

**BEAM 9**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	919+15.79	52.46	731.11	731.11
⊕ Brg. S. Abut	919+17.30	52.46	731.13	731.13
A	919+27.30	52.46	731.24	731.27
B	919+37.30	52.46	731.34	731.40
C	919+47.30	52.46	731.44	731.53
D	919+57.30	52.46	731.53	731.64
E	919+67.30	52.46	731.62	731.74
F	919+77.30	52.46	731.71	731.83
G	919+87.30	52.46	731.78	731.90
H	919+97.30	52.46	731.86	731.96
I	920+07.30	52.46	731.92	732.01
J	920+17.30	52.46	731.99	732.05
K	920+27.30	52.46	732.05	732.08
S. Brg. Pier	920+41.30	52.46	732.12	732.12
⊕ Pier	920+42.30	52.46	732.12	732.12
N. Brg. Pier	920+43.30	52.46	732.13	732.13
L	920+53.30	52.46	732.17	732.20
M	920+63.30	52.46	732.21	732.27
N	920+73.30	52.46	732.25	732.33
O	920+83.30	52.46	732.28	732.38
P	920+93.30	52.46	732.30	732.41
Q	921+03.30	52.46	732.32	732.44
R	921+13.30	52.46	732.33	732.45
S	921+23.30	52.46	732.34	732.45
T	921+33.30	52.46	732.35	732.44
U	921+43.30	52.46	732.35	732.42
V	921+53.30	52.46	732.34	732.38
⊕ Brg. N. Abut	921+67.30	52.46	732.32	732.32
Bk. N. Abut.	921+68.82	52.46	732.32	732.32

**WEST EDGE OF PAVEMENT**

Location	Station	Offset	Theoretical Grade Elevations
S. End South Appr. Pav't.	818+99.65	-42.00	730.84
A1	819+09.65	-42.00	730.96
A2	819+19.65	-42.00	731.08
N. End South Appr. Pav't	819+29.65	-42.00	731.18

**@ SB IL 59, PROFILE GRADE LINE & EAST EDGE OF PAVEMENT**

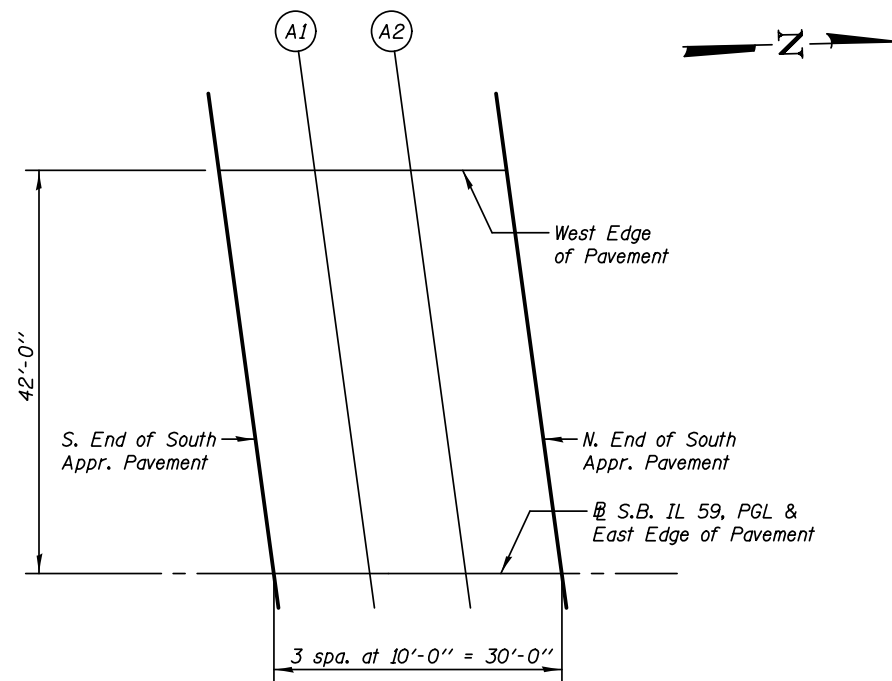
Location	Station	Offset	Theoretical Grade Elevations
S. End South Appr. Pav't.	819+05.39	0.00	730.04
A1	819+15.39	0.00	730.15
A2	819+25.39	0.00	730.26
N. End South Appr. Pav't	819+35.39	0.00	730.37

**WEST EDGE OF PAVEMENT**

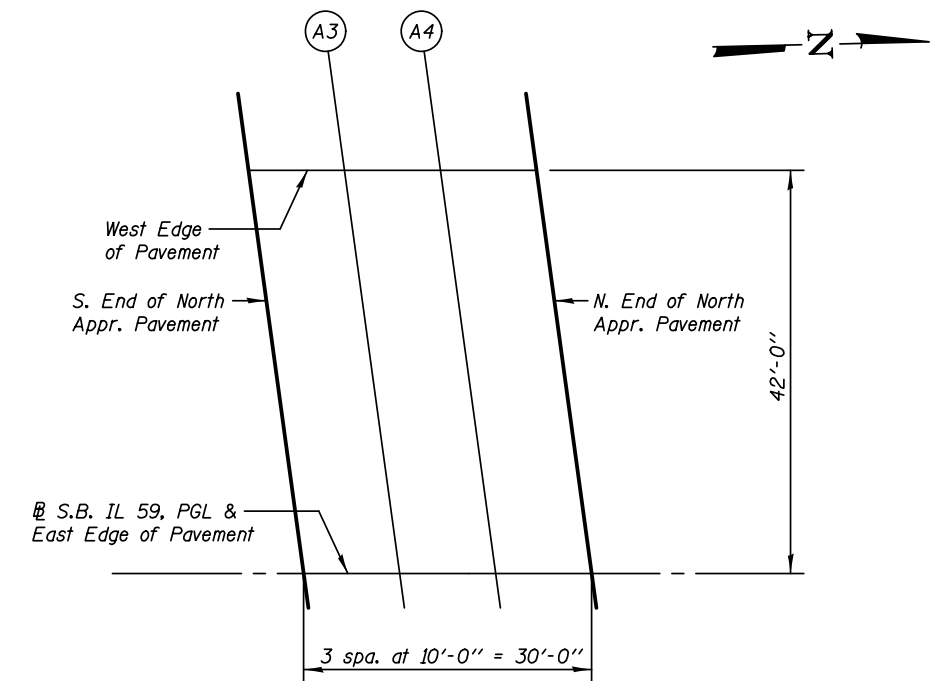
Location	Station	Offset	Theoretical Grade Elevations
S. End North Appr. Pav't.	821+82.68	-42.00	732.25
A3	821+92.68	-42.00	732.23
A4	822+02.68	-42.00	732.20
N. End North Appr. Pav't	822+12.68	-42.00	732.16

**@ SB IL 59, PROFILE GRADE LINE & EAST EDGE OF PAVEMENT**

Location	Station	Offset	Theoretical Grade Elevations
S. End North Appr. Pav't.	821+88.42	0.00	731.36
A3	821+98.42	0.00	731.34
A4	822+08.42	0.00	731.30
N. End North Appr. Pav't	822+18.42	0.00	731.27



**PLAN**  
South Approach (SB)



**PLAN**  
North Approach (SB)

**Ⓜ NB IL 59, PROFILE GRADE LINE & WEST EDGE OF PAVEMENT**

Location	Station	Offset	Theoretical Grade Elevations
S. End South Appr. Pav't.	918+78.61	0.00	729.57
A1	918+88.61	0.00	729.70
A2	918+98.61	0.00	729.82
N. End South Appr. Pav't	919+08.61	0.00	729.94

**EAST EDGE OF PAVEMENT**

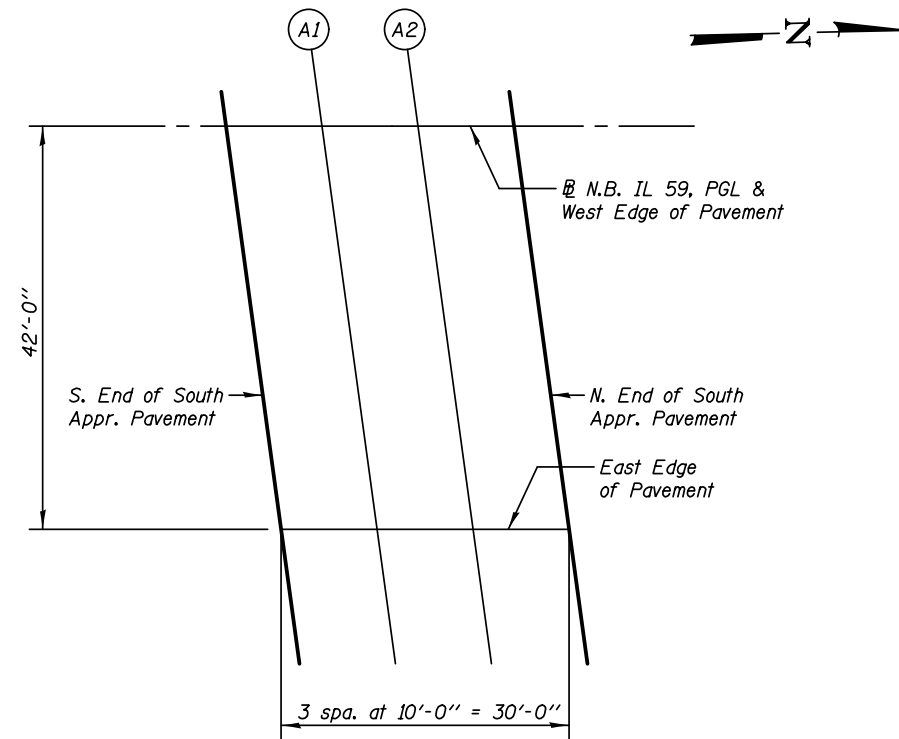
Location	Station	Offset	Theoretical Grade Elevations
S. End South Appr. Pav't.	918+84.36	42.00	730.52
A1	918+94.36	42.00	730.65
A2	919+04.36	42.00	730.77
N. End South Appr. Pav't	919+14.36	42.00	730.88

**Ⓜ NB IL 59, PROFILE GRADE LINE & WEST EDGE OF PAVEMENT**

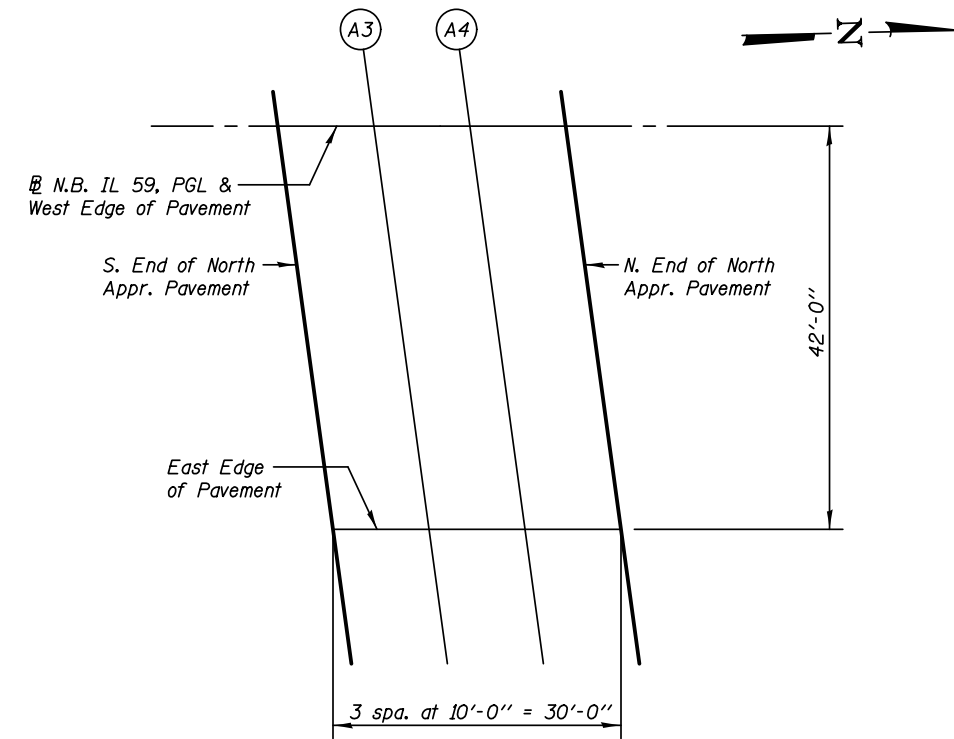
Location	Station	Offset	Theoretical Grade Elevations
S. End North Appr. Pav't.	921+61.64	0.00	731.24
A3	921+71.64	0.00	731.22
A4	921+81.64	0.00	731.20
N. End North Appr. Pav't	921+91.64	0.00	731.18

**EAST EDGE OF PAVEMENT**

Location	Station	Offset	Theoretical Grade Elevations
S. End North Appr. Pav't.	921+67.38	42.00	732.11
A3	921+77.38	42.00	732.09
A4	921+87.38	42.00	732.06
N. End North Appr. Pav't	921+97.38	42.00	732.04

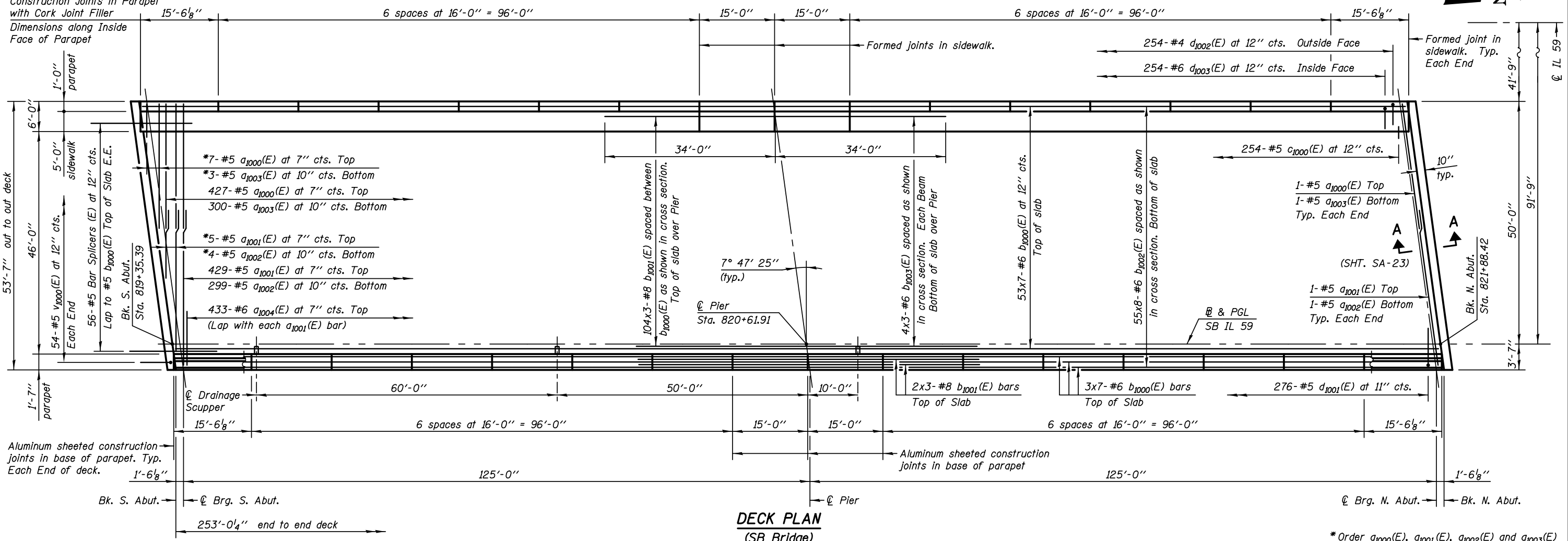


**PLAN**  
South Approach (NB)



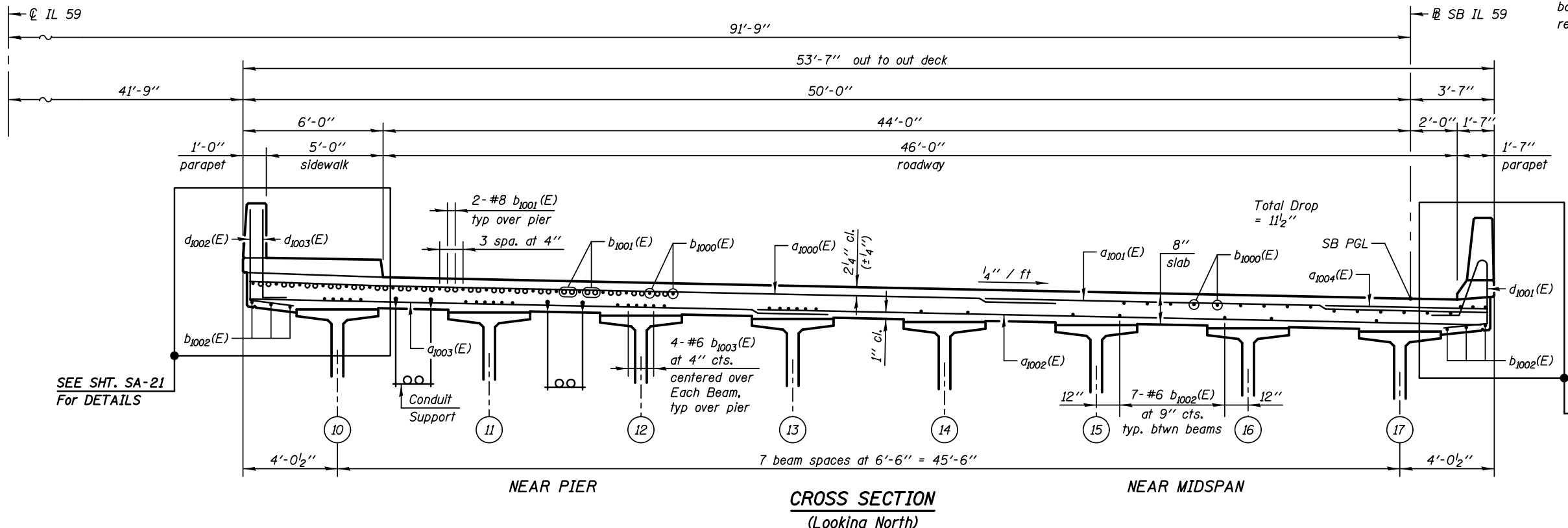
**PLAN**  
North Approach (NB)

Construction Joints in Parapet with Cork Joint Filler  
Dimensions along Inside Face of Parapet



**DECK PLAN**  
(SB Bridge)

\* Order a<sub>1000</sub>(E), a<sub>1001</sub>(E), a<sub>1002</sub>(E) and a<sub>1003</sub>(E) bars full length. Cut to fit skew and use remainder of bars in opposite end.



**Notes:**

Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.

See Sheet SA-21 for Sidewalk and Parapet Details

See Sheet SA-22 for East Parapet Details

See Sheet SA-24 for Deck Misc. Details and Bill of Material.

See Sheet SA-24 for Conduit Support Details

See Sheet SA-36 for Drainage Scupper Details.

**MIN. BAR LAPS:**

#5 = 3'-3"

#6 = 3'-10"

#8 = 6'-9"

**KNIGHT**  
Engineers & Architects

DESIGNED - WPM	REVISIONS
CHECKED - TB	REVISIONS
DRAWN - TB	REVISIONS
CHECKED - WPM	REVISIONS
SCALE - NONE	
DATE - 10/15/2012	

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

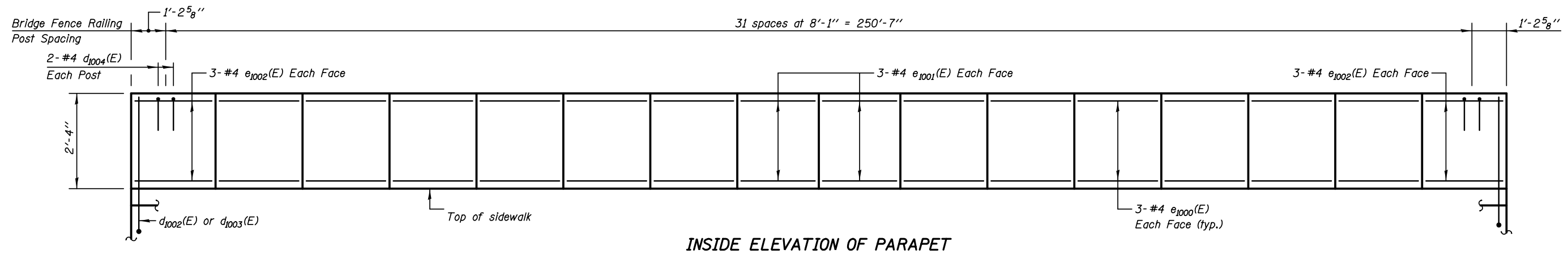
DECK PLAN AND CROSS SECTION (SB)  
S.N. 022-2029 (SB) TOLLWAY B.N. 826  
S.N. 022-2030 (NB) TOLLWAY B.N. 825

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	(112 & 113) WRS-5	DUPAGE	963	604
CONTRACT NO. 60131				

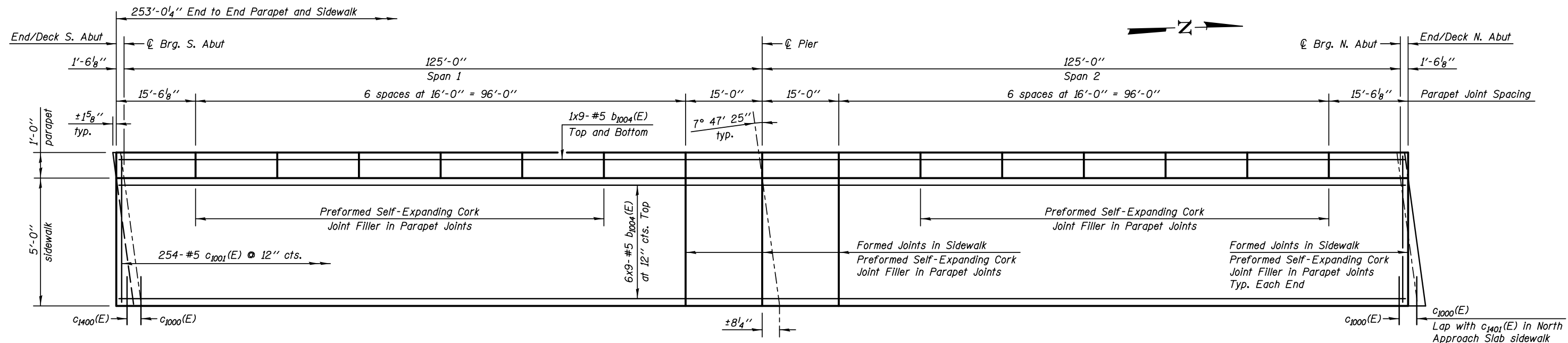
SHEET NO. SA-20 OF 63 SHEETS

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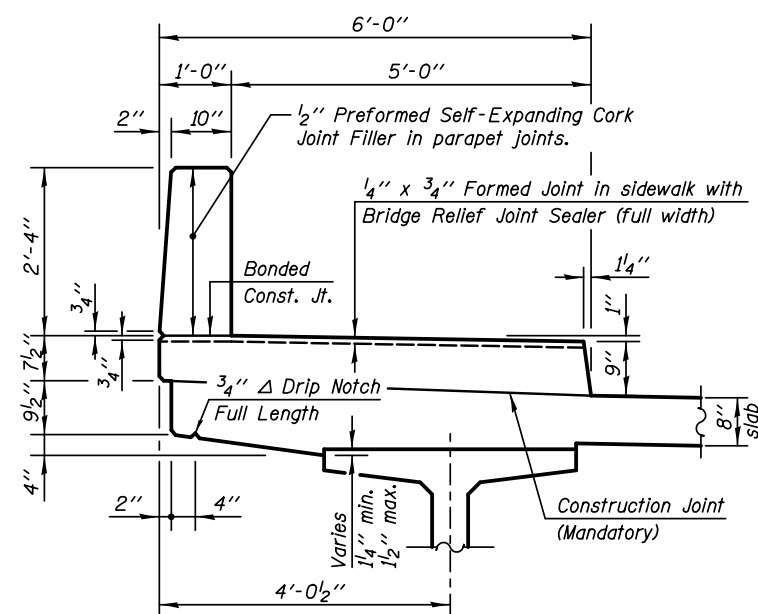




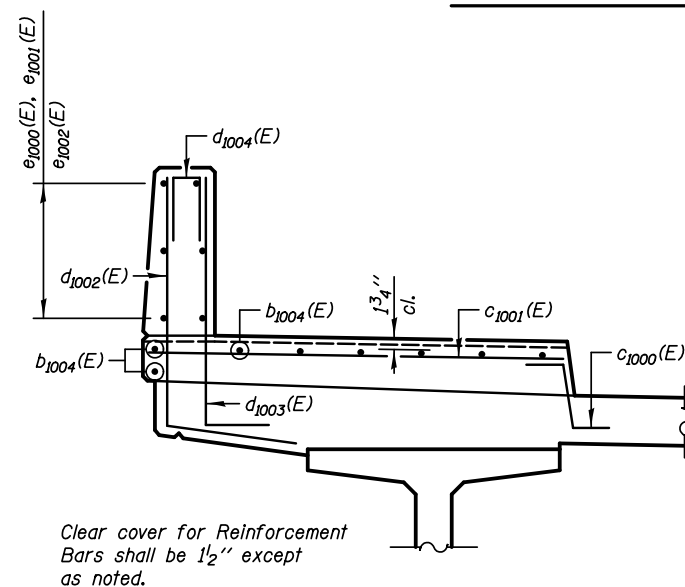
**INSIDE ELEVATION OF PARAPET**



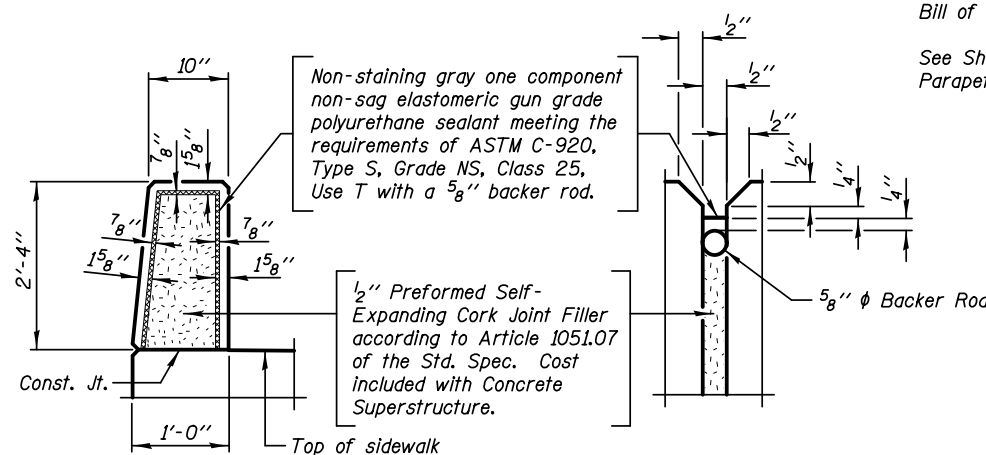
**SIDEWALK - PARTIAL PLAN**



**SECTION THRU SIDEWALK & PARAPET**  
(Showing Dimensions)



**SECTION THRU SIDEWALK & PARAPET**  
(Showing Reinforcement Bars)



**PARAPET JOINT DETAILS**

**Notes:**

Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.

See Sheet SA-24 for Deck Misc. Details and Bill of Materials.

See Sheet SA-38 for Bridge Fence Railing, Parapet Mounted Details

**MIN. BAR LAPS:**  
#5 = 3'-3"

**KNIGHT**  
Engineers & Architects

DESIGNED - WPM  
CHECKED - TB  
SCALE - NONE  
DATE - 10/15/2012

DRAWN - TB  
CHECKED - WPM

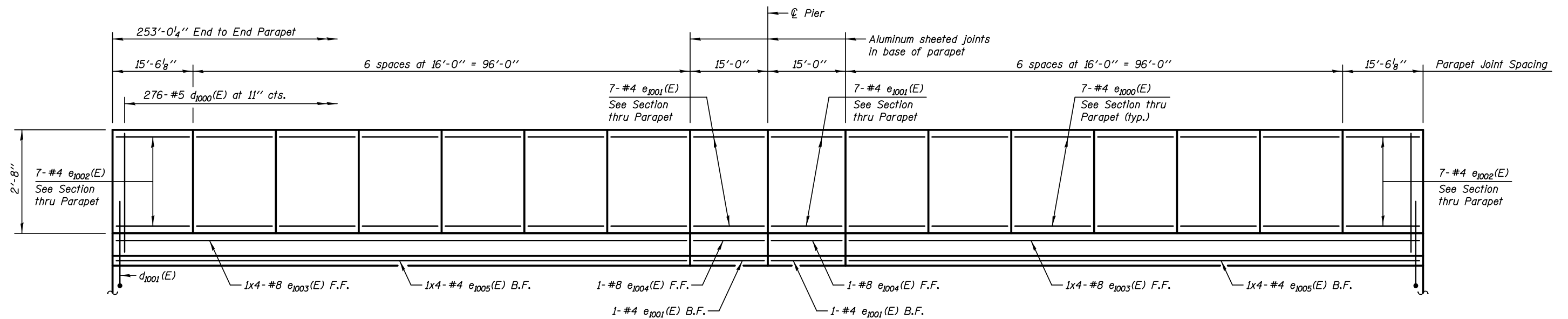
REVISED  
REVISED  
REVISED  
REVISED

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

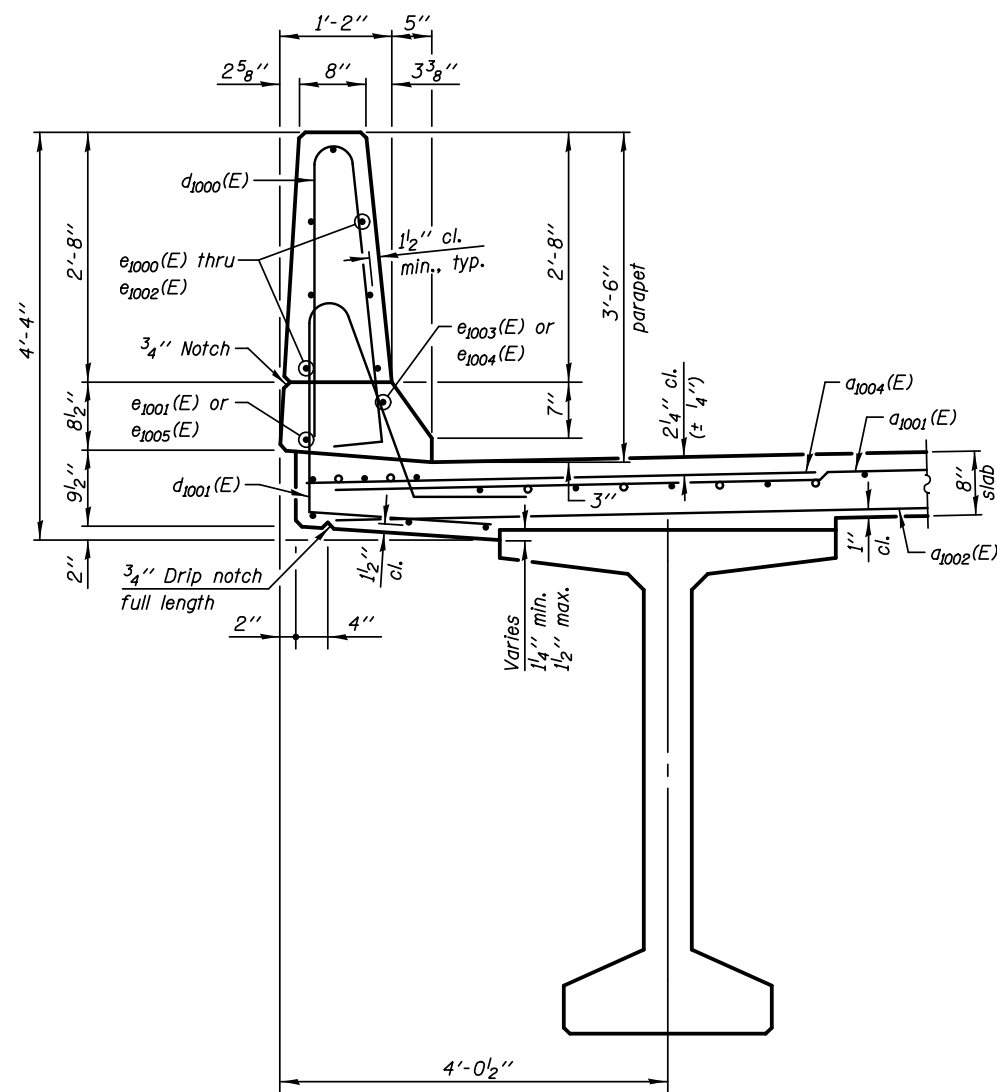
**SIDEWALK AND PARAPET DETAILS (SB)**  
S.N. 022-2029 (SB) TOLLWAY B.N. 826  
S.N. 022-2030 (NB) TOLLWAY B.N. 825  
SHEET NO. SA-21 OF 63 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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<b>CONTRACT NO. 60131</b>				

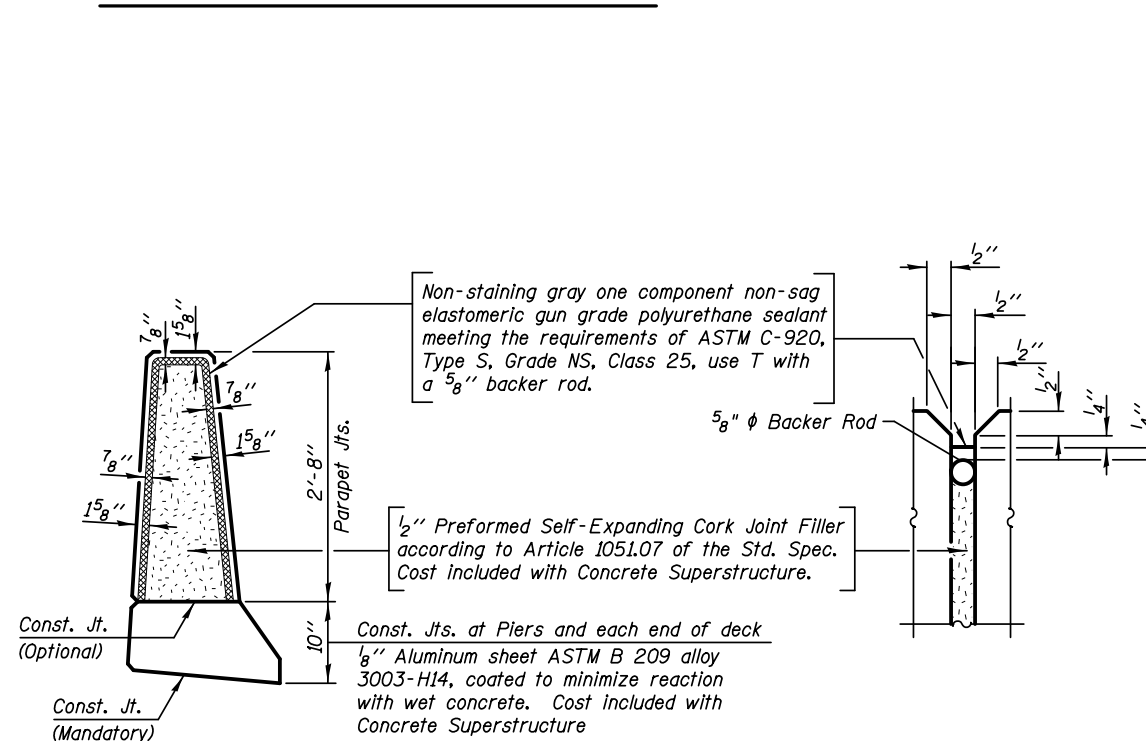
ILLINOIS FED. AID PROJECT



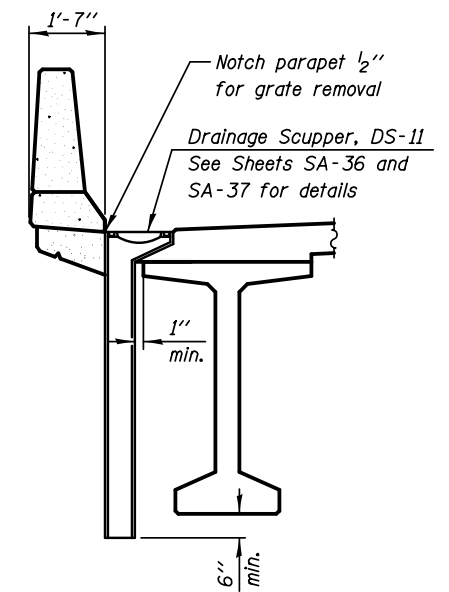
**INSIDE ELEVATION OF EAST PARAPET**



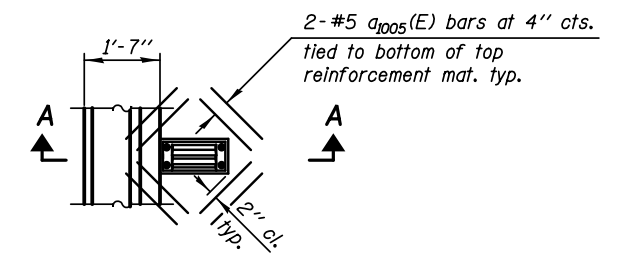
**SECTION THRU PARAPET**



**PARAPET JOINT DETAILS**



**SECTION A-A**



**PLAN**

**Note:**  
Cut longitudinal reinforcement to clear drainage scuppers.

**Notes:**

Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.

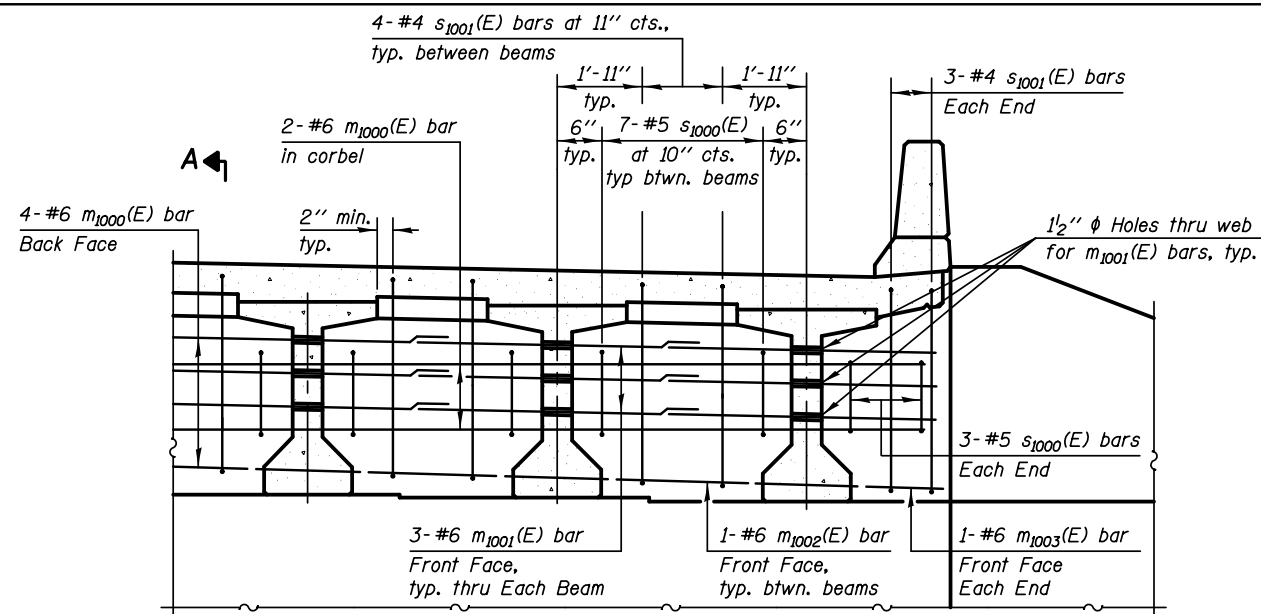
See Sheet SA-24 for Deck Misc. Details and Bill of Materials.

**MIN. BAR LAPS:**

#4 = 2'-4"  
#8 = 5'-5"

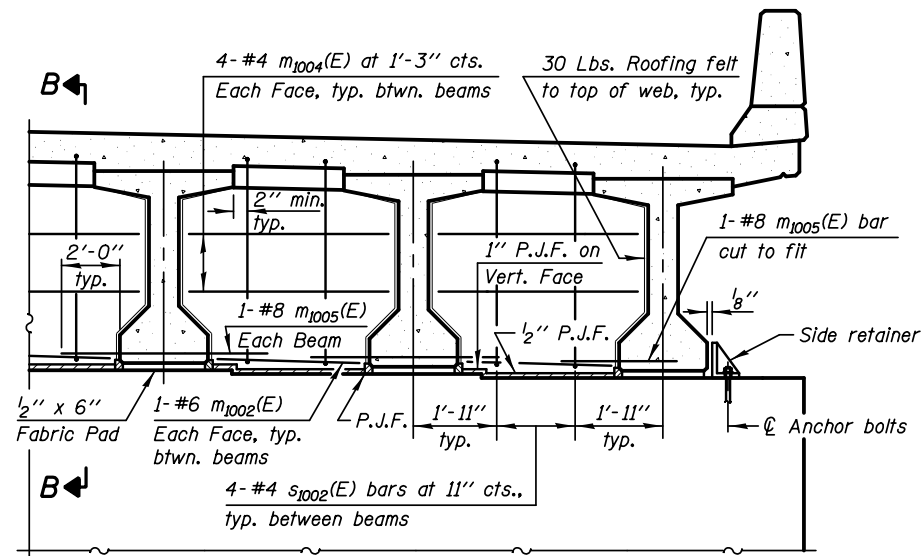
DESIGNED - WPM	REVISION
CHECKED - TB	REVISION
DRAWN - TB	REVISION
CHECKED - WPM	REVISION
SCALE - NONE	
DATE - 10/15/2012	

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	(112 & 113) WRS-5	DUPAGE	963	606
CONTRACT NO. 60131				

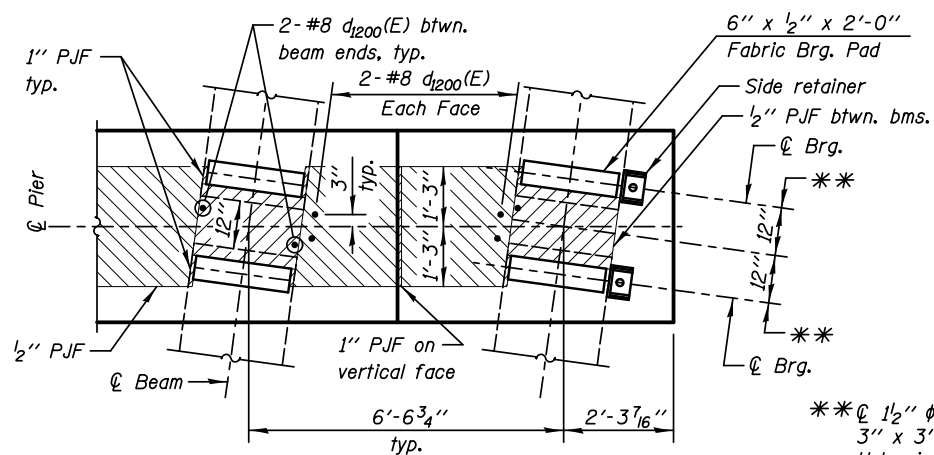


**DIAPHRAGM ELEVATION AT ABUTMENT**

**MIN. BAR LAP**  
#6 bar = 3'-4"



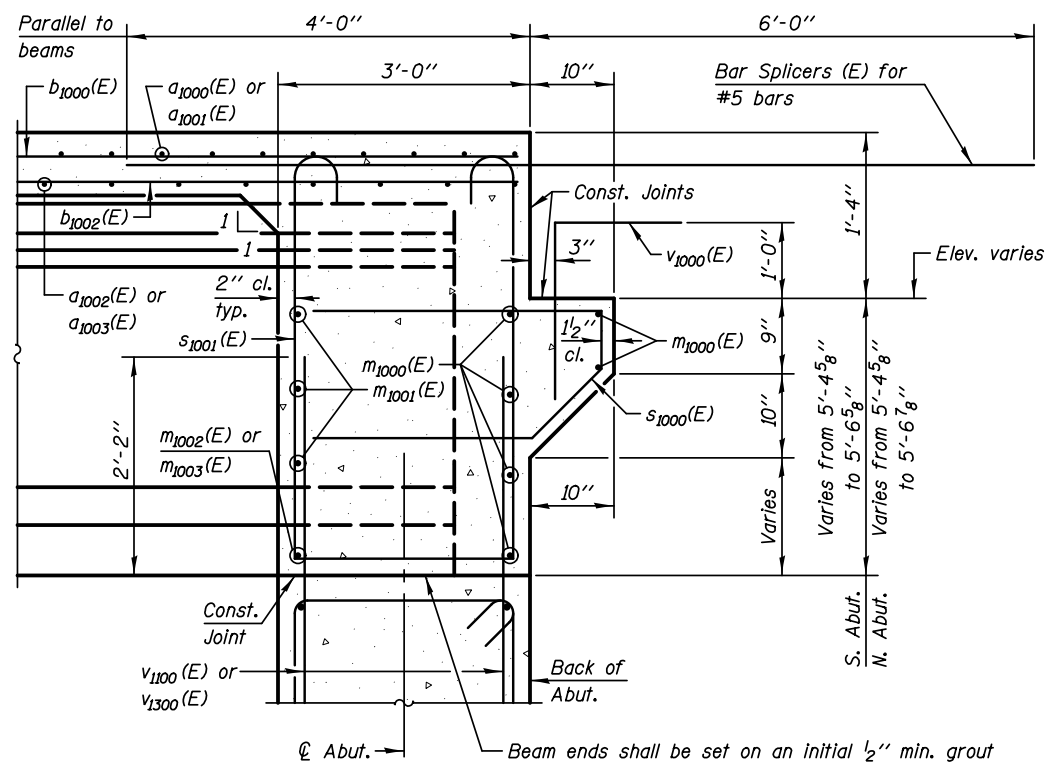
**DIAPHRAGM AT PIER**



**PLAN AT PIER**

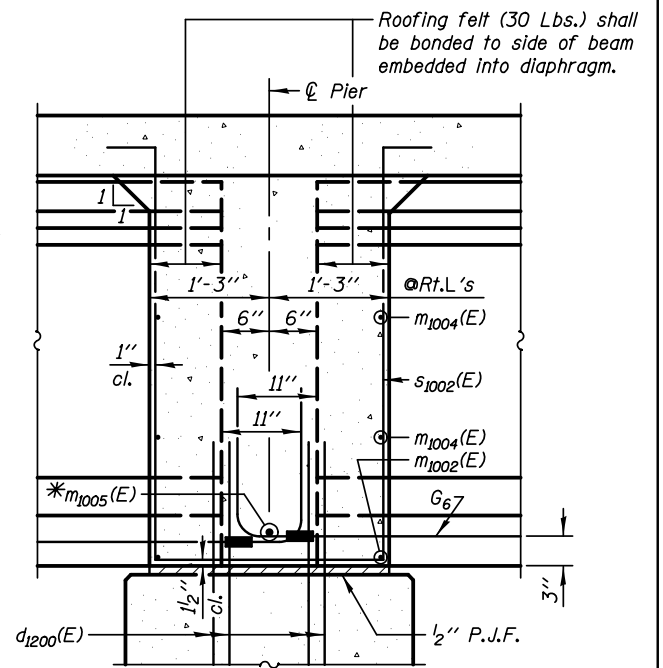
(Showing bearing pad and P.J.F. details)

\*\* \* 1/2"  $\phi$  x 18" Anchor bolts with 3" x 3" x 5/16"  $\phi$  washer under nut. Holes in cap to be formed or drilled after beams are in place but prior to pouring concrete diaphragm.



**SECTION A-A**

Dimensions at right angles to abutment, except as shown.

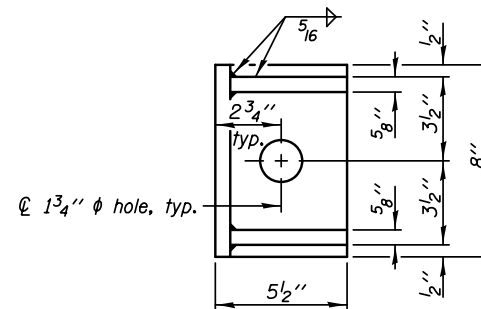
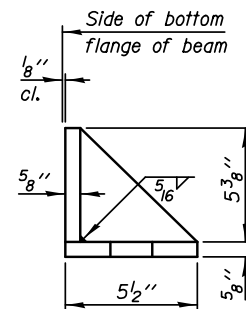


**SECTION B-B**

Dimensions along  $\phi$  of beam, except as shown.

\*Tightly fasten the #8 bars together with No. 9 wire ties.

Place 4- 5" I.D. conduit sleeves thru pier diaphragm. Coordinate location with TRAFFIC SIGNAL PLANS. Coring of holes thru pier diaphragm will not be allowed. Cost of sleeves is included with Concrete Superstructure.



**SIDE RETAINER**

(2 required each side of pier)  
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

**Notes:**

Reinforcement bars in diaphragm are billed with superstructure on Sheet SA-24.

Concrete in diaphragm is included with Concrete Superstructure on Sheet SA-24.

The s1000(E), s1001(E) and s1002(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.

Cost of 30 Lb. roofing felt is included with Concrete Superstructure.

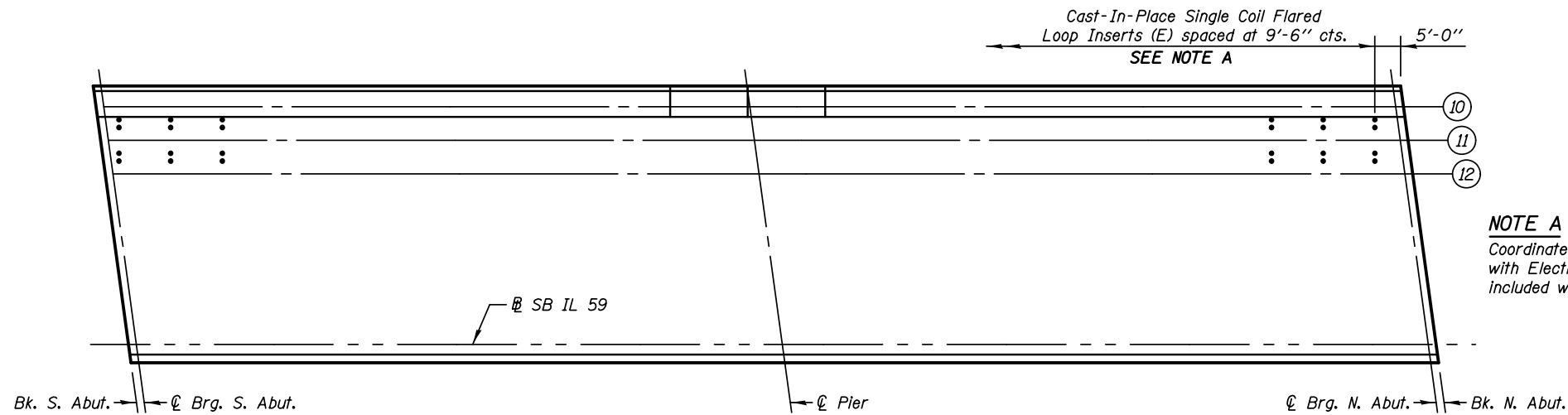
The side retainer shall be galvanized after shop fabrication according to AASHTO M 111. Cost of side retainer and anchor bolts shall be included with Concrete Structures.

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

Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy = 36 ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

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

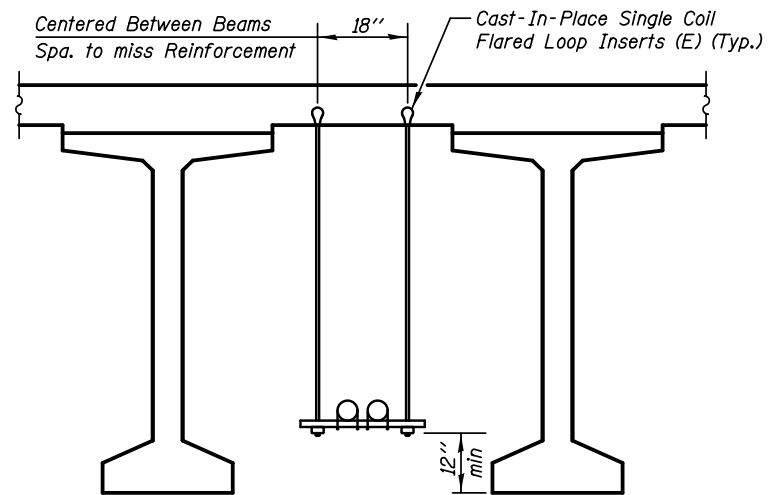
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.



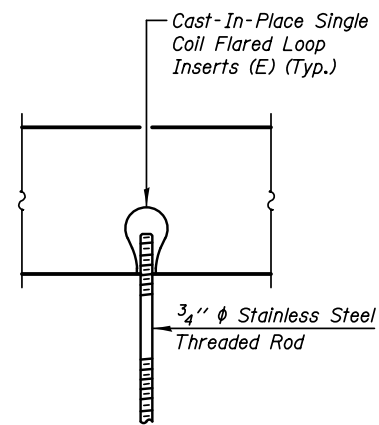
**CONDUIT SUPPORT PLAN**  
(SB Bridge)

**NOTE A**

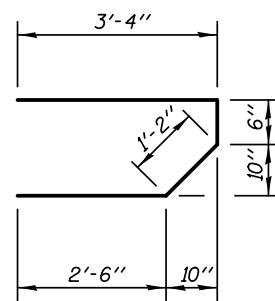
Coordinate single coil flared loop inserts with Electrical Contractor. Cost shall be included with Concrete Superstructure.



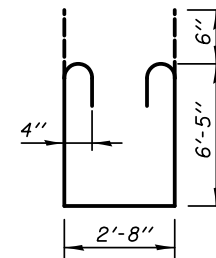
**CONDUIT SUPPORT DETAIL**



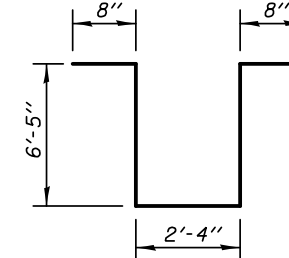
**THREADED COIL LOOP INSERTS DETAIL**



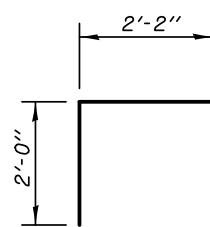
**BAR s<sub>1000</sub>(E)**



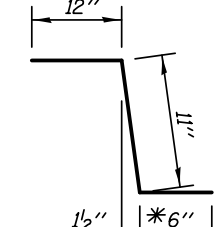
**BAR s<sub>1001</sub>(E)**



**BAR s<sub>1002</sub>(E)**

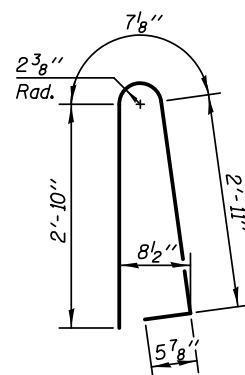


**BAR v<sub>1000</sub>(E)**

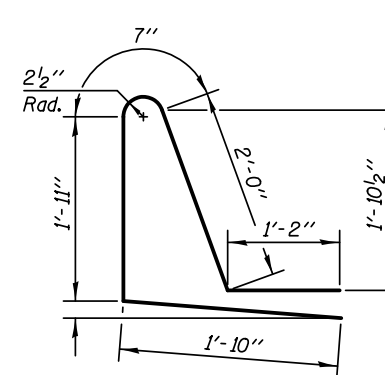


**BAR c<sub>1000</sub>(E)**

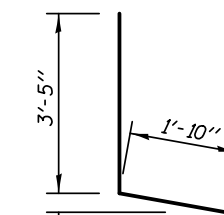
\*In lieu of bottom leg, c<sub>1000</sub>(E) bars may be cored and set according to Article 509.06 of the Standard Specifications. Cored holes shall be roughened or scored per manufacturer's recommendations. Maximum depth of cored hole shall not exceed 6".



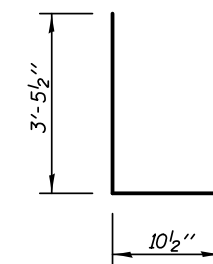
**BAR d<sub>1000</sub>(E)**



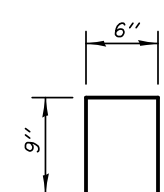
**BAR d<sub>1001</sub>(E)**



**BAR d<sub>1002</sub>(E)**



**BAR d<sub>1003</sub>(E)**



**BAR d<sub>1004</sub>(E)**

**BILL OF MATERIAL**

BAR	NO.	SIZE	LENGTH	SHAPE
a1000(E)	436	#5	34'-0"	—
a1001(E)	436	#5	22'-0"	—
a1002(E)	305	#5	31'-6"	—
a1003(E)	305	#5	25'-0"	—
a1004(E)	433	#6	6'-6"	—
a1005(E)	24	#5	1'-6"	—
b1000(E)	392	#6	39'-6"	—
b1001(E)	318	#8	27'-3"	—
b1002(E)	440	#6	35'-0"	—
b1003(E)	96	#6	25'-3"	—
b1004(E)	72	#5	31'-0"	—
c1000(E)	254	#5	2'-5"	┌
c1001(E)	254	#5	5'-8"	—
d1000(E)	276	#5	6'-10"	┌
d1001(E)	276	#5	7'-6"	┌
d1002(E)	254	#4	5'-3"	┌
d1003(E)	254	#6	4'-4"	┌
d1004(E)	64	#4	2'-0"	┌
e1000(E)	156	#4	15'-8"	—
e1001(E)	28	#4	14'-8"	—
e1002(E)	26	#4	15'-2"	—
e1003(E)	8	#8	32'-0"	—
e1004(E)	2	#8	14'-8"	—
e1005(E)	8	#4	29'-9"	—
m1000(E)	24	#6	28'-9"	—
m1001(E)	48	#6	10'-3"	—
m1002(E)	28	#6	4'-1"	—
m1003(E)	4	#6	2'-7"	—
m1004(E)	56	#4	5'-9"	—
m1005(E)	8	#8	6'-2"	—
s1000(E)	110	#5	7'-6"	┌
s1001(E)	68	#4	16'-6"	┌
s1002(E)	28	#4	16'-6"	┌
v1000(E)	108	#5	4'-2"	┌
Reinforcement Bars, Epoxy Coated			LB	139890
Concrete Superstructure			Cu. Yd.	593.0
Bridge Deck Grooving			Sq. Yd.	1237.0
Protective Coat			Sq. Yd.	1666.0

**KNIGHT**

Engineers & Architects

DESIGNED - WPM	REVISIONS
CHECKED - TB	REVISIONS
DRAWN - TB	REVISIONS
CHECKED - WPM	REVISIONS

SCALE - NONE  
DATE - 10/15/2012

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

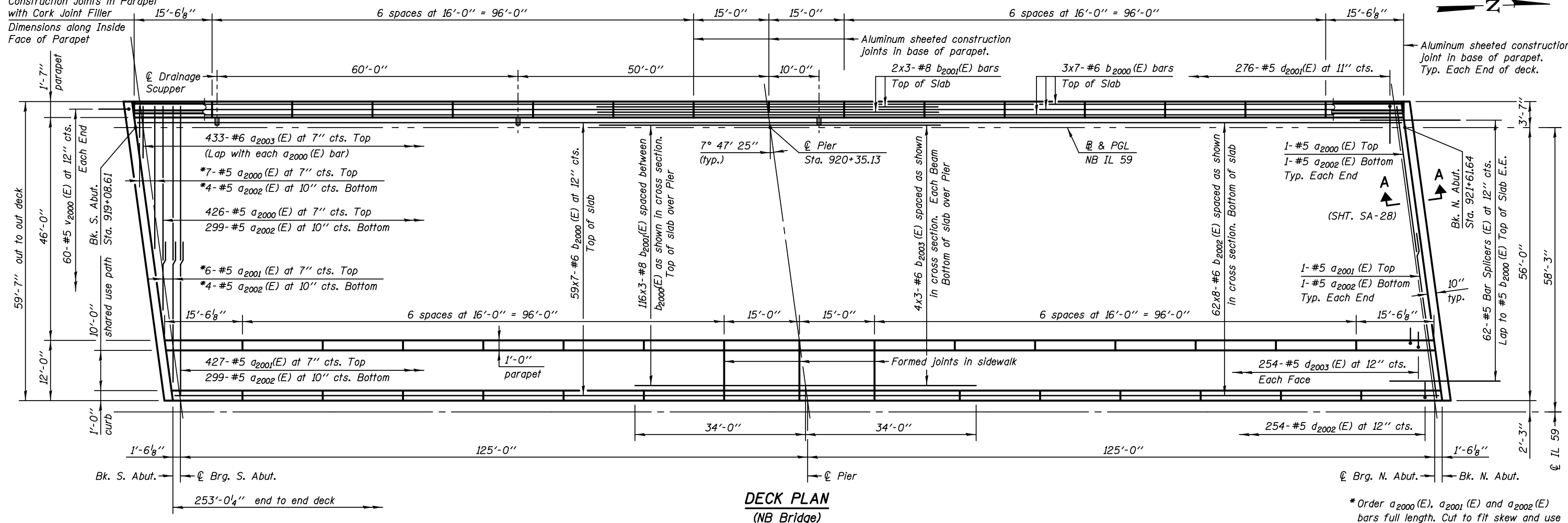
DECK MISCELLANEOUS DETAILS (SB)  
S.N. 022-2029 (SB) TOLLWAY B.N. 826  
S.N. 022-2030 (NB) TOLLWAY B.N. 825

SHEET NO. SA-24 OF 63 SHEETS

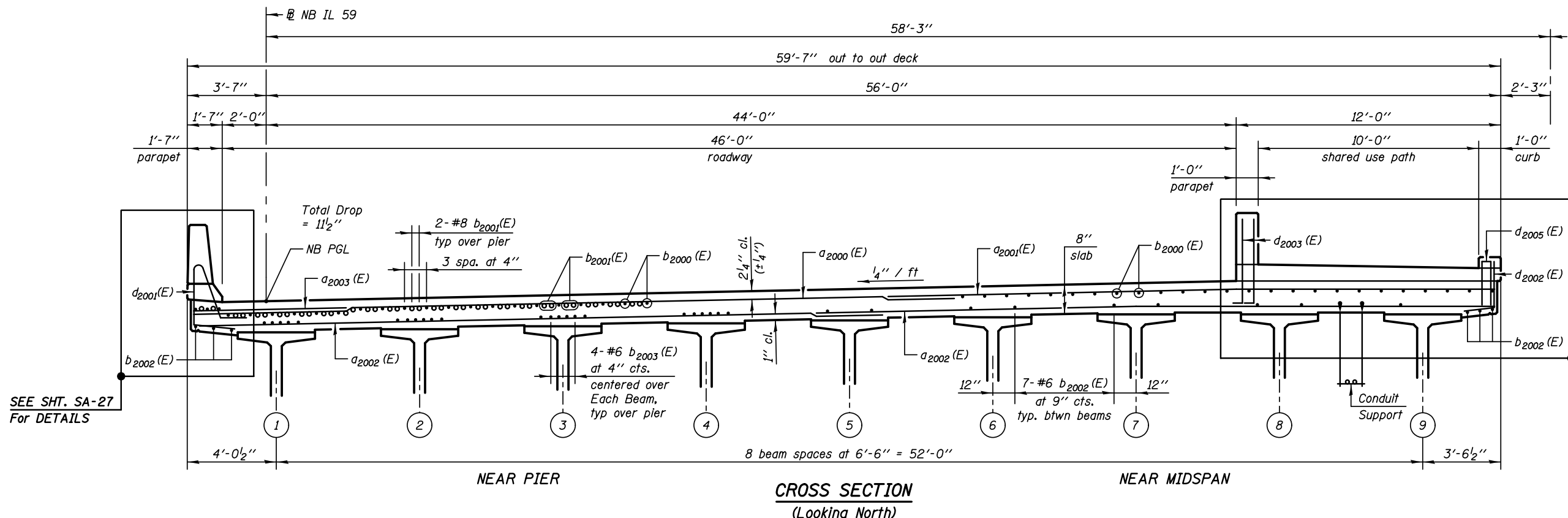
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	(112 & 113) WRS-5	DUPAGE	963	608
CONTRACT NO. 60131				

ILLINOIS FED. AID PROJECT

Construction Joints in Parapet  
with Cork Joint Filler  
Dimensions along Inside  
Face of Parapet



\* Order a<sub>2000</sub>(E), a<sub>2001</sub>(E) and a<sub>2002</sub>(E) bars full length. Cut to fit skew and use remainder of bars in opposite end.



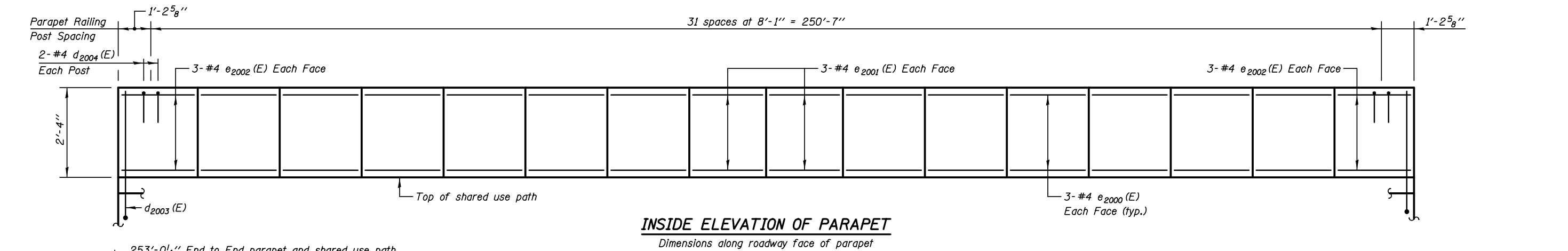
**Notes:**

- Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
- See Sheet SA-26 for Shared Use Path and Parapet Details
- See Sheet SA-27 for West Parapet Details
- See Sheet SA-29 for Deck Misc. Details and Bill of Material.
- See Sheet SA-29 for Conduit Support Details
- See Sheet SA-36 for Drainage Scupper Details.

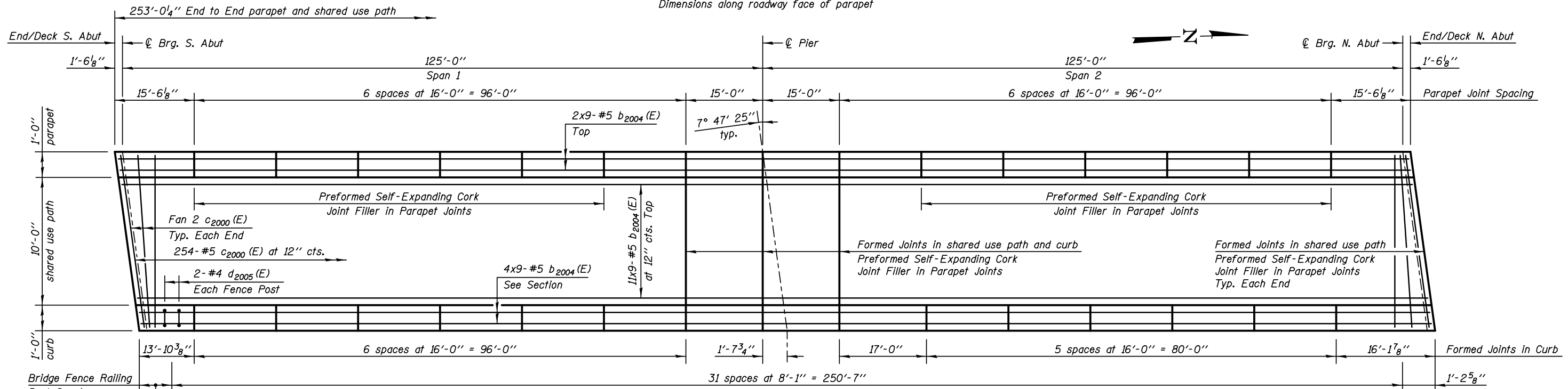
**SEE SHT. SA-26 For DETAILS**

**MIN. BAR LAPS:**

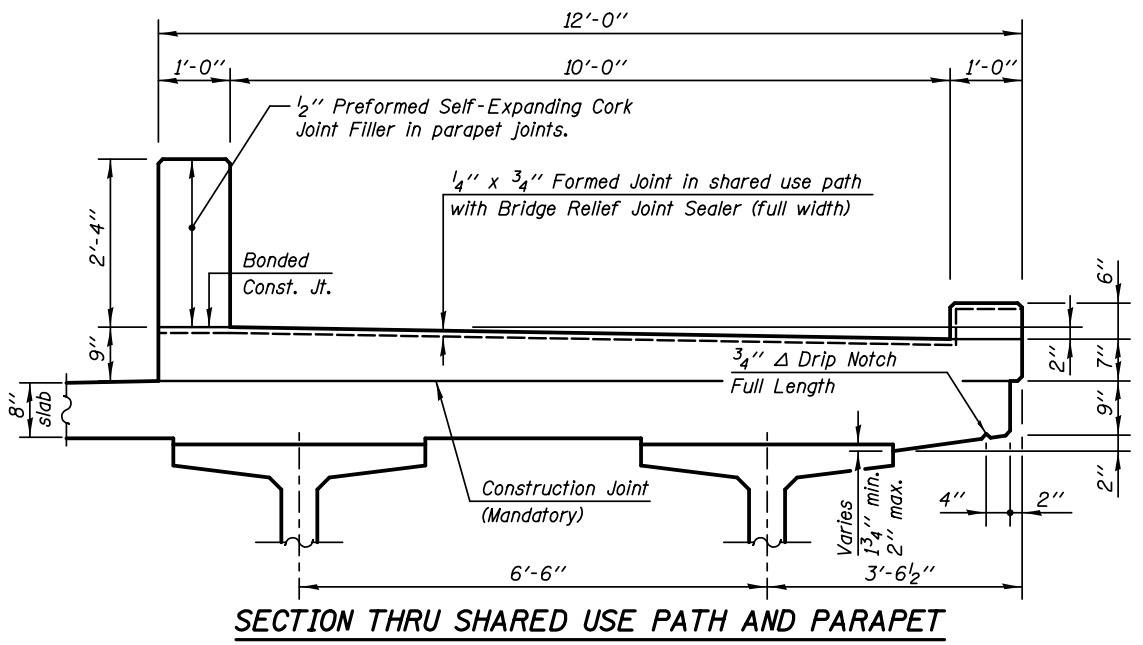
- #5 = 3'-3"
- #6 = 3'-10"
- #8 = 6'-9"



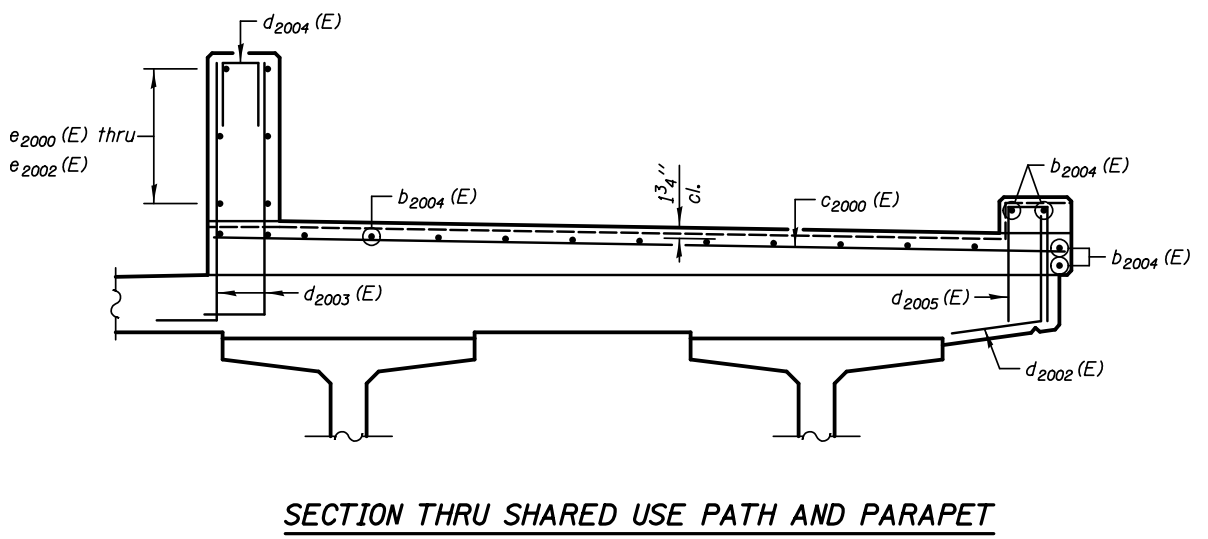
**INSIDE ELEVATION OF PARAPET**  
Dimensions along roadway face of parapet



**SHARED USE PATH - PARTIAL PLAN**



**SECTION THRU SHARED USE PATH AND PARAPET**  
(Showing Dimensions)



**SECTION THRU SHARED USE PATH AND PARAPET**  
(Showing Reinforcement Bars)

**Notes:**  
 Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.  
 See Sheet SA-29 for Cork Filled Parapet Joint Detail  
 See Sheet SA-29 for Deck Misc. Details and Bill of Materials.  
 See Sheet SA-38 for Bridge Fence Railing, Sidewalk Mounted Details

**MIN. BAR LAPS:**  
#5 = 3'-3"

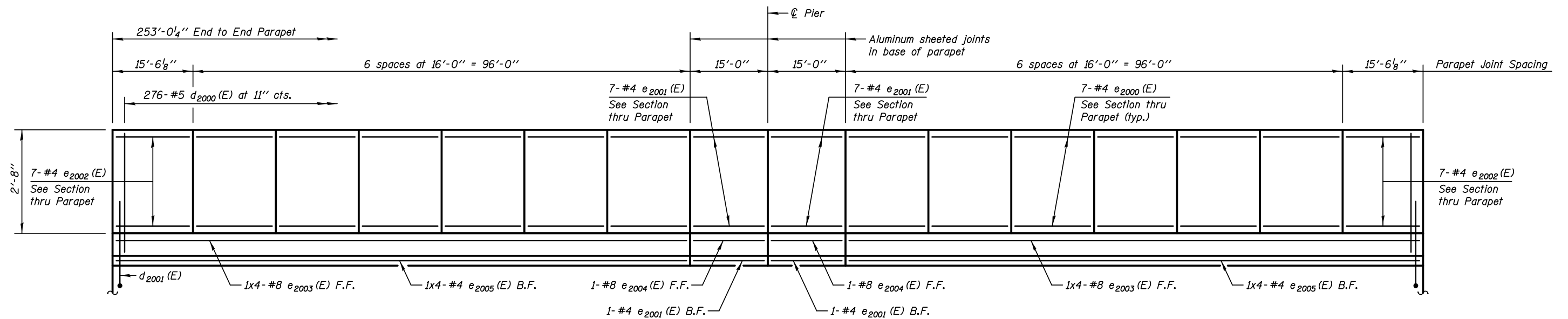
**KNIGHT**  
Engineers & Architects

DESIGNED - WPM	REVIS
CHECKED - TB	REVIS
DRAWN - TB	REVIS
CHECKED - WPM	REVIS
SCALE - NONE	
DATE - 10/15/2012	

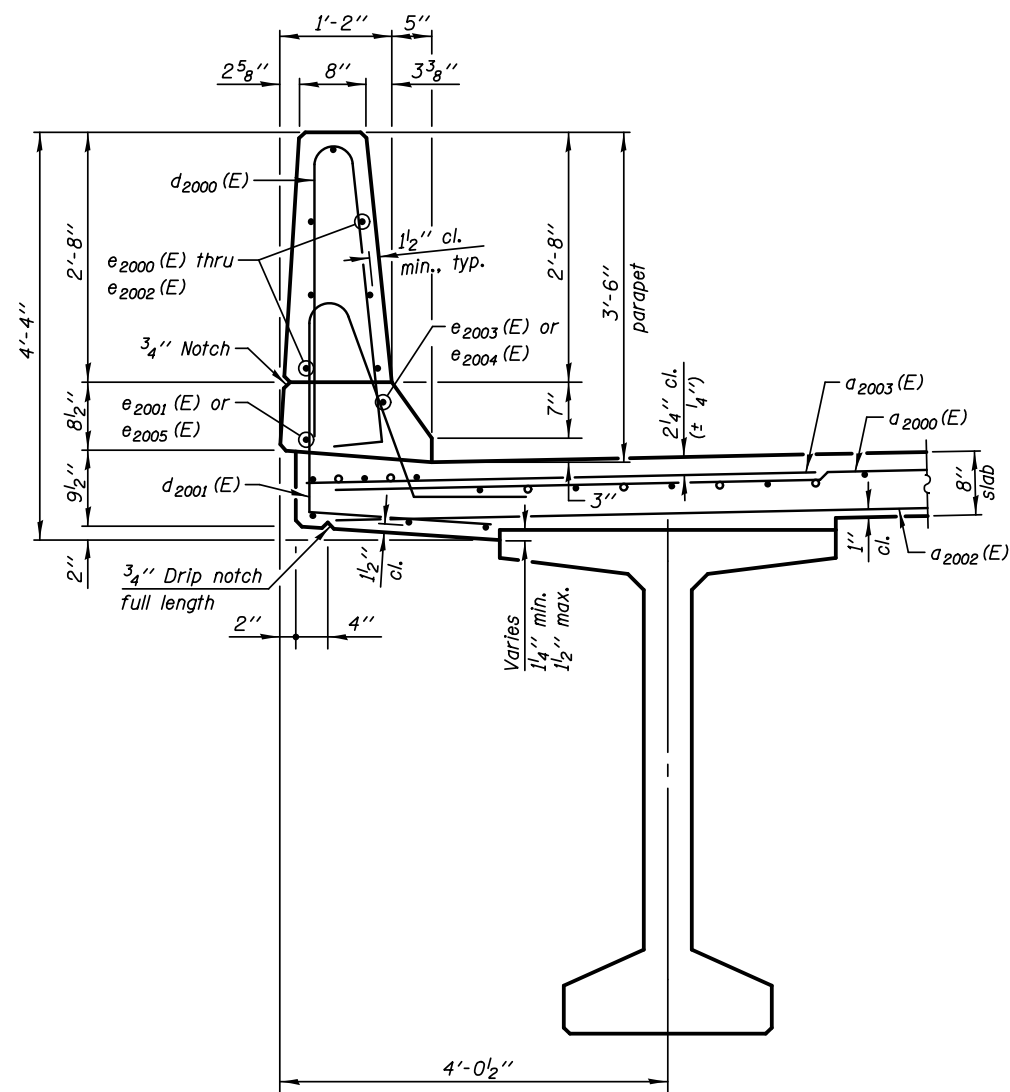
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SHARED USE PATH AND PARAPET DETAILS (NB)  
 S.N. 022-2029 (SB) TOLLWAY B.N. 826  
 S.N. 022-2030 (NB) TOLLWAY B.N. 825  
 SHEET NO. SA-26 OF 63 SHEETS

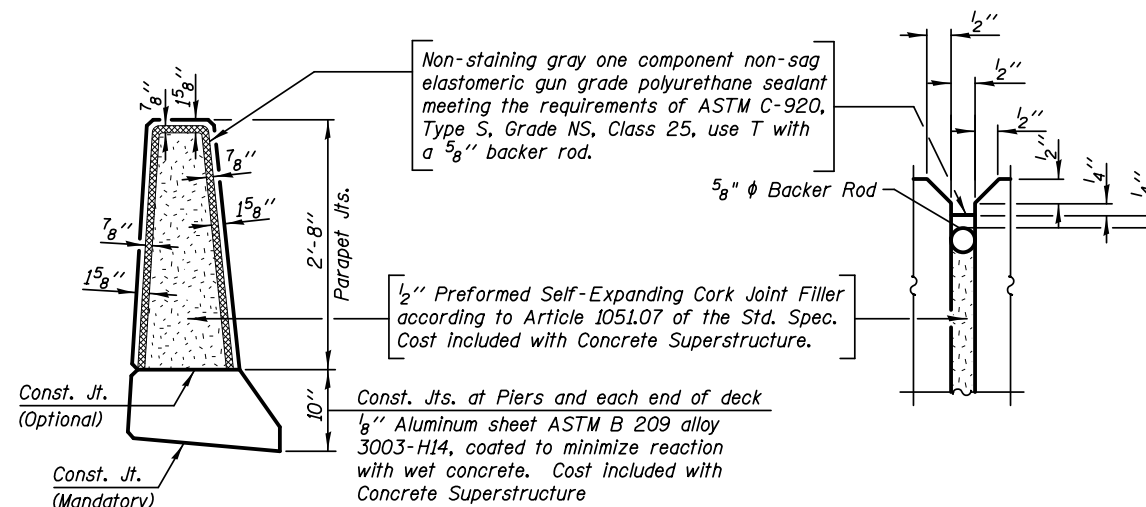
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	(112 & 113) WRS-5	DUPAGE	963	610
CONTRACT NO. 60131				
ILLINOIS FED. AID PROJECT				



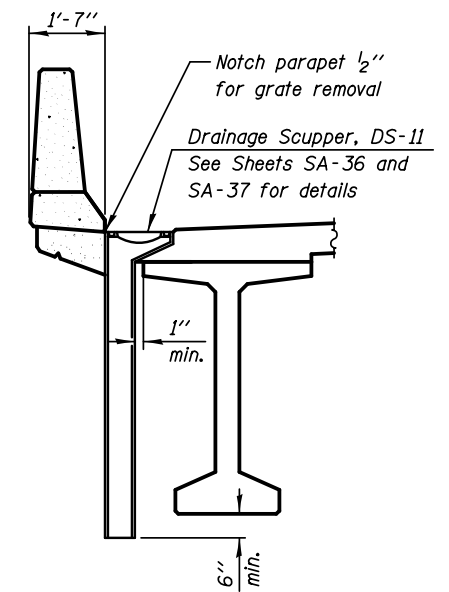
**INSIDE ELEVATION OF WEST PARAPET**



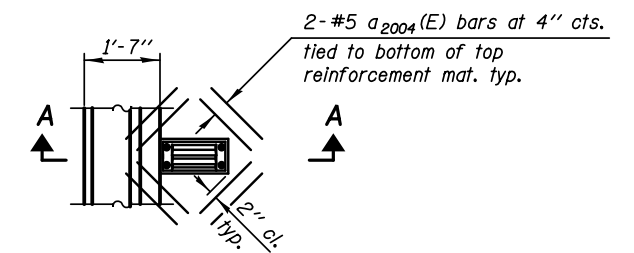
**SECTION THRU PARAPET**



**PARAPET JOINT DETAILS**



**SECTION A-A**



**PLAN**

**Note:**  
Cut longitudinal reinforcement to clear drainage scuppers.

**Notes:**

Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.

See Sheet SA-29 for Deck Misc. Details and Bill of Materials.

**MIN. BAR LAPS:**

#4 = 2'-4"  
#8 = 5'-5"

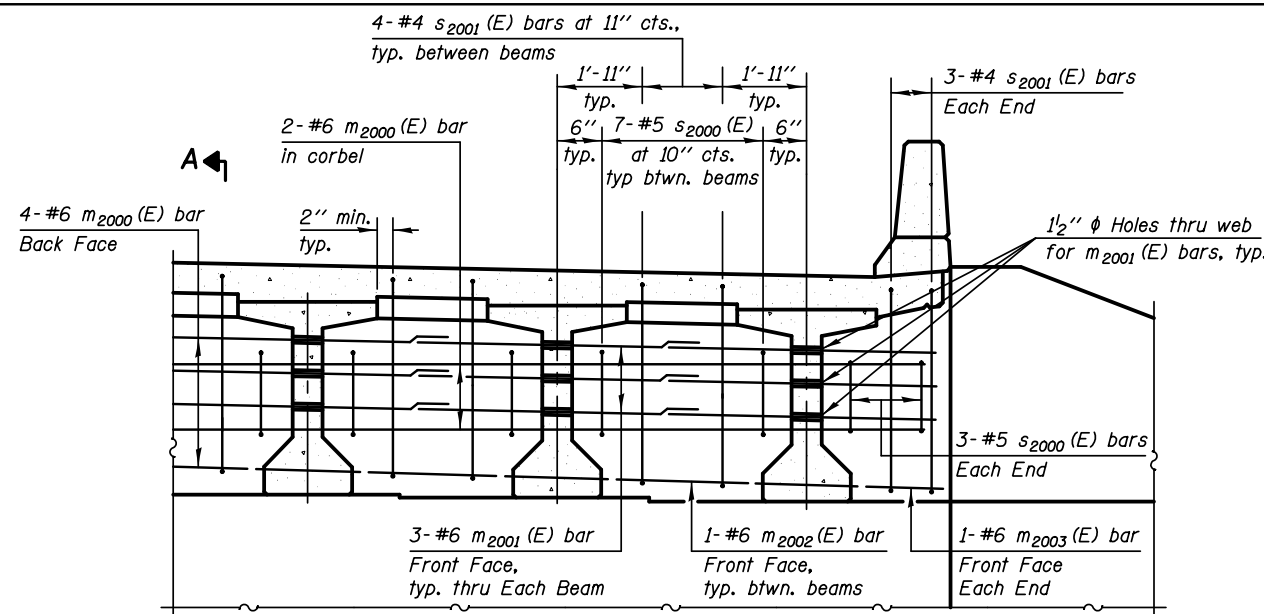
**KNIGHT**  
Engineers & Architects

DESIGNED - WPM	REVIS
CHECKED - TB	REVIS
DRAWN - TB	REVIS
CHECKED - WPM	REVIS
SCALE - NONE	
DATE - 10/15/2012	

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

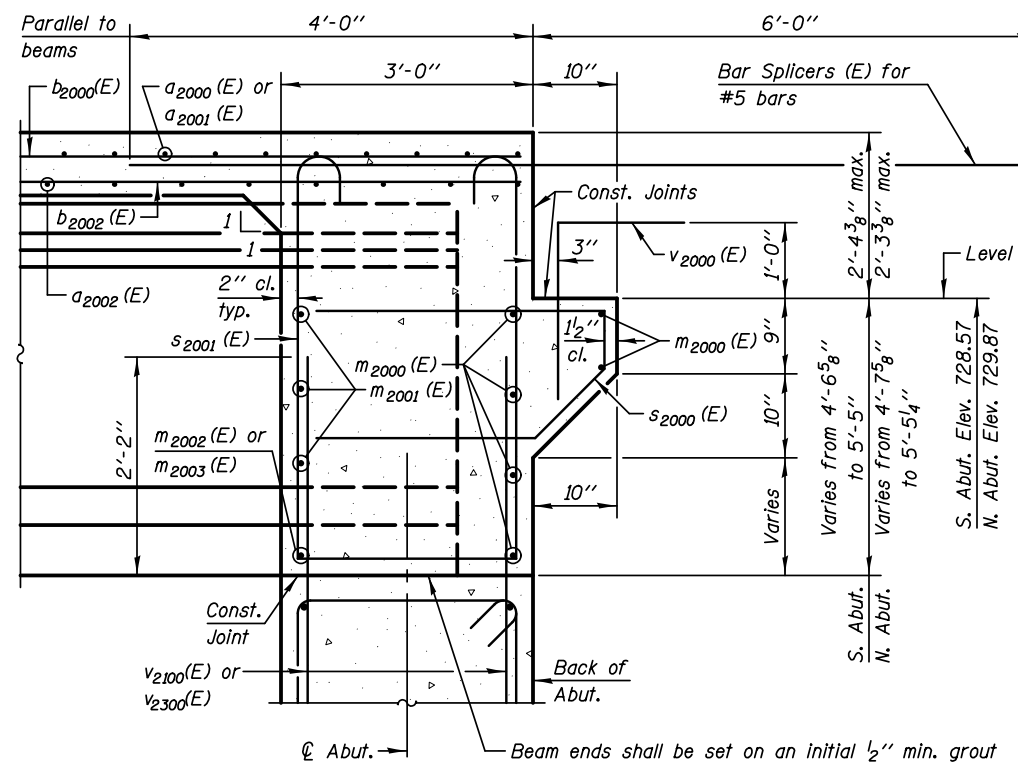
**WEST PARAPET DETAILS (NB)**  
S.N. 022-2029 (SB) TOLLWAY B.N. 826  
S.N. 022-2030 (NB) TOLLWAY B.N. 825  
SHEET NO. SA-27 OF 63 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	(112 & 113) WRS-5	DUPAGE	963	611
CONTRACT NO. 60131				
ILLINOIS FED. AID PROJECT				



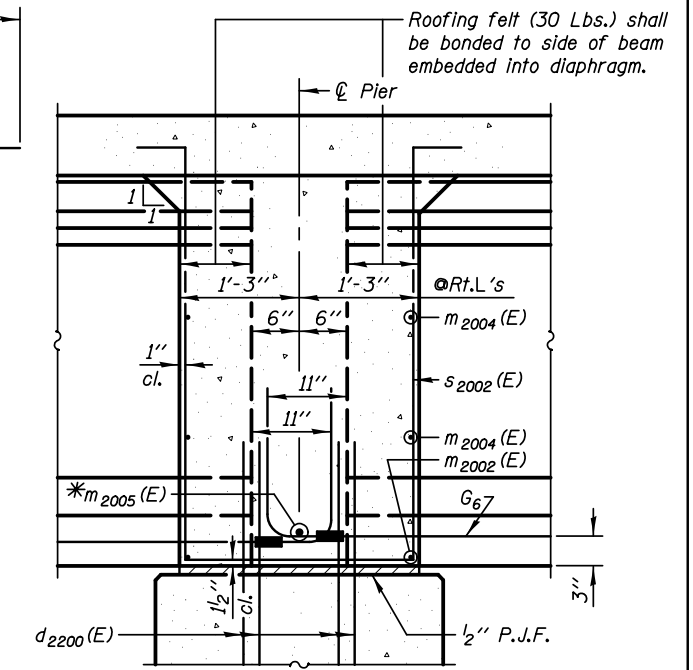
**DIAPHRAGM ELEVATION AT ABUTMENT**

**MIN. BAR LAP**  
#6 bar = 3'-4"



**SECTION A-A**

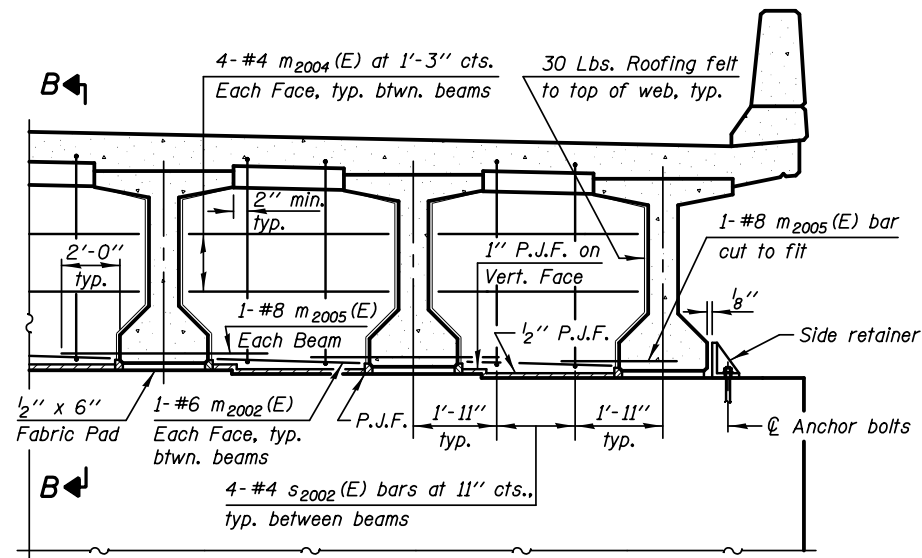
Dimensions at right angles to abutment, except as shown.



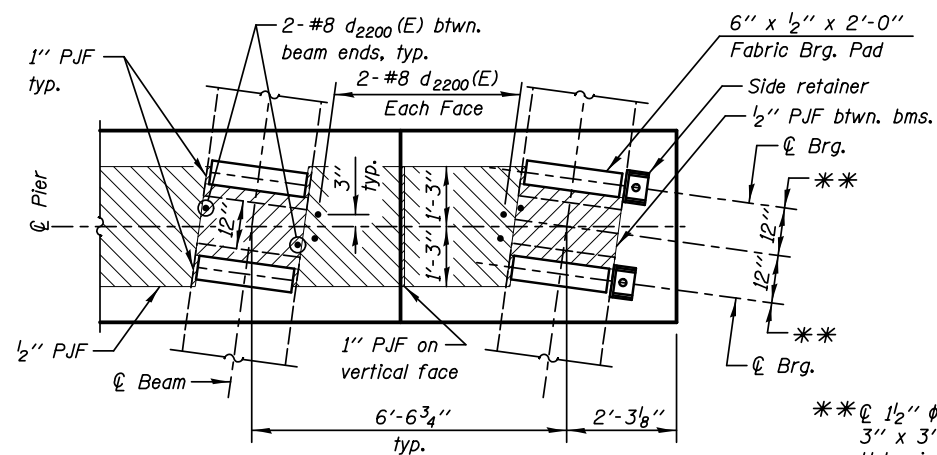
**SECTION B-B**

Dimensions along  $\phi$  of beam, except as shown.

\*Tightly fasten the #8 bars together with No. 9 wire ties.



**DIAPHRAGM AT PIER**

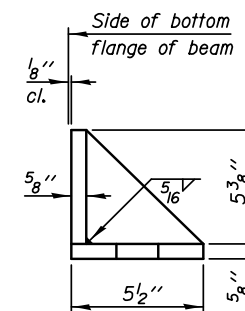


**PLAN AT PIER**

(Showing bearing pad and P.J.F. details)

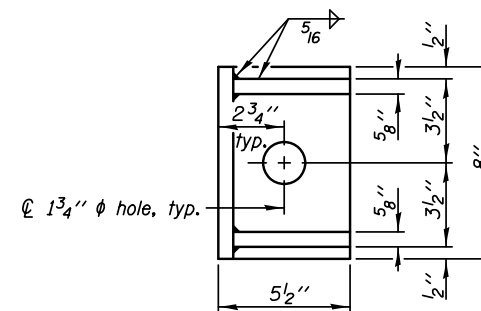
\*\*  $\phi$  1 1/2"  $\phi$  x 18" Anchor bolts with 3" x 3" x 5/16"  $\phi$  washer under nut. Holes in cap to be formed or drilled after beams are in place but prior to pouring concrete diaphragm.

Place 2- 3" I.D. conduit sleeves thru pier diaphragm. Coordinate location with LIGHTING PLANS. Coring of holes thru pier diaphragm will not be allowed. Cost of sleeves is included with Concrete Superstructure.



**SIDE RETAINER**

(2 required each side of pier)  
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



**Notes:**

Reinforcement bars in diaphragm are billed with superstructure on Sheet SA-29.

Concrete in diaphragm is included with Concrete Superstructure on Sheet SA-29.

The s2000(E), s2001(E) and s2002(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.

Cost of 30 Lb. roofing felt is included with Concrete Superstructure.

The side retainer shall be galvanized after shop fabrication according to AASHTO M 111. Cost of side retainer and anchor bolts shall be included with Concrete Structures.

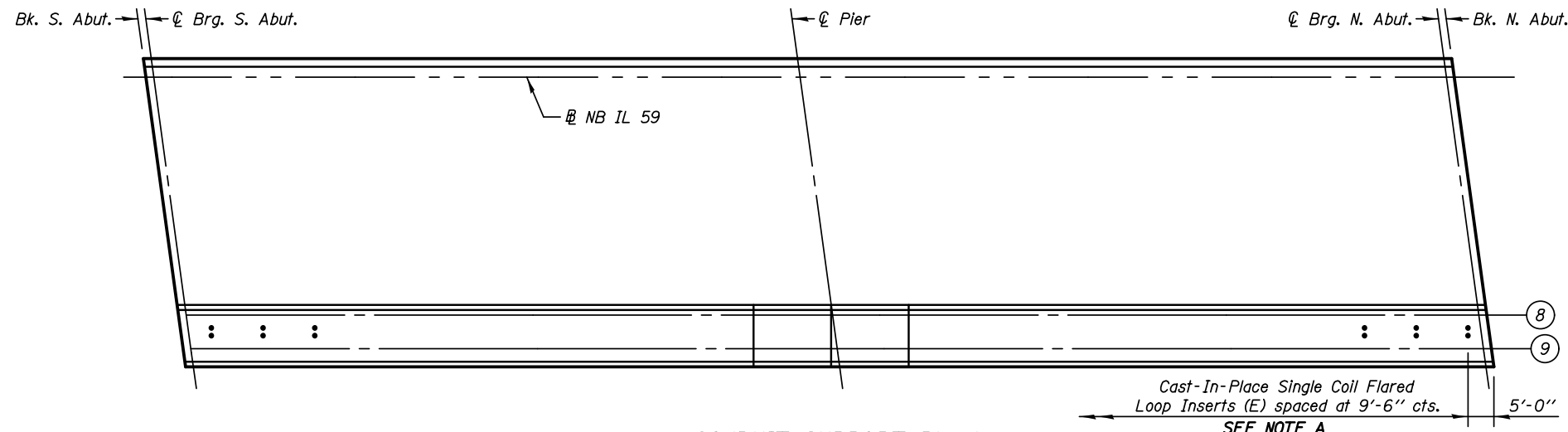
Anchor bolt assemblies shall be galvanized according to Article 1006.09 of the Standard Specifications.

Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy = 36 ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

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

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



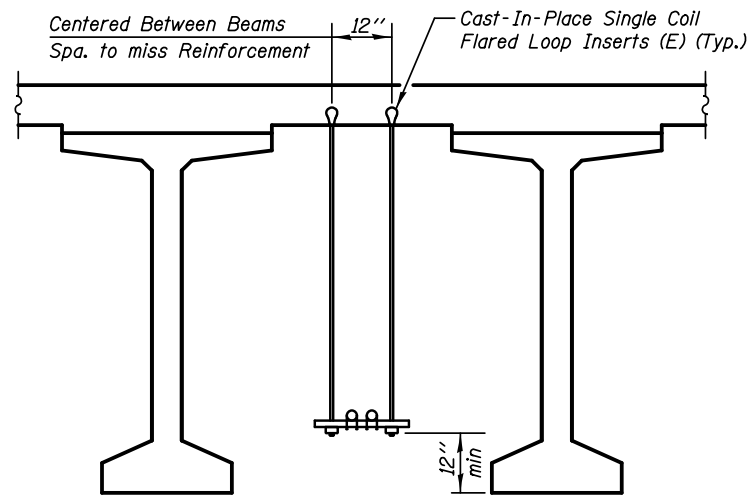


**CONDUIT SUPPORT PLAN**  
(NB Bridge)

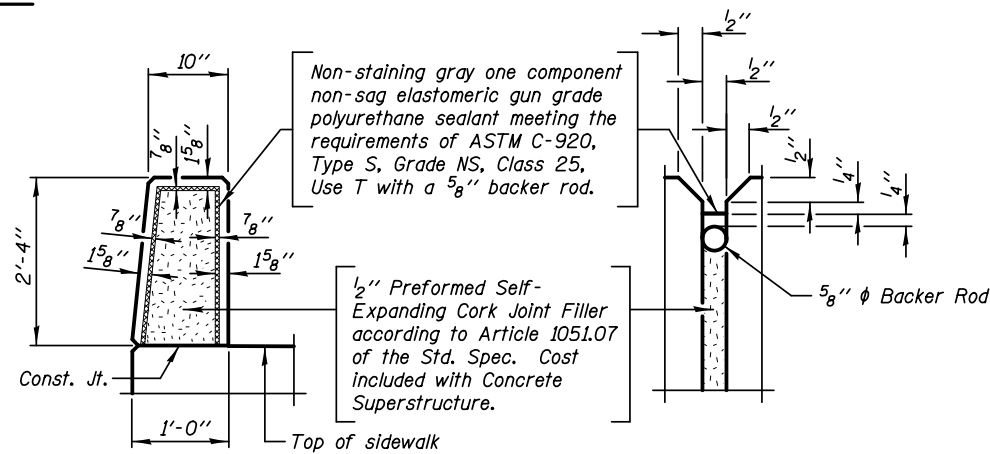
**NOTE A**  
Coordinate single coil flared loop inserts with Electrical Contractor. Cost shall be included with Concrete Superstructure.

**BILL OF MATERIAL**

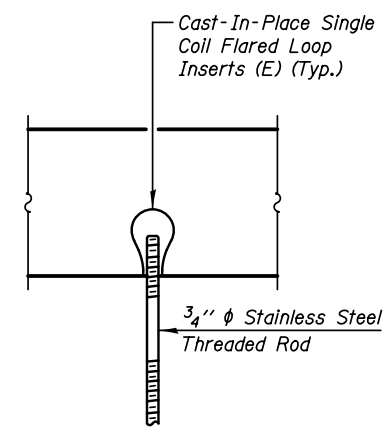
BAR	NO.	SIZE	LENGTH	SHAPE
a2000(E)	435	#5	34'-0"	—
a2001(E)	435	#5	28'-0"	—
a2002(E)	610	#5	31'-3"	—
a2003(E)	433	#6	6'-6"	—
a2004(E)	24	#5	1'-6"	—
b2000(E)	434	#6	39'-6"	—
b2001(E)	354	#8	27'-3"	—
b2002(E)	496	#6	35'-0"	—
b2003(E)	108	#6	25'-3"	—
b2004(E)	153	#5	31'-0"	—
c2000(E)	254	#5	11'-8"	—
d2000(E)	276	#5	6'-10"	┌
d2001(E)	276	#5	7'-6"	┌
d2002(E)	254	#5	5'-3"	┌
d2003(E)	508	#5	4'-4"	┌
d2004(E)	64	#4	2'-2"	┌
d2005(E)	64	#4	3'-4"	┌
e2000(E)	156	#4	15'-8"	—
e2001(E)	28	#4	14'-8"	—
e2002(E)	26	#4	15'-2"	—
e2003(E)	8	#8	32'-0"	—
e2004(E)	2	#8	14'-8"	—
e2005(E)	8	#4	29'-9"	—
m2000(E)	24	#6	31'-9"	—
m2001(E)	54	#6	10'-3"	—
m2002(E)	32	#6	4'-1"	—
m2003(E)	4	#6	2'-7"	—
m2004(E)	64	#4	5'-9"	—
m2005(E)	9	#8	6'-2"	—
s2000(E)	124	#5	7'-6"	┌
s2001(E)	76	#4	16'-6"	┌
s2002(E)	32	#4	16'-6"	┌
v2000(E)	120	#5	4'-2"	┌
Reinforcement Bars, Epoxy Coated			LB	158400
Concrete Superstructure			Cu. Yd.	686.0
Bridge Deck Grooving			Sq. Yd.	1237.0
Protective Coat			Sq. Yd.	1919.0



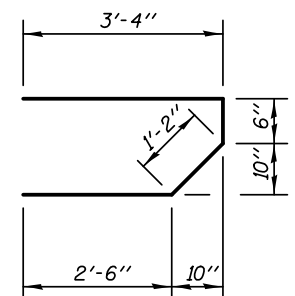
**CONDUIT SUPPORT DETAIL**



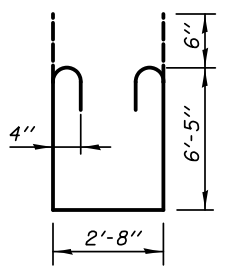
**PARAPET JOINT DETAILS**



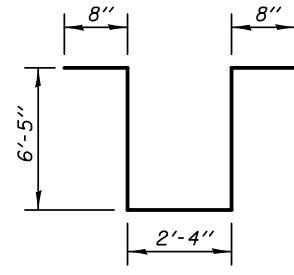
**THREADED COIL LOOP INSERTS DETAIL**



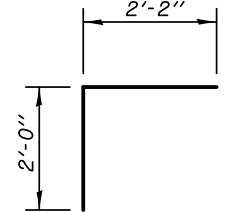
**BAR s2000 (E)**



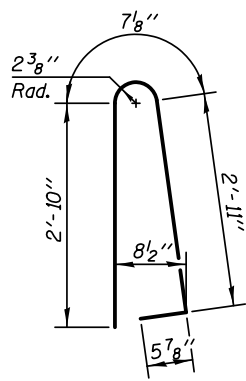
**BAR s2001 (E)**



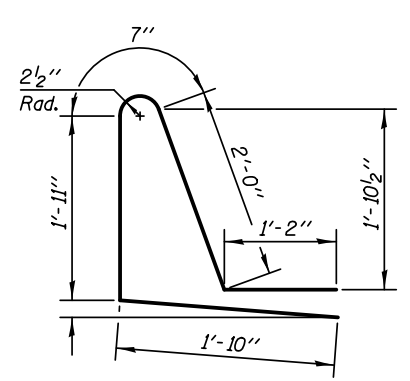
**BAR s2002 (E)**



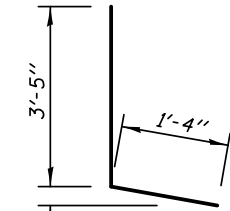
**BAR v2000 (E)**



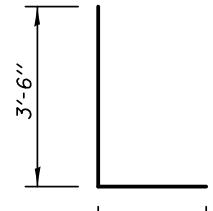
**BAR d2000 (E)**



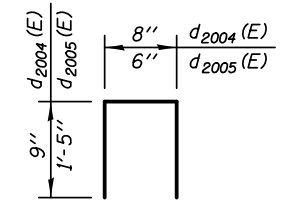
**BAR d2001 (E)**



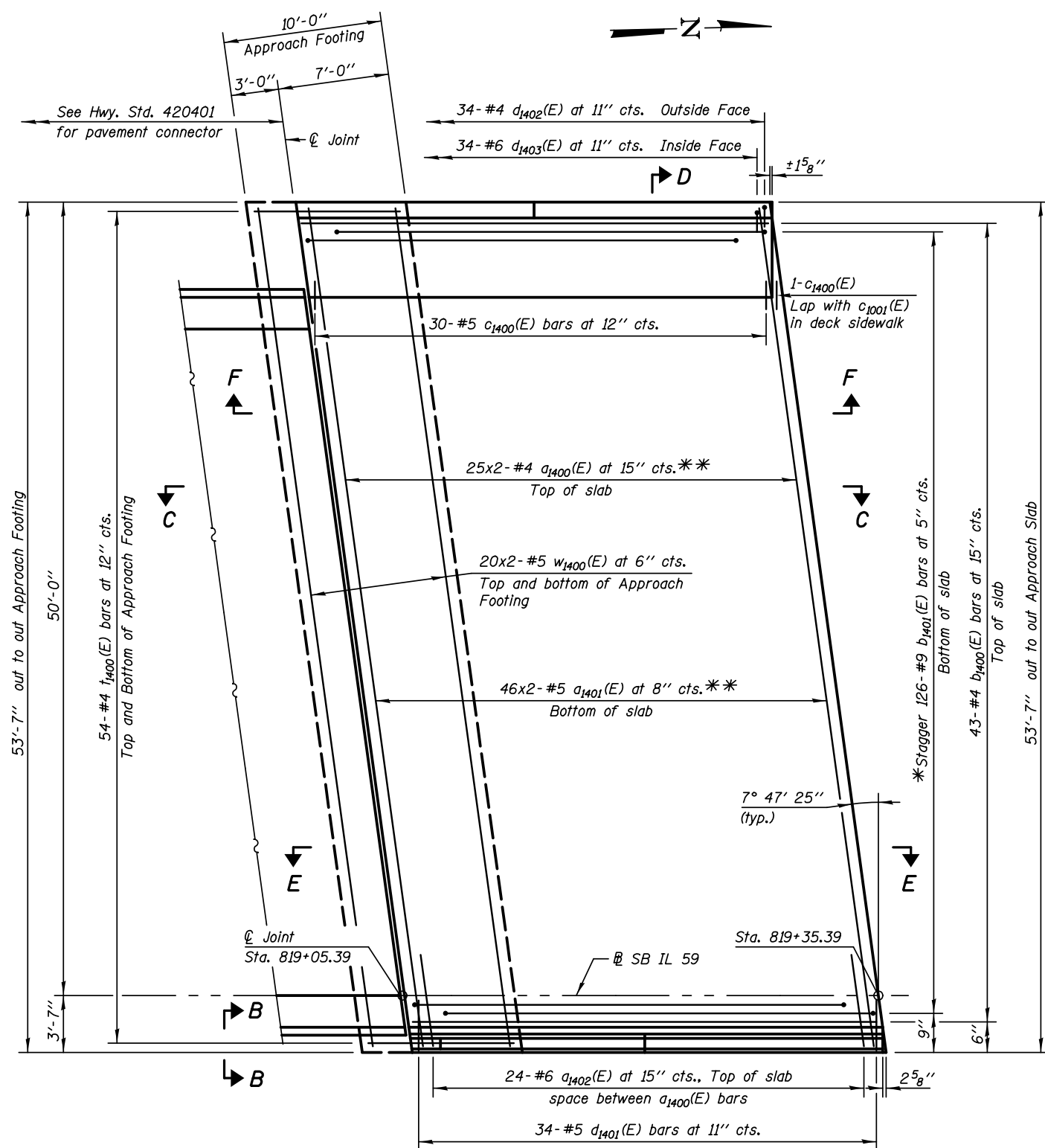
**BAR d2002 (E)**



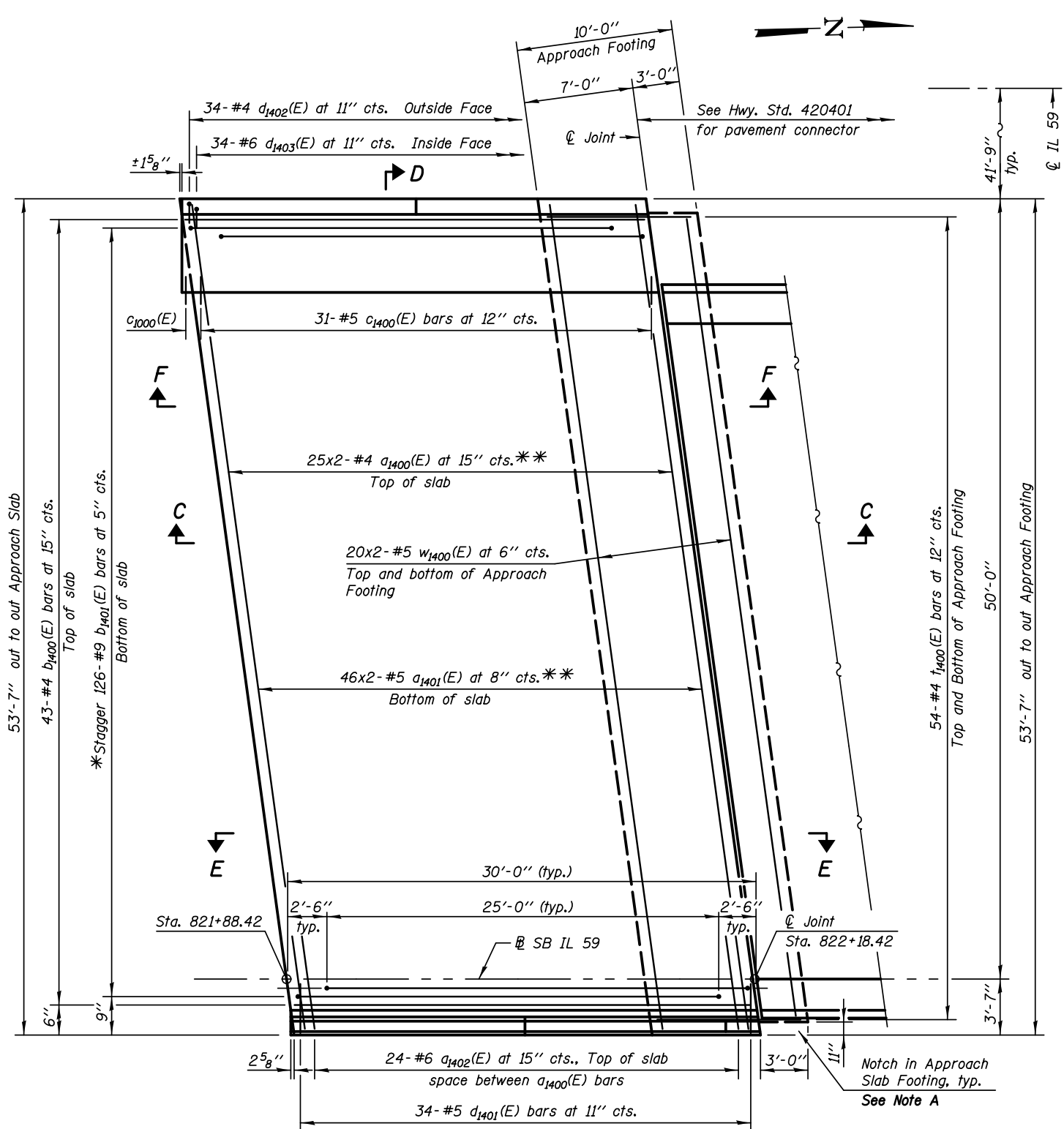
**BAR d2003 (E)**



**BARS d2004 (E) & d2005 (E)**



**PLAN**  
South Approach Slab (SB)



**PLAN**  
North Approach Slab (SB)

\*Tilt #9 b1401(E) bars as required to maintain clearance.  
\*\*Measured along  $\phi$  Roadway

**NOTE A**  
3'-0" x 11" notch in approach slab footing for Traffic Barrier Terminal Type 6 and T6 posts. Cut t1400(E) and w1400(E) bars, as required, to fit notch.  
North Approach Slab Only

**Notes:**  
Bars indicated thus 20x3-#5 ect. indicates 20 lines of bars with 3 lengths per line.  
See Sheet SA-31 for Sections C-C & D-D and Views B-B & E-E  
See Sheet SA-32 for View F-F and Sidewalk & Parapet Details.

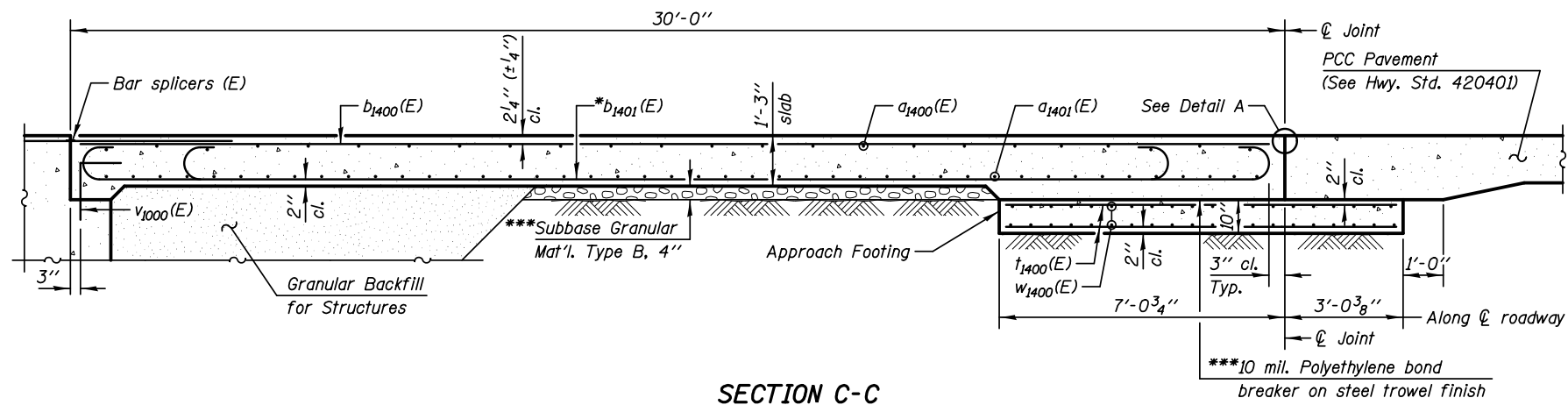
**KNIGHT**  
Engineers & Architects

DESIGNED - WPM	REVISION
CHECKED - TB	REVISION
DRAWN - TB	REVISION
CHECKED - WPM	REVISION
SCALE - NONE	
DATE - 10/15/2012	

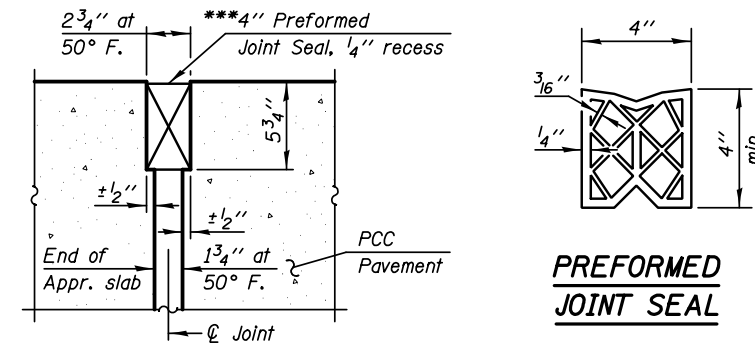
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB PLAN (SB)  
S.N. 022-2029 (SB) TOLLWAY B.N. 826  
S.N. 022-2030 (NB) TOLLWAY B.N. 825  
SHEET NO. SA-30 OF 63 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	(112 & 113) WRS-5	DUPAGE	963	614
CONTRACT NO. 60131				
ILLINOIS FED. AID PROJECT				



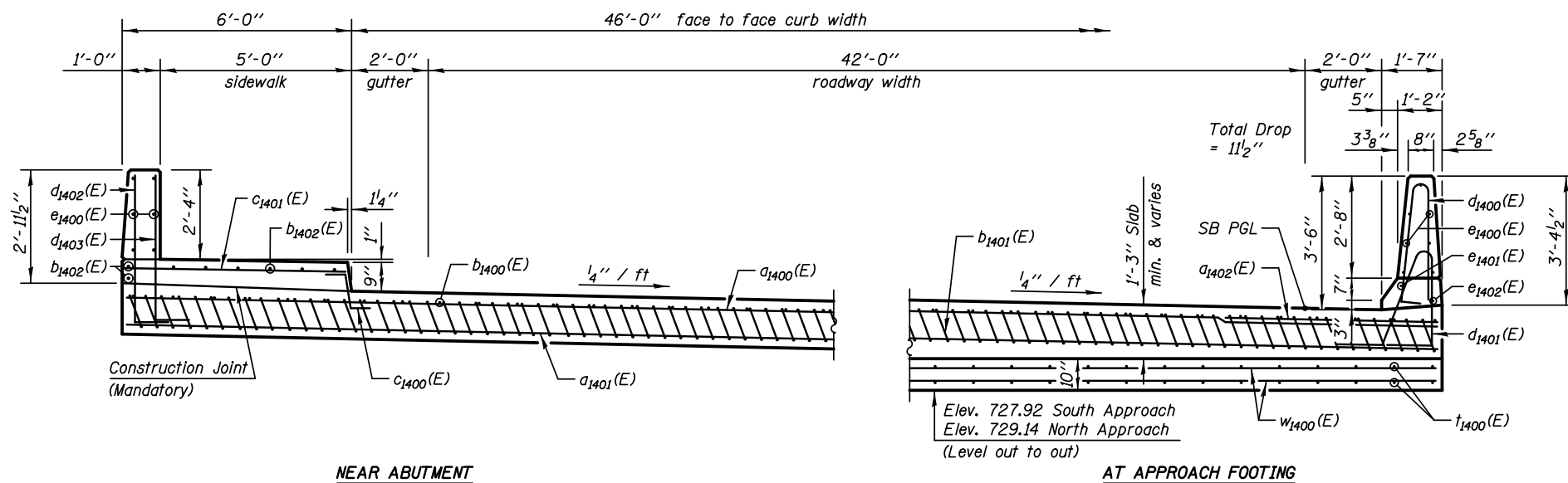
**SECTION C-C**



**PREFORMED JOINT SEAL**

\*Tilt #9 b1401(E) bars as required to maintain clearance.  
 \*\*\*Cost included with Concrete Superstructure.

**DETAIL A**

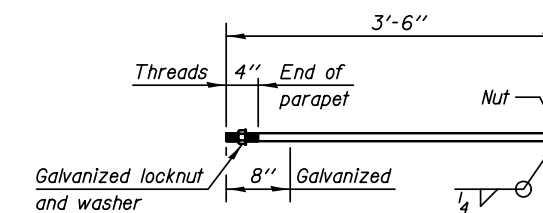


**NEAR ABUTMENT**

**SECTION D-D**

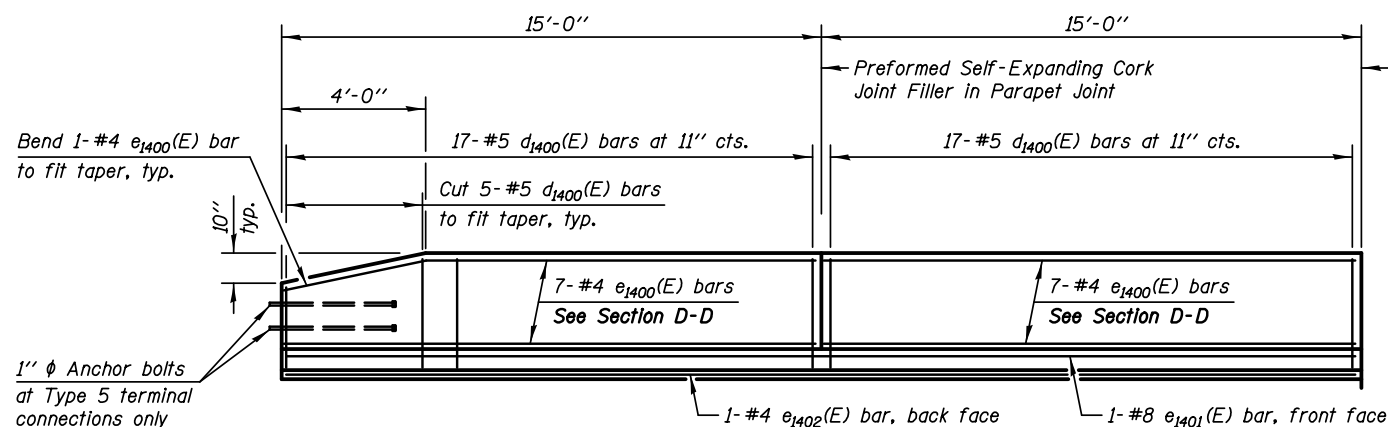
(See Plan for dimensions not shown)

**AT APPROACH FOOTING**



**1" ANCHOR BOLT**

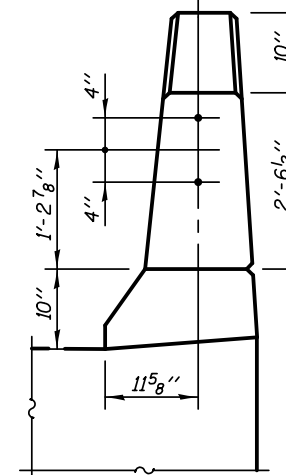
(Cost included with Concrete Superstructure)



**VIEW E-E**

Dimensions along inside face of parapet  
 North Approach parapet shown, South Approach parapet opposite hand

1"  $\phi$  Anchor bolts  
 Type T5 terminal connections only



**VIEW B-B**

**Notes:**

The approach footing maximum applied service bearing pressure ( $Q_{max}$ ) = 2.0 ksf.

See Sheet SA-24 for v1000(E) bar details

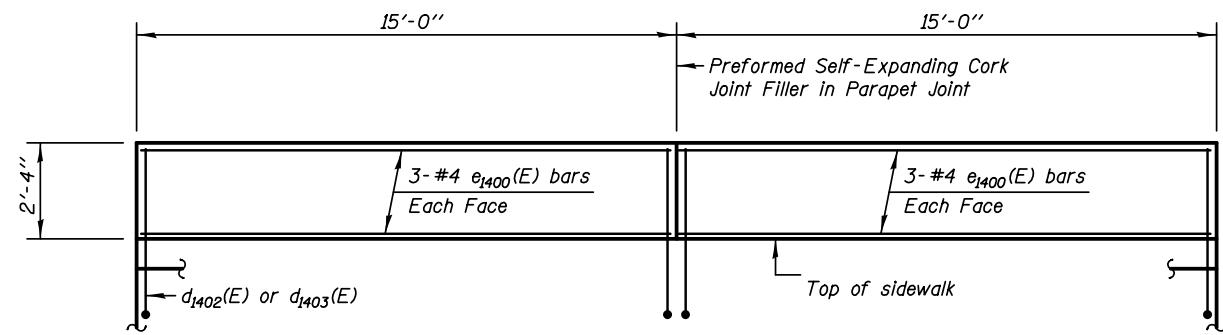
See Sheet SA-55 for bar splicer details.

See Sheet SA-03 for Granular Backfill for Structures and drainage treatment details.

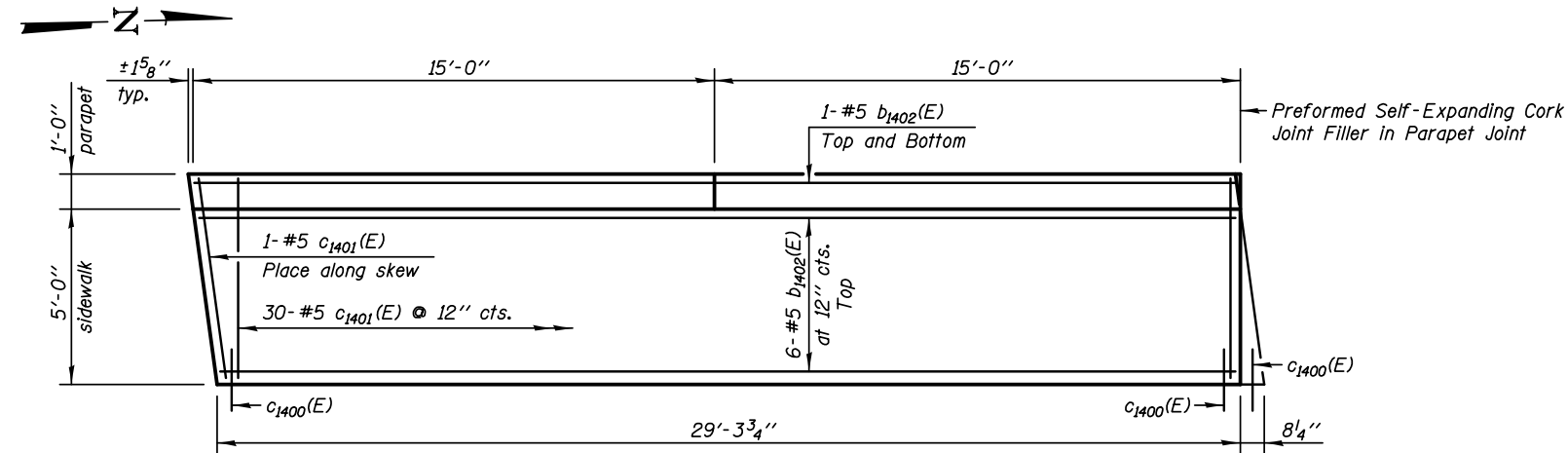
See Sheet SA-22 for Parapet Joint Details and additional parapet details.

DESIGNED - WPM	REVISIONS
CHECKED - TB	REVISIONS
SCALE - NONE	REVISIONS
DATE - 10/15/2012	REVISIONS
DRAWN - TB	REVISIONS
CHECKED - WPM	REVISIONS

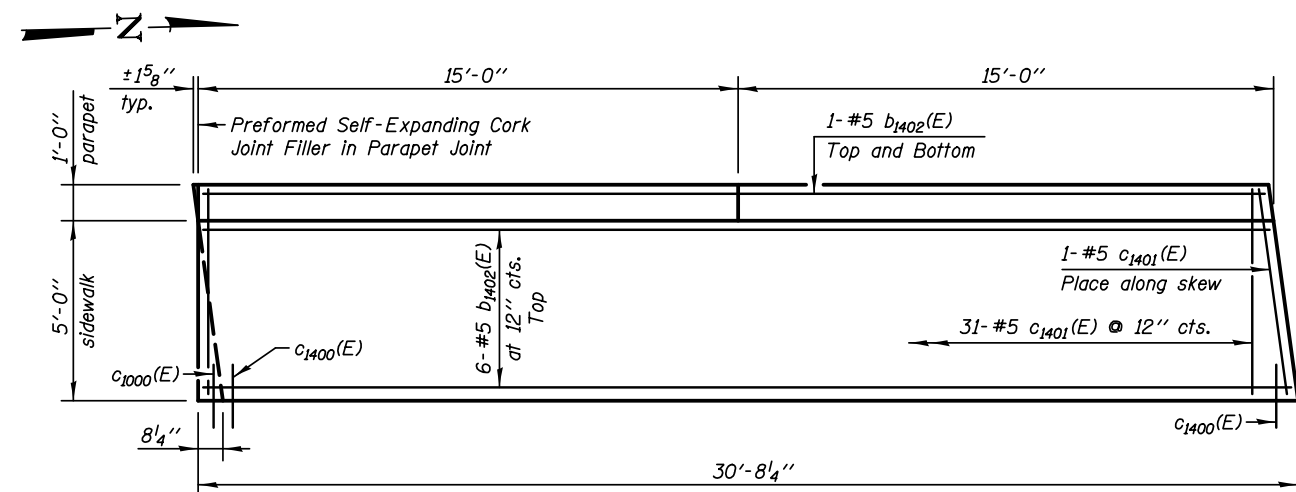
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	(112 & 113) WRS-5	DUPAGE	963	615
<b>CONTRACT NO. 60131</b>				
ILLINOIS FED. AID PROJECT				



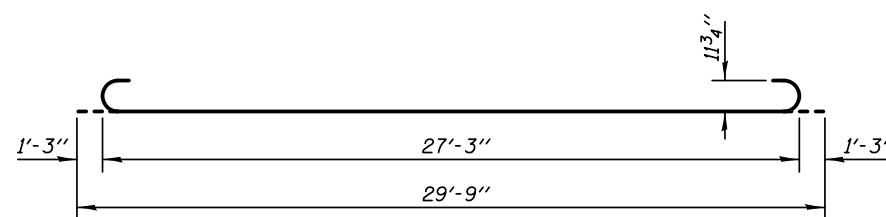
**VIEW F-F**  
Dimensions along inside face of parapet



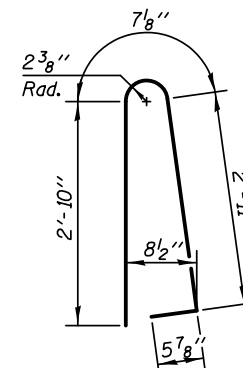
**SIDEWALK - PARTIAL PLAN**  
South Approach Slab (SB)



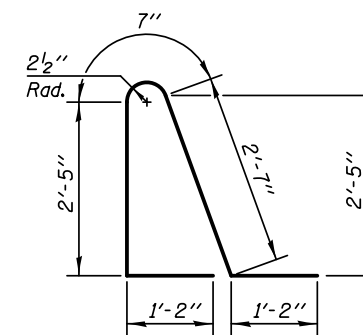
**SIDEWALK - PARTIAL PLAN**  
North Approach Slab (SB)



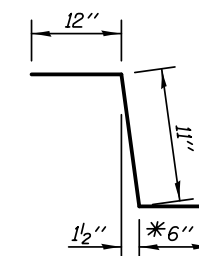
**BAR b1401(E)**



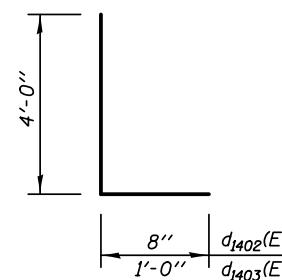
**BAR d1400(E)**



**BAR d1401(E)**



**BAR c1400(E)**



**BARS d1402(E)  
& d1403(E)**

**BILL OF MATERIAL  
SOUTH APPROACH SLAB**

BAR	NO.	SIZE	LENGTH	SHAPE
a1400(E)	50	#4	28'-3"	—
a1401(E)	92	#5	28'-9"	—
a1402(E)	24	#6	6'-6"	—
b1400(E)	43	#4	29'-8"	—
b1401(E)	126	#9	29'-9"	—
b1402(E)	8	#5	30'-0"	—
c1400(E)	31	#5	2'-5"	—
c1401(E)	31	#5	5'-8"	—
d1400(E)	34	#5	6'-10"	—
d1401(E)	34	#5	7'-11"	—
d1402(E)	34	#4	4'-8"	—
d1403(E)	34	#6	5'-0"	—
e1400(E)	26	#4	14'-8"	—
e1401(E)	1	#8	29'-8"	—
e1402(E)	1	#4	29'-8"	—
f1400(E)	108	#4	9'-9"	—
w1400(E)	80	#5	28'-9"	—
Reinforcement Bars, Epoxy Coated			LB	22390
Concrete Superstructure			Cu. Yd.	100.0
Concrete Structures			Cu. Yd.	18.0
Bridge Deck Grooving			Sq. Yd.	147.0
Protective Coat			Sq. Yd.	198.0

**BILL OF MATERIAL  
NORTH APPROACH SLAB**

BAR	NO.	SIZE	LENGTH	SHAPE
a1400(E)	50	#4	28'-3"	—
a1401(E)	92	#5	28'-9"	—
a1402(E)	24	#6	6'-6"	—
b1400(E)	43	#4	29'-8"	—
b1401(E)	126	#9	29'-9"	—
b1402(E)	8	#5	30'-0"	—
c1400(E)	31	#5	2'-5"	—
c1401(E)	32	#5	5'-8"	—
d1400(E)	34	#5	6'-10"	—
d1401(E)	34	#5	7'-11"	—
d1402(E)	34	#4	4'-8"	—
d1403(E)	34	#6	5'-0"	—
e1400(E)	26	#4	14'-8"	—
e1401(E)	1	#8	29'-8"	—
e1402(E)	1	#4	29'-8"	—
f1400(E)	108	#4	9'-9"	—
w1400(E)	80	#5	28'-9"	—
Reinforcement Bars, Epoxy Coated			LB	22400
Concrete Superstructure			Cu. Yd.	100.0
Concrete Structures			Cu. Yd.	18.0
Bridge Deck Grooving			Sq. Yd.	147.0
Protective Coat			Sq. Yd.	198.0

\*In lieu of bottom leg, c1400(E) bars may be cored and set according to Article 509.06 of the Standard Specifications. Cored holes shall be roughened or scored per manufacturer's recommendations. Maximum depth of cored hole shall not exceed 6".

**Notes:**

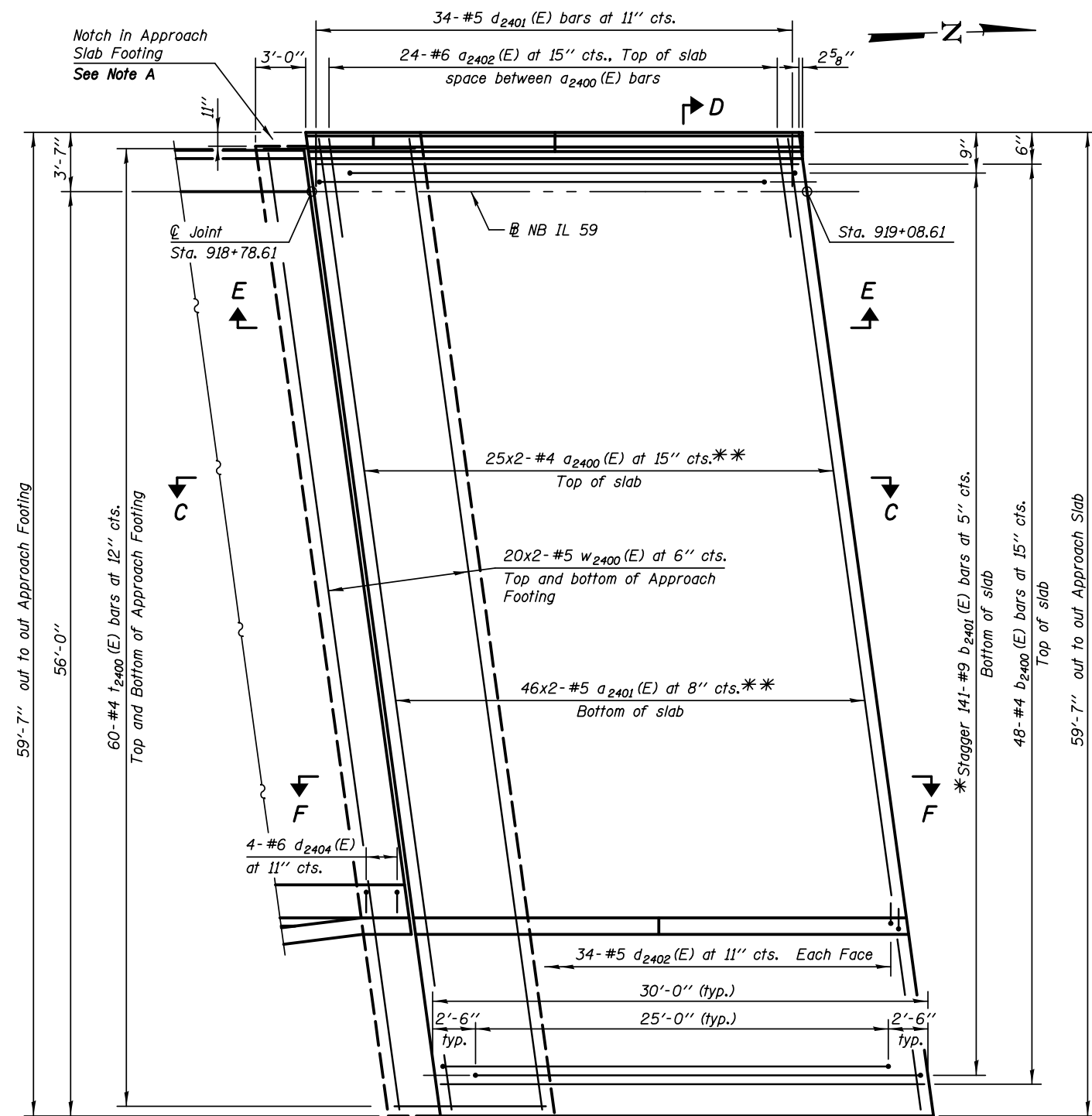
Approach slab and parapet concrete shall be paid for as Concrete Superstructure.

Approach footing concrete shall be paid for as Concrete Structures.

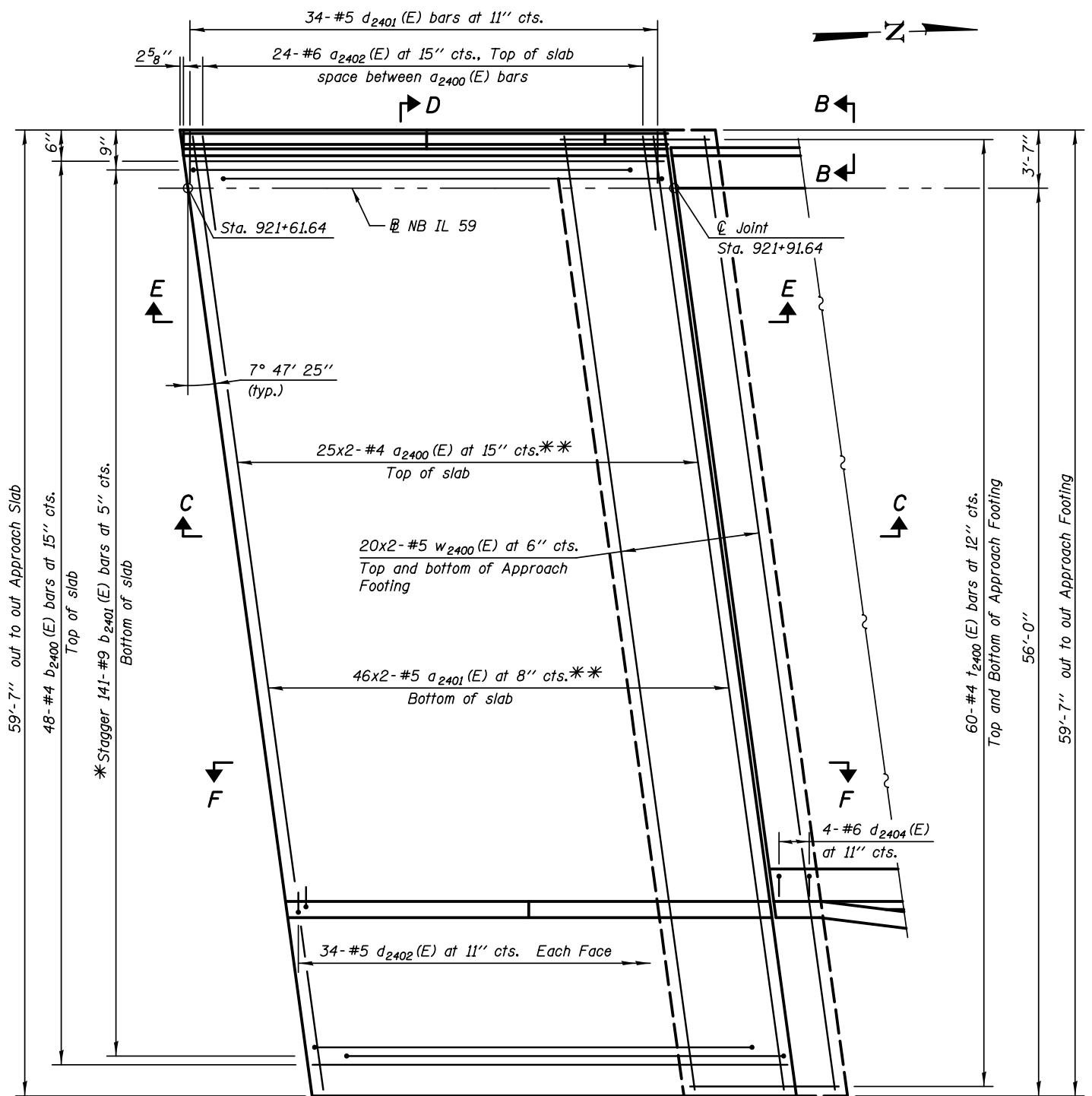
Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.

Cost of excavation for approach footing included with Concrete Structures.

See Sheet SA-21 for Parapet Joint Details and additional sidewalk and parapet details.



**PLAN**  
South Approach Slab (NB)



**PLAN**  
North Approach Slab (NB)

\*Tilt #9 b2401(E) bars as required to maintain clearance.  
\*\*Measured along  $\varnothing$  Roadway

**NOTE A**  
3'-0" x 11" notch in approach slab footing for Traffic Barrier Terminal Type T6 posts. Cut  $\uparrow$ 2400 (E) and w2400 (E) bars, as required, to fit notch.  
South Approach Slab Only

**Notes:**  
Bars indicated thus 20x3-#5 ect. indicates 20 lines of bars with 3 lengths per line.  
See Sheet SA-34 for Sections C-C & D-D and Views B-B & E-E  
See Sheet SA-35 for View F-F and Shared Use Path and Parapet Details.

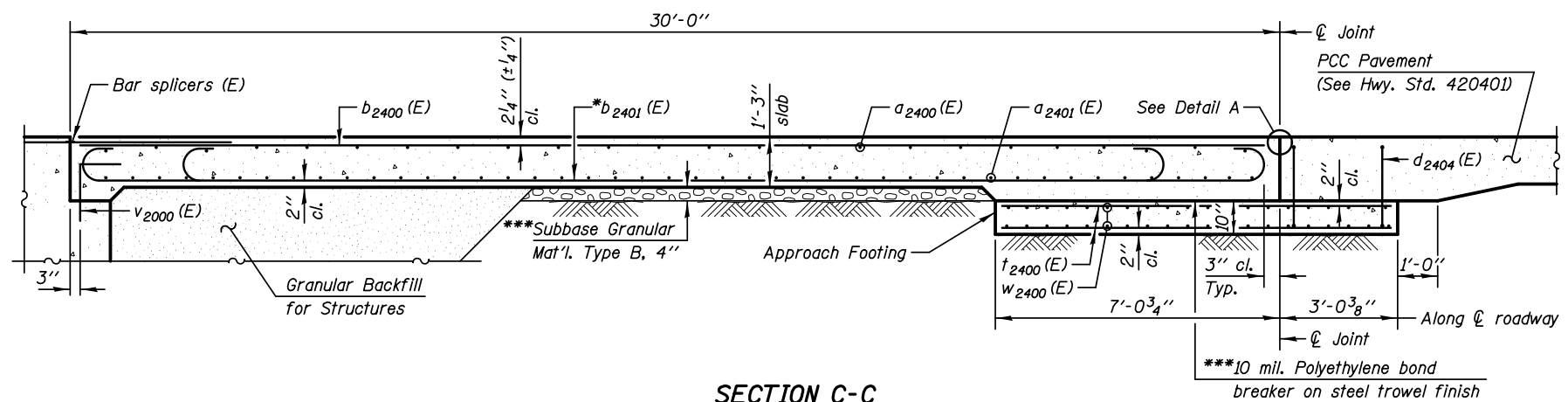
**KNIGHT**  
Engineers & Architects

DESIGNED - WPM	REVISIONS
CHECKED - TB	REVISIONS
SCALE - NONE	REVISIONS
DATE - 10/15/2012	REVISIONS
DRAWN - TB	REVISIONS
CHECKED - WPM	REVISIONS

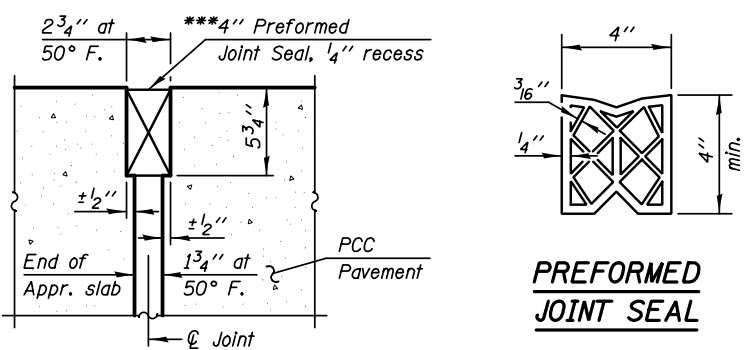
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**BRIDGE APPROACH SLAB PLAN (NB)**  
S.N. 022-2029 (SB) TOLLWAY B.N. 826  
S.N. 022-2030 (NB) TOLLWAY B.N. 825  
SHEET NO. SA-33 OF 63 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	(112 & 113) WRS-5	DUPAGE	963	617
<b>CONTRACT NO. 60131</b>				
ILLINOIS FED. AID PROJECT				



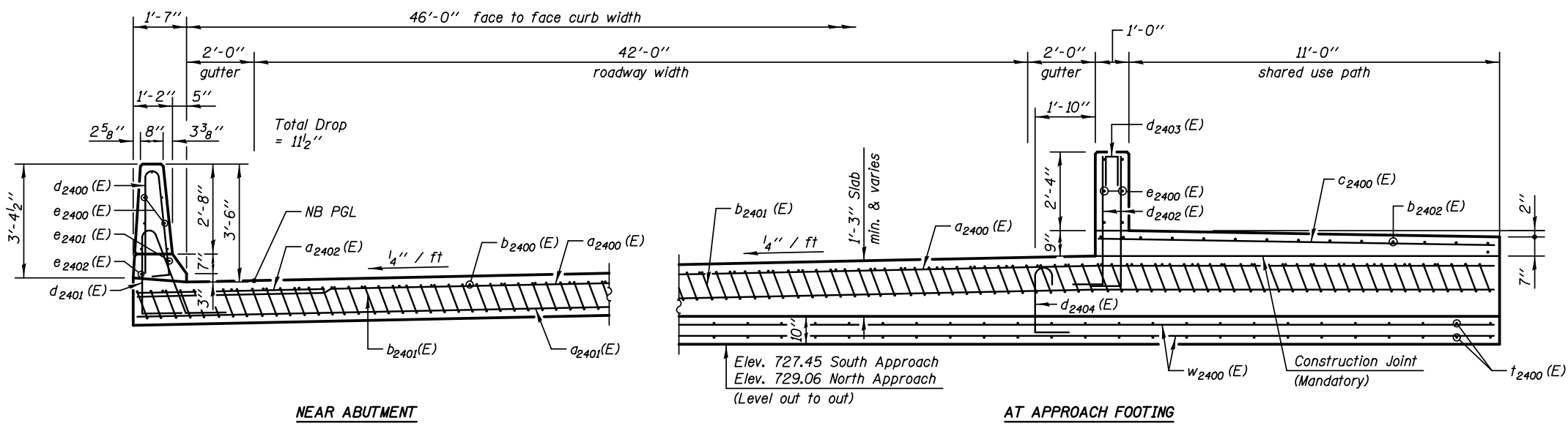
**SECTION C-C**



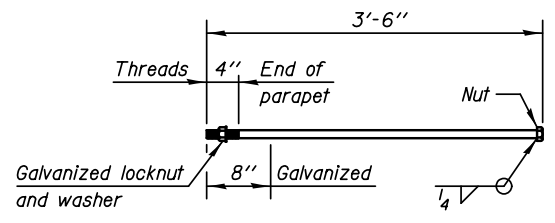
**PREFORMED JOINT SEAL**

\*Tilt #9 b<sub>1401</sub>(E) bars as required to maintain clearance.  
 \*\*\*Cost included with Concrete Superstructure.

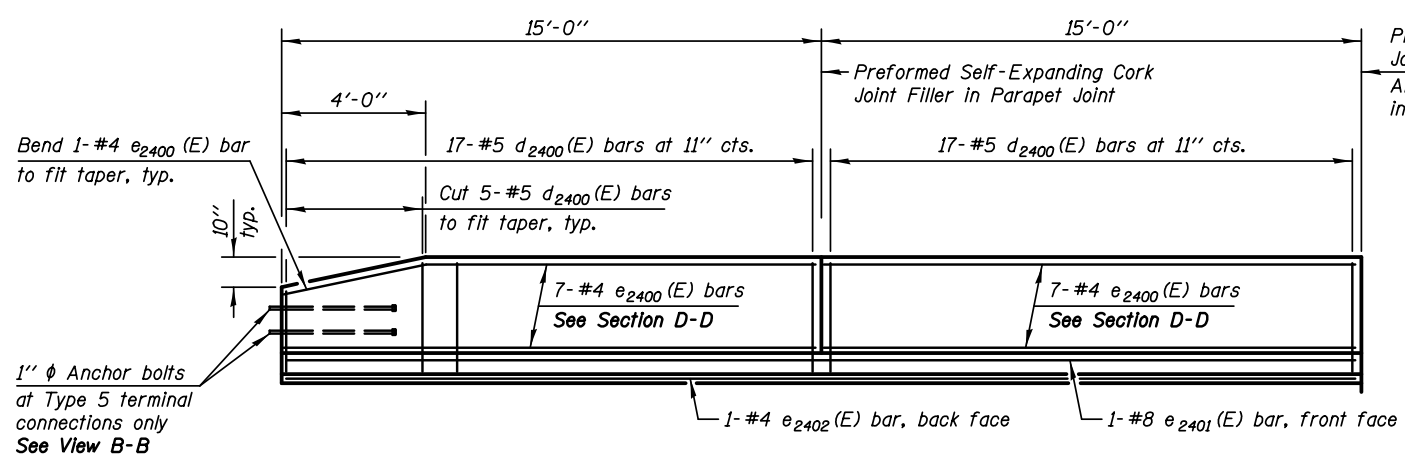
**DETAIL A**



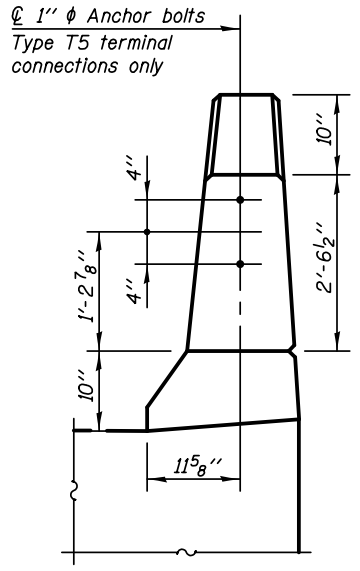
**SECTION D-D**  
(See Plan for dimensions not shown)



**1" ANCHOR BOLT**  
(Cost included with Concrete Superstructure)

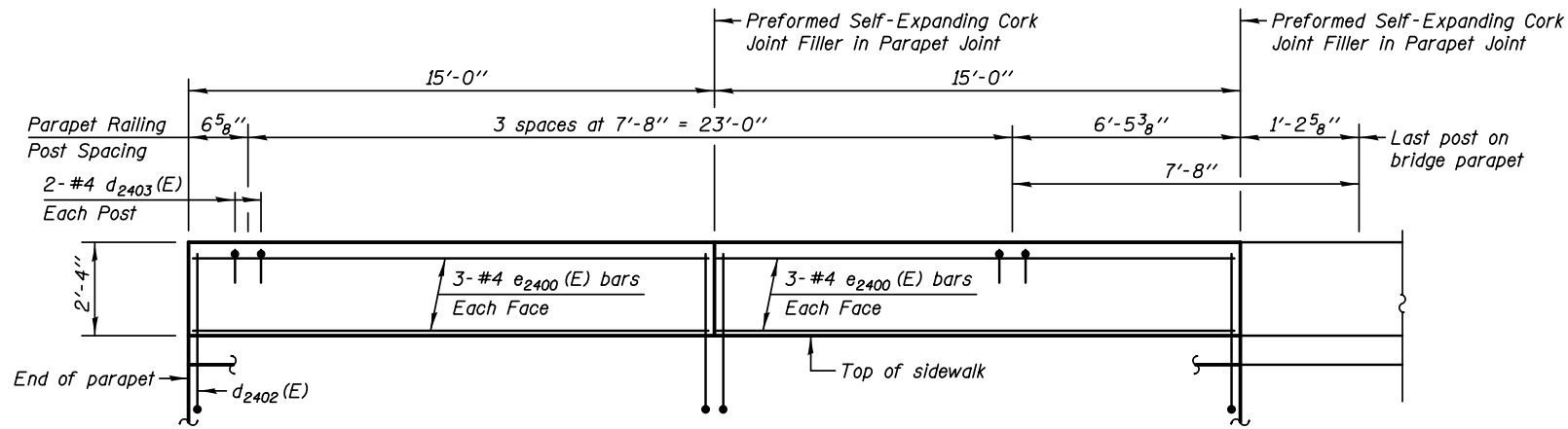


**VIEW E-E**  
Dimensions along inside face of parapet  
South Approach parapet shown, North Approach parapet opposite hand



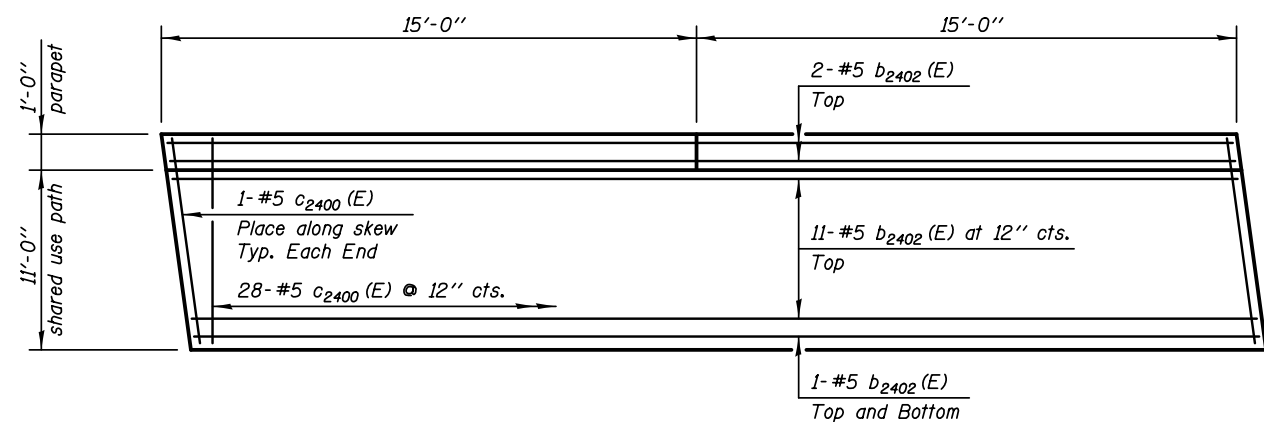
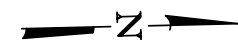
**VIEW B-B**

**Notes:**  
 The approach footing maximum applied service bearing pressure ( $Q_{max}$ ) = 2.0 ksf.  
 See Sheet SA-29 for v<sub>2000</sub>(E) bar details  
 See Sheet SA-55 for bar splicer details.  
 See Sheet SA-03 for Granular Backfill for Structures and drainage treatment details.  
 See Sheet SA-27 for Parapet Joint Details and additional parapet details.



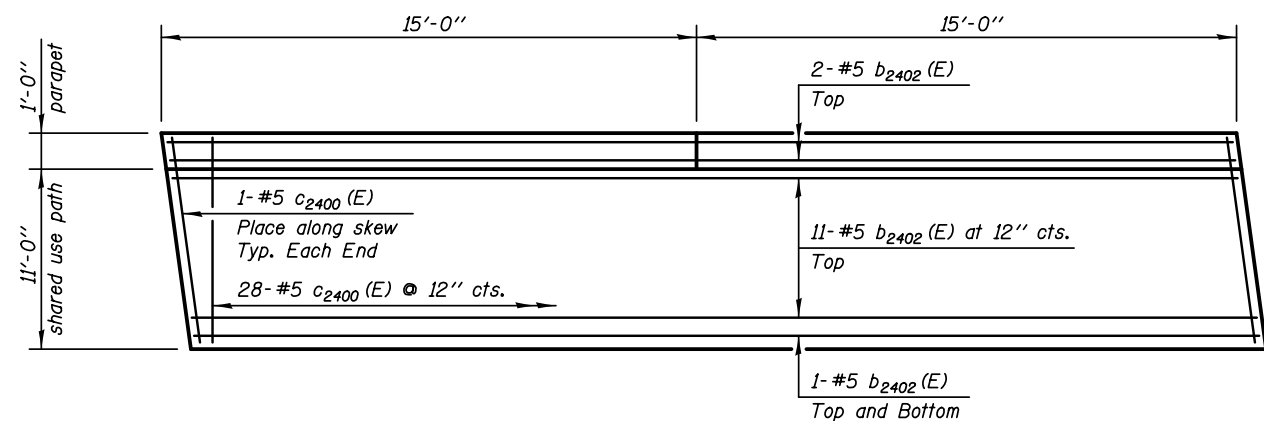
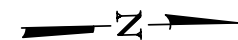
**VIEW F-F**

Dimensions along roadway face of parapet  
South Approach parapet shown, North Approach parapet opposite hand



**SHARED USE PATH - PARTIAL PLAN**

South Approach Slab (SB)



**SHARED USE PATH - PARTIAL PLAN**

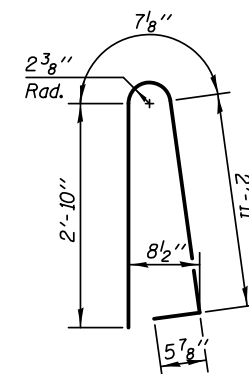
North Approach Slab (SB)

**BILL OF MATERIAL  
SOUTH APPROACH SLAB**

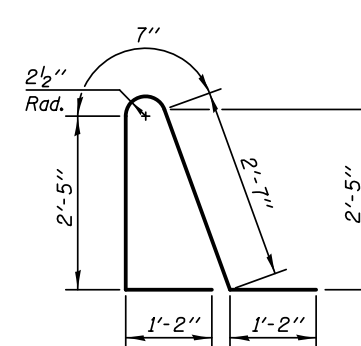
BAR	NO.	SIZE	LENGTH	SHAPE
a2400(E)	50	#4	31'-3"	—
a2401(E)	92	#5	31'-9"	—
a2402(E)	24	#6	6'-6"	—
b2400(E)	48	#4	29'-8"	—
b2401(E)	141	#9	29'-9"	U
b2402(E)	15	#5	29'-7"	—
c2400(E)	30	#5	11'-8"	—
d2400(E)	34	#5	6'-10"	⌋
d2401(E)	34	#5	7'-11"	⌋
d2402(E)	68	#5	4'-10"	⌋
d2403(E)	8	#4	2'-2"	⌋
d2404(E)	4	#6	4'-4"	⌋
e2400(E)	26	#4	14'-8"	—
e2401(E)	1	#8	29'-8"	—
e2402(E)	1	#4	29'-8"	—
f2400(E)	120	#4	9'-9"	—
w2400(E)	80	#5	31'-9"	—
Reinforcement Bars, Epoxy Coated			LB	25060
Concrete Superstructure			Cu. Yd.	115.0
Concrete Structures			Cu. Yd.	20.0
Bridge Deck Grooving			Sq. Yd.	147.0
Protective Coat			Sq. Yd.	226.0

**BILL OF MATERIAL  
NORTH APPROACH SLAB**

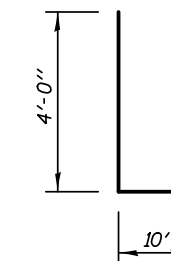
BAR	NO.	SIZE	LENGTH	SHAPE
a2400(E)	50	#4	31'-3"	—
a2401(E)	92	#5	31'-9"	—
a2402(E)	24	#6	6'-6"	—
b2400(E)	48	#4	29'-8"	—
b2401(E)	141	#9	29'-9"	U
b2402(E)	15	#5	29'-7"	—
c2400(E)	30	#5	11'-8"	—
d2400(E)	34	#5	6'-10"	⌋
d2401(E)	34	#5	7'-11"	⌋
d2402(E)	68	#5	4'-10"	⌋
d2403(E)	8	#4	2'-2"	⌋
d2404(E)	4	#6	4'-4"	⌋
e2400(E)	26	#4	14'-8"	—
e2401(E)	1	#8	29'-8"	—
e2402(E)	1	#4	29'-8"	—
f2400(E)	120	#4	9'-9"	—
w2400(E)	80	#5	31'-9"	—
Reinforcement Bars, Epoxy Coated			LB	25060
Concrete Superstructure			Cu. Yd.	115.0
Concrete Structures			Cu. Yd.	20.0
Bridge Deck Grooving			Sq. Yd.	147.0
Protective Coat			Sq. Yd.	226.0



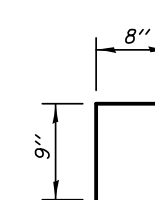
**BAR d<sub>2400</sub>(E)**



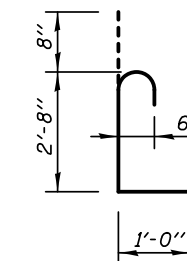
**BAR d<sub>2401</sub>(E)**



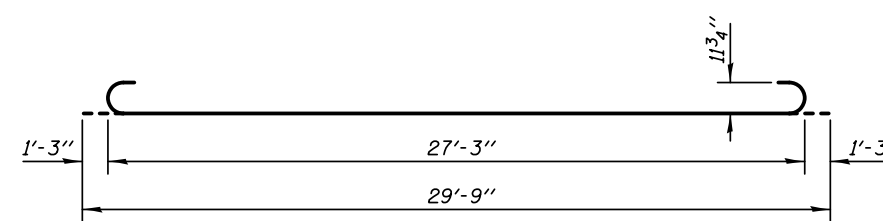
**BAR d<sub>2402</sub>(E)**



**BAR d<sub>2403</sub>(E)**



**BAR d<sub>2404</sub>(E)**



**BAR b<sub>2401</sub>(E)**

**Notes:**

Approach slab and parapet concrete shall be paid for as Concrete Superstructure.

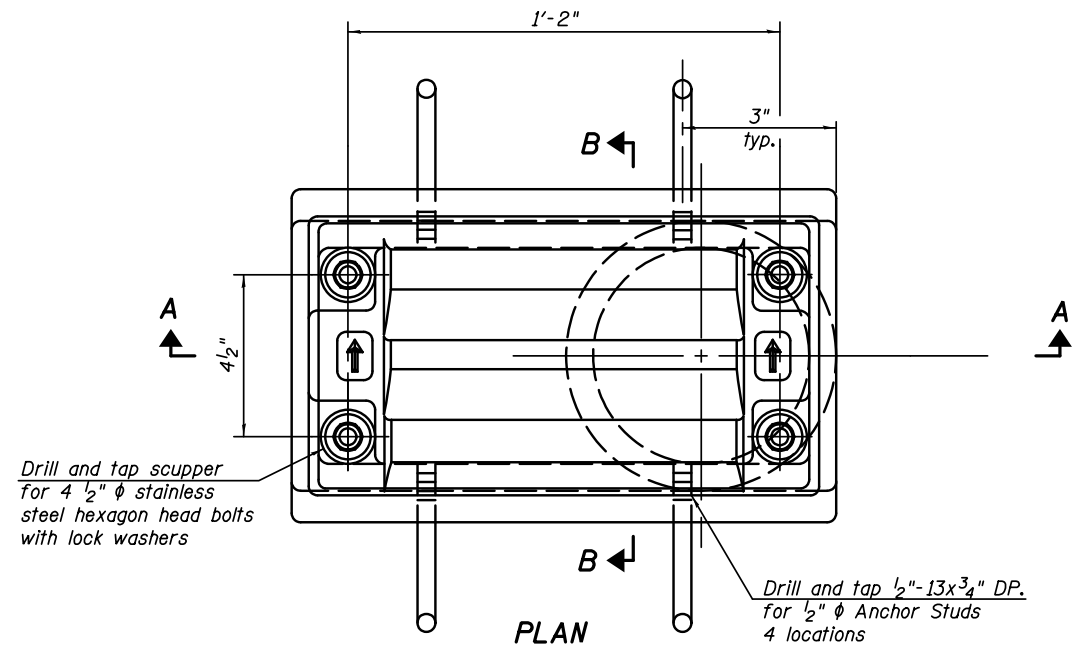
Approach footing concrete shall be paid for as Concrete Structures.

Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.

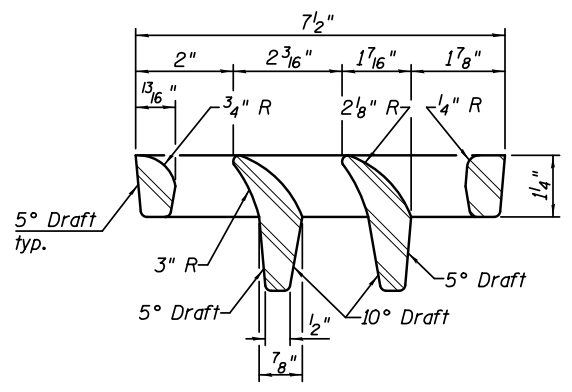
Cost of excavation for approach footing included with Concrete Structures.

See Sheet SA-26 for additional shared use path and parapet details.

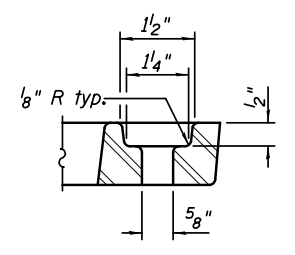
See Sheet SA-29 for Parapet Joint Details.



**PLAN**

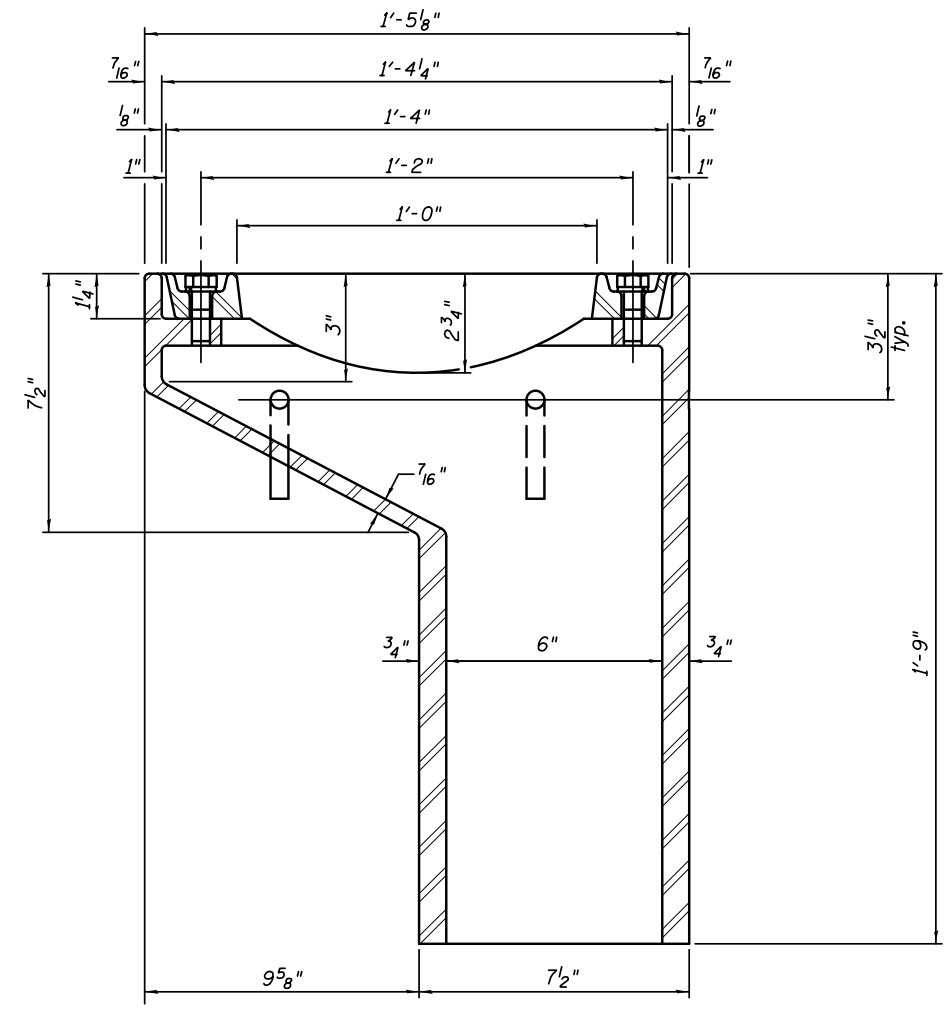


**VANE GRATE DETAIL**



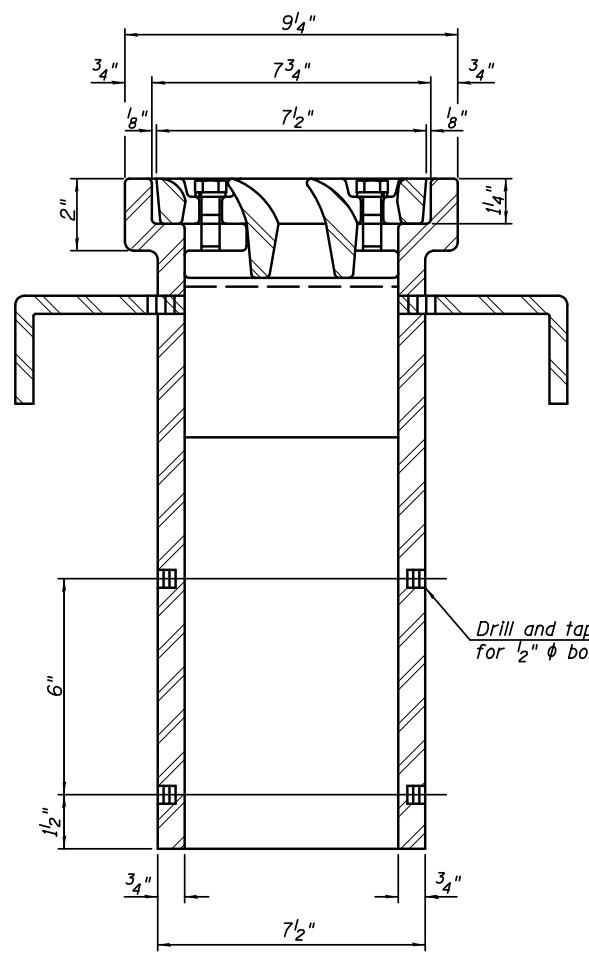
**BOLT HOLE DETAIL**

**Notes:**  
 All cast iron parts shall be gray iron conforming to the requirements of AASHTO M 105, Class 35B.  
 Bolts, anchor studs, washers and nuts shall conform to the requirements of ASTM A 307 and shall be galvanized according to AASHTO M 232.  
 Downspouts located on the exterior side of a painted steel fascia beam shall be painted with the finish coat specified for the exterior side of the fascia beam.  
 As an alternate, bolts, anchor studs, washers and nuts may be stainless steel according to Article 1006.29(d) of the Standard Specifications.  
 Structural steel weldments of equal sections and of the same configuration may be substituted for the cast iron scupper frame. Fillet or full penetration welds shall be used for the weldments. Details shall be submitted to the Engineer for approval. Structural steel weldments shall not be substituted for the cast iron scupper grate. Structural steel frames and downspouts shall be galvanized according to AASHTO M111.  
 The Contractor shall take appropriate measures to assure that Protective Coat is not applied to the scupper.  
 Cost of the Grate, Frame, Downspout, Anchor Studs, Bolts, Washers and Nuts including complete installation of the scupper shall be paid for at the contract unit price each for Drainage Scupper, DS-11.  
 Alternate fiberglass downspout conforming to ASTM D 2996 with a short-time rupture strength hoop tensile stress of 30,000 psi min. may be used in lieu of the cast iron or steel equivalent.

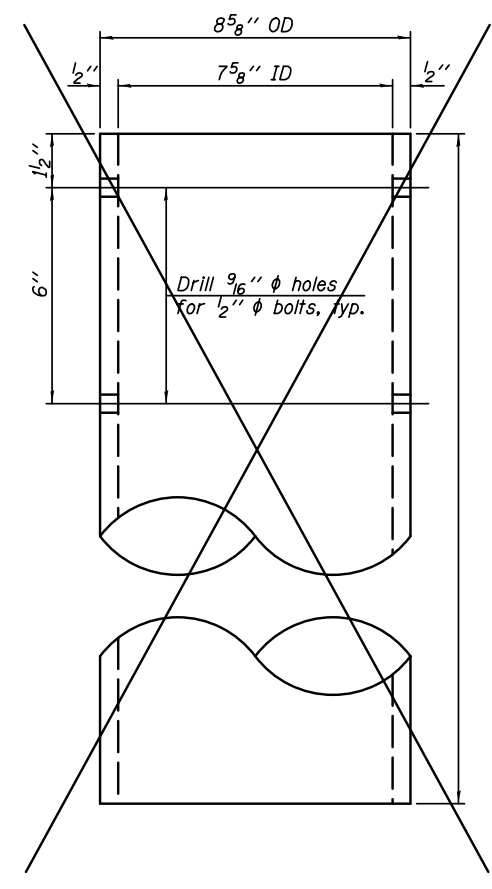


**SECTION A-A**

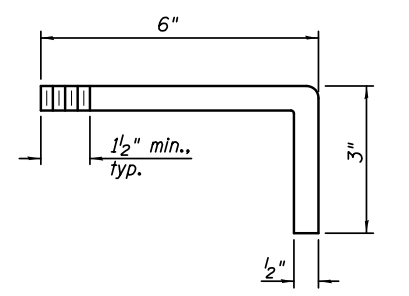
See Sheet SA-22 and SA-27 for scupper location relative to parapet



**SECTION B-B**



**DOWNSPOUT**



**ANCHOR STUD DETAIL**

**BILL OF MATERIAL**

Item	Unit	Quantity
Drainage Scupper, DS-11	Each	6

DS-11

7-1-10

**KNIGHT**  
 Engineers & Architects

SCALE - NONE  
 DATE - 10/15/2012

DESIGNED - WPM  
 CHECKED - TB  
 DRAWN - TB  
 CHECKED - WPM

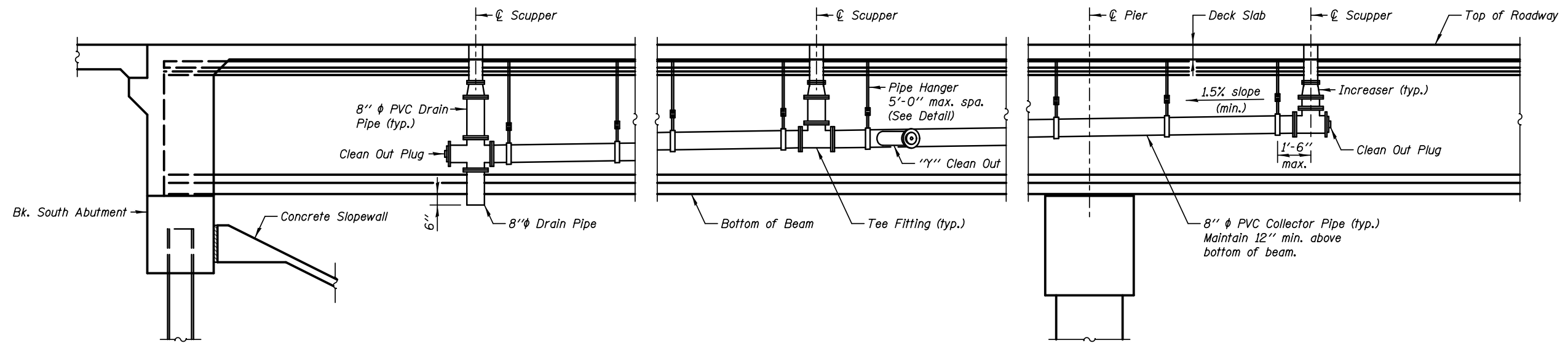
REVISED  
 REVISED  
 REVISED  
 REVISED

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

DRAINAGE SCUPPER, DS-11  
 S.N. 022-2029 (SB) TOLLWAY B.N. 826  
 S.N. 022-2030 (NB) TOLLWAY B.N. 825  
 SHEET NO. SA-36 OF 63 SHEETS

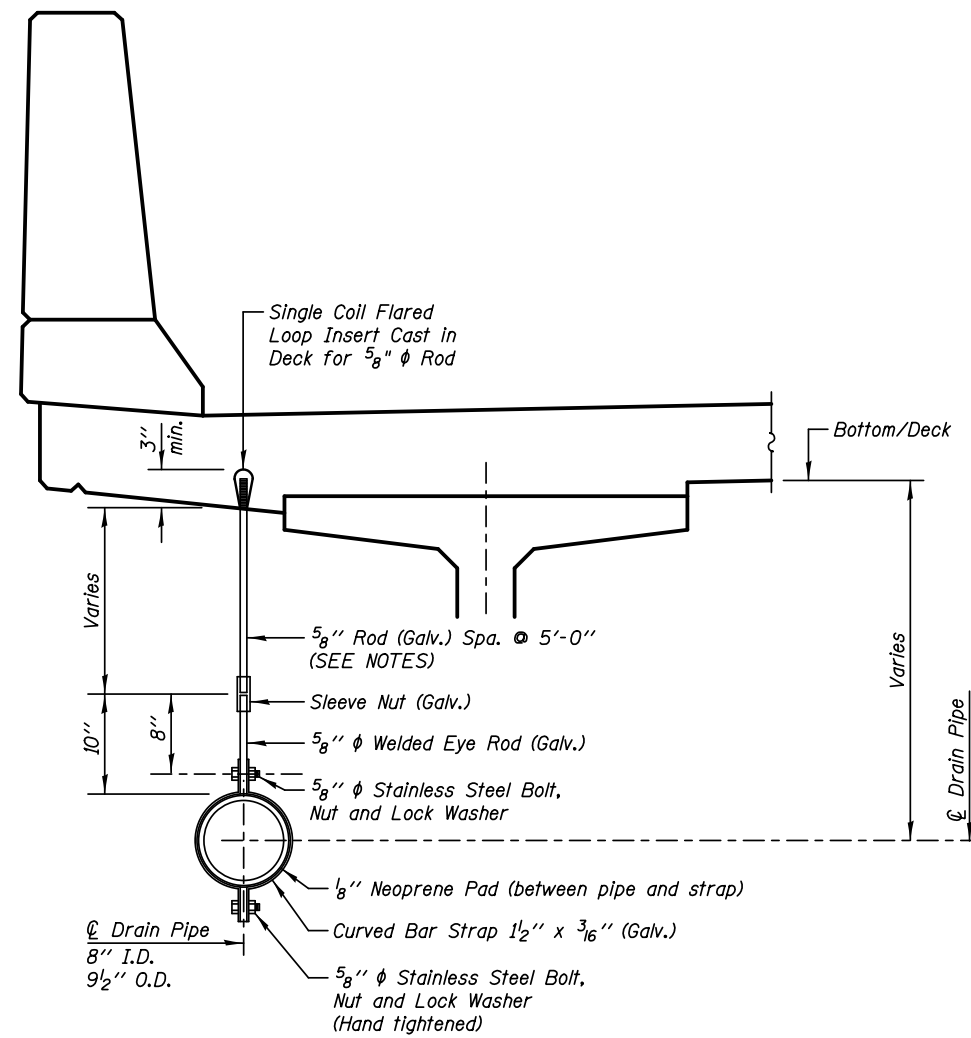
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	(112 & 113) WRS-5	DUPAGE	963	620
CONTRACT NO. 60131				
ILLINOIS FED. AID PROJECT				





**DECK DRAINAGE SYSTEM**

SB Bridge shown (Drainage System, No. 1)  
 NB Bridge opposite hand (Drainage System, No. 2)



**LONGITUDINAL PIPE  
 SUPPORT DETAIL**

**NOTES**

See Sheet SA-20 and SA-25 for Drainage Scupper spacing.

All Pipe Hangers, Supports and Hardware shall be hot-dipped galvanized in accordance with AASHTO M232 (ASTM A153). All bolts, nuts and washers shall be stainless steel.

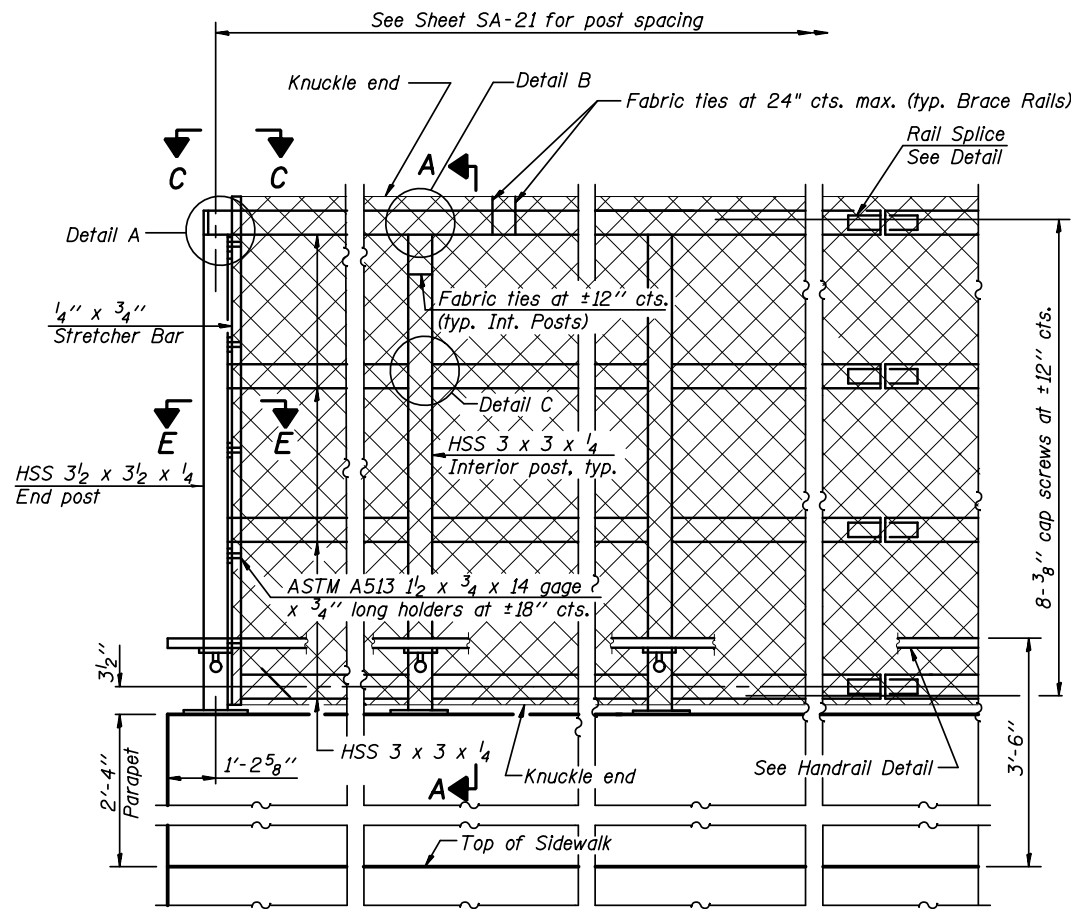
Pipe hangers shall be provided on all horizontal pipes at each tee, elbow or change in direction and at intermediate points as specified by the manufacturer, but not to exceed 5'-0" on centers. Pipe hangers shall have a load capacity of not less than 500 lbs.

The Deck Drainage System for the SB Bridge (022-2029) will be paid for as Drainage System, No. 1.

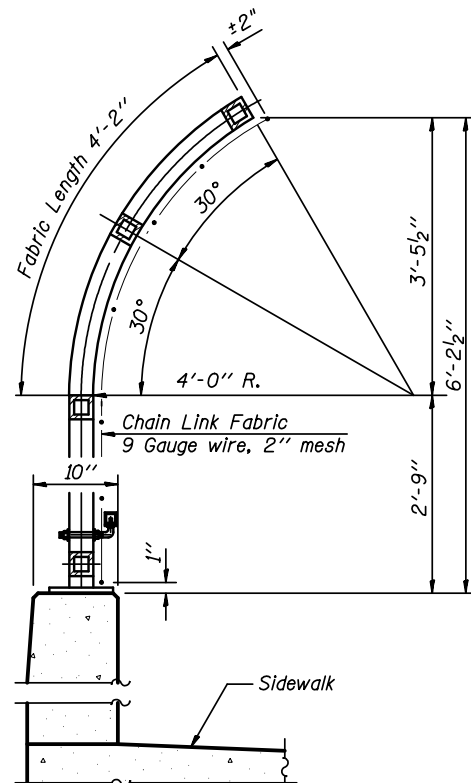
The Deck Drainage System for the NB Bridge (022-2030) will be paid for as Drainage System, No. 2.

**BILL OF MATERIAL**

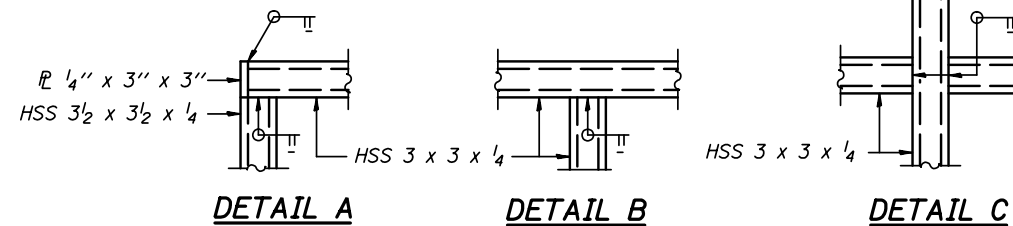
Item	Unit	Quantity
Drainage System, No. 1	Each	1
Drainage System, No. 2	Each	1



**ELEVATION**  
(Inside Face)



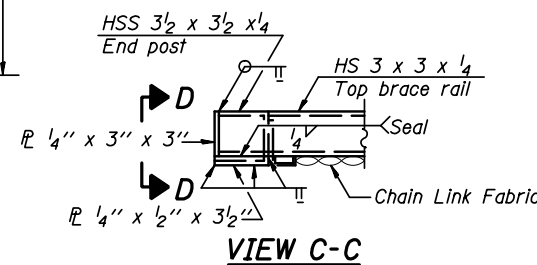
**SECTION A-A**



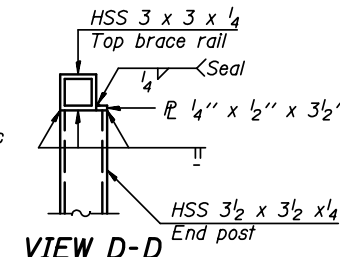
**DETAIL A**

**DETAIL B**

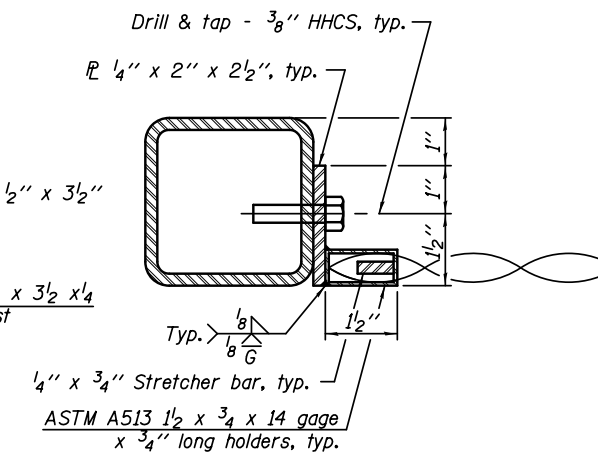
**DETAIL C**



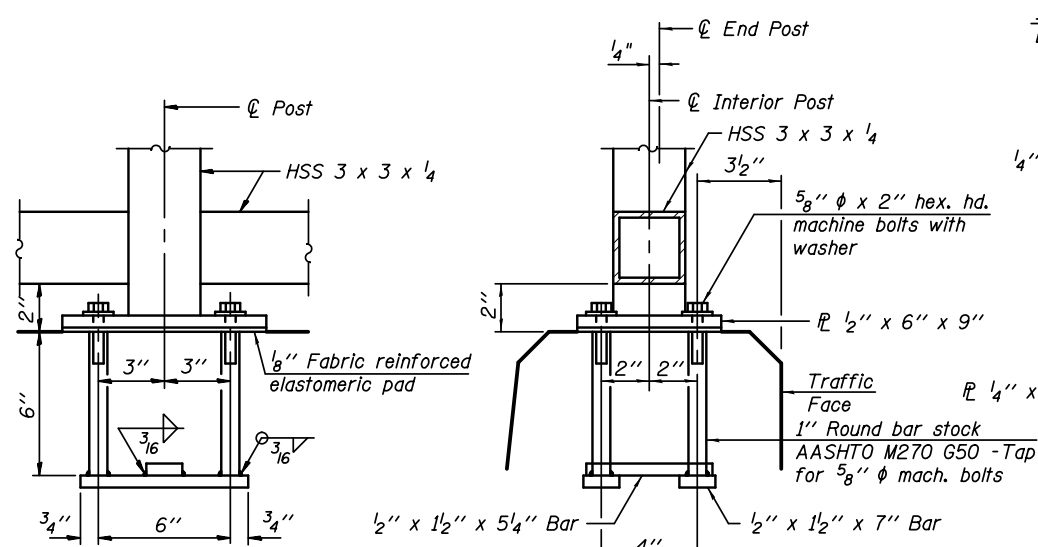
**VIEW C-C**



**VIEW D-D**

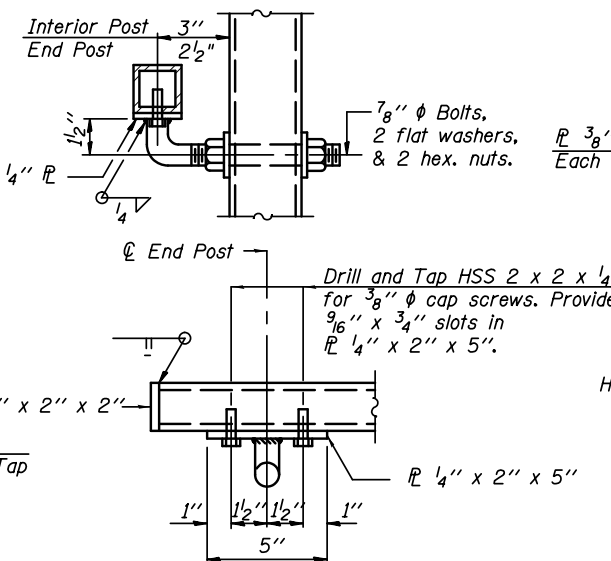


**SECTION E-E**

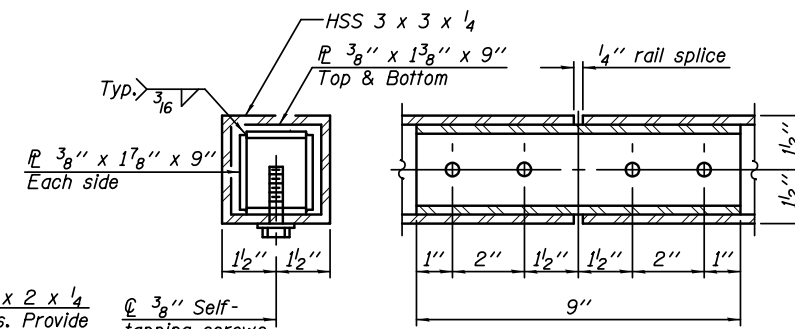


**ANCHOR BOLT DETAILS**

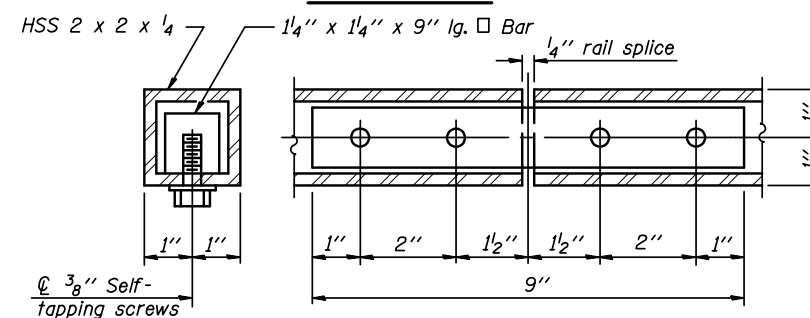
In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting 5/8\"/>



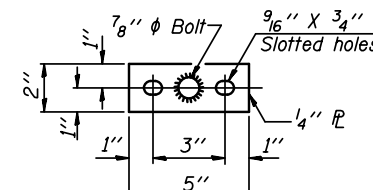
**HANDRAIL DETAIL**



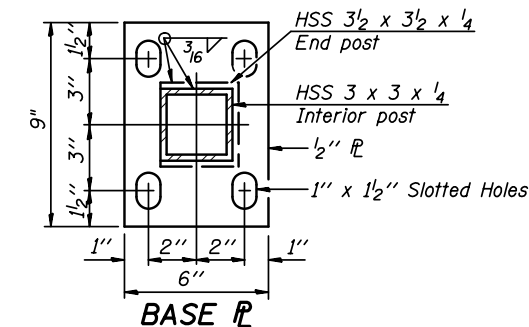
**RAIL SPLICE**



**HANDRAIL SPLICE**



**BASE P**  
(Handrail)



**BASE P**

**BILL OF MATERIAL**

Item	Unit	Quantity
Bridge Fence Railing	Foot	251.0

**KNIGHT**  
Engineers & Architects

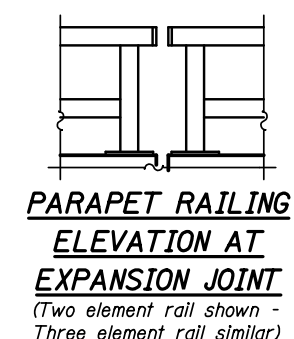
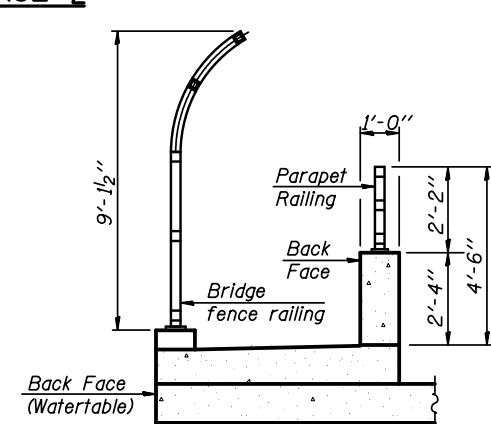
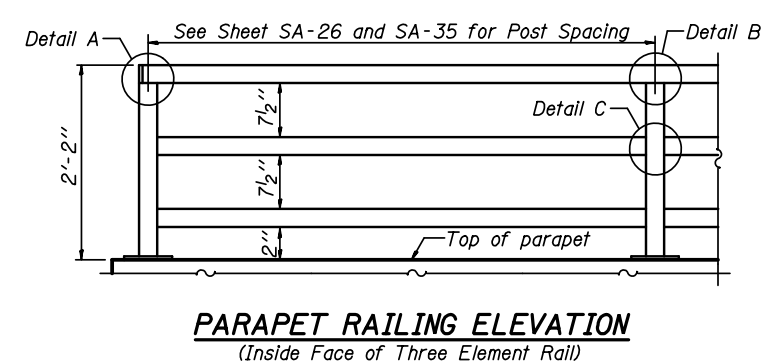
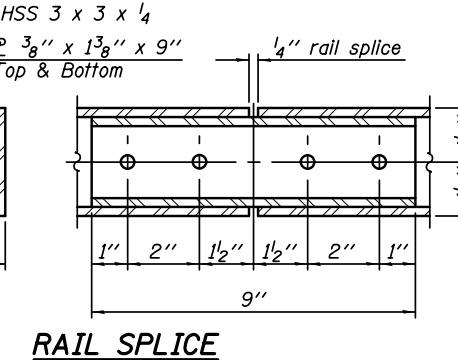
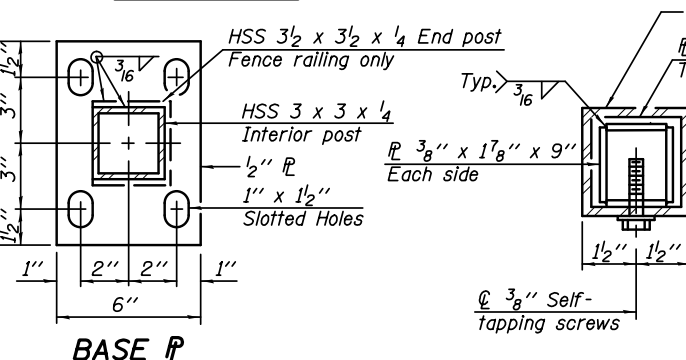
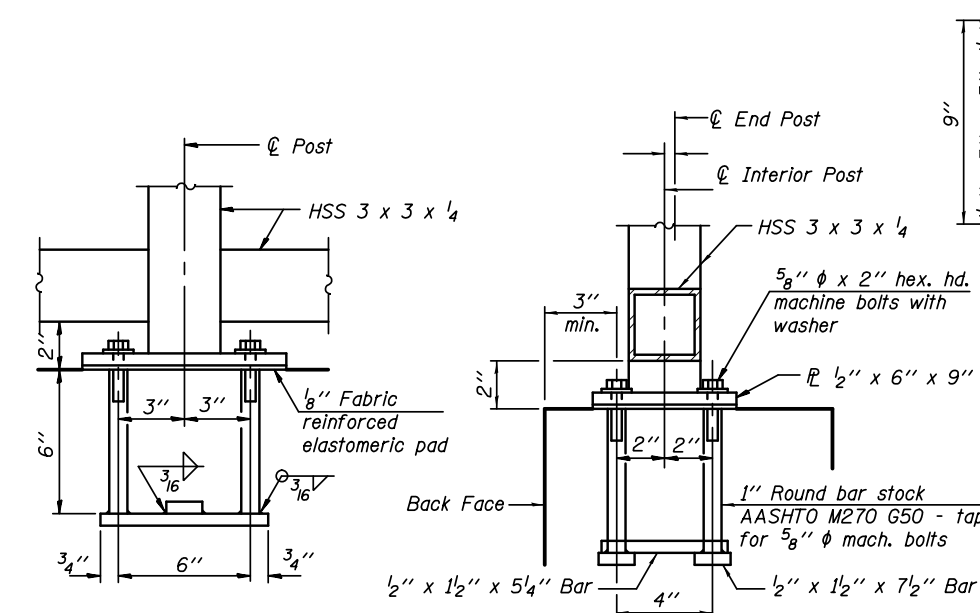
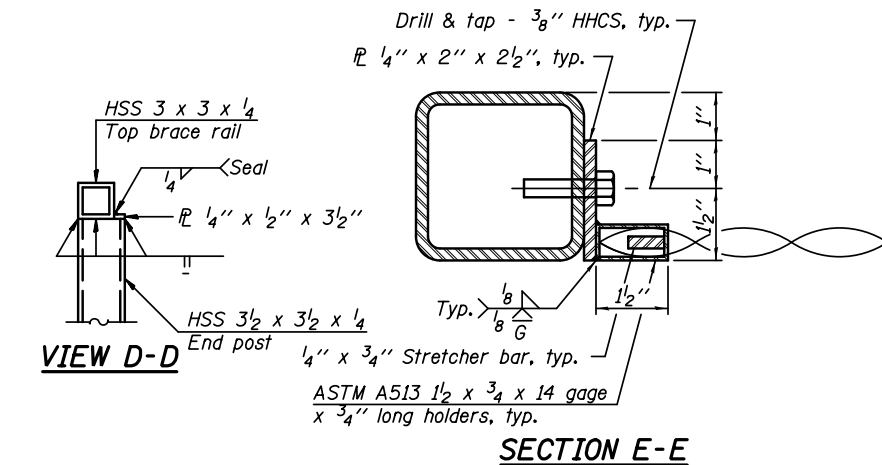
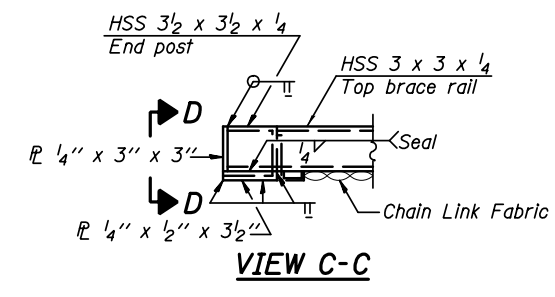
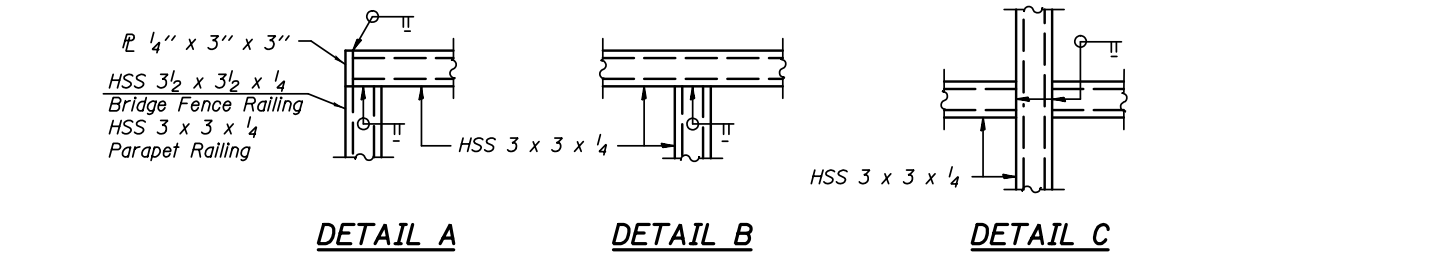
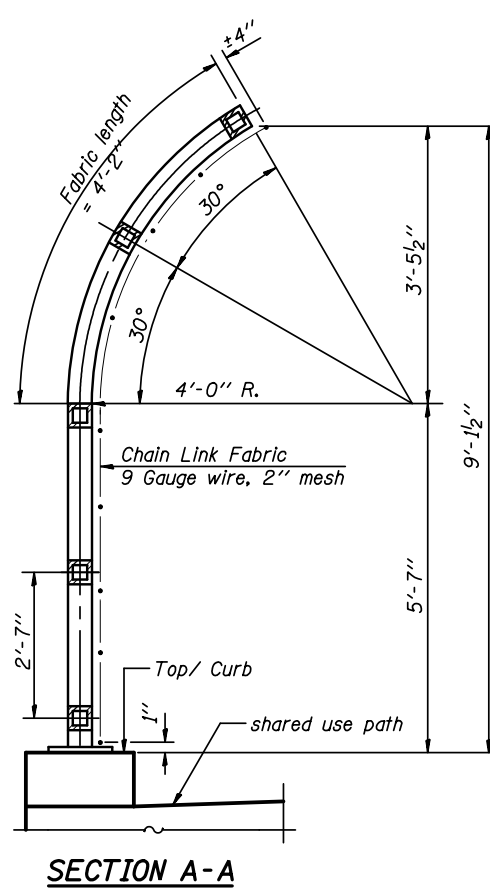
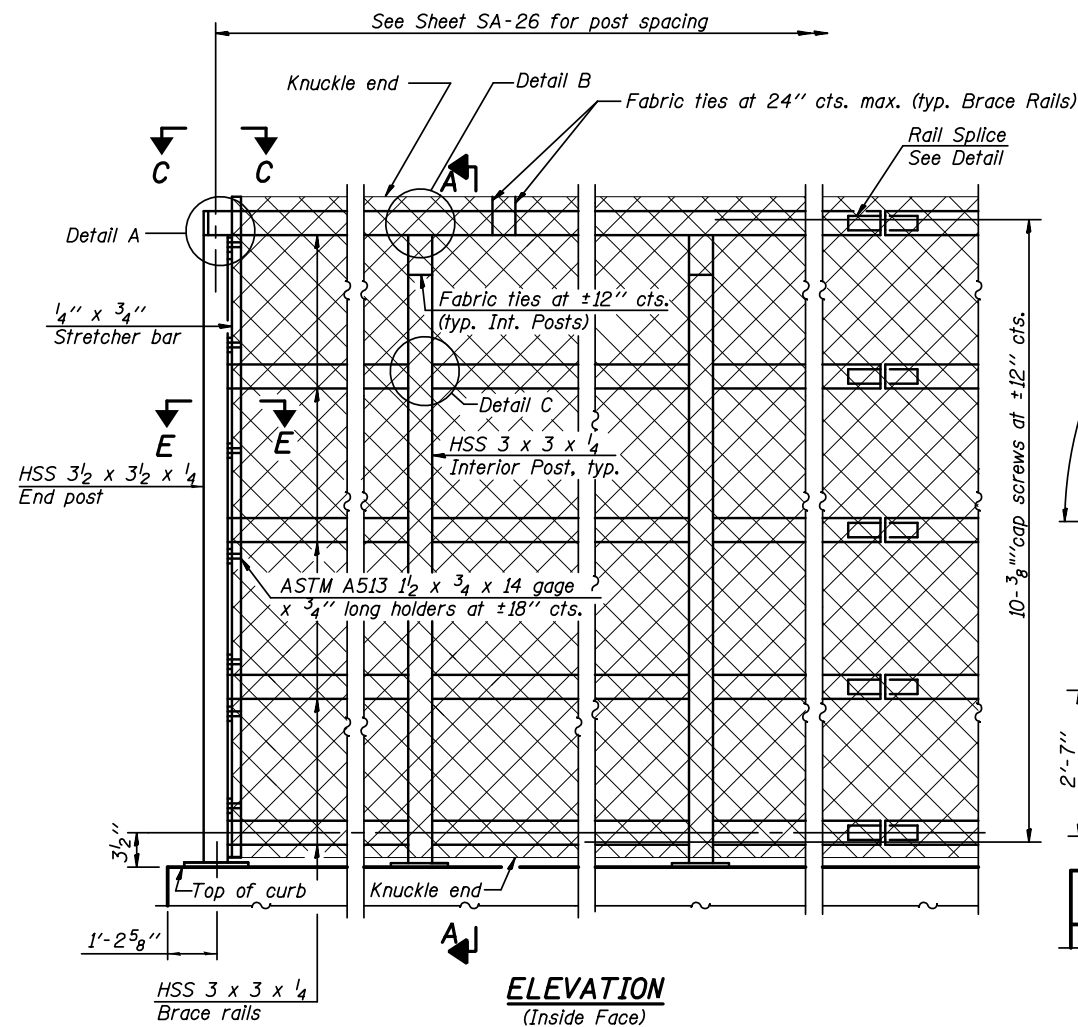
DESIGNED - WPM	REVISIONS
CHECKED - TB	REVISIONS
DRAWN - TB	REVISIONS
CHECKED - WPM	REVISIONS
SCALE - NONE	
DATE - 10/15/2012	

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BRIDGE FENCE RAILING, PARAPET MOUNTED  
S.N. 022-2029 (SB) TOLLWAY B.N. 826  
S.N. 022-2030 (NB) TOLLWAY B.N. 825  
SHEET NO. SA-38 OF 63 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	(112 & 113) WRS-5	DUPAGE	963	622
CONTRACT NO. 60131				
ILLINOIS FED. AID PROJECT				

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



**ANCHOR BOLT DETAILS**  
In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting 5/8" 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
Bridge Fence Railing (Sidewalk)	Foot	251.0
Parapet Railing	Foot	312.0

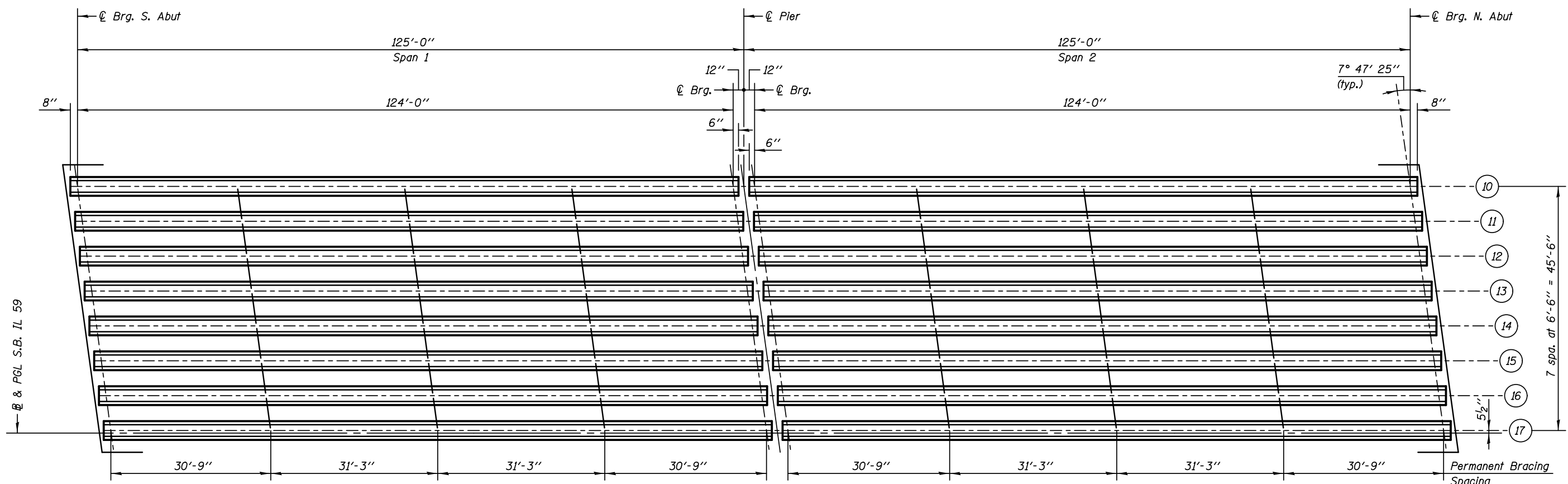
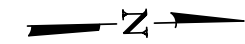
**KNIGHT**  
Engineers & Architects

DESIGNED - WPM	REVISIONS
CHECKED - TB	REVISIONS
DRAWN - TB	REVISIONS
CHECKED - WPM	REVISIONS

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BRIDGE FENCE RAILING, SIDEWALK MOUNTED  
S.N. 022-2029 (SB) TOLLWAY B.N. 826  
S.N. 022-2030 (NB) TOLLWAY B.N. 825  
SHEET NO. SA-39 OF 63 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	(112 & 113) WRS-5	DUPAGE	963	623
CONTRACT NO. 60131				
ILLINOIS FED. AID PROJECT				



**FRAMING PLAN**  
(SB Bridge)

	0.4 Span 1 0.6 Span 2	Pier
$I$	(in <sup>4</sup> ) 545894	-
$I'$	(in <sup>4</sup> ) 977244	977244
$S_b$	(in <sup>3</sup> ) 14915	-
$S_b'$	(in <sup>3</sup> ) 19236	19236
$S_t$	(in <sup>3</sup> ) 15421	-
$S_t'$	(in <sup>3</sup> ) 46104	46104
$DC1$	(k/ft) 1.45	1.45
$M_{DC1}$	(k) 2717	-
$DC2$	(k/ft) 0.21	0.21
$M_{DC2}$	(k) 235	413
$DW$	(k/ft) 0.29	0.29
$M_{DW}$	(k) 317	556
$M_L + IM$	(k) 1797	1703

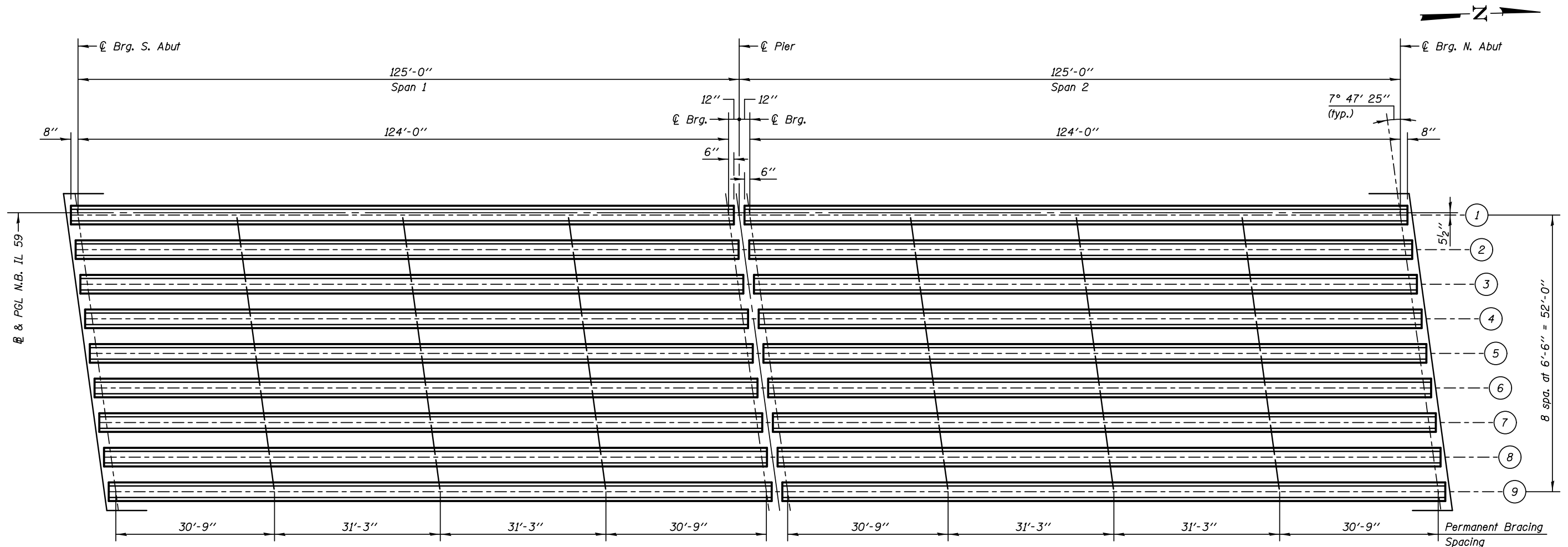
	0.4 Span 1 0.6 Span 2	Pier
$I$	(in <sup>4</sup> ) 545894	-
$I'$	(in <sup>4</sup> ) 1002942	1002942
$S_b$	(in <sup>3</sup> ) 14915	-
$S_b'$	(in <sup>3</sup> ) 19419	19419
$S_t$	(in <sup>3</sup> ) 15421	-
$S_t'$	(in <sup>3</sup> ) 49277	49277
$DC1$	(k/ft) 1.51	1.51
$M_{DC1}$	(k) 2834	-
$DC2$	(k/ft) 0.21	0.21
$M_{DC2}$	(k) 235	413
$DW$	(k/ft) 0.29	0.29
$M_{DW}$	(k) 317	556
$M_L + IM$	(k) 1870	1772

	Abutment	Pier
$R_{DC1}$	(k) 90.6	181.2
* $R_{DC2}$	(k) 10.0	33.4
* $R_{DW}$	(k) 13.5	44.8
* $R_L + IM$	(k) 89.0	179.8
$R_{Total}$	(k) 203.1	439.2

	Abutment	Pier
$R_{DC1}$	(k) 94.5	189.0
* $R_{DC2}$	(k) 10.0	33.4
* $R_{DW}$	(k) 13.5	44.8
* $R_L + IM$	(k) 75.1	153.1
$R_{Total}$	(k) 193.1	420.3

$I$ : Non-composite moment of inertia of beam section (in<sup>4</sup>).  
 $I'$ : Composite moment of inertia of beam section (in<sup>4</sup>).  
 $S_b$ : Non-composite section modulus for the bottom fiber of the prestressed beam (in<sup>3</sup>).  
 $S_b'$ : Composite section modulus for the bottom fiber of the prestressed beam (in<sup>3</sup>).  
 $S_t$ : Non-composite section modulus for the top fiber of the prestressed beam (in<sup>3</sup>).  
 $S_t'$ : Composite section modulus for the top fiber of the prestressed beam (in<sup>3</sup>).  
 $DC1$ : 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.).

\* At continuous piers, reactions from composite loads are assumed to be equally distributed to each bearing line.



**FRAMING PLAN**  
(NB Bridge)

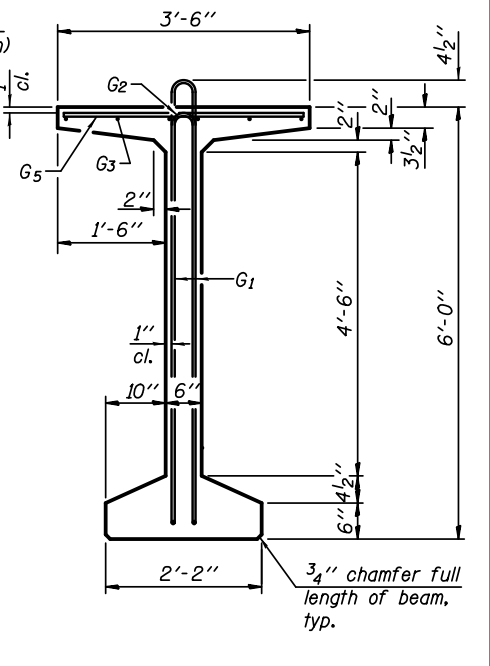
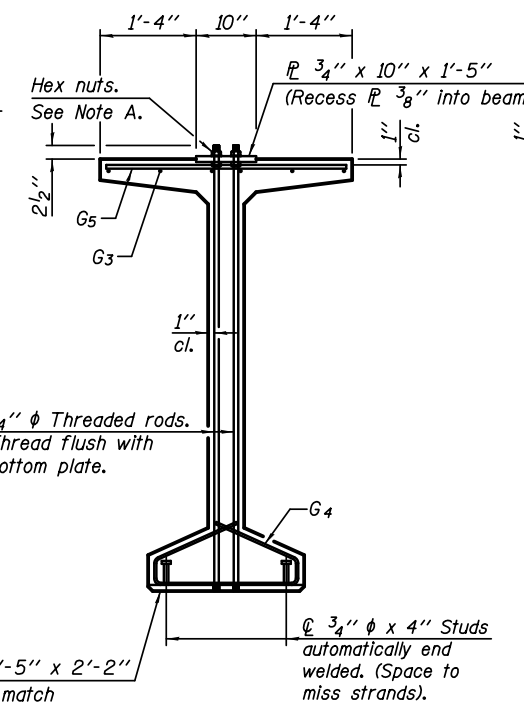
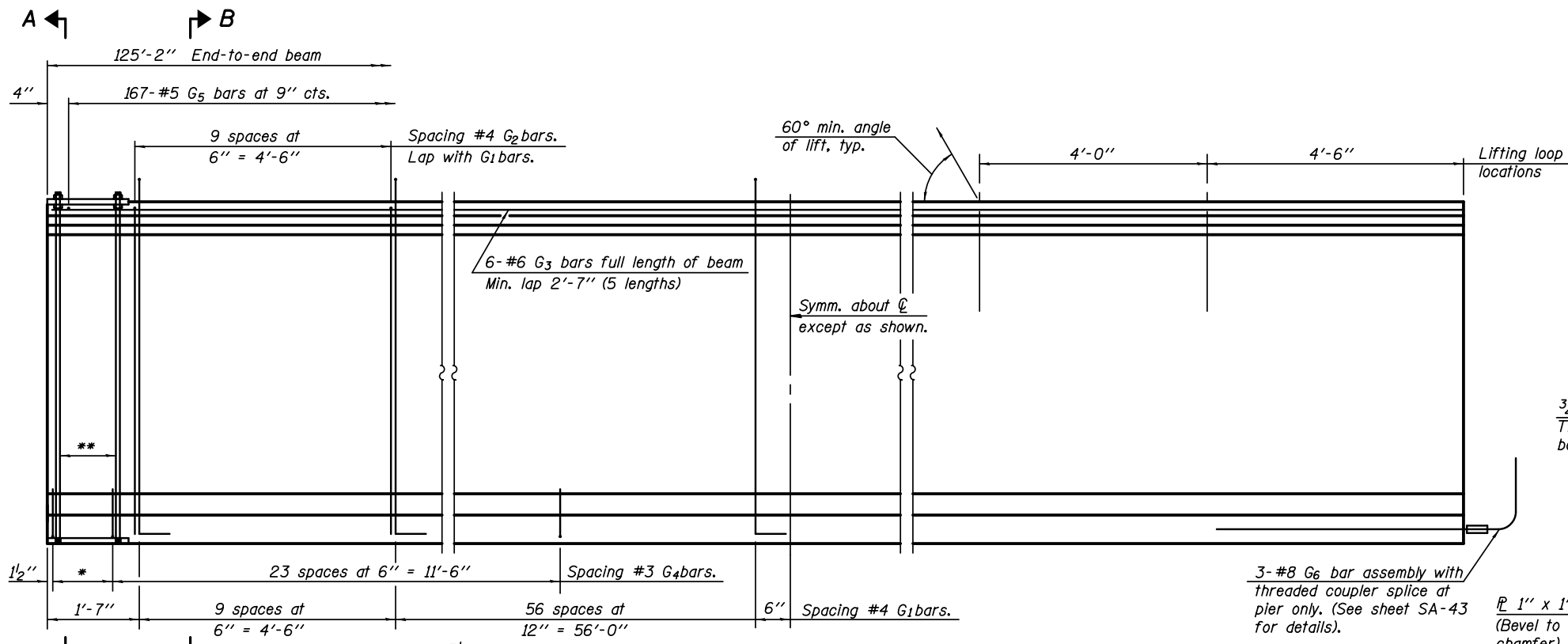
	0.4 Span 1 0.6 Span 2	Pier
$I$	(in <sup>4</sup> ) 545894	-
$I'$	(in <sup>4</sup> ) 977244	977244
$S_b$	(in <sup>3</sup> ) 14915	-
$S_b'$	(in <sup>3</sup> ) 19236	19236
$S_t$	(in <sup>3</sup> ) 15421	-
$S_t'$	(in <sup>3</sup> ) 46104	46104
$DC1$	(k/ft) 1.45	1.45
$M_{DC1}$	(k) 2717	-
$DC2$	(k/ft) 0.26	0.26
$M_{DC2}$	(k) 286	503
$DW$	(k/ft) 0.26	0.26
$M_{DW}$	(k) 282	494
$M_L + IM$	(k) 1797	1703

	0.4 Span 1 0.6 Span 2	Pier
$I$	(in <sup>4</sup> ) 545894	-
$I'$	(in <sup>4</sup> ) 1002942	1002942
$S_b$	(in <sup>3</sup> ) 14915	-
$S_b'$	(in <sup>3</sup> ) 19419	19419
$S_t$	(in <sup>3</sup> ) 15421	-
$S_t'$	(in <sup>3</sup> ) 49277	49277
$DC1$	(k/ft) 1.51	1.51
$M_{DC1}$	(k) 2834	-
$DC2$	(k/ft) 0.26	0.26
$M_{DC2}$	(k) 286	503
$DW$	(k/ft) 0.26	0.26
$M_{DW}$	(k) 282	494
$M_L + IM$	(k) 1870	1772

	Abutment	Pier
$R_{DC1}$	(k) 90.6	181.2
* $R_{DC2}$	(k) 12.2	40.6
* $R_{DW}$	(k) 12.0	39.8
* $R_L + IM$	(k) 89.0	179.8
$R_{Total}$	(k) 203.8	441.4

	Abutment	Pier
$R_{DC1}$	(k) 94.5	189.0
* $R_{DC2}$	(k) 12.2	40.6
* $R_{DW}$	(k) 12.0	39.8
* $R_L + IM$	(k) 75.1	153.1
$R_{Total}$	(k) 193.8	422.5

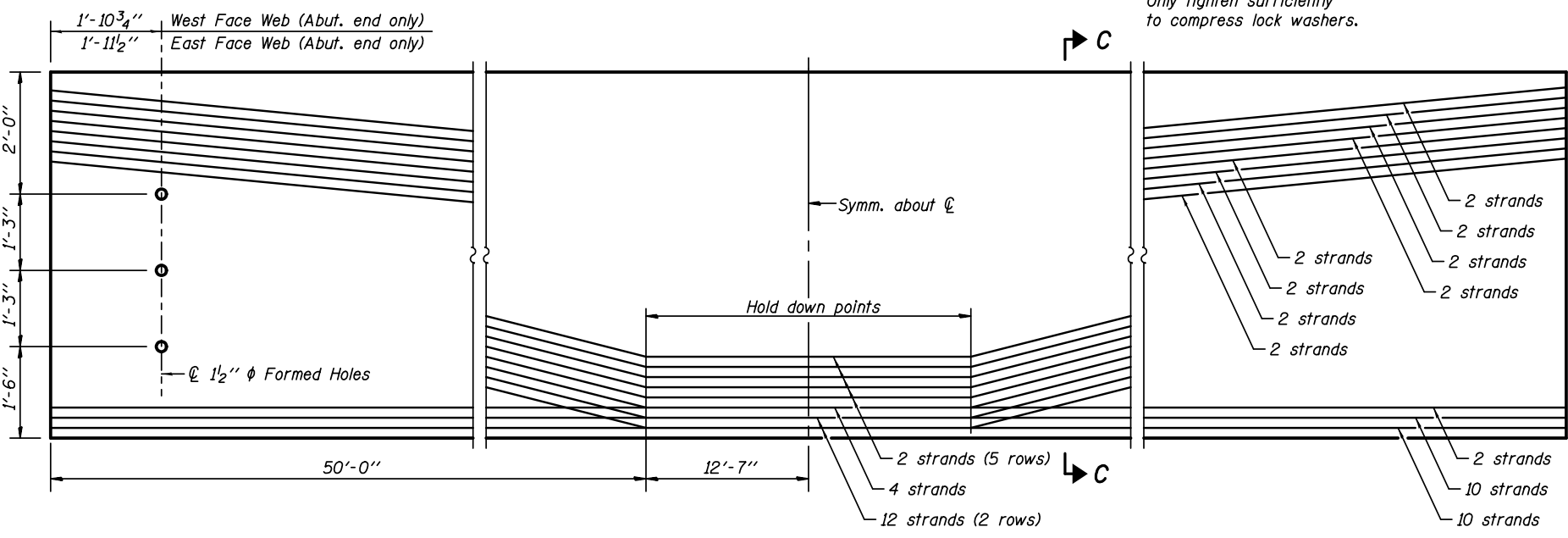
$I$ : Non-composite moment of inertia of beam section (in<sup>4</sup>).  
 $I'$ : Composite moment of inertia of beam section (in<sup>4</sup>).  
 $S_b$ : Non-composite section modulus for the bottom fiber of the prestressed beam (in<sup>3</sup>).  
 $S_b'$ : Composite section modulus for the bottom fiber of the prestressed beam (in<sup>3</sup>).  
 $S_t$ : Non-composite section modulus for the top fiber of the prestressed beam (in<sup>3</sup>).  
 $S_t'$ : Composite section modulus for the top fiber of the prestressed beam (in<sup>3</sup>).  
 $DC1$ : 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.).  
 \* At continuous piers, reactions from composite loads are assumed to be equally distributed to each bearing line.



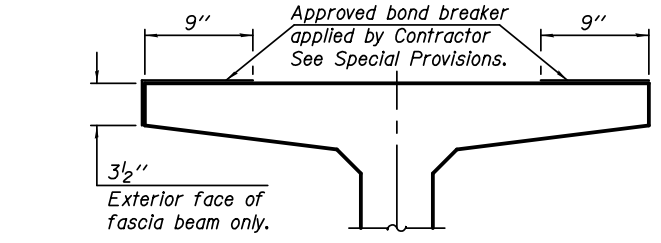
**ELEVATION OF BEAM**  
(Showing reinforcement & dimensions)

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

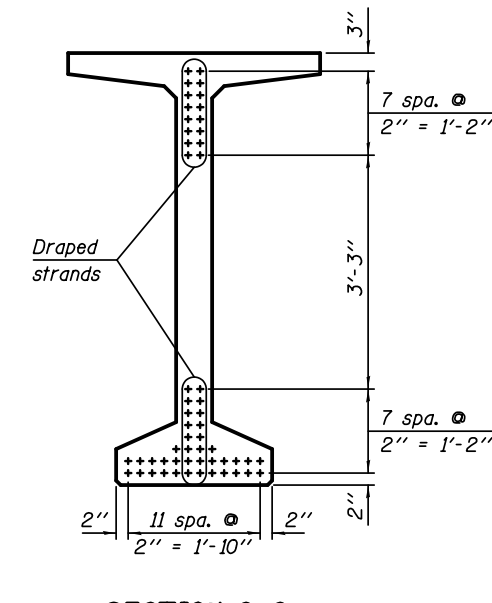
\* 4 spaces at 3/4" = 1'-1"  
\*\* 5-3/4" φ threaded dowel rods at 3/4" cts., each face.



**ELEVATION OF BEAM**  
(Showing prestressing steel)



**SECTION THRU TOP FLANGE**  
(Showing limits of bond breaker)



**SECTION C-C**

**\*\*\*BAR LIST  
ONE BEAM ONLY**

Bar	No.	Size	Length	Shape
G <sub>1</sub>	132	#4	13'-5"	∩L
G <sub>2</sub>	20	#4	11'-8"	∩
G <sub>3</sub>	30	#6	27'-3"	∩
G <sub>4</sub>	56	#3	4'-11"	∩
G <sub>5</sub>	167	#5	3'-4"	∩
G <sub>6</sub>	3	#8	6'-6"	U

\*\*\*For information only

**Notes:**  
See sheet SA-43 for additional details and Bill of Material.

Required release strength, f'ci, shall be 5200 psi.

Apply approved bond breaker as shown in Section thru Top Flange full length of beam. See Special Provisions.

PBT-4-72

4-16-12

**KNIGHT**  
Engineers & Architects

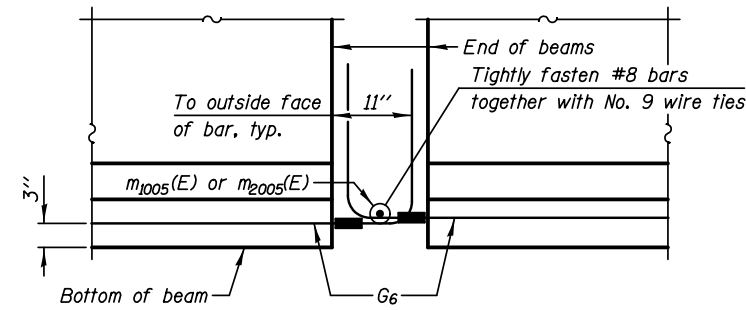
DESIGNED - WPM	REVISIONS
CHECKED - TB	REVISIONS
DRAWN - TB	REVISIONS
CHECKED - WPM	REVISIONS
SCALE - NONE	
DATE - 10/15/2012	

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

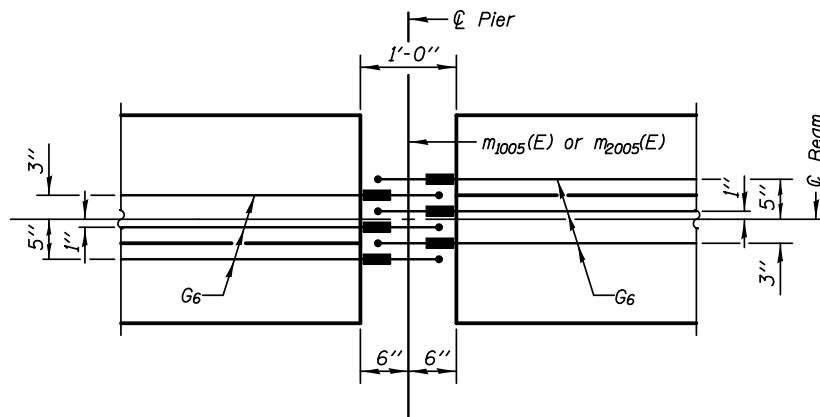
72" PPC BULB T-BEAM  
S.N. 022-2029 (SB) TOLLWAY B.N. 826  
S.N. 022-2030 (NB) TOLLWAY B.N. 825  
SHEET NO. SA-42 OF 63 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	(112 & 113) WRS-5	DUPAGE	963	626
CONTRACT NO. 60131				

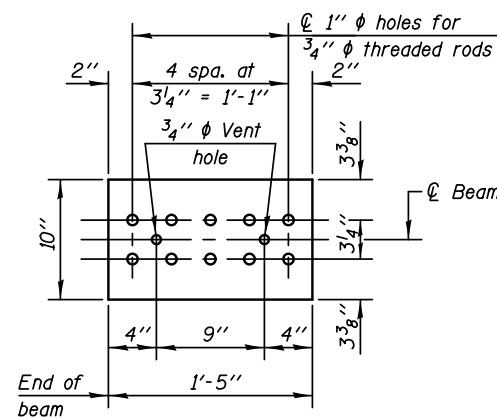
ILLINOIS FED. AID PROJECT



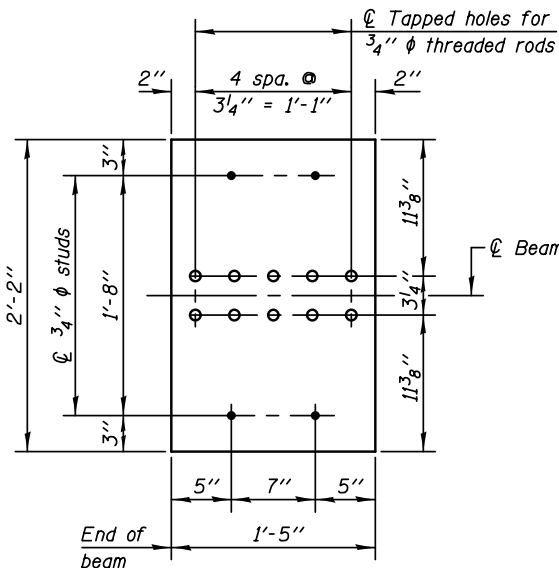
**ELEVATION OF BEAM AT PIER**



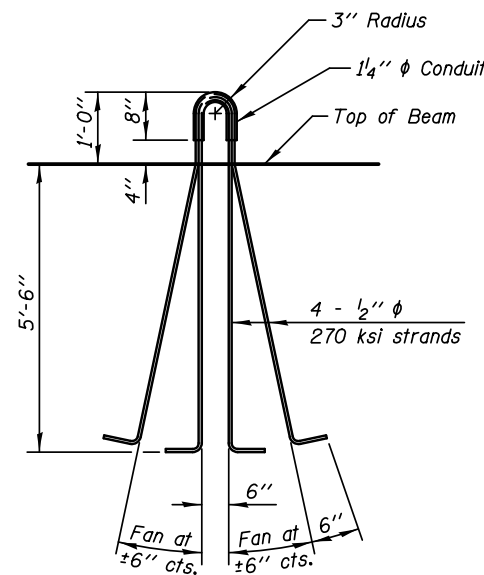
**PLAN OF BEAM AT PIER**



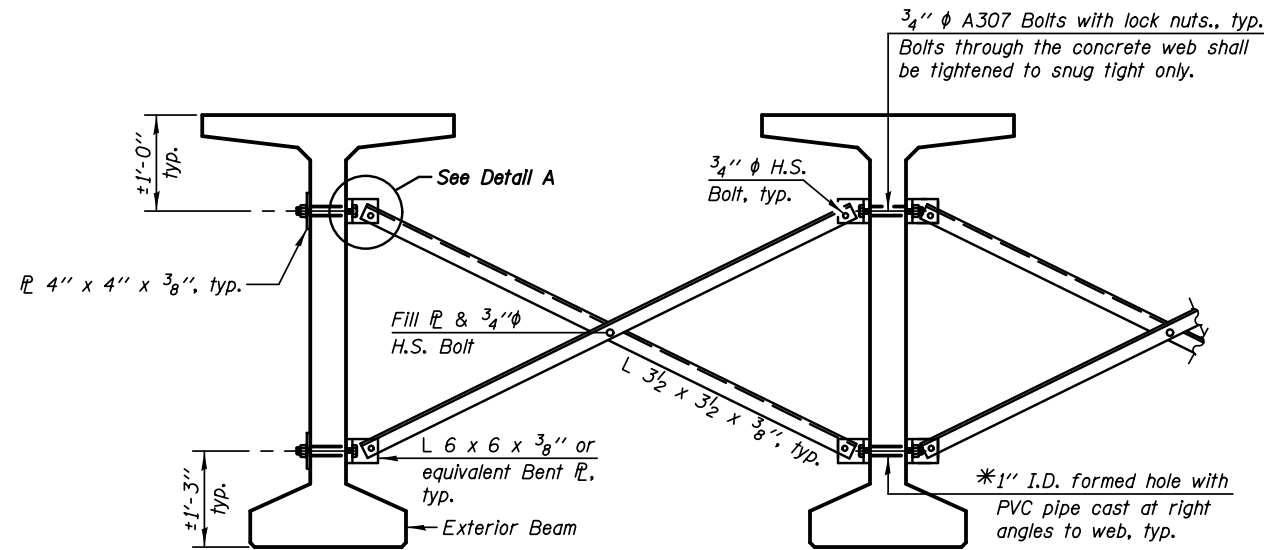
**TOP PLATE**



**BOTTOM PLATE**



**LIFTING LOOP DETAIL**



**Permanent Bracing Notes:**

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

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

All holes shall be 1 5/16" φ unless otherwise noted.

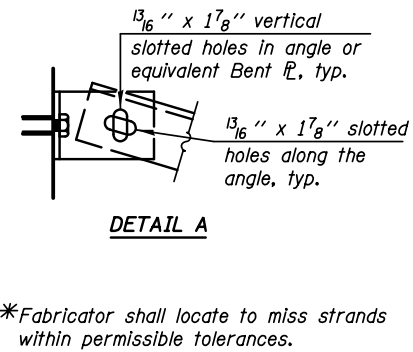
5/16" x 3" x 3" plate washers are required over all slotted holes.

All bolts shall be galvanized according to AASHTO M232.

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

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

**PERMANENT BRACING DETAILS FOR BULB-T BEAMS**



\*Fabricator shall locate to miss strands within permissible tolerances.

**NOTES**

Inserts for 3/4" φ threaded dowel rods, when specified, are to be two strut, ferrule type for interior beams and single ferrule, flared loop type for exterior beams.

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in.

A minimum 2 1/2" φ lifting pin shall be used to engage the lifting loops during handling.

Tilt G6 bars when necessary to maintain 1/2" clearance.

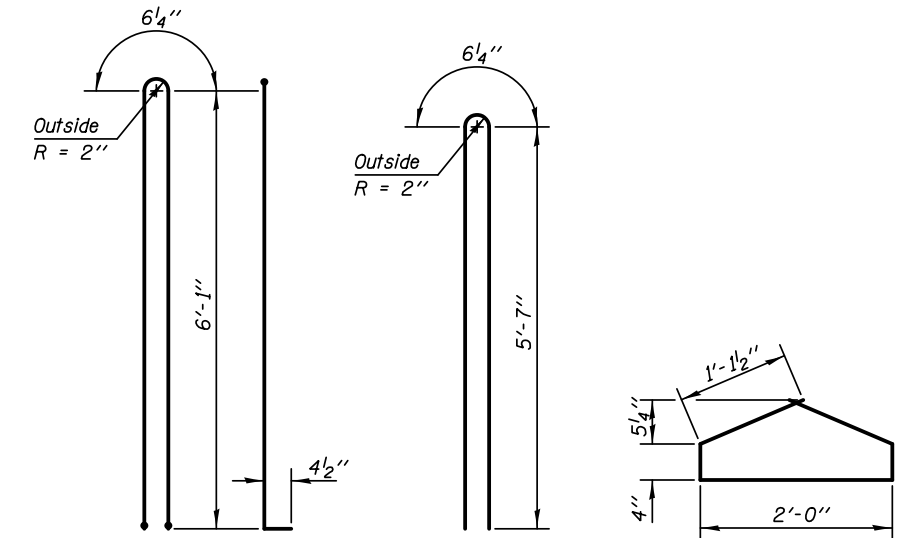
The top and bottom plates shall be AASHTO M270 Grade 50.

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

Threaded rods shall be ASTM F 1554 Grade 55.

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

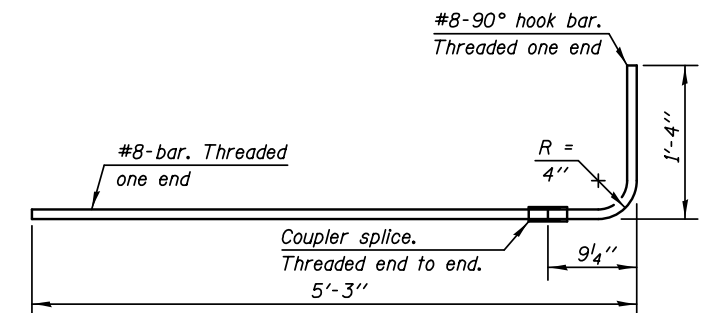
Beams requiring G6 bar assemblies shall not be released from the fabricator until they have attained 45 days of age or older.



**BAR G1**

**BAR G2**

**BAR G4**



**G6 BAR ASSEMBLY**

**BILL OF MATERIAL**

Item	Unit	Total
Furnishing and Erecting Precast Prestressed Concrete Bulb T-Beams, 72"	Foot	4256.0

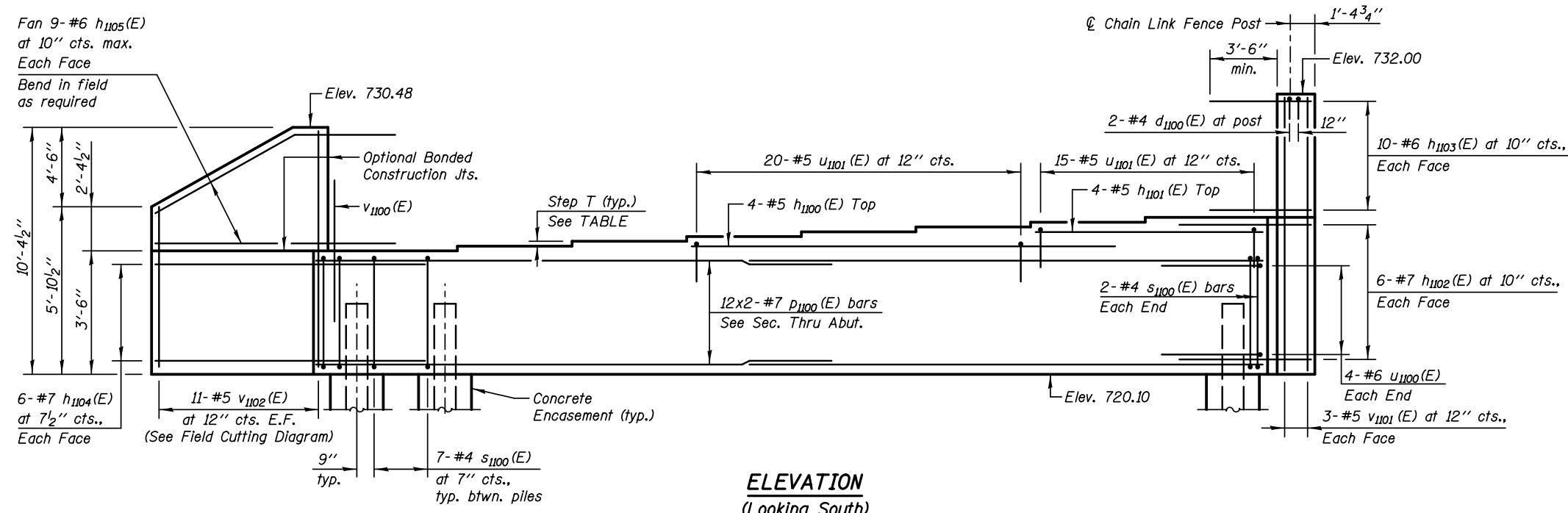
**KNIGHT**  
Engineers & Architects

DESIGNED - WPM	REVISIONS
CHECKED - TB	REVISIONS
SCALE - NONE	REVISIONS
DATE - 10/15/2012	REVISIONS
DRAWN - TB	REVISIONS
CHECKED - WPM	REVISIONS

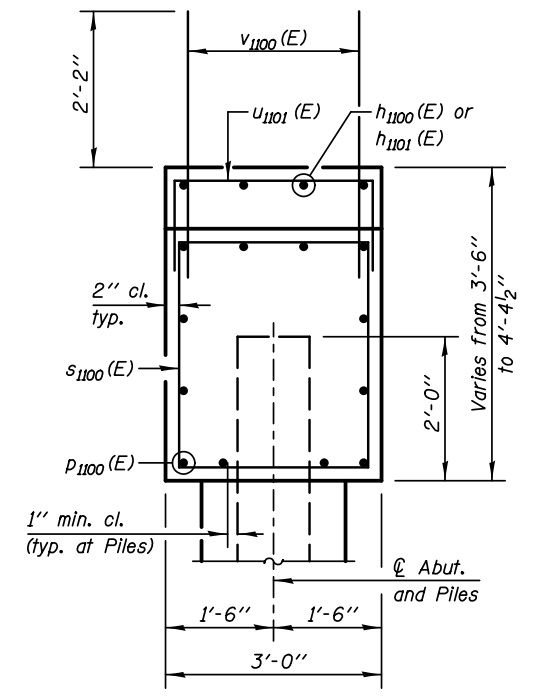
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**72" PPC BULB T-BEAM DETAILS**  
S.N. 022-2029 (SB) TOLLWAY B.N. 826  
S.N. 022-2030 (NB) TOLLWAY B.N. 825  
SHEET NO. SA-43 OF 63 SHEETS

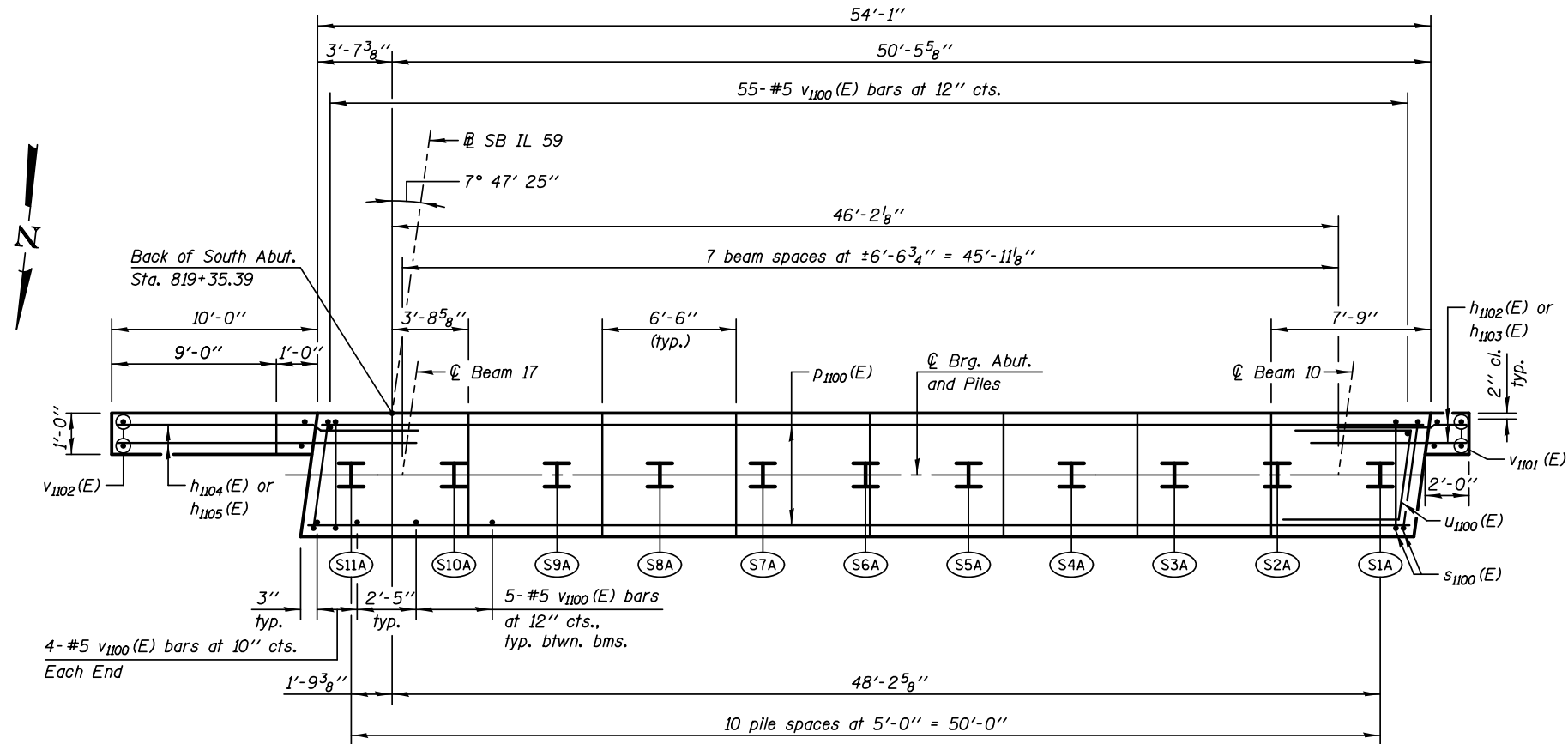
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	(112 & 113) WRS-5	DUPAGE	963	627
CONTRACT NO. 60131				
ILLINOIS FED. AID PROJECT				



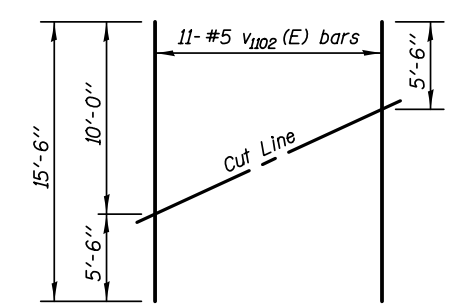
**ELEVATION**  
(Looking South)



**SEC. THRU ABUT.**



**PLAN - SOUTH ABUTMENT**  
(SB Bridge)

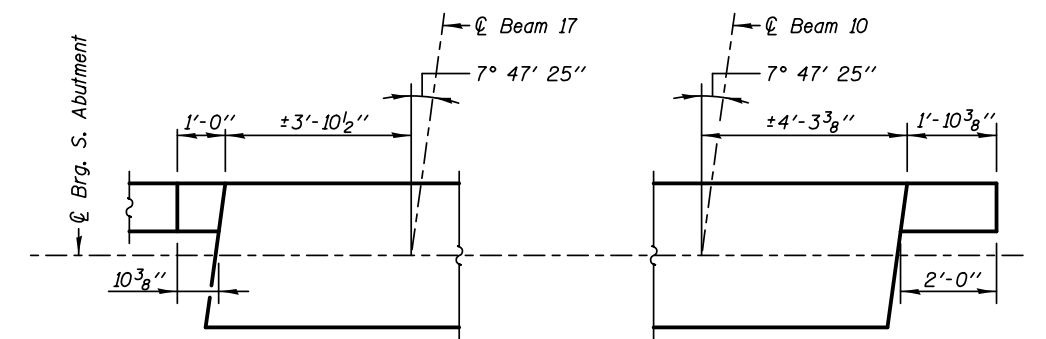


**FIELD CUTTING DIAGRAM**

Order v1102(E) full length. Cut as shown and use remainder of bars in opposite face.

**BEARING SEAT ELEVATIONS**

BEAM	BRG. SEAT ELEVATION	STEP T- inch
10	724.46	1 5/8"
11	724.32	1 1/2"
12	724.20	1 1/2"
13	724.07	1 1/2"
14	723.95	1 1/2"
15	723.82	1 1/2"
16	723.70	1 1/2"
17	723.58	1 3/8"



**ABUTMENT CORNER DETAILS**

**PILE DATA**

Type & Size: Steel HP 14x73  
 Nominal Required Bearing: 578 Kips  
 Factored Resistance Available: 318 Kips  
 Est. Length: 75 ft  
 No. Production Piles: 10  
 No. Test Piles: 1

**NOTES**

Pour steps monolithically with cap.  
 Bars indicated thus 20x3-#15 indicates 20 lines of bars with 3 lengths per line.  
 See Sheet SA-04 for additional Pile Layout details.  
 See Sheet SA-48 for details and Bill of Material.

See Sheet SA-49 for Chain Link Fence post spacing.  
 See Roadway Plans for additional Chain Link Fence details.

**LEGEND**

E.F. Each Face  
 (S1A) Pile Number

**MIN. BAR LAP**

Vertical Bars #5 - 2'-7"  
 Horizontal Bars #5 - 2'-11"  
 #7 - 4'-8"



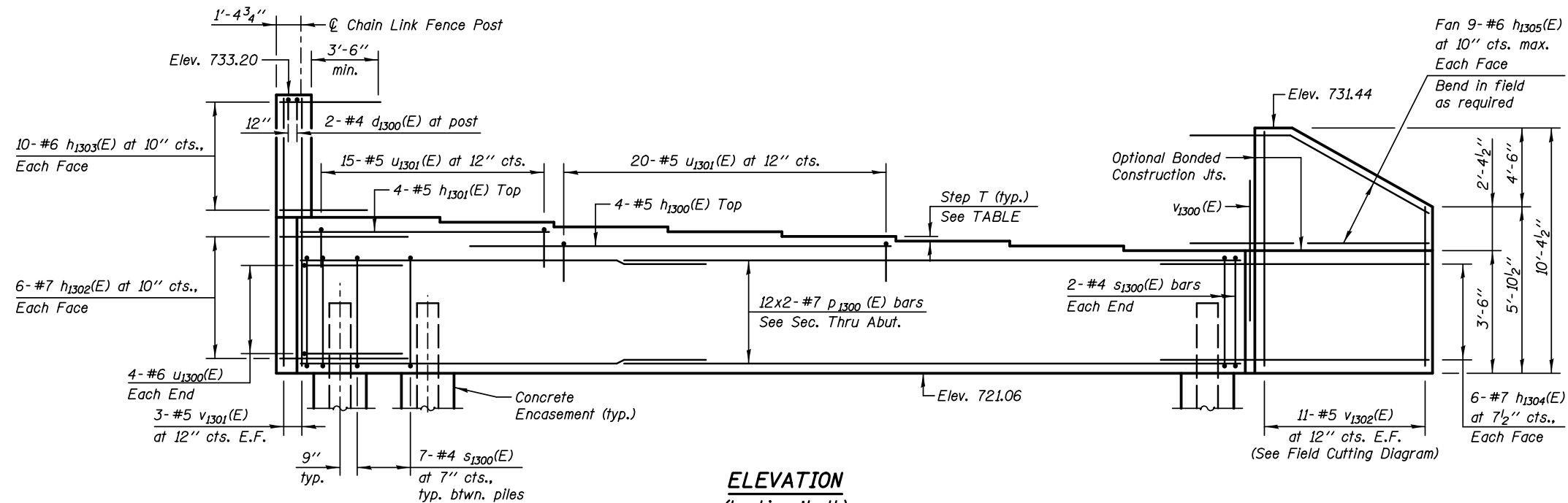
DESIGNED - WPM	REVISD
CHECKED - TB	REVISD
DRAWN - TB	REVISD
CHECKED - WPM	REVISD

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

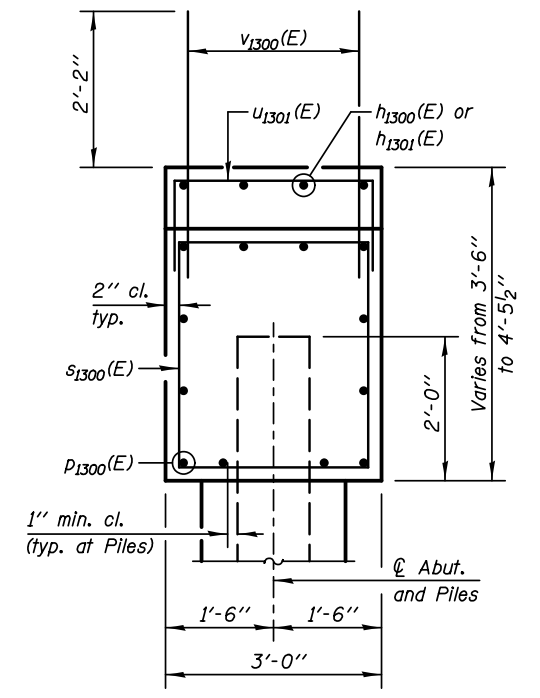
**SOUTH ABUTMENT (SB)**  
 S.N. 022-2029 (SB) TOLLWAY B.N. 826  
 S.N. 022-2030 (NB) TOLLWAY B.N. 825  
 SHEET NO. SA-44 OF 63 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	(112 & 113) WRS-5	DUPAGE	963	628
CONTRACT NO. 60131				
ILLINOIS FED. AID PROJECT				

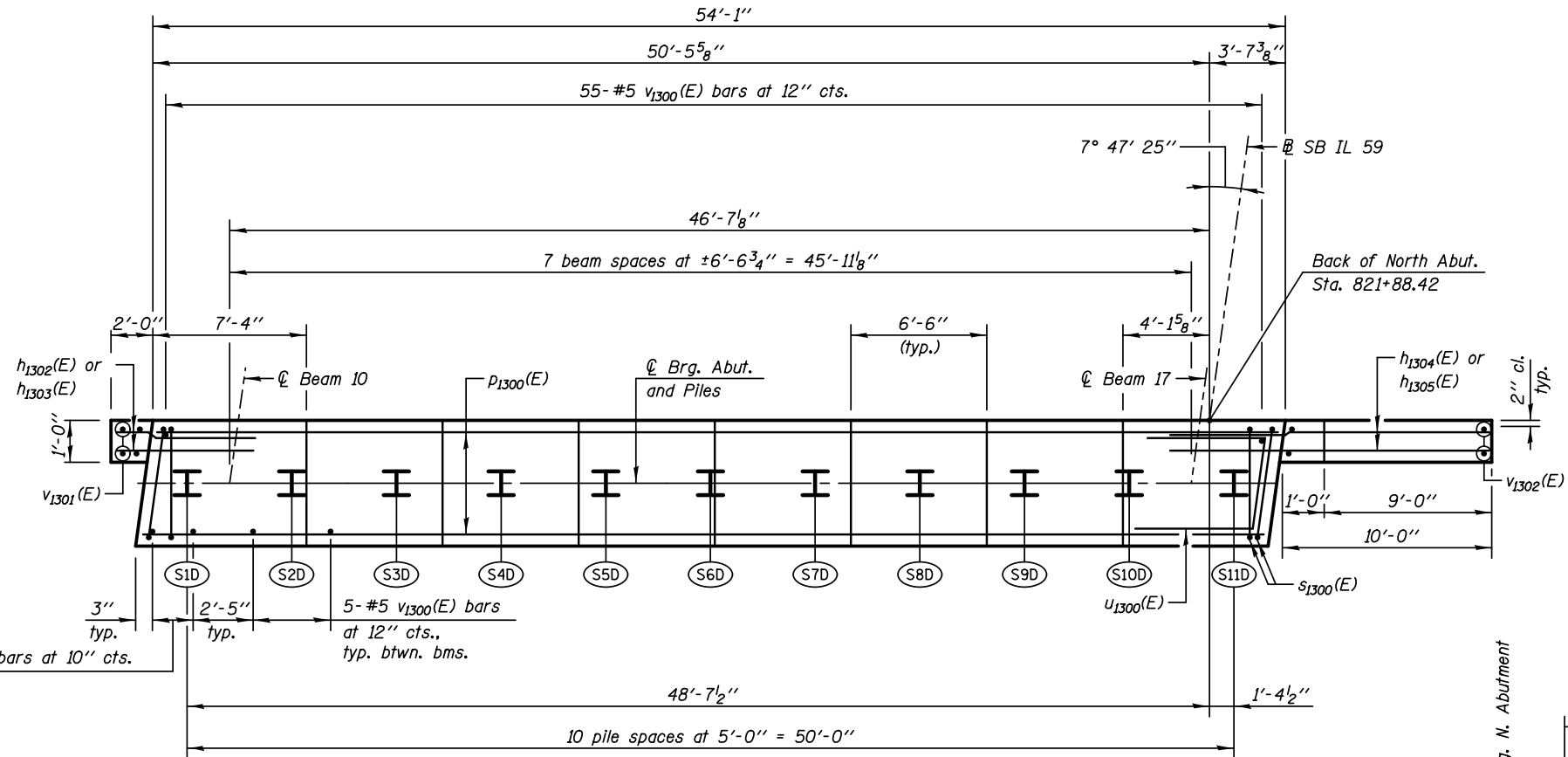




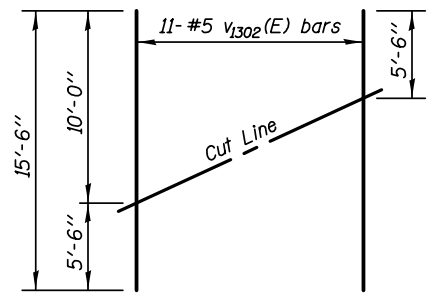
**ELEVATION**  
(Looking North)



**SEC. THRU ABUT.**



**PLAN - NORTH ABUTMENT**  
(SB Bridge)

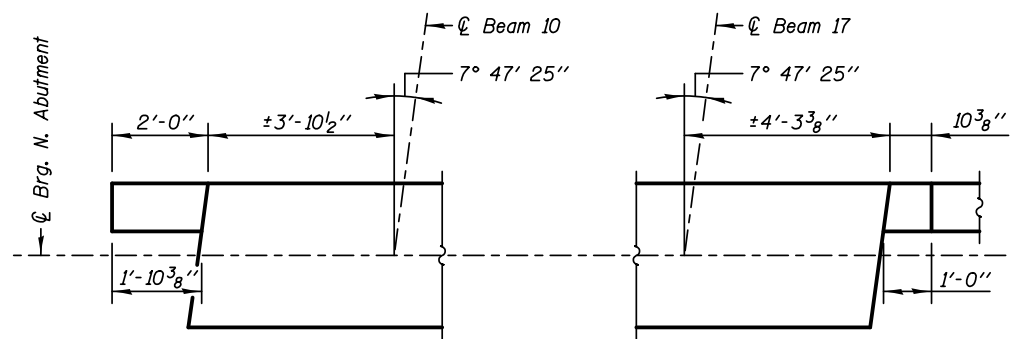


**FIELD CUTTING DIAGRAM**

Order v1302(E) full length. Cut as shown and use remainder of bars in opposite face.

**BEARING SEAT ELEVATIONS**

BEAM	BRG. SEAT ELEVATION	STEP T- Inch
10	725.52	1 3/4"
11	725.37	1 5/8"
12	725.24	1 5/8"
13	725.10	1 3/4"
14	724.96	1 5/8"
15	724.82	1 5/8"
16	724.69	1 1/2"
17	724.56	



**ABUTMENT CORNER DETAILS**

**PILE DATA**

Type & Size: Steel HP 14x73  
Nominal Required Bearing: 578 Kips  
Factored Resistance Available: 318 Kips  
Est. Length: 65 ft  
No. Production Piles: 10  
No. Test Piles: 1

**NOTES**

Four steps monolithically with cap.  
Bars indicated thus 20x3-#15 indicates 20 lines of bars with 3 lengths per line.  
See Sheet SA-04 for additional Pile Layout details.  
See Sheet SA-48 for details and Bill of Material.

See Sheet SA-50 for Chain Link Fence post spacing.

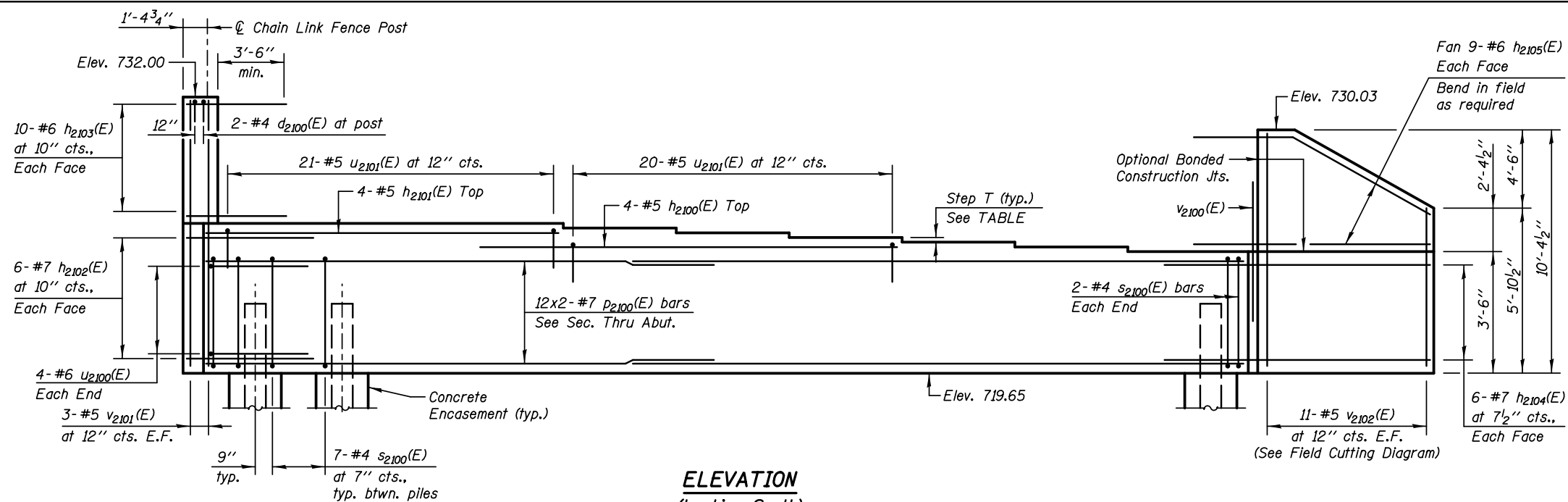
See Roadway Plans for additional Chain Link Fence details.

**LEGEND**

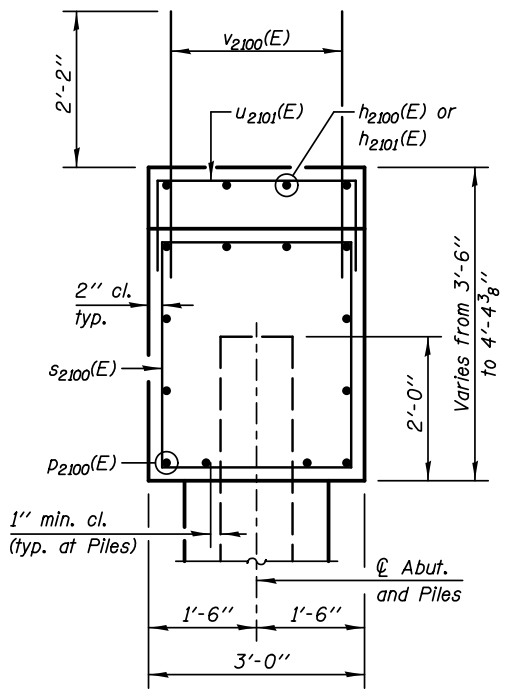
E.F. Each Face  
S1D Pile Number

**MIN. BAR LAP**

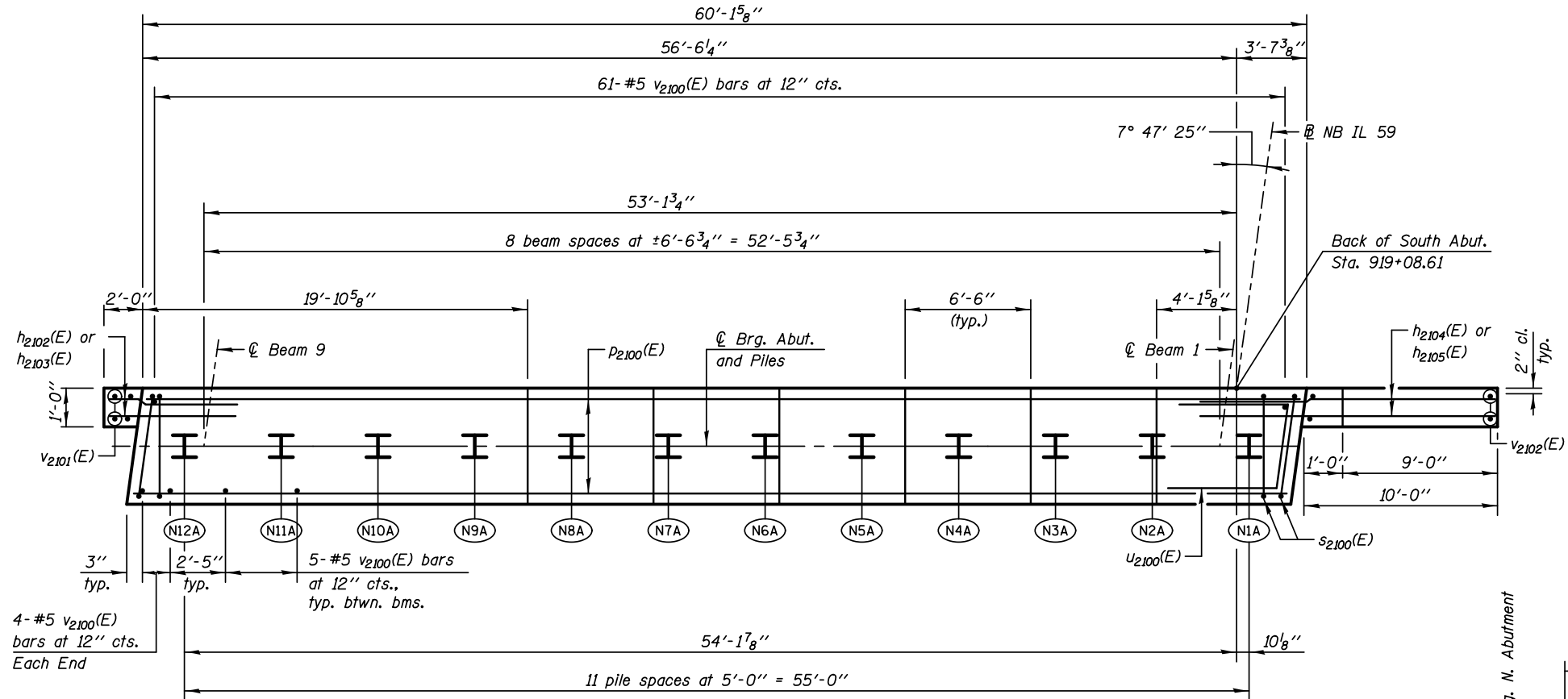
Vertical Bars #5 - 2'-7"  
Horizontal Bars #5 - 2'-11"  
#7 - 4'-8"



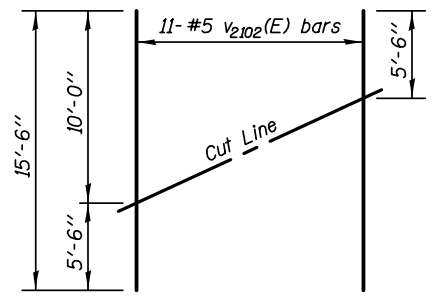
**ELEVATION**  
(Looking South)



**SEC. THRU ABUT.**



**PLAN - SOUTH ABUTMENT**  
(NB Bridge)



**FIELD CUTTING DIAGRAM**

Order  $v_{2102}(E)$  full length. Cut as shown and use remainder of bars in opposite face.

**BEARING SEAT ELEVATIONS**

BEAM	BRG. SEAT ELEVATION	STEP T- inch
1	723.15	1 5/8"
2	723.29	1 3/4"
3	723.43	1 3/4"
4	723.58	1 3/4"
5	723.72	1 3/4"
6	723.87	1 3/4"
7	724.02	1 3/4"
8	724.02	
9	724.02	

**PILE DATA**

Type & Size: Steel HP 14x73  
 Nominal Required Bearing: 499 Kips  
 Factored Resistance Available: 274 Kips  
 Est. Length: 60 ft  
 No. Production Piles: 11  
 No. Test Piles: 1

**NOTES**

Pour steps monolithically with cap.  
 Bars indicated thus 20x3-#15 indicates 20 lines of bars with 3 lengths per line.  
 See Sheet SA-04 for additional Pile Layout details.  
 See Sheet SA-48 for details and Bill of Material.

See Sheet SA-49 for Chain Link Fence post spacing.

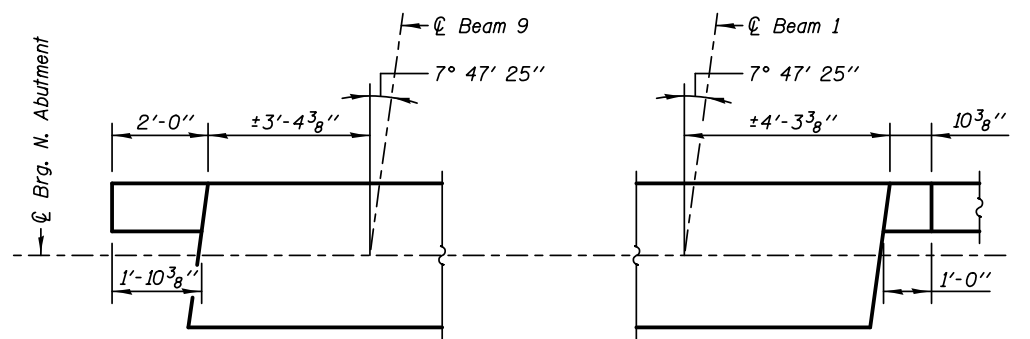
See Roadway Plans for additional Chain Link Fence details.

**LEGEND**

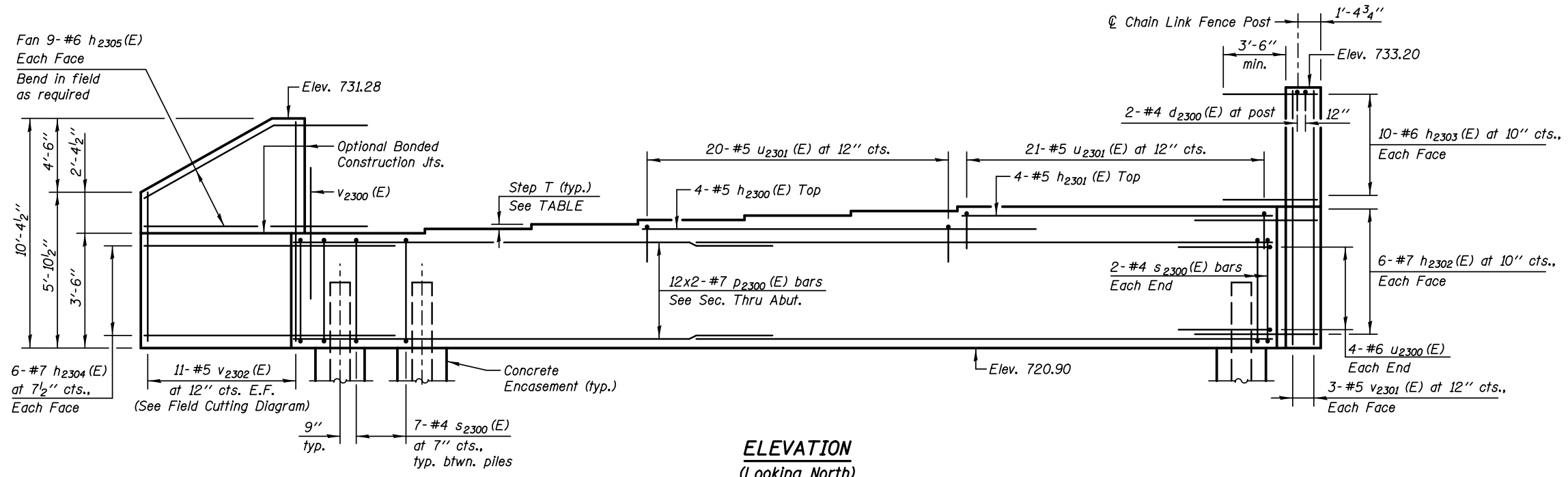
E.F. Each Face  
 (N1A) Pile Number

**MIN. BAR LAP**

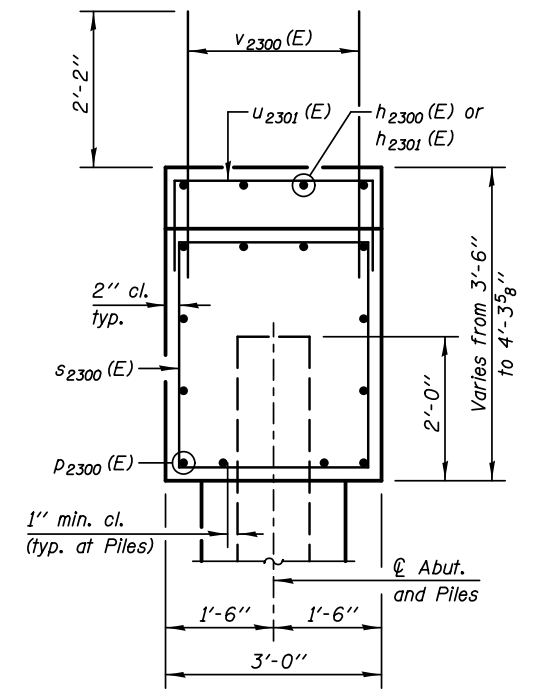
Vertical Bars #5 - 2'-7"  
 Horizontal Bars #5 - 2'-11"  
 #7 - 4'-8"



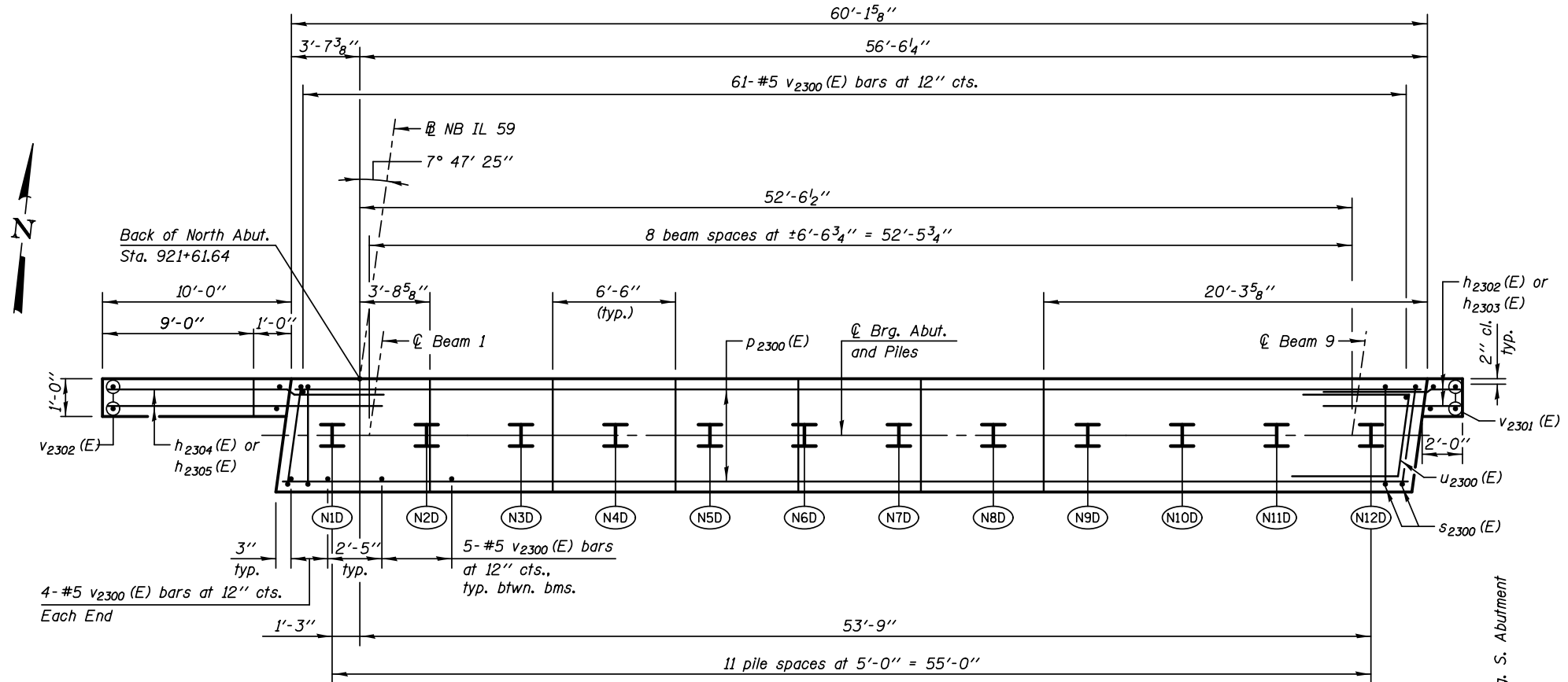
**ABUTMENT CORNER DETAILS**



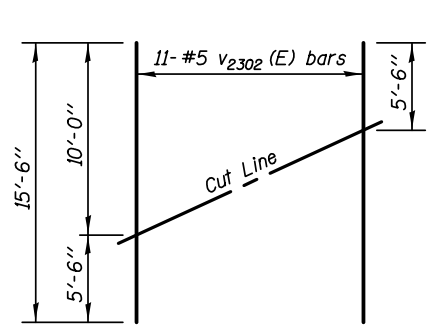
**ELEVATION**  
(Looking North)



**SEC. THRU ABUT.**



**PLAN - NORTH ABUTMENT**  
(NB Bridge)

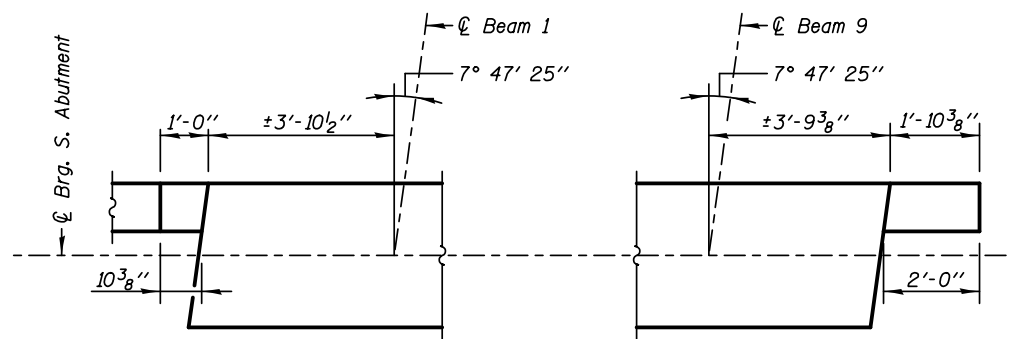


**FIELD CUTTING DIAGRAM**

Order v2302 (E) full length. Cut as shown and use remainder of bars in opposite face.

**BEARING SEAT ELEVATIONS**

BEAM	BRG. SEAT ELEVATION	STEP T- inch
1	724.43	1 1/2"
2	724.56	1 5/8"
3	724.69	1 5/8"
4	724.83	1 5/8"
5	724.96	1 5/8"
6	725.10	1 5/8"
7	725.23	1 5/8"
8	725.23	
9	725.23	



**ABUTMENT CORNER DETAILS**

**PILE DATA**

Type & Size: Steel HP 14x73  
 Nominal Required Bearing: 567 Kips  
 Factored Resistance Available: 312 Kips  
 Est. Length: 65 ft  
 No. Production Piles: 11  
 No. Test Piles: 1

**NOTES**

Pour steps monolithically with cap.  
 Bars indicated thus 20x3-#15 indicates 20 lines of bars with 3 lengths per line.  
 See Sheet SA-04 for additional Pile Layout details.  
 See Sheet SA-48 for details and Bill of Material.

See Sheet SA-50 for Chain Link Fence post spacing.  
 See Roadway Plans for additional Chain Link Fence details.

**LEGEND**

E.F. Each Face  
 (N1D) Pile Number

**MIN. BAR LAP**

Vertical Bars #5 - 2'-7"  
 Horizontal Bars #5 - 2'-11"  
 #7 - 4'-8"



DESIGNED - WPM	REVISOR
CHECKED - TB	REVISOR
DRAWN - TB	REVISOR
CHECKED - WPM	REVISOR

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

**NORTH ABUTMENT (NB)**  
 S.N. 022-2029 (SB) TOLLWAY B.N. 826  
 S.N. 022-2030 (NB) TOLLWAY B.N. 825  
 SHEET NO. SA-47 OF 63 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	(112 & 113) WRS-5	DUPAGE	963	631
CONTRACT NO. 60131				

ILLINOIS FED. AID PROJECT

**SOUTHBOUND BRIDGE**

**SOUTH ABUTMENT  
BILL OF MATERIAL**

BAR	NO.	SIZE	LENGTH	SHAPE
d1100(E)	2	#4	2'-2"	□
h1100(E)	4	#5	22'-6"	—
h1101(E)	4	#5	13'-6"	—
h1102(E)	12	#7	6'-8"	—
h1103(E)	20	#6	5'-6"	—
h1104(E)	12	#7	14'-8"	—
h1105(E)	18	#6	14'-6"	—
p1100(E)	24	#7	29'-6"	—
s1100(E)	74	#4	12'-5"	□
u1100(E)	8	#6	10'-1"	⌒
u1101(E)	35	#5	8'-8"	□
v1100(E)	98	#5	5'-2"	—
v1101(E)	6	#5	11'-7"	—
v1102(E)	11	#5	15'-6"	—
Reinforcement Bars, Epoxy Coated			LB	4510
Concrete Structures			Cu. Yd.	30.0
Structure Excavation			Cu. Yd.	270.0
Furnishing Steel Piles HP 14x73			Foot	770.0
Driving Piles			Foot	750.0
Test Pile Steel HP 14x73			Each	1
Concrete Encasement			Cu. Yd.	7.0

**NORTH ABUTMENT  
BILL OF MATERIAL**

BAR	NO.	SIZE	LENGTH	SHAPE
d1300(E)	2	#4	2'-2"	□
h1300(E)	4	#5	22'-6"	—
h1301(E)	4	#5	13'-6"	—
h1302(E)	12	#7	6'-8"	—
h1303(E)	20	#6	5'-6"	—
h1304(E)	12	#7	14'-8"	—
h1305(E)	18	#6	14'-6"	—
p1300(E)	24	#7	29'-6"	—
s1300(E)	74	#4	12'-5"	□
u1300(E)	8	#6	10'-1"	⌒
u1301(E)	35	#5	8'-8"	□
v1300(E)	98	#5	5'-2"	—
v1301(E)	6	#5	11'-9"	—
v1302(E)	11	#5	15'-6"	—
Reinforcement Bars, Epoxy Coated			LB	4520
Concrete Structures			Cu. Yd.	30.0
Structure Excavation			Cu. Yd.	272.0
Furnishing Steel Piles HP 14x73			Foot	670.0
Driving Piles			Foot	650.0
Test Pile Steel HP 14x73			Each	1
Concrete Encasement			Cu. Yd.	7.0

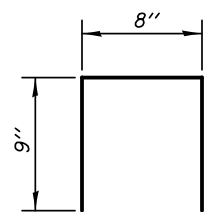
**NORTHBOUND BRIDGE**

**SOUTH ABUTMENT  
BILL OF MATERIAL**

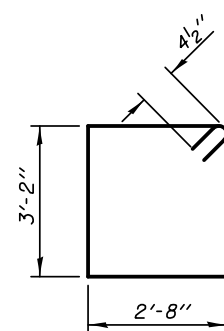
BAR	NO.	SIZE	LENGTH	SHAPE
d2100(E)	2	#4	2'-2"	□
h2100(E)	4	#5	22'-6"	—
h2101(E)	4	#5	19'-6"	—
h2102(E)	12	#7	6'-8"	—
h2103(E)	20	#6	5'-6"	—
h2104(E)	12	#7	14'-8"	—
h2105(E)	18	#6	14'-6"	—
p2100(E)	24	#7	32'-6"	—
s2100(E)	81	#4	12'-5"	□
u2100(E)	8	#6	10'-1"	⌒
u2101(E)	41	#5	8'-8"	□
v2100(E)	109	#5	5'-2"	—
v2101(E)	6	#5	11'-11"	—
v2102(E)	11	#5	15'-6"	—
Reinforcement Bars, Epoxy Coated			LB	4860
Concrete Structures			Cu. Yd.	33.0
Structure Excavation			Cu. Yd.	315.0
Furnishing Steel Piles HP 14x73			Foot	682.0
Driving Piles			Foot	660.0
Test Pile Steel HP 14x73			Each	1
Concrete Encasement			Cu. Yd.	7.0

**NORTH ABUTMENT  
BILL OF MATERIAL**

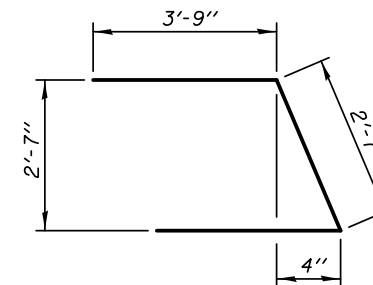
BAR	NO.	SIZE	LENGTH	SHAPE
d2300(E)	2	#4	2'-2"	□
h2300(E)	4	#5	22'-6"	—
h2301(E)	4	#5	19'-6"	—
h2302(E)	12	#7	6'-8"	—
h2303(E)	20	#6	5'-6"	—
h2304(E)	12	#7	14'-8"	—
h2305(E)	18	#6	14'-6"	—
p2300(E)	24	#7	32'-6"	—
s2300(E)	81	#4	12'-5"	□
u2300(E)	8	#6	10'-1"	⌒
u2301(E)	41	#5	8'-8"	□
v2300(E)	109	#5	5'-2"	—
v2301(E)	6	#5	11'-11"	—
v2302(E)	11	#5	15'-6"	—
Reinforcement Bars, Epoxy Coated			LB	4860
Concrete Structures			Cu. Yd.	33.0
Structure Excavation			Cu. Yd.	303.0
Furnishing Steel Piles HP 14x73			Foot	737.0
Driving Piles			Foot	715.0
Test Pile Steel HP 14x73			Each	1
Concrete Encasement			Cu. Yd.	7.0



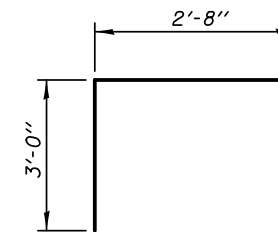
**BARS d1100(E) & d1300(E)  
BARS d2100(E) & d2300(E)**



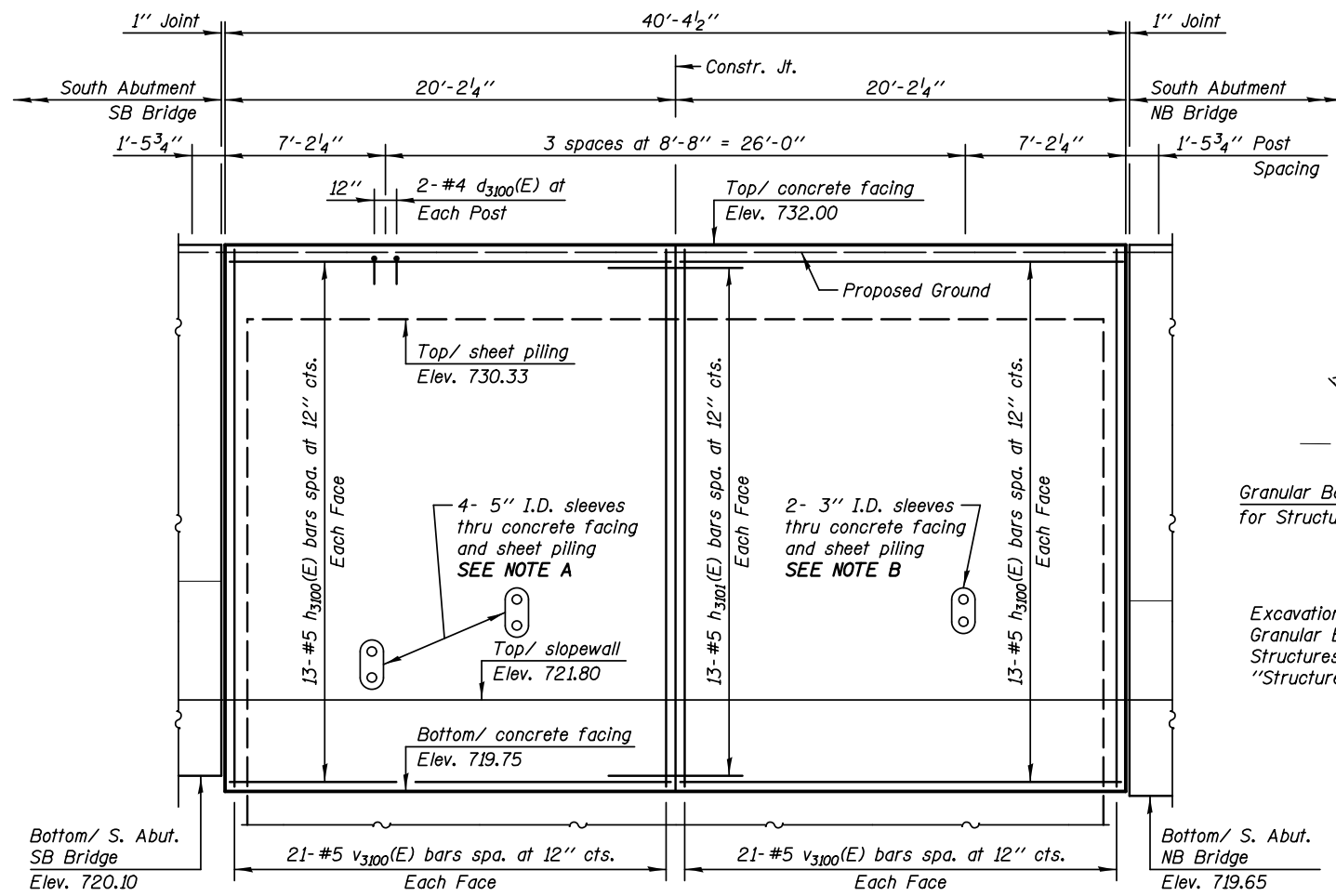
**BARS s1100(E) & s1300(E)  
BARS s2100(E) & s2300(E)**



**BARS u1100(E) & u1300(E)  
BARS u2100(E) & u2300(E)**



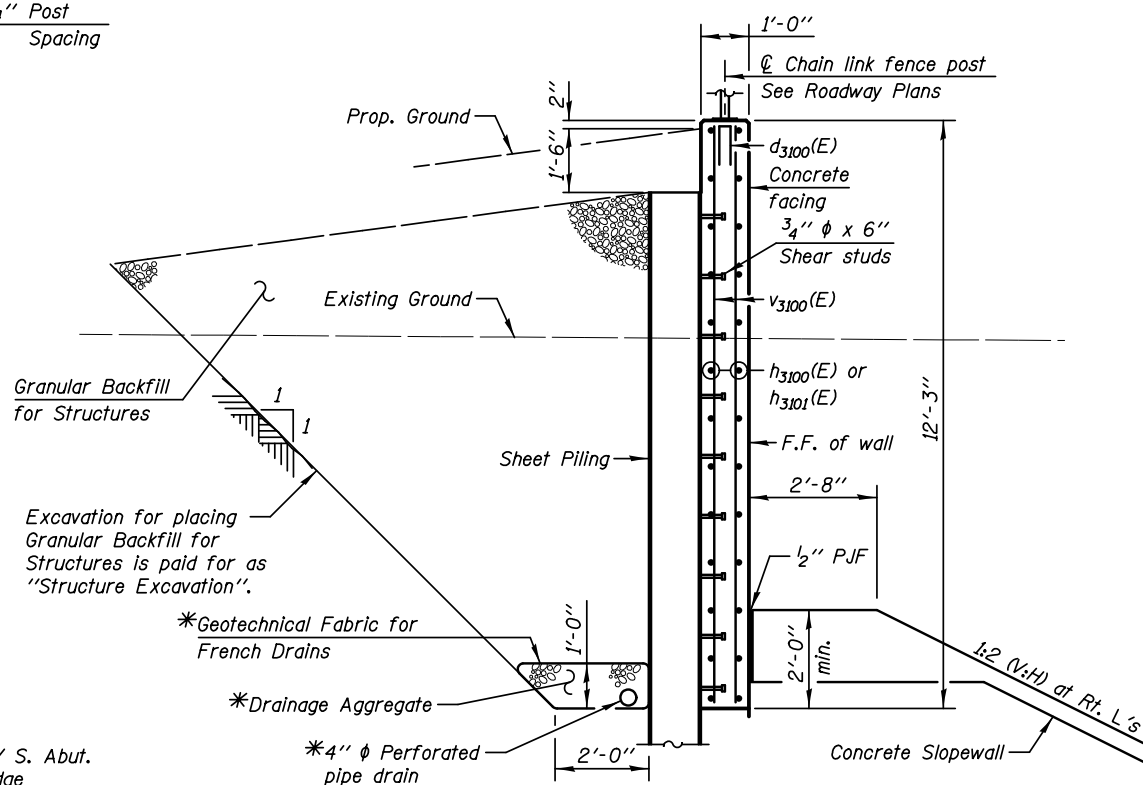
**BARS u1101(E) & u1301(E)  
BARS u2101(E) & u2301(E)**



**ELEVATION - NORTH FACE**  
(Looking South)

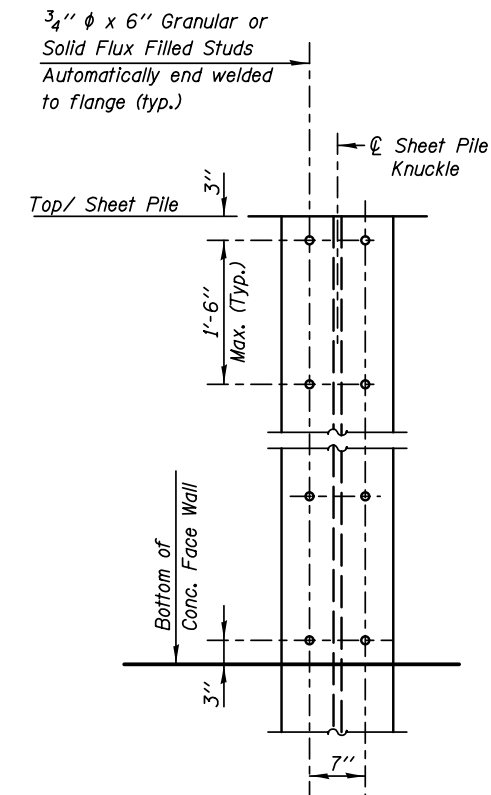
**DESIGN CRITERIA**

Required Section Modulus = 28.6 in<sup>3</sup>/ft  
Minimum Tip Elevation = 697.00



**SECTION THRU SHEET PILING WALL**

\*Included in the cost of Pipe Underdrains for Structures.



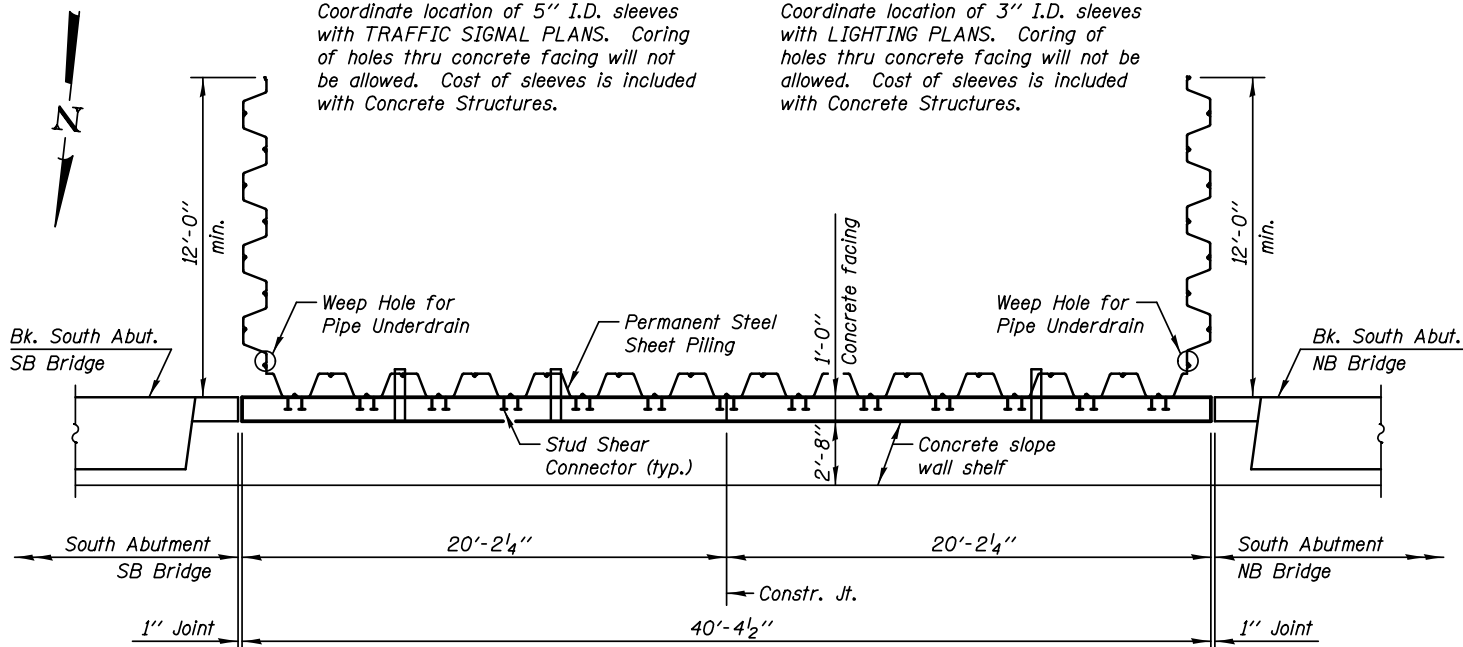
**STUD SHEAR CONNECTORS LAYOUT**

**NOTE A**

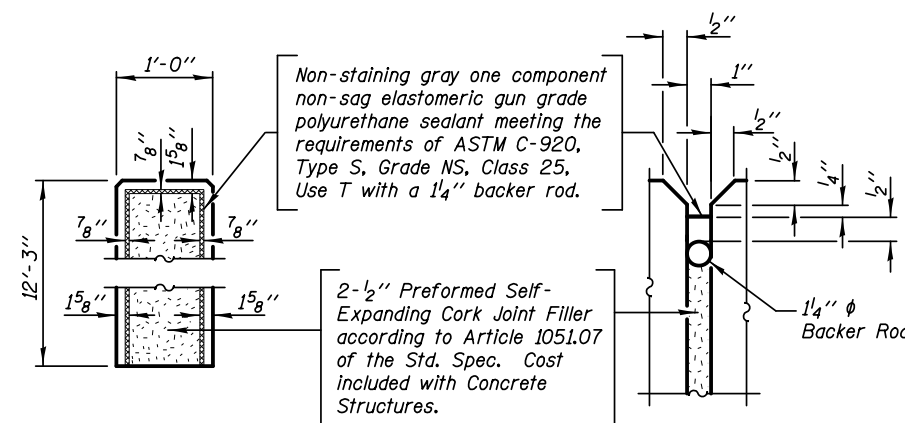
Coordinate location of 5" I.D. sleeves with TRAFFIC SIGNAL PLANS. Coring of holes thru concrete facing will not be allowed. Cost of sleeves is included with Concrete Structures.

**NOTE B**

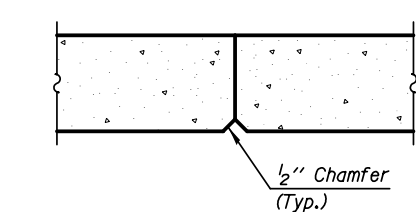
Coordinate location of 3" I.D. sleeves with LIGHTING PLANS. Coring of holes thru concrete facing will not be allowed. Cost of sleeves is included with Concrete Structures.



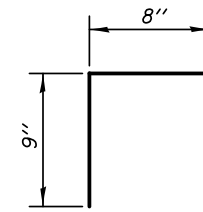
**PLAN**



**1\"/>**



**CONSTRUCTION JOINT DETAIL**



**BAR d<sub>3100</sub>(E)**

**BILL OF MATERIAL**

BAR	NO.	SIZE	LENGTH	SHAPE		
d <sub>3100</sub> (E)	8	#4	2'-2"	□		
h <sub>3100</sub> (E)	52	#5	19'-10"	—		
h <sub>3101</sub> (E)	26	#5	6'-0"	—		
v <sub>3100</sub> (E)	84	#5	11'-11"	—		
Structure Excavation					Cu. Yd.	97.0
Concrete Structures					Cu. Yd.	20.0
Stud Shear Connectors					Each	234
Reinforcement Bars, Epoxy Coated					Pound	2300
Permanent Steel Sheet Piling					Sq. Ft.	2171.0
Granular Backfill for Structures					Cu. Yd.	115.0
Pipe Underdrains for Structures 4"					Foot	40.0

**NOTES**

See Sheet SA-44, SA-46 and SA-48 for South Abutment Details.

**MIN. BAR LAP**  
#5 - 2'-5"

**TOLLWAY WALL EW123.3R,EB**

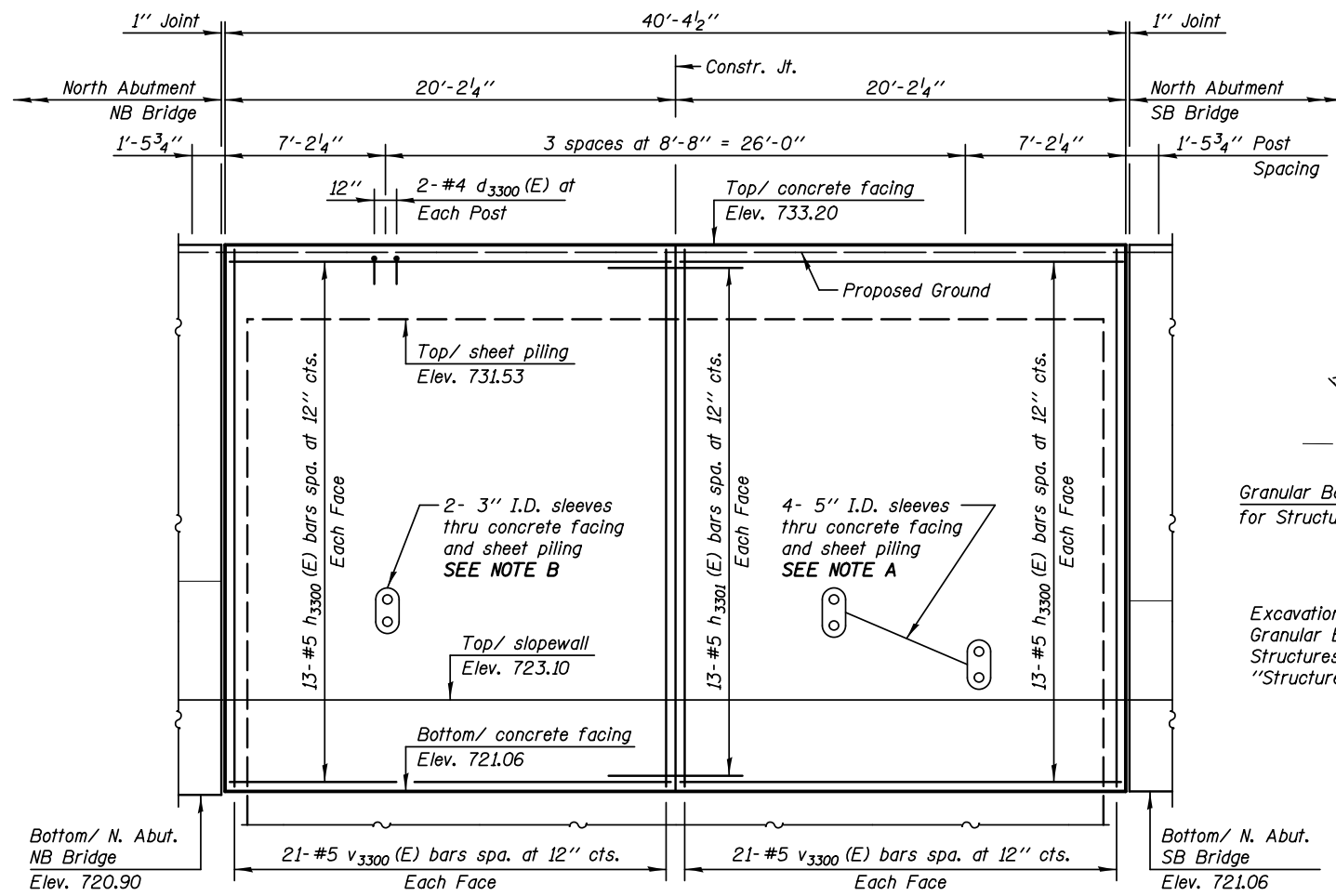
**KNIGHT**  
Engineers & Architects

DESIGNED - WPM	REVISION
CHECKED - TB	REVISION
SCALE - NONE	REVISION
DATE - 10/15/2012	REVISION
DRAWN - TB	REVISION
CHECKED - WPM	REVISION

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

RETAINING WALL - SOUTH ABUTMENT  
S.N. 022-2029 (SB) TOLLWAY B.N. 826  
S.N. 022-2030 (NB) TOLLWAY B.N. 825  
SHEET NO. SA-49 OF 63 SHEETS

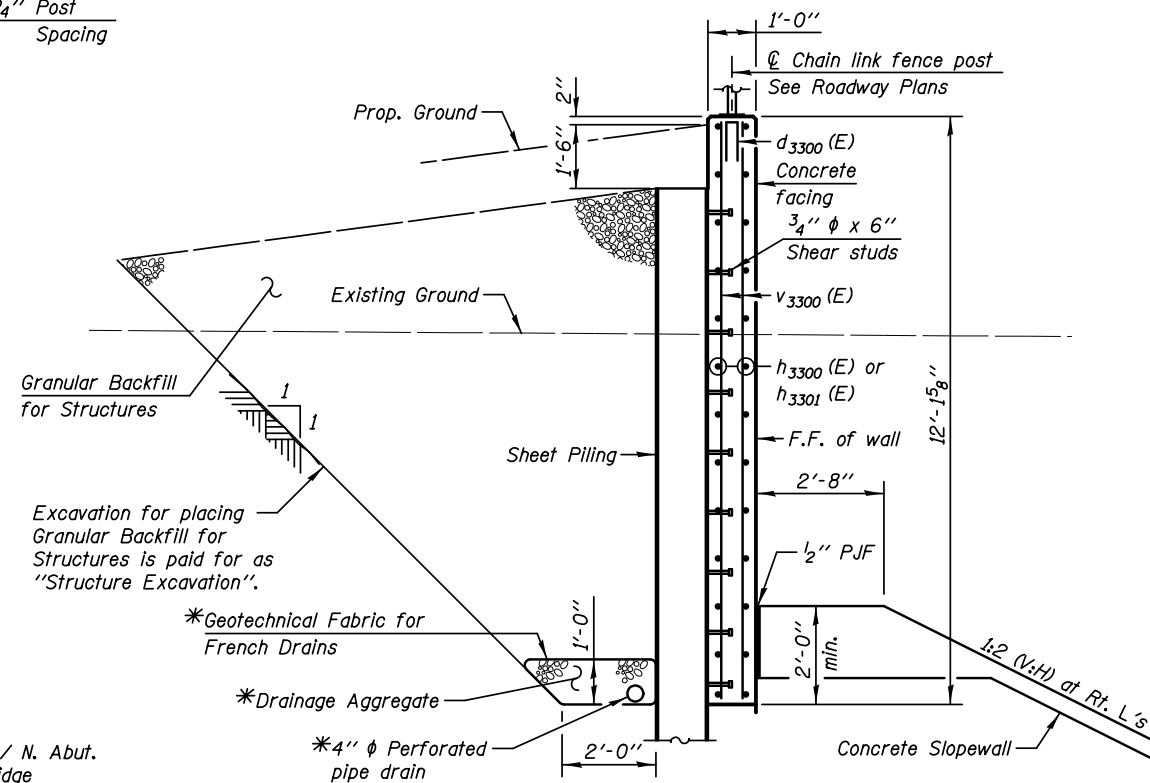
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	(112 & 113) WRS-5	DUPAGE	963	633
CONTRACT NO. 60131				
ILLINOIS FED. AID PROJECT				



**ELEVATION - SOUTH FACE**  
(Looking North)

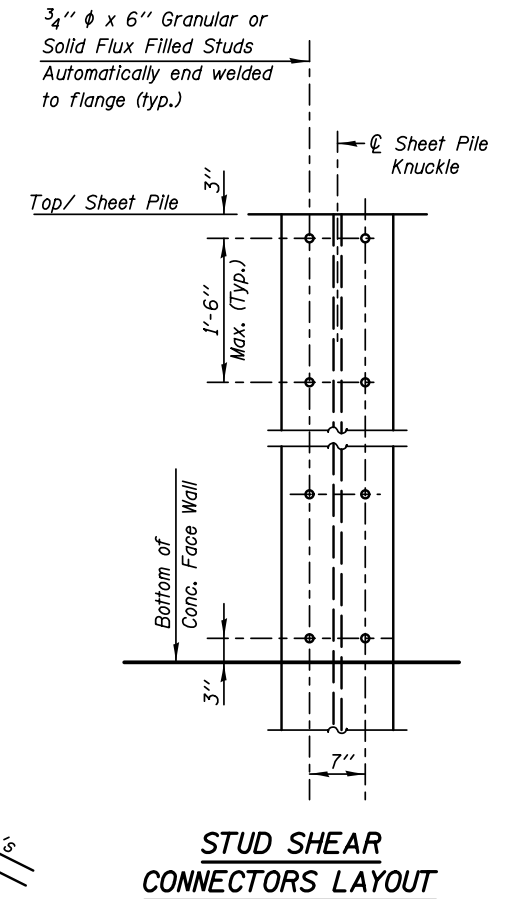
**DESIGN CRITERIA**

Required Section Modulus = 28.6 in<sup>3</sup>/ft  
Minimum Tip Elevation = 698.00



**SECTION THRU SHEET PILING WALL**

\*Included in the cost of Pipe Underdrains for Structures.



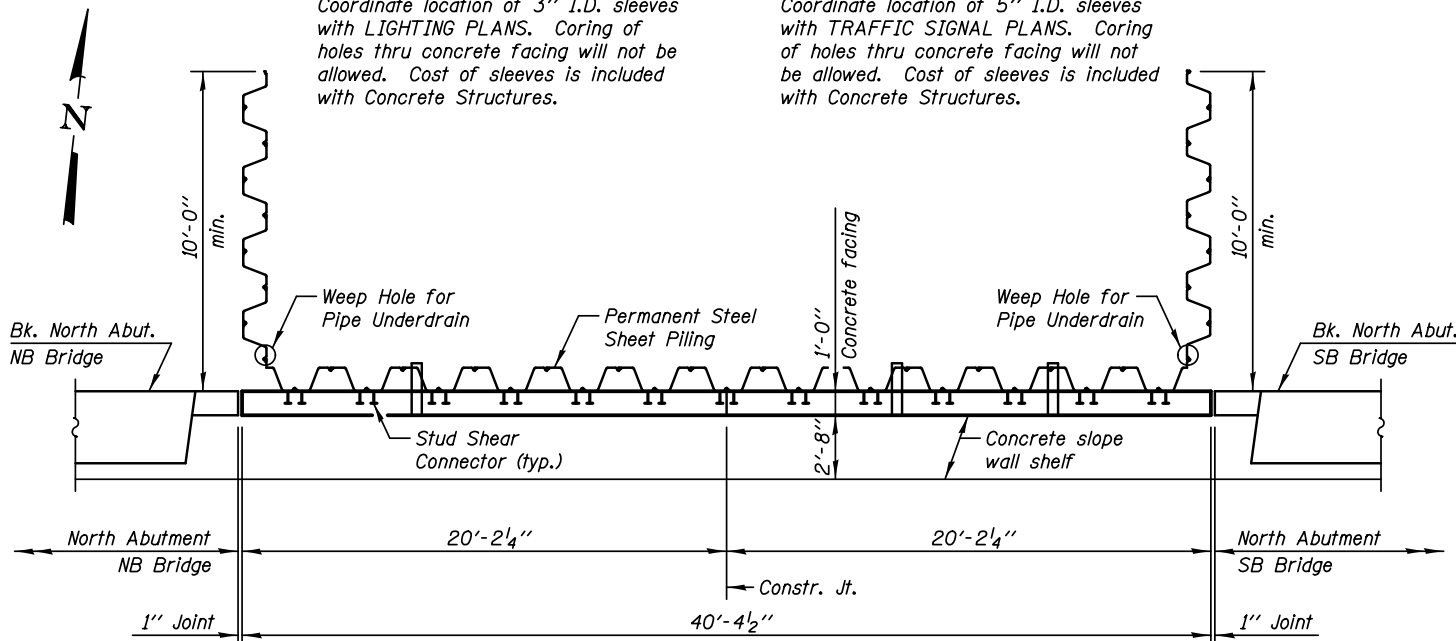
**STUD SHEAR CONNECTORS LAYOUT**

**NOTE B**

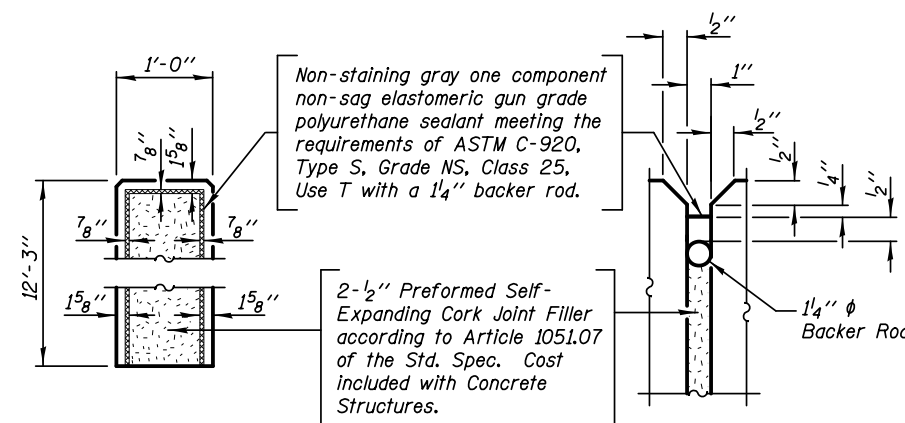
Coordinate location of 3" I.D. sleeves with LIGHTING PLANS. Coring of holes thru concrete facing will not be allowed. Cost of sleeves is included with Concrete Structures.

**NOTE A**

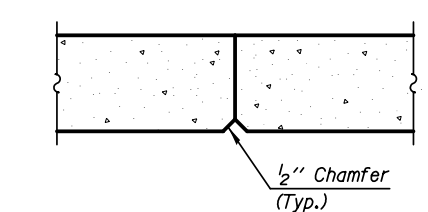
Coordinate location of 5" I.D. sleeves with TRAFFIC SIGNAL PLANS. Coring of holes thru concrete facing will not be allowed. Cost of sleeves is included with Concrete Structures.



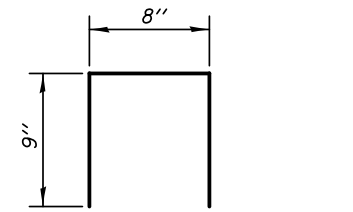
**PLAN**



**1" JOINT DETAILS**



**CONSTRUCTION JOINT DETAIL**



**BAR d<sub>3300</sub>(E)**

**BILL OF MATERIAL**

BAR	NO.	SIZE	LENGTH	SHAPE
d <sub>3300</sub> (E)	8	#4	2'-2"	┌
h <sub>3300</sub> (E)	52	#5	19'-10"	—
h <sub>3301</sub> (E)	26	#5	6'-0"	—
v <sub>3300</sub> (E)	84	#5	11'-9"	—
Structure Excavation			Cu. Yd.	91.0
Concrete Structures			Cu. Yd.	20.0
Stud Shear Connectors			Each	234
Reinforcement Bars, Epoxy Coated			Pound	2280
Permanent Steel Sheet Piling			Sq. Ft.	2183.0
Granular Backfill for Structures			Cu. Yd.	112.0
Pipe Underdrains for Structures 4"			Foot	40.0

**NOTES**

See Sheet SA-45, SA-47 and SA-48 for North Abutment Details.

**MIN. BAR LAP**  
#5 - 2'-5"

**TOLLWAY WALL EW123.3R,WB**

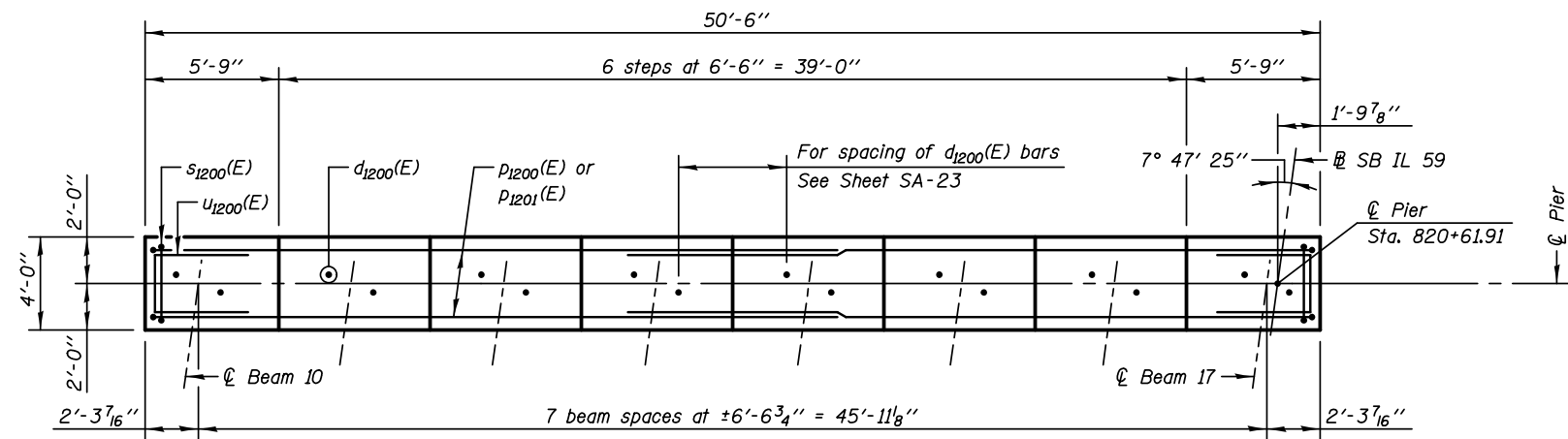
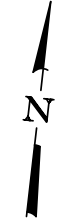
**KNIGHT**  
Engineers & Architects

DESIGNED - WPM	REVISIONS
CHECKED - TB	REVISIONS
SCALE - NONE	REVISIONS
DATE - 10/15/2012	REVISIONS
DRAWN - TB	REVISIONS
CHECKED - WPM	REVISIONS

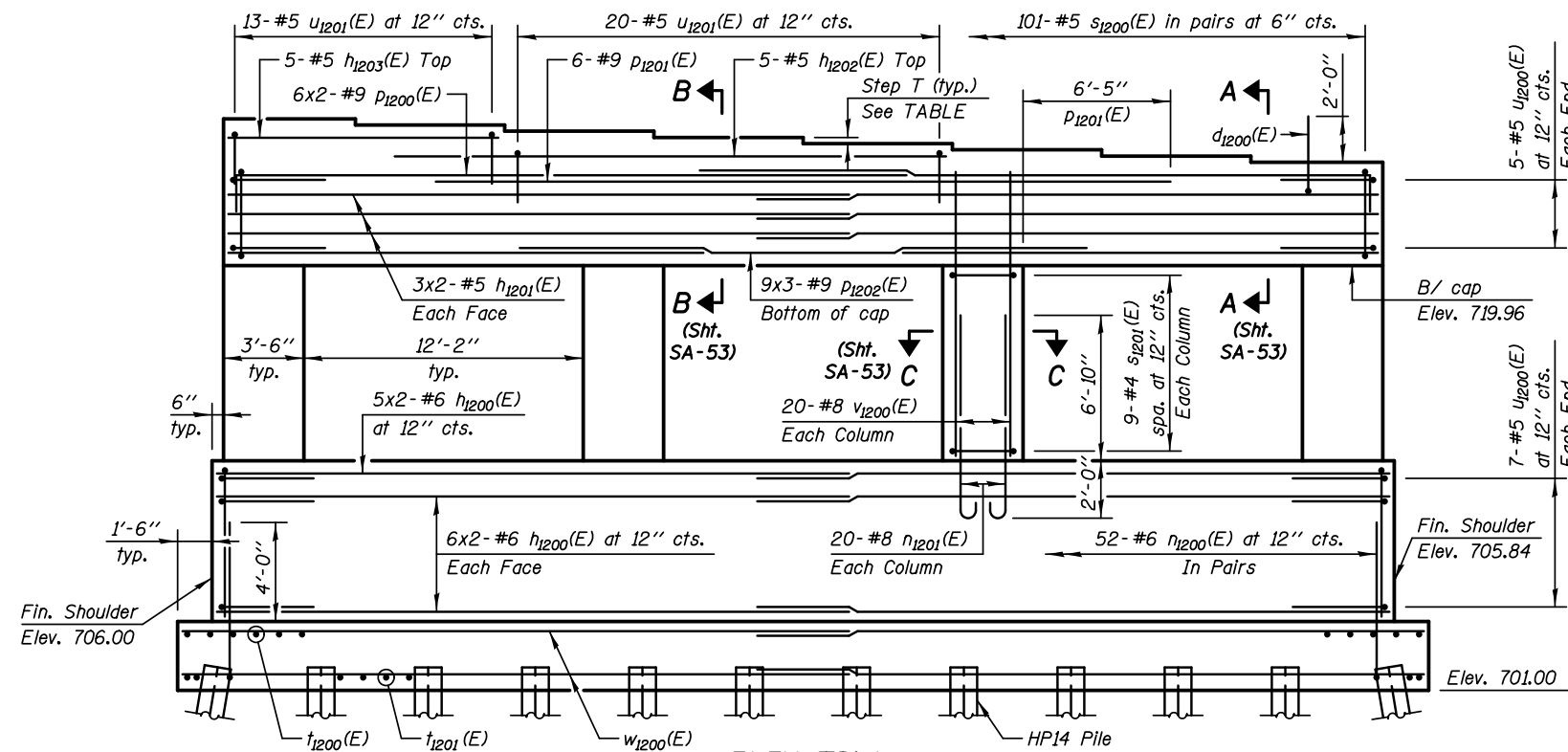
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

RETAINING WALL - NORTH ABUTMENT  
S.N. 022-2029 (SB) TOLLWAY B.N. 826  
S.N. 022-2030 (NB) TOLLWAY B.N. 825  
SHEET NO. SA-50 OF 63 SHEETS

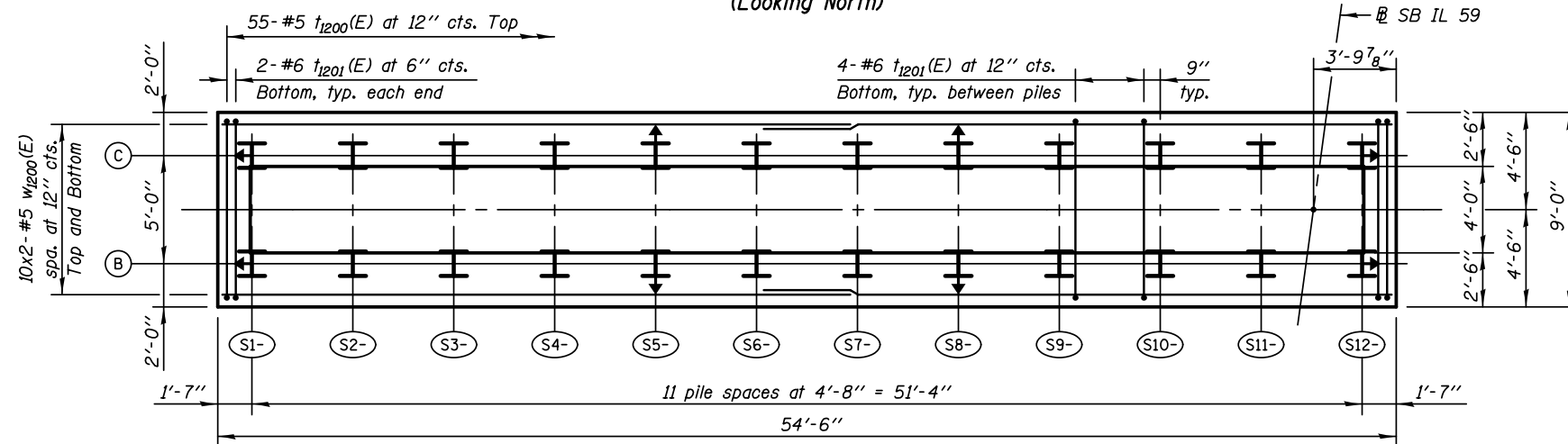
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	(112 & 113) WRS-5	DUPAGE	963	634
CONTRACT NO. 60131				
ILLINOIS FED. AID PROJECT				



**TOP PLAN**



**ELEVATION  
(Looking North)**



**FOOTING PLAN**

**BEARING SEAT ELEVATIONS**

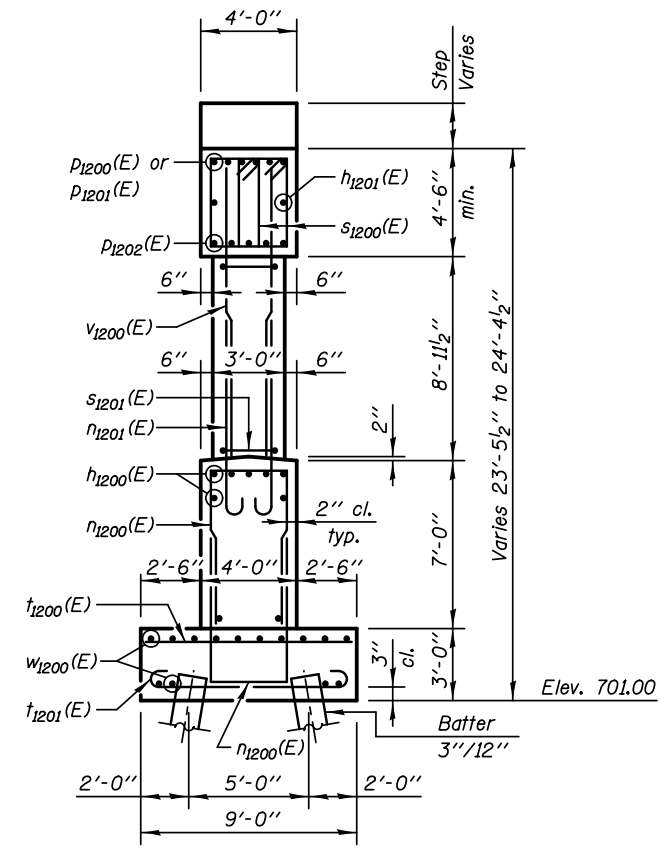
BEAM	BRG. SEAT ELEVATION	STEP T- inch
10	725.38	
11	725.24	1 5/8"
12	725.11	1 5/8"
13	724.97	1 5/8"
14	724.85	1 1/2"
15	724.71	1 5/8"
16	724.59	1 1/2"
17	724.46	1 1/2"

**LEGEND**

- E.F. Each Face
- (SIB) Pile Number
- I Vertical Pile
- I Battered Pile

**PILE DATA**

Type & Size: Steel HP 14x73  
 Nominal Required Bearing: 509 Kips  
 Factored Resistance Available: 280 Kips  
 Est. Length: 51 ft  
 No. Production Piles: 23  
 No. Test Piles: 1



**END VIEW**

**NOTES**

- Four steps monolithically with cap.
- Bars indicated thus 20x3-#15 indicates 20 lines of bars with 3 lengths per line.
- See Sheet SA-04 for additional Pile Layout details.
- See Sheet SA-53 for Section A-A, B-B & C-C, details and Bill of Material.

**MIN. BAR LAP**

- Vertical Bars #5 - 2'-7"
- Horizontal Bars #5 - 2'-11"
- #7 - 4'-8"

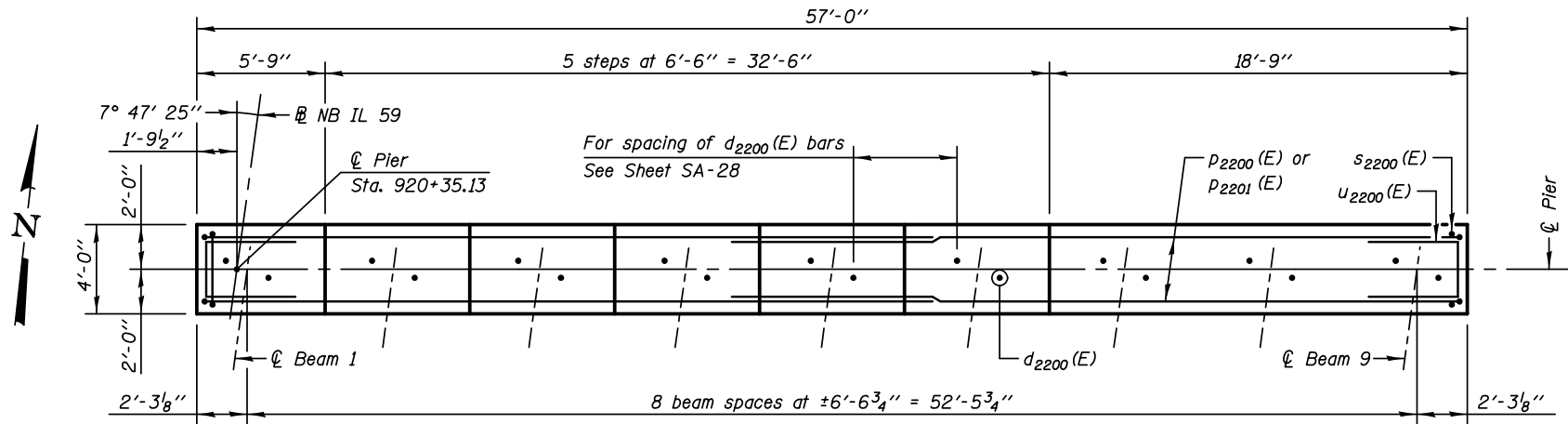
**KNIGHT**  
Engineers & Architects

DESIGNED - WPM	REVISIONS
CHECKED - TB	REVISIONS
SCALE - NONE	REVISIONS
DATE - 10/15/2012	REVISIONS
DRAWN - TB	REVISIONS
CHECKED - WPM	REVISIONS

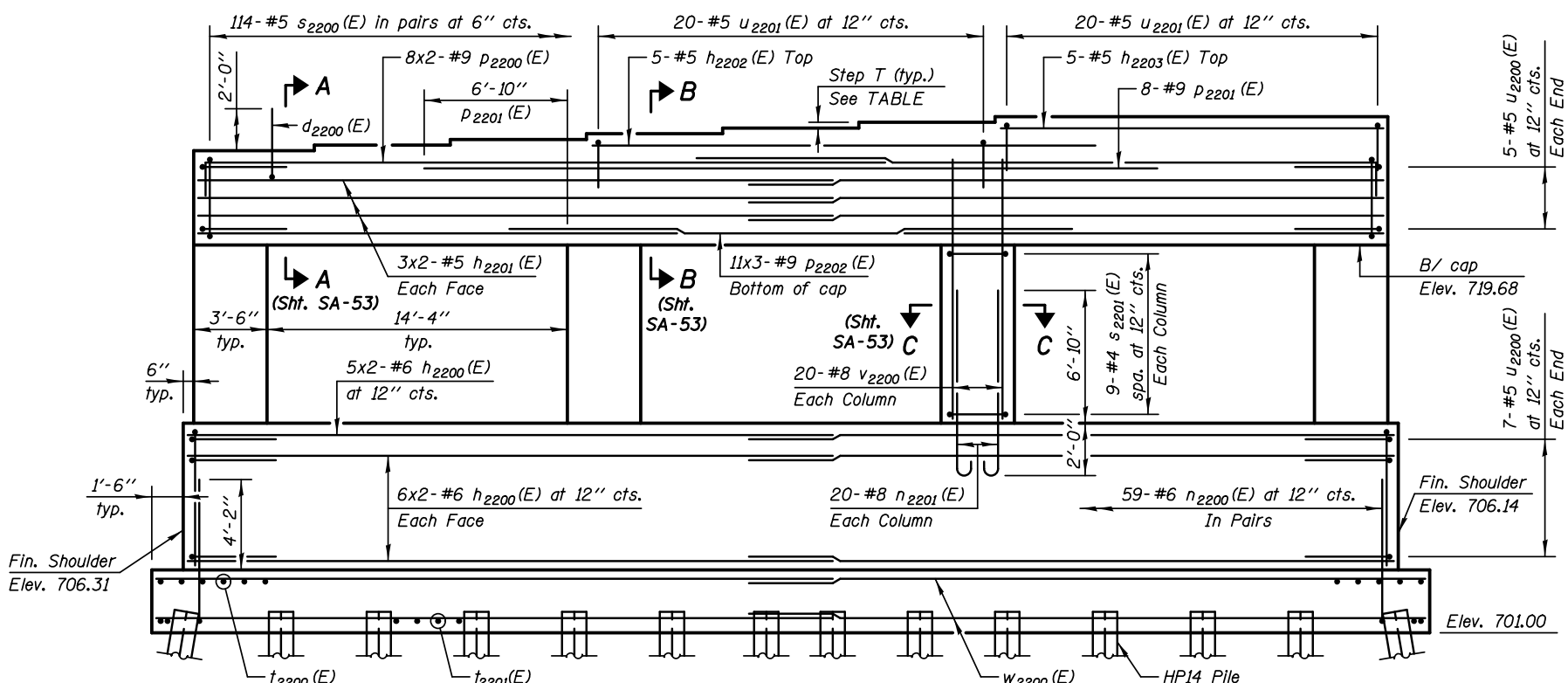
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**PIER (SB)**  
 S.N. 022-2029 (SB) TOLLWAY B.N. 826  
 S.N. 022-2030 (NB) TOLLWAY B.N. 825  
 SHEET NO. SA-51 OF 63 SHEETS

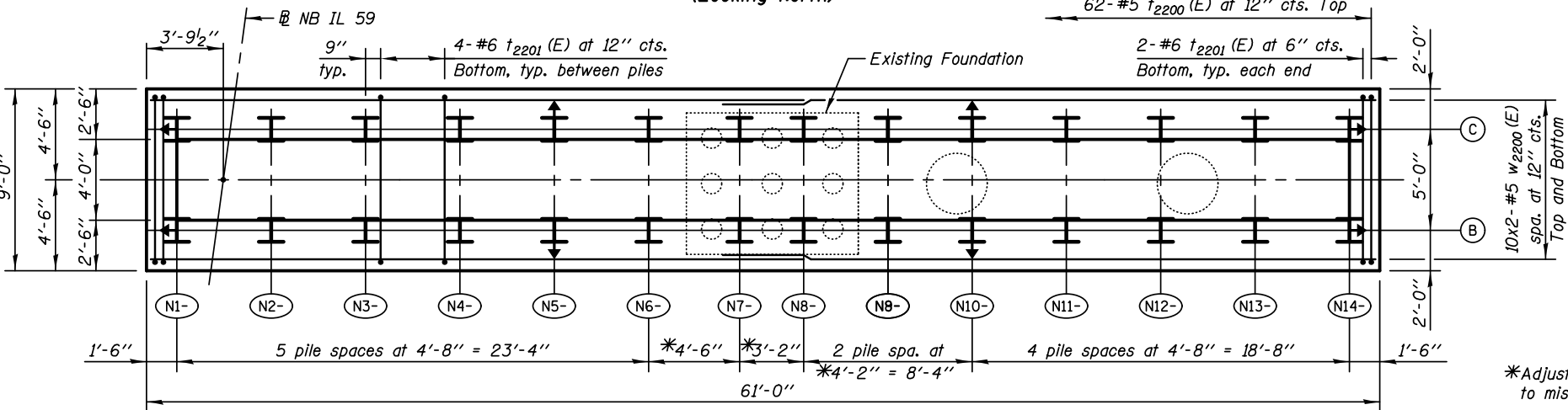
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	(112 & 113) WRS-5	DUPAGE	963	635
CONTRACT NO. 60131				
ILLINOIS FED. AID PROJECT				



**TOP PLAN**



**ELEVATION**  
(Looking North)



**FOOTING PLAN**

**BEARING SEAT ELEVATIONS**

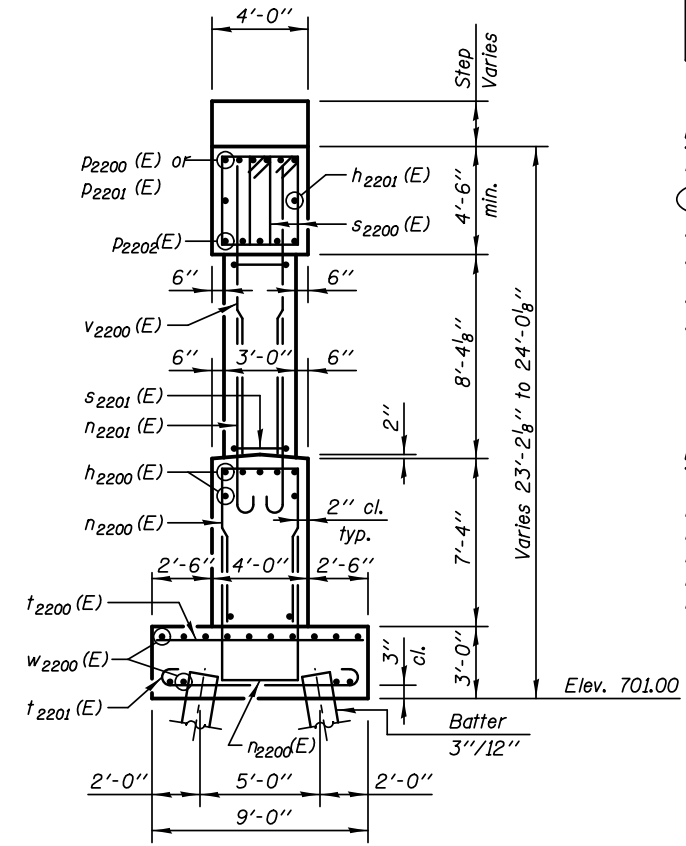
BEAM	BRG. SEAT ELEVATION	STEP T- inch
1	724.18	
2	724.32	1 5/8"
3	724.45	1 5/8"
4	724.59	1 5/8"
5	724.73	1 3/4"
6	724.87	1 5/8"
7	725.01	1 3/4"
8	725.01	
9	725.01	

**LEGEND**

- E.F. Each Face
- (NIB) Pile Number
- Vertical Pile
- Battered Pile

**PILE DATA**

Type & Size: Steel HP 14x73  
 Nominal Required Bearing: 504 Kips  
 Factored Resistance Available: 277 Kips  
 Est. Length: 58 ft  
 No. Production Piles: 27  
 No. Test Piles: 1



**END VIEW**

**NOTES**

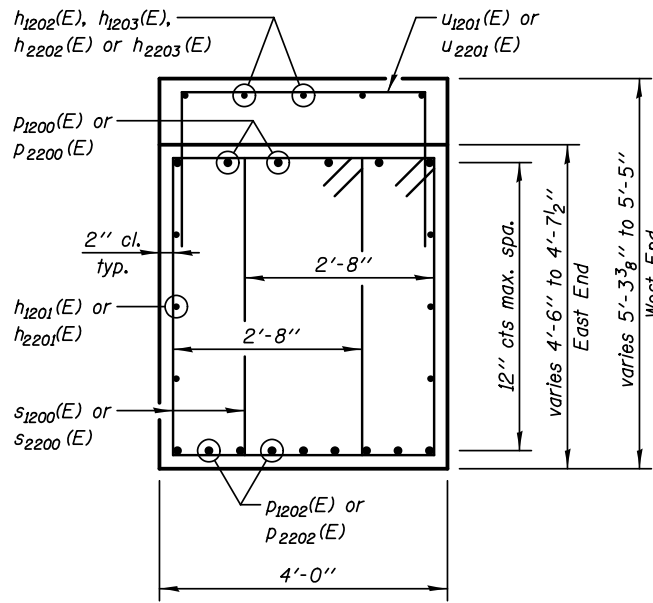
- Four steps monolithically with cap.
- Bars indicated thus 20x3-#15 indicates 20 lines of bars with 3 lengths per line.
- See Sheet SA-04 for additional Pile Layout details.
- See Sheet SA-53 for Section A-A, B-B & C-C, details and Bill of Material.

**MIN. BAR LAP**

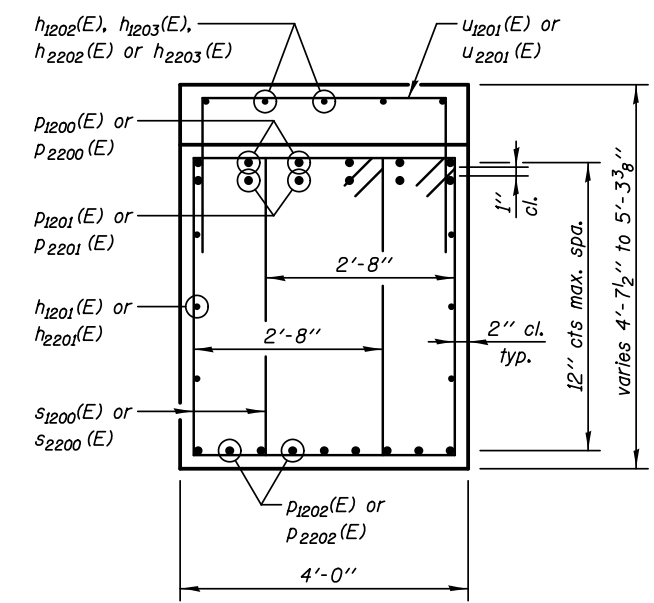
Vertical Bars #5 - 2'-7"  
 Horizontal Bars #5 - 2'-11"  
 #7 - 4'-8"

\*Adjust pile spacing, as required, to miss existing piles.

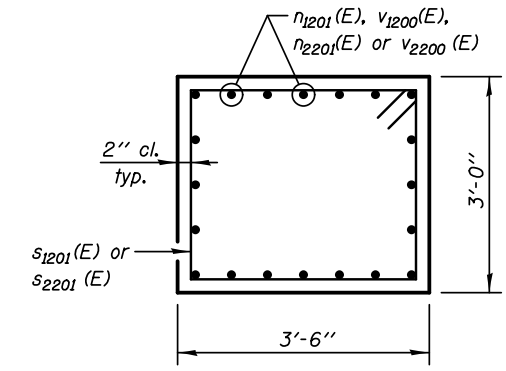




**SECTION A-A**  
SB Bridge shown, NB Bridge similar



**SECTION B-B**  
SB Bridge shown, NB Bridge similar

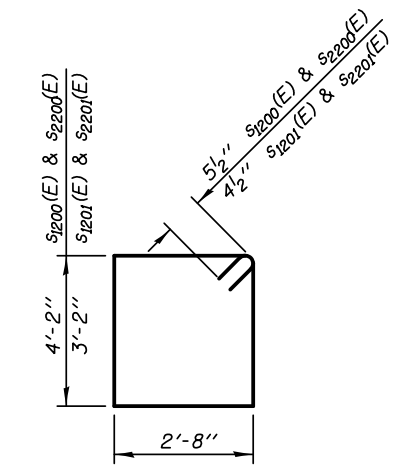


**SECTION C-C**

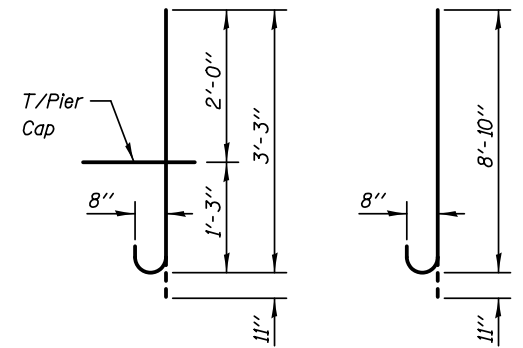
**A DIMENSIONS**

BAR	A
n1200(E)	6'-9"
u1200(E)	4'-0"
u1201(E)	3'-0"
n2200(E)	6'-11"
u2200(E)	4'-0"
u2201(E)	3'-0"

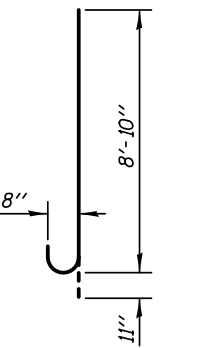
**BARS n1200(E), u1200(E) & u1201(E)**  
**BARS n2200(E), u2200(E) & u2201(E)**



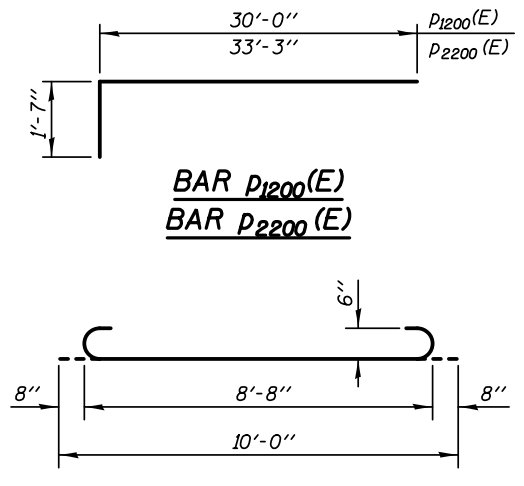
**BARS s1200(E) & s1201(E)**  
**BARS s2200(E) & s2201(E)**



**BAR d1200(E)**  
**BAR d2200(E)**



**BAR n1201(E)**  
**BAR n2201(E)**



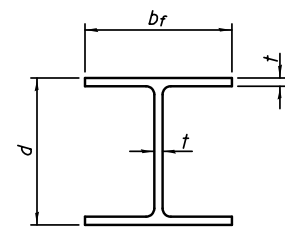
**BAR t1201(E)**  
**BAR t2201(E)**

**SOUTHBOUND  
BILL OF MATERIAL**

BAR	NO.	SIZE	LENGTH	SHAPE
d1200(E)	44	#8	4'-2"	U
h1200(E)	34	#6	28'-0"	
h1201(E)	12	#5	27'-5"	
h1202(E)	5	#5	22'-6"	
h1203(E)	5	#5	11'-11"	
n1200(E)	104	#6	17'-2"	U
n1201(E)	80	#8	9'-9"	U
p1200(E)	12	#9	31'-7"	L
p1201(E)	6	#9	32'-0"	
p1202(E)	27	#9	22'-6"	
s1200(E)	202	#5	14'-7"	□
s1201(E)	36	#4	12'-5"	□
t1200(E)	55	#5	8'-8"	
t1201(E)	48	#6	10'-0"	U
u1200(E)	24	#5	11'-8"	□
u1201(E)	33	#5	8'-8"	□
v1200(E)	80	#8	13'-2"	
w1200(E)	40	#5	29'-0"	
Reinforcement Bars, Epoxy Coated			LB	20420
Concrete Structures			Cu. Yd.	168.0
Structure Excavation			Cu. Yd.	148.0
Furnishing Steel Piles HP 14x73			Foot	1196.0
Driving Piles			Foot	1173.0
Test Pile Steel HP 14x73			Each	1
Concrete Sealer			Sq. Ft.	1985.0

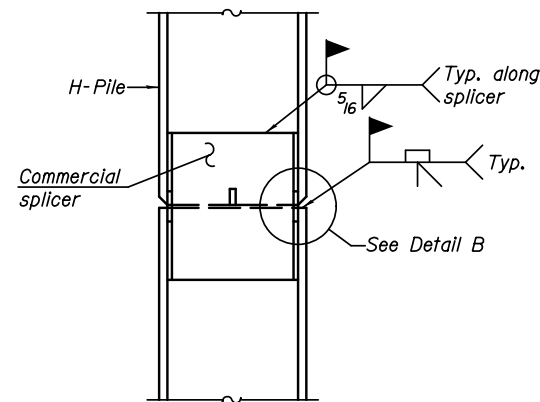
**NORTHBOUND  
BILL OF MATERIAL**

BAR	NO.	SIZE	LENGTH	SHAPE
d2200(E)	50	#8	4'-2"	U
h2200(E)	34	#6	31'-3"	
h2201(E)	12	#5	30'-8"	
h2202(E)	5	#5	22'-6"	
h2203(E)	5	#5	18'-5"	
n2200(E)	118	#6	17'-6"	U
n2201(E)	80	#8	9'-9"	U
p2200(E)	16	#9	34'-10"	L
p2201(E)	8	#9	35'-0"	
p2202(E)	33	#9	24'-8"	
s2200(E)	228	#5	14'-7"	□
s2201(E)	36	#4	12'-5"	□
t2200(E)	62	#5	8'-8"	
t2201(E)	56	#6	10'-0"	U
u2200(E)	24	#5	11'-8"	□
u2201(E)	40	#5	8'-8"	□
v2200(E)	80	#8	12'-7"	
w2200(E)	40	#5	32'-3"	
Reinforcement Bars, Epoxy Coated			LB	23410
Concrete Structures			Cu. Yd.	189.0
Structure Excavation			Cu. Yd.	155.0
Furnishing Steel Piles HP 14x73			Foot	1593.0
Driving Piles			Foot	1566.0
Test Pile Steel HP 14x73			Each	1
Concrete Sealer			Sq. Ft.	2157.0

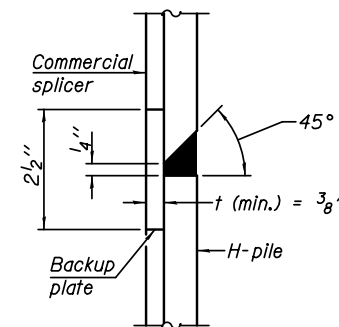


**STEEL PILE TABLE**

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

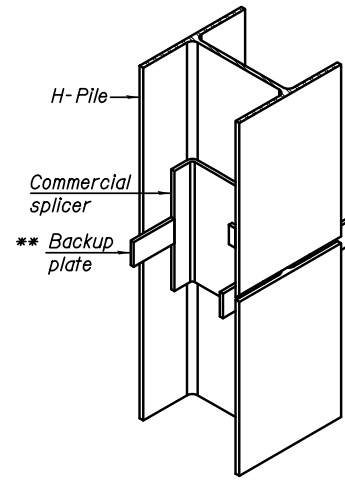


**ELEVATION**

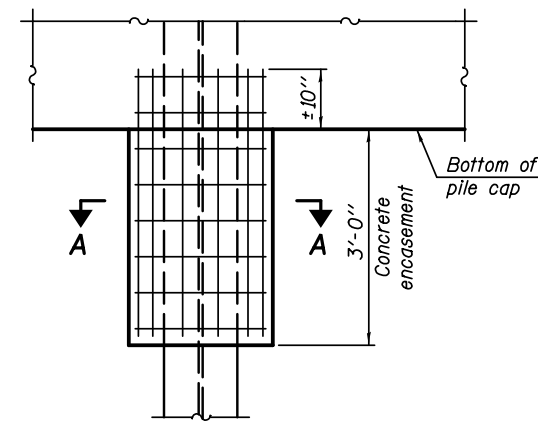


**DETAIL "B"**

**WELDED COMMERCIAL SPLICE**

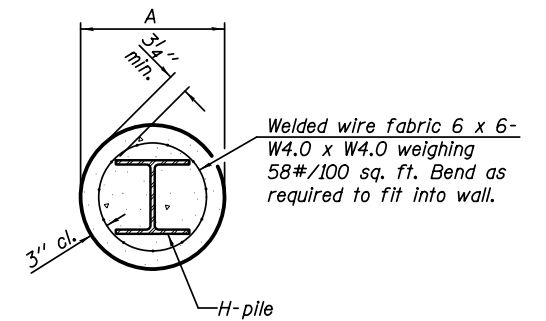


**ISOMETRIC VIEW**



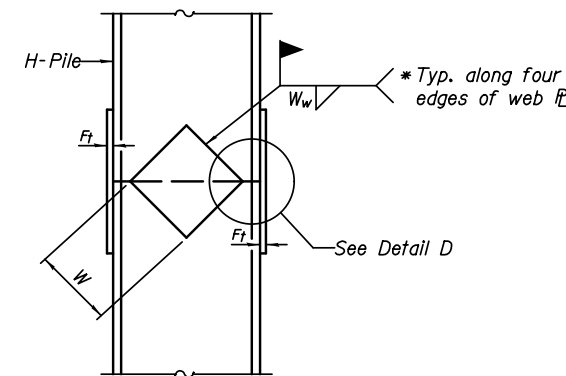
**ELEVATION**

**PILE ENCASEMENT**

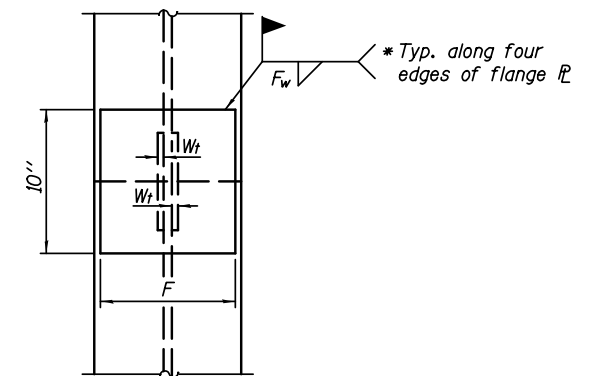


**SECTION A-A**

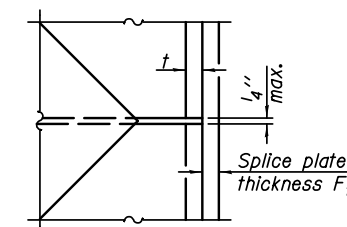
Note:  
Forms for encasement may be omitted when soil conditions permit.



**ELEVATION**



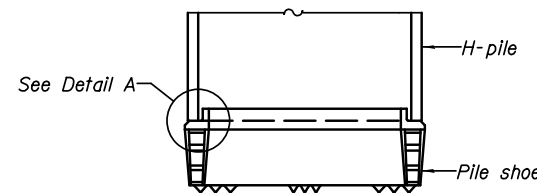
**END VIEW**



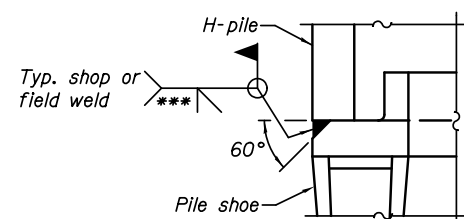
**DETAIL D**

**WELDED PLATE FIELD SPLICE**

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

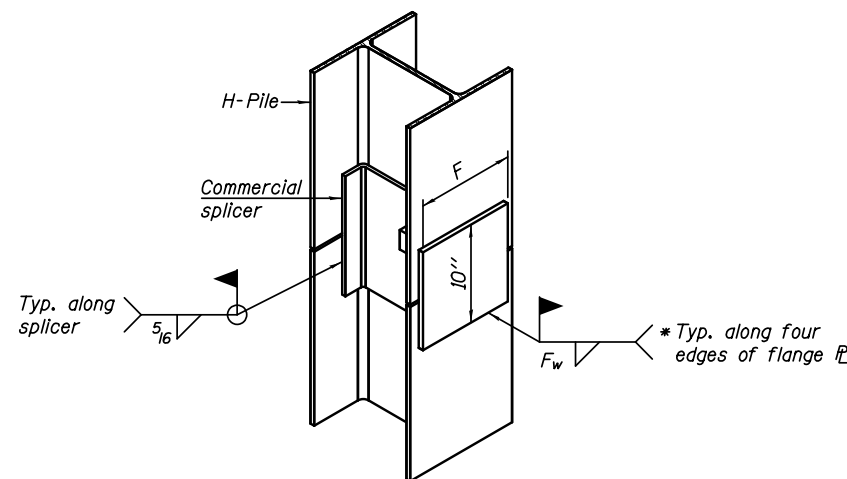


**ELEVATION**



**DETAIL A**

**H-PILE SHOE ATTACHMENT**



**ISOMETRIC VIEW**

**WELDED COMMERCIAL SPLICE ALTERNATE**

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

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

F-HP 1-27-12

**KNIGHT**  
Engineers & Architects

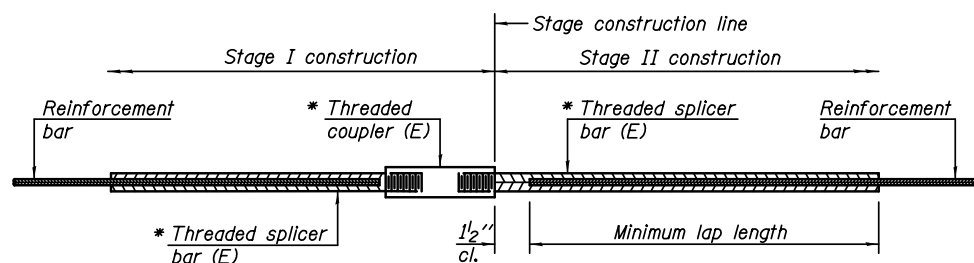
DESIGNED - WPM	REVISIONS
CHECKED - TB	REVISIONS
SCALE - NONE	REVISIONS
DATE - 10/15/2012	REVISIONS
DRAWN - TB	REVISIONS
CHECKED - WPM	REVISIONS

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

HP PILE DETAILS  
S.N. 022-2029 (SB) TOLLWAY B.N. 826  
S.N. 022-2030 (NB) TOLLWAY B.N. 825

SHEET NO. SA-54 OF 63 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	(112 & 113) WRS-5	DUPAGE	963	638
CONTRACT NO. 60I31				
ILLINOIS FED. AID PROJECT				



**STANDARD BAR SPLICER ASSEMBLY**

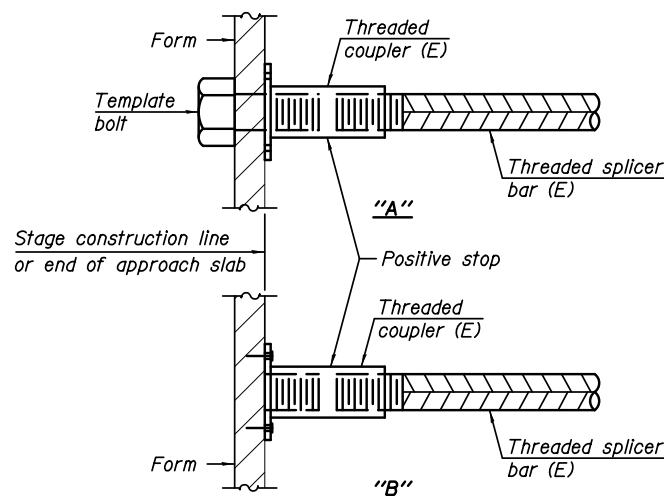
Minimum Lap Lengths						
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5	Table 6
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-7"	2'-11"
5	1'-9"	2'-5"	2'-7"	2'-11"	3'-3"	3'-8"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-10"	4'-5"
7	2'-9"	3'-10"	4'-2"	4'-8"	5'-2"	5'-10"
8	3'-8"	5'-1"	5'-5"	6'-2"	6'-9"	7'-8"
9	4'-7"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

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

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

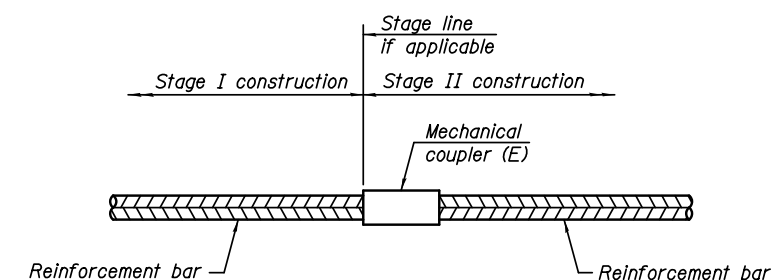
\* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

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



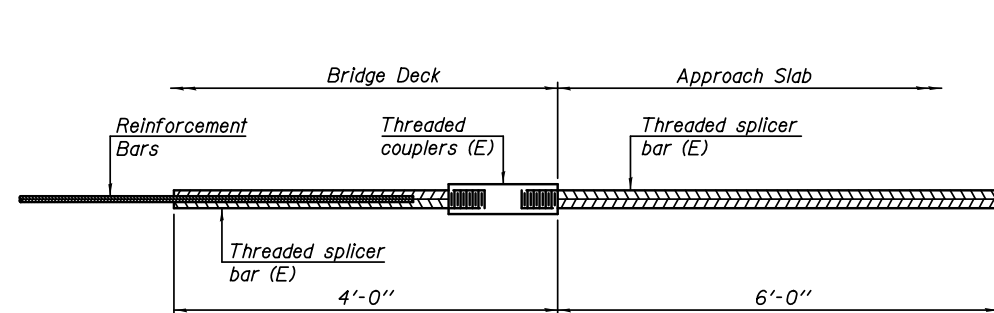
**INSTALLATION AND SETTING METHODS**

"A" : Set bar splicer assembly by means of a template bolt.  
 "B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.  
 (E) : Indicates epoxy coating.



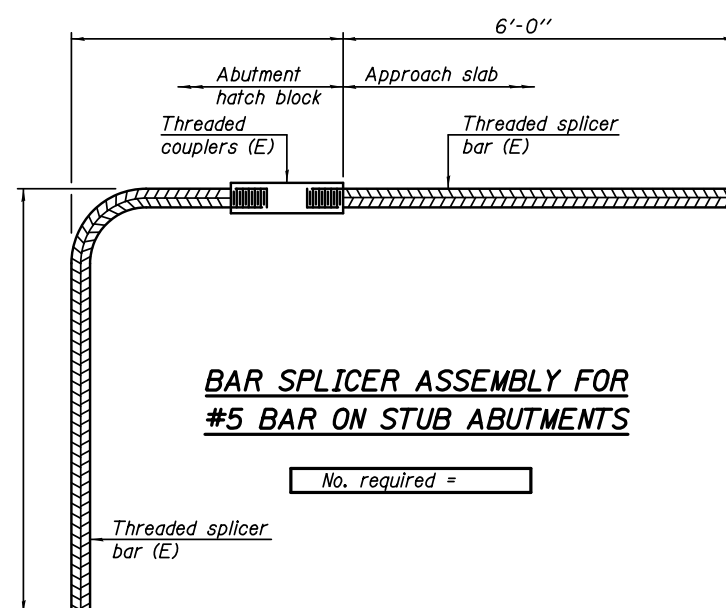
**STANDARD MECHANICAL SPLICER**

Location	Bar size	No. assemblies required



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

SB BRIDGE		NB BRIDGE	
No. required	Location	No. required	Location
56	South Abutment	62	South Abutment
56	North Abutment	62	North Abutment



**BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS**

No. required =

**NOTES**

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

BSD-1

1-27-12

**KNIGHT**  
Engineers & Architects

DESIGNED - WPM	REVISION
CHECKED - TB	REVISION
DRAWN - TB	REVISION
CHECKED - WPM	REVISION
SCALE - NONE	
DATE - 10/15/2012	

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY DETAILS  
S.N. 022-2029 (SB) TOLLWAY B.N. 826  
S.N. 022-2030 (NB) TOLLWAY B.N. 825

SHEET NO. SA-55 OF 63 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	(112 & 113) WRS-5	DUPAGE	963	639
CONTRACT NO. 60131				
ILLINOIS FED. AID PROJECT				

Geo Services Inc. Geotechnical, Environmental & Civil Engineering 805 Arden Court, Suite 204 Naperville, Illinois 60565 (630) 581-2236					SOIL BORING LOG					PAGE 1 of 3				
ROUTE II, Route 59 (FAP 338)					DESCRIPTION Illinois Route 59-Aurora Avenue/New York Street To Ferry Road					DATE 12/21-22/2011				
SECTION (112 & 113) WRS-5					LOCATION SEC. 3, 9-10, 15-16, 21-22 TWP. 38N, RNG. 9E, Naperville Township					LOGGED BY RJ				
COUNTY DuPage					DRILLING METHOD Hollow Stem Auger/Rotary					HAMMER TYPE CME Automatic				
STRUCT. No. 022-2030 NB, 022-2029 SB					SURFACE WATER Elev. n/a					DEPTH H				
Station: 4058+30.47 IL Rte. 59					Stream Bed Elev. n/a					BLOW S				
BORING NO. BS-01					Groundwater Elevation: Dry to -10.0' ▼					U C S				
Station: 4056+62 IL Rte. 59					First Encounter n/a					M O I S T				
Offset: 26.5' Left					Upon Completion n/a					Qu				
Ground Surface Elev. 726.8					After Hrs. ▼					(ft) (/6") (tsf) (%)				
12.0" ASPHALT, 6.0" CRUSHED STONE														
725.9														
SILTY CLAY LOAM-brown-very stiff (A-4/A-6) Fill														
703.8														
CLAY LOAM-brown & gray-stiff to hard (A-6) Fill														
694.8														
Some crushed stone from -8.5' to -10.0'														
689.8														
CLAY LOAM-gray-very stiff (A-6)														
688.8														
SILTY CLAY LOAM-brown-very stiff (A-4/A-6) Fill														
708.8														

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (BS-Bulge, S-Shear, P-Penetrometer) ST-S Shelby Tube Sample VS=Vane Shear Test  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)  
NR-No Recovery

Geo Services Inc. Geotechnical, Environmental & Civil Engineering 805 Arden Court, Suite 204 Naperville, Illinois 60565 (630) 581-2236					SOIL BORING LOG					PAGE 2 of 3				
ROUTE II, Route 59 (FAP 338)					DESCRIPTION Illinois Route 59-Aurora Avenue/New York Street To Ferry Road					DATE 12/21-22/2011				
SECTION (112 & 113) WRS-5					LOCATION SEC. 3, 9-10, 15-16, 21-22 TWP. 38N, RNG. 9E, Naperville Township					LOGGED BY RJ				
COUNTY DuPage					DRILLING METHOD Hollow Stem Auger/Rotary					HAMMER TYPE CME Automatic				
STRUCT. No. 022-2030 NB, 022-2029 SB					SURFACE WATER Elev. n/a					DEPTH H				
Station: 4058+30.47 IL Rte. 59					Stream Bed Elev. n/a					BLOW S				
BORING NO. BS-01					Groundwater Elevation: Dry to -10.0' ▼					U C S				
Station: 4056+62 IL Rte. 59					First Encounter n/a					M O I S T				
Offset: 26.5' Left					Upon Completion n/a					Qu				
Ground Surface Elev. 726.8					After Hrs. ▼					(ft) (/6") (tsf) (%)				
CLAY LOAM-gray-very stiff (A-6)														
684.8														
CLAY-gray-stiff to hard (A-6)														
658.8														
CLAY-gray-stiff to hard (A-6)														
658.8														
SANDY CLAY LOAM with Fractured Rock-gray-very dense (A-2)														
636.8														
End Of Boring @ -90.0'														
Hollow Stem Augers to -10.0'														
Rotary Drilling To Completion														
CME Automatic Hammer														
10.0' Of 4.0" Casing Used														
-100														

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (BS-Bulge, S-Shear, P-Penetrometer) ST-S Shelby Tube Sample VS=Vane Shear Test  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)  
NR-No Recovery

Geo Services Inc. Geotechnical, Environmental & Civil Engineering 805 Arden Court, Suite 204 Naperville, Illinois 60565 (630) 581-2236					SOIL BORING LOG					PAGE 3 of 3				
ROUTE II, Route 59 (FAP 338)					DESCRIPTION Illinois Route 59-Aurora Avenue/New York Street To Ferry Road					DATE 12/21-22/2011				
SECTION (112 & 113) WRS-5					LOCATION SEC. 3, 9-10, 15-16, 21-22 TWP. 38N, RNG. 9E, Naperville Township					LOGGED BY RJ				
COUNTY DuPage					DRILLING METHOD Hollow Stem Auger/Rotary					HAMMER TYPE CME Automatic				
STRUCT. No. 022-2030 NB, 022-2029 SB					SURFACE WATER Elev. n/a					DEPTH H				
Station: 4058+30.47 IL Rte. 59					Stream Bed Elev. n/a					BLOW S				
BORING NO. BS-01					Groundwater Elevation: Dry to -10.0' ▼					U C S				
Station: 4056+62 IL Rte. 59					First Encounter n/a					M O I S T				
Offset: 26.5' Left					Upon Completion n/a					Qu				
Ground Surface Elev. 726.8					After Hrs. ▼					(ft) (/6") (tsf) (%)				
SANDY CLAY LOAM with Fractured Rock-gray-very dense (A-2)														
644.8														
SILTY LOAM-gray-very dense (A-4)														
636.8														
End Of Boring @ -90.0'														
Hollow Stem Augers to -10.0'														
Rotary Drilling To Completion														
CME Automatic Hammer														
10.0' Of 4.0" Casing Used														
-100														

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (BS-Bulge, S-Shear, P-Penetrometer) ST-S Shelby Tube Sample VS=Vane Shear Test  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)  
NR-No Recovery

**KNIGHT**  
Engineers & Architects

DESIGNED - GSI	REVISED
CHECKED - WPM	REVISED
DRAWN - TB	REVISED
CHECKED - WPM	REVISED
SCALE - NONE	
DATE - 10/15/2012	

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS  
S.N. 022-2029 (SB) TOLLWAY B.N. 826  
S.N. 022-2030 (NB) TOLLWAY B.N. 825  
SHEET NO. SA-56 OF 63 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	(112 & 113) WRS-5	DUPAGE	963	640
CONTRACT NO. 60131				
ILLINOIS FED. AID PROJECT				



SOIL BORING LOG

PAGE 1 of 2
DATE 12/29/2011
LOGGED BY RJ
GSI JOB No. 09173

ROUTE II, Route 59 (FAP 338) DESCRIPTION Illinois Route 59-Aurora Avenue/New York Street To Ferry Road
SECTION (112 & 113) WRS-5 LOCATION SEC. 3, 9-10, 15-16, 21-22 TWP. 38N, RNG. 9E, Naperville Township
COUNTY DuPage DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic

STRUCT. No. 022-2030 NB
Station: 4058+30.47 IL Rte. 59
BORING NO. BS-02
Station: 4056+86 IL Rte. 59
Offset: 99.5' Left
Ground Surface Elev. 705.6

Table with columns: DEPTH (ft), BULGE (ft), UCS (tsf), MOISTURE (%), and SOIL DESCRIPTION. Includes groundwater elevation data.

Main soil log table for Page 1. Rows include: 9.0" TOPSOIL-black, CLAY LOAM-dark brown & black-stiff (A-6) Fill, CLAY-gray-very stiff to hard (A-6), SILTY SAND & GRAVEL-gray-medium dense (A-2), CLAY LOAM-gray-stiff to very stiff (A-6).

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (BS-Bulge, S-Shear, P-Penetrometer) ST-S Shelby Tube Sample VS-Vane Shear Test. The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206). The Unit Dry Weight (pcf) is noted in italics above moist (%). NR-No Recovery.



SOIL BORING LOG

PAGE 2 of 2
DATE 12/29/2011
LOGGED BY RJ
GSI JOB No. 09173

ROUTE II, Route 59 (FAP 338) DESCRIPTION Illinois Route 59-Aurora Avenue/New York Street To Ferry Road
SECTION (112 & 113) WRS-5 LOCATION SEC. 3, 9-10, 15-16, 21-22 TWP. 38N, RNG. 9E, Naperville Township
COUNTY DuPage DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic

STRUCT. No. 022-2030 NB
Station: 4058+30.47 IL Rte. 59
BORING NO. BS-02
Station: 4056+86 IL Rte. 59
Offset: 99.5' Left
Ground Surface Elev. 705.6

Table with columns: DEPTH (ft), BULGE (ft), UCS (tsf), MOISTURE (%), and SOIL DESCRIPTION. Includes groundwater elevation data.

Main soil log table for Page 2. Rows include: CLAY to CLAY LOAM-gray-stiff to very stiff (A-6), SANDY LOAM to LOAM-gray-very dense (A-2), SANDY LOAM with Fractured Rock-gray-very dense (A-2), Clayey SAND-gray-very dense (A-2), SILTY LOAM-gray-very dense (A-4).

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (BS-Bulge, S-Shear, P-Penetrometer) ST-S Shelby Tube Sample VS-Vane Shear Test. The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206). The Unit Dry Weight (pcf) is noted in italics above moist (%). NR-No Recovery.



Table with columns: DESIGNED, CHECKED, SCALE, DATE, REVISED, DRAWN, CHECKED. Values include GSI, WPM, TB, WPM.

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS
S.N. 022-2029 (SB) TOLLWAY B.N. 826
S.N. 022-2030 (NB) TOLLWAY B.N. 825

Table with columns: F.A.P. RTE., SECTION, COUNTY, TOTAL SHEETS, SHEET NO., CONTRACT NO. Values include 338, (112 & 113) WRS-5, DUPAGE, 963, 641, 60131.

ROUTE II, Route 59 (FAP 338) DESCRIPTION Illinois Route 59-Aurora Avenue/New York Street To Ferry Road  
 SECTION (112 & 113) WRS-5 LOCATION SEC. 3, 9-10, 15-16, 21-22 TWP. 38N, RNG. 9E, Naperville Township  
 COUNTY DuPage DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic

STRUCT. No. 022-2030 NB  
 Station: 4058+30.47 IL Rte. 59  
 BORING NO. **BS-03**  
 Station: 4058+23 IL Rte. 59  
 Offset: 39.5' Left  
 Ground Surface Elev. 706.5

DEPTH H (ft)	B L O W S (/6")	U C S Qu (tsf)	M O I S T (%)	Description	Elevation	DEPTH H (ft)	B L O W S (/6")	U C S Qu (tsf)	M O I S T (%)	Description	Elevation
				6.0" ASPHALT	n/a					SANDY CLAY LOAM-gray (A-2)	686.0
				CRUSHED STONE-medium dense (Fill)	n/a					SAND & GRAVEL-gray-medium dense (A-1)	
				CLAY LOAM-dark brown, gray & black-very stiff (A-6) Fill							
				SILTY CLAY LOAM with Stone-brown & gray-medium dense (Fill)							
				CLAY LOAM-brown & gray-very stiff (A-6) Fill							
				Some crushed stone from -11.0' to -12.5'							
				CLAY-gray-very stiff (A-6)							
				SANDY CLAY LOAM with Fractured Rock-gray-medium dense (A-2)							

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (BS-Bulge, S-Shear, P-Penetrometer) ST-Shealy Tube Sample VS-Vane Shear Test  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)  
 NR-No Recovery

ROUTE II, Route 59 (FAP 338) DESCRIPTION Illinois Route 59-Aurora Avenue/New York Street To Ferry Road  
 SECTION (112 & 113) WRS-5 LOCATION SEC. 3, 9-10, 15-16, 21-22 TWP. 38N, RNG. 9E, Naperville Township  
 COUNTY DuPage DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic

STRUCT. No. 022-2030 NB  
 Station: 4058+30.47 IL Rte. 59  
 BORING NO. **BS-03**  
 Station: 4058+23 IL Rte. 59  
 Offset: 39.5' Left  
 Ground Surface Elev. 706.5

DEPTH H (ft)	B L O W S (/6")	U C S Qu (tsf)	M O I S T (%)	Description	Elevation	DEPTH H (ft)	B L O W S (/6")	U C S Qu (tsf)	M O I S T (%)	Description	Elevation
				CLAY-gray-stiff (A-6)						SILTY LOAM-gray-very dense (A-4)	
				CLAY LOAM-gray-medium dense (A-6)						SANDY CLAY LOAM-gray-very dense (A-2)	
				SANDY CLAY LOAM-gray-dense to very dense (A-2)							
				SILTY LOAM-gray-very dense (A-4)							

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (BS-Bulge, S-Shear, P-Penetrometer) ST-Shealy Tube Sample VS-Vane Shear Test  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)  
 NR-No Recovery

Geo Services, Inc. Geotechnical, Environmental & Civil Engineering 805 Archer Court, Suite 204 Naperville, Illinois 60565 (630) 401-2266				SOIL BORING LOG				PAGE 1 of 2			
ROUTE <u>IL Route 59 (FAP 338)</u> DESCRIPTION <u>Illinois Route 59-Aurora Avenue/New York Street To Ferry Road</u>				DATE <u>12/28/2011</u>				LOGGED BY <u>RJ</u>			
SECTION <u>(112 &amp; 113) WRS-5</u> LOCATION <u>SEC. 3, 9-10, 15-16, 21-22 TWP. 38N, RNG. 9E, Naperville Township</u>				GSI JOB No. <u>09173</u>							
COUNTY <u>DuPage</u> DRILLING METHOD <u>Hollow Stem Auger/Rotary</u> HAMMER TYPE <u>CME Automatic</u>											
STRUCT. No. <u>022-2030 NB</u>				Surface Water Elev. <u>n/a</u>				D E P T H S Qu			
Station: <u>4058+30.47 IL Rte. 59</u>				Stream Bed Elev. <u>n/a</u>				U C S			
BORING NO. <u>BS-04</u>				Groundwater Elevation:				M O I S T			
Station: <u>4059+26 IL Rte. 59</u>				First Encounter <u>Dry to -10.0'</u>							
Offset: <u>113.6' Left</u>				Upon Completion <u>n/a</u>							
Ground Surface Elev. <u>705.8</u>				After _____ Hrs. <u>∇</u>							
6.0" TOPSOIL-black <u>705.3</u>											
CLAY LOAM-dark brown to black-stiff (A-6) Fill <u>682.8</u>											
CLAY-brown & gray-very stiff to hard (A-6) <u>700.3</u>											
CLAY-gray-very stiff (A-6) <u>695.3</u>											
CLAYEY SAND & GRAVEL-gray medium dense (A-2) <u>690.3</u>											
CLAY LOAM with Gravel-gray-stiff (A-6) <u>688.8</u>											

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (BS-Bulge, S-Shear, P-Penetrometer) ST-S Shelby Tube Sample VS-Vane Shear Test The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%) NR-No Recovery

Geo Services, Inc. Geotechnical, Environmental & Civil Engineering 805 Archer Court, Suite 204 Naperville, Illinois 60565 (630) 401-2266				SOIL BORING LOG				PAGE 2 of 2			
ROUTE <u>IL Route 59 (FAP 338)</u> DESCRIPTION <u>Illinois Route 59-Aurora Avenue/New York Street To Ferry Road</u>				DATE <u>12/28/2011</u>				LOGGED BY <u>RJ</u>			
SECTION <u>(112 &amp; 113) WRS-5</u> LOCATION <u>SEC. 3, 9-10, 15-16, 21-22 TWP. 38N, RNG. 9E, Naperville Township</u>				GSI JOB No. <u>09173</u>							
COUNTY <u>DuPage</u> DRILLING METHOD <u>Hollow Stem Auger/Rotary</u> HAMMER TYPE <u>CME Automatic</u>											
STRUCT. No. <u>022-2030 NB</u>				Surface Water Elev. <u>n/a</u>				D E P T H S Qu			
Station: <u>4058+30.47 IL Rte. 59</u>				Stream Bed Elev. <u>n/a</u>				U C S			
BORING NO. <u>BS-04</u>				Groundwater Elevation:				M O I S T			
Station: <u>4059+26 IL Rte. 59</u>				First Encounter <u>Dry to -10.0'</u>							
Offset: <u>113.6' Left</u>				Upon Completion <u>n/a</u>							
Ground Surface Elev. <u>705.8</u>				After _____ Hrs. <u>∇</u>							
CLAY LOAM-gray-hard (A-6) <u>643.8</u>											
CLAY-gray-stiff to very stiff (A-6) <u>658.8</u>											
SANDY CLAY LOAM with Gravel-gray-dense to very dense (A-2) <u>633.8</u>											
SANDY LOAM-gray-medium dense to very dense (A-2) <u>631.8</u>											
FRACTURED ROCK-gray-very dense (A-1) <u>628.8</u>											
CLAY LOAM-gray-hard (A-6) <u>628.8</u>											

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (BS-Bulge, S-Shear, P-Penetrometer) ST-S Shelby Tube Sample VS-Vane Shear Test The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%) NR-No Recovery

Geo SERVICES, Inc. Geotechnical, Environmental & Civil Engineering 805 Arden Court, Suite 204 Naperville, Illinois 60565 (630) 221-2236		SOIL BORING LOG		PAGE 1 of 2	
ROUTE <u>IL Route 59 (FAP 338)</u>		DESCRIPTION <u>Illinois Route 59-Aurora Avenue/New York Street To Ferry Road</u>		DATE <u>1/3/2012</u>	
SECTION <u>(112 &amp; 113) WRS-5</u>		LOCATION <u>SEC. 3, 9-10, 15-16, 21-22 TWP. 38N, RNG. 9E, Naperville Township</u>		LOGGED BY <u>RJ</u>	
COUNTY <u>DuPage</u>		DRILLING METHOD <u>Hollow Stem Auger/Rotary</u>		HAMMER TYPE <u>CME Automatic</u>	
STRUCT. No. <u>022-2029 SB</u>		Surface Water Elev. <u>n/a</u>		D E P T H	
Station: <u>4058+30.47 IL Rte. 59</u>		Stream Bed Elev. <u>n/a</u>		B L O W S	
BORING NO. <u>BS-05</u>		Groundwater Elevation:		U C S	
Station: <u>4057+33 IL Rte. 59</u>		First Encounter <u>Dry to -10.0'</u>		M O I S T	
Offset: <u>159.1' Right</u>		Upon Completion <u>n/a</u>		Qu	
Ground Surface Elev. <u>696.4</u>		After _____ Hrs.		(ft) (/6") (tsf) (%)	
6.0" TOPSOIL-dark brown to black <u>695.9</u>		CLAY LOAM-gray-very stiff (A-6) <u>675.9</u>			
CLAY LOAM-dark brown-hard (A-6) Fill		SANDY CLAY LOAM-gray-medium dense (A-6)			
SILTY CLAY-dark brown & gray-stiff (A-6)		SAND & GRAVEL-gray-medium dense (A-1)			
SILTY LOAM-brown-medium dense (A-4)		CLAY-gray-very stiff (A-6)			
CLAY-gray-stiff to very stiff (A-6)		SILTY LOAM-brown & gray-medium dense (A-4)			
CLAY LOAM-gray-very stiff (A-6)		CLAY-gray-very stiff (A-6)			
CLAY LOAM-gray-very stiff (A-6)		SANDY CLAY LOAM with Fractured Rock-gray-very dense (A-2)			
CLAY LOAM-gray-very stiff (A-6)		CLAY LOAM-gray-hard (A-6)			
CLAY LOAM-gray-very stiff (A-6)		SILTY LOAM-gray-very dense (A-4)			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (BS-Bulge, S-Shear, P-Penetrometer) ST-S Shelby Tube Sample VS-Vane Shear Test  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)  
NR-No Recovery

Geo SERVICES, Inc. Geotechnical, Environmental & Civil Engineering 805 Arden Court, Suite 204 Naperville, Illinois 60565 (630) 221-2236		SOIL BORING LOG		PAGE 2 of 2	
ROUTE <u>IL Route 59 (FAP 338)</u>		DESCRIPTION <u>Illinois Route 59-Aurora Avenue/New York Street To Ferry Road</u>		DATE <u>1/3/2012</u>	
SECTION <u>(112 &amp; 113) WRS-5</u>		LOCATION <u>SEC. 3, 9-10, 15-16, 21-22 TWP. 38N, RNG. 9E, Naperville Township</u>		LOGGED BY <u>RJ</u>	
COUNTY <u>DuPage</u>		DRILLING METHOD <u>Hollow Stem Auger/Rotary</u>		HAMMER TYPE <u>CME Automatic</u>	
STRUCT. No. <u>022-2029 SB</u>		Surface Water Elev. <u>n/a</u>		D E P T H	
Station: <u>4058+30.47 IL Rte. 59</u>		Stream Bed Elev. <u>n/a</u>		B L O W S	
BORING NO. <u>BS-05</u>		Groundwater Elevation:		U C S	
Station: <u>4057+33 IL Rte. 59</u>		First Encounter <u>Dry to -10.0'</u>		M O I S T	
Offset: <u>159.1' Right</u>		Upon Completion <u>n/a</u>		Qu	
Ground Surface Elev. <u>696.4</u>		After _____ Hrs.		(ft) (/6") (tsf) (%)	
CLAY-gray-very stiff (A-6) <u>654.4</u>		SILTY LOAM-gray-very dense (A-4) <u>634.4</u>			
SILTY SAND & GRAVEL-gray-medium dense (A-2) <u>649.4</u>		SANDY LOAM-gray-very dense (A-2) <u>631.4</u>			
SANDY CLAY LOAM with Fractured Rock-gray-very dense (A-2) <u>644.4</u>		End Of Boring @ -65.0' Hollow Stem Augers to -10.0' Rotary Drilling To Completion CME Automatic Hammer 10.0' Of 4.0" Casing Used			
CLAY LOAM-gray-hard (A-6) <u>639.4</u>					
SILTY LOAM-gray-very dense (A-4)					

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (BS-Bulge, S-Shear, P-Penetrometer) ST-S Shelby Tube Sample VS-Vane Shear Test  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)  
NR-No Recovery

**KNIGHT**  
Engineers & Architects

DESIGNED - GSI	REVISED
CHECKED - WPM	REVISED
DRAWN - TB	REVISED
CHECKED - WPM	REVISED

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS  
S.N. 022-2029 (SB) TOLLWAY B.N. 826  
S.N. 022-2030 (NB) TOLLWAY B.N. 825  
SHEET NO. SA-60 OF 63 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	(112 & 113) WRS-5	DUPAGE	963	644
CONTRACT NO. 60131				
ILLINOIS FED. AID PROJECT				



Geo SERVICES, Inc.		SOIL BORING LOG				PAGE 1 of 2			
Geotechnical, Environmental & Civil Engineering 805 Archer Court, Suite 204 Naperville, Illinois 60565 (630) 221-2236		DATE <u>12/23/2011</u>				LOGGED BY <u>RJ</u>			
ROUTE <u>IL Route 59 (FAP 338)</u>		DESCRIPTION <u>Illinois Route 59-Aurora Avenue/New York Street To Ferry Road</u>				GSI JOB No. <u>09173</u>			
SECTION <u>(112 &amp; 113) WRS-5</u>		LOCATION <u>SEC. 3, 9-10, 15-16, 21-22 TWP. 38N, RNG. 9E, Naperville Township</u>							
COUNTY <u>DuPage</u>		DRILLING METHOD <u>Hollow Stem Auger/Rotary</u>				HAMMER TYPE <u>CME Automatic</u>			
STRUCT. No. <u>022-2029 SB</u>		Surface Water Elev. <u>n/a</u>				D E P T H			
Station: <u>4058+30.47 IL Rte. 59</u>		Stream Bed Elev. <u>n/a</u>				B L O W S			
BORING NO. <u>BS-06</u>		Groundwater Elevation:				U C S			
Station: <u>4058+40 IL Rte. 59</u>		First Encounter <u>Dry to -10.0'</u>				M O I S T			
Offset: <u>77.0' Right</u>		Upon Completion <u>n/a</u>				(ft) (/6") (tsf) (%)			
Ground Surface Elev. <u>706.2</u>		After _____ Hrs. <u>∇</u>							
6.0" ASPHALT		705.7							
CRUSHED STONE--dense (Fill)		703.2							
CLAY LOAM--brown-- very stiff to hard (A-6)		694.2							
CLAY--gray--very stiff (A-6)		690.7							
CLAY LOAM--gray-- stiff to very stiff (A-6)		689.2							

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (BS--Bulge, S--Shear, P--Penetrometer) ST--Shelby Tube Sample VS--Vane Shear Test  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)  
NR--No Recovery

Geo SERVICES, Inc.		SOIL BORING LOG				PAGE 2 of 2			
Geotechnical, Environmental & Civil Engineering 805 Archer Court, Suite 204 Naperville, Illinois 60565 (630) 221-2236		DATE <u>12/23/2011</u>				LOGGED BY <u>RJ</u>			
ROUTE <u>IL Route 59 (FAP 338)</u>		DESCRIPTION <u>Illinois Route 59-Aurora Avenue/New York Street To Ferry Road</u>				GSI JOB No. <u>09173</u>			
SECTION <u>(112 &amp; 113) WRS-5</u>		LOCATION <u>SEC. 3, 9-10, 15-16, 21-22 TWP. 38N, RNG. 9E, Naperville Township</u>							
COUNTY <u>DuPage</u>		DRILLING METHOD <u>Hollow Stem Auger/Rotary</u>				HAMMER TYPE <u>CME Automatic</u>			
STRUCT. No. <u>022-2029 SB</u>		Surface Water Elev. <u>n/a</u>				D E P T H			
Station: <u>4058+30.47 IL Rte. 59</u>		Stream Bed Elev. <u>n/a</u>				B L O W S			
BORING NO. <u>BS-06</u>		Groundwater Elevation:				U C S			
Station: <u>4058+40 IL Rte. 59</u>		First Encounter <u>Dry to -10.0'</u>				M O I S T			
Offset: <u>77.0' Right</u>		Upon Completion <u>n/a</u>				(ft) (/6") (tsf) (%)			
Ground Surface Elev. <u>706.2</u>		After _____ Hrs. <u>∇</u>							
CLAY LOAM--gray-- stiff to very stiff (A-6)		684.2							
Clayey SAND & GRAVEL--gray-- medium dense (A-2)		659.2							
SANDY CLAY LOAM--gray-- very dense (A-2)		649.2							
SAND--gray--very dense (A-3)		634.2							
SILTY LOAM to LOAM--gray-- very dense (A-4)		631.2							
End Of Boring @ -75.0' Hollow Stem Augers to -10.0' Rotary Drilling To Completion CME Automatic Hammer 10.0' Of 4.0" Casing Used		629.2							

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (BS--Bulge, S--Shear, P--Penetrometer) ST--Shelby Tube Sample VS--Vane Shear Test  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)  
NR--No Recovery

**KNIGHT**  
Engineers & Architects

DESIGNED - GSI	REVISED
CHECKED - WPM	REVISED
DRAWN - TB	REVISED
CHECKED - WPM	REVISED
SCALE - NONE	
DATE - 10/15/2012	

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS  
S.N. 022-2029 (SB) TOLLWAY B.N. 826  
S.N. 022-2030 (NB) TOLLWAY B.N. 825  
SHEET NO. SA-61 OF 63 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	(112 & 113) WRS-5	DUPAGE	963	645
CONTRACT NO. 60131				
ILLINOIS FED. AID PROJECT				

PAGE 1 of 2

**SOIL BORING LOG**

DATE 12/27/2011  
 LOGGED BY RJ  
 GSI JOB No. 09173

Geo SERVICES, Inc.  
 Geotechnical, Environmental & Civil Engineering  
 805 Arden Court, Suite 204  
 Naperville, Illinois 60565  
 (630) 401-2236

ROUTE Il. Route 59 (FAP 338) DESCRIPTION Illinois Route 59-Aurora Avenue/New York Street To Ferry Road  
 SECTION (112 & 113) WRS-5 LOCATION SEC. 3, 9-10, 15-16, 21-22 TWP. 38N, RNG. 9E, Naperville Township  
 COUNTY DuPage DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic

STRUCT. No. 022-2029 SB Station: 4058+30.47 IL Rte. 59  
 BORING NO. BS-07 Station: 4059+58 IL Rte. 59  
 Offset: 120.5' Right  
 Ground Surface Elev. 706.0

DEPTH H S	B L O W S	U C S Qu	M O I S T (%)	Surface Water Elev. <u>n/a</u>	Stream Bed Elev. <u>n/a</u>	Groundwater Elevation: First Encounter <u>Dry to -10.0'</u> Upon Completion <u>n/a</u> After _____ Hrs. <u>∇</u>	DEPTH H S	B L O W S	U C S Qu	M O I S T (%)
6.0" TOPSOIL-black <b>705.5</b>				CLAY LOAM-stiff to very stiff (A-6) <b>685.5</b>						
	AS	-	15							
	4									
CLAY LOAM-brown-hard (A-6) Fill <b>703.0</b>				SANDY CLAY LOAM-gray-medium dense (A-2) <b>683.0</b>						
	8									
	10	4.5P	18							
SILTY CLAY-dark gray to black-stiff (A-6) Wet <b>700.5</b>										
	4									
	4									
	5	1.8B	29							
CLAY LOAM-brown-very stiff (A-6) <b>693.0</b>				CLAY LOAM-gray-very stiff (A-6)						
	4									
	5									
	6	2.8B	17							
	5		110							
	6									
	8	3.2B	17							
CLAY LOAM-gray-stiff to very stiff (A-6) <b>693.0</b>										
	6		113							
	6									
	8	3.5B	18							
CLAY LOAM-gray-stiff to very stiff (A-6) <b>693.0</b>										
	5		109							
	5									
	15	2.3B	20							
CLAY LOAM-gray-stiff to very stiff (A-6) <b>693.0</b>										
	3		106							
	3									
	5	1.3B	22							
	12									
	16									
	20	1.5P	23							

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (BS-Bulge, S-Shear, P-Penetrometer) ST-S Shelby Tube Sample VS-Vane Shear Test  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)  
 NR-No Recovery

PAGE 2 of 2

**SOIL BORING LOG**

DATE 12/27/2011  
 LOGGED BY RJ  
 GSI JOB No. 09173

Geo SERVICES, Inc.  
 Geotechnical, Environmental & Civil Engineering  
 805 Arden Court, Suite 204  
 Naperville, Illinois 60565  
 (630) 401-2236

ROUTE Il. Route 59 (FAP 338) DESCRIPTION Illinois Route 59-Aurora Avenue/New York Street To Ferry Road  
 SECTION (112 & 113) WRS-5 LOCATION SEC. 3, 9-10, 15-16, 21-22 TWP. 38N, RNG. 9E, Naperville Township  
 COUNTY DuPage DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic

STRUCT. No. 022-2029 SB Station: 4058+30.47 IL Rte. 59  
 BORING NO. BS-07 Station: 4059+58 IL Rte. 59  
 Offset: 120.5' Right  
 Ground Surface Elev. 706.0

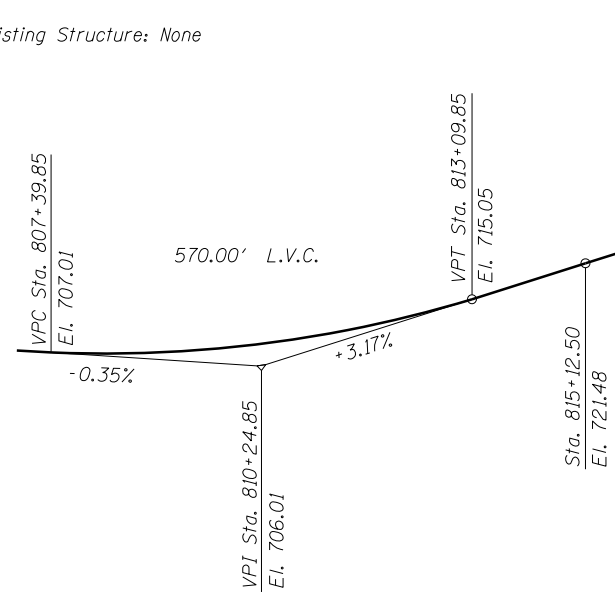
DEPTH H S	B L O W S	U C S Qu	M O I S T (%)	Surface Water Elev. <u>n/a</u>	Stream Bed Elev. <u>n/a</u>	Groundwater Elevation: First Encounter <u>Dry to -10.0'</u> Upon Completion <u>n/a</u> After _____ Hrs. <u>∇</u>	DEPTH H S	B L O W S	U C S Qu	M O I S T (%)
CLAY LOAM-gray-very stiff (A-6) <b>684.0</b>				LOAM-gray-very dense (A-4)						
SILTY LOAM-gray-medium dense (A-4) <b>659.0</b>				End Of Boring @ -65.0' Hollow Stem Augers to -10.0' Rotary Drilling To Completion CME Automatic Hammer 10.0' Of 4.0" Casing Used						
	5									
	10									
	15									
	21									
	64									
	50	46	NP	9						
SANDY LOAM with Gravel-gray-very dense (A-2) <b>649.0</b>										
	32									
	9									
	41									
	55	95	NP	9						
LOAM-gray-very dense (A-4) <b>649.0</b>										
	32									
	63									
	60	98	NP	16						

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (BS-Bulge, S-Shear, P-Penetrometer) ST-S Shelby Tube Sample VS-Vane Shear Test  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)  
 NR-No Recovery

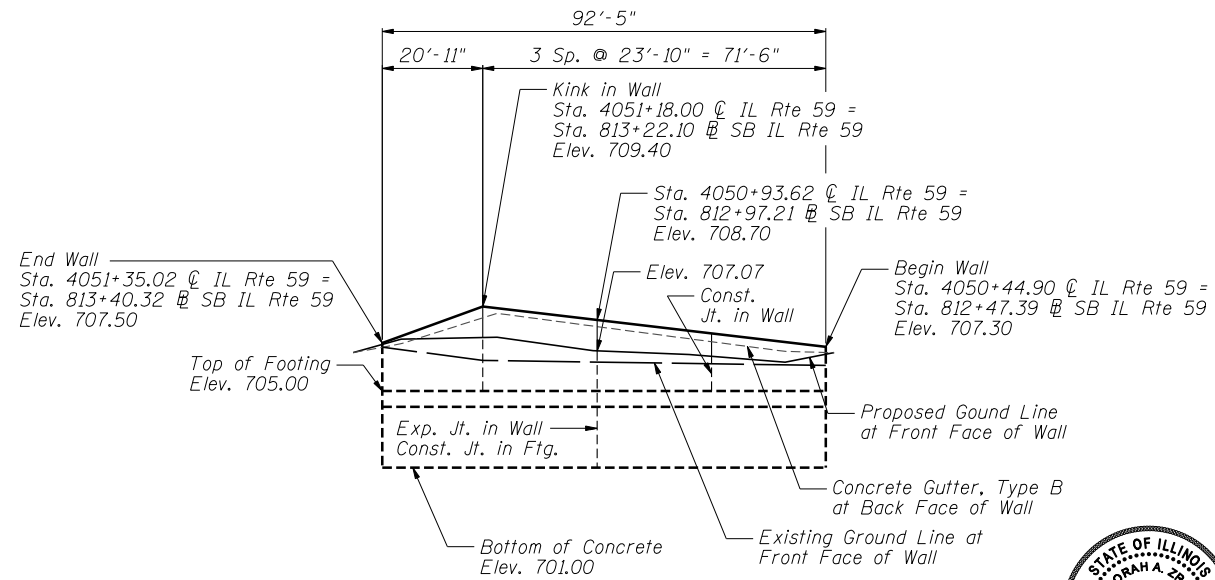


Bench Mark: DuPage County survey disk at north end of the west bridge wall, IL Rte 59 over Interstate Route 88, Elev. 731.43

Existing Structure: None



**PROFILE GRADE**  
(along SB IL Route 59)



**ELEVATION**



*Deborah A. Zroka* Oct. 18, 2012  
Signature Date  
November 30, 2014  
Expires

**GENERAL NOTES**

1. Reinforcement bars designated (E) shall be epoxy coated.
2. Concrete sealer shall be applied to exposed surfaces of the front and back face and top of wall.

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Structure Excavation	Cu. Yd.	12.3
Concrete Structures	Cu. Yd.	24.4
Concrete Sealer	Sq. Ft.	258
Reinforcement Bars, Epoxy Coated	Pound	1,880
Granular Backfill for Structures	Cu. Yd.	31

**INDEX OF SHEETS**

- SB-1. General Plan
- SB-2. Wall Plan and Elevation
- SB-3. Wall Section and Details
- SB-4. Soil Boring Logs

**DESIGN SPECIFICATIONS**

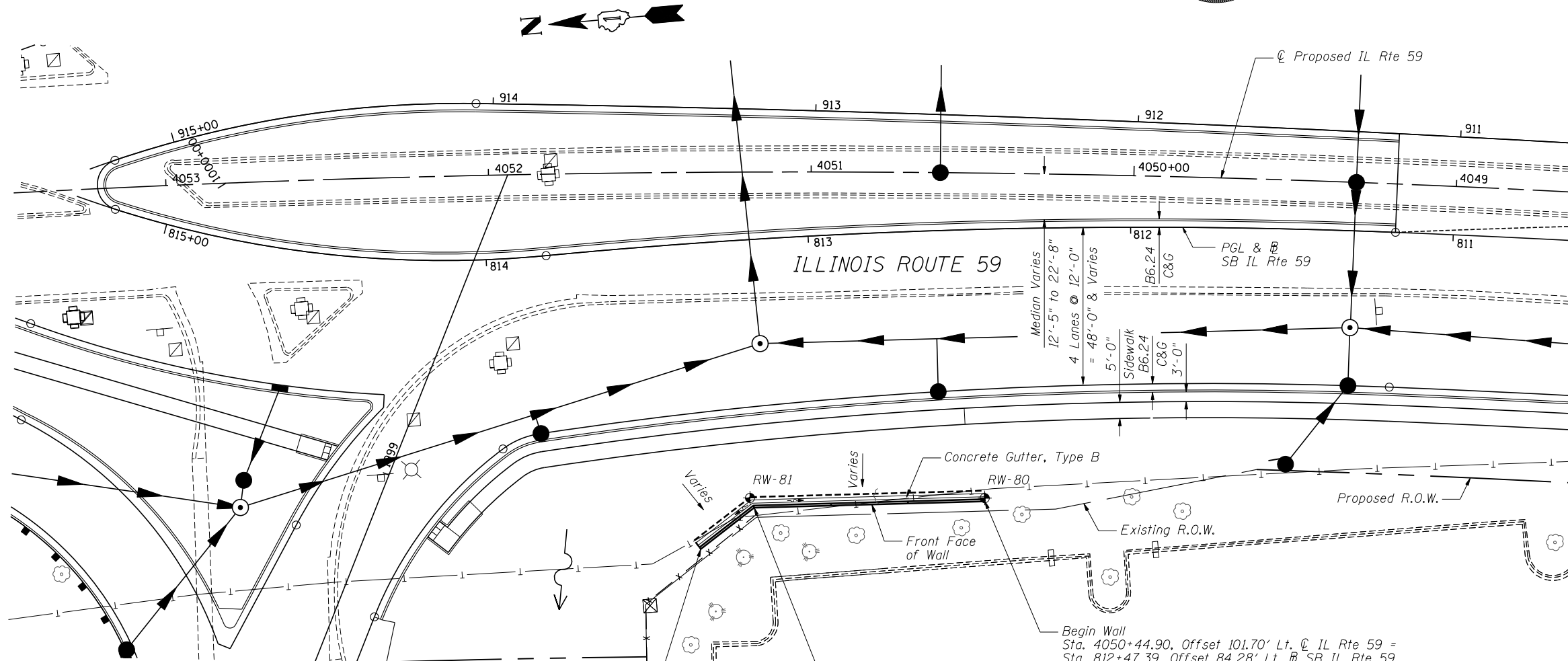
2012 AASHTO LRFD Bridge Design Specifications 6th Edition with 2012 Interims

**DESIGN STRESSES**

**FIELD UNITS**  
 $f'_c = 3,500$  psi  
 $f_y = 60,000$  psi (reinforcement)

**HORIZONTAL CURVE DATA**

Proposed Curve PRIL59-8  
 PI Sta. = 4048+25.34  
 $\Delta = 14^\circ 25' 49''$  (LT)  
 $D = 1^\circ 14' 59''$   
 $R = 4,584.55'$   
 $T = 580.39'$   
 $L = 1,154.64'$   
 $E = 36.59'$   
 P.C. Sta. = 4042+44.95  
 P.T. Sta. = 4053+99.58

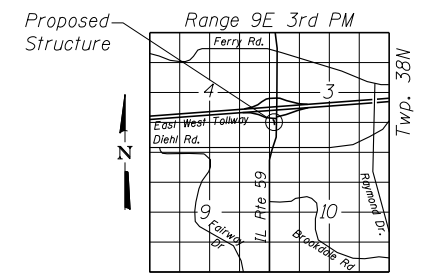


**PLAN**

Notes:  
 Offsets are measured to the front face of the wall.  
 Existing utilities including telephone to be adjusted or relocated as required.

End Wall  
 Sta. 4051+35.02, Offset 116.71' Lt. CL IL Rte 59 =  
 Sta. 813+40.32, Offset 94.62' Lt. SB IL Rte 59

Begin Wall  
 Sta. 4050+44.90, Offset 101.70' Lt. CL IL Rte 59 =  
 Sta. 812+47.39, Offset 84.28' Lt. SB IL Rte 59



**LOCATION SKETCH**

**GENERAL PLAN**  
**IL RTE 59 FAP RTE 338**  
**SECTION (112 & 113) WRS-5**  
**DUPAGE COUNTY**  
**STA. 4050+44.90 TO STA. 4051+35.02**  
**SN 022-W063**



USER NAME = SAW	DESIGNED - LAS	REVISED -
PLOT SCALE = 48.00' / IN.	CHECKED - DAZ	REVISED -
PLOT DATE = 10/18/2012	DRAWN - SAW	REVISED -
	CHECKED - JLA	REVISED -

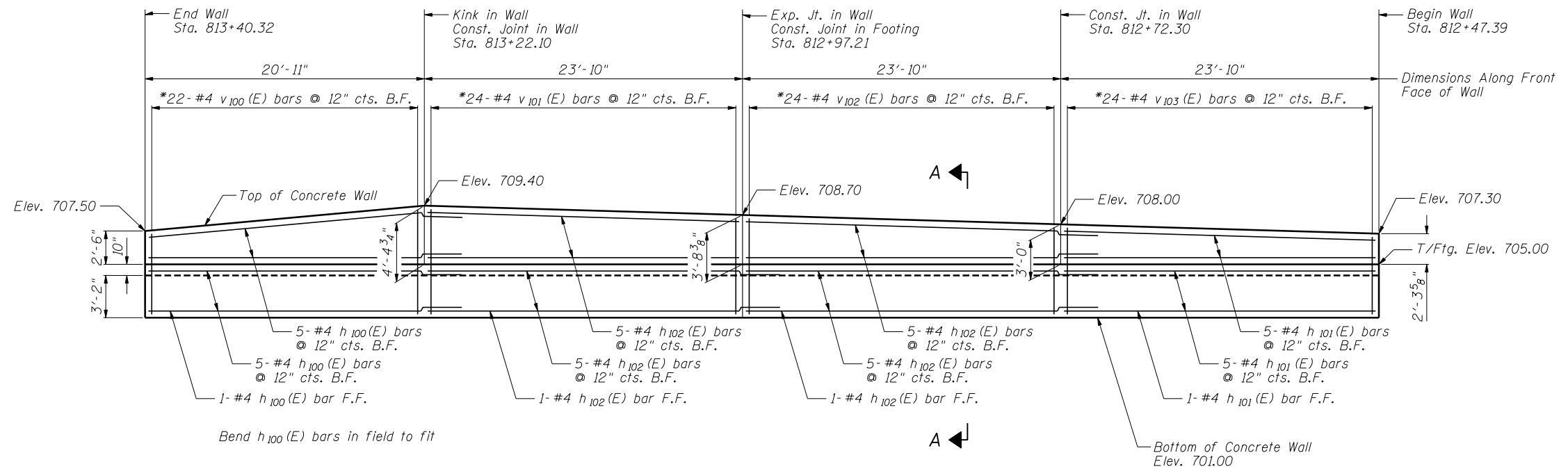
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**GENERAL PLAN**  
**STRUCTURE NUMBER 022-W063**

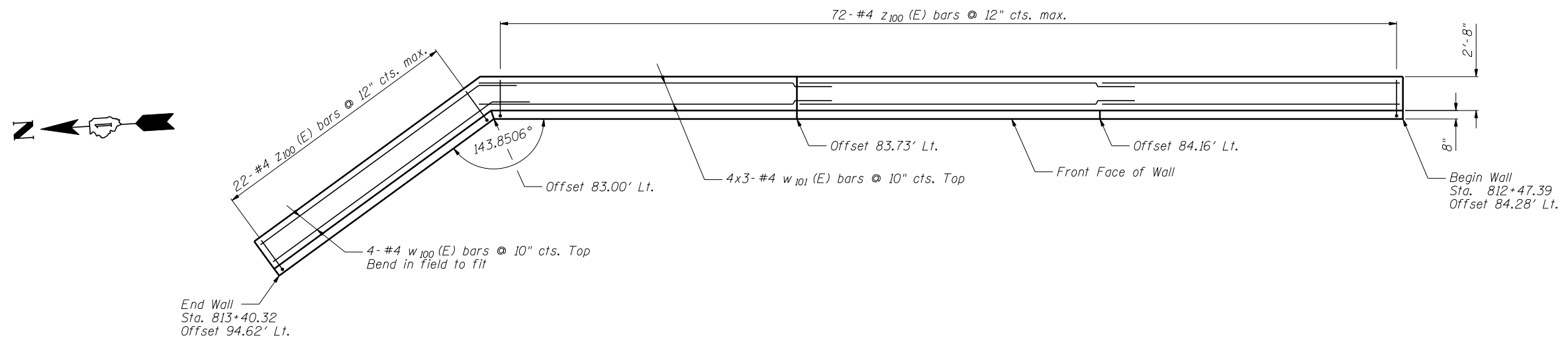
SHEET NO. SB-1 OF SB-4 SHEETS

F.A.P. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338/IL 59	(112 & 113) WRS-5	DUPAGE	963	648
CONTRACT NO. 60131				

ILLINOIS FED. AID PROJECT



ELEVATION



PLAN

Notes:

Minimum lap for #4 bar is 2'-11".

Bars indicated thus: 4x3-#4 etc. indicates 4 lines of bars with 3 lengths per line.

\* Signifies cut bar. Order per length on Bill of Material. Cut as shown in Cutting Diagram.

See Sheet SB-3 for Section A-A, Details and Bill of Material.

WALL PLAN AND ELEVATION  
SN 022-W063



Zroka Engineering, P.C.  
4216 North Hermitage  
Chicago, IL 60613

USER NAME = SAW	DESIGNED - LAS	REVISED -
	CHECKED - DAZ	REVISED -
PLOT SCALE = 10.0000' / IN.	DRAWN - SAW	REVISED -
PLOT DATE = 10/9/2012	CHECKED - JLA	REVISED -

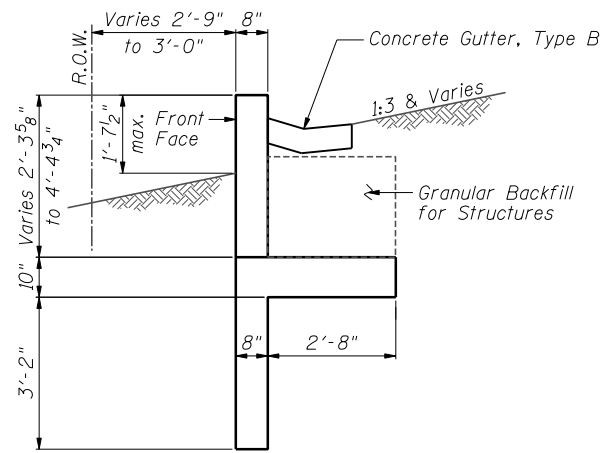
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

WALL PLAN AND ELEVATION  
STRUCTURE NUMBER 022-W063

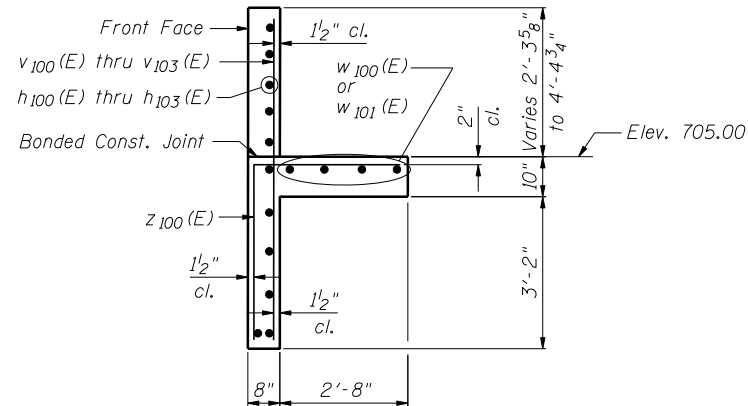
SHEET NO. SB-2 OF SB-4 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338/1L 59	(112 & 113) WRS-5	DUPAGE	963	649
			CONTRACT NO. 60131	
ILLINOIS FED. AID PROJECT				

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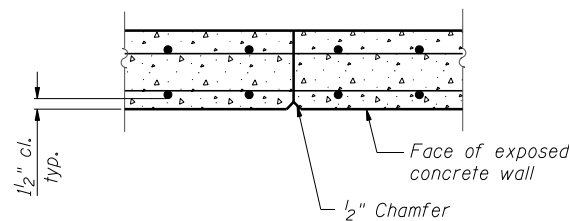
**TYPICAL SECTION**  
Sta. 812+47.39 to Sta. 813+40.32



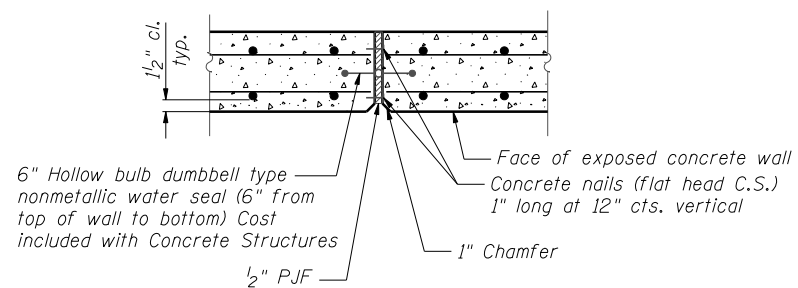
**SECTION A-A**  
Maximum Soil Bearing Pressure = 1,800 psf

**BILL OF MATERIAL**

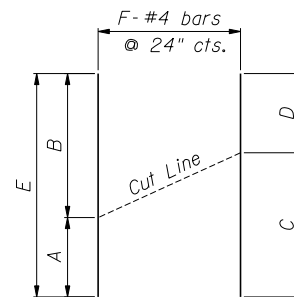
Bar	No.	Size	Length	Shape
h <sub>100</sub> (E)	11	#4	23'-10"	—
h <sub>101</sub> (E)	11	#4	23'-6"	—
h <sub>102</sub> (E)	22	#4	26'-9"	—
v <sub>100</sub> (E)	11	#4	14'-3"	—
v <sub>101</sub> (E)	12	#4	15'-5"	—
v <sub>102</sub> (E)	12	#4	14'-0"	—
v <sub>103</sub> (E)	12	#4	12'-7"	—
w <sub>100</sub> (E)	4	#4	24'-6"	—
w <sub>101</sub> (E)	12	#4	26'-2"	—
z <sub>100</sub> (E)	94	#4	6'-9"	└
Item		Unit	Quantity	
Concrete Structures		Cu. Yd.	24.4	
Reinforcement Bars, Epoxy Coated		Pound	1,880	
Granular Backfill for Structures		Cu. Yd.	31	



**CONSTRUCTION JOINT DETAIL**

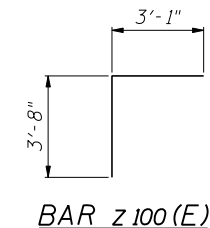


**EXPANSION JOINT DETAIL**



**CUTTING DIAGRAM**

Bar	A	B	C	D	E	F
v <sub>100</sub> (E)	6'-2"	8'-1"	7'-1"	7'-2"	14'-3"	11
v <sub>101</sub> (E)	8'-1"	7'-4"	7'-9"	7'-8"	15'-5"	12
v <sub>102</sub> (E)	7'-4"	6'-8"	7'-0"	7'-0"	14'-0"	12
v <sub>103</sub> (E)	6'-8"	5'-11"	6'-4"	6'-3"	12'-7"	12



**BAR z<sub>100</sub>(E)**

**WALL SECTION AND DETAILS**  
SN 022-W063

FILE NAME = ...E0131-W063-003-Details.dgn



USER NAME = SAW	DESIGNED - LAS	REVISED -
	CHECKED - DAZ	REVISED -
PLOT SCALE = 4.00' / IN.	DRAWN - SAW	REVISED -
PLOT DATE = 10/9/2012	CHECKED - JLA	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**WALL SECTION AND DETAILS**  
**STRUCTURE NUMBER 022-W063**

SHEET NO. SB-3 OF SB-4 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338/IL 59	(112 & 113) WRS-5	DUPAGE	963	650
			CONTRACT NO. 60131	

ILLINOIS FED. AID PROJECT

BORING LOG RW-80

**SOIL BORING LOG**

Geo Services, Inc.  
Geotechnical, Environmental & Civil Engineering  
805 Amberst Court, Suite 204  
Naperville, Illinois 60565  
(630) 353-2838

PAGE 1 of 1  
DATE 4/23/2012  
LOGGED BY RJ  
GSI JOB No. 09173

ROUTE II. Route 59 (FAP 338) DESCRIPTION Illinois Route 59-Aurora Avenue/New York Street To Ferry Road  
SECTION (112 & 113) WRS-5 LOCATION SEC. 3, 9-10, 15-16, 21-22 TWP. 38N, RNG. 9E, Naperville Township  
COUNTY DuPage DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. 022-W063  
Station: 4050+44.90 to 4051+35.02  
BORING NO. RW-80  
Station: 4050+42 IL RTE-59  
Offset: 116.4' Left  
Ground Surface Elev. 702.9

DEPTH (ft)	BLOWS	UNIT WEIGHT (pcf)	MOISTURE (%)	DESCRIPTION	DEPTH (ft)	BLOWS	UNIT WEIGHT (pcf)	MOISTURE (%)
0				4.0' TOPSOIL-dark brown to black	0			
3	99			CLAY-gray-very stiff (A-6)	3			130
4					4			
5	1.6B			SILTY CLAY-dark brown & gray-stiff (A-6) Wet	5			11
2	97			CLAY LOAM-gray-very stiff to hard (A-6)	6			
3					9			
3	1.4B				-25	12	4.0P	11
697.4								
3	113			CLAY-brown & gray-very stiff (A-6)	7			130
4					10			
5	2.25B				14	5.0B		10
694.9								
6					16			
11	NP			SILTY LOAM-brown & gray-medium dense (A-4)	13			
-10	NP				-30	14	NP	19
689.9								
6					11			
11				SAND-gray-medium dense to dense (A-3)	12	NP		16
12	NP							
3	120				10			
4					14			
6	2.8B			CLAY-gray-very stiff (A-6)	18	NP		14
-15					667.9	-35		
4	112			End Of Boring @ -35.0' Hollow Stem Augers CME Automatic Hammer				
5								
7	2.5B							
4	110							
5								
-20	3.5B				-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (S)-Shear, (P)-Penetrometer, (SI)-Shear Tube Sample, (VS)-Vane Shear Test. The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206). The Unit Dry Weight (pcf) is noted in Italics above moist (%). NR-No Recovery.

BORING LOG RW-81

**SOIL BORING LOG**

Geo Services, Inc.  
Geotechnical, Environmental & Civil Engineering  
805 Amberst Court, Suite 204  
Naperville, Illinois 60565  
(630) 353-2838

PAGE 1 of 1  
DATE 4/23/2012  
LOGGED BY RJ  
GSI JOB No. 09173

ROUTE II. Route 59 (FAP 338) DESCRIPTION Illinois Route 59-Aurora Avenue/New York Street To Ferry Road  
SECTION (112 & 113) WRS-5 LOCATION SEC. 3, 9-10, 15-16, 21-22 TWP. 38N, RNG. 9E, Naperville Township  
COUNTY DuPage DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. 022-W063  
Station: 4050+44.90 to 4051+35.02  
BORING NO. RW-81  
Station: 4051+25 IL RTE-59  
Offset: 132.9' Left  
Ground Surface Elev. 704.4

DEPTH (ft)	BLOWS	UNIT WEIGHT (pcf)	MOISTURE (%)	DESCRIPTION	DEPTH (ft)	BLOWS	UNIT WEIGHT (pcf)	MOISTURE (%)
0				6.0' TOPSOIL-black	0			
7				SILTY CLAY LOAM-brown & gray-medium dense (A-4)	6			
8					8			
7				CLAY-gray-stiff to very stiff (A-6)	10	3.75P		18
701.4								
5	112			CLAY-brown & gray-very stiff (A-6)	7			
6					9			
5	2.3B				-25	11	4.0P	11
698.9								
5				SANDY LOAM-brown-medium dense (A-2)	11			133
8					13			
10	NP				15	5.8B		10
696.4								
6				SAND & GRAVEL-brown-medium dense (A-1)	12			
8					16			
-10	NP			SAND & GRAVEL-gray-dense (A-1)	-30	18	NP	6
693.9								
5	117				6			
7					7			
8	2.4B			SAND-gray-dense (A-3)	13			
6	116				16			
8				CLAY-gray-stiff to very stiff (A-6)	18	NP		20
-15					669.4	-35		
4	108			End Of Boring @ -35.0' Hollow Stem Augers CME Automatic Hammer				
4								
7	2.2B							
3	106							
4								
-20	1.6B				-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (S)-Shear, (P)-Penetrometer, (SI)-Shear Tube Sample, (VS)-Vane Shear Test. The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206). The Unit Dry Weight (pcf) is noted in Italics above moist (%). NR-No Recovery.

SOIL BORING LOGS  
SN 022-W063

FILE NAME = ...E0131-W063-004-BoringLog.dgn



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CHECKED - DAZ	REVISIONS -	
PLOT SCALE = 2.00' / IN.	DRAWN - SAW	REVISED -
PLOT DATE = 10/9/2012	CHECKED - JLA	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS  
STRUCTURE NUMBER 022-W063

SHEET NO. SB-4 OF SB-4 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338/IL 59	(112 & 113) WRS-5	DUPAGE	963	651
				CONTRACT NO. 60131

ILLINOIS FED. AID PROJECT

Bench Mark: BM #224 4059+52, 34' LT  
 DuPage County survey disk at north end of the west bridge wall,  
 IL Rte 59 over Interstate Route 88, Elev. 731.43

Existing Structure: None

**INDEX OF DRAWINGS**

SHT NO.	TITLE
SC-01	General Plan and Elevation
SC-02	Total Bill of Material & Miscellaneous Details
SC-03	Plan & Elevation - Panels A & B
SC-04	Plan & Elevation - Panels C & D
SC-05	Plan & Elevation - Panels E, F & G
SC-06	Wall Sections and Details
SC-07	Architectural Finish and Joint Details
SC-08	Pile Splice Details
SC-09	Soil Boring Logs
SC-10	Soil Boring Logs

**CURVE DATA**

Curve 59INTNB-2	Curve 59INTNB-3
$\Delta = 2^\circ 52' 51''$ (LT)	$\Delta = 20^\circ 56' 44''$ (LT)
$D = 0^\circ 43' 15''$	$D = 17^\circ 09' 16''$
$R = 7,947.84'$	$R = 334.00'$
$T = 199.84'$	$T = 61.74'$
$L = 399.60'$	$L = 122.10'$
$E = 2.51'$	$E = 5.66'$
SE = Normal Crown	SE = Normal Crown
PC STA. 910+05.72	PC STA. 914+05.32
PT STA. 914+05.32	PT STA. 915+27.42
PI STA. 912+05.56	PI STA. 914+67.06

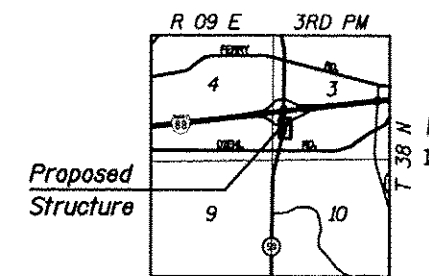
**Wall W064**  
 (Offsets from NB IL Rte. 59 to F.F. of wall)

POT "A"	Sta. 0+00.00 - Wall W064 =	Sta. 910+90.92, 76.47' Rt. - NB IL Rte. 59
POT "B"	Sta. 2+11.67 - Wall W064 =	Sta. 912+99.17, 98.36' Rt. - NB IL Rte. 59
POT "C"	Sta. 3+40.50 - Wall W064 =	Sta. 914+21.95, 89.45' Rt. - NB IL Rte. 59
POT "D"	Sta. 3+85.00 - Wall W064 =	Sta. 914+50.66, 113.55' Rt. - NB IL Rte. 59
POT "E"	Sta. 4+33.50 - Wall W064 =	Sta. 914+66.86, 156.40' Rt. - NB IL Rte. 59

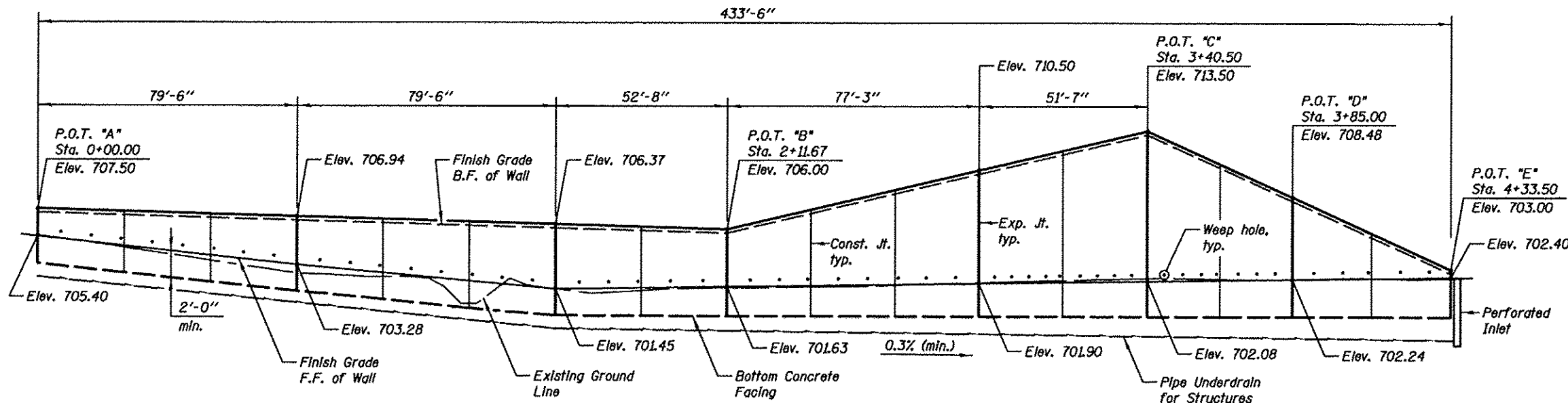
**DESIGN STRESSES**

**FIELD UNITS**

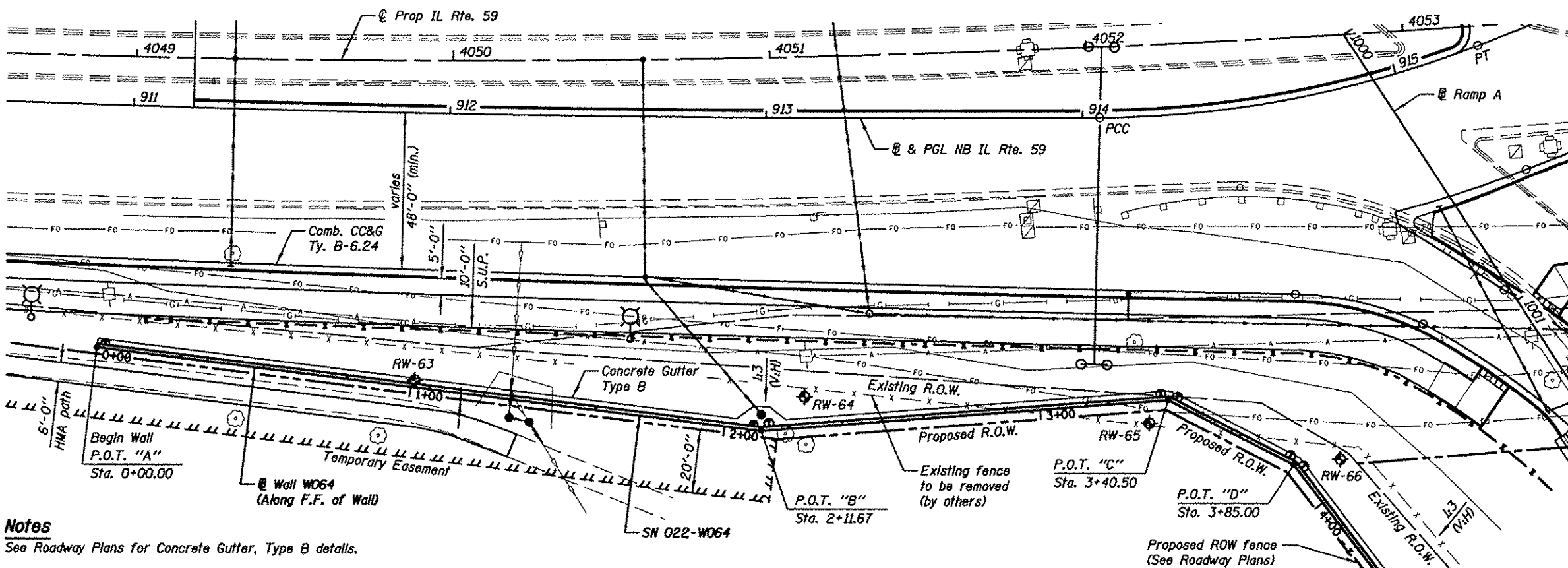
$f_c = 3,500$  psi  
 $f_y = 60,000$  psi (reinforcement)  
 $f_y = 50,000$  psi (AASHTO M270 Gr. 50)



**GENERAL PLAN AND ELEVATION**  
 ILLINOIS ROUTE 59 F.A.P. RTE. 338  
 SEC. (112 & 113) WRS-5  
 DUPAGE COUNTY  
 STA. 4048+90 TO STA. 4052+85  
 STRUCTURE NO. 022-W064



**ELEVATION**



**PLAN**

**APPROVED**  
 For Structural Adequacy Only

*S. Carl Dwyer*  
 Engineer of Bridges & Structures



Expires 11-30-2012  
 Date: 10/15/2012  
 for drawings SC-01 thru SC-10

**DESIGN SPECIFICATIONS**

2012 AASHTO LRFD Bridge Design Specifications  
 6th Edition, with 2012 Interim Revisions

**Notes**

- See Roadway Plans for Concrete Gutter, Type B details.
- See Roadway Drainage Plans for Drainage Structure Locations.
- Existing utilities, including gas, fiber optic and electric aerial lines to be adjusted or relocated as required.
- Piles may need to be spliced to avoid existing or relocated aerial lines. See Sheet SC-08 for pile splice detail. Cost of pile splicing shall be included in the cost of Furnishing Solder Piles.

**Legend**

- ◆ Soil Borings
- F.F. Front Face
- B.F. Back Face
- S.U.P. Shared Use Path

**KNIGHT**  
 Engineers & Architects

DESIGNED	TB	REVISIONS	
CHECKED	WPM	REVISIONS	
DRAWN	TB	REVISIONS	
CHECKED	WPM	REVISIONS	

SCALE	NONE
DATE	10/15/2012

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

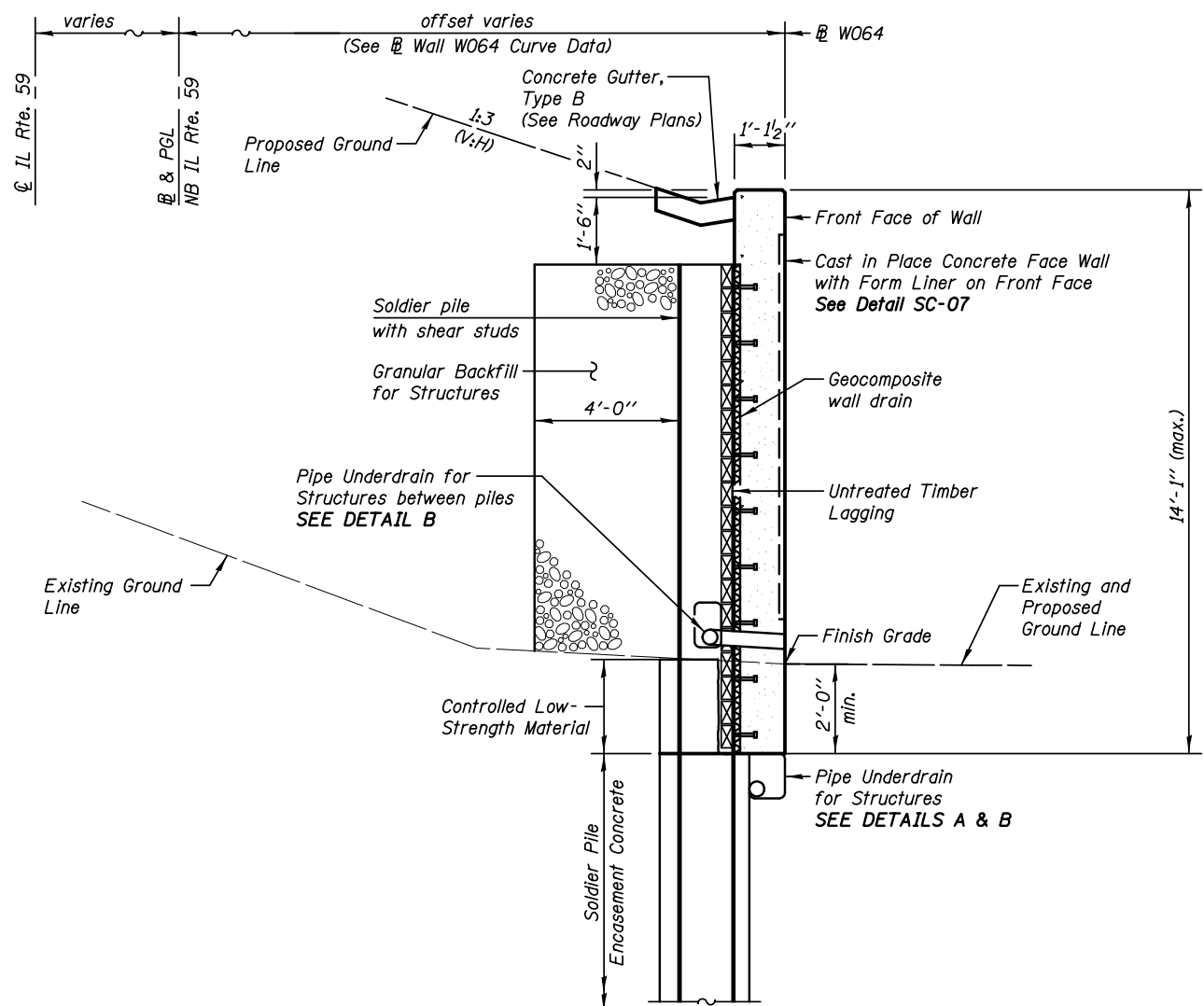
GENERAL PLAN AND ELEVATION  
 STRUCTURE NUMBER 022-W064

SHEET NO. SC-01 OF 10 SHEETS

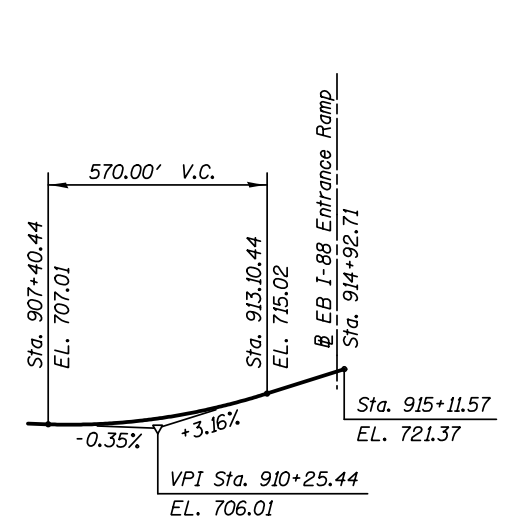
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	(112 & 113) WRS-5	DUPAGE	963	652

CONTRACT NO. 60131  
 ILLINOIS FED. AID PROJECT

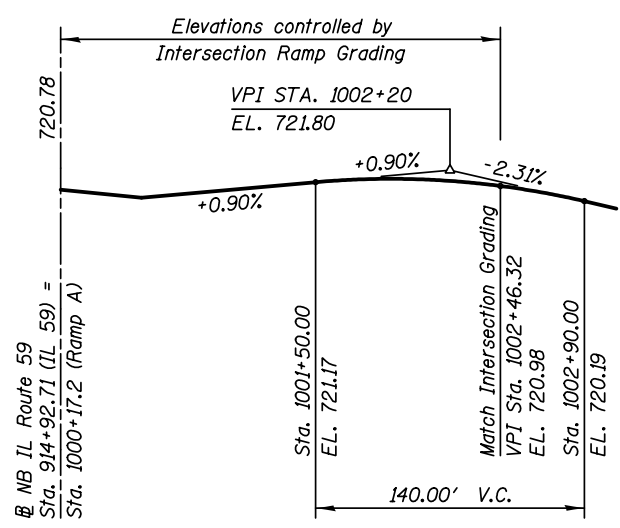




**TYPICAL WALL SECTION**  
(For Details See Sheet SC-06)



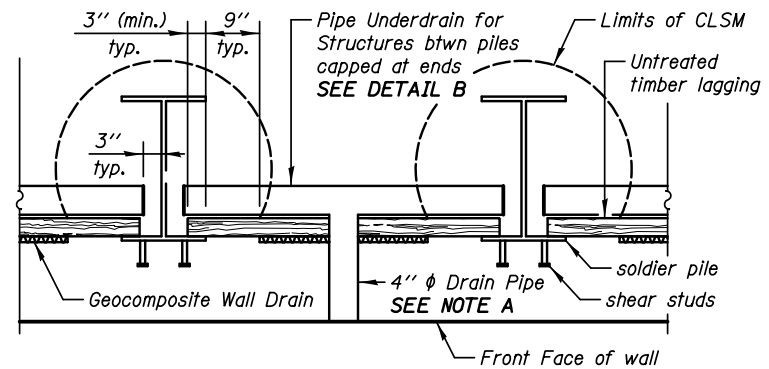
**NB IL ROUTE 59 - PROPOSED PROFILE GRADE LINE**



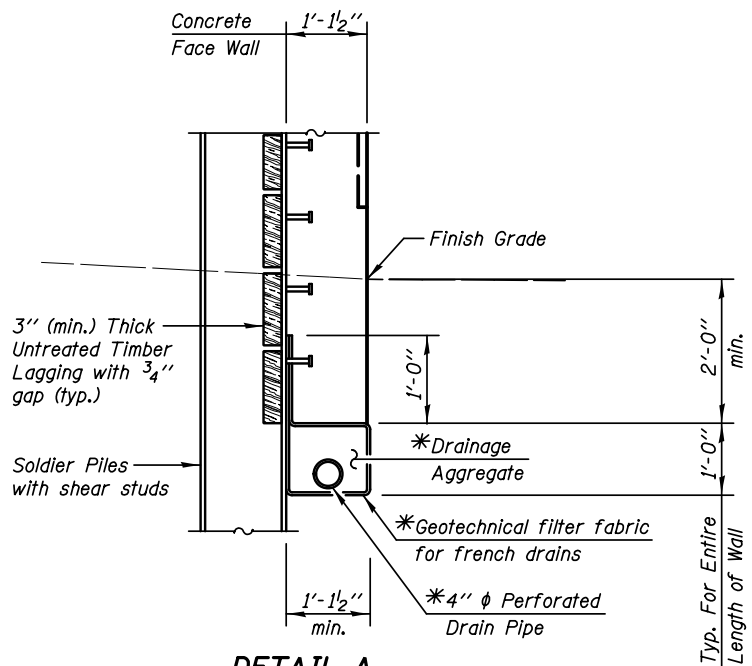
**RAMP A - PROPOSED PROFILE GRADE LINE**

**GENERAL NOTES**  
All structural steel shall conform to the requirements of AASHTO M 270 Grade 50 except as noted on plans.  
Reinforcement bars designated (E) shall be epoxy coated.  
The Contractor is responsible for the design and performance of the timber lagging using no less than a 3 in. nominal rough-sawn thickness and timber with a minimum allowable bending stress of 1000 psi.  
Concrete Sealer shall be applied to exposed surfaces of the front face, top face and back face of wall.

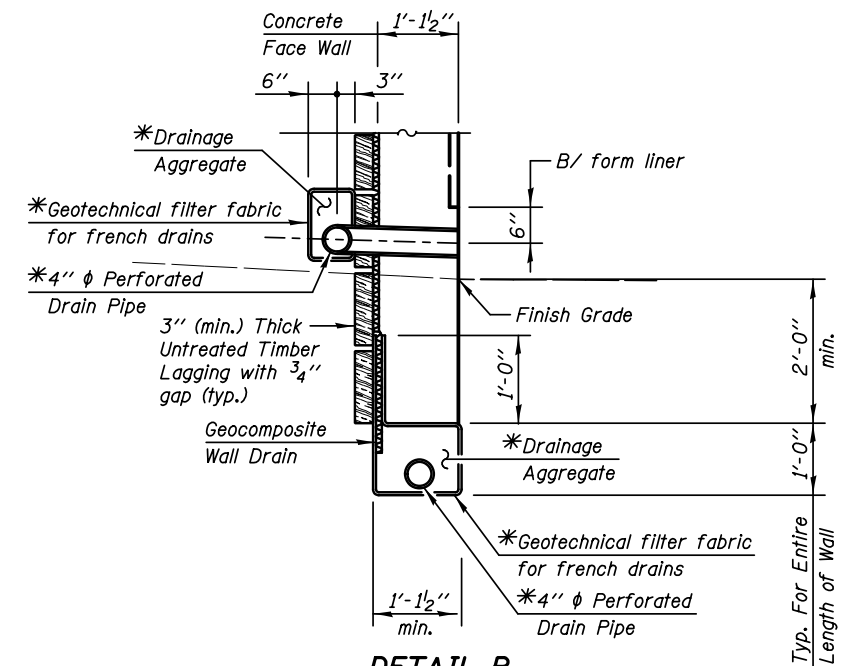
**NOTE A**  
One (1) 4" drain pipe shall be placed at each pile space, centered between the piles and capped at each end. Cost included in the cost of "Pipe Underdrains for Structures".



**BEHIND WALL UNDERDRAIN DETAILS**



**DETAIL A**  
(At Soldier Piles)



**DETAIL B**  
(Between Soldier Piles)

**UNDERDRAIN DETAIL**  
\*Cost Included with "Pipe Underdrains for Structures"

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Structure Excavation	Cu. Yd.	115.0
Concrete Structures	Cu. Yd.	150.0
Form Liner Textured Surface	Sq. Ft.	1555.0
Stud Shear Connectors	Each	650
Reinforcement Bars, Epoxy Coated	Pound	13680
Concrete Sealer	Sq. Ft.	3011.0
Geocomposite Wall Drain	Sq. Yd.	306.0
Untreated Timber Lagging	Sq. Ft.	2746.0
Furnishing Soldier Piles (HP Section)	Foot	546.0
Furnishing Soldier Piles (W Section)	Foot	1004.0
Pipe Underdrains for Structures 4"	Foot	923.0
Drilling And Setting Soldier Piles (In Soil)	Cu. Ft.	8519.0
Granular Backfill For Structures	Cu. Yd.	261.0

<b>KNIGHT</b> Engineers & Architects	DESIGNED - TB	REVISED
	CHECKED - WPM	REVISED
	SCALE - NONE	REVISED
	DATE - 10/15/2012	REVISED

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**TOTAL BILL OF MATERIAL & MISCELLANEOUS DETAILS**  
**STRUCTURE NUMBER 022-W064**  
SHEET NO. SC-02 OF 10 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	(112 & 113) WRS-5	DUPAGE	963	653
CONTRACT NO. 60131				
ILLINOIS FED. AID PROJECT				

**Note:**  
For Top/Wall Elevations, Bottom/Wall Elevations & Wall Height SEE TABLE.

**PILE DATA**

Pile No.	Top Elev.	Bottom Elev.	Length Ft.	No of Studs
PA-1	705.81	684.81	21.00	6
PA-2	705.75	684.75	21.00	6
PA-3	705.68	684.68	21.00	6
PA-4	705.61	683.61	22.00	6
PA-5	705.55	683.55	22.00	6
PA-6	705.49	683.49	22.00	6
PA-7	705.42	683.42	22.00	8
PA-8	705.35	683.35	22.00	8
PA-9	705.29	683.29	22.00	8
PB-1	705.25	682.25	23.00	8
PB-2	705.19	682.19	23.00	8
PB-3	705.12	682.12	23.00	8
PB-4	705.05	682.05	23.00	8
PB-5	704.99	681.99	23.00	8
PB-6	704.92	681.92	23.00	8
PB-7	704.85	681.85	23.00	8
PB-8	704.78	680.78	24.00	10
PB-9	704.72	680.72	24.00	10

**SHAFT SIZES**

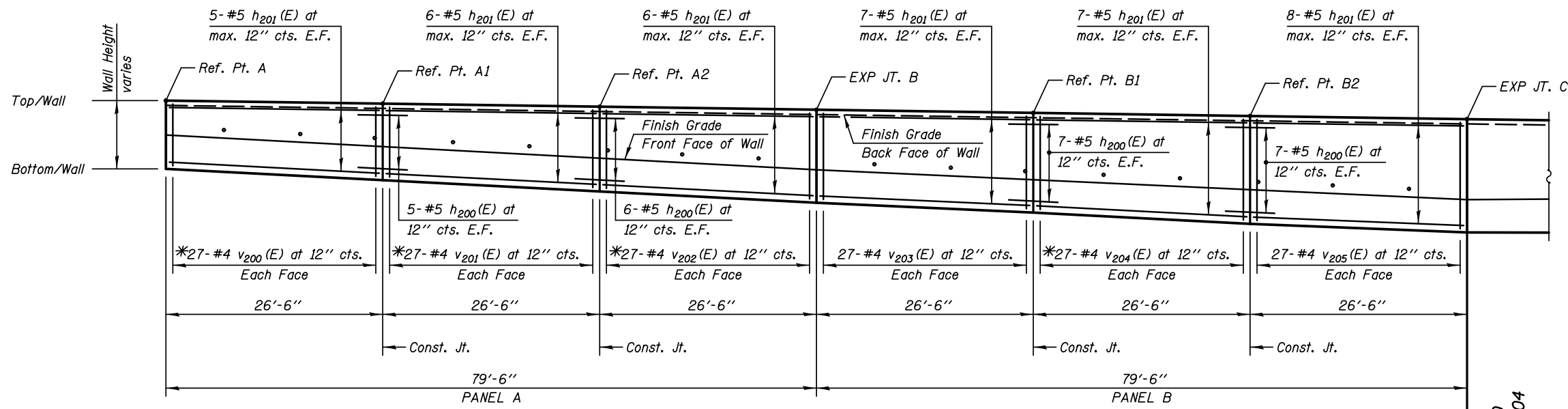
Pile Size	Shaft Excavation Size
HP14	2'-6"
W24	3'-0"

**LEGEND**

E.F. Each Face

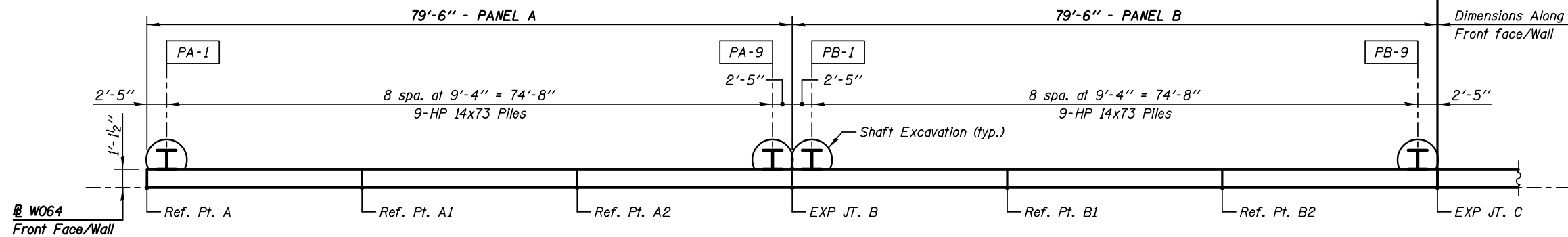
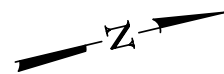
**Min Bar Laps**

#5 Bars = 2'-5" (Horiz. Top Bars)



**ELEVATION - EAST FACE**  
(Looking West)

MATCH LINE  
STA. 1+59.00  
SEE SHT. SC-04



**PLAN**  
(PANELS A & B)

**WALL JOINT LOCATIONS, HEIGHTS & ELEVATIONS**

Location Ref. Points	Station on W064	Wall Height	Top/Wall Elevation	Bottom/Wall Elevation	Finish Grade Elev.	Bott/Liner Elev. **
Begin Wall - A	0+00.00	4'-2"	707.50	703.33	705.40	706.40
C.J. - A1	0+26.50	4'-8"	707.31	702.64	704.69	705.69
C.J. - A2	0+53.00	5'-2"	707.13	701.96	703.99	704.99
Exp. Jt. - B	0+79.50	5'-8"	706.94	701.27	703.28	704.28
C.J. - B1	1+06.00	6'-1"	706.75	700.67	702.67	703.67
C.J. - B2	1+32.50	6'-7"	706.56	699.98	702.06	703.06
Exp. Jt. - C	1+59.00	6'-11"	706.37	699.45	701.45	702.45

**Notes**

All Dimensions are along Front Face of Wall.

For Typical Sections & Bill of Material, SEE Sheet SC-06

\*See Bar Cutting Diagram Sheet SC-06

\*\*Bottom of Form Liner Elevations are 1'-0" (1.0') higher than Finish Grade Elevations.

**KNIGHT**  
Engineers & Architects

DESIGNED - TB	REVISIONS
CHECKED - WPM	REVISIONS
DRAWN - TB	REVISIONS
CHECKED - WPM	REVISIONS

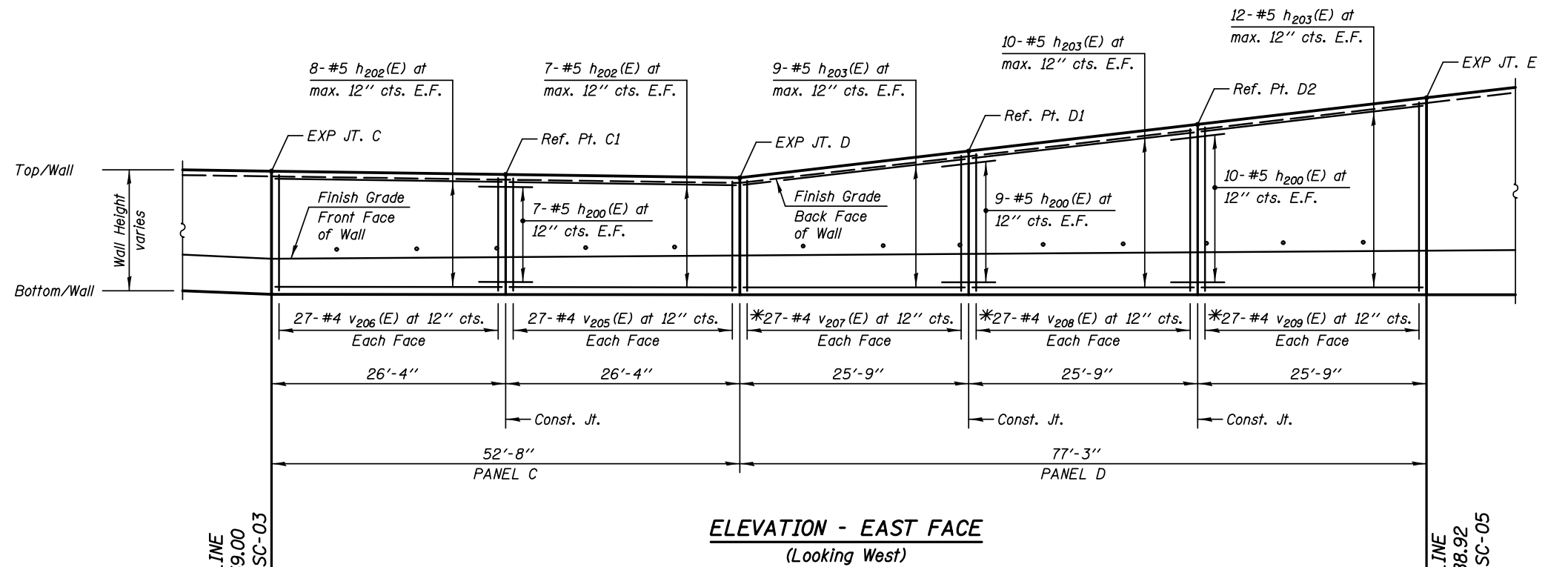
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PLAN & ELEVATION - PANELS A & B  
STRUCTURE NUMBER 022-W064

SHEET NO. SC-03 OF 10 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	(112 & 113) WRS-5	DUPAGE	963	654
CONTRACT NO. 60131				
ILLINOIS FED. AID PROJECT				

Note:  
For Top/Wall Elevations, Bottom/Wall Elevations & Wall Height SEE TABLE.



**PILE DATA:**

Pile No.	Top Elev.	Bottom Elev.	Length Ft.	No of Studs
PC-1	704.68	680.68	24.00	10
PC-2	704.62	680.62	24.00	10
PC-3	704.55	680.55	24.00	10
PC-4	704.49	680.49	24.00	10
PC-5	704.42	681.42	23.00	10
PC-6	704.35	681.35	23.00	10
PD-1	704.48	681.48	23.00	10
PD-2	705.01	681.01	24.00	10
PD-3	705.53	680.53	25.00	10
PD-4	706.06	680.06	26.00	12
PD-5	706.58	679.58	27.00	12
PD-6	707.10	679.10	28.00	12
PD-7	707.63	677.63	30.00	14
PD-8	708.15	677.15	31.00	14
PD-9	708.68	675.68	33.00	14

**SHAFT SIZES**

Pile Size	Shaft Excavation Size
HP14	2'-6"
W24	3'-0"

**Notes**

All Dimensions are along Front Face of Wall.

For Typical Sections & Bill of Material, SEE Sheet SC-06

\*See Bar Cutting Diagram Sheet SC-06

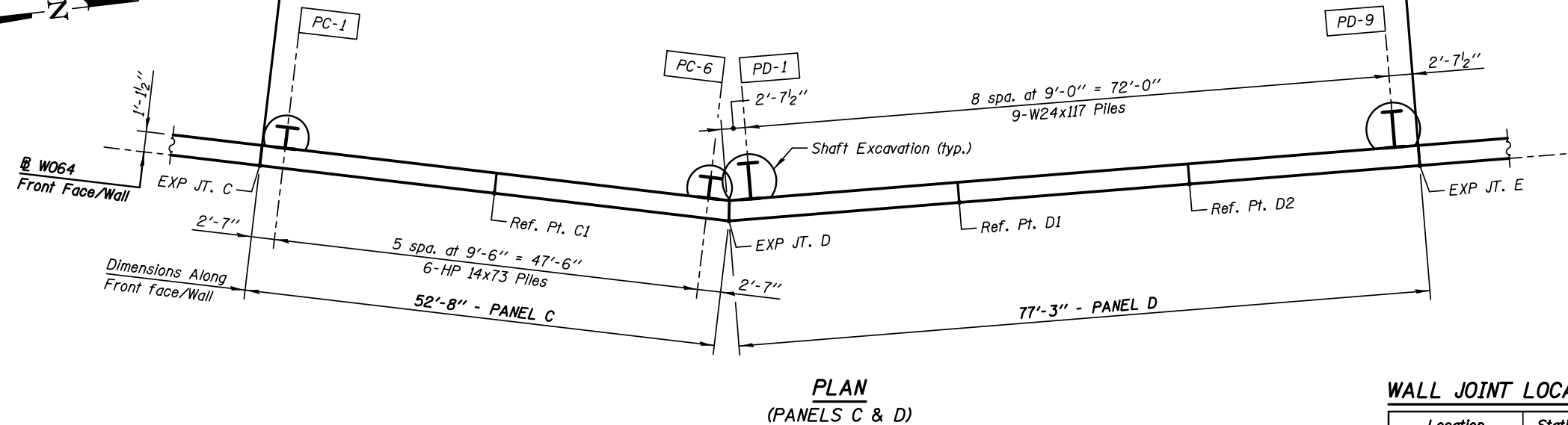
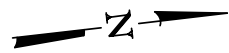
\*\*Bottom of Form Liner Elevations are 1'-0" (1.0') higher than Finish Grade Elevations.

**LEGEND**

E.F. Each Face

**Min Bar Laps**

#5 Bars = 2'-5" (Horiz. Top Bars)



**WALL JOINT LOCATIONS, HEIGHTS & ELEVATIONS**

Location Ref. Points	Station on W064	Wall Height	Top/Wall Elevation	Bottom/Wall Elevation	Finish Grade Elev.	Bottom/Liner Elev.**
Exp. Jt. - C	1+59.00	6'-11"	706.37	699.45	701.45	702.45
C.J. - C1	1+85.33	6'-9"	706.19	699.44	701.54	702.54
Exp. Jt. - D	2+11.67	6'-7"	706.00	699.42	701.63	702.63
C.J. - D1	2+37.42	8'-1"	707.50	699.42	701.72	702.72
C.J. - D2	2+63.17	9'-7"	709.00	699.42	701.81	702.81
Exp. Jt. - E	2+88.92	11'-1"	710.50	699.42	701.90	702.90

**KNIGHT**  
Engineers & Architects

DESIGNED - TB	REVISIONS
CHECKED - WPM	REVISIONS
DRAWN - TB	REVISIONS
CHECKED - WPM	REVISIONS

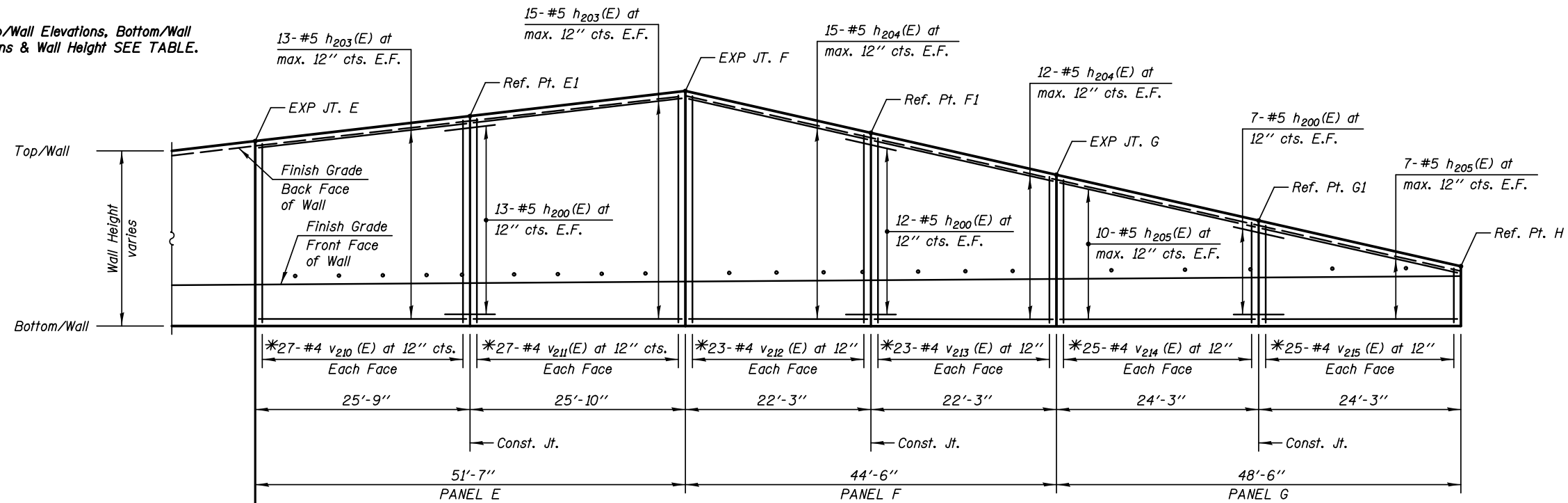
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PLAN & ELEVATION - PANELS C & D  
STRUCTURE NUMBER 022-W064

SHEET NO. SC-04 OF 10 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	(112 & 113) WRS-5	DUPAGE	963	655
CONTRACT NO. 60131				
ILLINOIS FED. AID PROJECT				

**Note:**  
For Top/Wall Elevations, Bottom/Wall Elevations & Wall Height SEE TABLE.



**PILE DATA:**

Pile No.	Top Elev.	Bottom Elev.	Length Ft.	No of Studs
PE-1	708.96	675.96	33.00	16
PE-2	709.26	675.26	34.00	16
PE-3	709.57	675.57	34.00	16
PE-4	709.87	674.87	35.00	16
PE-5	710.18	674.18	36.00	16
PE-6	710.48	674.48	36.00	18
PE-7	710.79	673.79	37.00	18
PE-8	711.09	673.09	38.00	18
PE-9	711.40	673.40	38.00	18
PE-10	711.70	672.70	39.00	18
PF-1	711.56	672.56	39.00	18
PF-2	710.92	673.92	37.00	18
PF-3	710.28	674.28	36.00	16
PF-4	709.64	675.64	34.00	16
PF-5	709.00	676.00	33.00	16
PF-6	708.36	677.36	31.00	14
PF-7	707.72	678.72	29.00	14
PF-8	707.08	679.08	28.00	12
PG-1	706.57	679.57	27.00	12
PG-2	705.57	681.57	24.00	10
PG-3	704.57	682.57	22.00	10
PG-4	703.57	683.57	20.00	8
PG-5	702.57	683.57	19.00	6
PG-6	701.57	683.57	18.00	6

**SHAFT SIZES**

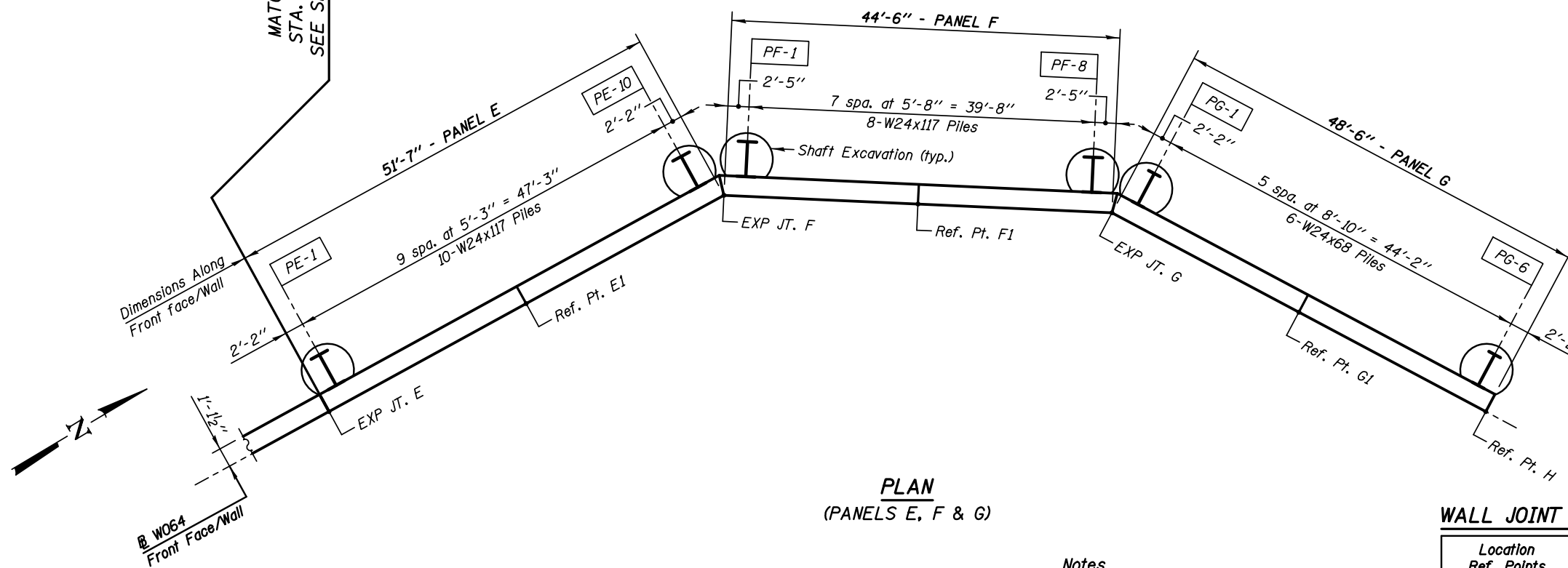
Pile Size	Shaft Excavation Size
HP14	2'-6"
W24	3'-0"

**LEGEND**

E.F. Each Face

**Min Bar Laps**

#5 Bars = 2'-5" (Horiz. Top Bars)



**Notes**

All Dimensions are along Front Face of Wall.

For Typical Sections & Bill of Material, SEE Sheet SC-06

\*See Bar Cutting Diagram Sheet SC-06

\*\*Bottom of Form Liner Elevations are 1'-0" (1.0') higher than Finish Grade Elevations.

**WALL JOINT LOCATIONS, HEIGHTS & ELEVATIONS**

Location Ref. Points	Station on W064	Wall Height	Top/Wall Elevation	Bottom/Wall Elevation	Finish Grade Elev.	Bott/Liner Elev. **
Exp. Jt. - E	2+88.92	11'-1"	710.50	699.42	701.90	702.90
C.J. - E1	3+14.67	12'-7"	712.00	699.42	701.99	702.99
Exp. Jt. - F	3+40.50	14'-1"	713.50	699.42	702.08	703.08
C.J. - F1	3+62.75	11'-7"	710.99	699.41	702.16	703.16
Exp. Jt. - G	3+85.00	9'-1"	708.48	699.40	702.24	703.24
C.J. - G1	4+09.25	6'-4"	705.74	699.41	702.32	703.32
End Wall - H	4+33.50	3'-7"	703.00	699.42	702.40	703.40

**KNIGHT**  
Engineers & Architects

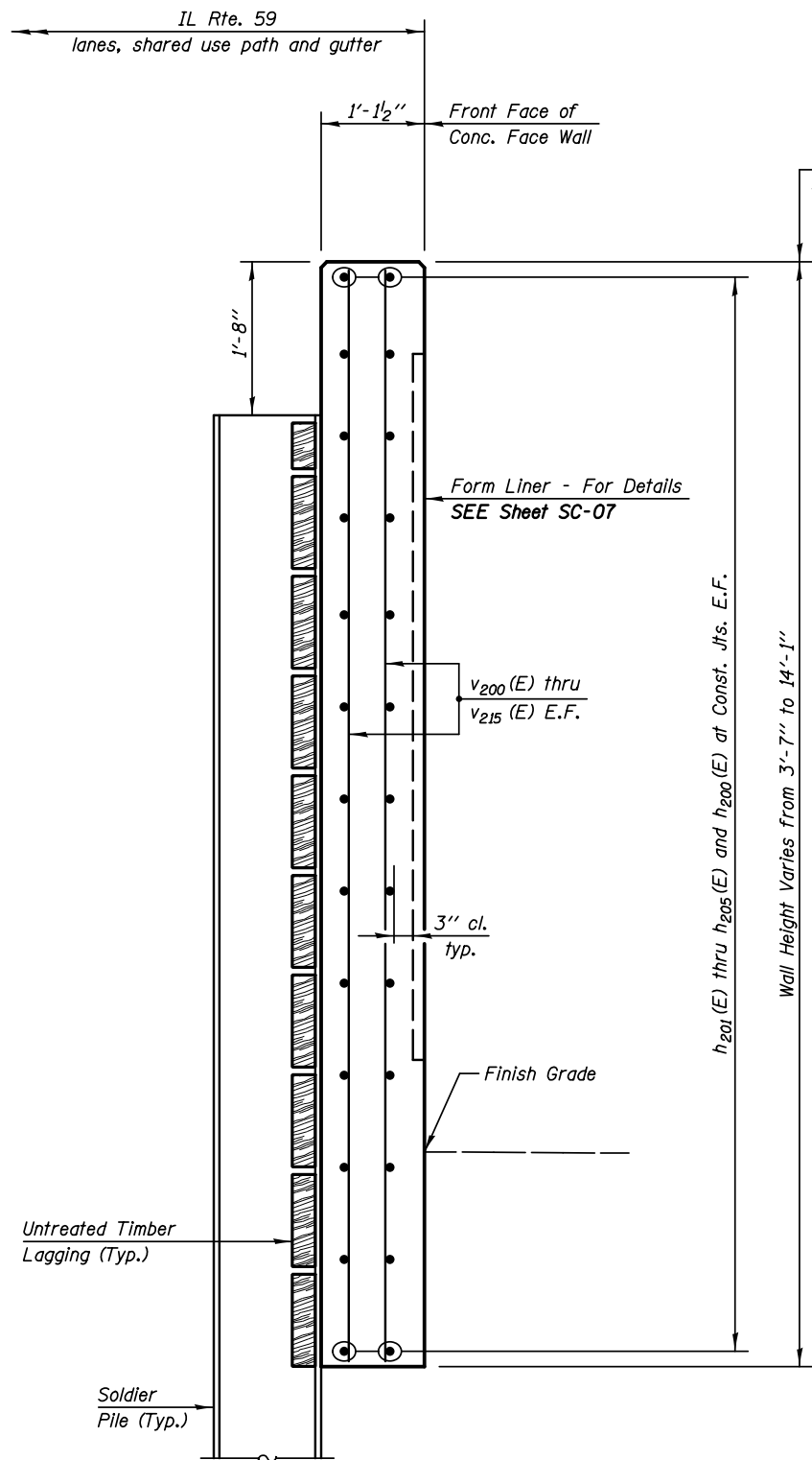
DESIGNED - TB	REVISIONS
CHECKED - WPM	REVISIONS
DRAWN - TB	REVISIONS
CHECKED - WPM	REVISIONS

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

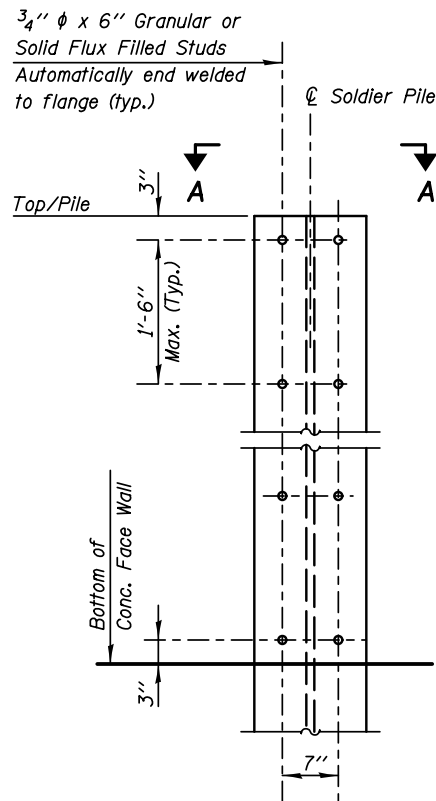
PLAN & ELEVATION - PANELS E, F & G  
STRUCTURE NUMBER 022-W064

SHEET NO. SC-05 OF 10 SHEETS

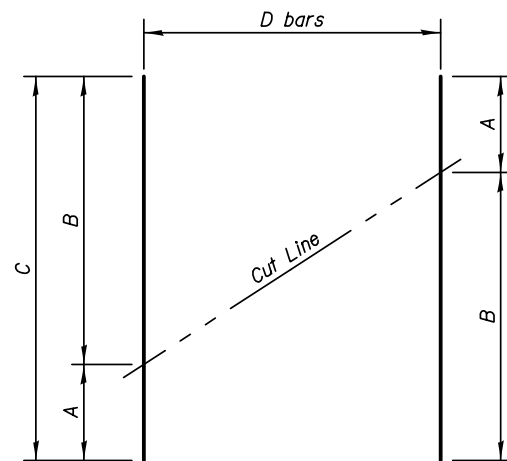
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	(112 & 113) WRS-5	DUPAGE	963	656
CONTRACT NO. 60131				
ILLINOIS FED. AID PROJECT				



**TYPICAL WALL SECTION**

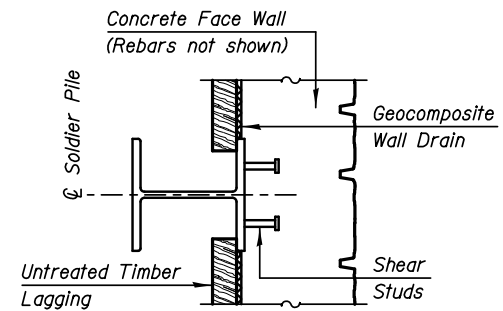


**STUD SHEAR CONNECTORS LAYOUT**



**BAR CUTTING DIAGRAM**

Order bars full length. Cut as shown and use remainder of bars in opposite face.



**SECTION A-A - PLAN**

BAR	A	B	C	D
v200(E)	3'-10"	4'-4"	8'-2"	27
v201(E)	4'-4"	4'-10"	9'-2"	27
v202(E)	4'-10"	5'-4"	10'-2"	27
v204(E)	5'-9"	6'-3"	12'-0"	27
v207(E)	6'-3"	7'-9"	14'-0"	27
v208(E)	7'-9"	9'-3"	17'-0"	27
v209(E)	9'-3"	10'-9"	20'-0"	27
v210(E)	10'-9"	12'-3"	23'-0"	27
v211(E)	12'-3"	13'-9"	26'-0"	27
v212(E)	13'-9"	11'-3"	25'-0"	23
v213(E)	11'-3"	8'-9"	20'-0"	23
v214(E)	8'-9"	6'-0"	14'-9"	25
v215(E)	6'-0"	3'-3"	9'-3"	25

**BILL OF MATERIAL**

BAR	NO.	SIZE	LENGTH	SHAPE
h200(E)	166	#5	6'-0"	————
h201(E)	78	#5	26'-2"	————
h202(E)	30	#5	26'-0"	————
h203(E)	118	#5	25'-5"	————
h204(E)	54	#5	21'-11"	————
h205(E)	34	#5	23'-11"	————
v200(E)	27	#4	8'-2"	————
v201(E)	27	#4	9'-2"	————
v202(E)	27	#4	10'-2"	————
v203(E)	54	#4	5'-4"	————
v204(E)	27	#4	12'-0"	————
v205(E)	108	#4	6'-3"	————
v206(E)	54	#4	6'-5"	————
v207(E)	27	#4	14'-0"	————
v208(E)	27	#4	17'-0"	————
v209(E)	27	#4	20'-0"	————
v210(E)	27	#4	23'-0"	————
v211(E)	27	#4	26'-0"	————
v212(E)	23	#4	25'-0"	————
v213(E)	23	#4	20'-0"	————
v214(E)	25	#4	14'-9"	————
v215(E)	25	#4	9'-3"	————
Structure Excavation			Cu. Yd.	115.0
Concrete Structures			Cu. Yd.	150.0
Form Liner Textured Surface			Sq. Ft.	1555.0
Concrete Sealer			Sq. Ft.	3011.0
Stud Shear Connectors			Each	650
Reinforcement Bars, Epoxy Coated			Pound	13680
Drilling and Setting Soldier Piles (In Soil)			Cu. Ft.	8519.0
Furnishing Soldier Piles (HP14x73)			Foot	546.0
Furnishing Soldier Piles (W24x68)			Foot	130.0
Furnishing Soldier Piles (W24x117)			Foot	874.0

**LEGEND:**  
E.F. Each Face

**KNIGHT**  
Engineers & Architects

DESIGNED - TB  
CHECKED - WPM  
SCALE - NONE  
DATE - 10/15/2012

REVIS  
REVISED  
DRAWN - TB  
CHECKED - WPM

REVIS  
REVISED  
REVISED  
REVISED

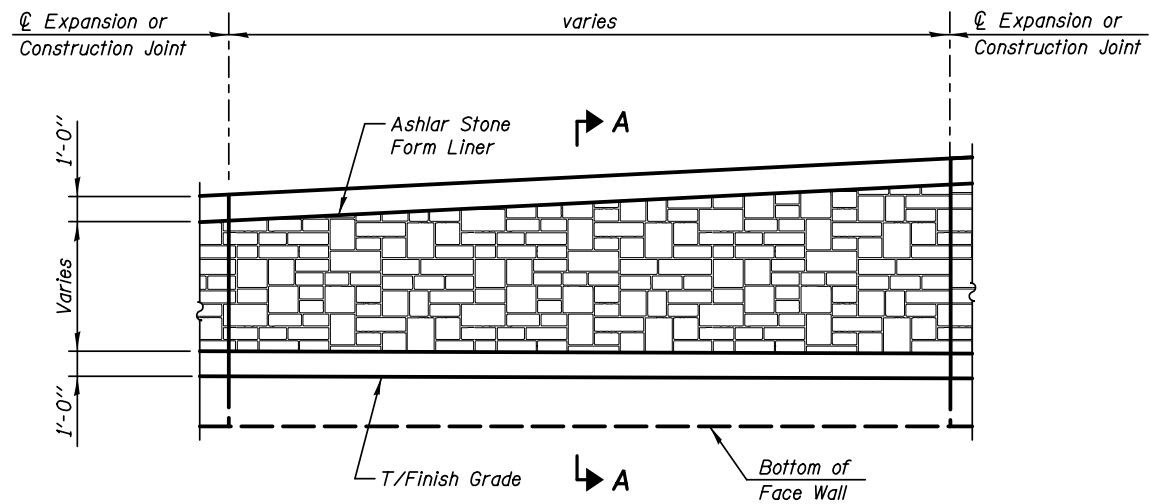
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**WALL SECTIONS AND DETAILS  
STRUCTURE NUMBER 022-W064**

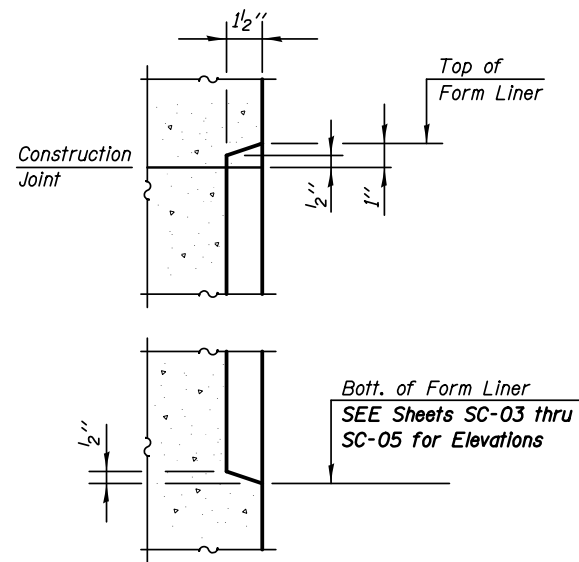
SHEET NO. SC-06 OF 10 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	(112 & 113) WRS-5	DUPAGE	963	657
CONTRACT NO. 60131				

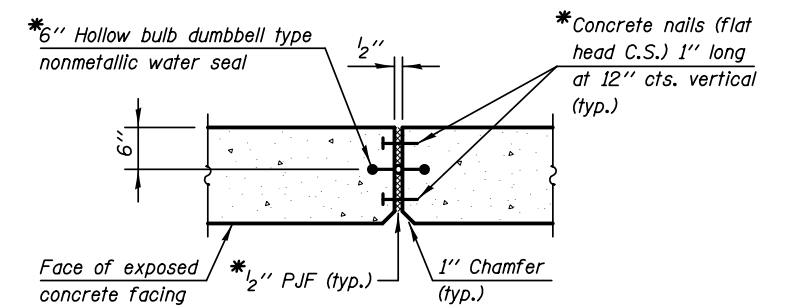
ILLINOIS FED. AID PROJECT



**INSIDE ELEVATION - FORM LINER**

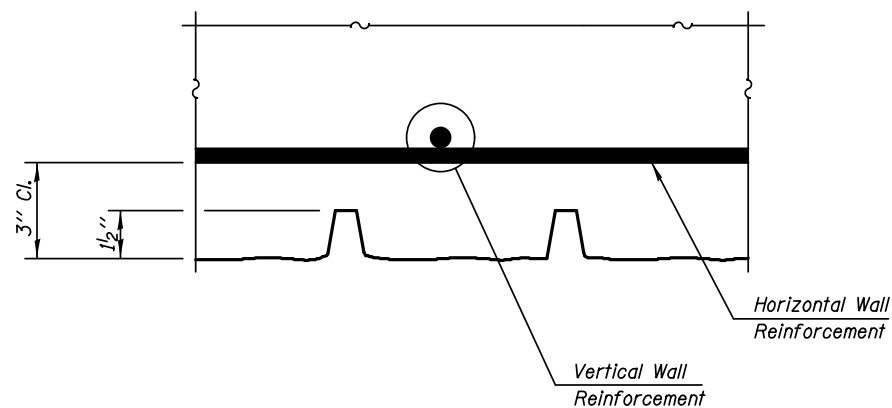


**SECTION A-A**

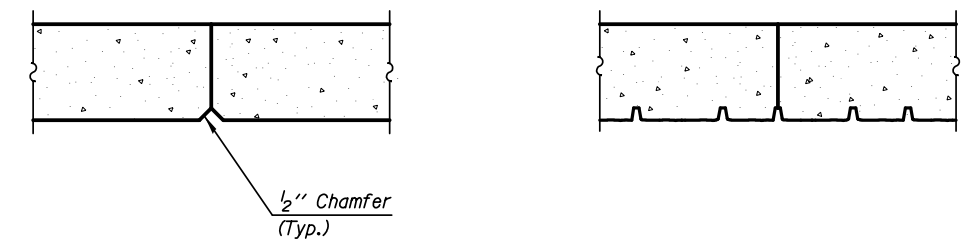


**WALL EXPANSION JOINT DETAIL**

\* Cost included with "Concrete Structures".



**PLAN - FORM LINER**

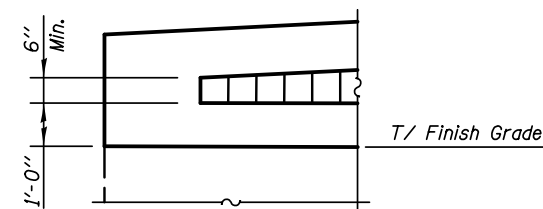


**WALL CONSTRUCTION JOINT DETAIL**

**NOTE:**  
SEE Sheets SC-03 thru SC-05  
for Bottom of Form Liner Elevations

WALL #	
STATION	ELEVATION
00+00.00	El. 00.00

WALL #	
STATION	ELEVATION
00+00.00	El. 00.00



**END FORM LINER DETAIL**

**KNIGHT**  
Engineers & Architects

SCALE - NONE  
DATE - 10/15/2012

DESIGNED - TB  
CHECKED - WPM  
DRAWN - TB  
CHECKED - WPM

REVISED  
REVISED  
REVISED  
REVISED

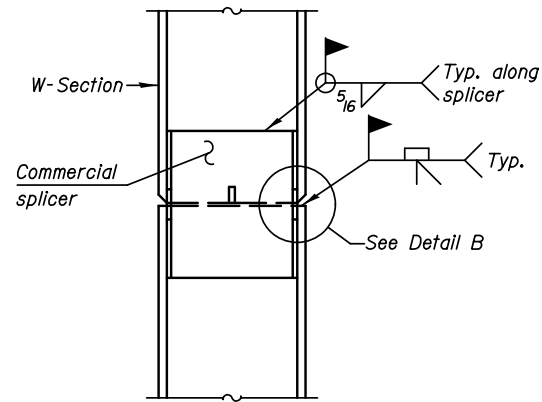
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**ARCHITECTURAL FINISH AND JOINT DETAILS  
STRUCTURE NUMBER 022-W064**

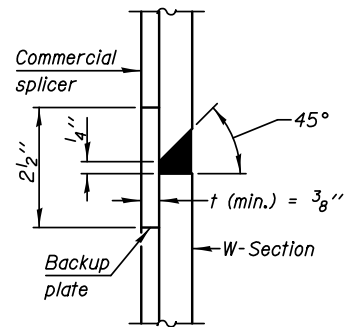
SHEET NO. SC-07 OF 10 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	(112 & 113) WRS-5	DUPAGE	963	658
<b>CONTRACT NO. 60131</b>				

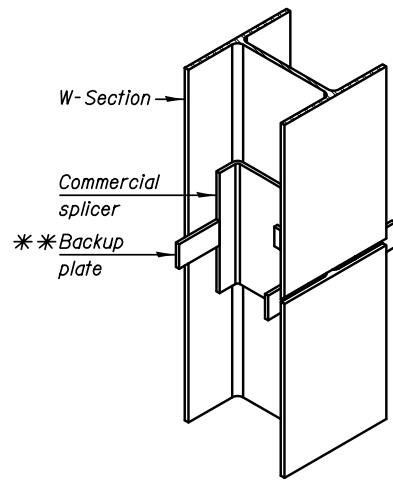
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**ELEVATION**

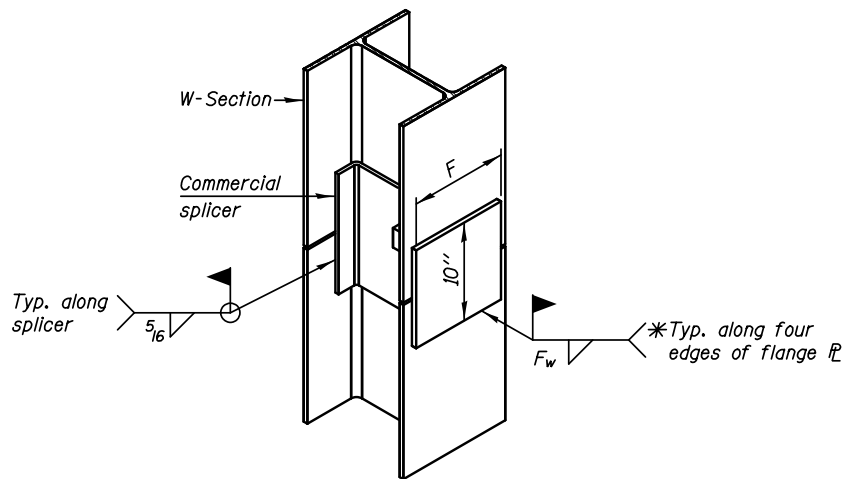


**DETAIL B**



**ISOMETRIC VIEW**

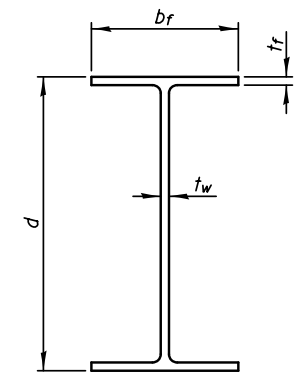
**WELDED COMMERCIAL SPLICE**



**ISOMETRIC VIEW**

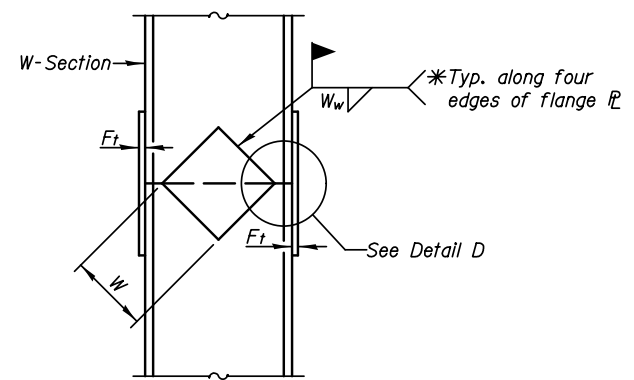
**WELDED COMMERCIAL SPLICE ALTERNATE**

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

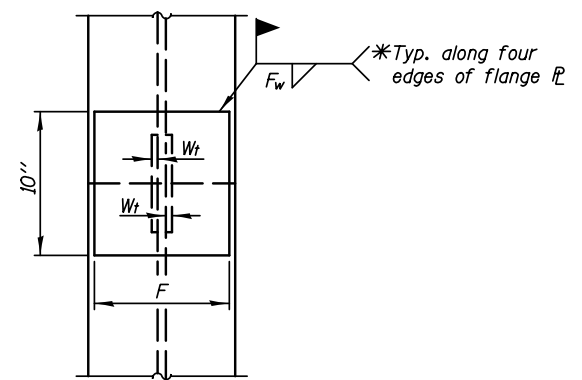


**STEEL PILE**

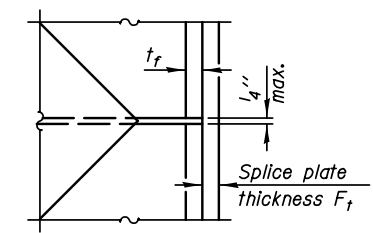
Designation	Depth d	Flange width b <sub>f</sub>	Flange thickness t <sub>f</sub>	Web thickness t <sub>w</sub>	Encasement diameter A
HP 14x73	13 <sup>5</sup> / <sub>8</sub> "	14 <sup>5</sup> / <sub>8</sub> "	1/2"	1/2"	30"
W24x68	23 <sup>3</sup> / <sub>4</sub> "	9"	9/16"	7/16"	36"
x117	24 <sup>1</sup> / <sub>4</sub> "	12 <sup>3</sup> / <sub>4</sub> "	7/8"	9/16"	36"



**ELEVATION**



**END VIEW**



**DETAIL D**

Designation	F	F <sub>t</sub>	F <sub>w</sub>	W	W <sub>t</sub>	W <sub>w</sub>
HP 14x73	12 <sup>1</sup> / <sub>2</sub> "	5 <sup>8</sup> / <sub>16</sub> "	9/16"	7 <sup>3</sup> / <sub>4</sub> "	5 <sup>8</sup> / <sub>16</sub> "	1/2"
W24x68	8"	3/4"	9/16"	15"	1/2"	3/8"
x117	10"	1 <sup>1</sup> / <sub>8</sub> "	15/16"	15"	1/2"	3/8"

**WELDED PLATE FIELD SPLICE**

**Notes:**  
The steel W-Section shall be according to AASHTO M270 Grade 50.

Geo Services Inc. Geotechnical, Environmental & Civil Engineering  
805 Arden Court, Suite 204  
Naperville, Illinois 60565  
(630) 451-2236

**SOIL BORING LOG**

PAGE 1 of 1  
DATE 4/30/2012  
LOGGED BY RT  
GSI JOB No. 09173

ROUTE II. Route 59 (FAP 338) DESCRIPTION Illinois Route 59-Aurora Avenue/New York Street To Ferry Road  
SECTION (112 & 113) WRS-5 LOCATION SEC. 3, 9-10, 15-16, 21-22 TWP. 38N, RNG. 9E, Naperville Township  
COUNTY DuPage DRILLING METHOD Hand Auger HAMMER TYPE n/a

STRUCT. NO. 022-W064  
Station: 4048+90 to 4052+85.09  
BORING NO. RW-63  
Station: 4049+88 IL RTE-59  
Offset: 94.0' Right  
Ground Surface Elev. 702.5

DEPTH (ft)	BULGE (in)	SHEAR (tsf)	M.O.S. (%)	Description	DEPTH (ft)	BULGE (in)	SHEAR (tsf)	M.O.S. (%)	Surface Water Elev.	Stream Bed Elev.	Groundwater Elevation:	
									n/a	n/a	First Encounter	Upon Completion
0				6.0" TOPSOIL-black	0				n/a	n/a		
1					1							
2					2	2.0P						
3				CLAY-brown & gray-very stiff to hard (A-6)	3	2.75P						
4					4	3.5P						
5					5	4.5+P						
6					6	4.5+P						
7					7	4.5+P						
8					8	4.5+P						
9					9	4.5+P						
10				CLAY LOAM-gray-hard (A-6)	10	4.5+P						
11					11	4.5+P						
12					12	4.5+P						
13					13	4.5+P						
14					14	4.5+P						
15				Auger Refusal @ -13.0' End Of Boring Hand Auger	15							
16					16							
17					17							
18					18							
19					19							
20					20							

Geo Services Inc. Geotechnical, Environmental & Civil Engineering  
805 Arden Court, Suite 204  
Naperville, Illinois 60565  
(630) 451-2236

**SOIL BORING LOG**

PAGE 1 of 1  
DATE 4/30/2012  
LOGGED BY RT  
GSI JOB No. 09173

ROUTE II. Route 59 (FAP 338) DESCRIPTION Illinois Route 59-Aurora Avenue/New York Street To Ferry Road  
SECTION (112 & 113) WRS-5 LOCATION SEC. 3, 9-10, 15-16, 21-22 TWP. 38N, RNG. 9E, Naperville Township  
COUNTY DuPage DRILLING METHOD Hand Auger HAMMER TYPE n/a

STRUCT. NO. 022-W064  
Station: 4048+90 to 4052+85.09  
BORING NO. RW-64  
Station: 4051+09 IL RTE-59  
Offset: 107.0' Right  
Ground Surface Elev. 701.4

DEPTH (ft)	BULGE (in)	SHEAR (tsf)	M.O.S. (%)	Description	DEPTH (ft)	BULGE (in)	SHEAR (tsf)	M.O.S. (%)	Surface Water Elev.	Stream Bed Elev.	Groundwater Elevation:	
									n/a	n/a	First Encounter	Upon Completion
0				TOPSOIL-black	0				n/a <td>n/a</td> <td></td> <td></td>	n/a		
1					1							
2					2	2.0P						
3					3	2.0P						
4				SILTY CLAY-brown & gray-stiff to very stiff (A-6) Wet	4	1.5P						
5					5	1.0P						
6					6	1.25P						
7					7	1.75P						
8					8							
9					9							
10					10							
11					11							
12					12							
13					13							
14					14							
15				Auger Refusal @ -13.0' End Of Boring Hand Auger	15							
16					16							
17					17							
18					18							
19					19							
20					20							

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(630) 451-2236

**SOIL BORING LOG**

PAGE 1 of 1  
DATE 4/30/2012  
LOGGED BY RT  
GSI JOB No. 09173

ROUTE II. Route 59 (FAP 338) DESCRIPTION Illinois Route 59-Aurora Avenue/New York Street To Ferry Road  
SECTION (112 & 113) WRS-5 LOCATION SEC. 3, 9-10, 15-16, 21-22 TWP. 38N, RNG. 9E, Naperville Township  
COUNTY DuPage DRILLING METHOD Hand Auger HAMMER TYPE n/a

STRUCT. NO. 022-W064  
Station: 4048+90 to 4052+85.09  
BORING NO. RW-65  
Station: 4052+15 IL RTE-59  
Offset: 118.9' Right  
Ground Surface Elev. 702.2

DEPTH (ft)	BULGE (in)	SHEAR (tsf)	M.O.S. (%)	Description	DEPTH (ft)	BULGE (in)	SHEAR (tsf)	M.O.S. (%)	Surface Water Elev.	Stream Bed Elev.	Groundwater Elevation:	
									n/a	n/a	First Encounter	Upon Completion
0				TOPSOIL-black	0				n/a <td>n/a</td> <td></td> <td></td>	n/a		
1					1	4.25P						
2				CLAY-brown & gray-hard (A-6) Fill	2							
3					3							
4				TOPSOIL-black	4							
5					5	1.5P						
6					6	4.5+P						
7				CLAY-brown & gray-stiff to hard (A-6)	7	4.5+P						
8					8	4.5+P						
9					9	4.5P						
10					10	4.5P						
11					11							
12					12							
13					13							
14					14							
15				Auger Refusal @ -11.0' End Of Boring Hand Auger	15							
16					16							
17					17							
18					18							
19					19							
20					20							

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-S Shelby Tube Sample VS-Vane Shear Test  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)  
NR-No Recovery HA-Hand Auger

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-S Shelby Tube Sample VS-Vane Shear Test  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)  
NR-No Recovery HA-Hand Auger

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-S Shelby Tube Sample VS-Vane Shear Test  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)  
NR-No Recovery HA-Hand Auger





## SOIL BORING LOG

PAGE 1 of 1  
 DATE 4/30/2012  
 LOGGED BY RT  
 GSI JOB No. 09173

ROUTE II. Route 59 (FAP 338) DESCRIPTION Illinois Route 59-Aurora Avenue/New York Street To Ferry Road  
 SECTION (112 & 113) WRS-5 LOCATION SEC. 3, 9-10, 15-16, 21-22 TWP. 38N, RNG. 9E, Naperville Township  
 COUNTY DuPage DRILLING METHOD Hand Auger HAMMER TYPE n/a

STRUCT. NO. 022-W064 Station: 4048+90 to 4052+85.09  
 BORING NO. RW-66 Station: 4052+73 IL RTE-59  
 Offset: 133.2' Right  
 Ground Surface Elev. 702.6

D E P T H  (ft)	B L O W S  (/6")	U C S Q u  (tsf)	M O I S T  (%)
-----------------------------------	------------------------------------	------------------------------------	----------------------------------

Surface Water Elev. n/a  
 Stream Bed Elev. n/a  
 Groundwater Elevation:  
 First Encounter 696.6 ▼  
 Upon Completion      ▼  
 After      Hrs.      ▼

D E P T H  (ft)	B L O W S  (/6")	U C S Q u  (tsf)	M O I S T  (%)
-----------------------------------	------------------------------------	------------------------------------	----------------------------------

TOPSOIL-black	HA	-	27						
<b>700.1</b>									
SILTY CLAY-dark brown & gray-stiff (A-6) Wet	HA	1.0P	25						
<b>698.1</b>									
▼									
	HA	1.75P	20						
-5									
▼									
CLAY-brown & gray-stiff to hard (A-6)	HA	4.5P	16						
-10									
	HA	4.5P	19						
-15									
▼									
Auger Refusal @ -12.0' End Of Boring Hand Auger	HA	3.0P	21						
<b>690.6</b>									
-20									
-25									
-30									
-35									
-40									

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS-Vane Shear Test  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)  
 NR-No Recovery HA-Hand Auger



DESIGNED - GSI	REVISED
CHECKED - WPM	REVISED
DRAWN - TB	REVISED
CHECKED - WPM	REVISED
SCALE - NONE	
DATE - 10/15/2012	

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**SOIL BORING LOGS  
 STRUCTURE NUMBER 022-W064**

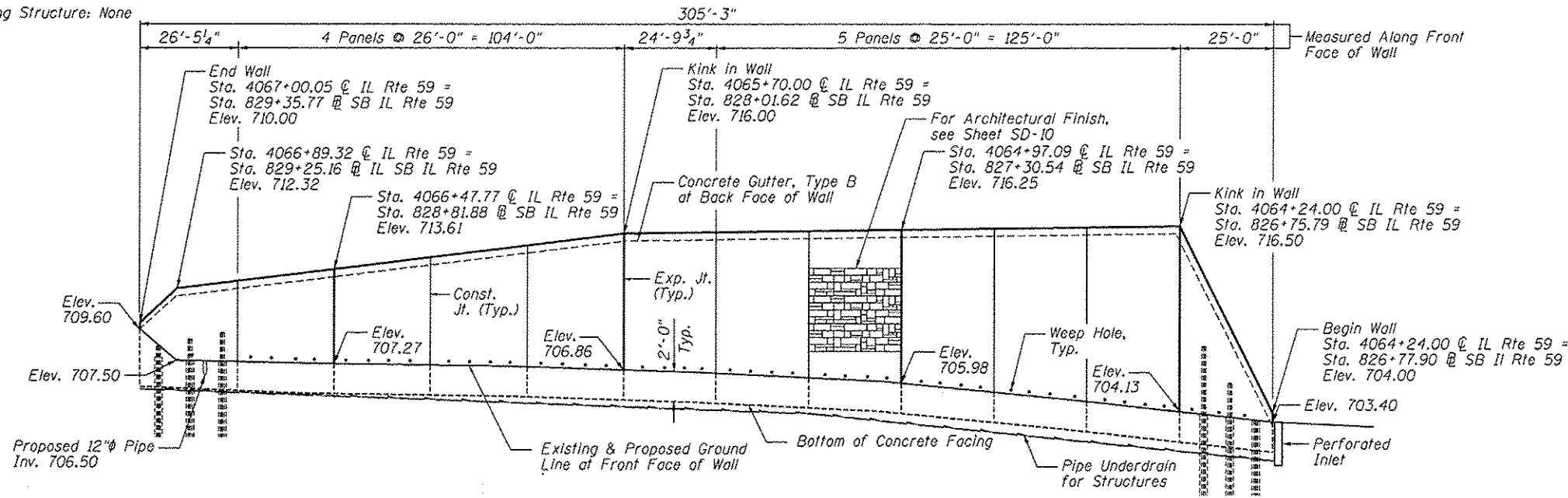
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	(112 & 113) WRS-5	DUPAGE	963	661
<b>CONTRACT NO. 60I31</b>				

SHEET NO. SC-10 OF 10 SHEETS

ILLINOIS FED. AID PROJECT

Bench Mark: DuPage County survey disk at north end of the west bridge wall,  
IL Rte 59 over Interstate Route 88, Elev. 731.43

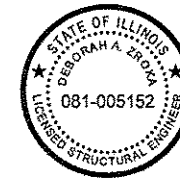
Existing Structure: None



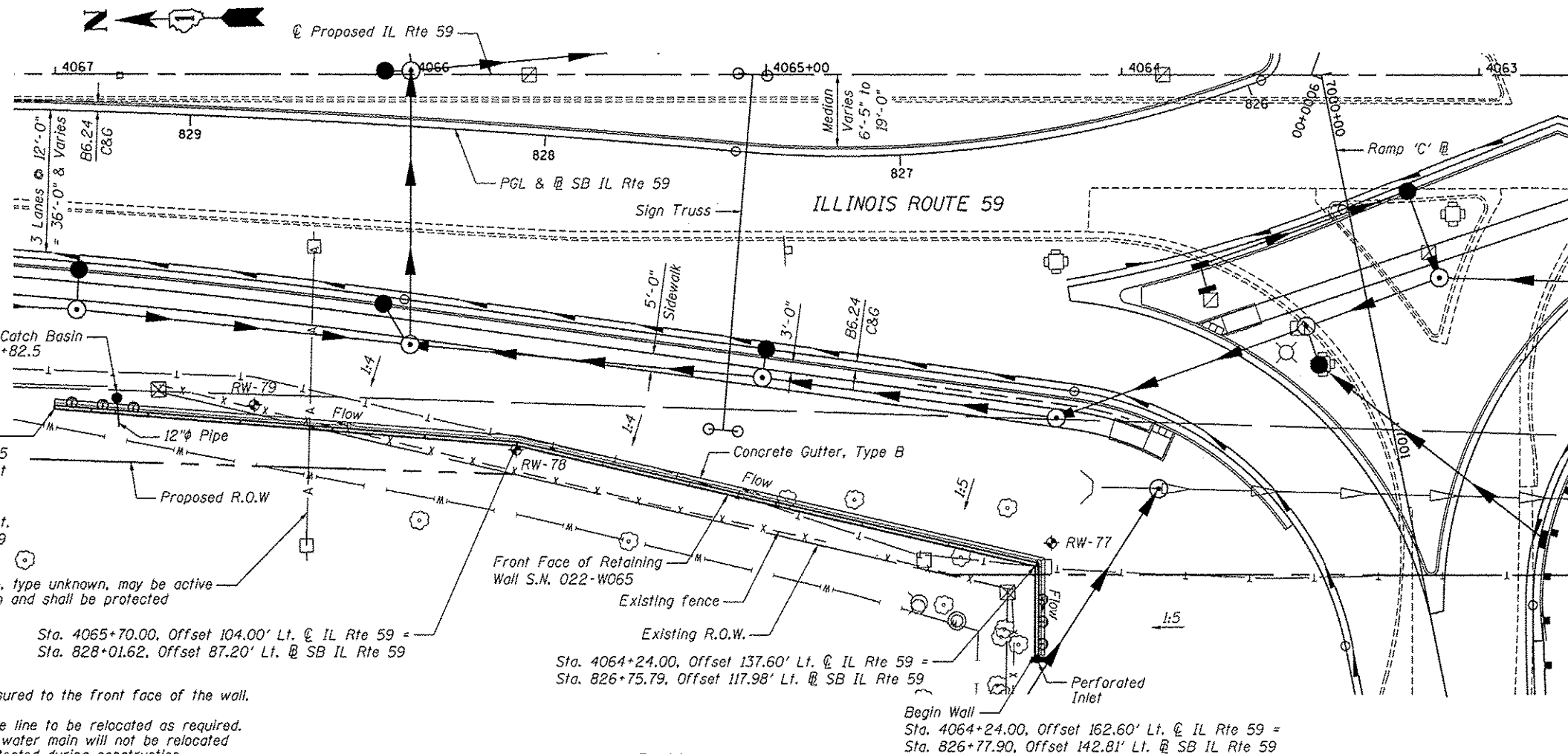
**ELEVATION**

**INDEX OF SHEETS**

- SD-1. General Plan
- SD-2. General Notes & Bill of Material
- SD-3. Soldier Pile Layout
- SD-4. Typical Section
- SD-5. Details
- SD-6. Concrete Facing 1
- SD-7. Concrete Facing 2
- SD-8. Concrete Facing & Details
- SD-9. Pile Splice Details
- SD-10. Architectural Finish Details
- SD-11. Boring Logs



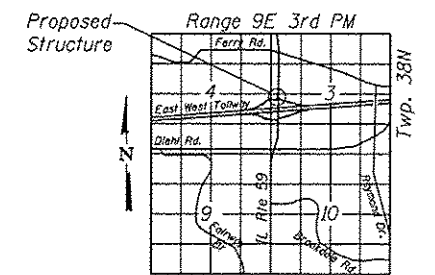
*[Signature]*  
November 30, 2014  
Expires



**PLAN**

**APPROVED**  
For Structural Adequacy Only

*[Signature]*  
Engineer of Bridges & Structures



**LOCATION SKETCH**

**GENERAL PLAN**  
IL RTE 59 FAP RTE 338  
SECTION (112 & 113) WRS-5  
DUPAGE COUNTY

**STA. 4064+24.00 TO STA. 4067+00.05**  
SN 022-W065



Zroka Engineering, P.C.  
4216 North Hermitage  
Chicago, IL 60613

USER NAME = #USER#	DESIGNED - LAS	REVISED
CHECKED - DAZ	REVISED	
DRAWN - SAW	REVISED	
CHECKED - JLA	REVISED	

DATE = 10/15/2012	DESIGNED - LAS	REVISED
	CHECKED - DAZ	REVISED
	DRAWN - SAW	REVISED
	CHECKED - JLA	REVISED

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN  
STRUCTURE NUMBER 022-W065

SHEET NO. SD-1 OF SD-11 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338/IL 59	(112 & 113) WRS-5	DUPAGE	963	662
			CONTRACT NO. 60131	

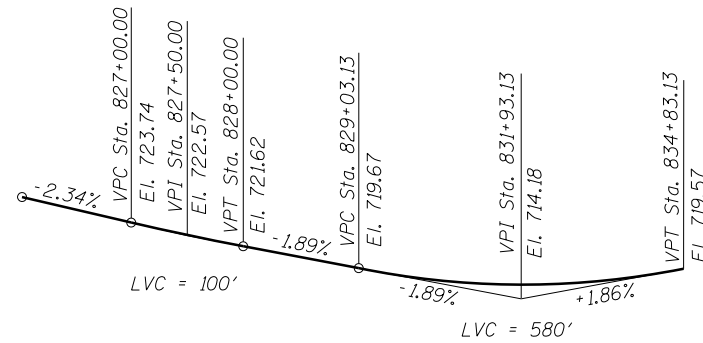
ILLINOIS FED. AID PROJECT

**DESIGN SPECIFICATIONS**  
 2012 AASHTO LRFD Bridge Design  
 Specifications 6th Edition with 2012 Interims

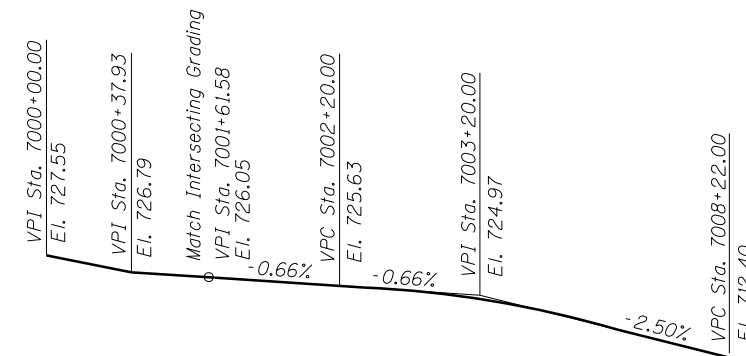
**DESIGN STRESSES**

**FIELD UNITS**

$f'_c = 3,500$  psi  
 $f_y = 60,000$  psi (reinforcement)  
 $f_y = 36,000$  psi (M270 Grade 36)



**SB IL ROUTE 59 - PROPOSED**  
**PROFILE GRADE LINE**  
 (along edge of pavement proposed SB IL Route 59)



**RAMP C - PROPOSED**  
**PROFILE GRADE LINE**  
 (along proposed Ramp C)

**GENERAL NOTES**

1. Reinforcement bars designated (E) shall be epoxy coated.
2. The Contractor is responsible for the design and performance of the lagging using no less than 3" nominal rough-sawn thickness and timber with a minimum allowable bending stress of 1000 psi.
3. Concrete Sealer shall be applied to exposed surfaces of the front face, top face, and back face of wall.

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Structure Excavation	Cu. Yd.	192
Concrete Structures	Cu. Yd.	134.3
Concrete Sealer	Sq. Ft.	3,033
Stud Shear Connectors	Each	436
Reinforcement Bars, Epoxy Coated	Pound	19,630
Geocomposite Wall Drain	Sq. Yd.	185
Untreated Timber Lagging	Sq. Ft.	2,445
Furnishing Soldier Piles (W Section)	Foot	1,385
Pipe Underdrains for Structures, 4"	Foot	602
Drilling and Setting Soldier Piles (In Soil)	Cu. Ft.	7,636
Form Liner Textured Surface	Sq. Ft.	1,877
Granular Backfill for Structures	Cu. Yd.	315

**GENERAL NOTES & BILL OF MATERIAL**  
**SN 022-W065**

FILE NAME = ...E0131-W065-002-GenData.dgn



Zroka Engineering, P.C.  
 4216 North Hermitage  
 Chicago, IL 60613

USER NAME = SAW	DESIGNED - LAS	REVISED -
	CHECKED - DAZ	REVISED -
PLOT SCALE = 38.00' / IN.	DRAWN - SAW	REVISED -
PLOT DATE = 10/9/2012	CHECKED - JLA	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

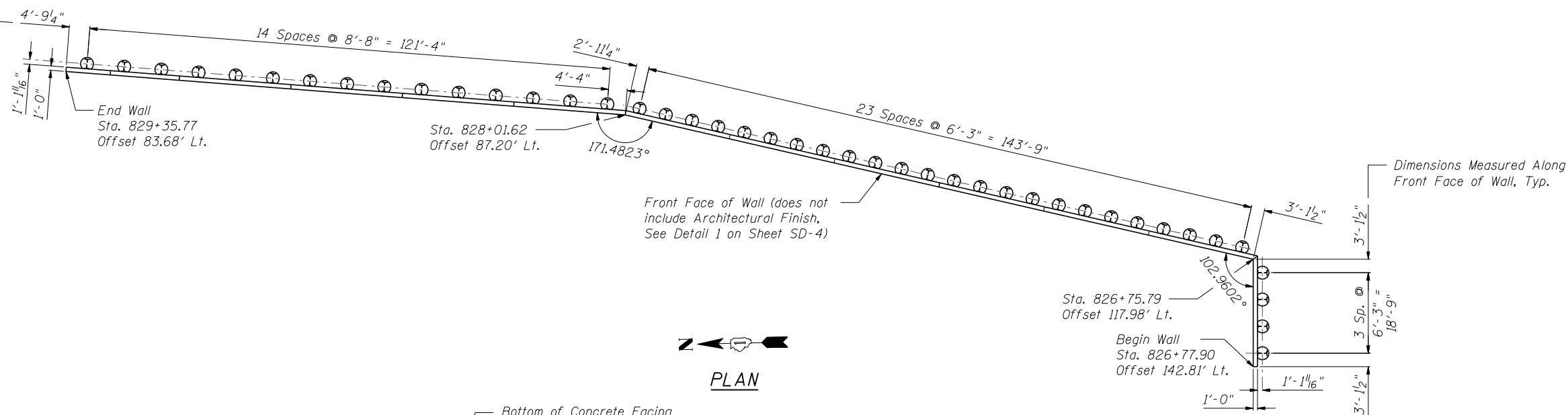
**GENERAL NOTES & BILL OF MATERIAL**  
**STRUCTURE NUMBER 022-W065**

SHEET NO. SD-2 OF SD-11 SHEETS

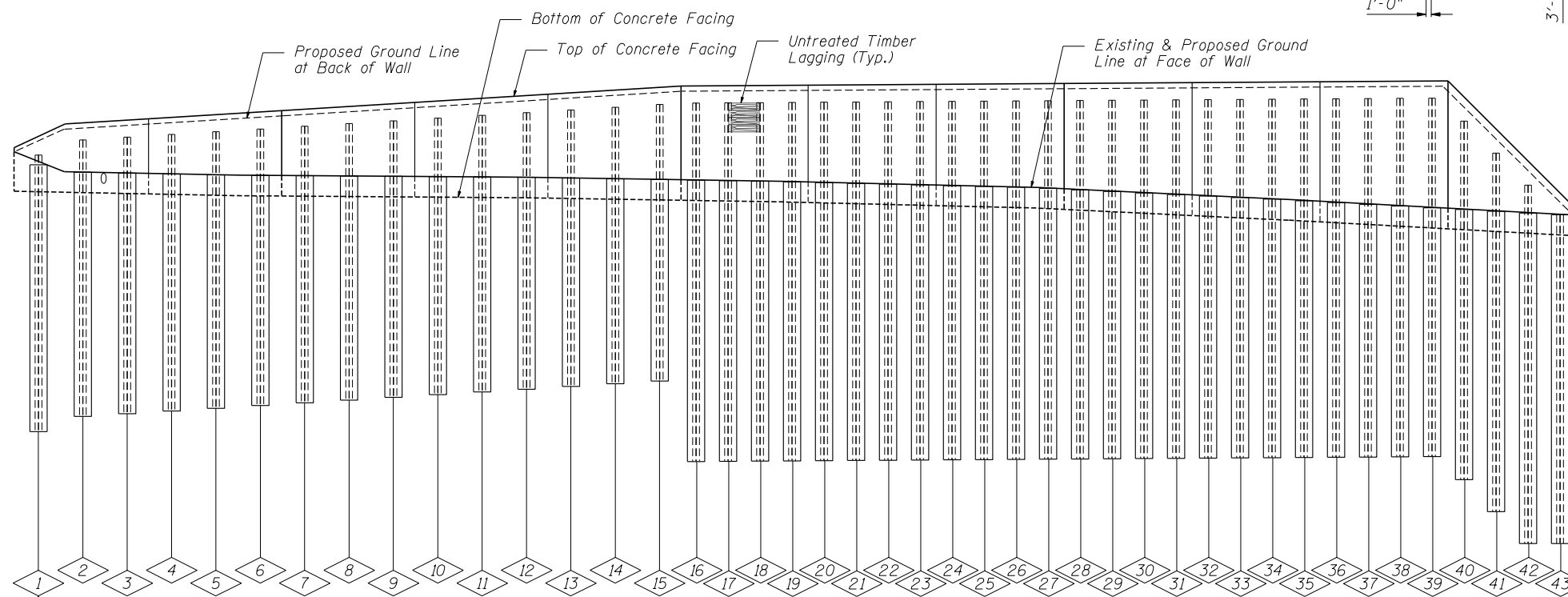
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338/IL 59	(112 & 113) WRS-5	DUPAGE	963	663
CONTRACT NO. 60131				

ILLINOIS FED. AID PROJECT

Dimensions Measured Along Front Face of Wall, Typ.



PLAN



DEVELOPED ELEVATION

PILE SUMMARY

Pile No.	Station	Offset to $\phi$ Pile	Pile Designation	Length	Bottom Elevation	Top Elevation	Pile No.	Station	Offset to $\phi$ Pile	Pile Designation	Length	Bottom Elevation	Top Elevation	Pile No.	Station	Offset to $\phi$ Pile	Pile Designation	Length	Bottom Elevation	Top Elevation	
1	829+30.77	81.77	W27x146	27'-0"	682.40	709.40	16	827+98.30	85.54	W27x146	35'-0"	679.34	714.34	31	827+13.71	100.71	W27x146	35'-0"	679.66	714.66	
2	829+21.87	82.17	W27x146	27'-0"	683.75	710.75	17	827+91.94	86.48	W27x146	35'-0"	679.36	714.36	32	827+09.05	102.20	W27x146	35'-0"	679.68	714.68	
3	829+12.97	82.54	W27x146	27'-0"	684.01	711.01	18	827+85.58	87.41	W27x146	35'-0"	679.38	714.38	33	827+04.43	103.77	W27x146	35'-0"	679.70	714.70	
4	829+04.07	82.89	W27x146	27'-0"	684.28	711.28	19	827+79.21	88.33	W27x146	35'-0"	679.41	714.41	34	826+99.84	105.42	W27x146	35'-0"	679.72	714.72	
5	828+95.17	83.21	W27x146	27'-0"	684.55	711.55	20	827+72.85	89.23	W27x146	35'-0"	679.43	714.43	35	826+95.28	107.16	W27x146	35'-0"	679.74	714.74	
6	828+86.27	83.50	W27x146	27'-0"	684.81	711.81	21	827+66.47	90.13	W27x146	35'-0"	679.45	714.45	36	826+90.76	108.98	W27x146	35'-0"	679.76	714.76	
7	828+77.36	83.78	W27x146	27'-0"	685.08	712.08	22	827+60.10	91.01	W27x146	35'-0"	679.47	714.47	37	826+86.28	110.87	W27x146	35'-0"	679.78	714.78	
8	828+68.45	84.02	W27x146	27'-0"	685.34	712.34	23	827+53.72	91.87	W27x146	35'-0"	679.49	714.49	38	826+81.84	112.85	W27x146	35'-0"	679.80	714.80	
9	828+59.55	84.24	W27x146	27'-0"	685.61	712.61	24	827+47.33	92.73	W27x146	35'-0"	679.51	714.51	39	826+77.44	114.91	W27x146	35'-0"	679.82	714.82	
10	828+50.64	84.44	W27x146	27'-0"	685.87	712.87	25	827+42.24	93.60	W27x146	35'-0"	679.53	714.53	40	826+74.51	121.34	W27x146	35'-0"	678.27	713.27	
11	828+41.72	84.61	W27x146	27'-0"	686.14	713.14	26	827+37.42	94.57	W27x146	35'-0"	679.55	714.55	41	826+75.07	127.54	W27x146	35'-0"	675.15	710.15	
12	828+32.81	84.75	W27x146	27'-0"	686.40	713.40	27	827+32.63	95.62	W27x146	35'-0"	679.57	714.57	42	826+75.62	133.75	W27x146	35'-0"	672.02	707.02	
13	828+23.90	84.87	W27x146	27'-0"	686.67	713.67	28	827+27.86	96.76	W27x146	35'-0"	679.59	714.59	43	826+76.15	139.95	W27x146	35'-0"	668.90	703.90	
14	828+14.99	84.97	W27x146	27'-0"	686.94	713.94	29	827+23.11	97.99	W27x146	35'-0"	679.61	714.61								
15	828+06.07	85.04	W27x146	27'-0"	687.20	714.20	30	827+18.39	99.31	W27x146	35'-0"	679.64	714.64								

BILL OF MATERIAL

Item	Unit	Quantity
Furnishing Soldier Piles (W Section)	Foot	1,385
Drilling and Setting Soldier Piles (In Soil)	Cu Ft	7,636
Untreated Timber Lagging	Sq Ft	2,445
Stud Shear Connectors	Each	436

Note: All offsets are to the left of  $\phi$  SB IL Rte 59

SOLDIER PILE LAYOUT  
SN 022-W065



USER NAME = SAW	DESIGNED - LAS	REVISED -
	CHECKED - DAZ	REVISED -
PLOT SCALE = 38.00' / IN.	DRAWN - SAW	REVISED -
PLOT DATE = 10/10/2012	CHECKED - JLA	REVISED -

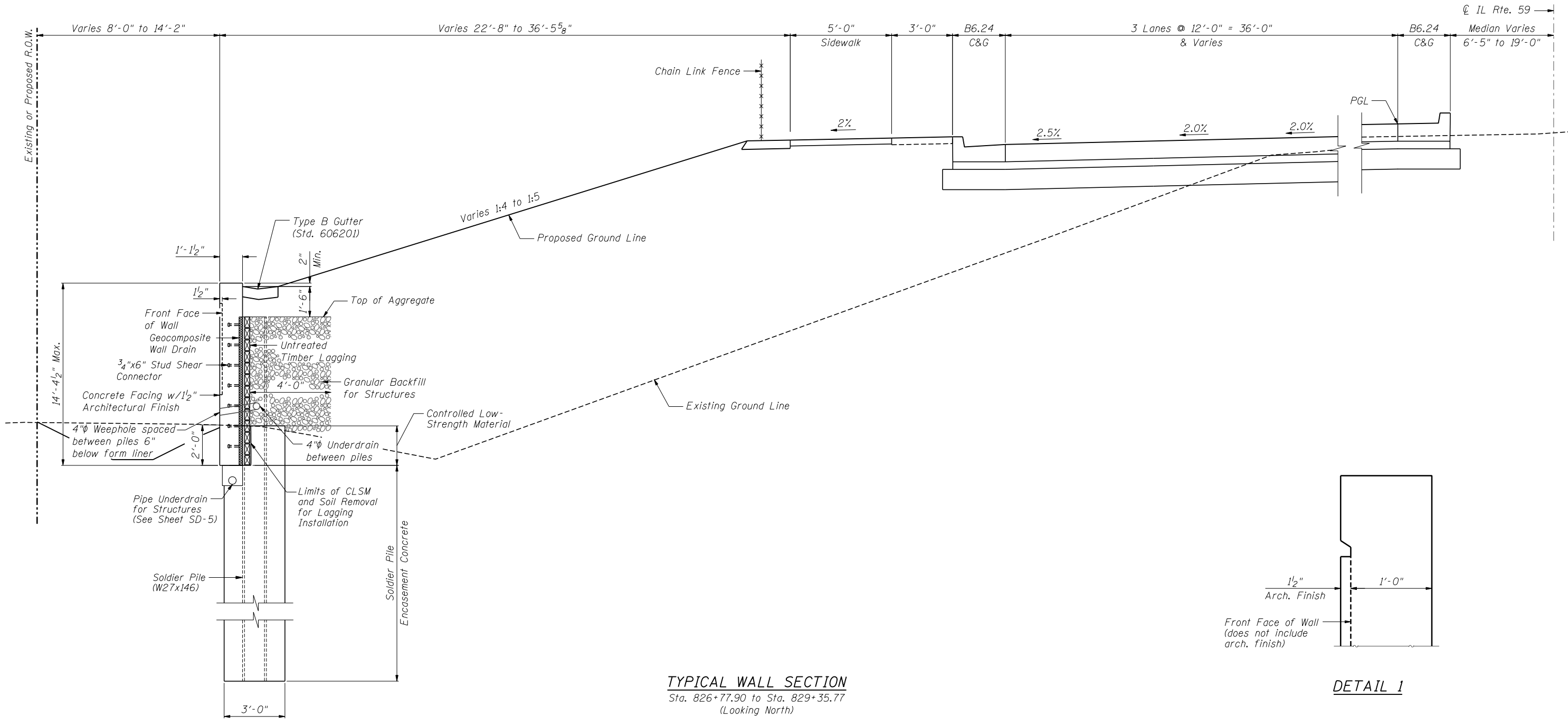
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SOLDIER PILE LAYOUT  
STRUCTURE NUMBER 022-W065

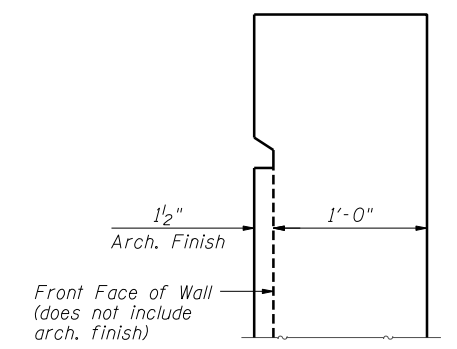
SHEET NO. SD-3 OF SD-11 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338/IL 59	(112 & 113) WRS-5	DUPAGE	963	664
			CONTRACT NO. 60131	
ILLINOIS FED. AID PROJECT				

FILE NAME = ...E0131-W065-003-F1.plt.dwg



**TYPICAL WALL SECTION**  
 Sta. 826+77.90 to Sta. 829+35.77  
 (Looking North)



**DETAIL 1**

**TYPICAL SECTION**  
 SN 022-W065

FILE NAME = ...E0131-W065-004-1.dwg



USER NAME = SAW	DESIGNED - LAS	REVISED -
CHECKED - DAZ	CHECKED - DAZ	REVISED -
PLOT SCALE = 5.00' / IN.	DRAWN - SAW	REVISED -
PLOT DATE = 10/10/2012	CHECKED - JLA	REVISED -

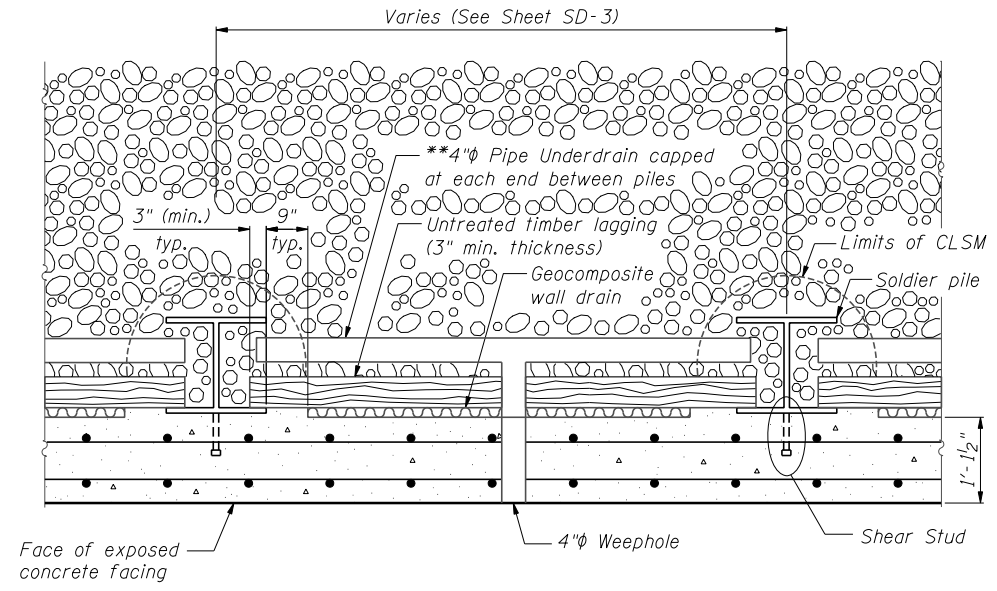
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**TYPICAL SECTION**  
**STRUCTURE NUMBER 022-W065**

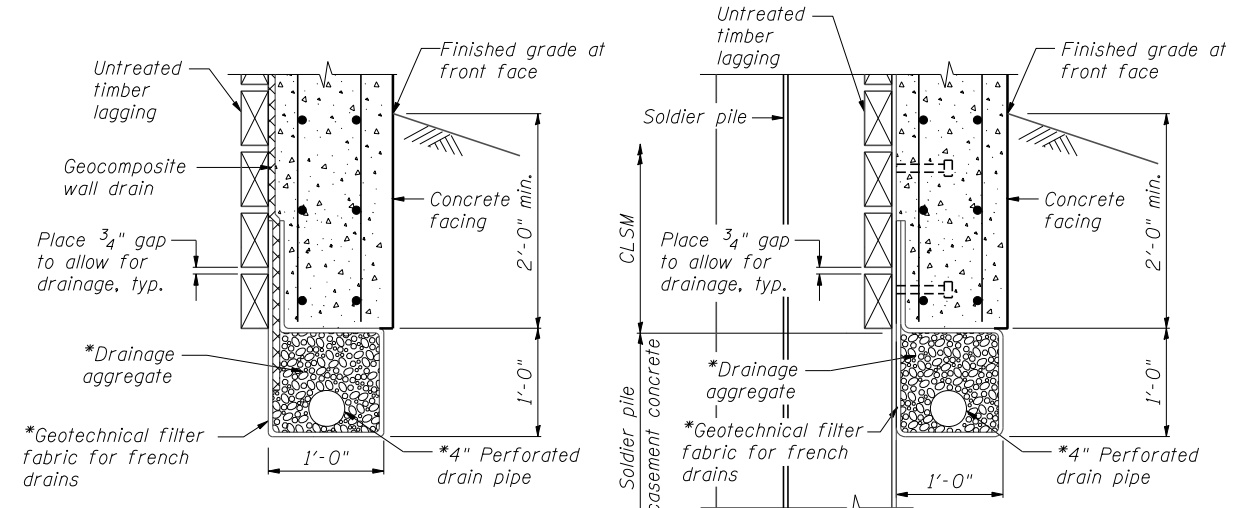
SHEET NO. SD-4 OF SD-11 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338/IL 59	(112 & 113) WRS-5	DUPAGE	963	665
CONTRACT NO. 60131				

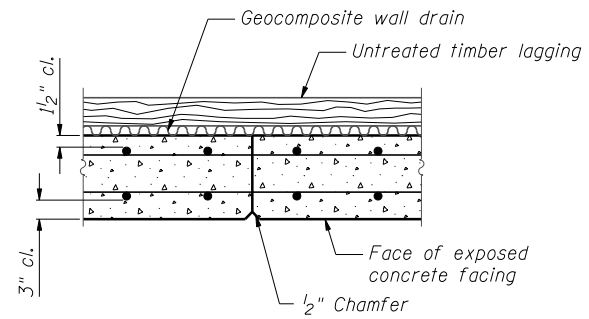
ILLINOIS FED. AID PROJECT



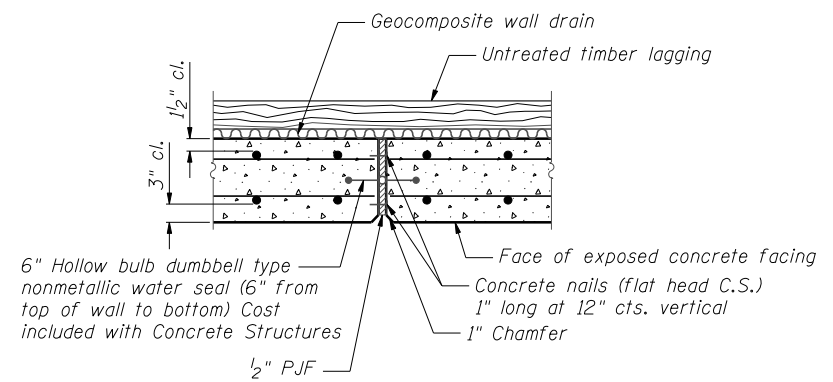
**SECTION THRU DRILLED SOLDIER PILE WALL**  
 \*\*Capping included in the cost of "Pipe Underdrains for Structures"



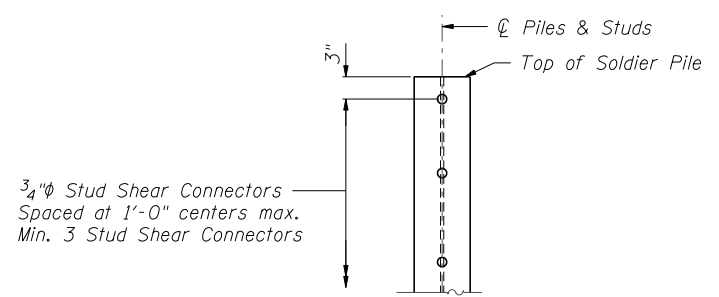
**PIPE UNDERDRAIN DETAIL**  
 \*Included in the cost of "Pipe Underdrains for Structures"



**CONSTRUCTION JOINT DETAIL**



**EXPANSION JOINT DETAIL**



**DETAIL OF SHEAR STUD PLACEMENT**

**DETAILS**  
**SN 022-W065**

FILE NAME = ...E0131-W065-005-Details.dgn



USER NAME = SAW	DESIGNED - LAS	REVISED -
	CHECKED - DAZ	REVISED -
PLOT SCALE = 5.00' / IN.	DRAWN - SAW	REVISED -
PLOT DATE = 10/9/2012	CHECKED - JLA	REVISED -

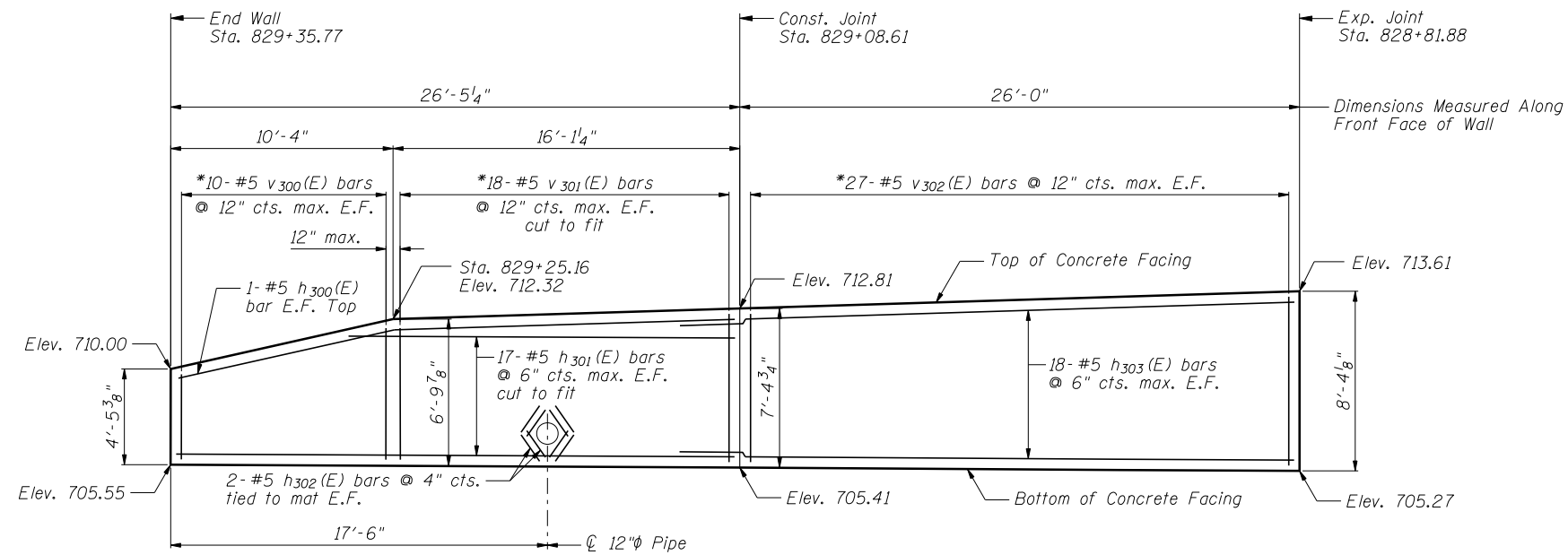
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**DETAILS**  
**STRUCTURE NUMBER 022-W065**

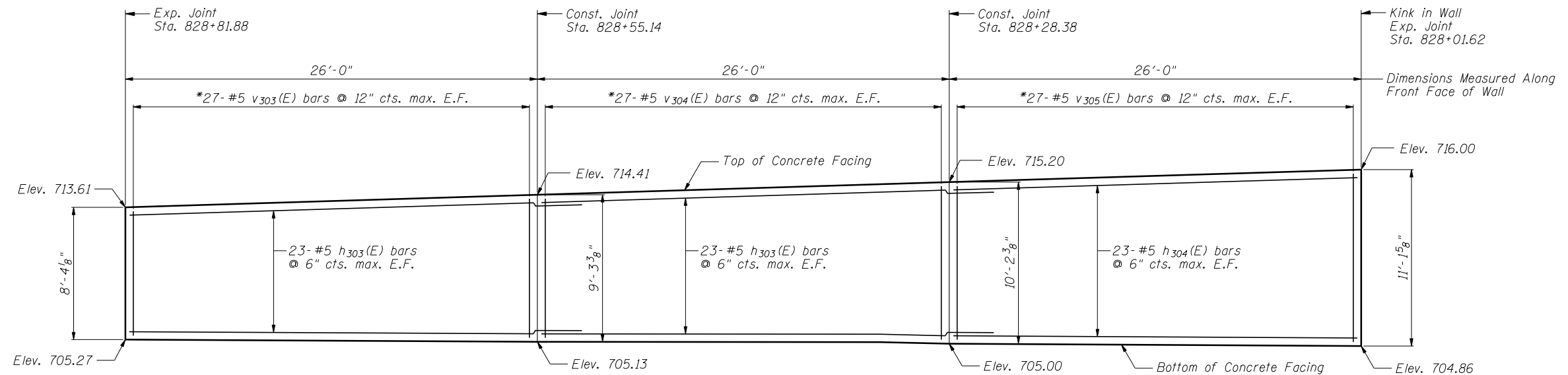
SHEET NO. SD-5 OF SE-11 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338/IL 59	(112 & 113) WRS-5	DUPAGE	963	666
			CONTRACT NO. 60131	

ILLINOIS FED. AID PROJECT



ELEVATION



ELEVATION

Notes:

Minimum lap for #5 bar is 3'-8".

Space reinforcement in wall to miss shear studs.

\* signifies cut bar. Order per length on Bill of Material. Cut as shown in Cutting Diagram and use half of bars in each face.

See Sheet SD-8 for Concrete Facing Details and Bill of Material.

CONCRETE FACING 1  
SN 022-W065



USER NAME = SAW	DESIGNED - LAS	REVISED -
	CHECKED - DAZ	REVISED -
PLOT SCALE = 8.0000' / IN.	DRAWN - SAW	REVISED -
PLOT DATE = 10/9/2012	CHECKED - JLA	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

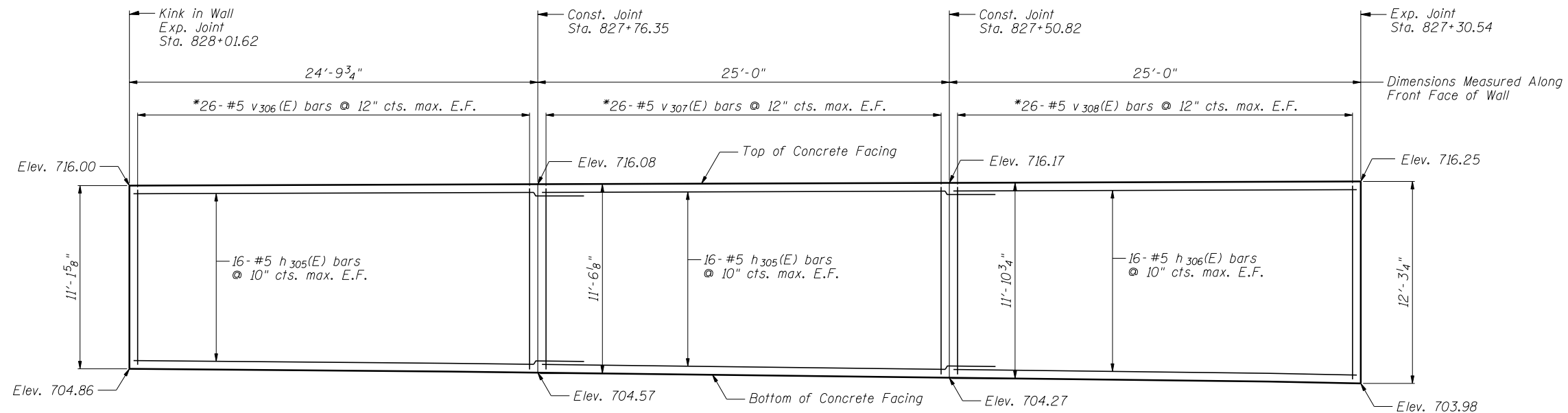
CONCRETE FACING 1  
STRUCTURE NUMBER 022-W065

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338/1L 59	(112 & 113) WRS-5	DUPAGE	963	667
			CONTRACT NO. 60131	

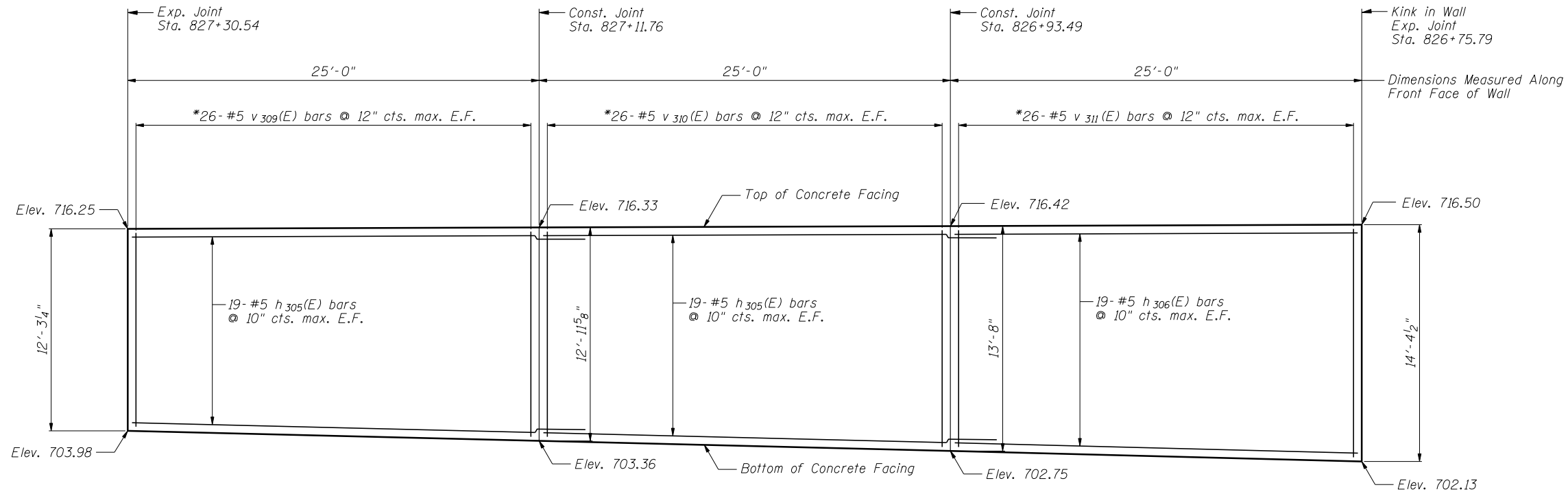
SHEET NO. SD-6 OF SD-11 SHEETS

ILLINOIS FED. AID PROJECT

FILE NAME = ...E0131-W065-006-ConcFacing.dgn



**ELEVATION**



**ELEVATION**

Notes:  
 Minimum lap for #5 bar is 3'-8".  
 Space reinforcement in wall to miss shear studs.  
 \* signifies cut bar. Order per length on Bill of Material. Cut as shown in Cutting Diagram and use half of bars in each face.  
 See Sheet SD-8 for Concrete Facing Details and Bill of Material.

**CONCRETE FACING 2**  
**SN 022-W065**

FILE NAME = ...E0131-W065-007-ConcFacing2.dgn



USER NAME = SAW	DESIGNED - LAS	REVISED -
	CHECKED - DAZ	REVISED -
PLOT SCALE = 8.0000' / IN.	DRAWN - SAW	REVISED -
PLOT DATE = 10/10/2012	CHECKED - JLA	REVISED -

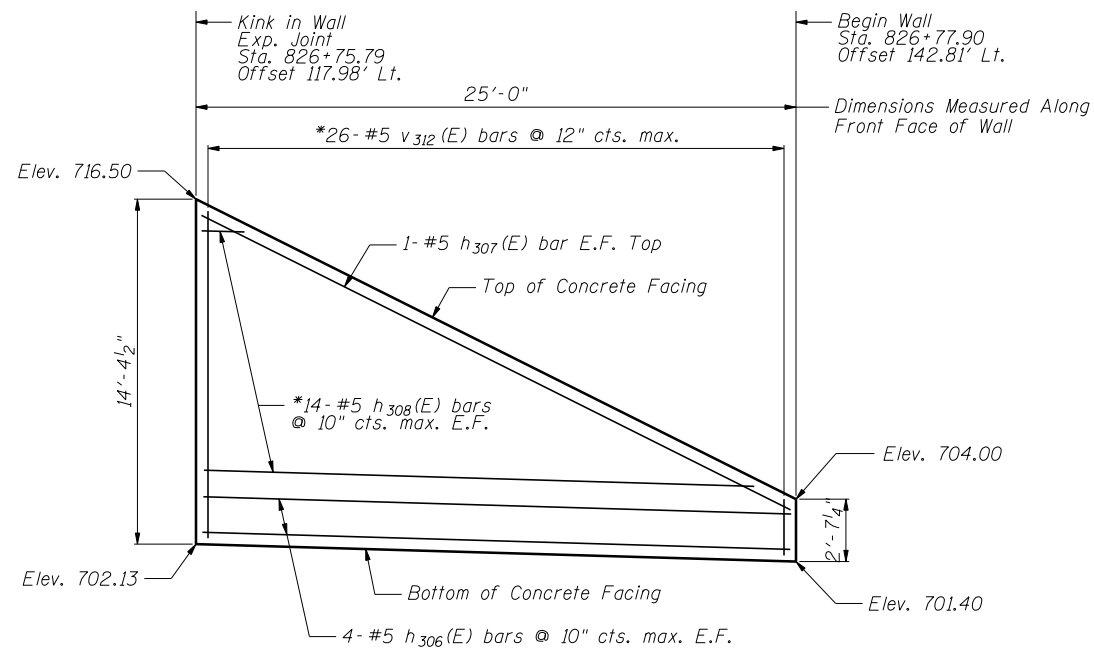
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**CONCRETE FACING 2**  
**STRUCTURE NUMBER 022-W065**  
 SHEET NO. SD-7 OF SD-11 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338/1L 59	(112 & 113) WRS-5	DUPAGE	963	668
CONTRACT NO. 60131				

ILLINOIS FED. AID PROJECT





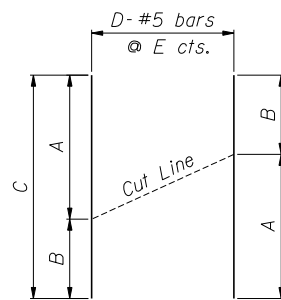
**ELEVATION**

**Notes:**

Minimum lap for #5 bar is 3'-8".

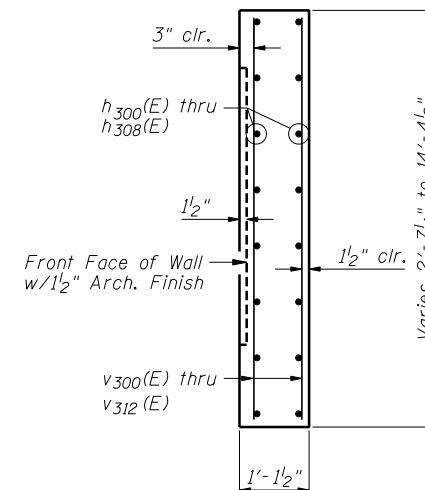
Space reinforcement in wall to miss shear studs.

\* signifies cut bar. Order per length on Bill of Material. Cut as shown in Cutting Diagram and use half of bars in each face.



**CUTTING DIAGRAM**

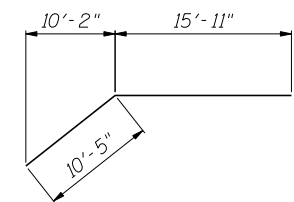
Bar	A	B	C	D	E
h <sub>308</sub> (E)	1'-8"	23'-4"	25'-0"	14	10"
v <sub>300</sub> (E)	4'-1"	6'-6"	10'-7"	10	12"
v <sub>301</sub> (E)	6'-6"	7'-1"	13'-7"	18	12"
v <sub>302</sub> (E)	7'-1"	8'-0"	15'-1"	27	12"
v <sub>303</sub> (E)	8'-0"	8'-11"	16'-11"	27	12"
v <sub>304</sub> (E)	8'-11"	9'-10"	18'-9"	27	12"
v <sub>305</sub> (E)	9'-10"	10'-9"	20'-7"	27	12"
v <sub>306</sub> (E)	10'-9"	11'-2"	21'-11"	26	12"
v <sub>307</sub> (E)	11'-2"	11'-7"	22'-9"	26	12"
v <sub>308</sub> (E)	11'-7"	11'-11"	23'-6"	26	12"
v <sub>309</sub> (E)	11'-11"	12'-8"	24'-7"	26	12"
v <sub>310</sub> (E)	12'-8"	13'-4"	26'-0"	26	12"
v <sub>311</sub> (E)	13'-4"	14'-0"	27'-4"	26	12"
v <sub>312</sub> (E)	14'-0"	2'-3"	16'-3"	26	12"



**SECTION THRU CONCRETE FACING**

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h <sub>300</sub> (E)	2	#5	26'-4"	┘
h <sub>301</sub> (E)	34	#5	26'-1"	—
h <sub>302</sub> (E)	16	#5	4'-0"	—
h <sub>303</sub> (E)	128	#5	29'-8"	—
h <sub>304</sub> (E)	46	#5	25'-8"	—
h <sub>305</sub> (E)	140	#5	28'-8"	—
h <sub>306</sub> (E)	78	#5	24'-8"	—
h <sub>307</sub> (E)	2	#5	27'-7"	—
h <sub>308</sub> (E)	14	#5	25'-0"	—
v <sub>300</sub> (E)	10	#5	10'-7"	—
v <sub>301</sub> (E)	18	#5	13'-7"	—
v <sub>302</sub> (E)	27	#5	15'-1"	—
v <sub>303</sub> (E)	27	#5	16'-11"	—
v <sub>304</sub> (E)	27	#5	18'-9"	—
v <sub>305</sub> (E)	27	#5	20'-7"	—
v <sub>306</sub> (E)	26	#5	21'-11"	—
v <sub>307</sub> (E)	26	#5	22'-9"	—
v <sub>308</sub> (E)	26	#5	23'-6"	—
v <sub>309</sub> (E)	26	#5	24'-7"	—
v <sub>310</sub> (E)	26	#5	26'-0"	—
v <sub>311</sub> (E)	26	#5	27'-4"	—
v <sub>312</sub> (E)	26	#5	16'-3"	—
Item	Unit	Quantity		
Concrete Structures	Cu. Yd.	134.3		
Reinforcement Bars, Epoxy Coated	Pound	19,630		
Pipe Underdrains for Structures, 4"	Foot	602		
Geocomposite Wall Drain	Sq. Yd.	185		



**h<sub>300</sub>(E) BAR**

**CONCRETE FACING & DETAILS  
SN 022-W065**



Zroka Engineering, P.C.  
4216 North Hermitage  
Chicago, IL 60613

USER NAME = SAW	DESIGNED - LAS	REVISED -
PLOT SCALE = 8.0000' / IN.	CHECKED - DAZ	REVISED -
PLOT DATE = 10/9/2012	DRAWN - SAW	REVISED -
	CHECKED - JLA	REVISED -

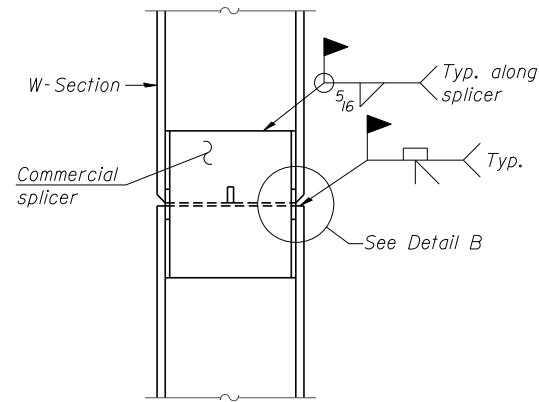
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**CONCRETE FACING & DETAILS  
STRUCTURE NUMBER 022-W065**

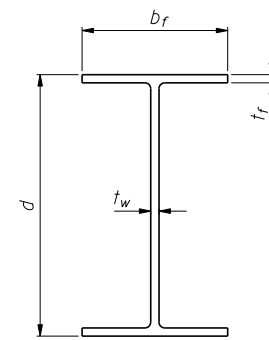
SHEET NO. SD-8 OF SD-11 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338/1L 59	(112 & 113) WRS-5	DUPAGE	963	669
CONTRACT NO. 60131			ILLINOIS FED. AID PROJECT	

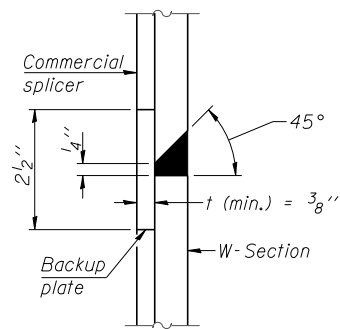
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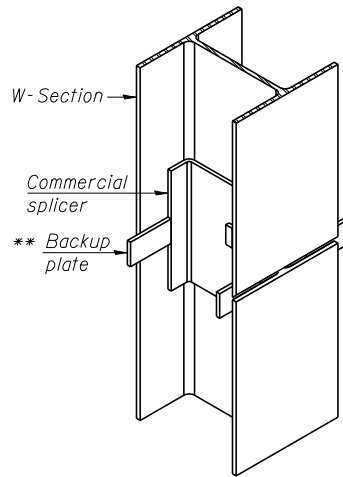
ELEVATION



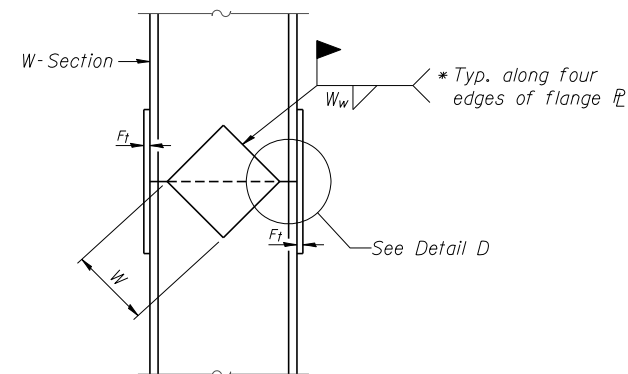
Designation	Depth d	Flange width b <sub>f</sub>	Flange thickness t <sub>f</sub>	Web thickness t <sub>w</sub>	Encasement diameter A
W27x146	27 <sup>3</sup> / <sub>8</sub> "	14"	1"	5 <sup>5</sup> / <sub>8</sub> "	36"



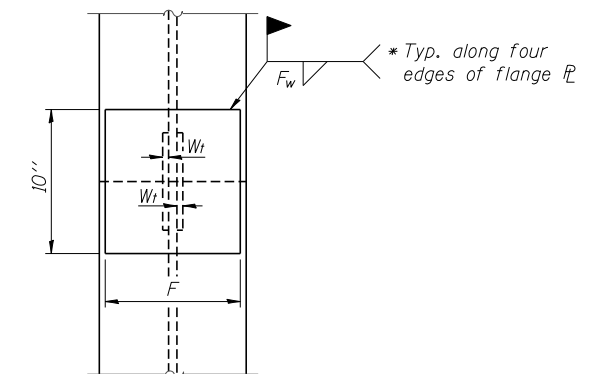
DETAIL "B"



ISOMETRIC VIEW

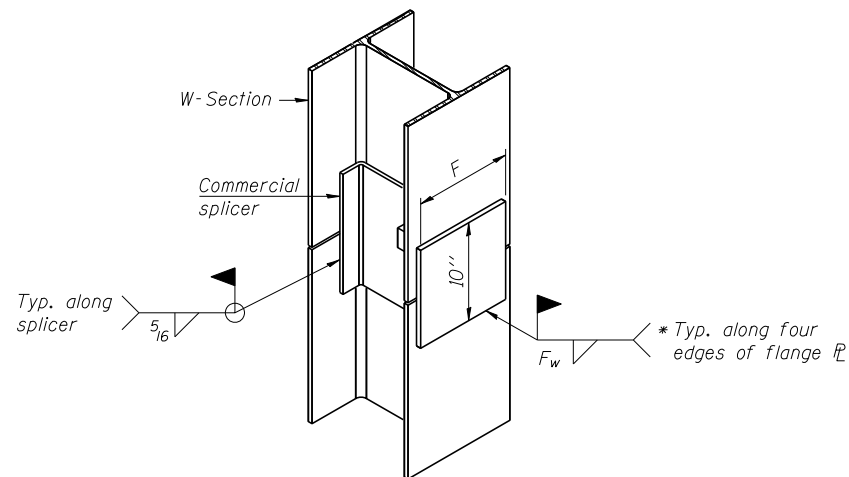


ELEVATION

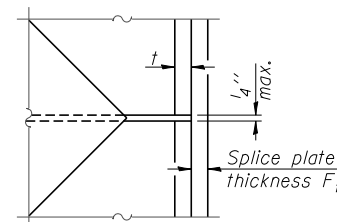


END VIEW

WELDED COMMERCIAL SPLICE



ISOMETRIC VIEW



DETAIL D

Designation	F	F <sub>t</sub>	F <sub>w</sub>	W	W <sub>t</sub>	W <sub>w</sub>
W27x146	12"	1 <sup>1</sup> / <sub>4</sub> "	3 <sup>3</sup> / <sub>4</sub> "	16 <sup>3</sup> / <sub>4</sub> "	5 <sup>5</sup> / <sub>8</sub> "	3 <sup>3</sup> / <sub>8</sub> "

WELDED PLATE FIELD SPLICE

WELDED COMMERCIAL SPLICE ALTERNATE

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

Note:  
The steel W-Sections shall be according to AASHTO M270 Grade 36.

PILE SPLICE DETAILS  
SN 022-W065

FILE NAME = ...E0131-W065-009-PileSpliceDetails.dgn



Zroka Engineering, P.C.  
4216 North Hermitage  
Chicago, IL 60613

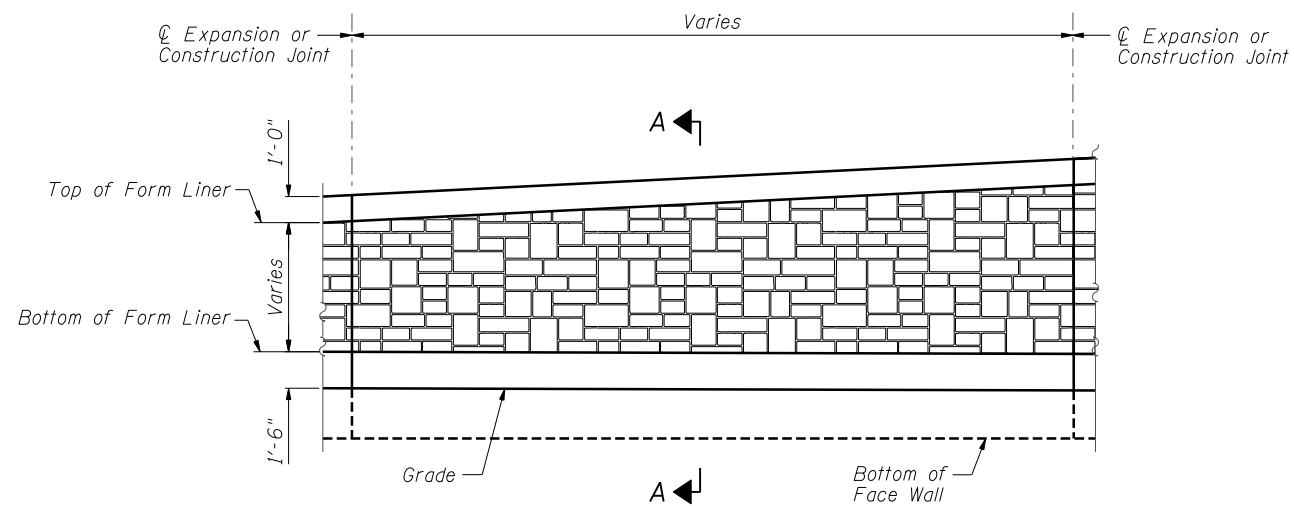
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	CHECKED - DAZ	REVISED -
PLOT SCALE = 0.1667' / IN.	DRAWN - SAW	REVISED -
PLOT DATE = 10/9/2012	CHECKED - JLA	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

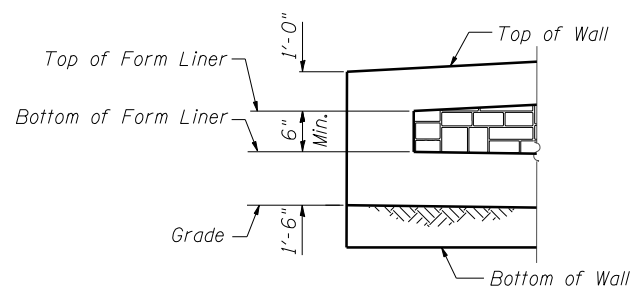
PILE SPLICE DETAILS  
STRUCTURE NUMBER 022-W065

SHEET NO. SD-9 OF SD-11 SHEETS

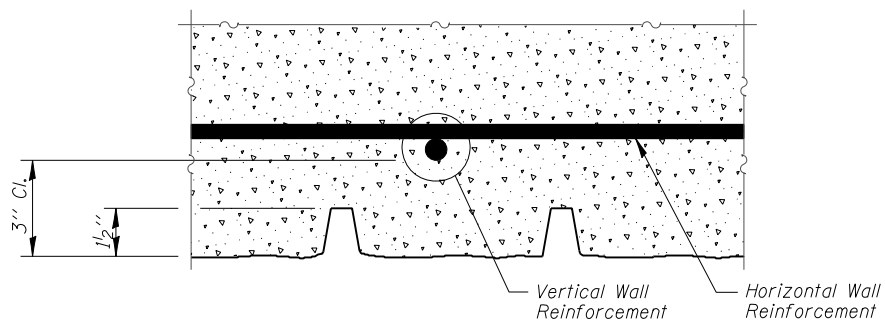
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338/IL 59	(112 & 113) WRS-5	DUPAGE	963	670
				CONTRACT NO. 60131
ILLINOIS FED. AID PROJECT				



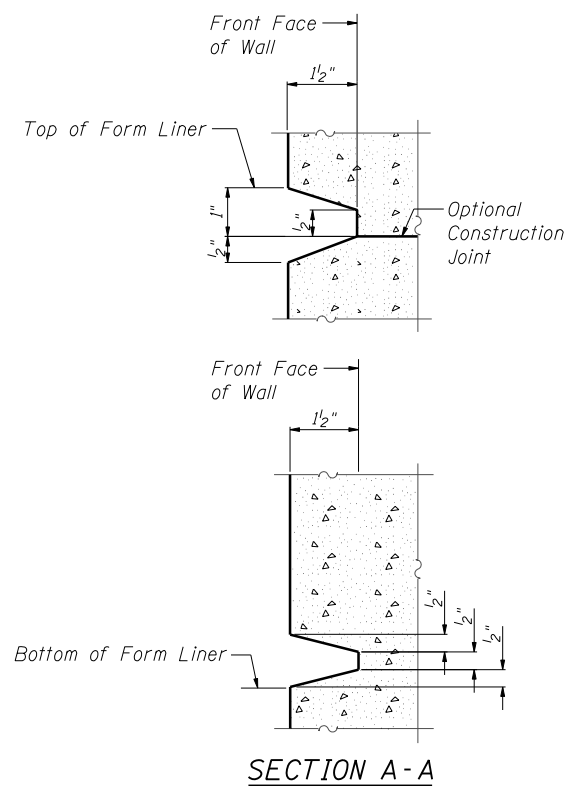
**ELEVATION - FORM LINER**



**END FORM LINER FINISH**



**PLAN - FORM LINER**



**FORM LINER ELEVATION TABLE**

Station	Form Liner Top Elevation	Form Liner Bottom Elevation
829+35.77	None	None
829+29.56	710.36	709.86
829+25.16	711.32	709.00
829+08.61	711.81	708.91
828+81.88	712.61	708.77
828+55.14	713.41	708.63
828+28.38	714.20	708.50
828+01.62	715.00	708.36
827+76.35	715.08	708.07
827+50.82	715.17	707.77
827+30.54	715.25	707.48
827+11.76	715.33	706.86
826+93.49	715.42	706.25
826+75.79 Offset 117.98' Lt.	715.50	705.63
826+77.49 Offset 137.74' Lt.	705.55	705.05
826+77.90 Offset 142.81' Lt.	None	None

**ARCHITECTURAL FINISH DETAILS**  
**SN 022-W065**

FILE NAME = ...E0131-W065-010-ArchFinish.dgn



USER NAME = SAW	DESIGNED - LAS	REVISED -
	CHECKED - DAZ	REVISED -
PLOT SCALE = 0.1667' / IN.	DRAWN - SAW	REVISED -
PLOT DATE = 10/10/2012	CHECKED - JLA	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**ARCHITECTURAL FINISH DETAILS**  
**STRUCTURE NUMBER 022-W065**

SHEET NO. SD-10 OF SD-11 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338/IL 59	(112 & 113) WRS-5	DUPAGE	963	671
			CONTRACT NO. 60131	
ILLINOIS FED. AID PROJECT				

BORING LOG RW-77

PAGE 1 of 1  
DATE 4/24/2012  
LOGGED BY RT  
GSI JOB No. 09173

**Geo Services, Inc.**  
Geotechnical, Environmental & Civil Engineering  
805 Amber Court, Suite 204  
Naperville, Illinois 60565  
(630) 953-2838

ROUTE IL Route 59 (FAP 338) DESCRIPTION Illinois Route 59-Aurora Avenue/New York Street To Ferry Road  
SECTION (112 & 113) WRS-5 LOCATION SEC. 3, 9-10, 15-16, 21-22 TWP. 38N, RNG. 9E, Naperville Township  
COUNTY DuPage DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic

STRUCT. NO. 022-W065 Station: 4064+24 to 4066+90  
BORING NO. RW-77 Station: 4064+38 IL RTE-59  
Offset: 131.2' Left  
Ground Surface Elev. 705.3

DEPTH (ft)	LOG	UCS (tsf)	MOIST	DEPTH (ft)	LOG	UCS (tsf)	MOIST
0-3	12.0" TOPSOIL-black	AS	-26	0-3	12.0" SAND & GRAVEL (fill)	AS	-10
3-5	SILTY CLAY-dark brown-very stiff (A-6) Wet	3	85	3-4	CLAY LOAM-gray-very stiff to hard (A-6)	3	112
5-7		5	2.3B 25	4-5	CLAY-brown & gray-very stiff to hard (A-6)	4	1.5P 14
7-10		2	110	5-7	CLAY LOAM-gray-very stiff (A-6)	5	1.25B 14
10-12	CLAY to CLAY LOAM-brown & gray-very stiff to hard (A-6)	3	4.5+P 19	7-8		2	112
12-14		4	1.25B 19	8-11	CLAY LOAM-gray-stiff (A-6)	4	110
14-16		3	116	11-12		6	1.25B 19
16-18		4	3.0P 13	12-14	SAND & GRAVEL-gray-medium dense (A-1)	3	111
18-19		6	2.75B 17	14-15	CLAY-gray-very stiff (A-6)	7	2.8B 15
19-20		9	1.5P 18	15-17	CLAY-gray-stiff (A-6)	8	119
20-21		9	2.5P 11	17-18	SILTY LOAM-brown & gray-medium dense to dense (A-4)	26	
21-22	CLAY LOAM-gray-very stiff (A-6)	15	2.5P 15	18-19	CLAY LOAM-gray-very stiff to hard (A-6)	17	NP
22-23		5	1.8B 9	19-20		7	
23-24		8	1.31	20-21		8	
24-25		10	3.0B 11			8	4.5+P 10
25-26		20	3.0B 11			20	4.5+P 10

End Of Boring @ -35.0'  
Hollow Stem Augers  
CME Automatic Hammer

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bluge, S-Shear, P-Penetrometer) S1-Sheby Tube Sample V-Vane Shear Test. The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%). NR-No Recovery

BORING LOG RW-78

PAGE 1 of 1  
DATE 4/24/2012  
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GSI JOB No. 09173

**Geo Services, Inc.**  
Geotechnical, Environmental & Civil Engineering  
805 Amber Court, Suite 204  
Naperville, Illinois 60565  
(630) 953-2838

ROUTE IL Route 59 (FAP 338) DESCRIPTION Illinois Route 59-Aurora Avenue/New York Street To Ferry Road  
SECTION (112 & 113) WRS-5 LOCATION SEC. 3, 9-10, 15-16, 21-22 TWP. 38N, RNG. 9E, Naperville Township  
COUNTY DuPage DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic

STRUCT. NO. 022-W065 Station: 4064+24 to 4066+90  
BORING NO. RW-78 Station: 4065+76 IL RTE-59  
Offset: 132.2' Left  
Ground Surface Elev. 706.2

DEPTH (ft)	LOG	UCS (tsf)	MOIST	DEPTH (ft)	LOG	UCS (tsf)	MOIST
0-3	12.0" SAND & GRAVEL (fill)	AS	-10	0-3	CLAY LOAM-gray-very stiff to hard (A-6)	3	12B
3-4		4	112	4-5	SANDY LOAM-gray-medium dense (A-2)	4	2.3B 11
4-5		5	3.0B 17	5-7	CLAY-brown & gray-very stiff to hard (A-6)	5	7
5-7		2	111	7-8		2	112
7-8	CLAY-brown & gray-very stiff to hard (A-6)	4	1.25B 14	8-11	CLAY LOAM-gray-stiff (A-6)	4	130
8-11		4	110	11-12		6	1.9B 11
11-12		7	6.7B 19	12-14	SAND & GRAVEL-gray-medium dense (A-1)	3	111
12-14		3	111	14-15	CLAY-gray-very stiff (A-6)	7	2.8B 15
14-15		6	2.75B 17	15-17	CLAY-gray-stiff (A-6)	8	119
15-17		10	7.6B 19	17-18	SILTY LOAM-brown & gray-medium dense to dense (A-4)	26	
17-18		5	120	18-19	CLAY LOAM-gray-very stiff to hard (A-6)	17	NP
18-19		7	2.8B 15	19-20		7	
19-20		8	1.8B 18	20-21		8	4.5P 10
20-21		9	2.8B 15			8	4.5+P 10
21-22		15	2.5P 15			20	4.5+P 10
22-23		5	1.8B 9			20	4.5+P 10
23-24		8	1.31			20	4.5+P 10
24-25		10	3.0B 11			20	4.5+P 10
25-26		20	3.0B 11			20	4.5+P 10

End Of Boring @ -35.0'  
Hollow Stem Augers  
CME Automatic Hammer

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bluge, S-Shear, P-Penetrometer) S1-Sheby Tube Sample V-Vane Shear Test. The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%). NR-No Recovery

BORING LOG RW-79

PAGE 1 of 1  
DATE 4/24/2012  
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GSI JOB No. 09173

**Geo Services, Inc.**  
Geotechnical, Environmental & Civil Engineering  
805 Amber Court, Suite 204  
Naperville, Illinois 60565  
(630) 953-2838

ROUTE IL Route 59 (FAP 338) DESCRIPTION Illinois Route 59-Aurora Avenue/New York Street To Ferry Road  
SECTION (112 & 113) WRS-5 LOCATION SEC. 3, 9-10, 15-16, 21-22 TWP. 38N, RNG. 9E, Naperville Township  
COUNTY DuPage DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic

STRUCT. NO. 022-W065 Station: 4064+24 to 4066+90  
BORING NO. RW-79 Station: 4066+53 IL RTE-59  
Offset: 118.0' Left  
Ground Surface Elev. 707.4

DEPTH (ft)	LOG	UCS (tsf)	MOIST	DEPTH (ft)	LOG	UCS (tsf)	MOIST
0-3	12.0" SAND & GRAVEL (fill)	AS	-19	0-3	CLAY LOAM-gray-very stiff to hard (A-6)	3	12B
3-4		5	116	4-5	SANDY LOAM-gray-medium dense (A-2)	4	2.3B 11
4-5		5	3.8B 15	5-7	CLAY-brown & gray-very stiff to hard (A-6)	5	7
5-7		3	110	7-8		2	112
7-8	CLAY-brown & gray-very stiff to hard (A-6)	6	4.5+P 16	8-11	CLAY LOAM-gray-stiff (A-6)	4	130
8-11		5	109	11-12		6	1.9B 11
11-12		6	5.0B 21	12-14	SAND & GRAVEL-gray-medium dense (A-1)	3	111
12-14		8	5.0B 21	14-15	CLAY-gray-very stiff (A-6)	7	2.8B 15
14-15		5	107	15-17	CLAY-gray-stiff (A-6)	8	119
15-17		8	4.9B 21	17-18	SILTY LOAM-brown & gray-medium dense (A-4)	26	
17-18		10	4.9B 21	18-19	CLAY LOAM-gray-very stiff to hard (A-6)	17	NP
18-19		2		19-20		7	
19-20		4	NP 18	20-21		8	4.5P 10
20-21		9	NP 18			8	4.5+P 10
21-22		5				20	4.5+P 10
22-23		9	4.0P 9			20	4.5+P 10
23-24		15	2.5P 11			20	4.5+P 10
24-25		5	1.8B 9			20	4.5+P 10
25-26		8	1.31			20	4.5+P 10
26-27		10	3.0B 11			20	4.5+P 10
27-28		20	3.0B 11			20	4.5+P 10

End Of Boring @ -35.0'  
Hollow Stem Augers  
CME Automatic Hammer

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bluge, S-Shear, P-Penetrometer) S1-Sheby Tube Sample V-Vane Shear Test. The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%). NR-No Recovery

FILE NAME = ...E0131-W065-011-BoringLogs.dgn



Zroka Engineering, P.C.  
4216 North Hermitage  
Chicago, IL 60613

USER NAME = SAW  
DESIGNED - LAS  
CHECKED - DAZ  
DRAWN - SAW  
CHECKED - JLA

REVISED -  
REVISED -  
REVISED -  
REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BORING LOGS  
STRUCTURE NUMBER 022-W065  
SHEET NO. SD-11 OF SD-11 SHEETS

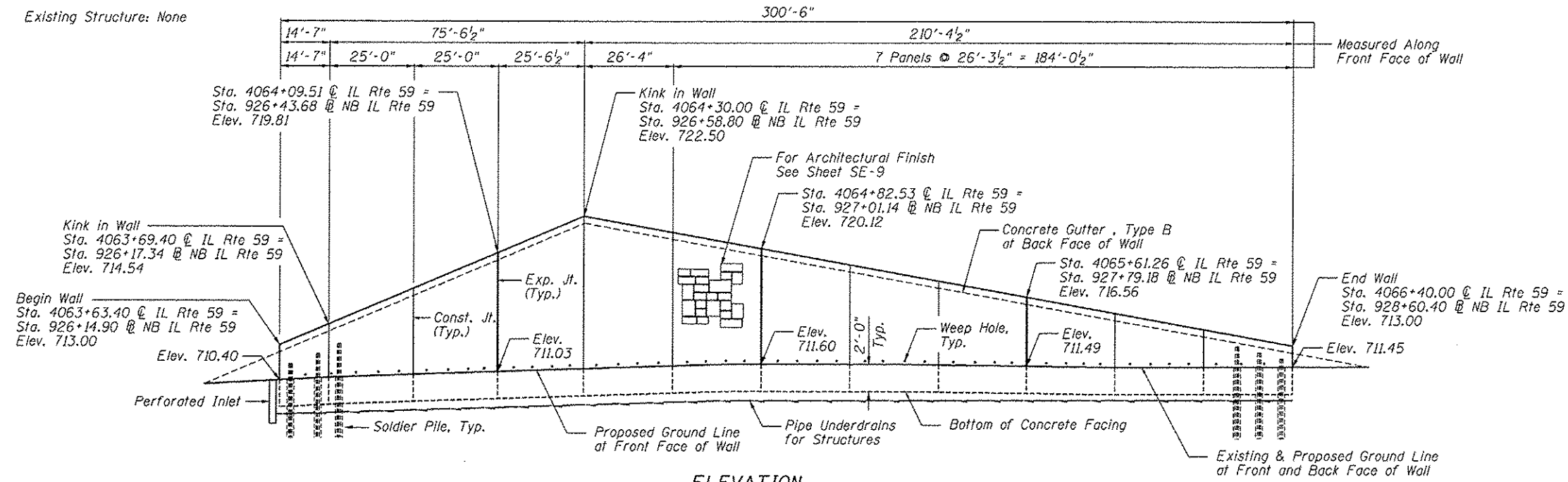
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338/IL 59	(112 & 113) WRS-5	DUPAGE	963	672
CONTRACT NO. 60131				

ILLINOIS FED. AID PROJECT

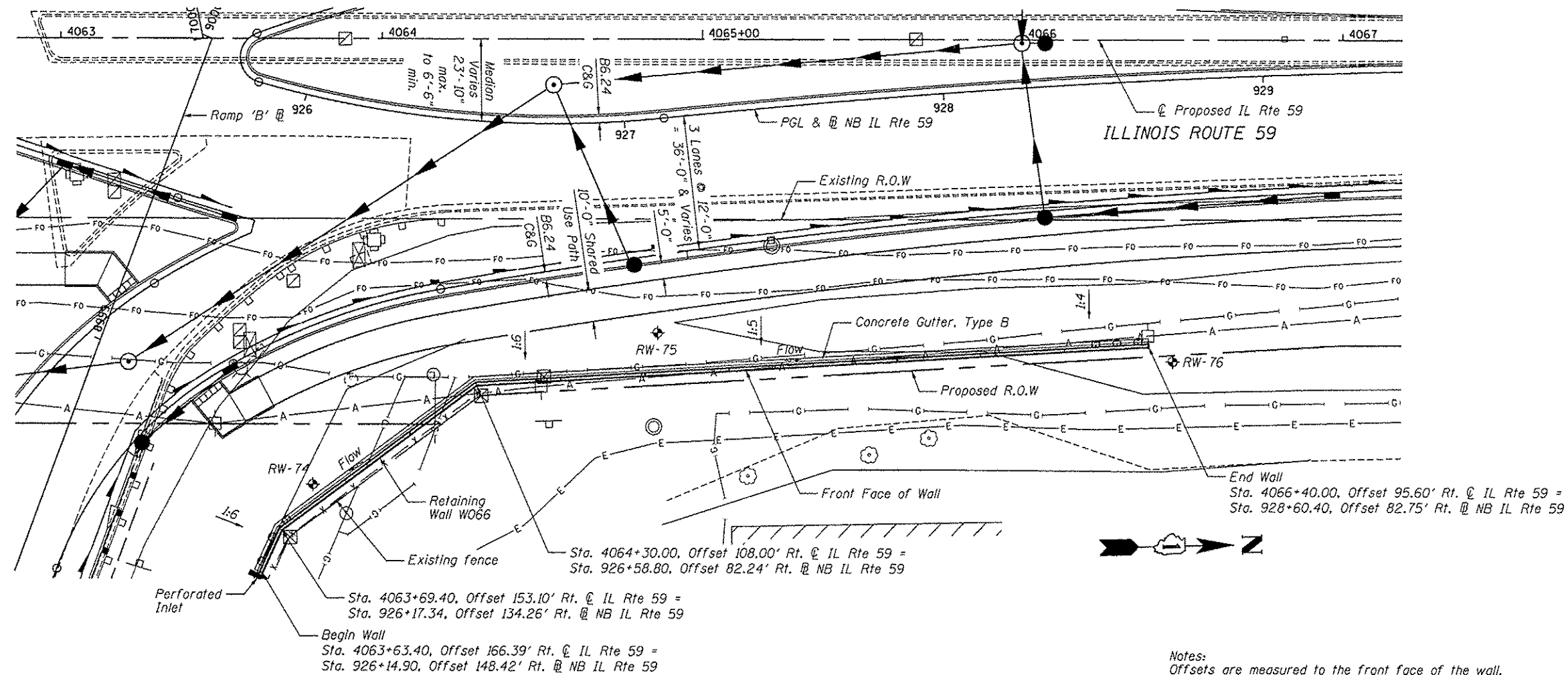
BORING LOGS  
SN 022-W065

Bench Mark: DuPage County survey disk at north end of the west bridge wall,  
IL Rte 59 over Interstate Route 88, Elev. 731.43

Existing Structure: None



ELEVATION



PLAN

Notes:  
Offsets are measured to the front face of the wall.

Existing utilities including gas, fiber optic and electric aerial lines to be adjusted or relocated as required.

INDEX OF SHEETS

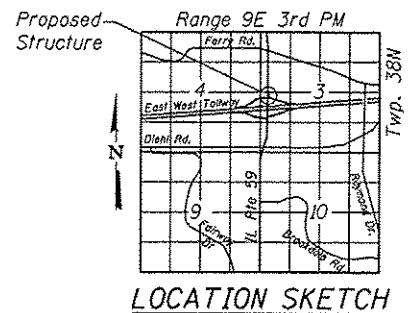
- SE-1. General Plan
- SE-2. General Notes & Bill of Material
- SE-3. Soldier Pile Layout
- SE-4. Typical Section
- SE-5. Details
- SE-6. Concrete Facing 1
- SE-7. Concrete Facing 2
- SE-8. Concrete Facing Details
- SE-9. Pile Splice Details
- SE-10. Architectural Finish Details
- SE-11. Boring Logs



Signature: *D. Carl Perry* Date: 10-15-12  
November 30, 2014 Expires

APPROVED  
For Structural Adequacy Only

D. Carl Perry, P.E.  
Engineer of Bridges & Structures



LOCATION SKETCH

GENERAL PLAN  
IL RTE 59 FAP RTE 338  
SECTION (112 & 113) WRS-5  
DUPAGE COUNTY

STA. 4063+63.40 TO STA. 4066+40.00

SN 022-W066



USER NAME: #USER#	DESIGNED - LAS	REVISIONS
PLDT SCALE: #SCALE#	CHECKED - DAZ	REVISIONS
DATE: 10/15/2012	DRAWN - SAW	REVISIONS
	CHECKED - JLA	REVISIONS

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN  
STRUCTURE NUMBER 022-W066

SHEET NO. SE-1 OF SE-11 SHEETS

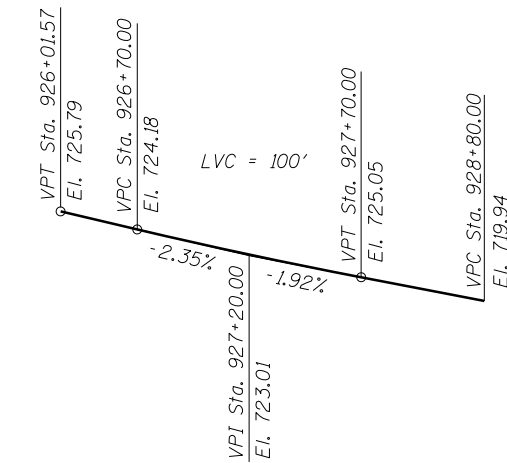
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338/IL 59	(112 & 113) WRS-5	DUPAGE	963	673
CONTRACT NO. 60131			ILLINOIS FED. AID PROJECT	

**DESIGN SPECIFICATIONS**  
 2012 AASHTO LRFD Bridge Design  
 Specifications 6th Edition with 2012 Interims

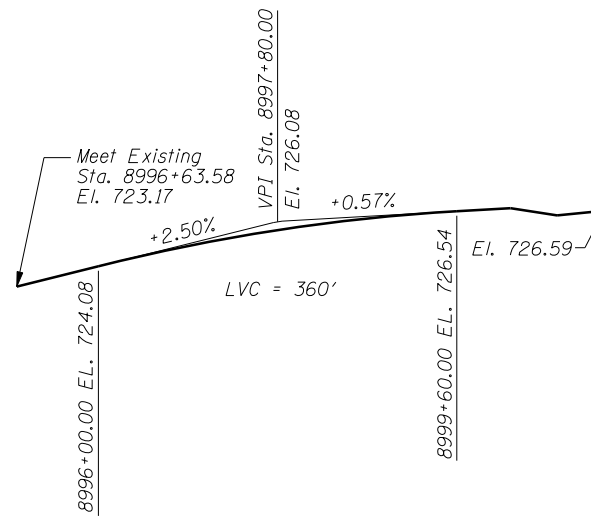
**DESIGN STRESSES**

**FIELD UNITS**

$f'_c = 3,500$  psi  
 $f_y = 60,000$  psi (reinforcement)  
 $f_y = 36,000$  psi (M270 Grade 36)



**NB IL ROUTE 59 - PROPOSED PROFILE GRADE LINE**  
 (along edge of pavement proposed NB IL Route 59)



**RAMP B - PROPOSED PROFILE GRADE LINE**  
 (along proposed Ramp B)

**GENERAL NOTES**

1. Reinforcement bars designated (E) shall be epoxy coated.
2. The Contractor is responsible for the design and performance of the lagging using no less than 3" nominal rough-sawn thickness and timber with a minimum allowable bending stress of 1000 psi.
3. Concrete Sealer shall be applied to exposed surfaces of the front face, top face, and back face of wall.

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Structure Excavation	Cu. Yd.	177
Concrete Structures	Cu. Yd.	105.8
Concrete Sealer	Sq. Ft.	2,352
Stud Shear Connectors	Each	345
Reinforcement Bars, Epoxy Coated	Pound	14,760
Geocomposite Wall Drain	Sq. Yd.	137
Untreated Timber Lagging	Sq. Ft.	1,828
Furnishing Soldier Piles (W Section)	Foot	1,424
Pipe Underdrains for Structures, 4"	Foot	601
Drilling and Setting Soldier Piles (In Soil)	Cu. Ft.	8,522
Form Liner Textured Surface	Sq. Ft.	1,197
Granular Backfill for Structures	Cu. Yd.	215

**GENERAL NOTES & BILL OF MATERIAL**  
 SN 022-W066

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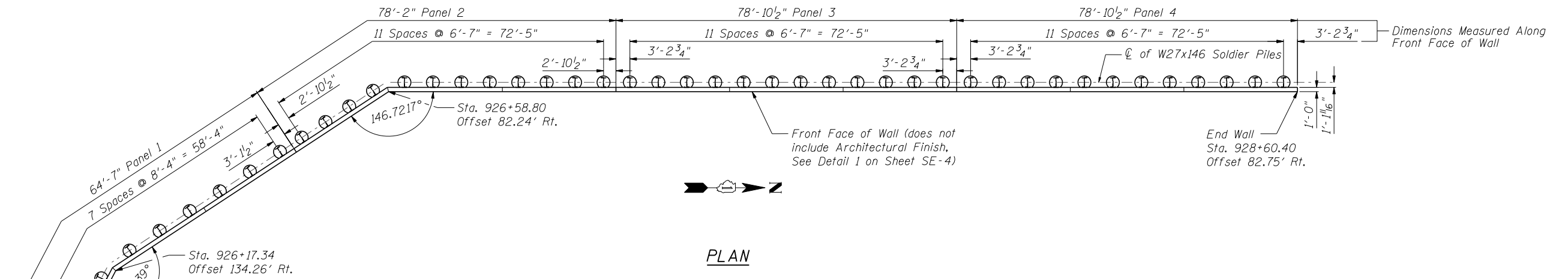
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**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

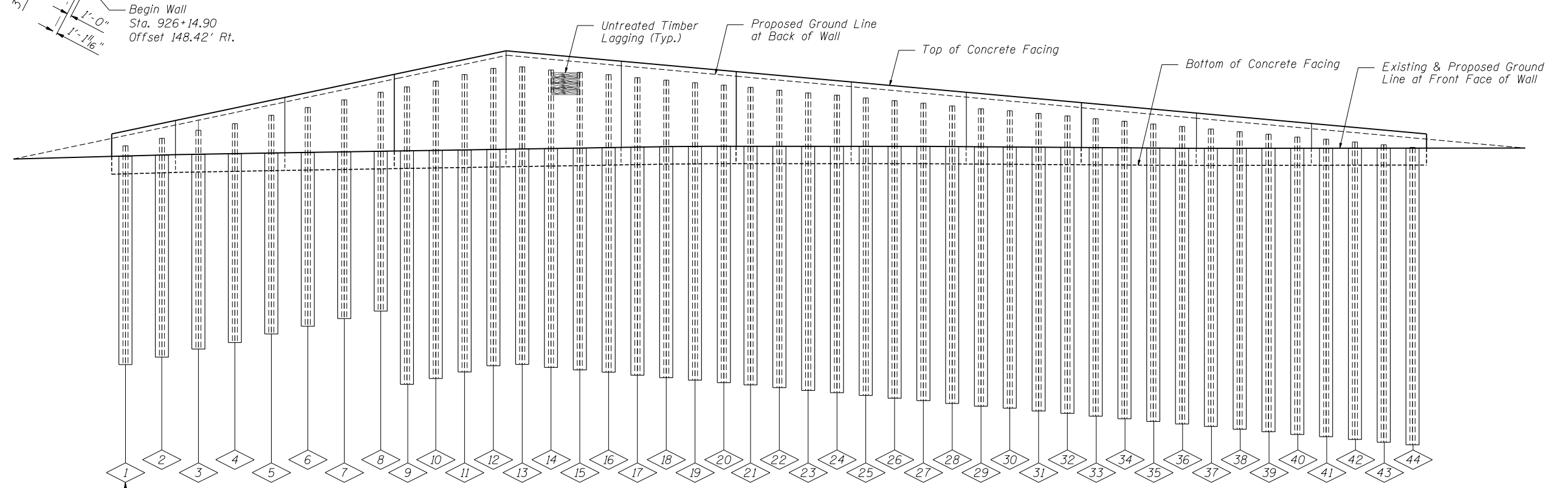
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**STRUCTURE NUMBER 022-W066**

SHEET NO. SE-2 OF SE-11 SHEETS

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338/IL 59	(112 & 113) WRS-5	DUPAGE	963	674
			CONTRACT NO. 60131	
ILLINOIS FED. AID PROJECT				



PLAN



DEVELOPED ELEVATION

PILE SUMMARY

Pile No.	Station	Offset to $\phi$ Pile	Pile Designation	Length	Bottom Elevation	Top Elevation	Pile No.	Station	Offset to $\phi$ Pile	Pile Designation	Length	Bottom Elevation	Top Elevation	Pile No.	Station	Offset to $\phi$ Pile	Pile Designation	Length	Bottom Elevation	Top Elevation	
1	926+13.96	144.89	W27x146	25'-0"	686.33	711.33	16	926+77.47	78.07	W27x146	34'-0"	685.78	719.78	31	927+69.14	79.75	W27x146	34'-0"	681.34	715.34	
2	926+15.33	136.78	W27x146	25'-0"	687.54	712.54	17	926+82.80	77.74	W27x146	34'-0"	685.48	719.48	32	927+75.91	79.91	W27x146	34'-0"	681.04	715.04	
3	926+18.77	129.00	W27x146	25'-0"	688.42	713.42	18	926+88.14	77.51	W27x146	34'-0"	685.18	719.18	33	927+82.55	80.06	W27x146	34'-0"	680.75	714.75	
4	926+22.95	122.96	W27x146	25'-0"	689.30	714.30	19	926+93.48	77.38	W27x146	34'-0"	684.88	718.88	34	927+89.32	80.19	W27x146	34'-0"	680.45	714.45	
5	926+27.23	117.01	W27x146	25'-0"	690.18	715.18	20	926+98.82	77.36	W27x146	34'-0"	684.59	718.59	35	927+96.10	80.30	W27x146	34'-0"	680.15	714.15	
6	926+31.63	111.12	W27x146	25'-0"	691.05	716.05	21	927+03.78	77.44	W27x146	34'-0"	684.31	718.31	36	928+02.87	80.40	W27x146	34'-0"	679.86	713.86	
7	926+36.15	105.32	W27x146	25'-0"	691.93	716.93	22	927+09.12	77.62	W27x146	34'-0"	684.01	718.01	37	928+09.64	80.49	W27x146	34'-0"	679.56	713.56	
8	926+40.79	99.60	W27x146	25'-0"	692.81	717.81	23	927+15.01	77.90	W27x146	34'-0"	683.72	717.72	38	928+16.42	80.55	W27x146	34'-0"	679.26	713.26	
9	926+44.20	95.54	W27x146	34'-0"	684.44	718.44	24	927+21.77	78.19	W27x146	34'-0"	683.42	717.42	39	928+23.19	80.61	W27x146	34'-0"	678.97	712.97	
10	926+48.02	91.13	W27x146	34'-0"	685.14	719.14	25	927+28.53	78.46	W27x146	34'-0"	683.12	717.12	40	928+29.97	80.64	W27x146	34'-0"	678.67	712.67	
11	926+51.93	86.78	W27x146	34'-0"	685.83	719.83	26	927+35.30	78.71	W27x146	34'-0"	682.82	716.82	41	928+36.74	80.66	W27x146	34'-0"	678.37	712.37	
12	926+55.91	82.49	W27x146	34'-0"	686.53	720.53	27	927+42.07	78.95	W27x146	34'-0"	682.53	716.53	42	928+43.52	80.67	W27x146	34'-0"	678.07	712.07	
13	926+61.54	79.71	W27x146	34'-0"	686.67	720.67	28	927+48.83	79.18	W27x146	34'-0"	682.23	716.23	43	928+50.29	80.66	W27x146	34'-0"	677.78	711.78	
14	926+66.84	79.06	W27x146	34'-0"	686.37	720.37	29	927+55.60	79.38	W27x146	34'-0"	681.93	715.93	44	928+57.07	80.63	W27x146	34'-0"	677.48	711.48	
15	926+72.14	78.52	W27x146	34'-0"	686.07	720.07	30	927+62.37	79.58	W27x146	34'-0"	681.64	715.64								

BILL OF MATERIAL

Item	Unit	Quantity
Furnishing Soldier Piles (W Section)	Foot	1,424
Drilling and Setting Soldier Piles (In Soil)	Cu Ft	8,522
Untreated Timber Lagging	Sq Ft	1,828
Stud Shear Connectors	Each	345

Note: All offsets are to the right of  $\phi$  NB IL Rte 59

SOLDIER PILE LAYOUT  
SN 022-W066

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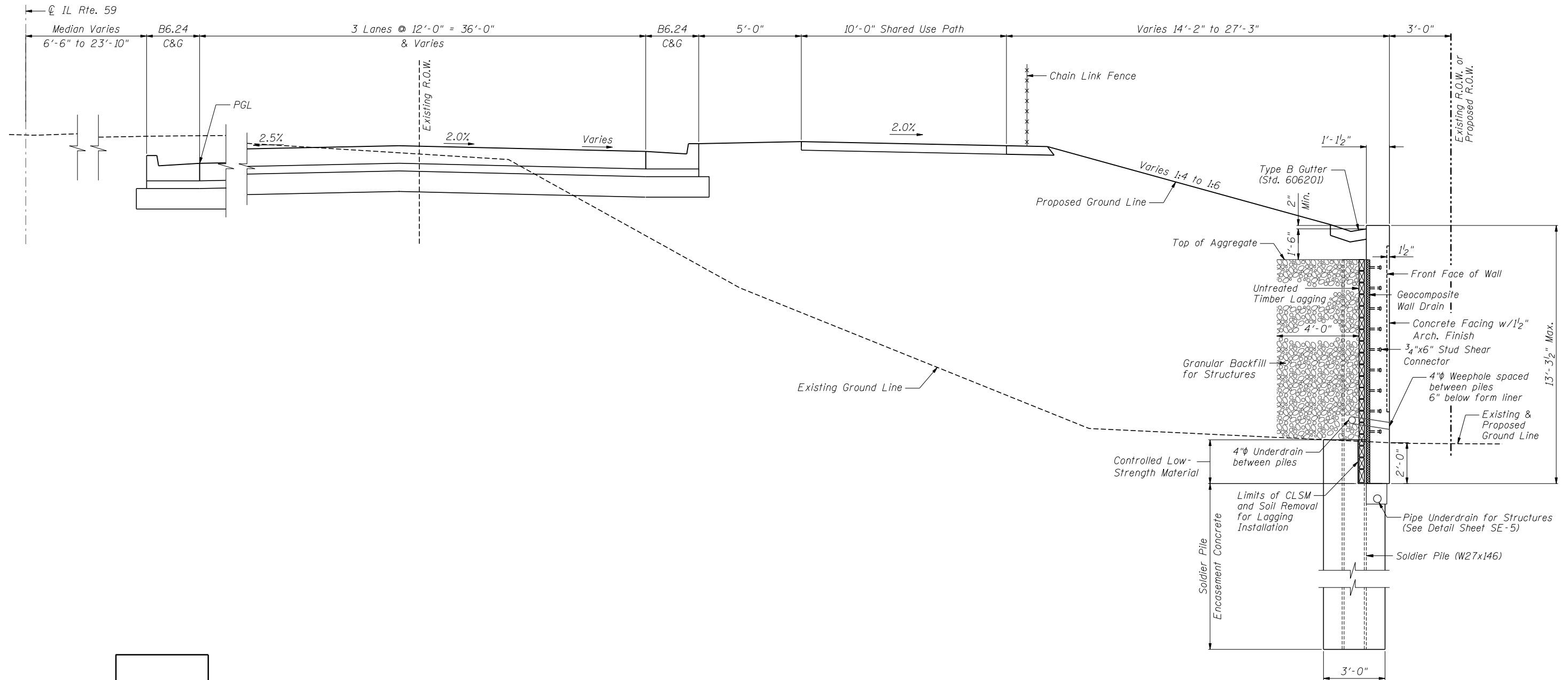
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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

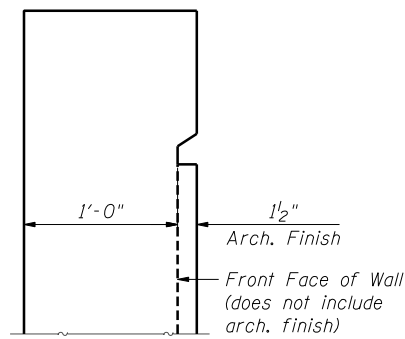
SOLDIER PILE LAYOUT  
STRUCTURE NUMBER 022-W066

SHEET NO. SE-3 OF SE-11 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338/IL 59	(112 & 113) WRS-5	DUPAGE	963	675
			CONTRACT NO. 60131	
ILLINOIS FED. AID PROJECT				



**TYPICAL WALL SECTION**  
 Sta. 926+14.90 to Sta. 928+60.40  
 (Looking North)



**DETAIL 1**

**TYPICAL SECTION**  
 SN 022-W066

FILE NAME = ...E0131-W066-004-1.dwg



Zroka Engineering, P.C.  
 4216 North Hermitage  
 Chicago, IL 60613

USER NAME = SAW	DESIGNED - LAS	REVISED -
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**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

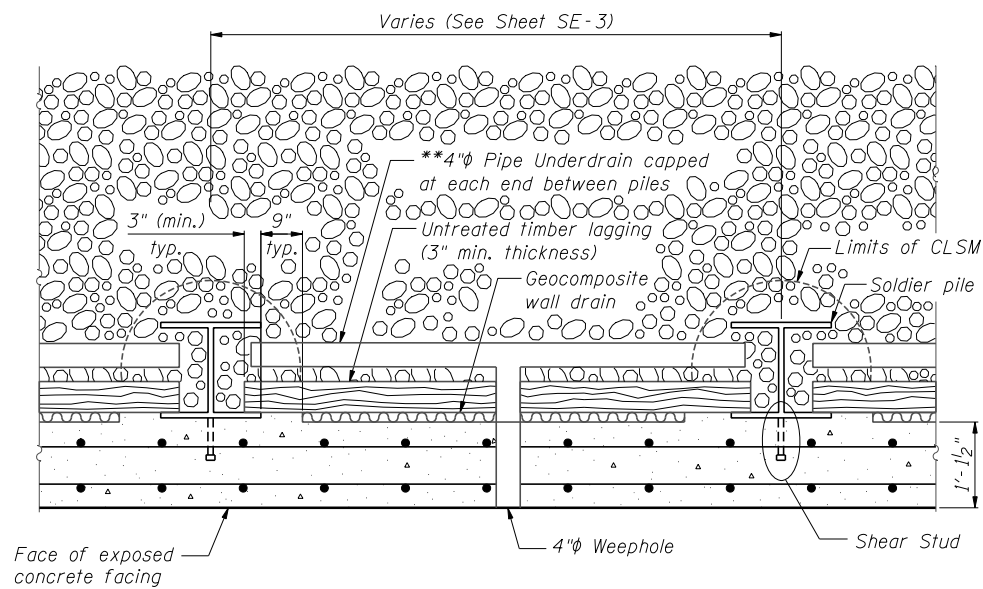
**TYPICAL SECTION**  
**STRUCTURE NUMBER 022-W066**

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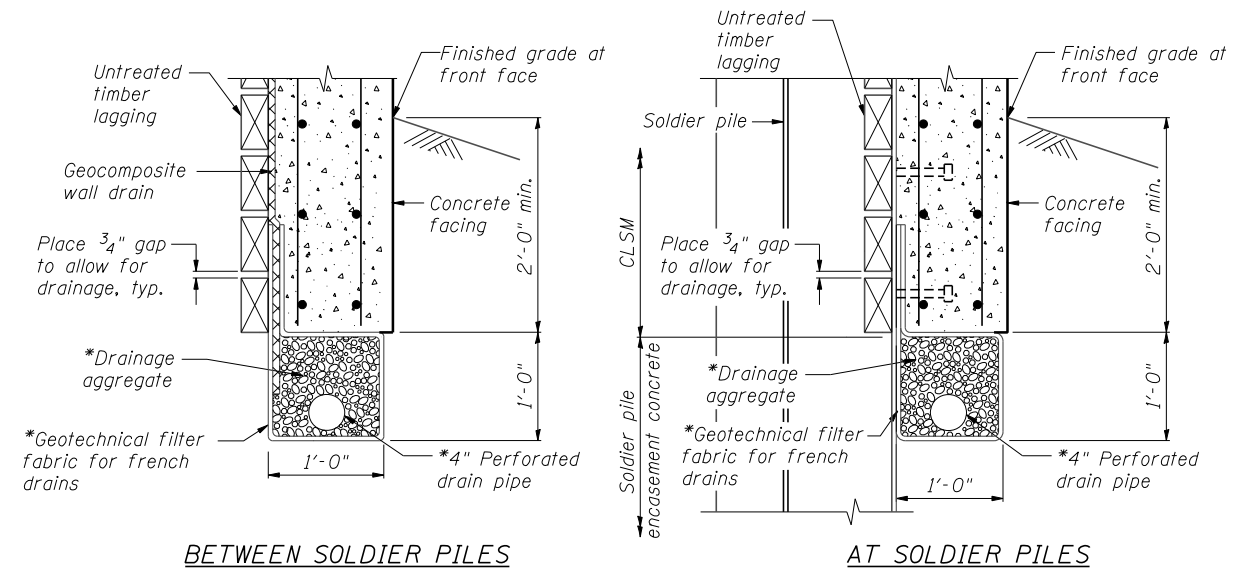
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338/IL 59	(112 & 113) WRS-5	DUPAGE	963	676
CONTRACT NO. 60131				

ILLINOIS FED. AID PROJECT

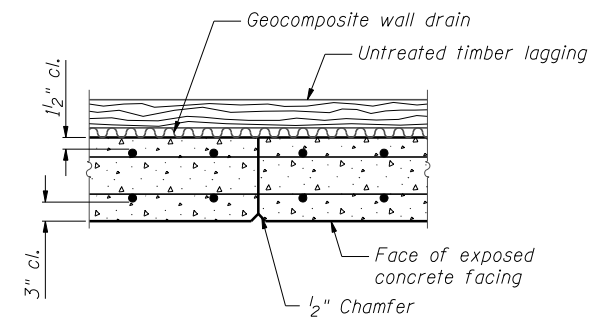




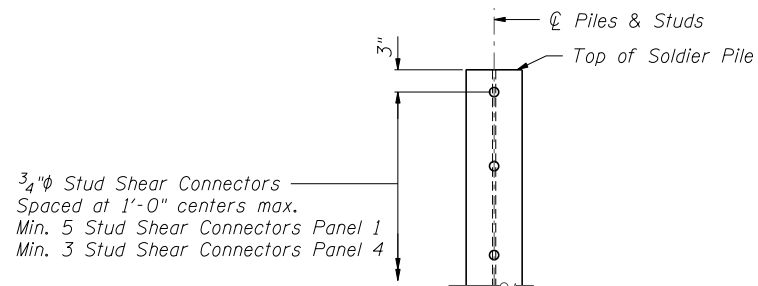
**SECTION THRU DRILLED SOLDIER PILE WALL**  
 \*\*Capping included in the cost of "Pipe Underdrains for Structures"



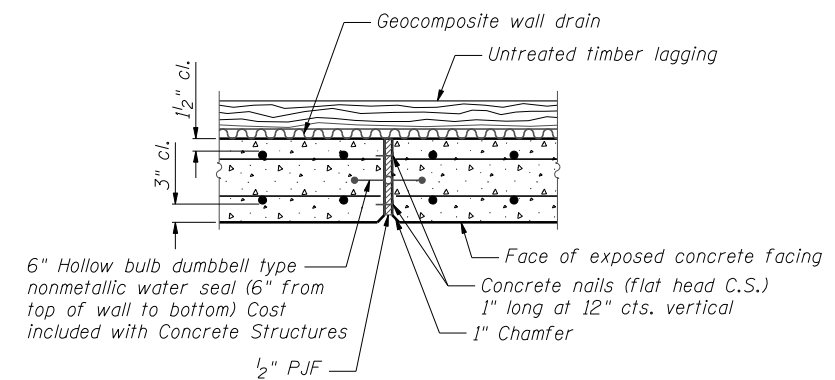
**PIPE UNDERDRAIN DETAIL**  
 \*Included in the cost of "Pipe Underdrains for Structures"



**CONSTRUCTION JOINT DETAIL**



**DETAIL OF SHEAR STUD PLACEMENT**



**EXPANSION JOINT DETAIL**

**DETAILS**  
**SN 022-W066**

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Zroka Engineering, P.C.  
 4216 North Hermitage  
 Chicago, IL 60613

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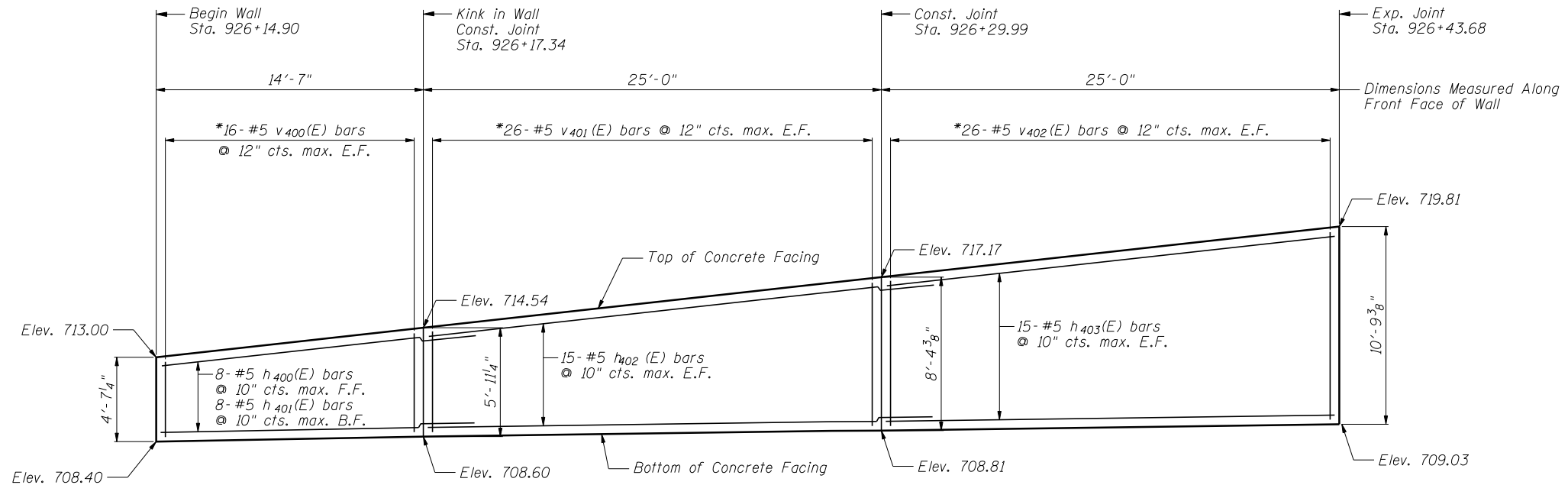
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**DETAILS**  
**STRUCTURE NUMBER 022-W066**

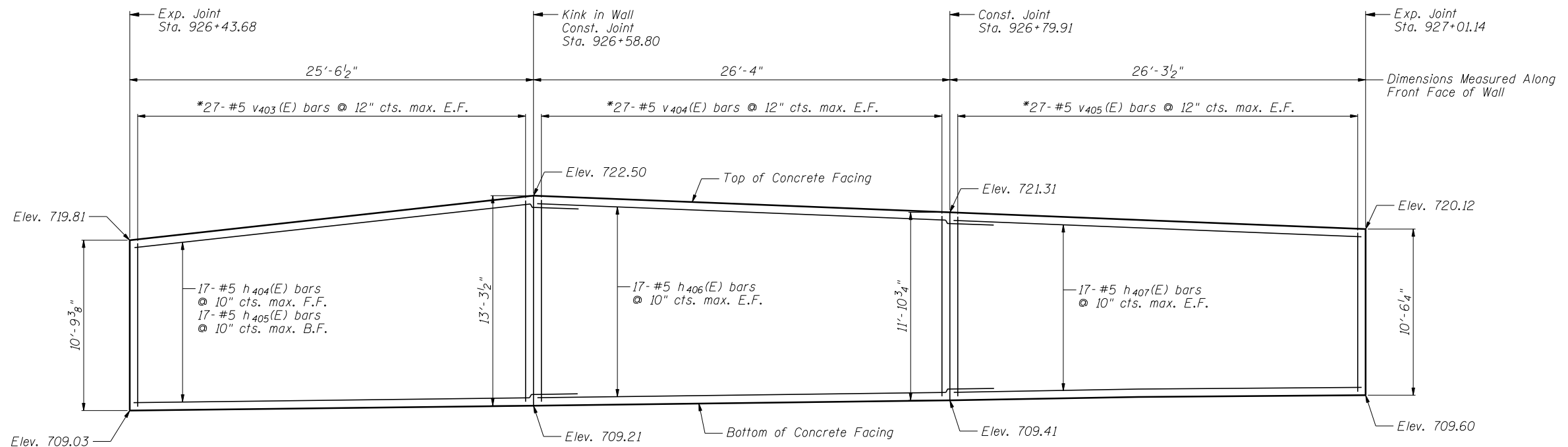
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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338/IL 59	(112 & 113) WRS-5	DUPAGE	963	677
			CONTRACT NO. 60131	

ILLINOIS FED. AID PROJECT



**ELEVATION**



**ELEVATION**

**Notes:**

Minimum lap for #5 bar is 3'-8".

Space reinforcement in wall to miss shear studs.

\* signifies cut bar. Order per length on Bill of Material. Cut as shown in Cutting Diagram and use half of bars in each face.

See Sheet SE-8 for Concrete Facing Details and Bill of Material.

**CONCRETE FACING 1  
SN 022-W066**



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	CHECKED - DAZ	REVISED -
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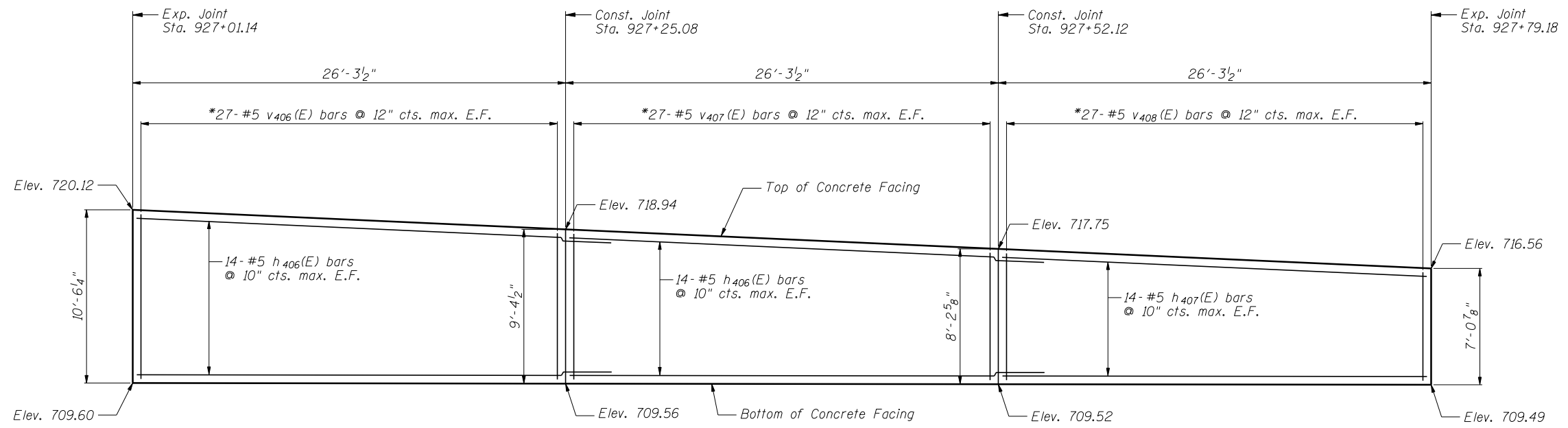
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

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STRUCTURE NUMBER 022-W066**

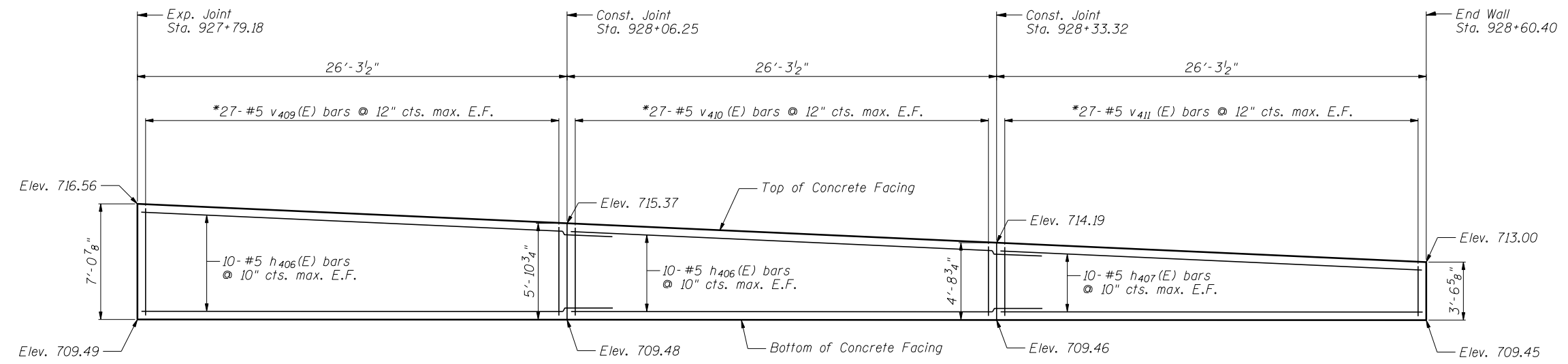
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			CONTRACT NO. 60131	
ILLINOIS FED. AID PROJECT				

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ELEVATION



ELEVATION

Notes:

Minimum lap for #5 bar is 3'-8".

Space reinforcement in wall to miss shear studs.

\* signifies cut bar. Order per length on Bill of Material. Cut as shown in Cutting Diagram and use half of bars in each face.

See Sheet SE-8 for Concrete Facing Details and Bill of Material.

CONCRETE FACING 2  
SN 022-W066



Zroka Engineering, P.C.  
4216 North Hermitage  
Chicago, IL 60613

USER NAME = SAW	DESIGNED - LAS	REVISED -
	CHECKED - DAZ	REVISED -
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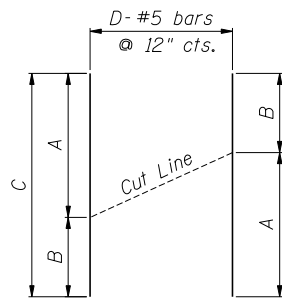
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

CONCRETE FACING 2  
STRUCTURE NUMBER 022-W066

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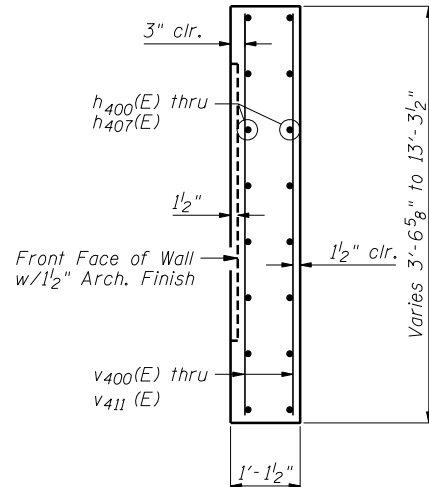
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ILLINOIS FED. AID PROJECT				

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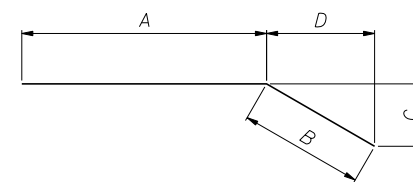


**CUTTING DIAGRAM**

Bar	A	B	C	D
V 400 (E)	4'-4"	5'-8"	10'-0"	16
V 401 (E)	5'-8"	8'-1"	13'-9"	26
V 402 (E)	8'-1"	10'-6"	18'-7"	26
V 403 (E)	10'-6"	13'-0"	23'-6"	27
V 404 (E)	13'-0"	11'-7"	24'-7"	27
V 405 (E)	11'-7"	10'-3"	21'-10"	27
V 406 (E)	10'-3"	9'-1"	19'-4"	27
V 407 (E)	9'-1"	7'-11"	17'-0"	27
V 408 (E)	7'-11"	6'-9"	14'-8"	27
V 409 (E)	6'-9"	5'-7"	12'-4"	27
V 410 (E)	5'-7"	4'-5"	10'-0"	27
V 411 (E)	4'-5"	3'-3"	7'-8"	27



**SECTION THRU CONCRETE FACING**



**h400(E), h401(E), h404(E) & h405(E) BARS**

**BAR BEND TABLE**

Bar	A	B	C	D
h400 (E)	14'-5"	3'-10"	1'-10"	3'-4"
h401 (E)	14'-8"	3'-10"	1'-10"	3'-4"
h404 (E)	25'-5"	3'-10"	2'-1"	3'-2 1/2"
h405 (E)	25'-8"	3'-10"	2'-1"	3'-2 1/2"

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h400 (E)	8	#5	18'-3"	—
h401 (E)	8	#5	18'-6"	—
h402 (E)	30	#5	29'-0"	—
h403 (E)	30	#5	24'-8"	—
h404 (E)	17	#5	29'-3"	—
h405 (E)	17	#5	29'-6"	—
h406 (E)	130	#5	30'-0"	—
h407 (E)	82	#5	26'-0"	—
v400 (E)	30	#5	10'-0"	—
v401 (E)	26	#5	13'-9"	—
v402 (E)	26	#5	18'-7"	—
v403 (E)	27	#5	23'-6"	—
v404 (E)	27	#5	24'-7"	—
v405 (E)	27	#5	21'-10"	—
v406 (E)	27	#5	19'-4"	—
v407 (E)	27	#5	17'-0"	—
v408 (E)	27	#5	14'-8"	—
v409 (E)	27	#5	12'-4"	—
v410 (E)	27	#5	10'-0"	—
v411 (E)	27	#5	7'-8"	—
Item	Unit	Quantity		
Concrete Structures	Cu. Yd.	105.8		
Reinforcement Bars, Epoxy Coated	Pound	14,760		
Pipe Underdrains for Structures, 4"	Foot	601		
Geocomposite Wall Drain	Sq. Yd.	137		

**CONCRETE FACING DETAILS  
SN 022-W066**

FILE NAME = ...E0131-W066-008-ConFacingDetails.dgn



Zroka Engineering, P.C.  
4216 North Hermitage  
Chicago, IL 60613

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PLOT DATE = 10/9/2012

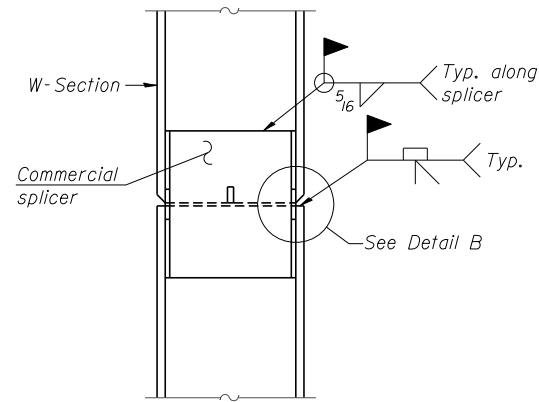
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REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

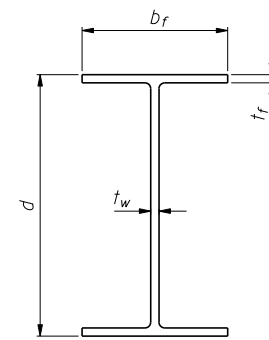
**CONCRETE FACING DETAILS  
STRUCTURE NUMBER 022-W066**

SHEET NO. SE-8 OF SE-11 SHEETS

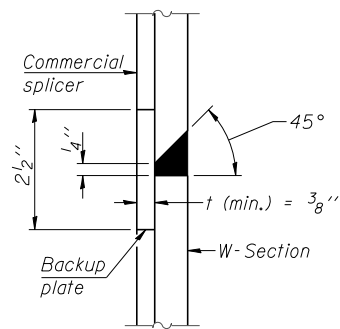
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338/1L 59	(112 & 113) WRS-5	DUPAGE	963	680
			CONTRACT NO. 60131	
ILLINOIS FED. AID PROJECT				



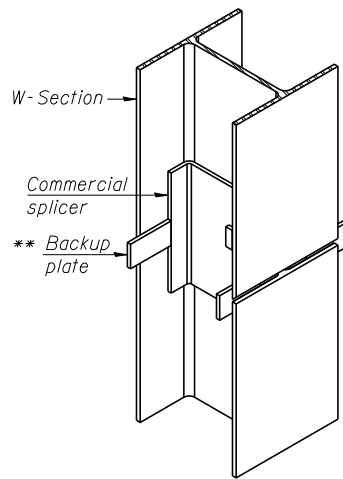
ELEVATION



Designation	Depth d	Flange width b <sub>f</sub>	Flange thickness t <sub>f</sub>	Web thickness t <sub>w</sub>	Encasement diameter A
W27x146	27 <sup>3</sup> / <sub>8</sub> "	14"	1"	5 <sup>5</sup> / <sub>8</sub> "	36"

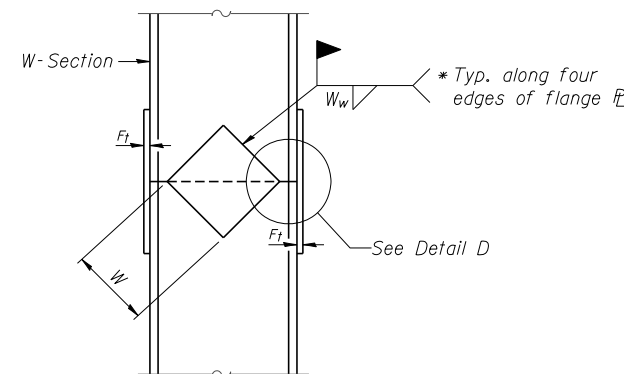


DETAIL "B"

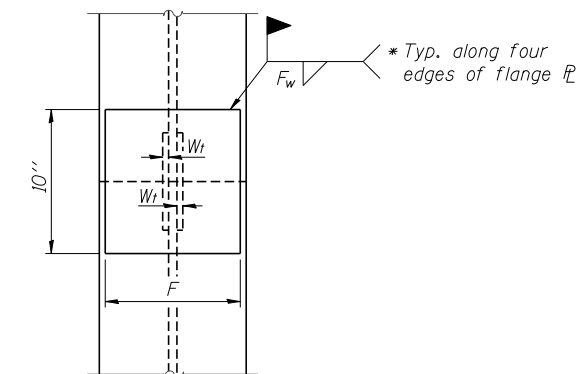


ISOMETRIC VIEW

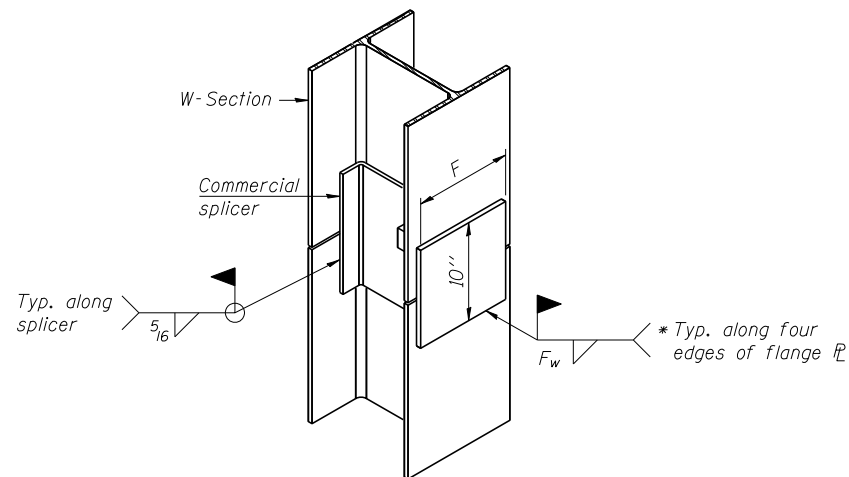
WELDED COMMERCIAL SPLICE



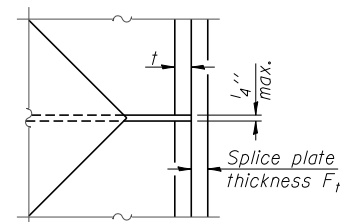
ELEVATION



END VIEW



ISOMETRIC VIEW



DETAIL D

Designation	F	F <sub>t</sub>	F <sub>w</sub>	W	W <sub>t</sub>	W <sub>w</sub>
W27x146	12"	1 <sup>1</sup> / <sub>4</sub> "	3 <sup>3</sup> / <sub>4</sub> "	16 <sup>3</sup> / <sub>4</sub> "	5 <sup>5</sup> / <sub>8</sub> "	3 <sup>3</sup> / <sub>8</sub> "

WELDED PLATE FIELD SPLICE

WELDED COMMERCIAL SPLICE ALTERNATE

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

Note:  
The steel W-Sections shall be according to AASHTO M270 Grade 36.

PILE SPLICE DETAILS  
SN 022-W066



Zroka Engineering, P.C.  
4216 North Hermitage  
Chicago, IL 60613

USER NAME = SAW	DESIGNED - LAS	REVISED -
	CHECKED - DAZ	REVISED -
PLOT SCALE = 0.1667' / IN.	DRAWN - SAW	REVISED -
PLOT DATE = 10/9/2012	CHECKED - JLA	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

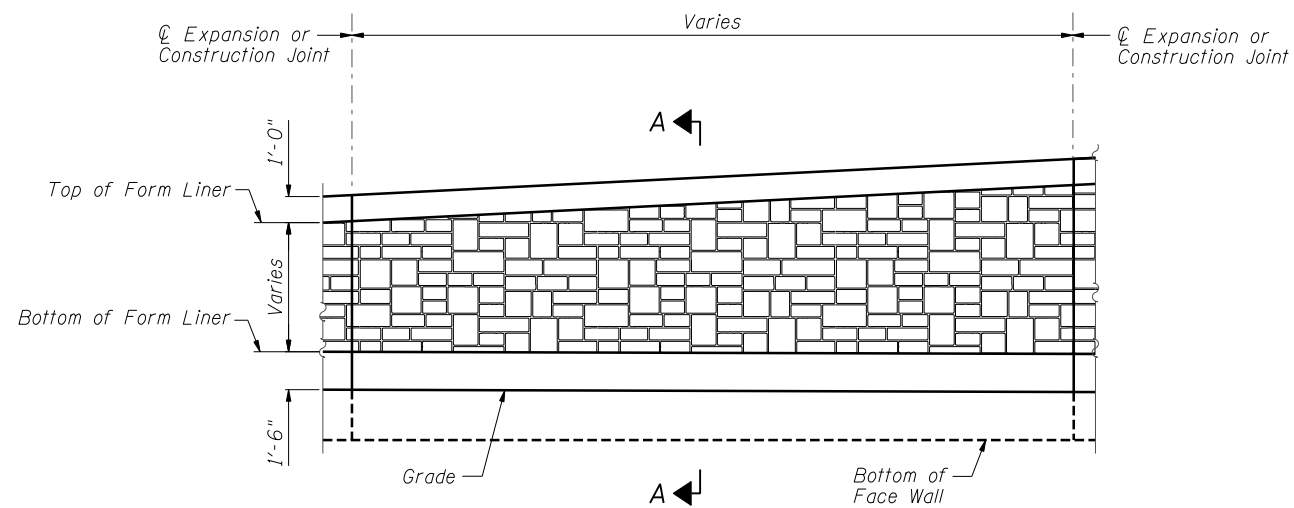
PILE SPLICE DETAILS  
STRUCTURE NUMBER 022-W066

SHEET NO. SE-9 OF SE-11 SHEETS

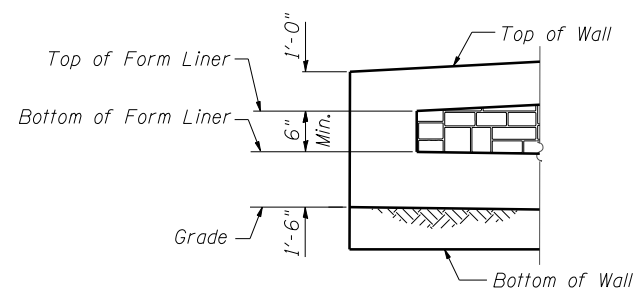
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338/1L 59	(112 & 113) WRS-5	DUPAGE	963	681
			CONTRACT NO. 60131	

ILLINOIS FED. AID PROJECT

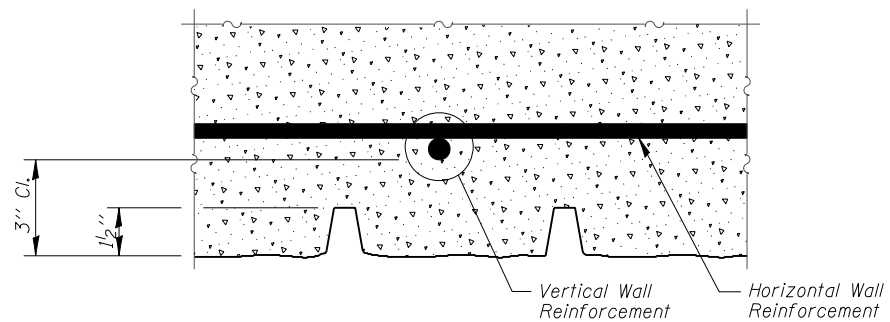
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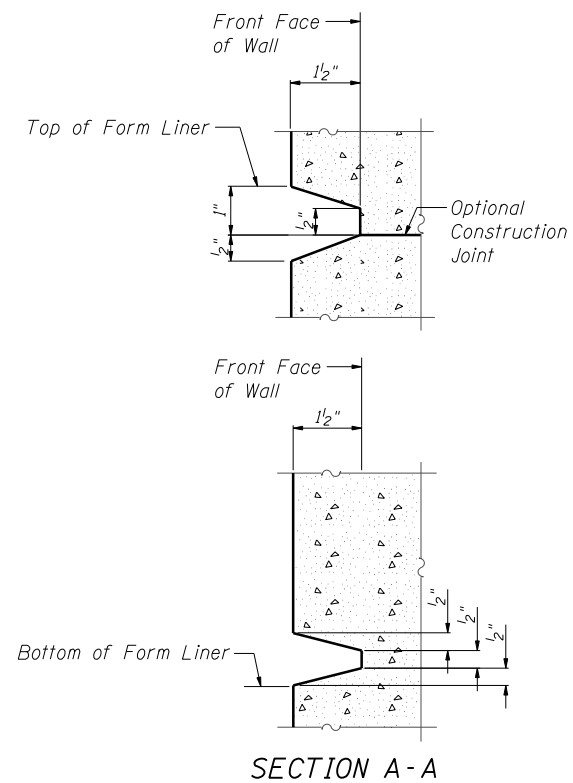
ELEVATION - FORM LINER



END FORM LINER FINISH



PLAN - FORM LINER



FORM LINER ELEVATION TABLE

Station	Form Liner Top Elevation	Form Liner Bottom Elevation
926+14.90	None	None
926+15.61	712.46	711.96
926+17.34	713.54	712.10
926+29.99	716.17	712.31
926+43.68	718.81	712.53
926+58.80	721.50	712.71
926+79.91	720.31	712.91
927+01.14	719.12	713.10
927+25.08	717.94	713.06
927+52.12	716.75	713.02
927+79.18	715.56	712.96
928+06.25	714.37	712.96
928+26.88	713.47	712.96
928+33.32	None	None
928+60.40	None	None

ARCHITECTURAL FINISH DETAILS  
SN 022-W066

FILE NAME = ...E0131-W066-010-ArchFinish.dgn

**ZROKA** engineering  
Zroka Engineering, P.C.  
4216 North Hermitage  
Chicago, IL 60613

USER NAME = SAW	DESIGNED - LAS	REVISED -
CHECKED - DAZ	REVISIONS -	
PLOT SCALE = 0.1667' / IN.	DRAWN - SAW	REVISED -
PLOT DATE = 10/10/2012	CHECKED - JLA	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ARCHITECTURAL FINISH DETAILS  
STRUCTURE NUMBER 022-W066

SHEET NO. SE-10 OF SE-11 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338/1L 59	(112 & 113) WRS-5	DUPAGE	963	682
			CONTRACT NO. 60131	
ILLINOIS FED. AID PROJECT				

BORING LOG RW-74

BORING LOG RW-75

BORING LOG RW-76

Geo Services, Inc.		SOIL BORING LOG		PAGE 1 of 1	
Geotechnical, Environmental & Civil Engineering 805 Amberst Court, Suite 204 Naperville, Illinois 60565 (630) 955-3838				DATE 4/23/2012	
ROUTE II, Route 59 (FAP 338)		DESCRIPTION Illinois Route 59-Aurora Avenue/New York Street To Ferry Road		LOGGED BY RT	
SECTION (112 & 113) WRS-5		LOCATION SEC. 3, 9-10, 15-16, 21-22 TWP. 38N, RNG. 9E, Naperville Township		GSI JOB No. 09173	
COUNTY DuPage		DRILLING METHOD Hollow Stem Auger		HAMMER TYPE CME Automatic	
STRUCT. NO. 022-W066		Surface Water Elev. <i>n/a</i>		D E P T H	
Station: 4063+6.3 to 4066+40		Stream Bed Elev. <i>n/a</i>		B L O W S	
BORING NO. RW-74		Groundwater Elevation:		U C S	
Station: 4063+97 IL RTE-59		First Encounter 691.5		M O I S T	
Offset: 138.8' Right		Upon Completion		Qu	
Ground Surface Elev. 710.5		After _____ Hrs.		(ft) (/ft) (tsf) (%)	
12.0" TOPSOIL-black 709.5 AS - 33					
2 123					
3 94					
4 0.9B 30					
SILTY CLAY-brown & gray-medium stiff to stiff (A-6) Wet, Apparent Fill					
1 123					
2 123					
3 123					
4 1.0P 32					
5 1.2B 14					
6 1.2B 14					
7 1.2B 14					
8 1.2B 14					
9 1.2B 14					
10 1.2B 14					
11 1.2B 14					
12 1.2B 14					
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100 1.2B 14					

Geo Services, Inc.		SOIL BORING LOG		PAGE 1 of 1	
Geotechnical, Environmental & Civil Engineering 805 Amberst Court, Suite 204 Naperville, Illinois 60565 (630) 955-3838				DATE 4/23/2012	
ROUTE II, Route 59 (FAP 338)		DESCRIPTION Illinois Route 59-Aurora Avenue/New York Street To Ferry Road		LOGGED BY RT	
SECTION (112 & 113) WRS-5		LOCATION SEC. 3, 9-10, 15-16, 21-22 TWP. 38N, RNG. 9E, Naperville Township		GSI JOB No. 09173	
COUNTY DuPage		DRILLING METHOD Hollow Stem Auger		HAMMER TYPE CME Automatic	
STRUCT. NO. 022-W066		Surface Water Elev. <i>n/a</i>		D E P T H	
Station: 4063+6.3 to 4066+40		Stream Bed Elev. <i>n/a</i>		B L O W S	
BORING NO. RW-75		Groundwater Elevation:		U C S	
Station: 4064+86 IL RTE-59		First Encounter 695.1		M O I S T	
Offset: 91.4' Right		Upon Completion		Qu	
Ground Surface Elev. 711.8		After _____ Hrs.		(ft) (/ft) (tsf) (%)	
15.0" TOPSOIL-black 710.1 AS - 51					
1 123					
2 123					
3 123					
4 1.0B 28					
SILTY CLAY-brown & gray-medium stiff to stiff (A-6)					
1 123					
2 123					
3 123					
4 1.0B 28					
5 1.0B 28					
6 1.0B 28					
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Geo Services, Inc.		SOIL BORING LOG		PAGE 1 of 1	
Geotechnical, Environmental & Civil Engineering 805 Amberst Court, Suite 204 Naperville, Illinois 60565 (630) 955-3838				DATE 4/23/2012	
ROUTE II, Route 59 (FAP 338)		DESCRIPTION Illinois Route 59-Aurora Avenue/New York Street To Ferry Road		LOGGED BY RT	
SECTION (112 & 113) WRS-5		LOCATION SEC. 3, 9-10, 15-16, 21-22 TWP. 38N, RNG. 9E, Naperville Township		GSI JOB No. 09173	
COUNTY DuPage		DRILLING METHOD Hollow Stem Auger		HAMMER TYPE CME Automatic	
STRUCT. NO. 022-W066		Surface Water Elev. <i>n/a</i>		D E P T H	
Station: 4063+6.3 to 4066+40		Stream Bed Elev. <i>n/a</i>		B L O W S	
BORING NO. RW-76		Groundwater Elevation:		U C S	
Station: 4066+07 IL RTE-59		First Encounter 705.1		M O I S T	
Offset: 113.0' Right		Upon Completion		Qu	
Ground Surface Elev. 712.1		After _____ Hrs.		(ft) (/ft) (tsf) (%)	
CLAY-gray-very stiff to hard (A-6) 691.6					
1 123					
2 123					
3 123					
4 1.0P 36					
TOPSOIL-black					
1 123					
2 123					
3 123					
4 1.0P 36					
5 1.0P 36					
6 1.0P 36					
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100 1.0P 36					

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USER NAME = SAW	DESIGNED - LAS	REVISED -
CHECKED - DAZ	REVISIONS -	
PLOT SCALE = 2.00' / IN.	DRAWN - SAW	REVISED -
PLOT DATE = 10/9/2012	CHECKED - JLA	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**BORING LOGS  
STRUCTURE NUMBER 022-W066**

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338/IL 59	(112 & 113) WRS-5	DUPAGE	963	683
CONTRACT NO. 60131			ILLINOIS FED. AID PROJECT	

BORING LOGS  
SN 022-W066

SHEET NO. SE-11 OF SE-11 SHEETS

Bench Mark: BM #224 4059+52, 34' LT  
 DuPage County survey disk at north end of the west bridge wall,  
 IL Rte 59 over Interstate Route 88, Elev. 731.43

Existing Structure: None

**DESIGN SPECIFICATIONS**

2012 AASHTO LRFD Bridge Design Specifications  
 6th Edition, with 2012 Interim Revisions

Illinois State Toll Highway Authority  
 Structure Design Manual, March 2012

**DESIGN STRESSES**

**FIELD UNITS**

$f'_c = 3,500$  psi  
 $f_y = 60,000$  psi (reinforcement)  
 $f_y = 50,000$  psi (AASHTO M270 Gr. 50)

**CURVE DATA**

**@ Wall W067**  
 Curve RW067-1  
 $\Delta = 6^\circ 48' 49''$  (RT)  
 $D = 6^\circ 48' 49''$   
 $R = 840.92'$   
 $T = 50.06'$   
 $L = 100.00'$   
 $E = 1.49'$   
 SE = Normal Crown  
 PC STA. 0+00.00  
 PT STA. 1+00.00  
 PI STA. 0+50.06

**@ Ramp A**  
 Curve Ramp A-1  
 $\Delta = 19^\circ 06' 41''$  (RT)  
 $D = 6^\circ 42' 19''$   
 $R = 854.50'$   
 $T = 143.85'$   
 $L = 285.02'$   
 $E = 12.02'$   
 SE = Normal Crown  
 PC STA. 1010+91.56  
 PT STA. 1013+76.58  
 PI STA. 1012+35.41

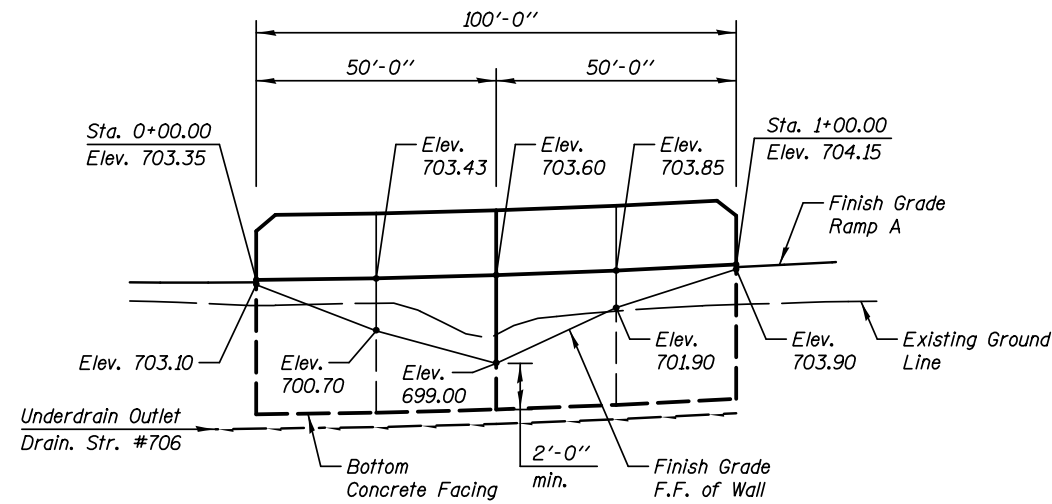
**POT "A"**  
 Sta. 0+00.00 - @ Wall W067 =  
 Sta. 1012+55.00, 13.58' Rt. - @ Ramp A

**TOTAL BILL OF MATERIAL**

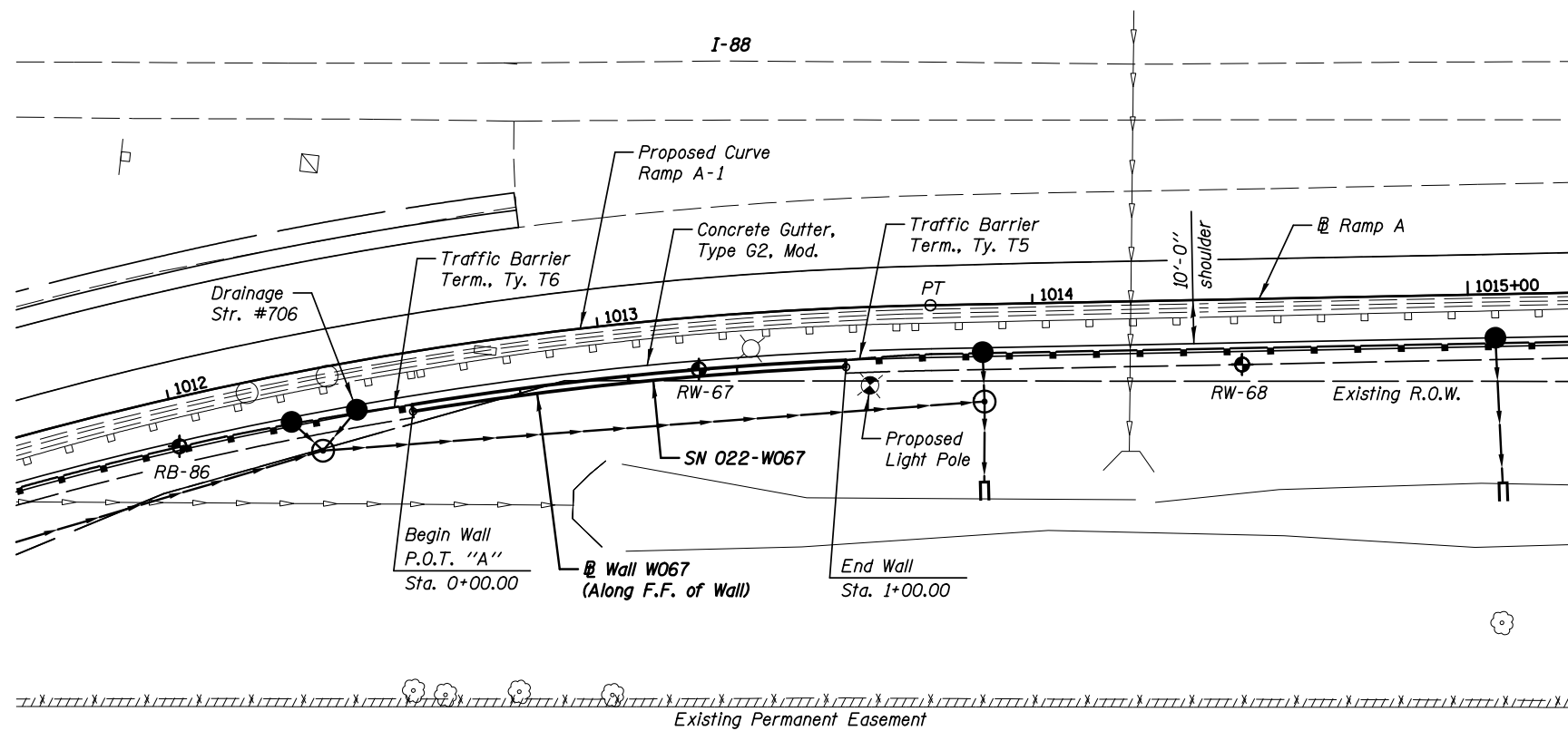
ITEM	UNIT	TOTAL
Structure Excavation	Cu. Yd.	58.0
Concrete Structures	Cu. Yd.	46.0
Stud Shear Connectors	Each	200
Reinforcement Bars, Epoxy Coated	Pound	5330
Concrete Sealer	Sq. Ft.	1511.0
Geocomposite Wall Drain	Sq. Yd.	62.0
Untreated Timber Lagging	Sq. Ft.	551.0
Furnishing Soldier Piles (HP Section)	Foot	560.0
Pipe Underdrains for Structures 4"	Foot	112.0
Drilling And Setting Soldier Piles (In Soil)	Cu. Ft.	2842.0

**INDEX OF DRAWINGS**

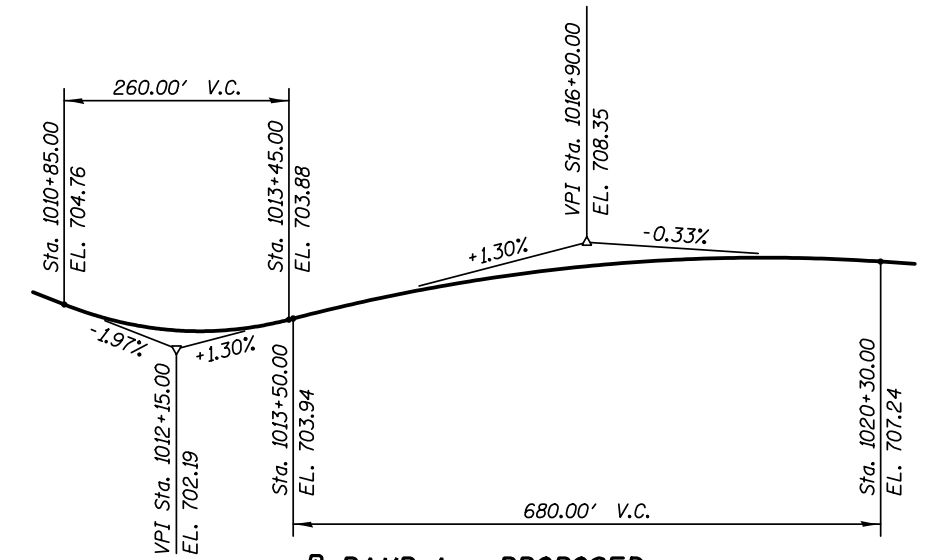
SHT NO.	TITLE
SF-1	General Plan and Elevation
SF-2	Typical Wall Section and Details
SF-3	Plan & Elevation - Panels A & B
SF-4	Wall Sections and Details
SF-5	Soil Boring Logs



**ELEVATION**

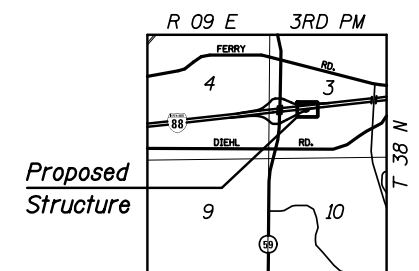


**PLAN**



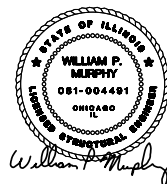
**@ RAMP A - PROPOSED PROFILE GRADE LINE**

(Profile along outside edge of shoulder)



**LOCATION SKETCH**

**GENERAL PLAN AND ELEVATION**  
 ILLINOIS ROUTE 59 F.A.P. RTE. 338  
 SEC. (112 & 113) WRS-5  
 DUPAGE COUNTY  
 STA. 1012+55 TO STA. 1013+57  
 STRUCTURE NO. 022-W067



Expires 11-30-2012  
 Date: 10/15/2012  
 for drawings  
 SF-1 thru SF-5

**Notes**

See Roadway Plans for Concrete Gutter, Type G2, Mod. details.  
 See Roadway Drainage Plans for drainage structure sizes and locations.

**Legend**

Soil Borings  
 F.F. Front Face  
 B.F. Back Face

**KNIGHT**  
 Engineers & Architects

DESIGNED - TB	REVISIONS
CHECKED - WPM	REVISIONS
DRAWN - TB	REVISIONS
CHECKED - WPM	REVISIONS

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

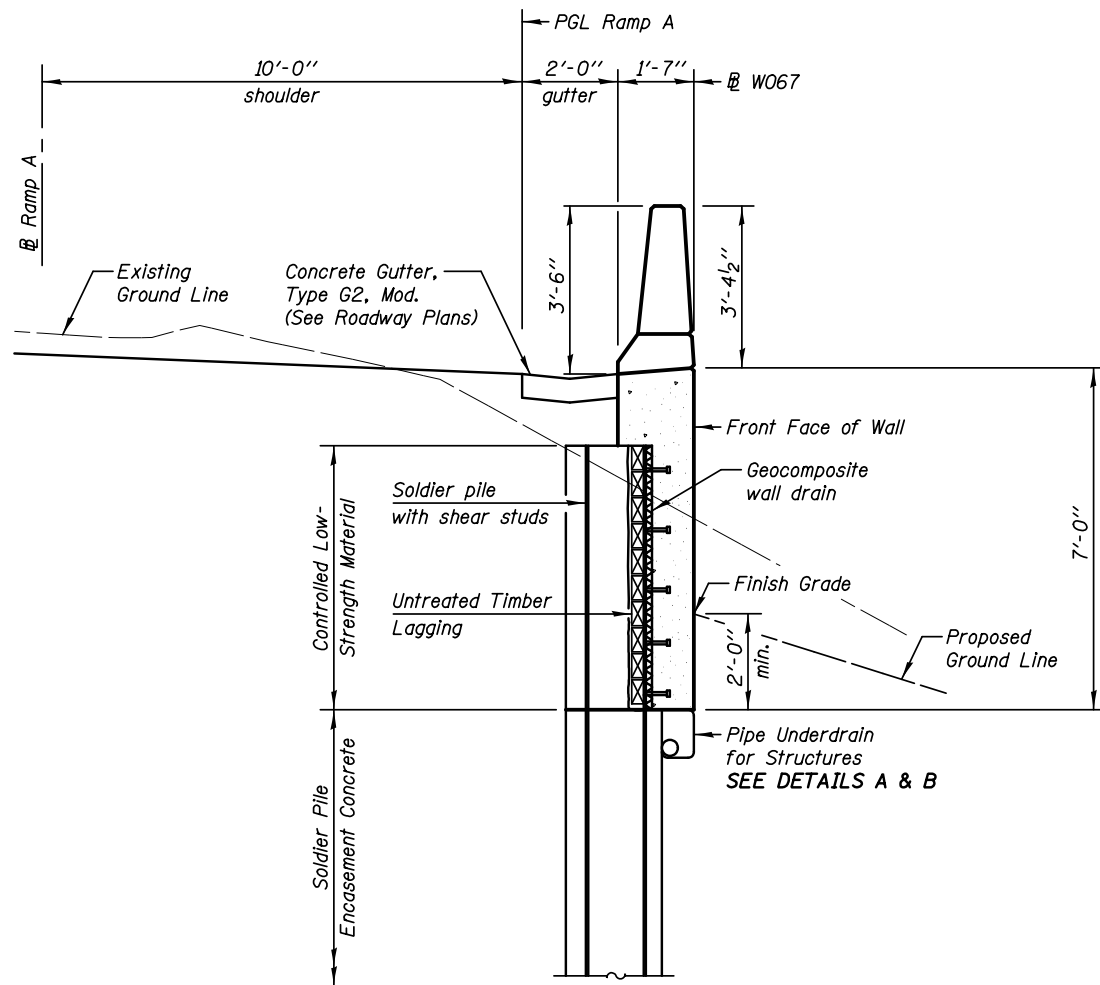
GENERAL PLAN AND ELEVATION  
 STRUCTURE NUMBER 022-W067 TOLLWAY WALL EW123.5R,EB(R)

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	(112 & 113) WRS-5	DUPAGE	963	684
CONTRACT NO. 60131				

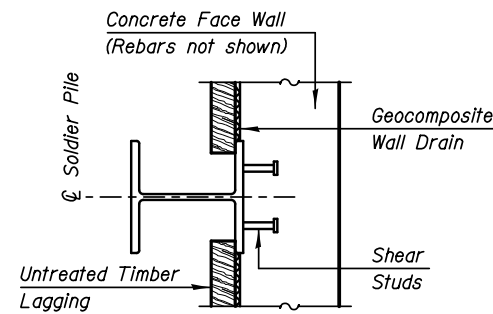
SHEET NO. SF-1 OF 5 SHEETS

ILLINOIS FED. AID PROJECT

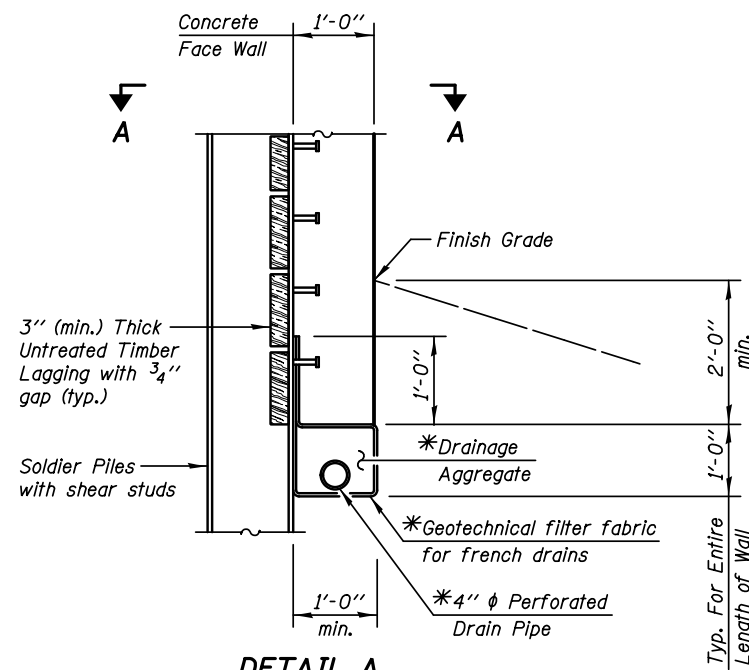




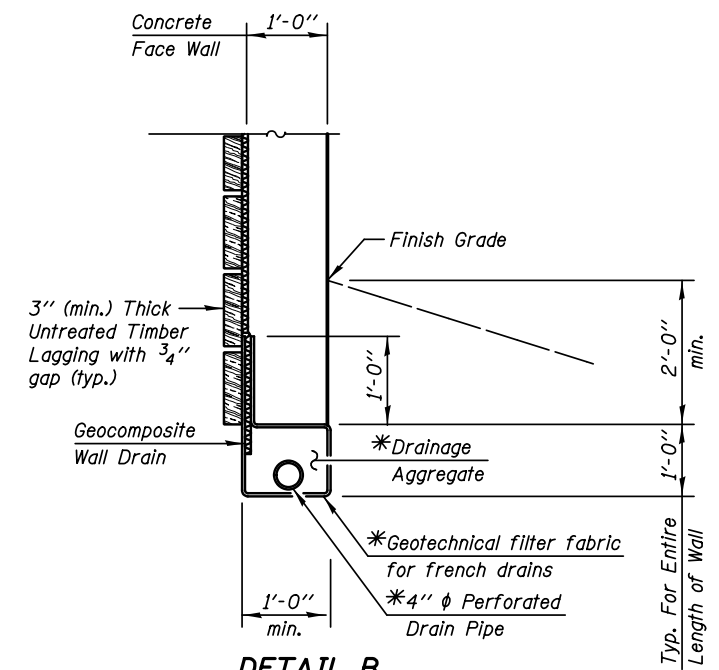
**TYPICAL WALL SECTION**  
(For Details See Sheet SF-4)



**SECTION A-A - PLAN**



**DETAIL A**  
(At Soldier Piles)



**DETAIL B**  
(Between Soldier Piles)

**UNDERDRAIN DETAIL**

\*Cost Included with "Pipe Underdrains for Structures"

**GENERAL NOTES**

All structural steel shall conform to the requirements of AASHTO M 270 Grade 50 except as noted on plans.

Reinforcement bars designated (E) shall be epoxy coated.

The Contractor is responsible for the design and performance of the timber lagging using no less than a 3 in. nominal rough-sawn thickness and timber with a minimum allowable bending stress of 1000 psi.

Concrete Sealer shall be applied to exposed surfaces of the front face, top face and back face of wall.

DESIGNED - TB	REVISION
CHECKED - WPM	REVISION
DRAWN - TB	REVISION
CHECKED - WPM	REVISION
SCALE - NONE	
DATE - 10/15/2012	

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	(112 & 113) WRS-5	DUPAGE	963	685
CONTRACT NO. 60131				

Note:  
For Top/Wall Elevations, Bottom/Wall  
Elevations & Wall Height SEE TABLE.

**PILE DATA**

Pile No.	Top Elev.	Bottom Elev.	Length Ft.	No of Studs
PA-1	701.73	673.73	28.00	10
PA-2	701.74	673.74	28.00	10
PA-3	701.76	673.76	28.00	10
PA-4	701.78	673.78	28.00	10
PA-5	701.79	673.79	28.00	10
PA-6	701.82	673.82	28.00	10
PA-7	701.85	673.85	28.00	10
PA-8	701.89	673.89	28.00	10
PA-9	701.92	673.92	28.00	10
PA-10	701.95	673.95	28.00	10
PB-1	702.00	674.00	28.00	10
PB-2	702.05	674.05	28.00	10
PB-3	702.10	674.10	28.00	10
PB-4	702.15	674.15	28.00	10
PB-5	702.20	674.20	28.00	10
PB-6	702.25	674.25	28.00	10
PB-7	702.31	674.31	28.00	10
PB-8	702.37	674.37	28.00	10
PB-9	702.43	674.43	28.00	10
PB-10	702.49	674.49	28.00	10

**SHAFT SIZES**

Pile Size	Shaft Excavation Size
HP14	2'-6"

**LEGEND**

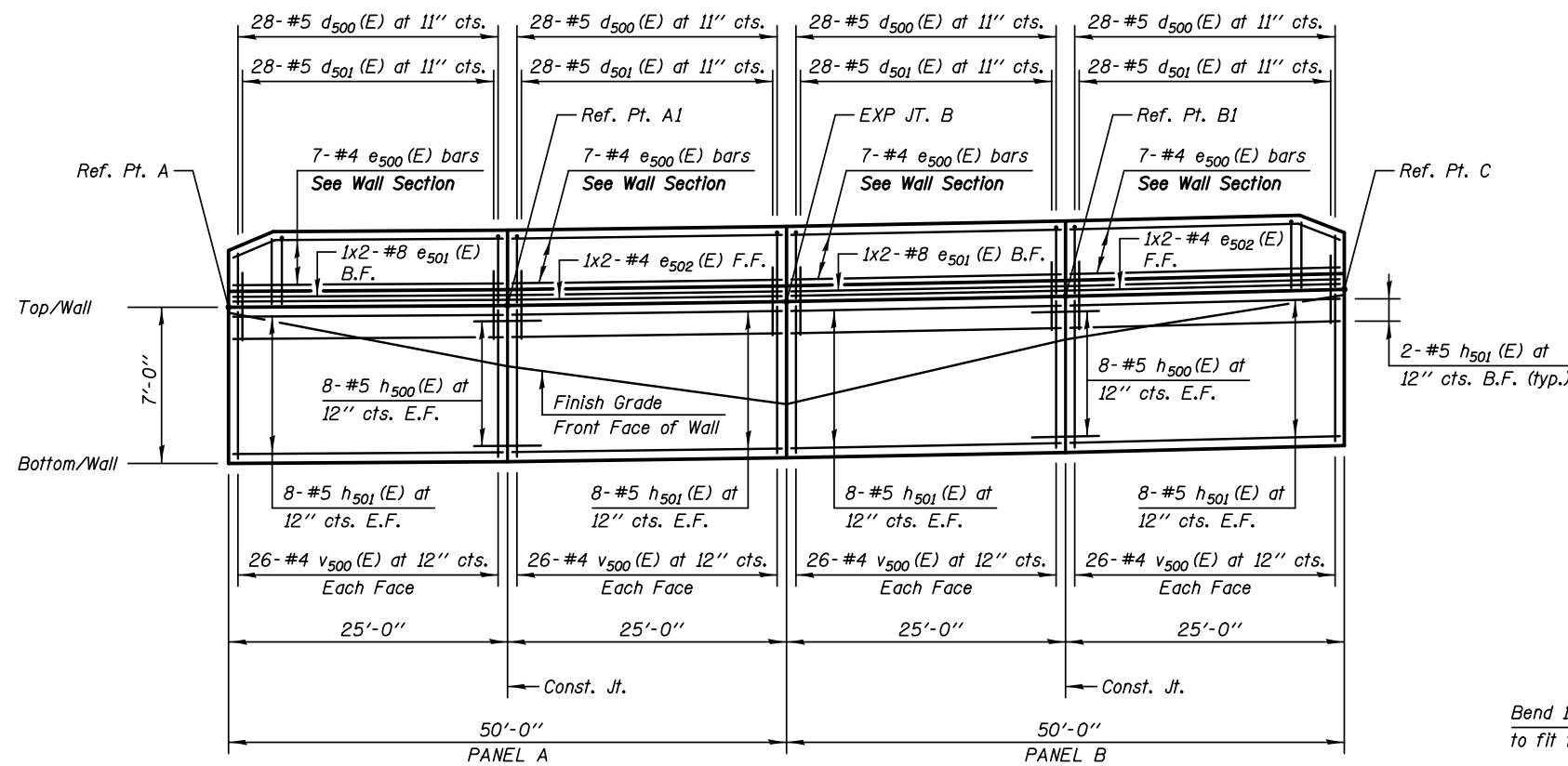
E.F. Each Face  
F.F. Front Face  
B.F. Back Face

**Min Bar Laps**

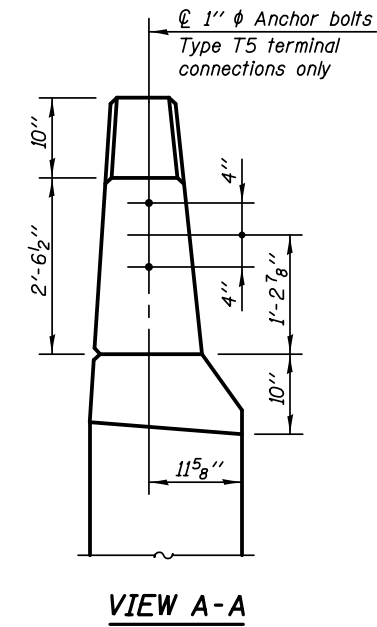
#5 Bars = 2'-5" (Horiz. Top Bars)  
#4 Bars = 2'-1"  
#8 Bars = 5'-5"

**WALL JOINT LOCATIONS, HEIGHTS & ELEVATIONS**

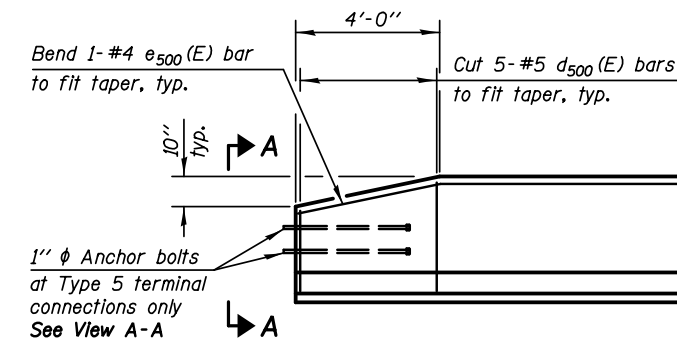
Location Ref. Points	Station on @ W067	Wall Height	Top/Wall Elevation	Bottom/Wall Elevation	Finish Grade Elev.
Begin Wall - A	0+00.00	7'-0"	703.35	696.35	703.10
C.J. - A1	0+25.00	7'-0"	703.43	696.43	700.70
Exp. Jt. - B	0+50.00	7'-0"	703.60	696.60	699.00
C.J. - B1	0+75.00	7'-0"	703.85	696.85	701.90
End Wall - C	1+00.00	7'-0"	704.15	697.15	703.90



**ELEVATION - SOUTH FACE**  
(Looking North)

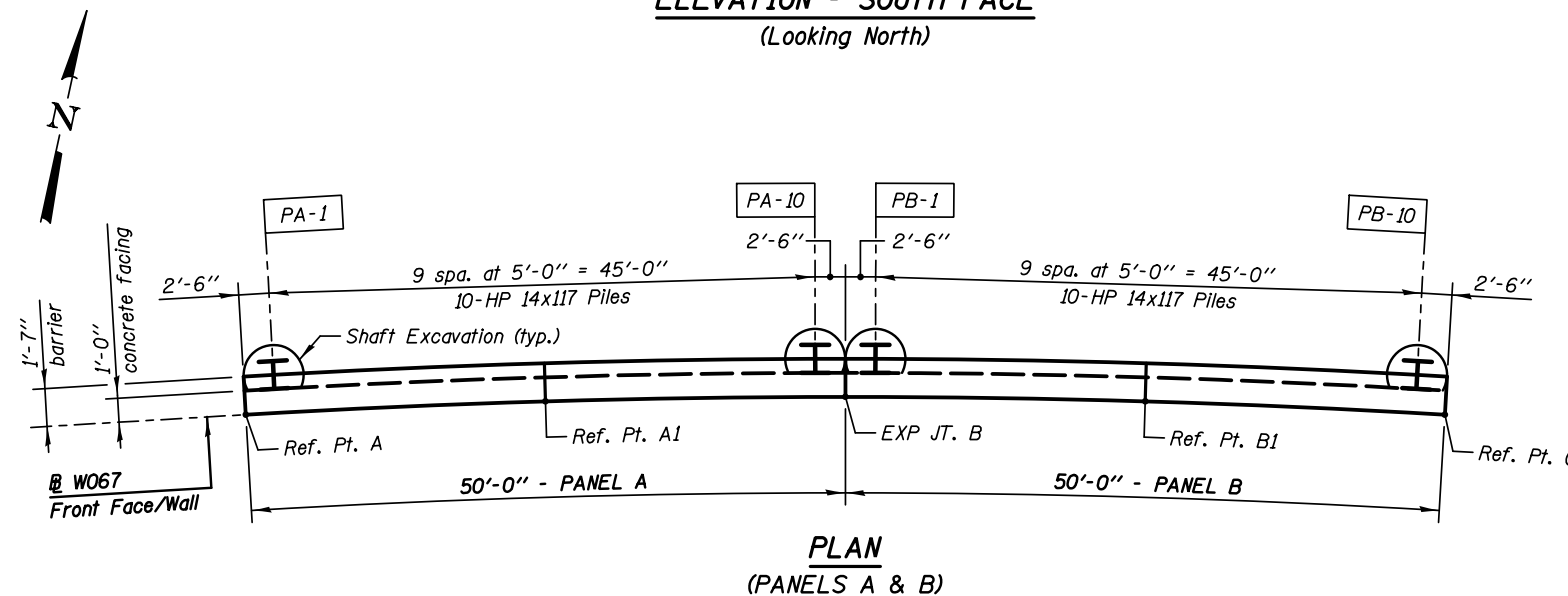


**VIEW A-A**



**INSIDE ELEVATION - PARAPET END**

Dimensions along inside face of parapet west end shown, east end opposite hand



**PLAN**  
(PANELS A & B)

**Notes**

All Dimensions are along Front Face of Wall.

Bars indicated thus 3 x 2-#4 etc. indicates 3 lines of bars with 2 lengths per line.

For Wall Section and Bill of Material, SEE Sheet SF-4

**KNIGHT**  
Engineers & Architects

DESIGNED - TB	REVISIONS
CHECKED - WPM	REVISIONS
DRAWN - TB	REVISIONS
CHECKED - WPM	REVISIONS

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

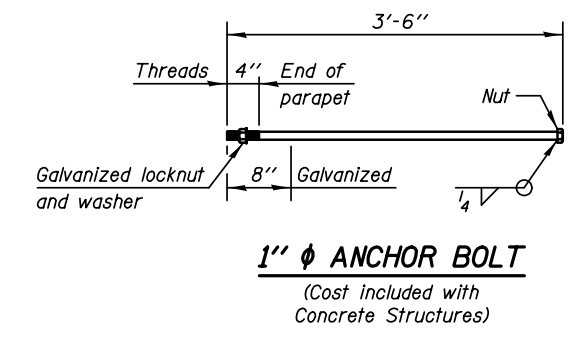
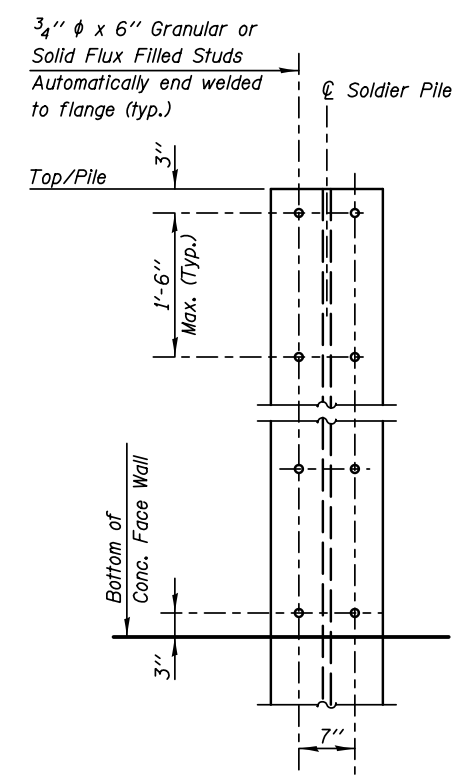
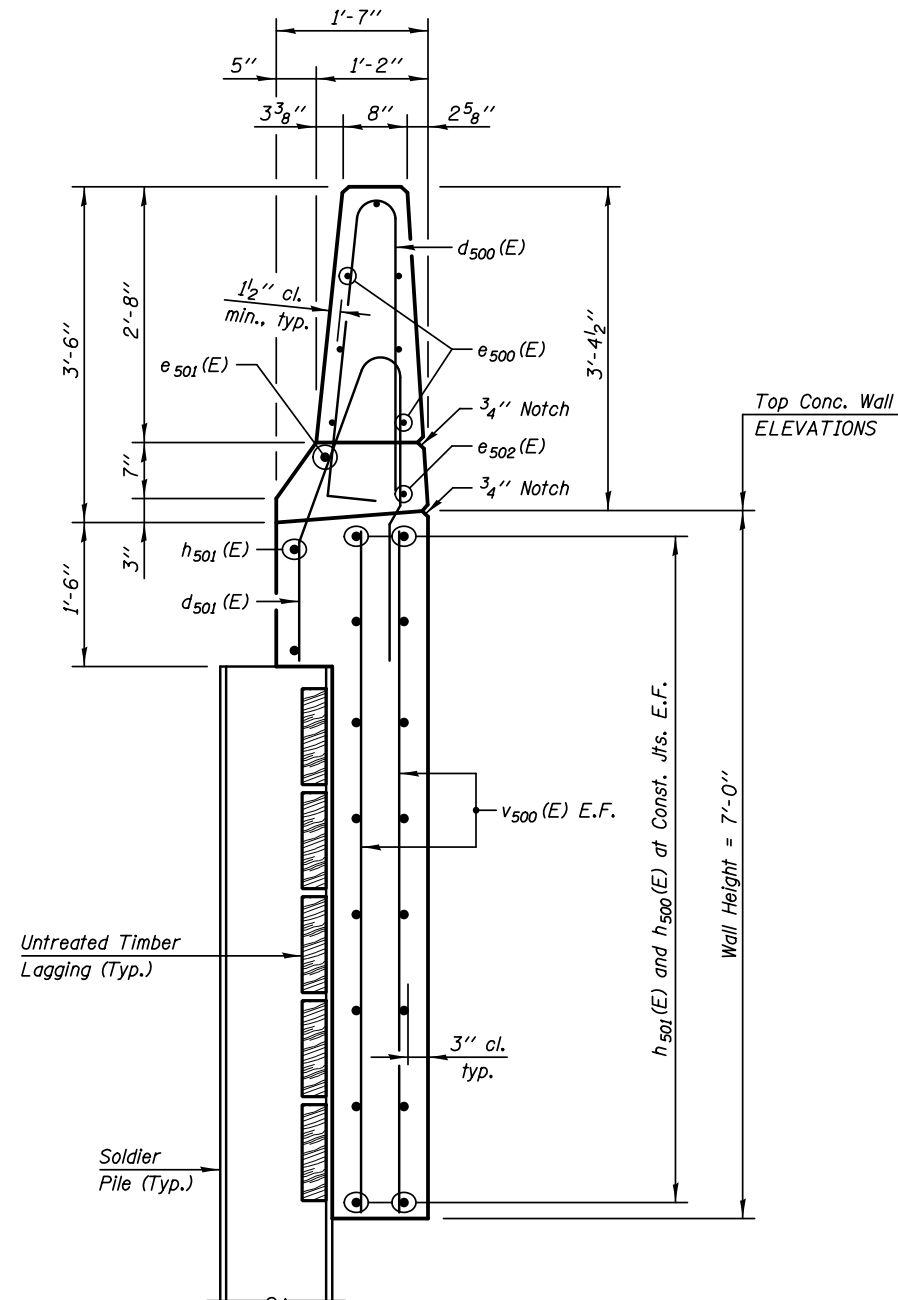
**PLAN & ELEVATION - PANELS A & B**  
**STRUCTURE NUMBER 022-W067 TOLLWAY WALL EW123.5R,EB(R)**

SHEET NO. SF-3 OF 5 SHEETS

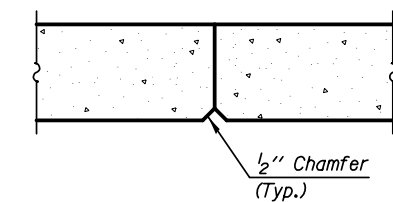
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	(112 & 113) WRS-5	DUPAGE	963	686
CONTRACT NO. 60131				
ILLINOIS FED. AID PROJECT				

**BILL OF MATERIAL**

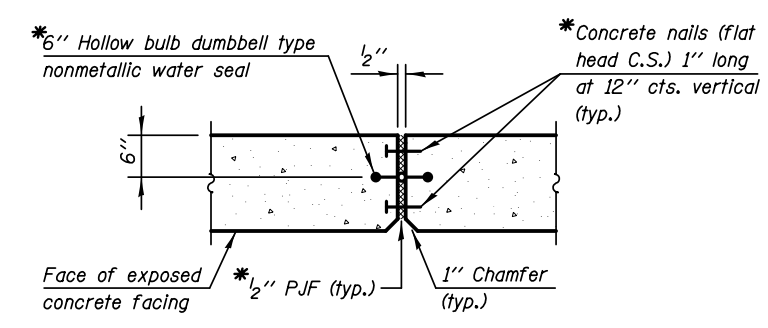
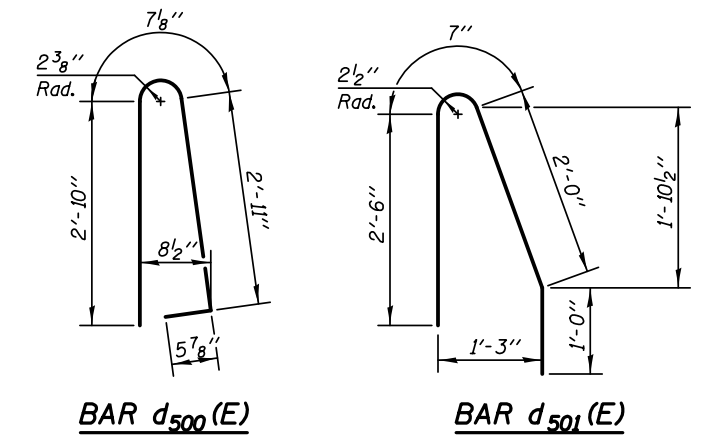
BAR	NO.	SIZE	LENGTH	SHAPE
d500(E)	112	#5	6'-10"	
d501(E)	112	#5	6'-1"	
e500(E)	28	#4	24'-8"	
e501(E)	4	#8	28'-6"	
e502(E)	4	#4	26'-6"	
h500(E)	32	#5	6'-0"	
h501(E)	72	#5	24'-8"	
v500(E)	208	#4	6'-8"	
Structure Excavation			Cu. Yd.	58.0
Concrete Structures			Cu. Yd.	46.0
Stud Shear Connectors			Each	200
Concrete Sealer			Sq. Ft.	1511.0
Reinforcement Bars, Epoxy Coated			Pound	5330
Drilling and Setting Soldier Piles (In Soil)			Cu. Ft.	2842.0
Furnishing Soldier Piles (HP14x117)			Foot	560.0



**STUD SHEAR CONNECTORS LAYOUT**

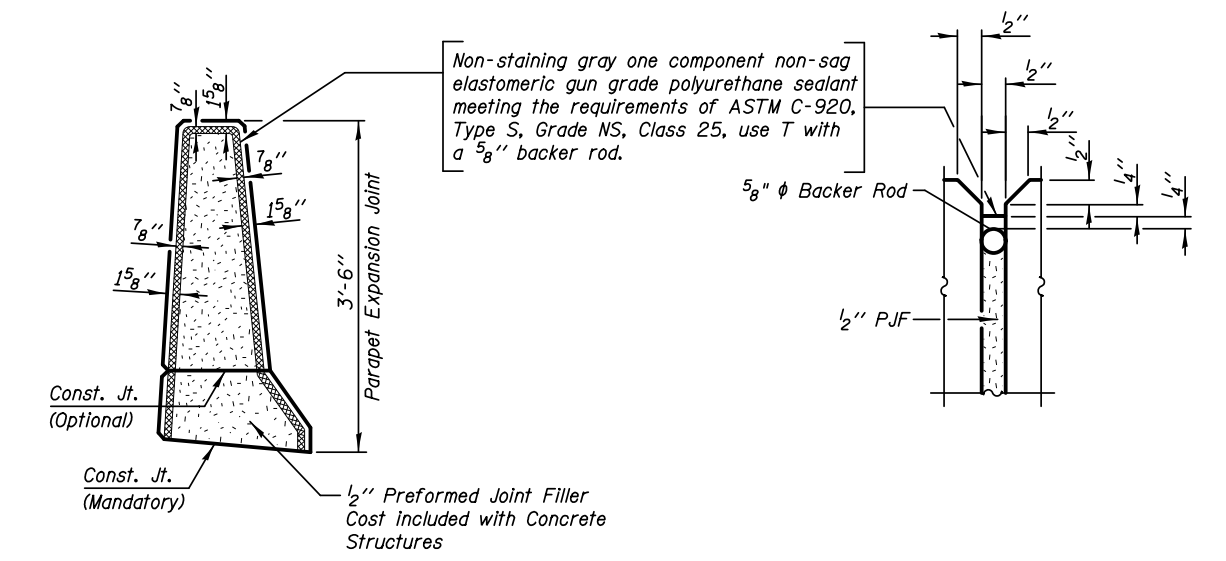


**WALL CONSTRUCTION JOINT DETAIL**



**WALL EXPANSION JOINT DETAIL**

\* Cost included with "Concrete Structures".



**PARAPET JOINT DETAILS**

**LEGEND:**  
E.F. Each Face  
P/JF Preformed Joint Filler

**KNIGHT**  
Engineers & Architects

DESIGNED - TB	REVISION
CHECKED - WPM	REVISION
DRAWN - TB	REVISION
CHECKED - WPM	REVISION
SCALE - NONE	
DATE - 10/15/2012	

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**WALL SECTIONS AND DETAILS**  
**STRUCTURE NUMBER 022-W067 TOLLWAY WALL EW123.5R,EB(R)**

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	(112 & 113) WRS-5	DUPAGE	963	687
<b>CONTRACT NO. 60I31</b>				

SHEET NO. SF-4 OF 5 SHEETS

ILLINOIS FED. AID PROJECT

Geo Services, Inc. Geotechnical, Environmental & Civil Engineering  
805 Arden Court, Suite 204  
Naperville, Illinois 60565  
(630) 251-2236

### SOIL BORING LOG

PAGE 1 of 1  
DATE 4/2/2012  
LOGGED BY RT  
GSI JOB No. 09173

ROUTE II, Route 59 (FAP 338) DESCRIPTION Illinois Route 59-Aurora Avenue/New York Street To Ferry Road  
SECTION (112 & 113) WRS-5 LOCATION SEC. 3, 9-10, 15-16, 21-22 TWP. 38N, RNG. 9E, Naperville Township  
COUNTY DuPage DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. -- Station: --  
BORING NO. **RB-86**  
Station: 1012+00 Ramp A  
Offset: 2.3' Left  
Ground Surface Elev. 704.4

DEPTH (ft)	BULGE (in)	SHEAR (tsf)	MOISTURE (%)	Surface Water Elev.		DEPTH (ft)	BULGE (in)	SHEAR (tsf)	MOISTURE (%)
				n/a	n/a				
7.0									
10									
16									
14	NP	6							
4			<b>115</b>						
4									
-5	4	3.2B	15						
3			<b>95</b>						
7									
10	1.4B		24						
4			<b>113</b>						
7									
-10	9	4.2B	15						
End Of Boring @ -10.0' Hollow Stem Augers CME Automatic Hammer									
-15									
-20									

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS-Vane Shear Test  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)  
NR-No Recovery

Geo Services, Inc. Geotechnical, Environmental & Civil Engineering  
805 Arden Court, Suite 204  
Naperville, Illinois 60565  
(630) 251-2236

### SOIL BORING LOG

PAGE 1 of 1  
DATE 4/3/2012  
LOGGED BY RT  
GSI JOB No. 09173

ROUTE II, Route 59 (FAP 338) DESCRIPTION Illinois Route 59-Aurora Avenue/New York Street To Ferry Road  
SECTION (112 & 113) WRS-5 LOCATION SEC. 3, 9-10, 15-16, 21-22 TWP. 38N, RNG. 9E, Naperville Township  
COUNTY DuPage DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. 022-W067  
Station: 1012+28.23 to 1022+50.59  
BORING NO. **RW-67**  
Station: 1013+08 188 Ramp A  
Offset: 3.0' Left  
Ground Surface Elev. 704.6

DEPTH (ft)	BULGE (in)	SHEAR (tsf)	MOISTURE (%)	Surface Water Elev.		DEPTH (ft)	BULGE (in)	SHEAR (tsf)	MOISTURE (%)
				n/a	n/a				
7.5									
17									
21									
16	NP	12							
5									
6									
-5	7	4.0P	18						
2			<b>97</b>						
3									
4	2.0B		25						
0									
2									
-10	2	1.75P	17						
4			<b>117</b>						
7									
8	4.75B		15						
4									
5									
-15	7	4.5P	17						
4									
5									
6	4.5P		13						
2									
2									
-20	2	0.5P	13						

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS-Vane Shear Test  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)  
NR-No Recovery

Geo Services, Inc. Geotechnical, Environmental & Civil Engineering  
805 Arden Court, Suite 204  
Naperville, Illinois 60565  
(630) 251-2236

### SOIL BORING LOG

PAGE 1 of 1  
DATE 4/3/2012  
LOGGED BY RT  
GSI JOB No. 09173

ROUTE II, Route 59 (FAP 338) DESCRIPTION Illinois Route 59-Aurora Avenue/New York Street To Ferry Road  
SECTION (112 & 113) WRS-5 LOCATION SEC. 3, 9-10, 15-16, 21-22 TWP. 38N, RNG. 9E, Naperville Township  
COUNTY DuPage DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

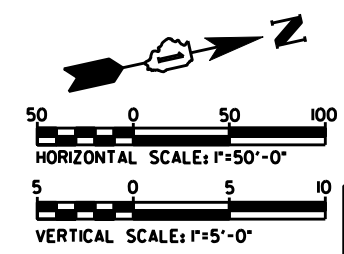
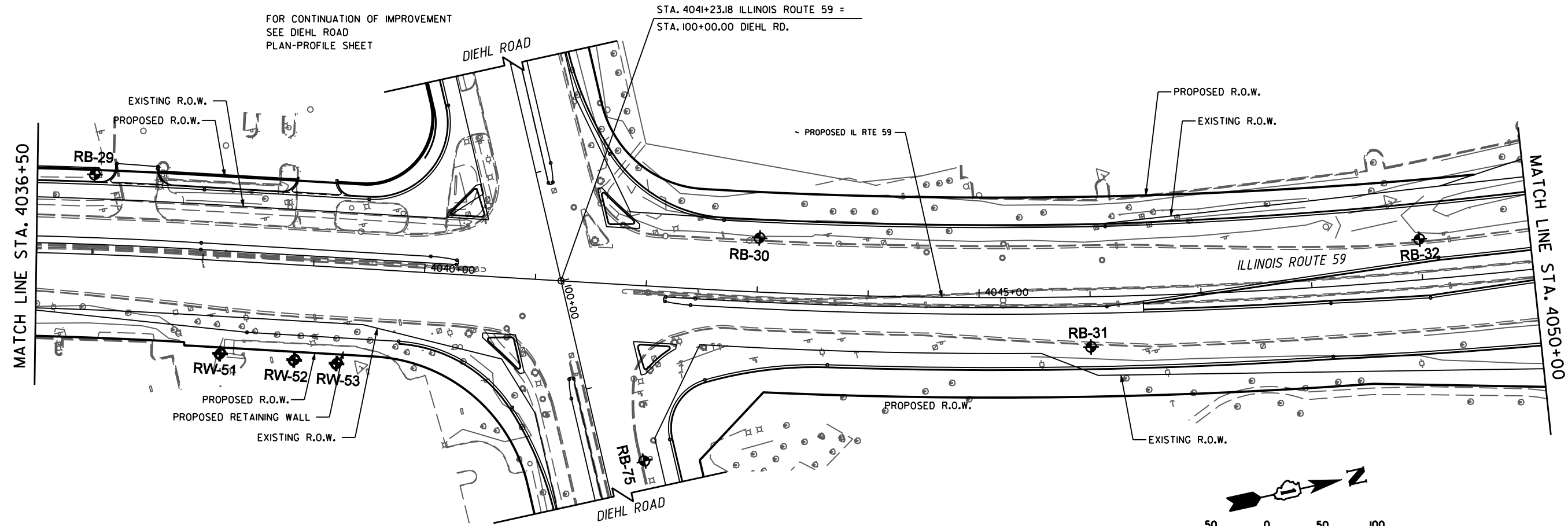
STRUCT. NO. 022-W067  
Station: 1012+28.23 to 1022+50.59  
BORING NO. **RW-68**  
Station: 1014+32 188 Ramp A  
Offset: 3.0' Left  
Ground Surface Elev. 705.8

DEPTH (ft)	BULGE (in)	SHEAR (tsf)	MOISTURE (%)	Surface Water Elev.		DEPTH (ft)	BULGE (in)	SHEAR (tsf)	MOISTURE (%)
				n/a	n/a				
7.0									
12									
29									
10	NP	7							
8									
15									
-5	20	4.5P	9						
5									
5									
7	1.5P		33						
3			<b>92</b>						
2									
-10	2	1.88B	29						
2									
6									
8			9						
2									
6									
-15	6	0.5P	15						
5									
37			<b>117</b>						
9									
28									
29									
-20	8	3.0P	20						

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS-Vane Shear Test  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)  
NR-No Recovery

PLAN	SURVEYED	DATE
	PLOTTED	
	GRADES CHECKED	
	STRUCTURE NOTATIONS CHECKED	
	NOTE BOOK NO.	
	FILE NAME	

PROFILE	SURVEYED	DATE
	PLOTTED	
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	NOTE BOOK NO.	
	FILE NAME	



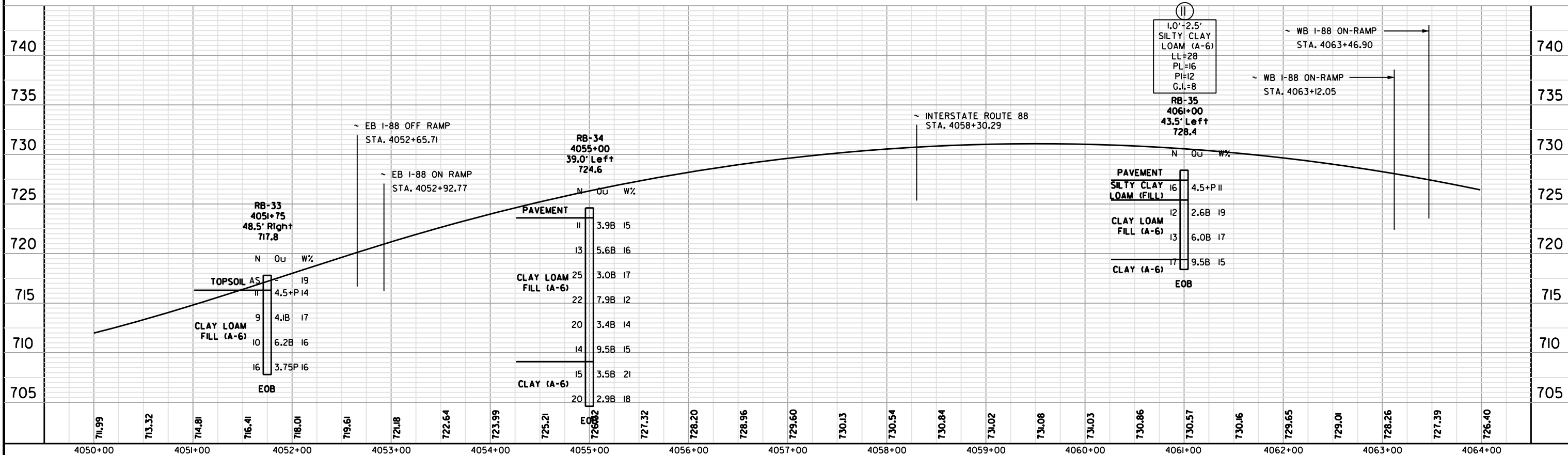
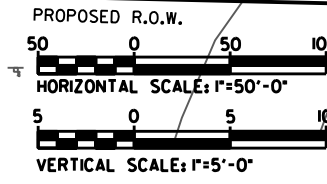
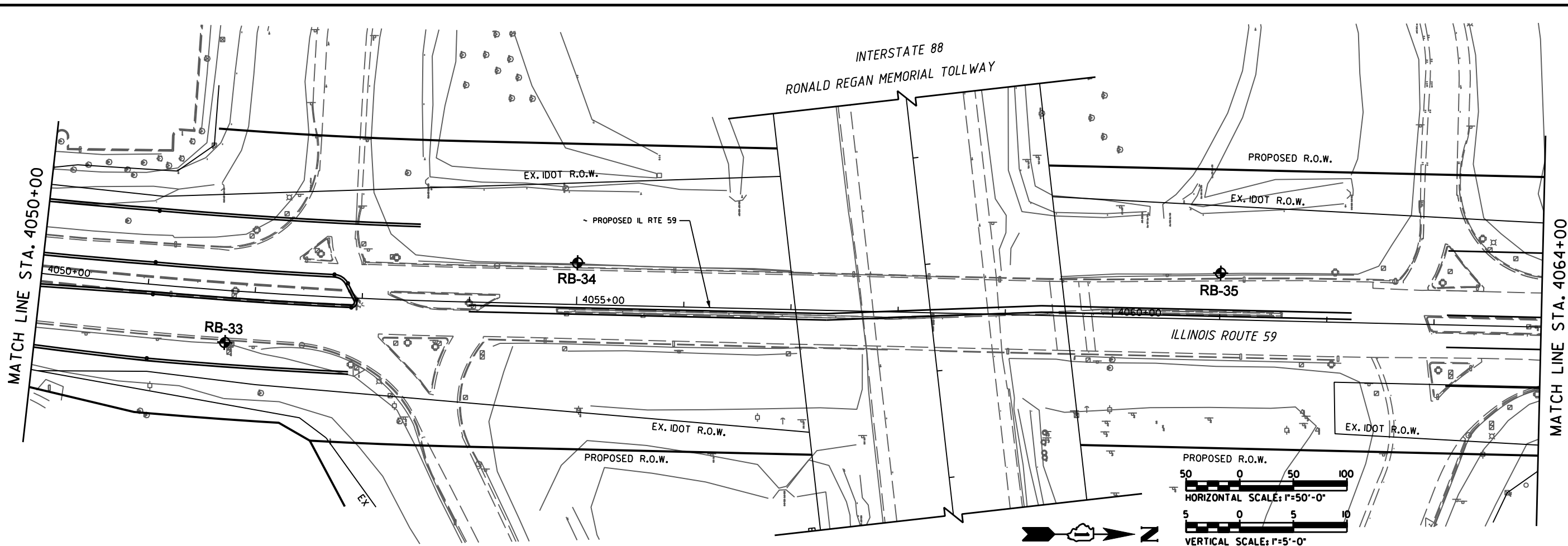
⑩  
1.0'-2.5'  
CLAY LOAM  
(A-6)  
LL=31  
PL=17  
PI=14  
G.I.=8

715	RB-29 4037+00 72.0' Left 709.5	RW-51 4038+21 83.5' Right 707.9	DIEHL ROAD STA. 4041+23.18	RB-30 4043+00 48.5' Left 707.3	RB-31 4046+00 45.0' Right 708.3	RB-32 4049+00 36.5' Left 709.9	715																						
710	N O U W%	N O U W%		N O U W%	N O U W%	N O U W%	710																						
705	TOPSOIL AS - 25 CLAY LOAM 7 2.25P 19 FILL (A-6) SILTY CLAY 9 2.0P 20 (A-6) SILTY CLAY 10 1.5P 25 LOAM (A-4/A-6) CLAY (A-6) 13 6.6B 19	TOPSOIL AS - 33 SAND & GRAVEL (FILL) CLAY LOAM 17 4.75B 20 (A-6) SAND & GRAVEL (A-1) CLAY LOAM 10 1.0P 12 (A-4/A-6) CLAY LOAM 12 1.0P 10		TOPSOIL AS - 21 CLAY LOAM 10 4.1S 14 (A-6) CLAY LOAM 13 6.4B 16 (A-6) CLAY (A-6) 12 4.5P 13 11 5.6B 16 12 3.7B 18 CLAY (A-6) 14 4.25B 18 13 2.8B 20 11 1.7B 22	TOPSOIL AS - 21 SILTY CLAY (A-6) 10 3.0P 29 15 4.5+P14 CLAY (A-6) 18 2.9B 16 22 7.2B 15	TOPSOIL AS - 21 CLAY LOAM 4 4.0P 12 FILL (A-6) 16 4.25P 16 16 4.9B 16 CLAY (A-6) 20 6.2B 15 31 10.4B 17 21 4.8B 16 11 3.9B 13 SILTY CLAY 18 NP 12 LOAM (A-4/A-6) EOB	705																						
700	EOB	EOB		EOB	EOB	EOB	700																						
695							695																						
690							690																						
685							685																						
	709.40	709.59	709.67	709.60	709.43	709.25	709.08	708.90	708.73	708.55	708.38	708.20	708.03	707.85	707.68	707.50	707.33	707.15	706.98	706.91	707.00	707.25	707.65	708.21	708.92	709.79	710.81	711.99	
	4037+00	4038+00	4039+00	4040+00	4041+00	4042+00	4043+00	4044+00	4045+00	4046+00	4047+00	4048+00	4049+00	4050+00															

<b>Geo Services, Inc.</b> Geotechnical, Environmental & Civil Engineering 805 Ashurst Court, Suite 204 Naperville, Illinois 60563 (630) 355-2838	USER NAME :	DESIGNED - RWC	REVISED -	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>SOIL BORING</b> <b>PLAN / PROFILE ILLINOIS ROUTE 59</b>			F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE :	DRAWN - RWC	REVISED -		338/IL 59	(#2 & #3) WRS-5	DUPAGE	963	689			
	PLOT DATE :	CHECKED - AJP	REVISED -		SCALE: SHEET NO. OF SHEETS STA. 4036+50 TO STA. 4050+00			CONTRACT NO. 60131				
	DATE - 3/24/2011	REVISED -		FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT					

PLAN	SURVEYED	BY	DATE
	PLOTTED		
	GRADES CHECKED		
	STRUCTURE NOTATIONS CHECKED		
	NOTE BOOK NO.		
	FILE NAME		

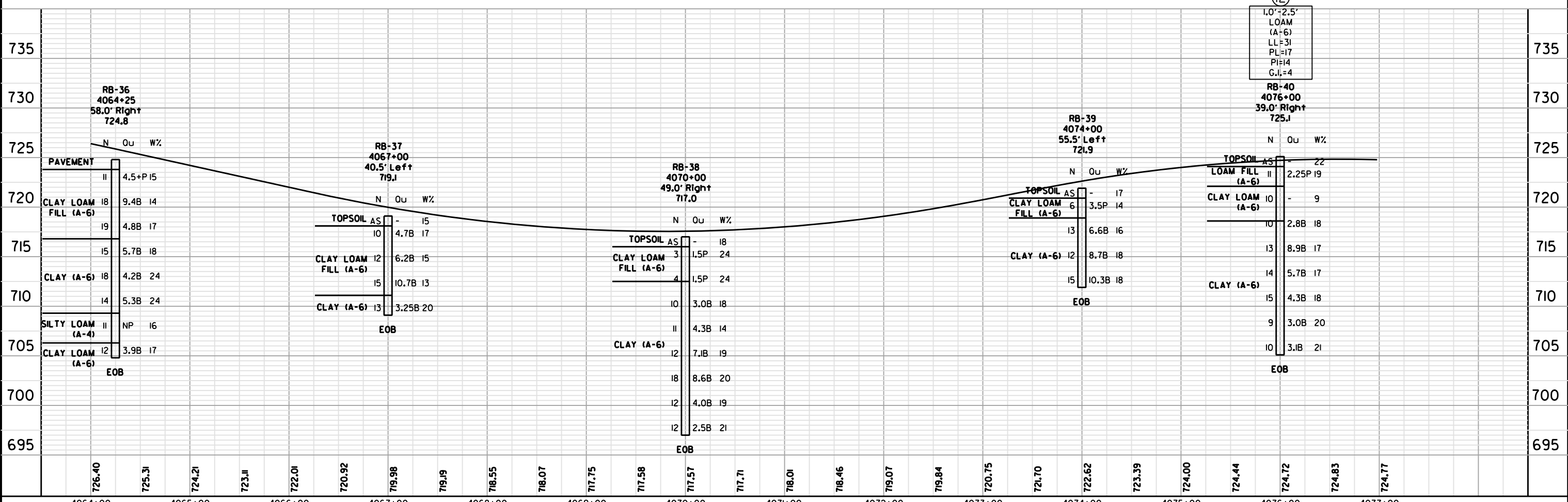
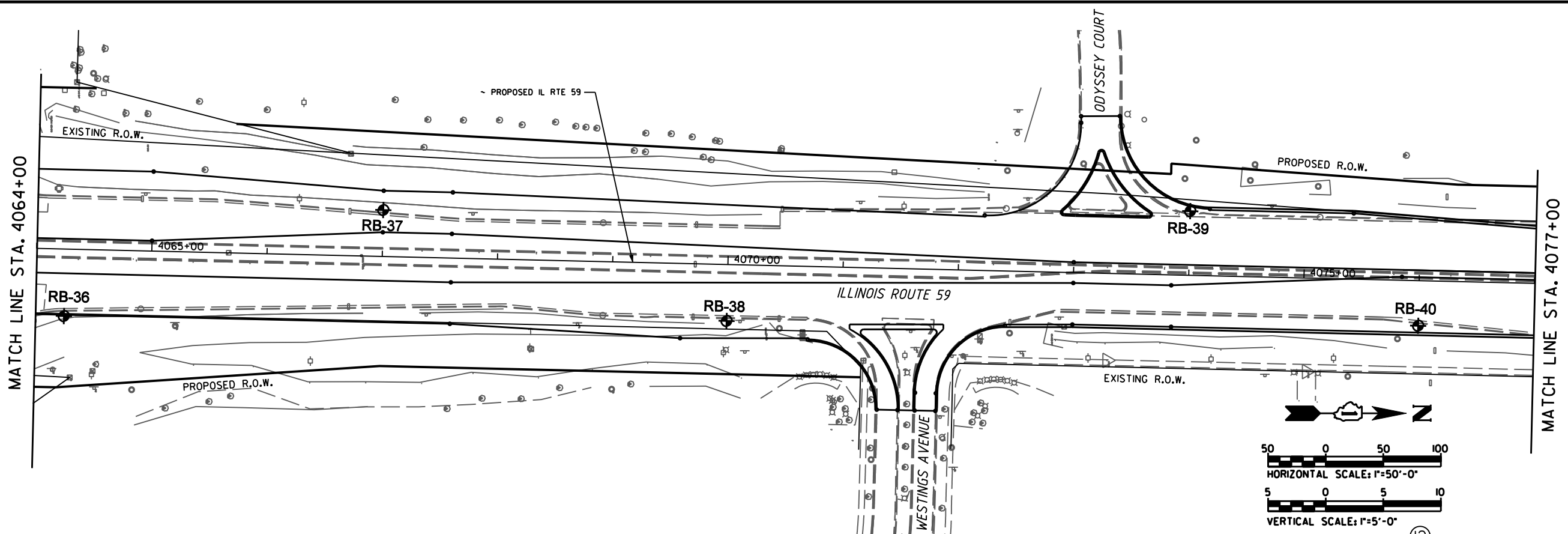
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	PLOTTED		
	GRADES CHECKED		
	STRUCTURE NOTATIONS CHECKED		
	NOTE BOOK NO.		
	FILE NAME		



<b>Geo Services, Inc.</b> Geotechnical, Environmental & Civil Engineering 805 Asher's Curve, Suite 204 Naperville, Illinois 60563 630-355-2838	USER NAME :	DESIGNED - RWC	REVISED -	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>SOIL BORING</b> <b>PLAN / PROFILE ILLINOIS ROUTE 59</b>		F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE :	DRAWN - RWC	REVISED -		SCALE:	SHEET NO. OF SHEETS	STA. 4050+00 TO STA. 4064+00	338/I. 59	(#2 & #3) WRS-5	DUPAGE	963
PLOT DATE :	CHECKED - AJP	REVISED -					CONTRACT NO. 60131				
	DATE - 3/24/2011	REVISED -					FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

PLAN	SURVEYED	BY	DATE
	PLOTTED		
	GRADES CHECKED		
	STRUCTURE NOTATIONS CHECKED		
	NOTE BOOK NO.		
	FILE NAME		

PROFILE	SURVEYED	BY	DATE
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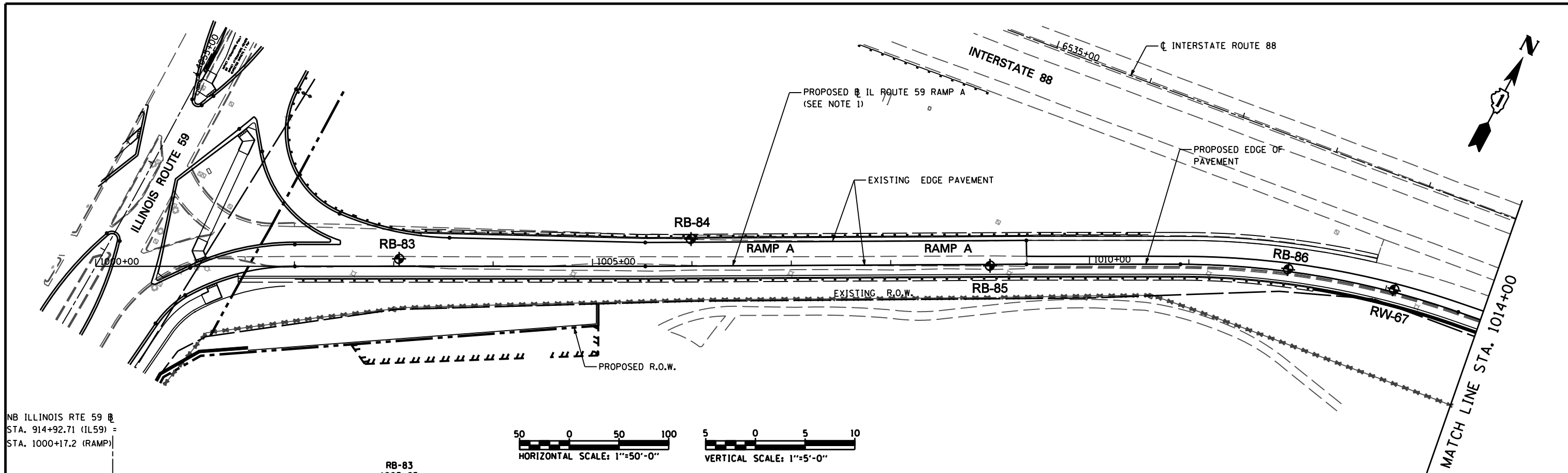


1.0'-2.5'	LOAM (A-6)
LL=31	PL=17
PI=14	G.I.=4

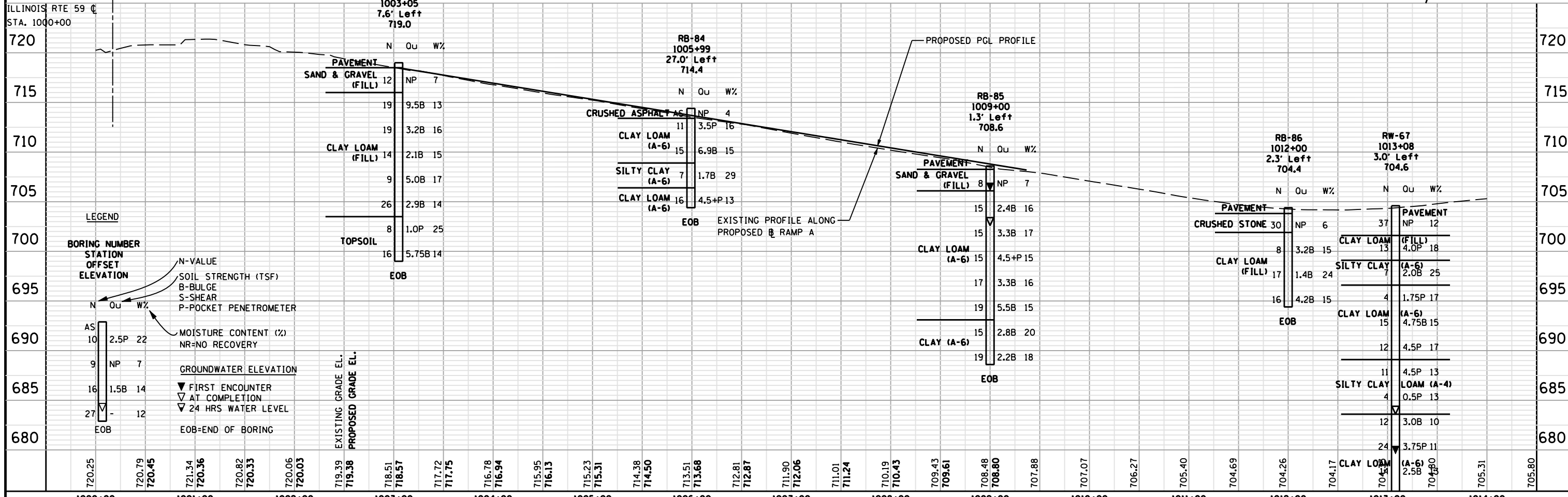
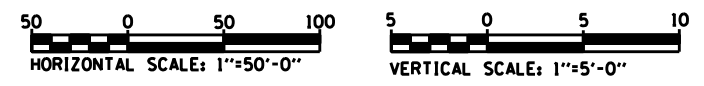
<b>Geo Services, Inc.</b> Geotechnical, Environmental & Civil Engineering 805 Ashurst Court, Suite 204 Naperville, Illinois 60563 (630) 355-2838	USER NAME :	DESIGNED - RWC	REVISED -	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>SOIL BORING</b> <b>PLAN / PROFILE ILLINOIS ROUTE 59</b>			F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE :	DRAWN - RWC	REVISED -		338/R 59	(#2 & #3) WRS-5	DUPAGE	963	691			
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		DATE - 3/24/2011	REVISED -		FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT				

PLAN	SURVEYED	DATE
	PLOTTED	
	CHECKED	
	AT	
	BY	
	NO.	

PROFILE	SURVEYED	DATE
	PLOTTED	
	CHECKED	
	AT	
	BY	
	NO.	



NB ILLINOIS RTE 59 @  
STA. 914+92.71 (IL59) =  
STA. 1000+17.2 (RAMP)



Geo Services, Inc.  
Geotechnical, Environmental & Civil Engineering  
805 Anthony Court, Suite 204  
Naperville, Illinois 60563  
(630) 355-2836

USER NAME :	DESIGNED - RWC	REVISED - 7/11/2012
PLOT SCALE :	DRAWN - RWC	REVISED -
PLOT DATE :	CHECKED - AJP	REVISED -
	DATE - 5/17/2012	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

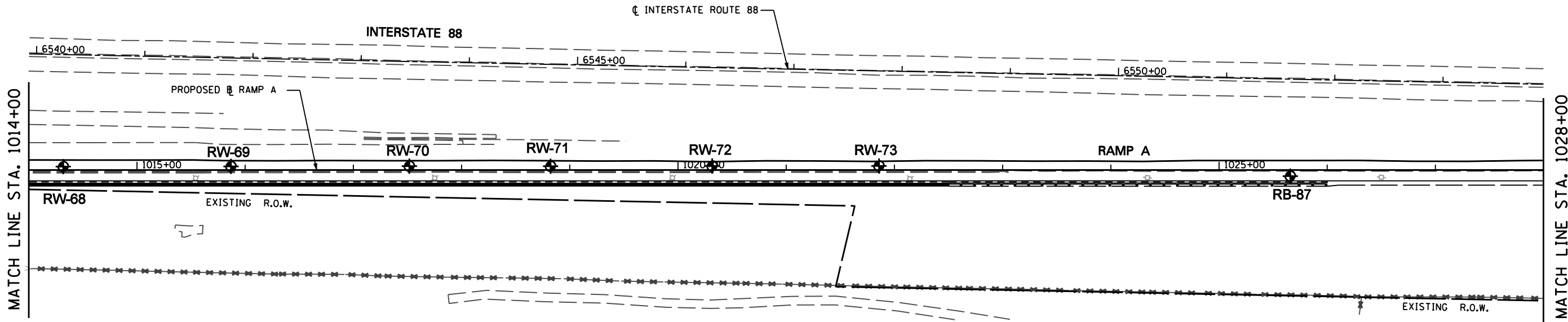
SOIL BORING PLAN / PROFILE - RAMP A  
SCALE: AS SHOWN SHEET NO. 1 OF 3 SHEETS STA. 1000+00 TO STA. 1014+00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338/IL 59	(112 & 113) WRS-5	DUPAGE	963	692
CONTRACT NO. 60131				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

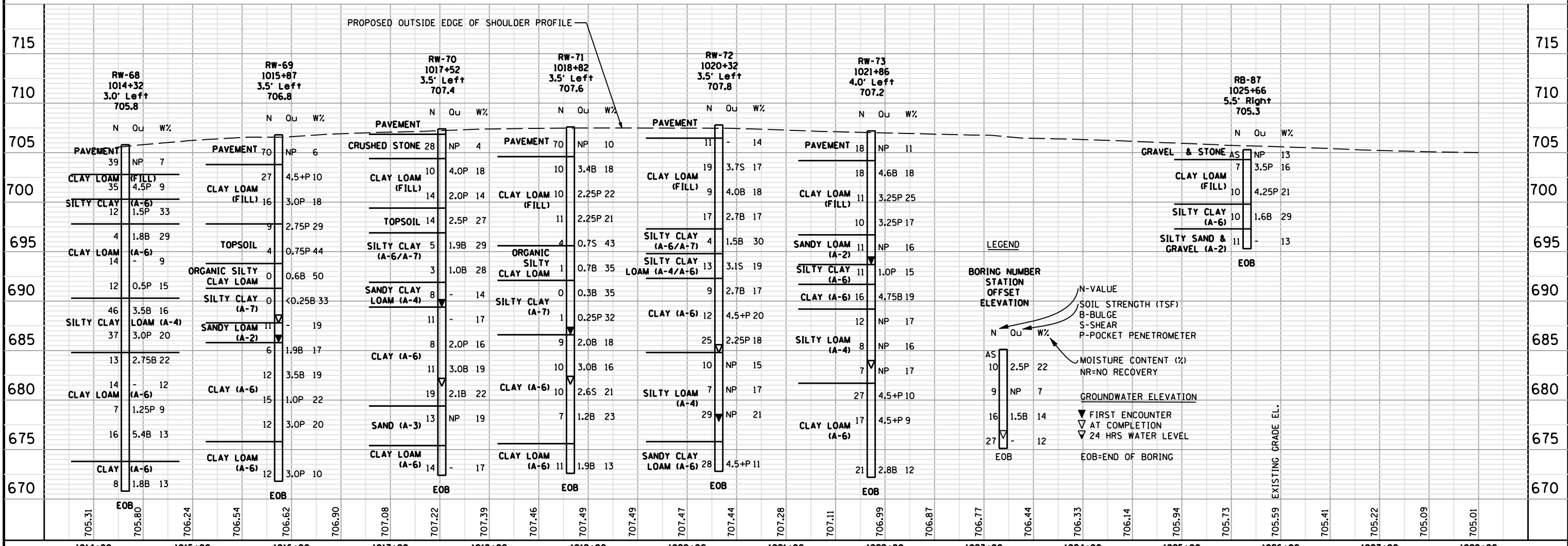




PLAN	SURVEYED	DATE
	PLOTTED	
	GRADES CHECKED	
	STRUCTURE NOTATIONS OK'D	
	NOTE BOOK NO.	
	FILE NAME	

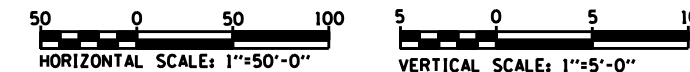
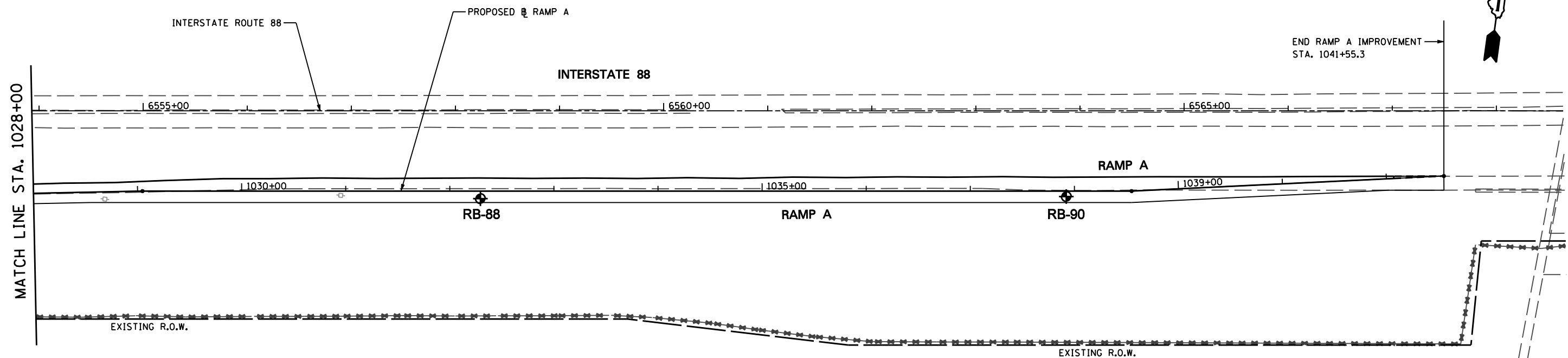


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	PLOTTED	
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	FILE NAME	

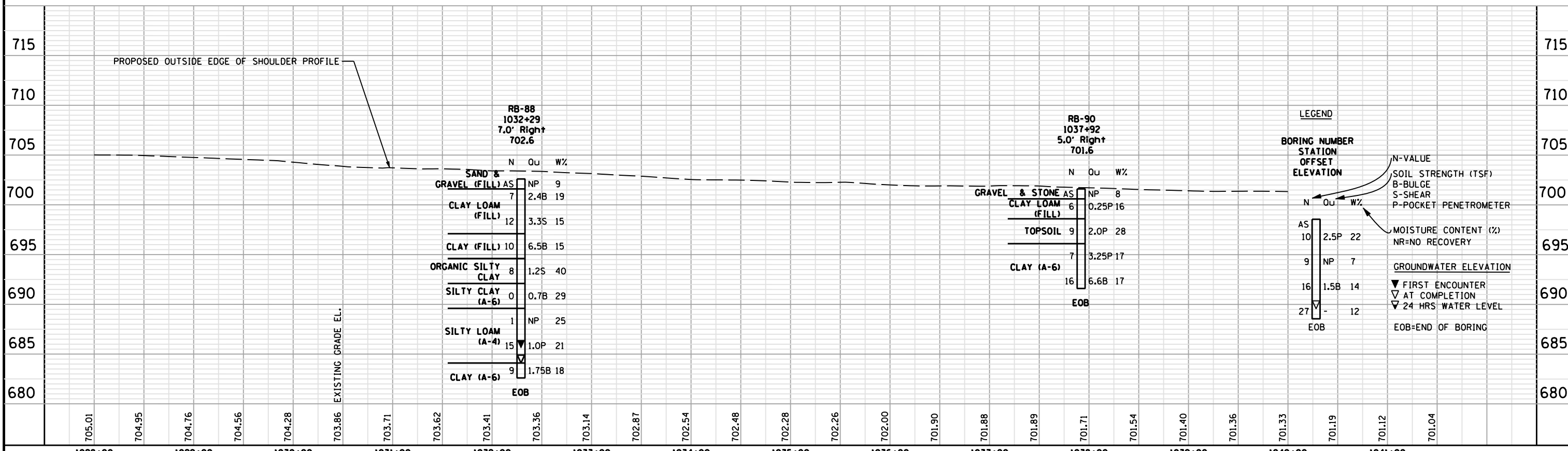


1014+00	1015+00	1016+00	1017+00	1018+00	1019+00	1020+00	1021+00	1022+00	1023+00	1024+00	1025+00	1026+00	1027+00	1028+00																																						
<table border="0"> <tr> <td rowspan="4"> <b>Geo Services, Inc.</b>            Geotechnical, Environmental &amp; Civil Engineering            805 Anthony Court, Suite 204            Naperville, Illinois 60563            (630) 355-2836         </td> <td>USER NAME :</td> <td>DESIGNED - RWC</td> <td>REVISED - 7/11/2012</td> <td rowspan="4" style="text-align: center;"> <b>STATE OF ILLINOIS</b>  <b>DEPARTMENT OF TRANSPORTATION</b> </td> <td colspan="4" style="text-align: center;"> <b>SOIL BORING PLAN / PROFILE - RAMP A</b> </td> <td>F.A.P. RTE.</td> <td>SECTION</td> <td>COUNTY</td> <td>TOTAL SHEETS</td> <td>SHEET NO.</td> </tr> <tr> <td>PLOT SCALE :</td> <td>DRAWN - RWC</td> <td>REVISED -</td> <td>338/IL 59</td> <td>(112 &amp; 113) WRS-5</td> <td>DUPAGE</td> <td>963</td> <td>693</td> </tr> <tr> <td>PLOT DATE :</td> <td>CHECKED - AJP</td> <td>REVISED -</td> <td colspan="4" style="text-align: center;">           SCALE: AS SHOWN    SHEET NO. 2 OF 3 SHEETS    STA. 1014+00 TO STA. 1028+00         </td> <td colspan="3" style="text-align: center;">           CONTRACT NO. 60131         </td> </tr> <tr> <td></td> <td>DATE - 5/17/2012</td> <td>REVISED -</td> <td colspan="4" style="text-align: center;">           FED. ROAD DIST. NO.    ILLINOIS FED. AID PROJECT         </td> </tr> </table>														<b>Geo Services, Inc.</b> Geotechnical, Environmental & Civil Engineering 805 Anthony Court, Suite 204 Naperville, Illinois 60563 (630) 355-2836	USER NAME :	DESIGNED - RWC	REVISED - 7/11/2012	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>SOIL BORING PLAN / PROFILE - RAMP A</b>				F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	PLOT SCALE :	DRAWN - RWC	REVISED -	338/IL 59	(112 & 113) WRS-5	DUPAGE	963	693	PLOT DATE :	CHECKED - AJP	REVISED -	SCALE: AS SHOWN    SHEET NO. 2 OF 3 SHEETS    STA. 1014+00 TO STA. 1028+00				CONTRACT NO. 60131				DATE - 5/17/2012	REVISED -	FED. ROAD DIST. NO.    ILLINOIS FED. AID PROJECT			
<b>Geo Services, Inc.</b> Geotechnical, Environmental & Civil Engineering 805 Anthony Court, Suite 204 Naperville, Illinois 60563 (630) 355-2836	USER NAME :	DESIGNED - RWC	REVISED - 7/11/2012	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>SOIL BORING PLAN / PROFILE - RAMP A</b>				F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.																																							
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		DATE - 5/17/2012	REVISED -		FED. ROAD DIST. NO.    ILLINOIS FED. AID PROJECT																																															

PLAN	SURVEYED	BY	DATE
	PLOTTED		
	GRADES CHECKED		
	STRUCTURE NOTATIONS CHKD		
	NOTE BOOK NO.		
	FILE NAME		

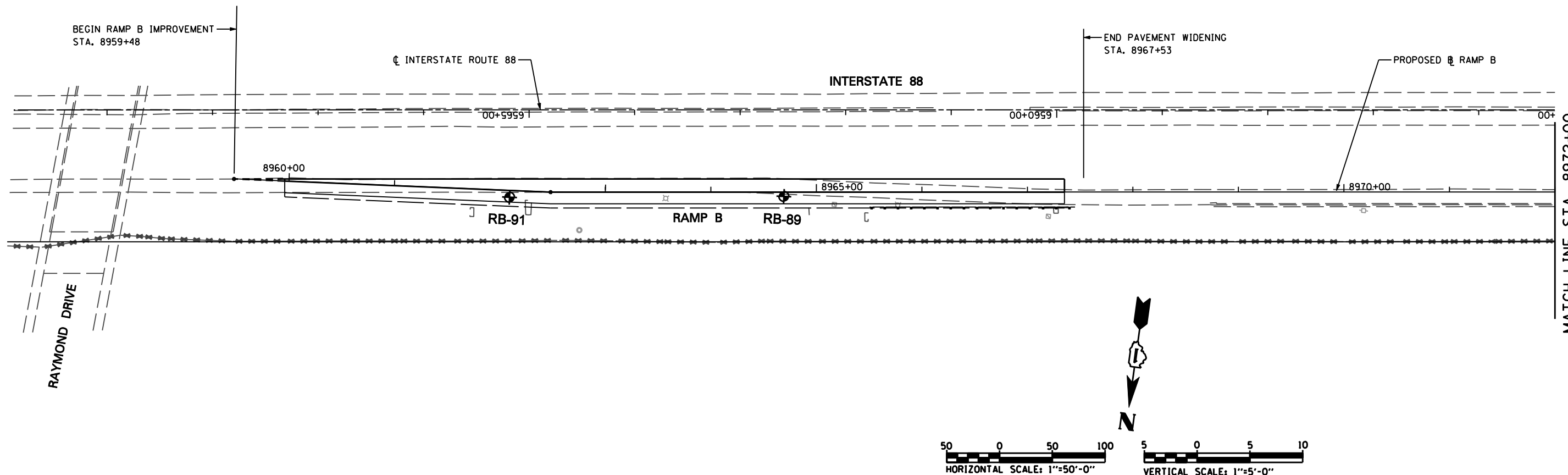


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	FILE NAME		

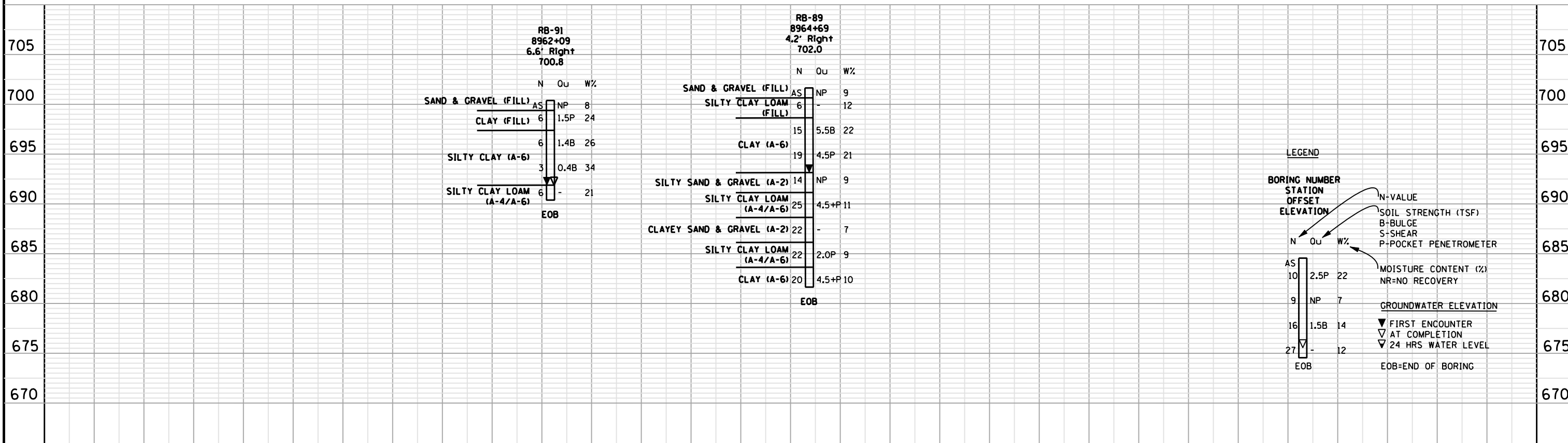


<b>Geo Services, Inc.</b> Geotechnical, Environmental & Civil Engineering 805 Anthony Court, Suite 204 Naperville, Illinois 60565 (630) 355-2836	USER NAME :	DESIGNED - RWC	REVISED -	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>SOIL BORING PLAN / PROFILE - RAMP A</b>			F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE :	DRAWN - RWC	REVISED -					338/IL 59	(112 & 113) WRS-5	DUPAGE	963	694
	PLOT DATE :	CHECKED - AJP	REVISED -					CONTRACT NO. 60131				
		DATE - 5/17/2012	REVISED -					ILLINOIS FED. AID PROJECT				
				SCALE: AS SHOWN SHEET NO. 3 OF 3 SHEETS STA. 1028+00 TO STA. 1041+55.31								

PLAN	SURVEYED	BY	DATE
	PLOTTED		
	GRADES CHECKED		
	STRUCTURE NOTATIONS CHECKED		
	NOTE BOOK NO.		
	FILE NAME		



PROFILE	SURVEYED	BY	DATE
	PLOTTED		
	GRADES CHECKED		
	STRUCTURE NOTATIONS CHECKED		
	NOTE BOOK NO.		
	FILE NAME		



**LEGEND**

**BORING NUMBER**  
**STATION**  
**OFFSET**  
**ELEVATION**

N-VALUE  
 SOIL STRENGTH (TSF)  
 B-BULGE  
 S-SHEAR  
 P-POCKET PENETROMETER

MOISTURE CONTENT (%)  
 NR=NO RECOVERY

GROUNDWATER ELEVATION

▽ FIRST ENCOUNTER  
 ▽ AT COMPLETION  
 ▽ 24 HRS WATER LEVEL

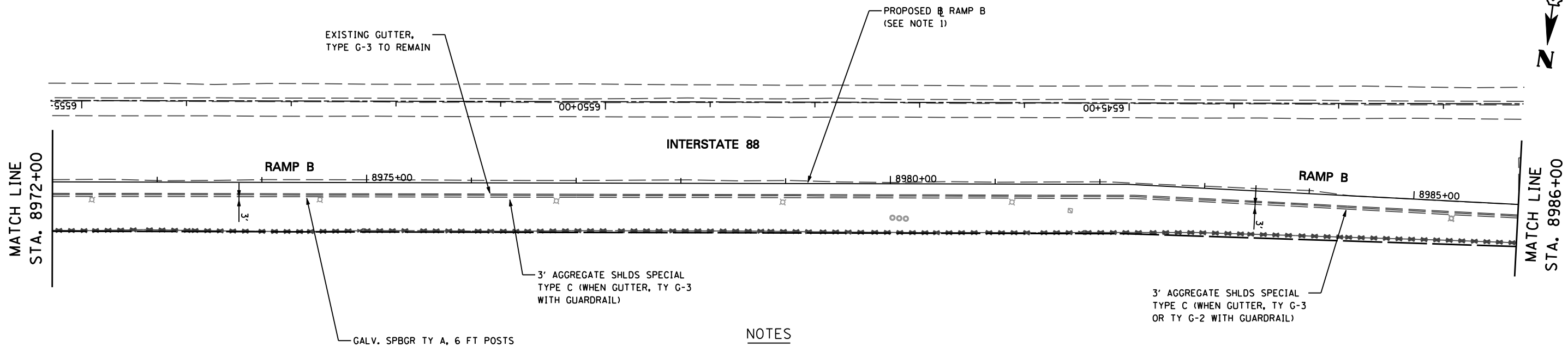
EOB=END OF BORING

8959+00		8960+00		8961+00		8962+00		8963+00		8964+00		8965+00		8966+00		8967+00		8968+00		8969+00		8970+00		8971+00		8972+00			
USER NAME :		DESIGNED - RWC		REVISED -																									
DRAWN - RWC		CHECKED - AJP		DATE - 5/20/2011		REVISED -																							
PLOT SCALE :		PLOT DATE :																											
<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>										<b>SOIL BORING PLAN / PROFILE - RAMP B</b>																			
SCALE: AS SHOWN										SHEET NO. 1 OF 3 SHEETS										STA. 8959+47.92 TO STA. 8972+00									
F.A.P. RTE.		SECTION		COUNTY		TOTAL SHEETS		SHEET NO.		338/IL 59		(112 & 113) WRS-5		DUPAGE		963		695		CONTRACT NO. 60131									
FED. ROAD DIST. NO.		ILLINOIS		FED. AID PROJECT																									

**Geo Services, Inc.**  
 Geotechnical, Environmental & Civil Engineering  
 805 Anthony Court, Suite 204  
 Naperville, Illinois 60565  
 (630) 355-2836

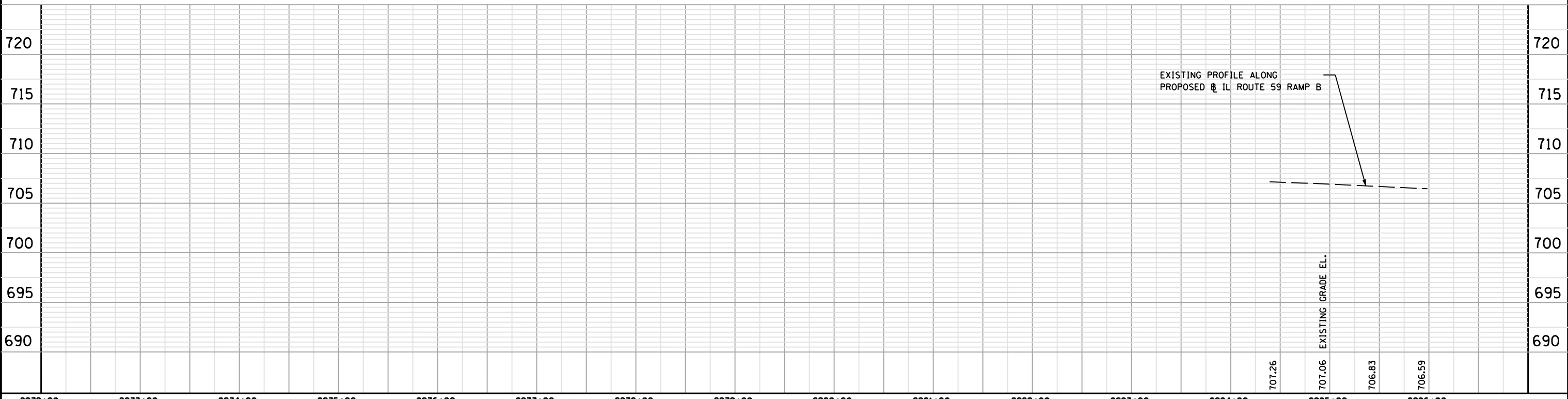
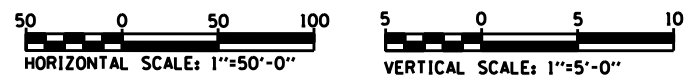
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NOTE BOOK NO.	PLOTTED		
	CHECKED		
	FILE NAME		

PROFILE	SURVEYED	BY	DATE
NOTE BOOK NO.	GRADES CHECKED		
	STRUCTURE NOTATIONS CHKD		



**NOTES**

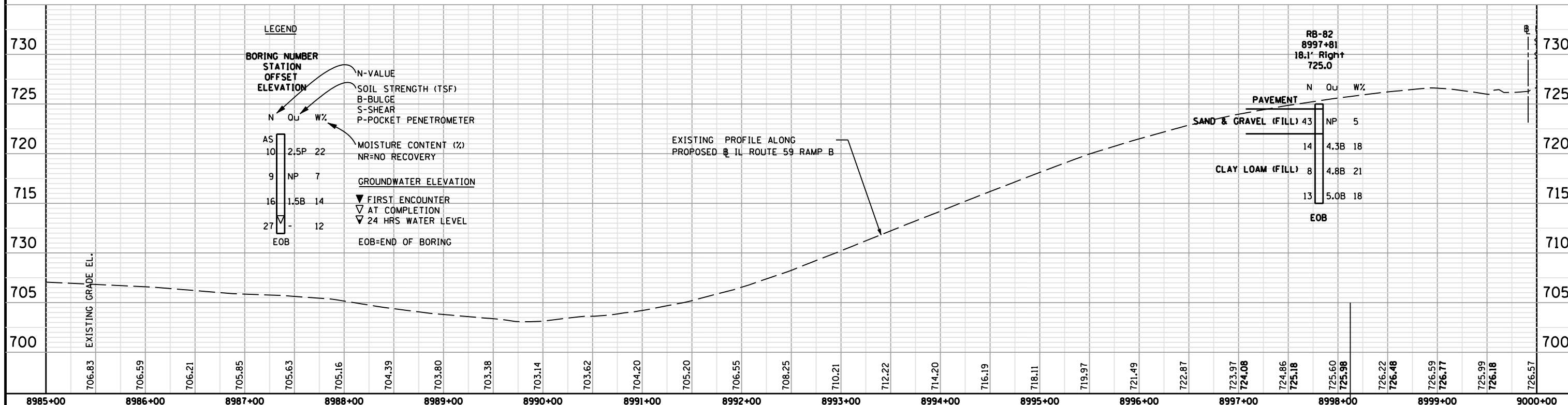
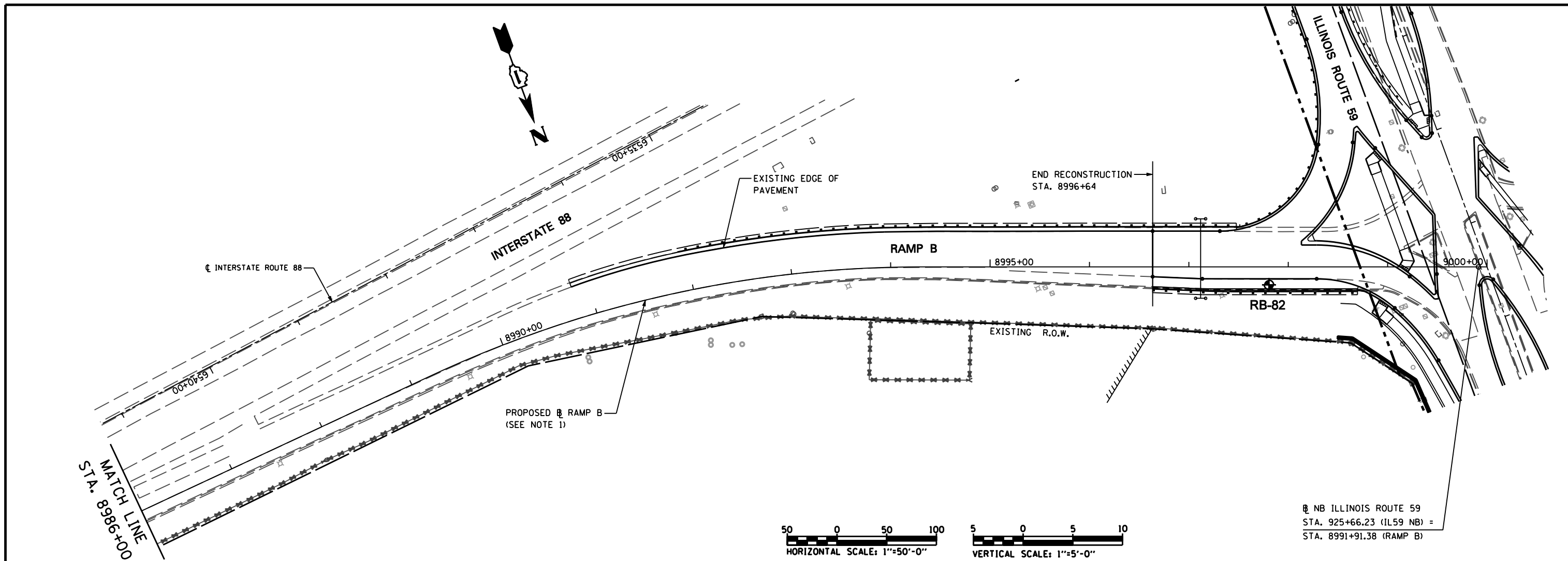
1. FOR PROPOSED ILLINOIS ROUTE 59 AND I-88 RAMP BASELINE INFORMATION SEE ALIGNMENT, BENCHMARKS, AND TIES - ILLINOIS ROUTE 59 NORTHBOUND & SOUTHBOUND BASELINE AND I-88 RAMPS DATA SHEETS.
2. FOR PROPOSED ILLINOIS ROUTE 59 AND I-88 RAMP PAVEMENT GEOMETRY INFORMATION SEE GEOMETRIC LAYOUT - ILLINOIS ROUTE 59 AND GEOMETRIC LAYOUT - I-88 RAMPS SHEETS.



8972+00	8973+00	8974+00	8975+00	8976+00	8977+00	8978+00	8979+00	8980+00	8981+00	8982+00	8983+00	8984+00	8985+00	8986+00				
<b>Geo Services, Inc.</b> Geotechnical, Environmental & Civil Engineering 805 Anthony Court, Suite 204 Naperville, Illinois 60565 (630) 355-2836			USER NAME : DESIGNED - RWC DRAWN - RWC CHECKED - AJP DATE - 5/17/2012	REVISED - REVISED - REVISED - REVISED -	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>			<b>SOIL BORING PLAN / PROFILE - RAMP B</b>			F.A.P. RTE. 338/IL 59	SECTION (112 & 113) WRS-5	COUNTY DUPAGE	TOTAL SHEETS 963	SHEET NO. 696			
SCALE: AS SHOWN											SHEET NO. 2 OF 3 SHEETS		STA. 8972+00 TO STA. 8986+00		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT		CONTRACT NO. 60131	

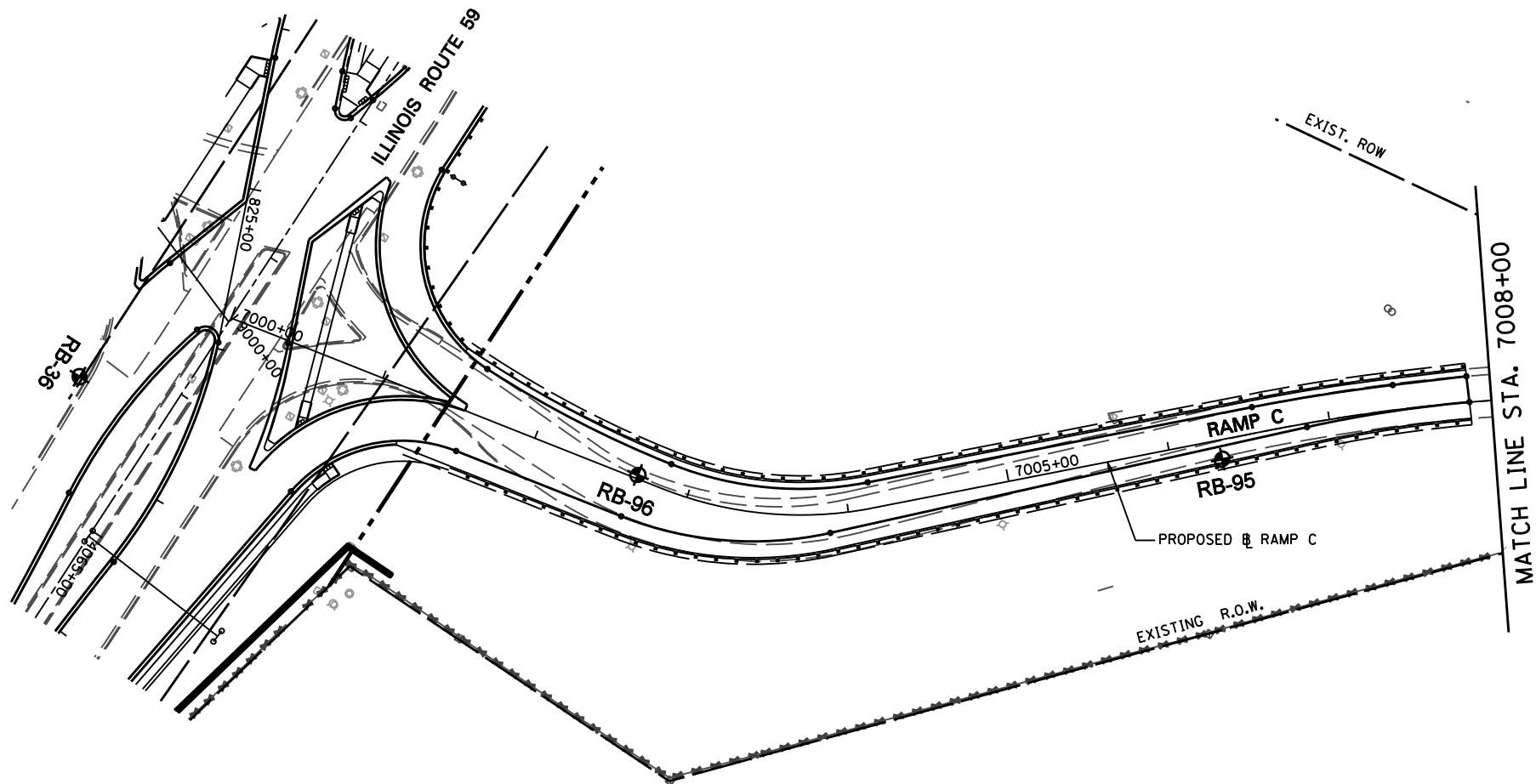
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	PLOTTED		
	GRADES CHECKED		
	STRUCTURE NOTATIONS OK'D		
	NOTE BOOK NO.		
	FILE NAME		

PROFILE	SURVEYED	BY	DATE
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	STRUCTURE NOTATIONS OK'D		
	NOTE BOOK NO.		
	FILE NAME		

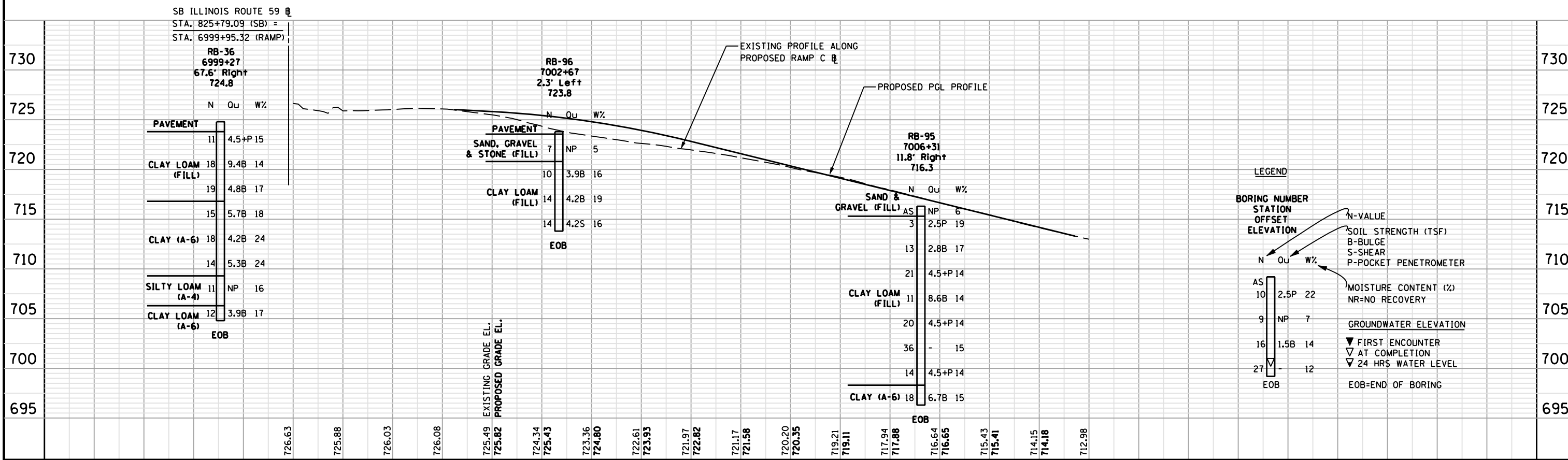


8985+00	8986+00	8987+00	8988+00	8989+00	8990+00	8991+00	8992+00	8993+00	8994+00	8995+00	8996+00	8997+00	8998+00	8999+00	9000+00																				
706.83	706.59	706.21	705.85	705.63	705.16	704.39	703.80	703.38	703.14	703.62	704.20	705.20	706.55	708.25	710.21	712.22	714.20	716.19	718.11	719.97	721.49	722.87	723.97	724.08	724.86	725.18	725.60	725.98	726.22	726.48	726.59	726.77	725.99	726.18	726.57

PLAN	SURVEYED	BY	DATE
	PLOTTED		
	GRADES CHECKED		
	STRUCTURE NOTATIONS OK'D		
	NO. _____		



PROFILE	SURVEYED	BY	DATE
	PLOTTED		
	GRADES CHECKED		
	STRUCTURE NOTATIONS OK'D		
	NO. _____		



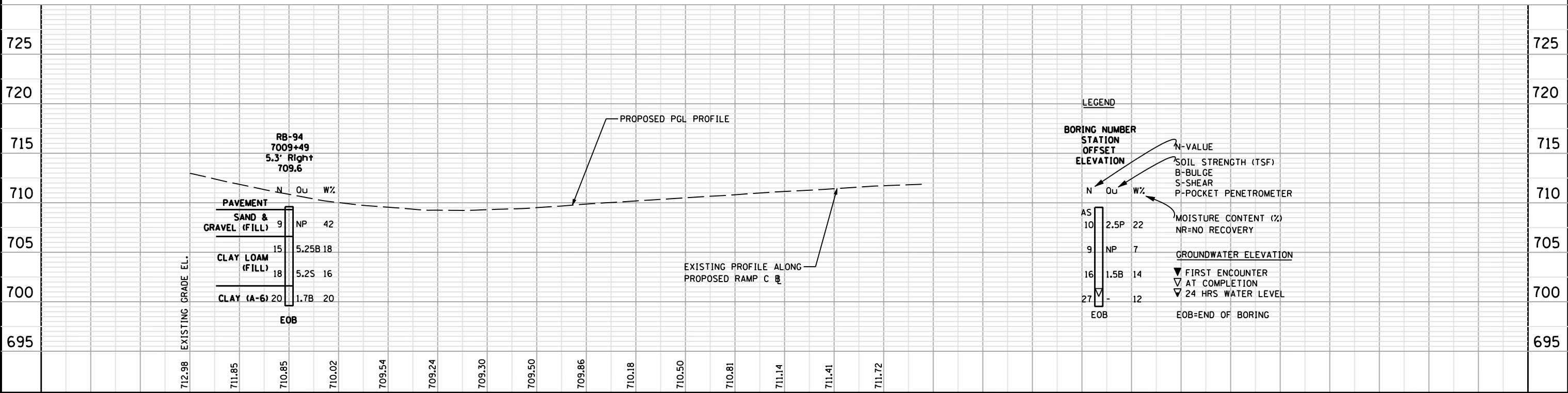
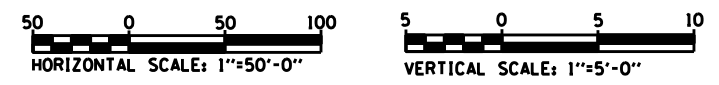
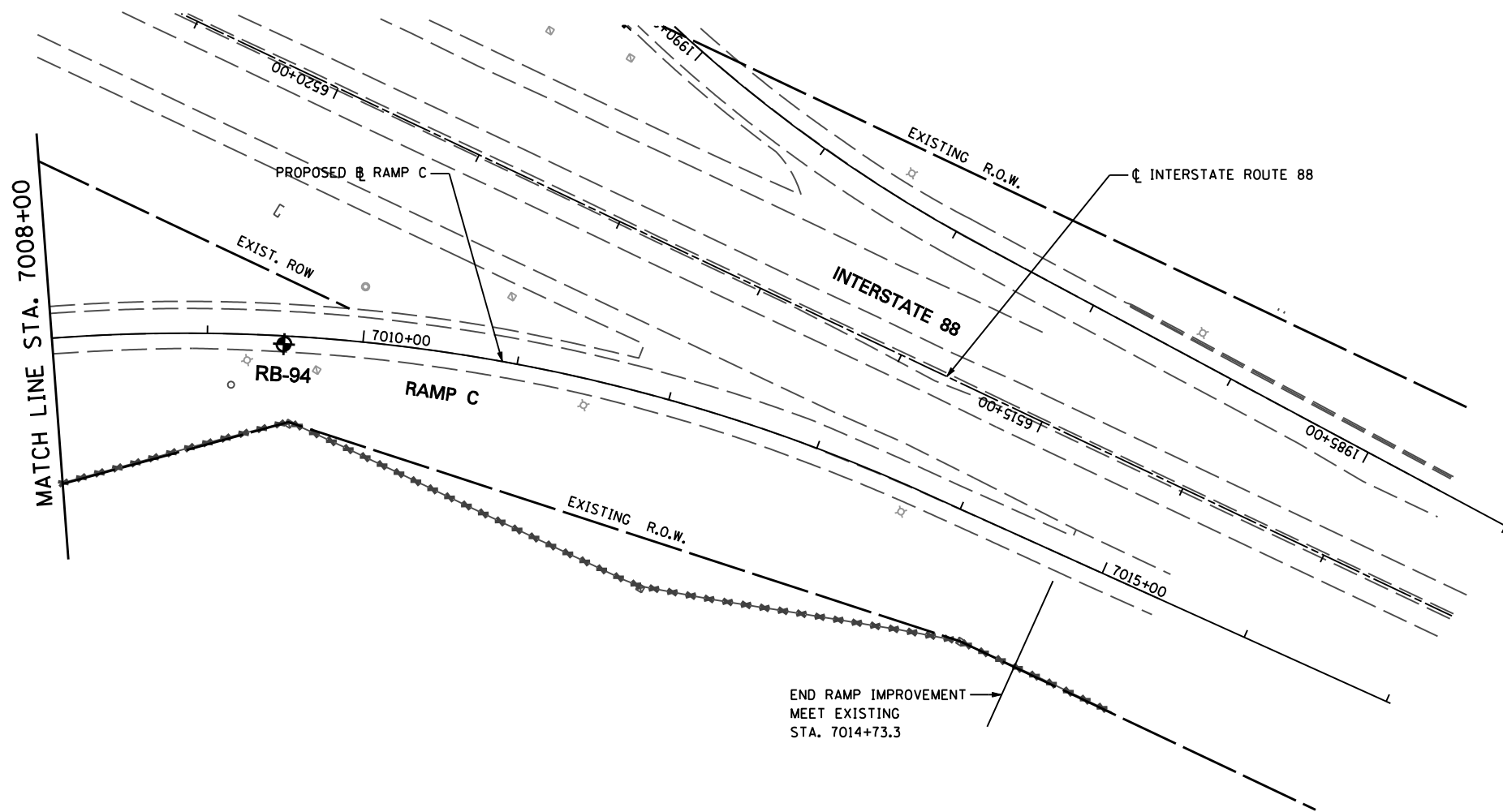
**LEGEND**

- N-VALUE
- SOIL STRENGTH (TSF)
- B-BULGE
- S-SHEAR
- P-POCKET PENETROMETER
- MOISTURE CONTENT (%)
- NR=NO RECOVERY
- GROUNDWATER ELEVATION
- ▼ FIRST ENCOUNTER
- ▽ AT COMPLETION
- ▽ 24 HRS WATER LEVEL
- EOB=END OF BORING

<b>Geo Services, Inc.</b> Geotechnical, Environmental & Civil Engineering 805 Amherst Court, Suite 204 Naperville, Illinois 60565 (630) 355-2836	USER NAME =	DESIGNED - RWC	REVISED - 7/11/2012	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>SOIL BORING PLAN / PROFILE - RAMP C</b>		F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE =	CHECKED - AJP	REVISED -		SCALE: AS SHOWN	SHEET NO. 1 OF 2 SHEETS	STA. 7000+00 TO STA. 7007+86	338/IL 59	(112 & 113) WRS-5	DUPAGE	963
PLOT DATE =	DATE - 5/17/2012	REVISED -								CONTRACT NO. 60131 FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

PLAN	SURVEYED	BY	DATE
	PLOTTED		
	GRADES CHECKED		
	STRUCTURE NOTATIONS CHKD		
	NOTE BOOK NO.		
	FILE NAME		

PROFILE	SURVEYED	BY	DATE
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	STRUCTURE NOTATIONS CHKD		
	NOTE BOOK NO.		
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**RB-94**  
7009+49  
5.3' Right  
709.6

N	Qu	W%
AS	10	2.5P 22
9	NP	7
16	1.5B	14
27	-	12

EOB

**PAVEMENT**

THICKNESS	TYPE	PERCENT
9	SAND & GRAVEL (FILL)	NP 42
15	CLAY LOAM (FILL)	5.25B 18
18	CLAY (A-6)	5.2S 16
20	CLAY (A-6)	1.7B 20

**LEGEND**

BORING NUMBER  
STATION  
OFFSET  
ELEVATION

N-VALUE  
SOIL STRENGTH (TSF)  
B-BULGE  
S-SHEAR  
P-POCKET PENETROMETER

MOISTURE CONTENT (%)  
NR=NO RECOVERY

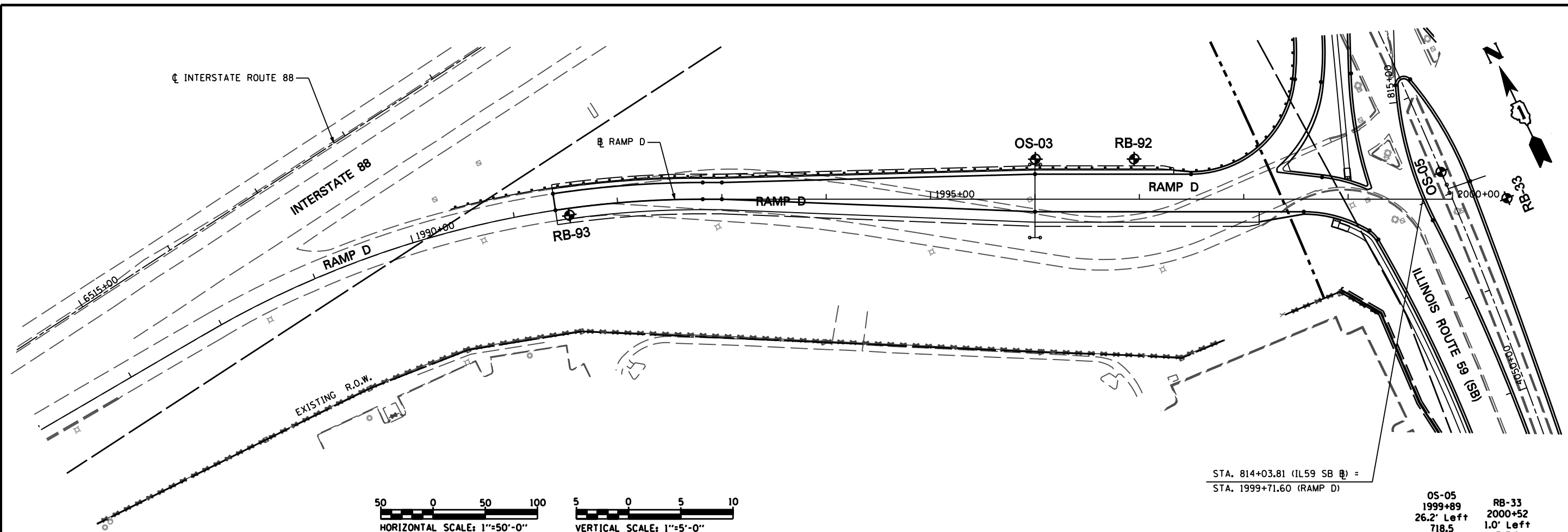
GROUNDWATER ELEVATION

▼ FIRST ENCOUNTER  
▽ AT COMPLETION  
▽ 24 HRS WATER LEVEL

EOB=END OF BORING

<b>Geo Services, Inc.</b> Geotechnical, Environmental & Civil Engineering 805 Amherst Court, Suite 204 Naperville, Illinois 60565 (630) 355-2836	USER NAME :	DESIGNED - RWC	REVISED -	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>SOIL BORING PLAN / PROFILE - RAMP C</b>		F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE :	DRAWN - RWC	REVISED -		338/IL 59	(112 & 113) WRS-5	DUPAGE	963	699		
	PLOT DATE :	CHECKED - AJP	REVISED -		SCALE: AS SHOWN SHEET NO. 2 OF 2 SHEETS STA. 7000+00 TO STA. 7007+86			CONTRACT NO. 60131			
		DATE - 5/17/2012	REVISED -		FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT					

PLAN	SURVEYED	DATE
	PLOTTED	
	GRADES CHECKED	
	STRUCTURE NOTATIONS CHKD	
	NOTE BOOK NO.	
	FILE NAME	



STA. 814+03.81 (IL59 SB @) =  
STA. 1999+71.60 (RAMP D)

OS-05  
1999+89  
26.2' Left  
718.5

RB-33  
2000+52  
1.0' Left  
717.8

PROFILE	SURVEYED	DATE
	PLOTTED	
	GRADES CHECKED	
	STRUCTURE NOTATIONS CHKD	
	NOTE BOOK NO.	
	FILE NAME	

