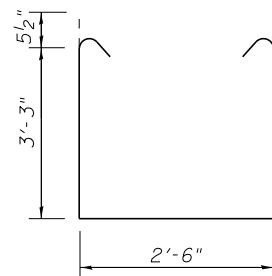
**s150(E), s151(E), s158(E), t151(E), u150(E),
u151(E), u152(E), u153(E), u154(E) & u155(E)**

BAR	C	D
s150(E)	4'-4"	2'-0"
s151(E)	5'-2"	2'-0"
s158(E)	5'-4"	2'-0"
t151(E)	9'-8"	2'-6"
u150(E)	4'-3"	3'-3"
u151(E)	4'-4"	3'-0"
u152(E)	5'-1"	3'-3"
u153(E)	5'-2"	3'-0"
u154(E)	5'-3"	3'-3"
u155(E)	5'-4"	3'-0"

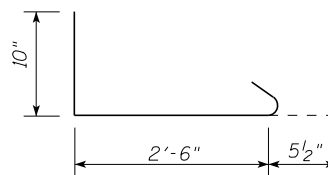


**s155(E), s156(E), s157(E),
& s159(E)**

BAR	E
s154(E)	2'-10 ¹ / ₂ "
s155(E)	3'-0"
s156(E)	2'-0 ¹ / ₂ "
s157(E)	3'-5"
s159(E)	3'-0"



s152(E)



s153(E)

PIER NOTES:

- The minimum clear distance from the face of concrete to near reinforcing bar is 2" unless noted otherwise.
- All exposed corners, 90 degrees or sharper shall be filleted with a 3/4" dressed and beveled strip unless noted otherwise.
- Space reinforcement in cap to miss anchor bolts.
- The use of steel forms is required for the forming of all pier concrete surfaces from the tops of footings to the bottom of pier cap beams, including stem and pier columns. Use of medium-density overlaid (MDO) or high-density overlaid (HDO) plywood faced forms is allowed for forming of the pier cap beam. Plain plywood-faced forms will not be allowed for any portion of the pier column or cap surfaces.
- The Contractor shall use self-consolidating concrete (SCC) in all the pier columns. The self-consolidating concrete shall conform to all requirements as specified in Section 1020 of the Standard Specifications. Cost of SCC shall be included with the cost of Concrete Structures.
- The contractor shall provide adequate forms to contain the increased hydraulic pressure of the self consolidating concrete.
- The tremie tube shall be in place prior to placing formwork.

PIER CONCRETE FINISH NOTES

If form ties are used in forming the pier, arrange ties to be regularly spaced and in a consistent geometric grid pattern. Do not locate ties at edges of concrete rustucations.

Following form removal, a rubbed surface finish in accordance with Article 503.15 (b) of the Standard Specifications shall be required but with the following additional requirements:

- Demonstrate hole and void patching operations in accordance with Article 503.15 (b) of the standard Specifications on a four foot section of vertical pier concrete located in an inconspicuous area. Begin patching demonstration by using a mortar mix comprised of 1 part white cement, 2 parts standard portland cement, 6 parts mortar sand, and water. The quantity of water used shall produce a mortar consistency as dry as possible to use effectively.
- When patching test areas have set, saturate with water and rub with a fine carborundum stone until surfaces are smooth in texture. Remove loose powder and other contaminants by rubbing with burlap and rinsing with water. After surfaces have dried, patch color and texture of surfaces will be reviewed by the engineer. Patches should match or be slightly lighter than surrounding concrete. If results are unsatisfactory, adjust patching mortar mix proportions and perform another demonstration until results are deemed satisfactory by the engineer.
- Use the patching mortar mix proportions that are approved by the engineer as a result of the satisfactory demonstration. Do not use patching mortar that is more than 1 hour old.
- Finished pier concrete shall be smooth and show no wood grain or other texture from the face of the forms used. All costs for repair or covering wood grain or other textures on these surfaces shall be the responsibility of the Contractor.

NOTE:

All dimensions are out to out.

**PIER 1
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h150(E)	18	#5	34'-10"	—
n151(E)	176	#7	8'-2"	L
p150(E)	64	#10	33'-9"	—
p151(E)	54	#10	38'-9"	—
p152(E)	5	#5	18'-10"	—
p153(E)	5	#5	31'-8"	—
p154(E)	5	#5	27'-10"	—
s150(E)	153	#5	8'-4"	L
s152(E)	168	#5	9'-11"	□
s153(E)	168	#5	3'-10"	L
s156(E)	408	#6	12'-4"	□
s159(E)	204	#6	14'-3"	□
t150(E)	97	#6	9'-8"	—
t151(E)	138	#8	14'-8"	L
u150(E)	14	#5	10'-9"	L
u151(E)	4	#5	10'-4"	L
v150(E)	56	#7	21'-7"	—
v151(E)	16	#7	21'-7"	—
v152(E)	16	#7	21'-8"	—
v153(E)	16	#7	21'-8"	—
v154(E)	16	#7	21'-8"	—
v155(E)	56	#7	21'-9"	—
w150(E)	48	#9	38'-8"	—
w151(E)	64	#9	31'-5"	—
Concrete Structures			Cu. Yd.	229.9
Reinforcement Bars, Epoxy Coated			Pound	65,920
Structure Excavation			Cu. Yd.	235
Test Pile Steel HP 14x73			Each	1
Furn. Steel Piles HP 14x73			Foot	330
Driving Piles			Foot	330
Pile Shoes			Each	34

**PIER 2
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h160(E)	30	#5	27'-3"	—
n152(E)	220	#7	8'-10"	L
p160(E)	32	#10	26'-6"	—
p161(E)	48	#10	39'-3"	—
p162(E)	56	#10	37'-6"	—
p163(E)	5	#5	9'-4"	—
p164(E)	10	#5	25'-0"	—
p165(E)	5	#5	8'-11"	—
p166(E)	10	#5	22'-9"	—
p167(E)	5	#5	11'-6"	—
s152(E)	220	#5	9'-11"	□
s153(E)	220	#5	3'-10"	L
s155(E)	396	#6	14'-3"	□
s158(E)	104	#5	9'-4"	L
t150(E)	120	#6	9'-8"	—
t151(E)	172	#8	14'-8"	L
u154(E)	14	#5	11'-9"	L
u155(E)	4	#5	11'-4"	L
v160(E)	70	#7	23'-0"	—
v161(E)	20	#7	23'-0"	—
v162(E)	20	#7	23'-1"	—
v163(E)	20	#7	23'-1"	—
v164(E)	20	#7	23'-1"	—
v165(E)	70	#7	23'-2"	—
w160(E)	32	#9	25'-10"	—
w161(E)	48	#9	35'-7"	—
w162(E)	52	#9	36'-11"	—
Concrete Structures			Cu. Yd.	318.1
Reinforcement Bars, Epoxy Coated			Pound	73,140
Structure Excavation			Cu. Yd.	256
Test Pile Steel HP 14x73			Each	1
Furn. Steel Piles HP 14x73			Foot	516
Driving Piles			Foot	516
Pile Shoes			Each	44
Concrete Sealer			Sq. Ft.	3,835

**PIER 3
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h170(E)	18	#5	28'-2"	—
n155(E)	132	#7	8'-6"	L
p170(E)	48	#10	33'-11"	—
p173(E)	40	#10	43'-0"	—
p176(E)	10	#5	24'-0"	—
s150(E)	51	#5	8'-4"	L
s152(E)	132	#5	9'-11"	□
s153(E)	132	#5	3'-10"	L
s156(E)	190	#6	12'-4"	□
s159(E)	95	#6	14'-3"	□
t150(E)	76	#6	9'-8"	—
t151(E)	108	#8	14'-8"	L
u150(E)	14	#5	10'-9"	L
u151(E)	4	#5	10'-4"	L
v160(E)	42	#7	23'-0"	—
v161(E)	12	#7	23'-0"	—
v162(E)	12	#7	23'-1"	—
v163(E)	12	#7	23'-1"	—
v164(E)	12	#7	23'-1"	—
v165(E)	42	#7	23'-2"	—
w170(E)	26	#9	42'-4"	—
w173(E)	48	#9	31'-8"	—
Concrete Structures			Cu. Yd.	179.4
Reinforcement Bars, Epoxy Coated			Pound	46,040
Structure Excavation			Cu. Yd.	42
Test Pile Steel HP 14x89			Each	1
Furn. Steel Piles HP 14x89			Foot	486
Driving Piles			Foot	486
Pile Shoes			Each	28

**PIER 4
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h170(E)	18	#5	28'-2"	—
n154(E)	132	#7	9'-5"	L
p170(E)	48	#10	33'-11"	—
p173(E)	40	#10	43'-0"	—
p176(E)	10	#5	24'-0"	—
s150(E)	51	#5	8'-4"	L
s152(E)	138	#5	9'-11"	□
s153(E)	138	#5	3'-10"	L
s156(E)	190	#6	12'-4"	□
s159(E)	95	#6	14'-3"	□
t150(E)	76	#6	9'-8"	—
t151(E)	108	#8	14'-8"	L
u150(E)	14	#5	10'-9"	L
u151(E)	4	#5	10'-4"	L
v160(E)	42	#7	23'-0"	—
v161(E)	12	#7	23'-0"	—
v162(E)	12	#7	23'-1"	—
v163(E)	12	#7	23'-1"	—
v164(E)	12	#7	23'-1"	—
v165(E)	42	#7	23'-2"	—
w170(E)	26	#9	42'-4"	—
w173(E)	48	#9	31'-8"	—
Concrete Structures			Cu. Yd.	181.4
Reinforcement Bars, Epoxy Coated			Pound	46,380
Structure Excavation			Cu. Yd.	165
Test Pile Steel HP 14x89			Each	1
Furn. Steel Piles HP 14x89			Foot	486
Driving Piles			Foot	486
Pile Shoes			Each	28

**PIER 5
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h170(E)	18	#5	28'-2"	—
n155(E)	132	#7	8'-6"	L
p170(E)	48	#10	33'-11"	—
p173(E)	32	#10	43'-0"	—
p178(E)	10	#5	27'-8"	—
s151(E)	88	#5	9'-2"	L
s152(E)	132	#5	9'-11"	□
s153(E)	132	#5	3'-10"	L
s157(E)	218	#6	14'-11"	□
t150(E)	76	#6	9'-8"	—
t151(E)	108	#8	14'-8"	L
u152(E)	14	#5	11'-7"	L
u153(E)	4	#5	11'-2"	L
v160(E)	42	#7	23'-0"	—
v161(E)	12	#7	23'-0"	—
v162(E)	12	#7	23'-1"	—
v163(E)	12	#7	23'-1"	—
v164(E)	12	#7	23'-1"	—
v165(E)	42	#7	23'-2"	—
w170(E)	26	#9	42'-4"	—
w173(E)	48	#9	31'-8"	—
Concrete Structures			Cu. Yd.	187.0
Reinforcement Bars, Epoxy Coated			Pound	44,350
Structure Excavation			Cu. Yd.	165
Test Pile Steel HP 14x89			Each	1
Furn. Steel Piles HP 14x89			Foot	486
Driving Piles			Foot	486
Pile Shoes			Each	28
Concrete Sealer			Sq. Ft.	2,244

NOTE:
See sheet S121 for bar details and notes.



FILE NAME = 081-0178-C00AB-122-Piers 1-5 Bill of Material.dgn
MODEL: Default

USER NAME = ksnyder
PLOT SCALE =
PLOT DATE = 1/18/2017

DESIGNED - AWH
CHECKED - AJK
DRAWN - KMS
CHECKED - AJK

REVISED -
REVISED -
REVISED -
REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**PIERS 1-5 BILL OF MATERIAL
STRUCTURE NO. 081-0178 (EASTBOUND)**

SHEET NO. S122 OF S138 SHEETS

F.A.I. RE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1HVBR	ROCK ISLAND	1504	1011
CONTRACT NO. 64C08				
ILLINOIS FED. AID PROJECT				

**PIER 6
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h17(E)	18	#5	26'-9"	—
n152(E)	132	#7	8'-10"	L
p17(E)	48	#10	32'-8"	—
p174(E)	40	#10	40'-8"	—
p177(E)	10	#5	24'-0"	—
s150(E)	67	#5	8'-4"	L
s152(E)	126	#5	9'-11"	L
s153(E)	126	#5	3'-10"	L
s156(E)	206	#6	12'-4"	□
s159(E)	103	#6	14'-3"	□
t150(E)	73	#6	9'-8"	—
t151(E)	102	#8	14'-8"	L
u150(E)	14	#5	10'-9"	L
u151(E)	4	#5	10'-4"	L
v150(E)	42	#7	21'-7"	—
v151(E)	12	#7	21'-7"	—
v152(E)	12	#7	21'-8"	—
v153(E)	12	#7	21'-8"	—
v154(E)	12	#7	21'-8"	—
v155(E)	42	#7	21'-9"	—
w17(E)	26	#9	40'-7"	—
w174(E)	48	#9	30'-4"	—
Concrete Structures		Cu. Yd.	169.9	
Reinforcement Bars, Epoxy Coated		Pound	44,930	
Structure Excavation		Cu. Yd.	178	
Test Pile Steel HP 14x89		Each	1	
Furn. Steel Piles HP 14x89		Foot	648	
Driving Piles		Foot	648	
Pile Shoes		Each	28	
Concrete Sealer		Sq. Ft.	1,064	

**PIER 7
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h172(E)	18	#5	25'-10"	—
n151(E)	132	#7	8'-2"	L
p172(E)	48	#10	31'-10"	—
p175(E)	40	#10	39'-4"	—
p177(E)	10	#5	24'-0"	—
s150(E)	45	#5	8'-4"	L
s152(E)	132	#5	9'-11"	L
s153(E)	132	#5	3'-10"	L
s156(E)	132	#6	12'-4"	□
s159(E)	66	#6	14'-3"	□
t150(E)	70	#6	9'-8"	—
t151(E)	102	#8	14'-8"	L
u150(E)	14	#5	10'-9"	L
u151(E)	4	#5	10'-4"	L
v160(E)	42	#7	23'-0"	—
v161(E)	12	#7	23'-0"	—
v162(E)	12	#7	23'-1"	—
v163(E)	12	#7	23'-1"	—
v164(E)	12	#7	23'-1"	—
v165(E)	42	#7	23'-2"	—
w172(E)	26	#9	39'-1"	—
w175(E)	48	#9	29'-4"	—
Concrete Structures		Cu. Yd.	165.5	
Reinforcement Bars, Epoxy Coated		Pound	42,110	
Structure Excavation		Cu. Yd.	152	
Test Pile Steel HP 14x73		Each	1	
Furn. Steel Piles HP 14x73		Foot	486	
Driving Piles		Foot	486	
Pile Shoes		Each	28	
Concrete Sealer		Sq. Ft.	1,109	

**PIER 8
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h180(E)	12	#5	35'-9"	—
n155(E)	132	#7	8'-6"	L
p180(E)	48	#10	31'-2"	—
p181(E)	32	#10	37'-11"	—
p182(E)	5	#5	35'-4"	—
s151(E)	36	#5	9'-2"	L
s152(E)	126	#5	9'-11"	L
s153(E)	126	#5	3'-10"	L
s157(E)	130	#6	14'-11"	□
t150(E)	68	#6	9'-8"	—
t151(E)	96	#8	14'-8"	L
u152(E)	14	#5	11'-7"	L
u153(E)	4	#5	11'-2"	L
v150(E)	42	#7	21'-7"	—
v151(E)	12	#7	21'-7"	—
v152(E)	12	#7	21'-8"	—
v153(E)	12	#7	21'-8"	—
v154(E)	12	#7	21'-8"	—
v155(E)	42	#7	21'-9"	—
w180(E)	26	#9	38'-2"	—
w181(E)	48	#9	28'-8"	—
Concrete Structures		Cu. Yd.	169.6	
Reinforcement Bars, Epoxy Coated		Pound	38,510	
Structure Excavation		Cu. Yd.	185	
Test Pile Steel HP 14x73		Each	1	
Furn. Steel Piles HP 14x73		Foot	540	
Driving Piles		Foot	540	
Pile Shoes		Each	28	
Concrete Sealer		Sq. Ft.	2,088	

**PIER 9
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h250(E)	12	#5	34'-9"	—
n250(E)	132	#7	8'-11"	L
p250(E)	14	#10	38'-4"	—
p252(E)	28	#10	40'-6"	—
p253(E)	14	#10	32'-10"	—
p255(E)	5	#5	35'-4"	—
s150(E)	37	#5	8'-4"	L
s152(E)	132	#5	9'-11"	L
s153(E)	132	#5	3'-10"	L
s154(E)	126	#6	14'-0"	□
t150(E)	65	#6	9'-8"	—
t151(E)	92	#8	14'-8"	L
u150(E)	14	#5	10'-9"	L
u151(E)	4	#5	10'-4"	L
v250(E)	42	#7	21'-7"	—
v251(E)	12	#7	21'-7"	—
v252(E)	12	#7	21'-8"	—
v253(E)	12	#7	21'-8"	—
v254(E)	12	#7	21'-8"	—
v255(E)	42	#7	21'-9"	—
w251(E)	32	#9	31'-2"	—
w252(E)	32	#9	42'-8"	—
Concrete Structures		Cu. Yd.	155.9	
Reinforcement Bars, Epoxy Coated		Pound	35,680	
Structure Excavation		Cu. Yd.	462	
Test Pile Steel HP 14x73		Each	1	
Furn. Steel Piles HP 14x73		Foot	460	
Driving Piles		Foot	460	
Pile Shoes		Each	24	

**PIER 10
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h251(E)	12	#5	33'-9"	—
n251(E)	132	#7	8'-0"	L
p251(E)	14	#10	36'-4"	—
p252(E)	28	#10	40'-6"	—
p254(E)	14	#10	30'-10"	—
p255(E)	5	#5	35'-4"	—
s150(E)	49	#5	8'-4"	L
s152(E)	126	#5	9'-11"	L
s153(E)	126	#5	3'-10"	L
s154(E)	162	#6	14'-0"	□
t150(E)	64	#6	9'-8"	—
t151(E)	89	#8	14'-8"	L
u150(E)	14	#5	10'-9"	L
u151(E)	4	#5	10'-4"	L
v250(E)	42	#7	21'-7"	—
v251(E)	12	#7	21'-7"	—
v252(E)	12	#7	21'-8"	—
v253(E)	12	#7	21'-8"	—
v254(E)	12	#7	21'-8"	—
v255(E)	42	#7	21'-9"	—
w250(E)	32	#9	41'-2"	—
w251(E)	32	#9	31'-2"	—
Concrete Structures		Cu. Yd.	151.6	
Reinforcement Bars, Epoxy Coated		Pound	35,660	
Structure Excavation		Cu. Yd.	261	
Test Pile Steel HP 14x73		Each	1	
Furn. Steel Piles HP 14x73		Foot	506	
Driving Piles		Foot	506	
Pile Shoes		Each	24	

NOTE:
See sheet S121 for bar details and notes.



FILE NAME = 081-0178-C00AB-123-Piers 6-10 Bill of Material.dgn
MODEL: Default

USER NAME = ksnider
PLOT SCALE =
PLOT DATE = 1/18/2017

DESIGNED - AWH
CHECKED - AJK
DRAWN - KMS
CHECKED - AJK

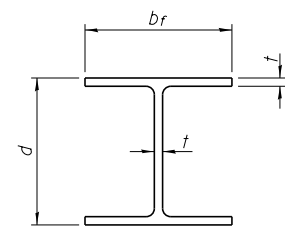
REVISED -
REVISED -
REVISED -
REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**PIERS 6-10 BILL OF MATERIAL
STRUCTURE NO. 081-0178 (EASTBOUND)**

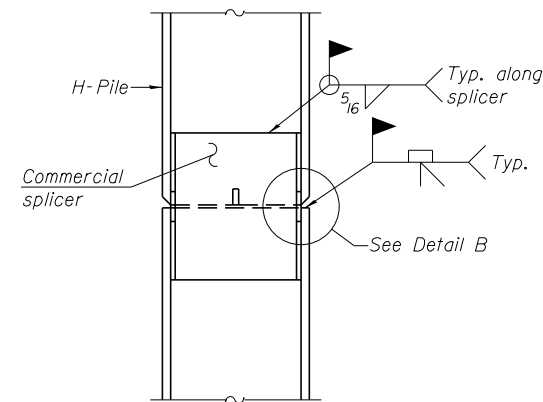
SHEET NO. S123 OF S138 SHEETS

F.A.I. RE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1HVBR	ROCK ISLAND	1504	1012
CONTRACT NO. 64C08			ILLINOIS FED. AID PROJECT	

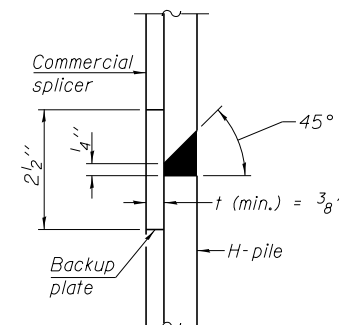


STEEL PILE TABLE

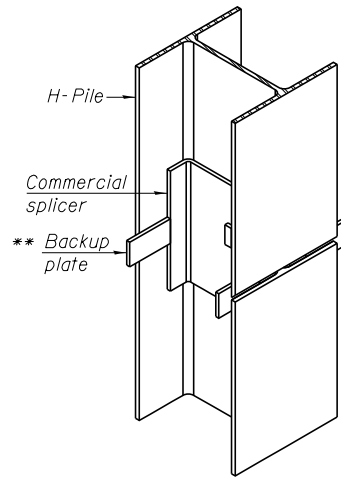
Designation	Depth d	Flange width br	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 3/4"	12"	7/16"	24"
HP 10x57	10"	10 1/4"	9/16"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP 8x36	8"	8 1/8"	7/16"	18"



ELEVATION

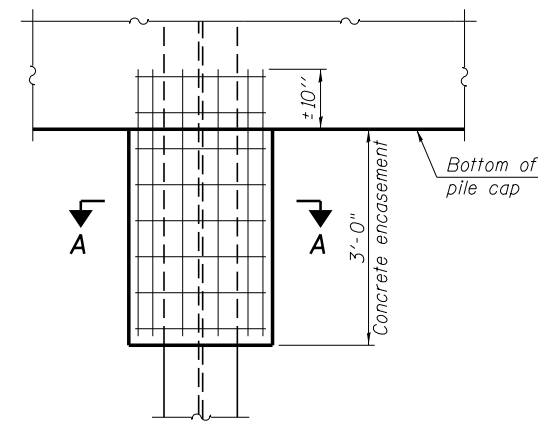


DETAIL "B"



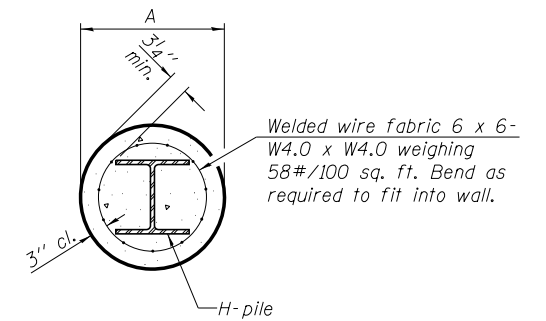
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



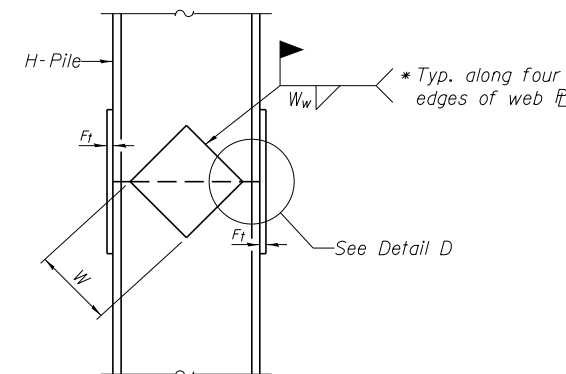
ELEVATION

PILE ENCASEMENT

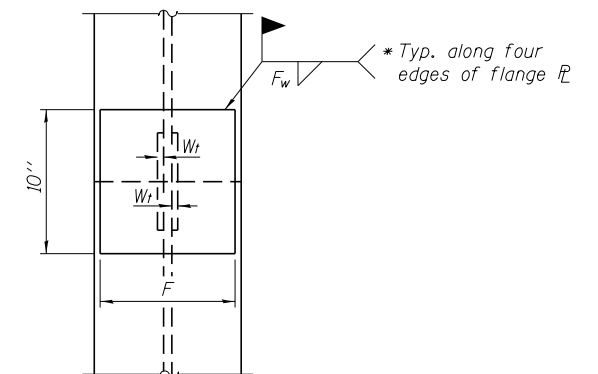


SECTION A-A

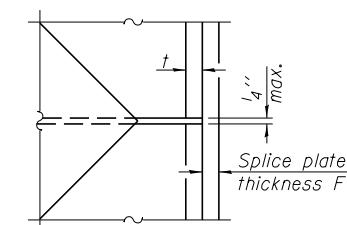
Note:
Forms for encasement may be omitted when soil conditions permit.



ELEVATION



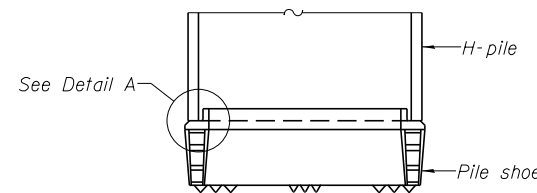
END VIEW



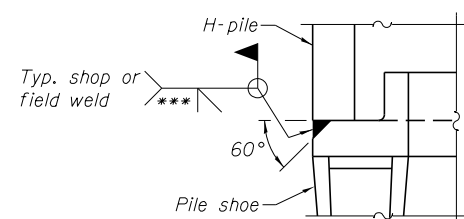
DETAIL D

WELDED PLATE FIELD SPLICE

Designation	F	Ft	Fw	W	Wt	Ww
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	1/16"	7 3/4"	5/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5/8"	1/2"
HP 12x84	10"	7/8"	1/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	1/16"	6 1/2"	5/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	5/8"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	7"	5/8"	7/16"	4 1/4"	1/2"	3/8"

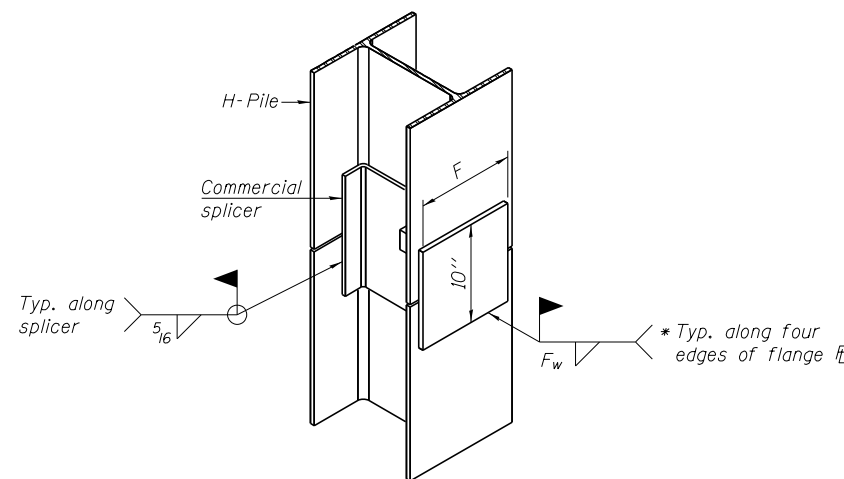


ELEVATION



DETAIL A

H-PILE SHOE ATTACHMENT



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

* Interrupt welds 1/4" from end of web and/or each flange.
** Remove portions of backup plates that extend outside the flanges.

Note:
The steel H-piles shall be according to AASHTO M270 Grade 50.

1-27-12 *** Weld size per pile shoe manufacturer (5/16" min.).



Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10081

F-HP

FILE NAME = 081-0178-C004B-124-HP Pile Details.dgn

USER NAME = ksnyder
DESIGNED - RJT
CHECKED - AJK
PLOT SCALE =
DRAWN - KMS
PLOT DATE = 1/18/2017
CHECKED - AJK

REVISOR -
REVISOR -
REVISOR -
REVISOR -

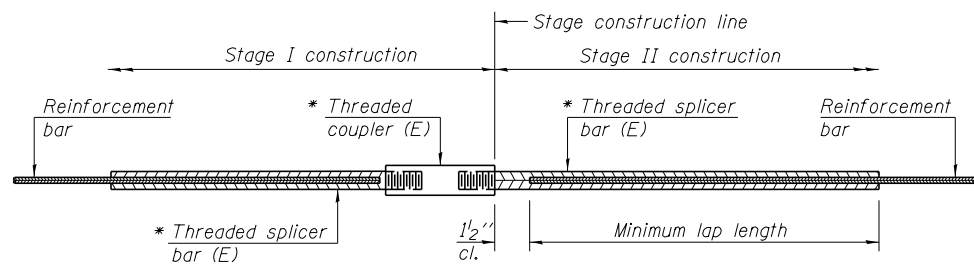
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HP PILE DETAILS
STRUCTURE NO. 081-0178 (EASTBOUND)

SHEET NO. S124 OF S138 SHEETS

F.A.I. RE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1HVBR	ROCK ISLAND	1504	1013
CONTRACT NO. 64C08			ILLINOIS FED. AID PROJECT	

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STANDARD BAR SPLICER ASSEMBLY

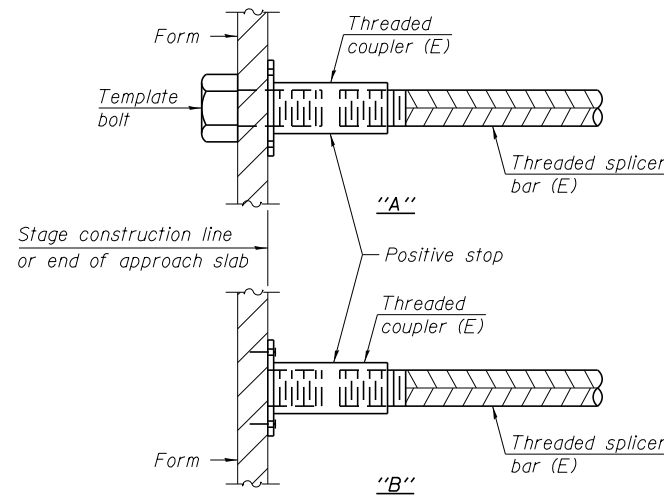
Minimum Lap Lengths						
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5	Table 6
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-7"	2'-11"
5	1'-9"	2'-5"	2'-7"	2'-11"	3'-3"	3'-8"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-10"	4'-5"
7	2'-9"	3'-10"	4'-2"	4'-8"	5'-2"	5'-10"
8	3'-8"	5'-1"	5'-5"	6'-2"	6'-9"	7'-8"
9	4'-7"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

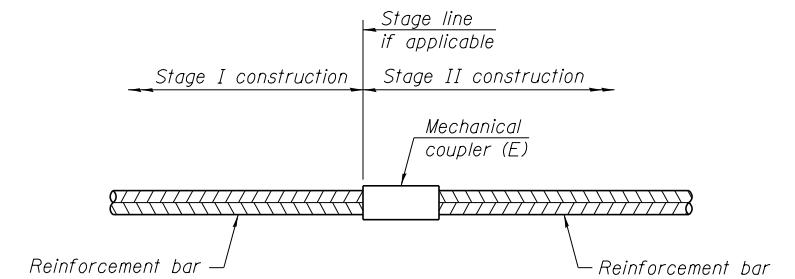
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

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



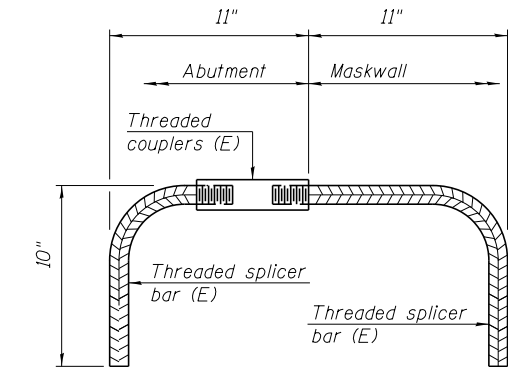
INSTALLATION AND SETTING METHODS

"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.



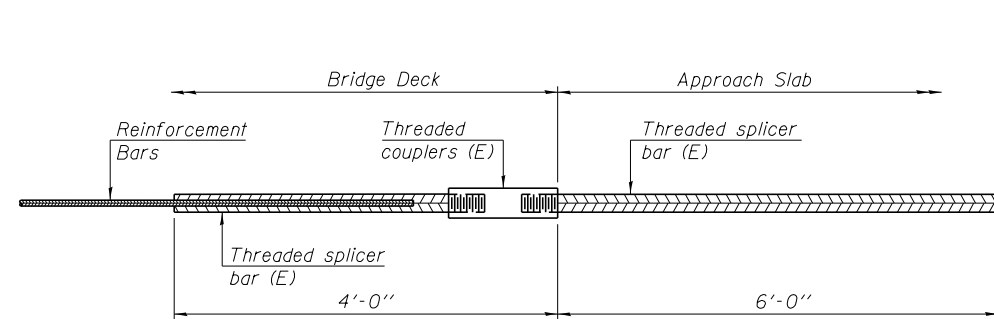
STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required



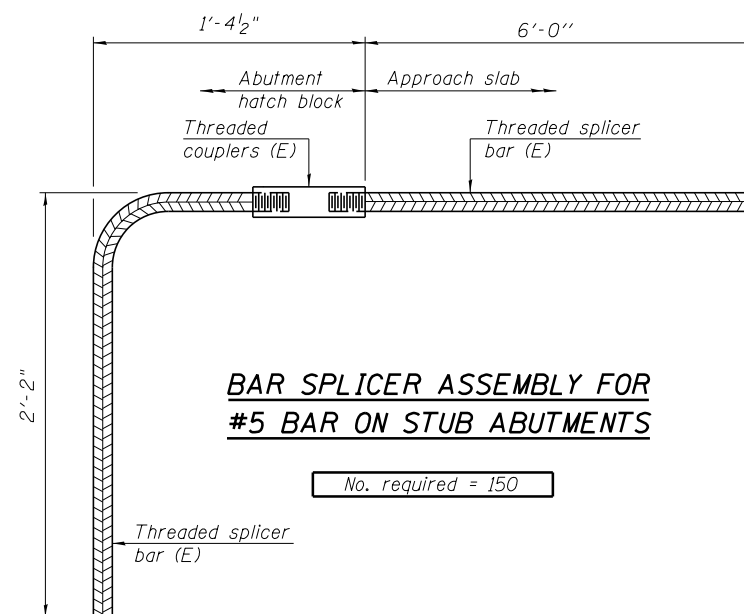
BAR SPLICER ASSEMBLY FOR #5 BAR ON MASKWALL

No. required = 17



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

No. required = 0



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required = 150

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.



Alfred Benesch & Company
 205 North Michigan Avenue, Suite 2400
 Chicago, Illinois 60601
 312-565-0450 Job No. 10061

BSD-1

1-27-12

FILE NAME = 081-0178-C00AB-125-Bar Splicer Assembly Details.dgn
 MODEL: Default

USER NAME = ksnyder
 PLOT SCALE =
 PLOT DATE = 1/18/2017

DESIGNED - RJT
 CHECKED - AJK
 DRAWN - KMS
 CHECKED - AJK

REVISED -
 REVISED -
 REVISED -
 REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY DETAILS
 STRUCTURE NO. 081-0178 (EASTBOUND)

SHEET NO. S125 OF S138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1HVBR	ROCK ISLAND	1504	1014
CONTRACT NO. 64C08				ILLINOIS FED. AID PROJECT

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SOIL BORING LOG

ROUTE I-74 DESCRIPTION New I-74 Bridge Over Mississippi River - Illinois Approach LOGGED BY SL
 SECTION LOCATION (N=564827.741, E=2459192.07), SEC. 32, TWP. 18N, RNG. 1W, 4th PM
 COUNTY Rock Island DRILLING METHOD HSA, CME 550X HAMMER TYPE CME AUTOMATIC

STRUCT. NO.	DEPTH	BLOW	UCS	MOIST	Surface Water Elev.
Station	(ft)	(/6")	(tsf)	(%)	ft
VIAIL-104					
Station					
Offset					
Ground Surface Elev.	568.20				
ASPHALT + BASE COURSE - (3" to 6" thick)	567.70				
SILT - black, sandy, and gravel, moist (FILL)	3				
	11				
	12				
CLAY - reddish brown to greenish brown, silty, medium plastic, medium stiff to soft, moist.	3		1.0	17.0	
	3		P		
	3				
SHALES - medium gray, with sand partings, friable, stiff.	3	0.3	18.9		
	4	B			
SAND - medium brown, fine to medium, some silt, loose, saturated.	3				
- moderately well consolidated in 2" seam at 10'	2				
	2				
SANDSTONE - moderate to severely weathered.	50/4"				
- augered through 11.3' to 14'					
Borehole continued with rock coring.					

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) BBS, form 137 (Rev. 8-99)



ROCK CORE LOG

ROUTE I-74 DESCRIPTION New I-74 Bridge Over Mississippi River - Illinois Approach LOGGED BY SL
 SECTION LOCATION (N=564827.741, E=2459192.07), SEC. 32, TWP. 18N, RNG. 1W, 4th PM
 COUNTY Rock Island CORING METHOD NQ Core

STRUCT. NO.	DEPTH	CORING METHOD	CORING BARREL TYPE & SIZE	RECOVERY	RECOVERED	CORE TIME	STRENGTH
Station	(ft)	(#)	(in)	(%)	(%)	(min/ft)	(tsf)
VIAIL-104							
Station							
Offset							
Ground Surface Elev.	568.20						
SANDSTONE - light to medium gray, with numerous shale partings with fracture at partings, soft to very soft, moderately well cemented, non-distinct bedding at thin to occasionally medium bedded spacing, fractures at partings are horizontal to 10° planar and smooth, fractures in sandstone are planar to slightly irregular and sandy rough, localized high angle to vertical fractures, fresh to slightly weathered.	554.20	Run 1	1.8	100	51	2.7	
	-18						
	Run 2	85	21	1.2			305.0
	-20						
- near-vertical fracture in sandstone at 19.7', sandy rough							
- thin beds of medium to dark gray shale with numerous sand partings at 20.3'-21.5'	Run 3	73	40	1.6			
	-28						
	Run 4	98	38	1.2			
	-30						
- medium to dark gray shale with numerous sand partings at 30.5'-32.5'	Run 5	98	87	1			
	-35						
- occasional shale partings from 32.5' to 35.5'							

Color pictures of the cores Yes
 Cores will be stored for examination until
 The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938) BBS, form 138 (Rev. 8-99)



ROCK CORE LOG

ROUTE I-74 DESCRIPTION New I-74 Bridge Over Mississippi River - Illinois Approach LOGGED BY SL
 SECTION LOCATION (N=564827.741, E=2459192.07), SEC. 32, TWP. 18N, RNG. 1W, 4th PM
 COUNTY Rock Island CORING METHOD NQ Core

STRUCT. NO.	DEPTH	CORING METHOD	CORING BARREL TYPE & SIZE	RECOVERY	RECOVERED	CORE TIME	STRENGTH
Station	(ft)	(#)	(in)	(%)	(%)	(min/ft)	(tsf)
VIAIL-104							
Station							
Offset							
Ground Surface Elev.	568.20						
SANDSTONE - light to medium gray, with numerous shale partings with fracture at partings, soft to very soft, moderately well cemented, non-distinct bedding at thin to occasionally medium bedded spacing, fractures at partings are horizontal to 10° planar and smooth, fractures in sandstone are planar to slightly irregular and sandy rough, localized high angle to vertical fractures, fresh to slightly weathered. (continued)	554.20	Run 6	1.8	98	62	0.6	
	-35						
- brownish gray with occasional shale clasts, increasing to numerous clast at 40.0' - 40.3', rough horizontal fractures with localized 70° rough fracture at 39.9'							
SHALES - medium to dark gray.	527.90						
End of Boring	527.70						

Color pictures of the cores Yes
 Cores will be stored for examination until
 The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938) BBS, form 138 (Rev. 8-99)

BORING NO. VIAIL-104
Station: 29+66.04
Offset: 73.63' Rt.
(Measured from C I-74)



Alfred Benesch & Company
 205 North Michigan Avenue, Suite 2400
 Chicago, Illinois 60601
 312-565-0450 Job No. 10061

FILE NAME = 081-0178-C00AB-126-Soil Boring Logs - N Abutment.dwg	USER NAME = ksnider	DESIGNED - RJT	REVISED -
MODEL: Default	PLOT SCALE =	CHECKED - AJK	REVISED -
	PLOT DATE = 1/18/2017	DRAWN - KMS	REVISED -
		CHECKED - AJK	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS - N. ABUTMENT
 STRUCTURE NO. 081-0178 (EASTBOUND)

SHEET NO. S126 OF S138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1HVBR	ROCK ISLAND	1504	1015
CONTRACT NO. 64C08			ILLINOIS FED. AID PROJECT	

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SOIL BORING LOG

ROUTE I-74 DESCRIPTION New I-74 Bridge Over Mississippi River - Illinois Approach LOGGED BY KJB
SECTION LOCATION (N=564699.203, E=2459256.422), SEC. 32, TWP. 18N, RNG. 1W, 4th PM
COUNTY Rock Island DRILLING METHOD HSA, CME 55 HAMMER TYPE CME AUTOMATIC

Table with columns: DEPTH (ft), BLOW COUNT, UCS Qu, Moisture, Surface Water Elev., Stream Bed Elev., Groundwater Elev., and soil descriptions with elevations.

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)
BBS, from 137 (Rev. 8-99)



ROCK CORE LOG

ROUTE I-74 DESCRIPTION New I-74 Bridge Over Mississippi River - Illinois Approach LOGGED BY KJB
SECTION LOCATION (N=564699.203, E=2459256.422), SEC. 32, TWP. 18N, RNG. 1W, 4th PM
COUNTY Rock Island CORING METHOD NQ Core

Table with columns: DEPTH (ft), CORING BARREL TYPE & SIZE, CORE RECOVERY (%), CORE DIAMETER, CORE LENGTH, and detailed rock core descriptions with elevations.

Color pictures of the cores Yes
Cores will be stored for examination until
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)



ROCK CORE LOG

ROUTE I-74 DESCRIPTION New I-74 Bridge Over Mississippi River - Illinois Approach LOGGED BY KJB
SECTION LOCATION (N=564699.203, E=2459256.422), SEC. 32, TWP. 18N, RNG. 1W, 4th PM
COUNTY Rock Island CORING METHOD NQ Core

Table with columns: DEPTH (ft), CORING BARREL TYPE & SIZE, CORE RECOVERY (%), CORE DIAMETER, CORE LENGTH, and detailed rock core descriptions with elevations.

Color pictures of the cores Yes
Cores will be stored for examination until
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

BORING NO. VIAIL - 106
Station: 31+05.15
Offset: 37.41' Rt.
(Measured from C I-74)



Table with columns: FILE NAME, USER NAME, DESIGNED, CHECKED, PLOT SCALE, PLOT DATE, DRAWN, CHECKED, REVISED, and REVISIONS.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS - PIER 1 (1 OF 2)
STRUCTURE NO. 081-0178 (EASTBOUND)

SHEET NO. S127 OF S138 SHEETS

Table with columns: F.A.I. RTE., SECTION, COUNTY, TOTAL SHEETS, SHEET NO., and CONTRACT NO.

Vertical text on the right edge: c:\pwise_work\do.not.delete\dms02467\081-0178-C00AB-127-Soil Boring Logs - Pier 1 (1 of 2).dgn



Illinois Department of Transportation
Division of Highways
JCI

SOIL BORING LOG

Page 1 of 3

Date 8/28/07

ROUTE I-74 DESCRIPTION New I-74 Bridge Over Mississippi River - Illinois Approach LOGGED BY KJB
SECTION LOCATION (N=564672.846, E=2459200.272), SEC. 32, TWP. 18N, RNG. 1W, 4th PM
COUNTY Rock Island DRILLING METHOD HSA, CME 55 HAMMER TYPE CME AUTOMATIC

STRUCT. NO. Station	DEPTH (ft)	BLOW S	UCS Qu	MOIST T	Surface Water Elev. ft	Stream Bed Elev. ft	Groundwater Elev.: First Encounter 563.0 ft Upon Completion ft After Hrs. ft
CONCRETE - 9" thick pavement + base course	569.00						
SILT - brown, little to some fine sand, trace clay, medium stiff, crumbles readily, moist	5						
	4	0.5	11.7				
	3	P					
SAND - reddish brown to brown, fine to medium sand, trace coarse sand, trace silt, loose, moist to saturated below 6' depth	565.50						
	2						
	3						
	4						
[sand blow-in occurred at 10'-11' depth]	557.70						
	3						
	17						
WEATHERED SANDSTONE - augered through	554.90						
Borehole continued with rock coring.	535.50						
	15						

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)
BBS, form 137 (Rev. 8-99)



Illinois Department of Transportation
Division of Highways
JCI

ROCK CORE LOG

Page 2 of 3

Date 8/28/07

ROUTE I-74 DESCRIPTION New I-74 Bridge Over Mississippi River - Illinois Approach LOGGED BY KJB
SECTION LOCATION (N=564672.846, E=2459200.272), SEC. 32, TWP. 18N, RNG. 1W, 4th PM
COUNTY Rock Island CORING METHOD NQ Core

STRUCT. NO. Station	CORING BARREL TYPE & SIZE	NQ Wireline	DEPTH (ft)	CORRE (#)	RECOVER (%)	R.Q. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	DESCRIPTION
BORING NO. VIAIL-107 Station	1.8 in	NQ Wireline	557.70	100	24				SANDSTONE - brownish gray to gray, fine grained, with minor thin black banding, porous, moderately to well cemented, soft, non-distinct horizontal planar fractures at thin to medium bedding spacing, occasional shale seams, slightly weathered to fresh
Ground Surface Elev. 569.00 ft			554.90	100	24				- possible 9" core loss at 15.8' to 16.6'. Driller reported black water return (shale?) at top of run
Ground Surface Elev. 569.00 ft			535.50	96	65	1.4			[Driller reported no voids/seams in Run 2. Loss could be due to wash out of poorly cemented material]
Ground Surface Elev. 569.00 ft			535.50	100	53	1.6			- shale partings at 18.3' (1/3"), 22.9' (1/4"), 24.0' (1/3")
Ground Surface Elev. 569.00 ft			535.50	100	53	1.6			- iron-stained layer at 25.8'-25.9'
Ground Surface Elev. 569.00 ft			535.50	100	53	1.6			- iron-stained gray fine sandstone with black seams and limestone clasts at 29.0'-29.3'
Ground Surface Elev. 569.00 ft			535.50	100	53	1.6			- numerous black shale partings at 29.3'-30.1'
Ground Surface Elev. 569.00 ft			535.50	100	53	1.6			SHAPE - dark gray to black shale with light gray sandstone partings (transitional zone)

Color pictures of the cores Yes
Cores will be stored for examination until
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)



Illinois Department of Transportation
Division of Highways
JCI

ROCK CORE LOG

Page 3 of 3

Date 8/28/07

ROUTE I-74 DESCRIPTION New I-74 Bridge Over Mississippi River - Illinois Approach LOGGED BY KJB
SECTION LOCATION (N=564672.846, E=2459200.272), SEC. 32, TWP. 18N, RNG. 1W, 4th PM
COUNTY Rock Island CORING METHOD NQ Core

STRUCT. NO. Station	CORING BARREL TYPE & SIZE	NQ Wireline	DEPTH (ft)	CORRE (#)	RECOVER (%)	R.Q. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	DESCRIPTION
BORING NO. VIAIL-107 Station	1.8 in	NQ Wireline	557.70	100	24				SANDSTONE - light brownish gray, fine grained with black "needle" inclusions and occasional gray shale pods, soft, well cemented with some healed vertical joints, fresh
Ground Surface Elev. 569.00 ft			554.90	100	24				- possible 9" core loss at 15.8' to 16.6'. Driller reported black water return (shale?) at top of run
Ground Surface Elev. 569.00 ft			535.50	96	65	1.4			[Driller reported no voids/seams in Run 2. Loss could be due to wash out of poorly cemented material]
Ground Surface Elev. 569.00 ft			535.50	100	53	1.6			- shale partings at 18.3' (1/3"), 22.9' (1/4"), 24.0' (1/3")
Ground Surface Elev. 569.00 ft			535.50	100	53	1.6			- iron-stained layer at 25.8'-25.9'
Ground Surface Elev. 569.00 ft			535.50	100	53	1.6			- iron-stained gray fine sandstone with black seams and limestone clasts at 29.0'-29.3'
Ground Surface Elev. 569.00 ft			535.50	100	53	1.6			- numerous black shale partings at 29.3'-30.1'
Ground Surface Elev. 569.00 ft			535.50	100	53	1.6			SHAPE - dark gray to black shale with light gray sandstone partings (transitional zone)

Color pictures of the cores Yes
Cores will be stored for examination until
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

BORING NO. VIAIL - 107
Station: 31+19.25
Offset: 97.81' Rt.
(Measured from C I-74)



Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10061

FILE NAME = 081-0178-C00AB-128-Soil Boring Logs - Pier 1 of 2	USER NAME = ksnider	DESIGNED - RJT	REVISED -
MODEL: Default	PLOT SCALE =	CHECKED - AJK	REVISED -
	PLOT DATE = 1/18/2017	DRAWN - KMS	REVISED -
		CHECKED - AJK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS - PIER 1 (2 OF 2)
STRUCTURE NO. 081-0178 (EASTBOUND)

SHEET NO. 5128 OF 5138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1HVBR	ROCK ISLAND	1504	1017
CONTRACT NO. 64C08			ILLINOIS FED. AID PROJECT	



SOIL BORING LOG

ROUTE I-74 DESCRIPTION New I-74 Bridge Over Mississippi River - Illinois Approach LOGGED BY KJB
SECTION LOCATION (N=564459.202, E=2459256.895, SEC. 32, TWP. 18N, RNG. 1W, 4th PM)
COUNTY Rock Island DRILLING METHOD HSA, CME 550X HAMMER TYPE CME AUTOMATIC

Table with columns: DEPTH (ft), BLOW COUNT, UCS (tsf), MOISTURE (%), and Soil Description. Includes data for TOPSOIL, SILT, CLAY, and WEATHERED SANDSTONE layers.

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) BBS, from 137 (Rev. 8-99)



ROCK CORE LOG

ROUTE I-74 DESCRIPTION New I-74 Bridge Over Mississippi River - Illinois Approach LOGGED BY KJB
SECTION LOCATION (N=564459.202, E=2459256.895, SEC. 32, TWP. 18N, RNG. 1W, 4th PM)
COUNTY Rock Island CORING METHOD NQ Core

Table with columns: DEPTH (ft), CORING BARREL TYPE & SIZE, CORING METHOD, RECOVERY (%), CORE DENSITY (min/ft), and CORE STRENGTH (tsf). Includes descriptions for SANDSTONE layers.

Color pictures of the cores Yes
Cores will be stored for examination until
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938) BBS, form 138 (Rev. 8-99)



ROCK CORE LOG

ROUTE I-74 DESCRIPTION New I-74 Bridge Over Mississippi River - Illinois Approach LOGGED BY KJB
SECTION LOCATION (N=564459.202, E=2459256.895, SEC. 32, TWP. 18N, RNG. 1W, 4th PM)
COUNTY Rock Island CORING METHOD NQ Core

Table with columns: DEPTH (ft), CORING BARREL TYPE & SIZE, CORING METHOD, RECOVERY (%), CORE DENSITY (min/ft), and CORE STRENGTH (tsf). Includes descriptions for SANDSTONE layers.

Color pictures of the cores Yes
Cores will be stored for examination until
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938) BBS, form 138 (Rev. 8-99)

BORING NO. VIAIL-108
Station: 33+40.00
Offset: 86.84' Rt.
(Measured from C I-74)



Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10061

Table with columns: DESIGNED, CHECKED, DRAWN, and REVISIONS. Includes names RJT, AJK, and KMS.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS - PIER 2
STRUCTURE NO. 081-0178 (EASTBOUND)

SHEET NO. S129 OF S138 SHEETS

Table with columns: F.A.I. RTE., SECTION, COUNTY, TOTAL SHEETS, SHEET NO., CONTRACT NO.

ILLINOIS FED. AID PROJECT

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SOIL BORING LOG

ROUTE I-74 DESCRIPTION New I-74 Bridge Over Mississippi River - Illinois Approach LOGGED BY KJB/SL

SECTION LOCATION (N=564338.777, E=2459305.083), SEC. 32, TWP. 18N, RNG. 1W, 4th PM

COUNTY Rock Island DRILLING METHOD HSA, CME 550X HAMMER TYPE CME AUTOMATIC

STRUCT. NO. Station 64+77.8 BORING NO. VIAIL-110 Station Offset Ground Surface Elev. 583.20 ft

Table with columns for Depth (ft), Blows (60"/ft), UCS (tsf), Moisture (%), and Soil Description. Includes entries for Embankment Fill, SILT, WEATHERED SANDY SHALE, and CLAY.

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) BBS, from 137 (Rev. 8-99)



ROCK CORE LOG

ROUTE I-74 DESCRIPTION New I-74 Bridge Over Mississippi River - Illinois Approach LOGGED BY KJB/SL

SECTION LOCATION (N=564338.777, E=2459305.083), SEC. 32, TWP. 18N, RNG. 1W, 4th PM

COUNTY Rock Island CORING METHOD NQ Core

STRUCT. NO. Station 64+77.8 BORING NO. VIAIL-110 Station Offset Ground Surface Elev. 583.20 ft

Table with columns for Depth (ft), Run, Recovery (%), Core Diameter (in), and Core Description. Includes entries for SANDSTONE and WEATHERED SANDY SHALE.

Color pictures of the cores Yes Cores will be stored for examination until The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938) BBS, form 138 (Rev. 8-99)



ROCK CORE LOG

ROUTE I-74 DESCRIPTION New I-74 Bridge Over Mississippi River - Illinois Approach LOGGED BY KJB/SL

SECTION LOCATION (N=564338.777, E=2459305.083), SEC. 32, TWP. 18N, RNG. 1W, 4th PM

COUNTY Rock Island CORING METHOD NQ Core

STRUCT. NO. Station 64+77.8 BORING NO. VIAIL-110 Station Offset Ground Surface Elev. 583.20 ft

Table with columns for Depth (ft), Run, Recovery (%), Core Diameter (in), and Core Description. Includes entries for SANDSTONE.

Color pictures of the cores Yes Cores will be stored for examination until The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938) BBS, form 138 (Rev. 8-99)

BORING NO. VIAIL-110 Station: 34+67.81 Offset: 64.75' Rt. (Measured from C I-74)



Alfred Benesch & Company 205 North Michigan Avenue, Suite 2400 Chicago, Illinois 60601 312-565-0450 Job No. 10061

Table with columns for USER NAME, DESIGNED, CHECKED, PLOT SCALE, PLOT DATE, DRAWN, and CHECKED.

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS - PIER 3 STRUCTURE NO. 081-0178 (EASTBOUND) SHEET NO. S130 OF S138 SHEETS

Table with columns for F.A.I. RTE., SECTION, COUNTY, TOTAL SHEETS, SHEET NO., and CONTRACT NO.

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Illinois Department of Transportation
Division of Highways
JCI

SOIL BORING LOG

Page 1 of 3

Date 9/4/07

ROUTE I-74 DESCRIPTION New I-74 Bridge Over Mississippi River - Illinois Approach
LOGGED BY KJB
SECTION LOCATION (N=564128.095, E=2459352.373), SEC. 32, TWP. 18N, RNG. 1W, 4th PM
COUNTY Rock Island DRILLING METHOD HSA, CME 55 HAMMER TYPE CME AUTOMATIC

STRUCT. NO. Station
BORING NO. VIAIL-112 Station
Offset
Ground Surface Elev. 576.00 ft

	DEPTH (ft)	BLOW (6")	UCS (tsf)	MOIST (%)	
PAVEMENT - asphalt concrete and base course (8" thick)	575.30				
SILT - dark brown and light brown, trace to little clay, with bricks, gravel, glass, metal, crumbly, slight to medium plastic, stiff, dry to moist (FILL)	9 10 8				
	5				
	3				
	2				
	1	0.5	20.1		
	1				
- brown silt with brick and yellowish brown silty sand	585.00	1			
SAND - reddish brown, silty, clayey fine sand, very loose, saturated	1				
	1				
CLAY - dark gray, little silt, trace coarse sand, medium to highly plastic, soft to medium stiff, wet	582.10	1	0.9		
	2				
	15				
SAND - greenish gray, fine grained, clayey, some limestone gravel, saturated	580.00	7			
	10				
	8				
SHALE - light greenish gray, sandy, no laminations, dry to slightly moist	558.50	23			
	26	>4.5			
Borehole continued with rock coring.	557.00	50(1")	P		
	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)
BBS, from 137 (Rev. 8-99)



Illinois Department of Transportation
Division of Highways
JCI

ROCK CORE LOG

Page 2 of 3

Date 9/4/07

ROUTE I-74 DESCRIPTION New I-74 Bridge Over Mississippi River - Illinois Approach
LOGGED BY KJB
SECTION LOCATION (N=564128.095, E=2459352.373), SEC. 32, TWP. 18N, RNG. 1W, 4th PM
COUNTY Rock Island CORING METHOD NQ Core

STRUCT. NO. Station
CORING BARREL TYPE & SIZE NQ Wireline
BORING NO. VIAIL-112 Station
Offset
Ground Surface Elev. 576.00 ft

DEPTH (ft)	RECOVERY (%)	RECOVERED (%)	CORE TIME (min/ft)	STRENGTH (tsf)
557.00	76	21	1.1	
Run 1				
20	100	58	1	256.0
Run 2				
25	97	43	1.6	
Run 3				
548.50				
SANDSTONE - grayish brown, fine grained with shale and clastic seams, soft to very soft, weak rock, slightly to moderately weathered				
545.70				
LIMESTONE - gray, fine grained, stylonitic, hard, thin to thick bedded, sub-horizontal rough to slightly rough fractures, occasional vugs and minor pitting, occasional mid angle (45°-60°) fractures, fresh except at vugs	100	99	1.8	
Run 4				
35	100	97	1.9	
Run 5				
576.00				
-minor "birdseye" texture limestone at 36.0' to 40.8'				

Color pictures of the cores Yes
Cores will be stored for examination until
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)



Illinois Department of Transportation
Division of Highways
JCI

ROCK CORE LOG

Page 3 of 3

Date 9/4/07

ROUTE I-74 DESCRIPTION New I-74 Bridge Over Mississippi River - Illinois Approach
LOGGED BY KJB
SECTION LOCATION (N=564128.095, E=2459352.373), SEC. 32, TWP. 18N, RNG. 1W, 4th PM
COUNTY Rock Island CORING METHOD NQ Core

STRUCT. NO. Station
CORING BARREL TYPE & SIZE NQ Wireline
BORING NO. VIAIL-112 Station
Offset
Ground Surface Elev. 576.00 ft

DEPTH (ft)	RECOVERY (%)	RECOVERED (%)	CORE TIME (min/ft)	STRENGTH (tsf)
530.20				
LIMESTONE - gray, fine grained, stylonitic, hard, thin to thick bedded, sub-horizontal rough to slightly rough fractures, occasional vugs and minor pitting, occasional mid angle (45°-60°) fractures, fresh except at vugs (continued)				
40				
45				
50				
55				
End of Boring				

Color pictures of the cores Yes
Cores will be stored for examination until
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

BORING NO. VIAIL-112
Station: 36+83.72
Offset: 62.29' Rt.
(Measured from C I-74)

benesch Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10061

FILE NAME = 081-0178-C004B-131-Soil Boring Logs - Pier 4.dgn	USER NAME = ksnider	DESIGNED - RJT	REVISED -
MODEL: Default		CHECKED - AJK	REVISED -
		DRAWN - KMS	REVISED -
		CHECKED - AJK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS - PIER 4
STRUCTURE NO. 081-0178 (EASTBOUND)

SHEET NO. S131 OF S138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1HVBR	ROCK ISLAND	1504	1020
CONTRACT NO. 64C08				

ILLINOIS FED. AID PROJECT



Illinois Department of Transportation
Division of Highways
JCI

SOIL BORING LOG

Page 1 of 3

Date 9/6/07

ROUTE I-74 DESCRIPTION New I-74 Bridge Over Mississippi River - Illinois Approach LOGGED BY KJB

SECTION LOCATION (N=563942.061, E=2459385.563), SEC. 32, TWP. 18N, RNG. 1W, 4th PM

COUNTY Rock Island DRILLING METHOD HSA, CME 55 HAMMER TYPE CME AUTOMATIC

STRUCT. NO. Station	DEPTH (ft)	BLOW S	UCS Qu	MOIST T	Surface Water Elev.	
					ft	ft
BORING NO. VIAIL-114 Station	Offset	Ground Surface Elev. 575.80 ft				
		Groundwater Elev.:				
PAVEMENT - asphaltic concrete (4" thick) and base course 575.00						
SILT - brown and dark brown, little to some clay, with brick, soft, moist (FILL)						
SILT - brown, dark brown, gray and orange, mottled, and clay to silty clay, medium plastic, medium stiff to stiff, moist						
SILT - light gray with orange mottles and iron-staining, and clay, medium plastic, rubbery texture, medium stiff, moist (MODIFIED LOESS)						
SAND - brown, fine to medium grained, clayey, to sandy clay, loose, saturated						
SHALE - light gray, sandy, hard (clay), dry						
Borehole continued with rock coring.						

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)
BBS, from 137 (Rev. 8-99)



Illinois Department of Transportation
Division of Highways
JCI

ROCK CORE LOG

Page 2 of 3

Date 9/6/07

ROUTE I-74 DESCRIPTION New I-74 Bridge Over Mississippi River - Illinois Approach LOGGED BY KJB

SECTION LOCATION (N=563942.061, E=2459385.563), SEC. 32, TWP. 18N, RNG. 1W, 4th PM

COUNTY Rock Island CORING METHOD NQ Core

STRUCT. NO. Station	CORING BARREL TYPE & SIZE	NQ Wireline	DEPTH (ft)	CORRE (#)	RECOVER (%)	R-Q (%)	CORE TIME (min/ft)	STRENGTH (tsf)	DESCRIPTION
Run 2	100	63	2.4						
Run 3	100	83	2.2						
Run 4	100	88	1.8						
Run	100	93	2						

Color pictures of the cores Yes
Cores will be stored for examination until
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)



Illinois Department of Transportation
Division of Highways
JCI

ROCK CORE LOG

Page 3 of 3

Date 9/6/07

ROUTE I-74 DESCRIPTION New I-74 Bridge Over Mississippi River - Illinois Approach LOGGED BY KJB

SECTION LOCATION (N=563942.061, E=2459385.563), SEC. 32, TWP. 18N, RNG. 1W, 4th PM

COUNTY Rock Island CORING METHOD NQ Core

STRUCT. NO. Station	CORING BARREL TYPE & SIZE	NQ Wireline	DEPTH (ft)	CORRE (#)	RECOVER (%)	R-Q (%)	CORE TIME (min/ft)	STRENGTH (tsf)	DESCRIPTION
Run 2	100	63	2.4						
Run 3	100	83	2.2						
Run 4	100	88	1.8						
Run	100	93	2						

Color pictures of the cores Yes
Cores will be stored for examination until
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

BORING NO. VIAIL-114
Station: 38+72.59
Offset: 68.51' Rt.
(Measured from C I-74)



Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10061

FILE NAME = 081-0178-C00AB-132-Soil Boring Logs - Pier 5.dgn
MODEL: Default

USER NAME = ksnyder
DESIGNED - RJT
CHECKED - AJK
DRAWN - KMS
PLOT DATE = 1/18/2017

REVISOR -
REVISOR -
REVISOR -
REVISOR -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS - PIER 5
STRUCTURE NO. 081-0178 (EASTBOUND)

SHEET NO. S132 OF S138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1HVBR	ROCK ISLAND	1504	1021
CONTRACT NO. 64C08			ILLINOIS FED. AID PROJECT	

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SOIL BORING LOG

ROUTE I-74 DESCRIPTION New I-74 Bridge Over Mississippi River - Illinois Approach LOGGED BY SL Date 9/6/07

SECTION LOCATION (N=563831.028, E=2459496.962), SEC. 32, TWP. 18N, RNG. 1W, 4th PM

COUNTY Rock Island DRILLING METHOD HSA, GME 550X HAMMER TYPE CME AUTOMATIC

STRUCT. NO. Station	DEPT H	BLOW S	UCS Qu	M O I S T	Surface Water Elev. ft	Stream Bed Elev. ft
BORING NO. VIAIL-115					Groundwater Elev.: First Encounter 563.3 ft	Upon Completion
Offset					After Hrs.	
Ground Surface Elev. 575.30 ft	(ft)	(/6")	(tsf)	(%)		

PAVEMENT - asphalt, concrete and base course	574.30					
CLAY - black, some silt, medium to highly plastic, medium stiff, moist	2	1	0.6			
-dark green gray to black, little silt	0	2	0.9	22.8		
- slightly plastic						
- [Dry unit weight = 101.6 pcf]			1.4	21.8		
-orange to greenish gray, soft	0	1	0.5	47.6		
- soft						
SAND - orange, medium to coarse grained, conglomeratic with fine grained gravel, loose, damp to wet	563.80	9	0.4			
-conglomeratic with gravel (1-inch minus), mixed rock types (subrounded to subangular limestone and gravel pieces)						
WEATHERED SANDSTONE - augered through	559.30					
Borehole continued with rock coring.	556.40					

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) BBS, from 137 (Rev. 8-99)



ROCK CORE LOG

ROUTE I-74 DESCRIPTION New I-74 Bridge Over Mississippi River - Illinois Approach LOGGED BY SL Date 9/6/07

SECTION LOCATION (N=563831.028, E=2459496.962), SEC. 32, TWP. 18N, RNG. 1W, 4th PM

COUNTY Rock Island CORING METHOD NQ Core

STRUCT. NO. Station	CORING BARREL TYPE & SIZE	DEPT H	CORER	RECOVERY	R - Q	CORE TIME	STRENGTH
BORING NO. VIAIL-115	NQ Wireline				(%)	(min/ft)	(tsf)
Offset	Core Diameter 1.8 in						
Ground Surface Elev. 575.30 ft	Top of Rock Elev. 559.30 ft						
	Begin Core Elev. 556.40 ft						

SANDSTONE - medium to dark gray, fine grained, black banding, silty, moderately well cemented, soft, occasional shale parting with fractures along partings; thin to medium bedded, horizontal to very low angle fractures, smooth to sandy rough, fresh (Transition). - (desiccation cracks in shale layers at 20.6' and 21' upon drying)	556.40	Run 1	86	22	1.8		
- swirled to mottled, 45° shale laminates with bedding offsets; deformed bedding at 22.0'-25.6'		Run 2	75	26	1.2		
LIMESTONE - gray, fine grained, locally stylolitic, hard, very thin to thin bedded, horizontal to low angle fractures, fractures at stylolites are planar to slightly irregular and slightly rough to rough, fractures in limestone are horizontal to very low angle, smooth, and planar to slightly irregular, fresh.	549.70	Run 3	100	76	1.2		813.1
- fine to medium grained, occasional stylolites		Run 4	92	70	1		
- minor pitting, very occasional "birdseye" texture, occasional clay-like shale partings		Run 5	98	83	1		

Color pictures of the cores Yes
Cores will be stored for examination until
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938) BBS, form 138 (Rev. 8-99)



ROCK CORE LOG

ROUTE I-74 DESCRIPTION New I-74 Bridge Over Mississippi River - Illinois Approach LOGGED BY SL Date 9/6/07

SECTION LOCATION (N=563831.028, E=2459496.962), SEC. 32, TWP. 18N, RNG. 1W, 4th PM

COUNTY Rock Island CORING METHOD NQ Core

STRUCT. NO. Station	CORING BARREL TYPE & SIZE	DEPT H	CORER	RECOVERY	R - Q	CORE TIME	STRENGTH
BORING NO. VIAIL-115	NQ Wireline				(%)	(min/ft)	(tsf)
Offset	Core Diameter 1.8 in						
Ground Surface Elev. 575.30 ft	Top of Rock Elev. 559.30 ft						
	Begin Core Elev. 556.40 ft						

LIMESTONE - gray, fine grained, locally stylolitic, hard, very thin to thin bedded, horizontal to low angle fractures, fractures at stylolites are planar to slightly irregular and slightly rough to rough, fractures in limestone are horizontal to very low angle, smooth, and planar to slightly irregular, fresh. (continued)		Run 6	100	75	1.2		
- 4" thick dark gray calcarenite bed at 40.3'-40.6'							
- light brownish gray limestone with several soft green clay-like shale partings, stringers, and occasional shale clasts							
- 6" thick layer of green soft rock-like shale at 42.5'-43'							
SHALE - dark gray, rock-like, soft, thin bedded, horizontal to very low angle smooth planar fractures, fresh with some moderate weathering.	530.40						
End of Boring	529.70						

Color pictures of the cores Yes
Cores will be stored for examination until
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938) BBS, form 138 (Rev. 8-99)

BORING NO. VIAIL - 115
Station: 40+04.36
Offset: 17.37' Lt.
(Measured from C I-74)



Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10061

FILE NAME = 081-0178-C00AB-133-Soil Boring Logs - Pier 6.dgn	USER NAME = ksnider	DESIGNED - RJT	REVISED -
MODEL: Default	PLOT SCALE =	CHECKED - AJK	REVISED -
	PLOT DATE = 1/18/2017	DRAWN - KMS	REVISED -
		CHECKED - AJK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS - PIER 6
STRUCTURE NO. 081-0178 (EASTBOUND)

SHEET NO. S133 OF S138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1HVBR	ROCK ISLAND	1504	1022
CONTRACT NO. 64C08			ILLINOIS FED. AID PROJECT	

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Illinois Department of Transportation
Division of Highways
JCI

SOIL BORING LOG

Page 1 of 3

ROUTE I-74 DESCRIPTION New I-74 Bridge Over Mississippi River - Illinois Approach LOGGED BY SL
SECTION LOCATION (N=563600.167, E=2459483.23), SEC. 32, TWP. 18N, RNG. 1W, 4th PM
COUNTY Rock Island DRILLING METHOD HSA, CME 550X HAMMER TYPE CME AUTOMATIC

STRUCT. NO. Station	DEPTH (ft)	BLOW COUNT (6")	UNCONSOLIDATED QUANTITIES (tsf)	M-O-I-S-T	Surface Water Elev.	ft
					Stream Bed Elev.	
BORING NO. VIAIL-118 Station					Groundwater Elev.: First Encounter	567.5 ft
Offset					Upon Completion	
Ground Surface Elev.	578.50 ft				After	
CLAY - dark greenish gray, with some orange brown clay, some silt, slightly to medium plastic, stiff to medium stiff, moist						
	3					
	4	1.6				
	4	B				
-brown orange						
	3	1.9	16.7			
	3	B				
-brown orange to green gray						
	3					
	4	1.2	17.2			
	4	B				
-little silt						
	2					
	2	0.8	31.6			
	2	B				
-some sand, slightly plastic, soft, saturated						
	1					
	2	0.3	24.8			
	6	B				
CONGLOMERATE - red brown, poorly sorted with sand, silty clay and gravel (0.5 inch minus) 565.00						
WEATHERED LIMESTONE - augered through 50/4"						
Borehole continued with rock coring. 562.40						

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) BBS, form 137 (Rev. 8-99)



Illinois Department of Transportation
Division of Highways
JCI

ROCK CORE LOG

Page 2 of 3

ROUTE I-74 DESCRIPTION New I-74 Bridge Over Mississippi River - Illinois Approach LOGGED BY SL
SECTION LOCATION (N=563600.167, E=2459483.23), SEC. 32, TWP. 18N, RNG. 1W, 4th PM
COUNTY Rock Island CORING METHOD NQ Core

STRUCT. NO. Station	CORING BARREL TYPE & SIZE	NQ Wireline	DEPTH (ft)	CORE (#)	RECOVERY (%)	CORRECTED (%)	CORE TIMING (min/ft)	STRENGTH (tsf)
BORING NO. VIAIL-118 Station	Core Diameter	1.8 in						
Offset	Top of Rock Elev.	565.00 ft						
Ground Surface Elev.	Begin Core Elev.	562.40 ft						
LIMESTONE - grayish brown, fine to medium grained, with occasional to some green shale partings and clasts, hard to moderately hard, thin to medium bedded, primarily horizontal planar fractures, occasional stylolites, smooth to slightly rough, slightly to moderately weathered in upper 6' grading to fresh to slightly weathered. (Note: core loss in Run #1 assumed to be between 16.1' and 19.5' in fractured limestone containing abundant shale clasts).								
- 6-inch clay seam at 16.1'-16.7', moderately weathered								
- highly fractured with abundant green gray shale and partings to 19.5'								
Run 1 53 9 2.1								
- fine to coarse grained, with several clay-like green shale partings at 20.9'-21.6'								
Run 2 96 67 1.2								
- minor pitting, occasional stylolites								
Run 3 100 93 1								
- very minor pitting, fractures primarily along smooth horizontal planar surfaces								
- abundant pitting, with several green clay-like shale clasts ranging up to 2" in length								
Run 4 100 80 1								
- light to medium gray, fine grained, occasional stylolites								

Color pictures of the cores Yes
Cores will be stored for examination until
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938) BBS, form 138 (Rev. 8-99)



Illinois Department of Transportation
Division of Highways
JCI

ROCK CORE LOG

Page 3 of 3

ROUTE I-74 DESCRIPTION New I-74 Bridge Over Mississippi River - Illinois Approach LOGGED BY SL
SECTION LOCATION (N=563600.167, E=2459483.23), SEC. 32, TWP. 18N, RNG. 1W, 4th PM
COUNTY Rock Island CORING METHOD NQ Core

STRUCT. NO. Station	CORING BARREL TYPE & SIZE	NQ Wireline	DEPTH (ft)	CORE (#)	RECOVERY (%)	CORRECTED (%)	CORE TIMING (min/ft)	STRENGTH (tsf)
BORING NO. VIAIL-118 Station	Core Diameter	1.8 in						
Offset	Top of Rock Elev.	565.00 ft						
Ground Surface Elev.	Begin Core Elev.	562.40 ft						
LIMESTONE - grayish brown, fine to medium grained, with occasional to some green shale partings and clasts, hard to moderately hard, thin to medium bedded, primarily horizontal planar fractures, occasional stylolites, smooth to slightly rough, slightly to moderately weathered in upper 6' grading to fresh to slightly weathered. (Note: core loss in Run #1 assumed to be between 16.1' and 19.5' in fractured limestone containing abundant shale clasts). (continued)								
- abundant stylolites, very thinly bedded 539.40								
LIMESTONE - light to medium gray, fine to medium grained, minor to abundant pitting, "birds-eye" texture, occasional stylolites, moderately hard, medium to thick bedded, horizontal rough jagged fractures, fresh to slightly weathered.								
Run 5 100 79 1.4								
End of Boring 535.60								

Color pictures of the cores Yes
Cores will be stored for examination until
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938) BBS, form 138 (Rev. 8-99)

BORING NO. VIAIL-118
Station: 42+27.32
Offset: 44.06' Rt.
(Measured from @ I-74)



Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10061

FILE NAME = 081-0178-C00AB-134-Soil Boring Logs - Pier 7.dgn	USER NAME = ksnyder	DESIGNED - RJT	REVISED -
MODEL: Default	PLOT SCALE =	CHECKED - AJK	REVISED -
	PLOT DATE = 1/18/2017	DRAWN - KMS	REVISED -
		CHECKED - AJK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS - PIER 7
STRUCTURE NO. 081-0178 (EASTBOUND)

SHEET NO. S134 OF S138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1HVBR	ROCK ISLAND	1504	1023
CONTRACT NO. 64C08				

ILLINOIS FED. AID PROJECT



SOIL BORING LOG

ROUTE I-74 DESCRIPTION New I-74 Bridge Over Mississippi River - Illinois Approach LOGGED BY SL Date 9/14/07

SECTION LOCATION (N=563292.754, E=2459483.427, SEC. 32, TWP. 18N, RNG. 1W, 4th PM)

COUNTY Rock Island DRILLING METHOD HSA, CME 550X HAMMER TYPE CME AUTOMATIC

STRUCT. NO. Station [redacted] BORING NO. VIAIL-122 Station [redacted] Offset [redacted] Ground Surface Elev. 590.00 ft

Table with columns for Depth (ft), Blows (B), Unconfined Compressive Strength (UCS) (tsf), Moisture Content (M) (%), and Soil Description. Includes entries for Clay, Maroon clay, Weathered Limestone, and Sand.

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) BBS, from 137 (Rev. 8-99)



ROCK CORE LOG

ROUTE I-74 DESCRIPTION New I-74 Bridge Over Mississippi River - Illinois Approach LOGGED BY SL Date 9/14/07

SECTION LOCATION (N=563292.754, E=2459483.427, SEC. 32, TWP. 18N, RNG. 1W, 4th PM)

COUNTY Rock Island CORING METHOD NQ Core

STRUCT. NO. Station [redacted] BORING NO. VIAIL-122 Station [redacted] Offset [redacted] Ground Surface Elev. 590.00 ft

Table with columns for Depth (ft), Core Diameter (in), Top of Rock Elev. (ft), Begin Core Elev. (ft), Recovery (%), and Core Strength (tsf). Includes entries for Limestone and Sand.

Color pictures of the cores Yes Cores will be stored for examination until [redacted] The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938) BBS, form 138 (Rev. 8-99)



ROCK CORE LOG

ROUTE I-74 DESCRIPTION New I-74 Bridge Over Mississippi River - Illinois Approach LOGGED BY SL Date 9/14/07

SECTION LOCATION (N=563292.754, E=2459483.427, SEC. 32, TWP. 18N, RNG. 1W, 4th PM)

COUNTY Rock Island CORING METHOD NQ Core

STRUCT. NO. Station [redacted] BORING NO. VIAIL-122 Station [redacted] Offset [redacted] Ground Surface Elev. 590.00 ft

Table with columns for Depth (ft), Core Diameter (in), Top of Rock Elev. (ft), Begin Core Elev. (ft), Recovery (%), and Core Strength (tsf). Includes entries for Limestone and Sand.

Color pictures of the cores Yes Cores will be stored for examination until [redacted] The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938) BBS, form 138 (Rev. 8-99)

BORING NO. VIAIL-122 Station: 45+28.06 Offset: 107.78' Rt. (Measured from C I-74)



Alfred Benesch & Company 205 North Michigan Avenue, Suite 2400 Chicago, Illinois 60601 312-565-0450 Job No. 10061

Table with columns for USER NAME, DESIGNED, CHECKED, PLOT SCALE, and PLOT DATE.

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS - PIER 9 STRUCTURE NO. 081-0178 (EASTBOUND)

Table with columns for F.A.I. RTE., SECTION, COUNTY, TOTAL SHEETS, SHEET NO., and CONTRACT NO.

SHEET NO. S136 OF S138 SHEETS

ILLINOIS FED. AID PROJECT

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SOIL BORING LOG

ROUTE I-74 DESCRIPTION New I-74 Bridge Over Mississippi River - Illinois Approach LOGGED BY SL Date 9/13/07

SECTION LOCATION (N=563122.181, E=2459544.529), SEC. 32, TWP. 18N, RNG. 1W, 4th PM

COUNTY Rock Island DRILLING METHOD HSA, CME 550X HAMMER TYPE CME AUTOMATIC

STRUCT. NO. Station	DEPT	BLOW	UCS	MOIST	Surface Water Elev. ft	DEPT	BLOW	UCS	MOIST
BORING NO. Station	TH	S	Qu	T	Stream Bed Elev. ft	H	S	Qu	T
Offset					Groundwater Elev.: First Encounter				
Ground Surface Elev. 586.50 ft	(ft)	(/6")	(tsf)	(%)	Upon Completion 572.0 ft	(ft)	(/6")	(tsf)	(%)
					After Hrs.				

CONCRETE - 2.5" concrete plus base course (sand & gravel). 585.20	1				- reddish brown to maroon, and sand, very soft 585.30	4			
CLAY - black to dark brown, some silt, medium plastic, soft to medium stiff, slightly moist to moist. - very stiff to hard at 1'-2.5'	5	3.2			SAND - brown, fine to coarse grain, conglomeric with gravel (1/2-inch minus, subrounded to subangular), loose, wet.	5	0.9		
	6	S			WEATHERED LIMESTONE 562.40	4			
	2				Borehole continued with rock coring.	50/5"			
	2	0.9	18.1						
	3	B							
	2								
	1	1.0	19.4						
	2	P							
- greenish gray to orange brown	1								
	1	0.7	19.9						
	2	B							
- slightly plastic									
		0.8	25.8						
		B							
- [Dry unit weight = 100.6 pcf]									
	1								
- slightly to medium plastic	1	0.6	24.2						
	2	B							
- medium gray, wet									
- greenish gray to orange brown	0								
- medium gray, little silt	1	0.5	25.0						
	2	B							
- soft	0								
	0	0.5	27.4						
	2	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) BBS, from 137 (Rev. 8-99)



ROCK CORE LOG

ROUTE I-74 DESCRIPTION New I-74 Bridge Over Mississippi River - Illinois Approach LOGGED BY SL Date 9/13/07

SECTION LOCATION (N=563122.181, E=2459544.529), SEC. 32, TWP. 18N, RNG. 1W, 4th PM

COUNTY Rock Island CORING METHOD NQ Core

STRUCT. NO. Station	CORING BARREL TYPE & SIZE	DEPT	COVER	R	Q	T	S
BORING NO. Station	NQ Wireline	H	Y	D	D	M	T
Offset		(ft)	(#)	(%)	(%)	(min/ft)	(tsf)
Ground Surface Elev. 586.50 ft							

LIMESTONE - medium brownish gray, fine to medium grained, hard, occasional pitting, occasional stylolites with some fractures along stylolites, locally vuggy with green clay-like shale infilling, occasional clay-like shale seams with fractures along seams, thin to medium bedded, fractures are horizontal to low angle planar to slightly irregular, smooth to slightly rough, occasional mid to high angle fractures, fresh.	560.90	Run 1	100	55	1.2		
- medium gray, fine grained, stylolites locally closely spaced, interbedded with "clean" limestone with only very occasional stylolites.		Run 2	100	91	1	293.3	
		Run 3	100	89	0.8		
		Run 4	100	89	1.6		
LIMESTONE - medium grayish brown, fine to medium grain, moderately hard, abundant pitting and "birdseye" texture, medium bedded, fractures are horizontal to very low angle, planar, smooth moderately irregular, rough to jagged, fresh to very slightly weathered.	543.00						

Color pictures of the cores Yes Cores will be stored for examination until The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938) BBS, form 138 (Rev. 8-99)



ROCK CORE LOG

ROUTE I-74 DESCRIPTION New I-74 Bridge Over Mississippi River - Illinois Approach LOGGED BY SL Date 9/13/07

SECTION LOCATION (N=563122.181, E=2459544.529), SEC. 32, TWP. 18N, RNG. 1W, 4th PM

COUNTY Rock Island CORING METHOD NQ Core

STRUCT. NO. Station	CORING BARREL TYPE & SIZE	DEPT	COVER	R	Q	T	S
BORING NO. Station	NQ Wireline	H	Y	D	D	M	T
Offset		(ft)	(#)	(%)	(%)	(min/ft)	(tsf)
Ground Surface Elev. 586.50 ft							

LIMESTONE - medium grayish brown, fine to medium grain, moderately hard, abundant pitting and "birdseye" texture, medium bedded, fractures are horizontal to very low angle, planar, smooth moderately irregular, rough to jagged, fresh to very slightly weathered. (continued)	535.90	Run 5	98	94	1		
End of Boring							

Color pictures of the cores Yes Cores will be stored for examination until The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938) BBS, form 138 (Rev. 8-99)

BORING NO. VIAIL-124 Station: 47+07.61 Offset: 83.47' Rt. (Measured from C I-74)



Alfred Benesch & Company 205 North Michigan Avenue, Suite 2400 Chicago, Illinois 60601 312-565-0450 Job No. 10061

FILE NAME = 081-0178-C00AB-137-Soil Boring Logs - Pier 10.dgn	USER NAME = ksnider	DESIGNED - AAY	REVISED -
MODEL: Default	PLOT SCALE =	CHECKED - AJK	REVISED -
	PLOT DATE = 1/18/2017	DRAWN - KMS	REVISED -
		CHECKED - AJK	REVISED -

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS - PIER 10 STRUCTURE NO. 081-0178 (EASTBOUND)

SHEET NO. S137 OF S138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1HVBR	ROCK ISLAND	1504	1026
CONTRACT NO. 64C08			ILLINOIS FED. AID PROJECT	

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Illinois Department of Transportation
Division of Highways
JCI

SOIL BORING LOG

ROUTE I-74 DESCRIPTION New I-74 Bridge Over Mississippi River - Illinois Approach LOGGED BY SL Date 9/12/07

SECTION LOCATION (N=562900.26, E=2459617.358, SEC. 32, TWP. 18N, RNG. 1W, 4th PM)

COUNTY Rock Island DRILLING METHOD HSA, CME 550X HAMMER TYPE CME AUTOMATIC

STRUCT. NO. Station	D E P T H S	B L O W S	U C S Q u	M O I S T	SOIL TESTS				
					Surface Water Elev. ft	Stream Bed Elev. ft	Groundwater Elev. Upon Completion ft	After Hrs. ft	
BORING NO. VIAIL-126	Station				572.4	ft	▼		
	Offset								
Ground Surface Elev. 586.40 ft					586.40	ft			

Description	D E P T H S	B L O W S	U C S Q u	M O I S T	D E P T H S	B L O W S	U C S Q u	M O I S T	Strength (tsf)
SILT - dark gray, some clay, non to slightly plastic, stiff, slightly moist.	5				31				
	6	1.5			48				
	6	B			50/4"				
- slightly to medium plastic	3				562.90				
CLAY - greenish gray to orange brown, some silt, sand seams, slightly to medium plastic, stiff to medium stiff, moist.	3	1.3	19.3		50/1"				
	3	B							
- slightly plastic	2				560.40				
	3	0.5	19.9						
	3	B							
	2								
	2	0.7	20.0						
	2	B							
	10								
[Upon completion of boring, offset 10' south, augered to 11' depth, and took Shelby tube sample at 11'-13']	1								
	1	0.8	22.3						
	2	P							
- medium gray, medium to highly plastic, with brown fine grained sand seams at 9.2', 11.3' and 13.7'	1								
	1	0.8	26.0						
- some silt, saturated	1	B							
[Note: attempted Shelby tube sample at 16'-18'; no recovery; followed-up with SPT sample]	0								
	1	0.5	24.6						
	1	B							
- vertical fracture at 47.3'-47.9'									
- red brown to maroon, medium to highly plastic	2								
	4	0.6							
	4	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) BBS, from 137 (Rev. 8-99)



Illinois Department of Transportation
Division of Highways
JCI

ROCK CORE LOG

ROUTE I-74 DESCRIPTION New I-74 Bridge Over Mississippi River - Illinois Approach LOGGED BY SL Date 9/12/07

SECTION LOCATION (N=562900.26, E=2459617.358, SEC. 32, TWP. 18N, RNG. 1W, 4th PM)

COUNTY Rock Island CORING METHOD NQ Core

STRUCT. NO. Station	CORING BARREL TYPE & SIZE	NQ Wireline	D E P T H S	C O R E R Y	R E C O V E R Y	R Q	D	T I M E	S T R E N G T H
BORING NO. VIAIL-126	Station								
	Offset								
Ground Surface Elev. 586.40 ft									

Description	D E P T H S	C O R E R Y	R E C O V E R Y	R Q	D	T I M E	S T R E N G T H
LIMESTONE - medium to light brown gray, fine to medium grained, hard, thin to medium bedding, occasional pitting, fractures are primarily horizontal, planar to slightly irregular, smooth to slightly rough, fresh to very slightly weathered except at vugs.	Run 1	100	76	1.4			
- occasional pitting at 26'-27.5'; vuggy at 27.6'-28.3' with pits to 2" length							
	Run 2	98	92	1	350.2		
- from 31' to 45': occasionally vuggy with clay-like shale fillings in voids, occasional stylolites, pitting, very thin to thin bedded							
	Run 3	100	91	1			
	Run 4	100	92	0.8			

Color pictures of the cores Yes _____
Cores will be stored for examination until _____
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938) BBS, form 138 (Rev. 8-99)



Illinois Department of Transportation
Division of Highways
JCI

ROCK CORE LOG

ROUTE I-74 DESCRIPTION New I-74 Bridge Over Mississippi River - Illinois Approach LOGGED BY SL Date 9/12/07

SECTION LOCATION (N=562900.26, E=2459617.358, SEC. 32, TWP. 18N, RNG. 1W, 4th PM)

COUNTY Rock Island CORING METHOD NQ Core

STRUCT. NO. Station	CORING BARREL TYPE & SIZE	NQ Wireline	D E P T H S	C O R E R Y	R E C O V E R Y	R Q	D	T I M E	S T R E N G T H
BORING NO. VIAIL-126	Station								
	Offset								
Ground Surface Elev. 586.40 ft									

Description	D E P T H S	C O R E R Y	R E C O V E R Y	R Q	D	T I M E	S T R E N G T H
LIMESTONE - medium brownish gray, fine to medium grained, pitted, "birdseye" texture, moderately hard, horizontal and slightly irregular, rough fracture.	Run 5	100	100	1			
- vertical fracture at 47.3'-47.9' with 1/2 "birdseye" texture and 1/2 gray fine limestone							
	535.40						
End of Boring							

Color pictures of the cores Yes _____
Cores will be stored for examination until _____
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938) BBS, form 138 (Rev. 8-99)

BORING NO. VIAIL-126
Station: 49+41.71
Offset: 56.78' Rt.
(Measured from C I-74)



FILE NAME : 081-0178-C00AB-138-Soil Boring Logs - N. Abutment.dwg	USER NAME : ksnider	DESIGNED - AAY	REVISED -
		CHECKED - AJK	REVISED -
		DRAWN - KMS	REVISED -
		CHECKED - AJK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS - S. ABUTMENT
STRUCTURE NO. 081-0178 (EASTBOUND)

SHEET NO. S138 OF S138 SHEETS

F.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1HVBR	ROCK ISLAND	1504	1027
CONTRACT NO. 64C08			ILLINOIS FED. AID PROJECT	

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1/18/2017

Bench Mark: Chiseled "X" in base of traffic light at southeast corner of intersection of 19th Street and 7th Avenue. Elevation NAVD 88 = 589.227

Existing Structure: None

DESIGN SPECIFICATIONS
2012 AASHTO LRFD Bridge Design Specifications, 6th Edition

SEISMIC DATA
Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.06g
Design Spectral Acceleration at 0.2 sec. (S_{D5}) = 0.10g
Soil Site Class = C

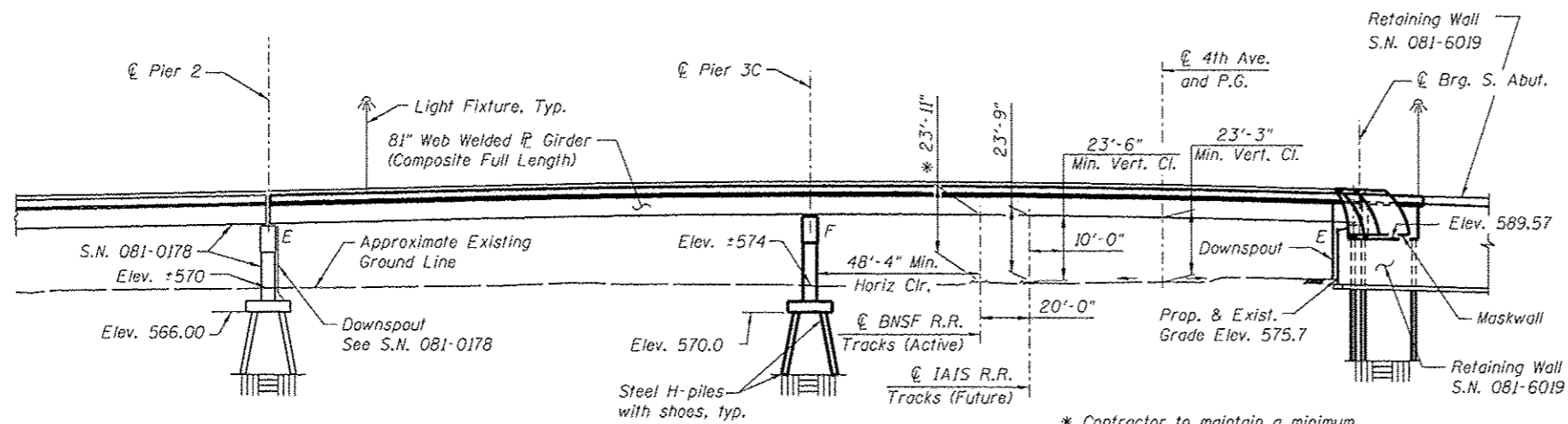
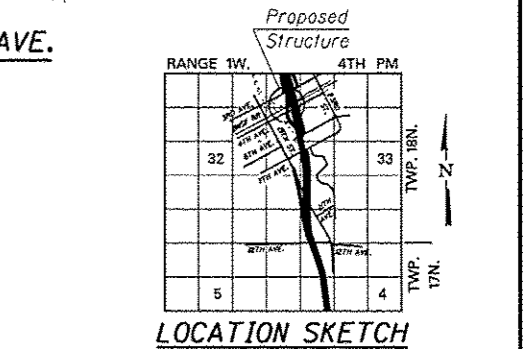
LOADING HL-93
Allow 50#/sq. ft. for future wearing surface.

DESIGN STRESSES
FIELD UNITS
 $f'_c = 3,500$ psi
 $f_y = 60,000$ psi (Reinforcement)
 $f_y = 50,000$ psi (A270 Grade 50)

DRAINAGE SCUPPER STATIONS
326+91.50 at West Gutterline
330+75.00 at East Gutterline

STATION 330+08.81
BUILT BY
STATE OF ILLINOIS
F.A.I. RT. 74 SEC 81-IHV
LOADING HL-93
STRUCTURE NO. 081-0186

NAME PLATE
See Std. 515001



ELEVATION

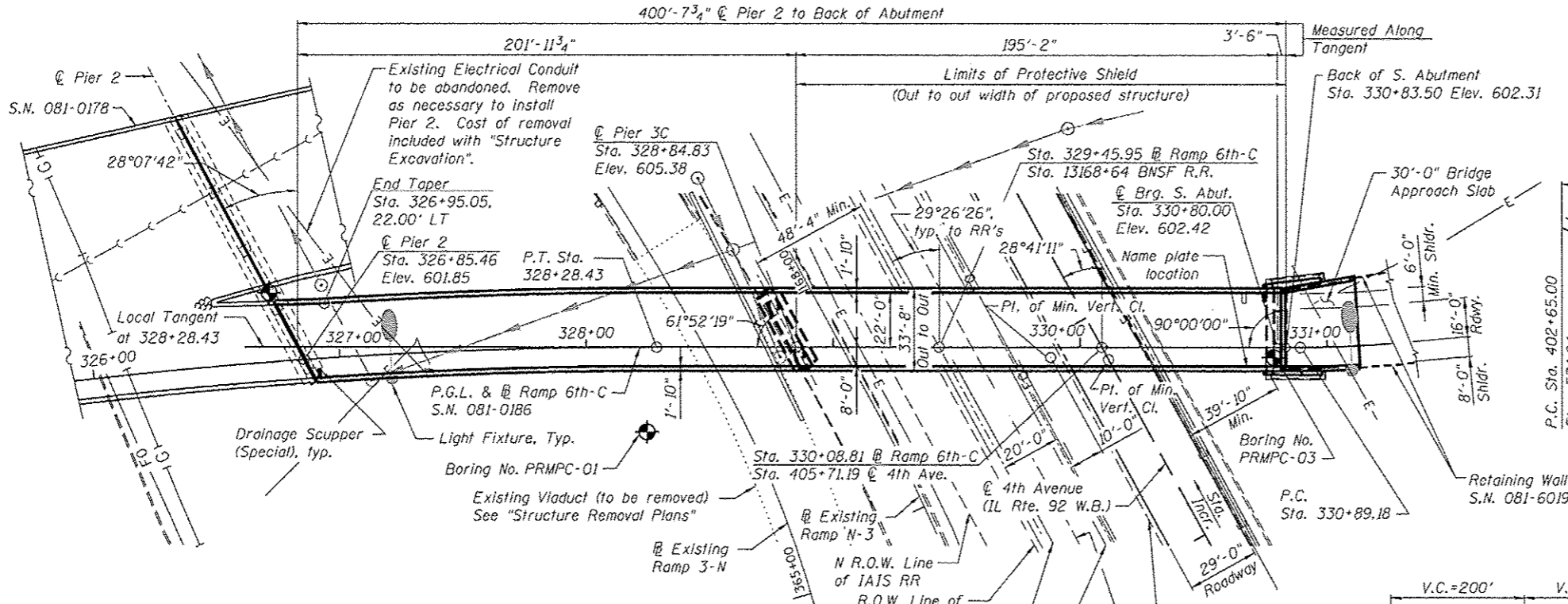
* Contractor to maintain a minimum 21'-0" Vertical Construction Clearance above the top of rail of the BNSF R.R. during all phases of construction.

Sta.	Elev.
13165+36	573.10
13165+97	573.25
13166+63	573.34
13167+22	573.34
13167+83	573.40
13168+36	573.45
13168+94	573.54

TOP OF RAIL BNSF R.R.
BNSF Sta. 13168+64 = Mile Post 249.41



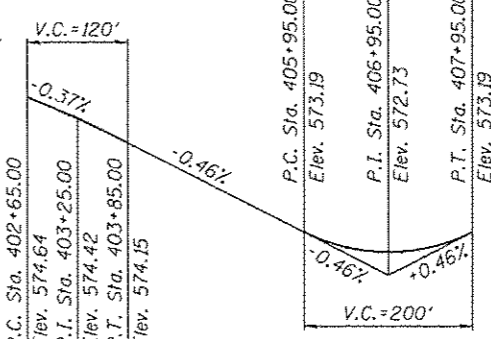
APPROVED
For Structural Adequacy Only
Andrew J. Keaschall
Engineer of Bridges & Structures



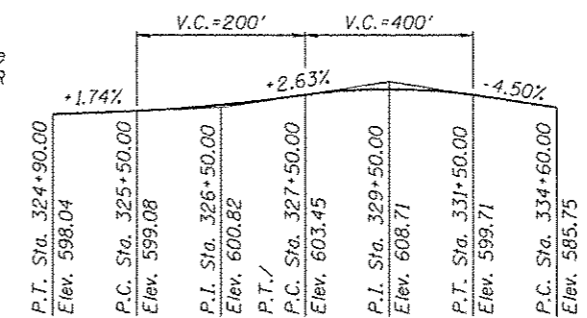
PLAN

CURVE DATA R 6TH-C-2
 $\Delta = 9^\circ 34' 14''$ (RT)
 $D = 2^\circ 51' 53''$
 $T = 167.43'$
 $L = 334.07'$
 $E = 7.00'$
 $R = 2,000.00'$
P.C. = Sta. 324+94.36
P.T. = Sta. 328+28.43
P.I. = Sta. 326+61.78
Normal Crown = Sta. 324+69
2.0% to 4.3% S.E. = Sta. 324+69 to 325+35
4.3% S.E. = Sta. 325+35 to 327+87
4.3% to 0% S.E. = Sta. 327+87 to 329+32
0% to -6.0% = Sta. 329+32 to 331+35

CURVE DATA R 6TH-C-3
 $\Delta = 53^\circ 19' 38''$ (LT)
 $D = 14^\circ 19' 26''$
 $T = 200.86'$
 $L = 372.29'$
 $E = 47.60'$
 $R = 400.00'$
P.C. = Sta. 330+89.18
P.T. = Sta. 334+61.48
P.I. = Sta. 332+90.05
6.0% S.E. = Sta. 331+35.00 to 333+96.00

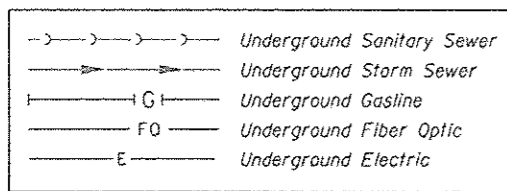


PROFILE GRADE 4TH AVE.



PROFILE GRADE RAMP 6TH-C
(Along @ Ramp 6th-C)

EXISTING UTILITY LEGEND



Note: See roadway and lighting plans for existing and proposed utilities.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
STRUCTURE NO. 081-0186 RAMP 6TH-C
SHEET NO. SCL OF SC39 SHEETS

F.A.I. RTE. 74	SECTION 81-IHVBR	COUNTY ROCK ISLAND	TOTAL SHEETS 1504	SHEET NO. 1028
S.N. 081-0186		CONTRACT NO. 64C08		

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GENERAL NOTES

- Fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts. Bolts $\frac{7}{8}$ " ϕ , holes $\frac{15}{16}$ " ϕ , unless otherwise noted.
- Calculated weight of Structural Steel = 720,080 lbs
M 270 Grade 36: 39,090 lbs
M 270 Grade 50: 680,990 lbs
- No field welding is permitted except as specified in the contract documents.
- Reinforcement bars designated (E) shall be epoxy coated.
- If the Contractor elects to use cantilever forming brackets on the exterior beams or girders, the brackets shall be placed at the same locations as required for the hardwood blocks in Article 503.06(b) of the Standard Specifications. If additional cantilever forming brackets are required, hardwood blocking shall be wedged between the exterior and first interior beam at each of these additional bracket locations.
- Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8 in. (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.
- Concrete Sealer shall be applied to the exposed faces of the pier 2 and the South Abutment.
- The Organic Zinc Rich Primer / Epoxy / Urethane Paint System shall be used for painting of new structural steel except where otherwise noted. The entire system shall be shop applied, with the exception of the exterior surface and the bottom of the bottom flange of fascia beams, masked off connection surfaces, and field installed fasteners, all of which shall be touched up and finish coated in the field. The color of the final finish coat for all interior steel surfaces shall be Gray, Munsell No. 5B 7/1.

The exterior and bottom flange of the fascia girders and fascia bearings shall be finish coated with fluoropolymer paint. The color of the final finish coat for the exterior and bottom flange of the fascia girders and bearings shall be Federal Standard 595C Color 26099 (gray-blue). See Special Provision for "Cleaning and Painting Structural Steel."
- Slip forming of the parapet is allowed. See sheet SC10 for details.
- The Contractor shall use self-consolidating concrete (SCC) in all the pier columns. The self-consolidating concrete shall conform to all requirements as specified in Section 1020 of the Standard Specifications. Cost of SCC shall be included with the cost of Concrete Structures.

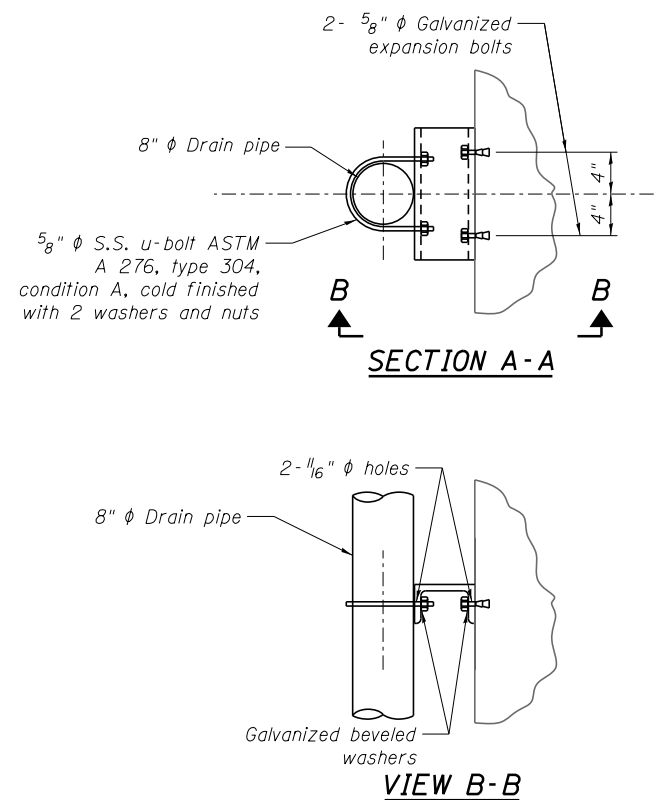
INDEX OF SHEETS

Dwg. No.	Drawing Title
SC1	General Plan and Elevation
SC2	General Notes, Index of Sheets and Total Bill of Material
SC3	Foundation Layout
SC4	Deck Elevation Plan
SC5	Top of Slab Elevations (1 of 2)
SC6	Top of Slab Elevations (2 of 2)
SC7	Top of Approach Slab Elevations
SC8	Deck Reinforcement Plan
SC9	Deck Reinforcement Cross Section
SC10	Parapet Elevations
SC11	Superstructure Details
SC12	Traffic Barrier Details (1 of 2)
SC13	Traffic Barrier Details (2 of 2)
SC14	Bridge Approach Slab Plan
SC15	Bridge Approach Slab Details
SC16	Preformed Joint Strip Seal
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SC18	Framing Plan
SC19	Steel Plate Girder Elevation
SC20	Steel Plate Girder Cross Frame and Stiffener Details
SC21	Steel Plate Girder Camber Diagram and Splice Details
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SC23	HLMR Guided Expansion Bearing Details
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SC25	Abutment Layout
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SC27	West Maskwall Details (1 of 2)
SC28	West Maskwall Details (2 of 2)
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SC30	East Maskwall Details (2 of 2)
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SC32	Pier 3C Layout
SC33	Pier 3C Details
SC34	Pier Cross Sections and Footing Details
SC35	Pier Bar List
SC36	HP Pile Details
SC37	Bar Splicer Assembly Details
SC38	Soil Boring Logs (1 of 2)
SC39	Soil Boring Logs (2 of 2)

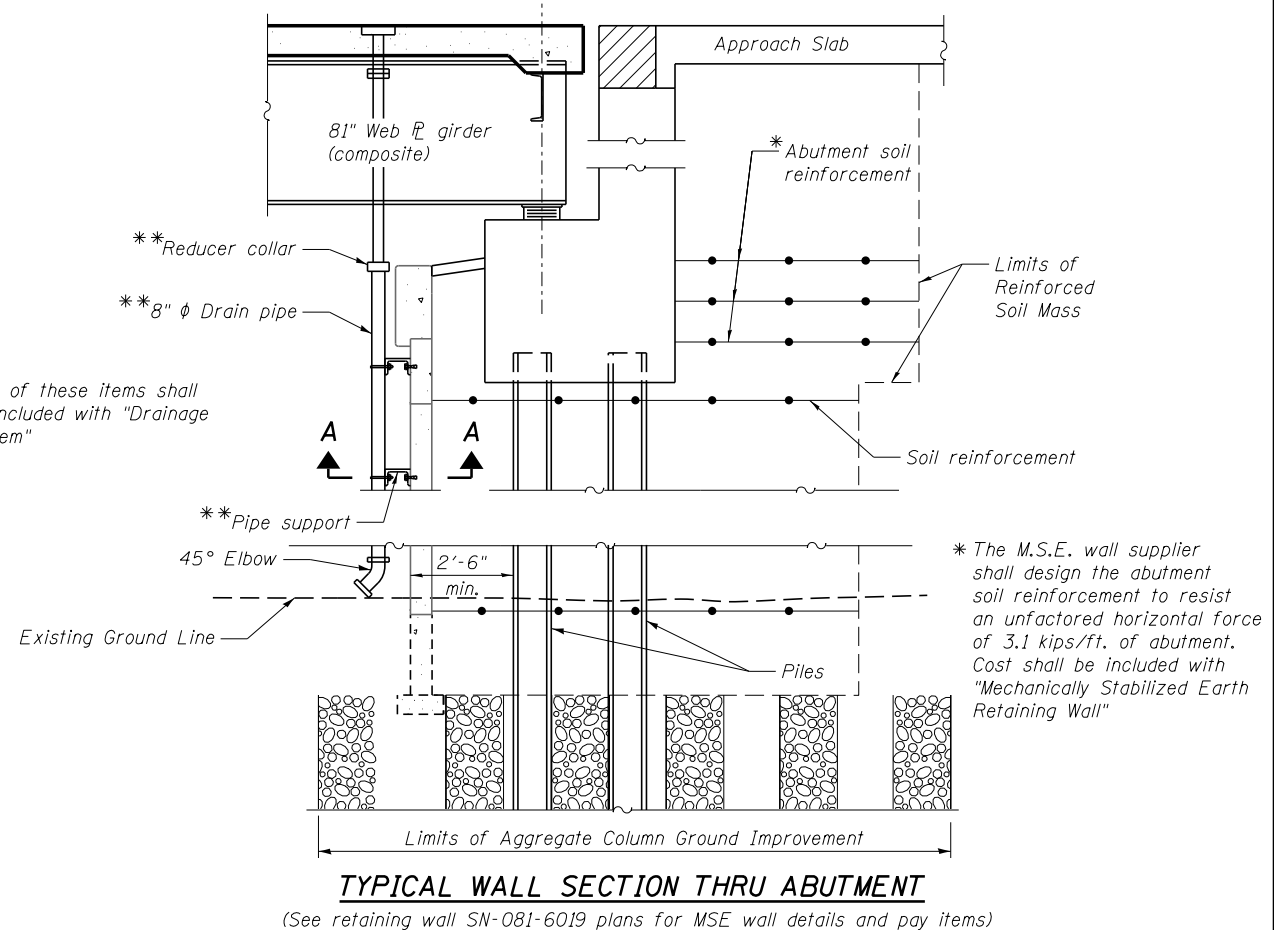
TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Protective Shield	Sq Yd	747	-	747
Structure Excavation	Cu Yd	-	20	20
Concrete Structures	Cu Yd	-	186.8	186.8
Concrete Superstructure	Cu Yd	542.1	-	542.1
Bridge Deck Grooving	Sq Yd	1,341	-	1,341
Protective Coat	Sq Yd	1,806	-	1,806
*** Furnishing and Erecting Structural Steel	L Sum	0.05	-	0.05
Stud Shear Connectors	Each	4,232	-	4,232
Reinforcement Bars, Epoxy Coated	Pound	158,870	25,700	184,570
Bar Splicers	Each	34	16	50
Furnishing Steel Piles HP14x73	Foot	-	645.0	645.0
Driving Piles	Foot	-	645.0	645.0
Test Pile Steel HP14x73	Each	-	2	2
Pile Shoes	Each	-	27	27
Name Plates	Each	1	-	1
Preformed Joint Strip Seal	Foot	32.0	-	32.0
Anchor Bolts, 1"	Each	-	48	48
Concrete Sealer	Sq Ft	-	1,192	1,192
High Load Multi-Rotational Bearings, Guided Expansion, 300K	Each	8	-	8
High Load Multi-Rotational Bearings, Fixed - 750K	Each	4	-	4
Steel Railing (Special)	Foot	799	-	799
Drainage Scuppers (Special)	Each	2	-	2
*** Drainage System	L Sum	-	0.10	0.10

*** Remainder of this item is installed with other structures in the Contract



***Cost of these items shall be included with "Drainage System"



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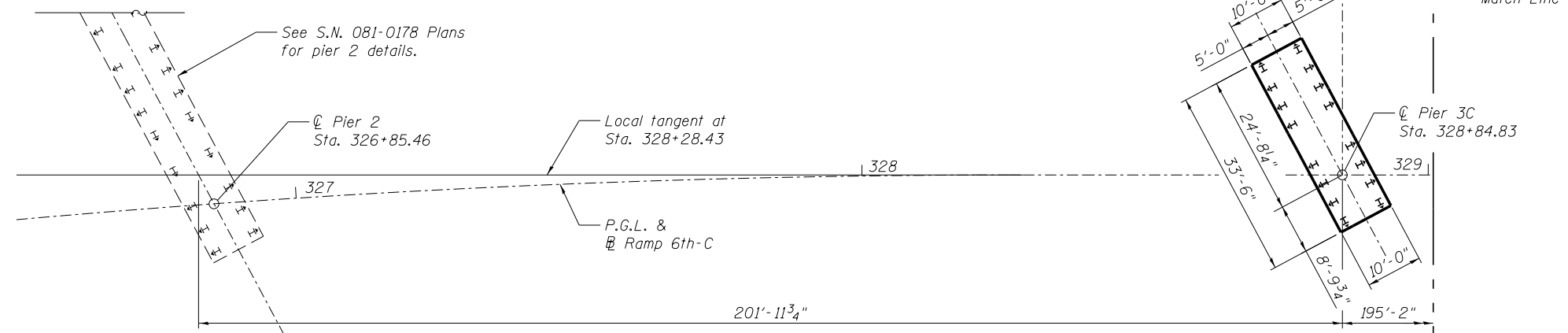
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GENERAL NOTES, INDEX OF SHEETS AND TOTAL BILL OF MATERIAL
STRUCTURE NO. 081-0186 RAMP 6TH-C
SHEET NO. SC2 OF SC39 SHEETS

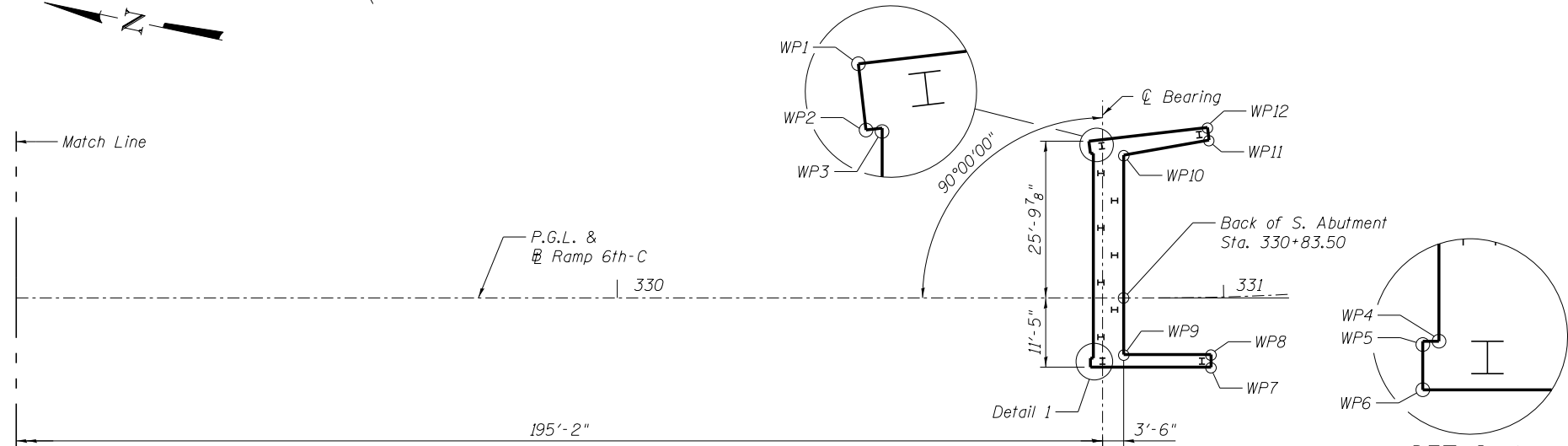
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74	81-1HVBR	ROCK ISLAND	1504	1029
ILLINOIS FED. AID PROJECT			CONTRACT NO. 64C08	

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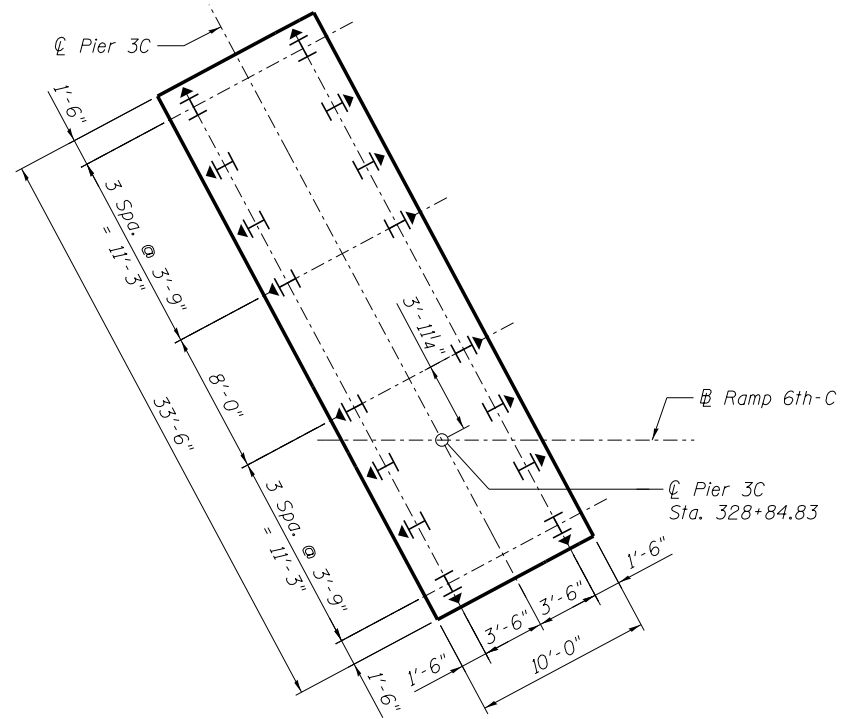
Work Points

W.P.	Station	Offset
1	330+77.77	25.82' Lt.
2	330+78.00	23.77' Lt.
3	330+78.50	23.83' Lt.
4	330+78.50	9.92' Rt.
5	330+78.00	9.92' Rt.
6	330+78.00	11.42' Rt.
7	330+97.66	11.51' Rt.
8	330+97.70	9.43' Rt.
9	330+83.50	9.33' Rt.
10	330+83.50	23.53' Lt.
11	330+98.15	25.92' Lt.
12	330+97.95	27.99' Lt.

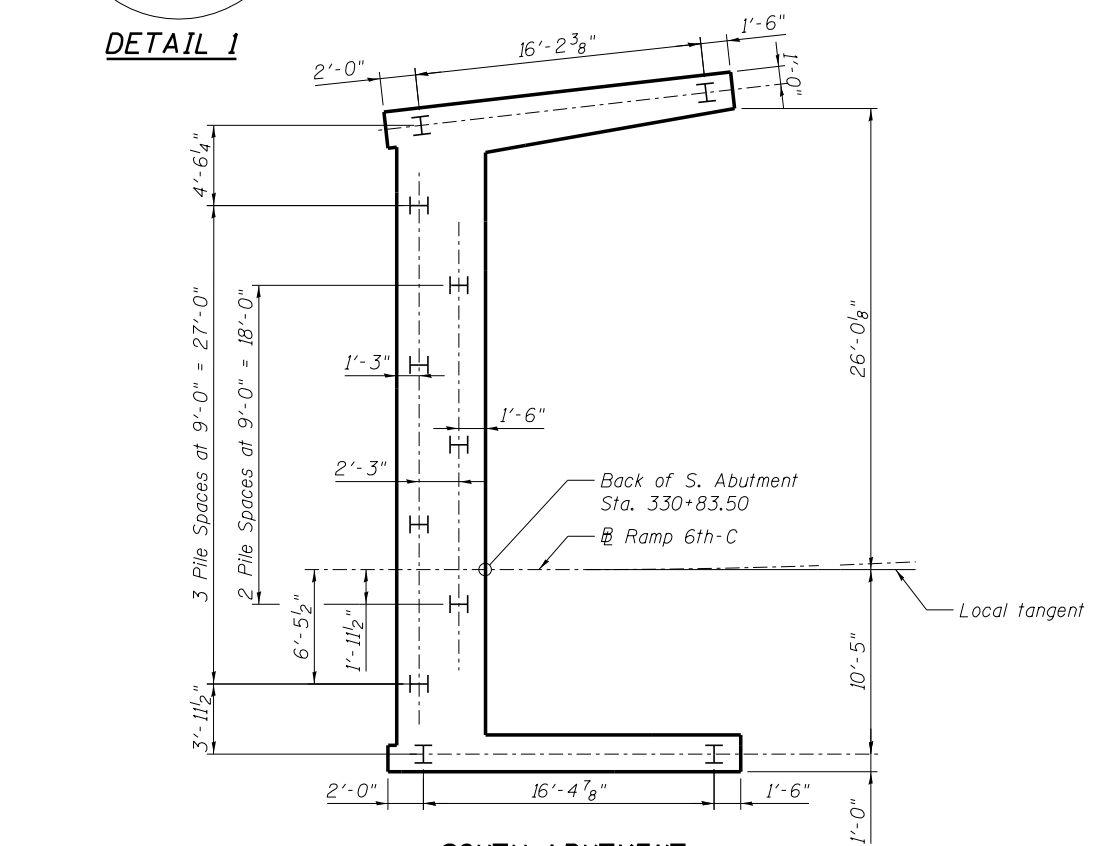


LEGEND:
 Vertical Pile
 Battered Pile

FOUNDATION PLAN



PIER 3C



SOUTH ABUTMENT

NOTES:
 1. For pier details, see sheets SC32 thru SC35.
 2. For abutment details, see sheets SC25 and SC26.

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**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**FOUNDATION LAYOUT
 STRUCTURE NO. 081-0186 RAMP 6TH-C**

SHEET NO. SC3 OF SC39 SHEETS

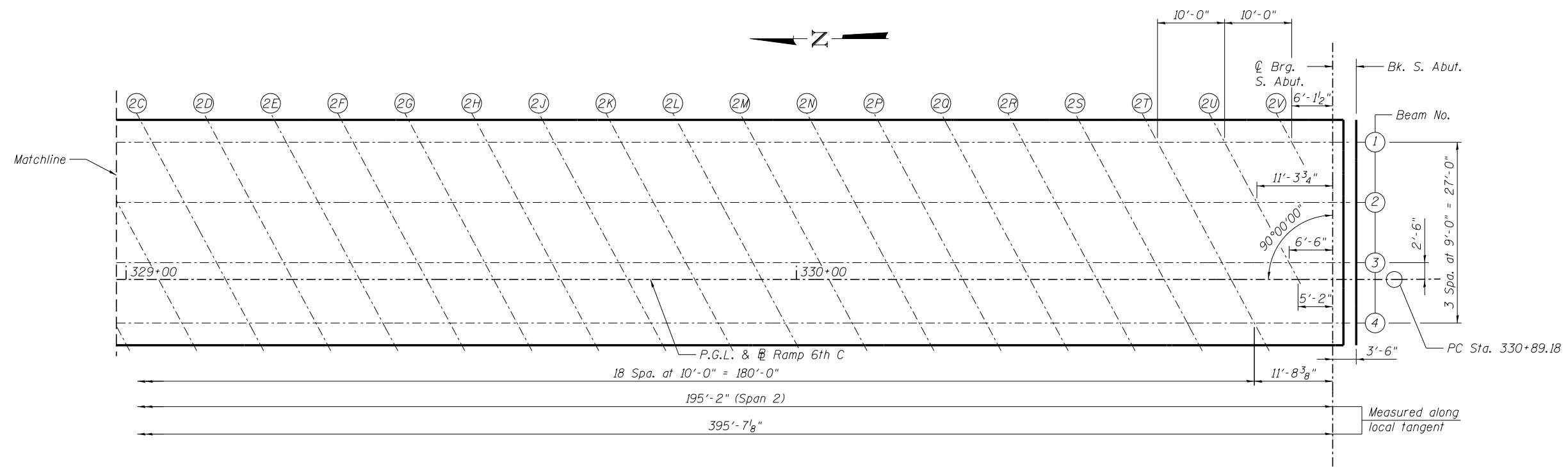
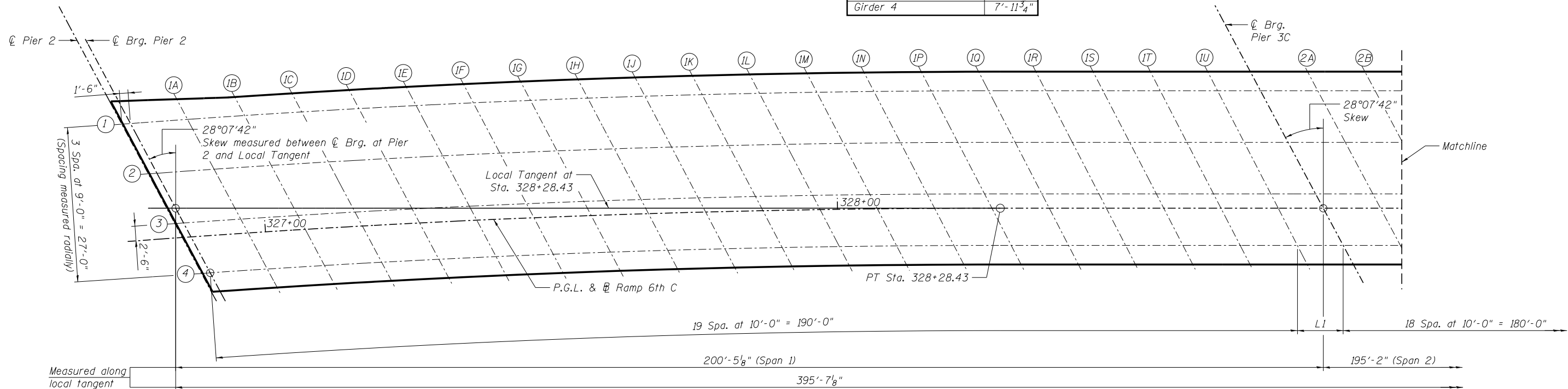
F.A.I. R.E. 74	SECTION 81-1HVBR	COUNTY ROCK ISLAND	TOTAL SHEETS 1504	SHEET NO. 1030
				CONTRACT NO. 64C08

ILLINOIS FED. AID PROJECT

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SCREED SPACING

Location	L1
Girder 1	7'-6 $\frac{1}{8}$ "
Girder 2	7'-8"
Girder 3	7'-10"
P.G.L. & Ramp 6th C	7'-10 $\frac{1}{2}$ "
Girder 4	7'-11 $\frac{3}{4}$ "



PLAN

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 DEPARTMENT OF TRANSPORTATION**

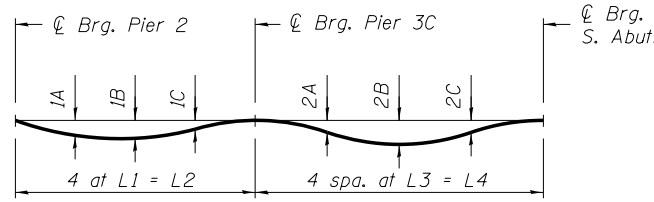
**TOP OF SLAB ELEVATIONS
 STRUCTURE NO. 081-0186 RAMP 6TH-C**

SHEET NO. SC4 OF SC39 SHEETS

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CONTRACT NO. 64C08			ILLINOIS FED. AID PROJECT	

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GIRDER 1



DEAD LOAD DEFLECTION DIAGRAM

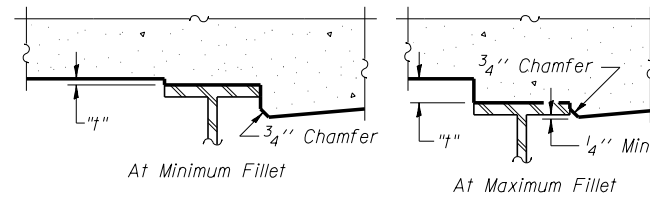
(Includes weight of concrete only.)

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 on SC5 & SC6.

DEAD LOAD DEFLECTION TABLE

Girder	1A	1B	1C	2A	2B	2C	L1	L2	L3	L4
1	3 ⁵ / ₈ "	4"	1 ⁵ / ₈ "	1 ³ / ₄ "	4 ¹ / ₄ "	3 ⁷ / ₈ "	49'-4 ¹ / ₂ "(+)	197'-6 ³ / ₈ "	51'-6 ³ / ₈ "	206'-1 ¹ / ₂ "
2	3 ¹ / ₄ "	3 ⁵ / ₈ "	1 ¹ / ₂ "	1 ⁵ / ₈ "	4"	3 ⁵ / ₈ "	49'-5"	197'-8"	50'-4"(-)	201'-3 ⁷ / ₈ "
3	3 ¹ / ₄ "	3 ¹ / ₂ "	1 ³ / ₈ "	1 ¹ / ₂ "	3 ⁵ / ₈ "	3 ¹ / ₄ "	49'-5 ¹ / ₂ "	197'-10"	49'-1 ¹ / ₂ "	196'-6"
4	2 ⁷ / ₈ "	3 ³ / ₈ "	1 ¹ / ₄ "	1 ³ / ₈ "	3 ³ / ₈ "	3"	49'-6"(-)	197'-11 ³ / ₄ "	47'-11 ³ / ₈ "(-)	191'-8 ³ / ₈ "



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

FILLET HEIGHTS

GIRDER 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
CL JT. & PIER 2	326+76.42	-20.50	602.52	602.52
CL. BRG. PIER 2	326+77.91	-20.50	602.55	602.55
1A	326+87.80	-20.50	602.78	602.86
1B	326+97.70	-20.50	603.02	603.16
1C	327+07.60	-20.50	603.26	603.46
1D	327+17.50	-20.50	603.50	603.76
1E	327+27.40	-20.50	603.75	604.05
1F	327+37.30	-20.50	604.00	604.34
1G	327+47.19	-20.50	604.26	604.61
1H	327+57.09	-20.50	604.51	604.87
1J	327+66.99	-20.50	604.75	605.10
1K	327+76.89	-20.50	604.97	605.31
1L	327+86.79	-20.50	605.18	605.48
1M	327+96.69	-20.50	605.31	605.57
1N	328+06.59	-20.50	605.42	605.63
1P	328+16.48	-20.50	605.51	605.68
1Q	328+26.38	-20.50	605.58	605.71
1R	328+36.36	-20.50	605.64	605.72
1S	328+46.36	-20.50	605.68	605.73
1T	328+56.36	-20.50	605.70	605.72
1U	328+66.36	-20.50	605.70	605.71
CL. BRG. PIER 3C	328+73.87	-20.50	605.69	605.69
2A	328+83.87	-20.50	605.67	605.67
2B	328+93.87	-20.50	605.62	605.65
2C	329+03.87	-20.50	605.56	605.61
2D	329+13.87	-20.50	605.48	605.57
2E	329+23.87	-20.50	605.38	605.52
2F	329+33.87	-20.50	605.26	605.45
2G	329+43.87	-20.50	605.13	605.36
2H	329+53.87	-20.50	604.97	605.25
2J	329+63.87	-20.50	604.81	605.12
2K	329+73.87	-20.50	604.62	604.97
2L	329+83.87	-20.50	604.41	604.78
2M	329+93.87	-20.50	604.19	604.57
2N	330+03.87	-20.50	603.95	604.33
2P	330+13.87	-20.50	603.69	604.05
2Q	330+23.87	-20.50	603.41	603.75
2R	330+33.87	-20.50	603.12	603.42
2S	330+43.87	-20.50	602.80	603.05
2T	330+53.87	-20.50	602.47	602.66
2U	330+63.87	-20.50	602.13	602.25
2V	330+73.87	-20.50	601.76	601.81
CL. BRG. S. ABUT.	330+80.00	-20.50	601.53	601.53
BK. S. ABUT.	330+83.50	-20.50	601.39	601.39

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
CL JT. & PIER 2	326+80.36	-11.50	602.22	602.22
CL. BRG. PIER 2	326+81.86	-11.50	602.26	602.26
1A	326+91.80	-11.50	602.49	602.56
1B	327+01.74	-11.50	602.73	602.86
1C	327+11.69	-11.50	602.97	603.16
1D	327+21.63	-11.50	603.22	603.45
1E	327+31.57	-11.50	603.47	603.74
1F	327+41.51	-11.50	603.72	604.02
1G	327+51.46	-11.50	603.98	604.30
1H	327+61.40	-11.50	604.23	604.56
1J	327+71.34	-11.50	604.47	604.78
1K	327+81.29	-11.50	604.68	604.98
1L	327+91.23	-11.50	604.86	605.13
1M	328+01.17	-11.50	605.01	605.25
1N	328+11.11	-11.50	605.14	605.33
1P	328+21.06	-11.50	605.25	605.40
1Q	328+31.01	-11.50	605.34	605.45
1R	328+41.01	-11.50	605.42	605.49
1S	328+51.01	-11.50	605.47	605.52
1T	328+61.01	-11.50	605.51	605.53
1U	328+71.01	-11.50	605.54	605.54
CL. BRG. PIER 3C	328+78.68	-11.50	605.54	605.54
2A	328+88.68	-11.50	605.53	605.54
2B	328+98.68	-11.50	605.50	605.53
2C	329+08.68	-11.50	605.46	605.51
2D	329+18.68	-11.50	605.40	605.49
2E	329+28.68	-11.50	605.32	605.45
2F	329+38.68	-11.50	605.22	605.40
2G	329+48.68	-11.50	605.10	605.33
2H	329+58.68	-11.50	604.97	605.23
2J	329+68.68	-11.50	604.81	605.12
2K	329+78.68	-11.50	604.64	604.97
2L	329+88.68	-11.50	604.46	604.80
2M	329+98.68	-11.50	604.25	604.61
2N	330+08.68	-11.50	604.03	604.38
2P	330+18.68	-11.50	603.79	604.12
2Q	330+28.68	-11.50	603.53	603.83
2R	330+38.68	-11.50	603.25	603.51
2S	330+48.68	-11.50	602.96	603.17
2T	330+58.68	-11.50	602.65	602.79
2U	330+68.68	-11.50	602.32	602.40
CL. BRG. S. ABUT.	330+80.00	-11.50	601.92	601.92
BK. S. ABUT.	330+83.50	-11.50	601.79	601.79



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E-S

7-1-10

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STATE OF ILLINOIS
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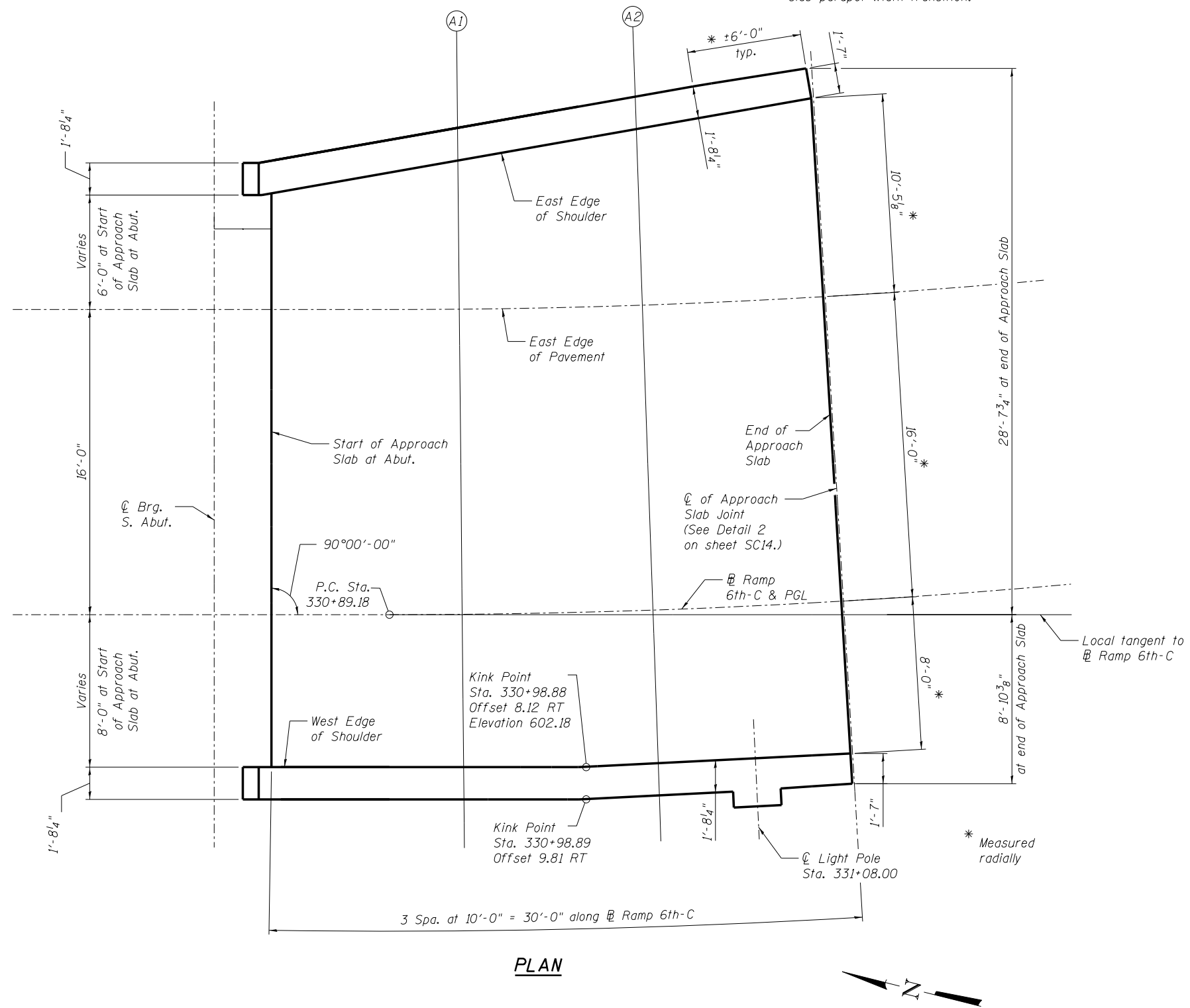
TOP OF SLAB ELEVATIONS (1 of 2)
STRUCTURE NO. 081-0186 RAMP 6TH-C

SHEET NO. SC5 OF SC39 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1HVR	ROCK ISLAND	1504	1032
CONTRACT NO. 64C08				

ILLINOIS FED. AID PROJECT

* See sheet SC14 for end of approach slab parapet width transition.



PLAN

EAST EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
Start of Approach Slab at Abut.	330+83.00	-22.09	601.34
A1	330+93.00	-23.80	600.85
A2	331+03.00	-25.24	600.35
☉ of Approach Slab Joint	331+13.00	-26.44	599.84

EAST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
Start of Approach Slab at Abut.	330+83.00	-16.00	601.61
A1	330+93.00	-16.00	601.22
A2	331+03.00	-16.00	600.82
☉ of Approach Slab Joint	331+13.00	-16.00	600.40

RAMP 6TH-C & PGL

Location	Station	Offset	Theoretical Grade Elevations
Start of Approach Slab at Abut.	330+83.00	0.00	602.32
A1	330+93.00	0.00	601.99
A2	331+03.00	0.00	601.63
☉ of Approach Slab Joint	331+13.00	0.00	601.25

WEST EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
Start of Approach Slab at Abut.	330+83.00	8.00	602.68
A1	330+93.00	8.02	602.37
A2	331+03.00	8.03	602.03
☉ of Approach Slab Joint	331+13.00	8.00	601.68

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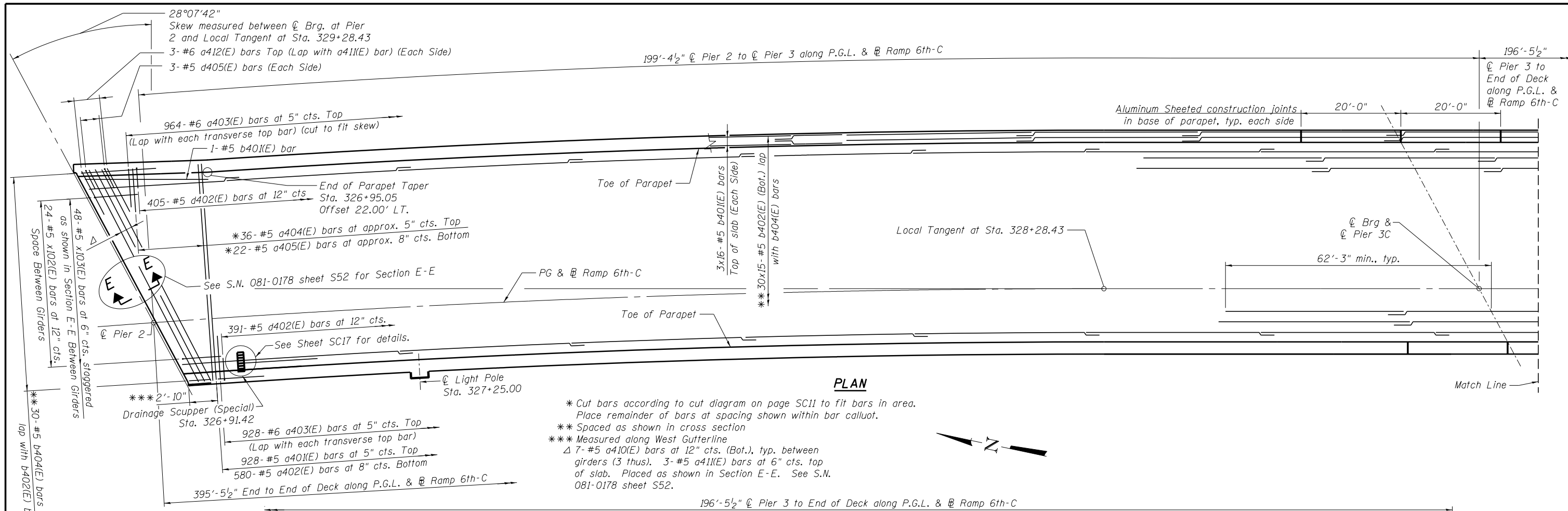
**STATE OF ILLINOIS
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**TOP OF APPROACH SLAB ELEVATIONS
 STRUCTURE NO. 081-0186 RAMP 6TH-C**

SHEET NO. SC7 OF SC39 SHEETS

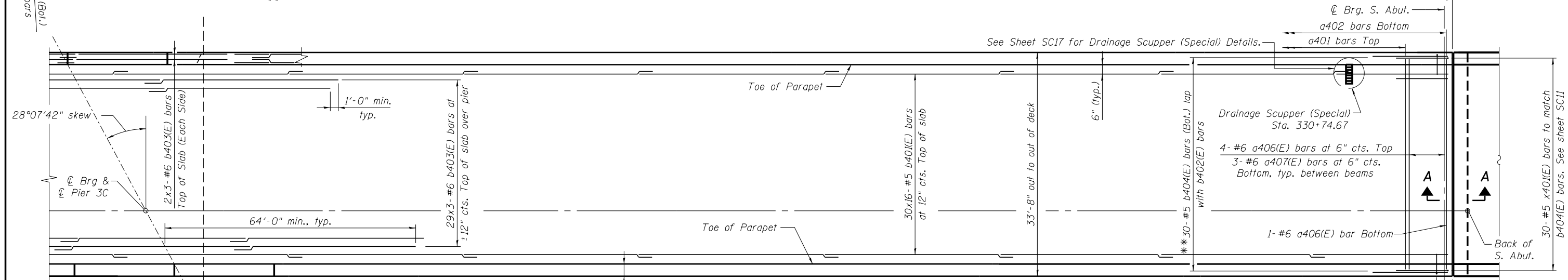
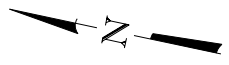
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CONTRACT NO. 64C08				ILLINOIS FED. AID PROJECT

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PLAN

- * Cut bars according to cut diagram on page SC11 to fit bars in area. Place remainder of bars at spacing shown within bar callout.
- ** Spaced as shown in cross section
- *** Measured along West Gutterline
- Δ 7- #5 a410(E) bars at 12" cts. (Bot.), typ. between girders (3 thus). 3- #5 a411(E) bars at 6" cts. top of slab. Placed as shown in Section E-E. See S.N. 081-0178 sheet S52.



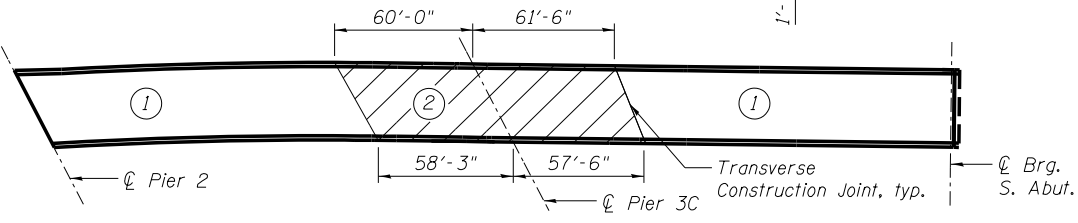
PLAN

NOTES:

1. 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.
2. The Contractor is alerted that camber and dead load deflection values were developed based on the deck pouring sequence shown. Any deviation from this pouring sequence could result in changes to camber and deck elevations. These shall be submitted to the engineer for review and approval.
3. See Sheet SC11 for Section A-A, superstructure details and Bill of Materials.
4. See Sheet SC9 for Deck Cross Section.
5. Bars indicated thus: 30x17- #5 etc. indicates 30 lines of bars with 17 lengths per line.
6. Dimensions at S. Abut. are based on Rolled Rail Strip Seal Joint. If Contractor elects to use the Welded Rail Strip Seal Joint, deck dimensions may require adjustments to satisfy the details on sheet SC16.
7. See Sheet SC10 for parapet reinforcement.
8. Spacing of transverse bars is measured along the \varnothing .

MINIMUM BAR LAP

(Deck)
 #5 bar = 3'-3"
 #6 bar = 3'-10"



REQUIRED DECK POUR SEQUENCE



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 205 North Michigan Avenue, Suite 2400
 Chicago, Illinois 60601
 312-565-0450 Job No. 10061

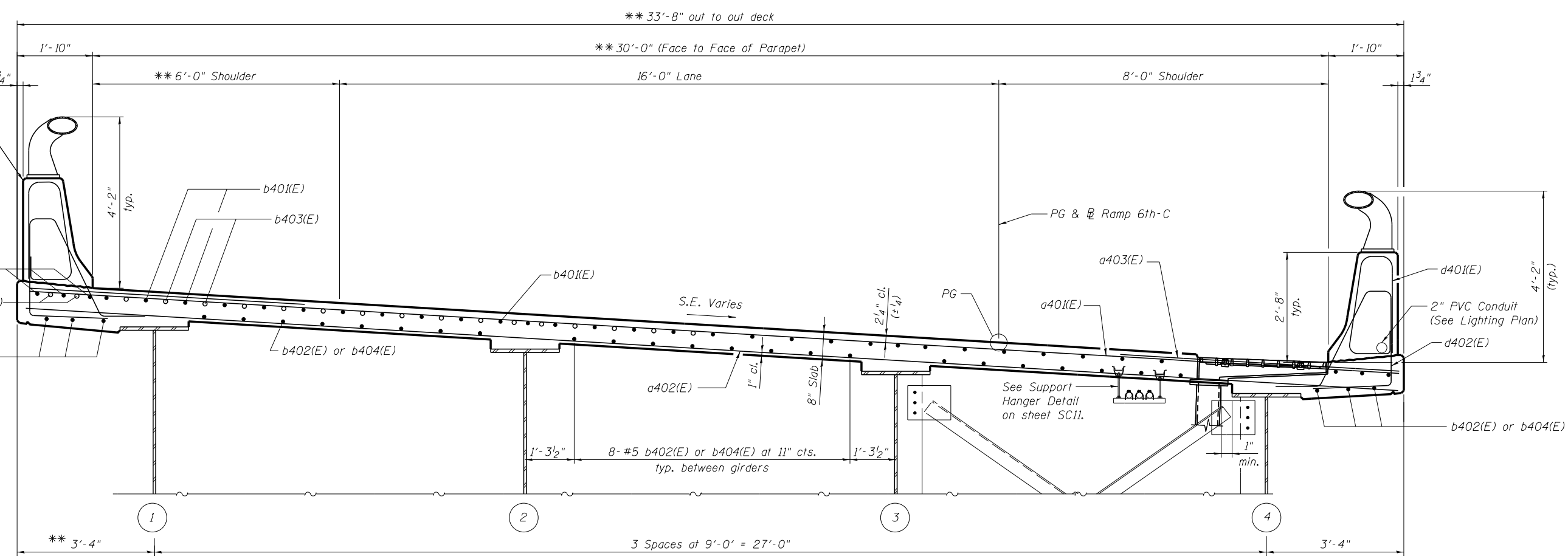
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	PLOT DATE = 1/18/2017	CHECKED - AMB/TPS	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**DECK REINFORCEMENT PLAN
 STRUCTURE NO. 081-0186 RAMP 6TH-C**

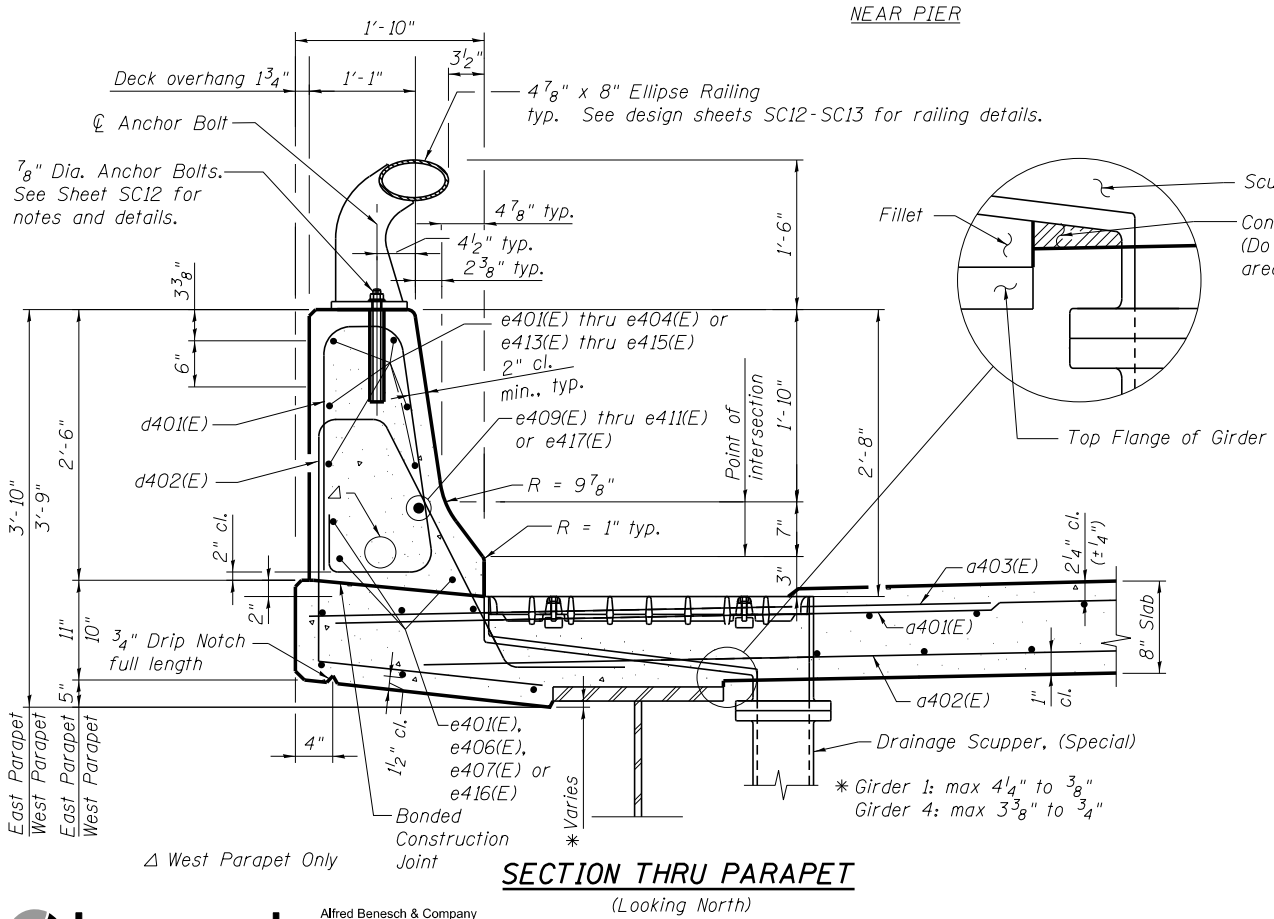
SHEET NO. SC8 OF SC39 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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ILLINOIS FED. AID PROJECT			CONTRACT NO. 64C08	

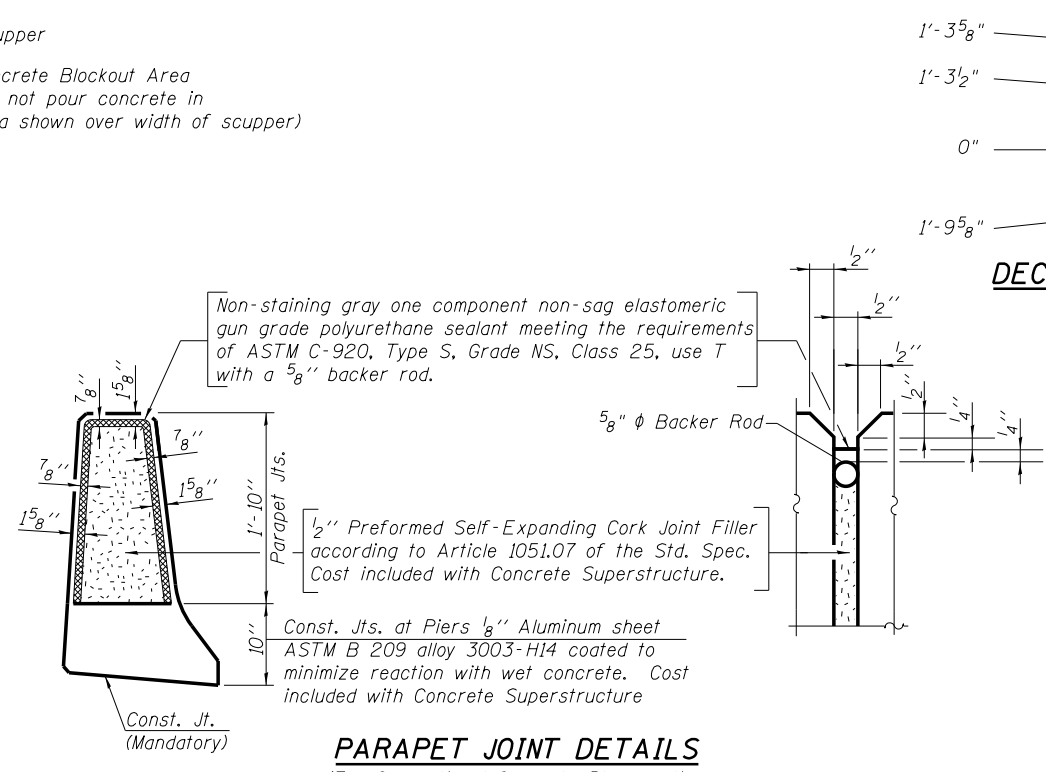


** Dimension is constant from Sta. 326+95.05 to End of Deck at S. Abut. See sheet S46 on SN 081-0178 for additional details. Dimensions increase by 8 7/8" linearly from Sta. 326+95.05 to 326+75.80.

CROSS SECTION
(Looking South)



SECTION THRU PARAPET
(Looking North)



PARAPET JOINT DETAILS
(For Conventional Concrete Placement)

TOTAL DROP

1'-3 5/8"	4.30%	Sta. 326+85.46 (CL Pier 2 at Ramp 6th-C)
1'-3 1/2"	4.30%	(30'-4 1/2" Face to Face of Parapet)
0"	0.00%	Sta. 327+87.00
1'-9 5/8"	6.00%	Sta. 329+32.00
		Sta. 331+35.00

DECK SLOPE CROSS SECTIONS
(Looking South)

- NOTES:**
1. Bars indicated thus: 1x4- #8 etc. indicates 1 line of bars with 4 lengths per line.
 2. Extend North Drainage Scupper (Special) downspout 6" to closed drainage system at Pier 2. See S.N. 081-0178 for closed drainage details.
 3. Extend South Drainage Scupper (Special) downspout 6" to closed drainage system at South Abutment. See sheet SC2 for closed drainage details.
 4. All horizontal dimensions shown the Cross Section are measured radially for the curved portion of the bridge structure.
 5. For Parapet Slip Forming Details, see sheet SC10.

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312-565-0450 Job No. 10061

FILE NAME = 0810186-08323-009-Deck Cross Section.dgn	USER NAME = ksnider	DESIGNED - JDS/DTS	REVISED -
		CHECKED - AMB	REVISED -
MODEL: Default	PLOT SCALE =	DRAWN - KMS	REVISED -
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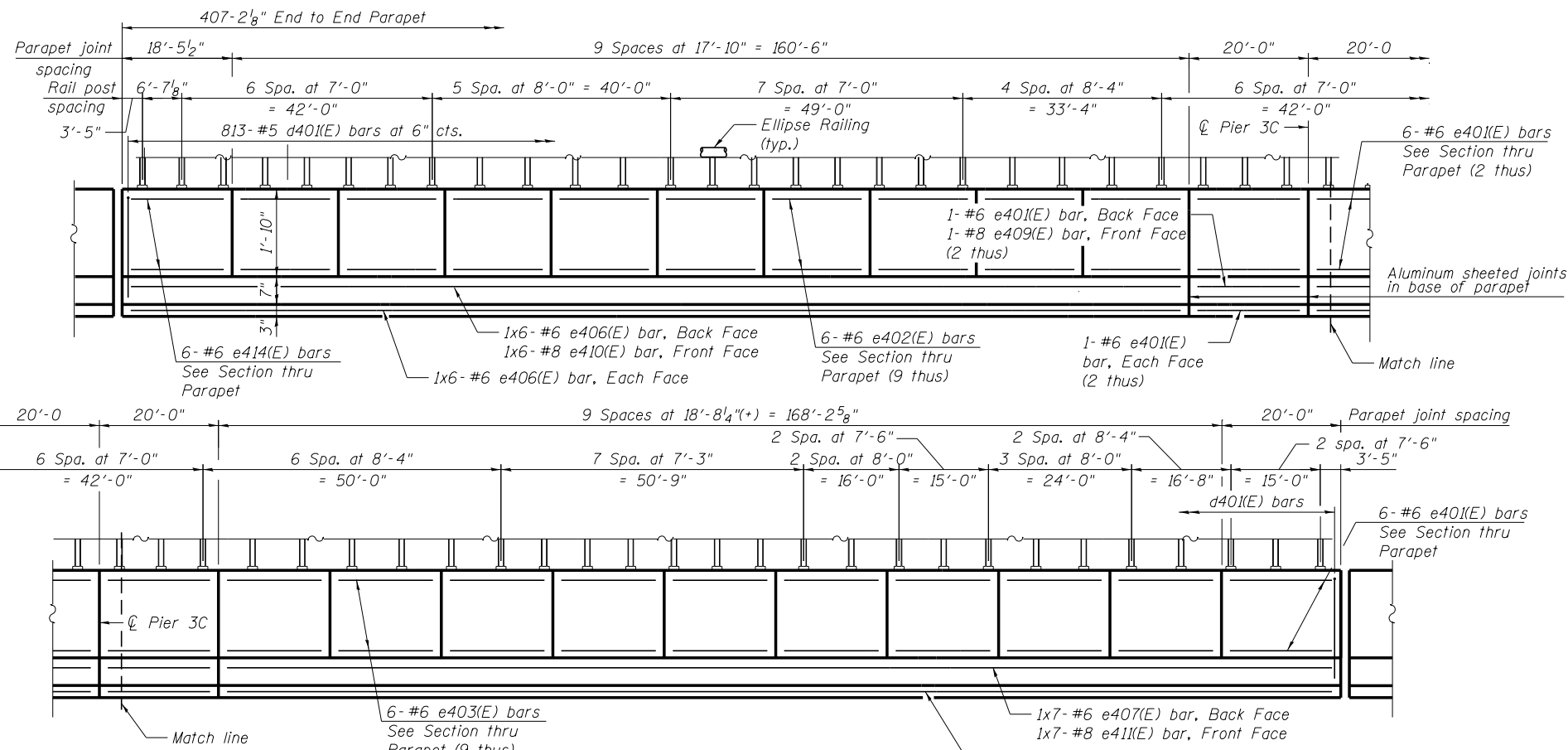
STATE OF ILLINOIS
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DECK REINFORCEMENT CROSS SECTION
STRUCTURE NO. 081-0186 RAMP 6TH-C

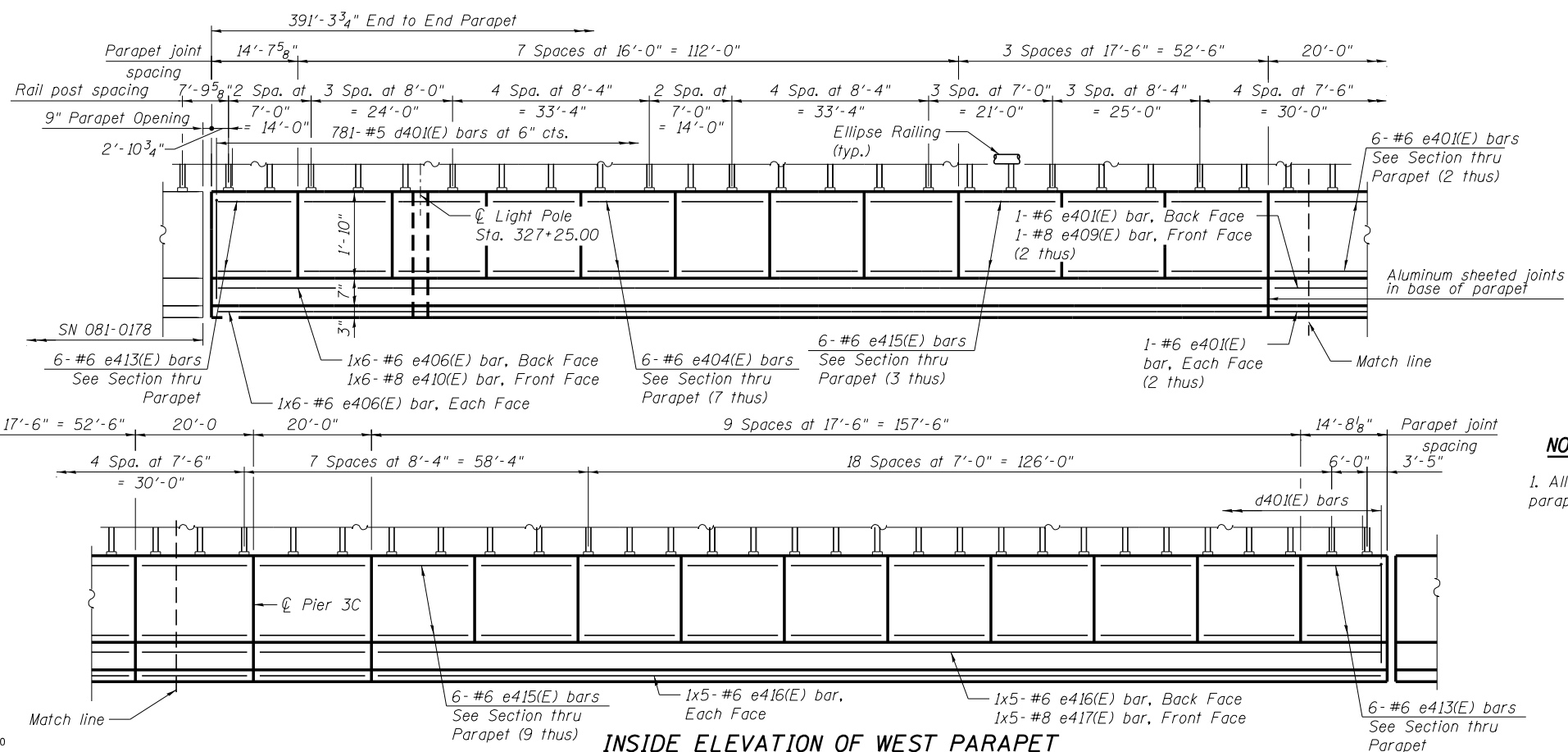
SHEET NO. SC9 OF SC39 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1HVBR	ROCK ISLAND	1504	1036
ILLINOIS FED. AID PROJECT			CONTRACT NO. 64C08	

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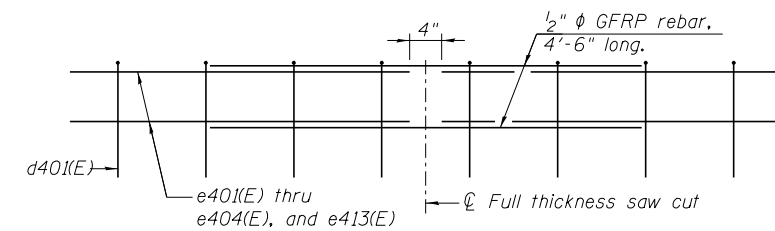


INSIDE ELEVATION OF EAST PARAPET



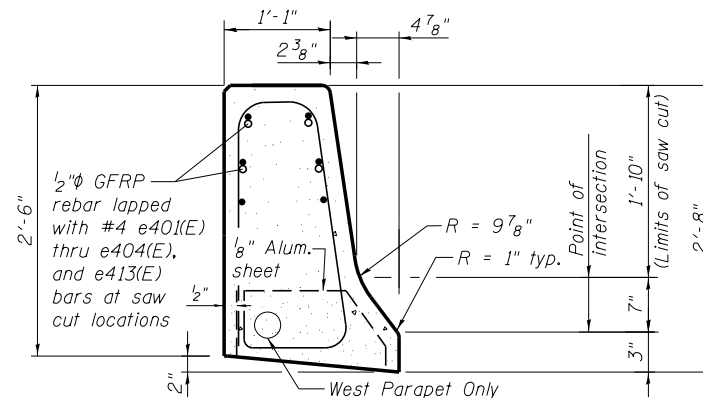
INSIDE ELEVATION OF WEST PARAPET

(Reflected View Shown)



GFRP REBAR STIFFENING DETAIL

(Place as shown in parapet section at each parapet joint location.)
(GFRP rebar is only required if contractor elects to slipform parapet.)
(Cost of GFRP shall be included with Concrete Superstructure.)



SLIPFORMED PARAPET JOINT DETAILS

(Ellipse railing not shown for clarity)

- All dimensions shall remain the same as shown on superstructure details.
- Place aluminum sheet in curb portion at and near piers. Full thickness saw cut at all joint locations in lieu of cork joint filler.

MINIMUM BAR LAP

(Parapet)
#6 bar = 3'-0"
#8 bar = 5'-2"

NOTES:

- All dimensions shown are along the toe of the parapet (gutterline).



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312-565-0450 Job No. 10061

FILE NAME = 0810186-08323-010-Parapet.Elevations.dgn

USER NAME = ksnider
DESIGNED - DTS
CHECKED - TPS
PLOT SCALE =
DRAWN - KMS
PLOT DATE = 1/18/2017
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STATE OF ILLINOIS
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PARAPET ELEVATIONS
STRUCTURE NO. 081-0186 RAMP 6TH-C

SHEET NO. SC10 OF SC39 SHEETS

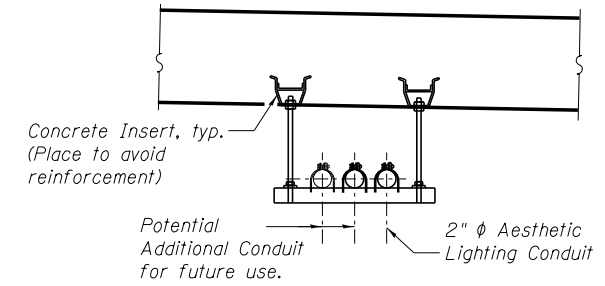
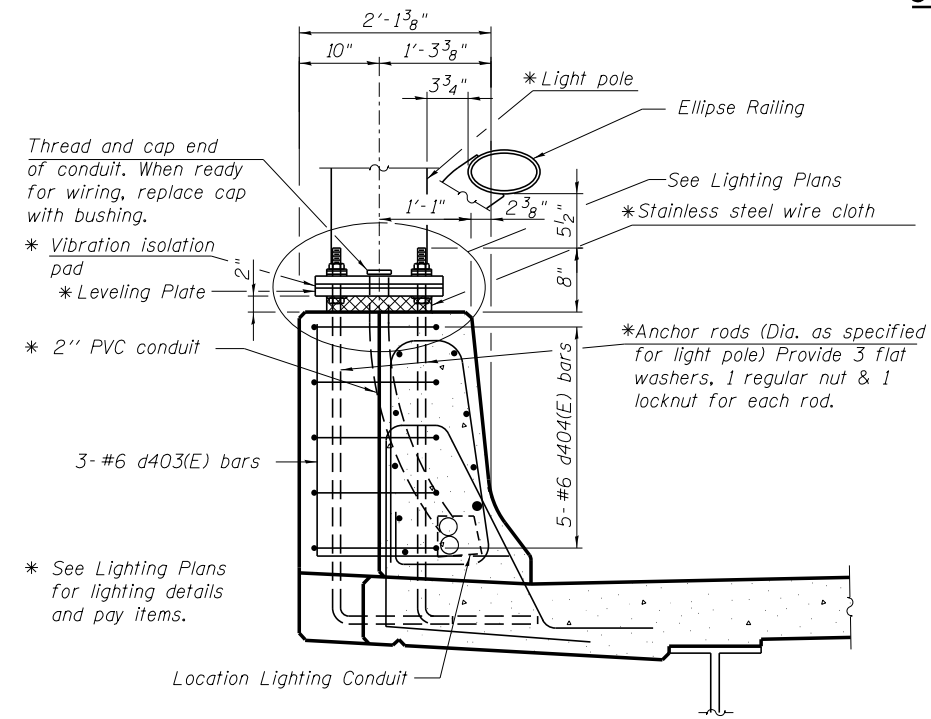
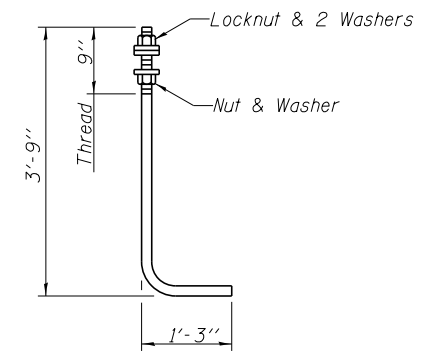
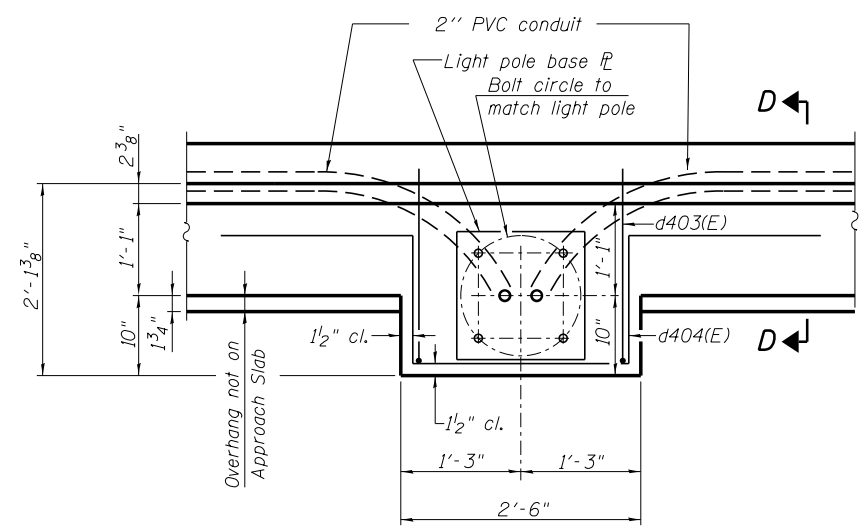
F.A.I. RE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1HVBR	ROCK ISLAND	1504	1037
CONTRACT NO. 64C08				

ILLINOIS FED. AID PROJECT

SUPERSTRUCTURE BILL OF MATERIAL

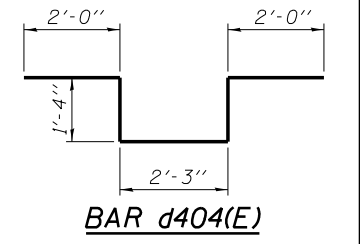
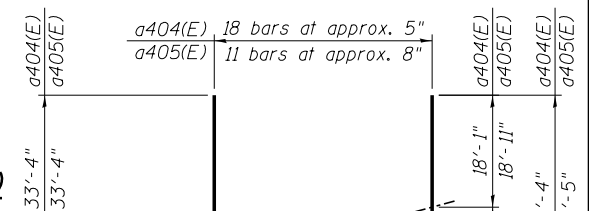
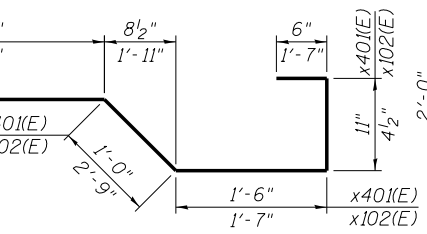
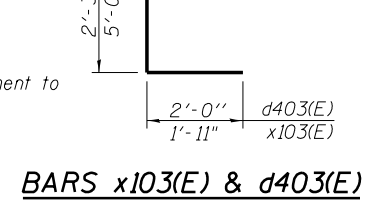
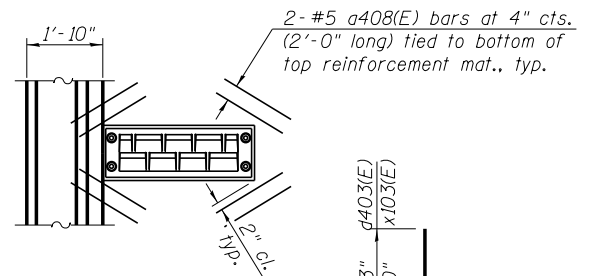
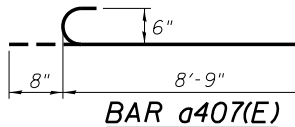
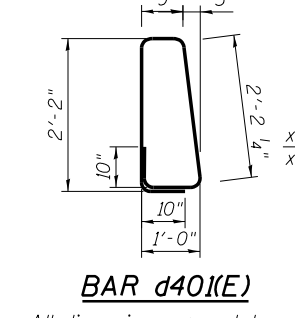
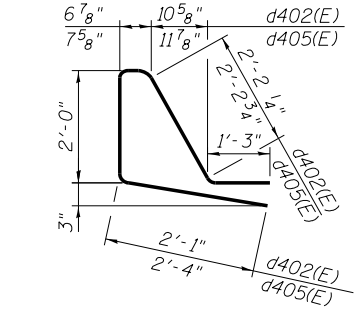
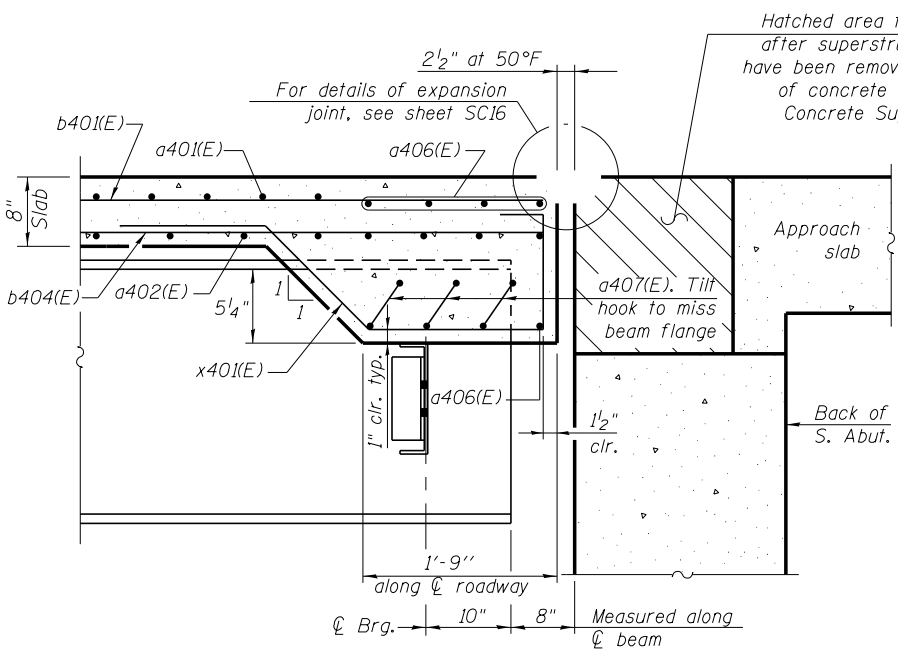
Bar	No.	Size	Length	Shape
a401(E)	928	#5	33'-4"	
a402(E)	580	#5	33'-4"	
a403(E)	1892	#6	6'-6"	
a404(E)	18	#5	35'-4"	
a405(E)	11	#5	36'-5"	
a406(E)	5	#6	33'-4"	
a407(E)	9	#6	10'-1"	
a408(E)	16	#5	2'-0"	
a410(E)	21	#5	9'-6"	
a411(E)	3	#5	37'-3"	
a412(E)	6	#6	7'-6"	
b401(E)	577	#5	28'-8"	
b402(E)	450	#5	28'-10"	
b403(E)	99	#6	45'-2"	
b404(E)	60	#5	13'-10"	
d401(E)	1594	#5	7'-9"	
d402(E)	796	#5	8'-1"	
d403(E)	3	#6	4'-3"	
d404(E)	5	#6	8'-11"	
d405(E)	6	#5	8'-4"	
e401(E)	42	#6	19'-8"	
e402(E)	54	#6	17'-6"	
e403(E)	54	#6	18'-4"	
e404(E)	42	#6	15'-8"	
e406(E)	36	#6	32'-4"	
e407(E)	21	#6	30'-2"	
e409(E)	4	#8	19'-8"	
e410(E)	12	#8	34'-2"	
e411(E)	7	#8	31'-4"	
e413(E)	12	#6	14'-4"	
e414(E)	6	#6	18'-2"	
e415(E)	72	#6	17'-2"	
e416(E)	15	#6	36'-10"	
e417(E)	5	#8	38'-6"	
x102(E)	24	#5	9'-7"	
x103(E)	48	#5	6'-11"	
x401(E)	30	#5	6'-5"	
Concrete Superstructure			Cu. Yd.	480.5
Reinforcement Bars, Epoxy Coated			Pound	145,030

Bars indicated thus 30x17-#5 etc. indicates 30 lines of bars with 17 lengths per line.



Notes:

- Contractor shall supply support hanger for two potential future conduit in addition to proposed lighting conduits. See lighting plans for additional lighting details.
- All exposed conduits shall be PVC coated galvanized steel. Cost of Concrete Inserts and supports shall be included with the conduits attached to structure. See Lighting Plans for pay items.
- Contractor shall be responsible for routing conduit around cross frames at expansion joints subject to approval by the Engineer.



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Chicago, Illinois 60601
312-565-0450 Job No. 10061

FILE NAME = 0810186-08323-011-Superstructure details.dgn	USER NAME = ksnider	DESIGNED - JDS/DTS	REVISED -
MODEL: Default	PLOT SCALE =	CHECKED - AMB/TPS	REVISED -
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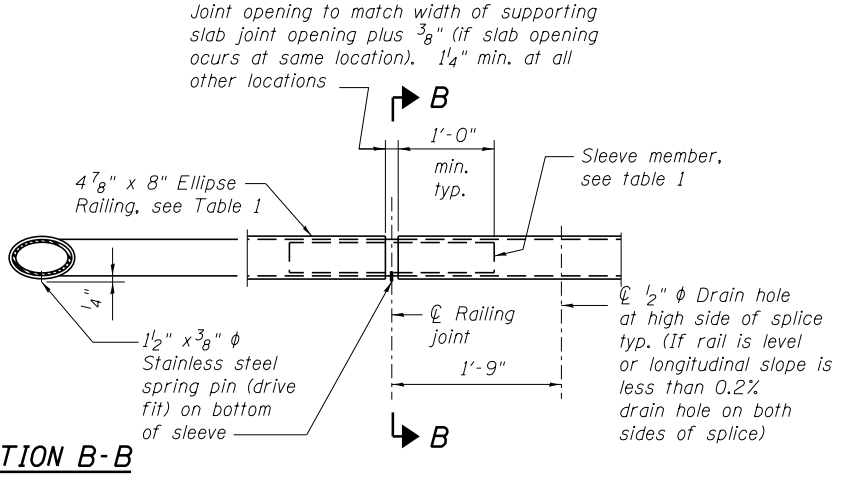
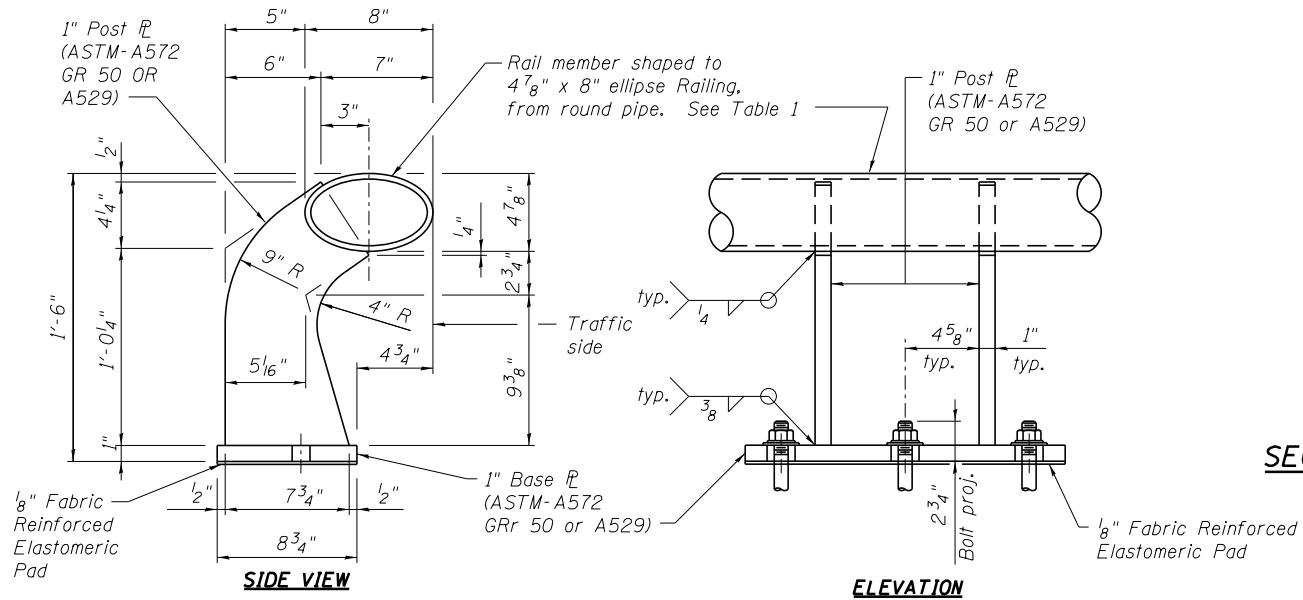
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS
STRUCTURE NO. 081-0186 RAMP 6TH-C

F.A.I. RTE. = 74	SECTION = 81-1HVBR	COUNTY = ROCK ISLAND	TOTAL SHEETS = 1504	SHEET NO. = 1038
ILLINOIS FED. AID PROJECT			CONTRACT NO. 64C08	

SHEET NO. SC11 OF SC39 SHEETS

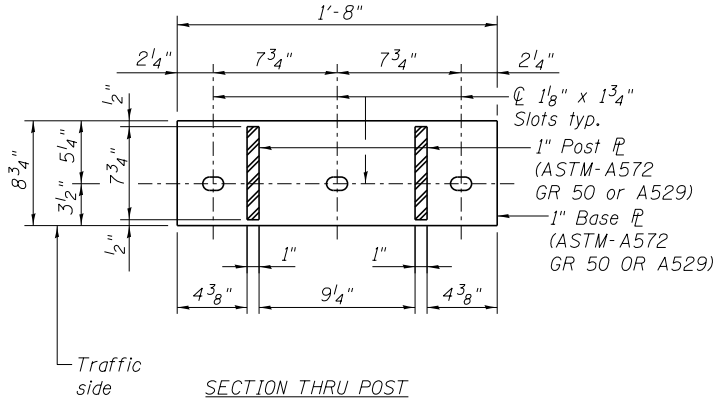
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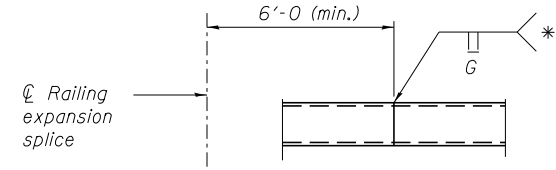
SECTION B-B

ELLIPSE RAILING SLEEVE DETAIL

Note:
The major and minor diameters of the rail member may vary +/- 3/16" from plan dimensions. However, the difference between the outside diameters of the sleeve and the inside diameters of the rail shall not exceed 1/8" along the major or minor axis. The maximum gap along the 45° axis of the sleeve may be 1/4" max.



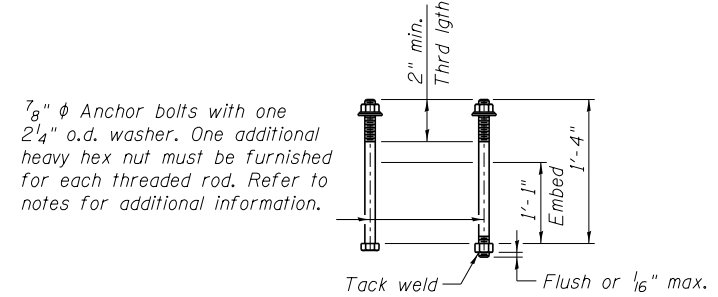
ELLIPTICAL TUBE WITH RAIL POST AND ANCHORAGE DETAILS



RAILING SHOP SPLICE DETAIL

* Shop splice is permitted with minimum 85 percent penetration. The weld may be square groove, double vee groove, or single groove. Grind smooth.

APPROVED RAILING MATERIAL		
Material	Material	Thickness
4 7/8" x 8" Ellipse Railing	Sleeve Member (at railing splice)	
6" Dia. Std. Pipe	ASTM-A53-B	0.353"
ASTM-A53 E OR S GRADE B	A36 or A500 GR. B	0.339"
6" dia. , 0.280" Wall thickness	API-5LX52	0.224"
ASTM-A501	ASTM-A53-B	0.353"
ASTM-A501	A36 or A500 GR. B	0.339"
6 5/8" O.D. x 0.188" Tube	API-5LX52	0.224"
API-5LX52	ASTM-A53-B	0.339"
API-5LX52	A36 or A500 GR. B	0.325"
API-5LX52	API-5LX52	0.216"



CAST-IN-PLACE ANCHOR BOLT OPTIONS

NOTES:

- See sheet SC10, for post spacing.
- Steel Railing (Special) shall be fabricated and installed in accordance with Article 509 of the Standard Specifications, unless otherwise noted.
- All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.
- The Steel Railing (Special) is to be bid on a per linear foot basis measured from end to end of steel railing.
- Payment for Steel Railing (Special) shall include full compensation for furnishing all material, and all the equipment and labor required to erect the rail in accordance with these plans and the Standard Specifications.
- Anchor bolts shall be 7/8" diameter, ASTM A-193 GR. B7, fully threaded with heavy hex nuts and one hardened washer and one 2 1/4" O.D. washer each. Embed threaded rods 10 1/2" min. into concrete parapet. Material for these items shall be in accordance with the adhesive manufacturer's requirements to be capable of obtaining an ultimate load per threaded rod of 36 kips in tension, considering spacing and edge distance. See Standard Specification 509.06 for further details on setting anchor bolts. Cost of anchor bolts included with Steel Railing (Special).
- Optional cast-in-place anchor bolts to comply with ASTM F-1554 Grade 105. Hex nuts to comply with AASHTO M291, washers to comply with AASHTO M-293. Galvanizing in accordance with AASHTO M-232.
- Provide one 1/8" and two 1/16" galvanized steel shims for 25% of rail posts, to be used as required. Shims shall be similar to base plates in size and holes. Cost included with Steel Railing (Special).

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Steel Railing (Special)	Foot	799

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205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10061

FILE NAME = 0810186-08323-012-Traffic Barrier Details 1 of 2.dgn	USER NAME = ksnider	DESIGNED - DTS	REVISED -
MODEL: Default	PLOT SCALE =	CHECKED - AJK	REVISED -
	PLOT DATE = 1/18/2017	DRAWN - KMS	REVISED -
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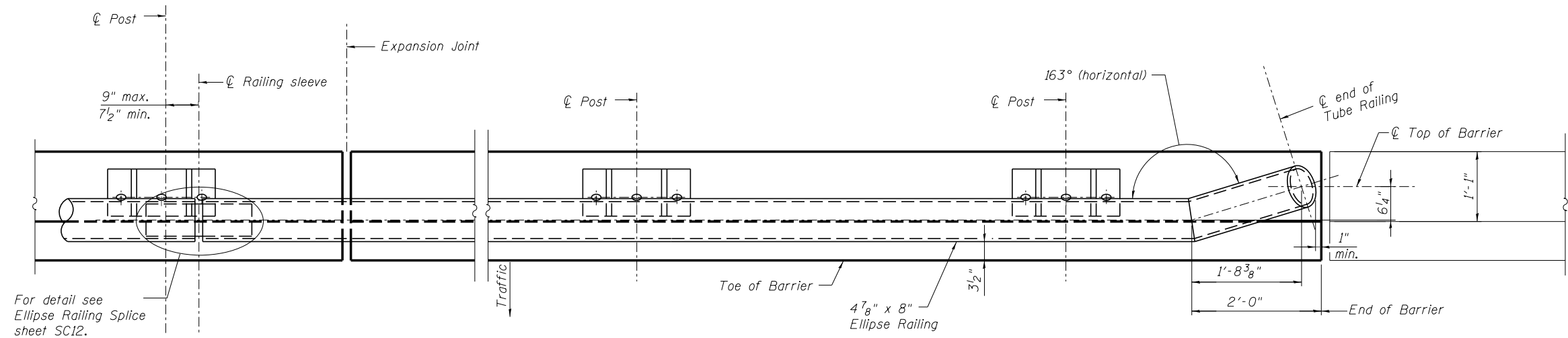
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TRAFFIC BARRIER DETAIL (1 OF 2)
STRUCTURE NO. 081-0186 RAMP 6TH-C**

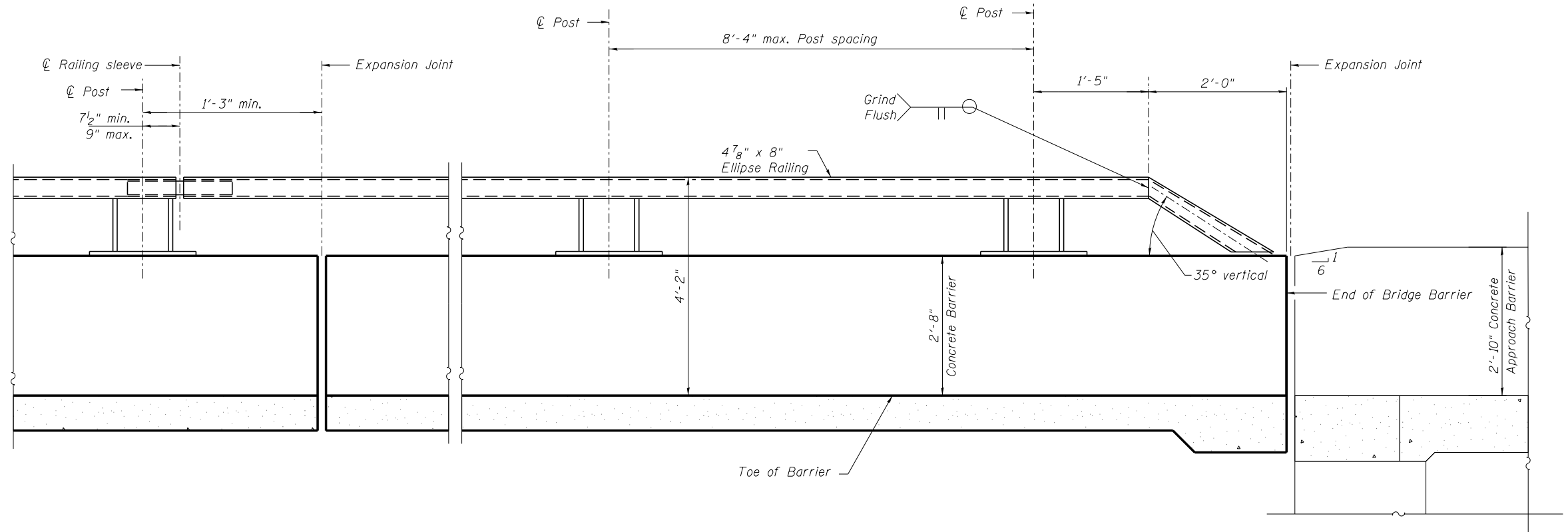
SHEET NO. SC12 OF SC39 SHEETS

F.A.I. RTE. = 74	SECTION = 81-1HVBR	COUNTY = ROCK ISLAND	TOTAL SHEETS = 1504	SHEET NO. = 1039
ILLINOIS FED. AID PROJECT			CONTRACT NO. 64C08	

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PLAN



ELEVATION

(Typical for each end for east rail and south end of west rail.
North end of west rail ties into railing on S.N. 081-0178)

NOTES:

1. Edge of base plate shall not be less than 6" from any cold joint or barrier discontinuity including the back of the abutment or opening for finger plate expansion joint.
2. See sheet SC10, for post spacing.
3. North end of west rail shall tie into railing on S.N. 081-0178.



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312-565-0450 Job No. 10061

FILE NAME = 0810186-08323-013-Traffic Barrier Details 2 of 2.dwg

USER NAME = ksnider

DESIGNED - DTS

REVISED -

CHECKED - AJK

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REVISED -

CHECKED - AJK

REVISED -

PLOT DATE = 1/18/2017

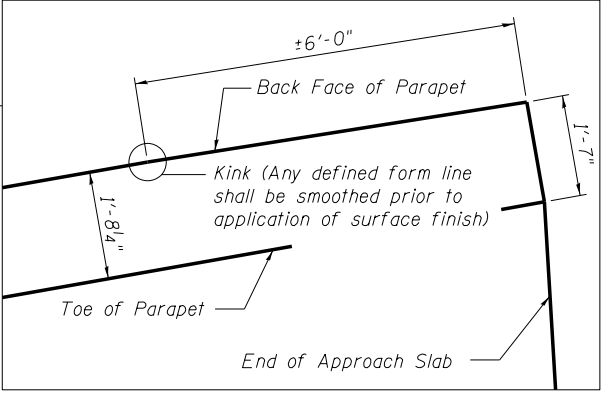
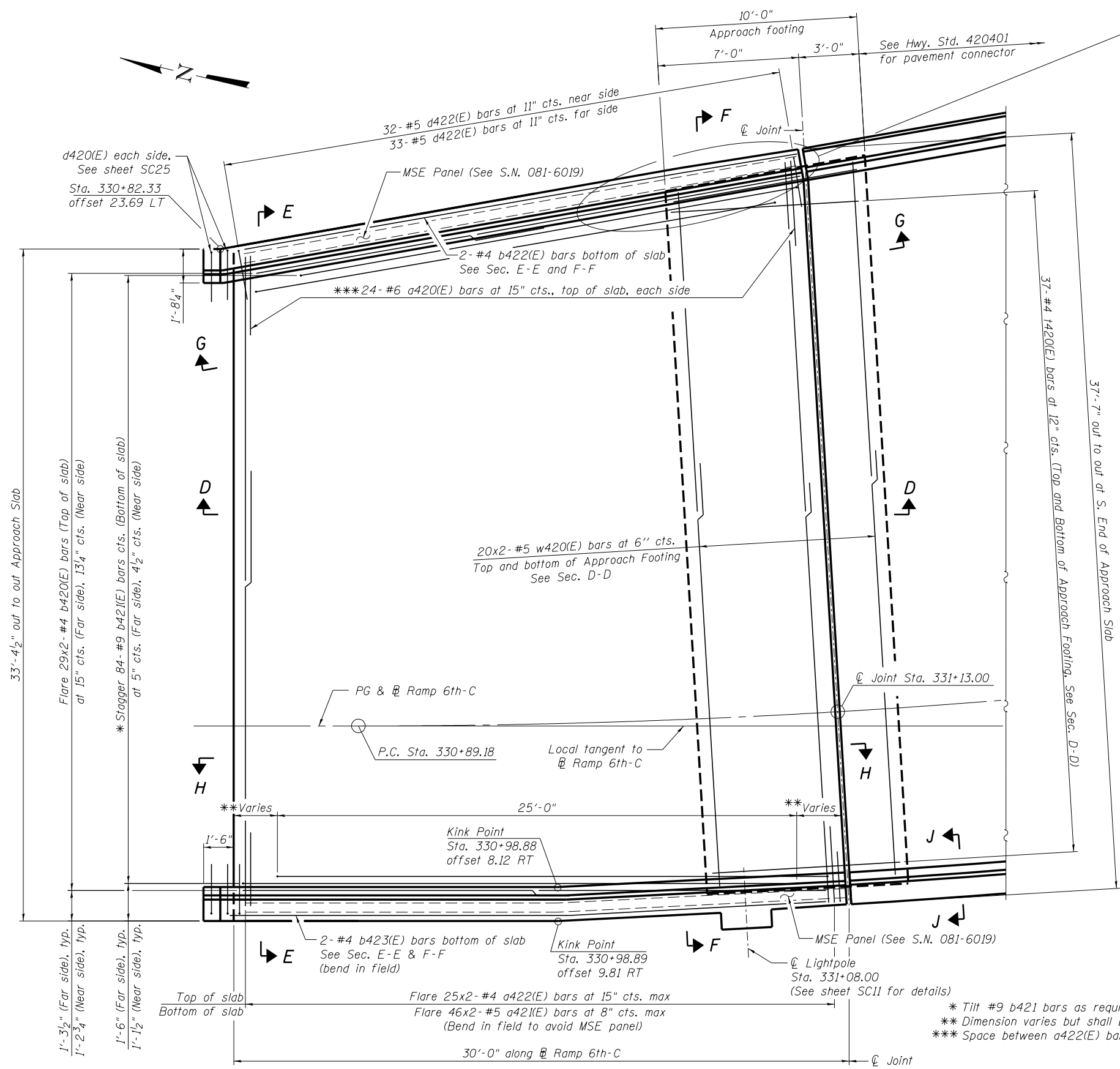
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TRAFFIC BARRIER DETAIL (2 OF 2)
STRUCTURE NO. 081-0186 RAMP 6TH-C**

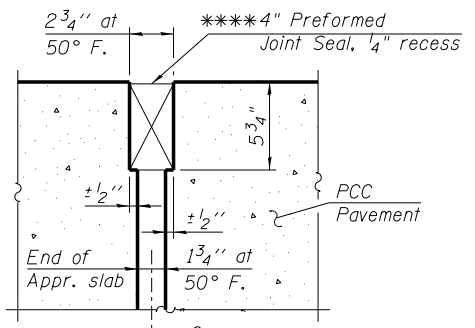
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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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			CONTRACT NO. 64C08	

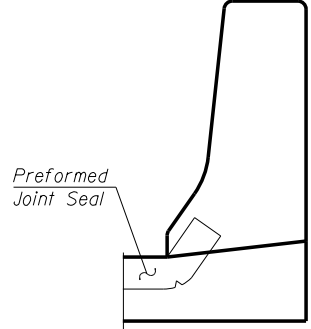
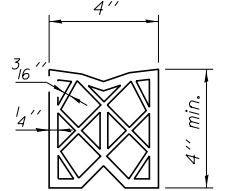
ILLINOIS FED. AID PROJECT



*** Cost included with Concrete Superstructure.



DETAIL 2



Angle Preformed Joint Seal at 45° at curbs when req'd for drainage.

NOTES:

1. See sheet SC15 for Sections D-D, E-E, F-F and View G-G & H-H.
2. See sheet SC25 for dimensions between end of approach slab and abutment backwall.
3. See sheets SC27 thru SC31 for maskwall details.
4. Maskwall not shown for clarity.
5. Kink point on west parapet occurs at intersection of upper and lower MSE panels.
6. See sheet SC25 for detail of d420 bars cast in the hatch block.

* Tilt #9 b421 bars as required to maintain clearance
** Dimension varies but shall be symmetric about approach slab.
*** Space between a422(E) bars.

MINIMUM BAR LAP
(Approach Slab, Footing & Parapet)
#4 bar = 2'-7"
#5 bar = 3'-3"

PLAN

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Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10061

FILE NAME = 0810186-A0323-014-Bridge-Approach-Slab_Plan.dgn	USER NAME = ksnider	DESIGNED - JDS	REVISED -
MODEL: Default	PLOT SCALE =	CHECKED - KWS/DTS	REVISED -
	PLOT DATE = 1/18/2017	DRAWN - JDS	REVISED -
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB PLAN
STRUCTURE NO. 081-0186 RAMP 6TH-C

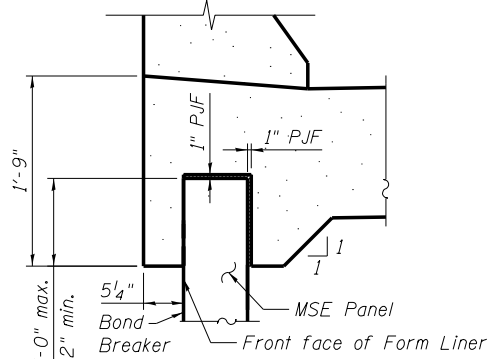
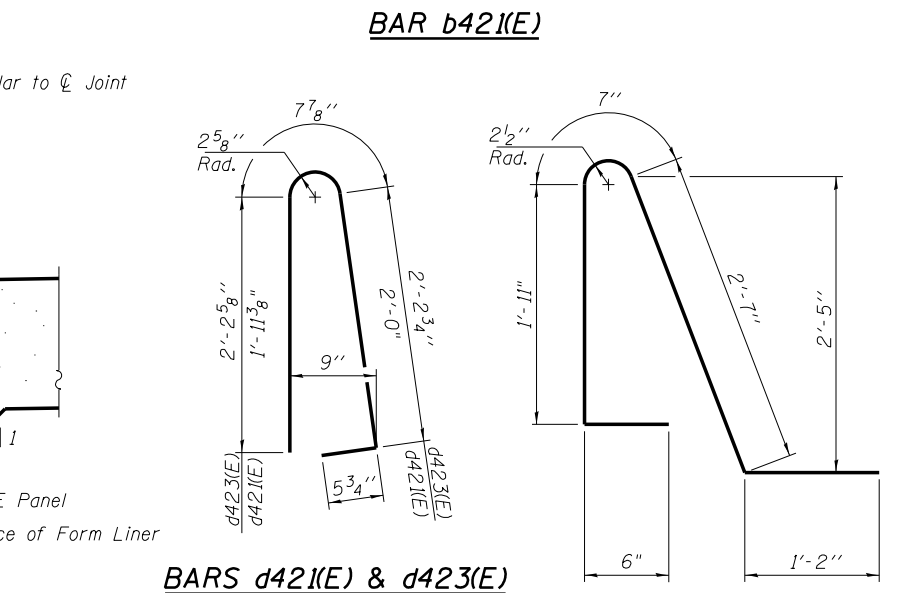
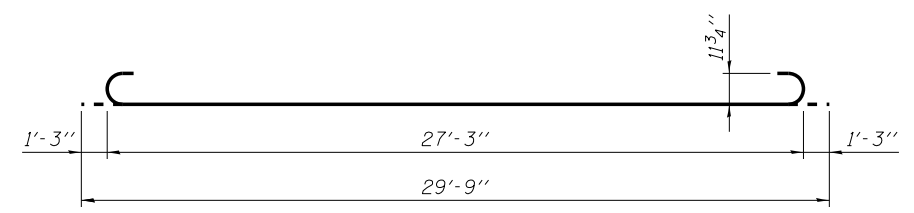
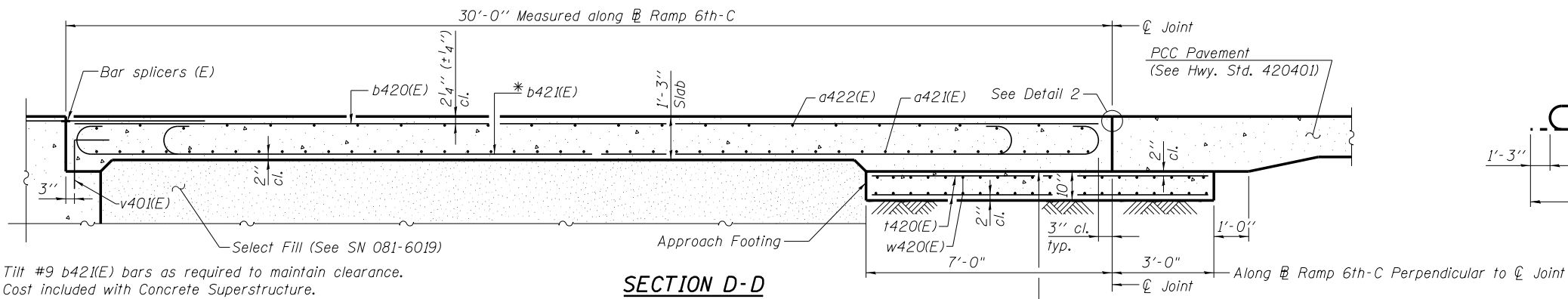
SHEET NO. SC14 OF SC39 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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ILLINOIS FED. AID PROJECT			CONTRACT NO. 64C08	

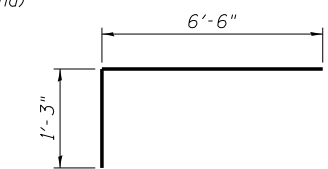
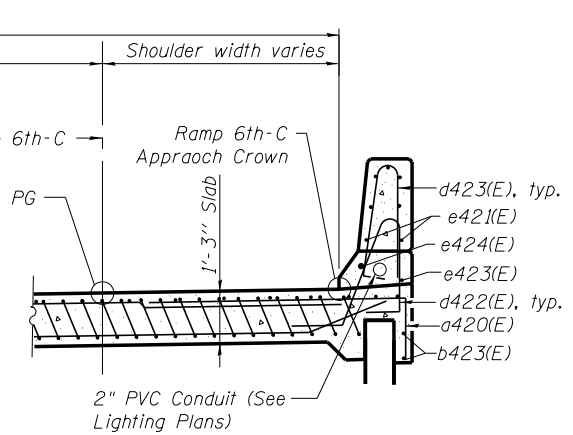
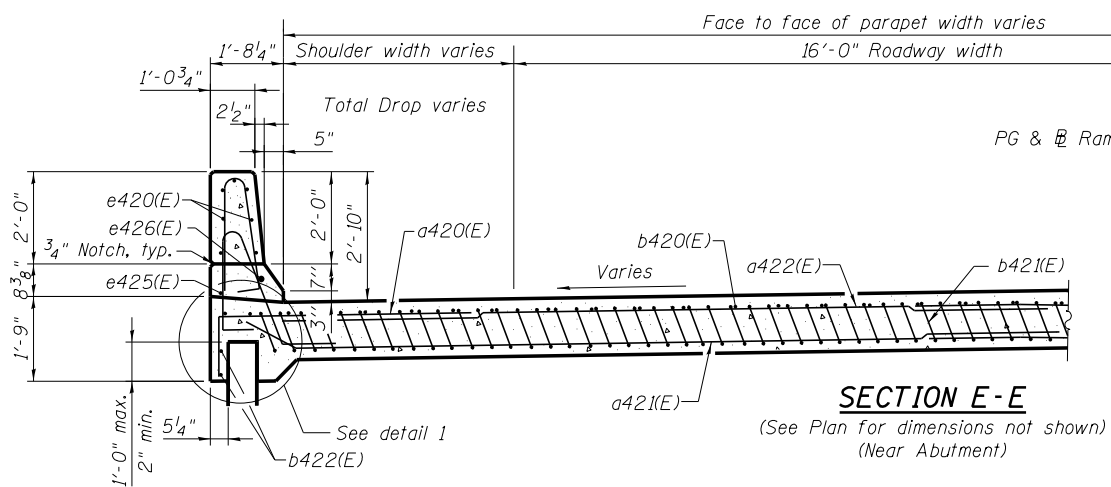
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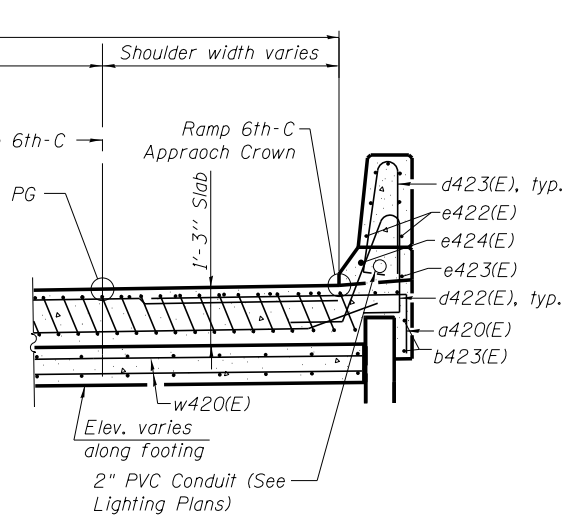
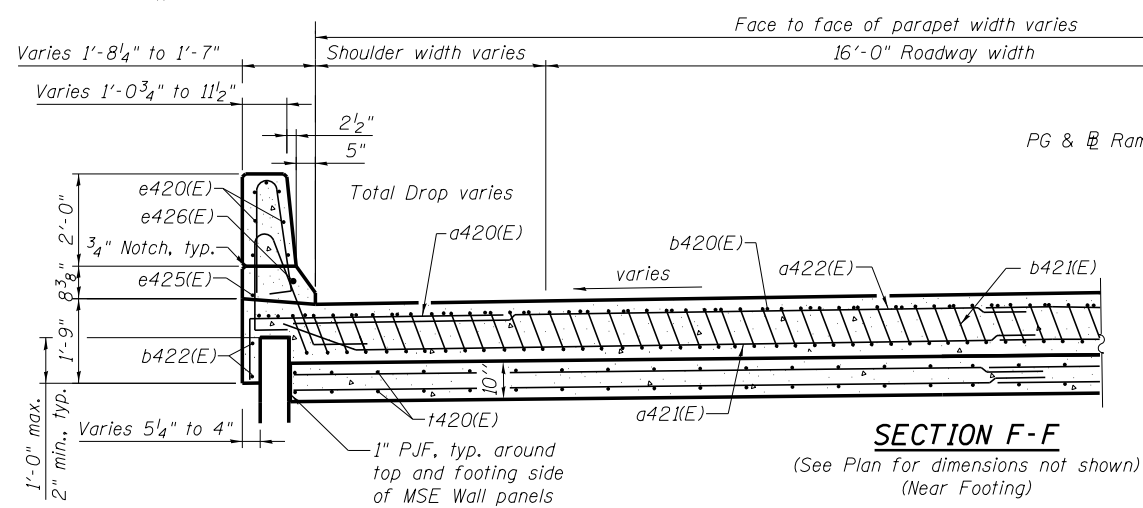
1/18/2017



DETAIL 1
(East Overhang shown, West similar opposite hand)



BAR a420(E)

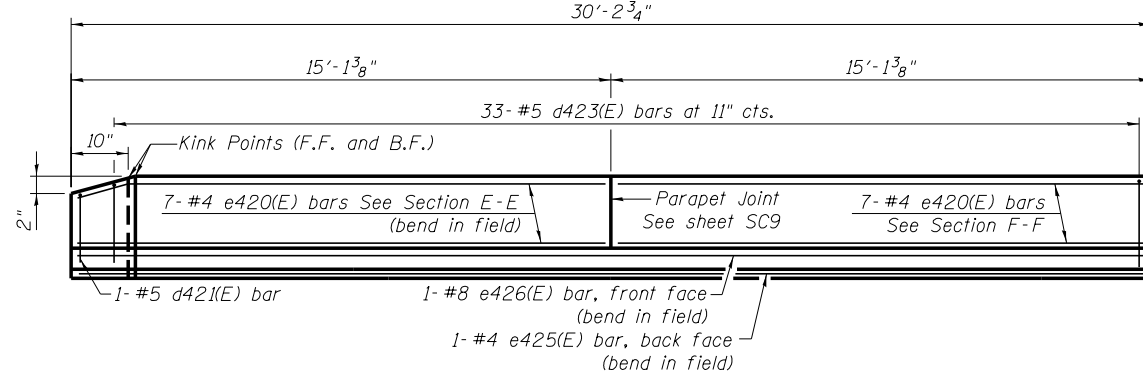


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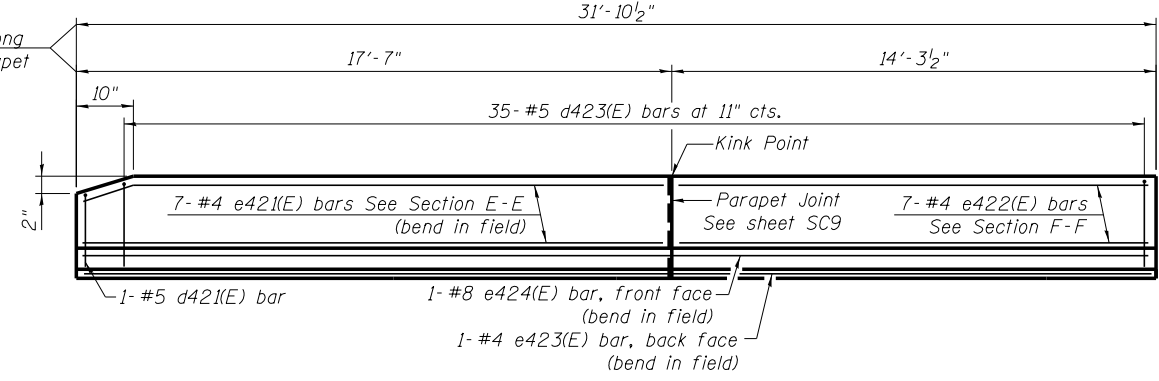
1. See sheet SC14 for Detail 2.
2. Approach slab and parapet concrete shall be paid for as Concrete Superstructure.
3. Approach footing concrete shall be paid for as Concrete Structures.
4. Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
5. For v40(E) details, see sheet SC26.
6. The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf
7. For bar splicer details, see sheet SC37.
8. For Select Fill details, see S.N. 081-6019.
9. See sheet SC11 for bars d403(E) and d404(E) details.

**APPROACH
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a420(E)	48	#6	7'-9"	┌
a42(E)	92	#5	20'-4"	┌
a422(E)	50	#4	20'-0"	┌
b420(E)	58	#4	16'-6"	┌
b42(E)	84	#9	29'-9"	┌
b422(E)	2	#4	29'-6"	┌
b423(E)	2	#4	31'-6"	┌
d403(E)	3	#6	4'-3"	┌
d404(E)	5	#6	8'-11"	┌
d42(E)	2	#5	5'-1"	┌
d422(E)	65	#5	6'-9"	┌
d423(E)	68	#5	5'-7"	┌
e420(E)	14	#4	14'-9"	┌
e42(E)	7	#4	17'-3"	┌
e422(E)	7	#4	14'-0"	┌
e423(E)	1	#4	31'-6"	┌
e424(E)	1	#8	31'-6"	┌
e425(E)	1	#4	29'-10"	┌
e426(E)	1	#8	29'-10"	┌
t420(E)	74	#4	9'-8"	┌
w420(E)	80	#5	19'-8"	┌
Concrete Superstructure			Cu. Yd.	61.6
Concrete Structures			Cu. Yd.	11.1
Reinforcement Bars, Epoxy Coated (Slab)			Pound	13,840
Reinforcement Bars, Epoxy Coated (Footing)			Pound	2,120



VIEW G-G (F.F. OF PARAPET)



**VIEW H-H (F.F. OF PARAPET)
(Reflected View Shown)**

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MODEL = Default	PLOT SCALE =	CHECKED - KWS	REVISED -
	PLOT DATE = 1/18/2017	DRAWN - JDS	REVISED -
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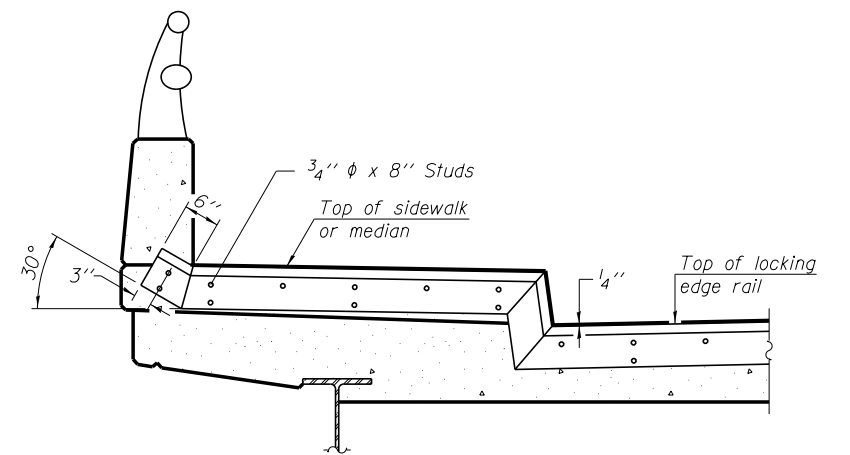
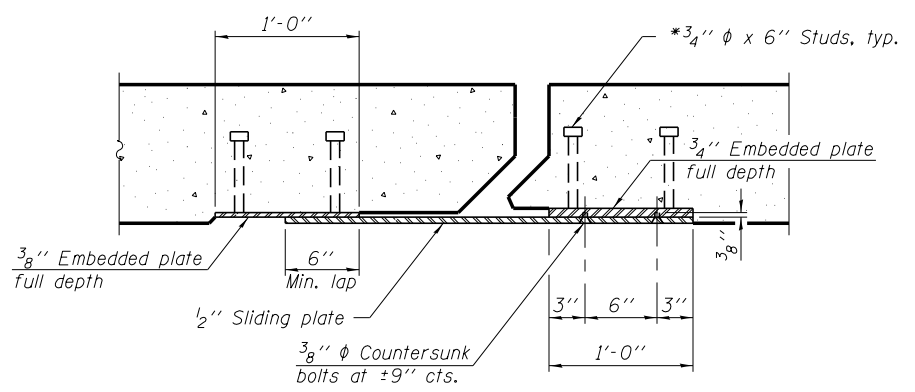
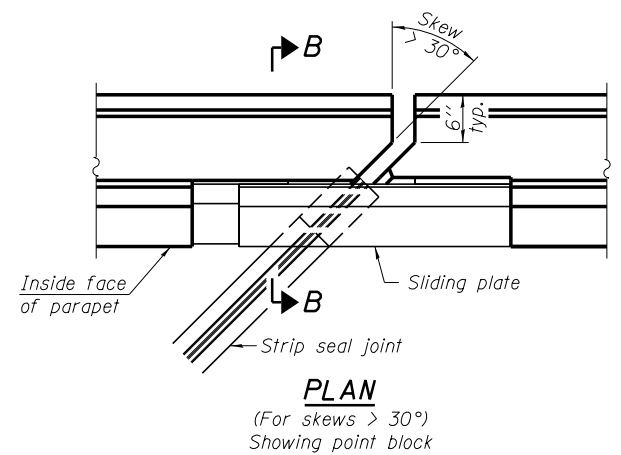
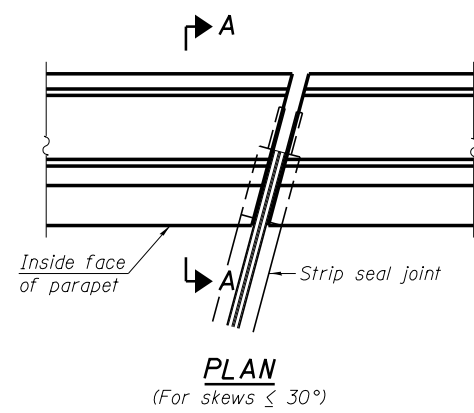
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 081-0186 RAMP 6TH-C**

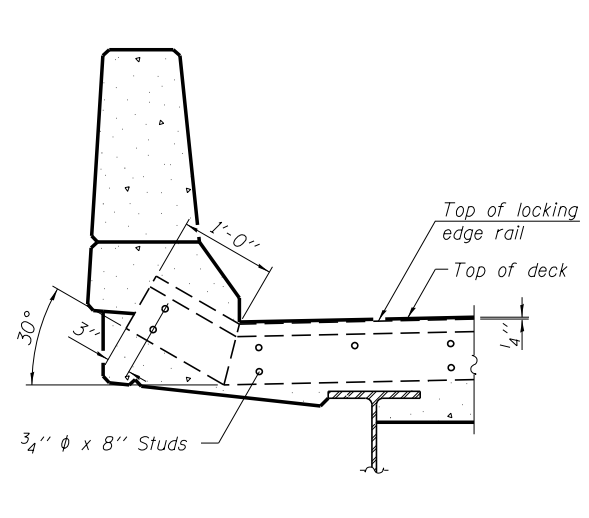
SHEET NO. SC15 OF SC39 SHEETS

F.A.I. RT.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1HVBR	ROCK ISLAND	1504	1042
ILLINOIS FED. AID PROJECT			CONTRACT NO. 64C08	

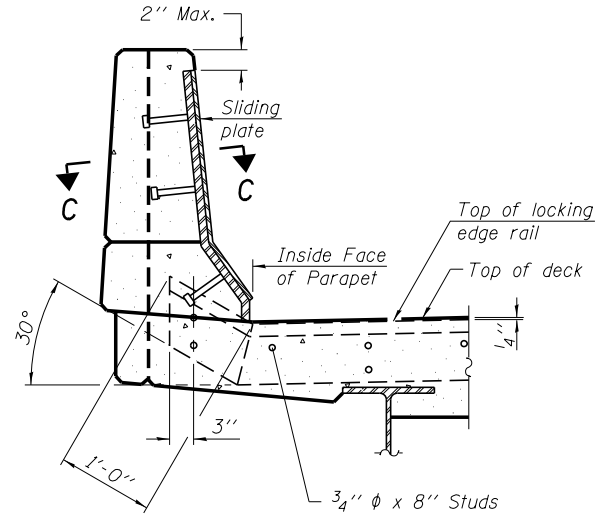
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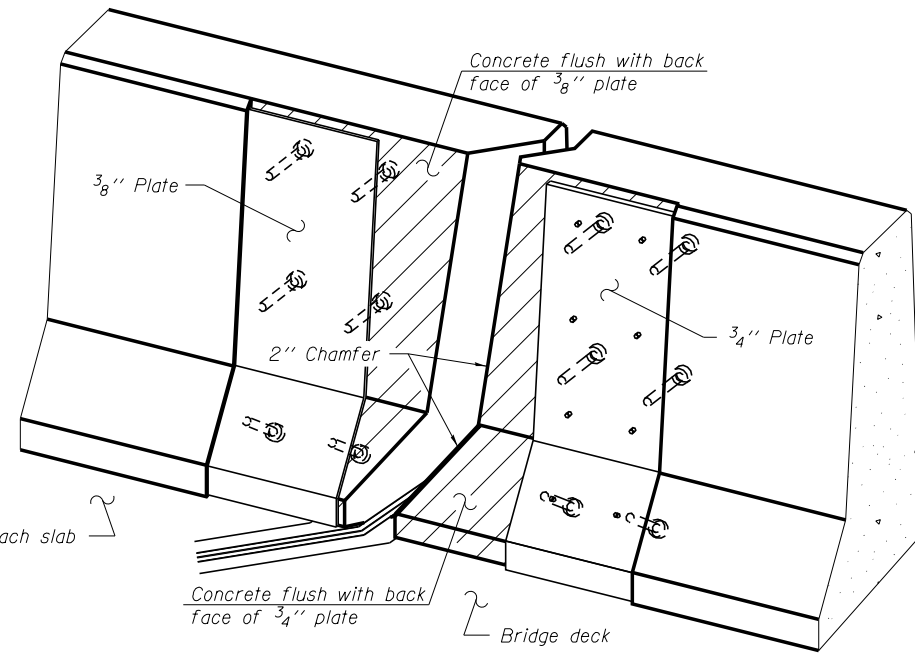
TYPICAL END TREATMENT AT SIDEWALK OR MEDIAN
 Shorter plates with a single row of studs at 12 inch cts. may be necessary on medians which are shallower than 9 inch. See manufacturer's recommendation.



SECTION A-A

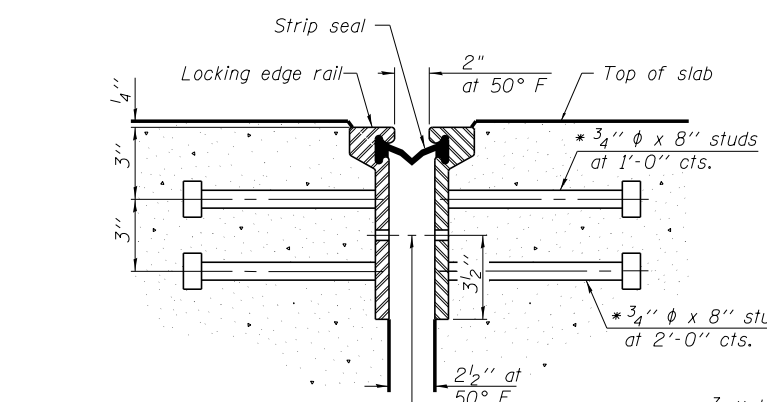


SECTION B-B

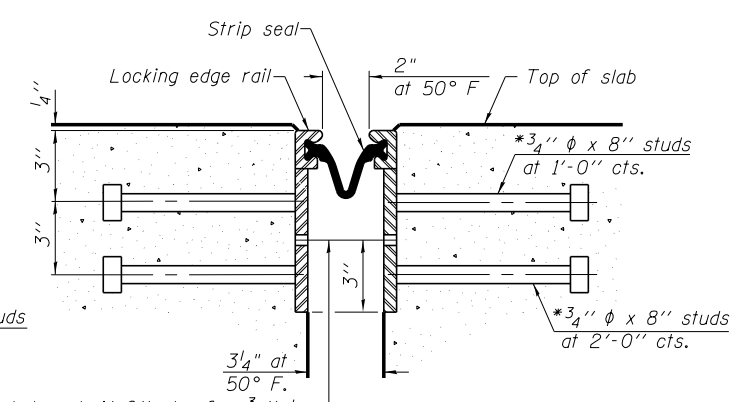


TRIMETRIC VIEW (Showing back plates only)

Notes:
 The strip seal shall be made continuous and shall have a minimum thickness of 1/4 inch. 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 inch, sealed with a suitable sealant. Joints in rails within 10 feet of curbs shall be welded.
 Parapet plates and anchorage studs for skews > 30 degrees included in the cost of Preformed Joint Strip Seal.



SECTION THRU ROLLED RAIL JOINT



SECTION THRU WELDED RAIL JOINT

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

ROLLED EXTRUDED RAIL

WELDED RAIL

LOCKING EDGE RAIL SPLICE

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

LOCKING EDGE RAILS

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	32

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 312-565-0450 Job No. 10081

EJ-SSJ
 1-27-12

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MODEL: Default	PLOT SCALE =	CHECKED - AJK	REVISED -
	PLOT DATE = 1/18/2017	DRAWN - KMS	REVISED -
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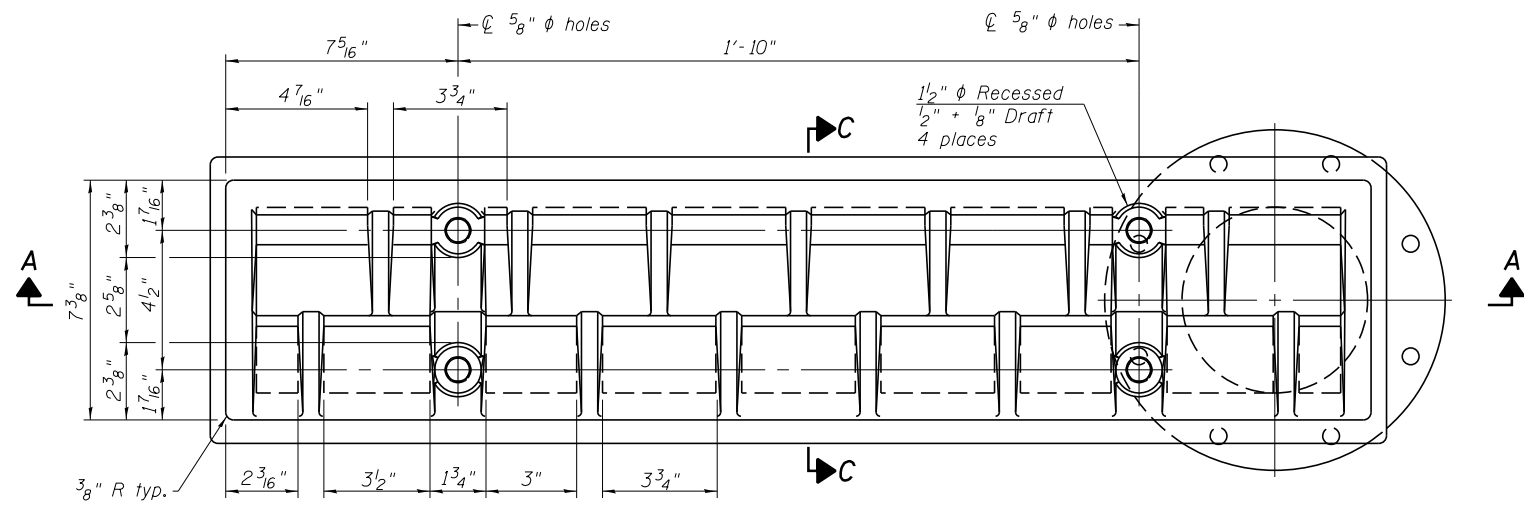
STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL STRUCTURE NO. 081-0186 RAMP 6TH-C

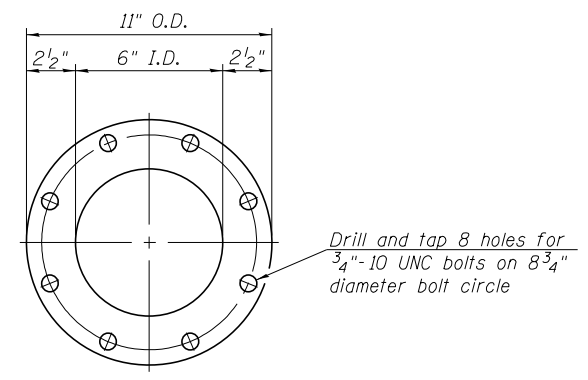
SHEET NO. SC16 OF SC39 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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ILLINOIS FED. AID PROJECT			CONTRACT NO. 64C08	

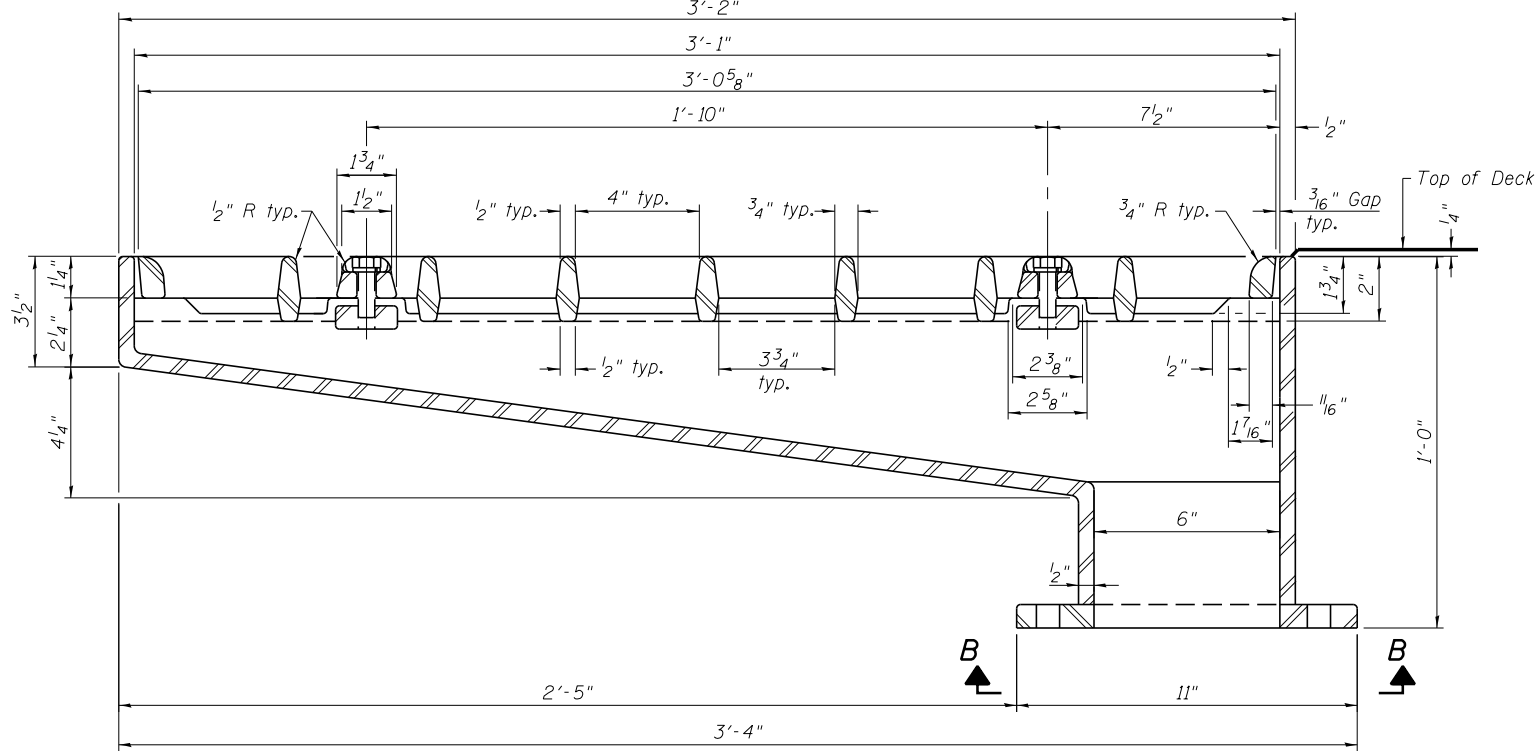
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PLAN

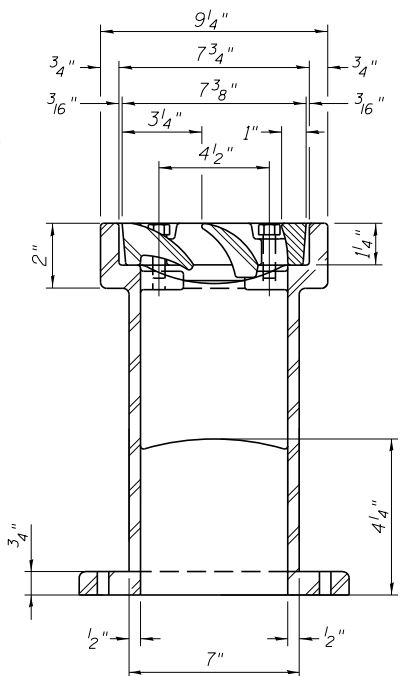


VIEW B-B

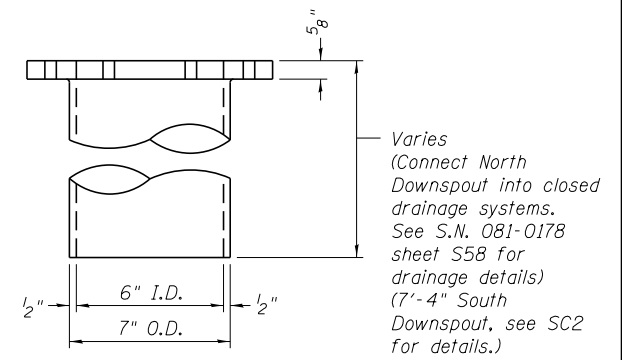
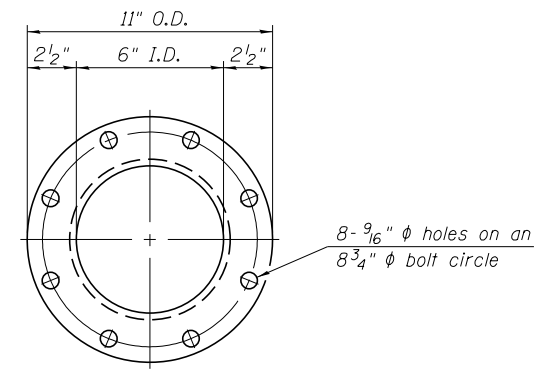


SECTION A-A

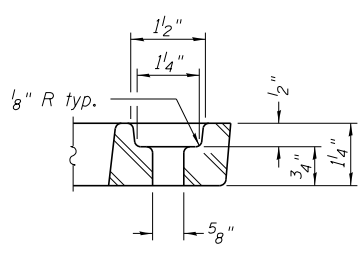
See sheet SC9 for scupper location relative to parapet.



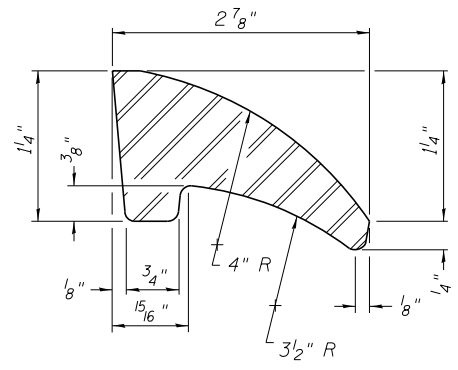
SECTION C-C



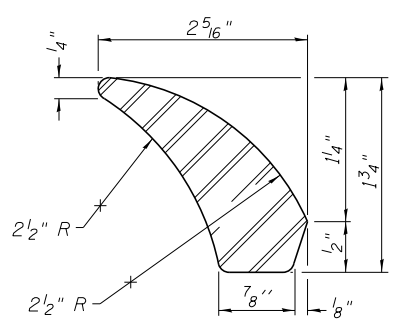
DOWNSPOUT



BOLT HOLE DETAIL



FIRST VANE DETAIL



SECOND VANE DETAIL

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scupper (Special)	Each	2

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 205 North Michigan Avenue, Suite 2400
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 312-565-0450 Job No. 10061

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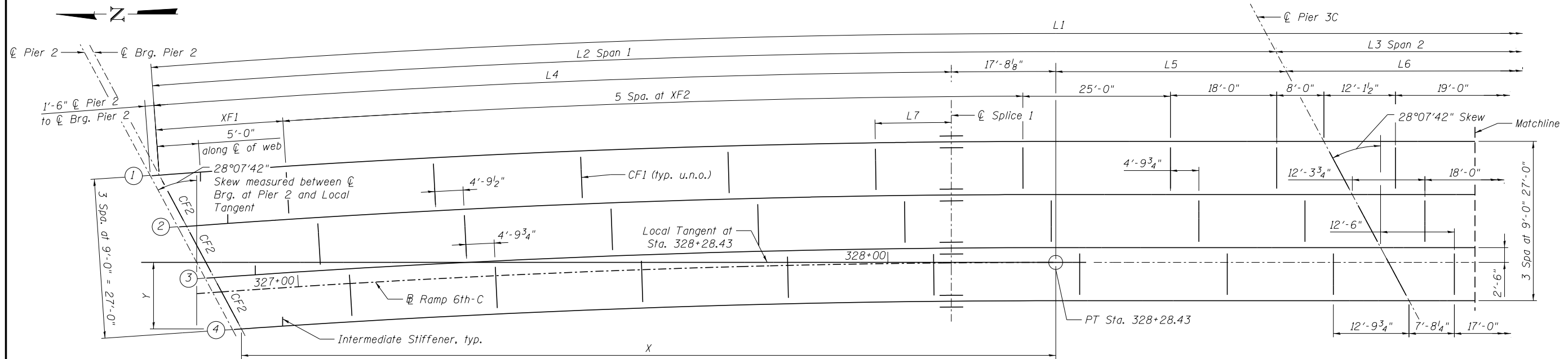
**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**SCUPPER DETAILS
 STRUCTURE NO. 081-0186 RAMP 6TH-C**

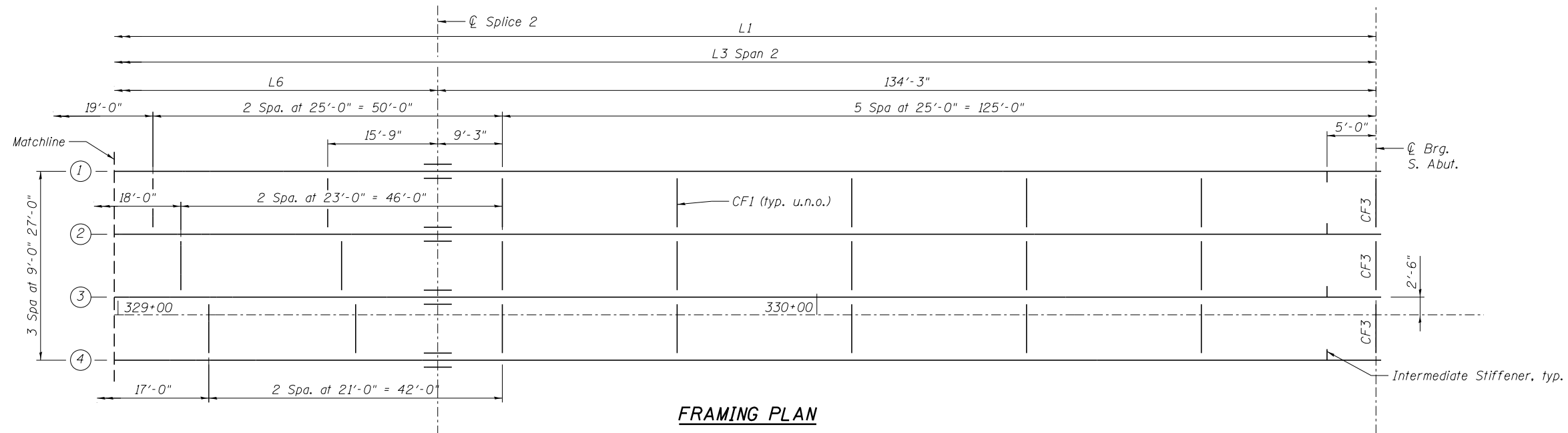
SHEET NO. SC17 OF SC39 SHEETS

F.A.I. RE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1HVBR	ROCK ISLAND	1504	1044
ILLINOIS FED. AID PROJECT			CONTRACT NO. 64C08	

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FRAMING PLAN



FRAMING PLAN

LAYOUT DIMENSIONS

GIRDER	☐ Brg. Pier 2		☐ Splice 1	
	X	Y	X	Y
1	-151'-11 ¹ / ₈ "	14'-9 ³ / ₈ "	-17'-8 ¹ / ₈ "	20'-5"
2	-147'-3 ³ / ₈ "	6'-1 ¹ / ₈ "	-17'-8 ¹ / ₈ "	11'-5"
3	-142'-7 ⁵ / ₈ "	-2'-7"	-17'-8 ¹ / ₈ "	2'-5"
4	-137'-11 ¹ / ₈ "	-11'-3 ³ / ₈ "	-17'-8 ¹ / ₈ "	-6'-7"

GIRDER DATA

GIRDER	Radius	L1	L2	L3	L4	L5	L6	L7	XF1	XF2
1	2020.5	403'-7 ⁵ / ₈ "	197'-6 ¹ / ₈ "	206'-1 ¹ / ₂ "	134'-4 ⁵ / ₈ "	45'-5 ³ / ₈ "	71'-10 ¹ / ₂ "	12'-10 ¹ / ₂ "	21'-6 ¹ / ₈ "	25'-0"
2	2011.5	398'-11 ¹ / ₈ "	197'-8"	201'-3 ¹ / ₈ "	129'-8 ¹ / ₈ "	50'-3"	67'-0 ¹ / ₈ "	7'-11 ¹ / ₂ "	22'-2 ¹ / ₈ "	24'-10 ⁵ / ₈ "
3	2002.5	394'-4"	197'-10"	196'-6"	125'-1"	55'-0 ¹ / ₈ "	62'-3"	3'-0 ¹ / ₂ "	22'-11 ¹ / ₈ "	24'-9 ³ / ₈ "
4	1993.5	389'-8 ¹ / ₈ "	197'-11 ³ / ₄ "	191'-8 ³ / ₈ "	120'-5 ¹ / ₈ "	59'-10 ¹ / ₂ "	57'-5 ³ / ₈ "	2'-11 ¹ / ₈ "	18'-9 ³ / ₄ "	24'-8"

(Dimensions given along ☐ of Web)

NOTES:

- The Contractor shall do either of the following:
 - Ream cross frame connection holes during shop assembly.
 - 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(l) of the Standard Specifications.
- 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 $\pm \frac{1}{8}$ in. per vertical ft. throughout when supporting their own weight.

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 205 North Michigan Avenue, Suite 2400
 Chicago, Illinois 60601
 312-565-0450 Job No. 10061

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 MODEL: Default

USER NAME = ksnider
 PLOT SCALE =
 PLOT DATE = 1/18/2017

DESIGNED - DTS
 CHECKED - AJK
 DRAWN - DTS
 CHECKED - AJK

REVISED -
 REVISED -
 REVISED -
 REVISED -

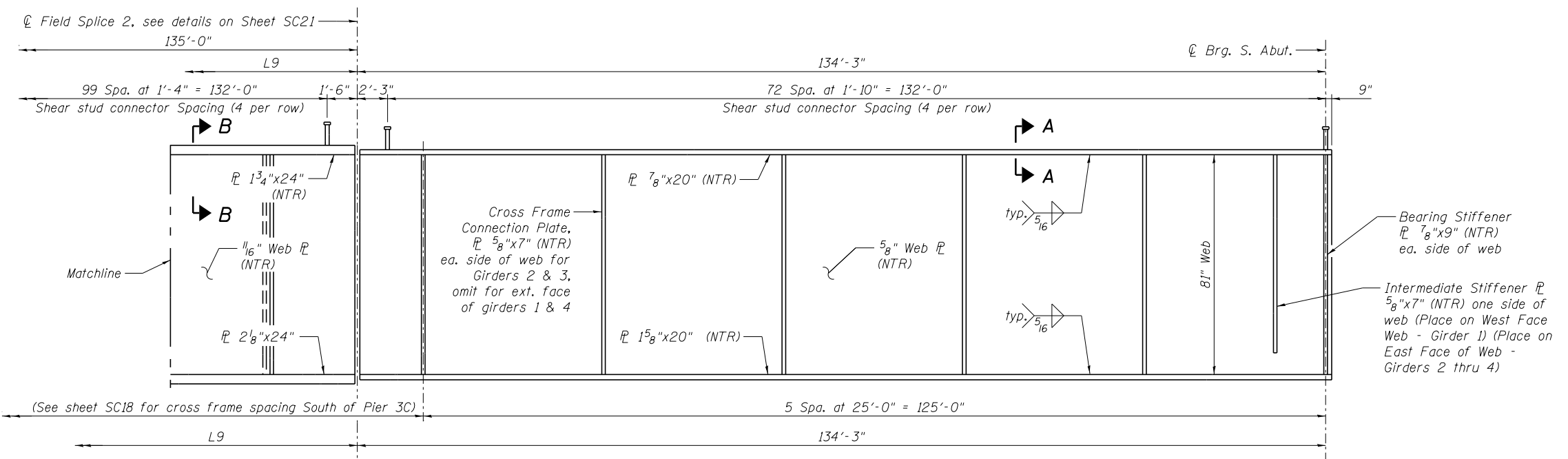
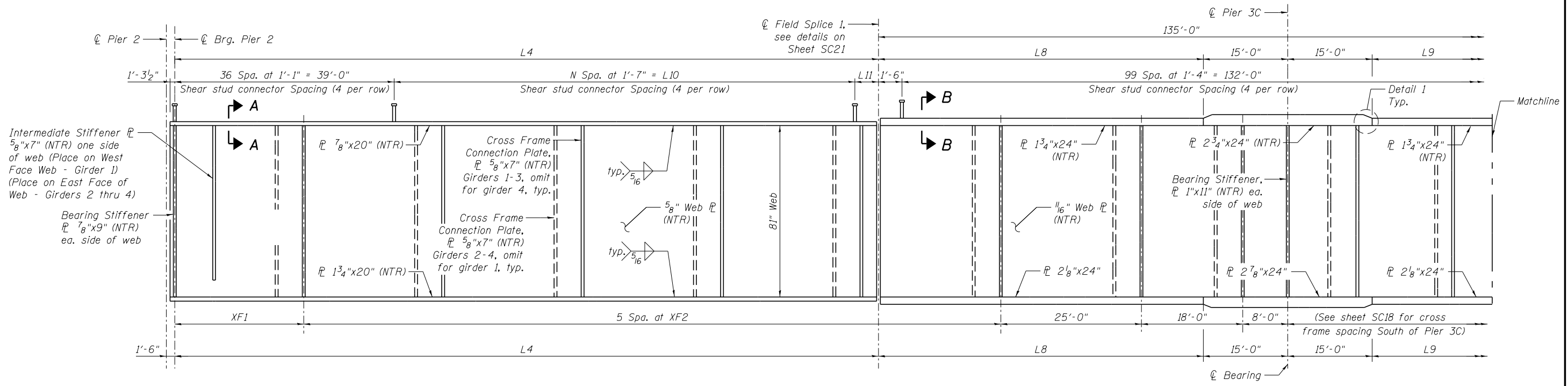
**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**FRAMING PLAN
 STRUCTURE NO. 081-0186 RAMP 6TH-C**

SHEET NO. SC18 OF SC39 SHEETS

F.A.I. RE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1HVBR	ROCK ISLAND	1504	1045
CONTRACT NO. 64C08				
ILLINOIS FED. AID PROJECT				

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NOTES:

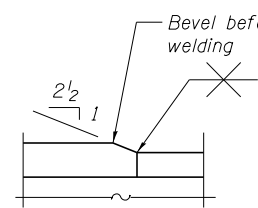
- See Sheet SC18 for girder data table.
- Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.
- All flange plates, web plates, and bearing stiffeners, shall be AASHTO M270 Grade 50 steel.

GIRDER DATA

GIRDER	L8	L9	L10	L11	N
1	48'-1 1/2"	56'-10 1/2"	93'-5"	1'-11 3/8"	59
2	52'-11 1/8"	52'-0 1/8"	88'-8"	2'-0 1/8"	56
3	57'-9"	47'-3"	83'-11"	2'-2"	53
4	62'-6 3/8"	42'-5 3/8"	79'-2"	2'-3 1/8"	50

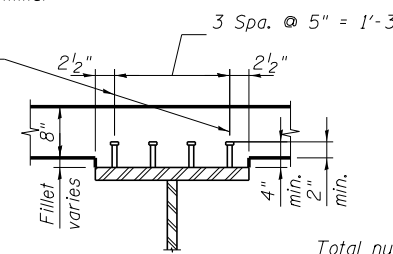
GIRDER ELEVATION

Interior girder shown, exterior girders similar (Looking East, 4 Required)

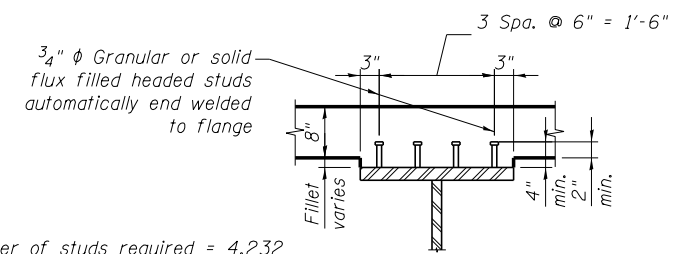


DETAIL 1
(Typ.)

3/4" φ Granular or solid flux filled headed studs automatically end welded to flange



SECTION A-A



SECTION B-B

Total number of studs required = 4,232



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205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10061

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MODEL: Default

USER NAME = ksnider
DESIGNED - DTS
CHECKED - AJK/RJT
DRAWN - KMS
PLOT DATE = 1/18/2017

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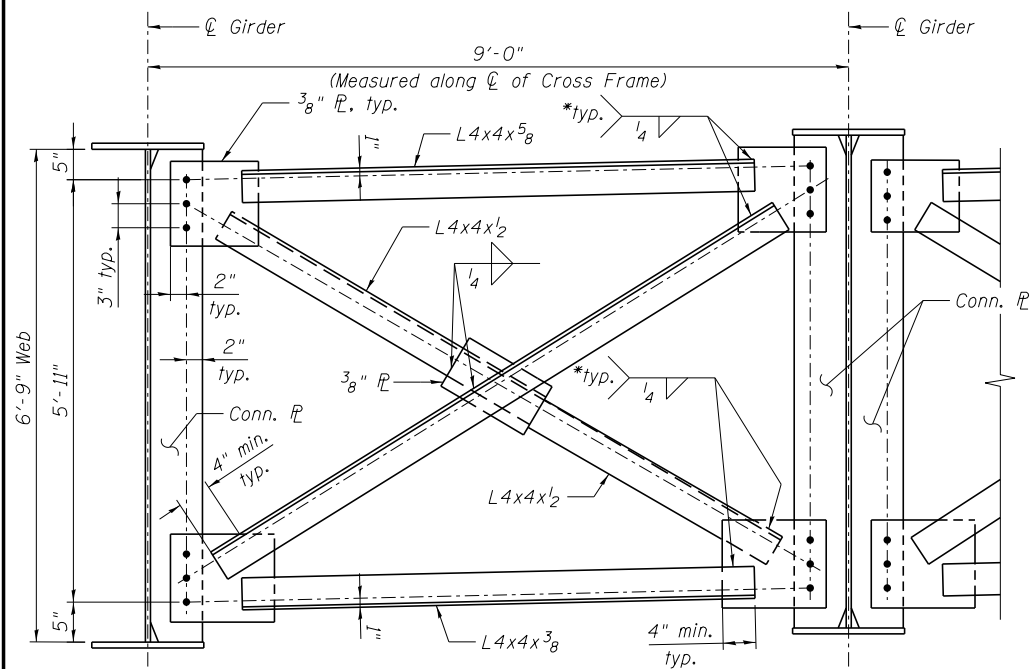
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL PLATE GIRDER ELEVATION
STRUCTURE NO. 081-0186 RAMP 6TH-C

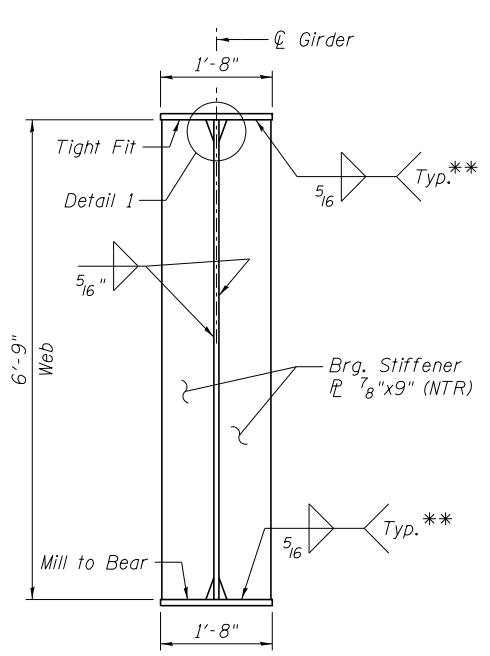
SHEET NO. SC19 OF SC39 SHEETS

F.A.I. R.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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				CONTRACT NO. 64C08

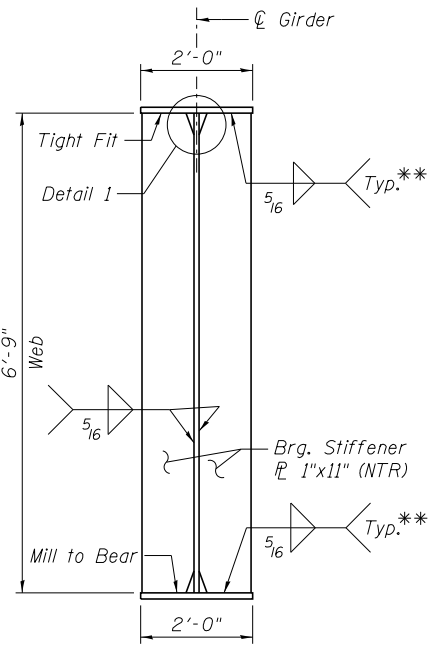
ILLINOIS FED. AID PROJECT



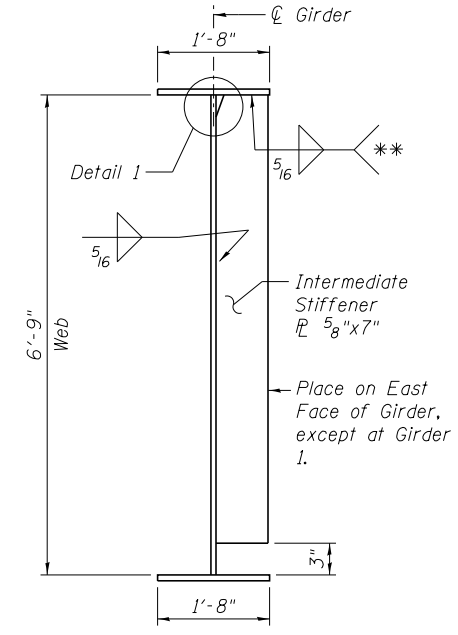
TYPE 1 CROSS FRAME
(CF1)



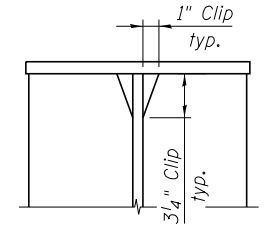
BEARING STIFFENER AT SOUTH ABUTMENT AND PIER 2
(No. of Plates Req'd = 16)



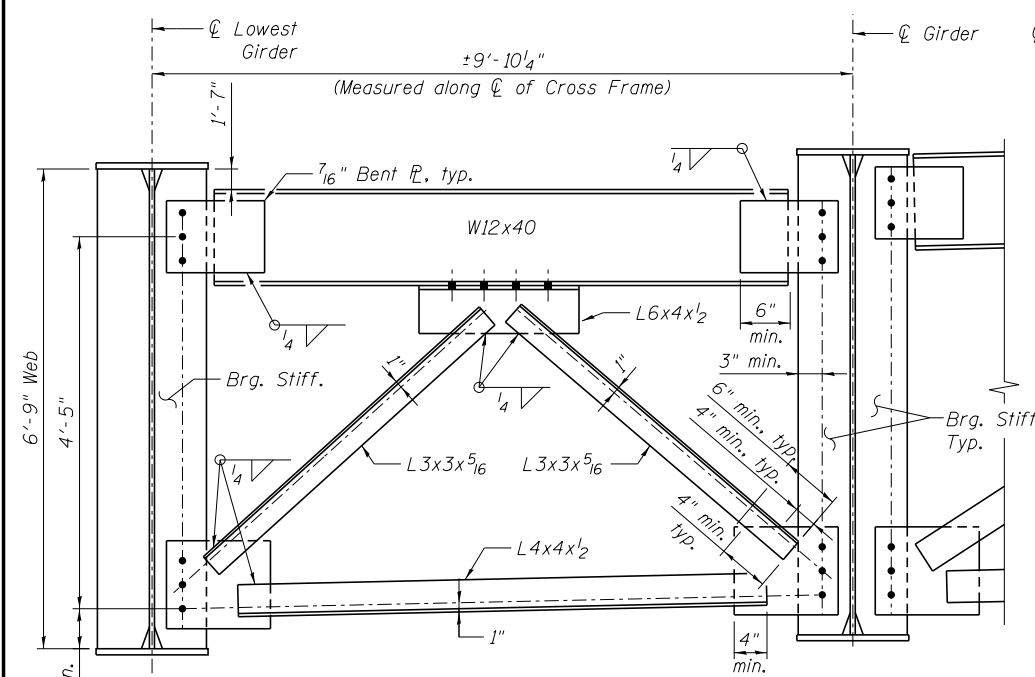
BEARING STIFFENER AT PIERS 3C
(No. of Plates Req'd = 8)



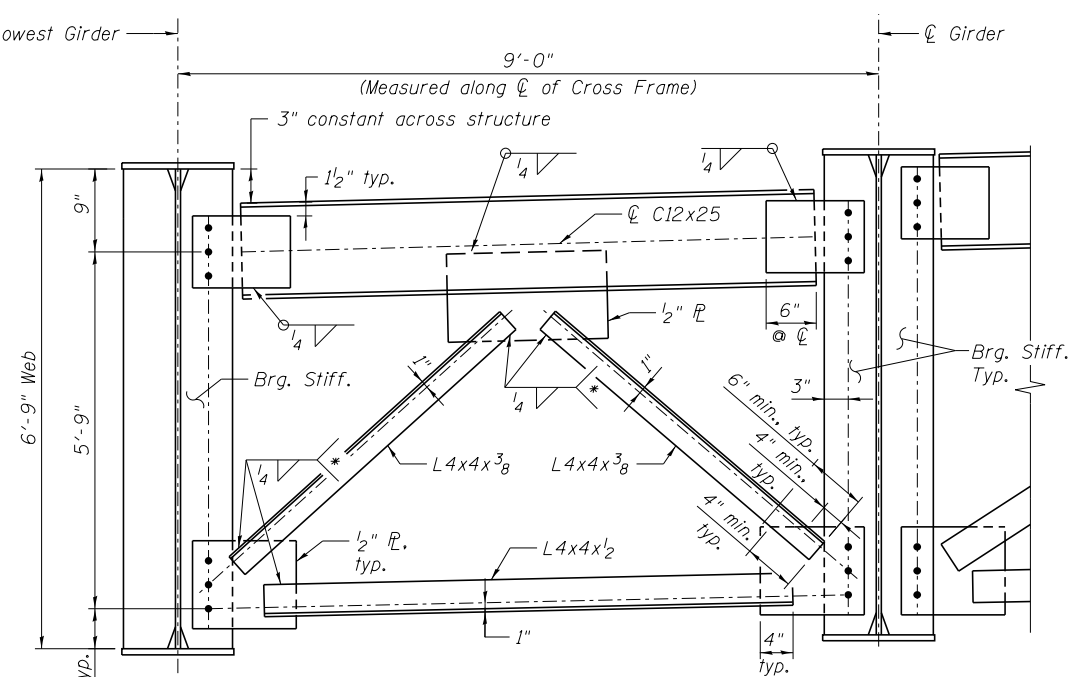
INTERMEDIATE STIFFENER DETAIL
(No. of Plates Req'd = 8)



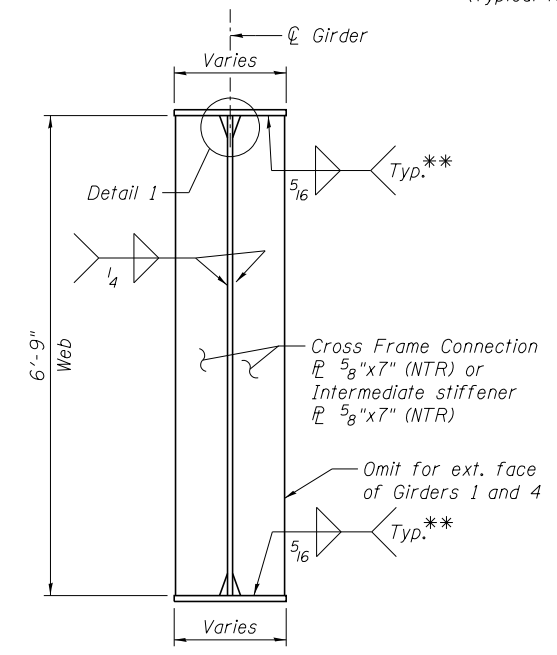
DETAIL 1
(Typical top & bottom flanges)



TYPE 2 CROSS FRAME AT PIER 2
(CF2)



TYPE 3 CROSS FRAME AT SOUTH ABUTMENT
(CF3)



CONNECTION PLATE DETAIL
(No. of Plates Req'd = 96)

NOTES:

1. All cross frames 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.
2. The calculated deflections of the girders under steel self-weight shall be used to detail the cross frame connections, and to erect the structural steel such that the girders will be plumb within a tolerance of ± 1/8" per vertical foot throughout when supporting their own weight. See Sheet SC21 for steel only deflections.
3. Fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts. Bolts 7/8" φ, holes 15/16" φ, unless noted otherwise. All cross frame components shall conform to the Impact Testing Requirement, Zone 2.

* Fillet weld angles along 3 sides on one face of gusset plate.
** Terminate weld 1/4" from edges of stiffener PL.

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312-565-0450 Job No. 10061

FILE NAME = 0810186-0823-020-Steel Plate Girder Cross Frame and Stiffener Details.dgn	USER NAME = ksnider	DESIGNED - DTS	REVISED -
MODEL: Default	PLOT SCALE =	CHECKED - RJT	REVISED -
	PLOT DATE = 1/18/2017	DRAWN - KMS	REVISED -
		CHECKED - RJT	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL PLATE GIRDER CROSS FRAME AND STIFFENER DETAILS
STRUCTURE NO. 081-0186 RAMP 6TH-C

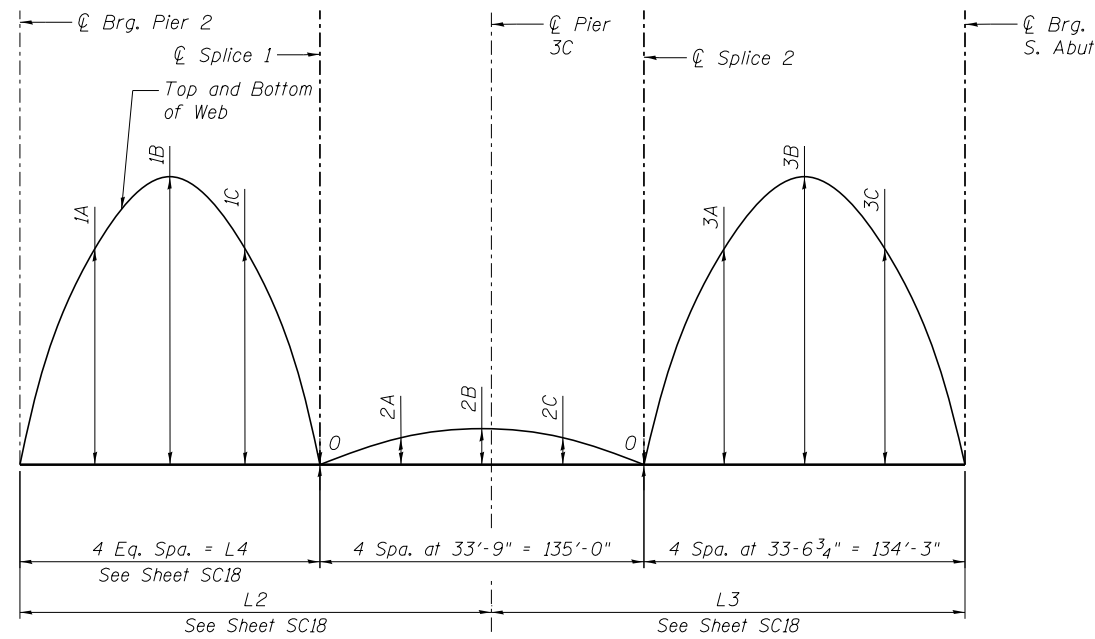
SHEET NO. SC20 OF SC39 SHEETS

F.A.I. RE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1HVBR	ROCK ISLAND	1504	1047
CONTRACT NO. 64C08				
ILLINOIS FED. AID PROJECT				

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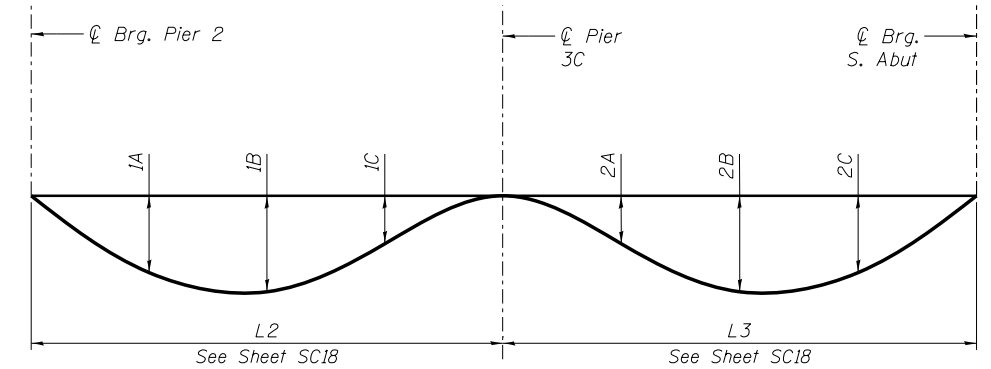
1/18/2017



CAMBER DIAGRAM

CAMBER TABLE

Girder	1A	1B	1C	2A	2B	2C	3A	3B	3C
1	4 7/8"	6 1/2"	4 7/8"	0"	0"	0"	6 3/4"	9"	6 3/4"
2	3 3/4"	5"	3 3/4"	0"	0"	0"	6 3/4"	9"	6 3/4"
3	3 3/8"	4 1/2"	3 3/8"	9/16"	3/4"	9/16"	6 3/8"	8 1/2"	6 3/8"
4	2 5/8"	3 1/2"	2 5/8"	9/16"	3/4"	9/16"	6 3/8"	8 1/2"	6 3/8"



STEEL DEFLECTION DIAGRAM

(Deflection due to steel self-weight only)

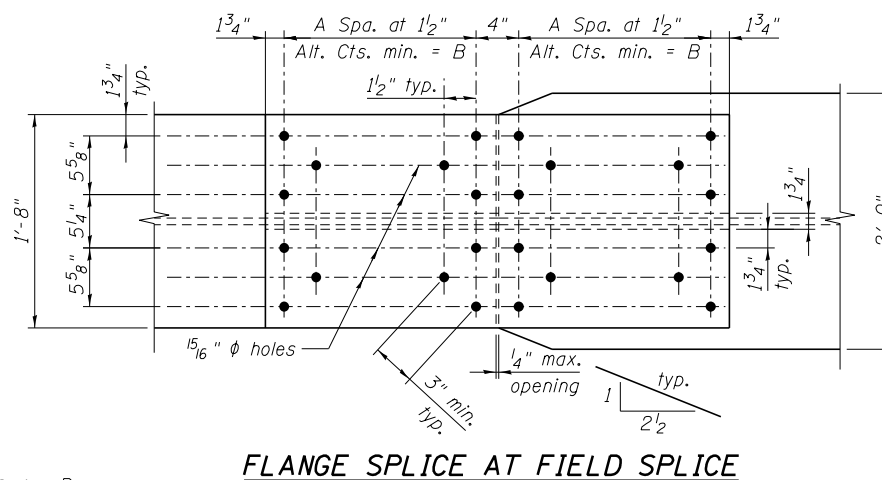
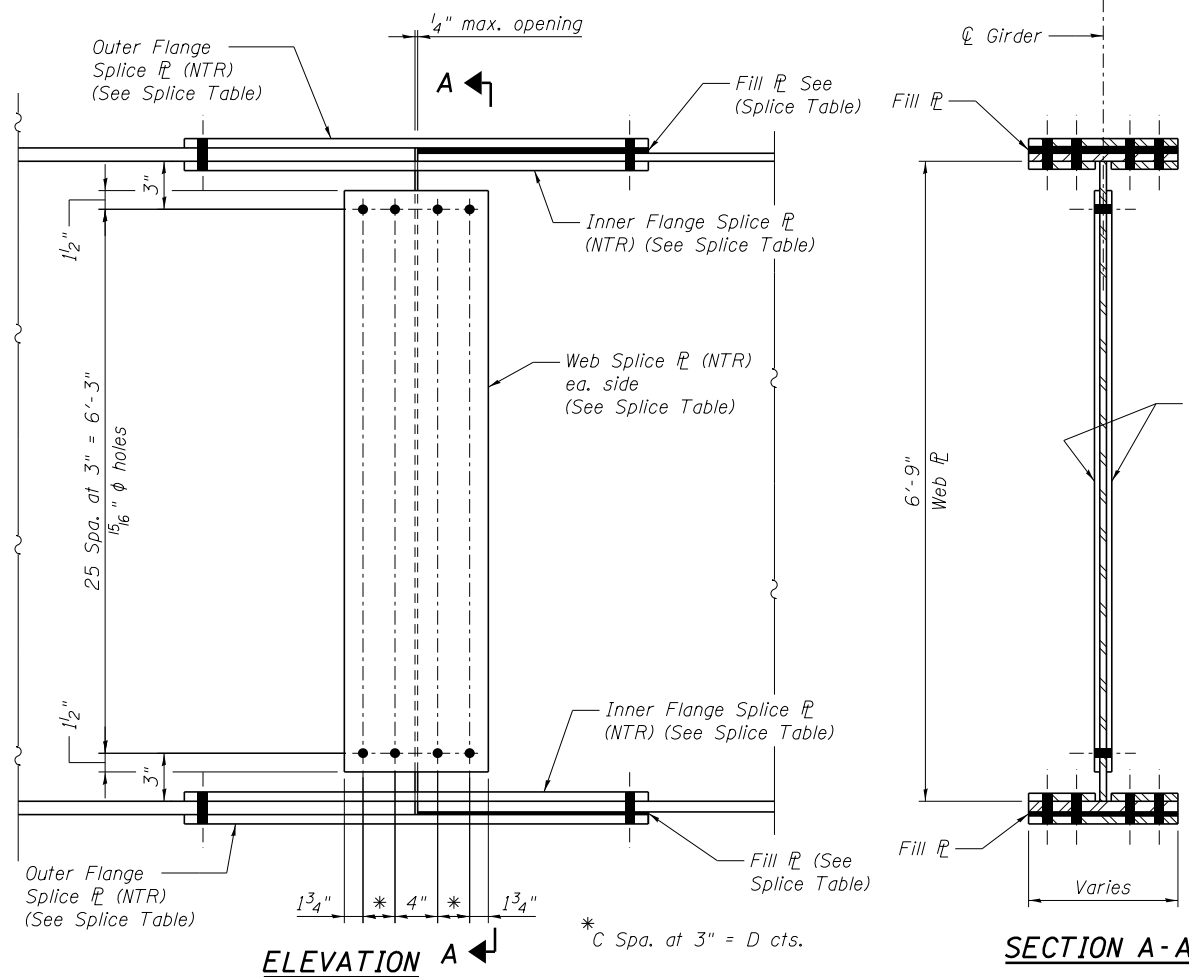
STEEL DEFLECTION TABLE

Girder	1A	1B	1C	2A	2B	2C
1	1 1/4"	1 3/8"	5/8"	5/8"	1 1/2"	1 3/8"
2	1 1/8"	1 1/4"	1/2"	1/2"	1 3/8"	1 1/4"
3	1 1/8"	1 1/4"	1/2"	1/2"	1 1/4"	1 1/4"
4	1"	1 1/8"	1/2"	3/8"	1"	1"

TOP OF WEB ELEVATIONS

(For fabrication only)

Location	Girder 1	Girder 2	Girder 3	Girder 4
Brg. Pier 2	601.59	601.34	601.07	600.77
Splice 1	604.77	604.44	604.14	603.81
Brg. Pier 3C	604.66	604.49	604.41	604.28
Splice 2	604.54	604.53	604.53	604.52
Brg. S. Abut.	600.63	601.02	601.42	601.81



FLANGE SPLICE AT FIELD SPLICE

SPLICE TABLE

Splice Location (Girders 1-4)	Top Flange						Bottom Flange						Web			
	Outer Flange PL	Inner Flange PL	Fill PL	A	B	No. Bolts	Outer Flange PL	Inner Flange PL	Fill PL	A	B	No. Bolts	Web Splice PL	C	D	No. Bolts
Field Splice 1	1/2"x20"x2'-7 1/2"	2-1/2"x9 1/8"x2'-7 1/2"	7/8"x20"x1'-3 5/8"	8	12"	56	7/8"x20"x3'-7 1/2"	2-1"x9 1/8"x3'-7 1/2"	3/8"x20"x1'-9 5/8"	12	1'-6"	80	3/8"x13 1/2"x6'-6"	1	3"	104
Field Splice 2	1/2"x20"x2'-7 1/2"	2-1/2"x9 1/8"x2'-7 1/2"	7/8"x20"x1'-3 5/8"	8	12"	56	7/8"x20"x3'-7 1/2"	2-1"x9 1/8"x3'-7 1/2"	1/2"x20"x1'-9 5/8"	12	1'-6"	80	3/8"x13 1/2"x6'-6"	1	3"	104

NOTES:

- All Splice Plates shall be AASHTO M270 Grade 50 steel.
- All Splice Bolts shall be 7/8" phi ASTM A325 High Strength with 15/16" phi holes.
- Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.

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FILE NAME = 0810186-08323-021-Steel Plate Girder Camber Diagram and Splice Details.dgn	USER NAME = ksnyder	DESIGNED - DTS	REVISED -
MODEL: Default	PLOT SCALE =	CHECKED - AJK/RJT	REVISED -
	PLOT DATE = 1/18/2017	DRAWN - KMS	REVISED -
		CHECKED - AJK/RJT	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**STEEL PLATE GIRDER CAMBER DIAGRAM AND SPLICE DETAILS
 STRUCTURE NO. 081-0186 RAMP 6TH-C**

SHEET NO. SC21 OF SC39 SHEETS

F.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1HVBR	ROCK ISLAND	1504	1048
CONTRACT NO. 64C08				
ILLINOIS FED. AID PROJECT				

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GIRDER 1 (EXTERIOR) MOMENT TABLE			
	0.4 Sp. 2	Pier 3C	0.6 Sp. 3
I_s	(in ⁴) 111,741	267,534	108,586
$I_c(n)$	(in ⁴) 239,265	401,455	230,570
$I_c(3n)$	(in ⁴) 172,264	-----	166,813
$I_c(cr)$	(in ⁴) -----	285,745	-----
S_s	(in ³) 3,179	6,267	3,025
$S_c(n)$	(in ³) 4,080	-----	3,888
$S_c(3n)$	(in ³) 3,720	-----	3,542
$S_c(cr)$	(in ³) -----	6,395	-----
S_{xc}	(in ³) 3,739	6,335	3,534
DC1	(k/')	1.272	1.578
M _{DC1}	(k)	3585	8568
DC2	(k/')	0.259	0.259
M _{DC2}	(k)	731	1544
DW	(k/')	0.375	0.375
M _{DW}	(k)	1059	2235
$M\pm + IM$	(k)	4392	5139
f_t (Strength I)	(ksi)	1.09	1.13
$M_u + \frac{1}{3} f_t S_{xc}$	(k)	14783	25185
$\phi_r M_n$	(k)	-----	-----
f_s DC1	(ksi)	13.5	16.4
f_s DC2	(ksi)	2.4	2.9
f_s DW	(ksi)	3.4	4.2
f_s ($\pm + IM$)	(ksi)	12.9	9.6
f_t (Service II)	(ksi)	0.8	0.9
$f_s + \frac{1}{2} f_t$ (Service II)	(ksi)	36.5	36.5
$0.95R_n F_{yt}$	(ksi)	47.5	47.5
$f_s + \frac{1}{3} f_t$ (Total)(Strength I)	(ksi)	48.0	47.7
$\phi_r F_n$	(ksi)	50	50
V_r	(k)	37.4	47.8

GIRDER 1 REACTION TABLE			
	Pier 2	Pier 3C	S. Abut.
R _{DC1}	(k) 101.7	372.5	94.5
R _{DC2}	(k) 20.1	68.4	18.8
R _{DW}	(k) 29.2	99.1	27.3
$R\pm + IM$	(k) 98.7	236.1	104.8
R _{Total}	(k) 249.7	776.1	245.4

GIRDER 2 (INTERIOR) MOMENT TABLE			
	0.4 Sp. 2	Pier 3C	0.6 Sp. 3
I_s	(in ⁴) 111,741	267,534	108,586
$I_c(n)$	(in ⁴) 249,133	414,744	239,900
$I_c(3n)$	(in ⁴) 179,149	-----	173,398
$I_c(cr)$	(in ⁴) -----	287,768	-----
S_s	(in ³) 3,179	6,267	3,025
$S_c(n)$	(in ³) 4,121	-----	3,927
$S_c(3n)$	(in ³) 3,765	-----	3,586
$S_c(cr)$	(in ³) -----	6,408	-----
S_{xc}	(in ³) 3,725	6,340	3,536
DC1	(k/')	1.293	1.599
M _{DC1}	(k)	3247	8201
DC2	(k/')	0.259	0.259
M _{DC2}	(k)	682	1506
DW	(k/')	0.375	0.375
M _{DW}	(k)	988	2180
$M\pm + IM$	(k)	3923	4544
f_t (Strength I)	(ksi)	0.90	0.15
$M_u + \frac{1}{3} f_t S_{xc}$	(k)	13352	23382
$\phi_r M_n$	(k)	-----	-----
f_s DC1	(ksi)	12.3	15.7
f_s DC2	(ksi)	2.2	2.8
f_s DW	(ksi)	3.1	4.1
f_s ($\pm + IM$)	(ksi)	11.4	8.5
f_t (Service II)	(ksi)	0.7	0.0
$f_s + \frac{1}{2} f_t$ (Service II)	(ksi)	32.8	33.7
$0.95R_n F_{yt}$	(ksi)	47.5	47.5
$f_s + \frac{1}{3} f_t$ (Total)(Strength I)	(ksi)	43.1	44.2
$\phi_r F_n$	(ksi)	50	50
V_r	(k)	35.0	45.8

GIRDER 2 REACTION TABLE			
	Pier 2	Pier 3C	S. Abut.
R _{DC1}	(k) 92.7	371.3	93.0
R _{DC2}	(k) 18.5	67.8	18.9
R _{DW}	(k) 26.7	98.2	27.4
$R\pm + IM$	(k) 114.2	242.8	109.1
R _{Total}	(k) 252.2	780.2	248.4

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 (in⁴ and in³).

$I_c(n), S_c(n)$: 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 (in⁴ and in³).

$I_c(3n), S_c(3n)$: 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 (in⁴ and in³).

$I_c(cr), S_c(cr)$: Composite moment of inertia and section modulus of the steel and longitudinal deck reinforcement, used for computing f_s (Total-Strength I and Service II) in cracked sections, due to both short-term composite live loads and long-term composite dead loads (in⁴ and in³).

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 (in³).

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.).

$M\pm + IM$: Un-factored live load moment plus dynamic load allowance (impact)(kip-ft.).

M_u (Strength I): Factored design moment (kip-ft.).

$1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M\pm + IM$

f_t : Factored calculated normal stress at edge of flange for controlling steel flange plate due to lateral bending, Strength I or Service II as applicable (ksi).

$\phi_r M_n$: Factored resistance available according to A6.1.1 (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_{xc}

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

$M\pm + IM / S_c(n)$ or $M\pm + IM / S_c(cr)$ as applicable.

$f_s + \frac{1}{2} f_t$ (Service II): Sum of stresses as computed below (ksi).

$f_s DC1 + f_s DC2 + f_s DW + 1.3 f_s \pm + IM + \frac{1}{2} f_t$

$0.95R_n F_{yt}$: Composite stress capacity for Service II loading according to Article 6.10.4.2 (ksi).

$f_s + \frac{1}{3} f_t$ (Total)(Strength I): Sum of stresses as computed below on non-compact section (ksi).

$1.25 (f_s DC1 + f_s DC2) + 1.5 f_s DW + 1.75 f_s \pm + IM + \frac{1}{3} f_t$

$\phi_r F_n$: Non-Compact composite positive or negative stress capacity for Strength I loading according to Article 6.10.7.2 (ksi).

V_r : Maximum factored shear range in the span computed according to Article 6.10.10 (k).

Note:
 $M\pm$ includes the effects of centrifugal force and superelevation.



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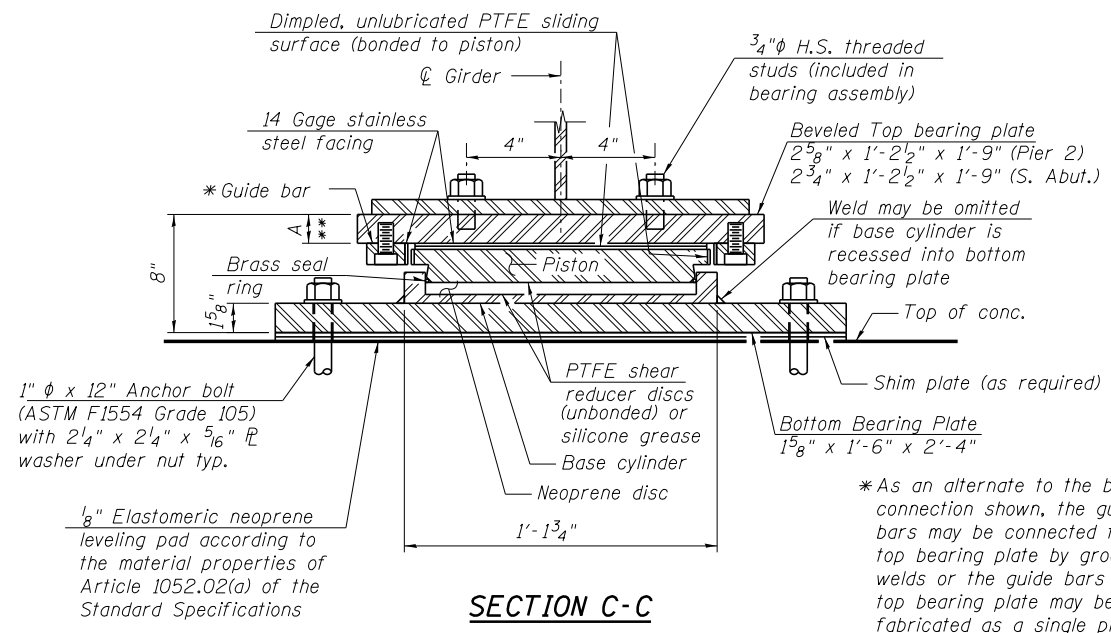
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	PLOT DATE = 1/18/2017	DRAWN - KMS	REVISED -
		CHECKED - RJT	REVISED -

STATE OF ILLINOIS
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STEEL PLATE GIRDER MOMENT AND REACTION TABLES
 STRUCTURE NO. 081-0186 RAMP 6TH-C

SHEET NO. SC22 OF SC39 SHEETS

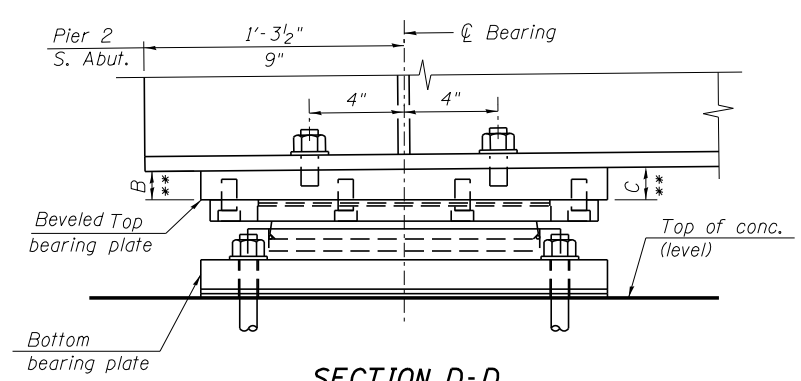
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74	81-1HVBR	ROCK ISLAND	1504	1049
ILLINOIS FED. AID PROJECT			CONTRACT NO. 64C08	



SECTION C-C

* As an alternate 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.

** See Table for Top Plate dimensions



SECTION D-D

(Looking East)
(Pier 2 Shown, S. Abut. similar opposite hand)

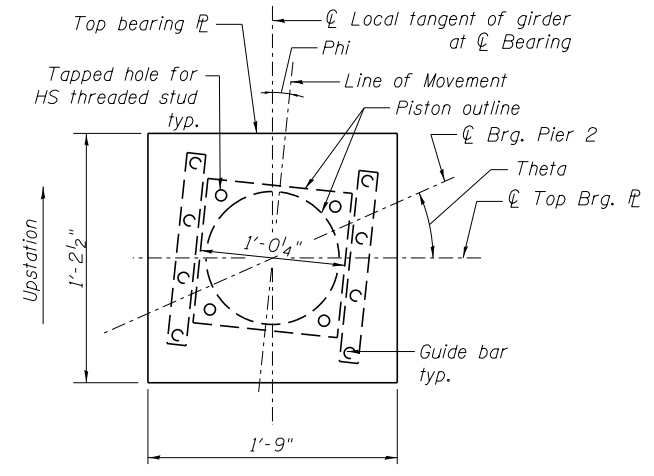
BILL OF MATERIAL

Item	Unit	Total
High Load Multi-Rotational Bearings, Guided Expansion, 300K	Ea.	8
Anchor Bolts, 1"	Ea.	32

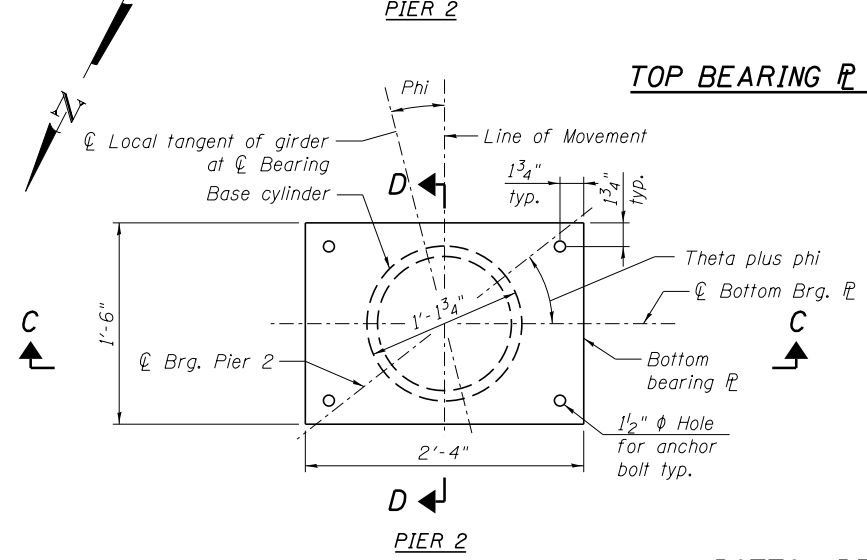
BEARING DIMENSIONS

Location	Pay Item Designation (kips)	Vert. Design Load** (kips)	Hu, Horiz. Design Load** (kips)	Θu, Req'd Rotation Range*** (radians)	Max. Theor. Thermal Mvmt**** from 50 °F	Top Plate Bevel	"A" Top Pl. Thickness @ Bearing End	"B" Thickness @ Girder End	"C" Thickness @ Interior Side
Pier 2	300	248	27	0.02	1 3/8"	2.36%	2 7/16"	2 1/4"	2 5/8"
S. Abut.	300	232	27	0.02	1 3/8"	3.41%	2 1/2"	2 1/4"	2 3/4"

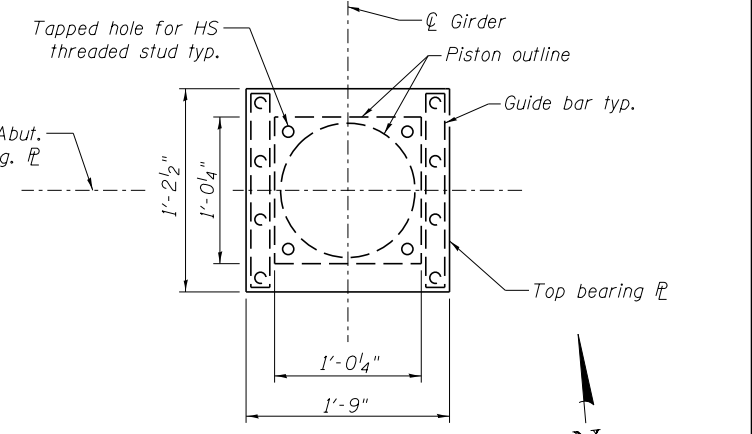
** Design Loads are the governing service loads with no dynamic load allowance.
 *** Rotation allowances for fabrication tolerances (0.005 radians), installation uncertainties (0.005 radians) are excluded.
 **** Total required movement is based on one way expansion (or contraction) of the superstructure perpendicular to the centerline of girder when bearings are set at 50°F. Bearing movement tolerances are excluded.



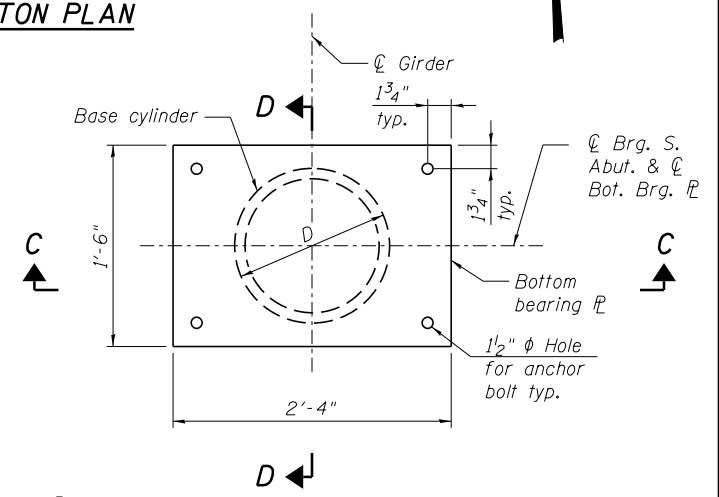
TOP BEARING PLATE AND PISTON PLAN



BOTTOM BEARING PLATE AND BASE CYLINDER PLAN



SOUTH ABUTMENT



SOUTH ABUTMENT

Line of Movement and Skew at Pier 2

Location	Theta	Phi
Girder 1	2°3'48'58"	2°38'08"
Girder 2	2°3'55'46"	2°38'00"
Girder 3	2°4'02'37"	2°36'39"
Girder 4	2°4'09'33"	2°35'06"

(Theta and Phi are equal to 0°00'00" at the S. Abut.)

NOTES:

- All steel for bearings shall conform to the requirements of AASHTO M270 Grade 50, unless otherwise noted.
- 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 may be either cast in place or installed in holes drilled after the supported member is in place. Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
- Total bearing height (Th) is taken at the centerline of bearing for beveled top plate.
- Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

SETTING ANCHOR BOLTS AT EXP. BRG.

X = 1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

BELOW 50°F (Move bottom brg. away from fixed brg.)
ABOVE 50°F (Move bottom brg. toward fixed brg.)



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MODEL: Default	PLOT SCALE =	CHECKED - AJK	REVISED -
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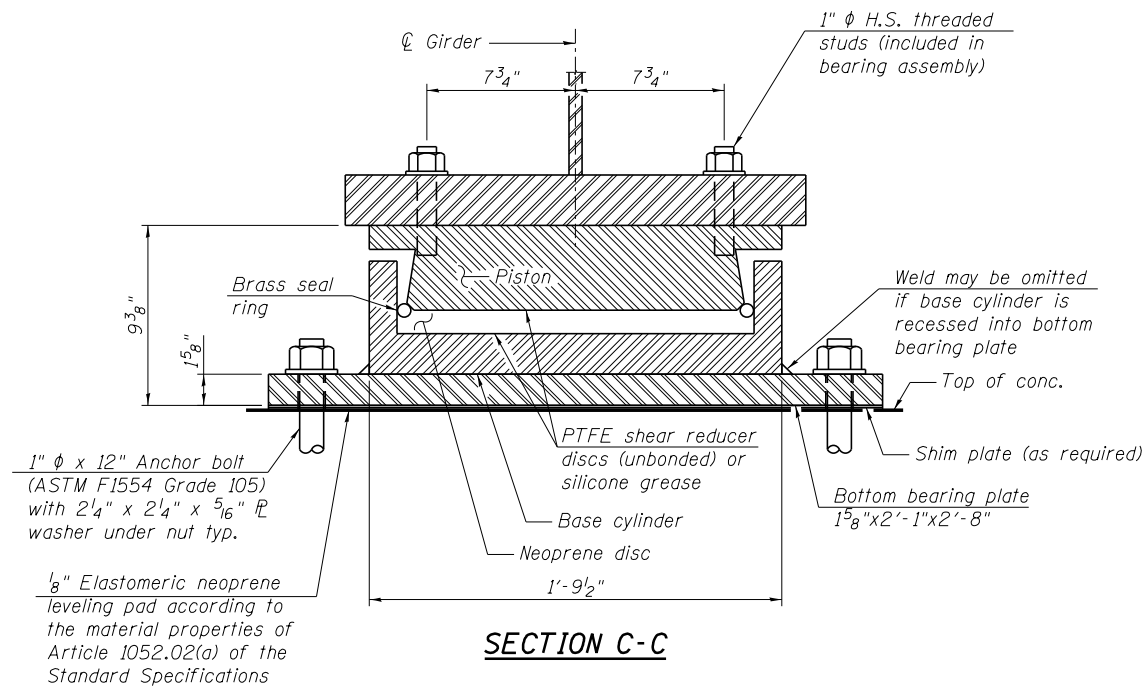
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HLMR GUIDED EXPANSION BEARING DETAILS
STRUCTURE NO. 081-0186 RAMP 6TH-C

SHEET NO. SC23 OF SC39 SHEETS

F.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1HVBR	ROCK ISLAND	1504	1050
			CONTRACT NO. 64C08	
ILLINOIS FED. AID PROJECT				

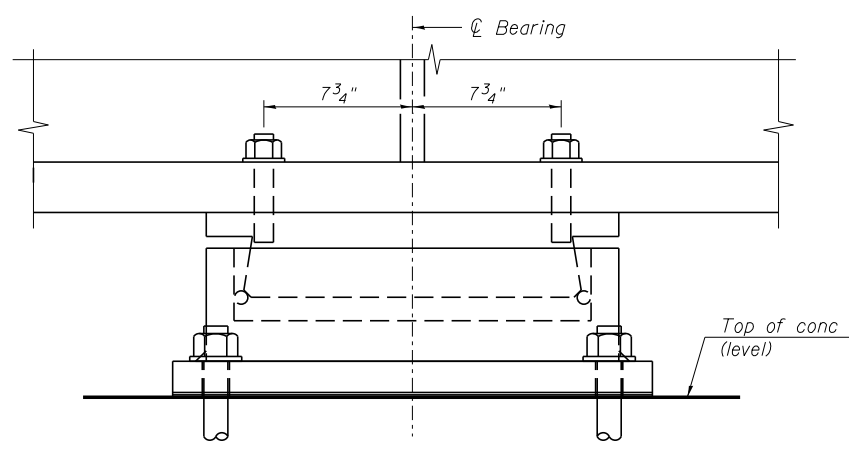
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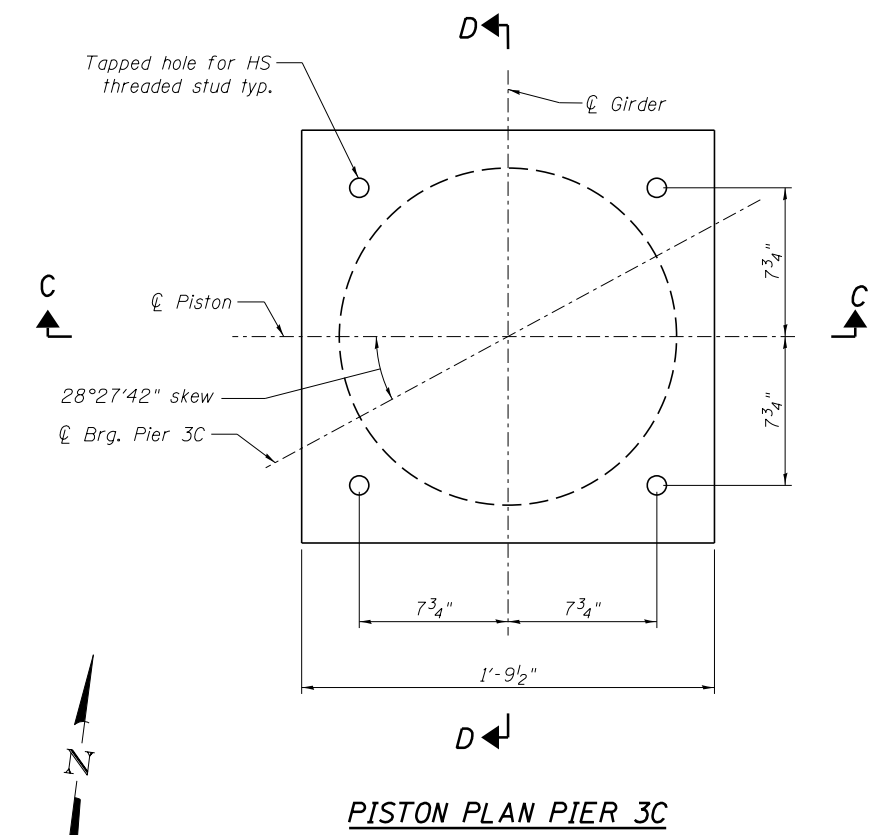
SECTION C-C

1" ϕ x 12" Anchor bolt (ASTM F1554 Grade 105) with 2 1/4" x 2 1/4" x 5/16" ϕ washer under nut typ.

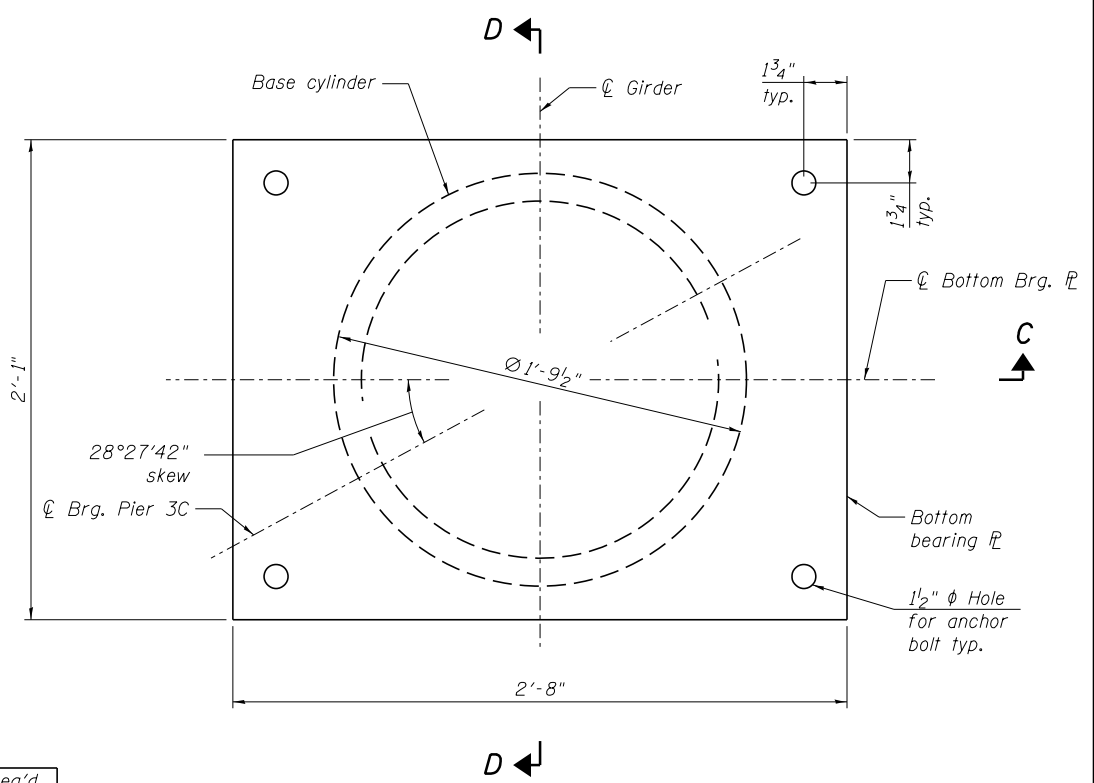
1/8" Elastomeric neoprene leveling pad according to the material properties of Article 1052.02(a) of the Standard Specifications



SECTION D-D



PISTON PLAN PIER 3C



BOTTOM BEARING PL AND BASE CYLINDER PLAN PIER 3C

BILL OF MATERIAL

Item	Unit	Total
High Load Multi-Rotational Bearings, Fixed, 750K	Ea.	4
Anchor Bolts, 1"	Ea.	16

BEARING DIMENSIONS

Location	Pay Item Designation (kips)	Vert. Design Load* (kips)	Hu, Horiz. Design Load* (kips)	θ_u , Req'd Rotation Range** (radians)
Pier 3C	750	750	105	0.02

* Design Loads are the governing service loads with no dynamic allowance.
 ** Rotation allowances for fabrication tolerances (0.005 radians) and installation uncertainties (0.005 radians) are excluded.

NOTE:
 1. See notes on sheet SC23.

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 312-565-0450 Job No. 10061

FILE NAME = 0810186-08323-024-HLMR Fixed Bearing Details.dgn	USER NAME = ksnider	DESIGNED - DMS	REVISED -
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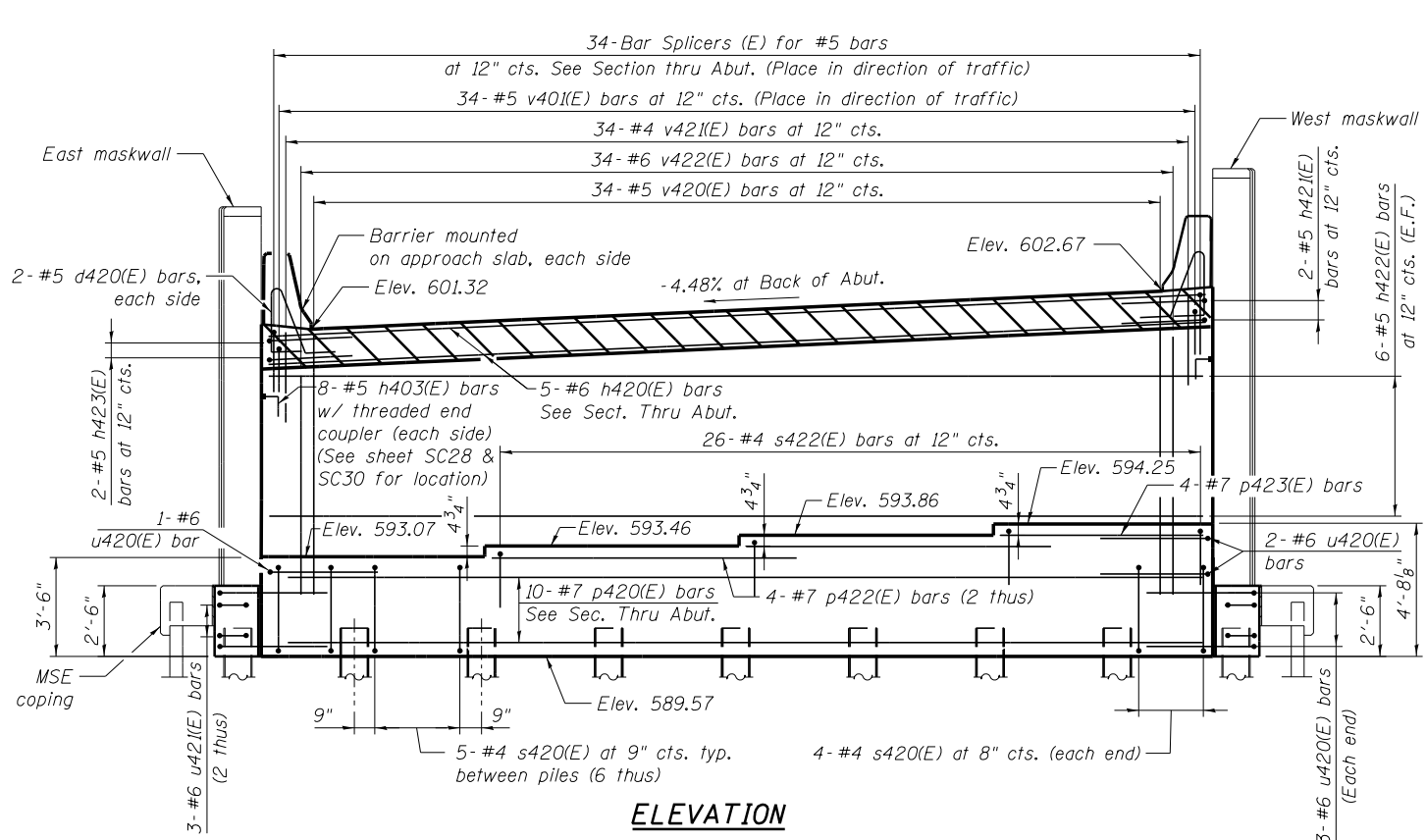
**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**HLMR FIXED BEARING DETAILS
 STRUCTURE NO. 081-0186 RAMP 6TH-C**

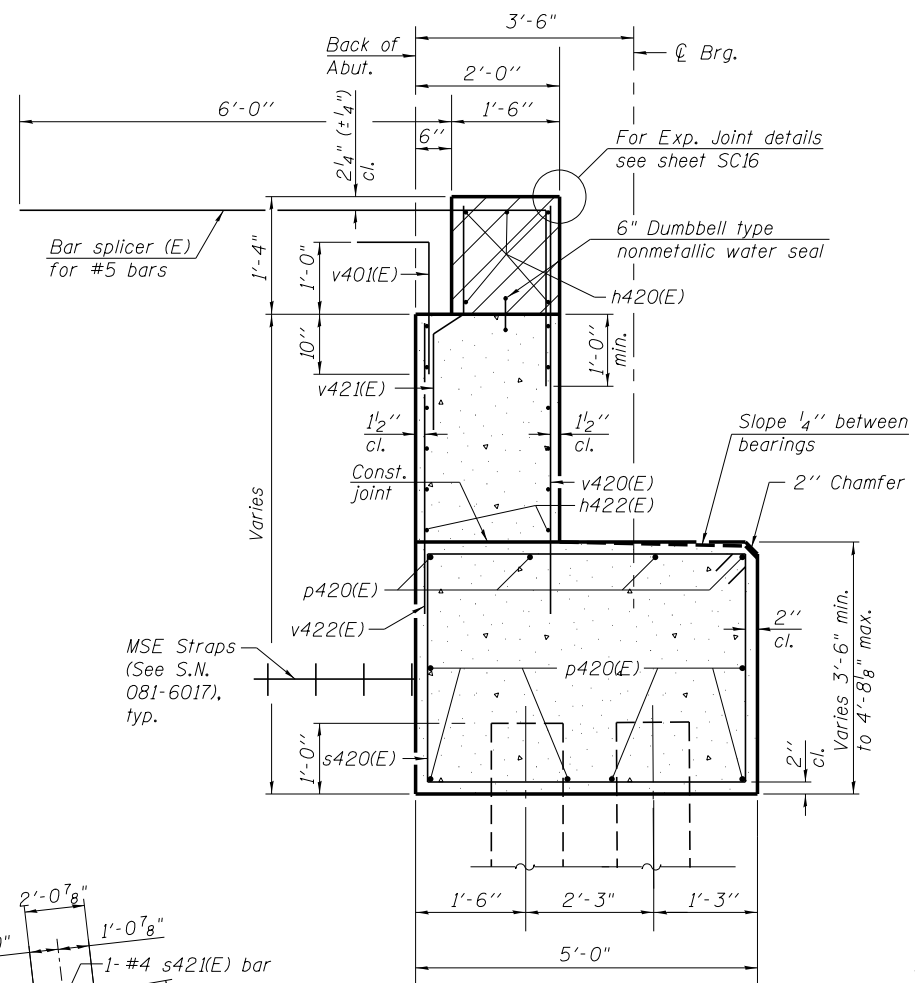
SHEET NO. SC24 OF SC39 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1HVBR	ROCK ISLAND	1504	1051
			CONTRACT NO. 64C08	
ILLINOIS FED. AID PROJECT				

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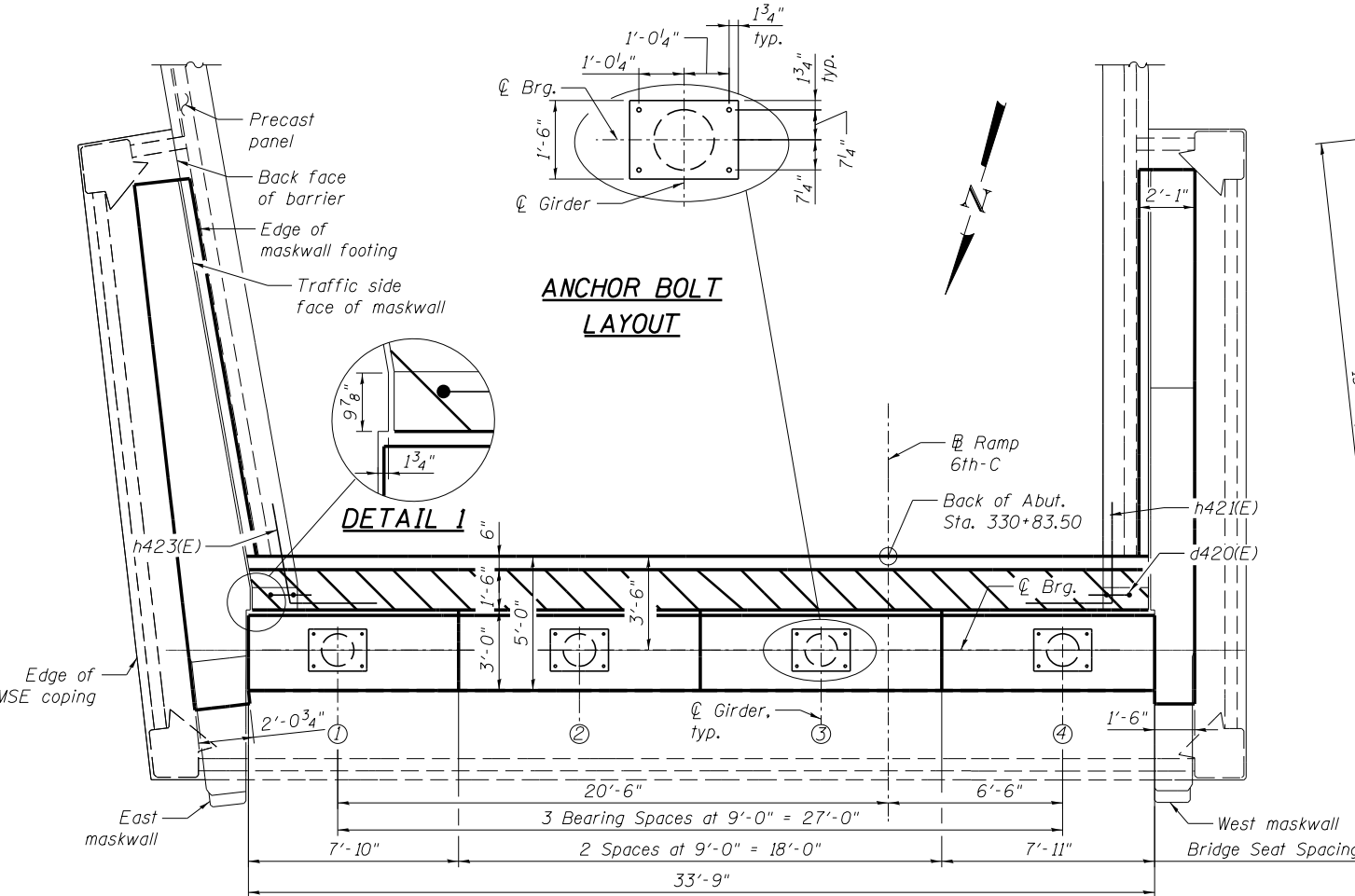
ELEVATION



SEC. THRU ABUT.

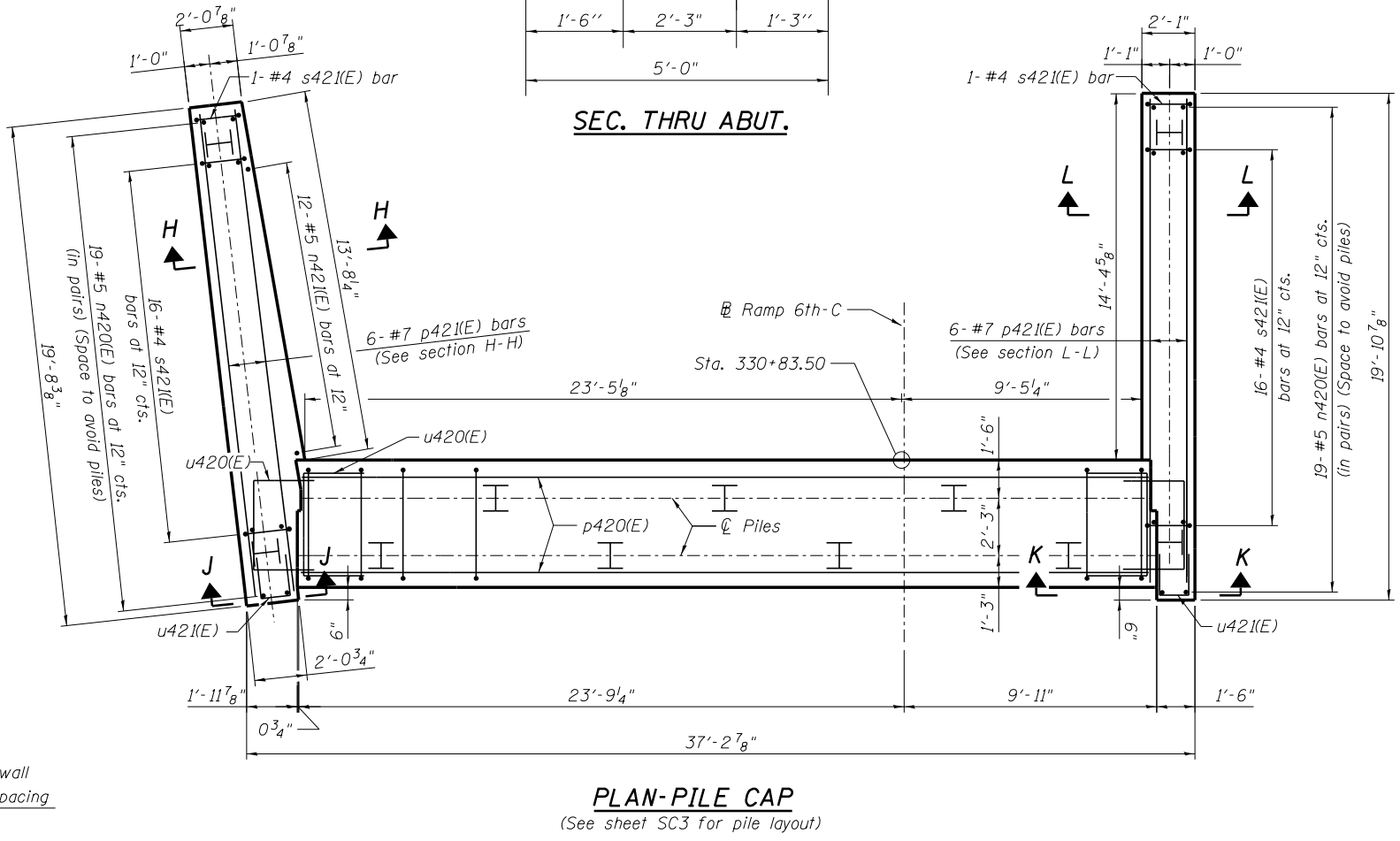
PILE DATA
 Type: HP14x73 with pile shoes
 Nominal Required Bearing: 695 kips
 Factored Resistance Available: 390 kips
 Est. Length: 36 feet
 No. Production Piles: 10
 No. Test Piles: 1
 See notes 6 and 7 on sheet SC26.

NOTES:
 1. See sheet SC26 for Sections K-K, L-L, H-H, and J-J.
 2. See sheet SC26 for additional notes.
 3. Factored Resistance Available accounts for the effects of downdrag on the pile.



ANCHOR BOLT LAYOUT

TOP VIEW



PLAN-PILE CAP

(See sheet SC3 for pile layout)

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USER NAME = ksnider	DESIGNED - DTS	REVISED -
PLOT SCALE =	CHECKED - AJK	REVISED -
PLOT DATE = 1/18/2017	DRAWN - JDS	REVISED -
	CHECKED - AJK	REVISED -

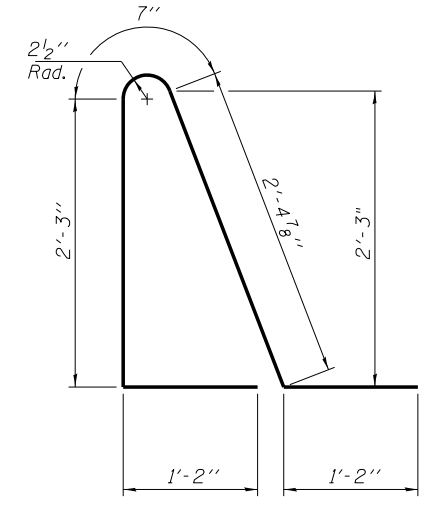
**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**ABUTMENT LAYOUT
 STRUCTURE NO. 081-0186 RAMP 6TH-C**

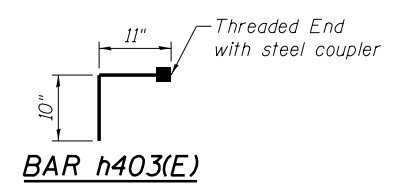
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			CONTRACT NO. 64C08	
ILLINOIS FED. AID PROJECT				

SHEET NO. SC25 OF SC39 SHEETS

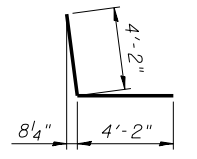
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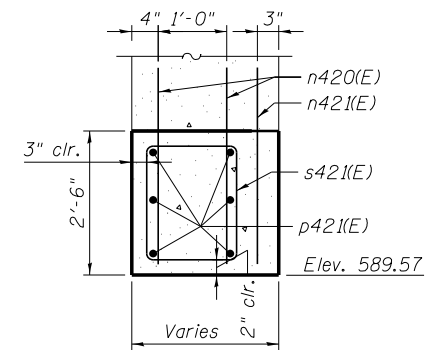
BAR d420(E)



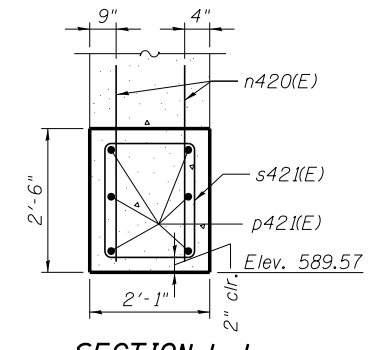
BAR h403(E)



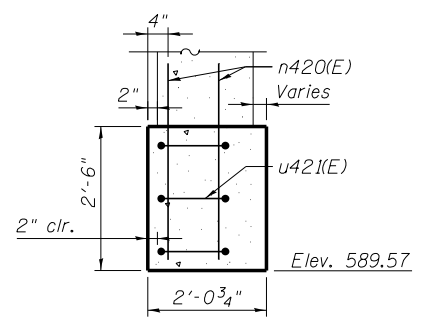
BAR h423(E)



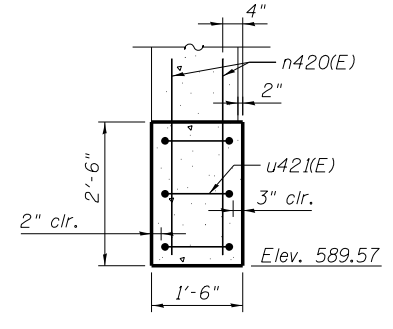
SECTION H-H



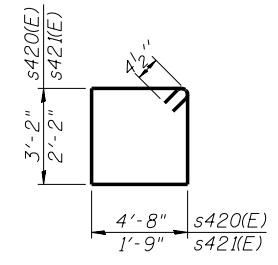
SECTION L-L



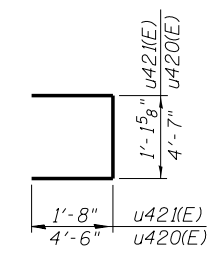
SECTION J-J



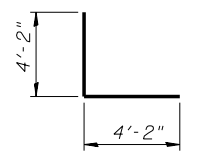
SECTION K-K



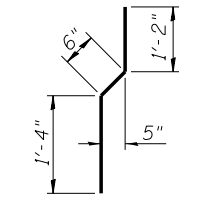
BARS s420(E) & s421(E)



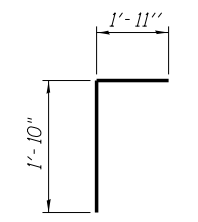
BAR u421(E) & u420(E)



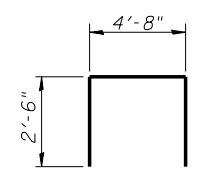
BARS h421(E)



BAR v421(E)



BAR v401(E)



BAR s422(E)

ABUTMENT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d420(E)	4	#5	7'-7"	└─┘
h403(E)	16	#5	1'-9"	└─┘
h420(E)	5	#6	33'-4"	└─┘
h421(E)	2	#5	8'-4"	└─┘
h422(E)	12	#5	33'-3"	└─┘
h423(E)	2	#5	8'-4"	└─┘
n420(E)	76	#5	4'-8"	└─┘
n421(E)	12	#5	9'-6"	└─┘
p420(E)	10	#7	33'-4"	└─┘
p421(E)	12	#7	19'-3"	└─┘
p422(E)	8	#7	10'-9"	└─┘
p423(E)	4	#7	7'-6"	└─┘
s420(E)	38	#4	16'-5"	└─┘
s421(E)	34	#4	8'-7"	└─┘
s422(E)	26	#4	9'-8"	└─┘
u420(E)	9	#6	13'-7"	└─┘
u421(E)	6	#6	4'-6"	└─┘
v401(E)	34	#5	3'-9"	└─┘
v420(E)	34	#5	10'-5"	└─┘
v421(E)	34	#4	3'-0"	└─┘
v422(E)	34	#6	9'-1"	└─┘
Pile Shoes			Each	11
Concrete Structures			Cu. Yd.	52.8
Reinforcement Bars, Epoxy Coated			Pound	4,680
Furnishing Steel Piles HP14x73			Foot	360
Driving Piles			Foot	360
Concrete Sealer			Sq. Ft.	510
Test Pile Steel HP14x73			Each	1

NOTES:

- Hatched area to be poured after superstructure false work has been removed. Quantity of concrete included with Concrete Superstructure.
- Space reinforcement in cap to miss anchor bolts.
- Pour steps monolithically with cap.
- See sheet SC27 thru SC31 for maskwall details.
- See S.N. 081-6012 for MSE Wall details.
- Piles shall be driven prior to placement of reinforced soil mass.

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FILE NAME = 0810186-AB323-026-Abutment_Details.dgn	USER NAME = ksnider	DESIGNED - JDS	REVISED -
MODEL: Default	PLOT SCALE =	CHECKED - AJK	REVISED -
	PLOT DATE = 1/18/2017	DRAWN - KMS	REVISED -
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**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**ABUTMENT DETAILS
 STRUCTURE NO. 081-0186 RAMP 6TH-C**

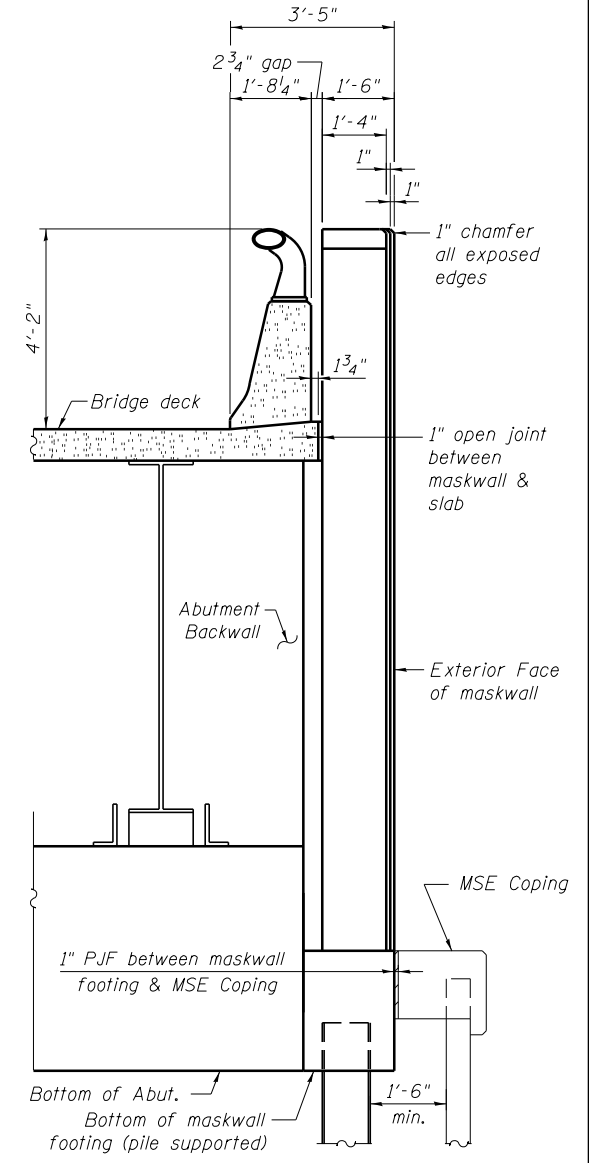
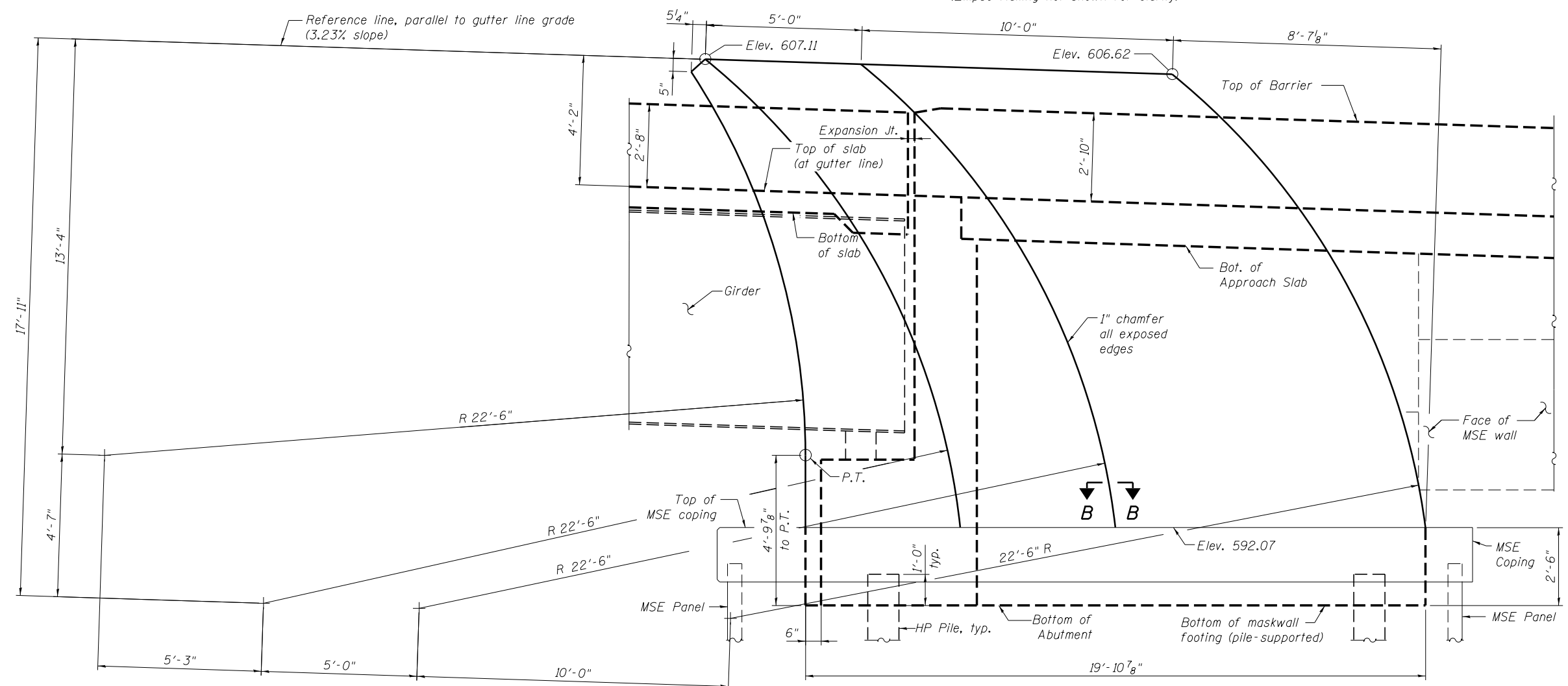
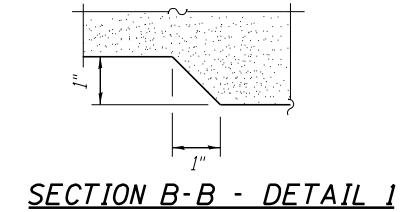
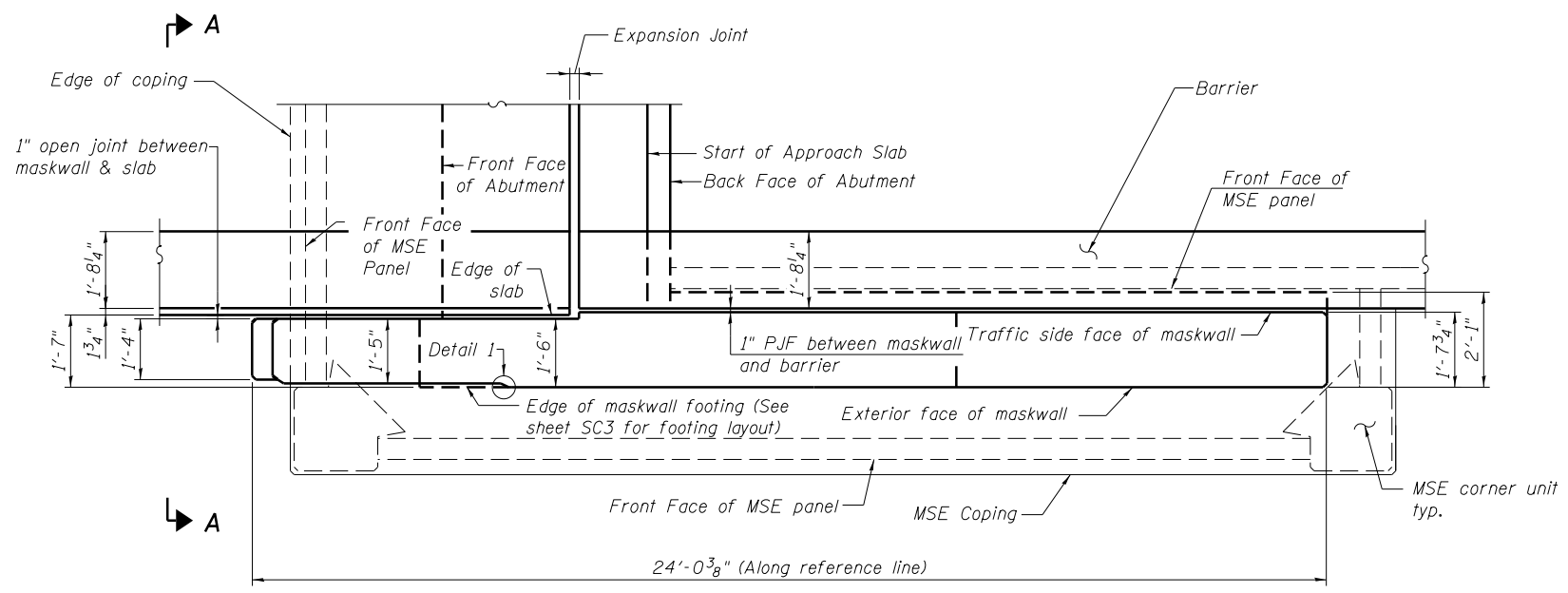
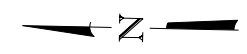
SHEET NO. SC26 OF SC39 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1HVBR	ROCK ISLAND	1504	1053
ILLINOIS FED. AID PROJECT			CONTRACT NO. 64C08	

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NOTES:

1. Top of maskwall shall be parallel to the longitudinal grade of the roadway and any adjacent barrier.
2. P.T. denotes Point of Tangent for curved face of northern edge only.
3. See S.N. 081-6019 Plan Set, for MSE wall details.



ELEVATION
(Ellipse Railing not shown for clarity)

VIEW A-A

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FILE NAME = 0810186-08323-027-West Maskwall Details 1 of 2.dgn	USER NAME = ksnyder	DESIGNED - DTS	REVISED -
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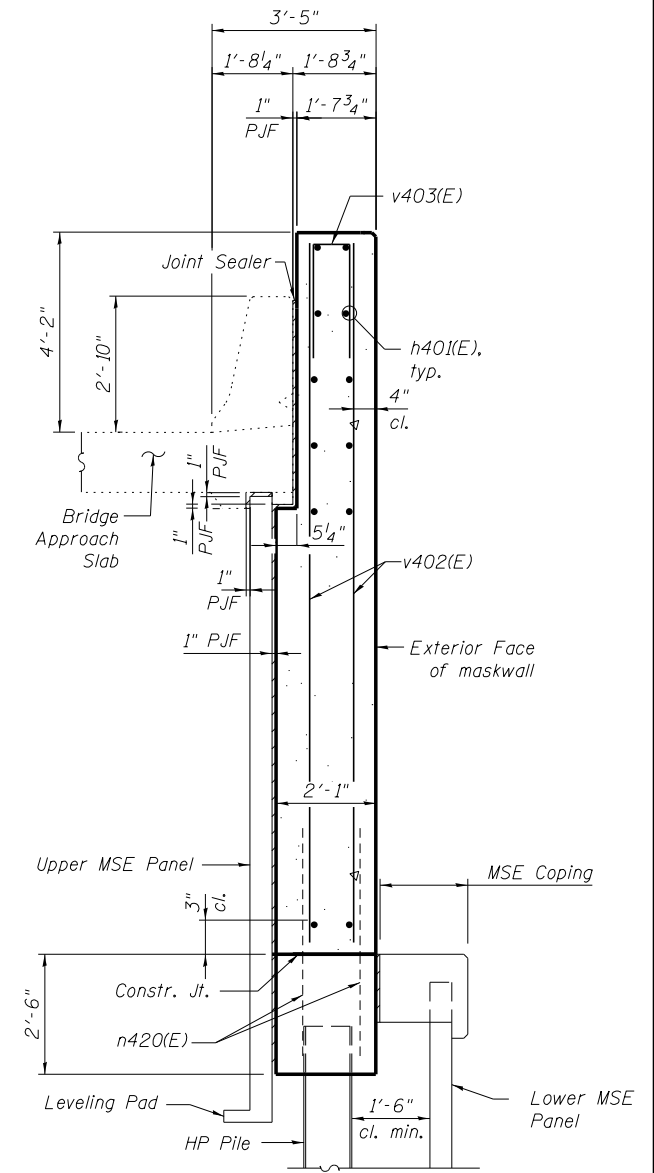
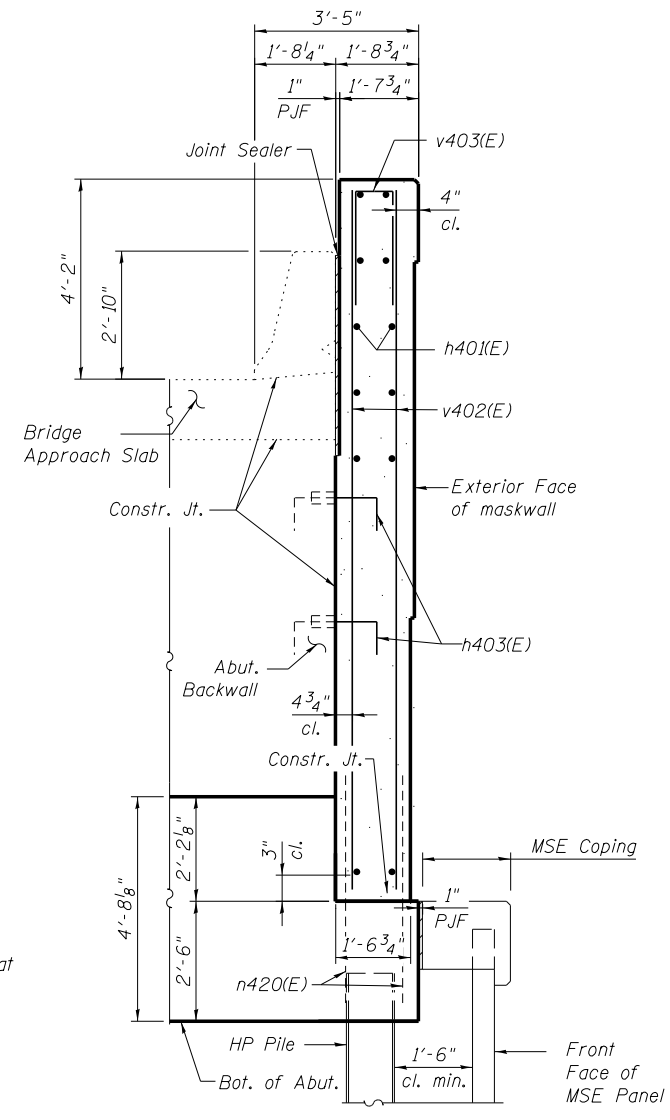
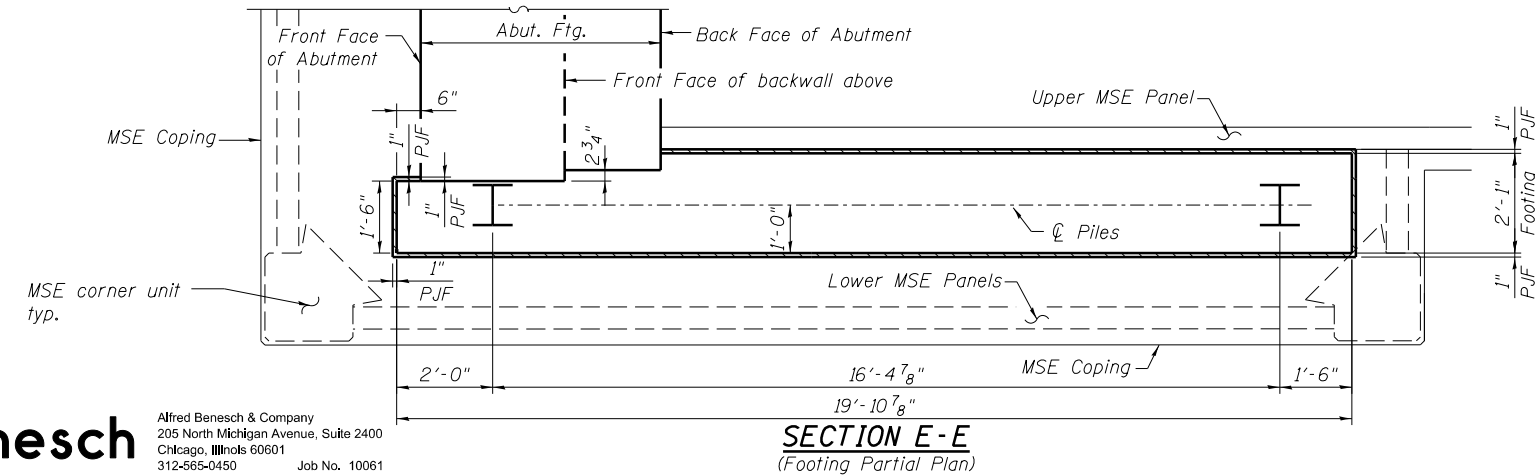
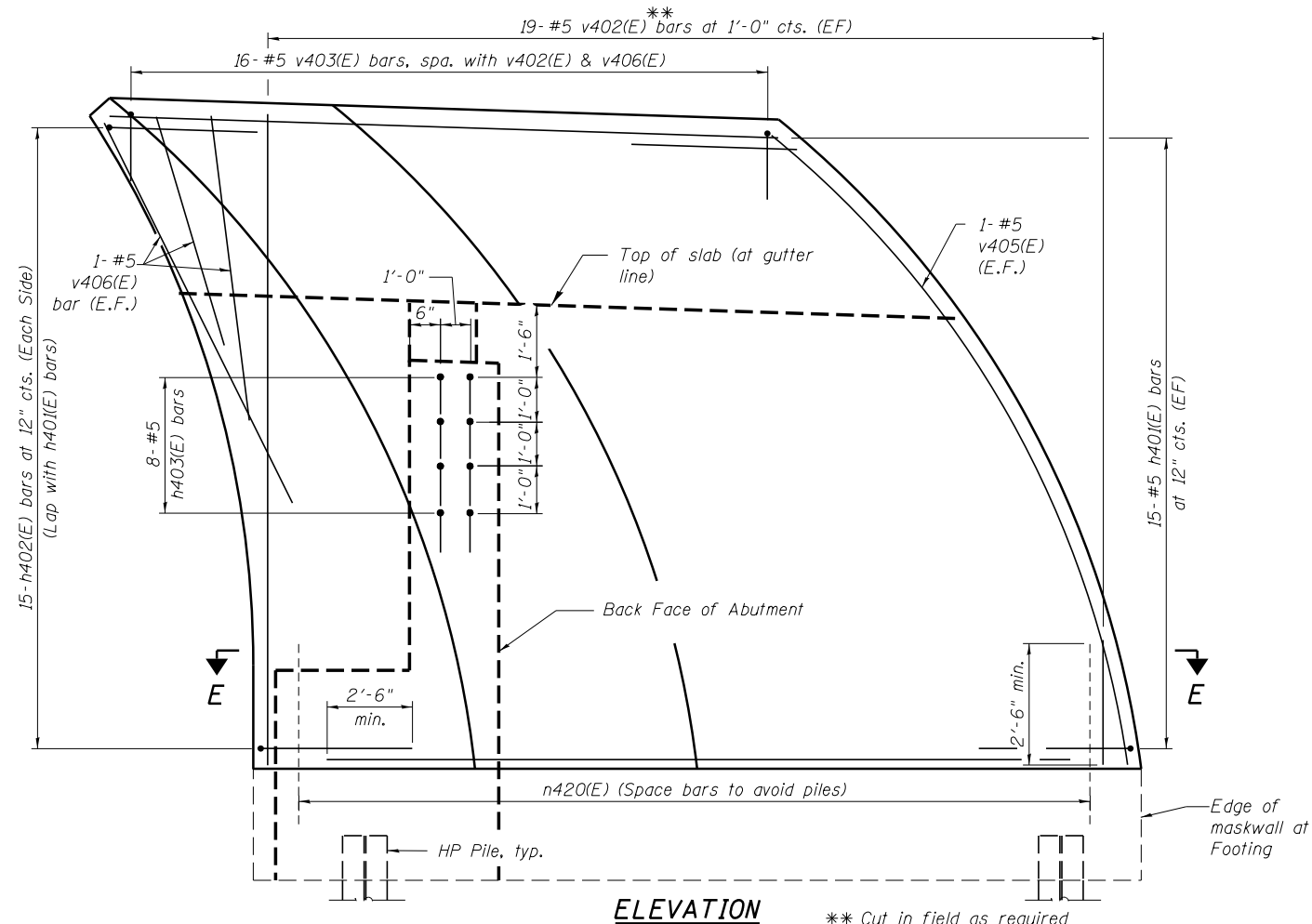
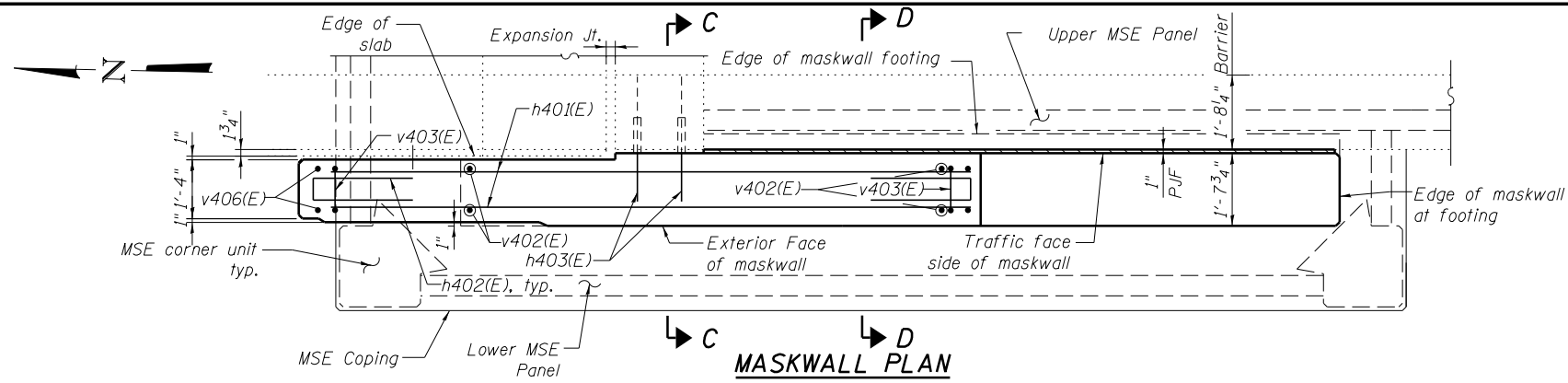
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**WEST MASKWALL DETAILS (1 OF 2)
STRUCTURE NO. 081-0186 RAMP 6TH-C**

SHEET NO. SC27 OF SC39 SHEETS

F.A.I. RTE. 74	SECTION 81-1HVBR	COUNTY ROCK ISLAND	TOTAL SHEETS 1504	SHEET NO. 1054
CONTRACT NO. 64C08			ILLINOIS FED. AID PROJECT	

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SECTION C-C

SECTION D-D

- NOTES:**
- Two inch clear concrete cover unless noted otherwise.
 - The joint sealer shall be light gray nonsag latex caulking sealer marketed for outdoor use. Cost of the joint sealer shall be included with concrete structures.
 - See sheet SC25 & SC26, for maskwall footing bar detailing.
 - When exterior face of barrier is exposed, use rubbed finish same as maskwall.
 - See S.N. 081-6019 Plan Set, for MSE wall details.

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FILE NAME = 0810186-08323-028-West Maskwall Details 2 of 2.dgn	USER NAME = ksnider	DESIGNED - DTS	REVISD -
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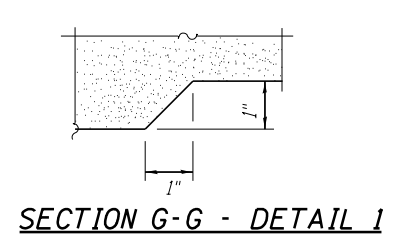
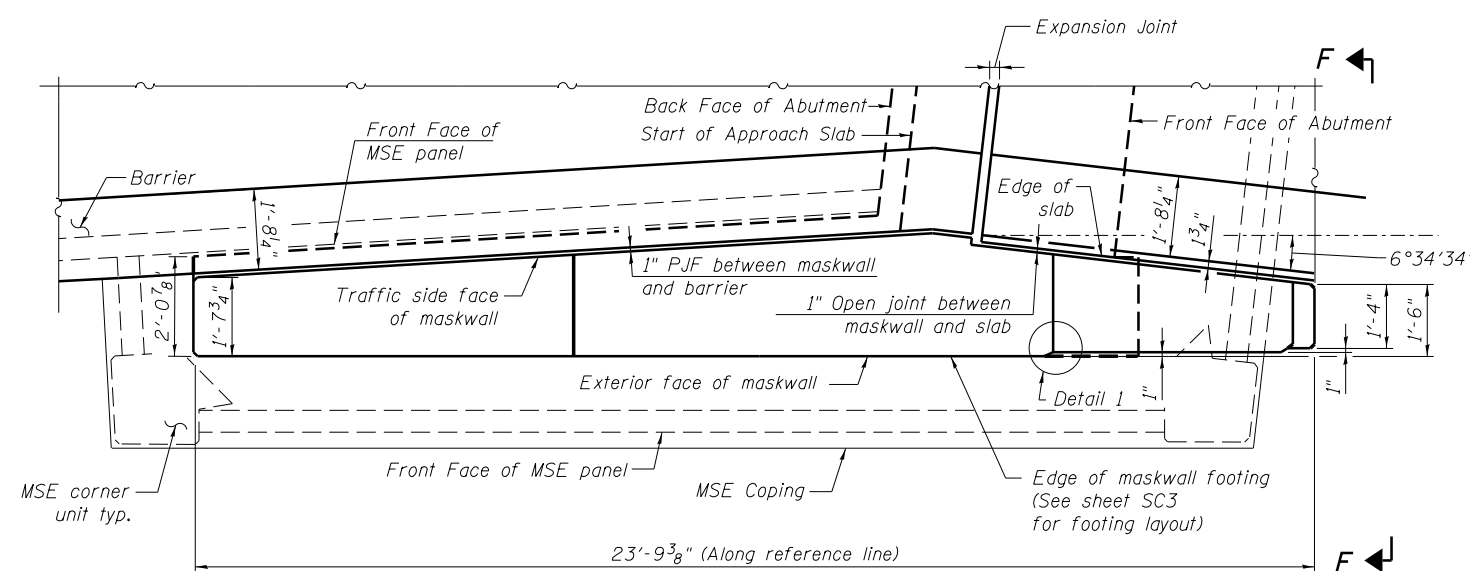
**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**WEST MASKWALL DETAILS (2 OF 2)
 STRUCTURE NO. 081-0186 RAMP 6TH-C**

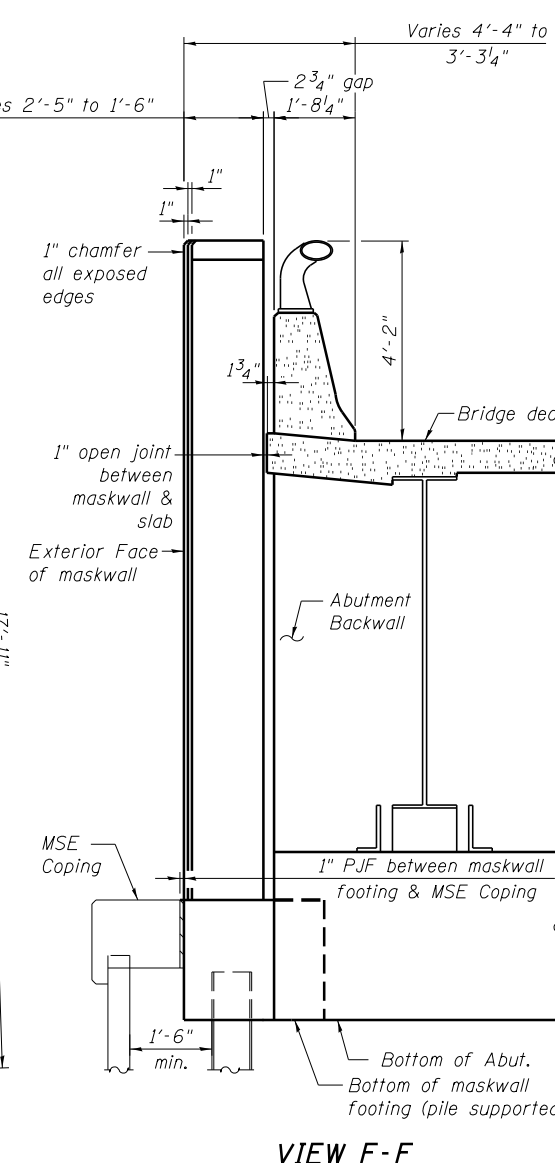
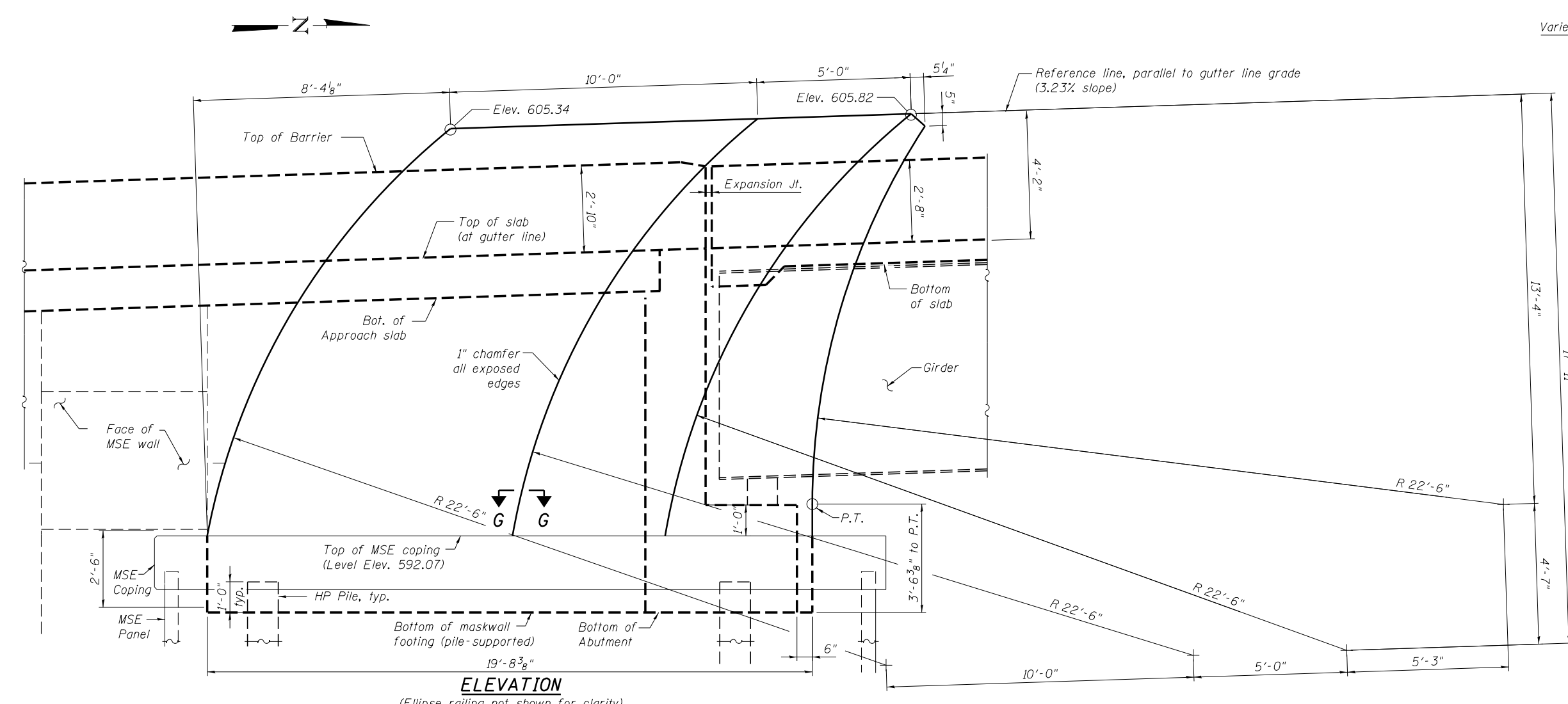
SHEET NO. SC28 OF SC39 SHEETS

F.A.I. R.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1HVBR	ROCK ISLAND	1504	1055
ILLINOIS FED. AID PROJECT			CONTRACT NO. 64C08	

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- NOTES:**
1. Top of maskwall shall be parallel to the longitudinal grade of the roadway and any adjacent barrier.
 2. P.T. denotes Point of Tangent for curved northern edge only.
 3. For MSE wall details, see plans for S.N. 081-6019.



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FILE NAME = 0810186-08323-029-East Maskwall Details 1 of 2.dgn	USER NAME = ksnider	DESIGNED - DTS	REVISED -
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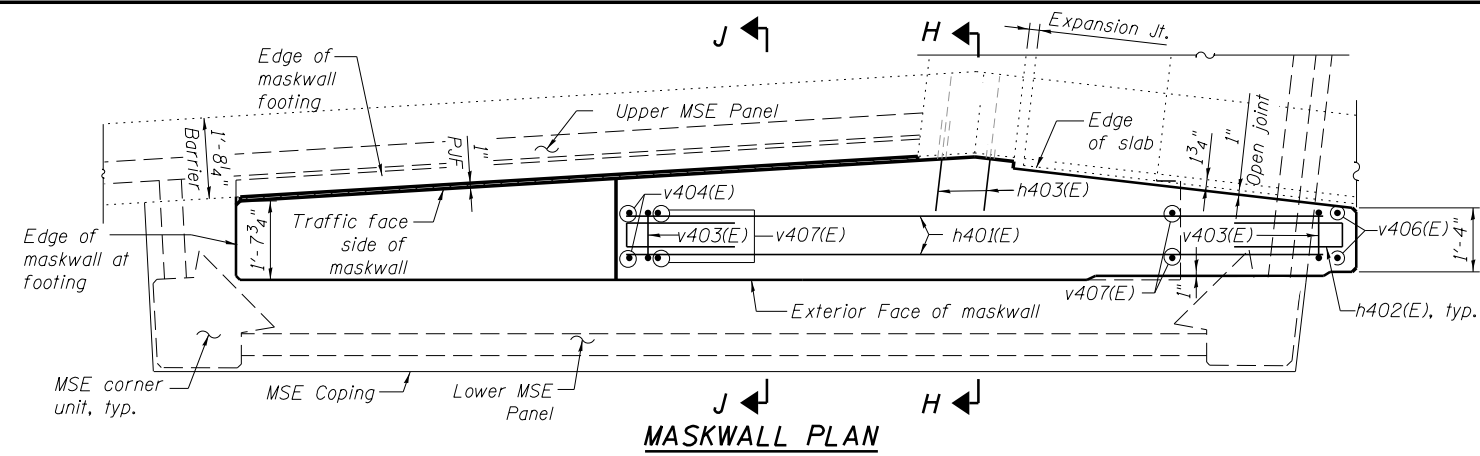
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**EAST MASKWALL DETAILS (1 OF 2)
STRUCTURE NO. 081-0186 RAMP 6TH-C**

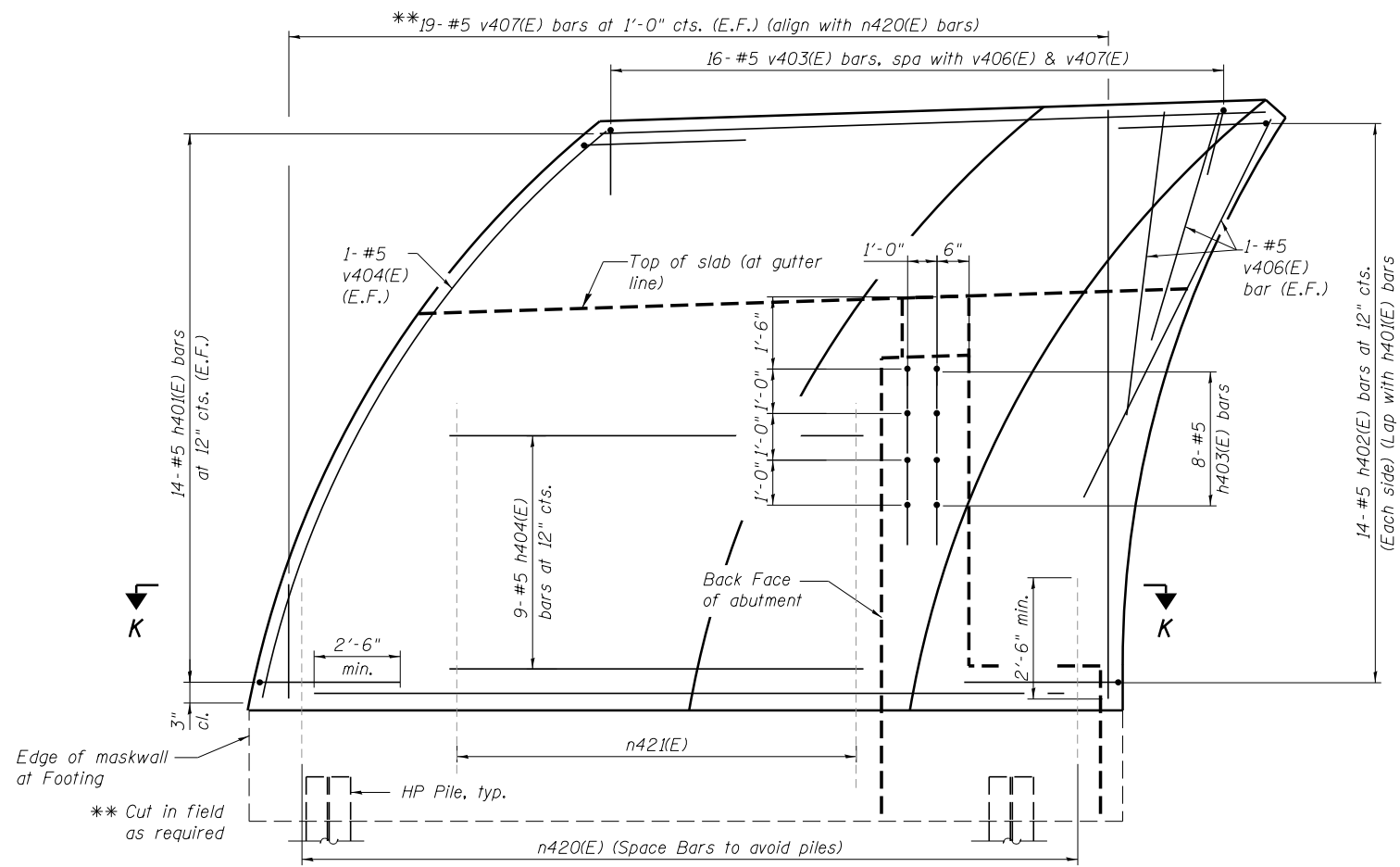
SHEET NO. SC29 OF SC39 SHEETS

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			CONTRACT NO. 64C08	
ILLINOIS FED. AID PROJECT				

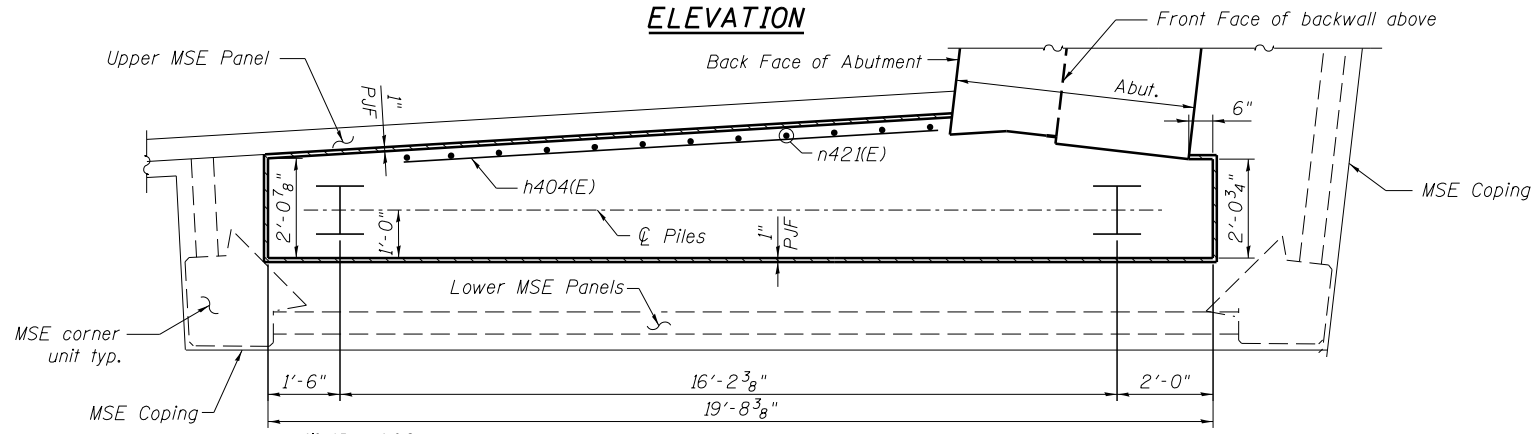
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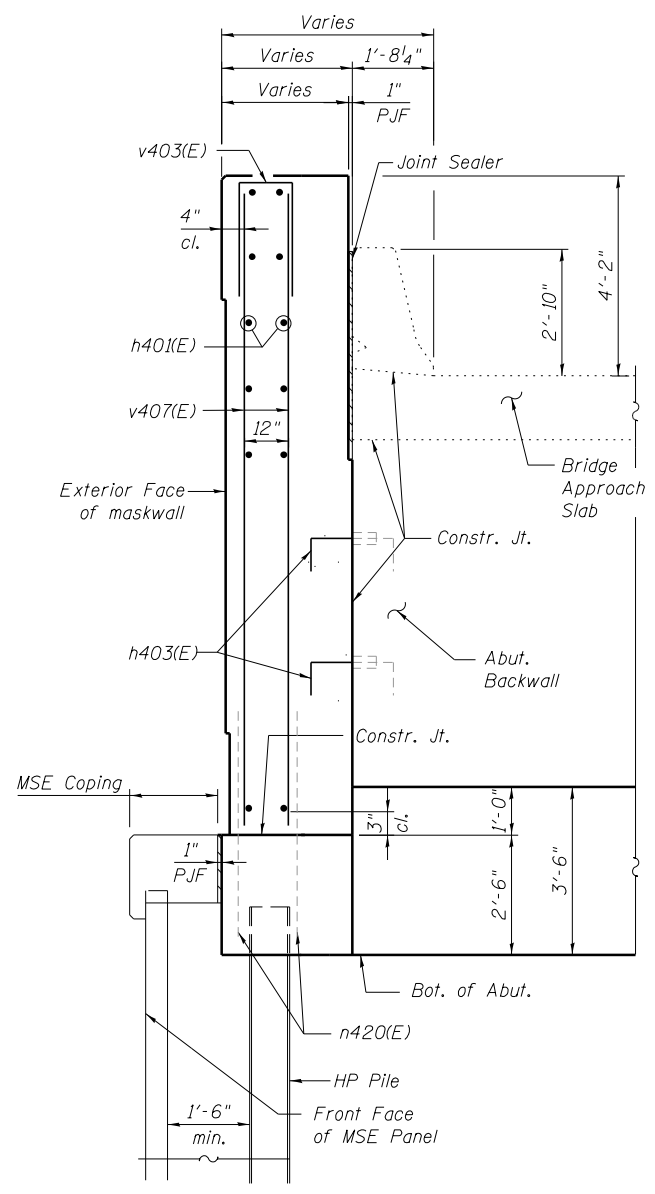
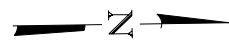
MASKWALL PLAN



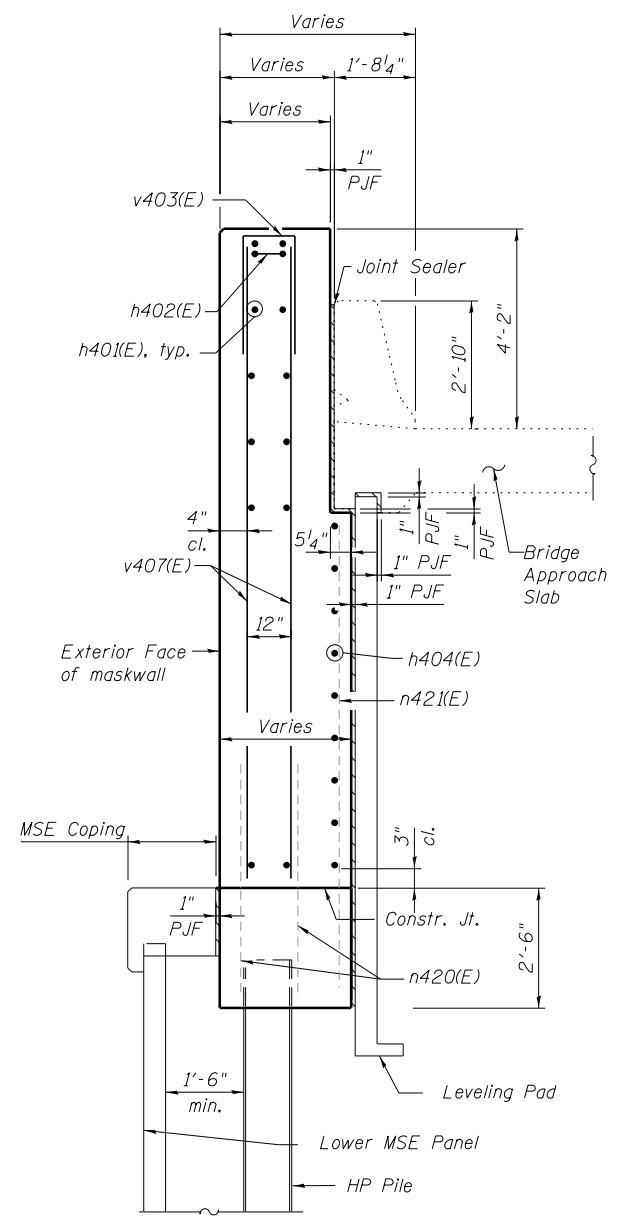
ELEVATION



**SECTION K-K
(Footing Partial Plan)**



SECTION H-H



SECTION J-J

- NOTES:**
- Two inch clear concrete cover unless noted otherwise.
 - The joint sealer shall be light gray nonsag latex caulking sealer marketed for outdoor use. Cost of the joint sealer shall be included with concrete structure.
 - See sheet SC25 & SC26, for maskwall footing bar detailing.
 - If exterior face of barrier is exposed, rubbed finish same as maskwall.

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FILE NAME = 0810186-08323-030-East Maskwall Details 2 of 2.dgn
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USER NAME = ksnider
 DESIGNED - DTS
 CHECKED - AJK
 PLOT SCALE =
 PLOT DATE = 1/18/2017

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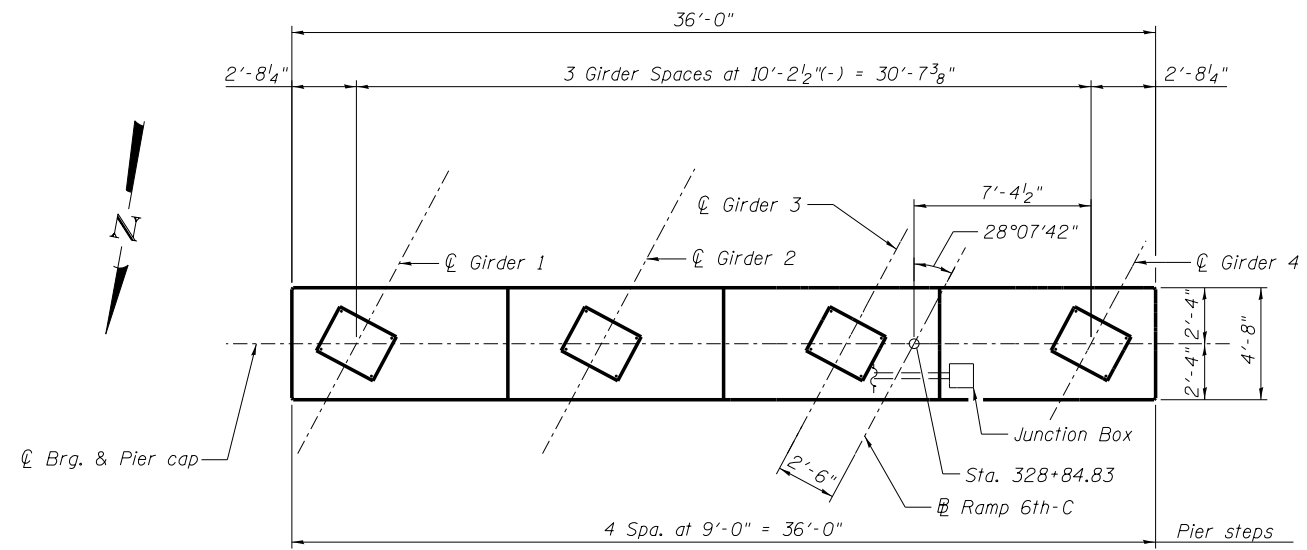
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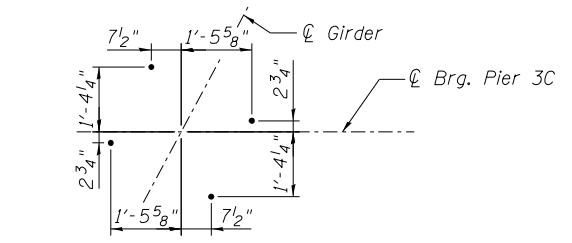
**EAST MASKWALL DETAILS (2 OF 2)
 STRUCTURE NO. 081-0186 RAMP 6TH-C**

SHEET NO. SC30 OF SC39 SHEETS

F.A.I. RT.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1HVBR	ROCK ISLAND	1504	1057
ILLINOIS FED. AID PROJECT			CONTRACT NO. 64C08	



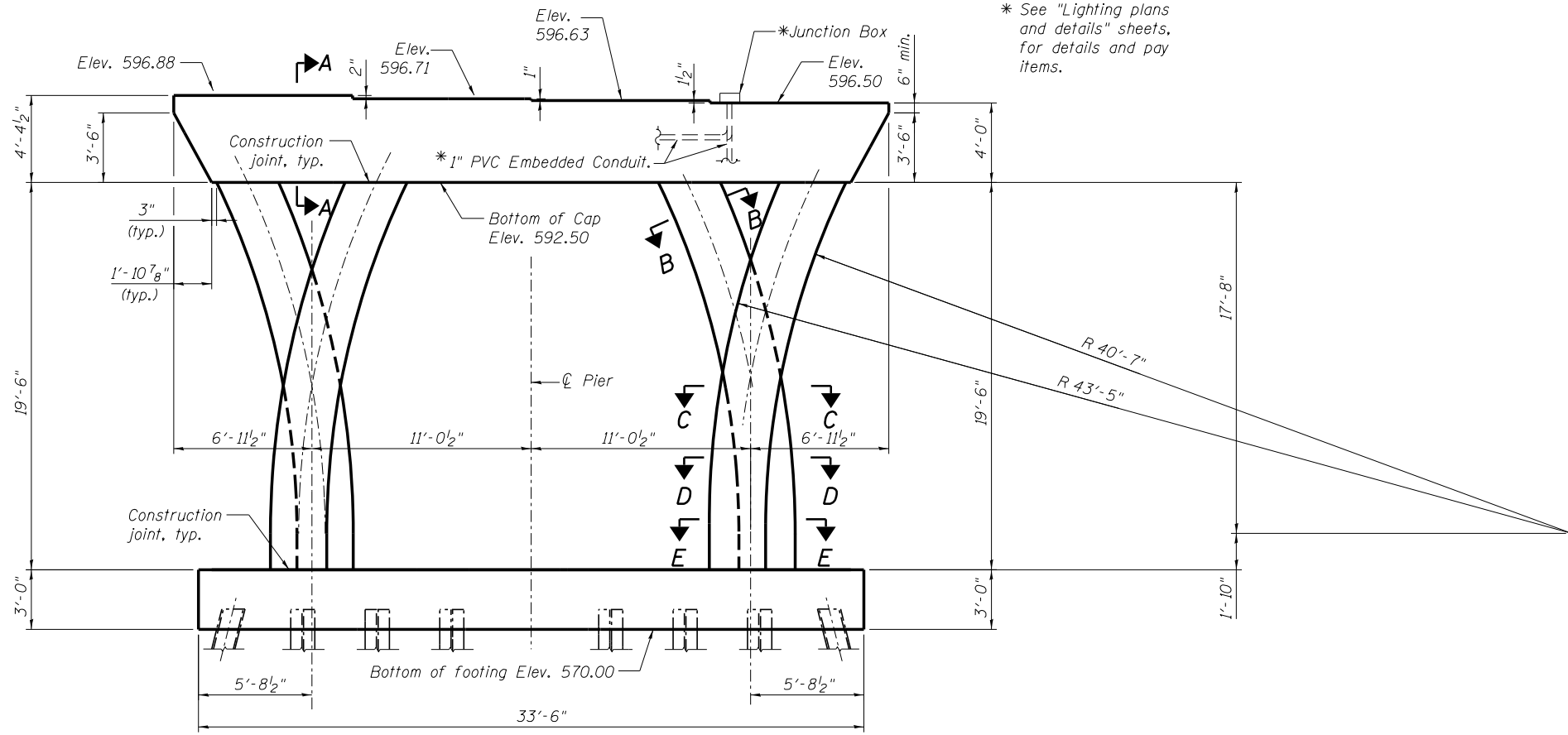
PLAN OF PIER CAP



ANCHOR BOLT LAYOUT

PILE DATA

Type: HP14x73 with pile shoes
 Nominal Required Bearing: 695 kips
 Factored Resistance Available: 486 kips
 Est. Length: 19 feet
 No. Production Piles: 15
 No. Test Piles: 1



PIER 3C ELEVATION
(Looking South)

* See "Lighting plans and details" sheets, for details and pay items.

PIER NOTES:

1. See sheet SC35 for pier concrete finishing notes.
2. For sections A-A, B-B, C-C, D-D, & E-E, See sheet SC34.
3. The minimum clear distance from the face of concrete to near reinforcing bar is 2" unless noted otherwise or shown.
4. All exposed corners, 90 degrees or sharper shall be filleted with a 3/4" dressed and beveled strip unless noted otherwise.
5. Space reinforcement in cap to miss anchor bolts.
6. The use of steel forms is required for the forming of all pier concrete surfaces from the tops of footings to the bottom of pier cap beams, including stem and pier columns. Use of medium-density overlaid (MDO) or high-density overlaid (HDO) plywood faced forms is allowed for forming of the pier cap beam. Plain plywood-faced forms will not be allowed for any portion of the pier column or cap surfaces.
7. The Contractor shall use self-consolidating concrete (SCC) in all the pier columns. The self-consolidating concrete shall conform to all requirements as specified in Section 1020 of the Standard Specifications. Cost of SCC shall be included with the cost of Concrete Structures.
8. The contractor shall provide adequate forms to contain the increased hydraulic pressure of the self consolidating concrete.
9. The tremie tube shall be in place prior to placing formwork.
10. See foundation layout on sheet SC3 for pier layout.

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 312-565-0450 Job No. 10061

FILE NAME = 0810186-08323-032-Pier 3C Layout.dgn	USER NAME = ksnider	DESIGNED - AWH	REVISED -
MODEL: Default	PLOT SCALE =	CHECKED - AJK	REVISED -
	PLOT DATE = 1/18/2017	DRAWN - KMS	REVISED -
		CHECKED - AJK	REVISED -

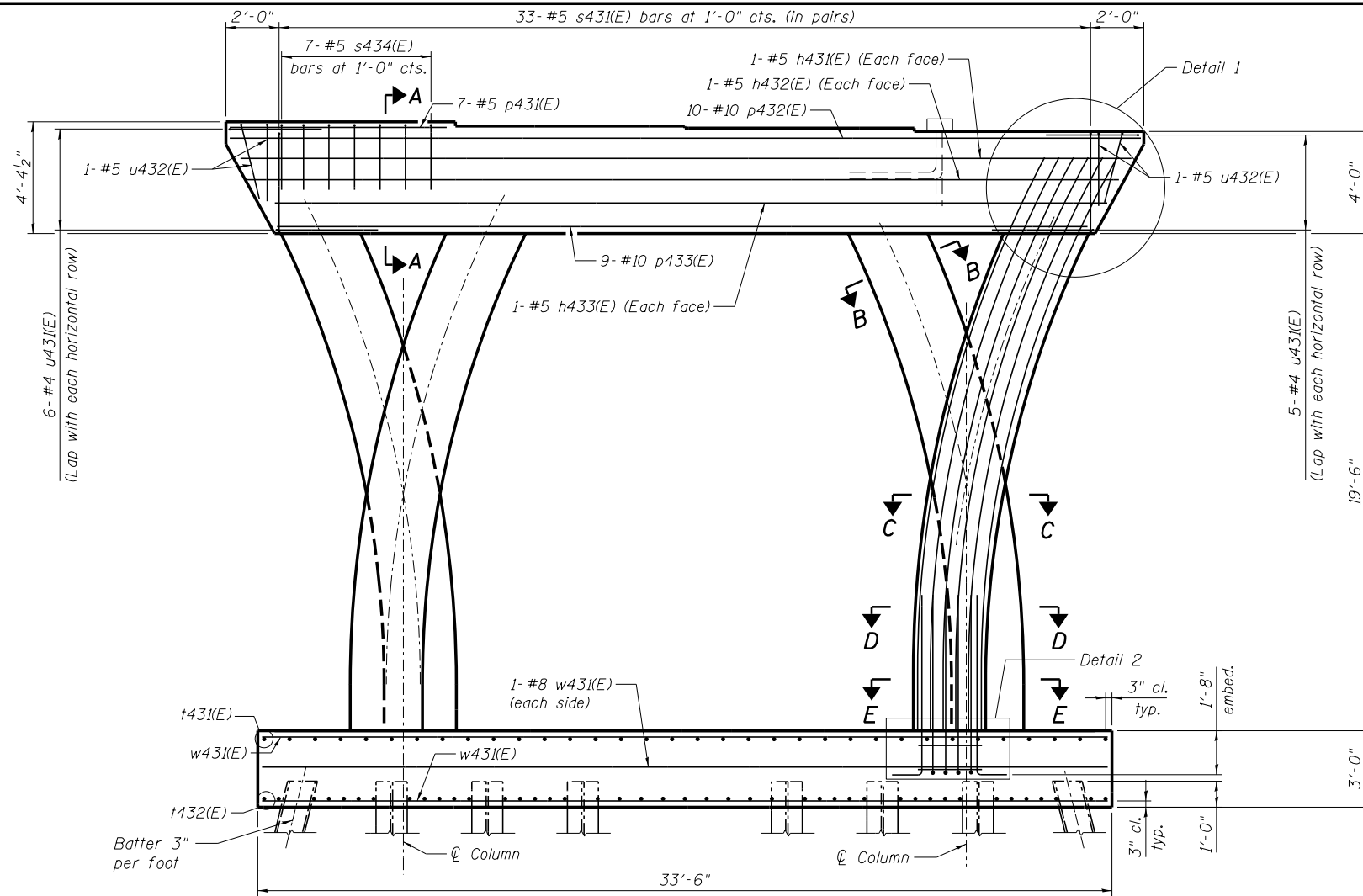
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 3C LAYOUT
STRUCTURE NO. 081-0186 RAMP 6TH-C

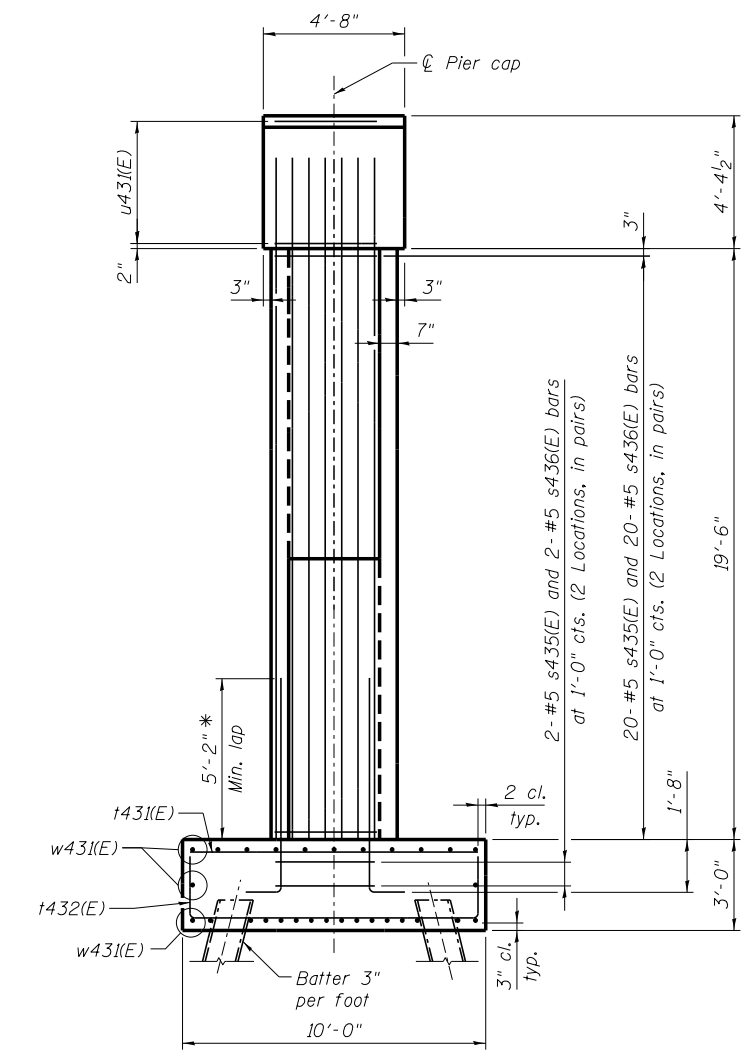
SHEET NO. SC32 OF SC39 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1HVBR	ROCK ISLAND	1504	1059
ILLINOIS FED. AID PROJECT			CONTRACT NO. 64C08	

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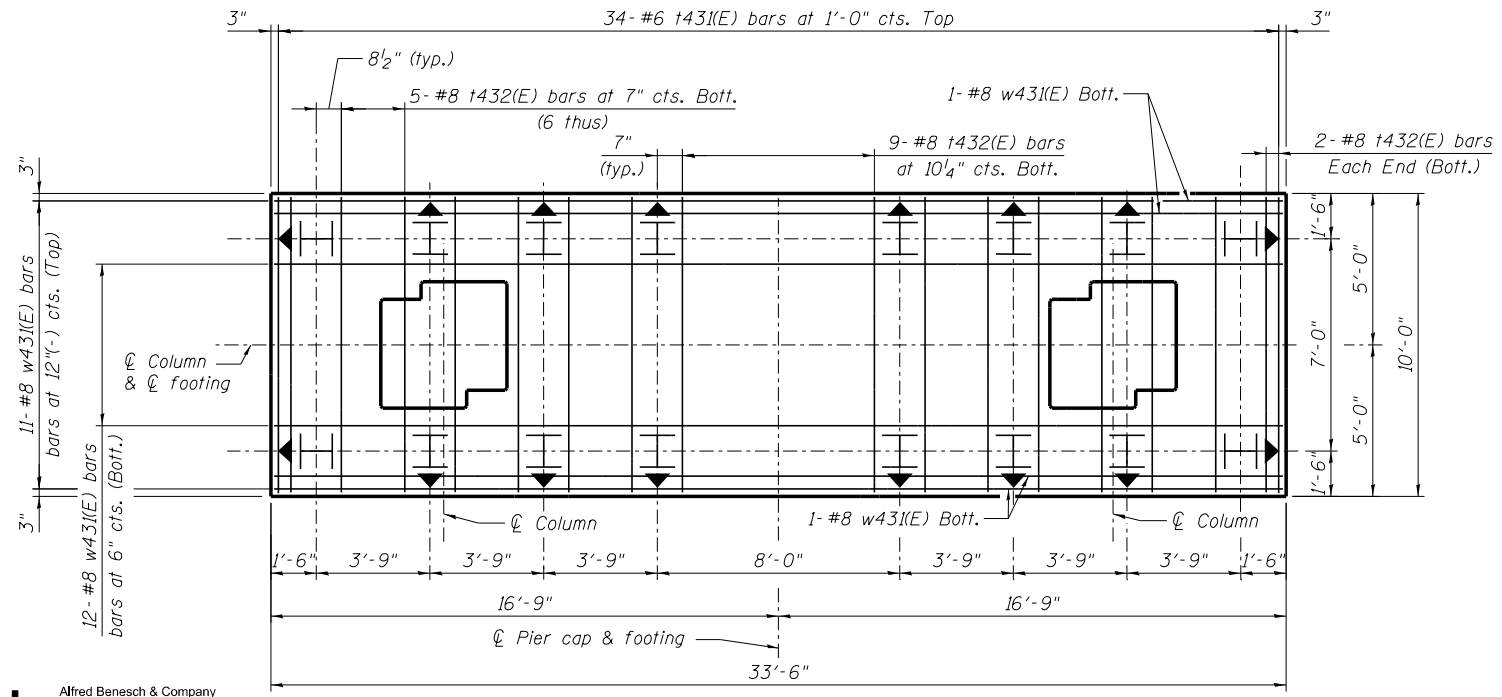


PIER 3C ELEVATION
(Looking South)

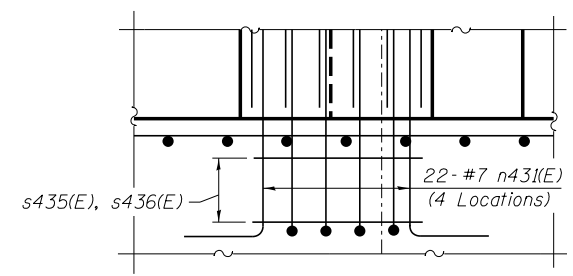


END VIEW

* Bend n431(E) bars in field to match radius of v bars



FOOTING PLAN



DETAIL 2

NOTES:

1. For Detail 1 and sections A-A, B-B, C-C, D-D, & E-E see sheet SC34.
2. For additional notes see sheet SC32.
3. See sheet SC35 for reinforcing details and bill of material.

benesch
Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10061

FILE NAME = 0810186-08323-033-Pier 3C Details.dgn
MODEL: Default

USER NAME = ksnider
DESIGNED - AWH
CHECKED - AJK
PLOT SCALE =
DRAWN - KMS
PLOT DATE = 1/18/2017
CHECKED - AJK

REVISIED -
REVISIED -
REVISIED -
REVISIED -

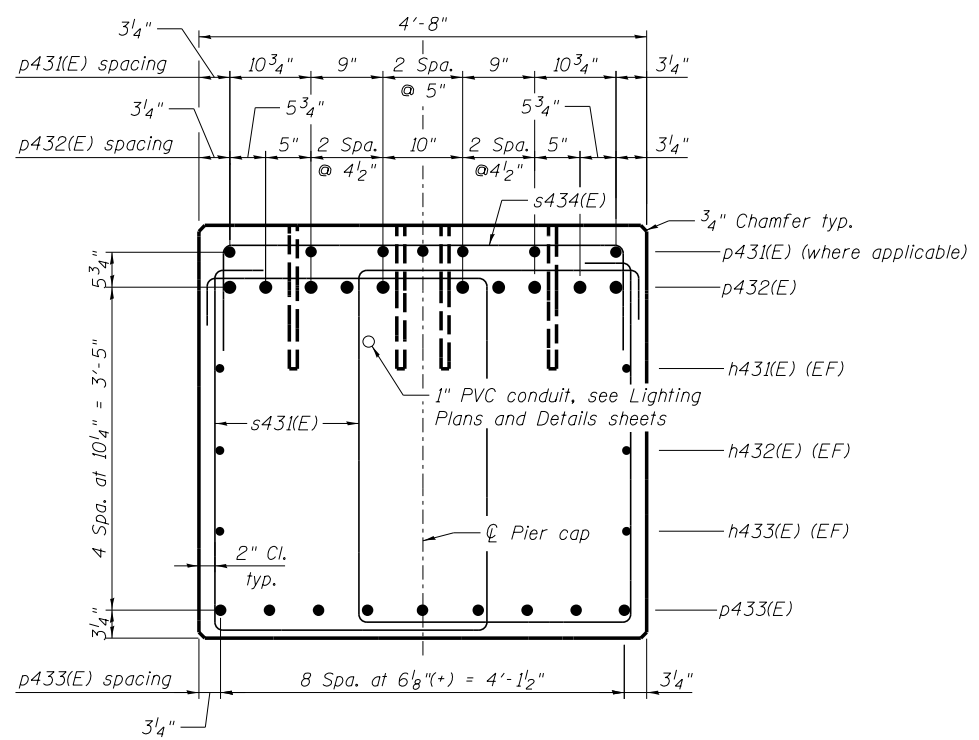
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 3C DETAILS
STRUCTURE NO. 081-0186 RAMP 6TH-C

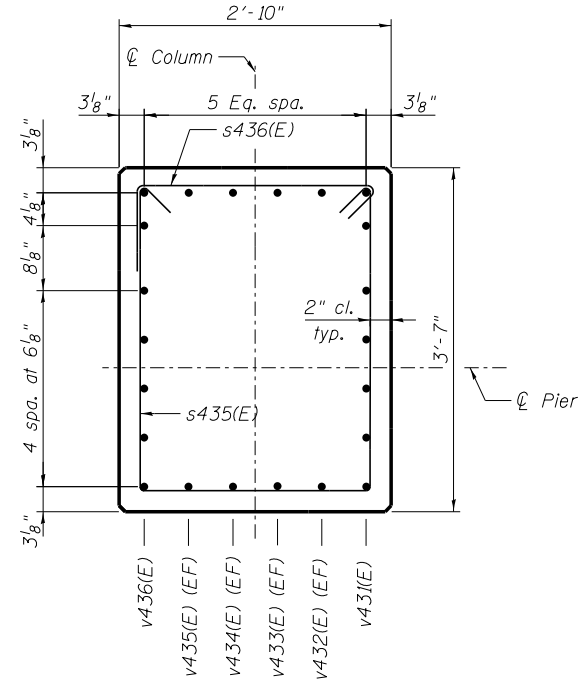
SHEET NO. SC33 OF SC39 SHEETS

F.A.I. RE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1HVBR	ROCK ISLAND	1504	1060
CONTRACT NO. 64C08				

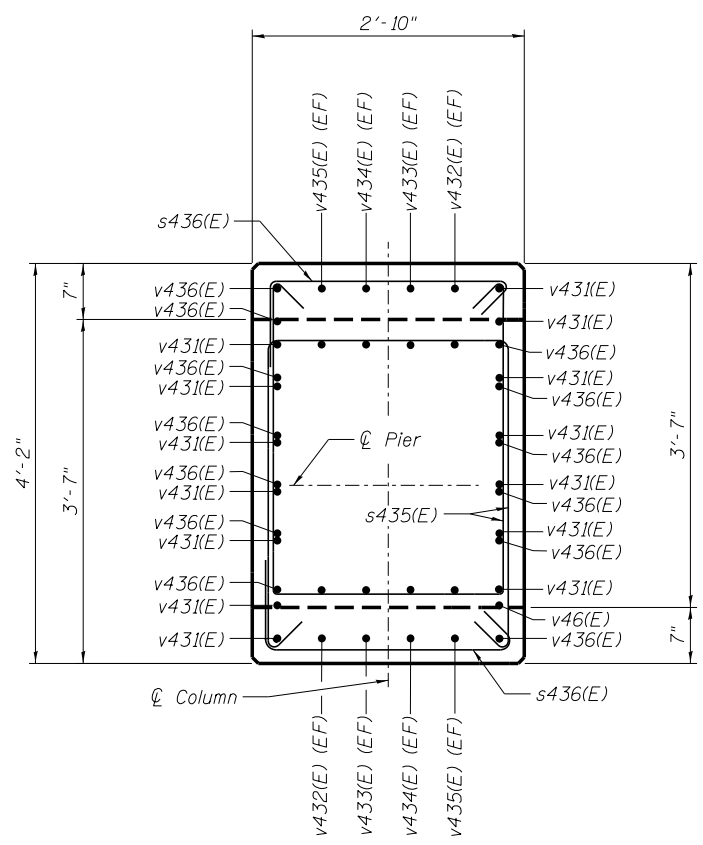
ILLINOIS FED. AID PROJECT



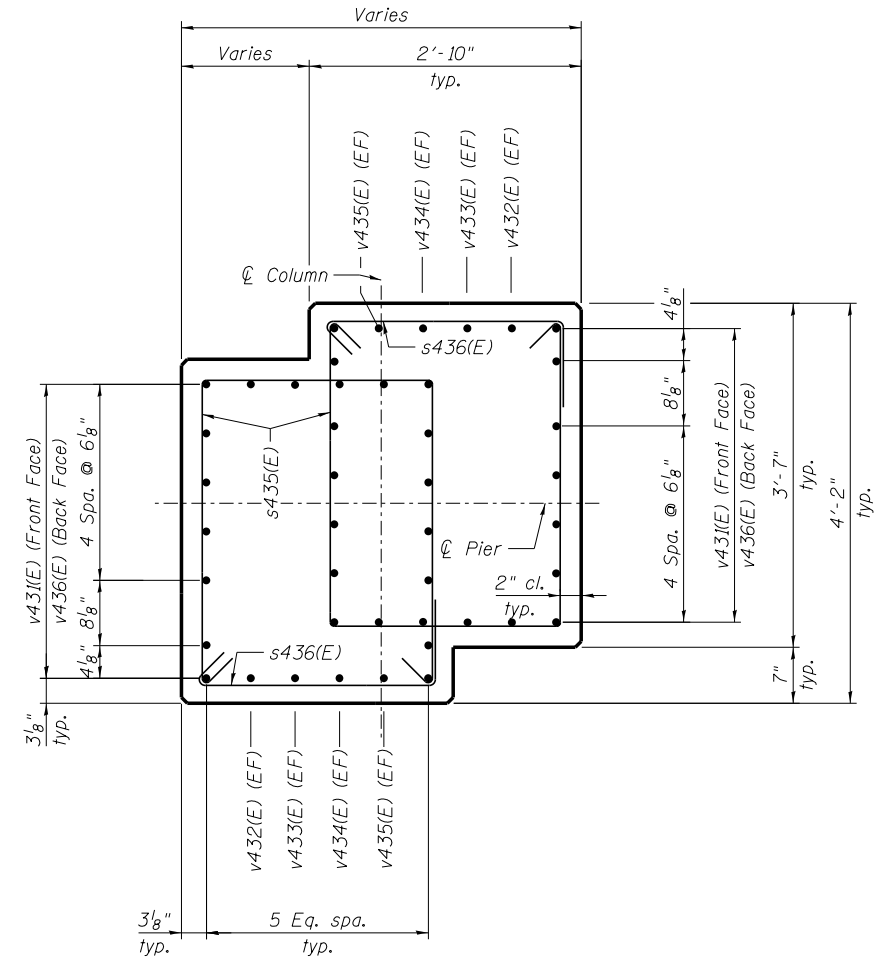
SECTION A-A



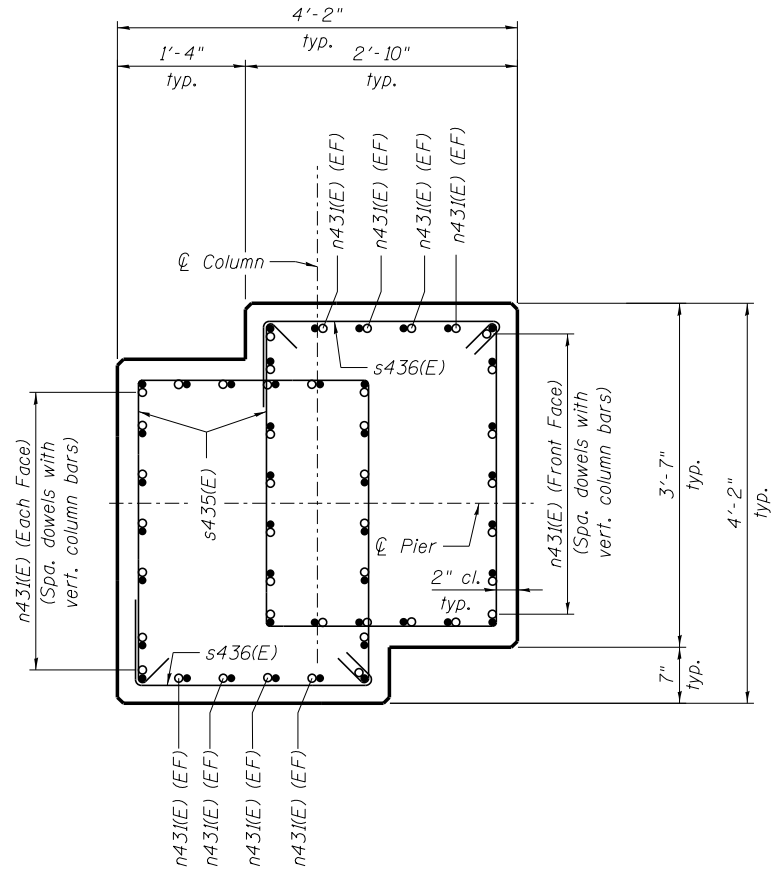
SECTION B-B



SECTION C-C

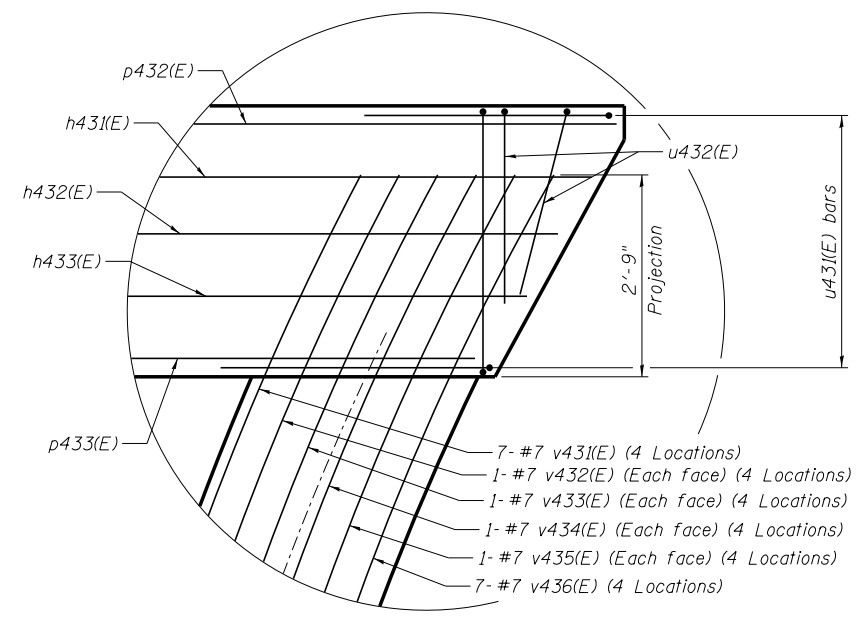


SECTION D-D



SECTION E-E

(Only dowels called out in this section for clarity. Main vertical bars same as called out and spaced in Section D-D)



DETAIL 1

NOTE:
"EF" abbreviation indicates each face or side of the indicated column reinforcement cage.



Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10061

FILE NAME = 0810186-08323-034-Pier Cross Sections and footing details.dgn
MODEL: Default

USER NAME = ksnider
PLOT SCALE =
PLOT DATE = 1/18/2017

DESIGNED - AWH
CHECKED - AJK
DRAWN - KMS
CHECKED - AJK

REVISED -
REVISED -
REVISED -
REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**PIER 3C CROSS SECTIONS
STRUCTURE NO. 081-0186 RAMP 6TH-C**

SHEET NO. SC34 OF SC39 SHEETS

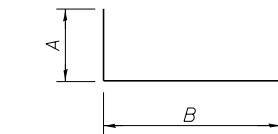
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1HVBR	ROCK ISLAND	1504	1061
			CONTRACT NO. 64C08	

ILLINOIS FED. AID PROJECT

**PIER 3C
BILL OF MATERIAL**

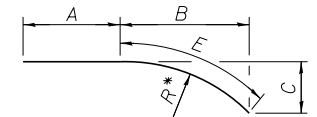
Bar	No.	Size	Length	Shape
h431(E)	2	#5	34'-10"	—
h432(E)	2	#5	34'-1'	—
h433(E)	2	#5	33'-4"	—
n431(E)	88	#7	8'-2"	L
p431(E)	7	#5	8'-8"	—
p432(E)	10	#10	35'-8"	—
p433(E)	9	#10	31'-10"	—
s431(E)	66	#5	13'-11"	□
s434(E)	7	#5	8'-4"	L
s435(E)	88	#5	9'-11"	□
s436(E)	88	#5	3'-10"	L
t431(E)	34	#6	9'-8"	—
t432(E)	43	#8	14'-8"	L
u431(E)	11	#4	8'-3"	L
u432(E)	4	#5	10'-4"	L
v431(E)	28	#7	23'-1")
v432(E)	8	#7	23'-1")
v433(E)	8	#7	23'-2")
v434(E)	8	#7	23'-2")
v435(E)	8	#7	23'-2")
v436(E)	28	#7	23'-3")
w431(E)	29	#8	33'-0"	—
Concrete Structures		Cu. Yd.	87.0	
Reinforcement Bars, Epoxy Coated		Pound	15,800	
Structure Excavation		Cu. Yd.	20	
Test Pile Steel HP 14x73		Each	1	
Furn. Steel Piles HP 14x73		Foot	285	
Driving Piles		Foot	285	
Pile Shoes		Each	16	
Concrete Sealer		Sq. Ft.	682	

BENT BAR DETAILS



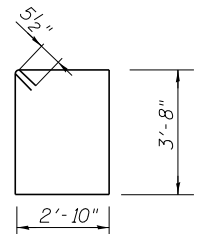
s434(E), t432(E), u431(E) & u432(E)

BAR	A	B	LENGTH
s434(E)	2'-0"	4'-4"	8'-4"
t432(E)	2'-6"	9'-8"	14'-8"
u431(E)	2'-0"	4'-3"	8'-3"
u432(E)	3'-0"	4'-4"	10'-4"

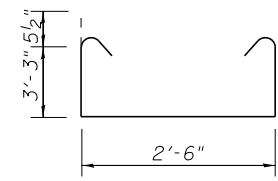


v431(E)-v436(E)

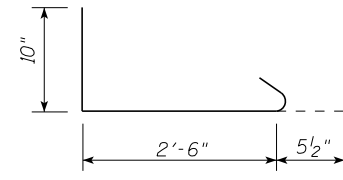
BAR	A	B	C	E	R*	LENGTH
v431(E)	1'-10"	20'-5"	5'-1 1/2"	21'-3"	43'-1 3/8"	23'-1"
v432(E)	1'-10"	20'-5"	5'-2 3/8"	21'-3"	42'-7 7/8"	23'-1"
v433(E)	1'-10"	20'-5"	5'-3 1/8"	21'-4"	42'-2 3/8"	23'-2"
v434(E)	1'-10"	20'-5"	5'-3 7/8"	21'-4"	41'-8 3/4"	23'-2"
v435(E)	1'-10"	20'-5"	5'-4 3/4"	21'-4"	41'-3 1/4"	23'-2"
v436(E)	1'-10"	20'-5"	5'-5 1/2"	21'-5"	40'-9 5/8"	23'-3"



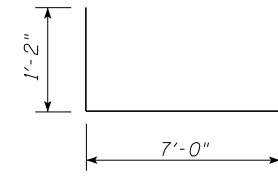
s431(E)



s435(E)



s436(E)



n431(E)

PIER CONCRETE FINISH NOTES

If form ties are used in forming the pier, arrange ties to be regularly spaced and in a consistent geometric grid pattern. Do not locate ties at edges of concrete rustucations.

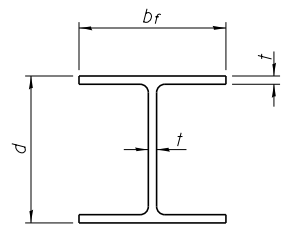
Following form removal, a rubbed surface finish in accordance with Article 503.15 (b) of the Standard Specifications shall be required but with the following additional requirements:

- Demonstrate hole and void patching operations in accordance with Article 503.15 (b) of the standard Specifications on a four foot section of vertical pier concrete located in an inconspicuous area. Begin patching demonstration by using a mortar mix comprised of 1 part white cement, 2 parts standard portland cement, 6 parts mortar sand, and water. The quantity of water used shall produce a mortar consistency as dry as possible to use effectively.
- When patching test areas have set, saturate with water and rub with a fine carborundum stone until surfaces are smooth in texture. Remove loose powder and other contaminants by rubbing with burlap and rinsing with water. After surfaces have dried, patch color and texture of surfaces will be reviewed by the engineer. Patches should match or be slightly lighter than surrounding concrete. If results are unsatisfactory, adjust patching mortar mix proportions and perform another demonstration until results are deemed satisfactory by the engineer.
- Use the patching mortar mix proportions that are approved by the engineer as a result of the satisfactory demonstration. Do not use patching mortar that is more than 1 hour old.
- Finished pier concrete shall be smooth and show no wood grain or other texture from the face of the forms used. All costs for repair or covering wood grain or other textures on these surfaces shall be the responsibility of the Contractor.

NOTE:

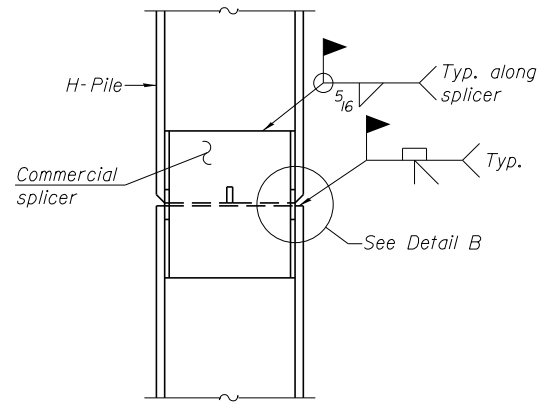
All dimensions are out to out.

R* = Inside Radius.

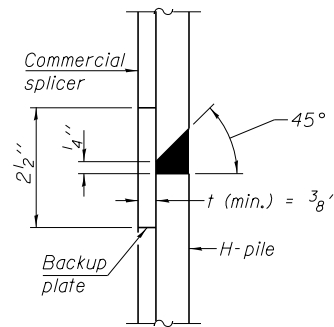


STEEL PILE TABLE

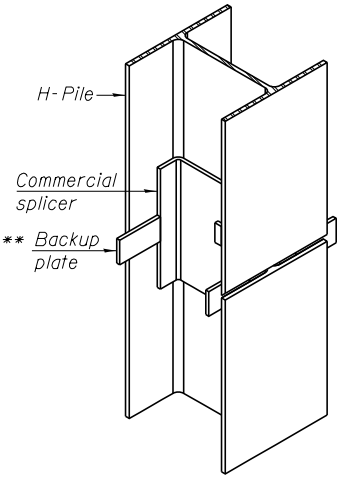
Designation	Depth d	Flange width br	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 3/4"	12"	7/16"	24"
HP 10x57	10"	10 1/4"	9/16"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP 8x36	8"	8 1/8"	7/16"	18"



ELEVATION

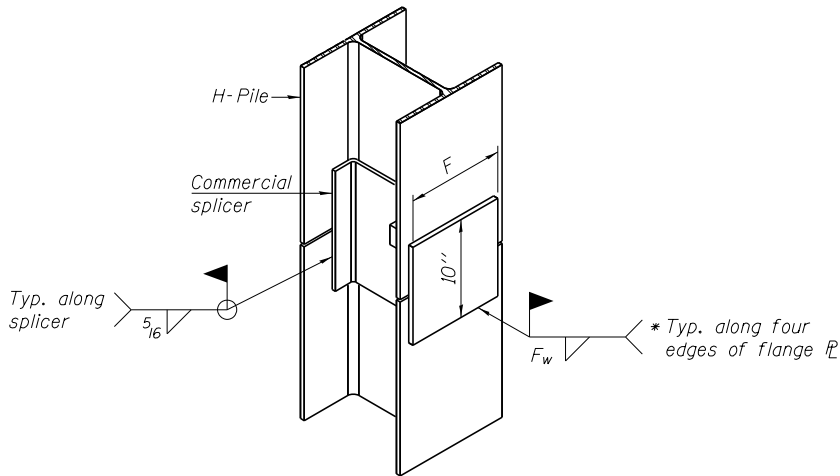


DETAIL "B"



ISOMETRIC VIEW

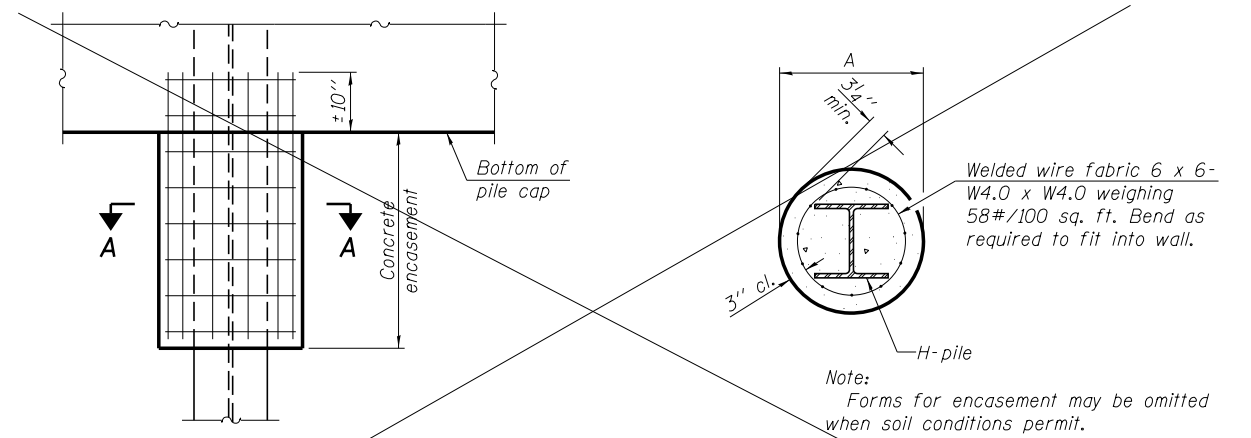
WELDED COMMERCIAL SPLICE



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

- * Interrupt welds 1/4" from end of web and/or each flange.
- ** Remove portions of backup plates that extend outside the flanges.
- *** Weld size per pile shoe manufacturer (5/16" min.).

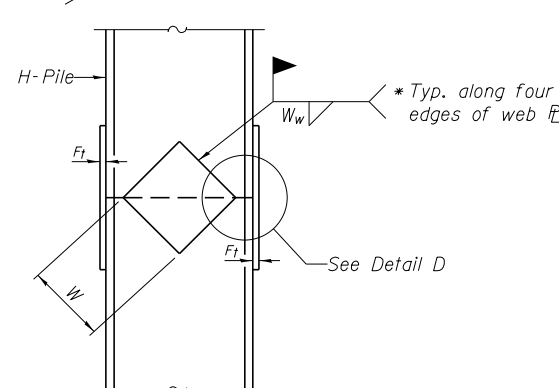


ELEVATION

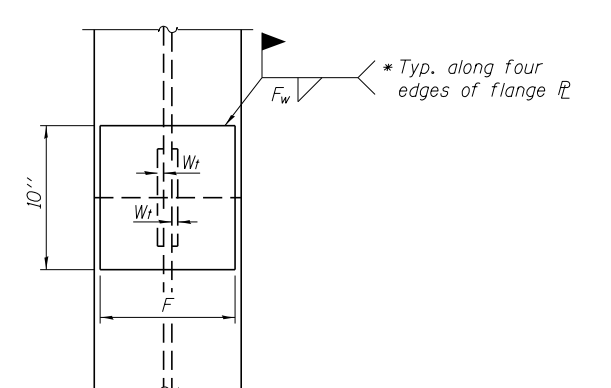
SECTION A-A

PILE ENCASEMENT

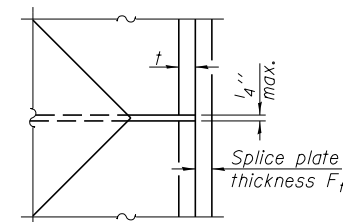
Note:
Forms for encasement may be omitted when soil conditions permit.



ELEVATION



END VIEW

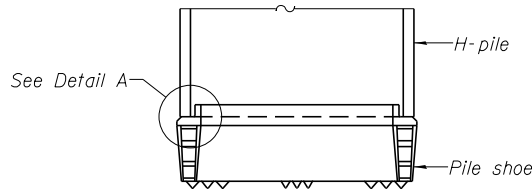


DETAIL D

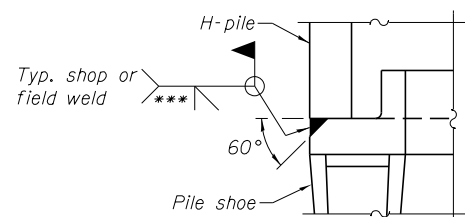
WELDED PLATE FIELD SPLICE

Designation	F	Ft	Fw	W	Wt	Ww
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	1/16"	7 3/4"	5/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5/8"	1/2"
HP 12x84	10"	7/8"	1/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	1/16"	6 1/2"	5/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	5/8"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	7"	5/8"	7/16"	4 1/4"	1/2"	3/8"

Note:
The steel H-piles shall be according to AASHTO M270 Grade 50.



ELEVATION



DETAIL A

H-PILE SHOE ATTACHMENT



Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10061

F-HP

1-27-12

FILE NAME = 0810186-40323-036-HP_Pile_Details.dgn

USER NAME = ksnider	DESIGNED - RJT	REVISIONS -
PLOT SCALE =	CHECKED - AJK	REVISIONS -
PLOT DATE = 1/18/2017	DRAWN - KMS	REVISIONS -
	CHECKED - AJK	REVISIONS -

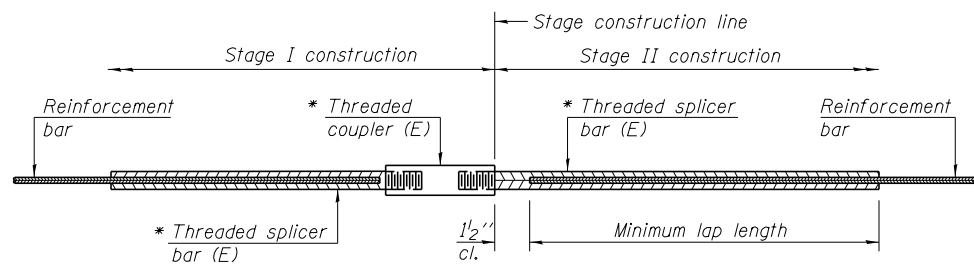
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HP PILE DETAILS
STRUCTURE NO. 081-0186 RAMP 6TH-C

SHEET NO. SC36 OF SC39 SHEETS

F.A.I. RE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1HVBR	ROCK ISLAND	1504	1063
CONTRACT NO. 64C08			ILLINOIS FED. AID PROJECT	

c:\pwise_work\do_not_delete\ms02473\0810186-40323-036-HP_Pile_Details.dgn 12:17:06 PM 1/18/2017



STANDARD BAR SPLICER ASSEMBLY

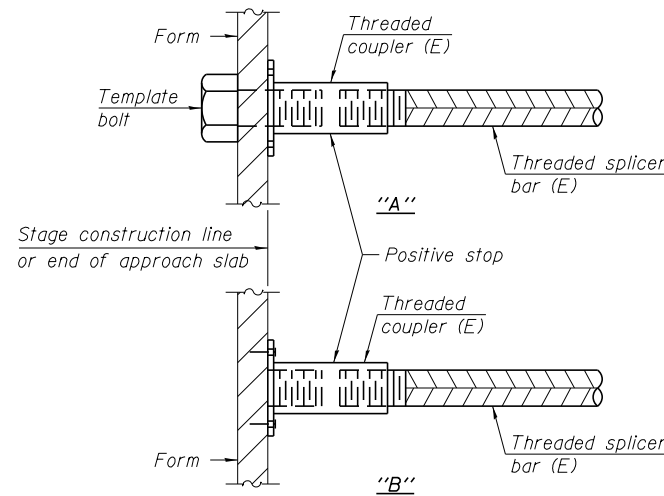
Minimum Lap Lengths						
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5	Table 6
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-7"	2'-11"
5	1'-9"	2'-5"	2'-7"	2'-11"	3'-3"	3'-8"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-10"	4'-5"
7	2'-9"	3'-10"	4'-2"	4'-8"	5'-2"	5'-10"
8	3'-8"	5'-1"	5'-5"	6'-2"	6'-9"	7'-8"
9	4'-7"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

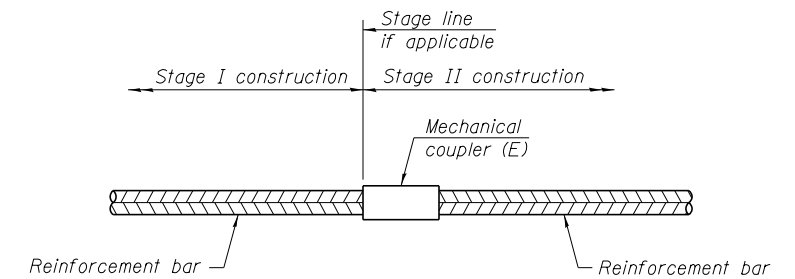
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

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



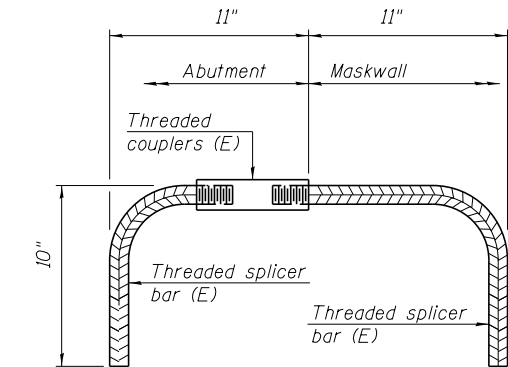
INSTALLATION AND SETTING METHODS

"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.



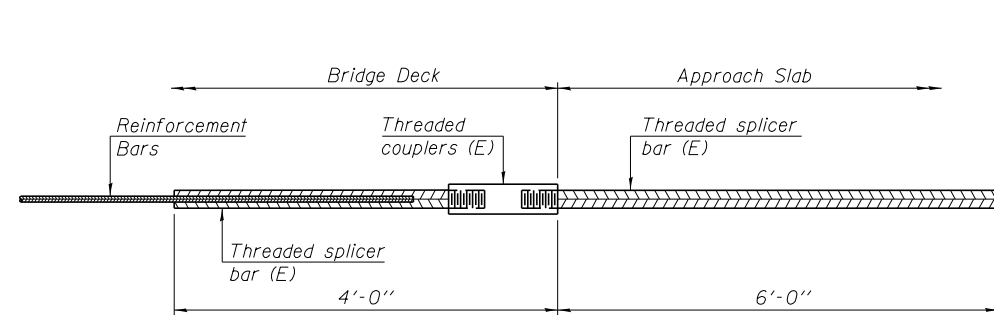
STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required



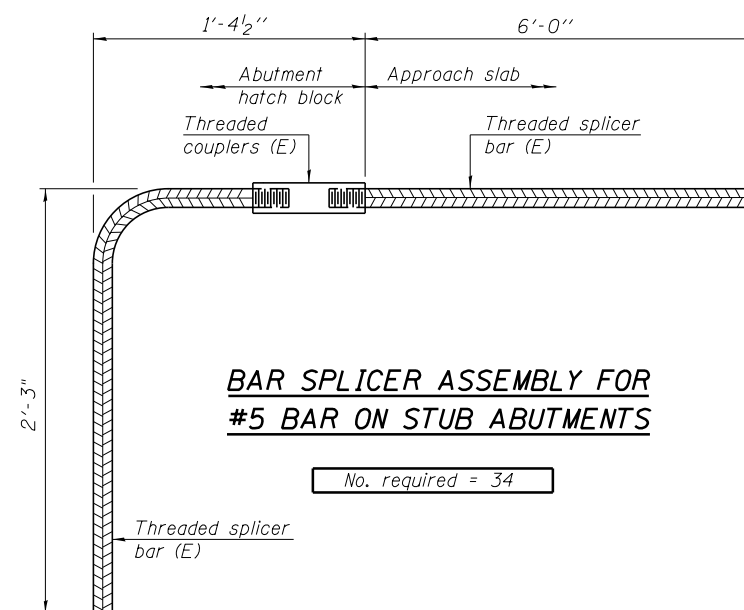
BAR SPLICER ASSEMBLY FOR #5 BAR ON MASKWALL

No. required = 16



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 = 34

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.



Alfred Benesch & Company
 205 North Michigan Avenue, Suite 2400
 Chicago, Illinois 60601
 312-565-0450 Job No. 10061

BSD-1

1-27-12

FILE NAME = 0810186-08323-037-Bar_Splicer_Assembly_details.dgn

USER NAME = ksnider
 DESIGNED - DTS
 CHECKED - AJK
 PLOT SCALE =
 DRAWN - KMS
 PLOT DATE = 1/18/2017
 CHECKED - AJK

REVISOR -
 REVISION -
 REVISOR -
 REVISION -
 REVISOR -
 REVISION -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY DETAILS
 STRUCTURE NO. 081-0186 RAMP 6TH-C

SHEET NO. SC37 OF SC39 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1HVBR	ROCK ISLAND	1504	1064
CONTRACT NO. 64C08				ILLINOIS FED. AID PROJECT



SOIL BORING LOG

Date 10/31/05

ROUTE I-74 DESCRIPTION _____ LOGGED BY L. Hunt

SECTION _____ LOCATION VIADUCT, RAMP 6TH-C, SEC., TWP., RNG.

COUNTY Rock Island DRILLING METHOD CME-550 Hollow Stem Auger HAMMER TYPE _____

STRUCT. NO. Station	BORING NO. Station Offset Ground Surface Elev.	DEPTH (ft)	BULGE (1/6")	UCS Qu (tsf)	MOIST (%)	Surface Water Elev.	
						ft	ft
	PRMPC01	573.26				571.26	
		5					
		13					
		22					
		12					
		12					
		16					
		18					
		12					
		7					
		4		1.0			
		2		P			
		2					
		2					
		2			24.0		
		3		P			
		3		1.1			
				P			
		2					
		2					
		3					
		3					
		3					
		3			22.0		
		2					
		2					
		2					
		3					
		3					
		6					
		7					
		16					
		34					
		50/5					
		50/2					
		19ft					
		554.16					
		50/2					
		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)
 BBS, from 137 (Rev. 8-99)

BORING NO. PRMPC-01
Station: 328+24.49
Offset: 34.34' Rt.



ROCK CORE LOG

Date 10/31/05

ROUTE I-74 DESCRIPTION _____ LOGGED BY L. Hunt

SECTION _____ LOCATION VIADUCT, RAMP 6TH-C, SEC., TWP., RNG.

COUNTY Rock Island CORING METHOD NQ DOUBLE BARREL DIAMOND TIP

STRUCT. NO. Station	BORING NO. Station Offset Ground Surface Elev.	CORING BARREL TYPE & SIZE	DEPTH (ft)	CORRECTION (#)	RECOVERY (%)	RQD (%)	CORE TIMING (min/ft)	STRENGTH (tsf)
			554.16					
			20					
			25					
			30					
			35					
			534.26					

End of Boring
 Color pictures of the cores _____
 Cores will be stored for examination until _____
 The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
 BBS, form 138 (Rev. 8-99)



Alfred Benesch & Company
 205 North Michigan Avenue, Suite 2400
 Chicago, Illinois 60601
 312-565-0450 Job No. 10061

FILE NAME : 0810186-A0323-039-Soil Boring Logs 2 of 2.dgn	DESIGNED - RJT	REVISED -
USER NAME : ksnider	CHECKED - AJK	REVISED -
PLOT SCALE :	DRAWN - KMS	REVISED -
PLOT DATE : 1/18/2017	CHECKED - AJK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS (2 OF 2)
STRUCTURE NO. 081-0186 RAMP 6TH-C

SHEET NO. SC39 OF SC39 SHEETS

F.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1HVBR	ROCK ISLAND	1504	1066
			CONTRACT NO. 64C08	

ILLINOIS FED. AID PROJECT

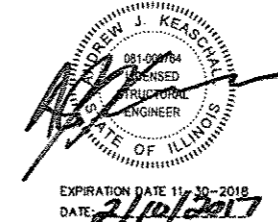
c:\pwise_work\do_not_delete\0810186-A0323-039-Soil Boring Logs 2 of 2.dgn 12:17:29 PM 1/18/2017

Bench Mark: Chiseled "X" in base of traffic light at southeast corner of intersection of 19th Street and 7th Avenue. Elevation NAVD 88 = 589.227

Existing Structure: None

Sta. 13165+36	Elev. 573.10
Sta. 13165+97	Elev. 573.25
Sta. 13166+63	Elev. 573.34
Sta. 13167+22	Elev. 573.34
Sta. 13167+83	Elev. 573.40
Sta. 13168+36	Elev. 573.45
Sta. 13168+94	Elev. 573.54

TOP OF RAIL BNSF R.R.
BNSF Sta. 13165+96 = Mile Post 249.36



APPROVED
For Structural Adequacy Only
Andrew J. Keaschall
Engineer of Bridges & Structures

DESIGN SPECIFICATIONS
2012 AASHTO LRFD Bridge Design Specifications,
6th Edition

SEISMIC DATA
Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S₀₁) = 0.06g
Design Spectral Acceleration at 0.2 sec. (S₀₅) = 0.10g
Soil Site Class = C

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

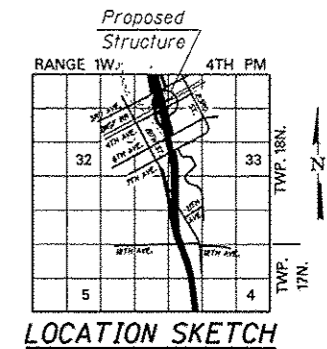
DESIGN STRESSES
FIELD UNITS
f'_c = 3,500 psi
f_y = 60,000 psi (Reinforcement)
f_y = 50,000 psi (M270 Grade 50)

DRAINAGE SCUPPER STATIONS	
425+80.00	
430+65.16	

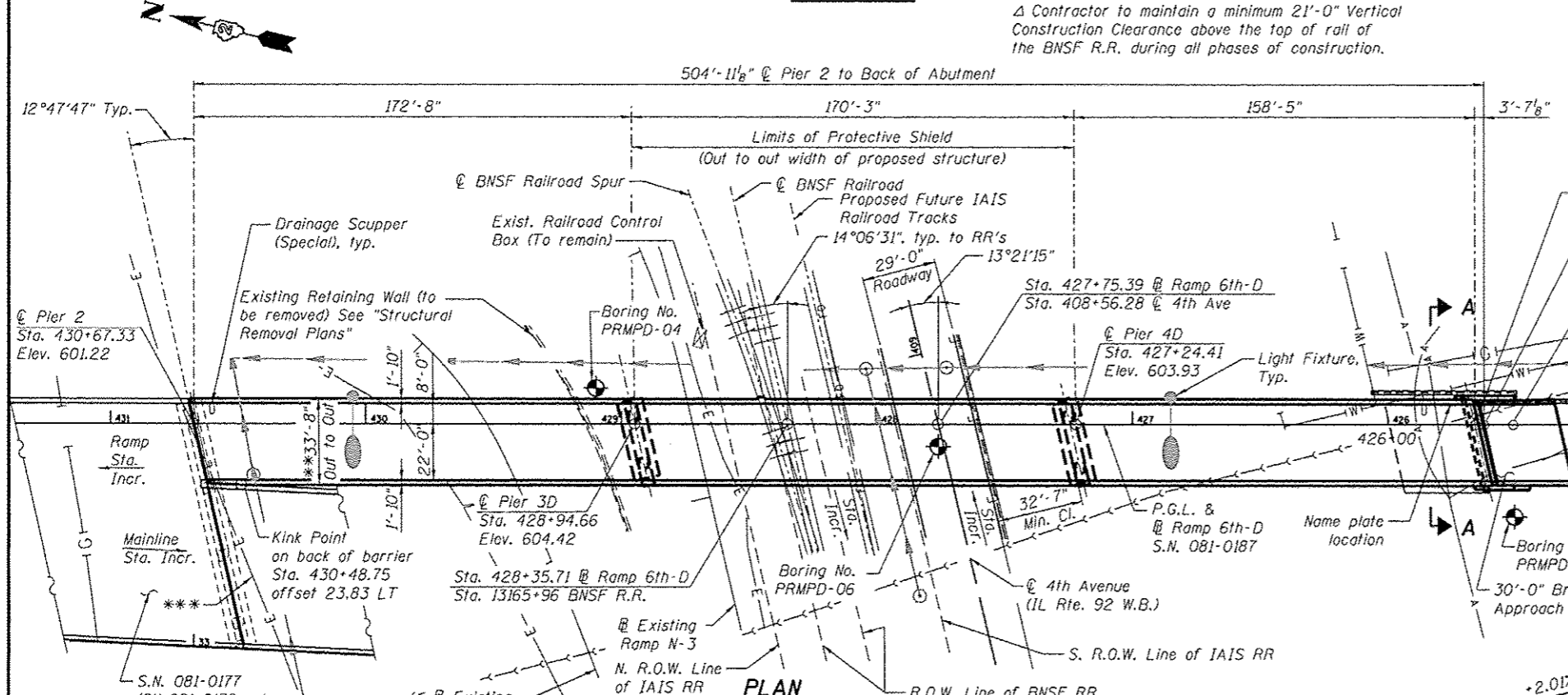
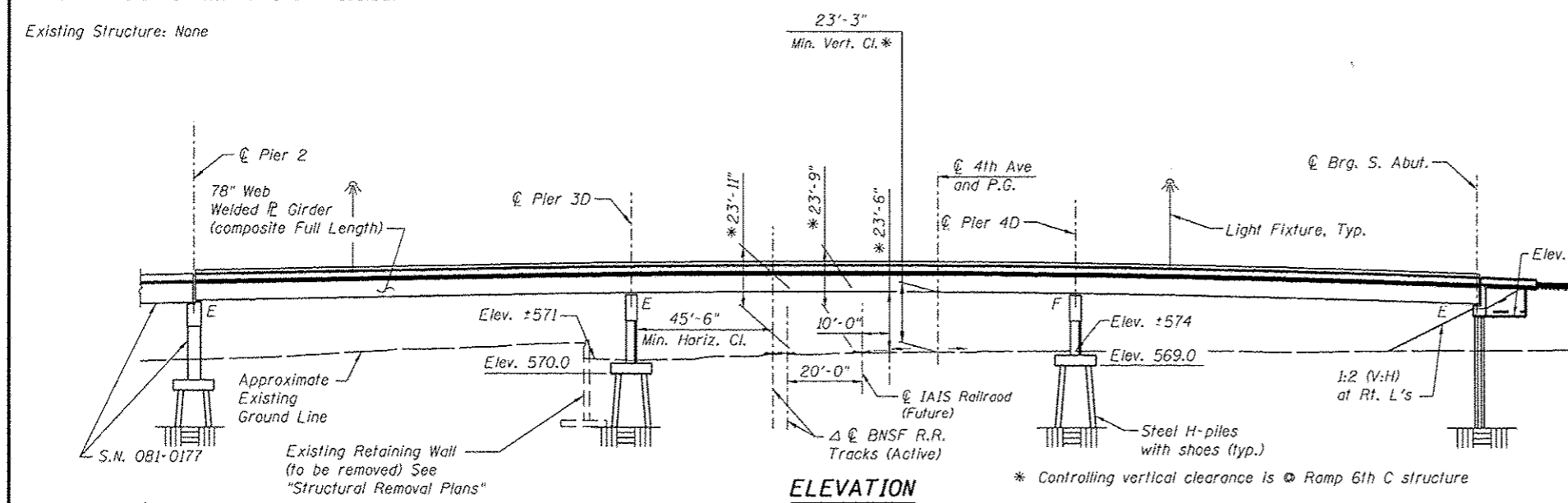
Note: All scuppers are at east gutterline.

STATION 427+75.39
BUILT BY
STATE OF ILLINOIS
F.A.I. RT. 74 SEC 81-IHVB
LOADING HL-93
STRUCTURE NO. 081-0187

NAME PLATE
See Std. 515001



GENERAL PLAN & ELEVATION
RAMP 6TH-D OVER BNSF R.R. AND 4TH AVE.
F.A.I. ROUTE 74-SECTION 81-IHVB
ROCK ISLAND COUNTY
STATION 427+75.39
STRUCTURE NUMBER 081-0187

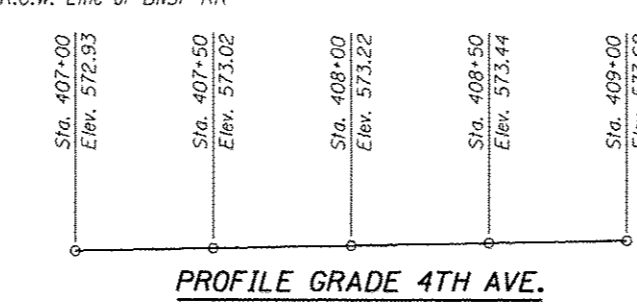
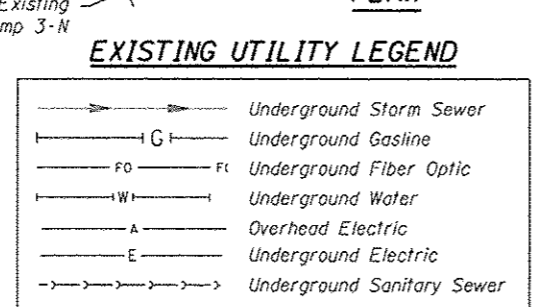


EXISTING UTILITY LEGEND

- Underground Storm Sewer
- Underground Gasline
- Underground Fiber Optic
- Underground Water
- Overhead Electric
- Underground Electric
- Underground Sanitary Sewer

** Deck width varies at North End of Structure. See sheet SD9, for deck variation.

*** Existing Electrical Conduit to be abandoned. Remove as necessary to install Pier 2. Cost of removal included with "Structure Excavation"



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312-585-0450 Job No. 10061

Note: See roadway and lighting plans for existing and proposed utilities.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
STRUCTURE NO. 081-0187 RAMP 6TH-D
SHEET NO. SD1 OF SD44 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-IHVB	ROCK ISLAND	1504	1067
			CONTRACT NO.	64C08

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	PLOT DATE: 1/28/2017	DRAWN: KMS	REVISED:
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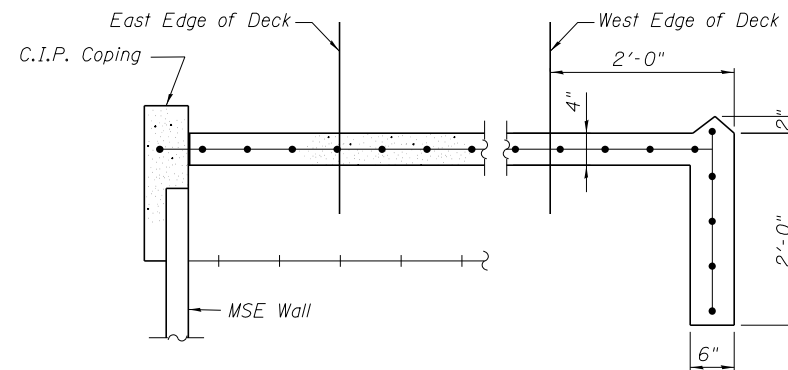
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GENERAL NOTES

- Fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts. Bolts 7/8", open holes 5/16", unless otherwise noted.
- Calculated weight of Structural Steel = 631,920 lbs
M 270 Grade 36: 37,450 lbs
M 270 Grade 50: 594,470 lbs

The contractor may substitute Grade 50 for Grade 36 at no additional cost to the Contract.
- No field welding is permitted except as specified in the contract documents.
- Reinforcement bars designated (E) shall be epoxy coated.
- If the Contractor elects to use cantilever forming brackets on the exterior beams or girders, the brackets shall be placed at the same locations as required for the hardwood blocks in Article 503.06(b) of the Standard Specifications. If additional cantilever forming brackets are required, hardwood blocking shall be wedged between the exterior and first interior beam at each of these additional bracket locations.
- Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8 in. (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.
- Concrete Sealer shall be applied to the exposed faces of the pier 2 and the South Abutment.
- The Organic Zinc Rich Primer / Epoxy / Urethane Paint System shall be used for painting of new structural steel except where otherwise noted. The entire system shall be shop applied, with the exception of the exterior surface and the bottom of the bottom flange of fascia beams, masked off connection surfaces, and field installed fasteners, all of which shall be touched up and finish coated in the field. The color of the final finish coat for all interior steel surfaces shall be Gray, Munsell No. 5B 7/1.

The exterior and bottom flange of the fascia girders and fascia bearings shall be finish coated with fluoropolymer paint. The color of the final finish coat for the exterior and bottom flange of the fascia girders and bearings shall be Federal Standard 595C Color 26099 (gray-blue). See Special Provision for "Cleaning and Painting Structural Steel."
- See Civil Plans for limits of special waste.
- The embankment configuration shown shall be the minimum that must be placed and compacted prior to construction of the abutments.
- Slip forming of the parapet is allowed, except at the parapet transition. See sheet SD9, for parapet transition detail.
- The Contractor shall use self-consolidating concrete (SCC) in all the pier columns. The self-consolidating concrete shall conform to all requirements as specified in Section 1020 of the Standard Specifications. Cost of SCC shall be included with the cost of Concrete Structures.



SECTION A-A

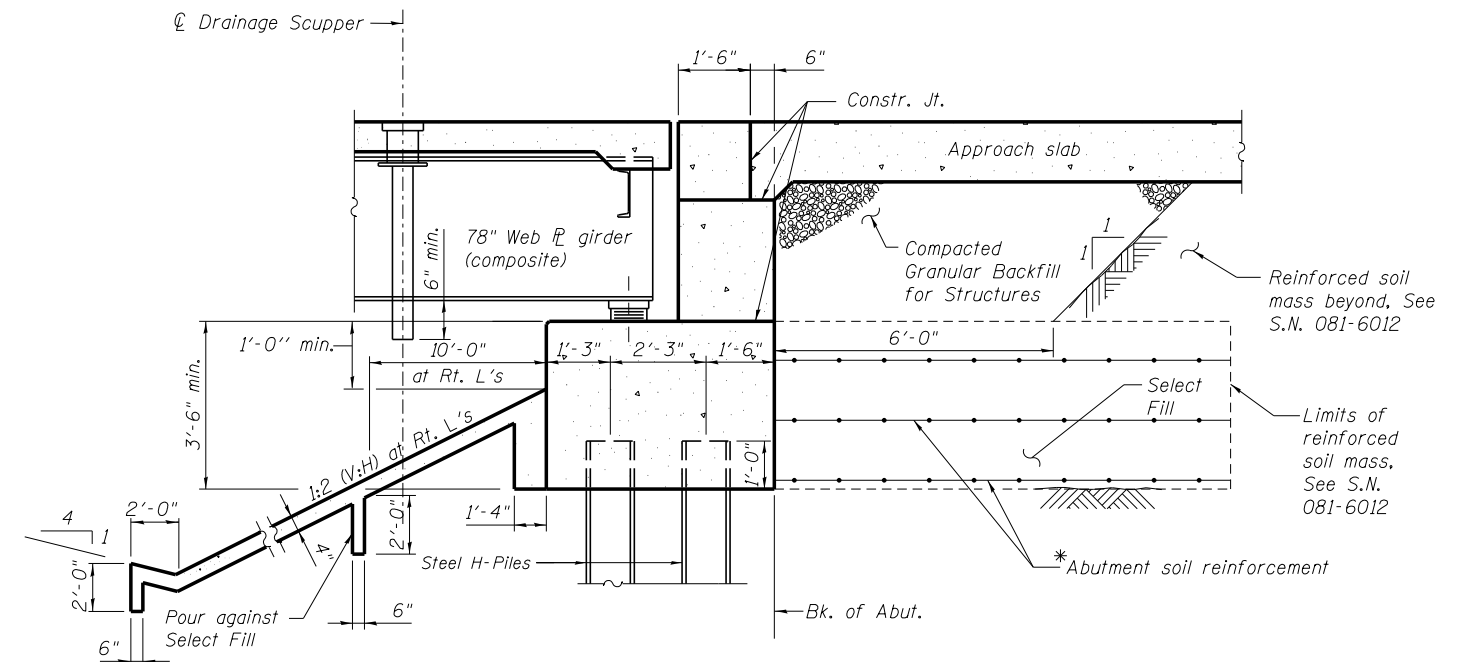
INDEX OF SHEETS

- SD1 General Plan and Elevation
- SD2 General Notes, Index of Sheets and Total Bill of Material
- SD3 Foundation Layout
- SD4 Deck Elevation Plan
- SD5 Top of Slab Elevations (1 of 2)
- SD6 Top of Slab Elevations (2 of 2)
- SD7 Top of Approach Slab Elevations
- SD8 Deck Reinforcement Plan
- SD9 Deck Reinforcement Cross Section
- SD10 Typical Parapet Elevation
- SD11 Superstructure Details
- SD12 Traffic Barrier Details (1 of 2)
- SD13 Traffic Barrier Details (2 of 2)
- SD14 Bridge Approach Slab Plan
- SD15 Bridge Approach Slab Details
- SD16 Preformed Joint Strip Seal
- SD17 Scupper Details
- SD18 Framing Plan
- SD19 Steel Plate Girder Elevation
- SD20 Steel Plate Girder Cross Frame and Stiffener Details
- SD21 Steel Plate Girder Camber Diagram and Splice Details
- SD22 Steel Plate Girder Moment and Reaction Tables
- SD23 Elastomeric Bearing Details
- SD24 HLMR Guided Expansion Bearing Details
- SD25 HLMR Fixed Bearing Details
- SD26 Abutment Layout
- SD27 Abutment and Wingwall Details
- SD28 West Maskwall Details (1 of 2)
- SD29 West Maskwall Details (2 of 2)
- SD30 East Maskwall Details (1 of 2)
- SD31 East Maskwall Details (2 of 2)
- SD32 Maskwall Notes and Bill of Material
- SD33 Pier 3D Layout
- SD34 Pier 3D Details
- SD35 Pier 3D Cross Sections
- SD36 Pier 4D Layout
- SD37 Pier 4D Details
- SD38 Pier 4D Cross Sections
- SD39 Pier Notes and Bill of Material
- SD40 HP Pile Details
- SD41 Bar Splicer Assembly Details
- SD42 Soil Boring Logs (1 of 3)
- SD43 Soil Boring Logs (2 of 3)
- SD44 Soil Boring Logs (3 of 3)

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Protective Shield	Sq Yd	637	-	637
Structure Excavation	Cu Yd	-	116	116
Concrete Structures	Cu Yd	-	267.6	267.6
Concrete Superstructure	Cu Yd	639.7	-	639.7
Bridge Deck Grooving	Sq Yd	1,658	-	1,658
Protective Coat	Sq Yd	2,238	-	2,238
** Furnishing and Erecting Structural Steel	L Sum	0.05	-	0.05
Stud Shear Connectors	Each	4,356	-	4,356
Reinforcement Bars, Epoxy Coated	Pound	195,160	41,370	236,530
Bar Splicers	Each	-	50	50
Slope Wall 4 Inch	Sq Yd	-	164	164
Furnishing Steel Piles HP14x73	Foot	-	792	792
Driving Piles	Foot	-	792	792
Test Pile Steel HP14x73	Each	-	3	3
Pile Shoes	Each	-	42	42
Name Plates	Each	1	-	1
Preformed Joint Strip Seal	Foot	33.0	-	33.0
Elastomeric Bearing Assembly, Type I	Each	4	-	4
Elastomeric Bearing Assembly, Type II	Each	4	-	4
Anchor Bolts, 1"	Each	-	48	48
Concrete Sealer	Sq Ft	-	500	500
High Load Multi-Rotational Bearings, Guided Expansion, 600K	Each	4	-	4
High Load Multi-Rotational Bearings, Fixed - 600K	Each	4	-	4
Granular Backfill for Structures	Cu Yd	-	20	20
Steel Railing (Special)	Foot	992	-	992
Drainage Scuppers (Special)	Each	2	-	2
** Drainage System	L Sum	-	0.10	0.10

** Remainder of this item is installed with other structures in the Contract.



SECTION THRU PILE SUPPORTED STUB ABUTMENT
(Horiz. dim. at Rt. L's)

(West section of abutment shown, soil in east section within MSE reinforced soil mass to be entirely select fill. See S.N. 081-6012 for limits of reinforced soil mass.)

*The M.S.E. wall supplier shall design the abutment soil reinforcement to resist an unfactored horizontal force of 3.0 kips/ft of abutment. Cost shall be included with the cost of "Mechanically Stabilized Earth Retaining Wall." See SN 081-6012 for MSE wall details and pay items.

NOTE:

Slopedwall shall be reinforced with welded wire fabric. 6 in. x 6 in. - W4.0 x W4.0, weighing 58 lbs. per 100 sq. ft.) Cost included with slopedwall.



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Chicago, Illinois 60601
312-565-0450 Job No. 10061

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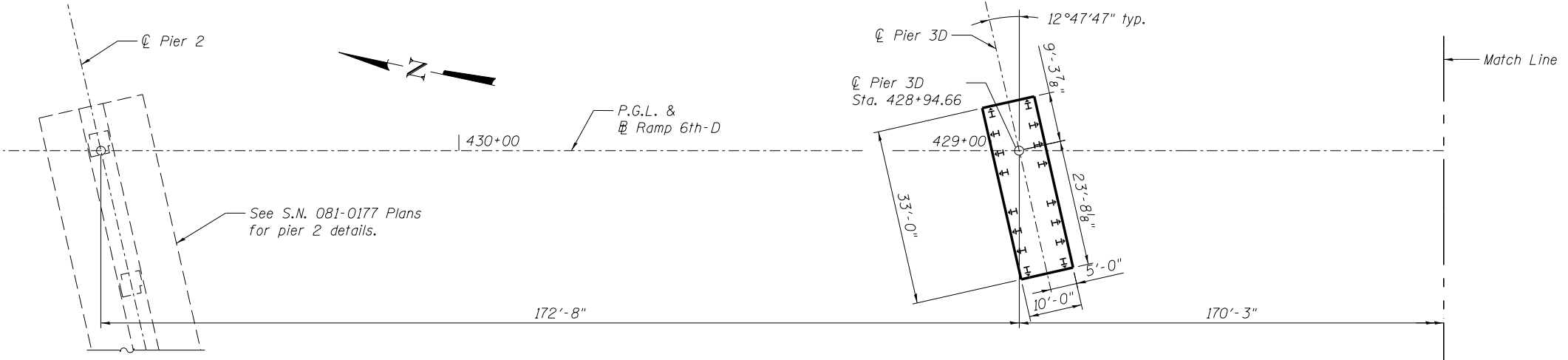
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**GENERAL NOTES, INDEX OF SHEETS AND TOTAL BILL OF MATERIAL
STRUCTURE NO. 081-0187 RAMP 6TH-D**

SHEET NO. SD2 OF SD44 SHEETS

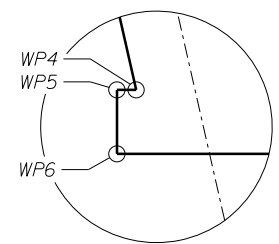
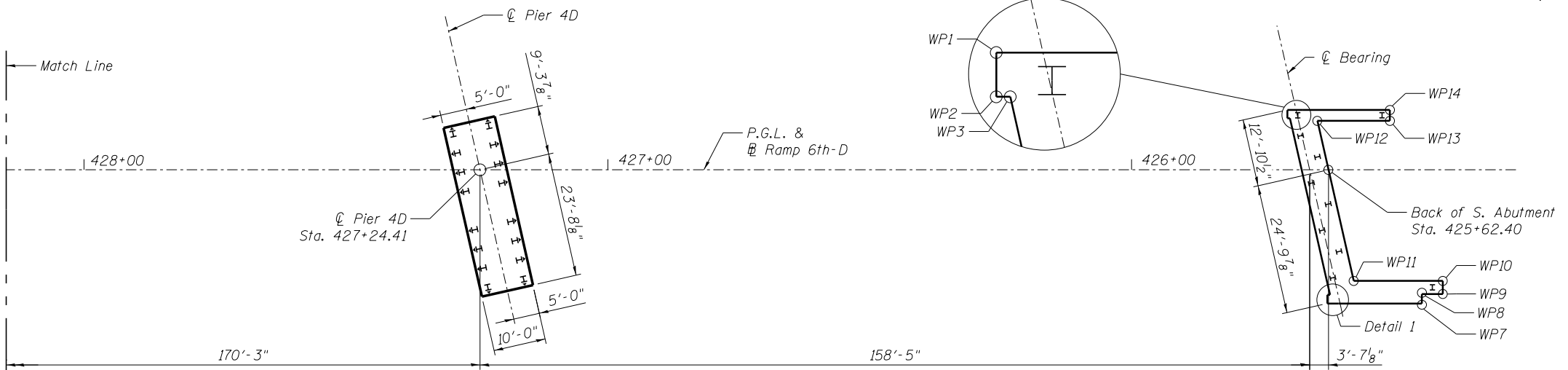
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-IHVBR	ROCK ISLAND	1504	1068
ILLINOIS FED. AID PROJECT			CONTRACT NO. 64C08	

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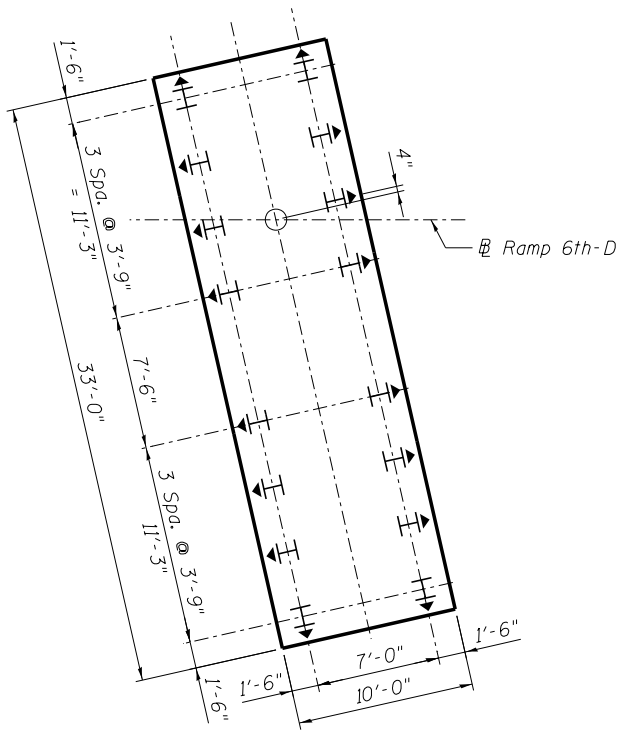
Work Points

W.P.	Station	Offset
1	425+70.26	11.42' Rt.
2	425+70.26	9.83' Rt.
3	425+69.76	9.83' Rt.
4	425+62.12	23.83' Lt.
5	425+62.62	23.83' Lt.
6	425+62.62	25.50' Lt.
7	425+44.57	25.50' Lt.
8	425+44.57	23.69' Lt.
9	425+40.57	23.69' Lt.
10	425+40.57	21.19' Lt.
11	425+57.59	21.19' Lt.
12	425+64.51	9.33' Rt.
13	425+50.68	9.33' Rt.
14	425+50.68	11.42' Rt.

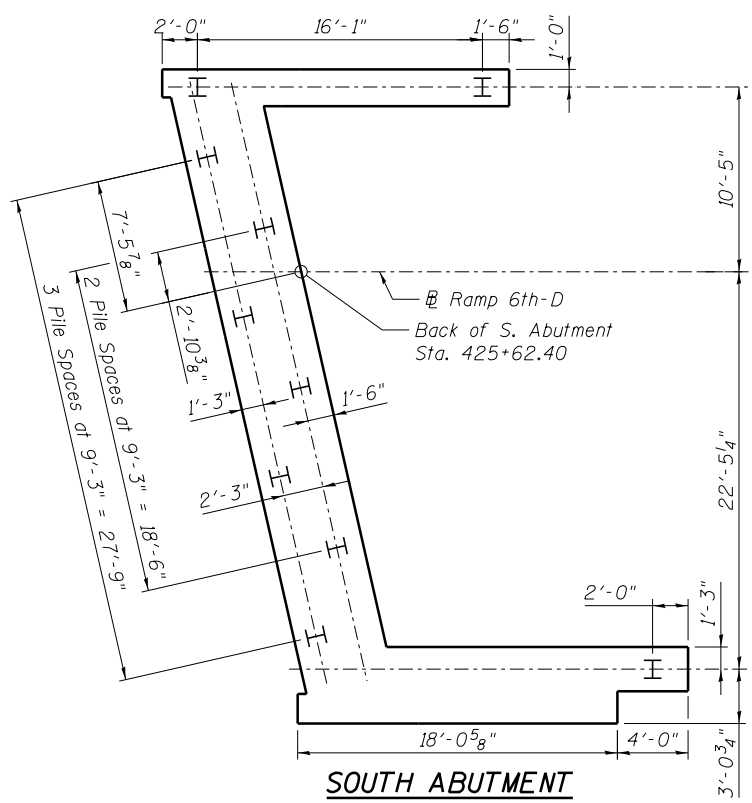


DETAIL 1

FOUNDATION LAYOUT



PIER 3D and 4D



SOUTH ABUTMENT

NOTES:

1. For pier details, see sheets SD33 thru SD39.
2. For abutment details, see sheets SD26 and SD27.

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**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

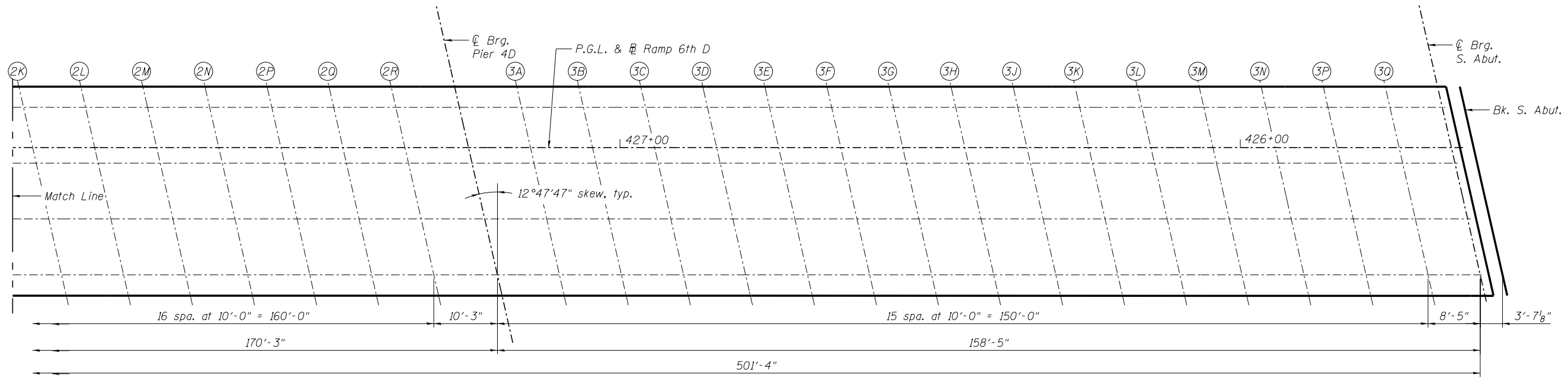
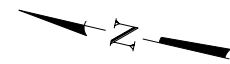
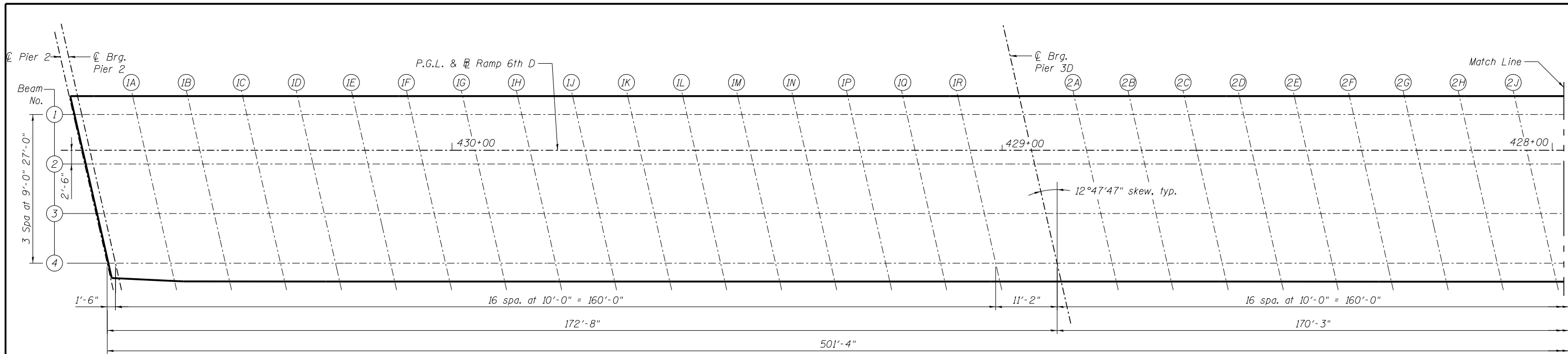
**FOUNDATION LAYOUT
 STRUCTURE NO. 081-0187 RAMP 6TH-D**

SHEET NO. SD3 OF SD44 SHEETS

F.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-IHVBR	ROCK ISLAND	1504	1069
CONTRACT NO. 64C08				

ILLINOIS FED. AID PROJECT

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PLAN

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 205 North Michigan Avenue, Suite 2400
 Chicago, Illinois 60601
 312-565-0450 Job No. 10061

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**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**DECK ELEVATION PLAN
 STRUCTURE NO. 081-0187 RAMP 6TH-D**

SHEET NO. SD4 OF SD44 SHEETS

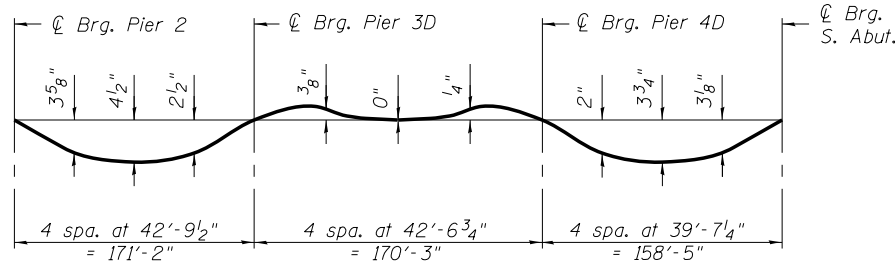
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CONTRACT NO. 64C08				

ILLINOIS FED. AID PROJECT

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GIRDER 1

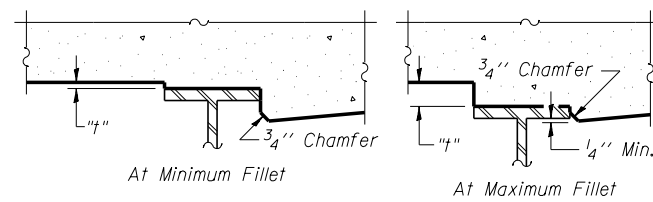
P.G.L. & BL RAMP 6TH-D



DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only.)

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 on sheets SD5 & SD6.



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

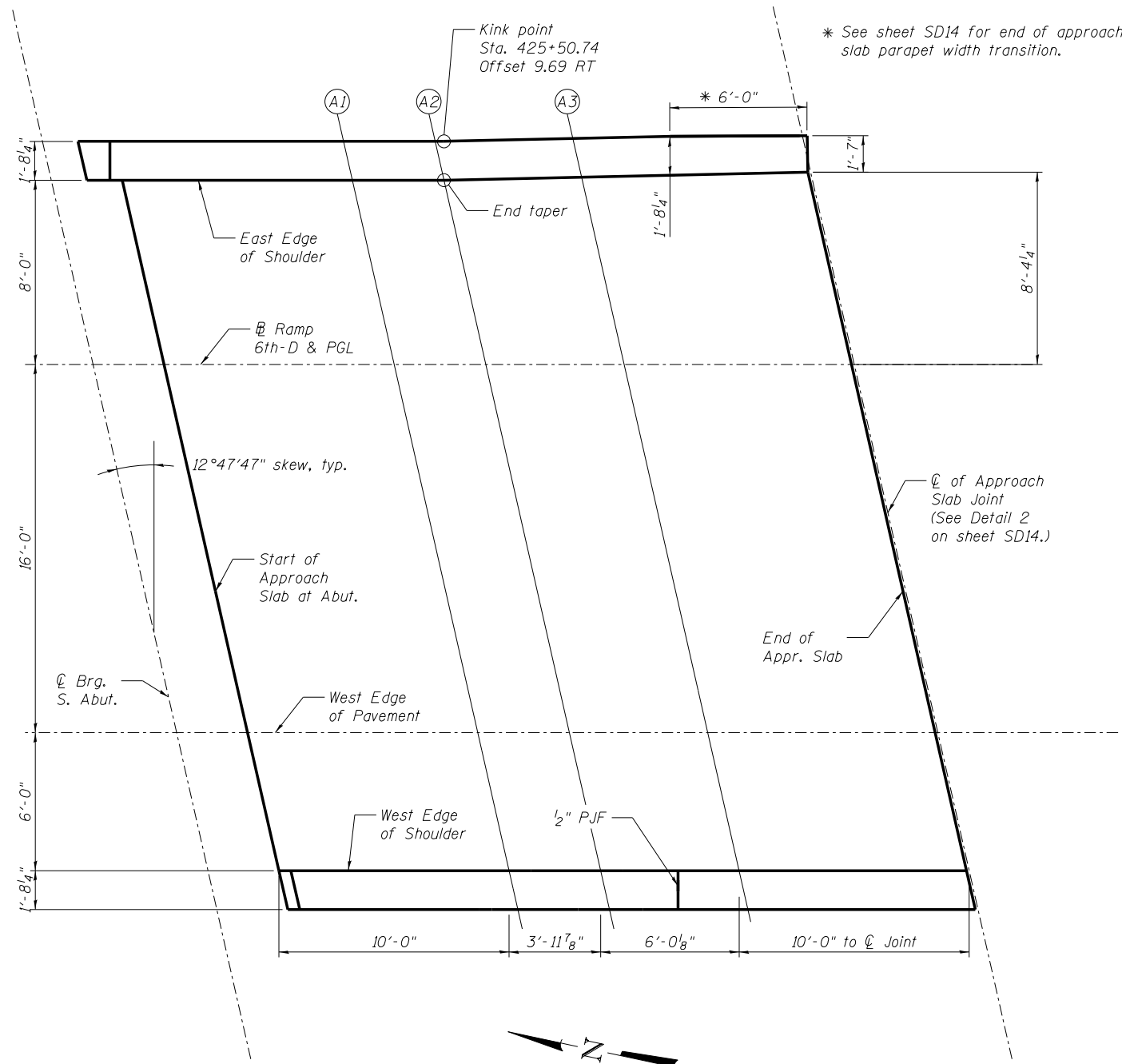
FILLET HEIGHTS

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
CL. JT. & PIER 2	430+68.81	6.50	601.05	601.05
CL. BRG. PIER 2	430+67.31	6.50	601.09	601.09
1A	430+57.31	6.50	601.29	601.37
1B	430+47.31	6.50	601.49	601.65
1C	430+37.31	6.50	601.69	601.92
1D	430+27.31	6.50	601.89	602.18
1E	430+17.31	6.50	602.09	602.42
1F	430+07.31	6.50	602.29	602.65
1G	429+97.31	6.50	602.49	602.87
1H	429+87.31	6.50	602.69	603.07
1J	429+77.31	6.50	602.89	603.25
1K	429+67.31	6.50	603.09	603.42
1L	429+57.31	6.50	603.29	603.58
1M	429+47.31	6.50	603.49	603.74
1N	429+37.31	6.50	603.68	603.87
1P	429+27.31	6.50	603.85	603.98
1Q	429+17.31	6.50	604.00	604.09
1R	429+07.31	6.50	604.14	604.18
CL. BRG. PIER 3D	428+96.14	6.50	604.28	604.28
2A	428+86.14	6.50	604.38	604.36
2B	428+76.14	6.50	604.47	604.43
2C	428+66.14	6.50	604.54	604.50
2D	428+56.14	6.50	604.59	604.56
2E	428+46.14	6.50	604.63	604.61
2F	428+36.14	6.50	604.65	604.64
2G	428+26.14	6.50	604.66	604.65
2H	428+16.14	6.50	604.65	604.65
2J	428+06.14	6.50	604.62	604.62
2K	427+96.14	6.50	604.58	604.58
2L	427+86.14	6.50	604.52	604.51
2M	427+76.14	6.50	604.45	604.43
2N	427+66.14	6.50	604.35	604.33
2P	427+56.14	6.50	604.25	604.22
2Q	427+46.14	6.50	604.12	604.10
2R	427+36.14	6.50	603.98	603.96
CL. BRG. PIER 4D	427+25.89	6.50	603.82	603.82
3A	427+15.89	6.50	603.65	603.68
3B	427+05.89	6.50	603.46	603.53
3C	426+95.89	6.50	603.25	603.37
3D	426+85.89	6.50	603.03	603.20
3E	426+75.89	6.50	602.79	603.01
3F	426+65.89	6.50	602.54	602.80
3G	426+55.89	6.50	602.27	602.56
3H	426+45.89	6.50	601.98	602.30
3J	426+35.89	6.50	601.68	602.00
3K	426+25.89	6.50	601.36	601.67
3L	426+15.89	6.50	601.03	601.31
3M	426+05.89	6.50	600.68	600.92
3N	425+95.89	6.50	600.31	600.50
3P	425+85.89	6.50	599.92	600.06
3Q	425+75.89	6.50	599.53	599.59
CL. BRG. S. ABUT.	425+67.47	6.50	599.19	599.19
BK. S. ABUT.	425+63.88	6.50	599.05	599.05

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
CL. JT. & PIER 2	430+67.33	0.00	601.22	601.22
CL. BRG. PIER 2	430+65.83	0.00	601.25	601.25
1A	430+55.83	0.00	601.45	601.53
1B	430+45.83	0.00	601.65	601.81
1C	430+35.83	0.00	601.85	602.08
1D	430+25.83	0.00	602.05	602.34
1E	430+15.83	0.00	602.25	602.59
1F	430+05.83	0.00	602.45	602.82
1G	429+95.83	0.00	602.65	603.04
1H	429+85.83	0.00	602.85	603.23
1J	429+75.83	0.00	603.05	603.42
1K	429+65.83	0.00	603.25	603.59
1L	429+55.83	0.00	603.45	603.75
1M	429+45.83	0.00	603.65	603.90
1N	429+35.83	0.00	603.84	604.03
1P	429+25.83	0.00	604.00	604.14
1Q	429+15.83	0.00	604.15	604.24
1R	429+05.83	0.00	604.29	604.33
CL. BRG. PIER 3D	428+94.66	0.00	604.42	604.42
2A	428+84.66	0.00	604.52	604.50
2B	428+74.66	0.00	604.61	604.57
2C	428+64.66	0.00	604.68	604.64
2D	428+54.66	0.00	604.73	604.70
2E	428+44.66	0.00	604.76	604.74
2F	428+34.66	0.00	604.78	604.77
2G	428+24.66	0.00	604.79	604.78
2H	428+14.66	0.00	604.78	604.78
2J	428+04.66	0.00	604.75	604.75
2K	427+94.66	0.00	604.70	604.70
2L	427+84.66	0.00	604.64	604.63
2M	427+74.66	0.00	604.56	604.55
2N	427+64.66	0.00	604.47	604.45
2P	427+54.66	0.00	604.36	604.33
2Q	427+44.66	0.00	604.23	604.21
2R	427+34.66	0.00	604.09	604.07
CL. BRG. PIER 4D	427+24.41	0.00	603.93	603.93
3A	427+14.41	0.00	603.75	603.78
3B	427+04.41	0.00	603.56	603.63
3C	426+94.41	0.00	603.35	603.47
3D	426+84.41	0.00	603.13	603.30
3E	426+74.41	0.00	602.89	603.11
3F	426+64.41	0.00	602.63	602.89
3G	426+54.41	0.00	602.36	602.66
3H	426+44.41	0.00	602.07	602.39
3J	426+34.41	0.00	601.76	602.09
3K	426+24.41	0.00	601.44	601.76
3L	426+14.41	0.00	601.11	601.40
3M	426+04.41	0.00	600.75	601.00
3N	425+94.41	0.00	600.38	600.58
3P	425+84.41	0.00	600.00	600.13
3Q	425+74.41	0.00	599.60	599.66
CL. BRG. S. ABUT.	425+65.99	0.00	599.26	599.26
BK. S. ABUT.	425+62.40	0.00	599.12	599.12

NOTE:

Offset measured from P.G.L. & BL Ramp 6th-D.



PLAN

EAST EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
Start of Approach Slab at Abut.	425+64.73	8.00	599.05
A1	425+54.73	8.00	598.65
A2	425+50.74	8.00	598.49
A3	425+44.76	8.13	598.25
℄ of Approach Slab Joint	425+34.81	8.35	597.85

RAMP 6TH-D PGL

Location	Station	Offset	Theoretical Grade Elevations
Start of Approach Slab at Abut.	425+62.91	0.00	599.14
A1	425+52.91	0.00	598.74
A2	425+48.92	0.00	598.58
A3	425+42.91	0.00	598.34
℄ of Approach Slab Joint	425+32.91	0.00	597.94

WEST EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
Start of Approach Slab at Abut.	425+57.92	-22.00	599.38
A1	425+47.92	-22.00	598.98
A2	425+43.93	-22.00	598.82
A3	425+37.92	-22.00	598.58
℄ of Approach Slab Joint	425+27.92	-22.00	598.18

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E-AS
 7-1-10

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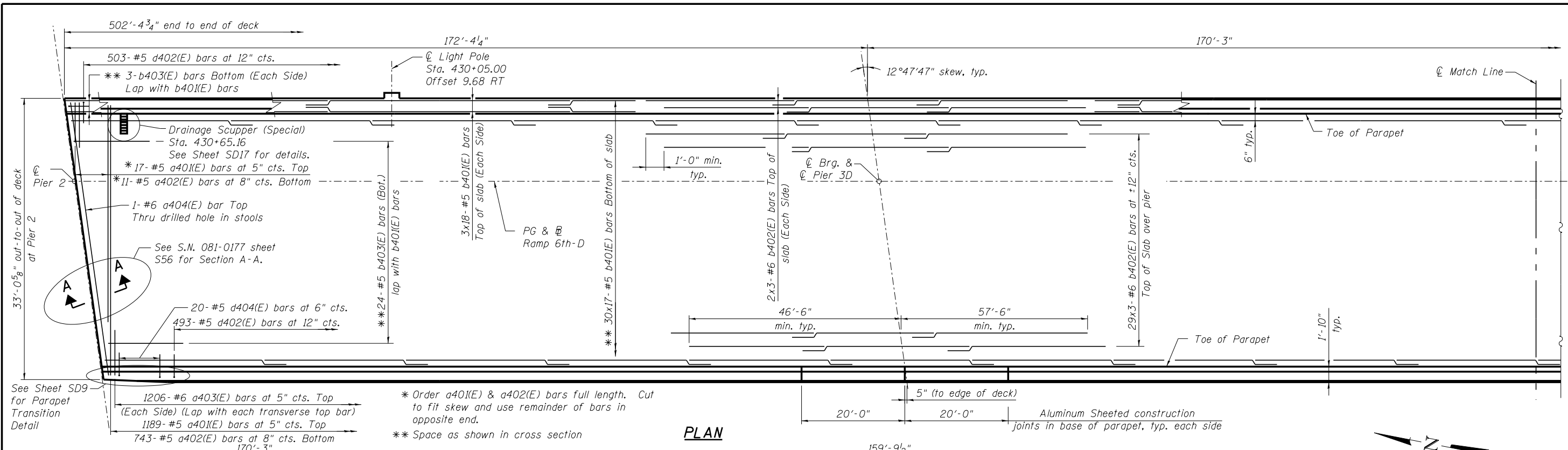
**STATE OF ILLINOIS
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**TOP OF APPROACH SLAB ELEVATIONS
 STRUCTURE NO. 081-0187 RAMP 6TH-D**

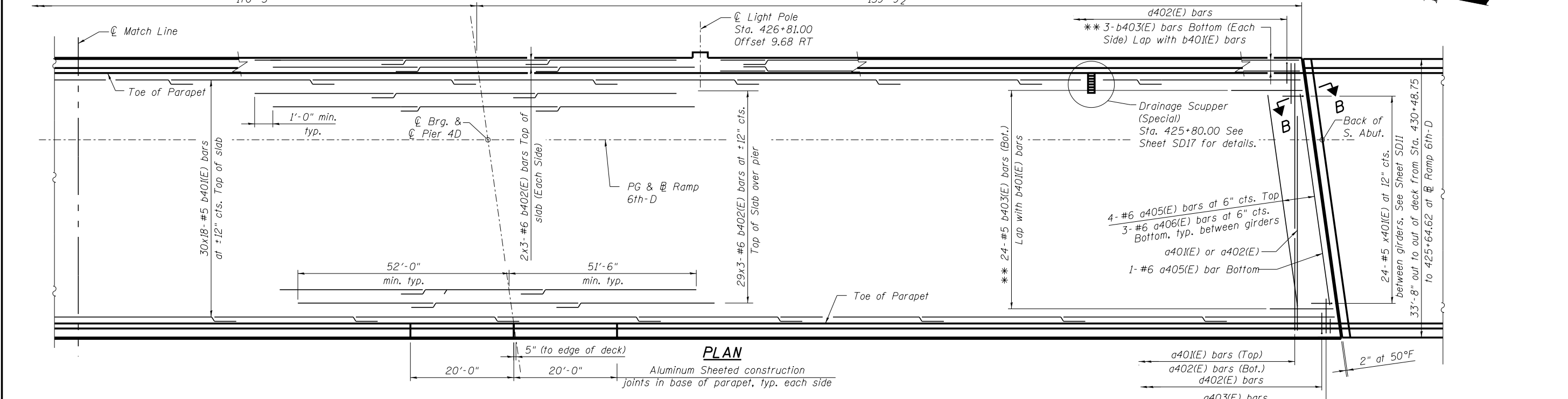
SHEET NO. SD7 OF SD44 SHEETS

F.A.I. RTE. 74	SECTION 81-IHVBR	COUNTY ROCK ISLAND	TOTAL SHEETS 1504	SHEET NO. 1073
CONTRACT NO. 64C08				ILLINOIS FED. AID PROJECT

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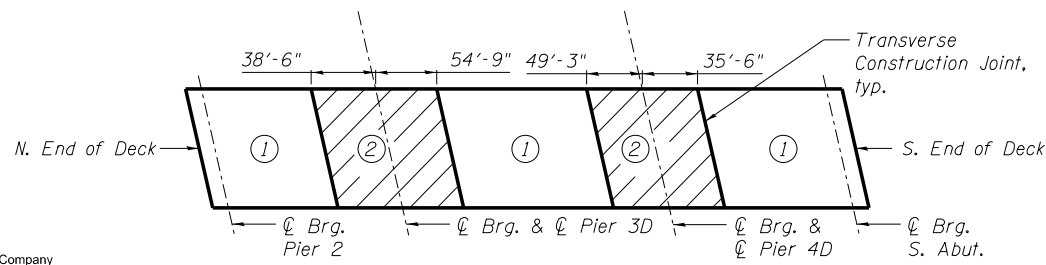
PLAN



PLAN

MINIMUM BAR LAP

(Deck)
 #5 bar = 3'-3"
 #6 bar = 3'-10"



DECK POUR SEQUENCE

NOTES:

- See Sheet SD11 for superstructure details and Bill of Materials.
- See Sheet SD9 for Deck Cross Section.
- Bars indicated this 30x17-#5 etc. indicates 30 lines of bars with 17 lengths per line.
- Cut transverse bars as required to fit taper at location of Parapet Transition & Finger Plate Expansion Stools.
- Dimensions at S. Abut. are based on Rolled Rail Strip Seal Joint. If Contractor elects to use the Welded Rail Strip Seal Joint, deck dimensions may require adjustments to satisfy the details on sheet SD16.
- See Sheet SD11 for Section B-B.
- See Sheet SD10 for parapet reinforcement.
- 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:
 - At least 72 hours shall have elapsed from the end of the previous pour.
 - The concrete strength shall have attained a minimum flexural strength of 650 psi or a minimum compressive strength of 3500 psi.

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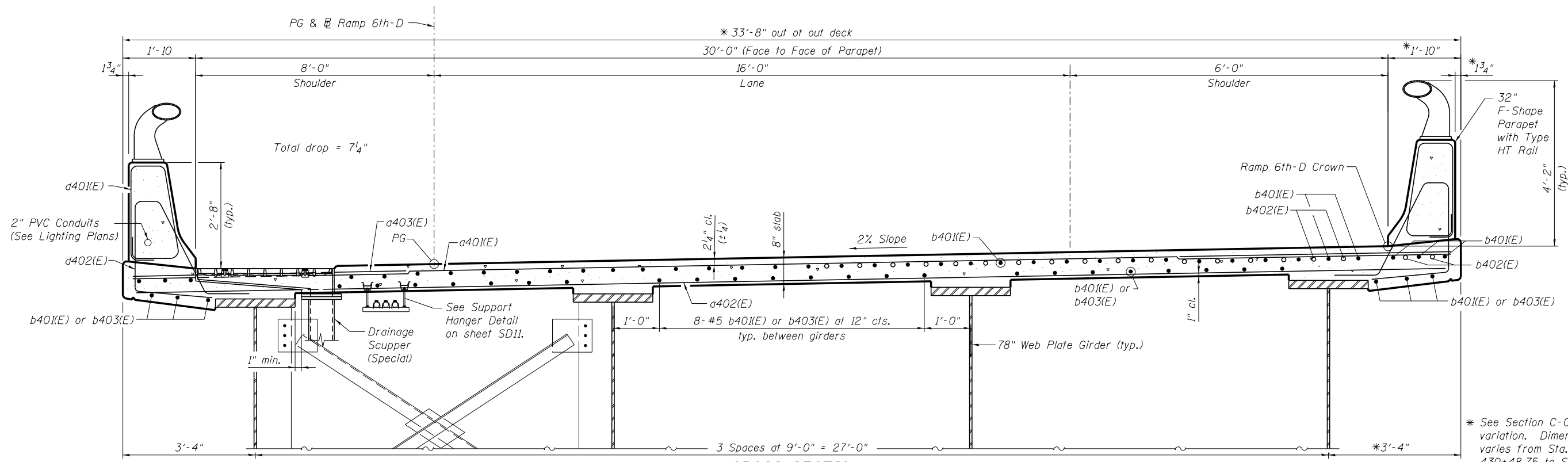
**STATE OF ILLINOIS
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**DECK REINFORCEMENT PLAN
 STRUCTURE NO. 081-0187 RAMP 6TH-D**

SHEET NO. SD8 OF SD44 SHEETS

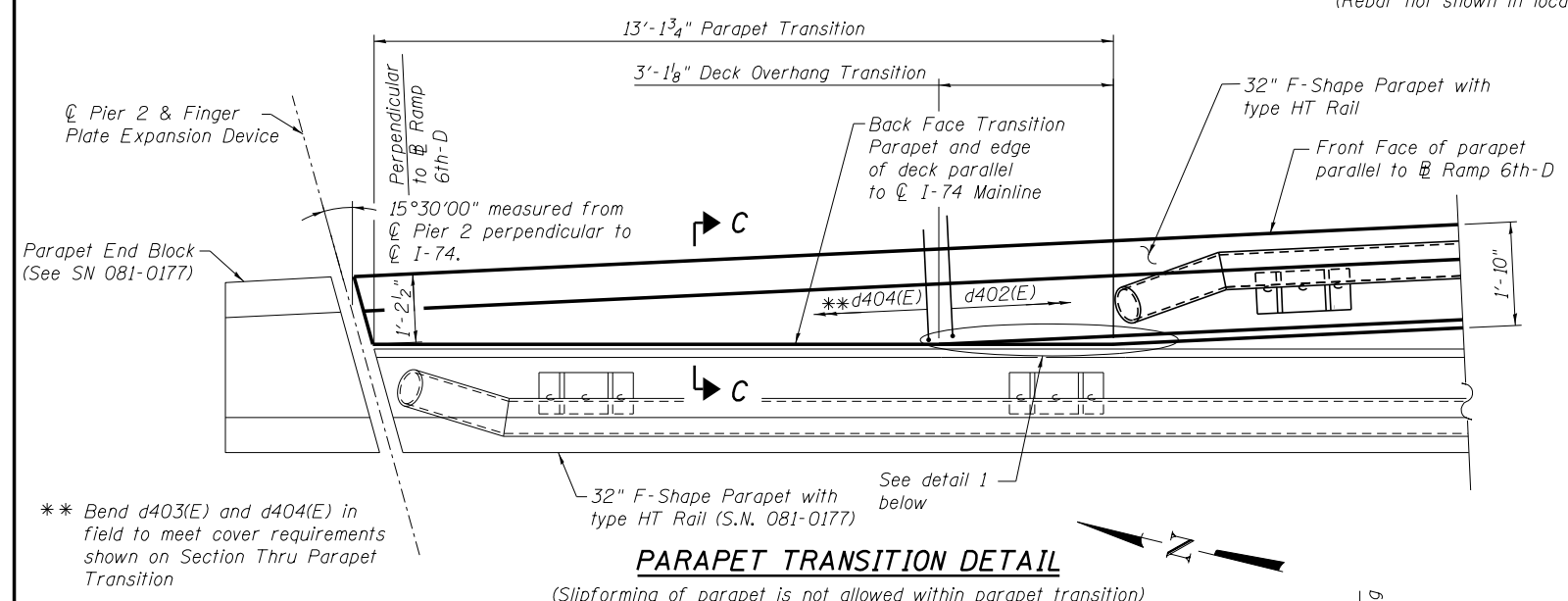
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74	81-IHVBR	ROCK ISLAND	1504	1074
ILLINOIS FED. AID PROJECT			CONTRACT NO. 64C08	

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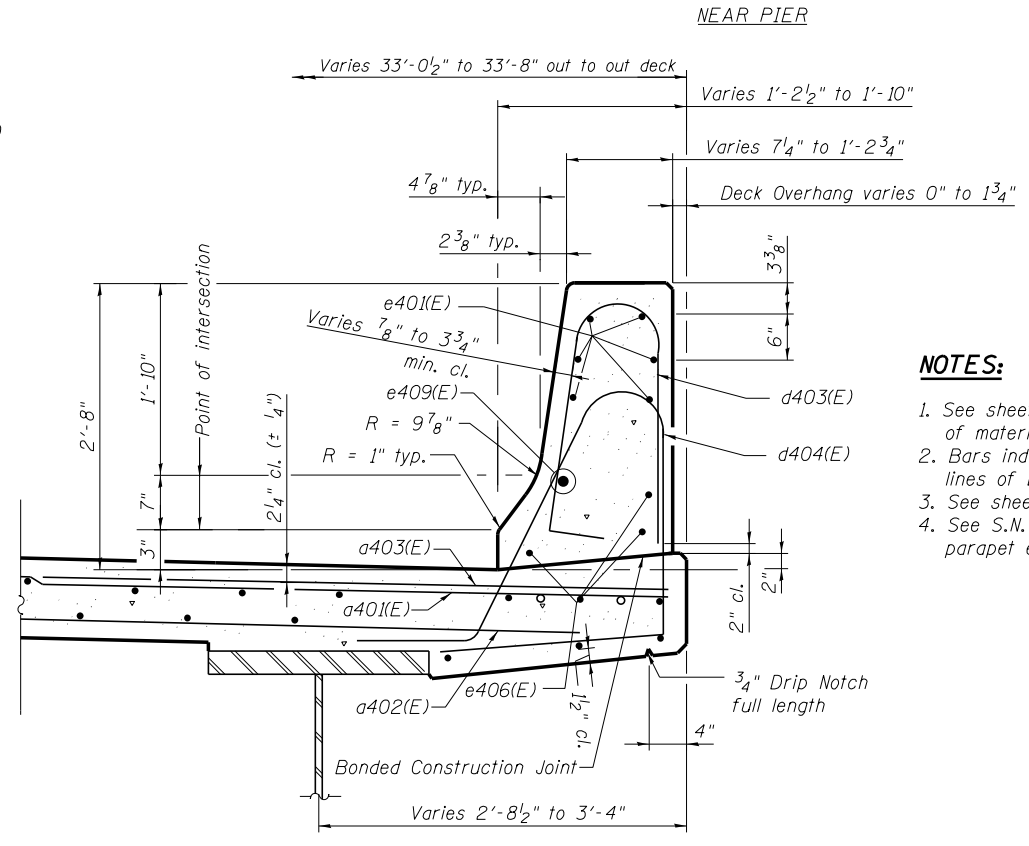
CROSS SECTION
(Looking South)
(Rebar not shown in location of scupper for clarity)

* See Section C-C for variation. Dimension varies from Sta. 430+48.75 to Sta. 430+62.14. Overhang width decreases to 2'-8 1/2" at north edge of deck.



PARAPET TRANSITION DETAIL
(Slipforming of parapet is not allowed within parapet transition)

** Bend d403(E) and d404(E) in field to meet cover requirements shown on Section Thru Parapet Transition



SECTION C-C
PARAPET TRANSITION

NOTES:

1. See sheet SD11 for superstructure details and bill of material.
2. Bars indicated this 30x17-#5 etc. indicates 30 lines of bars with 17 lengths per line.
3. See sheet SD10 for parapet reinforcement.
4. See S.N. 081-0177 for Pier 2 joint opening & parapet end block details.

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DETAIL 1

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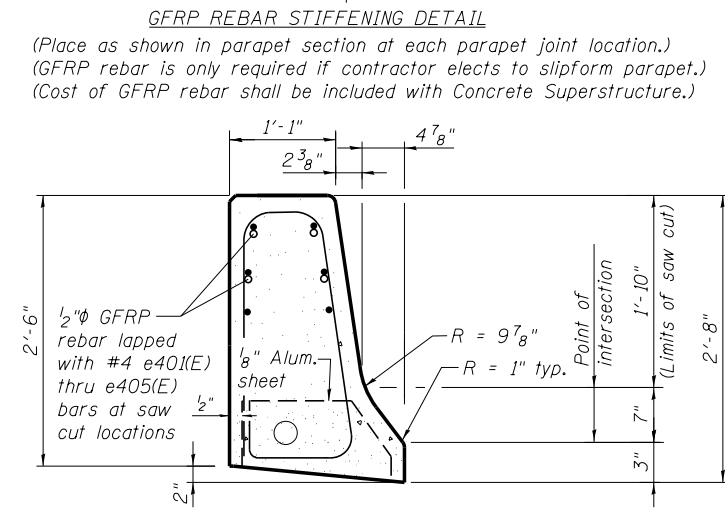
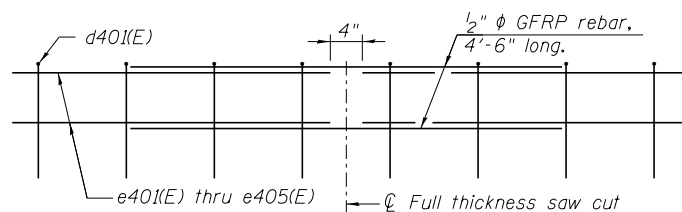
DECK REINFORCEMENT CROSS SECTION
STRUCTURE NO. 081-0187 RAMP 6TH-D

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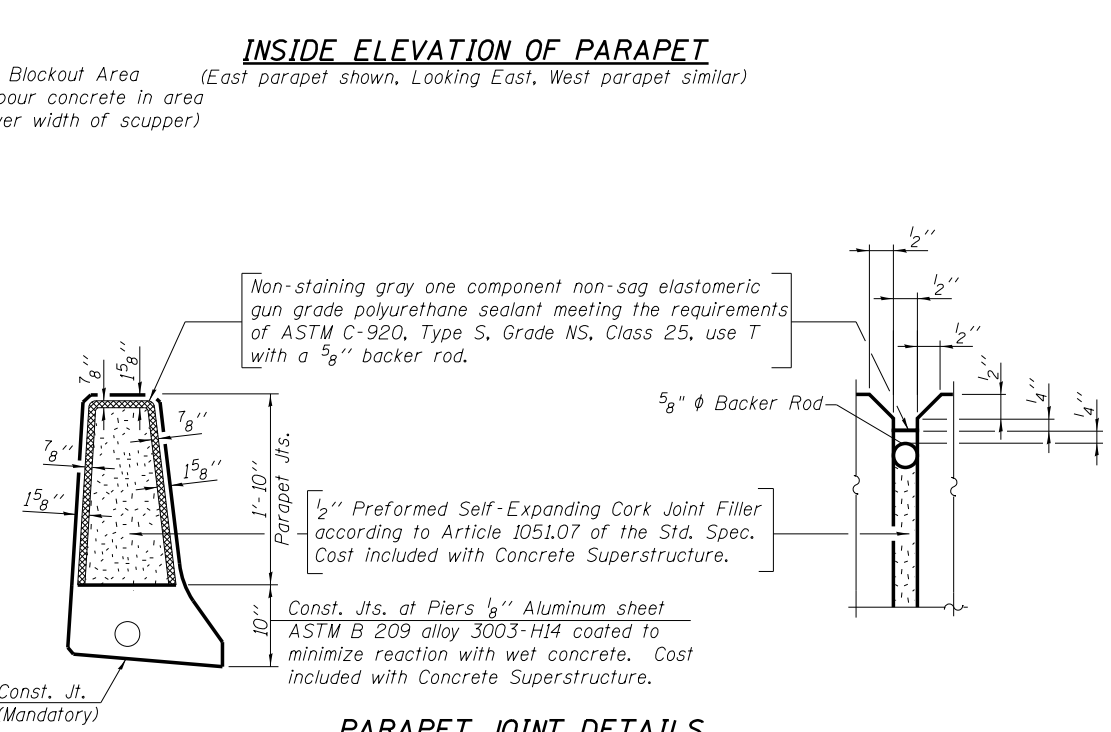
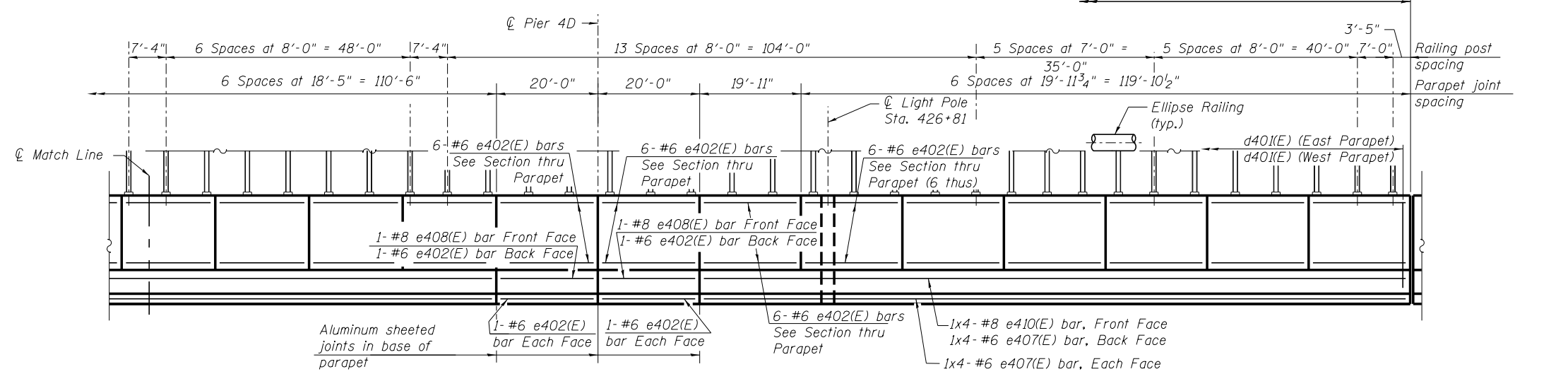
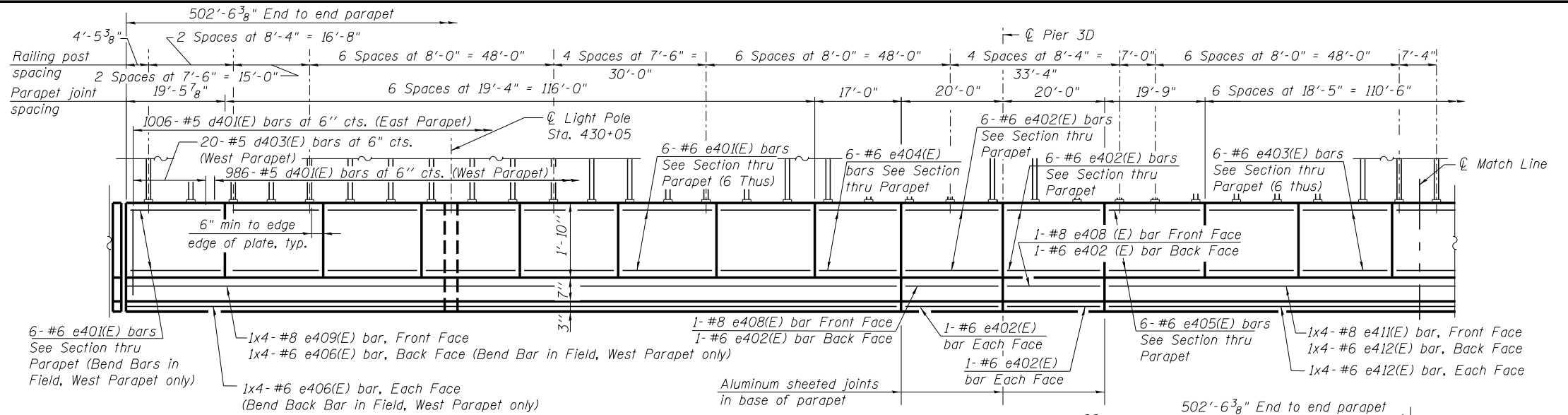
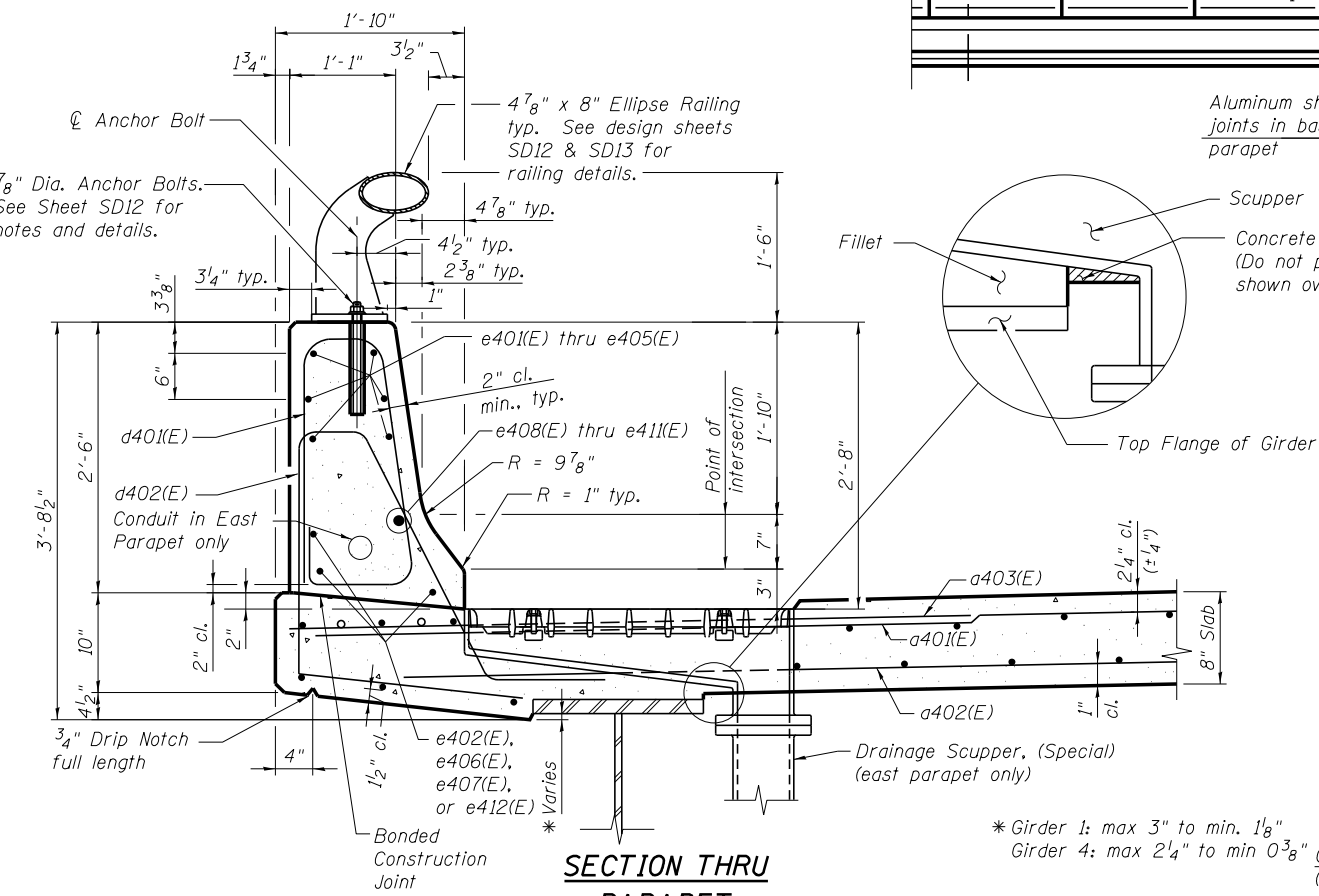
SHEET NO. SD9 OF SD44 SHEETS

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ILLINOIS FED. AID PROJECT			CONTRACT NO. 64C08	

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1. All dimensions shall remain the same as shown on superstructure details.
 2. Place aluminum sheet in curb portion at and near piers. Full thickness saw cut at all joint locations in lieu of cork joint filler.



MINIMUM BAR LAP

(Parapet)
 #6 bar = 3'-0"
 #8 bar = 5'-2"

NOTES:

- Bars indicated thus 1x4-#8 etc. indicates 1 line of bars with 4 lengths per line.
- Extend North Drainage Scupper, (Special) to closed drainage system at Pier 2. See S.N. 081-0177 for closed drainage details.
- Extend South Drainage Scupper, (Special) 6" below bottom of girder.

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TYPICAL PARAPET ELEVATION
STRUCTURE NO. 081-0187 RAMP 6TH-D

SHEET NO. SD10 OF SD44 SHEETS

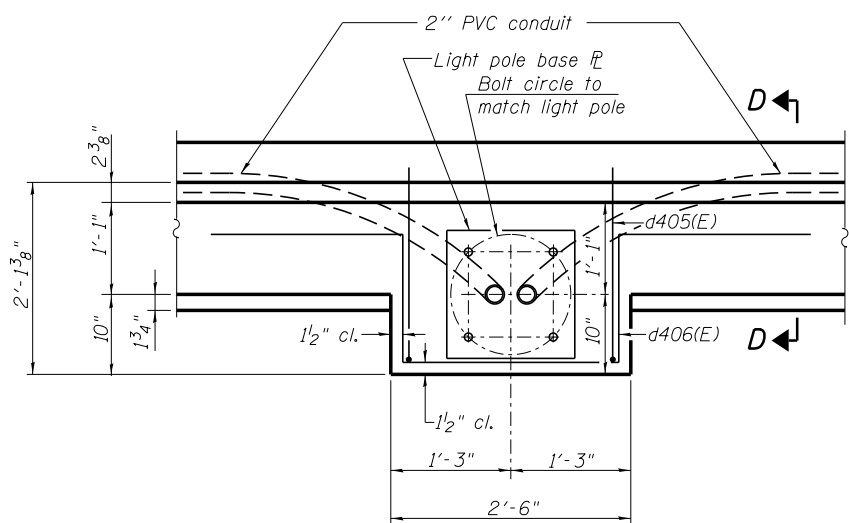
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ILLINOIS FED. AID PROJECT			CONTRACT NO. 64C08	

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**SUPERSTRUCTURE
BILL OF MATERIAL**

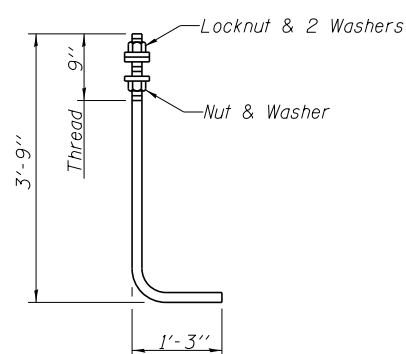
Bar	No.	Size	Length	Shape
a401(E)	1206	#5	33'-4"	
a402(E)	754	#5	32'-10"	
a403(E)	2412	#6	6'-6"	
a404(E)	1	#6	33'-7"	
a405(E)	5	#6	27'-4"	
a406(E)	9	#6	10'-3"	
a407(E)	16	#5	2'-0"	
b401(E)	1158	#5	31'-3"	
b402(E)	198	#6	37'-8"	
b403(E)	60	#5	17'-0"	
d401(E)	1992	#5	7'-9"	
d402(E)	996	#5	8'-4"	
d403(E)	20	#5	5'-1"	
d404(E)	20	#5	7'-1"	
d405(E)	6	#6	4'-3"	
d406(E)	10	#6	8'-11"	
e401(E)	84	#6	19'-0"	
e402(E)	156	#6	19'-8"	
e403(E)	72	#6	18'-1"	
e404(E)	12	#6	16'-8"	
e405(E)	12	#6	19'-5"	
e406(E)	24	#6	40'-4"	
e407(E)	24	#6	37'-3"	
e408(E)	8	#8	19'-8"	
e409(E)	8	#8	41'-11"	
e410(E)	8	#8	39'-0"	
e411(E)	8	#8	36'-5"	
e412(E)	24	#6	34'-10"	
x401(E)	24	#5	6'-5"	
Concrete Superstructure			Cu. Yd.	581.7
Reinforcement Bars, Epoxy Coated			Pound	183,680

Bars indicated thus 30x17-#5 etc. indicates 30 lines of bars with 17 lengths per line.



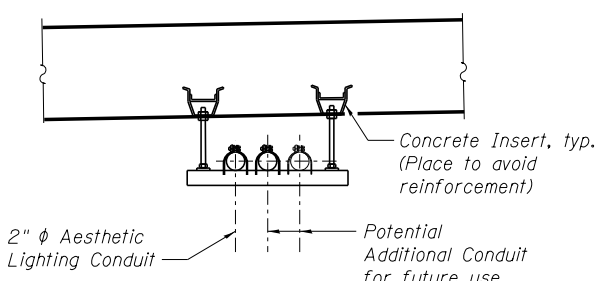
PLAN
(2 Locations)

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



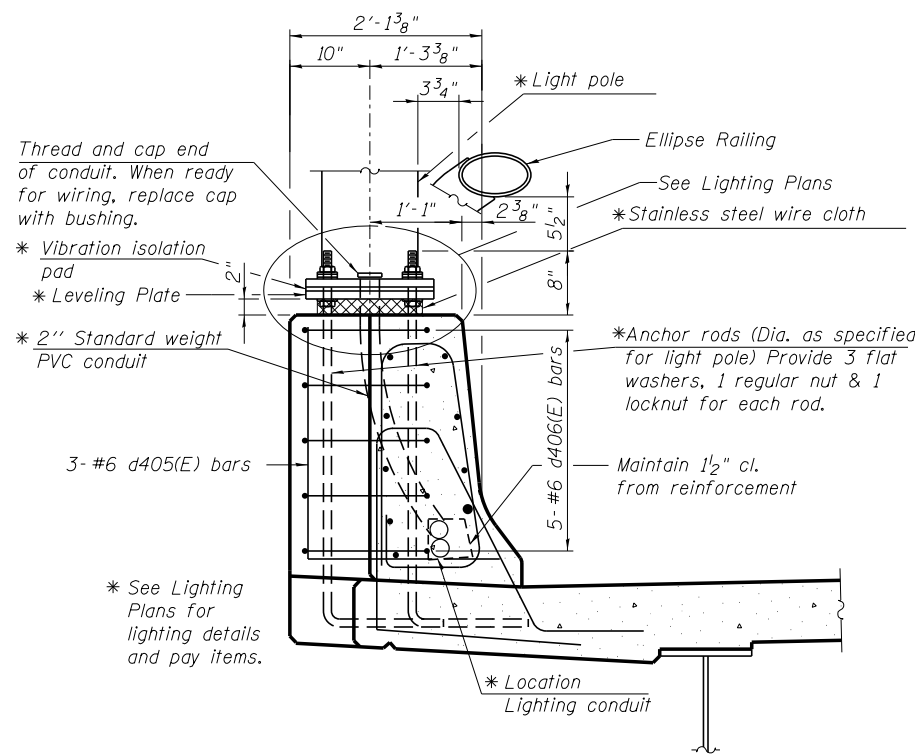
ANCHOR ROD

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

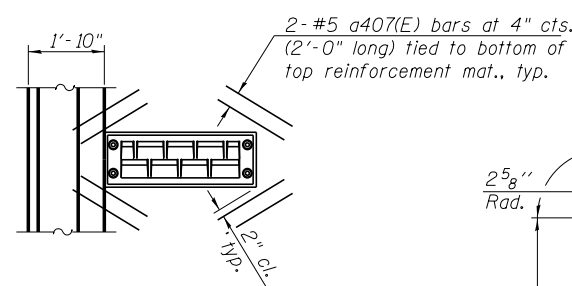


SUPPORT HANGER DETAIL

- Notes:
- Contractor shall supply support hanger for two potential future conduit in addition to proposed lighting conduits. See lighting plans for additional lighting details.
 - All exposed conduits shall be PVC coated galvanized steel.
 - Cost of Concrete Inserts and supports shall be included with the conduits attached to structure. See Lighting Plans for pay items.
 - Contractor shall be responsible for routing conduit around cross frames at expansion joints and at trough on Pier 2 subject to approval by the Engineer.

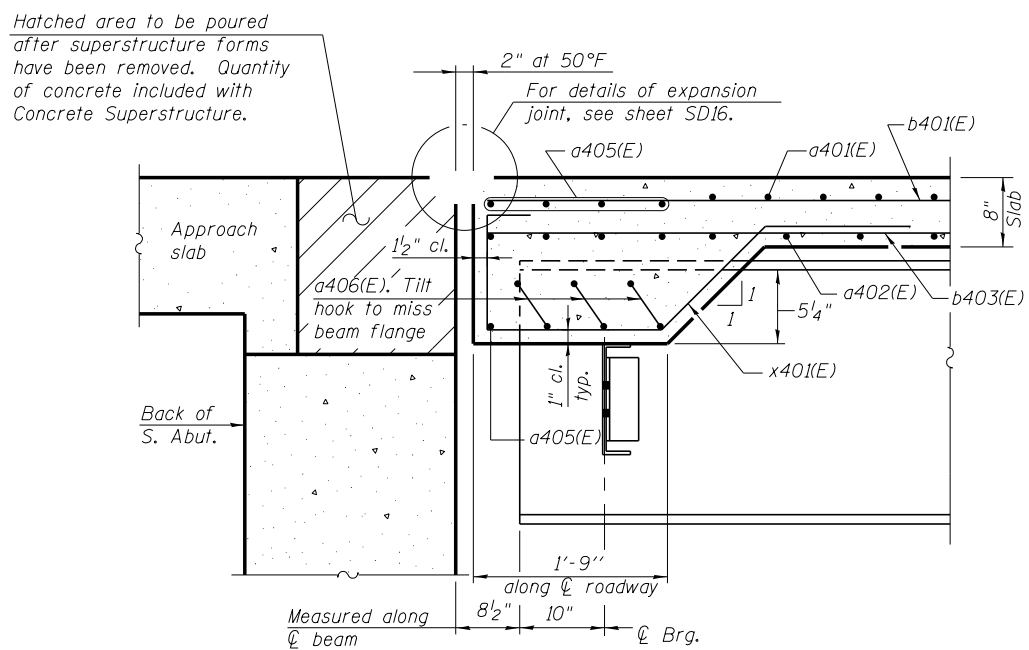


SECTION D-D
(2 locations)



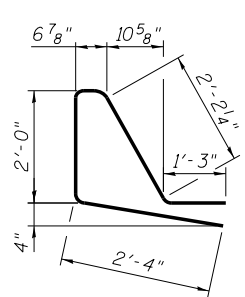
PLAN

(2 Locations)
Note: Cut longitudinal reinforcement to clear drainage scuppers.



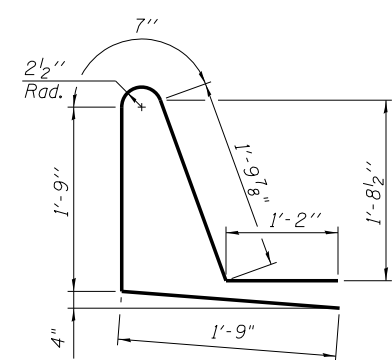
SECTION B-B

Note:
The concrete edge beams shall be placed from fascia beam to fascia beam and not on the overhangs of the structure.

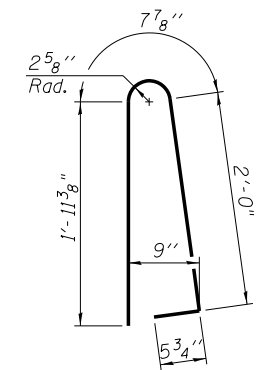


Bar d402(E)

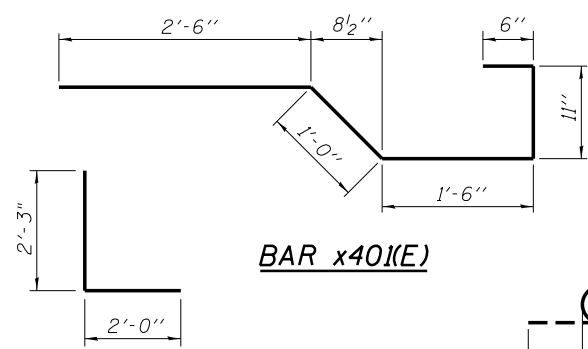
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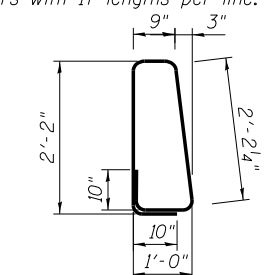
BAR d404(E)



BAR d403(E)

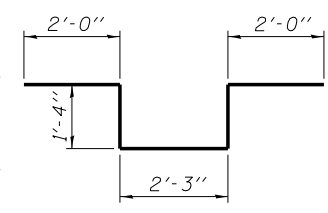


BAR x401(E)

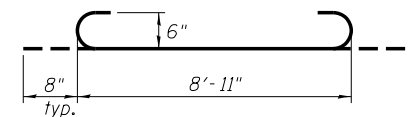


Bar d401(E)

All dimensions are out to out.



BAR d406(E)



a406(E) BAR

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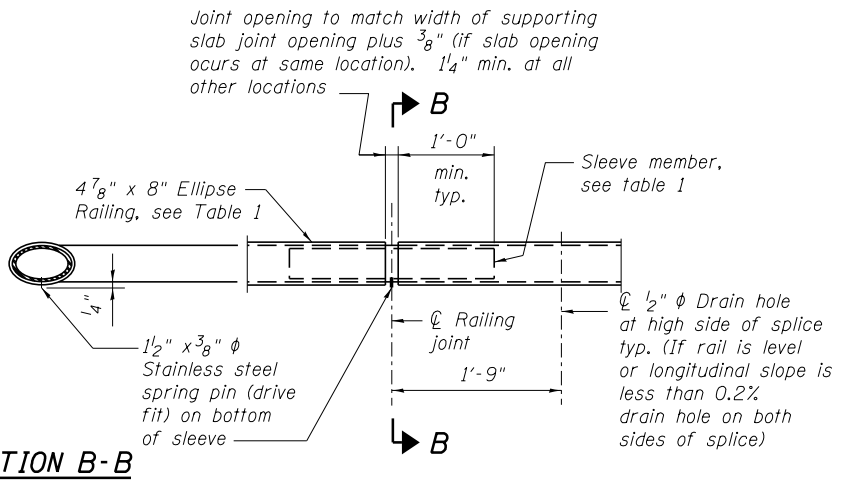
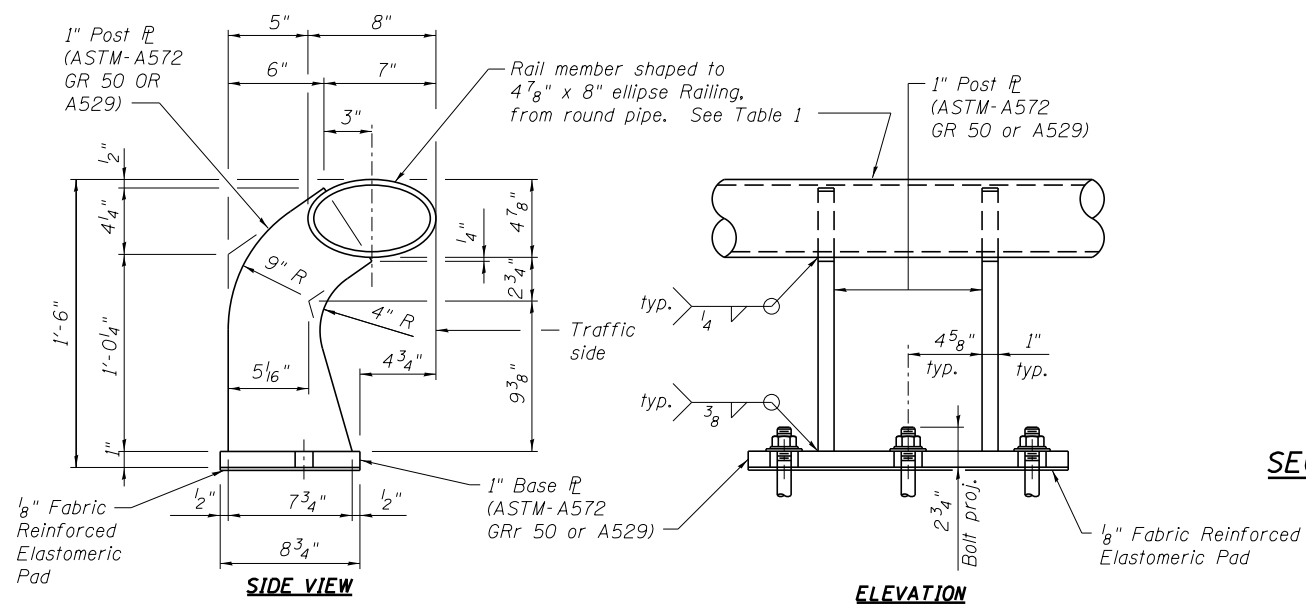
**STATE OF ILLINOIS
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**SUPERSTRUCTURE DETAILS
STRUCTURE NO. 081-0187 RAMP 6TH-D**

SHEET NO. SD11 OF SD44 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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ILLINOIS FED. AID PROJECT			CONTRACT NO. 64C08	

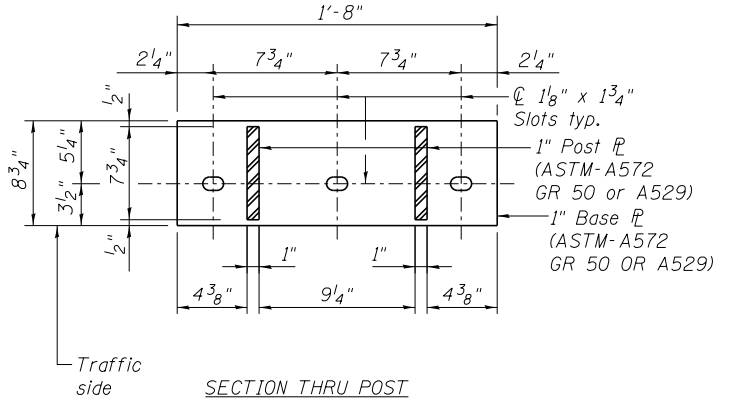
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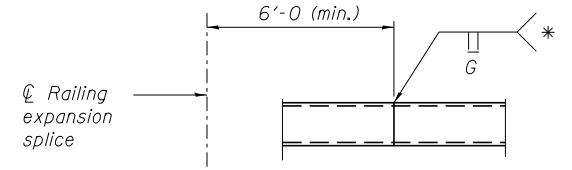
SECTION B-B

ELLIPSE RAILING SLEEVE DETAIL

Note:
The major and minor diameters of the rail member may vary +/- 3/16 inch from plan dimensions. However, the difference between the outside diameters of the sleeve and the inside diameters of the rail shall not exceed 1/8 inch along the major or minor axis. The maximum gap along the 45 degree axis of the sleeve may be 1/4 inch max.



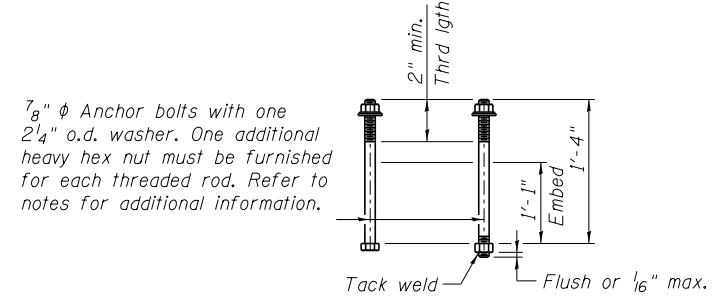
ELLIPTICAL TUBE WITH RAIL POST AND ANCHORAGE DETAILS



RAILING SHOP SPLICE DETAIL

* Shop splice is permitted with minimum 85 percent penetration. The weld may be square groove, double vee groove, or single groove. Grind smooth.

APPROVED RAILING MATERIAL		
4 7/8" x 8" Ellipse Railing		Sleeve Member (at railing splice)
Material	Material	Thickness
6" Dia. Std. Pipe	ASTM-A53-B	0.353"
ASTM-A53 E OR S GRADE B	A36 or A500 GR. B	0.339"
6" dia. , 0.280" Wall thickness	API-5LX52	0.224"
ASTM-A501	ASTM-A53-B	0.353"
ASTM-A501	A36 or A500 GR. B	0.339"
6 5/8" O.D. x 0.188" Tube	API-5LX52	0.224"
API-5LX52	ASTM-A53-B	0.339"
API-5LX52	A36 or A500 GR. B	0.325"
API-5LX52	API-5LX52	0.216"



CAST-IN-PLACE ANCHOR BOLT OPTIONS

NOTES:

- See sheet SD10, for post spacing.
- Steel Railing (Special) shall be fabricated and installed in accordance with Article 509 of the Standard Specifications, unless otherwise noted.
- All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.
- The Steel Railing (Special) is to be bid on a per linear foot basis measured from end to end of steel railing.
- Payment for Steel Railing (Special) shall include full compensation for furnishing all material, and all the equipment and labor required to erect the rail in accordance with these plans and the Standard Specifications.
- Anchor bolts shall be 7/8 inch diameter, ASTM A-193 GR. B7, fully threaded with heavy hex nuts and one hardened washer and one 2 1/4 inch O.D. washer each. Embed threaded rods 10 1/2 inch min. into concrete parapet. Material for these items shall be in accordance with the adhesive manufacturer's requirements to be capable of obtaining an ultimate load per threaded rod of 36 kips in tension, considering spacing and edge distance. See Standard Specification 509.06 for further details on setting anchor bolts. Cost of anchor bolts included with Steel Railing (Special).
- Optional cast-in-place anchor bolts to comply with ASTM F-1554 Grade 105. Hex nuts to comply with AASHTO M291, washers to comply with AASHTO M-293. Galvanizing in accordance with AASHTO M-232.
- Provide one 1/8 inch and two 1/16 inch galvanized steel shims for 25% of rail posts, to be used as required. Shims shall be similar to base plates in size and holes. Cost included with Steel Railing (Special).

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Steel Railing (Special)	Foot	992

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FILE NAME = 0810187-08324-012-TrafficBarrier-Details.dgn	USER NAME = ksnider	DESIGNED - DTS	REVISED -
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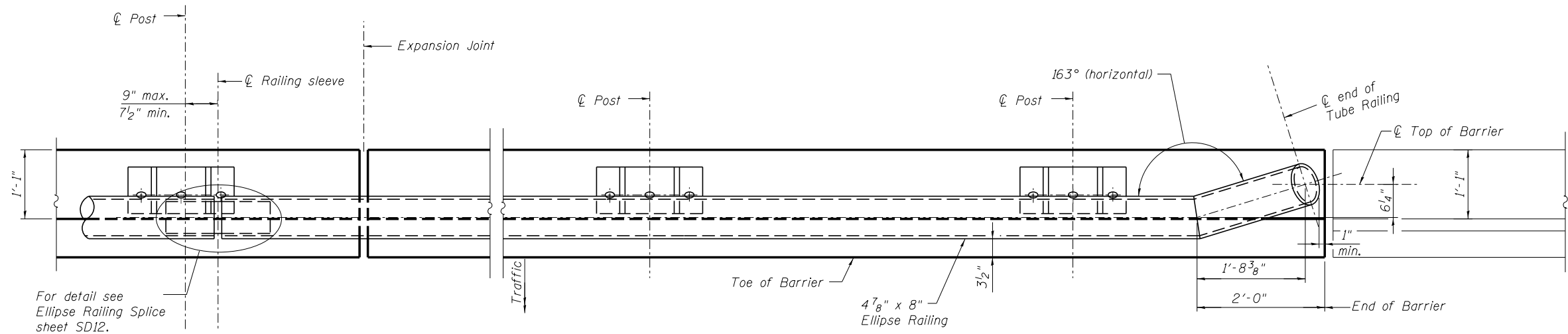
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TRAFFIC BARRIER DETAIL (1 OF 2)
STRUCTURE NO. 081-0187 RAMP 6TH-D**

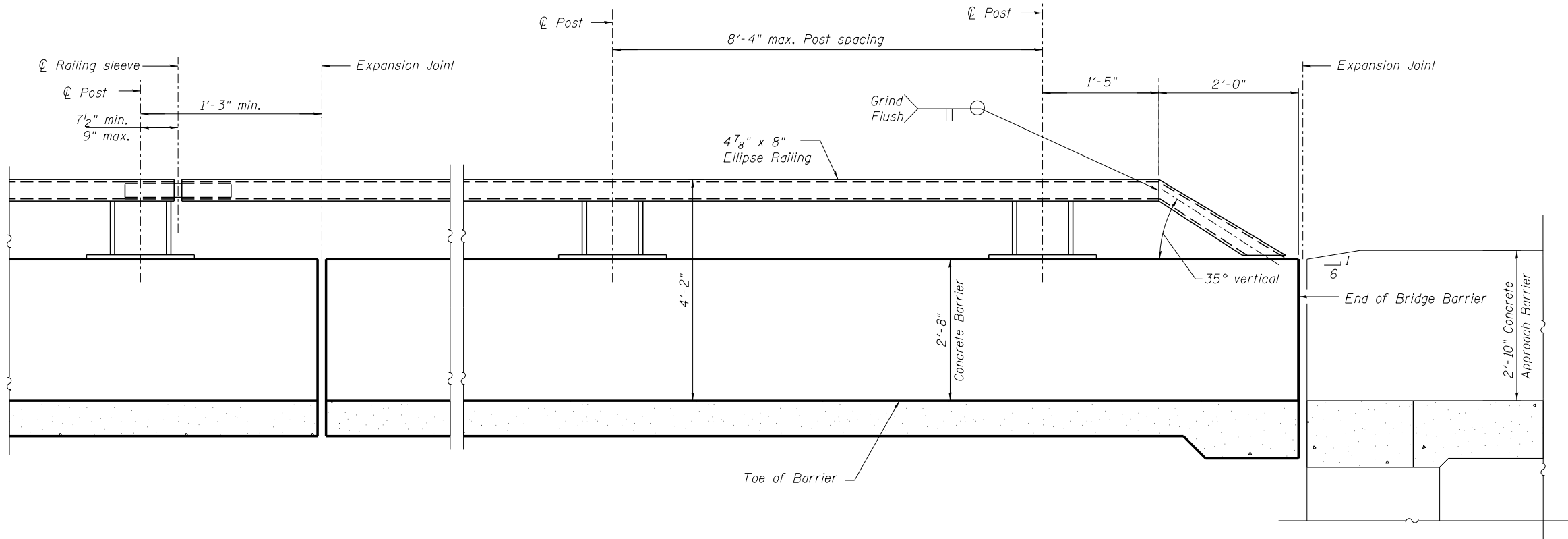
SHEET NO. SD12 OF SD44 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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ILLINOIS FED. AID PROJECT			CONTRACT NO. 64C08	

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PLAN



ELEVATION

(South end of east rail shown, south end of west rail opposite hand.
See sheet SD9 for details at north end of west rail.)

NOTES:

1. Edge of base plate shall not be less than 6" from any cold joint or barrier discontinuity including the back of the abutment or opening for finger plate expansion joint.
2. See sheet SD10, for post spacing.
3. North end of east rail shall tie into railing on S.N. 081-0177.



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FILE NAME = 0810187-08324-013-TrafficBarrier_Details.2.dgn

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PLOT DATE = 1/18/2017
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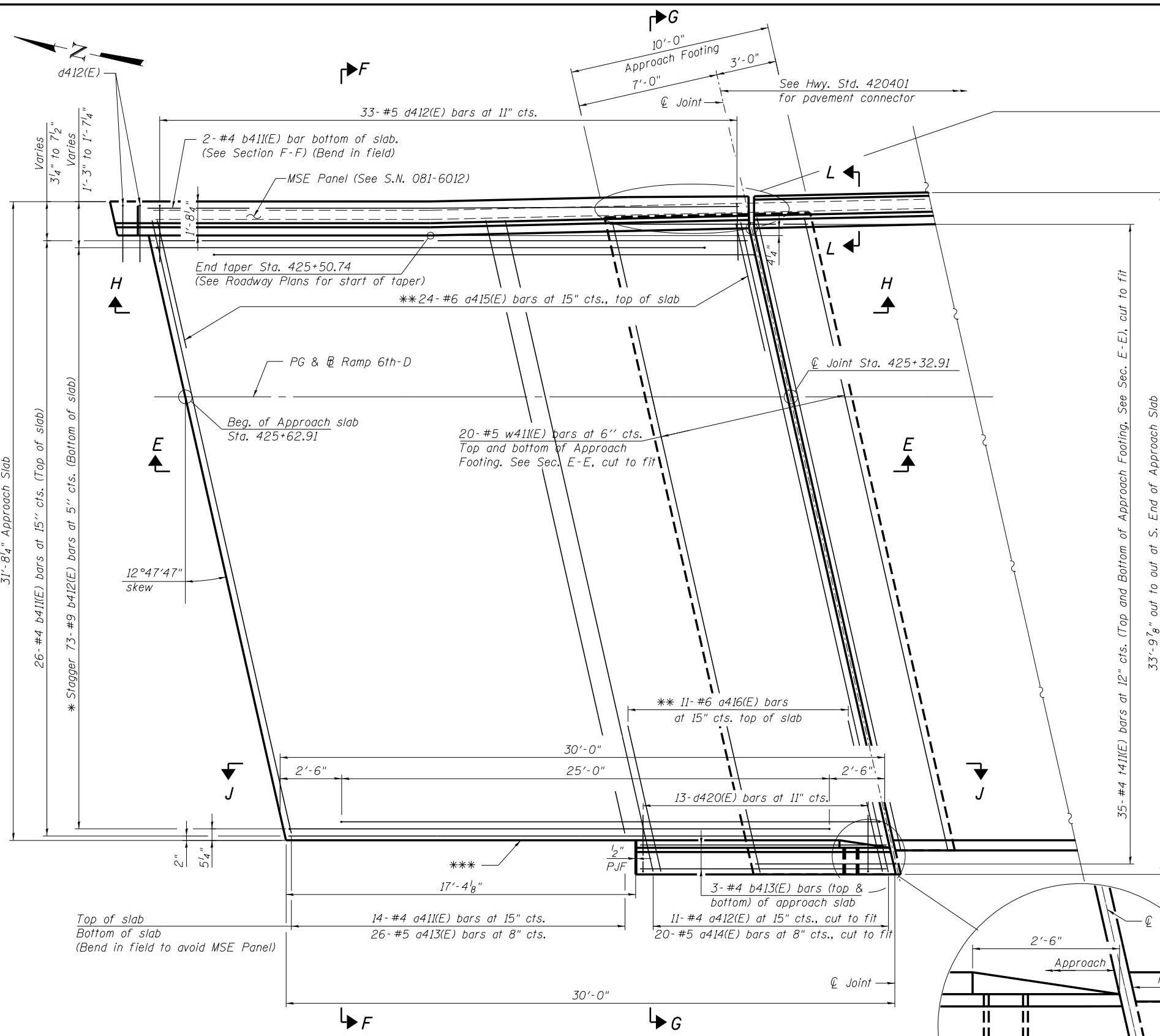
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TRAFFIC BARRIER DETAIL (2 OF 2)
STRUCTURE NO. 081-0187 RAMP 6TH-D**

SHEET NO. SD13 OF SD44 SHEETS

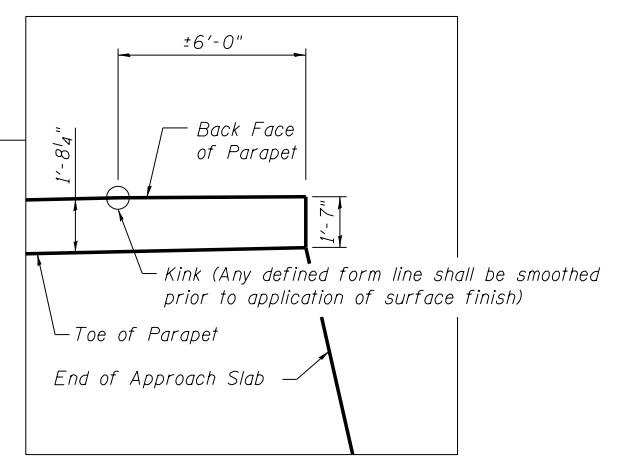
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74	81-IHVBR	ROCK ISLAND	1504	1079
CONTRACT NO. 64C08				

ILLINOIS FED. AID PROJECT

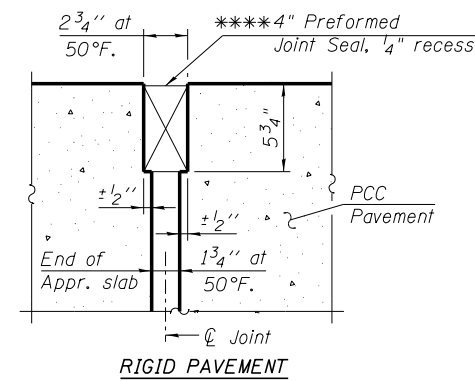


PLAN

- * Tilt #9 b412(E) bars as required to maintain clearance.
- ** Space between a411(E) & a412(E) bars.
- *** Preformed Flexible Foam Expansion Joint Filler according to Article 1051.09 of standard specifications, full depth slab, full length of parapet.

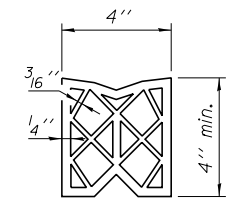


**** Cost included with Concrete Superstructure.

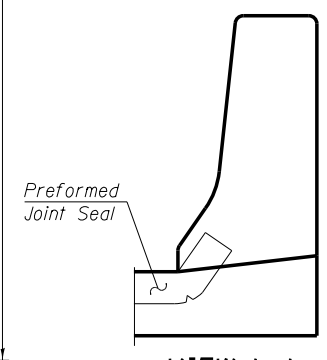


RIGID PAVEMENT

DETAIL 2



PREFORMED JOINT SEAL

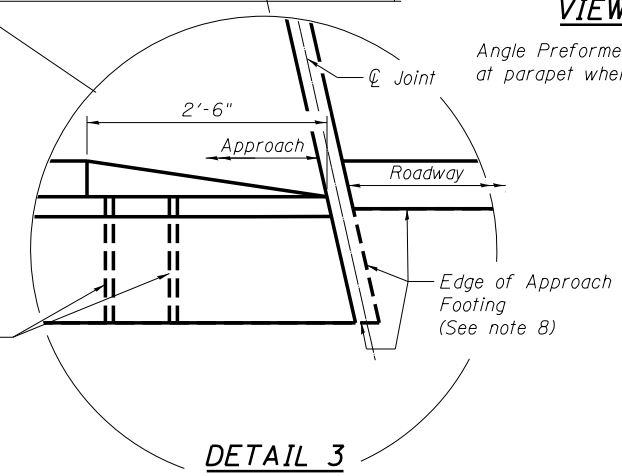


VIEW L-L

Angle Preformed Joint Seal at 45° at parapet when req'd for drainage.

NOTES:

1. See sheet SD15 for Sections E-E, F-F & G-G and Views H-H & J-J.
2. a411(E) thru a414(E) bar spacings measured along Ramp 6th-D.
3. b411(E) & b412(E) bar spacings measured perpendicular to Ramp 6th-D.
4. See sheet SD26 for dimensions between end of approach slab and abutment backwall.
5. Maskwall not shown for clarity.
6. See sheets SD28 thru SD32 for maskwall details.
7. See sheet SD27 for d412(E) bars cast in the hatchblock details.
8. Approach Slab Footing matches west edge of Concrete in order to avoid interference with post for proposed guardrail on roadway.



DETAIL 3

Form or drill holes for Traffic Barrier Terminal Type 6. See Std. 631031

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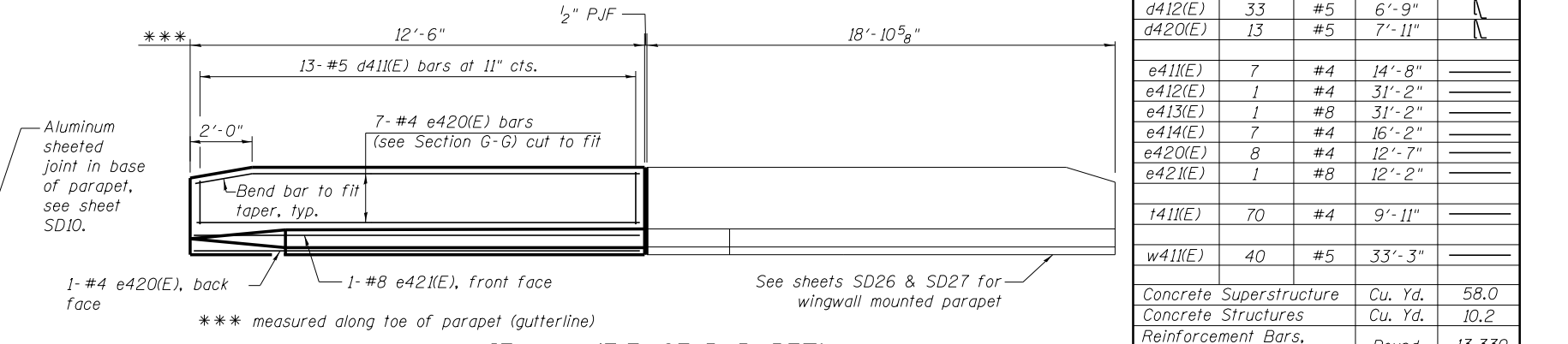
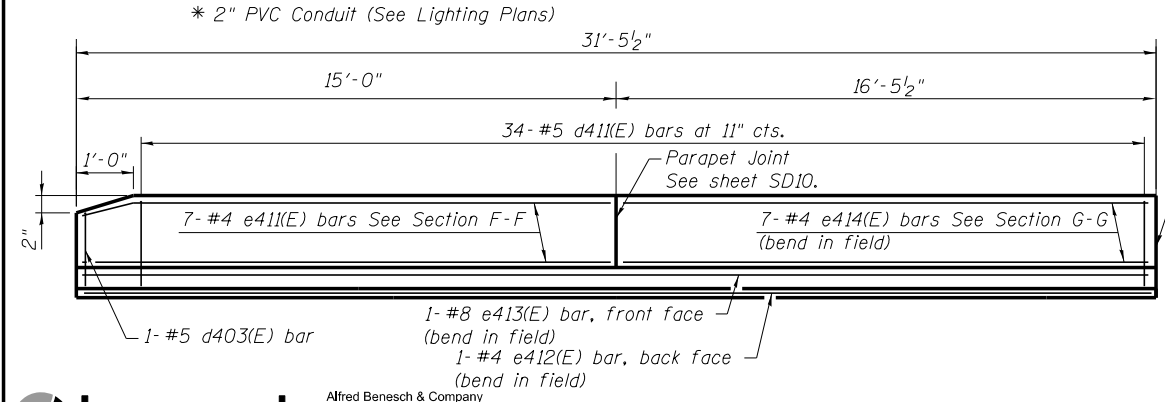
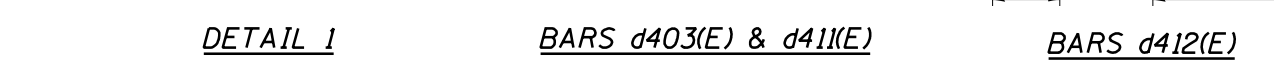
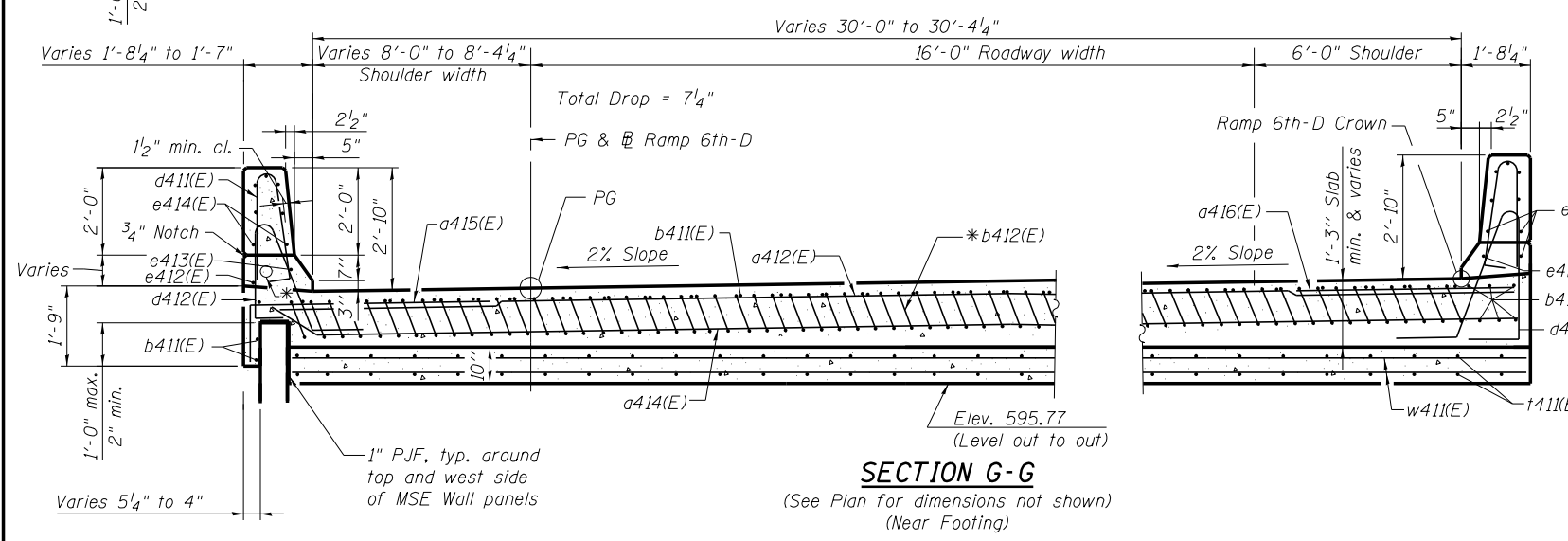
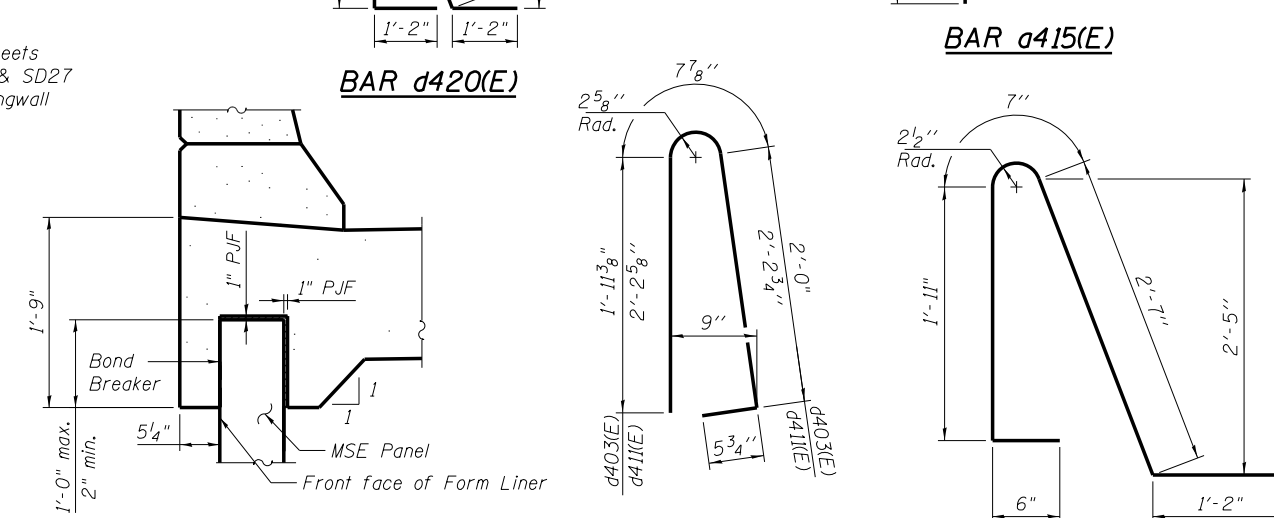
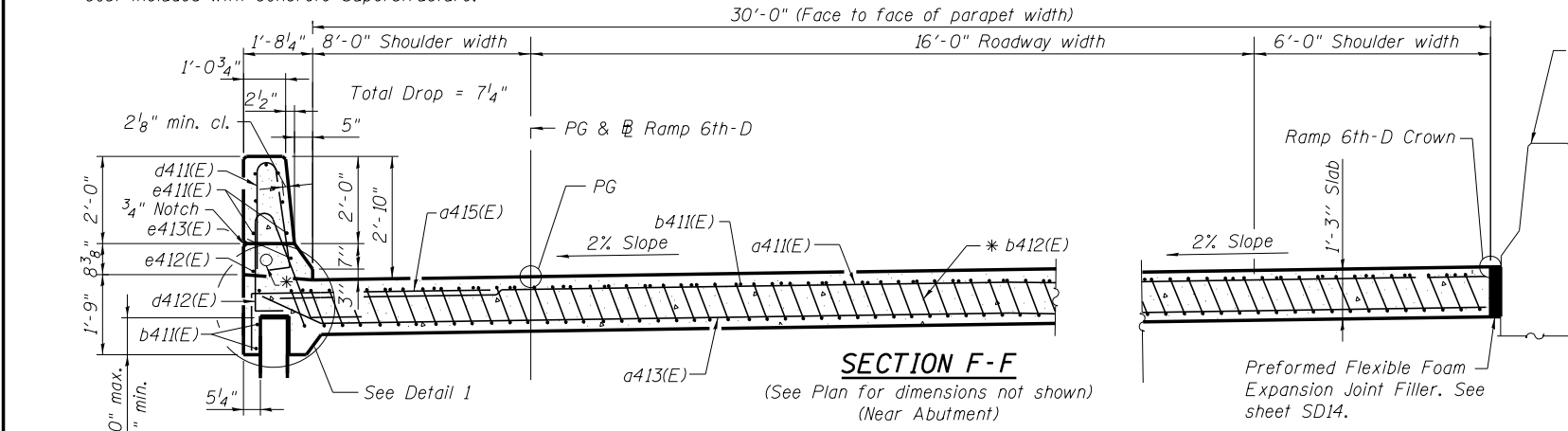
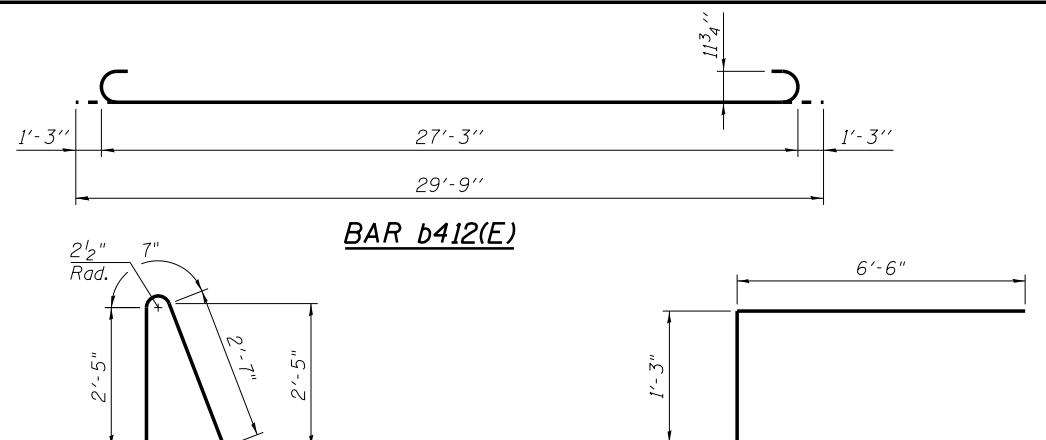
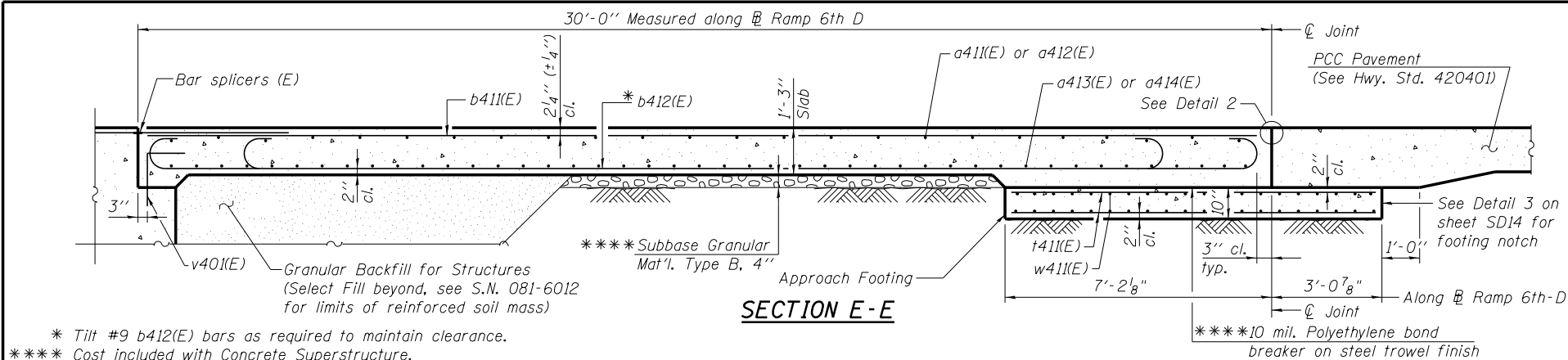
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	PLOT DATE = 1/18/2017	DRAWN - KMS	REVISED -
		CHECKED - AJK/MRB	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**BRIDGE APPROACH SLAB PLAN
 STRUCTURE NO. 081-0187 RAMP 6TH-D**

SHEET NO. SD14 OF SD44 SHEETS

F.A.I. R.T.E. = 74	SECTION = 81-IHVBR	COUNTY = ROCK ISLAND	TOTAL SHEETS = 1504	SHEET NO. = 1080
				CONTRACT NO. 64C08
ILLINOIS FED. AID PROJECT				



- NOTES:**
- See sheet SD14 for Detail 2.
 - Approach slab and parapet concrete shall be paid for as Concrete Superstructure.
 - Approach footing concrete shall be paid for as Concrete Structures.
 - Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
 - For v401(E) bar details, see sheet SD27.
 - The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
 - For bar splicer details, see sheet SD41.
 - For Select Fill details, see S.N. 081-6012.
 - Transverse dimensions shown are measured perpendicular to Ramp 6th-D

**APPROACH SLAB
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a411(E)	14	#4	32'-2"	—
a412(E)	11	#4	33'-11"	—
a413(E)	26	#5	32'-2"	—
a414(E)	20	#5	33'-11"	—
a415(E)	24	#6	7'-9"	—
a416(E)	11	#6	6'-6"	—
b411(E)	28	#4	29'-8"	—
b412(E)	73	#9	29'-9"	—
b413(E)	6	#4	12'-2"	—
d403(E)	1	#5	5'-1"	—
d411(E)	47	#5	5'-7"	—
d412(E)	33	#5	6'-9"	—
d420(E)	13	#5	7'-11"	—
e411(E)	7	#4	14'-8"	—
e412(E)	1	#4	31'-2"	—
e413(E)	1	#8	31'-2"	—
e414(E)	7	#4	16'-2"	—
e420(E)	8	#4	12'-7"	—
e421(E)	1	#8	12'-2"	—
1411(E)	70	#4	9'-11"	—
w411(E)	40	#5	33'-3"	—
Concrete Superstructure		Cu. Yd.	58.0	
Concrete Structures		Cu. Yd.	10.2	
Reinforcement Bars, Epoxy Coated		Pound	13,330	

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VIEW H-H (F.F. OF PARAPET)

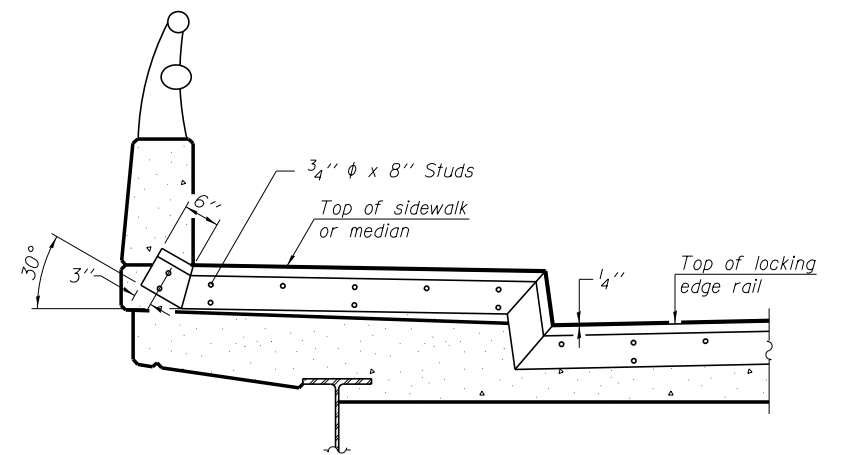
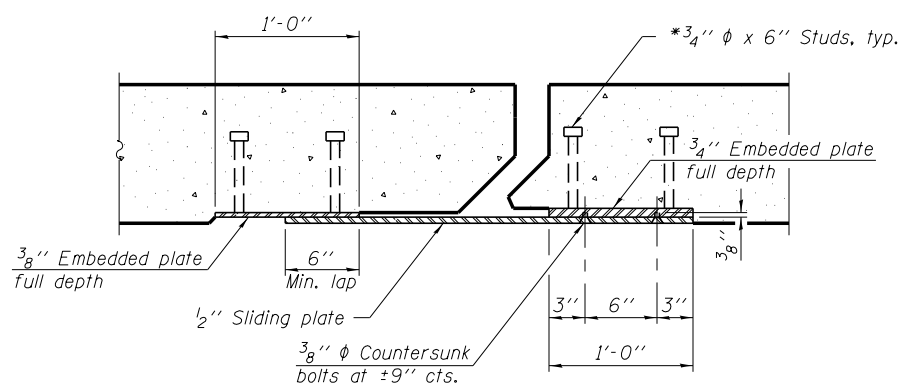
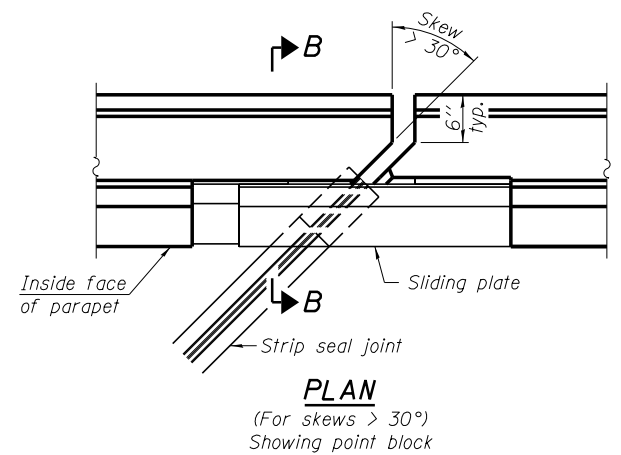
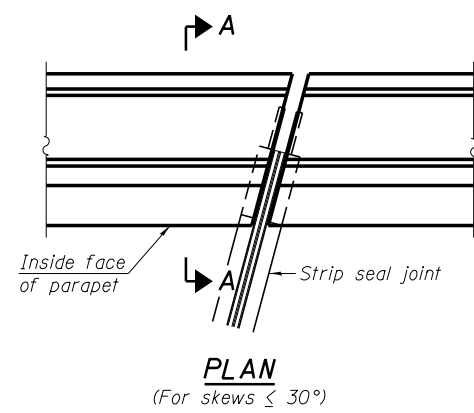
VIEW J-J (F.F. OF PARAPET)

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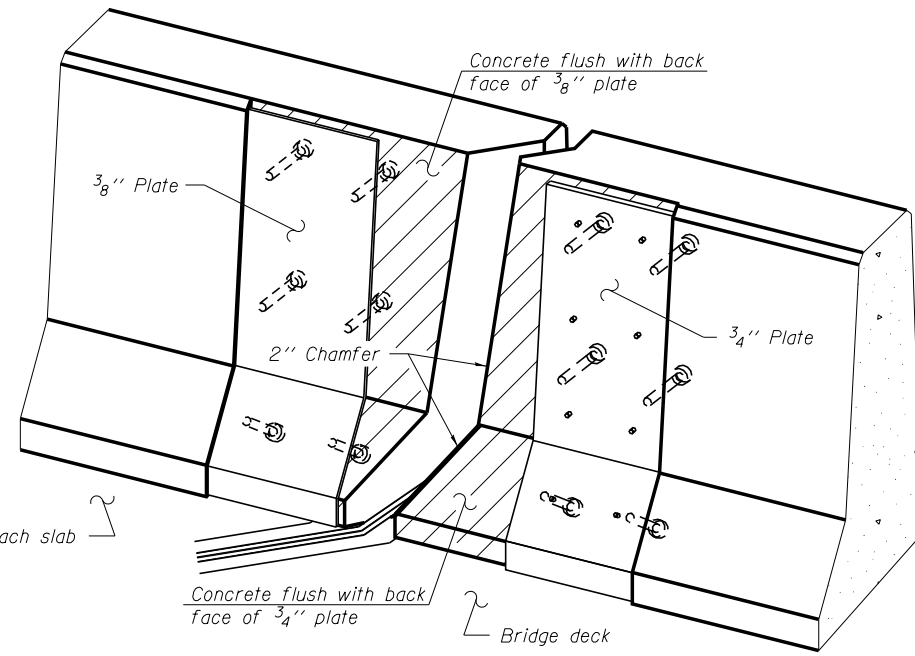
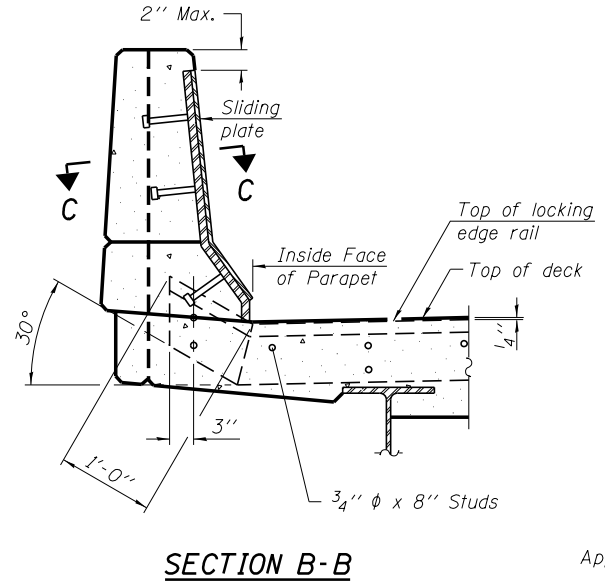
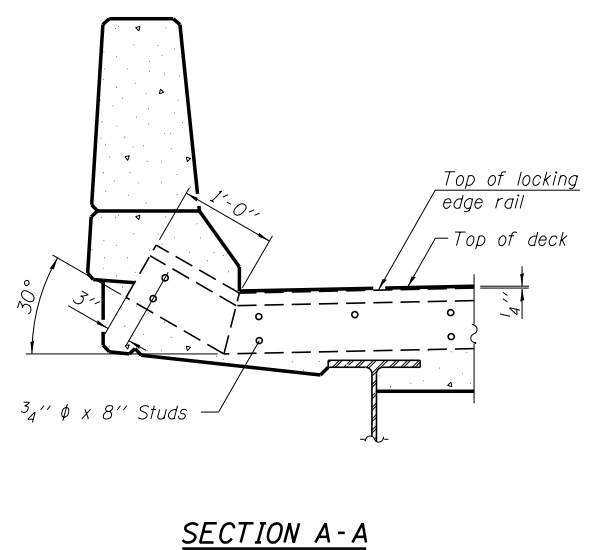
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 081-0187 RAMP 6TH-D**

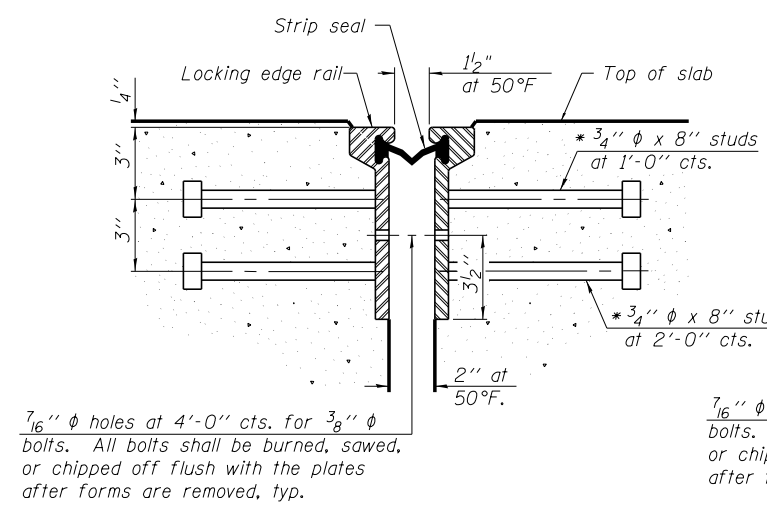
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				CONTRACT NO. 64C08
ILLINOIS FED. AID PROJECT				



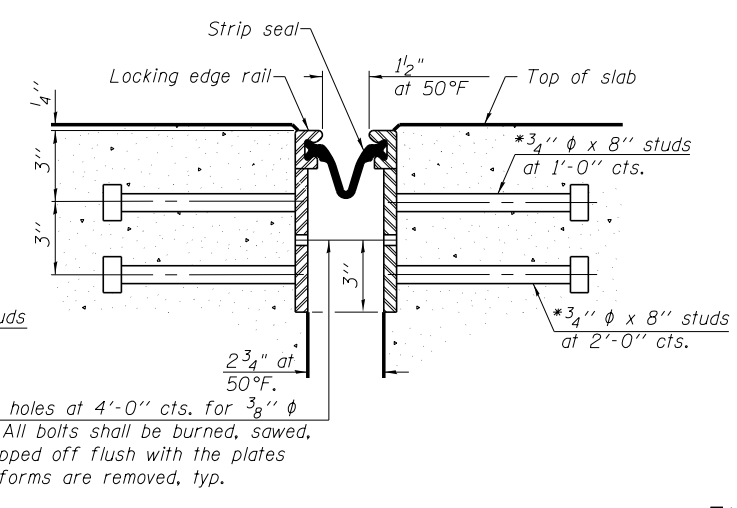
TYPICAL END TREATMENT AT SIDEWALK OR MEDIAN
 Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.



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 for skews > 30° included in the cost of Preformed Joint Strip Seal.

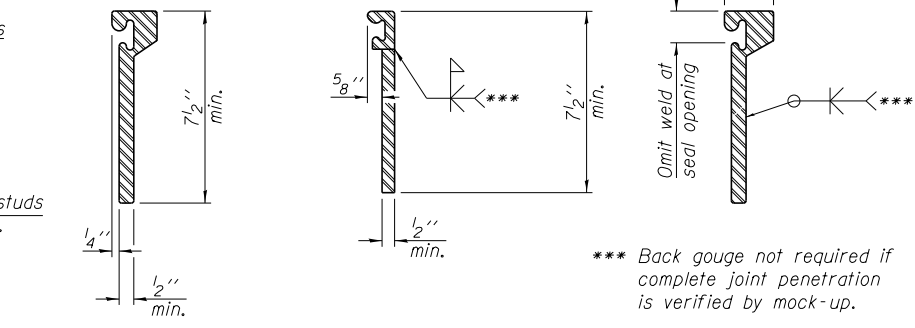


SECTION THRU ROLLED RAIL JOINT



SECTION THRU WELDED RAIL JOINT

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



ROLLED EXTRUDED RAIL WELDED RAIL

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

LOCKING EDGE RAILS

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	33

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EJ-SSJ
 1-27-12

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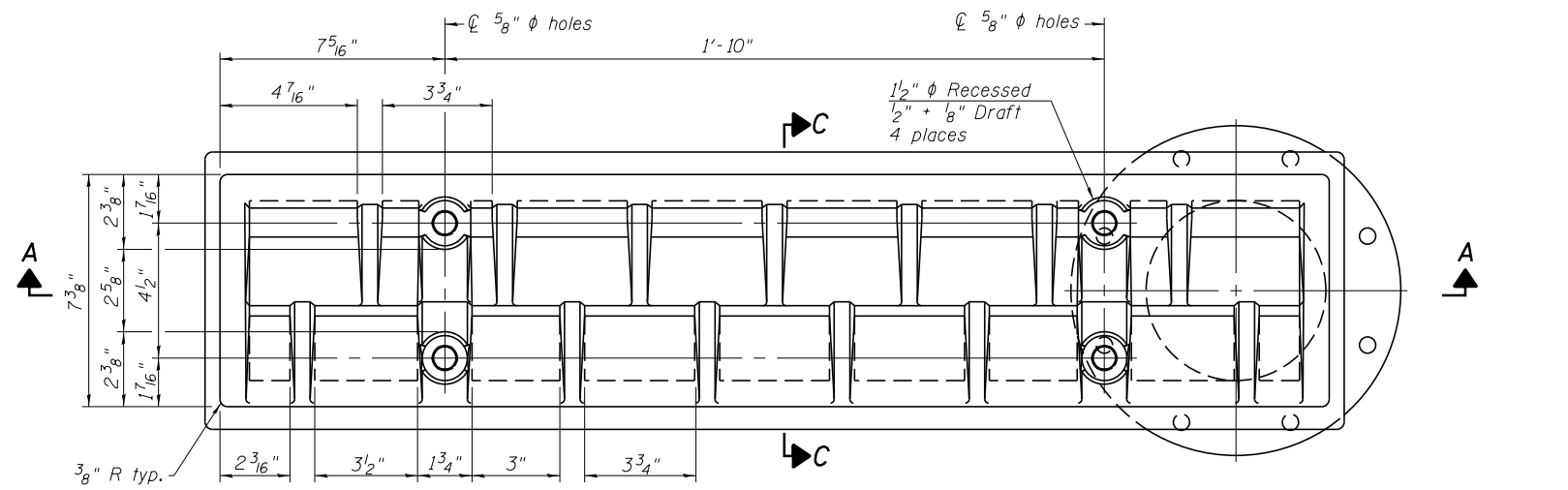
STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL STRUCTURE NO. 081-0187 RAMP 6TH-D

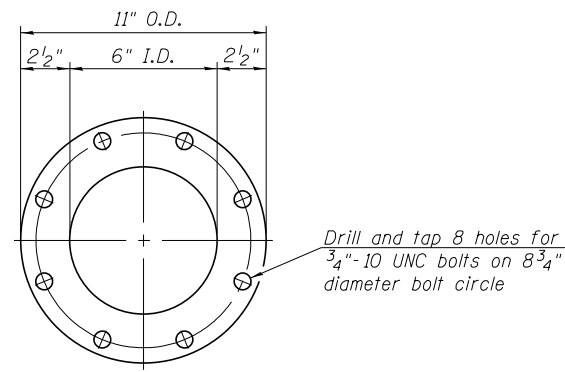
SHEET NO. SD16 OF SD44 SHEETS

F.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-IHVBR	ROCK ISLAND	1504	1082
ILLINOIS FED. AID PROJECT			CONTRACT NO. 64C08	

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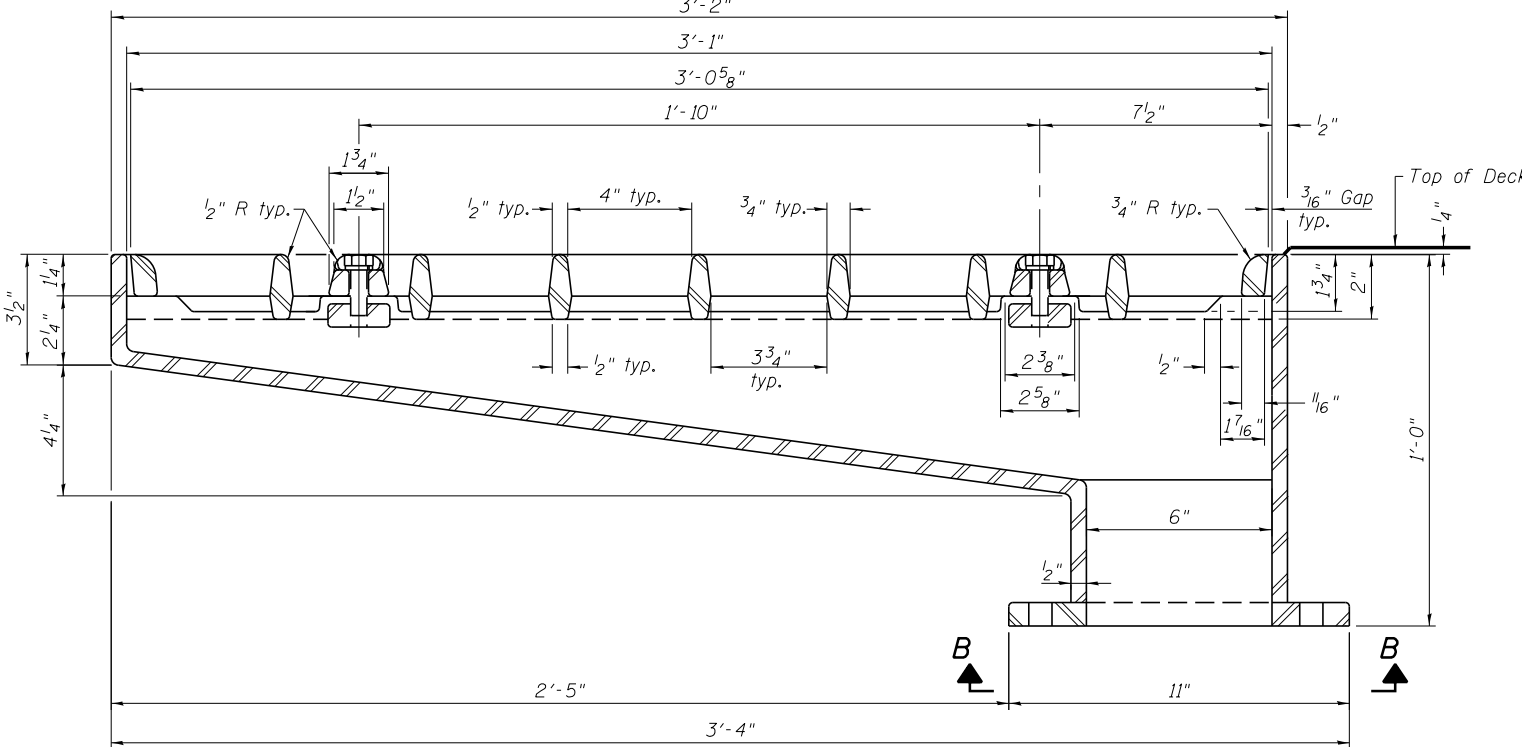


PLAN



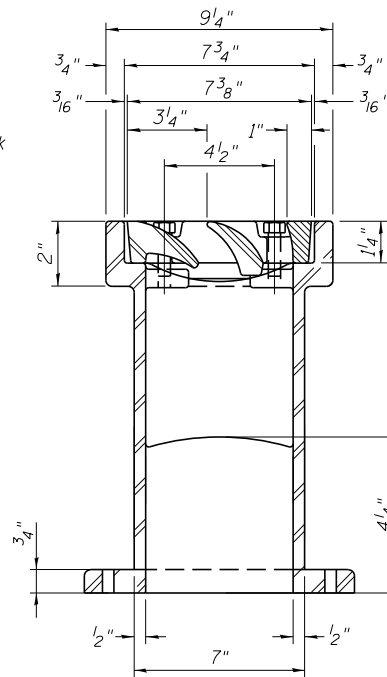
VIEW B-B

Drill and tap 8 holes for 3/4"-10 UNC bolts on 8 3/4" diameter bolt circle

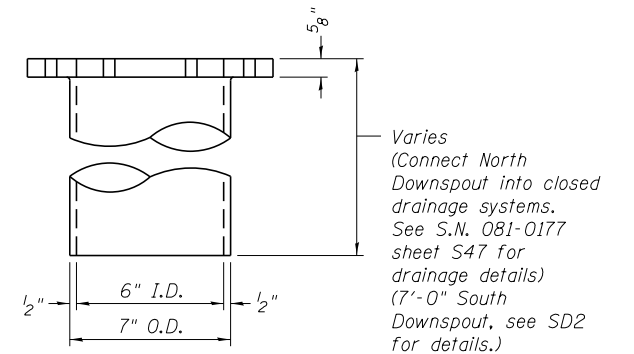
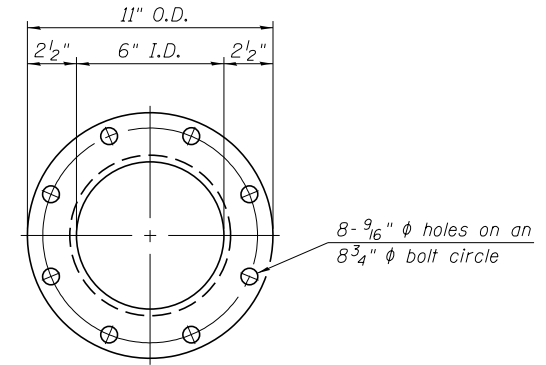


SECTION A-A

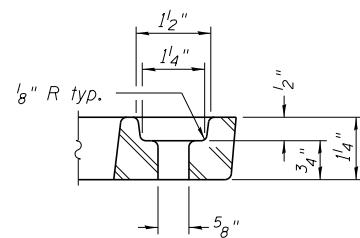
See sheet SD10 for scupper location relative to parapet.



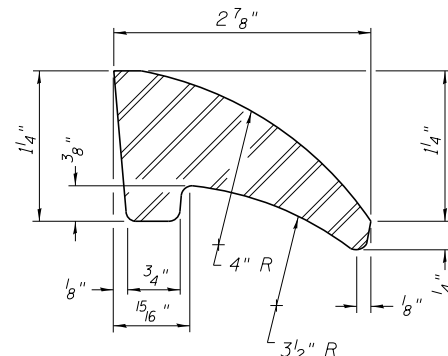
SECTION C-C



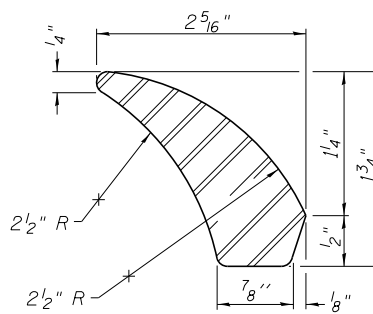
DOWNSPOUT



BOLT HOLE DETAIL



FIRST VANE DETAIL



SECOND VANE 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 (Special).
 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.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scuppers (Special)	Each	2

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 312-565-0450 Job No. 10061

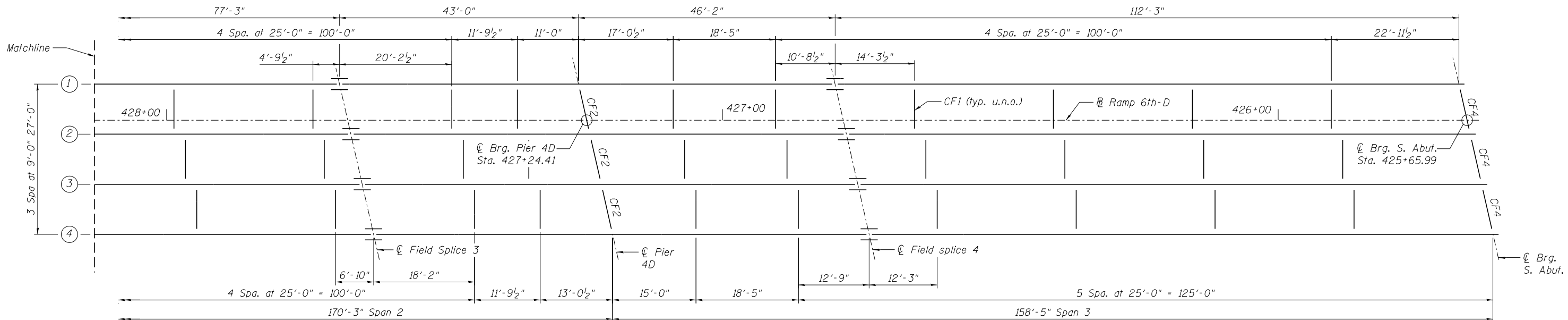
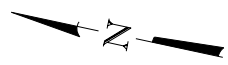
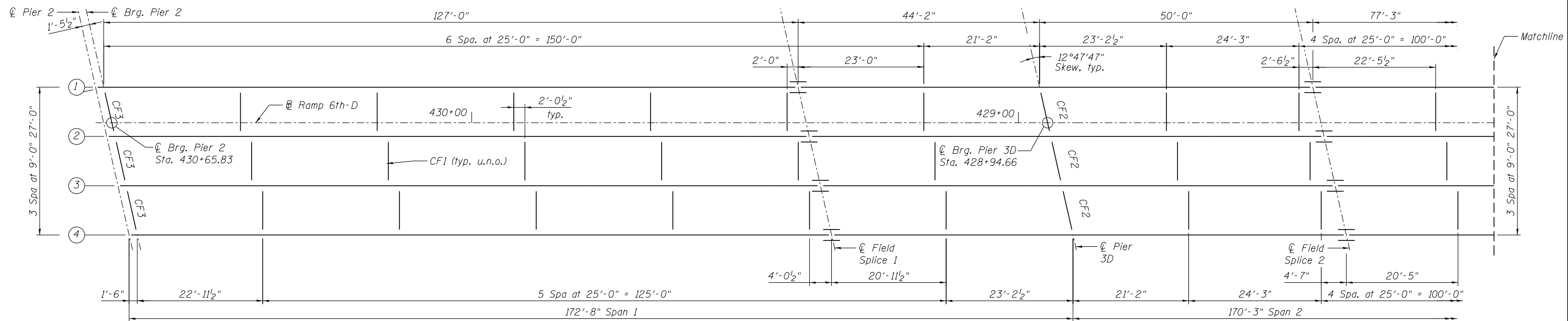
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**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**SCUPPER DETAILS
 STRUCTURE NO. 081-0187 RAMP 6TH-D**

SHEET NO. SD17 OF SD44 SHEETS

F.A.I. RE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-IHVBR	ROCK ISLAND	1504	1083
ILLINOIS FED. AID PROJECT			CONTRACT NO. 64C08	



FRAMING PLAN

NOTE:
 All longitudinal dimensions and spacings shown are measured along \square Ramp 6th-D. See Steel Plate Girder Elevation on Sheet SD19 detailed geometry.

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 Chicago, Illinois 60601
 312-565-0450 Job No. 10061

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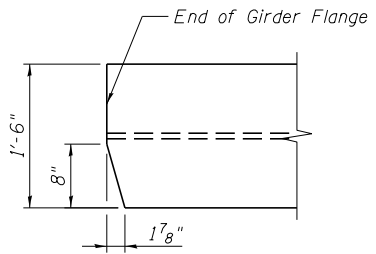
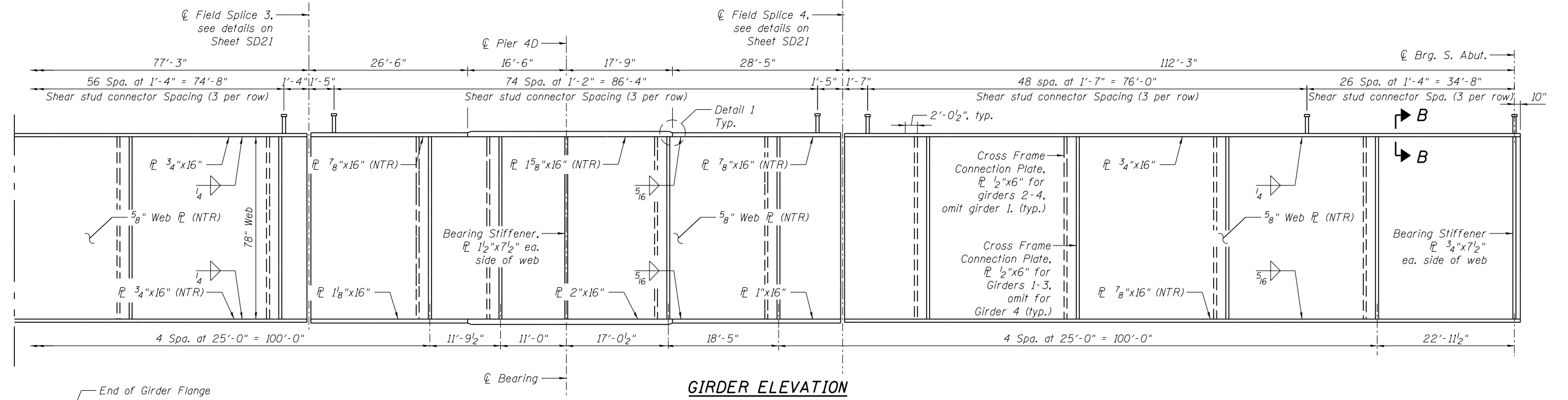
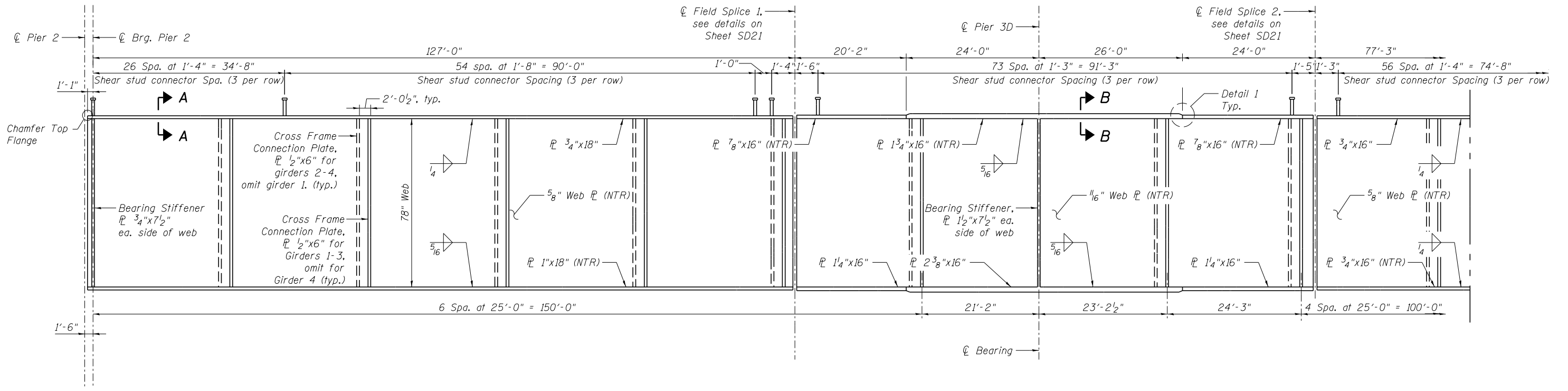
**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**FRAMING PLAN
 STRUCTURE NO. 081-0187 RAMP 6TH-D**

SHEET NO. SD18 OF SD44 SHEETS

F.A.I. RTE. = 74	SECTION = 81-IHVBR	COUNTY = ROCK ISLAND	TOTAL SHEETS = 1504	SHEET NO. = 1084
CONTRACT NO. 64C08			ILLINOIS FED. AID PROJECT	

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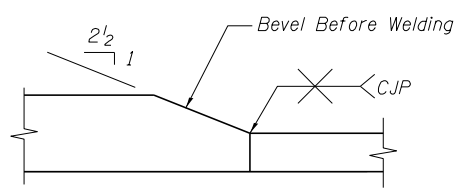


N. END TOP FLANGE CHAMFER DETAIL

- NOTE:**
1. Load carrying components designated "NTR" shall conform to the Impact Testing Requirement for Notch Toughness, Zone 2.
 2. All flange plates and web plates shall be AASHTO M270 Grade 50 steel.

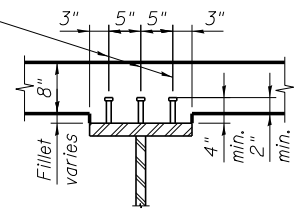
GIRDER ELEVATION

Interior girder shown, exterior girders similar (Looking East, 4 Required)



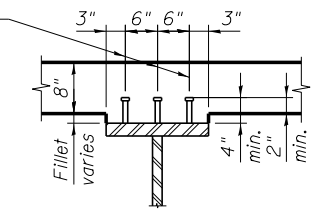
DETAIL 1

3/4" φ Granular or solid flux filled headed studs automatically end welded to flange



SECTION B-B

3/4" φ Granular or solid flux filled headed studs automatically end welded to flange



SECTION A-A

(No. shear studs required = 4,356)

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 Chicago, Illinois 60601
 312-565-0450 Job No. 10061

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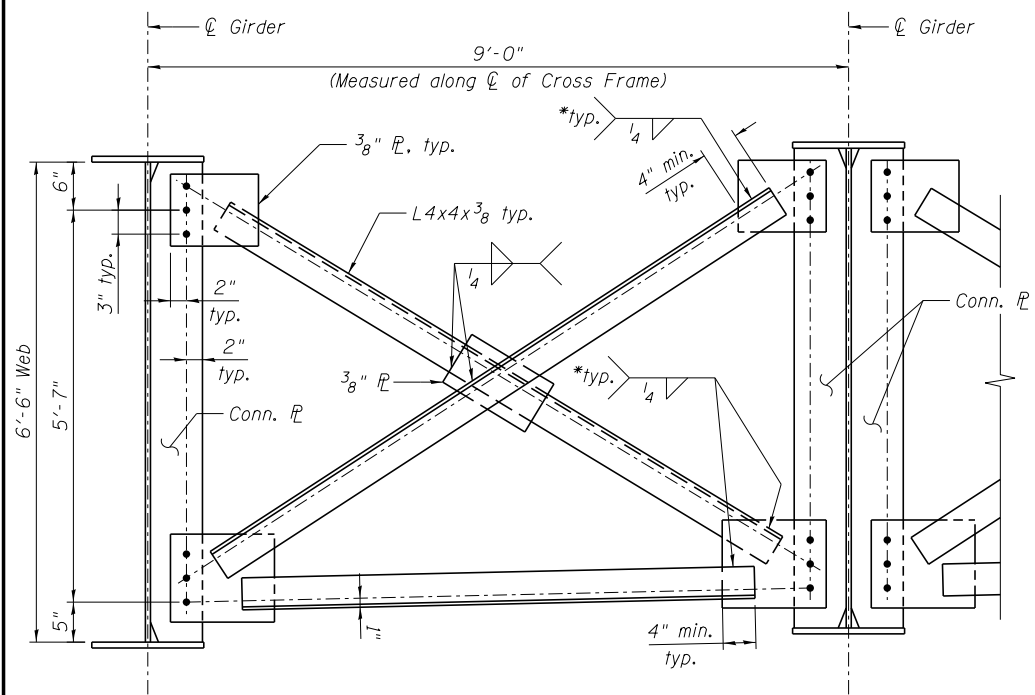
**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**STEEL PLATE GIRDER ELEVATION
 STRUCTURE NO. 081-0187 RAMP 6TH-D**

SHEET NO. SD19 OF SD44 SHEETS

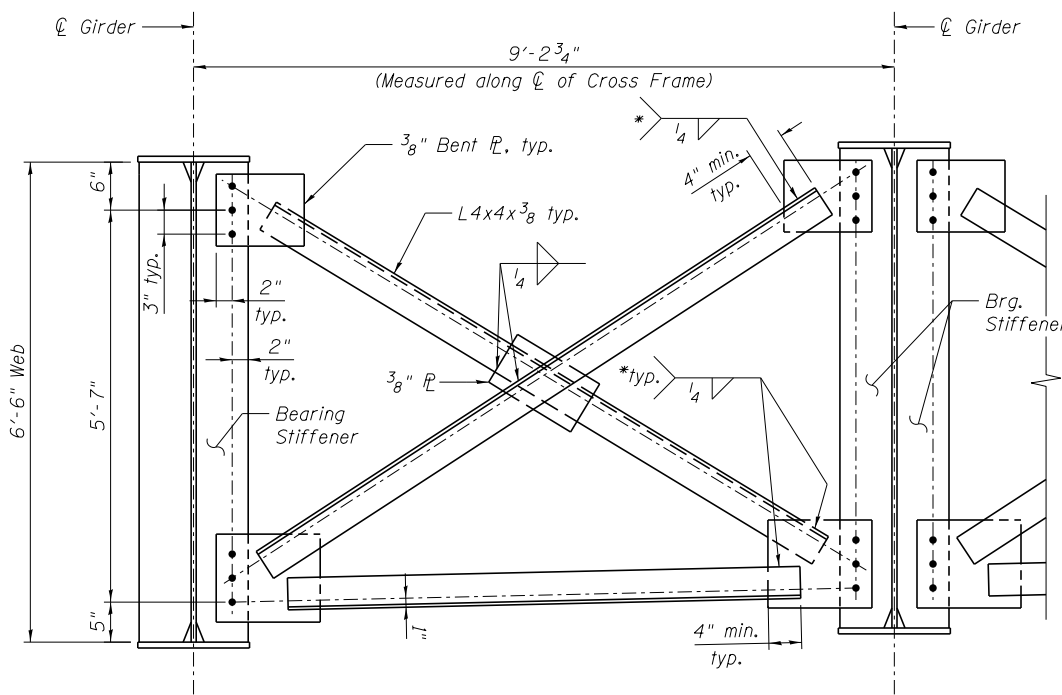
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CONTRACT NO. 64C08			ILLINOIS FED. AID PROJECT	

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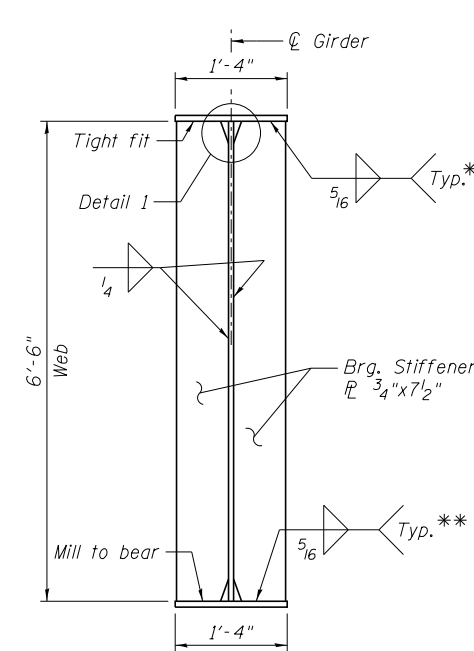
TYPE CF1 CROSS FRAME

(No. Req'd = 57)



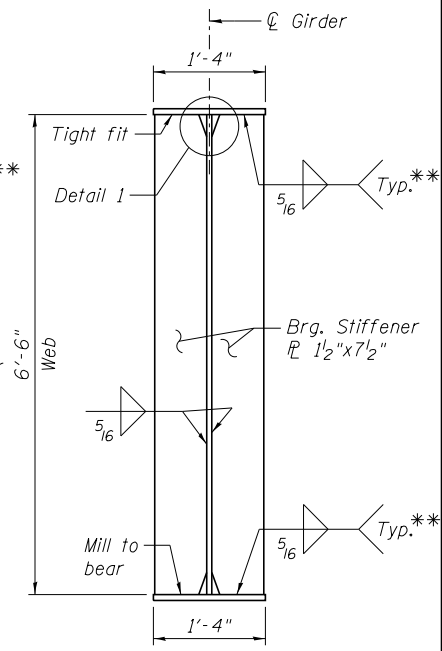
**TYPE CF2 CROSS FRAME
AT PIERS 3D AND 4D**

(No. Req'd = 6)



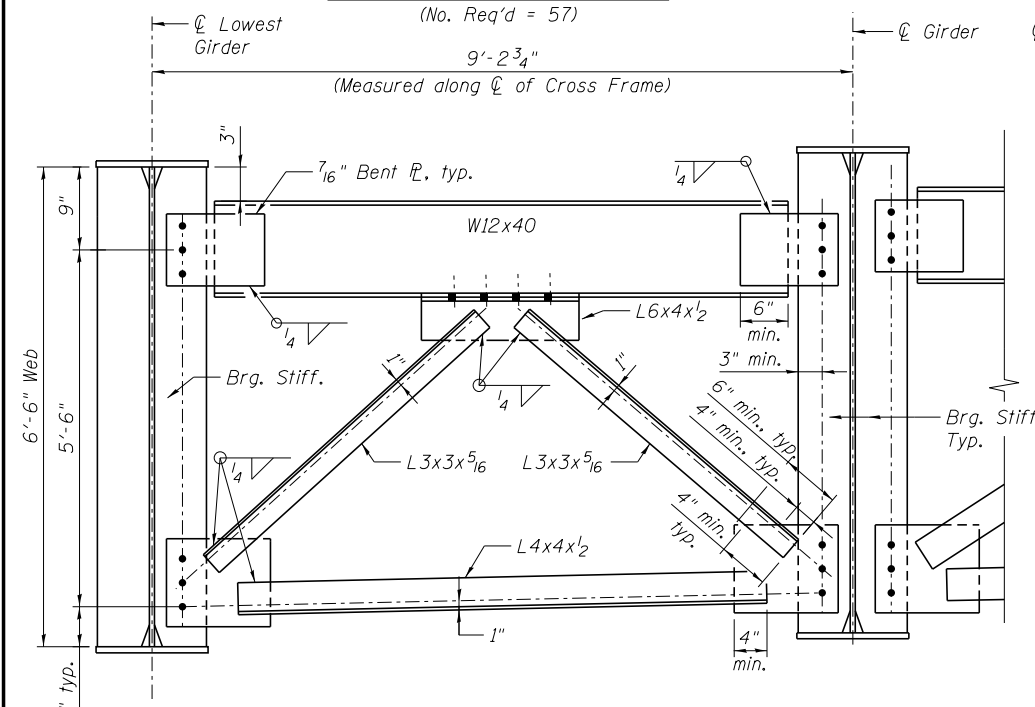
**BEARING STIFFENER AT
SOUTH ABUTMENT AND PIER 2**

(No. of Plates Req'd = 16)



**BEARING STIFFENER AT
PIERS 3D AND 4D**

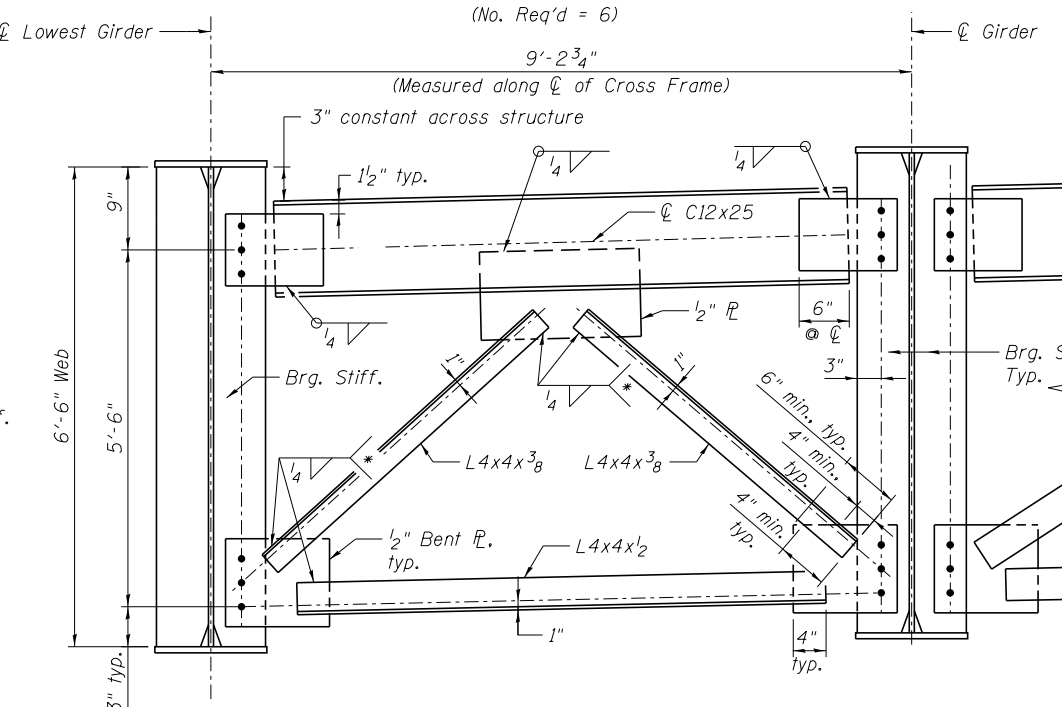
(No. of Plates Req'd = 16)



TYPE CF3 CROSS FRAME

AT PIER 2

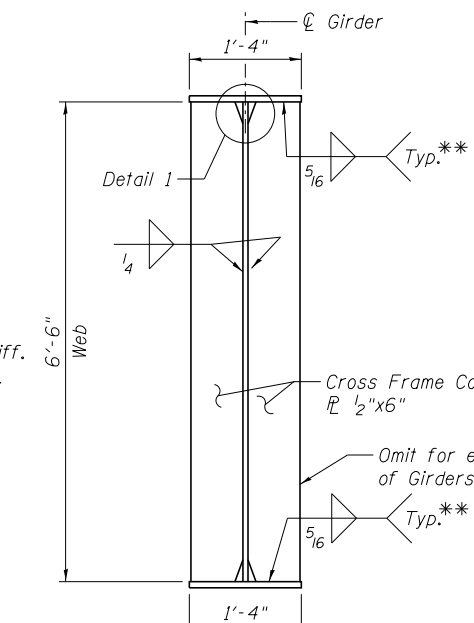
(No. Req'd = 3)



TYPE CF4 CROSS FRAME

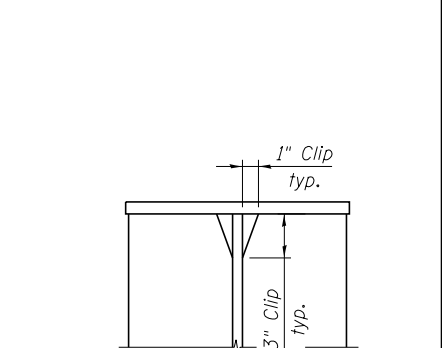
AT SOUTH ABUTMENT

(No. Req'd = 3)



CONNECTION PLATE DETAIL

(No. of Plates Req'd = 114)



DETAIL 1

(Typical top & bottom flanges)

NOTES:

- All cross frames between girders shall be installed as steel erected and secured with erection pins and bolts except as otherwise noted. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
- Fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts. Bolts 3/4" ϕ , holes 15/16" ϕ , unless noted otherwise. Two hardened washers required for each set of oversized holes.

* Fillet weld angles along 3 sides on one face of gusset plate.
** Terminate weld 1/4" from edges of stiffener PL.

benesch
Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10061

FILE NAME = 0810187-08324-020-Steel Plate Girder Cross Frame and Stiffener Details.dgn	USER NAME = ksnider	DESIGNED - RJT/DTS	REVISED -
MODEL: Default	PLOT SCALE =	CHECKED - AJK/KMP	REVISED -
	PLOT DATE = 1/18/2017	DRAWN - KMS	REVISED -
		CHECKED - AJK/KMP	REVISED -

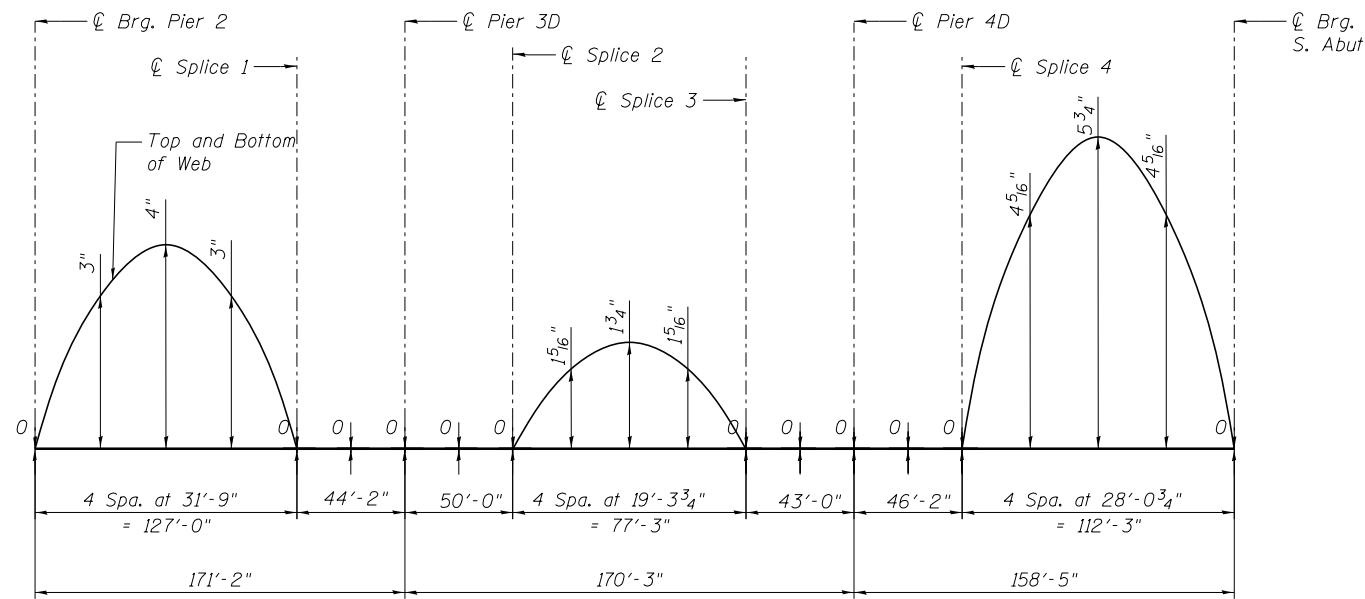
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**STEEL PLATE GIRDER CROSS FRAME AND STIFFENER DETAILS
STRUCTURE NO. 081-0187 RAMP 6TH-D**

SHEET NO. SD20 OF SD44 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-IHVBR	ROCK ISLAND	1504	1086
ILLINOIS FED. AID PROJECT			CONTRACT NO. 64C08	

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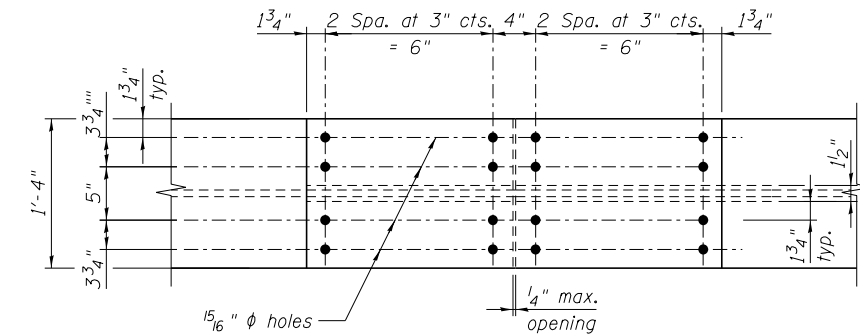


CAMBER DIAGRAM

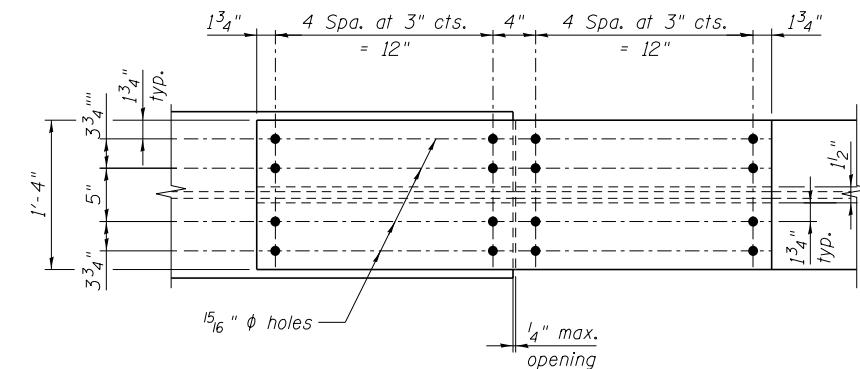
TOP OF WEB ELEVATIONS

(For fabrication only)

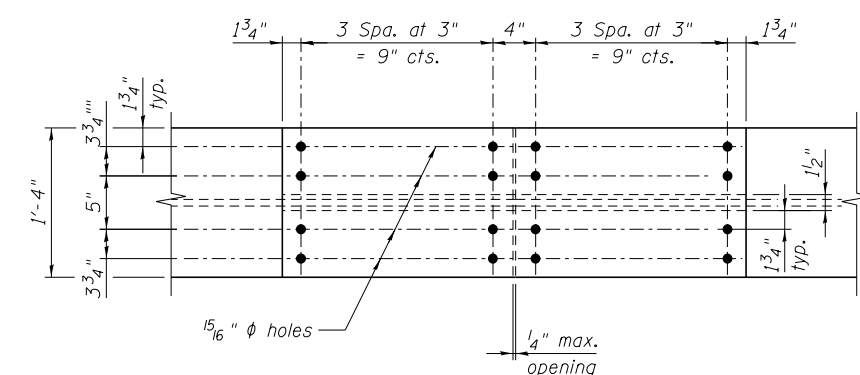
Location	Girder 1	Girder 2	Girder 3	Girder 4
Brg. Pier 2	600.25	600.48	600.70	600.92
Splice 1	603.01	603.23	603.45	603.65
Brg. Pier 3D	603.34	603.54	603.74	603.94
Splice 2	603.71	603.90	604.08	604.27
Splice 3	603.43	603.59	603.76	603.91
Brg. Pier 4D	602.84	602.99	603.14	603.28
Splice 4	602.21	602.35	602.48	602.60
Brg. S. Abut.	598.36	598.45	598.55	598.65



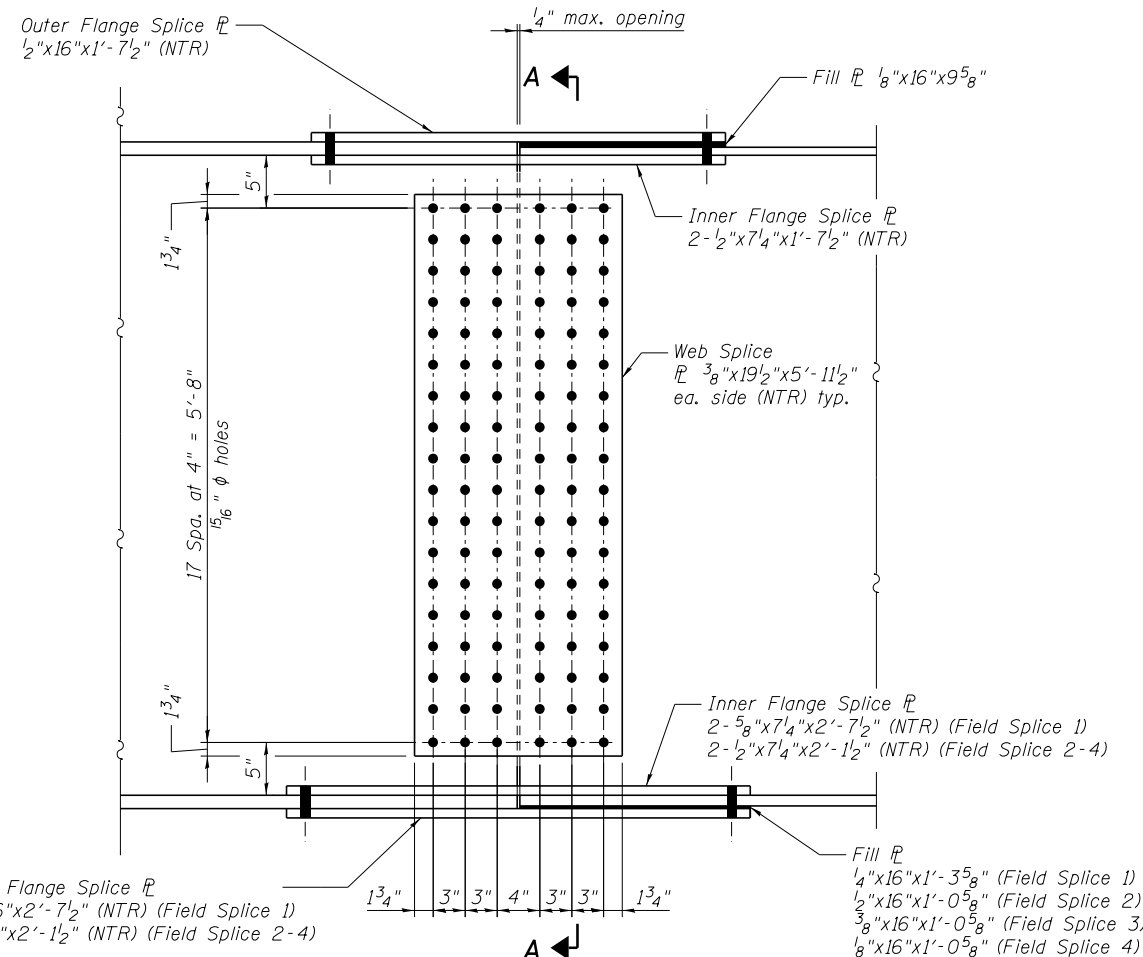
TOP FLANGE SPLICE



BOTTOM FLANGE SPLICE 1

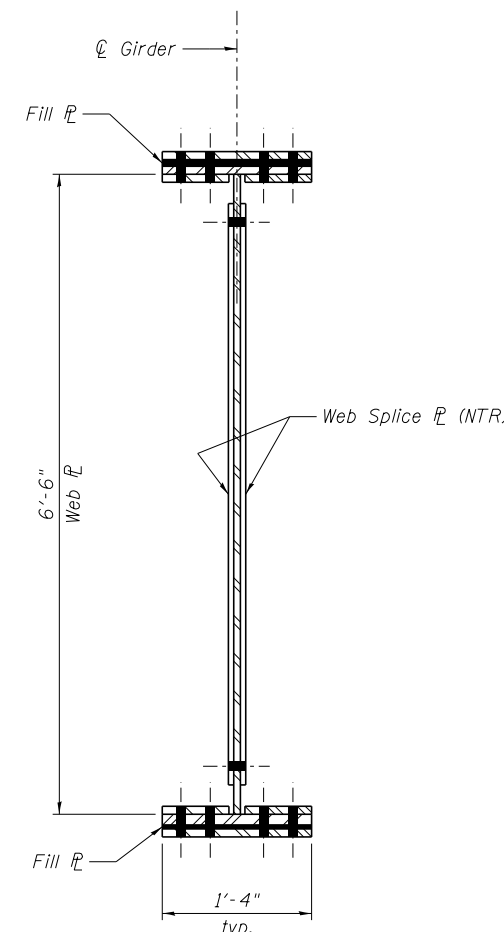


BOTTOM FLANGE SPLICE 2-4



ELEVATION

Field Splice 2 & 4 Looking East
Field Splice 1 & 3 Looking West



SECTION A-A

NOTES:

- All Splice Plates shall be AASHTO M270 Grade 50 steel.
- All Splice Bolts shall be 7/8" ϕ ASTM A325 High Strength with 15/16" ϕ holes.
- Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.

benesch
Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10061

FILE NAME = 0810187-08124-021-Steel Plate Girder Camber Diagram and Splice Details.dgn	USER NAME = ksnider	DESIGNED - DTS	REVISED -
MODEL: Default	PLOT SCALE =	CHECKED - KMP	REVISED -
	PLOT DATE = 1/18/2017	DRAWN - KMS	REVISED -
		CHECKED - KMP	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**STEEL PLATE GIRDER CAMBER DIAGRAM AND SPLICE DETAILS
STRUCTURE NO. 081-0187 RAMP 6TH-D**

SHEET NO. SD21 OF SD44 SHEETS

F.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-IHVBR	ROCK ISLAND	1504	1087
ILLINOIS FED. AID PROJECT			CONTRACT NO. 64C08	

1/18/2017 12:03:39 PM c:\pwise_work\do_not_delete\dm02476\0810187-40324-021-Steel Plate Girder Camber Diagram and Splice Details.dgn

GIRDERS 1 & 4 MOMENT TABLE						
	0.4 Sp. 1	Pier 3D	0.5 Sp. 2	Pier 4D	0.6 Sp. 3	
I_s	(in ⁴)	73,332	131,695	61,927	116,582	65,012
$I_c(n)$	(in ⁴)	160,343	246,348	136,810	220,206	144,697
$I_c(3n)$	(in ⁴)	117,204	-----	100,626	-----	105,914
$I_c(cr)$	(in ⁴)	-----	149,655	-----	133,481	-----
S_s	(in ³)	1942	2981	1558	3012	1675
$S_c(n)$	(in ³)	2619	-----	2167	-----	2316
$S_c(3n)$	(in ³)	2362	-----	1940	-----	2078
$S_c(cr)$	(in ³)	-----	3644	-----	3172	-----
DC1	(k/')	1.198	1.334	1.167	1.288	1.174
M _{DC1}	(k)	2636	3997	635	3305	2229
DC2	(k/')	0.259	0.259	0.259	0.259	0.259
M _{DC2}	(k)	571	850	152	722	491
DW	(k/')	0.375	0.375	0.375	0.375	0.375
M _{DW}	(k)	826	1230	221	1046	711
M _{ℓ + IM}	(k)	3509	3775	2618	3444	3198
M _u (Strength I)	(k)	11,389	14,510	5,897	12,630	10,063
Φ _r M _n	(k)	12,417	15,309	11,255	13,359	10,910
f _s DC1	(ksi)	16.3	16.1	4.9	13.2	16.0
f _s DC2	(ksi)	2.9	2.8	0.9	2.7	2.8
f _s DW	(ksi)	4.2	4.1	1.4	4.0	4.1
f _s (ℓ + IM)	(ksi)	16.1	12.4	14.5	13.0	16.6
f _s (Service II)	(ksi)	44.3	39.1	26.0	36.8	44.4
0.95R _h F _{yf}	(ksi)	47.5	47.5	47.5	47.5	47.5
f _s (Total)(Strength I)	(ksi)	-----	-----	-----	-----	-----
Φ _r F _n	(ksi)	-----	-----	-----	-----	-----
V _r	(k)	36.2	38.5	26.5	39.1	36.7

GIRDERS 1 & 4 REACTION TABLE					
	Pier 2	Pier 3D	Pier 4D	S. Abut.	
R _{DC1}	(k)	80.5	237.6	214.1	73.4
R _{DC2}	(k)	17.2	49.9	46.4	16.0
R _{DW}	(k)	24.9	72.3	67.1	23.1
R _{ℓ + IM}	(k)	104.9	203.9	198.7	102.5
R _{Total}	(k)	227.6	563.7	526.4	215.0

GIRDERS 2 & 3 MOMENT TABLE						
	0.4 Sp. 1	Pier 3D	0.5 Sp. 2	Pier 4D	0.6 Sp. 3	
I_s	(in ⁴)	73,332	131,695	61,927	116,582	65,012
$I_c(n)$	(in ⁴)	166,279	255,852	141,656	228,363	149,930
$I_c(3n)$	(in ⁴)	121,882	-----	104,636	-----	110,186
$I_c(cr)$	(in ⁴)	-----	151,597	-----	135,292	-----
S_s	(in ³)	1942	2981	1558	3012	1675
$S_c(n)$	(in ³)	2647	-----	2191	-----	2342
$S_c(3n)$	(in ³)	2396	-----	1970	-----	2109
$S_c(cr)$	(in ³)	-----	3722	-----	3188	-----
DC1	(k/')	1.238	1.381	1.206	1.333	1.213
M _{DC1}	(k)	2725	4132	656	3416	2304
DC2	(k/')	0.259	0.259	0.259	0.259	0.259
M _{DC2}	(k)	571	849	153	722	491
DW	(k/')	0.375	0.375	0.375	0.375	0.375
M _{DW}	(k)	827	1229	222	1045	711
M _{ℓ + IM}	(k)	3141	3546	2310	3219	2893
M _u (Strength I)	(k)	10,857	14,275	5,387	12,373	9,623
Φ _r M _n	(k)	12,464	15,415	11,360	13,356	10,955
f _s DC1	(ksi)	16.8	16.6	5.1	13.6	16.5
f _s DC2	(ksi)	2.9	2.7	0.9	2.7	2.8
f _s DW	(ksi)	4.1	4.0	1.4	3.9	4.0
f _s (ℓ + IM)	(ksi)	14.2	11.4	12.6	12.1	14.8
f _s (Service II)	(ksi)	42.4	38.2	23.8	36.0	42.6
0.95R _h F _{yf}	(ksi)	47.5	47.5	47.5	47.5	47.5
f _s (Total)(Strength I)	(ksi)	-----	-----	-----	-----	-----
Φ _r F _n	(ksi)	-----	-----	-----	-----	-----
V _r	(k)	35.5	37.8	26.0	38.4	36.1

GIRDERS 2 & 3 REACTION TABLE					
	Pier 2	Pier 3D	Pier 4D	S. Abut.	
R _{DC1}	(k)	83.3	245.7	221.4	75.9
R _{DC2}	(k)	17.2	49.9	46.4	16.0
R _{DW}	(k)	24.9	72.3	67.1	23.1
R _{ℓ + IM}	(k)	126.3	246.0	239.7	123.4
R _{Total}	(k)	251.8	613.9	574.5	238.4

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 (in⁴ and in³).

$I_c(n), S_c(n)$: 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 (in⁴ and in³).

$I_c(3n), S_c(3n)$: 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 (in⁴ and in³).

$I_c(cr), S_c(cr)$: Composite moment of inertia and section modulus of the steel and longitudinal deck reinforcement, used for computing f_s (Total-Strength I and Service II) in cracked sections, due to both short-term composite live loads and long-term composite (superimposed) dead loads (in⁴ and in³).

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}

Φ_rM_n: Compact composite positive moment capacity computed according to Article 6.10.7.1 or non-slender negative moment capacity according to Article A6.1.1 or A6.1.2 (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 load plus impact loads as calculated below (ksi).

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

f_s (Service II): Sum of stresses as computed below (ksi).

f_s DC1 + f_s DC2 + f_s DW + 1.3 f_s (ℓ + IM)

0.95R_hF_{yf}: Composite stress capacity for Service II loading according to Article 6.10.4.2 (ksi).

f_s (Total)(Strength I): Sum of stresses as computed below on non-compact section (ksi).

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

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

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



Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10061

FILE NAME : 0810187-08324-022-Steel Plate Girder Moment and Reaction Tables.dgn
MODEL: Default

USER NAME : ksnider
PLOT SCALE :
PLOT DATE : 1/18/2017

DESIGNED - DTS
CHECKED - KMP
DRAWN - KMS
CHECKED - KMP

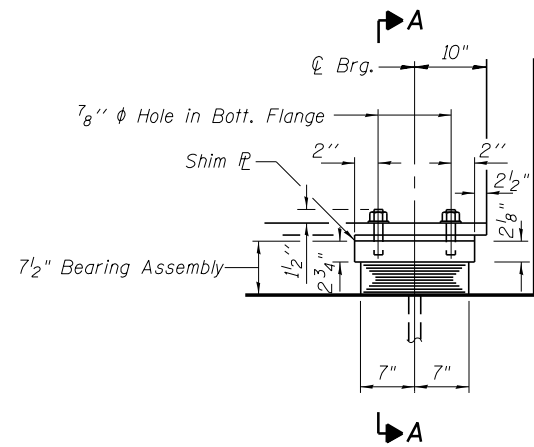
REVISED -
REVISED -
REVISED -
REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL PLATE GIRDER MOMENT AND REACTION TABLES
STRUCTURE NO. 081-0187 RAMP 6TH-D

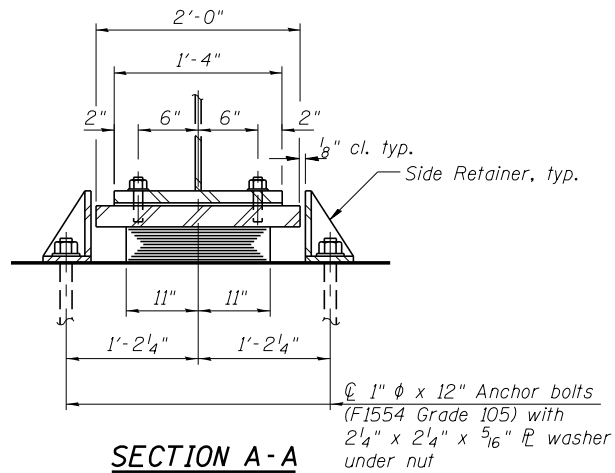
SHEET NO. SD22 OF SD44 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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ILLINOIS FED. AID PROJECT			CONTRACT NO. 64C08	

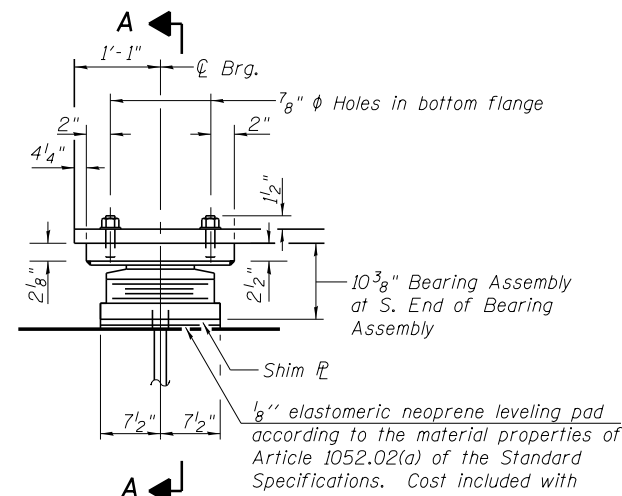


ELEVATION AT S ABUT.
(Looking East)

TYPE I ELASTOMERIC EXP. BRG. @ S. ABUT.

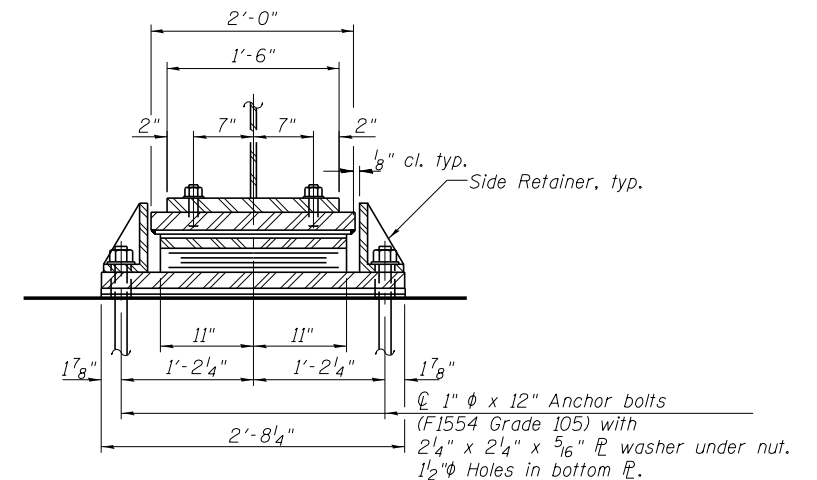


SECTION A-A

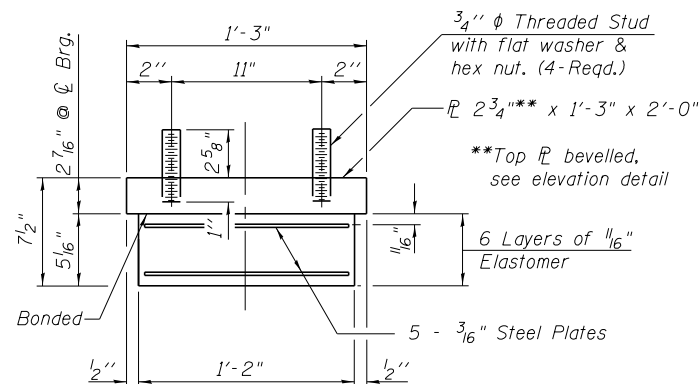


ELEVATION AT PIER 2
(Looking East)

TYPE II ELASTOMERIC EXP. BRG. @ PIER 2



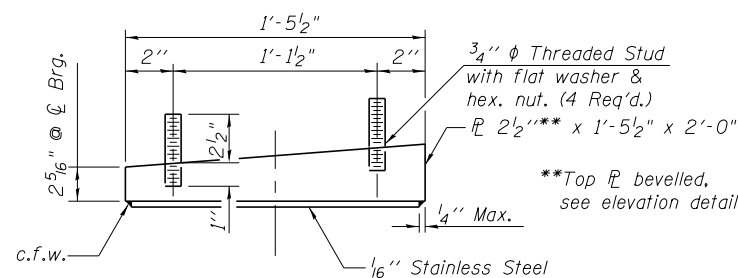
SECTION A-A



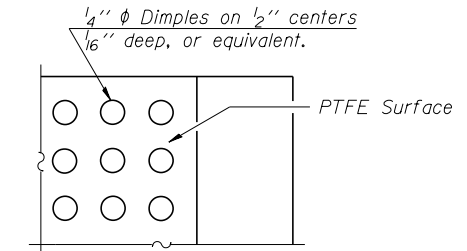
BEARING ASSEMBLY

Note:
Shim plates shall not be placed under Bearing Assembly.

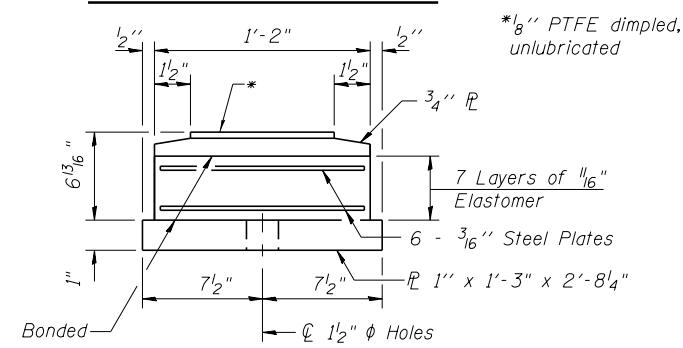
Notes:
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
Anchor bolts for side retainers may be cast in place or installed in holes drilled before or after members are in place.
Anchor bolts for Type II bearings shall be placed in holes drilled in the concrete through holes in the bottom bearing plate after members are in place. Side retainers shall be placed after bolts are installed.
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 or Type II.
The 1/8 inch PTFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.
Bonding of 1/8 inch PTFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.
Two 1/8 inch adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.
The structural steel plates of the bearing assembly, shall conform to requirements of AASHTO M270 Grade 50.



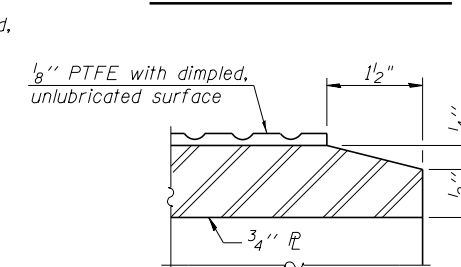
TOP BEARING ASSEMBLY



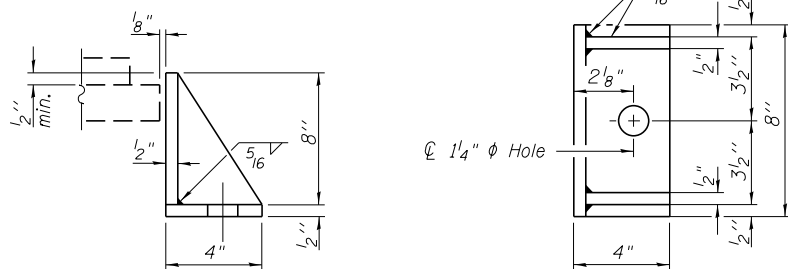
PLAN-PTFE SURFACE



BOTTOM BEARING ASSEMBLY



SECTION THRU PTFE

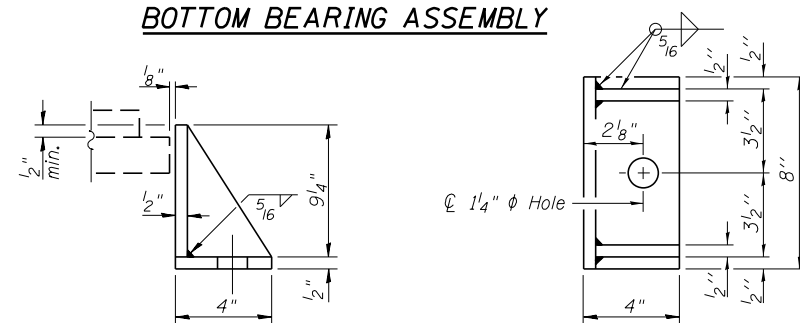


SIDE RETAINER

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

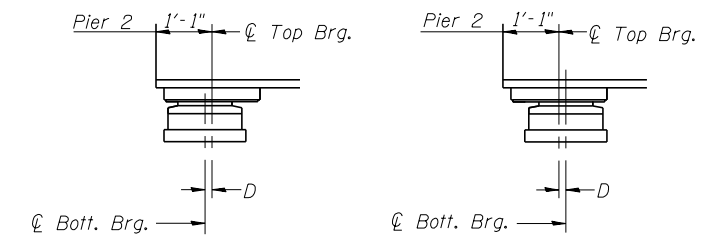
BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	4
Elastomeric Bearing Assembly Type II	Each	4
Anchor Bolts, 1"	Each	16



SIDE RETAINER

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



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.

D=1/8 inch per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

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205 North Michigan Avenue, Suite 2400
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312-565-0450 Job No. 10061

I-2E-1

I-27-12

FILE NAME :	USER NAME :	DESIGNED :	REVISD :
0810187-08324-023-Elastomeric Bearing Details.dgn	ksnyder	RJT/DTS	-
MODEL :	CHECKED :	AJK/TPS	-
Default	PLOT SCALE :	KMS	-
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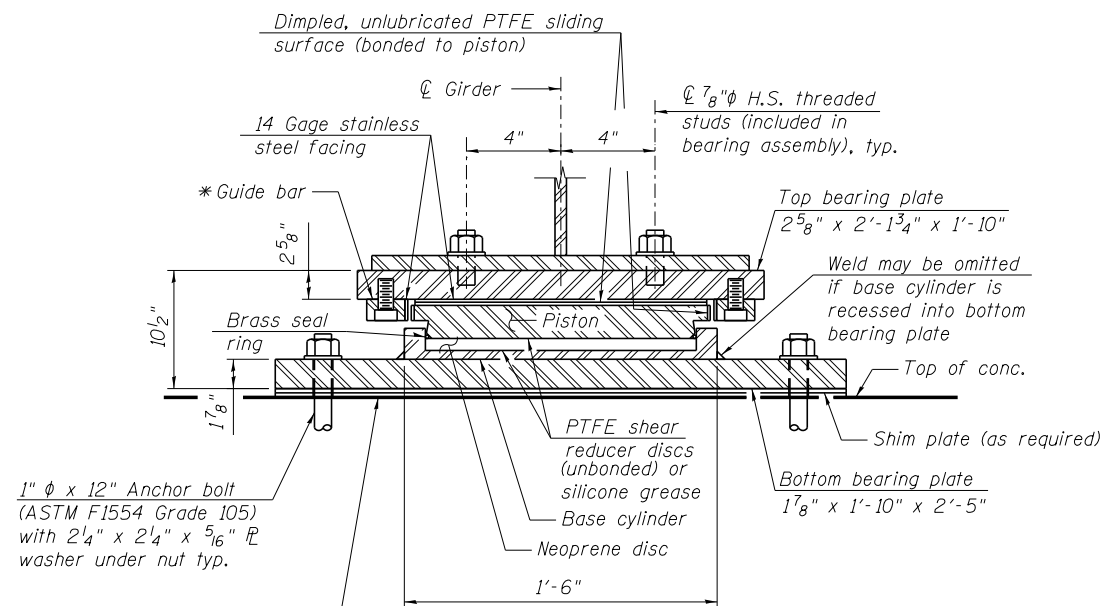
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ELASTOMERIC BEARING DETAILS
STRUCTURE NO. 081-0187 RAMP 6TH-D

SHEET NO. SD23 OF SD44 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-IHVBR	ROCK ISLAND	1504	1089
				CONTRACT NO. 64C08

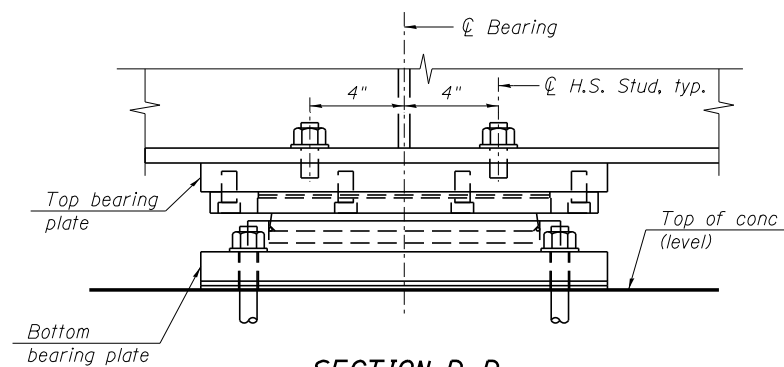
ILLINOIS FED. AID PROJECT



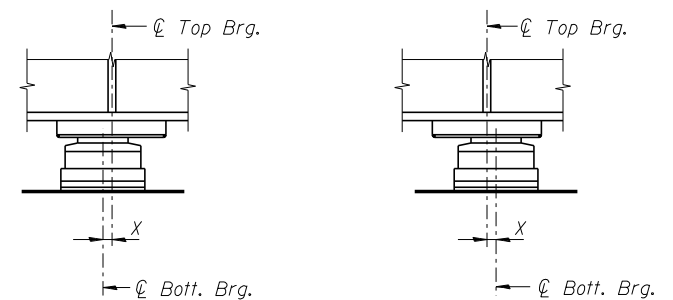
1" ϕ x 12" Anchor bolt
(ASTM F1554 Grade 105)
with 2 1/4" x 2 1/4" x 5/16" \bar{P}
washer under nut typ.

1/8" Elastomeric neoprene
leveling pad according to
the material properties of
Article 1052.02(a) of the
Standard Specifications

SECTION C-C



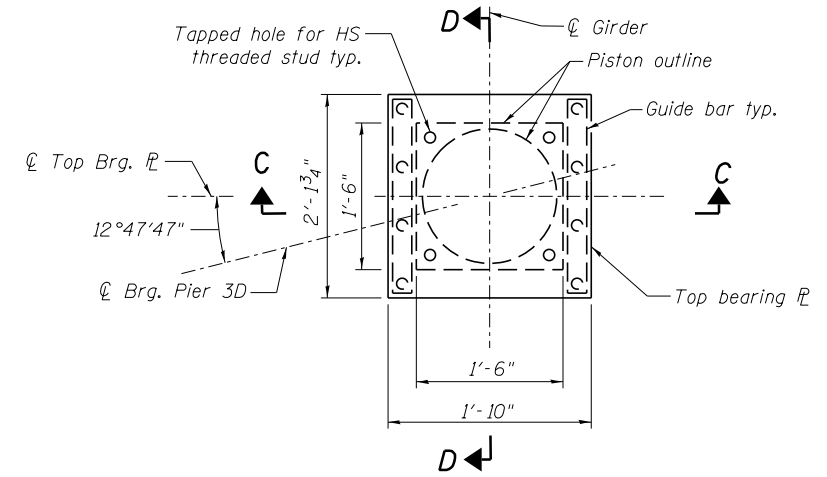
SECTION D-D



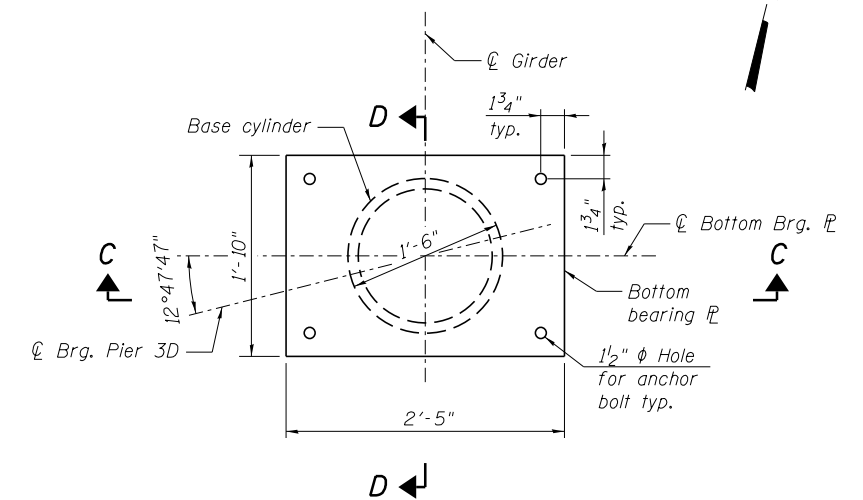
BELOW 50°F (Move bottom brg. away from fixed brg.)
ABOVE 50°F (Move bottom brg. toward fixed brg.)

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.



TOP BEARING \bar{P} AND PISTON PLAN



BOTTOM BEARING \bar{P} AND BASE CYLINDER PLAN

BEARING DIMENSIONS

Location	Pay Item Designation (kips)	Vert. Design Load** (kips)	Hu - Horiz. Design Load** (kips)	θ_u - Req'd Rotation Range*** (radians)	Max. Theor. Thermal Mvmt**** from 50 °F
Pier 3D	600	580	75	0.02	1/4"

BILL OF MATERIAL

Item	Unit	Total
High Load Multi-Rotational Bearings, Guided Expansion, 600K	Ea.	4
Anchor Bolts, 1"	Ea.	16

* As an alternate 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.

** Design Loads are the governing service loads with no dynamic load allowance.

*** Rotation allowances for fabrication tolerances (0.005 radians), installation uncertainties (0.005 radians) are excluded.

**** Total required movement is based on one way expansion (or contraction) of the superstructure perpendicular to the centerline of girder when bearings are set at 50°F. Bearing movement tolerances are excluded.

NOTES:

- All steel for bearings shall conform to the requirements of AASHTO M270 Grade 50, unless otherwise noted.
- 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 may be either cast in place or installed in holes drilled after the supported member is in place. Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
- Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

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FILE NAME = 0810187-08324-HLMR Guided Expansion Bearing Details.dgn	USER NAME = ksnider	DESIGNED - DMS	REVISED -
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	PLOT DATE = 1/18/2017	DRAWN - KMS	REVISED -
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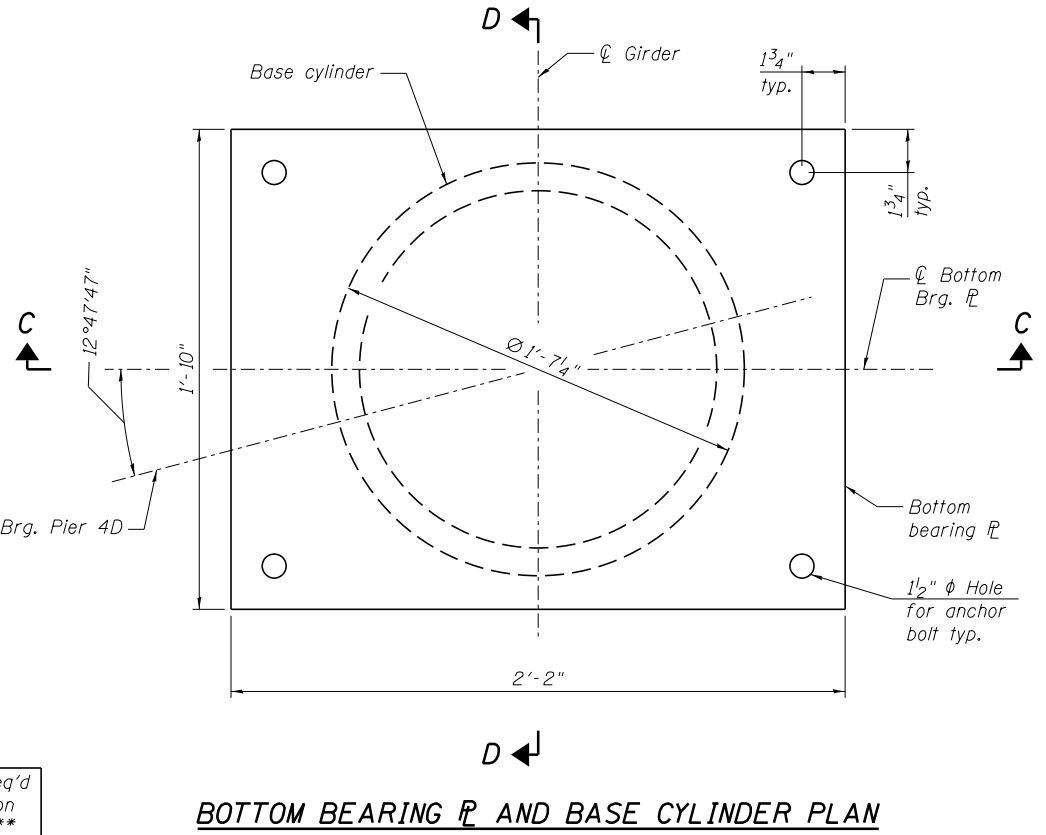
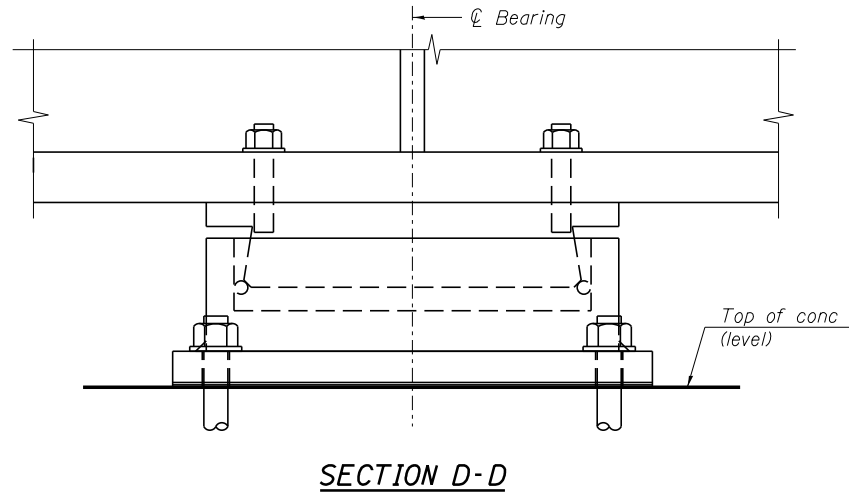
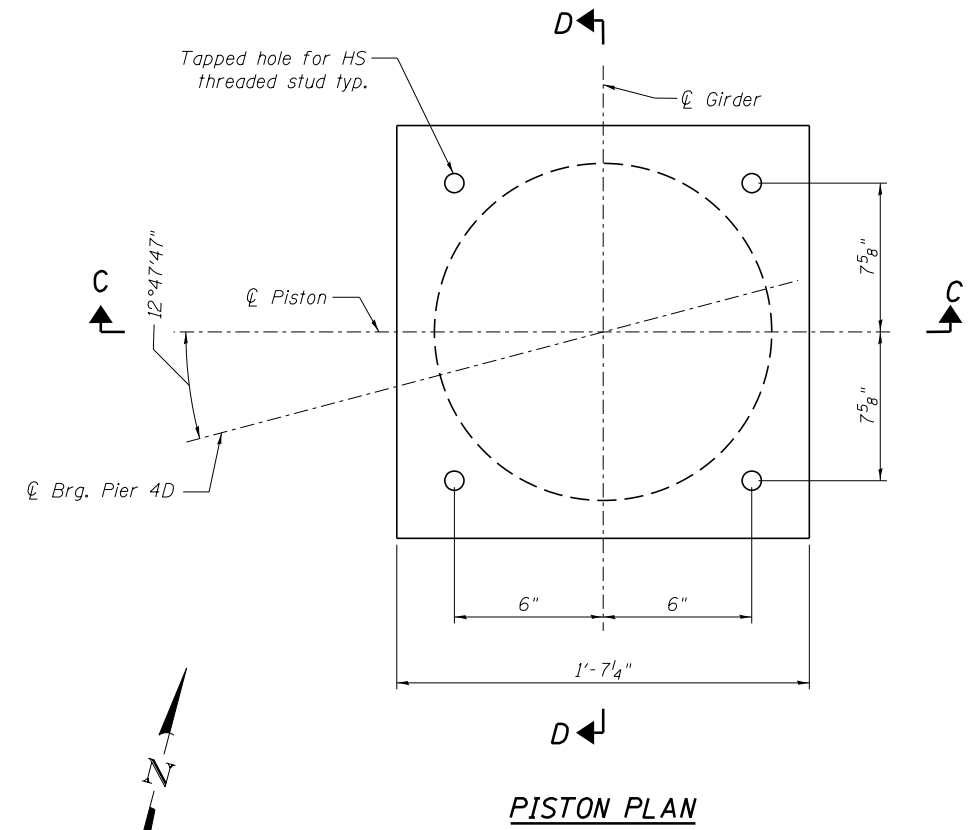
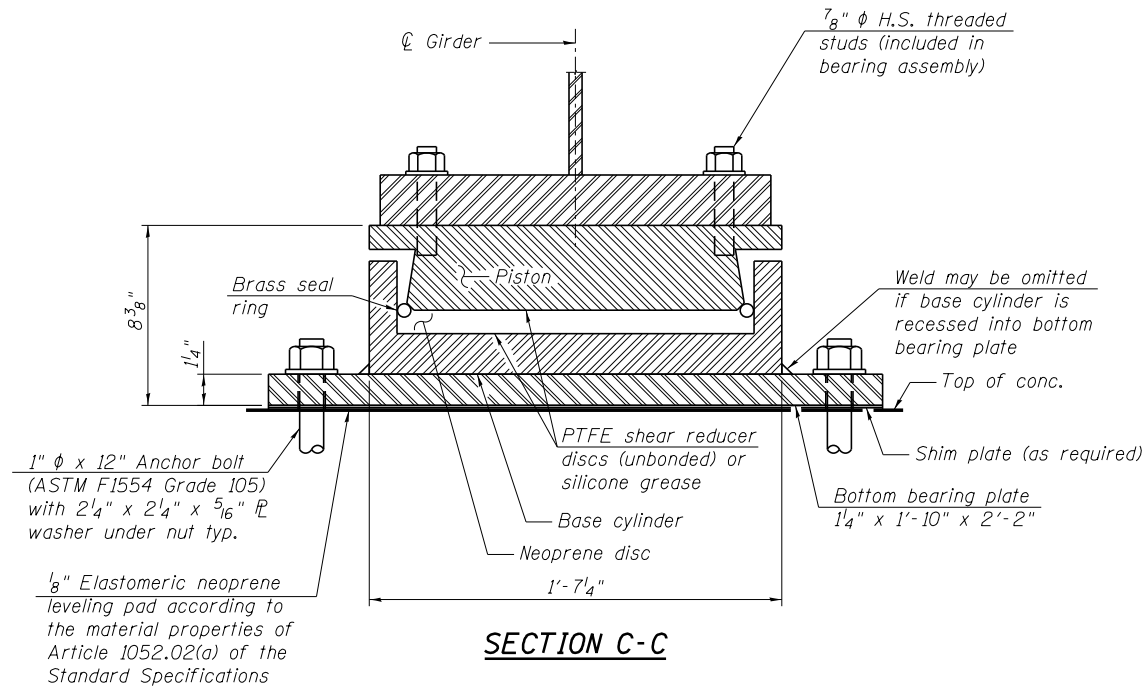
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**HLMR GUIDED EXPANSION BEARING DETAILS
STRUCTURE NO. 081-0187 RAMP 6TH-D**

SHEET NO. SD24 OF SD44 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-IHVBR	ROCK ISLAND	1504	1090
				CONTRACT NO. 64C08

ILLINOIS FED. AID PROJECT



BILL OF MATERIAL

Item	Unit	Total
High Load Multi-Rotational Bearings, Fixed - 600K	Ea.	4
Anchor Bolts, 1"	Ea.	16

BEARING DIMENSIONS

Location	Pay Item Designation (kips)	Vert. Design Load* (kips)	Hu - Horiz. Design Load* (kips)	θ_u - Req'd Rotation Range** (radians)
Pier 4D	600	545	70	0.02

* Design Loads are the governing service loads with no dynamic allowance.
 ** Rotation allowances for fabrication tolerances (0.005 radians) and installation uncertainties (0.005 radians) are excluded.

NOTE:
 1. See notes on sheet SD24.

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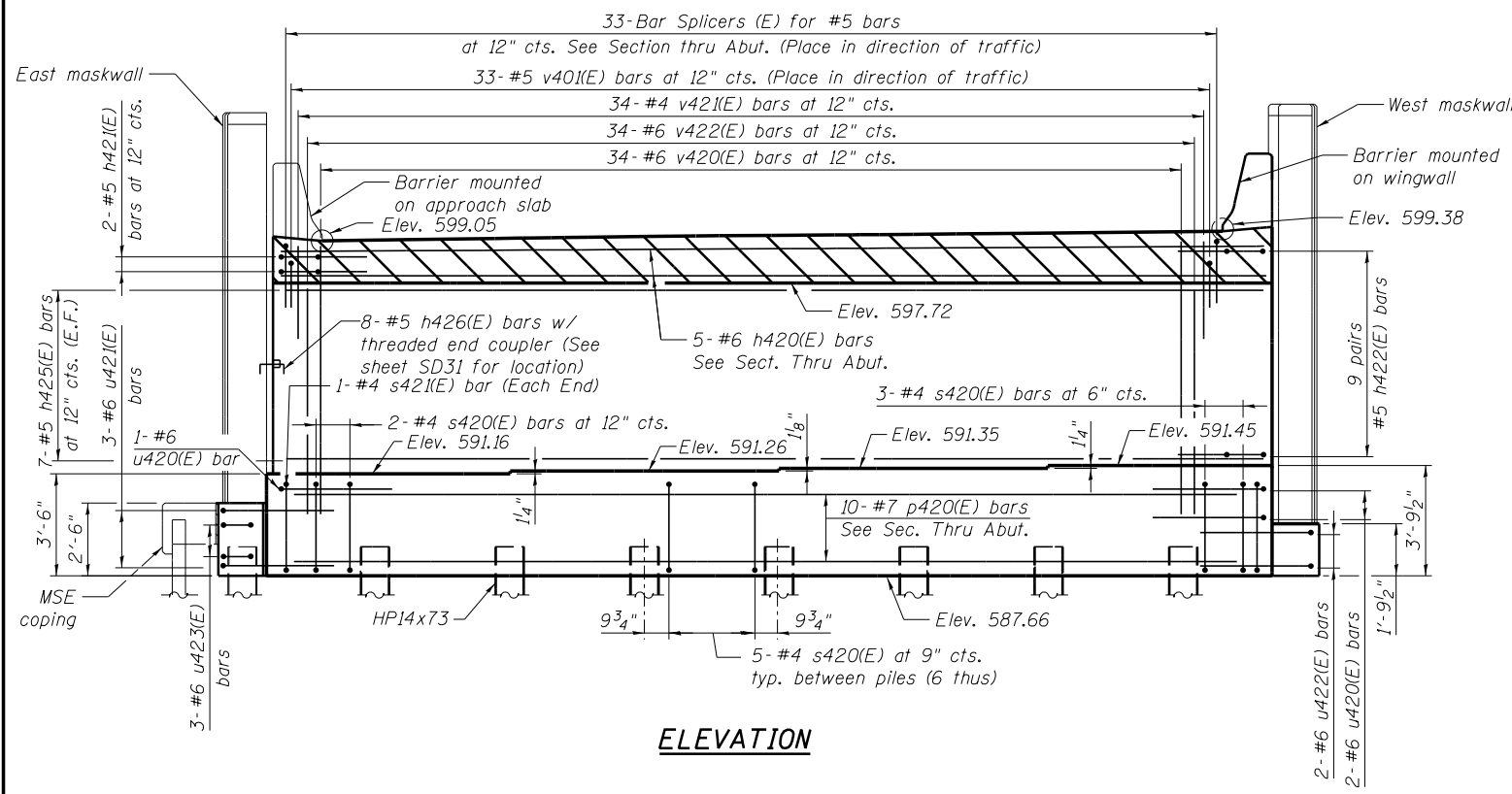
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HLMR FIXED BEARING DETAILS
STRUCTURE NO. 081-0187 RAMP 6TH-D

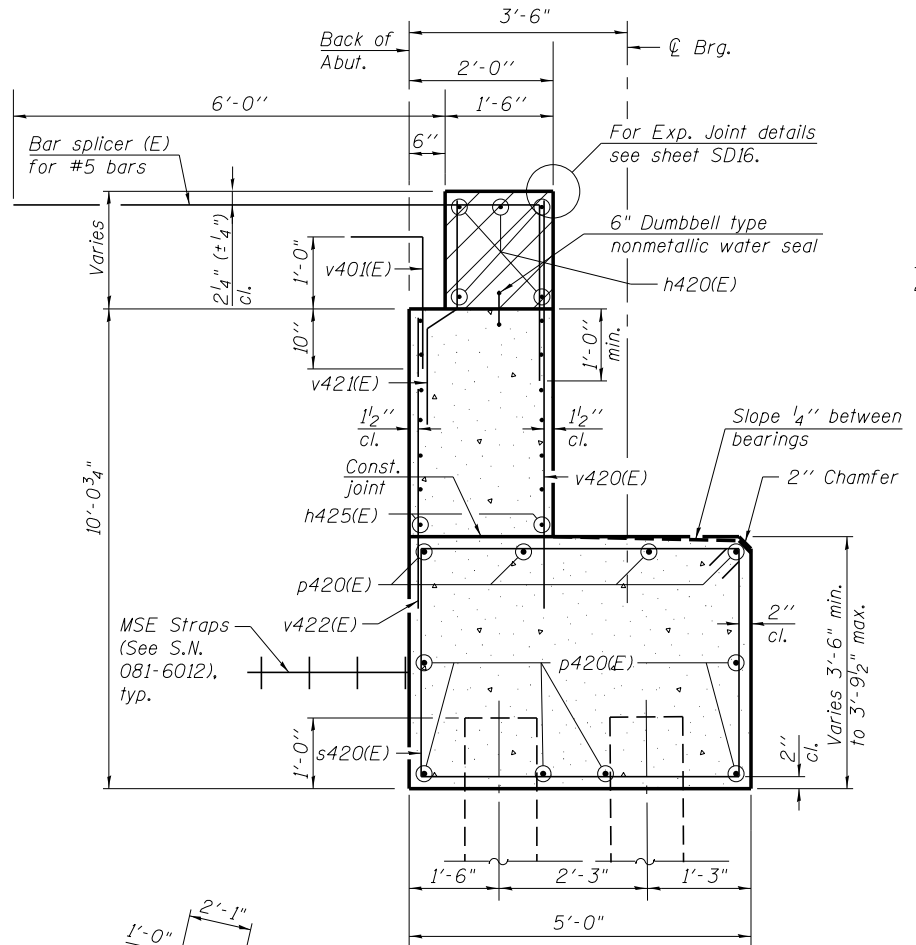
SHEET NO. SD25 OF SD44 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-IHVBR	ROCK ISLAND	1504	1091
CONTRACT NO. 64C08			ILLINOIS FED. AID PROJECT	

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ELEVATION



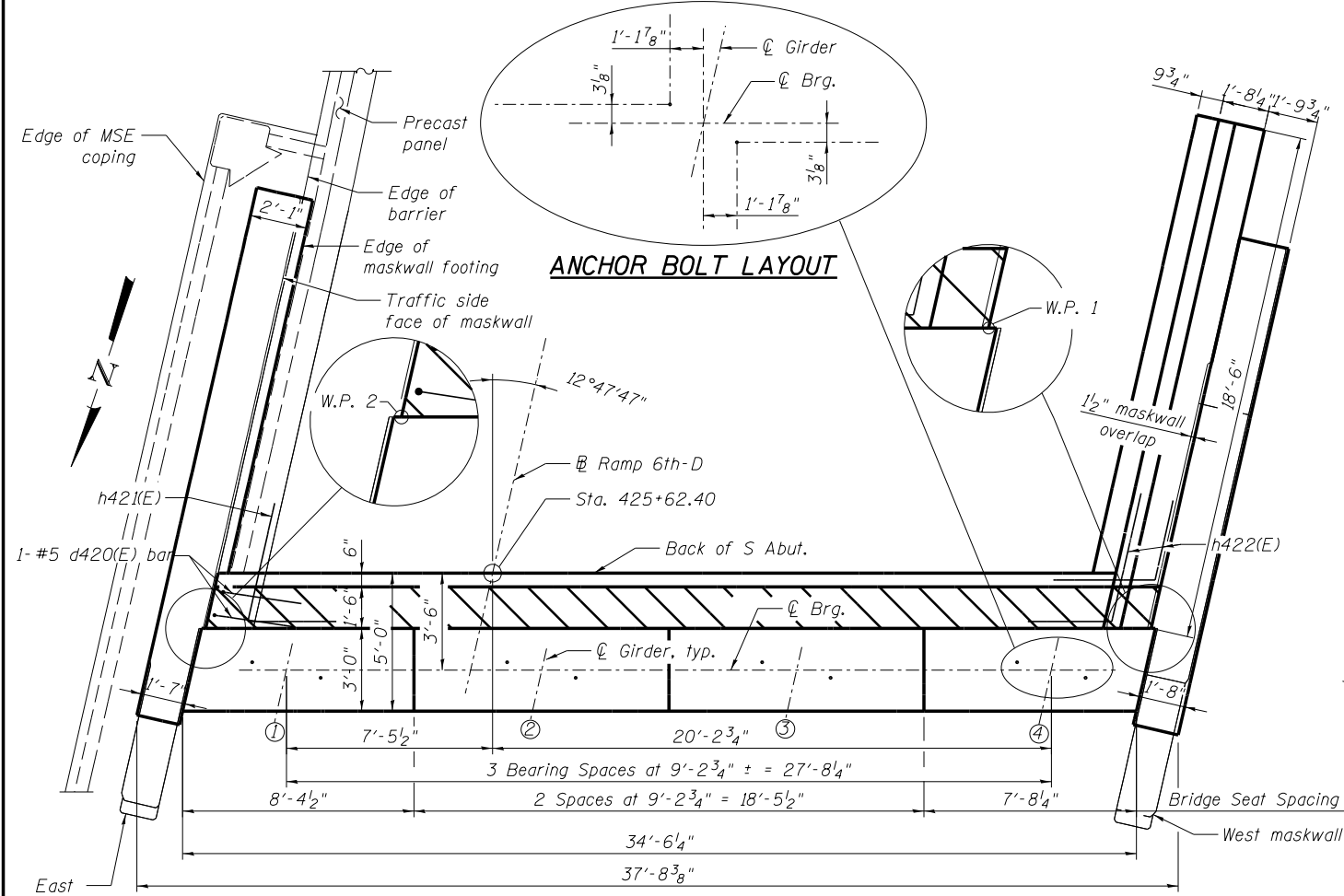
SEC. THRU ABUT.

Work Points

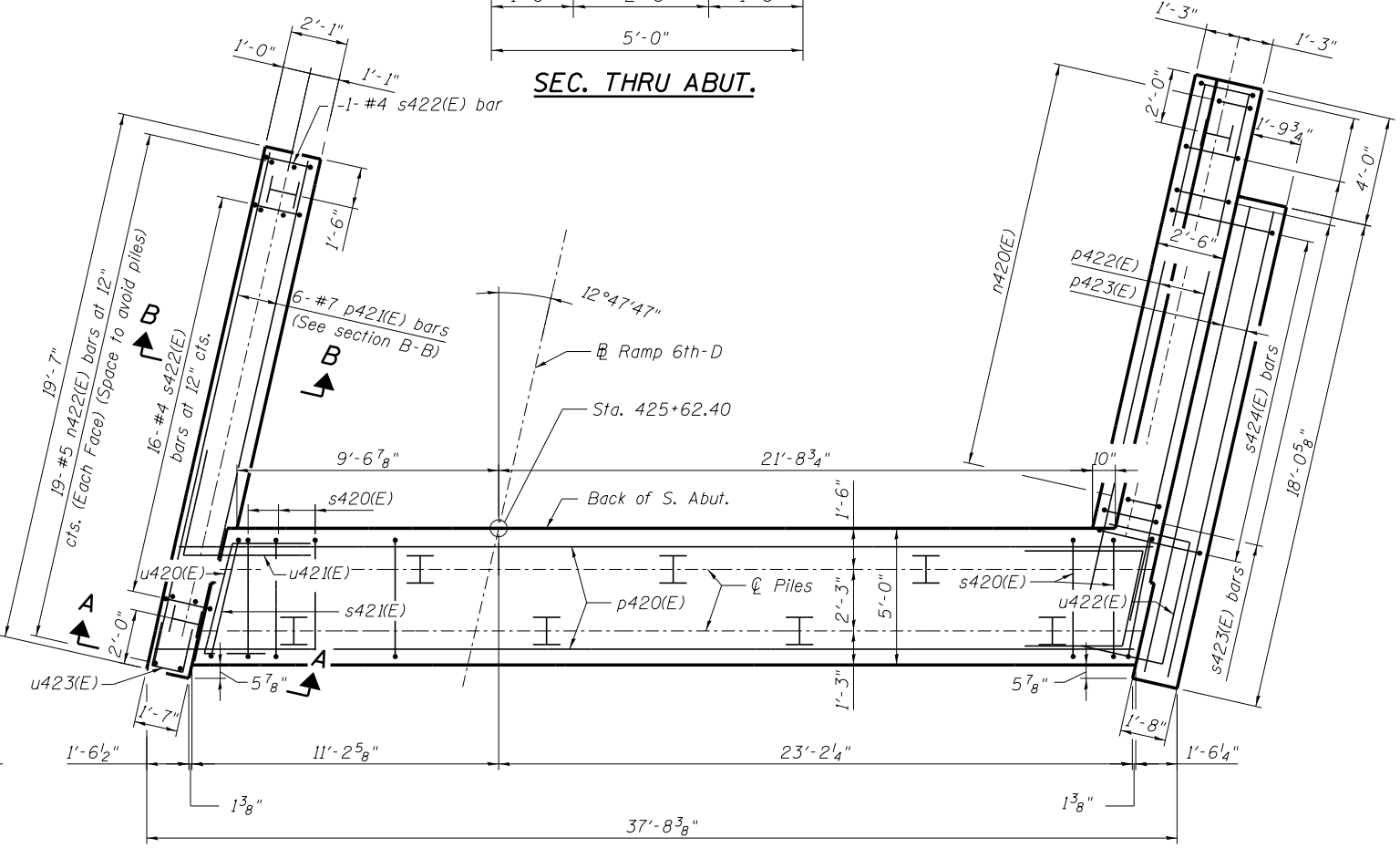
W.P.	Station	Offset
1	425+59.07	23.69' Lt..
2	425+66.65	9.69' Rt.

NOTES:
 1. See sheet SD27 for Section A-A and B-B.
 2. See sheet SD27 for additional notes.

PILE DATA
 Type: HP 14x73 with pile shoes
 Nominal Required Bearing: 695 kips
 Factored Resistance Available: 415 kips
 Est. Length: 33 feet
 No. Production Piles: 9
 No. Test Piles: 1



TOP VIEW



PLAN-PILE CAP

(See SD3 for pile layout)

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FILE NAME = 0810187-AB324-026-Abutment_Layout.dgn	USER NAME = ksnider	DESIGNED - DTS	REVISED -
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	PLOT DATE = 1/18/2017	DRAWN - KMS	REVISED -
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**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

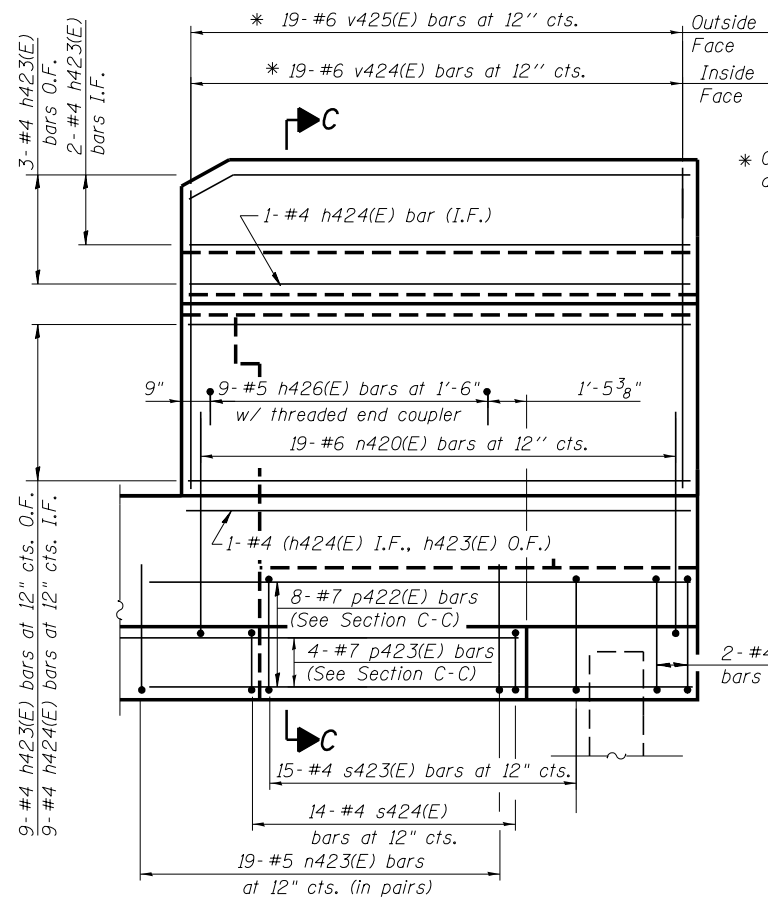
**ABUTMENT LAYOUT
 STRUCTURE NO. 081-0187 RAMP 6TH-D**

SHEET NO. SD26 OF SD44 SHEETS

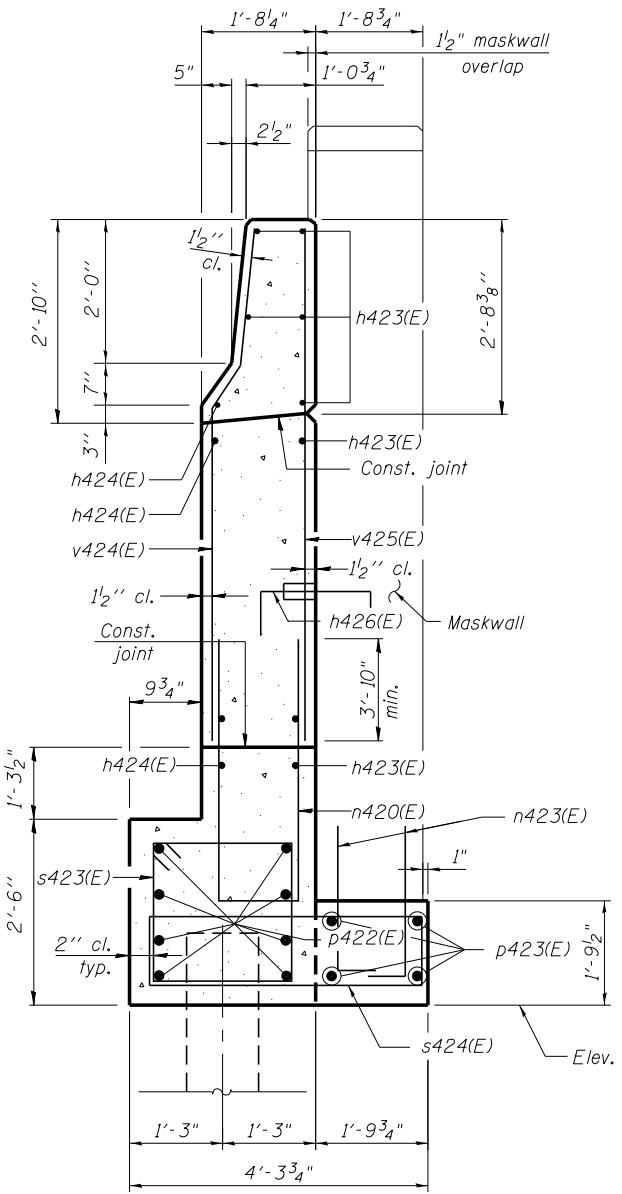
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-IHVBR	ROCK ISLAND	1504	1092
CONTRACT NO. 64C08				

ILLINOIS FED. AID PROJECT

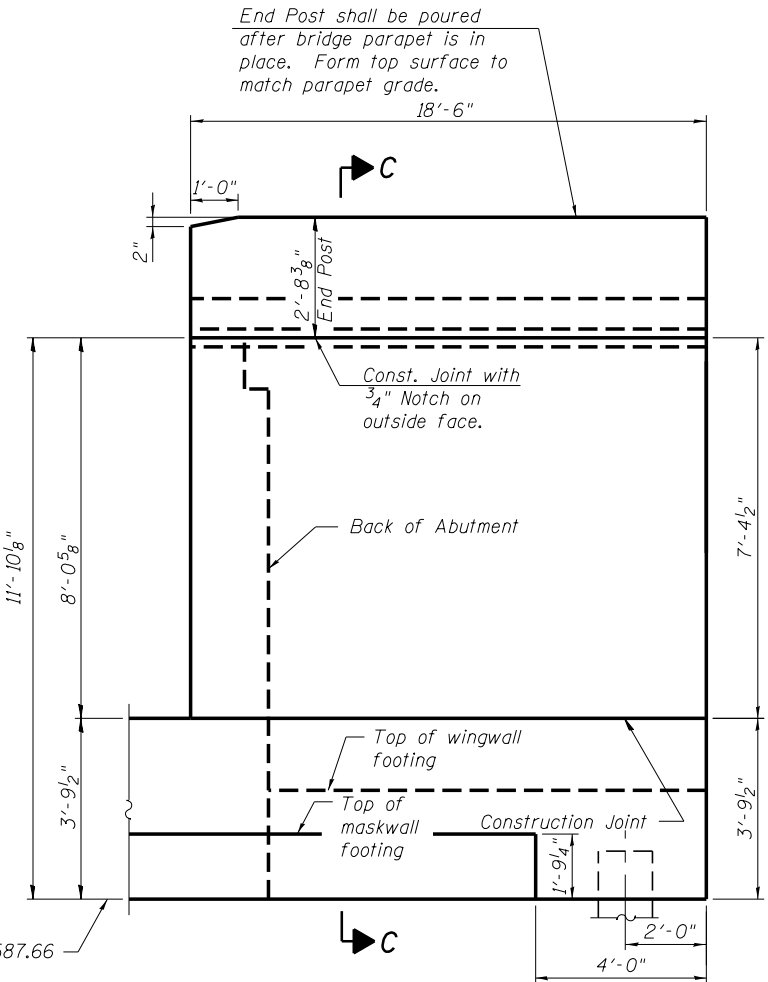
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WING WALL ELEVATION
Looking East Showing Reinforcement



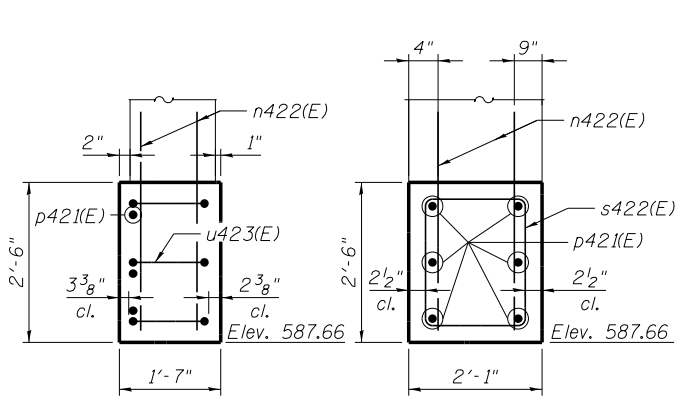
SECTION C-C



WING WALL ELEVATION
Looking East Showing Dimensions

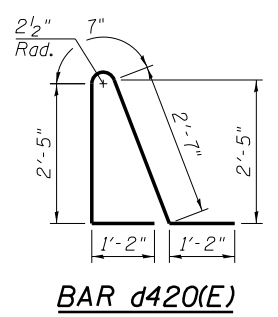
ABUTMENT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d420(E)	2	#5	7'-11"	
h420(E)	5	#6	33'-11"	
h421(E)	2	#5	8'-4"	
h422(E)	18	#5	8'-4"	
h423(E)	15	#4	18'-2"	
h424(E)	11	#4	18'-3"	
h425(E)	14	#5	33'-11"	
h426(E)	17	#5	1'-9"	
n420(E)	19	#6	15'-1"	
n422(E)	38	#5	4'-8"	
n423(E)	38	#5	5'-2"	
p420(E)	10	#7	35'-5"	
p421(E)	6	#7	18'-9"	
p422(E)	8	#7	20'-0"	
p423(E)	4	#7	17'-2"	
s420(E)	35	#4	16'-5"	
s421(E)	2	#4	16'-9"	
s422(E)	17	#4	8'-5"	
s423(E)	17	#4	9'-5"	
s424(E)	14	#4	11'-7"	
u420(E)	3	#6	12'-4"	
u421(E)	3	#6	8'-4"	
u422(E)	2	#6	11'-8"	
u423(E)	3	#6	4'-4"	
v401(E)	33	#5	3'-9"	
v420(E)	34	#6	10'-3"	
v421(E)	34	#4	3'-0"	
v422(E)	34	#6	8'-9"	
v424(E)	19	#6	10'-8"	
v425(E)	19	#6	9'-10"	
Pile Shoes	Each		10	
Concrete Structures			Cu. Yd.	58.0
Reinforcement Bars, Epoxy Coated			Pound	5,910
Furnishing Steel Piles HP14x73			Foot	297
Driving Piles			Foot	297
Concrete Sealer			Sq. Ft.	500
Test Pile Steel HP14x73			Each	1

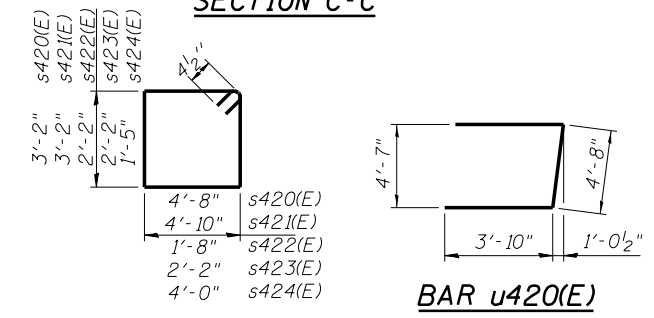


SECTION A-A

SECTION B-B

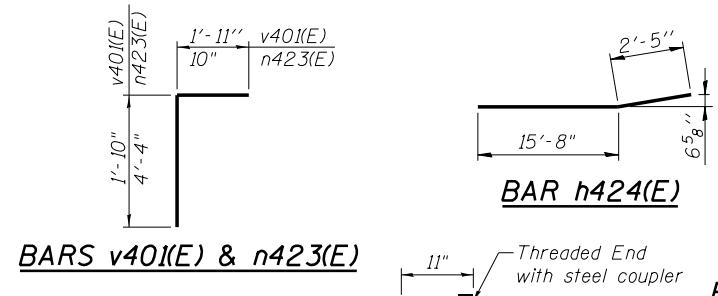


BAR d420(E)



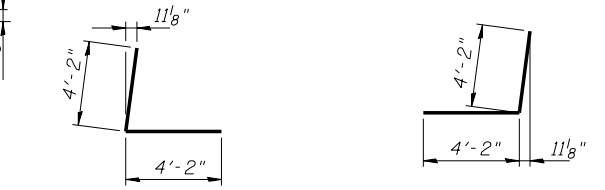
BARS s420(E), s421(E), s422(E), s423(E) & s424(E)

BAR u420(E)



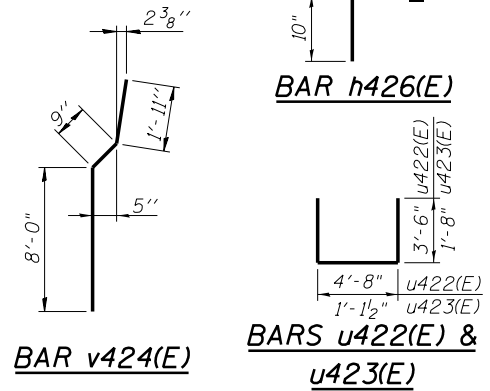
BARS v401(E) & n423(E)

BAR h424(E)



BARS h421(E) & u421(E)

BAR h422(E)



BAR h426(E)

BARS u422(E) & u423(E)

NOTES:

1. Hatched area to be poured after superstructure false work has been removed. Quantity of concrete included with Concrete Superstructure.
2. Space reinforcement in cap to miss anchor bolts.
3. Pour steps monolithically with cap.
4. Quantity of concrete in end post included with Concrete Superstructure on sheet SD15.
5. See sheet SD28 thru SD32, for maskwall details.
6. See S.N. 081-6012, for MSE Wall details.
7. See sheet SD40, for HP Pile Details.
8. See sheet SD41, for Bar Splicer Details.
9. Piles shall be driven prior to placement of the reinforced select fill.

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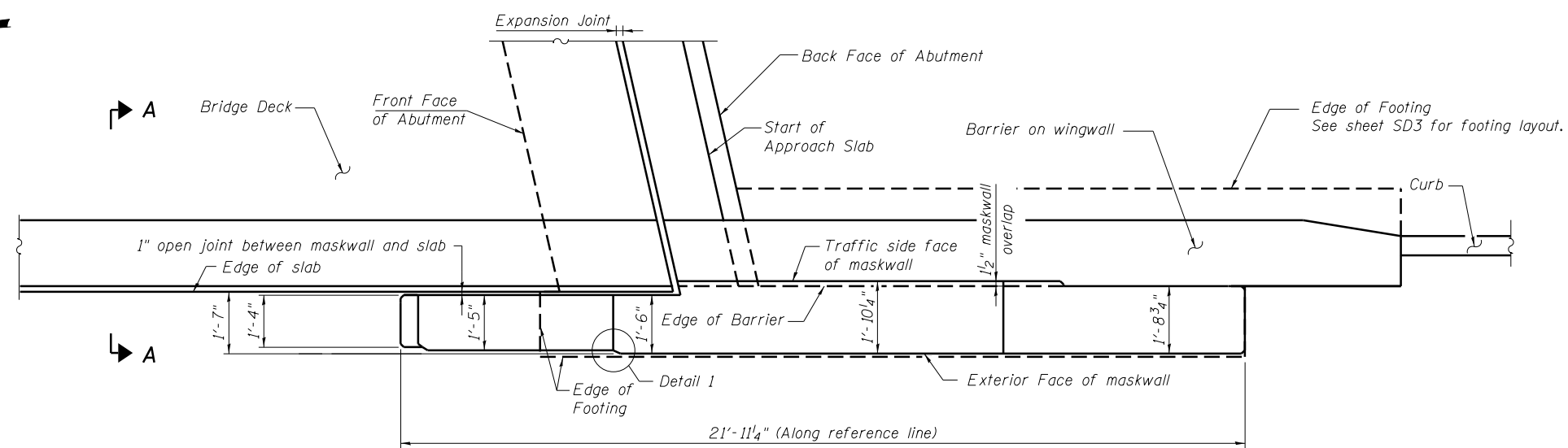
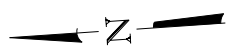
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

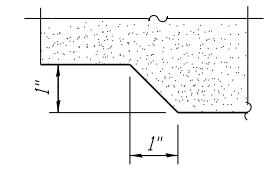
ABUTMENT AND WINGWALL DETAILS
STRUCTURE NO. 081-0187 RAMP 6TH-D

SHEET NO. SD27 OF SD44 SHEETS

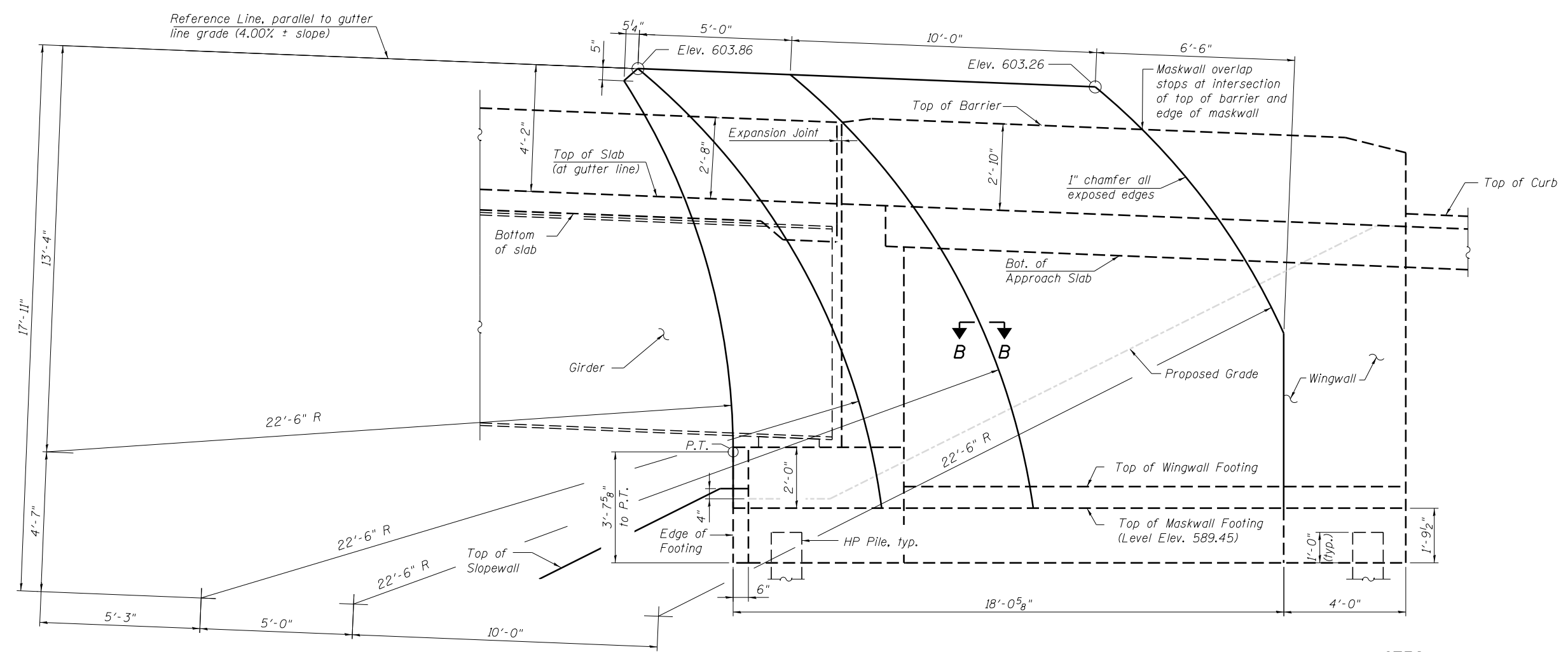
F.A.I. RT.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-IHVBR	ROCK ISLAND	1504	1093
ILLINOIS FED. AID PROJECT			CONTRACT NO. 64C08	



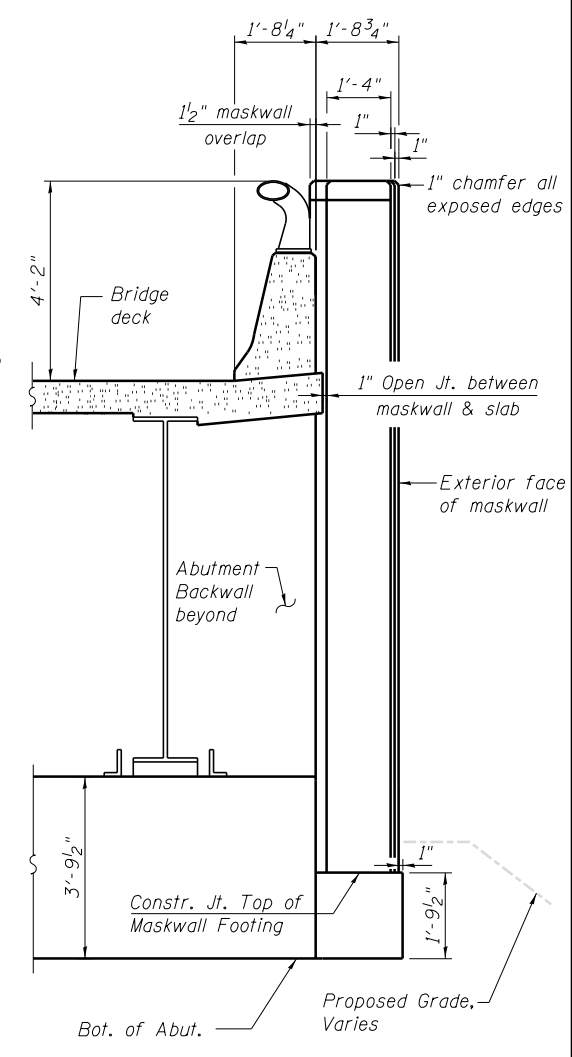
SECTION B-B - DETAIL 1



MASKWALL PLAN
(Ellipse Railing not shown for clarity)



ELEVATION
(Ellipse Railing not shown for clarity)



VIEW A-A

NOTES:

1. Top of maskwall shall be parallel to the longitudinal grade of the roadway and any adjacent barrier.
2. P.T. denotes point of vertical tangent for curved face of northern edge only.
3. For slopewall details, see sheet SD2.

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FILE NAME = 0810187-08324-028-West Maskwall_Details_1of2.dgn	USER NAME = ksnider	DESIGNED - DTS	REVISED -
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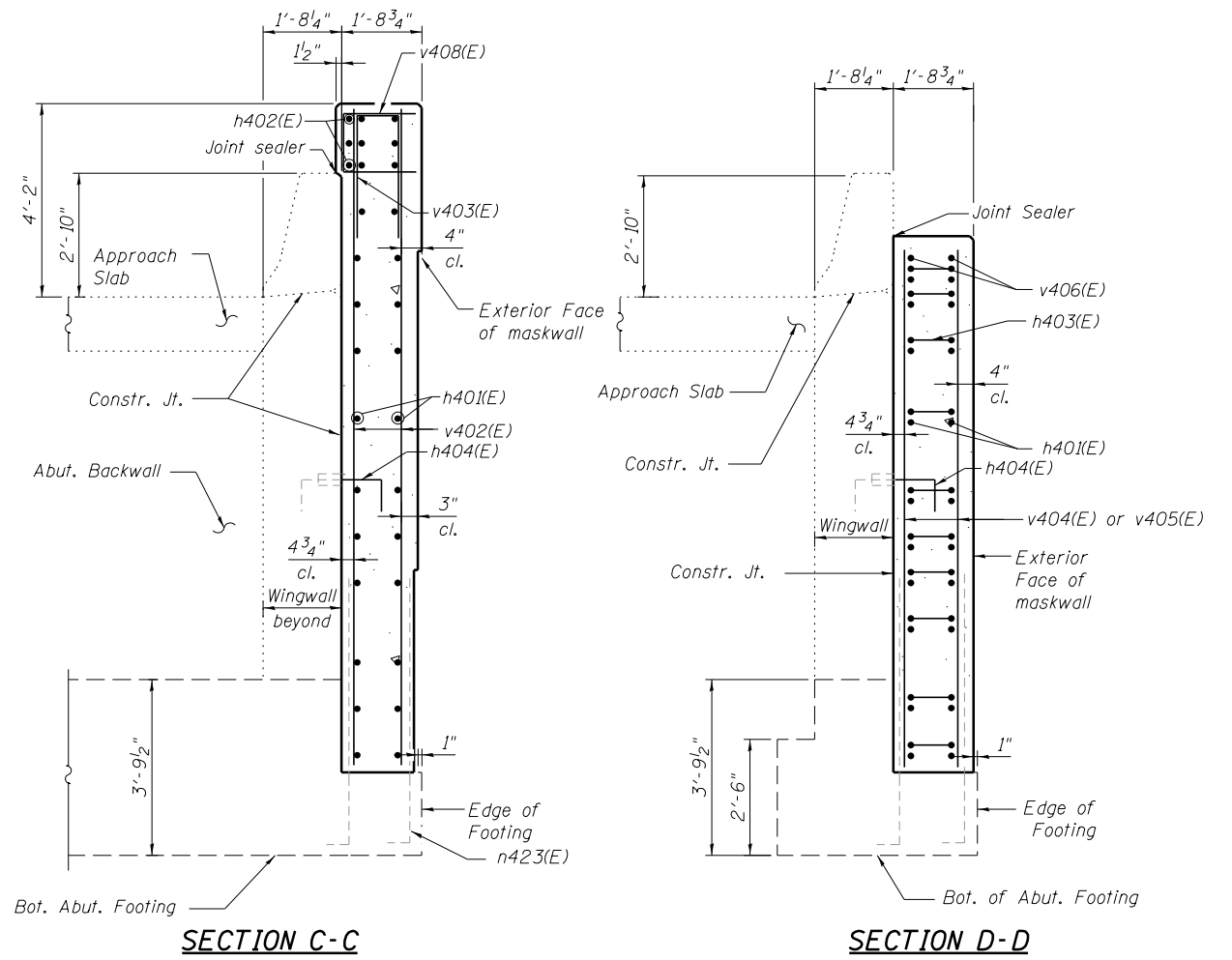
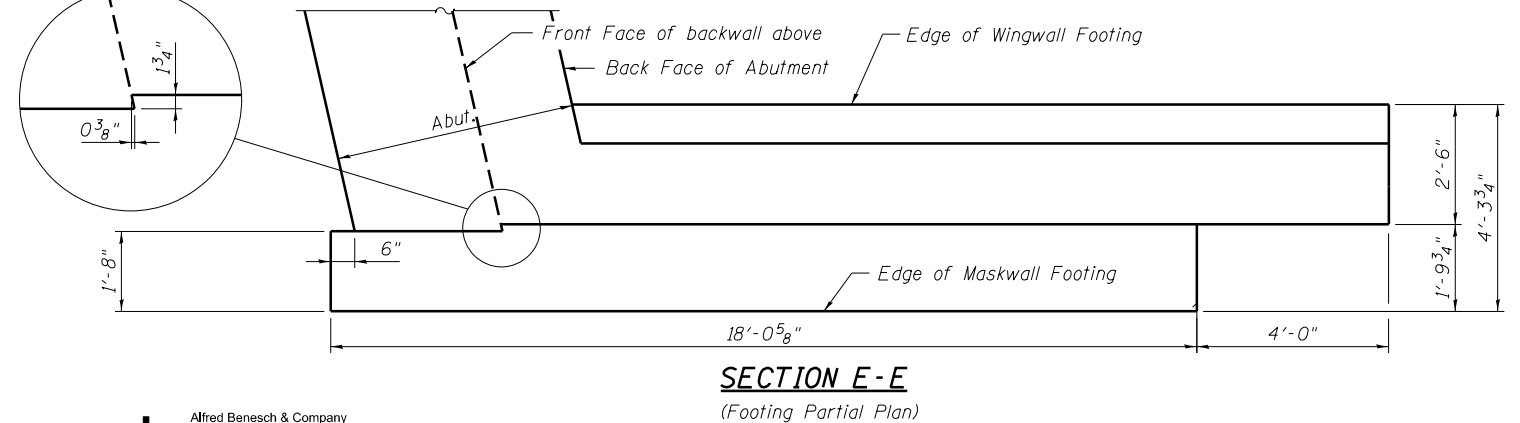
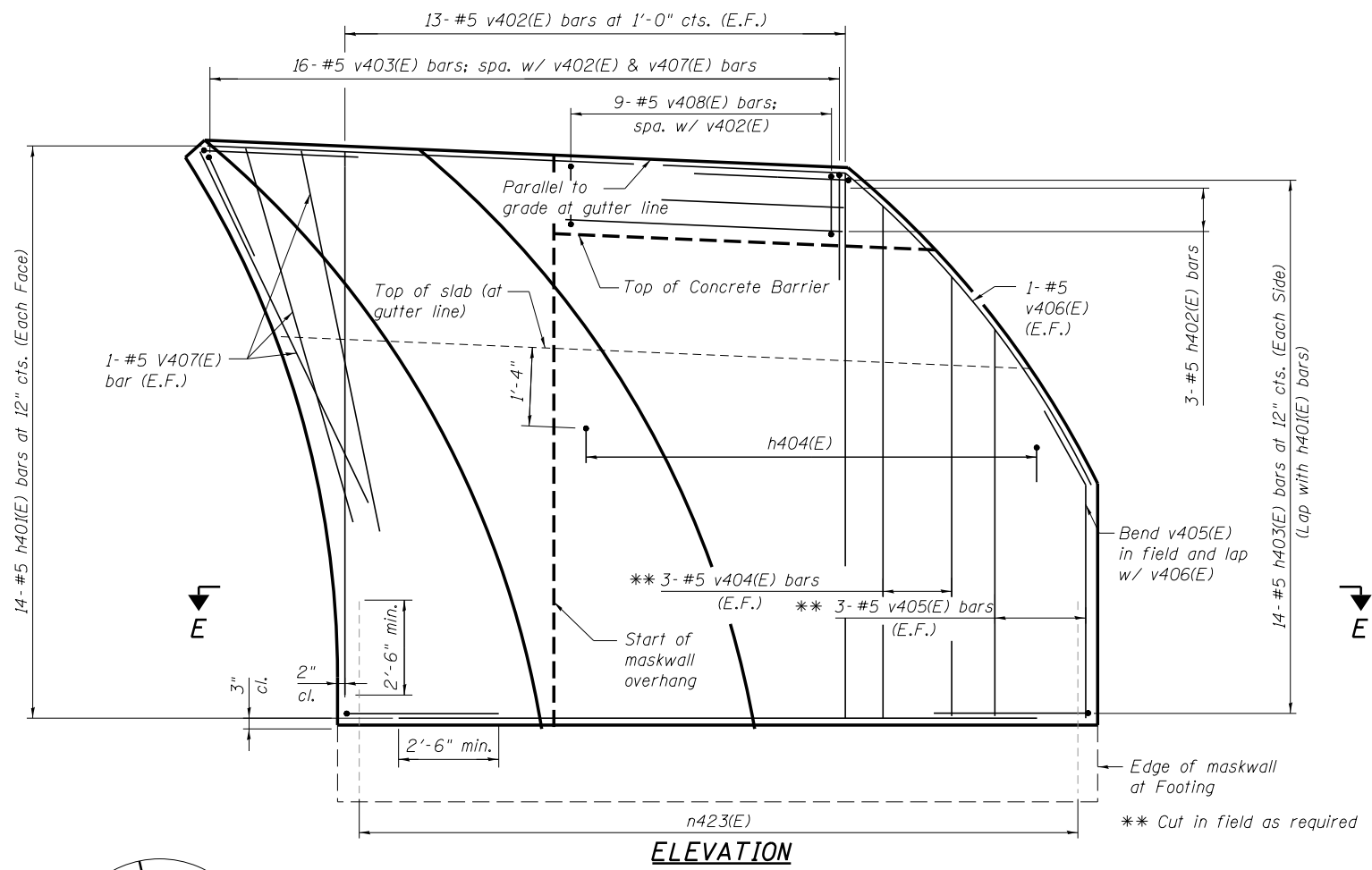
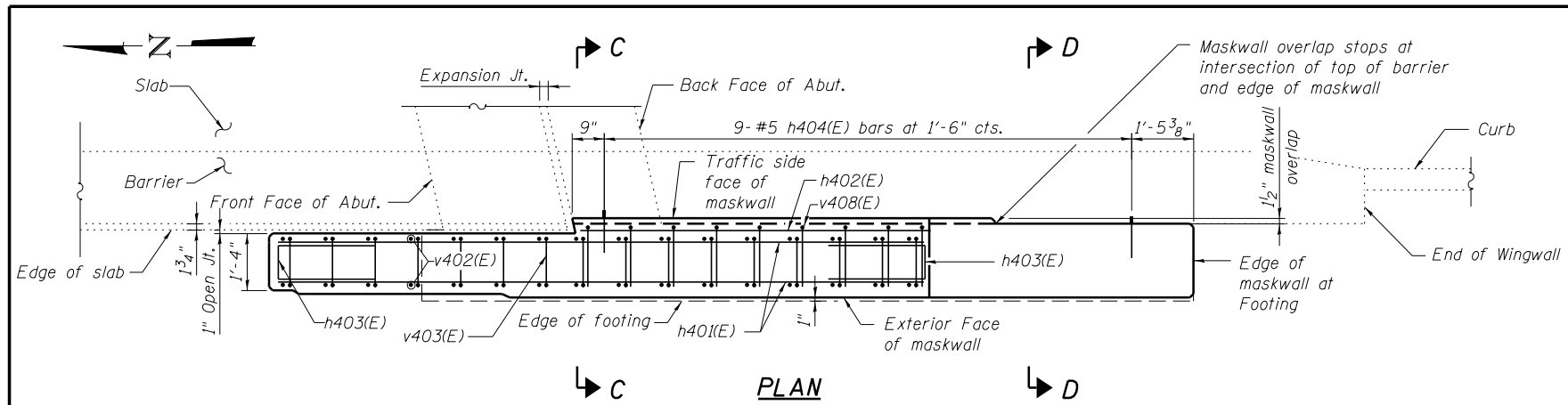
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WEST MASKWALL DETAILS (1 OF 2)
STRUCTURE NO. 081-0187 RAMP 6TH-D

SHEET NO. SD28 OF SD44 SHEETS

F.A.I. R.T.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-IHVBR	ROCK ISLAND	1504	1094
				CONTRACT NO. 64C08
ILLINOIS FED. AID PROJECT				

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- NOTES:**
1. Two inch clear concrete cover unless noted otherwise.
 2. The joint sealer shall be light gray nonsag latex caulking sealer marketed for outdoor use. Cost of the joint sealer shall be included with concrete structures.
 3. See sheet SD26 & SD27, for maskwall footing bar detailing.
 4. When exterior face of barrier and wingwall are exposed, contractor shall use rubbed finish same as maskwall.

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FILE NAME = 0810187-08324-029-West Maskwall_Details.2of2.dgn	USER NAME = ksnyder	DESIGNED - DTS	REVISED -
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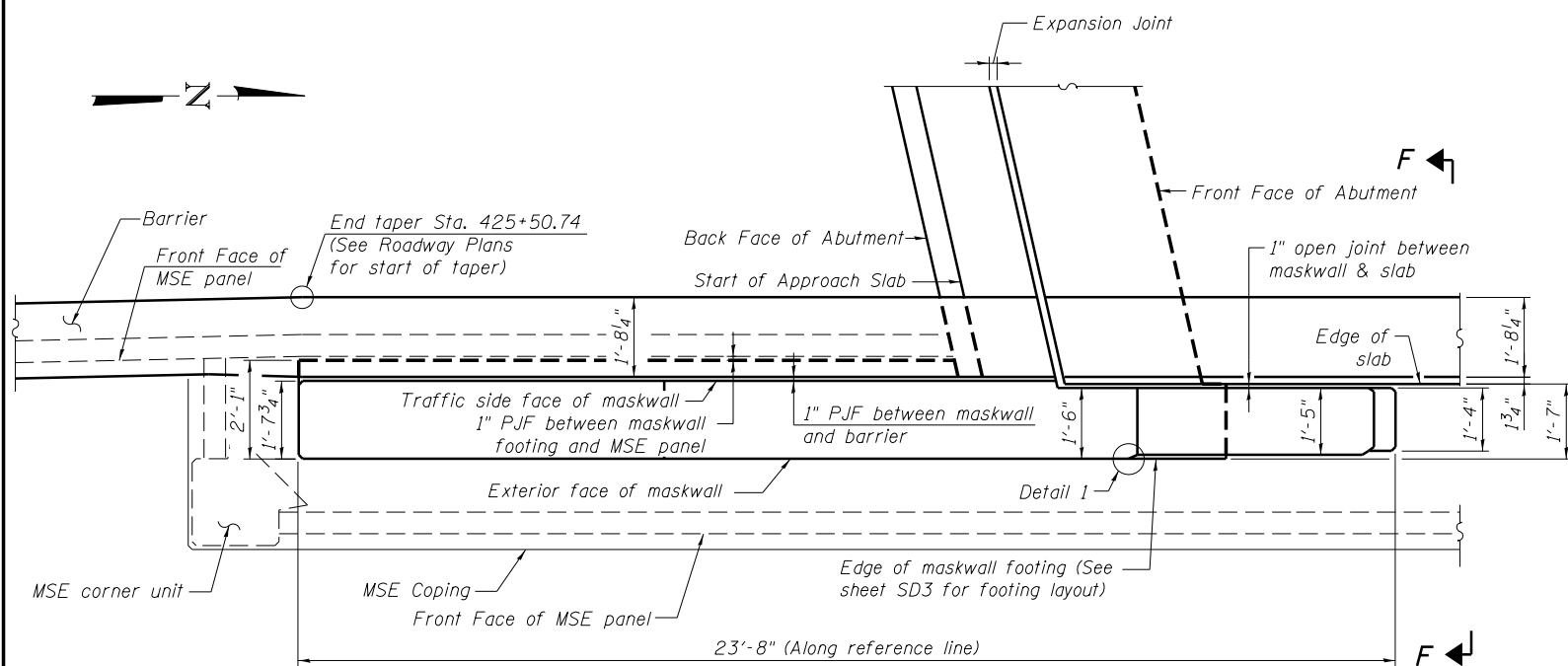
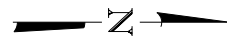
**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**WEST MASKWALL DETAILS (2 OF 2)
 STRUCTURE NO. 081-0187 RAMP 6TH-D**

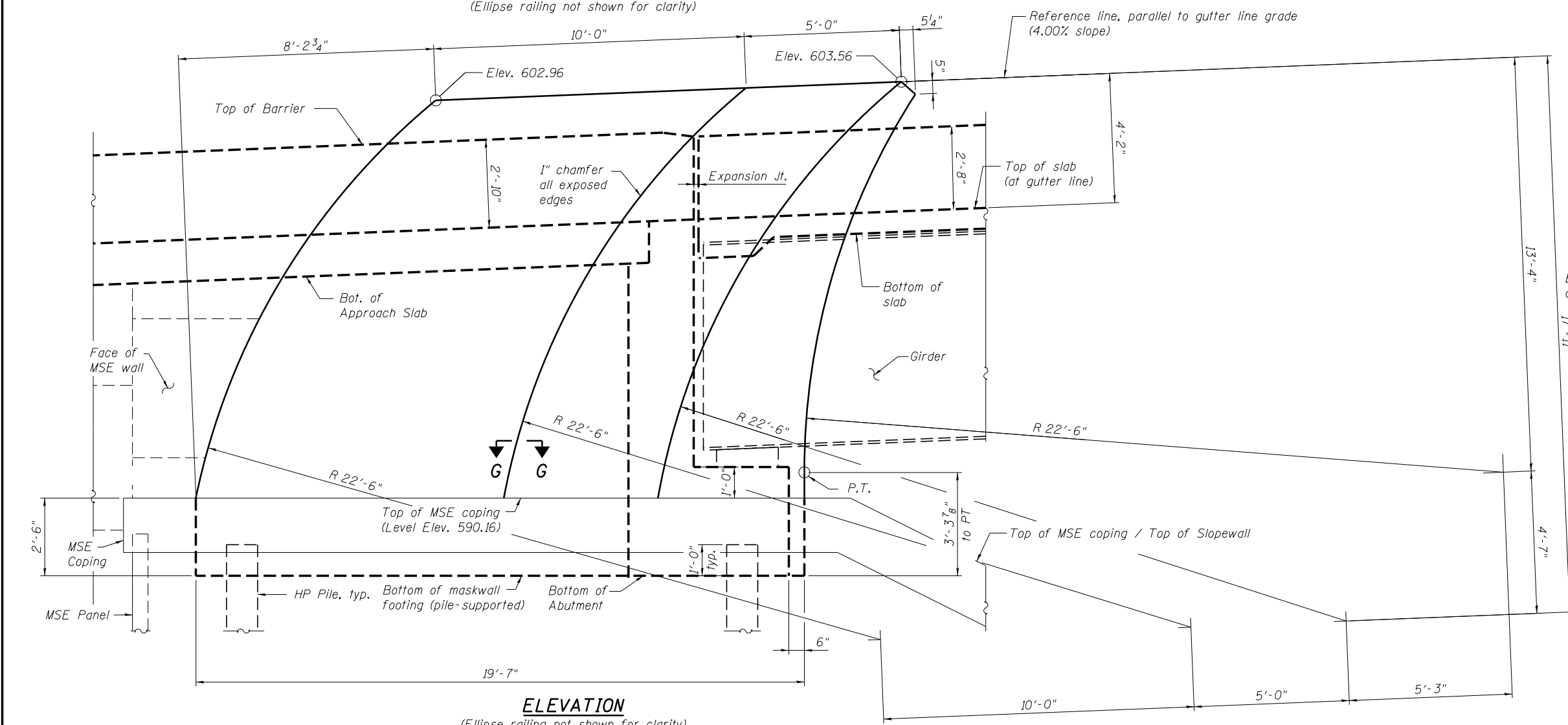
SHEET NO. SD29 OF SD44 SHEETS

F.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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ILLINOIS FED. AID PROJECT			CONTRACT NO. 64C08	

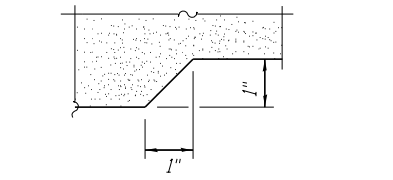
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MASKWALL PLAN
(Ellipse railing not shown for clarity)

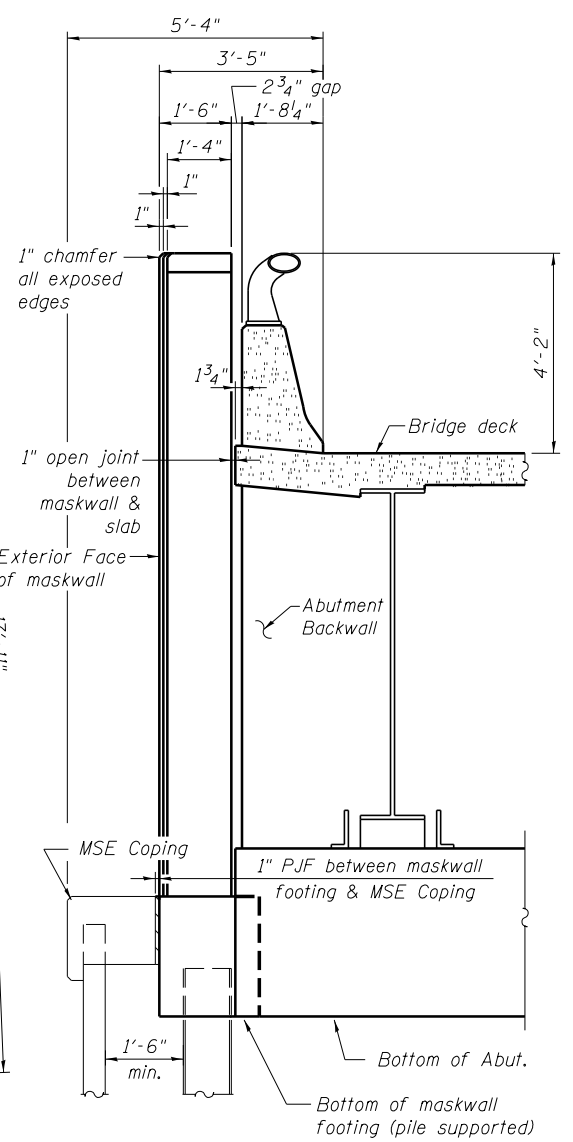


ELEVATION
(Ellipse railing not shown for clarity)



SECTION G-G - DETAIL 1

- NOTES:**
1. Top of maskwall shall be parallel to the longitudinal grade of the roadway and any adjacent barrier.
 2. P.T. denotes Vertical Point of Tangent for curved face of northern edge only.
 3. For slopewall details see sheet SD2.
 4. See S.N. 081-6012 Plan Set, for MSE wall details.



VIEW F-F

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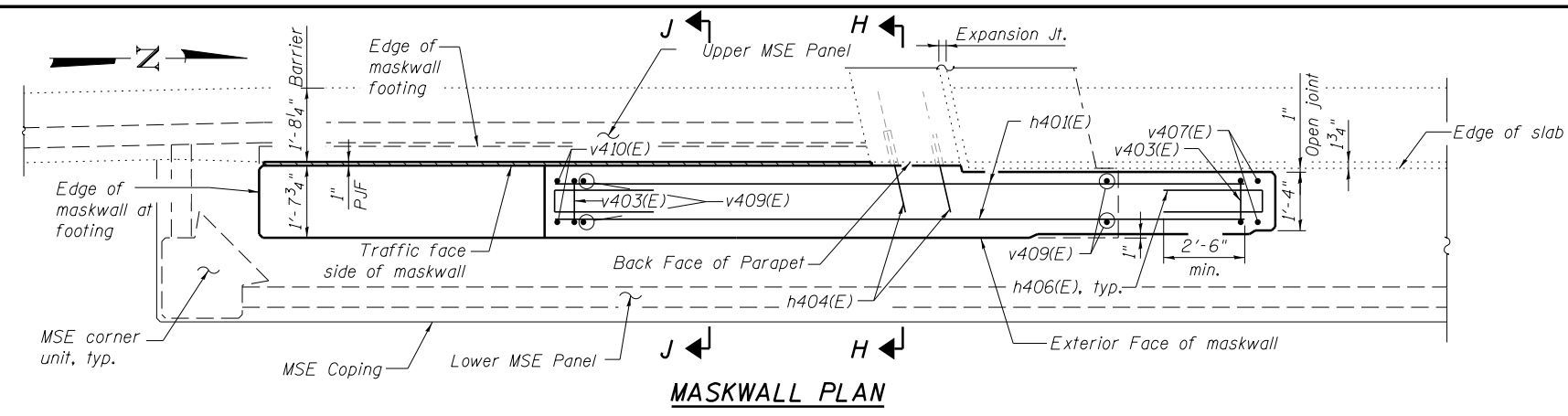
STATE OF ILLINOIS
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EAST MASKWALL DETAILS (1 OF 2)
STRUCTURE NO. 081-0187 RAMP 6TH-D

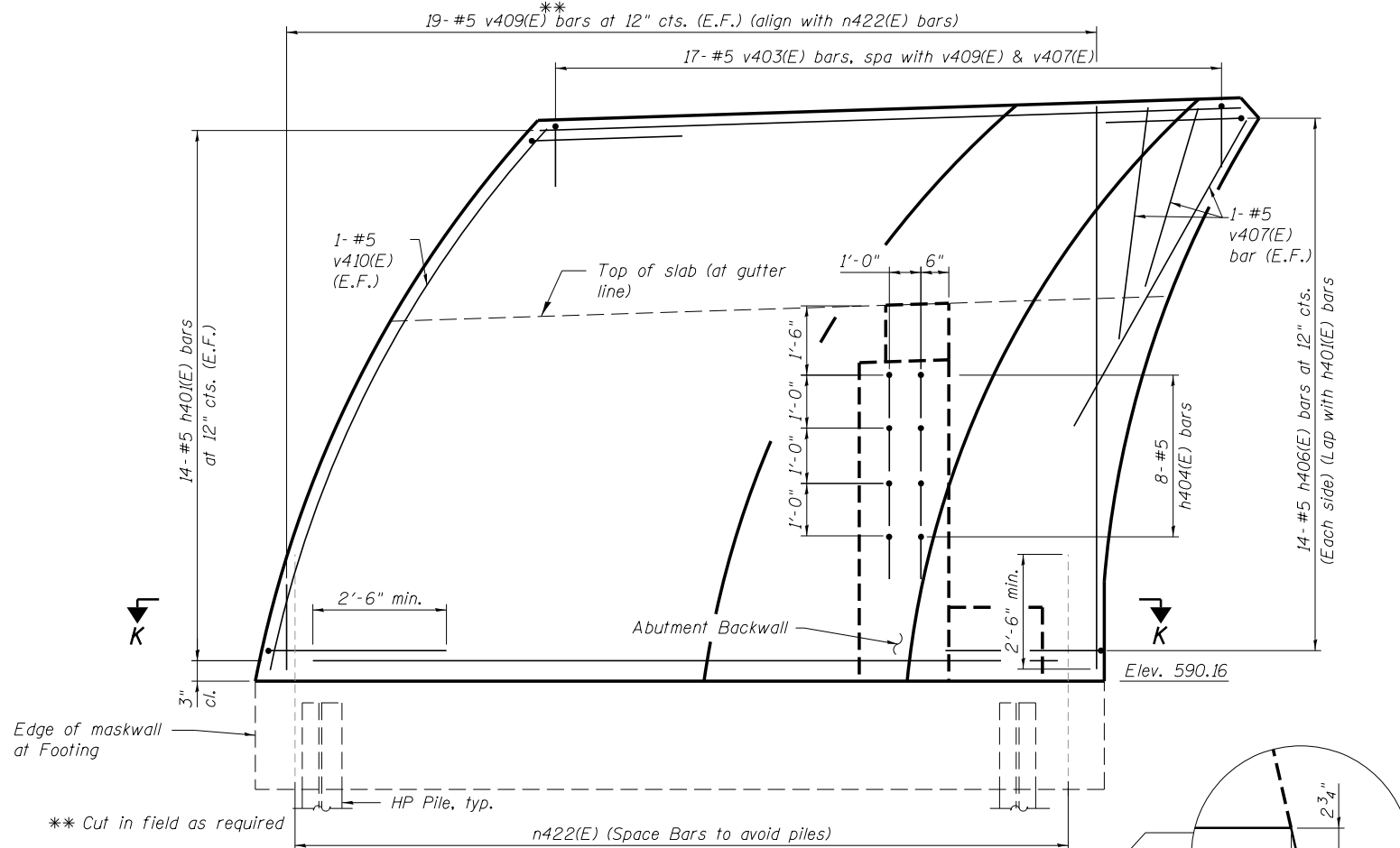
SHEET NO. SD30 OF SD44 SHEETS

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CONTRACT NO. 64C08			ILLINOIS FED. AID PROJECT	

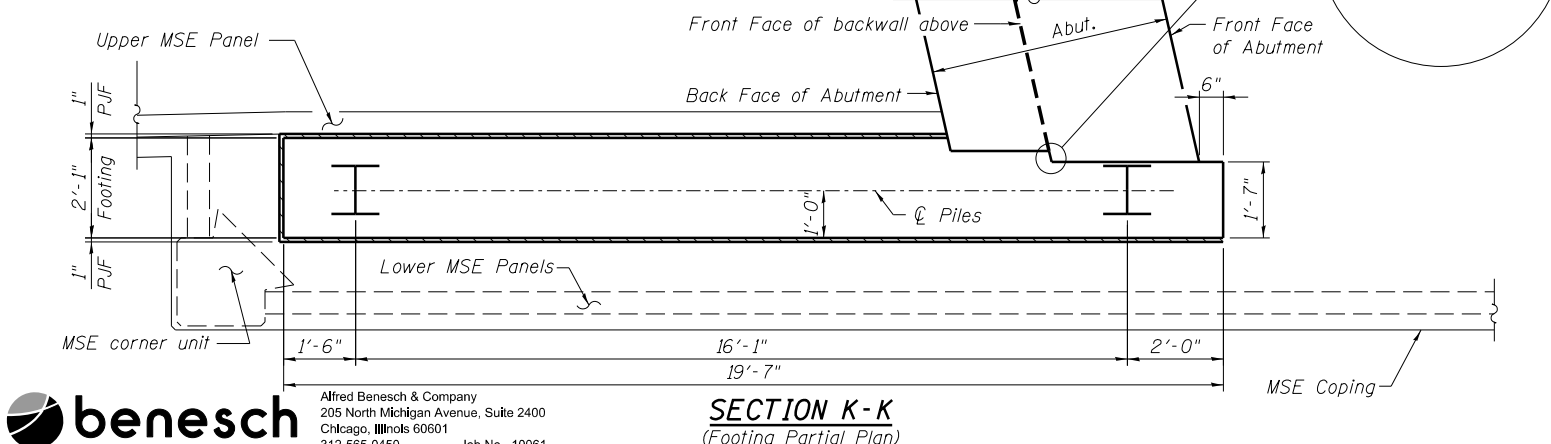
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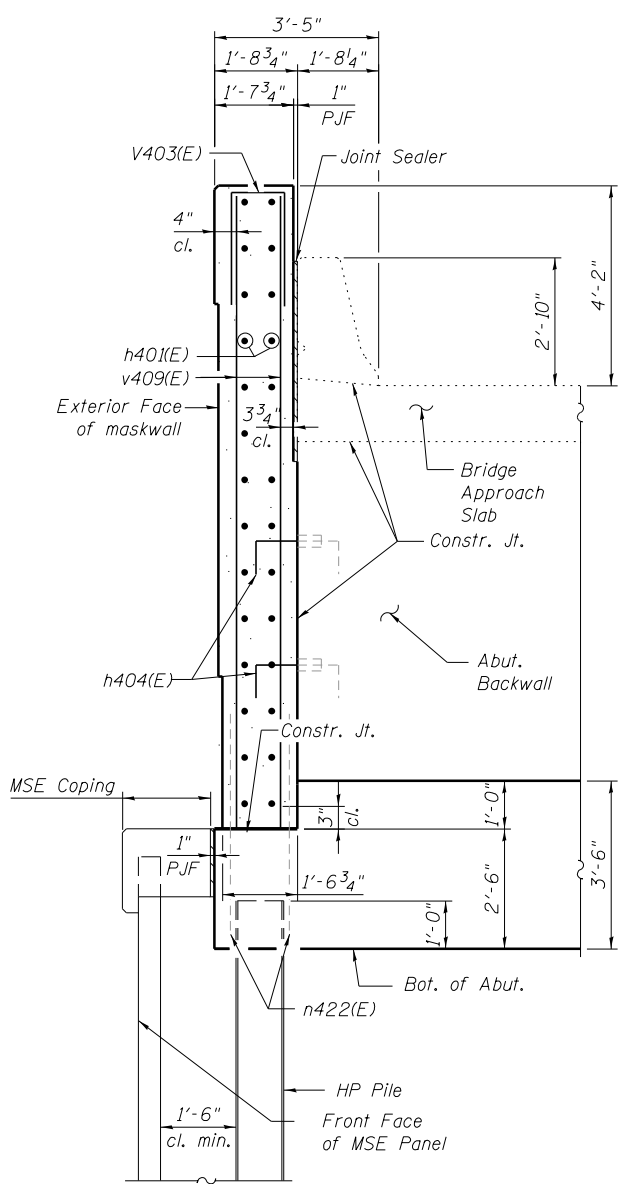
MASKWALL PLAN



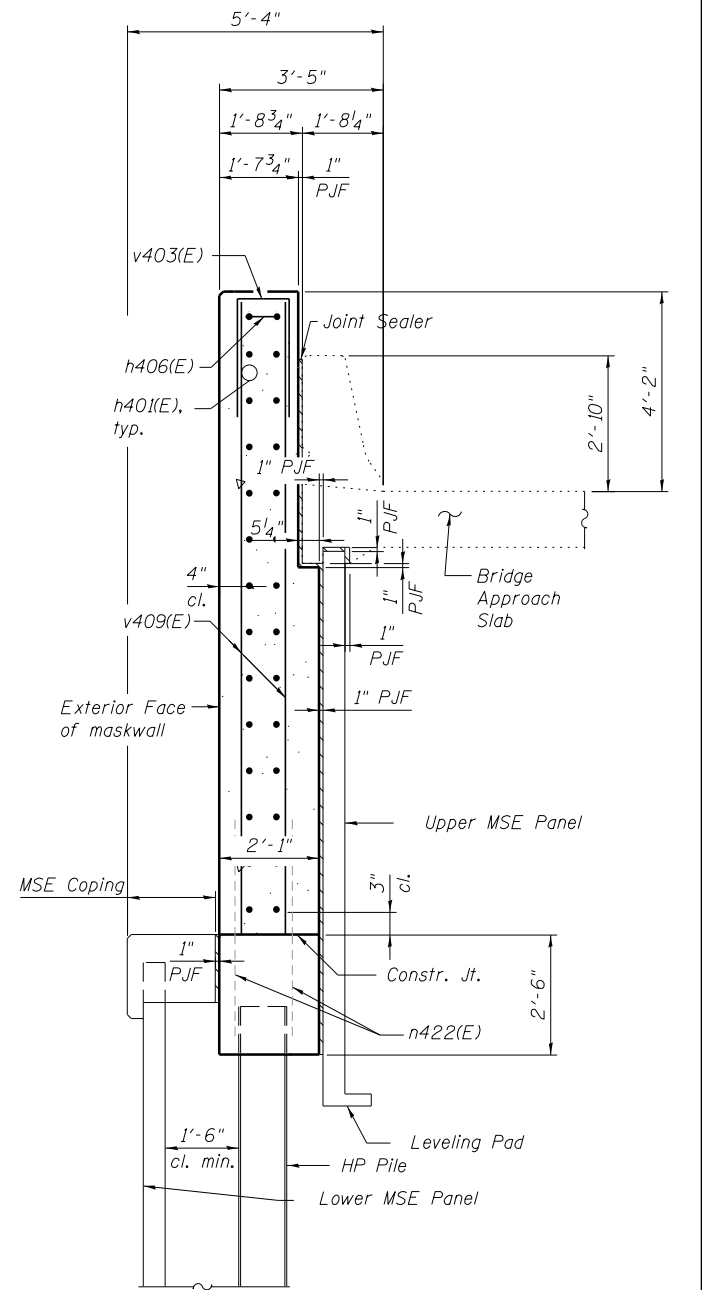
ELEVATION



SECTION K-K
(Footing Partial Plan)



SECTION H-H



SECTION J-J

NOTES:

1. See S.N. 081-6012 Plan Set, for MSE wall details.
2. Two inch clear concrete cover unless noted otherwise.
3. The joint sealer shall be light gray nonsag latex caulking sealer marketed for outdoor use. Cost of the joint sealer shall be included with concrete structure.
4. See sheet SD26 & SD27, for maskwall footing bar detailing.
5. When exterior face of barrier is exposed, contractor shall use rubbed finish same as maskwall.

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Chicago, Illinois 60601
312-565-0450 Job No. 10061

FILE NAME = 0810187-08324-031-East Maskwall_Details.2of2.dgn
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DESIGNED - DTS
CHECKED - AJK
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PLOT DATE = 1/18/2017
CHECKED - AJK

REVISIED -
REVISIED -
REVISIED -
REVISIED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**EAST MASKWALL DETAILS (2 OF 2)
STRUCTURE NO. 081-0187 RAMP 6TH-D**

SHEET NO. SD31 OF SD44 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-IHVBR	ROCK ISLAND	1504	1097
CONTRACT NO. 64C08			ILLINOIS FED. AID PROJECT	

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MASKWALL FINISHING NOTES

If form ties are used in forming the maskwall, arrange ties to be regularly spaced and in a consistent geometric grid pattern. Do not locate ties at edges of concrete rustications.

Following form removal, a rubbed surface finish in accordance with Article 503.15 (b) of the Standard Specifications shall be required but with the following additional requirements:

1. Demonstrate hole and void patching operations in accordance with Article 503.15 (b) of the Standard Specifications on a four foot section of vertical maskwall located in an inconspicuous area. Begin patching demonstration by using a mortar mix comprised of 1 part white cement, 2 parts standard portland cement, 6 parts mortar sand, and water. The quantity of water used shall produce a mortar consistency as dry as possible to use effectively.
2. When patching test areas have set, saturate with water and rub with a fine carborundum stone until surfaces are smooth in texture. Remove loose powder and other contaminants by rubbing with burlap and rinsing with water. After surfaces have dried, patch color and texture of surfaces will be reviewed by the engineer. Patches should match or be slightly lighter than surrounding concrete. If results are unsatisfactory, adjust patching mortar mix proportions and perform another demonstration until results are deemed satisfactory by the engineer.
3. Use the patching mortar mix proportions that are approved by the engineer as a result of the satisfactory demonstration. Do not use patching mortar that is more than 1 hour old.
4. Finished maskwall concrete shall be smooth and show no wood grain or other texture from the face of the forms used. All costs for repair or covering wood grain or other textures on these surfaces shall be the responsibility of the Contractor.
5. Do not apply curing compounds, sealers, or other coatings to the finished maskwalls.

NOTE:

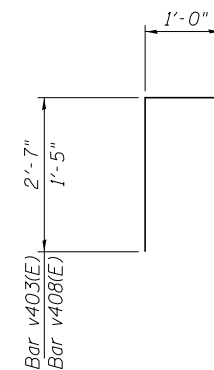
Contractor shall exercise all due care to assure that the maskwall surface finish is intact and the overall appearance is aesthetically pleasing at completion of the project. If the maskwalls are constructed before the deck, approach slab or parapets, additional effort may be required in forming and placing the deck, approach slab and/or parapet concrete, and precautions shall be taken to protect the maskwalls during these operations. If the maskwalls are constructed after deck, approach slab or parapets, temporary earth retention may be required. In either case, any costs for protecting the maskwalls, working around them or temporary earth retention and final grading shall be included in the cost of Concrete Structures.

**BILL OF MATERIAL
WEST MASKWALL**

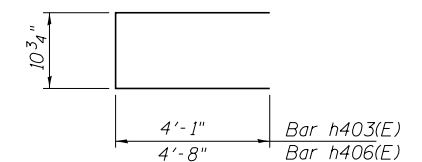
Bar	No.	Size	Length	Shape
h401(E)	28	#5	15'-0"	—
h402(E)	3	#5	8'-1"	—
h403(E)	28	#5	9'-1"	□
h404(E)	9	#5	1'-9"	┌
v402(E)	26	#5	13'-5"	—
v403(E)	16	#5	6'-2"	□
v404(E)	6	#5	12'-7"	—
v405(E)	6	#5	9'-3"	—
v406(E)	2	#5	9'-5"	⌒
v407(E)	6	#5	8'-3"	—
v408(E)	9	#5	3'-10"	□
Concrete Structures			Cu. Yd.	14.9
Reinforcement Bars, Epoxy Coated			Pound	1,460

**BILL OF MATERIAL
EAST MASKWALL**

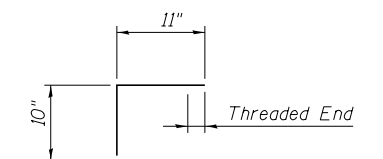
Bar	No.	Size	Length	Shape
h401(E)	28	#5	15'-0"	—
h404(E)	8	#5	1'-9"	┌
h406(E)	28	#5	10'-3"	□
v403(E)	17	#5	6'-2"	□
v407(E)	6	#5	8'-3"	—
v409(E)	38	#5	12'-10"	—
v410(E)	2	#5	14'-10"	⌒
Concrete Structures			Cu. Yd.	15.1
Reinforcement Bars, Epoxy Coated			Pound	1,460



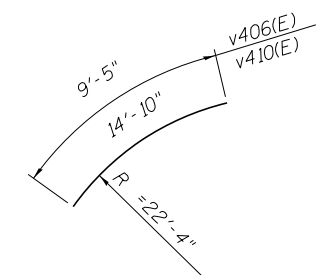
Bars v403(E) & v408(E)



Bars h403(E) & h406(E)



Bar h404(E)



Bars v406(E) & v410(E)

benesch
Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10061

FILE NAME = 0810187-08324-032-Maskwall Notes and bill of material.dgn	USER NAME = ksnider	DESIGNED - DTS	REVISED -
MODEL: Default	PLOT SCALE =	CHECKED - AJK	REVISED -
	PLOT DATE = 1/18/2017	DRAWN - KMS	REVISED -
		CHECKED - AJK	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

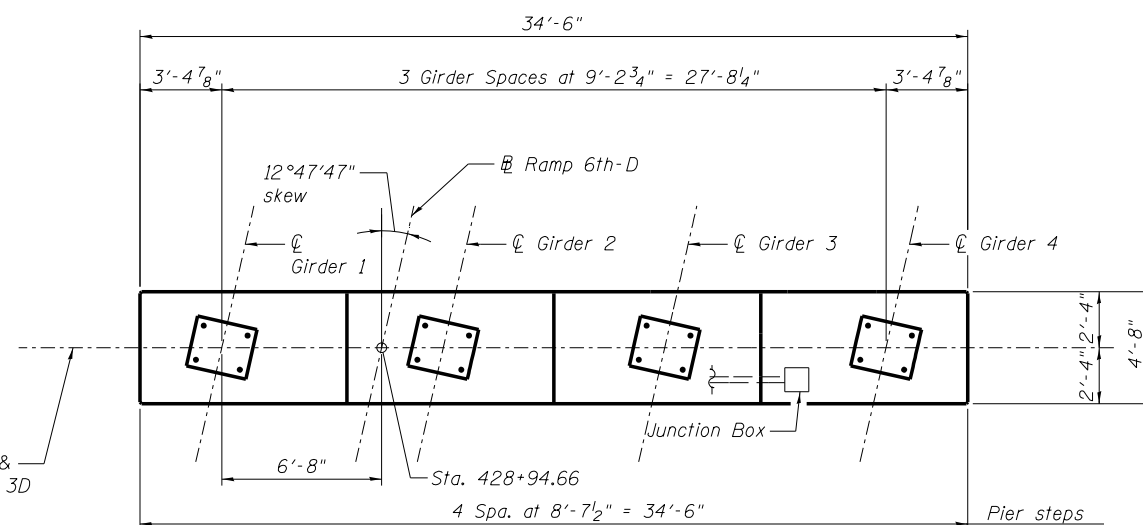
**MASKWALL NOTES AND BILL OF MATERIAL
STRUCTURE NO. 081-0187 RAMP 6TH-D**

SHEET NO. SD32 OF SD44 SHEETS

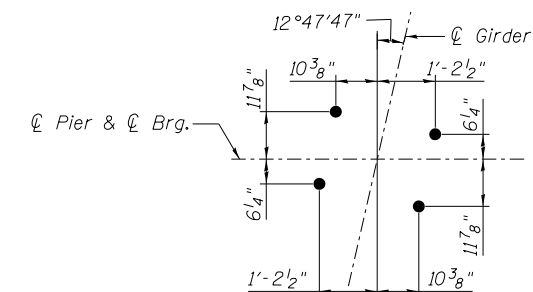
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74	81-IHVBR	ROCK ISLAND	1504	1098
ILLINOIS FED. AID PROJECT			CONTRACT NO. 64C08	



☉ Pier cap &
☉ Brg. Pier 3D



PLAN OF PIER CAP



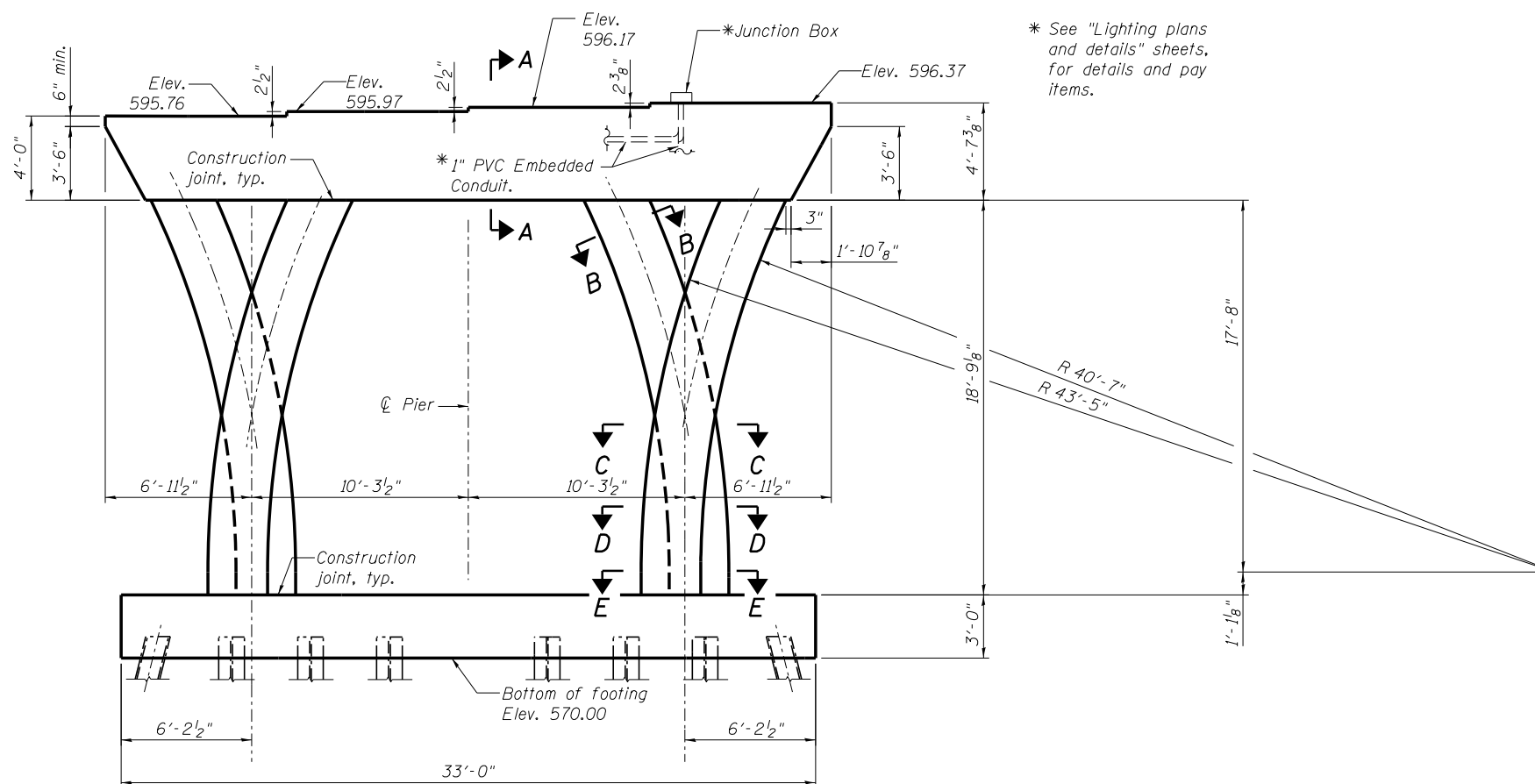
ANCHOR BOLT LAYOUT

PILE DATA

Type: HP 14x73 with pile shoes
 Nominal Required Bearing: 695 kips
 Factored Resistance Available: 486 kips
 Est. Length: 18 feet
 No. Production Piles: 15
 No. Test Piles: 1

PIER NOTES:

1. See sheet SD39 for pier concrete finishing notes.
2. For sections A-A, B-B, C-C, D-D, & E-E, See sheet SD35.
3. The minimum clear distance from the face of concrete to near reinforcing bar is 2" unless noted otherwise or shown.
4. All exposed corners, 90 degrees or sharper shall be filleted with a 3/4" dressed and beveled strip unless noted otherwise.
5. Space reinforcement in cap to miss anchor bolts.
6. The use of steel forms is required for the forming of all pier concrete surfaces from the tops of footings to the bottom of pier cap beams, including stem and pier columns. Use of medium-density overlaid (MDO) or high-density overlaid (HDO) plywood faced forms is allowed for forming of the pier cap beam. Plain plywood-faced forms will not be allowed for any portion of the pier column or cap surfaces.
7. The Contractor shall use self-consolidating concrete (SCC) in all the pier columns. The self-consolidating concrete shall conform to all requirements as specified in Section 1020 of the Standard Specifications. Cost of SCC shall be included with the cost of Concrete Structures.
8. The contractor shall provide adequate forms to contain the increased hydraulic pressure of the self consolidating concrete.
9. The tremie tube shall be in place prior to placing formwork.
10. See foundation layout on sheet SD3 for pier layout.



* See "Lighting plans and details" sheets, for details and pay items.

PIER 3D ELEVATION
(Looking South)



Alfred Benesch & Company
 205 North Michigan Avenue, Suite 2400
 Chicago, Illinois 60601
 312-565-0450 Job No. 10061

FILE NAME = 0810187-08324-033-Pier_3D_Layout.dgn

USER NAME = ksnyder

DESIGNED - RJT/DMS/DTS

REVISD -

CHECKED - TJJ

REVISD -

PLOT SCALE =

PLOT DATE = 1/18/2017

CHECKED - TJJ

REVISD -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

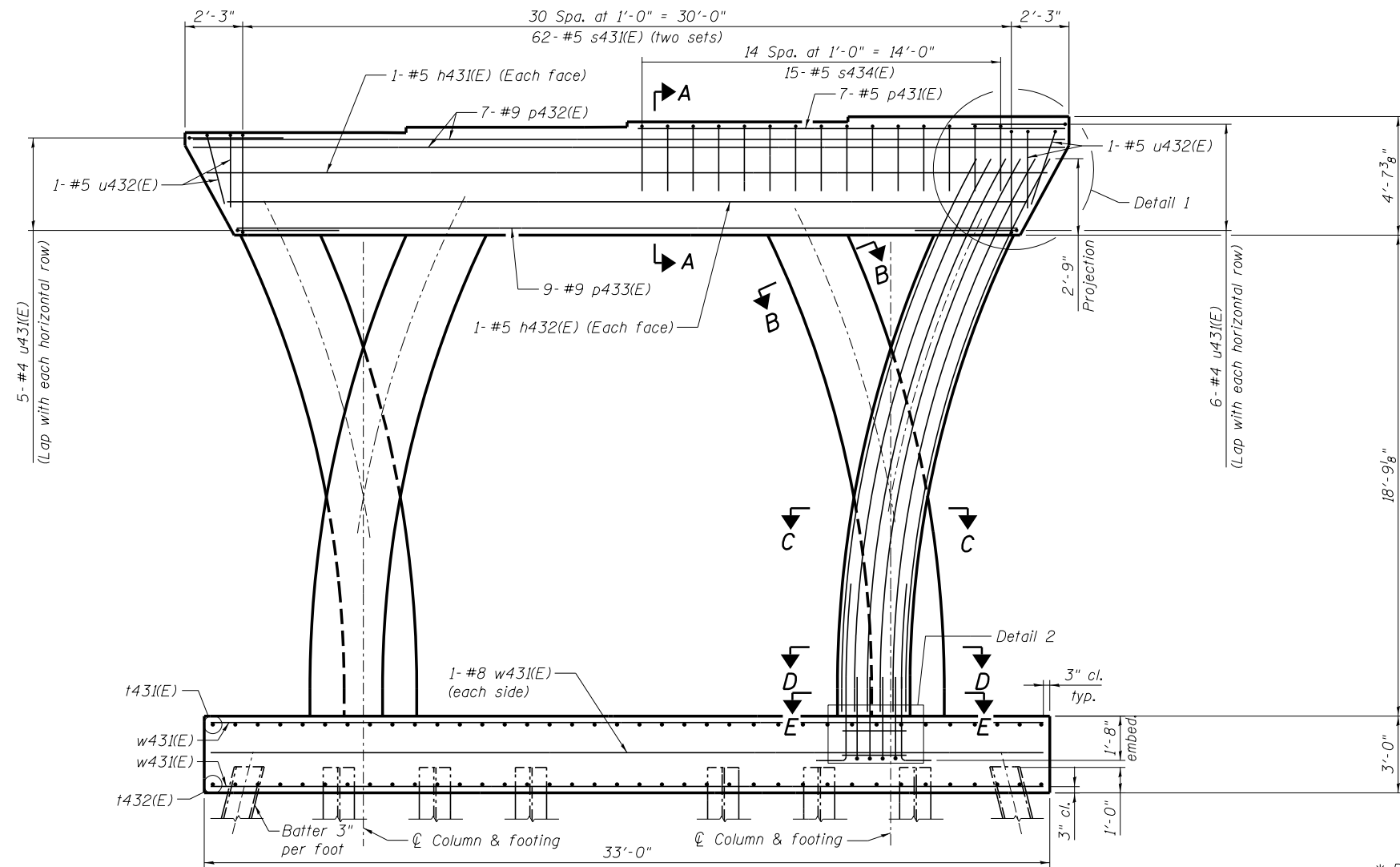
PIER 3D LAYOUT
 STRUCTURE NO. 081-0187 RAMP 6TH-D

SHEET NO. SD33 OF SD44 SHEETS

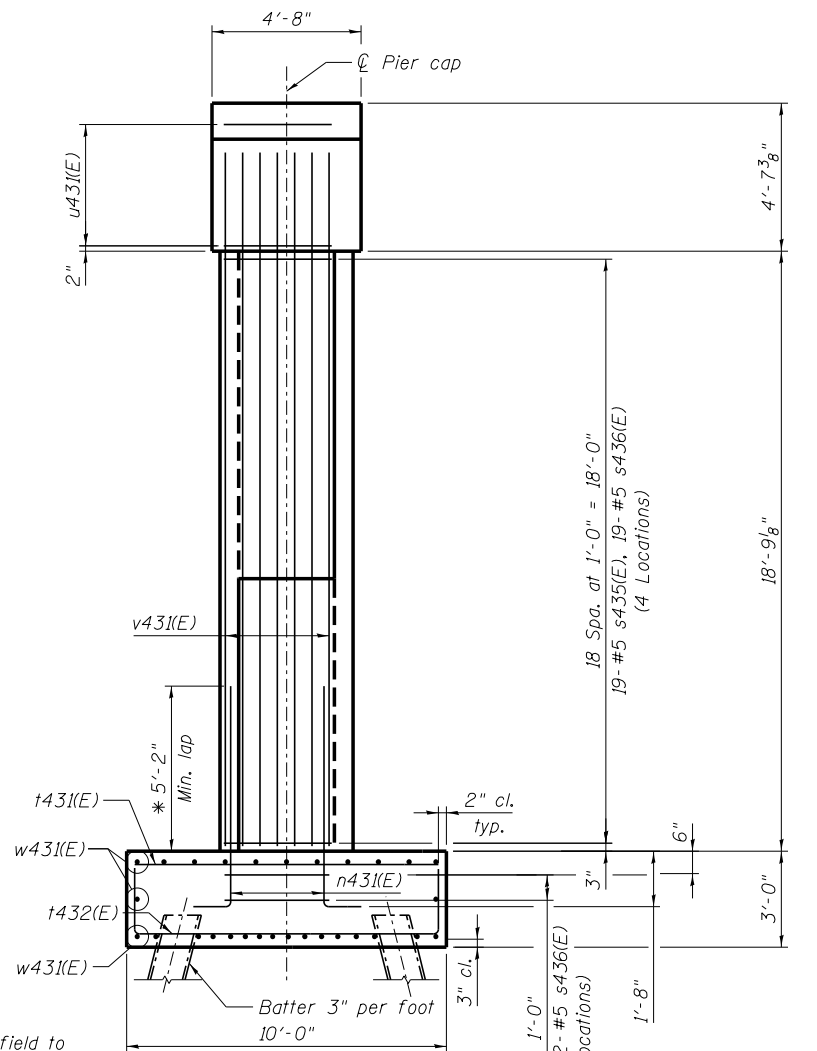
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-IHVBR	ROCK ISLAND	1504	1099
CONTRACT NO. 64C08				

ILLINOIS FED. AID PROJECT

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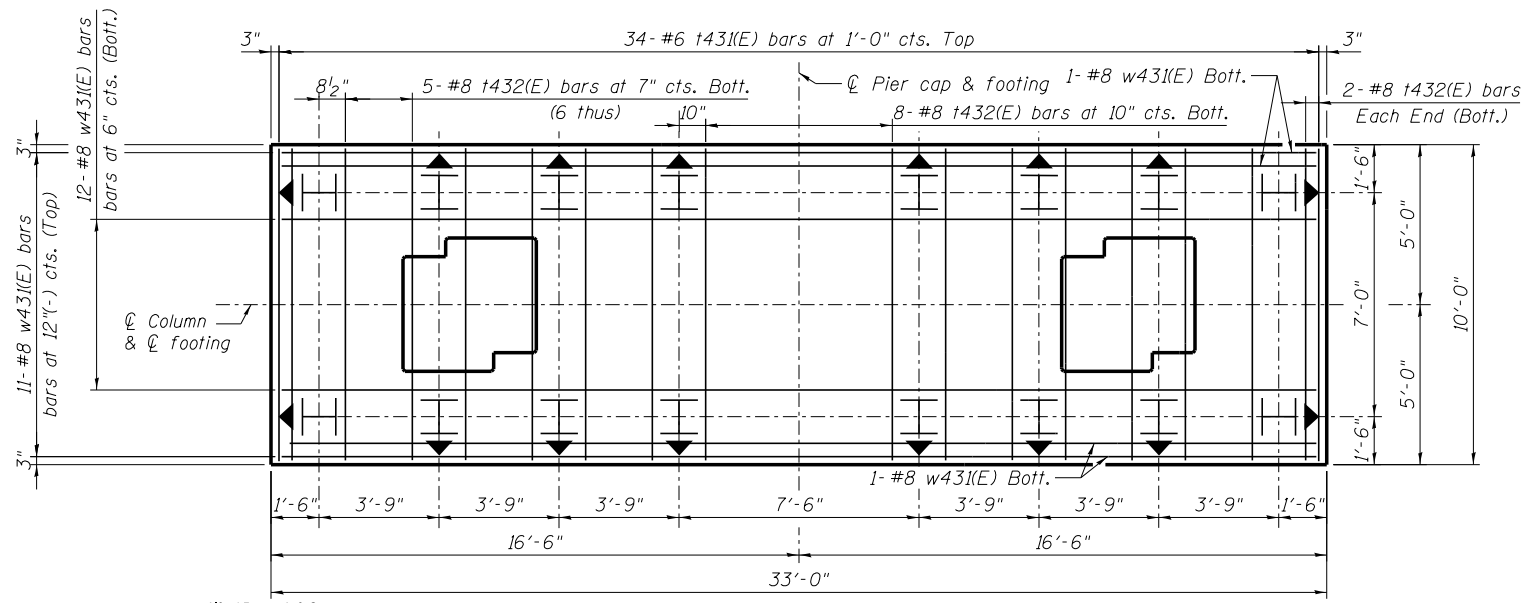


PIER 3D ELEVATION
(Looking South)

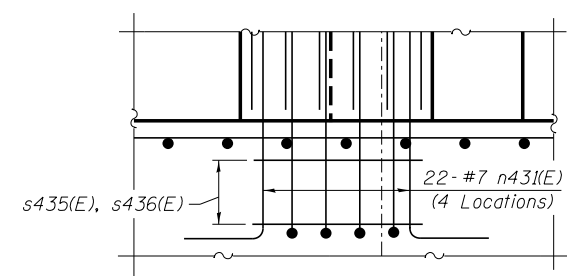


END VIEW

* Bend n431(E) bars in field to match radius of "v" bar



FOOTING PLAN



DETAIL 2

NOTES:

1. For Detail 1 and Sections A-A, B-B, C-C, D-D, & E-E see sheet SD35.
2. For additional notes see sheet SD33.
3. See sheet SD39 for reinforcing details and bill of material.



Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10061

USER NAME = ksnider	DESIGNED - RJT/DMS/DTS	REVISION -
PLOT SCALE =	CHECKED - TJJ	REVISION -
PLOT DATE = 1/18/2017	DRAWN - KMS	REVISION -
	CHECKED - TJJ	REVISION -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 3D DETAILS
STRUCTURE NO. 081-0187 RAMP 6TH-D

SHEET NO. SD34 OF SD44 SHEETS

F.A.I. RE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-IHVBR	ROCK ISLAND	1504	1100
CONTRACT NO. 64C08				
ILLINOIS FED. AID PROJECT				