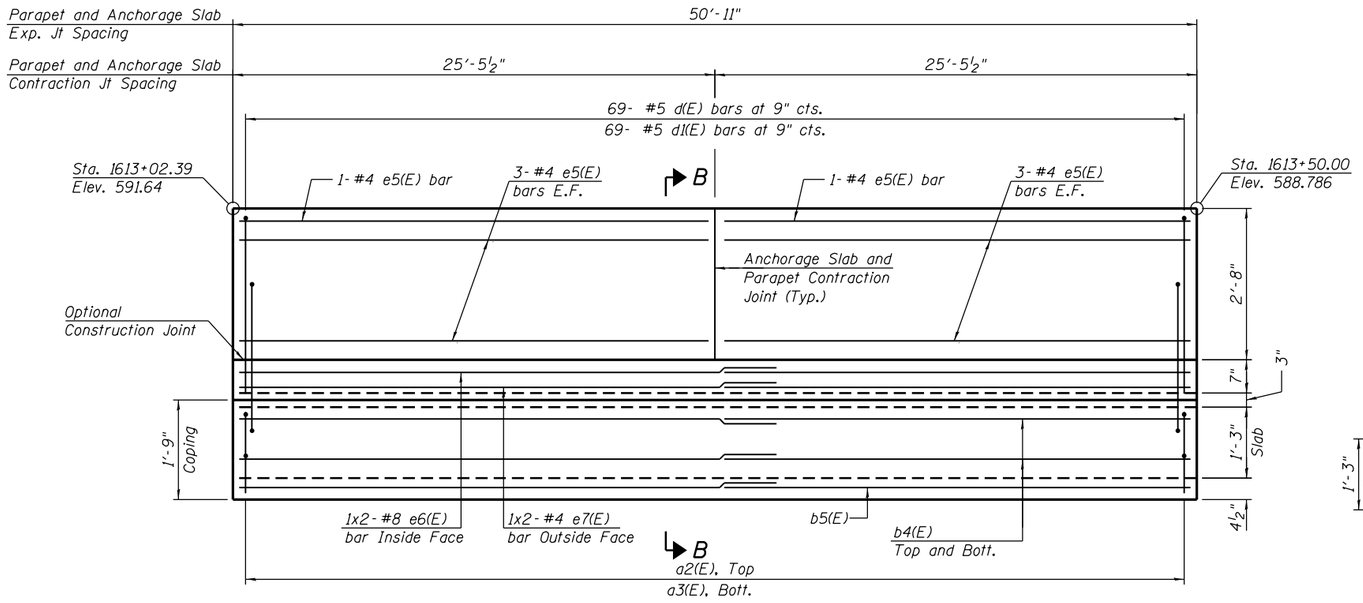
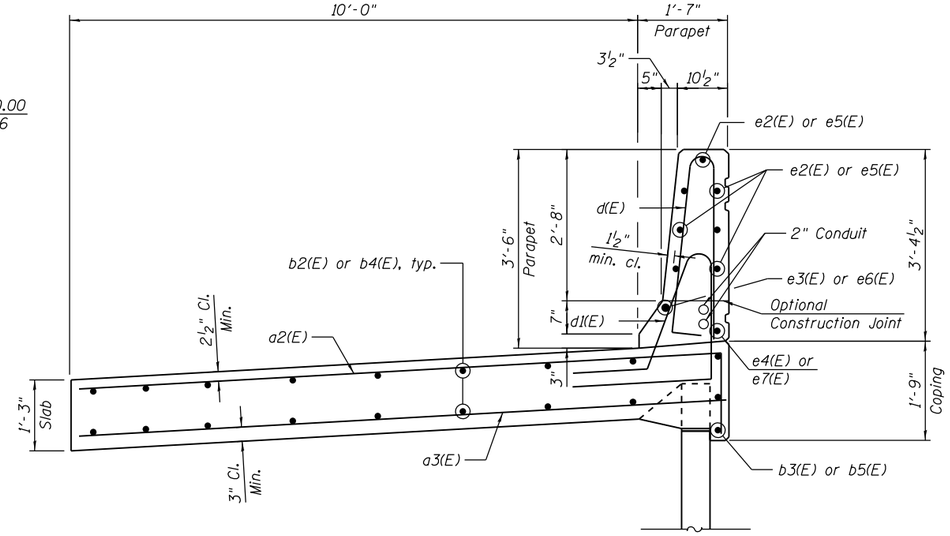
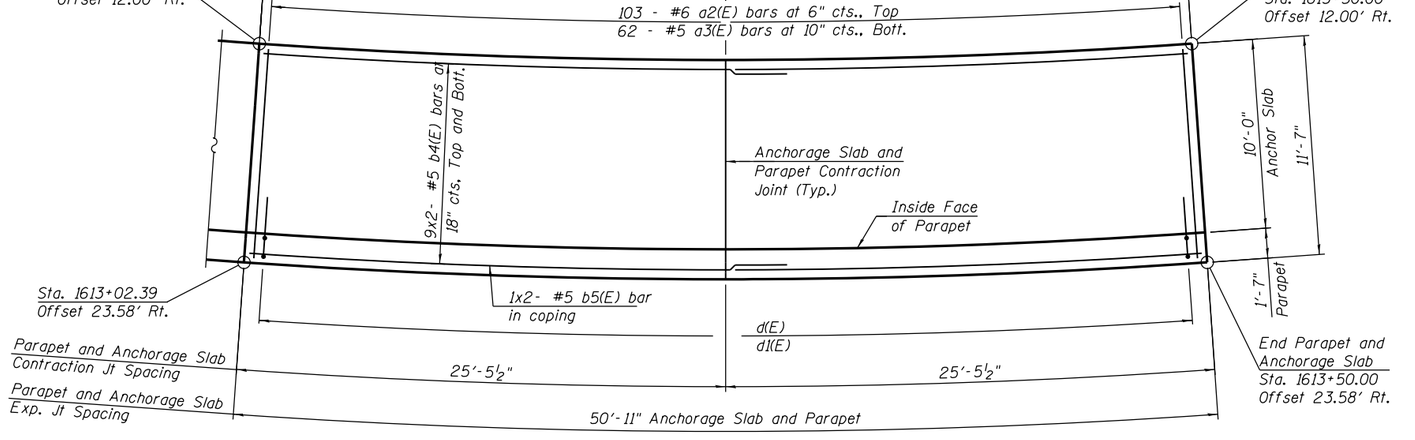


OUTSIDE ELEVATION OF PARAPET AND ANCHORAGE SLAB

(Segment 3)

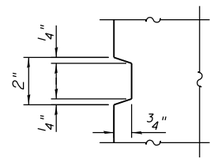


SECTION B-B



PARAPET AND ANCHORAGE SLAB PLAN

(Segment 3)



REVEAL DETAIL

NOTES:

1. For Bar Diagram, Expansion and Contraction Joints Details, and Bill of Material, see Sheet S4-08 .
2. Preformed Flexible Foam Expansion Joint Filler (called as PJF in plans) shall follow Article 1051.09 of IDOT Standard Specifications. Cost included in Concrete Superstructure.
3. Anchorage slab shall be constructed in final stage.
4. For Segment 2, see Sheet S4-06 .
5. Bars noted thus, 9x3-#5 indicates 9 lines of #4 bars with 2 lengths per line.

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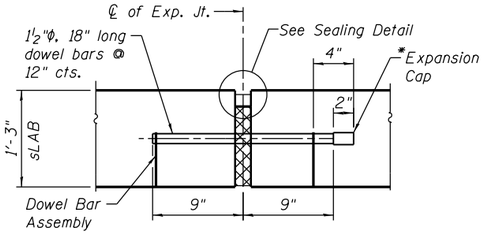
PLOT SCALE = N.T.S	DRAWN - SK, KJD	REVISED -	
PLOT DATE = 7/30/2018	CHECKED - MI, MAI	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PARAPET AND ANCHORAGE SLAB PLAN AND ELEVATION 4
STRUCTURE NO. 016-1811
SHEET NO. S4-07 OF S4-18 SHEETS

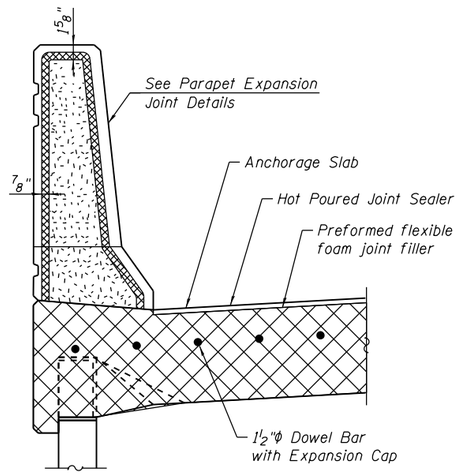
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-005R&B	COOK	888	501
		CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			



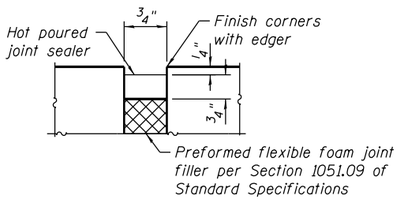
TRANSVERSE EXPANSION JOINT

Expansion Joint filler, sealer, Dowel Bars, Dowel Bar Assembly, and Expansion Caps included in cost of Concrete Superstructure.

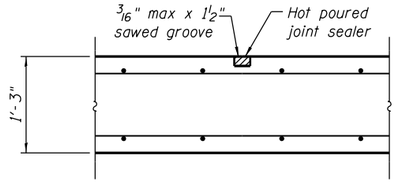
* Expansion Caps shall be installed on the exposed end of each dowel bar once header has been removed and the joint filler material has been installed.



TRANSVERSE EXPANSION JOINT SECTION

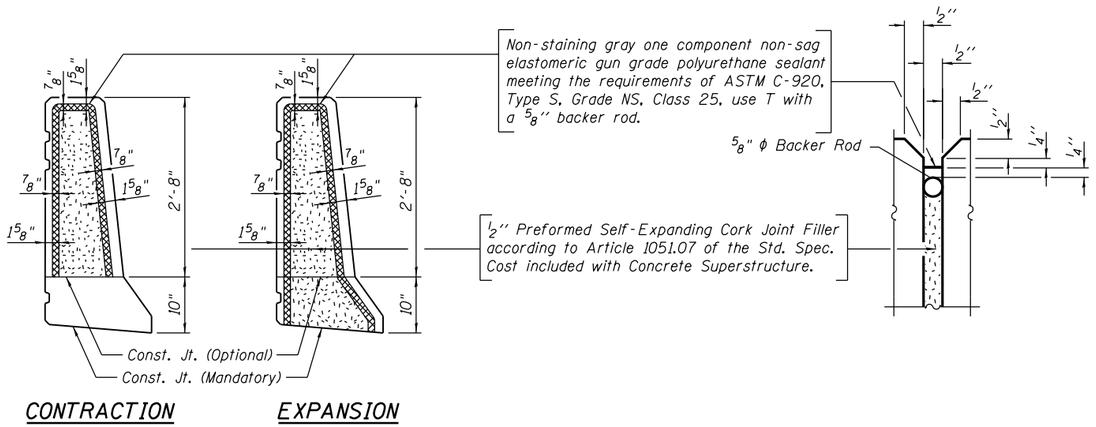


SEALING DETAIL



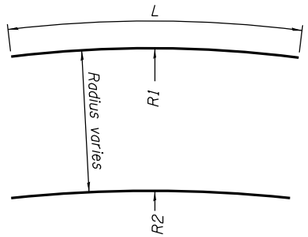
TRANSVERSE CONTRACTION JOINT

See Article 420.05 & 420.12 of the Standard Specifications



CONTRACTION EXPANSION

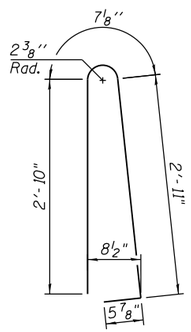
PARAPET JOINT DETAILS



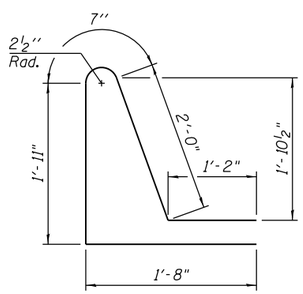
BARS b(E), b2(E), or b4(E)

TABLE 1

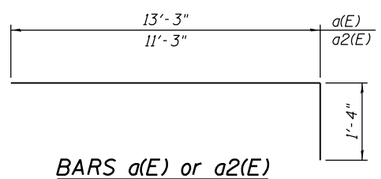
Bar	No. Per Series	R1	R2	L	No. Series
b(E)	10	327'-10"	314'-7"	21'-4"	2
b2(E)	9	363'-5"	352'-2"	32'-3"	12
b4(E)	9	363'-5"	352'-2"	27'-1"	4



BAR d(E)



BAR d1(E)



BARS a(E) or a2(E)

Minimum Bar Laps	
Bar	Lap
#4	2'-8"
#5	3'-6"
#8	5'-11"

NOTES:

1. See Ramp EN (S.N. 016-1712) plans for approach slab details and civil plans for roadway details.
2. Protective Coat shall be applied after Bridge Deck Grooving (Longitudinal) is complete.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	44	#6	14'-7"	
a1(E)	27	#5	13'-3"	
a2(E)	465	#6	12'-7"	
a3(E)	280	#5	11'-3"	
b(E)	20	#5	21'-4"	
b1(E)	1	#5	19'-1"	
b2(E)	108	#5	32'-3"	
b3(E)	6	#5	32'-3"	
b4(E)	36	#5	27'-1"	
b5(E)	2	#5	27'-1"	
d(E)	338	#5	6'-10"	
d1(E)	338	#5	7'-4"	
e(E)	8	#4	19'-1"	
e1(E)	1	#8	19'-1"	
e2(E)	42	#4	29'-8"	
e3(E)	6	#8	33'-10"	
e4(E)	6	#4	31'-8"	
e5(E)	14	#4	25'-2"	
e6(E)	2	#8	28'-3"	
e7(E)	2	#4	26'-8"	
Concrete Superstructure			Cu Yd	166.8
Protective Coat			Sq Yd	412
Reinforcement Bars, Epoxy Coated			Pound	25,860
Bridge Deck Grooving (Longitudinal)			Sq Yd	239

HBM ENGINEERING GROUP, LLC	USER NAME = ahmad.issa	DESIGNED - JJS, SK	REVISED -	
		CHECKED - MI, KJD	REVISED -	
	PLOT SCALE = N.T.S	DRAWN - SK, KJD	REVISED -	
	PLOT DATE = 7/30/2018	CHECKED - MI, MAI	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PARAPET AND ANCHORAGE SLAB DETAILS AND BOM
STRUCTURE NO. 016-1811
SHEET NO. S4-08 OF S4-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-005R&B	COOK	888	502
		CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			

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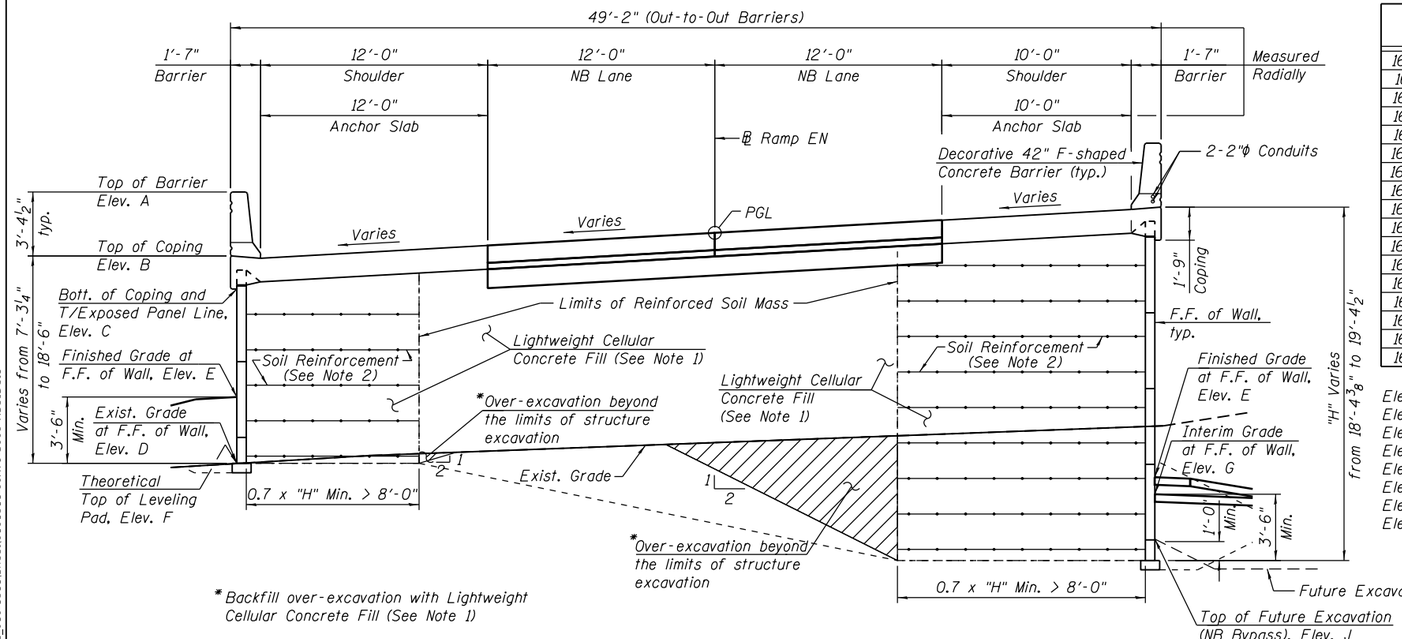


*Backfill over-excavation with Lightweight Cellular Concrete Fill (See Note 1)

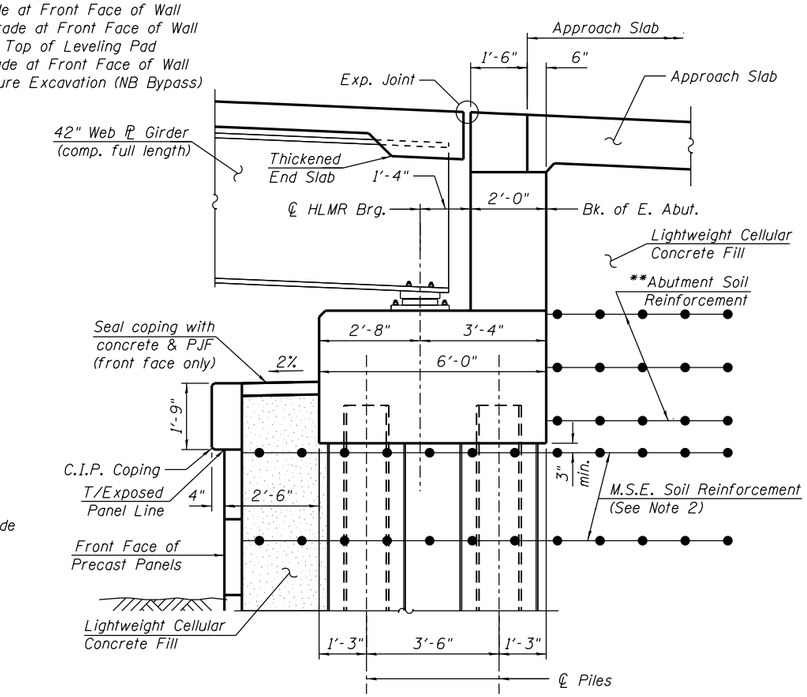
CROSS SECTION

Sta. 1610+98.45 to Sta. 1611+59.85
(Looking Up-station)

TABLE 1 - WALL ELEVATIONS

Station	Offset	Elevation A	Elevation B	Elevation C	Elevation D	Elevation E	Elevation F	Elevation G	Elevation J
1610+98.48	23.25 RT.	-	593.62	591.87	584.43	582.55	579.05	-	-
1611+06.12	23.25 RT.	603.83	600.45	598.70	585.49	584.91	581.07	-	-
1611+25.00	23.25 RT.	602.94	599.57	597.82	587.99	584.20	580.42	584.40	586.07
1611+50.00	23.25 RT.	601.58	598.21	596.46	593.08	583.22	579.54	583.78	583.82
1611+75.00	23.25 RT.	599.95	596.58	594.83	594.40	582.25	578.66	583.14	581.46
1612+00.00	23.25 RT.	598.31	594.94	593.19	593.85	581.29	577.78	582.71	579.62
1612+25.00	23.25 RT.	596.68	593.31	591.56	592.13	581.28	577.78	581.93	578.81
1612+50.00	23.25 RT.	595.04	591.67	589.92	590.16	581.28	577.78	582.13	579.00
1612+75.00	23.25 RT.	593.41	590.04	588.29	588.41	581.28	577.78	582.54	579.42
1613+00.00	23.25 RT.	591.79	588.42	586.67	587.02	581.85	578.35	583.21	580.08
1613+25.00	23.25 RT.	590.29	586.92	585.17	585.69	582.43	578.93	583.79	580.66
1613+50.00	23.25 RT.	588.79	585.42	583.67	584.32	583.00	579.50	584.18	581.50
1610+97.73	25.25 LT.	-	590.94	589.19	582.95	582.36	578.25	-	-
1611+06.56	25.25 LT.	601.23	597.86	596.11	583.99	584.91	579.36	-	-
1611+25.00	25.25 LT.	600.36	596.99	595.24	586.02	587.22	582.25	-	-
1611+50.00	25.25 LT.	599.01	595.64	593.89	588.26	593.37	586.26	-	-
1611+59.85	25.25 LT.	598.48	595.11	593.36	589.19	593.35	587.83	-	-

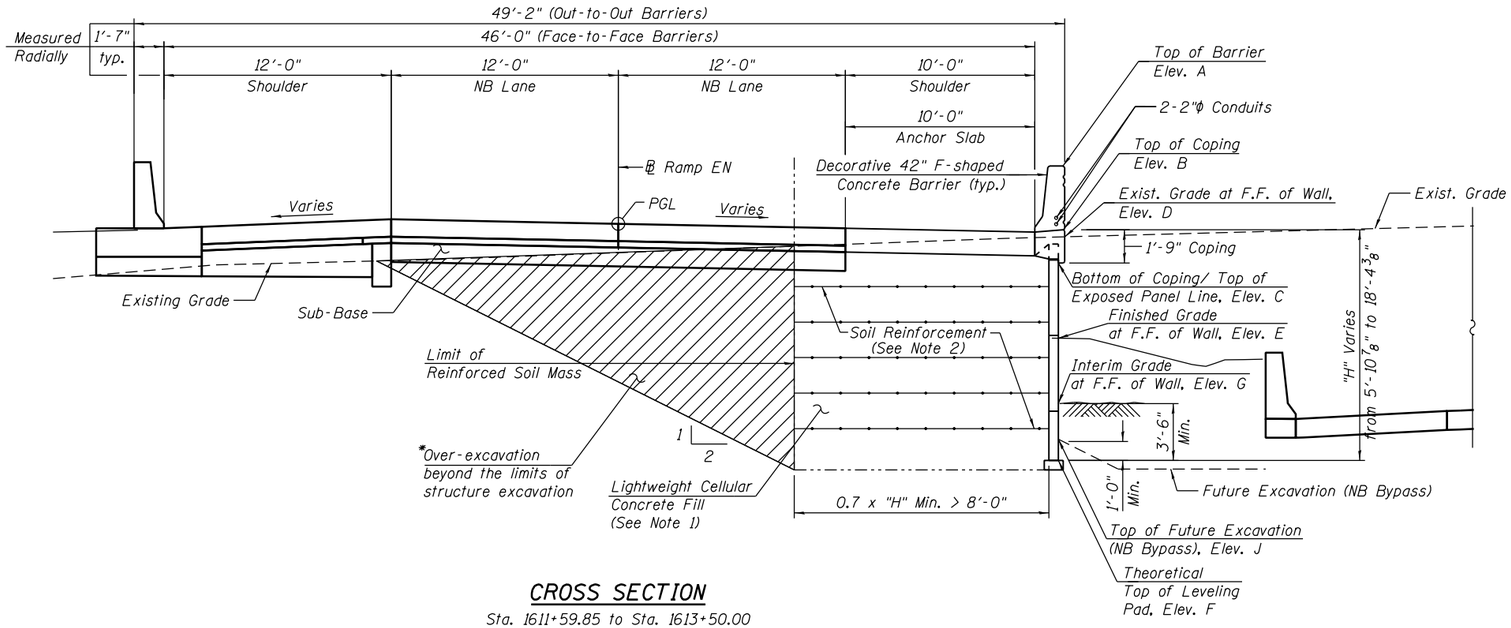
Elevation A - Top of Barrier
Elevation B - Top of Coping
Elevation C - Bottom of Coping/Top of Exposed Panel Line
Elevation D - Exist. Grade at Front Face of Wall
Elevation E - Finished Grade at Front Face of Wall
Elevation F - Theoretical Top of Leveling Pad
Elevation G - Interim Grade at Front Face of Wall
Elevation J - Top of Future Excavation (NB Bypass)



SECTION THRU EAST ABUTMENT

(Horiz. Dims. @ Rt. L's to ℄ Brg.)

** Abutment soil reinforcement to resist lateral loads in lieu of steel piles



CROSS SECTION

Sta. 1611+59.85 to Sta. 1613+50.00
(Looking Up-station)

NOTES:

1. All lightweight cellular concrete fill shall be Class III.
2. The MSE wall supplier's internal stability design shall account for the anchorage slab's bearing pressure surcharge of 1.0 ksf and horizontal sliding force of 0.83 kips/ft. of wall.
3. F.F. denotes Front Face.
4. The minimum factored bearing resistance for fill material at locations where the proposed theoretical leveling pad is above the existing ground line, shall equal or exceed 2,100 psf.

HBM ENGINEERING GROUP, LLC

USER NAME = ahmad.issa	DESIGNED - JJS, SK	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	MSE CROSS SECTION AND DETAILS STRUCTURE NO. 016-1811
	CHECKED - MI, KJD	REVISED -		
PLOT SCALE = N.T.S	DRAWN - SK, KJD	REVISED -		
PLOT DATE = 7/30/2018	CHECKED - MI, MAI	REVISED -		SHEET NO. S4-09 OF S4-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-005R&B	COOK	888	503
		CONTRACT NO. 60X79		
		ILLINOIS	FED. AID PROJECT	

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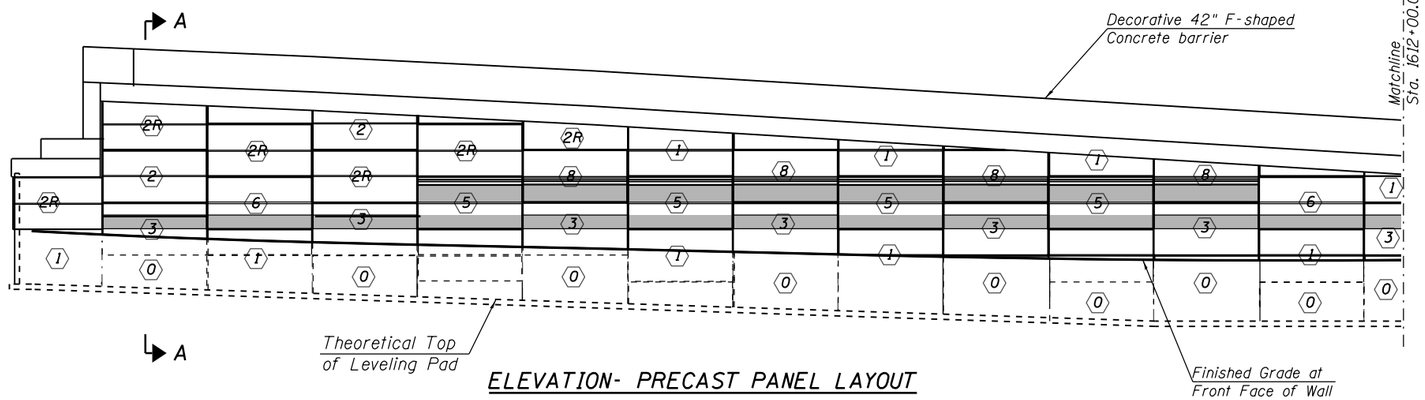
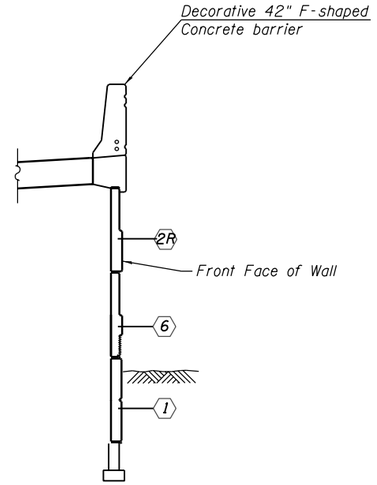
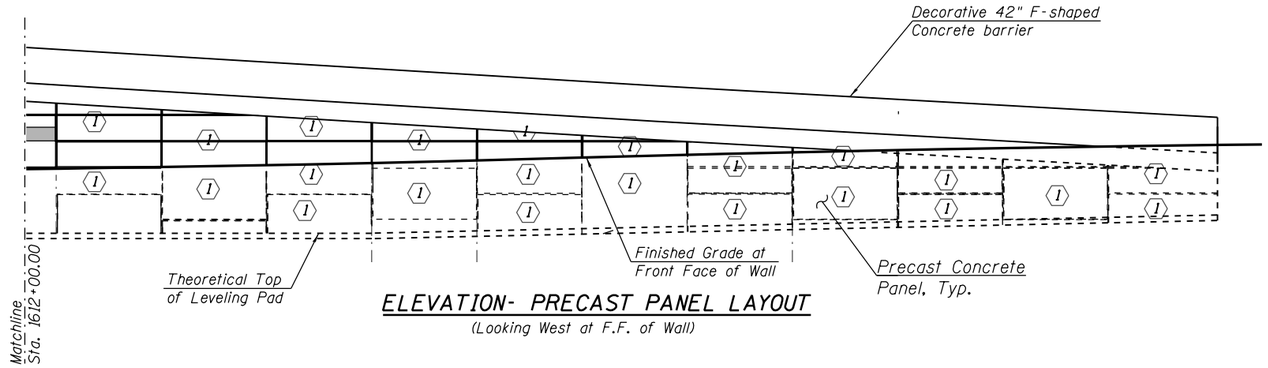


ELEVATION- PRECAST PANEL LAYOUT

(Looking West at F.F. of Wall)



SECTION A-A



ELEVATION- PRECAST PANEL LAYOUT

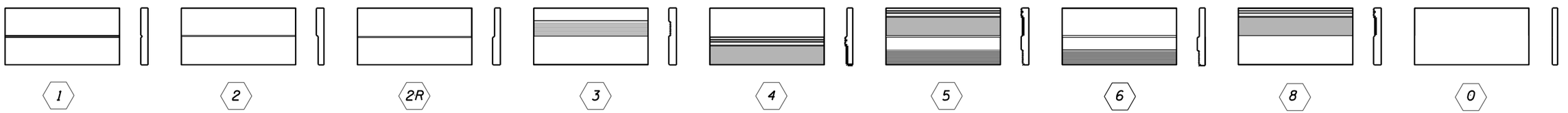
(Looking West at F.F. of Wall)

LEGEND:

0 1 2 2R 3 4 5 6 8 Precast Panel Type Designation Based on Formliner Layout

NOTES:

1. Reveals in concrete barrier shall not be paid separately but shall be included in the cost of "Concrete Superstructure".
2. Textured formliner for precast panels shall not be paid separately but shall be included in the cost of "Mechanically Stabilized Earth Retaining Wall, Special".
3. For formliner details for precast panels, see Sheet S3-11 of the Retaining wall 18 (S.N. 016-1807) plans.
4. Verify / coordinate all dimensions with bridge plans for Ramp EN (S.N. 016-1712).
5. MSE Supplier to determine precast panel dimensions based on proprietary design. The suggested 10'-0" Nom. width shown here may change depending on supplier. If this is the case, it will be addressed by the Engineer and coordinated with the supplier during the Shop Drawing submittal and review.



PRECAST PANEL TYPES

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9:32:18 AM

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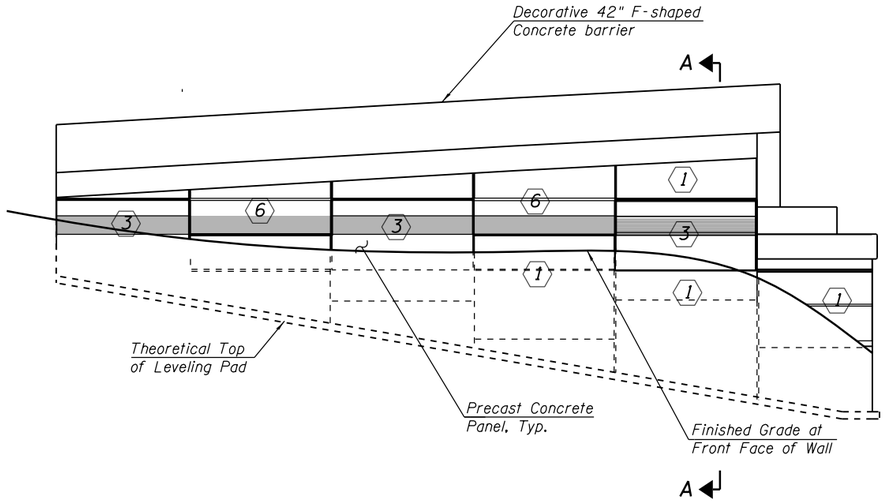
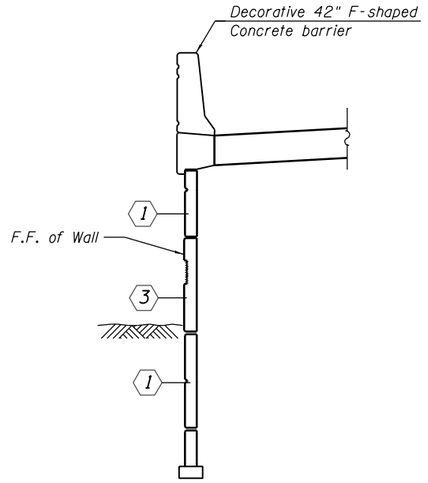
USER NAME = ahmad.issa	DESIGNED - MR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ARCHITECTURAL DETAILS 1 STRUCTURE NO. 016-1811
	CHECKED -	REVISED -		
PLOT SCALE = N.T.S	DRAWN - MR	REVISED -		
PLOT DATE = 7/30/2018	CHECKED -	REVISED -		SHEET NO. S4-10 OF S4-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-005R&B	COOK	888	504
		CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			



ELEVATION - PRECAST PANEL LAYOUT

(Looking East at F.F. of Wall)



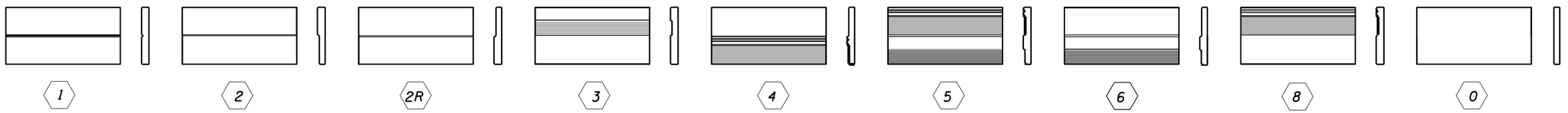
SECTION A-A

LEGEND:

⟨0⟩ ⟨1⟩ ⟨2⟩ ⟨2R⟩ ⟨3⟩ ⟨4⟩ ⟨5⟩ ⟨6⟩ ⟨8⟩ Precast Panel Type Designation Based on Formliner Layout

NOTES:

1. Reveals in concrete barrier shall not be paid separately but shall be included in the cost of "Concrete Superstructure".
2. Textured formliner for precast panels shall not be paid separately but shall be included in the cost of "Mechanically Stabilized Earth Retaining Wall, Special".
3. For formliner details for precast panels, see Sheet S3-11 of the Retaining wall 18 (S.N. 016-1807) plans.
4. Verify / coordinate all dimensions with bridge plans for Ramp EN (S.N. 016-1712).
5. MSE Supplier to determine precast panel dimensions based on proprietary design. The suggested 10'-0" Nom. width shown here may change depending on supplier. If this is the case, it will be addressed by the Engineer and coordinated with the supplier during the Shop Drawing submittal and review.



HBM ENGINEERING GROUP, LLC

USER NAME = ahmad.issa	DESIGNED - MR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ARCHITECTURAL DETAILS 2 STRUCTURE NO. 016-1811	
	CHECKED -	REVISED -			
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PLOT DATE = 7/30/2018	CHECKED -	REVISED -		SHEET NO. S4-11 OF S4-18 SHEETS	

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-005R&B	COOK	888	505
		CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			

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9:32:21 AM

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax 630 953-9938

BORING LOG 20-RWB-01

WEI Job No.: 1100-04-01

Client ..... AECOM
Project ..... Circle Interchange Reconstruction
Location ..... Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 577.12 ft
North: 1897711.41 ft
East: 1171734.33 ft
Station: 1610+87.80
Offset: 31.0288 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	577.1	13.5-inch thick CONCRETE --PAVEMENT--						
	576.0	4.5-inch thick ASPHALT --PAVEMENT--						
	575.8	Dense, white CRUSHED STONE --BASE COURSE--						
	573.9	Very soft to soft, gray CLAY to SILTY CLAY, trace gravel						
					1	26 30 11	NP	6
			5		2	2 1 1	0.25 B	27
					3	2 2 1	0.16 B	28
			10		4	1 1 2	0.41 B	24
					5	1 2 1	0.33 B	24
			15		6	1 1 2	0.41 B	24
	561.6	SOft, gray SILTY CLAY LOAM, trace gravel --L_L(%)=31, P_L(%)=16-- --%Gravel=4.8-- --%Sand=16.1-- --%Silt=54.8-- --%Clay=24.3-- --A-6 (10)--			7	2 1 2	0.16 B	18
	559.1	Very soft to medium stiff, gray CLAY to SILTY CLAY, trace	20		8	0 1 1	0.16 B	26
		gravel			9	0 1 1	0.16 B	25
			25		10	0 1 2	0.16 B	26
					11	1 2 2	0.16 B	26
			30		12	2 2 1	0.57 B	27
					13	1 2 2	0.08 B	26
	540.4	Stiff to hard, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel	35		14	3 6 10	1.72 B	23

GENERAL NOTES

Begin Drilling 10-28-2013 Complete Drilling 11-03-2013
Drilling Contractor Wang Testing Services Drill Rig CME-55 TMR [85%]
Driller R&J Logger A. Tomaras Checked by CLM
Drilling Method 2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion

WATER LEVEL DATA

While Drilling ▽ 56.00 ft
At Completion of Drilling ▼ mud in the borehole
Time After Drilling NA
Depth to Water ▼ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 1100401.GPJ WANGENG.GDT 9/14/17

Wang Engineering
wangeng@wangeng.com
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BORING LOG 20-RWB-01

WEI Job No.: 1100-04-01

Client ..... AECOM
Project ..... Circle Interchange Reconstruction
Location ..... Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 577.12 ft
North: 1897711.41 ft
East: 1171734.33 ft
Station: 1610+87.80
Offset: 31.0288 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--L_L(%)=35, P_L(%)=18-- --%Gravel=1.0-- --%Sand=6.7-- --%Silt=53.8-- --%Clay=38.6-- --A-6 (16)--	45		15	7 8 15	5.74 B	13
			50		16	6 9 12	3.94 B	20
			55		17	6 8 9	1.56 B	21
	520.4	Loose, gray SILT --Saturated--	60		18	3 3 6	1.31 S	29
	515.4	--HARD DRILLING-- --*Possible Cobbles*-- Very dense, gray, coarse SAND	65		19	48 50/5	NP	11
	510.6	--HARD DRILLING-- --*Possible Cobbles*-- Hard, gray SILTY CLAY LOAM to SILTY LOAM, trace gravel	70		20	32 45 45	5.41 S	10
	500.4	Very dense, gray SILTY LOAM, trace gravel	75		21	20 18 35	7.30 S	17
			80		22	39 47 48	NP	15

GENERAL NOTES

Begin Drilling 10-28-2013 Complete Drilling 11-03-2013
Drilling Contractor Wang Testing Services Drill Rig CME-55 TMR [85%]
Driller R&J Logger A. Tomaras Checked by CLM
Drilling Method 2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion

WATER LEVEL DATA

While Drilling ▽ 56.00 ft
At Completion of Drilling ▼ mud in the borehole
Time After Drilling NA
Depth to Water ▼ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 1100401.GPJ WANGENG.GDT 9/14/17

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BORING LOG 20-RWB-01

WEI Job No.: 1100-04-01

Client ..... AECOM
Project ..... Circle Interchange Reconstruction
Location ..... Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 577.12 ft
North: 1897711.41 ft
East: 1171734.33 ft
Station: 1610+87.80
Offset: 31.0288 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--HARD DRILLING-- --*Possible Cobbles*--						
	495.4	Very dense, gray GRAVELLY SAND, some cobbles						
			85		23	50/1	NA	
			90		24	39 50/5	NP	11
	486.1	--HARD DRILLING-- --*Possible Boulders*-- --ROLLER BIT REFUSAL-- Boring terminated at 91.00 ft						
			95					
			100					

GENERAL NOTES

Begin Drilling 10-28-2013 Complete Drilling 11-03-2013
Drilling Contractor Wang Testing Services Drill Rig CME-55 TMR [85%]
Driller R&J Logger A. Tomaras Checked by CLM
Drilling Method 2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion

WATER LEVEL DATA

While Drilling ▽ 56.00 ft
At Completion of Drilling ▼ mud in the borehole
Time After Drilling NA
Depth to Water ▼ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 1100401.GPJ WANGENG.GDT 9/14/17

NOTE:

1. Station and offsets are measured along ℄ Ramp EN.

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BORING LOG 21-RWB-02

WEI Job No.: 1100-04-01

Client ..... AECOM
Project ..... Circle Interchange Reconstruction
Location ..... Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 596.95 ft
North: 1897705.23 ft
East: 1171851.95 ft
Station: 1611+67.44
Offset: 53.9743 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	596.0	12-inch thick, brown LOAM, trace gravel --TOPSOIL--						
		Hard, gray CLAY LOAM, trace gravel --FILL--			1	13 11 11	7.79 S	16
			5		2	5 9 11	5.33 S	13
	591.5	Stiff to medium stiff, gray and brown, SILTY CLAY, trace gravel, slag, brick and wood --FILL--			3	2 2 4	1.23 B	19
			10		4	2 3 4	1.15 B	19
					5	3 5 5	0.98 B	21
	584.0	Very stiff, brown and gray SILTY CLAY, trace gravel	15		6	3 5 7	3.53 B	25
	581.5	Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel			7	0 2 2	0.66 B	24
			20		8	1 1 2	< 0.25 P	29
			25		9	1 1 1	< 0.25 P	25
					10	0 0 0	0.16 B	22
			30		11	0 0 0	0.16 B	25
					12	0 0 0	0.25 B	25
			35		13	0 0 0	< 0.25 P	26
			40		14	0 1 3	0.49 B	25

WANGENGINC 1100040 1.GPJ WANGENG.GDT 9/14/17

GENERAL NOTES

Begin Drilling 09-25-2013 Complete Drilling 09-30-2013
Drilling Contractor Wang Testing Services Drill Rig CME-55 TMR [85%]
Driller R&J Logger A. Tomaras Checked by L. Iordache
Drilling Method 2.25" HSA, boring backfilled upon completion

WATER LEVEL DATA

While Drilling ▽ Rotary wash
At Completion of Drilling ▼ mud in the borehole
Time After Drilling NA
Depth to Water ▽ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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BORING LOG 21-RWB-02

WEI Job No.: 1100-04-01

Client ..... AECOM
Project ..... Circle Interchange Reconstruction
Location ..... Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 596.95 ft
North: 1897705.23 ft
East: 1171851.95 ft
Station: 1611+67.44
Offset: 53.9743 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
			45		15	2 2 2	0.25 P	25
			50		16	1 2 3	< 0.25 P	25
			55		17	1 3 3	0.66 B	21
	540.2	Stiff to hard, gray SILTY CLAY LOAM, trace gravel	60		18	15 17 21	> 4.50 P	15
			65		19	11 10 16	4.33 N/6	
			70		20	10 12 19	4.76 B	19
			75		21	6 10 12	1.80 B	24
			80		22	6 8 10	3.00 N/6	19

WANGENGINC 1100040 1.GPJ WANGENG.GDT 9/14/17

GENERAL NOTES

Begin Drilling 09-25-2013 Complete Drilling 09-30-2013
Drilling Contractor Wang Testing Services Drill Rig CME-55 TMR [85%]
Driller R&J Logger A. Tomaras Checked by L. Iordache
Drilling Method 2.25" HSA, boring backfilled upon completion

WATER LEVEL DATA

While Drilling ▽ Rotary wash
At Completion of Drilling ▼ mud in the borehole
Time After Drilling NA
Depth to Water ▽ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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BORING LOG 21-RWB-02

WEI Job No.: 1100-04-01

Client ..... AECOM
Project ..... Circle Interchange Reconstruction
Location ..... Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 596.95 ft
North: 1897705.23 ft
East: 1171851.95 ft
Station: 1611+67.44
Offset: 53.9743 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	515.2	Very dense, gray SILTY LOAM, little to some gravel and cobbles						
			85		23	13 31 41	NP	14
			90		24	18 35 48	9.35 S	10
			95		25	20 36 50/4	9.10 S	13
		--HARD DRILLING-- *--Possible Cobbles--*			26	50/5	NR	
			100					
			105		27	50/4	NP	11
		--HARD DRILLING-- *--Possible Cobbles--*						
	490.0	--ROLLER BIT REFUSAL-- Boring terminated at 107.00 ft	110					
			115					
			120					

WANGENGINC 1100040 1.GPJ WANGENG.GDT 9/14/17

GENERAL NOTES

Begin Drilling 09-25-2013 Complete Drilling 09-30-2013
Drilling Contractor Wang Testing Services Drill Rig CME-55 TMR [85%]
Driller R&J Logger A. Tomaras Checked by L. Iordache
Drilling Method 2.25" HSA, boring backfilled upon completion

WATER LEVEL DATA

While Drilling ▽ Rotary wash
At Completion of Drilling ▼ mud in the borehole
Time After Drilling NA
Depth to Water ▽ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

NOTE:

1. Station and offsets are measured along ℄ Ramp EN.

HBM ENGINEERING GROUP, LLC

USER NAME = ahmad.issa	DESIGNED - SK	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BORING LOGS - II STRUCTURE NO. 016-1811
	CHECKED - KJD	REVISED -		
PLOT SCALE = N.T.S	DRAWN - SK	REVISED -		
PLOT DATE = 7/30/2018	CHECKED - MI, MAI	REVISED -		SHEET NO. S4-13 OF S4-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-005R&B	COOK	888	507
		CONTRACT NO. 60X79		
	ILLINOIS	FED. AID PROJECT		

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BORING LOG 21-RWB-03

WEI Job No.: 1100-04-01

Client ..... AECOM
Project ..... Circle Interchange Reconstruction
Location ..... Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 591.97 ft
North: 1897787.89 ft
East: 1171858.64 ft
Station: 1612+32.77
Offset: 11.8407 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		Very stiff to hard, brown CLAY LOAM, trace brick fragments --FILL--			1	3 4 8	3.50 P	11
			5		2	5 5 7	3.12 B	14
		--3-inch thick, red, crushed Brick--			3	13 8 6	NP	19
			10		4	5 5 7	6.56 B	15
	581.5	Stiff, gray SILTY CLAY, trace gravel			5	2 3 4	1.97 B	23
	579.0	Very soft to medium stiff, gray CLAY, trace gravel	15		6	2 1 3	0.57 B	25
					7	2 1 2	0.49 B	25
			20		8	2 2 2	< 0.25 P	28
			25		9	0 0 0	0.33 B	23
					10	0 0 2	0.25 B	26
			30		11	0 1 2	0.45 B	26
					12	2 2 2	< 0.25 P	25
			35		13	1 2 2	0.57 B	24
			40		14	2 3 3	0.49 B	25

GENERAL NOTES

Begin Drilling 09-23-2013 Complete Drilling 09-23-2013
Drilling Contractor Wang Testing Services Drill Rig CME-55 TMR [85%]
Driller R&J Logger A. Tomaras Checked by L. Iordache
Drilling Method 3.25" HSA, boring backfilled upon completion

WATER LEVEL DATA

While Drilling ▽ Rotary wash
At Completion of Drilling ▼ mud in the borehole
Time After Drilling NA
Depth to Water ▼ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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BORING LOG 21-RWB-03

WEI Job No.: 1100-04-01

Client ..... AECOM
Project ..... Circle Interchange Reconstruction
Location ..... Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 591.97 ft
North: 1897787.89 ft
East: 1171858.64 ft
Station: 1612+32.77
Offset: 11.8407 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	540.2	Very stiff to hard, SILTY CLAY to SILTY CLAY LOAM, trace gravel						
			45		15	2 3 3	< 0.25 P	27
			50		16	0 2 2	0.41 B	28
			55		17	4 5 8	1.48 B	22
			60		18	14 12 15	3.00 P	16
	520.2	Dense, gray SILT						
	515.2	Hard, gray SILTY CLAY LOAM, trace gravel	65		19	15 17 24	4.10 B	27
			70		20	16 17 20	8.53 B	12
			75		21	20 26 23	NP	21
			80		22	19 20 28	8.61 S	14

GENERAL NOTES

Begin Drilling 09-23-2013 Complete Drilling 09-23-2013
Drilling Contractor Wang Testing Services Drill Rig CME-55 TMR [85%]
Driller R&J Logger A. Tomaras Checked by L. Iordache
Drilling Method 3.25" HSA, boring backfilled upon completion

WATER LEVEL DATA

While Drilling ▽ Rotary wash
At Completion of Drilling ▼ mud in the borehole
Time After Drilling NA
Depth to Water ▼ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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BORING LOG 21-RWB-03

WEI Job No.: 1100-04-01

Client ..... AECOM
Project ..... Circle Interchange Reconstruction
Location ..... Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 591.97 ft
North: 1897787.89 ft
East: 1171858.64 ft
Station: 1612+32.77
Offset: 11.8407 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	510.2	Very dense, gray SILT --HARD DRILLING--						
			85		23	31 32 50/5	NP	15
	505.2	Very dense, gray SILTY LOAM, trace gravel						
			90		24	23 33 29	6.81 S	21
			95		25	66/6	NP	15
	495.2	--HARD DRILLING-- Very dense, brown SANDY GRAVEL --possibly underpressure groundwater bearing--	100		26	30 70/6	NP	6
	490.2	Very dense, weathered DOLOSTONE fragments --WEATHERED BEDROCK--			27	50/1	NP	
	487.5	--ROLLER BIT REFUSAL--						
	487.0	DOLI Boring terminated at 104.50 ft	105					
			110					
			115					
			120					

GENERAL NOTES

Begin Drilling 09-23-2013 Complete Drilling 09-23-2013
Drilling Contractor Wang Testing Services Drill Rig CME-55 TMR [85%]
Driller R&J Logger A. Tomaras Checked by L. Iordache
Drilling Method 3.25" HSA, boring backfilled upon completion

WATER LEVEL DATA

While Drilling ▽ Rotary wash
At Completion of Drilling ▼ mud in the borehole
Time After Drilling NA
Depth to Water ▼ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

NOTE:

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BORING LOG 21-RWB-04

WEI Job No.: 1100-04-01

Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 587.85 ft
North: 1897850.59 ft
East: 1171897.08 ft
Station: 1613+02.29
Offset: 21.9615 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	587.4	5 -inch thick, black SILTY LOAM --TOPSOIL--						
		Very stiff to hard, brown SILTY CLAY LOAM, trace gravel --FILL--			1	5 6 7	4.51 S	16
			5		2	5 3 5	3.50 P	18
	582.4	Stiff, brown and gray SILTY CLAY, trace gravel			3	3 3 3	1.97 B	22
	579.9	Very soft to medium stiff, brown CLAY to SILTY CLAY, trace gravel			4	1 1 2	0.57 B	23
			10		5	1 1 2	0.41 B	25
			15		6	1 1 2	0.33 B	24
					7	1 1 2	0.33 B	23
			20		8	0 1 1	0.16 B	26
			25		9	1 1 2	0.16 B	25
					10	1 1 1	0.16 B	27
			30		11	1 2 2	0.33 B	20
					12	1 1 2	0.16 B	23
			35		13	1 2 3	0.66 B	21
			40		14	2 2 2	0.41 B	24

GENERAL NOTES				WATER LEVEL DATA	
Begin Drilling	09-23-2013	Complete Drilling	09-23-2013	While Drilling	Rotary wash
Drilling Contractor	K&S	Drill Rig	D-120 TMR	At Completion of Drilling	mud in the borehole
Driller	R&E	Logger	F. Bozga	Checked by	L. Iordache
Drilling Method	4.25" HSA, boring backfilled upon completion			Time After Drilling	NA
				Depth to Water	NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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BORING LOG 21-RWB-04

WEI Job No.: 1100-04-01

Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 587.85 ft
North: 1897850.59 ft
East: 1171897.08 ft
Station: 1613+02.29
Offset: 21.9615 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
			45		15	1 2 3	0.33 B	26
			50		16	3 5 8	0.66 B	20
	536.1	Very stiff, gray SILTY CLAY, trace gravel			17	4 7 11	3.28 B	22
	531.1	Dense to very dense, gray SILTY LOAM to SILTY CLAY LOAM, trace to little gravel	55					
			60		18	16 26 38	6.23 S	14
		--HARD DRILLING-- *--Possible Cobbles--*	65		19	26 25 30	5.66 S	13
			70		20	38 50/5"	NP	15
			75		21	12 19 29	8.04 S	13
			80		22	22 50/5"	NP	11

GENERAL NOTES				WATER LEVEL DATA	
Begin Drilling	09-23-2013	Complete Drilling	09-23-2013	While Drilling	Rotary wash
Drilling Contractor	K&S	Drill Rig	D-120 TMR	At Completion of Drilling	mud in the borehole
Driller	R&E	Logger	F. Bozga	Checked by	L. Iordache
Drilling Method	4.25" HSA, boring backfilled upon completion			Time After Drilling	NA
				Depth to Water	NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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BORING LOG 21-RWB-04

WEI Job No.: 1100-04-01

Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 587.85 ft
North: 1897850.59 ft
East: 1171897.08 ft
Station: 1613+02.29
Offset: 21.9615 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
			85		23	19 25 31	NP	10
			90		24	50/5"	NP	11
	496.6	Dense, gray SANDY GRAVEL						
	492.9	Boring terminated at 95.00 ft	95		25	11 21 19	NP	13
			100					

GENERAL NOTES				WATER LEVEL DATA	
Begin Drilling	09-23-2013	Complete Drilling	09-23-2013	While Drilling	Rotary wash
Drilling Contractor	K&S	Drill Rig	D-120 TMR	At Completion of Drilling	mud in the borehole
Driller	R&E	Logger	F. Bozga	Checked by	L. Iordache
Drilling Method	4.25" HSA, boring backfilled upon completion			Time After Drilling	NA
				Depth to Water	NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 1100401.GPJ WANGENG.GDT 9/14/17

NOTE:

1. Station and offsets are measured along ℄ Ramp EN.

HBM ENGINEERING GROUP, LLC

USER NAME = ahmad.issa	DESIGNED - SK	REVISED -			
	CHECKED - KJD	REVISED -			
PLOT SCALE = N.T.S	DRAWN - SK	REVISED -			
PLOT DATE = 7/30/2018	CHECKED - MI, MAI	REVISED -			

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS - IV
STRUCTURE NO. 016-1811
SHEET NO. S4-15 OF S4-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-005R&B	COOK	888	509
		CONTRACT NO. 60X79		
	ILLINOIS	FED. AID PROJECT		

Page 1 of 3

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BORING LOG 21-RWB-05

WEI Job No.: 1100-04-01

Client ..... AECOM
Project ..... Circle Interchange Reconstruction
Location ..... Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 583.32 ft
North: 1897919.78 ft
East: 1171915.09 ft
Station: 1613+69.21
Offset: 25.0245 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	582.9	5-inch thick, white CRUSHED STONE	0					
		--FILL--						
		Hard, gray and brown CLAY LOAM, trace gravel			1	6 9 9	6.56 S	15
		--FILL--						
	580.3	Medium stiff to stiff, gray SILTY CLAY, trace gravel						
			5		2	2 2 2	0.82 B	20
					3	1 3 3	1.23 B	17
	575.3	Soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel						
			10		4	0 2 1	0.41 B	25
					5	0 0 0	0.41 B	26
			15		6	0 0 2	0.57 B	22
					7	2 3 2	0.66 B	22
			20		8	0 2 3	0.74 B	24
			25		9	2 2 4	0.82 B	23
					10	2 3 3	0.74 B	23
			30		11	2 2 3	0.66 B	24
					12	3 4 6	0.66 B	23
			35		13	2 3 3	0.49 B	25
			40		14	3 3 4	0.41 B	23

GENERAL NOTES

Begin Drilling 09-24-2013 Complete Drilling 09-25-2013
Drilling Contractor Wang Testing Services Drill Rig CME-55 TMR [85%]
Driller R&J Logger A. Tomaras Checked by L. Iordache
Drilling Method 2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion

WATER LEVEL DATA

While Drilling ▽ Rotary wash
At Completion of Drilling ▼ mud in the borehole
Time After Drilling NA
Depth to Water ▽ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 1100401.GPJ WANGENG.GDT 9/14/17

Page 2 of 3

Wang Engineering

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1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax 630 953-9938

BORING LOG 21-RWB-05

WEI Job No.: 1100-04-01

Client ..... AECOM
Project ..... Circle Interchange Reconstruction
Location ..... Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 583.32 ft
North: 1897919.78 ft
East: 1171915.09 ft
Station: 1613+69.21
Offset: 25.0245 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	541.6	Stiff to hard, gray SILTY CLAY LOAM, trace gravel						
			45		15	2 4 8	1.23 B	18
			50		16	6 12 18	4.26 B	15
	531.6	Gray, coarse SAND						
	529.6	Hard, gray SILTY CLAY LOAM, trace gravel	55		17	13 15 21	5.66 B	14
			60		18	16 24 31	7.13 S	11
	516.6	Very dense, gray SILTY LOAM, trace to some gravel	65		19	10 16 21	6.81 S	14
			70		20	15 25 30	9.02 S	11
			75		21	41 60/3"	NP	10
			80		22	34 45 20/2"	8.69 S	10

GENERAL NOTES

Begin Drilling 09-24-2013 Complete Drilling 09-25-2013
Drilling Contractor Wang Testing Services Drill Rig CME-55 TMR [85%]
Driller R&J Logger A. Tomaras Checked by L. Iordache
Drilling Method 2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion

WATER LEVEL DATA

While Drilling ▽ Rotary wash
At Completion of Drilling ▼ mud in the borehole
Time After Drilling NA
Depth to Water ▽ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 1100401.GPJ WANGENG.GDT 9/14/17

Page 3 of 3

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BORING LOG 21-RWB-05

WEI Job No.: 1100-04-01

Client ..... AECOM
Project ..... Circle Interchange Reconstruction
Location ..... Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 583.32 ft
North: 1897919.78 ft
East: 1171915.09 ft
Station: 1613+69.21
Offset: 25.0245 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	501.6	Very dense, gray SANDY LOAM, trace gravel						
			85		23	78/6" 29/4"	NP	9
		--HARD DRILLING--						
		--Possible Cobbles--						
			90		24	64 45/6"	NP	13
	491.6	Very dense, gray GRAVELLY SILTY LOAM, trace to some cobbles						
			95		25	100/6"	1.31 S	13
		--HARD DRILLING--						
		--Possible Cobbles--						
			100		26	64 40/2"	0.49 S	9
	482.3	--WEATHERED BEDROCK--						
	481.3	--ROLLER BIT REFUSAL--						
		Boring terminated at 102.00 ft	105					
			110					
			115					
			120					

GENERAL NOTES

Begin Drilling 09-24-2013 Complete Drilling 09-25-2013
Drilling Contractor Wang Testing Services Drill Rig CME-55 TMR [85%]
Driller R&J Logger A. Tomaras Checked by L. Iordache
Drilling Method 2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion

WATER LEVEL DATA

While Drilling ▽ Rotary wash
At Completion of Drilling ▼ mud in the borehole
Time After Drilling NA
Depth to Water ▽ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 1100401.GPJ WANGENG.GDT 9/14/17

NOTE:

1. Station and offsets are measured along ℄ Ramp EN.

HBM ENGINEERING GROUP, LLC	USER NAME = ahmad.issa	DESIGNED - SK	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BORING LOGS - V STRUCTURE NO. 016-1811
		CHECKED - KJD	REVISED -		
	PLOT SCALE = N.T.S	DRAWN - SK	REVISED -		SHEET NO. S4-16 OF S4-18 SHEETS
	PLOT DATE = 7/30/2018	CHECKED - MI. MAI	REVISED -		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-005R&B	COOK	888	510
		CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			

FILE NAME: pw:\\617479-PWINT.aecomonline.localbAECOM_DS02_NA\Documents\01 Americas\Transportation\60269938 CircletPhase_II\000_CAD\008_Structural\Structure_016-1811\Sheet\016181 1-60X79-S016 Boring5

9:32:48 AM

Wang Engineering
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BORING LOG 1705-B-06A

WEI Job No.: 1100-04-01

Client ..... AECOM
Project ..... Circle Interchange Reconstruction
Location ..... Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 591.98 ft
North: 1897749.88 ft
East: 1171805.18 ft
Station: 1827+13.77
Offset: 38.2558 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	591.5	6-inch thick, black SILTY LOAM --TOPSOIL--						
		Medium dense to dense, brown LOAM, little gravel and brick fragments --FILL--			1	9 17 13	NP	6
			5		2	2 15 9	NP	14
	586.5	Very stiff, gray SILTY CLAY LOAM, trace gravel			3	2 3 4	2.95 B	17
			10		4	2 4 4	2.54 B	22
	581.5	Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel			5	3 3 3	< 0.25 P	21
			15		6	0 2 2	0.41 B	24
					7	0 1 1	0.25 B	22
			20		8	0 0 2	0.41 B	26
			25		9	0 0 1	0.08 B	26
					10	0 0 2	0.25 B	26
					11	0 0 3	0.25 B	28
			30		12	0 1 2	0.57 B	23
			35		13	0 1 2	0.50 P	21
					14	0 3 2	0.49 B	24
			40					

GENERAL NOTES

Begin Drilling 07-25-2013 Complete Drilling 07-26-2013
Drilling Contractor Wang Testing Services Drill Rig CME-55 TMR [85%]
Driller R&J Logger A. Tomaras Checked by C. Marin
Drilling Method 2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion

WATER LEVEL DATA

While Drilling ▽ Rotary wash
At Completion of Drilling ▼ mud in the borehole
Time After Drilling NA
Depth to Water ▼ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 1100401.GPJ WANGENG.GDT 9/14/17

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BORING LOG 1705-B-06A

WEI Job No.: 1100-04-01

Client ..... AECOM
Project ..... Circle Interchange Reconstruction
Location ..... Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 591.98 ft
North: 1897749.88 ft
East: 1171805.18 ft
Station: 1827+13.77
Offset: 38.2558 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	540.2	Very stiff to hard, gray SILTY CLAY, trace gravel	45		15	0 2 2	0.41 B	25
			50		16	1 1 2	0.33 B	25
			55		17	6 7 13	3.36 B	19
	518.2	Loose, gray SILT --Wet--	60		18	13 18 21	4.84 B	14
	515.2	Hard, gray SILTY CLAY, trace gravel						
	525.2	Very stiff, gray CLAY, trace gravel	65		19	10 12 19	4.92 B	18
		--L_L(%)=41, P_I(%)=18-- --%Gravel=0.1-- --%Sand=3.0-- --%Silt=46.6-- --%Clay=50.3-- --A-7-6 (23)--	70		20	6 9 10	2.54 B	24
			75		21	2 4 5	NP	19
			80		22	13 20 28	8.94 S	13

GENERAL NOTES

Begin Drilling 07-25-2013 Complete Drilling 07-26-2013
Drilling Contractor Wang Testing Services Drill Rig CME-55 TMR [85%]
Driller R&J Logger A. Tomaras Checked by C. Marin
Drilling Method 2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion

WATER LEVEL DATA

While Drilling ▽ Rotary wash
At Completion of Drilling ▼ mud in the borehole
Time After Drilling NA
Depth to Water ▼ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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BORING LOG 1705-B-06A

WEI Job No.: 1100-04-01

Client ..... AECOM
Project ..... Circle Interchange Reconstruction
Location ..... Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 591.98 ft
North: 1897749.88 ft
East: 1171805.18 ft
Station: 1827+13.77
Offset: 38.2558 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	510.2	Very dense to hard, gray SILTY LOAM to SILTY CLAY LOAM, trace gravel						
			85		23	33 46 50/6	> 4.50 P	10
			90		24	13 20 26	8.61 S	11
		--HARD DRILLING-- --Possible Cobbles--						
	499.0	Very dense, SANDY GRAVEL, with rock fragments	95		25	21 24 29	NP	11
		--HARD DRILLING-- --Possible Cobbles--						
	490.0	Strong, fair to good rock quality, light gray, fresh, joint breaks with little to no infill, slightly vuggy DOLOSTONE with stylolites --Run 1 - RECOVERY=100%-- --RQD (top 5ft)=45%-- --RQD= (10ft)=62%--	105		26	60/6	NP	17
			110	CORE	1		NP	
	480.0	Boring terminated at 112.00 ft						
			115					
			120					

GENERAL NOTES

Begin Drilling 07-25-2013 Complete Drilling 07-26-2013
Drilling Contractor Wang Testing Services Drill Rig CME-55 TMR [85%]
Driller R&J Logger A. Tomaras Checked by C. Marin
Drilling Method 2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion

WATER LEVEL DATA

While Drilling ▽ Rotary wash
At Completion of Drilling ▼ mud in the borehole
Time After Drilling NA
Depth to Water ▼ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 1100401.GPJ WANGENG.GDT 9/14/17

NOTE:

1. Boring Log 1705-B-06A station and offset along Ⓑ Ramp EN is: Sta. 1611+68.52 Offset 8.70 Lt.

FILE NAME: pw:\\617479-PWINT.aecomonline.localaAECOM_DS02_NA\Documents\01 Americas\Transportation\60269938 Circle\Phase_II\000_CAD\008_Structural\Structure_016-1811\Sheet\016181 1-60X79-S017 Boring6
9:32:54 AM

HBM ENGINEERING GROUP, LLC					
USER NAME = ahmad.issa	DESIGNED - SK	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BORING LOGS - VI STRUCTURE NO. 016-1811	
	CHECKED - KJD	REVISED -			
PLOT SCALE = N.T.S	DRAWN - SK	REVISED -			
PLOT DATE = 7/30/2018	CHECKED - MI, MAI	REVISED -		SHEET NO. S4-17 OF S4-18 SHEETS	

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-005R&B	COOK	888	511
		CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			

Page 1 of 3

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BORING LOG 1710-B-01

WEI Job No.: 1100-04-01

Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 589.38 ft
North: 1897814.39 ft
East: 1171841.78 ft
Station: 1704+98.15
Offset: 72.7367 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	589.0	5-inch thick, brown SILTY CLAY LOAM --TOPSOIL--						
		Medium dense, brown SILTY LOAM, trace gravel --FILL--			1	5 7 8	NP	13
	586.4	Very stiff, brown SILTY CLAY LOAM, trace gravel, brick fragments --FILL--	5		2	5 7 5	2.54	15
	583.9	Dense, brown, SANDY LOAM, trace gravel, brick fragments --FILL--			3	10 16 17	NP	22
	581.4	Stiff, gray SILTY CLAY LOAM, trace gravel	10		4	3 3 4	1.07 B	22
	578.9	Soft to medium stiff, CLAY to SILTY CLAY, trace gravel			5	1 1 2	0.33 B	25
			15		6	1 1 2	0.33 B	24
					7	1 1 2	0.41 B	26
					8	1 1 2	0.49 B	24
			20					
			25		9	1 2 2	0.41 B	23
					10	1 1 2	0.25 B	22
					11	1 1 2	0.41 B	24
			30		12	1 2 2	0.41 B	24
					13	1 1 3	0.49 B	23
			35					
					14	1 2 3	0.33 B	24
			40					

GENERAL NOTES

Begin Drilling: 09-24-2013 Complete Drilling: 09-25-2013
Drilling Contractor: K&S Drill Rig: D-120 TMR
Driller: R&E Logger: F. Bozga Checked by: L. Iordache
Drilling Method: 4.25" HSA, boring backfilled upon completion

WATER LEVEL DATA

While Drilling: 85.00 ft
At Completion of Drilling: 90.00 ft
Time After Drilling: NA
Depth to Water: NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 1100401.GPJ WANGENG.GDT 9/14/17

Page 2 of 3

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BORING LOG 1710-B-01

WEI Job No.: 1100-04-01

Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 589.38 ft
North: 1897814.39 ft
East: 1171841.78 ft
Station: 1704+98.15
Offset: 72.7367 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	537.6	Very stiff, gray SILTY CLAY, trace gravel						
			45		15	1 2 3	0.41 B	25
			50		16	2 3 5	0.66 B	20
	532.6	Dense to very dense, gray SILTY LOAM, trace gravel			17	4 7 12	3.94 B	20
			55					
			60		18	11 14 20	NP	11
			65		19	23 39 37	NP	7
			70		20	12 20 20	NP	10
			75		21	13 20 37	NP	11
			80		22	10 22 40	NP	15

GENERAL NOTES

Begin Drilling: 09-24-2013 Complete Drilling: 09-25-2013
Drilling Contractor: K&S Drill Rig: D-120 TMR
Driller: R&E Logger: F. Bozga Checked by: L. Iordache
Drilling Method: 4.25" HSA, boring backfilled upon completion

WATER LEVEL DATA

While Drilling: 85.00 ft
At Completion of Drilling: 90.00 ft
Time After Drilling: NA
Depth to Water: NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 1100401.GPJ WANGENG.GDT 9/14/17

Page 3 of 3

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BORING LOG 1710-B-01

WEI Job No.: 1100-04-01

Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 589.38 ft
North: 1897814.39 ft
East: 1171841.78 ft
Station: 1704+98.15
Offset: 72.7367 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	502.6	Very dense, gray SILT						
			85		23	17 25 37	NP	9
			90		24	13 50/2"	NP	26
	497.6	Dense, gray GRAVELLY SAND						
			95		25	10 18 20	NP	14
	492.4	--HARD DRILLING-- Very dense, gray DOLOSTONE fragments						
	491.2	--WEATHERED BEDROCK-- --AUGER REFUSAL-- Boring terminated at 98.20 ft			26	50/2"	NP	9
			100					

GENERAL NOTES

Begin Drilling: 09-24-2013 Complete Drilling: 09-25-2013
Drilling Contractor: K&S Drill Rig: D-120 TMR
Driller: R&E Logger: F. Bozga Checked by: L. Iordache
Drilling Method: 4.25" HSA, boring backfilled upon completion

WATER LEVEL DATA

While Drilling: 85.00 ft
At Completion of Drilling: 90.00 ft
Time After Drilling: NA
Depth to Water: NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 1100401.GPJ WANGENG.GDT 9/14/17

NOTE:

1. Boring Log 1710-B-01 station and offset along ℄ Ramp EN is: Sta. 1612+44.28 Offset 13.29 Lt.

FILE NAME: pw:\\6171479-PWINT.aecomonline.localbAECOM_DS02_NA\Documents\01 Americas\Transportation\60269938 Circle\Phase_II\000_CAD\008_Structural\Structure_016-1811\Sheet\016181 1-60X79-S018 Boring7

9:33:00 AM

HBM ENGINEERING GROUP, LLC

USER NAME = ahmad.issa	DESIGNED - SK	REVISED -	
	CHECKED - KJD	REVISED -	
PLOT SCALE = N.T.S	DRAWN - SK	REVISED -	
PLOT DATE = 7/30/2018	CHECKED - MI, MAI	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS - VII
STRUCTURE NO. 016-1811
SHEET NO. S4-18 OF S4-18 SHEETS

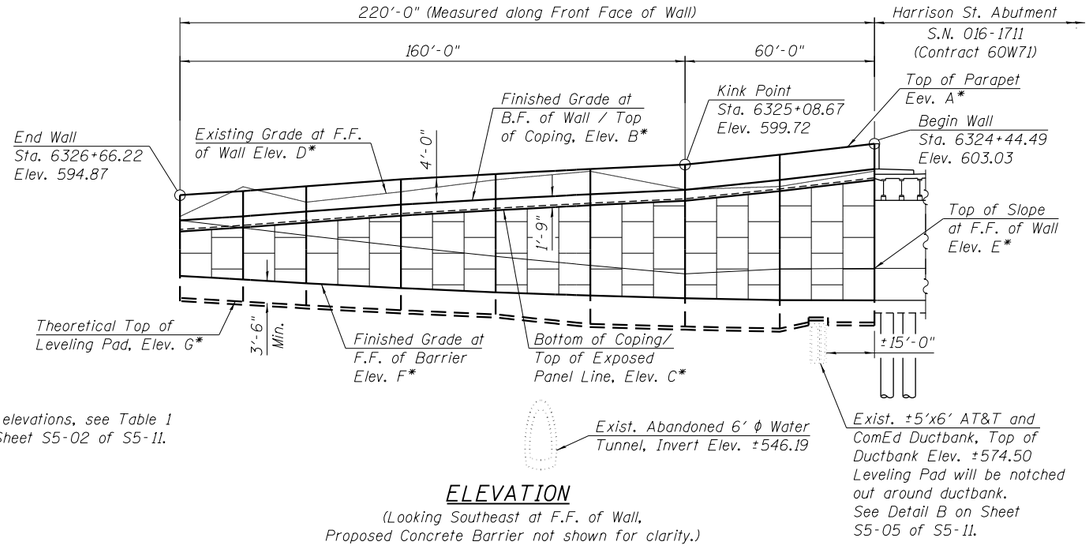
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-005R&B	COOK	888	512
		CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			

Bench Mark: Chisel "X" on chain bolt of fire hydrant in front of 555 W. Harrison St. Elev. 594.46

Existing Structure: Existing Sheet Pile Wall along Existing Ramp EN.

Traffic on Ramp NE, Des Plaines Street, and Harrison Street will be maintained with stage construction.
The Existing CTA Bus turn around will be closed during construction.

No Salvage.

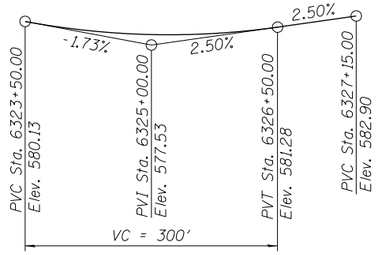


* For elevations, see Table 1 on Sheet S5-02 of S5-11.

ELEVATION

(Looking Southeast at F.F. of Wall.
Proposed Concrete Barrier not shown for clarity.)

Notes:
Wall offsets are measured from the ℄ of Proposed NB C-D Road to the front face of precast panels.
F.F. denotes Front Face.
B.F. denotes Back Face.



PROFILE GRADE

(℄ NB C-D Road)

CURVE DATA

(NB C-D Road)
Prop. Curve P-NCD-NX-3
P.I. Sta. = 6324+41.27
Δ = 20° 56' 44" (RT)
D = 17° 21' 44"
R = 330.00'
T = 61.00'
L = 120.64'
E = 5.59'
e = 5.80%
T.R. = NA
S.E. Run = 105'
P.C. Sta. = 6323+80.27
P.T. Sta. = 6325+00.91

(NB C-D Road)
Prop. Curve P-NCD-NX-4
P.I. Sta. = 6328+76.78
Δ = 59° 05' 41" (LT)
D = 14° 08' 50"
R = 405.00'
T = 229.58'
L = 417.72'
E = 60.54'
e = 5.40%
T.R. = 36'
S.E. Run = 98'
P.C. Sta. = 6326+47.20
P.T. Sta. = 6330+64.91

DESIGN SPECIFICATIONS

2017 AASHTO LRFD Bridge Design Specifications 8th Edition

DESIGN STRESSES

FIELD UNITS

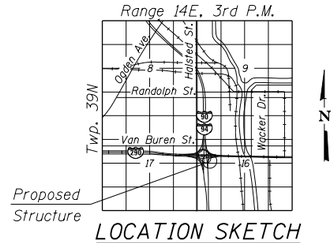
f'c = 4,000 psi
fy = 60,000 psi (Reinforcement)

PRECAST UNITS

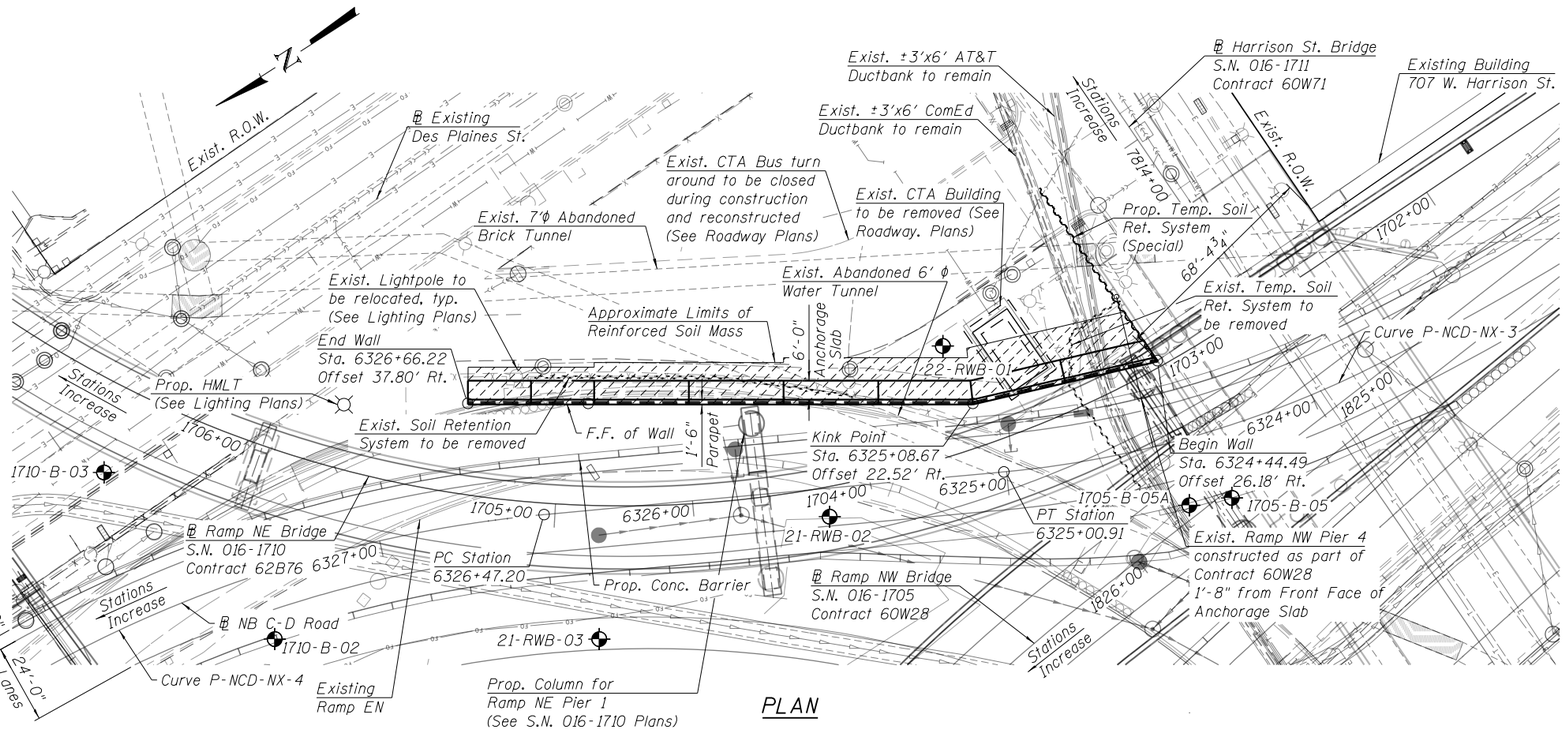
f'c = 4,500 psi

MATTHEW D. SANTEFORD
081-007244
LICENSED STRUCTURAL ENGINEER OF
STATE OF ILLINOIS
07/30/2018

MATTHEW D. SANTEFORD, P.E., S.E.
NO. 081-007244
EXP. DATE 11/30/2018



LOCATION SKETCH



PLAN

LEGEND:

Ex. Chain Link Fence	— x — x — x —	Soil Boring	⊕
Combined Sewer	→→→→→→→→→→	Existing Catch Basin	○
Electric	—E—E—	Proposed Catch Basin	●
Ex. Storm Sewer	—▷—▷—▷—	Existing Manhole	◎
Prop. Storm Sewer	—▶—▶—▶—	Proposed Manhole	⊙
Ex. ITS Cable	— — — — —	Proposed Inlet	▬
Ex. Gas Line	—G—	Limits of Soil Reinforcement	▨
Ex. Fiber Optic	—FO—FO—		
Ex. AT&T Line	—T—T—		

GENERAL PLAN AND ELEVATION
RETAINING WALL 22A ALONG NB C-D ROAD
F.A.I. RTE. 90/94 (KENNEDY EXPRESSWAY)
SECTION 2014-005R&B
COOK COUNTY
STATION 6324+44.49 TO STATION 6326+66.22
STRUCTURE NO. 016-1813

3:20:25 PM
016813-60X79-S001-GPE.dgn

TranSystems

USER NAME = wjcollett1	DESIGNED - DJG	REVISED -	
	CHECKED - KRS	REVISED -	
PLOT SCALE = 48.00 ' / in.	DRAWN - MJR	REVISED -	
PLOT DATE = 7/26/2018	CHECKED - KRS/WJC	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. S5-01 OF S5-11 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2014-005R&B	COOK	888	513
		CONTRACT NO. 60X79		
	ILLINOIS	FED. AID PROJECT		

GENERAL NOTES:

1. Reinforcement bars designated (E) shall be epoxy coated.

2. Plan dimensions and details relative to existing plans are subjected 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 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.

3. Concrete Sealer shall be applied to exposed front face surfaces of the panels, anchorage slab and parapet. Protective Coating shall be applied on the top and back face of parapet and top of exposed anchorage slab.

4. The Contractor shall exercise extreme caution during construction to make certain that construction activities, live load surcharge and other loads applied to the structures will not have detrimental effects on the adjacent building foundations. Any damage during construction shall be repaired by the Contractor at his expense and no charge to the department. Driving piles and temporary sheet piling is not allowed.

5. The Contractor shall provide vibration and displacement monitoring at the locations specified in the Special Provision for Construction Vibration Monitoring and Monitoring Adjacent Structures, to ensure that removal/construction activities in the vicinity of the structures do not have detrimental effects on building foundations. No additional compensation shall be provided to the Contractor for alternative means and methods, or additional precautionary measures, required during removal/ construction activities to satisfy these requirements. See Contract Special Provisions for details.

6. Slipforming of parapets is not allowed.

7. The Contractor shall field verify locations of existing underground utilities. The Contractor shall take all precautions to protect existing utilities during construction of the wall. Any damage to the existing utilities shall be responsibility of the Contractor. The contractor shall locate ComED and AT&T ductbanks prior to preparation of MSE shop drawings.

8. MSE Wall supplier shall design the MSE Wall using granular reinforced mass with minimum effective internal friction angle of 34 degrees and unit weight of 120 lbs./cu. ft. For embankment behind granular reinforced mass, an embankment unit weight of 120 lbs./cu. ft and an effective friction angle of 30 degrees shall be used in the wall system design.

9. The contractor shall coordinate the construction of the proposed structure with the construction of the existing and proposed Ramp EN bridge, proposed Retaining Wall 20, and proposed Pier 1 of Ramp NE. See MOT plan sheets and special provisions, including the Available Work Areas and Sequencing Requirements special provision, for additional construction and coordination requirements.

10. All Lightweight Cellular Concrete Fill shall be Class I, See Special Provisions.

11. The Contractor may encounter abandoned foundation elements that obstruct construction of the proposed structure. Removal and disposal of portion of abandoned foundation elements shall be per special provision "Abandoned Foundation Removal". See Civil plans for approximate location and quantity.

SUGGESTED CONSTRUCTION SEQUENCE

1. Locate existing utilities that are to remain. Contractor to coordinate any required improvements to or removals of existing utilities with utility owner(s). See Utility Location Plans and ITS Plans.
2. Remove existing CTA Building (See Roadway Plans).
3. Install Temporary Soil Retention System (Special) along Harrison Street.
4. Excavate for Retaining Wall 22A and remove existing Temporary Soil Retention System and sheet piling.
5. Construct RW 22A.
6. Begin placing lightweight cellular concrete fill.
7. Install Roadway pavement (See Roadway Plans).
8. No portions of the wall shall be compromised by excavation for other elements of work under the contract. If the sequencing of work requires that the wall construction is staged, the stage line shall be located at a panel edge with any exposed lightweight fill protected from damage.

TOTAL BILL OF MATERIAL

Item	Unit	Total
Structure Excavation	Cu. Yd.	3,569
Concrete Superstructure	Cu. Yd.	126.5
Protective Coat	Sq. Yd.	274
Reinforcement Bars, Epoxy Coated	Pound	15,780
Name Plates	Each	1
Temporary Soil Retention System (Special)	Sq. Ft.	1,078
Concrete Sealer	Sq. Ft.	5,109
Lightweight Cellular Concrete Fill	Cu. Yd.	5,200
Slope Inclinometer	Each	1
Removal of Soil Retention System	L. Sum	1
Mechanically Stabilized Earth Retaining Wall, Special	Sq. Ft.	3,843

INDEX OF SHEETS

STATION 6324+44.49 TO 6326+66.22
BUILT 20__ BY
STATE OF ILLINOIS
F.A.I. RT. 90/94 SEC. 2014-005R&B
LOADING HL-93
STR. NO. 016-1813

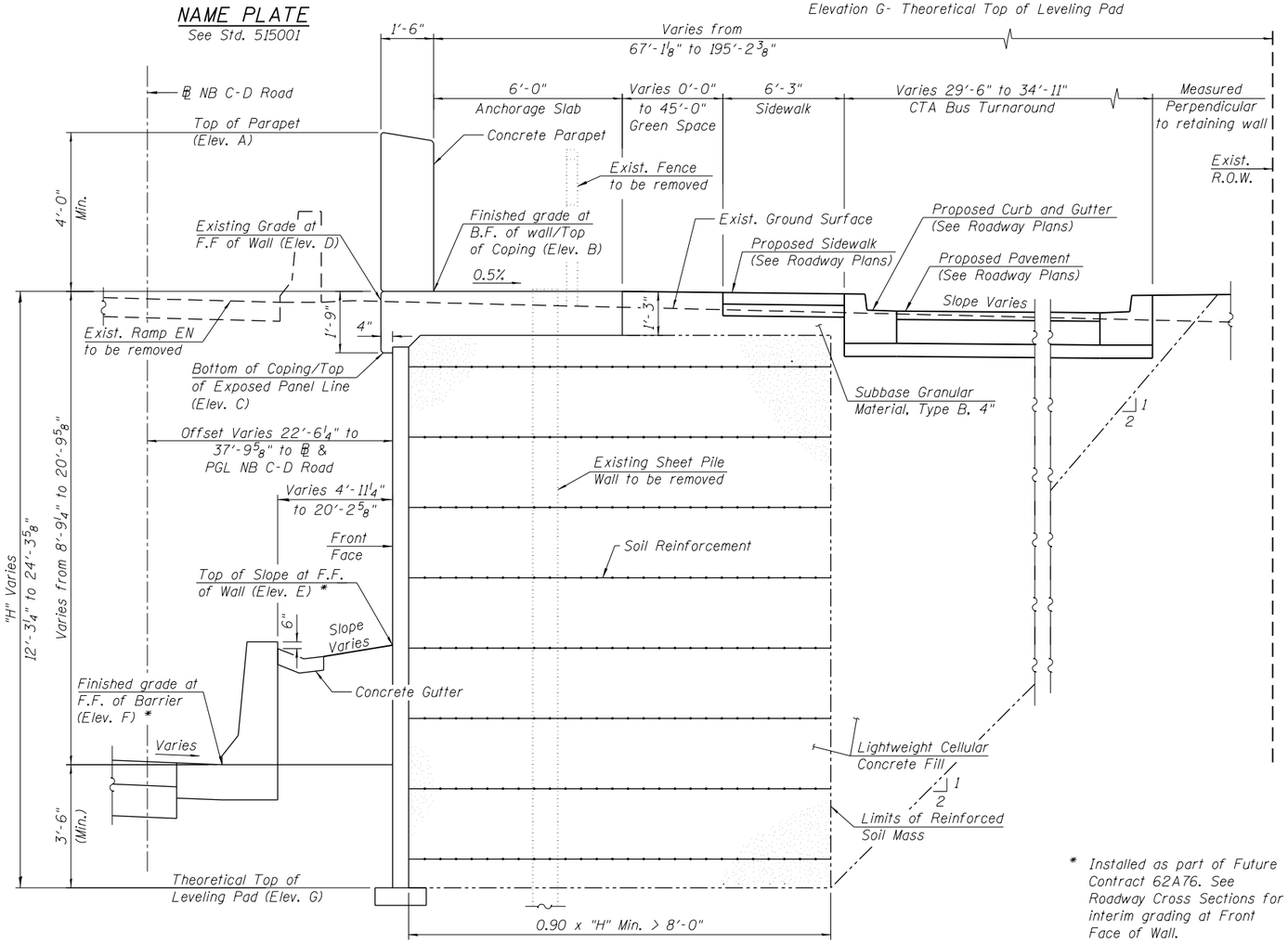
NAME PLATE

See Std. 515001

TABLE 1 - WALL ELEVATIONS

Station	Offset	Elevation A	Elevation B	Elevation C	Elevation D	Elevation E	Elevation F	Elevation G
6324+44.49	26.18' Rt.	603.03	599.03	597.28	598.68	583.30	578.23	574.73
6324+77.06	25.77' Rt.	601.28	597.28	595.53	596.25	583.19	578.25	573.75
6325+08.67	22.52' Rt.	599.72	595.72	593.97	595.77	582.42	578.57	574.07
6325+38.54	25.29' Rt.	599.03	595.03	593.28	598.66	583.75	578.97	574.47
6325+68.41	28.07' Rt.	598.24	594.24	592.49	597.32	585.20	579.49	575.99
6325+98.29	30.84' Rt.	597.38	593.38	591.63	595.41	586.78	580.15	576.65
6326+28.16	33.61' Rt.	596.28	592.28	590.53	593.77	588.48	580.93	577.43
6326+48.00	35.46' Rt.	595.53	591.53	589.78	596.21	589.68	581.52	578.02
6326+66.22	37.80' Rt.	594.87	590.87	589.12	591.51	590.87	582.10	578.60

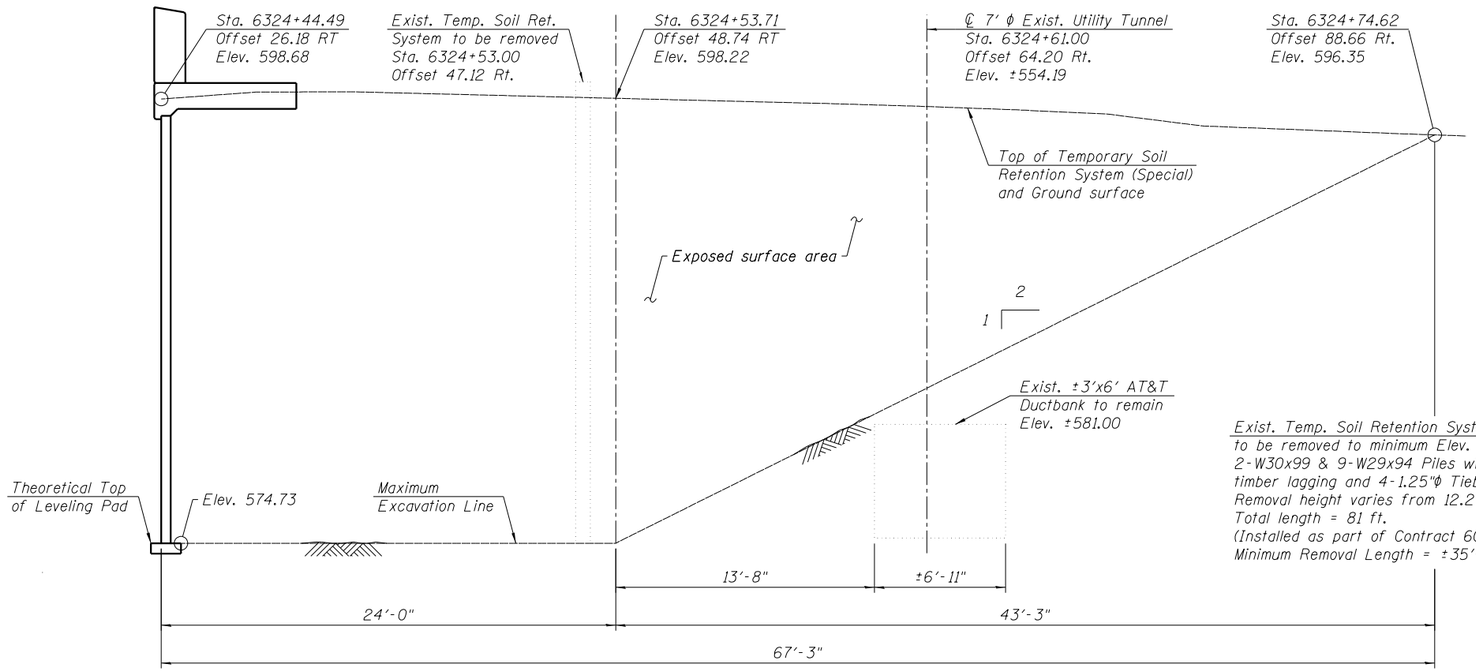
Elevation A- Top of Parapet
Elevation B- Finished Grade at Back Face of Wall / Top of Coping
Elevation C- Bottom of Coping / Top of Exposed Panel Line
Elevation D- Existing Grade at Front Face of Wall
Elevation E- Top of Slope at Front Face of Wall *
Elevation F- Finished Grade at Front Face of Barrier *
Elevation G- Theoretical Top of Leveling Pad



TYPICAL CROSS SECTION

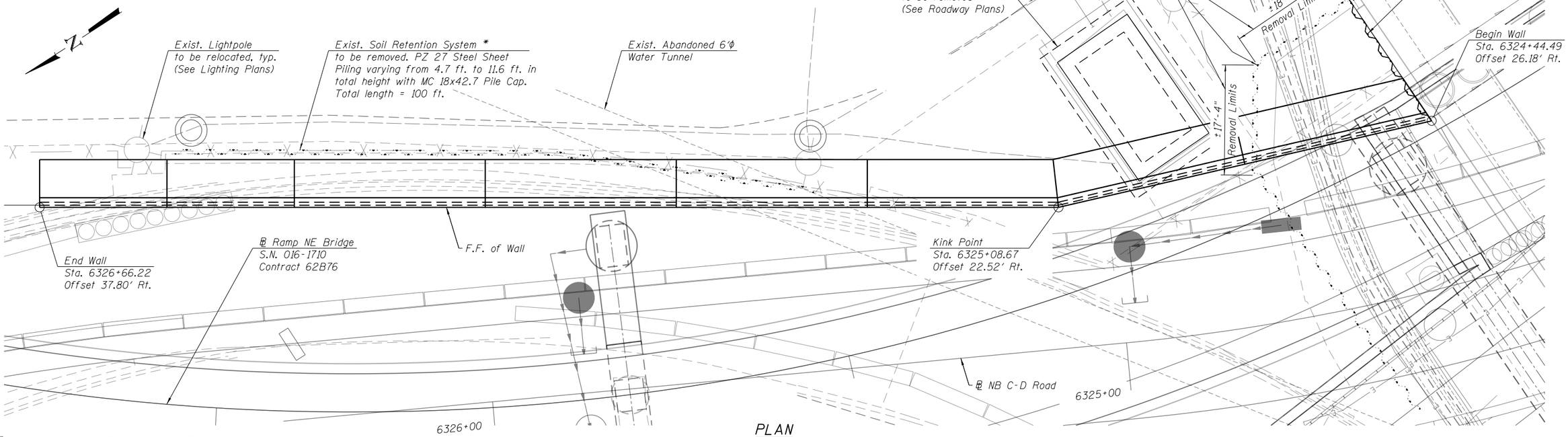
(Looking Upstation)

* Installed as part of Future Contract 62A76. See Roadway Cross Sections for interim grading at Front Face of Wall.



TEMPORARY SOIL RETENTION SYSTEM (SPECIAL)

(Along Harrison St. Bridge S.N. 016-1711 Approach Slab)



PLAN

Notes:

A cantilevered sheet piling design does not appear feasible and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan details and calculations for review and acceptance by the Engineer.

The maximum allowable excavation slope is 1:2 (V:H).

Any damage to existing utilities during construction shall be repaired at the Contractor's expense.

See Suggested Construction Sequence on Sheet S5-02 of S5-11.

Contractor shall field verify location and type of existing temporary soil retention system at Harrison St. Bridge prior to construction.

In addition to vibration and displacement monitoring, the Contractor shall monitor movements with Slope Inclinometers. All inclinometers shall be installed prior to drilling. See special provision for Slope Inclinometer.

BILL OF MATERIAL

Item	Unit	Total
Temporary Soil Retention System (Special)	Sq. Ft.	1,078
Removal of Soil Retention System	L. Sum	1

* Cost included with Removal of Soil Retention System.

USER NAME = wjcolletti	DESIGNED - DJG	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	CHECKED - KRS	REVISED -	
PLOT SCALE = 16.00 ' / in.	DRAWN - MJR	REVISED -	
PLOT DATE = 7/26/2018	CHECKED - KRS/WJC	REVISED -	

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TEMPORARY SOIL RETENTION SYSTEM (SPECIAL) DETAILS
RETAINING WALL 22A (STRUCTURE NO. 016-1813)
SHEET NO. S5-03 OF S5-11 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2014-005R&B	COOK	888	515
		CONTRACT NO. 60X79		
ILLINOIS	FED. AID PROJECT			

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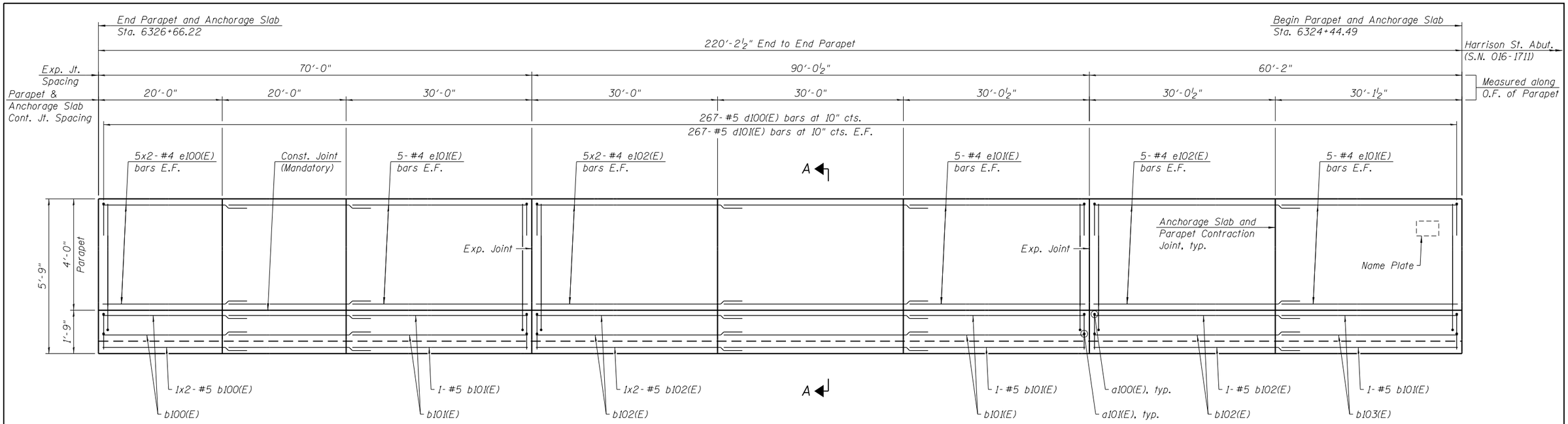
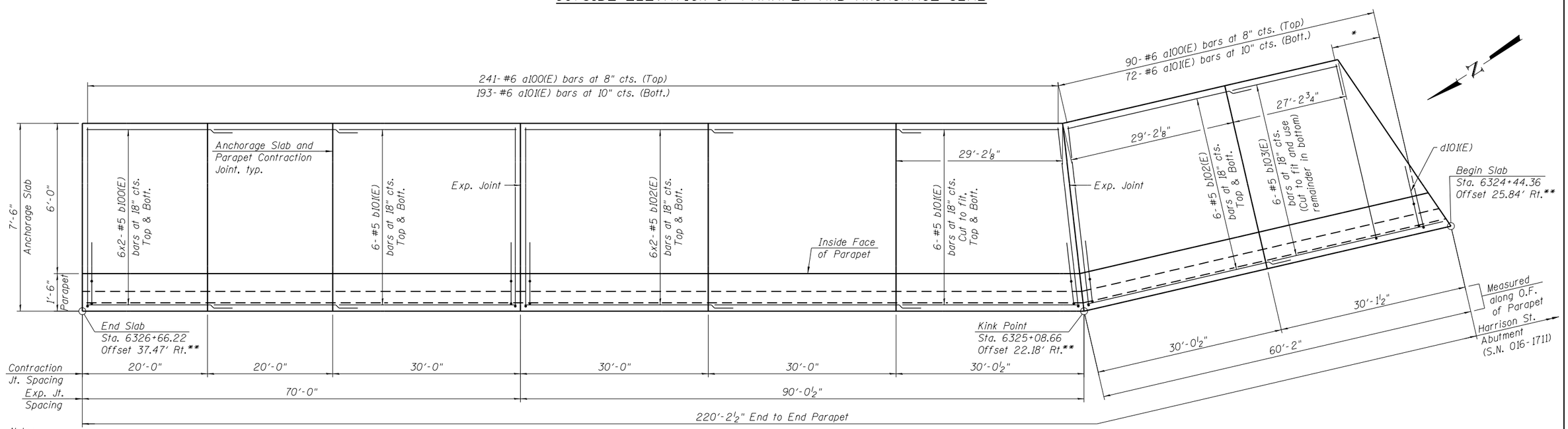


OUTSIDE ELEVATION OF PARAPET AND ANCHORAGE SLAB



PARAPET AND ANCHORAGE SLAB PLAN

Notes:
I.F. = Inside Face
O.F. = Outside Face
E.F. = Each Face
For Section A-A, Bar Diagram, Expansion and Contraction Joint Details and Bill of Material, see S5-05 of S5-11.
Preformed Flexible Foam Expansion Joint Filler (called out as PJF in plans) shall follow Article 1051.09 of IDOT Standard Specifications. Cost included in Concrete Superstructure.
Anchorage slab shall be constructed in final stage.

MIN. BAR LAPS
#4 = 2'-8"
#5 = 3'-4"

* Cut bar for edge clearance.
** Offsets measured to front face of anchorage slabs.

TranSystems	USER NAME = wjcollett1	DESIGNED - DJG	REVISED -
		CHECKED - KRS	REVISED -
	PLOT SCALE = 0.1667 ' / in.	DRAWN - MJR	REVISED -
	PLOT DATE = 7/26/2018	CHECKED - KRS/WJC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PARAPET AND ANCHORAGE SLAB PLAN AND ELEVATION
RETAINING WALL 22A (STRUCTURE NO. 016-1813)
SHEET NO. S5-04 OF S5-11 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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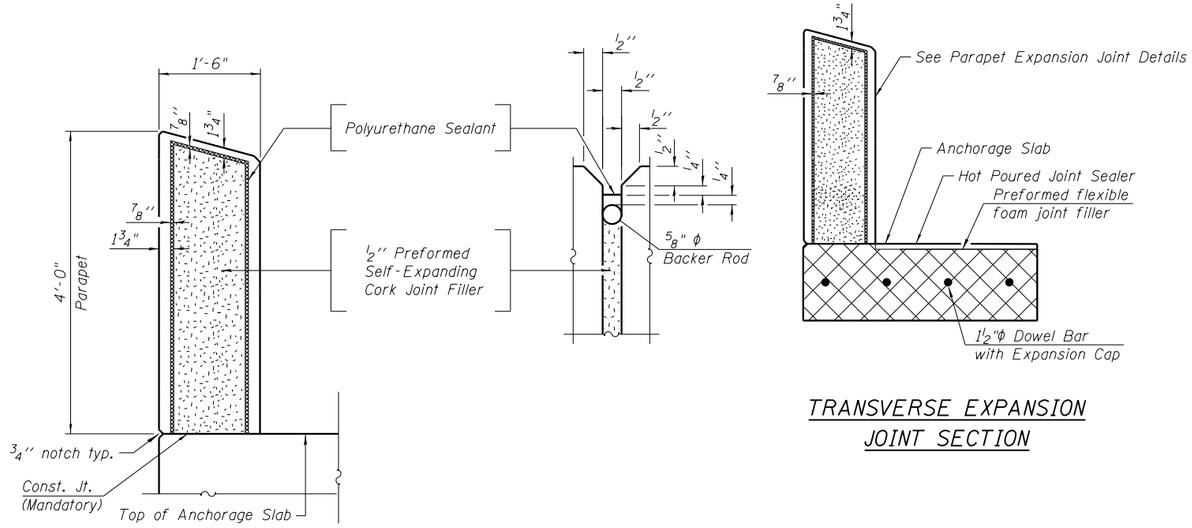
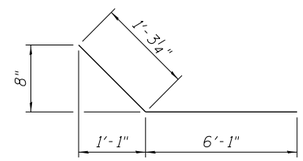
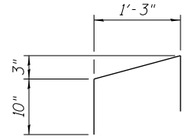


PARAPET JOINT DETAILS

TRANSVERSE EXPANSION JOINT SECTION

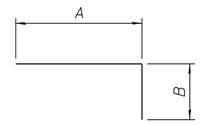


BAR a101(E)

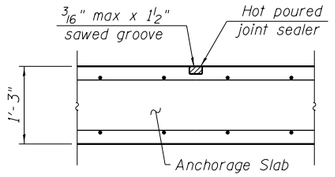


BAR d100(E)

Bar	A	B
a100(E)	7'-3"	1'-5"
d101(E)	4'-4"	1'-0"



BARS a100(E) and d101(E)

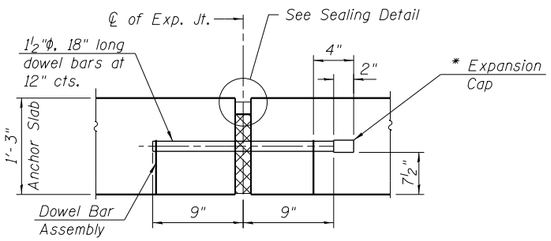


TRANSVERSE CONTRACTION JOINT

See Article 420.05 & 420.12 of the Standard Specifications

BILL OF MATERIAL

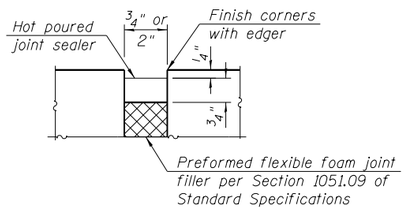
Bar	No.	Size	Length	Shape
a100(E)	331	#6	8'-8"	
a101(E)	265	#6	7'-4"	
b100(E)	26	#5	23'-4"	
b101(E)	27	#5	29'-9"	
b102(E)	39	#5	33'-4"	
b103(E)	6	#5	56'-1"	
d100(E)	267	#5	3'-0"	
d101(E)	534	#5	5'-4"	
e100(E)	20	#4	22'-8"	
e101(E)	30	#4	29'-9"	
e102(E)	30	#4	32'-8"	
Concrete Superstructure		Cu. Yd.	126.5	
Protective Coat		Sq. Yd.	274	
Reinforcement Bars, Epoxy Coated		Pound	15,780	
Concrete Sealer		Sq. Ft.	5,109	



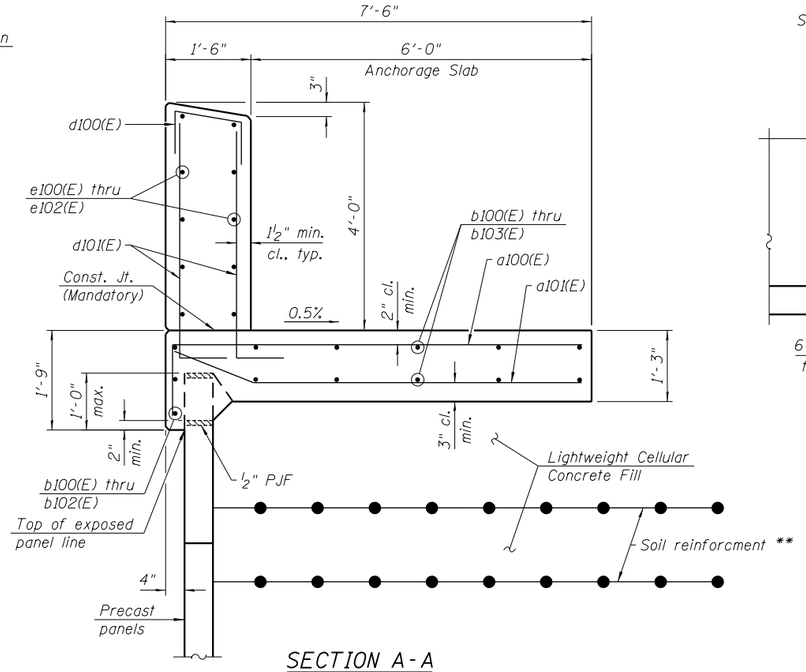
ANCHOR SLAB TO ANCHOR SLAB TRANSVERSE EXPANSION JOINT

Expansion Joint Filler, Sealer and Dowel Bars included in cost of Concrete Superstructure.

* Expansion caps shall be installed on the exposed end of each dowel bar once header has been removed and the joint filler material has been installed.

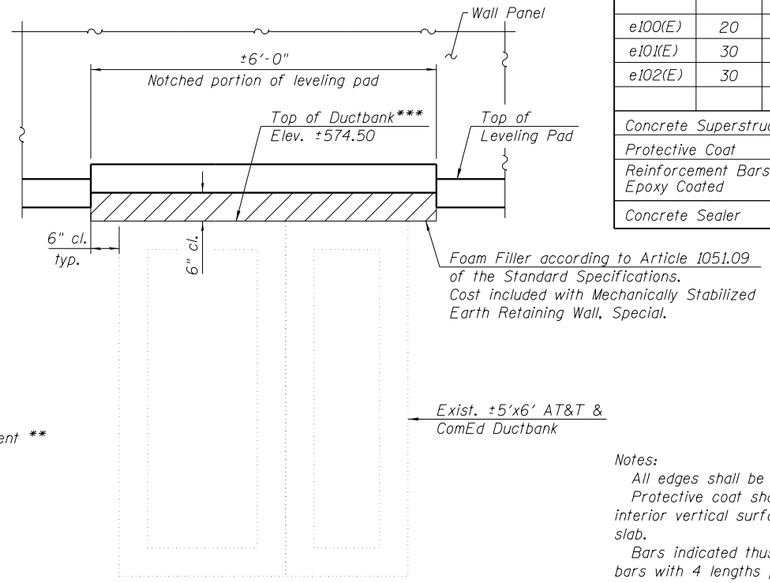


SEALER DETAIL



SECTION A-A

** The M.S.E. wall supplier's internal stability design shall account for the anchorage slab's bearing pressure surcharge of 1.0 ksf and horizontal sliding force of 0.5 kips/ft. of wall.



DETAIL B

***Refer to Note 7 on Sheet S5-02 of S5-11.

Notes:

All edges shall be chamfered 3/4 inches.

Protective coat shall be applied to the parapet top and interior vertical surfaces and top of exposed anchorage slab.

Bars indicated thus 3x4-#5 etc. indicates 3 lines of bars with 4 lengths per line.

See Sheet S5-02 of S5-11 for additional notes for MSE wall suppliers.

The Polyurethane Sealant shall be according to Article 1050.04 of Std. Spec. and the color shall be gray.

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	CHECKED - KRS	REVISED -
PLOT SCALE = Ø2 '-' / in.	DRAWN - MJR	REVISED -
PLOT DATE = 7/26/2018	CHECKED - KRS/WJC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PARAPET AND ANCHORAGE SLAB DETAILS
RETAINING WALL 22A (STRUCTURE NO. 016-1813)
SHEET NO. S5-05 OF S5-11 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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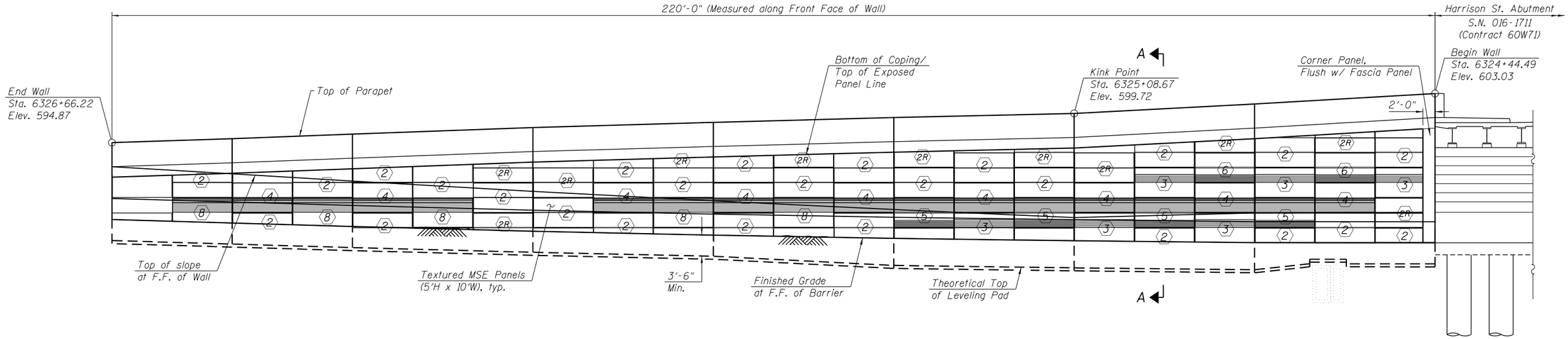
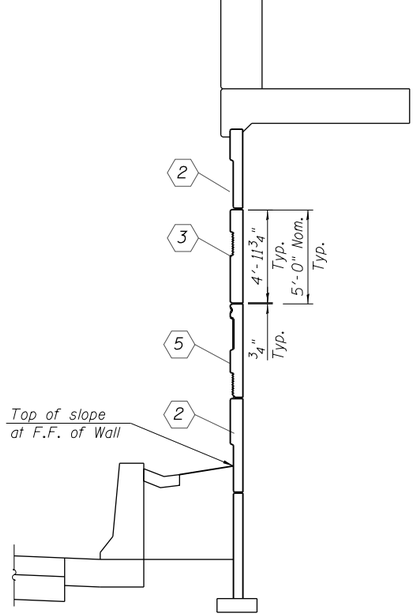
		CONTRACT NO. 60X79		
		ILLINOIS	FED. AID PROJECT	

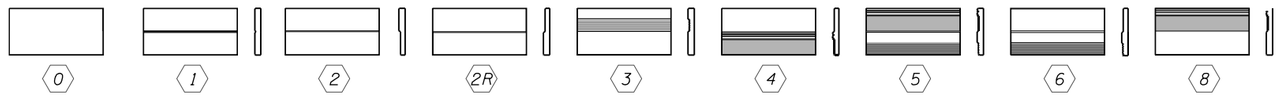


ELEVATION - PRECAST PANEL LAYOUT

(Looking Southeast at F.F. of Wall)



SECTION A-A



PRECAST PANEL TYPES

Notes:

For Precast Panel and Formliner pattern details, see Retaining Wall 18 (S.N. 016-1807) Plans.

Textured formliner for precast panels will not be paid separately and will be included in the cost of Mechanical Stabilized Earth Retaining Wall, Special.

MSE Supplier to determine precast panel dimensions based on proprietary design. The suggested 10'-0" nominal width shown here may change depending on supplier. If this is the case, it will be addressed by the engineer and coordinated with the supplier during the shop drawing submittal and reviews.

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	CHECKED - KRS	REVISED -
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PLOT DATE = 7/26/2018	CHECKED - KRS/WJC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ARCHITECTURAL DETAILS
RETAINING WALL 22A (STRUCTURE NO. 016-1813)
SHEET NO. S5-06 OF S5-11 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2014-005R&B	COOK	888	518
		CONTRACT NO. 60X79		
	ILLINOIS	FED. AID PROJECT		

Wang Engineering
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1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG 22-RWB-01

WEI Job No.: 1100-04-01

Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 595.62 ft
North: 1897646.18 ft
East: 1171875.74 ft
Station: 1703+67.42
Offset: 31.6147 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	596.1	12-inch thick CRUSHED STONE							
		Very stiff to hard, brown and gray SILTY CLAY LOAM, trace gravel and brick fragments --FILL--				1	7 10 10	> 4.50 P	15
			5			2	4 7 9	> 4.50 P	13
						3	3 22 12	2.75 P	17
	587.6	Medium dense, dark brown GRAVELLY LOAM; wet --FILL--				4	19 0 10	NP	16
	585.1	Stiff, gray SILTY CLAY, trace gravel	10			5	3 3 4	1.72 B	26
			15			6	2 4 6	1.97 B	23
	580.1	Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel				7	1 2 3	0.66 B	23
			20			8	1 1 2	0.25 B	25
						9	0 1 2	0.16 B	32
			25			10	0 1 2	0.25 B	27
						11	1 4 4	0.50 P	19
			30			12	2 2 2	0.25 B	23
						13	0 1 2	0.33 B	26
			35			14	1 2 2	0.33 B	27
			40						

GENERAL NOTES

Begin Drilling: 03-13-2014 Complete Drilling: 03-16-2014
Drilling Contractor: Wang Testing Services Drill Rig: CME-55 TMR [85%]
Driller: R&N Logger: F. Bozga Checked by: C. Marin
Drilling Method: 2.25" SSA to 15', mud rotary thereafter, boring
backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ Rotary wash
At Completion of Drilling: ▼ mud in the borehole
Time After Drilling: NA
Depth to Water: ▽ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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Fax: (630) 953-9938

BORING LOG 22-RWB-01

WEI Job No.: 1100-04-01

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Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
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East: 1171875.74 ft
Station: 1703+67.42
Offset: 31.6147 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
			45			15	0 2 2	0.49 B	24
			50			16	1 3 4	0.25 P	25
	538.9	Hard, gray SILTY CLAY LOAM, trace gravel	55			17	1 2 2	0.25 B	28
			60			18	7 17 23	5.74 S	14
	518.9	Medium dense, gray SILT; wet --possible groundwater bearing--							
			65			19	10 16 20	8.69 B	12
			70			20	7 14 24	6.07 B	19
			75			21	6 8 12	4.35 B	18
			80			22	3 5 7	NP	27

GENERAL NOTES

Begin Drilling: 03-13-2014 Complete Drilling: 03-16-2014
Drilling Contractor: Wang Testing Services Drill Rig: CME-55 TMR [85%]
Driller: R&N Logger: F. Bozga Checked by: C. Marin
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Time After Drilling: NA
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The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG 22-RWB-01

WEI Job No.: 1100-04-01

Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 595.62 ft
North: 1897646.18 ft
East: 1171875.74 ft
Station: 1703+67.42
Offset: 31.6147 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	513.9	Very dense, gray SILTY LOAM, trace gravel							
			85			23	13 25 30	NP	11
	491.6	--HARD DRILLING-- --Possible Cobbles--				27	50/5	NP	8
	490.6	--WEATHERED BEDROCK--	105						
		Strong, light gray, fair rock mass quality, bedded fresh DOLOSTONE, up to 18-inch beds, 10-inch joints spacing, horizontal joints with none to more than 0.2-inch greenish gray argillaceous infilling, hard joint wall, with stylolitic surfaces, and moderately vuggy porosity --Run 1 - RECOVERY=90%-- --RQD=75%-110				1	CORE		
			90			24	30 46 50/3	NP	15
			95			25	23 50/4	NP	14
	480.6	Boring terminated at 115.00 ft	115						
	496.9	--HARD DRILLING-- --Possible Cobbles-- Very dense, gray GRAVELLY SANDY LOAM to SILTY LOAM --possible groundwater bearing--							
			100			26	50 50/4	NP	8
			120						

GENERAL NOTES

Begin Drilling: 03-13-2014 Complete Drilling: 03-16-2014
Drilling Contractor: Wang Testing Services Drill Rig: CME-55 TMR [85%]
Driller: R&N Logger: F. Bozga Checked by: C. Marin
Drilling Method: 2.25" SSA to 15', mud rotary thereafter, boring
backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ Rotary wash
At Completion of Drilling: ▼ mud in the borehole
Time After Drilling: NA
Depth to Water: ▽ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Notes:
Boring Log 22-RWB-01 station and offset along ℄ NB C-D Road is: Sta. 6325+18.62, Offset 38.59' Rt.

3:22:13 PM
018813-60X79-S007-Boring_1.dgn

TranSystems

USER NAME = wjcolletti	DESIGNED - DJG	REVISED -
	CHECKED - KRS	REVISED -
PLOT SCALE = 0.1667 ' / in.	DRAWN - MJR	REVISED -
PLOT DATE = 7/26/2018	CHECKED - KRS/WJC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS 1
RETAINING WALL 22A (STRUCTURE NO. 016-1813)
SHEET NO. S5-07 OF S5-11 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2014-005R&B	COOK	888	519
		CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			

Wang Engineering
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1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG 1710-B-02

WEI Job No.: 1100-04-01

Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 586.37 ft
North: 1897868.08 ft
East: 1171913.23 ft
Station: 1705+72.43
Offset: 55.5596 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	586.37	10-inch thick, brown SILTY LOAM --TOPSOIL--							
		Hard, brown, SILTY CLAY LOAM, little gravel, wood and brick fragments --FILL--				1	22 18 11	> 4.50 P	13
			5			2	5 6 7	2.71 S	17
	580.9	Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel				3	2 3 3	0.57 B	24
			10			4	0 1 2	0.33 B	25
						5	0 0 0	0.25 B	25
			15			6	0 2 2	0.33 B	16
						7	0 0 1	0.33 B	26
			20			8	1 1 1	0.25 B	24
			25			9	0 1 1	< 0.25 P	23
						10	0 0 0	0.25 B	19
			30			11	0 2 2	< 0.25 P	18
						12	0 1 2	0.41 B	25
			35			13	1 1 2	0.33 B	26
			40			14	0 1 1	0.33 B	26

GENERAL NOTES

Begin Drilling: 10-01-2013 Complete Drilling: 10-01-2013
Drilling Contractor: Wang Testing Services Drill Rig: D-50 TMR [78%]
Driller: R&R Logger: B. Wilson Checked by: L. Iordache
Drilling Method: 2.25" SSA to 10', mud rotary thereafter, boring
backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ 88.50 ft
At Completion of Drilling: ▼ mud in the borehole
Time After Drilling: NA
Depth to Water: ▼ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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BORING LOG 1710-B-02

WEI Job No.: 1100-04-01

Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 586.37 ft
North: 1897868.08 ft
East: 1171913.23 ft
Station: 1705+72.43
Offset: 55.5596 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
			45			15	0 1 2	0.25 B	29
	539.6	Very stiff, gray SILTY CLAY LOAM, trace gravel							
			50			16	3 6 8	2.21 B	22
			55			17	6 8 10 22	3.00 P	16
	529.6	Very stiff to hard, gray SILTY LOAM to SILTY CLAY LOAM, trace gravel							
			60			18	23 33 33	5.74 S	11
			65			19	11 18 24	5.90 S	17
			70			20	11 10 26	7.30 S	12
			75			21	50/2"	> 4.50 S	17
			80			22	30 36 43	5.66 S	9

GENERAL NOTES

Begin Drilling: 10-01-2013 Complete Drilling: 10-01-2013
Drilling Contractor: Wang Testing Services Drill Rig: D-50 TMR [78%]
Driller: R&R Logger: B. Wilson Checked by: L. Iordache
Drilling Method: 2.25" SSA to 10', mud rotary thereafter, boring
backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ 88.50 ft
At Completion of Drilling: ▼ mud in the borehole
Time After Drilling: NA
Depth to Water: ▼ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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BORING LOG 1710-B-02

WEI Job No.: 1100-04-01

Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 586.37 ft
North: 1897868.08 ft
East: 1171913.23 ft
Station: 1705+72.43
Offset: 55.5596 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--Cobble at 83.5'-84'--	85			23	13 21 26	3.53 S	24
	499.6	Very dense, gray GRAVELLY SAND --possible underpressure groundwater bearing--				24	22 32 43	NP	12
		--HARD DRILLING-- --Possible Cobbles--	90						
			95			25	50/4"	NP	6
		--HARD DRILLING-- --Possible Cobbles--	100			26	50/3"	NP	11
		--HARD DRILLING-- --Possible Cobbles--	105						
	483.9	--ROLLER BIT REFUSAL-- Boring terminated at 102.50 ft	110						
			115						
			120						

GENERAL NOTES

Begin Drilling: 10-01-2013 Complete Drilling: 10-01-2013
Drilling Contractor: Wang Testing Services Drill Rig: D-50 TMR [78%]
Driller: R&R Logger: B. Wilson Checked by: L. Iordache
Drilling Method: 2.25" SSA to 10', mud rotary thereafter, boring
backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ 88.50 ft
At Completion of Drilling: ▼ mud in the borehole
Time After Drilling: NA
Depth to Water: ▼ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 1100040I.GPJ WANGENG.GDT 1/29/18

Notes:
Boring Log 1710-B-02 station and offset along ℄ NB C-D Road is: Sta. 6327+38.20, Offset 20.90' Lt.

3:22:17 PM
016813-60X79-S008-Boring_2.dgn

TranSystems

USER NAME = wjcolletti	DESIGNED - DJG		REVISED -
	CHECKED - KRS		REVISED -
PLOT SCALE = 0.1667 ' / in.	DRAWN - MJR		REVISED -
PLOT DATE = 7/26/2018	CHECKED - KRS/WJC		REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS 2
RETAINING WALL 22A (STRUCTURE NO. 016-1813)
SHEET NO. S5-08 OF S5-11 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2014-005R&B	COOK	888	520
		CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			

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Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG 1710-B-03

WEI Job No.: 1100-04-01

Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 587.04 ft
North: 1897891.66 ft
East: 1171988.13 ft
Station: 1706+38.71
Offset: 29.9313 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	586.8	2.5-inch thick ASPHALT over 9.5-inch thick CONCRETE							
	586.0	--PAVEMENT--							
		Medium dense, white CRUSHED STONE aggregate				1	6 5 7	NP	17
		--FILL--							
	584.0	Very stiff, gray SILTY CLAY LOAM, trace gravel							
		--L_L(%)=32, P_L(%)=19--				2	3 3 4	3.61 B	19
		--%Gravel=2.0--							
		--%Sand=16.6--	5						
		--%Silt=52.1--							
		--%Clay=29.3--							
		--A-6(10)--							
	581.5	Very soft to medium stiff, gray CLAY to SILTY CLAY LOAM, trace gravel				3	2 2 2	0.82 B	20
						4	2 2 1	0.33 B	24
			10						
						5	0 1 1	0.25 B	28
		--L_L(%)=33, P_L(%)=18--				6	0 0 1	0.16 B	25
		--%Gravel=3.1--							
		--%Sand=17.5--							
		--%Silt=50.4--	15						
		--%Clay=29.0--							
		--A-6(11)--				7	0 0 2	0.08 B	26
						8	0 1 2	0.16 B	27
			20						

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
						9	0 0 2	0.33 B	26
			25						
						10	0 2 1	0.33 B	26
						11	0 2 1	0.16 B	25
						12	0 1 1	0.16 B	27
			30						
		--L_L(%)=34, P_L(%)=18--				13	0 2 2	0.08 B	26
		--%Gravel=5.2--							
		--%Sand=14.6--							
		--%Silt=48.4--	35						
		--%Clay=31.9--							
		--A-6(12)--				14	2 1 3	0.25 B	25
			40						

GENERAL NOTES

Begin Drilling: 10-14-2013 Complete Drilling: 10-14-2013
Drilling Contractor: Wang Testing Services Drill Rig: CME-55 TMR [85%]
Driller: R&J Logger: A. Tomaras Checked by: L. Iordache
Drilling Method: 2.25" SSA to 10', mud rotary thereafter, boring
backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ Rotary wash
At Completion of Drilling: ▼ mud in the borehole
Time After Drilling: NA
Depth to Water: ▽ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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BORING LOG 1710-B-03

WEI Job No.: 1100-04-01

Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 587.04 ft
North: 1897891.66 ft
East: 1171988.13 ft
Station: 1706+38.71
Offset: 29.9313 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	540.3	Stiff to very stiff, gray CLAY to SILTY CLAY, trace gravel							
		--L_L(%)=34, P_L(%)=18--				15	2 1 2	0.25 B	27
		--%Gravel=4.0--	45						
		--%Sand=12.6--							
		--%Silt=47.9--	50			16	4 3 6	1.15 B	22
		--%Clay=35.5--							
		--A-6(12)--							
			55			17	5 7 10	3.12 B	16
	530.3	Hard, gray SILTY LOAM, trace gravel							
			60			18	22 32 34	4.59 S	8

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--L_L(%)=20 P_L(%)=16--	65			19	18 26 28	6.89 S	15
		--%Gravel=1.6--							
		--%Sand=15.1--							
		--%Silt=71.3--	70			20	19 26 32	3.53 S	11
		--%Clay=11.9--							
		--A-4(1)--							
			75			21	15 18 26	7.79 S	13
		--HARD DRILLING--							
		--*Possible Cobbles*--							
			80			22	50 50/3	> 4.50 P	9

GENERAL NOTES

Begin Drilling: 10-14-2013 Complete Drilling: 10-14-2013
Drilling Contractor: Wang Testing Services Drill Rig: CME-55 TMR [85%]
Driller: R&J Logger: A. Tomaras Checked by: L. Iordache
Drilling Method: 2.25" SSA to 10', mud rotary thereafter, boring
backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ Rotary wash
At Completion of Drilling: ▼ mud in the borehole
Time After Drilling: NA
Depth to Water: ▽ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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Fax: (630) 953-9938

BORING LOG 1710-B-03

WEI Job No.: 1100-04-01

Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 587.04 ft
North: 1897891.66 ft
East: 1171988.13 ft
Station: 1706+38.71
Offset: 29.9313 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--HARD DRILLING--							
		--*Possible Cobbles*--							
	484.5	--WEATHERED BEDROCK--							
	483.5	--ROLLER BIT REFUSAL--							
		Boring terminated at 103.50 ft							
		--L_L(%)=23, P_L(%)=15--				23	25 30 32	9.59 S	11
		--%Gravel=5.2--							
		--%Sand=16.7--							
		--%Silt=62.3--	85						
		--%Clay=15.7--							
		--A-4(4)--							
			105						
		--HARD DRILLING--							
	499.5	Very dense, gray GRAVELLY SAND, trace cobbles							
		--possible underpressure groundwater bearing--				24	50 50/2	NP	12
			90						
			110						
						25	50/3	NP	11
		--HARD DRILLING--	95						
		--*Possible Cobbles*--							
			115						
	489.5	Very dense, gray SILTY LOAM, little gravel				26	50/3	NP	11
			100						
			120						

GENERAL NOTES

Begin Drilling: 10-14-2013 Complete Drilling: 10-14-2013
Drilling Contractor: Wang Testing Services Drill Rig: CME-55 TMR [85%]
Driller: R&J Logger: A. Tomaras Checked by: L. Iordache
Drilling Method: 2.25" SSA to 10', mud rotary thereafter, boring
backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ Rotary wash
At Completion of Drilling: ▼ mud in the borehole
Time After Drilling: NA
Depth to Water: ▽ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 1100401.GPJ WANGENG.GDT 1/26/18

Notes:
Boring Log 1710-B-03 station and offset along ℄ NB C-D Road is: Sta. 6327+75.58, Offset 47.56' Rt.

3:22:22 PM
016813_60X79-SG09-Boring_3.dgn

TranSystems

USER NAME = wjcolletti	DESIGNED - DJG	REVISED -	
	CHECKED - KRS	REVISED -	
PLOT SCALE = 0.1667 ' / in.	DRAWN - MJR	REVISED -	
PLOT DATE = 7/26/2018	CHECKED - KRS/WJC	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS 3
RETAINING WALL 22A (STRUCTURE NO. 016-1813)
SHEET NO. S5-09 OF S5-11 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2014-005R&B	COOK	888	521
		CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			

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Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG 1705-B-05A

WEI Job No.: 1100-04-01

Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 580.24 ft
North: 1897604.27 ft
East: 1171792.75 ft
Station: 1825+76.08
Offset: 3.9157 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--Blind drilled--							
	571.2	SILTY CLAY LOAM	5						
		--L_L(%)=31, P_I(%)=17--	10			1	PUSH		26
		--%Gravel=4.4--							
		--%Sand=18.7--							
		--%Silt=48.3--							
		--%Clay=28.6--							
		--A-6 (9)--							
	566.2	Soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel	15						
		--L_L(%)=34, P_I(%)=17--				2	PUSH	0.33 B	24
		--%Gravel=4.2--							
		--%Sand=13.9--							
		--%Silt=49.8--							
		--%Clay=32.1--							
		--A-6 (13)--	20						
		--L_L(%)=32, P_I(%)=17--							
		--%Gravel=2.9--							
		--%Sand=14.3--							
		--%Silt=50.9--							
		--%Clay=31.9--							
		--A-6 (11)--	25						
		--L_L(%)=33, P_I(%)=17--				3	PUSH		26
		--%Gravel=2.9--							
		--%Sand=13.8--							
		--%Silt=49.3--							
		--%Clay=33.9--							
		--A-6 (12)--	30						
						13	0 0 2	0.41 B	27
			35						
						14	0 2 5	0.57 B	18
			40						

GENERAL NOTES

Begin Drilling: 07-23-2013 Complete Drilling: 07-24-2013
Drilling Contractor: Wang Testing Services Drill Rig: D-50 TMR [78%]
Driller: R&N Logger: A. Happel Checked by: C. Marin
Drilling Method: 2.25" SSA to 10', mud rotary thereafter, boring
backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ Rotary wash
At Completion of Drilling: ▼ mud in the borehole
Time After Drilling: NA
Depth to Water: ▼ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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BORING LOG 1705-B-05A

WEI Job No.: 1100-04-01

Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 580.24 ft
North: 1897604.27 ft
East: 1171792.75 ft
Station: 1825+76.08
Offset: 3.9157 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	538.5	Hard, gray SILTY CLAY, trace gravel	45			15	7 12 17	5.44 B	19
			50			16	8 12 20	5.40 B	15
			55			17	7 15 20	5.74 B	17
	523.5	Stiff, gray CLAY							
		--L_L(%)=53, P_I(%)=21--							
		--%Gravel=0.5--							
		--%Sand=2.9--							
		--%Silt=34.0--							
		--%Clay=62.6--							
		--A-7-6 (34)--	60			18	5 5 5	1.15 B	34
	518.5	Medium dense, gray SANDY LOAM							
		--possible groundwater bearing--	65			19	8 10 13	NP	25
	513.5	Very stiff to hard, gray SILTY CLAY LOAM, trace gravel	70			20	10 18 50/4	2.46 S	12
			75			21	21 30 31	6.81 B	13
	503.5	Very dense, gray SILTY LOAM, trace gravel							
		--possible groundwater bearing--	80			22	50/6	NP	20

GENERAL NOTES

Begin Drilling: 07-23-2013 Complete Drilling: 07-24-2013
Drilling Contractor: Wang Testing Services Drill Rig: D-50 TMR [78%]
Driller: R&N Logger: A. Happel Checked by: C. Marin
Drilling Method: 2.25" SSA to 10', mud rotary thereafter, boring
backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ Rotary wash
At Completion of Drilling: ▼ mud in the borehole
Time After Drilling: NA
Depth to Water: ▼ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC I1000401.GPJ WANGENG.GDT 1/29/18

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Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG 1705-B-05A

WEI Job No.: 1100-04-01

Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 580.24 ft
North: 1897604.27 ft
East: 1171792.75 ft
Station: 1825+76.08
Offset: 3.9157 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	497.2	--AUGER REFUSAL--							
		Boring terminated at 83.00 ft	85						
			90						
			95						
			100						

GENERAL NOTES

Begin Drilling: 07-23-2013 Complete Drilling: 07-24-2013
Drilling Contractor: Wang Testing Services Drill Rig: D-50 TMR [78%]
Driller: R&N Logger: A. Happel Checked by: C. Marin
Drilling Method: 2.25" SSA to 10', mud rotary thereafter, boring
backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ Rotary wash
At Completion of Drilling: ▼ mud in the borehole
Time After Drilling: NA
Depth to Water: ▼ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC I1000401.GPJ WANGENG.GDT 1/29/18

Notes:
Boring Log 1705-B-05A station and offset along ℄ NB C-D Road is: Sta. 6324+46.27, Offset 20.49' Lt.

3:22:27 PM
016813 60X79-S010-Boring_4.dgn

TranSystems

USER NAME = wjcollett	DESIGNED - DJG	REVISED -	
	CHECKED - KRS	REVISED -	
PLOT SCALE = 0.1667 ' / in.	DRAWN - MJR	REVISED -	
PLOT DATE = 7/26/2018	CHECKED - KRS/WJC	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS 4
RETAINING WALL 22A (STRUCTURE NO. 016-1813)
SHEET NO. S5-10 OF S5-11 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2014-005R&B	COOK	888	522
		CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953 9928
Fax: 630 953 9938

BORING LOG 1705-B-05

WEI Job No.: 1100-04-01

Client: AECOM
Project: Jane Byrne Interchange
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 579.65 ft
North: 1897590.86 ft
East: 1171794.26 ft
Station: 1825+62.58
Offset: 4.2306 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		12-inch thick ASPHALT --PAVEMENT--						
	578.6	Loose, gray SANDY GRAVEL --FILL--			1	5 3 4	NP	4
	576.6	Very soft to soft, gray CLAY to SILTY CLAY LOAM, trace gravel			2	0 0 0	< 0.25 P	18
			5		3	0 0 1	0.41 B	20
			10		4	0 0 0	0.25 B	21
					5	0 0 0	0.25 B	24
		$-L_L(\%)=35,\ P_I(\%)=15-$	15		6	0 0 2	0.33 B	23
		--%Gravel=5.8--						
		--%Sand=17.8--						
		--%Silt=48.3--			7	0 0 1	0.41 B	24
		--%Clay=28.1--						
		--A-6 (14)--						
	561.6	Very loose, gray LOAM			8	0 0 0	NP	28
	559.1	Very soft to soft, gray CLAY to SILTY CLAY, trace gravel	20		9	0 0 0	0.25 B	25
			25		10	1 1 2	0.41 B	25
					11	0 0 0	< 0.25 P	27
			30		12	0 0 1	0.41 B	25
	547.1	--Obstruction at 32.5 ft-- Boring terminated at 32.50 ft	35					
			40					
			45					
			50					

GENERAL NOTES

Begin Drilling: 07-22-2013 Complete Drilling: 07-22-2013
Drilling Contractor: Wang Testing Services Drill Rig:
Driller: R&N Logger: A. Happel Checked by: C. Marin
Drilling Method: 2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ Rotary wash
At Completion of Drilling: ▼ mud in the borehole
Time After Drilling: NA
Depth to Water: ▽ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 1100041.GPJ WANGENG.GDT 8/24/18

Notes:
Boring Log 1705-B-05 station and offset along ℄ NB C-D Road is: Sta. 6324+34.52, Offset 15.13' Lt.

USER NAME = wjcolletti	DESIGNED - DJG	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BORING LOGS 5 RETAINING WALL 22A (STRUCTURE NO. 016-1813)
	CHECKED - KRS	REVISED -		
PLOT SCALE = 0.1667 ' / in.	DRAWN - MJR	REVISED -		
PLOT DATE = 7/26/2018	CHECKED - KRS/WJC	REVISED -		SHEET NO. S5-11 OF S5-11 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2014-005R&B	COOK	888	523
		CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			

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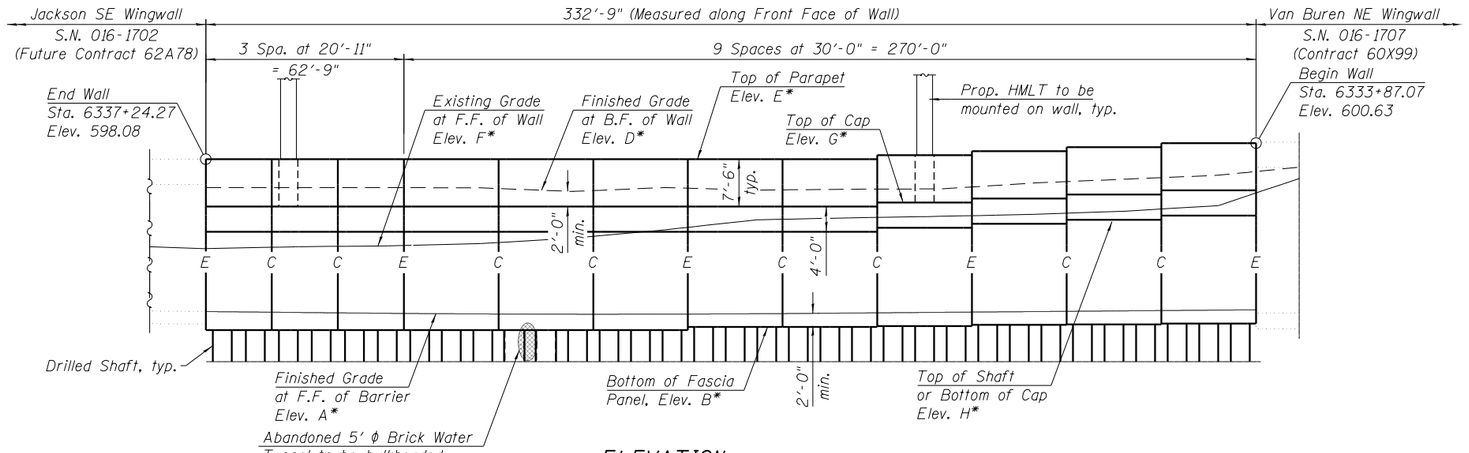
Bench Mark: Set "X" on east barrier wall of I-90 at ℄ of Adams Street. Elev. 581.17.

Existing Structure: None.

Traffic on I-90/94 will be maintained with stage construction. Existing Ramp WN and Ramp EN will be closed to traffic for a portion of construction.

No Salvage.



ELEVATION

(Looking East at F.F. of Wall, Proposed Concrete Barrier not shown for clarity.)

* For elevations, see Table 1 on Sheet S6-02 of S6-16.

Notes:
Wall offsets are measured from the ℄ of Proposed NB C-D Road to the front face of cast-in-place fascia panels.
C denotes Construction Joint.
E denotes Expansion Joint.
F.F. denotes Front Face.
B.F. denotes Back Face.
Wall to be built along straight chords between construction joints.

CURVE DATA

(NB C-D Road)
Prop. Curve P-NCD-NX-5
P.I. Sta. = 6336+57.47
Δ = 35° 13' 41" (RT)
D = 4° 12' 24"
R = 1,362.00'
T = 432.42'
L = 837.42'
E = 67.00'
e = 4.20%
T.R. = 41'
S.E. Run = 87'
P.C. Sta. = 6332+25.05
P.T. Sta. = 6340+62.48

MATTHEW D. SANTEFORD
081-007244
LICENSED STRUCTURAL ENGINEER OF
STATE OF ILLINOIS
07/30/2018
MATTHEW D. SANTEFORD, P.E., S.E.
NO. 081-007244
EXP. DATE 11/30/2018

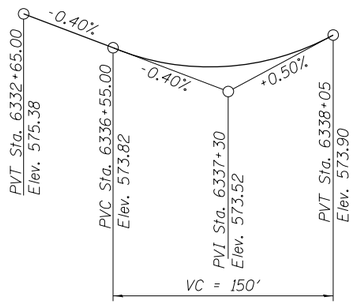
DESIGN SPECIFICATIONS

2017 AASHTO LRFD Bridge Design Specifications 8th Edition

DESIGN STRESSES

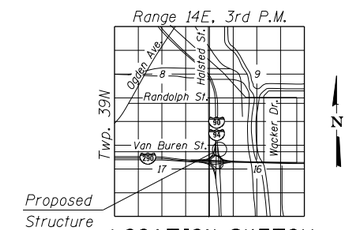
FIELD UNITS

f'c = 7,000 psi (Drilled Shafts)
f'c = 3,500 psi (All other concrete)
fy = 60,000 psi (Reinforcement)

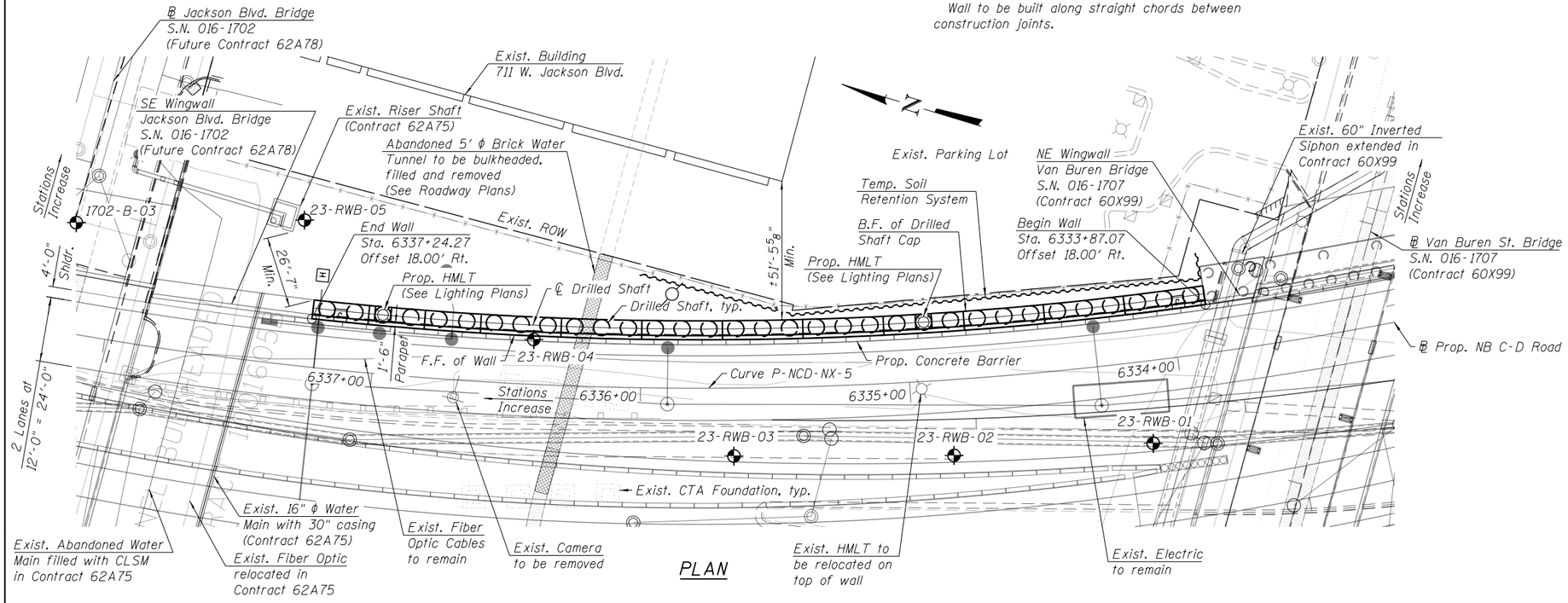


PROFILE GRADE

(Along ℄ NB C-D Road)



LOCATION SKETCH



PLAN

LEGEND:

Ex. Chain Link Fence	----------	Soil Boring	⊕
Combined Sewer	————	Existing Catch Basin	○
Electric	————	Proposed Catch Basin	●
Water	————	Existing Manhole	◎
Fiber Optic	————	Proposed Inlet	▬
Ex. Storm Sewer	————		
Prop. Storm Sewer	————		

GENERAL PLAN AND ELEVATION
RETAINING WALL 23 ALONG NB C-D ROAD
F.A.I. RTE. 90/94 (KENNEDY EXPRESSWAY)
SECTION 2014-005R&B
COOK COUNTY
STATION 6333+87.07 TO STATION 6337+24.27
STRUCTURE NO. 016-1814

TranSystems

USER NAME = wjcolletti	DESIGNED - KRS	REVISED -
	CHECKED - DJG	REVISED -
PLOT SCALE = 48.00 ' / in.	DRAWN - MJR	REVISED -
PLOT DATE = 7/26/2018	CHECKED - KRS/WJC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. S6-01 OF S6-16 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2014-005R&B	COOK	888	524
		CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			

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GENERAL NOTES:

1. Reinforcement bars designated (E) shall be epoxy coated.
2. The Contractor shall exercise extreme caution during construction to make certain that construction activities, live load surcharge and other loads applied to the structures will not have detrimental effects on the adjacent building foundations. Any damage during construction shall be repaired by the Contractor at his expense and no charge to the department. Driving piles and temporary sheet piling is not allowed.
3. The Contractor shall provide vibration and displacement monitoring at the locations specified in the Special Provisions for Construction Vibration Monitoring and Monitoring Adjacent Structures, to ensure that removal/construction activities in the vicinity of the structures do not have detrimental effects on building foundations. No additional compensation shall be provided to the Contractor for alternative means and methods, or additional precautionary measures, required during removal/ construction activities to satisfy these requirements. See Contract Special Provisions for details.
4. Drilled shaft construction above existing grade shall not be paid separately but shall be included with Drilled Shaft in Soil.
5. Slipforming of parapets is not allowed.
6. The Contractor shall field verify locations of existing underground utilities. The Contractor shall take precautions to protect existing utilities during construction of the wall. Any damage to the existing utilities shall be the responsibility of the Contractor.
7. Concrete for the Drilled Shafts shall be in accordance with Section 516 of Standard Specifications and shall have the minimum compressive strength of 7,000 psi prior to excavation in front of shafts and installation of lagging system.
8. For drilled shaft locations where permanent casing is required as shown on the plans, the casing will be paid for under Permanent Casing. If Contractor elects to use permanent casing for ease of construction in locations where it is not required on the plans, the casing will not be paid for separately and is included in Drilled Shaft in Soil.
9. Wall to be built along straight chords between construction and expansion joints.
10. Concrete Sealer shall be applied to the exposed top, front, and back faces of the parapet, and to the exposed front faces of cap and fascia panels.
11. Limited groundwater elevation data is available in the boring logs. In addition, groundwater may also be present in deeper granular layers. The groundwater may rise in the shafts to an elevation above the top of granular layers. The Contractor shall consider this information when choosing construction methods. The Contractor will not be compensated for issues related to the groundwater elevation.
12. The Contractor shall take all necessary precautions not to contaminate groundwater during the drilled shaft construction operation. Contractor is responsible for the proper containment and disposal of the contaminated groundwater and spoils resulting from the Contractor's means and methods. No additional cost will be paid for this effort.
13. Based on the high squeeze potential of the clay soils, the use of temporary casing will be required to Elevation 539.00 in order to properly construct the drilled shafts. Casing may be pulled or left in place, as determined by the Contractor at no cost to the Department.
14. A cantilevered sheet piling design does not appear feasible and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan details and calculations for review and acceptance by the Engineer.
15. The contractor shall coordinate the construction of the proposed structure with the construction of the existing and proposed Ramp WN bridge to be constructed as part of Contract 60X93. See MOT plan sheets and special provisions, including the Available Work Areas and Sequencing Requirements special provision, for additional construction and coordination requirements.
16. Foundation Construction at Existing Obstructions applies to Shafts 23 and 24 only.

TOTAL BILL OF MATERIAL

Item	Unit	Total Quantity
Structure Excavation	Cu. Yd.	871
Concrete Structures	Cu. Yd.	345.1
Concrete Superstructure	Cu. Yd.	154.7
Reinforcement Bars	Pound	687,470
Reinforcement Bars, Epoxy Coated	Pound	29,660
Mechanical Splicers	Each	792
Name Plates	Each	1
Permanent Casing	Foot	170
Drilled Shaft in Soil	Cu. Yd.	2,937.4
Temporary Soil Retention System	Sq. Ft.	982
Concrete Sealer	Sq. Ft.	10,728
Class SI Concrete (Miscellaneous)	Cu. Yd.	299.8
Crosshole Sonic Logging Access Ducts	Foot	2805
Crosshole Sonic Logging Testing	Each	7
Slope Inclinometer	Each	1
Foundation Construction at Existing Obstructions	Each	2
Pipe Underdrain for Structures 4"	Foot	333

TABLE 1 - WALL ELEVATIONS

	Station	Offset	Elevation A	Elevation B	Elevation C	Elevation D	Elevation E	Elevation F	Elevation G	Elevation H
	6333+87.07	18.00' Rt.	574.22	572.05	577.72	596.13	600.63	592.73	593.13	589.13
*	6334+17.47	18.00' Rt.	574.10	572.05	577.60	595.15	600.63	590.19	593.13	589.13
**	6334+17.47	18.00' Rt.	574.10	571.91	577.60	595.15	599.99	590.19	592.49	588.49
*	6334+47.87	18.00' Rt.	573.98	571.91	577.48	594.52	599.99	589.52	592.49	588.49
**	6334+47.87	18.00' Rt.	573.98	571.85	577.48	594.52	599.35	589.52	591.85	587.85
*	6334+78.27	18.00' Rt.	573.86	571.85	577.36	593.69	599.35	589.13	591.85	587.85
**	6334+78.27	18.00' Rt.	573.86	571.63	577.36	593.69	598.72	589.13	591.22	587.22
*	6335+08.67	18.00' Rt.	573.74	571.63	577.24	593.34	598.72	588.86	591.22	587.22
**	6335+08.67	18.00' Rt.	573.74	571.50	577.24	593.34	598.08	588.86	590.58	586.58
	6335+39.08	18.00' Rt.	573.62	571.50	577.12	593.23	598.08	588.50	590.58	586.58
*	6335+69.48	18.00' Rt.	573.49	571.50	576.99	593.51	598.08	587.33	590.58	586.58
**	6335+69.48	18.00' Rt.	573.49	571.00	576.99	593.51	598.08	587.33	590.58	586.58
	6335+99.88	18.00' Rt.	573.37	571.00	576.87	593.43	598.08	585.84	590.58	586.58
	6336+30.28	18.00' Rt.	573.25	571.00	576.75	593.38	598.08	584.84	590.58	586.58
	6336+60.68	18.00' Rt.	573.13	571.00	576.63	593.57	598.08	584.41	590.58	586.58
	6336+81.88	18.00' Rt.	573.07	571.00	576.57	593.58	598.08	584.27	590.58	586.58
	6337+03.08	18.00' Rt.	573.03	571.00	576.53	593.58	598.08	584.13	590.58	586.58
	6337+24.27	18.00' Rt.	573.02	571.00	576.52	593.58	598.08	583.91	590.58	586.58

Elevation A- Finished Grade at Front Face of Barrier
Elevation B- Bottom of Fascia Panel
Elevation C- Top of Barrier at Front Face of Wall
Elevation D- Finished Grade at Back Face of Wall
Elevation E- Top of Parapet
Elevation F- Existing Grade at Front Face of Wall
Elevation G- Top of Cap
Elevation H- Top of Shaft / Bottom of Cap
** Elevations just to the right of joint*
*** Elevations just to the left of joint*

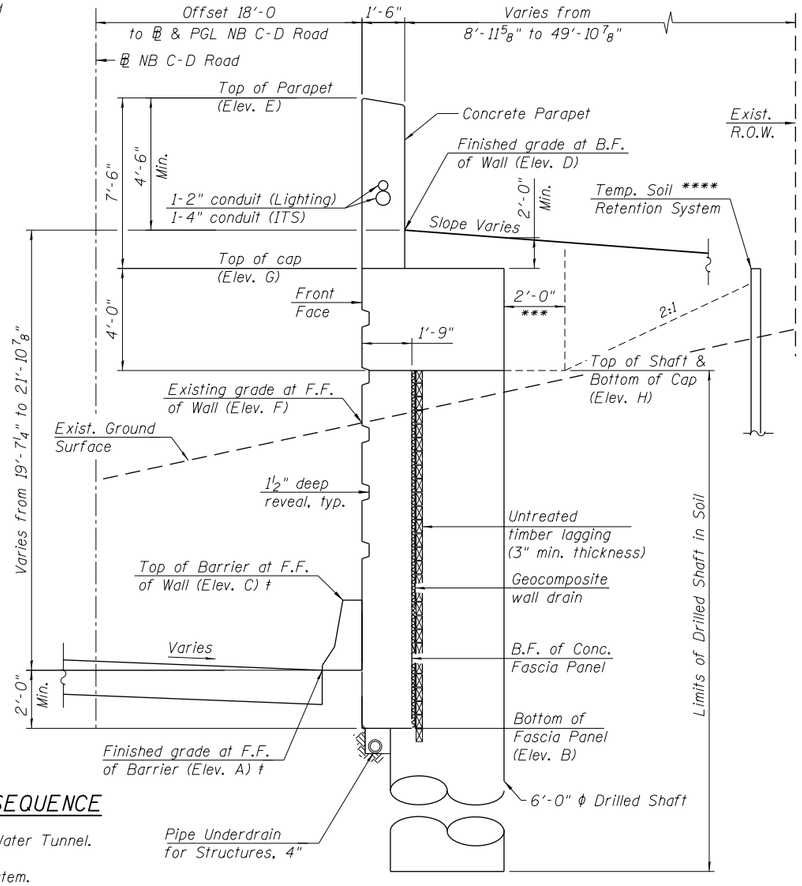
STATION 6333+87.07 TO 6337+24.27
BUILT 20__ BY
STATE OF ILLINOIS
F.A.I. RT. 90/94 SEC. 2014-005R&B
LOADING HL-93
STR. NO. 016-1814

INDEX OF SHEETS

† Installed as part of Future Contract 62A76. See Roadway Cross Sections for interim grading at Front Face of wall.

SUGGESTED CONSTRUCTION SEQUENCE

1. Bulkhead & fill Abandoned 5' ϕ Brick Water Tunnel.
2. Construct drilled shaft 1 thru 33.
3. Construct Temporary Soil Retention System.
4. Construct drilled shaft cap & parapet.
5. Remove Temporary Soil Retention System.
6. Excavate in front of shafts to Finished grade, installing lagging system in the process.
7. Construct concrete fascia panel.



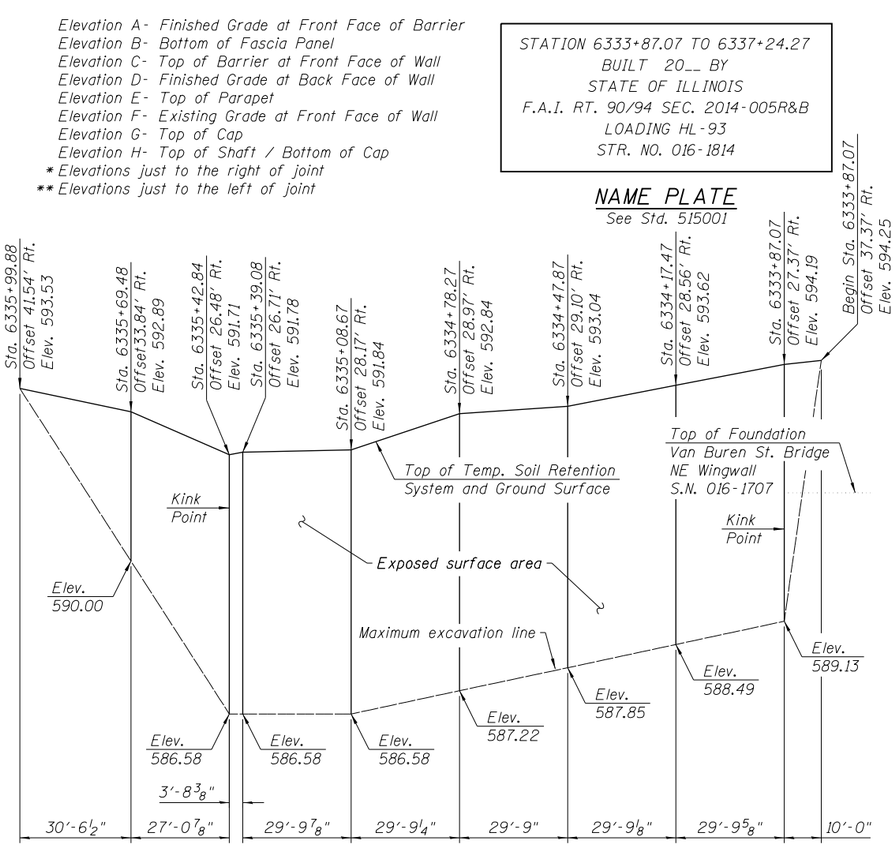
**** Limits of Structure Excavation.*
***** From Sta. 6333+87.07 to Sta. 6335+99.88 only.*

TYPICAL CROSS SECTION

(Looking Upstation)

NAME PLATE

See Std. 515001



TEMPORARY SOIL RETENTION SYSTEM - ELEVATION

(Unfolded View, Measured along F.F. of Wall)

TranSystems	USER NAME = wjcolletti	DESIGNED - KRS	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL DATA RETAINING WALL 23 (STRUCTURE NO. 016-1814)	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED - DJG	REVISED -			90/94	2014-005R&B	COOK	888	525
	PLOT SCALE = 0.1667 ' / in.	DRAWN - MJR	REVISED -					CONTRACT NO. 60X79		
	PLOT DATE = 7/30/2018	CHECKED - KRS/WJC	REVISED -		SHEET NO. S6-02 OF S6-16 SHEETS			ILLINOIS FED. AID PROJECT		

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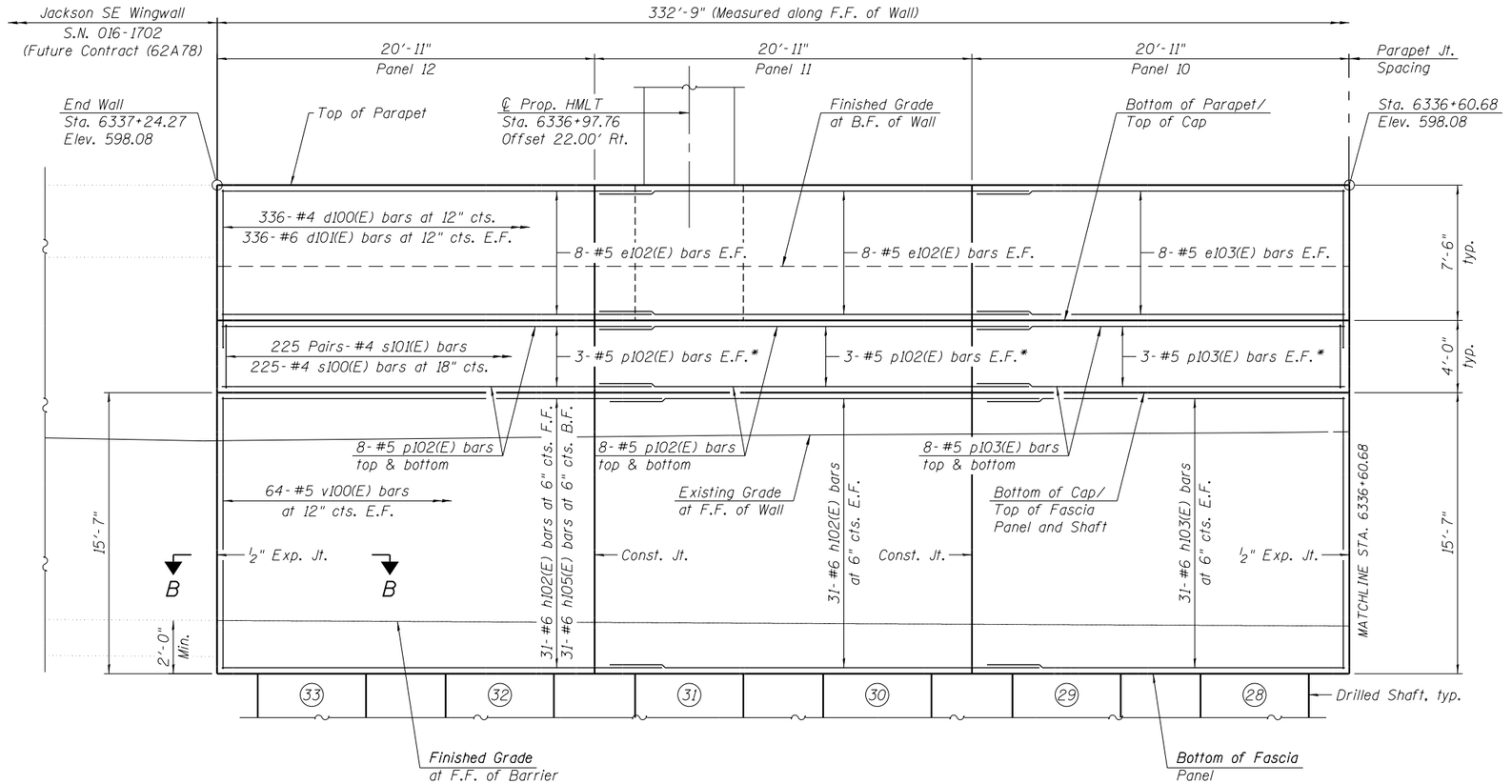
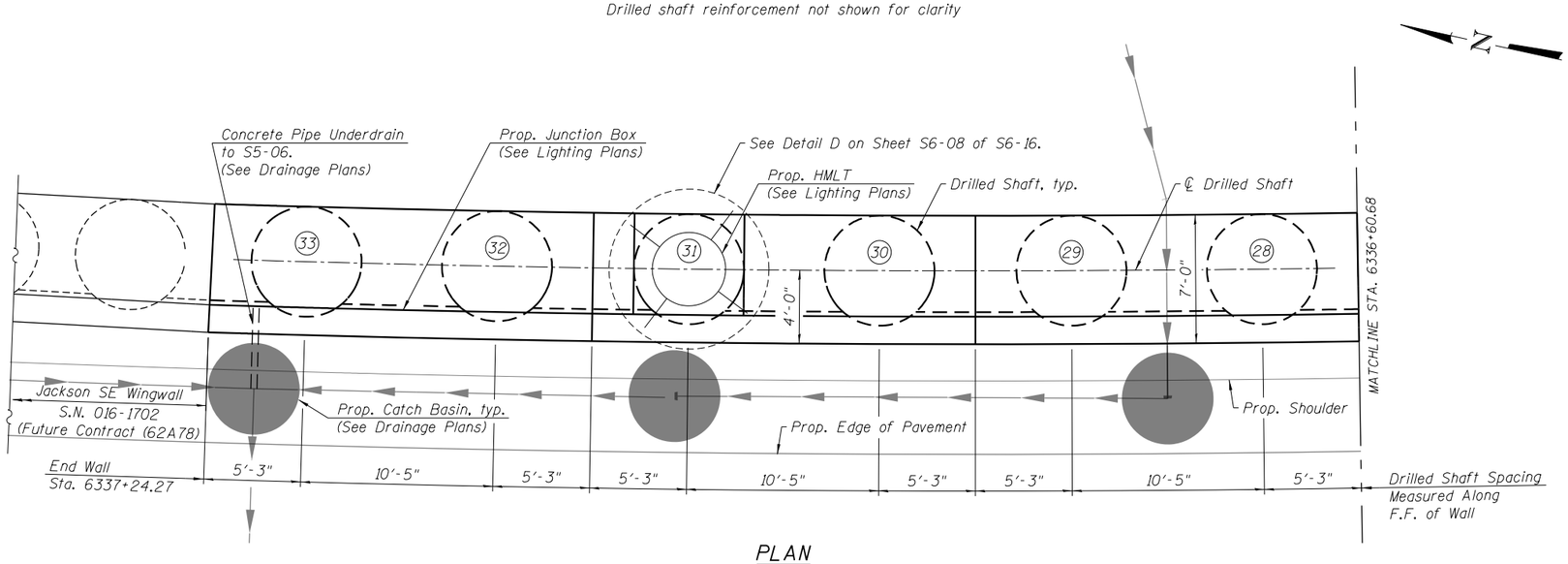


* Spaced evenly between shown bars.

WALL ELEVATION

(Looking East)
Drilled shaft reinforcement not shown for clarity



PLAN

(Parapet and cap reinforcement not shown for clarity)

Notes:
- Work this sheet with Sheets S6-03 to S6-09 of S6-16.
- F.F. = Front Face
- B.F. = Back Face
- E.F. = Each Face
- Parapet concrete shall be paid for as Concrete Superstructure.
- Shaft Cap shall be paid for as Concrete Structures.
- Concrete fascia panels shall be paid as Class SI Concrete (Miscellaneous).
- Drilled Shafts shall be tested in accordance with Special Provision for Crosshole Sonic Logging Testing of Drilled Shafts.
- See Drilled Shaft Layout Table on Sheet S6-09 of S6-16.
- See Sheet S6-10 of S6-16 for details on architectural reveals and joint between cap and fascia panels.

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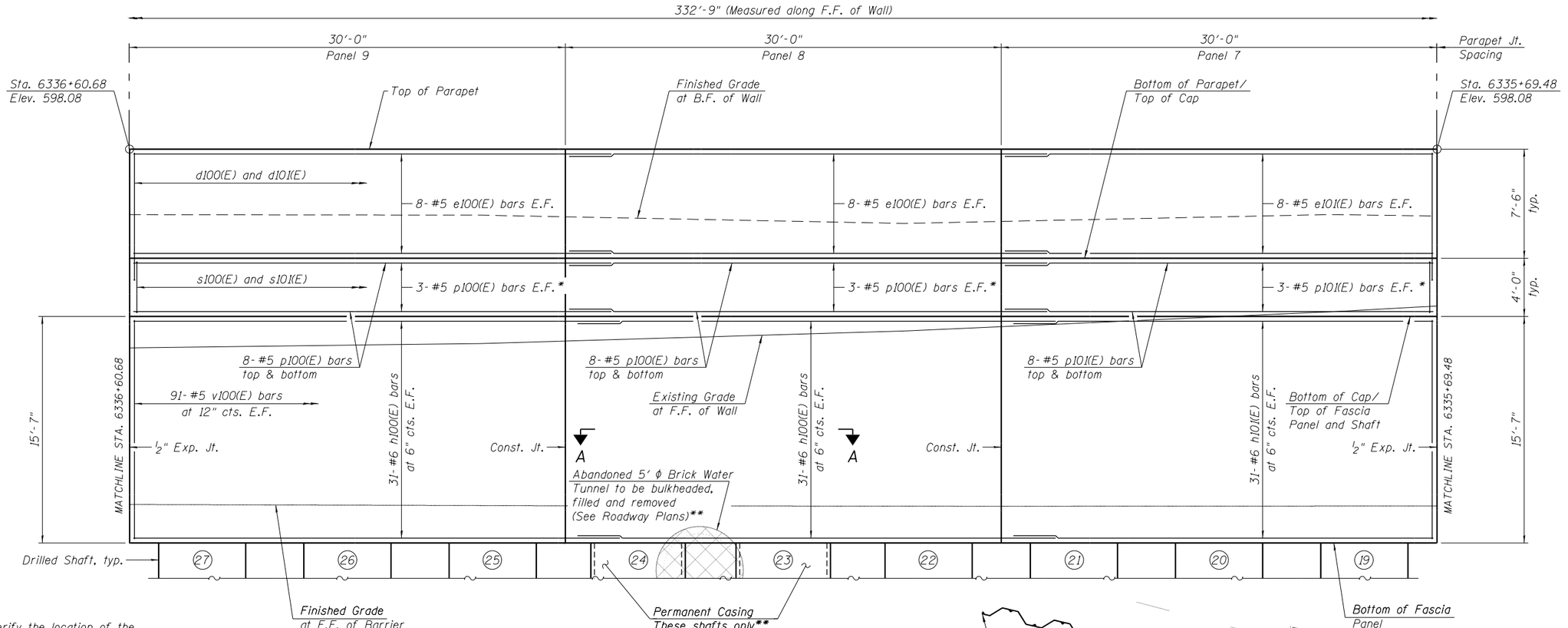
TranSystems

USER NAME = wjcolletti	DESIGNED - KRS	REVISED -
	CHECKED - DJG	REVISED -
PLOT SCALE = 0.2 '/ in.	DRAWN - MJR	REVISED -
PLOT DATE = 7/26/2018	CHECKED - KRS/WJC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WALL ELEVATION DETAILS 1
RETAINING WALL 23 (STRUCTURE NO. 016-1814)
SHEET NO. S6-03 OF S6-16 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2014-005R&B	COOK	888	526
		CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			



** Contractor must verify the location of the Abandoned 5' ϕ Brick Water Tunnel prior to the drilling of the shafts and adjust the locations of the permanent casings if necessary.

WALL ELEVATION

(Looking East)
Drilled shaft reinforcement not shown for clarity

PLAN

(Parapet and cap reinforcement not shown for clarity)

Notes:
F.F. = Front Face
B.F. = Back Face
E.F. = Each Face
See additional notes on Sheet S6-03 of S6-16.

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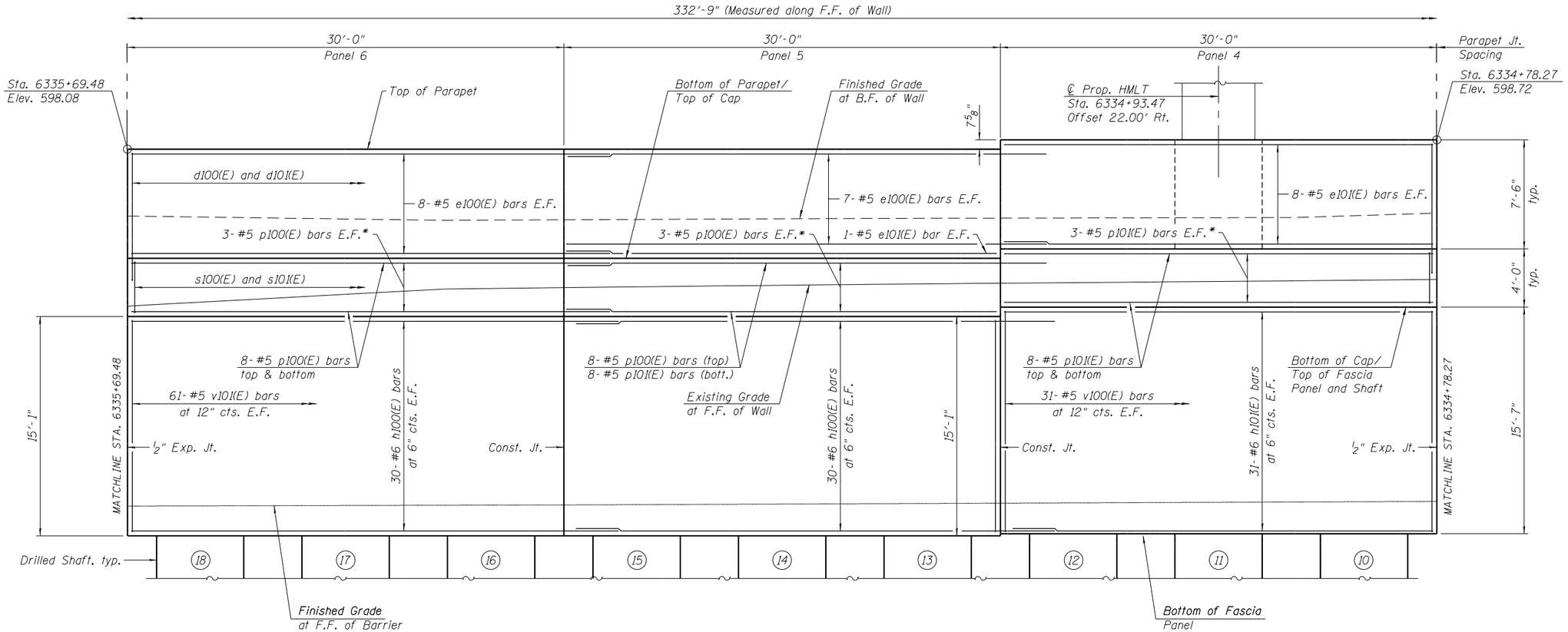
TranSystems

USER NAME = wjcolletti	DESIGNED - KRS	REVISED -
	CHECKED - DJG	REVISED -
PLOT SCALE = 0.1667 ' / in.	DRAWN - MJR	REVISED -
PLOT DATE = 7/26/2018	CHECKED - KRS/WJC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WALL ELEVATION DETAILS 2
RETAINING WALL 23 (STRUCTURE NO. 016-1814)
SHEET NO. S6-04 OF S6-16 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2014-005R&B	COOK	888	527
		CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			

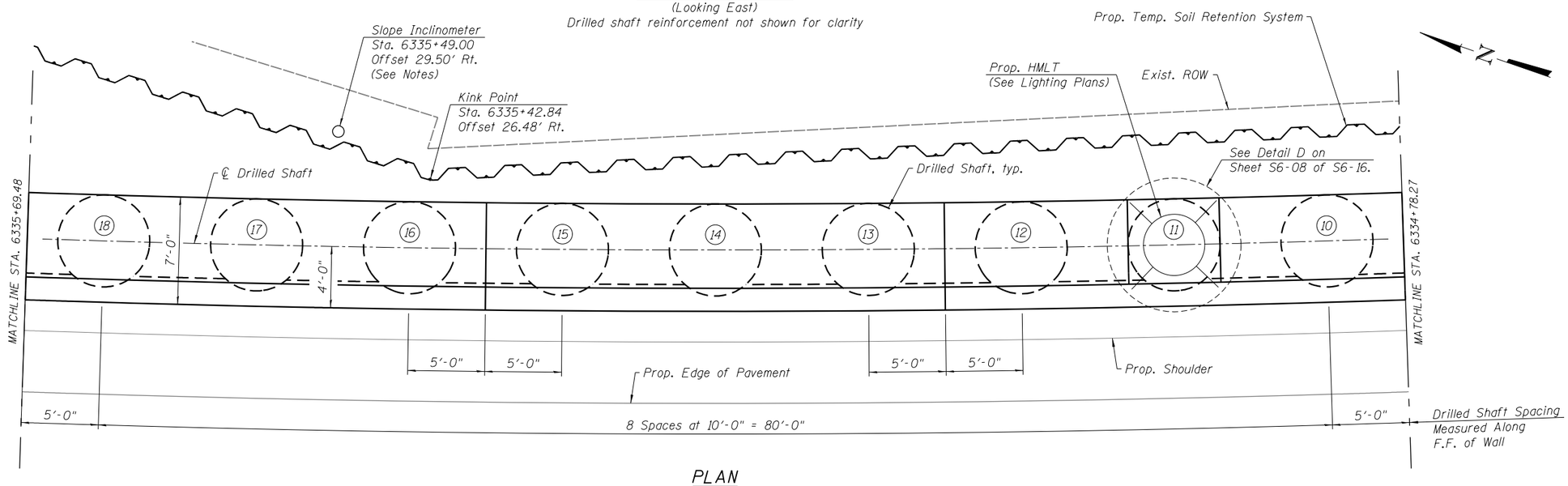


* Spaced evenly between shown bars.

WALL ELEVATION

(Looking East)

Drilled shaft reinforcement not shown for clarity



PLAN

(Parapet and cap reinforcement not shown for clarity)

Notes:

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

See additional notes on Sheet S6-03 of S6-16.

In addition to vibration and displacement monitoring, the Contractor shall monitor movements with Slope Inclinometers. All inclinometers shall be installed prior to drilling. See special provision for Slope Inclinometers.

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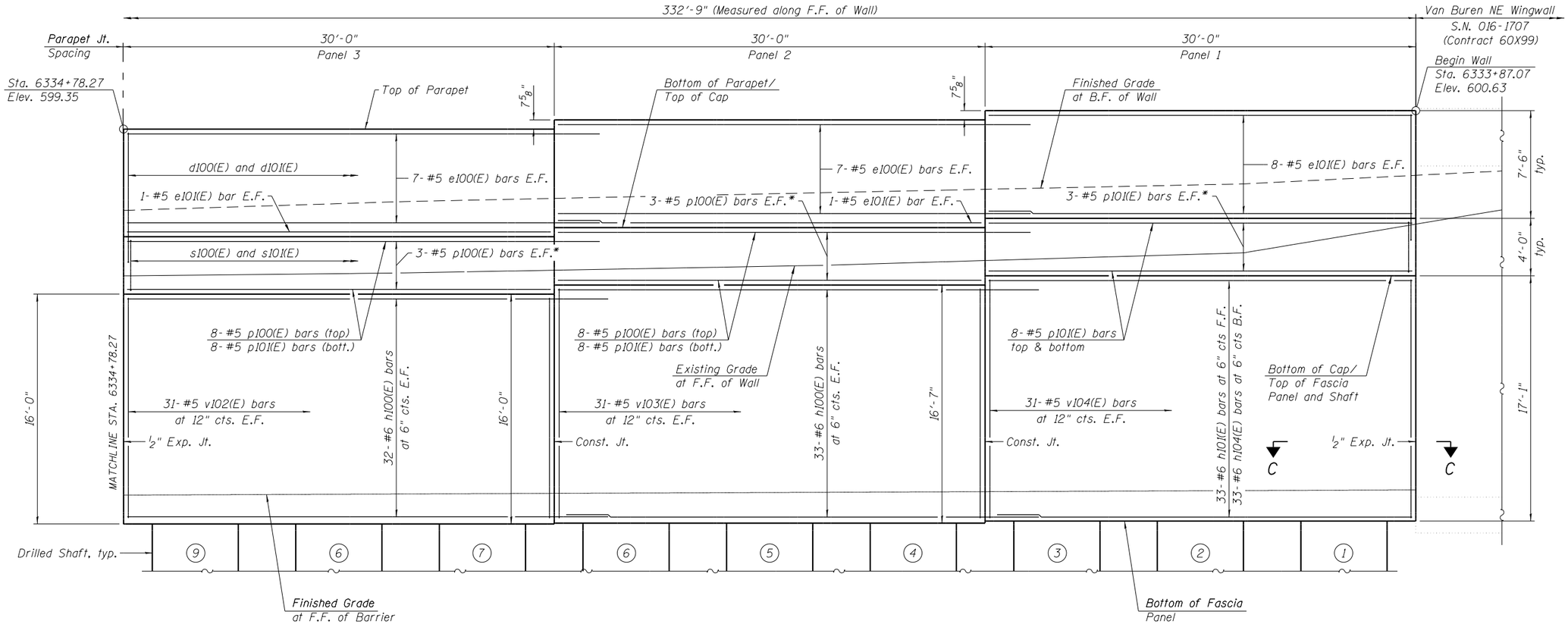
TranSystems

USER NAME = wjcolletti	DESIGNED - KRS	REVISED -
	CHECKED - DJG	REVISED -
PLOT SCALE = 0.1667 '/ in.	DRAWN - MJR	REVISED -
PLOT DATE = 7/26/2018	CHECKED - KRS/WJC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WALL ELEVATION DETAILS 3
RETAINING WALL 23 (STRUCTURE NO. 016-1814)
SHEET NO. S6-05 OF S6-16 SHEETS

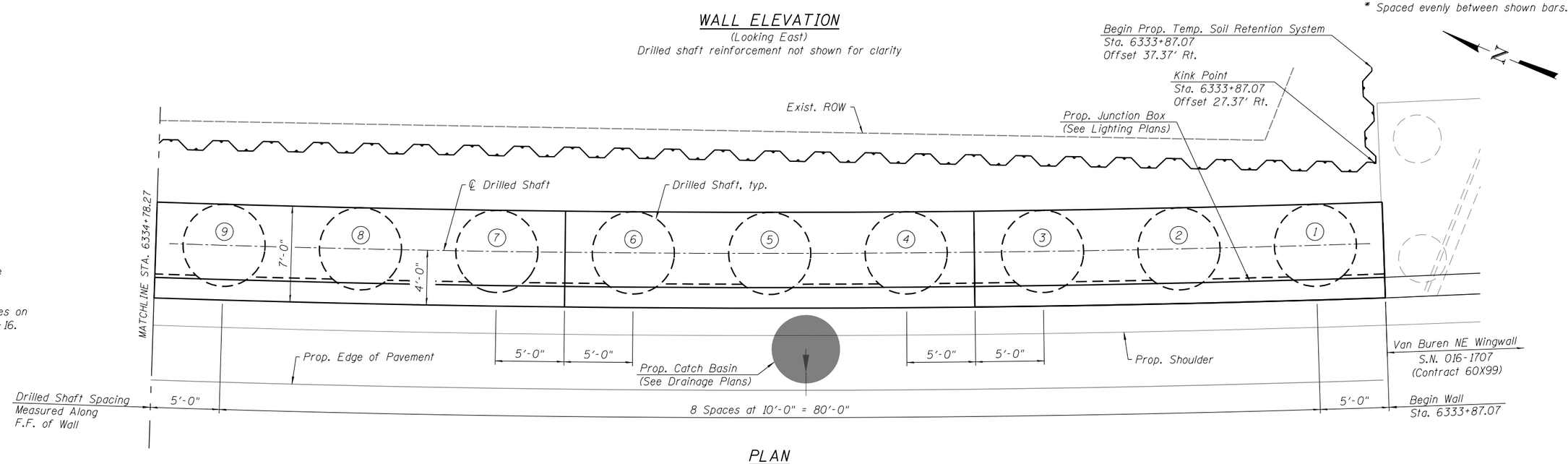
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2014-005R&B	COOK	888	528
		CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			



* Spaced evenly between shown bars.

WALL ELEVATION

(Looking East)
Drilled shaft reinforcement not shown for clarity



PLAN

(Parapet and cap reinforcement not shown for clarity)

Notes:
F.F. = Front Face
B.F. = Back Face
E.F. = Each Face
See additional notes on Sheet S6-03 of S6-16.

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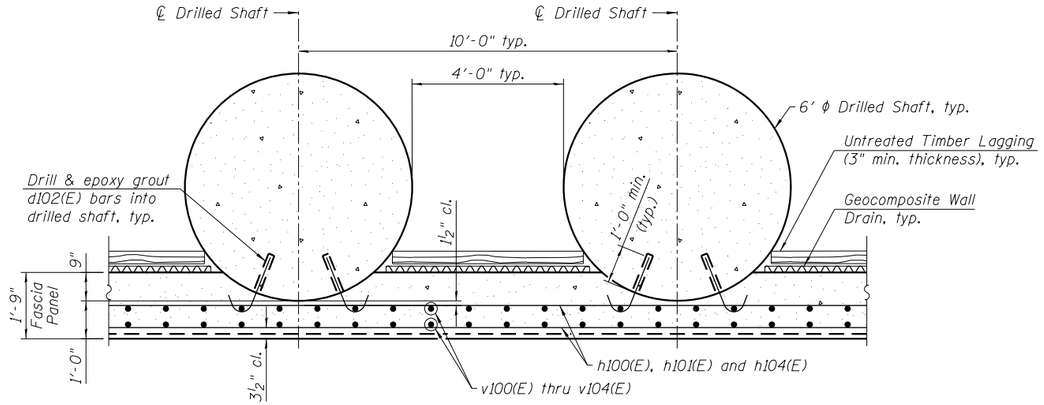
016814-60X79-S006-ElevDetails_4.dgn

TranSystems	USER NAME = wjcolletti	DESIGNED - KRS	REVISED -
		CHECKED - DJG	REVISED -
	PLOT SCALE = 0.1667 '/ in.	DRAWN - MJR	REVISED -
	PLOT DATE = 7/26/2018	CHECKED - KRS/WJC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

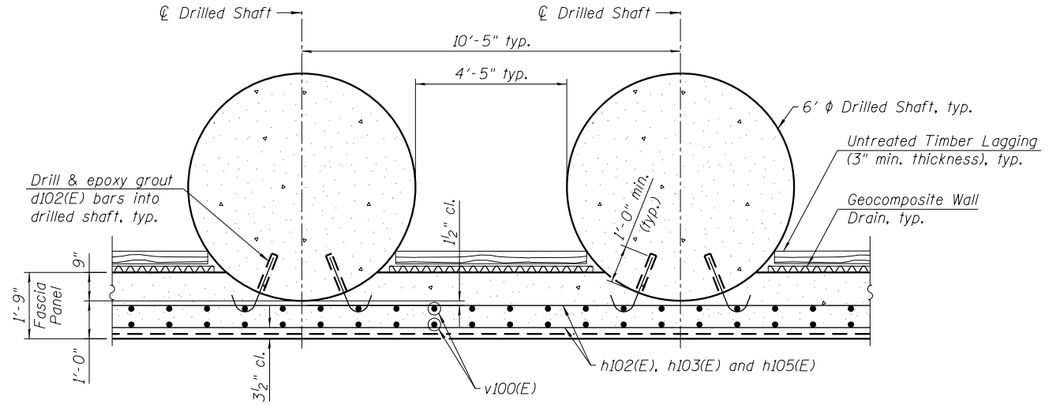
WALL ELEVATION DETAILS 4
RETAINING WALL 23 (STRUCTURE NO. 016-1814)
SHEET NO. S6-06 OF S6-16 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2014-005R&B	COOK	888	529
		CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			



TYPICAL WALL SECTION - PANELS 1-9

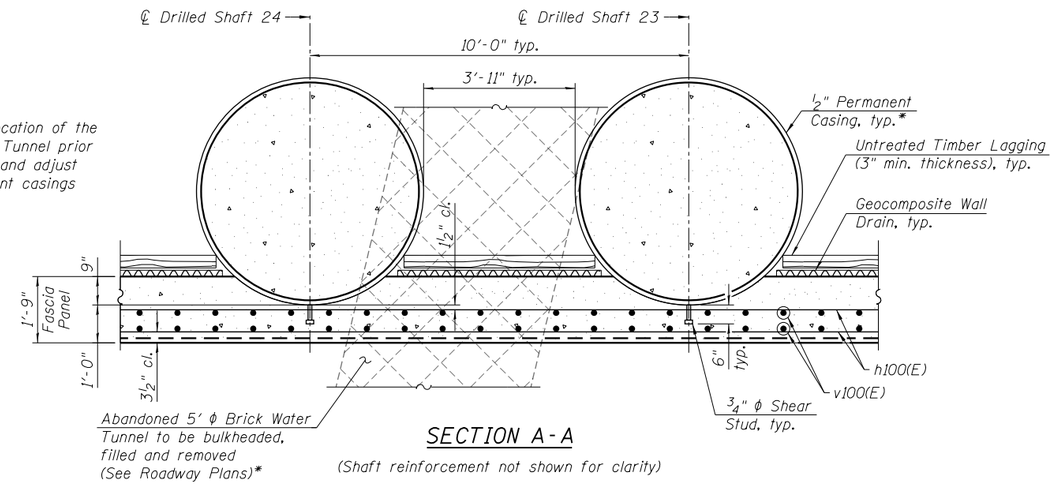
(Shaft reinforcement not shown for clarity)



TYPICAL WALL SECTION - PANELS 10-12

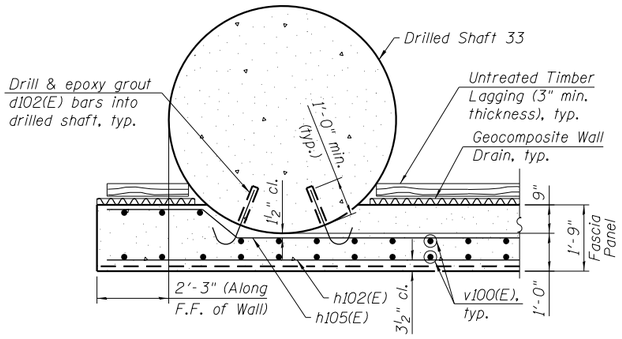
(Shaft reinforcement not shown for clarity)

* Contractor must verify the location of the Abandoned 5' ϕ Brick Water Tunnel prior to the drilling of the shafts and adjust the locations of the permanent casings if necessary.



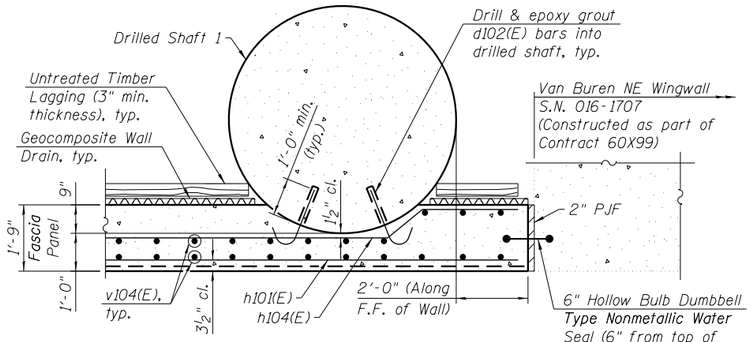
SECTION A-A

(Shaft reinforcement not shown for clarity)



SECTION B-B

(Shaft reinforcement not shown for clarity)



SECTION C-C

(Shaft reinforcement not shown for clarity)

Notes:

F.F. = Front Face.
B.F. = Back Face.
E.F. = Each Face.
Work this sheet with Sheets S6-03 thru S6-06 of S6-16.
Hollow bulb dumbbell included in cost of Class SI Concrete (Miscellaneous).
Install lagging and Geocomposite Wall Drain from top down as excavation proceeds. Minimize over-excavation and backfill voilds with dry loose sand. Cost included with Class SI Concrete (Miscellaneous).
The Contractor is responsible for the design and performance of the lagging system, the deflection of the lagging shall be limited to 1" maximum using no less than a 3 in. nominal rough-sawn thickness and timber with a minimum allowable bending stress of 1000 psi, until the concrete facing is installed. The Contractor shall submit design calculations and details prepared by an Illinois Licensed Structural Engineer for the attachment of the lagging to the shaft for approval by the Engineer. Alternative equivalent systems may be submitted for approval by the Engineer. Cost included with Class SI Concrete (Miscellaneous).

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016814-60X79-S007-WallDetails_1.dgn

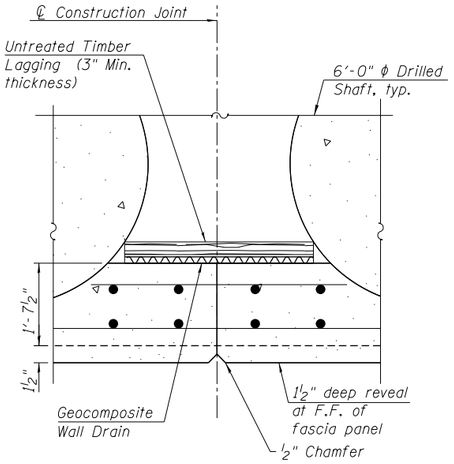
TranSystems

USER NAME = wjcolletti	DESIGNED - KRS	REVISED -
	CHECKED - DJG	REVISED -
PLOT SCALE = Ø2 '-' / in.	DRAWN - MJR	REVISED -
PLOT DATE = 7/26/2018	CHECKED - KRS/WJC	REVISED -

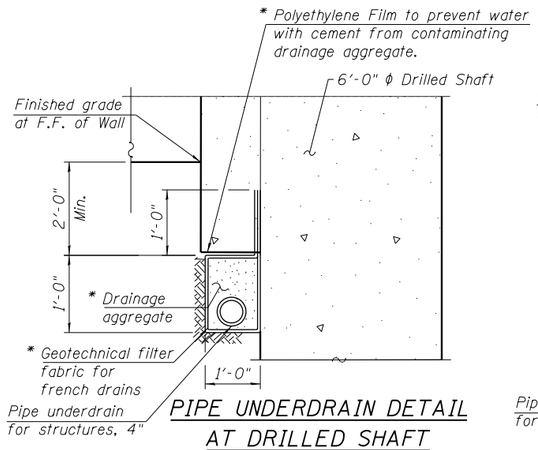
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WALL SECTIONS AND DETAILS 1
RETAINING WALL 23 (STRUCTURE NO. 016-1814)
SHEET NO. S6-07 OF S6-16 SHEETS

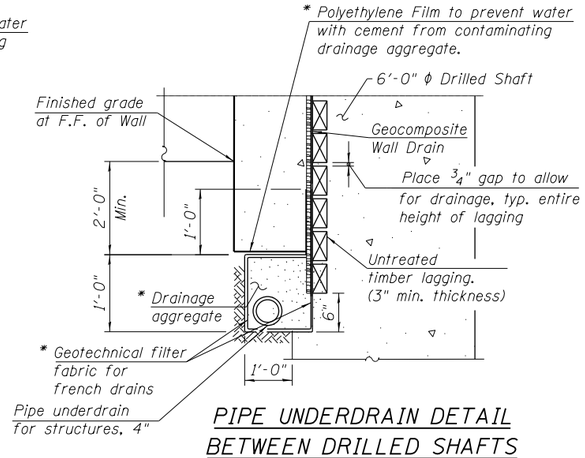
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2014-005R&B	COOK	888	530
		CONTRACT NO. 60X79		
		ILLINOIS	FED. AID PROJECT	



CONSTRUCTION JOINT DETAILS

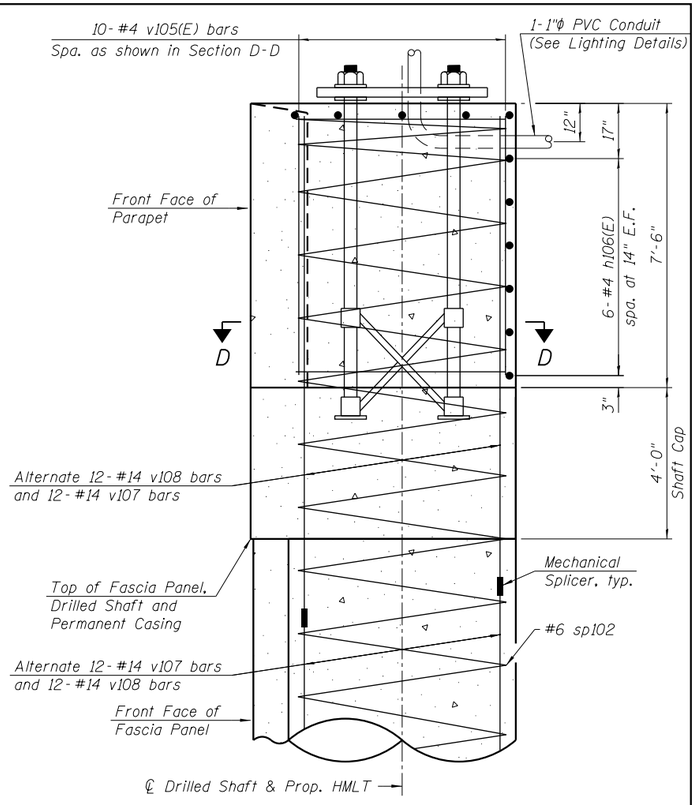


PIPE UNDERDRAIN DETAIL AT DRILLED SHAFT



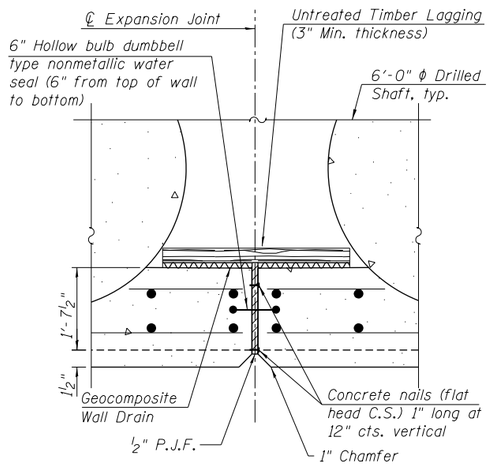
PIPE UNDERDRAIN DETAIL BETWEEN DRILLED SHAFTS

* Cost included with Pipe Underdrains for Structures, 4".

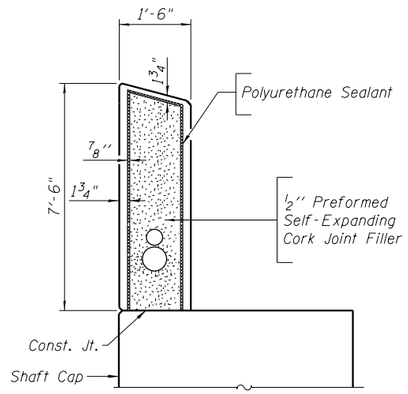


HMLT PEDESTAL ELEVATION

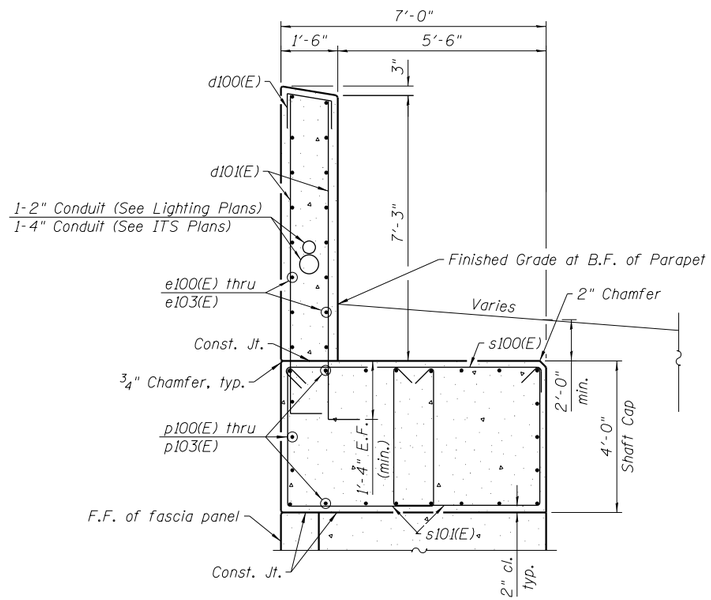
(Drilled Shafts 11 & 31 only)
(Parapet Reinforcement not shown for clarity)



EXPANSION JOINT DETAILS

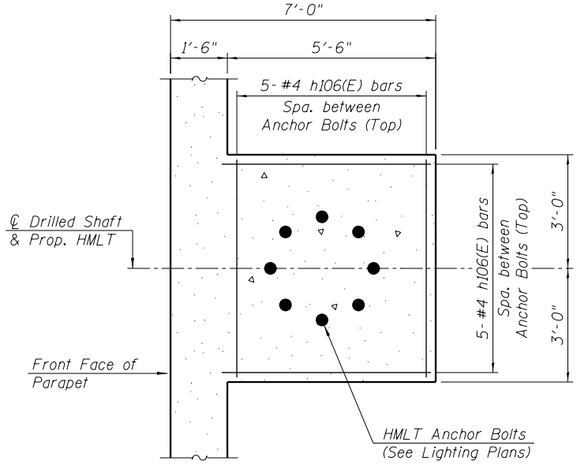


TRANSVERSE EXPANSION JOINT SECTION

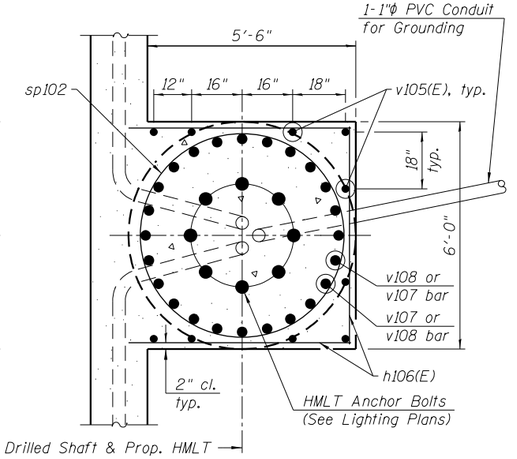


TYPICAL SECTION OF PARAPET AND CAP

(Shaft and fascia panel reinforcement not shown for clarity)



DETAIL D



SECTION D-D

(Parapet Reinforcement not shown for clarity)

Notes:
F.F. = Front Face.
B.F. = Back Face.
E.F. = Each Face.
Work this sheet with Sheets S6-03 thru S6-09 of S6-16.
The Polyurethane Sealant shall be according to Article 1050.04 of Std. Spec. and the color shall be gray.
HMLT Pedestal Concrete included in the cost of Concrete Superstructure.

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016814-60X79-S008-WallDetails_2.dgn

TranSystems

USER NAME = wjcollett	DESIGNED - KRS	REVISED -
	CHECKED - DJG	REVISED -
PLOT SCALE = 0.1667 ' / in.	DRAWN - MJR	REVISED -
PLOT DATE = 7/26/2018	CHECKED - KRS/WJC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

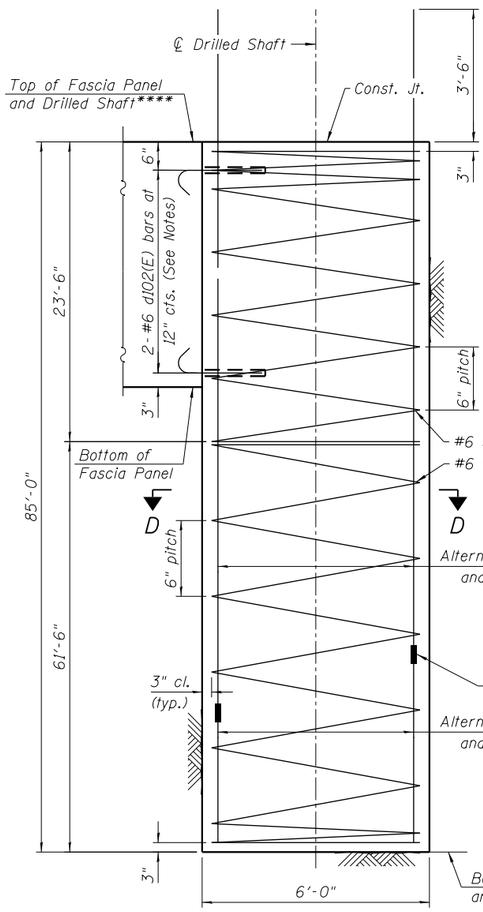
WALL SECTIONS AND DETAILS 2
RETAINING WALL 23 (STRUCTURE NO. 016-1814)
SHEET NO. S6-08 OF S6-16 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2014-005R&B	COOK	888	531
		CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			

DRILLED SHAFT LAYOUT TABLE

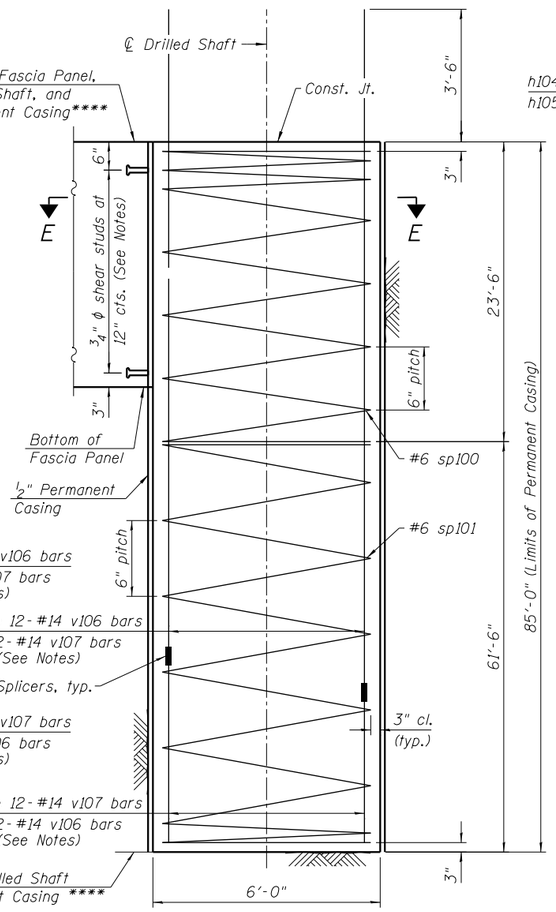
Shaft No.	Station	Offset	Top of Shaft Elevation	Bottom of Shaft Elevation
1	6333+92.13	22.00' Rt.	589.13	504.13
2	6334+02.27	22.00' Rt.	589.13	504.13
3	6334+12.40	22.00' Rt.	589.13	504.13
4	6334+22.54	22.00' Rt.	588.16	503.16
5	6334+32.67	22.00' Rt.	588.16	503.16
6	6334+42.80	22.00' Rt.	588.16	503.16
7	6334+52.94	22.00' Rt.	587.58	502.58
8	6334+63.07	22.00' Rt.	587.58	502.58
9	6334+73.21	22.00' Rt.	587.58	502.58
10	6334+83.34	22.00' Rt.	587.08	502.08
* 11	6334+93.47	22.00' Rt.	587.08	502.08
12	6335+03.61	22.00' Rt.	587.08	502.08
13	6335+13.74	22.00' Rt.	586.58	501.58
14	6335+23.88	22.00' Rt.	586.58	501.58
15	6335+34.01	22.00' Rt.	586.58	501.58
16	6335+44.14	22.00' Rt.	586.58	501.58
17	6335+54.28	22.00' Rt.	586.58	501.58
18	6335+64.41	22.00' Rt.	586.58	501.58
19	6335+74.54	22.00' Rt.	586.58	501.58
20	6335+84.68	22.00' Rt.	586.58	501.58
21	6335+94.81	22.00' Rt.	586.58	501.58
22	6336+04.95	22.00' Rt.	586.58	501.58
23	6336+15.08	22.00' Rt.	586.58	501.58
24	6336+25.21	22.00' Rt.	586.58	501.58
25	6336+35.35	22.00' Rt.	586.58	501.58
26	6336+45.48	22.00' Rt.	586.58	501.58
27	6336+55.62	22.00' Rt.	586.58	501.58
28	6336+66.00	22.00' Rt.	586.58	501.58
29	6336+76.56	22.00' Rt.	586.58	501.58
30	6336+87.20	22.00' Rt.	586.58	501.58
* 31	6336+97.76	22.00' Rt.	586.58	501.58
32	6337+08.40	22.00' Rt.	586.58	501.58
33	6337+18.95	22.00' Rt.	586.58	501.58

* Extend spiral reinforcing and drilled shaft reinforcing through cap and into HMLT pedestal. See Sheet S6-08 of S6-16 for details.



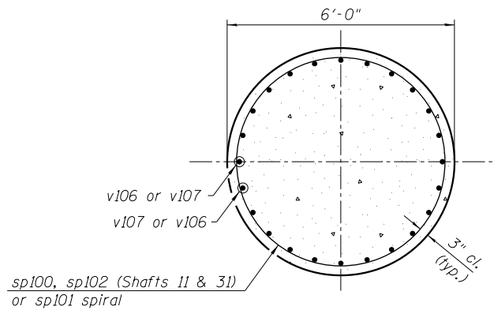
TYPICAL SHAFT ELEVATION

****See Drilled Shaft Layout Table

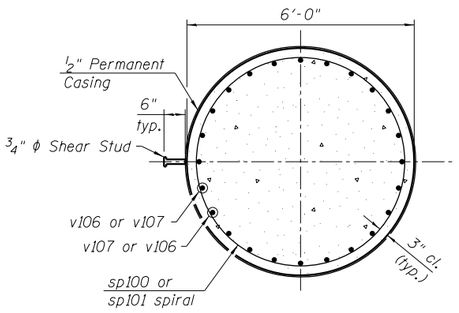


TYPICAL SHAFT ELEVATION
PERMANENTLY CASED

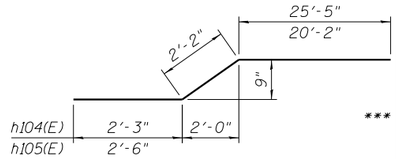
Shafts 23, and 24 only



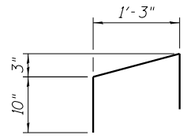
SECTION D-D



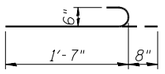
SECTION E-E



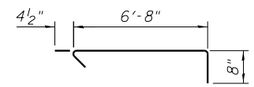
BARS h104(E) and h105(E)



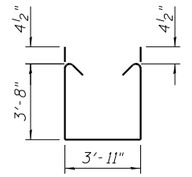
BAR d100(E)



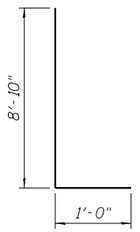
BAR d102(E)



BAR s100(E)



BAR s101(E)



BAR d101(E)

BILL OF MATERIAL

	Bar	No.	Size	Length	Shape
	d100(E)	336	#4	3'-0"	
	d101(E)	672	#6	9'-10"	
***	d102(E)	973	#6	2'-3"	
	e100(E)	90	#5	33'-2"	
	e101(E)	54	#5	29'-8"	
	e102(E)	32	#5	24'-1"	
	e103(E)	16	#5	20'-7"	
***	h100(E)	374	#6	33'-10"	
***	h101(E)	157	#6	29'-8"	
***	h102(E)	93	#6	24'-9"	
***	h103(E)	62	#6	20'-7"	
***	h104(E)	33	#6	29'-10"	
***	h105(E)	31	#6	24'-11"	
	h106(E)	56	#4	5'-9"	
	p100(E)	108	#5	33'-2"	
	p101(E)	90	#5	29'-8"	
	p102(E)	44	#5	24'-1"	
	p103(E)	22	#5	20'-7"	
	s100(E)	225	#4	7'-9"	
	s101(E)	450	#4	12'-0"	
**	sp100	31	#6	23'-3"	
**	sp101	33	#6	61'-0"	
**	sp102	2	#6	34'-10"	
***	v100(E)	372	#5	15'-4"	
***	v101(E)	122	#5	14'-9"	
***	v102(E)	62	#5	15'-9"	
***	v103(E)	62	#5	16'-4"	
***	v104(E)	62	#5	16'-10"	
	v105(E)	20	#4	7'-3"	
	v106	744	#14	42'-2"	
	v107	792	#14	46'-2"	
	v108	48	#14	49'-11"	
	Structure Excavation		Cu. Yd.	871	
	Concrete Structures		Cu. Yd.	345.1	
	Concrete Superstructures		Cu. Yd.	154.7	
***	Stud Shear Connectors		Each	32	
	Reinforcement Bars		Pound	687,470	
	Reinforcement Bars, Epoxy Coated		Pound	29,660	
	Permanent Casing		Foot	170	
	Drilled Shaft in Soil		Cu. Yd.	2,937.4	
	Concrete Sealer		Sq. Ft.	10,728	
	Class SI Concrete (Miscellaneous)		Cu. Yd.	299.8	
	Crosshole Sonic Logging Access Ducts		Foot	2,805	
	Crosshole Sonic Logging Testing		Each	7	
	Slope Inclinometer		Each	1	
	Pipe Underdrain for Structures 4"		Foot	333	

** Length is height of spiral

*** Shown for information only. Cost included with Class SI Concrete (Miscellaneous).

Notes:

Splice v106 bars with v107 bars or v107 bars with v106 bars. For shafts 11 and 31, splice v107 bars with v108 bars or v108 bars with v107 bars. See HMLT Pedestal Elevation on Sheet S6-08 of S6-16.

Splice sp100 and sp101 or sp102 and sp101 bars where they meet.

When splicing spiral reinforcement is necessary, the spiral shall be provided with $1\frac{1}{2}$ extra turns at the ends to be spliced. These additional turns shall either be welded together according to AWS D1.4 or shall both terminate with a 135° standard hook.

Drilling and grouting of d102(E) bars shall be as per Section 584 of the Standard Specifications. Depth of embedment = 12". Cost included in Class SI Concrete (Miscellaneous).

Cost of shear studs included in Class SI Concrete (Miscellaneous).

Minimum Bar Laps	
Bar	Lap
#5	3'-2"
#6	3'-10"

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016184-60X79-S009-WallDetails_3.dgn

Tran Systems

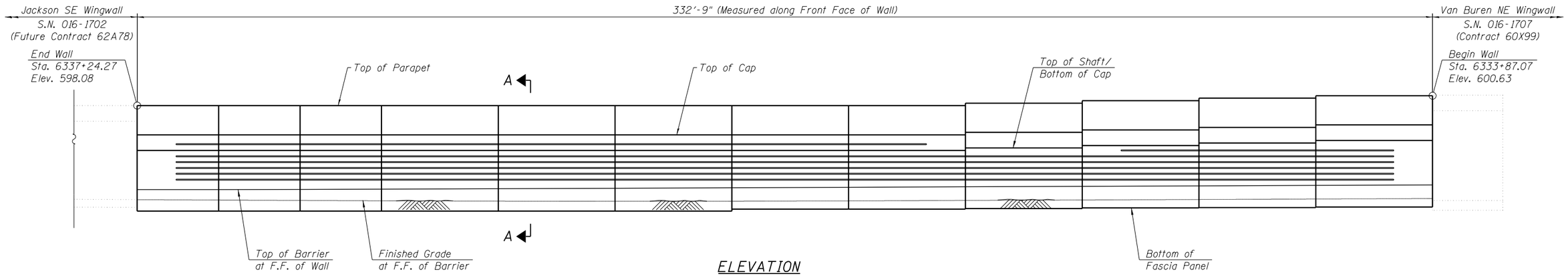
USER NAME = wjcolletti	DESIGNED - KRS	REVISED -	
	CHECKED - DJG	REVISED -	
PLOT SCALE = 0.1667 ' / in.	DRAWN - MJR	REVISED -	
PLOT DATE = 7/26/2018	CHECKED - KRS/WJC	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WALL SECTION AND DETAILS 3
RETAINING WALL 23 (STRUCTURE NO. 016-1814)

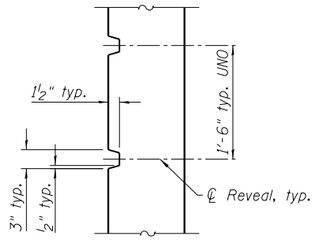
SHEET NO. S6-09 OF S6-16 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2014-005R&B	COOK	888	532
		CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			

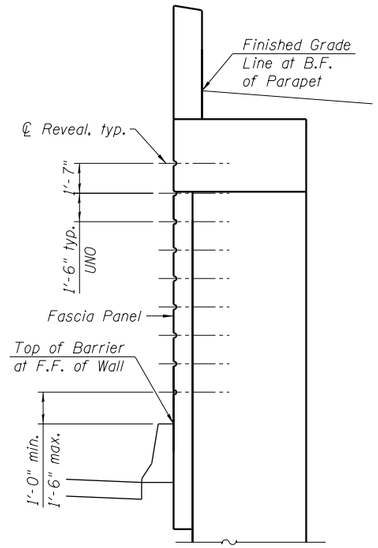


ELEVATION

(Looking East at F.F. of Wall)



REVEAL DETAIL



SECTION A-A

Notes:

Coordinate / verify all dimensions with structural drawings.

Parapet reveal will not be paid separately and shall be included in the cost of pay item Class SI Concrete (Miscellaneous).

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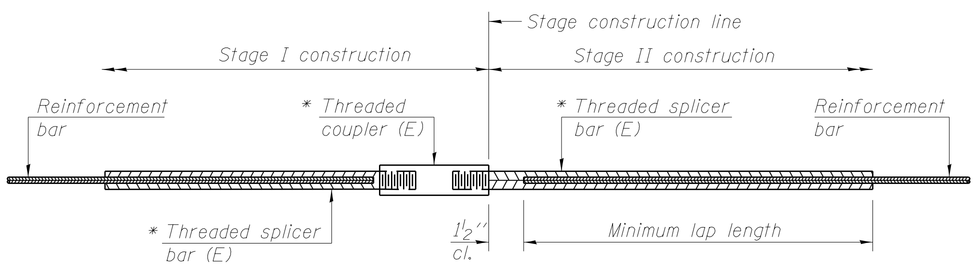
TranSystems

USER NAME = wjcollett	DESIGNED - WJC	REVISED -
	CHECKED - KRS	REVISED -
PLOT SCALE = 0.17 ' / in.	DRAWN - MJR	REVISED -
PLOT DATE = 7/26/2018	CHECKED - KRS/WJC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ARCHITECTURAL DETAILS
RETAINING WALL 23 (STRUCTURE NO. 016-1814)
SHEET NO. S6-10 OF S6-16 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2014-005R&B	COOK	888	533
		CONTRACT NO. 60X79		
	ILLINOIS	FED. AID PROJECT		



STANDARD BAR SPLICER ASSEMBLY

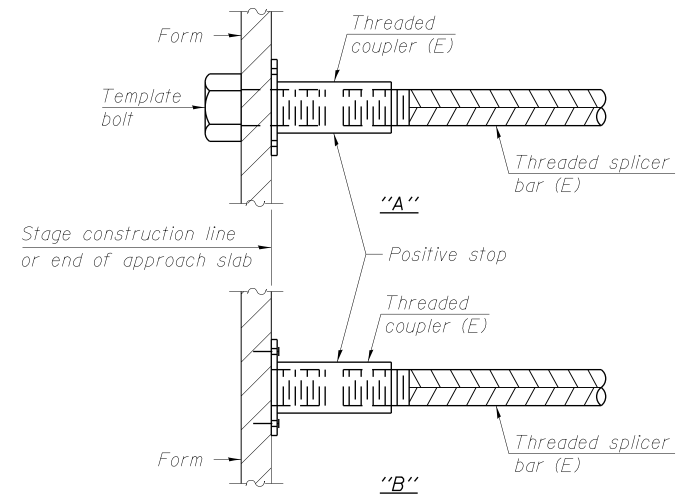
Minimum Lap Lengths						
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5	Table 6

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

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

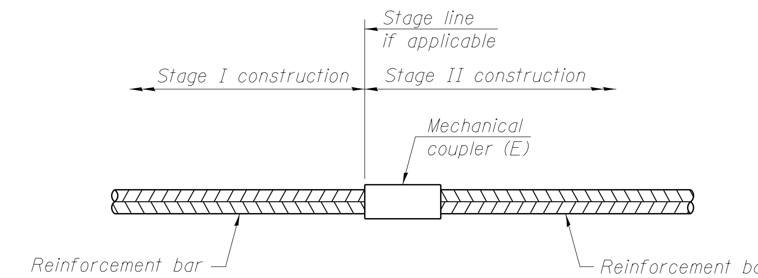
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

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



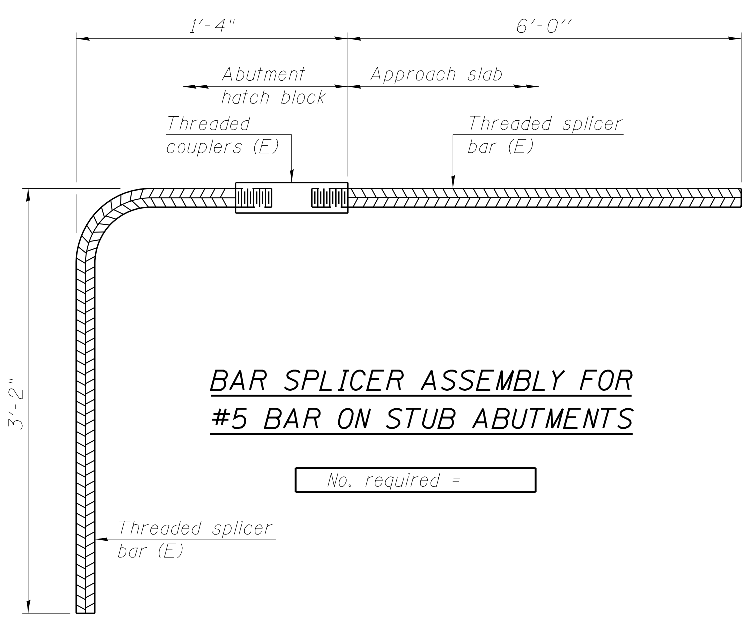
INSTALLATION AND SETTING METHODS

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



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required
Drilled Shaft 1	14	24
Drilled Shaft 2	14	24
Drilled Shaft 3	14	24
Drilled Shaft 4	14	24
Drilled Shaft 5	14	24
Drilled Shaft 6	14	24
Drilled Shaft 7	14	24
Drilled Shaft 8	14	24
Drilled Shaft 9	14	24
Drilled Shaft 10	14	24
Drilled Shaft 11	14	24
Drilled Shaft 12	14	24
Drilled Shaft 13	14	24
Drilled Shaft 14	14	24
Drilled Shaft 15	14	24
Drilled Shaft 16	14	24
Drilled Shaft 17	14	24
Drilled Shaft 18	14	24
Drilled Shaft 19	14	24
Drilled Shaft 20	14	24
Drilled Shaft 21	14	24
Drilled Shaft 22	14	24
Drilled Shaft 23	14	24
Drilled Shaft 24	14	24
Drilled Shaft 25	14	24
Drilled Shaft 26	14	24
Drilled Shaft 27	14	24
Drilled Shaft 28	14	24
Drilled Shaft 29	14	24
Drilled Shaft 30	14	24
Drilled Shaft 31	14	24
Drilled Shaft 32	14	24
Drilled Shaft 33	14	24



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required =

NOTES

Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.

All reinforcement shall be lapped and tied to the splicer bars.

Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.

See approved list of bar splicer assemblies and mechanical splicers for alternatives.

BSD-1 6-8-15

3:25:46 PM
0161814-60X79-S011-BarSplicer

TranSystems

USER NAME = wjcolletti	DESIGNED - KRS	REVISED -
	CHECKED - DJG	REVISED -
PLOT SCALE = 0:2.0000 ' / in.	DRAWN - MJR	REVISED -
PLOT DATE = 7/26/2018	CHECKED - KRS/WJC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
RETAINING WALL 23 (STRUCTURE NO. 016–1814)

SHEET NO. S6-11 OF S6-16 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2014-005R&B	COOK	888	534

CONTRACT NO. 60X79

ILLINOIS FED. AID PROJECT

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BORING LOG 23-RWB-01

WEI Job No.: 1100-04-01

Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 575.29 ft
North: 1898467.55 ft
East: 1171687.36 ft
Station: 6334+12.89
Offset: 30.5965 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
573.8	18-inch thick, ASPHALT --FILL-- Loose to medium dense, white CRUSHED STONE --BASE COURSE--	0						
					1	5 6 6	NP	6
		5			2	3 3 3	NP	8
569.8	Soft to stiff, brown and gray SILTY CLAY LOAM, trace gravel				3	2 3 4	1.17 N/6	19
		10			4	2 2 4	0.49 B	19
564.8	Very soft to soft, gray CLAY to SILTY CLAY, trace gravel				5	1 1 3	0.41 B	23
		15			6	1 2 2	0.49 B	26
					7	3 4 4	0.41 B	25
		20			8	2 3 2	0.25 P	27
538.5	Stiff to very stiff, gray SILTY CLAY, trace gravel	25			9	2 2 3	0.25 B	26
					10	1 2 2	0.25 B	23
		30			11	1 2 3	0.25 B	25
					12	2 2 3	0.41 B	25
		35			13	2 3 2	0.83 N/6	
		40			14	5 7 9	1.64 B	22

GENERAL NOTES

Begin Drilling: 07-27-2014 Complete Drilling: 07-27-2014
Drilling Contractor: Wang Testing Services Drill Rig: CME-55 TMR
Driller: R&J Logger: A. Happel Checked by: C. Marin
Drilling Method: 2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ Rotary wash
At Completion of Drilling: ▼ unable to measure
Time After Drilling: NA
Depth to Water: ▽ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 1100040\1 GPJ WANGENG.GDT 3/29/18

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BORING LOG 23-RWB-01

WEI Job No.: 1100-04-01

Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 575.29 ft
North: 1898467.55 ft
East: 1171687.36 ft
Station: 6334+12.89
Offset: 30.5965 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
523.5	Medium stiff, gray CLAY	45			15	7 13 16	2.54 B	22
518.5	Dense, gray SANDY LOAM, trace gravel --Wet--	50			16	28 26 32	3.00 P	24
		55			17	4 5 5	0.87 B	26
		60			18	16 14 16	NP	16
513.5	Hard, gray SILTY CLAY LOAM, trace gravel	65			19	23 30 45	7.38 B	15
510.3	Boring terminated at 65.00 ft	70						
		75						
		80						

GENERAL NOTES

Begin Drilling: 07-27-2014 Complete Drilling: 07-27-2014
Drilling Contractor: Wang Testing Services Drill Rig: CME-55 TMR
Driller: R&J Logger: A. Happel Checked by: C. Marin
Drilling Method: 2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ Rotary wash
At Completion of Drilling: ▼ unable to measure
Time After Drilling: NA
Depth to Water: ▽ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 1100040\1 GPJ WANGENG.GDT 3/29/18

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BORING LOG 23-RWB-02

WEI Job No.: 1100-04-01

Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 575.96 ft
North: 1898537.05 ft
East: 1171661.69 ft
Station: 6334+85.38
Offset: 28.1222 LT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
575.7	3-inch thick ASPHALT --PAVEMENT-- 575.3 7-inch thick CONCRETE --PAVEMENT-- Very dense, grayish white CRUSHED STONE --FILL-- 573.0 Very soft to soft, gray CLAY to SILTY CLAY, trace gravel	0						
					1	40 37 21	NP	2
		5			2	4 3 2	0.41 B	19
					3	1 2 3	0.49 B	20
		10			4	1 2 3	0.41 B	23
					5	1 2 2	0.41 B	25
		15			6	1 2 2	0.41 B	26
					7	1 2 2	< 0.25 P	27
		20			8	1 1 2	0.33 B	26
539.2	Stiff to hard, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel	25			9	1 1 2	0.25 B	25
					10	1 1 2	0.25 B	26
		30			11	2 3 4	0.41 B	25
					12	2 2 3	0.49 B	25
		35			13	1 2 3	0.41 B	27
		40			14	2 4 6	1.31 B	22

GENERAL NOTES

Begin Drilling: 08-13-2014 Complete Drilling: 08-13-2014
Drilling Contractor: Wang Testing Services Drill Rig: CME-55 TMR
Driller: R&J Logger: S. Woods Checked by: C. Marin
Drilling Method: 2.25" HSA, boring backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ Rotary wash
At Completion of Drilling: ▼ unable to measure
Time After Drilling: NA
Depth to Water: ▽ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 1100040\1 GPJ WANGENG.GDT 3/29/18

Notes:
Station and offsets are measured along ℄ Prop. NB C-D Road.

3-25-50 PW
016814-60X79-SO12-Boring1.dgn

TranSystems

USER NAME = wjcollett1	DESIGNED - KRS	REVISED -	
	CHECKED - DJG	REVISED -	
PLOT SCALE = 0.1667 ' / in.	DRAWN - MJR	REVISED -	
PLOT DATE = 7/26/2018	CHECKED - KRS/WJC	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS 1
RETAINING WALL 23 (STRUCTURE NO. 016-1814)
SHEET NO. S6-12 OF S6-16 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2014-005R&B	COOK	888	535
		CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			

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BORING LOG 23-RWB-02

WEI Job No.: 1100-04-01

Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 575.96 ft
North: 1898537.05 ft
East: 1171661.69 ft
Station: 6334+85.38
Offset: 28.1222 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--Occasional SILT interbeds--	45			15	6 9 13	2.13 B	13
			50			16	6 10 8	4.10 B	19
	524.2	Very stiff, gray CLAY , trace gravel							
			55			17	3 7 8	2.05 B	24
	519.2	Dense, gray SILTY LOAM, trace gravel --Moist--							
			60			18	7 14 17	NP	25
	514.2	Coarse, brown SAND --Saturated--							
	512.2	Dense, gray SILTY LOAM, trace gravel				19	10 15 19	NP	16
	511.0	Boring terminated at 65.00 ft	65						

GENERAL NOTES

Begin Drilling: 08-13-2014 Complete Drilling: 08-13-2014
Drilling Contractor: Wang Testing Services Drill Rig: CME-55 TMR
Driller: R&J Logger: S. Woods Checked by: C. Marin
Drilling Method: 2.25" HSA, boring backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ Rotary wash
At Completion of Drilling: ▼ unable to measure
Time After Drilling: NA
Depth to Water: ▽ NA

The stratification lines represent the approximate boundary between soil types: the actual transition may be gradual.

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BORING LOG 23-RWB-03

WEI Job No.: 1100-04-01

Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 576.57 ft
North: 1898615.24 ft
East: 1171637.84 ft
Station: 6335+65.51
Offset: 25.2492 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	576.3	4-inch thick ASPHALT --PAVEMENT--							
	575.8	8-inch thick CONCRETE --PAVEMENT--				1	9 9 12	NP	7
		Medium dense, gray and white CRUSHED STONE --FILL--							
	573.6	Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel				2	3 2 3	0.83 N/6	
			5						
						3	1 1 2	0.41 B	22
			10			4	1 2 3	0.33 B	23
						5	1 2 3	0.49 B	23
			15			6	1 2 3	0.49 B	24
						7	1 2 2	0.49 B	22
			20			8	1 2 2	0.25 B	25
						9	1 1 2	0.08 B	27
			25			10	1 2 2	0.16 B	26
						11	1 2 2	0.16 B	23
		--L_L(%)=36, P_I(%)=17-- --%Gravel=4.9-- --%Sand=12.1-- --%Silt=44.7-- --%Clay=38.4-- --A-6 (15)--	30			12	1 2 4	0.33 B	25
	539.8	Stiff to very stiff, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel				13	1 2 3	0.33 B	26
			35			14	3 4 8	1.56 B	23
			40						

GENERAL NOTES

Begin Drilling: 08-18-2014 Complete Drilling: 08-18-2014
Drilling Contractor: Wang Testing Services Drill Rig: CME-55 TMR
Driller: R&J Logger: S. Woods Checked by: C. Marin
Drilling Method: 2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ Rotary wash
At Completion of Drilling: ▼ unable to measure
Time After Drilling: NA
Depth to Water: ▽ NA

The stratification lines represent the approximate boundary between soil types: the actual transition may be gradual.

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BORING LOG 23-RWB-03

WEI Job No.: 1100-04-01

Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 576.57 ft
North: 1898615.24 ft
East: 1171637.84 ft
Station: 6335+65.51
Offset: 25.2492 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		gravel --DRY--							
		--L_L(%)=25, P_I(%)=16-- --%Gravel=6.6-- --%Sand=25.6-- --%Silt=48.8-- --%Clay=19.0-- --A-4 (4)--	45			15	5 8 13	3.94 B	13
			50			16	7 38 19	2.30 B	19
			55			17	6 8 10	1.23 B	23
	517.6	Medium dense to dense, gray SILTY LOAM, trace to some	60			18	4 5 6	NP	22
	511.6	Boring terminated at 65.00 ft	65			19	9 17 28	NP	

GENERAL NOTES

Begin Drilling: 08-18-2014 Complete Drilling: 08-18-2014
Drilling Contractor: Wang Testing Services Drill Rig: CME-55 TMR
Driller: R&J Logger: S. Woods Checked by: C. Marin
Drilling Method: 2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ Rotary wash
At Completion of Drilling: ▼ unable to measure
Time After Drilling: NA
Depth to Water: ▽ NA

The stratification lines represent the approximate boundary between soil types: the actual transition may be gradual.

Notes:
Station and offsets are measured along ℄ Prop. NB C-D Road.

BORING LOG 23-RWB-04

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WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 576.93 ft
North: 1898688.27 ft
East: 1171612.80 ft
Station: 6336+40.47
Offset: 16.6754 RT

Elevation (ft)	Soil and Rock Description
	3-inch thick, ASPHALT over 9-inch thick, CONCRETE --PAVEMENT--
575.9	Medium dense, gray and white CRUSHED STONE --FILL--
573.2	Medium stiff to very stiff, gray SILTY CLAY LOAM, trace gravel
568.9	Very soft to medium stiff, gray CLAY, trace gravel
545.2	Medium stiff to very stiff, gray SILTY CLAY LOAM, trace gravel

Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
1	13, 9, 9	NP	3
2	5, 4, 5	2.00 P	14
3	3, 4, 4	0.74 B	16
4	2, 3, 4	0.41 B	19
5	1, 2, 3	0.57 B	23
6	2, 2, 4	0.74 B	23
7	0, 2, 2	0.41 B	25
8	1, 1, 2	0.25 B	25
9	1, 2, 3	0.25 B	26
10	2, 1, 3	0.25 B	26
11	1, 4, 3	0.25 B	26
12	1, 3, 4	0.49 B	25
13	2, 4, 5	0.90 B	20
14	5, 7, 11	1.00 P	22

GENERAL NOTES

Begin Drilling 07-31-2014 Complete Drilling 07-31-2014
Drilling Contractor Wang Testing Services Drill Rig CME-55 TMR
Driller R&J Logger A. Happel Checked by C. Marin
Drilling Method 2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion

WATER LEVEL DATA

While Drilling ▽ Rotary wash
At Completion of Drilling ▼ unable to measure
Time After Drilling NA
Depth to Water ▼ NA
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 11000401.GPJ WANGENG.GDT 3/25/16

BORING LOG 23-RWB-04

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WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 576.93 ft
North: 1898688.27 ft
East: 1171612.80 ft
Station: 6336+40.47
Offset: 16.6754 RT

Elevation (ft)	Soil and Rock Description
525.2	Hard, gray SILTY CLAY, trace gravel
520.2	Medium stiff, gray CLAY, trace gravel
515.2	Medium dense, gray SILTY LOAM
511.9	Boring terminated at 65.00 ft

Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
15	5, 7, 11	1.56 B	19
16	9, 11, 15	2.13 B	20
17	15, 15, 20	4.02 B	24
18	3, 4, 5	0.66 B	40
19	7, 9, 7	NP	13

GENERAL NOTES

Begin Drilling 07-31-2014 Complete Drilling 07-31-2014
Drilling Contractor Wang Testing Services Drill Rig CME-55 TMR
Driller R&J Logger A. Happel Checked by C. Marin
Drilling Method 2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion

WATER LEVEL DATA

While Drilling ▽ Rotary wash
At Completion of Drilling ▼ unable to measure
Time After Drilling NA
Depth to Water ▼ NA
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 11000401.GPJ WANGENG.GDT 3/25/16

BORING LOG 23-RWB-05

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WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 592.28 ft
North: 1898793.23 ft
East: 1171675.68 ft
Station: 6337+31.20
Offset: 54.1130 RT

Elevation (ft)	Soil and Rock Description
	6-inch thick, dark brown SANDY LOAM --TOPSOIL--
591.8	Loose, brown GRAVELLY SANDY LOAM --FILL--
589.3	Loose to medium dense, brown and gray, fine SAND, trace gravel --FILL--
584.3	Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel

Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
1	6, 3, 3	NP	13
2	4, 4, 6	NP	10
3	10, 5, 3	NP	19
4	5, 2, 2	0.80 B	19
5	2, 2, 2	0.33 B	26
6	1, 1, 2	0.16 B	27
7	0, 2, 1	0.33 B	25
8	1, 2, 3	0.41 B	20
9	2, 2, 4	0.57 B	22
10	2, 2, 3	0.41 B	24
11	2, 2, 3	0.41 B	24
12	1, 2, 2	0.32 B	24
13	0, 2, 3	0.33 B	25
14	3, 3, 3	0.41 B	24

GENERAL NOTES

Begin Drilling 08-18-2014 Complete Drilling 08-18-2014
Drilling Contractor Wang Testing Services Drill Rig D-25 ATV
Driller P&N Logger H. Bista Checked by C. Marin
Drilling Method 2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion

WATER LEVEL DATA

While Drilling ▽ 5.50 ft
At Completion of Drilling ▼ unable to measure
Time After Drilling NA
Depth to Water ▼ NA
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 11000401.GPJ WANGENG.GDT 3/25/16

Notes:
Station and offsets are measured along ℄ Prop. NB C-D Road.

BORING LOG 23-RWB-05

Page 2 of 2

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WEI Job No.: 1100-04-01
Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 592.28 ft
North: 1898793.23 ft
East: 1171675.68 ft
Station: 6337+31.20
Offset: 54.1130 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		45	15	3 3 5	0.74 B	25
545.5	Medium stiff to stiff, gray SILTY CLAY to SILTY CLAY LOAM, little to some gravel					
		50	16	4 10 11	0.82 B	25
		55	17	4 6 7	0.90 B	22
532.3		60	18	10 16 14	1.39 B	19
	Boring terminated at 60.00 ft					

WANGENGINC 11000401.GPJ WANGENG.GDT 3/25/16

GENERAL NOTES

Begin Drilling: 08-18-2014 — Complete Drilling: 08-18-2014
Drilling Contractor: Wang Testing Services — Drill Rig: D-25 ATV
Driller: P&N — Logger: H. Bista — Checked by: C. Marin
Drilling Method: 2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion

WATER LEVEL DATA

While Drilling: 5.50 ft
At Completion of Drilling: unable to measure
Time After Drilling: NA
Depth to Water: NA
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

BORING LOG 1702-B-03

Page 1 of 3

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WEI Job No.: 1100-04-01
Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 593.01 ft
North: 1898890.82 ft
East: 1171649.04 ft
Station: 8214+76.16
Offset: 15.8644 LT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
592.8	3-inch thick ASPHALT --PAVEMENT--					
592.0	9-inch thick CONCRETE --PAVEMENT--					
	Loose, gray GRAVELLY SAND --BASE COURSE--		1	5 3 5	NP	9
589.8	Very loose, grayish brown SANDY LOAM to SAND, trace to little gravel; moist to wet	5	2	1 0 1	NP	11
			3	1 2 1	NP	16
585.8	Stiff, grayish brown SILTY CLAY to SILTY CLAY LOAM, trace gravel	10	4	1 3 3	1.31 B	22
582.5	Very soft to soft, gray CLAY to SILTY CLAY, trace gravel		5	1 1 1	0.49 B	24
	--In-Situ Vane Shear, 14.0 feet-- --$S_{u\,undis}$ = 544 psf-- --$S_{u\,remold}$ = 181 psf-- --Sensitivity = 3.00--	15	1			
		20	1	P U S	< 0.25	31
				H	P	
	--In-Situ Vane Shear, 24.0 feet-- --$S_{u\,undis}$ = 1067 psf-- --$S_{u\,remold}$ = 648 psf-- --Sensitivity = 1.64--	25	2			
		30	2	P U S H	0.25 P	24
	--In-Situ Vane Shear, 34.0 feet-- --$S_{u\,undis}$ = 712 psf-- --$S_{u\,remold}$ = 233 psf-- --Sensitivity = 3.05--	35	3			
		40	3	P U S	0.25	25

WANGENGINC 11000401.GPJ WANGENG.GDT 3/25/16

GENERAL NOTES

Begin Drilling: 06-26-2014 — Complete Drilling: 06-26-2014
Drilling Contractor: Wang Testing Services — Drill Rig: D-50 TMR
Driller: R&J — Logger: S. Woods — Checked by: C. Marin
Drilling Method: 2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion

WATER LEVEL DATA

While Drilling: Rotary wash
At Completion of Drilling: NA
Time After Drilling: NA
Depth to Water: NA
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

BORING LOG 1702-B-03

Page 2 of 3

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

WEI Job No.: 1100-04-01
Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 593.01 ft
North: 1898890.82 ft
East: 1171649.04 ft
Station: 8214+76.16
Offset: 15.8644 LT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
				H	P	
	--In-Situ Vane Shear, 44.0 feet-- --$S_{u\,undis}$ = 1450 psf-- --$S_{u\,remold}$ = 803 psf-- --Sensitivity = 1.81--	45	4			
		50	6	PUSH	0.41 B	
540.3	Very stiff to hard, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel	55				
			7	7 9 13	3.85 B	21
		60	8	4 7 17	3.44 B	16
	--L_L(%)=34, P_L(%)=17-- --%Gravel=4.1-- --%Sand=13.2-- --%Silt=49.7-- --%Clay=33.0-- --A-6 (13)--	65	9	3 7 12	2.30 B	22
		70	10	6 12 16	4.84 B	21
521.3	Medium stiff, gray CLAY to SILTY CLAY, trace gravel					
		75	11	1 2 5	0.98 B	30
516.3	Medium dense to dense, gray SAND; moist to saturated					
		80	12	10 9 8	NP	12

WANGENGINC 11000401.GPJ WANGENG.GDT 3/25/16

GENERAL NOTES

Begin Drilling: 06-26-2014 — Complete Drilling: 06-26-2014
Drilling Contractor: Wang Testing Services — Drill Rig: D-50 TMR
Driller: R&J — Logger: S. Woods — Checked by: C. Marin
Drilling Method: 2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion

WATER LEVEL DATA

While Drilling: Rotary wash
At Completion of Drilling: NA
Time After Drilling: NA
Depth to Water: NA
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Notes:
Boring Log 23-RWB-05 station and offset is measured along ℄ Prop. NB C-D Road.
Boring Log 1702-B-03 station and offset along ℄ Prop. NB C-D Road is:
Sta. 6338+35.25, Offset 41.54' Rt.

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TranSystems

USER NAME = wjcolletti	DESIGNED - KRS	REVISED -
	CHECKED - DJG	REVISED -
PLOT SCALE = 0.1667 ' / in.	DRAWN - MJR	REVISED -
PLOT DATE = 7/26/2018	CHECKED - KRS/WJC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS 4
RETAINING WALL 23 (STRUCTURE NO. 016-1814)

SHEET NO. S6-15 OF S6-16 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2014-005R&B	COOK	888	538

CONTRACT NO. 60X79
ILLINOIS FED. AID PROJECT

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

BORING LOG 1702-B-03

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 593.01 ft
North: 1898890.82 ft
East: 1171649.04 ft
Station: 8214+76.16
Offset: 15.8644 LT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		85	13	13 16 15	NP	17
		90	14	17 19 25	NP	20
499.0	Dense, gray SILT; saturated	95	15	13 17 18	NP	25
496.3	Dense, brown GRAVELLY SAND; wet	100	16	18 21 22	NP	15
491.3	Very dense, gray GRAVELLY SILTY LOAM; wet		17	50/6	NP	18
489.0	*Dolostone fragments in the head of the spoon* --difficult drilling from 104 feet-- --WEATHERED BEDROCK--	105				
484.5	--ROLLER BIT REFUSAL-- Boring terminated at 108.50 ft	110				
		115				
		120				

GENERAL NOTES

Begin Drilling **06-26-2014** Complete Drilling **06-26-2014**
Drilling Contractor **Wang Testing Services** Drill Rig **D-50 TMR**
Driller **R&J** Logger **S. Woods** Checked by **C. Marin**
Drilling Method **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ∇ **Rotary wash**
At Completion of Drilling ▼ **NA**
Time After Drilling **NA**
Depth to Water ▼ **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 11000401.GPJ WANGENG.GDT 3/25/16

Notes:
Boring Log 1702-B-03 station and offset along ℄ Prop. NB C-D Road is:
Sta. 6338+35.25, Offset 41.54' Rt.

TranSystems	USER NAME = wjcolletti	DESIGNED - KRS	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BORING LOGS 5 RETAINING WALL 23 (STRUCTURE NO. 016-1814)
		CHECKED - DJG	REVISED -		
	PLOT SCALE = 0.1667 ' / in.	DRAWN - MJR	REVISED -		
	PLOT DATE = 7/26/2018	CHECKED - KRS/WJC	REVISED -		SHEET NO. S6-16 OF S6-16 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2014-005R&B	COOK	888	539
		CONTRACT NO. 60X79		
		ILLINOIS FED. AID PROJECT		

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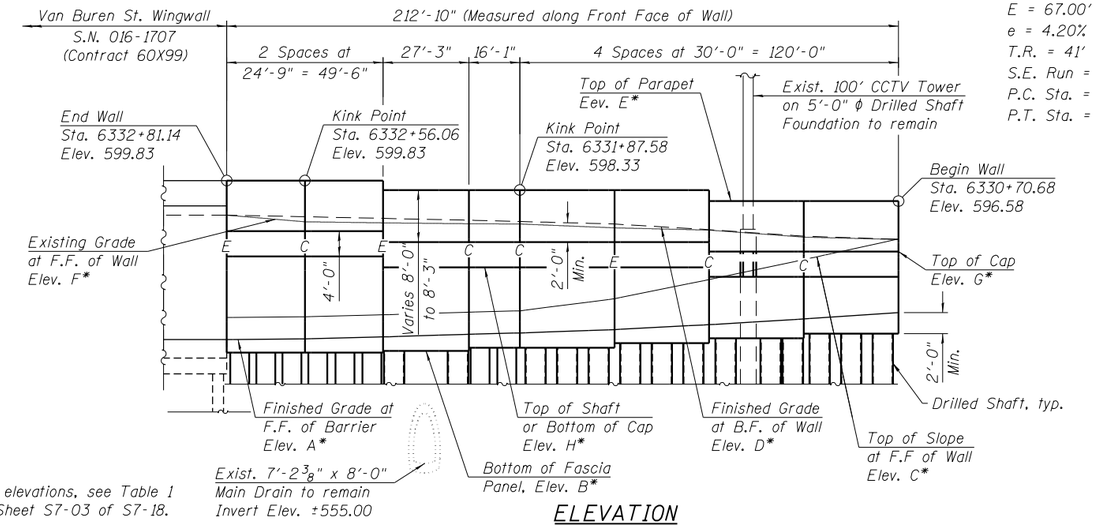
Bench Mark: Set "X" on east barrier wall of I-90 at ℄ of Adams Street. Elev. 581.17.

Existing Structure: None.

Ramp WN and Ramp EN will be closed to traffic and detoured during construction as necessary.

No Salvage.



* For elevations, see Table 1 on Sheet S7-03 of S7-18.

ELEVATION

(Looking East at F.F. of Wall, Proposed Concrete Barrier not shown for clarity.)

CURVE DATA

(NB C-D Road)
Prop. Curve P-NCD-NX-5
P.I. Sta. = 6336+57.47
Δ = 35° 13′ 41" (RT)
D = 4° 12′ 24"
R = 1,362.00′
T = 432.42′
L = 837.42′
E = 67.00′
e = 4.20%
T.R. = 41′
S.E. Run = 87′
P.C. Sta. = 6332+25.05
P.T. Sta. = 6340+62.48

CURVE DATA

(NB C-D Road)
Prop. Curve P-NCD-NX-4
P.I. Sta. = 6328+76.78
Δ = 59° 05′ 41" (RT)
D = 14° 08′ 50"
R = 405.00′
T = 229.58′
L = 417.72′
E = 60.54′
e = 5.40%
T.R. = 36′
S.E. Run = 98′
P.C. Sta. = 6326+47.20
P.T. Sta. = 6330+64.91

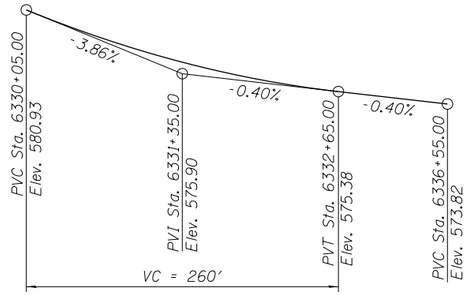
DESIGN SPECIFICATIONS

2017 AASHTO LRFD Bridge Design Specifications 8th Edition

DESIGN STRESSES

FIELD UNITS

f'c = 7,000 psi (Drilled Shafts)
f'c = 4,000 psi (All other concrete)
fy = 60,000 psi (Reinforcement)



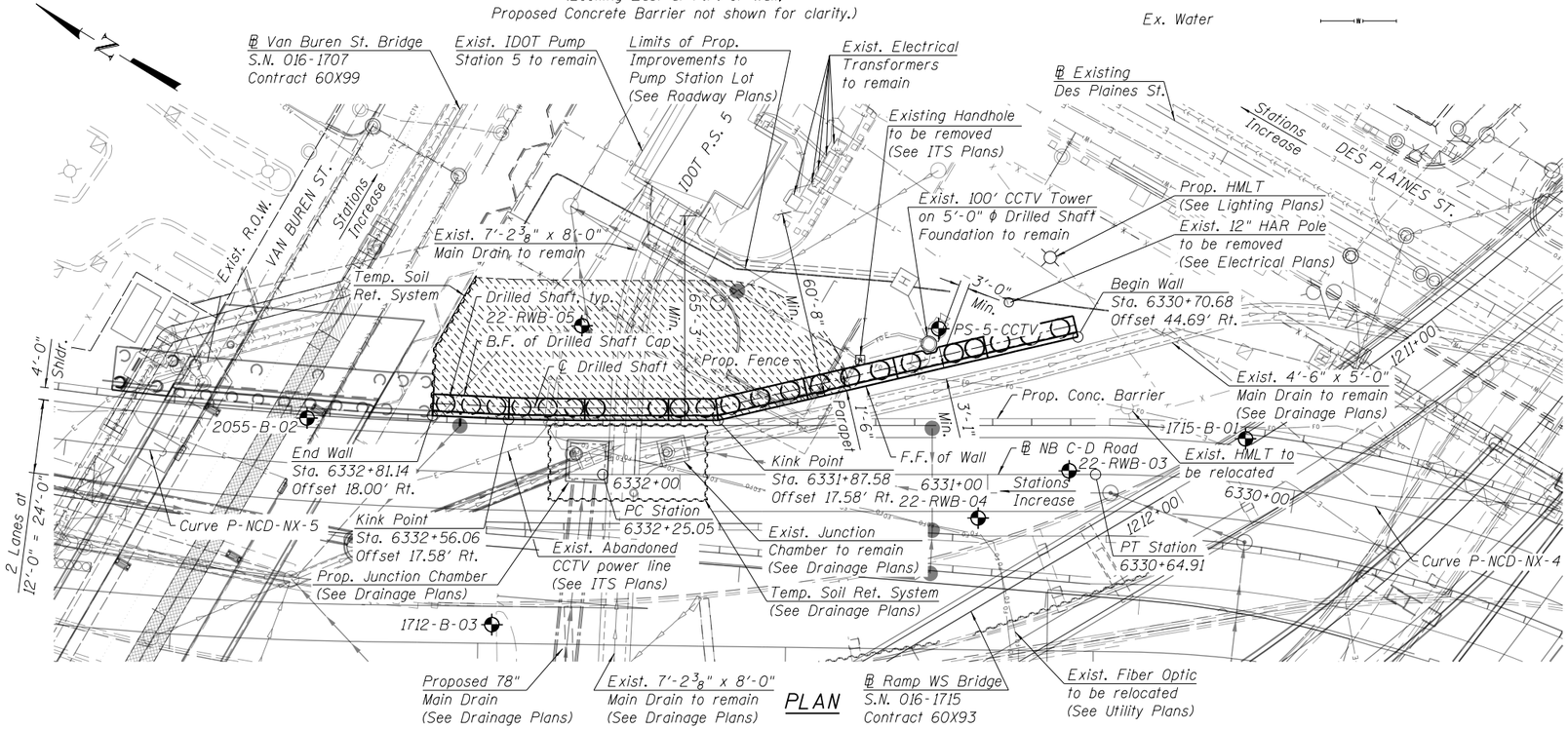
PROFILE GRADE

(℄ NB C-D Road)

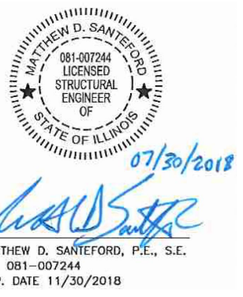
LEGEND:

Ex. Chain Link Fence	— x — x —	Soil Boring	⌖
Combined Sewer	→→→→→→	Existing Catch Basin	○
Electric	—E—	Proposed Catch Basin	●
Ex. Storm Sewer	——	Existing Manhole	◎
Prop. Storm Sewer	——	Proposed Manhole	◉
Ex. ITS Cable	— — — —	Proposed Inlet	▬
Ex. Gas Line	—G—	Limits of Excavation and LCCF	▨
Ex. Fiber Optic	—FO—		
Ex. Water	—W—		

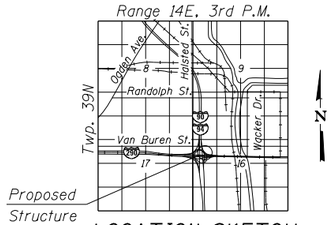
Notes:
Wall offsets are measured from the ℄ of Proposed NB C-D Road to the front face of cast-in-place fascia panels.
C denotes Construction Joint.
E denotes Expansion Joint.
F.F. denotes Front Face.
B.F. denotes Back Face.
Wall to be built along straight chords between beginning station, kink points, and end station.
There shall be a minimum clear distance of 2′ between the proposed drilled shafts and the existing main drain.



PLAN



MATTHEW D. SANTEFORD, P.E., S.E.
NO. 081-007244
EXP. DATE 11/30/2018



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
RETAINING WALL 22B ALONG NB C-D ROAD
F.A.I. RTE. 90/94 (KENNEDY EXPRESSWAY)
SECTION 2014-005R&B
COOK COUNTY
STATION 6330+70.68 TO STATION 6332+81.14
STRUCTURE NO. 016-1839

USER NAME = wjcolletti	DESIGNED - KRS	REVISED -	
	CHECKED - DJG	REVISED -	
PLOT SCALE = 48.00 ' / in.	DRAWN - MJR	REVISED -	
PLOT DATE = 7/27/2018	CHECKED - KRS/WJC	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. S7-01 OF S7-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2014-005R&B	COOK	888	540
		CONTRACT NO. 60X79		
		ILLINOIS FED. AID PROJECT		

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GENERAL NOTES:

1. Reinforcement bars designated (E) shall be epoxy coated.

2. The Contractor shall exercise extreme caution during construction to make certain that construction activities, live load surcharge and other loads applied to the structures will not have detrimental effects on the adjacent building foundations. Any damage during construction shall be repaired by the Contractor at his expense and no charge to the department. Driving piles and temporary sheet piling is not allowed.

3. The Contractor shall provide vibration and displacement monitoring at the locations specified in the Special Provisions for Construction Vibration Monitoring and Monitoring Adjacent Structures, to ensure that removal/construction activities in the vicinity of the structures do not have detrimental effects on building foundations. No additional compensation shall be provided to the Contractor for alternative means and methods, or additional precautionary measures, required during removal/ construction activities to satisfy these requirements. See Contract Special Provisions for details.

4. Drilled shaft construction above existing grade shall not be paid separately but shall be included with Drilled Shaft in Soil.

5. Slipforming of parapets is not allowed.

6. The Contractor shall field verify locations of existing underground utilities. The Contractor shall take precautions to protect existing utilities during construction of the wall. Any damage to the existing utilities shall be the responsibility of the Contractor.

7. Concrete for the Drilled Shafts shall be in accordance with Section 516 of Standard Specifications and shall have the minimum compressive strength of 7,000 psi prior to excavation in front of shafts and installation of lagging system.

8. For drilled shaft locations where permanent casing is required as shown on the plans, the casing will be paid for under Permanent Casing. If Contractor elects to use permanent casing for ease of construction in locations where it is not required on the plans, the casing will not be paid for separately and is included in Drilled Shaft in Soil.

9. Wall to be built along straight chords between construction and expansion joints.

10. Concrete Sealer shall be applied to the exposed top, front, and back faces of the parapet, and to the exposed front faces of cap and fascia panels.

11. Limited groundwater elevation data is available in the boring logs. In addition, groundwater may also be present in deeper granular layers. The groundwater may rise in the shafts to an elevation above the top of granular layers. The Contractor shall consider this information when choosing construction methods. The Contractor will not be compensated for issues related to the groundwater elevation.

12. The Contractor shall take all necessary precautions not to contaminate groundwater during the drilled shaft construction operation. Contractor is responsible for the proper containment and disposal of the contaminated groundwater and spoils resulting from the Contractor's means and methods. No additional cost will be paid for this effort.

13. Based on the high squeeze potential of the clay soils, the use of temporary casing will be required to Elevation 538.00 in order to properly construct the drilled shafts. Casing may be pulled or left in place, as determined by the Contractor at no cost to the Department.

14. The contractor shall coordinate the construction of the proposed structure with the construction of the existing and proposed Ramp WN bridge to be constructed as part of Contract 60X93. See MOT plan sheets and special provisions, including the Available Work Areas and Sequencing Requirements special provision, for additional construction and coordination requirements.

15. Proposed permanent casing shall be installed by twisting and/or pushing the casing in conjunction with drilled excavation inside of the permanent casing. The bottom of the permanent casing shall maintain minimum 2 ft. embedment into underlying soil below the bottom of shaft excavation elevation. Neither the Wet Method of construction nor the use of Temporary Casing will be permitted. See Special Provisions for Foundation Drilling Procedures.

16. All Lightweight Cellular Concrete Fill shall be Class III. See Special Provision.

INDEX OF SHEETS

STATION 6330+70.68 TO 6332+81.14
BUILT 20__ BY
STATE OF ILLINOIS
F.A.I. RT. 90/94 SEC. 2014-005R&B
LOADING HL-93
STR. NO. 016-1839

NAME PLATE

See Std. 515001

TOTAL BILL OF MATERIAL

Item	Unit	Total Quantity
Structure Excavation	Cu. Yd.	369
Concrete Structures	Cu. Yd.	220.8
Concrete Superstructure	Cu. Yd.	94.6
Reinforcement Bars	Pound	344,440
Reinforcement Bars, Epoxy Coated	Pound	19,400
Mechanical Splicers	Each	240
Name Plates	Each	1
Permanent Casing	Foot	1,174
Drilled Shaft in Soil	Cu. Yd.	1,698.6
Temporary Soil Retention System	Sq. Ft.	533
Concrete Sealer	Sq. Ft.	5,956
Class SI Concrete (Miscellaneous)	Cu. Yd.	151.1
Crosshole Sonic Logging Access Ducts	Foot	1,622
Crosshole Sonic Logging Testing	Each	5
Lightweight Cellular Concrete Fill	Cu. Yd.	1,454
Slope Inclinometer	Each	1
Chain Link Fence, 4' Attached to Structure	Foot	14
Pipe Underdrain for Structures 4"	Foot	218

CONSTRUCTION SEQUENCE

1. Install TSRS along Van Buren Street.

2. Excavate the area down to proposed groundline at F.F. of the wall.

3. Install TSRS and excavate to install junction chamber (See Drainage Plans).

4. Construct junction chamber and backfill excavation (See Drainage Plans).

5. Drill shafts and construct retaining wall.

6. Backfill with lightweight cellular concrete fill.

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TranSystems

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	CHECKED - DJG	REVISED -	
PLOT SCALE = 0.1667 ' / in.	DRAWN - MJR	REVISED -	
PLOT DATE = 7/30/2018	CHECKED - KRS/WJC	REVISED -	

GENERAL DATA
RETAINING WALL 22B (STRUCTURE NO. 016-1839)
SHEET NO. S7-02 OF S7-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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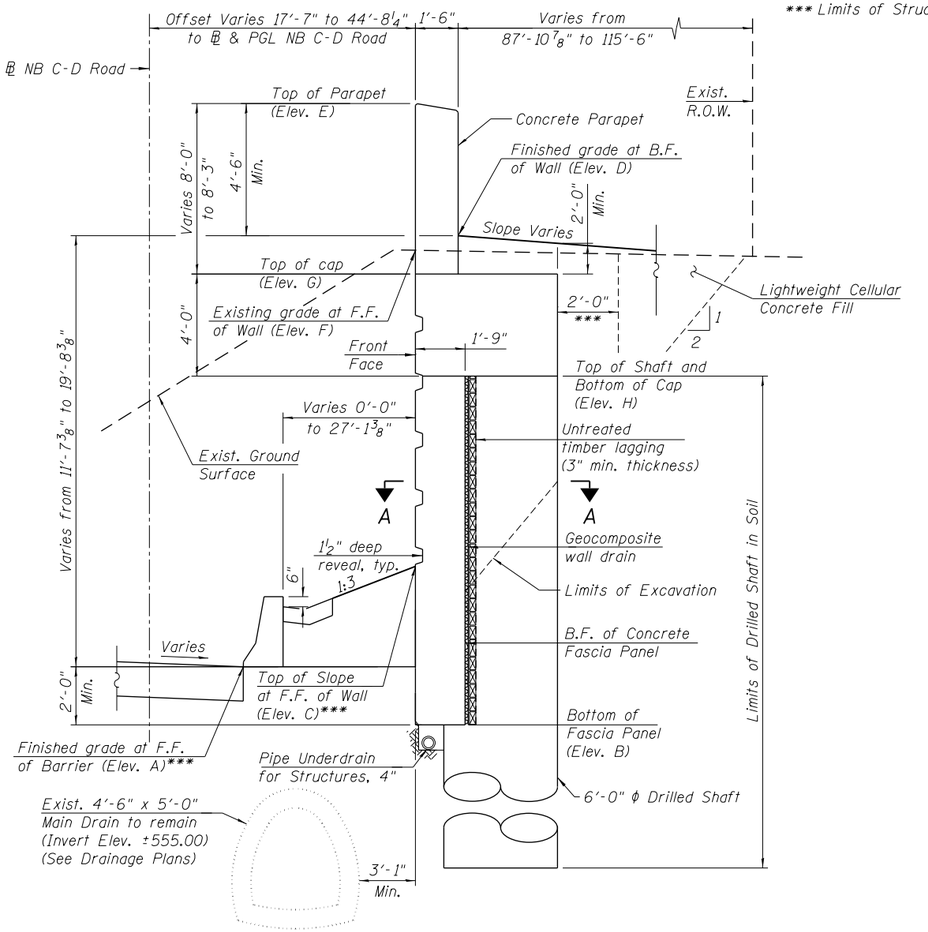
		CONTRACT NO. 60X79		
		ILLINOIS FED. AID PROJECT		

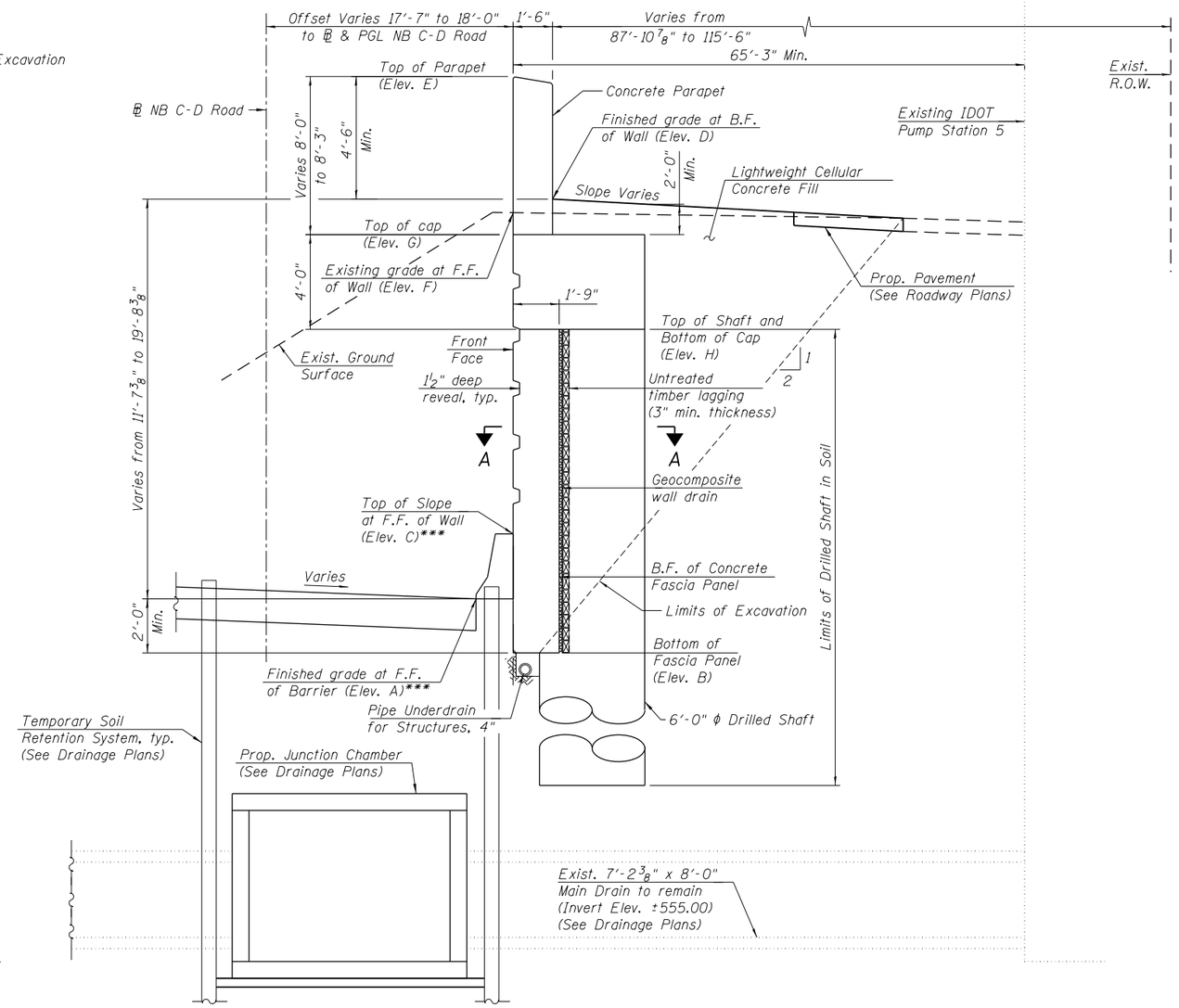


*** Limits of Structure Excavation

TYPICAL CROSS SECTION

(Sta. 6330+70.68 to Sta. 6331+87.58)
(Looking Upstation)

*** Installed as part of Future Contract 62A76. See Roadway Cross Sections for interim grading of Front Face of wall.



TYPICAL CROSS SECTION

(Sta. 6331+87.58 to Sta. 6332+81.14)
(Looking Upstation)

TABLE 1 - WALL ELEVATIONS

	Station	Offset	Elevation A	Elevation B	Elevation C	Elevation D	Elevation E	Elevation F	Elevation G	Elevation H
	6330+70.68	44.69' Rt.	578.91	575.58	590.57	590.52	596.58	590.49	588.58	584.58
	6330+99.90	37.92' Rt.	577.90	574.83	587.30	591.02	596.58	590.87	588.58	584.58
*	6331+29.13	31.14' Rt.	577.01	574.83	584.15	592.05	596.58	591.98	588.58	584.58
**	6331+29.13	31.14' Rt.	577.01	574.08	584.15	592.05	598.33	591.98	590.08	586.08
	6331+58.35	24.36' Rt.	576.23	573.33	581.11	592.95	598.33	592.34	590.08	586.08
	6331+87.58	17.58' Rt.	575.69	573.33	579.19	593.35	598.33	592.95	590.08	586.08
	6332+03.66	17.58' Rt.	575.48	572.83	578.98	593.55	598.33	592.99	590.08	586.08
*	6332+30.99	17.58' Rt.	575.07	572.83	578.57	593.84	598.33	593.13	590.08	586.08
**	6332+30.99	17.58' Rt.	575.07	572.58	578.57	593.84	599.83	593.13	591.83	587.83
	6332+56.06	17.58' Rt.	574.75	572.58	578.25	594.11	599.83	593.30	591.83	587.83
	6332+81.14	18.00' Rt.	574.65	572.58	578.15	594.35	599.83	594.35	591.83	587.83

Elevation A- Finished Grade at Front Face of Barrier***
Elevation B- Bottom of Fascia Panel
Elevation C- Top of Slope at Front Face of Wall***
Elevation D- Finished Grade at Back Face of Wall
Elevation E- Top of Parapet
Elevation F- Existing Grade at Front Face of Wall
Elevation G- Top of Cap
Elevation H- Top of Shaft / Bottom of Cap
* Elevations just to the right of joint
** Elevations just to the left of joint

Notes:
B.F. denotes Back Face.
E.F. denotes Each Face.
F.F. denotes Front Face.

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Tran Systems

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	CHECKED - DJG	REVISED -
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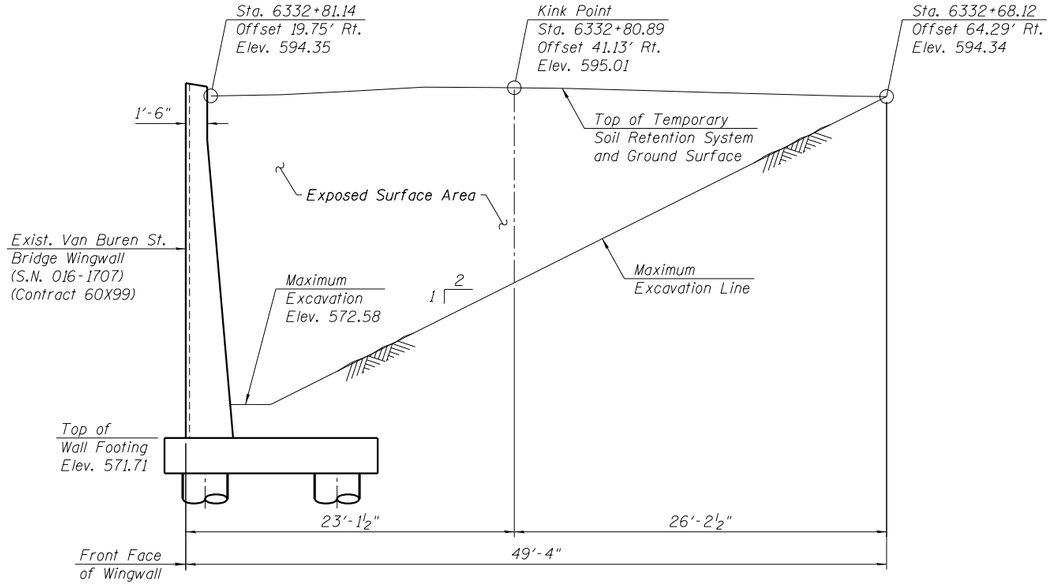
PLOT DATE = 7/27/2018	CHECKED - KRS/WJC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TYPICAL CROSS SECTIONS
RETAINING WALL 22B (STRUCTURE NO. 016-1839)
SHEET NO. S7-03 OF S7-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2014-005R&B	COOK	888	542
		CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			



TEMPORARY SOIL RETENTION SYSTEM

Notes:

A cantilevered sheet piling design does not appear feasible and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan details and calculations for review and acceptance by the Engineer.

The maximum allowable excavation slope is 1:2 (V:H).

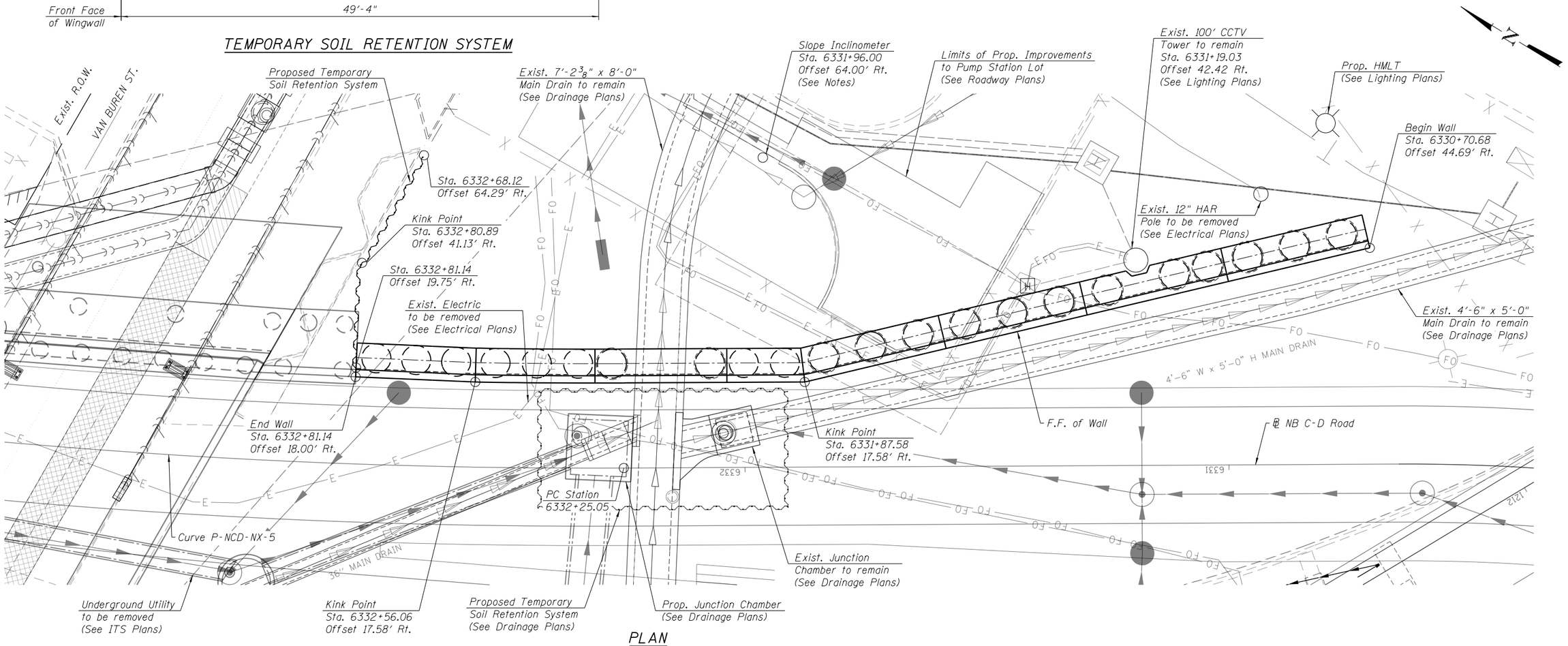
Any damage to existing utilities during construction shall be repaired at the Contractor's expense.

See Suggested Construction Sequence on Sheet S7-02 of S7-18.

In addition to vibration and displacement monitoring, the Contractor shall monitor movements with Slope Inclinometers. All inclinometers shall be installed prior to drilling. See special provision for Slope Inclinometer.

BILL OF MATERIAL

Item	Unit	Total
Temporary Soil Retention System	Sq. Ft.	533



PLAN

TranSystems	USER NAME = wjcolletti	DESIGNED - KRS	REVISED -
		CHECKED - DJG	REVISED -
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	PLOT DATE = 7/27/2018	CHECKED - KRS/WJC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY SOIL RETENTION SYSTEM DETAILS
RETAINING WALL 22B (STRUCTURE NO. 016-1839)
SHEET NO. S7-04 OF S7-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2014-005R&B	COOK	888	543
		CONTRACT NO. 60X79		
		ILLINOIS FED. AID PROJECT		

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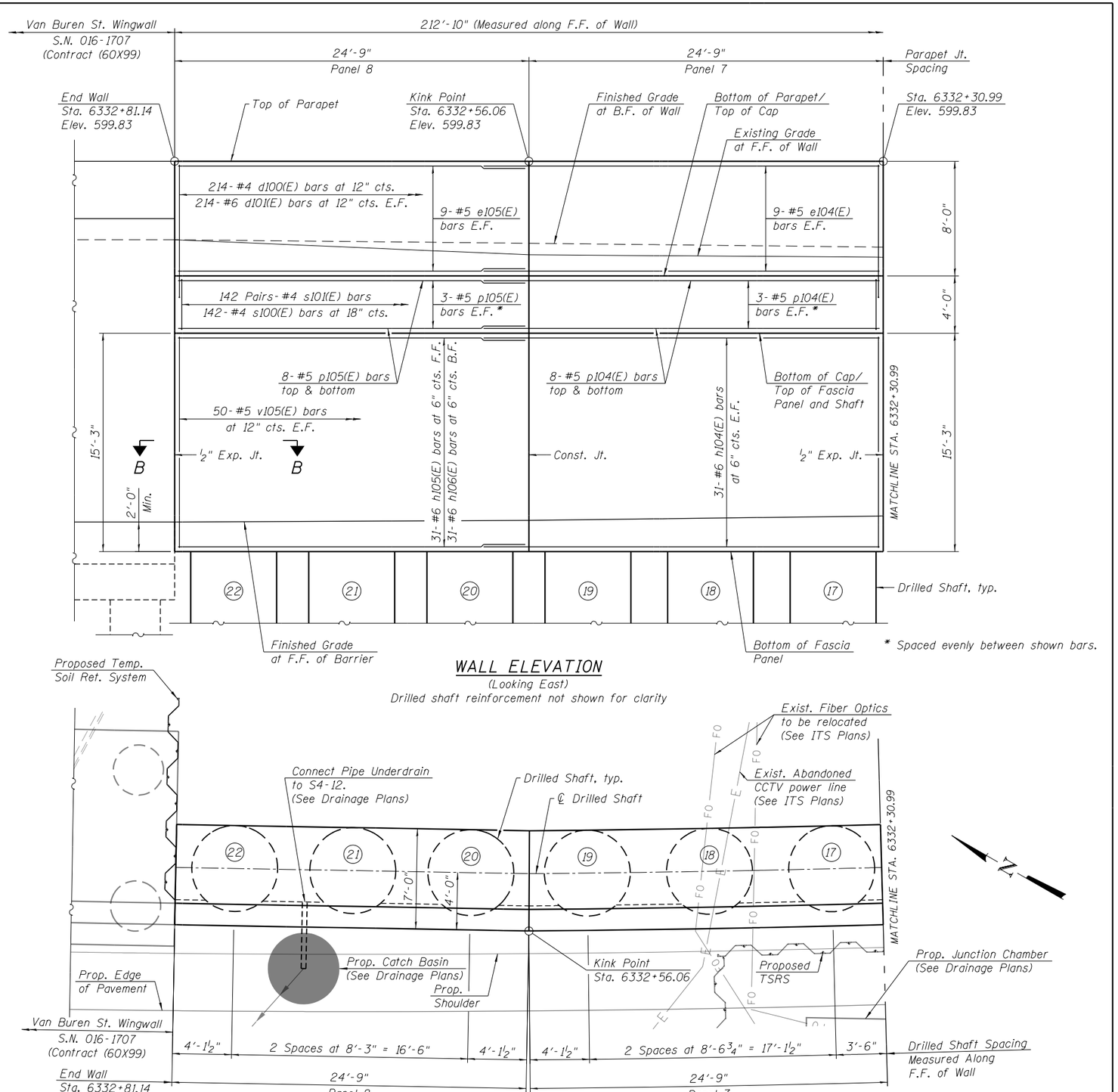


WALL ELEVATION

(Looking East)
Drilled shaft reinforcement not shown for clarity

PLAN

(Parapet and cap reinforcement not shown for clarity)

Notes:
Work this sheet with Sheets S7-06 to S7-10 of S7-18.
F.F. = Front Face
B.F. = Back Face
E.F. = Each Face
Parapet concrete shall be paid for as Concrete Superstructure.
Shaft Cap shall be paid for as Concrete Structures.
Concrete fascia panels shall be paid as Class SI Concrete (Miscellaneous).
Drilled Shafts shall be tested in accordance with Special Provision for Crosshole Sonic Logging Testing of Drilled Shafts.
See Drilled Shaft Layout Table on Sheet S7-10 of S7-18.
See Sheet S7-11 of S7-18 for details on architectural reveals and joint between cap and fascia panels.

8/16/2018 AM
0161839-60X79-S005-WallElev_1.dgn

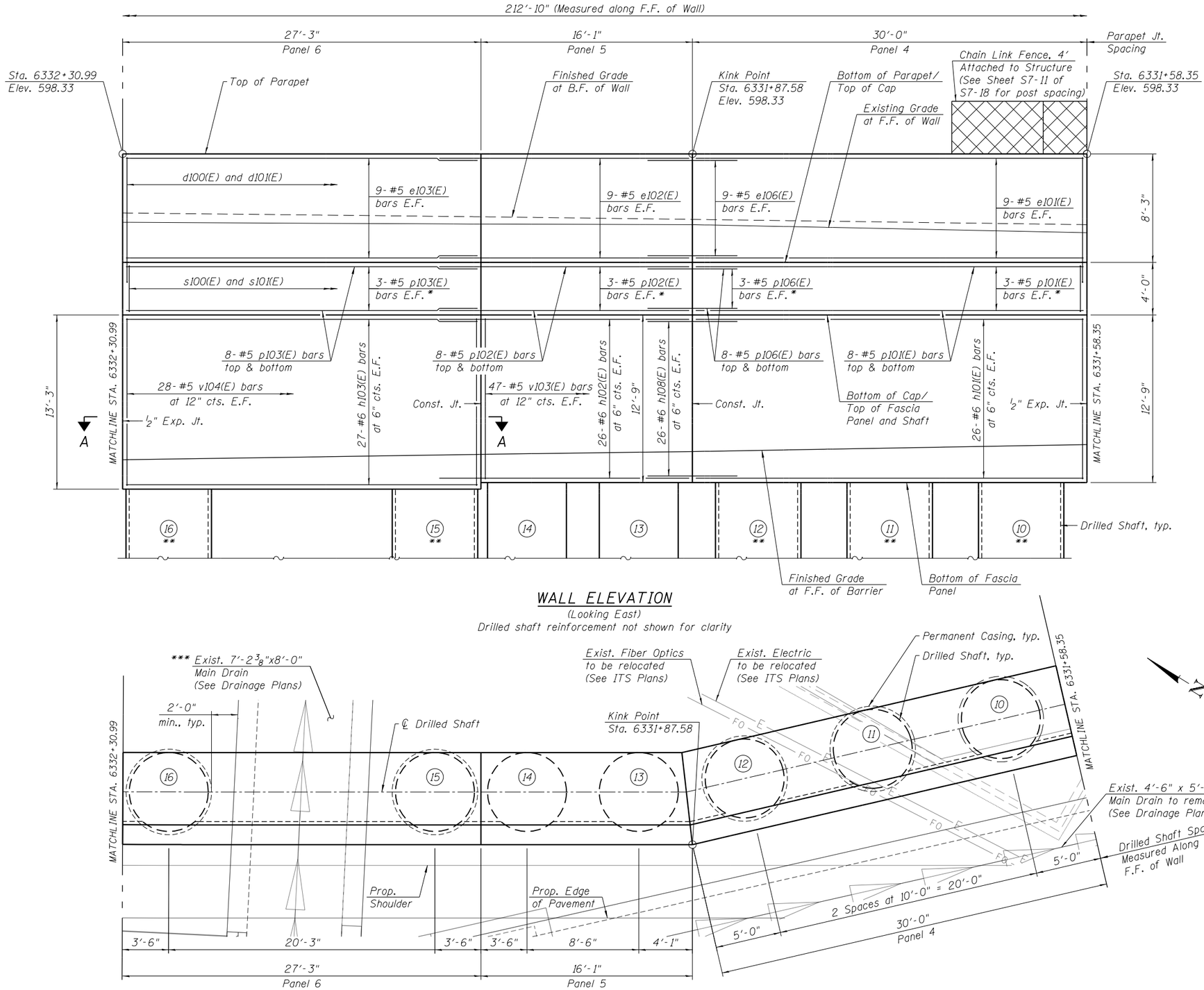
TranSystems

USER NAME = wjcolletti	DESIGNED - KRS	REVISED -
	CHECKED - DJG	REVISED -
PLOT SCALE = 0.2 '/ in.	DRAWN - MJR	REVISED -
PLOT DATE = 7/27/2018	CHECKED - KRS/WJC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WALL ELEVATION DETAILS 1
RETAINING WALL 22B (STRUCTURE NO. 016-1839)
SHEET NO. S7-05 OF S7-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2014-005R&B	COOK	888	544
		CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			



WALL ELEVATION

(Looking East)

Drilled shaft reinforcement not shown for clarity

PLAN

(Parapet and cap reinforcement not shown for clarity)

* Spaced evenly between shown bars.

** Drilled shafts with ½" permanent casing required.

*** Contractor must verify the location of the Existing 7'-2 3/8"x8'-0" Main Drain prior to the drilling of the shafts and adjust the locations of the permanent casings if necessary.

Notes:
F.F. = Front Face
B.F. = Back Face
E.F. = Each Face
See additional notes on Sheet S7-05 of S7-18.

8:16:48 AM
016-1839-60X79-S006-WallElev_2.dgn

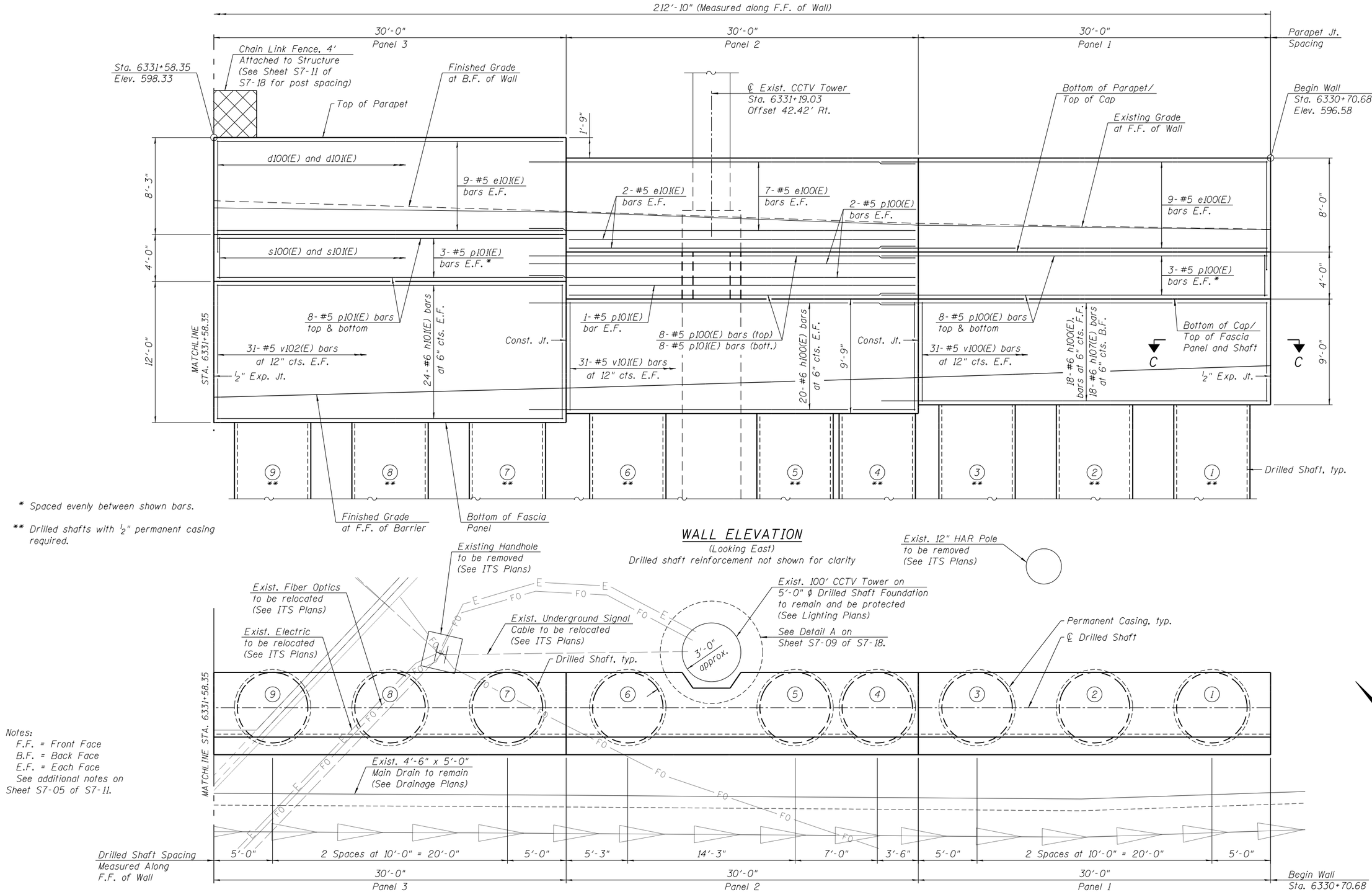
Tran Systems

USER NAME = wjcolletti	DESIGNED - KRS	REVISED -
	CHECKED - DJG	REVISED -
PLOT SCALE = 0.2 '/ in.	DRAWN - MJR	REVISED -
PLOT DATE = 7/27/2018	CHECKED - KRS/WJC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WALL ELEVATION DETAILS 2
RETAINING WALL 22B (STRUCTURE NO. 016-1839)
SHEET NO. S7-06 OF S7-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2014-005R&B	COOK	888	545
		CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			



* Spaced evenly between shown bars.

** Drilled shafts with 1/2" permanent casing required.

WALL ELEVATION

(Looking East)

Drilled shaft reinforcement not shown for clarity

Notes:
F.F. = Front Face
B.F. = Back Face
E.F. = Each Face
See additional notes on Sheet S7-05 of S7-11.

Drilled Shaft Spacing Measured Along F.F. of Wall	5'-0"	2 Spaces at 10'-0" = 20'-0"	5'-0"	5'-3"	14'-3"	7'-0"	3'-6"	5'-0"	2 Spaces at 10'-0" = 20'-0"	5'-0"
	30'-0" Panel 3			30'-0" Panel 2				30'-0" Panel 1		Begin Wall Sta. 6330+70.68

PLAN

(Parapet and cap reinforcement not shown for clarity)

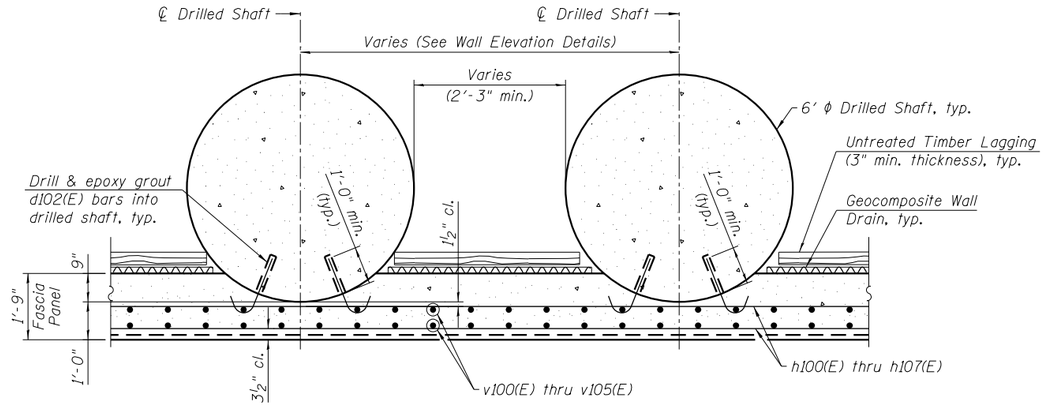
817.36 AM
016-1839-60X79-S007-WallElev_3.dgn

USER NAME = wjcolletti	DESIGNED - KRS	REVISED -	
	CHECKED - DJG	REVISED -	
PLOT SCALE = 0.2 '/ in.	DRAWN - MJR	REVISED -	
PLOT DATE = 7/27/2018	CHECKED - KRS/WJC	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

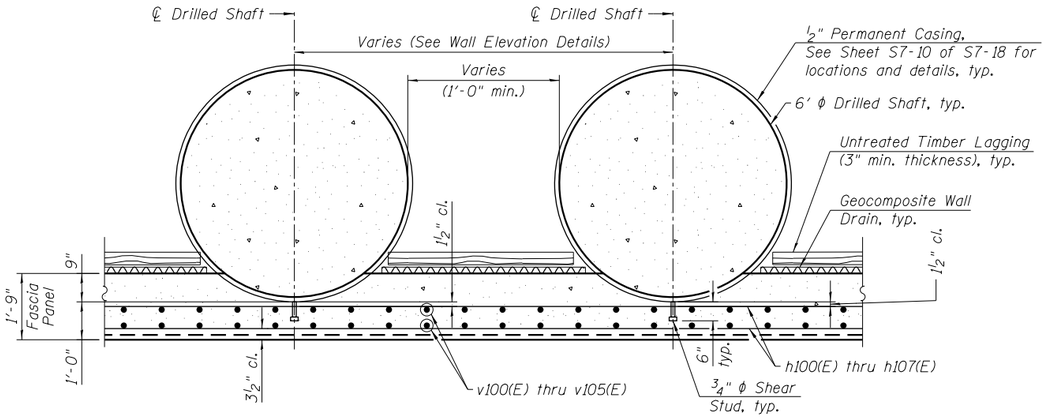
WALL ELEVATION DETAILS 3
RETAINING WALL 22B (STRUCTURE NO. 016-1839)
SHEET NO. S7-07 OF S7-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2014-005R&B	COOK	888	546
		CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			



TYPICAL WALL SECTION

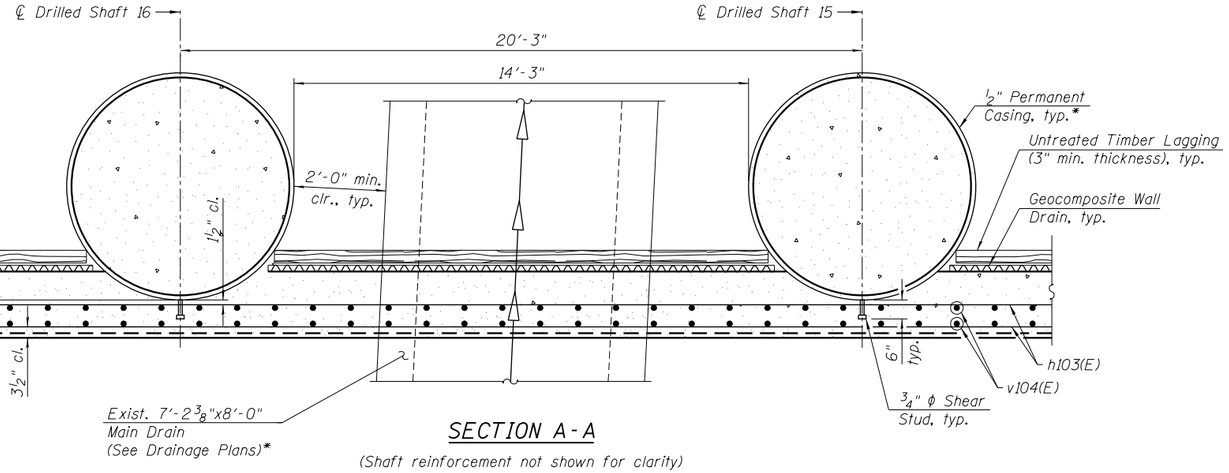
(Shaft reinforcement not shown for clarity)



TYPICAL WALL SECTION WITH PERMANENT CASING

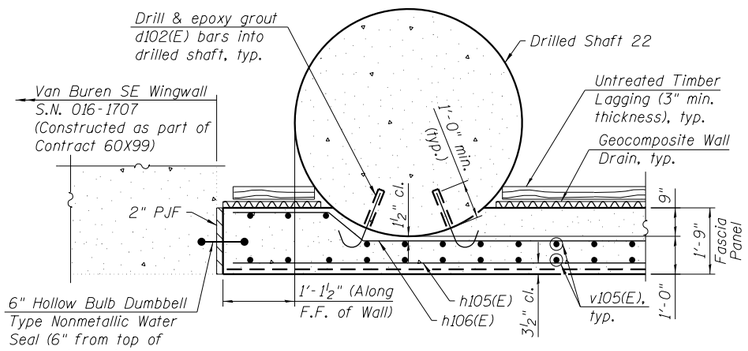
(Shaft reinforcement not shown for clarity)

* Contractor must verify the location of the Exist. 7'-2 3/8"x8'-0" Main Drain prior to the drilling of the shafts and adjust the locations of the permanent casings if necessary.



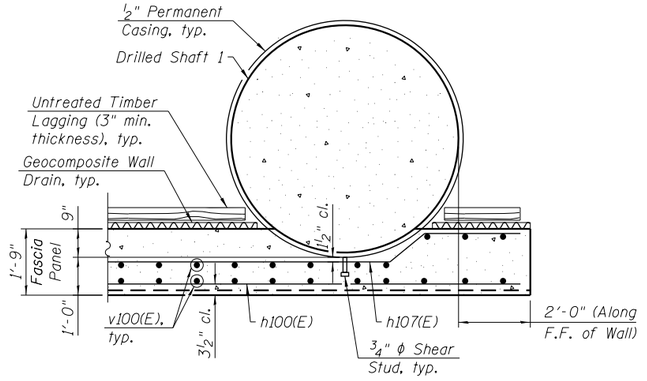
SECTION A-A

(Shaft reinforcement not shown for clarity)



SECTION B-B

(Shaft reinforcement not shown for clarity)



SECTION C-C

(Shaft reinforcement not shown for clarity)

Notes:

F.F. = Front Face.
B.F. = Back Face.
E.F. = Each Face.
Work this sheet with Sheets S7-05 thru S7-07 of S7-18.
Hollow bulb dumbbell included in cost of Class SI Concrete (Miscellaneous).
Install lagging and Geocomposite Wall Drain from top down as excavation proceeds. Minimize over-excavation and backfill voids with dry loose sand. Cost included with Class SI Concrete (Miscellaneous).
The Contractor is responsible for the design and performance of the lagging system, the deflection of the lagging shall be limited to 1" maximum using no less than a 3 in. nominal rough-sawn thickness and timber with a minimum allowable bending stress of 1000 psi, until the concrete facing is installed. The Contractor shall submit design calculations and details prepared by an Illinois Licensed Structural Engineer for the attachment of the lagging to the shaft for approval by the Engineer. Alternative equivalent systems may be submitted for approval by the Engineer. Cost included with Class SI Concrete (Miscellaneous).

8:18:20 AM
01618-39-60X79-S008-WallDetails_1.dgn

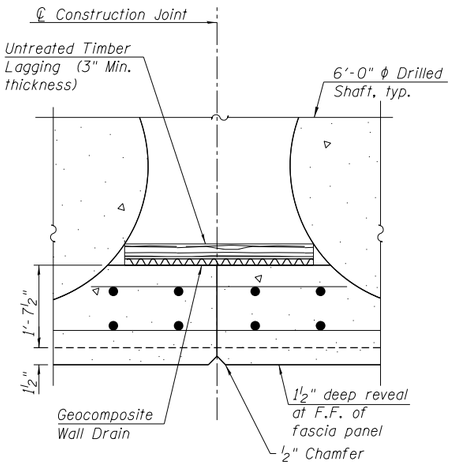
TranSystems

USER NAME = wjcolletti	DESIGNED - KRS	REVISED -
	CHECKED - DJG	REVISED -
PLOT SCALE = 0.1667 ' / in.	DRAWN - MJR	REVISED -
PLOT DATE = 7/27/2018	CHECKED - KRS/WJC	REVISED -

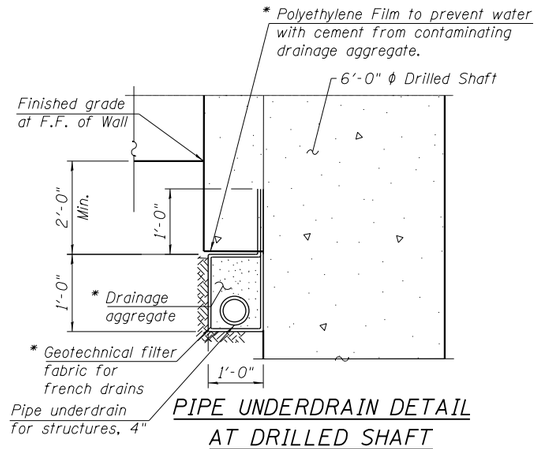
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WALL SECTIONS AND DETAILS 1
RETAINING WALL 22B (STRUCTURE NO. 016-1839)
SHEET NO. S7-08 OF S7-18 SHEETS

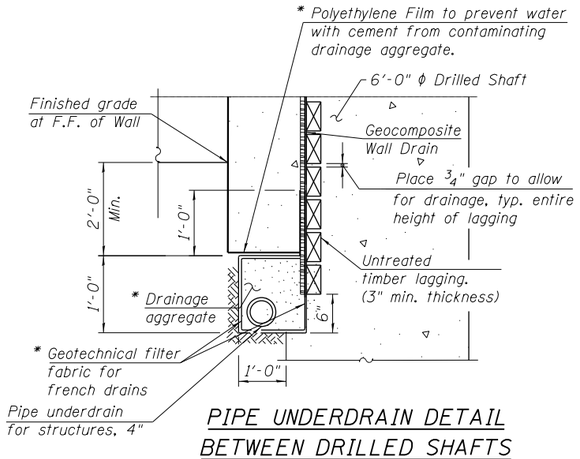
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2014-005R&B	COOK	888	547
		CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			



CONSTRUCTION JOINT DETAILS

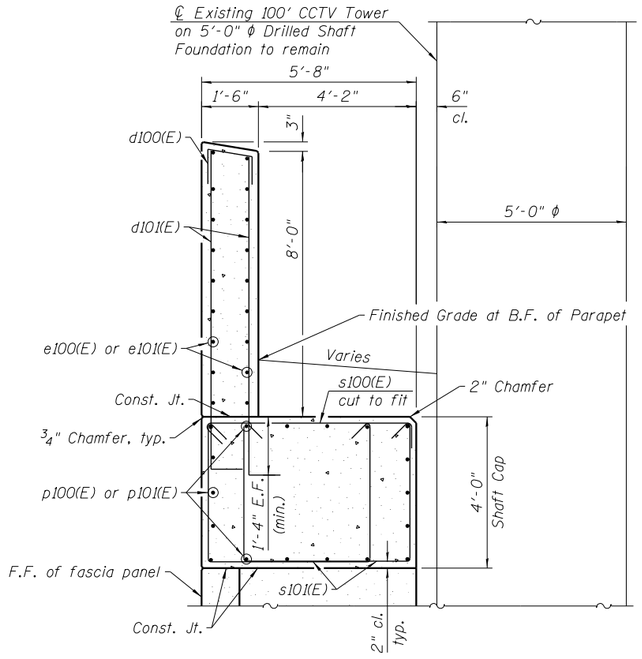


PIPE UNDERDRAIN DETAIL AT DRILLED SHAFT



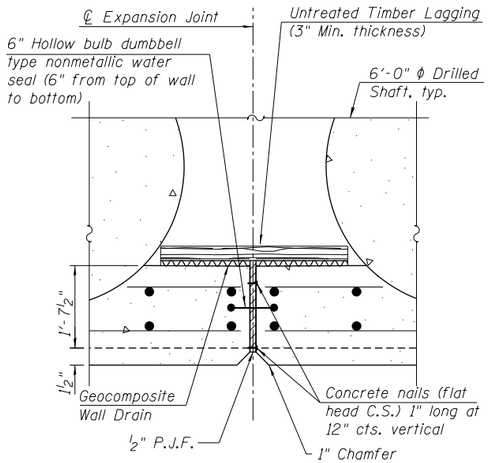
PIPE UNDERDRAIN DETAIL BETWEEN DRILLED SHAFTS

* Cost included with Pipe Underdrains for Structures, 4".

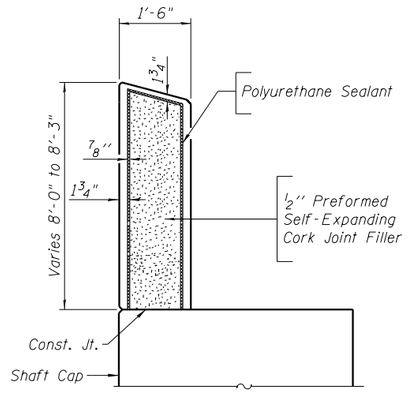


SECTION D-D

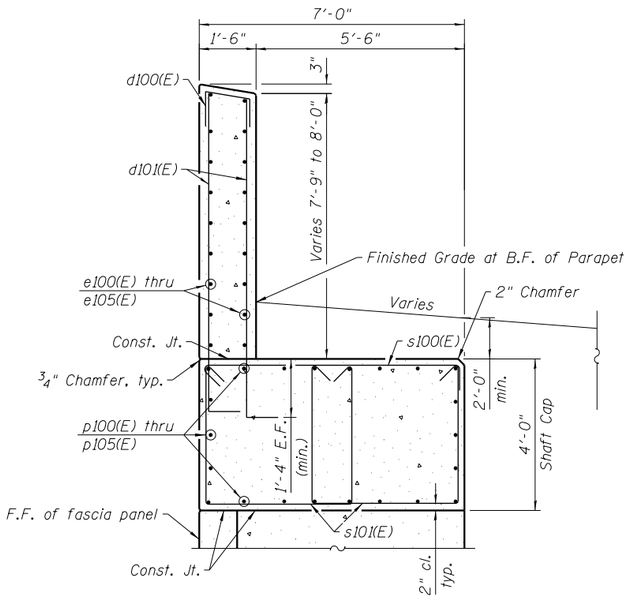
(Shaft and fascia panel reinforcement not shown for clarity)



EXPANSION JOINT DETAILS

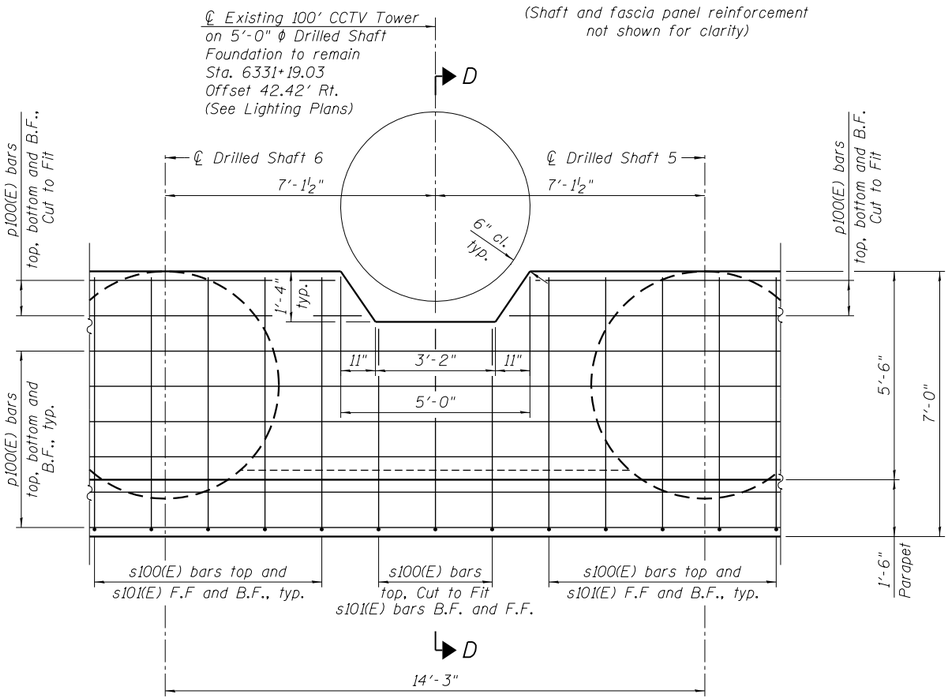


TRANSVERSE EXPANSION JOINT SECTION



TYPICAL SECTION OF PARAPET AND CAP

(Shaft and fascia panel reinforcement not shown for clarity)



DETAIL A - PROPOSED CCTV BLOCKOUT

(Shaft, parapet and fascia panel reinforcement not shown for clarity)

Notes:
F.F. = Front Face.
B.F. = Back Face.
E.F. = Each Face.
Work this sheet with Sheets S7-05 thru S7-10 of S7-18.
The Polyurethane Sealant shall be according to Article 1050.04 of Std. Spec. and the color shall be gray.

8:18:24 AM
0161839-60X79-S009-WallDetails_2.dgn

Tran Systems

USER NAME = wjcolletti	DESIGNED - KRS	REVISED -
	CHECKED - DJG	REVISED -
PLOT SCALE = 0.2 '' / in.	DRAWN - MJR	REVISED -
PLOT DATE = 7/27/2018	CHECKED - KRS/WJC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WALL SECTIONS AND DETAILS 2
RETAINING WALL 22B (STRUCTURE NO. 016-1839)
SHEET NO. S7-09 OF S7-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2014-005R&B	COOK	888	548
		CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			

Notes:

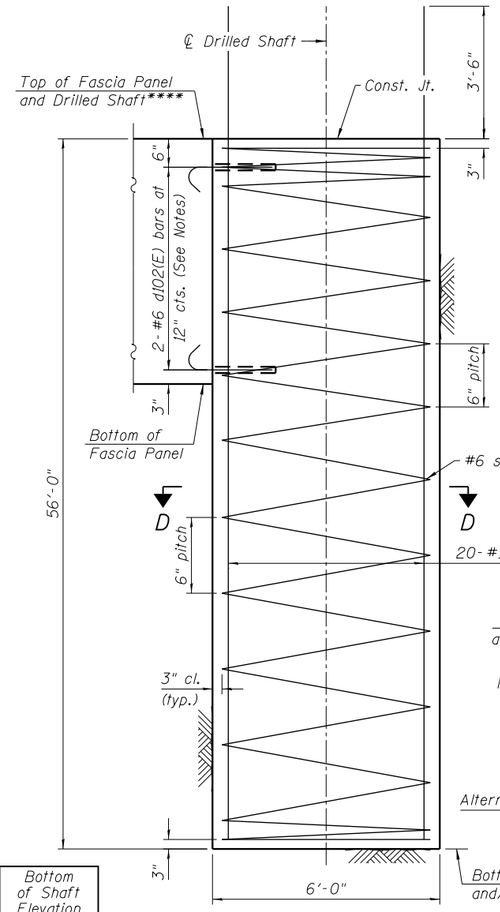
Splice v106 bars with v107 or v108 bars or v107 or v108 bars with v106 bars.

Splice sp100 and sp101 or sp102 bars where they meet.

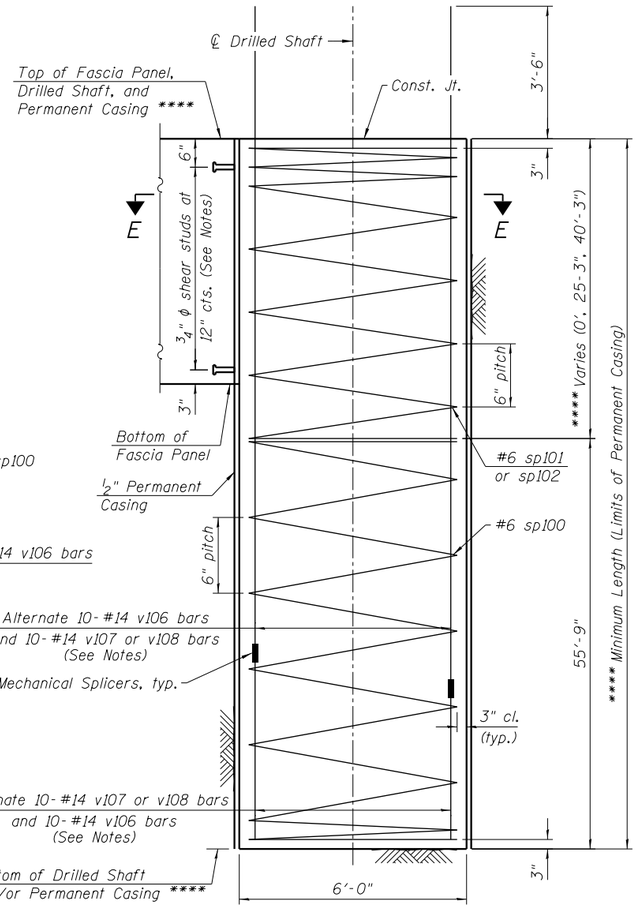
When splicing spiral reinforcement is necessary, the spiral shall be provided with $1\frac{1}{2}$ extra turns at the ends to be spliced. These additional turns shall either be welded together according to AWS D1.4 or shall both terminate with a 135° standard hook.

Drilling and grouting of d102(E) bars shall be as per Section 584 of the Standard Specifications. Depth of embedment = 12". Cost included in Class SI Concrete (Miscellaneous).

Cost of shear studs included in Class SI Concrete (Miscellaneous).



TYPICAL SHAFT ELEVATION



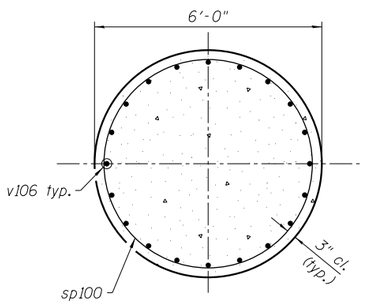
TYPICAL SHAFT ELEVATION PERMANENTLY CASED

****See Drilled Shaft Layout Table

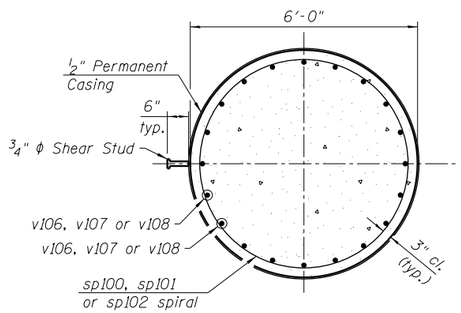
DRILLED SHAFT LAYOUT TABLE

	Shaft No.	Station	Offset	Top of Shaft Elevation	Minimum Length	Bottom of Shaft Elevation
*	1	6330+76.45	47.46' Rt.	584.58	81'-0"	503.58
*	2	6330+86.20	45.20' Rt.	584.58	81'-0"	503.58
*	3	6330+95.94	42.94' Rt.	584.58	81'-0"	503.58
*	4	6331+04.22	41.02 Rt.	584.58	81'-0"	503.58
*	5	6331+11.04	39.44 Rt.	584.58	81'-0"	503.58
*	6	6331+24.92	36.22 Rt.	584.58	81'-0"	503.58
*	7	6331+34.90	33.91 Rt.	586.08	96'-0"	490.08
*	8	6331+44.64	31.65 Rt.	586.08	96'-0"	490.08
*	9	6331+54.39	29.39 Rt.	586.08	96'-0"	490.08
*	10	6331+64.13	27.13 Rt.	586.08	96'-0"	490.08
*	11	6331+73.87	24.87 Rt.	586.08	96'-0"	490.08
*	12	6331+83.61	22.61 Rt.	586.08	96'-0"	490.08
	13	6331+91.66	21.58 Rt.	586.08	56'-0"	530.08
	14	6332+00.16	21.58 Rt.	586.08	56'-0"	530.08
*	15	6332+07.16	21.58 Rt.	586.08	56'-0"	530.08
*	16	6332+27.44	21.58 Rt.	586.08	56'-0"	530.08
	17	6332+34.53	21.58 Rt.	587.83	56'-0"	531.83
	18	6332+43.21	21.58 Rt.	587.83	56'-0"	531.83
	19	6332+51.88	21.58 Rt.	587.83	56'-0"	531.83
	20	6332+60.15	21.68 Rt.	587.83	56'-0"	531.83
	21	6332+68.53	21.85 Rt.	587.83	56'-0"	531.83
	22	6332+76.91	21.96 Rt.	587.83	56'-0"	531.83

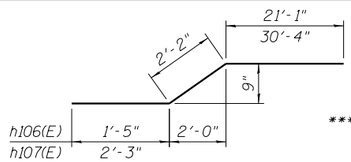
* Permanent Casing



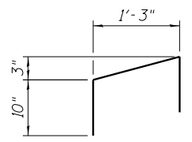
SECTION D-D



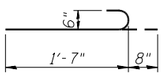
SECTION E-E



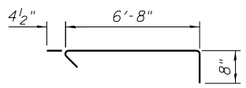
BARS h106(E) and h107(E)



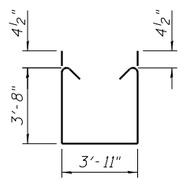
BAR d100(E)



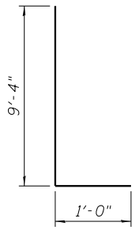
BAR d102(E)



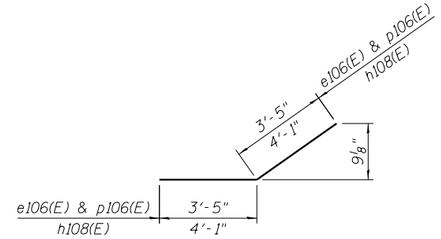
BAR s100(E)



BAR s101(E)



BAR d101(E)



BARS e106(E), p106(E) and h108(E)

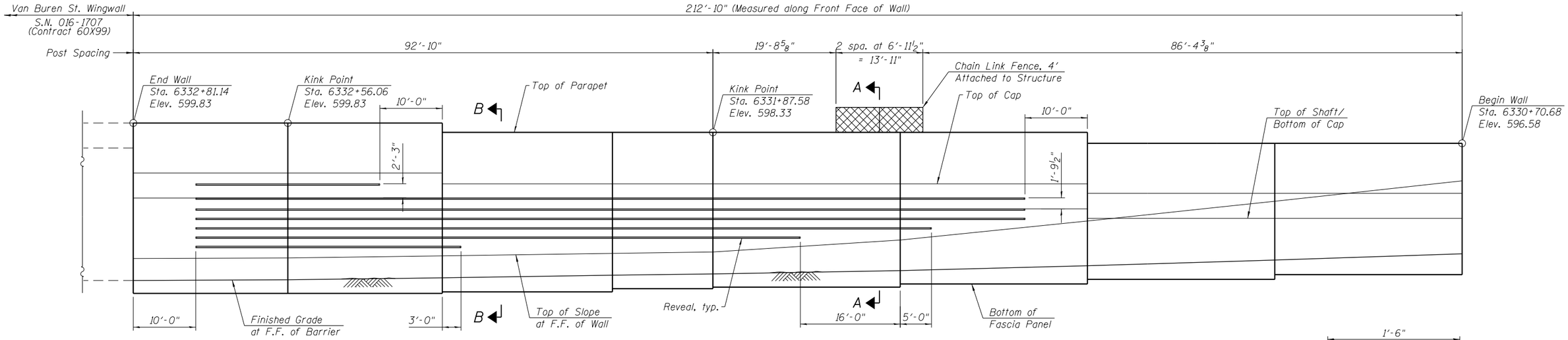
BILL OF MATERIAL

	Bar	No.	Size	Length	Shape
	d100(E)	214	#4	3'-0"	
	d101(E)	428	#6	10'-4"	
***	d102(E)	244	#6	2'-3"	
	e100(E)	32	#5	33'-2"	
	e101(E)	40	#5	29'-9"	
	e102(E)	18	#5	19'-3"	
	e103(E)	18	#5	27'-0"	
	e104(E)	18	#5	27'-11"	
	e105(E)	18	#5	24'-6"	
	e106(E)	18	#5	6'-10"	
***	h100(E)	58	#6	33'-10"	
***	h101(E)	100	#6	29'-9"	
***	h102(E)	52	#6	19'-11"	
***	h103(E)	54	#6	27'-0"	
***	h104(E)	62	#6	28'-7"	
***	h105(E)	31	#6	24'-6"	
***	h106(E)	31	#6	24'-8"	
***	h107(E)	18	#6	34'-9"	
***	h108(E)	52	#6	8'-2"	
	p100(E)	34	#5	33'-2"	
	p101(E)	54	#5	29'-9"	
	p102(E)	22	#5	19'-3"	
	p103(E)	22	#5	27'-0"	
	p104(E)	22	#5	27'-11"	
	p105(E)	22	#5	24'-6"	
	p106(E)	22	#5	6'-10"	
	s100(E)	142	#4	7'-9"	
	s101(E)	284	#4	12'-0"	
**	sp100	22	#6	55'-6"	
**	sp101	6	#6	25'-0"	
**	sp102	6	#6	40'-0"	
***	v100(E)	62	#5	8'-9"	
***	v101(E)	62	#5	9'-6"	
***	v102(E)	62	#5	11'-9"	
***	v103(E)	94	#5	12'-6"	
***	v104(E)	56	#5	13'-0"	
***	v105(E)	100	#5	15'-0"	
	v106	440	#14	59'-3"	
	v107	120	#14	25'-0"	
	v108	120	#14	40'-0"	
	Structure Excavation			Cu. Yd.	369
	Concrete Structures			Cu. Yd.	220.8
	Concrete Superstructures			Cu. Yd.	94.6
***	Stud Shear Connectors			Each	163
	Reinforcement Bars			Pound	344,440
	Reinforcement Bars, Epoxy Coated			Pound	19,400
	Permanent Casing			Foot	1,174
	Drilled Shaft in Soil			Cu. Yd.	1,698.6
	Concrete Sealer			Sq. Ft.	5,956
	Class SI Concrete (Miscellaneous)			Cu. Yd.	151.1
	Crosshole Sonic Logging Access Ducts			Foot	1,622
	Crosshole Sonic Logging Testing			Each	5
	Slope Inclinometer			Each	1
	Pipe Underdrain for Structures 4"			Foot	218

** Length is height of spiral

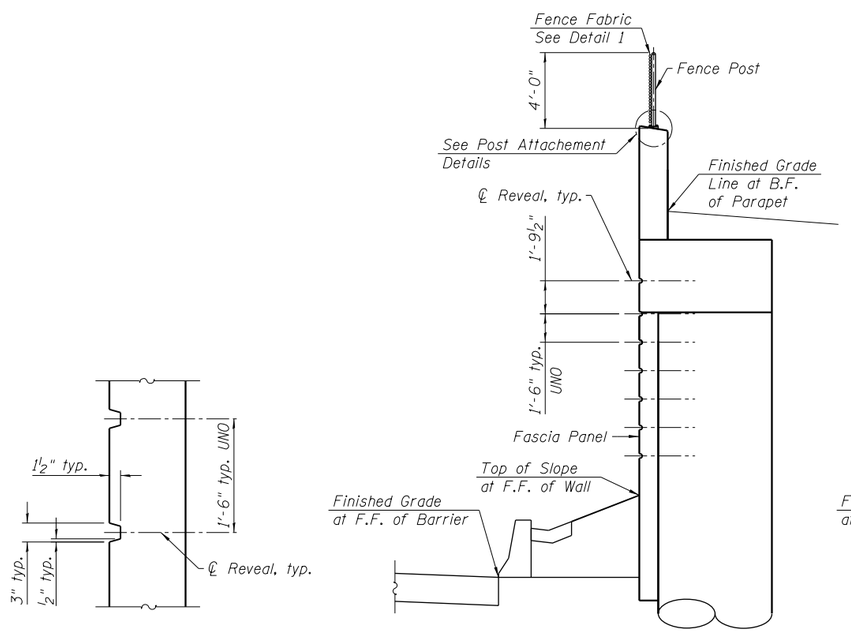
*** Shown for information only. Cost included with Class SI Concrete (Miscellaneous).

Minimum Bar Laps	
Bar	Lap
#5	3'-2"
#6	3'-10"

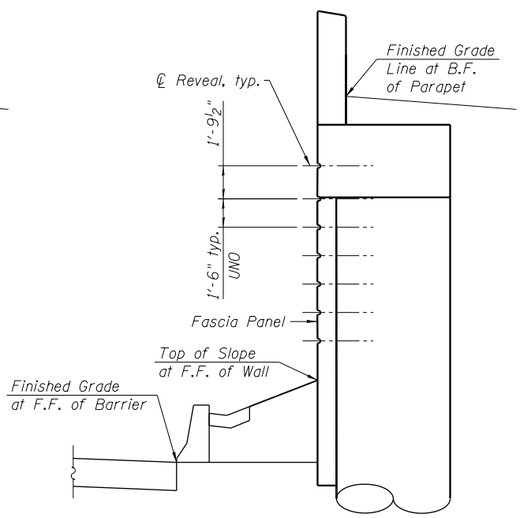


ELEVATION

(Looking East at F.F. of Wall)

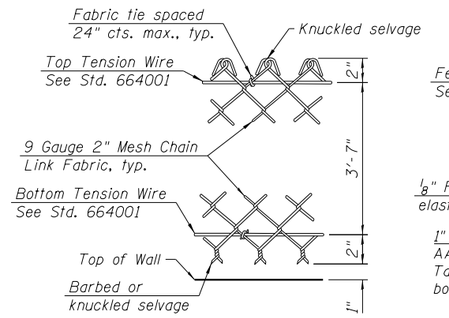


SECTION A-A

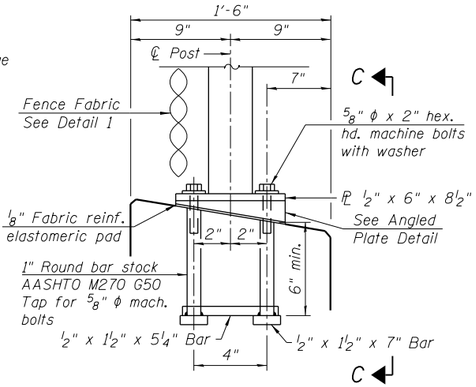


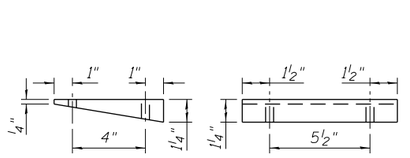
SECTION B-B

REVEAL DETAIL

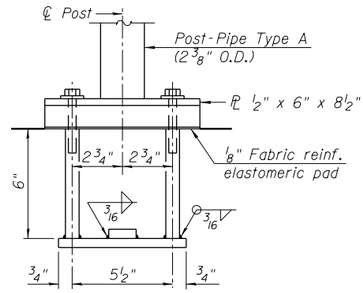


DETAIL 1

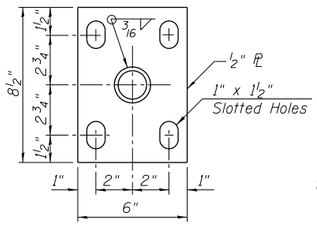




ANGLED PL



SECTION C-C



BASE PL

POST ATTACHMENT 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.

Notes:

Coordinate / verify all dimensions with structural drawings.

Parapet reveal will not be paid separately and shall be included in the cost of pay item Class SI Concrete (Miscellaneous).

For additional chain link fence details, see standard 664001.

Base plate, angled plate, elastomeric pad, and post attachment assembly shall be included with Chain Link Fence, 4' Attached to Structure.

BILL OF MATERIAL

Item	Unit	Total
Chain Link Fence, 4' Attached to Structure	Foot	14

Tran Systems

USER NAME = wjcolletti	DESIGNED - WJC	REVISED -
	CHECKED - KRS	REVISED -
PLOT SCALE = Ø2 '-' / in.	DRAWN - MJR	REVISED -
PLOT DATE = 7/27/2018	CHECKED - KRS/WJC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ARCHITECTURAL DETAILS
RETAINING WALL 22B (STRUCTURE NO. 016-1839)
SHEET NO. S7-11 OF S7-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2014-005R&B	COOK	888	550
		CONTRACT NO. 60X79		
		ILLINOIS	FED. AID PROJECT	

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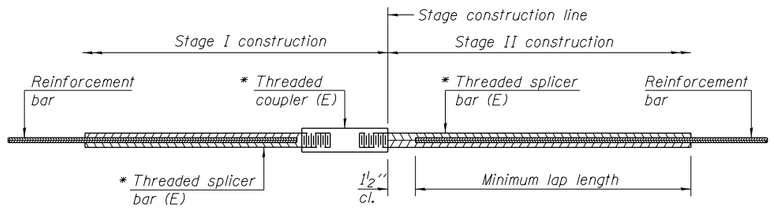


STANDARD BAR SPLICER ASSEMBLY

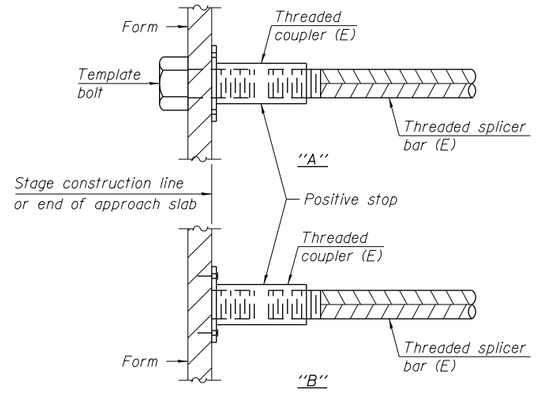
Minimum Lap Lengths						
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5	Table 6

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

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

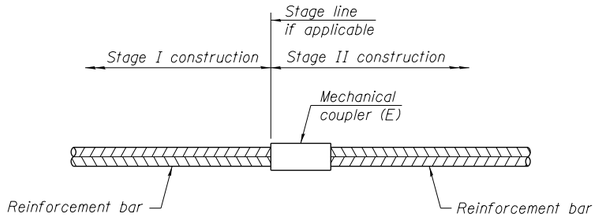
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

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



INSTALLATION AND SETTING METHODS

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



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required
Drilled Shaft 1	14	20
Drilled Shaft 2	14	20
Drilled Shaft 3	14	20
Drilled Shaft 4	14	20
Drilled Shaft 5	14	20
Drilled Shaft 6	14	20
Drilled Shaft 7	14	20
Drilled Shaft 8	14	20
Drilled Shaft 9	14	20
Drilled Shaft 10	14	20
Drilled Shaft 11	14	20
Drilled Shaft 12	14	20

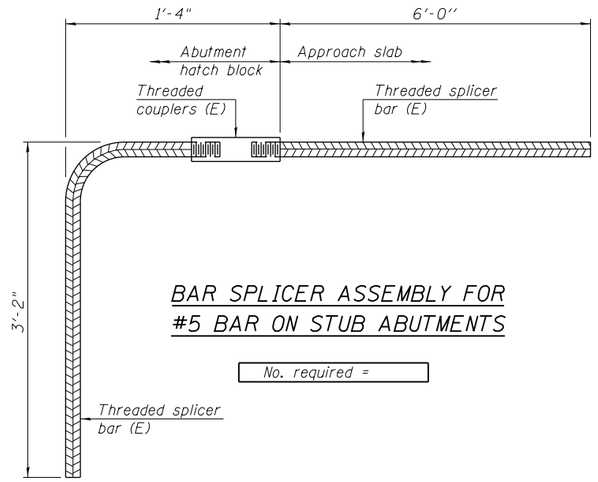
NOTES

Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.

All reinforcement shall be lapped and tied to the splicer bars.

Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.

See approved list of bar splicer assemblies and mechanical splicers for alternatives.



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required =

BSD-1

6-8-15

TranSystems

USER NAME = wjcollett1	DESIGNED - KRS	REVISED -
	CHECKED - DJG	REVISED -
PLOT SCALE = 2.0000 '/ in.	DRAWN - MJR	REVISED -
PLOT DATE = 7/27/2018	CHECKED - KRS/WJC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
RETAINING WALL 22B (STRUCTURE NO. 016-1839)

SHEET NO. S7-12 OF S7-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2014-005R&B	COOK	888	551
		CONTRACT NO. 60X79		
	ILLINOIS	FED. AID PROJECT		

016-36 AM
0161839-60X79-S012-BarSplicer.dgn

BORING LOG 1712-B-03 — Page 1 of 3

Wang Engineering
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Telephone: (630) 953-9928
Fax: (630) 953-9938

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 584.78 ft
North: 1898322.61 ft
East: 1171738.21 ft
Station: 1618+05.95
Offset: 4.7838 RT

Elevation (ft)	Soil and Rock Description	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	3-inch thick, ASPHALT over 9-inch thick, CONCRETE --PAVEMENT--					
583.8	Medium dense, grayish white SANDY GRAVEL --DRY-- --BASE COURSE--		1	12, 11, 9	NP	5
582.5	Stiff, brown to gray SILTY CLAY LOAM, trace gravel --FILL--	5	2	2, 4, 5	1.50 N/6	8
			3	1, 3, 3	1.64 B	17
576.8	Soft to stiff, gray CLAY to SILTY CLAY, trace gravel	10	4	1, 3, 3	0.82 B	18
			5	0, 0, 2	0.57 B	23
		15	6	0, 1, 2	0.57 B	22
			7	0, 0, 1	0.49 B	24
		20	8	0, 1, 2	0.41 B	24
			9	0, 0, 2	0.41 B	25
		25	10	0, 0, 1	0.49 B	25
			11	0, 0, 1	0.25 B	25
		30	12	0, 0, 1	0.25 B	26
		35	13	0, 1, 1	0.41 B	25
		40	14	0, 2, 3	0.66 B	26

GENERAL NOTES
Begin Drilling 07-28-2014 Complete Drilling 08-20-2014
Drilling Contractor Wang Testing Services Drill Rig D-50 TMR [78%]
Driller R&J Logger S. Woods Checked by C. Marin
Drilling Method 2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion

WATER LEVEL DATA
While Drilling ∇ Rotary wash
At Completion of Drilling ▼ mud in the borehole
Time After Drilling NA
Depth to Water ▼ NA
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 1100040I.GPJ WANGENG.GDT 1/12/18

BORING LOG 1712-B-03 — Page 2 of 3

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WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 584.78 ft
North: 1898322.61 ft
East: 1171738.21 ft
Station: 1618+05.95
Offset: 4.7838 RT

Elevation (ft)	Soil and Rock Description	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		45	15	0, 0, 2	0.33 B	20
538.0	Stiff to very stiff, gray SILTY CLAY, trace gravel	50	16	3, 6, 9	1.00 P	21
		55	17	2, 5, 10	2.87 B	17
528.0	Medium dense, gray SILTY LOAM, trace gravel	60	18	5, 8, 13	NP	21
523.0	Medium dense, gray fine SAND, trace gravel --Dry-	65	19	10, 8, 13	NP	13
518.0	Dense, gray SILTY LOAM, trace gravel --Dry-	70	20	13, 16, 28	NP	13
		75	21	14, 17, 26	NP	13
		80	22	18, 27, 50/4	NP	23

GENERAL NOTES
Begin Drilling 07-28-2014 Complete Drilling 08-20-2014
Drilling Contractor Wang Testing Services Drill Rig D-50 TMR [78%]
Driller R&J Logger S. Woods Checked by C. Marin
Drilling Method 2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion

WATER LEVEL DATA
While Drilling ∇ Rotary wash
At Completion of Drilling ▼ mud in the borehole
Time After Drilling NA
Depth to Water ▼ NA
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 1100040I.GPJ WANGENG.GDT 1/12/18

BORING LOG 1712-B-03 — Page 3 of 3

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Telephone: (630) 953-9928
Fax: (630) 953-9938

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 584.78 ft
North: 1898322.61 ft
East: 1171738.21 ft
Station: 1618+05.95
Offset: 4.7838 RT

Elevation (ft)	Soil and Rock Description	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
			23	80/6	NP	13
		85				
			24	80/4	NR	
		90				
493.6	Very dense, gray, very fine to fine SAND --possible water bearing--		25	90/6	NP	10
		95				
			26	100/5	NR	
484.8	Very dense, greenish gray, shaly DOLOSTONE; moist to wet	100				
			27	100/4	NP	21
		105				
			28	100/3	NR	
474.8	Boring terminated at 111.00 ft	110				
		115				
		120				

GENERAL NOTES
Begin Drilling 07-28-2014 Complete Drilling 08-20-2014
Drilling Contractor Wang Testing Services Drill Rig D-50 TMR [78%]
Driller R&J Logger S. Woods Checked by C. Marin
Drilling Method 2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion

WATER LEVEL DATA
While Drilling ∇ Rotary wash
At Completion of Drilling ▼ mud in the borehole
Time After Drilling NA
Depth to Water ▼ NA
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 1100040I.GPJ WANGENG.GDT 1/12/18

Notes:
Boring Log 1712-B-03 station and offset along ℄ NB C-D Road is:
Sta. 6332+64.94, Offset 50.65' Lt.

Wang Engineering
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BORING LOG 1715-B-01

WEI Job No.: 1100-04-01

Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 588.39 ft
North: 1898143.12 ft
East: 1171931.11 ft
Station: 1211+64.12
Offset: 7.8377 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		Stiff to very stiff, brown SILTY CLAY LOAM							
		--FILL--				1	13 12 14	2.87 B	18
			5			2	4 3 5	1.00 P	25
	582.9	Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel				3	2 2 2	0.33 B	23
			10			4	1 1 2	0.41 B	23
						5	1 2 2	0.16 B	23
			15			6	1 2 3	0.49 B	22
						7	1 2 2	0.57 B	25
			20			8	1 1 3	0.41 B	25
			25			9	1 1 2	0.16 B	26
						10	1 1 2	0.33 B	24
						11	1 1 2	0.33 B	26
			30			12	2 1 2	0.33 B	27
						13	1 2 3	0.33 B	25
			35			14	2 3 5	0.33 B	25
			40						

GENERAL NOTES

Begin Drilling: 03-04-2014 Complete Drilling: 03-06-2014
Drilling Contractor: Wang Testing Services Drill Rig: D-25 ATV [93%]
Driller: N&J Logger: A. Happel Checked by: C. Marin
Drilling Method: 2.25" HSA to 10', mud rotary thereafter, boring
backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ Rotary wash
At Completion of Drilling: ▼ mud in the borehole
Time After Drilling: NA
Depth to Water: ▼ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
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Lombard, IL 60148
Telephone: (630) 953-9928
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BORING LOG 1715-B-01

WEI Job No.: 1100-04-01

Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 588.39 ft
North: 1898143.12 ft
East: 1171931.11 ft
Station: 1211+64.12
Offset: 7.8377 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	541.6	Very stiff hard, gray SILTY CLAY LOAM to SILTY LOAM, trace gravel							
			45			15	1 2 2	0.33 B	29
			50			16	7 10 20	3.20 B	18
			55			17	12 15 15	6.64 S	13
			60			18	28 26 24	6.56 S	12
	519.4	Very dense, gray SILTY LOAM, trace gravel --Moist--	65			19	26 33 48	> 8.33 N/6	16
			70			20	26 16 28/3	NP	16
	516.6	Hard, gray SILTY CLAY LOAM, trace gravel --L_L(%)=29, P_I(%)=16-- --%Gravel=1.6-- --%Sand=10.8-- --%Silt=63.8-- --%Clay=23.7-- --A-6 (10)--	75			21	17 30 48	> 8.33 N/6	15
	511.6	Very dense, gray SILTY LOAM, trace gravel							
			80			22	50/4	NP	9

GENERAL NOTES

Begin Drilling: 03-04-2014 Complete Drilling: 03-06-2014
Drilling Contractor: Wang Testing Services Drill Rig: D-25 ATV [93%]
Driller: N&J Logger: A. Happel Checked by: C. Marin
Drilling Method: 2.25" HSA to 10', mud rotary thereafter, boring
backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ Rotary wash
At Completion of Drilling: ▼ mud in the borehole
Time After Drilling: NA
Depth to Water: ▼ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG 1715-B-01

WEI Job No.: 1100-04-01

Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 588.39 ft
North: 1898143.12 ft
East: 1171931.11 ft
Station: 1211+64.12
Offset: 7.8377 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
			85			23	35 45 50/4	NP	17
		--L_L(%)=29, P_I(%)=18-- --%Gravel=4.7-- --%Sand=10.1-- --%Silt=57.1-- --%Clay=28.0-- --A-6 (9)--	90			24	24 50/5	NP	16
			95			25	37 50/5	NP	23
	491.4	--HARD DRILLING-- --*Possible Cobbles*-- Very dense, gray GRAVELLY SAND --possible water bearing--	100			26	50/3	NP	10
	485.4	--HARD DRILLING-- --*Possible Cobbles*-- --AUGER REFUSAL-- Boring terminated at 103.00 ft	105						
			110						
			115						
			120						

GENERAL NOTES

Begin Drilling: 03-04-2014 Complete Drilling: 03-06-2014
Drilling Contractor: Wang Testing Services Drill Rig: D-25 ATV [93%]
Driller: N&J Logger: A. Happel Checked by: C. Marin
Drilling Method: 2.25" HSA to 10', mud rotary thereafter, boring
backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ Rotary wash
At Completion of Drilling: ▼ mud in the borehole
Time After Drilling: NA
Depth to Water: ▼ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Notes:
Boring Log 1715-B-01 station and offset along ℄ NB C-D Road is: Sta. 6330+15.18, Offset 23.38' Rt.

TranSystems

USER NAME = wjcollett	DESIGNED - KRS	REVISED -
	CHECKED - DJG	REVISED -
PLOT SCALE = 0.1667 ' / in.	DRAWN - MJR	REVISED -
PLOT DATE = 7/27/2018	CHECKED - KRS/WJC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS 2
RETAINING WALL 22B (STRUCTURE NO. 016-1839)
SHEET NO. S7-14 OF S7-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2014-005R&B	COOK	888	553
		CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			

Wang Engineering
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BORING LOG 2055-B-02

WEI Job No.: 1100-04-01

Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 595.62 ft
North: 1898407.45 ft
East: 1171767.90 ft
Station: 8152+79.03
Offset: 6.0657 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		17-inch thick CONCRETE --PAVEMENT--							
	594.2								
		9-inch thick CRUSHED STONE --BASE COURSE--							
	593.1								
		Medium dense, black and gray LOAM, trace gravel --FILL--				1	5 4 3	NP	6
			5			2	6 12 17	NP	11
	588.8								
		Very stiff (2.50 - 2.75 P), brown and gray SILTY CLAY LOAM with fine sand lenses, trace gravel --FILL--				3	5 7 7	NP	12
	586.6								
		Dense, black and gray LOAM to SILTY LOAM, trace gravel, brick, and wood --FILL--	10			4	3 1 28	NP	11
	584.4	*boring offset 3 feet south due to obstruction*							
		Stiff, gray SILTY CLAY LOAM, trace gravel				5	2 3 4	1.64 B	22
			15			6	3 3 3	1.07 B	24
	580.1								
		Gray SILTY LOAM							
	579.1								
		Soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel				7	1 2 1	0.66 B	18
			20			8	2 2 2	0.49 B	21
						9	2 2 2	0.41 B	23
			25			10	2 2 1	0.49 B	23
						11	1 2 2	0.57 B	25
			30			12	1 1 2	0.49 B	24
						13	1 1 2	0.42 B	25
			35			14	1 2 1	0.33 B	27
			40						

GENERAL NOTES

Begin Drilling: 04-22-2013 Complete Drilling: 04-29-2013
Drilling Contractor: Wang Testing Services Drill Rig: CME-55 TMR [85%]
Driller: P&N Logger: A. Happel Checked by: C. Marin
Drilling Method: 2.25" SSA to 10', mud rotary thereafter, boring
backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ Rotary wash
At Completion of Drilling: ▼ mud in the borehole
Time After Drilling: NA
Depth to Water: ▽ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 1100401.GPJ WANGENG.GDT 1/12/18

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BORING LOG 2055-B-02

WEI Job No.: 1100-04-01

Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 595.62 ft
North: 1898407.45 ft
East: 1171767.90 ft
Station: 8152+79.03
Offset: 6.0657 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
			45			15	1 2 2	0.50 P	25
			50			16	2 2 2	0.41 B	26
	543.9								
		Medium stiff to hard, gray SILTY CLAY to CLAY, trace to little gravel							
		thin, gray medium sand lenses	55			17	2 3 10	0.82 B	17
	521.5								
		Gray SILTY LOAM							
	518.9								
		Hard, gray SILTY CLAY LOAM, trace gravel and seams of fine sand to silt				18	4 5 9	1.00 P	23
			60						
			65			19	4 9 13	3.61 B	14
			70			20	5 10 15	4.10 B	22
			75			21	5 9 10	3.03 B	18
			80			22	20 27 30	7.13 B	13

GENERAL NOTES

Begin Drilling: 04-22-2013 Complete Drilling: 04-29-2013
Drilling Contractor: Wang Testing Services Drill Rig: CME-55 TMR [85%]
Driller: P&N Logger: A. Happel Checked by: C. Marin
Drilling Method: 2.25" SSA to 10', mud rotary thereafter, boring
backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ Rotary wash
At Completion of Drilling: ▼ mud in the borehole
Time After Drilling: NA
Depth to Water: ▽ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 1100401.GPJ WANGENG.GDT 1/12/18

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Fax: (630) 953-9938

BORING LOG 2055-B-02

WEI Job No.: 1100-04-01

Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 595.62 ft
North: 1898407.45 ft
East: 1171767.90 ft
Station: 8152+79.03
Offset: 6.0657 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--L_L(%)=28, P_L(%)=14-- --%Gravel=6.2-- --%Sand=22.1-- --%Silt=52.6-- --%Clay=19.1-- --A-6 (6)--	85			23	19 21 27	5.33 B	13
	505.9								
		Very dense, gray, medium GAND, trace gravel --Moist--	90			24	24 37 37	NP	14
	503.6								
		Hard, gray SILTY CLAY LOAM, some gravel				25	50/3"	4.50 P	10
			95						
	498.6								
		--HARD DRILLING-- Possible Boulders --AUGER REFUSAL--							
	497.6								
		Boring terminated at 98.00 ft	100						

GENERAL NOTES

Begin Drilling: 04-22-2013 Complete Drilling: 04-29-2013
Drilling Contractor: Wang Testing Services Drill Rig: CME-55 TMR [85%]
Driller: P&N Logger: A. Happel Checked by: C. Marin
Drilling Method: 2.25" SSA to 10', mud rotary thereafter, boring
backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ Rotary wash
At Completion of Drilling: ▼ mud in the borehole
Time After Drilling: NA
Depth to Water: ▽ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 1100401.GPJ WANGENG.GDT 1/12/18

Notes:
Boring Log 2055-B-02 station and offset along ℄ NB C-D Road is: Sta. 6333+24.37, Offset 16.13' Rt.

BORING LOG 22-RWB-03

Wang Engineering
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1145 N Main Street
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Telephone: (630) 953-9928
Fax: (630) 953-9938

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 587.62 ft
North: 1898185.65 ft
East: 1171879.86 ft
Station: 1212+29.37
Offset: 21.9731 RT

SOIL AND ROCK DESCRIPTION

15-inch thick, black and brown SILTY LOAM --TOPSOIL-- (586.4)

Hard, brown CLAY LOAM, trace gravel --FILL-- (584.6)

Very stiff, gray SILTY CLAY LOAM, trace gravel (582.1)

Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel

--L_L(%)=32, P_L(%)=18--
--%Gravel=2.5--
--%Sand=15.0--
--%Silt=57.1--
--%Clay=25.4--
--A-6 (10)--

--L_L(%)=33, P_L(%)=18--
--%Gravel=2.7--
--%Sand=15.7--
--%Silt=57.1--
--%Clay=25.4--
--A-6 (11)--

Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
1	7 8 10	4.50 P	16
2	3 4 6	2.05 B	18
3	2 2 3	0.57 B	24
4	1 1 2	0.25 B	25
5	1 2 2	0.41 B	26
6	1 2 2	0.41 B	23
7	2 2 3	0.33 B	21
8	2 2 3	0.57 B	21
9	1 2 2	0.41 B	26
10	1 2 2	0.25 B	27
11	2 2 2	< 0.25 P	27
12	2 1 2	0.25 B	26
13	1 2 2	0.16 B	26
14	2 2 4	< 0.25 P	26

GENERAL NOTES

Begin Drilling **03-07-2014** Complete Drilling **03-10-2014**
Drilling Contractor **Wang Testing Services** Drill Rig **D-25 ATV [93%]**
Driller **N&J** Logger **A. Happel** Checked by **C. Marin**
Drilling Method **2.25" HSA to 15', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **62.00 ft**
At Completion of Drilling ▼ **mud in the borehole**
Time After Drilling **NA**
Depth to Water ▼ **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 11000401.GPJ WANGENG.GDT 1/12/18

BORING LOG 22-RWB-03

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Telephone: (630) 953-9928
Fax: (630) 953-9938
WEI Job No.: 1100-04-01
Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM
Datum: NAVD 88
Elevation: 587.62 ft
North: 1898185.65 ft
East: 1171879.86 ft
Station: 1212+29.37
Offset: 21.9731 RT

SOIL AND ROCK DESCRIPTION

(540.9) Very stiff to hard, gray SILTY CLAY LOAM, trace gravel

--L_L(%)=35, P_L(%)=18--
--%Gravel=1.8--
--%Sand=10.2--
--%Silt=54.1--
--%Clay=33.9--
--A-6 (14)--

(525.9) Very dense, gray, coarse SAND, little gravel --Moist--

(523.3) Hard, gray SILTY CLAY LOAM to SILTY LOAM, trace gravel

--HARD DRILLING from 77 ft--
--*Possible Cobbles*--

(510.6) Very dense, gray SILTY LOAM, trace gravel

Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
15	2 2 3	0.16 B	29
16	5 9 12	3.50 P	22
17	10 9 16	4.17 N/6	
18	8 10 22	2.30 B	21
19	35 50/5	NP	20
20	25 33 37	4.50 P	13
21	16 27 38	7.38 B	17
22	50/0	NP	

GENERAL NOTES
Begin Drilling 03-07-2014 Complete Drilling 03-10-2014
Drilling Contractor Wang Testing Services Drill Rig D-25 ATV [93%]
Driller N&J Logger A. Happel Checked by C. Marin
Drilling Method 2.25" HSA to 15', mud rotary thereafter, boring backfilled upon completion
WATER LEVEL DATA
While Drilling ▽ 62.00 ft
At Completion of Drilling ▼ mud in the borehole
Time After Drilling NA
Depth to Water ▼ NA
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.
WANGENGINC 11000401.GPJ WANGENG.GDT 1/12/18

BORING LOG 22-RWB-03

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Telephone: (630) 953-9928
Fax: (630) 953-9938
WEI Job No.: 1100-04-01
Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM
Datum: NAVD 88
Elevation: 587.62 ft
North: 1898185.65 ft
East: 1171879.86 ft
Station: 1212+29.37
Offset: 21.9731 RT

SOIL AND ROCK DESCRIPTION

(491.4) Very dense, gray SANDY GRAVEL; wet --possible water bearing-- (487.6)

--VERY HARD, STEADY DRILLING--
--WEATHERED BEDROCK--

--ROLLER BIT REFUSAL-- (484.6)

Boring terminated at 103.00 ft

Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
23	50/5	NP	14
24	50/2	NP	11
25	50/4	3.69 S	16
26	50/2	NP	

GENERAL NOTES
Begin Drilling 03-07-2014 Complete Drilling 03-10-2014
Drilling Contractor Wang Testing Services Drill Rig D-25 ATV [93%]
Driller N&J Logger A. Happel Checked by C. Marin
Drilling Method 2.25" HSA to 15', mud rotary thereafter, boring backfilled upon completion
WATER LEVEL DATA
While Drilling ▽ 62.00 ft
At Completion of Drilling ▼ mud in the borehole
Time After Drilling NA
Depth to Water ▼ NA
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.
WANGENGINC 11000401.GPJ WANGENG.GDT 1/12/18

Notes:
Boring Log 22-RWB-03 station and offset along ℄ NB C-D Road is:
Sta. 6330+75.53, Offset 1.20' Lt.

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BORING LOG 22-RWB-04

WEI Job No.: 1100-04-01

Client AECOM
Project Circle Interchange Reconstruction
Location Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 586.36 ft
North: 1898208.77 ft
East: 1171849.77 ft
Station: 1212+66.85
Offset: 28.4715 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
586.3	13-inch thick, brown SILTY LOAM --TOPSOIL--							
	Hard, brown SILTY CLAY LOAM, trace gravel --FILL--				1	3 4 6	4.10 B	21
583.4	Stiff to very stiff, gray SILTY CLAY, trace gravel	5			2	3 4 5	2.87 B	20
					3	2 3 4	1.56 B	22
578.4	Soft, gray CLAY, trace gravel	10			4	1 1 2	0.33 B	25
					5	1 1 2	0.33 B	25
573.4	Medium stiff, gray SILTY CLAY LOAM, trace gravel	15			6	1 2 4	0.57 B	17
570.9	Soft, gray CLAY to SILTY CLAY, trace gravel				7	1 2 3	0.41 B	25
		20			8	2 2 4	0.41 B	22
		25			9	1 1 2	0.41 B	26
					10	2 2 2	0.49 B	26
					11	2 1 2	0.41 B	27
		30			12	1 2 3	0.41 B	25
					13	1 2 3	0.41 B	25
		35			14	1 2 3	0.25 P	26
		40						

GENERAL NOTES

Begin Drilling 08-05-2014 Complete Drilling 08-05-2014
Drilling Contractor Wang Testing Services Drill Rig D-25 ATV [93%]
Driller P&N Logger M. de los Reyes Checked by C. Marin
Drilling Method 2.25" HSA to 10', mud rotary thereafter, boring
backfilled upon completion

WATER LEVEL DATA

While Drilling ▽ Rotary wash
At Completion of Drilling ▼ mud in the borehole
Time After Drilling NA
Depth to Water ▽ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 1100401.GPJ WANGENG.GDT 1/12/18

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BORING LOG 22-RWB-04

WEI Job No.: 1100-04-01

Client AECOM
Project Circle Interchange Reconstruction
Location Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 586.36 ft
North: 1898208.77 ft
East: 1171849.77 ft
Station: 1212+66.85
Offset: 28.4715 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	--HARD DRILLING at 42.5 ft-- --Possible Cobbles--							
543.9	Stiff to very stiff, gray SILTY CLAY LOAM, trace gravel	45			15	2 4 5	1.50 N/6	18
		50			16	5 0 12	2.87 B	18
529.6	Very stiff, gray SILTY LOAM to SILTY CLAY LOAM, trace gravel and sand seams	55			17	9 11 14	2.62 B	14
		60			18	13 19 35	3.69 S	13
524.6	Very dense, gray SANDY LOAM, trace gravel --Moist--	65			19	13 19 35	NP	11
521.4	Boring terminated at 65.00 ft	70						
		75						
		80						

GENERAL NOTES

Begin Drilling 08-05-2014 Complete Drilling 08-05-2014
Drilling Contractor Wang Testing Services Drill Rig D-25 ATV [93%]
Driller P&N Logger M. de los Reyes Checked by C. Marin
Drilling Method 2.25" HSA to 10', mud rotary thereafter, boring
backfilled upon completion

WATER LEVEL DATA

While Drilling ▽ Rotary wash
At Completion of Drilling ▼ mud in the borehole
Time After Drilling NA
Depth to Water ▽ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 1100401.GPJ WANGENG.GDT 1/12/18

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BORING LOG 22-RWB-05

WEI Job No.: 1100-04-01

Client AECOM
Project Circle Interchange Reconstruction
Location Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 594.37 ft
North: 1898339.83 ft
East: 1171837.02 ft
Station: 6332+29.43
Offset: 43.1182 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	14-inch thick, dark brown SILTY LOAM --TOPSOIL--							
593.2	Very loose to dense, brown GRAVELLY SAND --FILL--				1	5 7 3	0.50 P	20
589.4	--Rubble--	5			2	4 4 2	NP	9
					3	8 1 2	NP	31
		10			4	4 14 33	NP	20
581.4	Soft, gray CLAY, trace gravel				5	7 5 3	NP	29
		15			6	1 2 2	0.41 B	24
578.9	Loose, brown, coarse SAND --MOIST--				7	4 4 3	NP	23
576.4	Very soft to soft, gray CLAY to SILTY CLAY, trace gravel	20			8	1 3 3	<0.25 P	24
571.4	Stiff, gray, SILTY CLAY, trace gravel	25			9	1 1 2	0.41 B	26
					10	1 3 3	1.15 B	20
568.9	Soft, gray CLAY, trace gravel				11	1 2 4	0.41 B	23
		30			12	1 2 3	0.25 P	24
					13	1 2 3	0.25 P	27
		35			14	1 2 3	0.41 B	25
		40						

GENERAL NOTES

Begin Drilling 08-06-2014 Complete Drilling 08-06-2014
Drilling Contractor Wang Testing Services Drill Rig D-25 ATV [93%]
Driller P&N Logger M. de los Reyes Checked by C. Marin
Drilling Method 2.25" HSA to 10', mud rotary thereafter, boring
backfilled upon completion

WATER LEVEL DATA

While Drilling ▽ 5.50 ft
At Completion of Drilling ▼ mud in the borehole
Time After Drilling NA
Depth to Water ▽ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 1100401.GPJ WANGENG.GDT 1/12/18

Notes:
Boring Log 22-RWB-04 station and offset along ℄ NB C-D Road is: Sta. 6331+10.99, Offset 14.71' Lt.
Boring Log 22-RWB-05 station and offset is measured along ℄ NB C-D Road.

USER NAME = wjcolletti	DESIGNED - KRS	REVISED -	
	CHECKED - DJG	REVISED -	
PLOT SCALE = 0.1667 ' / in.	DRAWN - MJR	REVISED -	
PLOT DATE = 7/27/2018	CHECKED - KRS/WJC	REVISED -	

TranSystems

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS 5
RETAINING WALL 22B (STRUCTURE NO. 016-1839)
SHEET NO. S7-17 OF S7-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2014-005R&B	COOK	888	556
		CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			

8/8/2018 8:55 AM
016839-60X79-S017-Boring_5.dgn

BORING LOG 22-RWB-05

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Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 594.37 ft
North: 1898339.83 ft
East: 1171837.02 ft
Station: 6332+29.43
Offset: 43.1182 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		45	15	3 3 5	0.49 B	25
		50	16	2 4 5	0.25 P	27
		55	17	1 4 4	0.33 B	31
537.6	Very stiff, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel	60	18	8 13 17	3.69 B	17
529.4	Boring terminated at 65.00 ft	65	19	6 10 15	2.62 B	14
		70				
		75				
		80				

GENERAL NOTES

Begin Drilling **08-06-2014** Complete Drilling **08-06-2014**
Drilling Contractor **Wang Testing Services** Drill Rig **D-25 ATV [93%]**
Driller **P&N** Logger **M. de los Reyes** Checked by **C. Marin**
Drilling Method **2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ∇ **5.50 ft**
At Completion of Drilling ▼ **mud in the borehole**
Time After Drilling **NA**
Depth to Water ▼ **NA**
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 1100040I.GPJ WANGENG.GDT 1/12/18

BORING LOG PS-5-CCTV

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1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 592.39 ft
North: 1898245.34 ft
East: 1171901.91 ft
Station: 1212+37.64
Offset: 85.0667 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
591.9	6-inch thick dark brown SILTY LOAM --TOPSOIL--					
	Loose, brown and gray, fine SAND --FILL--		1	5 4 3	NP	13
589.4	Brown SILTY LOAM, trace gravel, glass, and cinders --FILL--	5	2	5 5 6		8
587.9	Medium dense, brown SANDY LOAM, trace gravel --FILL--		3	11 11 7	NP	
584.4	Medium stiff to stiff, gray SILTY CLAY, trace gravel	10	4	3 4 5	1.64 B	22
			5	2 2 3	0.90 B	25
579.4	Very soft to soft, gray CLAY to SILTY CLAY, trace gravel	15	6	1 2 2	0.49 B	23
			7	1 1 2	0.16 B	29
		20	8	1 1 1	0.25 B	27
			9	1 1 2	0.16 B	25
		25	10	2 2 2	0.33 B	22
			11	1 2 3	0.41 B	25
		30	12	1 2 2	0.41 B	26
		35	13	1 2 2	0.25 B	25
		40	14	2 2 2	0.41 B	25

GENERAL NOTES

Begin Drilling **11-07-2013** Complete Drilling **11-07-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-25 ATV [93%]**
Driller **P&N** Logger **D. Kolpacki** Checked by
Drilling Method **2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ∇ **Rotary wash**
At Completion of Drilling ▼ **mud in the borehole**
Time After Drilling **NA**
Depth to Water ▼ **NA**
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 1100040I.GPJ WANGENG.GDT 1/12/18

BORING LOG PS-5-CCTV

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Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 592.39 ft
North: 1898245.34 ft
East: 1171901.91 ft
Station: 1212+37.64
Offset: 85.0667 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
548.1	Very stiff to hard, gray SILTY CLAY to SILTY CLAY LOAM, trace to little gravel	45	15	2 2 4	1.00 N/6	
		50	16	6 0 13	2.00 P	13
		55	17	8 14 16	4.92 B	16
532.4	Boring terminated at 60.00 ft	60	18	11 14 21	3.53 B	15

GENERAL NOTES

Begin Drilling **11-07-2013** Complete Drilling **11-07-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-25 ATV [93%]**
Driller **P&N** Logger **D. Kolpacki** Checked by
Drilling Method **2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ∇ **Rotary wash**
At Completion of Drilling ▼ **mud in the borehole**
Time After Drilling **NA**
Depth to Water ▼ **NA**
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 1100040I.GPJ WANGENG.GDT 1/12/18

Notes:
Boring Log 22-RWB-05 station and offset is measured along ℄ NB C-D Road.
Boring Log PS-5-CCTV station and offset along ℄ NB C-D Road is:
Sta. 6331+14.80, Offset 48.86' Rt.

TranSystems			
USER NAME = wjcolletti	DESIGNED - KRS	REVISED -	
	CHECKED - DJG	REVISED -	
PLOT SCALE = 0.1667 ' / in.	DRAWN - MJR	REVISED -	
PLOT DATE = 7/27/2018	CHECKED - KRS/WJC	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS 6
RETAINING WALL 22B (STRUCTURE NO. 016–1839)
SHEET NO. S7-18 OF S7-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2014-005R&B	COOK	888	557

CONTRACT NO. 60X79
ILLINOIS FED. AID PROJECT

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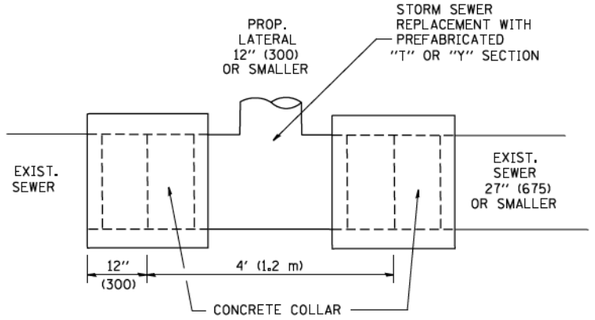
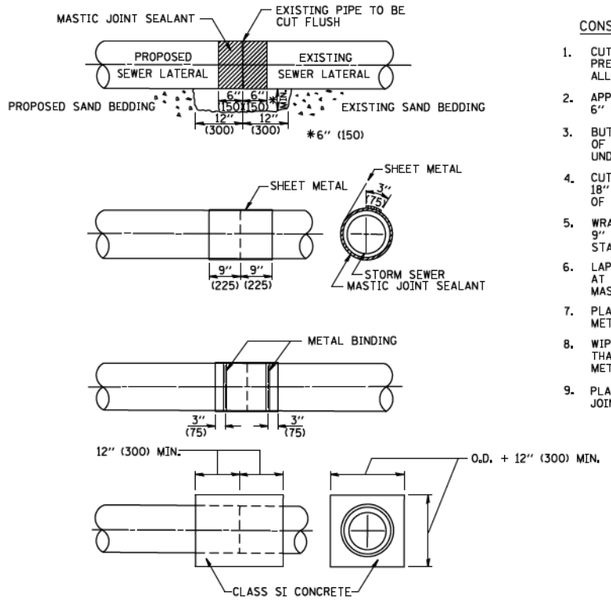


DETAIL "A"

LATERAL CONNECTION TO EXISTING SEWER
OF 27" (675) OR SMALLER

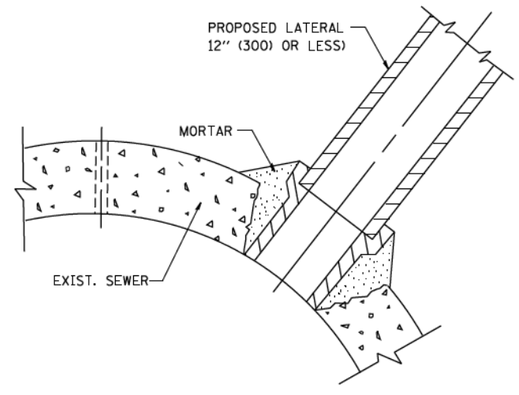


DETAIL "B"

CLASS SI CONCRETE COLLAR

CONSTRUCTION SEQUENCE

1. CUT THE EXISTING END OF THE PIPE SO AS TO PRESENT A FLUSH BUTT JOINT. BRUSH AND CLEAN ALL PIPES.
2. APPLY THE MASTIC JOINT SEALANT TO THE FIRST 6" (150) OF EACH PIPE.
3. BUTT THE PIPES TOGETHER LEAVING A MINIMUM OF 12' x 6' (300 x 150) DEEP EXCAVATION UNDER AND AROUND EACH PIPE END.
4. CUT A PIECE OF SHEET METAL GAGE NO. 19 1.1 (0.0418) 18" (450) WIDE BY THE OUTSIDE CIRCUMFERANCE OF THE PIPE PLUS 3" (75) LONG.
5. WRAP THE SHEET METAL AROUND THE PIPES, 9" (225) ON EACH SIDE OF THE JOINT, STARTING AT THE TOP OF THE PIPE.
6. LAP THE SHEET METAL AT LEAST 3" (75) AT THE TOP OF THE PIPE AND PLACE THE MASTIC JOINT SEALANT BETWEEN THE LAP.
7. PLACE TWO METAL BANDS AROUND THE SHEET METAL AND TIGHTEN.
8. WIPE OFF ANY EXCESS MASTIC JOINT SEALANT THAT OOZES OUT FROM BETWEEN THE SHEET METAL AND THE PIPES.
9. PLACE CLASS SI CONCRETE AROUND THE JOINT.



DETAIL "C"

PROPOSED LATERAL
CONNECTION TO EXISTING SEWER
OF 30" (750) OR LARGER

NOTES

MATERIAL

MATERIAL USED FOR THE TEE OR WYE SECTION SHALL BE COMPATIBLE WITH THE EXISTING STORM SEWER OR THE PROPOSED STORM SEWER.

CONSTRUCTION METHODS

I. THIS WORK SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE APPLICABLE PORTIONS OF SECTION 550 OF THE STANDARD SPECIFICATIONS.

II. CONNECTION TO AN EXISTING STORM SEWER SHALL BE BY EITHER OF THE FOLLOWING METHODS:

A) PROPOSED STORM SEWER CONNECTION TO EXISTING SEWER OF 27" (675) OR SMALLER SEE DETAIL "A" AND "B".

B) PROPOSED STORM SEWER CONNECTION TO EXISTING SEWER OF 30" (750) OR LARGER SEE DETAIL "C".

IF THE EXISTING SEWER PIPE IS CRACKED, BROKEN OR OTHERWISE DAMAGED BY THE CONTRACTOR IN MAKING THE CIRCULAR OPENING, THE CONTRACTOR SHALL REPLACE THAT SECTION OF PIPE WITH PIPE EQUAL AND SIMILAR IN ALL RESPECTS TO THE PIPE IN THE EXISTING SEWER, IN A CAREFUL WORKMANLIKE MANNER, WITHOUT EXTRA COMPENSATION.

GENERAL

CARE MUST BE TAKEN TO PREVENT DEBRIS FROM ENTERING THE SEWER. ALL DEBRIS WHICH ENTERS THE SEWER MUST BE REMOVED. THE SEWER MUST BE LEFT CLEAN AND UNOBSTRUCTED UPON COMPLETION OF THE CONTRACT.

CARE MUST BE TAKEN TO PREVENT ANY PART OF THE NEW PIPE CONNECTION FROM PROJECTING INTO THE EXISTING SEWER.

BASIS OF PAYMENT

TEE OR WYE CONNECTIONS SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH FOR STORM SEWER TEE OR WYE OF THE TYPE AND SIZE SPECIFIED IN THE PLANS, THIS PRICE SHALL INCLUDE ALL EXCAVATION OF THE TRENCH, REMOVAL OF THE EXISTING STORM SEWER, FURNISHING AND INSTALLING THE SPECIFIED TEE OR WYE SECTION, FURNISHING AND INSTALLING THE REQUIRED CONCRETE COLLAR, AND ALL OTHER MATERIAL NECESSARY TO COMPLETE THIS WORK AS SHOWN AND SPECIFIED.

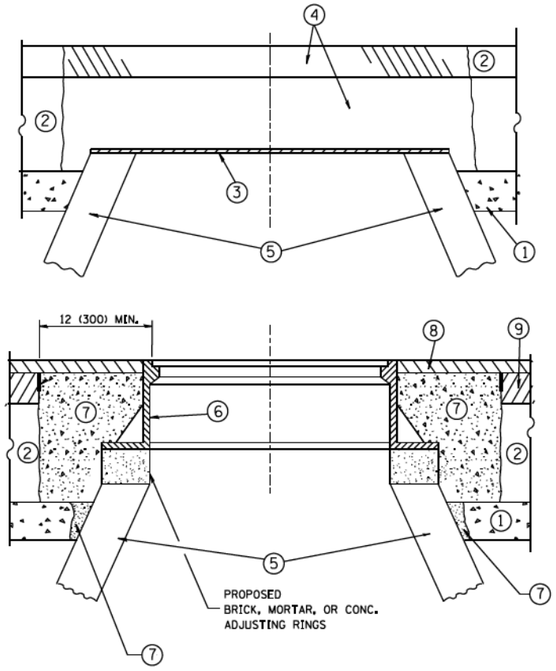
REMOVAL AND REINSTALLATION OF EXISTING STORM SEWER ADJACENT TO THE PROPOSED TEE OR WYE SECTION, FOR THE PURPOSE OF FACILITATING THE INSTALLATION OF THE TEE OR WYE SECTION, WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE WORK.

TRENCH BACKFILL, EXCAVATION IN ROCK AND REMOVAL AND REPLACEMENT OF UNSUITABLE MATERIAL BELOW PLAN BEDDING GRADE WILL BE PAID FOR SEPARATELY.

CONCRETE COLLAR FOR CONNECTING A PROPOSED STORM SEWER TO AN EXISTING STORM SEWER WILL NOT BE PAID PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF THE PROPOSED STORM SEWER.

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

FILE NAME = W:\diststd\22x34\bd07.dgn	USER NAME = gaglianobt	DESIGNED - M. DE YONG	REVISED - M. DE YONG 05-08-92	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DETAIL OF STORM SEWER CONNECTION TO EXISTING SEWER	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED - R. SHAH 09-09-94						888	558
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED - R. SHAH 10-25-94				BD500-01 (BD-7)		CONTRACT NO. 60X79	
	PLOT DATE = 1/4/2008	DATE - 07-25-90	REVISED - R. SHAH 06-12-96		SCALE: NONE	SHEET 1 OF 45 SHEETS	STA.	TO STA.	FED. ROAD DIST. NO. 1	ILLINOIS FED. AID PROJECT



CONSTRUCTION PROCEDURES

STAGE 1 (BEFORE PAVEMENT MILLING)

A) REMOVE A MINIMUM OF 12 (300) OF THE PAVEMENT FROM AROUND THE STRUCTURE.
B) REMOVE THE EXISTING FRAME AND LID FROM THE STRUCTURE.
C) COVER THE STRUCTURE OPENING WITH A 36 (900) DIAMETER METAL PLATE.
D) BACKFILL WITH CRUSHED STONE AND A MINIMUM 1½ (40) THICK HMA SURFACE MIX APPROVED BY THE ENGINEER.

STAGE 2 (AFTER PAVEMENT MILLING)

A) REMOVE THE HMA SURFACE MIX AND CRUSHED STONE.
B) INSTALL THE FRAME AND LID; ADJUST THE FRAME TO ITS FINAL SURFACE ELEVATION.
C) THE SURROUNDING SPACE SHALL BE FILLED WITH CLASS PP-1* CONCRETE TO THE ELEVATION OF THE SURFACE OF THE EXISTING BASE COURSE OR THE BINDER COURSE.

*UNLESS OTHERWISE SPECIFIED IN THE PLANS.

THE PROCEDURE EXPLAINED ABOVE SHALL CONFORM TO THE APPLICABLE PORTIONS OF SECTIONS 353, 406, 602, AND 603 OF THE STANDARD SPECIFICATIONS EXCEPT THAT "THE CONTRACTOR SHALL ADJUST THE STRUCTURES TO THE FINISHED PAVEMENT ELEVATION NO MORE THAN 5 CALENDAR DAYS PRIOR TO PLACEMENT OF THE FINAL LIFT OF SURFACE UNLESS APPROVED BY THE ENGINEER."

LEGEND

1. SUB-BASE GRANULAR MATERIAL
2. EXISTING PAVEMENT
3. 36 (900) DIAMETER METAL PLATE
4. PROPOSED CRUSHED STONE AND HMA SURFACE MIX
5. EXISTING STRUCTURE
6. FRAME AND LID (SEE NOTES)
7. CLASS PP-1* CONCRETE
8. PROPOSED HMA SURFACE COURSE
9. PROPOSED HMA BINDER COURSE

NOTES:

EXISTING BROKEN FRAMES AND LIDS SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR AND SHALL BE REPLACED AS DIRECTED BY THE ENGINEER. REPLACEMENT FRAMES AND LIDS WILL BE PAID FOR IN ACCORDANCE WITH ARTICLE 109.04 OF THE STANDARD SPECIFICATIONS UNLESS A SEPARATE PAY ITEM HAS BEEN PROVIDED.

IF THE EXISTING LIDS ARE OPEN, THE FRAME WILL BE ADJUSTED TO THE ELEVATION OF THE MILLED PAVEMENT SURFACE PRIOR TO THE MILLING OPERATION. THE FRAME WILL NOT BE REMOVED AND COVERED BY THE METAL PLATE.

CITY OF CHICAGO CASTINGS ARE THE PROPERTY OF THE CITY AND THE CONTRACTOR SHALL NOTIFY THE CITY FOR REMOVAL AND DISPOSITION OF THE CASTINGS.

THE METAL PLATE USED TO COVER THE STRUCTURE SHALL REMAIN THE PROPERTY OF THE CONTRACTOR.

WHEN STRUCTURES ARE TO BE ADJUSTED OR RECONSTRUCTED, THE LOWERING AND RAISING OF THE FRAMES AND LIDS WILL NOT BE PAID FOR SEPARATELY BUT WILL BE INCLUDED IN THE COST OF THE CORRESPONDING PAY ITEM.

LOCATION OF STRUCTURES:

THE CONTRACTOR WILL BE REQUIRED TO KEEP A RECORD OF THE LOCATIONS OF THE BURIED STRUCTURES ACCORDING TO THE STATION AND DISTANCE LEFT OR RIGHT OF THE CENTERLINE OF PAVEMENT. UPON COMPLETION OF THE WORK, THE CONTRACTOR WILL DELIVER THE RECORD TO THE ENGINEER.

BASIS OF PAYMENT:

REMOVING FRAMES AND LIDS ON DRAINAGE AND UTILITY STRUCTURES IN THE PAVEMENT PRIOR TO MILLING, AND ADJUSTING TO FINAL GRADE PRIOR TO PLACING THE SURFACE COURSE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH FOR "FRAMES AND LIDS TO BE ADJUSTED (SPECIAL)."

THIS WORK WILL NOT BE PAID FOR WHEN DRAINAGE AND UTILITY STRUCTURES ARE SPECIFIED FOR PAYMENT AS STRUCTURE RECONSTRUCTION.

NEW FRAMES AND LIDS, WHEN SPECIFIED, WILL BE PAID FOR SEPARATELY.

DETAILS FOR FRAMES AND LIDS ADJUSTMENT WITH MILLING

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN

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		DRAWN -	REVISED - R. BORO 01-01-07
	PLOT SCALE = 1968.5000 ' / m	CHECKED -	REVISED - R. BORO 03-09-11
	PLOT DATE = 12/6/2011	DATE - 10-25-94	REVISED - R. BORO 12-06-11

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DETAILS FOR FRAMES AND LIDS ADJUSTMENT WITH MILLING

SCALE: NONE | SHEET 2 OF 45 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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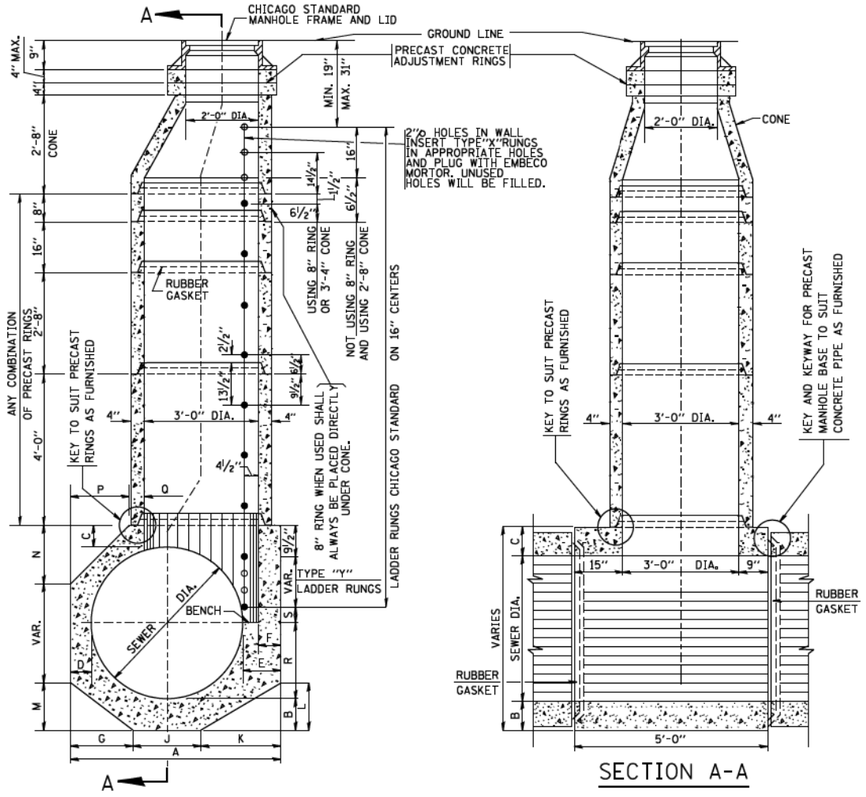
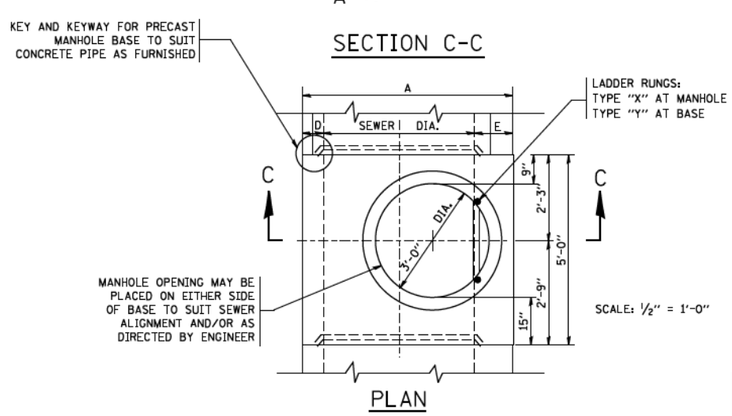
	BD600-03 (BD-8)		CONTRACT NO. 60X79	
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



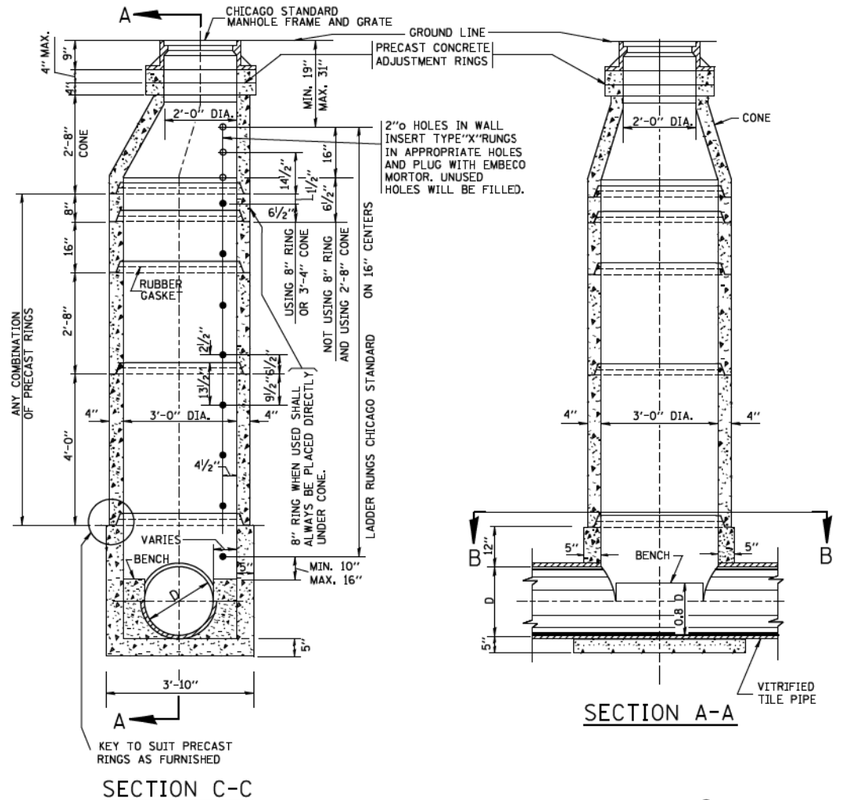


TYPE "A" MANHOLE

FOR SEWERS
24" TO 120" DIAMETER
PRECAST BASES AND RINGS

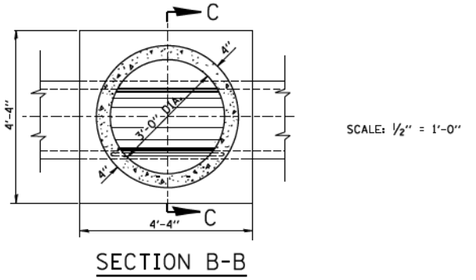
FOR STATE CONTRACT
ALL DIMENSIONS SHOULD
BE PREPARED IN METRIC
UNITS SOFT CONVERSION
METHOD SHOULD BE USED.

SEWER DIA.	PART OF ITEM	DIMENSIONS OF PRECAST MANHOLE BASE															NO. "Y" RINGS
		A	B	C	D	E	F	G	J	K	L	M	N	P	Q	R	
120"	____	12"-4½"	12"	12"	12"	16½"	12"	4'-0"	4'-0"	4'-4½"	2'-7½"	2'-5"	3'-7"	3'-7"	4'-8½"	2'-0"	2½"	7
108"	____	11"-4½"	12"	12"	12"	16½"	12"	3'-8"	3'-8"	4'-0½"	2'-5"	2'-2"	3'-4"	3'-4"	4'-0½"	2'-0"	6½"	6
102"	____	10"-10½"	12"	12"	12"	16½"	12"	3'-6"	3'-6"	3'-10½"	2'-4"	2'-1"	3'-2"	3'-2"	3'-8½"	2'-0"	16½"	5
96"	10-A	10"-2½"	11"	11"	11"	15½"	11"	3'-3"	3'-3"	3'-8½"	2'-3"	23"	2'-11"	2'-11"	3'-4½"	2'-0"	9½"	5
90"	10-B	9'-8½"	11"	11"	11"	15½"	11"	3'-1"	3'-1"	3'-6½"	2'-1½"	22"	2'-10"	2'-10½"	2'-11½"	2'-0"	3½"	5
84"	10-C	9'-0½"	10"	10"	10"	14½"	10"	2'-11"	2'-11"	3'-2½"	23"	21"	2'-7"	2'-7"	2'-7½"	2'-0"	12½"	4
78"	10-D	8'-6½"	10"	10"	10"	14½"	10"	2'-9"	2'-9"	3'-0½"	22"	20"	2'-6"	2'-6"	2'-2½"	2'-0"	6½"	4
72"	10	7"-10½"	9"	9"	9"	13½"	9"	2'-6"	2'-6"	2'-10½"	21"	18"	2'-3"	2'-3"	22½"	2'-0"	15½"	3
66"	11	7'-4½"	9"	9"	9"	13½"	9"	2'-4"	2'-4"	2'-8½"	19½"	17"	2'-1"	2'-1"	18½"	2'-0"	9½"	3
60"	12	6'-8½"	8"	8"	8"	12½"	8"	2'-1½"	2'-1"	2'-6"	18"	15"	23"	23"	13½"	2'-0"	2½"	3
54"	13	6'-2½"	8"	8"	8"	12½"	8"	23½"	23"	2'-4"	17"	14"	21"	21"	9½"	2'-0"	12½"	2
48"	14	5'-6½"	7"	7"	7"	11½"	7"	20½"	21"	2'-1"	15"	12½"	18½"	18½"	5"	2'-0"	5½"	2
42"	15	5'-0½"	7"	7"	7"	11½"	7"	18½"	19"	23"	14"	11"	---	---	17½"	21"	2½"	2
36"	16	4'-4½"	6"	6"	6"	10½"	6"	16"	16"	20½"	12½"	9½"	---	---	10½"	18"	14½"	1
30"	17	4'-0"	6"	6"	6"	12"	6"	14"	14"	20"	12"	8½"	---	---	6"	15"	11½"	1
24"	18	4'-0"	6"	6"	12"	12"	6"	16"	16"	16"	9½"	9½"	---	---	6"	12"	8½"	1



TYPE "A" MANHOLE

FOR SEWERS
21" DIAMETER AND SMALLER
PRECAST BASES AND RINGS



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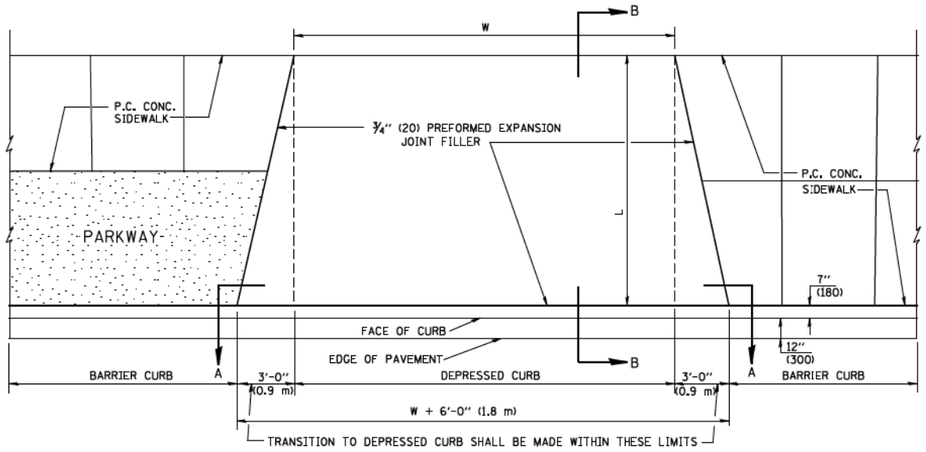
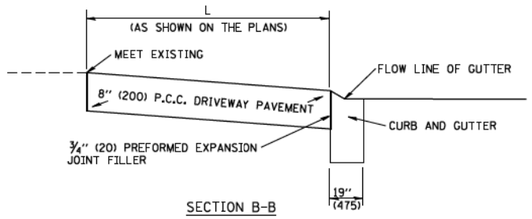
	PLOT DATE = 1/4/2008	DATE - 06-18-82	REVISED -		SCALE: NONE SHEET 3 OF 45 SHEETS STA. TO STA.	FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



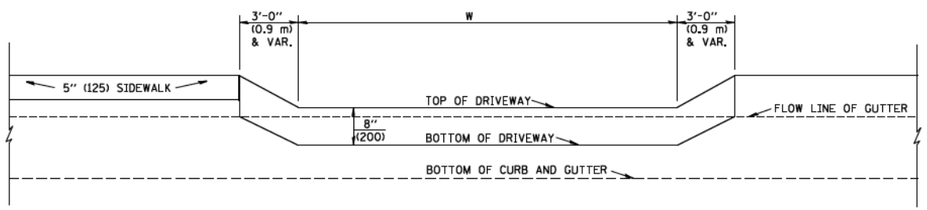
PLAN VIEW

NOTES:

1. EXPANSION JOINTS SHALL BE CONSTRUCTED AS SHOWN ON THE DETAILS FOR P.C.C. SIDEWALK.
2. THE CURB BETWEEN ADJACENT DRIVEWAYS SHALL BE FULL HEIGHT FOR A DISTANCE OF AT LEAST FOUR 4 FEET (1.2 METERS)
3. P.C. CONCRETE DRIVEWAYS SHALL BE CONSTRUCTED AT LOCATIONS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
4. ¾" (20) PREFORMED EXPANSION JOINTS WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED INCIDENTAL TO P.C.C. DRIVEWAY PAVEMENT 8" (200).
5. COMBINATION CONC. CURB AND GUTTER SHALL BE MEASURED STRAIGHT ACROSS THE DRIVEWAY. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR THE TRANSITION CURB AND GUTTER.

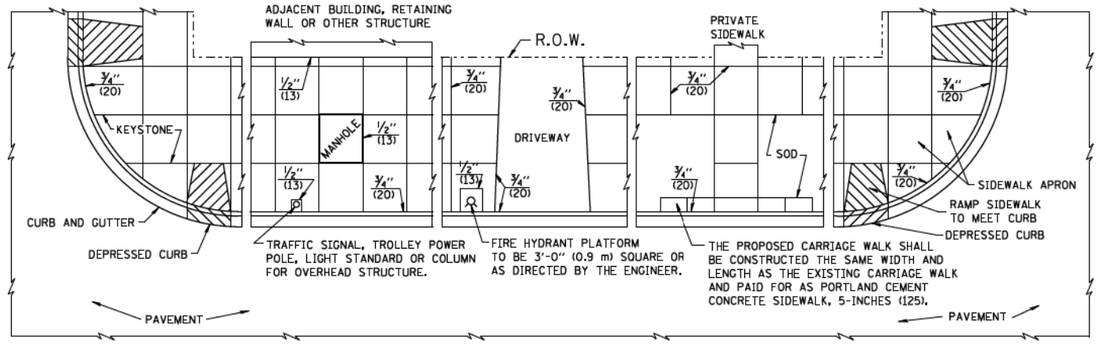


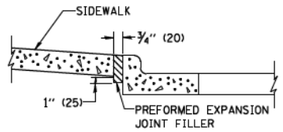
SECTION B-B



SECTION A-A

P.C.C. DRIVEWAY PAVEMENT DETAIL





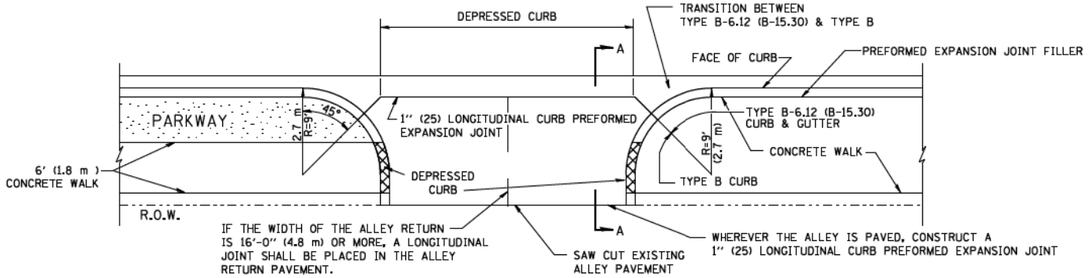
SLOPE FOR SIDEWALK
1" (25) IN 3'-0" (0.9 m) IN CHICAGO

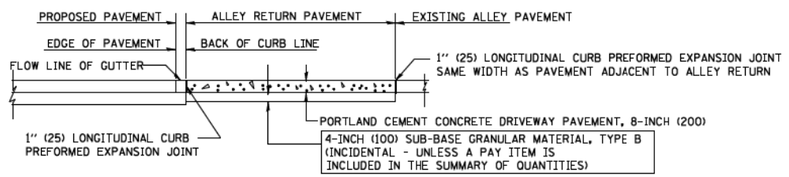
NOTES:

1. ONE-HALF INCH THICK EXPANSION JOINTS SHALL BE PLACED BETWEEN THE SIDEWALK AND ALL STRUCTURES SUCH AS LIGHT STANDARDS, TRAFFIC LIGHT STANDARDS, MANHOLES, WHICH EXTEND THROUGH THE SIDEWALK.
2. ¾" (20) THICK EXPANSION JOINTS SHALL BE PLACED AT INTERVALS OF NOT MORE THAN 100 FEET (30 METERS) IN THE SIDEWALK. WHERE THE SIDEWALK IS CONSTRUCTED ADJACENT TO PAVEMENT OR CURB HAVING EXPANSION JOINTS, THE EXPANSION JOINTS IN THE SIDEWALK SHALL BE PLACED OPPOSITE THE EXISTING EXPANSION JOINTS AS NEARLY AS PRACTICABLE. EXPANSION JOINTS SHALL ALSO BE PLACED WHERE THE SIDEWALK ABUTS EXISTING SIDEWALKS, BETWEEN DRIVEWAY PAVEMENT AND SIDEWALK, AND BETWEEN SIDEWALK AND CURBS WHERE THE SIDEWALK ABUTS A CURB.

PORTLAND CEMENT CONCRETE SIDEWALK DETAILS

NOTES: NO EXTRA COMPENSATION SHALL BE ALLOWED FOR THE GUTTER FLARE





SECTION A-A

ALLEY RETURN DETAIL

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN

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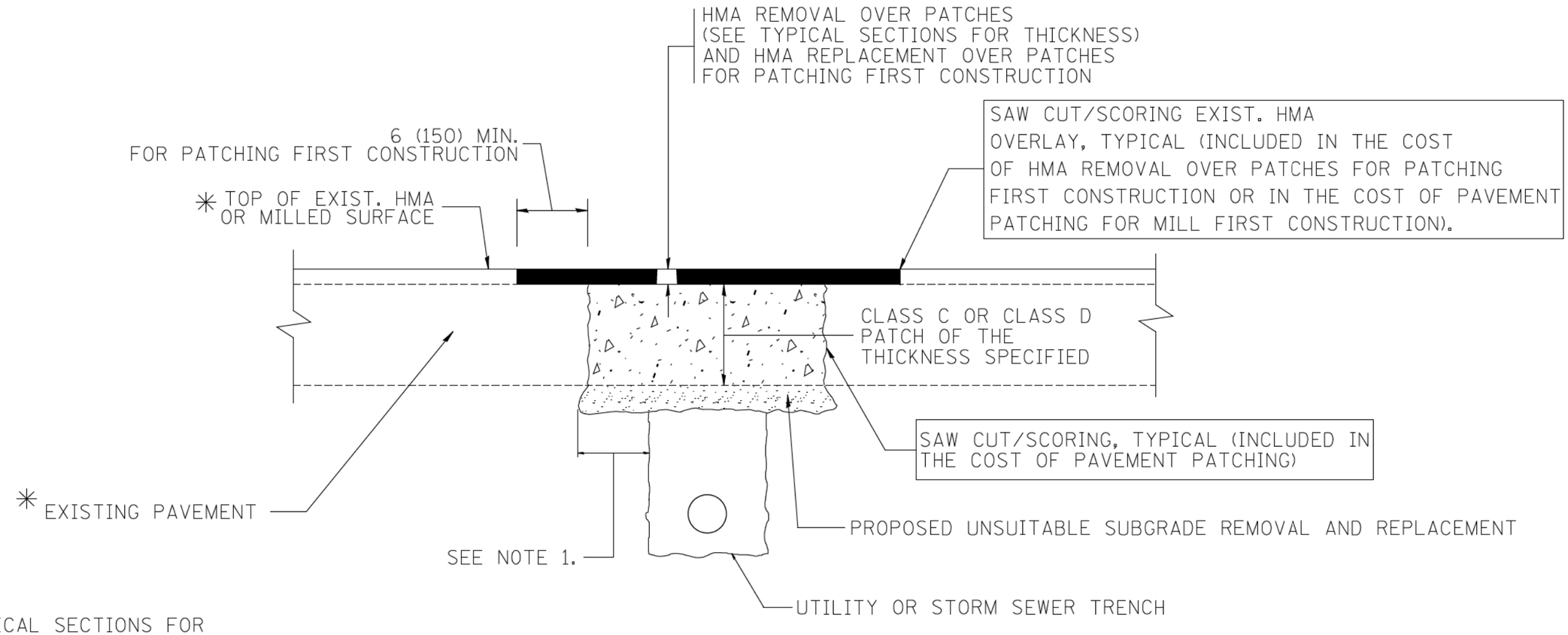
		DRAWN -	REVISED -
	PLOT SCALE = 50.0000 ' / IN.	CHECKED -	REVISED -
	PLOT DATE = 1/4/2008	DATE - 06-13-90	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CITY OF CHICAGO
DETAILS FOR P.C. CONCRETE DRIVEWAY, ALLEY RETURN AND SIDEWALK

SCALE: NONE | SHEET 4 OF 45 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			888	561
	BD400-03 (BD-17)	CONTRACT NO. 60X79		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



* SEE TYPICAL SECTIONS FOR THICKNESS AND MATERIALS

NOTES:

1. THE WIDTH OF THE FULL DEPTH PATCH OVER A TRENCH SHALL BE 12 (300) WIDER ON EACH SIDE OF THE TRENCH.
2. FOR METHOD OF MEASUREMENT AND BASIS OF PAYMENT, SEE RECURRING SPECIAL PROVISION "PATCHING WITH HOT-MIX ASPHALT OVERLAY REMOVAL".

SEQUENCE OF CONSTRUCTION (PATCHING FIRST)

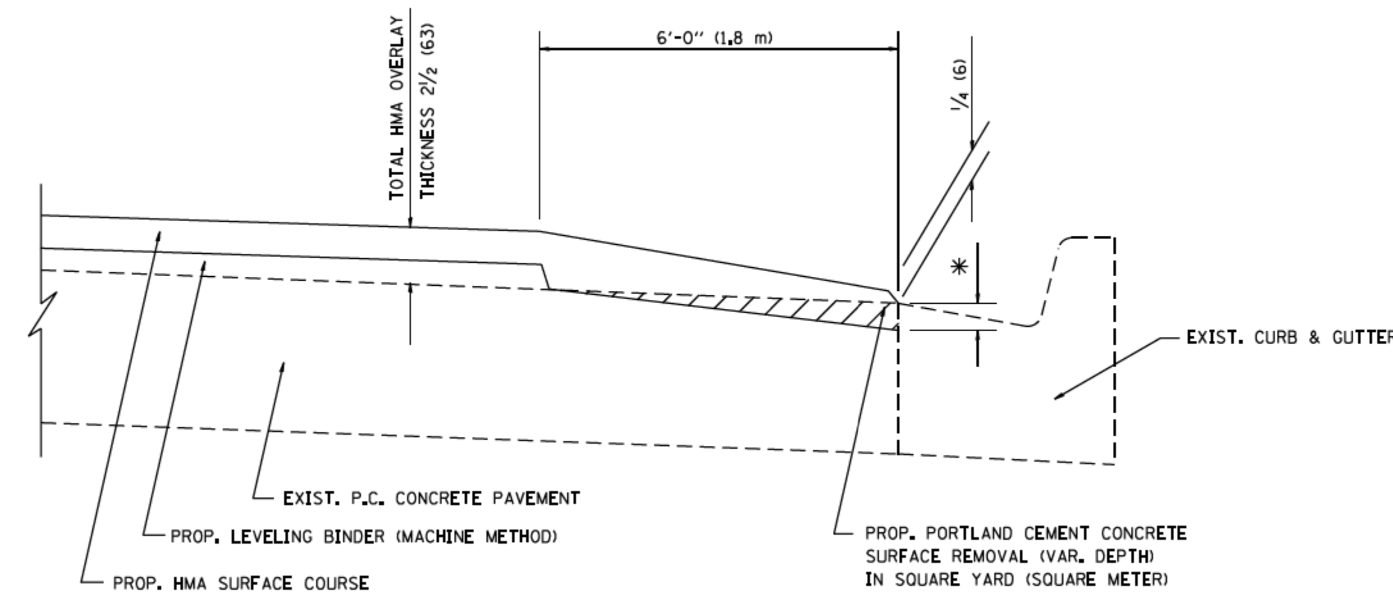
1. REMOVE THE EXISTING HMA MATERIAL OVER THE AREA TO BE PATCHED.
2. REMOVE AND REPLACE WITH CLASS C OR D PATCH.
3. REPLACE HMA MATERIAL OVER THE AREA TO BE PATCHED.

SEQUENCE OF CONSTRUCTION (MILLING FIRST)

1. MILL HMA FIRST IF THERE IS AT LEAST $4\frac{1}{2}$ INCHES OR MORE OF HMA MATERIAL ON TOP OF THE EXISTING PAVEMENT OR IF THE PAVEMENT IS FULL DEPTH HMA. A MINIMUM OF 2 INCHES OF HMA MATERIAL SHALL BE IN PLACE AFTER MILLING.
2. REMOVE AND REPLACE WITH FULL DEPTH CLASS D PATCHES TO TOP OF MILLED SURFACE.

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

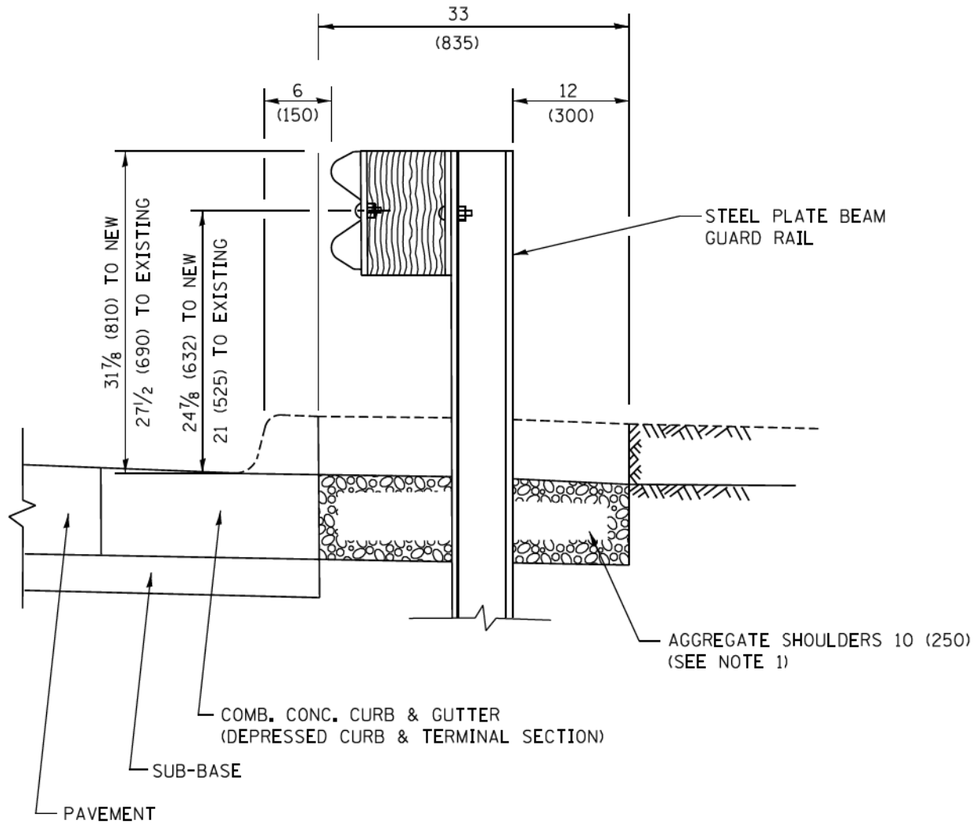
FILE NAME = c:\projects\diststd22x34\bd22.dgn	USER NAME = bauerdl	DESIGNED - R. SHAH	REVISED - A. ABBAS 04-27-98	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PAVEMENT PATCHING FOR HMA SURFACED PAVEMENT			F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS / SHEET NO.
		DRAWN -	REVISED - R. BORO 01-01-07								888 / 562
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED - R. BORO 09-04-07						BD400-04 (BD-22)		CONTRACT NO. 60X79
	PLOT DATE = 10/27/2008	DATE - 10-25-94	REVISED - K. ENG 10-27-08		SCALE: NONE	SHEET NO. 51 OF 45 SHEETS	STA. TO STA.	FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT	



HMA TAPER AT EDGE OF P.C.C PAVEMENT

HMA SURFACE		LEVELING BINDER	
MIX	THICKNESS	THICKNESS	* MILLING AT GUTTER FLAG
C OR D	1½ (38)	1 (25)	1¼ (33)
E	1¾ (44)	¾ (19)	1½ (38)

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



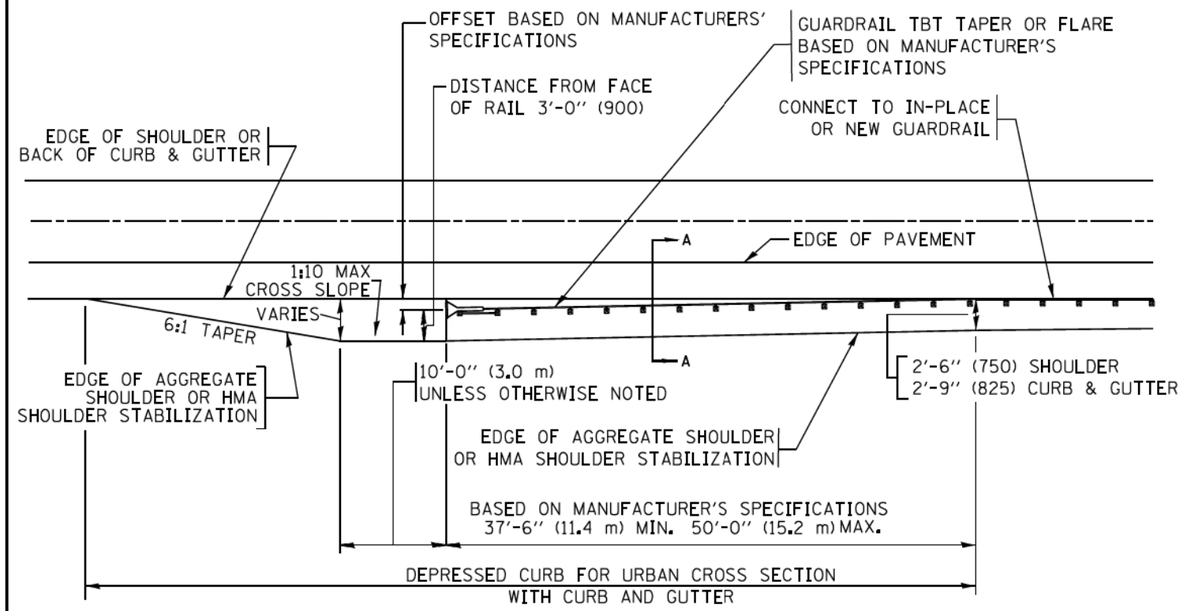
SECTION A-A

NOTES:

1. THE AGGREGATE SHOULDER, 10 (250) OR HMA SHOULDER, 6 (150) (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.

AGGREGATE SHOULDER, 10 (250) WILL BE PAID ACCORDING TO SECTION 481.

HMA SHOULDERS 6 (150) (IF REQUIRED) WILL BE PAID ACCORDING TO SECTION 482.

COMB. CONC. C&G, 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.

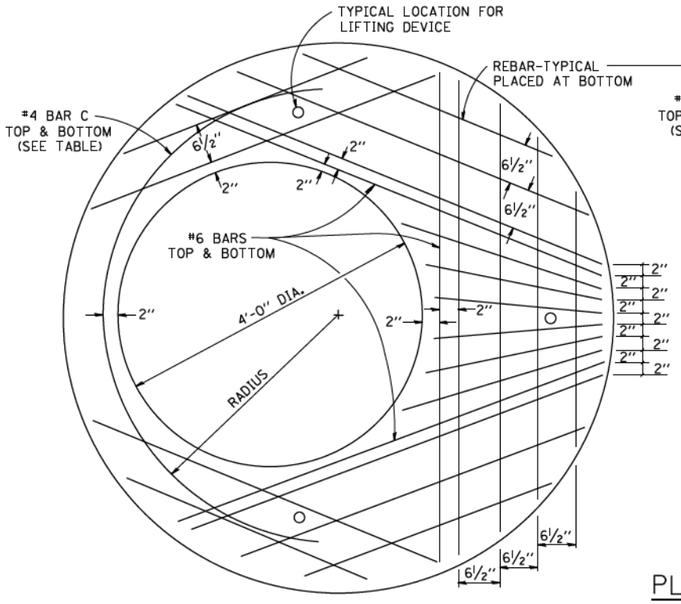
FILE NAME = pw:\\IL884EBIDINTEG.illinois.gov#PWIDOT\Documents\IDOT Offices\District 1\Projects\DistStds\BRMN\CADData\CADsheets\bd34.dgn	USER NAME = dravakosgn	DESIGNED - M. DE YONG	REVISED - R. BORO 12-08-2008
			REVISED - R. BORO 09-14-2009
	PLOT SCALE = 50.0000 ' / in.	CHECKED -	REVISED - R. BORO 08-06-2012
Default	PLOT DATE = 12/21/2015	DATE - 09-22-90	REVISED - R. BORO 05-08-2015

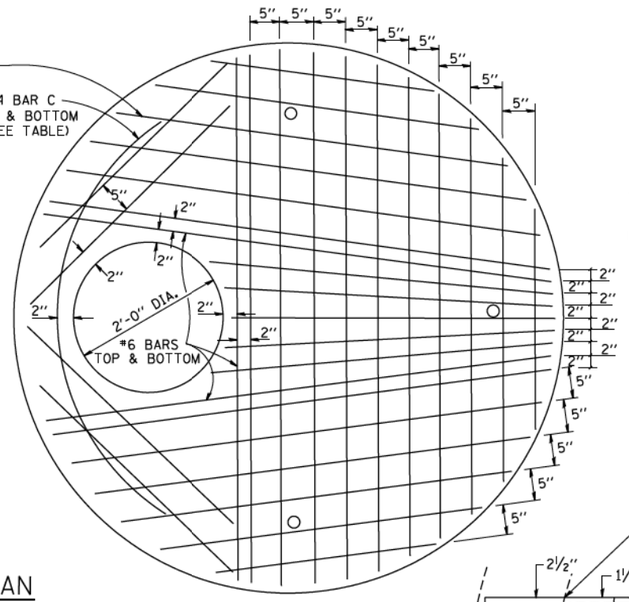
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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

SCALE: NONE | SHEET 7 OF 45 SHEETS | STA. | TO STA.

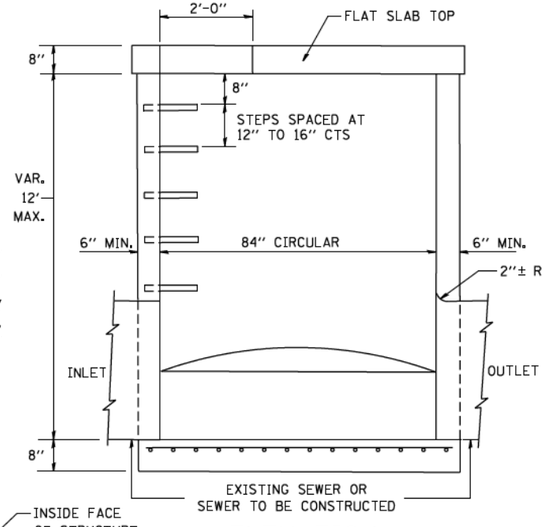
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			888	564
	BD600-10 (BD 34)	CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			





PLAN

SHOWING REBAR REINFORCEMENT



ELEVATION

GENERAL NOTES

ALTERNATE MATERIAL FOR THE WALLS MAY BE CONCRETE MASONRY UNITS, PRECAST REINFORCED CONCRETE SECTIONS OR CAST-IN-PLACE CONCRETE. THE CAST IRON STEPS AS DETAILED HEREON ARE TYPICAL. STEPS OF OTHER DESIGN AND MATERIAL THAT CONFORM TO THE MINIMUM REQUIREMENTS OF THE STEPS SHOWN MAY BE USED WHEN APPROVED BY THE ENGINEER.

CAST IRON STEPS SHALL BE GRAY IRON CONFORMING TO THE REQUIREMENTS OF ARTICLE 1006.14 OF THE STANDARD SPECIFICATIONS.

STEPS SHALL BE EMBEDDED INTO THE WALL A MINIMUM OF THREE (3) INCHES. STEPS SHALL NOT BE EXTENDED ON THE OUTSIDE.

STEPS SHALL BE OMITTED FOR WORK IN COOK COUNTY WHEN THE DEPTH OF THE MANHOLE IS TEN (10') OR LESS.

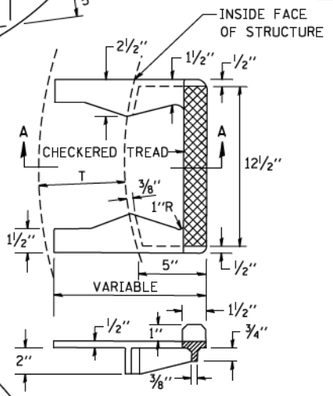
IN ADDITION TO THE REQUIREMENTS OF ARTICLE 612.13 OF THE STANDARD SPECIFICATIONS, THE CONTRACT UNIT PRICE FOR MANHOLES, TYPE A, 7'-DIAMETER SHALL INCLUDE THE SAND CUSHION WHEN REQUIRED, FURNISHING AND INSTALLING STEPS WHEN REQUIRED, FURNISHING AND COMPACTING THE SPECIFIED BACKFILL MATERIAL, AND FURNISHING AND INSTALLING FLAT SLAB TOP.

PRECAST FLAT SLAB TOP SHALL CONFORM TO ARTICLES 505.01 THRU 505.05 OF THE STANDARD SPECIFICATIONS EXCEPT THAT THE CONCRETE STRENGTH SHALL BE 4,000 PSI AFTER 28 DAYS. REINFORCEMENT BARS AND WELDED WIRE FABRIC SHALL CONFORM TO THE REQUIREMENTS OF ARTICLE 1006.10. ONLY GRADE 60 REINFORCEMENT BARS WILL BE PERMITTED.

BOTTOM SLAB SHALL BE REINFORCED BY EITHER REINFORCEMENT BARS OR WELDED WIRE FABRIC. THE MINIMUM REINFORCEMENT SHALL BE 0.46 SQUARE INCH PER LINEAR FOOT IN BOTH DIRECTIONS.

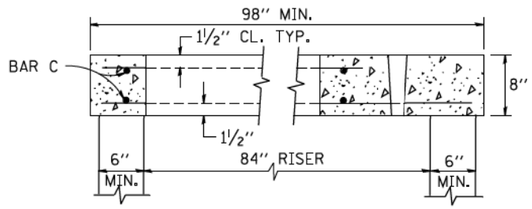
JOINT CONFIGURATION AND DIMENSIONS OF FLAT SLAB TOP SHALL MATCH AND FIT THE RISER JOINT DETAIL.

LIFTING DEVICES SHALL BE APPROVED BY THE ENGINEER.

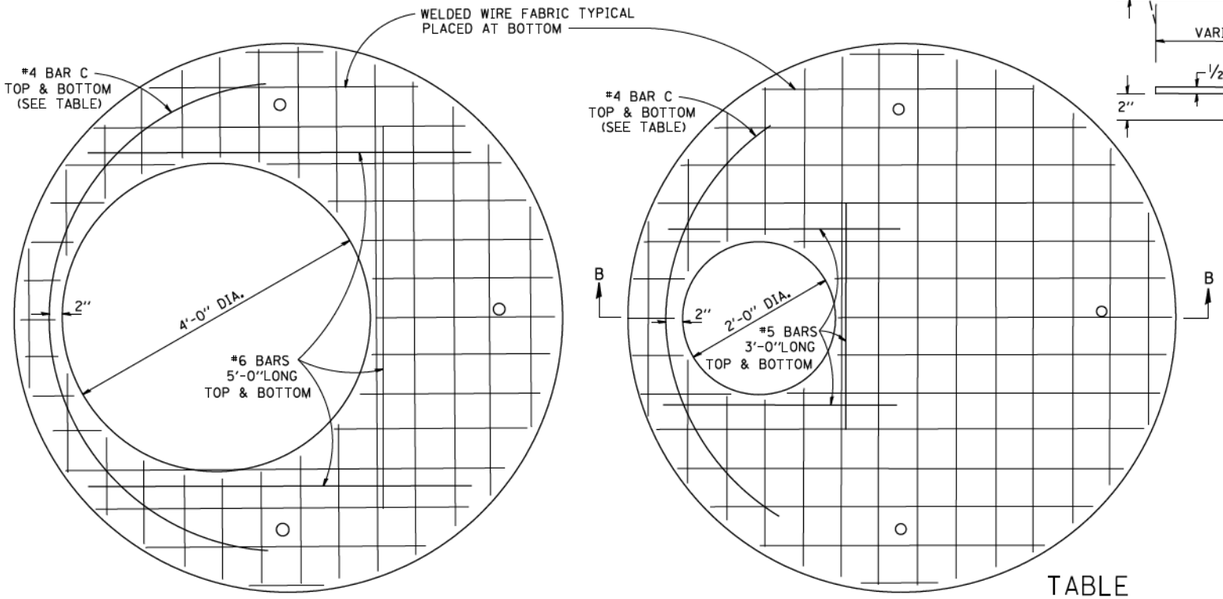


SEC. A-A

CAST IRON STEPS



SECTION B-B



PLAN

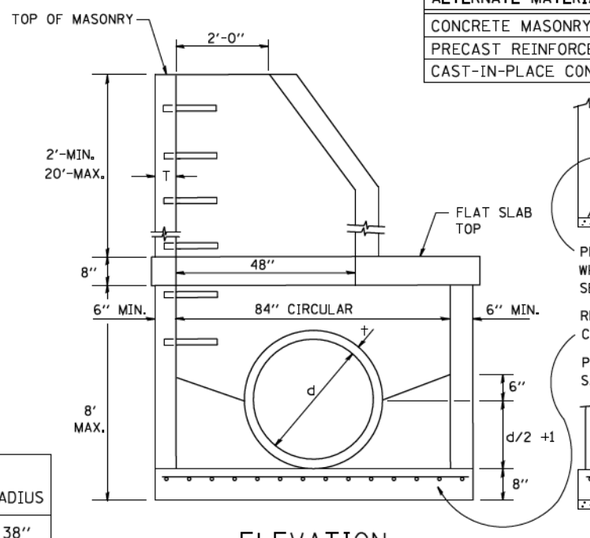
SHOWING WELDED WIRE FABRIC REINFORCEMENT

NOTE: THIS STRUCTURE SHOULD BE USED WITH PIPES SIZE 54" DIA. OR SMALLER.

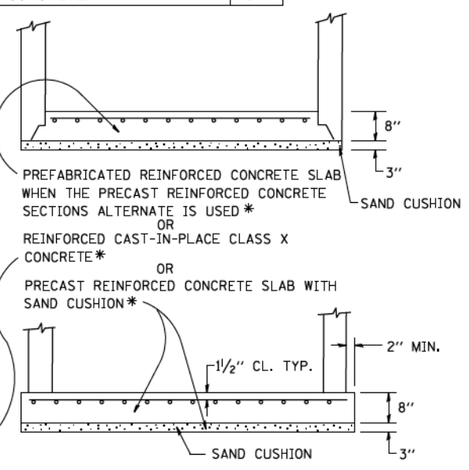
TABLE

DIAMETER OF OPENING	REINFORCEMENT "As" WWF OR EACH DIRECTION	BAR SIZE	BAR C SIZE	BAR C LENGTH	BAR C RADIUS
2'-0"	1.06 SQ.IN./LIN.FT.	#6	#4	6'-0"	38"
4'-0"	0.82 SQ.IN./LIN.FT.	#6	#4	9'-0"	38"

ALTERNATE MATERIALS FOR RISERS	T (MIN.)
CONCRETE MASONRY UNITS	5"
PRECAST REINFORCED CONCRETE SECTIONS	4"
CAST-IN-PLACE CONCRETE	6"

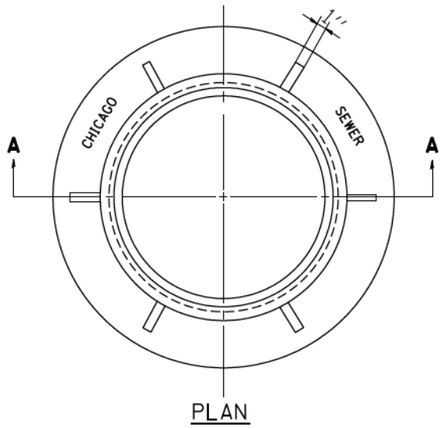


ELEVATION

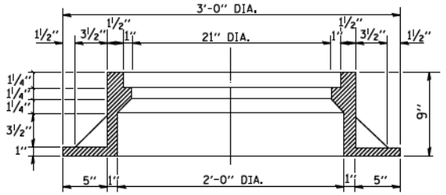


FILE NAME = W:\diststd\22x34\bd37.dgn	USER NAME = gaglianobt	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	MANHOLE TYPE A 7 FOOT DIAMETER
		DRAWN -	REVISED -		
	PLOT SCALE = 50.0000 ' / IN.	CHECKED -	REVISED -		SCALE: NONE SHEET 8 OF 45 SHEETS STA. TO STA.
	PLOT DATE = 1/4/2008	DATE - 10-18-02	REVISED -		

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			888	565
	BD600-11 (BD-37)	CONTRACT NO. 60X79		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



PLAN

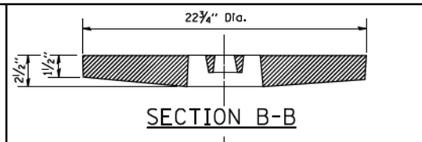


SECTION A-A

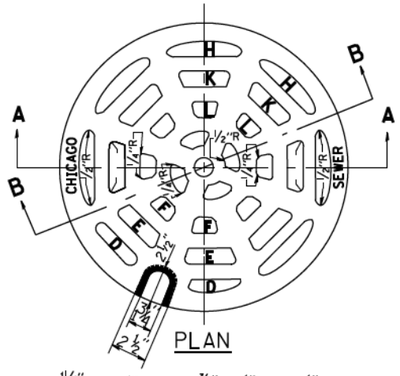
NOTE: METAL PLATES MUST BE FURNISHED FOR PERFORMED LIDS ON MANHOLES

CHICAGO STANDARD MANHOLE FRAME

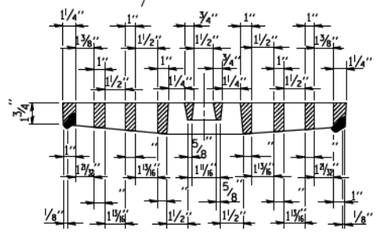
SCALE: 1½"=1'-0"
MATERIAL: CAST IRON



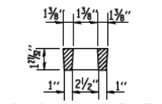
SECTION B-B



PLAN



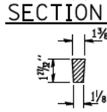
SECTION A-A



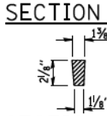
SECTION D-D

SECTION E-E

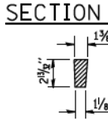
SECTION F-F



SECTION H-H



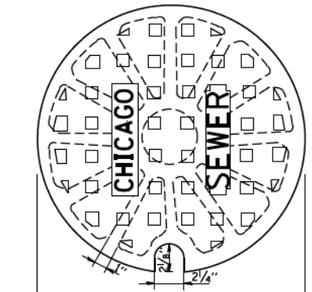
SECTION K-K



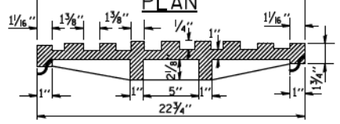
SECTION L-L

PERFORMED LID FOR CATCH BASINS & MANHOLES

SCALE: 2"=1'-0"
MATERIAL: CAST IRON



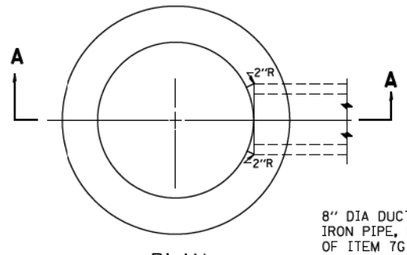
PLAN



SECTION

SOLID LID FOR MANHOLES

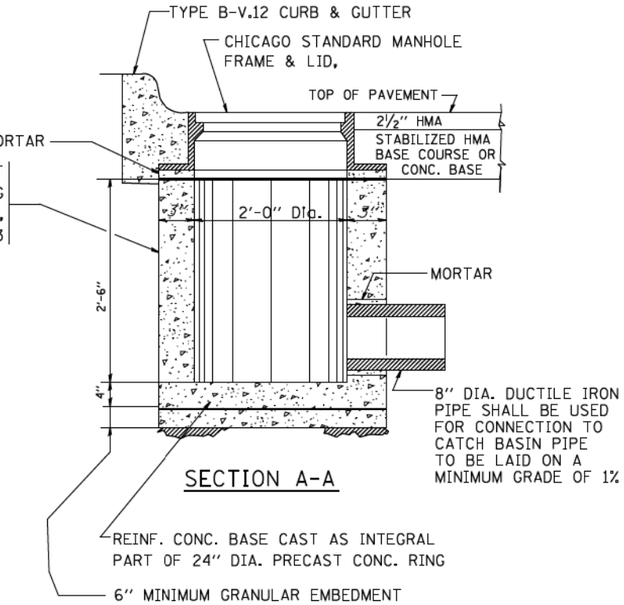
SCALE: NONE
MATERIAL: CAST IRON



8" DIA DUCTILE IRON PIPE, PART OF ITEM 7G

PLAN

(FRAME & LID NOT SHOWN)



SECTION A-A

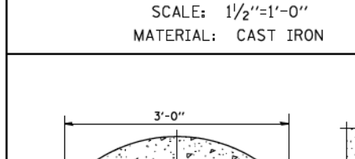
STANDARD INLETS

SCALE 1"= 1'-0"
ITEM 12

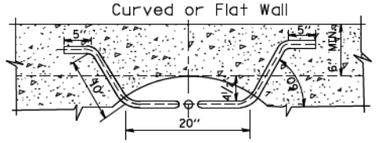
THIS INLET DETAIL IS SOMETIMES REFERRED TO AS "CHICAGO STANDARD INLET, TYPE A"

NOTE:
INLETS SHALL NOT BE CONSTRUCTED UNLESS IT IS IMPOSSIBLE TO CONSTRUCT A CATCH BASIN. THE CONTRACTOR SHALL HAVE THE DEPARTMENT OF SEWERS APPROVAL BEFORE CONSTRUCTING INLETS.

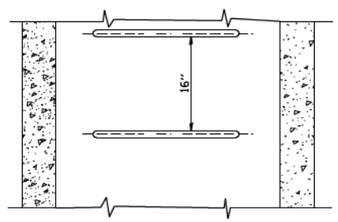
CITY OF CHICAGO
DEPARTMENT OF SEWERS
ENGINEERING DIVISION



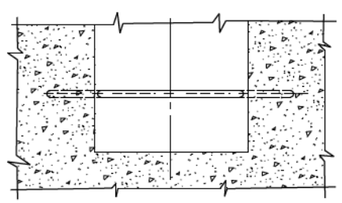
PLAN



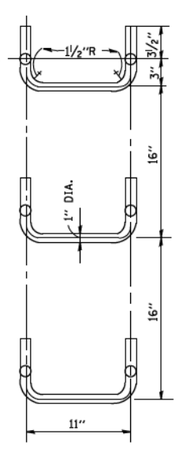
PLAN



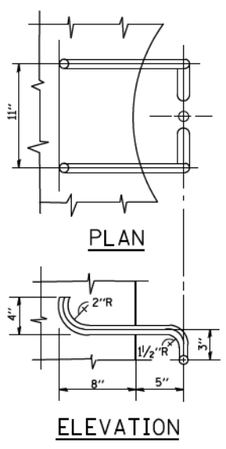
ELEVATION
TYPE X
SCALE: 1"=1'-0"



ELEVATION
TYPE Y
SCALE: 1"=1'-0"



SPACING



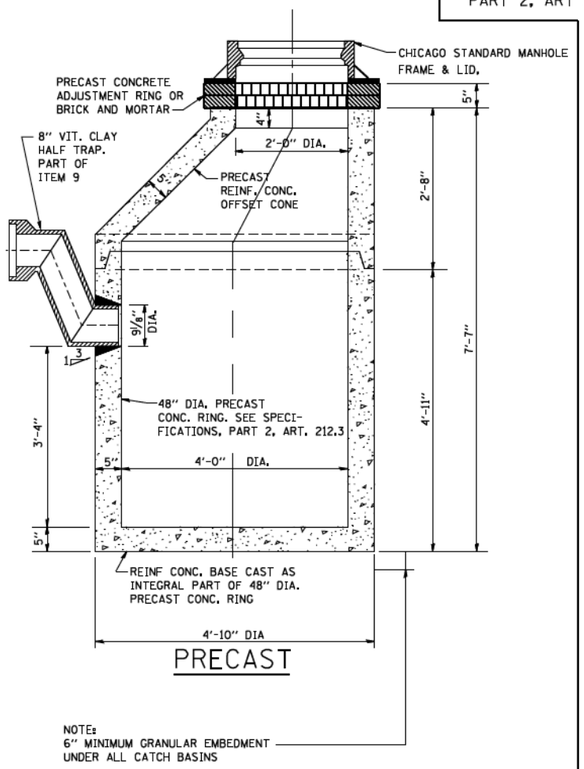
PLAN

ELEVATION

HANDHOLD-TYPE Z RUNG
Scale: 1½"=1'-0"

STANDARD LADDER RUNGS

ALL LADDER RUNGS SHALL BE ALUMINUM OR GALVANIZED WROUGHT IRON AS SPECIFIED IN THE SPECIFICATIONS, PART 2, ARTICLE 214.2. RUNGS SHALL BE 1" DIAMETER OR OF A SHAPE HAVING AN EQUIVALENT CROSS-SECTIONAL AREA.



PRECAST

STANDARD CATCH BASINS

SCALE: ¾"= 1'-0"
ITEM 9

FILE NAME = W:\diststd\22x34\bd47.dgn	USER NAME = gagliarobt	DESIGNED - M. GOMEZ	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 50.0000 ' / IN.	CHECKED -	REVISED -
	PLOT DATE = 1/4/2008	DATE - 01-25-01	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CITY OF CHICAGO
CATCH BASIN, INLET AND MANHOLE DETAILS

SCALE: NONE | SHEET 9 OF 45 SHEETS | STA. | TO STA.

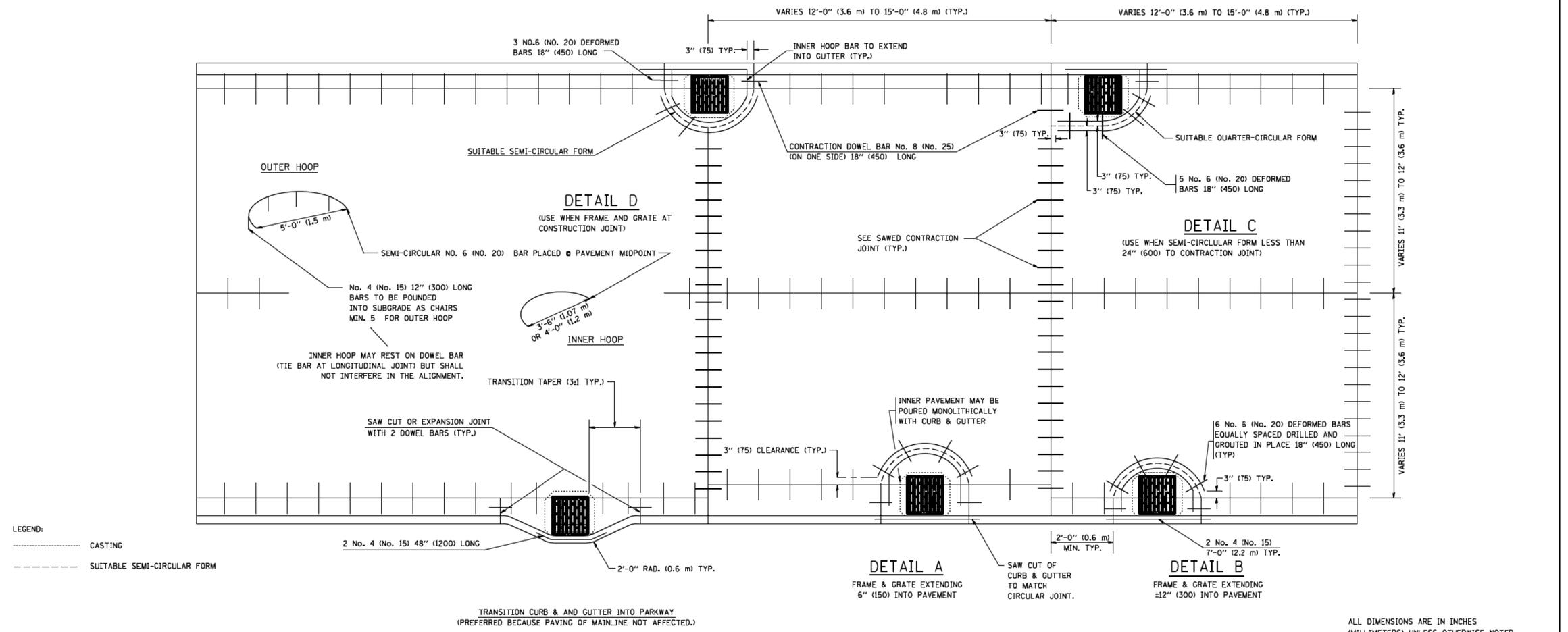
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			888	566
	BD600-13 (BD47)		CONTRACT NO. 60X79	
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

FRAME EXTENSION INTO PAVEMENT	INNER HOOP REINFORCEMENT DIAMETER	SEMI CIRCULAR FORM DIAMETER	OUTER HOOP REINFORCEMENT DIAMETER
UP TO 8" (200)	3'-6" (1.1 m)	4'-0" (1.2 m)	5'-0" (1.5 m)
> 8" (200) TO 14" (360)	4'-0" (1.2 m)	4'-6" (1.4 m)	5'-0" (1.5 m)

DESIGNER NOTE:
THIS DETAIL IS TO BE USED WHEN THE GUTTER FLAG IS LESS THAN 24"

NOTES :

1. THE ROUNDOUT AND ADDED REINFORCEMENT WILL NOT BE PAID SEPARATELY, BUT SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR THE PAVEMENT.
2. TRANSVERSE JOINTS MAY BE MOVED TO ACCOMMODATE ROUNDOUT, EDGE OF CIRCULAR JOINT SHALL BE MINIMUM 12" (300) FROM TRANSVERSE JOINT. RELOCATED TRANSVERSE JOINT SHALL BE CONTINUOUS FROM EDGE OF PAVEMENT TO EDGE OF PAVEMENT.
3. SEMI-CIRCULAR FORM SHALL BE REMOVED PRIOR TO DRILL AND GROUT OF TIE BARS.
4. ALL REINFORCED BARS SHALL BE EPOXY COATED.
5. DRILL AND GROUT IS PREFERRED, HOWEVER TIE BARS CAN BE POURED IN PLACE IF CLEARANCE IS PROVIDED TO OUTER EDGE OF FRAME. MINIMUM 2" (50) CLEARANCE.
6. WOOD SHIMS SHALL BE USED TO ADJUST ALL FRAMES. AFTER ADJUSTING MORTAR HAS CURED, THE WOOD SHIMS SHALL BE REMOVED AND THE VOIDS UNDER THE FRAMES FILLED WITH NON SHRINK GROUT.
7. HOOP REINFORCEMENT SHALL BE ONE PIECE CONSTRUCTION.
8. CIRCULAR FRAMES AND GRATES MAY BE SUBSTITUTED.
9. CURB DOWELS MUST BE PLACED LEVEL & TRUE TO ALLOW CONTRACTION MOVEMENT.



TRANSITION CURB & AND GUTTER INTO PARKWAY
(PREFERRED BECAUSE PAVING OF MAINLINE NOT AFFECTED.)

ALL DIMENSIONS ARE IN INCHES
(MILLIMETERS) UNLESS OTHERWISE NOTED

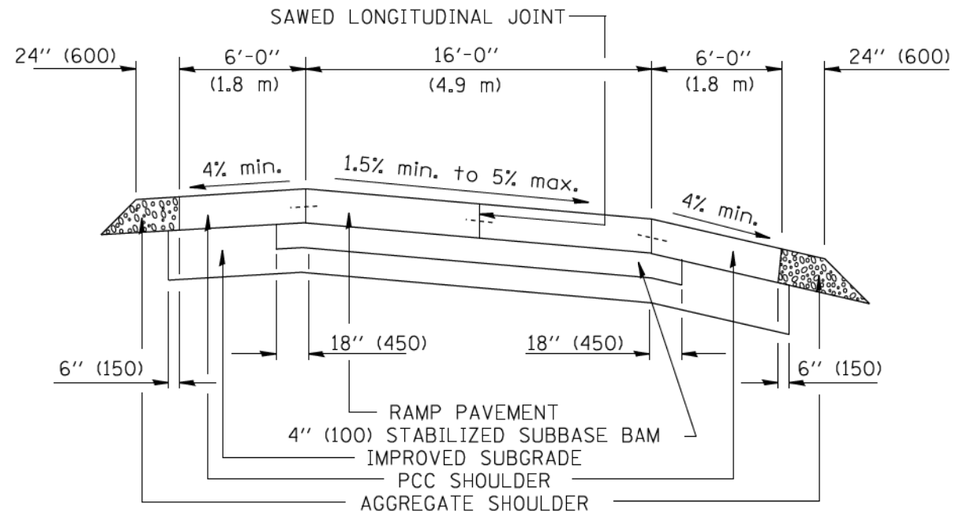
FILE NAME = W:\diststd\22x34\bd48.dgn	USER NAME = gaglianobt	DESIGNED - A. ABBAS	REVISED - T. MATOUSEK 08-28-00
		DRAWN - TOM MATOUSEK	REVISED - T. MATOUSEK 10-02-00
	PLOT SCALE = 50.0000 ' / IN.	CHECKED - A. ABBAS	REVISED - T. MATOUSEK 04-25-02
	PLOT DATE = 1/4/2008	DATE - 01-04-99	REVISED - P. LAFLEUR 08-27-02

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

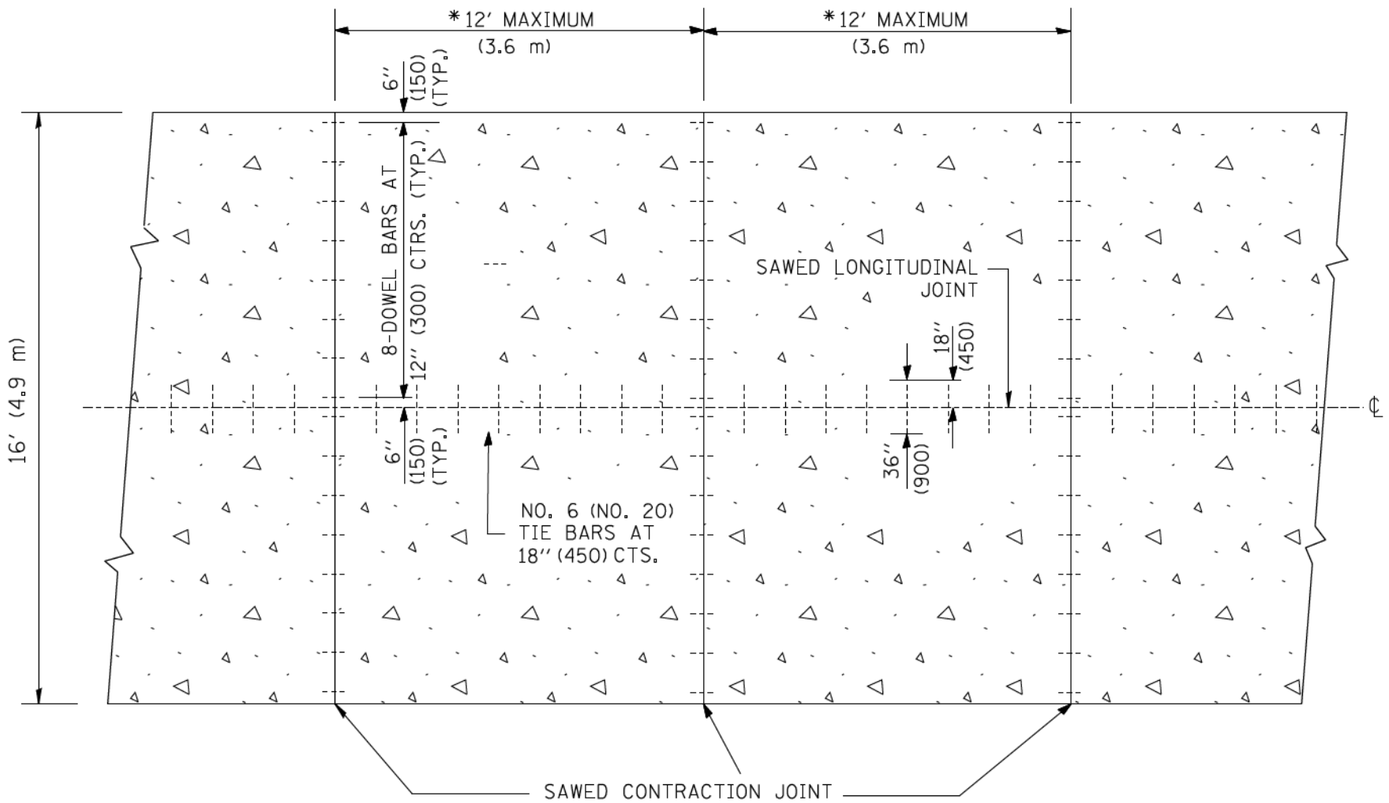
PCC PAVEMENT ROUNDOUTS AT CURB AND GUTTER

SCALE: NONE | SHEET 10 OF 45 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			888	567
	BD-48	CONTRACT NO. 60X79		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



SECTION

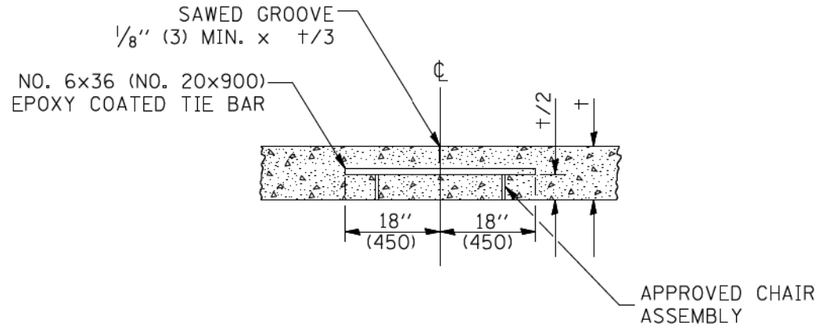


PLAN

NOTES:

1. CENTERLINE JOINT REMAINS IN THE CENTER WHEN RAMP TRANSITIONS TO TWO (2) RAMPS AT 12' (3.6 m).

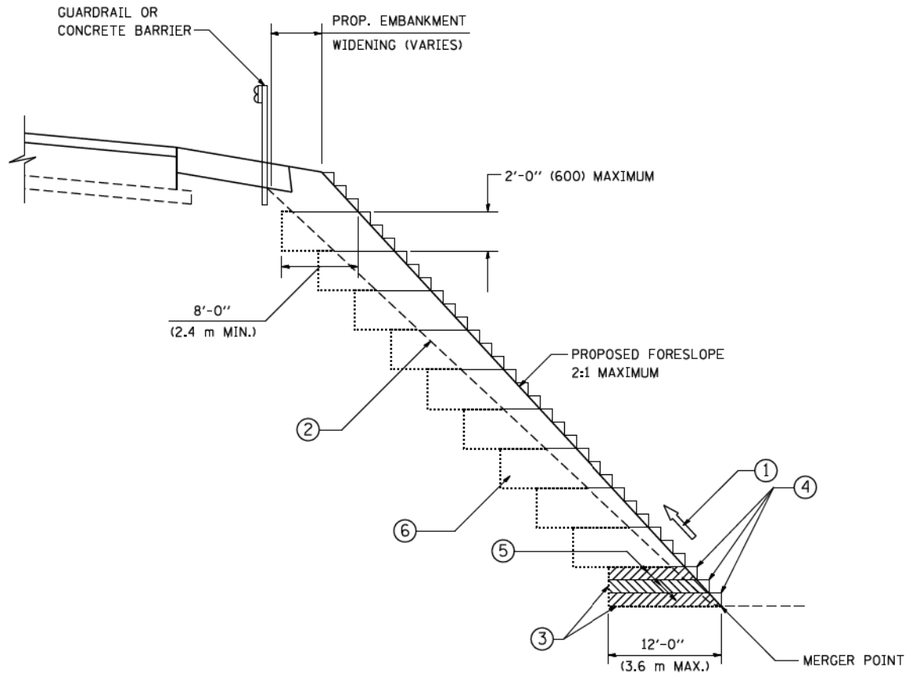
2. ALL BARS TO BE EPOXY COATED.



SAWED LONGITUDINAL JOINT

ALL DIMENSIONS ARE IN INCHES
(MILLIMETERS) UNLESS OTHERWISE NOTED

FILE NAME = W:\diststd\22x34\bd49.dgn	USER NAME = gaglianobt	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DETAIL FOR CENTERLINE SAW CUT 16' (4.9 m) AND VARIABLE JOINTED PCC PAVEMENT FOR RAMPS	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN - TOM MATOUSEK	REVISED -						888	568
	PLOT SCALE = 50.0000 ' / IN.	CHECKED - A. ABBAS	REVISED -				BD49		CONTRACT NO. 60X79	
	PLOT DATE = 1/4/2008	DATE - 10-18-02	REVISED -		SCALE: NONE SHEET 11 OF 45 SHEETS STA. TO STA.	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.

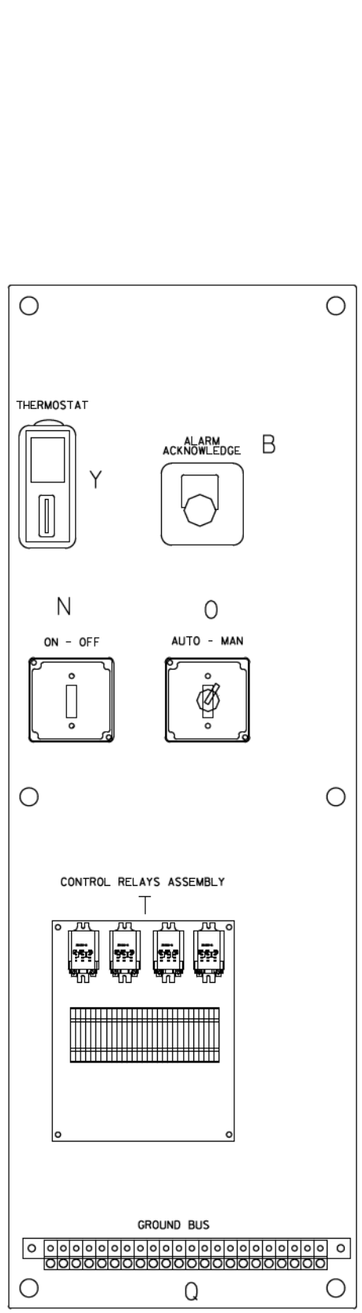
FILE NAME = W:\diststd\22x34\bd51.dgn	USER NAME = gaglianobt	DESIGNED -	REVISED -
		DRAWN - CADD	REVISED -
	PLOT SCALE = 50.0000 ' / IN.	CHECKED - S.E.B.	REVISED -
	PLOT DATE = 1/4/2008	DATE - 06-16-04	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

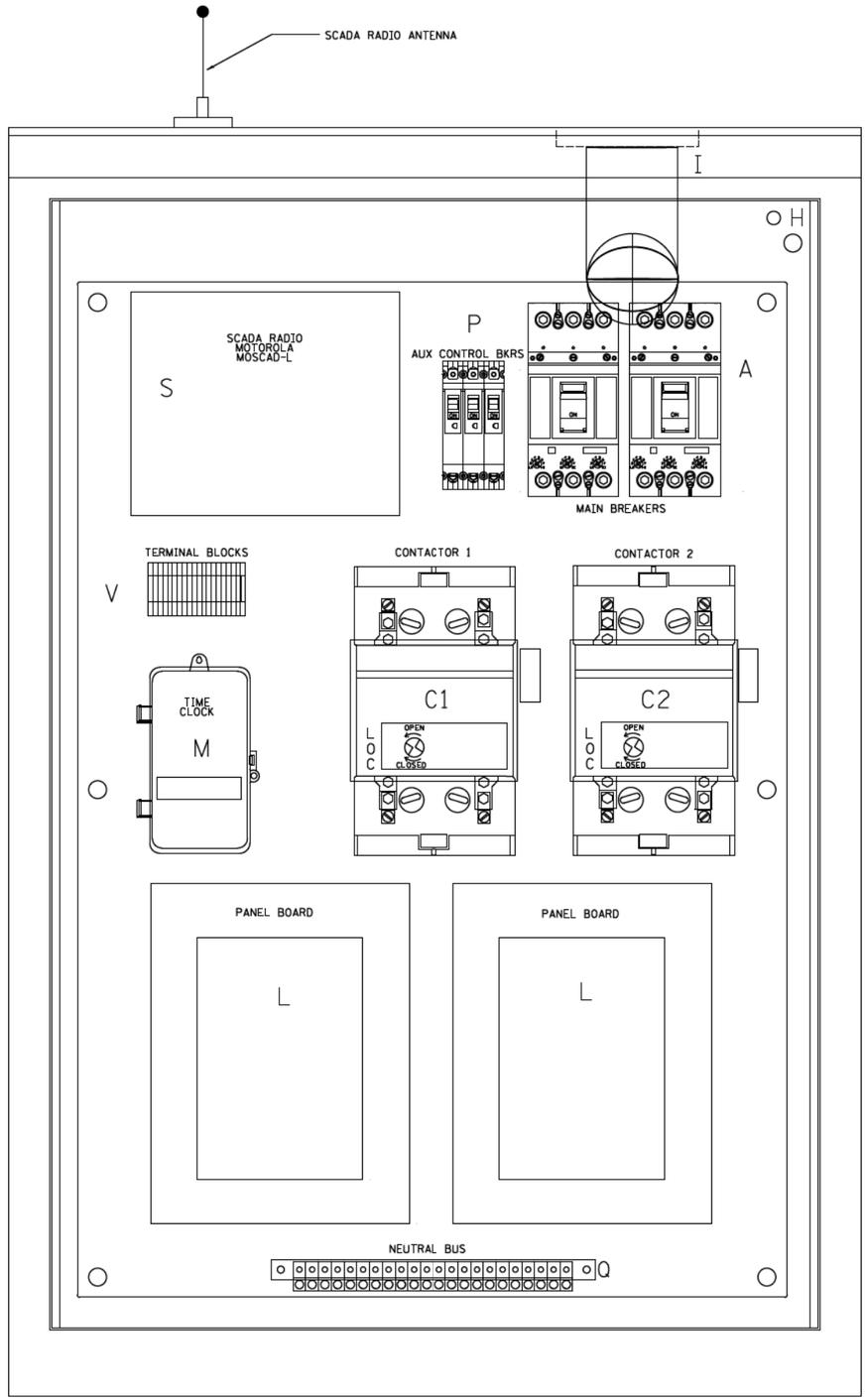
BENCHING DETAIL
FOR EMBANKMENT WIDENING

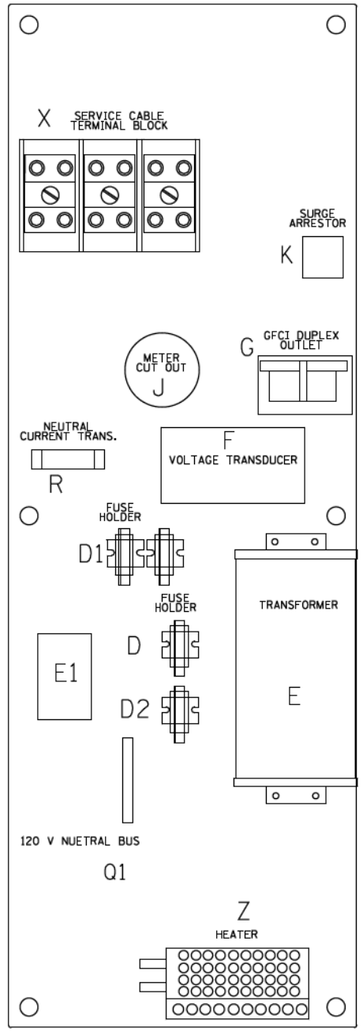
SCALE: NONE | SHEET 12 OF 45 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			888	569
	BD-51	CONTRACT NO. 60X79		
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

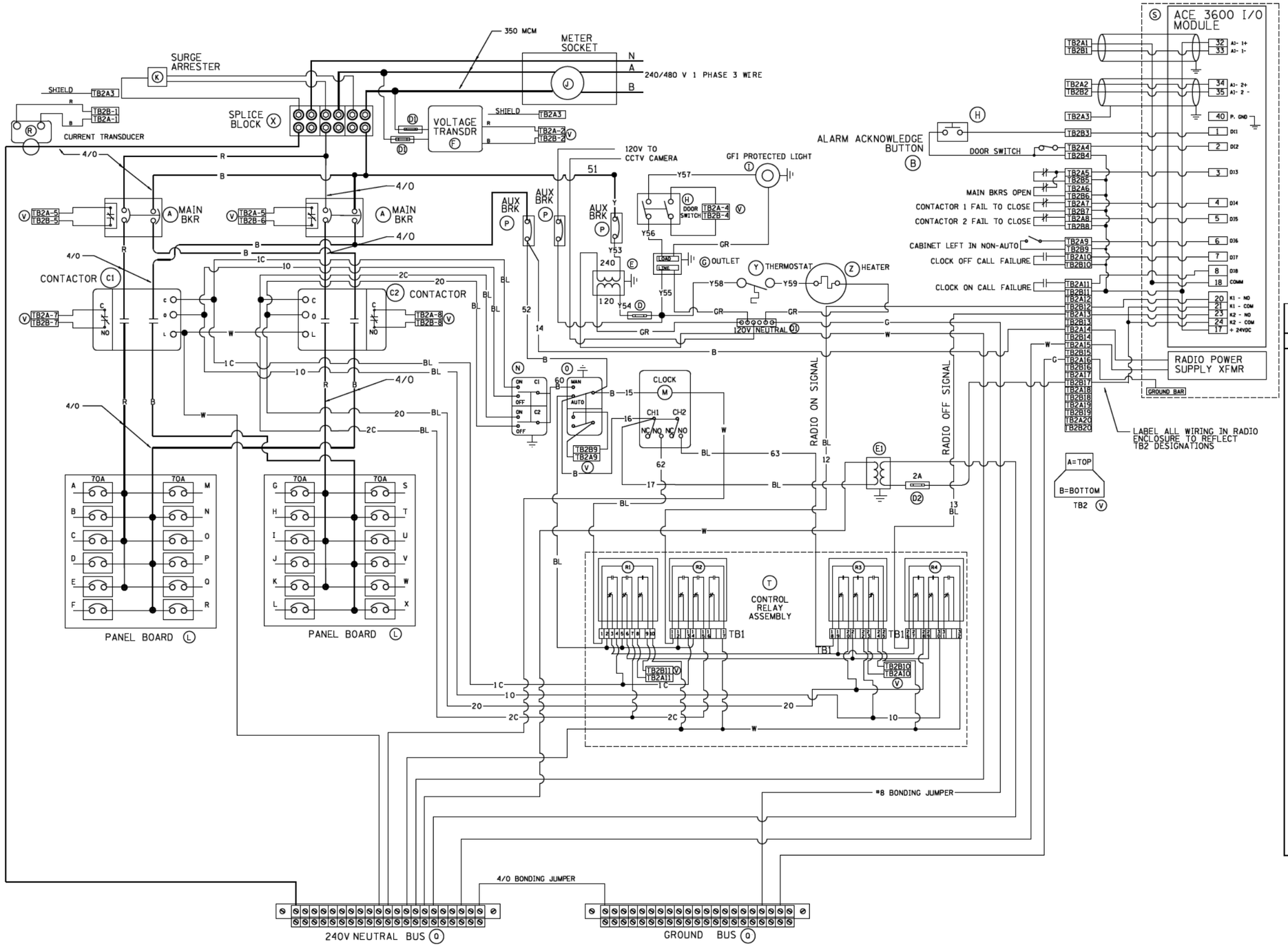
FILE NAME = c:\pw_work\pwidot\dr.vakosgn\d0108315\be205.dgn	USER NAME = dr.vakosgn	DESIGNED -	REVISED - R. TOMSONS 08-19-04
		DRAWN -	REVISED - R. TOMSONS 05-11-09
	PLOT SCALE = 50.000 ' / in.	CHECKED -	REVISED - R. TOMSONS 03-10-10
	PLOT DATE = 3/29/2012	DATE -	REVISED - R. TOMSONS 03-29-12

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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

SCALE: NONE | SHEET 13 OF 45 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			888	570
	BE-205		CONTRACT NO. 60X79	
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



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-20GG-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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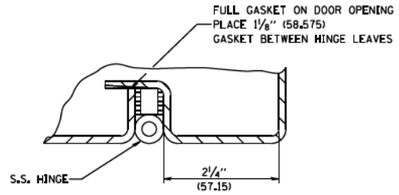
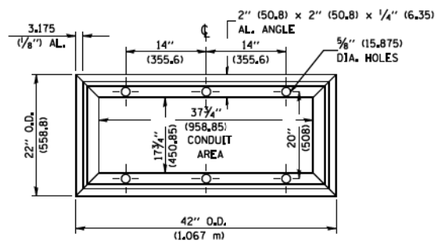
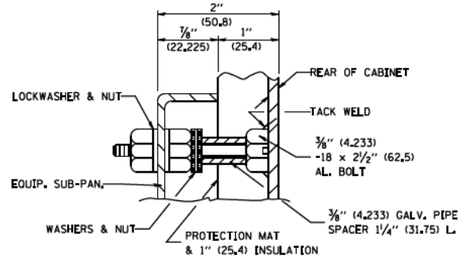
	PLOT SCALE = 50.000 ' / in.	DRAWN -	REVISED - R. TOMSONS 05-11-09						888	571
	PLOT DATE = 3/29/2012	CHECKED -	REVISED - R. TOMSONS 03-10-10				BE-205		CONTRACT NO. 60X79	
		DATE -	REVISED - R. TOMSONS 03-29-12		SCALE: NONE SHEET 14 OF 45 SHEETS STA. TO STA.	FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



DETAIL "Y"



BASE MTG. DETAIL



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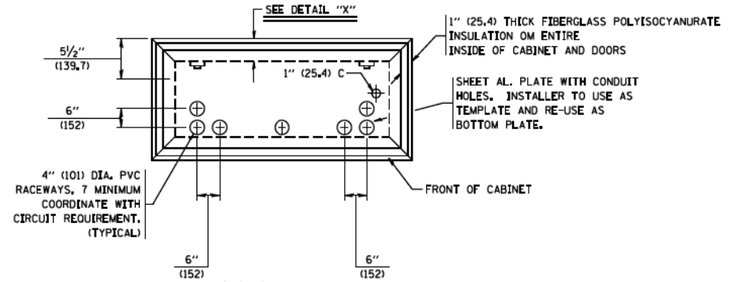
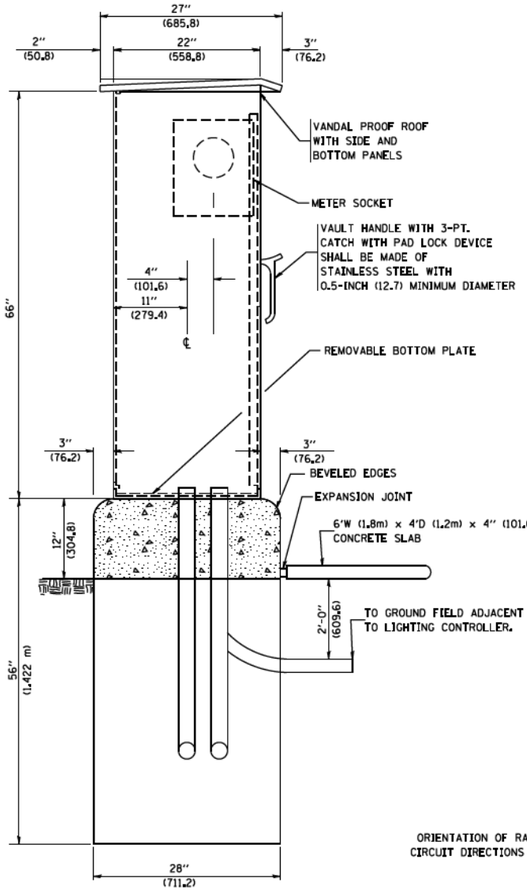
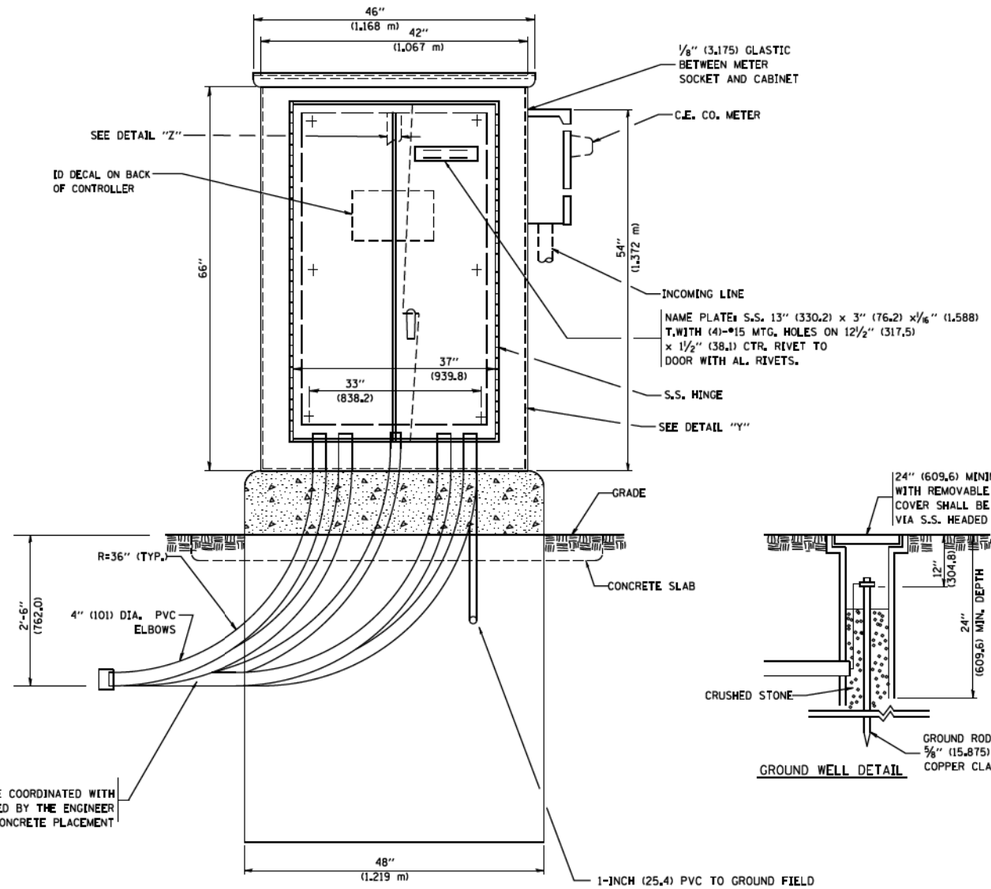


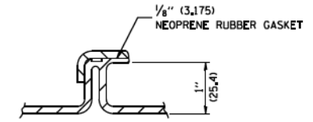
SECTION "A-A"



LEFT SIDE ELEVATION

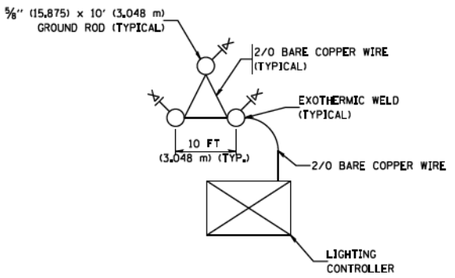


FRONT ELEVATION



DETAIL "Z"

GROUND WELL DETAIL



GROUND FIELD DETAIL
(N.T.S.)

THE CONTRACTOR SHALL
VERIFY EXACT LOCATION
WITH THE ENGINEER

FILE NAME = c:\pw_work\pwidot\drivakosgn\d0188315\be205.dgn	USER NAME = drivakosgn	DESIGNED -	REVISED - R. TOMSONS 08-19-04
		DRAWN -	REVISED - R. TOMSONS 05-11-09
	PLOT SCALE = 50.000 ' / in.	CHECKED -	REVISED - R. TOMSONS 03-10-10
	PLOT DATE = 3/29/2012	DATE -	REVISED - R. TOMSONS 03-29-12

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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

SCALE: NONE | SHEET 15 OF 45 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			888	572
	BE-205	CONTRACT NO. 60X79		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

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:

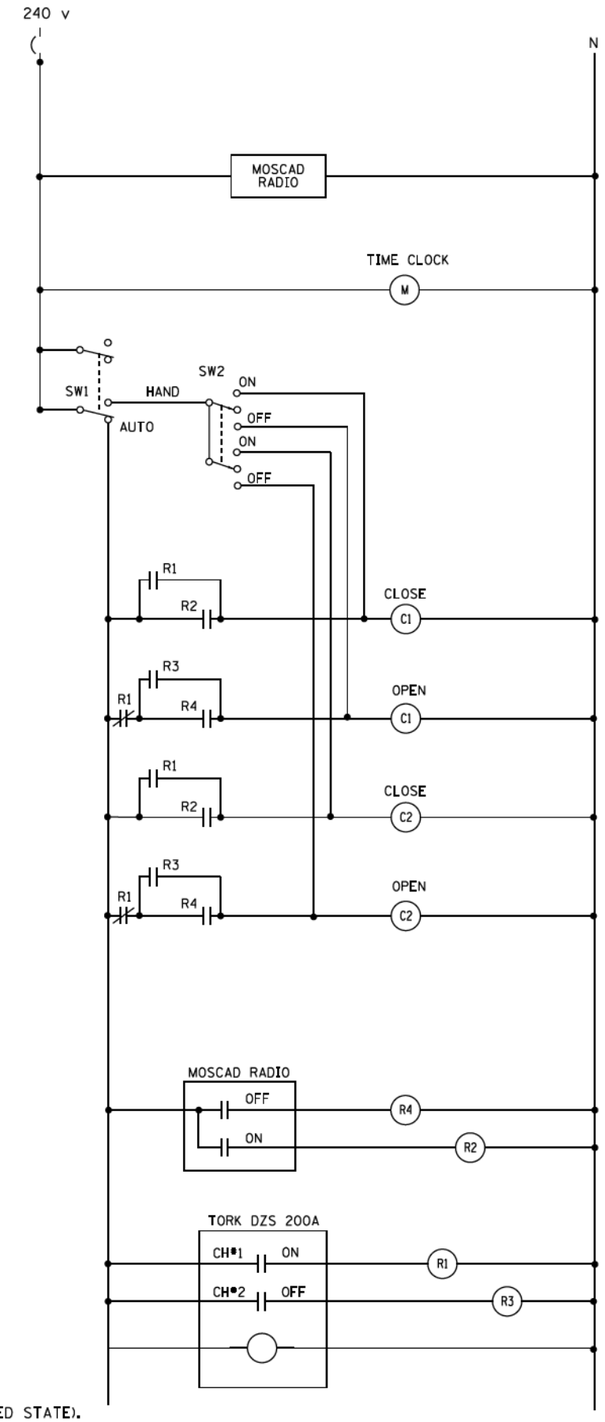
    R - RED Y - YELLOW
    B - BLACK W - WHITE
    BL- BLUE G - GREEN
    G - GREY

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.



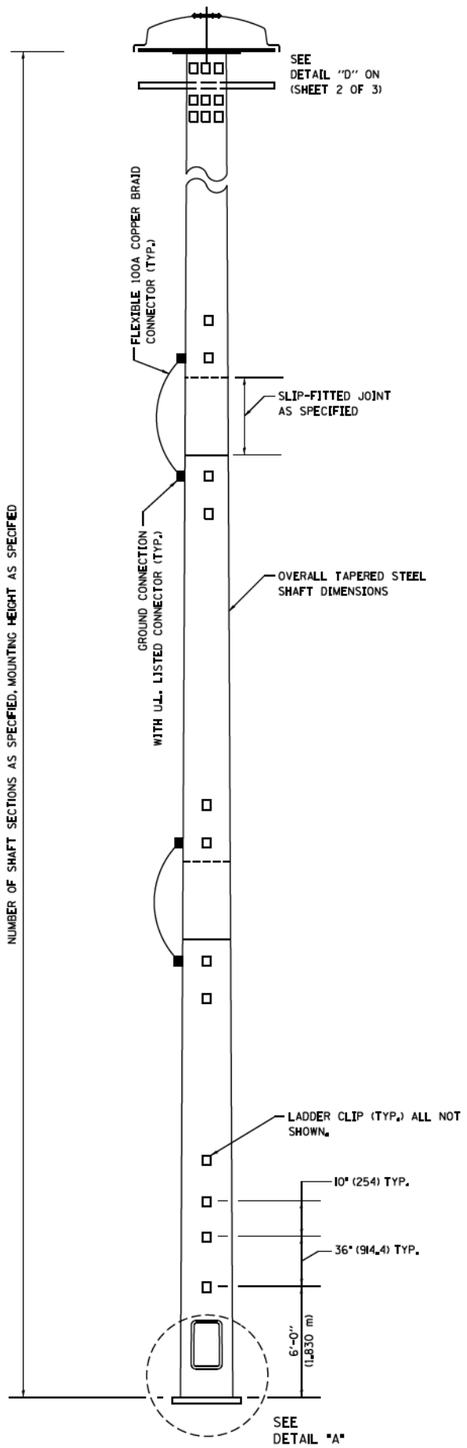
CONTROL CIRCUIT LADDER LOGIC DIAGRAM

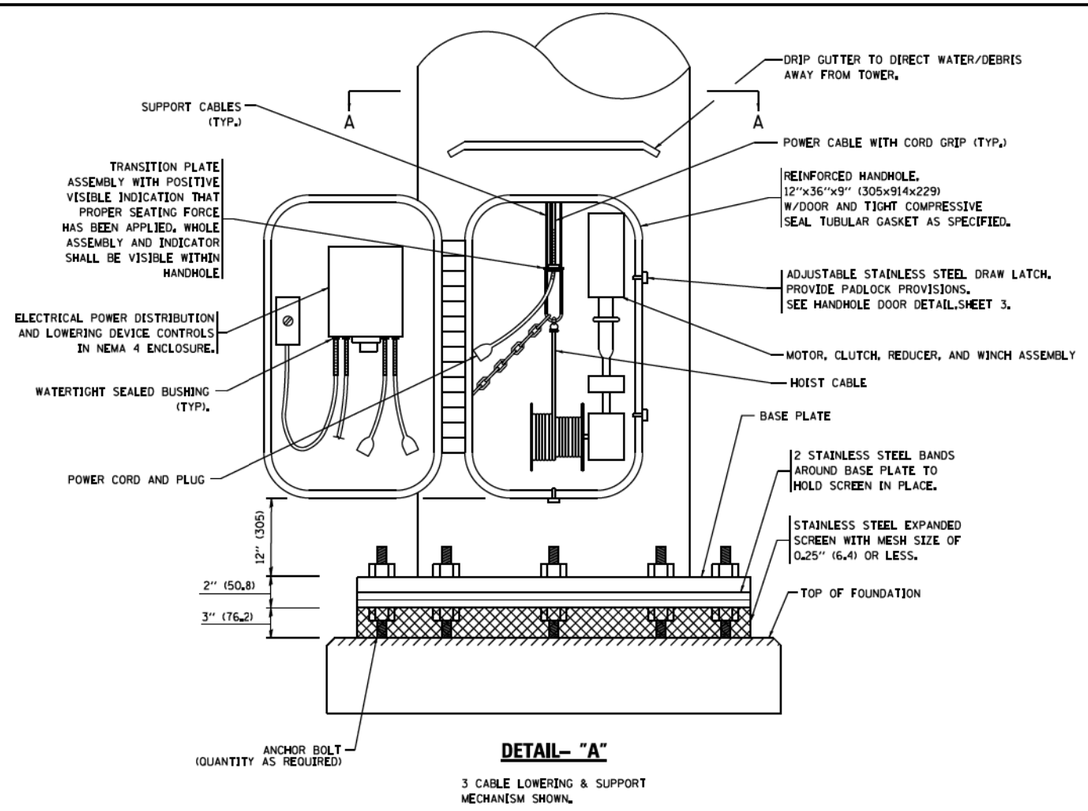
MOSCAD I/O ASSIGNMENTS		
TERM	MOSCAD DESTINATION	DESCRIPTION OF INPUT
1	DIGITAL INPUT 1	ALARM KNOWLEDGE
2	DIGITAL INPUT 2	DOOR OPEN
3	DIGITAL INPUT 3	MAIN(S) BREAKER OPEN
4	DIGITAL INPUT 4	CONTACTOR 1 OPEN
5	DIGITAL INPUT 5	CONTACTOR 2 OPEN
6	DIGITAL INPUT 6	CABINET IN NON-AUTO
7	DIGITAL INPUT 7	BACK-UP 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

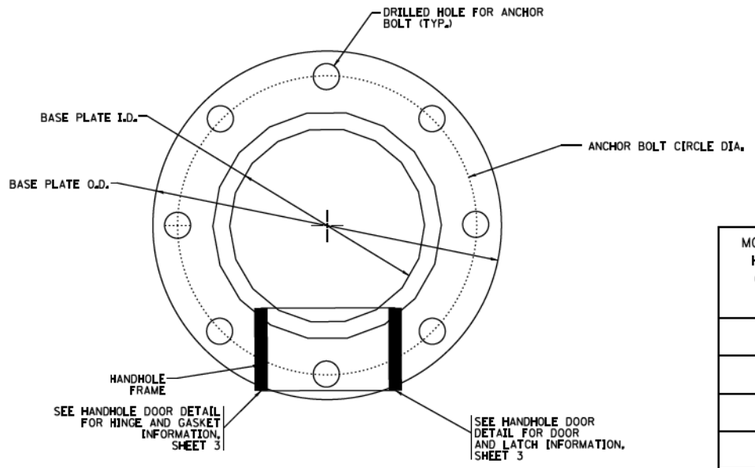
FILE NAME = c:\pw_work\pwidot\drivakosgn\d0108315\be205.dgn	USER NAME = drivakosgn	DESIGNED -	REVISED - R. TOMSONS 08-19-04	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	LIGHTING CONTROLLER, BASE MOUNTED, 480VOLT, 200AMP (DUAL) RADIO SCADA	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = 50.000 ' / in.	DRAWN -	REVISED - R. TOMSONS 05-11-09						888	573
	PLOT DATE = 3/29/2012	CHECKED -	REVISED - R. TOMSONS 03-10-10				BE-205		CONTRACT NO. 60X79	
		DATE -	REVISED - R. TOMSONS 03-29-12		SCALE: NONE SHEET 16 OF 45 SHEETS STA. TO STA.	FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		





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

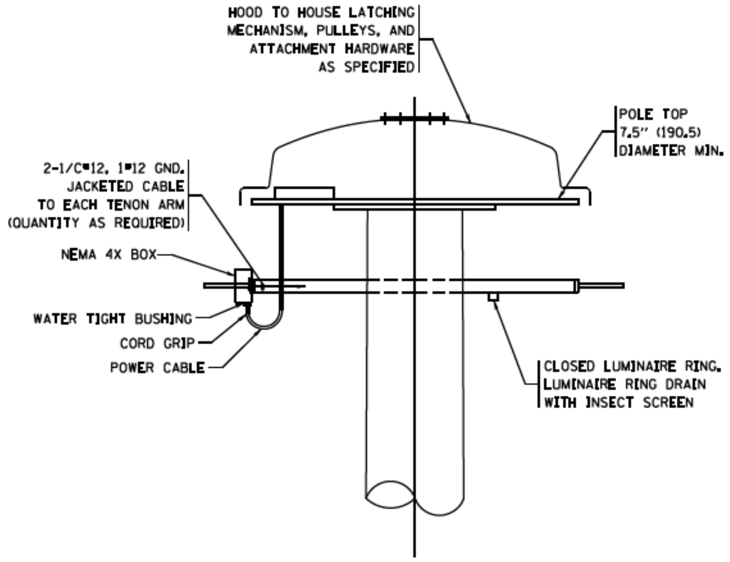
FILE NAME = pw:\\IL084EBIDINTEG.illinois.gov:PWIDOT\Documents\IDOT Offices\District 1\Projects\Dist\$\{DRAWN\}\CADData\CADsheets\be500.dgn	USER NAME = footemj	DESIGNED -	REVISED - R. TOMSONS 09-02-10
	PLOT SCALE = 50.0000 ' / in.	CHECKED -	REVISED - R. TOMSONS 02-27-13
Default	PLOT DATE = 7/27/2016	DATE -	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 17 OF 45 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			888	574
	BE-500		CONTRACT NO. 60X79	
		ILLINOIS	FED. AID PROJECT	



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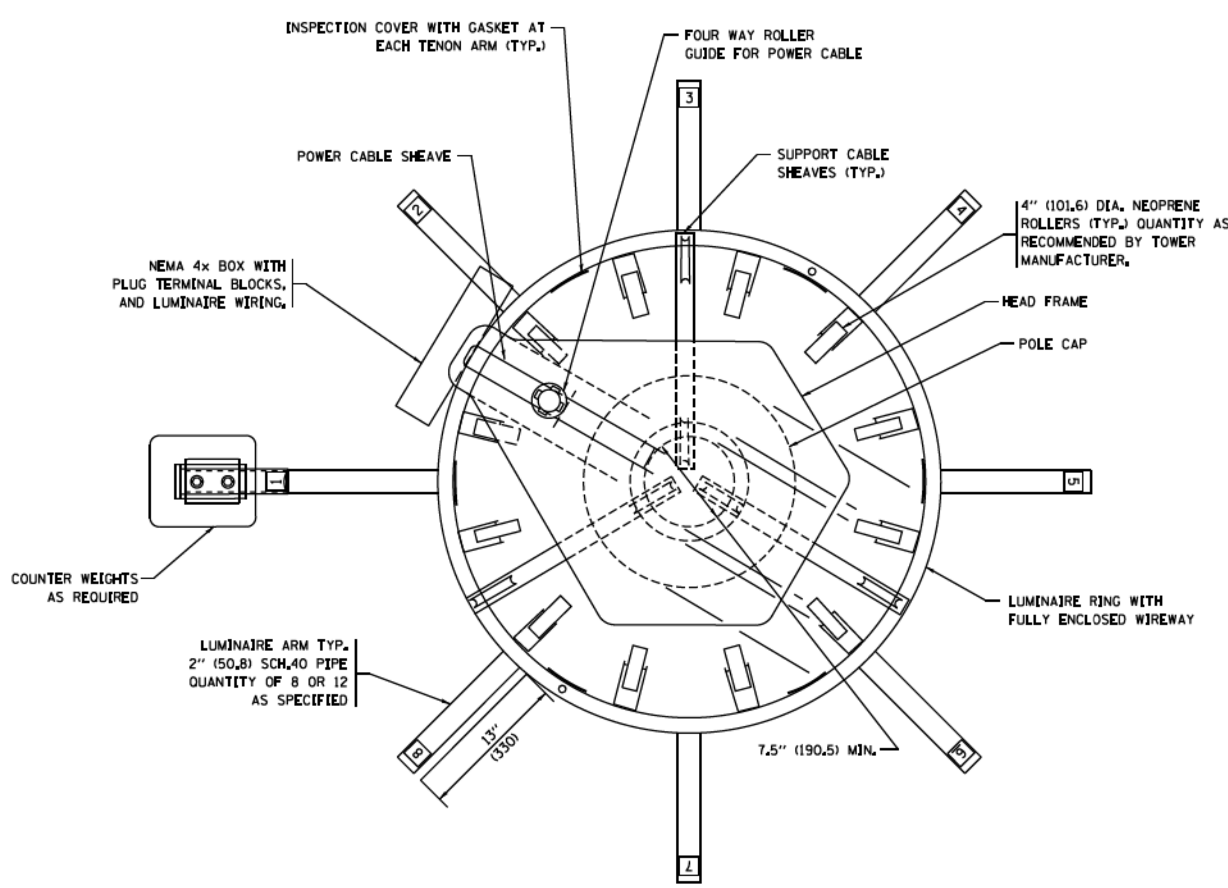
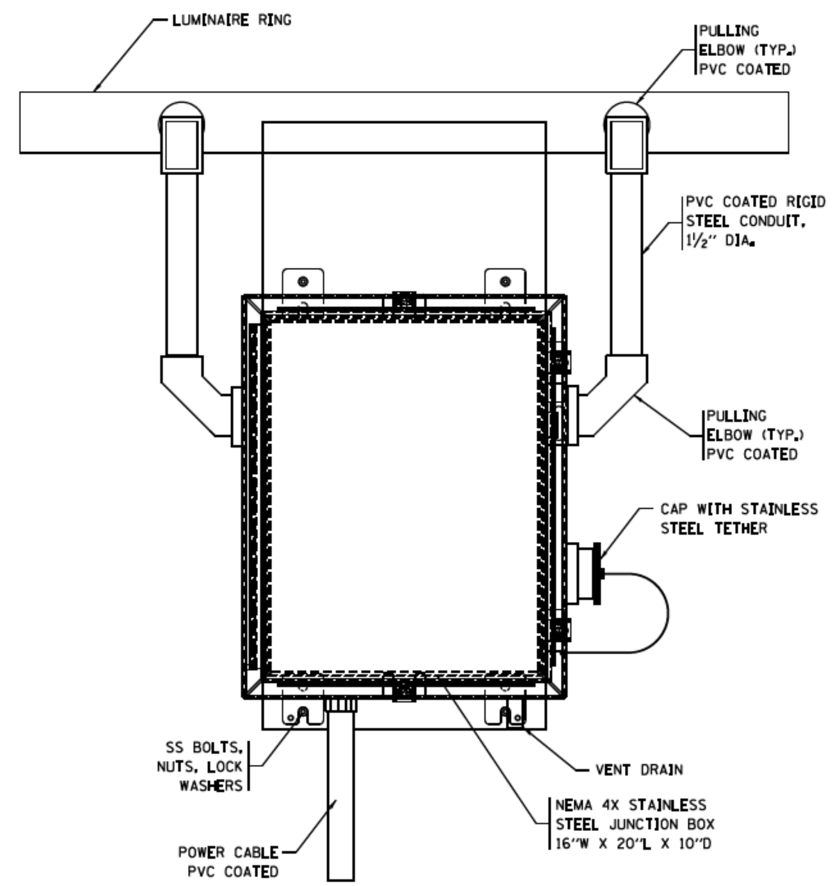
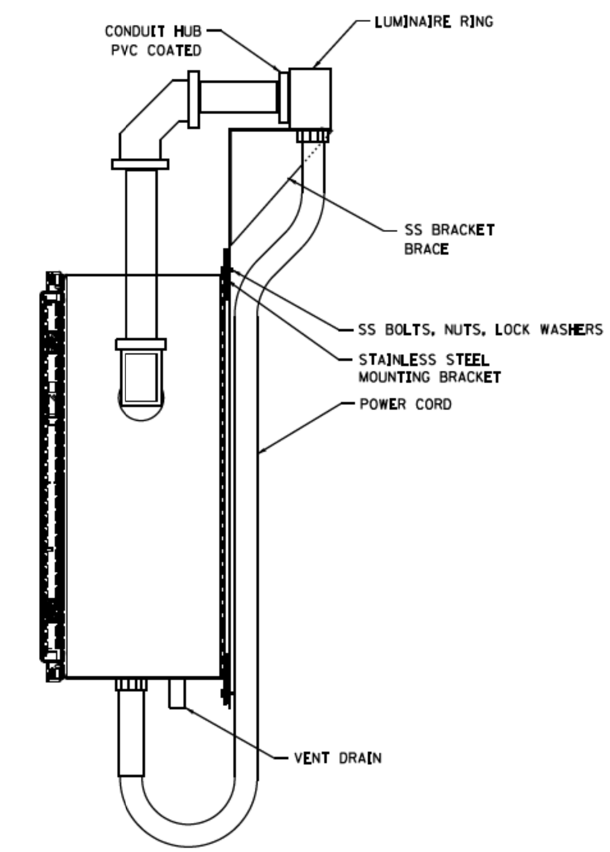




FRONT VIEW
N.T.S.



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.

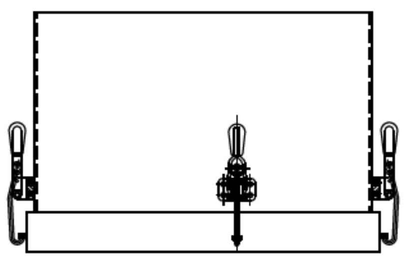
FILE NAME =	USER NAME = footemj	DESIGNED -	REVISED - R. TOMSONS 09-02-10
pw:\\IL084EBIDINTEG.illinois.gov:PWIDOT\Documents\IDOT Offices\District 1\Projects\Dist 1 DRAWN\CADData\CADsheets\be500.dgn			REVISED - R. TOMSONS 02-27-13
	PLOT SCALE = 50.0000 '/ in.	CHECKED -	REVISED - R. TOMSONS 04-29-16
Default	PLOT DATE = 7/27/2016	DATE -	REVISED - R. TOMSONS 07-26-16

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

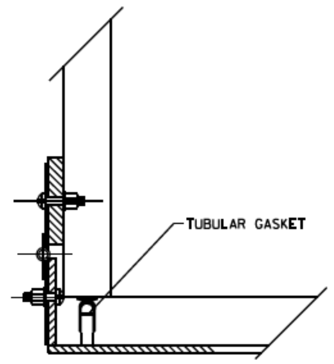
HIGH MAST LIGHT TOWER
100 FT TO 160 FT (30 m TO 49 m)

SCALE: | SHEET 18 OF 45 SHEETS | STA. | TO STA.

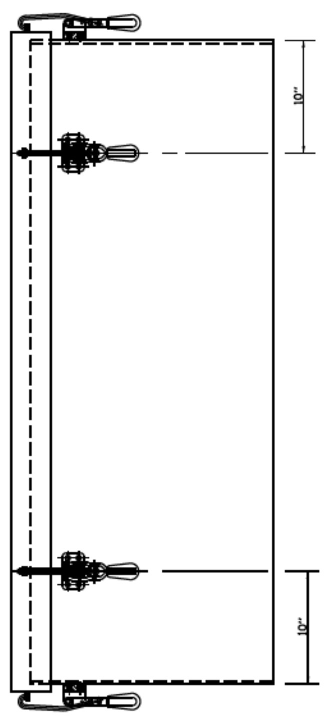
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			888	575
	BE-500	CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			



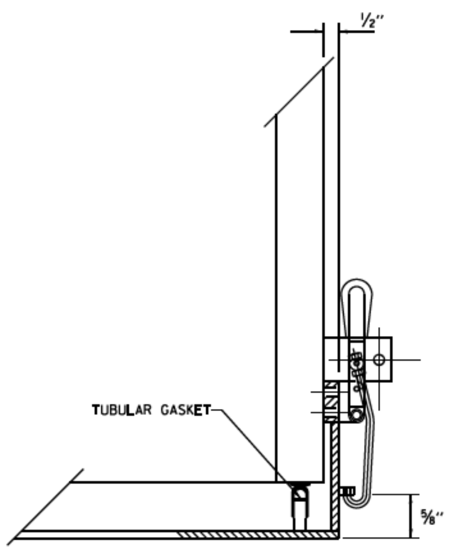
TOP VIEW



HINGE DETAIL

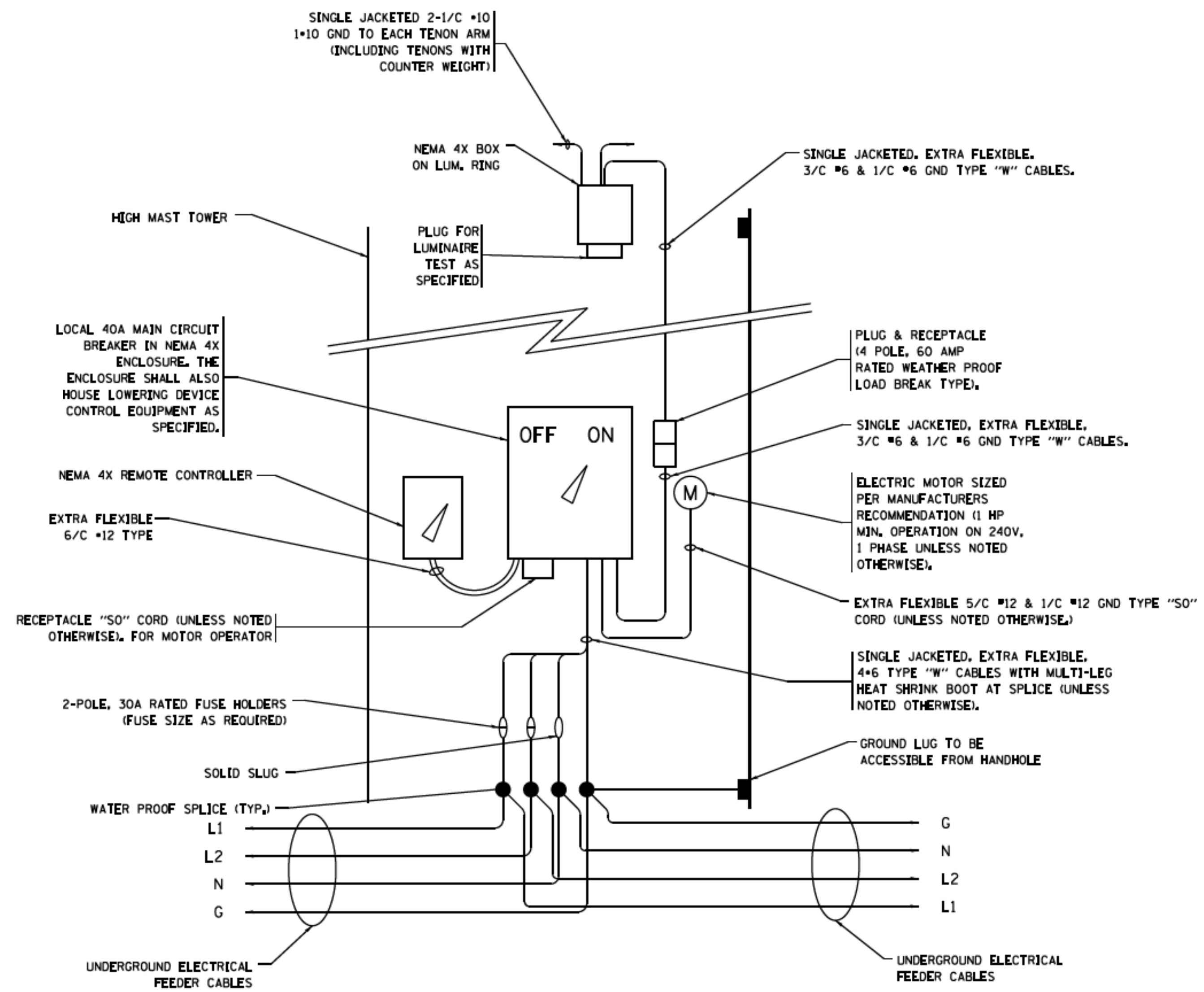


SIDE VIEW

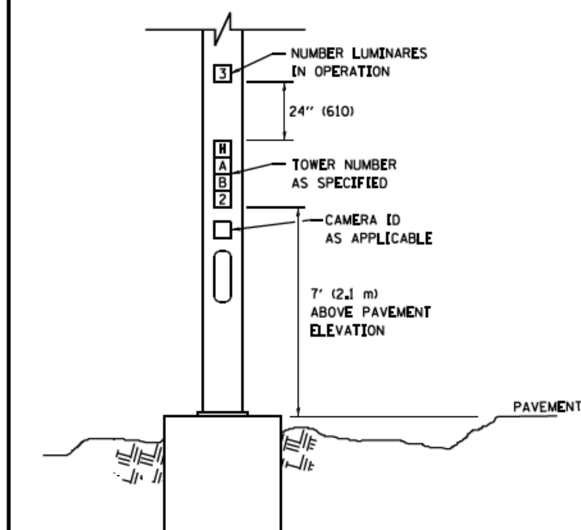


LATCH DETAIL

HANDHOLE DOOR DETAILS



HIGH MAST POLE WIRING DIAGRAM



LIGHT TOWER NUMBERING DETAIL

FILE NAME =	USER NAME = footemj	DESIGNED -	REVISED - R. TOMSONS 09-02-10
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	PLOT SCALE = 50.0000 ' / in.	CHECKED -	REVISED - R. TOMSONS 04-29-16
Default	PLOT DATE = 7/27/2016	DATE -	REVISED - R. TOMSONS 07-26-16

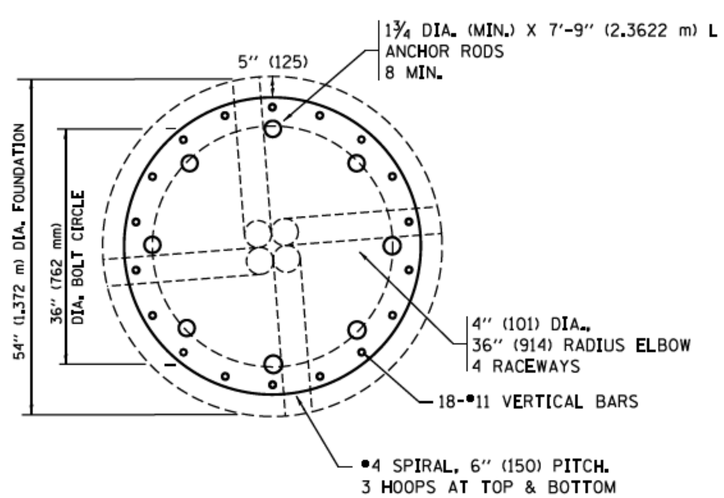
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HIGH MAST LIGHT TOWER
100 FT TO 160 FT (30 m TO 49 m)

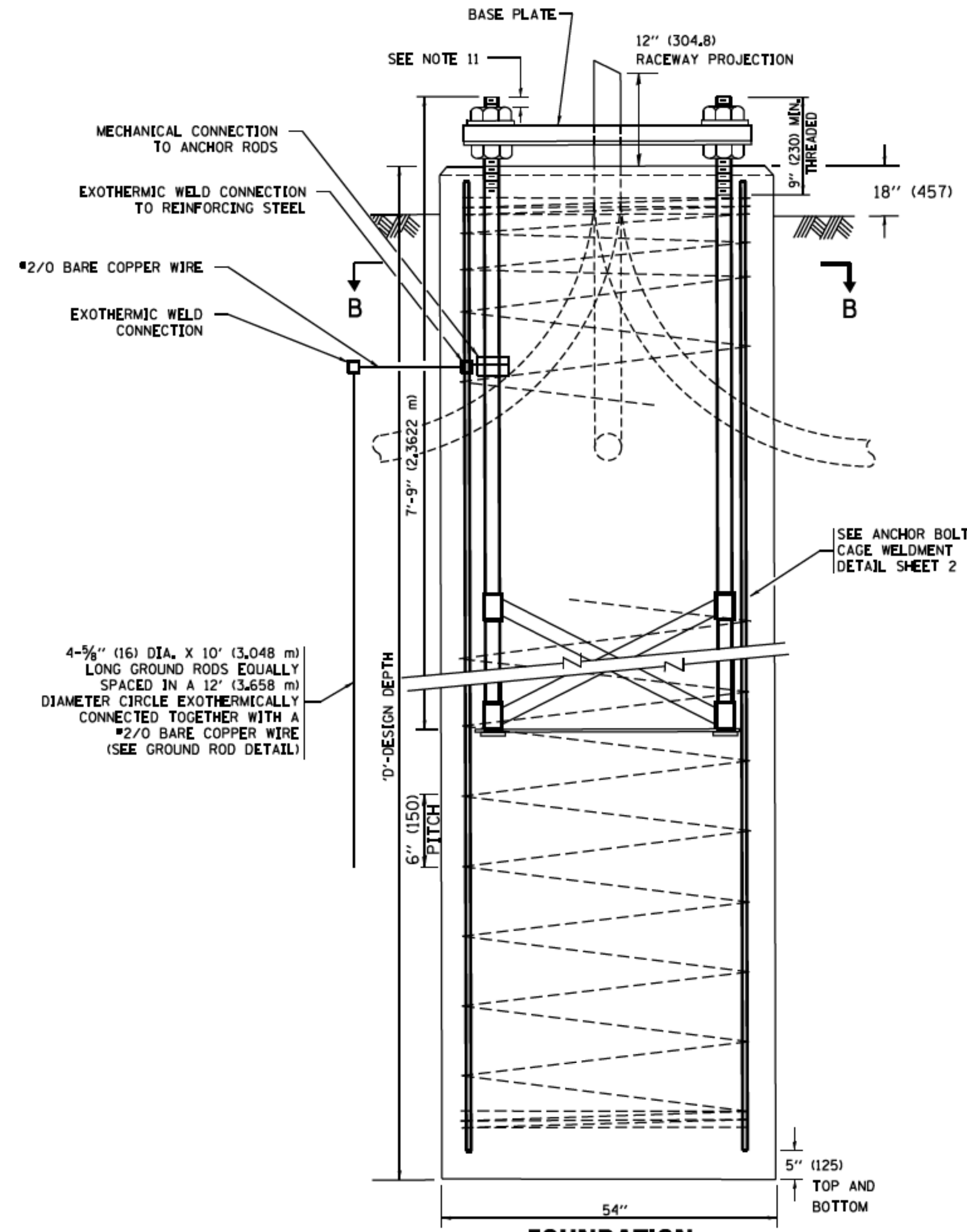
SCALE: | SHEET 19 OF 45 SHEETS | STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			888	576
	BE-500	CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			

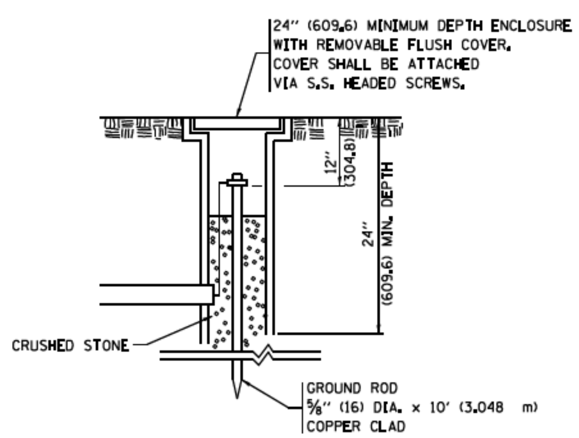
SHAFT LENGTH (D) TABLE					
SOIL CONSISTENCY		AVERAGE STRENGTH	LIGHT TOWER MOUNTING HEIGHT		
		Qu In tsf (Qu In kPa)	120 FT. (37 m)	130 FT. (40 m)	140 FT. (43 m)
COHESIVE	SOFT	<0.5 (<50)	25'-0" (7.6 m)	26'-6" (8.0 m)	27'-6" (8.3 m)
	MEDIUM	0.5 TO 1 (50 to 100)	20'-6" (6.2 m)	21'-6" (6.4 m)	22'-0" (6.7 m)
	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)			
GRANULAR	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)
	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



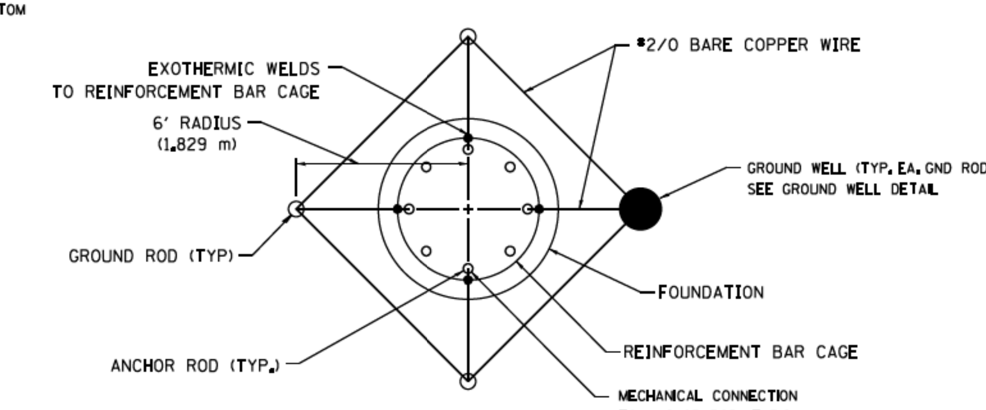
FOUNDATION ELEVATION



GROUND WELL DETAIL

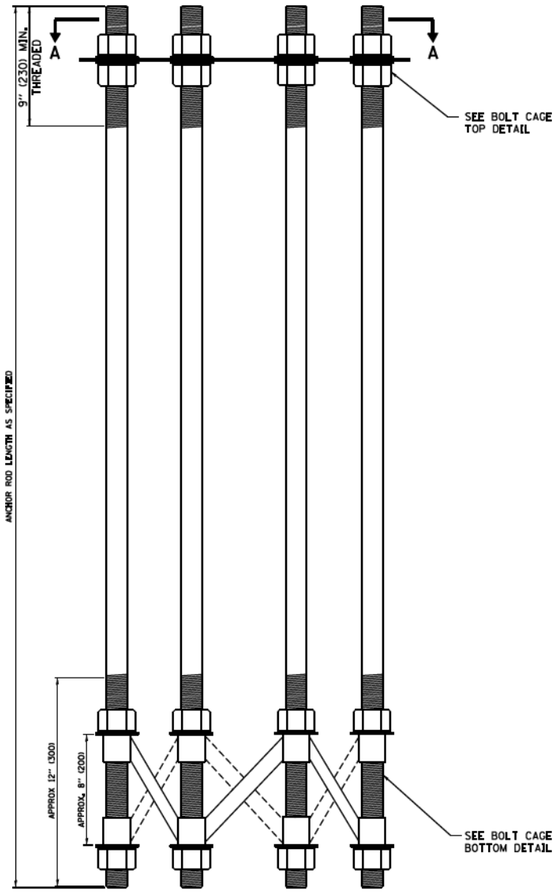
DESIGN NOTES

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.

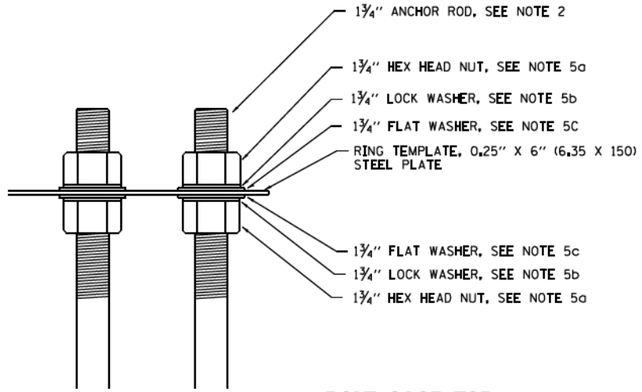


GROUND ROD DETAIL

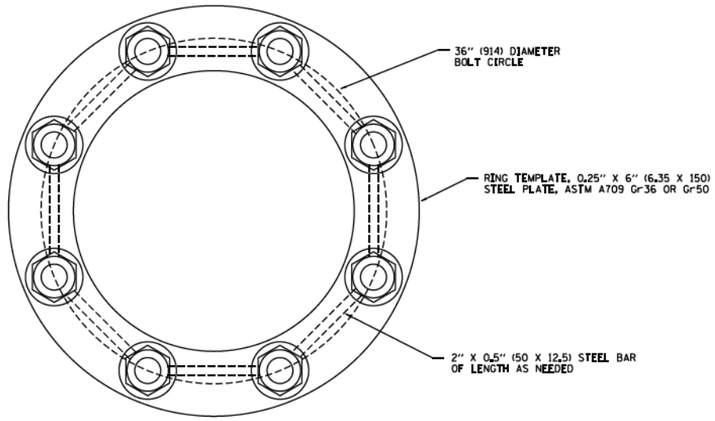
FILE NAME =	USER NAME = footemj	DESIGNED -	REVISED - R. TOMSONS 09-02-10	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	HIGH MAST LIGHT TOWER 120 FT TO 140 FT FOUNDATION DETAIL	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
pw:\\IL084EBIDINTEG.illinois.gov:PWIDOT\Documents\IDOT Offices\District 1\Projects\Dist ... \CADData\CADsheets\be506.dgn		DRAWN -	REVISED - R. TOMSONS 02-27-13						888	577
	PLOT SCALE = 50.000 ' / in.	CHECKED -	REVISED - R. TOMSONS 04-29-16			BE-506		CONTRACT NO. 60X79		
Default	PLOT DATE = 4/29/2016	DATE - 03-12-10	REVISED -		SCALE: SHEET 20 OF 45 SHEETS STA. TO STA.	ILLINOIS FED. AID PROJECT				



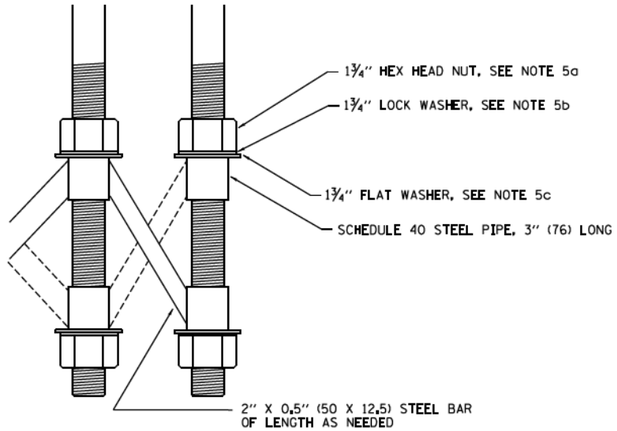
ANCHOR BOLT CAGE



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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			REVISED - R. TOMSONS 04-29-16
Default	PLOT SCALE = 50.000 ' / in.	CHECKED -	REVISED -
	PLOT DATE = 4/29/2016	DATE -	REVISED -

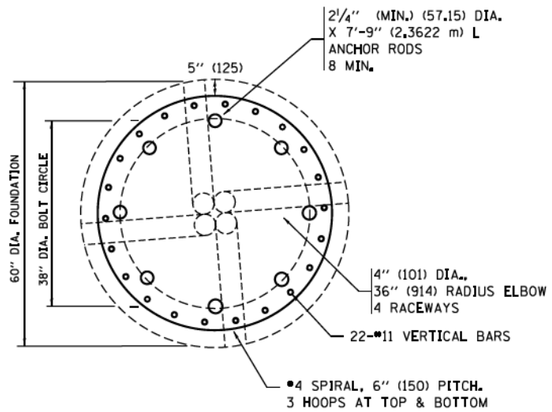
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HIGH MAST LIGHT TOWER
120 FT TO 140 FT FOUNDATION DETAIL

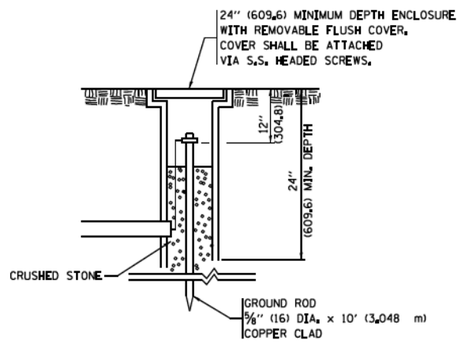
SCALE: | SHEET 21 OF 45 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			888	578
	BE-506		CONTRACT NO. 60X79	
	ILLINOIS FED. AID PROJECT			

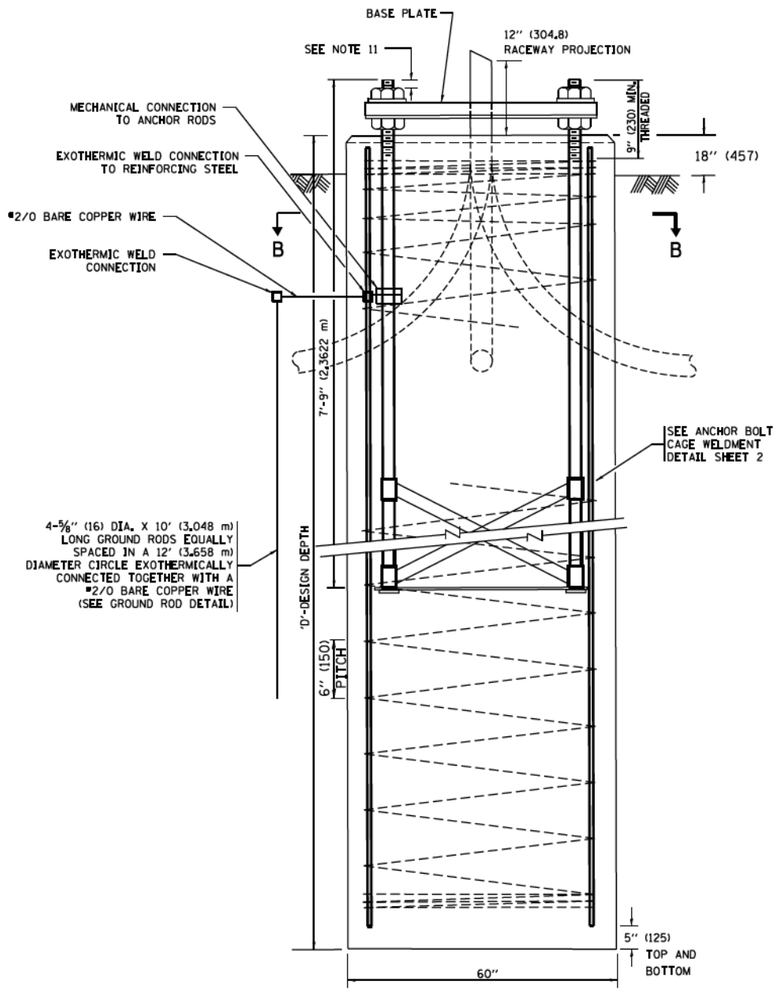
SHAFT LENGTH (D) TABLE				
SOIL CONSISTENCY		AVERAGE STRENGTH	LIGHT TOWER MOUNTING HEIGHT	
		Qu in tsf (Qu in kPa)	150 FT. (46 m)	160 FT. (48.8 m)
	SOFT	<0.5 (<50)	28'-6" (8.7 m)	30'-0" (9.1 m)
	MEDIUM	0.5 TO 1 (50 to 100)	23'-6" (7.0 m)	24'-0" (7.3 m)
COHESIVE	STIFF	1 TO 2 (100 TO 200)	19'-6" (5.9 m)	20'-0" (6.1 m)
	VERY STIFF	2 TO 4 (200 TO 400)	17'-0" (5.1 m)	17'-6" (5.2 m)
	HARD	>4 (>400)	15'-6" (4.5 m)	15'-6" (4.5 m)
		N in BLOWS/FT. (N in BLOWS/0.3m)		
	VERY LOOSE	<5 (<5)	21'-0" (6.3 m)	21'-6" (6.5 m)
	LOOSE	5 TO 10 (5 TO 10)	19'-0" (5.7 m)	19'-6" (5.9 m)
GRANULAR	MEDIUM	10 TO 25 (10 TO 25)	18'-0" (5.5 m)	18'-6" (5.6 m)
	DENSE	25 TO 50 (25 TO 50)	17'-0" (5.2 m)	17'-6" (5.3 m)
	VERY DENSE	>50 (>50)	16'-6" (4.9 m)	17'-0" (5.1 m)



SECTION–B–B



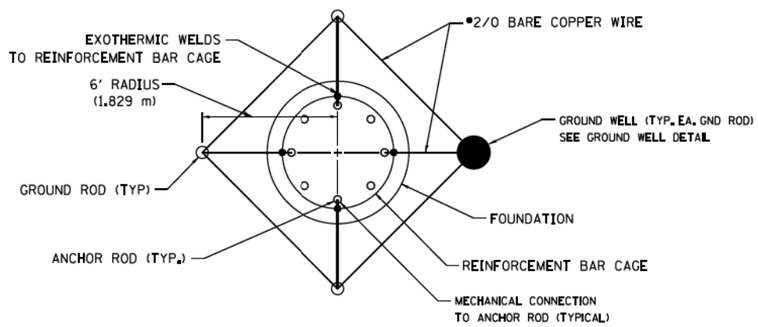
GROUND WELL DETAIL



FOUNDATION ELEVATION

DESIGN NOTES

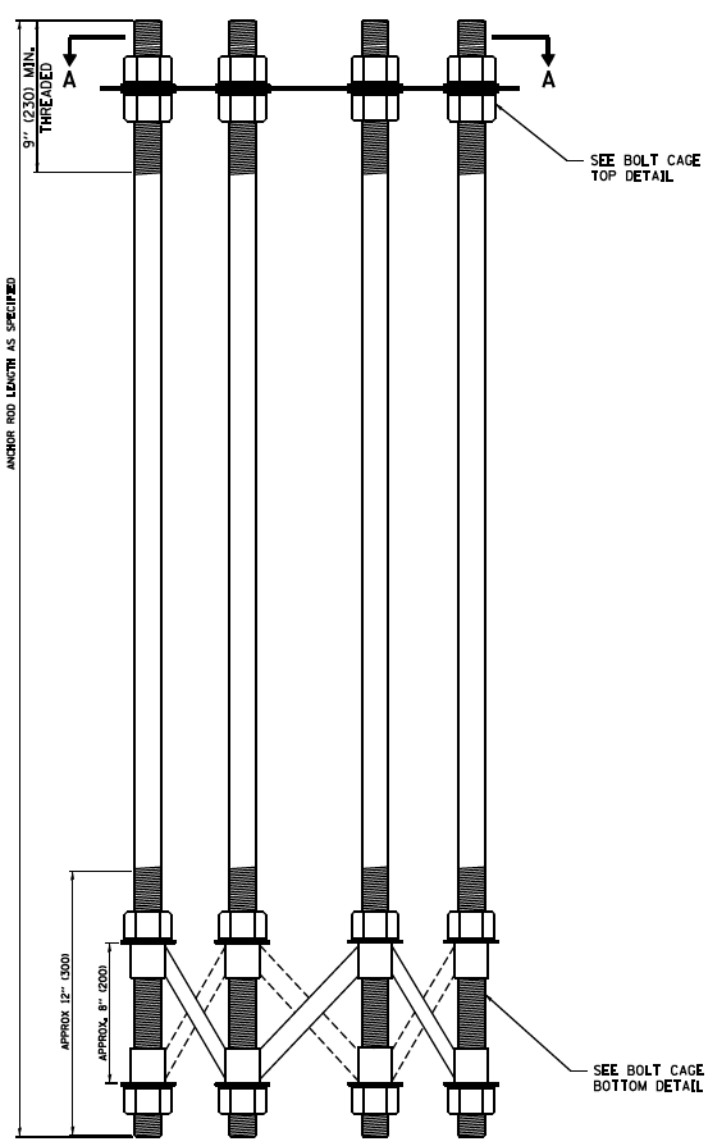
1. ALL DIMENSIONS IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN
2. THE ANCHOR RODS SHALL BE VERTICAL NO ADJUSTMENT SHALL BE ALLOWED AFTER THE FOUNDATION IS PLACED.
3. THE GAP BETWEEN THE FOUNDATION AND THE BASE PLATE SHALL BE ENCLOSED WITH A STAINLESS STEEL SCREEN FASTENED WITH A STAINLESS STEEL BAND.
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.



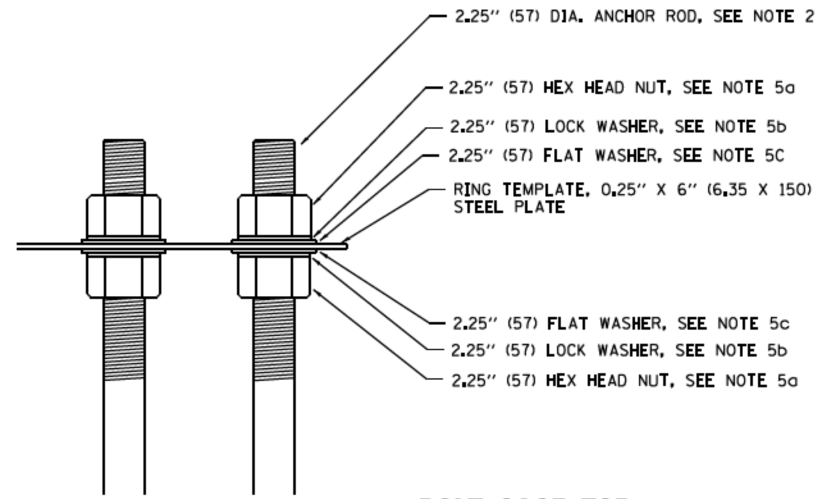
GROUND ROD DETAIL

FILE NAME =	USER NAME = footemj	DESIGNED - R. TOMSONS	REVISED - R. TOMSONS 02-27-13	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	HIGH MAST LIGHT TOWER 150 FT TO 160 FT FOUNDATION DETAIL
pw:\\IL084EBIDINTEG.illinois.gov:PWIDOT\Documents\IDOT Offices\District 1\Projects\DistStds\BE2WN\CADData\CADsheets\be511.dgn	PLOT SCALE = 50.000 ' / in.	CHECKED -	REVISED - R. TOMSONS 04-29-16		
Default	PLOT DATE = 4/29/2016	DATE - 09-02-10	REVISED -		SCALE: SHEET 22 OF 45 SHEETS STA. TO STA.

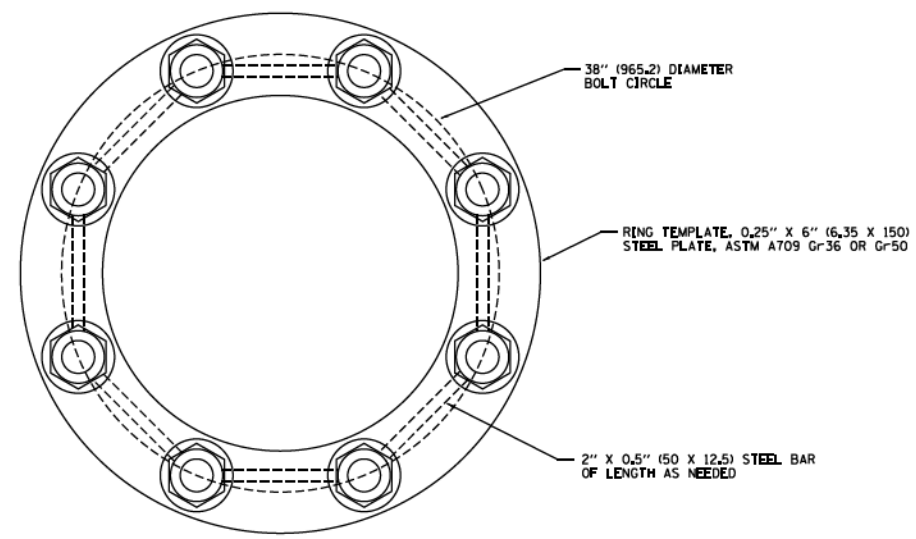
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			888	579
	BE-511		CONTRACT NO. 60X79	
	ILLINOIS	FED. AID PROJECT		



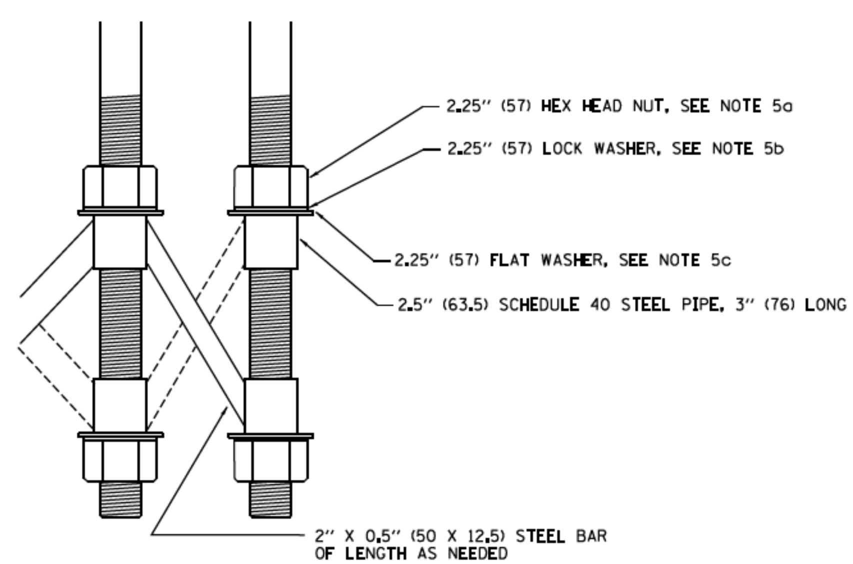
ANCHOR BOLT CAGE



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.

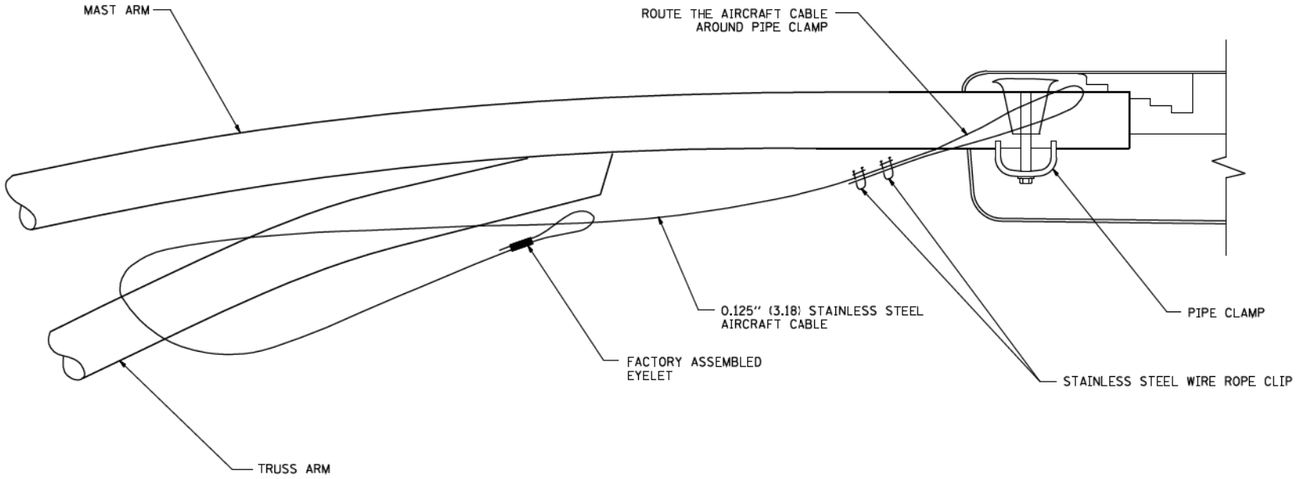
FILE NAME =	USER NAME = footemj	DESIGNED - R. TOMSONS	REVISED - R. TOMSONS 02-27-13
pw:\\IL084EBIDINTEG.illinois.gov:PWIDOT\Documents\IDOT Offices\District 1\Projects\Dist5\0BB4M\CADData\CADsheets\be511.dgn		DRAWN -	REVISED - R. TOMSONS 04-29-16
	PLOT SCALE = 50.000 '/ in.	CHECKED -	REVISED -
Default	PLOT DATE = 4/29/2016	DATE - 09-02-10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HIGH MAST LIGHT TOWER
150 FT TO 160 FT FOUNDATION DETAIL

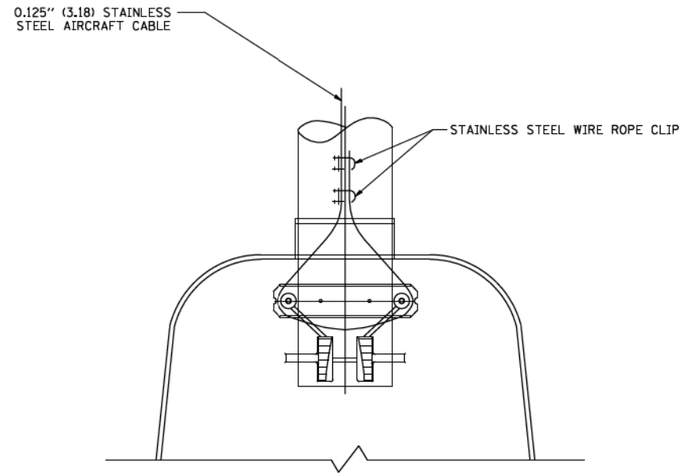
SCALE: | SHEET 23 OF 45 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			888	580
	BE-511	CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			



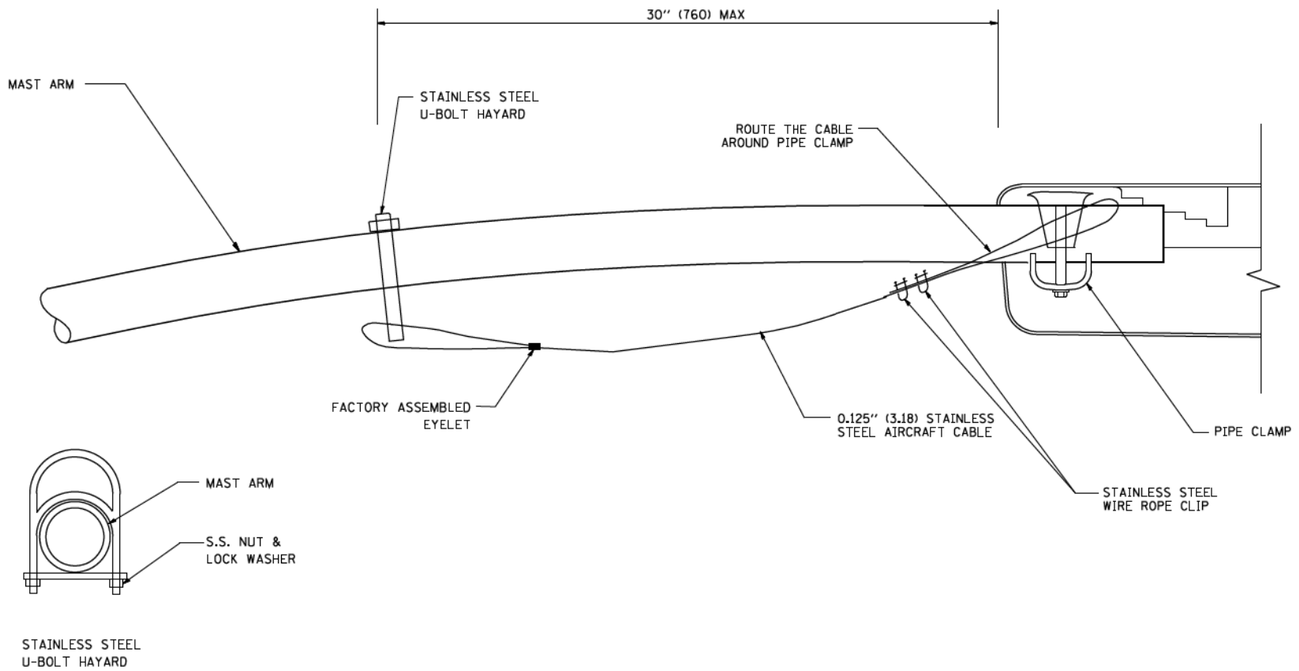
SIDE VIEW (TRUSS ARM)

N.T.S.



BOTTOM VIEW

N.T.S.



SIDE VIEW (SINGLE MEMBER OR DAVIT ARM)

N.T.S.

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS (INCHES) UNLESS OTHERWISE SHOWN.
2. CONTRACTOR SHALL ADJUST THE WIRE CLIP TO ELIMINATE ANY SLACK FROM THE WIRE ROPE.
3. THE 0.125" (3.18) STAINLESS STEEL AIRCRAFT CABLE SHALL REMAIN VISIBLE FROM THE GROUND LEVEL.
4. THE BREAKING STRENGTH OF THE CABLE SHALL BE 1700 LBS. MIN.

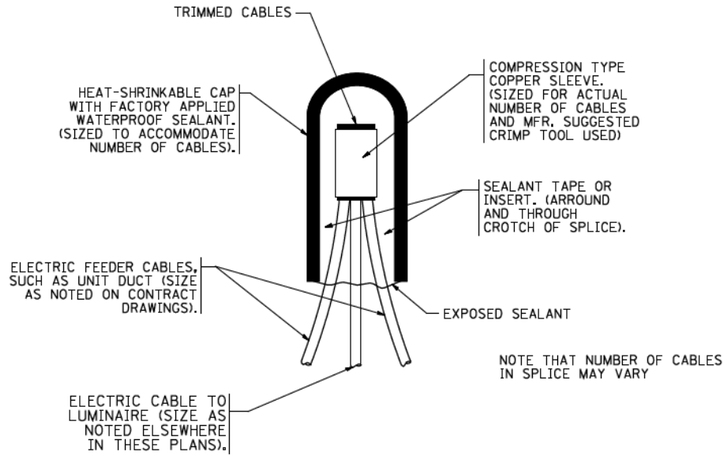
FILE NAME = W:\diststd\22x34\be701.dgn	USER NAME = gaglianobt	DESIGNED -	REVISED - 08-08-03
		DRAWN -	REVISED -
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED -
	PLOT DATE = 1/4/2008	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LUMINAIRE SAFETY CABLE ASSEMBLY

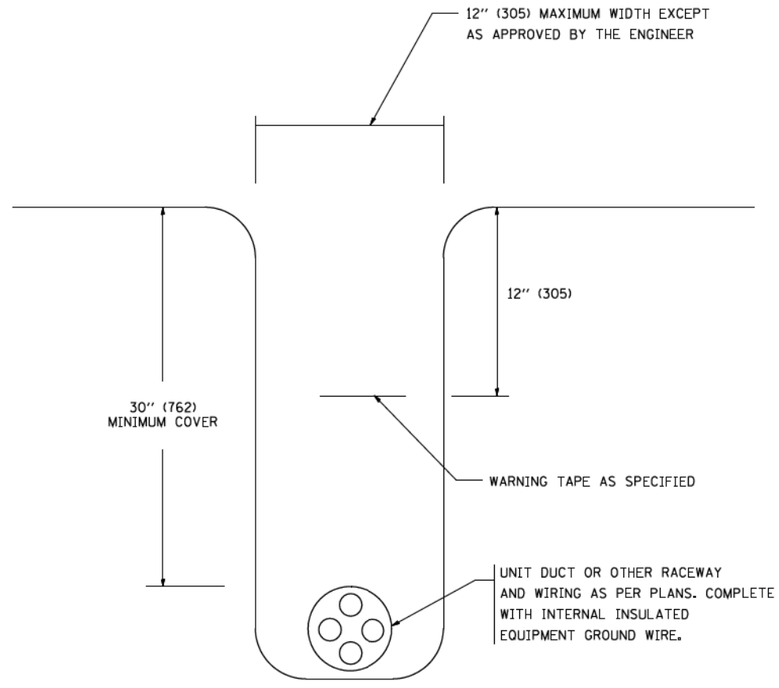
SCALE: NONE | SHEET 24 OF 45 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			888	581
	BE-701		CONTRACT NO. 60X79	
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



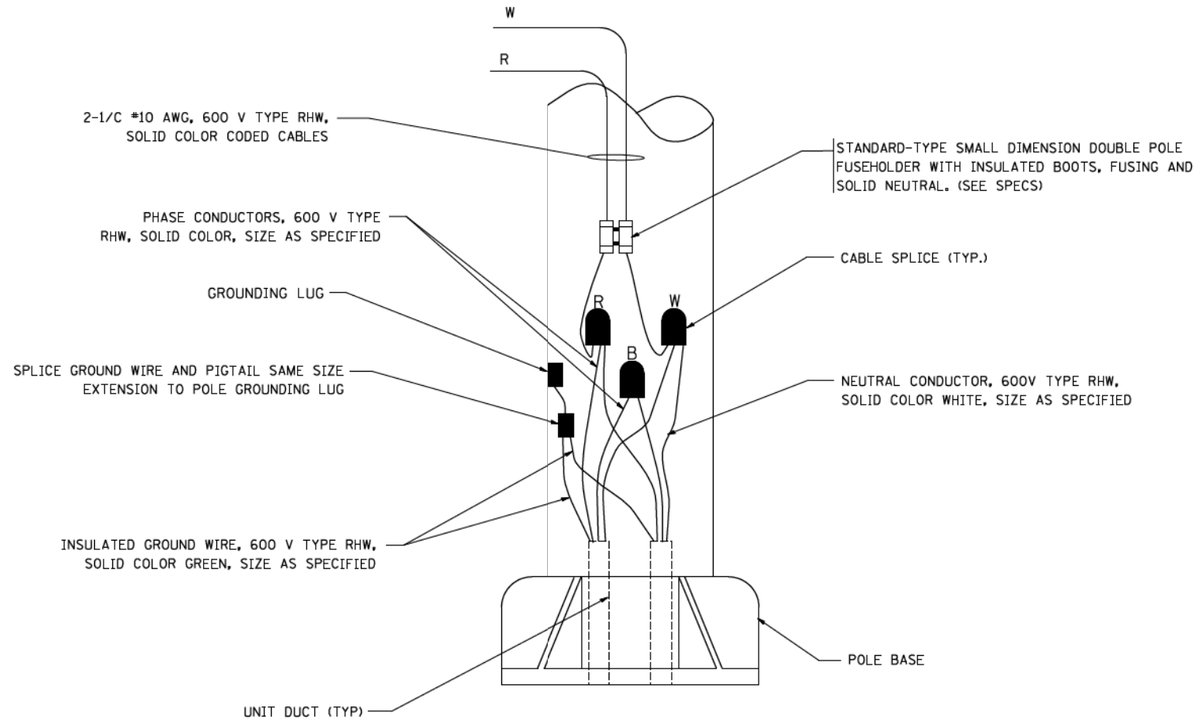
TYPICAL SPLICE DETAIL

N.T.S.



TYPICAL WIRING IN TRENCH DETAIL

N.T.S.



POLE WIRING DETAIL

N.T.S.

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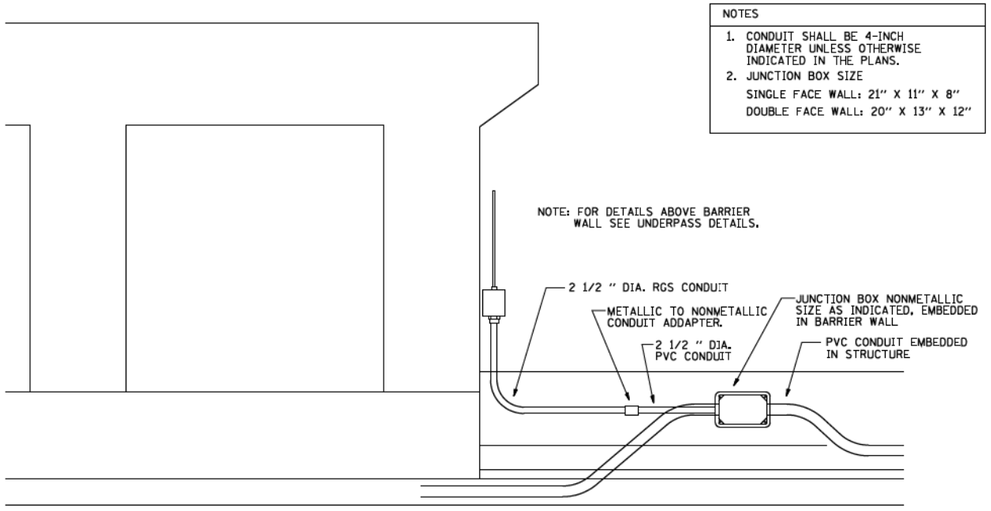
		DRAWN -	REVISED -								888	582
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED -						BE-702		CONTRACT NO. 60X79	
	PLOT DATE = 1/4/2008	DATE -	REVISED -		SCALE: NONE	SHEET 25 OF 45 SHEETS	STA. TO STA.		FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT	

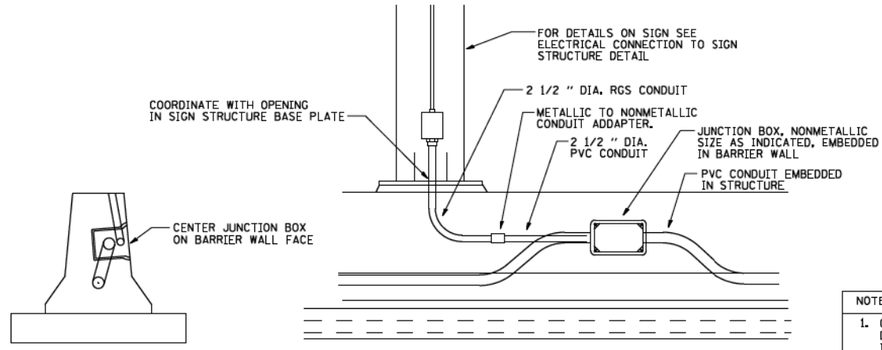


NOTES

1. CONDUIT SHALL BE 4-INCH DIAMETER UNLESS OTHERWISE INDICATED IN THE PLANS.
2. JUNCTION BOX SIZE
   SINGLE FACE WALL: 21" X 11" X 8"
   DOUBLE FACE WALL: 20" X 13" X 12"

ED - BWD

ELECTRIC CONNECTION TO UNDERPASS LIGHTING

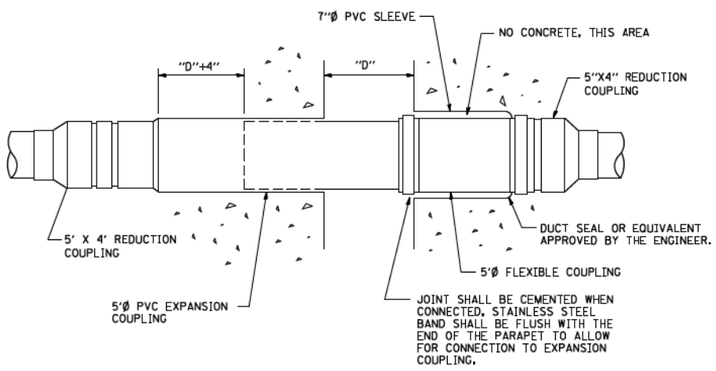


NOTES

1. CONDUIT SHALL BE 4-INCH DIAMETER UNLESS OTHERWISE INDICATED IN THE PLANS.
2. JUNCTION BOX SIZE
   SINGLE FACE WALL: 21" X 11" X 8"
   DOUBLE FACE WALL: 20" X 13" X 12"

ED - SGN

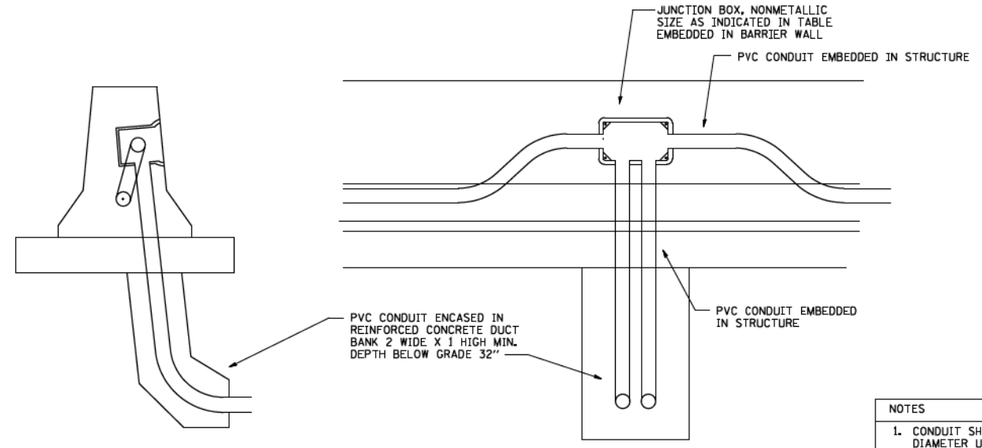
JUNCTION BOX EMBEDDED IN BARRIER WALL FOR SIGN LIGHTING



INSTALLATION OF CONDUIT

IN BRIDGE PARAPET EXPANSION JOINT

(N.T.S.)



NOTES

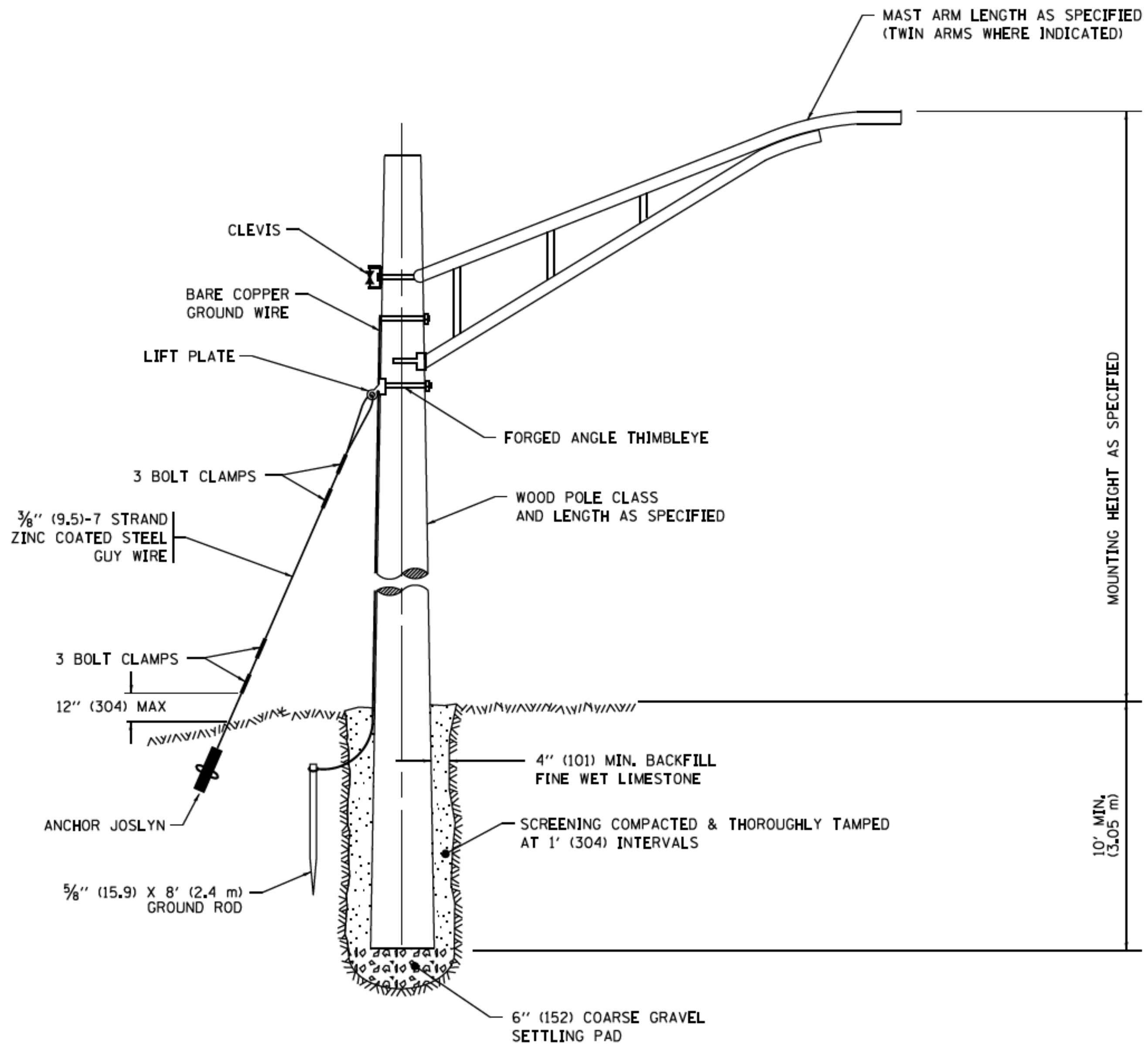
1. CONDUIT SHALL BE 4-INCH DIAMETER UNLESS OTHERWISE INDICATED IN THE PLANS.
2. JUNCTION BOX SIZE
   SINGLE FACE WALL: 21" X 11" X 8"
   DOUBLE FACE WALL: 20" X 13" X 12"

ED - BW

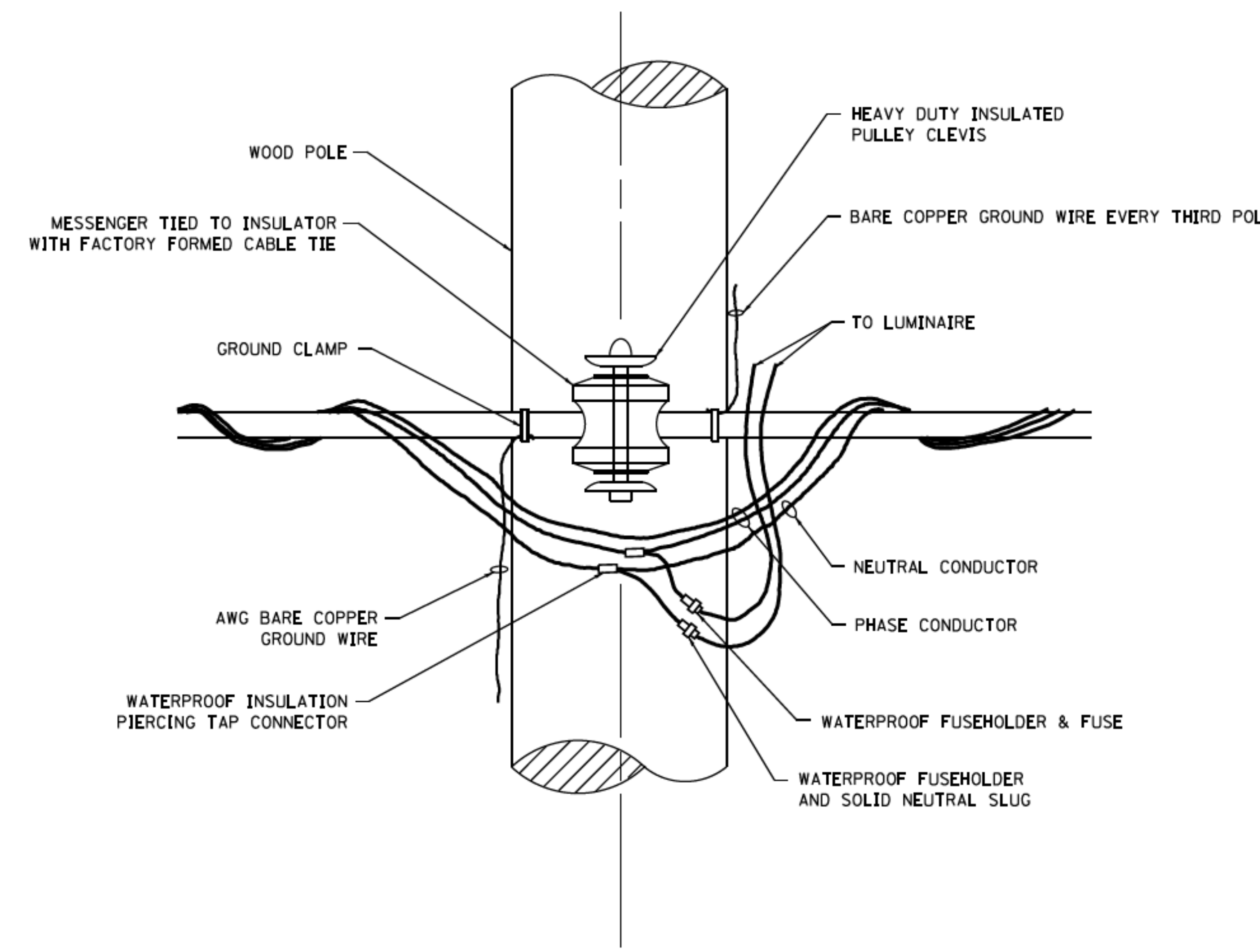
JUNCTION BOX EMBEDDED IN BARRIER WALL

FILE NAME = be703.dgn	USER NAME = gaglianobt	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	MISCELLANEOUS ELECTRICAL DETAILS, SHEET B J BOX EMBEDDED IN BARRIER WALL – INSTALLATION OF CONDUIT IN BRIDGE PARAPET EXPANSION JOINT – ELECTRIC CONNECTION TO UNDERPASS LIGHTING
		DRAWN -	REVISED -		
	PLOT SCALE = 50.0000 ' / IN.	CHECKED -	REVISED -		SCALE: NONE SHEET 26 OF 45 SHEETS STA. TO STA.
	PLOT DATE = 2/5/2009	DATE - 01-20-2009	REVISED -		

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			888	583
	BE-703	CONTRACT NO. 60X79		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



TEMPORARY LIGHT POLE DETAIL

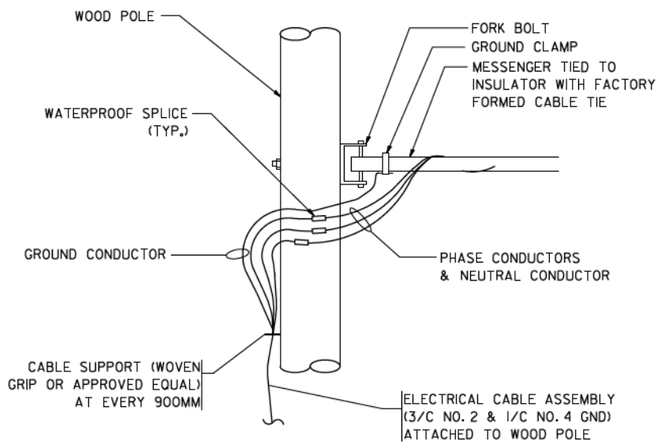


TEMPORARY LIGHT POLE ATTACHMENT DETAIL

NOTE:

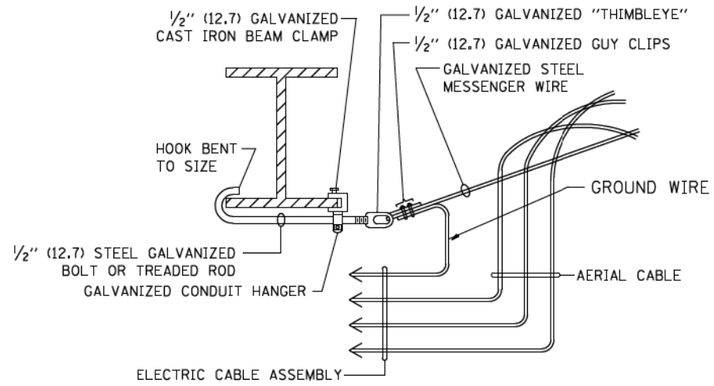
1. ALL DIMENSIONS IN INCHES (MILLIMETERS) UNLESS OTHERWISE INDICATED.
2. MAST ARM SHALL BE RATED FOR THE SPECIFIED MOUNTING HEIGHT.

FILE NAME = pw\\IL084EBIDINTEG.illinois.gov:PWIDOT\Documents\IDOT Offices\District 1\Projects\DistS0\... \CADData\CADsheets\be800.dgn Default	USER NAME = footemj	DESIGNED -	REVISED - 08-08-03	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TEMPORARY LIGHT POLE DETAILS	F.A. RTE. / SECTION / COUNTY / TOTAL SHEETS 888 / SHEET NO. 584
		DRAWN	REVISED - R.T. 07-26-16			BE-800 / CONTRACT NO. 60X79
	PLOT SCALE = 50.000 ' / in.	CHECKED -	REVISED -		SCALE: NONE / SHEET 27 OF 45 SHEETS / STA. / TO STA.	ILLINOIS FED. AID PROJECT
	PLOT DATE = 9/1/2016	DATE -	REVISED -			



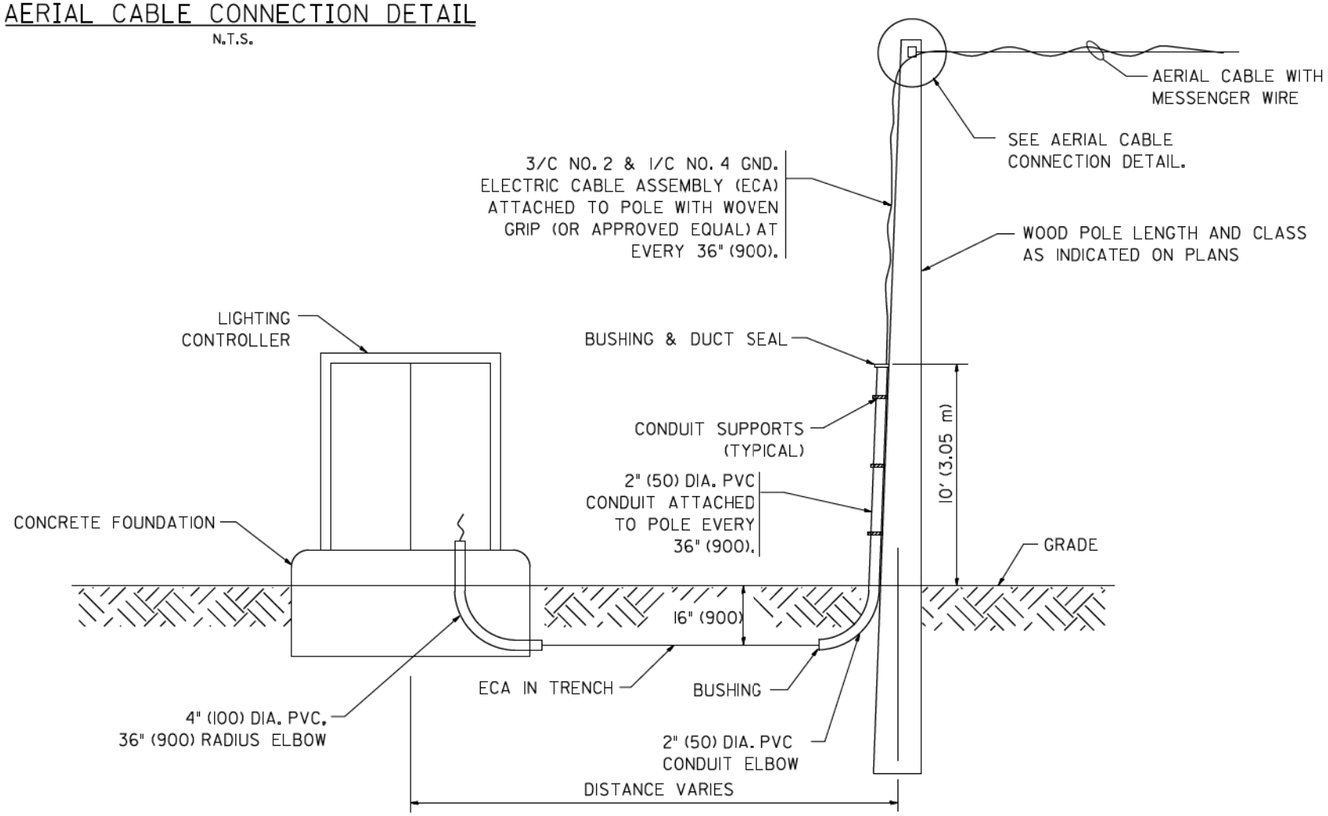
AERIAL CABLE CONNECTION DETAIL

N.T.S.



AERIAL CABLE ATTACHED TO STRUCTURE

NOT TO SCALE



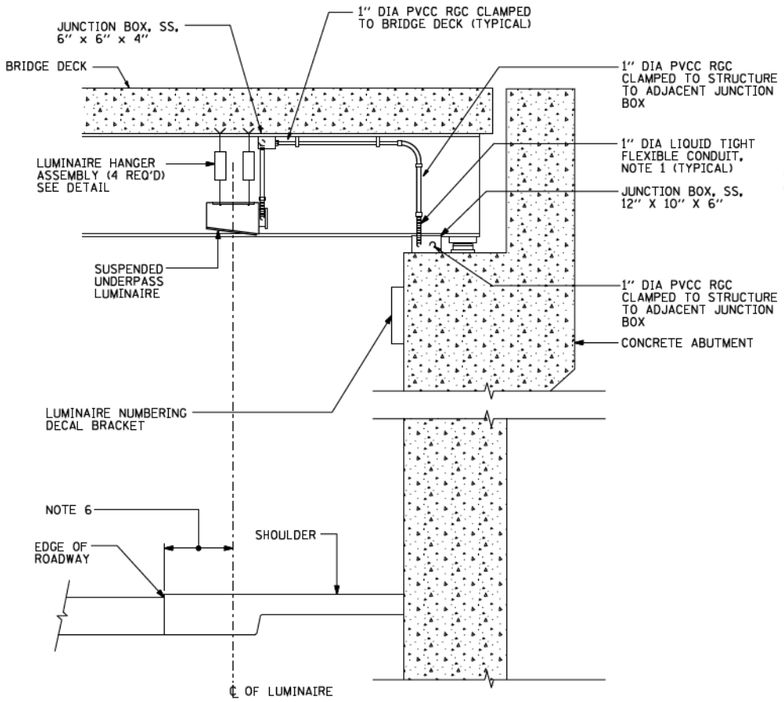
WOOD POLE TO LIGHTING CONTROLLER WIRING CONNECTION DETAIL

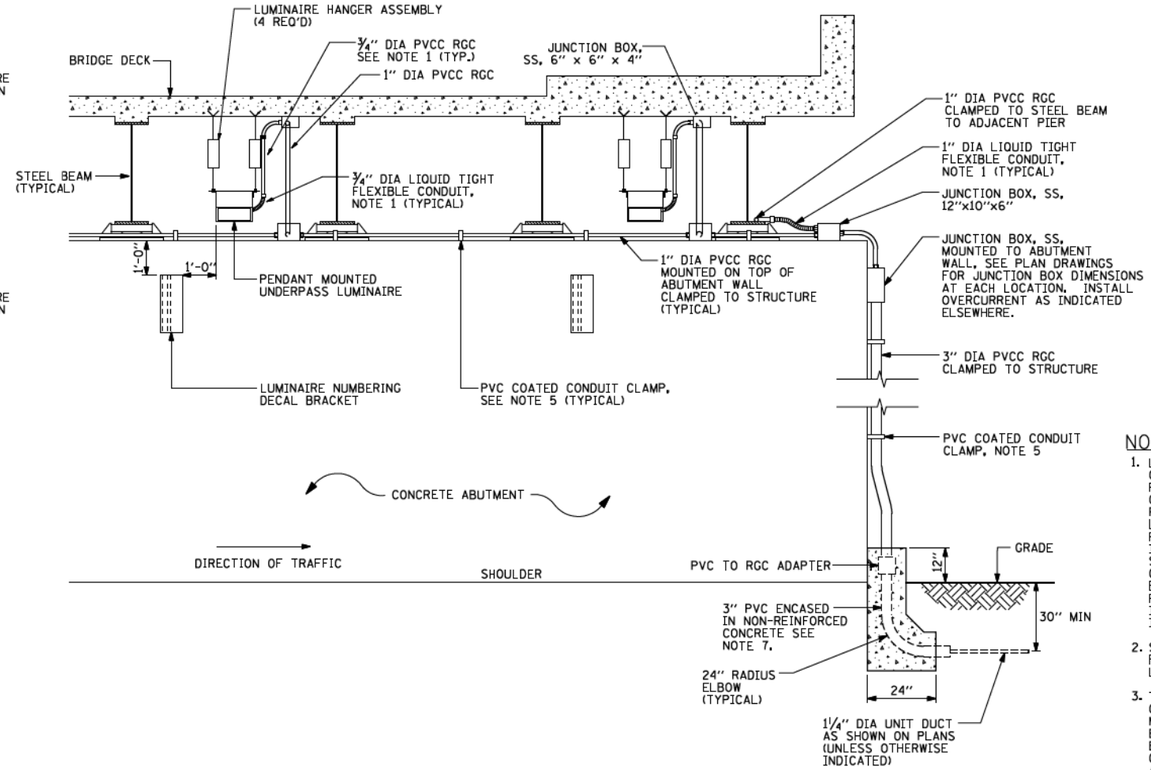
N.T.S.

NOTES:

1. ALL DIMENSIONS IN INCHES (MILLIMETERS) UNLESS OTHERWISE INDICATED.
2. SEE PROPOSED LIGHTING PLAN FOR CONDUIT, CABLE AND ROUTING.
3. THE CONTRACTOR SHALL PROVIDE INTERMEDIATE SUPPORTS TO MAINTAIN MINIMUM CLEARANCES. REFER TO AERIAL AERIAL CABLE ATTACHED TO STRUCTURE DETAIL.
4. COST OF SPLICES AND MOUNTING HARDWARE SHALL BE INCLUDED IN THE UNIT PRICE FOR AERIAL CABLE.

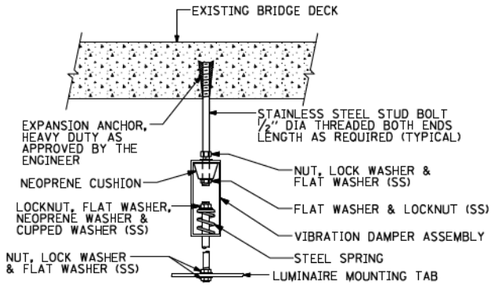
FILE NAME = W:\diststd\22x34\be801.dgn	USER NAME = gaglianobt	DESIGNED -	REVISED - 08-08-03	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TEMPORARY AERIAL CABLE INSTALLATION	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED -						888	585
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED -				BE-801		CONTRACT NO. 60X79	
	PLOT DATE = 1/4/2008	DATE -	REVISED -		SCALE: NONE SHEET 28 OF 45 SHEETS STA. TO STA.			FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT



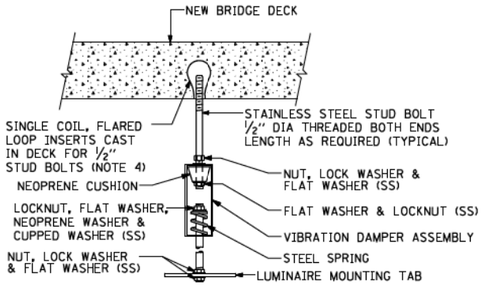


NOTES:

1. LIQUID TIGHT FLEXIBLE METAL CONDUIT, MAXIMUM LENGTH 6'-0", TYPICAL FOR EACH INSTANCE AS SHOWN. PROVIDE PVC COATED RIGID GALVANIZED STEEL CONDUIT AS REQUIRED NOT TO EXCEED 6'-0" OF FLEXIBLE LIQUID TIGHT METAL CONDUIT. LIQUID TIGHT FLEXIBLE METAL CONDUIT WILL BE INCLUDED IN THE COST OF THE CONDUIT ATTACHED TO STRUCTURE, OF THE CORRESPONDING DIA., GALVANIZED STEEL, PVC COATED PAY ITEM EXCEPT THAT ¾" DIA. CONDUIT AND ¾" DIA. FLEXIBLE CONDUIT SHALL BE INCLUDED IN THE COST OF UNDERPASS LUMINAIRE INSTALLATION.
2. SEE UNDERPASS LIGHTING PLANS FOR INSTALLATION LOCATION OF UNDERPASS LIGHTING LUMINAIRES.
3. THE CONTRACTOR SHALL USE APPROVED SINGLE COIL FLARED LOOP INSERTS WHEN SUSPENDED MOUNTING AN UNDERPASS LUMINAIRE TO A NEW BRIDGE DECK. THE FLARED LOOP INSERTS MUST BE CAST INTO THE CONCRETE DECK. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND COORDINATING THE INSERT LOCATIONS FOR MOUNTING THE UNDERPASS LIGHTING SYSTEM AS SHOWN ON THE PLANS WITH THE BRIDGE DECK CONTRACTOR. SEE DETAIL.
4. THE UNDERPASS LUMINAIRE HANGER ASSEMBLY COMPLETE WITH HEAVY DUTY ANCHORS/INSERTS AND ALL APPLICABLE HARDWARE SHALL BE INCLUDED IN THE COST OF THE UNDERPASS LUMINAIRE PAY ITEM.
5. SECURE THE CONDUIT WITH PVC COATED CONDUIT CLAMPS OR CONDUIT BEAM CLAMPS AS SHOWN AT 5'-0" INTERVALS FOR LATERALS AND WITHIN 2'-0" MAXIMUM FROM ANY JUNCTION BOX, FLEXIBLE CONDUIT, OR CHANGE IN DIRECTION. ALL PVC COATED CONDUIT CLAMPS OR BEAM CLAMPS SHALL BE INCLUDED WITH THE COST OF THE "CONDUIT ATTACHED TO STRUCTURE, OF THE CORRESPONDING DIA., GALVANIZED STEEL, PVC COATED" PAY ITEM.
6. ALL UNDERPASS LUMINAIRES MUST BE CENTERED IN THE BEAM SPACE AS INDICATED ON THE PLANS UNLESS OTHERWISE DIRECTED BY THE ENGR. LUMINAIRE SETBACK SHALL BE AS INDICATED IN PLANS FOR EACH SPECIFIC UNDERPASS
7. THE CONCRETE ENCASED CONDUIT TRANSITION SHALL BE INCLUDED IN THE COST OF THE GALVANIZED RIGID STEEL CONDUIT PAY ITEMS.
8. ALL CONDUIT ATTACHED TO STRUCTURE SHALL BE PVC COATED RIGID STEEL CONDUIT (PVCC RGC) TYPICAL.

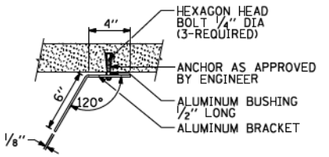


EXISTING BRIDGE DECK INSTALLATION



NEW BRIDGE DECK INSTALLATION

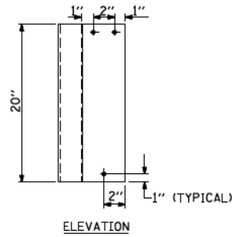
TYPICAL LUMINAIRE HANGER ASSEMBLY DETAILS



TOP VIEW

LUMINAIRE NUMBERING DECAL BRACKET

NOT TO SCALE



ELEVATION

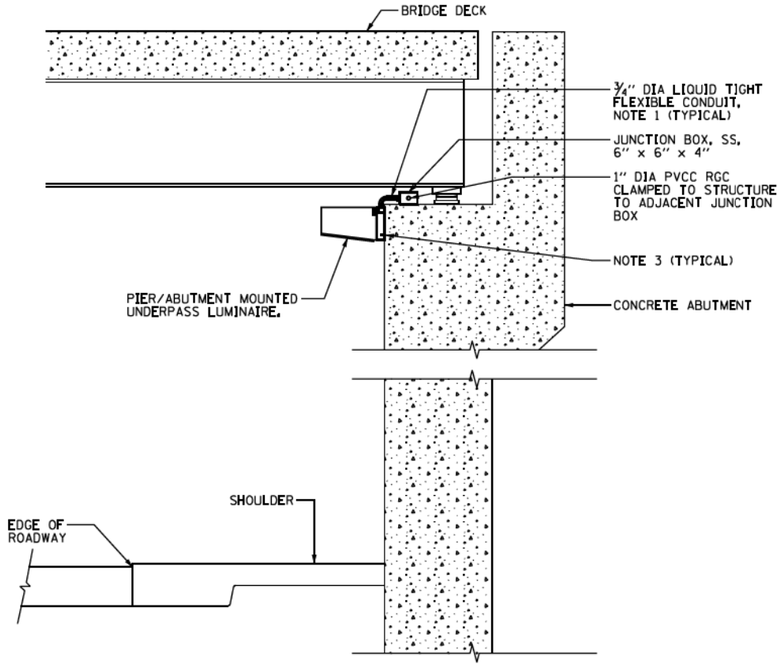
PVC COATED CONDUIT BEAM CLAMP

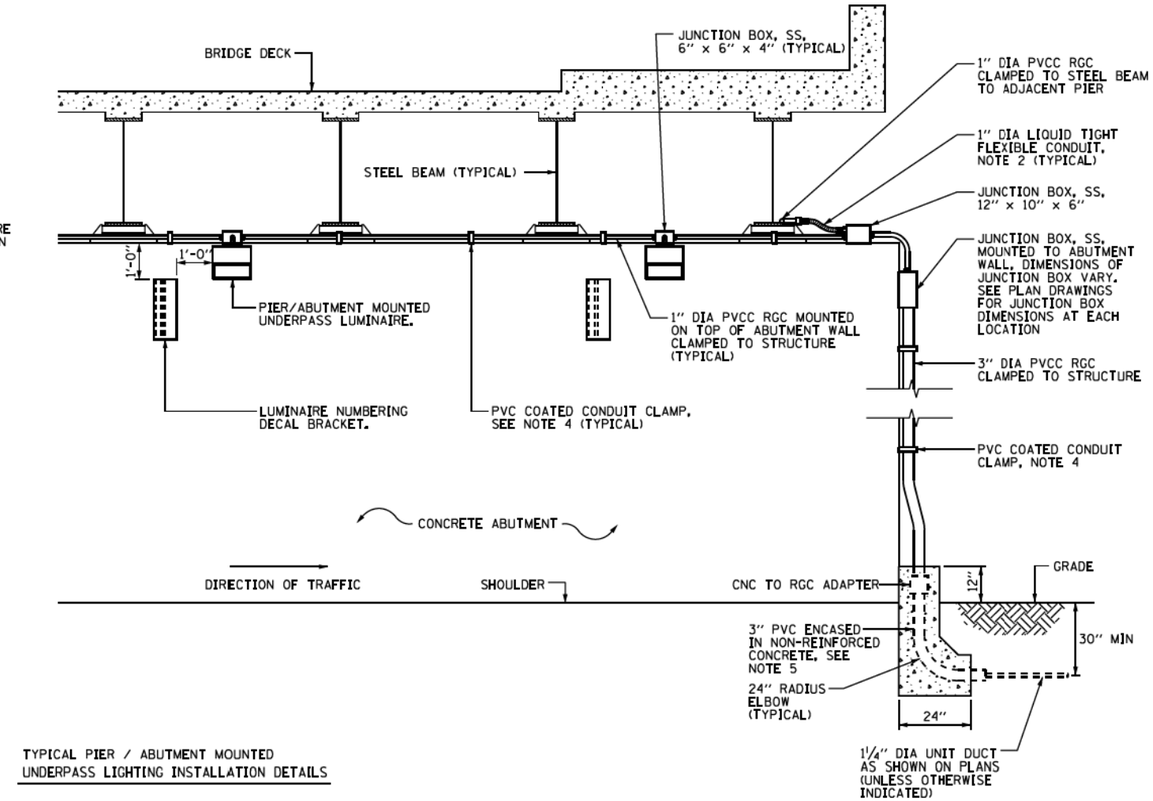
NOT TO SCALE

PVC COATED CONDUIT CLAMP

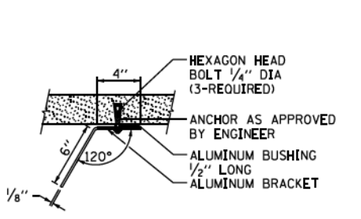
NOT TO SCALE

FILE NAME = W:\diststd\22x34\be900.dgn	USER NAME = gaglianobt	DESIGNED -	REVISED - 12-12-05	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUSPENDED MOUNT UNDERPASS LUMINAIRE INSTALLATION DETAILS	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED -						888	586
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED -				BE-900		CONTRACT NO. 60X79	
	PLOT DATE = 1/4/2008	DATE -	REVISED -		SCALE: NONE SHEET 29 OF 45 SHEETS STA. TO STA.	FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

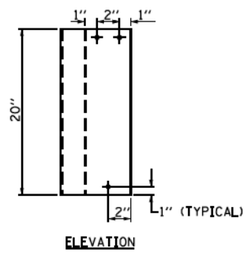




TYPICAL PIER / ABUTMENT MOUNTED
UNDERPASS LIGHTING INSTALLATION DETAILS



TOP VIEW



ELEVATION

LUMINAIRE NUMBERING DECAL BRACKET
NOT TO SCALE

PVC COATED CONDUIT BEAM CLAMP
NOT TO SCALE

PVC COATED CONDUIT CLAMP
NOT TO SCALE

NOTES:

1. LIQUID TIGHT FLEXIBLE METAL CONDUIT, MAXIMUM LENGTH 6'-0", TYPICAL FOR EACH INSTANCE AS SHOWN. PROVIDE PVC COATED RIGID GALVANIZED STEEL CONDUIT AS REQUIRED NOT TO EXCEED 6'-0" OF FLEXIBLE LIQUID TIGHT METAL CONDUIT. LIQUID TIGHT FLEXIBLE METAL CONDUIT WILL BE INCLUDED IN THE COST OF THE CONDUIT ATTACHED TO STRUCTURE, OF THE CORRESPONDING DIA., GALVANIZED STEEL, PVC COATED PAY ITEM EXCEPT THAT THE COST OF THE ¾" DIA. RIGID STEEL CONDUIT AND ¾" DIA. FLEXIBLE CONDUIT SHALL BE INCLUDED IN THE LUMINAIRE INSTALLATION.
2. UNDERPASS LUMINAIRE MOUNTED TO FACE OF PIER OR ABUTMENT WALL, MOUNTING HEIGHT OF 1" BELOW THE TOP OF PIER OR ABUTMENT WALL TYPICAL FOR ALL PIER/ABUTMENT MOUNTED UNDERPASS LUMINAIRES UNLESS OTHERWISE NOTED.
3. EXPANSION ANCHOR, POWDER ACTUATED FASTENERS WILL NOT BE ALLOWED. EXPANSION ANCHOR MUST BE SIZED IN ACCORDANCE WITH MANUFACTURERS REQUIREMENTS.
4. SECURE THE CONDUIT WITH PVC COATED CONDUIT CLAMPS OR CONDUIT BEAM CLAMPS AS SHOWN AT 5'-0" INTERVALS FOR LATERALS AND WITHIN 2'-0" MAXIMUM FROM ANY JUNCTION BOX, FLEXIBLE CONDUIT, OR CHANGE IN DIRECTION. ALL PVC COATED CONDUIT CLAMPS OR BEAM CLAMPS SHALL BE INCLUDED WITH THE COST OF THE "CONDUIT ATTACHED TO STRUCTURE, OF THE CORRESPONDING DIA., GALVANIZED STEEL, PVC COATED" PAY ITEM.
5. THE CONCRETE ENCASED CONDUIT TRANSITION SHALL BE INCLUDED IN THE COST OF THE GALVANIZED RIGID STEEL CONDUIT PAY ITEMS.
6. ALL CONDUIT ATTACHED TO STRUCTURE SHALL BE PVC COATED RIGID STEEL CONDUIT (PVCC RGC) TYPICAL.

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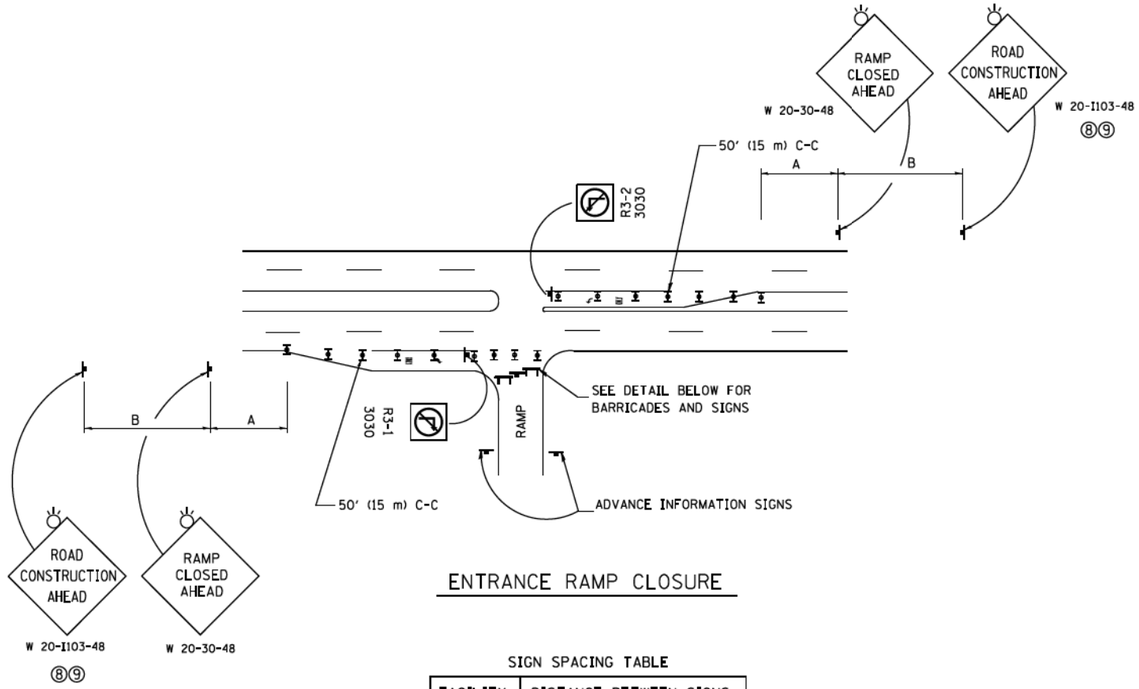
			REVISED -
	PLOT SCALE = 100.000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 11/17/2015	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER /ABUTMENT MOUNTED UNDERPASS LUMINARE INSTALLATION DETAILS

SCALE: NONE | SHEET 30 OF 45 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			888	587
	BE-902		CONTRACT NO. 60X79	
		ILLINOIS FED. AID PROJECT		

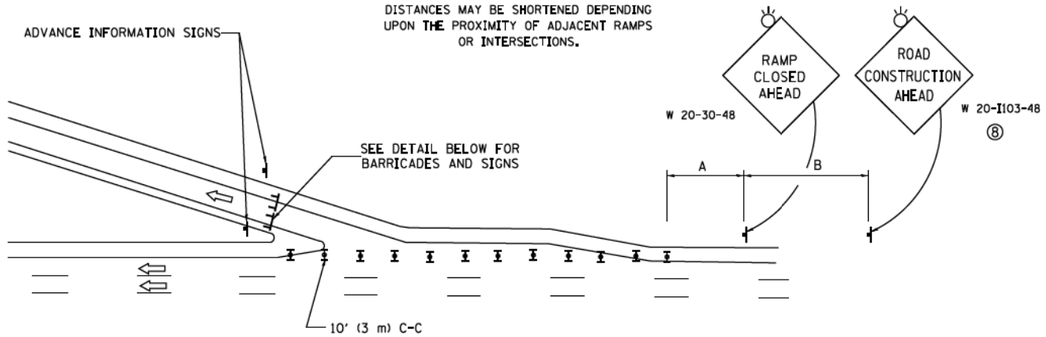


ENTRANCE RAMP CLOSURE

SIGN SPACING TABLE

FACILITY	DISTANCE BETWEEN SIGNS A	DISTANCE BETWEEN SIGNS B
EXPRESSWAY >24 HOURS	1000' (300 m)	1500' (450 m)
EXPRESSWAY ≤24 HOURS	500' (150 m)	500' (150 m)
ARTERIAL 55 MPH	500' (150 m)	500' (150 m)
ARTERIAL 50-45 MPH	350' (100 m)	350' (100 m)
ARTERIAL <45 MPH	200' (60 m)	200' (60 m)

DISTANCES MAY BE SHORTENED DEPENDING UPON THE PROXIMITY OF ADJACENT RAMPS OR INTERSECTIONS.

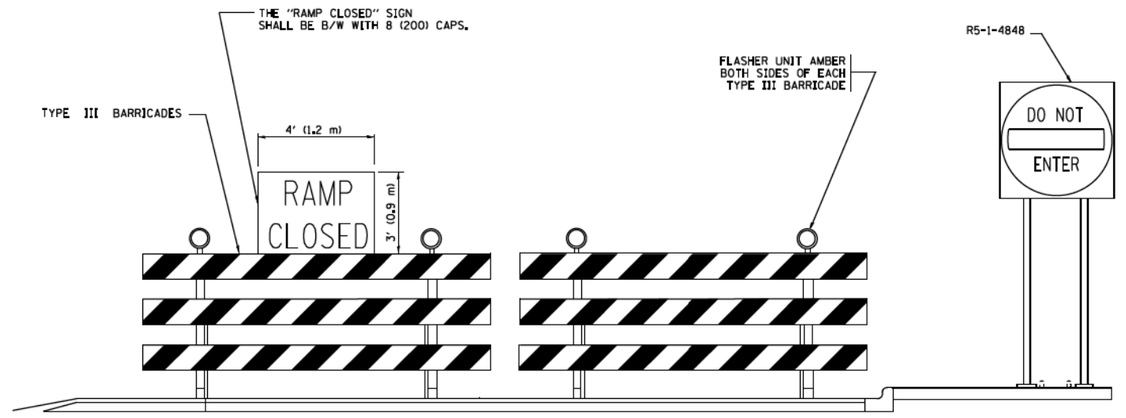


EXIT RAMP CLOSURE

SYMBOLS

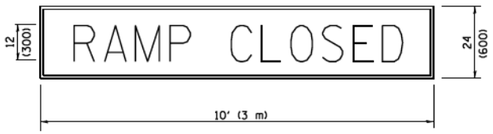
TYPE II BARRICADE OR DRUM WITH STEADY BURN MONO-DIRECTIONAL LIGHT

TYPE III BARRICADE WITH 2 FLASHING LIGHTS



DETAIL FOR REQUIRED BARRICADES & SIGNS

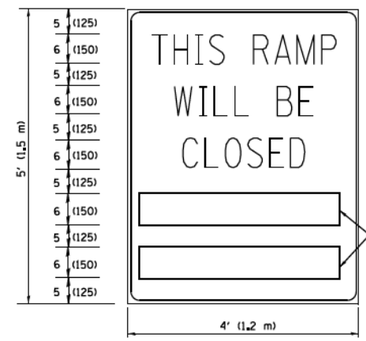
RAMP CLOSURE ADVANCE WARNING SIGN



BLACK LEGEND ON ORANGE BACKGROUND MOUNTED DIAGONALLY
E MOD FONT
1 (25) BORDER

THESE SIGNS ARE REQUIRED ON ALL THE EXIT GUIDE SIGNS FOR EXIT RAMPS THAT WILL BE CLOSED FOR MORE THAN FOUR (4) CONSECUTIVE DAYS.

RAMP CLOSURE ADVANCE INFORMATION SIGN



BLACK LEGEND ON WHITE BACKGROUND

½ (12) BORDER

E MOD FONT

THESE BLANK AREAS SHALL BE FILLED WITH THE DATES AND THE TIME THAT THE RAMP WILL BE CLOSED.

THESE SIGNS ARE REQUIRED ON BOTH SIDES OF THE RAMP, MINIMUM OF 1 WEEK IN ADVANCE OF THE CLOSURE.

THESE SIGNS SHALL BE FABRICATED AND PAID FOR ACCORDING TO THE TEMPORARY INFORMATION SIGNING SPECIAL PROVISION

GENERAL NOTES:

1. CONES MAY BE SUBSTITUTED FOR DRUMS OR TYPE II BARRICADES DURING DAY OPERATIONS. CONES SHALL BE A MINIMUM OF 28 (700) HIGH.
2. STEADY BURN LIGHTS WILL NOT BE REQUIRED FOR DAY OPERATIONS.
3. A FLAGGER SHALL BE POSITIONED AT EACH CLOSED RAMP THAT IS OPEN TO CONSTRUCTION VEHICLES, PRECEEDED BY A W20-7 FLAGGER WARNING SIGN.
4. ALL ROUTE MARKERS AND TRAILBLAZER ASSEMBLIES WHICH DIRECT MOTORISTS TO A CLOSED ENTRANCE RAMP SHALL BE COVERED WHEN THE RAMP IS CLOSED FOR MORE THAN FOUR (4) DAYS.
5. THE SIGNING AND BARRICADING WHICH IS REQUIRED BY THIS DETAIL SHALL BE INCLUDED IN THE COST OF TRAFFIC CONTROL AND PROTECTION (EXPRESSWAYS).
6. AUTHORIZATION FROM THE DISTRICT'S BUREAU OF TRAFFIC IS REQUIRED FOR ALL RAMP CLOSURES.
7. THE RAMP CLOSURE ADVANCE INFORMATION SIGNS SHALL BE ERECTED IF THE CLOSURE TIME EXCEEDS TWENTY-FOUR (24) HOURS. ADDITIONAL ADVANCE WARNING SIGNS ON EXIT GUIDE SIGNING WILL BE REQUIRED FOR EXIT RAMP CLOSURES THAT EXCEED FOUR (4) DAYS IN LENGTH
8. ROAD CONSTRUCTION AHEAD SIGNS MAY BE OMITTED WHEN THIS DETAIL IS USED IN CONJUNCTION WITH OTHER TRAFFIC CONTROL THAT ALREADY INCLUDES A ROAD CONSTRUCTION AHEAD SIGN.
9. ARTERIAL ROAD CONSTRUCTION AHEAD SIGNS SHALL BE INSTALLED ON THE LEFT SIDE OF TRAFFIC IF THE MEDIAN IS MORE THAN 10 FT WIDE.

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

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	PLOT SCALE = 50.000 ' / in.	CHECKED -	REVISED - SPB 12-09
	PLOT DATE = 7/8/2013	DATE - 02-83	REVISED - MD 06-13

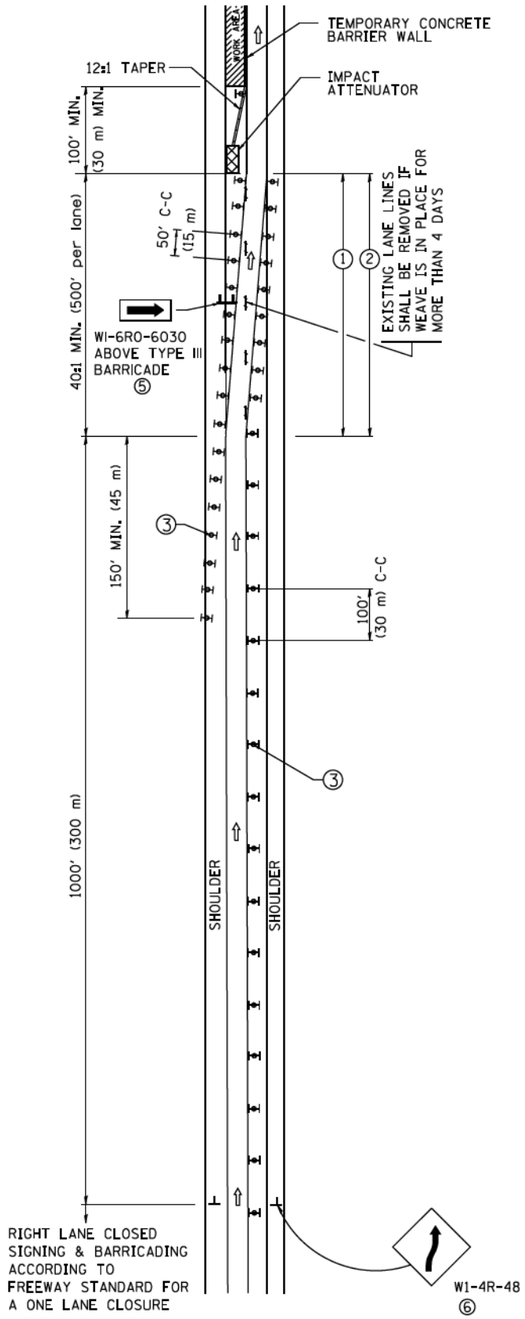
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ENTRANCE AND EXIT RAMP CLOSURE DETAILS

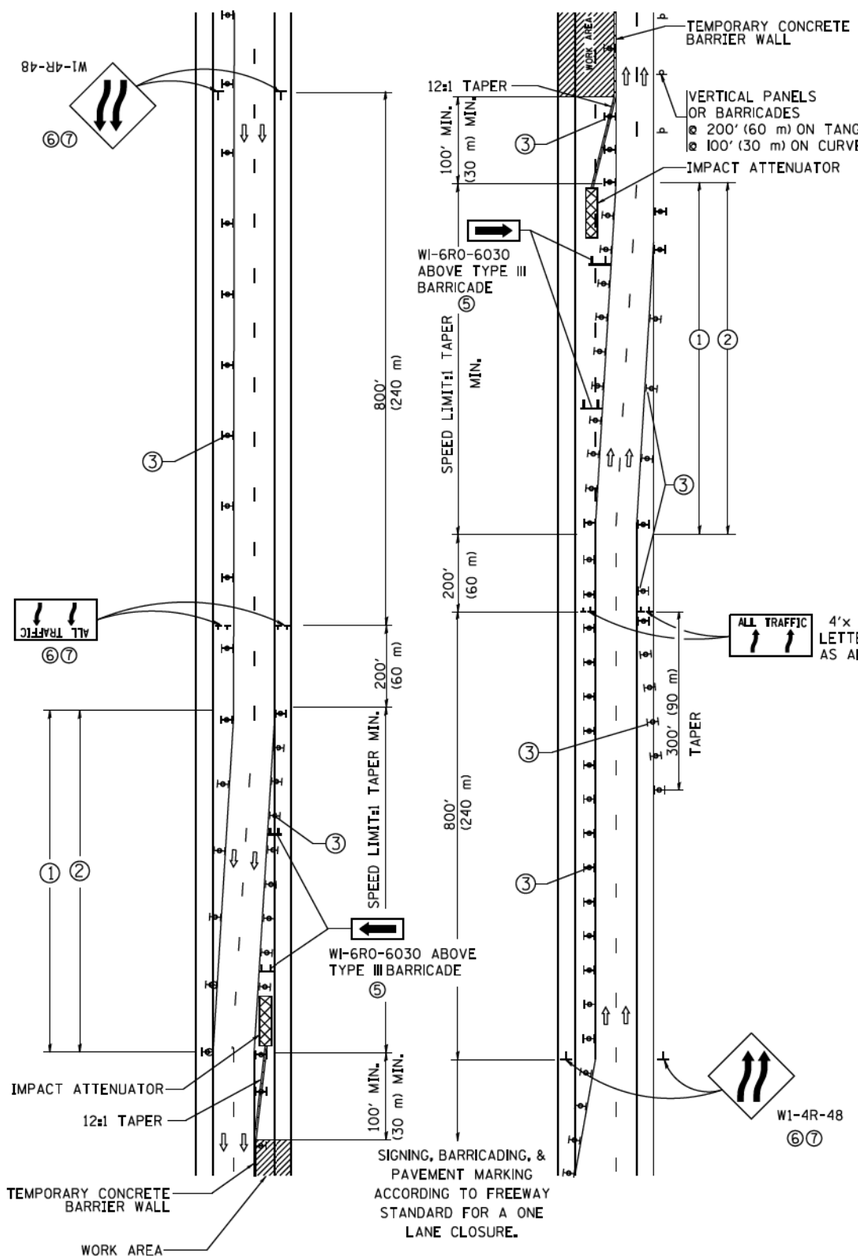
SCALE: NONE | SHEET 31 OF 45 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			888	588
	TC-08		CONTRACT NO. 60X79	
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

SINGLE LANE WEAVE



MULTI-LANE WEAVE



ALL TRAFFIC 4'x 8' (1.2 m x 2.4 m); 1 (25) BORDER; 10 (250) CAPITAL LETTERS BACKGROUND SHEETING SHALL BE THE SAME AS ALL DIAMOND SHAPED CONSTRUCTION SIGNS.

GENERAL NOTES

① EXISTING CONFLICTING PAVEMENT MARKING LINES SHALL BE REMOVED. PAVEMENT MARKING REMOVAL SHALL NOT BE REQUIRED FOR SINGLE LANE WEAVES UNDER 4 DAYS IN DURATION.

② CONTINOUS REFLECTIVE TEMPORARY PAVEMENT MARKING TAPE SHALL BE PLACED THROUGHOUT THE TAPER AND FOR 300' (90 m) ALONG SIDE THE WORK AREA WHERE THE CLOSURE TIME IS GREATER THAN FOURTEEN DAYS. THE LEFT EDGE LINE SHALL BE YELLOW AND THE RIGHT EDGE LINE SHALL BE WHITE. FOR MULTI-LANE WEAVES LANE LINES SHALL BE 5 INCH, 10'-30' (3 m-9 m) SKIP DASH, WHITE.

③ PLASTIC DRUMS WITH STEADY BURN LIGHTS AT 50' (15 m) C-C SPACING IN TAPERS AND 100' (30 m) C-C SPACING IN TANGENTS.

④ ALL SIGNS SHALL BE POST MOUNTED IF THE CLOSURE TIME EXCEEDS FOUR DAYS.

⑤ TYPE III BARRICADES MAY BE OMMITTED FOR SINGLE-LANE WEAVES UNDER 24-HOURS IN DURATION. W1-6 SIGNS WILL STILL BE REQUIRED. IF THE WIDTH OF OFFSET IS LESS THAN 6' THEN THE TYPE III BARRICADE WITH ATTACHED ARROW SIGN PANEL CAN BE ELIMINATED IN THE TAPER AREAS.

⑥ WHEN THE LENGTH OF THE SHIFTED SEGMENT (DISTANCE BETWEEN WEAVE POINTS) IS LESS THAN 1500', DOUBLE REVERSE CURVE SIGNS (W24-1) SHOULD BE USED INSTEAD OF THE REVERSE CURVE (W1-4) SIGNS. ARROWS ON THE 4'X8' "ALL TRAFFIC" SIGNS SHALL BE THE SAME SHAPE.

⑦ THE NUMBER OF ARROWS ON THESE SIGNS SHALL MATCH THE NUMBER OF LANES OPEN TO TRAFFIC.

SYMBOLS

- DIRECTION OF TRAFFIC
- WORK AREA
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- TYPE II BARRICADE OR DRUM WITH MONO-DIRECTIONAL STEADY BURNING LIGHT
- TEMPORARY CONCRETE BARRIER WALL
- IMPACT ATTENUATOR

W24-1-48 ⑦

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN

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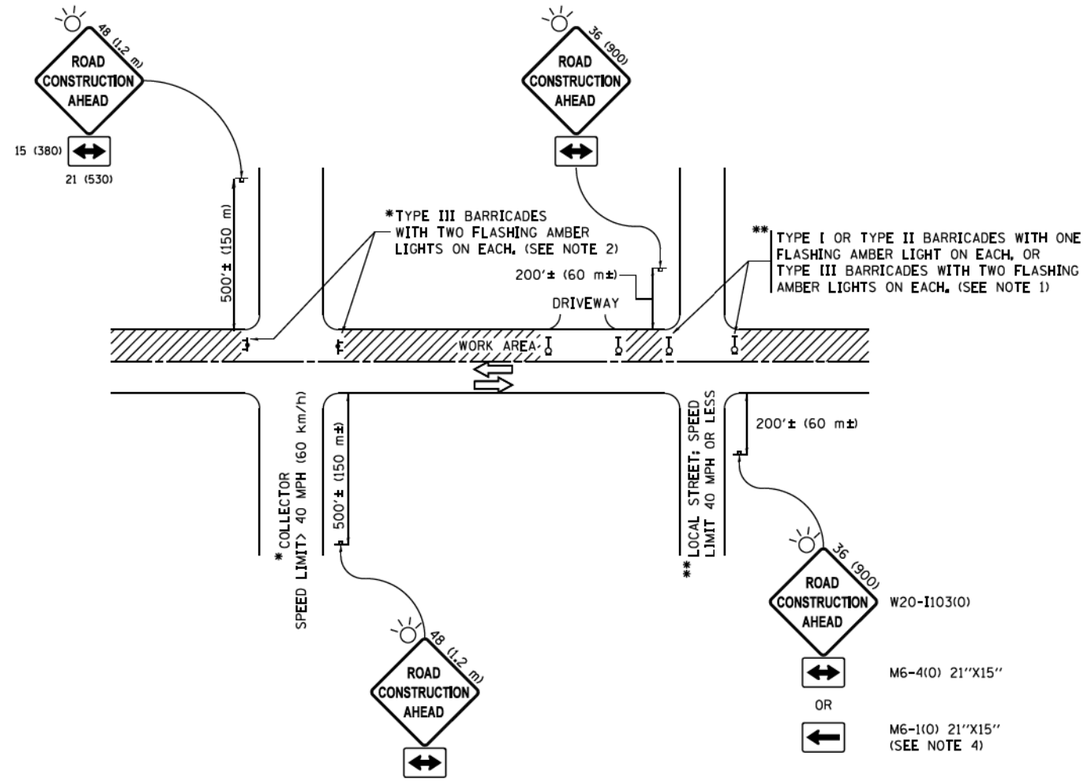
	PLOT DATE = 7/1/2013	DATE - 02-87	REVISED - MD 06-13

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL DETAILS FOR FREEWAY SINGLE & MULTI-LANE WEAVE

SCALE: NONE | SHEET 32 OF 45 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			888	589
	TC-09	CONTRACT NO. 60X79		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



NOTES:

1. SIDE ROAD WITH A SPEED LIMIT OF 40 MPH (60 km/h) OR LESS AS SHOWN ON THE DRAWING AND AS DIRECTED BY THE ENGINEER:
   a) ONE "ROAD CONSTRUCTION AHEAD" SIGN 36 x 36 (900x900) WITH A FLASHER MOUNTED ON IT APPROXIMATELY 200' (60 m) IN ADVANCE OF THE MAIN ROUTE.
   b) THE CLOSED PORTION OF THE MAIN ROUTE SHALL BE PROTECTED BY BLOCKING WITH TYPE I, TYPE II OR TYPE III BARRICADES, 1/3 OF THE CROSS SECTION OF THE CLOSED PORTION.
2. SIDE ROAD WITH A SPEED LIMIT GREATER THAN 40 MPH (60 km/h) AS SHOWN ON THE DRAWING AND AS DIRECTED BY THE ENGINEER:
   a) ONE "ROAD CONSTRUCTION AHEAD" SIGN 48 x 48 (1.2 m x 1.2 m) WITH A FLASHER MOUNTED ON IT APPROXIMATELY 500' (150 m) IN ADVANCE OF THE MAIN ROUTE.
   b) THE CLOSED PORTION OF THE MAIN ROUTE SHALL BE PROTECTED BY BLOCKING WITH TYPE III BARRICADES, 1/2 OF THE CROSS SECTION OF THE CLOSED PORTION.
3. CONES MAY BE SUBSTITUTED FOR BARRICADES OR DRUMS AT HALF THE SPACING DURING DAY OPERATIONS. CONES SHALL BE A MINIMUM OF 28 (710) IN HEIGHT.
4. WHEN THE SIDE ROAD LIES BETWEEN THE BEGINNING OF THE MAINLINE SIGNING AND THE WORK ZONE, A SINGLE HEADED ARROW (M6-1) SHALL BE USED IN LIEU OF THE DOUBLE HEADED ARROW (M6-4).
5. WHEN WORK IS BEING PERFORMED ON A SIDE ROAD OR DRIVEWAY, FOLLOW THE APPLICABLE STANDARD(S). THE DIRECTIONAL ARROW (M6-1 OR M6-4) SHALL BE COVERED OR REMOVED WHEN NO LONGER CONSISTENT WITH THE TRAFFIC CONTROL SET-UP.
6. ADVANCE WARNING SIGNS ARE TO BE OMITTED ON DRIVEWAYS UNLESS OTHERWISE SPECIFIED IN THE PLANS OR BY THE ENGINEER.
7. THE TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS SHALL BE INCLUDED IN THE COST OF SPECIFIED TRAFFIC CONTROL STANDARDS OR ITEMS.

All dimensions are in inches (millimeters) unless otherwise shown.

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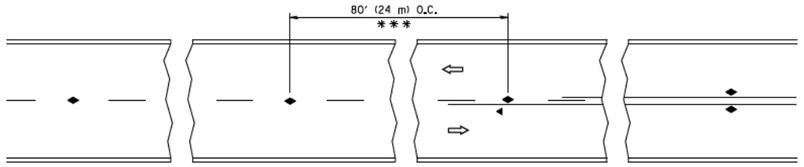
Default	PLOT DATE = 9/15/2016	DATE - 06-89	REVISED - A. SCHUETZE 07-01-13
			REVISED - A. SCHUETZE 09-15-16

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS

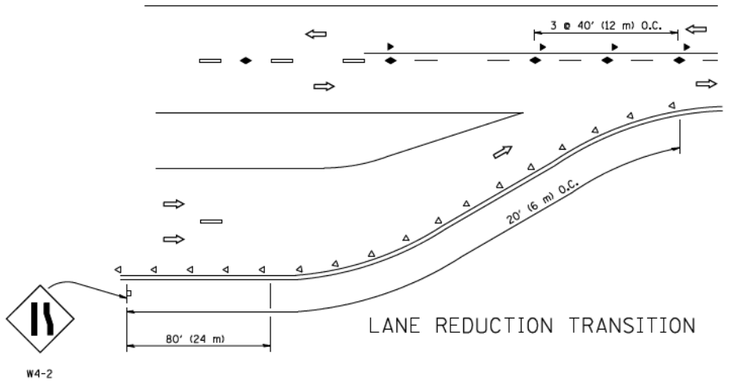
SCALE: NONE | SHEET 33 OF 45 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			888	590
TC-10		CONTRACT NO. 60X79		
ILLINOIS FED. AID PROJECT				

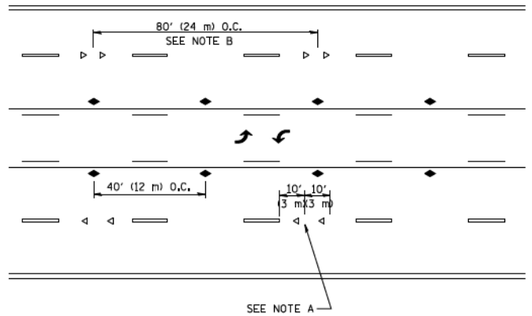


*** REDUCE TO 40' (12 m) O.C. ON CURVES WITH POSTED OR ADVISORY SPEED 45 M.P.H. (70 km/h) OR LESS.

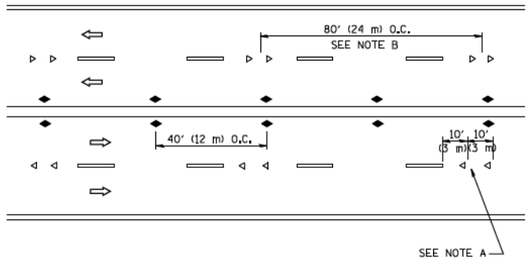
TWO-LANE/TWO-WAY



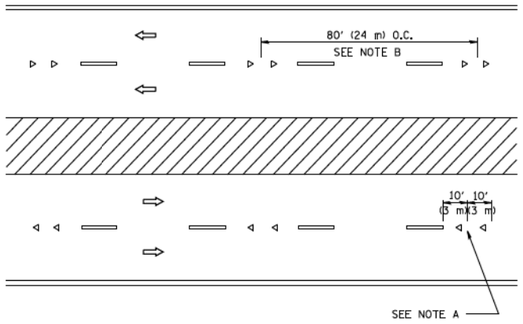
LANE REDUCTION TRANSITION



TWO-WAY LEFT TURN



MULTI-LANE/UNDIVIDED



MULTI-LANE/DIVIDED

GENERAL NOTES

1. MARKERS USED WITH DASHED LINES SHALL BE CENTERED IN THE GAP BETWEEN SEGMENTS.
2. MARKERS USED ADJACENT TO SOLID LINES SHALL BE OFFSET 2 TO 3 (50 TO 75) TOWARD TRAFFIC AS SHOWN.
3. MARKERS THROUGH TANGENTS LESS THAN 500' (150 m) IN LENGTH BETWEEN CURVES SHALL BE INSTALLED AT THE LESSER OF THE TWO CURVE SPACINGS.

SYMBOLS

- YELLOW STRIPE
- WHITE STRIPE
- ONE-WAY AMBER MARKER
- ONE-WAY CRYSTAL MARKER (W/O)
- TWO-WAY AMBER MARKER

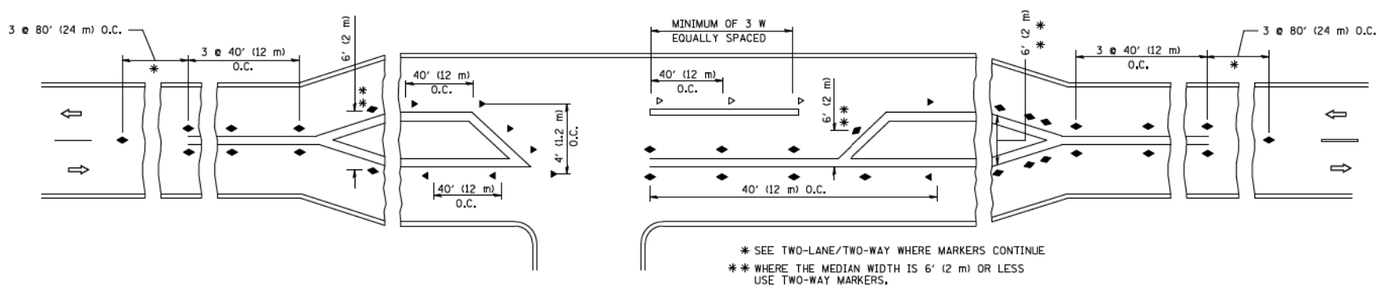
LANE MARKER NOTES

A. USE DOUBLE LANE LINE MARKERS SPACED AS SHOWN.

B. REDUCE TO 40' (12 m) O.C. ON CURVES WHERE ADVISORY SPEEDS ARE 10 M.P.H (20 km/h) LOWER THAN POSTED SPEEDS.

DESIGN NOTES

1. DOUBLE LANE LINE MARKERS SHALL BE USED UNLESS SPECIFIED OTHERWISE.
2. EXCEPT AS SHOWN ON THE LANE REDUCTION TRANSITION AND FREEWAY EXIT RAMP DETAIL, MARKERS ARE NOT TO BE SPECIFIED ON RIGHT EDGE LINES.
3. THE EXACT MARKER LIMITS, SPACING, AND COLOR SHALL BE INCLUDED IN THE PLANS WHEN STANDARD SPECIFICATIONS ARE NOT BEING USED.
4. MARKERS SHOULD NOT BE USED ALONGSIDE CURBS EXCEPT FOR EXTREMELY SHORT SECTIONS OF CURBS WHERE NOT MORE THAN TWO MARKERS WOULD BE INVOLVED.



LEFT TURN

All dimensions are in inches (millimeters) unless otherwise shown.

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	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED -T. RAMMACHER 01-06-00
	PLOT DATE = 3/2/2011	DATE -	REVISED - C. JUCIUS 09-09-09

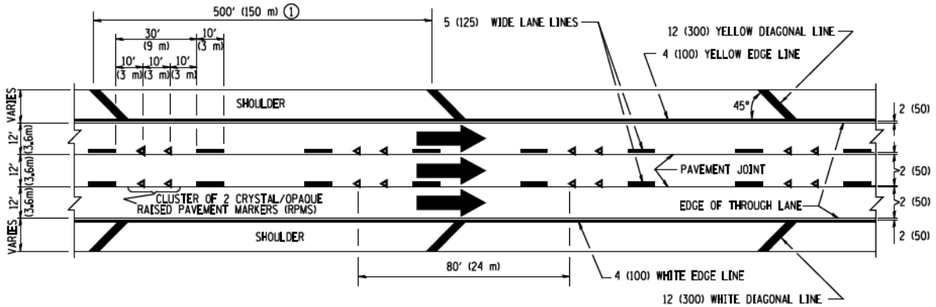
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TYPICAL APPLICATIONS
RAISED REFLECTIVE PAVEMENT MARKERS (SNOW-PLOW RESISTANT)

SCALE: NONE | SHEET 34 OF 45 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			888	591
	TC-11	CONTRACT NO. 60X79		

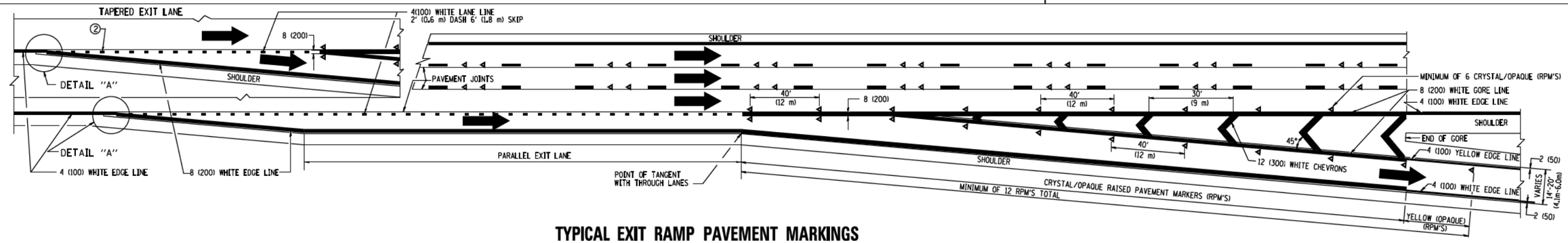
FED. ROAD DIST. NO. 1 | ILLINOIS | FED. AID PROJECT



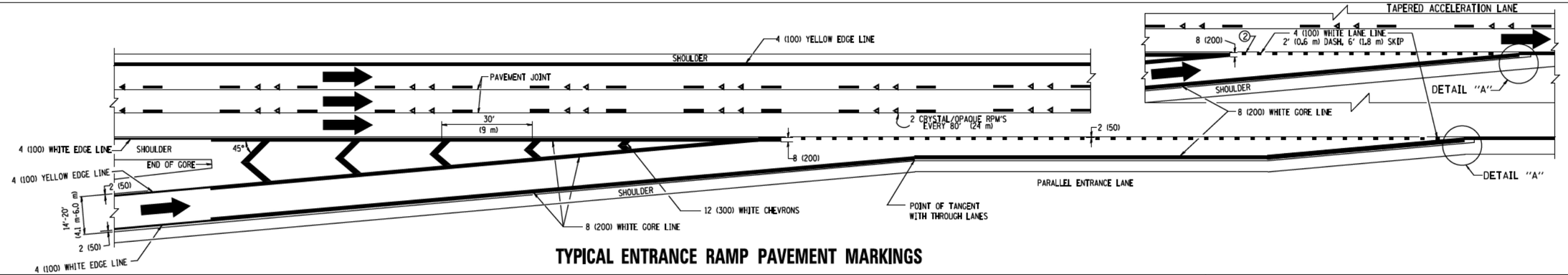
TYPICAL EDGE LINES & LANE LINES

PAVEMENT MARKING MATERIALS

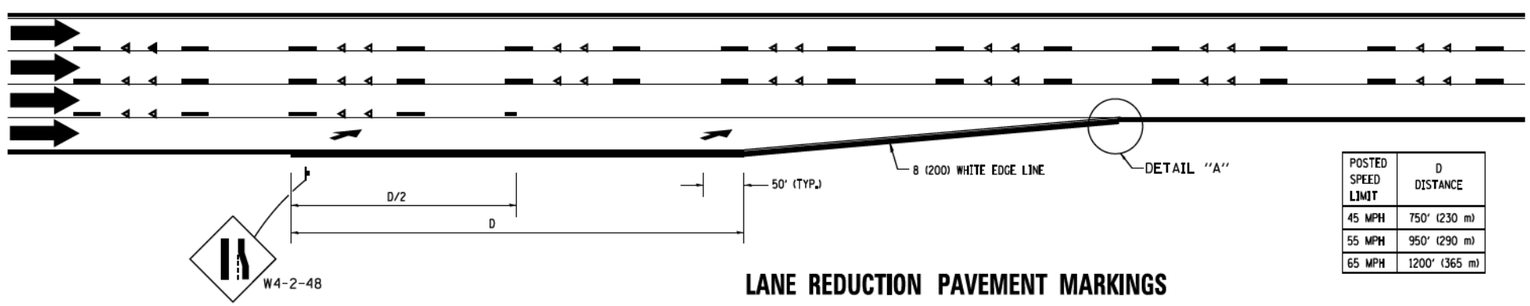
1. THERMO PLASTIC PAVEMENT MARKING LINE SHALL BE USED FOR THE EDGE LINES, GORE LINES, AND DIAGONAL LINES ON BITUMINOUS PAVEMENT ONLY.
2. PREFORMED PLASTIC TYPE B PAVEMENT MARKING LINE; INLAID OR GROOVED IN SHALL BE USED FOR ALL LANE LINES ON HMA PAVEMENT PROJECTS.
3. POLYUREA PAVEMENT MARKING SHALL BE USED FOR ALL MARKINGS ON PCC PROJECTS.



TYPICAL EXIT RAMP PAVEMENT MARKINGS

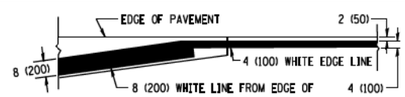


TYPICAL ENTRANCE RAMP PAVEMENT MARKINGS



POSTED SPEED LIMIT	D DISTANCE
45 MPH	750' (230 m)
55 MPH	950' (290 m)
65 MPH	1200' (365 m)

LANE REDUCTION PAVEMENT MARKINGS



NOTES:

① THE DIAGONAL LINES SHALL BE SPACED AT 40' (12 m) C-C ACROSS ALL STRUCTURES WHICH ARE 500' (150 m) OR LESS IN LENGTH. THE DIAGONAL LINES ARE NOT REQUIRED ON SHOULDERS WHICH ARE 6' (1.8 m) OR LESS IN WIDTH.

② 4" (2' DASH, 6' SKIP) MARKING ON TAPERED ENTRANCE AND EXIT RAMP SHALL BE OMITTED ON TANGENT SECTIONS.

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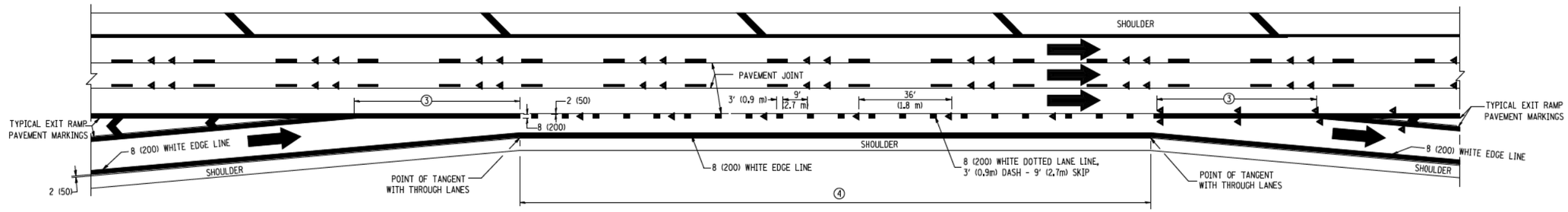
	PLOT SCALE = 50.000 ' / in.	CHECKED -	REVISED - S.P.B. 01-10
	PLOT DATE = 7/8/2013	DATE - 01-90	REVISED - M.D. 05-13

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

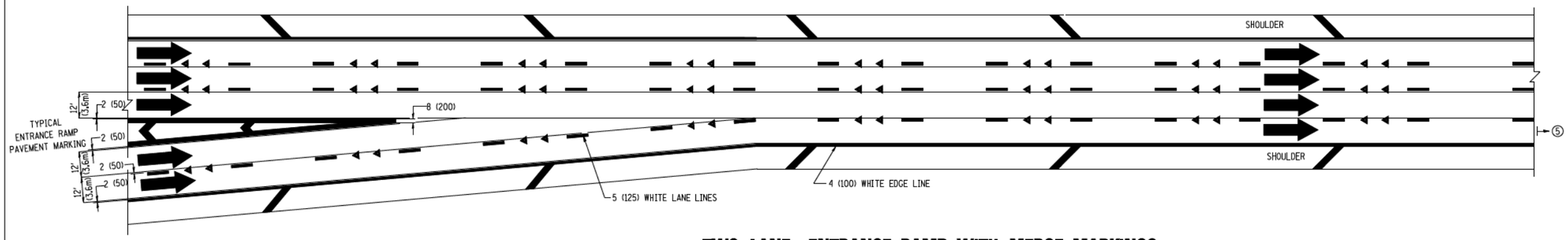
MULTI-LANE FREEWAY
PAVEMENT MARKING DETAILS

SCALE: NONE | SHEET 35 OF 45 SHEETS | STA. | TO STA.

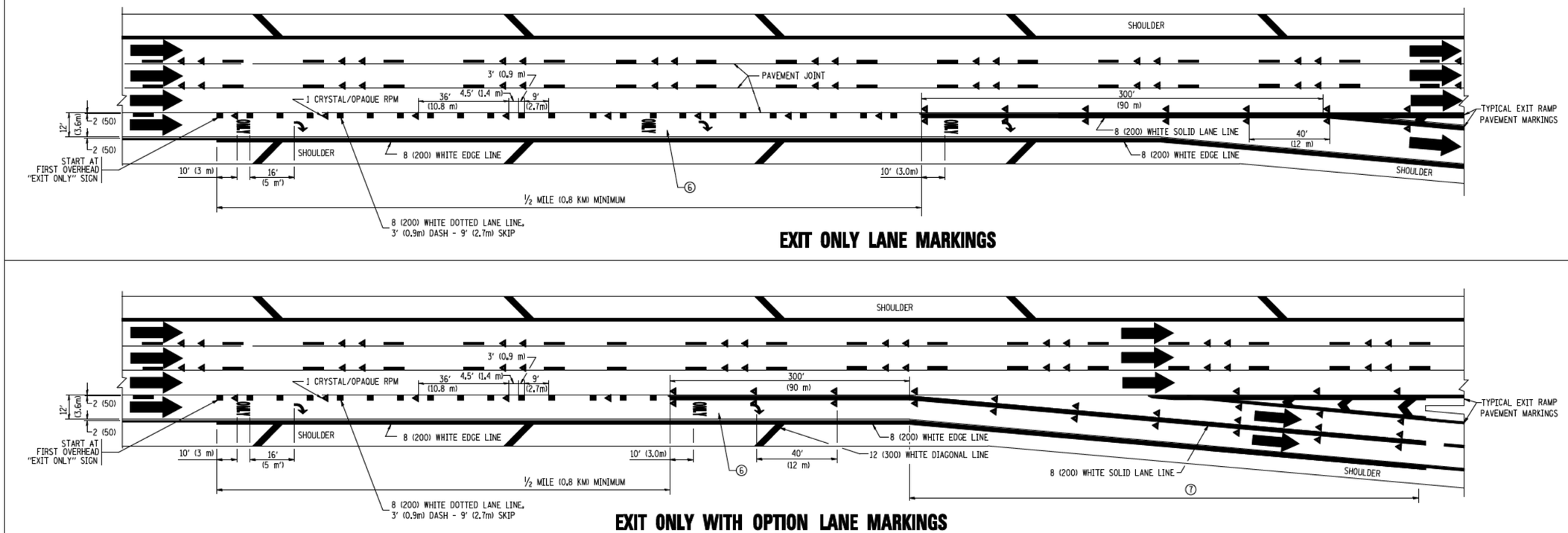
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			888	592
	TC-12	CONTRACT NO. 60X79		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



AUXILIARY LANE MARKINGS



TWO LANE ENTRANCE RAMP WITH MERGE MARKINGS



EXIT ONLY LANE MARKINGS

EXIT ONLY WITH OPTION LANE MARKINGS

NOTES

③ OMIT WHEN LENGTH OF AUXILIARY LANE IS LESS THAN 500' (150 m).

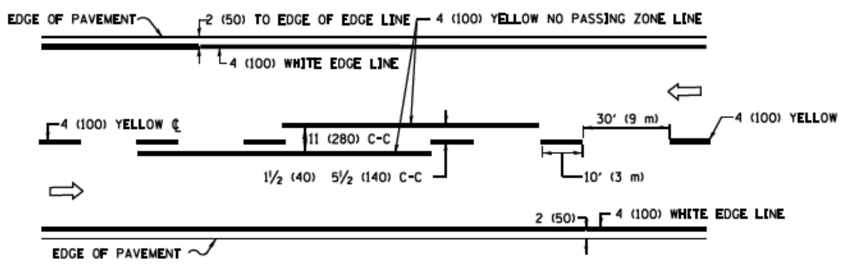
④ 8-INCH WIDE DOTTED LANE LINE MARKINGS SHALL BE USED WHEN THE LENGTH OF THE AUXILIARY LANE IS 2 MILES OR LESS.

⑤ FOR TWO-LANE ENTRANCE RAMP, IF RIGHT LANE ENDS, USE TYPICAL ENTRANCE RAMP PAVEMENT MARKINGS.

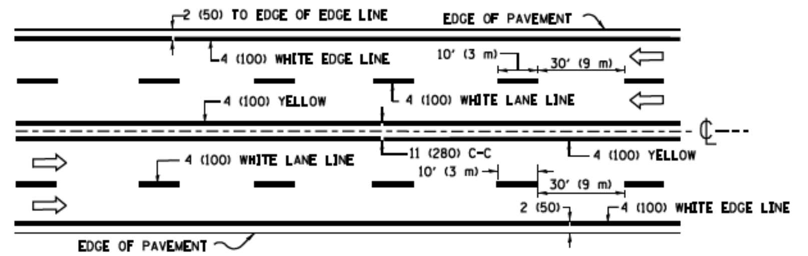
⑥ ONLY AND ARROWS EQUALLY SPACED, 500' (150 m) MAXIMUM SPACING. FULL SIZE LETTERS AND ARROW SHALL BE USED.

⑦ CONTINUE 8" SOLID LANE LINE THROUGH EXIT TO END OF PAVED GORE.

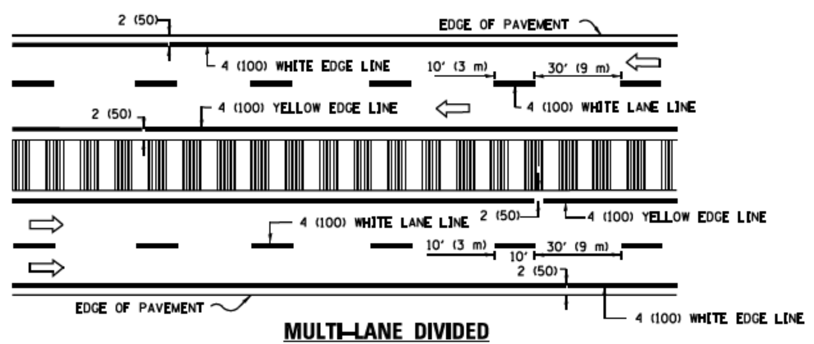
FILE NAME = c:\pw_work\PWIDOT\LEYSA\d0108315\tc12.dgn	USER NAME = leyse	DESIGNED - D.W.S.	REVISED - D.W.S. 07-96	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	MULTI-LANE FREEWAY PAVEMENT MARKING DETAILS	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED - J.A.F. 02-06						888	593
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED - S.P.B. 01-07				TC-12		CONTRACT NO. 60X79	
	PLOT DATE = 1/22/2010	DATE - 01-90	REVISED - S.P.B. 01-10		SCALE: NONE SHEET 36 OF 45 SHEETS STA. TO STA.	FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



2-LANE ROADWAY

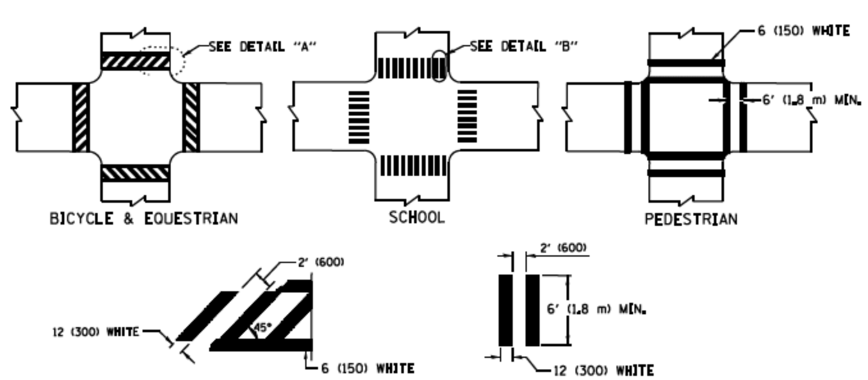


MULTI-LANE UNDIVIDED



MULTI-LANE DIVIDED
WITH MEDIAN

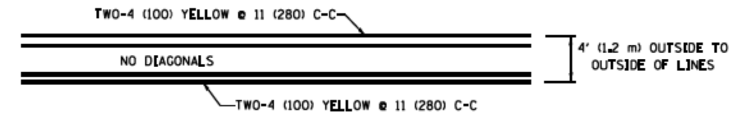
TYPICAL LANE AND EDGE LINE MARKING



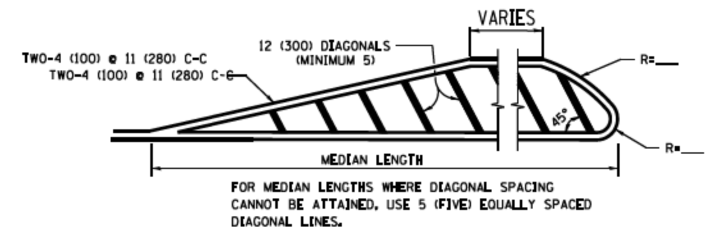
DETAIL "A" DETAIL "B"

TYPICAL CROSSWALK MARKING

✳ MARKINGS SHALL BE INSTALLED PARALLEL TO THE CENTERLINE OF THE ROAD WHICH IT CROSSES



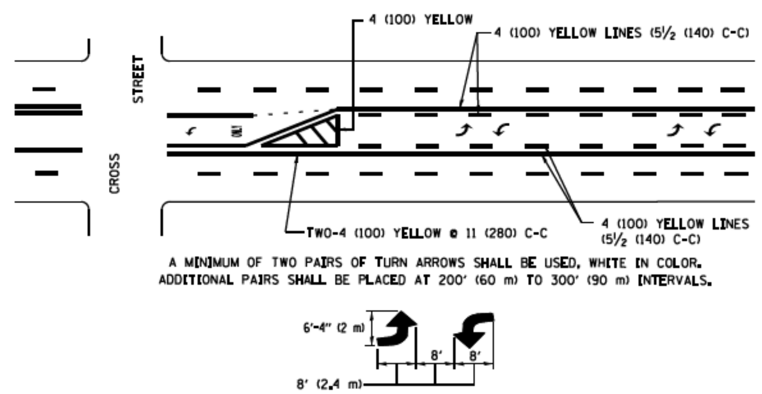
4' (1.2 m) WIDE MEDIANS ONLY



FOR MEDIAN LENGTHS WHERE DIAGONAL SPACING CANNOT BE ATTAINED, USE 5 (FIVE) EQUALLY SPACED DIAGONAL LINES.

DIAGONAL LINE SPACING: 50' (15 m) C-C (LESS THAN 30MPH (50 km/h))
75' (25 m) C-C 30MPH (50 km/h) TO 45MPH (70 km/h))
150' (45 m) C-C (MORE THAN 45MPH (70 km/h))

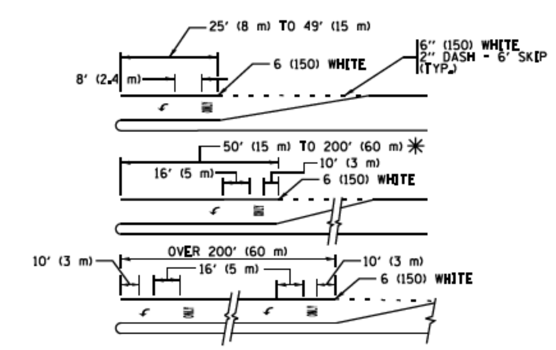
MEDIANS OVER 4' (1.2 m) WIDE



A MINIMUM OF TWO PAIRS OF TURN ARROWS SHALL BE USED, WHITE IN COLOR. ADDITIONAL PAIRS SHALL BE PLACED AT 200' (60 m) TO 300' (90 m) INTERVALS.

MEDIAN WITH TWO-WAY LEFT TURN LANE

TYPICAL PAINTED MEDIAN MARKING

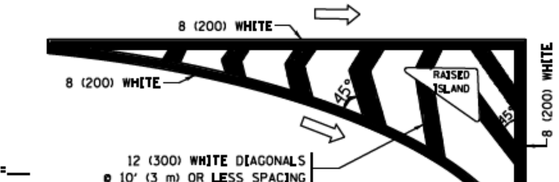


FULL SIZE LETTERS 8' (2.4 m) AND ARROWS SHALL BE USED.
↰ AREA = 15.6 SQ. FT. (1.5 m²) ONLY AREA = 20.8 SQ. FT. (1.9 m²)

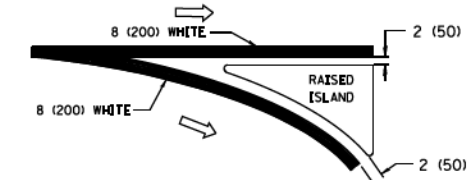
✳ TURN LANES IN EXCESS OF 400' (120 m) IN LENGTH MAY HAVE AN ADDITIONAL SET OF ARROW - "ONLY" INSTALLED MIDWAY BETWEEN THE OTHER TWO SETS OF ARROW - "ONLY".

TYPICAL LEFT (OR RIGHT) TURN LANE

TYPICAL TURN LANE MARKING

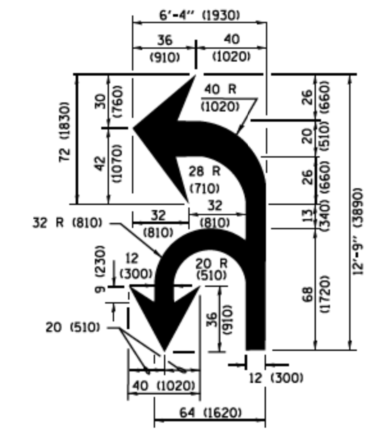


ISLAND OFFSET FROM PAVEMENT EDGE

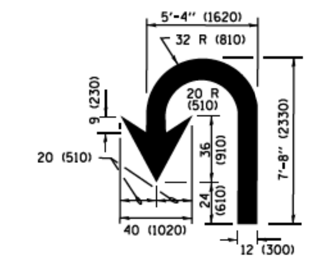


ISLAND AT PAVEMENT EDGE

TYPICAL ISLAND MARKING

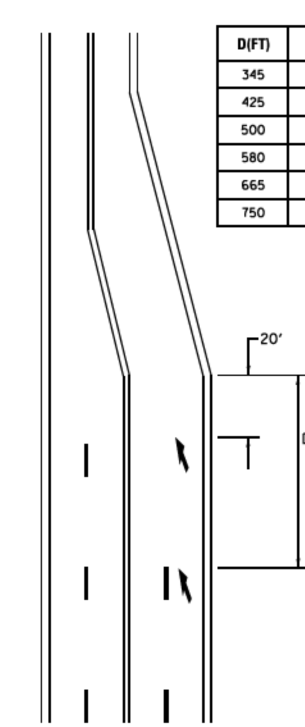


COMBINATION LEFT AND U-TURN



U-TURN

D(FT)	SPEED LIMIT
345	30
425	35
500	40
580	45
665	50
750	55



LANE REDUCTION TRANSITION

✳ LANE REDUCTION ARROWS REQUIRED AT SPEEDS OF 45 MPH OR GREATER OR WHEN SPECIFIED IN PLANS.

TYPE OF MARKING	WIDTH OF LINE	PATTERN	COLOR	SPACING /REMARKS
CENTERLINE ON 2 LANE PAVEMENT	4 (100)	SKIP-DASH	YELLOW	10' (3 m) LINE WITH 30' (9 m) SPACE
CENTERLINE ON MULTI-LANE UNDIVIDED PAVEMENT	2 @ 4 (100)	SOLID	YELLOW	11 (280) C-C
NO PASSING ZONE LINES: FOR ONE DIRECTION FOR BOTH DIRECTIONS	4 (100) 2 @ 4 (100)	SOLID SOLID	YELLOW YELLOW	5½ (140) C-C FROM SKIP-DASH CENTERLINE 11 (280) C-C OMIT SKIP-DASH CENTERLINE BETWEEN
LANE LINES	4 (100) 5 (125) ON FREEWAYS	SKIP-DASH SKIP-DASH	WHITE WHITE	10' (3 m) LINE WITH 30' (9 m) SPACE
DOTTED LINES (EXTENSIONS OF CENTER, LANE OR TURN LANE MARKINGS)	SAME AS LINE BEING EXTENDED	SKIP-DASH	SAME AS LINE BEING EXTENDED	2' (600) LINE WITH 6' (1.8 m) SPACE
EDGE LINES	4 (100)	SOLID	YELLOW-LEFT WHITE-RIGHT	OUTLINE MEDIANS IN YELLOW
TURN LANE MARKINGS	6 (150) LINE; FULL SIZE LETTERS & SYMBOLS (8' (2.4m))	SOLID	WHITE	SEE TYPICAL TURN LANE MARKING DETAIL
TWO WAY LEFT TURN MARKING	2 @ 4 (100) EACH DIRECTION 8' (2.4m) LEFT ARROW	SKIP-DASH AND SOLID IN PAIRS	YELLOW WHITE	10' (3 m) LINE WITH 30' (9 m) SPACE FOR SKIP-DASH; 5½ (140) C-C BETWEEN SOLID LINE AND SKIP-DASH LINE SEE TYPICAL TWO-WAY LEFT TURN MARKING DETAIL
CROSSWALK LINES (PEDESTRIAN) A. DIAGONALS (BIKE & EQUESTRIAN) B. LONGITUDINAL BARS (SCHOOL)	2 @ 6 (150) 12 (300) @ 45° 12 (300) @ 90°	SOLID SOLID SOLID	WHITE WHITE WHITE	NOT LESS THAN 6' (1.8 m) APART 2' (600) APART 2' (600) APART SEE TYPICAL CROSSWALK MARKING DETAILS.
STOP LINES	24 (600)	SOLID	WHITE	PLACE 4' (1.2 m) IN ADVANCE OF AND PARALLEL TO CROSSWALK, IF PRESENT. OTHERWISE, PLACE AT DESIRED STOPPING POINT. PARALLEL TO CROSSROAD CENTERLINE, WHERE POSSIBLE
PAINTED MEDIANS	2 @ 4 (100) WITH 12 (300) DIAGONALS @ 45° NO DIAGONALS USED FOR 4' (1.2 m) WIDE MEDIANS	SOLID	YELLOW: TWO WAY TRAFFIC WHITE: ONE WAY TRAFFIC	11 (280) C-C FOR THE DOUBLE LINE SEE TYPICAL PAINTED MEDIAN MARKING.
GORE MARKING AND CHANNELIZING LINES	8 (200) WITH 12 (300) DIAGONALS @ 45°	SOLID	WHITE	DIAGONALS: 15' (4.5 m) C-C (LESS THAN 30MPH (50 km/h)) 20' (6 m) C-C 30MPH (50 km/h) TO 45MPH (70 km/h)) 30' (9 m) C-C (OVER 45MPH (70 km/h))
RAILROAD CROSSING	24 (600) TRANSVERSE LINES; "RR" IS 6' (1.8 m) LETTERS; 16 (400) LINE FOR "X"	SOLID	WHITE	SEE STATE STANDARD 780001 AREA OF: "R"=3.6 SQ. FT. (0.33 m^2) EACH "X"=54.0 SQ. FT. (5.0 m^2)
SHOULDER DIAGONALS (REQUIRED FOR SHOULDERS $\geq$ 8')	12 (300) @ 45°	SOLID	WHITE - RIGHT YELLOW - LEFT	50' (15 m) C-C (LESS THAN 30MPH (50 km/h)) 75' (25 m) C-C (30 MPH (50 km/h) TO 45MPH (70 km/h)) 150' (45 m) C-C (OVER 45MPH (70 km/h))
U TURN ARROW	SEE DETAIL	SOLID	WHITE	16.3 SF
2 ARROW COMBINATION LEFT AND U TURN	SEE DETAIL	SOLID	WHITE	30.4 SF

FOR FURTHER DETAILS ON PAVEMENT MARKING REFER TO STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND STATE STANDARD 780001.

All dimensions are in inches (millimeters) unless otherwise shown.

FILE NAME =	USER NAME = footemj	DESIGNED - EVERS	REVISED - C. JUCIUS 09-09-09
pw:\\IL084EBIDINTEG.illinois.gov:PWIDOT\Documents\IDOT Offices\District 1\Projects\Dist5...\CADData\CADsheets\tc13.dgn		DRAWN -	REVISED - C. JUCIUS 07-01-13
	PLOT SCALE = 50.000 ' / in.	CHECKED -	REVISED - C. JUCIUS 12-21-15
Default	PLOT DATE = 4/13/2016	DATE - 03-19-90	REVISED - C. JUCIUS 04-12-16

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

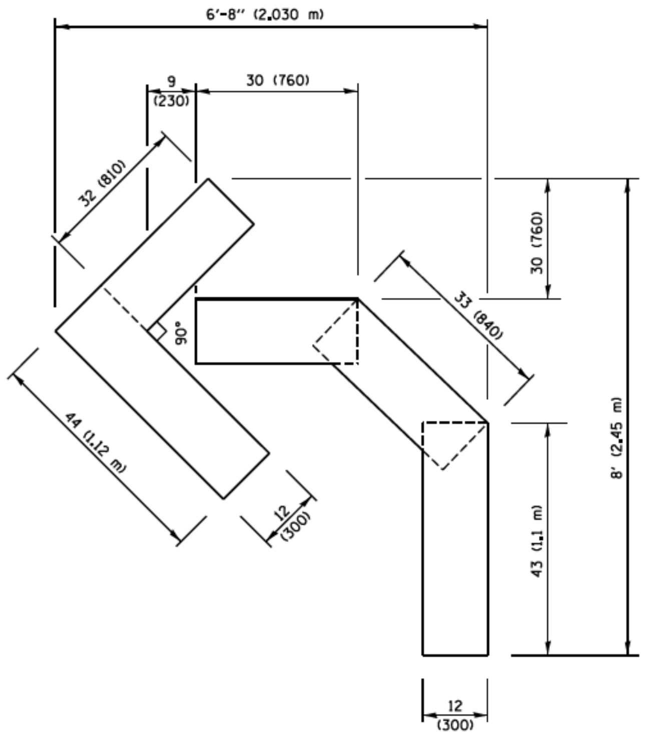
DISTRICT ONE
TYPICAL PAVEMENT MARKINGS

SCALE: NONE SHEET 37 OF 45 SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			888	594

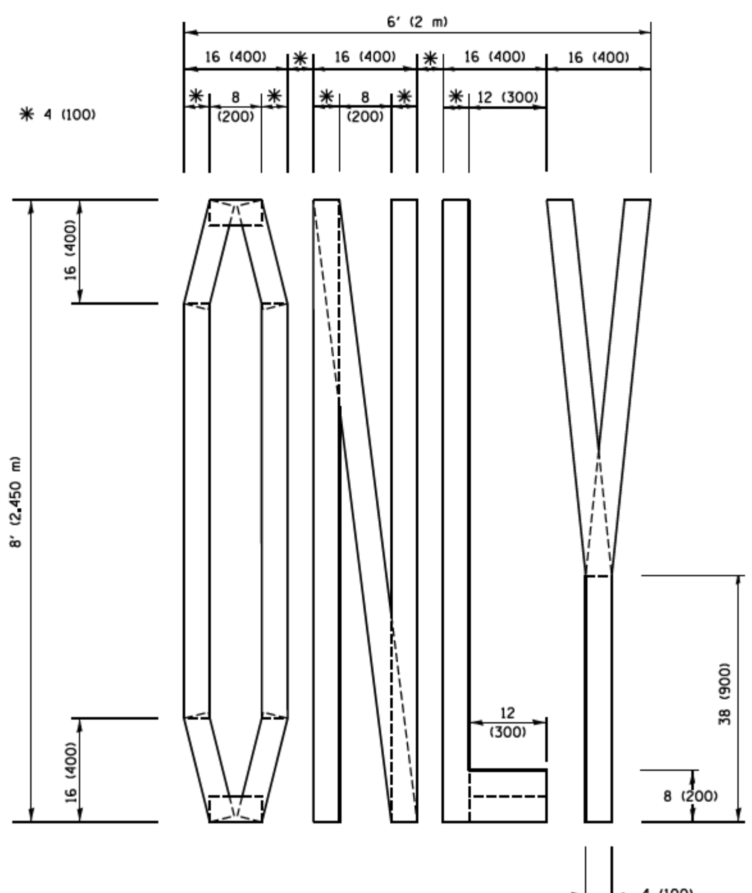
TC-13 CONTRACT NO. 60X79

ILLINOIS FED. AID PROJECT



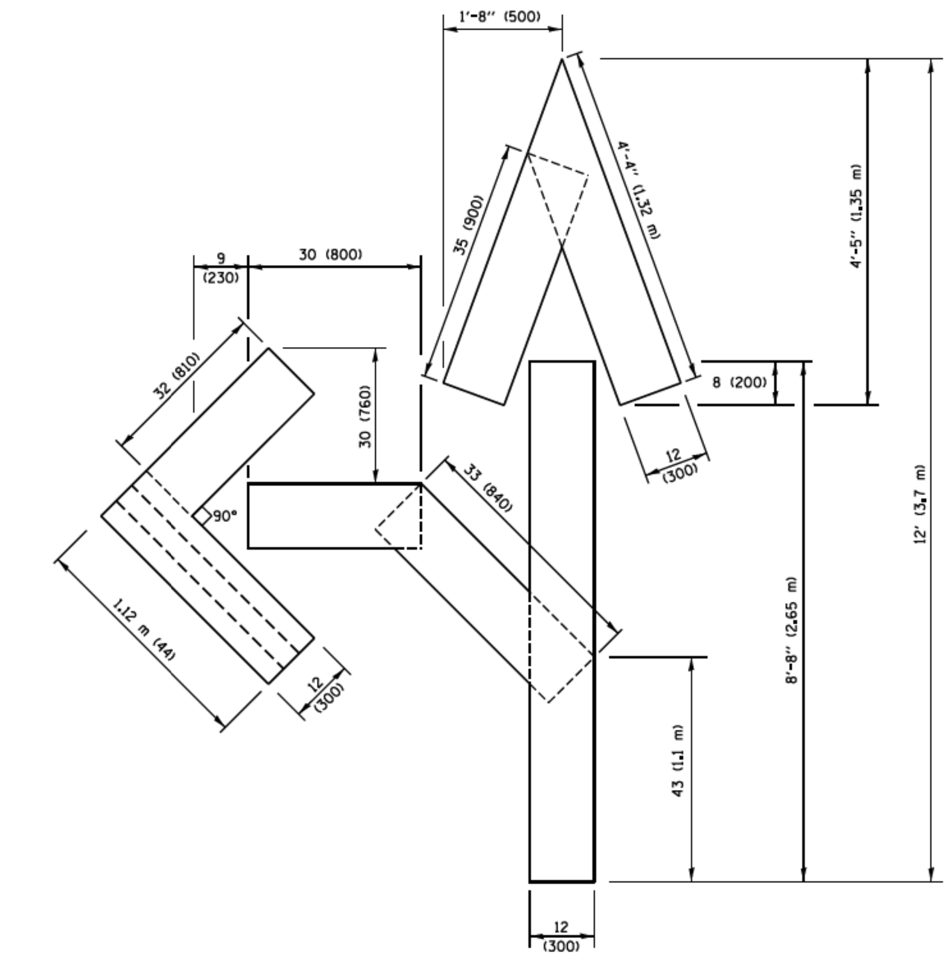
QUANTITY

4 (100) LINE = 45.5 ft. (13.9 m)
15.2 sq. ft. (1.41 sq. m)



QUANTITY

4 (100) LINE = 64.1 ft. (19.5 m)
21.4 sq. ft. (1.99 sq. m)

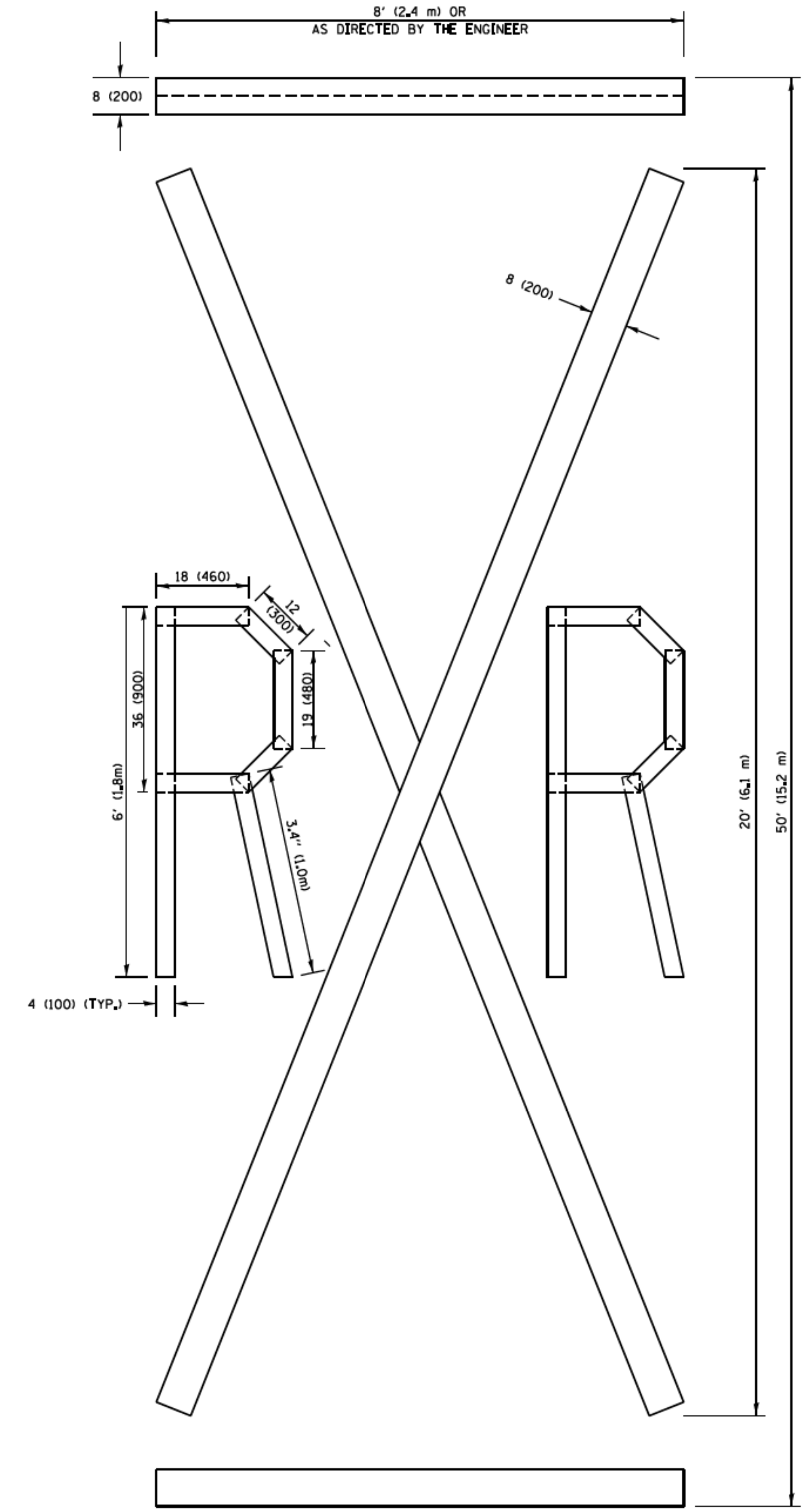


QUANTITY

4 (100) LINE = 82.5 ft. (25.1 m)
27.5 sq. ft. (2.53 sq. m)

NOTE:

ALL QUANTITIES OF PLACEMENT ARE REPRESENTED IN LINEAR FEET OF 4" LINES TO MATCH THE 4" TEMPORARY TAPE PAY ITEM AND REPRESENTS THE TOTAL QUANTITY OF 4" TAPE REQUIRED.



QUANTITY

4 (100) LINE = 225.9 ft. (68.9 m)
75.3 sq. ft. (6.99 sq. m)

All dimensions are in inches (millimeters) unless otherwise shown.

FILE NAME = pw:\\IL084EBIDINTEG.illinois.gov:PWIDOT\Documents\IDOT Offices\District 1\Projects\Dist...	USER NAME = footemj	DESIGNED -	REVISED -T. RAMMACHER 03-02-98
		DRAWN ...\CADData\CADsheets\tc16.dgn	REVISED -E. GOMEZ 08-28-00
	PLOT SCALE = 50.0000 ' / in.	CHECKED -	REVISED -E. GOMEZ 08-28-00
	PLOT DATE = 9/15/2016	DATE - 09-18-94	REVISED -A. SCHUETZE 09-15-16

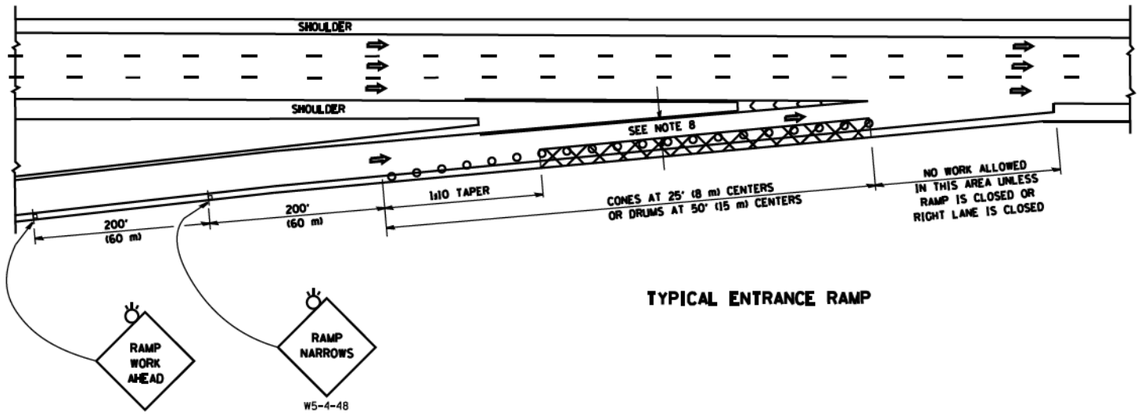
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHORT TERM PAVEMENT MARKING LETTERS AND SYMBOLS

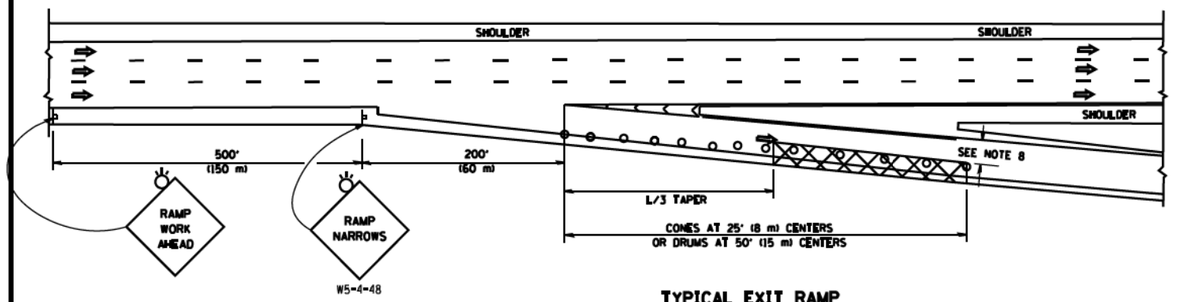
SCALE: NONE | SHEET 38 OF 45 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			888	595
	TC-16	CONTRACT NO. 60X79		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

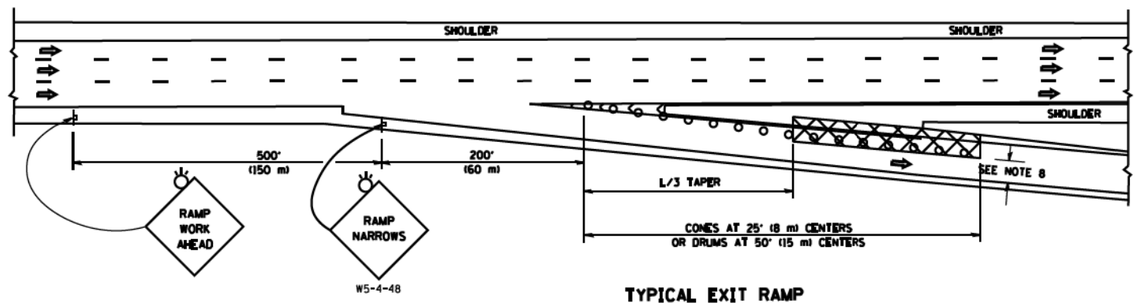
PARTIAL RAMP CLOSURE DETAILS



TYPICAL ENTRANCE RAMP

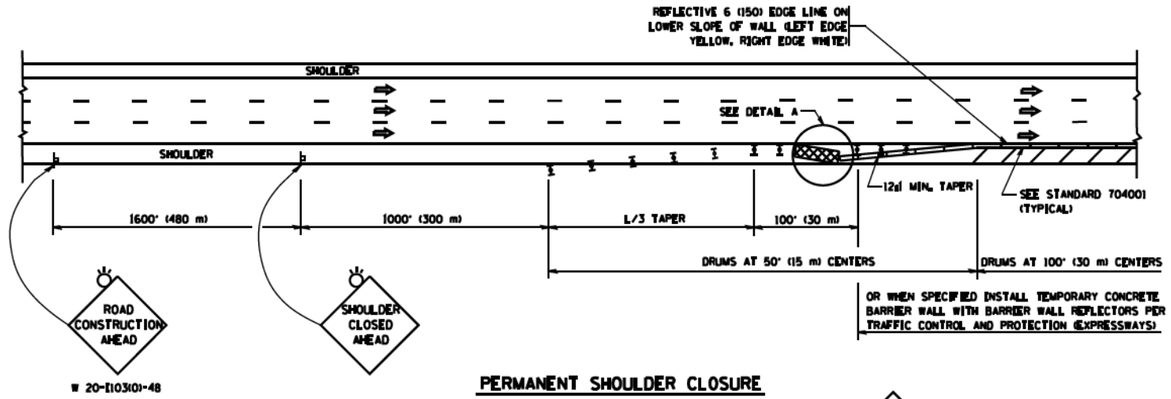


TYPICAL EXIT RAMP

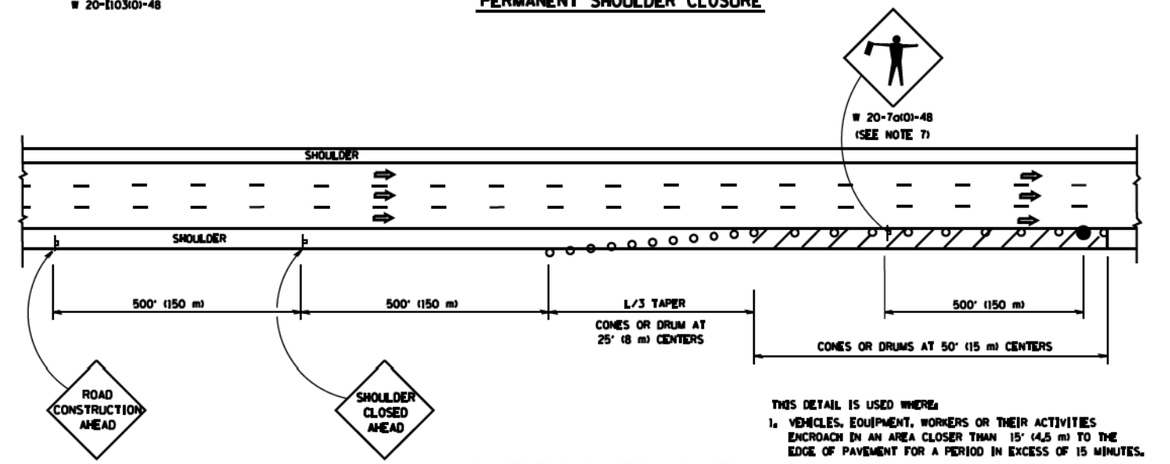


TYPICAL EXIT RAMP

SHOULDER CLOSURE DETAILS



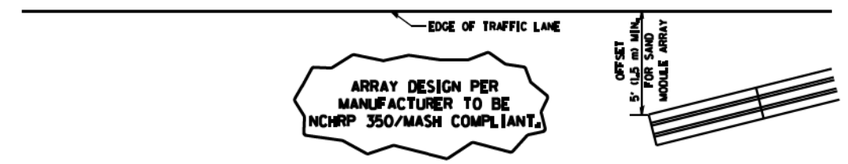
PERMANENT SHOULDER CLOSURE



DAYTIME SHOULDER CLOSURE

THIS DETAIL IS USED WHERE:

1. VEHICLES, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH IN AN AREA CLOSER THAN 15' (4.5 m) TO THE EDGE OF PAVEMENT FOR A PERIOD IN EXCESS OF 15 MINUTES.



DETAIL "A"
IMPACT ATTENTUATOR, TEMPORARY
(SEE NOTE 5)

SYMBOLS

- ACTIVE WORK AREA
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- FLAGGER WITH CONTROL SIGN
- TYPE II BARRICADE OR DRUM WITH STEADY BURN MONO-DIRECTIONAL LIGHT
- CONE, DRUM OR BARRICADE
- IMPACT ATTENUATOR OF TYPE AND TEST LEVEL SPECIFIED

GENERAL NOTES

1. THE "L" DISTANCE EQUALS:

SPEED LIMIT	FORMULAS	
	METRIC	ENGLISH
45 mph (80 km/h) OR GREATER:	L=0.65(WXS)	L=(WXS)

W = WIDTH OF OFFSET IN FEET (METERS)
S = NORMAL POSTED SPEED MPH (KM/H)

2. PLASTIC DRUMS WITH HIGH PERFORMANCE REFLECTIVE SHEETING AND STEADY BURNING LIGHTS ARE REQUIRED FOR ALL NIGHTTIME CLOSURES.
3. ALL SIGNS SHALL BE POST MOUNTED IF THE CLOSURE TIME EXCEEDS FOUR DAYS.
4. FLASHING LIGHTS SHALL BE USED DURING THE HOURS OF DARKNESS AND SHALL BE INSTALLED ABOVE THE FIRST TWO SETS OF SIGNS.
5. THE IMPACT ATTENTUATOR, TEMPORARY IS NOT REQUIRED WHEN THE TEMPORARY CONCRETE BARRIER WALL IS PROTECTED BY OR IS TIED INTO THE EXISTING GUARDRAIL. IF OFFSET IS LESS THAN 5 FEET USE NARROW USE TYPE DEVICE TO MEET NCHRP350/MASH.
6. AUTHORIZATION FROM THE DISTRICT'S BUREAU OF TRAFFIC IS REQUIRED FOR ALL FREEWAY CLOSURES.
7. THE FLAGGER AND FLAGGER SIGN ARE REQUIRED AT THE ABOVE WORK SITES WHEN:
   a. FOUR OR MORE WORK VEHICLES ENTER THE TRAFFIC LANES IN A ONE HOUR PERIOD.
   b. THE WORK AVTIVITY REQUIRES FREQUENT ENCROACHMENT INTO THE LANE OPEN TO TRAFFIC.

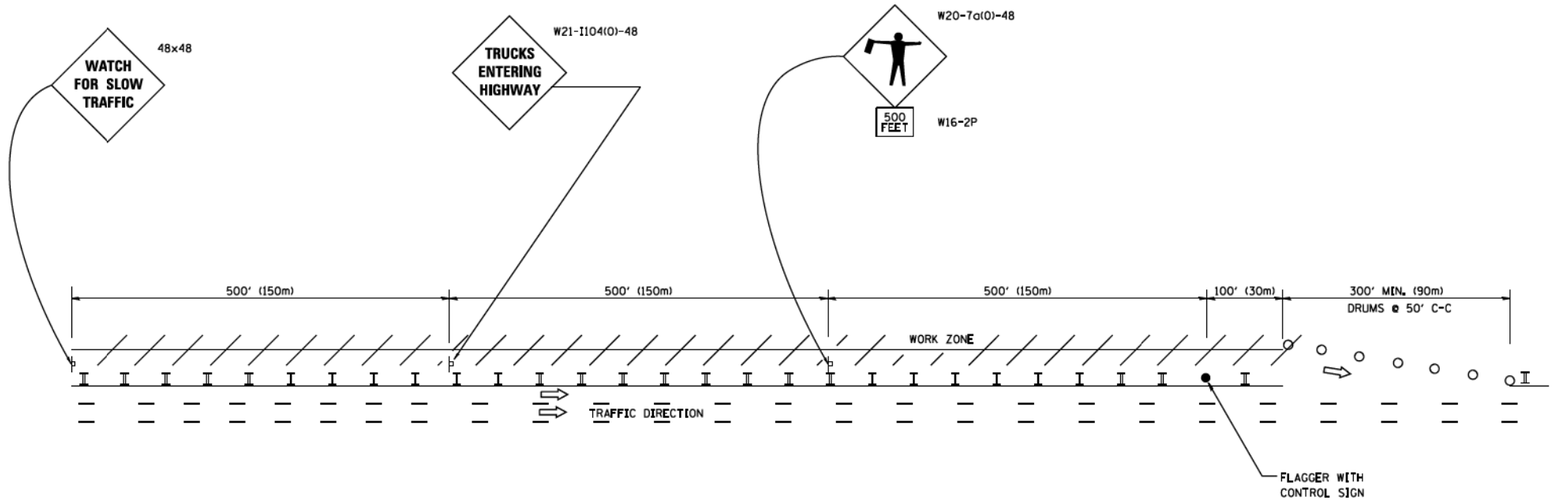
   THE FLAGGER SHALL BE STATIONED APPROXIMATELY 100' (30 m) TO 200' (60 m) IN ADVANCE OF THE WORKERS.
8. 12' MIN. WIDTH TANGENT SECTION
   16' MIN. WIDTH CURVE SECTION.

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

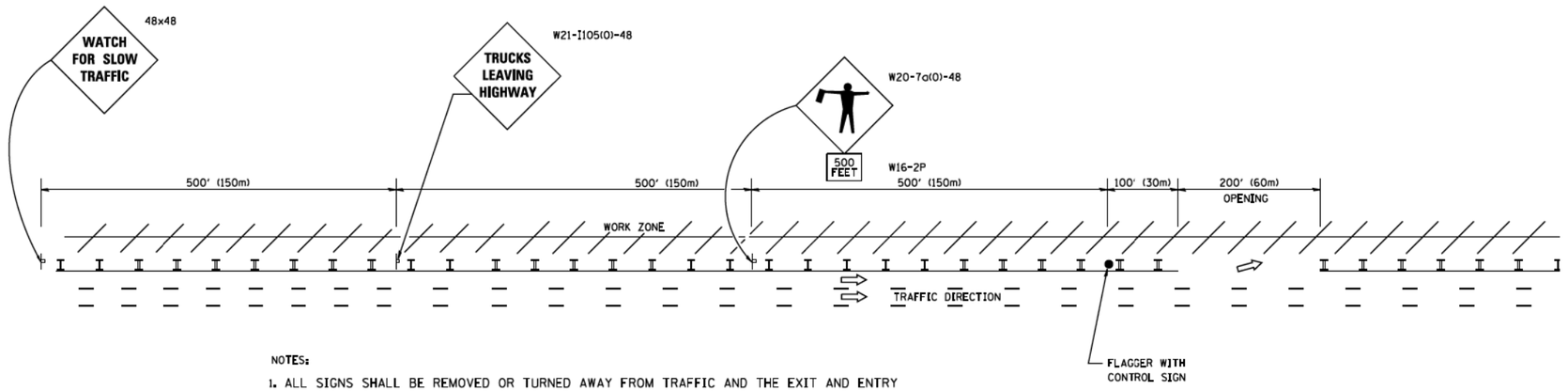
FILE NAME = c:\pw_work\pwidot\leyse\d0108315\tc17.dgn	USER NAME = leyse	DESIGNED -	REVISED - J.A.F. 12-06	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TRAFFIC CONTROL DETAILS FOR FREEWAY SHOULDER CLOSURES AND PARTIAL RAMP CLOSURES			F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN - D.W.S.	REVISED - S.P.B. 01-07								888	596
	PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED - S.P.B. 12-09						TC-17		CONTRACT NO. 60X79	
	PLOT DATE = 4/17/2014	DATE - 11-96	REVISED - M.D. 06-13		SCALE: NONE	SHEET 39 OF 45 SHEETS	STA.	TO STA.	FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT	

SIGNING FOR FLAGGING OPERATIONS AT WORK ZONE OPENINGS

WORK ZONE EXIT OPENING



WORK ZONE ENTRY OPENING



NOTES:

1. ALL SIGNS SHALL BE REMOVED OR TURNED AWAY FROM TRAFFIC AND THE EXIT AND ENTRY OPENINGS SHALL BE CLOSED WHEN THE FLAGGING OPERATION CEASES. NON OPERATING EQUIPMENT SHALL COMPLY WITH ARTICLE 701.11
2. WORK ZONE OPENINGS SHALL BE A MINIMUM OF ONE HALF MILE APART AND A MINIMUM OF ONE QUARTER MILE FROM ALL ENTRANCE AND EXIT RAMPS.
3. EXITING THE WORK ZONE AT ANY PLACE OTHER THAN AT A WORK ZONE EXIT OPENING WILL BE PROHIBITED.
4. ALL VEHICLES SHALL ENTER THE WORK ZONE AT ENTRY OPENINGS, USING THEIR TURN SIGNALS TO WARN MOTORISTS
5. FLAGGERS SHALL NOT STOP TRAFFIC OR DIRECT TRAFFIC INTO AN ADJACENT LANE.

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN

FILE NAME = c:\pw_work\pw:dot\footemj\d0108315\tc18.dgn	USER NAME = footemj	DESIGNED -	REVISED - J.A.F. 02-06
		DRAWN -	REVISED - S.P.B. 01-07
	PLOT SCALE = 50.000 ' / in.	CHECKED -	REVISED - S.P.B. 12-09
	PLOT DATE = 7/8/2013	DATE -	REVISED - M.D. 06-13

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FREEWAY/EXPRESSWAY SIGNING FOR FLAGGING OPERATIONS AT WORK ZONE OPENINGS ON FREEWAYS/EXPRESSWAYS

SCALE: NONE | SHEET 40 OF 45 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			888	597
	TC-18	CONTRACT NO. 60X79		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

ROUTE MARKERS

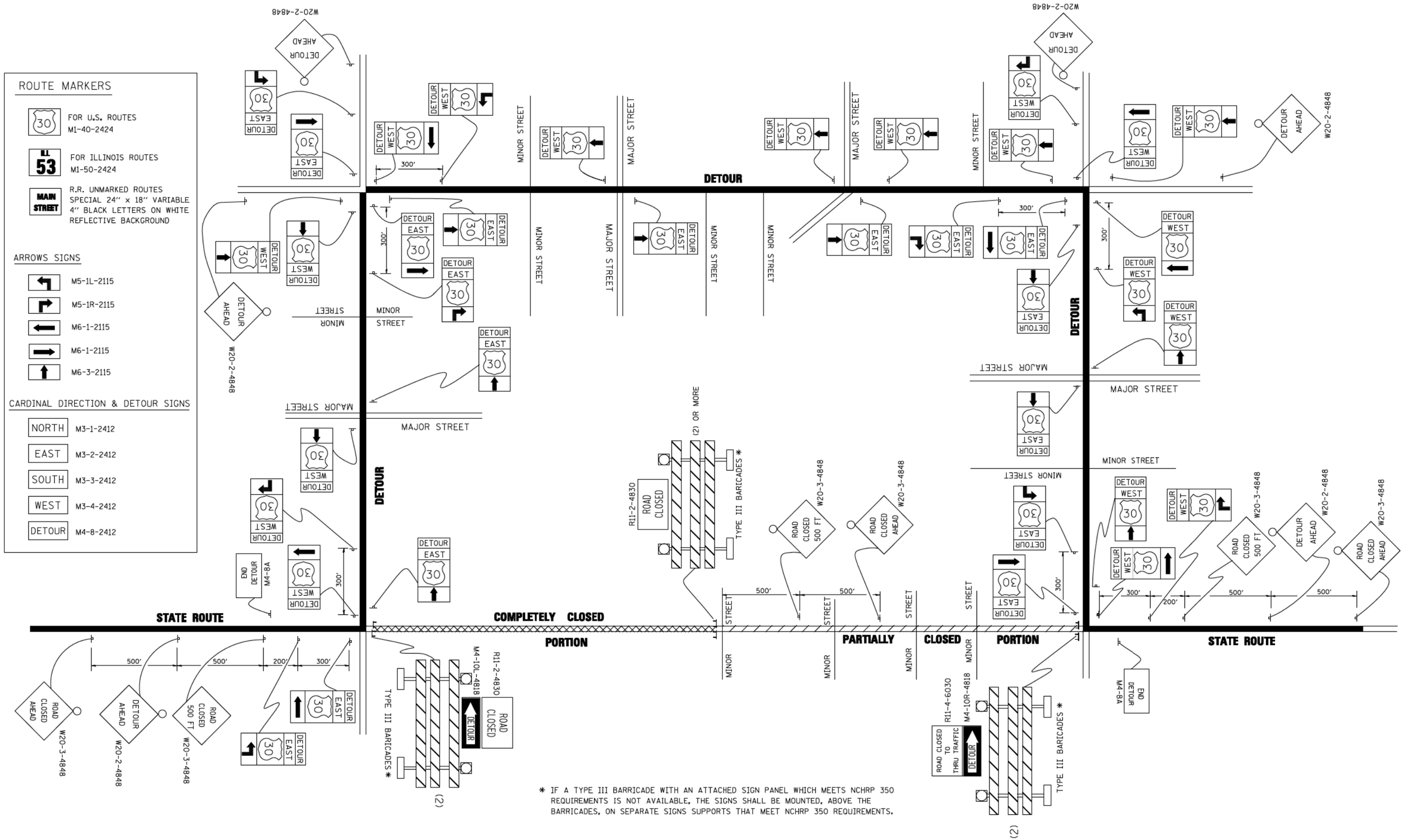
- 30 — FOR U.S. ROUTES M1-40-2424
- IL 53 — FOR ILLINOIS ROUTES M1-50-2424
- MAIN STREET — R.R. UNMARKED ROUTES SPECIAL 24" x 18" VARIABLE 4" BLACK LETTERS ON WHITE REFLECTIVE BACKGROUND

ARROWS SIGNS

- M5-1L-2115
- M5-1R-2115
- M6-1-2115
- M6-1-2115
- M6-3-2115

CARDINAL DIRECTION & DETOUR SIGNS

- NORTH M3-1-2412
- EAST M3-2-2412
- SOUTH M3-3-2412
- WEST M3-4-2412
- DETOUR M4-8-2412



* IF A TYPE III BARRICADE WITH AN ATTACHED SIGN PANEL WHICH MEETS NCHRP 350 REQUIREMENTS IS NOT AVAILABLE, THE SIGNS SHALL BE MOUNTED, ABOVE THE BARRICADES, ON SEPARATE SIGNS SUPPORTS THAT MEET NCHRP 350 REQUIREMENTS.

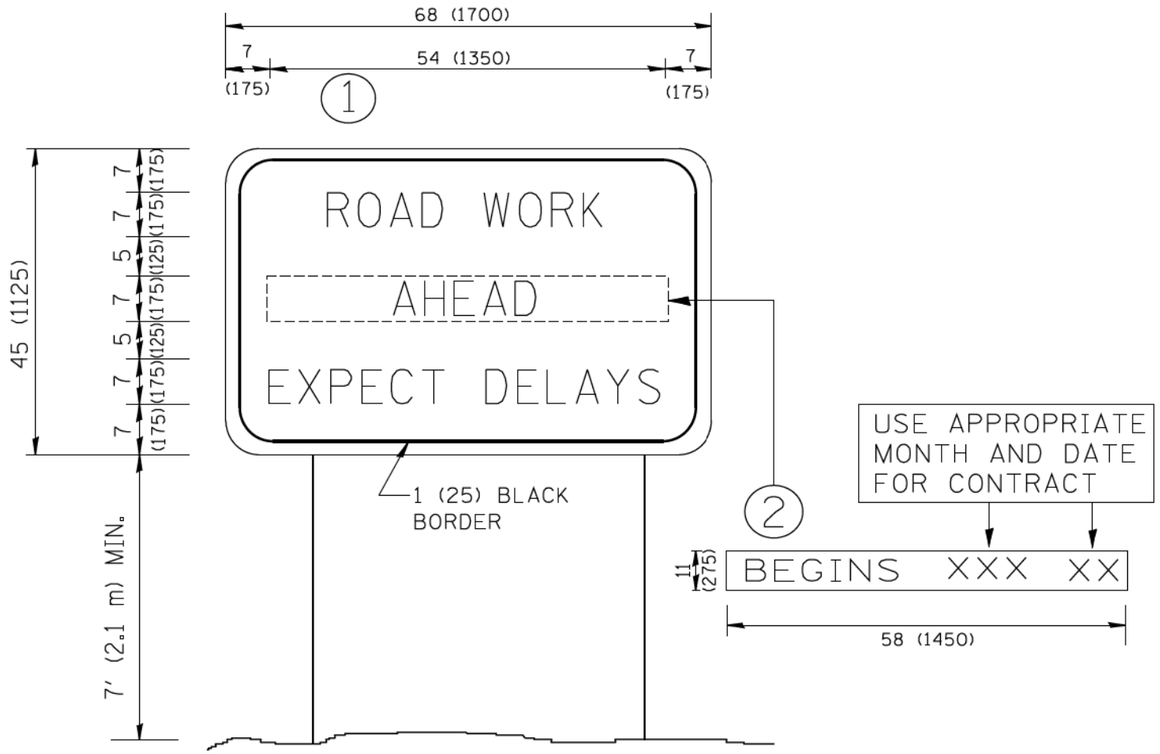
FILE NAME = c:\pw_work\PWIDOT\DRIVAKOSGN\d0108315\tc21.dgn	USER NAME = drivakosgn	DESIGNED -	REVISED - 10-18-02
		DRAWN -	REVISED - R. BORO 09-14-09
	PLOT SCALE = 49.9999 ' / IN.	CHECKED -	REVISED -
	PLOT DATE = 9/14/2009	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DETOUR SIGNING FOR CLOSING STATE HIGHWAYS

SCALE: NONE | SHEET 41 OF 45 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			888	598
	TC-21		CONTRACT NO. 60X79	
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



NOTES:

1. USE BLACK LETTERING ON ORANGE BACKGROUND.
2. ERECT SIGNS IN ADVANCE OF THE LOCATION FOR THE "ROAD CONSTRUCTION AHEAD" SIGN AT LOCATIONS AS DIRECTED BY THE ENGINEER.
3. ERECT SIGN (1) WITH INSTALLED PANEL (2) ONE WEEK PRIOR TO THE START OF CONSTRUCTION.
4. REMOVE PANEL (2) SOON AFTER THE START OF CONSTRUCTION.
5. SEE SPECIAL PROVISION FOR "TEMPORARY INFORMATION SIGNING" FOR ADDITIONAL INFORMATION.
6. ONE SIGN ASSEMBLY EQUALS 25.70 SQ. FT. (2.3 SQ. M.)
7. SHALL BE PAID FOR AS TEMPORARY INFORMATION SIGNING.

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

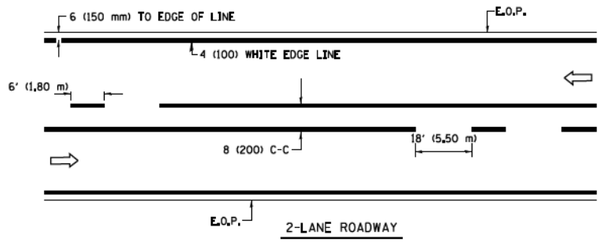
FILE NAME = W:\diststd\22x34\tc22.dgn	USER NAME = gaglianobt	DESIGNED -	REVISED - R. MIRS 09-15-97
		DRAWN -	REVISED - R. MIRS 12-11-97
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED -T. RAMMACHER 02-02-99
	PLOT DATE = 1/4/2008	DATE -	REVISED - C. JUCIUS 01-31-07

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

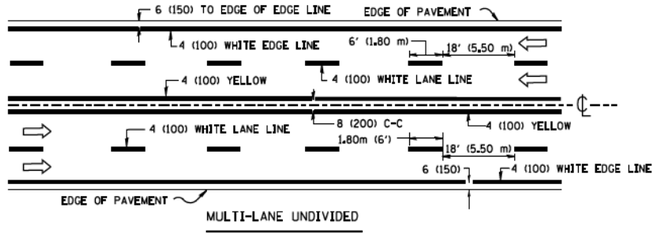
ARTERIAL ROAD INFORMATION SIGN

SCALE: NONE | SHEET 42 OF 45 SHEETS | STA. | TO STA.

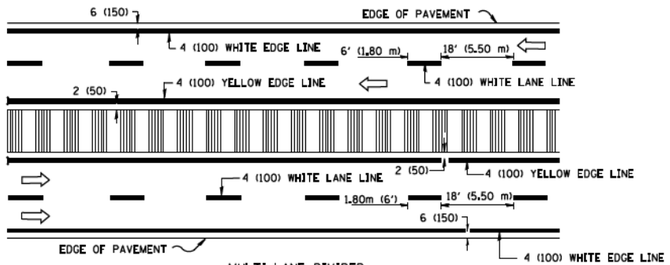
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			888	599
	TC-22		CONTRACT NO. 60X79	
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



2-LANE ROADWAY



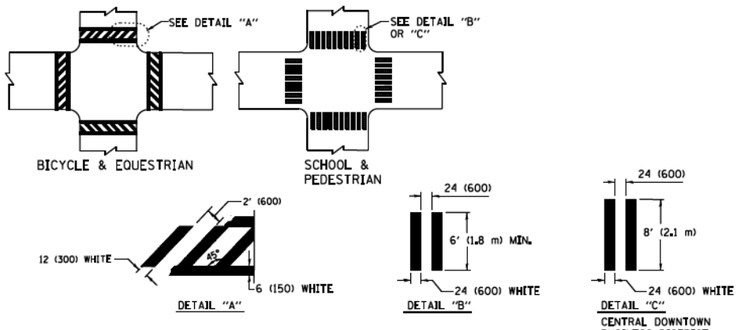
MULTI-LANE UNDIVIDED



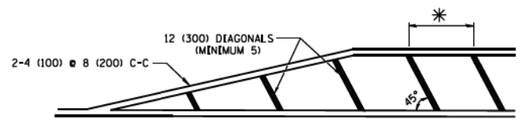
MULTI-LANE DIVIDED
WITH MOUNTABLE MEDIAN

NOTE: MEDIANS WITH BARRIER CURB DO NOT REQUIRE AN EDGE LINE

TYPICAL LANE AND EDGE LINE MARKING



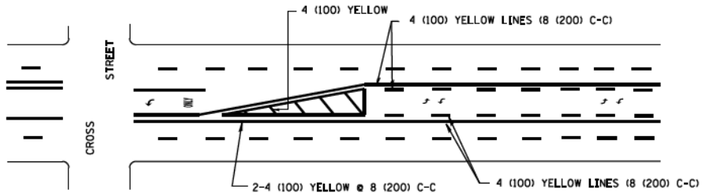
TYPICAL CROSSWALK MARKING



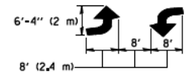
*FOR MEDIAN LENGTHS WHERE DIAGONAL SPACING CANNOT BE ATTAINED, USE 5 (FIVE) EQUALLY SPACED DIAGONAL LINES.

* DIAGONAL LINE SPACING: 20' (6.1 m) C-C

PAINTED MEDIANS

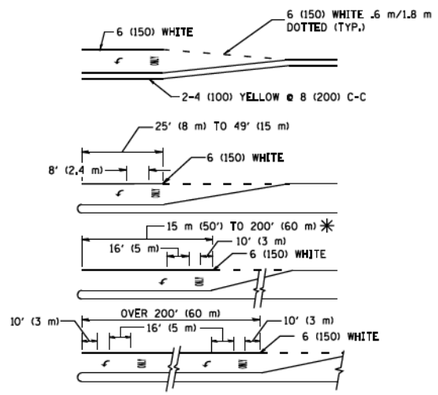


A MINIMUM OF TWO PAIRS OF TURN ARROWS SHALL BE USED, WHITE IN COLOR. ADDITIONAL PAIRS SHALL BE PLACED AT 200' (60 m) TO 300' (90 m) INTERVALS.



MEDIAN WITH TWO-WAY LEFT TURN LANE

TYPICAL PAINTED MEDIAN MARKING

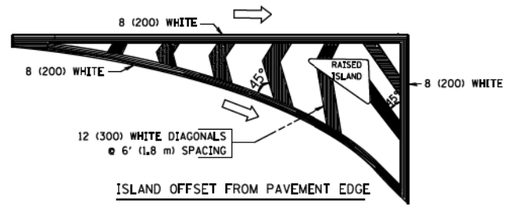


FULL SIZE LETTERS 8' (2.4 m) AND ARROWS SHALL BE USED.
AREA = 15.8 SQ. FT. (1.47 m²) ONLY AREA = 22.9 SQ. FT. (2.13 m²)

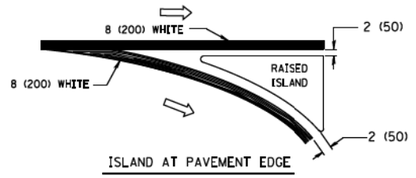
* TURN LANES IN EXCESS OF 400' (120 m) IN LENGTH MAY HAVE AN ADDITIONAL SET OF ARROW - "ONLY" INSTALLED MIDWAY BETWEEN THE OTHER TWO SETS OF ARROW - "ONLY".

TYPICAL LEFT (OR RIGHT) TURN LANE

TYPICAL TURN LANE MARKING



ISLAND OFFSET FROM PAVEMENT EDGE



ISLAND AT PAVEMENT EDGE

TYPICAL ISLAND MARKING

TYPE OF MARKING	WIDTH OF LINE	PATTERN	COLOR	SPACING / REMARKS
CENTERLINE ON 2 LANE PAVEMENT	4 (100)	SKIP-DASH	YELLOW	6' (1.80 m) LINE WITH 18' (5.50 m) SPACE
CENTERLINE ON MULTI-LANE UNDIVIDED PAVEMENT	2 @ 4 (100)	SOLID	YELLOW	8 (200) C-C
NO PASSING ZONE LINES: FOR ONE DIRECTION FOR BOTH DIRECTIONS	4 (100) 2 @ 4 (100)	SOLID SOLID	YELLOW YELLOW	8 (200) C-C
LANE LINES	4 (100) 5 (125) ON FREEWAYS	SKIP-DASH SKIP-DASH	WHITE WHITE	6' (1.80 m) LINE WITH 18' (5.50 m) SPACE
DOTTED LINES (EXTENSIONS OF CENTER, LANE OR TURN LANE MARKINGS)	SAME AS LINE BEING EXTENDED	SKIP-DASH	SAME AS LINE BEING EXTENDED	2' (600) LINE WITH 6' (1.8) SPACE
EDGE LINES	4 (100)	SOLID	YELLOW-LEFT WHITE-RIGHT	OUTLINE MOUNTABLE MEDIANS IN YELLOW; EDGE LINES ARE NOT USED NEXT TO BARRIER CURB
TURN LANE MARKINGS	6 (150) LINE; FULL SIZE LETTERS & SYMBOLS (8' (2.4 m))	SOLID	WHITE	SEE TYPICAL TURN LANE MARKING DETAIL
TWO WAY LEFT TURN MARKING	2 @ 4 (100) EACH DIRECTION 8' (2.4 m) LEFT ARROW	SKIP-DASH AND SOLID IN PAIRS	YELLOW WHITE	6' (1.8 m) LINE WITH 18' (5.50 m) SPACE FOR SKIP-DASH; 8 (200) C-C BETWEEN SOLID LINE AND SKIP-DASH LINE SEE TYPICAL TWO-WAY LEFT TURN MARKING DETAIL
CROSSWALK LINES A. DIAGONALS (BIKE & EQUESTRIAN) B. LONGITUDINAL BARS (SCHOOL & PEDESTRIAN)	12 (300) @ 45° 24 (600) @ 90°	SOLID SOLID	WHITE WHITE	2' (600) APART 2' (600) APART SEE TYPICAL CROSSWALK MARKING DETAILS.
STOP LINES	24 (600)	SOLID	WHITE	PLACE 4' (1.2 m) IN ADVANCE OF AND PARALLEL TO CROSSWALK, IF PRESENT. OTHERWISE, PLACE AT DESIRED STOPPING POINT, PARALLEL TO CROSSROAD CENTERLINE, WHERE POSSIBLE
PAINTED MEDIANS	2 @ 4 (100) WITH 12 (300) DIAGONALS @ 45°	SOLID	YELLOW: TWO WAY TRAFFIC WHITE: ONE WAY TRAFFIC	8 (200) C-C FOR THE DOUBLE LINE SEE TYPICAL PAINTED MEDIAN MARKING.
GORE MARKING AND CHANNELIZING LINES	8 (200) WITH 12 (300) DIAGONALS @ 45°	SOLID	WHITE	DIAGONALS: 20' (6.1 m) (LESS THAN 30 MPH (50 km/h))
RAILROAD CROSSING	24 (600) TRANSVERSE LINES; "RR" IS 6' (1.8 m) LETTERS; 16 (400) LINE FOR "X"	SOLID	WHITE	SEE STATE STANDARD 780001 AREA OF: "R"=3.6 SQ. FT. (0.33m²) EACH "X"=54.0 SQ. FT. (5.0 m²)

FOR FURTHER DETAILS ON PAVEMENT MARKING REFER TO STREET MARKING STANDARDS, PRINTED BY CITY OF CHICAGO, DEPARTMENT OF TRANSPORTATION, BUREAU OF TRAFFIC.

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

FILE NAME = c:\pw_work\pwidot\drivakosgn\d0188315\tc24.dgn	USER NAME = drivakosgn	DESIGNED -	REVISED -T. RAMMACHER 12-07-00
	PLOT SCALE = 50.000 ' / in.	DRAWN -	REVISED - K. ENG 02-28-12
	PLOT DATE = 3/1/2012	CHECKED -	REVISED -
		DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CITY OF CHICAGO
TYPICAL PAVEMENT MARKINGS

SCALE: NONE | SHEET 43 OF 45 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			888	600
	TC-24	CONTRACT NO. 60X79		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		