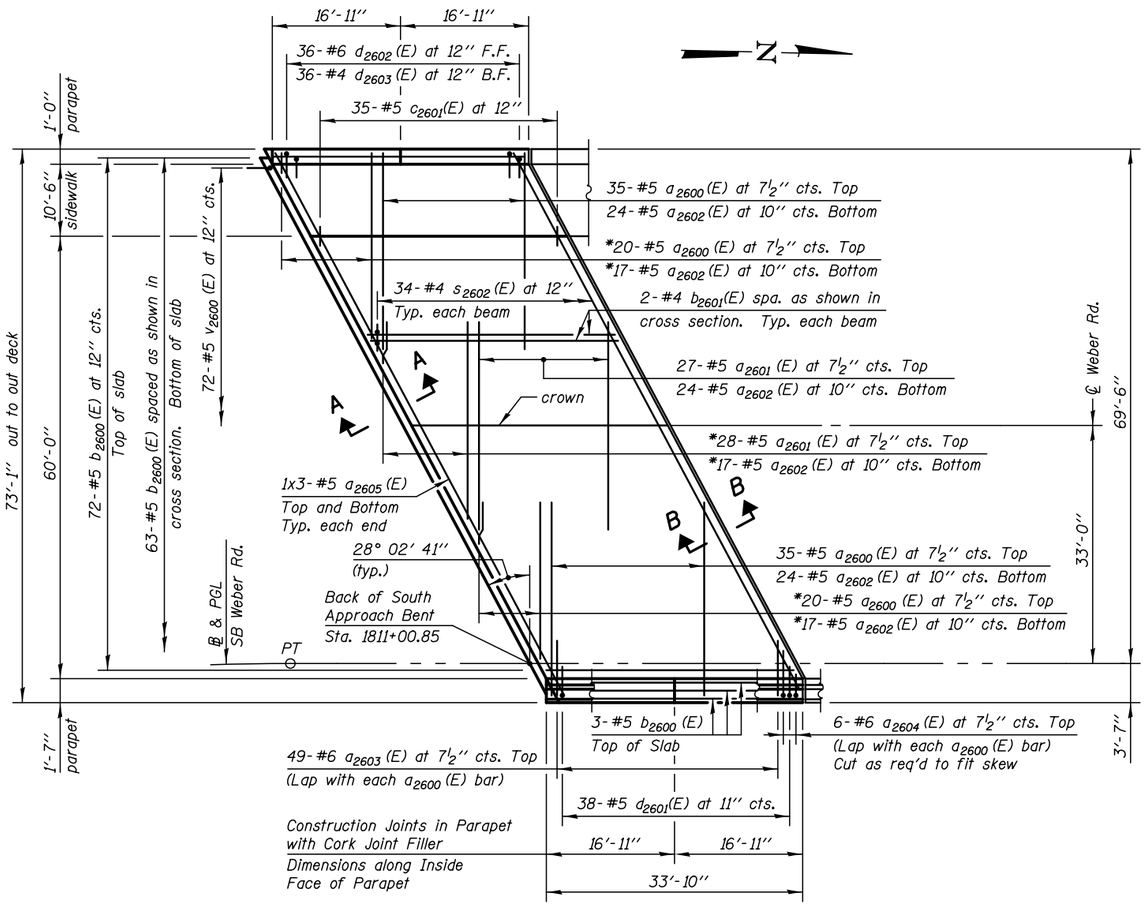
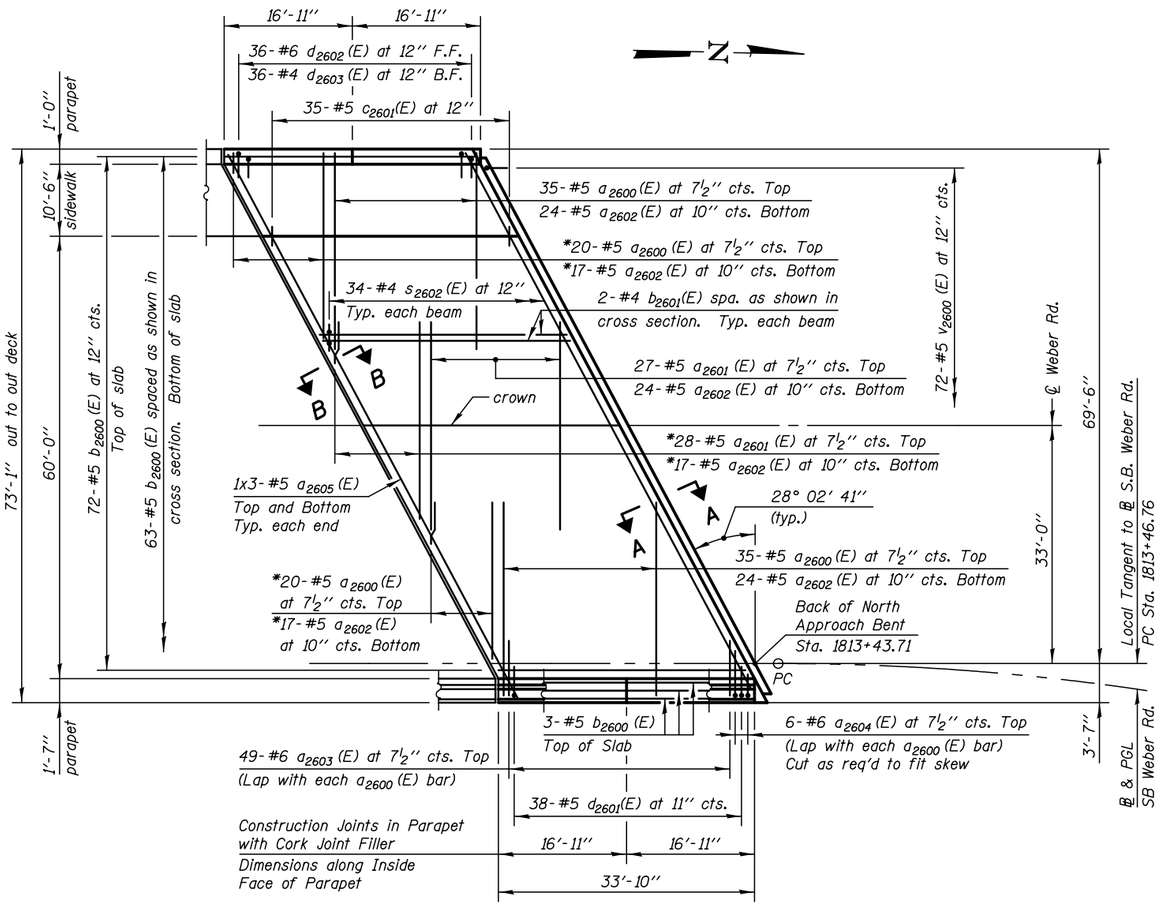


PLAN
(South Approach Span)



PLAN
(North Approach Span)

* Order a_{2600}(E), a_{2601}(E) and a_{2602}(E) bars full length. Cut to fit skew and use remainder of bars in opposite end.

Legend

F.F. Front Face
B.F. Back Face

MIN. BAR LAPS:

#5 = 3'-6"

Notes:

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

See Sheet SB-19 for Approach Span Cross Section Details.

See Sheet SB-20 for Sidewalk and Parapet Details.

See Sheet SB-21 for East Parapet Details.

See Sheet SB-22 for Sections A-A and B-B.

See Sheet SB-23 for Deck Misc. Details and Bill of Material.

PLOT DATE = 8/16/2017

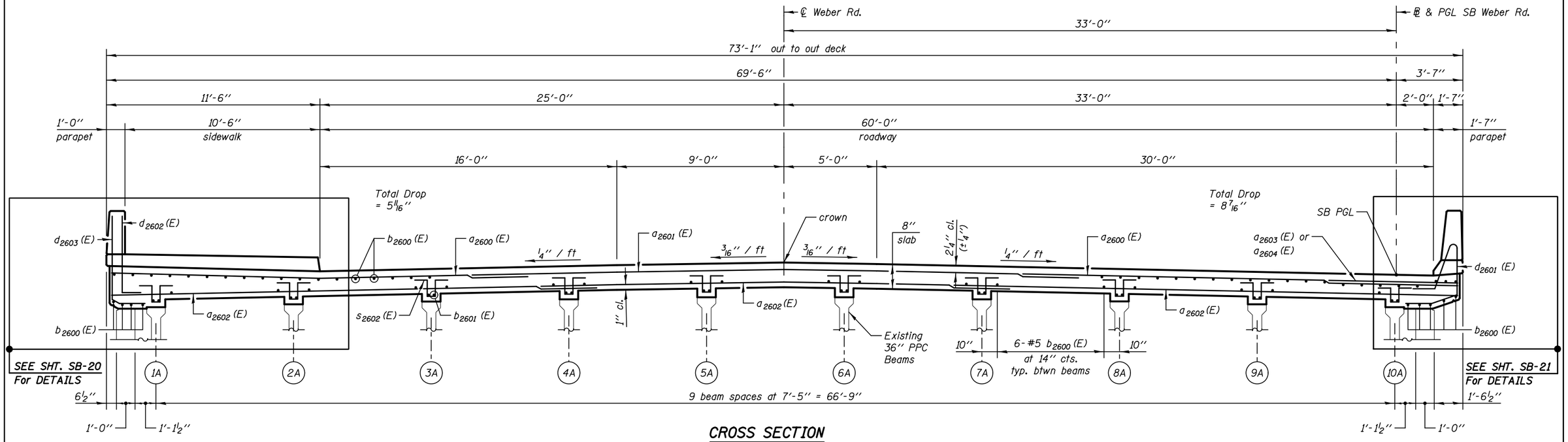
KNIGHT
Engineers & Architects

	DESIGNED - TB	REVISED	
	CHECKED - WPM	REVISED	
SCALE - NONE	DRAWN - SMA	REVISED	
DATE - 8/25/2017	CHECKED - TB	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

APPROACH SPAN PLAN
STRUCTURE NUMBER 099-0281
SHEET NO. SB-18 OF 40 SHEETS

F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1101
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		



CROSS SECTION
(Looking North)

MIN. BAR LAPS:
#5 = 3′-6″

PLOT DATE = 8/16/2017

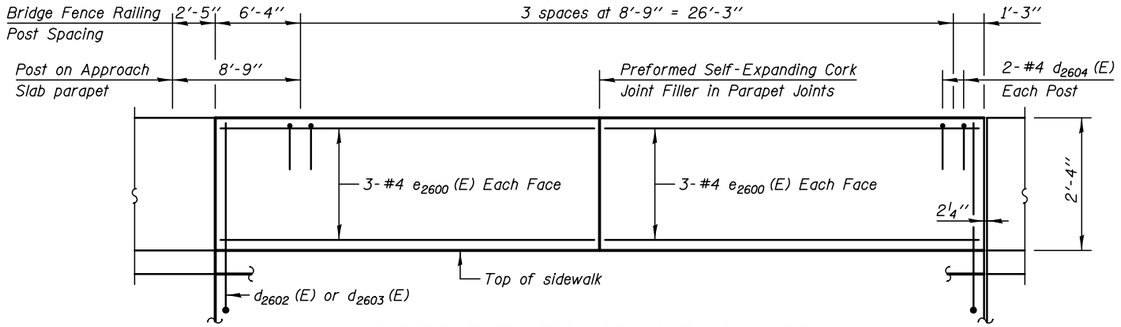
KNIGHT
Engineers & Architects

		DESIGNED - TB	REVISED
		CHECKED - WPM	REVISED
SCALE - NONE		DRAWN - SMA	REVISED
DATE - 8/25/2017		CHECKED - TB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

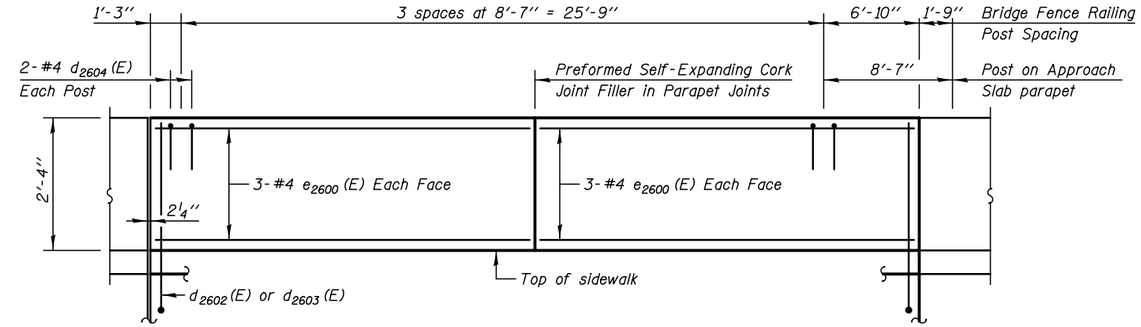
APPROACH SPAN CROSS SECTION
STRUCTURE NUMBER 099-0281
SHEET NO. SB-19 OF 40 SHEETS

F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1102
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		



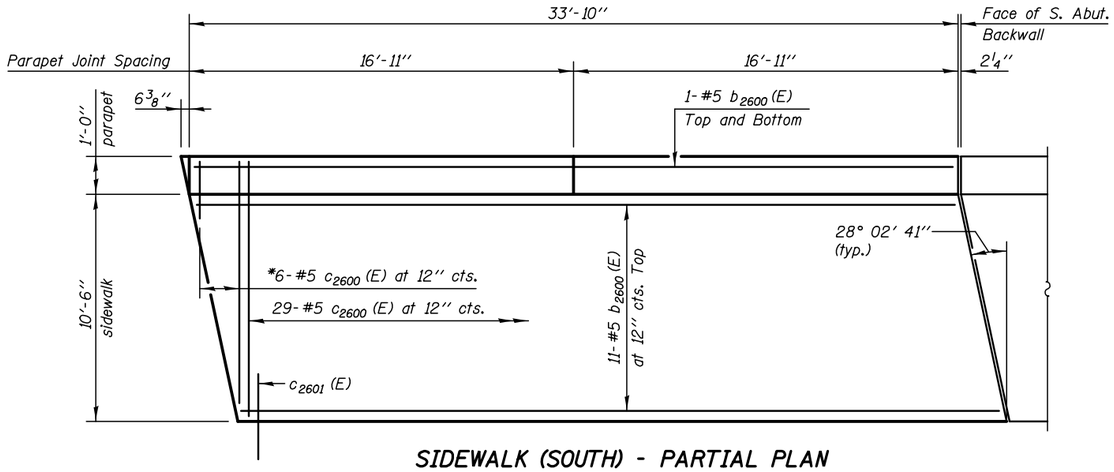
INSIDE ELEVATION OF SOUTH PARAPET

Dimensions along roadway face of parapet

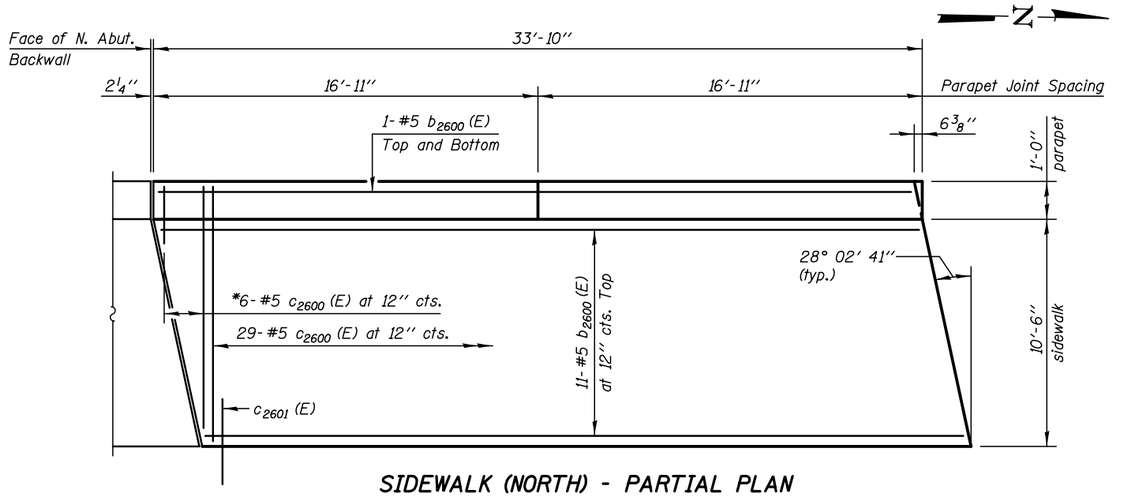


INSIDE ELEVATION OF NORTH PARAPET

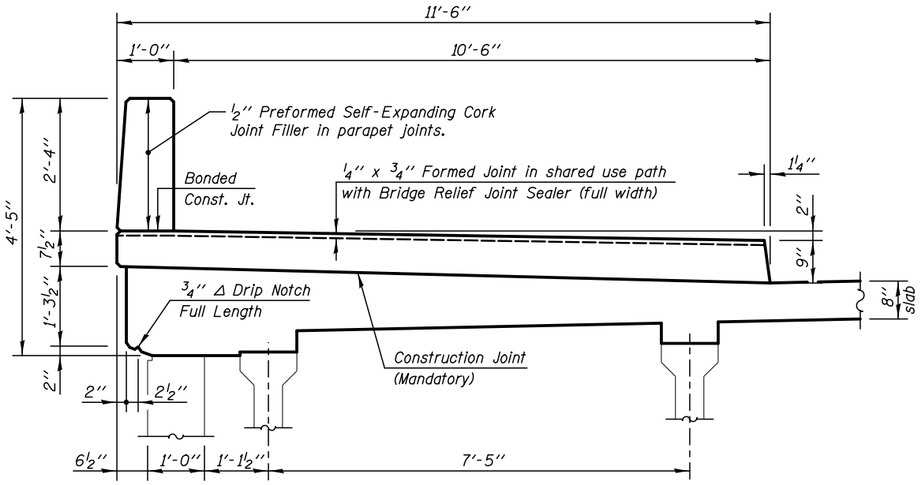
Dimensions along roadway face of parapet



SIDEWALK (SOUTH) - PARTIAL PLAN

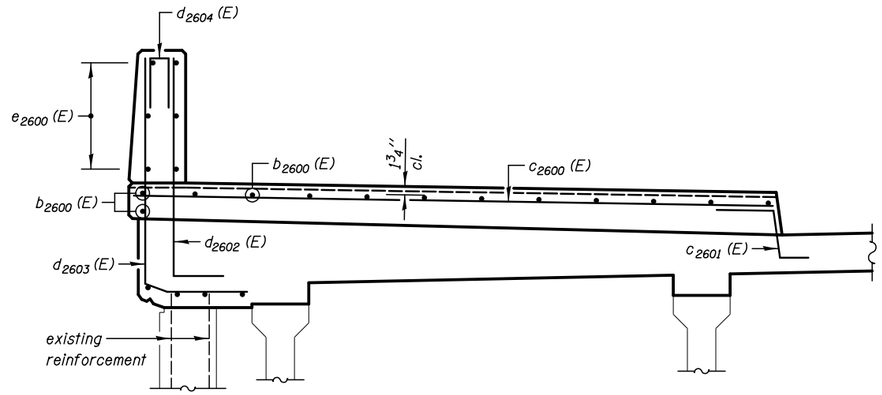


SIDEWALK (NORTH) - PARTIAL PLAN



SECTION THRU SIDEWALK AND PARAPET

(Showing Dimensions)



SECTION THRU SIDEWALK AND PARAPET

(Showing Reinforcement Bars)

* Order c_{2600} (E) bars full length. Cut to fit skew and use remainder of bars in opposite end.

Notes:

See Sheet SB-23 for Cork Filled Parapet Joint Detail.

See Sheet SB-23 for Approach Span Misc. Details and Bill of Materials.

See Sheet SB-28 for Bridge Fence Railing, Parapet Mounted Details.

Existing reinforcement shall be cleaned and incorporated into the new construction. Cost included with Removal of Existing Concrete Deck.

PLOT DATE = 8/16/2017

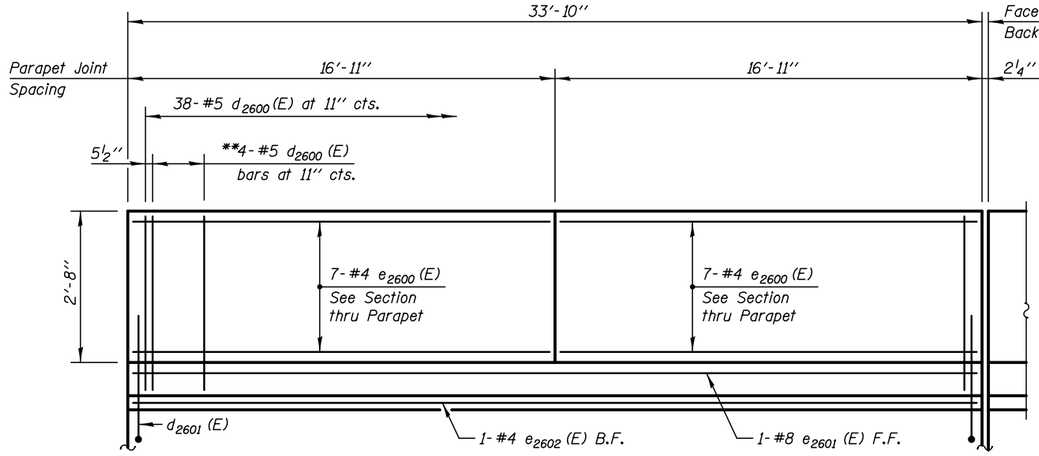
KNIGHT
Engineers & Architects

	DESIGNED - TB	REVISED	
	CHECKED - WPM	REVISED	
SCALE - NONE	DRAWN - SMA	REVISED	
DATE - 8/25/2017	CHECKED - TB	REVISED	

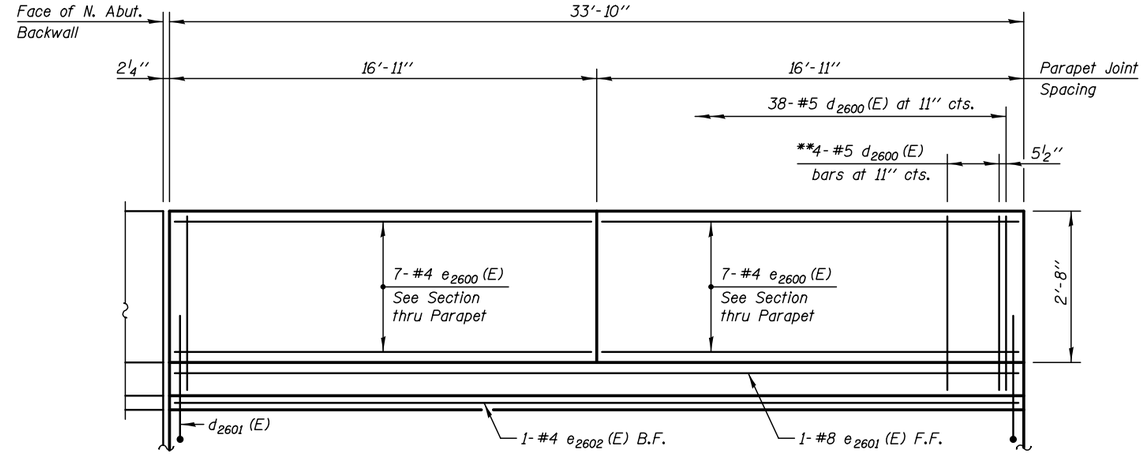
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

APPROACH SPAN SIDEWALK AND PARAPET DETAILS
STRUCTURE NUMBER 099-0281
SHEET NO. SB-20 OF 40 SHEETS

F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1103
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		

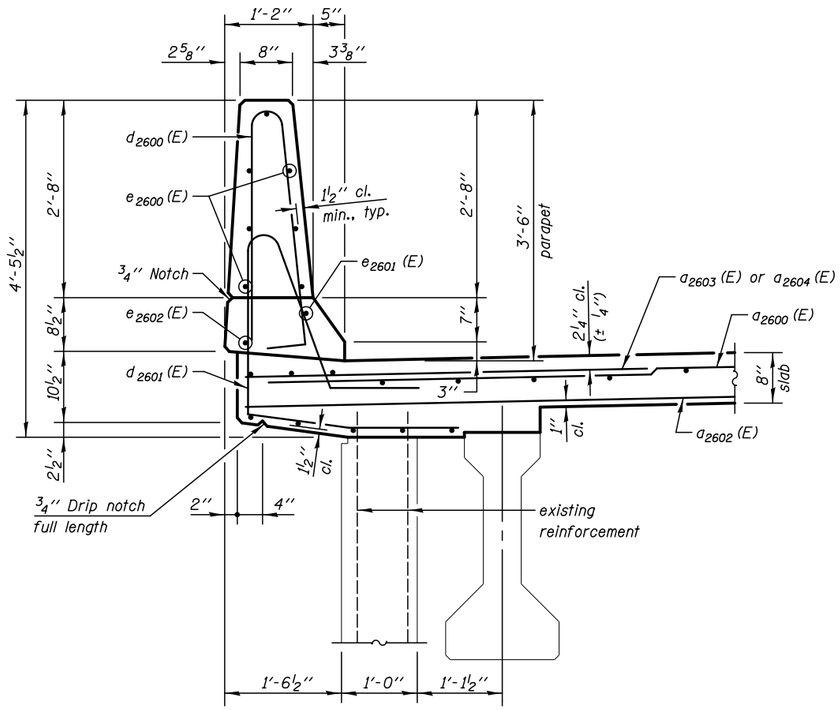


INSIDE ELEVATION OF EAST PARAPET (SOUTH APPROACH SPAN)

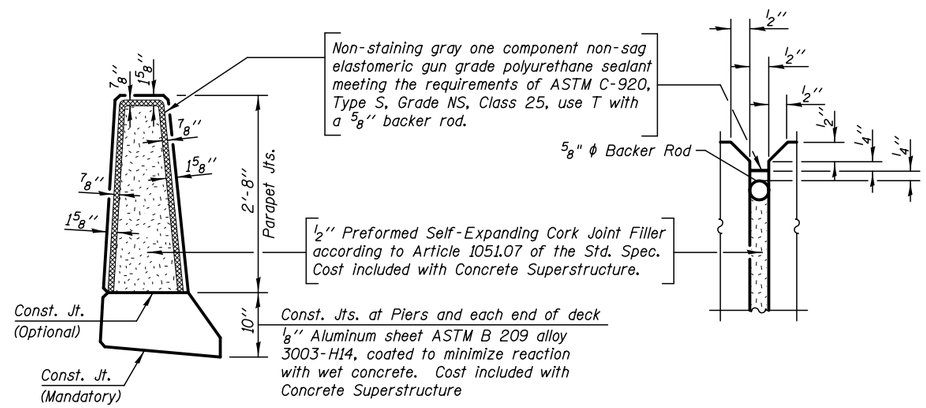


INSIDE ELEVATION OF EAST PARAPET (NORTH APPROACH SPAN)

**Typical at parapet ends and each side of aluminum sheeted joints.



SECTION THRU PARAPET



PARAPET JOINT DETAILS

Notes:

See Sheet SB-23 for Approach Span Misc. Details and Bill of Materials.

Existing reinforcement shall be cleaned and incorporated into the new construction. Cost included with Removal of Existing Concrete Deck.

PLOT DATE = 8/16/2017

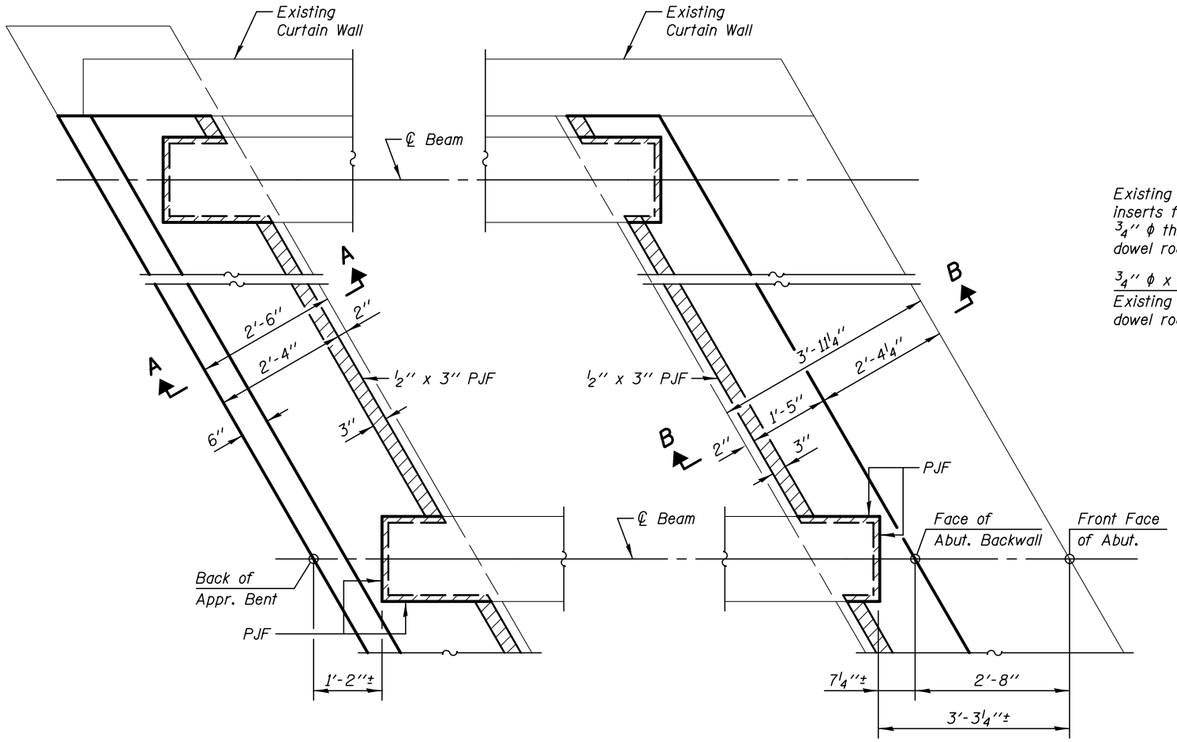
KNIGHT
Engineers & Architects

	DESIGNED - TB	REVISED	
	CHECKED - WPM	REVISED	
SCALE - NONE	DRAWN - SMA	REVISED	
DATE - 8/25/2017	CHECKED - TB	REVISED	

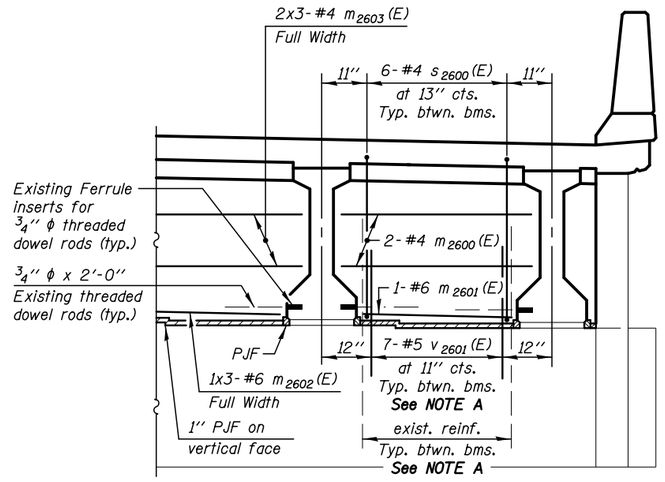
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

APPROACH SPAN EAST PARAPET DETAILS
STRUCTURE NUMBER 099-0281
SHEET NO. SB-21 OF 40 SHEETS

F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1104
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		

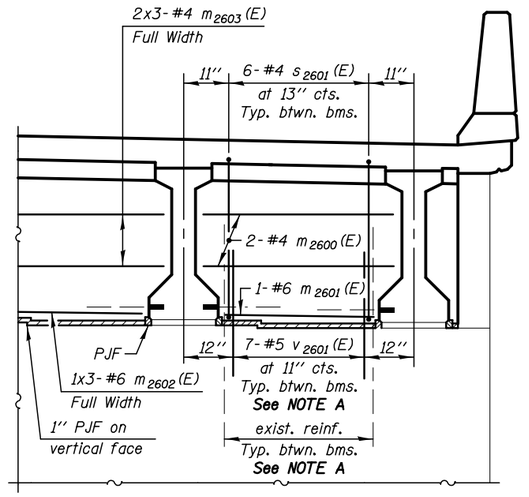


PARTIAL PLAN



DIAPHRAGM ELEVATION AT APPROACH BENT

For location of m_{2600}(E), m_{2601} (E), m_{2602}(E) and m_{2603}(E) bars see Section A-A.

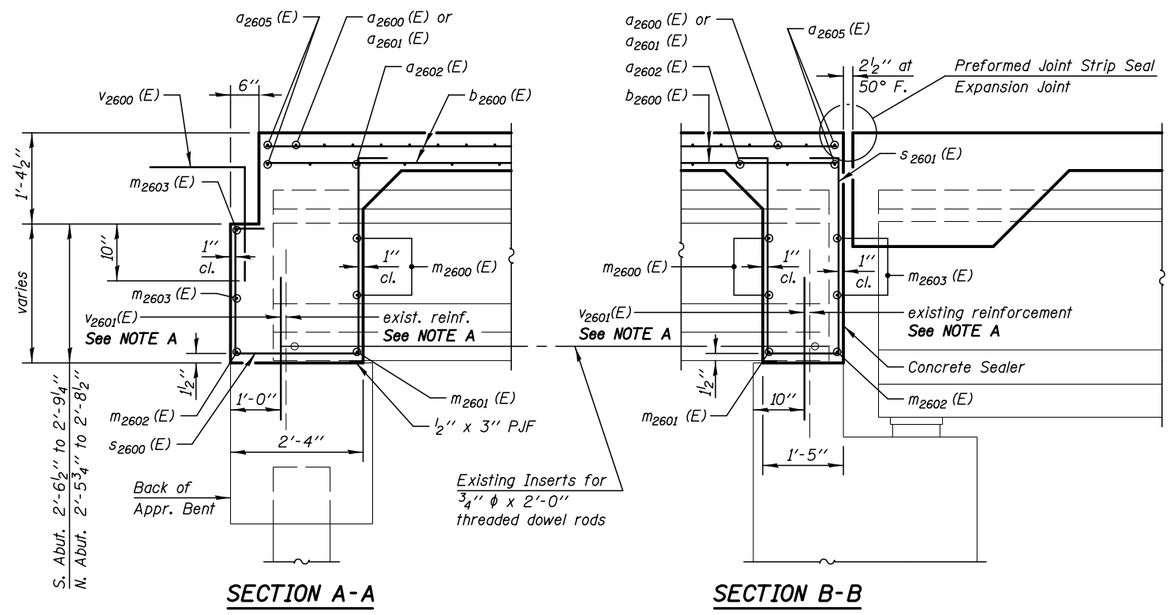


DIAPHRAGM ELEVATION AT ABUTMENT

For location of m_{2600}(E), m_{2601} (E), m_{2602}(E) and m_{2603}(E) bars see Section B-B.

NOTE A

If existing reinforcement is present and in acceptable condition, as determined by the Engineer, v_{2601}(E) bars may be omitted, as directed by the Engineer.



SECTION A-A

SECTION B-B

MIN. BAR LAPS:

#4 = 2'-8"
#6 = 4'-10"

Notes:

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

Reinforcement bars in diaphragm are billed with superstructure on Sheet SB-23.

Concrete in diaphragm is included with Concrete Superstructure on Sheet SB-23.

The s_{2600}(E) and s_{2601}(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.

Drill and grout v_{2601}(E) bars in accordance with Section 584 of the Standard Specifications. Embedment length shall be 1'-0". Method and grout are subject to approval of the Engineer. Cost included with Reinforcement Bars, Epoxy Coated.

Existing reinforcement shall be cleaned and incorporated into the new construction. Cost included with Removal of Existing Concrete Deck.

See Sheet SB-29 for Preformed Joint Strip Seal details.

See Sheets SB-34 and SB-36 for additional Concrete Sealer locations.

PLOT DATE = 8/16/2017

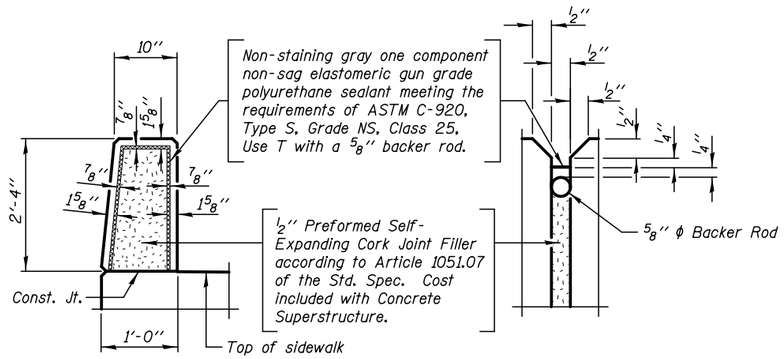
KNIGHT
Engineers & Architects

	DESIGNED - TB	REVISED	
	CHECKED - WPM	REVISED	
SCALE - NONE	DRAWN - SMA	REVISED	
DATE - 8/25/2017	CHECKED - TB	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

APPROACH SPAN DIAPHRAGM DETAILS
STRUCTURE NUMBER 099-0281
SHEET NO. SB-22 OF 40 SHEETS

F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1105
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		



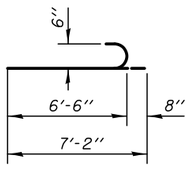
PARAPET JOINT DETAILS

BILL OF MATERIAL
SOUTH APPROACH SPAN

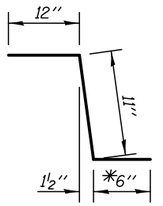
BAR	NO.	SIZE	LENGTH	SHAPE
a2600(E)	110	#5	23'-3''	
a2601(E)	55	#5	33'-3''	
a2602(E)	123	#5	26'-9''	
a2603(E)	49	#6	6'-6''	
a2604(E)	6	#6	7'-2''	
a2605(E)	12	#5	29'-9''	
b2600(E)	151	#5	33'-6''	
b2601(E)	20	#4	33'-6''	
c2600(E)	35	#5	11'-2''	
c2601(E)	35	#5	2'-5''	
d2600(E)	46	#5	6'-10''	
d2601(E)	38	#5	8'-7''	
d2602(E)	36	#6	4'-11''	
d2603(E)	36	#4	5'-9''	
d2604(E)	8	#4	2'-0''	
e2600(E)	26	#4	16'-7''	
e2601(E)	1	#8	33'-6''	
e2602(E)	1	#4	33'-6''	
m2600(E)	36	#4	7'-6''	
m2601(E)	18	#6	6'-4''	
m2602(E)	6	#6	29'-0''	
m2603(E)	6	#4	28'-6''	
s2600(E)	54	#4	9'-3''	
s2601(E)	54	#4	9'-5''	
s2602(E)	340	#4	2'-10''	
v2600(E)	72	#5	3'-9''	
v2601(E)	126	#5	2'-6''	
Reinforcement Bars, Epoxy Coated			LB	19280
Concrete Superstructure			Cu. Yd.	129.0
Bridge Deck Grooving			Sq. Yd.	219.0
Protective Coat			Sq. Yd.	297.0
Concrete Sealer			Sq. Ft.	329.0

BILL OF MATERIAL
NORTH APPROACH SPAN

BAR	NO.	SIZE	LENGTH	SHAPE
a2600(E)	110	#5	23'-3''	
a2601(E)	55	#5	33'-3''	
a2602(E)	123	#5	26'-9''	
a2603(E)	49	#6	6'-6''	
a2604(E)	6	#6	7'-2''	
a2605(E)	12	#5	29'-9''	
b2600(E)	151	#5	33'-6''	
b2601(E)	20	#4	33'-6''	
c2600(E)	35	#5	11'-2''	
c2601(E)	35	#5	2'-5''	
d2600(E)	46	#5	6'-10''	
d2601(E)	38	#5	8'-7''	
d2602(E)	36	#6	4'-11''	
d2603(E)	36	#4	5'-9''	
d2604(E)	8	#4	2'-0''	
e2600(E)	26	#4	16'-7''	
e2601(E)	1	#8	33'-6''	
e2602(E)	1	#4	33'-6''	
m2600(E)	36	#4	7'-6''	
m2601(E)	18	#6	6'-4''	
m2602(E)	6	#6	29'-0''	
m2603(E)	6	#4	28'-6''	
s2600(E)	54	#4	9'-3''	
s2601(E)	54	#4	9'-5''	
s2602(E)	340	#4	2'-10''	
v2600(E)	72	#5	3'-9''	
v2601(E)	126	#5	2'-6''	
Reinforcement Bars, Epoxy Coated			LB	19280
Concrete Superstructure			Cu. Yd.	129.0
Bridge Deck Grooving			Sq. Yd.	219.0
Protective Coat			Sq. Yd.	297.0
Concrete Sealer			Sq. Ft.	329.0

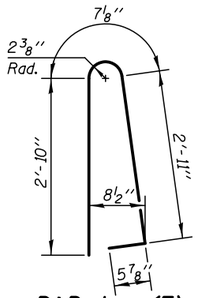


BAR a_{2604} (E)

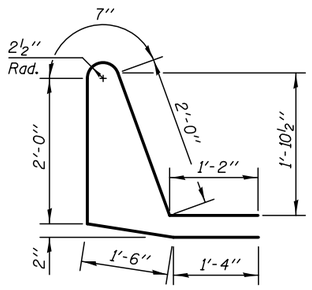


BAR c_{2601} (E)

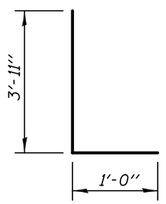
*In lieu of bottom leg, c_{2601} (E) bars may be drilled and set according to Article 509.06 of the Standard Specifications. Drilled holes shall be roughened or scored per manufacturer's recommendations. Max. depth of hole shall not exceed 6''. Contractor shall take all necessary precautions to prevent drilled hole interference with deck reinforcement bars. Locate longitudinal bars to miss drilled locations. Locate drilled holes to miss transverse bars in deck.



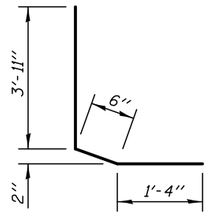
BAR d_{2600} (E)



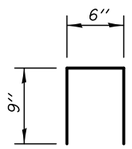
BAR d_{2601} (E)



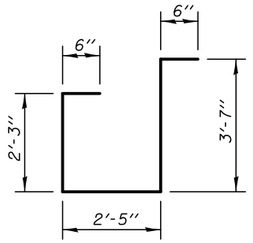
BAR d_{2602} (E)



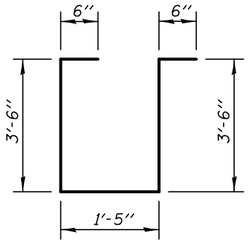
BAR d_{2603} (E)



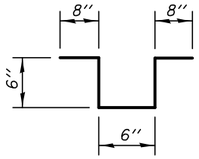
BAR d_{2604} (E)



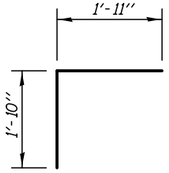
BAR s_{2600} (E)



BAR s_{2601} (E)



BAR s_{2602} (E)



BAR v_{2600} (E)

PLOT DATE = 8/16/2017

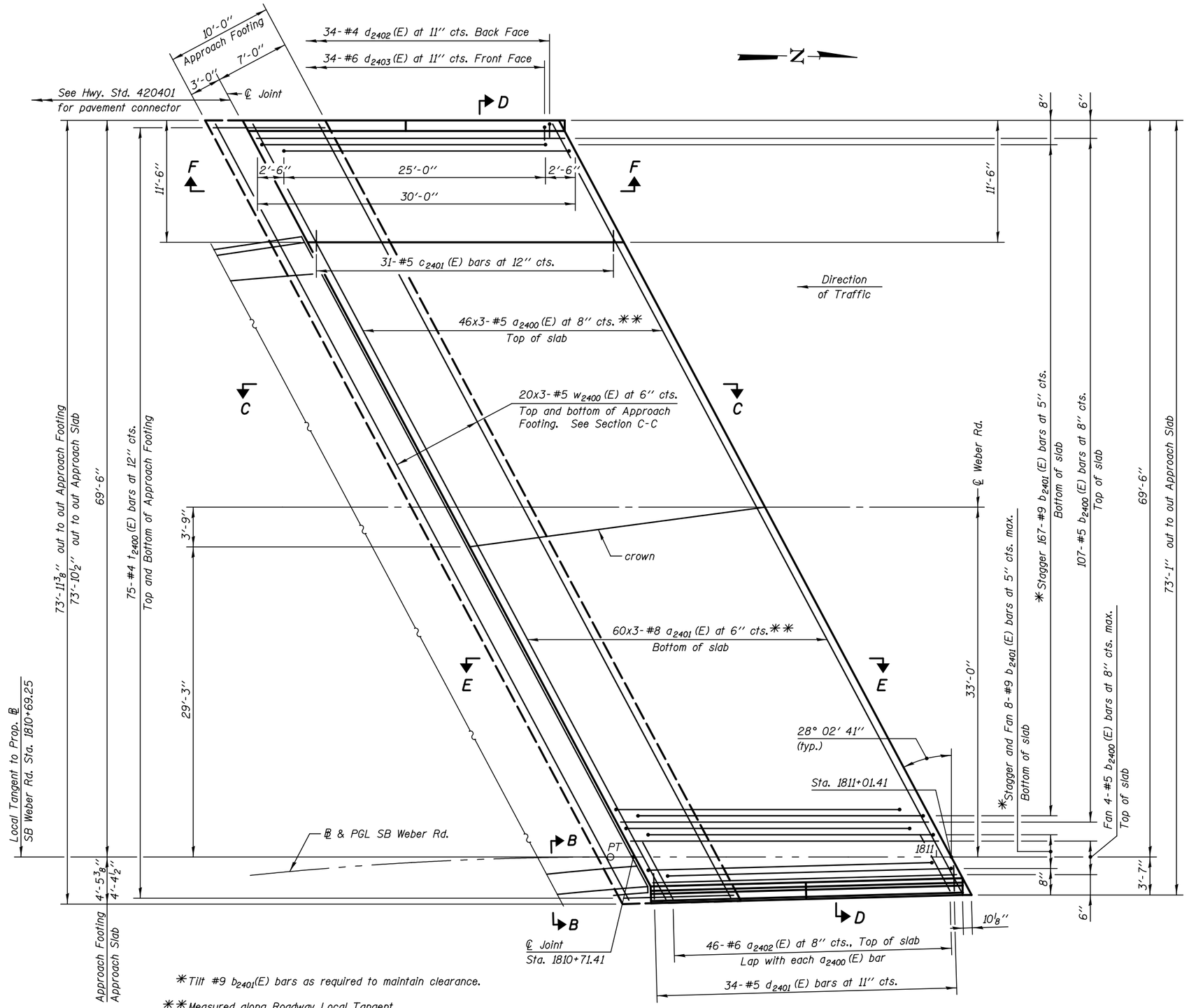
KNIGHT
Engineers & Architects

		DESIGNED - TB	REVISED
		CHECKED - WPM	REVISED
SCALE - NONE		DRAWN - SMA	REVISED
DATE - 8/25/2017		CHECKED - TB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

APPROACH SPAN MISCELLANEOUS DETAILS
STRUCTURE NUMBER 099-0281
SHEET NO. SB-23 OF 40 SHEETS

F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1106
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		



PLAN

MIN. BAR LAPS:

Horizontal Bars	Horizontal Top Bars
#5 = 3'-1"	#5 = 3'-4"
#8 = 6'-9"	

Notes:

Bars indicated thus 20x3-#5 etc. indicates 20 lines of bars with 3 lengths per line.

See Sheet SB-26 for Sections C-C & D-D and Views B-B & E-E.

See Sheet SB-27 for View F-F and Sidewalk and Parapet Details.

PLOT DATE = 8/16/2017

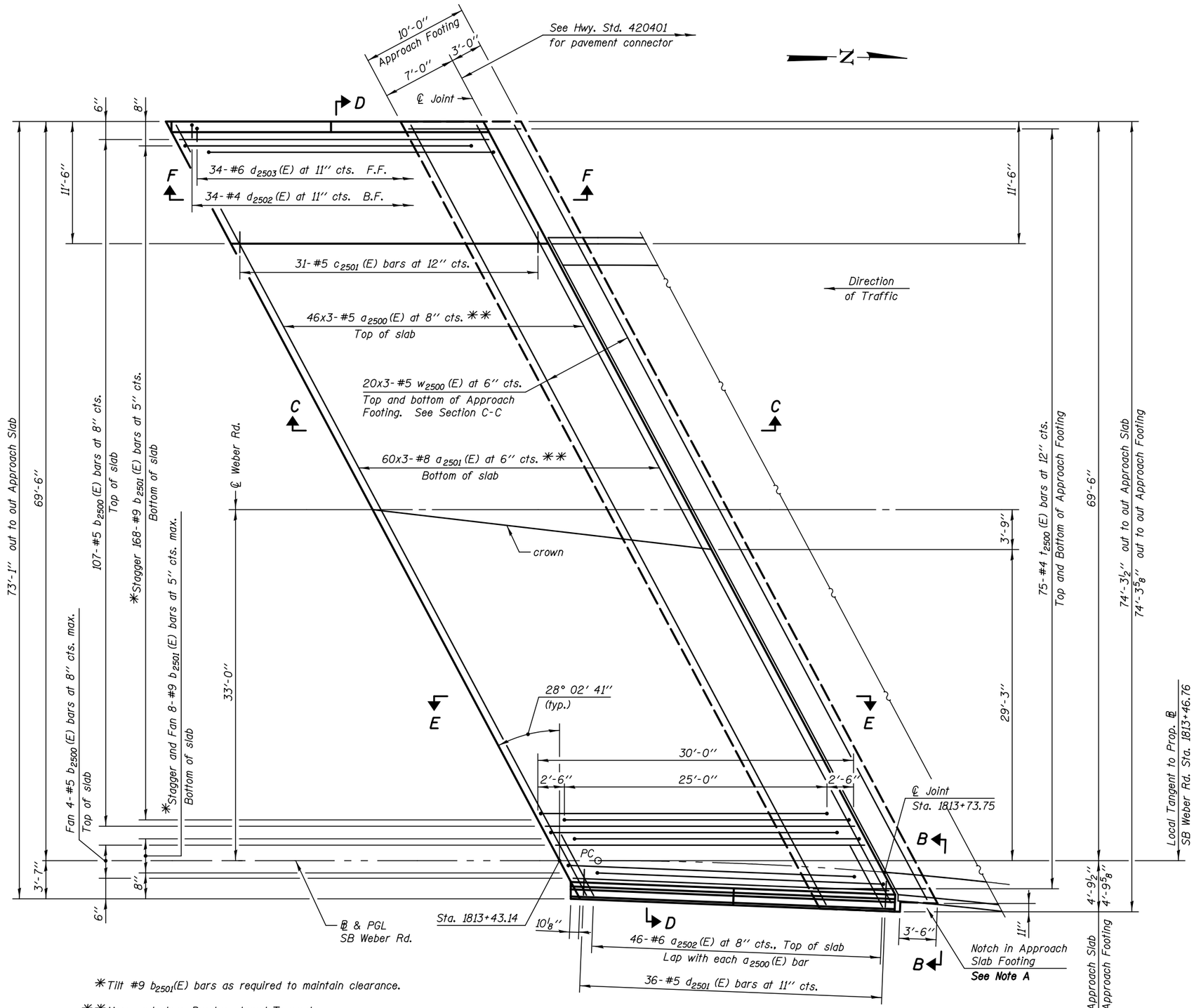
KNIGHT Engineers & Architects

	DESIGNED - TB	REVISED	
	CHECKED - WPM	REVISED	
SCALE - NONE	DRAWN - SMA	REVISED	
DATE - 8/25/2017	CHECKED - TB	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB PLAN (SOUTH)
STRUCTURE NUMBER 099-0281
SHEET NO. SB-24 OF 40 SHEETS

F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1107
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		



*Tilt #9 b_{2501}(E) bars as required to maintain clearance.

**Measured along Roadway Local Tangent

PLAN

NOTE

Traffic Barrier Terminal, Type 6 shall be attached to the NORTH APPROACH SLAB, East Parapet.

NOTE A

3'-6" x 11" notch in approach slab footing for Traffic Barrier Terminal Type 6 posts. Cut t_{2500}(E) and w_{2500}(E) bars, as required, to fit notch.
North Approach Slab Only

LEGEND

F.F. Front Face
B.F. Back Face

MIN. BAR LAPS:

Horizontal Bars	Horizontal Top Bars
#5 = 3'-1"	#5 = 3'-4"
#8 = 6'-9"	

Notes:

Bars indicated thus 20x3-#5 etc. indicates 20 lines of bars with 3 lengths per line.

See Sheet SB-26 for Sections C-C & D-D and Views B-B & E-E.

See Sheet SB-27 for View F-F and Sidewalk and Parapet Details.

PLOT DATE = 8/16/2017

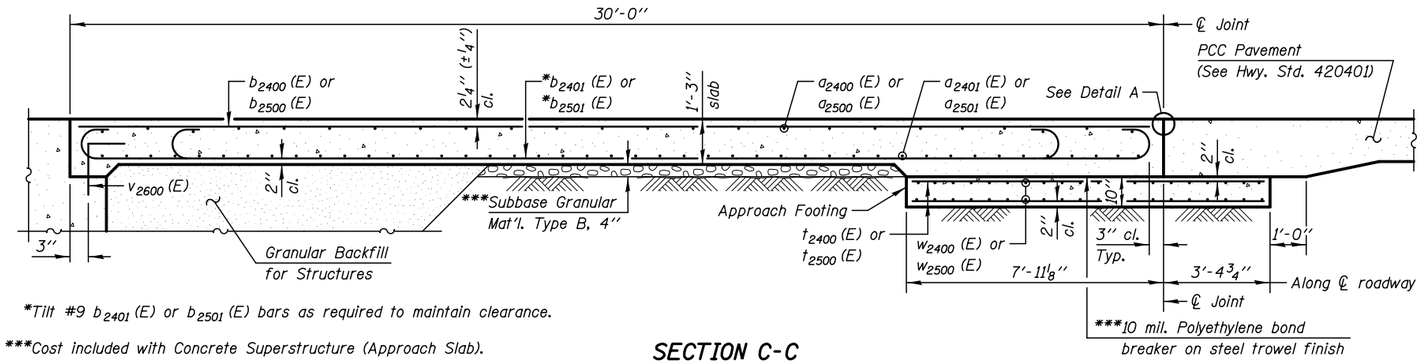
KNIGHT
Engineers & Architects

		DESIGNED - TB	REVISED
		CHECKED - WPM	REVISED
SCALE - NONE		DRAWN - SMA	REVISED
DATE - 8/25/2017		CHECKED - TB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB PLAN (NORTH)
STRUCTURE NUMBER 099-0281
SHEET NO. SB-25 OF 40 SHEETS

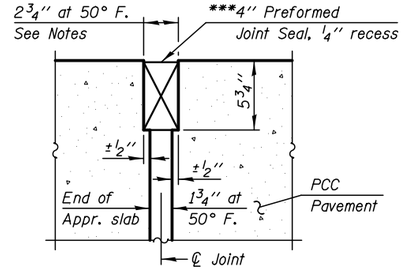
F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1108
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		



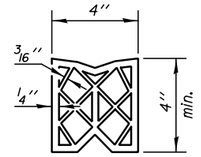
*Tilt #9 b_{2401} (E) or b_{2501} (E) bars as required to maintain clearance.

***Cost included with Concrete Superstructure (Approach Slab).

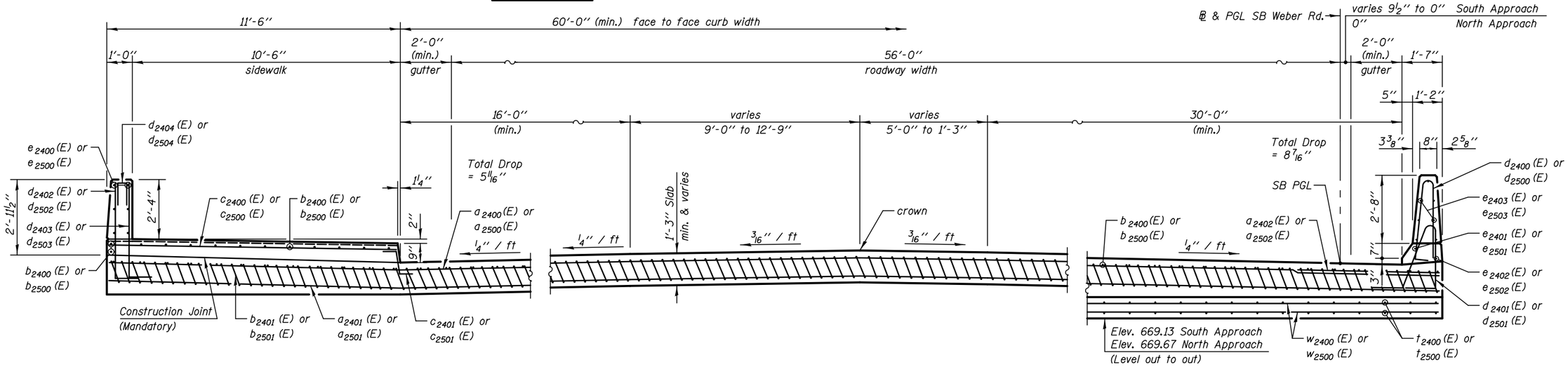
SECTION C-C



DETAIL A



PREFORMED JOINT SEAL

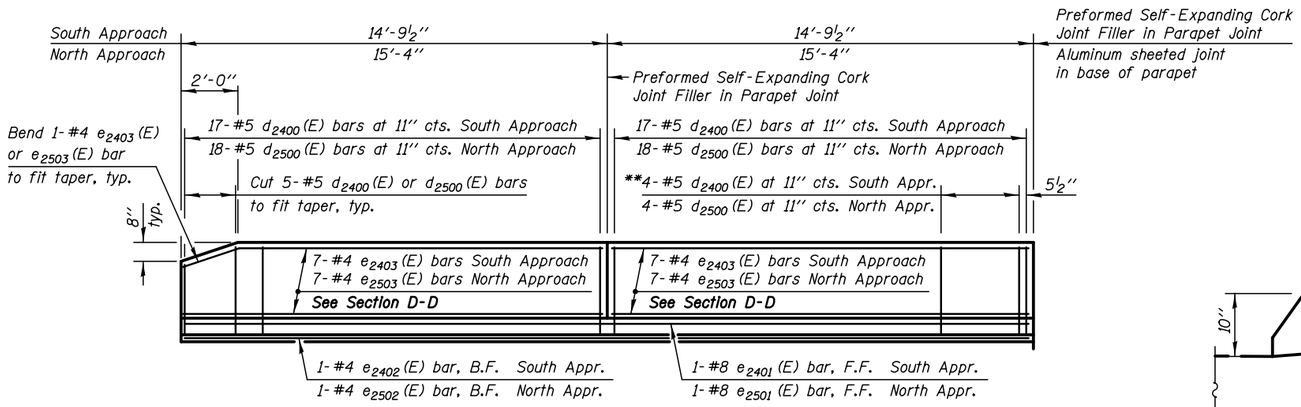


NEAR ABUTMENT

AT APPROACH FOOTING

SECTION D-D

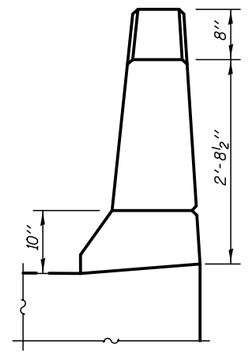
(See Plan for dimensions not shown)



VIEW E-E

Dimensions along inside face of parapet

**Typical at parapet ends and each side of aluminum sheeted joints.



VIEW B-B

LEGEND

F.F. Front Face
B.F. Back Face

Notes:

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

See Sheet SB-23 for v_{2600} (E) bar details

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

See Sheet SB-15 for Parapet Joint Details and additional parapet details.

The joint opening shall be determined per Article 520.04 except that, the distance described as the bridge length between the nearest fixed bearings each way from the joint shall be taken as half the bridge length plus the approach slab length. The minimum dimension shall be 1½" for installation purposes.

PLOT DATE = 8/16/2017

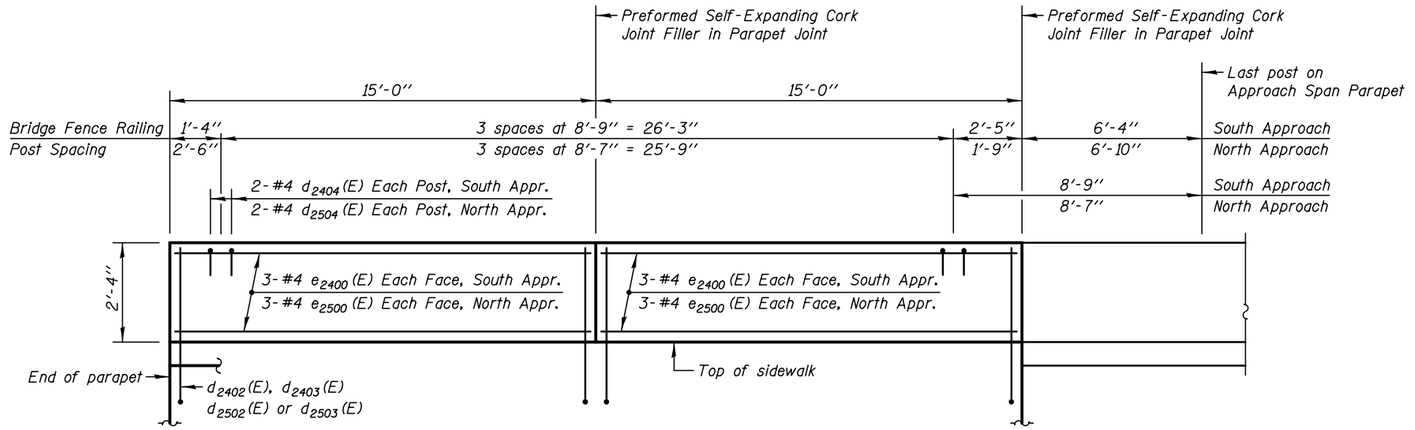
KNIGHT
Engineers & Architects

	DESIGNED - TB	REVISED
	CHECKED - WPM	REVISED
SCALE - NONE	DRAWN - SMA	REVISED
DATE - 8/25/2017	CHECKED - TB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

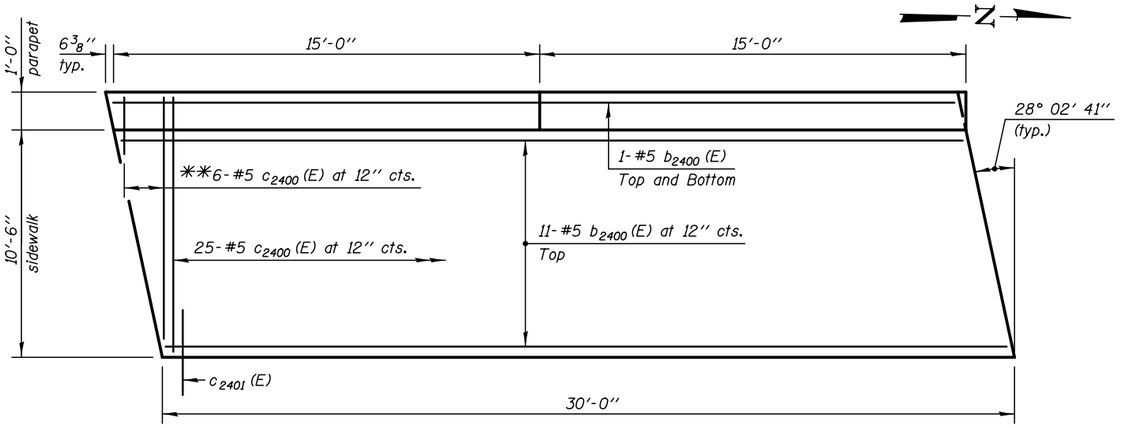
BRIDGE APPROACH SLAB DETAILS
STRUCTURE NUMBER 099-0281
SHEET NO. SB-26 OF 40 SHEETS

F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1109
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		



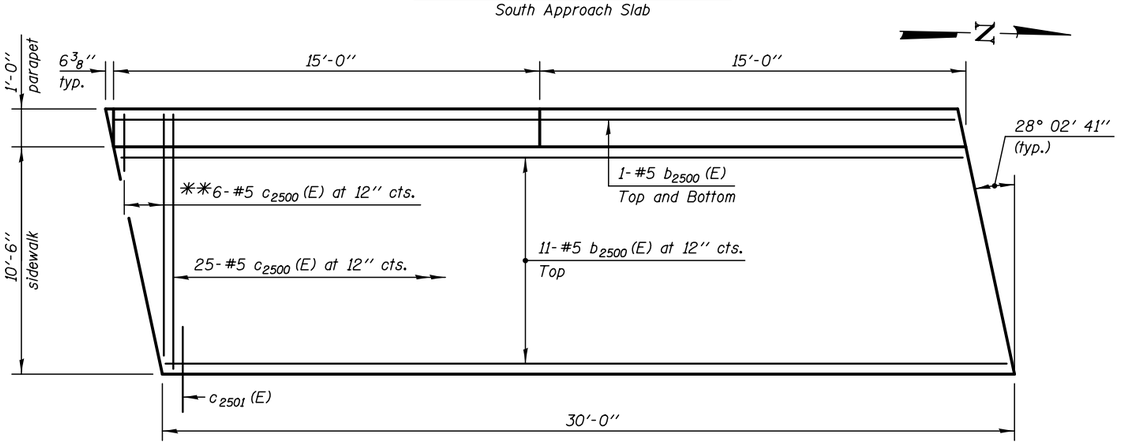
VIEW F-F

Dimensions along roadway face of parapet



SIDEWALK - PARTIAL PLAN

South Approach Slab



SIDEWALK - PARTIAL PLAN

North Approach Slab

**Order c_{2400}(E) and c_{2500}(E) bars full length. Cut to fit skew and use remainder of bars in opposite end.

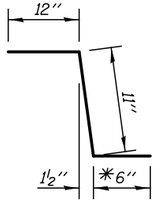
*In lieu of bottom leg, c_{2401}(E) and c_{2501}(E) bars may be drilled and set according to Article 509.06 of the Standard Specifications. Drilled holes shall be roughened or scored per manufacturer's recommendations. Max. depth of hole shall not exceed 6". Contractor shall take all necessary precautions to prevent drilled hole interference with deck reinforcement bars. Locate longitudinal bars to miss drilled locations. Locate drilled holes to miss transverse bars in deck.

BILL OF MATERIAL SOUTH APPROACH SLAB

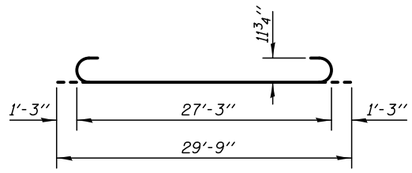
BAR	NO.	SIZE	LENGTH	SHAPE
a2400(E)	138	#5	30'-3"	
a2401(E)	180	#8	32'-6"	
a2402(E)	46	#6	6'-6"	
b2400(E)	124	#5	29'-8"	
b2401(E)	175	#9	29'-9"	
c2400(E)	31	#5	11'-2"	
c2401(E)	31	#5	2'-5"	
d2400(E)	42	#5	6'-10"	
d2401(E)	34	#5	7'-11"	
d2402(E)	34	#4	4'-8"	
d2403(E)	34	#6	5'-0"	
d2404(E)	8	#4	2'-0"	
e2400(E)	12	#4	14'-8"	
e2401(E)	1	#8	29'-3"	
e2402(E)	1	#4	29'-3"	
e2403(E)	14	#4	14'-5"	
t2400(E)	150	#4	11'-0"	
w2400(E)	120	#5	30'-0"	
Reinforcement Bars, Epoxy Coated			LB	48560
Concrete Superstructure			Cu. Yd.	16.0
Concrete Structures			Cu. Yd.	28.0
Bridge Deck Grooving			Sq. Yd.	195.0
Protective Coat			Sq. Yd.	265.0
Concrete Superstructure (Approach Slab)			Cu. Yd.	127.0

BILL OF MATERIAL NORTH APPROACH SLAB

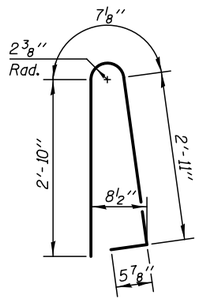
BAR	NO.	SIZE	LENGTH	SHAPE
a2500(E)	138	#5	30'-3"	
a2501(E)	180	#8	32'-6"	
a2502(E)	46	#6	6'-6"	
b2500(E)	124	#5	29'-8"	
b2501(E)	176	#9	29'-9"	
c2500(E)	31	#5	11'-2"	
c2501(E)	31	#5	2'-5"	
d2500(E)	44	#5	6'-10"	
d2501(E)	36	#5	7'-11"	
d2502(E)	34	#4	4'-8"	
d2503(E)	34	#6	5'-0"	
d2504(E)	8	#4	2'-0"	
e2500(E)	12	#4	14'-8"	
e2501(E)	1	#8	30'-4"	
e2502(E)	1	#4	30'-4"	
e2503(E)	14	#4	15'-0"	
t2500(E)	150	#4	11'-0"	
w2500(E)	120	#5	30'-0"	
Reinforcement Bars, Epoxy Coated			LB	48700
Concrete Superstructure			Cu. Yd.	17.0
Concrete Structures			Cu. Yd.	28.0
Bridge Deck Grooving			Sq. Yd.	196.0
Protective Coat			Sq. Yd.	266.0
Concrete Superstructure (Approach Slab)			Cu. Yd.	127.0



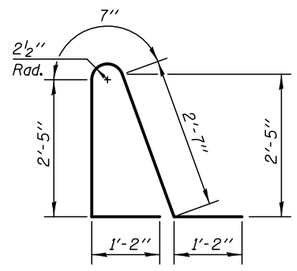
BARS c_{2400}(E) and c_{2500}(E)



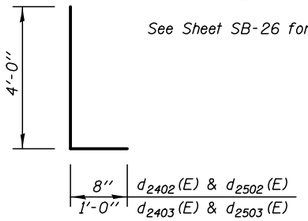
BARS b_{2400}(E) and b_{2500}(E)



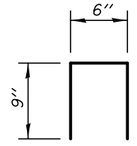
BARS d_{2400}(E) and d_{2500}(E)



BARS d_{2401}(E) and d_{2501}(E)



BARS d_{2402}(E), d_{2403}(E), d_{2502}(E) & d_{2503}(E)



BARS d_{2404}(E) and d_{2504}(E)

Notes:

Parapet and sidewalk concrete shall be paid for as Concrete Superstructure.

Approach slab shall be paid for as Concrete Superstructure (Approach Slab).

Approach footing concrete shall be paid for as Concrete Structures.

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

Cost of excavation for approach footing included with Concrete Structures.

See Sheet SB-14 for additional sidewalk and parapet details.

See Sheet SB-17 for Parapet Joint Details.

See Sheet SB-26 for Section D-D.

PLOT DATE = 8/16/2017

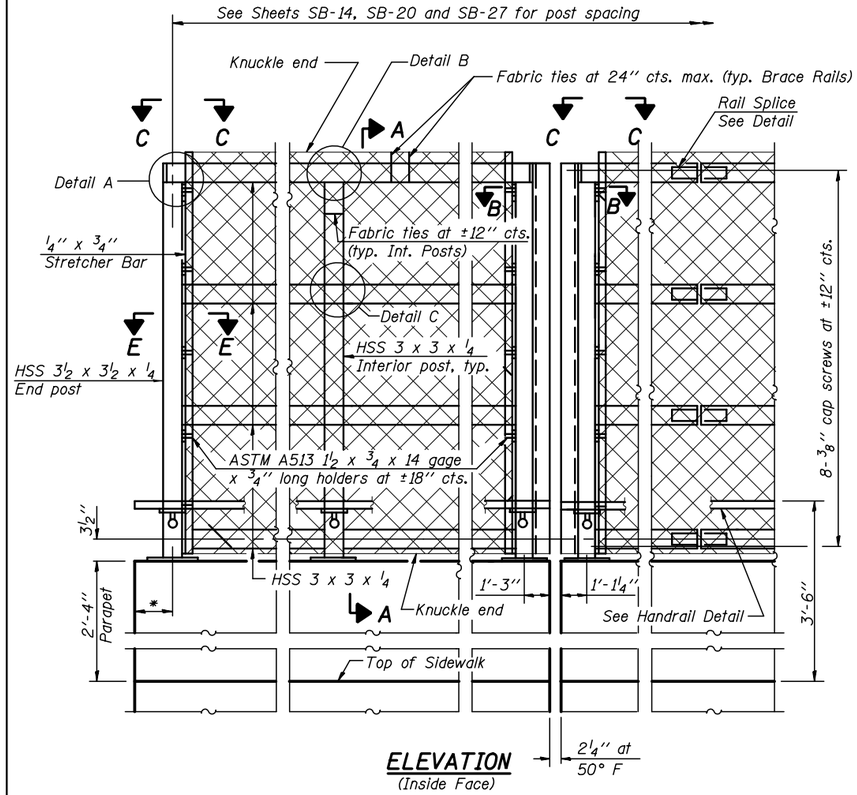
KNIGHT Engineers & Architects

		DESIGNED - TB	REVISED
		CHECKED - WPM	REVISED
SCALE - NONE		DRAWN - SMA	REVISED
DATE - 8/25/2017		CHECKED - TB	REVISED

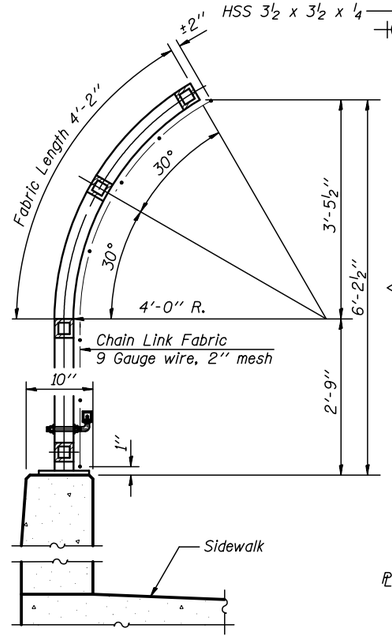
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS
STRUCTURE NUMBER 099-0281
SHEET NO. SB-27 OF 40 SHEETS

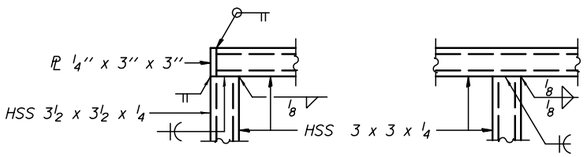
F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1110
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		



ELEVATION
(Inside Face)



SECTION A-A

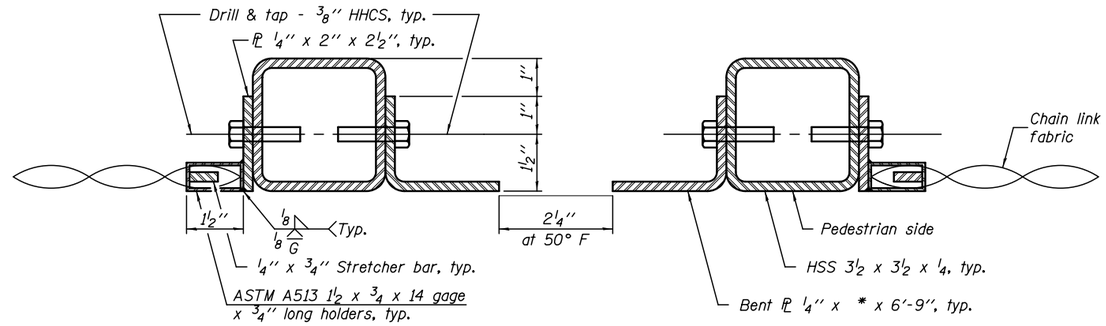


DETAIL A

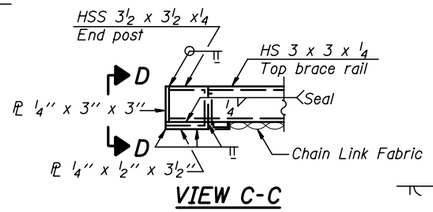
DETAIL B

DETAIL C

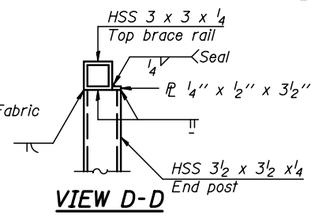
Note:
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.



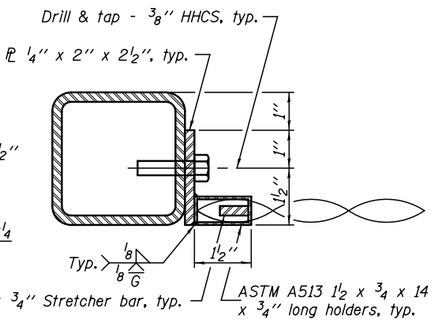
SECTION B-B
(At Expansion Joint)



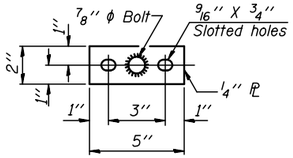
VIEW C-C



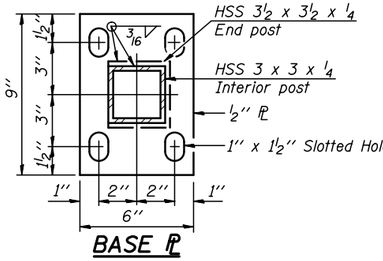
VIEW D-D



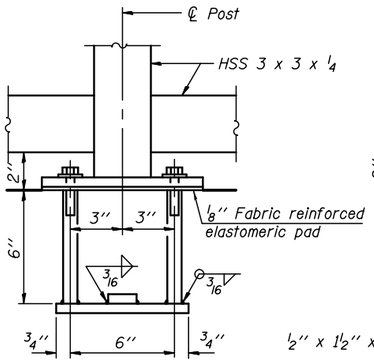
SECTION E-E

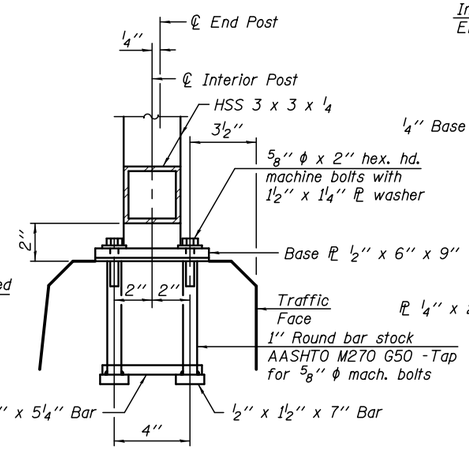


BASE PL
(Handrail)



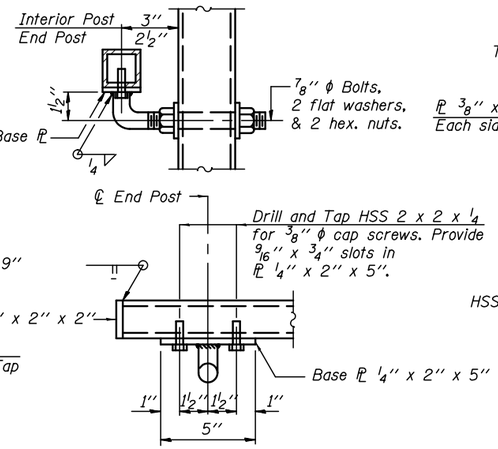
BASE PL



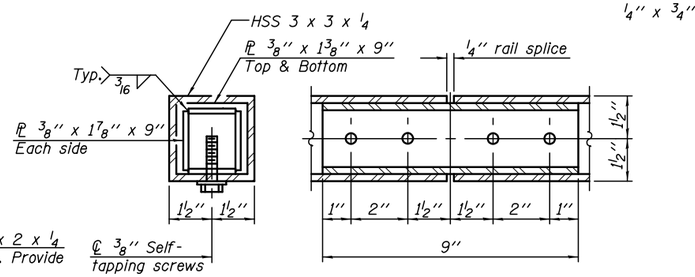


ANCHOR BOLT DETAILS

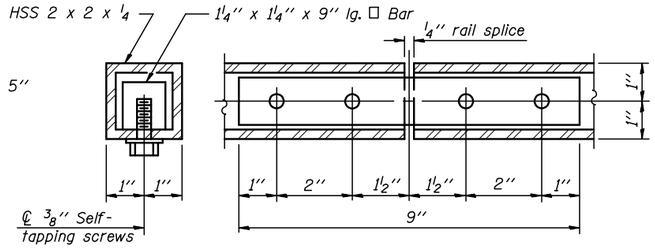
In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting 5/8" ϕ anchor rods according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.



HANDRAIL DETAIL



RAIL SPLICE



HANDRAIL SPLICE

**Variable - See Plans (10'-0" Maximum Post Spacing)*

BILL OF MATERIAL

Item	Unit	Quantity
Bridge Fence Railing	Foot	299.0

R-32

1-12-15

PLOT DATE = 8/16/2017

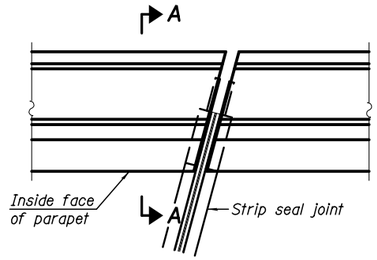
KNIGHT
Engineers & Architects

		DESIGNED - TB	REVISED
		CHECKED - WPM	REVISED
SCALE - NONE		DRAWN - SMA	REVISED
DATE - 8/25/2017		CHECKED - TB	REVISED

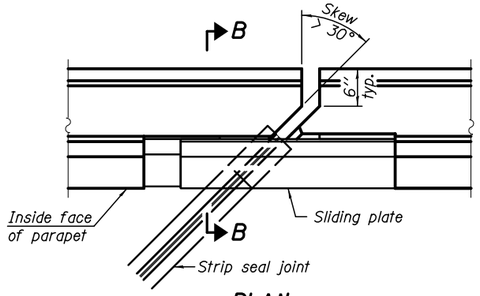
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE FENCE RAILING, PARAPET MOUNTED
STRUCTURE NUMBER 099-0281
SHEET NO. SB-28 OF 40 SHEETS

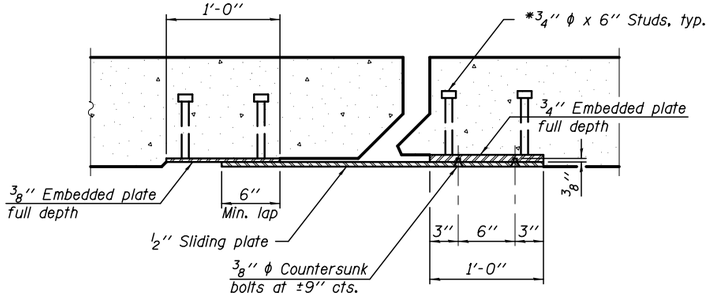
F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1111
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		



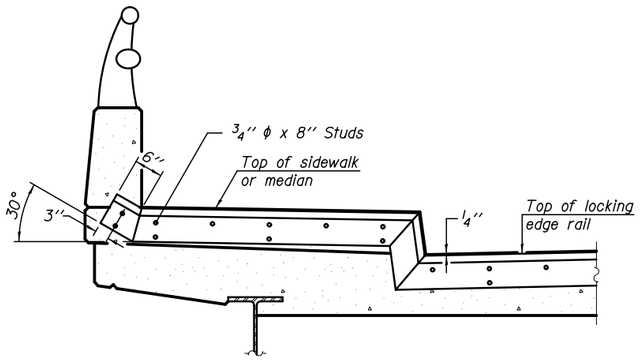
PLAN
(For skews ≤ 30°)



PLAN
(For skews > 30°)
Showing point block

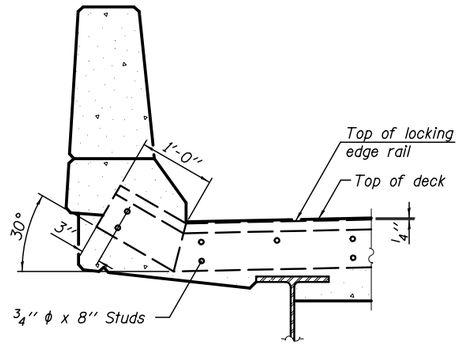


SECTION C-C

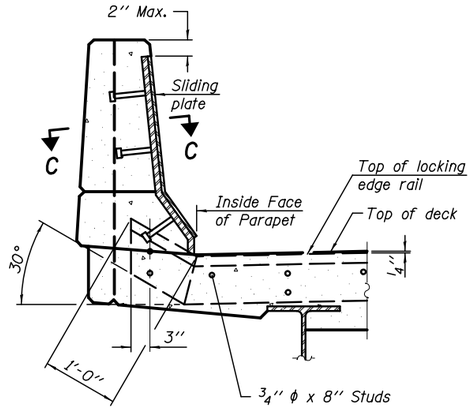


TYPICAL END TREATMENT AT SIDEWALK OR MEDIAN

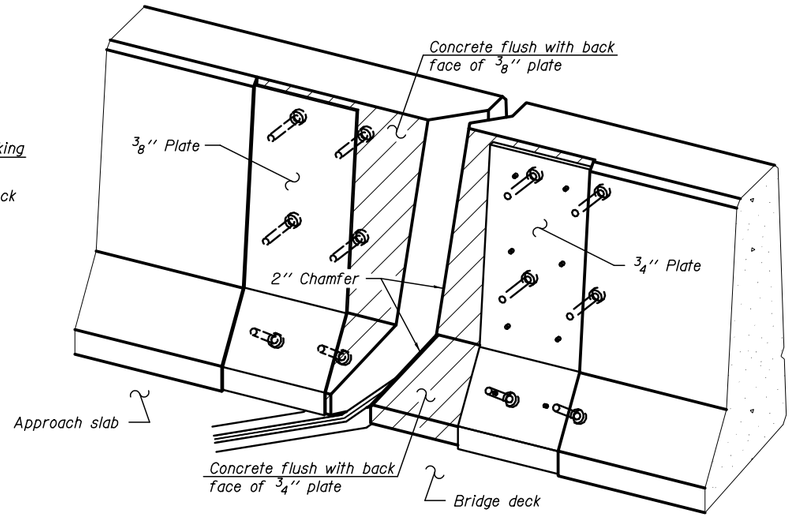
Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.



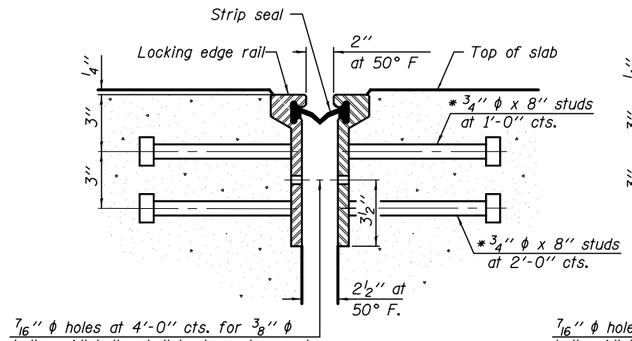
SECTION A-A



SECTION B-B

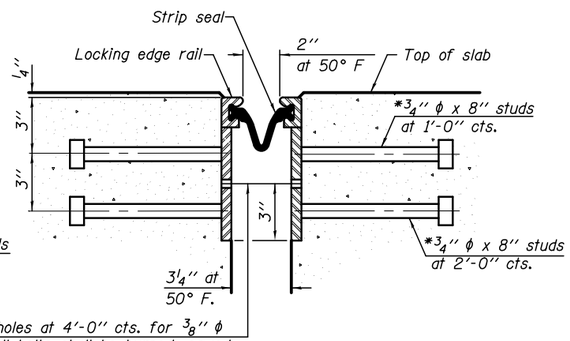


TRIMETRIC VIEW
(Showing back plates only)



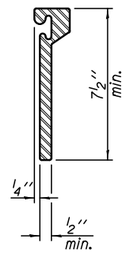
7/16" ϕ holes at 4'-0" cts. for 3/8" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

SECTION THRU ROLLED RAIL JOINT

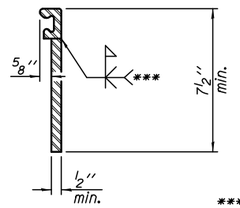


7/16" ϕ holes at 4'-0" cts. for 3/8" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

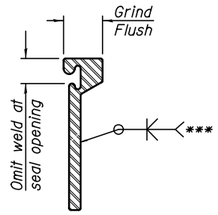
SECTION THRU WELDED RAIL JOINT



ROLLED EXTRUDED RAIL



WELDED RAIL



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

LOCKING EDGE RAIL SPLICE

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

Rolled rail shown, welded rail similar.

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

LOCKING EDGE RAILS

Notes:

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

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

The manufacturer's recommended installation methods shall be followed.

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

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

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

Parapet plates and anchorage studs for skews > 30° included in the cost of Preformed Joint Strip Seal.

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	166.0

EJ-SSJ 1-27-12

PLOT DATE = 8/16/2017

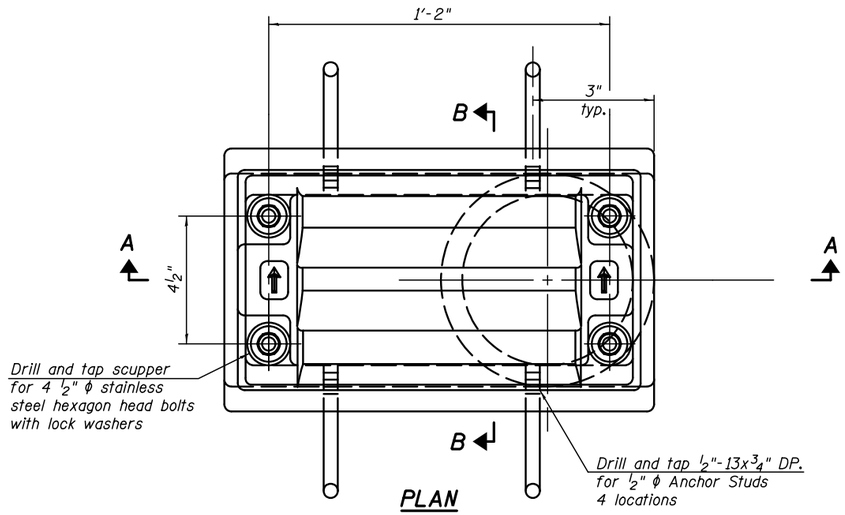
KNIGHT
Engineers & Architects

		DESIGNED - TB	REVISED
		CHECKED - WPM	REVISED
SCALE - NONE		DRAWN - SMA	REVISED
DATE - 8/25/2017		CHECKED - TB	REVISED

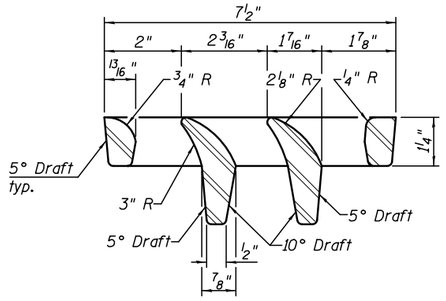
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL
STRUCTURE NUMBER 099-0281
SHEET NO. SB-29 OF 40 SHEETS

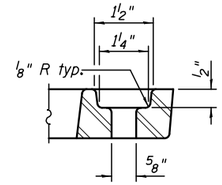
F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1112
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		



PLAN



VANE GRATE DETAIL



BOLT HOLE DETAIL

Notes:

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

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

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

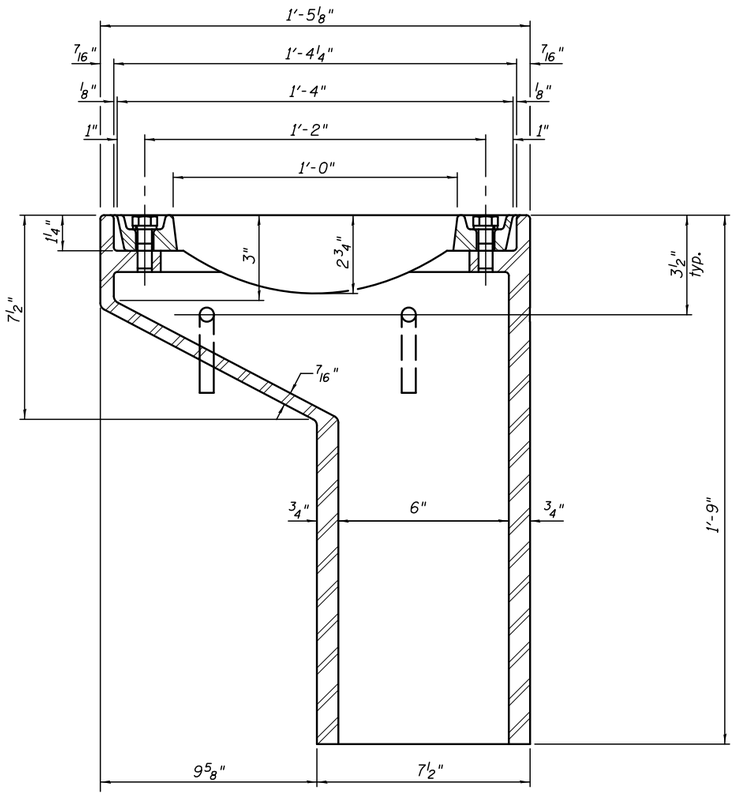
As an alternate, bolts, anchor studs, washers and nuts may be stainless steel according to Article 1006.29(d) of the Standard Specifications.

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

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

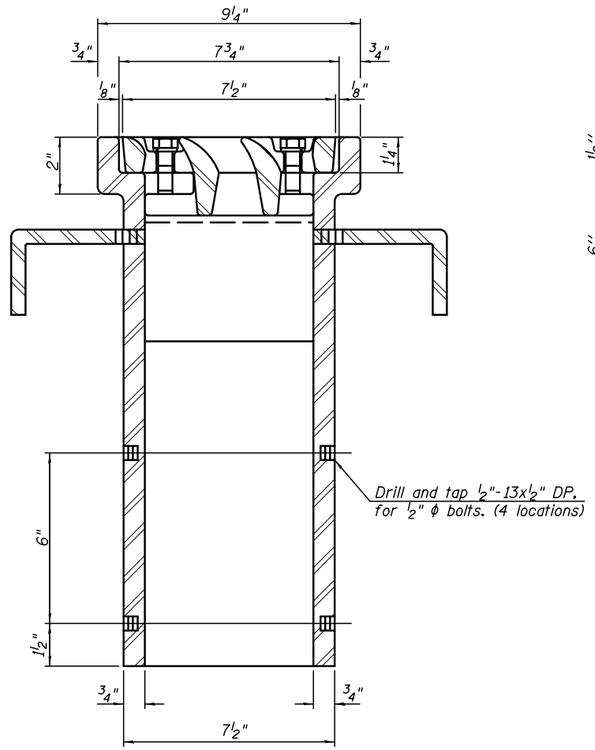
Cost of the Grate, Frame, Downspout, Anchor Studs, Bolts, Washers and Nuts including complete installation of the scupper shall be paid for at the contract unit price each for Drainage Scupper, DS-11.

Alternate fiberglass downspout conforming to ASTM D 2996 with a short-time rupture strength hoop tensile stress of 30,000 psi min. may be used in lieu of the cast iron or steel equivalent.

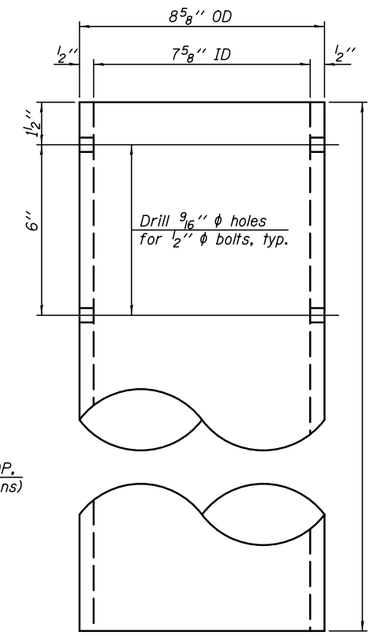


SECTION A-A

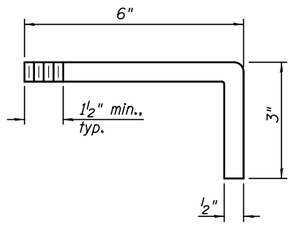
See Sheet SB-15 for scupper location relative to parapet



SECTION B-B



DOWNSPOUT



ANCHOR STUD DETAIL

BILL OF MATERIAL

Item	Unit	Quantity
Drainage Scupper, DS-11	Each	5

DS-11

7-1-10

KNIGHT Engineers & Architects

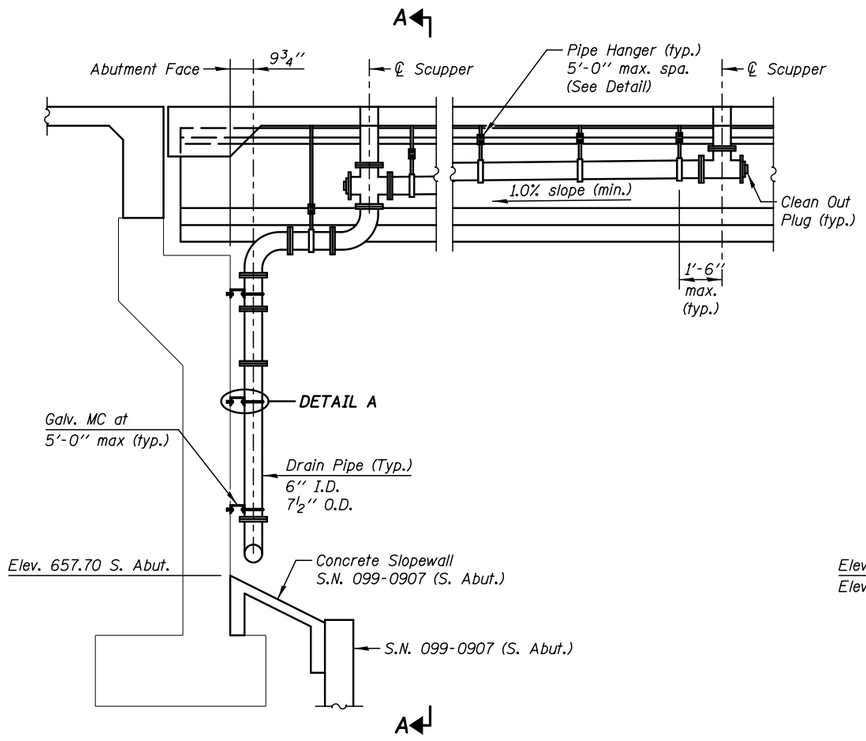
	DESIGNED - TB	REVISED	
	CHECKED - WPM	REVISED	
SCALE - NONE	DRAWN - SMA	REVISED	
DATE - 8/25/2017	CHECKED - TB	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

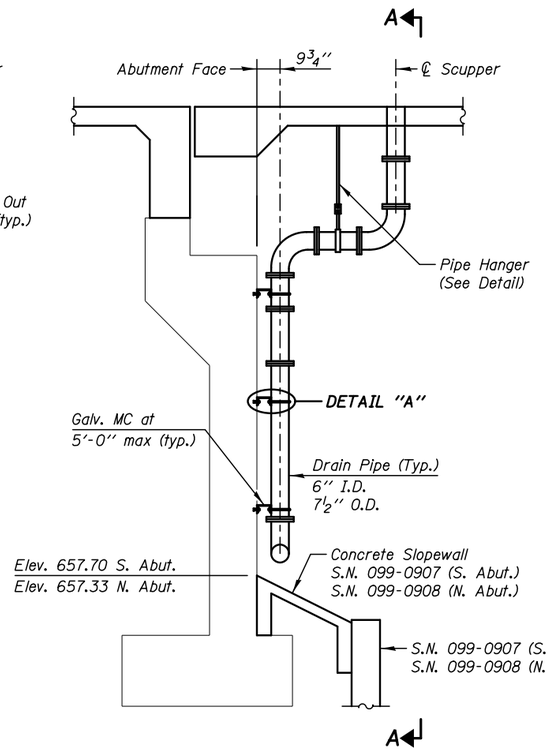
DRAINAGE SCUPPER, DS-11
STRUCTURE NUMBER 099-0281
SHEET NO. SB-30 OF 40 SHEETS

F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1113
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		

PLOT DATE = 8/16/2017

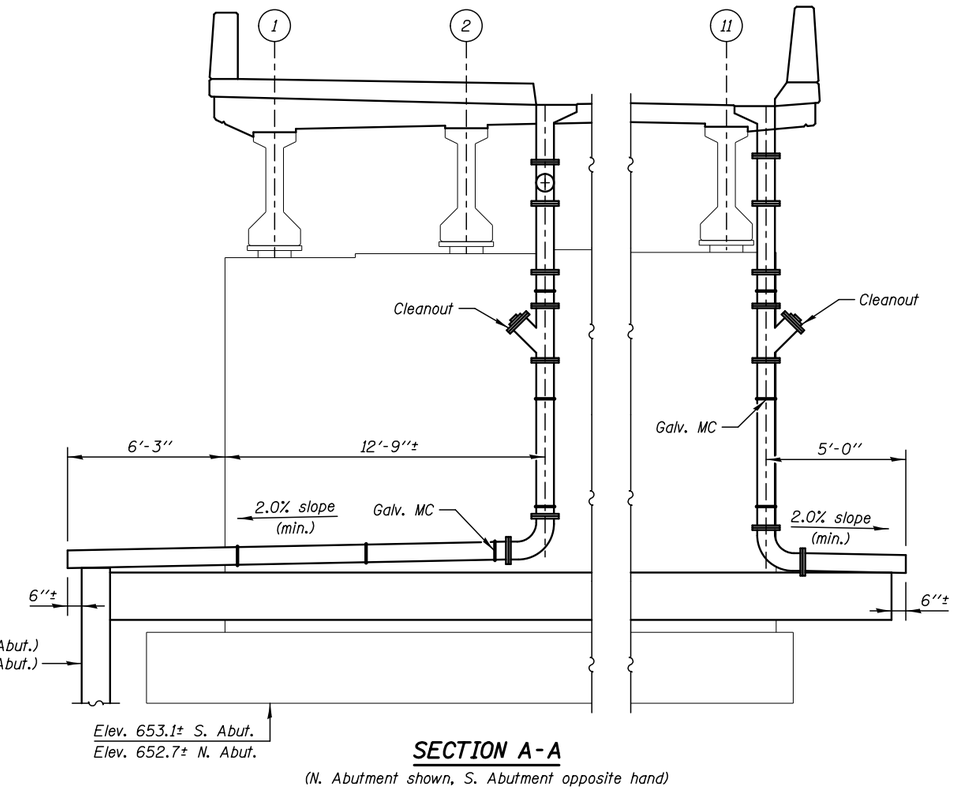


DRAINAGE SYSTEM AT SOUTHWEST ABUTMENT



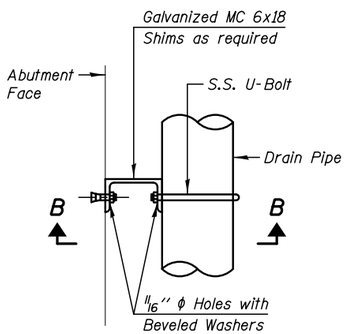
DRAINAGE SYSTEM

(N. Abutment shown, SW Abutment similar)

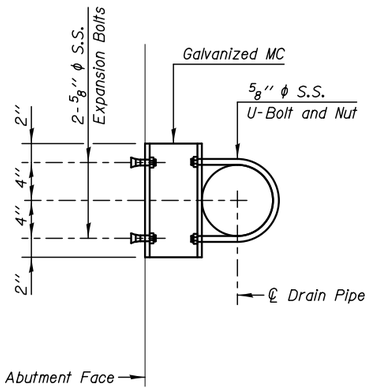


SECTION A-A

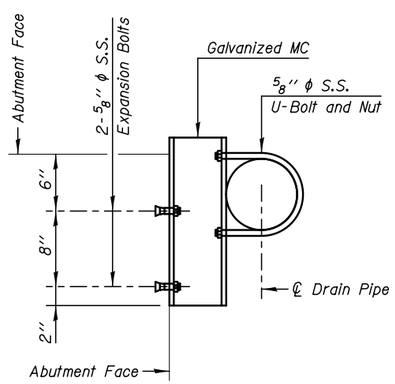
(N. Abutment shown, S. Abutment opposite hand)



DETAIL A

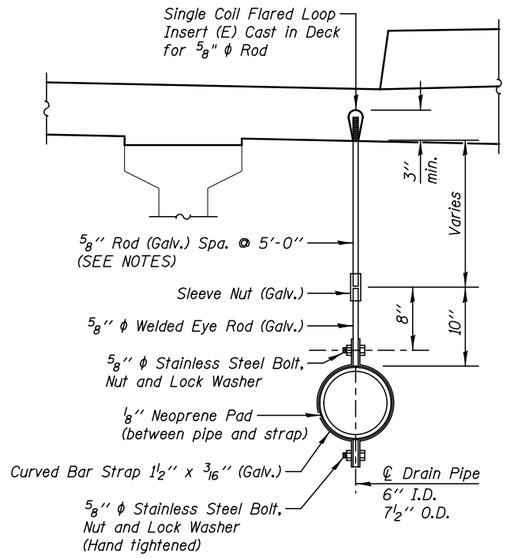


WEST EDGE DECK



EAST EDGE DECK

SECTION B-B



LONGITUDINAL PIPE SUPPORT DETAIL

NOTES

See Sheet SB-13 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 Systems along the east parapet will be paid for as Drainage System, No. 2.

The Deck Drainage System at the south abutment, west parapet, will be paid for as Drainage System, No. 3.

The Deck Drainage System at the north abutment, west parapet, will be paid for as Drainage System, No. 4.

The Contractor shall submit all details of the drainage system for approval by the Engineer.

Cost of all drain pipes, collars, bolts, expansion bolts, channels, shims, clamps, cleanouts, pads, field drilling of web holes and other items required to be included with "Drainage System" of the No. specified.

All shim plates and beveled washers to be galvanized.

BILL OF MATERIAL

Item	Unit	Quantity
Drainage System, No. 2	Each	2
Drainage System, No. 3	Each	1
Drainage System, No. 4	Each	1

PLOT DATE = 8/16/2017

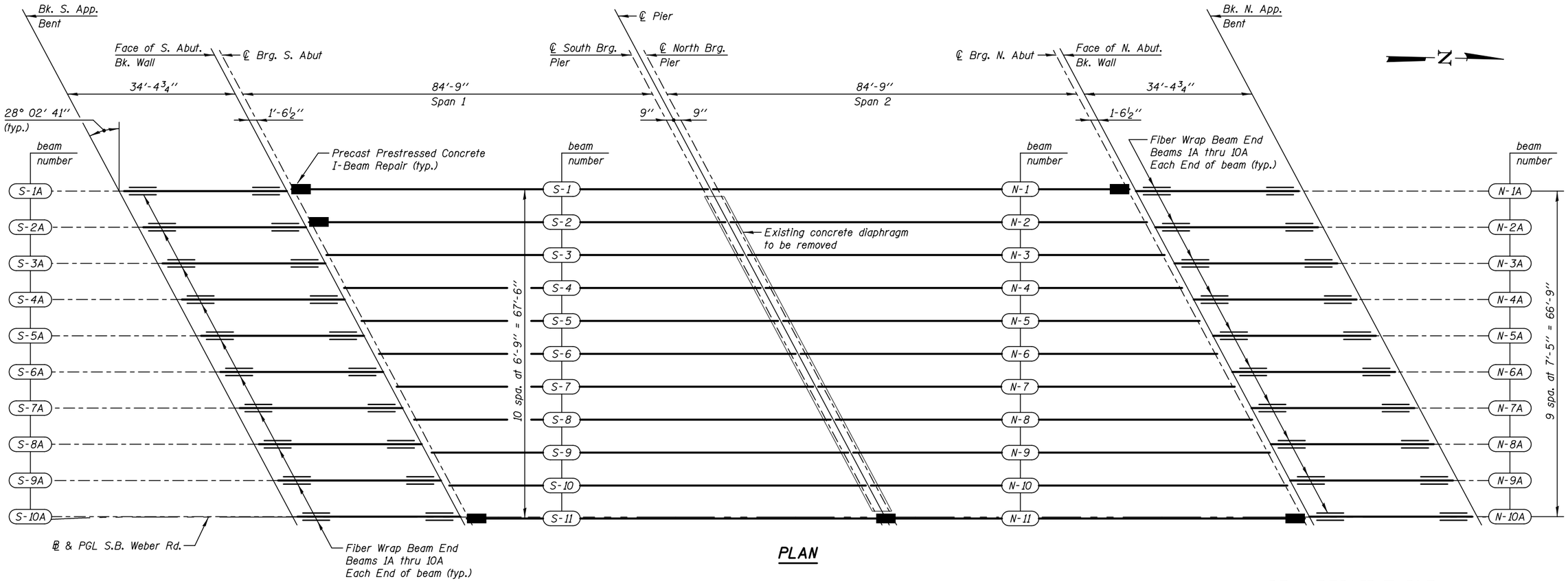
KNIGHT
Engineers & Architects

		DESIGNED - TB	REVISED
		CHECKED - WPM	REVISED
SCALE - NONE		DRAWN - SMA	REVISED
DATE - 8/25/2017		CHECKED - TB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK DRAINAGE SYSTEM
STRUCTURE NUMBER 099-0281
SHEET NO. SB-31 OF 40 SHEETS

F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1114
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		



PLAN

INTERIOR BEAM MOMENT TABLE			
		0.4 Span 1 0.6 Span 2	Pier
I	(in^4)	144117	144117
I'	(in^4)	408830	408830
S_b	(in^3)	6834	6834
S_b'	(in^3)	11369	11369
S_t	(in^3)	5355	5355
S_t'	(in^3)	33956	33956
D_L	(k/')	1.34	1.34
M_{D_L}	('k)	1228	-
s_{D_L}	(k/')	0.22	0.22
$M_{s\,D_L}$	('k)	111	195
M_{L_L}	('k)	626	536
M_I	('k)	149	128

INTERIOR BEAM MOMENT TABLE		
		0.5 Span
I	(in^4)	48648
I'	(in^4)	190723
S_b	(in^3)	3165
S_b'	(in^3)	6125
S_t	(in^3)	2358
S_t'	(in^3)	39243
D_L	(k/')	1.16
M_{D_L}	('k)	147
s_{D_L}	(k/')	0.24
$M_{s\,D_L}$	('k)	30
M_{L_L}	('k)	208
M_I	('k)	62

INTERIOR BEAM REACTION TABLE			
		Abut.	Pier 1 Span 1 Pier 1 Span 2
	R_{D_L} (k)	57.4	114.9
*	$R_{s\,D_L}$ (k)	6.9	23.0
*	R_{L_L} (k)	38.0	57.1
*	R_I (k)	9.0	13.6
	R_{Total} (k)	111.3	208.6

INTERIOR BEAM REACTION TABLE		
		Abut.
R_{D_L}	(k)	18.5
$R_{s\,D_L}$	(k)	3.8
R_{L_L}	(k)	34.4
R_I	(k)	10.3
R_{Total}	(k)	67.0

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

I: Non-composite moment of inertia of beam section ($in.^4$).
I': Composite moment of inertia of beam section ($in.^4$).
S_b: Non-composite section modulus for the bottom fiber of the prestressed beam ($in.^3$).
S_b': Composite section modulus for the bottom fiber of the prestressed beam ($in.^3$).
S_t: Non-composite section modulus for the top fiber of the prestressed beam ($in.^3$).
S_t': Composite section modulus for the top fiber of the prestressed beam ($in.^3$).
D_L: Un-factored non-composite dead load (kips/ft.).
M_{D_L}: Un-factored moment due to non-composite dead load conservatively taken at 0.5 of the span (kip-ft.).
s_{D_L}: Un-factored long-term composite (superimposed) dead load (kips/ft.).
$M_{s\,D_L}$: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).
M_{L_L}: Un-factored live load moment on the composite section (kip-ft.).
M_I: Un-factored moment due to impact on the composite section (kip-ft.).

MINIMUM CURED LAMINATE PROPERTIES

CARBON FIBER

Tensile Strength f_{fu} = 500 ksi
Tensile Modulus E_f = 33,000 ksi
Ply Thickness = 0.0065 in.

BEAM REPAIR TABLE

Beam	End	Repair Areas Sq. Ft.
S-1	South	10.0
S-2	South	2.0
S-11	South	12.0
S-11/N-11	North/South	1.0
N-1	North	12.0
N-11	North	16.0
	Total	53.0

BILL OF MATERIAL

Item	Unit	Total
Precast Prestressed Concrete I-Beam Repair	Sq. Ft.	53.0
Fiber Wrap	Sq. Ft.	1138.0
Acrylic Coating	Sq. Yd.	546.0

Notes:

See Sheet SB-33 for Fiber Wrap Detail and Beam Repair Details.

Fiber Wrap work shall be performed after the existing deck has been removed and prior to addition of the new deck.

See Fiber Wrap Special Provision.

PLOT DATE = 8/16/2017

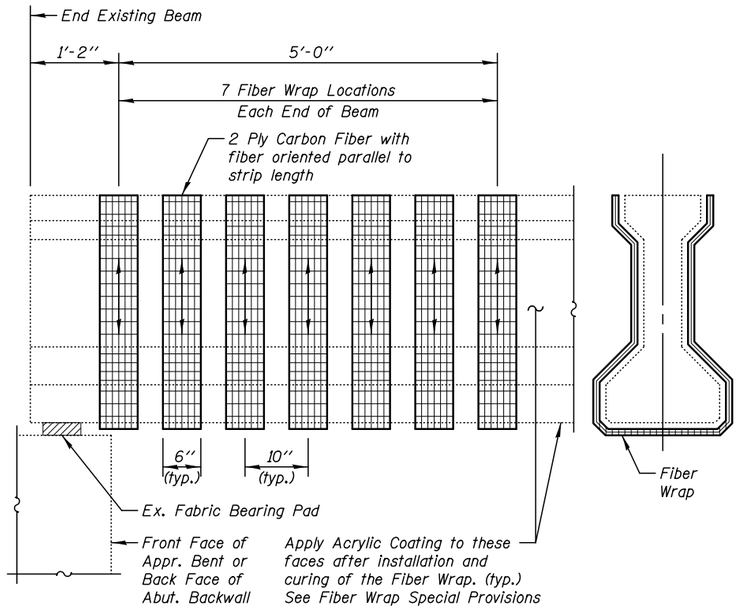
KNIGHT Engineers & Architects

		DESIGNED - TB	REVISED
		CHECKED - WPM	REVISED
SCALE - NONE		DRAWN - SMA	REVISED
DATE - 8/25/2017		CHECKED - TB	REVISED

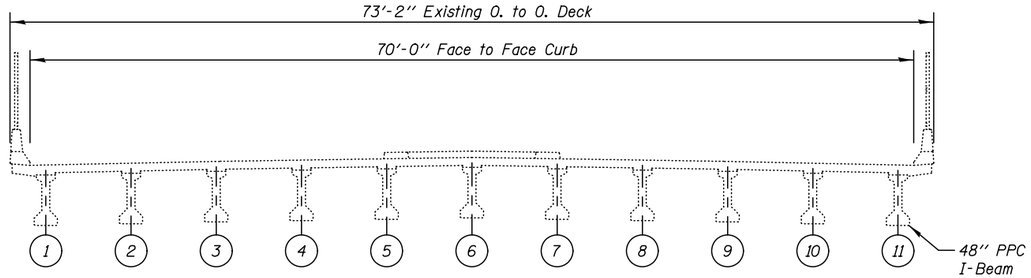
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEAM REPAIR PLAN
STRUCTURE NUMBER 099-0281
SHEET NO. SB-32 OF 40 SHEETS

F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1115
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		

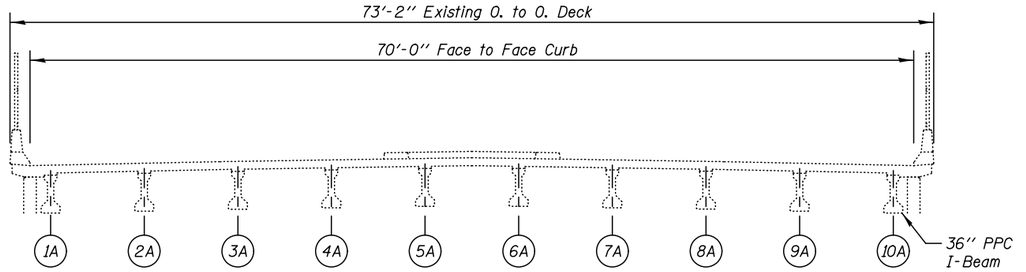


FIBER WRAP DETAIL



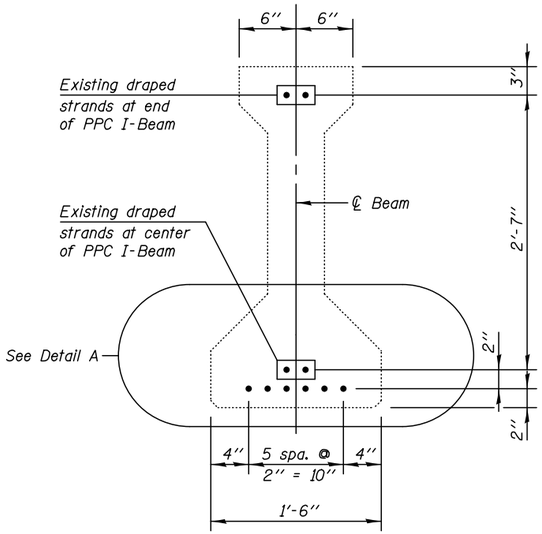
EXISTING DECK CROSS SECTION

(Looking North)



EXISTING APPROACH SPAN CROSS SECTION

(Looking North)



TYPICAL PATCHING DETAILS

36" PPC I-BEAMS

REPAIR PROCEDURES

1. Beam repairs shall be done before addition of the new concrete deck, but after removal of the existing concrete deck.

2. The damaged area of the beam shall be cleaned of all loose and spalled concrete and sealant. All loose material shall be removed to sound concrete until course aggregate will break under chipping rather than dislodging. Hand tools shall be used for the removal of concrete adjacent to the prestressing strands. While a 15 pound chipping hammer may be used away from prestressing strands, extreme care shall be taken not to damage the exposed prestressing strands.

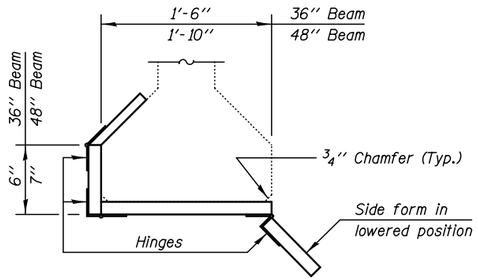
3. Using the same tools, remove the existing concrete to sound concrete, as described above, along the edges of the damaged area to a depth of 1" min. to $1\frac{1}{2}$" max. The edges shall be saw cut $\frac{3}{4}$" deep. The entire area of existing concrete against which new concrete will be placed and any exposed portions of the prestressing strands shall be sandblasted. The concrete shall be sandblasted to expose clean, well bonded aggregate.

4. Self-drilling anchors as shown in Detail A shall be placed at 9" alternate centers along damaged length of beam at locations shown in Detail A. Place 1" x 1" x 18 gauge welded wire fabric in repair areas and attach it to the anchors or strands with wire ties. The clearance between the finished surface of the new concrete and the welded wire fabric shall be a 1" minimum. All beams involved in this work shall be rebuilt to their original dimensions.

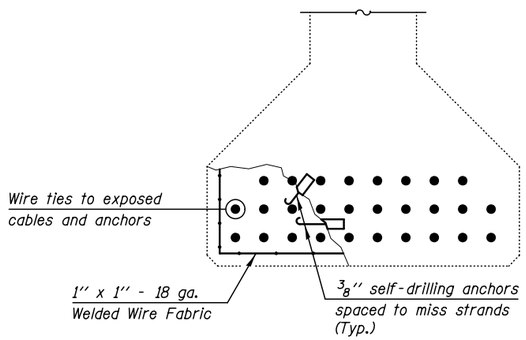
5. The surface of the existing concrete against which new concrete will be placed shall be prepared as a bonded construction joint according to Article 503.09(b) of the Standard Specifications. Other minor mortar repair, crack sealing or surface sealing of gouges on the beam shall be performed as directed by the Engineer.

6. The repair shall be made using a material from the "Approved List of Non-Shrink Grouts" maintained by the Bureau of Materials and Physical Research. The repair material chosen shall be appropriate for the thickness of repair to be made. Coarse aggregate with maximum size of $\frac{3}{8}$" shall be added with the amount as specified by the manufacturer. Place the lower form on the bottom of the beam and compact by vibrating (or other approved methods) the mix into the voids.

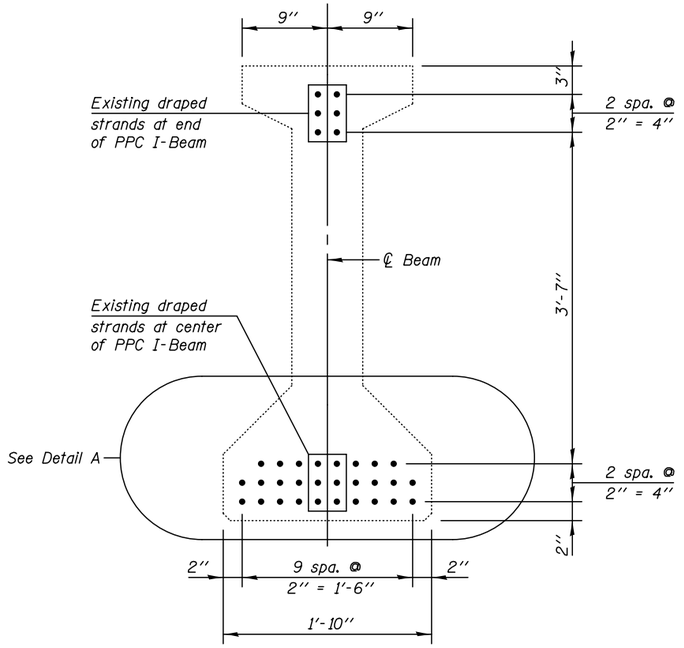
7. Forms shall be kept in place until the repair material has reached an ultimate strength of 5,000 psi. Timing of form removal shall be modified as necessary to meet curing requirements as specified by the manufacturer.



SUGGESTED FORM DETAIL



DETAIL A



TYPICAL PATCHING DETAILS

48" PPC I-BEAMS

Notes:

The cost of concrete removal, Class PS Concrete, self-drilling anchors, wire ties, wire mesh, epoxy bonding agent, Epoxy Crack Injection and all other work required to perform repairs shall be included in the unit cost per sq. ft. for Precast Prestressed Concrete I-Beam Repair.

PLOT DATE = 8/16/2017

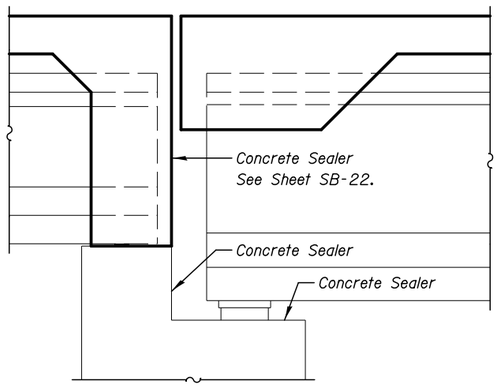
KNIGHT
Engineers & Architects

		DESIGNED - TB	REVISED
		CHECKED - WPM	REVISED
SCALE - NONE		DRAWN - SMA	REVISED
DATE - 8/25/2017		CHECKED - TB	REVISED

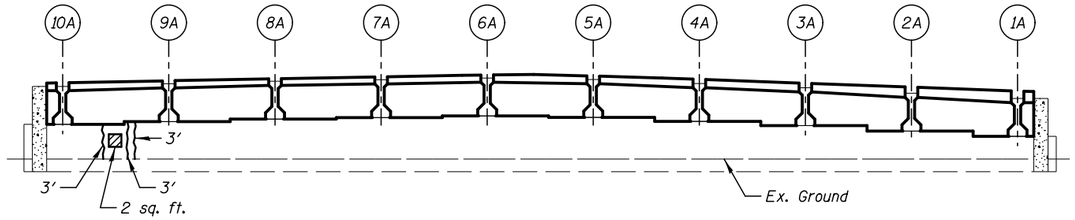
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEAM REPAIR DETAILS
STRUCTURE NUMBER 099-0281
SHEET NO. SB-33 OF 40 SHEETS

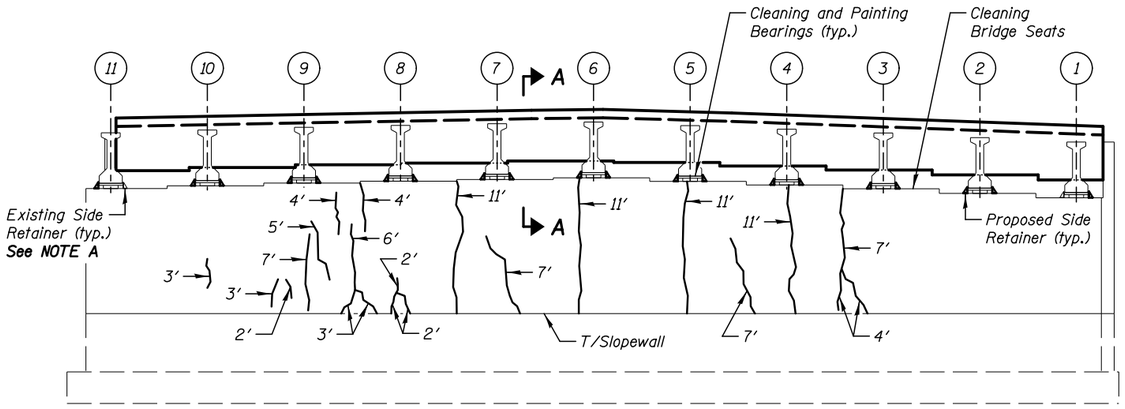
F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1116
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		



SECTION A-A

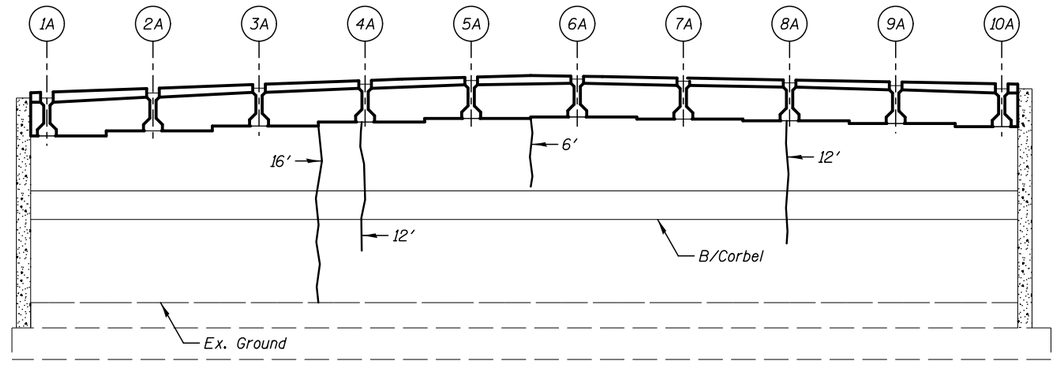


SOUTH APPROACH BENT ELEVATION
(Inside Vault)



SOUTH ABUTMENT ELEVATION
(Looking South)

NOTE A
Existing side retainer to be cleaned and painted. Cost included with "Cleaning and Painting Bearings"



SOUTH ABUTMENT ELEVATION
(Inside Vault)

BILL OF MATERIAL

Item	Unit	Total
Epoxy Crack Injection	Foot	174.0
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 Inches)	Sq. Ft.	2.0
Cleaning and Painting Bearings	Each	11
Cleaning Bridge Seats	Sq. Ft.	190.0
Concrete Sealer	Sq. Ft.	336.0

LEGEND

Epoxy Crack Injection

Structural Repair of Concrete

Notes
For Proposed Side Retainer Details, See Sheet SB-16.

Concrete Sealer shall be applied to the areas shown.

PLOT DATE = 8/16/2017

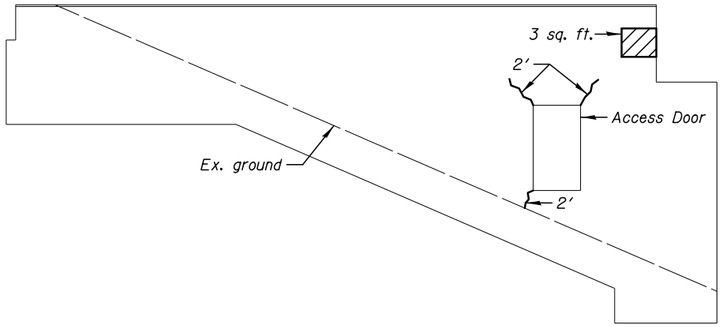
KNIGHT
Engineers & Architects

	DESIGNED - TB	REVISED	
	CHECKED - WPM	REVISED	
SCALE - NONE	DRAWN - SMA	REVISED	
DATE - 8/25/2017	CHECKED - TB	REVISED	

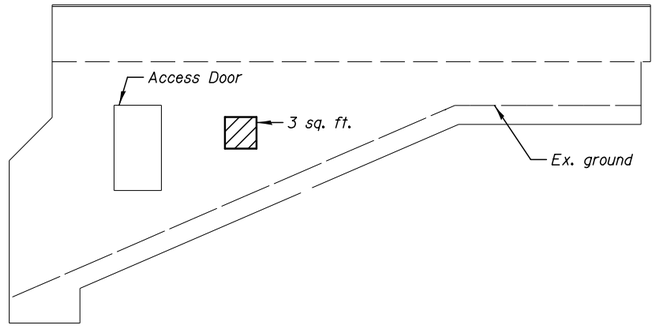
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT REPAIR ELEVATIONS
STRUCTURE NUMBER 099-0281
SHEET NO. SB-34 OF 40 SHEETS

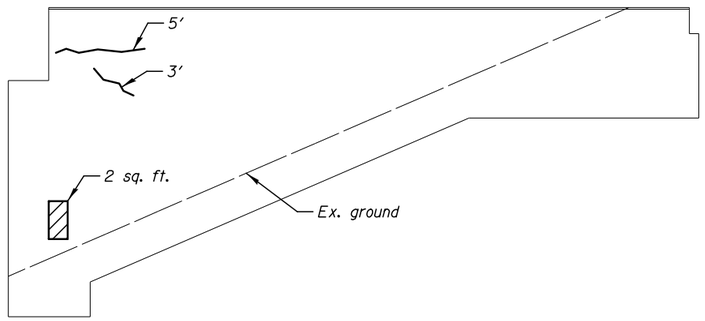
F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1117
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		



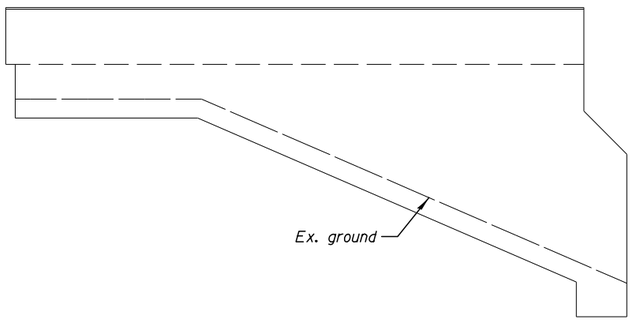
EAST EXTERIOR CURTAIN WALL ELEVATION
(Looking West)



EAST INTERIOR CURTAIN WALL ELEVATION
(Looking East)



WEST EXTERIOR CURTAIN WALL ELEVATION
(Looking East)



WEST INTERIOR CURTAIN WALL ELEVATION
(Looking West)

BILL OF MATERIAL

Item	Unit	Total
Epoxy Crack Injection	Foot	14.0
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 Inches)	Sq. Ft.	8.0

LEGEND

Epoxy Crack Injection

Structural Repair of Concrete

PLOT DATE = 8/16/2017

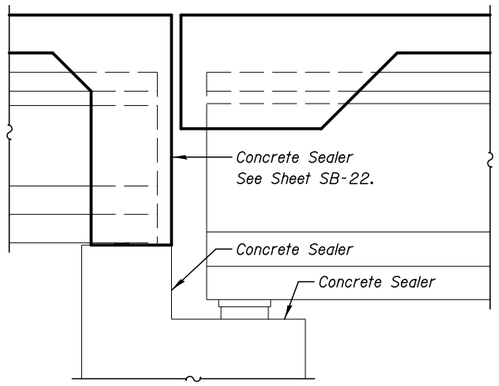
KNIGHT
Engineers & Architects

		DESIGNED - TB	REVISED
		CHECKED - WPM	REVISED
SCALE - NONE		DRAWN - SMA	REVISED
DATE - 8/25/2017		CHECKED - TB	REVISED

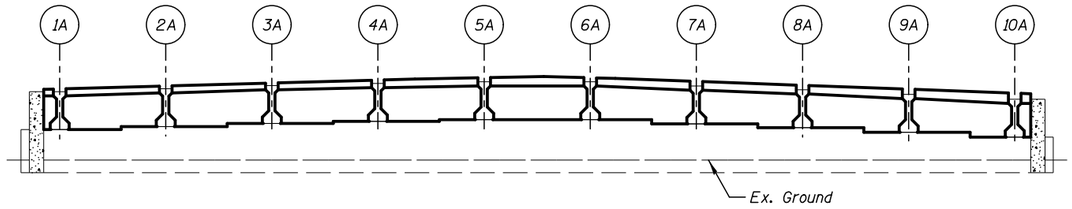
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT CURTAIN WALL REPAIR ELEVATIONS
STRUCTURE NUMBER 099-0281
SHEET NO. SB-35 OF 40 SHEETS

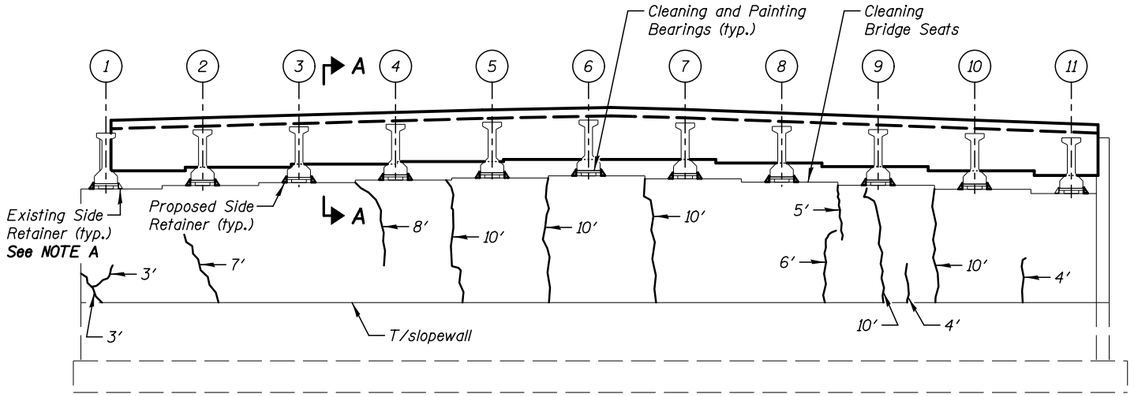
F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1118
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		



SECTION A-A

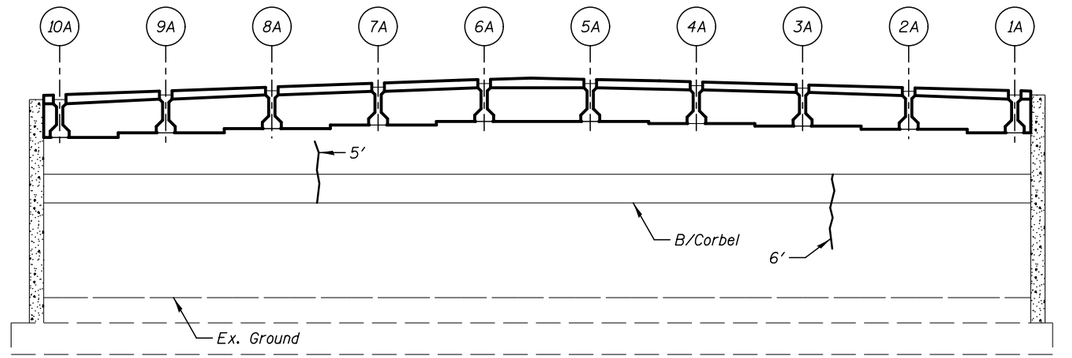


NORTH APPROACH BENT ELEVATION
(Inside Vault)



NORTH ABUTMENT ELEVATION
(Looking North)

NOTE A
Existing side retainer to be cleaned and painted. Cost included with "Cleaning and Painting Bearings"



NORTH ABUTMENT ELEVATION
(Inside Vault)

BILL OF MATERIAL

Item	Unit	Total
Epoxy Crack Injection	Foot	101.0
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 Inches)	Sq. Ft.	———
Cleaning and Painting Bearings	Each	11
Cleaning Bridge Seats	Sq. Ft.	190.0
Concrete Sealer	Sq. Ft.	336.0

LEGEND

Epoxy Crack Injection

Structural Repair of Concrete

Notes
For Proposed Side Retainer Details, See Sheet SB-16.

Concrete Sealer shall be applied to the areas shown.

PLOT DATE = 8/16/2017

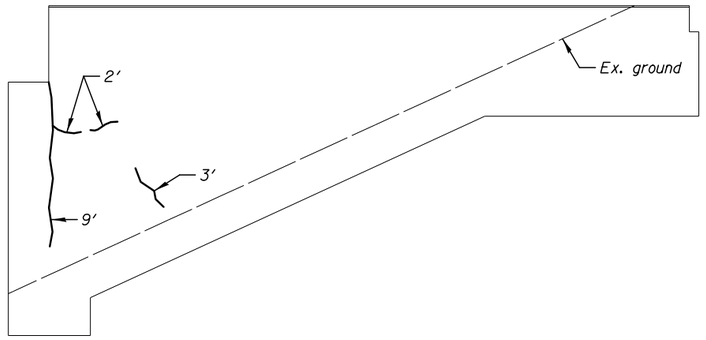
KNIGHT
Engineers & Architects

		DESIGNED - TB	REVISED
		CHECKED - WPM	REVISED
SCALE - NONE		DRAWN - SMA	REVISED
DATE - 8/25/2017		CHECKED - TB	REVISED

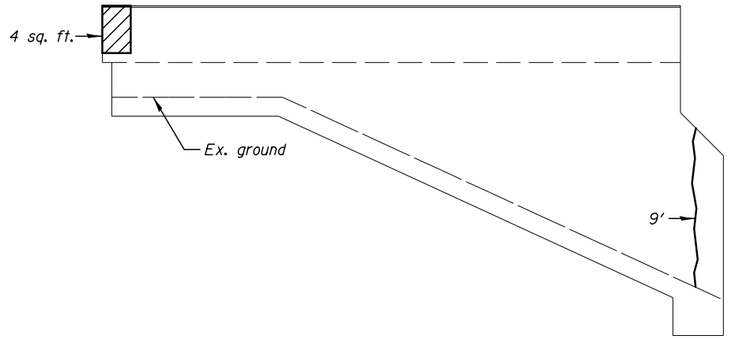
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT REPAIR ELEVATIONS
STRUCTURE NUMBER 099-0281
SHEET NO. SB-36 OF 40 SHEETS

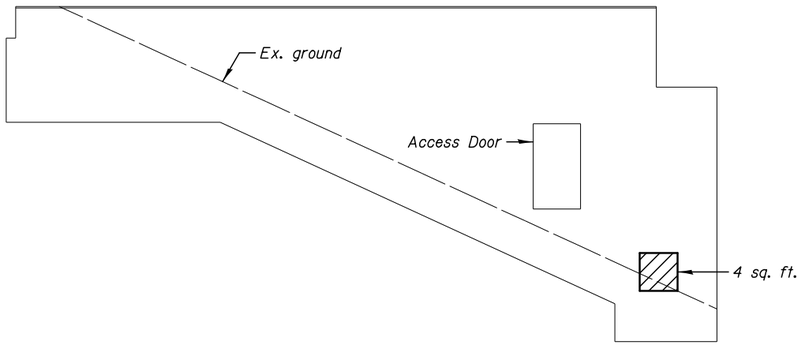
F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1119
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		



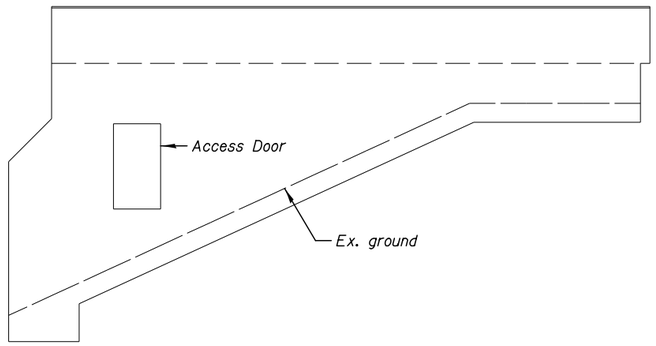
EAST EXTERIOR CURTAIN WALL ELEVATION
(Looking West)



EAST INTERIOR CURTAIN WALL ELEVATION
(Inside Vault)



WEST EXTERIOR CURTAIN WALL ELEVATION
(Looking East)



WEST INTERIOR CURTAIN WALL ELEVATION
(Inside Vault)

BILL OF MATERIAL

Item	Unit	Total
Epoxy Crack Injection	Foot	25.0
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 Inches)	Sq. Ft.	8.0

LEGEND

Epoxy Crack Injection

Structural Repair of Concrete

PLOT DATE = 8/16/2017

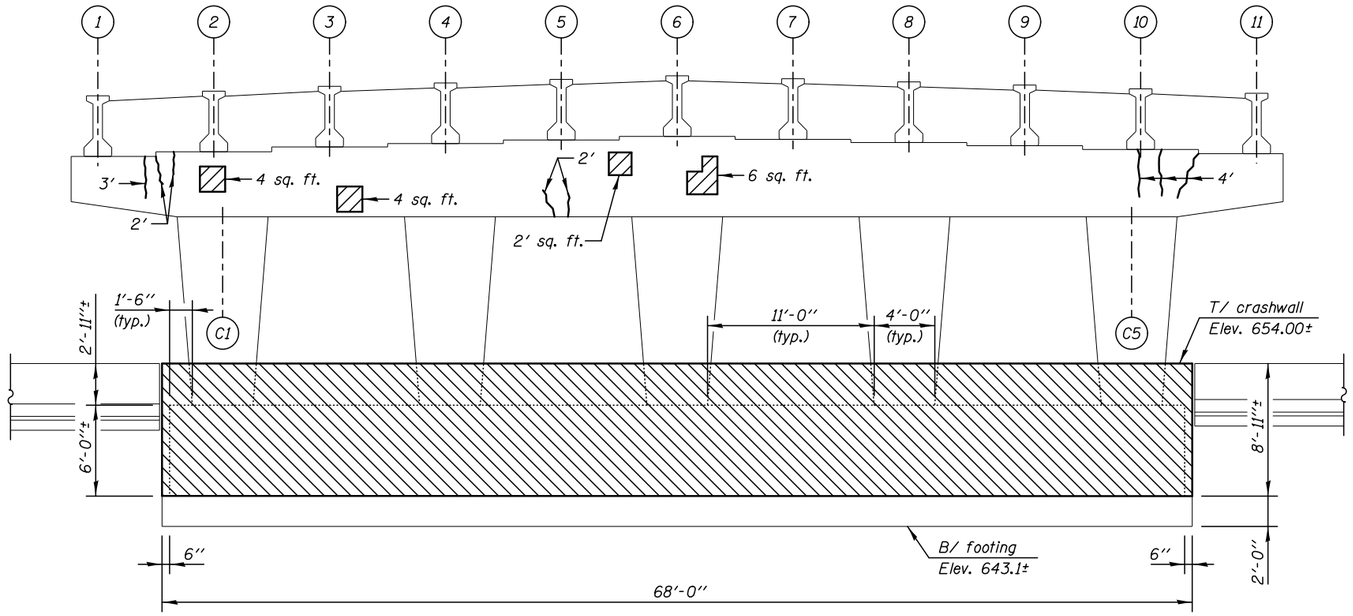
KNIGHT
Engineers & Architects

		DESIGNED - TB	REVISED
		CHECKED - WPM	REVISED
SCALE - NONE		DRAWN - SMA	REVISED
DATE - 8/25/2017		CHECKED - TB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

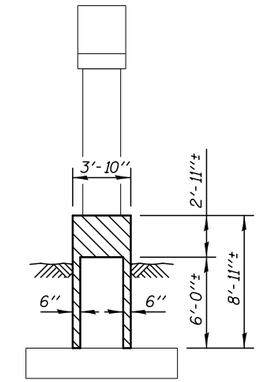
NORTH ABUTMENT CURTAIN WALL REPAIR ELEVATIONS
STRUCTURE NUMBER 099-0281
SHEET NO. SB-37 OF 40 SHEETS

F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1120
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		



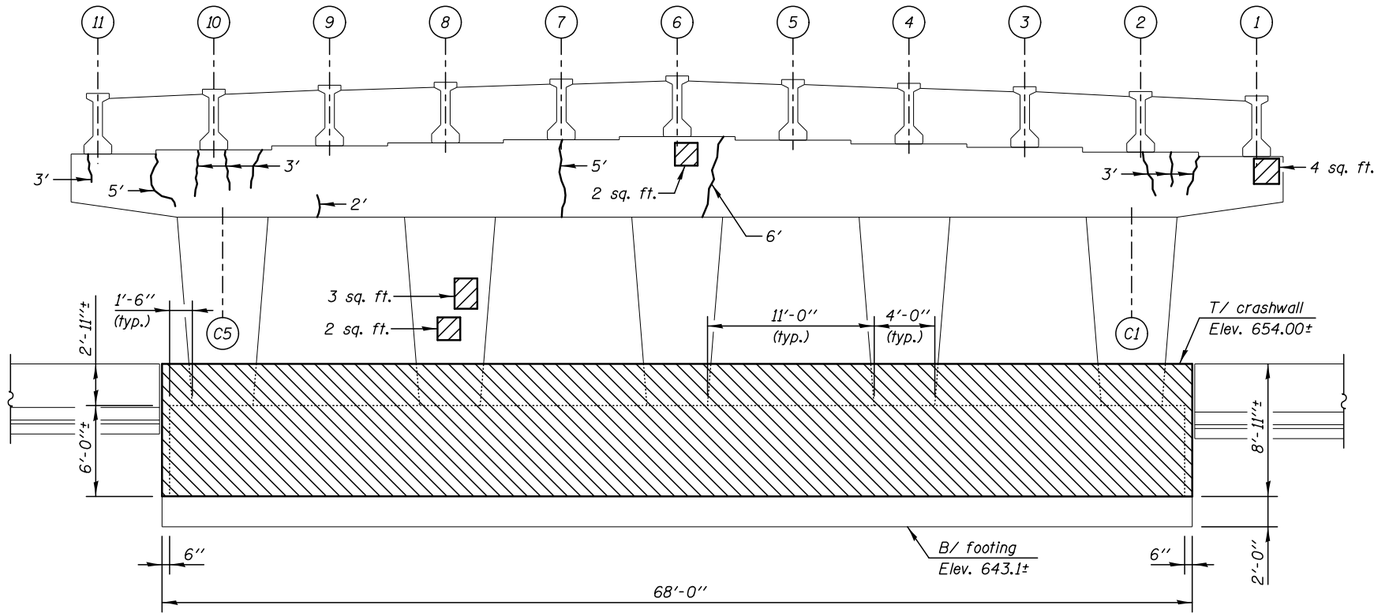
PIER SOUTH ELEVATION

(Looking North)



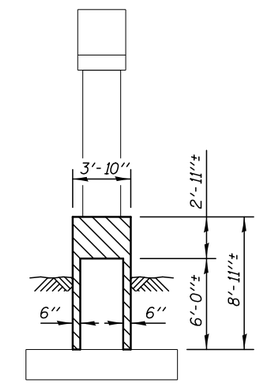
PIER EAST ELEVATION

(Looking West)



PIER NORTH ELEVATION

(Looking South)



PIER WEST ELEVATION

(Looking East)

BILL OF MATERIAL

Item	Unit	Total
Epoxy Crack Injection	Foot	62.0
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 Inches)	Sq. Ft.	27.0
Concrete Removal	Cu. Yd.	46.0
Structure Excavation	Cu. Yd.	63.0

Notes

Existing reinforcement shall be cleaned and incorporated into the new construction.
Cost included with Concrete Removal.

LEGEND

- Epoxy Crack Injection
- Structural Repair of Concrete
- Concrete Removal

PLOT DATE = 8/16/2017

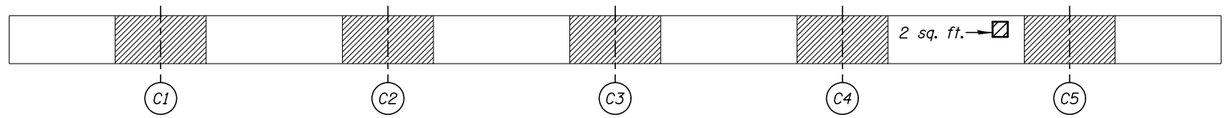
KNIGHT
Engineers & Architects

	DESIGNED - TB	REVISED	
	CHECKED - WPM	REVISED	
SCALE - NONE	DRAWN - SMA	REVISED	
DATE - 8/25/2017	CHECKED - TB	REVISED	

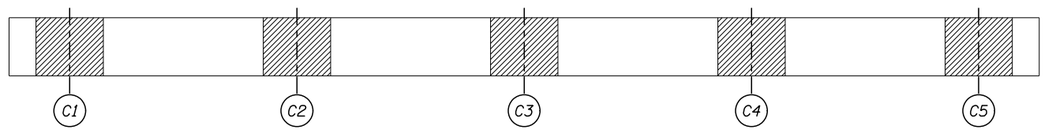
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER REMOVAL AND REPAIR ELEVATIONS
STRUCTURE NUMBER 099-0281
SHEET NO. SB-38 OF 40 SHEETS

F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1121
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		

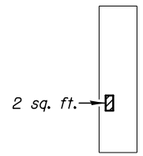


PIER CAP UNDERSIDE PLAN



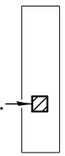
TOP OF CRASHWALL PLAN

COLUMN C1 EAST ELEVATION
(Looking West)

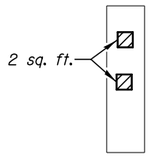


COLUMN C2 WEST ELEVATION
(Looking East)

COLUMN C2 EAST ELEVATION
(Looking West)



COLUMN C3 WEST ELEVATION
(Looking East)



COLUMN C3 EAST ELEVATION
(Looking West)

COLUMN C4 WEST ELEVATION
(Looking East)

COLUMN C4 EAST ELEVATION
(Looking West)

COLUMN C5 WEST ELEVATION
(Looking East)

BILL OF MATERIAL

Item	Unit	Total
Epoxy Crack Injection	Foot	——
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 Inches)	Sq. Ft.	10.0

LEGEND

Epoxy Crack Injection

Structural Repair of Concrete

PLOT DATE = 8/16/2017

KNIGHT
Engineers & Architects

	DESIGNED - TB	REVISED	
	CHECKED - WPM	REVISED	
SCALE - NONE	DRAWN - SMA	REVISED	
DATE - 8/25/2017	CHECKED - TB	REVISED	

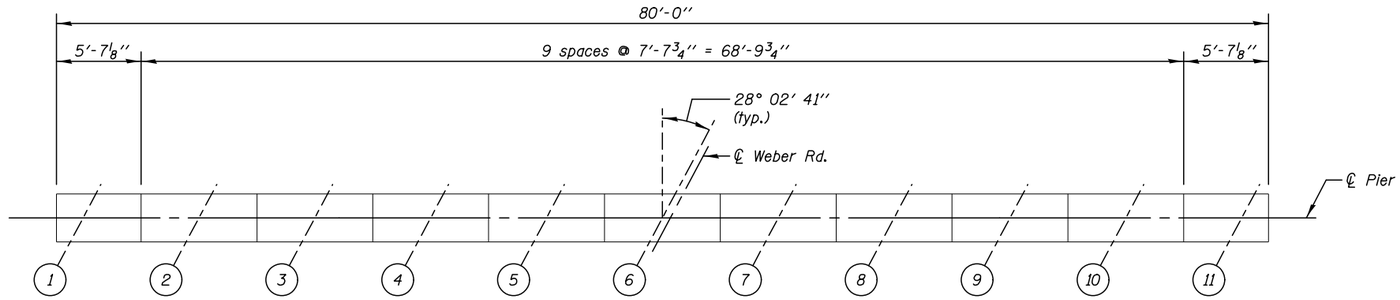
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER REPAIR PLANS AND ELEVATIONS
STRUCTURE NUMBER 099-0281
SHEET NO. SB-39 OF 40 SHEETS

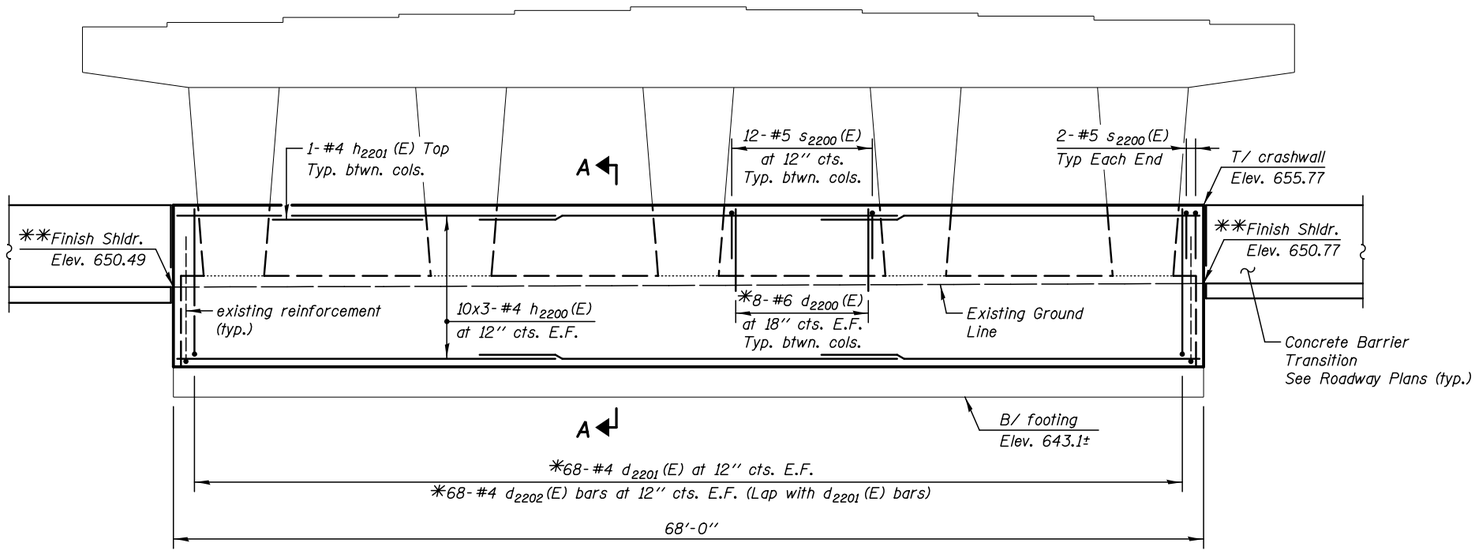
F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1122
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		

BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
d2200(E)	64	#6	5'-3"	
d2201(E)	136	#4	10'-9"	
d2202(E)	136	#4	2'-9"	
h2200(E)	60	#4	25'-0"	
h2201(E)	4	#4	10'-0"	
s2200(E)	52	#5	9'-8"	
Reinforcement Bars, Epoxy Coated			LB	3290
Concrete Structures			Cu. Yd.	66.0
Concrete Sealer			Sq. Ft.	1637.0



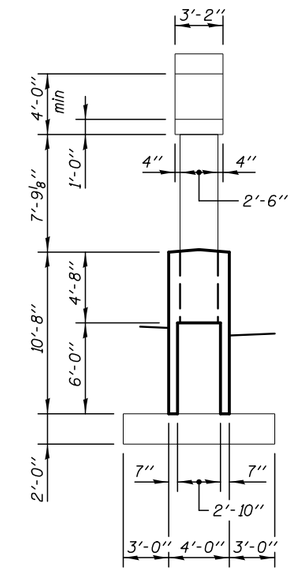
TOP PLAN



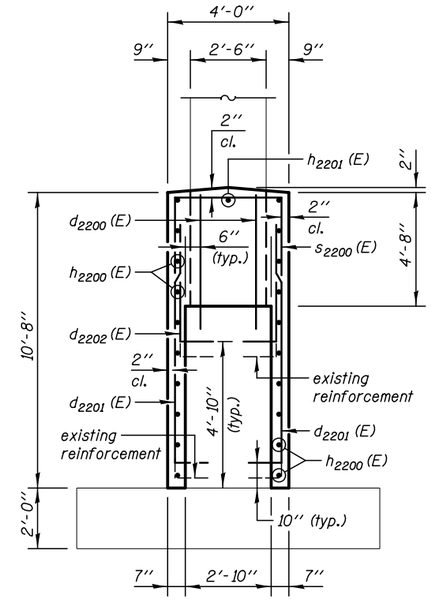
PIER ELEVATION
(Looking North)

*Space d_{2200} (E), d_{2201} (E) and d_{2202} (E) bars to miss existing reinforcement.

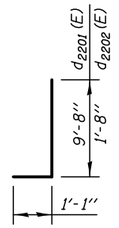
**Elevs. shown are for South Face. North Face is lower.



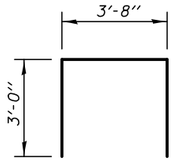
END VIEW



SECTION A-A



BARS d_{2201} (E) and d_{2202} (E)



BAR s_{2200} (E)

LEGEND
E.F. Each Face

MIN. BAR LAPS:
Horizontal Top Bars
#4 = 2'-11"

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

Drill and grout d_{2200} (E), d_{2201} (E) and d_{2202} (E) in accordance with Section 584 of the Standard Specifications. Embedment length shall be 9". Method and grout are subject to the approval of the Engineer. Cost included with Reinforcement Bars, Epoxy Coated.

Concrete Sealer shall be applied to the exposed surfaces of the crashwall and columns.

PLOT DATE = 8/16/2017

KNIGHT
Engineers & Architects

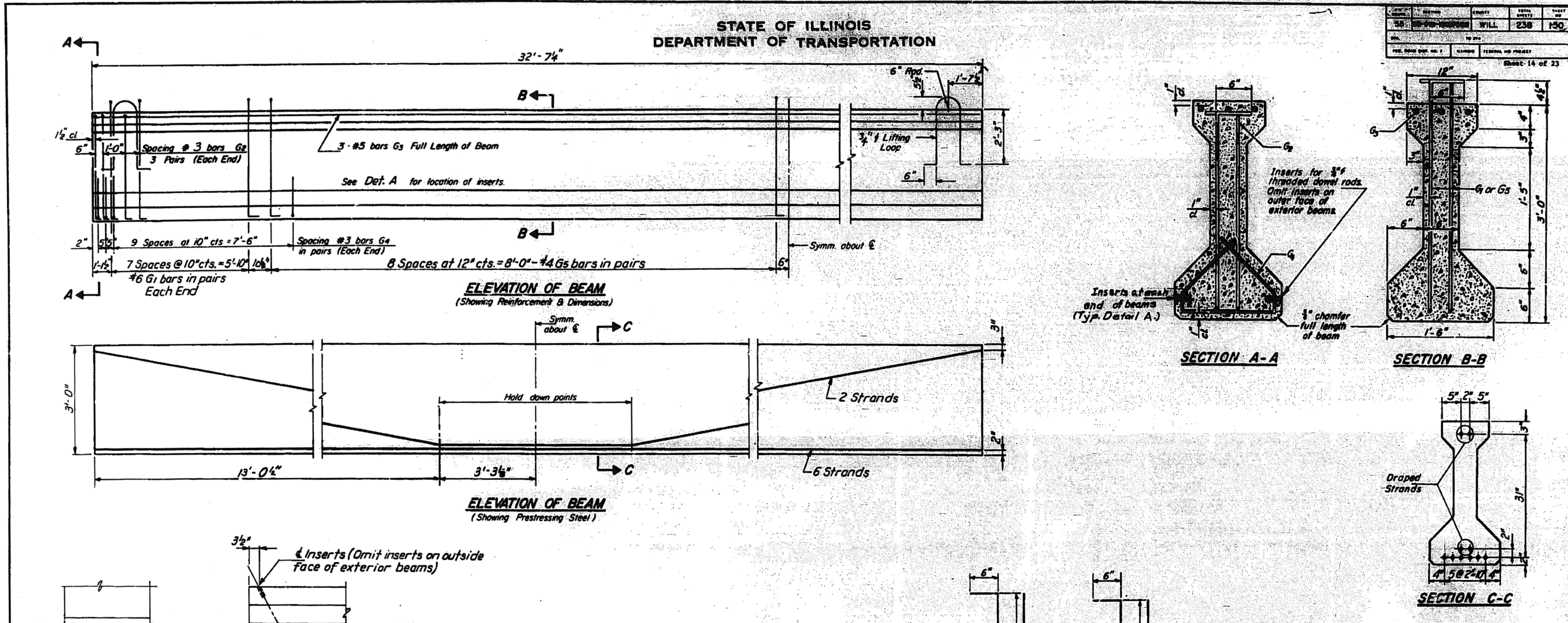
	DESIGNED - TB	REVISED	
	CHECKED - WPM	REVISED	
SCALE - NONE	DRAWN - SMA	REVISED	
DATE - 8/25/2017	CHECKED - TB	REVISED	

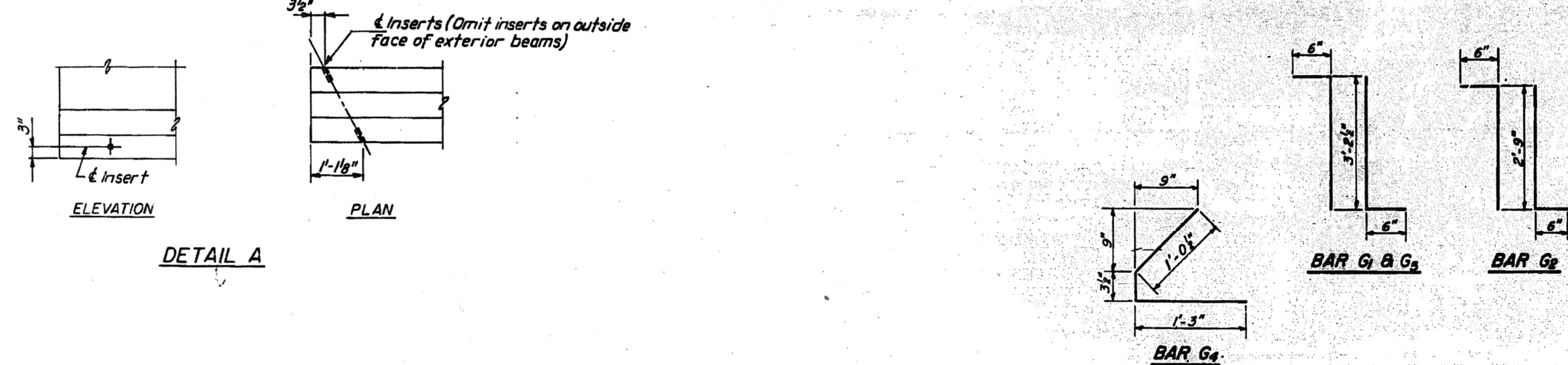
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER CRASHWALL RECONSTRUCTION
STRUCTURE NUMBER 099-0281
SHEET NO. SB-40 OF 40 SHEETS

F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1123
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION





***BAR LIST**

Bar	No.	Size	Length	Shape
G1	32	#6	4'-2½"	˥L
G2	12	#3	3'-9"	˥L
G3	3	#5	32'-6"	—
G4	48	#3	2'-7"	∠
G5	36	#4	4'-2½"	˥L

* For one beam only.

BILL OF MATERIAL

Item	Unit	Total
Furnishing & Erecting Precast Prestressed Concrete I-Beams, 36"	Lin. Ft.	652

NOTES

All inserts and threaded dowel rods for inserts, reinforcing and Prestressing Steel, and other items which are cast into the Precast Concrete I-Beams shall be included in the contract unit price per lineal foot of "Furnishing and Erecting Precast Prestressed Concrete I-Beams, 36 in.

Insert for ¾" ϕ threaded dowel rods are to be two strut, coil type for interior I-Beams and single coil, flared loop type for exterior I-Beams.

Prestressing steel shall be non-galvanized high strength, stress-relieved 7-wire strand, Grade 270.

The nominal diameter shall be ½" and the nominal cross-sectional area shall be 0.153 sq. in.

Non-prestressing steel shall conform to A.A.S.H.T.O. designation M-31 or M-53 Grade 60.

Steel for lifting loops shall be non-deformed bars f'y = 40,000 psi

Required release strength, f'ci, shall be 4,000 psi.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
36" P.P.C. I-BEAM DETAILS
WEBER ROAD OVER I-55
SECTION 99-IHB-1(K&R) 88
WILL COUNTY
STA. 31 + 32.75
STRUCTURE NO. 099-0281
SCALE N.T.S.

FOR INFORMATION ONLY

KNIGHT Engineers & Architects				
		DESIGNED - ——	REVISED	
		CHECKED - ——	REVISED	
	SCALE - NONE	DRAWN - TB	REVISED	
	DATE - 5/12/2017	CHECKED - WPM	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

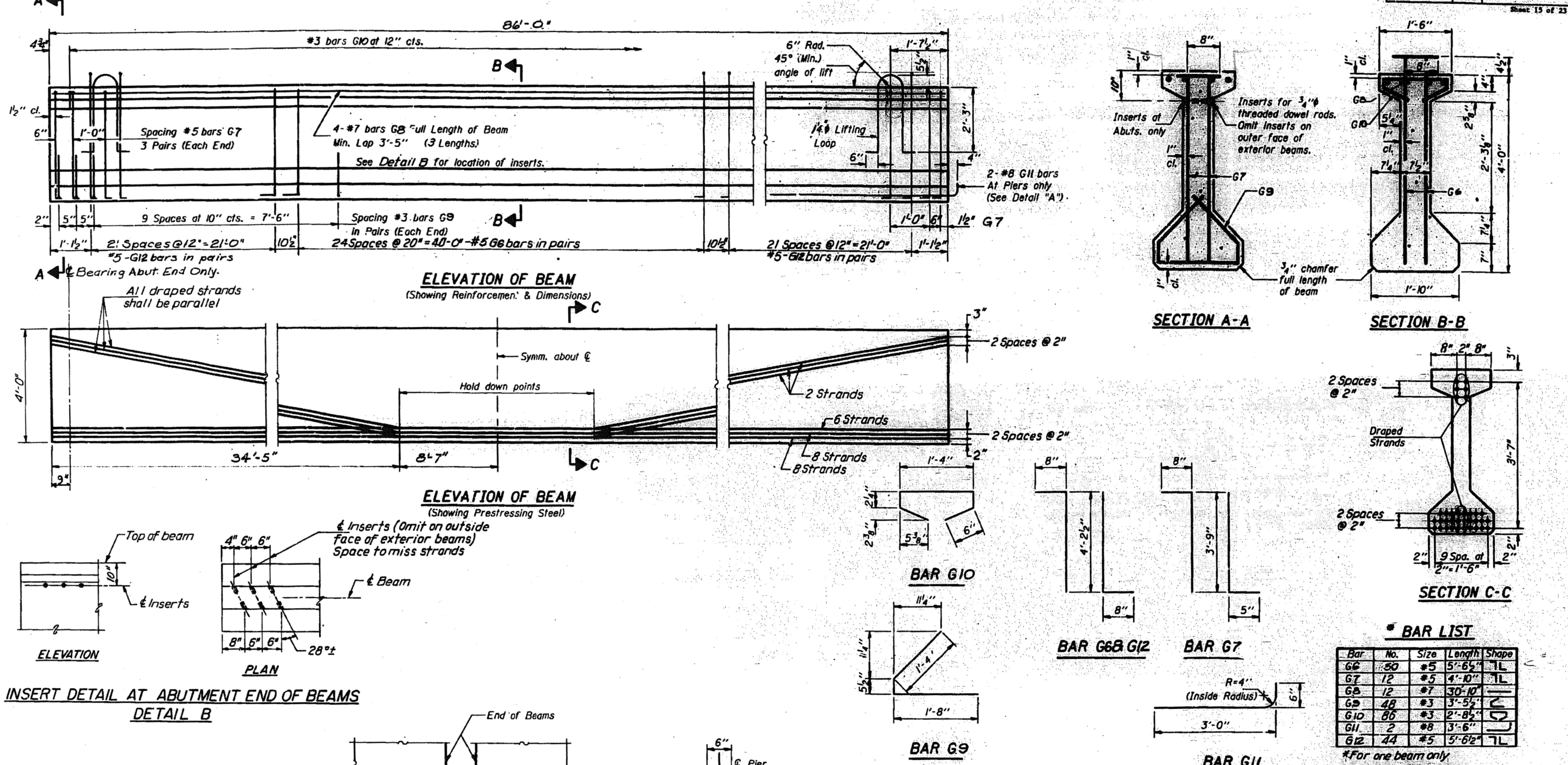
EXISTING PLANS – 36" PPC I-BEAM
STRUCTURE NUMBER 099–0281
SHEET NO. SBX-1 OF 6 SHEETS

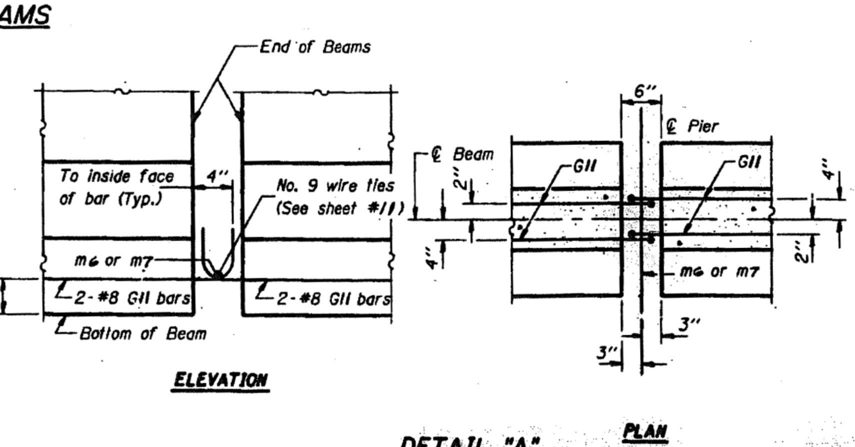
F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1124
		CONTRACT NO. 60X10		

* FAI 55, FAP 856 ILLINOIS FED. AID PROJECT

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Sheet 15 of 23





* BAR LIST

Bar	No.	Size	Length	Shape
G6	50	#5	5'-6½"	ᒣL
G7	12	#5	4'-10"	ᒣL
G8	12	#7	30'-10"	—
G9	48	#3	3'-5½"	
G10	86	#3	2'-8½"	
G11	2	#8	3'-6"	
G12	44	#5	5'-6½"	ᒣL

*For one beam only

BILL OF MATERIAL

Item	Unit	Total
Furnishing and Erecting Precast Prestressed Concrete I-Beams, 48"	Lin. Ft.	1892

NOTES

All inserts and threaded dowel rods for inserts, reinforcing and Prestressing Steel, and other items which are cast into the Precast Concrete I-Beams shall be included in the contract unit price per lineal foot of "Furnishing and Erecting Precast Prestressed Concrete I-Beams, 48 in."

Insert for ¾"ϕ threaded dowel rods are to be two strut, coil type for interior I-Beams and single coil, flared loop type for exterior I-Beams.

Prestressing steel shall be non-galvanized high strength, stress-relieved 7-wire strand, Grade 270.

The nominal diameter shall be ½" and the nominal cross-sectional area shall be 0.153 sq. in.

Non-prestressing steel shall conform to AASHTO designation M-31, M-42 or M-53 Grade 60.

Steel for lifting loops shall be non-deformed bars fy=40,000 psi.

Required release strength, f'ci, shall be 4400 psi.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
48" P.P.C. I-BEAM DETAILS
WEBER ROAD OVER I-55
SECTION 99-1HB-1(K&R) 98
WILL COUNTY
STA. 51 + 22.75
STRUCTURE NO. 099-0281
SCALE N.T.S.

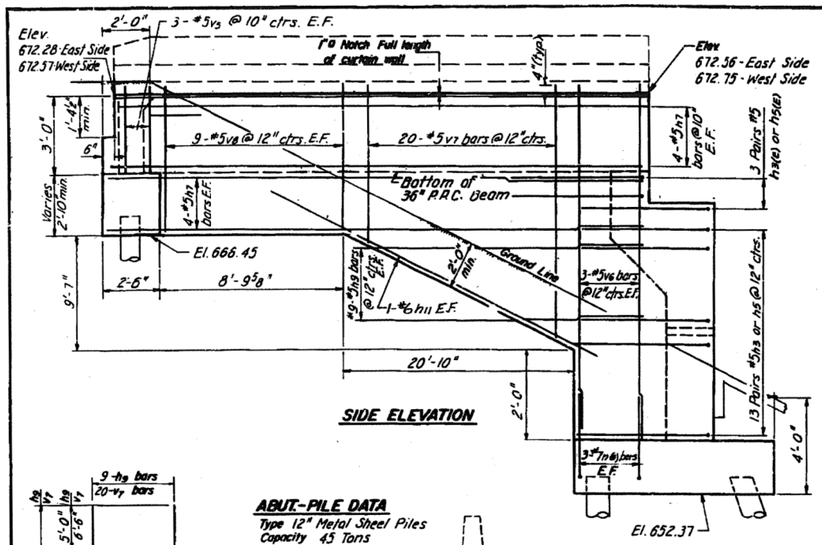
FOR INFORMATION ONLY

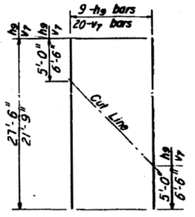
KNIGHT Engineers & Architects		DESIGNED - ——	REVISED	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING PLANS – 48" PPC I-BEAM STRUCTURE NUMBER 099–0281	F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED - ——	REVISED			*	(99-1HB-1) R-1	WILL	1508	1125
	SCALE - NONE	DRAWN - TB	REVISED			CONTRACT NO. 60X10				
	DATE - 5/12/2017	CHECKED - WPM	REVISED		SHEET NO. SBX-2 OF 6 SHEETS	* FAI 55, FAP 856 ILLINOIS FED. AID PROJECT				

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.I.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	99-1HB-1(K&R)88	WILL	238	154

Sheet 18 of 23

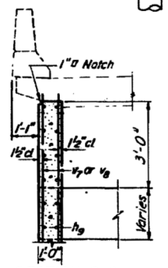


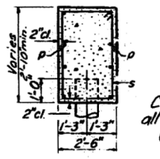


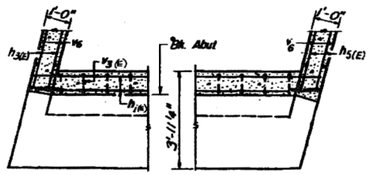
*Order h_9 & v_7 bars full length. Cut to fit as shown and use remainder of bars in other face.

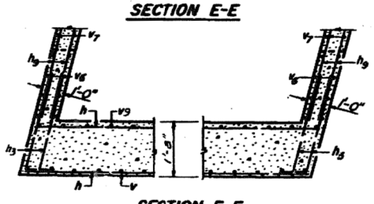
ABUT-PILE DATA
Type 12" Metal Shell Piles
Capacity 45 Tons
Est Length 15'-0"
No Reqd. 38 (Includes One Test Pile)

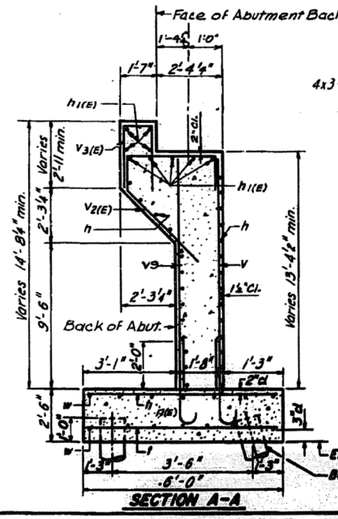
APPR BENT-PILE DATA
Type 12" Metal Shell Piles
Capacity 45 Tons
Est. Length 20'-0"
No. Reqd. 14

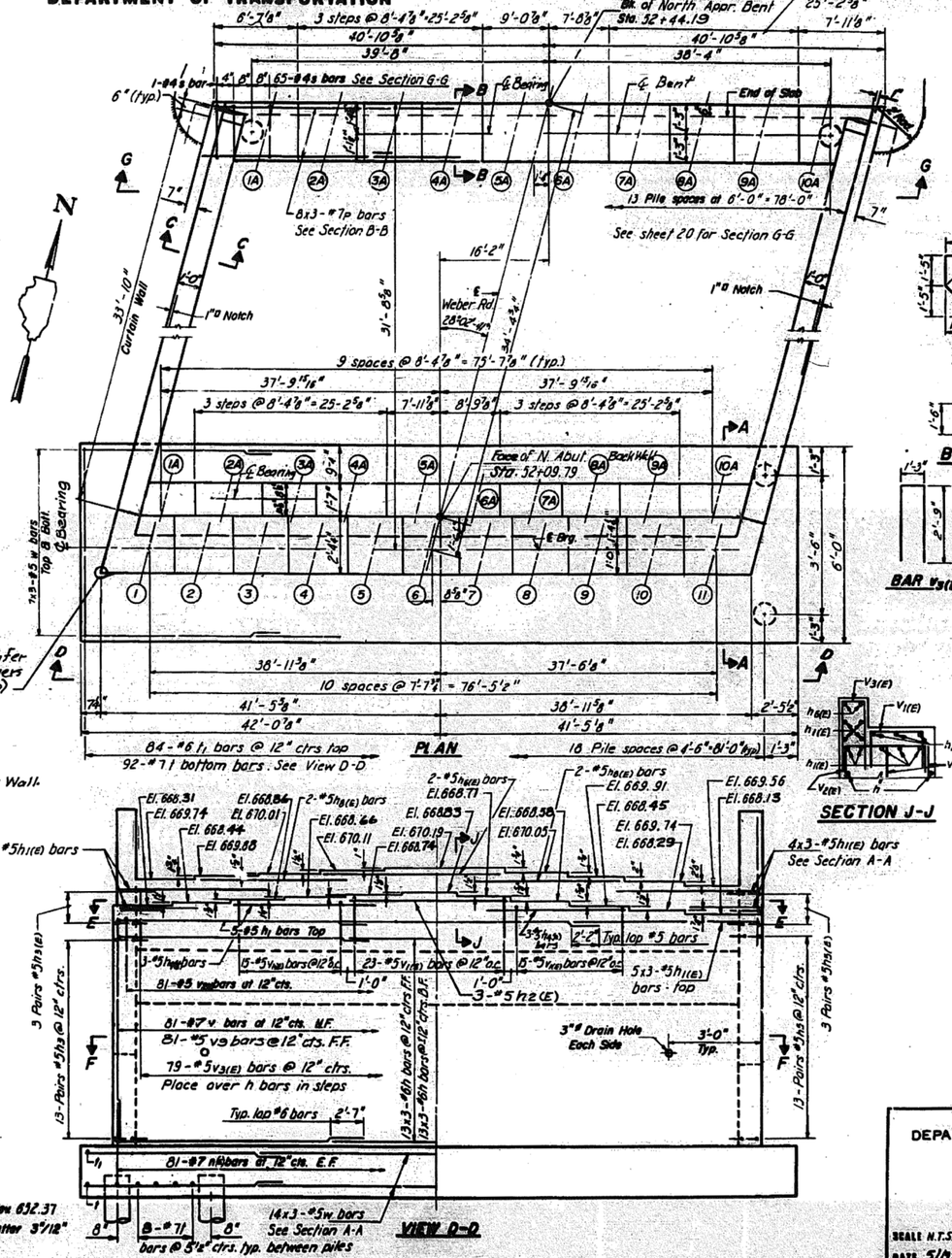


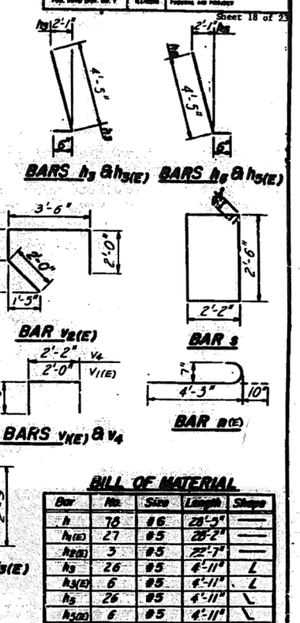












BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h	76	#6	28'-3"	
$h_{5(E)}$	27	#5	28'-2"	
$h_{2(E)}$	3	#5	22'-7"	
h_3	26	#5	6'-11"	L
$h_{3(E)}$	6	#5	6'-11"	L
h_5	26	#5	6'-11"	
$h_{5(E)}$	6	#5	6'-11"	
h_7	32	#5	33'-6"	
$h_{8(E)}$	4	#5	17'-10"	
h_9	36	#5	27'-6"	
h_{10}	3	#5	24'-10"	
h_{11}	4	#6	27'-0"	
$h_{5(E)}$	6	#5	16'-4"	
$h_{6(E)}$	2	#5	24'-10"	
h_{12}	6	#5	17'-10"	
P	24	#7	29'-5"	
s	69	#4	10'-1"	
l_1	146	#7	5'-8"	
l_1	84	#6	5'-8"	
$n_{(E)}$	174	#7	5'-1"	
v	81	#7	13'-2"	
$w_{(E)}$	53	#5	5'-0"	
$v_{8(E)}$	81	#5	8'-11"	
$v_{9(E)}$	79	#5	6'-9"	
v_4	39	#5	5'-2"	
v_5	12	#5	5'-2"	
v_6	12	#5	18'-0"	
v_7	80	#5	27'-9"	
v_8	36	#5	6'-0"	
v_9	81	#5	13'-2"	
w	42	#5	29'-2"	
Reinf. Bars Epoxy Coated			Lbs.	6250
Reinforcement Bars			Lbs.	17,600
Class X Concrete			Cu Yds.	189
Test Pile			Ea	1
Piles			L.F.	835

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
NORTH ABUTMENT
WEBER ROAD OVER I-55
SECTION 99-1HB-1(K&R)88
WILL COUNTY
STA. 51 + 22.75
STRUCTURE NO. 099-0281
SCALE N.T.S. DRAWN BY TB
DATE 5/11/2017 CHECKED BY WPM

Note
Existing Plan elevations have been adjusted by -1.1'

FOR INFORMATION ONLY

KNIGHT
Engineers & Architects

	DESIGNED - ——	REVISED	
	CHECKED - ——	REVISED	
SCALE - NONE	DRAWN - TB	REVISED	
DATE - 5/12/2017	CHECKED - WPM	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

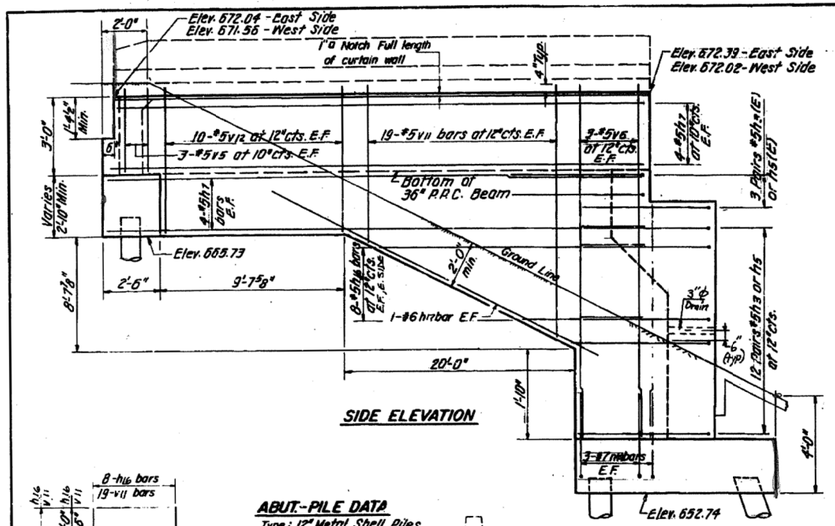
EXISTING PLANS – NORTH ABUTMENT
STRUCTURE NUMBER 099-0281
SHEET NO. SBX-3 OF 6 SHEETS

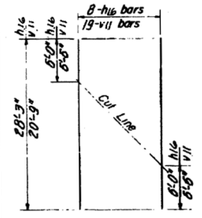
F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1126
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.I.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	99-1HB-1(K&R)88	WILL	238	155
STA.	TO STA.			
FED. ROAD DIST. NO. 7	ILLINOIS	FEDERAL AID PROJECT		

Sheet 19 of 23

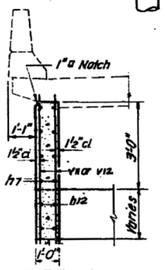


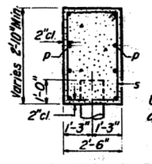


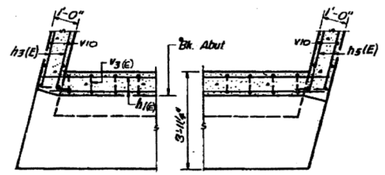
*Order h_9 & v_7 bars full length. Cut to fit as shown and use remainder of bars in other face.

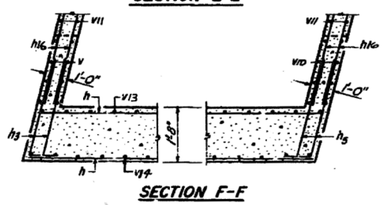
ABUT-PILE DATA
Type: 12" Metal Shell Piles
Capacity: 45 Tons
Est. Length: 20'-0"
No. Req'd.: 38 (includes one test pile)

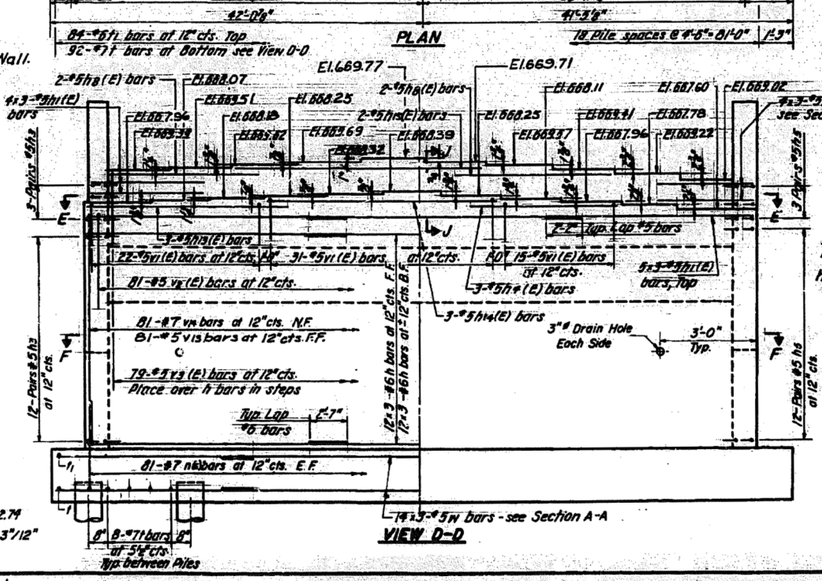
APP'R. BENT-PILE DATA
Type: 12" Metal Shell Piles
Capacity: 45 Tons
Est. Length: 35'-0"
No. Req'd.: 14

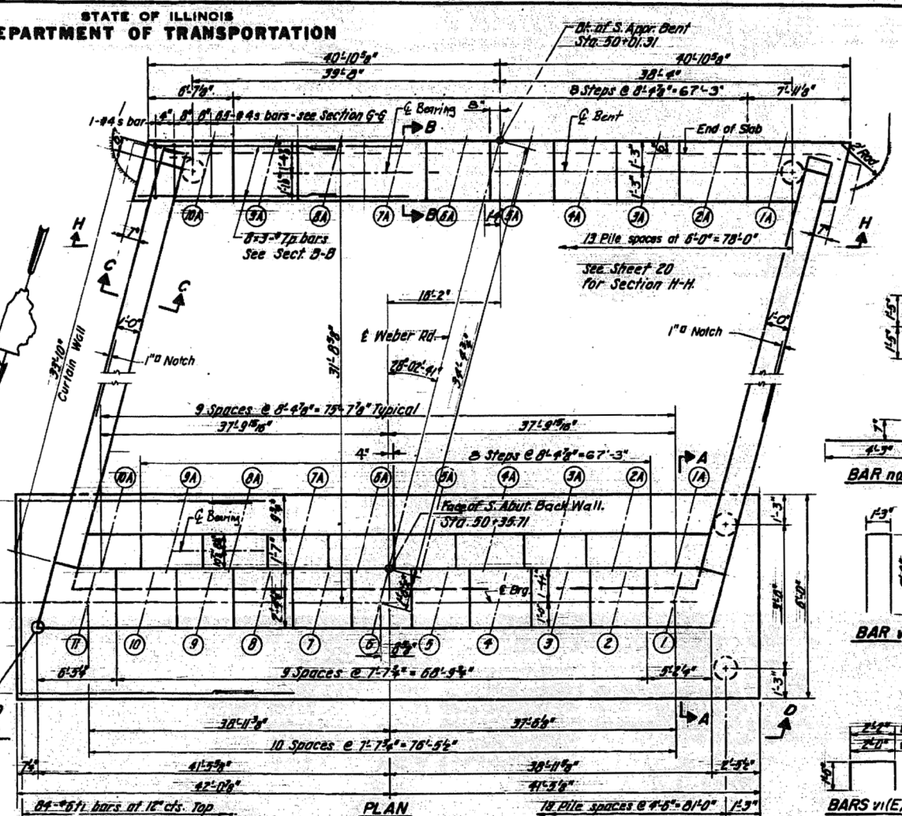


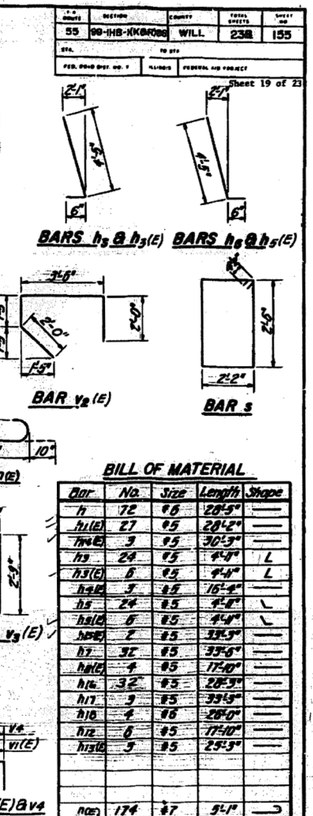






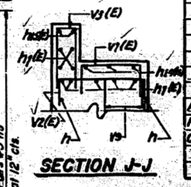






BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h	72	#6	28'-5"	
h1(E)	27	#5	28'-2"	
h14(E)	3	#5	30'-5"	
h3	24	#5	4'-4"	L
h3(E)	8	#5	4'-4"	L
h4(E)	3	#5	16'-4"	
h5	24	#5	4'-8"	
h5(E)	8	#5	4'-4"	
h6(E)	2	#5	33'-9"	
h7	32	#5	33'-6"	
h8(E)	4	#5	17'-10"	
h16	32	#5	28'-3"	
h17	3	#5	33'-9"	
h18	4	#6	28'-0"	
h12	6	#5	17'-10"	
h13(E)	5	#5	25'-3"	
n(E)	174	#7	5'-1"	
p	24	#7	29'-5"	
s	69	#4	10'-1"	
t	146	#7	5'-8"	
h	84	#6	5'-0"	
v14	81	#7	12'-3"	
v8(E)	88	#5	5'-0"	
v12(E)	81	#5	8'-4"	
v3(E)	79	#5	8'-9"	
v4	87	#5	5'-2"	
v5	12	#5	5'-2"	
v10	12	#5	16'8"	
v11	76	#5	28'-9"	
v12	80	#5	8'-0"	
v13	81	#5	12'-3"	
w	92	#5	29'-2"	
Reinf. Bars Epoxy Coated		Lbs.	6397	
Reinforcement Bars		Lbs.	15,216	
Class X Concrete		Cu. Yds.	179	
Test Pile		EA.	1	
Piles		L.F.	1230	



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
SOUTH ABUTMENT
WEBER ROAD OVER I-55
SECTION 99-1HB-1(K & R) 88
WILL COUNTY
STA. 51 + 22.75
STRUCTURE NO. 099-0281
SCALE N.T.S. DRAWN BY M.S.
DATE 5/11/17 CHECKED BY WPM

AV-R 8-30-80

Note
Existing Plan elevations have been adjusted by -1.1'

FOR INFORMATION ONLY

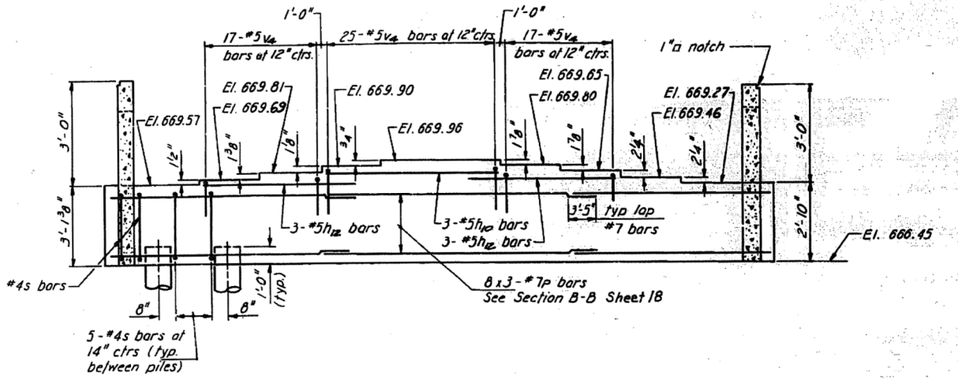
KNIGHT
Engineers & Architects

	DESIGNED - ——	REVISED	
	CHECKED - ——	REVISED	
SCALE - NONE	DRAWN - TB	REVISED	
DATE - 5/12/2017	CHECKED - WPM	REVISED	

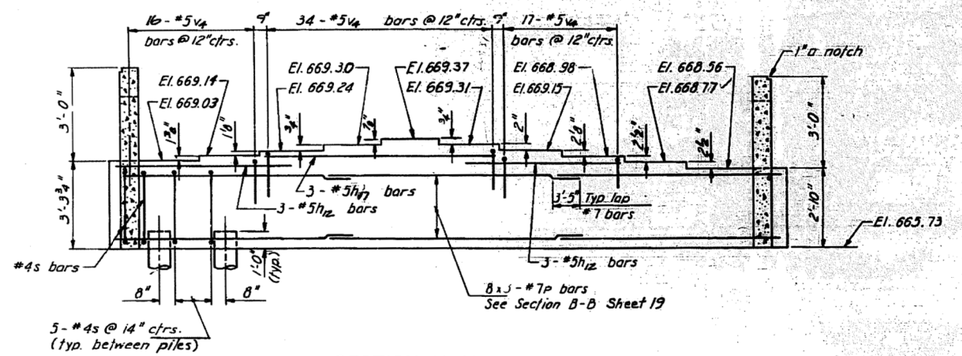
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS – SOUTH ABUTMENT
STRUCTURE NUMBER 099-0281
SHEET NO. SBX-4 OF 6 SHEETS

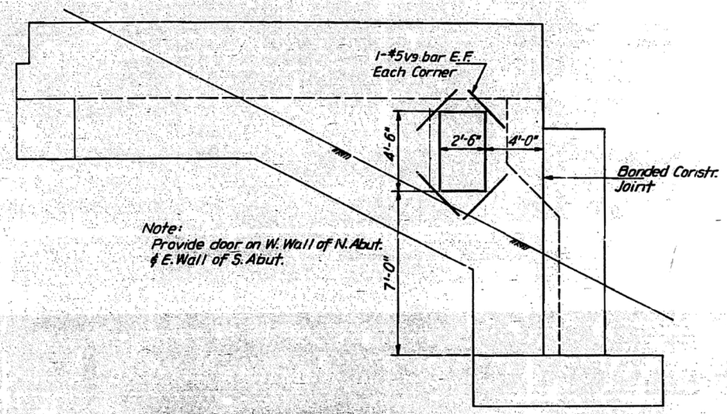
F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1127
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		



SECTION G-G
NORTH APPROACH BENT
N.T.S.

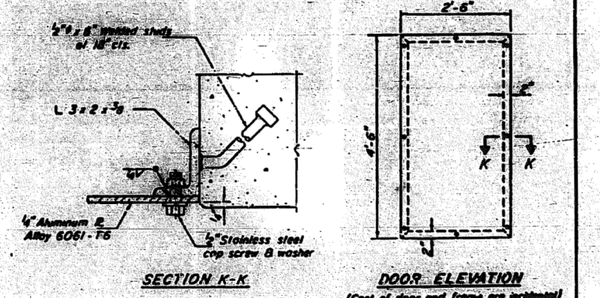


SECTION H-H
SOUTH APPROACH BENT
N.T.S.



Note:
Provide door on W. Wall of N. Abut. & E. Wall of S. Abut.

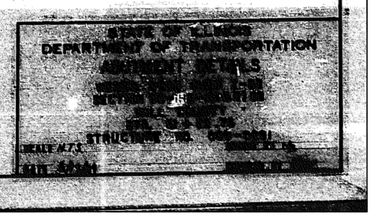
TYPICAL SIDE ELEVATION



SECTION K-K

DOOR ELEVATION
(Cost of door and frame are incidental)

ACCESS DOOR DETAILS



Note
Existing Plan elevations have been adjusted by -1.1'

FOR INFORMATION ONLY

KNIGHT Engineers & Architects		DESIGNED - ——	REVISED
		CHECKED - ——	REVISED
	SCALE - NONE	DRAWN - TB	REVISED
	DATE - 5/12/2017	CHECKED - WPM	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

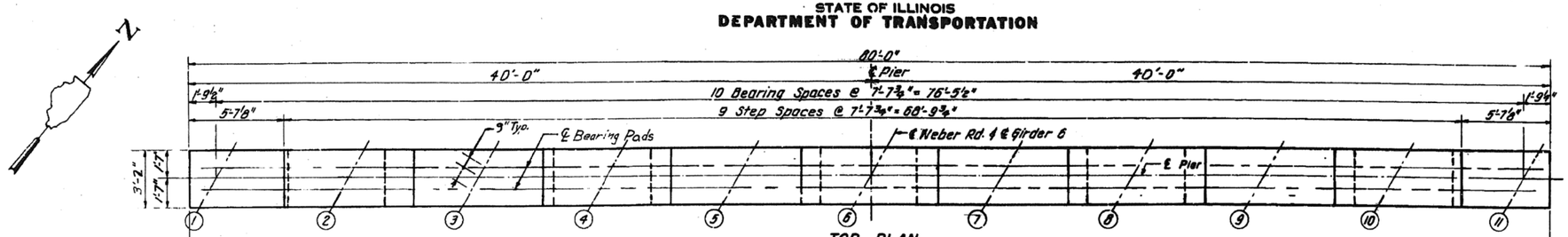
EXISTING PLANS – ABUTMENT DETAILS
STRUCTURE NUMBER 099-0281
SHEET NO. SBX-5 OF 6 SHEETS

F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1128
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		

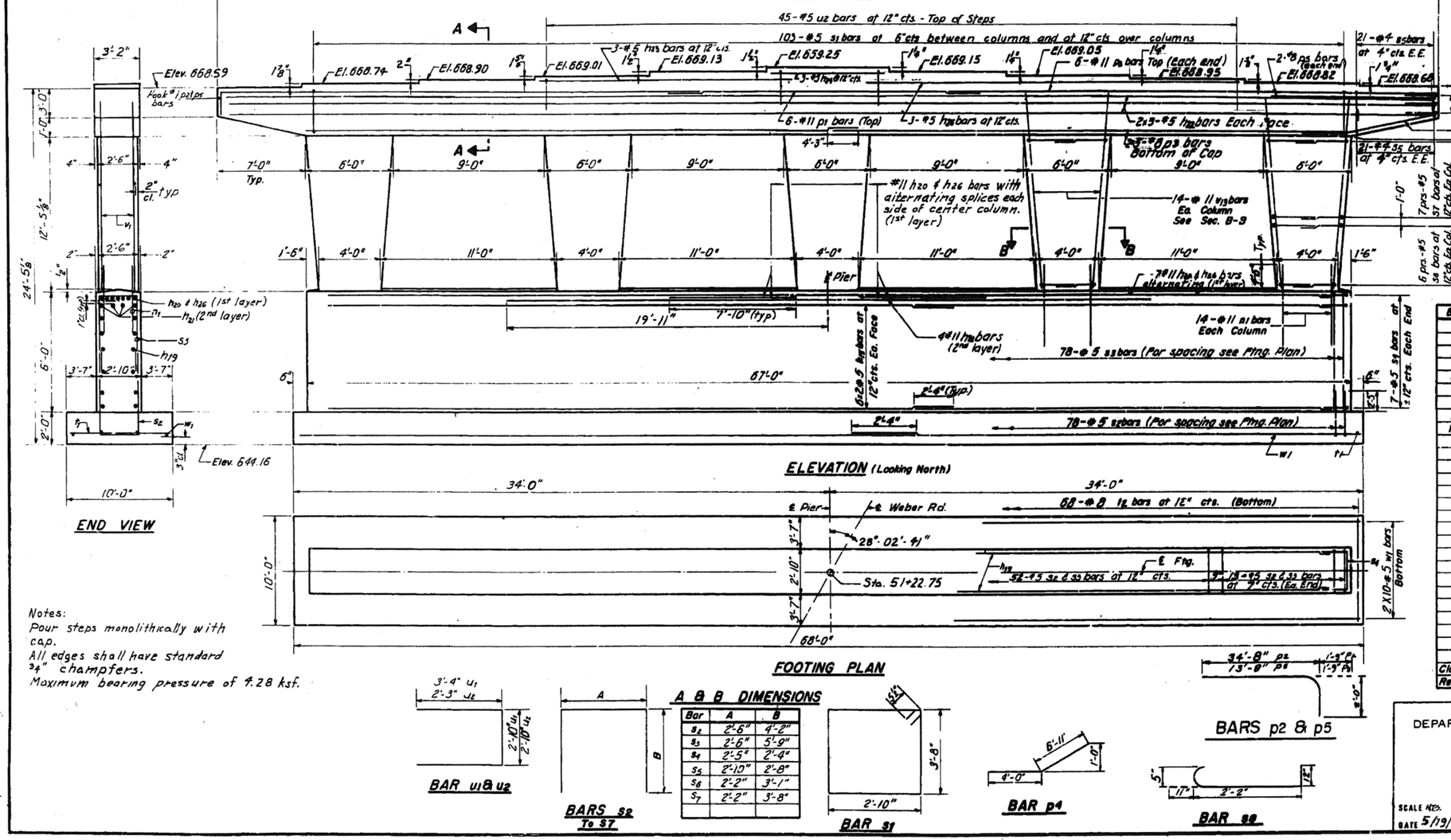
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	99-1HB-1(K&R)88	WILL	238	157
STA.	TO STA.			
FED. ROAD DIST. NO. 1	ILLINOIS	FEDERAL AID PROJECT		

Sheet 21 of 23



TOP PLAN



END VIEW

ELEVATION (Looking North)

FOOTING PLAN

Notes:
Pour steps monolithically with cap.
All edges shall have standard ¾" champfers.
Maximum bearing pressure of 4.28 ksf.

BAR u1 & u2

BARS s2 To s7

A & B DIMENSIONS

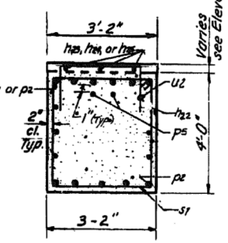
Bar	A	B
s_2	2'-6"	4'-2"
s_3	2'-6"	5'-9"
s_4	2'-5"	2'-4"
s_5	2'-10"	2'-8"
s_6	2'-2"	3'-1"
s_7	2'-2"	3'-8"

BAR s1

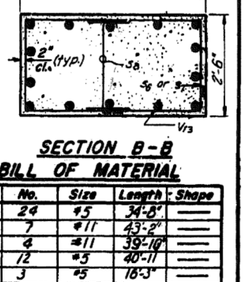
BAR p4

BARS p2 & p5

BAR s2



SECTION A-A



SECTION B-B

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h_{19}	24	#5	34'-8"	
h_{20}	7	#11	43'-2"	
h_{21}	4	#11	39'-10"	
h_{22}	12	#5	40'-11	
h_{23}	3	#5	18'-3"	
h_{24}	3	#5	7'-1"	
h_{25}	3	#5	24'-2"	
h_{26}	7	#11	31'-3"	
n_1	70	#11	9'-0"	
p_1	6	#11	24'-0"	
p_2	12	#11	36'-5"	
p_3	10	#8	34'-11"	
p_4	10	#6	10'-11"	
p_5	4	#8	15'-3"	
s_1	103	#5	13'-11"	
s_2	78	#5	10'-10"	
s_3	78	#5	14'-0"	
s_4	14	#5	7'-1"	
s_5	84	#4	6'-2"	
s_6	60	#5	8'-4"	
s_7	70	#5	9'-6"	
s_8	65	#5	4'-1"	
t_2	68	#8	9'-6"	
u_1	8	#6	9'-6"	
u_2	45	#5	7'-4"	
V_{13}	70	#11	14'-10"	
w_1	20	#5	33'-10"	
Class X Concrete			Cu.Yds.	164
Reinforcement Bars			Lbs.	26,853

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
PIER
WEBER ROAD OVER I-55
SECTION 99-1HB-1(K&R)88
WILL COUNTY
STA. 51+22.75
STRUCTURE NO. 099-0281
SCALE NTS. DRAWN BY AO.
DATE 5/19/89 CHECKED BY SBW

Note
Existing Plan elevations have been adjusted by -1.1'

FOR INFORMATION ONLY

KNIGHT Engineers & Architects		DESIGNED - ——	REVISED
		CHECKED - ——	REVISED
	SCALE - NONE	DRAWN - TB	REVISED
	DATE - 5/12/2017	CHECKED - WPM	REVISED

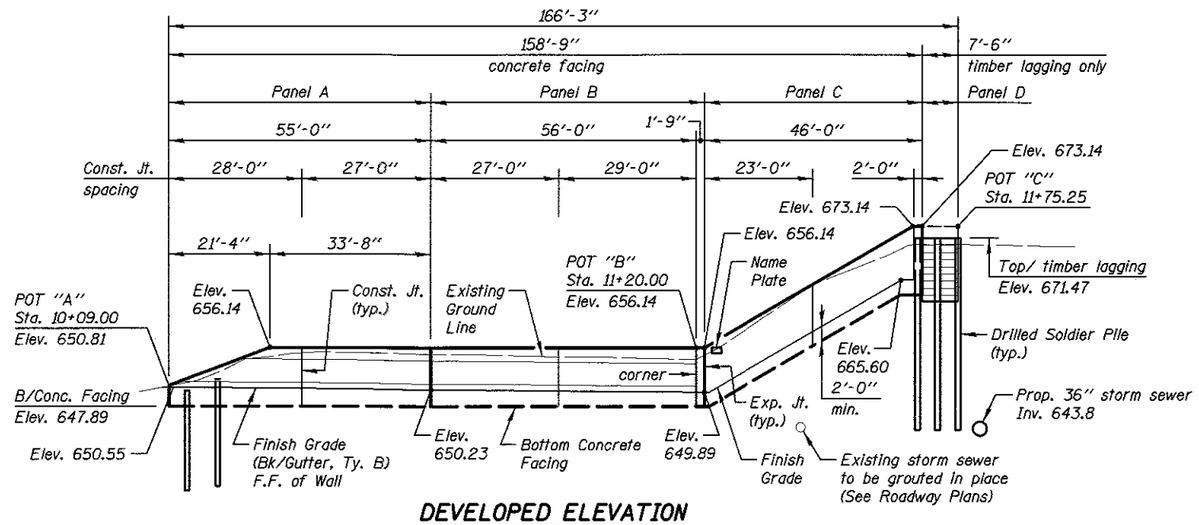
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS – PIER
STRUCTURE NUMBER 099-0281
SHEET NO. SBX-6 OF 6 SHEETS

F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1129
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		

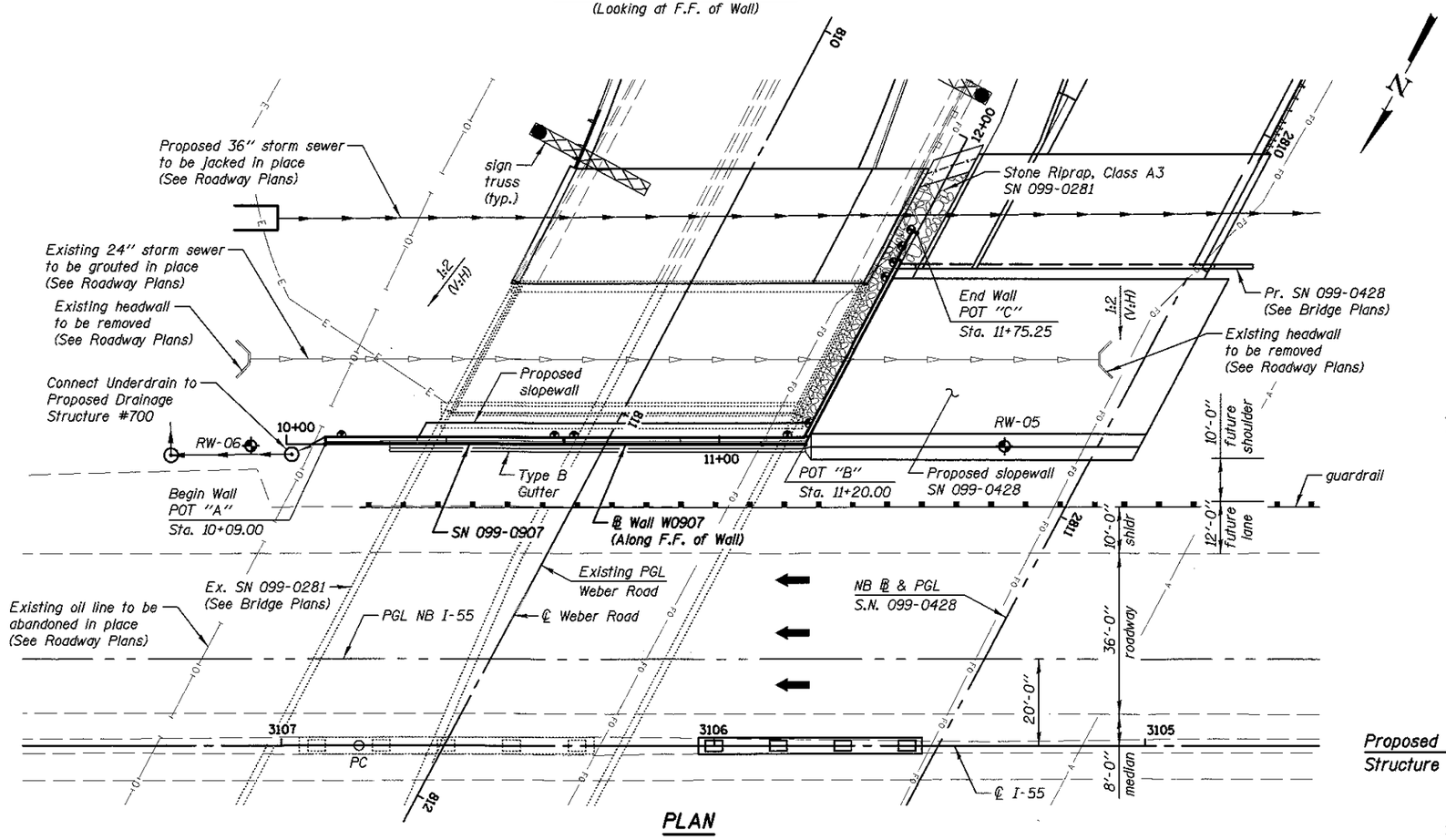
Bench Mark: BM Lin17 Chiseled "X" on south bolt of round light pole foundation between I-55 southbound and existing I-55 ramp to Weber Road Mile marker 263.71 sign. Elev. 654.37

Existing Structure: None.



DEVELOPED ELEVATION

(Looking at F.F. of Wall)



PLAN

DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge Design Specifications, Customary U.S. Units, 7th Edition with 2015 Interims

DESIGN STRESSES

FIELD UNITS

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

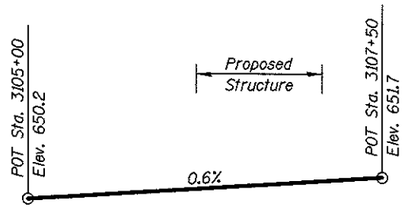
INDEX OF DRAWINGS

SHT NO.	TITLE
SC-1	General Plan and Elevation
SC-2	Total Bill of Material & Miscellaneous Details
SC-3	Typical Wall Sections
SC-4	Plan and Elevation - 1
SC-5	Plan and Elevation - 2
SC-6	Wall Details
SC-7	Wall Sections and Details
SC-8	HP Pile Details
SC-9	Soil Boring Logs

CURVE DATA

℄ I-55
Curve I-55-2
Δ = 5° 33' 40" (LT)
D = 0° 21' 17"
R = 16,149.49'
T = 784.36'
L = 1,567.49'
E = 19.04'
SE = normal crown
PC STA. 3106+81.93
PT STA. 3122+49.42
PI STA. 3114+66.30

℄ Wall W0907
(Offsets from ℄ I-55 and ℄ Weber Road to F.F. of wall)
POT "A"
Sta. 10+09.00 - ℄ Wall 0907 =
Sta. 3106+89.77, 69.54' Rt. - ℄ I-55
Sta. 811+38.54, 56.97' Rt. - ℄ Weber Road
POT "B"
Sta. 11+20.00 - ℄ Wall 0907 =
Sta. 3105+78.81, 69.56' Rt. - ℄ I-55
Sta. 810+86.35, 41.0' Lt. - ℄ Weber Road
POT "C"
Sta. 11+75.25 - ℄ Wall 0907 =
Sta. 3105+52.84, 118.33' Rt. - ℄ I-55
Sta. 810+31.10, 41.0' Lt. - ℄ Weber Road



I-55 N.B. - EXISTING PROFILE GRADE LINE

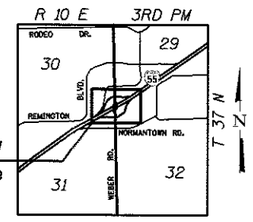
APPROVED
For Structural Adequacy Only
Engineer of Bridges & Structures

TRISHA B. BUTCHER 081-006306 LICENSED STRUCTURAL ENGINEER STATE OF ILLINOIS
Expires 11-30-2018

Date: 05/12/2017
for drawings SC-1 thru SC-8

Legend

- Soil Borings
- F.F. Front Face
- B.F. Back Face
- POT Point on Tangent



LOCATION SKETCH

Notes

See Sheet SC-5 for name plate location.

See Roadway Plans for Concrete Gutter, Type B details.

See Roadway Drainage Plans for Drainage Structure Locations.

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

GENERAL PLAN & ELEVATION

WEBER ROAD
F.A.P. RTE. 856 SEC. (99-1HB-1) R-1
WILL COUNTY
STA. 3105+53 TO 3106+90
STRUCTURE NO. 099-0907

		DESIGNED - TB	REVISED
		CHECKED - WPM	REVISED
SCALE - NONE		DRAWN - TB	REVISED
DATE - 5/12/2017		CHECKED - WPM	REVISED

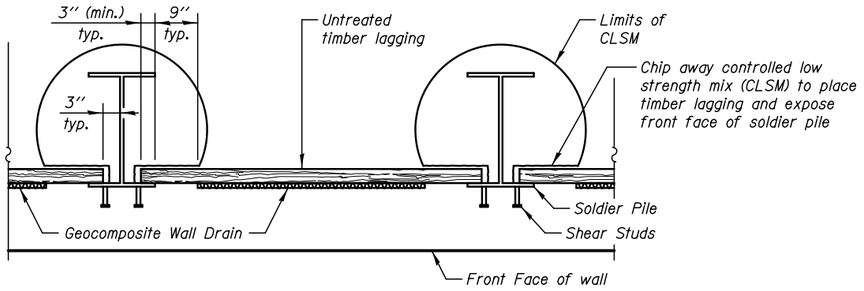
KNIGHT Engineers & Architects

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
STRUCTURE NUMBER 099-0907
SHEET NO. SC-1 OF 9 SHEETS

F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1130
		CONTRACT NO. 60X10		

* FAI 55, FAP 856 ILLINOIS FED. AID PROJECT



SECTION THRU DRILLED SOLDIER PILE WALL

(Reinforcement not shown)

GENERAL NOTES

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

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

Reinforcement bars designated (E) shall be epoxy coated.

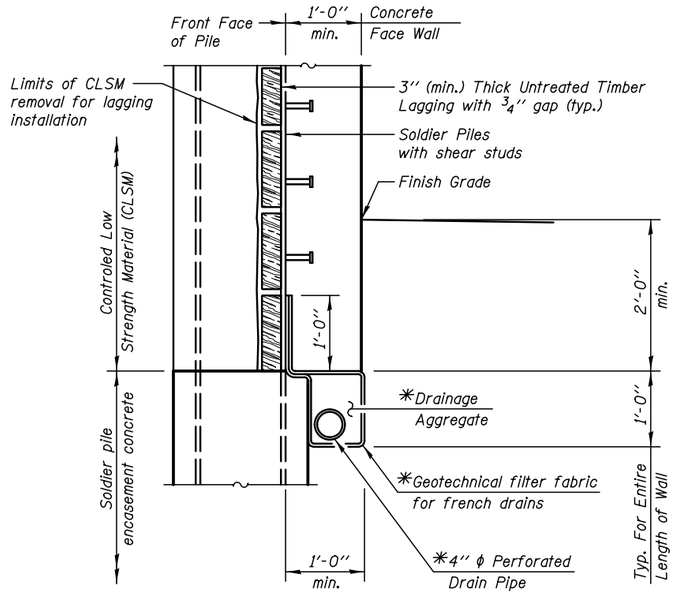
Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall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

Slope wall shall be reinforced with welded wire fabric, 6 in. x 6 in. - W4.0 x W4.0, weighing 58 lbs. per 100 sq. ft.

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

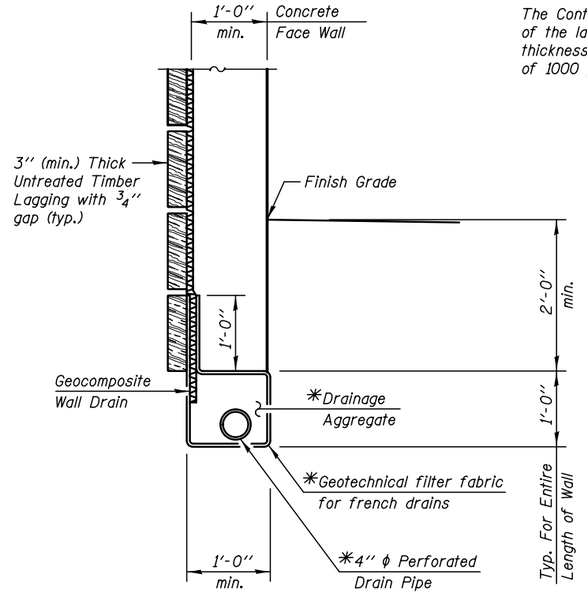
TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Slope Wall Removal	Sq. Yd.	220.0
Structure Excavation	Cu. Yd.	135.0
Concrete Structures	Cu. Yd.	55.0
Protective Coat	Sq. Yd.	105.0
Stud Shear Connectors	Each	360
Reinforcement Bars, Epoxy Coated	Pound	6560
Slope Wall 4 Inch	Sq. Yd.	39.0
Name Plates	Each	1
Furnishing Soldier Piles (HP Section)	Foot	662.0
Drilling And Setting Soldier Piles (In Soil)	Cu. Ft.	2171.0
Untreated Timber Lagging	Sq. Ft.	1093.0
Geocomposite Wall Drain	Sq. Yd.	61.0
Pipe Underdrains for Structures 4''	Foot	166.0
Granular Backfill For Structures	Cu. Yd.	50.0



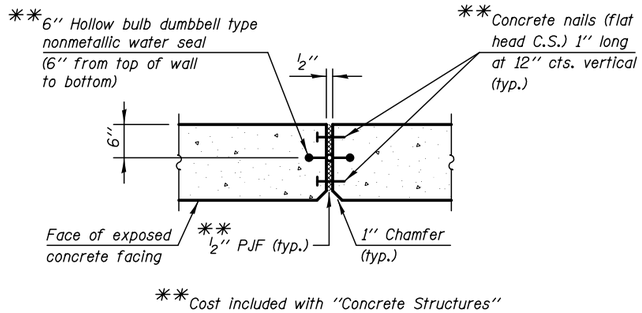
DETAIL A

(At Soldier Piles)



DETAIL B

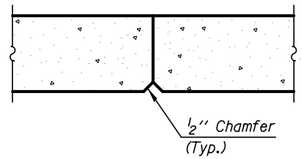
(Between Soldier Piles)



**Cost included with ''Concrete Structures''

WALL EXPANSION JOINT DETAIL

(Reinforcement not shown)



WALL CONSTRUCTION JOINT DETAIL

(Reinforcement not shown)

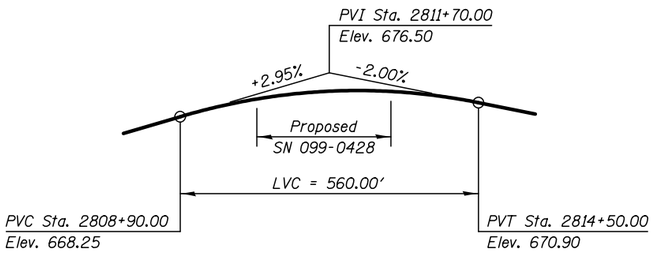
UNDERDRAIN DETAIL

wall parallel to Weber Road shown
wall parallel to I-55 similar

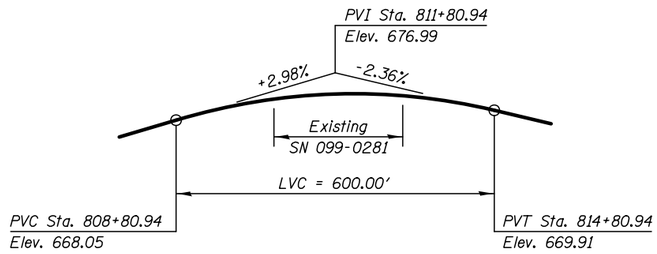
*Cost Included with ''Pipe Underdrains for Structures''

Note

No ''Pipe Underdrain for Structures'' or ''Geocomposite Wall Drain'' in Panel D.



℄ NORTHBOUND WEBER ROAD - PROPOSED PROFILE GRADE LINE



℄ WEBER ROAD - EXISTING PROFILE GRADE LINE

STATION 3105+53 TO 3106+90
BUILT 20 BY
STATE OF ILLINOIS
F.A.P. RTE. 856 SEC. (99-1HB-1) R-1
LOADING HL-93
STRUCTURE NO. 099-0907

NAME PLATES

See Std. 515001

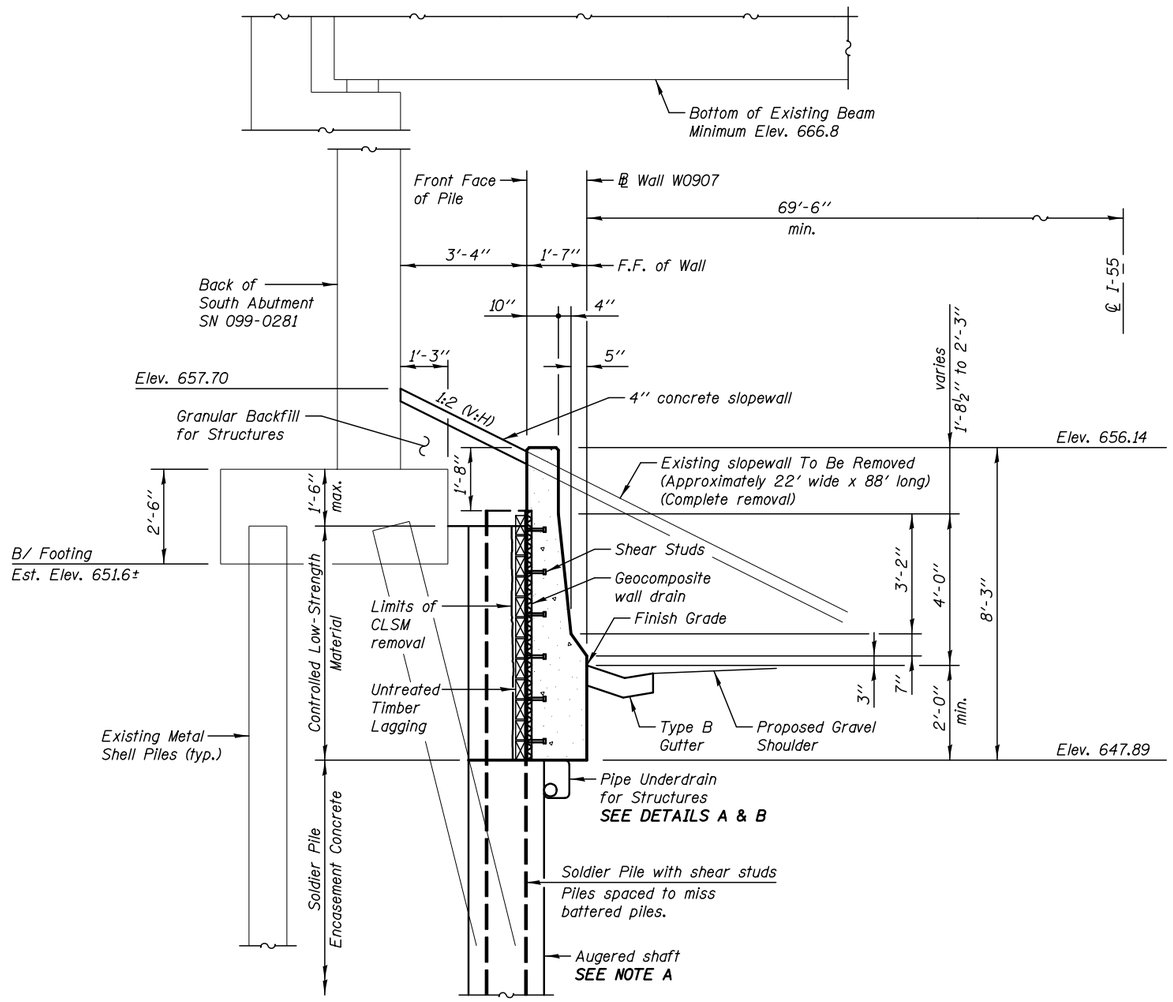
KNIGHT
Engineers & Architects

	DESIGNED - TB	REVISED	
	CHECKED - WPM	REVISED	
SCALE - NONE	DRAWN - TB	REVISED	
DATE - 5/12/2017	CHECKED - WPM	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOTAL BILL OF MATERIAL & MISCELLANEOUS DETAILS
STRUCTURE NUMBER 099-0907
SHEET NO. SC-2 OF 9 SHEETS

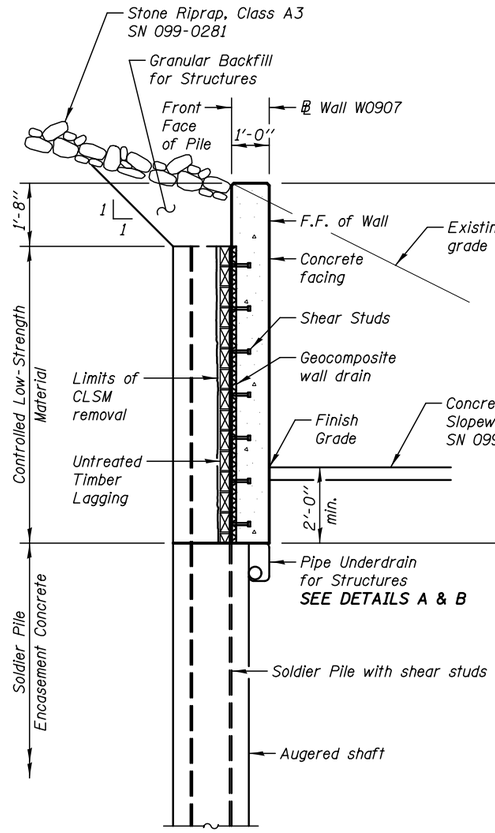
F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1131
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		



TYPICAL WALL SECTION
PANEL A AND PANEL B

Parallel to I-55

(Horiz. dim @ Rt. L's)



TYPICAL WALL SECTION
PANEL C

Parallel to Weber Road

(Horiz. dim @ Rt. L's)

PANEL D sim. (Timber Lagging Only)

NOTE A

The existing beams on the existing bridge (SN 099-0281) will remain in place during wall construction and will restrict clearance under the bridge to an estimated 15 feet during augering of the holes and setting of the soldier piles. Special, low clearance, equipment will be required and piles will need to be spliced. Any field splices required due to the restricted vertical clearance of the existing beams will not be paid for separately, but shall be included in the cost of "Furnishing Soldier Piles" of the type specified.

Suggested Sequence of Construction

1. *Remove existing slopewall - complete removal*
2. *Excavate in front of existing abutment 1'-6" (max.) below top of footing. Estimated B/excavation Elev. 652.6±.*
3. *Auger holes for soldier pile wall under bridge.*
4. *Construct wall.*

Notes:

For Details A & B, See Sheet SC-2

For additional Wall Section Details, See Sheet SC-7.

Panel D and portions of the timber lagging in Panel C are intended to be used as a Temporary Soil Retention System for construction of the south abutment for SN 099-0428 and installation of the waterproofing system on the south abutment approach bent for SN 099-0281. See SA-01 to SA-36 for additional details related to SN 099-0428. See SB-01 to SB-40 for additional details related to SN 099-0281.

KNIGHT
Engineers & Architects

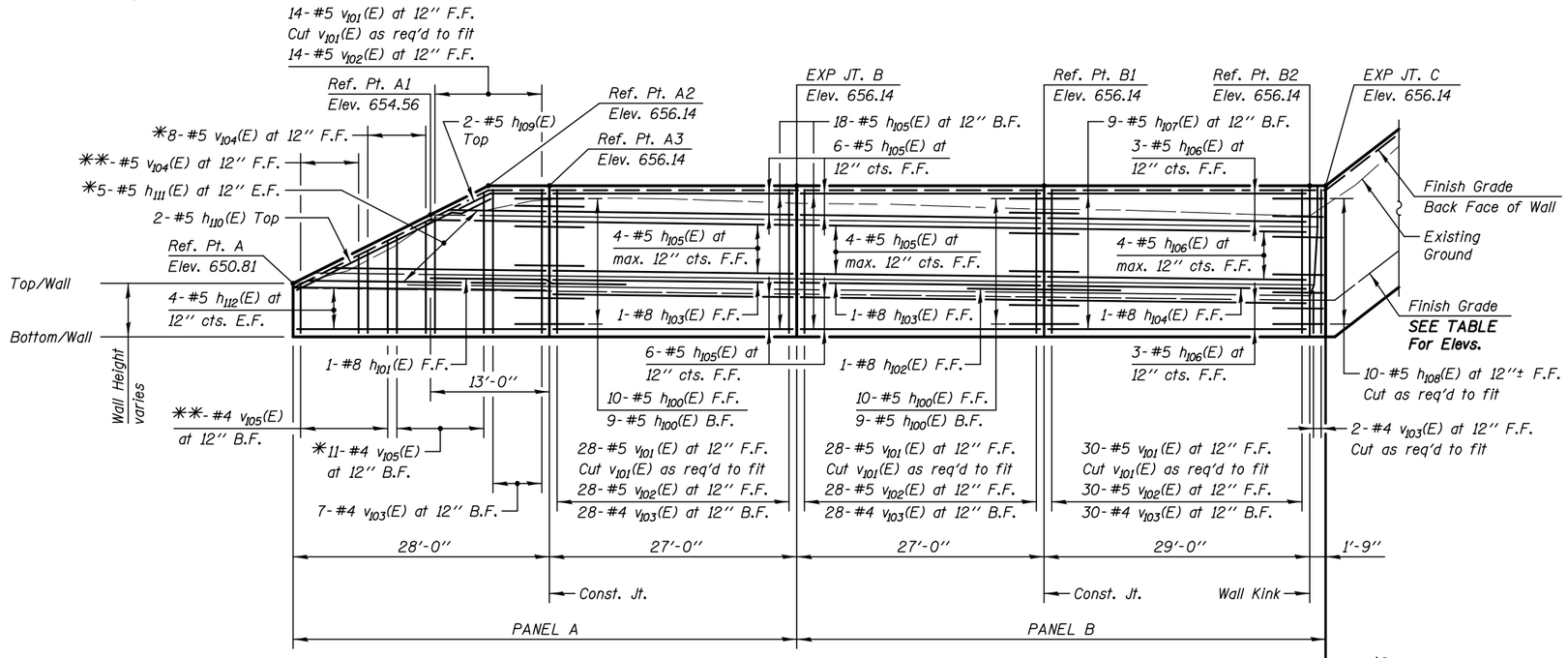
	DESIGNED - TB	REVISED	
	CHECKED - WPM	REVISED	
SCALE - NONE	DRAWN - TB	REVISED	
DATE - 5/12/2017	CHECKED - WPM	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TYPICAL WALL SECTIONS
STRUCTURE NUMBER 099-0907
SHEET NO. SC-3 OF 9 SHEETS

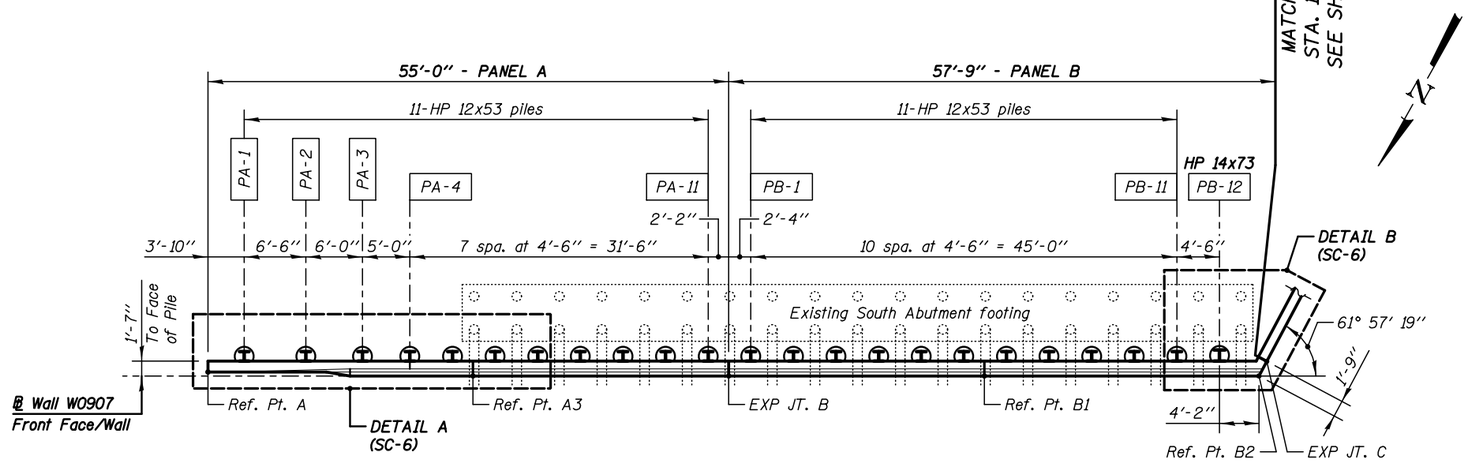
F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1132
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		

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



ELEVATION - NORTH FACE
(Looking South)

MATCH LINE STA. 11+21.75 SEE SHT. SC-5



PLAN
(PANELS A & B)

PILE DATA:

Pile No.	Top Elev.	Bottom Elev.	Length Ft.	No of Studs	Pile Size
PA-1	650.10	636.10	14.00	6	HP 12x53
PA-2	651.73	635.73	16.00	8	HP 12x53
PA-3	653.23	636.23	17.00	10	HP 12x53
PA-4	654.47	635.47	19.00	12	HP 12x53
PA-5	654.47	635.47	19.00	12	HP 12x53
PA-6	654.47	635.47	19.00	12	HP 12x53
PA-7	654.47	635.47	19.00	12	HP 12x53
PA-8	654.47	635.47	19.00	12	HP 12x53
PA-9	654.47	635.47	19.00	12	HP 12x53
PA-10	654.47	635.47	19.00	12	HP 12x53
PA-11	654.47	635.47	19.00	12	HP 12x53
PB-1	654.47	635.47	19.00	12	HP 12x53
PB-2	654.47	635.47	19.00	12	HP 12x53
PB-3	654.47	635.47	19.00	12	HP 12x53
PB-4	654.47	635.47	19.00	12	HP 12x53
PB-5	654.47	635.47	19.00	12	HP 12x53
PB-6	654.47	635.47	19.00	12	HP 12x53
PB-7	654.47	635.47	19.00	12	HP 12x53
PB-8	654.47	635.47	19.00	12	HP 12x53
PB-9	654.47	635.47	19.00	12	HP 12x53
PB-10	654.47	635.47	19.00	12	HP 12x53
PB-11	654.47	635.47	19.00	12	HP 12x53
PB-12	654.47	631.47	23.00	12	HP 14x73

Notes:

All Dimensions are along Front Face of Wall.

For Details A & B, See Sheet SC-6.

For Typical Sections & Bill of Material, See Sheet SC-7.

*See Bar Cutting Diagram on Sheet SC-7.

**Remainder of bars to be placed as shown.

Prior to augering ANY holes in Panel A, Panel B or pile PC-1, verify the location of the edge of the existing footing. See Sheet SC-6 for additional notes and details.

LEGEND

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

Min Bar Laps

#5 Bars = 3'-7" (Horiz. Top Bars)
#8 Bars = 8'-2" (Horiz. Top Bars)

SHAFT SIZES

Pile Size	Shaft Excavation Size
HP12	2'-0"
HP14	2'-0"

WALL JOINT LOCATIONS, HEIGHTS & ELEVATIONS

Location Ref. Points	Station on ℄ W0907	Wall Height	Top/Wall Elevation	Bottom/Wall Elevation	Finish Grade Elev.
Begin Wall - A	10+09.00	2'-11"	650.81	647.89	650.55
Grade Break - A1	10+24.00	6'-8"	654.56	647.89	650.47
Grade Break - A2	10+30.33	8'-3"	656.14	647.89	650.43
C.J. - A3	10+37.00	8'-3"	656.14	647.89	650.39
Exp. Jt. - B	10+64.00	8'-3"	656.14	647.89	650.23
C.J. - B1	10+91.00	8'-3"	656.14	647.89	650.06
Wall Kink - B2	11+20.00	8'-3"	656.14	647.89	649.89
Exp. Jt. - C	11+21.75	8'-3"	656.14	647.89	649.89

KNIGHT Engineers & Architects

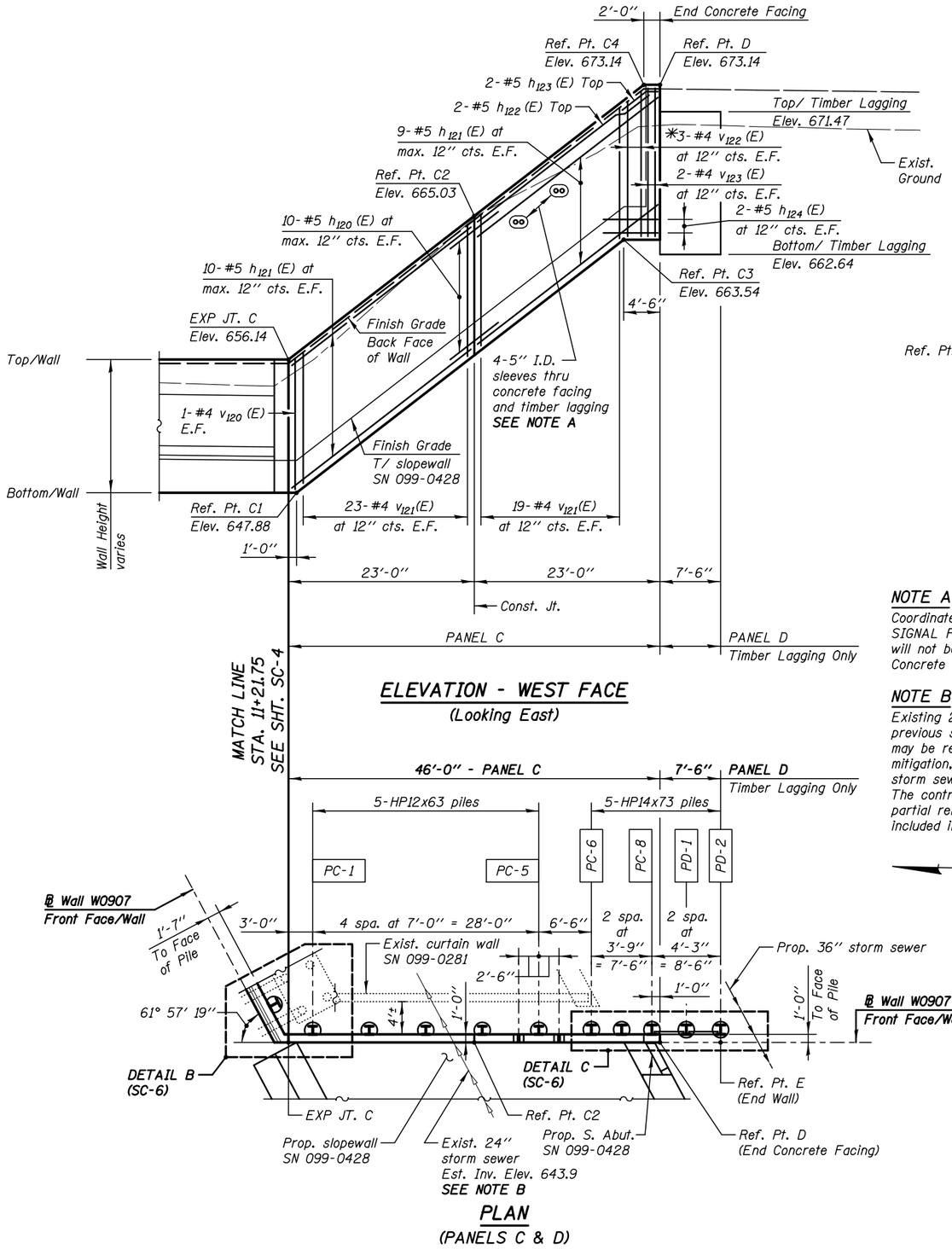
	DESIGNED - TB	REVISED	
	CHECKED - WPM	REVISED	
SCALE - NONE	DRAWN - TB	REVISED	
DATE - 5/12/2017	CHECKED - WPM	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLAN AND ELEVATION - 1
STRUCTURE NUMBER 099-0907
SHEET NO. SC-4 OF 9 SHEETS

F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1133
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		

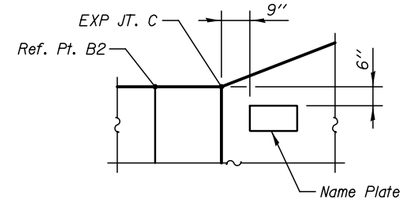
Note:
For Top/Wall Elevations, Bottom/Wall Elevations & Wall Height SEE TABLE.



ELEVATION - WEST FACE
(Looking East)

MATCH LINE
STA. 11+21.75
SEE SHT. SC-4

PLAN
(PANELS C & D)



NAME PLATE LOCATION

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
Existing 24" storm sewer to be grouted in place during a previous stage. Partial removal of the grouted storm sewer may be required to drill hole to the required depth. Obstruction mitigation, with regard to the partial removal of the grouted storm sewer, as required, WILL NOT be considered Extra Work. The contractor shall prepare, in advance, for the possibility of partial removal of storm sewer, as required, and the cost will be included in the cost of Drilling and Setting Soldier Piles (In Soil).

PILE DATA:

Pile No.	Top Elev.	Bottom Elev.	Length Ft.	No of Studs	Pile Size
PC-1	655.63	635.63	20.00	12	HP 12x63
PC-2	658.34	638.34	20.00	12	HP 12x63
PC-3	661.04	641.04	20.00	12	HP 12x63
PC-4	663.75	642.75	21.00	12	HP 12x63
PC-5	666.45	643.45	23.00	12	HP 12x63
PC-6	668.96	644.96	24.00	12	HP 14x73
PC-7	670.41	645.41	25.00	12	HP 14x73
PC-8	671.47	645.47	26.00	12	HP 14x73
PD-1	671.47	645.47	26.00	-	HP 14x73
PD-2	671.47	645.47	26.00	-	HP 14x73

SHAFT SIZES

Pile Size	Shaft Excavation Size
HP12	2'-0"
HP14	2'-0"

Notes:
All Dimensions are along Front Face of Wall.

For Details B & C, See Sheet SC-6.

For Typical Sections & Bill of Material, See Sheet SC-7.

**See Bar Cutting Diagram on Sheet SC-7.*

Prior to augering ANY holes in Panel A, Panel B or pile PC-1, verify the location of the edge of the existing footing. See Sheet SC-6 for additional notes and details.

Panel D and portions of the timber lagging in Panel C are intended to be used as a Temporary Soil Retention System for construction of the south abutment for SN 099-0428 and installation of the waterproofing system on the south abutment approach bent for SN 099-0281. See SA-01 to SA-36 for additional details related to SN 099-0428. See SB-01 to SB-40 for additional details related to SN 099-0281.

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

Min Bar Laps
#5 Bars = 3'-7" (Horiz. Top Bars)

WALL JOINT LOCATIONS, HEIGHTS & ELEVATIONS

Location Ref. Points	Station on ℄ W0907	Wall Height	Top/Wall Elevation	Bottom/Wall Elevation	Finish Grade Elev.
Exp. Jt. - C	11+21.75	8'-3"	656.14	647.89	649.89
Grade Break - C1	11+22.75	8'-7 3/4"	656.53	647.88	649.89
C.J. - C2	11+44.75	8'-7 1/2"	665.03	656.40	658.41
Grade Break - C3	11+63.25	8'-7 1/2"	672.17	663.54	665.58
Grade Break - C4	11+65.75	9'-7"	673.14	663.56	665.60
End Facing - D	11+67.75	9'-7"	673.14	663.56	673.14
End Wall - E	11+75.25	8'-10"	671.47	662.64	673.00

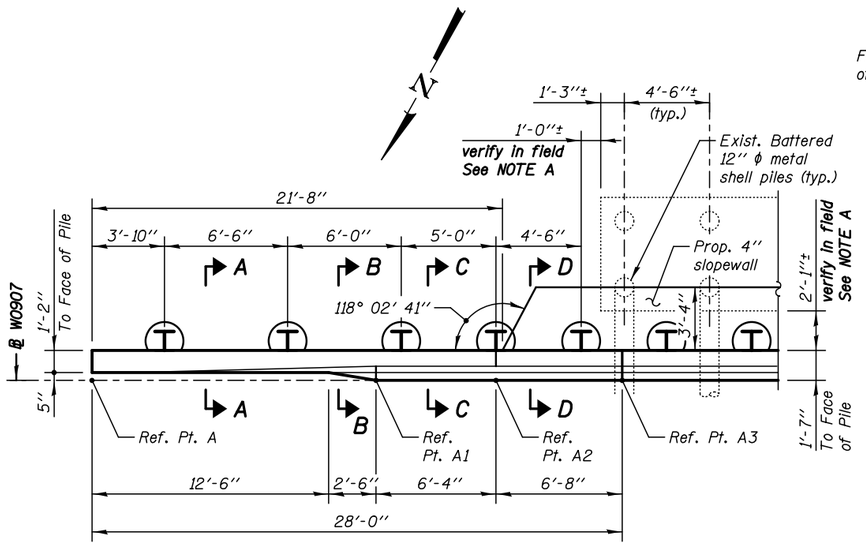
KNIGHT
Engineers & Architects

	DESIGNED - TB	REVISED	
	CHECKED - WPM	REVISED	
SCALE - NONE	DRAWN - TB	REVISED	
DATE - 5/12/2017	CHECKED - WPM	REVISED	

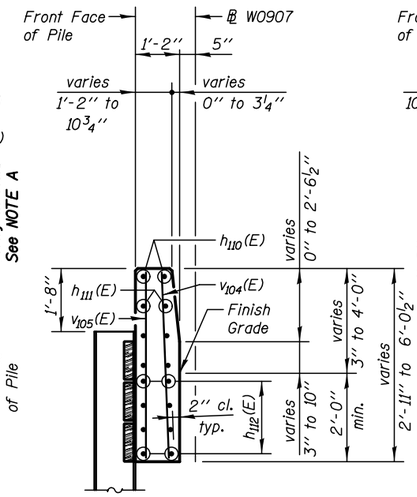
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLAN AND ELEVATION – 2
STRUCTURE NUMBER 099–0907
SHEET NO. SC-5 OF 9 SHEETS

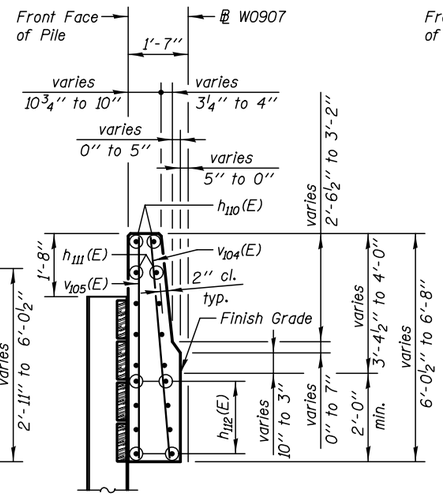
F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1134
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		



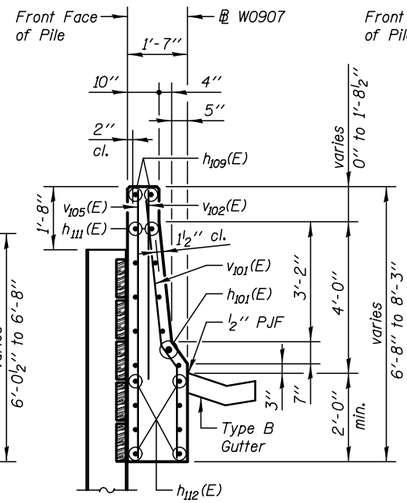
DETAIL A



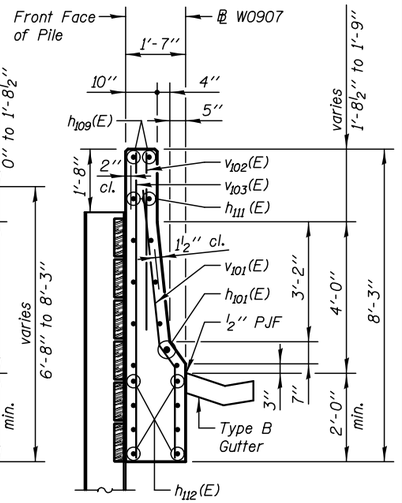
SECTION A-A



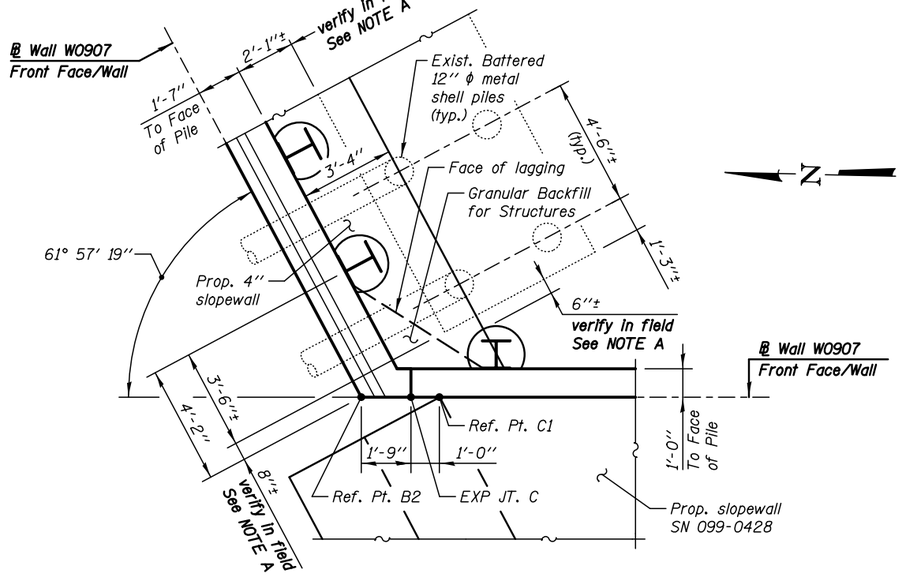
SECTION B-B



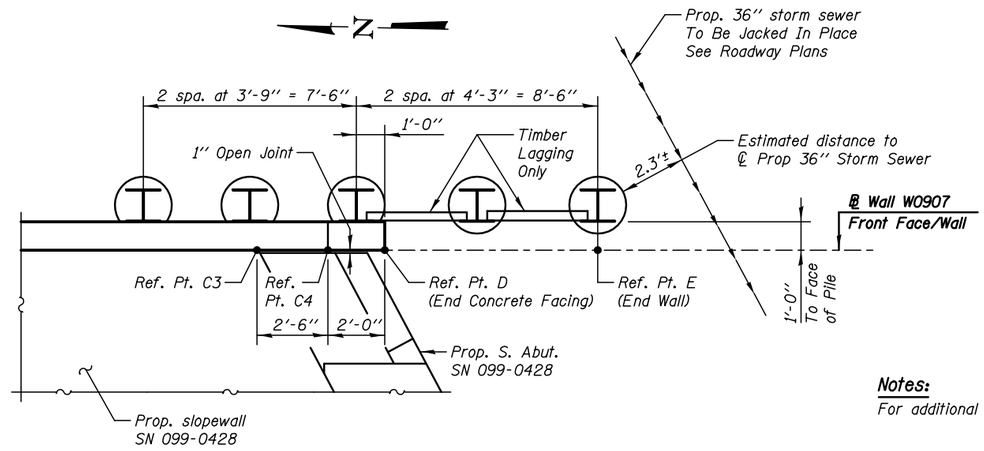
SECTION C-C



SECTION D-D



DETAIL B



DETAIL C

Notes:

For additional reinforcing details, See Sheet SC-7.

NOTE A

Prior to augering ANY holes in Panel A, Panel B or pile PC-1, verify the location of the edge of the existing footing. If this dimension varies more than 2 inches from the location shown in the plans, contact the Engineer of Record for pile spacing revisions.

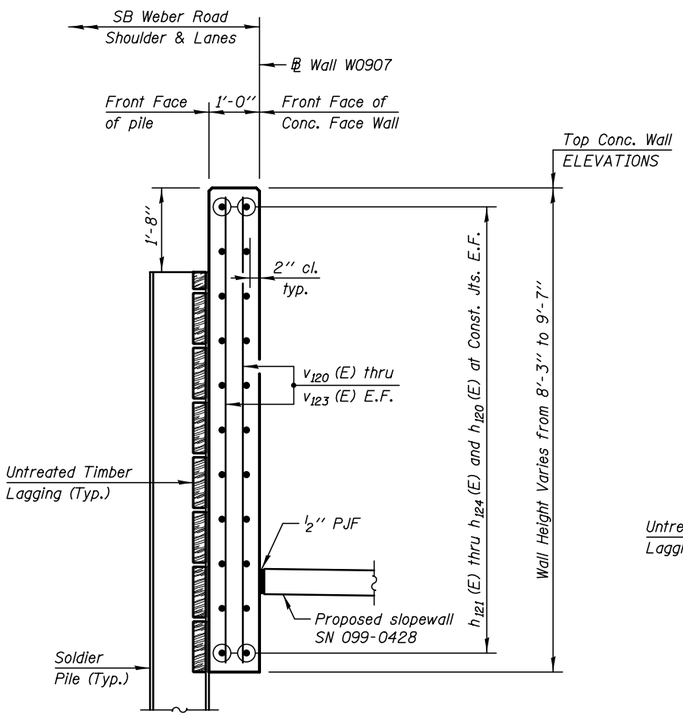
KNIGHT
Engineers & Architects

	DESIGNED - TB	REVISED	
	CHECKED - WPM	REVISED	
SCALE - NONE	DRAWN - TB	REVISED	
DATE - 5/12/2017	CHECKED - WPM	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

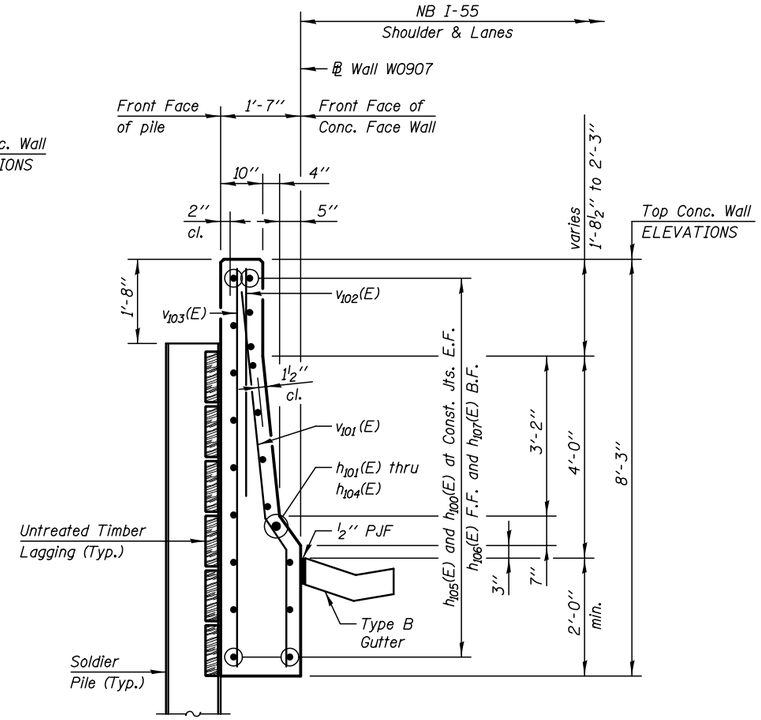
WALL DETAILS
STRUCTURE NUMBER 099-0907
SHEET NO. SC-6 OF 9 SHEETS

F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1135
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		



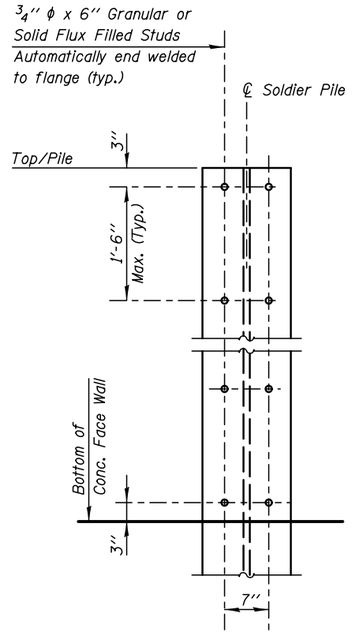
TYPICAL WALL SECTION A

Sta. 11+21.75 to Sta. 11+67.75



TYPICAL WALL SECTION B

Sta. 10+33.33 to Sta. 11+20.00



STUD SHEAR CONNECTORS LAYOUT

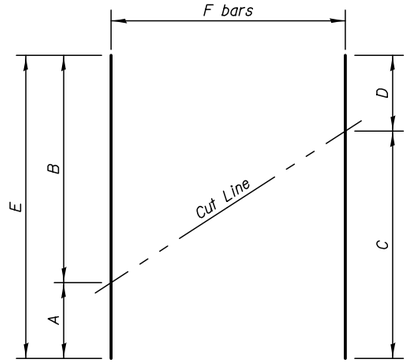
BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
h100(E)	38	#5	7'-6"	
h101(E)	1	#8	21'-4"	
h102(E)	1	#8	16'-8"	
h103(E)	2	#8	26'-8"	
h104(E)	1	#8	28'-10"	
h105(E)	38	#5	26'-8"	
h106(E)	10	#5	28'-9"	
h107(E)	9	#5	29'-6"	
h108(E)	10	#5	5'-2"	
h109(E)	2	#5	10'-3"	
h110(E)	2	#5	21'-8"	
h111(E)	5	#5	34'-0"	
h112(E)	8	#5	27'-8"	
h120(E)	20	#5	7'-6"	
h121(E)	38	#5	24'-3"	
h122(E)	2	#5	22'-3"	
h123(E)	2	#5	5'-7"	
h124(E)	4	#5	7'-0"	
v101(E)	100	#5	8'-0"	
v102(E)	100	#5	5'-3"	
v103(E)	95	#4	7'-11"	
v104(E)	8	#5	8'-11"	
v105(E)	11	#4	10'-6"	
v120(E)	2	#4	7'-11"	
v121(E)	84	#4	8'-3"	
v122(E)	3	#4	17'-6"	
v123(E)	4	#4	9'-3"	

Structure Excavation	Cu. Yd.	135.0
Concrete Structures	Cu. Yd.	55.0
Protective Coat	Sq. Yd.	105.0
Stud Shear Connectors	Each	360
Reinforcement Bars, Epoxy Coated	Pound	6560
Drilling and Setting Soldier Piles (In Soil)	Cu. Ft.	2171.0
Furnishing Soldier Piles (HP Section)	Foot	662.0

PILE TYPE SUMMARY

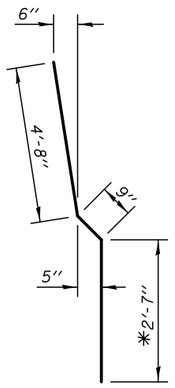
Furnishing Soldier Piles (HP12x53)	Foot	408.0
Furnishing Soldier Piles (HP12x63)	Foot	104.0
Furnishing Soldier Piles (HP14x73)	Foot	150.0



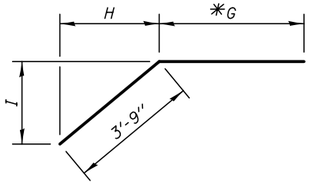
BAR CUTTING DIAGRAM

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

BAR	A	B	C	D	E	F
v105(E)	2'-7"	6'-4"	4'-4"	4'-7"	8'-11"	8
v106(E)	2'-7"	7'-11"	5'-2"	5'-4"	10'-6"	11
v122(E)	8'-3"	9'-3"	9'-3"	8'-3"	17'-6"	3
h111(E)	10'-0"	24'-0"	24'-0"	10'-0"	34'-0"	5



BAR v_{101}(E)



BARS h_{108}(E), h_{109}(E) & h_{123}(E)

G, H & I DIMENSIONS

BAR	G	H	I
h108(E)	*1'-5"	1'-9"	3'-4"
h109(E)	6'-6"	3'-8"	11"
h123(E)	1'-10"	3'-5"	1'-4"

*Cut as req'd to fit.

LEGEND

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

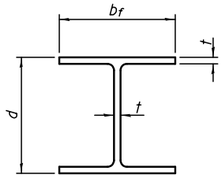
KNIGHT
Engineers & Architects

	DESIGNED - TB	REVISED	
	CHECKED - WPM	REVISED	
SCALE - NONE	DRAWN - TB	REVISED	
DATE - 1/31/2018	CHECKED - WPM	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

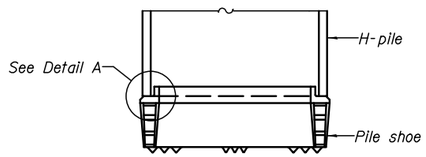
WALL SECTIONS AND DETAILS
STRUCTURE NUMBER 099-0907
SHEET NO. SC-7 OF 9 SHEETS

F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1136
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		

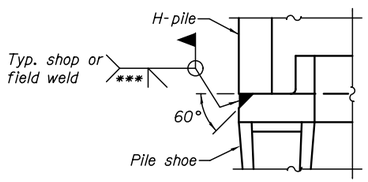


STEEL PILE TABLE

Designation	Depth d	Flange width b_f	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	11/16"	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"	11/16"	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"

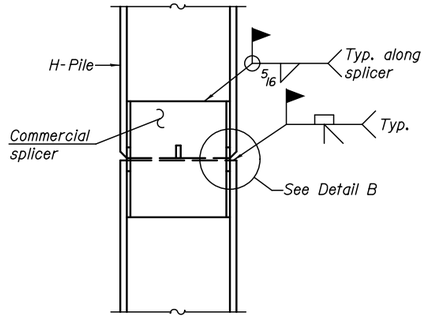


ELEVATION



DETAIL A

H-PILE SHOE ATTACHMENT



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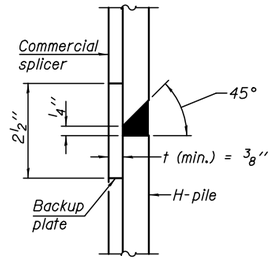
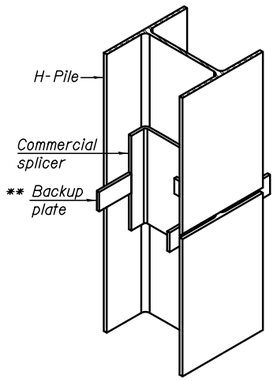
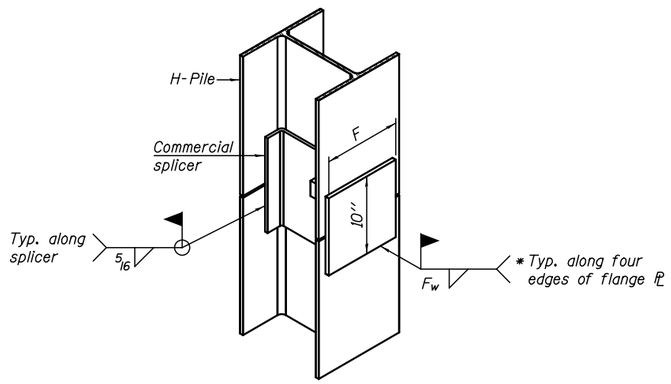


DETAIL "B"



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



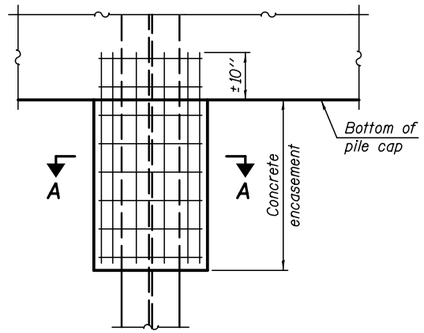
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

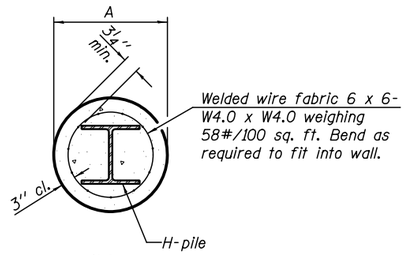
* Interrupt welds 1/4" from end of web and/or each flange.

** Remove portions of backup plates that extend outside the flanges.

*** Weld size per pile shoe manufacturer (5/16" min.).



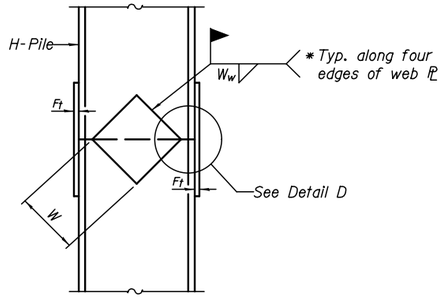
ELEVATION



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

SECTION A-A

PILE ENCASEMENT



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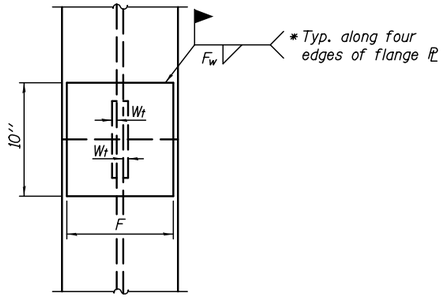
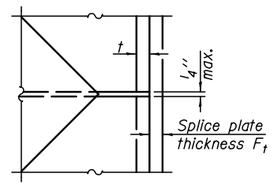


END VIEW

WELDED PLATE FIELD SPLICE



DETAIL D

Designation	F	F_f	F_w	W	W_f	W_w
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"	11/16"	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"	11/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	11/16"	6 1/2"	5/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	5/8"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	7"	5/8"	7/16"	4 1/4"	1/2"	3/8"

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

F-HP 1-27-12

KNIGHT Engineers & Architects

	DESIGNED - TB	REVISED	
	CHECKED - WPM	REVISED	
SCALE - NONE	DRAWN - SMA	REVISED	
DATE - 5/12/2017	CHECKED - TB	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HP PILE DETAILS
STRUCTURE NUMBER 099-0907
SHEET NO. SC-8 OF 9 SHEETS

F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1137
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
GSG Consultants

SOIL BORING LOG

Date 2/6/15

ROUTE Weber Road DESCRIPTION Proposed Weber Road & I-55 Improvements LOGGED BY JJR

SECTION Normantown Road to 135th Street/Romeo Road LOCATION Retaining Wall, SEC. , TWP. , RNG. , Latitude , Longitude

COUNTY Will County DRILLING METHOD HSA HAMMER TYPE AUTO

STRUCT. NO. 099-0907
Station NA

BORING NO. RW-05 (@ W0907)
Station 810+65 (11+41)
Offset 82.00ft LT (41.00ft RT)
Ground Surface Elev. 650.00 ft

Surface Water Elev. NA ft
Stream Bed Elev. NA ft

Groundwater Elev.:
First Encounter None ft
Upon Completion None ft
After NA Hrs. NA ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
6 inches of Asphalt	649.50			
Gray, Moist FILL: SAND, with gravel	648.50	13		
Stiff to Very Stiff Black and Gray, Moist to Very Moist CLAY, trace organics (CL)		5 8	3.0 P	27
		3		
		4 4	3.0 P	24
	-5			
		2		
	643.00	3 4	1.7 B	20
Very Stiff to Hard Brown and Gray, Moist to Very Moist SILTY CLAY, trace gravel (CL/ML)		4		
		8 9	4.6 B	18
	-10			
		7		
		8 10	4.0 P	17
		7		
		8 8	3.5 P	27
	-15			
	633.50	3		
Very Stiff Gray, Moist SILTY CLAY, trace gravel (CL/ML)		6 7	3.3 B	15
		3		
		5 8	3.5 B	16
	-20			

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Very Stiff Gray, Moist SILTY CLAY, trace gravel (CL/ML) (continued)		5		
		6 8	2.5 B	21
		3		
		5 7	2.5 B	21
	625.00	-25		
End of Boring				
		-30		
		-35		
		-40		

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

BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
GSG Consultants

SOIL BORING LOG

Date 2/6/15

ROUTE Weber Road DESCRIPTION Proposed Weber Road & I-55 Improvements LOGGED BY JJR

SECTION Normantown Road to 135th Street/Romeo Road LOCATION Retaining Wall, SEC. , TWP. , RNG. , Latitude , Longitude

COUNTY Will County DRILLING METHOD HSA HAMMER TYPE AUTO

STRUCT. NO. 099-0907
Station NA

BORING NO. RW-06 (@ W0907)
Station 811+47 (9+92)
Offset 72.00ft RT (0.40ft RT)
Ground Surface Elev. 650.00 ft

Surface Water Elev. NA ft
Stream Bed Elev. NA ft

Groundwater Elev.:
First Encounter 643.0 ft ▼
Upon Completion None ft
After NA Hrs. NA ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
6 inches of Asphalt	649.50			
Gray, Moist FILL: SAND, with gravel	648.50	6		
Very Stiff Black and Gray, Moist CLAY, trace organics and sand (CL)		5 7	2.5 P	20
		5		
		3 4	2.0 P	22
	-5			
		2		
	643.50	▼		
Very Stiff Brown and Gray, Moist SILTY CLAY, trace gravel (CL/ML)		2 2	3.0 P	20
		4		
		4 5	2.5 B	18
	-10			
		4		
		4 6	2.5 B	22
		2		
		4 6	2.9 B	20
	635.00	-15		
Stiff to Very Stiff Gray, Moist SILTY CLAY, trace gravel (CL/ML)		2		
		4 7	2.5 B	21
		6		
		9 10	2.5 B	17
	-20			

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Stiff to Very Stiff Gray, Moist SILTY CLAY, trace gravel (CL/ML) (continued)		3		
		4 6	1.9 B	21
		3		
		5 6	2.5 B	20
	625.00	-25		
End of Boring				
		-30		
		-35		
		-40		

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

BBS, form 137 (Rev. 8-99)

KNIGHT
Engineers & Architects

	DESIGNED - GSG	REVISED	
	CHECKED - WPM	REVISED	
SCALE - NONE	DRAWN - TB	REVISED	
DATE - 5/12/2017	CHECKED - WPM	REVISED	

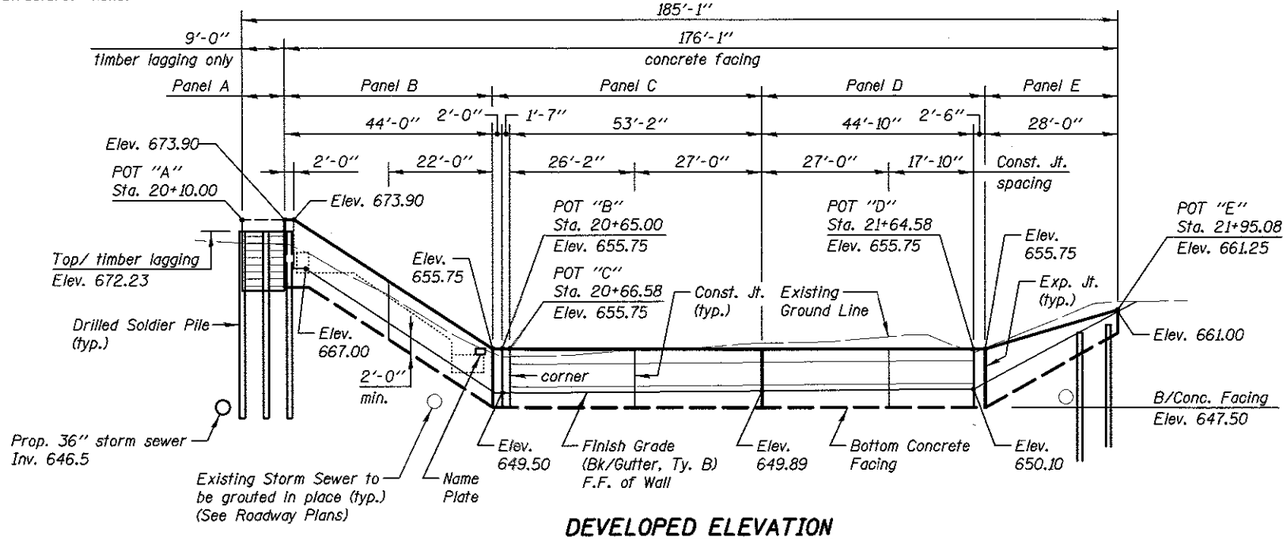
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS
STRUCTURE NUMBER 099-0907
SHEET NO. SC-9 OF 9 SHEETS

F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1138
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		

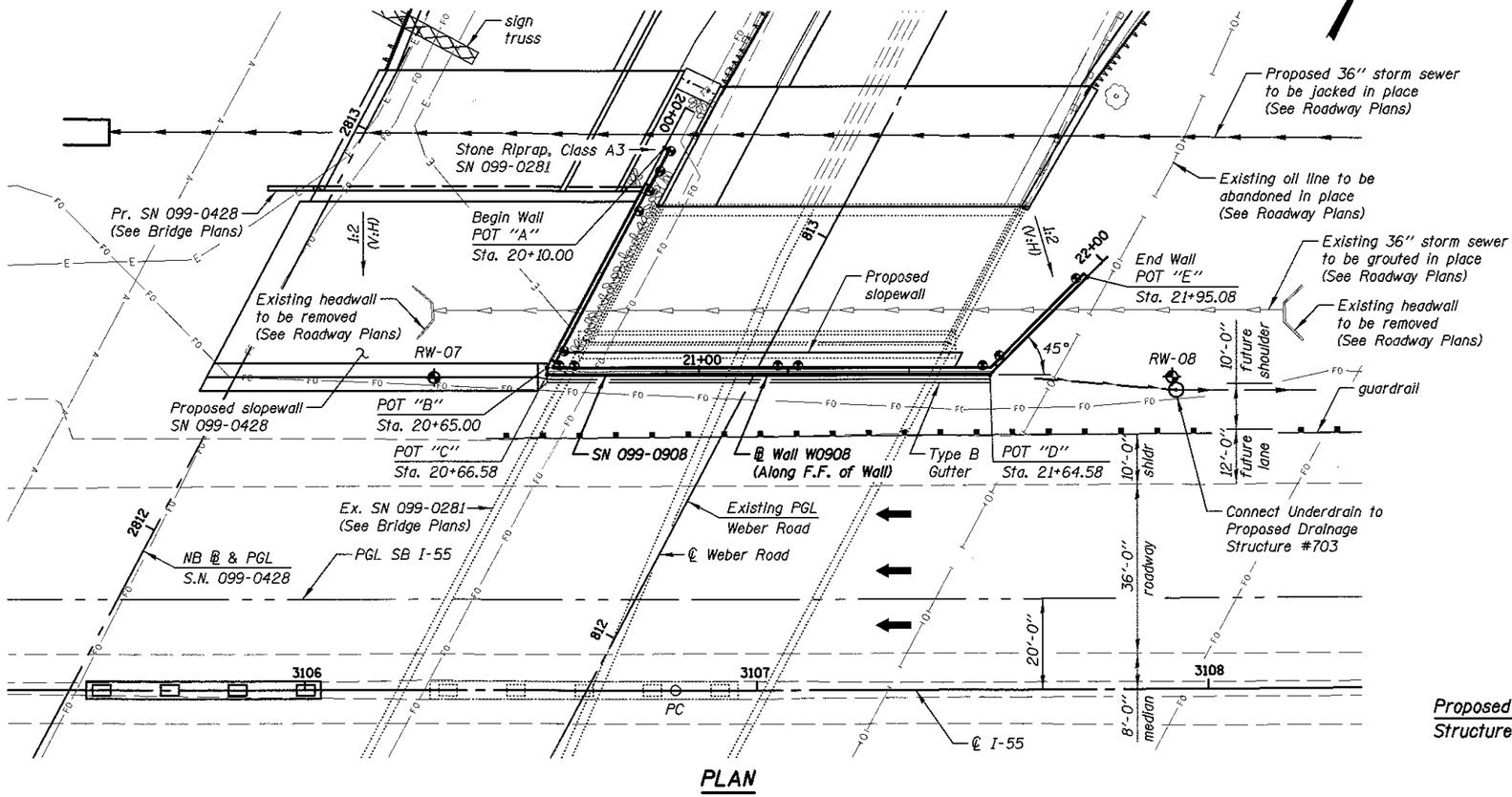
Bench Mark: BM Lin17 Chiseled "X" on south bolt of round light pole foundation between I-55 southbound and existing I-55 ramp to Weber Road Mile marker 263.71 sign. Elev. 654.37

Existing Structure: None.



DEVELOPED ELEVATION

(Looking at F.F. of Wall)



PLAN

DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge Design Specifications, Customary U.S. Units, 7th Edition with 2015 Interims

DESIGN STRESSES

FIELD UNITS

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

INDEX OF DRAWINGS

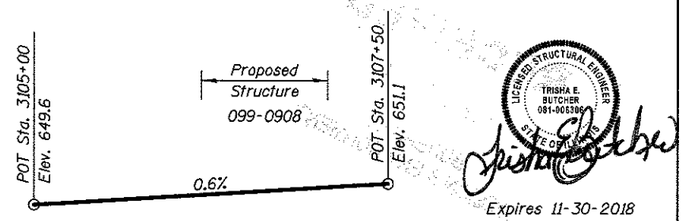
SHT NO.	TITLE
SD-1	General Plan and Elevation
SD-2	Total Bill of Material & Miscellaneous Details
SD-3	Typical Wall Sections
SD-4	Plan and Elevation - 1
SD-5	Plan and Elevation - 2
SD-6	Wall Details
SD-7	Wall Sections and Details
SD-8	HP Pile Details
SD-9	Soil Boring Logs

CURVE DATA

℄ I-55
Curve I-55-2
Δ = 5° 33' 40" (LT)
D = 0° 21' 17"
R = 16,149.49'
T = 784.36'
L = 1,567.49'
E = 19.04'
SE = normal crown
PC STA. 3106+81.93
PT STA. 3122+49.42
PI STA. 3114+66.30

℄ Wall W0908
(Offsets from ℄ I-55 and ℄ Weber Road to F.F. of wall)
POT "A"
Sta. 20+10.00 - ℄ Wall 0908 =
Sta. 3106+79.57, 119.67' Lt. - ℄ I-55
Sta. 813+00.74, 41.0' Lt. - ℄ Weber Road
POT "B"
Sta. 20+65.00 - ℄ Wall 0908 =
Sta. 3106+53.72, 71.13' Lt. - ℄ I-55
Sta. 812+45.74, 41.0' Lt. - ℄ Weber Road
POT "C"
Sta. 20+66.58 - ℄ Wall 0908 =
Sta. 3106+53.72, 69.54' Lt. - ℄ I-55
Sta. 812+44.34, 40.26' Lt. - ℄ Weber Road
POT "D"
Sta. 21+64.58 - ℄ Wall 0908 =
Sta. 3107+52.02, 69.41' Lt. - ℄ I-55
Sta. 812+90.42, 46.24' Rt. - ℄ Weber Road
POT "E"
Sta. 21+95.08 - ℄ Wall 0908 =
Sta. 3107+73.80, 90.87' Lt. - ℄ I-55
Sta. 813+19.59, 55.13' Rt. - ℄ Weber Road

APPROVED
For Structural Adequacy Only
Engineer of Bridges & Structures



TRISHA E. BUTCHER 081-005306 LICENSED STRUCTURAL ENGINEER SITE OPERATIONS
Expires 11-30-2018

I-55 S.B. - EXISTING PROFILE GRADE LINE

Date: 05/12/2017
for drawings SD-1 thru SD-8

Legend

- Soil Borings
- F.F. Front Face
- B.F. Back Face
- POT Point on Tangent

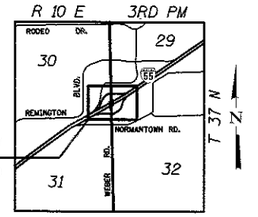
Notes

See Sheet SD-4 for name plate location.

See Roadway Plans for Concrete Gutter, Type B details.

See Roadway Drainage Plans for Drainage Structure Locations.

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



LOCATION SKETCH

GENERAL PLAN & ELEVATION

WEBER ROAD
F.A.P. RTE. 856 SEC. (99-1HB-1) R-1
WILL COUNTY
STA. 3106+54 TO 3107+74
STRUCTURE NO. 099-0908

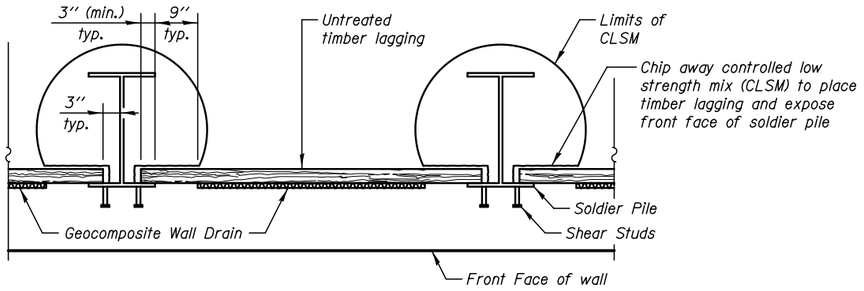
KNIGHT Engineers & Architects		DESIGNED - TB	REVISED
		CHECKED - WPM	REVISED
	SCALE - NONE	DRAWN - TB	REVISED
	DATE - 5/12/2017	CHECKED - WPM	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
STRUCTURE NUMBER 099-0908
SHEET NO. SD-1 OF 9 SHEETS

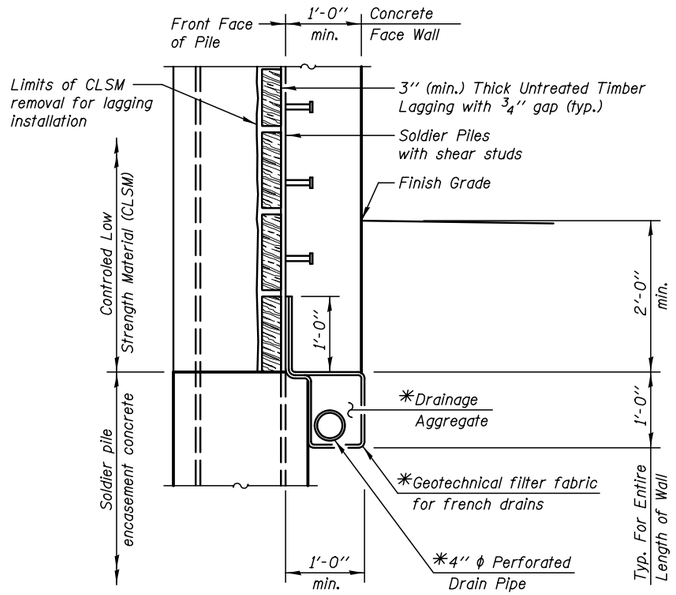
F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1139
		CONTRACT NO. 60X10		

* FAI 55, FAP 856 ILLINOIS FED. AID PROJECT



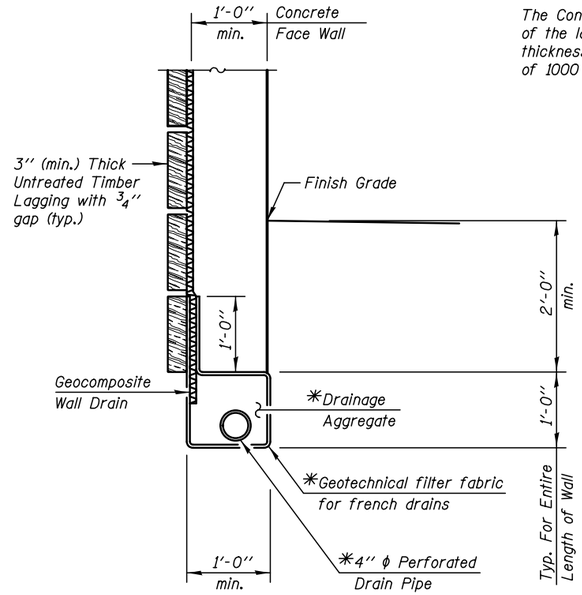
SECTION THRU DRILLED SOLDIER PILE WALL

(Reinforcement not shown)



DETAIL A

(At Soldier Piles)



DETAIL B

(Between Soldier Piles)

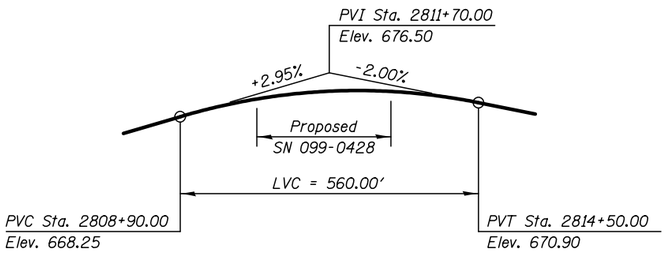
UNDERDRAIN DETAIL

wall parallel to Weber Road shown
wall parallel to I-55 similar

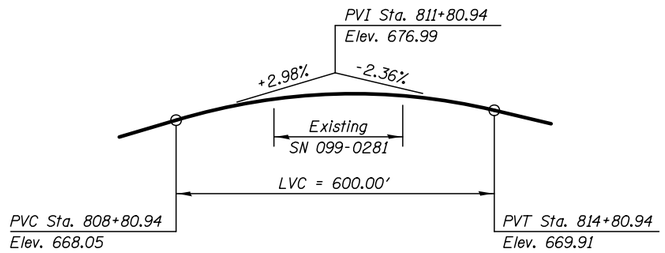
*Cost Included with ''Pipe Underdrains for Structures''

Note

No ''Pipe Underdrain for Structures'' or ''Geocomposite Wall Drain'' in Panel A.



℄ NORTHBOUND WEBER ROAD - PROPOSED PROFILE GRADE LINE



℄ WEBER ROAD - EXISTING PROFILE GRADE LINE

GENERAL NOTES

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

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

Reinforcement bars designated (E) shall be epoxy coated.

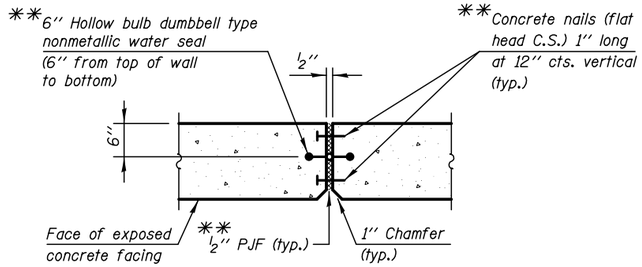
Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall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

Slope wall shall be reinforced with welded wire fabric, 6 in. x 6 in. - W4.0 x W4.0, weighing 58 lbs. per 100 sq. ft.

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

TOTAL BILL OF MATERIAL

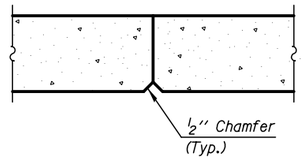
ITEM	UNIT	TOTAL
Slope Wall Removal	Sq. Yd.	220.0
Structure Excavation	Cu. Yd.	183.0
Concrete Structures	Cu. Yd.	60.0
Protective Coat	Sq. Yd.	109.0
Stud Shear Connectors	Each	386
Reinforcement Bars, Epoxy Coated	Pound	6960
Slope Wall 4 Inch	Sq. Yd.	39.0
Name Plates	Each	1
Furnishing Soldier Piles (HP Section)	Foot	702.0
Drilling And Setting Soldier Piles (In Soil)	Cu. Ft.	2486.0
Untreated Timber Lagging	Sq. Ft.	1194.0
Geocomposite Wall Drain	Sq. Yd.	66.0
Pipe Underdrains for Structures 4''	Foot	217.0
Granular Backfill For Structures	Cu. Yd.	49.0



**Cost included with ''Concrete Structures''

WALL EXPANSION JOINT DETAIL

(Reinforcement not shown)



WALL CONSTRUCTION JOINT DETAIL

(Reinforcement not shown)

STATION 3106+54 TO 3107+74
BUILT 20 BY
STATE OF ILLINOIS
F.A.P. RTE. 856 SEC. (99-1HB-1) R-1
LOADING HL-93
STRUCTURE NO. 099-0908

NAME PLATES

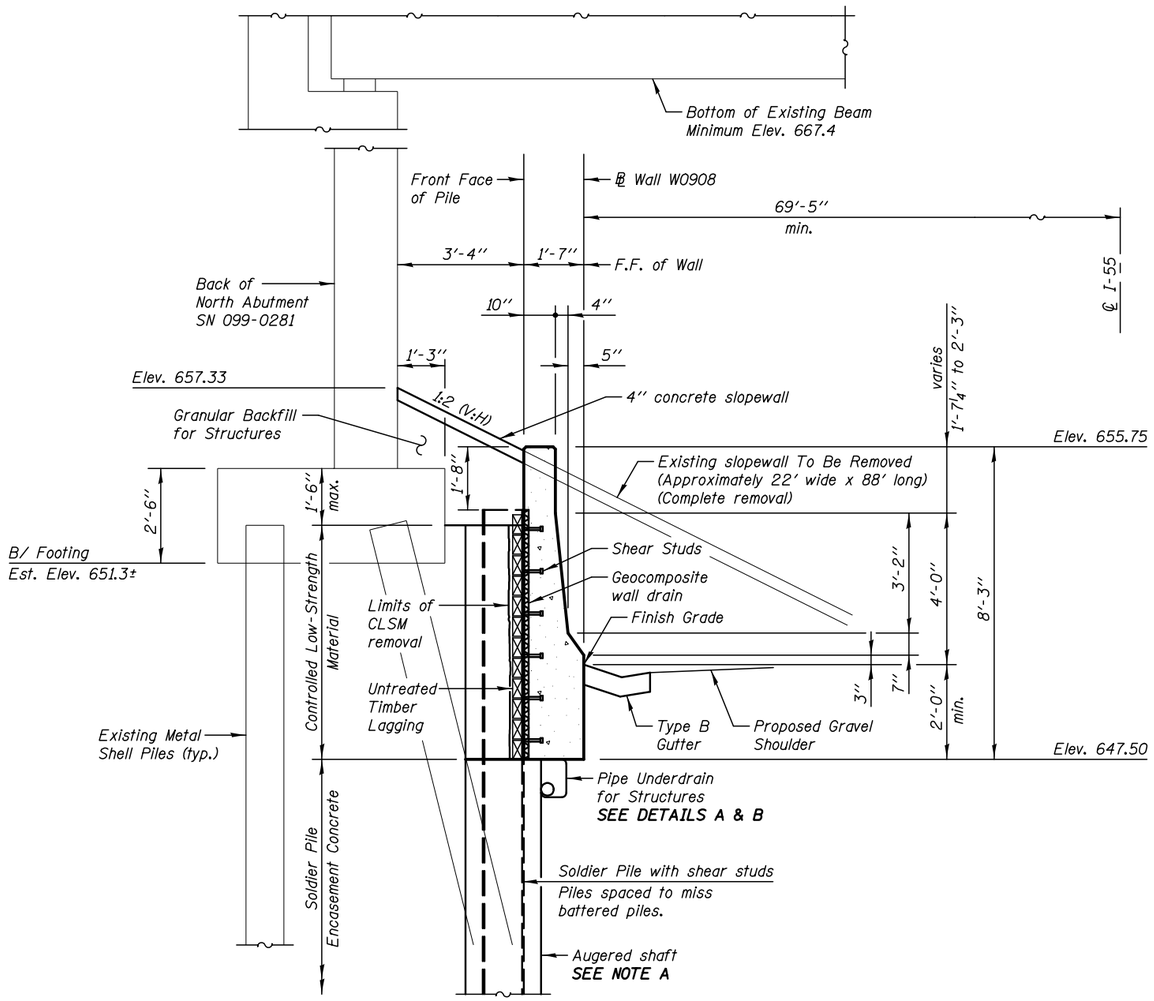
See Std. 515001

KNIGHT Engineers & Architects		DESIGNED - TB	REVISED
		CHECKED - WPM	REVISED
	SCALE - NONE	DRAWN - TB	REVISED
	DATE - 5/12/2017	CHECKED - WPM	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

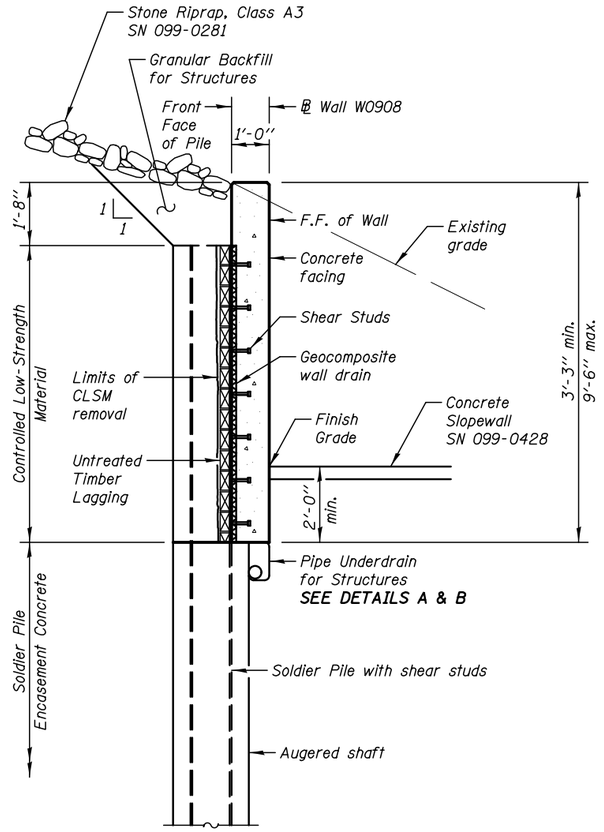
TOTAL BILL OF MATERIAL & MISCELLANEOUS DETAILS
STRUCTURE NUMBER 099-0908
SHEET NO. SD-2 OF 9 SHEETS

F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1140
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		



TYPICAL WALL SECTION
PANEL C AND PANEL D

Parallel to I-55
(Horiz. dim ⊥ Rt. L's)



TYPICAL WALL SECTION
PANEL B AND PANEL E

Parallel/Skewed to Weber Road
(Horiz. dim ⊥ Rt. L's)
PANEL A sim. (Timber Lagging Only)

NOTE A

The existing beams on the existing bridge (SN 099-0281) will remain in place during wall construction and will restrict clearance under the bridge to an estimated 15 feet during augering of the holes and setting of the soldier piles. Special, low clearance, equipment will be required and piles will need to be spliced. Any field splices required due to the restricted vertical clearance of the existing beams will not be paid for separately, but shall be included in the cost of "Furnishing Soldier Piles" of the type specified.

Suggested Sequence of Construction

1. *Remove existing slopewall - complete removal*
2. *Excavate in front of existing abutment 1'-6" (max.) below top of footing. Estimated B/excavation Elev. 652.3±.*
3. *Auger holes for soldier pile wall under bridge.*
4. *Construct wall.*

Notes:

For Details A & B, See Sheet SD-2

For additional Wall Section Details, See Sheet SD-7.

Panel A and portions of the timber lagging in Panel B are intended to be used as a Temporary Soil Retention System for construction of the north abutment for SN 099-0428 and installation of the waterproofing system on the north abutment approach bent for SN 099-0281. See SA-01 to SA-36 for additional details related to SN 099-0428. See SB-01 to SB-40 for additional details related to SN 099-0281.

KNIGHT
Engineers & Architects

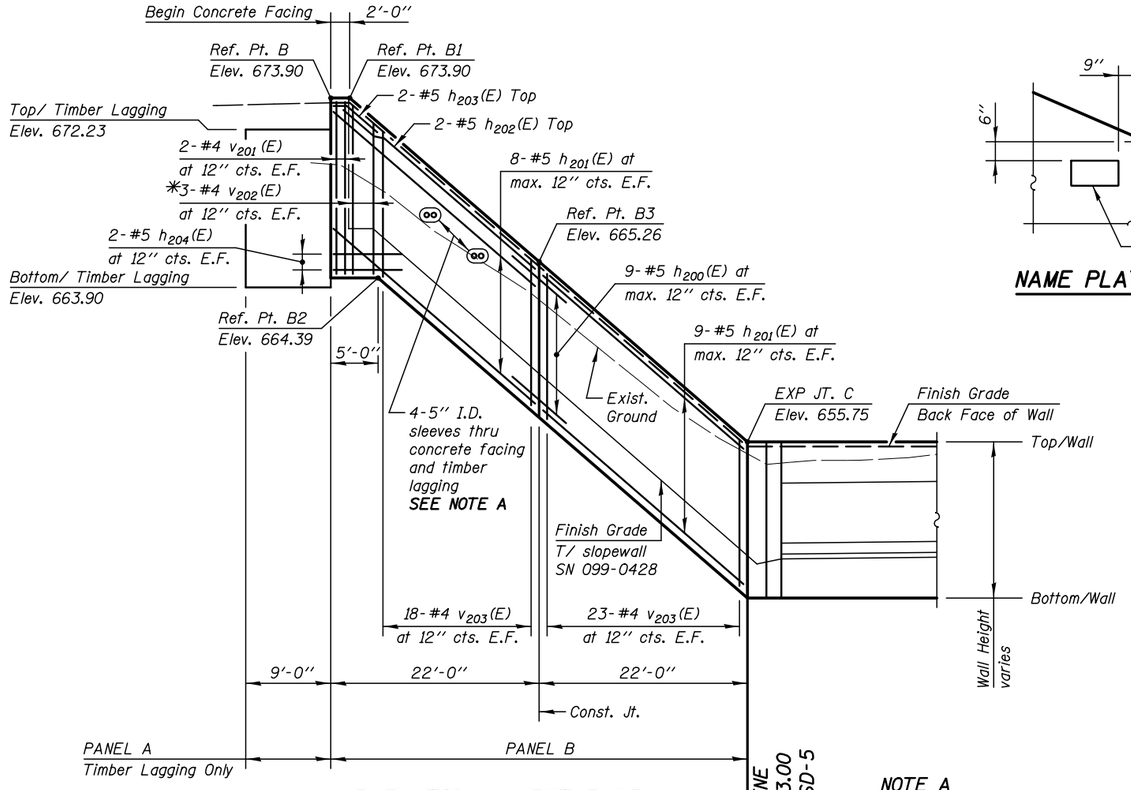
	DESIGNED - TB	REVISED	
	CHECKED - WPM	REVISED	
SCALE - NONE	DRAWN - TB	REVISED	
DATE - 5/12/2017	CHECKED - WPM	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

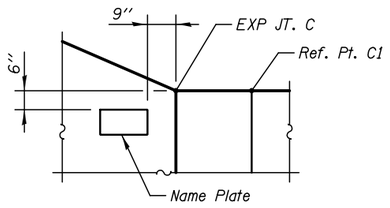
TYPICAL WALL SECTIONS
STRUCTURE NUMBER 099-0908
SHEET NO. SD-3 OF 9 SHEETS

F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1141
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		

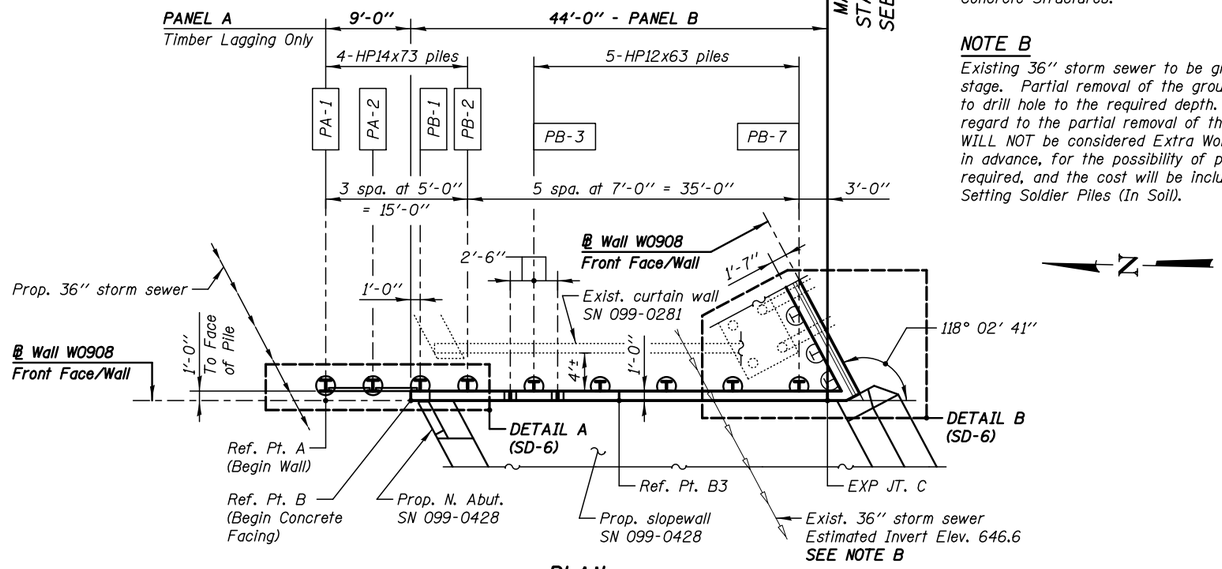
Note:
For Top/Wall Elevations, Bottom/Wall Elevations & Wall Height SEE TABLE.



ELEVATION - WEST FACE
(Looking East)



NAME PLATE LOCATION



PLAN
(PANELS A & B)

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
Existing 36" storm sewer to be grouted in place during a previous stage. Partial removal of the grouted storm sewer may be required to drill hole to the required depth. Obstruction mitigation, with regard to the partial removal of the grouted storm sewer, as required, WILL NOT be considered Extra Work. The contractor shall prepare, in advance, for the possibility of partial removal of storm sewer, as required, and the cost will be included in the cost of Drilling and Setting Soldier Piles (In Soil).

PILE DATA:

Pile No.	Top Elev.	Bottom Elev.	Length Ft.	No of Studs	Pile Size
PA-1	672.23	646.23	26.00	-	HP 14x73
PA-2	672.23	646.23	26.00	-	HP 14x73
PB-1	672.23	646.23	26.00	12	HP 14x73
PB-2	670.50	646.50	24.00	12	HP 14x73
PB-3	667.48	645.48	22.00	12	HP 12x63
PB-4	664.45	644.45	20.00	12	HP 12x63
PB-5	661.43	641.43	20.00	12	HP 12x63
PB-6	658.40	638.40	20.00	12	HP 12x63
PB-7	655.38	635.38	20.00	12	HP 12x63

SHAFT SIZES

Pile Size	Shaft Excavation Size
HP12	2'-0"
HP14	2'-0"

Notes:
All Dimensions are along Front Face of Wall.

For Details A & B, See Sheet SD-6.

For Typical Sections & Bill of Material, See Sheet SD-7.

*See Bar Cutting Diagram on Sheet SD-7.

Prior to augering ANY holes in Panel C, Panel D or piles PB-6 or PB-7, verify the location of the edge of the existing footing. See Sheet SD-6 for additional notes and details.

Panel A and portions of the timber lagging in Panel B are intended to be used as a Temporary Soil Retention System for construction of the north abutment for SN 099-0428 and installation of the waterproofing system on the north abutment approach bent for SN 099-0281. See SA-01 to SA-36 for additional details related to SN 099-0428. See SB-01 to SB-40 for additional details related to SN 099-0281.

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

Min Bar Laps
#5 Bars = 3'-7" (Horiz. Top Bars)

WALL JOINT LOCATIONS, HEIGHTS & ELEVATIONS

Location Ref. Points	Station on ℄ W0907	Wall Height	Top/Wall Elevation	Bottom/Wall Elevation	Finish Grade Elev.
Begin Wall - A	20+10.00	10'-0"	672.23	663.90	664.50
Begin Facing - B	20+19.00	9'-6"	673.90	664.40	667.00
Grade Break - B1	20+21.00	9'-6"	673.90	664.40	667.00
Grade Break - B2	20+24.00	8'-2½"	672.60	664.39	666.78
C.J. - B3	20+41.00	8'-2¾"	665.26	657.03	659.34
Exp. Jt. - C	20+63.00	8'-3"	655.75	647.50	649.74

KNIGHT
Engineers & Architects

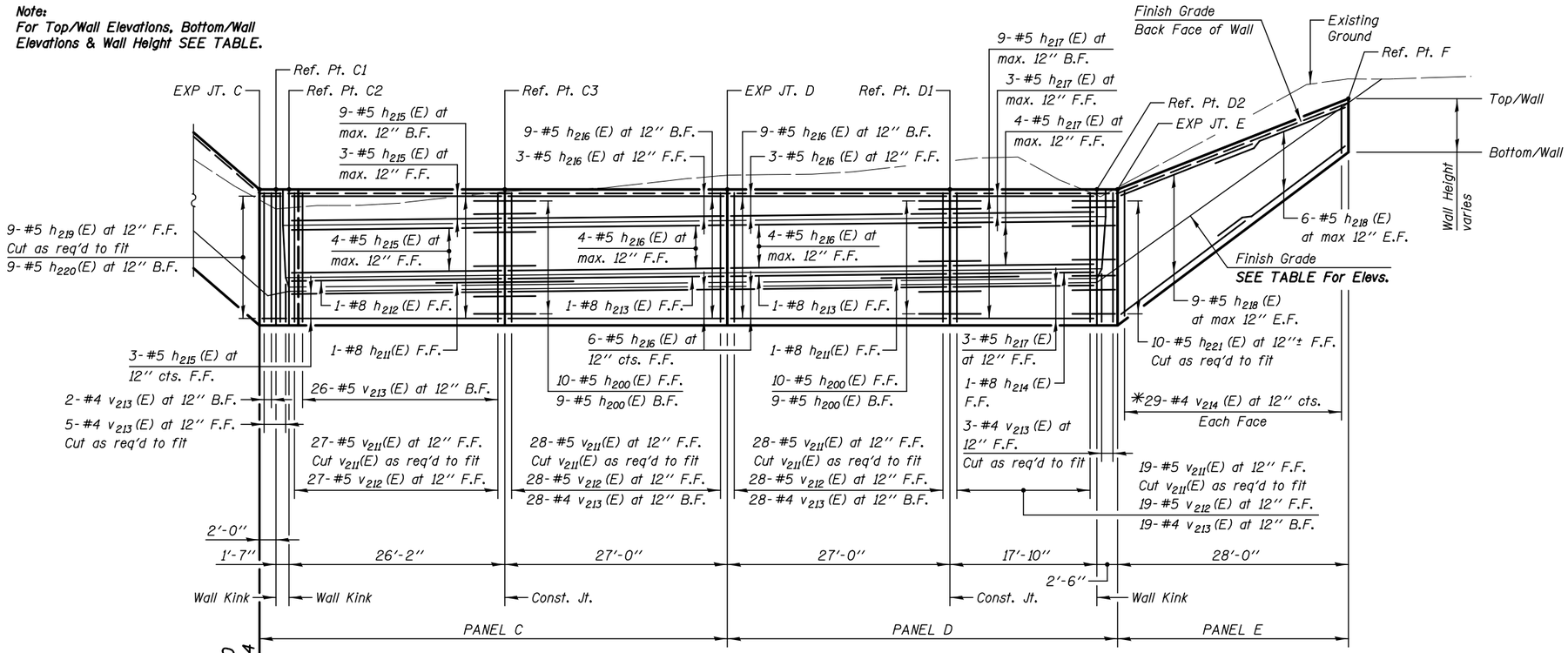
	DESIGNED - TB	REVISED	
	CHECKED - WPM	REVISED	
SCALE - NONE	DRAWN - TB	REVISED	
DATE - 5/12/2017	CHECKED - WPM	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLAN AND ELEVATION – 1
STRUCTURE NUMBER 099-0908
SHEET NO. SD-4 OF 9 SHEETS

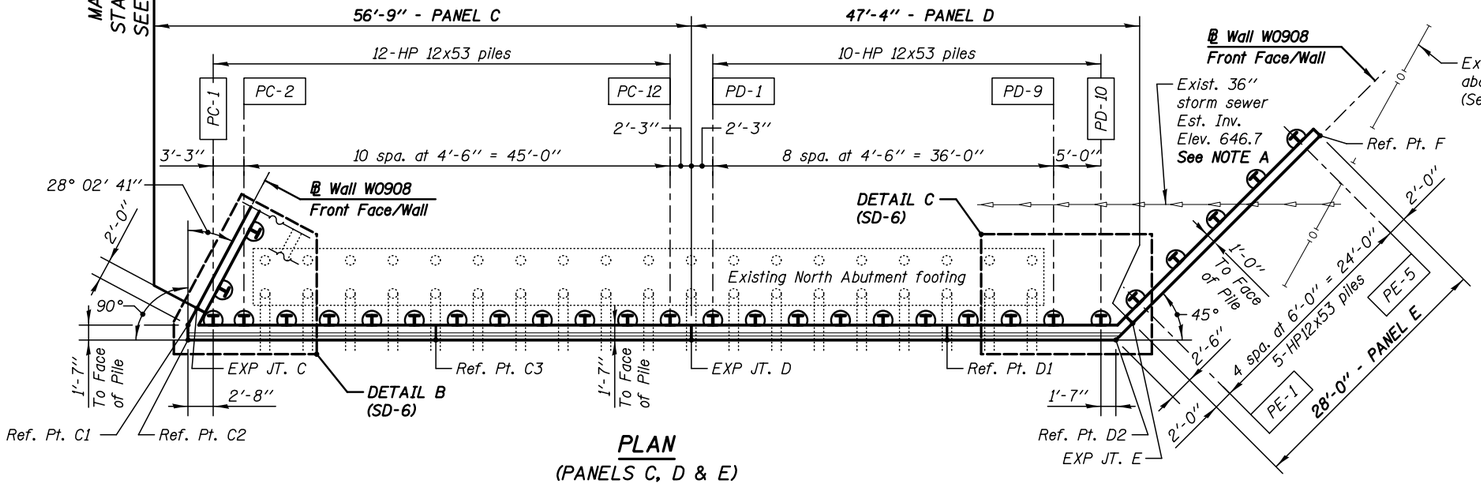
F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1142
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		

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



DEVELOPED ELEVATION - SOUTH FACE
(Looking North)

MATCH LINE
STA. 20+63.00
SEE SHT. SD-4



PLAN
(PANELS C, D & E)

PILE DATA:

Pile No.	Top Elev.	Bottom Elev.	Length Ft.	No of Studs	Pile Size
PC-1	654.08	635.08	19.00	12	HP 12x53
PC-2	654.08	635.08	19.00	12	HP 12x53
PC-3	654.08	635.08	19.00	12	HP 12x53
PC-4	654.08	635.08	19.00	12	HP 12x53
PC-5	654.08	635.08	19.00	12	HP 12x53
PC-6	654.08	635.08	19.00	12	HP 12x53
PC-7	654.08	635.08	19.00	12	HP 12x53
PC-8	654.08	635.08	19.00	12	HP 12x53
PC-9	654.08	635.08	19.00	12	HP 12x53
PC-10	654.08	635.08	19.00	12	HP 12x53
PC-11	654.08	635.08	19.00	12	HP 12x53
PC-12	654.08	635.08	19.00	12	HP 12x53
PD-1	654.08	635.08	19.00	12	HP 12x53
PD-2	654.08	635.08	19.00	12	HP 12x53
PD-3	654.08	635.08	19.00	12	HP 12x53
PD-4	654.08	635.08	19.00	12	HP 12x53
PD-5	654.08	635.08	19.00	12	HP 12x53
PD-6	654.08	635.08	19.00	12	HP 12x53
PD-7	654.08	635.08	19.00	12	HP 12x53
PD-8	654.08	635.08	19.00	12	HP 12x53
PD-9	654.08	635.08	19.00	12	HP 12x53
PD-10	654.08	635.08	19.00	12	HP 12x53
PE-1	654.48	636.48	18.00	10	HP 12x53
PE-2	655.65	638.65	17.00	10	HP 12x53
PE-3	656.83	640.83	16.00	8	HP 12x53
PE-4	658.01	643.01	15.00	6	HP 12x53
PE-5	659.19	645.19	14.00	4	HP 12x53

Notes:

All Dimensions are along Front Face of Wall.

For Details B & C, See Sheet SD-6.

For Typical Sections & Bill of Material, See Sheet SD-7.

*See Bar Cutting Diagram on Sheet SD-7.

Prior to augering ANY holes in Panel C, Panel D or piles PB-6 or PB-7, verify the location of the edge of the existing footing. See Sheet SD-6 for additional notes and details.

Min Bar Laps

#5 Bars = 3'-7'' (Horiz. Top Bars)
#8 Bars = 8'-2'' (Horiz. Top Bars)

LEGEND

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

WALL JOINT LOCATIONS, HEIGHTS & ELEVATIONS

Location Ref. Points	Station on ℄ W0908	Wall Height	Top/Wall Elevation	Bottom/Wall Elevation	Finish Grade Elev.
Exp. Jt. - C	20+63.00	8'-3''	655.75	647.50	649.74
Wall Kink - C1	20+65.00	8'-3''	655.75	647.50	649.50
Wall Kink - C2	20+66.58	8'-3''	655.75	647.50	649.57
C.J. - C3	20+92.75	8'-3''	655.75	647.50	649.73
Exp. Jt. - D	21+19.75	8'-3''	655.75	647.50	649.89
C.J. - D1	21+46.75	8'-3''	655.75	647.50	650.05
Wall Kink - D2	21+64.58	8'-3''	655.75	647.50	650.10
Exp. Jt. - E	21+67.08	8'-3''	655.75	647.50	650.99
End Wall - F	21+95.08	3'-3''	661.25	658.00	661.00

SHAFT SIZES

Pile Size	Shaft Excavation Size
HP12	2'-0''

NOTE A

Existing 36'' storm sewer to be grouted in place during a previous stage. Partial removal of the grouted storm sewer may be required to drill hole to the required depth. Obstruction mitigation, with regard to the partial removal of the grouted storm sewer, as required, WILL NOT be considered Extra Work. The contractor shall prepare, in advance, for the possibility of partial removal of storm sewer, as required, and the cost will be included in the cost of Drilling and Setting Soldier Piles (In Soil).

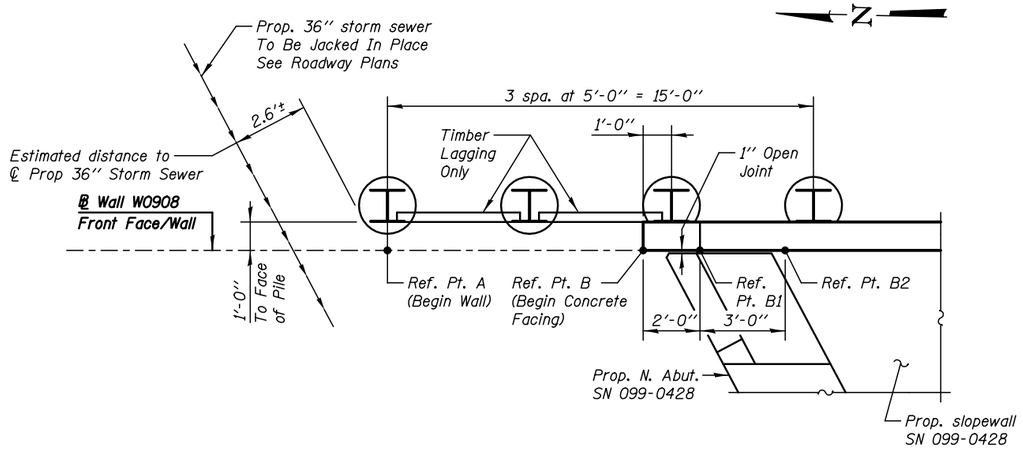
KNIGHT
Engineers & Architects

	DESIGNED - TB	REVISED	
	CHECKED - WPM	REVISED	
SCALE - NONE	DRAWN - TB	REVISED	
DATE - 5/12/2017	CHECKED - WPM	REVISED	

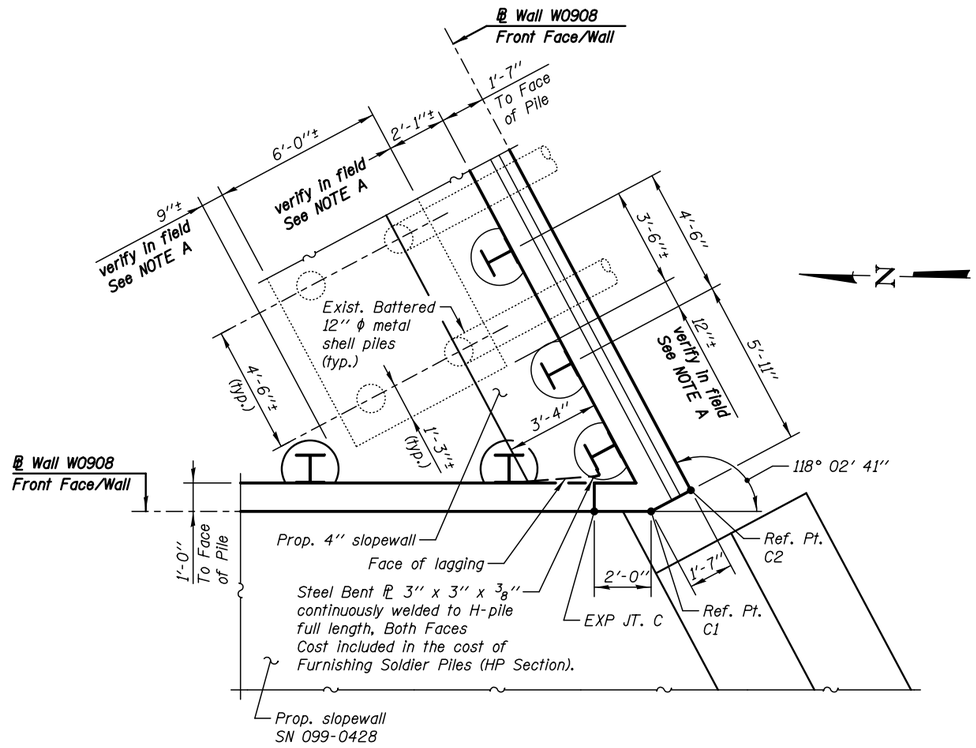
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLAN AND ELEVATION – 2
STRUCTURE NUMBER 099–0908
SHEET NO. SD-5 OF 9 SHEETS

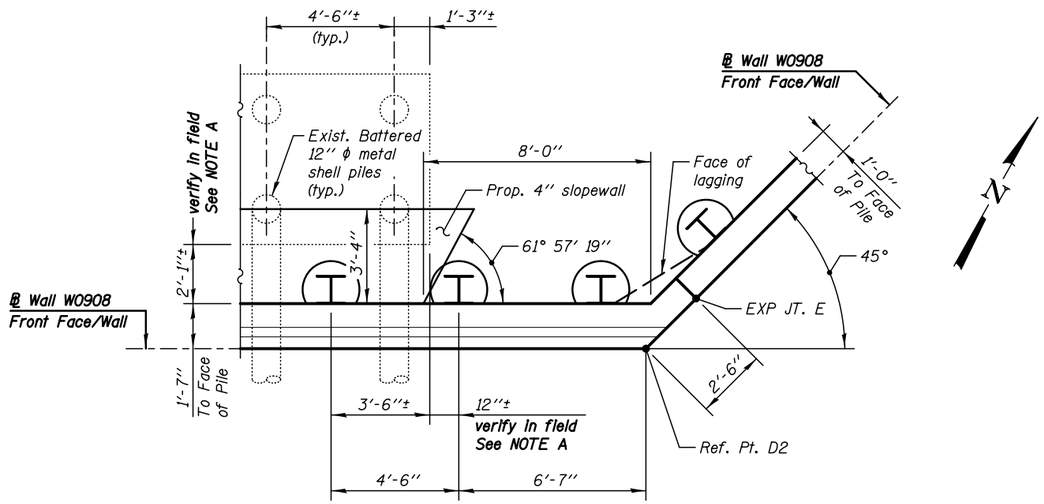
F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1143
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		



DETAIL A



DETAIL B



DETAIL C

NOTE A

Prior to augering ANY holes in Panel C, Panel D or piles PB-6 or PB-7, verify the location of the edge of the existing footing. If this dimension varies more than 2 inches from the location shown in the plans, contact the Engineer of Record for pile spacing revisions.

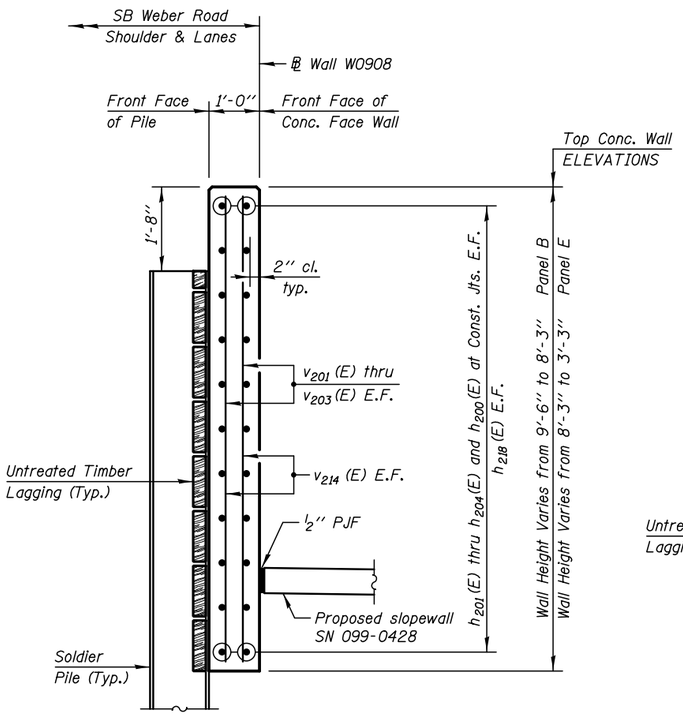
KNIGHT
Engineers & Architects

		DESIGNED - TB	REVISED
		CHECKED - WPM	REVISED
SCALE - NONE		DRAWN - TB	REVISED
DATE - 5/12/2017		CHECKED - WPM	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

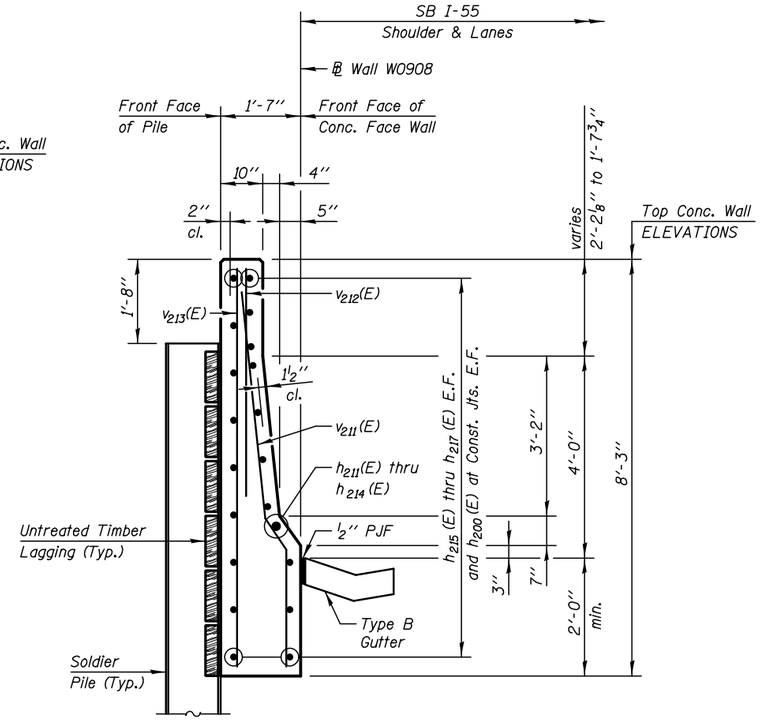
WALL DETAILS
STRUCTURE NUMBER 099-0908
SHEET NO. SD-6 OF 9 SHEETS

F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1144
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		



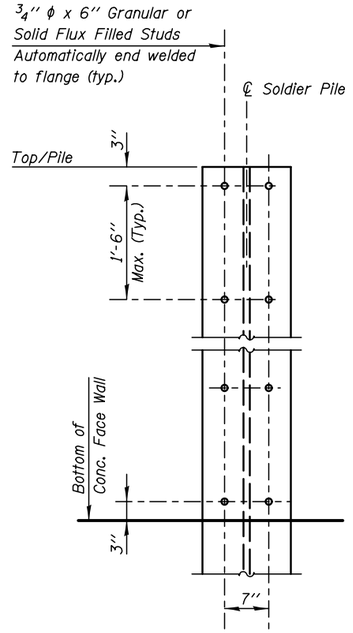
TYPICAL WALL SECTION A

Sta. 20+10.00 to Sta. 20+63.00
Sta. 21+67.08 to Sta. 21+95.08 Similar



TYPICAL WALL SECTION B

Sta. 20+66.58 to Sta. 21+64.58



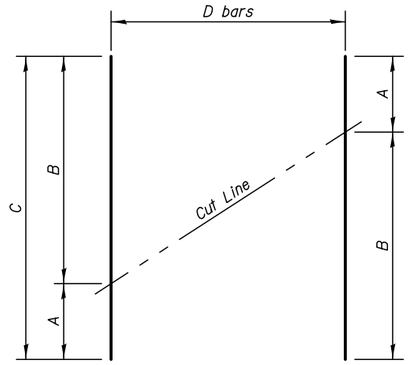
STUD SHEAR CONNECTORS LAYOUT

BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
h200(E)	56	#5	7'-6"	
h201(E)	34	#5	23'-7"	
h202(E)	2	#5	21'-4"	
h203(E)	2	#5	5'-7"	
h204(E)	4	#5	7'-6"	
h211(E)	2	#8	16'-8"	
h212(E)	1	#8	25'-10"	
h213(E)	2	#8	26'-8"	
h214(E)	1	#8	17'-6"	
h215(E)	19	#5	25'-10"	
h216(E)	38	#5	26'-8"	
h217(E)	19	#5	17'-6"	
h218(E)	30	#5	16'-8"	
h219(E)	9	#5	3'-1"	
h220(E)	9	#5	2'-1"	
h221(E)	10	#5	6'-0"	
v201(E)	4	#4	9'-2"	
v202(E)	3	#4	17'-1"	
v203(E)	82	#4	7'-11"	
v211(E)	102	#5	8'-0"	
v212(E)	102	#5	5'-3"	
v213(E)	111	#4	7'-11"	
v214(E)	29	#4	10'-10"	
Structure Excavation			Cu. Yd.	183.0
Concrete Structures			Cu. Yd.	60.0
Protective Coat			Sq. Yd.	109.0
Stud Shear Connectors			Each	386
Reinforcement Bars, Epoxy Coated			Pound	6960
Drilling and Setting Soldier Piles (In Soil)			Cu. Ft.	2486.0
Furnishing Soldier Piles (HP Section)			Foot	702.0

PILE TYPE SUMMARY

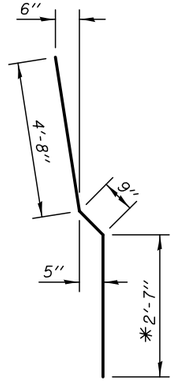
Furnishing Soldier Piles (HP12x53)	Foot	498.0
Furnishing Soldier Piles (HP12x63)	Foot	102.0
Furnishing Soldier Piles (HP14x73)	Foot	102.0



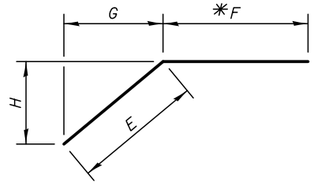
BAR CUTTING DIAGRAM

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

BAR	A	B	C	D
v202(E)	9'-2"	7'-11"	17'-1"	3
v215(E)	7'-11"	2'-11"	10'-10"	29



BAR $v_{211}(E)$



BARS $h_{203}(E)$, $h_{219}(E)$ & $h_{221}(E)$

E, F, G & H DIMENSIONS

BAR	E	F	G	H
h203(E)	3'-9"	1'-10"	3'-5"	1'-6"
h219(E)	1'-9"	*1'-4"	1'-6"	10"
h221(E)	3'-9"	*2'-3"	2'-8"	2'-8"

*Cut as req'd to fit.

LEGEND

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

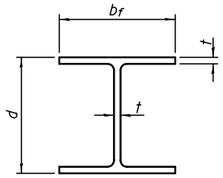
KNIGHT
Engineers & Architects

	DESIGNED - TB	REVISED	
	CHECKED - WPM	REVISED	
SCALE - NONE	DRAWN - TB	REVISED	
DATE - 1/31/2018	CHECKED - WPM	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

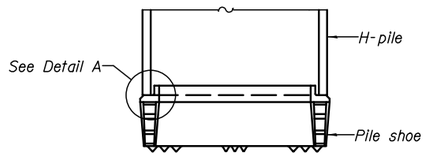
WALL SECTIONS AND DETAILS
STRUCTURE NUMBER 099-0908
SHEET NO. SD-7 OF 9 SHEETS

F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1145
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		

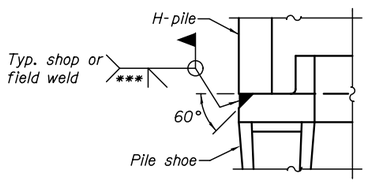


STEEL PILE TABLE

Designation	Depth d	Flange width b_f	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	11/16"	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"	11/16"	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"

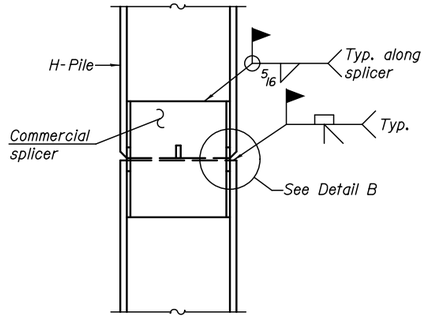


ELEVATION

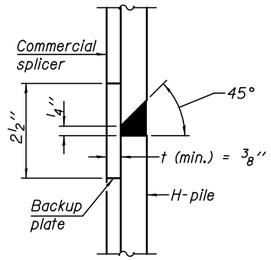


DETAIL A

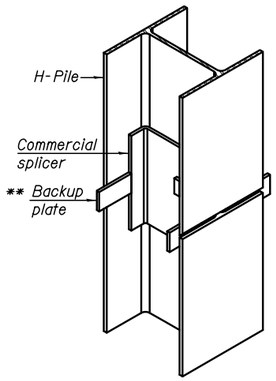
H-PILE SHOE ATTACHMENT



ELEVATION

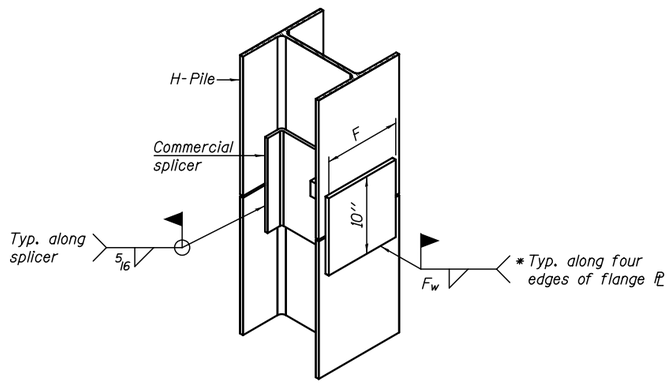


DETAIL "B"



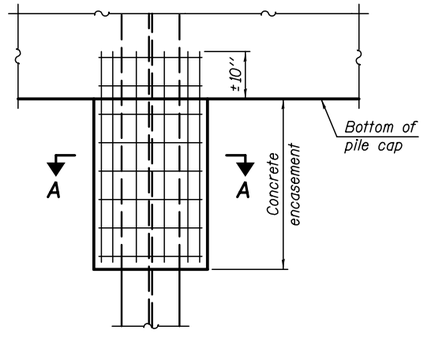
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE

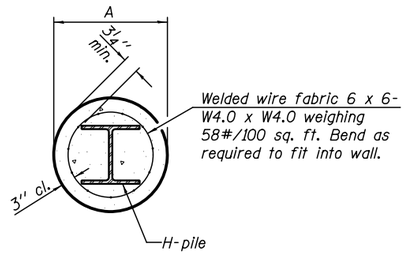


ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE



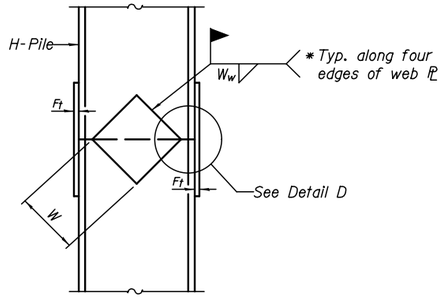
ELEVATION



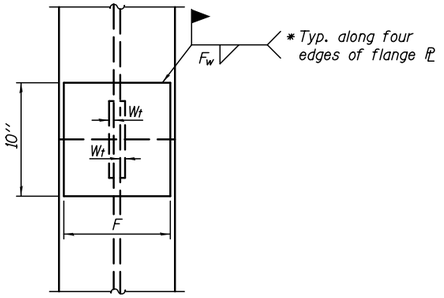
Note:
Forms for encasement may be omitted when soil conditions permit.

SECTION A-A

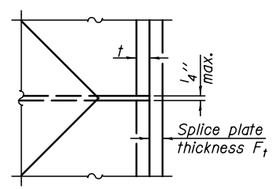
PILE ENCASEMENT



ELEVATION



END VIEW



DETAIL D

Designation	F	F_f	F_w	W	W_f	W_w
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"	11/16"	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"	11/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	11/16"	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"

WELDED PLATE FIELD SPLICE

* 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 - TB	REVISED	
	CHECKED - WPM	REVISED	
SCALE - NONE	DRAWN - SMA	REVISED	
DATE - 5/12/2017	CHECKED - TB	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HP PILE DETAILS
STRUCTURE NUMBER 099-0908
SHEET NO. SD-8 OF 9 SHEETS

F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1146
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
GSG Consultants

SOIL BORING LOG

Page 1 of 1

Date 2/5/15

ROUTE Weber Road DESCRIPTION Proposed Weber Road & I-55 Improvements LOGGED BY JJR

SECTION Normantown Road to 135th Street/Romeo Road LOCATION Retaining Wall, SEC. , TWP. , RNG. , Latitude , Longitude

COUNTY Will County DRILLING METHOD HSA HAMMER TYPE AUTO

STRUCT. NO. 099-0908
Station NA

BORING NO. RW-07 (@ W0908)
Station 812+32 (20+66)
Offset 62.00ft LT (25.00ft RT)
Ground Surface Elev. 650.00 ft

Surface Water Elev. NA ft
Stream Bed Elev. NA ft

Groundwater Elev.:
First Encounter None ft
Upon Completion None ft
After NA Hrs. NA ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
6 inches of Asphalt 649.50			
Gray, Moist FILL: SAND, with gravel 648.50	7		
Hard	7	4.0	30
Black and Gray, Very Moist CLAY, trace organics (CL)	9	P	
646.00	4		
Very Stiff to Hard	5	2.1	25
Brown and Gray, Moist to Very Moist	6	B	
-5 SILTY CLAY, trace gravel (CL/ML)	3		
	4	3.8	23
	6	B	
	4		
	4	2.9	24
-10	6	B	
	4		
	8	4.2	22
	9	B	
636.00	4		
Very Stiff to Hard	7	6.3	23
Gray, Moist	8	B	
-15 SILTY CLAY, trace gravel (CL/ML)	4		
	5	2.5	24
	6	B	
	3		
	6	2.5	23
-20	7	B	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Very Stiff to Hard			
Gray, Moist	4		
SILTY CLAY, trace gravel (CL/ML) (continued)			
	6	2.5	22
	8	B	
	4		
	7	2.5	20
625.00 -25	10	B	
End of Boring			
-30			
-35			
-40			

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

BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
GSG Consultants

SOIL BORING LOG

Page 1 of 1

Date 2/5/15

ROUTE Weber Road DESCRIPTION Proposed Weber Road & I-55 Improvements LOGGED BY JJR

SECTION Normantown Road to 135th Street/Romeo Road LOCATION Retaining Wall, SEC. , TWP. , RNG. , Latitude , Longitude

COUNTY Will County DRILLING METHOD HSA HAMMER TYPE AUTO

STRUCT. NO. 099-0908
Station NA

BORING NO. RW-08 (@ W0908)
Station 813+09 (21+93)
Offset 82.00ft RT (29.00ft RT)
Ground Surface Elev. 650.00 ft

Surface Water Elev. NA ft
Stream Bed Elev. NA ft

Groundwater Elev.:
First Encounter 629.0 ft ▼
Upon Completion None ft
After NA Hrs. NA ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
6 inches of Asphalt 649.50			
Gray, Moist FILL: SAND, with gravel 648.50	6		
Very Stiff	5	3.0	24
Black and Gray, Moist CLAY, trace organics (CL)	8	P	
646.00	5		
Very Stiff to Hard	7	3.3	19
Brown and Gray, Moist	10	B	
-5 SILTY CLAY, trace gravel (CL/ML)	4		
	8	4.6	21
	10	B	
	3		
	8	6.3	22
-10	10	B	
	3		
	5	3.8	20
	7	B	
	2		
	3	3.1	20
-15	5	B	
633.50	9		
Stiff to Very Stiff	4	1.7	19
Gray, Moist	9	B	
SILTY CLAY, trace gravel (CL/ML)	12		
	10	2.5	17
-20	12	P	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Stiff to Very Stiff ▼			
Gray, Moist	4		
SILTY CLAY, trace gravel (CL/ML) (continued)			
	10	2.5	17
	11	P	
	4		
	5	2.5	18
625.00 -25	7	B	
End of Boring			
-30			
-35			
-40			

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

BBS, form 137 (Rev. 8-99)

KNIGHT
Engineers & Architects

	DESIGNED - GSG	REVISED	
	CHECKED - WPM	REVISED	
SCALE - NONE	DRAWN - TB	REVISED	
DATE - 5/12/2017	CHECKED - WPM	REVISED	

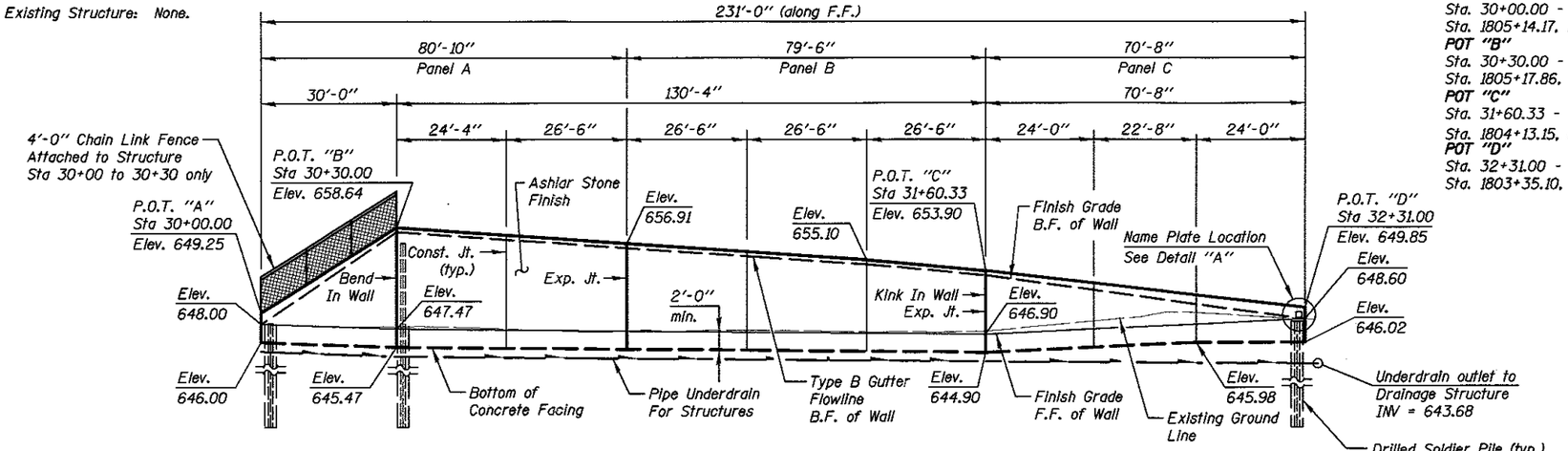
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS
STRUCTURE NUMBER 099-0908
SHEET NO. SD-9 OF 9 SHEETS

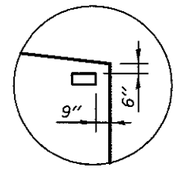
F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1147
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		

Bench Mark: BM L1n17 Chiseled "X" on south bolt of round light pole foundation between I-55 southbound and existing I-55 ramp to Weber Road
Mile marker 263.71 sign. Elev. 654.37

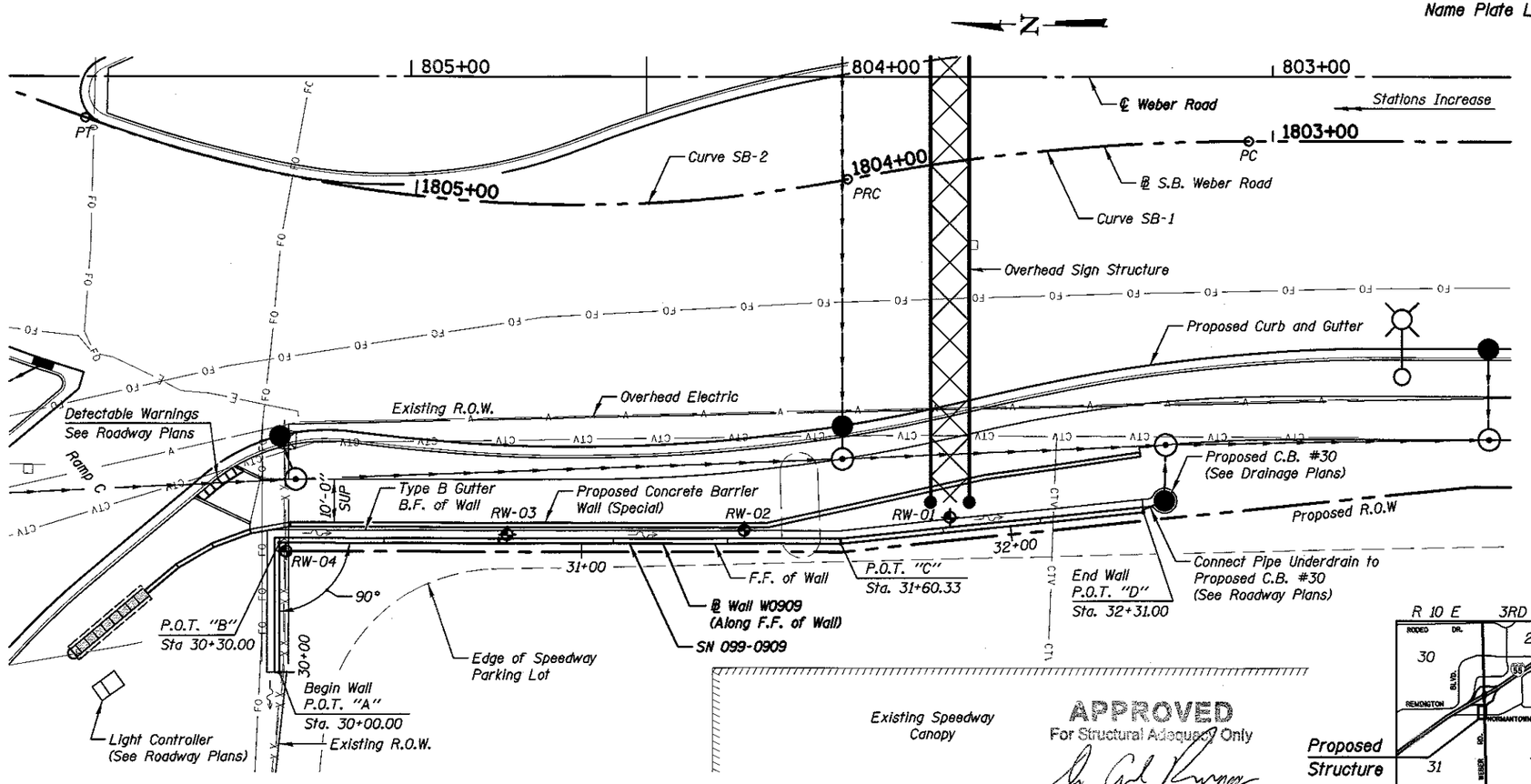
Existing Structure: None.



DEVELOPED ELEVATION
(Front Face of Wall)

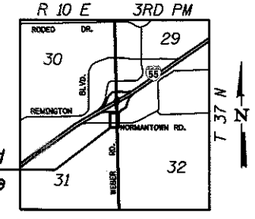


DETAIL "A"
Name Plate Location



APPROVED
For Structural Adequacy Only
Engineer of Bridges & Structures

PLAN



Proposed Structure

LOCATION SKETCH

℄ Wall W0909
(Offsets from ℄ S.B. Weber Rd. to F.F. of wall)
POT "A"
Sta. 30+00.00 - ℄ Wall W0909 =
Sta. 1805+14.17, 113.63' Lt. - ℄ S.B. Weber Rd.
POT "B"
Sta. 30+30.00 - ℄ Wall W0909 =
Sta. 1805+17.86, 84.01' Lt. - ℄ S.B. Weber Rd.
POT "C"
Sta. 31+60.33 - ℄ Wall W0909 =
Sta. 1804+13.15, 82.83' Lt. - ℄ S.B. Weber Rd.
POT "D"
Sta. 32+31.00 - ℄ Wall W0909 =
Sta. 1803+35.10, 85.08' Lt. - ℄ S.B. Weber Rd.

INDEX OF DRAWINGS

SHT NO.	TITLE
SE-1	General Plan and Elevation
SE-2	Typical Wall Section and Details
SE-3	Plan and Elevation - 1
SE-4	Plan and Elevation - 2
SE-5	Wall Sections and Details
SE-6	Architectural Finish and Joint Details
SE-7	Chain Link Fence Details
SE-8	HP Pile Details
SE-9	Soil Boring Logs
SE-10	Soil Boring Logs

Notes

See Roadway Plans for Concrete Gutter, Type B and Concrete Barrier Wall (Special) details.

See Roadway Drainage Plans for Drainage Structure Locations.

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

CURVE DATA

℄ SB Weber Road Curve SB-1	℄ SB Weber Road Curve SB-2
Δ = 10° 44' 13" (LT)	Δ = 30° 50' 40" (RT)
D = 11° 27' 33"	D = 17° 09' 16"
R = 500.00'	R = 334.00'
T = 46.99'	T = 92.14'
L = 93.70'	L = 179.80'
E = 2.20'	E = 12.48'
SE = none	SE = none
PC STA. 1803+05.61	PC STA. 1803+99.30
PT STA. 1803+99.30	PT STA. 1805+79.11
PI STA. 1803+52.59	PI STA. 1804+91.44

DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge Design Specifications, Customary U.S. Units, 7th Edition with 2015 Interims

DESIGN STRESSES

FIELD UNITS

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

LICENSED STRUCTURAL ENGINEER
FRANK J. WILLIAMS
081-005837
STATE OF ILLINOIS

Expires 11-30-2018

Date: 05/12/2017
for drawings SE-1 thru SE-8

Legend

- Soil Borings
- F.F. Front Face
- B.F. Back Face
- S.U.P. Shared Use Path
- P.O.T. Point on Tangent

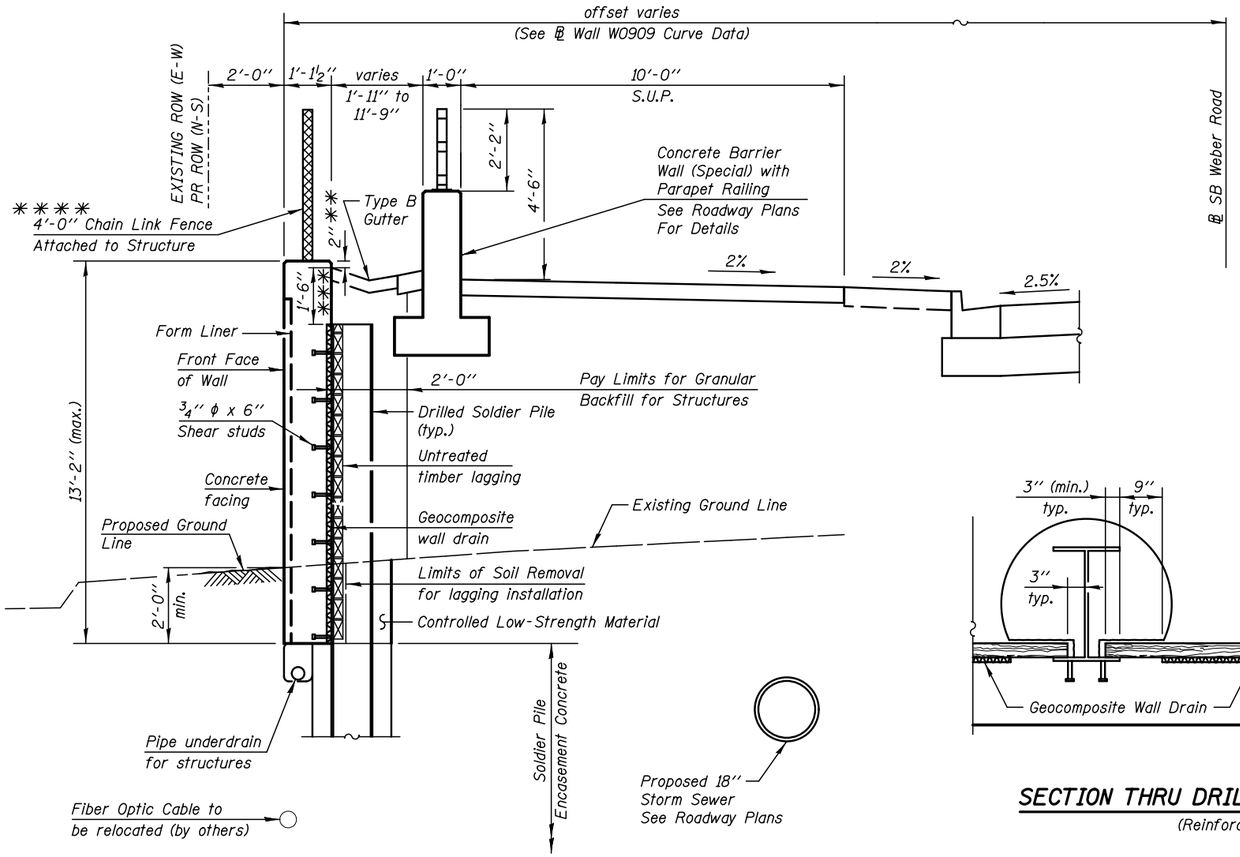
GENERAL PLAN & ELEVATION
WEBER ROAD
F.A.P. RTE. 856 SEC. (99-1HB-1) R-1
WILL COUNTY
STA. 803+30.00 TO 805+30.50
STRUCTURE NO. 099-0909

KNIGHT Engineers & Architects		DESIGNED - FJW	REVISED
		CHECKED - WPM	REVISED
SCALE - NONE		DRAWN - DC	REVISED
DATE - 5/12/2017		CHECKED - WPM	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
STRUCTURE NUMBER 099-0909
SHEET NO. SE-1 OF 10 SHEETS

F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1148
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		

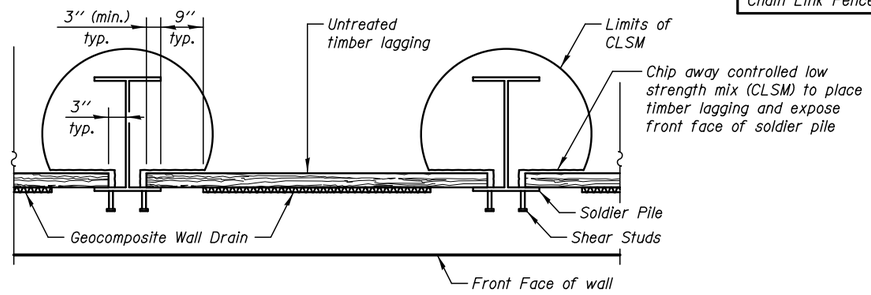


STATION 803+30.00
BUILT 20 BY
STATE OF ILLINOIS
F.A.P. RTE. 856 SEC. (99-1HB-1) R-1
LOADING HL-93
STRUCTURE NO. 099-0909

NAME PLATES
See Std. 515001

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structure Excavation	Cu. Yd.	68.0
Concrete Structures	Cu. Yd.	96.0
Form Liner Textured Surface	Sq. Ft.	1955.0
Stud Shear Connectors	Each	502
Reinforcement Bars, Epoxy Coated	Pound	8880
Name Plates	Each	1
Furnishing Soldier Piles (HP Section)	Foot	398.0
Furnishing Soldier Piles (W Section)	Foot	745.0
Drilling And Setting Soldier Piles (In Soil)	Cu. Ft.	5715.0
Untreated Timber Lagging	Sq. Ft.	1799.0
Concrete Sealer	Sq. Ft.	2035.0
Geocomposite Wall Drain	Sq. Yd.	116.0
Pipe Underdrains for Structures 4"	Foot	240.0
Granular Backfill For Structures	Cu. Yd.	114.0
Chain Link Fence, 4' Attached to Structure	Foot	30.0



SECTION THRU DRILLED SOLDIER PILE WALL
(Reinforcement not shown)

GENERAL NOTES

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

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.

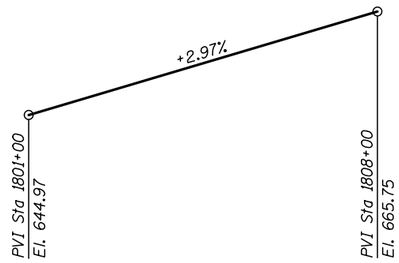
Reinforcement bars designated (E) shall be epoxy coated.

TYPICAL WALL SECTION
(Looking North)

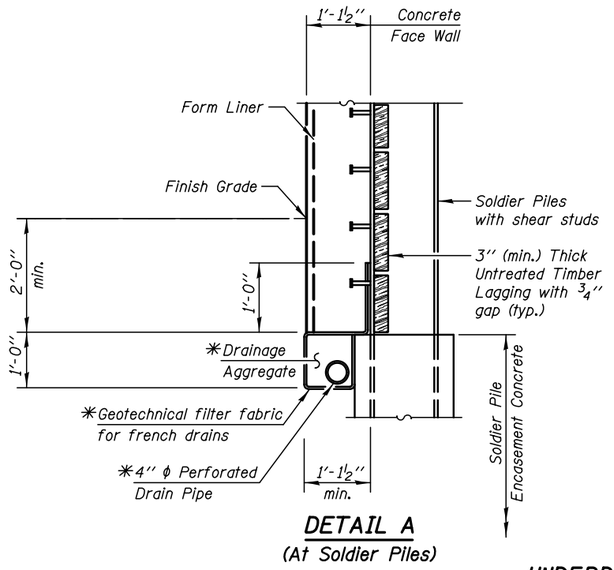
✱✱ Finished grade at back face of wall varies from 2" at stations 30+30 and 31+60.33 to 11" at stations 30+00 and 32+31, respectively.

✱✱✱ Dimension varies from 1'-6" at stations 30+30 and 31+60.33 to 9" at stations 30+00 and 32+31, respectively.

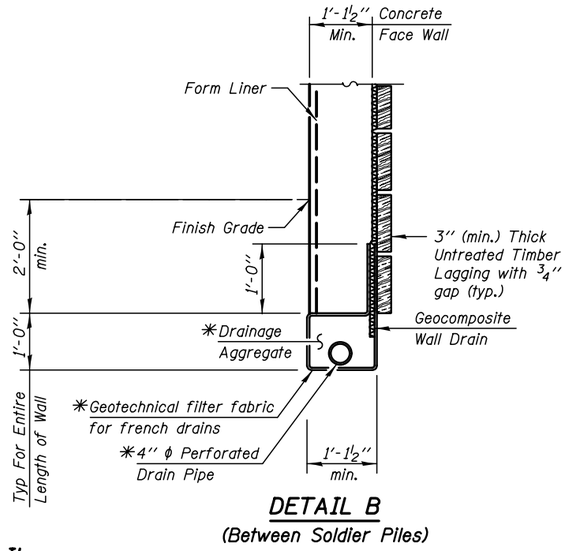
✱✱✱✱ Chain Link Fence from Sta. 30+00 to 30+30 only.



PROFILE GRADE - ℄ SB WEBER ROAD



DETAIL A
(At Soldier Piles)



DETAIL B
(Between Soldier Piles)

UNDERDRAIN DETAIL
✱Cost included with "Pipe Underdrains for Structures"

KNIGHT
Engineers & Architects

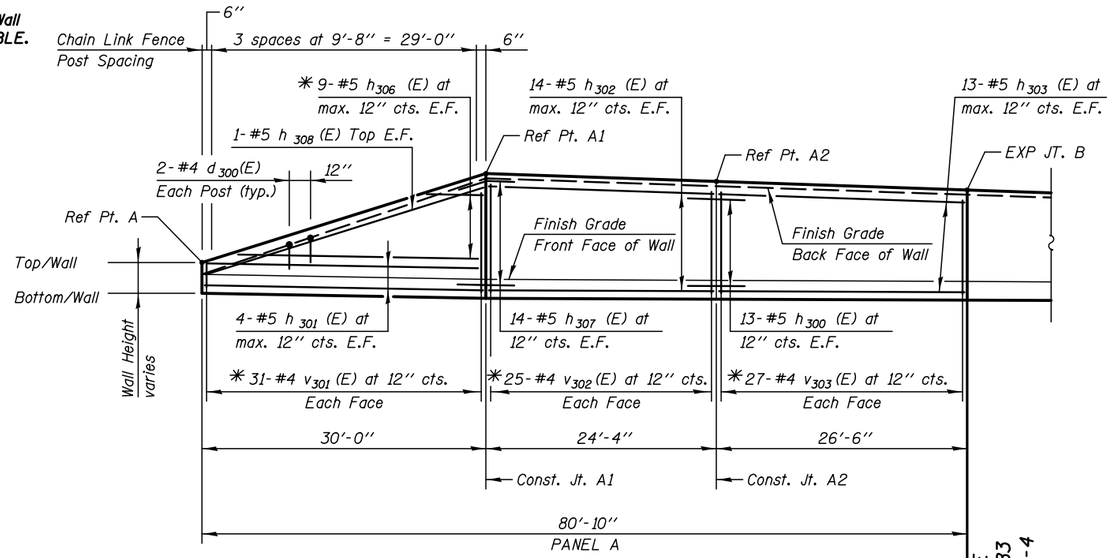
		DESIGNED - FJW	REVISED
		CHECKED - WPM	REVISED
SCALE - NONE		DRAWN - DC	REVISED
DATE - 5/12/2017		CHECKED - WPM	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TYPICAL WALL SECTION AND DETAILS
STRUCTURE NUMBER 099-0909
SHEET NO. SE-2 OF 10 SHEETS

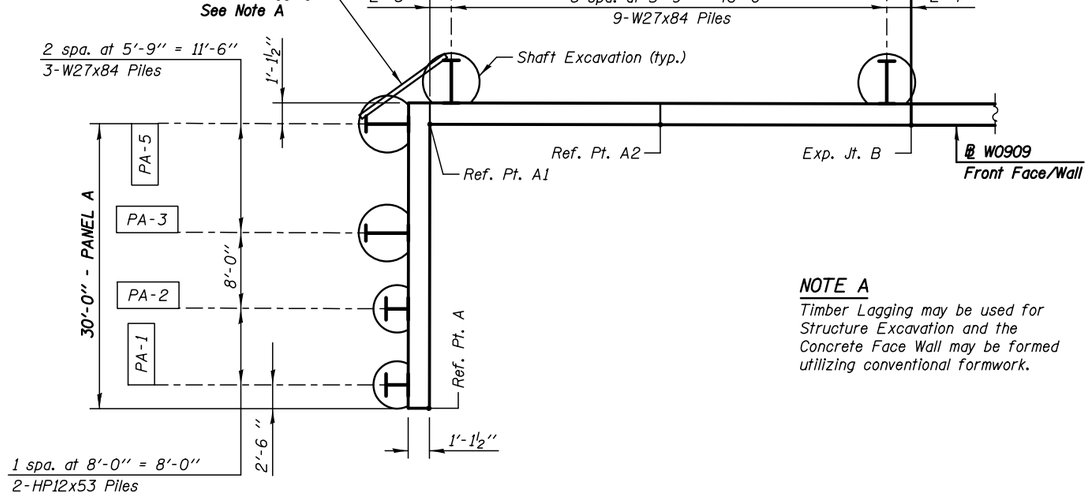
F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
✱	(99-1HB-1) R-1	WILL	1508	1149
		CONTRACT NO. 60X10		
✱FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		

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



DEVELOPED ELEVATION
(Looking North & East)

MATCH LINE STA. 30+80.83 SEE SHT. SE-4



PLAN
(PANEL A)

NOTE A
Timber Lagging may be used for Structure Excavation and the Concrete Face Wall may be formed utilizing conventional formwork.

PILE DATA

Pile No.	Top Elev.	Bottom Elev.	Length Ft.	No of Studs	Pile Size
PA-1	648.37	631.37	17.00	6	HP 12x53
PA-2	650.87	626.87	24.00	10	HP 12x53
PA-3	653.37	622.37	31.00	12	W27x84
PA-4	655.17	619.17	36.00	16	W27x84
PA-5	656.97	615.97	41.00	18	W27x84
PA-6	656.90	615.90	41.00	18	W27x84
PA-7	656.70	616.70	40.00	18	W27x84
PA-8	656.50	617.50	39.00	18	W27x84
PA-9	656.31	617.31	39.00	16	W27x84
PA-10	656.11	618.11	38.00	16	W27x84
PA-11	655.92	617.92	38.00	16	W27x84
PA-12	655.72	618.72	37.00	16	W27x84
PA-13	655.53	619.53	36.00	16	W27x84
PA-14	655.33	619.33	36.00	16	W27x84

SHAFT SIZES

Pile Size	Shaft Excavation Size
HP12	2'-0''
W27	3'-0''

Notes
All Dimensions are along Front Face of Wall.

For Typical Sections & Bill of Material, See Sheet SE-2

*See Bar Cutting Diagram Sheet SE-5

LEGEND
E.F. Each Face

Min Bar Laps
#5 Bars = 3'-7'' (Horiz. Top Bars)

WALL JOINT LOCATIONS, HEIGHTS & ELEVATIONS

Location Ref. Points	Station on ℄ W0909	Wall Height	Top/Wall Elevation	Bottom/Wall Elevation	Finish Grade Elev.	Bott/Liner Elev.
Begin Wall - A	30+00.00	3'-3''	649.25	646.00	648.00	646.00
C.J. - A1	30+30.00	13'-2''	658.64	645.47	647.47	645.47
C.J. - A2	30+54.33	12'-5''	657.81	645.39	647.39	645.39
Exp. Jt. - B	30+80.83	11'-8''	656.91	645.24	647.28	645.24

KNIGHT Engineers & Architects

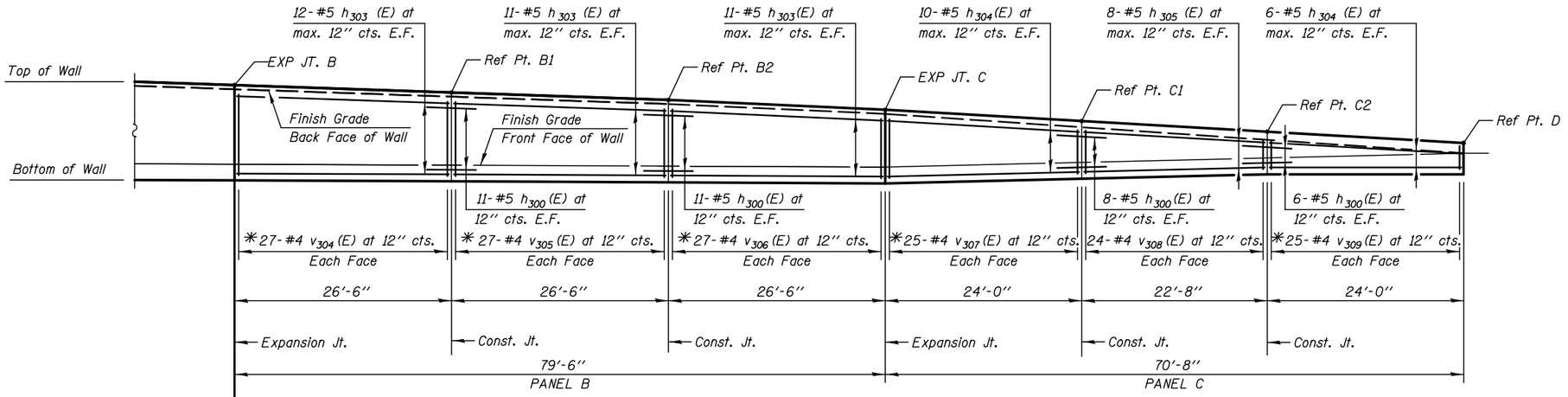
	DESIGNED - FJW	REVISED	
	CHECKED - WPM	REVISED	
SCALE - NONE	DRAWN - DC	REVISED	
DATE - 5/12/2017	CHECKED - WPM	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

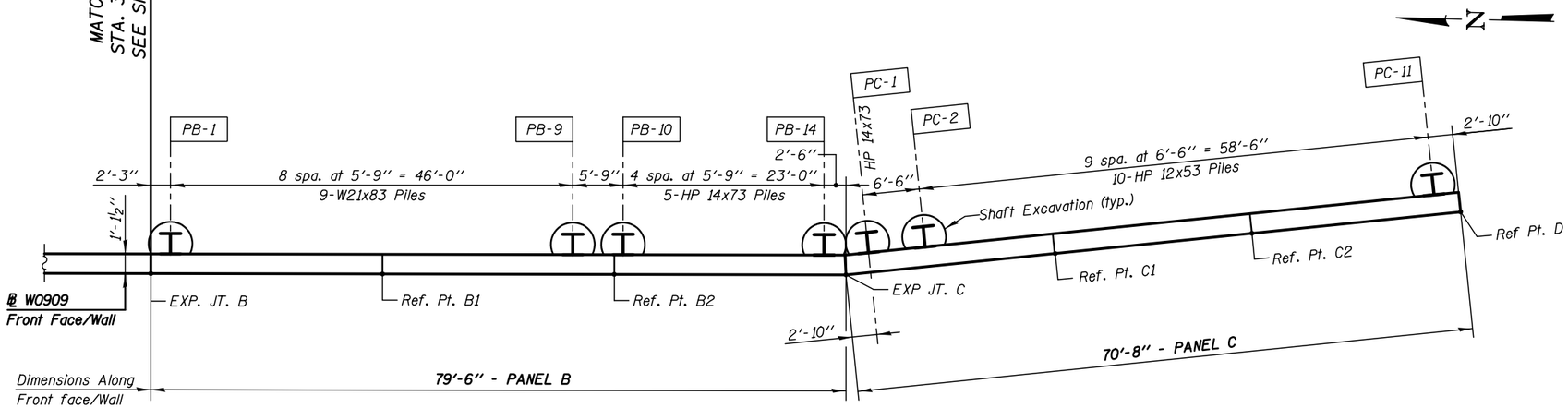
PLAN & ELEVATION – 1
STRUCTURE NUMBER 099–0909
SHEET NO. SE-3 OF 10 SHEETS

F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1150
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		

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



DEVELOPED ELEVATION
(PANELS B & C)



PLAN
(PANELS B & C)

PILE DATA

Pile No.	Top Elev.	Bottom Elev.	Length Ft.	No of Studs	Pile Size
PB-1	655.17	621.17	34.00	16	W21x83
PB-2	654.97	620.97	34.00	16	W21x83
PB-3	654.77	620.77	34.00	16	W21x83
PB-4	654.57	621.57	33.00	14	W21x83
PB-5	654.38	621.38	33.00	14	W21x83
PB-6	654.18	622.18	32.00	14	W21x83
PB-7	653.99	621.99	32.00	14	W21x83
PB-8	653.79	622.79	31.00	14	W21x83
PB-9	653.59	623.59	30.00	14	W21x83
PB-10	653.39	623.39	30.00	14	HP 14x73
PB-11	653.13	624.13	29.00	14	HP 14x73
PB-12	652.87	623.87	29.00	12	HP 14x73
PB-13	652.61	624.61	28.00	12	HP 14x73
PB-14	652.35	624.35	28.00	12	HP 14x73
PC-1	652.07	626.07	26.00	12	HP 14x73
PC-2	651.70	626.70	25.00	12	HP 12x53
PC-3	651.32	627.32	24.00	10	HP 12x53
PC-4	650.95	628.95	22.00	10	HP 12x53
PC-5	650.58	629.58	21.00	10	HP 12x53
PC-6	650.20	631.20	19.00	8	HP 12x53
PC-7	649.83	631.83	18.00	8	HP 12x53
PC-8	649.46	632.46	17.00	6	HP 12x53
PC-9	649.09	634.09	15.00	6	HP 12x53
PC-10	648.72	634.72	14.00	6	HP 12x53
PC-11	648.35	636.35	12.00	6	HP 12x53

SHAFT SIZES

Pile Size	Shaft Excavation Size
HP12	2'-0''
HP14	2'-0''
W21	3'-0''

LEGEND
E.F. Each Face

Min Bar Laps
#5 Bars = 3'-7'' (Horiz. Top Bars)

WALL JOINT LOCATIONS, HEIGHTS & ELEVATIONS

Location Ref. Points	Station on ℄ W0909	Wall Height	Top/Wall Elevation	Bottom/Wall Elevation	Finish Grade Elev.	Bott/Liner Elev.
Exp. Jt. - B	30+80.83	11'-8''	656.91	645.24	647.28	645.24
C.J. - B1	31+07.33	10'-10''	656.00	645.17	647.17	645.17
C.J. - B2	31+33.83	10'-1''	655.10	645.02	647.04	645.02
Exp. Jt. - C	31+60.33	9'-0''	653.90	644.90	646.90	644.90
C.J. - C1	31+84.33	7'-1''	652.52	645.44	647.48	645.44
C.J. - C2	32+07.00	5'-3''	651.22	645.97	647.98	645.97
End Wall - D	32+31.00	3'-10''	649.85	646.02	648.60	646.02

Notes
All Dimensions are along Front Face of Wall.

For Typical Sections & Bill of Material, See Sheet SE-2

✳See Bar Cutting Diagram Sheet SE-5

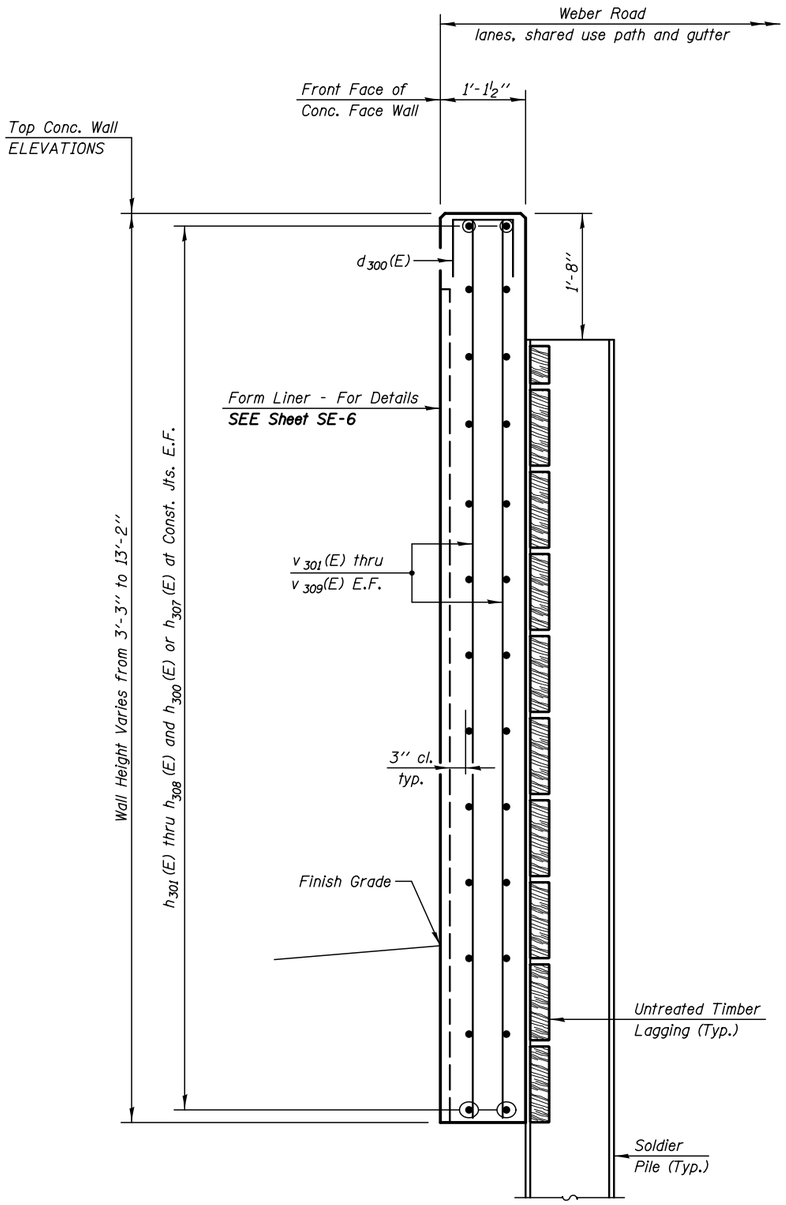
KNIGHT
Engineers & Architects

		DESIGNED - FJW	REVISED
		CHECKED - WPM	REVISED
SCALE - NONE		DRAWN - DC	REVISED
DATE - 5/12/2017		CHECKED - WPM	REVISED

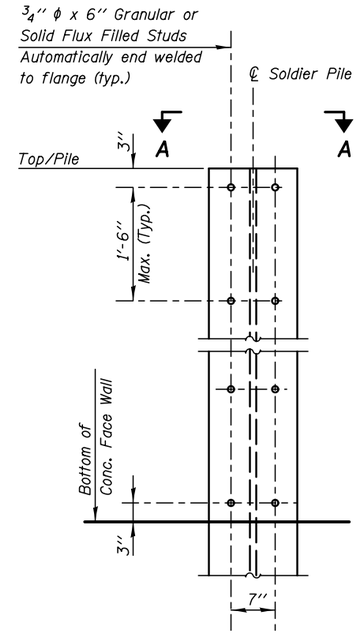
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLAN & ELEVATION – 2
STRUCTURE NUMBER 099-0909
SHEET NO. SE-4 OF 10 SHEETS

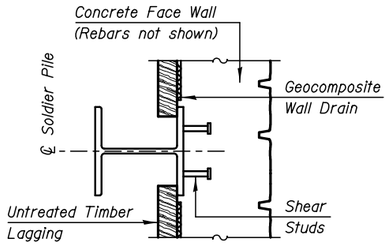
F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
✳	(99-1HB-1) R-1	WILL	1508	1151
		CONTRACT NO. 60X10		
✳ FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		



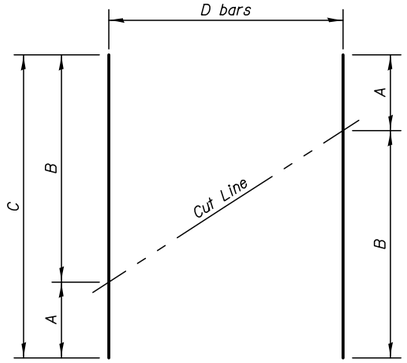
TYPICAL WALL SECTION



STUD SHEAR CONNECTORS LAYOUT



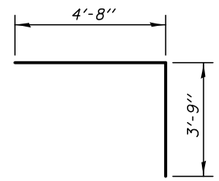
SECTION A-A - PLAN



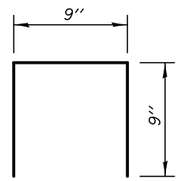
BAR CUTTING DIAGRAM

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

BAR	A	B	C	D
v301(E)	2'-11"	12'-10"	15'-9"	31
v302(E)	12'-10"	12'-1"	24'-11"	25
v303(E)	12'-1"	11'-4"	23'-5"	27
v304(E)	11'-4"	10'-6"	21'-10"	27
v305(E)	10'-6"	9'-9"	20'-3"	27
v306(E)	9'-9"	8'-8"	18'-5"	27
v307(E)	8'-8"	6'-9"	15'-5"	25
v308(E)	6'-9"	4'-11"	11'-8"	24
v309(E)	4'-11"	3'-6"	8'-5"	25
h306(E)	2'-4"	26'-6"	28'-10"	9



BAR $h_{307}(E)$



BAR $d_{300}(E)$

BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
d300(E)	8	#4	2'-3"	⊓
h300(E)	98	#5	7'-6"	—
h301(E)	8	#5	29'-8"	—
h302(E)	28	#5	24'-0"	—
h303(E)	94	#5	26'-2"	—
h304(E)	32	#5	23'-8"	—
h305(E)	16	#5	22'-4"	—
h306(E)	9	#5	28'-10"	—
h307(E)	28	#5	8'-5"	L
h308(E)	2	#5	31'-1"	—
v301(E)	31	#4	15'-9"	—
v302(E)	25	#4	24'-11"	—
v303(E)	27	#4	23'-5"	—
v304(E)	27	#4	21'-10"	—
v305(E)	27	#4	20'-3"	—
v306(E)	27	#4	18'-5"	—
v307(E)	25	#4	15'-5"	—
v308(E)	24	#4	11'-8"	—
v309(E)	25	#4	8'-5"	—
Structure Excavation			Cu. Yd.	68.0
Concrete Structures			Cu. Yd.	96.0
Form Liner Textured Surface			Sq. Ft.	1955.0
Stud Shear Connectors			Each	502
Reinforcement Bars, Epoxy Coated			Pound	8880
Furnishing Soldier Piles (HP Section)			Foot	398.0
Furnishing Soldier Piles (W Section)			Foot	745.0
Drilling and Setting Soldier Piles (In Soil)			Cu. Ft.	5715.0
Untreated Timber Lagging			Sq. Ft.	1799.0
Concrete Sealer			Sq. Ft.	2035.0
Geocomposite Wall Drain			Sq. Yd.	116.0
Pipe Underdrains for Structures 4"			Foot	240.0

PILE TYPE SUMMARY

Furnishing Soldier Piles (HP12x53)	Foot	228.0
Furnishing Soldier Piles (HP14x73)	Foot	170.0
Furnishing Soldier Piles (W21x83)	Foot	293.0
Furnishing Soldier Piles (W27x84)	Foot	452.0

LEGEND:

E.F. Each Face

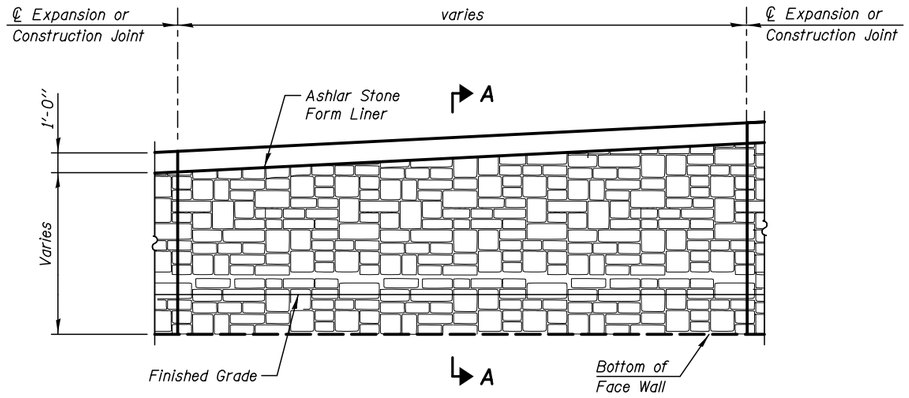
KNIGHT
Engineers & Architects

	DESIGNED - FJW	REVISED	
	CHECKED - WPM	REVISED	
SCALE - NONE	DRAWN - DC	REVISED	
DATE - 5/12/2017	CHECKED - WPM	REVISED	

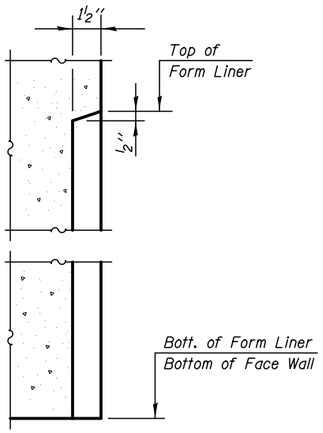
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WALL SECTIONS AND DETAILS
STRUCTURE NUMBER 099-0909
SHEET NO. SE-5 OF 10 SHEETS

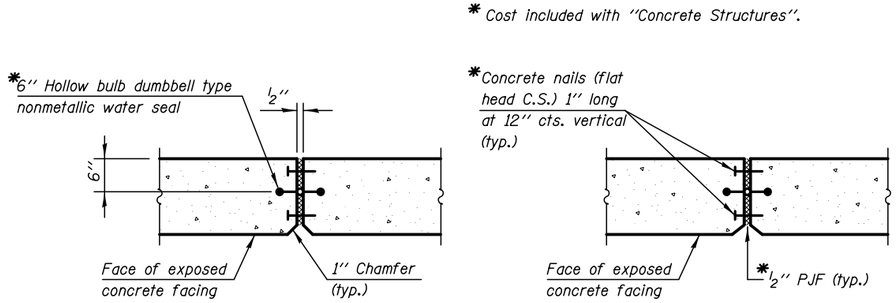
F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1152
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		



FRONT FACE ELEVATION - FORM LINER

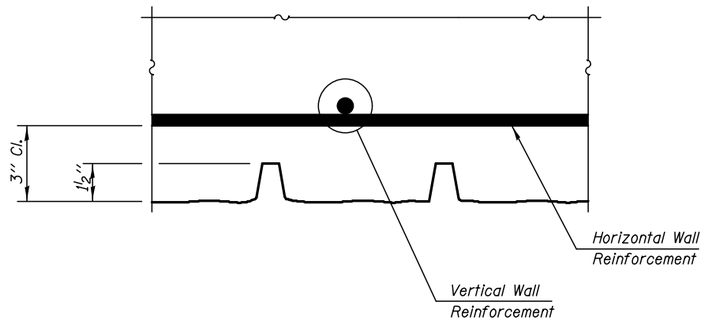


SECTION A-A

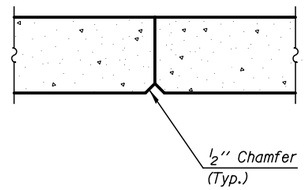


WALL EXPANSION JOINT DETAIL

(Reinforcement not shown)

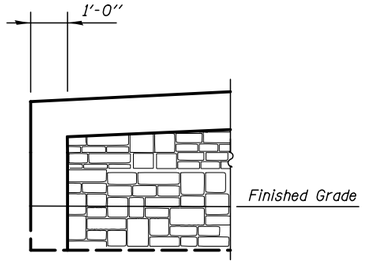


PLAN - FORM LINER



WALL CONSTRUCTION JOINT DETAIL

(Reinforcement not shown)



END FORM LINER DETAIL

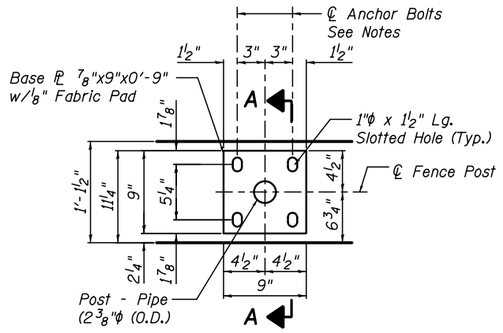
KNIGHT
Engineers & Architects

	DESIGNED - FJW	REVISED	
	CHECKED - WPM	REVISED	
SCALE - NONE	DRAWN - DC	REVISED	
DATE - 5/12/2017	CHECKED - WPM	REVISED	

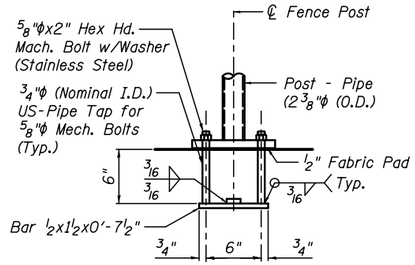
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ARCHITECTURAL FINISH AND JOINT DETAILS
STRUCTURE NUMBER 099-0909
SHEET NO. SE-6 OF 10 SHEETS

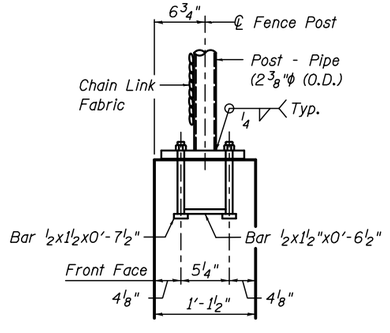
F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1153
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		



PLAN

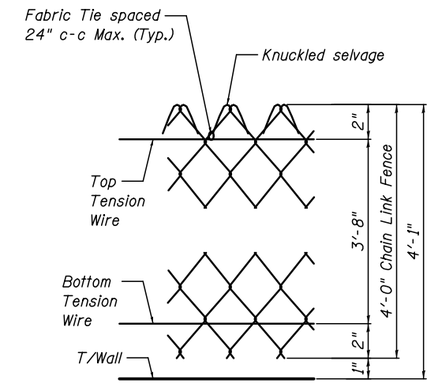


ELEVATION



SECTION A-A

In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting ⅝" ϕ anchor rods according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.



DETAIL 1

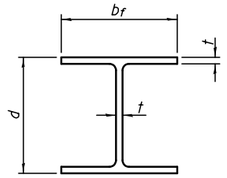
FENCE POST ANCHOR ASSEMBLY DETAILS

KNIGHT Engineers & Architects		DESIGNED -	REVISED
		CHECKED -	REVISED
	SCALE - NONE	DRAWN -	REVISED
	DATE - 5/12/2017	CHECKED -	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

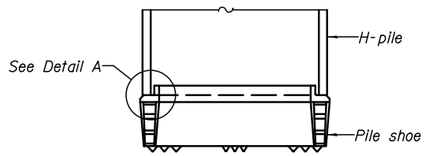
CHAIN LINK FENCE DETAILS
STRUCTURE NUMBER 099-0909
SHEET NO. SE-7 OF 10 SHEETS

F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1154
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		

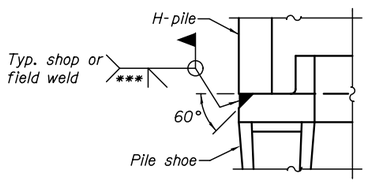


STEEL PILE TABLE

Designation	Depth d	Flange width b_f	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	11/16"	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"	11/16"	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"

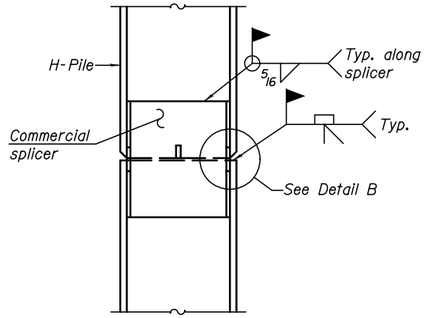


ELEVATION

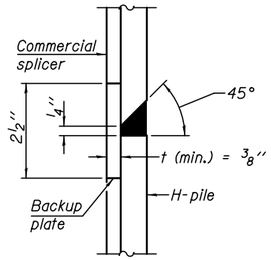


DETAIL A

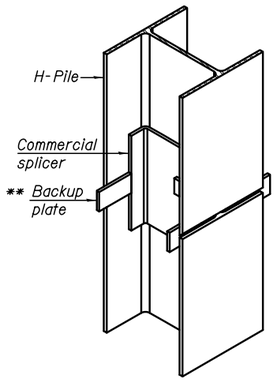
H-PILE SHOE ATTACHMENT



ELEVATION

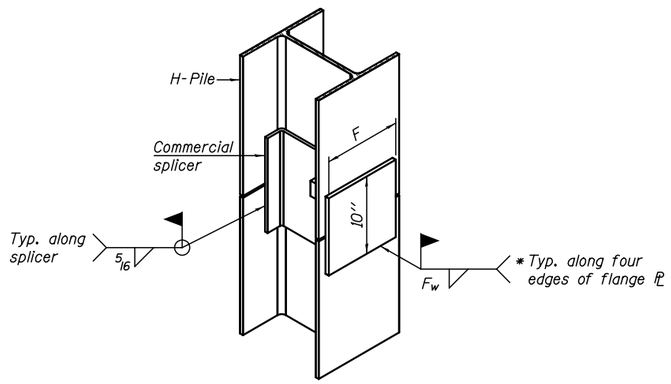


DETAIL "B"



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



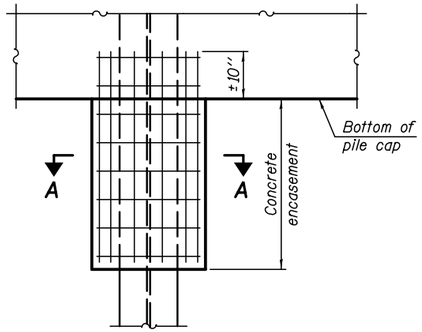
ISOMETRIC VIEW

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.).



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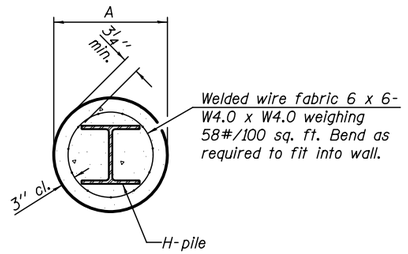
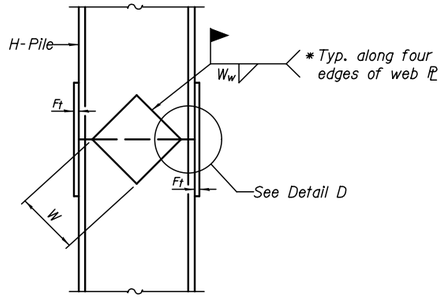


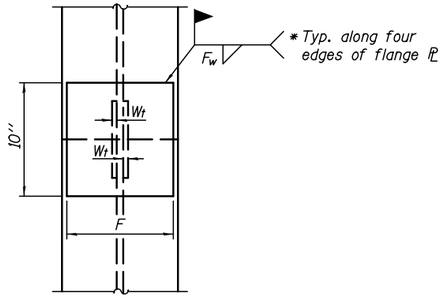
SECTION A-A

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

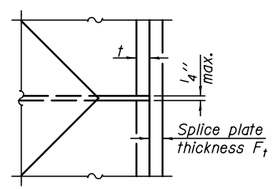
PILE ENCASEMENT



ELEVATION



END VIEW



DETAIL D

Designation	F	F_f	F_w	W	W_f	W_w
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"	11/16"	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"	11/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	11/16"	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"

WELDED PLATE FIELD SPLICE

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

F-HP 1-27-12

KNIGHT Engineers & Architects		DESIGNED - TB	REVISED
		CHECKED - WPM	REVISED
	SCALE - NONE	DRAWN - SMA	REVISED
	DATE - 5/12/2017	CHECKED - TB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HP PILE DETAILS
STRUCTURE NUMBER 099-0909
SHEET NO. SE-8 OF 10 SHEETS

F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1155
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
GSG Consultants

SOIL BORING LOG

Page 1 of 1

Date 10/22/14

ROUTE Weber Road | DESCRIPTION Proposed Weber Road & I-55 Improvements | LOGGED BY JH
SECTION Normantown Road to 135th Street/Romeo Road | LOCATION Retaining Wall, SEC. , TWP. , RNG. , Latitude , Longitude
COUNTY Will County | DRILLING METHOD HSA | HAMMER TYPE AUTO

STRUCT. NO. 099-0909
Station NA

BORING NO. RW-01 (@ W0909)
Station 803+75 (11+86)
Offset 102.00ft LT (3.00ft LT)
Ground Surface Elev. 648.00 ft

Surface Water Elev. NA ft
Stream Bed Elev. NA ft

Groundwater Elev.:
First Encounter None ft
Upon Completion None ft
After NA Hrs. NA ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
647.00			
12 inches of Topsoil			
	3		
Brown, Moist to Very Moist	5	2.8	27
FILL: SILTY CLAY	5	P	
	3		
	6	6.0	17
-5	9	P	
642.00			
Hard	3		
Brown, Moist	5	4.4	20
CLAY (CL)	7	B	
	3		
	7	7.9	19
-10	8	B	
637.00			
Very Stiff to Hard	4		
Gray, Moist	7	5.0	19
CLAY (CL)	9	B	
	5		
	9	5.0	20
-15	9	B	
	4		
	7	5.0	19
	9	B	
	3		
	3	2.1	21
-20	6	B	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Very Stiff to Hard			
Gray, Moist			
CLAY (CL) (continued)	2		
	5	2.1	22
	6	B	
	3		
	4	2.1	21
-25	6	B	
	3		
	5	2.1	21
	6	B	
619.50			
	6		
Stiff	5	1.3	18
Gray, Moist	14	P	
SILT, with sand (ML)			
614.50			
	23		
Very Dense	29		3
Gray, Dry	40		
GRAVEL, with sand (GPS)			
613.00 -35			
End of Boring			
-40			

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

BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
GSG Consultants

SOIL BORING LOG

Page 1 of 1

Date 10/22/14

ROUTE Weber Road | DESCRIPTION Proposed Weber Road & I-55 Improvements | LOGGED BY JH
SECTION Normantown Road to 135th Street/Romeo Road | LOCATION Retaining Wall, SEC. , TWP. , RNG. , Latitude , Longitude
COUNTY Will County | DRILLING METHOD HSA | HAMMER TYPE AUTO

STRUCT. NO. 099-0909
Station NA

BORING NO. RW-02 (@ W0909)
Station 804+23 (11+38)
Offset 105.00ft LT (3.00ft LT)
Ground Surface Elev. 648.00 ft

Surface Water Elev. NA ft
Stream Bed Elev. NA ft

Groundwater Elev.:
First Encounter None ft
Upon Completion None ft
After NA Hrs. NA ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
647.00			
12 inches of Topsoil			
	3		
Brown, Moist to Very Moist	4	2.0	26
FILL: SILTY CLAY, trace sand	5	P	
	3		
	4	3.0	17
-5	4	P	
642.00			
Hard	4		
Brown, Moist	6	5.4	20
CLAY (CL)	8	B	
	5		
	8	6.0	19
-10	11	P	
637.00			
Very Stiff	5		
Gray, Moist	5	2.1	22
CLAY (CL)	7	B	
	2		
	4	3.7	20
-15	6	B	
	3		
	5	3.7	19
	7	B	
	3		
	5	2.5	21
-20	6	B	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Very Stiff			
Gray, Moist			
CLAY (CL) (continued)	2		
	5	2.5	21
	6	B	
	3		
	5	2.5	22
-25	6	B	
	3		
	4	2.1	21
620.50	10	B	
Very Stiff			
Gray, Moist	16		
SILT (ML)	12		19
618.00 -30	12		
End of Boring			
-40			

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

BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
GSG Consultants

SOIL BORING LOG

Page 1 of 1

Date 10/22/14

ROUTE Weber Road | DESCRIPTION Proposed Weber Road & I-55 Improvements | LOGGED BY JH
SECTION Normantown Road to 135th Street/Romeo Road | LOCATION Retaining Wall, SEC. , TWP. , RNG. , Latitude , Longitude
COUNTY Will County | DRILLING METHOD HSA | HAMMER TYPE AUTO

STRUCT. NO. 099-0909
Station NA

BORING NO. RW-03 (@ W0909)
Station 804+78 (10+83)
Offset 106.00ft LT (2.00ft LT)
Ground Surface Elev. 648.00 ft

Surface Water Elev. NA ft
Stream Bed Elev. NA ft

Groundwater Elev.:
First Encounter None ft
Upon Completion None ft
After NA Hrs. NA ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
647.00			
12 inches of Topsoil			
	3		
Brown, Moist	4	2.0	25
FILL: SILTY CLAY	6	P	
644.50			
	4		
Brown, Moist	5	3.0	14
FILL: SILTY CLAY, with gravel,	5	P	
trace sand			
-5 642.00			
Very Stiff to Hard	3		
Brown, Moist	6	4.0	17
CLAY (CL)	7	P	
621.00			
Stiff	7		
Gray, Moist	8		NR
SILT (ML)	9		
-10 618.00 -30			
End of Boring			
-40			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Very Stiff			
Gray, Moist			
CLAY (CL) (continued)	3		
	5	2.1	22
	6	B	
	2		
	4	2.1	23
-25	5	B	
	3		
	10	1.3	16
	12	P	
Stiff			
Gray, Moist	7		
SILT (ML)	6	1.3	19
618.00 -30	8	P	
End of Boring			
-40			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
	8		
	10		NR
	12		
634.50			
Very Stiff	4		
Gray, Moist	4	3.7	19
CLAY (CL)	6	B	
-15			
	3		
	5	2.9	22
	5	B	
	3		
	4	2.9	21
-20	4	B	

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

BBS, form 137 (Rev. 8-99)

KNIGHT
Engineers & Architects

	DESIGNED - GSG	REVISED	
	CHECKED - FJW	REVISED	
SCALE - NONE	DRAWN - TB	REVISED	
DATE - 5/12/2017	CHECKED - FJW	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS
STRUCTURE NUMBER 099-0909
SHEET NO. SE-9 OF 10 SHEETS

F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1156
		CONTRACT NO. 60X10		
* FAI 55, FAP 856	ILLINOIS	FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
CSG Consultants

SOIL BORING LOG

Date 10/22/14

ROUTE Weber Road | DESCRIPTION Proposed Weber Road & I-55 Improvements | LOGGED BY JH

SECTION Normantown Road to 135th Street/Romeo Road | LOCATION Retaining Wall, SEC. , TWP. , RNG. , Latitude , Longitude

COUNTY Will County | DRILLING METHOD HSA | HAMMER TYPE AUTO

STRUCT. NO. 099-0909
Station NA

BORING NO. RW-04 (@ W0909)
Station 805+29 (10+28)
Offset 110.00ft LT (2.00ft RT)
Ground Surface Elev. 650.00 ft

Surface Water Elev. NA ft
Stream Bed Elev. NA ft

Groundwater Elev.:
First Encounter None ft
Upon Completion None ft
After NA Hrs. NA ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Material
				12 inches of Topsoil
				649.00
	3			Brown, Moist
	4	2.5	24	FILL: SILTY CLAY
	6	P		
	3			
	5	2.3	18	
-5	7	B		
				644.00
	6			Very Stiff to Hard
	7	5.2	20	Brown, Moist
	8	B		CLAY (CL)
	4			
	7	7.0	20	
-10	10	P		
	4			
	5	4.6	18	
	7	B		
				636.50
	7			Very Stiff
	8	2.8	18	Gray, Moist
-15	10	P		CLAY (CL)
	5			
	6	2.1	19	
	7	B		
	3			
	5	2.3	19	
-20	7	B		
	3			Very Stiff
	4			Gray, Moist
	6	2.3	21	CLAY (CL) (continued)
	6	B		
	3			
	4	2.1	23	
-25	6	B		
	4			
	6	2.1	19	
	16	B		
				622.50
				Stiff
	11			Gray, Moist
	14	1.3	17	SILT, trace sand (ML)
	11	P		
				620.00
-30				End of Boring
-35				
-40				

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

BBS, form 137 (Rev. 8-99)

NOTE: THE SOIL BORING PLAN AND PROFILE SHEETS TO FOLLOW WERE CREATED USING PHASE ONE STATIONING AND ALIGNMENTS. CONTRACT 60X10 HAS REVISED THE STATIONING OF THE ALIGNMENTS ON ALL SIDE ROADS AND RAMPS. THE STATIONING OF WEBER ROAD REMAINS UNCHANGED.

ALIGNMENT	STATION EQUATIONS	
	SOILS PLAN & PROFILES	60X10 ALIGNMENTS
RAMP A	STA. 117+94.05	STA. 5000+00
RAMP B	STA. 200+00.00	STA. 6000+00
RAMP C	STA. 317+57.40	STA. 8000+00
RAMP D	STA. 400+00.00	STA. 9000+00
NORMANTOWN ROAD	STA. 91+71.38	STA. 100+00
LAKEVIEW DRIVE	STA. 56+04.87	STA. 200+00
REMINGTON BOULEVARD / WINDHAM PARKWAY	STA. 65+04.87	STA. 300+00
CARLOW DRIVE	STA. 69+20.70	STA. 400+00
RODEO DRIVE / REMINGTON BOULEVARD	STA. 75+61.38	STA. 500+00

FILE NAME = D160X10-sht-blog000-notes.dgn

KNIGHT
Engineers & Architects

USER NAME = mmaestra	DESIGNED DGB	REVISED -
	DRAWN DGB	REVISED -
PLOT SCALE = 1:20	CHECKED PJO	REVISED -
PLOT DATE = 5/13/2017	DATE 05/12/17	REVISED -

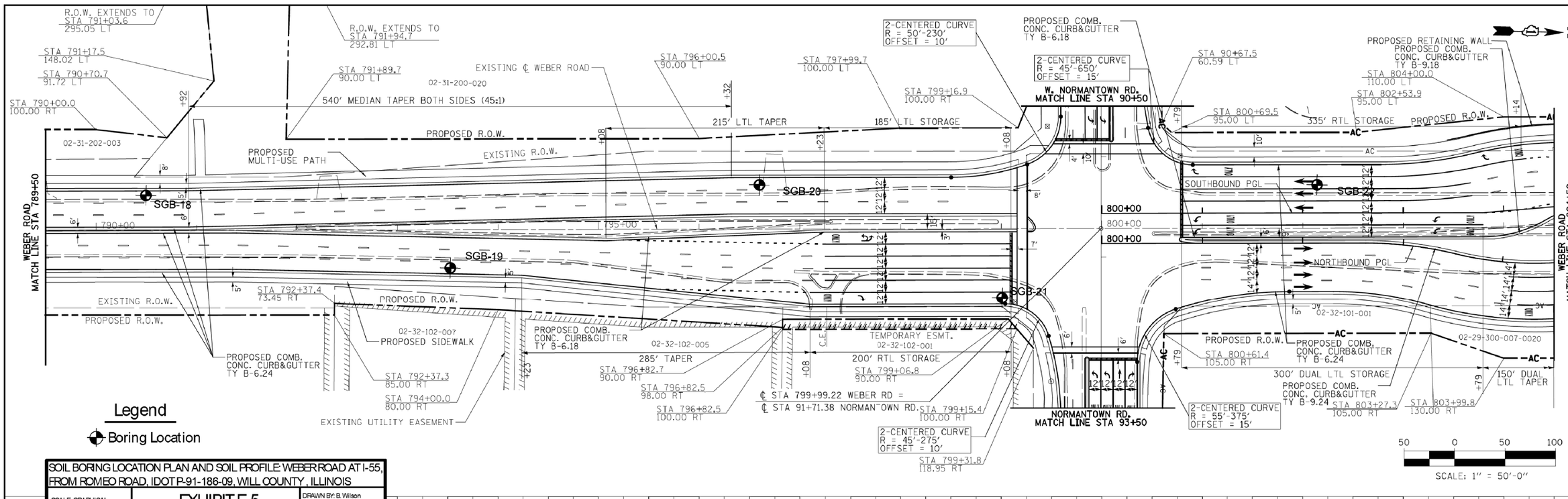
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROADWAY SOIL BORINGS – STATION EQUATIONS

SCALE: AS SHOWN | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A.I/P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(99-1HB-1) R-1	WILL	1508	1158
		CONTRACT NO. 60X10		

* FAI 55, FAP 856 | ILLINOIS | FED. AID PROJECT



SOIL BORING LOCATION PLAN AND SOIL PROFILE: WEBER ROAD AT I-55, FROM ROMEO ROAD, IDOT P-91-186-09, WILL COUNTY, ILLINOIS

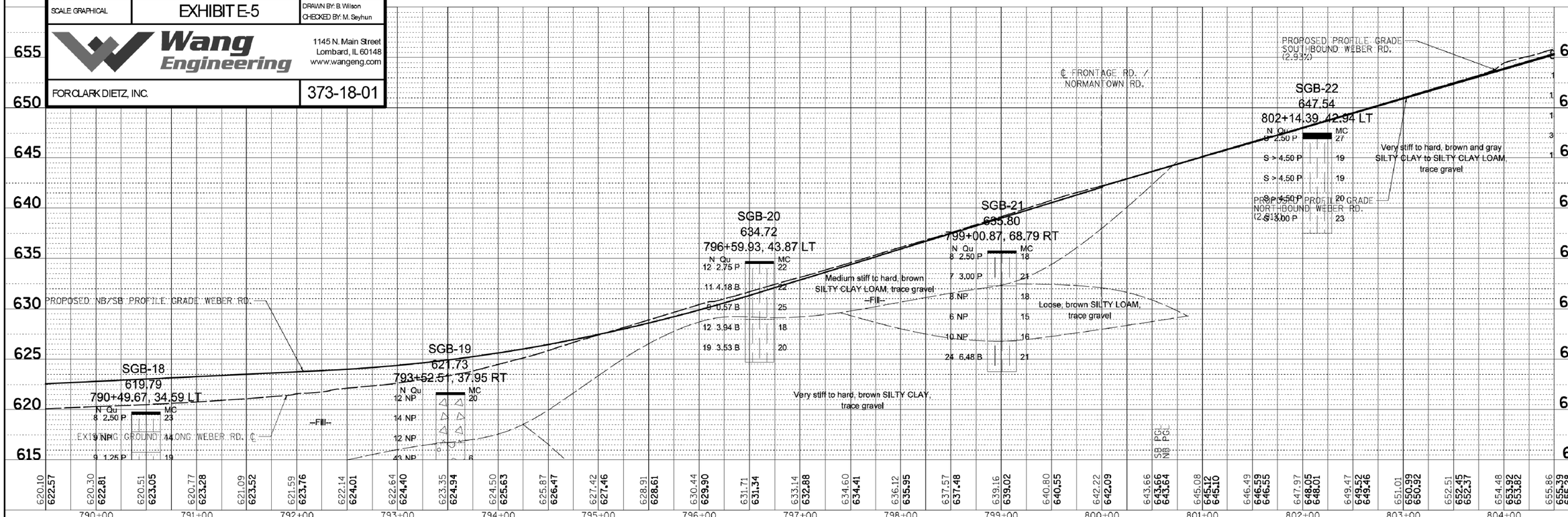
SCALE: GRAPHICAL | EXHIBIT E-5 | DRAWN BY: B. Wilson | CHECKED BY: M. Seyhun

Wang Engineering
1145 N. Main Street
Lombard, IL 60148
www.wangeng.com

FOR: CLARK DIETZ, INC. | 373-18-01

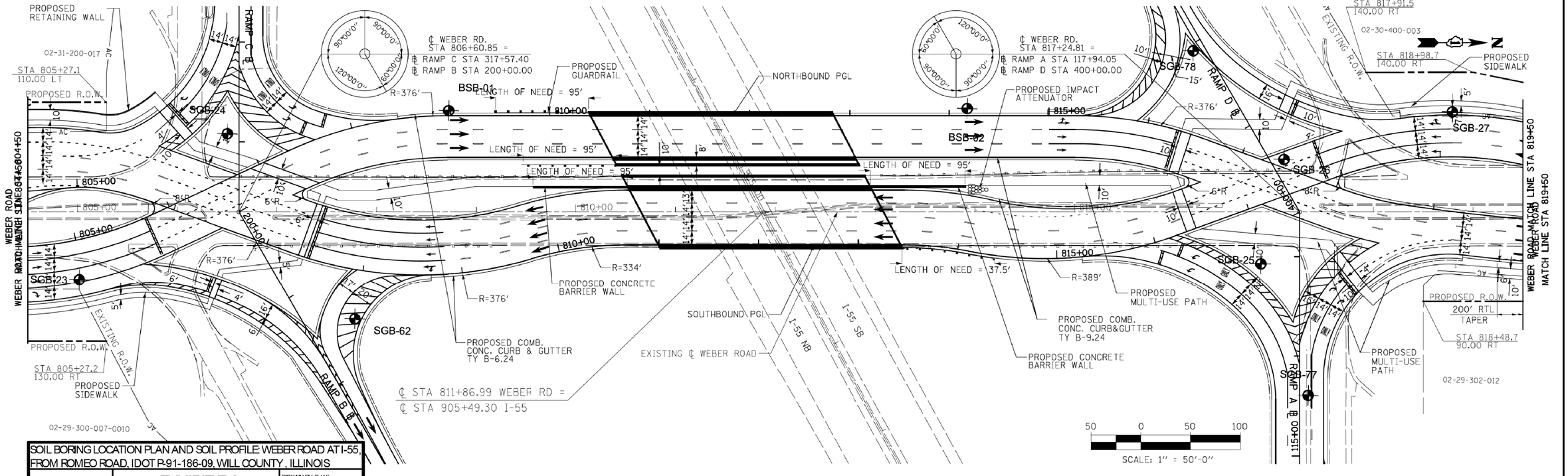
PLAN: SURVEYED — BY — DATE; ALIGNMENT CHECKED; RT. OF WAY CHECKED; CADD FILE NAME; NOTE BOOK; NO.

PROFILE: SURVEYED — BY — DATE; GRADES CHECKED; B.M. NOTED; STRUCTURE NOTATIONS CHKD; NOTE BOOK; NO.



FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - TMW/CMD/PAW	REVISED - 6/20/2013	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**	**WEBER ROAD SOIL BORINGS PLAN AND PROFILE**
$MODELNAME$		DRAWN - TMW/CMD/PAW	REVISED - 11/11/2013		SCALE: 1"=50' | SHEET 5 OF 10 SHEETS | STA. 789+50 TO STA. 804+50
	PLOT SCALE = $SCALE$	CHECKED - TMW/SMW	REVISED - 1/9/2014		
	PLOT DATE = $DATE$	DATE - 1/25/2013	REVISED - 1/20/2014		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
856	(99-1HB-1)A	WILL	1508	1159
		CONTRACT NO. 60X10		
		ILLINOIS FED. AID PROJECT		

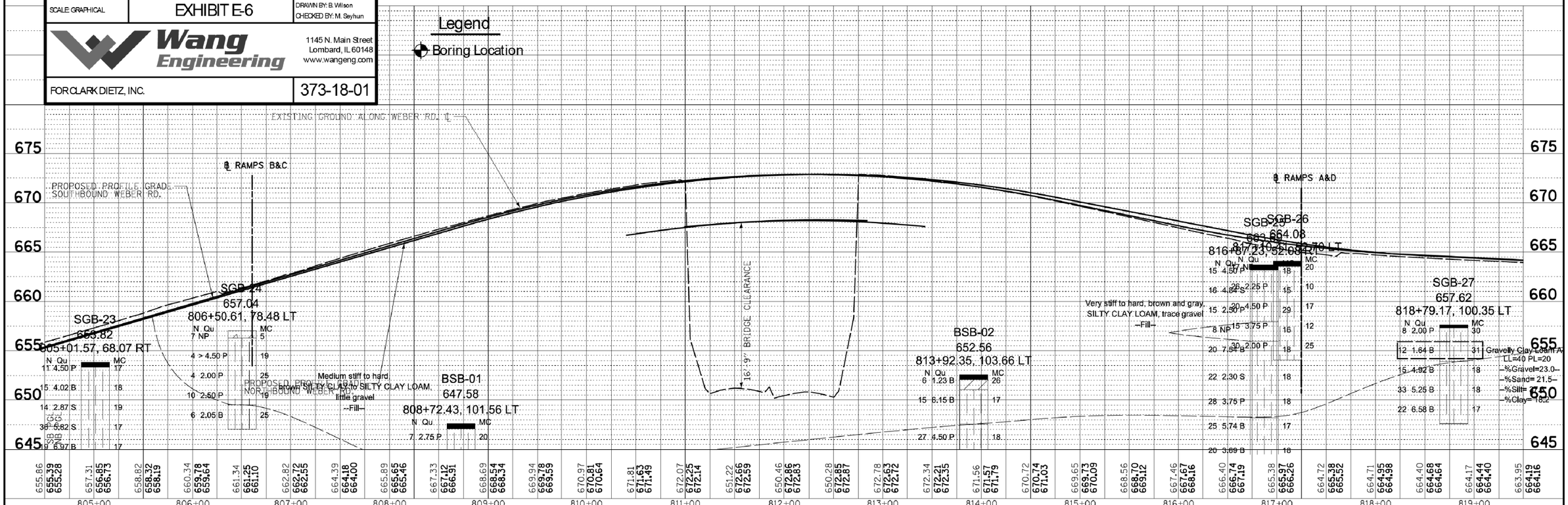


SOIL BORING LOCATION PLAN AND SOIL PROFILE WEBER ROAD AT I-55, FROM ROMEO ROAD, IDOT P-91-186-09, WILL COUNTY, ILLINOIS

SCALE: GRAPHICAL	EXHIBIT E-6	DRAWN BY: B. Wilson CHECKED BY: M. Seyhun

Wang Engineering
1145 N. Main Street
Lombard, IL 60148
www.wangeng.com

FOR CLARK DIETZ, INC. | 373-18-01



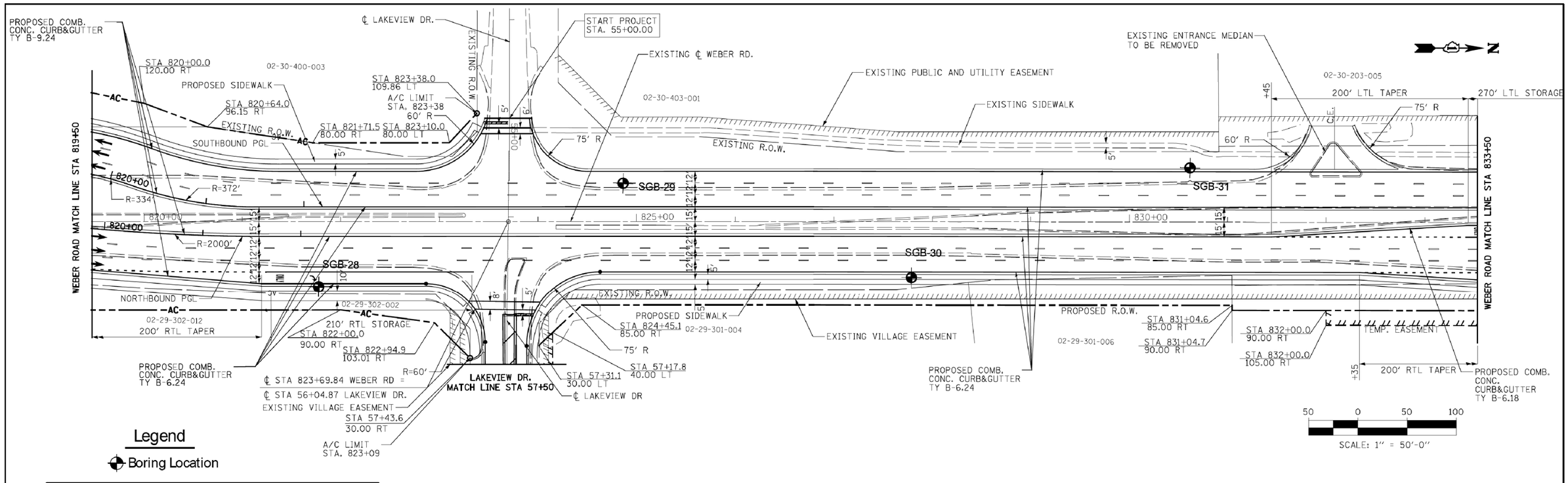
FILE NAME =	USER NAME = $USER$	DESIGNED - TMW/CMD/PAW	REVISED - 6/20/2013
$FILE$		DRAWN - TMW/CMD/PAW	REVISED - 11/11/2013
$MODELNAME$	PLOT SCALE = $SCALE$	CHECKED - TMW/SMW	REVISED - 1/9/2014
	PLOT DATE = $DATE$	DATE - 1/25/2013	REVISED - 1/20/2014

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WEBER ROAD
SOIL BORINGS PLAN AND PROFILE

SCALE: 1"=50' | SHEET 6 6 OF 10 SHEETS | STA. 804+50 TO STA. 819+50

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
856	(99-1HB-1)A	WILL	1508	1160
		CONTRACT NO. 60X10		
		ILLINOIS FED. AID PROJECT		



SOIL BORING LOCATION PLAN AND SOIL PROFILE: WEBER ROAD AT I-55, FROM ROMEO ROAD, IDOT P-91-186-09, WILL COUNTY , ILLINOIS

SCALE: GRAPHICAL

EXHIBIT E-7

DRAWN BY: B. Wilson
CHECKED BY: M. Seyhun

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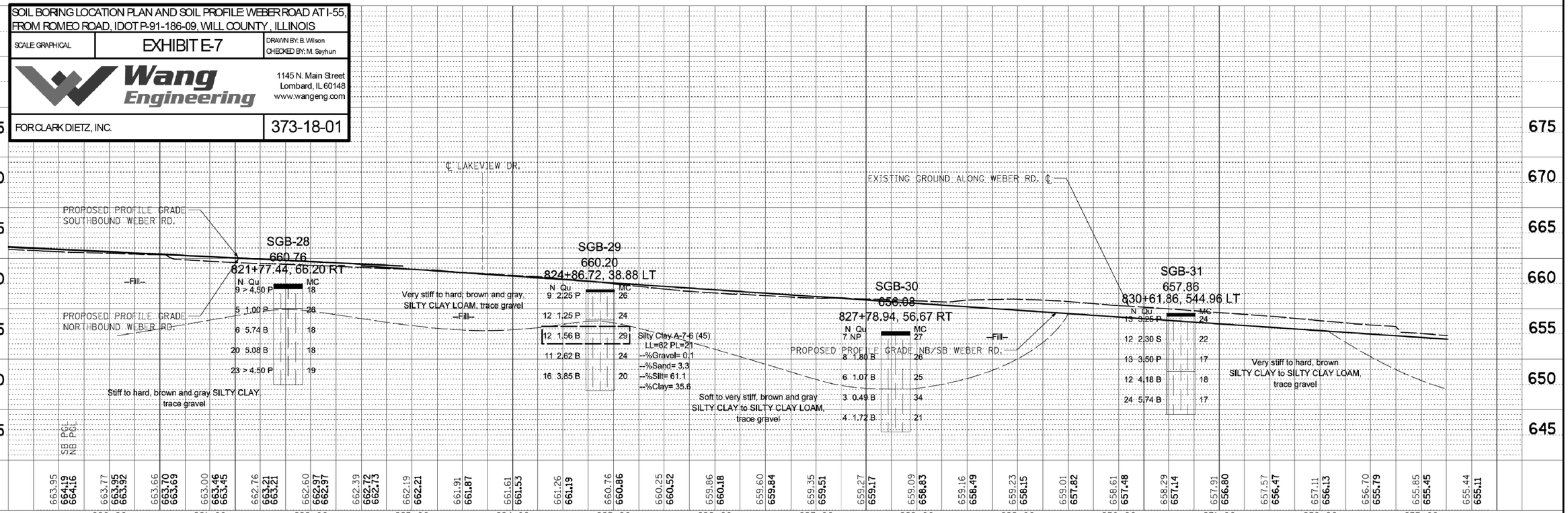
373-18-01



PLAN
NOTE BOOK
NO.
SURVEYED
PLOTTED
ALIGNMENT CHECKED
R/L OF WAY CHECKED
CADD FILE NAME
BY
DATE

PROFILE
NOTE BOOK
NO.
SURVEYED
PLOTTED
GRADES CHECKED
B.M. NOTED
STRUCTURE NOTATNS CHKD
BY
DATE

FILE NAME = $FILEL$
$MODELNAME$
USER NAME = $USER$
PLOT SCALE = $SCALE$
PLOT DATE = $DATE$

DESIGNED	- TMW/CMD/PAW	REVISED	- 6/20/2013
DRAWN	- TMW/CMD/PAW	REVISED	- 11/11/2013
CHECKED	- TMW/SMW	REVISED	- 1/9/2014
DATE	- 1/25/2013	REVISED	- 1/20/2014

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

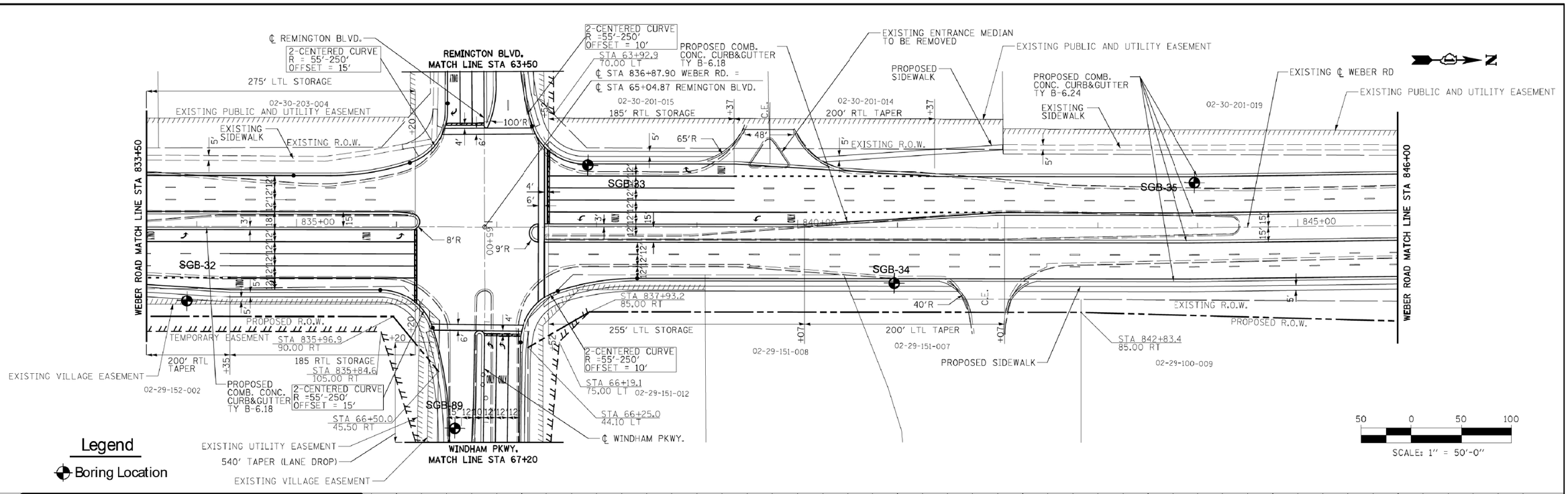
WEBER ROAD
SOIL BORINGS PLAN AND PROFILE

SCALE: 1"=50' | SHEET 7 OF 10 SHEETS | STA. 819+50 TO STA. 833+50

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
856	(99-1HB-1)A	WILL	1508	1161

CONTRACT NO. 60X10

ILLINOIS FED. AID PROJECT



SOIL BORING LOCATION PLAN AND SOIL PROFILE: WEBER ROAD AT I-55, FROM ROMEO ROAD, IDOT P-91-186-09, WILL COUNTY, ILLINOIS

SCALE GRAPHICAL | EXHIBIT E-8 | DRAWN BY: B. Wilson; CHECKED BY: M. Seyhun

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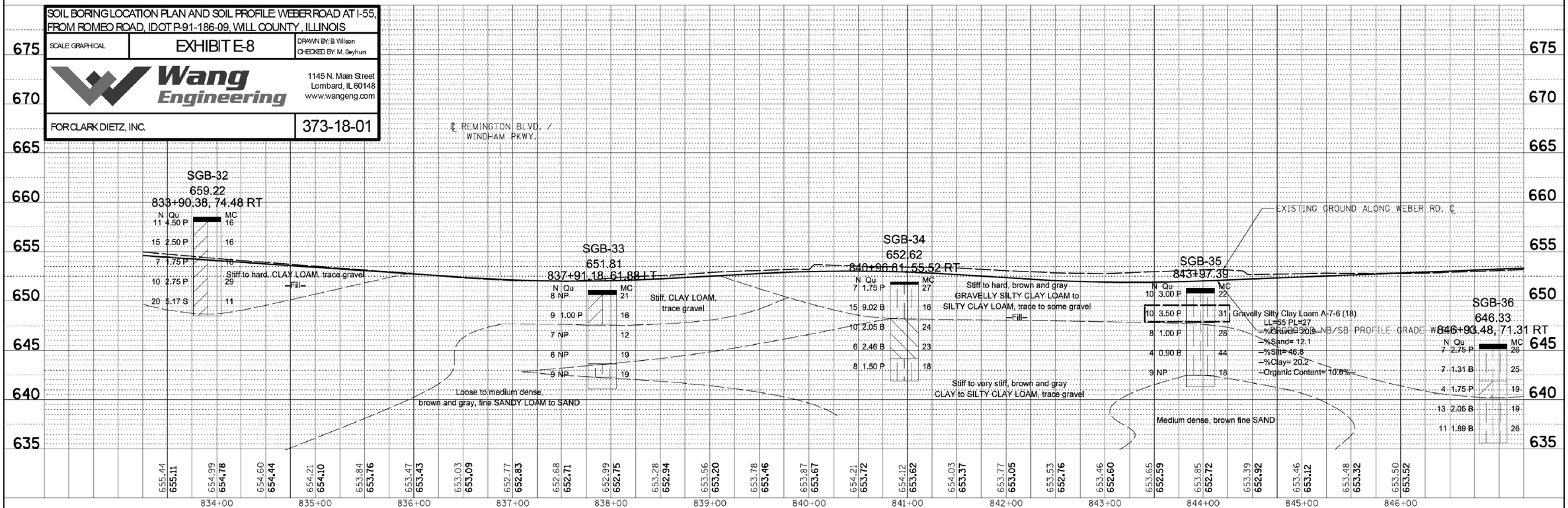
FOR CLARK DIETZ, INC. | 373-18-01



FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - TMW/CMD/PAW	REVISED - 6/20/2013
$MODELNAME$		DRAWN - TMW/CMD/PAW	REVISED - 11/11/2013
	PLOT SCALE = $SCALE$	CHECKED - TMW/SMW	REVISED - 1/9/2014
	PLOT DATE = $DATE$	DATE - 1/25/2013	REVISED - 1/20/2014

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

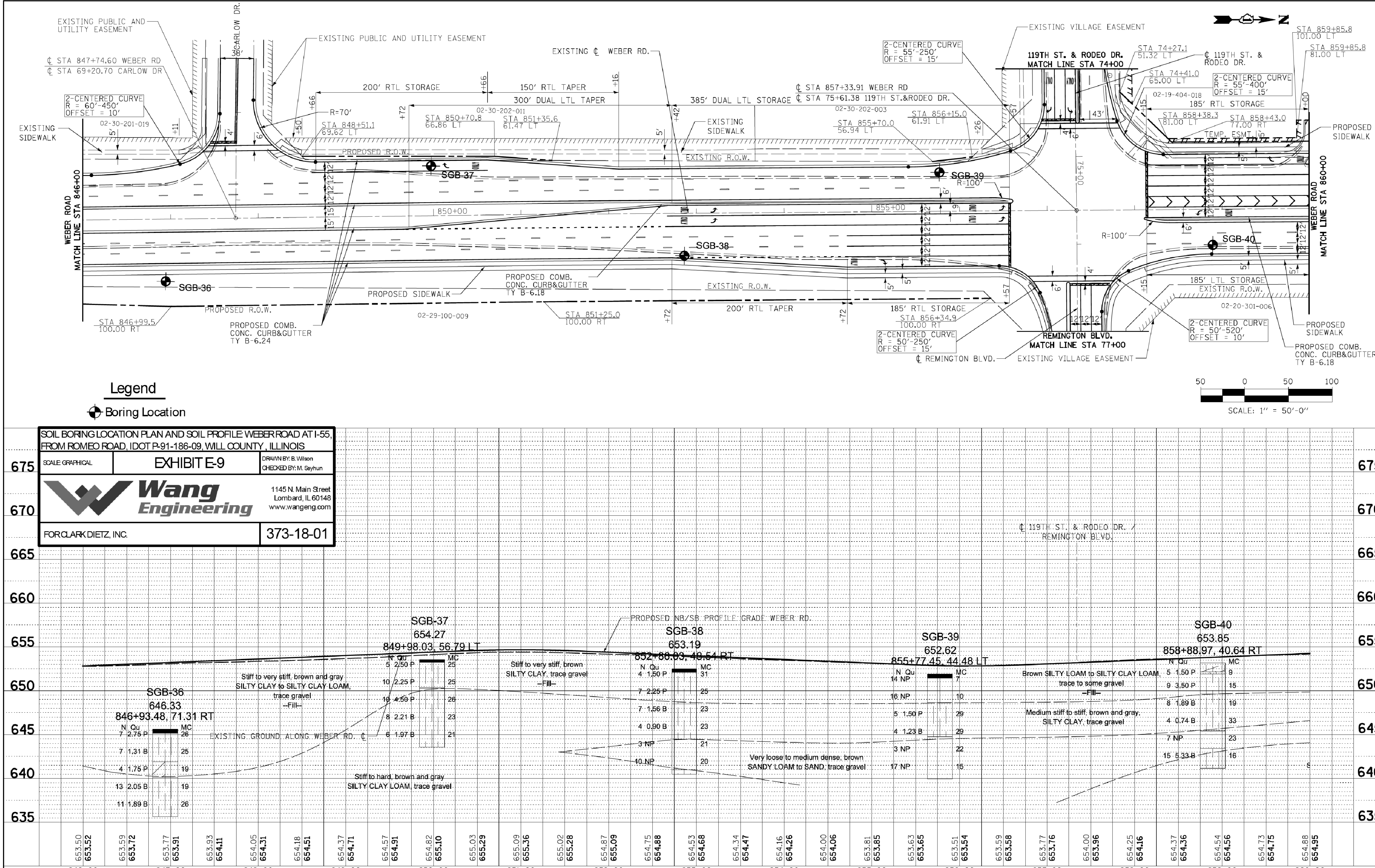
WEBER ROAD
SOIL BORINGS PLAN AND PROFILE

SCALE: 1"=50' | SHEET 8 OF 10 SHEETS | STA. 833+50 | TO STA. 846+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
856	(99-1HB-1)A	WILL	1508	1162

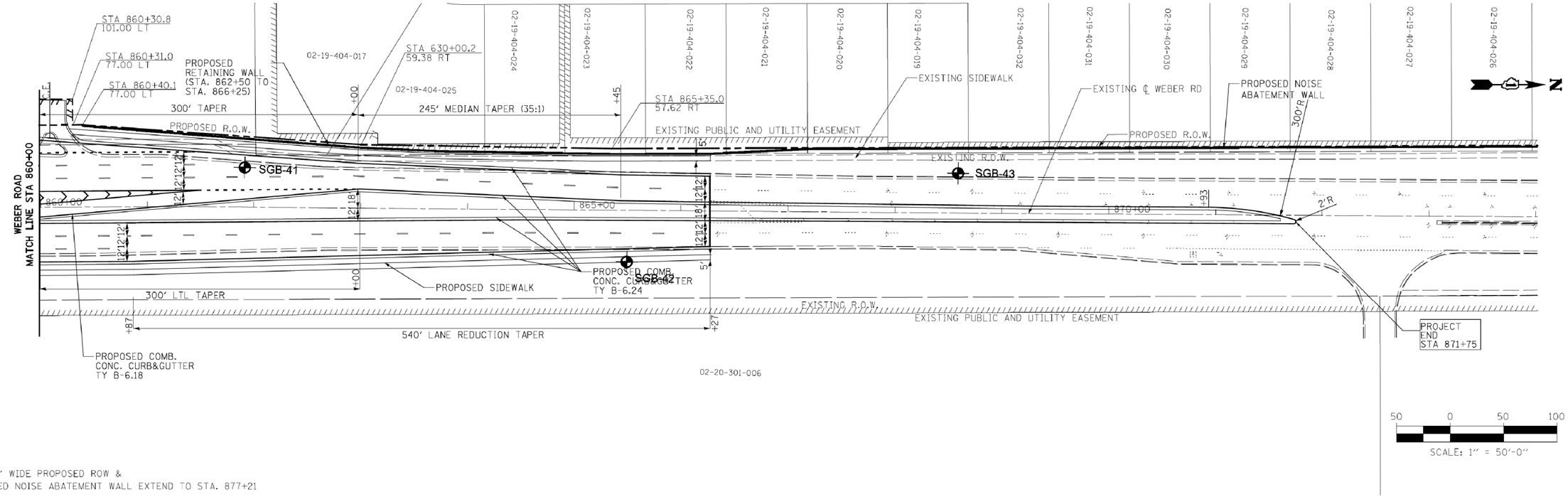
CONTRACT NO. 60X10

ILLINOIS FED. AID PROJECT



SOIL BORING LOCATION PLAN AND SOIL PROFILE: WEBER ROAD AT I-55, FROM ROMEO ROAD, IDOT P-91-186-09, WILL COUNTY, ILLINOIS
SCALE GRAPHICAL
EXHIBIT E-9
DRAWN BY: B. Wilson
CHECKED BY: M. Seyhun
Wang Engineering
1145 N. Main Street
Lombard, IL 60148
www.wangeng.com
FOR CLARK DIETZ, INC.
373-18-01
Legend
Boring Location
SGB-36
SGB-37
SGB-38
SGB-39
SGB-40
WEBER ROAD
MATCH LINE STA 846+00
MATCH LINE STA 860+00
119TH ST. & RODEO DR.
MATCH LINE STA 74+00
REMINGTON BLVD.
MATCH LINE STA 77+00
CARLOW DR.
EXISTING PUBLIC AND UTILITY EASEMENT
EXISTING VILLAGE EASEMENT
EXISTING SIDEWALK
PROPOSED SIDEWALK
PROPOSED R.O.W.
EXISTING R.O.W.
PROPOSED COMB. CONC. CURB&GUTTER TY B-6.24
PROPOSED COMB. CONC. CURB&GUTTER TY B-6.18
200' RTL STORAGE
150' RTL TAPER
300' DUAL LTL TAPER
385' DUAL LTL STORAGE
185' RTL STORAGE
185' LTL STORAGE
200' RTL TAPER
SCALE: 1" = 50'-0"
SGB-36
646.33
846+93.48, 71.31 RT
SGB-37
654.27
849+98.03, 56.79 LT
SGB-38
653.19
852+86.03, 40.54 RT
SGB-39
652.62
855+77.45, 44.48 LT
SGB-40
653.85
858+88.97, 40.64 RT
Stiff to very stiff, brown and gray SILTY CLAY to SILTY CLAY LOAM, trace gravel --Fill--
Stiff to very stiff, brown SILTY CLAY, trace gravel --Fill--
Stiff to hard, brown and gray SILTY CLAY LOAM, trace gravel
Very loose to medium dense, brown SANDY LOAM to SAND, trace gravel
Brown SILTY LOAM to SILTY CLAY LOAM, trace to some gravel --Fill--
Medium stiff to stiff, brown and gray, SILTY CLAY, trace gravel
PROPOSED NB/SB PROFILE GRADE WEBER RD.
EXISTING GROUND ALONG WEBER RD. ℄
℄ 119TH ST. & RODEO DR. / REMINGTON BLVD.

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - TMW/CMD/PAW	REVISED - 6/20/2013	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	WEBER ROAD SOIL BORINGS PLAN AND PROFILE	F.A.I. RTE. 856	SECTION (99-1HB-1)A
$MODELNAME$		DRAWN - TMW/CMD/PAW	REVISED - 11/11/2013			COUNTY WILL	TOTAL SHEETS 1508 / SHEET NO. 1163
	PLOT SCALE = $SCALE$	CHECKED - TMW/SMW	REVISED - 1/9/2014		SCALE: 1"=50' SHEET 9 OF 10 SHEETS STA. 846+00 TO STA. 860+00	CONTRACT NO. 60X10	
	PLOT DATE = $DATE$	DATE - 1/25/2013	REVISED - 1/20/2014			ILLINOIS FED. AID PROJECT	



NOTE: 5' WIDE PROPOSED ROW &
PROPOSED NOISE ABATEMENT WALL EXTEND TO STA. 877+21

SOIL BORING LOCATION PLAN AND SOIL PROFILE: WEBER ROAD AT I-55, FROM ROMEO ROAD, IDOT P-91-186-09, WILL COUNTY, ILLINOIS

SCALE: GRAPHICAL | EXHIBIT E-10 | DRAWN BY: B. Wilson | CHECKED BY: M. Seyhun

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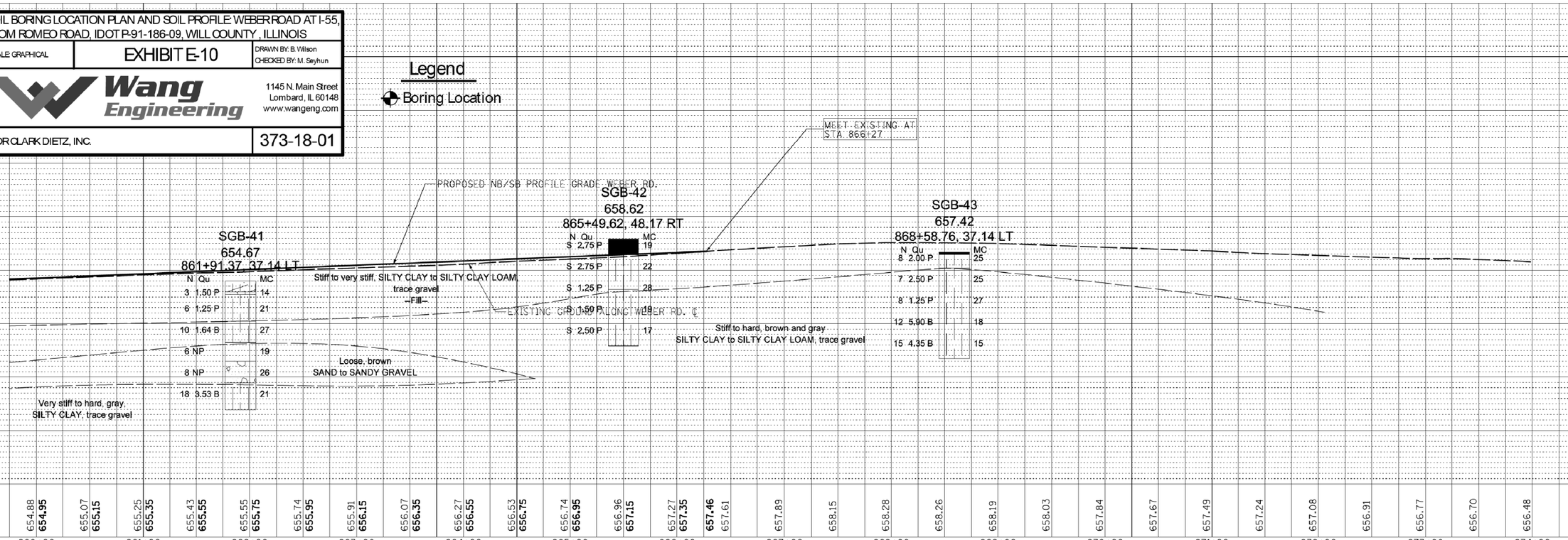
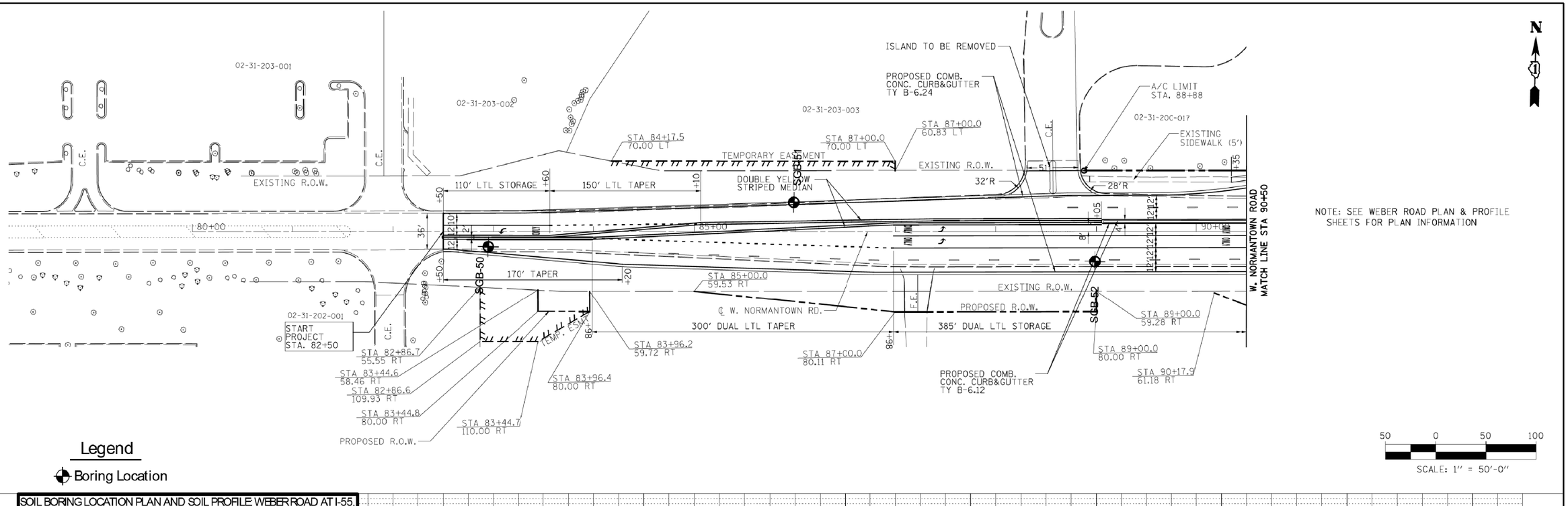


FILE NAME = $FILEL$ $MODELNAME$	USER NAME = $USER$	DESIGNED - TMW/CMD/PAW	REVISED - 6/20/2013	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	WEBER ROAD SOIL BORINGS PLAN AND PROFILE
		DRAWN - TMW/CMD/PAW	REVISED - 11/11/2013		
	PLOT SCALE = $SCALE$	CHECKED - TMW/SMW	REVISED - 1/9/2014		SCALE: 1"=50' SHEET 10 OF 10 SHEETS STA. 860+00 TO STA. 866+27.03
	PLOT DATE = $DATE$	DATE - 1/25/2013	REVISED - 1/20/2014		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
856	(99-1HB-1)A	WILL	1508	1164
		CONTRACT NO. 60X10		
		ILLINOIS FED. AID PROJECT		



SOIL BORING LOCATION PLAN AND SOIL PROFILE WEBBER ROAD AT I-55, FROM ROMEO ROAD, IDOT P-91-186-09, WILL COUNTY, ILLINOIS

SCALE: GRAPHICAL | EXHIBIT E-13 | DRAWN BY: B. Wilson, CHECKED BY: M. Seyhun

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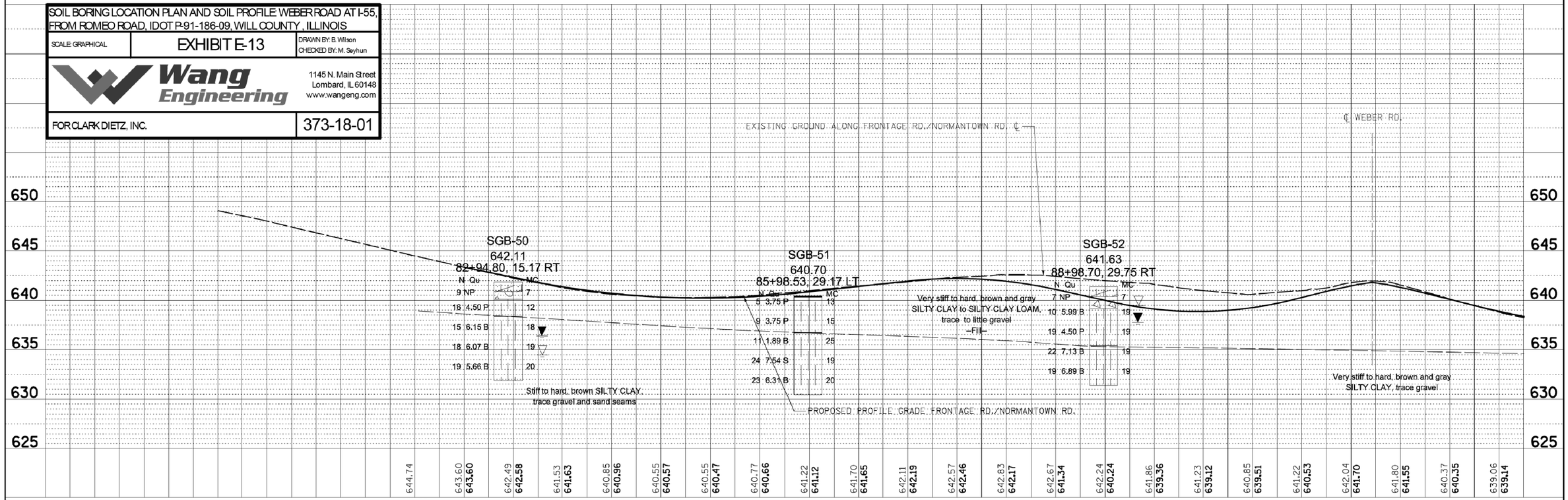
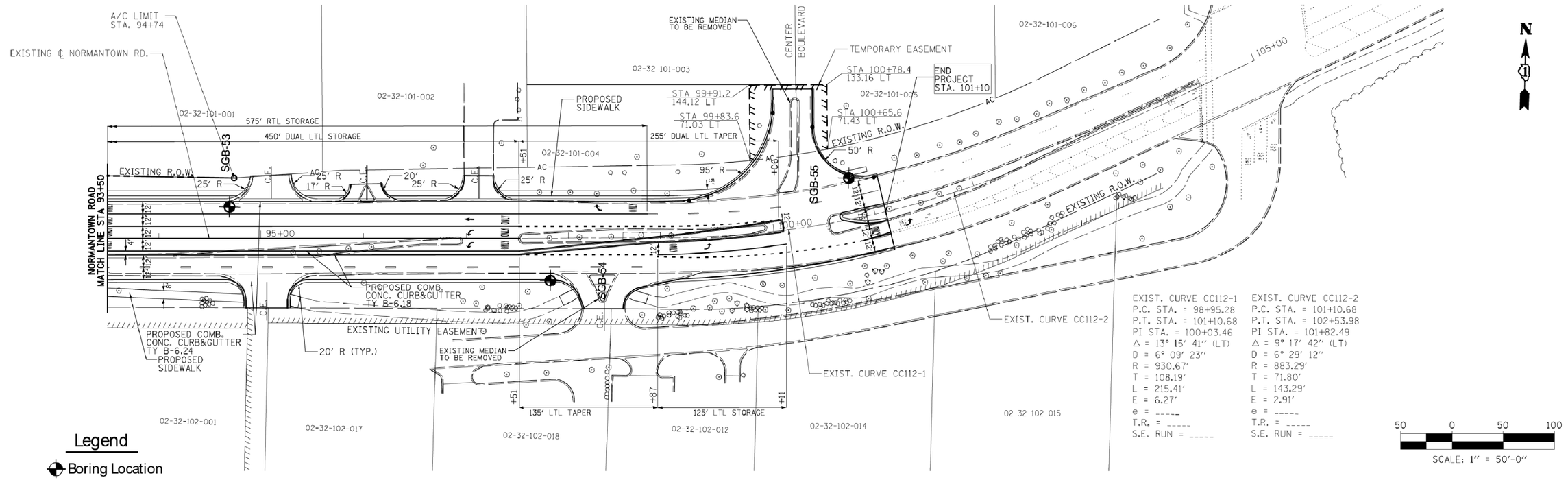
FOR CLARK DIETZ, INC. | 373-18-01



FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - TMW/CMD/PAW	REVISED - 6/20/2013	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**
$MODELNAME$		DRAWN - TMW/CMD/PAW	REVISED - 11/11/2013	**W. NORMANTOWN ROAD/NORMANTOWN ROAD SOIL BORINGS PLAN AND PROFILE**
	PLOT SCALE = $SCALE$	CHECKED - TMW/SMW	REVISED - 1/9/2014	SCALE: 1"=50' SHEET 1 OF 2 SHEETS STA. 82+50 TO STA. 90+50
	PLOT DATE = $DATE$	DATE - 1/25/2013	REVISED - 1/20/2014	

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
856	(99-1HB-1)A	WILL	1508	1165
		CONTRACT NO. 60X10		
	ILLINOIS FED. AID PROJECT			



SOIL BORING LOCATION PLAN AND SOIL PROFILE: WEBBER ROAD AT I-55, FROM ROMEO ROAD, IDOT P-91-186-09, WILL COUNTY, ILLINOIS

SCALE GRAPHICAL | EXHIBIT E-14 | DRAWN BY: B. Wilson, CHECKED BY: M. Seyhun

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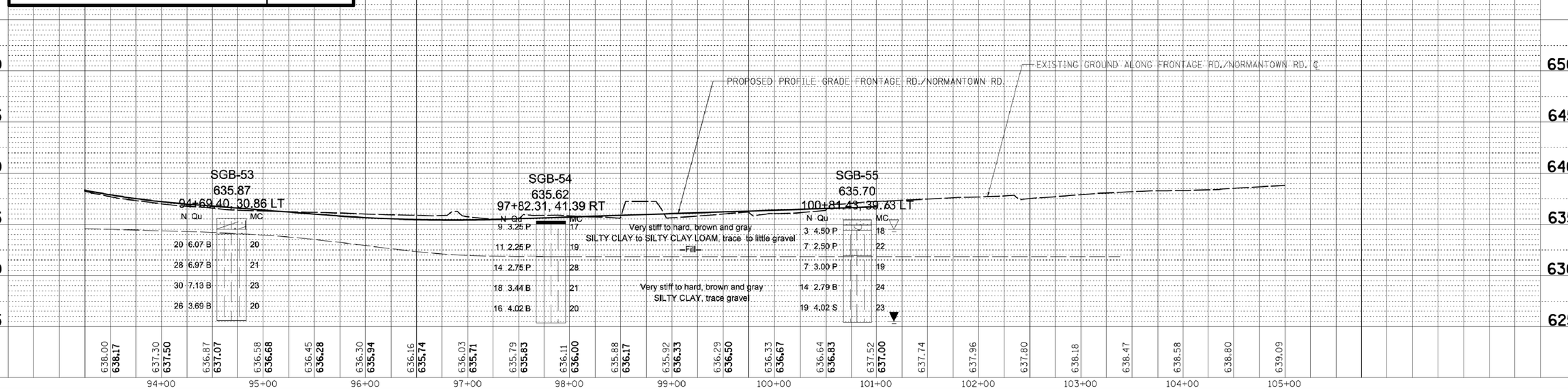

FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - TMW/CMD/PAW	REVISED - 6/20/2013
$MODELNAME$		DRAWN - TMW/CMD/PAW	REVISED - 11/11/2013
	PLOT SCALE = $SCALE$	CHECKED - TMW/SMW	REVISED - 1/9/2014
	PLOT DATE = $DATE$	DATE - 1/25/2013	REVISED - 1/20/2014

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

W. NORMANTOWN ROAD/NORMANTOWN ROAD
SOIL BORINGS PLAN AND PROFILE

SCALE: 1"=50' | SHEET 2 OF 2 SHEETS | STA. 93+50 TO STA. 101+10

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
856	(99-1HB-1)A	WILL	1508	1166

CONTRACT NO. 60X10
ILLINOIS FED. AID PROJECT

PLAN: SURVEYED, PLOTTED, ALIGNMENT CHECKED, RT. OF WAY CHECKED, NOTE BOOK, NO. ____, CADD FILE NAME, BY, DATE

PROFILE: SURVEYED, PLOTTED, PROFILE CHECKED, S.M. NOTED, NOTE BOOK, NO. ____, STRUCTURE NO(S) & TYPE(S) CHKD

SOIL BORING LOCATION PLAN AND SOIL PROFILE: WEBER ROAD AT I-55, FROM ROMEO ROAD, IDOT P-91-186-09, WILL COUNTY, ILLINOIS

SCALE: GRAPHICAL | EXHIBIT E-15 | DRAWN BY: B. Wilson | CHECKED BY: M. Seyhun

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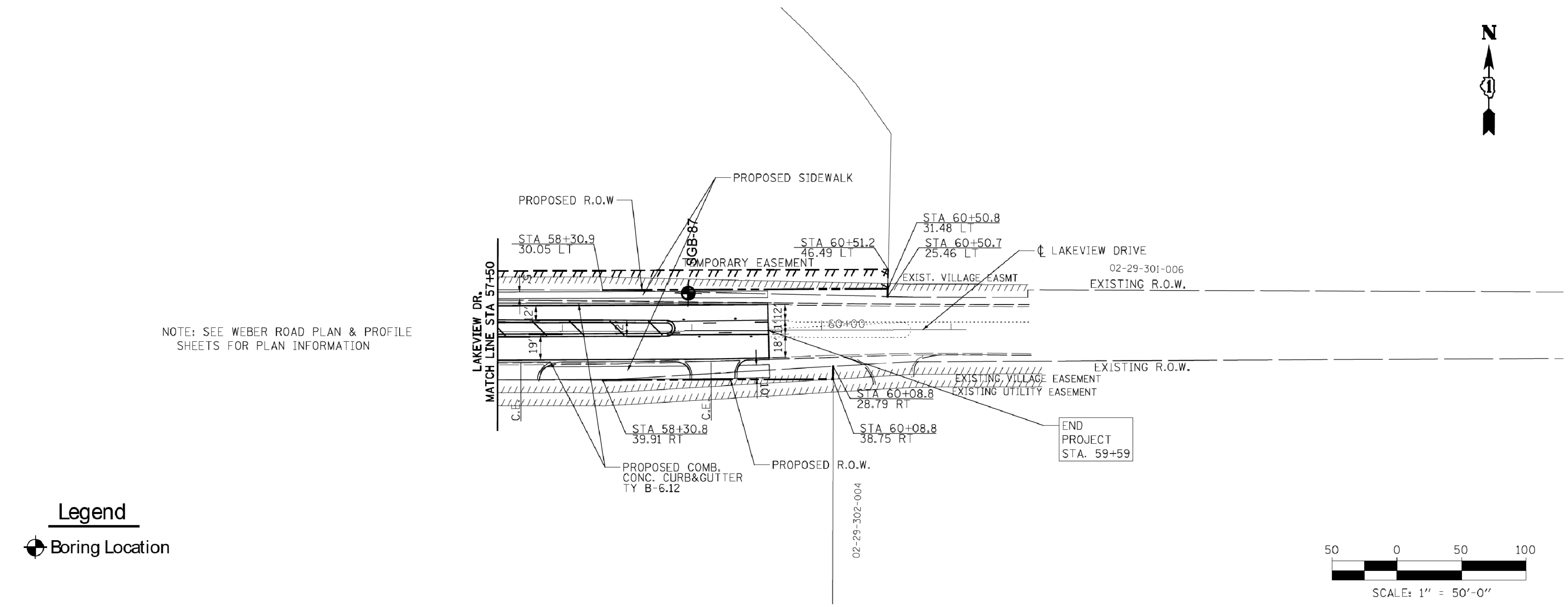
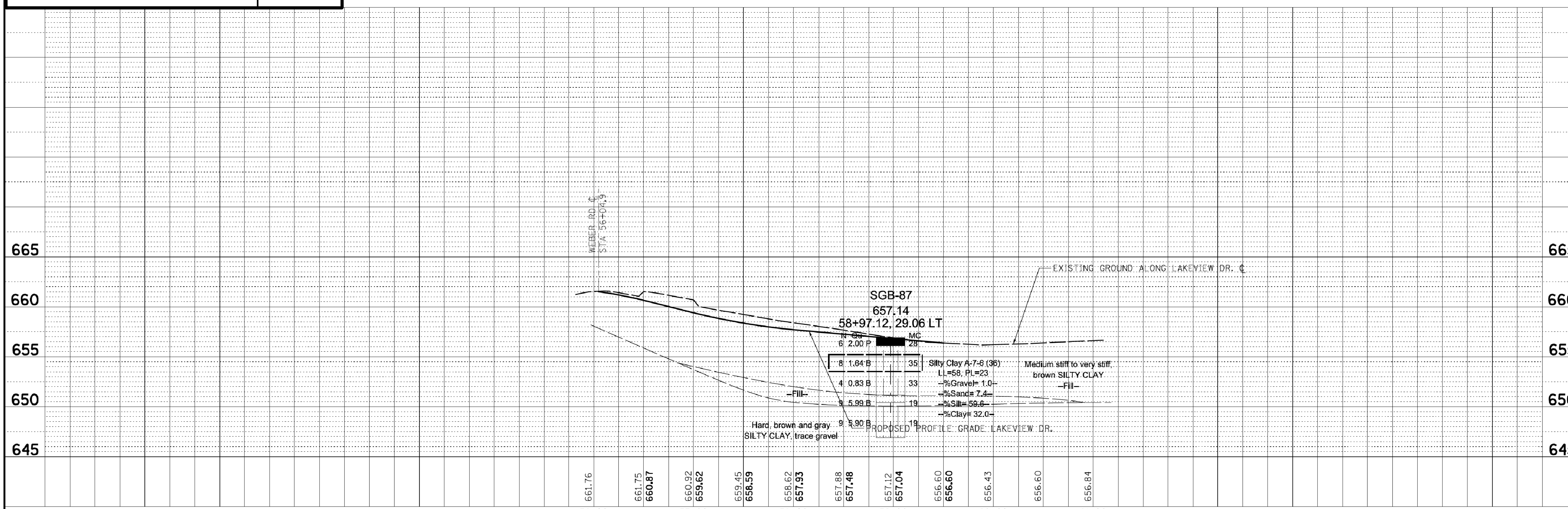
FOR CLARK DIETZ, INC. | 373-18-01





FILE NAME = $FILEL$ $MODELNAME$	USER NAME = $USER$ / PLOT SCALE = $SCALE$ / PLOT DATE = $DATE$	DESIGNED - TMW/CMD/PAW / DRAWN - TMW/CMD/PAW / CHECKED - TMW/SMW / DATE - 1/25/2013	REVISED - 6/20/2013 / REVISED - 11/11/2013 / REVISED - 1/9/2014 / REVISED - 1/20/2014	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

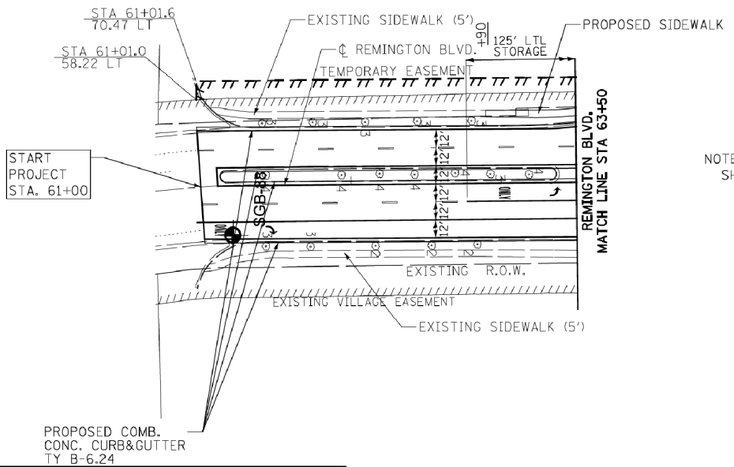
LAKEVIEW DRIVE SOIL BORINGS PLAN AND PROFILE

SCALE: 1"=50' | SHEET 1 OF 1 SHEETS | STA. 57+50 TO STA. 59+59

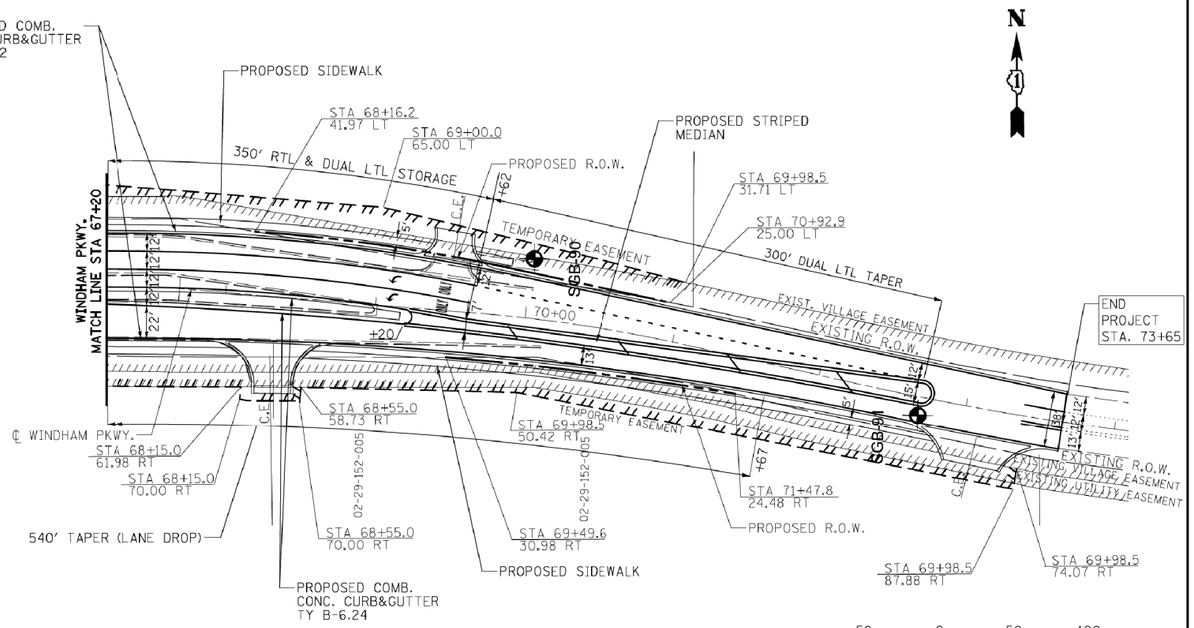
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
856	(99-1HB-1)A	WILL	1508	1167

CONTRACT NO. 60X10

ILLINOIS FED. AID PROJECT



NOTE: SEE WEBER ROAD PLAN & PROFILE SHEETS FOR PLAN INFORMATION



SOIL BORING LOCATION PLAN AND SOIL PROFILE: WEBER ROAD AT I-55, FROM ROMEO ROAD, IDOT P-91-186-09, WILL COUNTY, ILLINOIS

SCALE: GRAPHICAL	EXHIBIT E-16	DRAWN BY: B.Wilson CHECKED BY: M. Seyhun

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1145 N. Main Street
Lombard, IL 60148
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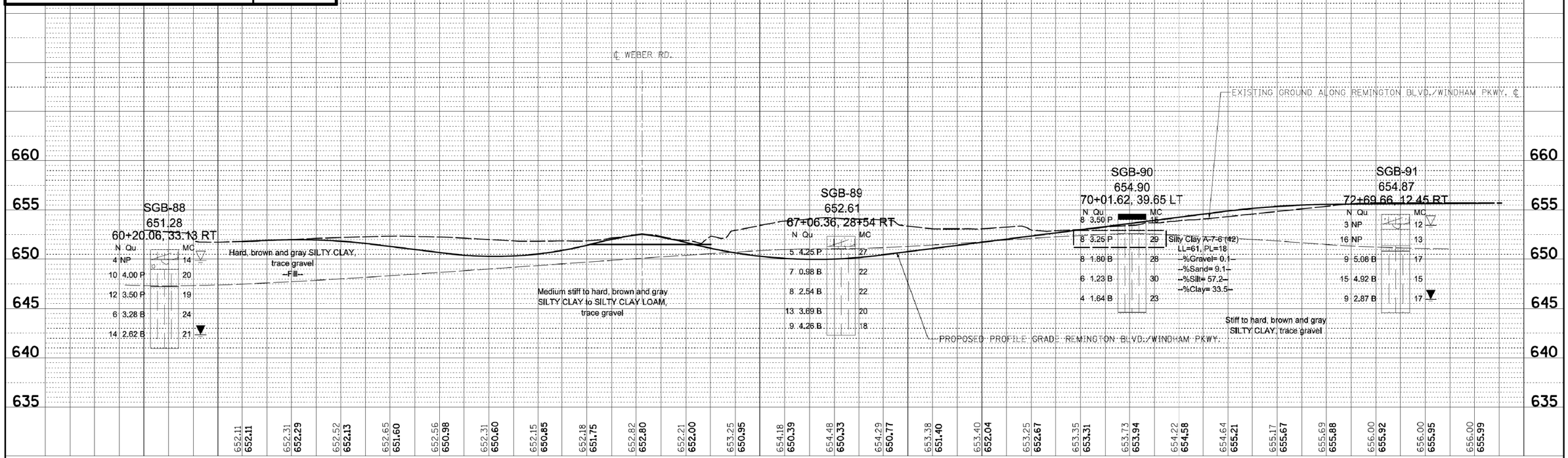
FOR: CLARK DIETZ, INC. — 373-18-01

Legend
Boring Location



FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - TMW/CMD/PAW	REVISED - 6/20/2013
		DRAWN - TMW/CMD/PAW	REVISED - 11/11/2013
$MODELNAME$	PLOT SCALE = $SCALE$	CHECKED - TMW/SMW	REVISED - 1/9/2014
	PLOT DATE = $DATE$	DATE - 1/25/2013	REVISED - 1/20/2014

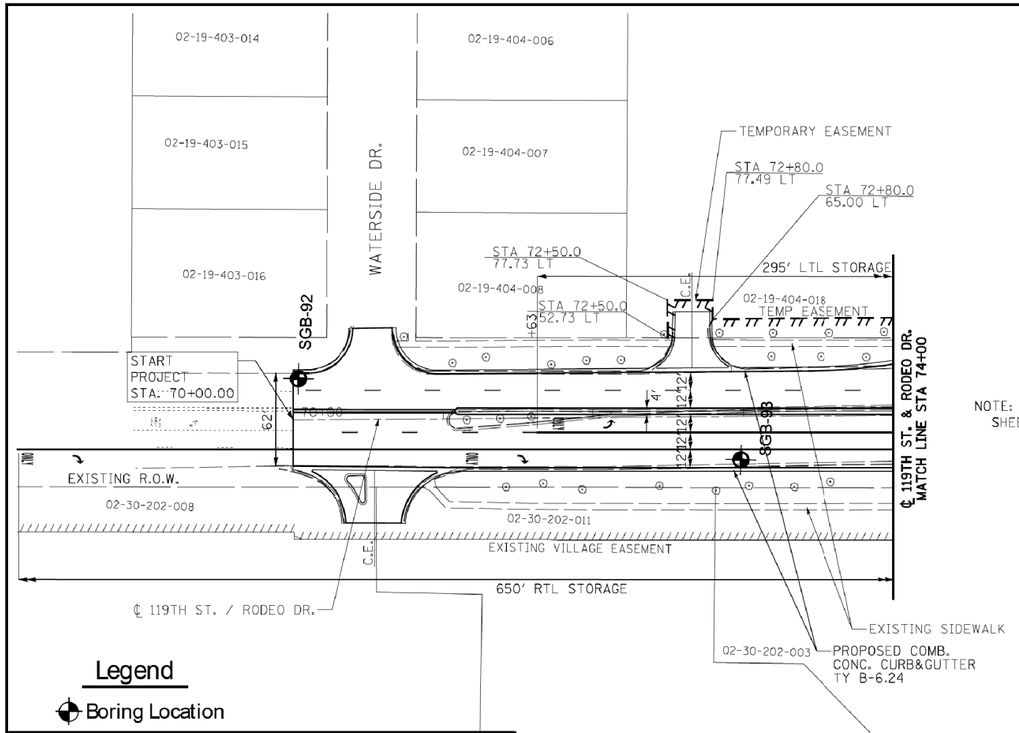
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

REMINGTON BLVD/WINDHAM PKWY
SOIL BORINGS PLAN AND PROFILE

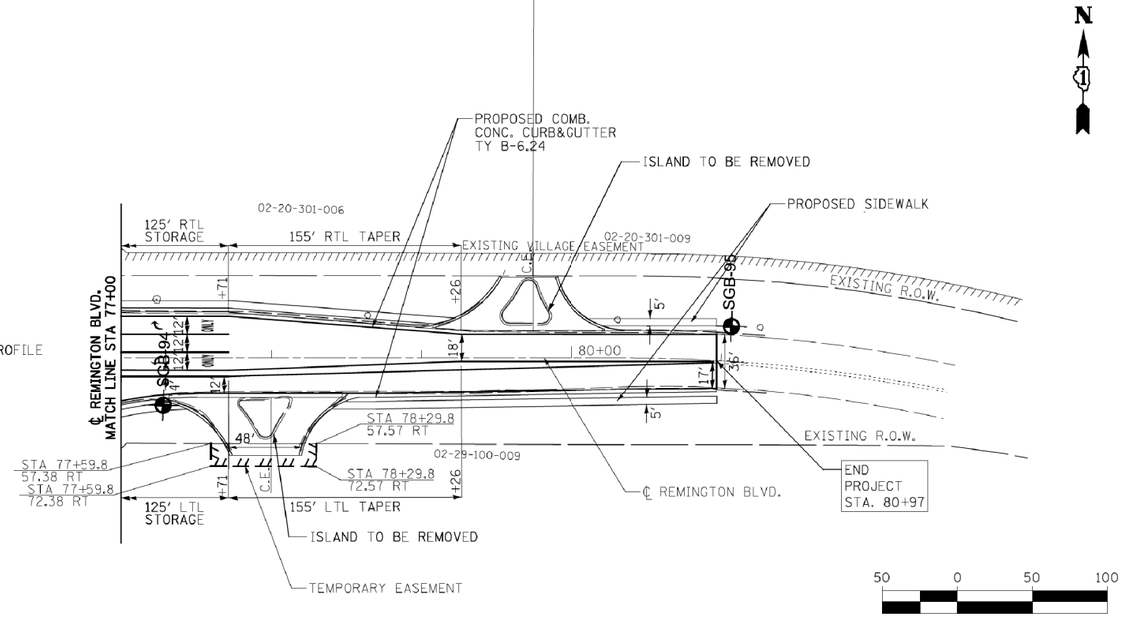
SCALE: 1"=50' | SHEET 1 OF 1 SHEETS | STA. 61+00 TO STA. 73+65

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
856	(99-1HB-1)A	WILL	1508	1168
		CONTRACT NO. 60X10		
	ILLINOIS FED. AID PROJECT			

PLAN / PROFILE — SURVEYED — BY — DATE — ALIGNMENT CHECKED — R.O.W. STAKED — GRADES CHECKED — SLM. NOTED — STRUCTURE NOTATIONS CHKD — NOTE BOOK — NO. — CADD FILE NAME



NOTE: SEE WEBER ROAD PLAN & PROFILE SHEETS FOR PLAN INFORMATION

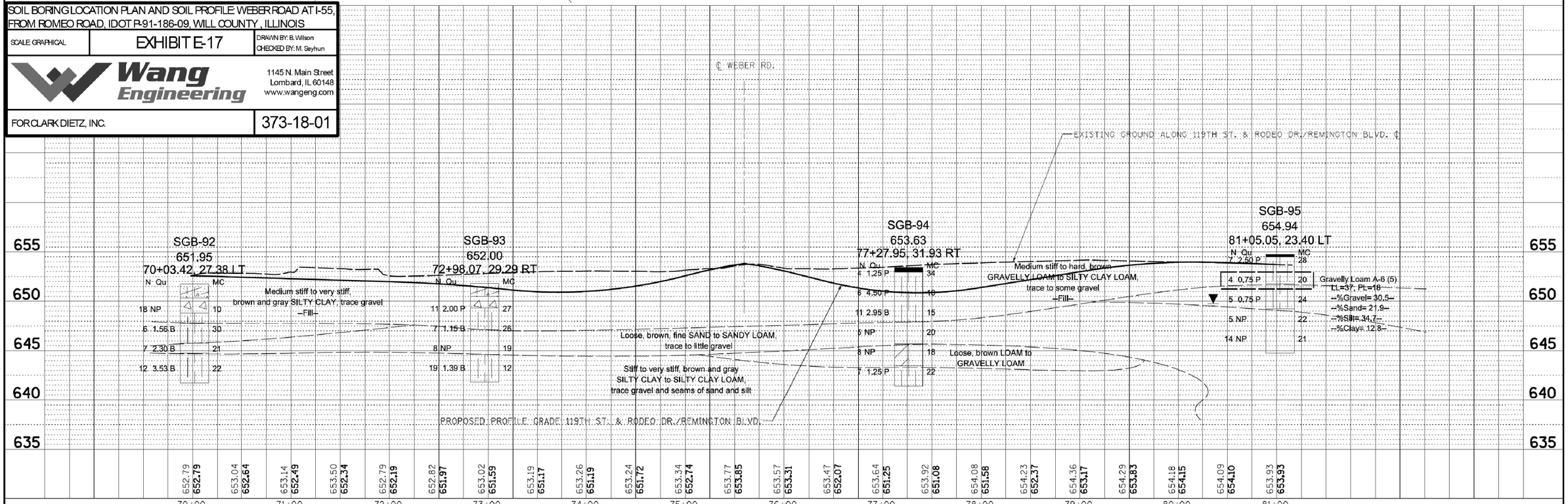


Legend

Boring Location

SOIL BORING LOCATION PLAN AND SOIL PROFILE WEBER ROAD AT I-55, FROM ROMEO ROAD, IDOT P-91-186-09, WILL COUNTY, ILLINOIS

SCALE GRAPHICAL	EXHIBIT E-17	DRAWN BY: B. Wilson CHECKED BY: M. Seyhun
Wang Engineering	1145 N. Main Street Lombard, IL 60148 www.wangeng.com	
FOR CLARK DIETZ, INC.	373-18-01	



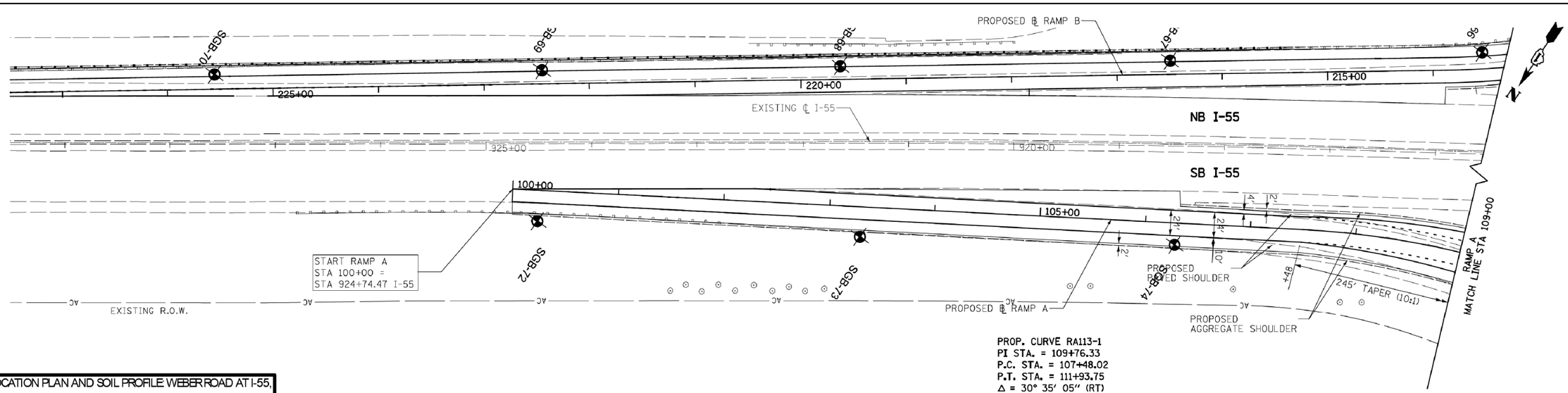
FILE NAME = $FILE1$	USER NAME = $USER$	DESIGNED - TMW/CMD/PAW	REVISED - 6/20/2013
		DRAWN - TMW/CMD/PAW	REVISED - 11/1/2013
$MODELNAME$	PLOT SCALE = $SCALE$	CHECKED - TMW/SMW	REVISED - 1/9/2014
	PLOT DATE = $DATE$	DATE - 1/25/2013	REVISED - 1/20/2014

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

119TH STREET/RODEO ROAD & REMINGTON BLVD
SOIL BORINGS PLAN AND PROFILE

SCALE: 1"=50' | SHEET 1 OF 1 SHEETS | STA. 70+00 TO STA. 80+97

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
856	(99-1HB-1)A	WILL	1508	1169
		CONTRACT NO. 60X10		
	ILLINOIS FED. AID PROJECT			



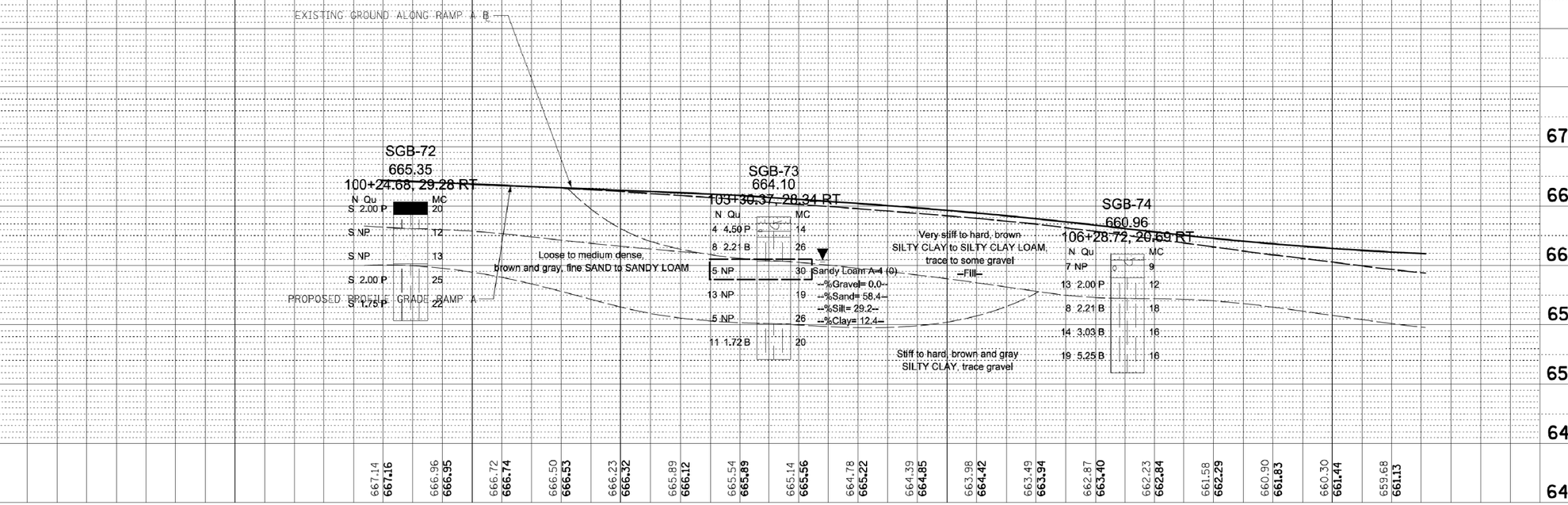
SOIL BORING LOCATION PLAN AND SOIL PROFILE: WEBER ROAD AT I-55, FROM ROMEO ROAD, IDOT P-91-186-09, WILL COUNTY, ILLINOIS

SCALE: GRAPHICAL	EXHIBIT E-18	DRAWN BY: B. Wilson CHECKED BY: M. Seyhun

Wang Engineering
1145 N. Main Street
Lombard, IL 60148
www.wangeng.com

FOR: CLARK DIETZ, INC. — 373-18-01

Legend
Boring Location



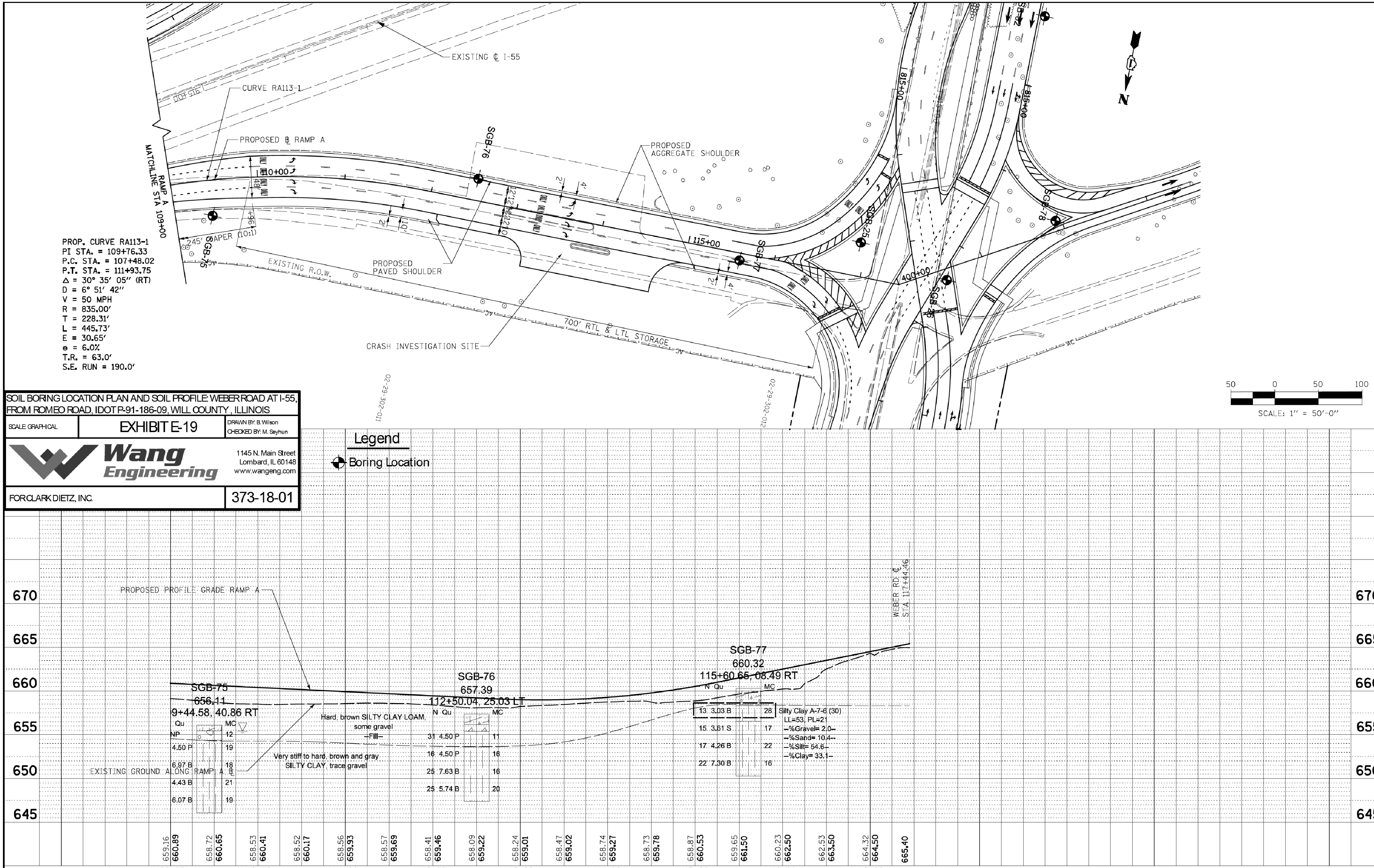
FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - TMW/CMD/PAW	REVISED - 6/20/2013
$MODELNAME$		DRAWN - TMW/CMD/PAW	REVISED - 11/11/2013
	PLOT SCALE = $SCALE$	CHECKED - TMW/SMW	REVISED - 1/9/2014
	PLOT DATE = $DATE$	DATE - 1/25/2013	REVISED - 1/20/2014

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RAMP A
SOIL BORINGS PLAN AND PROFILE

SCALE: 1"=50' | SHEET 1 OF 2 SHEETS | STA. 100+00 | TO STA. 109+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
856	(99-1HB-1)A	WILL	1508	1170
		CONTRACT NO. 60X10		
	ILLINOIS FED. AID PROJECT			



EXISTING ℄ I-55
CURVE RA113-1
PROPOSED ℄ RAMP A
RAMP A MATCHLINE STA 109+00
PROPOSED AGGREGATE SHOULDER
PROPOSED PAVED SHOULDER
EXISTING R.O.W.
700' RTL & LTL STORAGE
CRASH INVESTIGATION SITE
SGB-75
SGB-76
SGB-77
SGB-78
PROP. CURVE RA113-1
PI STA. = 109+76.33
P.C. STA. = 107+48.02
P.T. STA. = 111+93.75
Δ = 30° 35' 05" (RT)
D = 6° 51' 42"
V = 50 MPH
R = 835.00'
T = 228.31'
L = 445.73'
E = 30.65'
e = 6.0%
T.R. = 63.0'
S.E. RUN = 190.0'
SCALE: 1" = 50'-0"
SOIL BORING LOCATION PLAN AND SOIL PROFILE: WEBER ROAD AT I-55, FROM ROMEO ROAD, IDOT P-91-186-09, WILL COUNTY, ILLINOIS
SCALE GRAPHICAL
EXHIBIT E-19
DRAWN BY: B.Wilson
CHECKED BY: M.Seyhun
Wang Engineering
1145 N. Main Street
Lombard, IL 60148
www.wangeng.com
FOR CLARK DIETZ, INC.
373-18-01
Legend
Boring Location
PROPOSED PROFILE GRADE RAMP A
EXISTING GROUND ALONG RAMP A ℄
WEBER RD ℄ STA 117+44.46
SGB-75 656.11 109+44.58, 40.86 RT
SGB-76 657.39 112+50.04, 25.03 LT
SGB-77 660.32 115+60.65, 08.49 RT
Hard, brown SILTY CLAY LOAM, some gravel --Fill--
Very stiff to hard, brown and gray SILTY CLAY, trace gravel
Silty Clay A-7-6 (30)
LL=53, PL=21
--%Gravel= 2.0--
--%Sand= 10.4--
--%Silt= 54.6--
--%Clay= 33.1--

FILE NAME = $FILEL$ $MODELNAME$	USER NAME = $USER$	DESIGNED - TMW/CMD/PAW	REVISED - 6/20/2013
		DRAWN - TMW/CMD/PAW	REVISED - 11/11/2013
	PLOT SCALE = $SCALE$	CHECKED - TMW/SMW	REVISED - 1/9/2014
	PLOT DATE = $DATE$	DATE - 1/25/2013	REVISED - 1/20/2014

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RAMP A
SOIL BORINGS PLAN AND PROFILE

SCALE: 1"=50' | SHEET 2 OF 2 SHEETS | STA. 109+00 TO STA. 117+44.46

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
856	(99-1HB-1)A	WILL	1508	1171

CONTRACT NO. 60X10

ILLINOIS FED. AID PROJECT

SOIL BORING LOCATION PLAN AND SOIL PROFILE: WEBER ROAD AT I-55, FROM ROMEO ROAD, IDOT P-91-186-09, WILL COUNTY, ILLINOIS

SCALE: GRAPHICAL

EXHIBIT E-20

DRAWN BY: B. Wilson
CHECKED BY: M. Seyhun

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373-18-01

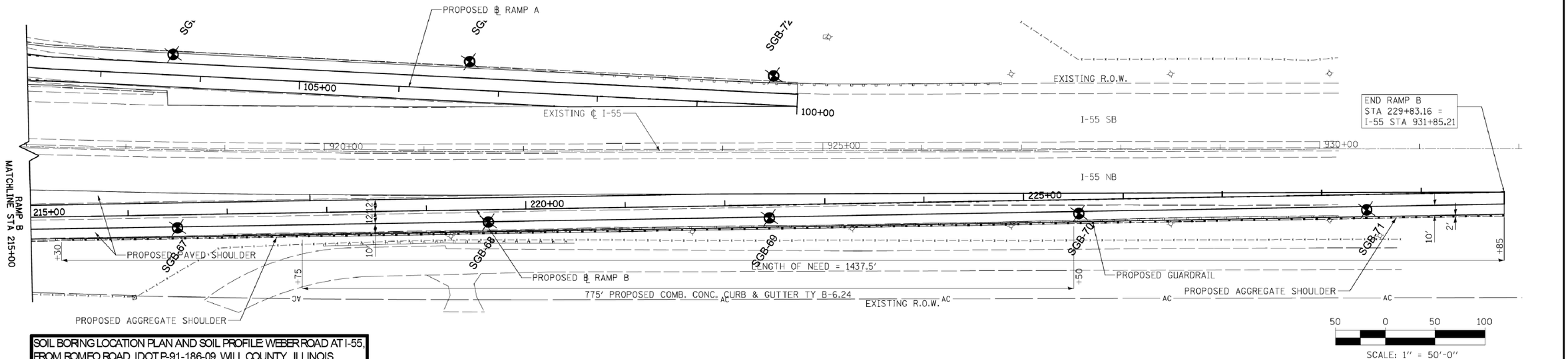
FILE NAME = $FILEL$ $MODELNAME$	USER NAME = $USER$ PLOT SCALE = $SCALE$ PLOT DATE = $DATE$	DESIGNED - TMW/CMD/PAW DRAWN - TMW/CMD/PAW CHECKED - TMW/SMW DATE - 1/25/2013	REVISED - 6/20/2013 REVISED - 11/11/2013 REVISED - 1/9/2014 REVISED - 1/20/2014	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	RAMP B SOIL BORINGS PLAN AND PROFILE	F.A.I. RTE. 856	SECTION (99-1HB-1)A	COUNTY WILL	TOTAL SHEETS 1508	SHEET NO. 1172
					SCALE: 1″=50′ | SHEET 1 OF 2 SHEETS | STA. 200+00 TO STA. 215+00	CONTRACT NO. 60X10				
						ILLINOIS FED. AID PROJECT				

PLAN: SURVEYED, PLOTTED, ALIGNMENT CHECKED, R/W & BENCH CHECKED, CADD FILE NAME, NOTE BOOK, NO. — BY — DATE

PROFILE: SURVEYED, PLOTTED, GRADES CHECKED, B.M. NOTED, STRUCTURE NOTATIONS CHKD, NOTE BOOK, NO. — BY — DATE

PLAN
SURVEYED
PLOTTED
ALIGNMENT CHECKED
R.P. OF WAY CHECKED
CAD FILE NAME
NOTE BOOK
NO.
BY
DATE

PROFILE
SURVEYED
PLOTTED
ALIGNMENT CHECKED
R.P. OF WAY NOTED
STRUCTURE NOTATIONS CHKD
NOTE BOOK
NO.
BY
DATE



50 0 50 100

SCALE: 1" = 50'-0"

SOIL BORING LOCATION PLAN AND SOIL PROFILE: WEBBER ROAD AT I-55, FROM ROMEO ROAD, IDOT P-91-186-09, WILL COUNTY, ILLINOIS

SCALE: GRAPHICAL	EXHIBIT E-21	DRAWN BY: B. Wilson CHECKED BY: M. Seyhun

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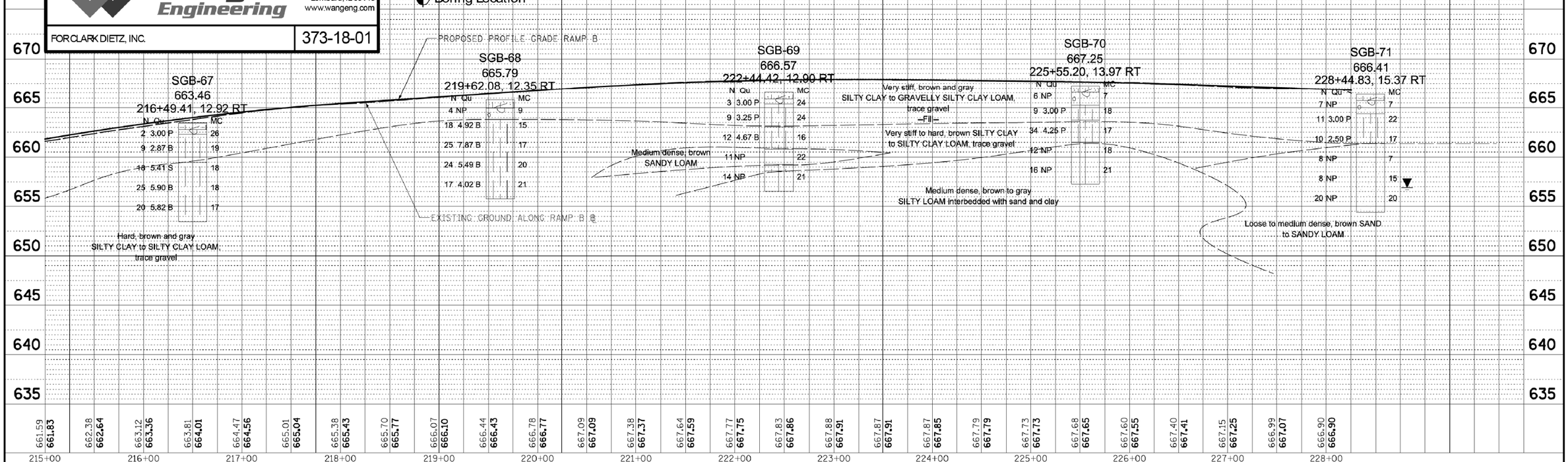
FOR: CLARK DIETZ, INC. — 373-18-01

Legend
Boring Location



FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - TMW/CMD/PAW	REVISED - 6/20/2013
$MODELNAME$		DRAWN - TMW/CMD/PAW	REVISED - 11/11/2013
	PLOT SCALE = $SCALE$	CHECKED - TMW/SMW	REVISED - 1/9/2014
	PLOT DATE = $DATE$	DATE - 1/25/2013	REVISED - 1/20/2014

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RAMP B
SOIL BORINGS PLAN AND PROFILE

SCALE: 1"=50' | SHEET 2 OF 2 SHEETS | STA. 215+00 | TO STA. 229+83.16

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
856	(99-1HB-1)A	WILL	1508	1173
		CONTRACT NO. 60X10		
	ILLINOIS FED. AID PROJECT			

SOIL BORING LOCATION PLAN AND SOIL PROFILE WEBER ROAD AT I-55, FROM ROMEO ROAD, IDOT P-91-186-09, WILL COUNTY, ILLINOIS

SCALE: GRAPHICAL	EXHIBIT E-22	DRAWN BY: B. Wilson CHECKED BY: M. Seyhun

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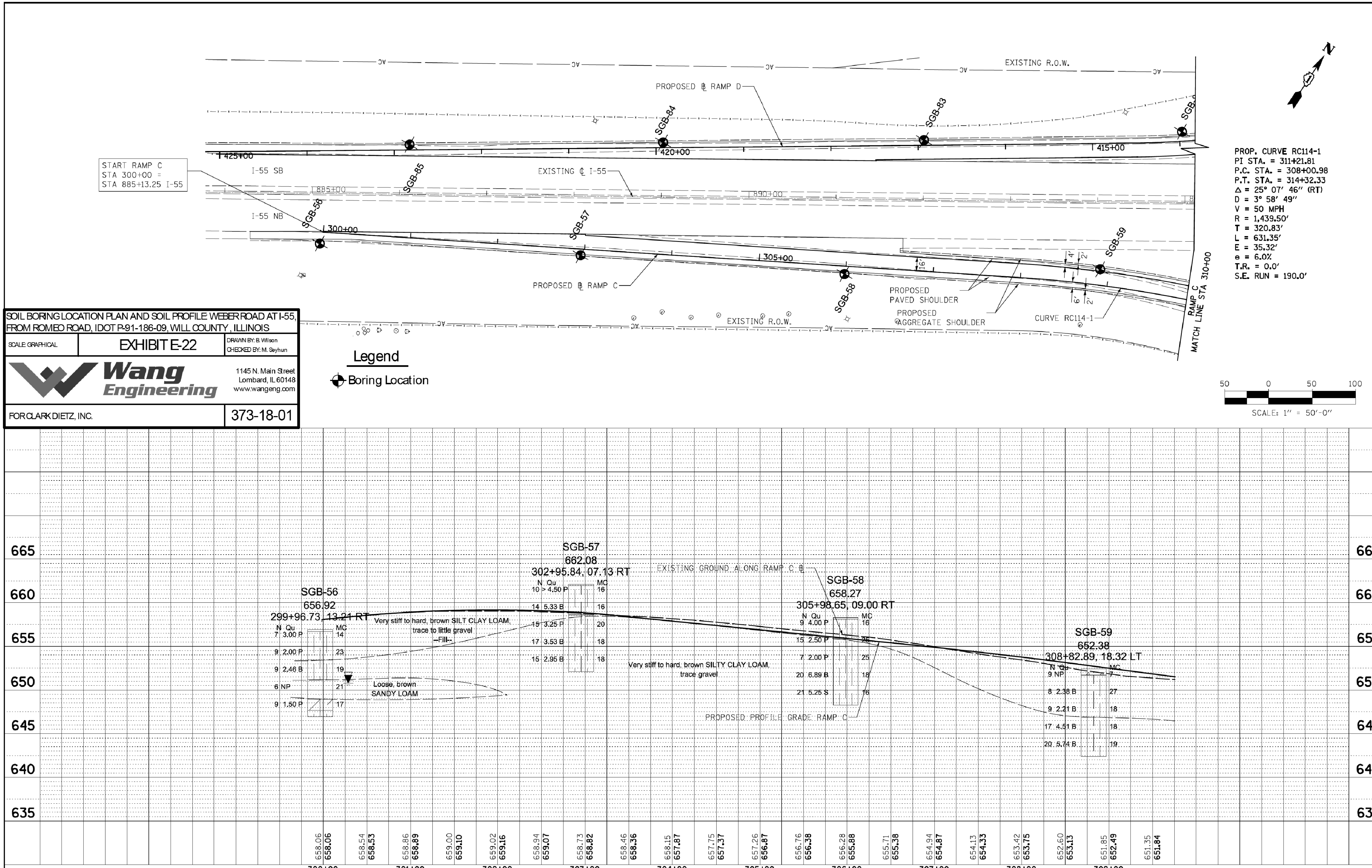
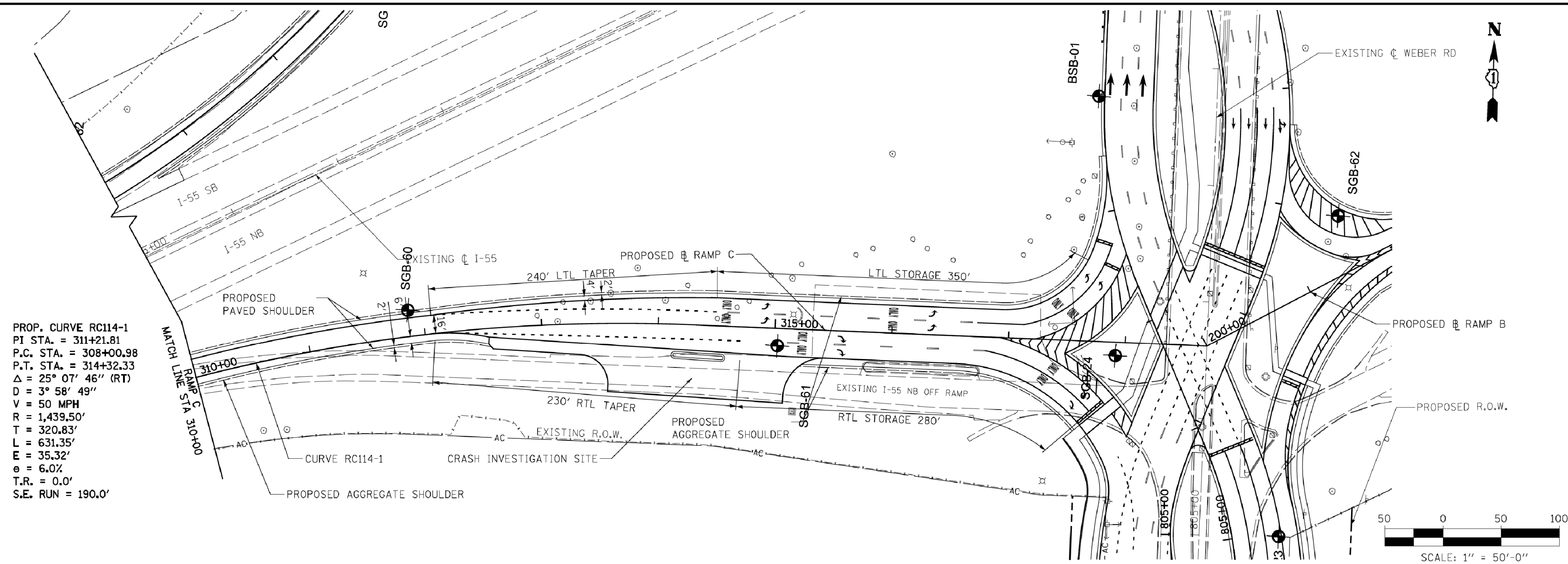


FILE NAME = $FILEL$ $MODELNAME$	USER NAME = $USER$	DESIGNED - TMW/CMD/PAW	REVISED - 6/20/2013	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	RAMP C SOIL BORINGS PLAN AND PROFILE	F.A.I. RTE. 856	SECTION (99-1HB-1)A	COUNTY WILL	TOTAL SHEETS 1508	SHEET NO. 1174
	PLOT SCALE = $SCALE$	DRAWN - TMW/CMD/PAW	REVISED - 11/11/2013		SCALE: 1"=50'			CONTRACT NO. 60X10		
	PLOT DATE = $DATE$	CHECKED - TMW/SMW	REVISED - 1/9/2014		SHEET 1 OF 2 SHEETS		ILLINOIS FED. AID PROJECT			
		DATE - 1/25/2013	REVISED - 1/20/2014		STA. 300+00 TO STA. 310+00					



Legend

Boring Location

SOIL BORING LOCATION PLAN AND SOIL PROFILE: WEBER ROAD AT I-55, FROM ROMEO ROAD, IDOT P-91-186-09, WILL COUNTY, ILLINOIS

SCALE GRAPHICAL	EXHIBIT E-23	DRAWN BY: B. Wilson CHECKED BY: M. Seyhun
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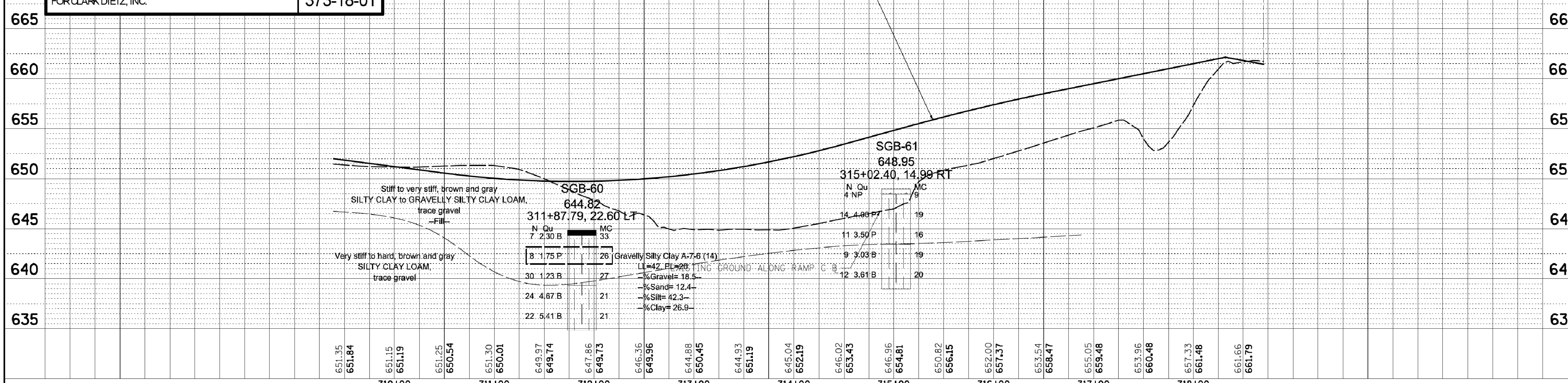
FOR CLARK DIETZ, INC.		373-18-01



PLAN: SURVEYED, PLOTTED, ALIGNMENT CHECKED, R.O.W. CHECKED, CADD FILE NAME, NOTE BOOK, NO.

PROFILE: SURVEYED, PLOTTED, GRADES CHECKED, B.M. NOTED, STRUCTURE NOTATIONS CHKD, NOTE BOOK, NO.

FILE NAME = $FILEL$ $MODELNAME$	USER NAME = $USER$	DESIGNED - TMW/CMD/PAW	REVISED - 6/20/2013	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	RAMP C SOIL BORINGS PLAN AND PROFILE	F.A.I. RTE. 856	SECTION (99-1HB-1)A	COUNTY WILL	TOTAL SHEETS 1508	SHEET NO. 1175
		DRAWN - TMW/CMD/PAW	REVISED - 11/11/2013							
	PLOT SCALE = $SCALE$	CHECKED - TMW/SMW	REVISED - 1/9/2014			CONTRACT NO. 60X10				
	PLOT DATE = $DATE$	DATE - 1/25/2013	REVISED - 1/20/2014		SCALE: 1"=50' SHEET 2 OF 2 SHEETS STA. 310+00 TO STA. 318+70.34	ILLINOIS FED. AID PROJECT				

EXISTING ℄ WEBER RD

SGB-77 SGB-26 SGB-78 SGB-79 SGB-80 SGB-81 SGB-82 SGB-83

PROP. CURVE RD114-1
PI STA. = 404+73.93
P.C. STA. = 403+43.46
P.T. STA. = 405+98.92
Δ = 28° 41′ 57″ (LT)
D = 11° 14′ 04″
V = 40 MPH
R = 510.00′
T = 130.47′
L = 255.46′
E = 16.42′
e = 6.0%
T.R. = 0.0′
S.E. RUN = 165.0′

PROPOSED ℄ RAMP D

CURVE RD114-1

400′ TAPER (50:1)

EXISTING ℄ I-55

PROPOSED PAVED SHOULDER

CURVE RD114-2

PROPOSED AGGREGATE SHOULDER

RAMP D MATCH LINE STA 412+00

PROP. CURVE RD114-2
PI STA. = 412+26.54
P.C. STA. = 409+94.41
P.T. STA. = 414+48.42
Δ = 29° 25′ 34″ (RT)
D = 6° 28′ 53″
V = 50 MPH
R = 884.00′
T = 232.13′
L = 454.01′
E = 29.97′
e = 6.0%
T.R. = 63.0′
S.E. RUN = 190.0′

STA 405+73.7
132.01 RT

STA 410+40.7
46.86 RT

EXISTING R.O.W.

PROPOSED R.O.W.

AC

Legend

Boring Location

50 0 50 100
SCALE: 1″ = 50′-0″

SOIL BORING LOCATION PLAN AND SOIL PROFILE WEBER ROAD AT I-55, FROM ROMEO ROAD, IDOT P-91-186-09, WILL COUNTY, ILLINOIS

SCALE GRAPHICAL | EXHIBIT E-24 | DRAWN BY: B. Wilson | CHECKED BY: M. Seyhun

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WEBER RD. ℄ STA 400+00.00

PROPOSED PROFILE GRADE RAMP D

EXISTING GROUND ALONG RAMP D ℄

SGB-78
653.07
401+93.30, 11.62 LT
N Qu MC
9 2.71 S 18
18 6.07 S 30
19 7.38 S 22
24 5.58 S 20
24 6.72 B 18
Silty Clay Loam A-7-6 (15)
LL=42, PL=20
--%Gravel= 0.3--
--%Sand= 25.7--
--%Silt= 51.2--
--%Clay= 22.8--

SGB-79
655.99
404+93.84, 05.29 LT
N Qu MC
10 2.05 S 19
22 0.41 S 19
21 NP 20
19 NP 17
19 4.02 B 18
Silty Clay A-7-6 (20)
LL=41, PL=20
--%Gravel= 3.8--
--%Sand= 6.0--
--%Silt= 50.1--
--%Clay= 40.0--

SGB-80
654.36
407+84.95, 04+40 RT
N Qu MC
10 NP 6
14 3.77 B 11
23 > 4.50 P 12
8 2.00 P 17
17 1.50 P 13
Stiff to hard, brown
SILTY CLAY to SILTY CLAY LOAM,
trace to some gravel

SGB-81
652.51
410+83.19, 21.57 LT
N Qu MC
6 2.25 P 21
12 4.00 P 13
8 2.21 B 16
14 1.50 P 15
17 1.39 B 15
Stiff to hard, brown SILTY CLAY LOAM,
trace to little gravel
--Fill--
Medium dense, brown
SANDY GRAVEL

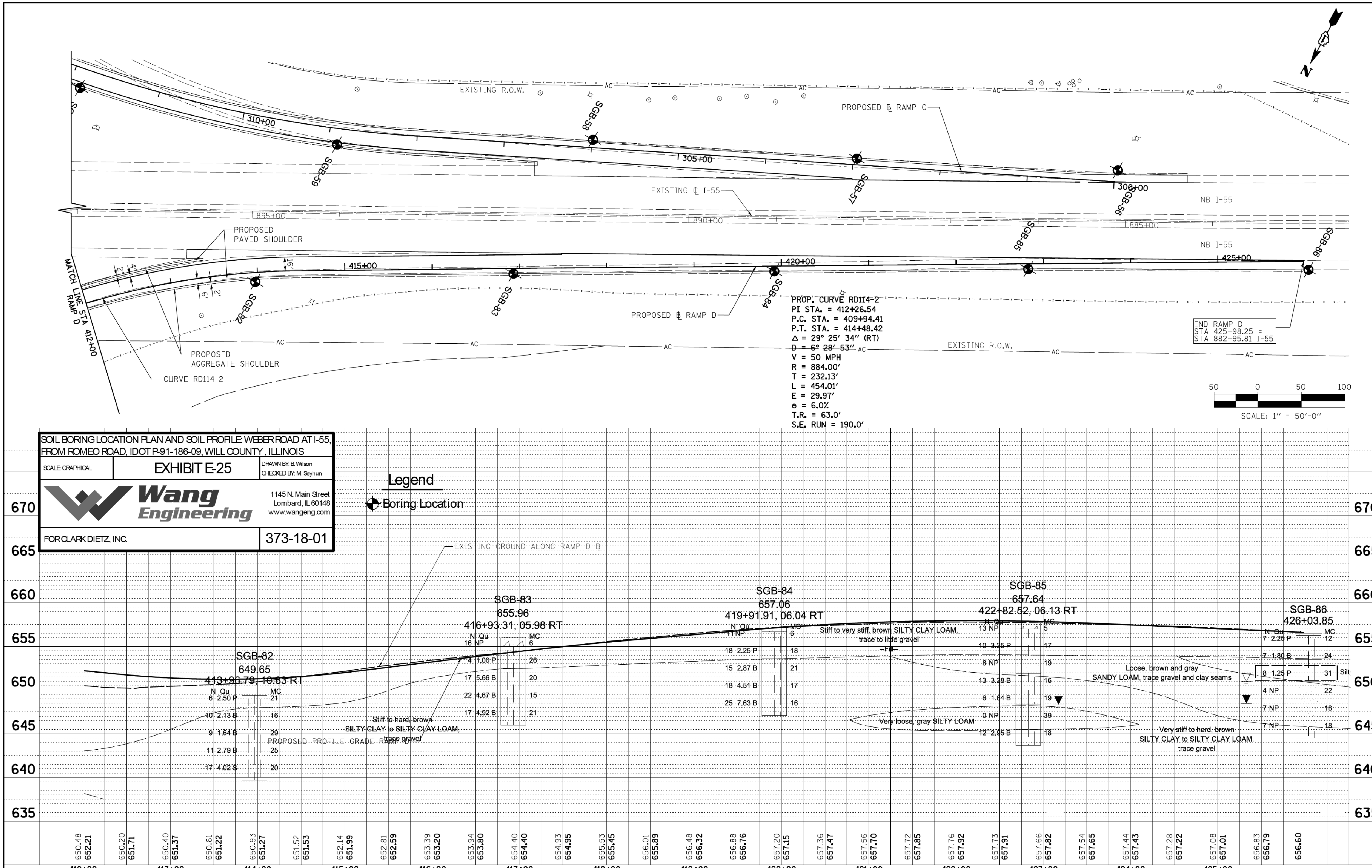
	400+00	401+00	402+00	403+00	404+00	405+00	406+00	407+00	408+00	409+00	410+00	411+00	412+00
	664.95	665.04	658.77	656.49	655.93	655.47	655.07	654.86	654.51	653.76	653.28	652.62	651.82
	665.40	665.82	665.19	664.19	663.19	662.25	661.44	660.75	660.19	659.69	659.19	658.69	658.20
	651.05	652.17	653.47	654.35	654.45	653.82	653.08	652.45	651.88	651.35	650.81	650.48	
	657.70	657.20	656.70	656.20	655.70	655.20	654.70	654.20	653.70	653.21	652.71	652.21	

FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - TMW/CMD/PAW	REVISED - 6/20/2013	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**
		DRAWN - TMW/CMD/PAW	REVISED - 11/1/2013	**RAMP D SOIL BORINGS PLAN AND PROFILE**
$MODELNAME$	PLOT SCALE = $SCALE$	CHECKED - TMW/SMW	REVISED - 1/9/2014	SCALE: 1″=50′ SHEET 1 OF 2 SHEETS STA. 400+00 TO STA. 412+00
	PLOT DATE = $DATE$	DATE - 1/25/2013	REVISED - 1/20/2014	

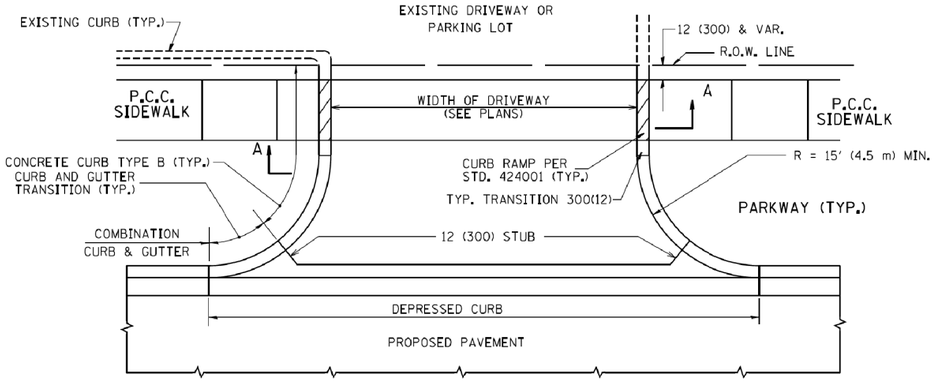
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
856	(99-1HB-1)A	WILL	1508	1176
		CONTRACT NO. 60X10		
		ILLINOIS FED. AID PROJECT		

PLAN: SURVEYED, PLOTTED, ALIGNMENT CHECKED, RT. OF WAY CHECKED, CADD FILE NAME, NOTE BOOK, NO., BY, DATE

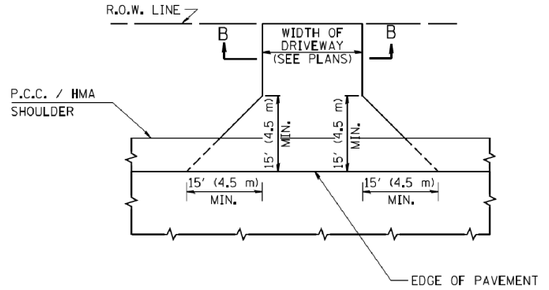
PROFILE: SURVEYED, PLOTTED, GRADES CHECKED, B.M. NOTED, STRUCTURE NOTATING SHEET, NOTE BOOK, NO., BY, DATE



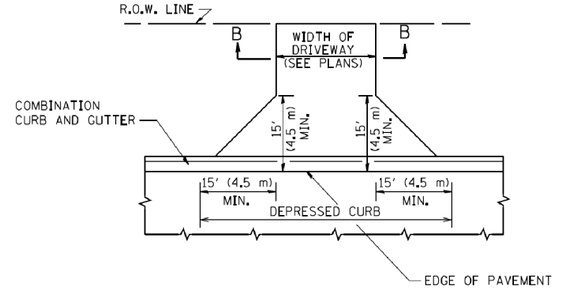
FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - TMW/CMD/PAW	REVISED - 6/20/2013	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	RAMP D SOIL BORINGS PLAN AND PROFILE	F.A.I. RTE. 856	SECTION (99-1HB-1)A	COUNTY WILL	TOTAL SHEETS 1508	SHEET NO. 1177
$MODELNAME$	PLOT SCALE = $SCALE$	DRAWN - TMW/CMD/PAW	REVISED - 11/11/2013					CONTRACT NO. 60X10		
	PLOT DATE = $DATE$	CHECKED - TMW/SMW	REVISED - 1/9/2014		SCALE: 1″=50′ SHEET 2 OF 2 SHEETS STA. 412+00 TO STA. 425+98.25	ILLINOIS FED. AID PROJECT				
		DATE - 1/25/2013	REVISED - 1/20/2014							



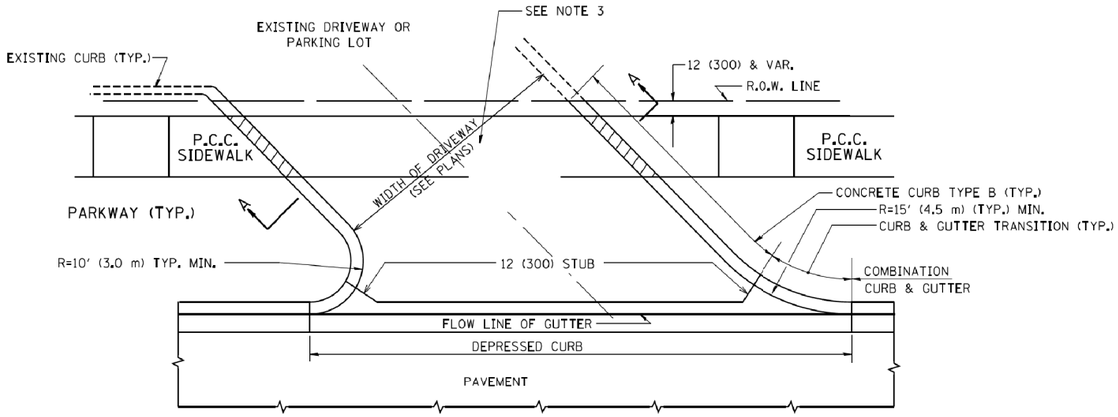
WITH CONCRETE CURB, TYPE B



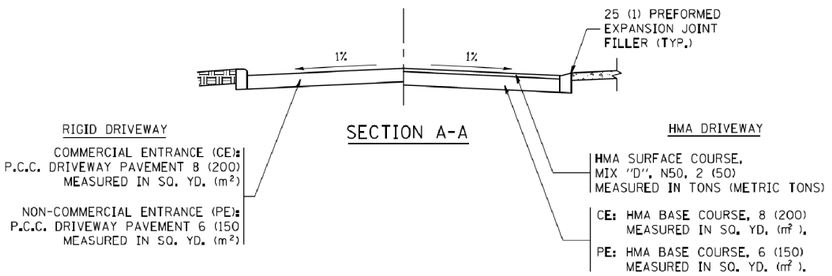
ADJACENT TO P.C.C. / HMA SHOULDER

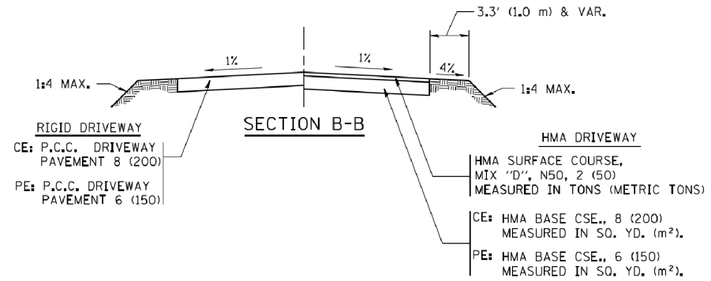


ADJACENT TO CURB AND GUTTER



WITH CONCRETE CURB, TYPE B





RURAL FIELD ENTRANCE (FE)

HMA SURFACE COURSE, MIX "D", N50, 2 (50) MEASURED IN TONS (METRIC TONS)

AGGREGATE BASE CSE., TYPE B, 8 (200) MEASURED IN SQ. YD. (m²).

GENERAL NOTES:

DRIVEWAY SLOPES, LOCATIONS, & GEOMETRIC LAYOUT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "HANDBOOK FOR POLICY ON PERMITS FOR ACCESS DRIVEWAYS TO STATE HIGHWAYS". FOR FURTHER LAYOUT REQUIREMENTS, REFER TO ILLUSTRATIONS IN THE PERMIT HANDBOOK. DRIVEWAYS SHALL BE REPLACED IN KIND, UNLESS OTHERWISE NOTED ON THE PLANS.

COMMERCIAL DRIVEWAYS SHALL BE CONSTRUCTED WITH CONCRETE CURB, TYPE B RETURNS EXCEPT WHEN THE SIDEWALK EDGE IS 4 FEET (1.2 METERS) OR LESS FROM THE BACK OF CURB, CONSTRUCT A FLARE DRIVEWAY WITHOUT CURB.

THE RESIDENT ENGINEER SHALL CONTACT THE TRAFFIC PERMIT OFFICE AT 847/ 705-4131 FOR ANY QUESTIONS ON DRIVEWAYS SHOWN IN THE PLANS; SPECIFICALLY IN REFERENCE TO ADDITIONAL AND/OR RELOCATION/REMOVAL OF A DRIVEWAY.

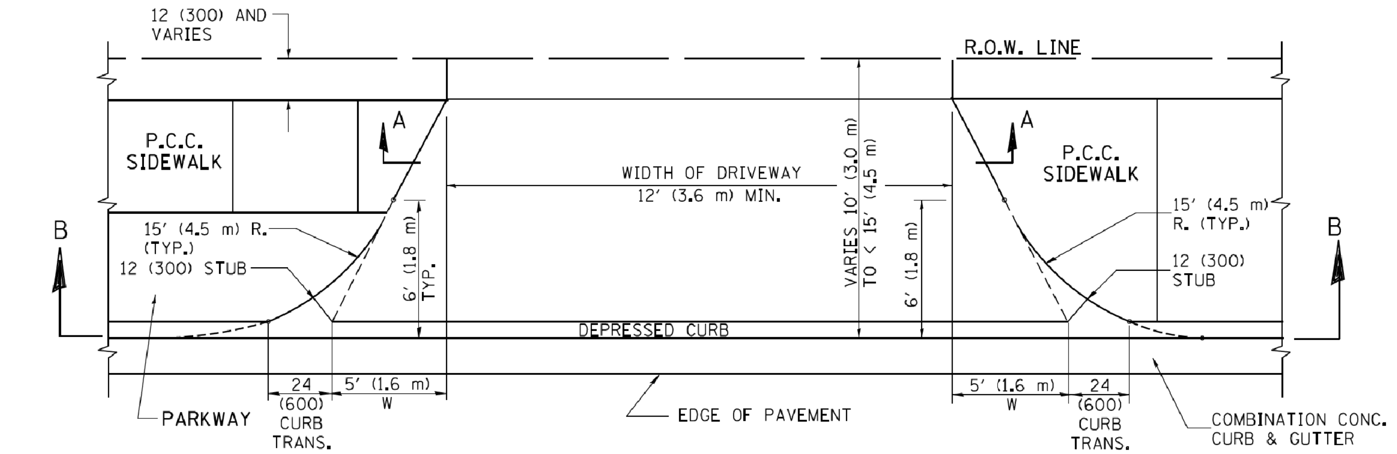
COMBINATION CONCRETE CURB & GUTTER SHALL BE MEASURED STRAIGHT ACROSS THE DRIVEWAY. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR THE CURB & GUTTER TRANSITION.

1 (25) PREFORMED EXPANSION JOINT FILLER WILL NOT BE PAID SEPARATELY, BUT SHALL BE CONSIDERED INCLUDED IN THE COST OF THE P.C.C. DRIVEWAY PAVEMENT OR P.C.C. SIDEWALK.

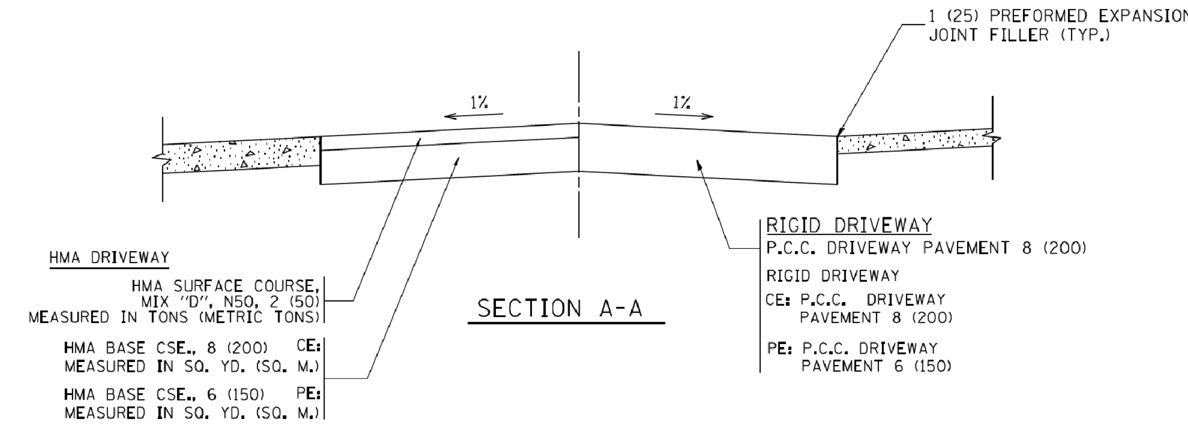
WHEN THE P.C.C. SIDEWALK EXTENDS THROUGH THE DRIVEWAY, THE THICKNESS OF THE SIDEWALK IN THE DRIVEWAY AREA SHALL BE THE SAME AS THE DRIVEWAY THICKNESS. SIDEWALK WILL BE PAID FOR AS P.C.C. SIDEWALK OF THE THICKNESS SPECIFIED. SIDEWALK CROSS SLOPE THRU DRIVEWAY AREA TO BE A MAXIMUM OF 1:50.

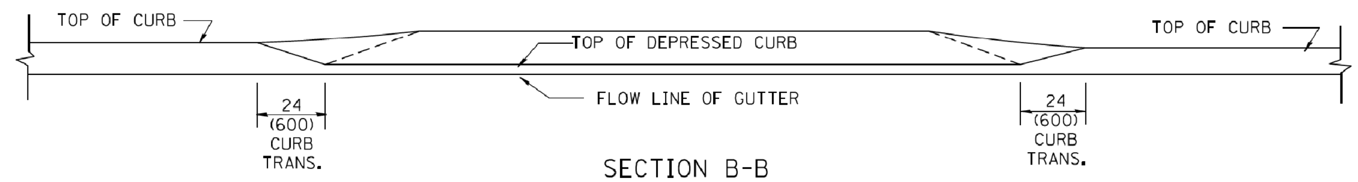
FILE NAME = c:\pw_work\pwidot\leyse\d0108315\bd01.dgn	USER NAME = leyse	DESIGNED - R. SHAH	REVISED - P. LaFLUER 04-15-03	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DRIVEWAY DETAILS – DISTANCE BETWEEN R.O.W. AND FACE OF CURB & EDGE OF SHOULDER >= 15' (4.5 m)	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED - R. BORO 01-01-07			856	(99-1HB-1)A	WILL	1508	1178
	PLOT SCALE = 50.0000 ' / in.	CHECKED -	REVISED - R. BORO 06-11-08				BD0156-07 (BD-01)		CONTRACT NO. 60X10	
	PLOT DATE = 9/6/2011	DATE - 11-04-95	REVISED - R. BORO 09-06-11		SCALE: NONE SHEET NO. 1 OF 1 SHEETS STA. TO STA.	FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

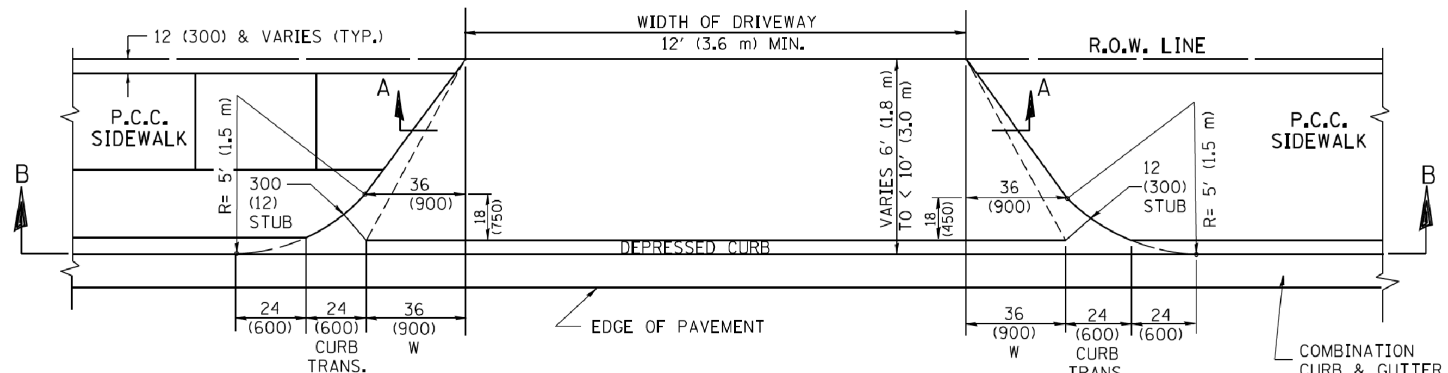
bd01.dgn 9/6/2011 11:50:34 AM User:leyse



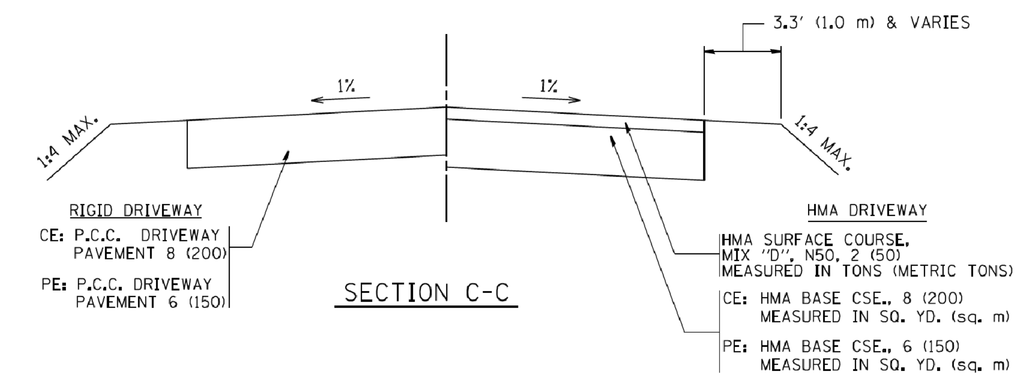
PLAN
10' (3.0 m) TO < 15' (4.5 m)

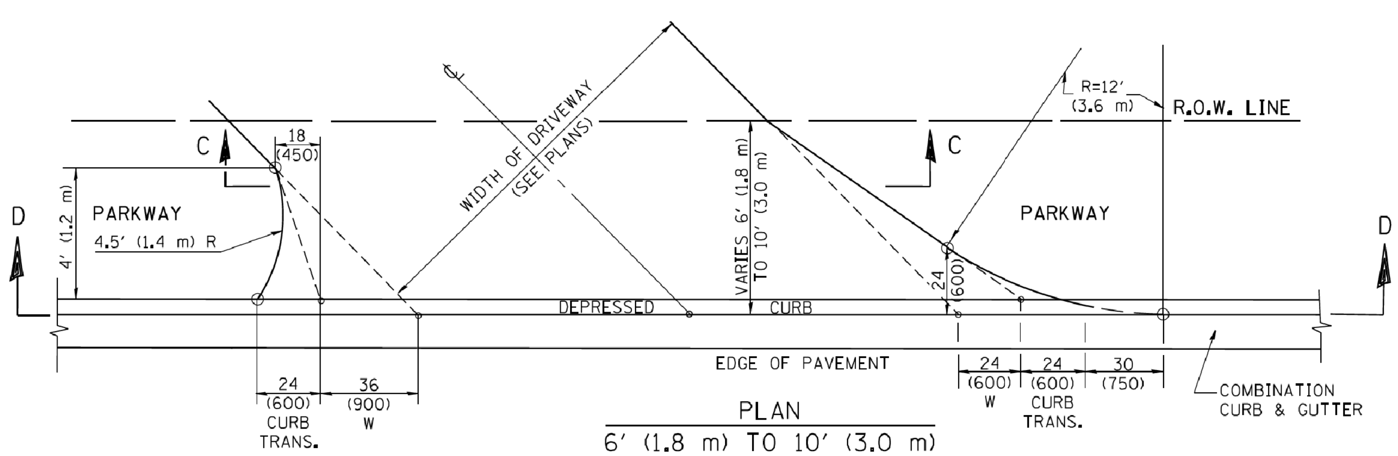




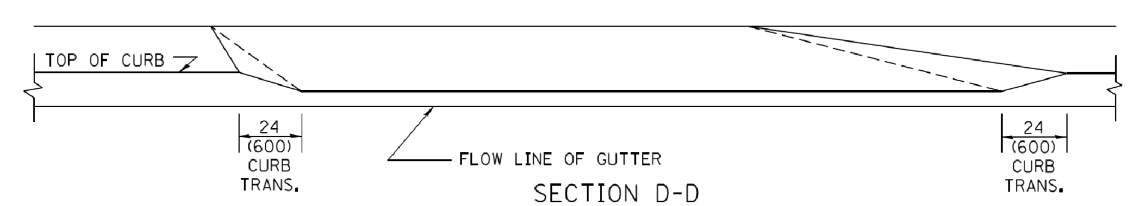


PLAN
6' (1.8 m) TO < 10' (3.0 m)





PLAN
6' (1.8 m) TO 10' (3.0 m)



GENERAL NOTES

DRIVEWAY SLOPES, LOCATIONS, & GEOMETRIC LAYOUT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "HANDBOOK FOR POLICY ON PERMITS FOR ACCESS DRIVEWAYS TO STATE HIGHWAYS". FOR FURTHER LAYOUT REQUIREMENTS, REFER TO ILLUSTRATION 10 IN THE PERMIT HANDBOOK. WHERE SIDEWALKS EXIST, DRIVEWAYS SHALL BE REPLACED WITH RIGID PAVEMENT. WHERE NO SIDEWALKS EXIST, DRIVEWAYS SHALL BE REPLACED IN KIND. SIDEWALK CROSS SLOPE THRU DRIVEWAY AREA TO BE A MAXIMUM OF 1:50.

WHEN THE DISTANCE BETWEEN R.O.W. AND THE BACK OF CURB IS EQUAL TO OR LESS THAN 8' (2.4 m), THE P.C.C. SIDEWALK SHALL EXTEND TO THE BACK OF CURB.

THE RESIDENT ENGINEER SHALL CONTACT THE TRAFFIC PERMIT OFFICE AT 847/ 705-4131 FOR ANY QUESTIONS ON DRIVEWAYS SHOWN IN THE PLANS; SPECIFICALLY IN REFERENCE TO ADDITIONAL AND/OR RELOCATION/REMOVAL OF A DRIVEWAY.

COMBINATION CONCRETE CURB & GUTTER SHALL BE MEASURED STRAIGHT ACROSS THE DRIVEWAY. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR THE CURB & GUTTER TRANSITION.

THE 1 (25) PREFORMED EXPANSION JOINT FILLER WILL NOT BE PAID SEPARATELY, BUT SHALL BE CONSIDERED INCLUDED IN THE COST OF THE P.C.C. DRIVEWAY PAVEMENT OR P.C.C. SIDEWALK.

"W" VARIES FROM 36 (900) TO 5' (1.5 m) PROPORTIONAL TO THE LENGTH (L), FROM 6' (1.8 m) TO 10' (3 m).

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE NOTED.

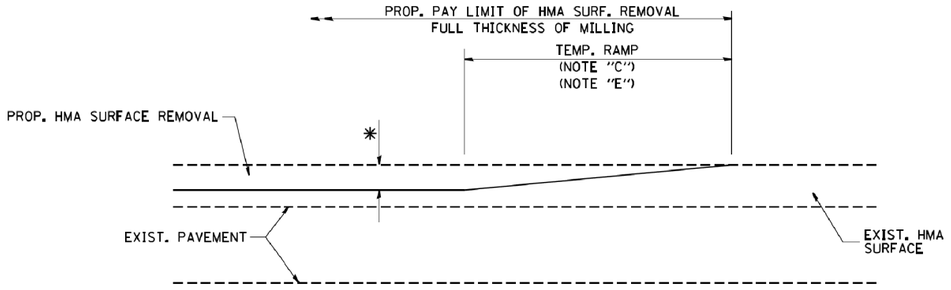
FILE NAME = c:\pw_work\pwidot\leysa\d0108315\bd02.dgn	USER NAME = leysa	DESIGNED - R. SHAH	REVISED - M. GOMEZ 04-06-01
		DRAWN -	REVISED - P. LaFLEUR 04-15-03
	PLOT SCALE = 50.0000 ' / in.	CHECKED -	REVISED - R. BORO 01-01-07
	PLOT DATE = 10/28/2011	DATE - 11-06-95	REVISED - R. BORO 09-06-11

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DRIVEWAY DETAILS
DISTANCE BETWEEN ROW AND FACE OF CURB < 15' (4.5 m)

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

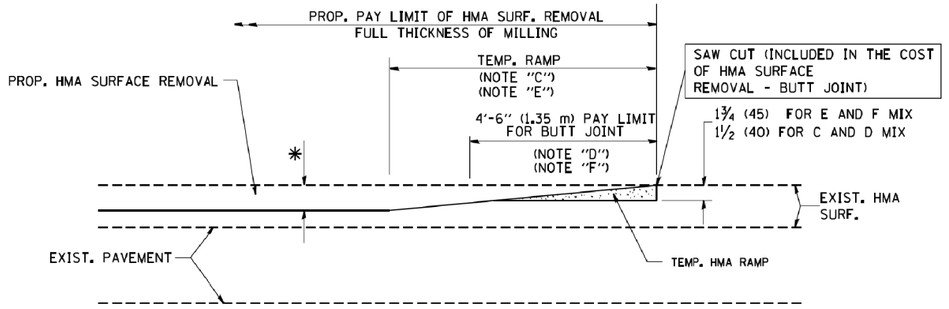
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
856	(99-1HB-1)A	WILL	1508	1179
BD400-02 (BD-02)		CONTRACT NO. 60X10		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



MILLED TEMPORARY RAMP

(FOR BUTT JOINT AND HMA TAPER SEE DETAIL BELOW)

OPTION 1

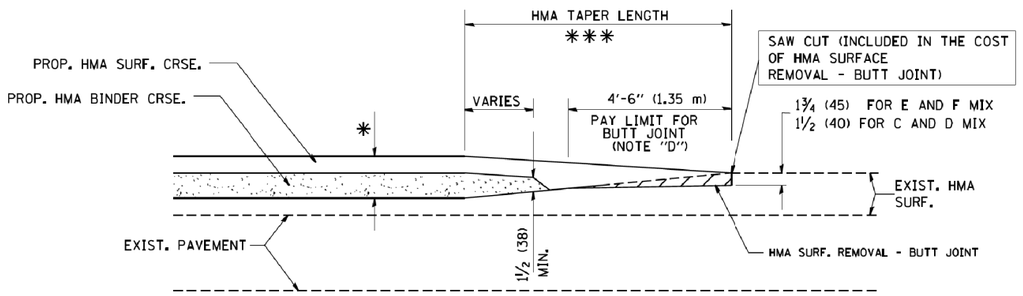


HMA CONSTRUCTED TEMPORARY RAMP

(FOR BUTT JOINT AND HMA TAPER SEE DETAIL BELOW)

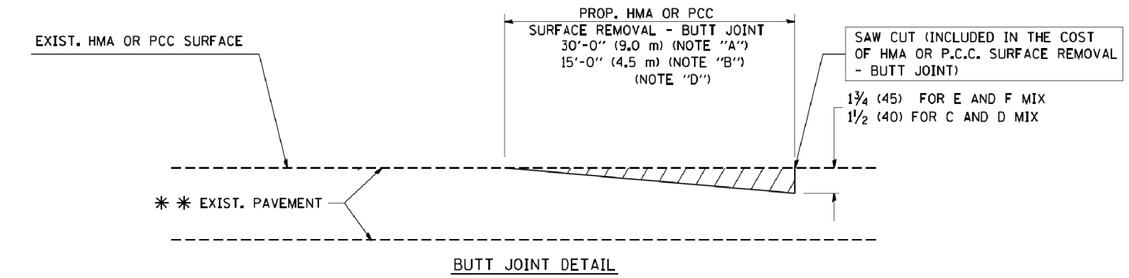
OPTION 2

TYPICAL TEMPORARY RAMP

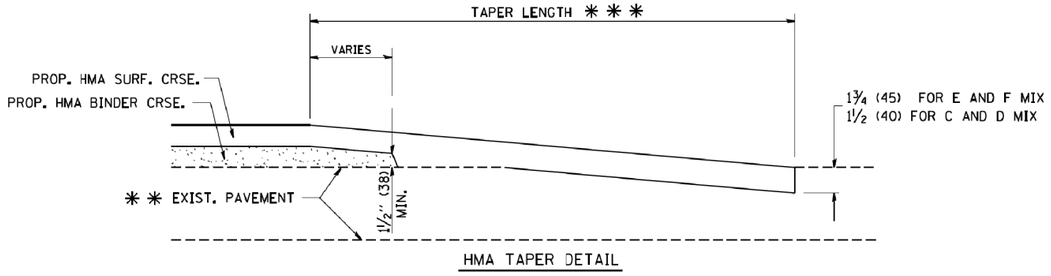


BUTT JOINT AND HMA TAPER

TYPICAL BUTT JOINT AND HMA TAPER FOR MILLING AND RESURFACING



BUTT JOINT DETAIL



HMA TAPER DETAIL

TYPICAL BUTT JOINT AND HMA TAPER FOR RESURFACING ONLY

** PC CONCRETE, HMA OR HMA RESURFACED PAVEMENT.

NOTES

A: MAINLINE ROADWAYS AND MAJOR SIDE ROADS.

B: MINOR SIDE ROADS.

C: THE TEMP. RAMP SHALL BE CONSTRUCTED IMMEDIATELY UPON REMOVAL OF THE EXISTING HMA SURFACE.

D: THE BUTT JOINT SHALL BE CONSTRUCTED IMMEDIATELY PRIOR TO PLACING THE PROPOSED HMA COURSES.

E: TAPER THE TEMP. RAMP AT A RATE OF 3'-0" (900 mm) PER 1 INCH (25 mm) OF MILLING THICKNESS.

F: INSTALLATION AND REMOVAL OF THE 4'-6" (1.35 m) TEMP. RAMP IS INCLUDED IN COST OF HMA SURFACE REMOVAL - BUTT JOINT

G: SEE ARTICLE 406.08 AND 406.14 OF THE STANDARD SPECIFICATIONS FOR "HMA AND/OR PCC SURFACE REMOVAL, BUTT JOINT".

* SEE TYPICAL SECTIONS FOR MILLING THICKNESS.

*** 20'-0" (6.1 m) PER 1 (25) RESURFACING (NOTE "A")
10'-0" (3.0 m) PER 1 (25) RESURFACING (NOTE "B")

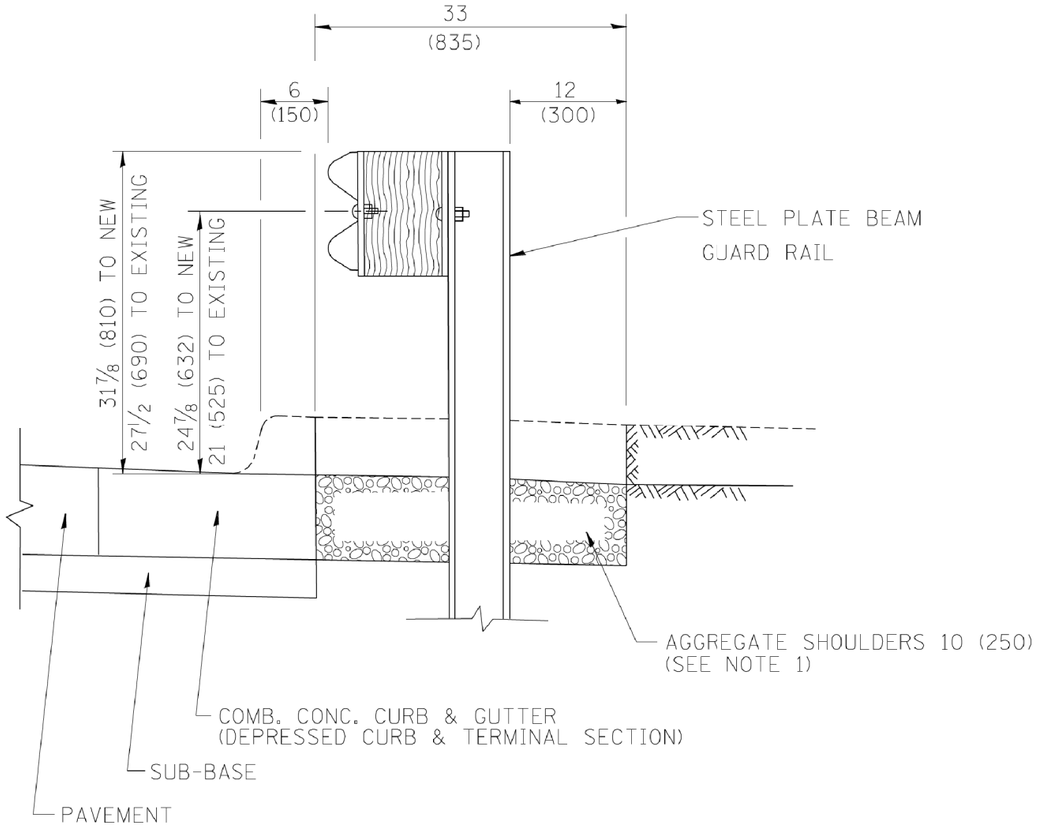
BASIS OF PAYMENT:

THE BUTT JOINT WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE YARD (SQUARE METER) FOR "HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT" OR FOR "PORTLAND CEMENT CONCRETE SURFACE REMOVAL- BUTT JOINT".

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

FILE NAME = W:\diststd\22x34\bd32.dgn	USER NAME = gaglianobt	DESIGNED - M. DE YONG	REVISED - R. SHAH 10-25-94	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BUTT JOINT AND HMA TAPER DETAILS
		DRAWN -	REVISED - A. ABBAS 03-21-97		
	PLOT SCALE = 50.0000 ' / IN.	CHECKED -	REVISED - M. GOMEZ 04-06-01		SCALE: NONE SHEET NO. 1 OF 1 SHEETS STA. TO STA.
	PLOT DATE = 1/4/2008	DATE - 06-13-90	REVISED - R. BORO 01-01-07		

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
856	(99-1HB-1)A	WILL	1508	1180
	BD400-05 BD32	CONTRACT NO. 60X10		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

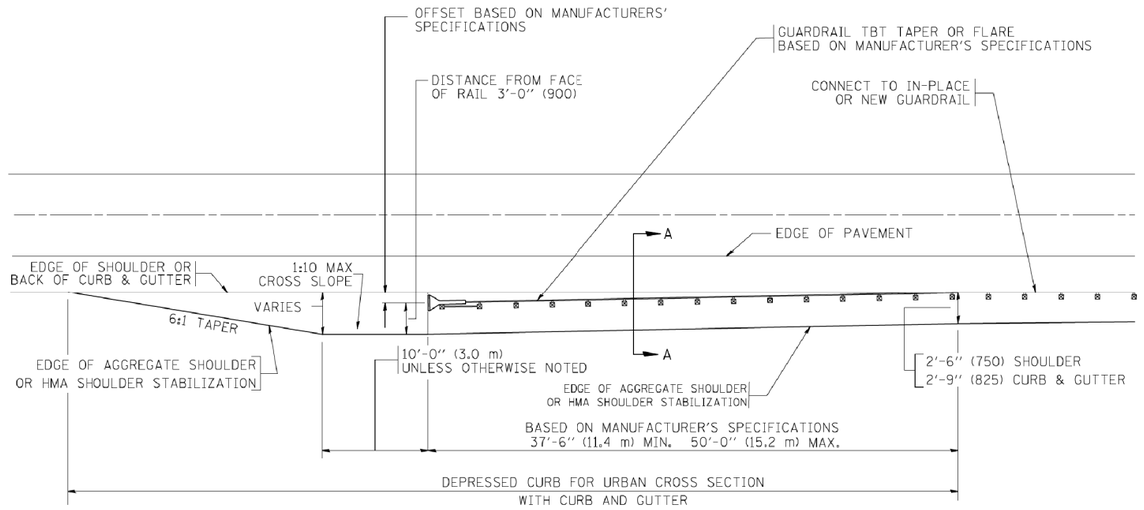


SECTION A-A

NOTES:
1. THE AGGREGATE SHOULDER, 10" OR HMA SHOULDER, 6" (IF REQUIRED) SHALL EXTEND UNDER THE TRAFFIC BARRIER TERMINAL.
2. "EXISTING" GUARDRAIL REFERS TO CONNECTING TERMINAL SECTION TO GUARD RAILING PRIOR TO THE MIDWEST GUARDRAIL SYSTEM.
3. THE CONTRACTOR SHALL VERIFY THE TYPE/HEIGHT OF GUARDRAIL IN-PLACE BEFORE ORDERING THE NEW TERMINAL SECTION. COST INCLUDED WITH THE COST OF THE TERMINAL. THE TERMINAL SECTION HEIGHT TO BE PLACED MUST MATCH THE HEIGHT OF THE IN-PLACE GUARDRAIL.

DETAILS FOR STEEL PLATE BEAM GUARD RAIL ADJACENT TO CURB AND GUTTER

[FOR ROADWAY SPEED 35 MPH (60 kmh) TO 45 MPH (70 kmh)]



DEPRESSED CURB AND GUTTER AND SHOULDER TREATMENT AT TBT TY. 1 SPL.

BASIS OF PAYMENT: HMA SHOULDERS 6 (150) (IF REQUIRED) WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE YARD (SQUARE METER) FOR "HOT-MIX ASPHALT SHOULDERS 6" (150 mm)".

STEEL PLATE BEAM GUARD RAIL AND TRAFFIC BARRIER TERMINAL, OF THE TYPE SPECIFIED WILL BE PAID FOR SEPARATELY.

TBT = TRAFFIC BARRIER TERMINAL

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

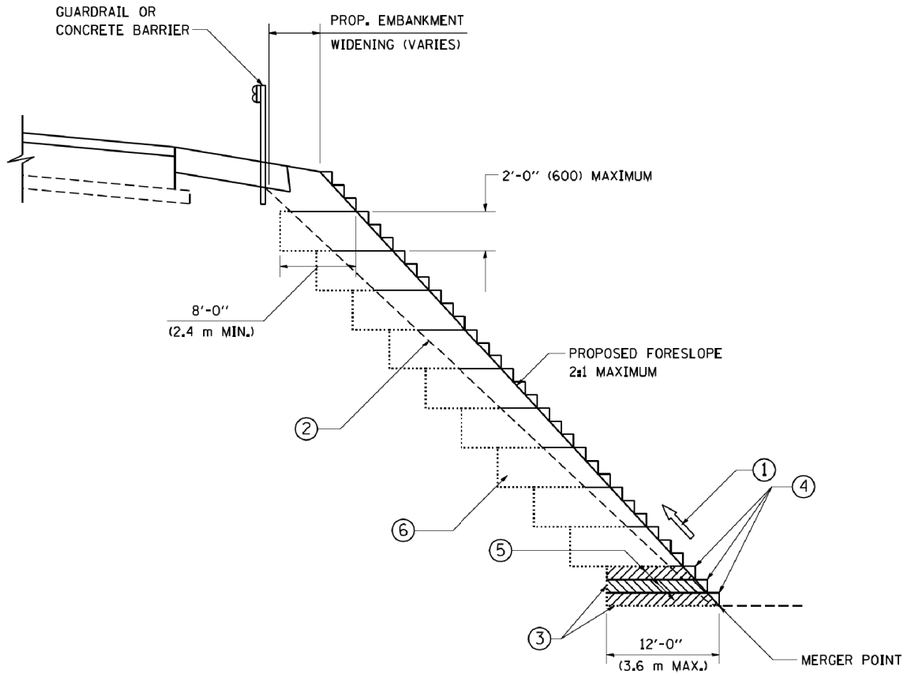
FILE NAME = c:\pw_work\PWIDOT\DRIVAKOSGN\d0108315\bd34.dgn	USER NAME = drivakosgn	DESIGNED - M. DE YONG	REVISED - E. GOMEZ 08-28-00
		DRAWN -	REVISED - R. BORO 01-01-07
	PLOT SCALE = 49.9999 '/ IN.	CHECKED -	REVISED - R. BORO 12-08-2008
	PLOT DATE = 9/21/2009	DATE - 09-22-90	REVISED - R. BORO 09-14-2009

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DETAILS FOR DEPRESSED CURB & GUTTER AND SHOULDER TREATMENT AT TBT TY 1 SPL.

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
856	(99-1HB-1)A	WILL	1508	1181
	BD600-10 (BD 34)	CONTRACT NO. 60X10		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



TYPICAL BENCHING DETAIL FOR EMBANKMENT

NOTES:

1. CONSTRUCT SUCCEEDING BENCH CUTS AND EMBANKMENT PLACEMENT AND COMPACTION FROM BOTTOM TO TOP IN STAIRSTEP FASHION.
2. EXISTING FORESLOPE PREPARED IN ACCORDANCE WITH ARTICLE 205.03 OF THE STANDARD SPECIFICATIONS.
3. BENCH CUT EXISTING SLOPE TYPICAL FOR EACH STEP.
4. TRIM TO FINAL SLOPE.
5. EQUAL 8-INCH (200) LIFTS OF EMBANKMENT COMPACTED IN ACCORDANCE WITH ARTICLE 205.05 OF THE STANDARD SPECIFICATIONS.
6. EXCAVATION OF BENCH CUTS WITHIN EXISTING EMBANKMENT WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER CUBIC METER OR CUBIC YARD FOR "EARTH EXCAVATION". THIS PRICE WILL INCLUDE ALL LABOR AND MATERIAL, NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
7. SLOPES SHALL BE BENCHED ACCORDING TO THIS DETAIL WHEN THE SLOPE IS STEEPER THAN 4:1 AND THE HEIGHT IS GREATER THAN 5' (1.5 m).

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

FILE NAME = W:\diststd\22x34\bd51.dgn	USER NAME = gaglianobt	DESIGNED -	REVISED -
		DRAWN - CADD	REVISED -
	PLOT SCALE = 50.0000 ' / IN.	CHECKED - S.E.B.	REVISED -
	PLOT DATE = 1/4/2008	DATE - 06-16-04	REVISED -

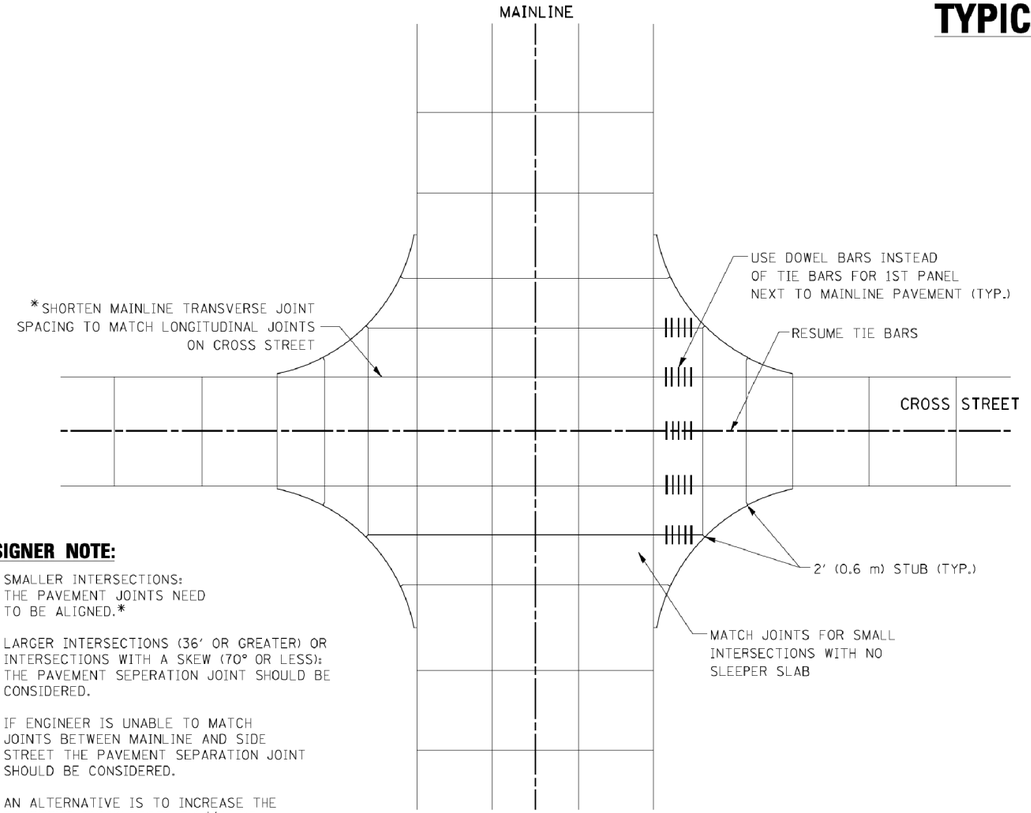
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BENCHING DETAIL
FOR EMBANKMENT WIDENING

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
856	(99-1HB-1)A	WILL	1508	1182
	BD-51	**CONTRACT NO. 60X10**		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

TYPICAL APPLICATION

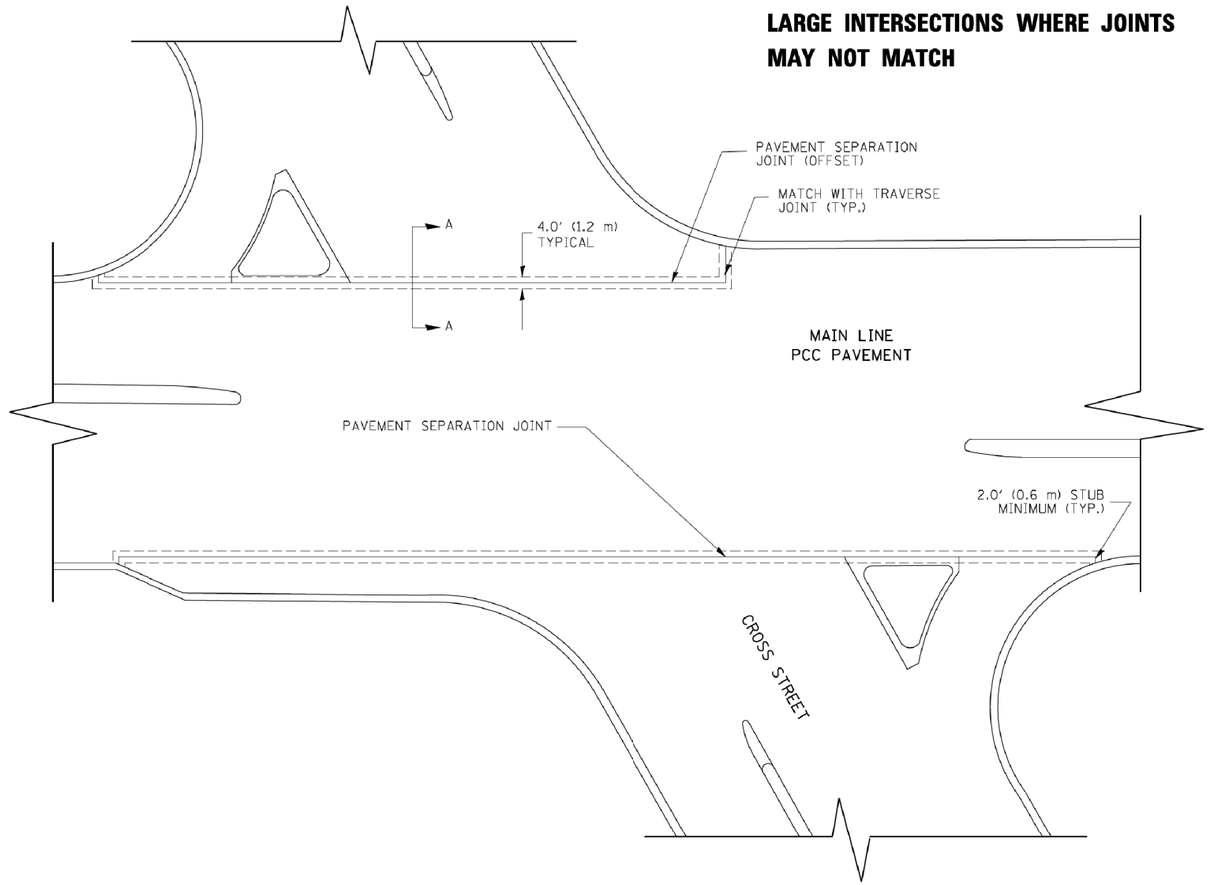


PLAN

DESIGNER NOTE:

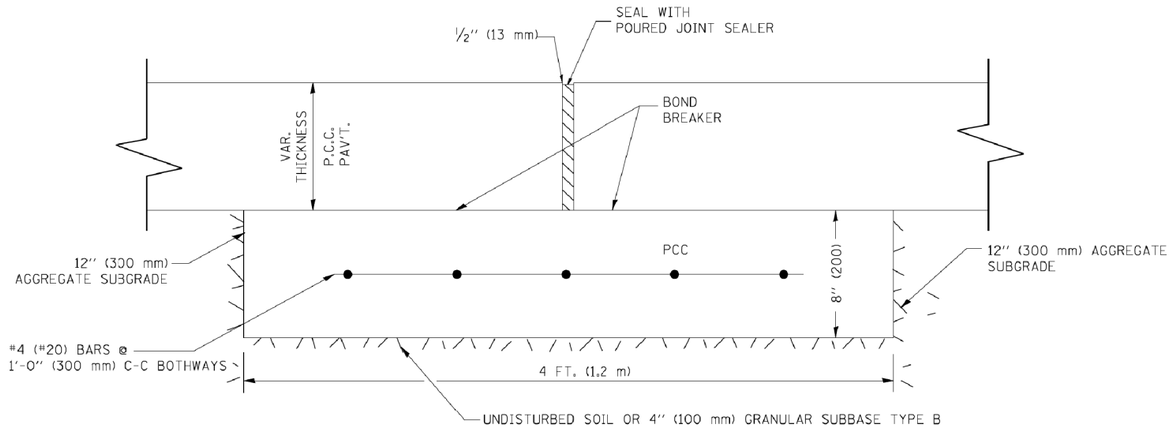
1. SMALLER INTERSECTIONS: THE PAVEMENT JOINTS NEED TO BE ALIGNED.*
2. LARGER INTERSECTIONS (36' OR GREATER) OR INTERSECTIONS WITH A SKEW (70° OR LESS): THE PAVEMENT SEPERATION JOINT SHOULD BE CONSIDERED.
3. IF ENGINEER IS UNABLE TO MATCH JOINTS BETWEEN MAINLINE AND SIDE STREET THE PAVEMENT SEPARATION JOINT SHOULD BE CONSIDERED.
4. AN ALTERNATIVE IS TO INCREASE THE PAVEMENT THICKNESSES BY 1/2" (13 mm) FOR THE LENGTH OF THE AFFECTED PANELS AT THE INTERSECTION.
5. FOR LARGE INTERSECTIONS (6 LANES OR MORE) WHERE JOINTS CAN BE MATCHED, USE #8 (25) DOWEL BARS INSTEAD OF #8 (25) TIE BARS AT EDGE OF MAINLINE PAVEMENT WHEN NO PAVEMENT SEPARATION JOINTS USED.

THE USE OF CROSS STREET PAVEMENT SEPARATION JOINTS FOR SKEWED OR LARGE INTERSECTIONS WHERE JOINTS MAY NOT MATCH



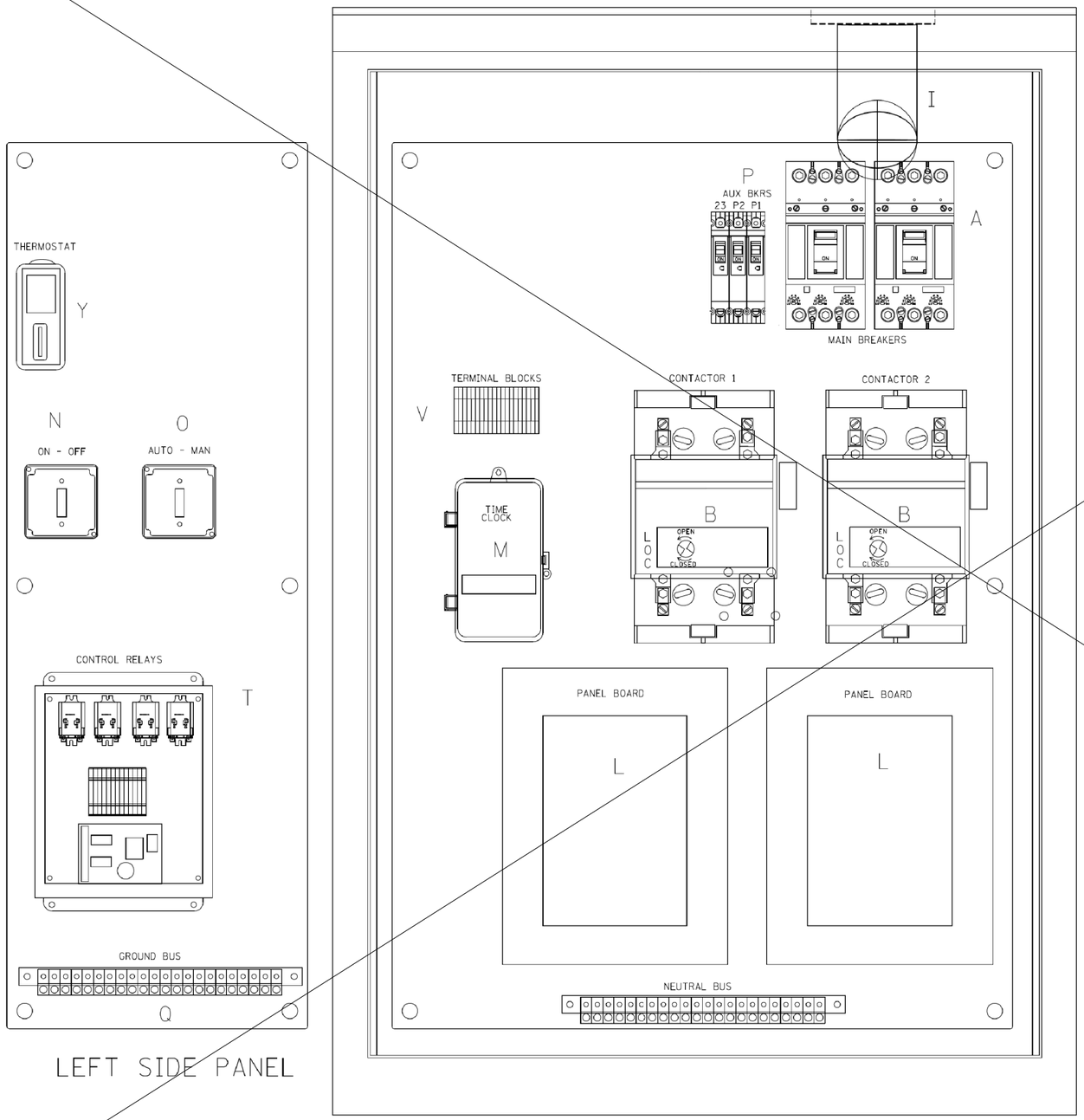
NOTE:

1. JOINT FILLER SHALL CONSIST OF A SHEET OF 1/2" (13 mm) BITUMINOUS PREFORMED FIBER JOINT FILLER CONFORMING TO ARTICLE 1051.03 OF THE STANDARD SPECIFICATIONS.
2. THE JOINT SHALL BE SEALED WITH A HOT POUR JOINT SEALER CONFORMING TO ARTICLE 1050.02 OF THE STANDARD SPECIFICATIONS.
3. A SINGLE LAYER OF FELT ROOFING PAPER SHALL SERVE AS A BOND BREAKER.
4. JOINT SHALL CONTINUE THROUGH COMBINATION CURB & GUTTER OR PCC SHOULDER.
5. PAVEMENT SEPARATION JOINT IS TO BE PAID FOR AS "SLEEPER SLAB" AND IS TO BE MEASURED IN PLACE BY THE LINEAL FOOT.
6. BOND BREAKER AND 1/2" (13 mm) JOINT AND FILLER SHALL BE INCIDENTAL TO THE PAY ITEM "SLEEPER SLAB".



PROPOSED SECTION A-A

FILE NAME = bd52.dgn	USER NAME = leyse	DESIGNED -	REVISED - CADD 06-18-10	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DETAIL OF PAVEMENT SEPARATION JOINT FOR JOINTED PCC PAVEMENTS AT INTERSECTIONS	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED -			856	(99-1HB-1)A	WILL	1508	1183
	PLOT SCALE = 49.9999 ' / IN.	CHECKED -	REVISED -				BD52	CONTRACT NO. 60X10		
	PLOT DATE = 2/25/2011	DATE -	REVISED -		SCALE: NONE SHEET NO. 1 OF 1 SHEETS STA. TO STA.			ILLINOIS FED. AID PROJECT		



BILL OF MATERIALS

ITEM *	QTY	DESCRIPITON
A	2	MAIN BREAKERS 2 POLE 200 AMP WITH AUX CONTACT
B	2	MECHANICAL CONTRACTOR 2 POLE 200 AMP 240V COIL WITH AUX CONTACTS
D	1	SECTIONAL FUSE HOLDER
E	1	2.0 KVA 277V-240/120 TRASFORMER
G	1	15 AMP GFCI
H	2	DOOR SWITCH
I	1	LIGHT FIXTURE
J	1	METER FITTING 1 PHASE 3 WIRE 200 AMP
K	1	SURGE ARRESTER
L	2	PANEL BOARD 480/240V 1 PHASE, 250 AMP COPPER BUS
M	1	2 CHANNEL DIGITAL TIME CLOCK
N	1	MOMENTARY SWITCH ON - OF
O	1	DPDT 20 AMP AUTO-MANUAL
P1	1	BREAKER 1P 15A
P2	1	BREAKER 1P 15A
P3	1	BREAKER 1P 15A
Q	2	COPPER GROUND AND NEUTRAL BUS 1 X 16 X 1/4
T	1	CONTROL RELAY ASSEMBLY 240V COILS WITH DPDT 25 AMP RELAYS (R1,R2,R3,R4). MOMENTARY CONTACT ADAPTER. QTY 12 TERMINAL BLOCKS
V	20	TERMINAL BLOCKS
X	1	620 AMP SPLICE BLOCK
Y	1	CHROMALOX WR 80, 40-80 DEG THERMOSTAT
Z	1	HEATREX 276-10 375 WATT HEATER

*

E-200

FILE NAME = c:\pw_work\pwidot\drivakosgn\d0108315\be200.dgn	USER NAME = drivakosgn	DESIGNED -	REVISED - R. TOMSONS 03-29-12
	PLOT SCALE = 50.0000 ' / in.	DRAWN - CADD	REVISED -
	PLOT DATE = 3/29/2012	CHECKED -	REVISED -
		DATE - 12-18-02	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING CONTROLLER, BASE MOUNTED
480 VOLT, 200 AMP, (DUAL)

SCALE: NONE | SHEET NO. 1 OF 4 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
856	(99-1HB-1)A	WILL	1508	1184
	E-200 (BE-200)	CONTRACT NO. 60X10		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

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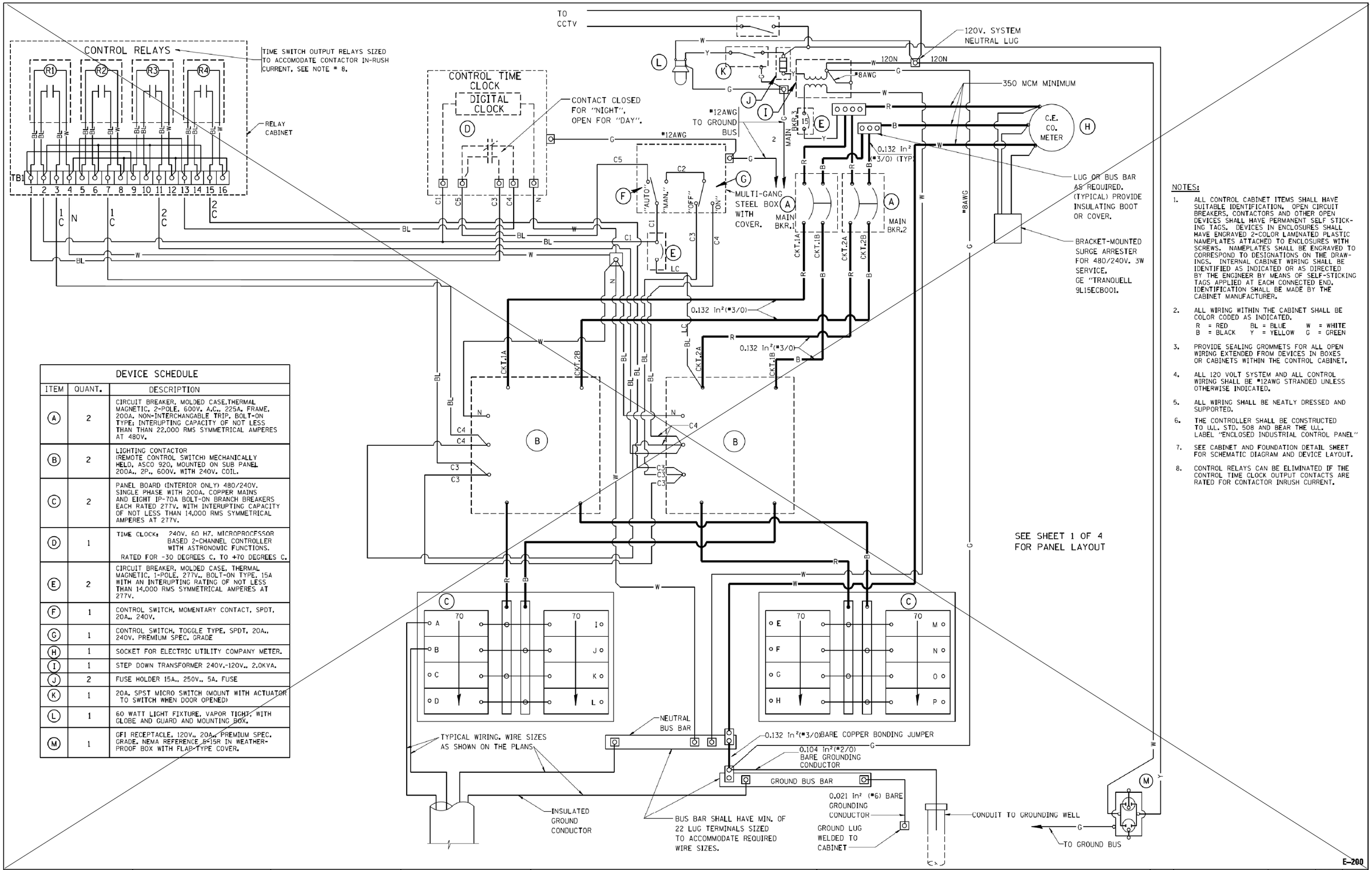

DEVICE SCHEDULE		
ITEM	QUANT.	DESCRIPTION
(A)	2	CIRCUIT BREAKER, MOLDED CASE, THERMAL MAGNETIC, 2-POLE, 600V. A.C., 225A. FRAME, 200A. NON-INTERCHANGABLE TRIP, BOLT-ON TYPE; INTERUPTING CAPACITY OF NOT LESS THAN THAN 22,000 RMS SYMMETRICAL AMPERES AT 480V.
(B)	2	LIGHTING CONTACTOR (REMOTE CONTROL SWITCH) MECHANICALLY HELD, ASCO 920, MOUNTED ON SUB PANEL 200A., 2P., 600V. WITH 240V. COIL.
(C)	2	PANEL BOARD (INTERIOR ONLY) 480/240V. SINGLE PHASE WITH 200A. COPPER MAINS AND EIGHT IP-70A BOLT-ON BRANCH BREAKERS EACH RATED 277V. WITH INTERUPTING CAPACITY OF NOT LESS THAN 14,000 RMS SYMMETRICAL AMPERES AT 277V.
(D)	1	TIME CLOCK: 240V. 60 HZ. MICROPROCESSOR BASED 2-CHANNEL CONTROLLER WITH ASTRONOMIC FUNCTIONS. RATED FOR -30 DEGREES C. TO +70 DEGREES C.
(E)	2	CIRCUIT BREAKER, MOLDED CASE, THERMAL MAGNETIC, 1-POLE, 277V., BOLT-ON TYPE, 15A WITH AN INTERUPTING RATING OF NOT LESS THAN 14,000 RMS SYMMETRICAL AMPERES AT 277V.
(F)	1	CONTROL SWITCH, MOMENTARY CONTACT, SPDT, 20A., 240V.
(G)	1	CONTROL SWITCH, TOGGLE TYPE, SPDT, 20A., 240V. PREMIUM SPEC. GRADE
(H)	1	SOCKET FOR ELECTRIC UTILITY COMPANY METER.
(I)	1	STEP DOWN TRANSFORMER 240V.-120V., 2.0KVA.
(J)	2	FUSE HOLDER 15A., 250V., 5A. FUSE
(K)	1	20A. SPST MICRO SWITCH (MOUNT WITH ACTUATOR TO SWITCH WHEN DOOR OPENED)
(L)	1	60 WATT LIGHT FIXTURE, VAPOR TIGHT, WITH GLOBE AND GUARD AND MOUNTING BOX.
(M)	1	GFI RECEPTACLE, 120V., 20A., PREMIUM SPEC. GRADE, NEMA REFERENCE 5-15R IN WEATHER-PROOF BOX WITH FLAP-TYPE COVER.

NOTES:

1. ALL CONTROL CABINET ITEMS SHALL HAVE SUITABLE IDENTIFICATION. OPEN CIRCUIT BREAKERS, CONTACTORS AND OTHER OPEN DEVICES SHALL HAVE PERMANENT SELF STICKING TAGS. DEVICES IN ENCLOSURES SHALL HAVE ENGRAVED 2-COLOR LAMINATED PLASTIC NAMEPLATES ATTACHED TO ENCLOSURES WITH SCREWS. NAMEPLATES SHALL BE ENGRAVED TO CORRESPOND TO DESIGNATIONS ON THE DRAWINGS. INTERNAL CABINET WIRING SHALL BE IDENTIFIED AS INDICATED OR AS DIRECTED BY THE ENGINEER BY MEANS OF SELF-STICKING TAGS APPLIED AT EACH CONNECTED END. IDENTIFICATION SHALL BE MADE BY THE CABINET MANUFACTURER.
2. ALL WIRING WITHIN THE CABINET SHALL BE COLOR CODED AS INDICATED.
   R = RED BL = BLUE W = WHITE
   B = BLACK Y = YELLOW G = GREEN
3. PROVIDE SEALING GROMMETS FOR ALL OPEN WIRING EXTENDED FROM DEVICES IN BOXES OR CABINETS WITHIN THE CONTROL CABINET.
4. ALL 120 VOLT SYSTEM AND ALL CONTROL WIRING SHALL BE #12AWG STRANDED UNLESS OTHERWISE INDICATED.
5. ALL WIRING SHALL BE NEATLY DRESSED AND SUPPORTED.
6. THE CONTROLLER SHALL BE CONSTRUCTED TO U.L. STD. 508 AND BEAR THE U.L. LABEL "ENCLOSED INDUSTRIAL CONTROL PANEL"
7. SEE CABINET AND FOUNDATION DETAIL SHEET FOR SCHEMATIC DIAGRAM AND DEVICE LAYOUT.
8. CONTROL RELAYS CAN BE ELIMINATED IF THE CONTROL TIME CLOCK OUTPUT CONTACTS ARE RATED FOR CONTACTOR INRUSH CURRENT.

E-200

FILE NAME = c:\pw_work\pwidot\drivakosgn\d0108315\be200.dgn	USER NAME = drivakosgn	DESIGNED - G. BRATKIV	REVISED - M. BURNS 07-25-91	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	LIGHTING CONTROLLER, BASE MOUNTED 480 VOLT, 200 AMP, (DUAL)	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = 50.0000 ' / in.	DRAWN -	REVISED - S. MANLEY 10-11-93			856	(99-1HB-1)A	WILL	1508	1185
	PLOT DATE = 3/29/2012	CHECKED -	REVISED - R. TOMSONS 03-29-12				E-200 (BE-200)		CONTRACT NO. 60X10	
		DATE - 06-30-86	REVISED -		SCALE: NONE SHEET NO. 2 OF 4 SHEETS STA. TO STA.	FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

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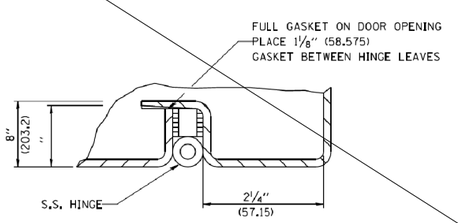
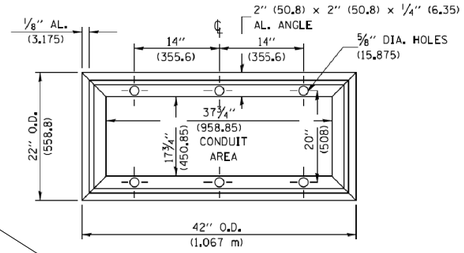
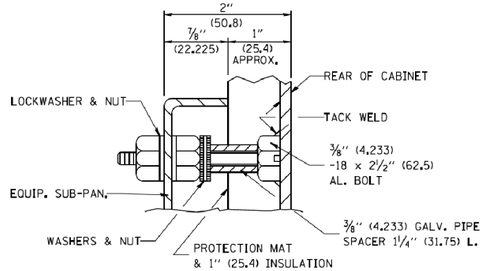


DETAIL "Y"



BASE MTG. DETAIL



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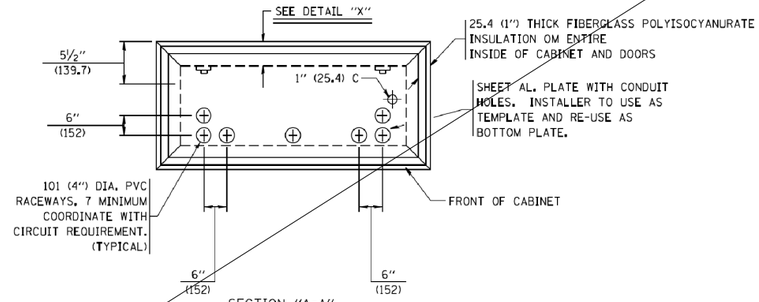

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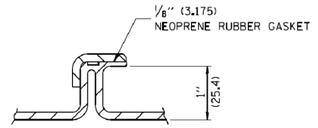

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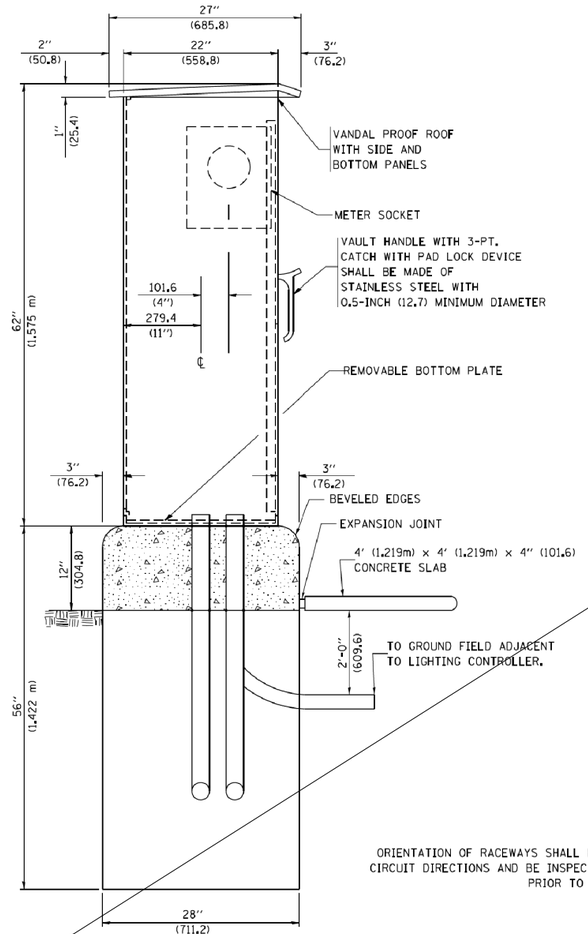
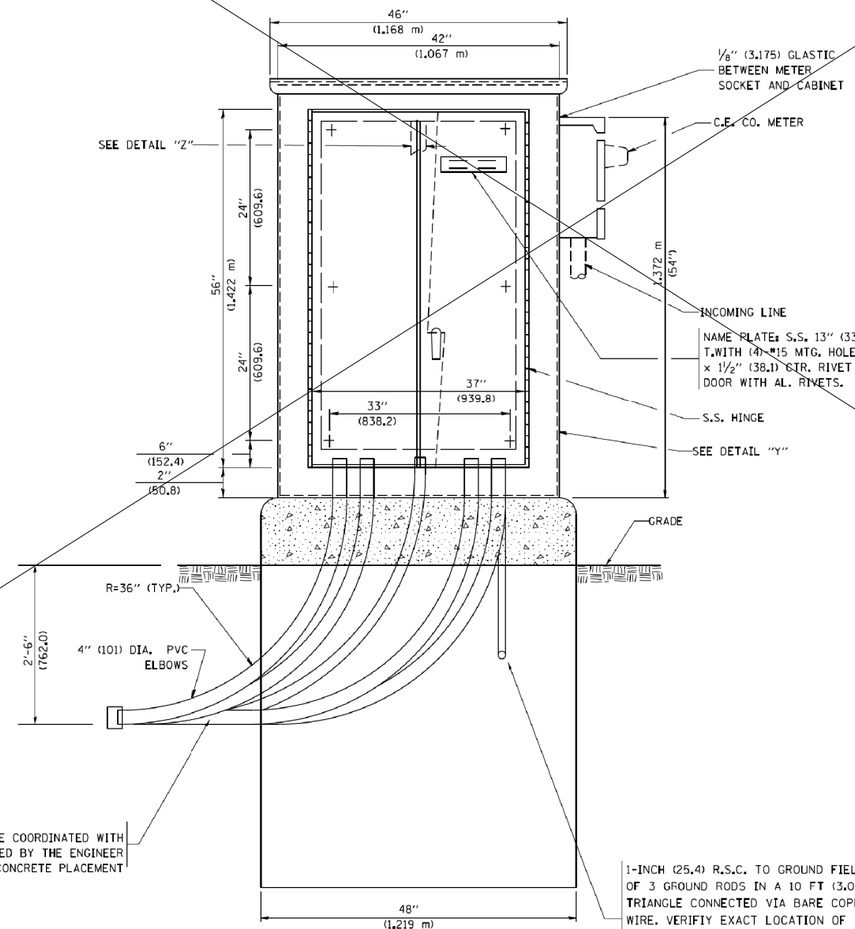


LEFT SIDE ELEVATION



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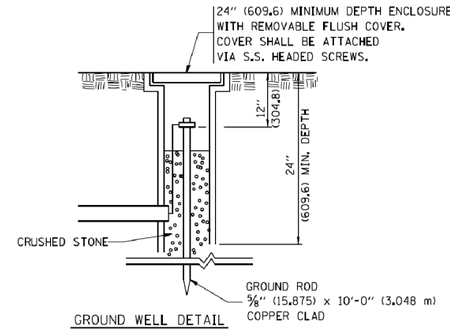
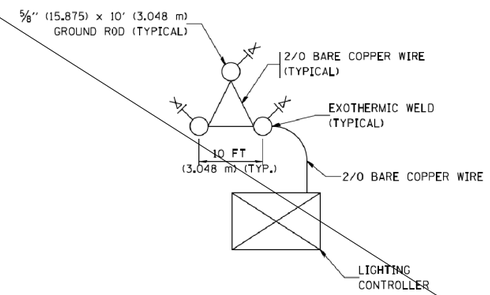


GROUND WELL DETAIL



GROUND FIELD DETAIL
(N.T.S.)

THE CONTRACTOR SHALL
VERIFY EXACT LOCATION
WITH THE ENGINEER

E-200

FILE NAME = c:\pw_work\pwidot\drivakosgn\d0108315\be200.dgn	USER NAME = drivakosgn	DESIGNED -	REVISED - R. TOMSONS 03-29-12
		DRAWN - CADD	REVISED -
	PLOT SCALE = 50.0000 ' / in.	CHECKED -	REVISED -
	PLOT DATE = 3/29/2012	DATE - 12-18-02	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING CONTROLLER, BASE MOUNTED
480 VOLT, 200 AMP, (DUAL)

SCALE: NONE | SHEET NO. 3 OF 4 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
856	(99-1HB-1)A	WILL	1508	1186
	E-200 (BE-200)	CONTRACT NO. 60X10		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

be200.dgn 3/29/2012 11:00:05 AM Usersdrivakosgn

NOTES

1. CABINET SHALL BE FABRICATED FROM 0.125-INCH (3.175) SHEET ALUMINUM #3003H14, FORMED AND ARC WELDED ASSEMBLY.
2. ALL SCREWS AND HARDWARE SHALL BE PLATED, GALVANIZED, OR MADE OF BRASS, ALUMINUM OR STAINLESS STEEL.
3. NAME PLATE SHALL HAVE ENGRAVED 0.75-INCH (19.05) HIGH LETTERS FILLED IN BLACK: "STATE OF ILLINOIS LIGHTING CONTROLS" UNLESS OTHERWISE SPECIFIED.
4. ONE INCH THICK POLYISOCYANURATE INSULATION SHALL BE INSTALL AND PERMANENTLY CEMENTED ON ALL SIDES OF THE CABINET AND DOORS.
5. CABINET SHALL BE PRIMED AND PAINTED AS SPECIFIED.
6. ELECTRIC UTILITY METER BOX SHALL BE MOUNTED ON THE SIDE OF CONTROL CABINET AS SHOWN ON THE PANEL LAYOUT DIAGRAM.
7. THE COMPLETED CONTROLLER SHALL BE U.L. LISTED AS AN INDUSTRIAL CONTROL PANEL UNDER UL508.
8. METAL MOUNTING PANEL SHALL BE #10 GAUGE GALVANIZED SHEET STEEL FLANGED BACK 0.75-INCHES I.D. ON 4 SIDES.
9. CIRCUIT BREAKERS AND CONTACTORS AND OTHER COMPONENTS SHALL BE MOUNTED ON 0.125-INCH (3.175) THICK GLASTIC INSULATION BACK PANEL.
10. ALL DEVICES SHALL BE FRONT REMOVABLE.
11. TIME CLOCK CHANNEL 1 N.O. CONTACT IS CLOSED NIGHT AND OPEN DAY.
12. SET "ON TIME" TO 30 MINUTES AFTER ASTRONOMICAL SUNSET.
13. BUS BAR SHALL HAVE 22 LUG TERMINALS SIZED TO ACCOMMODATE REQUIRED WIRE SIZES.
    NEUTRAL BUS SHALL BE PAINTED WHITE.
    GROUND BUS SHALL BE PAINTED GREEN.
14. ALL LUGS SHALL BE OF COPPER SCREWS AND CONNECTORS, SPRING HELD.
15. ALL WIRING TERMINATIONS SHALL BE RATED NOT LESS THAN 75 DEGREE CENTIGRADE.
16. ALL CONTROL WIRING SHALL BE 600V MACHINE TOOL WIRE TYPE MTW.
17. ALL POWER WIRING SHALL BE 600V TYPE RHH/RHW.
18. ALL WIRING WITHIN THE CABINET SHALL BE COLOR CODED AS INDICATED:

    R - RED Y - YELLOW
    B - BLACK W - WHITE
    BL- BLUE G - GREEN

19. ALL DIMENSIONS ARE IN MILIMETERS (INCHES) UNLESS OTHERWISE INDICATED.
20. SCHEMATIC SHOWN WITH BREAKER OPEN, CONTACTOR OPEN, CABINET DOOR CLOSED, CLOCK NOT ACTIVE.
21. A LAMINATED COPY OF THE CIRCUIT SCHEMATIC AND SCADA I/O DIAGRAM SHALL BE ATTACHED TO THE INSIDE OF THE CONTROLLER.

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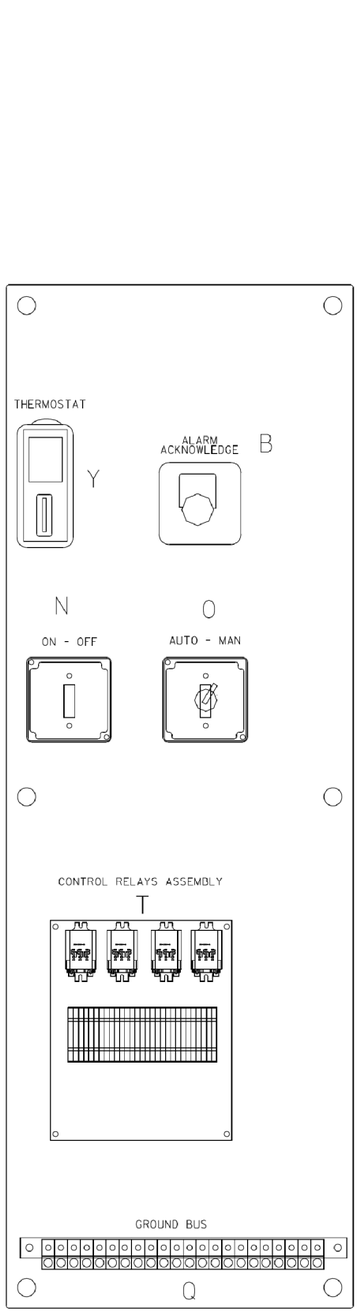
		DRAWN - CADD	REVISED -
	PLOT SCALE = 50.0000 ' / in.	CHECKED -	REVISED -
	PLOT DATE = 3/29/2012	DATE - 12-18-02	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

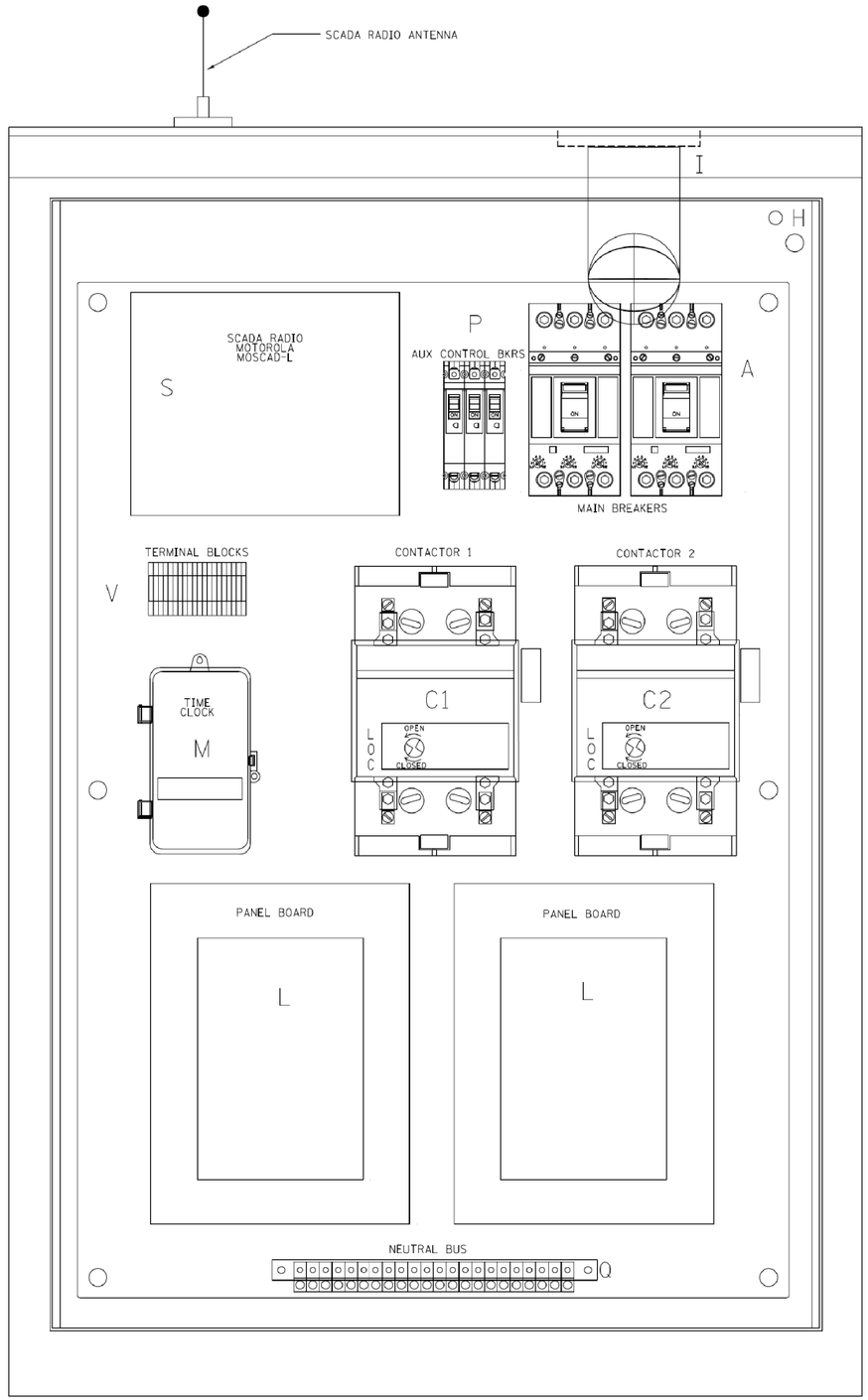
LIGHTING CONTROLLER, BASE MOUNTED
480 VOLT, 200 AMP, (DUAL)

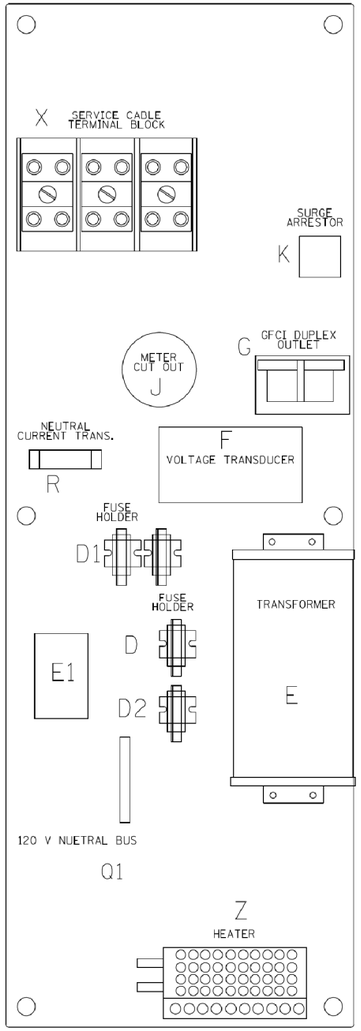
SCALE: NONE | SHEET NO. 4 OF 4 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
856	(99-1HB-1)A	WILL	1508	1187
	E-200 (BE-200)	CONTRACT NO. 60X10		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



LEFT SIDE PANEL





RIGHT SIDE PANEL

BILL OF MATERIALS

ITEM	QTY	DESCRIPTION
A	2	MAIN CIRCUIT BREAKERS 2 POLE 200 AMP WITH AUX CONTACT
B	1	ACKNOWLEDGE SWITCH, PUSH BUTTON WITH YELLOW INSERT
C1, C2 *	2	CONTACTOR 2 POLE 200 AMP 240V COIL WITH AUX CONTACTS
D	1	FINGERSAFE FUSE HOLDER WITH KTK-20 FUSE
D1	2	FINGERSAFE FUSE HOLDER WITH KTK-½ FUSE
D2	1	FINGERSAFE FUSE HOLDER WITH KTK-2A FUSE
E	1	2.0 KVA 277V-240/120 TRANSFORMER
E1	1	0.25 KVA 240/120 - 24 VAC TRANSFORMER
F	1	VOLTAGE TRANSDUCER WITH COVERED TERMINALS
G	1	20 AMP GFCI DUPLEX OUTLET W/COVER
H	2	DOOR SWITCH
I	1	LIGHT FIXTURE
J	1	METER FITTING 1 PHASE 3 WIRE 200 AMP
K	1	SURGE ARRESTER
L	2	PANEL BOARD 480/240V 1 PHASE, 250 AMP COPPER BUS
M	1	2 CHANNEL DIGITAL TIME CLOCK
N	1	MOMENTARY SWITCH ON - OFF
O	1	SQUARE D, 9001KS11BH13, 2 POSITION SWITCH IN 9001KY1 ENCLOSURE OR APPROVED EQUAL
P	2	BREAKER 1P 15A
Q	2	COPPER GROUND AND NEUTRAL BUS 1 x 16 x 1/4
Q1	1	COPPER NEUTRAL BUS WITH 1 #6 AND 8 #12 CONDUCTOR POINTS
R	1	CURRENT TRANSDUCER
S	1	MOTOROLA MOSCAD-L RADIO, 240 V
T *	1	CONTROL RELAY ASSEMBLEY 240V COILS WITH 4 3 PDT 25A RELAYS (W389ACX-15) (R1, R2, R3, R4) . QTY 32 TERMINAL BLOCKS
V	20	TERMINAL BLOCKS
X *	1	620 AMP SLPICE BLOCK
Y	1	40-80 DEG THERMOSTAT
Z	1	375 WATT HEATER

* TERMINALS SHALL BE COVERED WITH CLEAR PLEXIGLASS SHEET

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		DRAWN -	REVISED - R. TOMSONS 05-11-09			856	(99-1HB-1)A	WILL	1508	1188
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	PLOT DATE = 3/29/2012	DATE -	REVISED - R. TOMSONS 03-29-12		SCALE: NONE SHEET NO. 1 OF 4 SHEETS STA. TO STA.	FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

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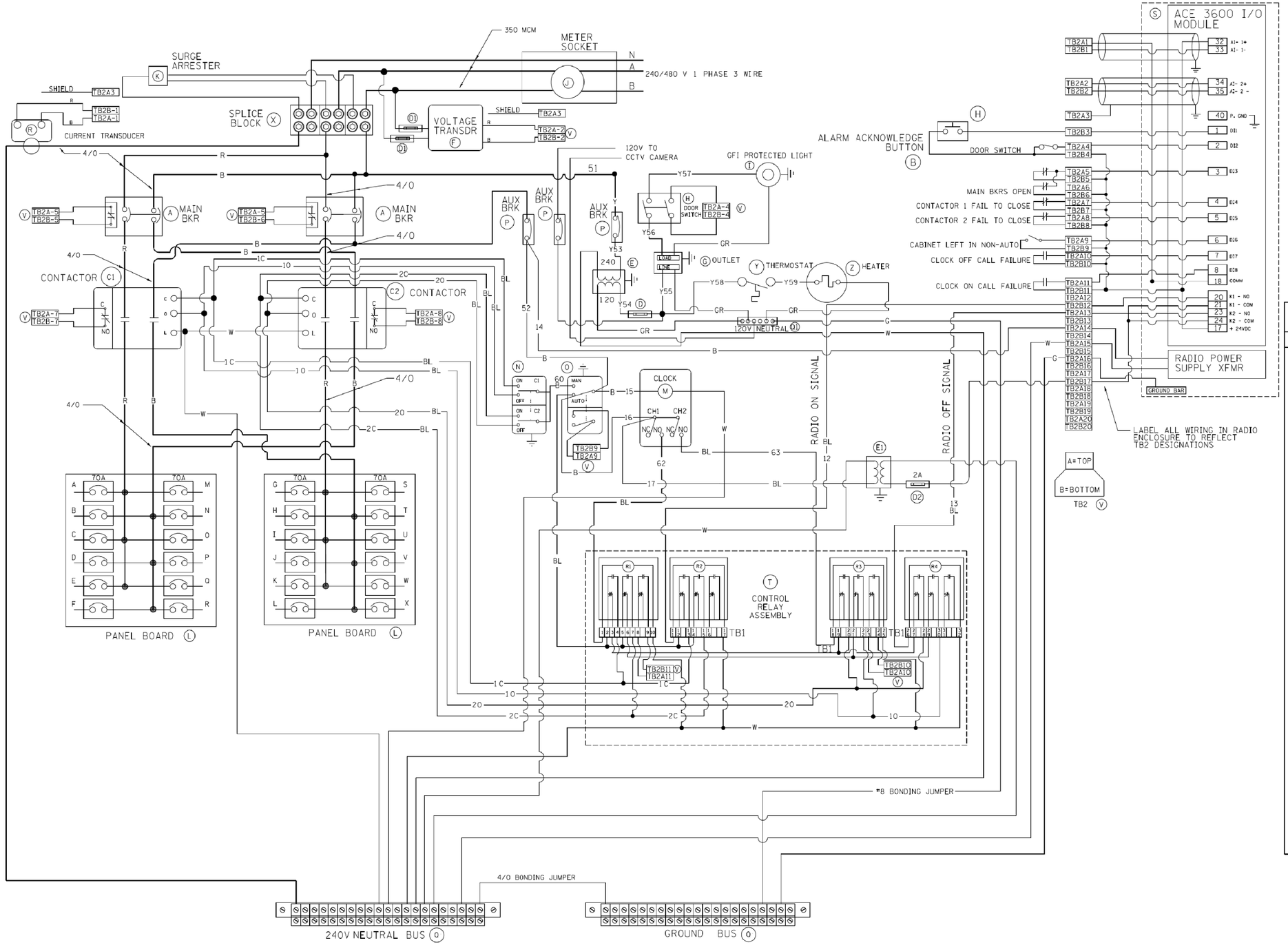

BILL OF MATERIALS

ITEM *	QTY	DESCRIPTION
A	2	MAIN CIRCUIT BREAKERS 2 POLE 200 AMP WITH AUX CONTACT
B	1	ACKNOWLEDGE SWITCH, PUSH BUTTON WITH YELLOW INSERT
C1, C2	2	CONTACTOR 2 POLE 200 AMP 240V COIL WITH AUX CONTACTS
D	1	FINGERSAFE FUSE HOLDER WITH KTK-20A FUSE
D1	2	FINGERSAFE FUSE HOLDER WITH KTK-½ FUSE
D2	1	FINGERSAFE FUSE HOLDER WITH KTK- 2A FUSE
E	1	2.0 KVA 277V-240/120 TRANSFORMER
E1	1	0.25 KVA 240/120-24 VAC TRANSFORMER
F	1	VOLTAGE TRANSDUCER
G	1	15 AMP GFCI DUPLEX OUTLET W/COVER
H	2	DOOR SWITCH A-20GO-B7-K
I	1	LIGHT FIXTURE
J	1	METER FITTING 1 PHASE 3 WIRE 200 AMP
K	1	SURGE ARRESTER
L	2	PANEL BOARD 480/240V 1 PHASE, 250 AMP COPPER BUS
M	1	2 CHANNEL DIGITAL TIME CLOCK
N	1	MOMENTARY SWITCH ON - OFF
O	1	SQUARE D, 9001KS11BH13, 2 POSITION SWITCH IN 9001KY1 ENCLOSURE
P	2	BREAKER 1P 15A
Q	2	COPPER GROUND AND NEUTRAL BUS 1 x 16 x 1/4
Q1	1	COPPER NEUTRAL BUS WITH 1 1/0 AND #6 CONDUCTOR POINTS
R	1	CURRENT TRANSDUCER
S	1	MOTOROLA ACE 3600
T	1	CONTROL RELAY ASSEMBLEY 240V COILS WITH 4 3 PDT 25A RELAYS (W389ACX-15) (R1, R2, R3, R4) . QTY 32 TERMINAL BLOCKS
V	20	TERMINAL BLOCKS
X	1	620 AMP SLPICE BLOCK
Y	1	40-80 DEG THERMOSTAT
Z	1	375 WATT HEATER

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING CONTROLLER, BASE MOUNTED, 480VOLT, 200AMP (DUAL) RADIO SCADA

SCALE: NONE | SHEET NO. 2 OF 4 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
856	(99-1HB-1)A	WILL	1508	1189
	BE-205	CONTRACT NO. 60X10		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

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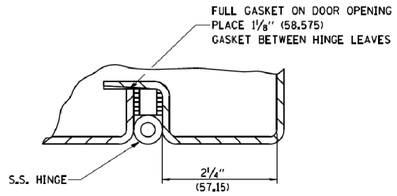

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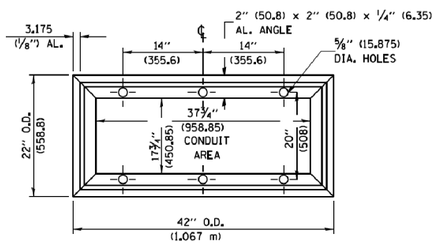
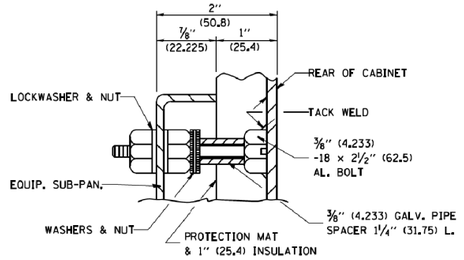


BASE MTG. DETAIL



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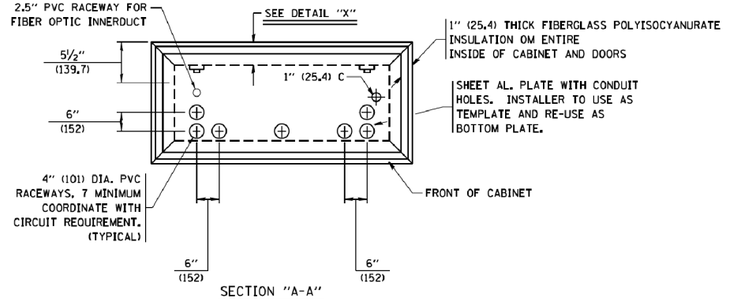

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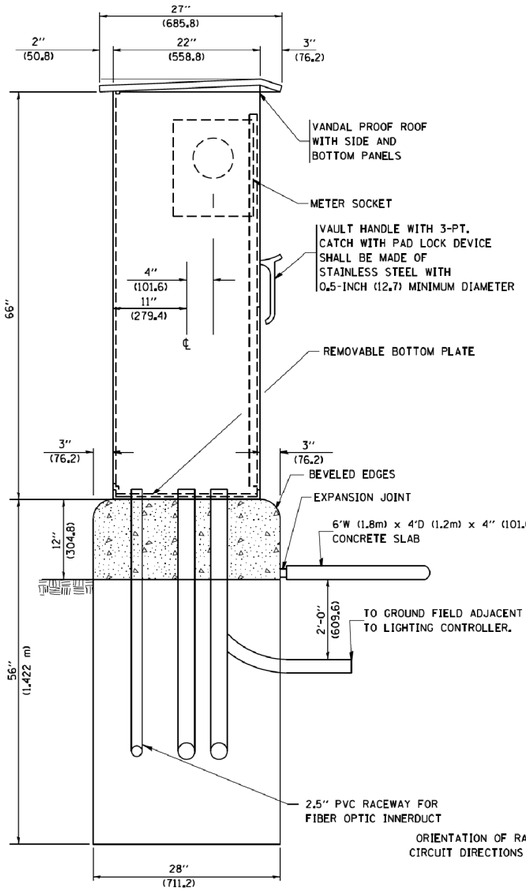
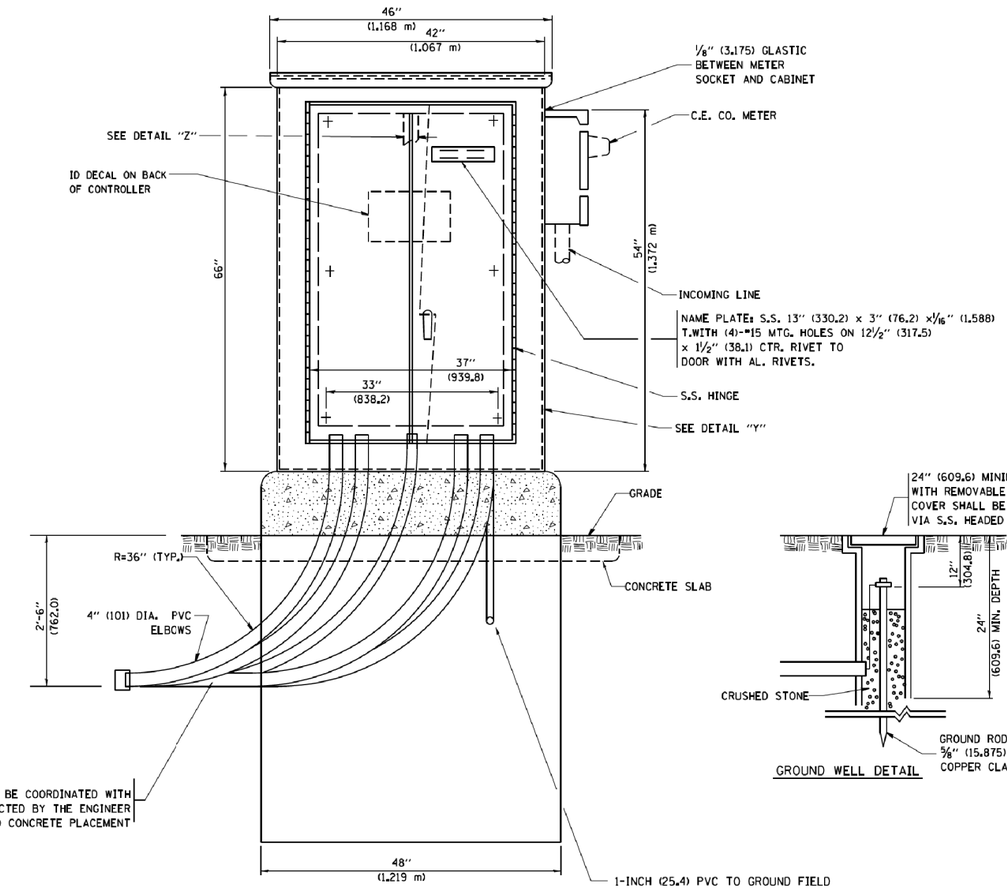


LEFT SIDE ELEVATION



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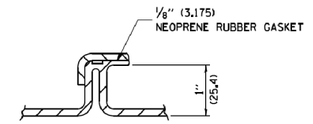

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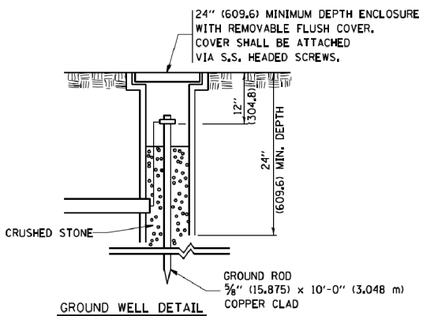
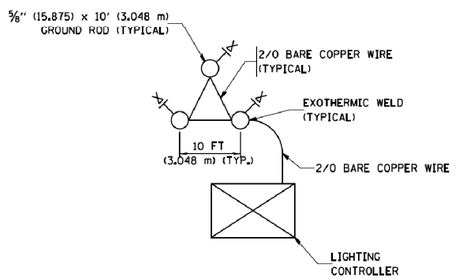


GROUND WELL DETAIL



GROUND FIELD DETAIL
(N.T.S.)

THE CONTRACTOR SHALL
VERIFY EXACT LOCATION
WITH THE ENGINEER

FILE NAME = W:\District_1\Make_working_file\be205.dgn	USER NAME = footemj	DESIGNED -	REVISED - R. TOMSONS 05-11-09	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	LIGHTING CONTROLLER, BASE MOUNTED, 480VOLT, 200AMP (DUAL) RADIO SCADA	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED - R. TOMSONS 03-10-10			856	(99-1HB-1)A	WILL	1508	1190
Default	PLOT SCALE = 50.000 ' / in.	CHECKED -	REVISED - R. TOMSONS 03-29-12				BE-205	CONTRACT NO. 60X10		
	PLOT DATE = 7/21/2017	DATE -	REVISED - R. TOMSONS 07-21-17		SCALE: SHEET 3 OF 4 SHEETS STA. TO STA.		ILLINOIS FED. AID PROJECT			

be205.dgn 7/21/2017 1:17:30 PM User=footemj

NOTES

1. CABINET SHALL BE FABRICATED FROM 0.125-INCH (3.175) SHEET ALUMINUM #3003H14, FORMED AND ARC WELDED.
2. ALL SCREWS AND HARDWARE SHALL BE PLATED, GALVANIZED, OR MADE OF BRASS, ALUMINUM OR STAINLESS STEEL, UNLESS OTHERWISE NOTED.
3. NAME PLATE SHALL HAVE ENGRAVED 0.75-INCH (19.05) HIGH LETTERS FILLED IN BLACK: "STATE OF ILLINOIS LIGHTING CONTROLS" UNLESS OTHERWISE SPECIFIED.
4. ONE INCH THICK POLYISOCYANURATE INSULATION SHALL BE INSTALL AND PERMANENTLY CEMENTED ON ALL SIDES OF THE CABINET AND DOORS.
5. CABINET SHALL BE PRIMED AND PAINTED AS SPECIFIED.
6. ELECTRIC UTILITY METER BOX SHALL BE MOUNTED ON THE SIDE OF CONTROL CABINET AS SHOWN ON THE PANEL LAYOUT DIAGRAM.
7. THE COMPLETED CONTROLLER SHALL BE U.L. LISTED AS AN INDUSTRIAL CONTROL PANEL UNDER UL508.
8. METAL MOUNTING PANEL SHALL BE FABRICATED FROM THE SAME MATERIAL AS THE CABINET AND SHALL BE FLANGED BACK 0.75-INCHES I.D. ON 4 SIDES.
9. CIRCUIT BREAKERS AND CONTACTORS AND OTHER COMPONENTS SHALL BE MOUNTED ON 0.125-INCH (3.175) THICK GLASTIC INSULATION BACK PANEL.
10. ALL DEVICES SHALL BE FRONT REMOVABLE.
11. TIME CLOCK CHANNEL 1 N.O. CONTACT IS CLOSED NIGHT AND OPEN DAY (LIGHTS ON).
12. SET LATITUDE TO 42 DEGREES. SET CH.1 TO 23 MINUTES AFTER ASTRONOMICAL SUNSET, 50 MINUTES BEFORE ASTRONOMICAL SUNRISE. SET CH.2 TO 60 MINUTES AFTER ASTRONOMICAL SUNSET (WITH A SIGNAL LENGTH OF 1 SECOND), +28 MINUTES AFTER ASTRONOMICAL SUNRISE (WITH A SIGNAL LENGTH OF 7 SECONDS.)
13. BUS BAR SHALL HAVE 22 LUG TERMINALS SIZED TO ACCOMMODATE REQUIRED WIRE SIZES. 240V NEUTRAL BUS SHALL BE PAINTED WHITE, GROUND BUS SHALL BE PAINTED GREEN, AND THE 120V NEUTRAL BUS SHALL BE PAINTED GREY.
14. ALL LUGS SHALL BE OF COPPER SCREWS AND CONNECTORS, SPRING HELD.
15. ALL WIRING TERMINATIONS SHALL BE RATED NOT LESS THAN 75 DEGREE CENTIGRADE.
16. ALL CONTROL WIRING SHALL BE 600V #12 TYPE MTW, SCADA WIRING SHALL BE #18.
17. ALL POWER WIRING SHALL BE 600V TYPE RHH/RHW.
18. ALL WIRING WITHIN THE CABINET SHALL BE COLOR CODED AS INDICATED:

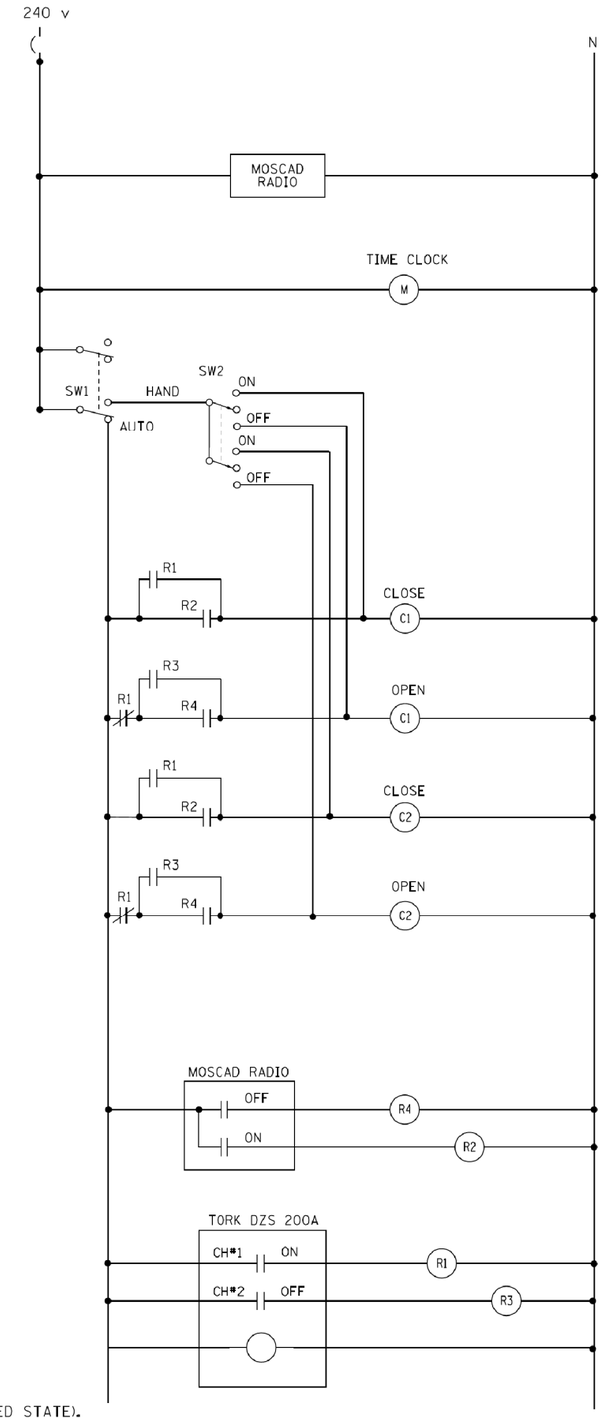
    R - RED Y - YELLOW
    B - BLACK W - WHITE
    BL- BLUE G - GREEN
    G - GREY

19. MOSCAD I/O WIRING SHALL BE:

    DIGITAL INPUT (DI) WIRING SHALL BE #18 MTW PURPLE.

    ANALOG INPUT (AI) WIRING SHALL BE #18, 2/C SHIELDED.

    AI AND DI WIRING MAY BE BUNDLED TOGETHER, BUT SHALL NOT BE BUNDLED WITH OTHER WIRING.
20. ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE INDICATED.
21. SCHEMATIC SHOWN WITH BREAKER OPEN, CONTACTOR OPEN, CABINET DOOR CLOSED, CLOCK NOT ACTIVE (DE-ENERGIZED STATE).
22. A LAMINATED COPY OF THE CIRCUIT SCHEMATIC AND SCADA I/O DIAGRAM (NO SMALLER THAN 11"x17" EACH) SHALL BE ATTACHED TO THE INSIDE OF THE CONTROLLER WITH STAINLESS STEEL SCREWS.



CONTROL CIRCUIT LADDER LOGIC DIAGRAM

MOSCAD I/O ASSIGNMENTS		
TERM	MOSCAD DESTINATION	DESCRIPTION OF INPUT
1	DIGITAL INPUT 1	ALARM KNOWLEDGE
2	DIGITAL INPUT 2	DOOR OPEN
3	DIGITAL INPUT 3	MAIN(S) BREAKER OPEN
4	DIGITAL INPUT 4	CONTACTOR 1 OPEN
5	DIGITAL INPUT 5	CONTACTOR 2 OPEN
6	DIGITAL INPUT 6	CABINET IN NON-AUTO
7	DIGITAL INPUT 7	BACK-UP CLOCK OFF CALL
8	DIGITAL INPUT 8	BACK-UP CLOCK ON CALL
17	24 V+	24+VDC
18	DI COMMON	COMMON
21	K1 C	K1 COMMON
22	K1 NO	LIGHTS ON CALL
24	K2 C	K2 COMMON
25	K2 NO	LIGHTS OFF CALL
32	ANALOG INPUT 1 (+)	CABINET NEUTRAL CURRENT
33	ANALOG INPUT 1 (-)	CABINET NEUTRAL CURRENT
34	ANALOG INPUT 2 (+)	CABINET SERVICE VOLTAGE
35	ANALOG INPUT 2 (-)	CABINET SERVICE VOLTAGE
40	P. GROUND	GROUND

ALL ANALOG INPUTS WILL BE 4-20 MA ONLY. DIGITAL OUTPUT RELAYS WILL BE ELECTRICALLY ENERGIZED AND MOMENTARILY HELD

MIXED I/O MODULE MODEL NUMBER V436

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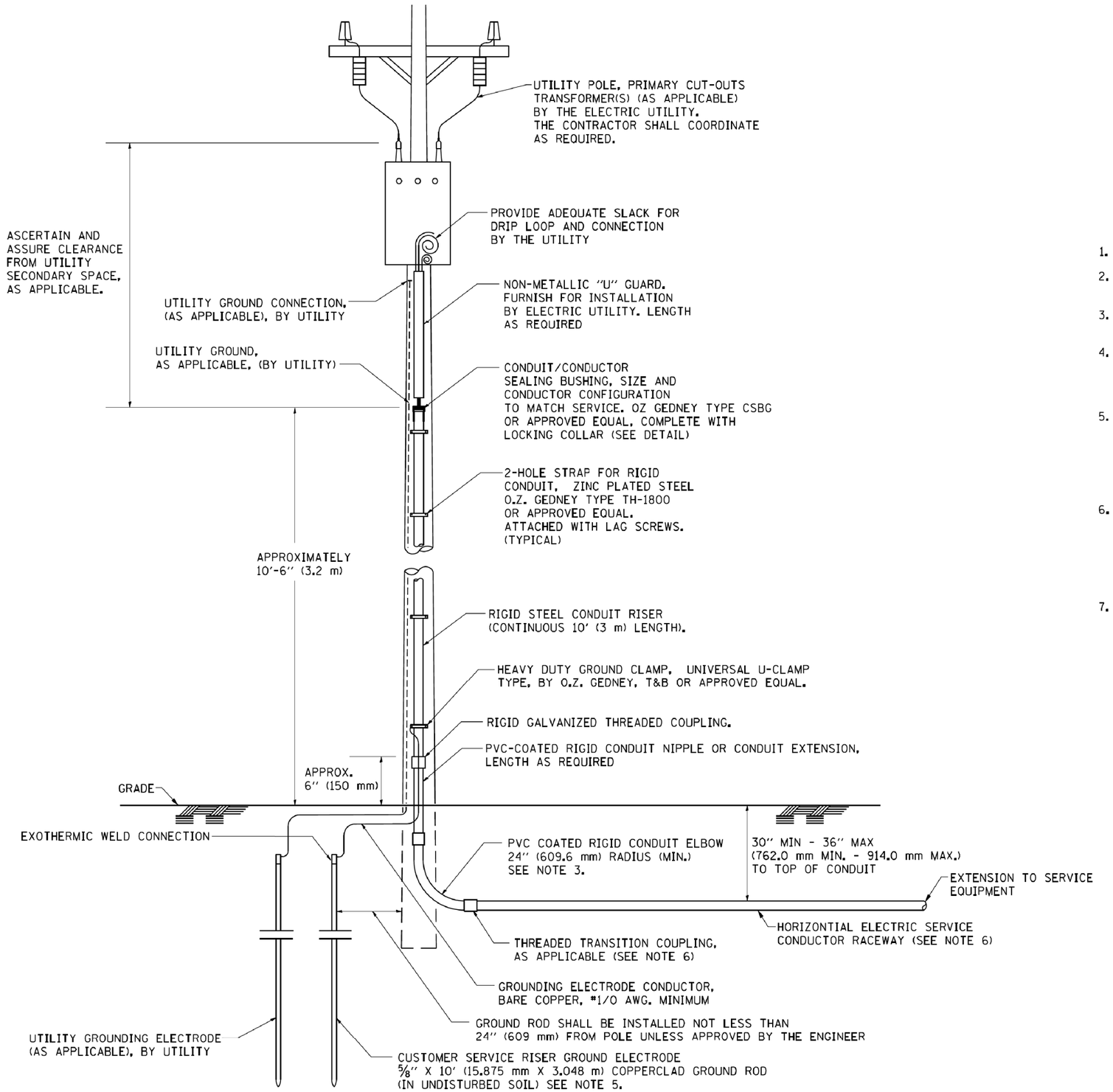
	PLOT SCALE = 50.000 ' / in.	DRAWN -	REVISED - R. TOMSONS 05-11-09			856	(99-1HB-1)A	WILL	1508	1191
	PLOT DATE = 3/29/2012	CHECKED -	REVISED - R. TOMSONS 03-10-10				BE-205		CONTRACT NO. 60X10	
		DATE -	REVISED - R. TOMSONS 03-29-12		SCALE: NONE SHEET NO. 4 OF 4 SHEETS STA. TO STA.		FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT	

be205.dgn 3/29/2012 11:17:21 AM User:drivakosgn

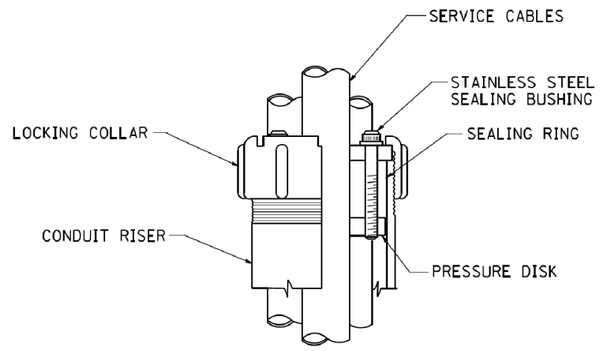


APPLICATION

THIS DETAIL APPLIES FOR LOW VOLTAGE ELECTRIC SERVICE (660 V OR LESS) FROM AN OVERHEAD UTILITY SUPPLY TO SEPERATLY-MOUNTED SERVICE EQUIPMENT.

NOTES

1. SERVICE VOLTAGE SHALL BE AS INDICATED ELSEWHERE IN THE DRAWINGS.
2. UNLESS OTHERWISE INDICATED, ITEMS AND WORK SHALL BE INCLUDED AND PAID AS PART OF THE ELECTRIC UTILITY SERVICE INSTALLATION PAY ITEM.
3. CONDUIT AND CONNECTOR DIAMETER SHALL MATCH THE DIAMETER OF THE SERVICE CONDUCTOR RACEWAY AS INDICATED ON THE PLANS.
4. PVC COATED RACEWAYS AND ACCESSORIES SHALL BE CAREFULLY INSTALLED WITH MFR RECOMMENDED TOOLS AND PROCEDURES TO AVOID DAMAGE. ANY DAMAGE SHALL BE REPAIRED WITH COMPATIBLE PVC TOUCH-UP MATERIAL TO THE SATISFACTION OF THE ENGINEER OR THE DAMAGED MATERIAL SHALL BE REPLACED AT NO ADDITIONAL COST.
5. THE CONTRACTOR SHALL OBTAIN INSPECTION AND APPROVAL BY THE ENGINEER OF SERVICE RISER GROUND ELECTRODE, RISER ELBOW, NIPPLE AND CONNECTION TO SERVICE CONDUCTOR RACEWAY EXTENSION BEFORE BACKFILL AND SHALL ALSO OBTAIN INSPECTION OF SERVICE RISER AND SEALING BUSHING BEFORE UTILITY "U" GUARD INSTALLATION AND SERVICE CONNECTION.
6. THE HORIZONTAL ELECTRIC SERVICE CONDUCTOR RACEWAY SHALL BE AS INDICATED AND SHALL BE MEASURED SEPARATELY FOR PAYMENT. WHEN THE RACEWAY IS PVC-COATED RIGID GALVANIZED STEEL, THE COUPLING SHALL BE THE SAME. WHEN THE RACEWAY IS PVC CONDUIT (IN CONCRETE), THE COUPLING SHALL BE A METALIC TO NON METALIC ADAPTER. WHEN THE RACEWAY IS ENCASED IN CONCRETE, THE CONCRETE SHALL EXTEND TO COVER THE COUPLING.
7. PLANS AND DETAILS INDICATE THE GENERAL NATURE AND REQUIREMENTS. THEY DO NOT SHOW EVERY ACCESSORY AND ATTACHMENT, AND THEY DO NOT RELIEVE THE CONTRACTOR OF THE REQUIREMENTS OF THE SPECIFICATIONS AND SPECIAL PROVISIONS TO ASCERTAIN UTILITY REQUIREMENTS AND TO COORDINATE ACCORDINGLY, FURNISHING ALL ITEMS AND WORK NOT PROVIDED BY THE UTILITY, BUT NECESSARY FOR A COMPLETE SERVICE INSTALLATION IS REQUIRED AND SHALL BE INCLUDED IN THE ELECTRIC UTILITY SERVICE INSTALLATION PAY ITEM.

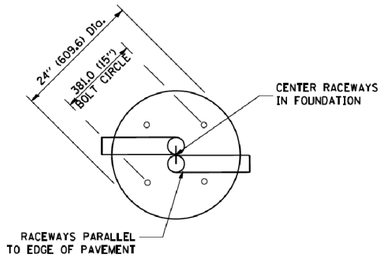


SEALING BUSHING DETAIL

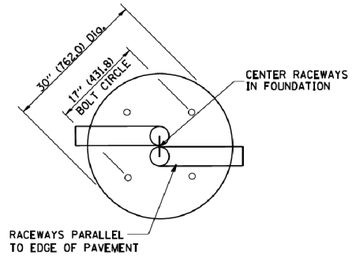
FILE NAME = W:\diststd\22x34\be220.dgn	USER NAME = gaglianobt	DESIGNED -	REVISED - 03-03-06	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ELECTRIC SERVICE INSTALLATION AERIAL, REMOTE DISCONNECT		F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED -				856	(99-1HB-1)A	WILL	1508	1192
	PLOT SCALE = 50.0000 ' / IN.	CHECKED - MEA	REVISED -					BE-220		CONTRACT NO. 60X10	
	PLOT DATE = 1/4/2008	DATE -	REVISED -		SCALE: NONE	SHEET NO. 1 OF 1 SHEETS STA. TO STA.	FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

LIGHT POLE FOUNDATION DEPTH TABLE
40 FT. (12.192 m) TO 47.5 FT. (14.478 m) MOUNTING HEIGHT

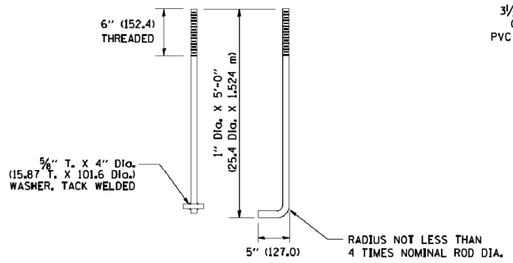
SOIL CONDITIONS	DESIGN DEPTH "D" OF FOUNDATION	
	SINGLE ARM POLE	TWIN ARM POLE
SOFT CLAY Qu = 0.375 TON/SQ. FT.	13'-0" (3.96 m)	15'-0" (4.57 m)
MEDIUM CLAY Qu = 0.75 TON/SQ.FT	9'-6" (2.09 m)	10'-9" (3.23 m)
STIFF CLAY Qu = 1.50 TON/SQ. FT.	7'-0" (2.13 m)	8'-0" (2.44 m)
LOOSE SAND Ø = 34°	9'-0" (2.74 m)	10'-0" (3.05 m)
MEDIUM SAND Ø = 37.5°	8'-3" (2.52 m)	9'-0" (2.74 m)
DENSE SAND Ø = 40°	7'-9" (2.36 m)	9'-0" (2.74 m)



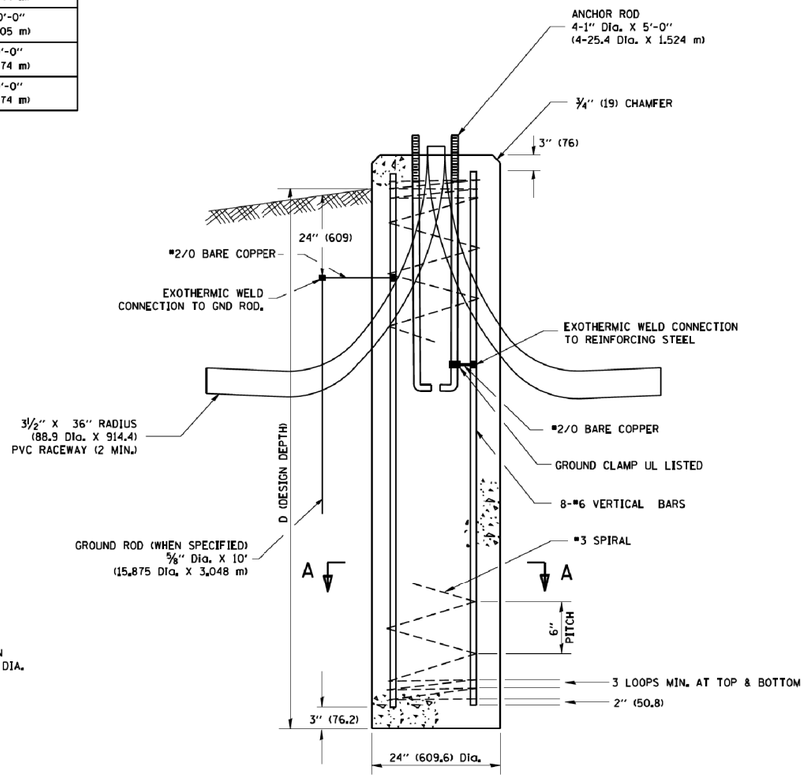
TOP VIEW



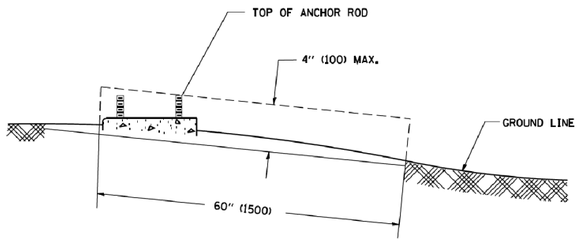
TOP VIEW



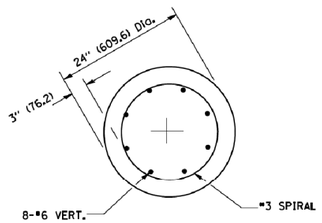
ANCHOR ROD DETAIL



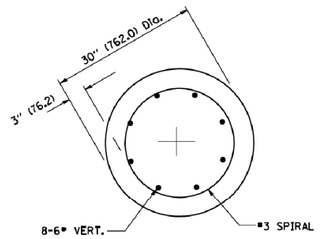
FOUNDATION DETAIL



FOUNDATION EXTENSION DETAIL



SECTION A-A



SECTION A-A

NOTES

1. ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.
2. THE ANCHOR RODS AND RACEWAYS SHALL BE PROPERLY SECURED IN PLACE BEFORE THE CONCRETE IN PLACED.
3. THE FOUNDATION SHALL NOT PROTRUDE MORE THAN 100MM (4 IN.) ABOVE THE FINISHED GRADE WITHIN A 60 IN. (1.5 m) CHORD ACROSS THE FOUNDATION, WITH ANCHOR RODS INCLUDED. IN ACCORDANCE WITH AASHTO GUIDELINES. IF THE FOUNDATION HEIGHT, INCLUDING ANCHOR RODS, EXTENDS BEYOND THESE SPECIFIED LIMITS, THE FOUNDATION SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE. SEE FOUNDATION EXTENSION DETAIL.
4. THE HOLE FOR THE FOUNDATION SHALL BE MADE BY DRILLING WITH AN AUGER, OF THE SAME DIAMETER AS THE FOUNDATION. IF SOIL CONDITIONS REQUIRE THE USE OF A LINER TO FORM THE HOLE, THE LINER SHALL BE WITHDRAWN AS THE CONCRETE IS DEPOSITED.
5. THE TOP OF THE FOUNDATION SHALL BE CONSTRUCTED LEVEL. A LINER OR FORM SHALL BE USED TO PRODUCE A UNIFORM SMOOTH SIDE TO THE TOP OF THE FOUNDATION. FOUNDATION TOP SHALL BE CHAMFERED 3/4-IN. (20 mm).
6. THE CONCRETE SHALL BE CLASS SI. CONCRETE SHALL CURE ACCORDING TO ARTICLE 1020.13 BEFORE LIGHT POLES ARE INSTALLED.
7. THE ANCHOR ROD SHALL BE A HOOK ROD TYPE. COLD BENDING OF THE ANCHOR ROD WILL NOT BE ALLOWED. THE RADIUS OF THE HOOK BEND SHALL NOT BE LESS THAN 4 TIMES THE NOMINAL DIAMETER OF THE ANCHOR ROD. A TACK WELDED ANCHOR ROD MAY BE SUBSTITUTED WITH THE APPROVAL OF THE ENGINEER.
8. THE ANCHOR RODS SHALL BE ACCORDING TO ASTM F1554 GRADE 725 (GRADE 105). NUTS SHALL BE HEXAGON NUTS ACCORDING TO ASTM A 194 2H OR ASTM A 563 DH, AND WASHERS SHALL BE ACCORDING TO ASTM F 436.
9. ANCHOR RODS, NUTS AND WASHERS SHALL BE COMPLETELY GALVANIZED BY EITHER THE HOT-DIPPED PROCESS CONFORMING WITH AASHTO M 232, THE MECHANICAL PLATING METHOD CONFORMING TO AASHTO M 298, CLASS 50 WITH A MAXIMUM COATING THICKNESS OF 150 UM(6 MILS) OR THE ELECTROLYTIC PROCESS ACCORDING TO ASTM F 1136.
10. THE ANCHOR RODS SHALL BE THREADED A MINIMUM OF 6 INCHES (150 mm) WITH A MINIMUM OF 3 INCHES (75 mm) OF THREADED ANCHOR ROD EMBEDDED IN THE FOUNDATION.
11. ANCHOR RODS SHALL PROJECT 2 3/4" (69.9 mm) ABOVE THE TOP OF THE FOUNDATION. IF BREAKAWAY COUPLINGS ARE SPECIFIED, THE CONTRACTOR SHALL CAREFULLY COORDINATE THE ANCHOR ROD PROJECTION WITH THE INSTALLATION REQUIREMENTS OF THE BREAKAWAY COUPLINGS.
12. THE CONTRACTOR SHALL USE A #3 SPIRAL AT 6" (152.4 mm) PITCH OR MAY SUBSTITUTE #3 TIES AT 12" (304.8 mm) O.C. WITH THE APPROVAL OF THE ENGINEER.
13. THE CABLE TRENCHES AND FOUNDATION SHALL BE BACK FILLED AND COMPACTED AS SPECIFIED BEFORE THE LIGHT POLE IS ERECTED.
14. THE RACEWAYS SHALL PROJECT 1" (25.4 mm) ABOVE THE TOP OF THE FOUNDATION.

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		DRAWN -	REVISED -
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	PLOT DATE = 1/4/2008	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHT POLE FOUNDATION
40' (12.192 m) TO 47 1/2' (14.478 m) M.H. 15" (381 mm) BOLT CIRCLE

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

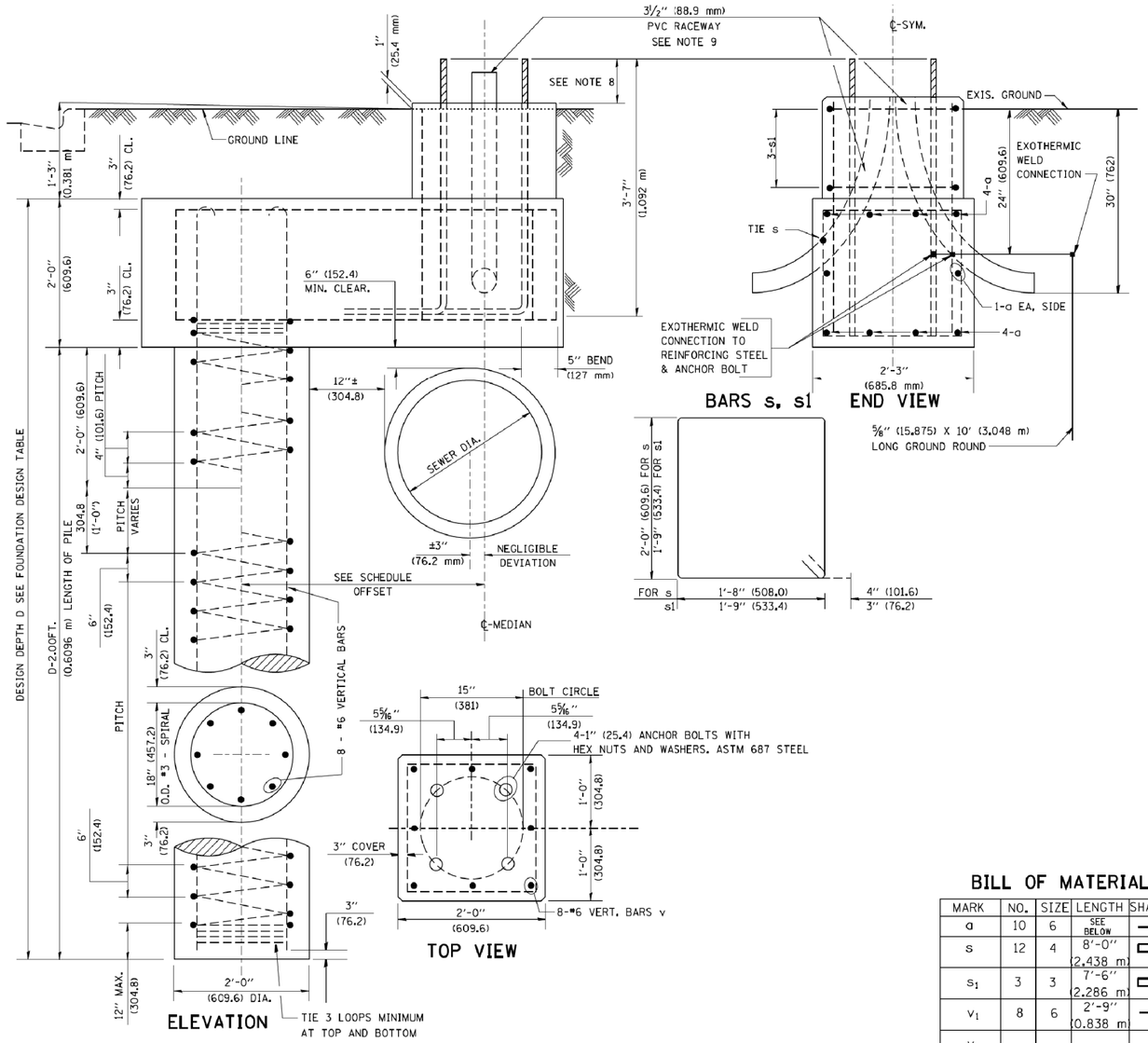
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
856	(99-1HB-1)A	WILL	1508	1193
	BE-301	CONTRACT NO. 60X10		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

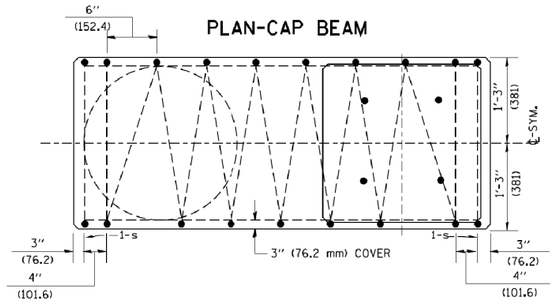
FOUNDATION DESIGN TABLE

TYPE OF SOIL	DESIGN DEPTH OF FOUNDATION		REINFORCEMENT IN FOUNDATION			
	SINGLE ARM D	TWIN ARM D	SINGLE ARM		TWIN ARM	
			VERT BARS	SPIRAL	VERT BARS	SPIRAL
SOFT CLAY	13′-0″ (3.962 m)	15′-0″ (4.572 m)	8-#6X12′-6″ (3.810 m)	#3X122′ (37.186 m)	8-#6X14′-3″ (4.343 m)	#3X141′ (42.977 m)
MEDIUM CLAY	9′-6″ (2.896 m)	10′-9″ (3.277 m)	8-#6X9′-0″ (2.743 m)	#3X90′ (27.432 m)	8-#6X10′-0″ (3.048 m)	#3X100′ (30.480 m)
STIFF CLAY	7′-0″ (2.134 m)	8′-0″ (2.438 m)	8-#6X6′-6″ (1.981 m)	#3X66′ (20.112 m)	8-#6X7′-6″ (2.286 m)	#3X76′ (23.165 m)
LOOSE SAND	9′-0″ (2.743 m)	10′-0″ (3.048 m)	8-#6X8′-6″ (2.591 m)	#3X85′ (25.908 m)	8-#6X9′-6″ (2.896 m)	#3X94′ (28.651 m)
MEDIUM SAND	8′-3″ (2.515 m)	9′-0″ (2.743 m)	8-#6X8′-0″ (2.438 m)	#3X78′ (23.774 m)	8-#6X8′-6″ (2.591 m)	#3X85′ (25.908 m)
DENSE SAND	7′-9″ (2.362 m)	9′-0″ (2.743 m)	8-#6X7′-6″ (2.286 m)	#3X73′ (22.250 m)	8-#6X8′-6″ (2.591 m)	#3X85′ (25.908 m)
ROCK OR SOLIDIFIED SLAG	5′-0″ (1.524 m)	5′-0″ (1.524 m)	NONE	NONE	NONE	NONE

NOTES

1. ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.
2. THE ENGINEER SHALL DETERMINE THE CLASS OF SOIL DURING EXCAVATION AND SELECT THE DESIGN DEPTH OF FOUNDATION FROM THE DESIGN TABLE.
3. EXCAVATION OF THE POLE FOUNDATION SHALL BE MADE WITH AN AUGER, 24″ (609.6 mm) OR 30″ (762.0 mm) IN DIAMETER.
4. THE ANCHOR ROD SHALL BE A HOOK ROD TYPE. COLD BENDING OF THE ANCHOR ROD WILL NOT BE ALLOWED. THE RADIUS OF THE HOOK BEND SHALL NOT BE LESS THAN 4 TIMES THE NOMINAL DIAMETER OF THE ANCHOR ROD. A TACK WELDED ANCHOR ROD MAY BE SUBSTITUTED WITH THE APPROVAL OF THE ENGINEER.
5. THE ANCHOR BOLTS AND RACEWAYS SHALL BE PROPERLY SECURED IN PLACE BEFORE THE CONCRETE IS PLACED IN THE FORM.
6. THE ANCHOR RODS SHALL BE ACCORDING TO ASTM F1554 GRADE 725 (GRADE 105). NUTS SHALL BE HEXAGON NUTS ACCORDING TO ASTM A 194 2H OR ASTM A 563 DH, AND WASHERS SHALL BE ACCORDING TO ASTM F 436.
7. THE CONTRACTOR SHALL COORDINATE EXTENSION OF ANCHOR BOLTS ABOVE TOP OF FOUNDATION WITH THE BREAKAWAY DEVICE MANUFACTURER'S REQUIREMENTS. IF LIGHT POLE IS MOUNTED WITHOUT BREAKAWAY DEVICE, ANCHOR BOLTS SHALL PROJECT 2¾″ (69.9 mm) ABOVE TOP OF THE FOUNDATION. THE CONTRACTOR SHALL CONFIRM ANCHOR BOLT EXTENTION WITH ENGINEER.
8. RACEWAYS SHALL PROJECT 1″ (25.4 mm) ABOVE THE TOP OF THE FOUNDATION.
9. THE CABLE TRENCH SHALL BE BACKFILLED AND FIRMLY COMPACTED BEFORE THE LIGHT IS ERECTED.





BILL OF MATERIAL

MARK	NO.	SIZE	LENGTH	SHAPE
a	10	6	SEE BELOW	—
s	12	4	8′-0″ (2,438 m)	▭
s_1	3	3	7′-6″ (2.286 m)	▭
v_1	8	6	2′-9″ (0.838 m)	—
v_2				

OFFSET SCHEDULE

SEWER DIAM. d IN.	PILE OFFSET from℄-MED'N FT.	LENGTH of BAR a FT.
UP TO 24″ (609.6 mm)	3′-3″ (0.991 m)	#6 x 5′-3″ (1.600 m)
27″ (685.8 m)TO 36″ (914.4 mm)	3′-9″ (1.143 m)	5′-9″ (1.753 m)
42″ (1066.8 mm) TO 48″ (1219.2 mm)	4′-6″ (1.372 m)	6′-6″ (1.981 m)
54″ (1371.6 mm) TO 60″ (1524.0 mm)	5′-0″ (1.524 m)	7′-0″ (2.134 m)
66″ (1676.4 mm) TO 72″ (1828.8 mm)	5′-6″ (1.676 m)	7′-6″ (2.286 m)

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		DRAWN -	REVISED -
	PLOT SCALE = 50.000 ′ / IN.	CHECKED -	REVISED -
	PLOT DATE = 6/16/2008	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHT POLE FOUNDATION OFFSET
40′ (12.192 m) TO 47 1⁄2 ′ (14.478 m) M.H.
15″ (381 mm) BOLT CIRCLE

SCALE: | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
856	(99-1HB-1)A	WILL	1508	1194
	BE-310	CONTRACT NO. 60X10		
	ILLINOIS FED. AID PROJECT			

6/16/2008
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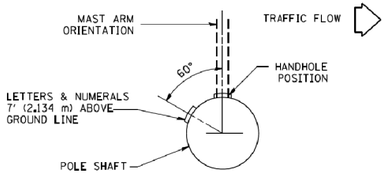
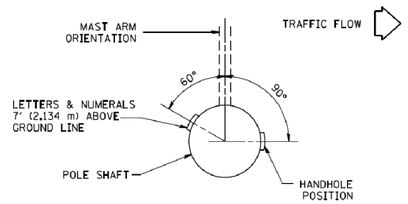
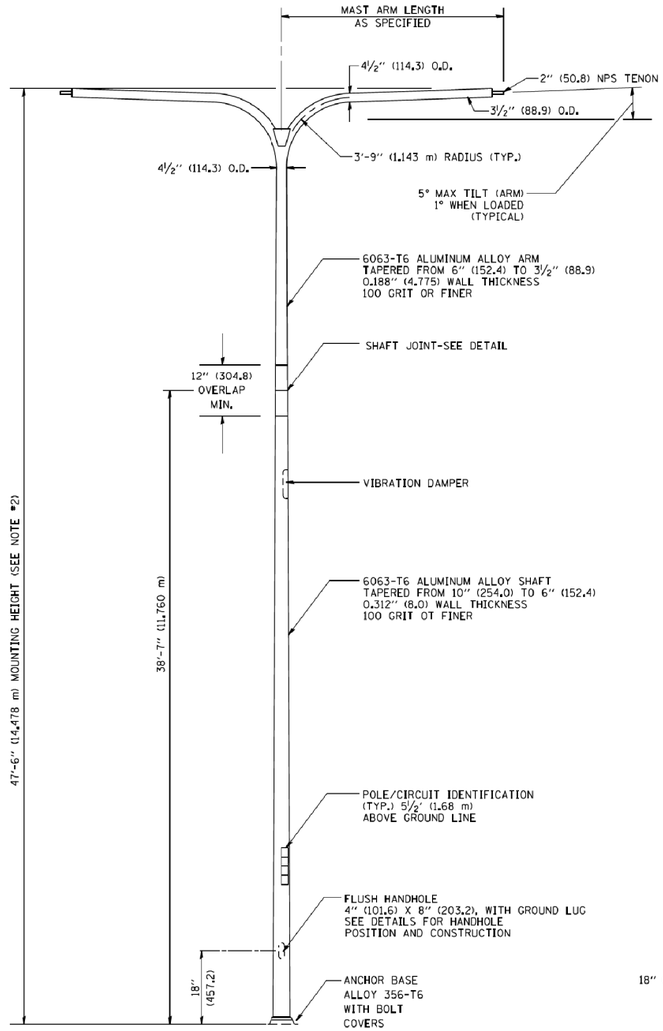


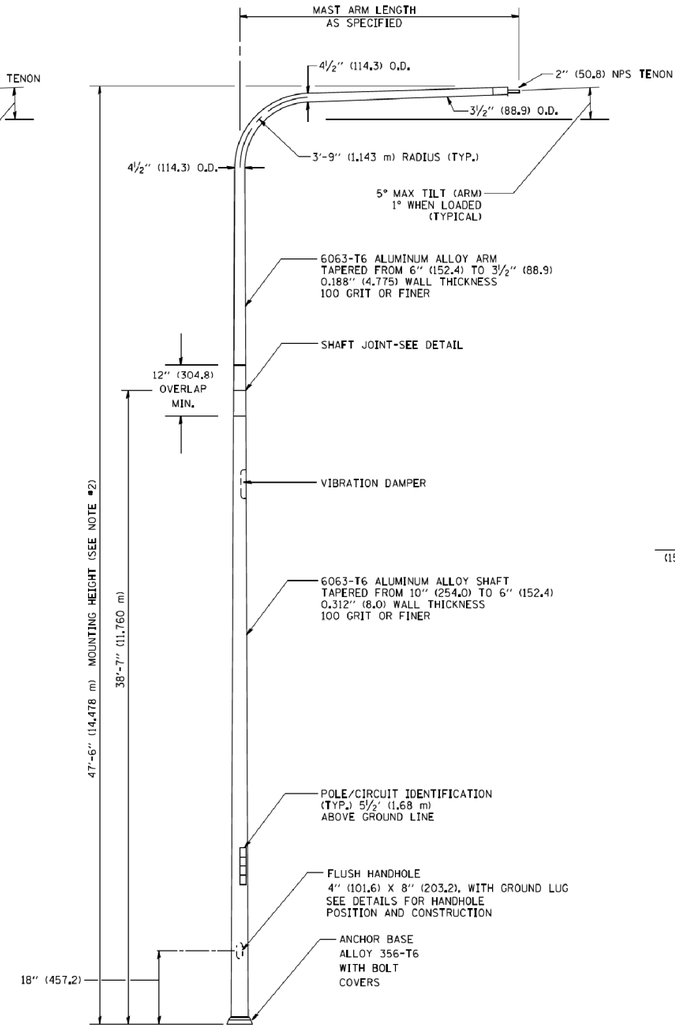
POSITION OF HANDHOLE AND POLE NUMBER FOR SINGLE MAST ARM POLES MOUNTED ON BRIDGE PARAPET OR BARRIER WALL



POSITION OF HANDHOLE AND POLE NUMBER FOR SINGLE MAST ARM POLES



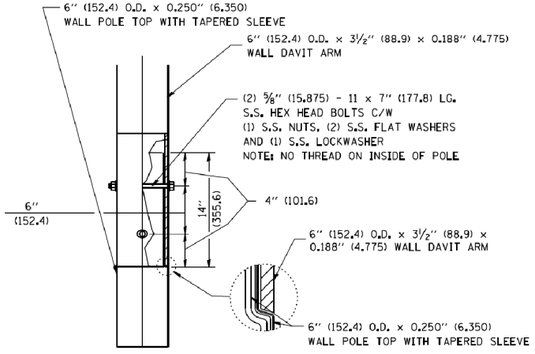
TWIN ARM POLE



SINGLE ARM POLE

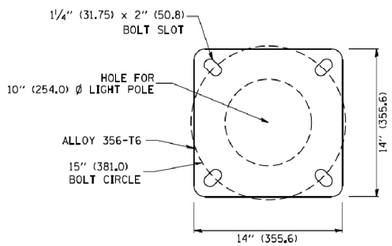
NOTES:

1. ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.
2. MOUNTING HEIGHT IS DEFINED AS THE DISTANCE FROM THE CENTERLINE OF THE TENON TO THE BOTTOM OF THE ANCHOR BASE.
3. TWO PIECE SHAFT WILL BE MATCHED MARKED AND INTERCHANGEABLE BETWEEN DIFFERENT UNITS. FIELD DRILLING OF THE HOLES WILL NOT BE ALLOWED.
4. THE LIGHT POLE WILL MEET AASHTO DESIGN CRITERIA AS SPECIFIED.
5. THE INSTALLING CONTRACTOR WILL PROVIDE A UL LISTED GROUNDING CONNECTOR. BURNDY K2C23, T&B SP4DL OR APPROVED EQUAL.
6. LIGHT POLES WILL NOT BE INSTALLED WITHOUT MAST ARMS AND LUMINAIRES.
7. LIGHT POLES WILL BE SET PLUMB ON THE FOUNDATION WITHOUT THE USE OF LEVELING NUTS, WASHERS OR SHIMS.
8. LIGHTING UNIT IDENTIFICATION NUMBERS SHALL BE INSTALLED BEFORE THE LIGHTING UNIT IS ENERGIZED.



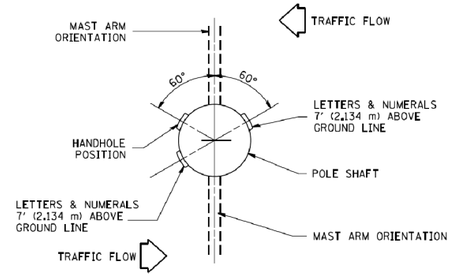
DAVIT ARM CONNECTION

[14" (355.6) OVERLAP SHOWN]

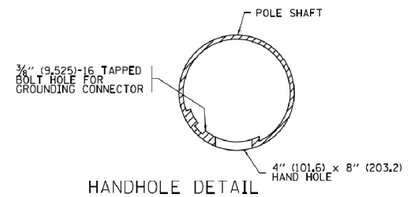


LIGHT POLE BASE PLATE DETAIL

(FOR POLE MOUNTED ON 15 INCH (381.0) BOLT CIRCLE FOUNDATION)



POSITION OF HANDHOLE AND POLE NUMBER FOR TWIN MAST ARM POLES



HANDHOLE DETAIL

(N.T.S.)

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	PLOT SCALE = 49.9999 '/ in.	DRAWN - LEY	REVISED - R. TOMSONS 09-06-00					856	(99-1HB-1)A	WILL	1508	1195
	PLOT DATE = 2/27/2013	CHECKED -	REVISED - R. TOMSONS 09-02-03						BE-410		CONTRACT NO. 60X10	
		DATE -	REVISED - R. TOMSONS 01-18-13		SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA. TO STA.	FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

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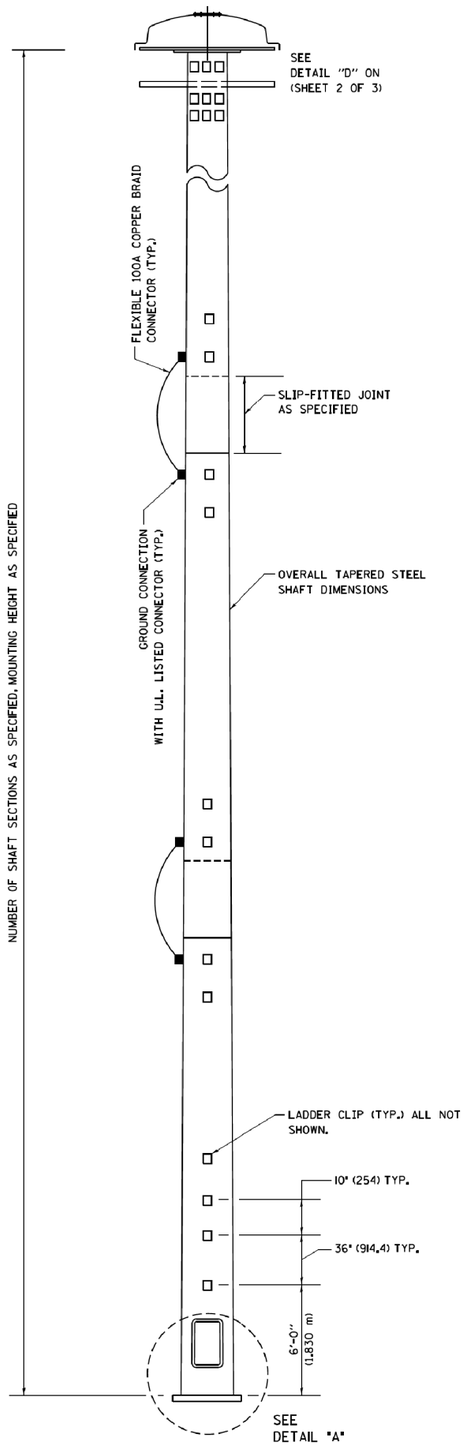
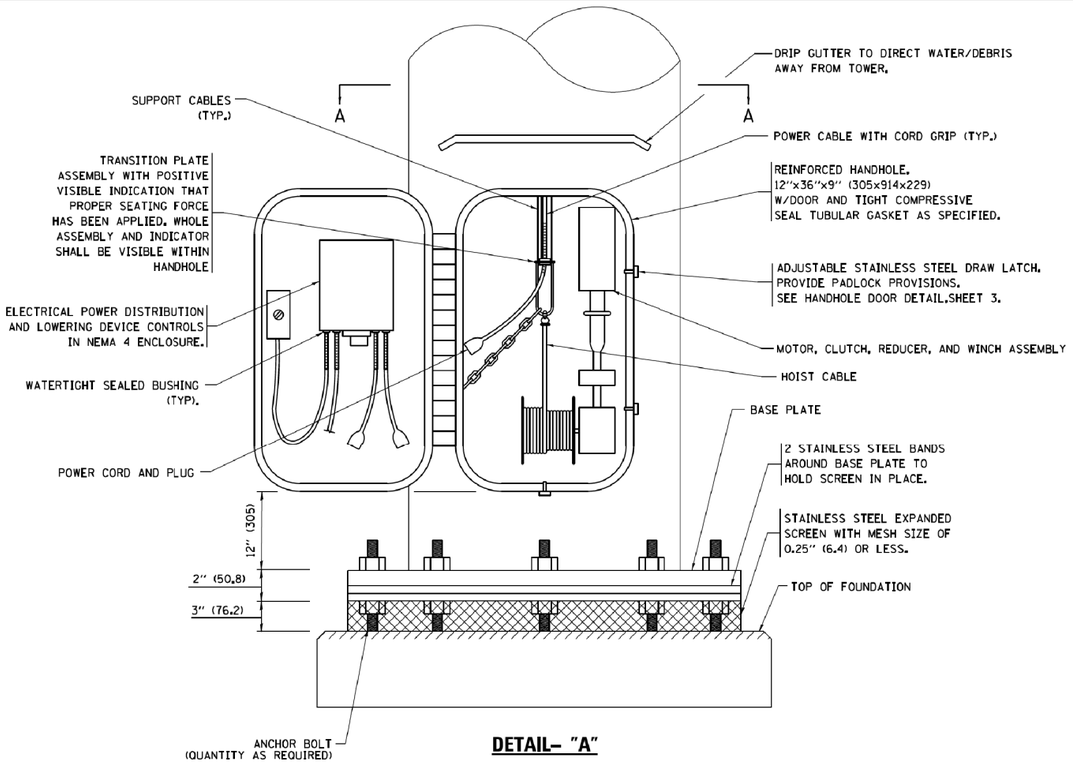
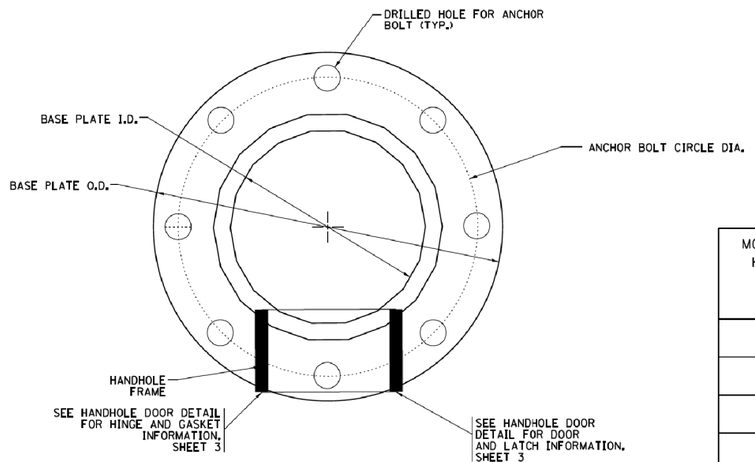




DETAIL– "A"

3 CABLE LOWERING & SUPPORT
MECHANISM SHOWN.



SECTION – A–A

NOTES:

1. ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.
2. THE DESIGN SHALL BE BASED UPON AASHTO "LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS" IN EFFECT ON THE DATE OF INVITATION FOR BIDS, HOWEVER THE WIDTH OF REINFORCED OPENING REQUIREMENT IN CHAPTER 5, SECTION 5.6.6.1 SHALL NOT APPLY. LIGHT TOWERS SHALL BE DESIGNED FOR ADT > 10,000, RISK CATEGORY TYPICAL, AND FATIGUE IMPORTANCE CATEGORY I.

   A MINIMUM TOTAL COMBINED LUMINAIRE WEIGHT OF 600 LB (272 KG) SHALL BE USED PLUS A COMBINED HOOD AREA AND LOWERING RING WEIGHT OF 400 LB (181 KG). THE ASSOCIATED TOTAL PROJECTED AREA SHALL BE 24 SQ FT (2.23 SQ M) AND 10 SQ FT (0.93 SQ.) RESPECTIVELY.
3. ALL TOWER SHAFT COMPONENTS, INCLUDING, BUT NOT LIMITED TO THE SHAFT SECTIONS, BASE PLATE, LADDER CLIPS, HANDHOLE DOOR, HANDHOLE REINFORCING, RAIN GUTTER, AND BASE PLATE, SHALL BE FABRICATED FROM HIGH-STRENGTH, LOW ALLOY, STEEL WITH A MINIMUM YIELD STRENGTH OF 50,000 PSI (345 K PA) ACCORDING TO AASHTO M 270 (ASTM A 572 GR50)
4. THE ELECTRIC MOTOR, MOTOR GEAR REDUCER, WINCH DRUM ASSEMBLY AND AUTOMATIC SHUTOFF SWITCH OF THE LOWERING DEVICE SHALL BE ACCESSIBLE FROM THE FRONT OF THE TOWER FOR EASY REMOVAL AND MAINTENANCE. ALL COMPONENTS SHALL BE REMOVABLE THROUGH THE HANDHOLE.
5. THE LIGHT TOWER SHAFT SHALL HAVE LADDER CLIPS. CLIPS SHALL BEGIN 6 FT. (1.8 m) ABOVE THE BASE PLATE WITH ALTERNATE 36 INCH (900) AND 10 INCH (250) SPACING THEREAFTER, FOR THE ENTIRE LENGTH. THE TOP 10 FT. (3 m) OF THE POLE SHAFT SHALL HAVE 3 SETS OF CLIPS. EACH SET OF CLIPS SHALL BE 120 DEGREES APART. CLIPS SHALL BE 0.25 X 2 INCHES (6 X 50) WELDED TO THE SHAFT TO PRODUCE A SLOT 0.625 INCHES (15.9) DEEP AND 1.625 INCHES (41.3) LONG. THE TOP INSIDE EDGE SHALL BE CHAMFERED.
6. A COPPER BONDING JUMPER SHALL BOND SLIP-FIT POLE SECTIONS TOGETHER WITH A FLAT COPPER MESH AND STAINLESS STEEL GROUND LUGS.
7. ALL TOWER SHAFT HARDWARE, SUCH AS GROUND LUGS, JUNCTION BOXES, HARDWARE FOR THE HANDHOLE DOOR, INCLUDING THE HANDLE/LATCH MECHANISM, HINGE AND DOOR STOP, SHALL BE STAINLESS STEEL. ALL CONDUIT AND CONDUIT FITTINGS SHALL BE PVC COATED GALVANIZED STEEL.
8. THE ENTIRE TOWER INCLUDING THE SHAFT, HANDHOLE, HANDHOLE DOOR, BASE PLATE AND ALL OTHER ELEMENTS WELDED TO THE SHAFT SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M 111 (ASTM A 123). THE LUMINAIRE RING SHALL BE PRIMED AND PAINTED AS SPECIFIED OR BE STAINLESS STEEL
9. ALL MULTI-CONDUCTOR CABLES SHALL BE FITTED WITH A HEAT-SHRINK MULTI-LEG BOOT. THE BOOT SHALL MEET MILITARY SPECIFICATION MIL-I-81765/1.
10. THE LIGHT TOWER SHALL BE STRAIGHT AND CENTERED ON ITS LONGITUDINAL AXIS, UNDER NO-WIND CONDITIONS, SO WHEN EXAMINED WITH A TRANSIT FROM ANY DIRECTION, THE DEVIATION FROM THE NORMAL SHALL NOT EXCEED 1/8 IN. IN 3 FT (2 mm IN 1 m) WITHIN ANY 5 FT (1.5 m) OF HEIGHT, WITH TOTAL DEVIATION NOT TO EXCEED 3 IN. (75) FROM THE VERTICAL AXIS THROUGH THE CENTER OF THE POLE BASE.
11. PVC CONDUIT WILL NOT BE ALLOWED FOR ANY LIGHT TOWER COMPONENT.
12. COUNTER WEIGHTS TO BE INCLUDED AS A PART OF THE LIGHT TOWER PAY ITEM.

LIGHT TOWER DIMENSIONS

MOUNTING HEIGHT (FEET)	MAXIMUM NUMBER OF SECTIONS	MINIMUM NUMBER OF ANCHOR RODS	MINIMUM TOWER TOP DIAMETER (INCHES)	MINIMUM TOWER BOTTOM DIAMETER (INCHES)	MINIMUM ROD DIAMETER (INCHES)	MINIMUM ANCHOR ROD CIRCLE (INCHES)
100	3	8	7.5	24	1.5	30
110	3	8	7.5	24	1.5	30
120	3	8	7.5	26	1.75	36
130	4	8	7.5	28	1.75	36
140	4	8	7.5	28	1.75	36
150	4	8	7.5	30	2.25	38
160	4	8	7.5	32	2.25	38

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Default	PLOT DATE = 7/27/2016	DATE –	REVISED – R. TOMSONS 04-29-16
			REVISED – R. TOMSONS 07-26-16

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HIGH MAST LIGHT TOWER
100 FT TO 160 FT (30 m TO 49 m)

SCALE: | SHEET 1 OF 3 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
856	(99-1HB-1)A	WILL	1508	1196
	BE-500	CONTRACT NO. 60X10		
	ILLINOIS FED. AID PROJECT			

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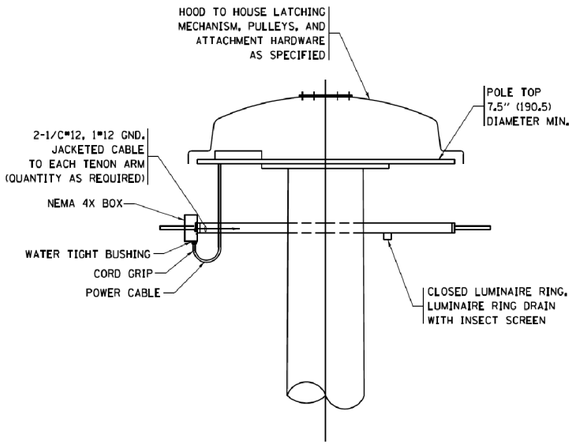
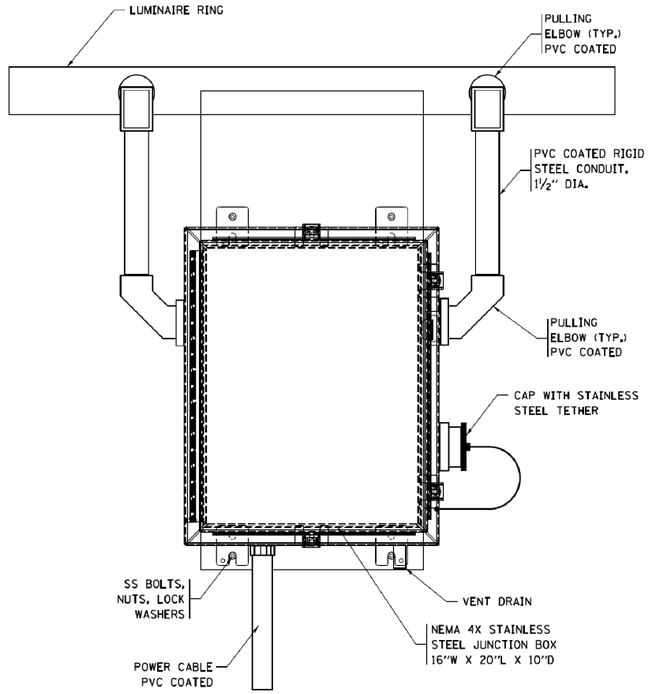


DETAIL-"D"



FRONT VIEW
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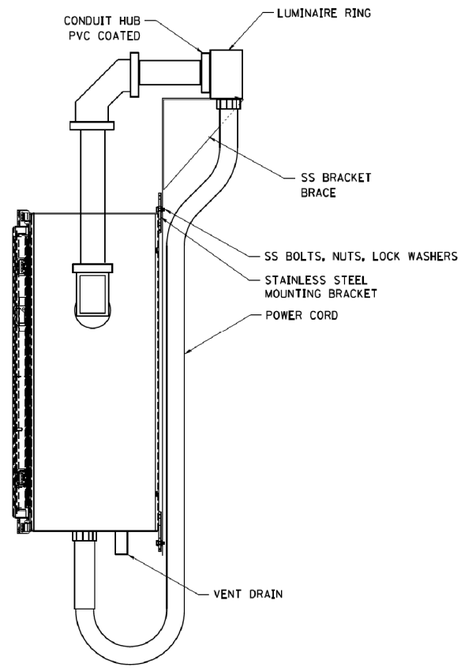
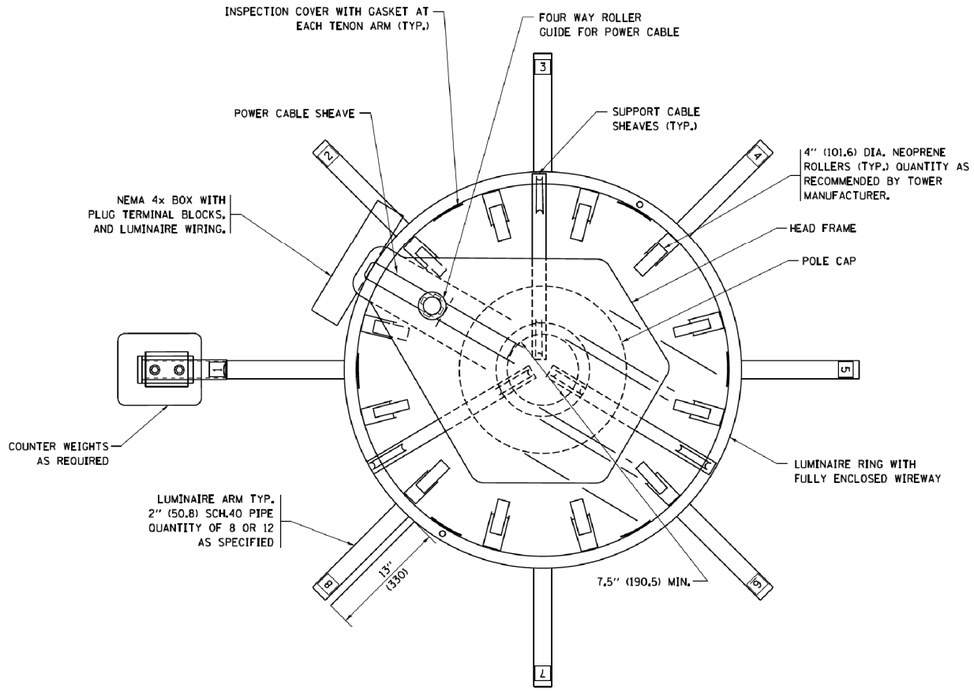


SIDE VIEW
N.T.S.



LUMINAIRE RING TERMINAL BOX

NOTES:

1. LUMINAIRE WIRES SHALL EXTEND 24 INCHES (609mm) LONGER THAN THE RESPECTIVE TENON ARM AND SHALL BE TRAINED BACK INTO THE ARM WHICH SHALL THEN BE CLOSED WITH A CAP AS SPECIFIED. ALL WIRES SHALL BE CAPPED WITH HEAT SHRINK INSULATING BOOTS, CRIMP CAPS ARE UNACCEPTABLE. ALL RING WIRES SHALL BE TAGGED WITH WIRE MARKERS AT BOTH ENDS THE TENON ARMS SHALL ALSO BE TAGGED CORRESPONDING TO THE WIRING CONTAINED WITHIN.
2. SPLICING WILL NOT BE ALLOWED WITHIN THE LUMINAIRE RING.
3. ALL TOWER SHAFT HARDWARE, SUCH AS GROUND LUGS, JUNCTION BOXES, HARDWARE FOR THE HANDHOLE DOOR, INCLUDING THE HANDLE/LATCH MECHANISM, HINGE AND DOOR STOP, SHALL BE STAINLESS STEEL. ALL CONDUIT AND CONDUIT FITTINGS SHALL BE PVC COATED GALVANIZED STEEL.
4. ALL MULTI-CONDUCTOR CABLES SHALL BE FITTED WITH A HEAT-SHRINK MULTI-LEG BOOT. THE BOOT SHALL MEET MILITARY SPECIFICATION MIL-I-81765/1.

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	PLOT DATE = 7/27/2016	DATE -	REVISED - R. TOMSONS 07-26-16

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HIGH MAST LIGHT TOWER
100 FT TO 160 FT (30 m TO 49 m)

SCALE: | SHEET 2 OF 3 SHEETS | STA. | TO STA.

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

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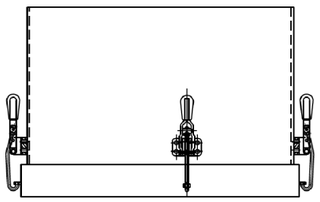
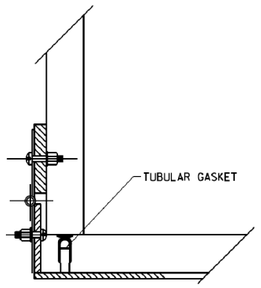
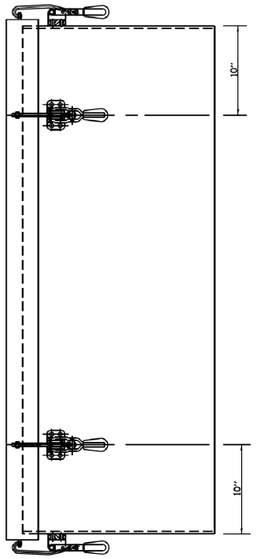


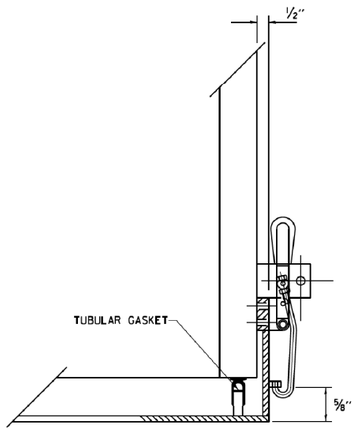
TOP VIEW



HINGE DETAIL

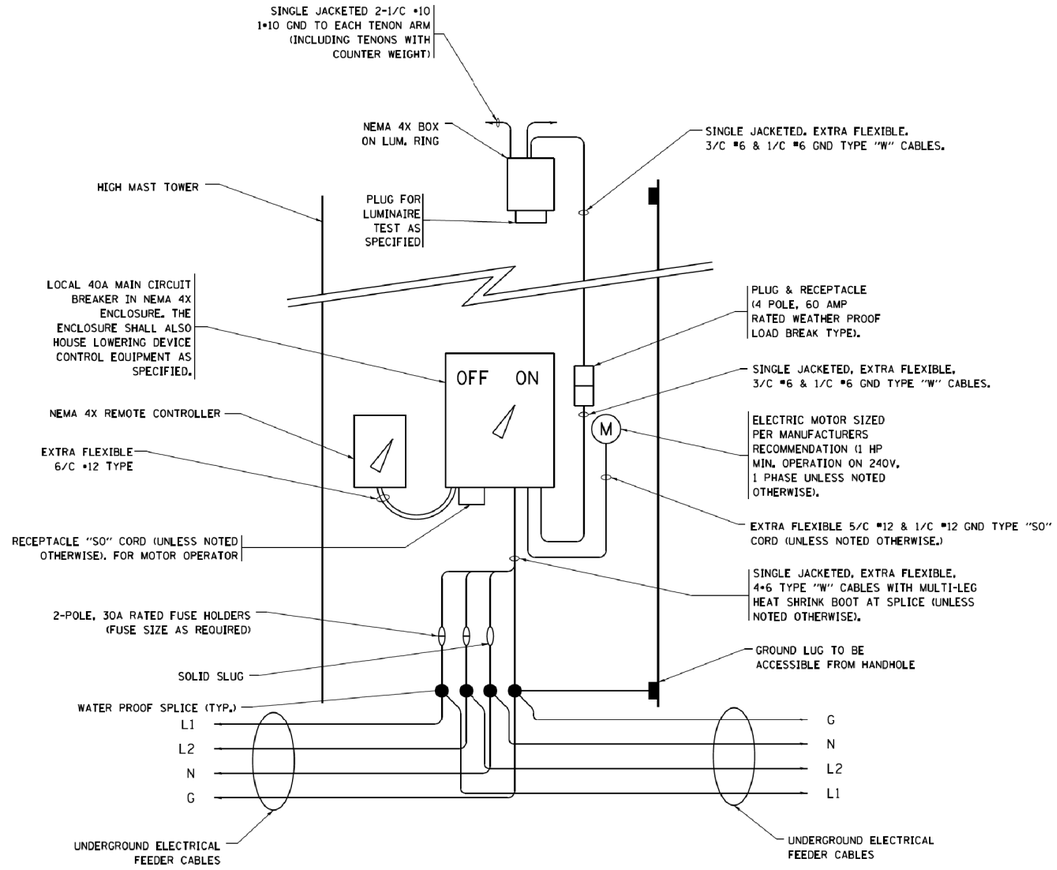


SIDE VIEW

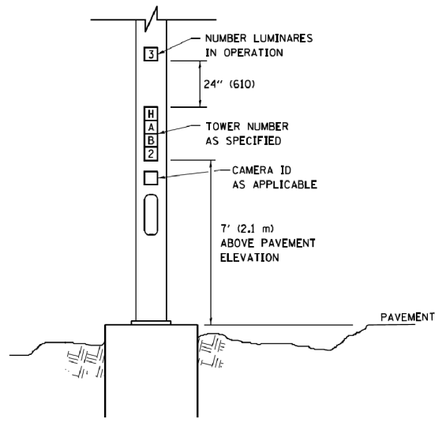


LATCH DETAIL

HANDHOLE DOOR DETAILS



HIGH MAST POLE WIRING DIAGRAM



LIGHT TOWER NUMBERING DETAIL

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	PLOT DATE = 7/27/2016	DATE -	REVISED - R. TOWSONS 07-26-16

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HIGH MAST LIGHT TOWER
100 FT TO 160 FT (30 m TO 49 m)

SCALE: | SHEET 3 OF 3 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
856	(99-1HB-1)A	WILL	1508	1198
	BE-500	CONTRACT NO. 60X10		
	ILLINOIS FED. AID PROJECT			

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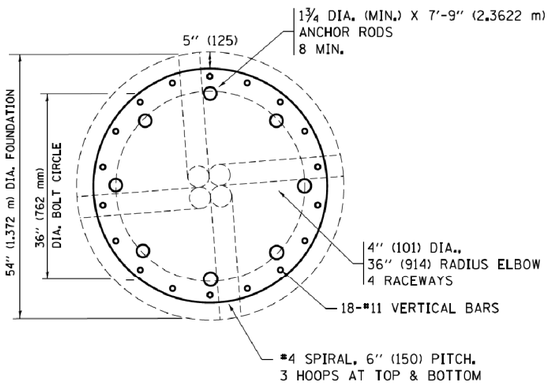
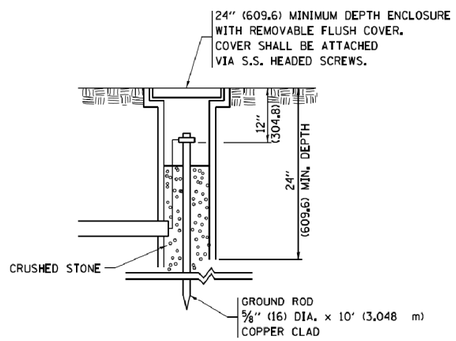
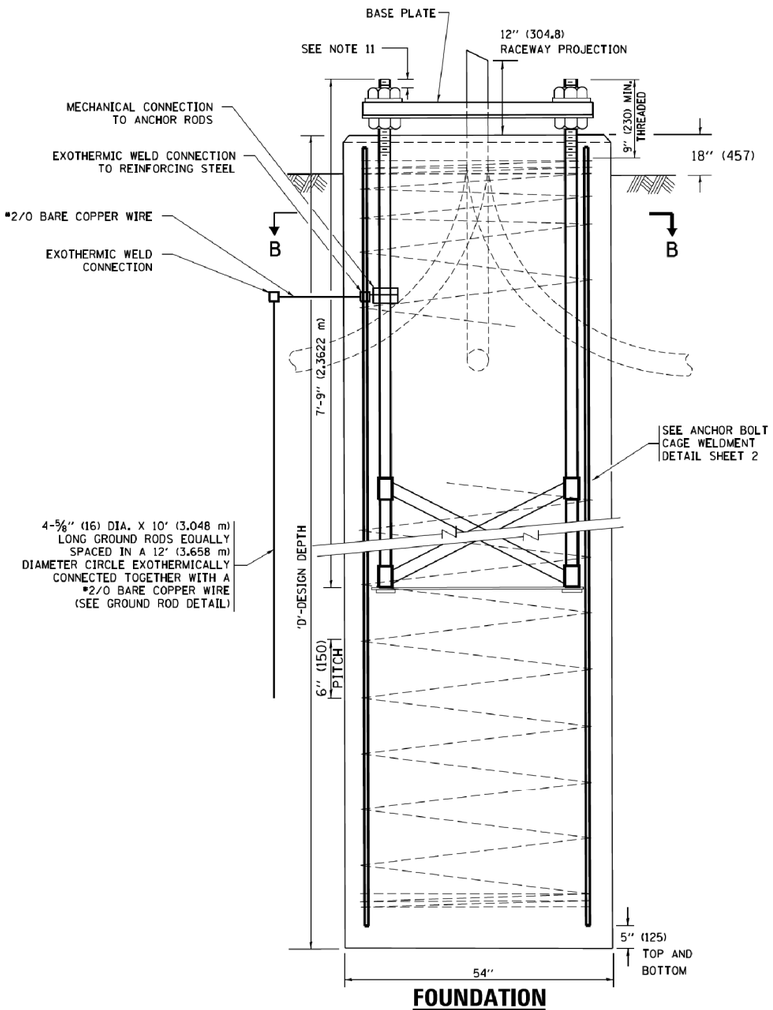
SHAFT LENGTH (D) TABLE					
SOIL CONSISTENCY		AVERAGE STRENGTH	LIGHT TOWER MOUNTING HEIGHT		
		Qu In tsf (Qu In kPa)	120 FT. (37 m)	130 FT. (40 m)	140 FT. (43 m)
	SOFT	<0.5 (<50)	25'-0" (7.6 m)	26'-6" (8.0 m)	27'-6" (8.3 m)
	MEDIUM	0.5 TO 1 (50 to 100)	20'-6" (6.2 m)	21'-6" (6.4 m)	22'-0" (6.7 m)
COHESIVE	STIFF	1 TO 2 (100 TO 200)	17'-6" (5.2 m)	18'-0" (5.4 m)	18'-6" (5.5 m)
	VERY STIFF	2 TO 4 (200 TO 400)	15'-0" (4.5 m)	15'-6" (4.6 m)	16'-0" (4.7 m)
	HARD	>4 (>400)	13'-6" (4.0 m)	13'-6" (4.1 m)	14'-0" (4.2 m)
		N In BLOWS/FT. (N In BLOWS/0.3m)			
	VERY LOOSE	<5 (<5)	19'-0" (6.3 m)	20'-0" (6.0 m)	20'-6" (6.2 m)
	LOOSE	5 TO 10 (5 TO 10)	17'-6" (5.7 m)	18'-0" (5.5 m)	18'-6" (5.6 m)
GRANULAR	MEDIUM	10 TO 25 (10 TO 25)	16'-6" (5.5 m)	17'-0" (5.2 m)	17'-6" (5.3 m)
	DENSE	25 TO 50 (25 TO 50)	15'-6" (5.2 m)	16'-6" (4.9 m)	16'-6" (5.0 m)
	VERY DENSE	>50 (>50)	15'-0" (4.5 m)	15'-6" (4.7 m)	16'-0" (4.8 m)



SECTION–B–B



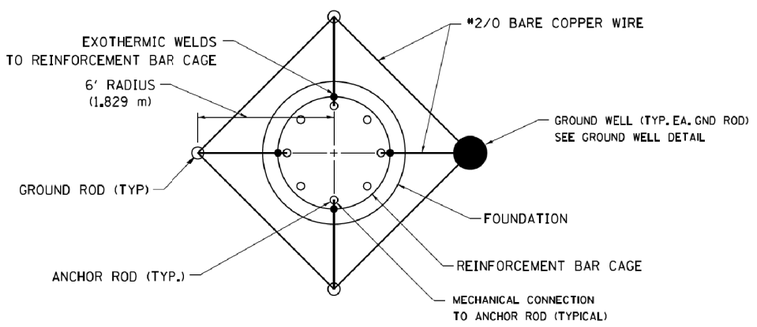
GROUND WELL DETAIL



FOUNDATION ELEVATION

DESIGN NOTES

1. ALL DIMENSIONS IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN
2. THE ANCHOR RODS SHALL BE VERTICAL NO ADJUSTMENT SHALL BE ALLOWED AFTER THE FOUNDATION IS PLACED.
3. THE GAP BETWEEN THE FOUNDATION AND THE BASE PLATE SHALL BE ENCLOSED WITH A STAINLESS STEEL SCREEN FASTENED WITH A STAINLESS STEEL BAND.
4. THE TOP OF THE FOUNDATION TO 18" (450) BELOW GRADE SHALL BE FORMED.
5. SURFACE WATER WILL NOT BE PERMITTED TO ENTER THE HOLE AND ALL WATER WHICH MAY HAVE INFILTRATED INTO THE HOLE SHALL BE REMOVED BEFORE PLACING CONCRETE.
6. THE LIGHT TOWER SHALL NOT BE ERECTED UNTIL AFTER THE CONCRETE HAS BEEN CURED ACCORDING TO ARTICLE 1020.13.
7. ANCHOR RODS SHALL BE STRAIGHT AND SHALL BE ACCORDING TO ASTM F1554, GRADE 725 (GRADE 105) AND GALVANIZED ACCORDING TO ARTICLE 1006.9.
8. ANCHOR ROD INFORMATION SHALL BE SUBMITTED FOR APPROVAL AND SHALL BE FULLY COORDINATED FOR APPROVAL WITH TOWER MANUFACTURER REQUIREMENTS.
9. REINFORCEMENT BARS SHALL BE ACCORDING TO ARTICLE 1006.10
10. TWO ANCHOR RODS OPPOSITE EACH OTHER SHALL HAVE THE ANCHOR ROD THREADS PEENED AFTER NUTS ARE INSTALLED.
11. A MINIMUM OF THREE FULL THREADS SHALL REMAIN EXPOSED AFTER LIGHT TOWER IN INSTALLED.
12. ALL GROUNDING INDICATED IN THE PLANS SHALL BE INCLUDED IN THE COST OF THE LIGHT TOWER FOUNDATION AND SHALL NOT BE PAID FOR SEPARATELY.
13. CUT NUTS, OR JAM NUTS, ARE NOT ALLOWED
14. ANCHOR ROD QUANTITY, DIAMETER, AND LENGTH SHALL BE DETERMINED BY THE TOWER MANUFACTURER AND APPROVED BY THE ENGINEER. EACH FOUNDATION SHALL HAVE A MINIMUM OF 8 ANCHOR RODS.
15. COORDINATE THE ROD CIRCLE DIAMETER OF THE TOWER WITH THE DIAMETER OF THE ANCHOR ROD CAGE.
16. THE FOUNDATION SHALL BE POURED MONOLITHICALLY AND SHALL HAVE NO CONSTRUCTION JOINTS.



GROUND ROD DETAIL

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	PLOT SCALE = 50.000 ' / in.	DRAWN -	REVISED - R. TOMSONS 02-27-13		
Default	PLOT DATE = 4/29/2016	CHECKED -	REVISED - R. TOMSONS 04-29-16		
		DATE - 03-12-10	REVISED -		SCALE: SHEET 1 OF 2 SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
856	(99-1HB-1)A	WILL	1508	1199
	BE-506	CONTRACT NO. 60X10		
	ILLINOIS FED. AID PROJECT			

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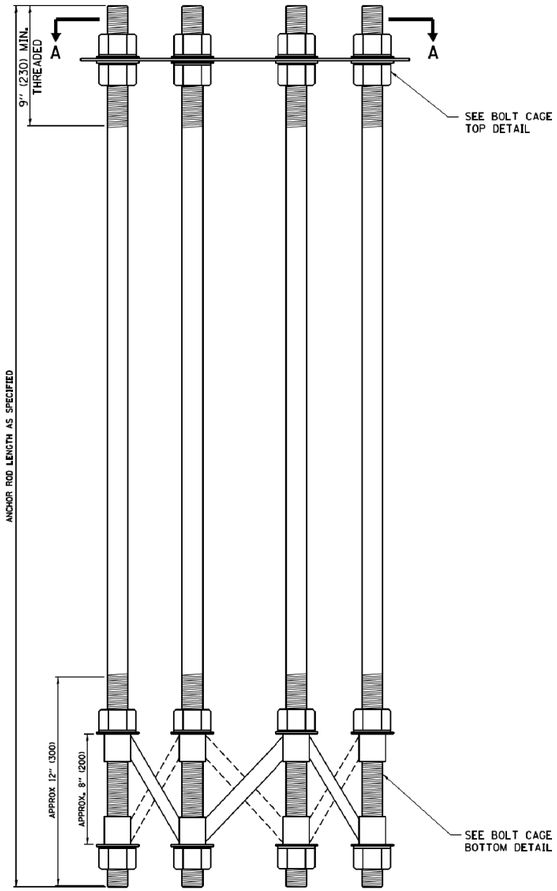
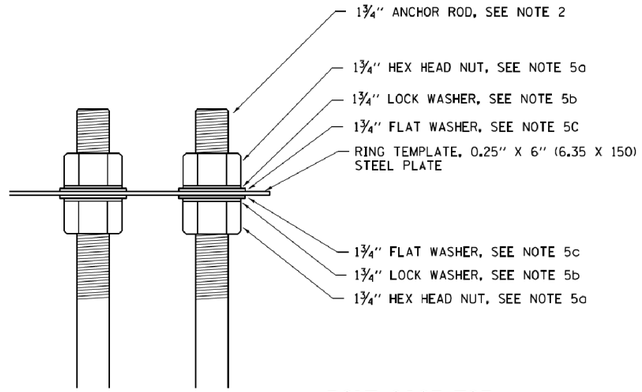
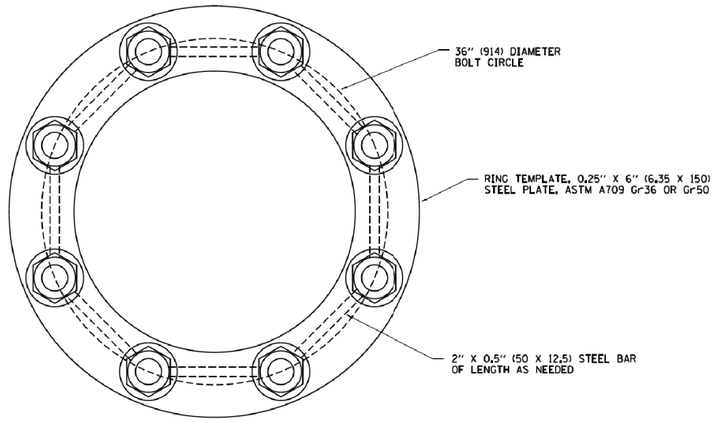


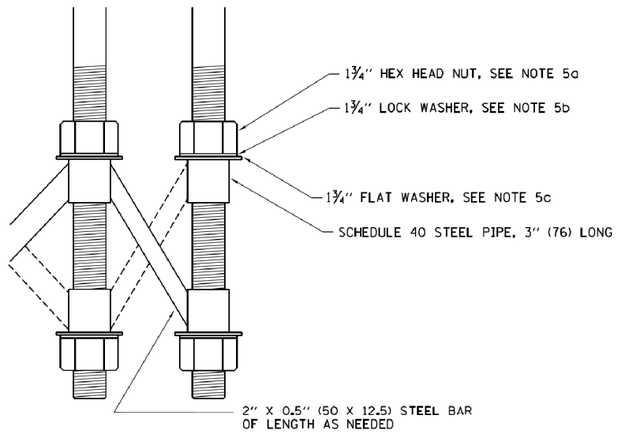
ANCHOR BOLT CAGE



BOLT CAGE TOP



SECTION A–A



BOLT CAGE BOTTOM

NOTES:

1. ALL DIMENSIONS IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN
2. ANCHOR RODS SHALL BE STRAIGHT AND SHALL BE ACCORDING TO ASTM F1554, GRADE 725 (GRADE 105) AND GALVANIZED ACCORDING TO ARTICLE 1006.09.
3. ANCHOR ROD INFORMATION SHALL BE SUBMITTED FOR APPROVAL AND SHALL BE FULLY COORDINATED WITH TOWER MANUFACTURERS REQUIREMENTS
4. CUT NUTS, OR JAM NUTS, ARE NOT ALLOWED
5. ANCHOR ROD CAGE HARDWARE SHALL BE IN ACCORDANCE WITH THE FOLLOWING:

   a) 1.5 (38) HEX HEAD NUTS
   AASHTO M291, GRADE C, C3, D ,DH OR DH3
   HOT DIPPED GALVANIZED AASHTO M 232

   b) 1.5 (38) HELICAL LOCK WASHERS
   ANSI/ASME B18.21.1
   I.D. 1.504 - 1.524
   O.D. 2.159 MAX.
   WIDTH 0.292 MIN.
   THICKNESS 0.375 MIN.
   HARDNESS 26-45 ROCKWELL C
   HOT DIPED GALVANIZED AASHTO M232

   c) 1.5 (38) FLAT WASHERS
   AASHTO M293
   O.D. 2.75
   I.D. 1.56
   THICKNESS 0.16 - 0.25
   HARDNESS 26-45 ROCKWELL C.
   HOT DIPED GALVANIZED AASHTO M232
6. THE SHAFT LENGTHS SHALL BE BASED ON SOIL BORINGS IN THE PLANS AND OR A DETERMINATION OF SOIL CONDITIONS BY THE ENGINEER.
7. ALL FOUNDATION REINFORCEMENT STEEL SHALL BE EPOXY COATED.
8. THE FOUNDATION SHALL BE POURED MONOLITHICALLY AND SHALL HAVE NO CONSTRUCTION JOINTS.
9. ANCHOR RODS AND ALL ASSOCIATED HARDWARE ARE SHOWN AS MINIMUMS. SIZING SHALL BE DETERMINED BY THE TOWER MANUFACTURER AND APPROVED BY THE ENGINEER. EACH FOUNDATION SHALL HAVE A MINIMUM OF 8 ANCHOR RODS.

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	PLOT SCALE = 50.000 ' / in.	CHECKED -	REVISED -
	PLOT DATE = 4/29/2016	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HIGH MAST LIGHT TOWER
120 FT TO 140 FT FOUNDATION DETAIL

SCALE: | SHEET 2 OF 2 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
856	(99-1HB-1)A	WILL	1508	1200
	BE-506	CONTRACT NO. 60X10		
	ILLINOIS FED. AID PROJECT			

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