

GIRDER 6

Location	Station	Offset from PGL	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflection & Grinding
Exp. Jt.	74+15.13	20.00	500.61	500.63
Brg. Pier 6	74+16.50	20.00	500.58	500.61
JA	74+24.00	20.00	500.42	500.49
JB	74+34.00	20.00	500.20	500.32
JC	74+44.00	20.00	499.98	500.13
JD	74+54.00	20.00	499.74	499.93
JE	74+64.00	20.00	499.50	499.72
JF	74+74.00	20.00	499.25	499.48
JG	74+84.00	20.00	498.99	499.23
JH	74+94.00	20.00	498.73	498.96
JI	75+04.00	20.00	498.46	498.67
JJ	75+14.00	20.00	498.18	498.37
JK	75+24.00	20.00	497.90	498.05
JL	75+34.00	20.00	497.61	497.72
JM	75+44.00	20.00	497.31	497.39
JN	75+54.00	20.00	497.00	497.06
JO	75+64.00	20.00	496.69	496.72
Brg. Pier 7	75+76.50	20.00	496.29	496.31
KA	75+86.50	20.00	495.96	495.99
KB	75+96.50	20.00	495.62	495.66
KC	76+06.50	20.00	495.28	495.34
KD	76+16.50	20.00	494.93	495.02
KE	76+26.50	20.00	494.57	494.69
KF	76+36.50	20.00	494.21	494.36
KG	76+46.50	20.00	493.84	494.02
KH	76+56.50	20.00	493.46	493.66
KI	76+66.50	20.00	493.07	493.29
KJ	76+76.50	20.00	492.68	492.90
KK	76+86.50	20.00	492.28	492.49
KL	76+96.50	20.00	491.88	492.08
KM	77+06.50	20.00	491.48	491.66
KN	77+16.50	20.00	491.08	491.23
KO	77+26.50	20.00	490.68	490.80
KP	77+36.50	20.00	490.28	490.37
KQ	77+46.50	20.00	489.88	489.94
KR	77+56.50	20.00	489.48	489.52
KS	77+66.50	20.00	489.08	489.11
Brg. Pier 8	77+76.50	20.00	488.68	488.70
LA	77+86.50	20.00	488.28	488.31
LB	77+96.50	20.00	487.88	487.92
LC	78+06.50	20.00	487.48	487.55
LD	78+16.50	20.00	487.08	487.18
LE	78+26.50	20.00	486.68	486.81
LF	78+36.50	20.00	486.28	486.44
LG	78+46.50	20.00	485.88	486.07
LH	78+56.50	20.00	485.48	485.69
LI	78+66.50	20.00	485.08	485.30
LJ	78+76.50	20.00	484.68	484.91
LK	78+86.50	20.00	484.28	484.50
LL	78+96.50	20.00	483.88	484.09
LM	79+06.50	20.00	483.48	483.67
LN	79+16.50	20.00	483.08	483.24
LO	79+26.50	20.00	482.68	482.81
LP	79+36.50	20.00	482.28	482.37

GIRDER 6

Location	Station	Offset from PGL	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflection & Grinding
LQ	79+46.50	20.00	481.88	481.94
LR	79+56.50	20.00	481.48	481.52
LS	79+66.50	20.00	481.08	481.11
Brg. Pier 9	79+76.50	20.00	480.68	480.70
MA	79+86.50	20.00	480.28	480.31
MB	79+96.50	20.00	479.88	479.93
MC	80+06.50	20.00	479.48	479.56
MD	80+16.50	20.00	479.08	479.19
ME	80+26.50	20.00	478.68	478.83
MF	80+36.50	20.00	478.28	478.46
MG	80+46.50	20.00	477.88	478.09
MH	80+56.50	20.00	477.48	477.71
MI	80+66.50	20.00	477.08	477.32
MJ	80+76.50	20.00	476.68	476.92
MK	80+86.50	20.00	476.28	476.51
ML	80+96.50	20.00	475.88	476.09
MM	81+06.50	20.00	475.48	475.65
MN	81+16.50	20.00	475.08	475.21
MO	81+26.50	20.00	474.68	474.76
Brg. E. Abut.	81+36.50	20.00	474.28	474.30
Exp. Jt.	81+37.99	20.00	474.22	474.24
Bk. E. Abut.	81+40.33	20.00	474.13	474.15

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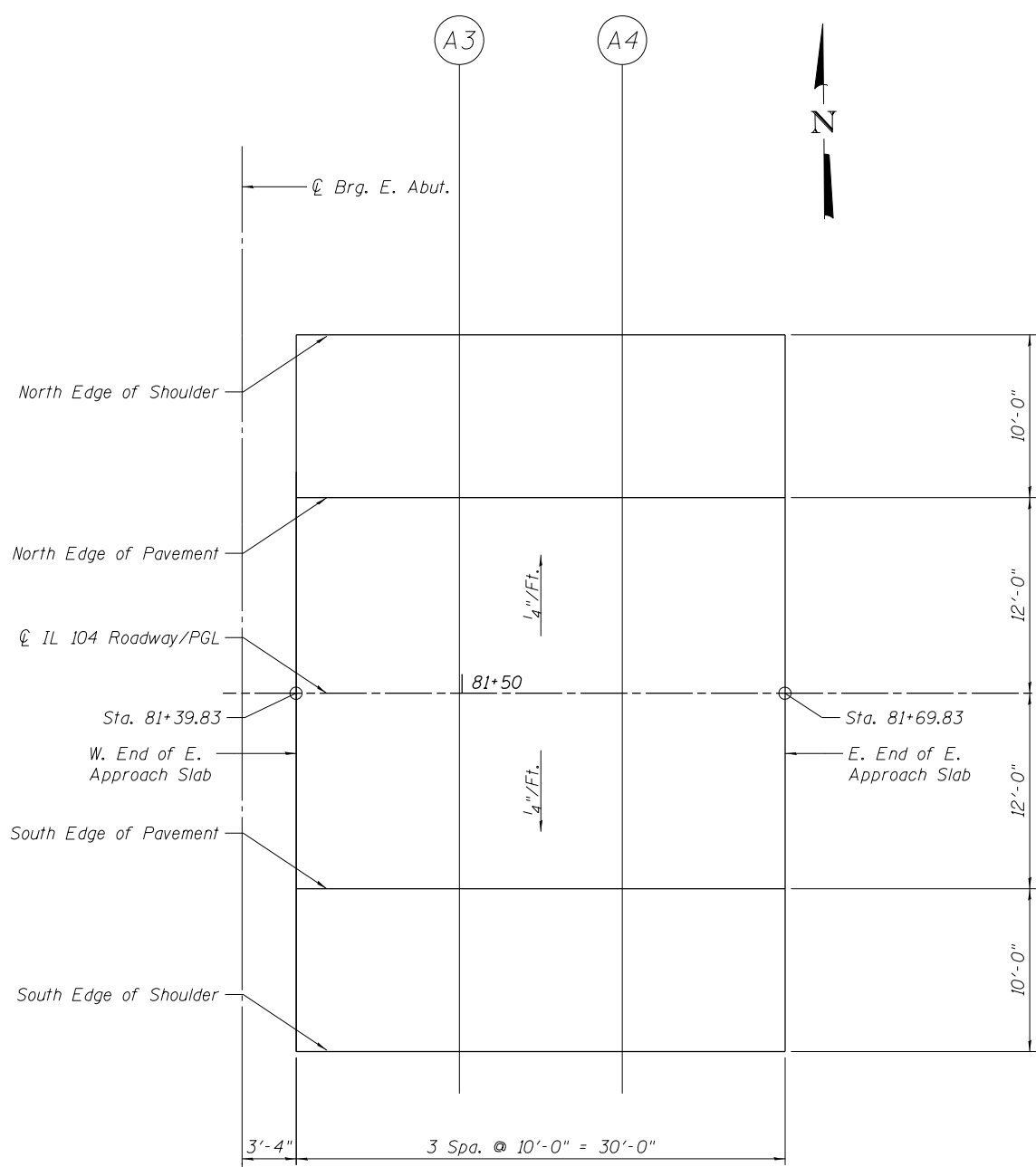
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF DECK ELEVATIONS
UNIT 3
4 OF 4

SHEET NO. 5-20 OF 146 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	401
SN 069-0525		CONTRACT NO. 72B58		
ILLINOIS FED. AID PROJECT				

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 REVISIONS -
 PLOT DATE =
 CHECKED - VCP
 REVISIONS -



PLAN
East Approach Slab

Note:
The slab is to be ground after curing to achieve smoothness but the slab is not to be ground to elevations below the "Theoretical Grade Elevations" shown on this sheet. For grinding the slab, see Special Provisions.

North Edge of Shoulder

Location	Station	Offset from PGL	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Grinding
W. End of E. App. Slab	81+39.83	-22.00	474.11	474.13
A3	81+49.83	-22.00	473.71	473.73
A4	81+59.83	-22.00	473.31	473.33
E. End of E. App. Slab	81+69.83	-22.00	472.91	472.93

North Edge of Pavement

Location	Station	Offset from PGL	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Grinding
W. End of E. App. Slab	81+39.83	-12.00	474.32	474.34
A3	81+49.83	-12.00	473.92	473.94
A4	81+59.83	-12.00	473.52	473.54
E. End of E. App. Slab	81+69.83	-12.00	473.12	473.14

IL 104 Roadway

Location	Station	Offset from PGL	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Grinding
W. End of E. App. Slab	81+39.83	0.00	474.57	474.59
A3	81+49.83	0.00	474.17	474.19
A4	81+59.83	0.00	473.77	473.79
E. End of E. App. Slab	81+69.83	0.00	473.37	473.39

South Edge of Pavement

Location	Station	Offset from PGL	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Grinding
W. End of E. App. Slab	81+39.83	12.00	474.32	474.34
A3	81+49.83	12.00	473.92	473.94
A4	81+59.83	12.00	473.52	473.54
E. End of E. App. Slab	81+69.83	12.00	473.12	473.14

South Edge of Shoulder

Location	Station	Offset from PGL	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Grinding
W. End of E. App. Slab	81+39.83	22.00	474.11	474.13
A3	81+49.83	22.00	473.71	473.73
A4	81+59.83	22.00	473.31	473.33
E. End of E. App. Slab	81+69.83	22.00	472.91	472.93

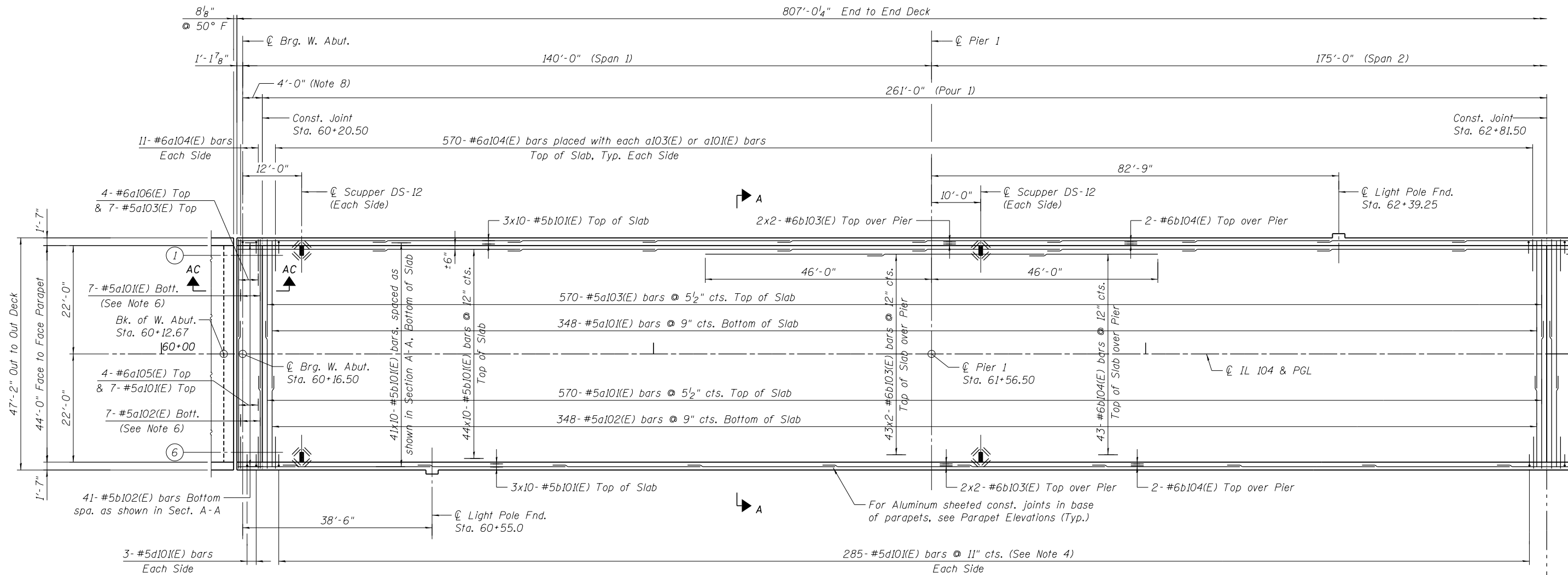
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TOP OF APPROACH SLAB ELEVATIONS
EAST APPROACH**

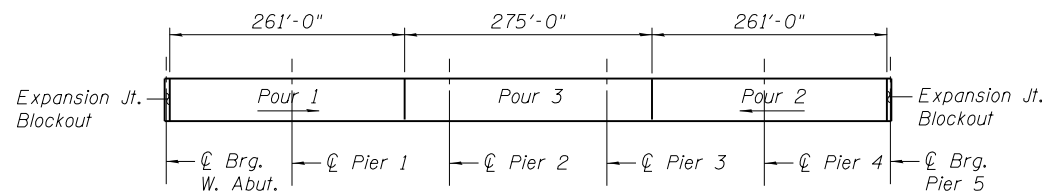
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	403
SN 069-0525		CONTRACT NO. 72B58		

SHEET NO. S-22 OF 146 SHEETS

ILLINOIS FED. AID PROJECT



DECK PLAN 1



DECK POURING SEQUENCE

When the deck pour is stopped for the day at the transverse bonded construction joint in the deck pouring sequence as shown, the next pour shall not be made until both of the following are met:

- At least 72 hours shall have elapsed from the end of the previous pour.
- The concrete strength shall have attained a minimum flexural strength of 650 psi or a minimum compressive strength of 3500 psi.

The Contractor is alerted that camber and dead load deflection values shown on the girder detail drawings were developed based on the deck pouring sequence shown above. Any deviation from this pouring sequence will result in changes to camber and elevations that reflect dead load deflections. If the Contractor wishes to change the sequence, then the proposed plan revisions and design calculations shall be submitted to the Engineer for review and approval. The calculations shall be prepared and sealed by a Licensed Structural Engineer in Illinois.

Notes:

- For Bar List, see Sht. S-46.
- Minimum Bar Laps for deck reinforcement:
 - #5 = 3'-3" for #5 bars spaced < 6"
 - #5 = 2'-7" for all other #5 bars
 - #6 = 3'-1"
- Bars indicated thus 44x10-#5 etc. indicates 44 lines of bars with 10 lengths per line.
- Space bars to miss parapet joints.
- For drainage scupper placement details, see Sht. S-35.
- For layout of bars and additional edge beam reinforcement, see Shts. S-53, S-54 and S-57.
- For Sections AC-AC & BC-BC see Sht. S-56. For Section A-A, see Sht. S-32.
- Locate reinforcing steel bars in the joint block-out area in coordination with the selected modular joint. Make necessary adjustments as approved in writing by the Engineer.

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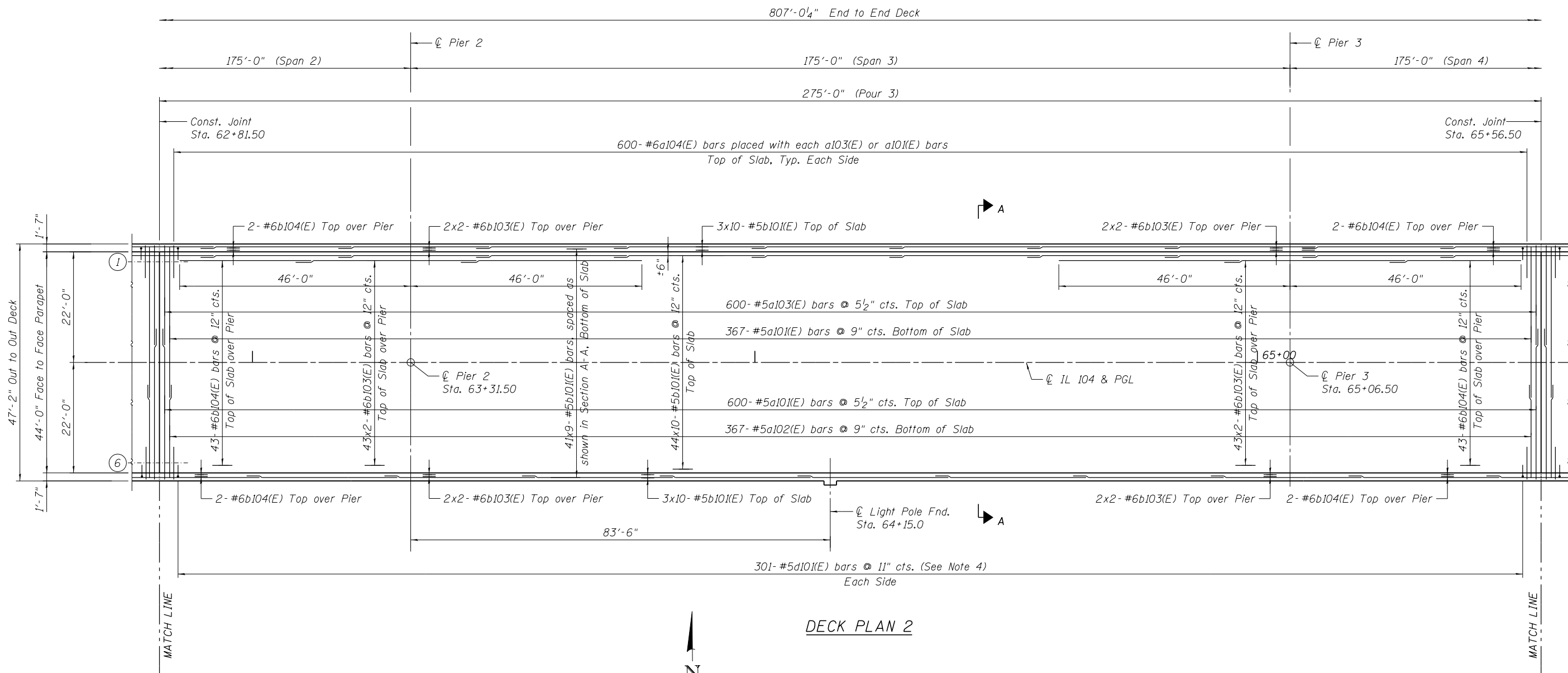
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK PLAN
UNIT 1
1 OF 3

SHEET NO. S-23 OF 146 SHEETS

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SN 069-0525		CONTRACT NO. 72B58		
ILLINOIS FED. AID PROJECT				

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DECK PLAN 2

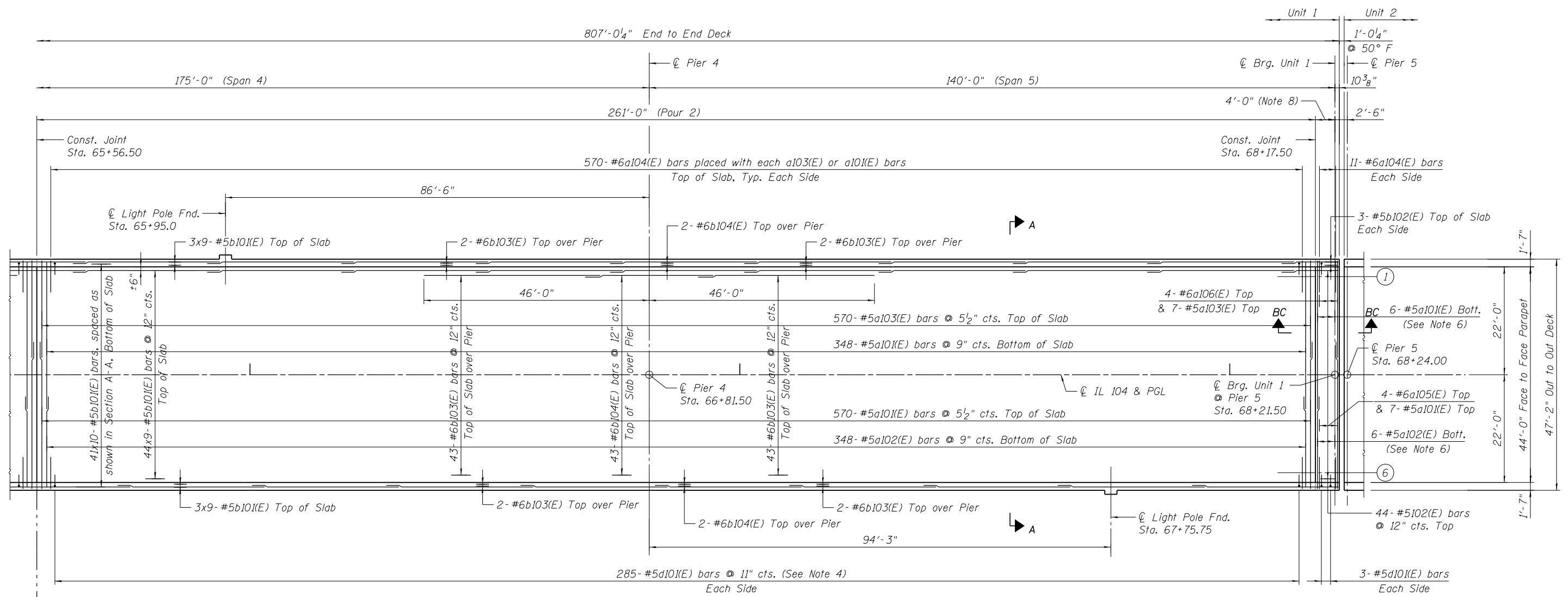


Note:
For Notes, see Sht. S-23.

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ILLINOIS FED. AID PROJECT



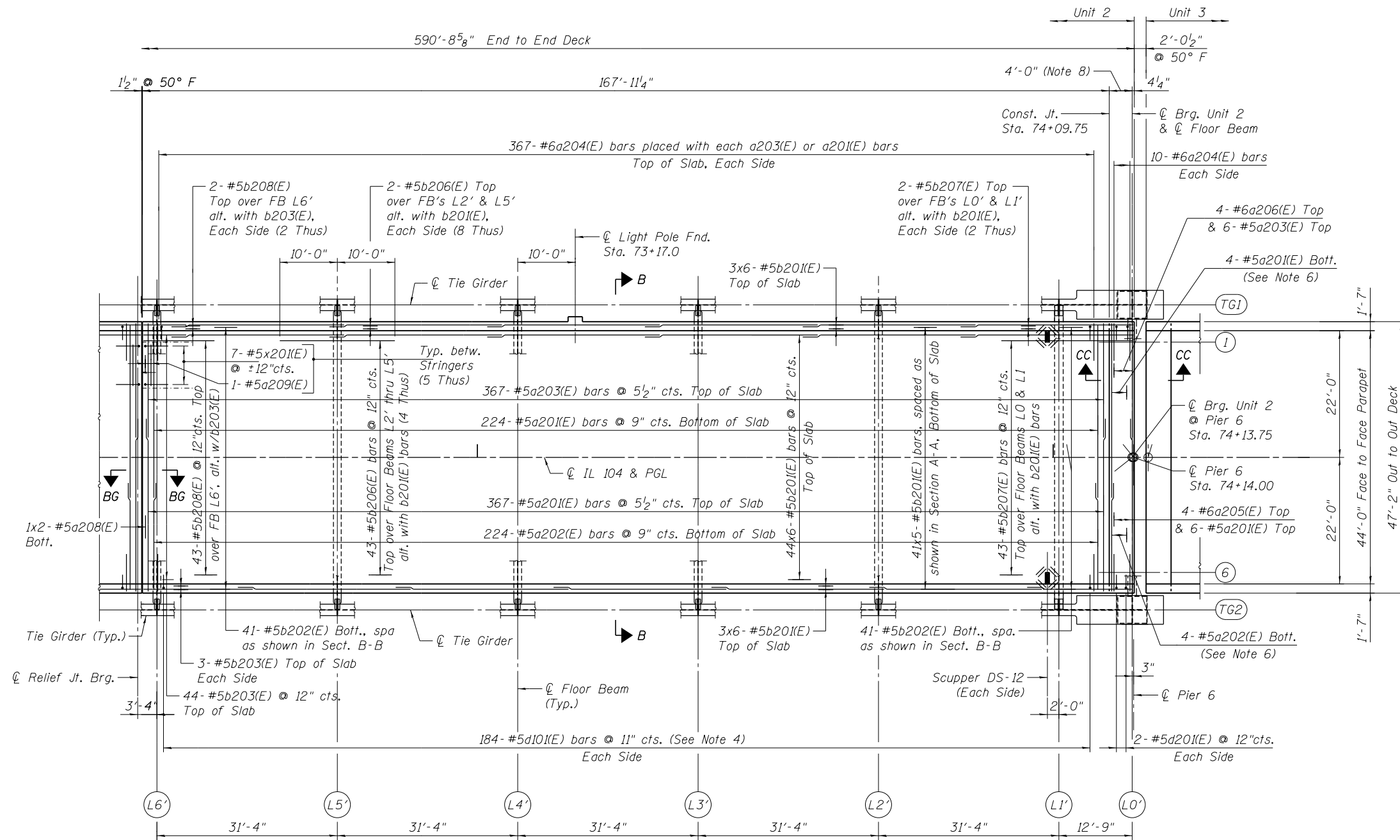
DECK PLAN 3



Note:
For Notes, see Sht. S-23.

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exp U.S. Services Inc. Chicago, IL BUILDINGS-EARTH & ENVIRONMENT-ENERGY INDUSTRIAL-INFRASTRUCTURE-SUSTAINABILITY				SHEET NO. S-25 OF 146 SHEETS						



DECK PLAN 3

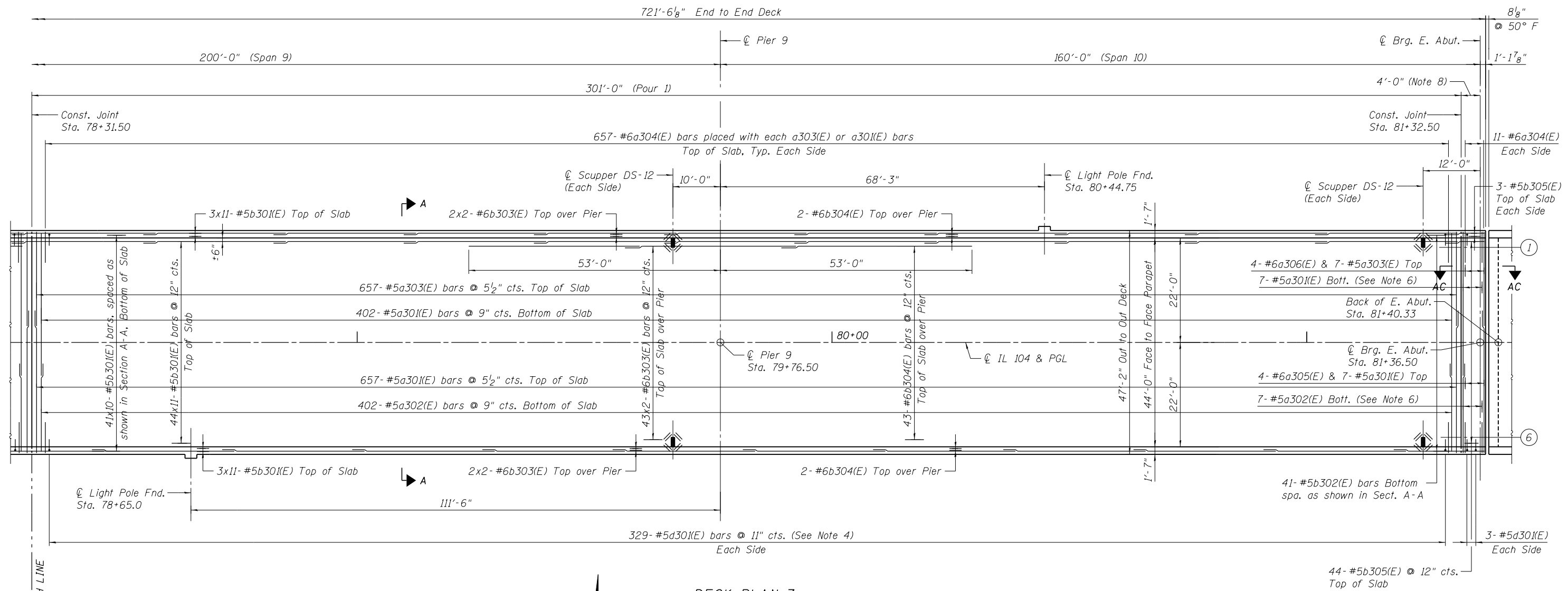


Note:
For Notes, see Sht. S-26.

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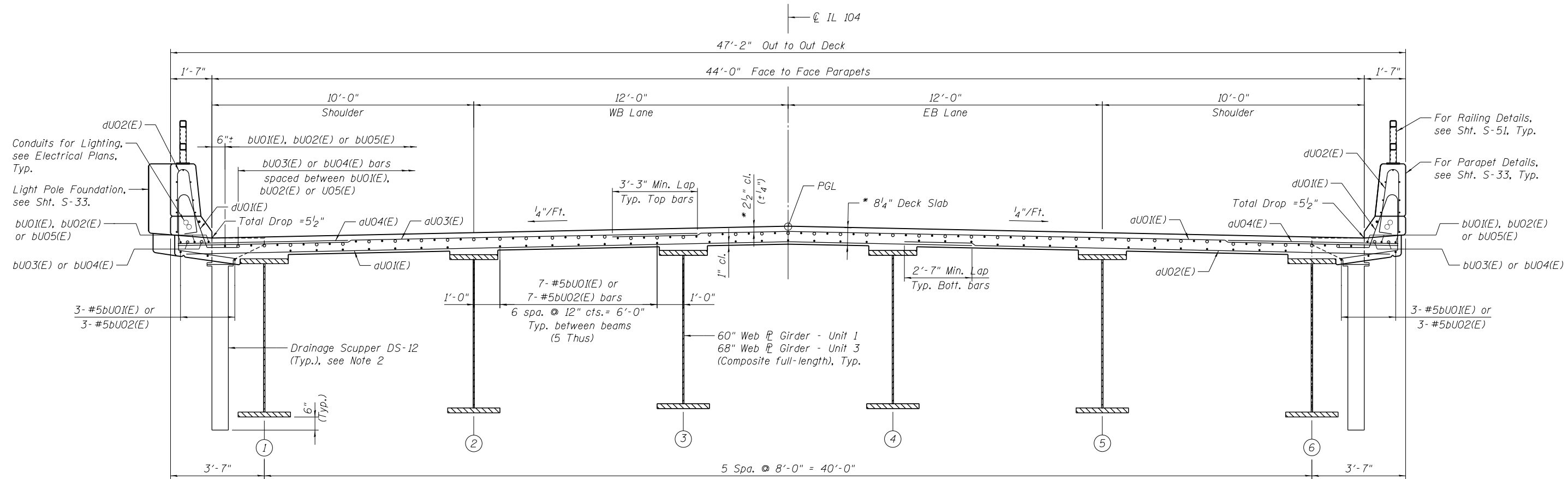
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DECK PLAN 3

Note:
For Notes, see Sht. S-29.

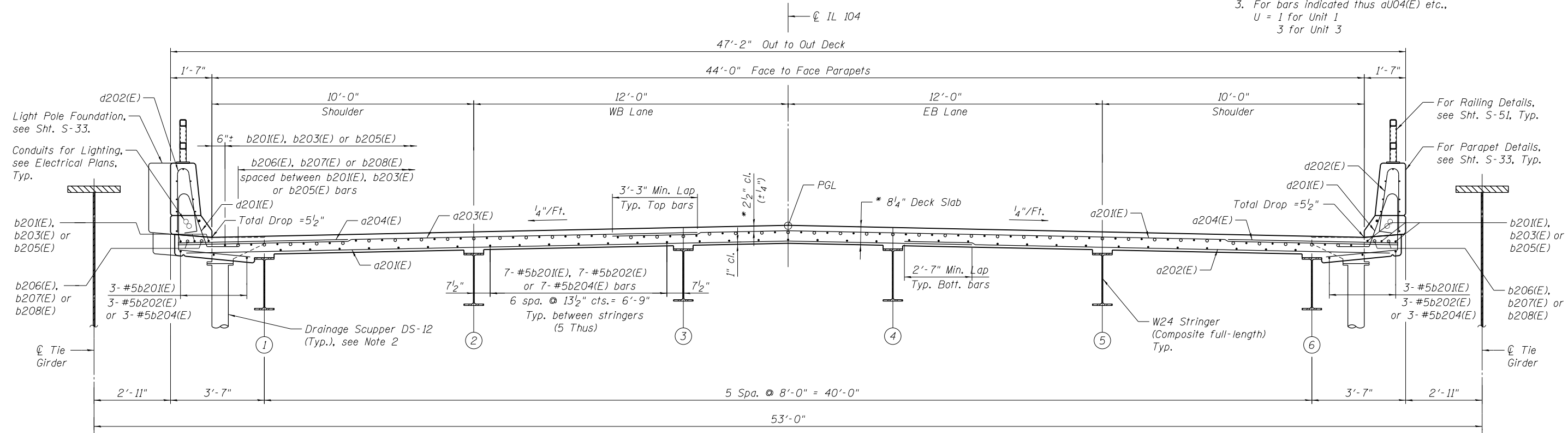
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SECTION A-A
UNITS 1 & 3

* Prior to grinding.

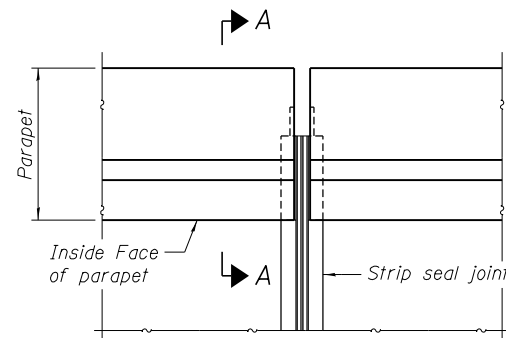
- Notes:**
1. For Bar List, see Sht. S-46.
 2. For location of scuppers, see deck plans. For details of scuppers, see Sht. S-35.
 3. For bars indicated thus aU04(E) etc., U = 1 for Unit 1, 3 for Unit 3



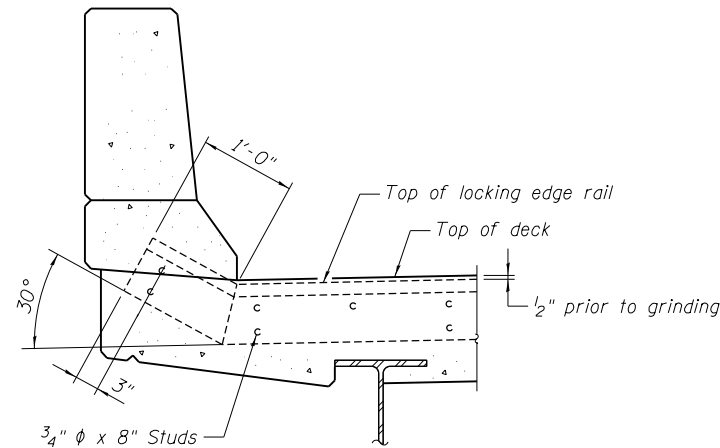
SECTION B-B
UNIT 2

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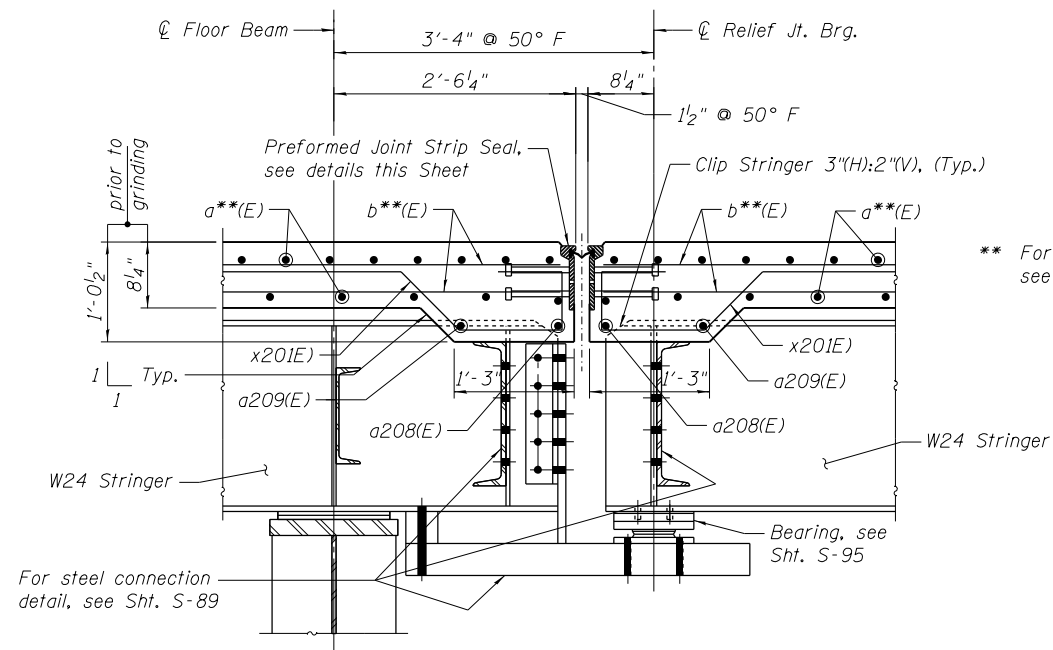
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PLAN
UNIT 2 RELIEF JOINT

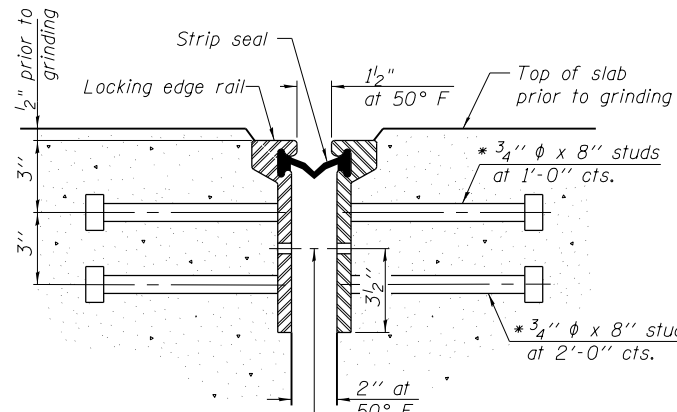


SECTION A-A



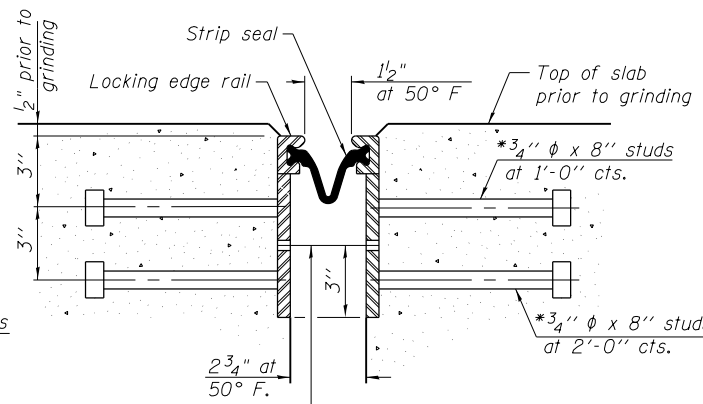
SECTION BG-BG

** For bar designations, see Deck Plans.



SECTION THRU
ROLLED RAIL JOINT

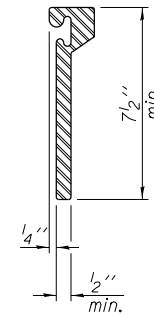
7/16" φ holes at 4'-0" cts. for 3/8" φ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.



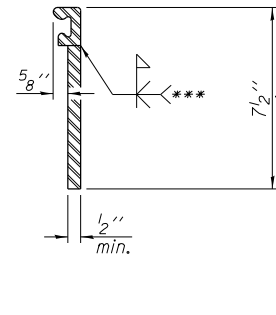
SECTION THRU
WELDED RAIL JOINT

7/16" φ holes at 4'-0" cts. for 3/8" φ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

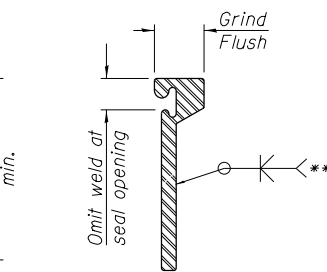
* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



ROLLED
EXTRUDED RAIL



WELDED RAIL



LOCKING EDGE
RAIL SPLICE

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

The inside of the locking edge rail groove shall be free of weld residue.

Rolled rail shown, welded rail similar.

LOCKING EDGE RAILS

Notes:

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

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

The manufacturer's recommended installation methods shall be followed.

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

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

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

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	92

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 exp U.S. Services Inc. Chicago, IL
 BUILDINGS-EARTH & ENVIRONMENT-ENERGY
 INDUSTRIAL-INFRASTRUCTURE-SUSTAINABILITY

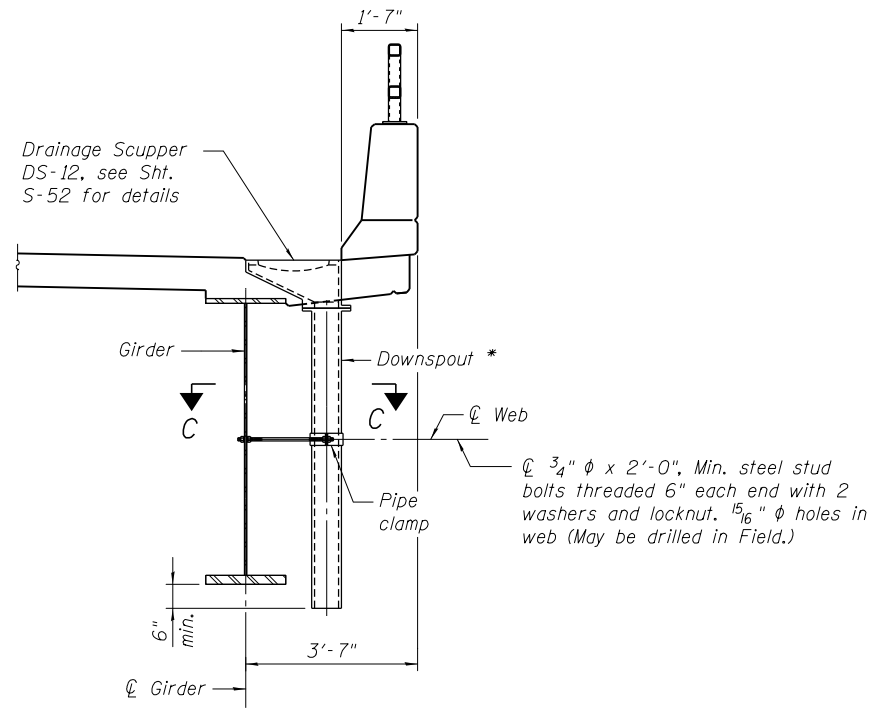
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK DETAILS
2 OF 3

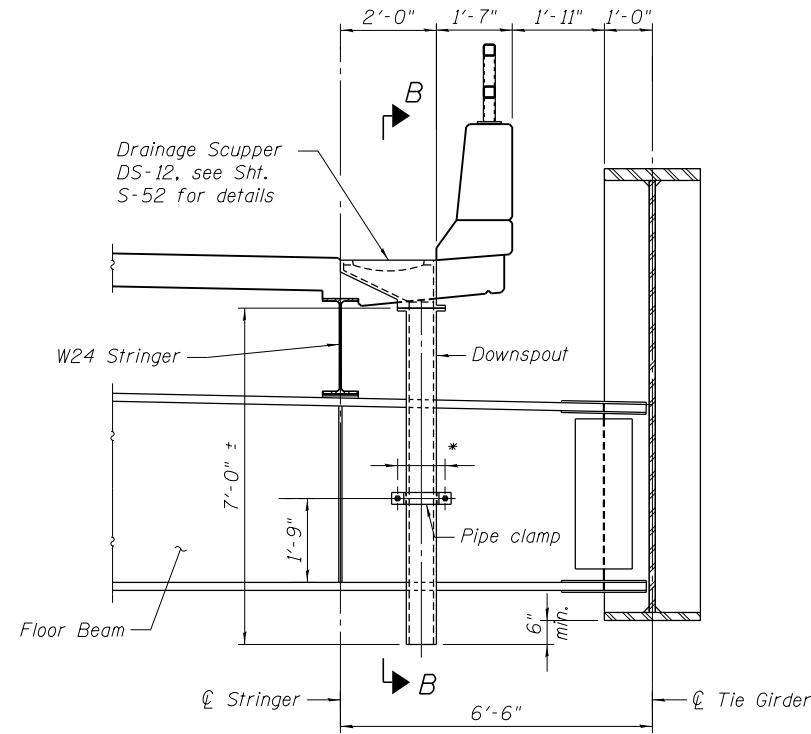
SHEET NO. S-34 OF 146 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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SN 069-0525		CONTRACT NO. 72B58		
ILLINOIS FED. AID PROJECT				

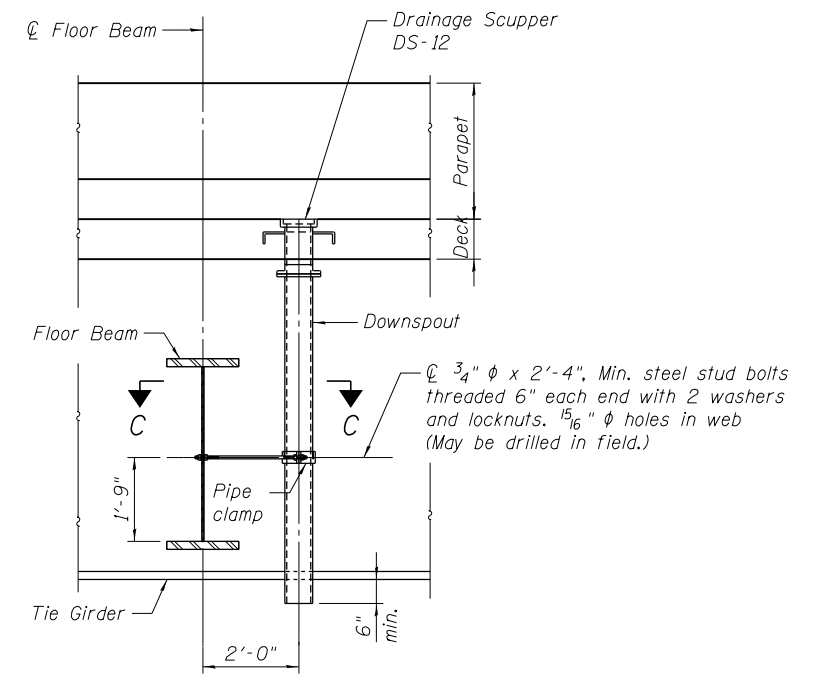


SECTION A-A - UNITS 1 & 3 *

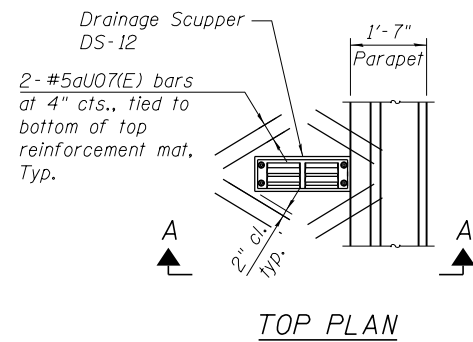
* For Scuppers near East Abutment, see Sht. S-130.



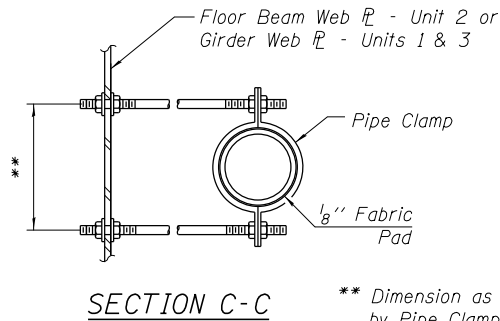
SECTION A-A - UNIT 2



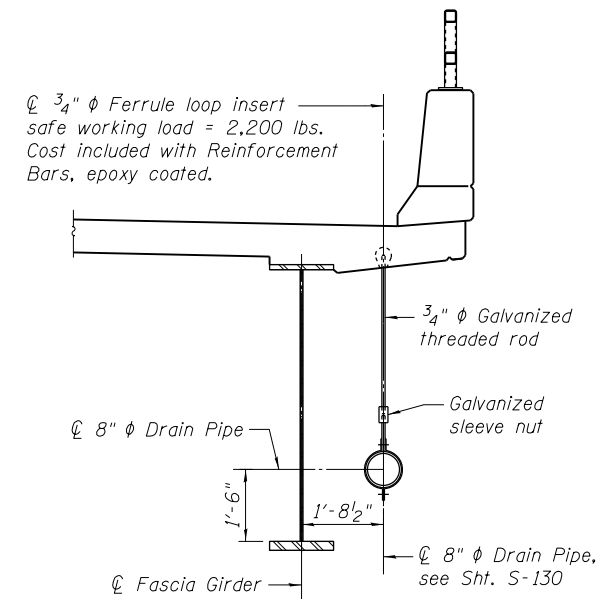
SECTION B-B



TOP PLAN



SECTION C-C



PIPE HANGER DETAIL

SCUPPER DETAILS
See Deck Plan for locations.

Notes:

1. Cut longitudinal reinforcement to clear drainage scuppers.
2. Galvanize clamping device according to AASHTO M232. Cost of clamping device and inserts is included with Scuppers.
3. For bars indicated thus aU07(E) etc.
U = 1 for Unit 1
2 for Unit 2
3 for Unit 3
4. Scuppers shall be located clear of all diaphragms, floor beams and lateral bracing.

\\exp\0690525-72B58-001-SUPER.DGN... \ALL\SNUM-72B58-001-BORDER.DGN
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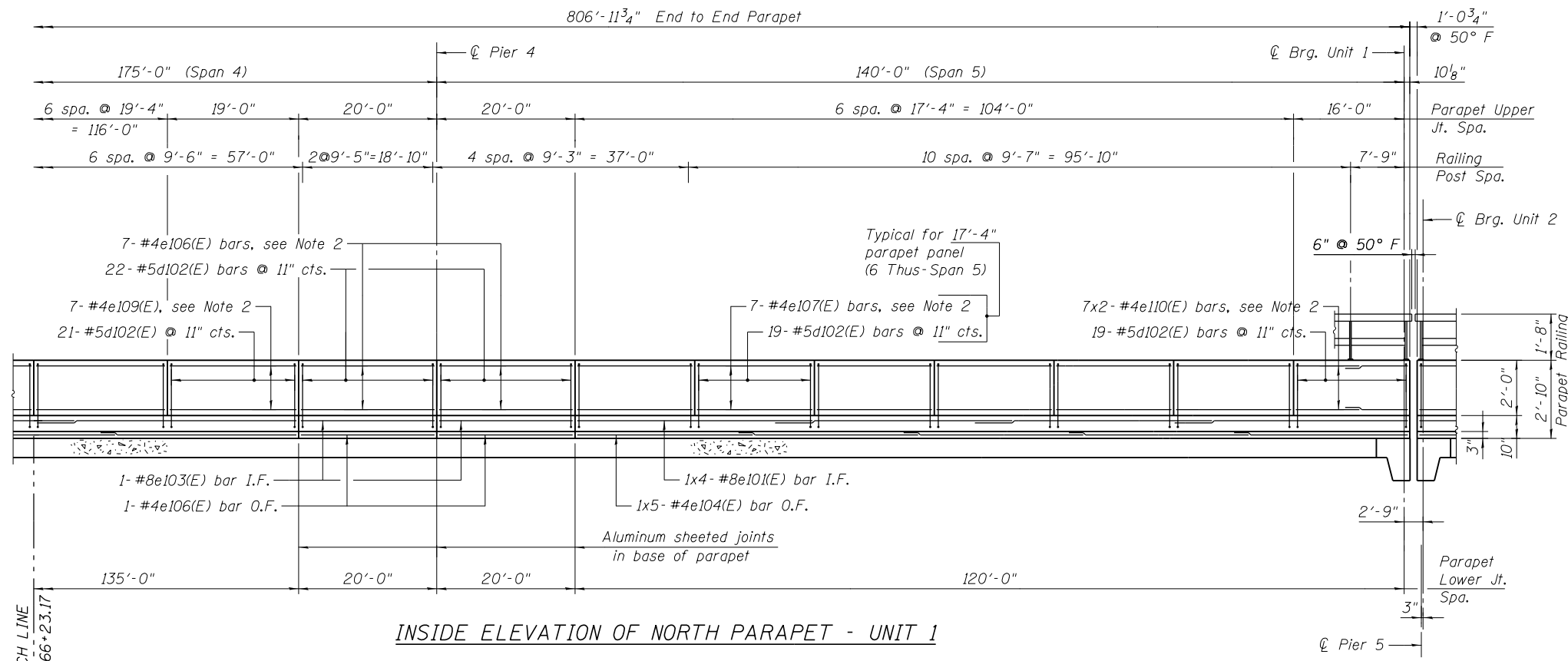
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	PLOT DATE =	CHECKED - VCP	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK DETAILS
3 OF 3

SHEET NO. S-35 OF 146 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	416
SN 069-0525		CONTRACT NO. 72B58		
ILLINOIS FED. AID PROJECT				



INSIDE ELEVATION OF NORTH PARAPET - UNIT 1

Notes:

1. For Bar List, see Sht. S-46.
2. For section through the parapet, see Sht. S-33.
3. For light pole details & rebar spacing, see Sht. S-33.
4. Bars indicated thus 7x2-#5 etc. indicates 7 lines of bars with 2 lengths per line.
5. Minimum Bar Laps for parapet reinforcement:
 #8 = 5'-5"
 #4 = 2'-1"
6. Modular Jt. P's not shown for clarity, see Shts. S-53 thru S-57 for details.
7. I.F. denotes Inside Face
 O.F. denotes Outside Face
 U.N.O. denotes Unless noted otherwise

FILE NAME = \\FS-004\AM\VALU\LD-TRANS\07\TRDCH\00012341-02\STRUCT\CAD\72B58\0690525\ASHEET_0690525-72B58-265-SUPER_SHT.DGN
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 DESIGNED - HBJ
 CHECKED - JLR
 DATE - 8/5/2014
 PLOT SCALE =
 DRAWN - HBJ
 CHECKED - VCP
 DATE - 8/5/2014
 PLOT DATE =

FILE NAME =	USER NAME =	DESIGNED - HBJ	REVISED -
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

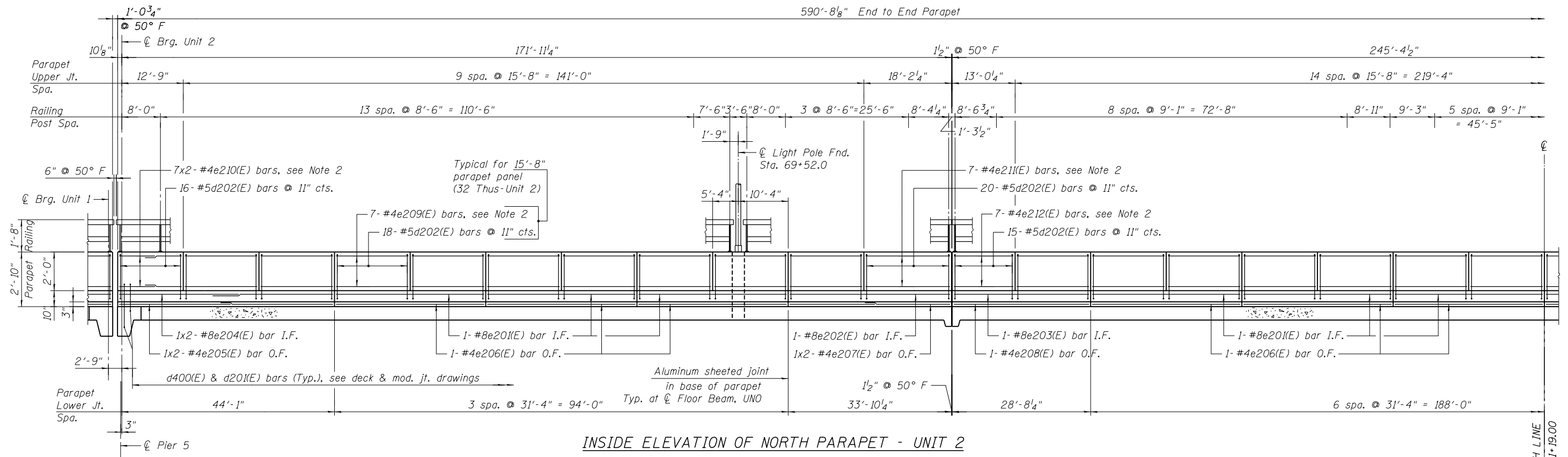
PARAPET ELEVATION
UNIT 1 - NORTH PARAPET
2 OF 2

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	418
SN 069-0525		CONTRACT NO. 72B58		

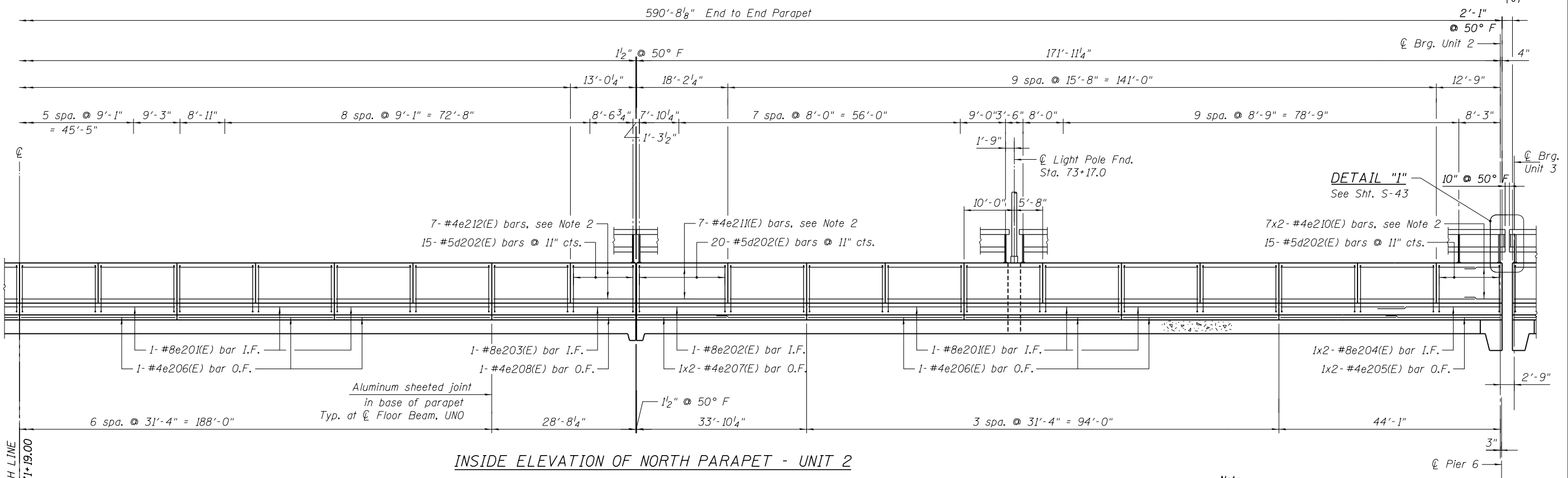
SHEET NO. S-37 OF 146 SHEETS

ILLINOIS FED. AID PROJECT

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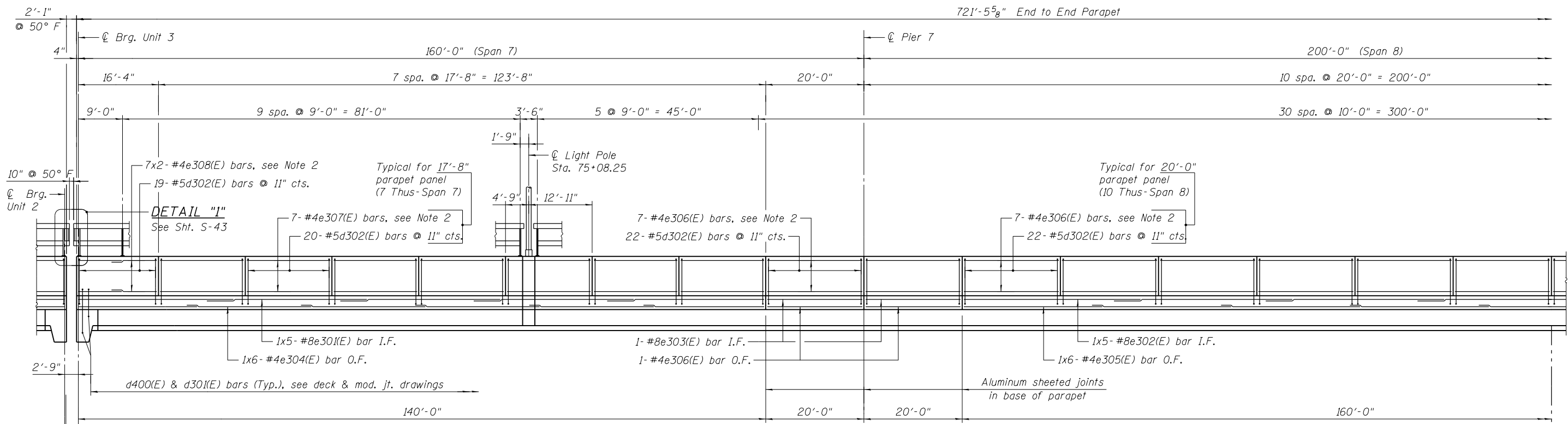
INSIDE ELEVATION OF NORTH PARAPET - UNIT 2



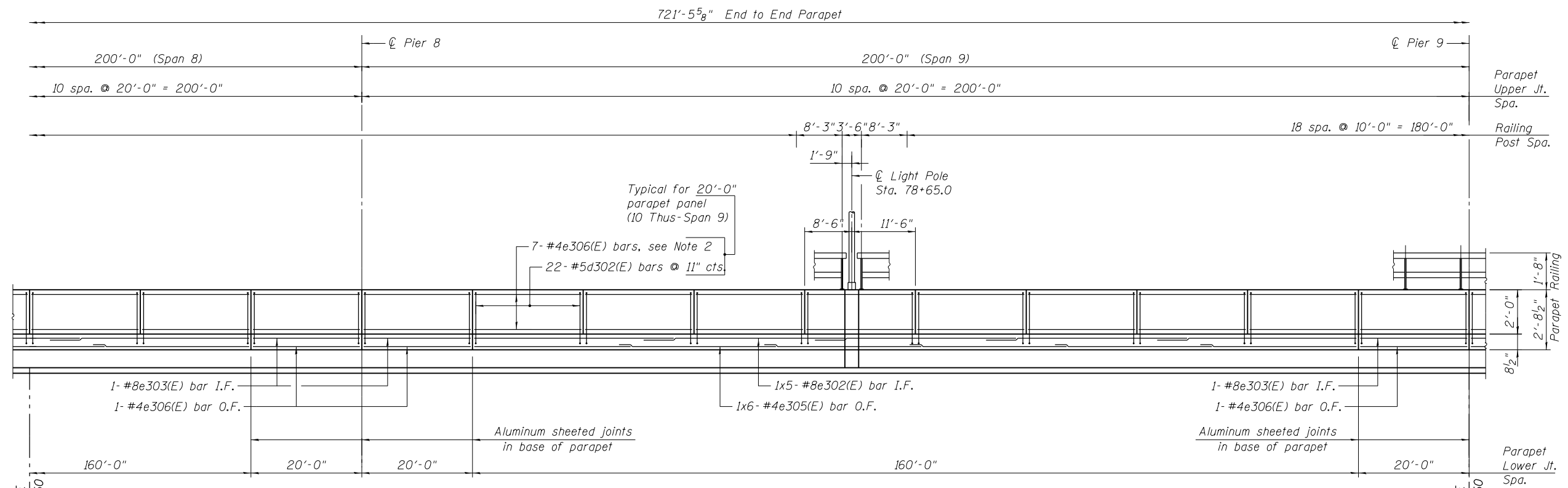
INSIDE ELEVATION OF NORTH PARAPET - UNIT 2

Note:
For Notes, see Sht. S-37.

FILE NAME =	USER NAME =	DESIGNED - HBJ	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PARAPET ELEVATIONS UNIT 2 - NORTH PARAPET	F.A.P. RT. =	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
DATE = 8/5/2014	CHECKED - JLR	REVISED -	745			123B-2	MORGAN	782	421	
PLOT SCALE =	DRAWN - HBJ	REVISED -	SN 069-0525			CONTRACT NO. 72B58				
PLOT DATE	CHECKED - VCP	REVISED -	ILLINOIS FED. AID PROJECT							



OUTSIDE ELEVATION OF SOUTH PARAPET - UNIT 3



OUTSIDE ELEVATION OF SOUTH PARAPET - UNIT 3

Note:
For Notes, see Sht. S-37.

FILE NAME = \\FS-0044\AM\VALU\LD_TRANS\871\TRDCH\02012341-92\STRUCT\CAO\72B58\0690525\ASHEET\0690525-72B58-272-SUPER.SHT.DGN
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 CHECKED - JLR
 DRAWN - HBJ
 CHECKED - VCP
 DATE - 8/5/2014
 PLOT SCALE =
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 CHICAGO, IL
 BUILDINGS-EARTH & ENVIRONMENT-ENERGY
 INDUSTRIAL-INFRASTRUCTURE-SUSTAINABILITY

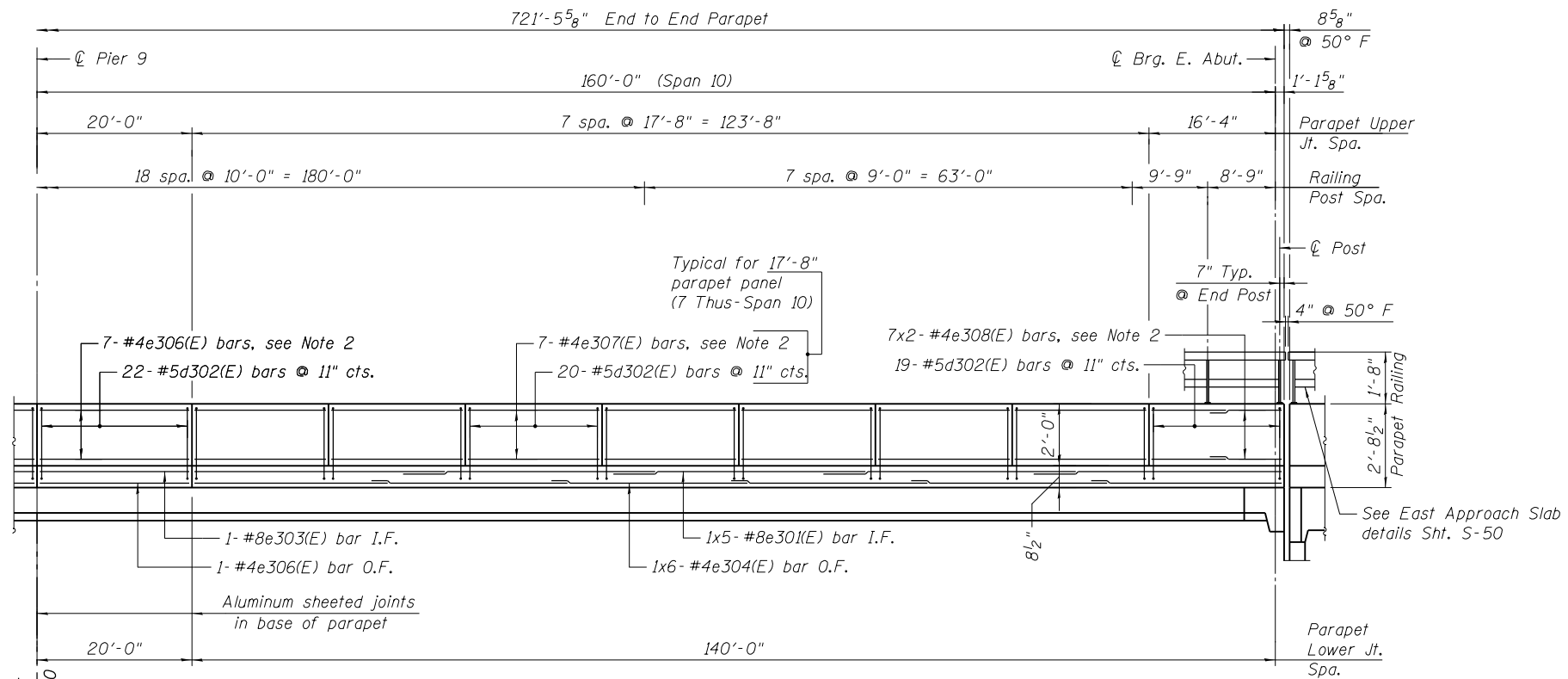
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PARAPET ELEVATIONS
UNIT 3 - SOUTH PARAPET
1 OF 2

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	425
SN 069-0525		CONTRACT NO. 72B58		

SHEET NO. S-44 OF 146 SHEETS

ILLINOIS FED. AID PROJECT



OUTSIDE ELEVATION OF SOUTH PARAPET - UNIT 3

Note:
For Notes, see Sht. S-37.

\0690525-72B58-102-SUPER.DGN, \ALL\SNUM-72B58-001-BORDER.DGN, \0690525-72B58-268-SUPER.SHT.DGN, \0690525-72B58-268-SUPER.SHT.DGN, \STRUCT\CAO\72B58\0690525\SHEET_0690525-72B58-273-SUPER.SHT.DGN, \NEWMAN\0690525-72B58-004\AM\VAL\T.D - TRANS.07\TRDCHI\00012341-02\STRUCT\CAO\72B58\0690525\SHEET_0690525-72B58-273-SUPER.SHT.DGN

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	PLOT DATE =	CHECKED - VCP	REVISED -

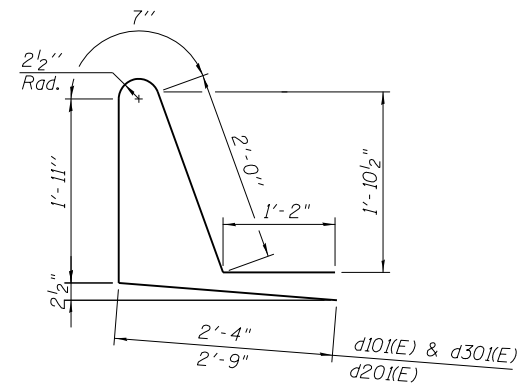
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PARAPET ELEVATION
UNIT 3 - SOUTH PARAPET
2 OF 2

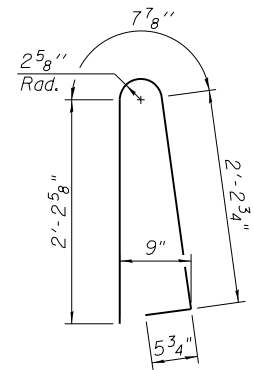
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	426
SN 069-0525		CONTRACT NO. 72B58		

SHEET NO. S-45 OF 146 SHEETS

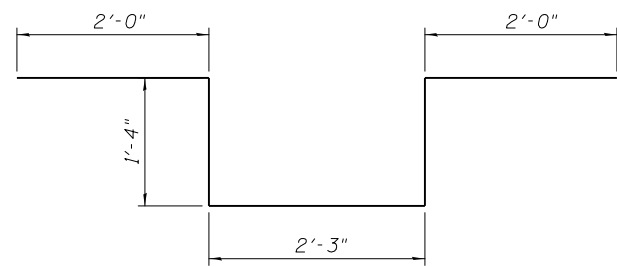
ILLINOIS FED. AID PROJECT



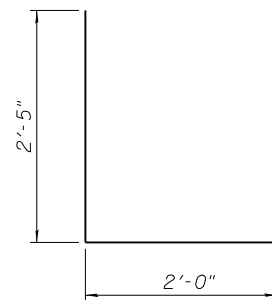
Bars d101(E), d201(E) & d301(E)



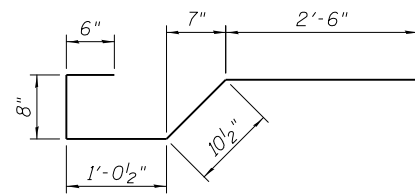
Bars d102(E), d202(E) & d302(E)



BAR dU03(E)



BAR dU04(E)



x201(E)

BAR LIST - UNIT 1

Bar	No.	Size	Length	Shape
a101(E)	2830	#5	30'-0"	—
a102(E)	1076	#5	18'-7"	—
a103(E)	1754	#5	19'-10"	—
a104(E)	3524	#6	6'-6"	—
a105(E)	8	#6	30'-0"	—
a106(E)	8	#6	20'-6"	—
a107(E)	32	#5	2'-0"	—
b101(E)	2639	#5	30'-0"	—
b102(E)	91	#5	12'-3"	—
b103(E)	376	#6	36'-0"	—
b104(E)	188	#6	26'-2"	—
d101(E)	1754	#5	8'-0"	└
d102(E)	1802	#5	5'-7"	└
d103(E)	25	#6	8'-11"	└
d104(E)	15	#6	4'-5"	└
e101(E)	16	#8	34'-4"	—
e102(E)	24	#8	37'-9"	—
e103(E)	16	#8	19'-8"	—
e104(E)	20	#4	26'-0"	—
e105(E)	30	#4	28'-8"	—
e106(E)	128	#4	19'-8"	—
e107(E)	168	#4	17'-0"	—
e108(E)	252	#4	19'-0"	—
e109(E)	42	#4	18'-8"	—
e110(E)	56	#4	9'-6"	—

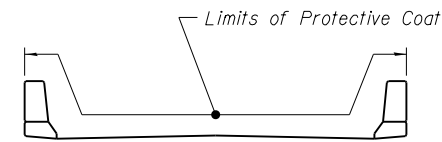
BAR LIST - UNIT 2

Bar	No.	Size	Length	Shape
a201(E)	2068	#5	30'-0"	—
a202(E)	786	#5	18'-7"	—
a203(E)	1282	#5	19'-10"	—
a204(E)	2580	#6	6'-6"	—
a205(E)	8	#6	30'-0"	—
a206(E)	8	#6	20'-6"	—
a207(E)	32	#5	2'-0"	—
a208(E)	8	#5	24'-7"	—
a209(E)	20	#5	7'-2"	—
b201(E)	1738	#5	30'-0"	—
b202(E)	164	#5	19'-0"	—
b203(E)	100	#5	8'-0"	—
b204(E)	82	#5	14'-2"	—
b205(E)	50	#5	25'-9"	—
b206(E)	705	#5	20'-0"	—
b207(E)	94	#5	23'-9"	—
b208(E)	94	#5	12'-6"	—
d201(E)	1282	#5	8'-5"	└
d202(E)	1354	#5	5'-7"	└
d203(E)	15	#6	8'-11"	└
d204(E)	9	#6	4'-5"	└
e201(E)	24	#8	31'-0"	—
e202(E)	4	#8	33'-6"	—
e203(E)	4	#8	28'-4"	—
e204(E)	8	#8	25'-3"	—
e205(E)	8	#4	23'-6"	—
e206(E)	24	#4	31'-0"	—
e207(E)	8	#4	18'-0"	—
e208(E)	4	#4	28'-4"	—
e209(E)	448	#4	15'-4"	—
e210(E)	56	#4	7'-9"	—
e211(E)	28	#4	17'-10"	—
e212(E)	28	#4	12'-8"	—
x201(E)	140	#5	5'-7"	└

BAR LIST - UNIT 3

Bar	No.	Size	Length	Shape
a301(E)	2530	#5	30'-0"	—
a302(E)	962	#5	18'-7"	—
a303(E)	1568	#5	19'-10"	—
a304(E)	3152	#6	6'-6"	—
a305(E)	8	#6	30'-0"	—
a306(E)	8	#6	20'-6"	—
a307(E)	32	#5	2'-0"	—
b301(E)	2325	#5	30'-0"	—
b302(E)	82	#5	19'-2"	—
b303(E)	282	#6	36'-0"	—
b304(E)	141	#6	40'-2"	—
b305(E)	50	#5	8'-4"	—
d301(E)	1568	#5	8'-0"	└
d302(E)	1604	#5	5'-7"	└
d303(E)	20	#6	8'-11"	└
d304(E)	12	#6	4'-5"	└
e301(E)	20	#8	32'-6"	—
e302(E)	20	#8	36'-4"	—
e303(E)	12	#8	19'-8"	—
e304(E)	24	#4	25'-3"	—
e305(E)	24	#4	28'-5"	—
e306(E)	320	#4	19'-8"	—
e307(E)	196	#4	17'-4"	—
e308(E)	56	#4	9'-8"	—

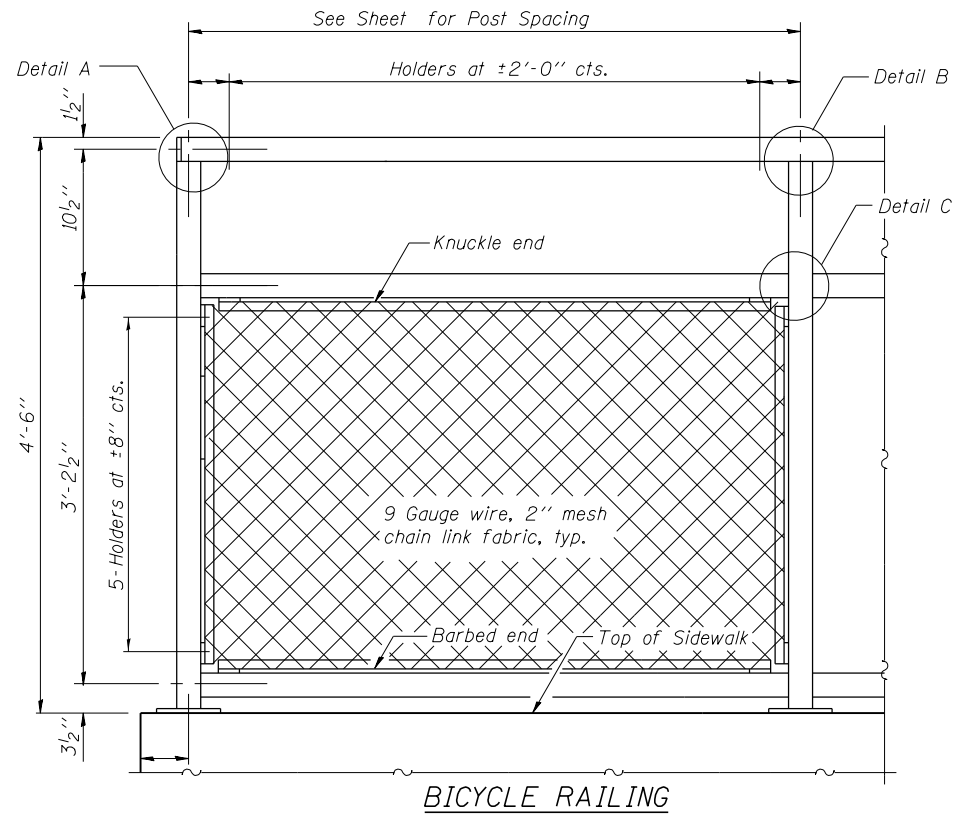
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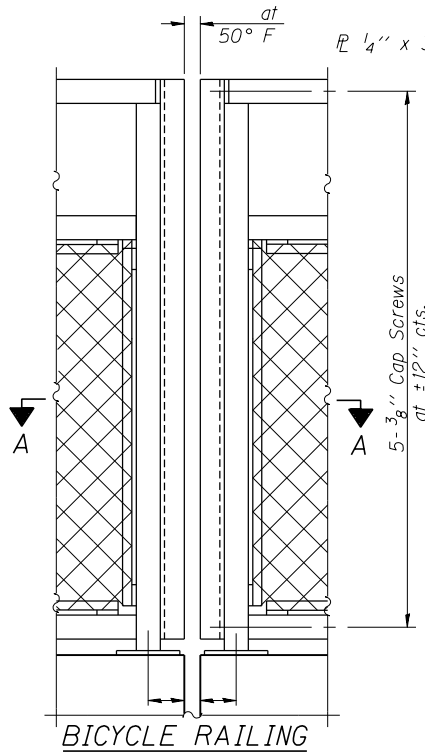
LIMITS OF PROTECTIVE COAT

BILL OF MATERIAL

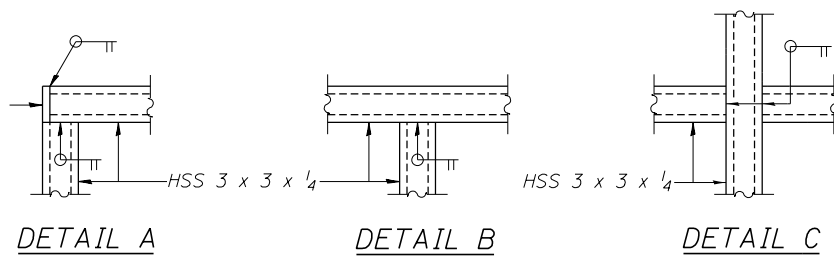
Item	Unit	Superstructure Unit 1	Superstructure Unit 2	Superstructure Unit 3
Concrete Superstructure	Cu. Yd.	1,225.4	882.4	1,095.4
Reinforcement Bars, Epoxy Coated	Pound	331,100	241,600	295,040
Bridge Deck Grooving	Sq. Yd.	3,766	2,756	3,367
Protective Coat	Sq. Yd.	4,653	3,404	4,160
Diamond Grinding (Bridge Section)	Sq. Yd.	3,587	2,624	3,207



BICYCLE RAILING

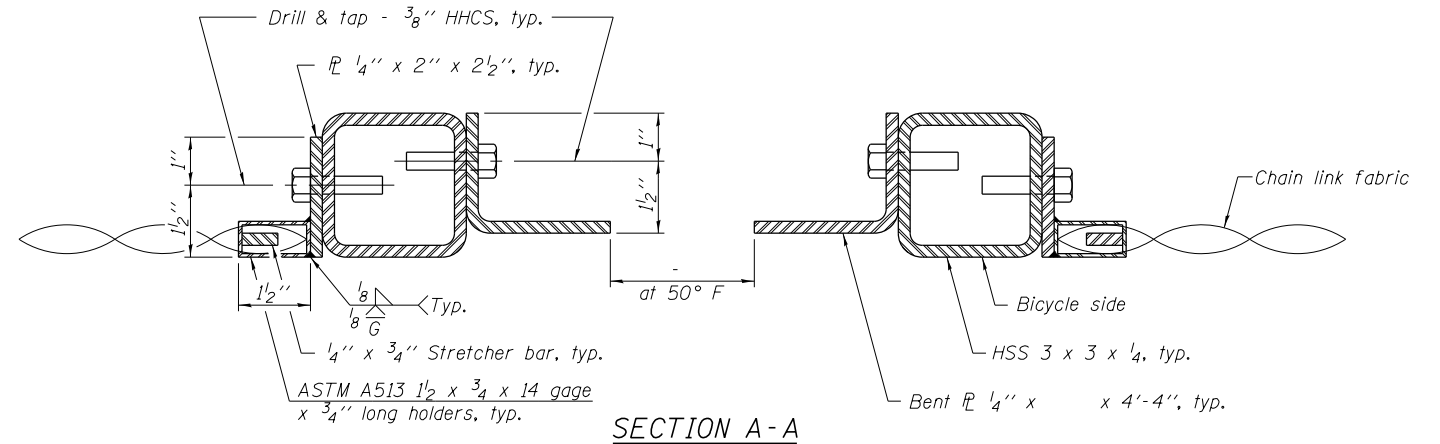


BICYCLE RAILING

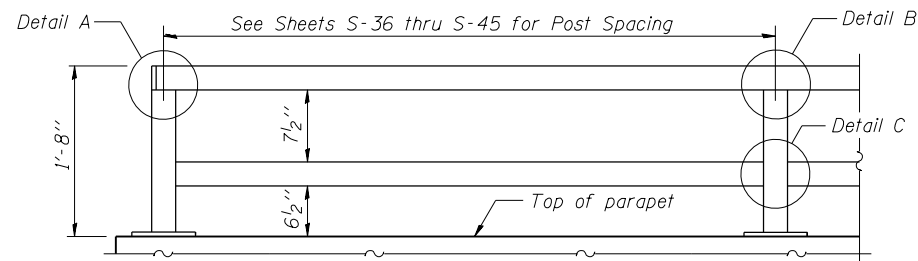


DETAIL A DETAIL B DETAIL C

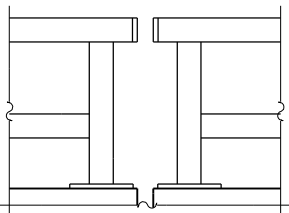
Note:
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.



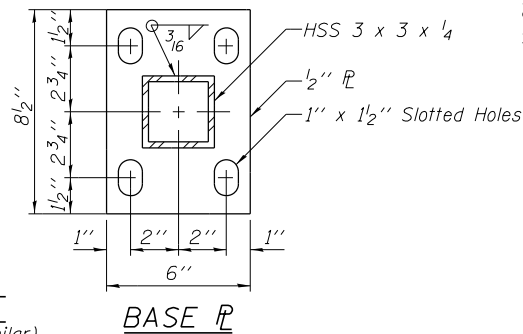
SECTION A-A



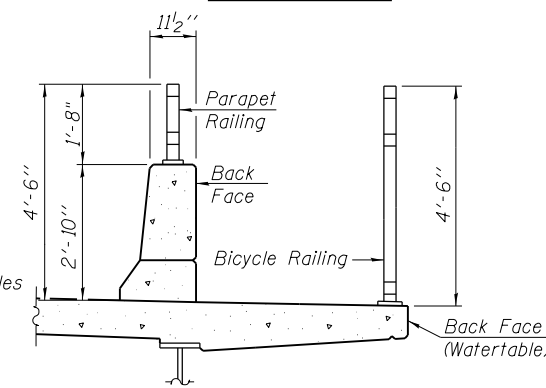
**PARAPET RAILING
ELEVATION
(Inside Face of Two Element Rail)**



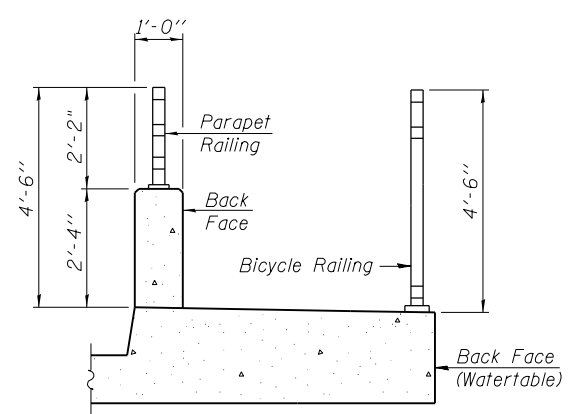
**PARAPET RAILING
ELEVATION AT EXPANSION JOINT
(Two Element Rail Shown - Three Element Rail Similar)**



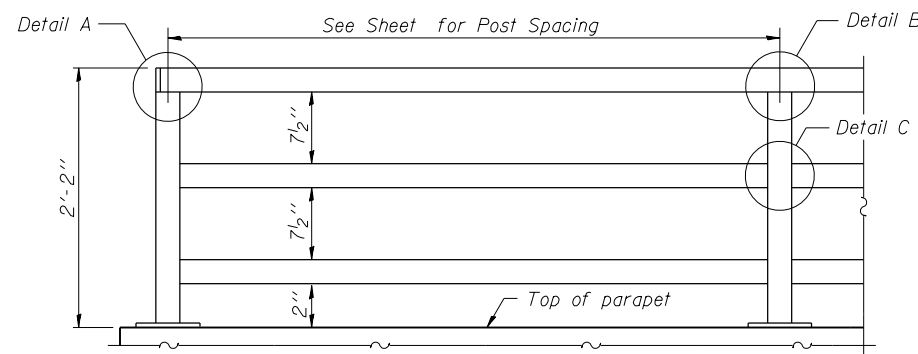
BASE PLATE



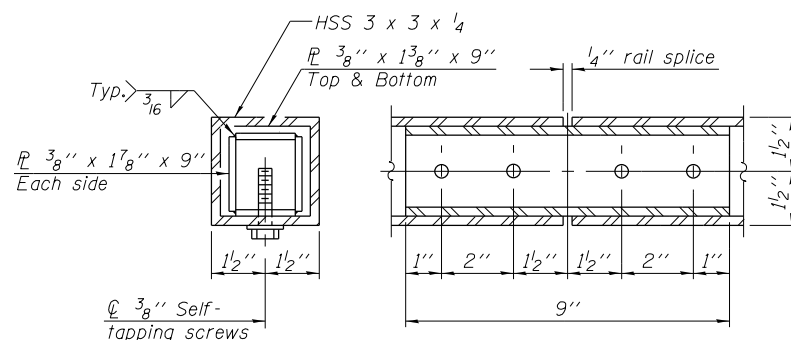
SECTION THRU DECK



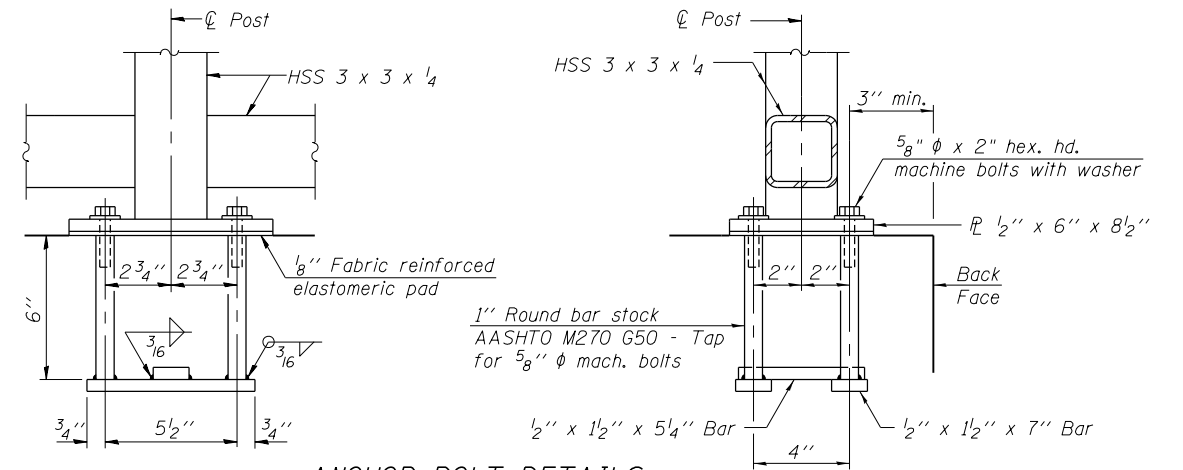
SECTION THRU SIDEWALK



**PARAPET RAILING
ELEVATION
(Inside Face of Three Element Rail)**



RAIL SPLICE



ANCHOR BOLT DETAILS

In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting 5/8" φ anchor rods according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.

BILL OF MATERIAL

Item	Unit	Quantity
Bicycle Railing	Foot	-
Parapet Railing	Foot	4,336.0

R-29 1-27-12 (10'-0" Maximum Post Spacing)

0690525-72B58-102-SUPER.DGN...ALL SNIM-72B58-001-BORDER.DGN
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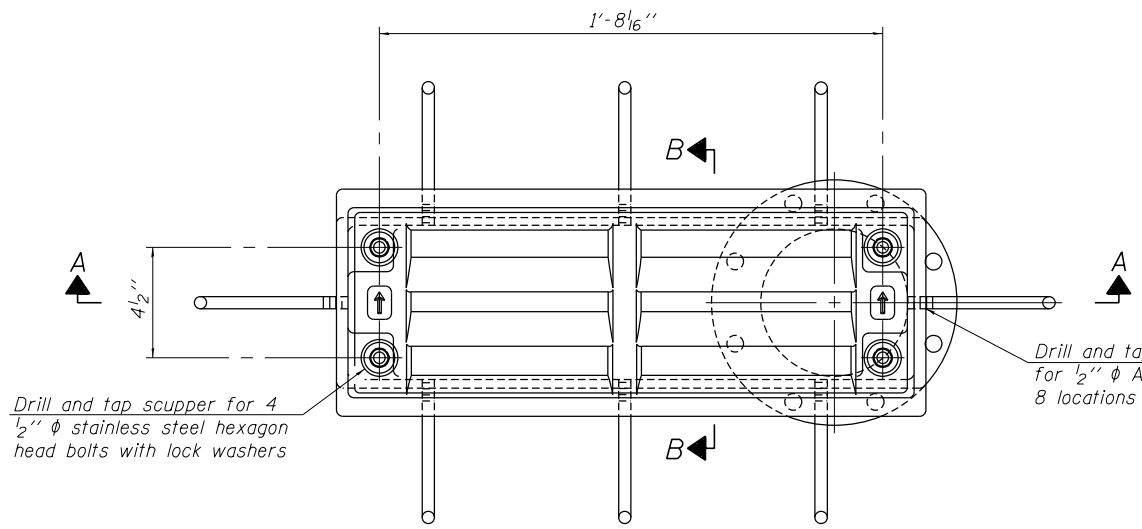
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	DATE - 8/5/2014	CHECKED -	REVISED -
exp U.S. Services Inc.	PLOT SCALE =	DRAWN -	REVISED -
BUILDINGS-EARTH & ENVIRONMENT-ENERGY	PLOT DATE	CHECKED -	REVISED -
INDUSTRIAL-INFRASTRUCTURE-SUSTAINABILITY			

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

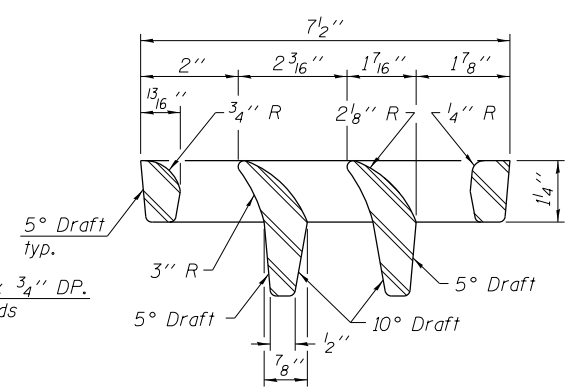
PARAPET RAILING

SHEET NO. S-51 OF 146 SHEETS

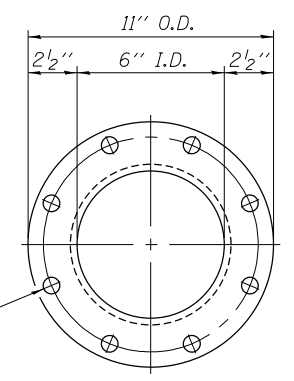
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	432
SN 069-0525		CONTRACT NO. 72B58		
ILLINOIS FED. AID PROJECT				



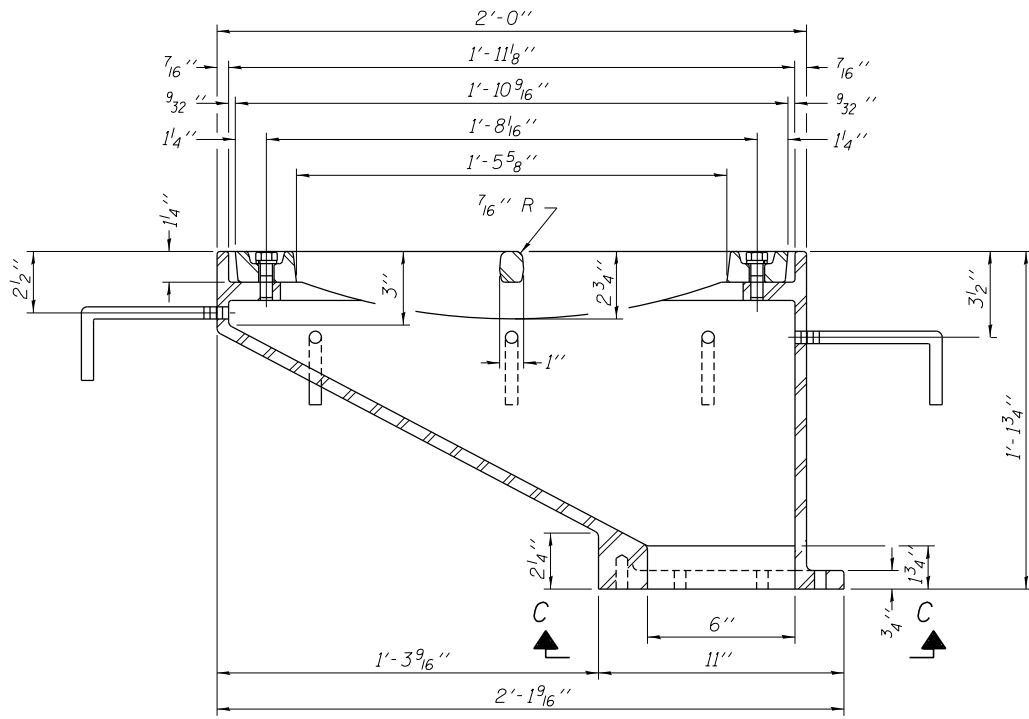
PLAN



VANE GRATE DETAIL

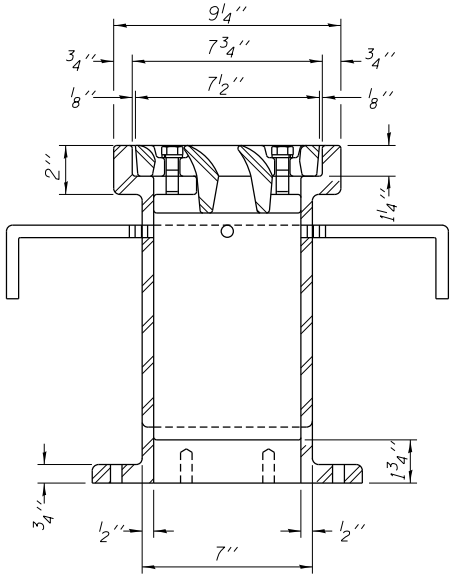


VIEW C-C

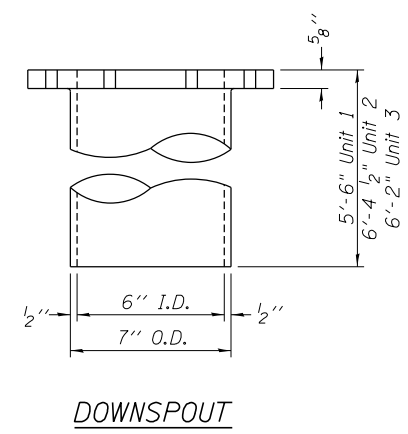


SECTION A-A

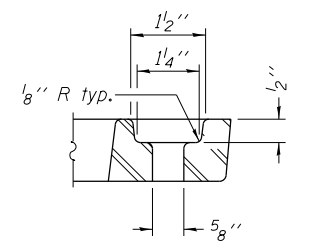
See sheet S-35 of 146 for scupper location relative to parapet.



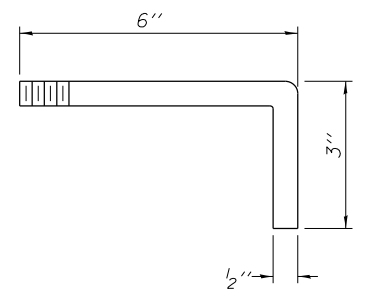
SECTION B-B



DOWNSPOUT



BOLT HOLE DETAIL



ANCHOR STUD DETAIL

Drill and tap 8 holes for 1/2"-13 bolts on a 9 1/2" φ bolt circle. (2 blind holes are 1 1/4" deep, 6 thru holes)

Notes:

All cast iron parts shall be gray iron conforming to the requirements of AASHTO M 105, Class 35B.

Bolts, anchor studs, washers and nuts shall conform to the requirements of ASTM A 307 and shall be galvanized according to AASHTO M 232.

Downspouts located on the exterior side of a painted steel fascia beam shall be painted with the finish coat specified for the exterior side of the fascia beam.

As an alternate, bolts, anchor studs, washers and nuts may be stainless steel according to Article 1006.29(d) of the Standard Specifications.

Structural steel weldments of equal sections and of the same configuration may be substituted for the cast iron scupper frame. Fillet or full penetration welds shall be used for the weldments. Details shall be submitted to the Engineer for approval. Structural steel weldments shall not be substituted for the cast iron scupper grate. Structural steel frames and downspouts shall be galvanized according to AASHTO M111.

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

Cost of the Grate, Frame, Downspout, Anchor Studs, Bolts, Washers and Nuts including complete installation of the scupper shall be paid for at the contract unit price each for Drainage Scupper, DS-12.

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 Scupper, DS-12	Each	12

\\FS-0044\AM\VALU\T.D.-TRANS.07\TRDCHI\00012341-02\STRUCT\CAD\72B58\06\0525\SHEET_06\0525-72B58-070-MISC\DETAIL_SHT.DGN
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 \\FS-0044\AM\VALU\T.D.-TRANS.07\TRDCHI\00012341-02\STRUCT\CAD\72B58\06\0525\SHEET_06\0525-72B58-070-MISC\DETAIL_SHT.DGN

DS-12

7-1-10

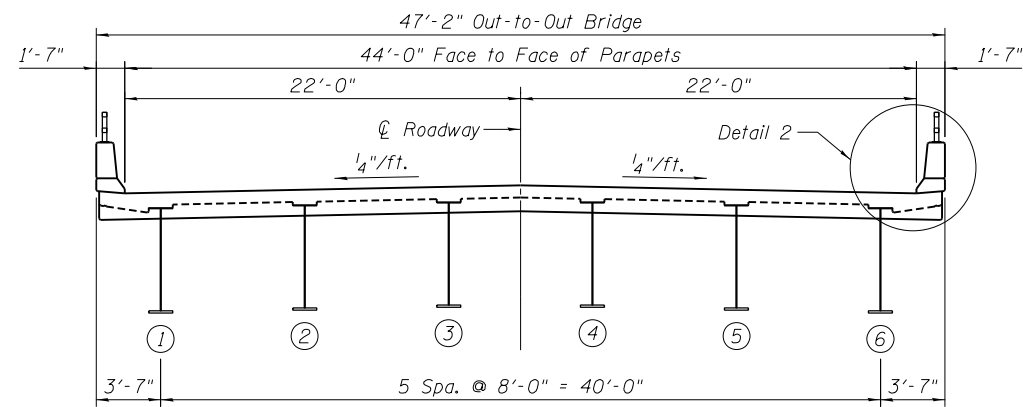
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	DATE = 8/5/2014	CHECKED -	REVISED -
	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE =	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

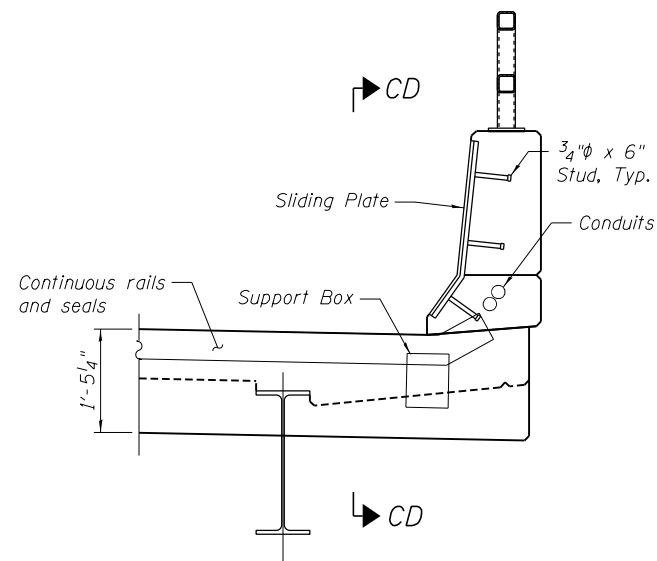
DRAINAGE SCUPPER
DS-12

SHEET NO. S-52 OF 146 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	433
SN 069-0525		CONTRACT NO. 72B58		
ILLINOIS FED. AID PROJECT				

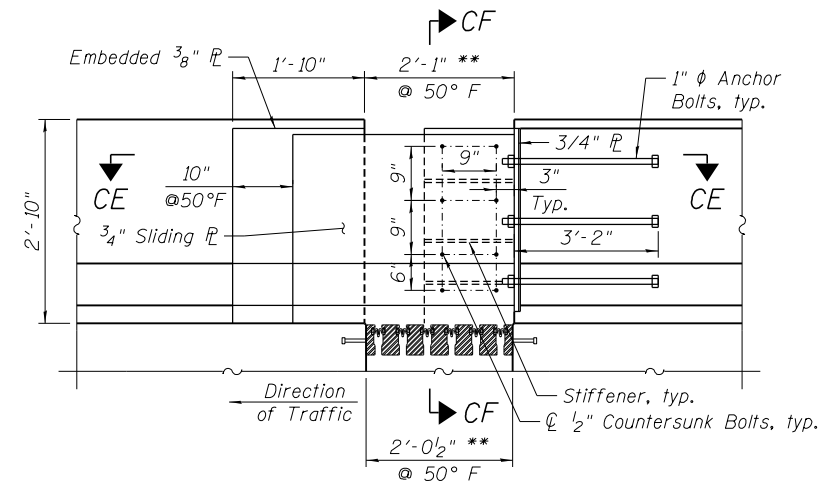


SECTION CA-CA



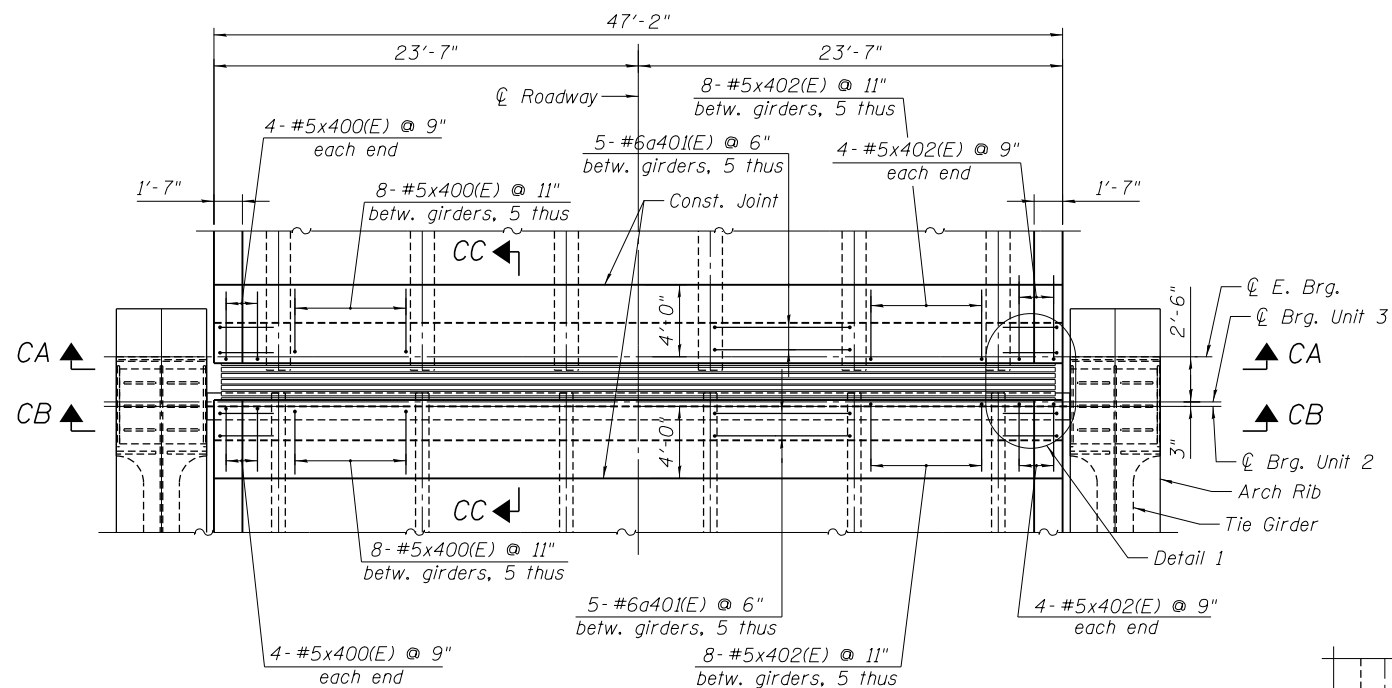
DETAIL 2

South Parapet shown, North Parapet similar

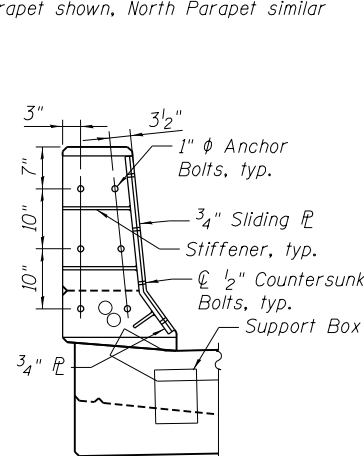


VIEW CD-CD

South Parapet shown, North Parapet similar
Parapet Railing omitted for clarity

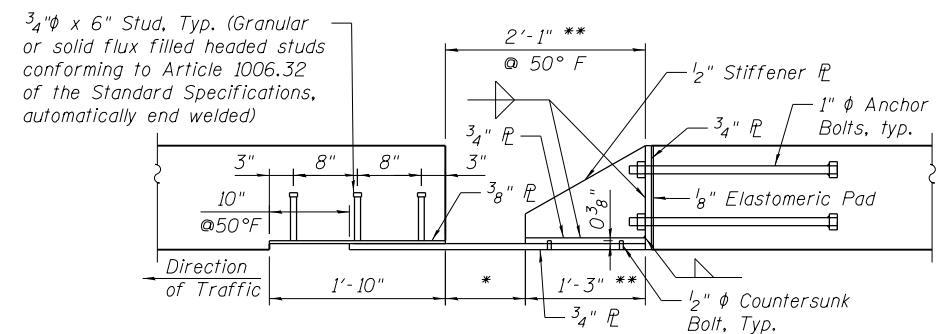


DECK PLAN AT PIER 6



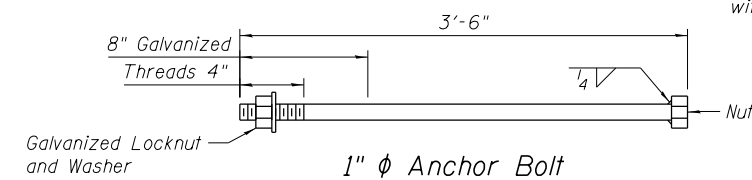
SECTION CF-CF

South Parapet shown, North Parapet similar



SECTION CE-CE

* 10" min. @ 50°F
12" max. @ 50°F
** Contractor to verify with Joint Supplier



1" Anchor Bolt

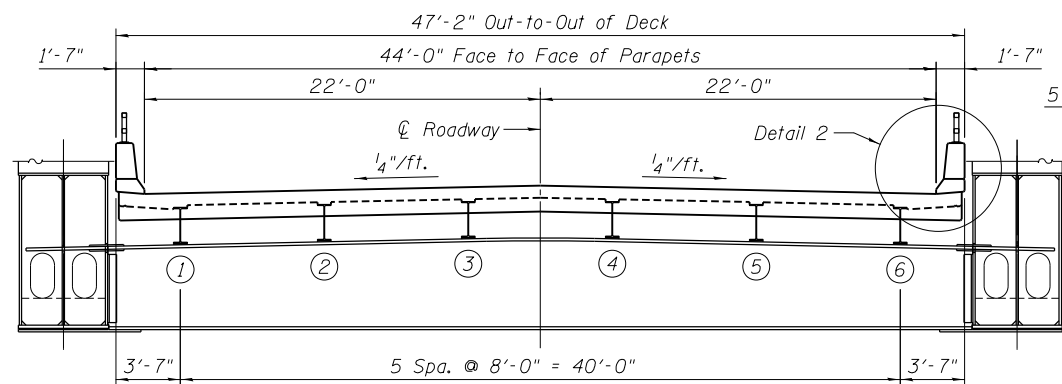
Notes:

- The expansion joint device shall be a prefabricated modular assembly with multiple support bars and separator beams, providing a continuous seal across the deck.
- Modular expansion joints shall be assembled in their final relative position with the ends in place for shop inspection and acceptance.
- Joint opening shall be adjusted according to Article 520.04 of the Standard Specifications when the concrete breakout is cast at an ambient temperature other than 50°F.
- The structural steel plates of the barrier plate assemblies shall conform to the requirements of AASHTO M270 Grade 36, and hot-dipped galvanized according to AASHTO M111 after fabrication.
- The cost of furnishing and installing the barrier plate assemblies shall be included in the cost of Modular Expansion Joints.
- Countersunk bolts shall be in accordance with ASTM A307, Grade A.
- Countersunk bolts and concrete inserts shall be hot-dipped galvanized according to AASHTO M232.
- The modular joints shall be fabricated to conform to the roadway profile and cross slope.
- The joints shall be fabricated and installed according to the manufacturer's recommendations and as shown in the Special Provisions and as approved by the Engineer.
- Payment of furnishing and installing barrier plate assemblies shall be included in the cost of Modular Expansion Joints.
- Bars indicated thus 4x2-#5 etc. indicates 4 lines of bars with 2 lengths per line.
- For bar details, bar list, and Bill of Material, see Sht. S-57.
- For Section CC-CC, see Sht. S-56.

REQUIRED MOVEMENT

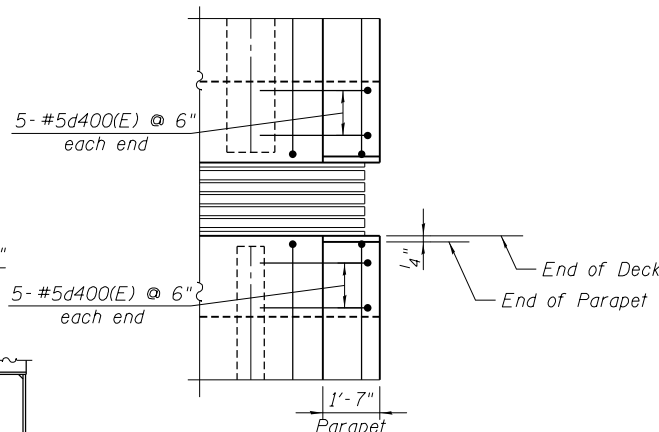
(AASHTO Load Combination Service I)

Item	Pier 6
Total longitudinal (open/close) movement	17.6"



SECTION CB-CB

*Floor beam stiffeners and lateral bracing connections not shown for clarity



DETAIL 1

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MODULAR EXPANSION JOINT
PIER 6

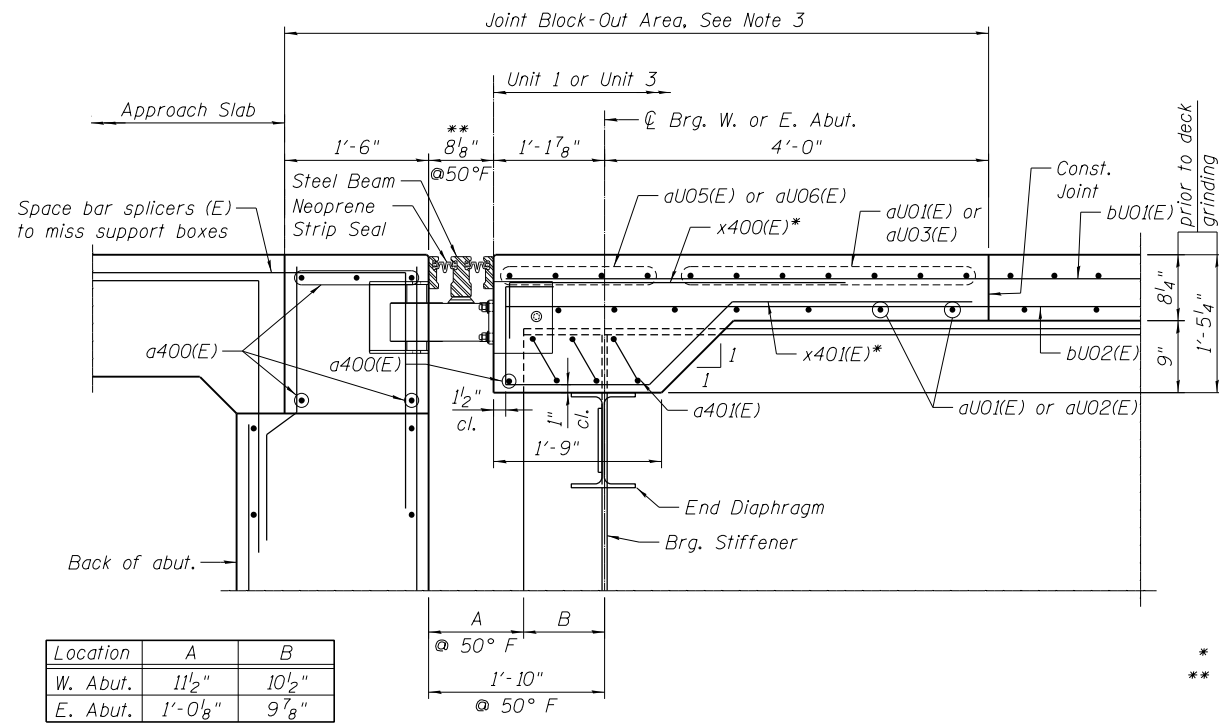
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	436
SN 069-0525		CONTRACT NO. 72B58		

SHEET NO. S-55 OF 146 SHEETS

ILLINOIS FED. AID PROJECT

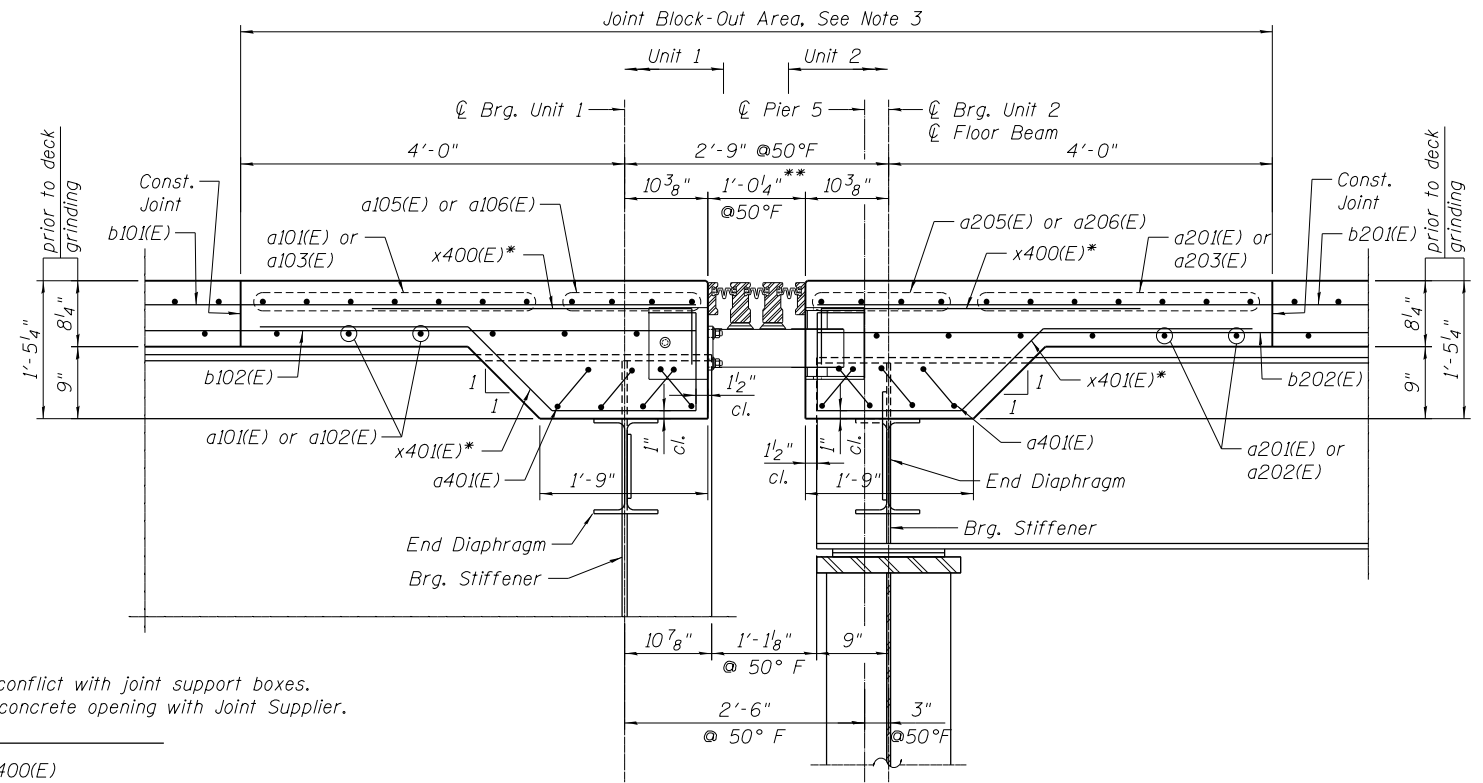
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DATE - 8/5/2014 CHECKED - JLR REVISED -
PLOT SCALE = DRAWN - HVP REVISED -
PLOT DATE CHECKED - VCP REVISED -

exp U.S. Services Inc.
Chicago, IL
BUILDINGS-EARTH & ENVIRONMENT-ENERGY
INDUSTRIAL-INFRASTRUCTURE-SUSTAINABILITY



SECTION AC-AC

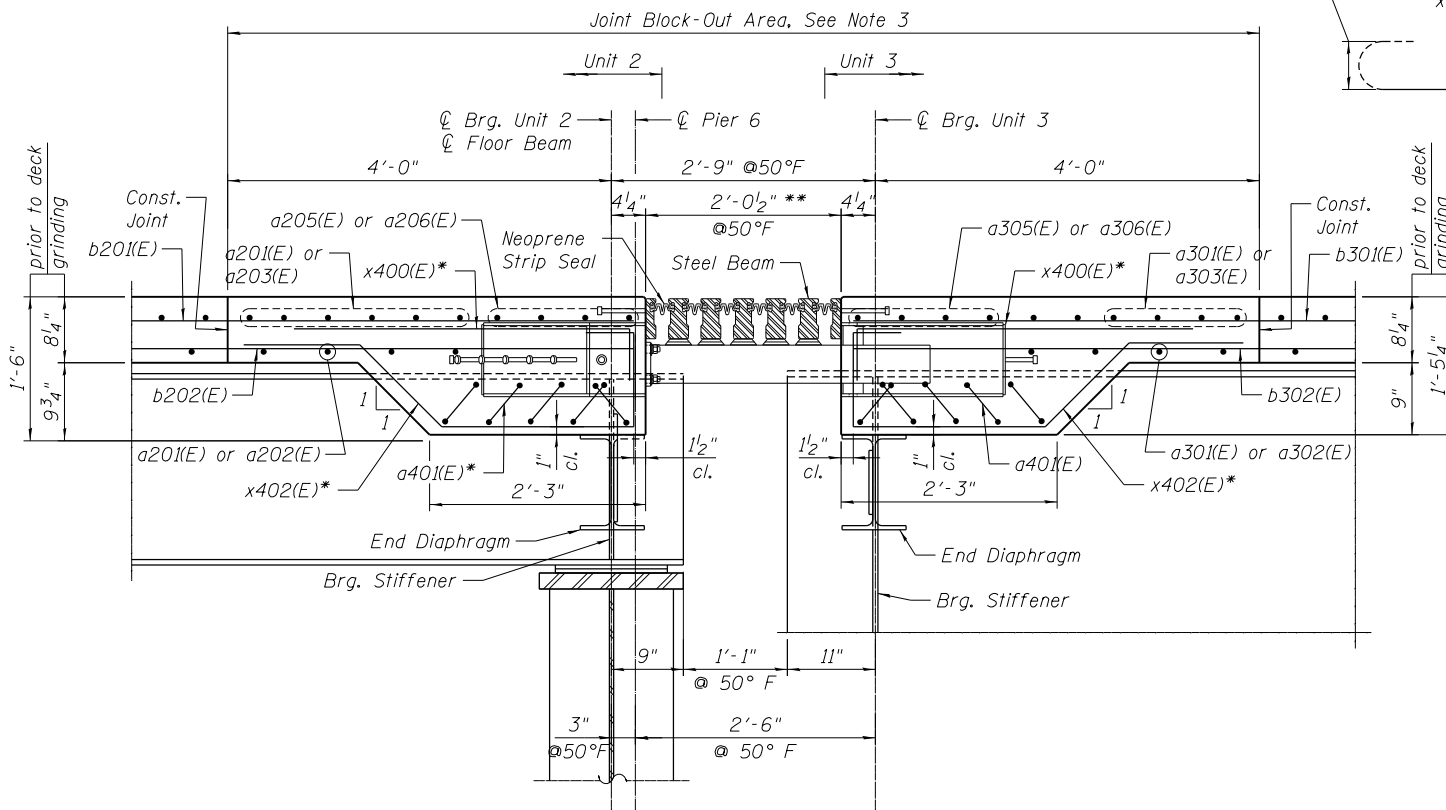
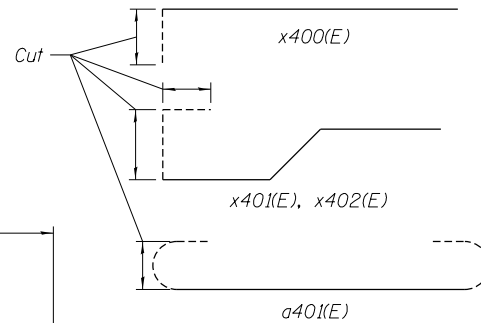
Showing reinforcement details of modular expansion joint at West Abutment
East Abutment similar



SECTION BC-BC

Showing reinforcement details of modular expansion joint at Pier 5

* Cut bars in field at conflict with joint support boxes.
** Contractor to verify concrete opening with Joint Supplier.



SECTION CC-CC

Showing reinforcement details of modular expansion joint at Pier 6

Notes:

1. Attach support box rigidly to diaphragms and beams by adjustable brackets, stools, or shims (typ.)
2. U = 1 for Unit 1
U = 3 for Unit 3
3. Prior to the placement of the joint block-out, the Contractor shall coordinate with the Modular Joint Manufacturer to ensure that the joint will be properly supported and that the reinforcement bars will not interfere with the joint components. Any necessary adjustments to the reinforcement layout shall be submitted to the Engineer for approval.

FILE NAME = \\F:\069-0525-72B58-001-EXP-JOINT.DGN, USER NAME = HVP, DESIGNED - HVP, REVISED - JLR, DATE - 9/12/2014, CHECKED - JLR, REVISED - HVP, DRAWN - HVP, REVISED - VCP, PLOT SCALE = 1/8" = 1'-0", PLOT DATE = 9/12/2014, 11:15:41 AM, PROJECT: ILLINOIS FEDERAL AID PROJECT, SHEET: 123B-2, CONTRACT NO. 72B58

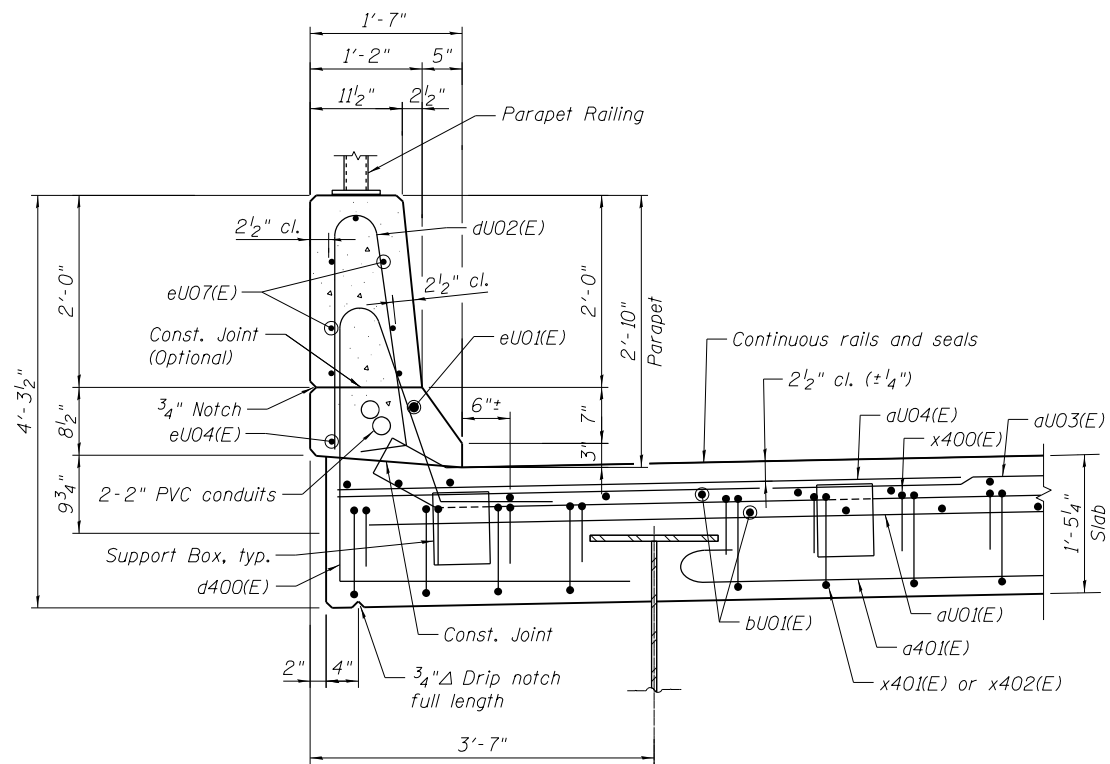
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DATE -	CHECKED -	REVISIONS -	
PLOT SCALE =	DRAWN -	REVISIONS -	
PLOT DATE =	CHECKED -	REVISIONS -	

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**MODULAR EXPANSION JOINT DETAILS
1 OF 2**

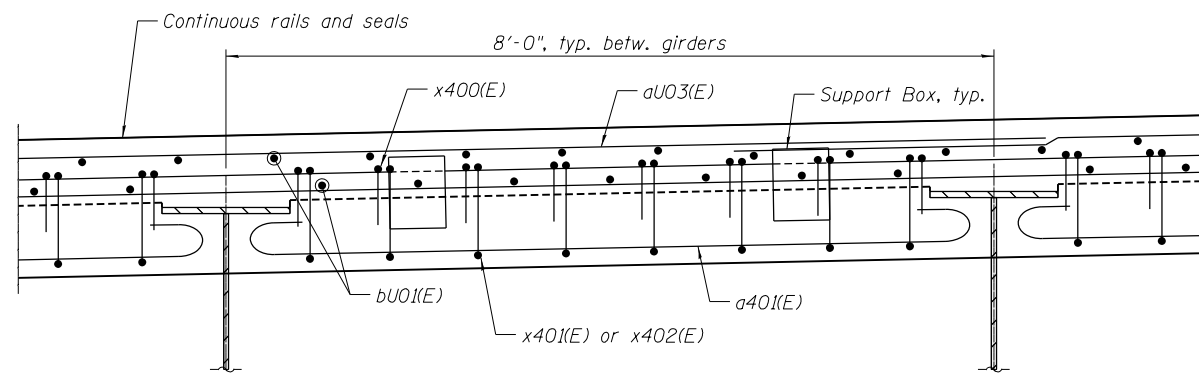
SHEET NO. S-56 OF 146 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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SN 069-0525		CONTRACT NO. 72B58		
ILLINOIS FED. AID PROJECT				



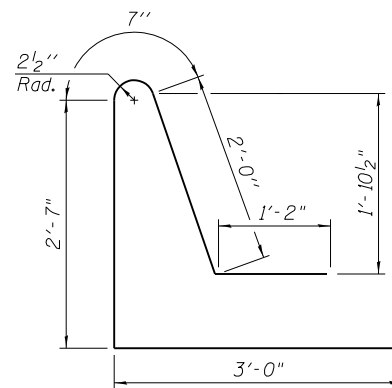
SECTION THRU PARAPET AT EXPANSION JOINT

Parapet at West Abutment shown
 Parapets at Pier 5, Pier 6, and East Abutment similar
 U = 1 for Unit 1
 U = 2 for Unit 2
 U = 3 for Unit 3

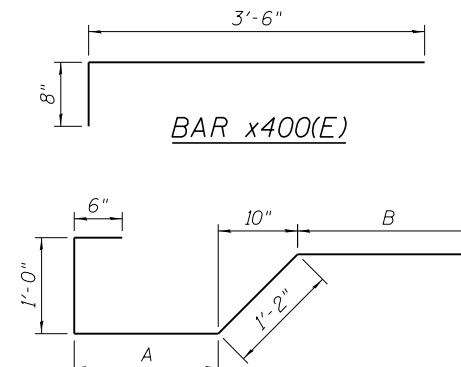


SECTION THRU DECK AT EXPANSION JOINT

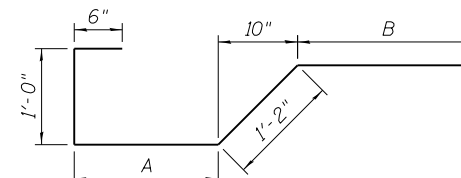
Deck at West Abutment shown
 Deck at Pier 5, Pier 6, and East Abutment similar



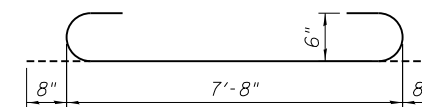
BAR d400(E)



BAR x400(E)



BARS x401(E), x402(E)



BAR a401(E)

Bar	A	B
x401(E)	1'-6"	2'-3"
x402(E)	2'-0"	1'-2"

W. ABUT.-BAR LIST

Bar	No.	Size	Length	Shape
a400(E)	12	#6	25'-4"	—
a401(E)	15	#6	9'-0"	⌋
d400(E)	8	#5	9'-4"	⌋
x400(E)	48	#5	4'-2"	⌋
x401(E)	48	#5	6'-5"	⌋

PIER 5-BAR LIST

Bar	No.	Size	Length	Shape
a401(E)	40	#6	9'-0"	⌋
d400(E)	16	#5	9'-4"	⌋
x400(E)	96	#5	4'-2"	⌋
x401(E)	96	#5	6'-5"	⌋

W. ABUT.-BILL OF MATERIAL

Item	Unit	Total
Concrete Superstructure	Cu. Yd.	12.7
Reinforcement Bars, Epoxy Coated	Pound	1,270
Modular Expansion Joint 6"	Foot	44

PIER 5-BILL OF MATERIAL

Item	Unit	Total
Concrete Superstructure	Cu. Yd.	17.3
Reinforcement Bars, Epoxy Coated	Pound	1,760
Modular Expansion Joint 9"	Foot	44

PIER 6-BAR LIST

Bar	No.	Size	Length	Shape
a401(E)	50	#6	9'-0"	⌋
d400(E)	20	#5	9'-4"	⌋
x400(E)	96	#5	4'-2"	⌋
x402(E)	96	#5	5'-10"	⌋

PIER 6-BILL OF MATERIAL

Item	Unit	Total
Concrete Superstructure	Cu. Yd.	17.4
Reinforcement Bars, Epoxy Coated	Pound	1,870
Modular Expansion Joint 18"	Foot	44

E. ABUT.-BAR LIST

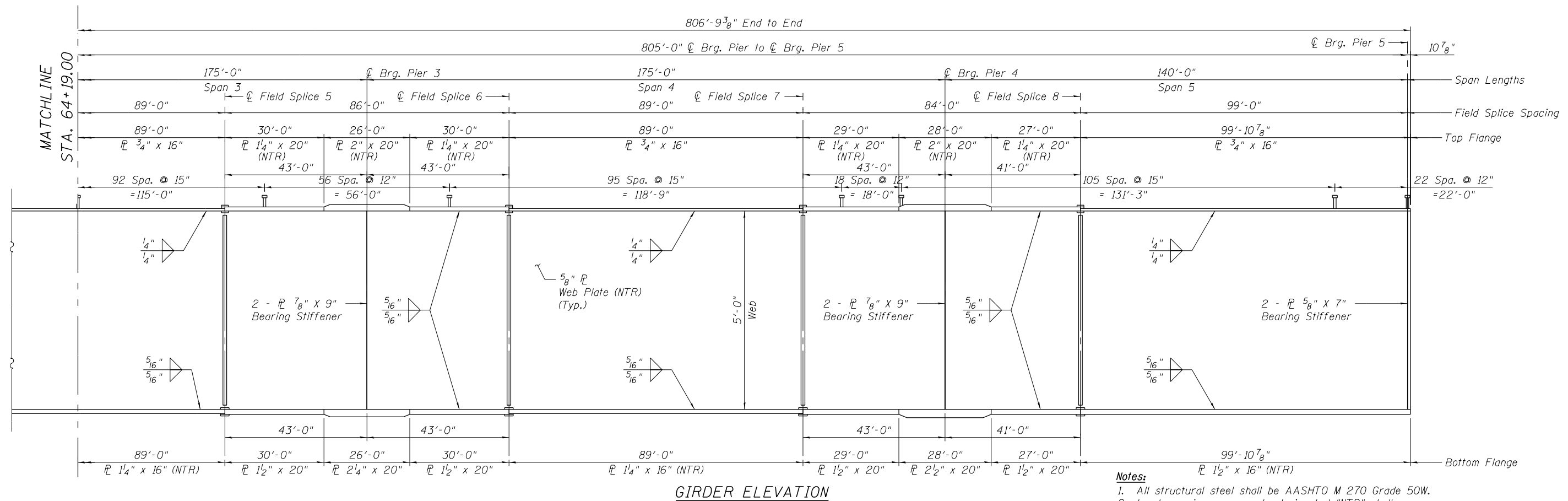
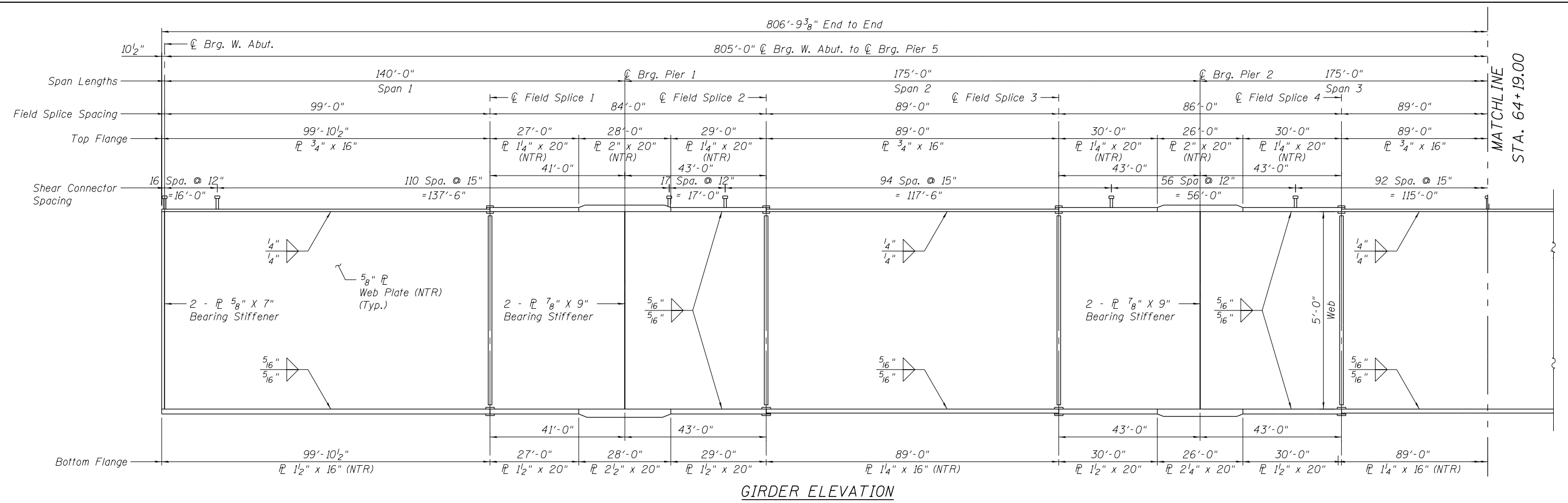
Bar	No.	Size	Length	Shape
a400(E)	12	#6	25'-4"	—
a401(E)	15	#6	9'-0"	⌋
d400(E)	8	#5	9'-4"	⌋
x400(E)	48	#5	4'-2"	⌋
x401(E)	48	#5	6'-5"	⌋

E. ABUT.-BILL OF MATERIAL

Item	Unit	Total
Concrete Superstructure	Cu. Yd.	12.5
Reinforcement Bars, Epoxy Coated	Pound	1,270
Modular Expansion Joint 6"	Foot	44

Note:
 For Notes, see Sht. S-56.

FILE NAME = \\exp\joints\0690525-72B58-001-EXPJOINT.DGN, USER NAME = HVP, DESIGNED - HVP, REVISED - JLR, CHECKED - JLR, DATE - 8/5/2014, PLOT SCALE = 1"=1'-0", DRAWN - HVP, REVISED - VCP, CHECKED - VCP, PLOT DATE = 8/5/2014, 15:26:45



Notes:
 1. All structural steel shall be AASHTO M 270 Grade 50W.
 2. Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

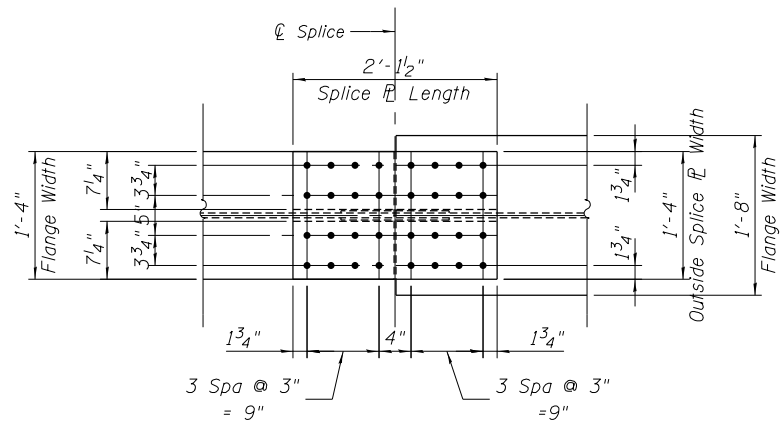
**GIRDER ELEVATIONS
 UNIT 1**

FILE NAME =	USER NAME =	DESIGNED - SNB	REVISED -
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	PLOT DATE =	CHECKED - VCP	REVISED -

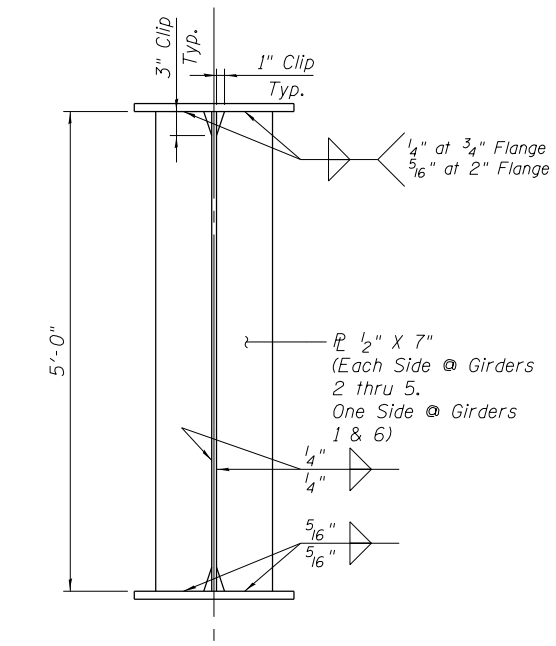
SHEET NO. S-59 OF 146 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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SN 069-0525		CONTRACT NO. 72B58		

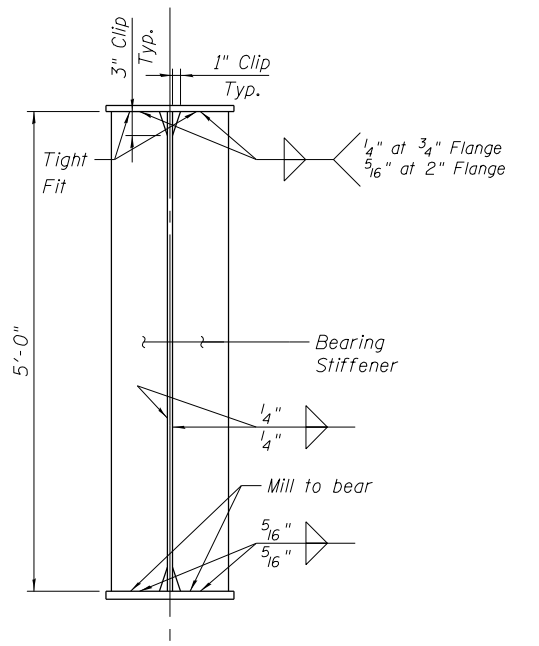
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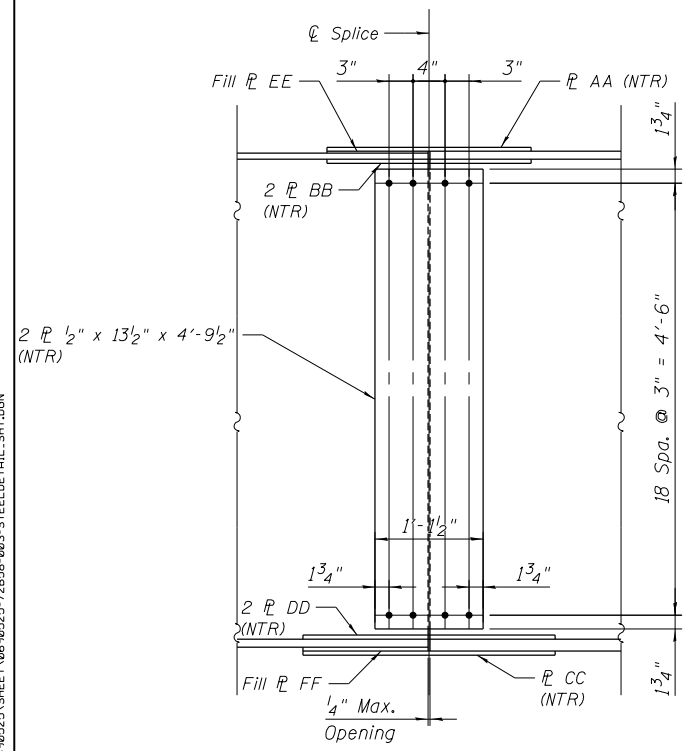
TYPICAL TOP FLANGE SPLICE DETAIL



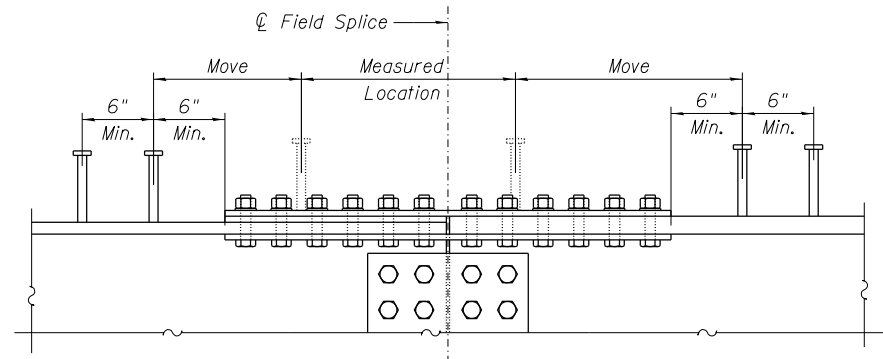
CONNECTION PLATE DETAIL



BEARING STIFFENER DETAIL

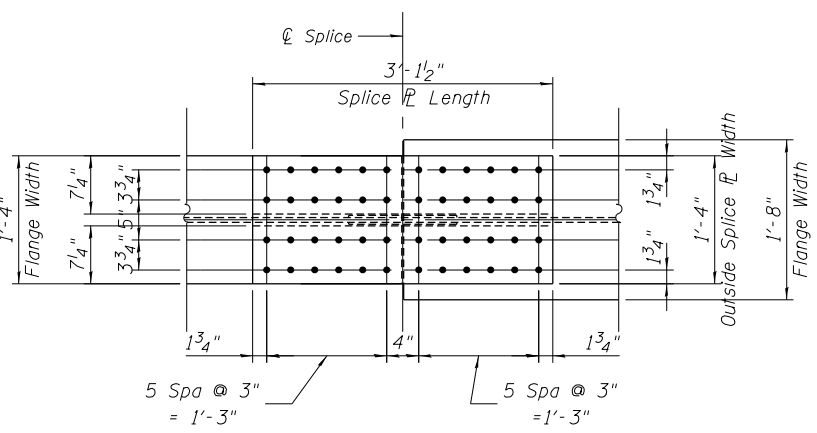


TYPICAL WEB SPLICE DETAIL

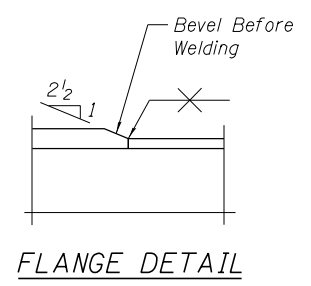


SHEAR CONNECTOR DETAIL AT SPLICES

Do not place shear connectors on splice plates.
Move row of studs to 6" beyond nearest edge of splice plate from the measured location.



TYPICAL BOTTOM FLANGE SPLICE DETAIL



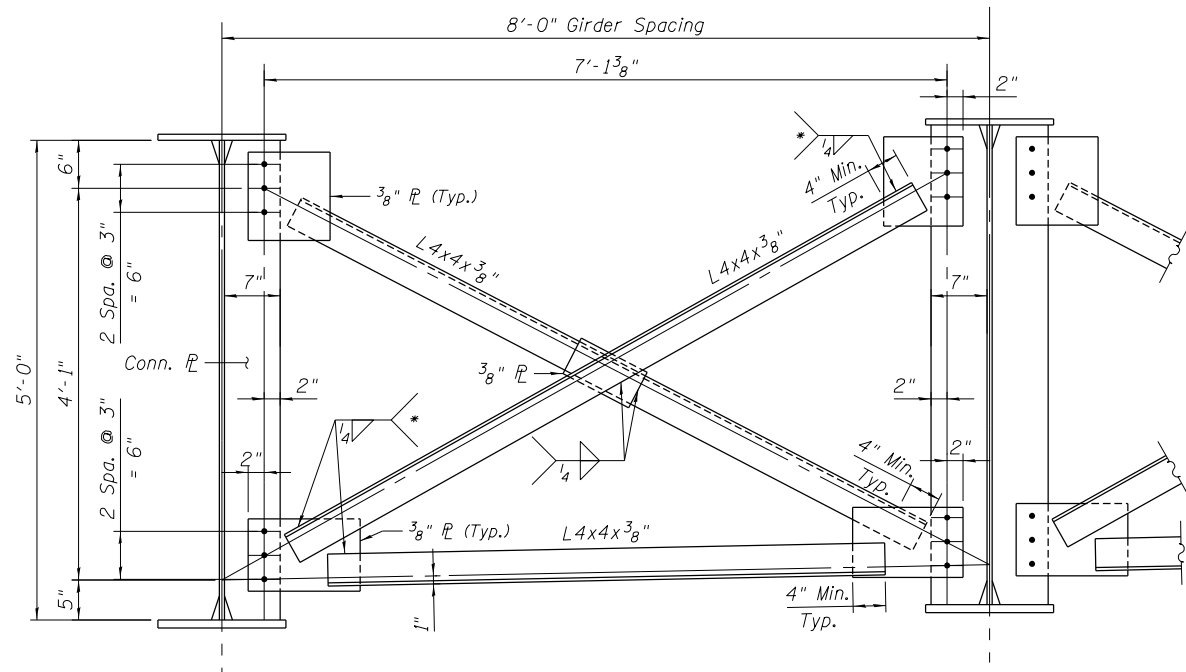
FLANGE DETAIL

FIELD SPLICE PLATE SIZES

Field Splice	AA	BB	CC	DD	EE	FF
1 & 8	1/2" x 16" x 2'-1 1/2"	1/2" x 7 1/4" x 2'-1 1/2"	3/4" x 16" x 3'-1 1/2"	3/4" x 7 1/4" x 3'-1 1/2"	1/2" x 16" x 1'-0 3/4"	---
2, 3, 4, 5, 6, & 7	1/2" x 16" x 2'-1 1/2"	1/2" x 7 1/4" x 2'-1 1/2"	3/4" x 16" x 3'-1 1/2"	3/4" x 7 1/4" x 3'-1 1/2"	1/2" x 16" x 1'-0 3/4"	1/4" x 16" x 1'-6 3/4"

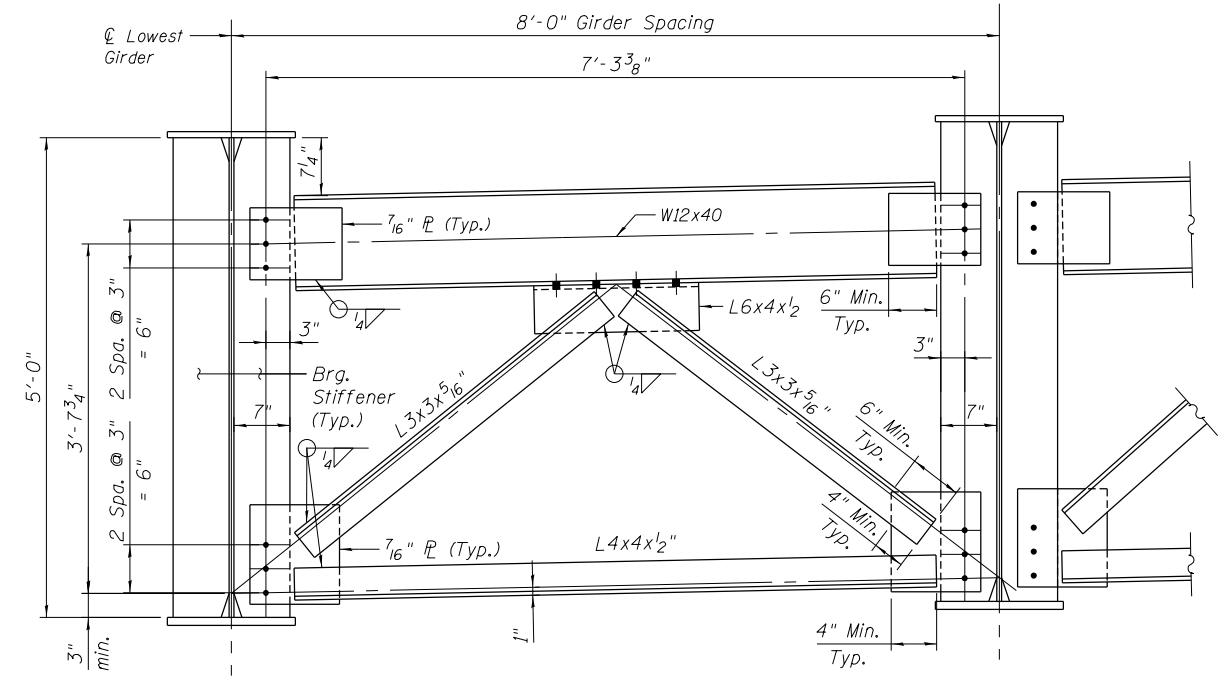
- Notes:**
- All structural steel shall be AASHTO M 270 Grade 50W.
 - Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.
 - Bolts 7/8" φ, holes 15/16" φ, unless otherwise noted.

FILE NAME = \\S:\STEELDETAIL.DGN... USER NAME = DESIGNED - SNB REVISIONS -
 DATE - CHECKED - JLR REVISIONS -
 PLOT SCALE = DRAWN - SNB REVISIONS -
 PLOT DATE CHECKED - VCP REVISIONS -

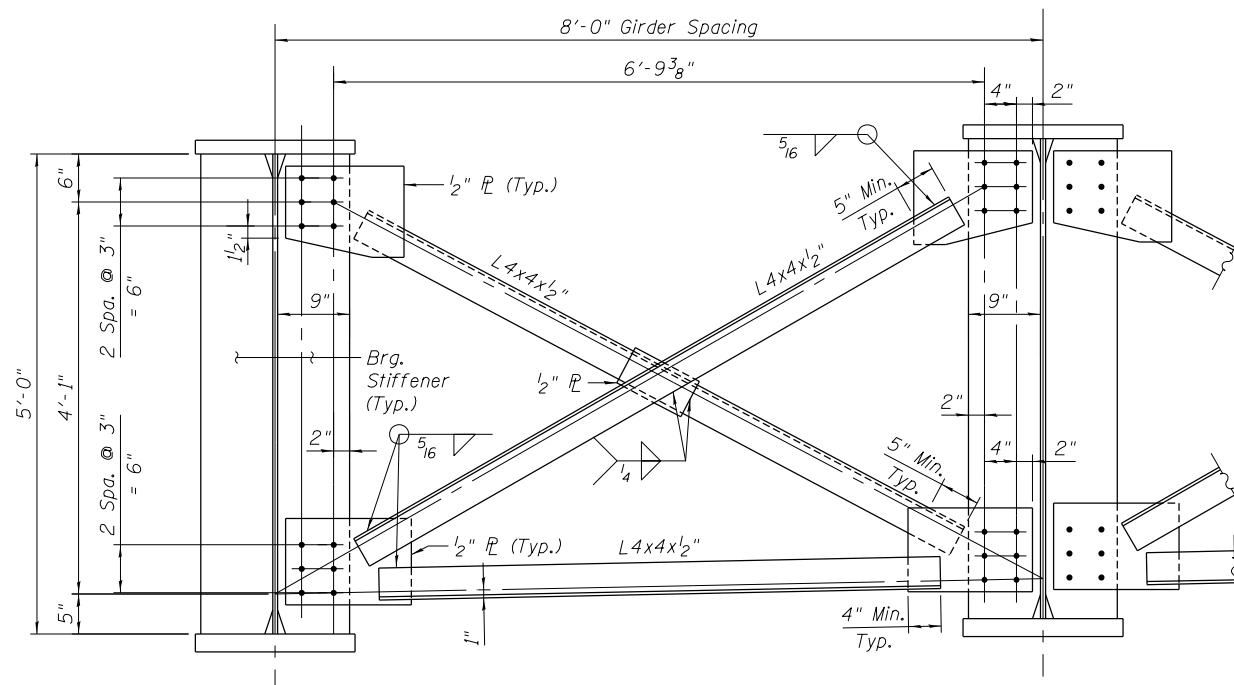


CF1 TYPICAL CROSS FRAME

* Fillet weld angles along 3 sides on one face of gusset plate.



CF2 END CROSS FRAME AT W. ABUT. & PIER 5



CF3 CROSS FRAME AT PIERS 1, 2, 3, & 4

Notes:

1. All structural steel shall be AASHTO M 270 Grade 50W.
2. Bolts 7/8" ϕ , holes 1 1/16" ϕ , unless otherwise noted.

FILE NAME = ... \ALL\SNUM-72B58-001-BORDER.DGN
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 DESIGNED - SNB
 CHECKED - JLR
 DRAWN - SNB
 CHECKED - VCP
 DATE =
 PLOT SCALE =
 PLOT DATE =
 exp U.S. Services Inc.
 CHICAGO, IL
 BUILDINGS-EARTH & ENVIRONMENT-ENERGY
 INDUSTRIAL-INFRASTRUCTURE-SUSTAINABILITY
 8-05-2014, 15:26:52
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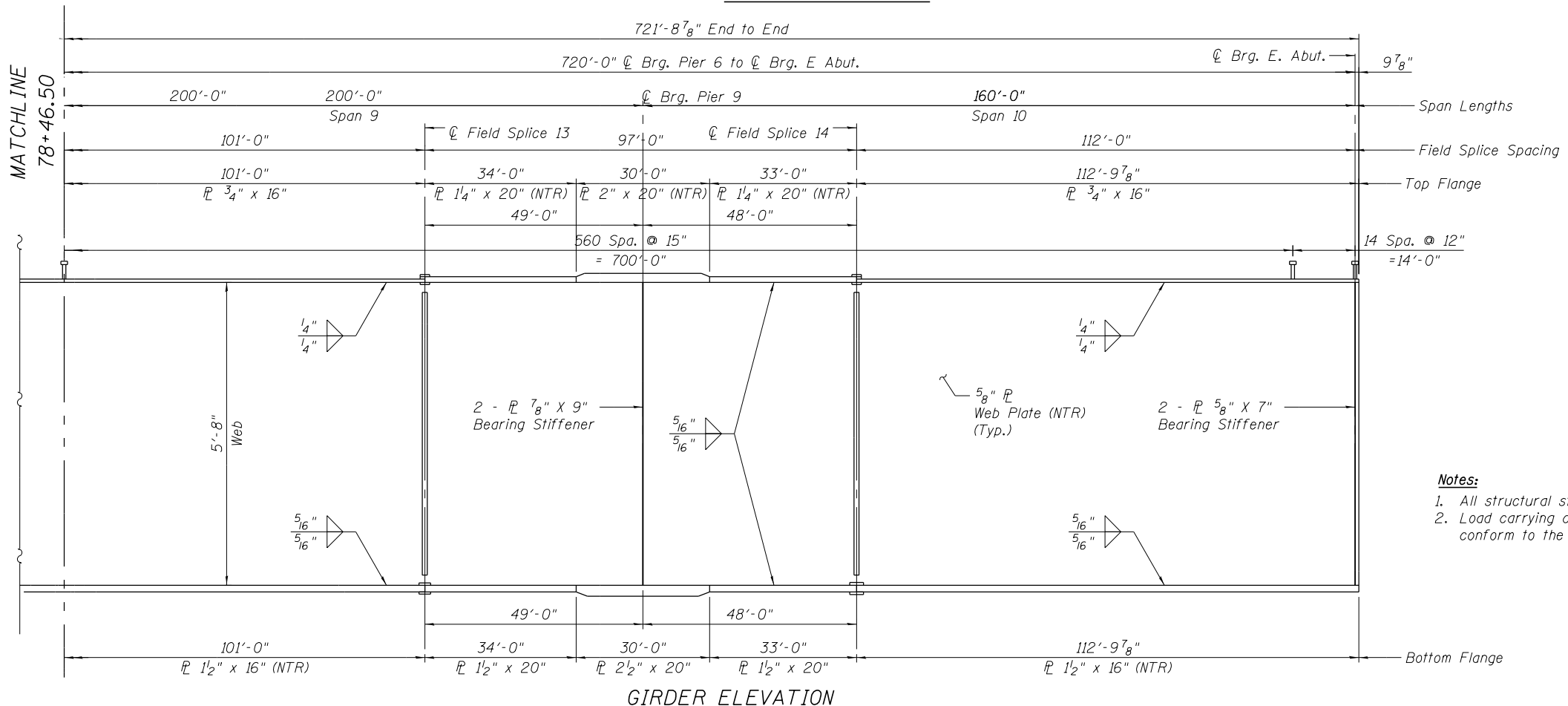
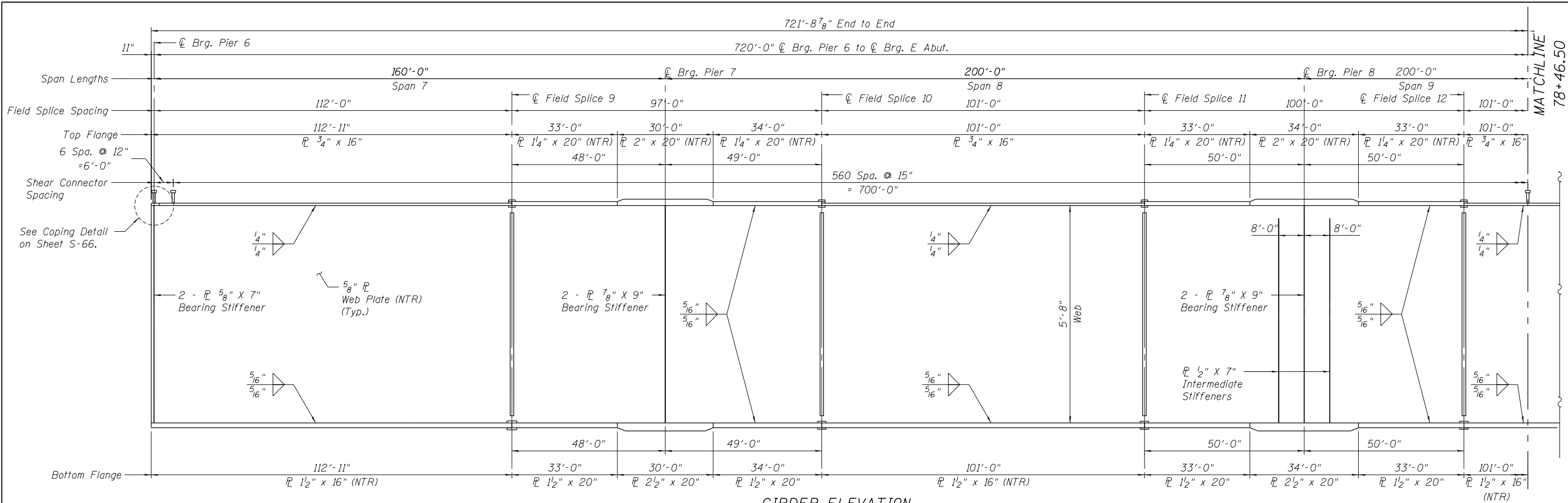
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	DATE =	CHECKED - JLR	REVISED -
	PLOT SCALE =	DRAWN - SNB	REVISED -
	PLOT DATE =	CHECKED - VCP	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**CROSS FRAME DETAILS
UNIT 1**

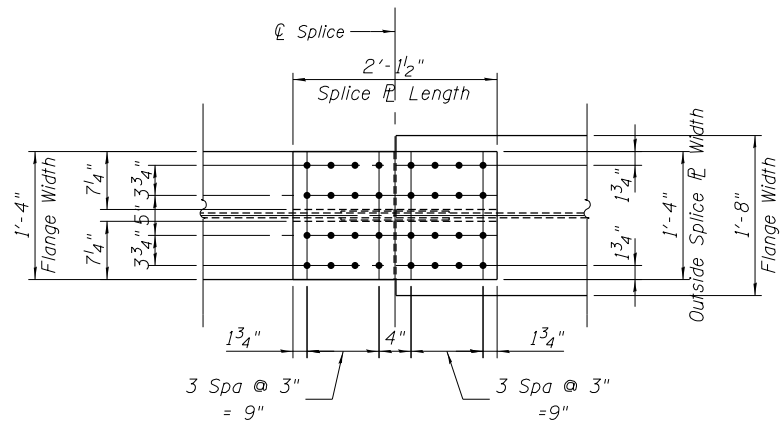
SHEET NO. S-62 OF 146 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	443
SN 069-0525		CONTRACT NO. 72B58		
ILLINOIS FED. AID PROJECT				

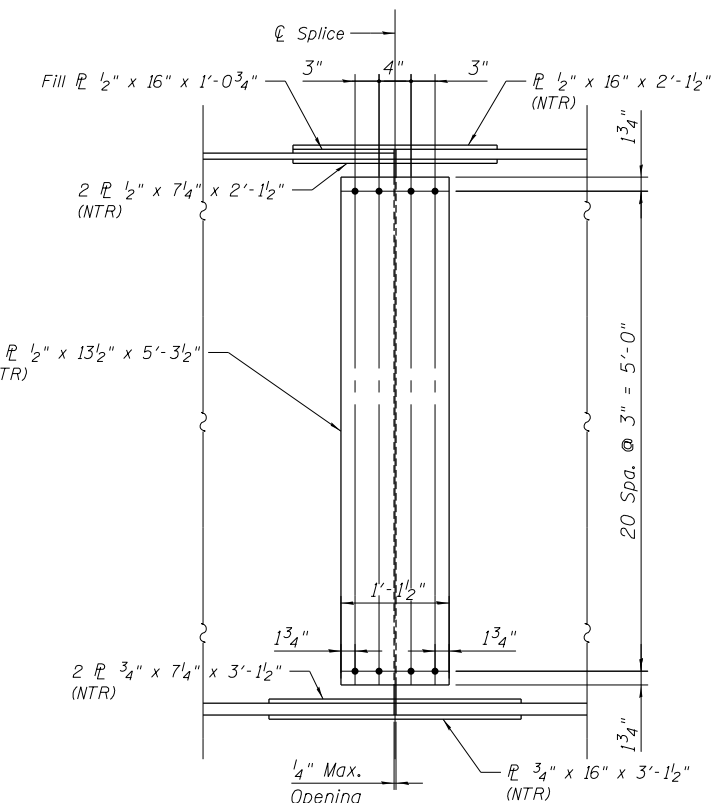


- Notes:**
- All structural steel shall be AASHTO M 270 Grade 50W.
 - Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.

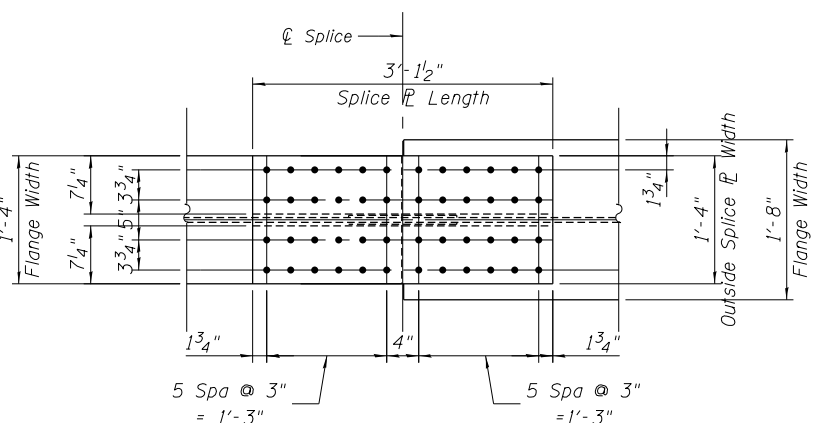
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 DATE = 8/5/2014
 PLOT SCALE =
 PLOT DATE =
 DESIGNED - SNB
 CHECKED - JLR
 DRAWN - SNB
 CHECKED - VCP
 REVISED -
 REVISED -
 REVISED -
 REVISED -
 STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 GIRDER ELEVATIONS
 UNIT 3
 SHEET NO. S-64 OF 146 SHEETS
 F.A.P. RTE. 745
 SECTION 123B-2
 COUNTY MORGAN
 TOTAL SHEETS 782
 SHEET NO. 445
 CONTRACT NO. 72B58
 ILLINOIS FED. AID PROJECT



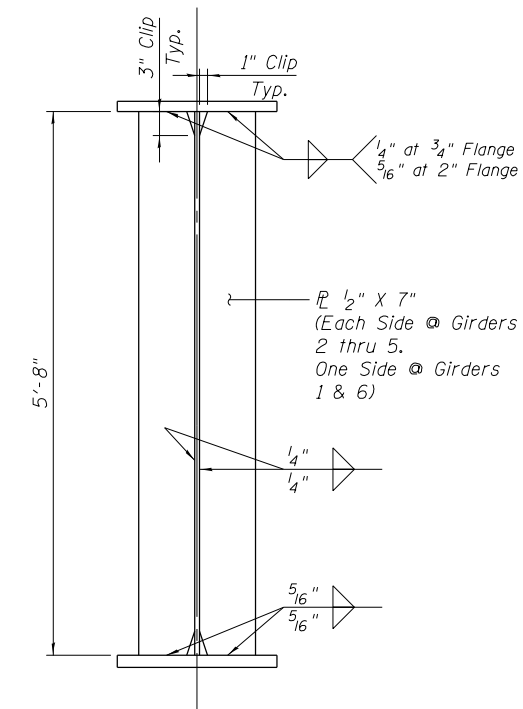
TYPICAL TOP FLANGE SPLICE DETAIL



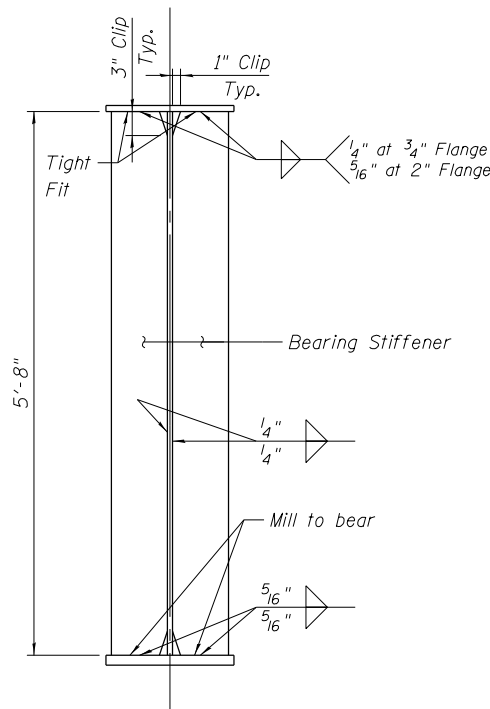
TYPICAL WEB SPLICE DETAIL



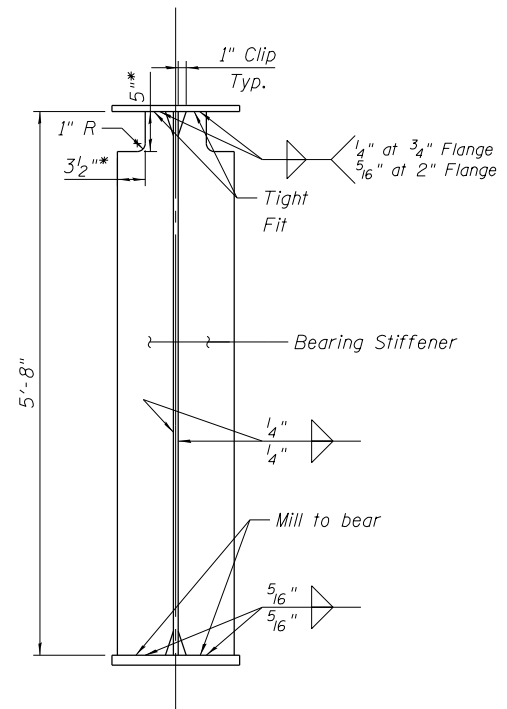
BOTTOM FLANGE SPLICE DETAIL



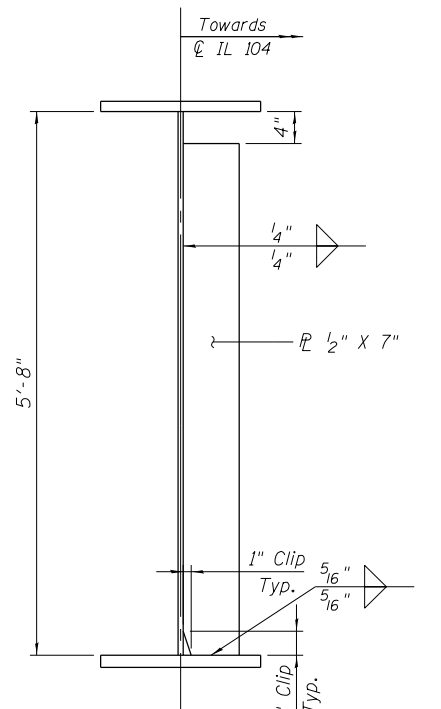
CONNECTION PLATE DETAIL



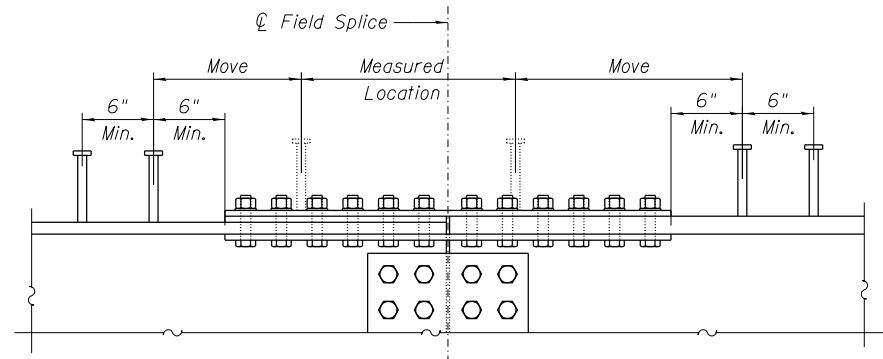
BEARING STIFFENER DETAIL



BEARING STIFFENER DETAIL (PIER 6)



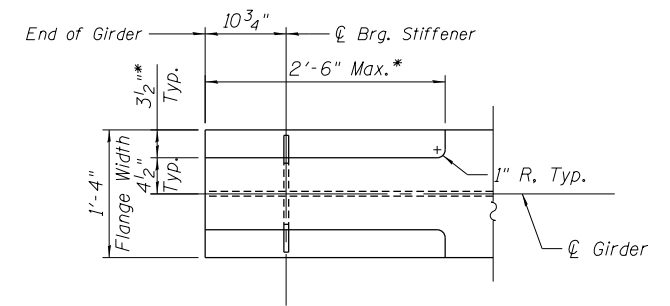
INTERMEDIATE STIFFENER DETAIL



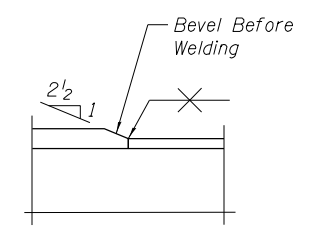
SHEAR CONNECTOR DETAIL AT SPLICES

Do not place shear connectors on splice plates.
Move row of studs to 6" beyond nearest edge of splice plate from the measured location.

* Contractor to verify with modular joint supplier.



COPING DETAIL (TOP VIEW)
(Pier 6 as needed by modular joint supplier)



FLANGE DETAIL

- Notes:**
1. All structural steel shall be AASHTO M 270 Grade 50W.
 2. Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.
 3. Bolts 7/8" ϕ , holes 15/16" ϕ , unless otherwise noted.

FILE NAME = \\S:\exp\0525-72B58-001-STEELDETAIL.DGN, USER NAME = JLR, DESIGNED - SNB, REVISED - JLR, CHECKED - JLR, REVISED - JLR, DRAWN - SNB, REVISED - VCP, CHECKED - VCP, REVISED - VCP, PLOT SCALE = 1" = 1'-0", PLOT DATE = 11/15/2014, 15:26:57, exp U.S. Services Inc. Chicago, IL BUILDINGS-EARTH & ENVIRONMENT-ENERGY INDUSTRIAL-INFRASTRUCTURE-SUSTAINABILITY

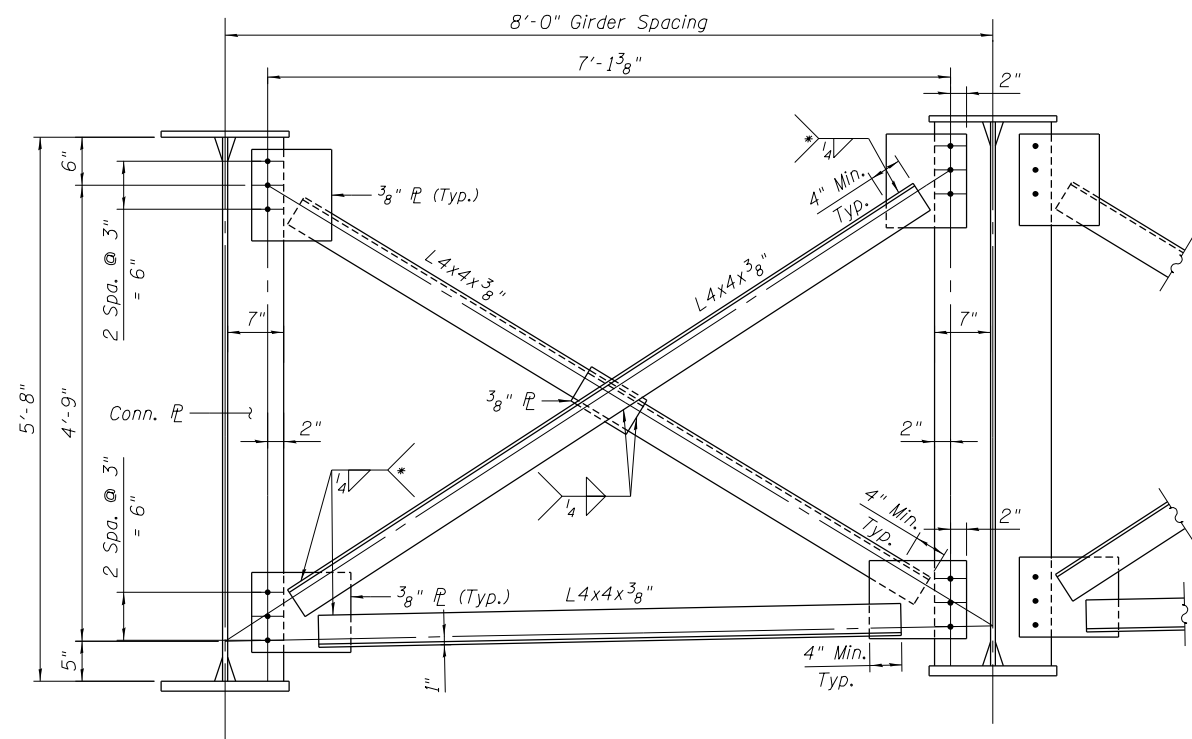
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL DETAILS
UNIT 3

SHEET NO. S-66 OF 146 SHEETS

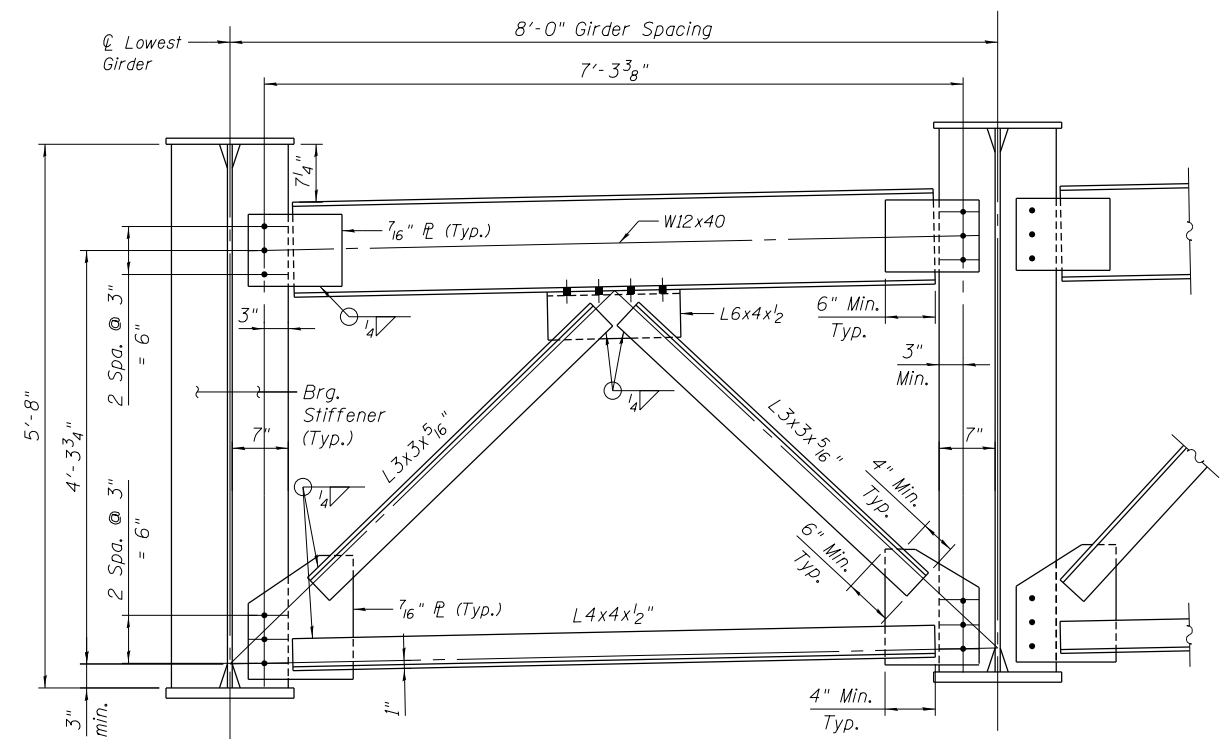
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	447
SN 069-0525		CONTRACT NO. 72B58		

ILLINOIS FED. AID PROJECT

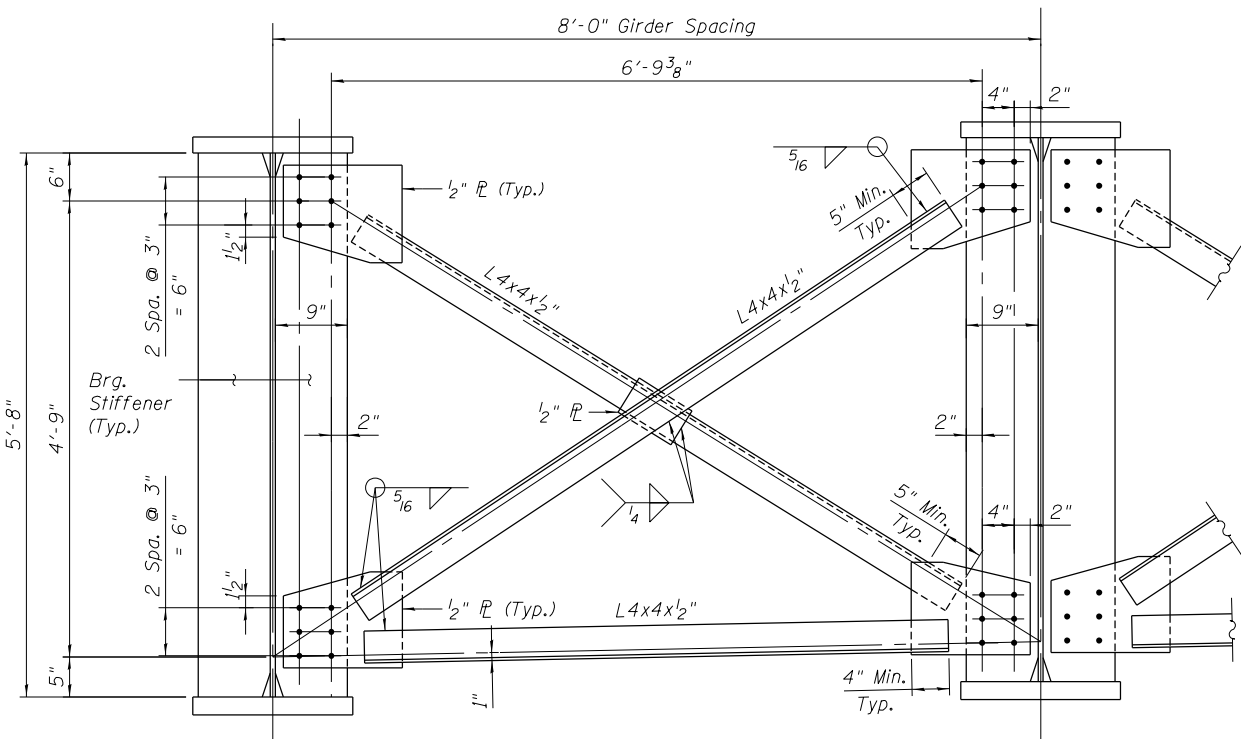


CF4 TYPICAL CROSS FRAME

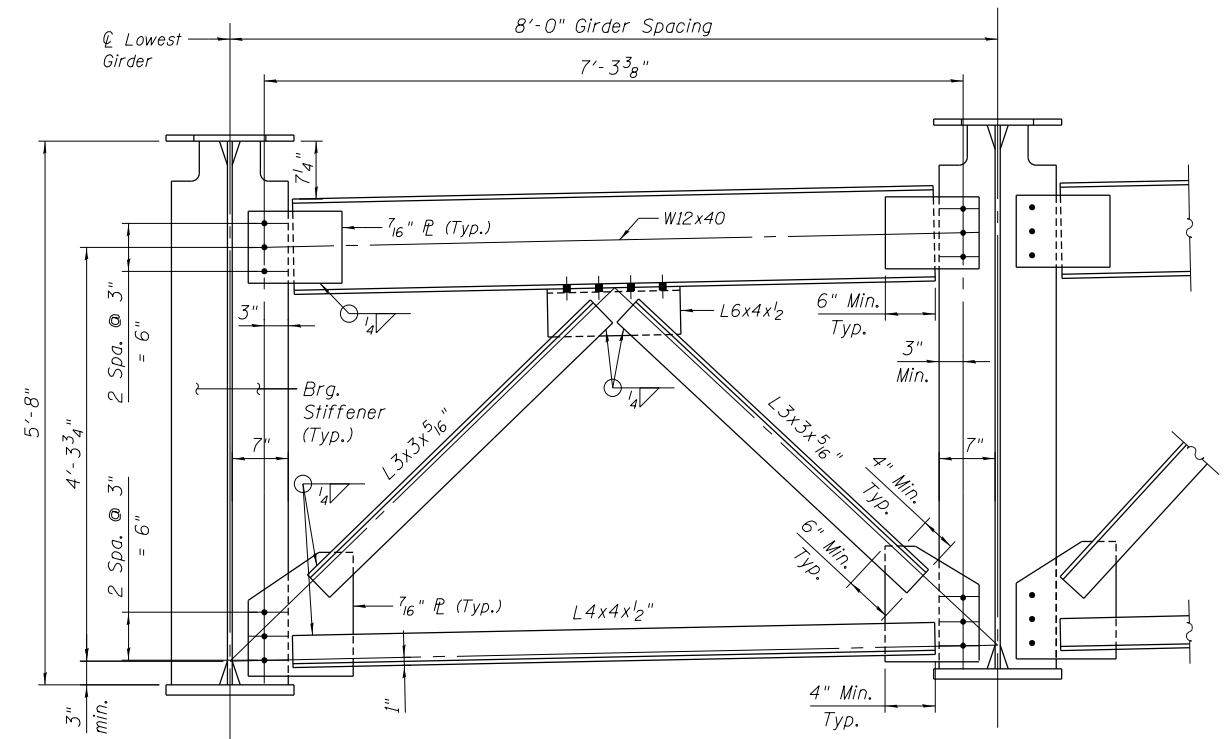
* Fillet weld angles along 3 sides on one face of gusset plate.



CF5 END CROSS FRAME AT E. ABUT.



CF6 CROSS FRAME AT PIERS 7, 8, & 9



CF5 END CROSS FRAME AT PIER 6

Notes:
 1. All structural steel shall be AASHTO M 270 Grade 50W.
 2. Bolts 7/8" φ, holes 1 1/8" φ, unless otherwise noted.

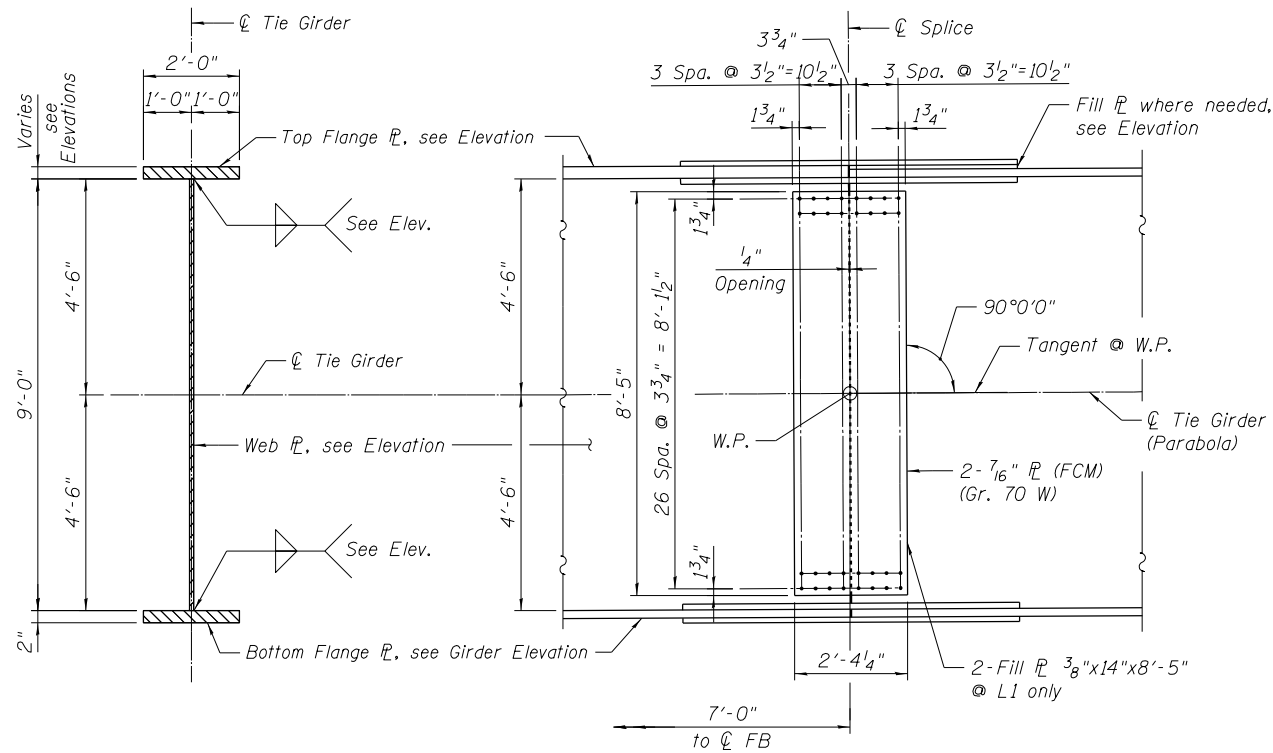
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STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

CROSS FRAME DETAILS
 UNIT 3

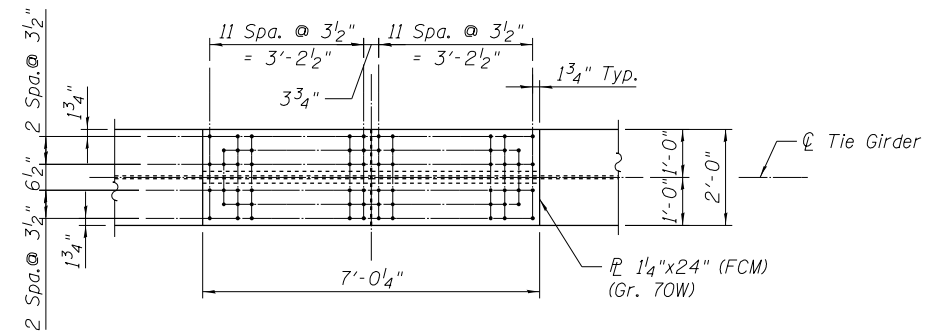
SHEET NO. S-67 OF 146 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	448
SN 069-0525		CONTRACT NO. 72B58		
ILLINOIS FED. AID PROJECT				

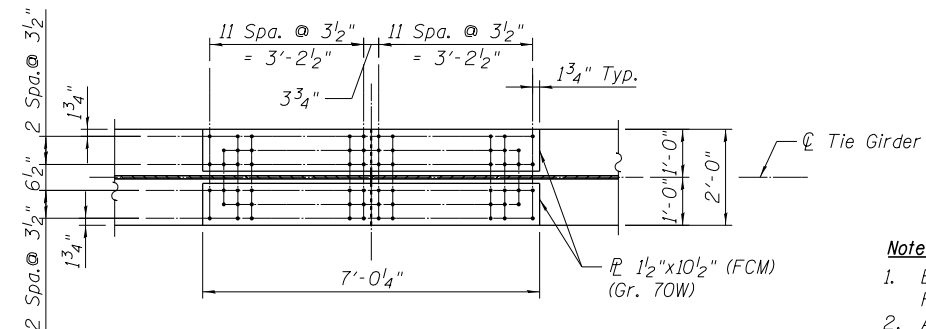


TYPICAL SECTION THRU TIE GIRDER

TYPICAL WEB SPLICE PLATE DETAIL



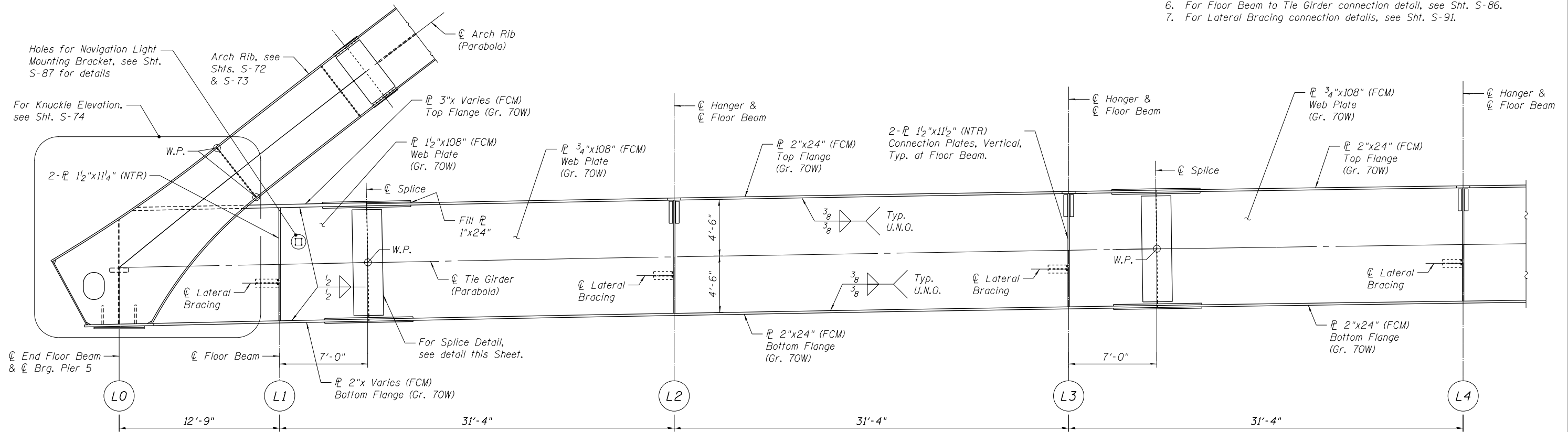
TYPICAL OUTER FLANGE SPLICE PLATE DETAIL



TYPICAL INNER FLANGE SPLICE PLATE DETAIL

Notes:

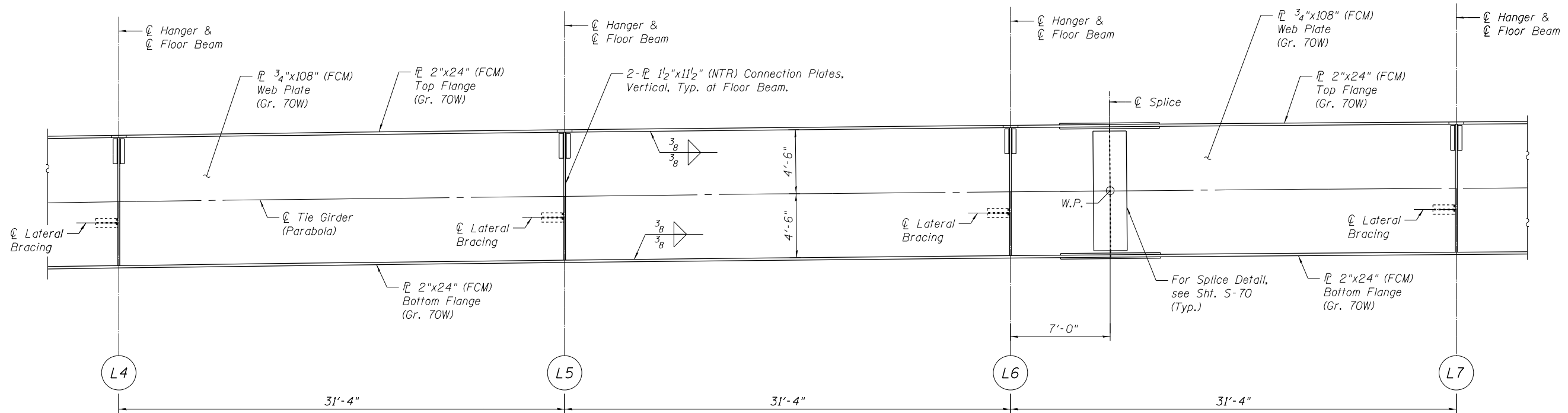
1. Bolts 1 in. ϕ , holes 1 1/8 in. ϕ , unless otherwise noted. Faying surfaces shall be Class B.
2. All structural steel shall be AASHTO M 270 Grade 50 except steel plates indicated (Gr. 70W) which shall be AASHTO M 270 Grade HPS 70W.
3. "FCM" denotes Fracture Critical Member or Member Component.
4. Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.
5. For Hanger connection details, see Sht. S-79.
6. For Floor Beam to Tie Girder connection detail, see Sht. S-86.
7. For Lateral Bracing connection details, see Sht. S-91.



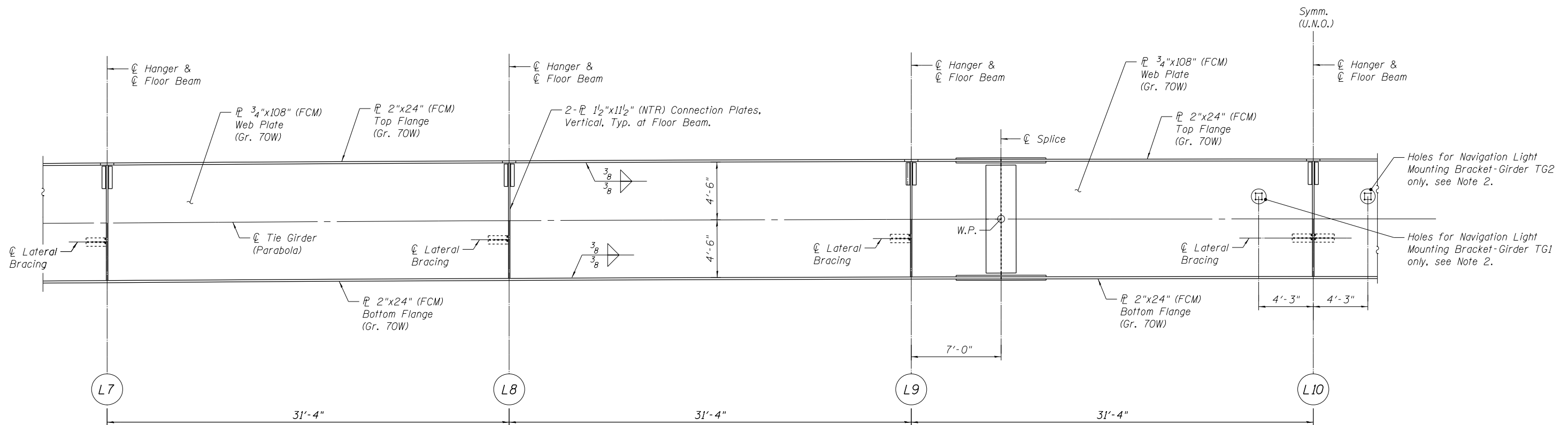
TIE GIRDER ELEVATION - FROM L0 THRU L4
TG2 SHOWN - TGI SIMILAR

FILE NAME = \\FS-004\AM\VALU\1-D-TRANS\071\FRCH\02012341-02\STRUCT\CAO\72B58\0690525\SHEET_0690525-72B58-203-STEELDETAIL_SHT.DGN
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 DESIGNED - CCE
 CHECKED - RSN
 REVISED -
 PLOT SCALE =
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 REVISED -
 PLOT DATE =
 CHECKED - RSN
 REVISED -

exp U.S. Services Inc. CHICAGO, IL BUILDINGS-EARTH & ENVIRONMENT-ENERGY INDUSTRIAL-INFRASTRUCTURE-SUSTAINABILITY		STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION		TIE GIRDER ELEVATION 1 OF 2		F.A.P. RTE. 745	SECTION 123B-2	COUNTY MORGAN	TOTAL SHEETS 782	SHEET NO. 451
						SN 069-0525		CONTRACT NO. 72B58		ILLINOIS FED. AID PROJECT
						SHEET NO. S-70 OF 146 SHEETS				



TIE GIRDER ELEVATION - FROM L4 THRU L7
TG2 SHOWN - TG1 SIMILAR



TIE GIRDER ELEVATION - FROM L7 THRU L10
TG2 SHOWN - TG1 SIMILAR

- Notes:**
1. For Notes, see Sht. S-70.
 2. For details of Navigation Light Mounting Bracket, see Sht. S-87.

FILE NAME = \\exp\0690525-72B58-202-STEELDETAIL.DGN, USER NAME = \\exp\0690525-72B58-202-STEELDETAIL.DGN, DESIGNED - CCE, REVISED -
 DATE - 8/5/2014, CHECKED - RSN, REVISED -
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 PLOT DATE = 8/5/2014, CHECKED - RSN, REVISED -

FILE NAME =	USER NAME =	DESIGNED - CCE	REVISED -
DATE - 8/5/2014	CHECKED - RSN	REVISED -	
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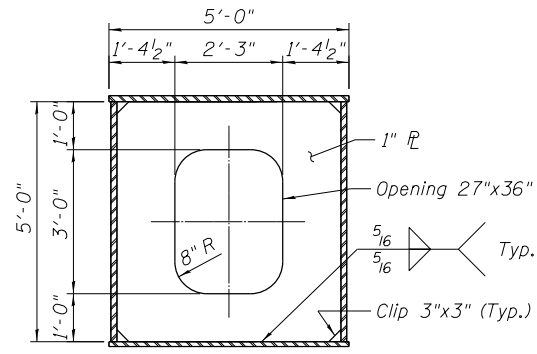
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TIE GIRDER ELEVATION
2 OF 2

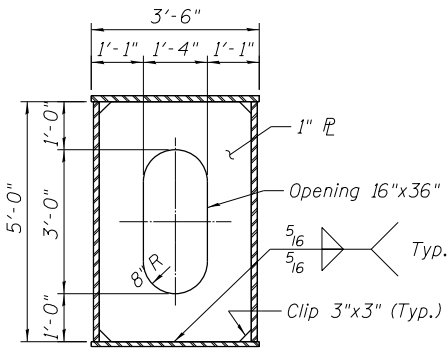
SHEET NO. S-71 OF 146 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	452
SN 069-0525		CONTRACT NO. 72B58		

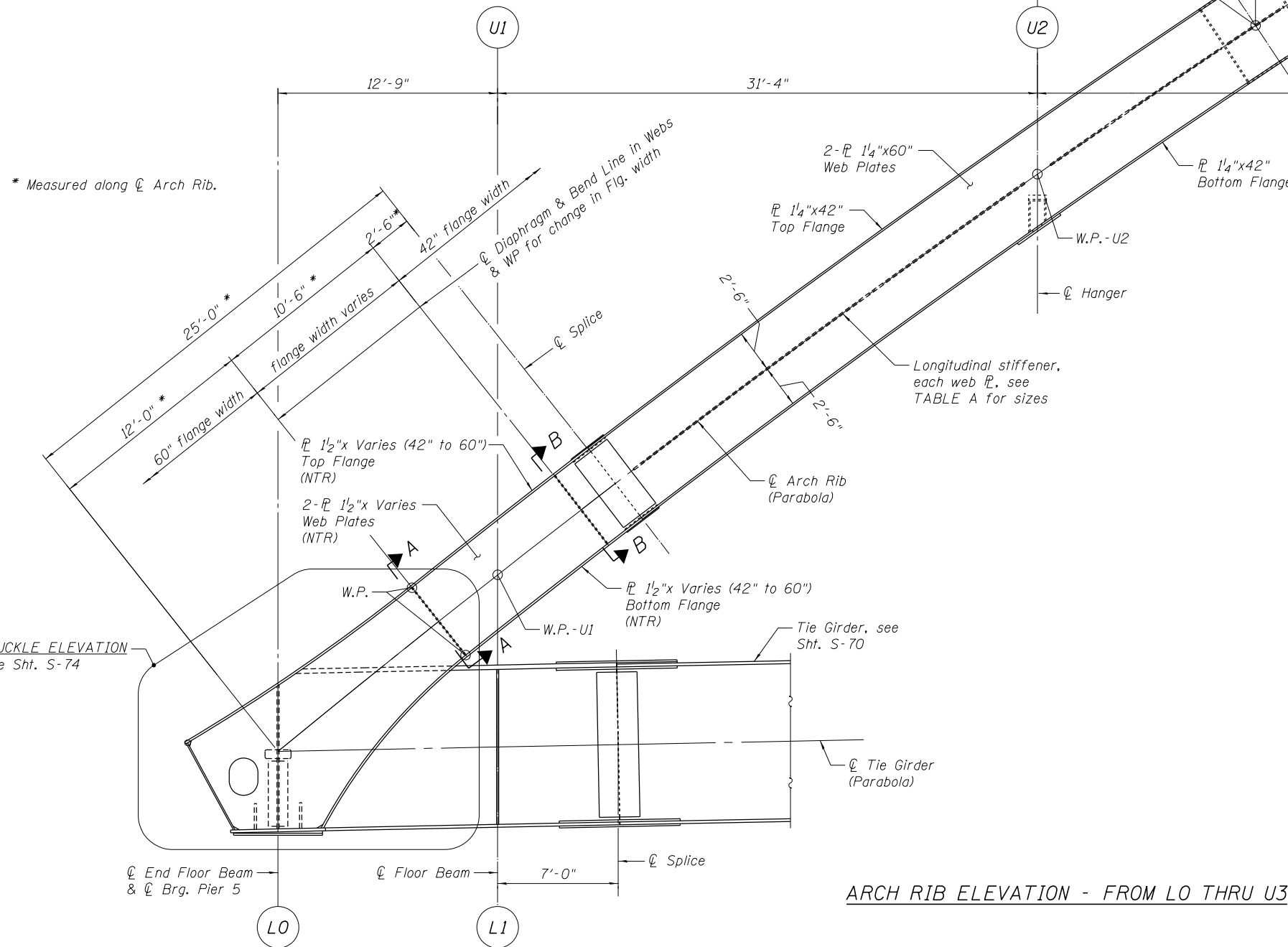
ILLINOIS FED. AID PROJECT



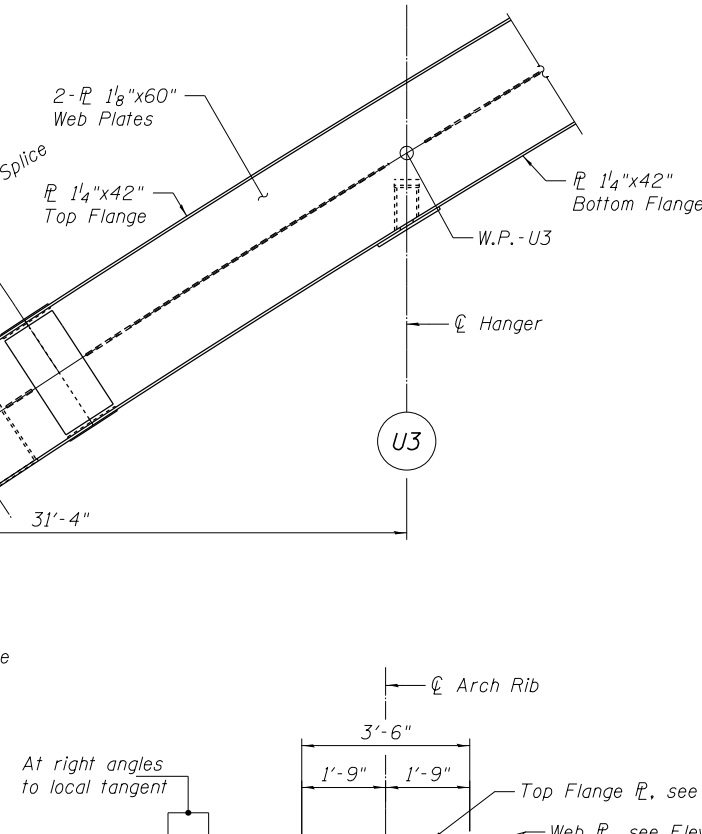
SECTION A-A



SECTION B-B



ARCH RIB ELEVATION - FROM L0 THRU U3



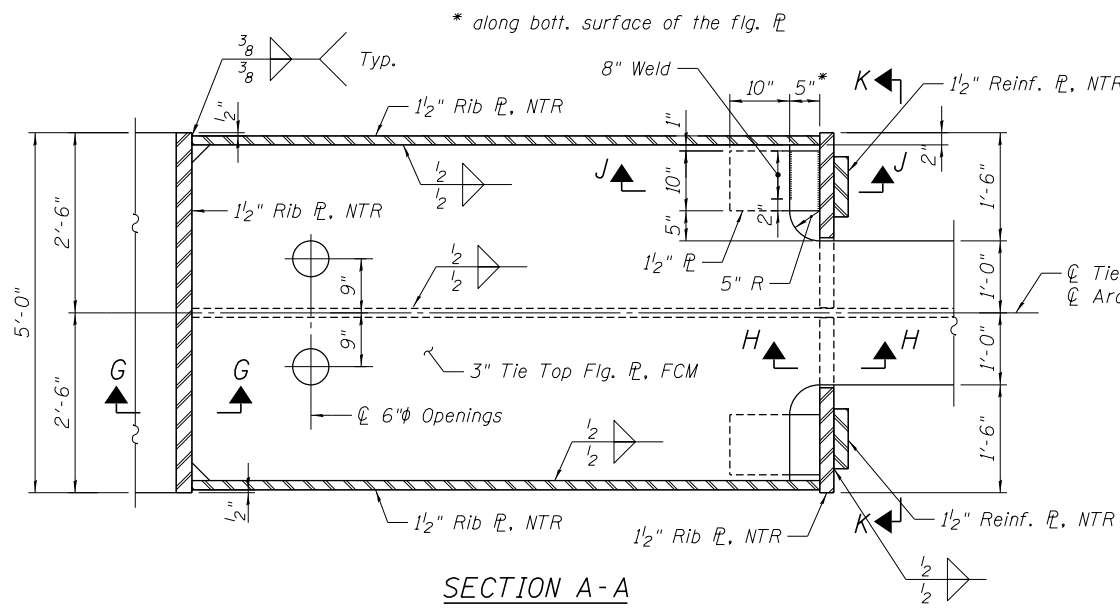
TYPICAL SECTION THRU ARCH RIB

TABLE A

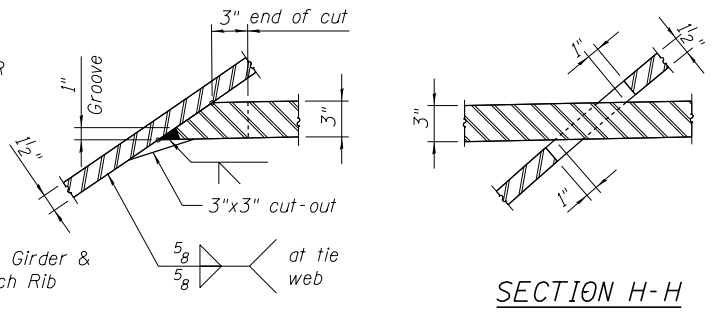
Web \bar{r} thickness	Longitudinal Stiffener
1"	$\frac{3}{4}$ " x 6" \bar{r}
$\frac{1}{8}$ "	1" x 6" \bar{r}
$\frac{1}{4}$ "	$\frac{1}{4}$ " x 6" \bar{r}

- Notes:**
- All structural steel shall be AASHTO M 270 Grade 50.
 - Load carrying components designated "NTR" shall conform of the Impact Testing Requirement, Zone 2.
 - For Hanger to Arch Rib connection details, see Sht. S-79.
 - For Rib Splice and Strut to Arch Rib connection details, see Sht. S-76.

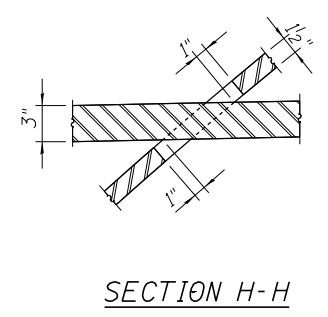
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 DESIGNED - CCE
 CHECKED - RSN
 DRAWN - HBJ
 CHECKED - RSN
 REVISED -
 REVISED -
 REVISED -
 REVISED -
 STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 ARCH RIB ELEVATION
 1 OF 2
 SHEET NO. S-72 OF 146 SHEETS
 F.A.P. RTE. SECTION COUNTY TOTAL SHEETS SHEET NO.
 745 123B-2 MORGAN 782 453
 SN 069-0525 CONTRACT NO. 72B58
 ILLINOIS FED. AID PROJECT



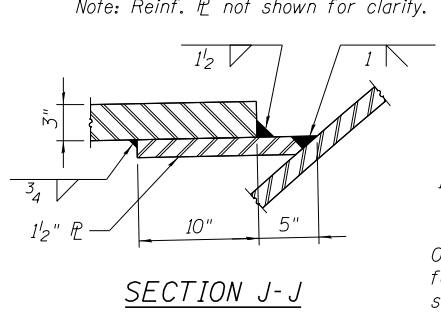
SECTION A-A



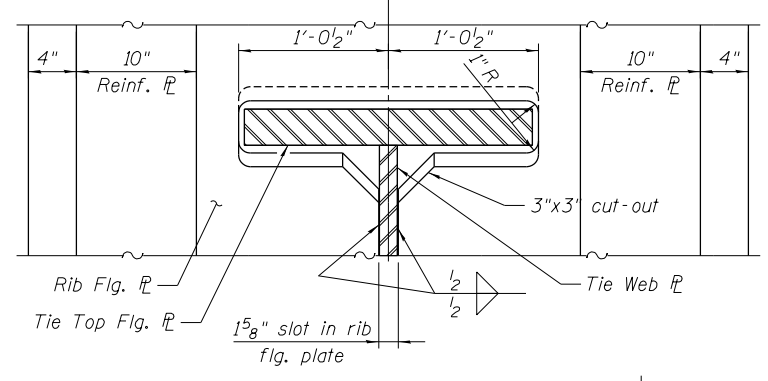
SECTION G-G



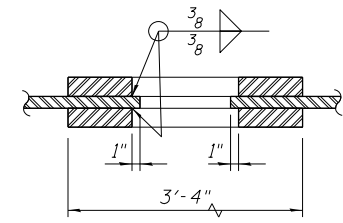
SECTION H-H



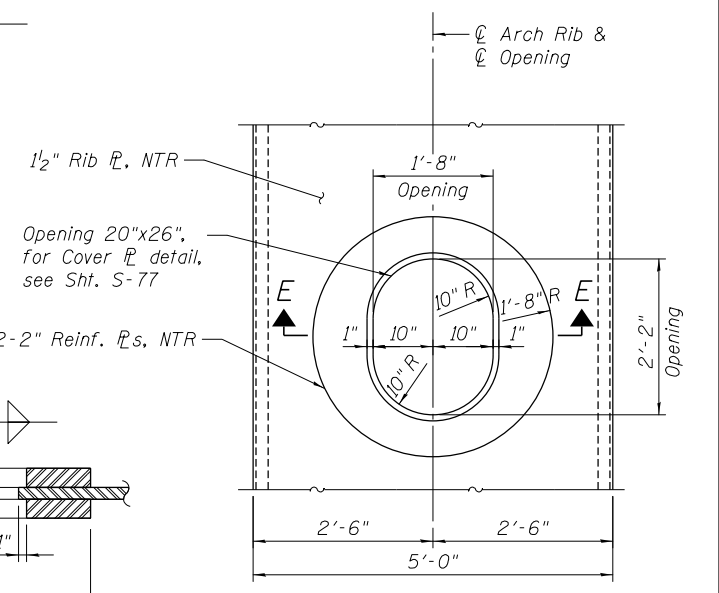
SECTION J-J



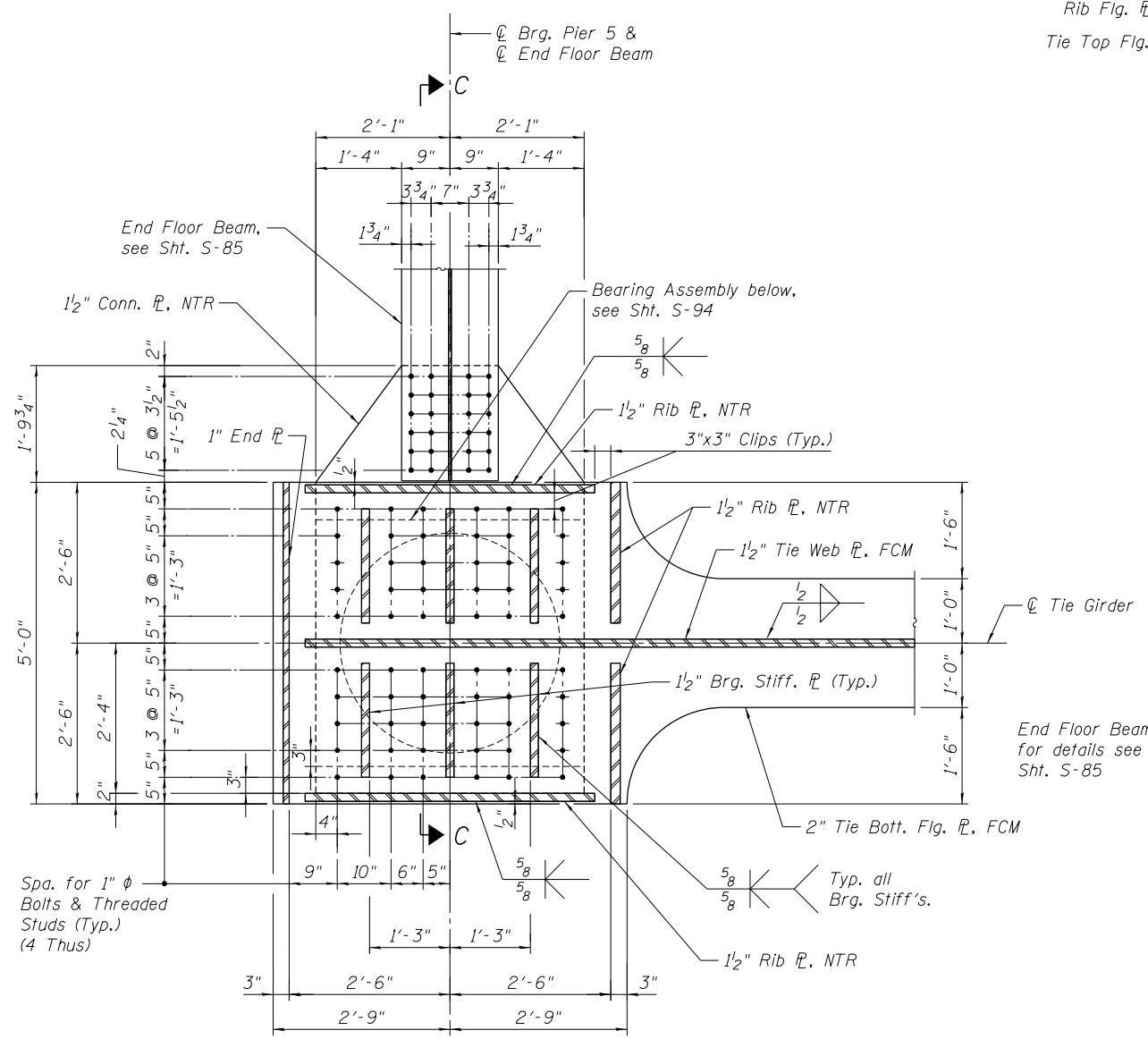
SECTION K-K



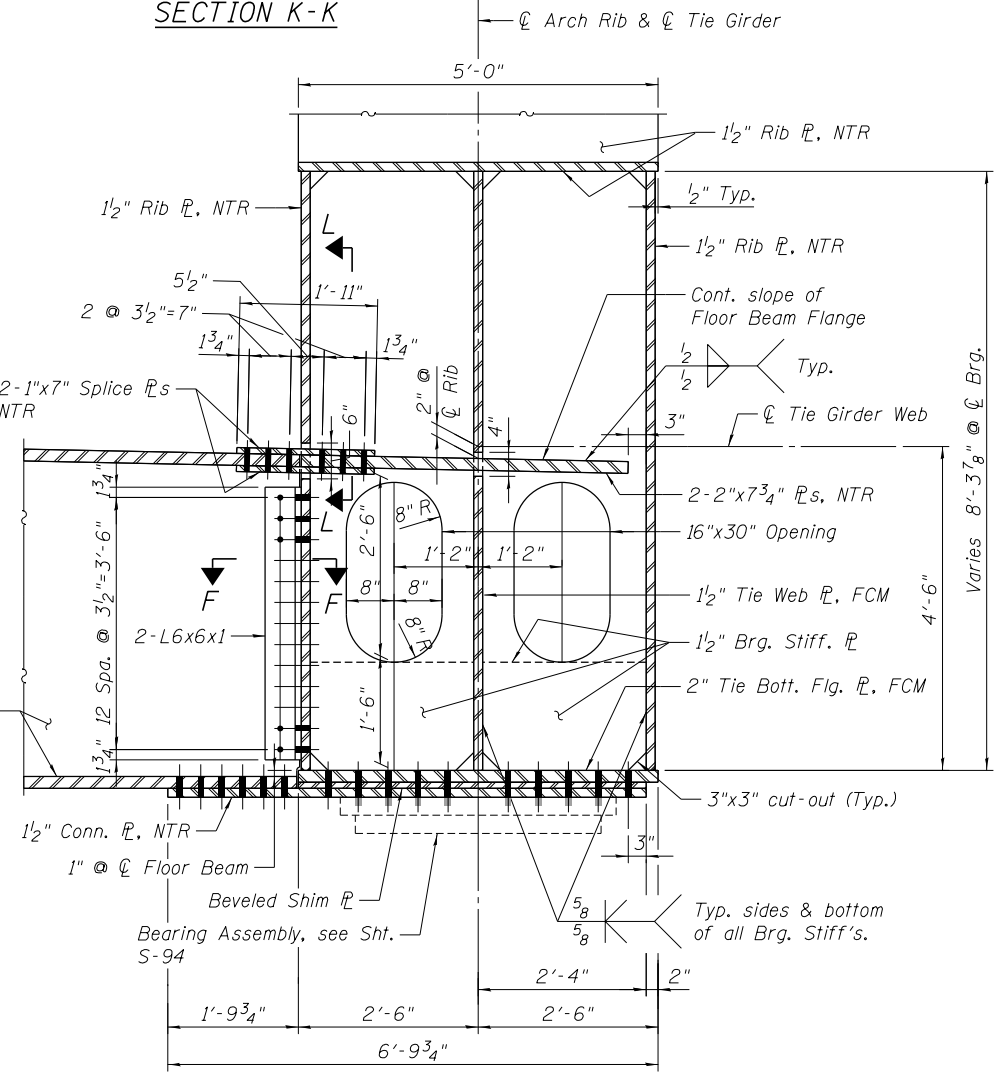
SECTION E-E



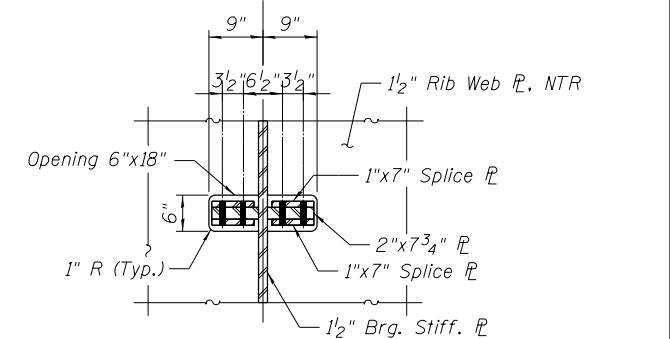
VIEW D-D



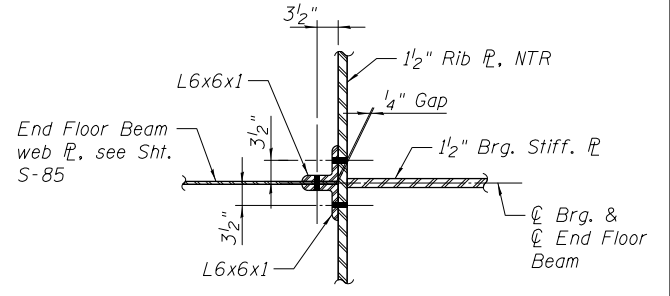
SECTION B-B



SECTION C-C



SECTION L-L



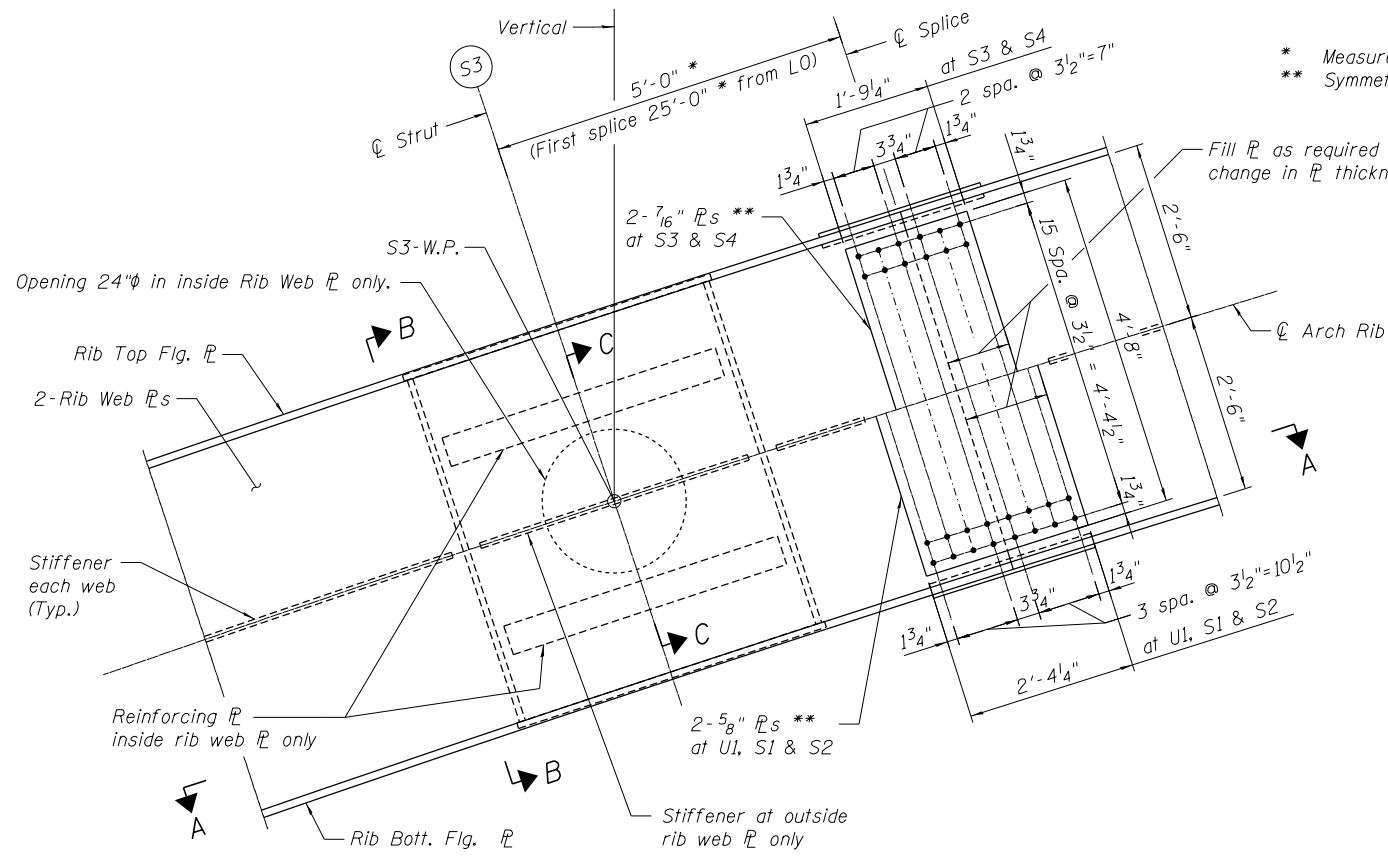
SECTION F-F

Note:
For Notes, see Sht. S-74.

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 CHECKED - RSN
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 PLOT DATE =
 REVISIONS:
 REVISED -
 REVISED -
 REVISED -
 REVISED -
 REVISED -
 REVISED -
 STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 ARCH RIB DETAILS
 2 OF 4
 SHEET NO. S-75 OF 146 SHEETS
 F.A.P. R.T.E. SECTION COUNTY TOTAL SHEETS SHEET NO.
 745 123B-2 MORGAN 782 456
 SN 069-0525 CONTRACT NO. 72B58
 ILLINOIS FED. AID PROJECT

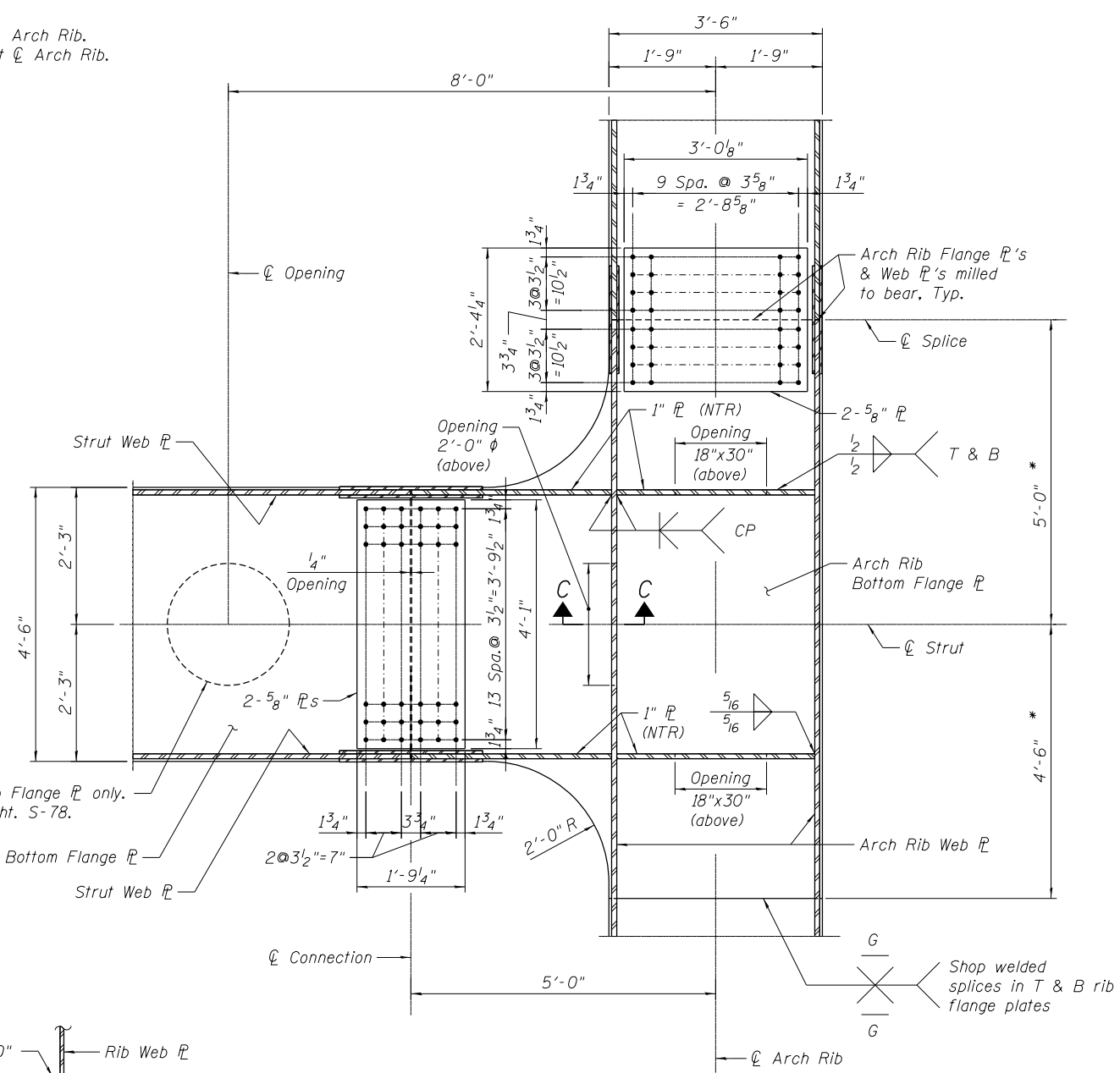
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PLOT DATE =	CHECKED - RSN	REVISED -	SHEET NO. S-75 OF 146 SHEETS			ILLINOIS FED. AID PROJECT				

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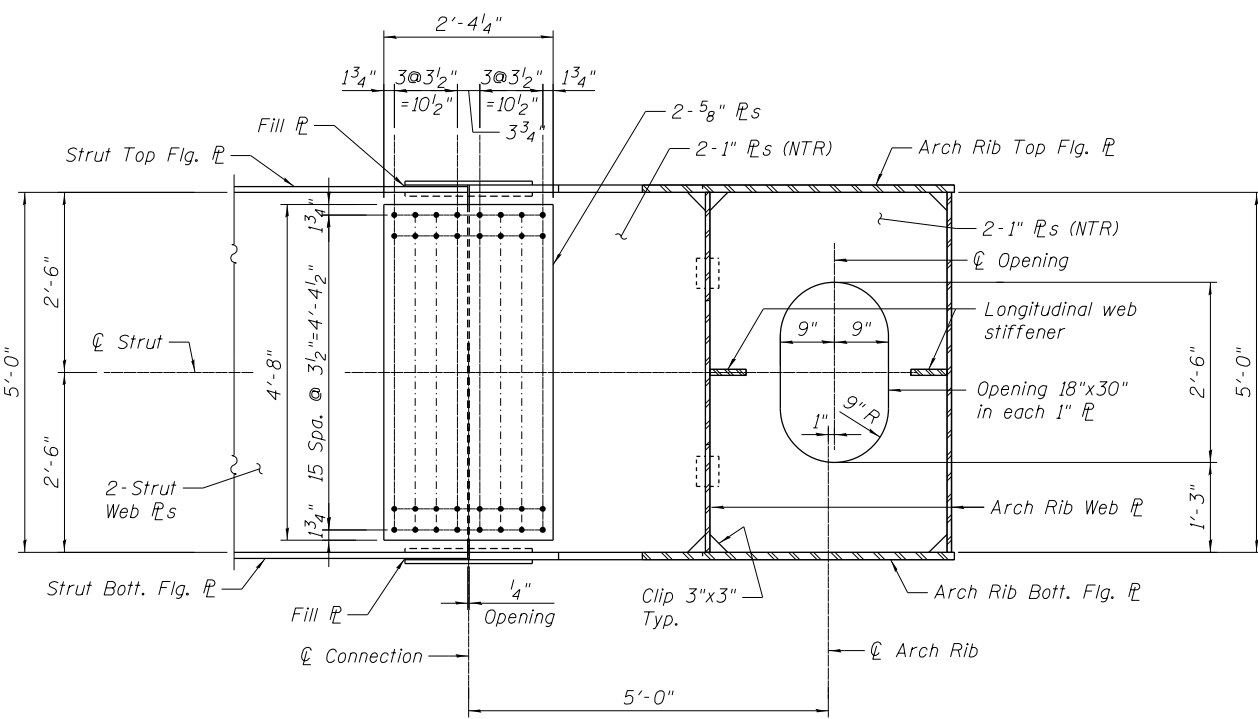


RIB SPLICE AND STRUT TO RIB CONNECTION
S3 SHOWN (except as noted)

* Measured along \varnothing Arch Rib.
 ** Symmetrical about \varnothing Arch Rib.

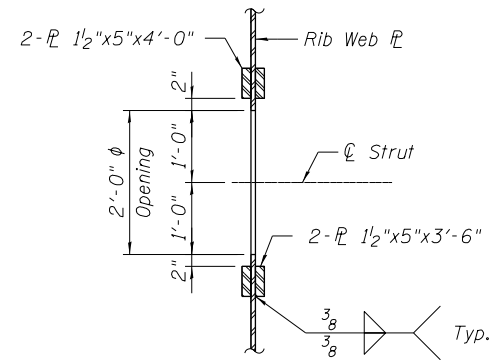


SECTION A-A



SECTION B-B

Opening 24" \varnothing in Strut Top Flange \varnothing only.
 For Cover \varnothing detail, see Sht. S-78.



SECTION C-C
 (At Inside Rib Web \varnothing)

- Notes:**
1. Bolts 1 in. \varnothing , holes 1 1/16 in. \varnothing . Faying surfaces shall be Class B.
 2. All structural steel shall be AASHTO M 270 Grade 50.
 3. Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.

FILE NAME =	USER NAME =	DESIGNED - CCE	REVISED -
DATE = 8/5/2014	CHECKED - RSN	REVISED -	
PLOT SCALE =	DRAWN - HBJ	REVISED -	
PLOT DATE =	CHECKED - RSN	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

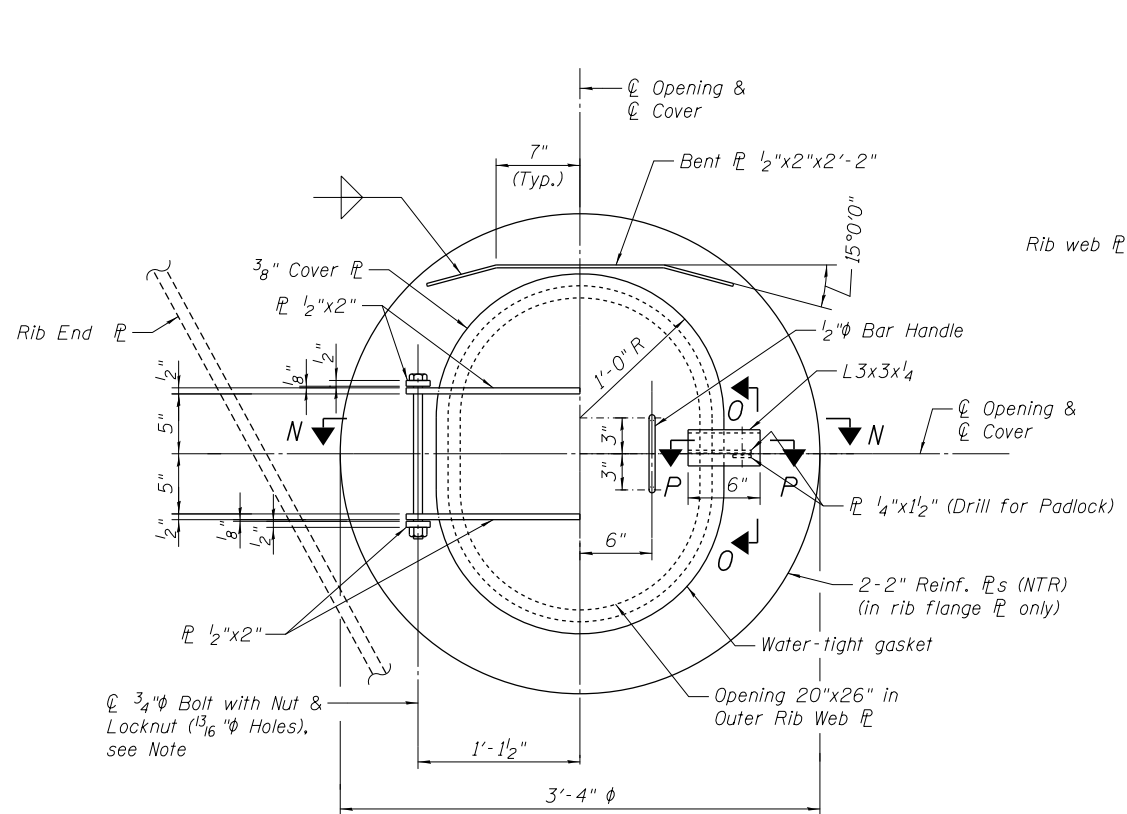
ARCH RIB DETAILS
3 OF 4

SHEET NO. S-76 OF 146 SHEETS

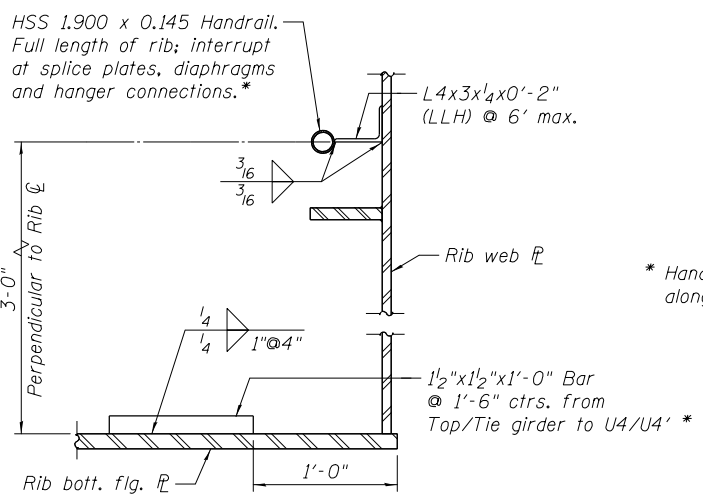
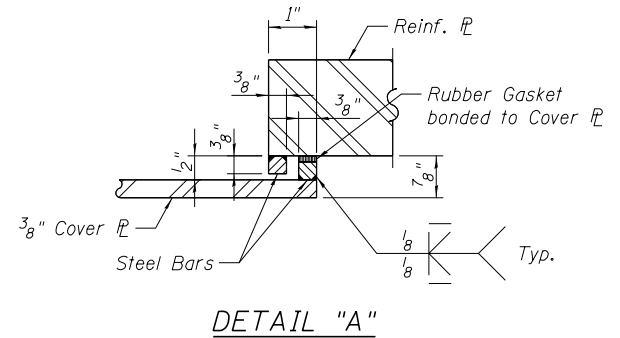
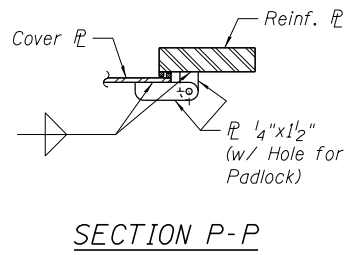
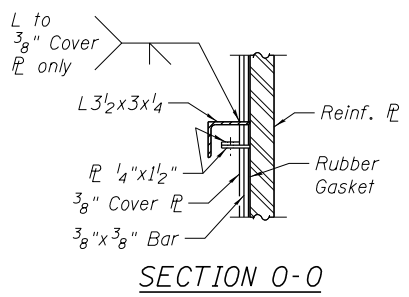
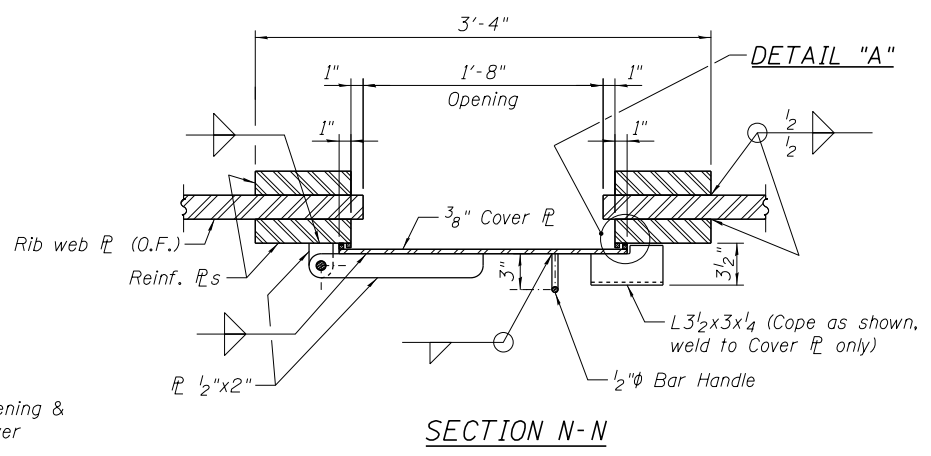
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	457
SN 069-0525		CONTRACT NO. 72B58		

ILLINOIS FED. AID PROJECT

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ARCH RIB ACCESS OPENING AND COVER PLATE DETAIL
 Note: Cost included with Furnishing and Erecting Structural Steel.



RIB HANDRAIL & TREAD DETAIL
 (Handrail and tread bars are not shown in rib elevations. Cost of handrail and treads included with Furnishing and Erecting Structural Steel.)

* Handrail and treads shall be provided along outside face of arch rib only.

- Notes:**
- The handrail shall be ASTM A500 Grade B, and painted.
 - For remainder of notes, see Sht. S-74.

FILE NAME =	USER NAME =	DESIGNED - CCE	REVISED -
	DATE - 8/5/2014	CHECKED - RSN	REVISED -
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	PLOT DATE =	CHECKED - RSN	REVISED -

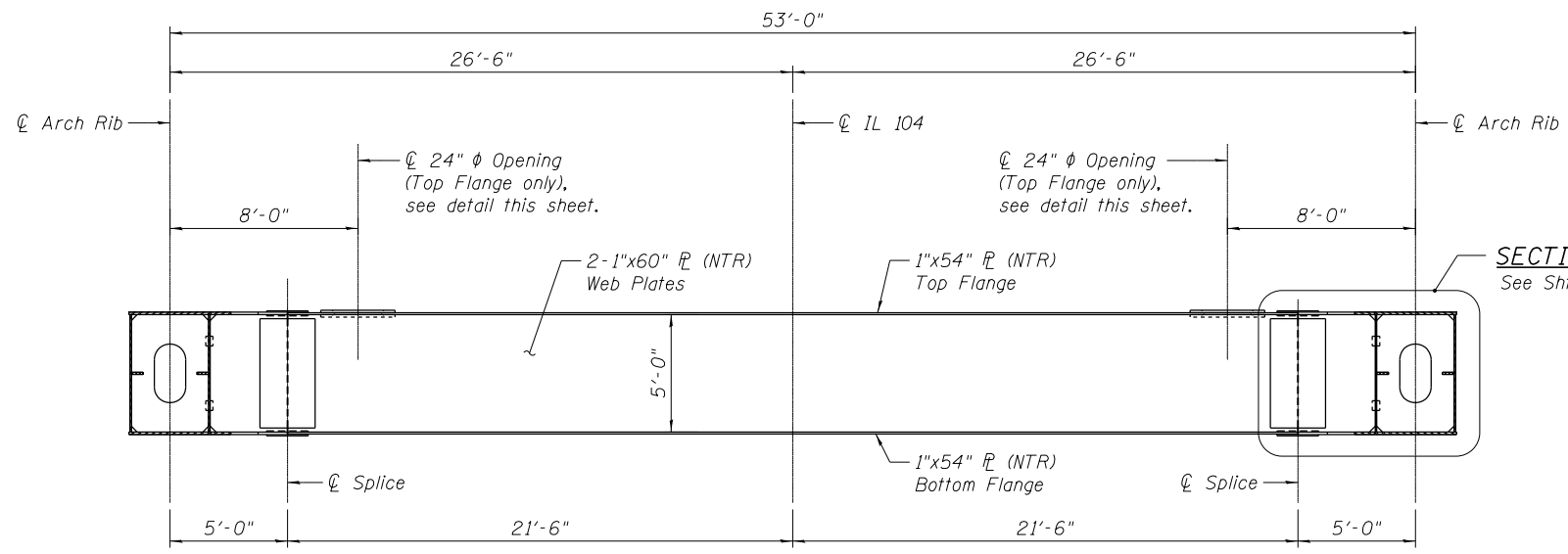
**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**ARCH RIB DETAILS
 4 OF 4**

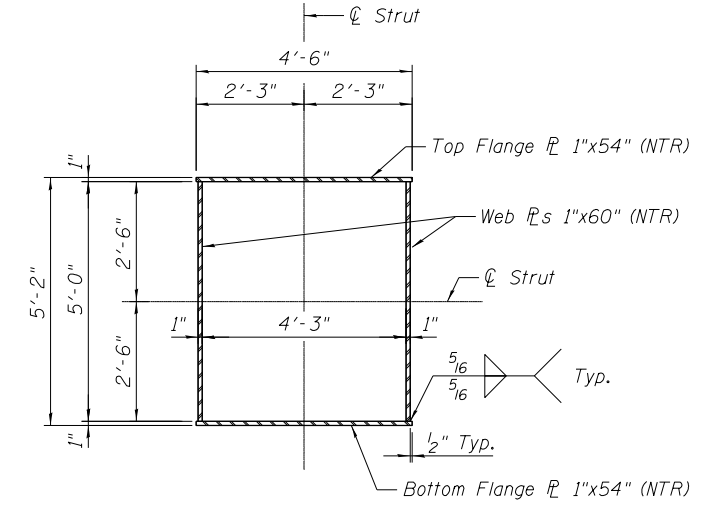
SHEET NO. S-77 OF 146 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	458
SN 069-0525		CONTRACT NO. 72B58		
ILLINOIS FED. AID PROJECT				

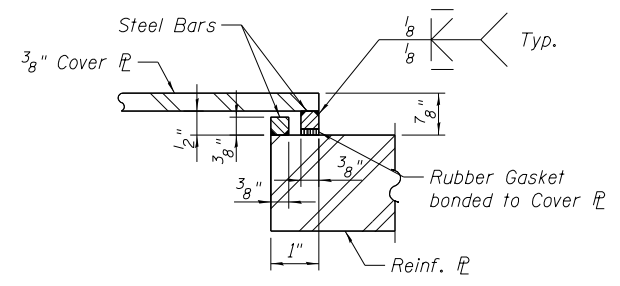
exp U.S. Services Inc.
 Chicago, IL
 BUILDINGS-EARTH & ENVIRONMENT-ENERGY
 INDUSTRIAL-INFRASTRUCTURE-SUSTAINABILITY



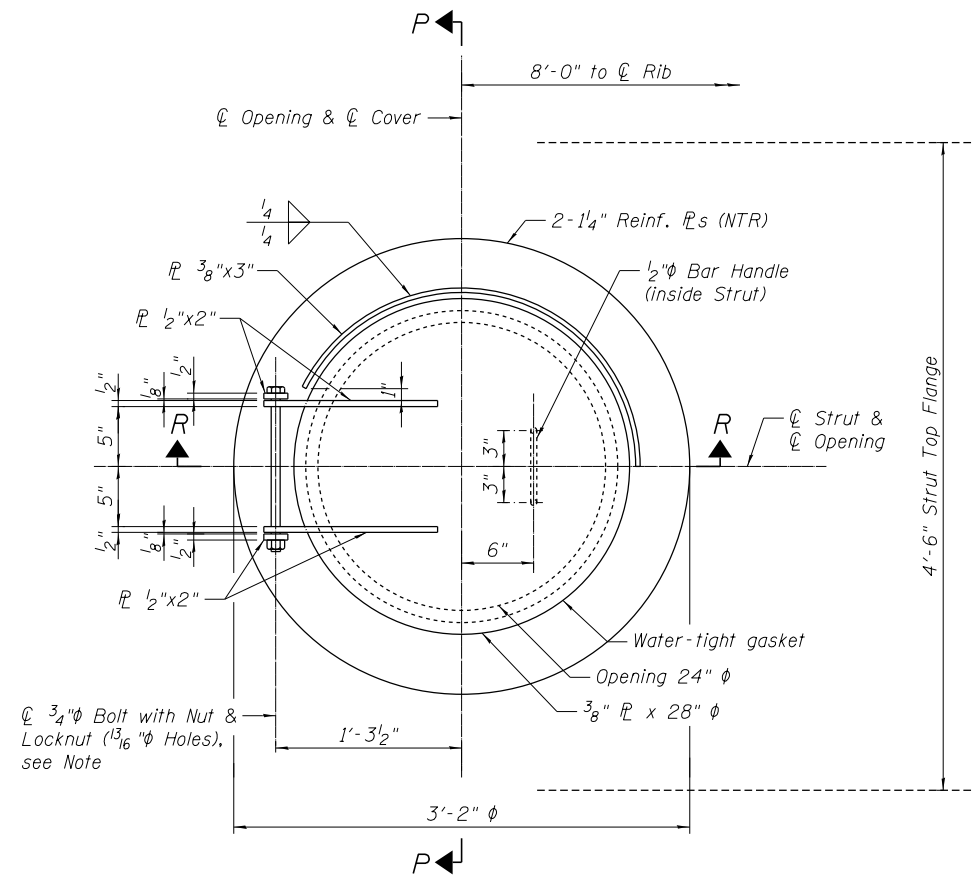
TYPICAL STRUT ELEVATION



TYPICAL SECTION THRU STRUT

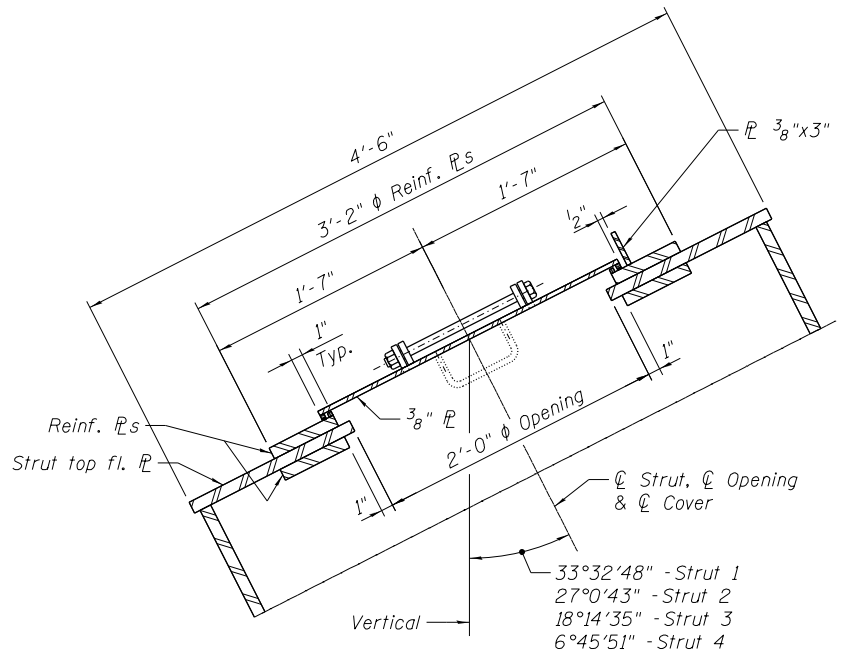


DETAIL "B"

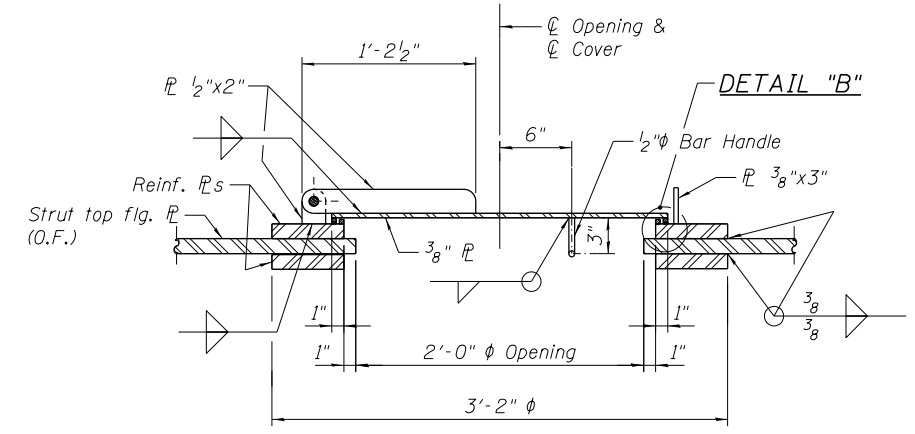


STRUT ACCESS OPENING AND COVER PLATE DETAIL

Note: Cost included with Furnishing and Erecting Structural Steel.



SECTION P-P (STRUT S2 SHOWN)



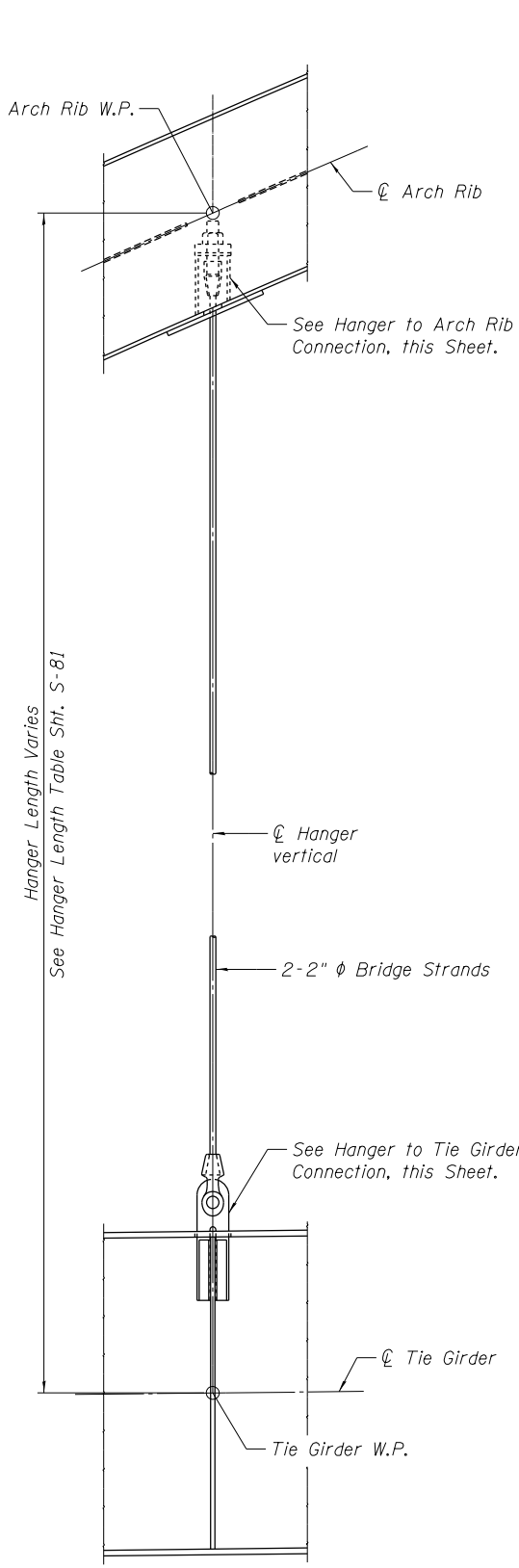
SECTION R-R

- Notes:
1. All structural steel shall be AASHTO M 270 Grade 50.
 2. Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.
 3. For Arch Rib Elevations, see Shts. S-69, S-72 & S-73.

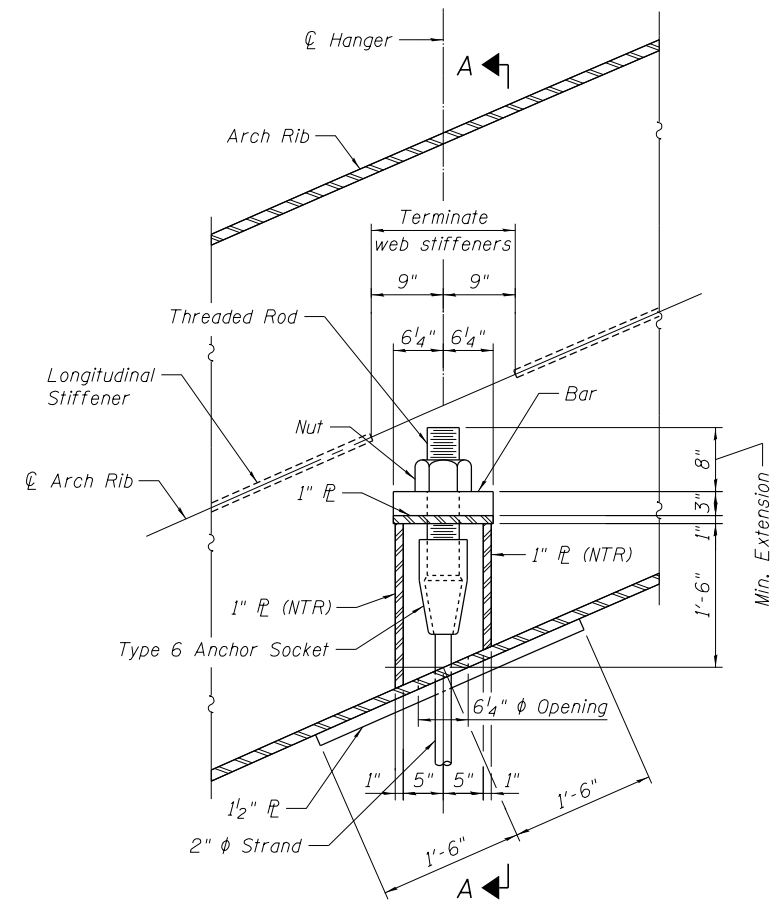
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exp U.S. Services Inc. CHICAGO, IL BUILDINGS-EARTH & ENVIRONMENT-ENERGY INDUSTRIAL-INFRASTRUCTURE-SUSTAINABILITY	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION		RIB BRACING DETAILS		F.A.P. RTE. 745	SECTION 123B-2	COUNTY MORGAN	TOTAL SHEETS 782	SHEET NO. 459
	SHEET NO. S-78 OF 146 SHEETS			SN 069-0525		CONTRACT NO. 72B58		ILLINOIS FED. AID PROJECT	

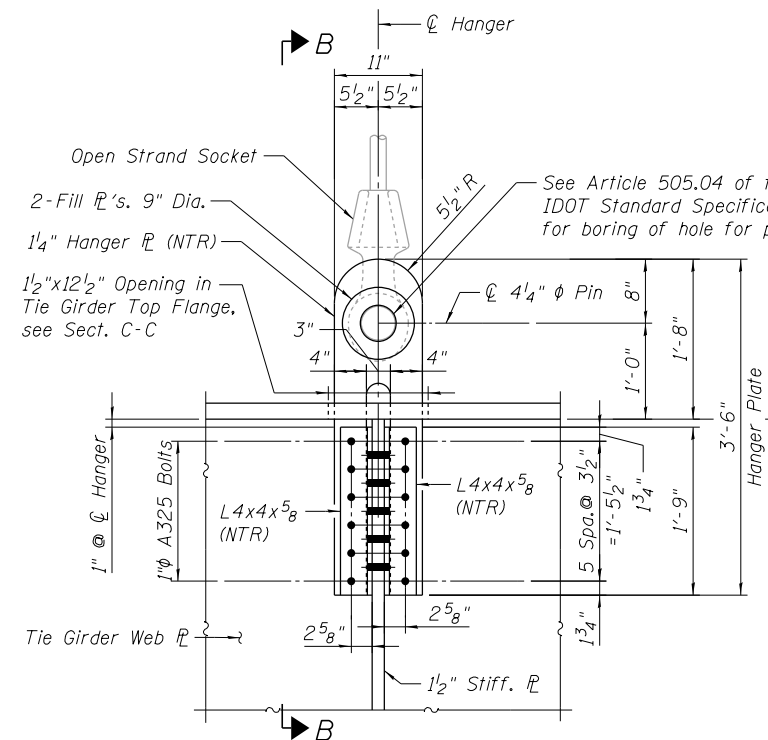
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 INDUSTRIAL-INFRASTRUCTURE-SUSTAINABILITY



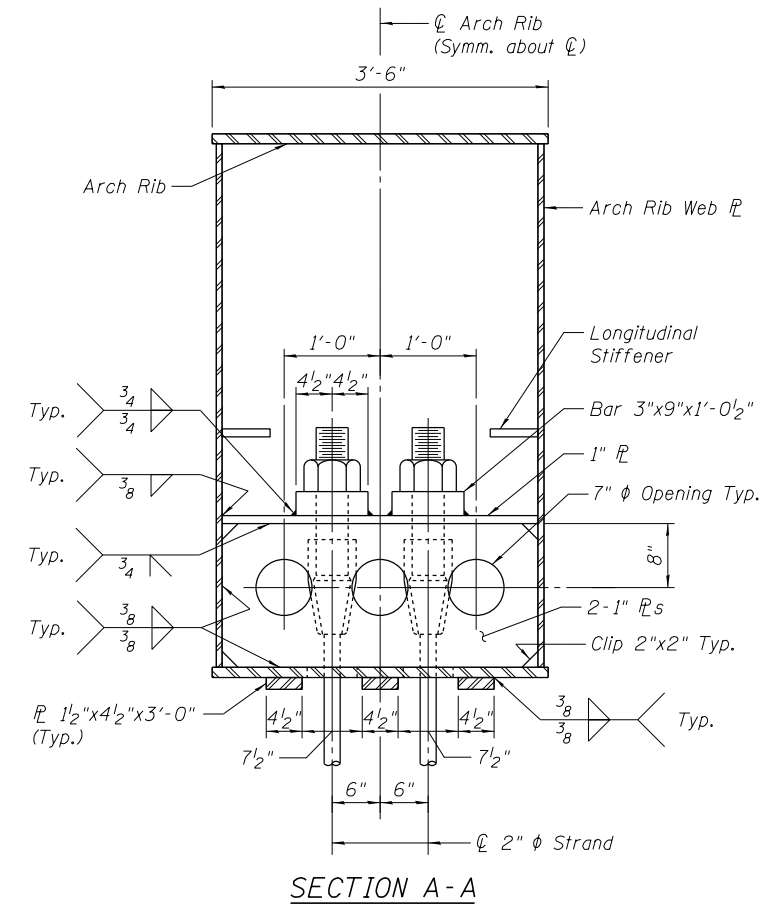
HANGER ELEVATION



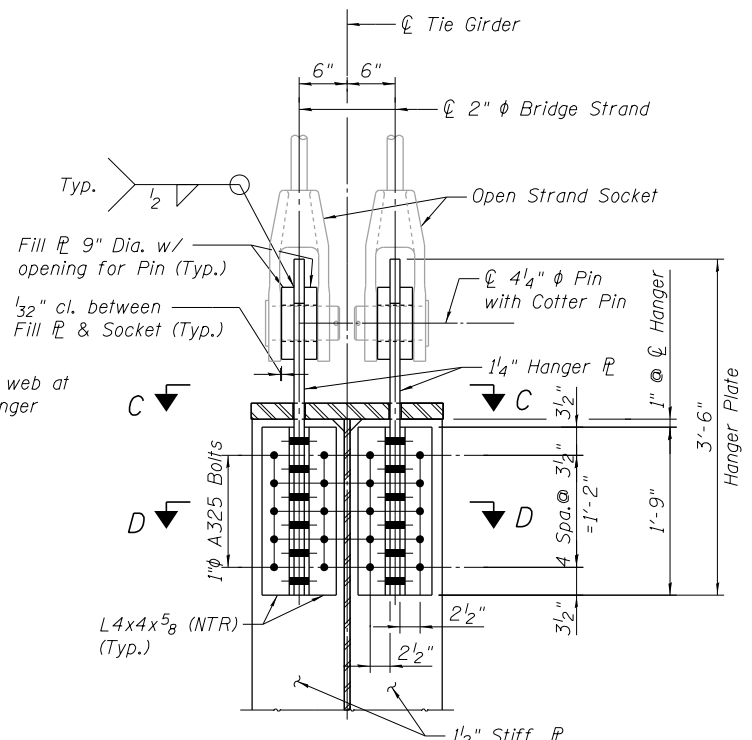
HANGER TO ARCH RIB CONNECTION
 (Section thru Arch Rib)



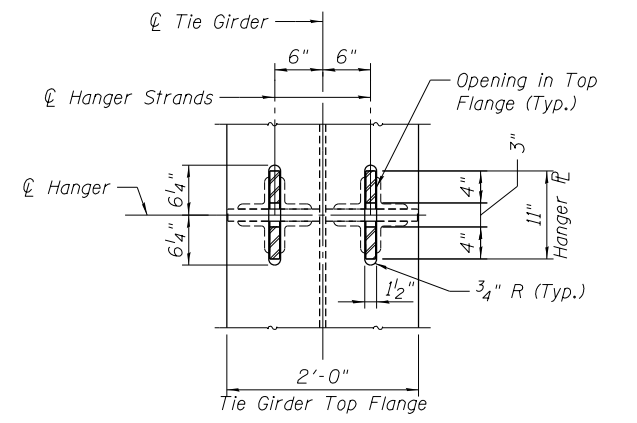
HANGER TO TIE GIRDER CONNECTION



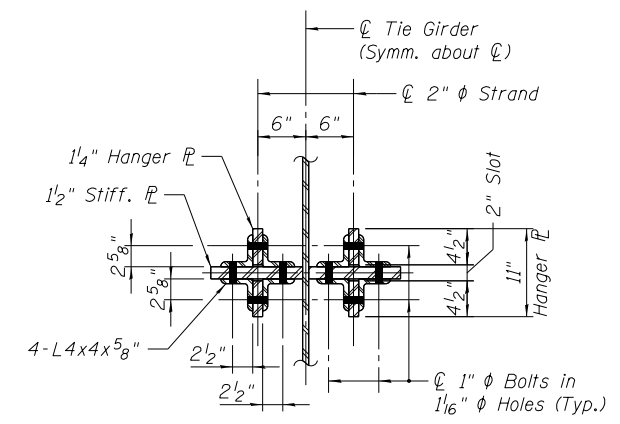
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

Notes

1. Redundancy: Hangers with one strand removed satisfy all AASHTO strength requirements with the live load on the span reduced to one lane of HL-93 at any location or two lanes of HL-93 confined to a 24-foot width at the far side of the deck.
2. All structural steel shall be AASHTO M 270 Gr 50.
3. Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.
4. Fasteners for hanger connections shall be ASTM A490, Type 1 bolts, 1/4 in. ϕ , holes 1 5/16 in. ϕ .
5. Bridge Strands shall be ASTM A586 Galvanized Structural Strand, Grade 1, Class A coating inner wires / Class C coating outer wires, Minimum Breaking Strength 576 kips.
6. Sockets and their connections to the strand shall be capable of developing the specified Minimum Breaking Strength of the strand.
7. The details and dimensions shown are based on sockets as manufactured by Clodfelter Bridge and Structures International, Inc. Sockets by other manufacturers may be used as described in the special provisions. The Contractor shall be responsible for adjusting the details and dimensions accordingly.

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

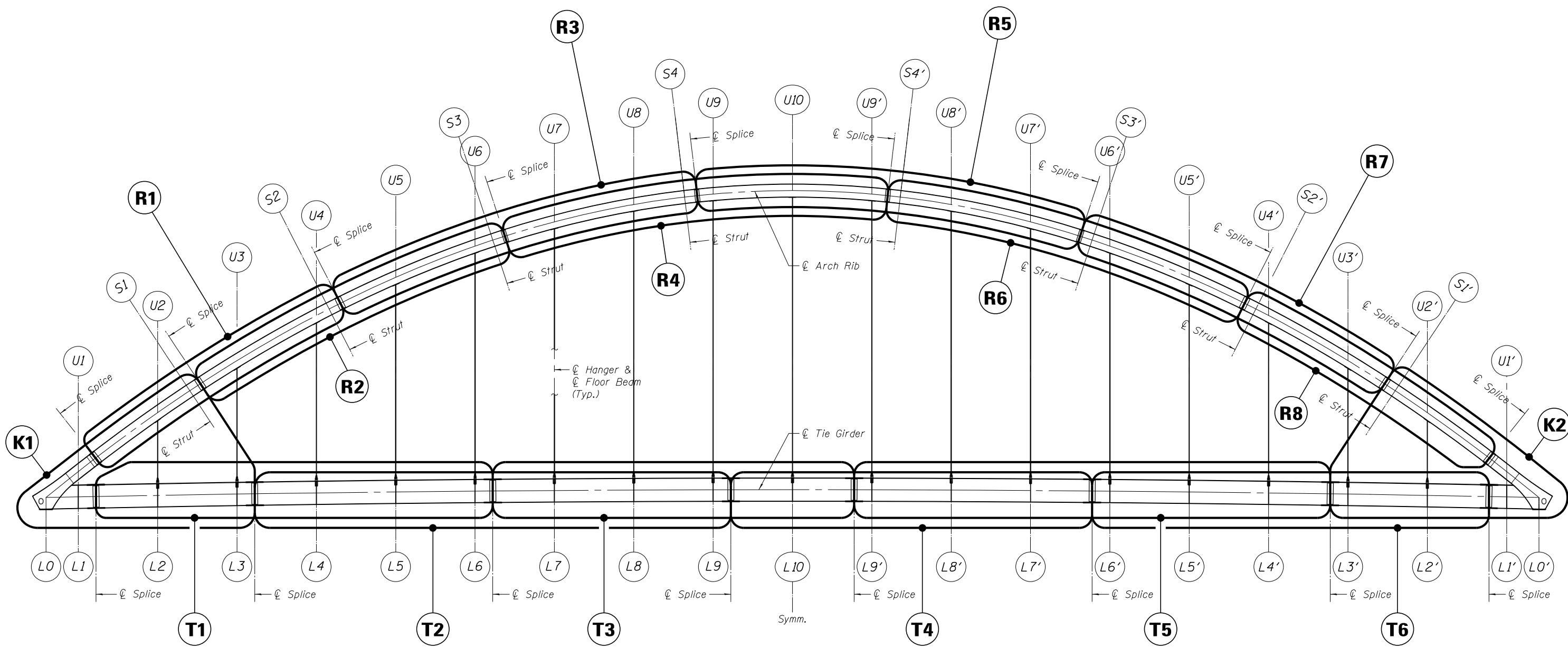
HANGER DETAILS

SHEET NO. S-79 OF 146 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	460
SN 069-0525		CONTRACT NO. 72B58		

ILLINOIS FED. AID PROJECT

\\0690525-72B58-208-STEELDETAIL.DGN, \\VAL\SNUM-72B58-001-BORDER.DGN, \\0690525-72B58-216-STEELDETAIL_SHT.DGN
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 \\0690525-72B58-208-STEELDETAIL.DGN, \\VAL\SNUM-72B58-001-BORDER.DGN, \\0690525-72B58-216-STEELDETAIL_SHT.DGN



SHOP ASSEMBLY UNITS

Notes:

Each of the 16 units indicated on this sheet (K1, K2, R1, R2, R3, R4, R5, R6, R7, R8, T1, T2, T3, T4, T5, T6) shall be assembled in the shop in flat position.
 The following shall be evaluated in each assembled unit:
 - geometry with respect to the "unstressed geometry" specified on the Arch Geometry sheet S-81;
 - fit at all connections;
 - bearing of contact surfaces at "mill to bear" connections in the rib.

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	PLOT SCALE =	DRAWN - HBJ	REVISED -
	PLOT DATE =	CHECKED - RSN	REVISED -

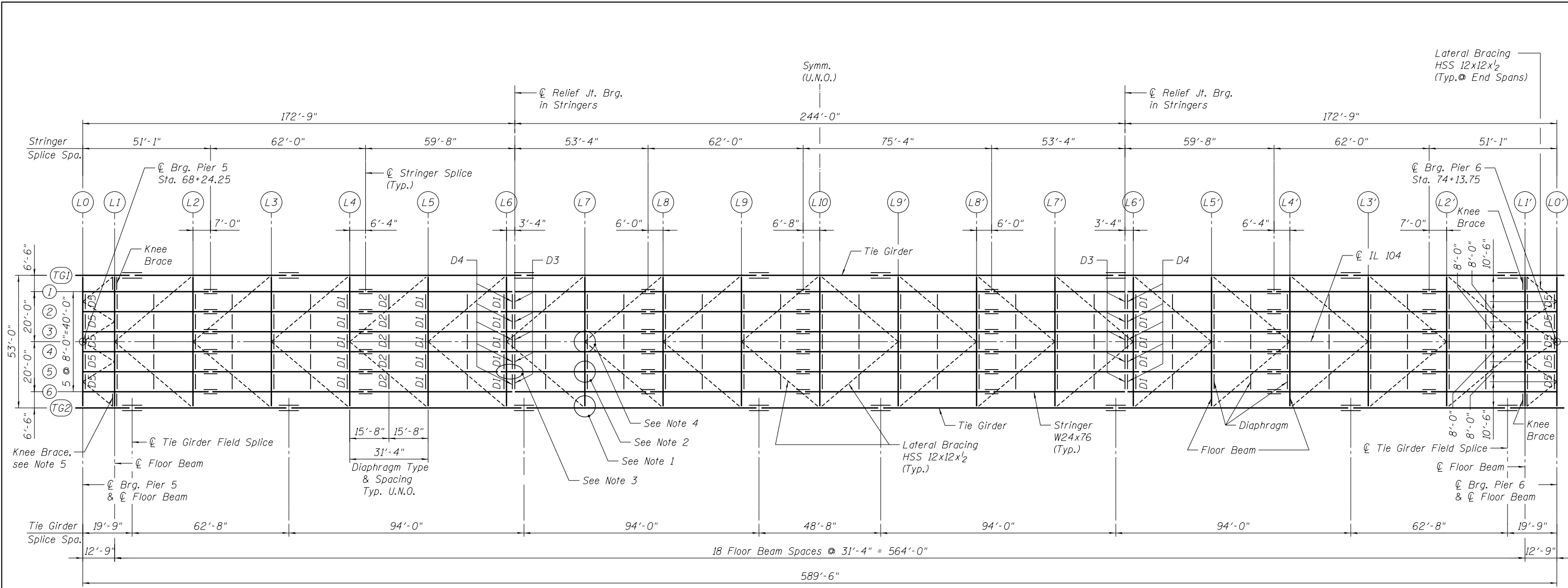
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

ARCH TEST ASSEMBLY

SHEET NO. S-82 OF 146 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	463
SN 069-0525		CONTRACT NO. 72B58		

ILLINOIS FED. AID PROJECT



FRAMING PLAN



Notes:

1. For Floor Beam to Tie Girder connection detail, see Sht. S-86.
2. For Stringer to Floor Beam connection detail, see Sht. S-89.
3. For Stringer @ Relief Joint connection detail, see Sht. S-89.
4. For Lower Lateral Bracing connection details, see Sht. S-91.
5. For Knee Brace detail, see Sht. S-86.
6. All structural steel shall be AASHTO M 270 Grade 50, unless noted otherwise.
7. Bolts 1 in. ϕ , holes $1\frac{1}{16}$ in. ϕ , unless noted otherwise. Faying surfaces shall be Class B.

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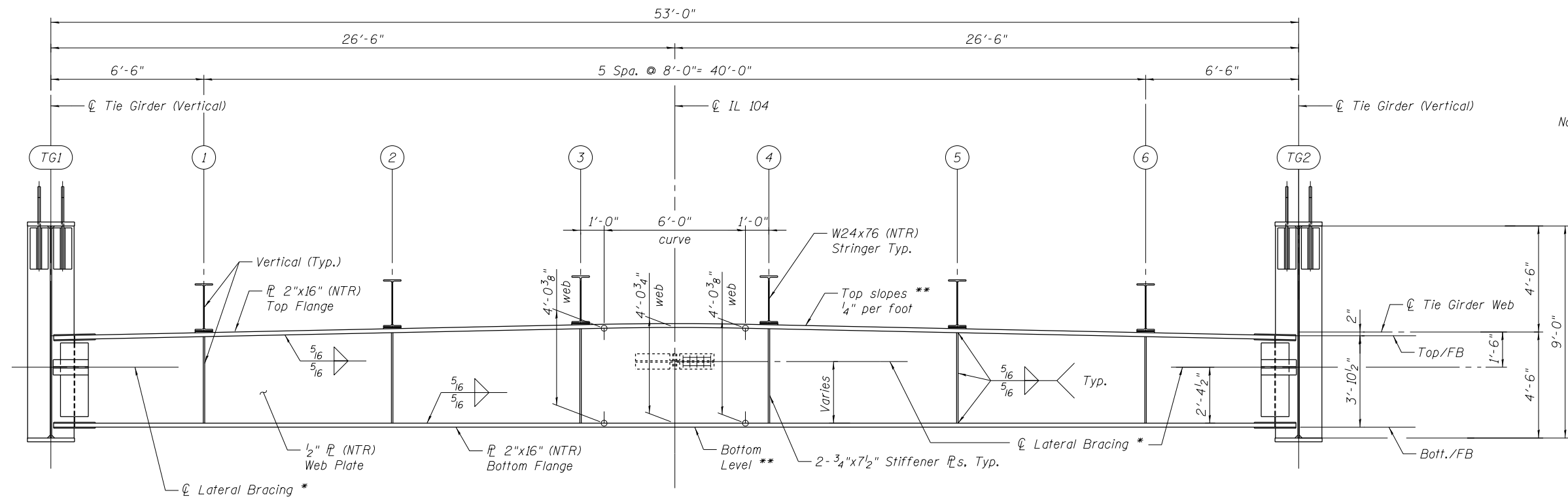
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

**STEEL FLOOR FRAMING PLAN
UNIT 2**

SHEET NO. S-83 OF 146 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	464
SN 069-0525		CONTRACT NO. 72B58		

ILLINOIS FED. AID PROJECT



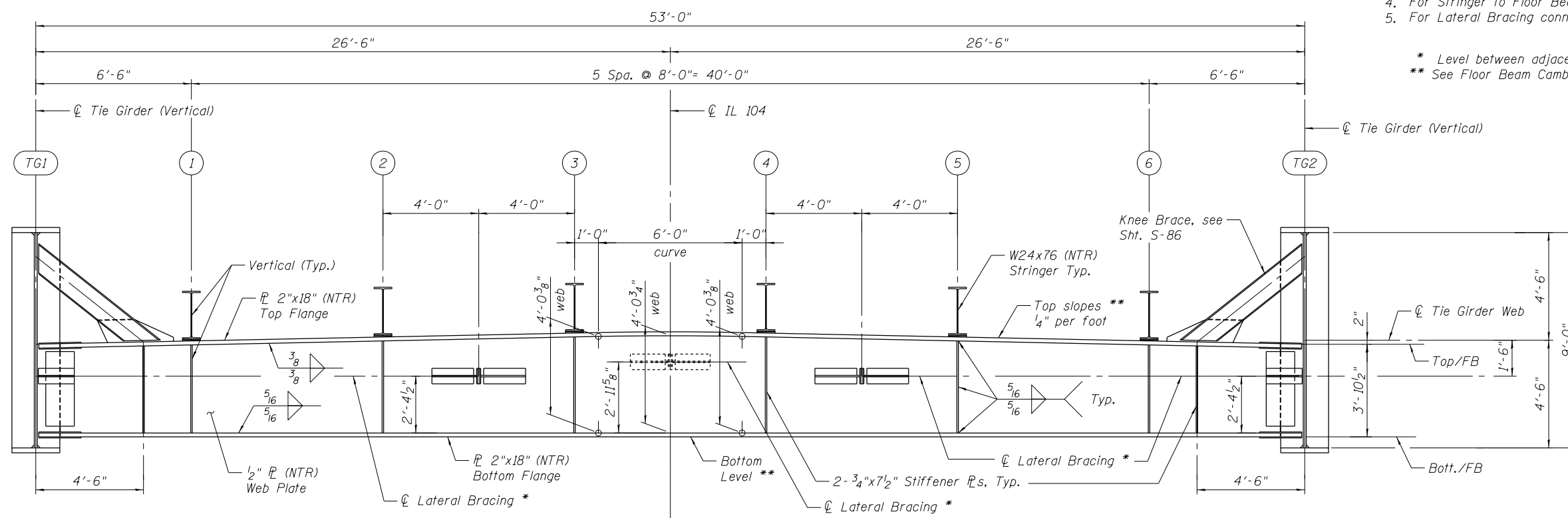
FLOOR BEAM ELEVATION - L2 THRU L10

Note: Diaphragms (DI) not shown for clarity (Typ.).

Notes:

1. All structural steel billed on this sheet shall be AASHTO M 270 Grade 50.
2. Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.
3. For Floor Beam to Tie Girder connection detail, see Sht. S-86.
4. For Stringer to Floor Beam connection detail, see Sht. S-89.
5. For Lateral Bracing connection details, see Sht. S-91.

* Level between adjacent Floor Beams.
 ** See Floor Beam Camber Diagram on Sht. S-85.



FLOOR BEAM ELEVATION - L1

\\FS-0044\AM\VALU.L.D. TRANS. 87\TRDCHI\02012341-92\STRUCT\CAD\72B58\06\0525\SHEET_06\0525-72B58-21B-S1TEELDETAIL_SHT.DGN
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STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

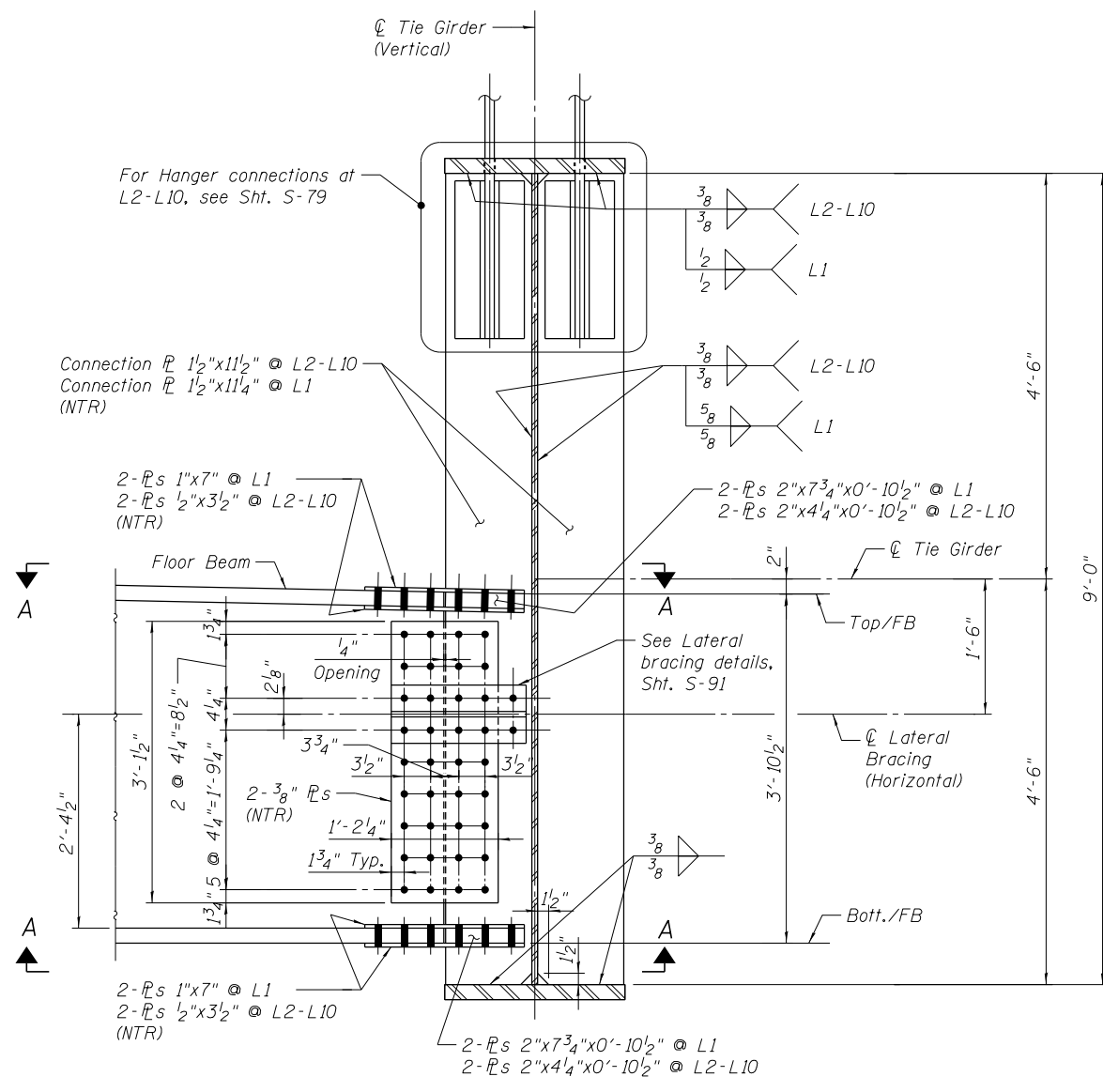
FLOOR BEAM ELEVATION
 1 OF 2

SHEET NO. S-84 OF 146 SHEETS

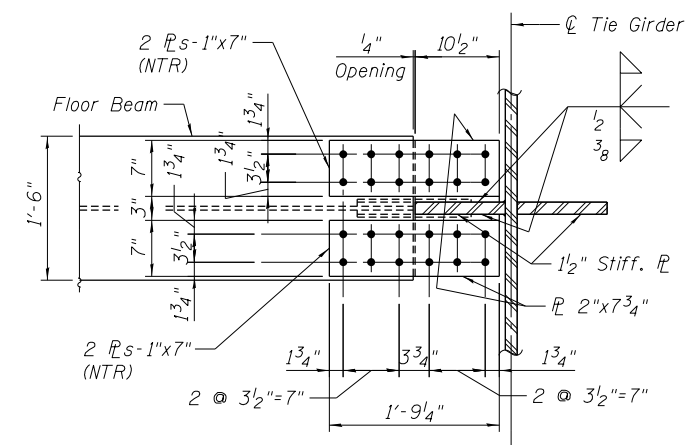
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	465
SN 069-0525		CONTRACT NO. 72B58		

ILLINOIS FED. AID PROJECT

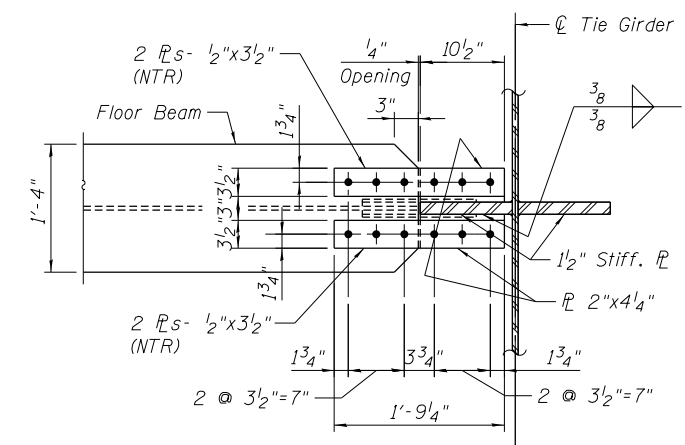
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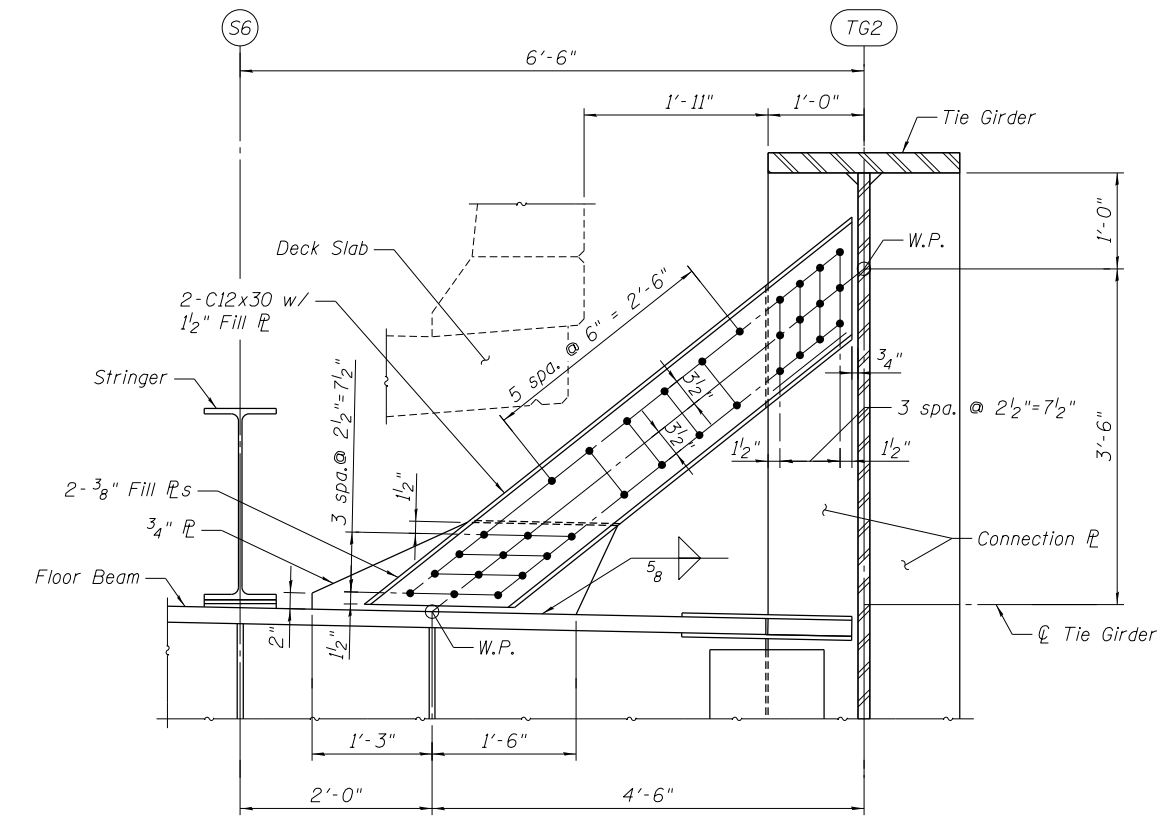
FLOOR BEAM TO TIE GIRDER CONNECTION @ L1-L10



SECTION A-A @ L1



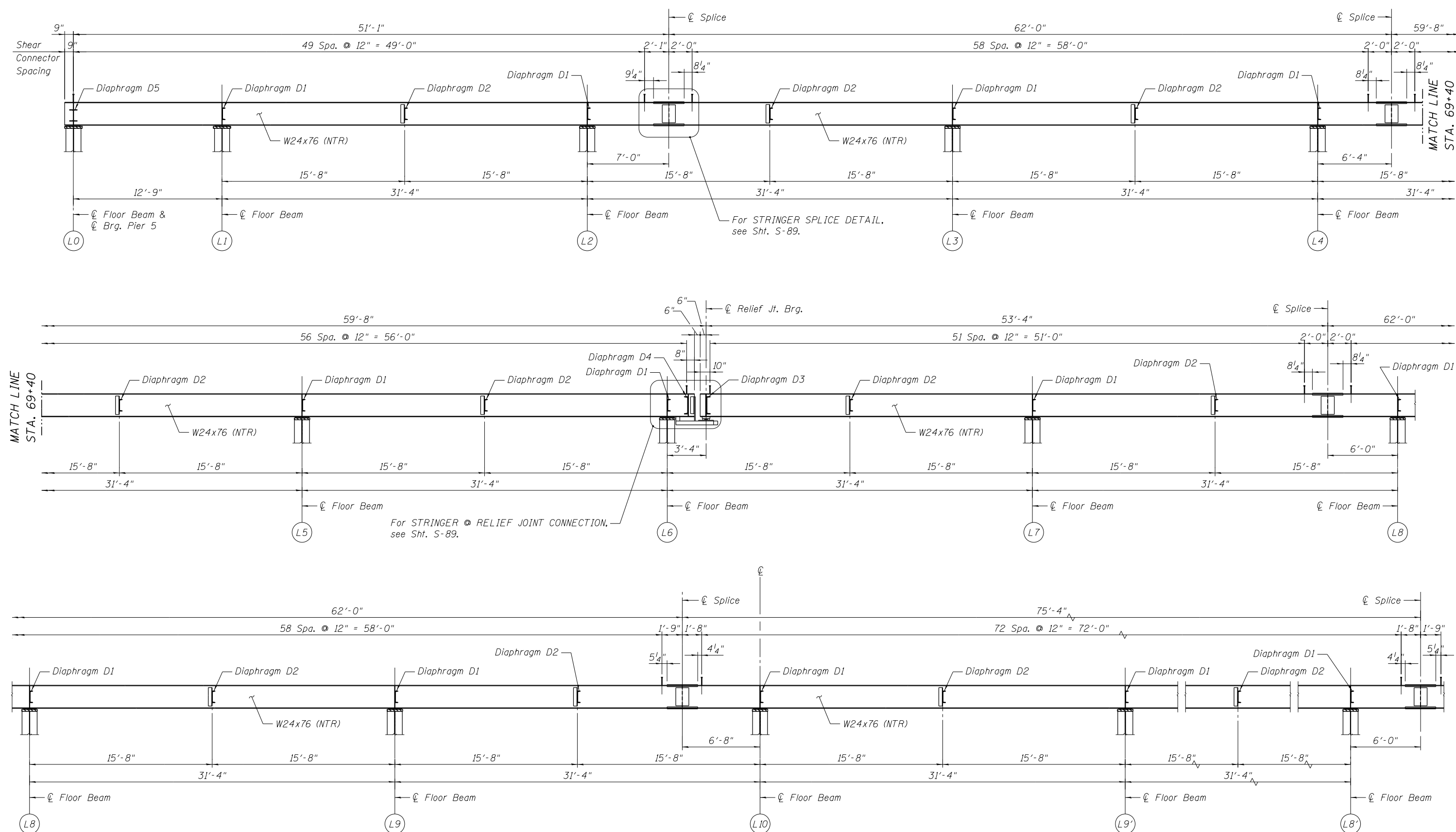
SECTION A-A @ L2-L10



KNEE BRACE AT L1

- Notes:**
- All structural steel shall be AASHTO M 270 Grade 50.
 - Bolts 1 in. ϕ , holes $1\frac{1}{16}$ in. ϕ . Faying surfaces shall be Class B.

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION				FLOOR BEAM DETAILS		F.A.P. RTE. 745		SECTION 123B-2		COUNTY MORGAN		TOTAL SHEETS 782		SHEET NO. 467	
				SHEET NO. S-86 OF 146 SHEETS		SN 069-0525		CONTRACT NO. 72B58		ILLINOIS FED. AID PROJECT					



STRINGER ELEVATION
 L0 TO L8' - SHOWN
 REMAINDER SYMM. ABOUT \bar{C} L10

- Notes:**
- All structural steel shall be AASHTO M 270 Grade 50.
 - Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.

\\FS-0044\AM\VALU\T.D. TRANS. 87\TRDCHI\02012341-02\STRUCT\CAD\72B58\06\0525\SHEET_06\0525-72B58-221-STEELDETAIL_SHT.DGN
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	PLOT DATE =	CHECKED - RSN	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

STRINGER ELEVATION

SHEET NO. S-88 OF 146 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	469
SN 069-0525		CONTRACT NO. 72B58		
ILLINOIS FED. AID PROJECT				

INTERIOR STRINGER (Non-Composite*) MOMENT TABLE																					
	L0.5	L1	L1.5	L2	L2.5	L3	L3.5	L4	L4.5	L5	L5.5	L6	L6.5	L7	L7.5	L8	L8.5	L9	L9.5	L10	
I_s	(in ⁴)	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	
S_s	(in ³)	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	
DC1	(k/')	0.903	0.903	0.903	0.903	0.903	0.903	0.903	0.903	0.903	0.903	0.903	0.903	0.903	0.903	0.903	0.903	0.903	0.903	0.903	
M _{DC1}	(k)	9	56	44	78	36	73	39	71	34	83	52	35	53	80	35	71	38	74	38	73
DC2	(k/')	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	
M _{DC2}	(k)	2	9	7	13	6	12	6	12	5	14	9	6	9	13	6	12	6	12	6	12
DW	(k/')	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	
M _{DW}	(k)	4	25	19	35	15	32	17	32	15	37	23	16	24	36	15	32	17	33	16	33
$M_L + IM$	(k)	60	124	136	126	145	129	148	131	149	140	178	93	160	132	147	130	148	130	147	130
M_u (Strength I)	(k)																				
$\phi_r M_n$	(k)																				
f_s DC1	(ksi)	0.6	3.8	3.0	5.3	2.5	5.0	2.7	4.8	2.3	5.7	3.6	2.4	3.6	5.5	2.4	4.8	2.6	5.1	2.6	5.0
f_s DC2	(ksi)	0.1	0.6	0.5	0.9	0.4	0.8	0.4	0.8	0.3	1.0	0.6	0.4	0.6	0.9	0.4	0.8	0.4	0.8	0.4	0.8
f_s DW	(ksi)	0.3	1.7	1.3	2.4	1.0	2.2	1.2	2.2	1.0	2.5	1.6	1.1	1.6	2.5	1.0	2.2	1.2	2.3	1.1	2.3
f_s (L+IM)	(ksi)	4.1	8.5	9.3	8.6	9.9	8.8	10.1	8.9	10.2	9.6	12.2	6.4	10.9	9.0	10.0	8.9	10.1	8.9	10.0	8.9
f_s (Service II)	(ksi)	6.4	17.2	16.9	19.8	16.8	19.4	17.4	19.5	16.9	21.6	21.5	12.1	20.1	20.5	16.9	19.4	17.3	19.7	17.1	19.6
0.80R _n F _{yf}	(ksi)	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
f_s (Total)(Strength I)	(ksi)	8.5	22.9	22.6	26.4	22.4	25.9	23.3	26.0	22.7	28.8	28.8	16.3	26.9	27.4	22.6	25.9	23.2	26.3	23.0	26.2
$\phi_r F_n$	(ksi)	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0

* Stringers are designed as non-composite; shear connectors are provided for overall structural integrity and improved diaphragm action of concrete deck.

INTERIOR STRINGER REACTION TABLE							
	L0	L1	L2 & L5	L3 & L4	L6	L7	L8, L9, & L10
R _{DC1}	(k)	2	24	32	28	26	28
R _{DC2}	(k)	0	4	5	5	4	5
R _{DW}	(k)	1	10	14	12	11	13
$R_L + IM$	(k)	48	95	88	88	80	86
R _{Total}	(k)	51	133	140	133	121	134

FLOOR BEAM L2 MOMENT TABLE **		
	0.5 Span	
I_s	(in ⁴)	44866
S_s	(in ³)	1721
DC1	(k/')	3.597
M _{DC1}	(k)	1263
DC2	(k/')	0.604
M _{DC2}	(k)	212
DW	(k/')	1.609
M _{DW}	(k)	565
$M_L + IM$	(k)	2244
M_u (Strength I)	(k)	
$\phi_r M_n$	(k)	
f_s DC1	(ksi)	8.8
f_s DC2	(ksi)	1.5
f_s DW	(ksi)	3.9
f_s (L+IM)	(ksi)	15.6
f_s (Service II)	(ksi)	34.6
0.80R _n F _{yf}	(ksi)	40.0
f_s (Total)(Strength I)	(ksi)	46.1
$\phi_r F_n$	(ksi)	50.0

FLOOR BEAM L2 REACTION TABLE **		
	Q TIE GIRDER	
R _{DC1}	(k)	87
R _{DC2}	(k)	15
R _{DW}	(k)	40
$R_L + IM$	(k)	123
R _{Total}	(k)	265

** Floor Beam L2 receives maximum gravity load. See Interior Stringer Reaction Table.

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).

$I(n), S_c(n)$: 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).

$I(3n), S_c(3n)$: 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).

$I(cr), S_c(cr)$: 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 $M_L + IM$

$\phi_r M_n$: 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 $M_L + IM$ / S_{c(cr)} as applicable.

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

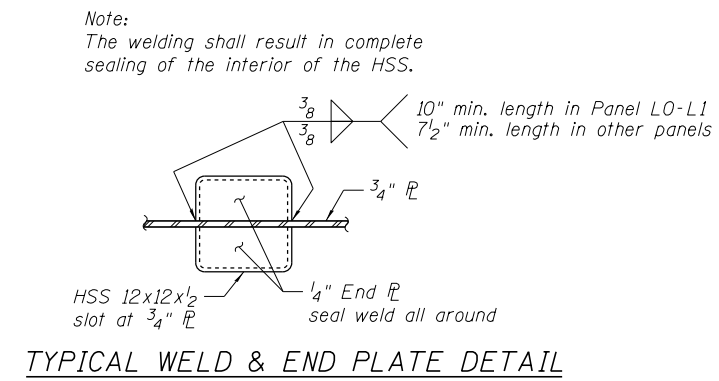
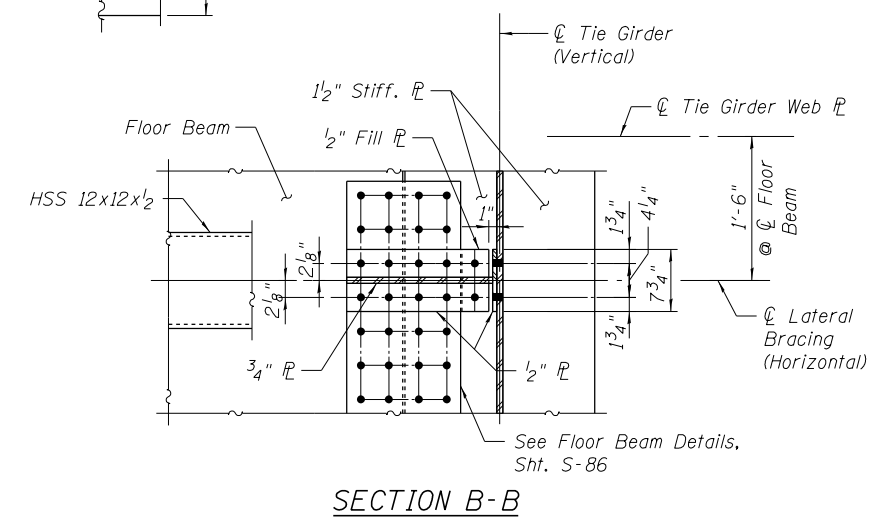
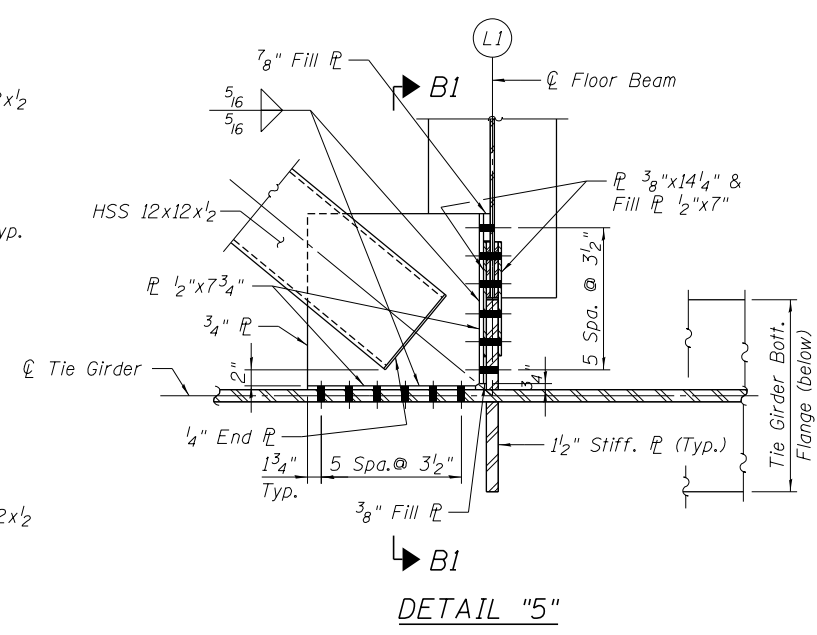
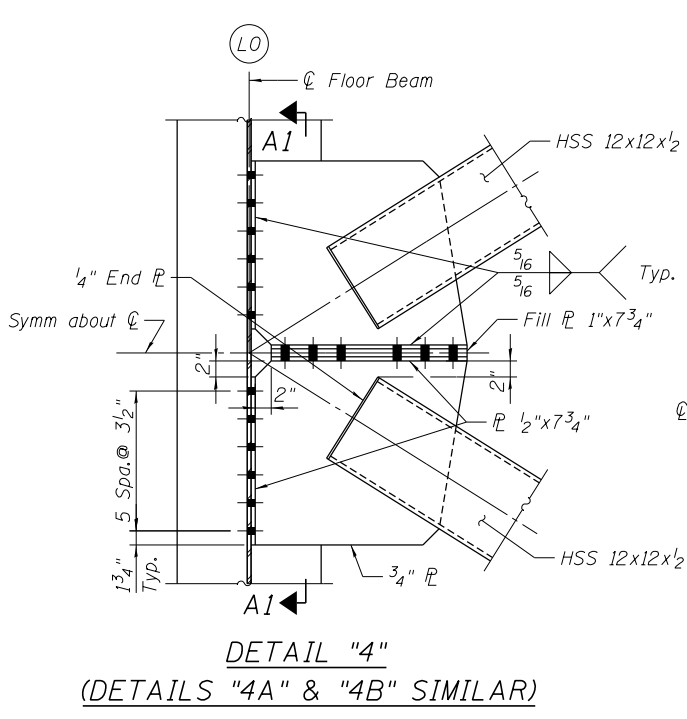
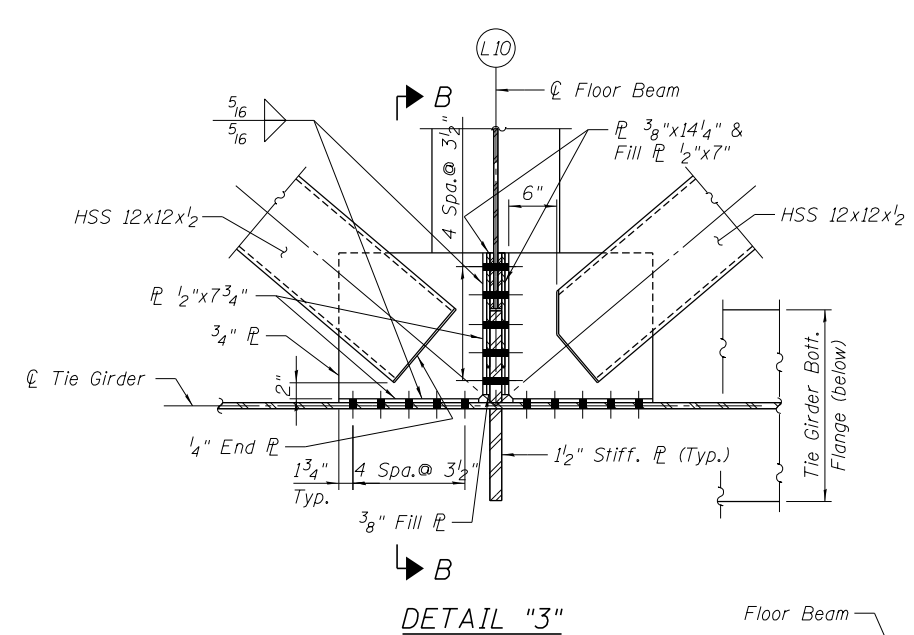
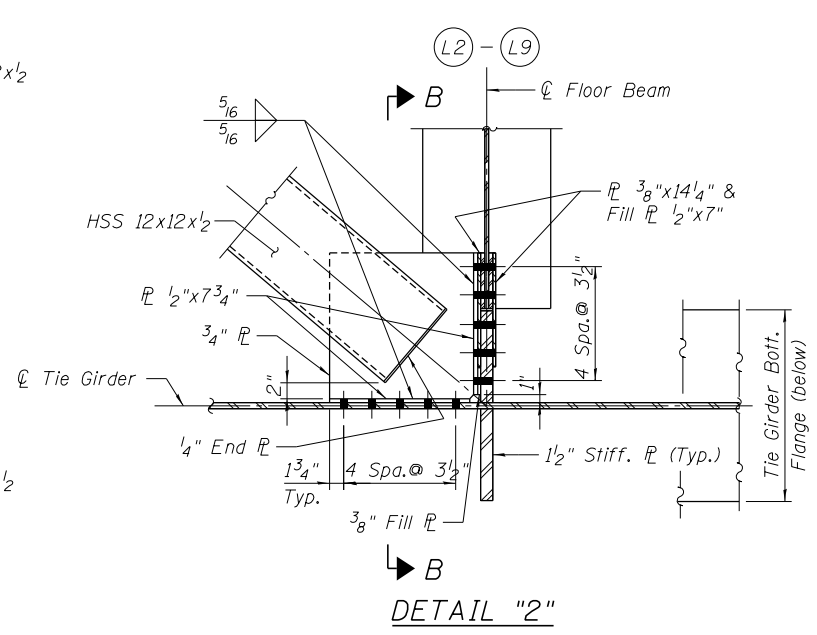
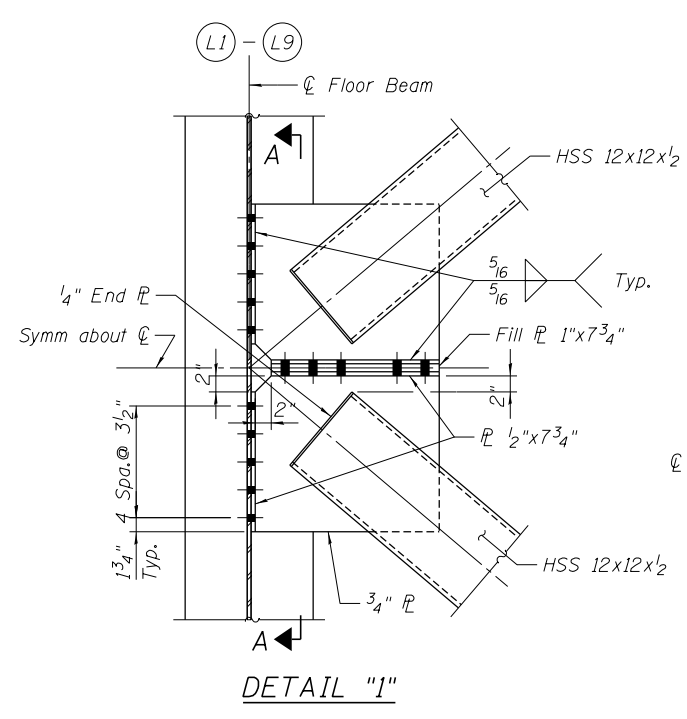
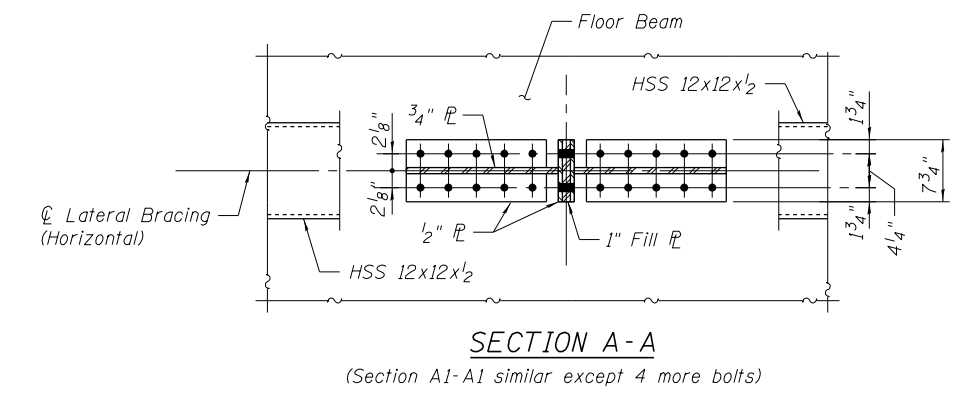
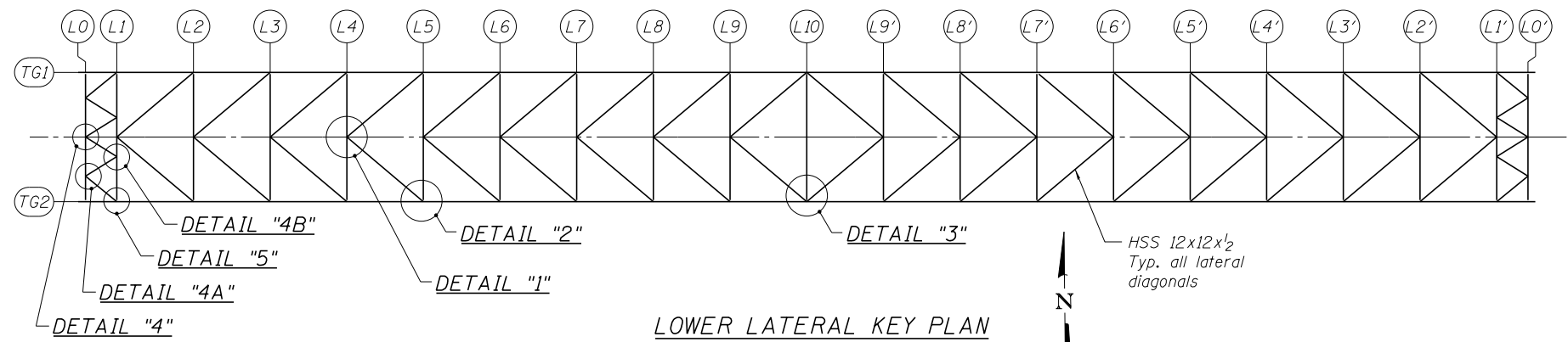
0.80R_nF_{yf}: Non-composite stress capacity for Service II loading according to Article 6.10.4.2 (ksi).

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

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

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

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 Chicago, IL
 BUILDINGS-EARTH & ENVIRONMENT-ENERGY
 INDUSTRIAL-INFRASTRUCTURE-SUSTAINABILITY
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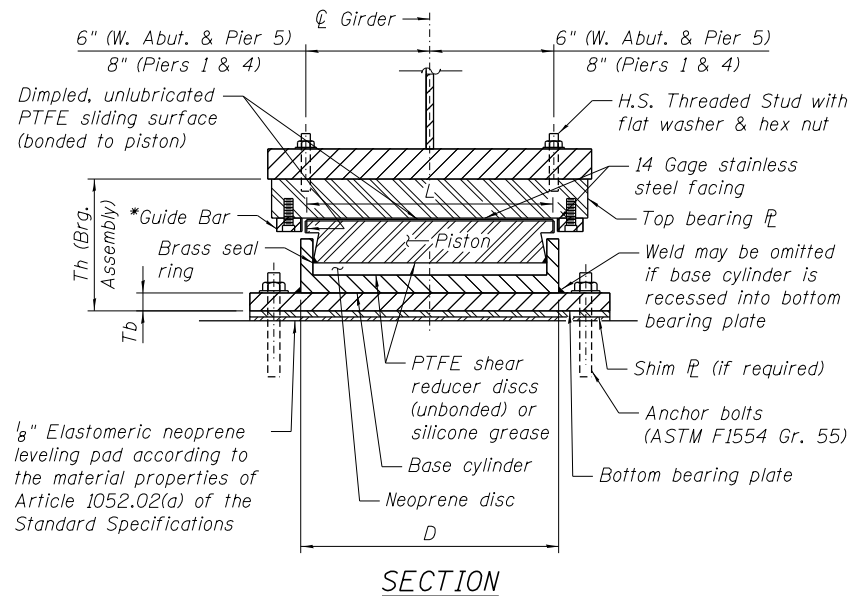
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LOWER LATERAL BRACING DETAILS

SHEET NO. S-91 OF 146 SHEETS

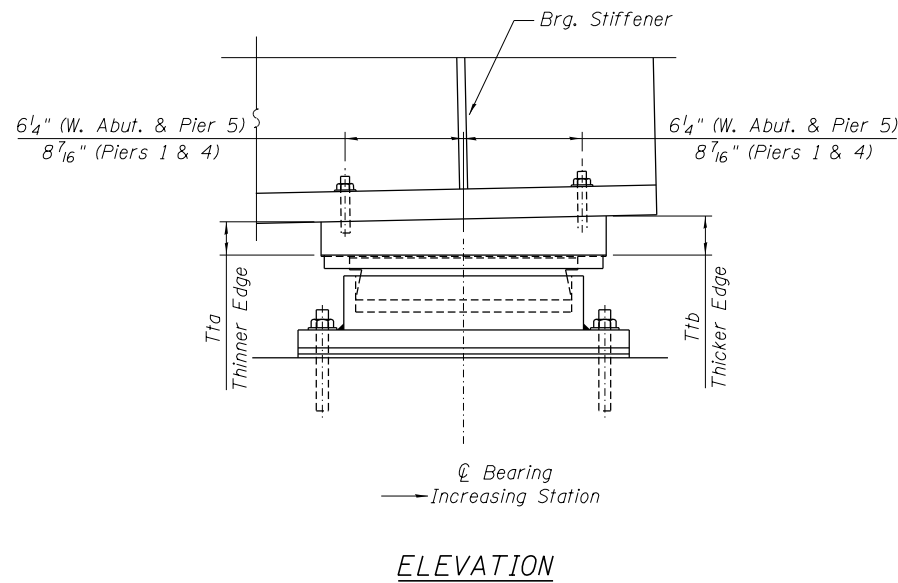
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	472
SN 069-0525		CONTRACT NO. 72B58		
ILLINOIS FED. AID PROJECT				

*As 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 single piece.

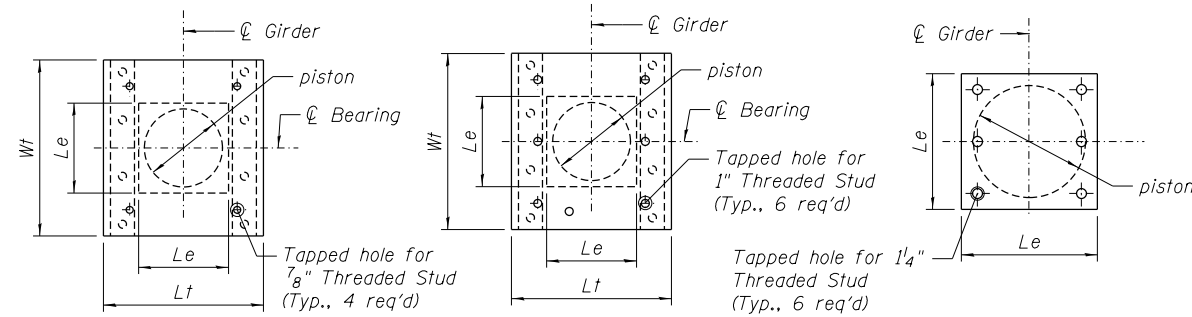


GUIDED EXPANSION BEARING (LONGITUDINAL)

(W. Abut. & Piers 1, 4, & 5)



ELEVATION



TOP BEARING & PISTON PLAN

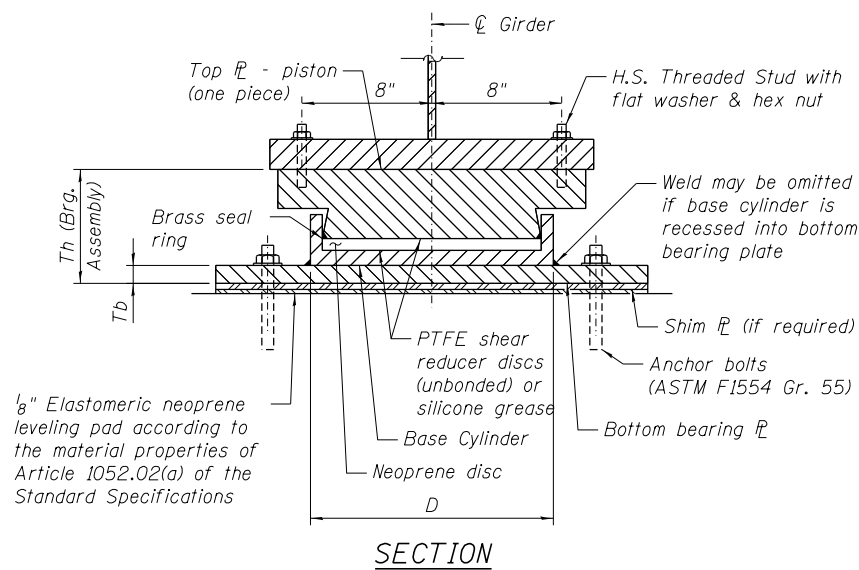
(Longitudinal Guided Expansion, W. Abut. & Pier 5)

TOP BEARING & PISTON PLAN

(Longitudinal Guided Expansion, Piers 1 & 4)

TOP PISTON PLAN

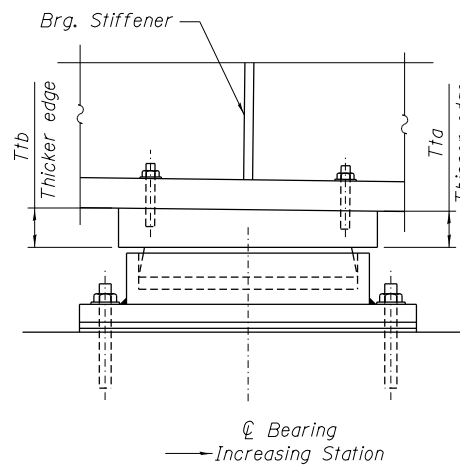
(Fixed, Piers 2 & 3)



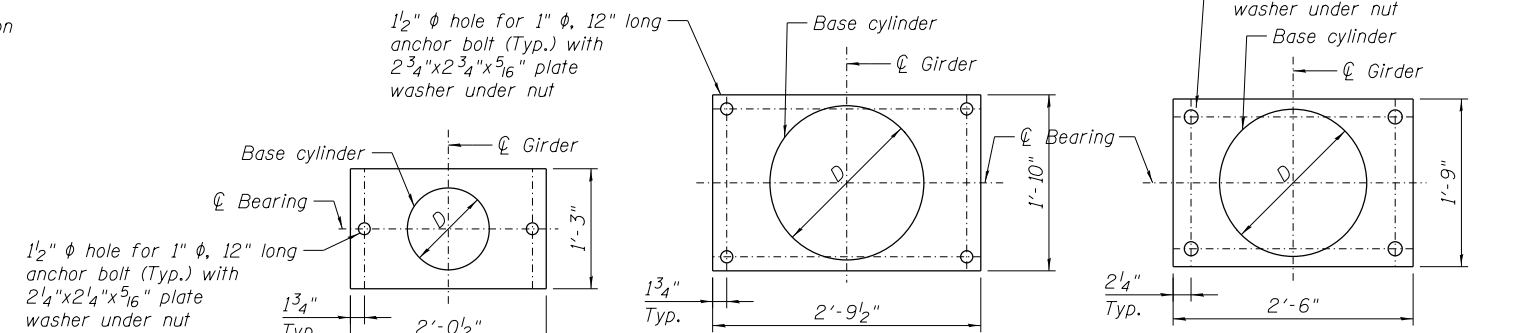
SECTION

FIXED BEARING

(Piers 2 & 3)



ELEVATION



BOTTOM BEARING & BASE CYLINDER PLAN

(W. Abut. & Pier 5)

BOTTOM BEARING & BASE CYLINDER PLAN

(Piers 1 & 4)

BOTTOM BEARING & BASE CYLINDER PLAN

(Piers 2 & 3)

DESIGN DATA

Location	W. Abut.	Pier 1	Pier 2	Pier 3	Pier 4	Pier 5
Type	Guided Expansion	Guided Expansion	Fixed	Fixed	Guided Expansion	Guided Expansion
Service Vertical Design Load (kips)	175	495	495	495	495	175
Strength Horizontal Design Load (kips)	35	99	137	137	99	35
Strength Design Rotation (rad)	0.0106	0.0025	0.0031	0.0030	0.0025	0.0106
Total Required Movement, Longitudinal (in)	5.7	3.6	-	-	4.2	6.3

BILL OF MATERIAL

Item	Unit	Total
Anchor Bolts, 1" ϕ	Each	72
Anchor Bolts, 1 1/4" ϕ	Each	48
High Load Multi-Rotational Bearings, Guided Expansion, 200 kips	Each	12
High Load Multi-Rotational Bearings, Guided Expansion, 500 kips	Each	12
High Load Multi-Rotational Bearings, Fixed, 500 kips	Each	12

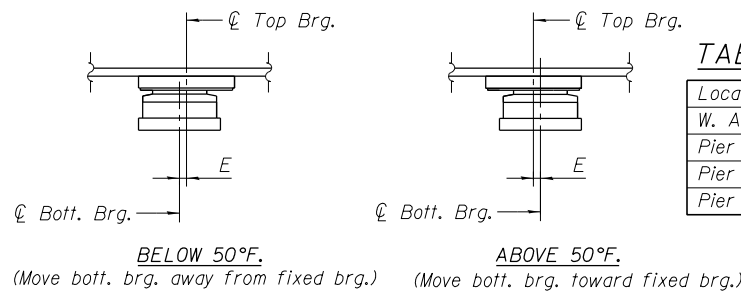
Notes:

- The structural steel plates of the bearing assembly shall conform to the requirements of AASHTO M 270 Grade 50.
- 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.
- H.S. fasteners in bearing assembly shall be galvanized according to AASHTO M298 Class 50.
- If base cylinder is recessed into the bottom bearing plate, the thickness of the bottom plate shall be Td plus the depth of the recess.
- Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade and diameter 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 Specification.
- The cost of the elastomeric neoprene leveling pads, shim plates, and threaded studs shall be included in the cost of High Load Multi-Rotational Bearings.

DIMENSIONS

Location	W. Abut.	Pier 1	Pier 2	Pier 3	Pier 4	Pier 5
Type	Guided Expansion	Guided Expansion	Fixed	Fixed	Guided Expansion	Guided Expansion
D	11 1/4"	1'-5 1/2"	1'-5 1/2"	1'-5 1/2"	1'-5 1/2"	11 1/4"
Le	11 1/4"	1'-5 1/2"	1'-5 1/2"	1'-5 1/2"	1'-5 1/2"	11 1/4"
Tta	1 1/2"	2 1/4"	2 1/2"	2 1/2"	2 1/4"	1 1/2"
Ttb	2 1/2"	3 3/8"	3 3/8"	3 3/8"	3"	1 7/8"
Tb	1 1/2"	2"	1 3/4"	1 3/4"	2"	1 1/2"
Th	8 7/16"	11 5/8"	10 1/8"	10 1/6"	11 7/16"	8 1/8"
Wt	1'-7"	1'-11 1/4"	1'-7 1/2"	1'-7 1/2"	1'-11 3/4"	1'-7 3/4"
Lt	1'-6"	2'-2 3/4"	1'-5 1/2"	1'-5 1/2"	2'-2 3/4"	1'-6"

* Dimensions may vary depending on Manufacturer's design



SETTING ANCHOR BOLTS AT EXP. BRG.

E value for every 15° temp. change from the normal temp. of 50°F shown in Table A.

TABLE A

Location	E
W. Abut.	1/2"
Pier 1	1/4"
Pier 4	3/8"
Pier 5	1/2"

FILE NAME = ...
 USER NAME = ...
 DATE = 8/5/2014
 CHECKED - JLR
 REVISIONS -
 DESIGNED - JLR
 CHECKED - JLR
 REVISIONS -
 DRAWN - SNB
 CHECKED - VCP
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 exp U.S. Services Inc.
 CHICAGO, IL
 BUILDINGS-EARTH & ENVIRONMENT-ENERGY
 INDUSTRIAL-INFRASTRUCTURE-SUSTAINABILITY

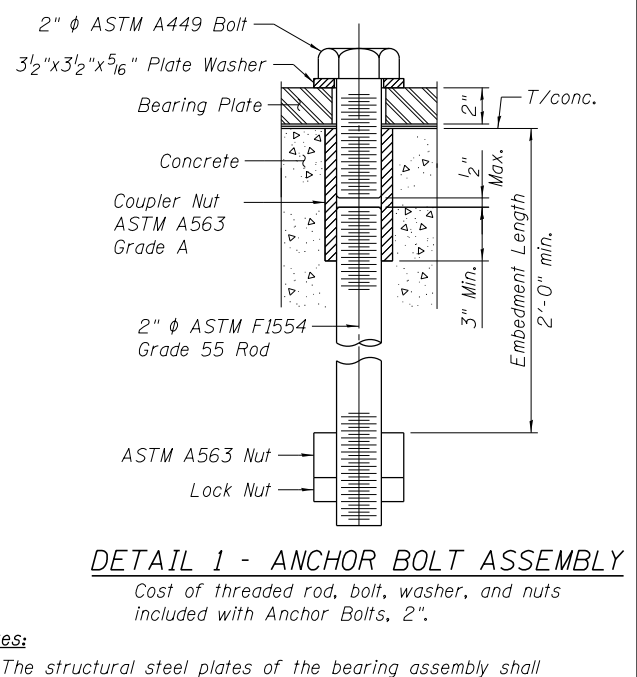
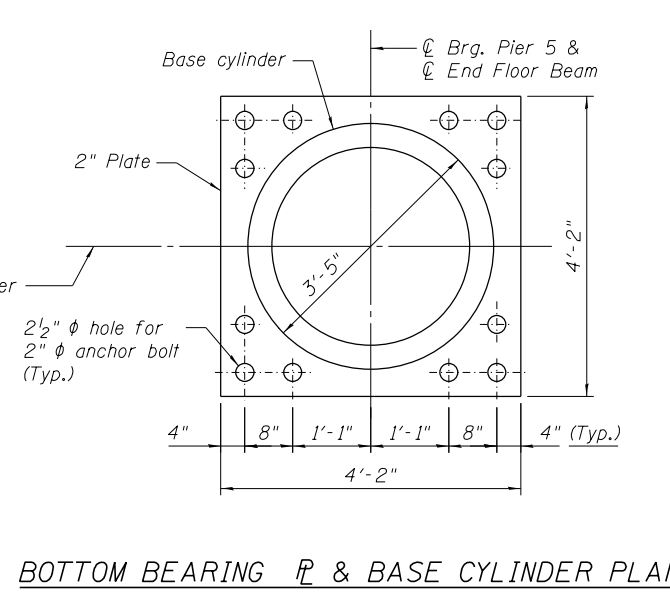
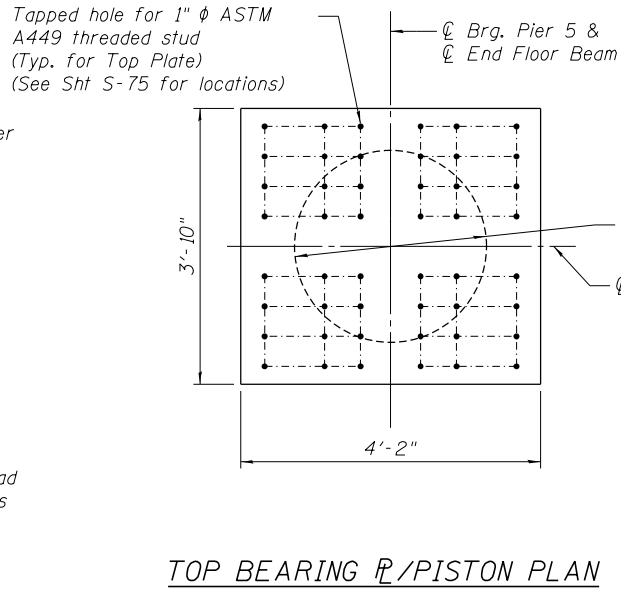
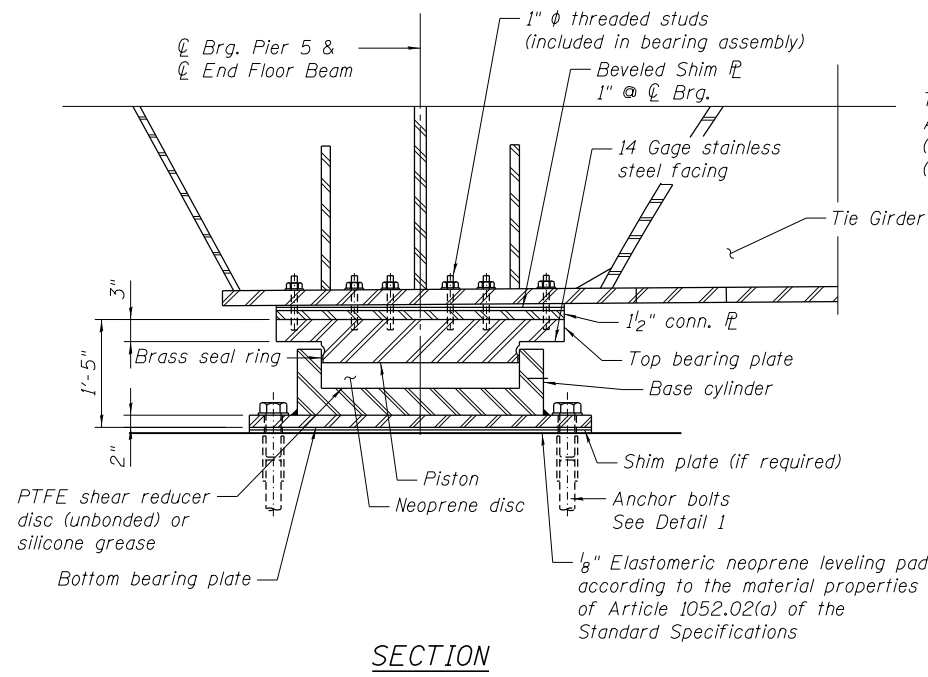
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**BEARING DETAILS
UNIT 1**

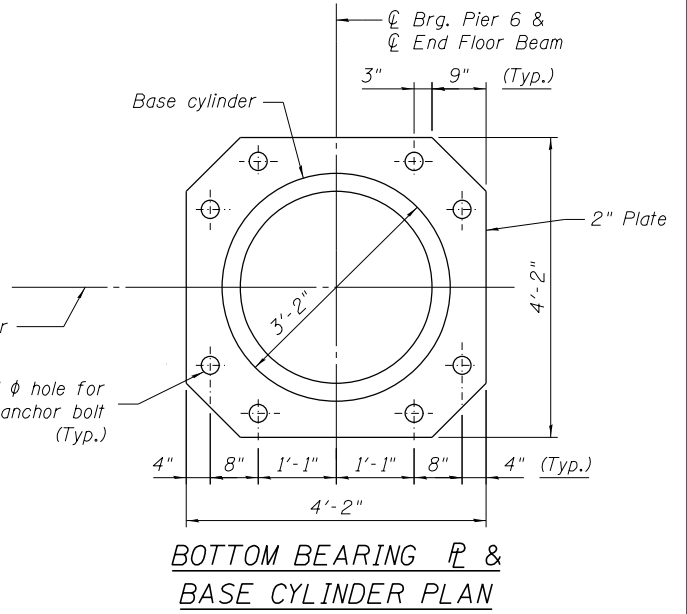
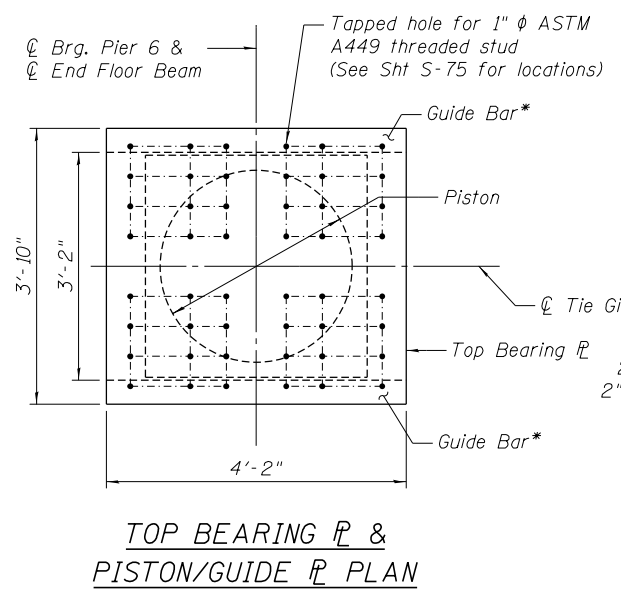
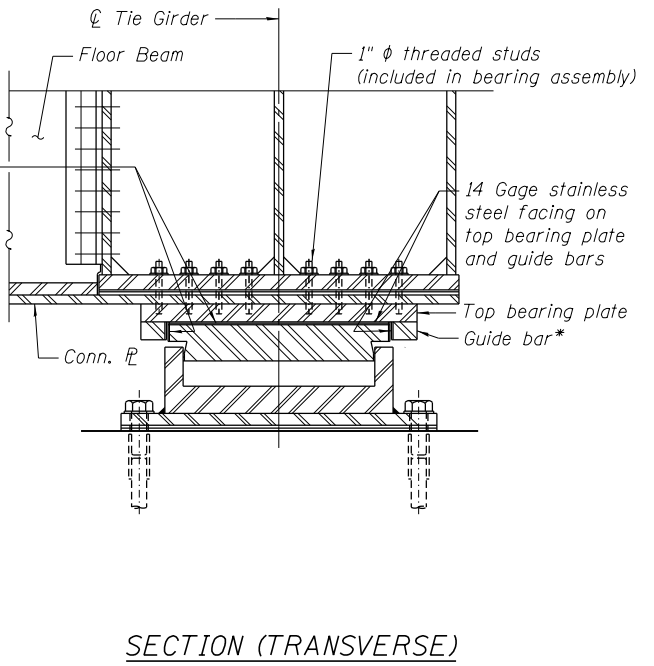
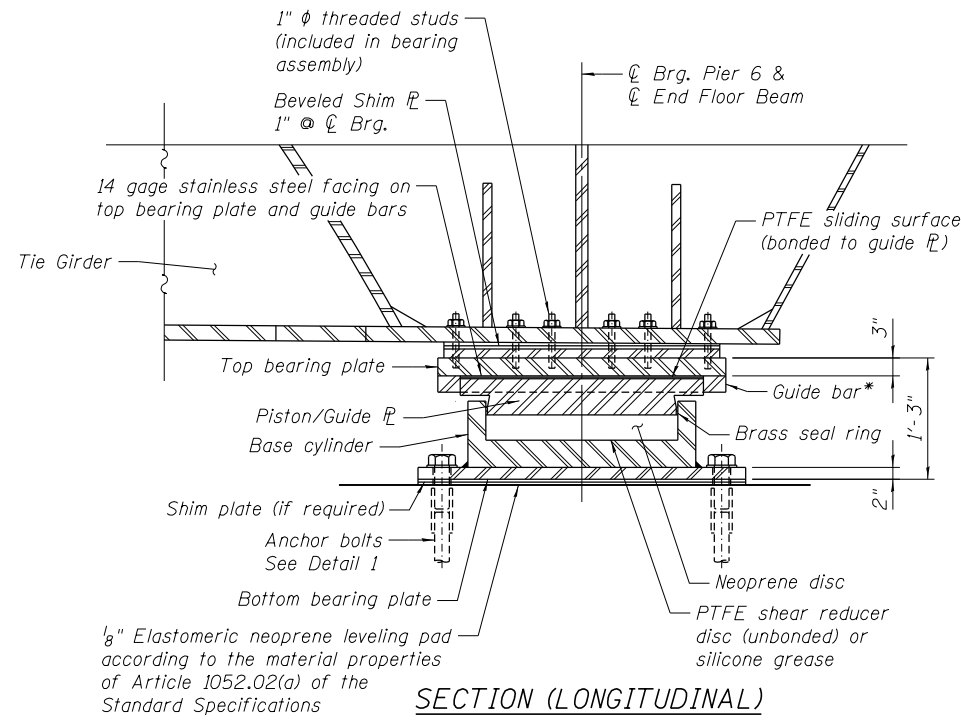
SHEET NO. S-93 OF 146 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	474
SN 069-0525		CONTRACT NO. 72B58		
ILLINOIS FED. AID PROJECT				



- Notes:**
- The structural steel plates of the bearing assembly shall conform to the requirements of AASHTO M 270 Grade 50.
 - 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.
 - H.S. fasteners in bearing assembly shall be galvanized according to AASHTO M298 Class 50.
 - All anchor bolt assembly components shall be hot dip galvanized.
 - The cost of the elastomeric neoprene leveling pads, shim plates, and threaded studs shall be included in the cost of High Load Multi-Rotational Bearings.

FIXED POT BEARING
(Pier 5, 2 thus)



GUIDED EXPANSION POT BEARING
(Pier 6, 2 thus)

DESIGN DATA (FIXED BEARING)

Data	Pier 5	Comment
Vertical Design Load, Service (kips)	2575	Service DL + LL without Impact + 0.3WS
Horizontal Design Load, Strength (kips)	940	20% of Restrained Tributary DL+LL
Design Rotation (rad)	0.03	Factored Ultimate Design Rotation
Total Required Movement, Longitudinal (in)	0	
Total Required Movement, Transverse (in)	0	

DESIGN DATA (GUIDED EXP. BEARING)

Data	Pier 6	Comment
Vertical Design Load, Service (kips)	2575	Service DL + LL without Impact + 0.3WS
Horizontal Design Load, Strength (kips)	492	20% of Service DL + LL without Impact
Design Rotation (rad)	0.03	Factored Ultimate Design Rotation
Total Required Movement, Longitudinal (in)	12	
Total Required Movement, Transverse (in)	0	

BILL OF MATERIAL

Item	Unit	Total
Anchor Bolts, 2" ϕ	Each	40
High Load Multi-Rotational Bearings, Fixed, 2600 kips	Each	2
High Load Multi-Rotational Bearings, Guided Expansion, 2600 kips	Each	2

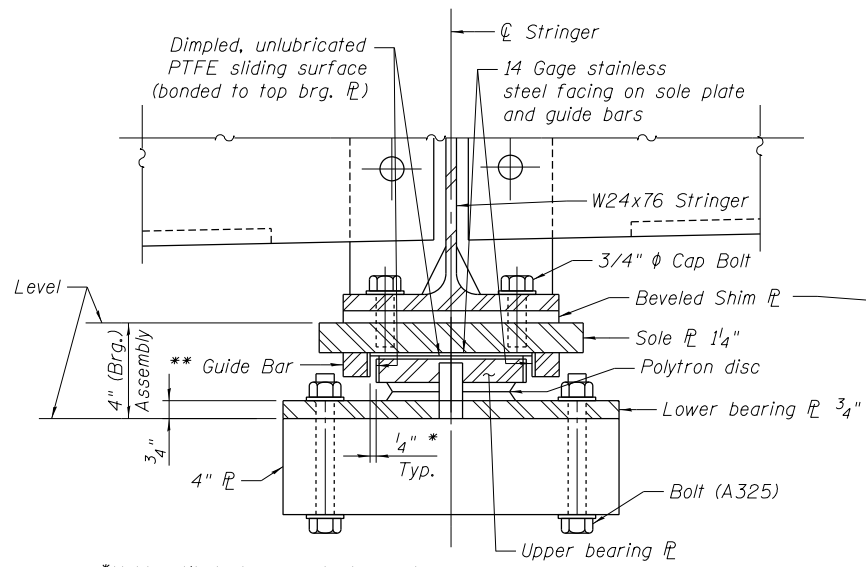
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exp U.S. Services Inc.
Chicago, IL
BUILDINGS-EARTH & ENVIRONMENT-ENERGY
INDUSTRIAL-INFRASTRUCTURE-SUSTAINABILITY

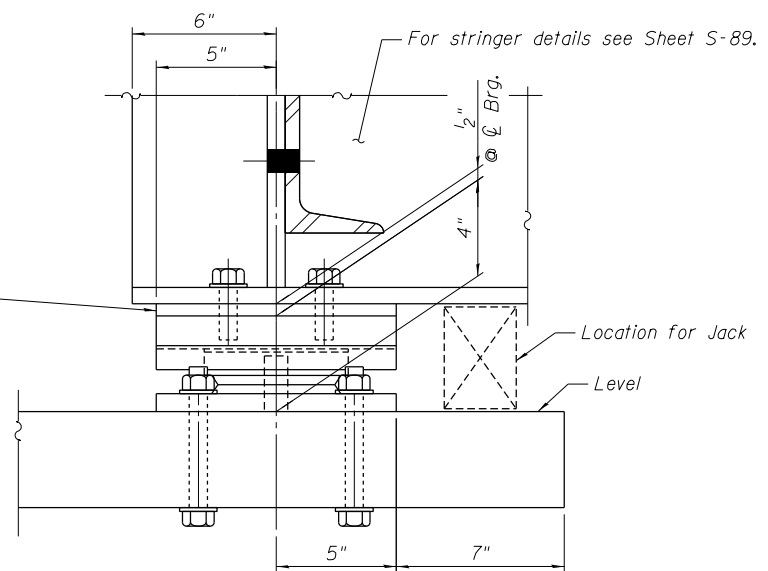
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEARING DETAILS
UNIT 2
1 OF 2
SHEET NO. S-94 OF 146 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	475
SN 069-0525		CONTRACT NO. 72B58		
ILLINOIS FED. AID PROJECT				

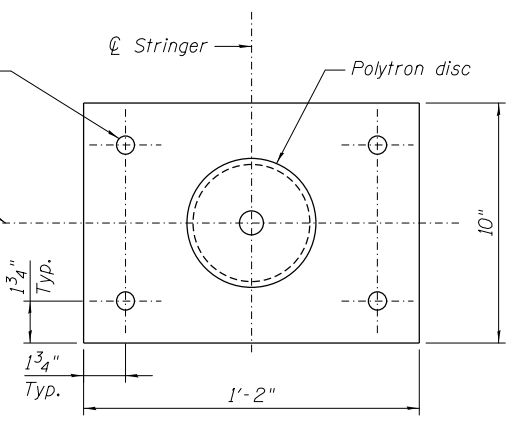
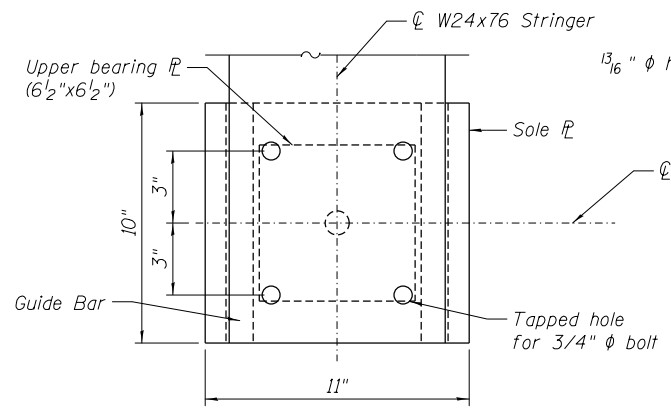


*Hold until deck concrete has set.
 ** Guide bar to be groove welded to sole plate



DESIGN DATA

Item		Comment
Vertical Design Load, Service (kips)	100	Service DL + LL without Impact
Horizontal Design Load, Strength (kips)	20	20% of Service DL + LL without Impact
Design Rotation (rad)	0.03	Factored Ultimate Design Rotation
Total Required Movement, Longitudinal (in)	3	
Total Required Movement, Transverse (in)	0	



GUIDED EXPANSION DISC BEARING
 (at relief joints)

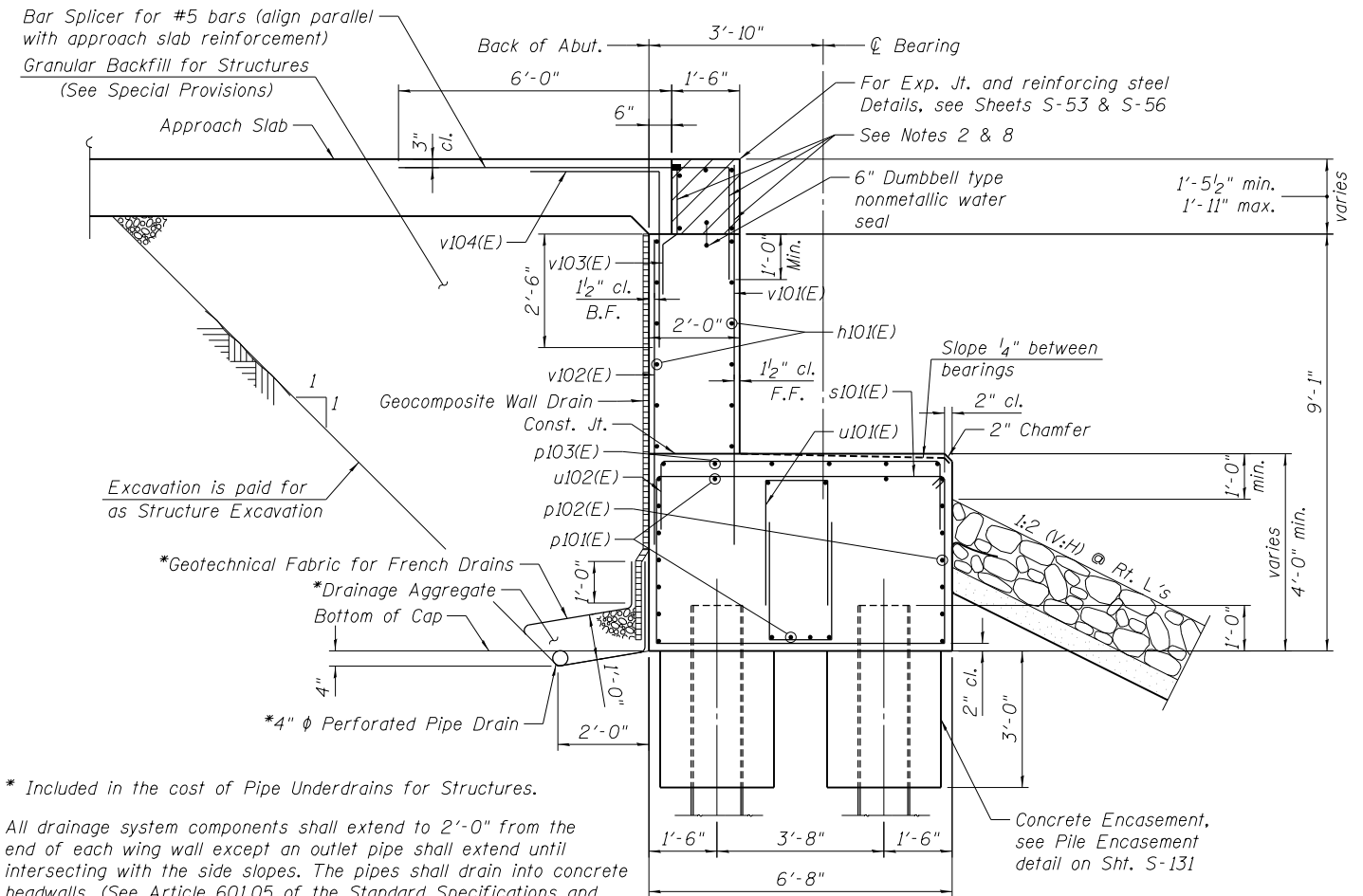
BILL OF MATERIAL

Item	Unit	Total
High Load Multi-Rotational Bearing, Guided Expansion, 100 kips	Each	12

Notes:

- The structural steel plates of the bearing assembly shall conform to the requirements of AASHTO M270 Grade 50 and painted (see General Notes)
- H.S. fasteners in bearing assembly shall be galvanized according to AASHTO M298 Class 50.
- Coordinate bolt locations with steel fabricator.

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* Included in the cost of Pipe Underdrains for Structures.

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

SECTION A-A

BEARING SEAT ELEVATIONS

Girder	Elevation
1	459.55
2	459.71
3	459.87
4	459.87
5	459.71
6	459.55

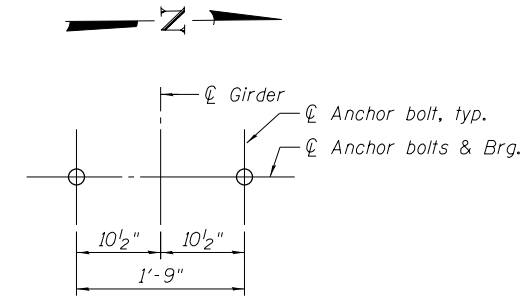
PILE DATA (W. ABUT.)

Pile type and size: HP 14X89 with pile shoe
 Nominal Required Bearing: 705 kips
 Factored Resistance Available: 183 kips
 Estimated Pile Length: 108 feet
 Number of Production Piles: 14
 Number of Test Piles: 1
 Est. Top/Rock Elev. 349.9

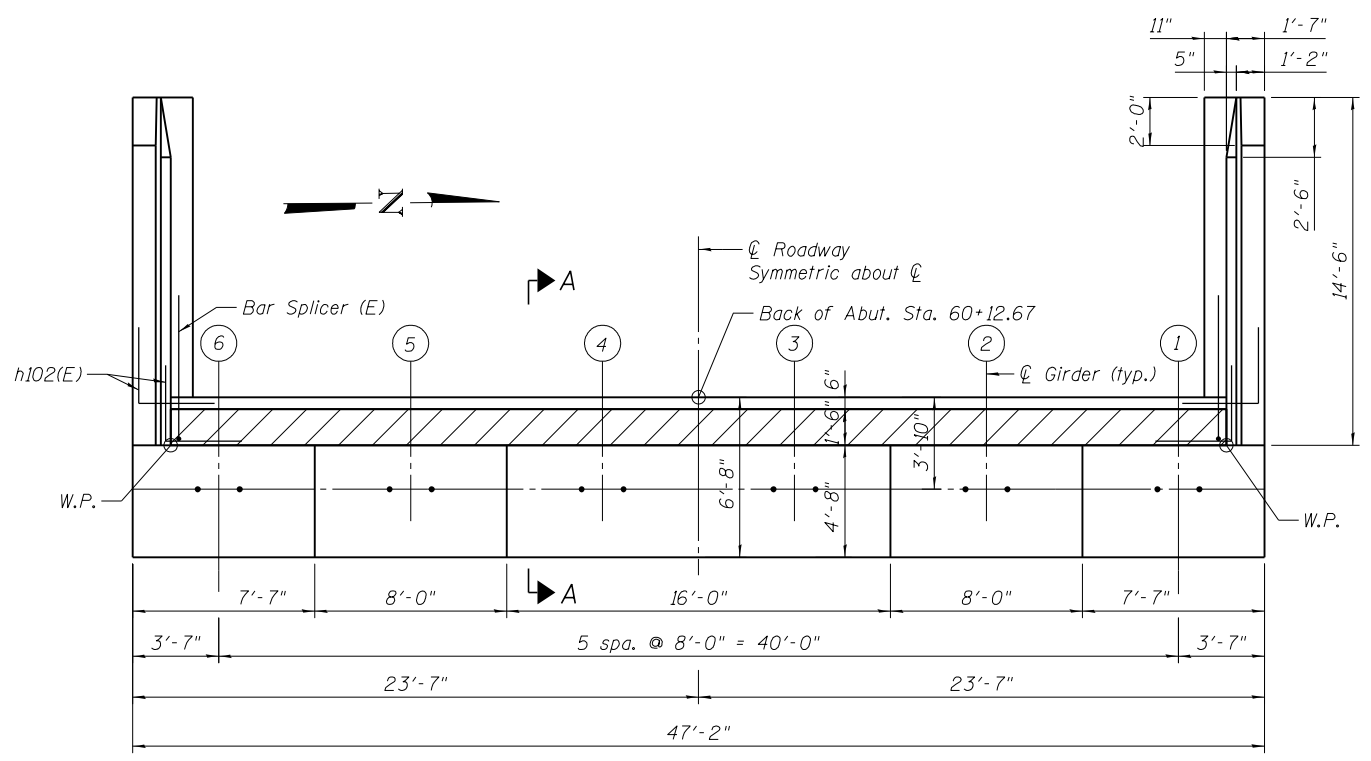
Notes:

- Space reinforcement in cap to miss anchor bolts.
- Hatched area of abutment back wall to be poured after superstructure forms have been removed. Quantity of concrete included with Concrete Superstructure.
- F.F. indicates Front Face
B.F. indicates Back Face
E.F. indicates Each Face
I.F. indicates Inside Face
O.F. indicates Outside Face
- For approach slab details see Shts. S-47 and S-48
- All exposed surfaces of backwall, bridge seats, and front face of pile cap shall be treated with Concrete Sealer.
- Bars indicated thus 5x2-#5 etc. indicates 5 lines of bars with 2 lengths per line.
- For bar splicer details see Sht. S-132
- Locate reinforcing steel bars in coordination with the selected modular expansion joint. Make necessary adjustments as approved in writing by the Engineer.

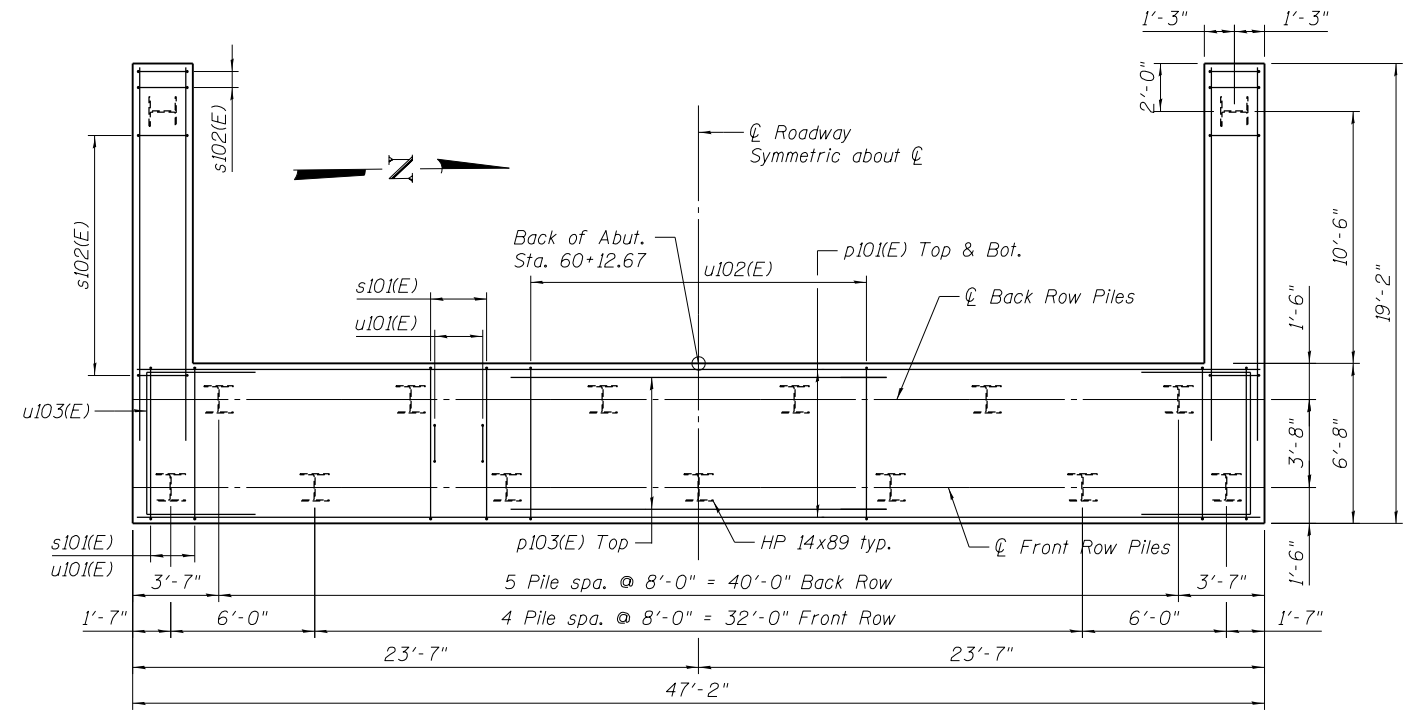
Min. Lap Lengths (unless noted otherwise)	
#4	2'-4"
#5	2'-11"
#7	4'-8"



ANCHOR BOLT LAYOUT



PLAN - TOP VIEW



PLAN - PILE CAP

FILE NAME = \\FS-0044\AM\VALU\T.D. TRANS.07\FRCH\02012341-02\STRUCT\CAD\72B58\0650525\SHEET_0650525-72B58-002-ABUTMENT_SHT.DGN
 USER NAME =
 DESIGNED - HVP
 CHECKED - JLR
 DATE - 9/12/2014
 PLOT SCALE =
 DRAWN - HVP
 CHECKED - VCP
 DATE
 exp U.S. Services Inc. Chicago, IL
 BUILDINGS-EARTH & ENVIRONMENT-ENERGY
 INDUSTRIAL-INFRASTRUCTURE-SUSTAINABILITY

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

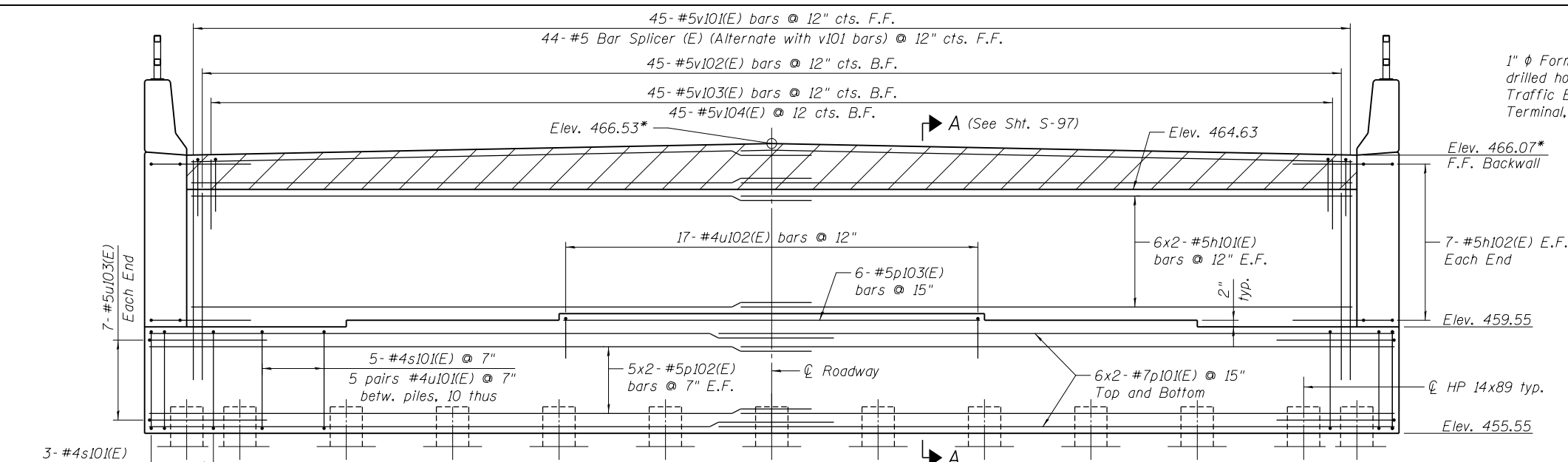
WEST ABUTMENT PLAN

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	478
SN 069-0525		CONTRACT NO. 72B58		

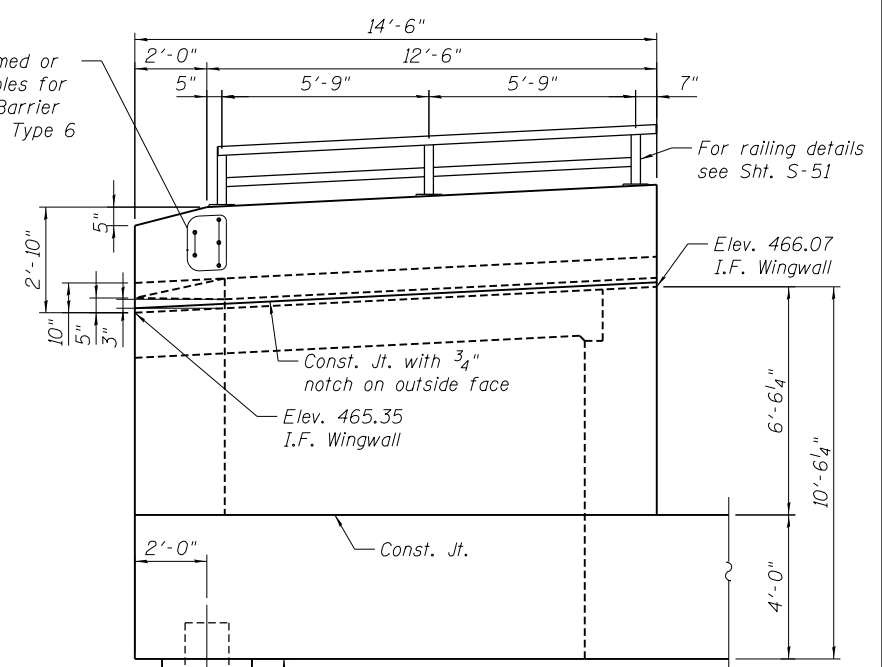
SHEET NO. S-97 OF 146 SHEETS

ILLINOIS FED. AID PROJECT

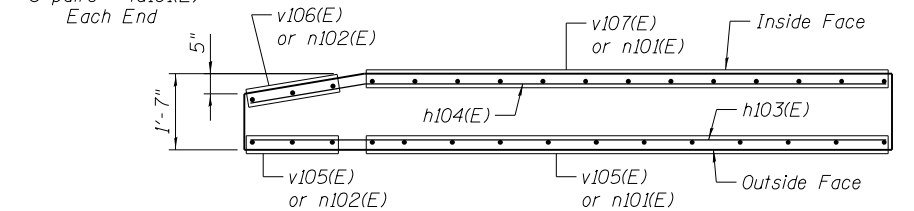
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 USER NAME = exp U.S. Services Inc.
 DATE = 9/12/2014
 PLOT SCALE =
 PLOT DATE =
 DESIGNED - HVP
 CHECKED - JLR
 DRAWN - HVP
 CHECKED - VCP
 REVISED -
 REVISED -
 REVISED -
 REVISED -
 STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 WEST ABUTMENT DETAILS
 SHEET NO. S-98 OF 146 SHEETS
 F.A.P. RITE. SECTION COUNTY TOTAL SHEETS SHEET NO.
 745 1238-2 MORGAN 782 479
 SN 069-0525 CONTRACT NO. 72B58
 ILLINOIS FED. AID PROJECT



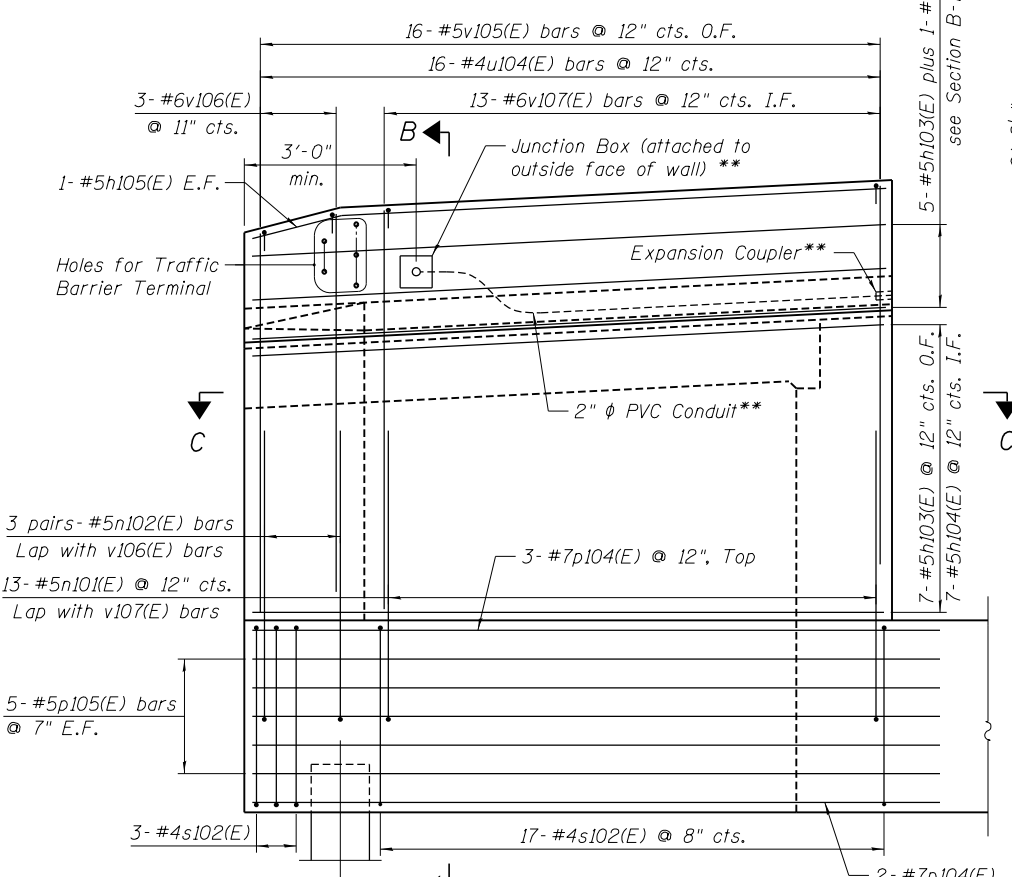
ELEVATION
(Looking west)



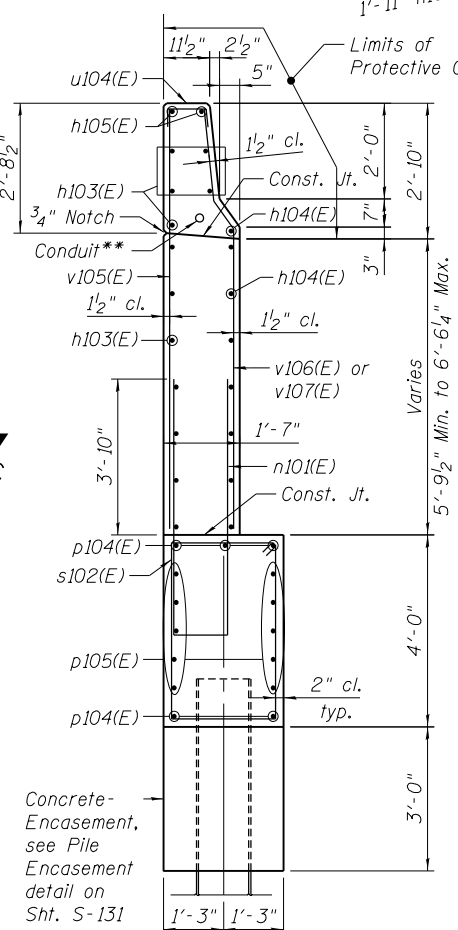
WING WALL ELEVATION
Showing Dimensions
South wall shown, north wall similar



SECTION C-C



WING WALL ELEVATION
Showing Reinforcement
South wall shown, north wall similar
Parapet railing omitted for clarity



SECTION B-B

BAR h104(E), h105(E)

BAR u101(E) THRU u104(E), n101(E)

CUTTING DIAGRAM FOR BAR v105(E)

Bar	A	B
u101(E)	1'-6"	2'-10"
u102(E)	6'-0"	1'-8"
u103(E)	6'-0"	3'-8"
u104(E)	8"	4 1/2"
n101(E)	1'-4"	6'-2"

BAR s101(E), s102(E)

BAR h102(E)

BAR n102(E)

BILL OF MATERIAL

Item	Unit	Total
Concrete Structures	Cu. Yd.	89.2
Concrete Encasement	Cu. Yd.	8.2
Reinforcement Bars, Epoxy Coated	Pound	8300
Furnishing Steel Piles HPI4x89	Foot	1512
Driving Piles	Foot	1512
Test Pile HPI4x89	Each	1
Pile Shoes	Each	15
Bar Splicers	Each	44
Concrete Sealer	Sq. Ft.	507
Geocomposite Wall Drain	Sq. Yd.	45
Structure Excavation	Cu. Yd.	122
Granular Backfill for Structures	Cu. Yd.	122
Pipe Underdrains for Structures	Foot	104
Protective Coat	Sq. Yd.	13.0

BAR LIST

Bar	No.	Size	Length	Shape
h101(E)	24	#5	23'-4"	—
h102(E)	28	#5	6'-4"	┘
h103(E)	24	#5	14'-2"	—
h104(E)	16	#5	14'-3"	—
h105(E)	4	#5	14'-3"	—
n101(E)	26	#5	13'-8"	┘
n102(E)	12	#5	6'-2"	┘
p101(E)	24	#7	25'-9"	—
p102(E)	20	#5	25'-0"	—
p103(E)	6	#5	15'-8"	—
p104(E)	10	#7	17'-0"	—
p105(E)	20	#5	16'-0"	—
s101(E)	56	#4	20'-9"	□
s102(E)	40	#4	12'-5"	□
u101(E)	112	#4	7'-2"	┘
u102(E)	17	#4	9'-4"	┘
u103(E)	14	#5	13'-4"	┘
u104(E)	32	#4	1'-5"	┘
v101(E)	45	#5	8'-0"	—
v102(E)	45	#5	6'-5"	—
v103(E)	45	#5	4'-2"	—
v104(E)	45	#5	7'-0"	┘
v105(E)	16	#5	16'-10"	—
v106(E)	6	#6	7'-10"	—
v107(E)	26	#6	8'-7"	—

BAR v106(E)

BAR v107(E)

BAR v104(E)

BAR v103(E)

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DEPARTMENT OF TRANSPORTATION**

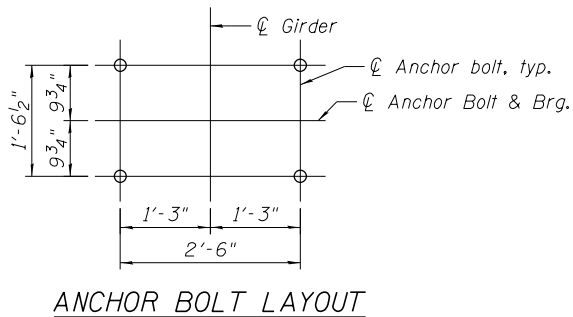
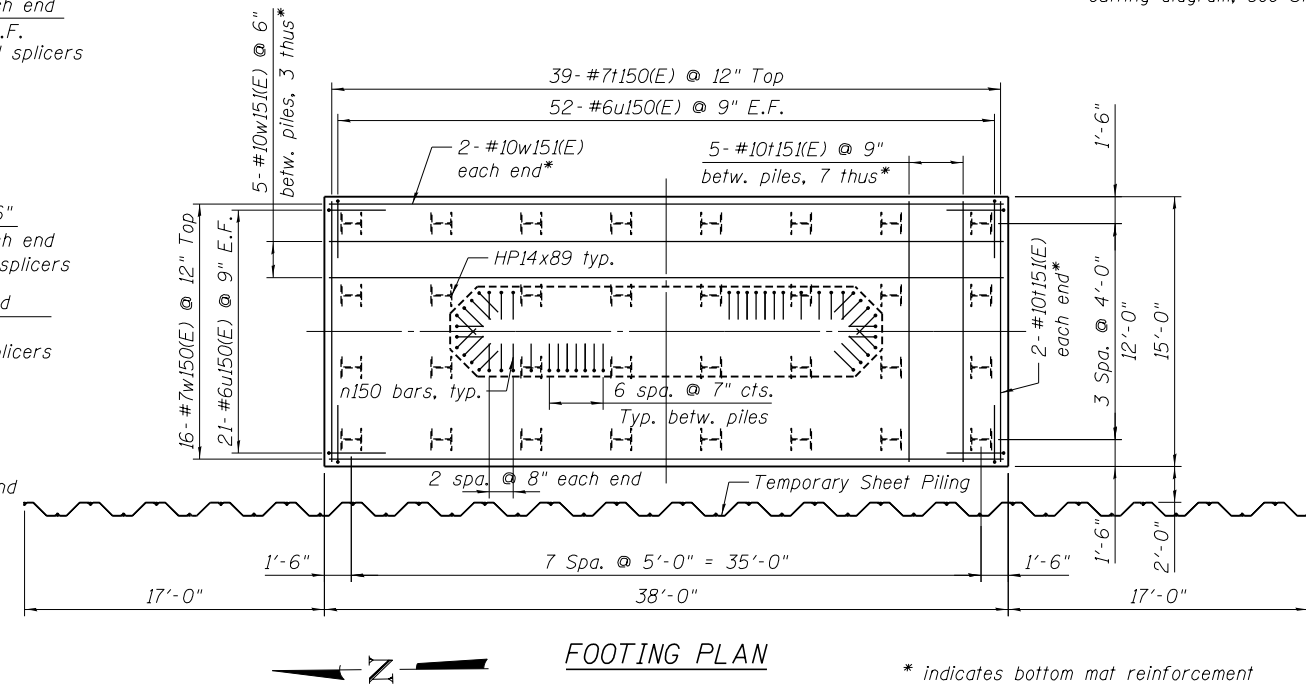
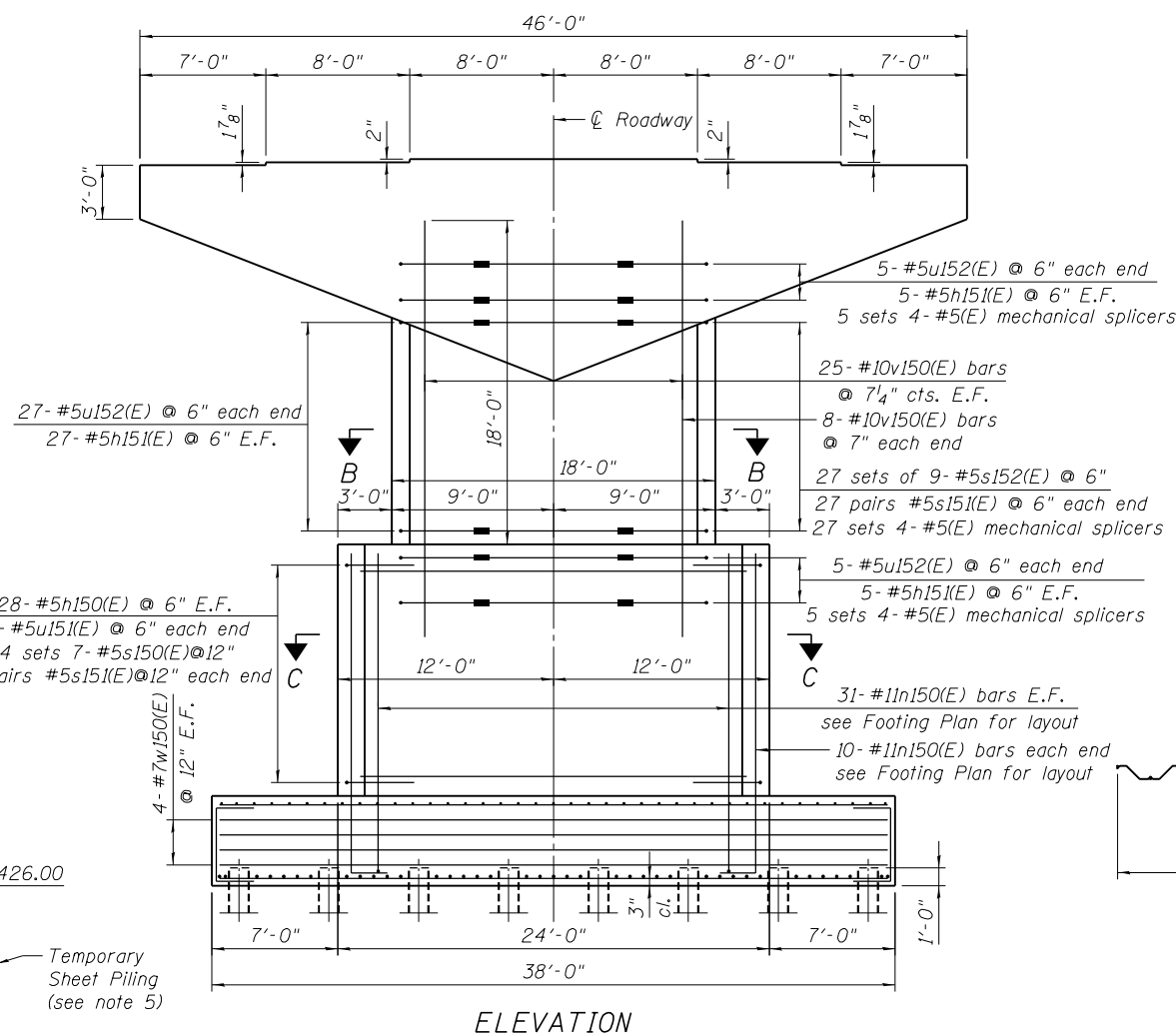
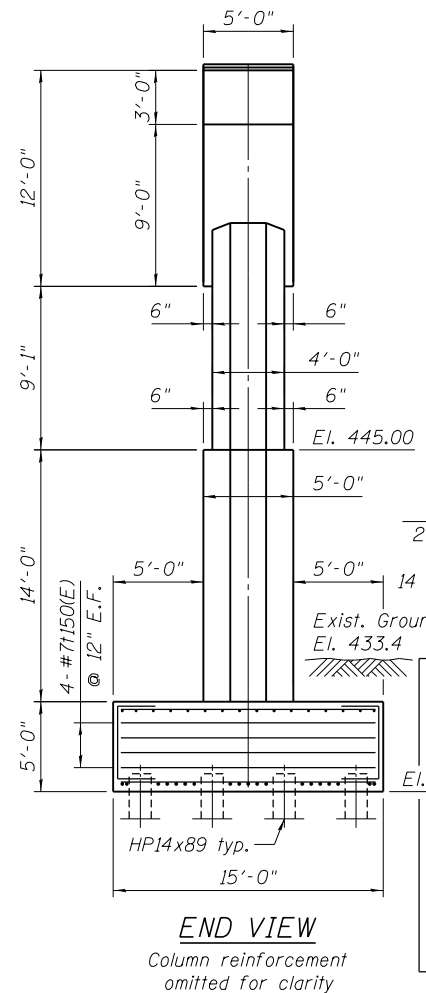
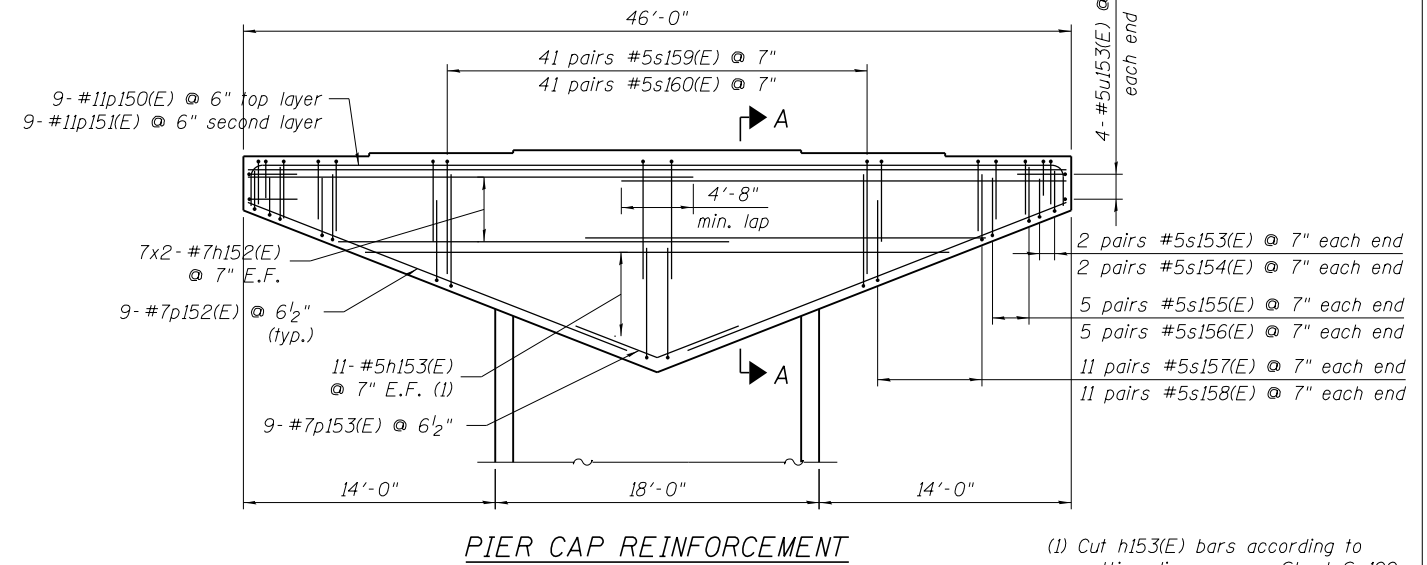
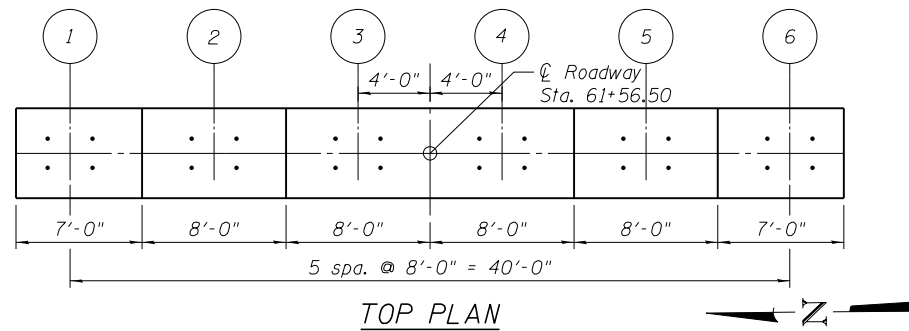
WEST ABUTMENT DETAILS

SHEET NO. S-98 OF 146 SHEETS

F.A.P. RITE. SECTION COUNTY TOTAL SHEETS SHEET NO.
745 1238-2 MORGAN 782 479
SN 069-0525 CONTRACT NO. 72B58
ILLINOIS FED. AID PROJECT

BEARING SEAT ELEVATIONS

Girder	Brg. Seat Elevation
1	466.08
2	466.24
3	466.40
4	466.40
5	466.24
6	466.08



PILE DATA

Pile Type and Size:	Steel-HP14x89 with pile shoe
Nominal Required Bearing:	455 kips
Factored Resistance Available:	250 kips
Estimated Pile Length:	75 ft.
Number of Production Piles:	31
Number of Test Piles:	1
Estimated Top of Rock Elevation:	351.20

- Notes:**
1. Bars indicated thus 4x2-#5 etc. indicates 4 lines of bars with 2 lengths per line.
 2. Pour steps monolithically with cap.
 3. Space reinforcement in cap to miss anchor bolts.
 4. E.F. indicates each face
 5. If the Contractor chooses to alter the temporary cantilevered sheet piling design requirements shown on the plans, a design submittal including plan details and calculations will be required for review and acceptance by the Engineer.

FILE NAME = ... USER NAME = ... DESIGNED - HVP ... CHECKED - JLR ... DATE - 8/5/2014 ... PLOT SCALE = ... DRAWN - HVP ... CHECKED - VCP ...

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

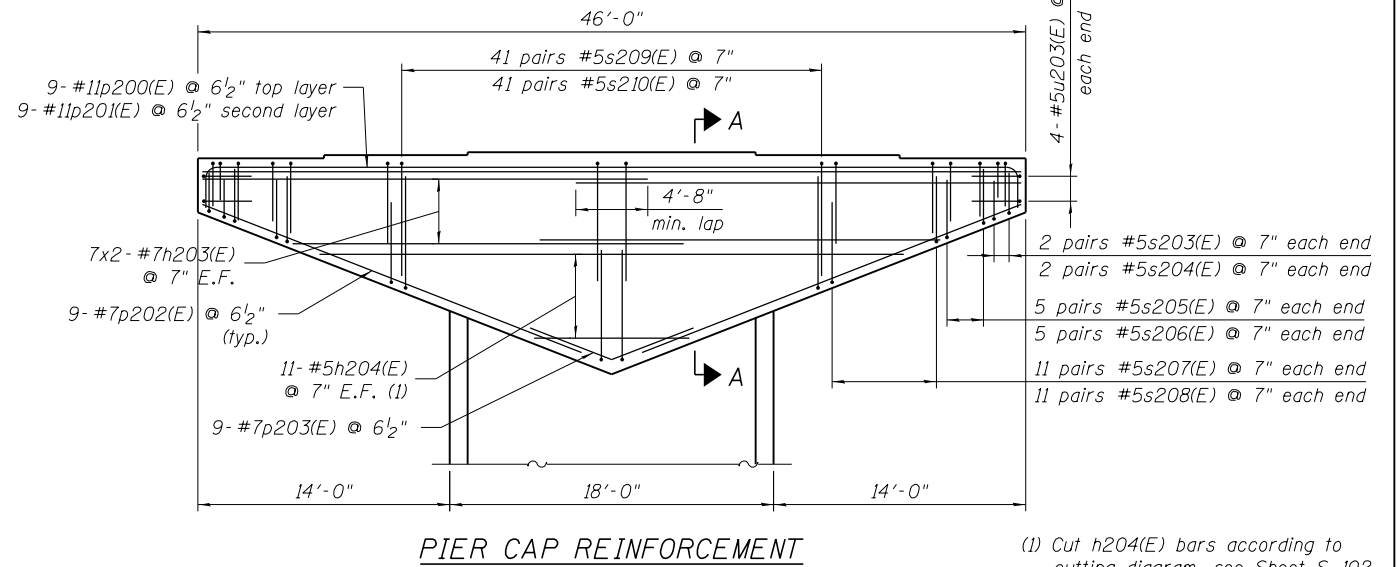
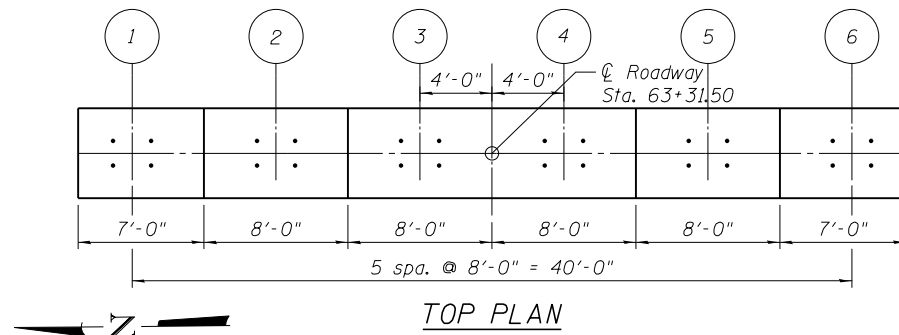
**PIER 1
PLAN & ELEVATION**
SHEET NO. S-99 OF 146 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	480
SN 069-0525			CONTRACT NO. 72B58	

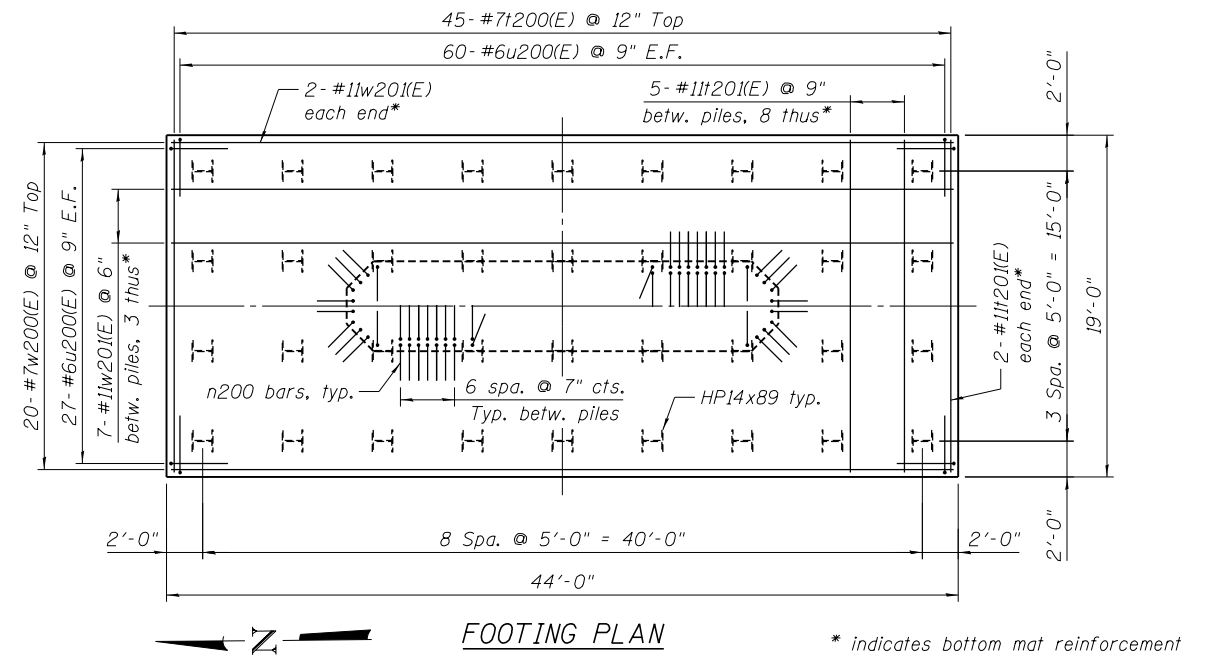
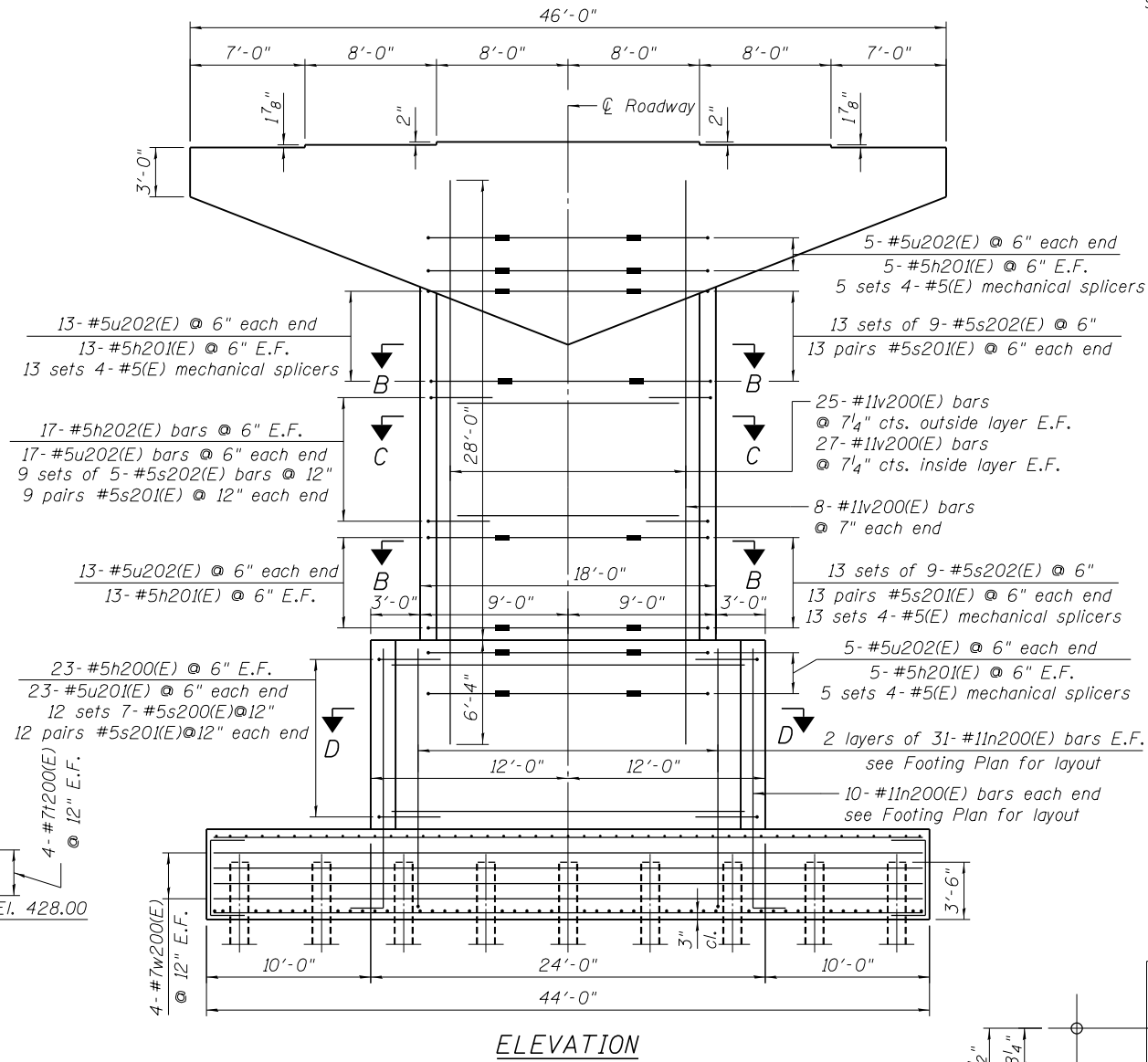
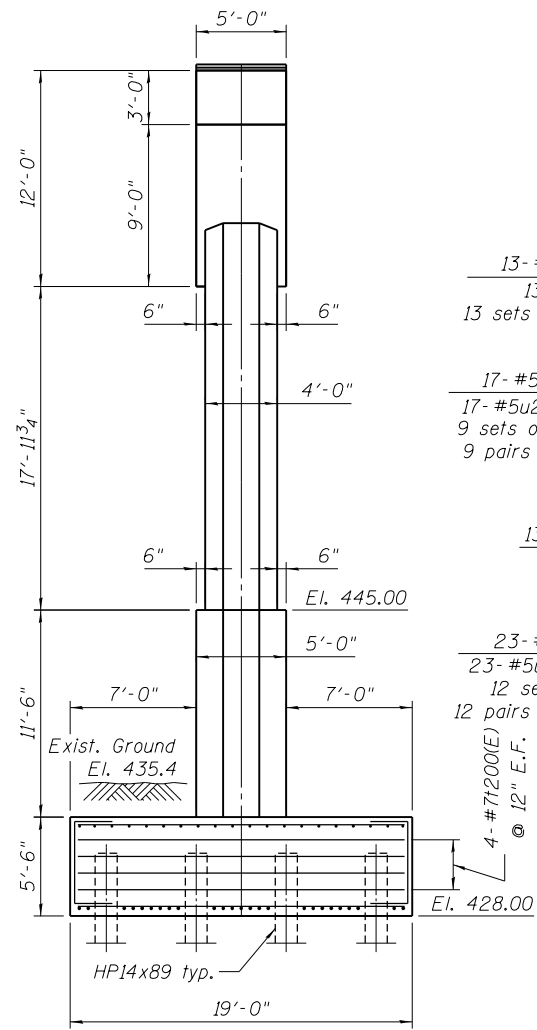
ILLINOIS FED. AID PROJECT

BEARING SEAT ELEVATIONS

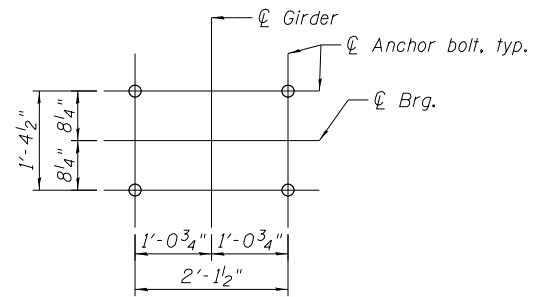
Girder	Brg. Seat Elevation
1	474.98
2	475.14
3	475.30
4	475.30
5	475.14
6	474.98



(1) Cut h204(E) bars according to cutting diagram, see Sheet S-102



* indicates bottom mat reinforcement



PILE DATA

Pile Type and Size:	Steel-HP14x89 with pile shoe
Nominal Required Bearing:	455 kips
Factored Resistance Available:	250 kips
Estimated Pile Length:	81 ft.
Number of Production Piles:	35
Number of Test Piles:	1
Estimated Top of Rock Elevation:	351.40

Notes:

1. Bars indicated thus 4x2-#5 etc. indicates 4 lines of bars with 2 lengths per line.
2. Pour steps monolithically with cap.
3. Space reinforcement in cap to miss anchor bolts.
4. E.F. indicates each face
5. See Sht. S-128 for aesthetic reveals on pier shaft.

FILE NAME = ... USER NAME = ... DESIGNED - HVP ... REVISED - ...
 DATE - 8/5/2014 ... CHECKED - JLR ... REVISED - ...
 PLOT SCALE = ... DRAWN - HVP ... REVISED - ...
 PLOT DATE ... CHECKED - VCP ... REVISED - ...

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

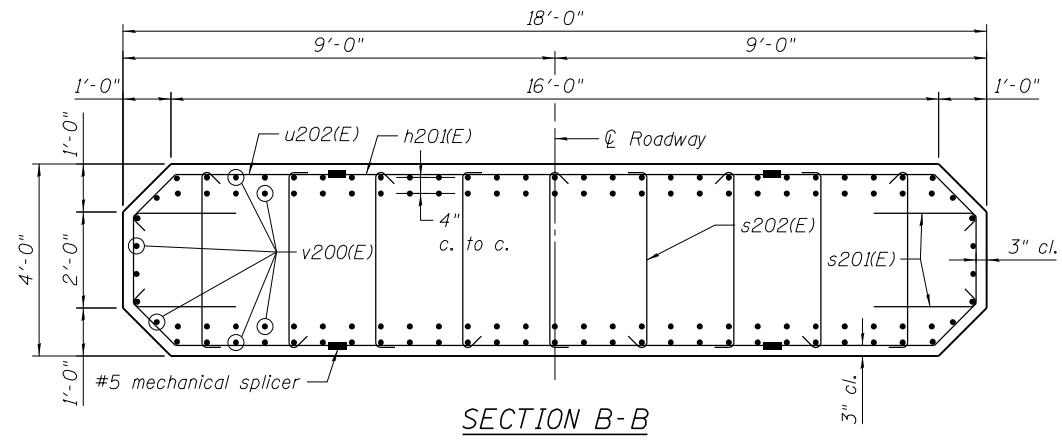
**PIER 2
PLAN & ELEVATION**

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	482
SN 069-0525		CONTRACT NO. 72B58		

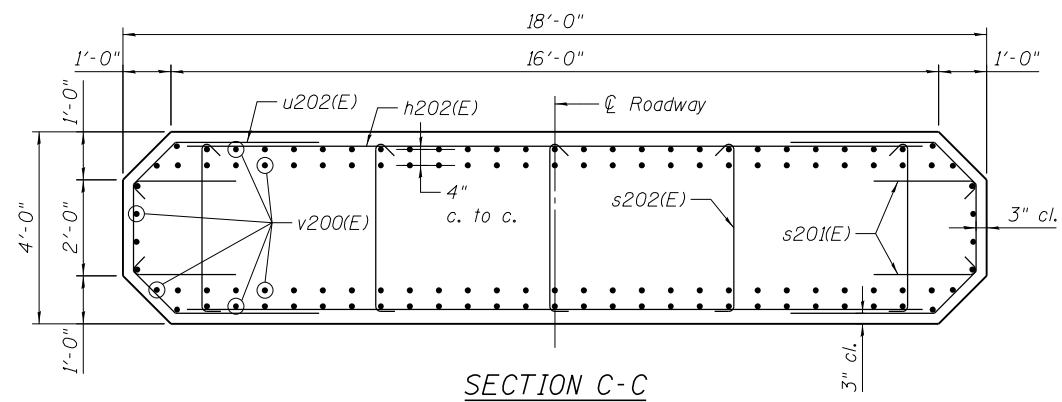
SHEET NO. S-101 OF 146 SHEETS

ILLINOIS FED. AID PROJECT

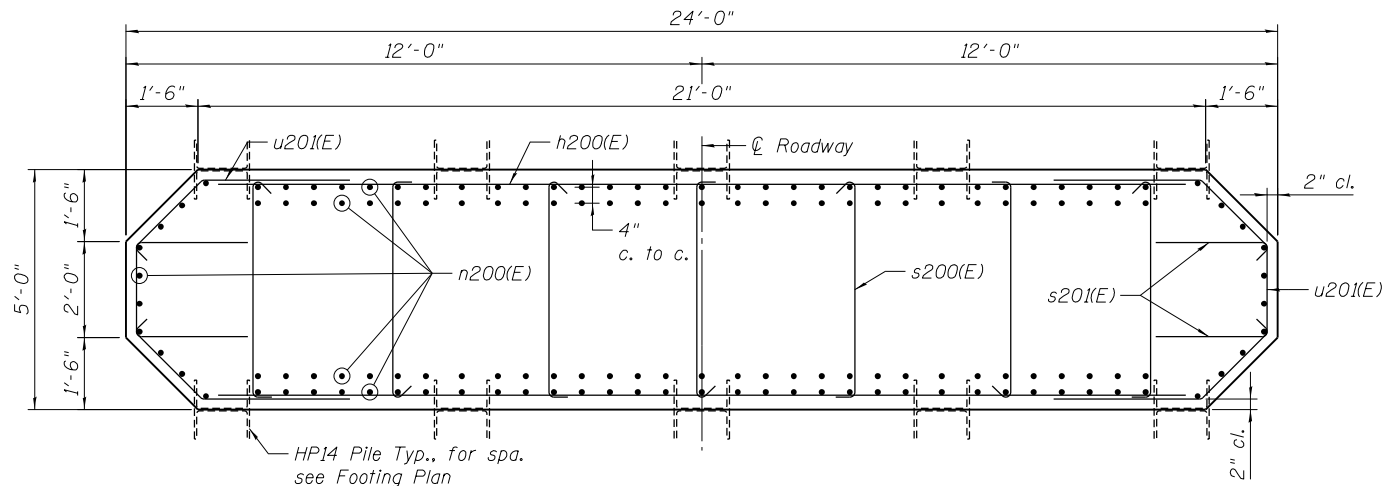
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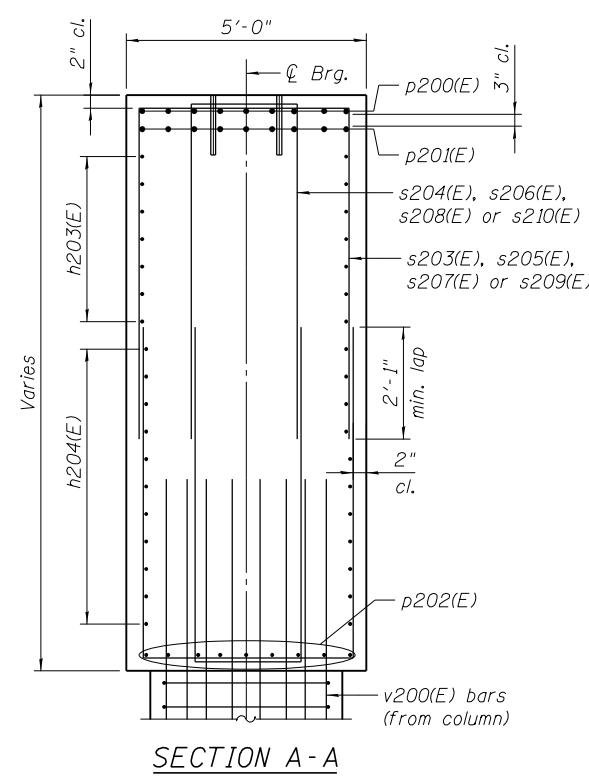
SECTION B-B



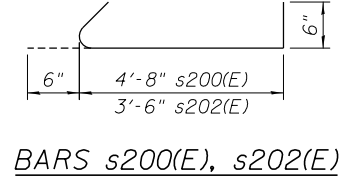
SECTION C-C



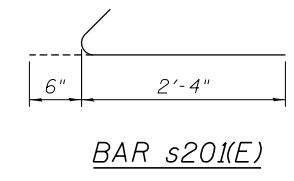
SECTION D-D



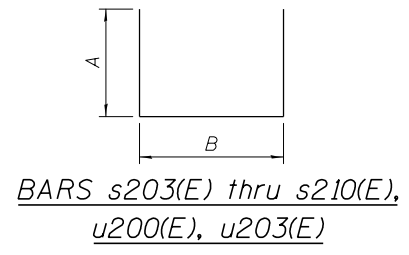
SECTION A-A



BARS s200(E), s202(E)

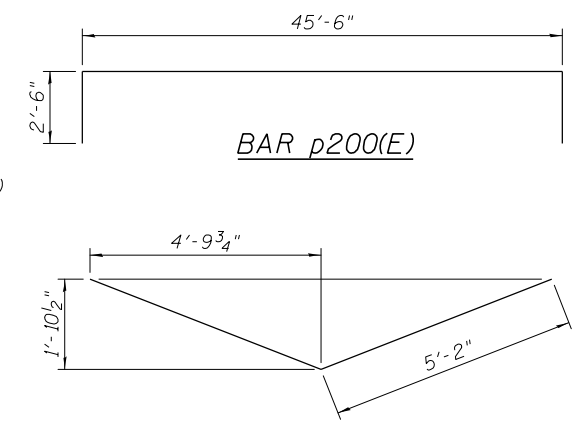


BAR s201(E)

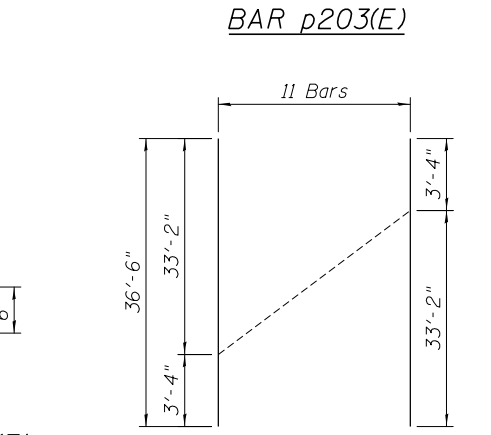


BARS s203(E) thru s210(E), u200(E), u203(E)

Bar	A	B
s203(E)	2'-8"	4'-8"
s204(E)	2'-8"	2'-4"
s205(E)	3'-2"	4'-8"
s206(E)	3'-2"	2'-4"
s207(E)	4'-6"	4'-8"
s208(E)	4'-6"	2'-4"
s209(E)	6'-11"	4'-8"
s210(E)	6'-11"	2'-4"
u200(E)	2'-1"	4'-11"
u203(E)	2'-9"	4'-6"

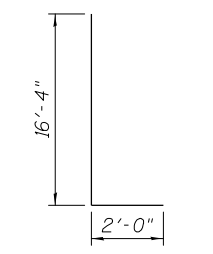


BAR p200(E)

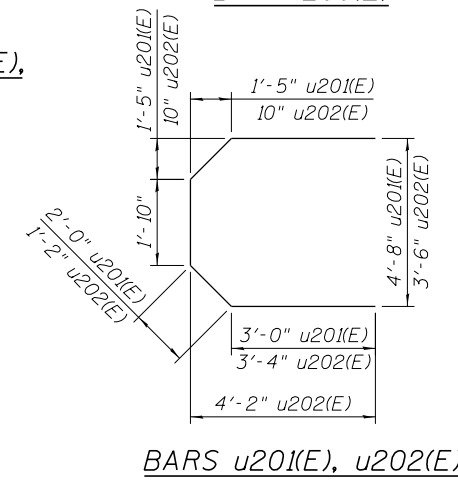


BAR p203(E)

BAR CUTTING DIAGRAM FOR h204(E)



BAR n200(E)



BARS u201(E), u202(E)

BAR LIST

Bar	No.	Size	Length	Shape
h200(E)	46	#5	20'-8"	—
h201(E)	72	#5	9'-2"*	—
h202(E)	34	#5	15'-8"	—
h203(E)	28	#7	25'-2"	—
h204(E)	11	#5	36'-6"	—
n200(E)	144	#11	18'-4"	—
p200(E)	9	#11	50'-6"	—
p201(E)	9	#11	45'-0"	—
p202(E)	18	#7	23'-6"	—
p203(E)	9	#7	10'-4"	—
s200(E)	84	#5	5'-8"	—
s201(E)	188	#5	2'-10"	—
s202(E)	279	#5	4'-6"	—
s203(E)	8	#5	10'-0"	—
s204(E)	8	#5	7'-8"	—
s205(E)	20	#5	11'-0"	—
s206(E)	20	#5	8'-8"	—
s207(E)	44	#5	13'-8"	—
s208(E)	44	#5	11'-4"	—
s209(E)	82	#5	18'-6"	—
s210(E)	82	#5	16'-2"	—
t200(E)	53	#7	18'-6"	—
t201(E)	44	#11	18'-6"	—
u200(E)	174	#6	9'-1"	—
u201(E)	46	#5	11'-10"	—
u202(E)	106	#5	10'-10"	—
u203(E)	8	#5	10'-0"	—
v200(E)	120	#11	34'-4"	—
w200(E)	28	#7	43'-6"	—
w201(E)	25	#11	43'-6"	—

* The bar length is to the center of mechanical splicer. The Contractor shall adjust the length as required for the selected mechanical splicer.

BILL OF MATERIAL

Item	Unit	Total
Concrete Structures	Cu. Yd.	335.4
Reinforcement Bars, Epoxy Coated	Pound	71480
Furnishing Steel Piles HP14x89	Foot	2835
Driving Piles	Foot	2835
Test Pile HP14x89	Each	1
Pile Shoes	Each	36
Mechanical Splicers	Each	144
Structure Excavation	Cu. Yd.	303

FILE NAME =	USER NAME =	DESIGNED - HVP	REVISED -
	DATE - 8/5/2014	CHECKED - JLR	REVISED -
	PLOT SCALE =	DRAWN - HVP	REVISED -
	PLOT DATE	CHECKED - VCP	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 2
SECTIONS & DETAILS

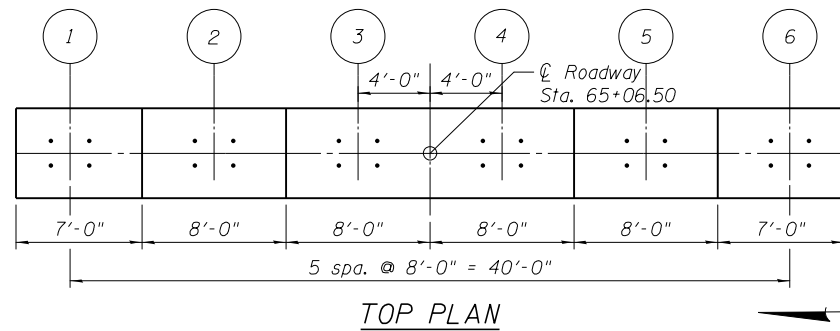
SHEET NO. S-102 OF 146 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	483
SN 069-0525		CONTRACT NO. 72B58		

ILLINOIS FED. AID PROJECT

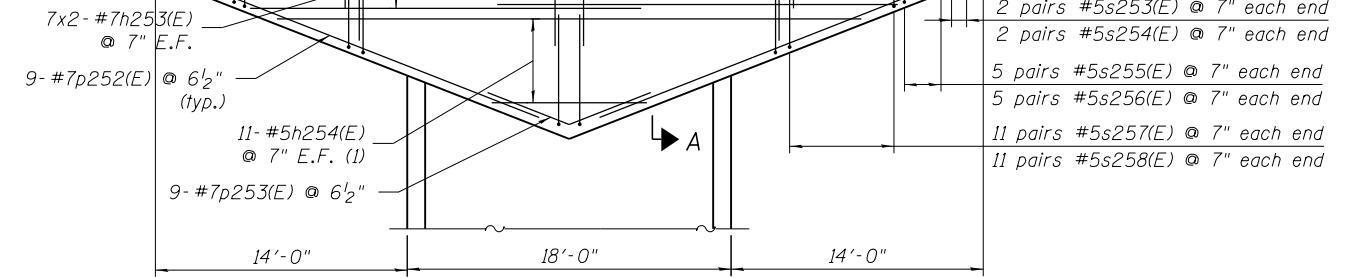
BEARING SEAT ELEVATIONS

Girder	Brg. Seat Elevation
1	483.44
2	483.60
3	483.76
4	483.76
5	483.60
6	483.44



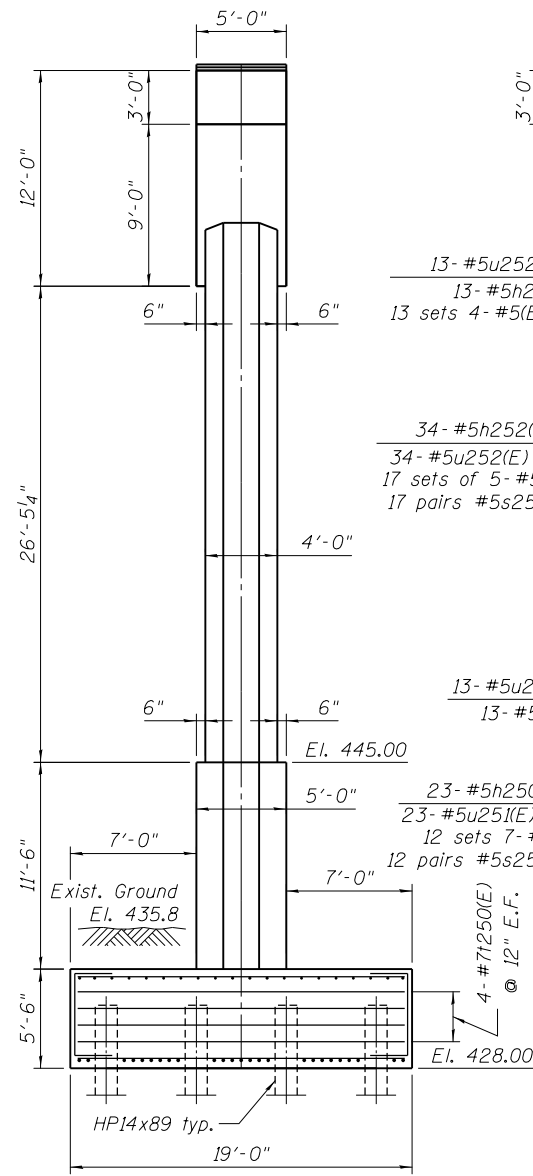
TOP PLAN

9- #1p250(E) @ 6 1/2" top layer
9- #1p251(E) @ 6 1/2" second layer



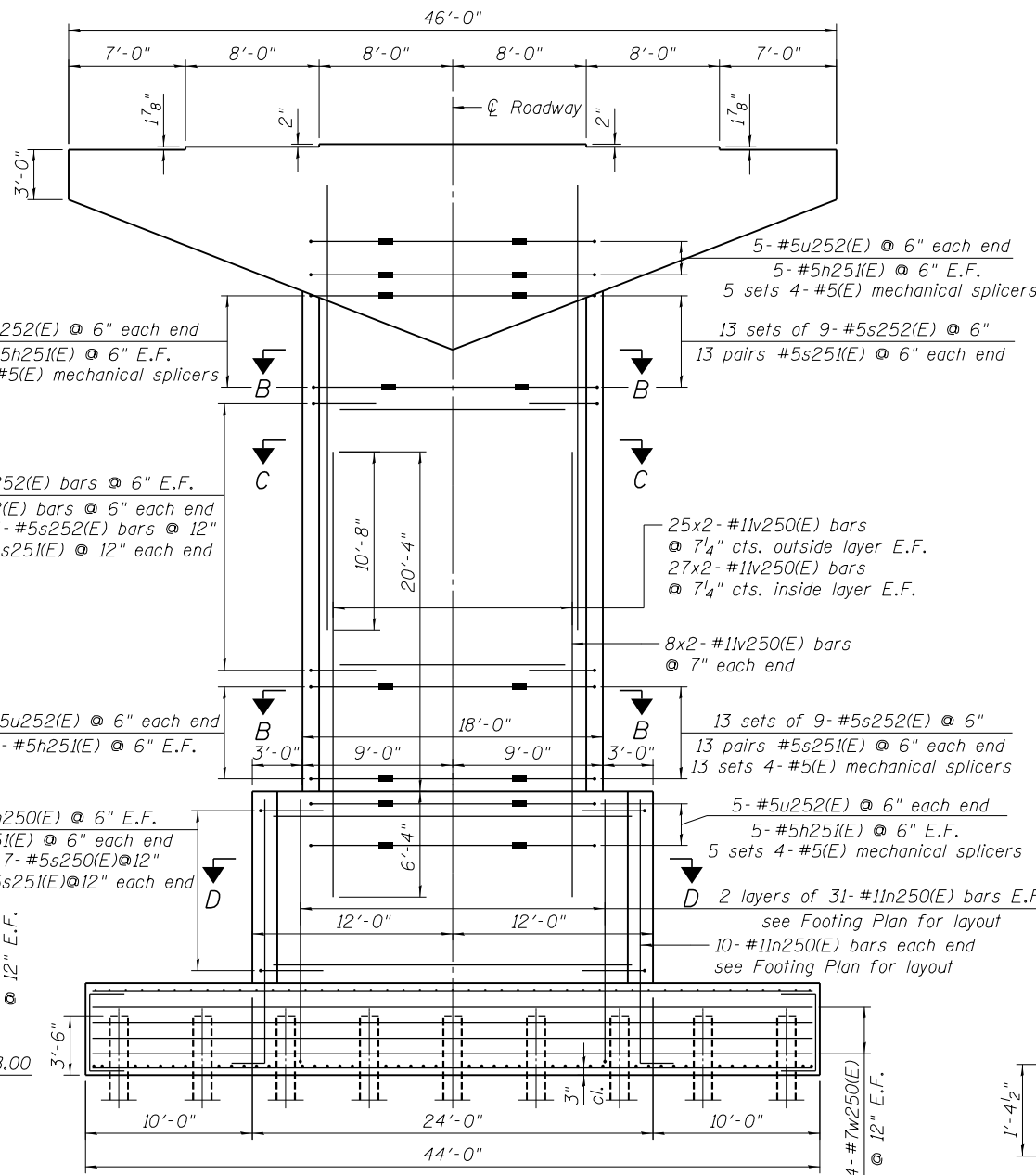
PIER CAP REINFORCEMENT

(1) Cut h254(E) bars according to cutting diagram, see Sheet S-104

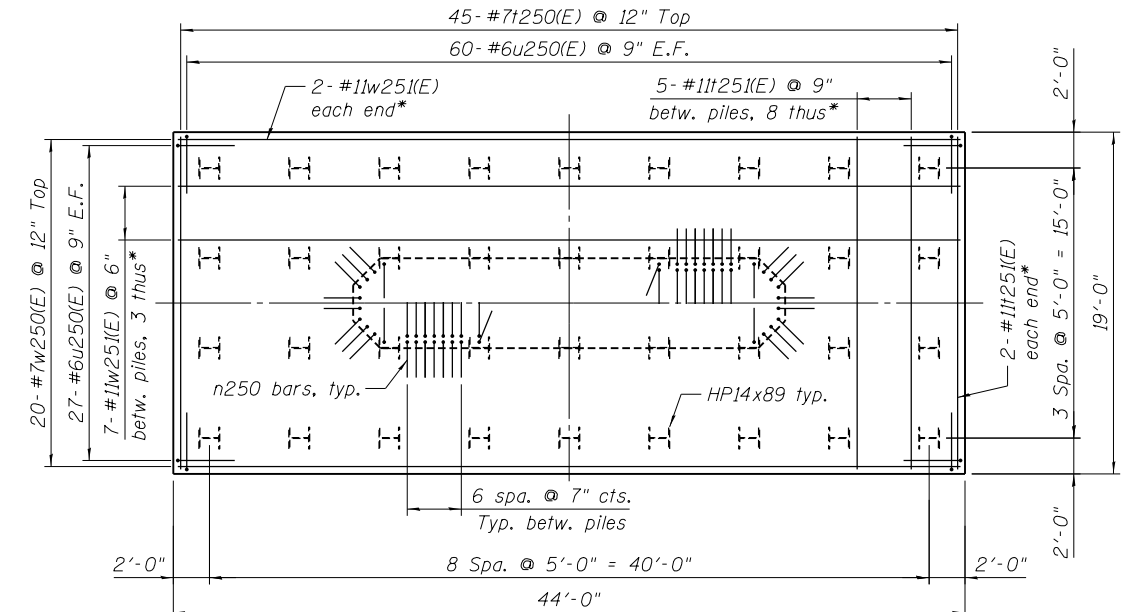


END VIEW

Column reinforcement omitted for clarity

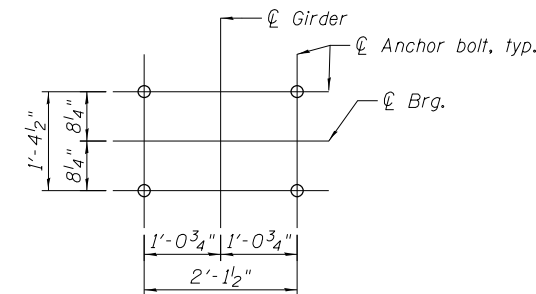


ELEVATION



FOOTING PLAN

* indicates bottom mat reinforcement



ANCHOR BOLT LAYOUT

PILE DATA

Pile Type and Size:	Steel-HP14x89 with pile shoe
Nominal Required Bearing:	455 kips
Factored Resistance Available:	250 kips
Estimated Pile Length:	83 ft.
Number of Production Piles:	35
Number of Test Piles:	1
Estimated Top of Rock Elevation:	353.00

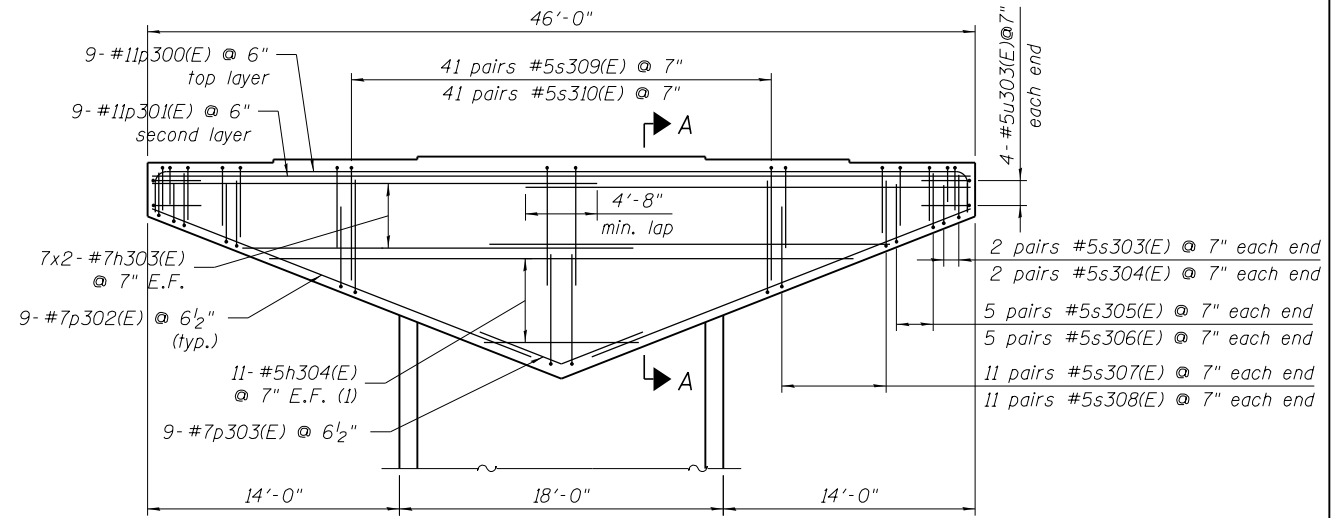
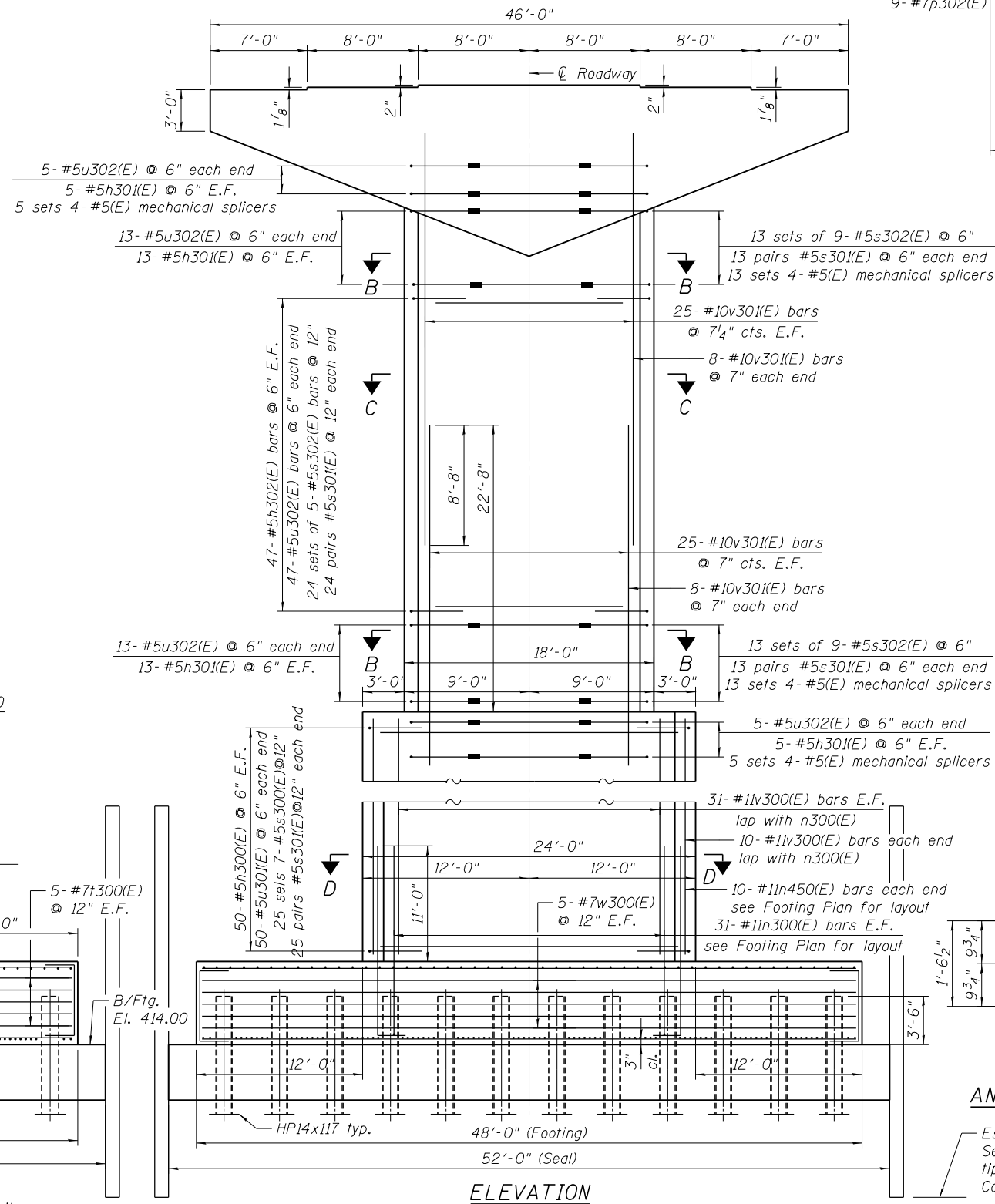
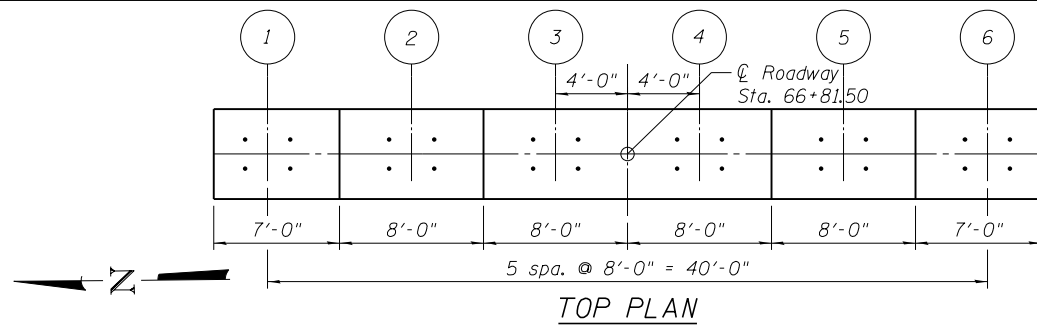
Notes:

1. Bars indicated thus 4x2- #5 etc. indicates 4 lines of bars with 2 lengths per line.
2. Pour steps monolithically with cap.
3. Space reinforcement in cap to miss anchor bolts.
4. E.F. indicates each face
5. See Sht. S-128 for aesthetic reveals on pier shaft.

FILE NAME = \\\FS-0044\AM\VALU\T.D. TRANS. 07\TRDCH\02012341-02\STRUCT\CAD\72B58\0690525\SHEET_0690525-72B58-030-PIER_SHT.DGN
 USER NAME = exp U.S. Services Inc
 DATE = 8/5/2014
 PLOT SCALE =
 PLOT DATE =
 DESIGNED - HVP
 CHECKED - JLR
 DRAWN - HVP
 CHECKED - VCP
 REVISED -
 REVISED -
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 STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 PIER 3
 PLAN & ELEVATION
 SHEET NO. S-103 OF 146 SHEETS
 F.A.P. RTE. SECTION COUNTY TOTAL SHEETS SHEET NO.
 745 123B-2 MORGAN 782 484
 SN 069-0525 CONTRACT NO. 72B58
 ILLINOIS FED. AID PROJECT

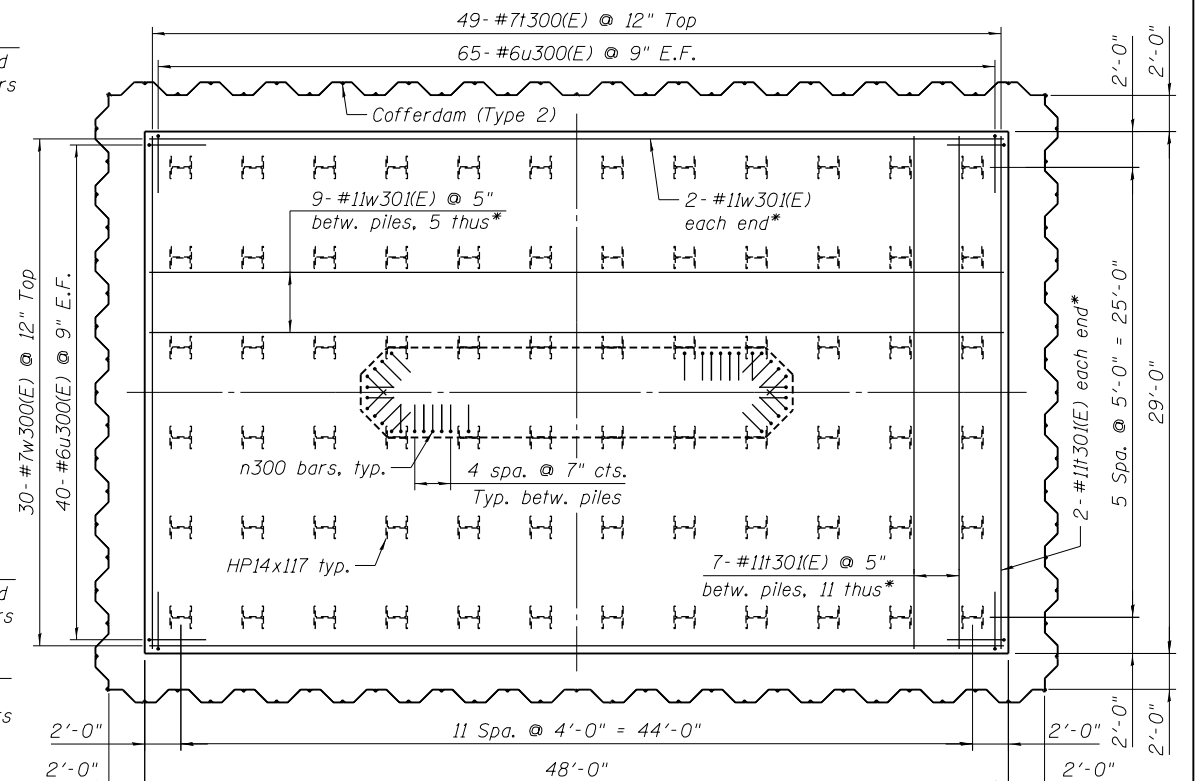
BEARING SEAT ELEVATIONS

Girder	Brg. Seat Elevation
1	489.84
2	490.00
3	490.16
4	490.16
5	490.00
6	489.84



PIER CAP REINFORCEMENT

(1) Cut h304(E) bars according to cutting diagram, see Sheet S-106



FOOTING PLAN

* indicates bottom mat reinforcement

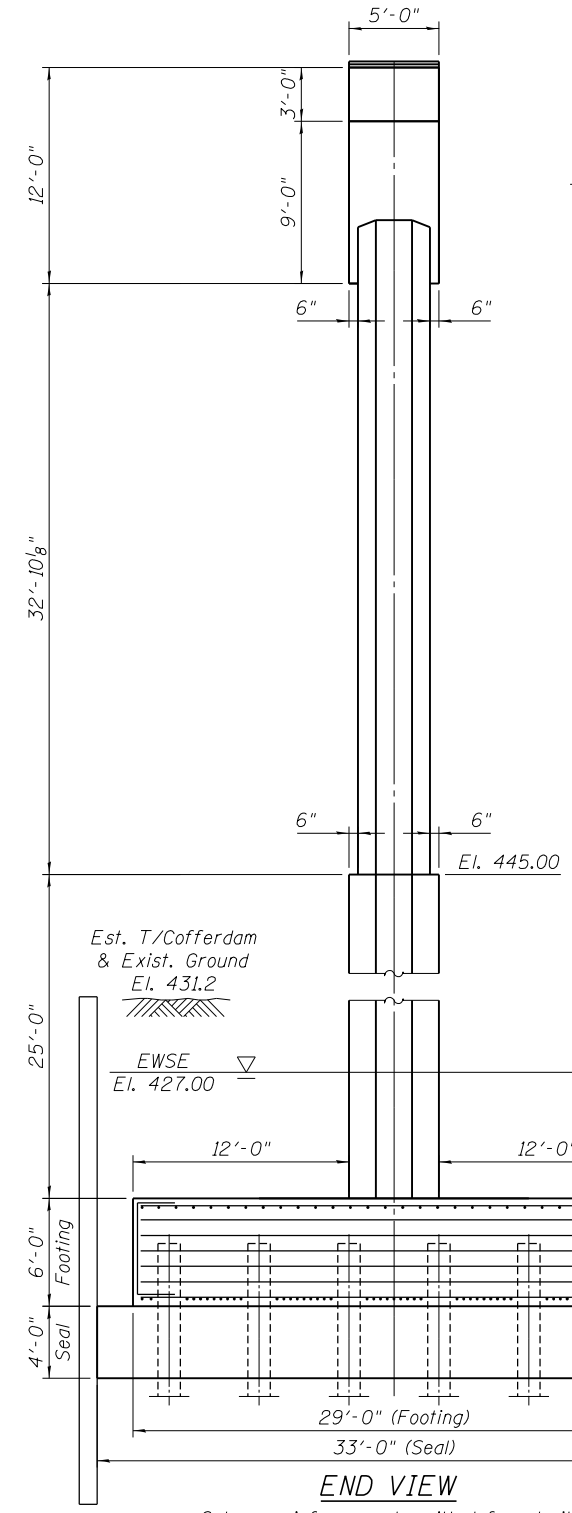
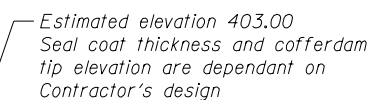
PILE DATA

Pile Type and Size:	Steel-HP14x117 with pile shoe
Nominal Required Bearing:	929 kips
Factored Resistance Available:	494 kips
Estimated Pile Length:	68 ft.
Number of Production Piles:	71
Number of Test Piles:	1
Estimated Top of Rock Elevation:	349.30

Notes:

1. Bars indicated thus 4x2-#5 etc. indicates 4 lines of bars with 2 lengths per line.
2. Pour steps monolithically with cap.
3. Space reinforcement in cap to miss anchor bolts.
4. E.F. indicates each face
5. See Sht. S-128 for aesthetic reveals on pier shaft.

ANCHOR BOLT LAYOUT



END VIEW

Column reinforcement omitted for clarity

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**PIER 4
PLAN & ELEVATION**

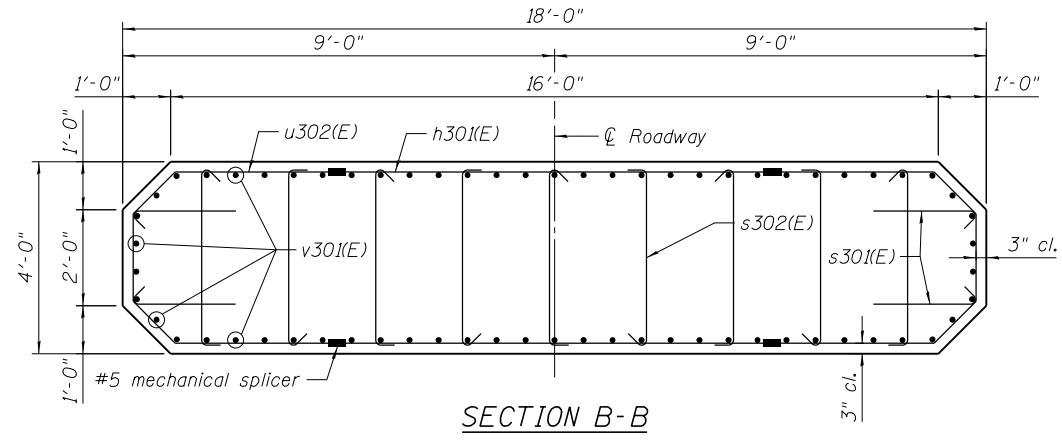
SHEET NO. S-105 OF 146 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	486
SN 069-0525		CONTRACT NO. 72B58		

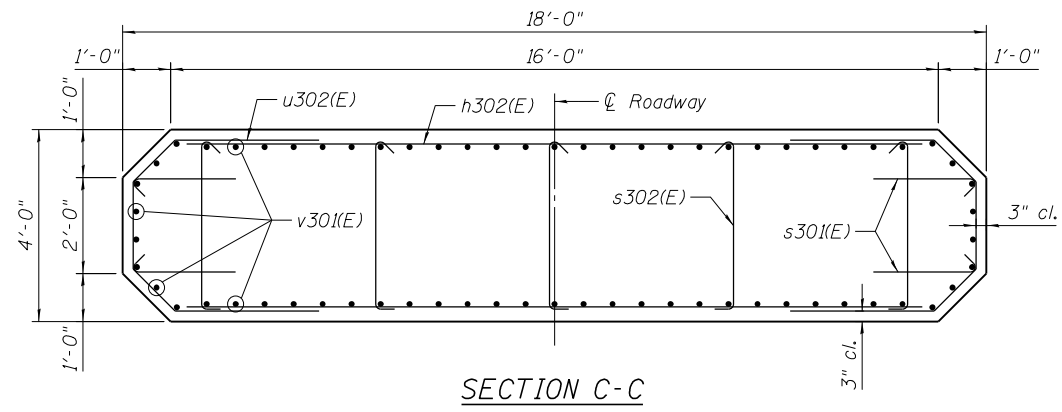
ILLINOIS FED. AID PROJECT

FILE NAME = USER NAME = DESIGNED - HVP REVISED -
 DATE - 8/5/2014 CHECKED - JLR REVISED -
 PLOT SCALE = DRAWN - HVP REVISED -
 PLOT DATE CHECKED - VCP REVISED -
 exp U.S. Services Inc. Chicago, IL
 BUILDINGS-EARTH & ENVIRONMENT-ENERGY
 INDUSTRIAL-INFRASTRUCTURE-SUSTAINABILITY

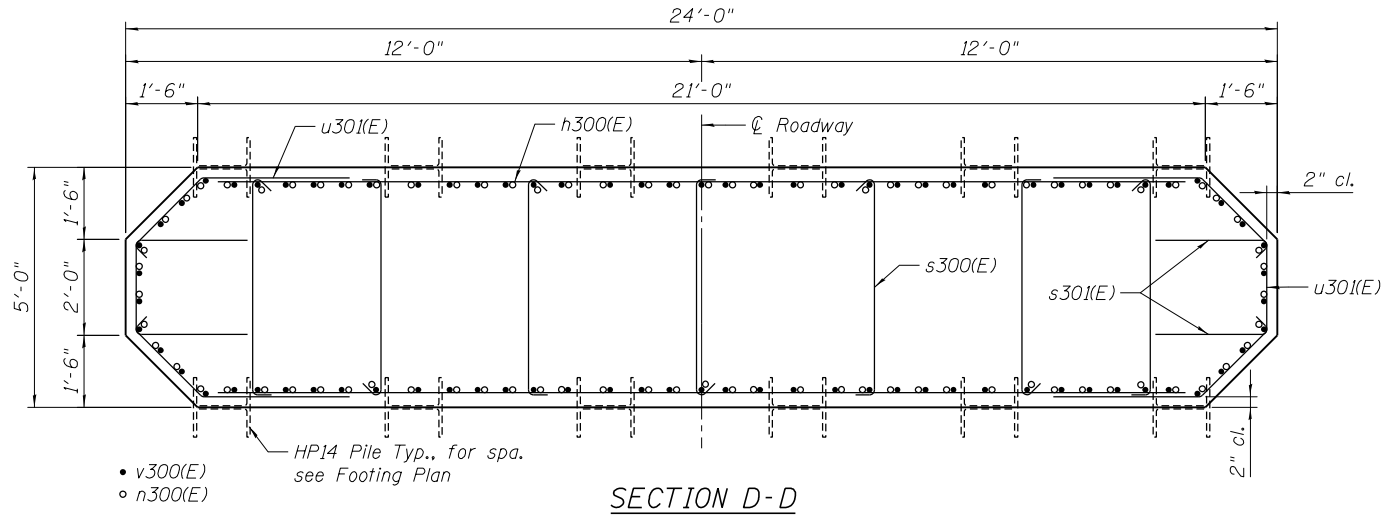
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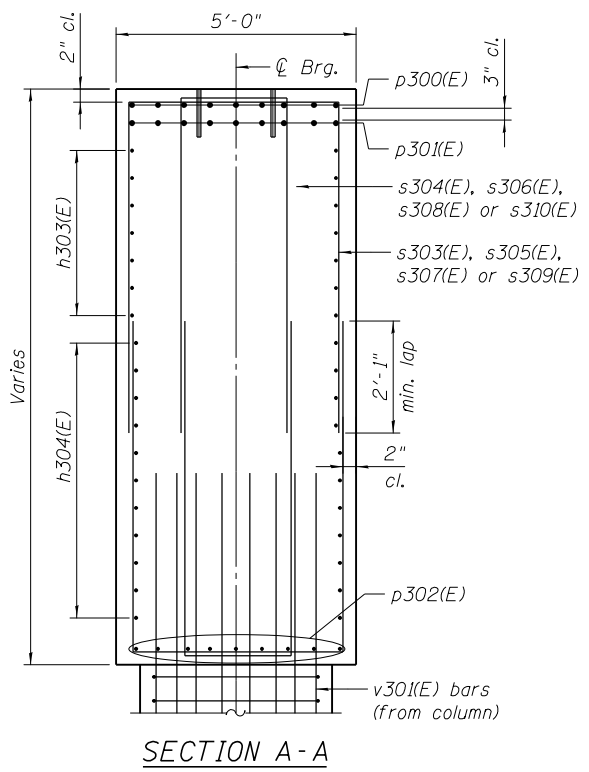
SECTION B-B



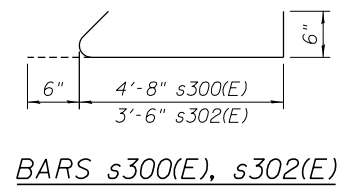
SECTION C-C



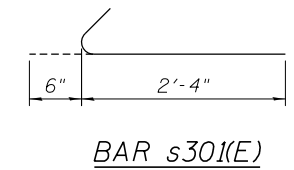
SECTION D-D



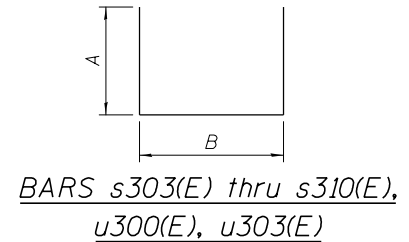
SECTION A-A



BARS s300(E), s302(E)

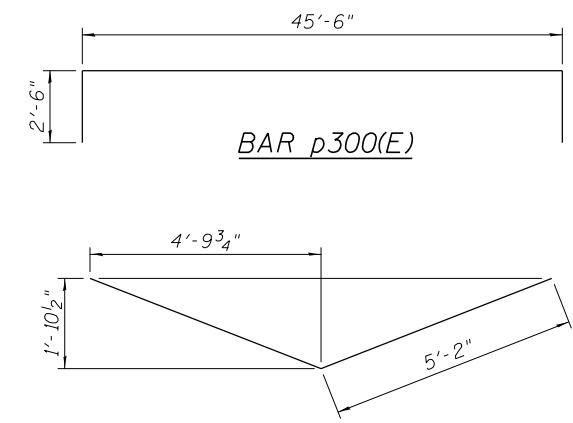


BAR s301(E)

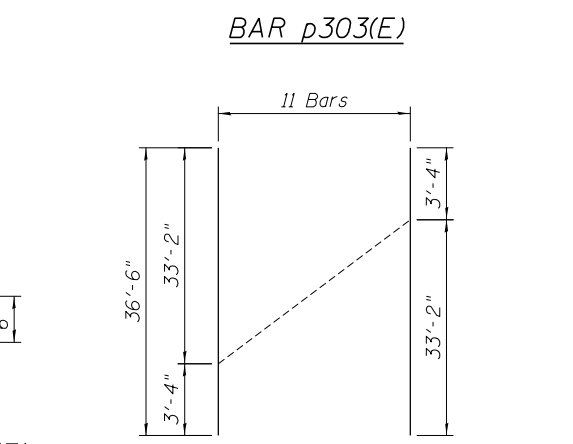


BARS s303(E) thru s310(E), u300(E), u303(E)

Bar	A	B
s303(E)	2'-8"	4'-8"
s304(E)	2'-8"	2'-4"
s305(E)	3'-2"	4'-8"
s306(E)	3'-2"	2'-4"
s307(E)	4'-6"	4'-8"
s308(E)	4'-6"	2'-4"
s309(E)	6'-11"	4'-8"
s310(E)	6'-11"	2'-4"
u300(E)	2'-1"	5'-5"
u303(E)	2'-9"	4'-6"

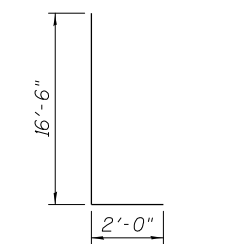


BAR p300(E)

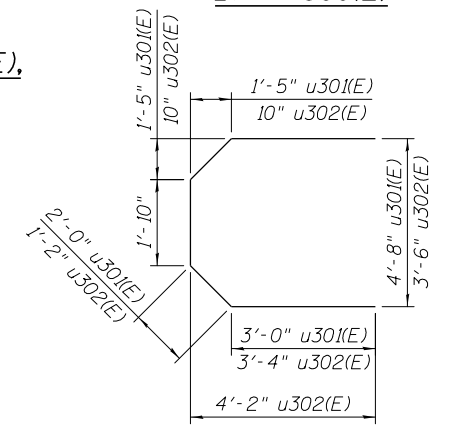


BAR p303(E)

BAR CUTTING DIAGRAM FOR h304(E)



BAR n300(E)



BARS u301(E), u302(E)

BAR LIST

Bar	No.	Size	Length	Shape
h300(E)	100	#5	20'-8"	—
h301(E)	72	#5	9'-2" *	—
h302(E)	94	#5	15'-8"	—
h303(E)	28	#7	25'-2"	—
h304(E)	11	#5	36'-6"	—
n300(E)	82	#11	18'-6"	—
p300(E)	9	#11	50'-6"	—
p301(E)	9	#11	45'-0"	—
p302(E)	18	#7	23'-6"	—
p303(E)	9	#7	10'-4"	—
s300(E)	175	#5	5'-8"	—
s301(E)	300	#5	2'-10"	—
s302(E)	354	#5	4'-6"	—
s303(E)	8	#5	10'-0"	—
s304(E)	8	#5	7'-8"	—
s305(E)	20	#5	11'-0"	—
s306(E)	20	#5	8'-8"	—
s307(E)	44	#5	13'-8"	—
s308(E)	44	#5	11'-4"	—
s309(E)	82	#5	18'-6"	—
s310(E)	82	#5	16'-2"	—
t300(E)	59	#7	28'-6"	—
t301(E)	81	#11	28'-6"	—
u300(E)	210	#6	9'-7"	—
u301(E)	100	#5	11'-10"	—
u302(E)	166	#5	10'-10"	—
u303(E)	8	#5	10'-0"	—
v300(E)	82	#11	24'-8"	—
v301(E)	132	#10	27'-10"	—
w300(E)	40	#7	47'-6"	—
w301(E)	49	#11	47'-6"	—

* The bar length is to the center of mechanical splicer. The Contractor shall adjust the length as required for the selected mechanical splicer.

BILL OF MATERIAL

Item	Unit	Total
Concrete Structures	Cu. Yd.	571.2
Reinforcement Bars, Epoxy Coated	Pound	92900
Furnishing Steel Piles HP14x117	Foot	4828
Driving Piles	Foot	4828
Test Pile HP14x117	Each	1
Pile Shoes	Each	72
Mechanical Splicers	Each	144
Cofferdam (Type 2) (Location 1)	Each	1
Cofferdam Excavation	Cu. Yd.	1348
Seal Coat Concrete	Cu. Yd.	255.0

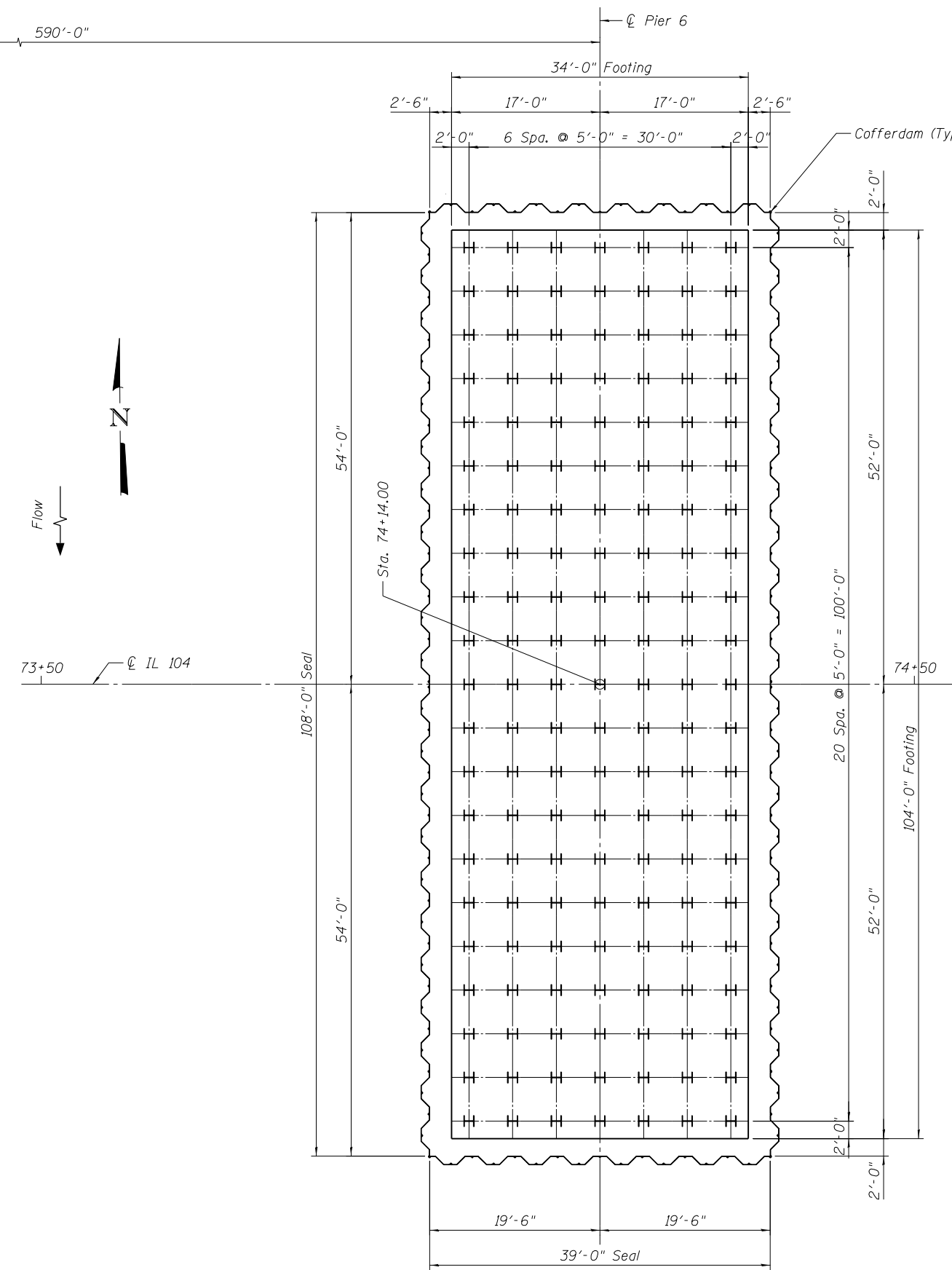
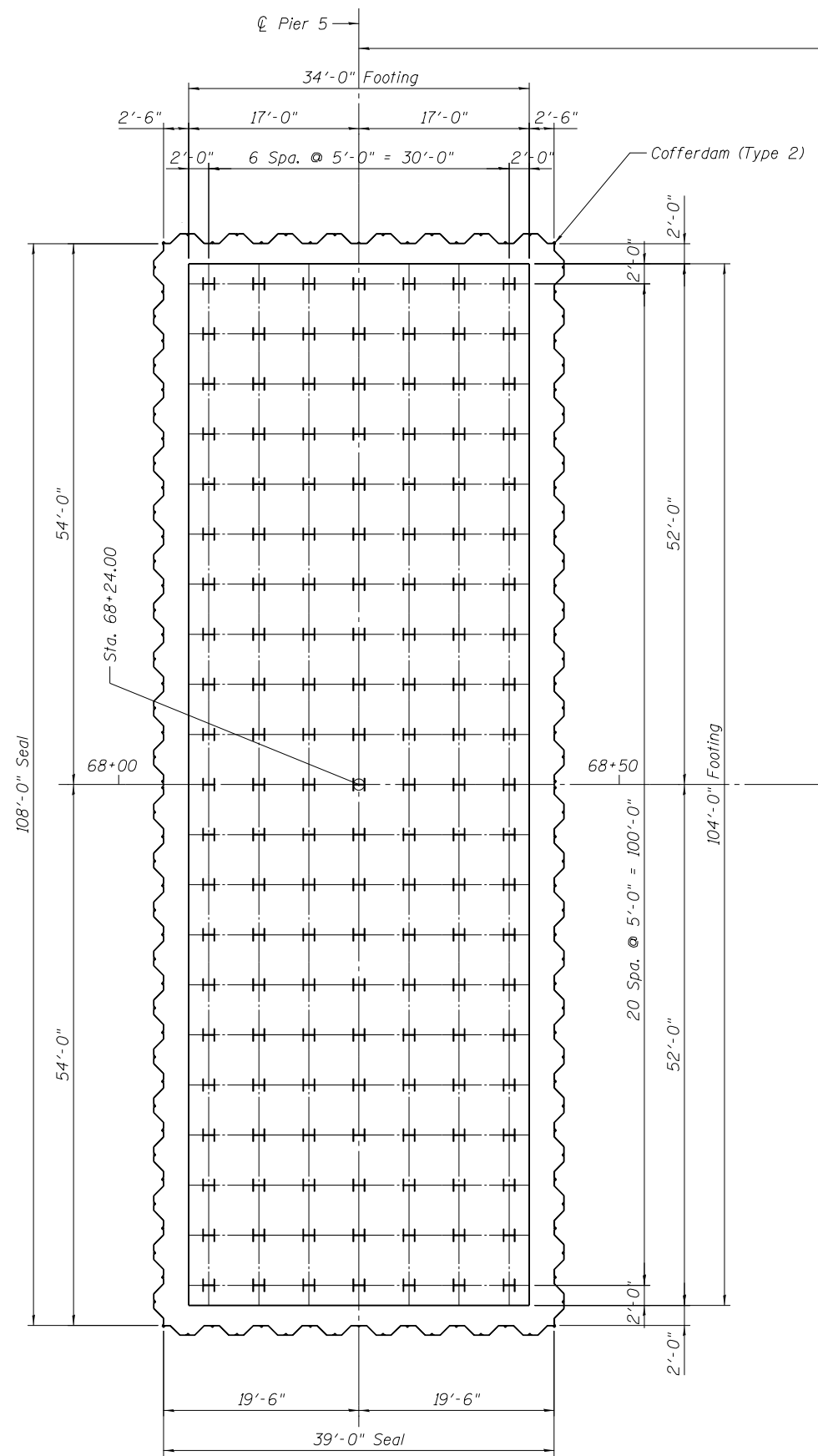
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	PLOT SCALE =	DRAWN - HVP	REVISED -
	PLOT DATE	CHECKED - VCP	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 4
SECTIONS & DETAILS

SHEET NO. S-106 OF 146 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	487
SN 069-0525		CONTRACT NO. 72B58		
ILLINOIS FED. AID PROJECT				



PILE LAYOUT PLAN

PIER 5 AND 6 - PILE DATA
 Pile Type and Size: Steel-HP14x117 with pile shoe
 Strength
 Nominal Required Bearing: 929 kips
 Factored Resistance Available: 511 kips
 Factored Resistance Available (tension): 23 kips
 Extreme Event
 Nominal Required Bearing: 929 kips
 Factored Resistance Available: 929 kips
 Factored Resistance Available (tension): 103 kips

PIER 5 - PILE QUANTITY
 Estimated Length: 55 ft
 Number of Production Piles: 145
 Number of Test Piles: 2
 Estimated Top of Rock Elevation: 350.6

PIER 6 - PILE QUANTITY
 Estimated Length: 56 ft
 Number of Production Piles: 145
 Number of Test Piles: 2
 Estimated Top of Rock Elevation: 349.4

Notes:
 1. Pile cutoff elevation is 405.50.
 2. If splicing of pile is required, follow typical splice detail on HP Pile Details sheet.

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	PLOT SCALE =	DRAWN - FD	REVISED -
	PLOT DATE =	CHECKED - SGC	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

PIERS 5 & 6
 PILE LAYOUT PLAN

SHEET NO. S-109 OF 146 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	490
SN 069-0525		CONTRACT NO. 72B58		
ILLINOIS FED. AID PROJECT				

