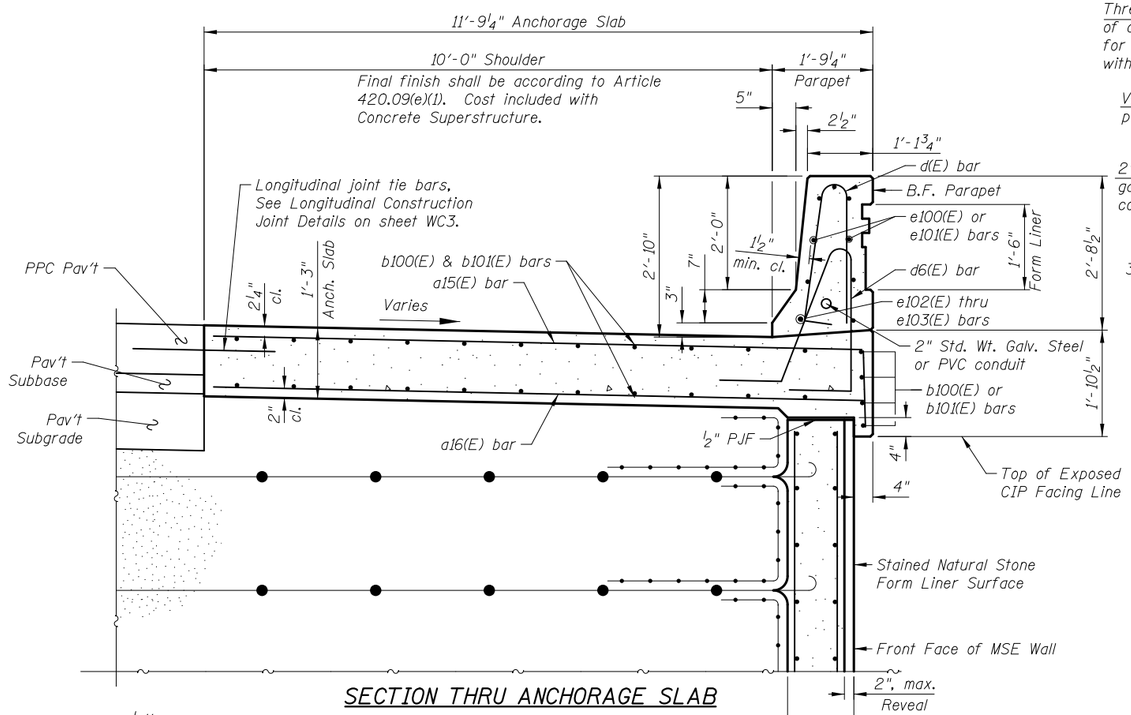
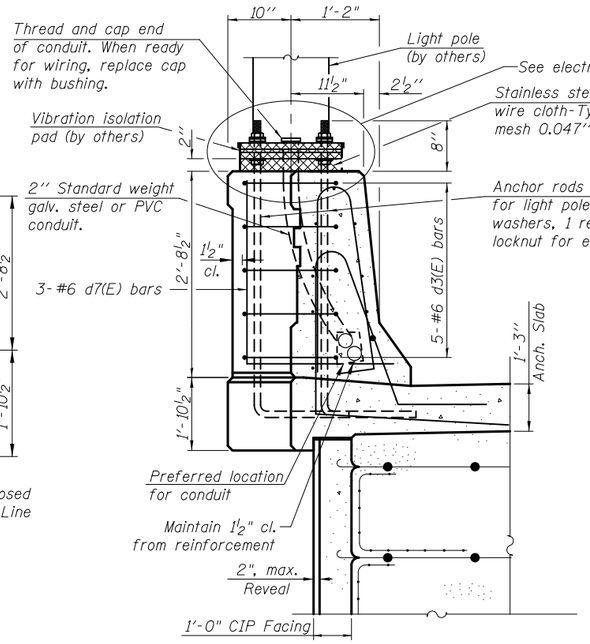
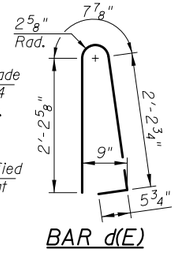


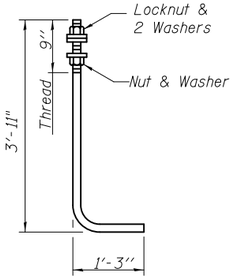
SECTION THRU ANCHORAGE SLAB



SECTION A-A



BAR d(E)



ANCHOR ROD

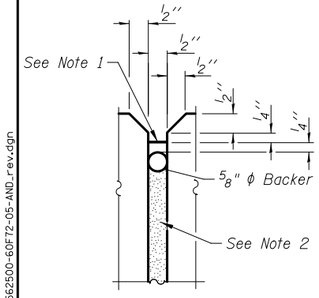
Diameter as specified for light poles. (ASTM F 1554 Grade 105)

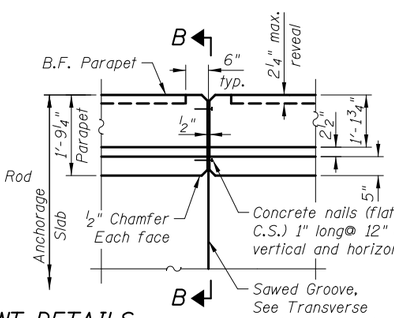
ANCHORAGE SLABS BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a13(E)	16	#5	3'-6"	
a15(E)	210	#6	12'-9"	
a16(E)	210	#5	11'-5"	
b100(E)	84	#5	33'-2"	
b101(E)	84	#5	35'-0"	
d(E)	210	#5	5'-7"	
d3(E)	10	#6	8'-11"	
d6(E)	210	#5	7'-11"	
d7(E)	6	#6	4'-5"	
e100(E)	48	#4	15'-0"	
e101(E)	48	#4	16'-0"	
e102(E)	6	#8	15'-0"	
e103(E)	6	#8	16'-0"	

Item	Unit	Quantity
Concrete Superstructures	Cu. Yd.	132.6
Protective Coat	Sq. Yd.	300
Reinforcement Bars, Epoxy Coated	Pound	17,180
Form Liner Textured Surface, Special	Sq. Ft.	256

Notes:
Cost of anchor rods and conduit is included with Concrete Superstrucure.
See sheet WC6 for Form Liner Textured Surface, Special details.

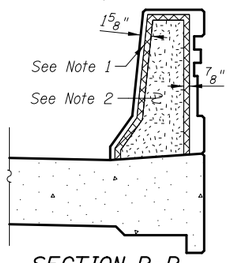




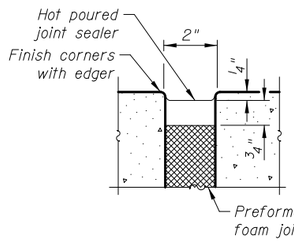
PARAPET JOINT DETAILS

PLAN

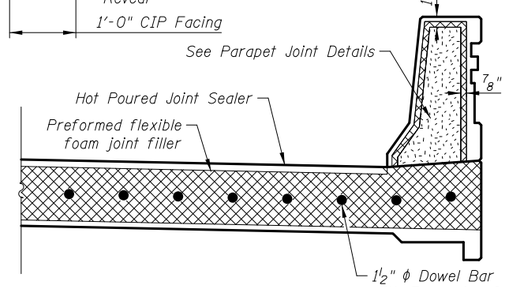
Parapet Joint Notes:
1. Non-staining gray one component non-sag elastomeric gun grade polyurethane sealant meeting the requirements of ASTM C-920, Type S, Grade NS, Class 25, use T with a ⅝" backer rod.
2. ½" Preformed Self-Expanding Cork Joint Filler according to Article 1051.07 of the Std. Spec. Cost included with Concrete Superstructure.



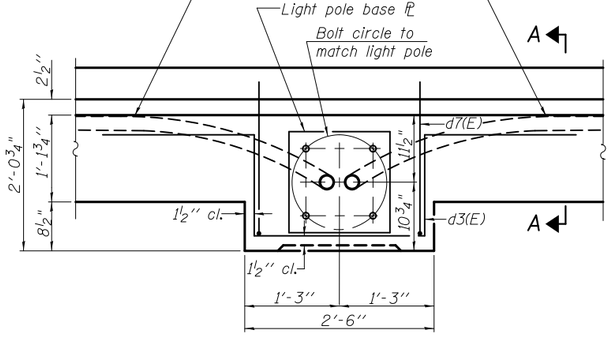
SECTION B-B



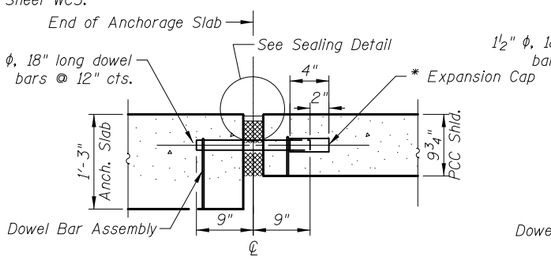
SEALING DETAIL



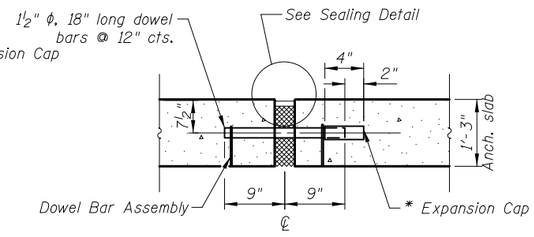
TRANSVERSE EXPANSION JOINT SECTION



LIGHT POLE FOUNDATION PLAN



ANCHORAGE SLAB TO PCC SHOULDER

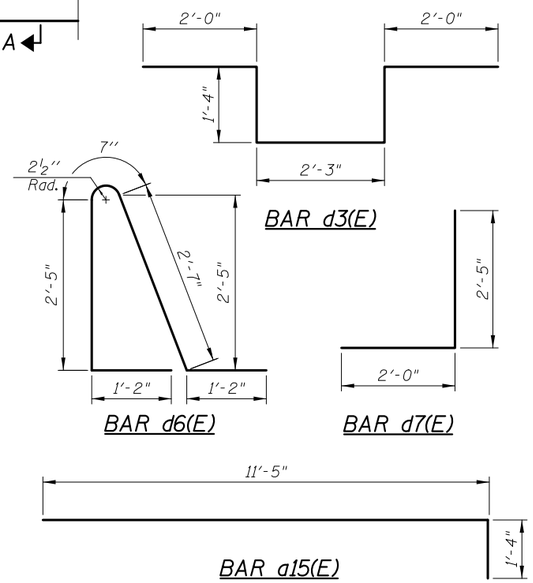


ANCHORAGE SLAB TO ANCHORAGE SLAB

TRANSVERSE EXPANSION JOINT

Expansion Joint and Dowel Bars included in the cost of Concrete Superstructures.

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



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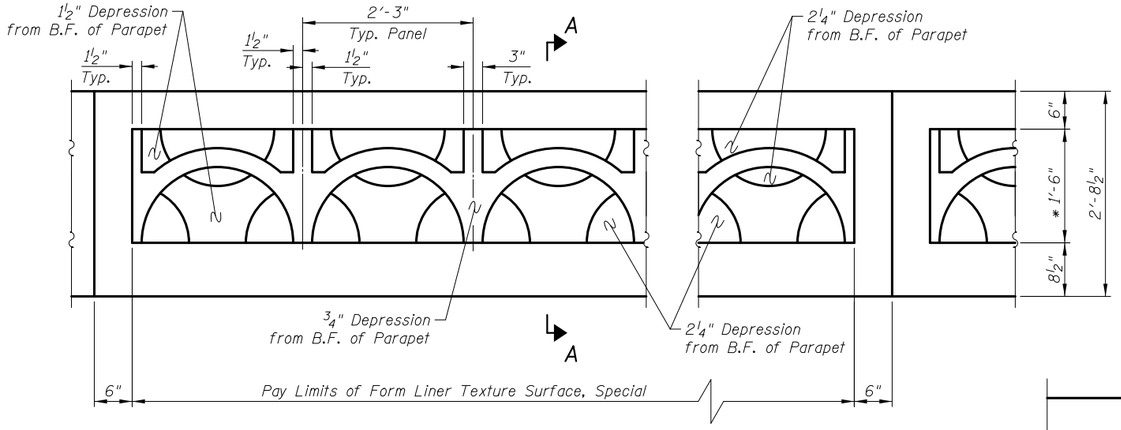
DESIGNED	-	D. ATKINS
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

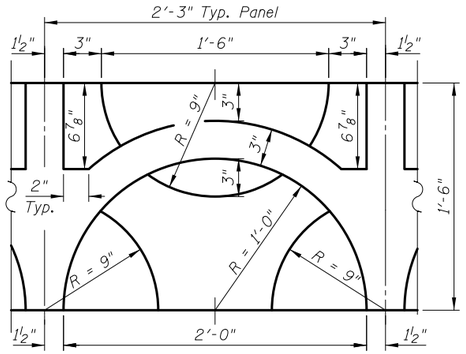
ANCHORAGE SLAB DETAILS
WALL C: IL RTE 31
STRUCTURE NO. 056-2500
SHEET NO. WC5 OF WC8 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	601
		CONTRACT NO. 60F72		
	ILLINOIS FED. AID PROJECT			

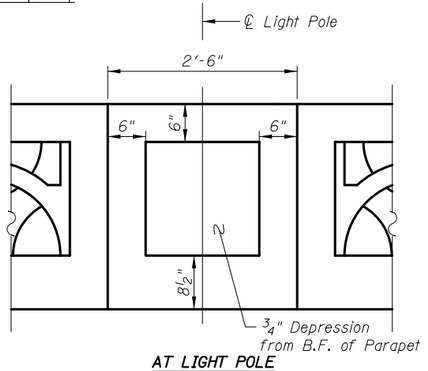


ELEVATION -OUTSIDE FACE OF PARAPET

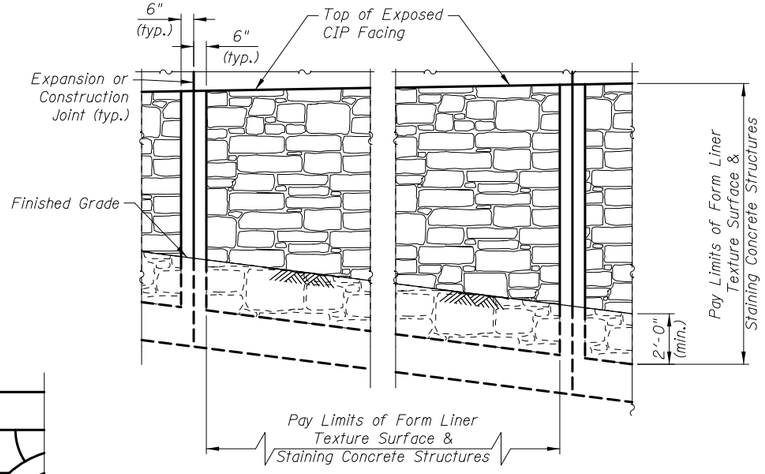
* Pay Limits of Form Liner Texture Surface, Special



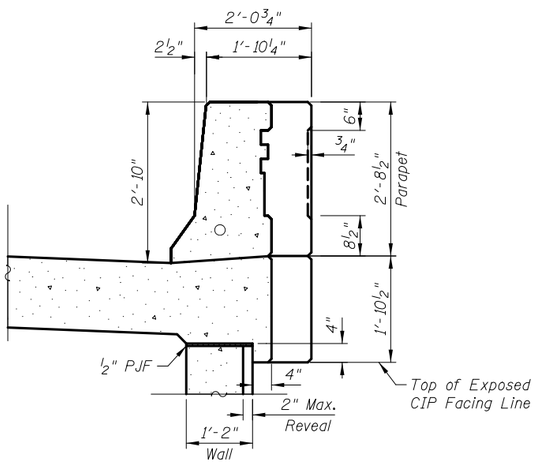
FORM LINER TEXTURE SURFACE, SPECIAL DETAIL



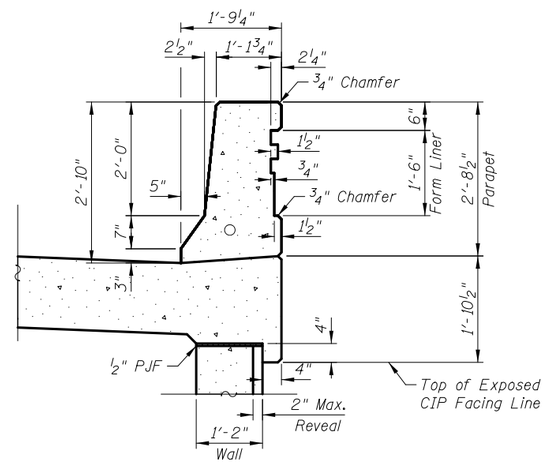
AT LIGHT POLE



FORM LINER TEXTURE SURFACE DETAIL



AT LIGHT POLE



AT MSE WALL

SECTION A-A

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DESIGNED	-	D. ATKINS
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ARCHITECTURAL DETAILS
WALL C: IL RTE 31
STRUCTURE NO. 056-2500
SHEET NO. WC6 OF WC8 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	602
		CONTRACT NO. 60F72		
		ILLINOIS FED. AID PROJECT		

klb
5/2/2012
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MIDLAND STANDARD ENGINEERING & TESTING, INC.

STRUCTURE FOUNDATION BORING LOG

SHEET 1 OF 1

PROJECT Algonquin Bypass STRUCTURE Retaining Wall C
ROUTE FAP 339/ILL 31
SECTION 96-00209-00-PV STATION 124+25 to 126+20
COUNTY McHenry
BORING RW-133
STATION 125+52
OFFSET 45'R of CL

DATE 7/13/10
BORED BY SPE
CHECKED BY WJW

WATER SURFACE EL. 6.1
GROUND WATER AT COMPLETION 7.1

Depth	N/6"	Qu tsf	W %
GROUND SURFACE EL. 743.8 M (Ft)			
Dark Brown to Black Sandy LOAM, A-4: fill over Black Clay LOAM, A-7-6	2 2 4	--	14
	2 2 3	--	13
738.3 Brown SAND & GRAVEL, A-1: dense to very dense	10 14 21	--	10
	12 33 22	--	6
Brown to Grey	12 14 20	--	11
729.3 Grey Clay LOAM, A-6: hard	11 12 17	--	7
726.8 Grey SAND & GRAVEL, A-1: dense	12 27 21	4.5 Qp	12
Grey Clay LOAM, A-6 v. stiff 724.3	17 12 15	3.5	8

Depth	N/6"	Qu tsf	W %
M (Ft)			
723.8 Grey Clay LOAM, A-6: very stiff	10 13 15	3.61 B	13
	ST	1.46 B	12
	10 16 23	3.49 B	13
	9 16 24	3.98 BS	14
End of Boring @ 30' 713.8			

N-Standard Penetration Test-
Blows per foot to drive 2 inch
O.D. Split Spoon Sampler 12 inches
with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf)
W- Water Content-percentage of oven dry weight (%)

Type failure: B- Bulge Failure, S- Shear Failure, E- Estimated Value, P-Penetrometer

MIDLAND STANDARD ENGINEERING & TESTING, INC.

STRUCTURE FOUNDATION BORING LOG

SHEET 1 OF 1

PROJECT Algonquin Bypass STRUCTURE Retaining Wall C
ROUTE FAP 339/ILL 31
SECTION 96-00209-00-PV STATION 124+25 to 126+20
COUNTY McHenry
BORING RW-134
STATION 124+25
OFFSET 39' R of CL

DATE 10/14/10
BORED BY SPE
CHECKED BY WJW

WATER SURFACE EL. 16.5'
GROUND WATER AT COMPLETION 16.8'
AFTER HOURS

Depth	N/6"	Qu tsf	W %
GROUND SURFACE EL. 755.0 M (Ft)			
Pavement Materials			
Brown over Brown and Black Silty Clay LOAM: fill 754.3	8 6 6	5.04 S	13
to Dark Grey to Grey Silt LOAM, A-6	2 3 4	1.16 BS	26
Brown Clay LOAM, A-6: very stiff 749.5	2 3 4	2.33 BS	21
Brown SAND, A-2: slightly dense to dense 746.0	2 3 4	--	10
	4 5 5	--	5
	13 14 28	--	4
Brown SAND and GRAVEL, A-1: medium dense 739.5	12 9 7	--	11
	4 6 9	--	14

Depth	N/6"	Qu tsf	W %
M (Ft)			
Brown SAND and GRAVEL, A-1 735.0	5 8 11	--	12
Grey Silty CLAY, A-6: hard 731.0	8 12 10	4.95 BS	13
	7 10 12	4.86 BS	13
	8 10 10	5.97 B	12
End of Boring @ 30' 725.0			

N-Standard Penetration Test-
Blows per foot to drive 2 inch
O.D. Split Spoon Sampler 12 inches
with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf)
W- Water Content-percentage of oven dry weight (%)

Type failure: B- Bulge Failure, S- Shear Failure, E- Estimated Value, P-Penetrometer

MIDLAND STANDARD ENGINEERING & TESTING, INC.

BRIDGE FOUNDATION BORING LOG

SHEET 1 OF 2

PROJECT IL. 31 - Algonquin Bypass BRIDGE IL. 31 over Crystal Creek
ROUTE IL. Route 31 at IL. Route 62
SECTION STATION 126+45 to 127+90
COUNTY McHenry
BORING BB-10
STATION 126+42
OFFSET 48' R of CL

DATE 12/2/08
BORED BY SPE
CHECKED BY WJW

WATER LEVEL DURING DRILLING 2.5'
Rotary Mud Drilling, Hole Grouted at Completion

Depth	N/6"	Qu tsf	W %
GROUND SURFACE EL. 740.0 Ft			
±12" Black Silty CLAY/TOPSOIL			
Brown SAND (f-c) and GRAVEL, A-1, medium dense 739.0	5 7 9	-	5
frequent Cobbles	7 6 8	-	10
dense to very dense	14 13 24	-	12
	17 28 29	-	8
Boulder @ 12.0'-13.5'	20 38 50/3"	-	12
	17 30 30	-	9
	16 20 18	-	9
	17 16 18	-	9

Depth	N/6"	Qu tsf	W %
Ft			
Grey Clay LOAM A-6, very stiff to hard 720.0	8 11 17	3.82 B	15
	12 17 19	4.06 B	15
	7 10 18	4.02 B	16
	8 11 17	-	20
Grey SAND (f-c) and GRAVEL, A-1, dense 708.7	7 18 28	-	11
continued	10 17 23	-	10

N-Standard Penetration Test-
Blows per foot to drive 2 inch
O.D. Split Spoon Sampler 12 inches
with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf)
W- Water Content-percentage of oven dry weight (%)

Type failure: B- Bulge Failure, S- Shear Failure, E- Estimated Value, P-Penetrometer

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DRAWN	-	K. HODGEN
DESIGNED	-	D. ATKINS
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS I
WALL C: IL RTE 31
STRUCTURE NO. 056-2500
SHEET NO. WC7 OF WC8 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	603
		CONTRACT NO. 60F72		
	ILLINOIS FED. AID PROJECT			

MIDLAND STANDARD ENGINEERING & TESTING, INC.

BRIDGE FOUNDATION BORING LOG

SHEET 2 OF 2

BORING BB-10

Depth	N/6"	Qu tsf	W %		Depth	N/6"	Qu tsf	W %
Ft				CONTINUED	Ft			
				Grey SAND (f-m), trace Gravel, A-2, very dense 700.0				
45	12 22 48	-	17					
				Grey SAND (f-m), A-3, medium dense 693.0				
50	10 10 17	-	18					
				slightly dense				
55	5 3 3	-	22					
				Grey SAND and GRAVEL, A-1, medium dense 683.0				
				Cobble @ 59.0'				
60	10 50/5" -	-	8					
65	8 10 10	-	5					
				Grey SAND and GRAVEL, A-1 675.0				
				Light Blue-Grey weathered Dolomite Bedrock 673.5				
70	50/1" - -	-	0.3					
				Light-Blue-Grey Dolomite Bedrock, slightly weathered, fine grained, medium horizontal bedding with frequent horizontal fractures, contains several white chert nodules 670.0				
75				Core Run 1 Recovery = 92.5% RQD = 68%				
				ROCK CORE				
80				End of Boring @ 80.0' 660.0				

MIDLAND STANDARD ENGINEERING & TESTING, INC.

BORING LOG

SHEET 1 OF 1

PROJECT Algonquin Bypass — Mainline - IL. Route 31
ROUTE FAP 339/ILL 31
SECTION 96-00209-00-PV — STATION 100+00 to 180+00
COUNTY McHenry
BORING B-8
STATION 123+75
OFFSET on CL
DATE 4/6/09
BORED BY SPE
CHECKED BY WJW
WATER LEVEL DURING DRILLING none
GROUND WATER AT COMPLETION dry

GROUND SURFACE EL. 752.5

Depth	N/6"	Qu tsf	W %
Ft			
	6 6 7	0.58 S	18
5	6 8 7	1.55 S	17
	4 6 7	1.47 B	22
10	3 3 3	-	11

Brown and Black Silty CLAY, little Sand, little Gravel, trace Cinders, A-6: FILL

Brown Clay LOAM, A-6 748.0

Brown SAND (f-m), A-3, damp 743.5

End of Boring @ 10.0' 742.5

N-Standard Penetration Test- Blows per foot to drive 2 inch O.D. Split Spoon Sampler 12 inches with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf)
W- Water Content-percentage of oven dry weight (%)

Type failure: B- Bulge Failure, S- Shear Failure, E- Estimated Value, P-Penetrometer

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DESIGNED	-	D. ATKINS
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

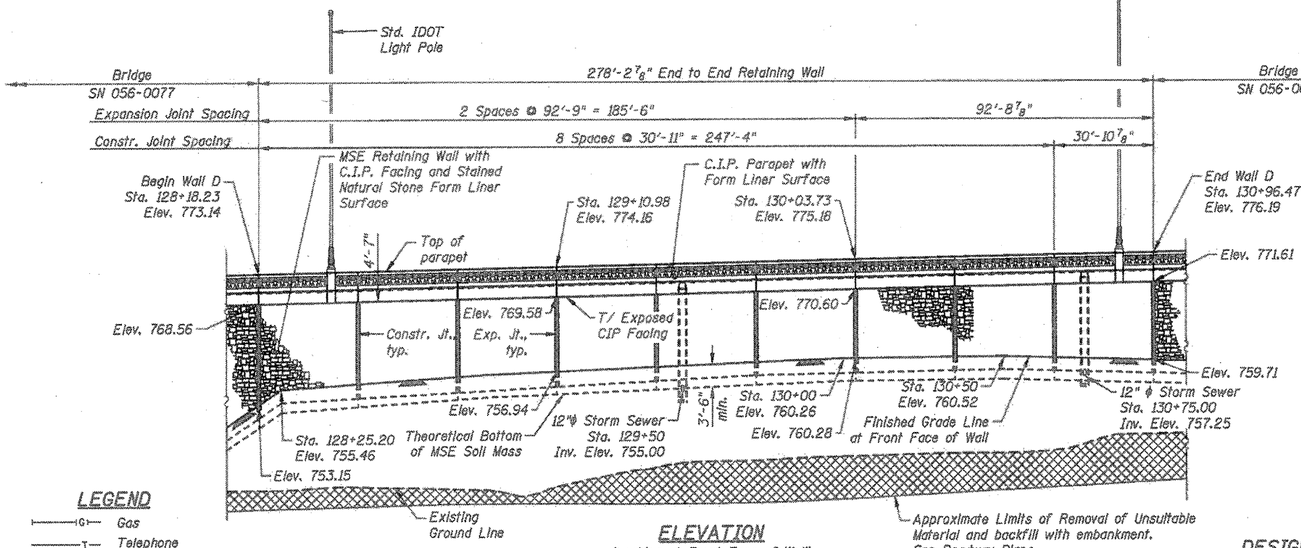
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS II
WALL C: IL RTE 31
STRUCTURE NO. 056-2500
SHEET NO. WC8 OF WC8 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	604
		CONTRACT NO. 60F72		
	ILLINOIS FED. AID PROJECT			

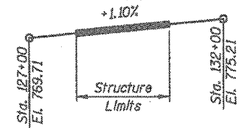
Bench Mark: Control Point CP10, $\frac{5}{8}$" Iron Rod with cap set, Ramp B Station 11+51.26, Offset 2.12' Lt. Elev. 737.99

Existing Structure: None



ELEVATION

(Looking at Front Face of Wall)



PROPOSED PROFILE
IL RTE 31

INDEX OF SHEETS

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specification for Highway Bridges, 17th Ed.

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Concrete Superstructure	Cu. Yd.	194.1
Form Liner Textured Surface	Sq. Ft.	3,731
Protective Coat	Sq. Yd.	439
Reinforcement Bars, Epoxy Coated	Lb	25,370
Geocomposite Wall Drain	Sq. Yd.	36
Mechanically Stabilized Earth Retaining Wall	Sq. Ft.	4,275
Staining Concrete Structures	Sq. Yd.	415
Form Liner Textured Surface, Special	Sq. Ft.	394

LEGEND

- Gas
- Telephone
- Soil Boring Location
- Direction of Ditch Flow
- Proposed Storm Sewer
- Proposed Pipe Underdrain
- Wetlands

Settlement Platforms
Sta. 128+50, 33-ft. Right
Sta. 129+60, 30-ft. Right
Sta. 130+50, 33-ft. Right

Settlement Platforms shall be erected in accordance with Article 204.06 except that the platforms shall be placed at the bottom of the MSE soil mass. Cost shall be included in the cost of Mechanically Stabilized Earth Retaining Wall.

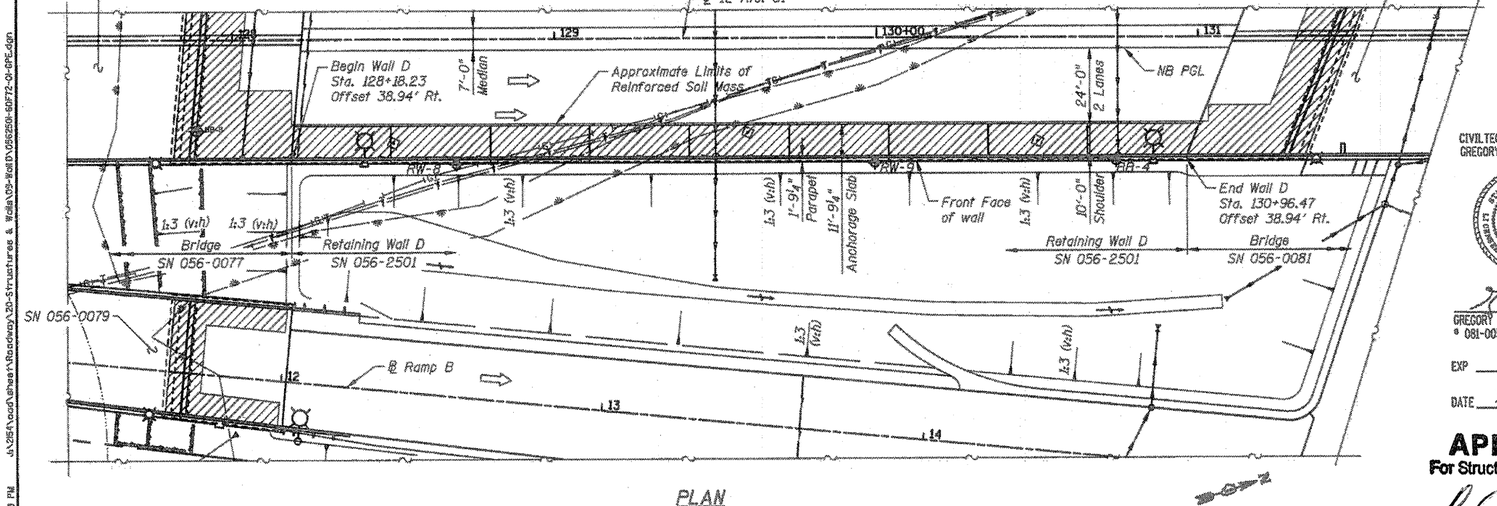
DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)

GENERAL NOTES

1. Reinforcement bars designated (E) shall be epoxy coated.
2. Neither the MSE wall cast-in-place concrete facing, anchorage slab & parapet, nor roadway pavement shall be constructed until after the roadway embankment and reinforced select fill have been in place for 4 months, after which time less than 1 inch of the total anticipated settlement of 3½ inches is assumed to remain, without the prior approval of the Engineer. The settlement period may be shortened at the discretion of the Engineer if the monitoring data indicates a lesser than predicted settlement.



PLAN

Note: Wall offsets measured from ℄ IL Rte. 31 to front face of wall.

CIVILTECH ENGINEERING, INC.
GREGORY J. HATLESTAD, S.E.

STATE OF ILLINOIS
GREGORY J. HATLESTAD
081-005662
LICENSED STRUCTURAL ENGINEER
MY LICENSE EXPIRES NOVEMBER 30, 2012

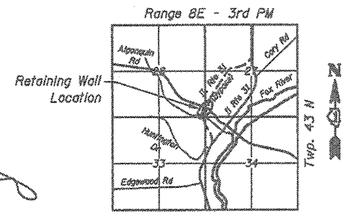
GREGORY J. HATLESTAD, S.E.
081-005662

EXP 11/30/12

DATE 3/15/12

APPROVED
For Structural Adequacy Only

Engineer of Bridges & Structures



LOCATION SKETCH

GENERAL PLAN & ELEVATION
WALL D, IL RTE. 31 F.A.P. 339
SECTION 18A-2, McHENRY COUNTY
STA. 128+18.23 TO STA. 130+96.47
STRUCTURE NO. 056-2501

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DESIGNED	D. ATKINS
CHECKED	G. HATLESTAD
DATE	3/23/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION
WALL D: IL RTE 31
STRUCTURE NO. 056-2501
SHEET NO. WD1 OF WD8 SHEETS

Q.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	605
		CONTRACT NO. 60F72		
		ILLINOIS FED. AID PROJECT		

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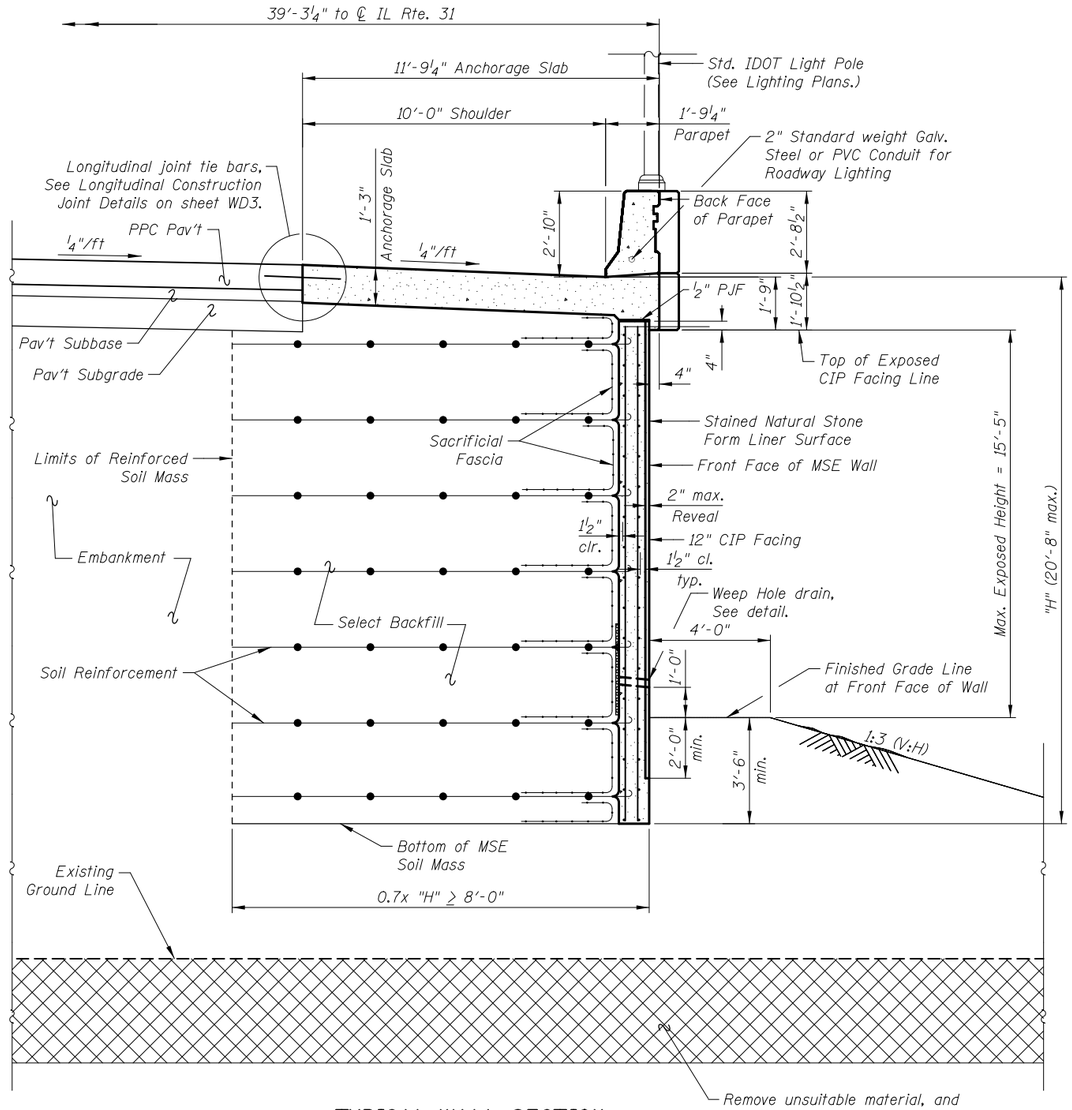


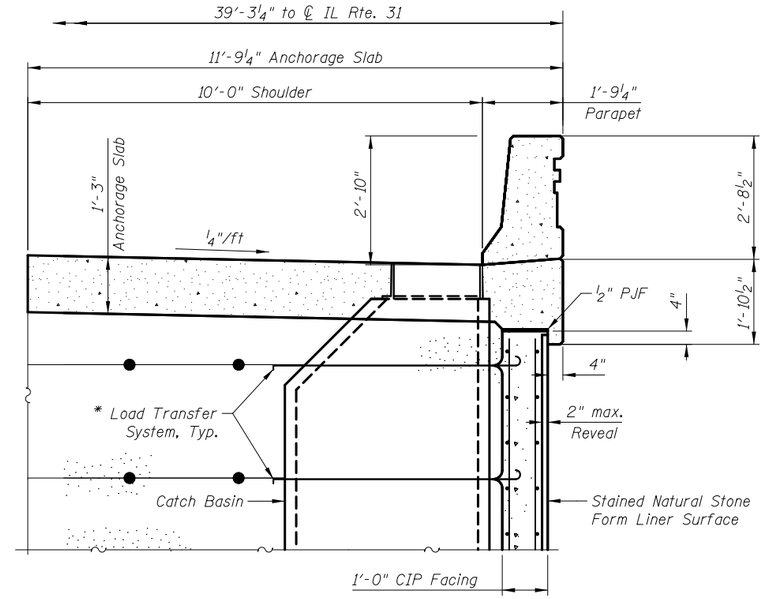
TYPICAL WALL SECTION

(Looking North)

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 0.5 kips/ft. of wall.

MSE WALL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Form Liner Textured Surface	Sq. Ft.	3,744
Geocomposite Wall Drain	Sq. Yd.	36
Mechanically Stabilized Earth Retaining Walls	Sq. Ft.	4,275
Staining Concrete Structures	Sq. Yd.	416



SECTION THRU DRAINAGE STRUCTURE

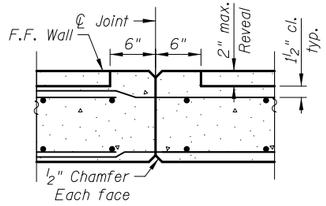
** M.S.E. supplier to design load transfer system to accommodate concrete pipe and catch basin*

Notes:

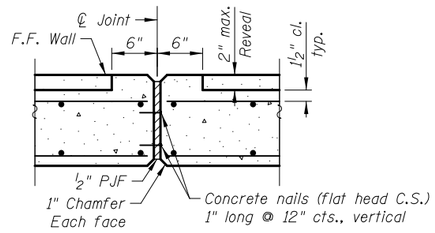
For Frame and Grate type, Catch Basin type, and rim elevations, see Drainage and Utility Plans.

See sheet WD3 for dimensions and reinforcement of Anchorage Slab.

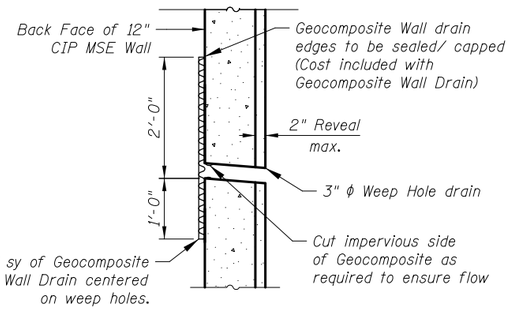
See sheet WD6 for Form Liner Textured Surface details.



CONSTRUCTION JOINT



EXPANSION JOINT



WEEP HOLE DRAIN DETAIL

Weep holes shall be spaced at 8'-0" horizontally

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DESIGNED	-	D. ATKINS
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MSE WALL DETAILS
WALL D: IL RTE 31
STRUCTURE NO. 056-2501
SHEET NO. WD2 OF WD8 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	606
		CONTRACT NO. 60F72		
		ILLINOIS FED. AID PROJECT		

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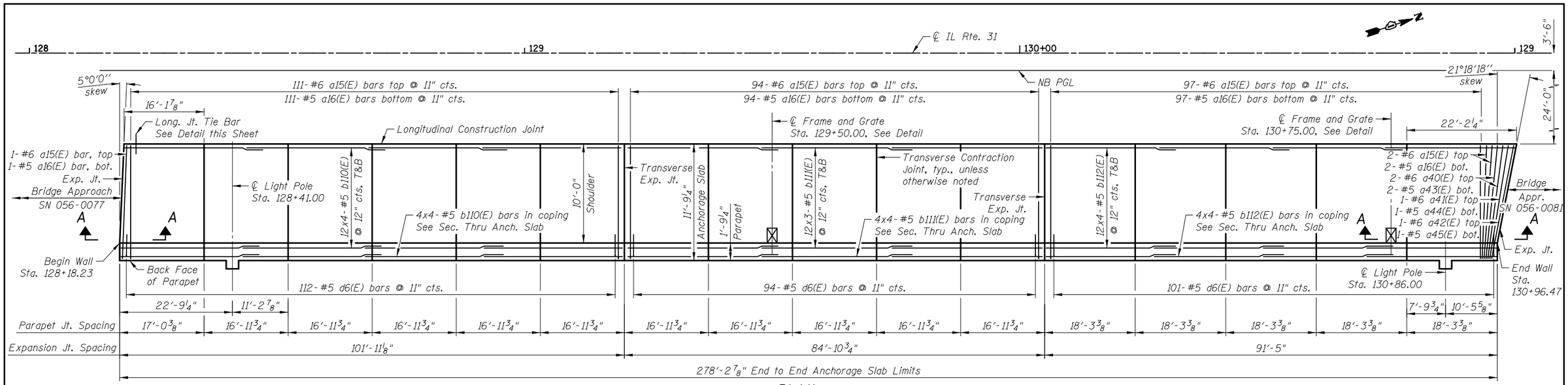
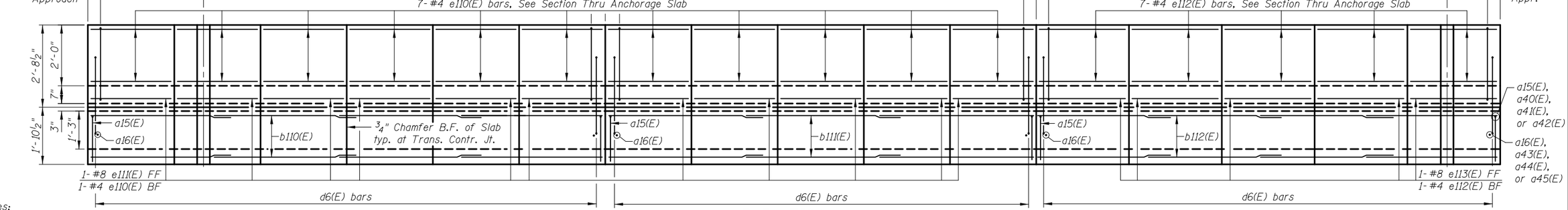


PLAN

Anchorage Slab Dimensions are measured along Back Face of Parapet

MINIMUM BAR LAP

(Slab)
#5 bar = 3'-3"

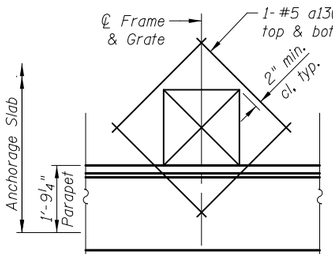


ELEVATION

(Back face of parapet)

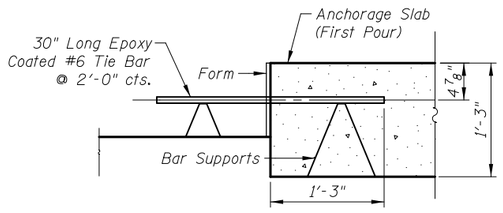
Notes:

See sheet WD5 for Bill of Material, Reinforcement Schedule, and Bar Diagrams.
See sheet WD5 for Light Pole Foundation Details.
See sheet WD5 for Section Thru Anchorage Slab.
See sheet WD5 for Transverse Expansion Joint Details.
Anchorage slab contraction and expansion joints shall be in line with pavement jointing.
Bars indicated thus 11x2-#5 etc. indicate 11 lines of bars with 2 lengths per line.
Field cut bars as required around Frame and Grate.

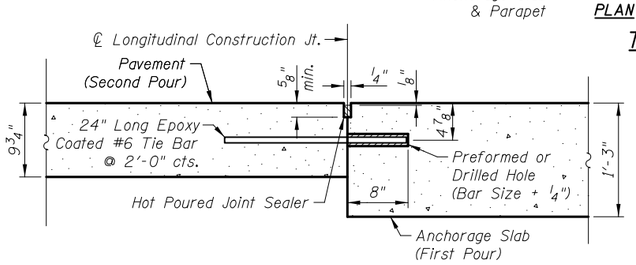


DETAIL OF REINFORCEMENT AT DRAINAGE STRUCTURE

(Cut longitudinal reinforcement to clear drainage structure)

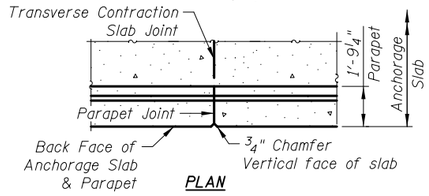


TIE BAR FORMED IN PLACE

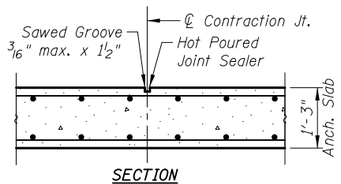


TIE BAR GROUTED IN PLACE

LONGITUDINAL CONSTRUCTION JOINT



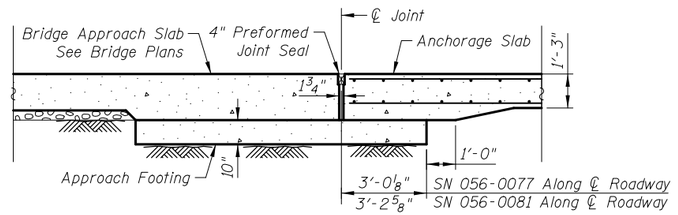
PLAN



SECTION

TRANSVERSE CONTRACTION JOINT

See Art. 420.05(c) of Standard Specifications



SECTION A-A

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DESIGNED	-	D. ATKINS
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ANCHORAGE SLABS
WALL D: IL RTE 31
STRUCTURE NO. 056-2501
SHEET NO. WD3 OF WD8 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	607
		CONTRACT NO. 60F72		
		ILLINOIS FED. AID PROJECT		

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5/2/2012

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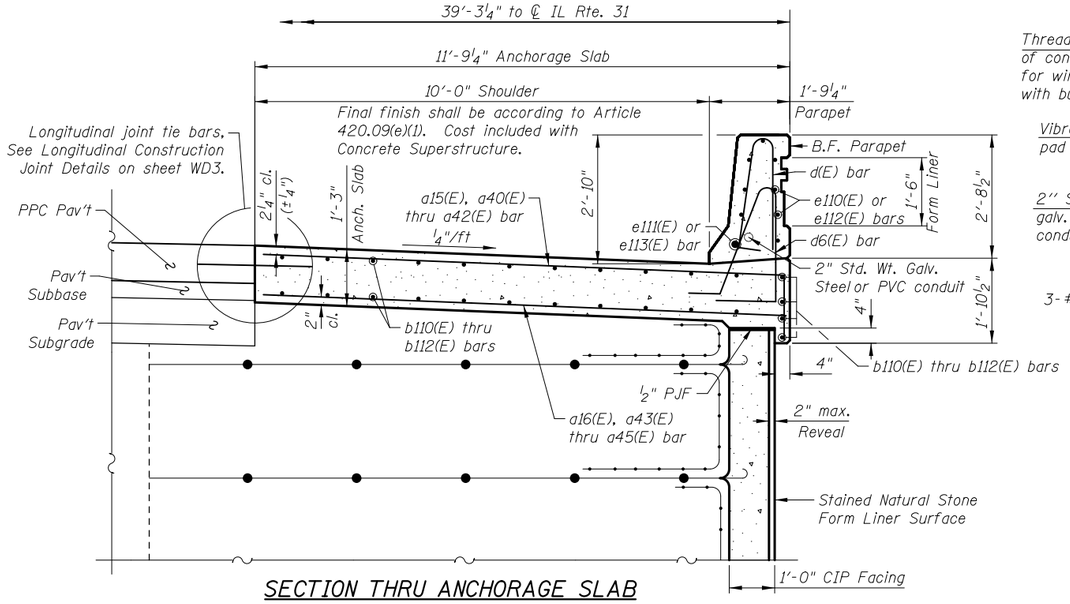
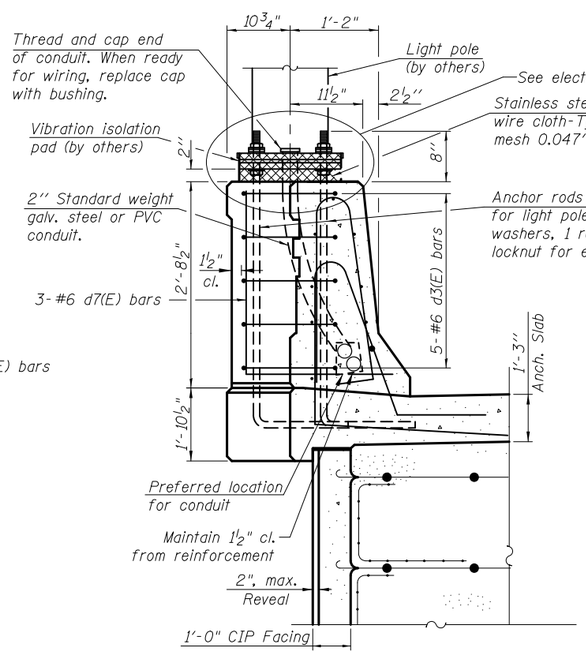
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WALL D: IL RTE 31
STRUCTURE NO. 056-2501
SHEET NO. WD4 OF WD8 SHEETS

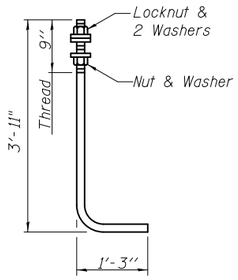
O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	608
		CONTRACT NO. 60F72		
	ILLINOIS	FED. AID PROJECT		



SECTION THRU ANCHORAGE SLAB

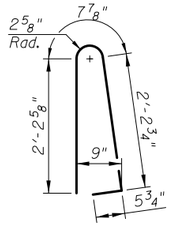


SECTION A-A

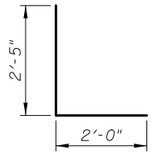


ANCHOR ROD

Diameter as specified for light poles. (ASTM F 1554 Grade 105)



BAR d(E)

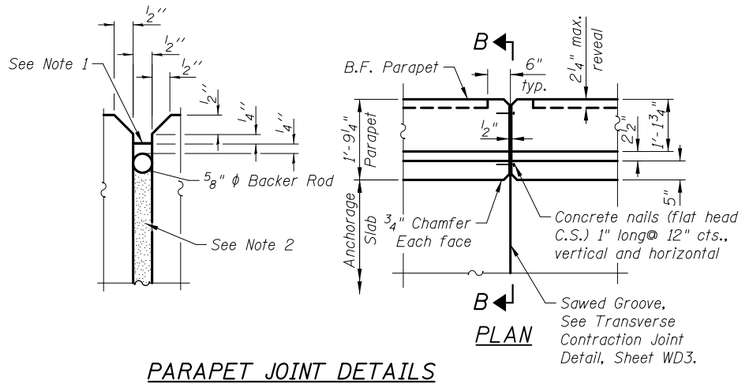


BAR d7(E)

ANCHORAGE SLAB BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a13(E)	16	#5	3'-6"	
a15(E)	305	#6	12'-9"	
a16(E)	305	#5	11'-5"	
a40(E)	2	#6	13'-0"	
a41(E)	1	#6	13'-4"	
a42(E)	1	#6	13'-7"	
a43(E)	2	#5	11'-8"	
a44(E)	1	#5	12'-0"	
a45(E)	1	#5	12'-3"	
b110(E)	112	#5	27'-11"	
b111(E)	88	#5	30'-5"	
b112(E)	112	#5	26'-3"	
d(E)	307	#5	5'-7"	
d3(E)	10	#6	8'-11"	
d6(E)	307	#5	7'-11"	
d7(E)	6	#6	4'-5"	
e110(E)	88	#4	16'-8"	
e111(E)	11	#8	16'-8"	
e112(E)	40	#4	18'-0"	
e113(E)	5	#8	18'-0"	

Items	Units	Quantity
Concrete Superstructures	Cu. Yd.	195.4
Protective Coat	Sq. Yd.	439
Reinforcement Bars, Epoxy Coated	Pound	25,470
Form Liner Textured Surface, Special	Sq. Ft.	383

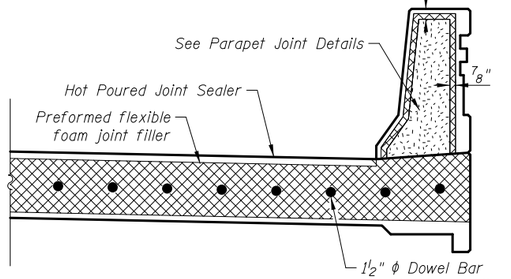


PLAN

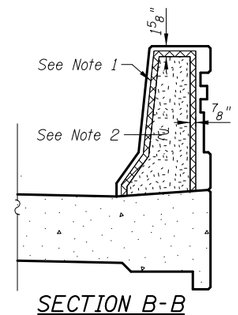
PARAPET JOINT DETAILS

Parapet Joint Notes:

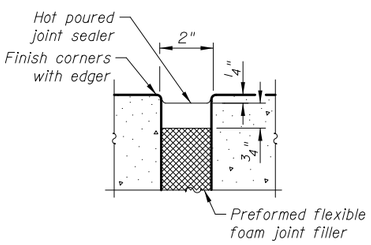
1. Non-staining gray one component non-sag elastomeric gun grade polyurethane sealant meeting the requirements of ASTM C-920, Type S, Grade NS, Class 25, use T with a ⅝" backer rod.
2. ½" Preformed Self-Expanding Cork Joint Filler according to Article 1051.07 of the Std. Spec. Cost included with Concrete Superstructure.



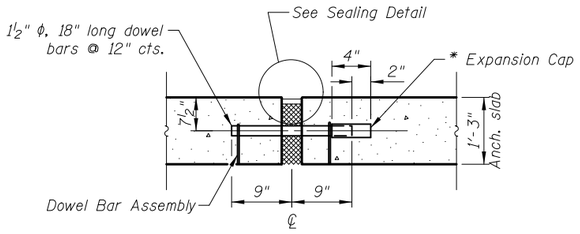
TRANSVERSE EXPANSION JOINT SECTION



SECTION B-B



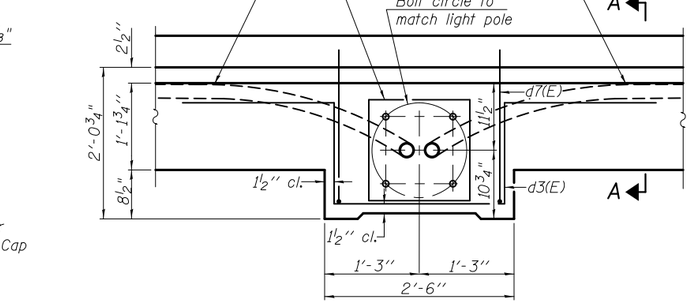
SEALING DETAIL



TRANSVERSE EXPANSION JOINT

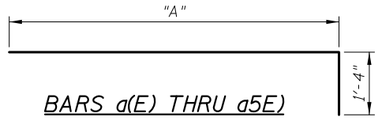
Expansion Joint and Dowel Bars included in the cost of Concrete Superstructures.

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



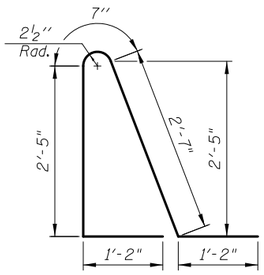
LIGHT POLE FOUNDATION PLAN

Notes:
Cost of anchor rods and conduit in Light Pole Foundation included with Concrete Superstructure.
See sheet WD6 for Form Liner Textured Surface, Special details.

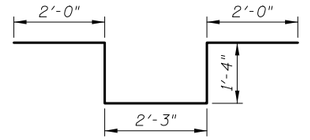


BARS a(E) THRU a5E)

Bar	A
a15(E)	11'-5"
a40(E)	11'-8"
a41(E)	12'-0"
a42E)	12'-3"



BAR d6(E)



BAR d3(E)

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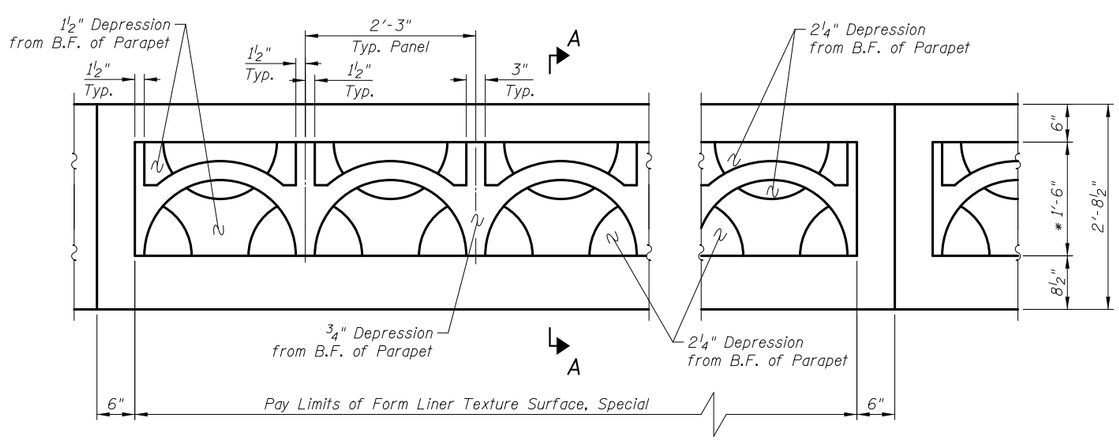
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ANCHORAGE SLAB DETAILS
WALL D: IL RTE 31
STRUCTURE NO. 056-2501
SHEET NO. WD5 OF WD8 SHEETS

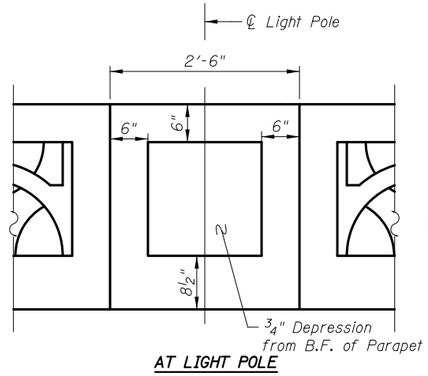
O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	609
		CONTRACT NO. 60F72		
		ILLINOIS	FED. AID PROJECT	

CHECKED FOR: CHECKER: DATE: (RED,YELLOW) BACK CHECKER: DATE: (GREEN) DRAFTER: DATE: (BLUE)

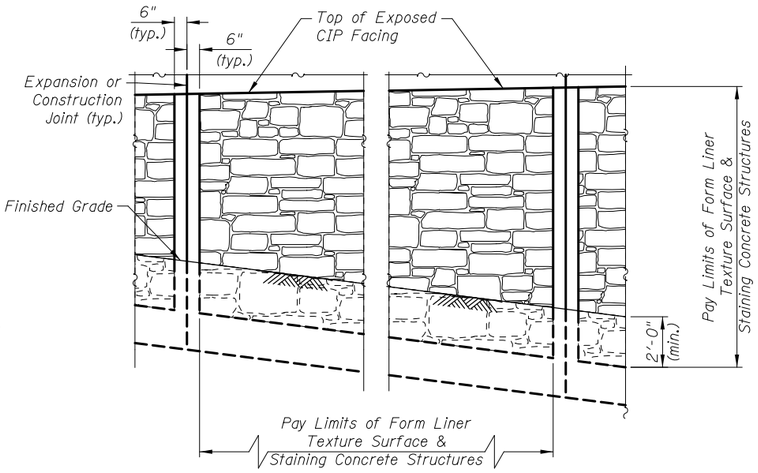


ELEVATION -OUTSIDE FACE OF PARAPET

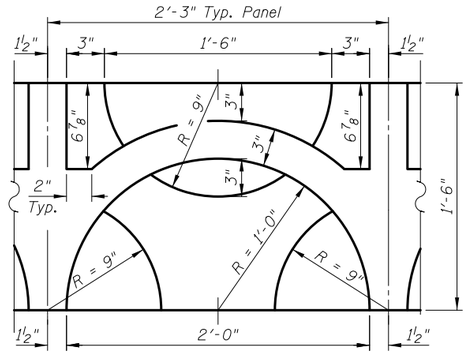
* Pay Limits of Form Liner Texture Surface, Special



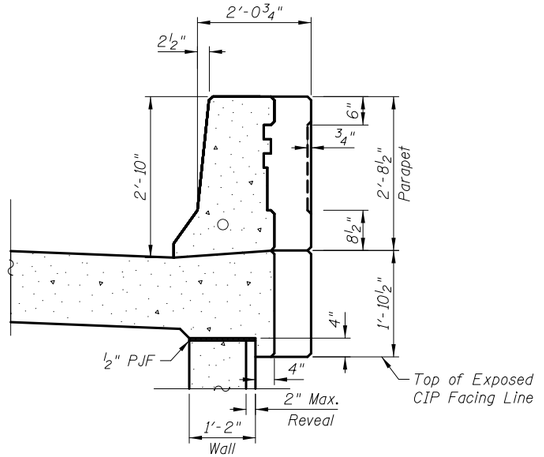
AT LIGHT POLE



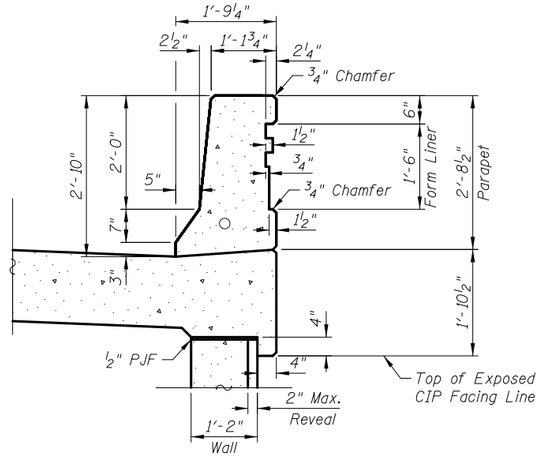
FORM LINER TEXTURE SURFACE DETAIL



FORM LINER TEXTURE SURFACE, SPECIAL DETAIL



AT LIGHT POLE



AT MSE WALL

SECTION A-A

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DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ARCHITECTURAL DETAILS
WALL D: IL RTE 31
STRUCTURE NO. 056-2501
SHEET NO. WD6 OF WD8 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	610
		CONTRACT NO. 60F72		
		ILLINOIS FED. AID PROJECT		

MIDLAND STANDARD ENGINEERING & TESTING, INC.

BRIDGE FOUNDATION BORING LOG

SHEET 1 OF 2

PROJECT IL. 31 - Algonquin Bypass | BRIDGE Mainline Route 31 | DATE 12/24/09, 12/30/09
ROUTE IL. Route 31 at IL. Route 62 | BORED BY SPE
SECTION | STATION 131+50 to 133+20 | CHECKED BY WJW
COUNTY McHenry
BORING BB-4
STATION 130+75
OFFSET 39' R of CL

WATER LEVEL DURING DRILLING 5.5'
Rotary Mud Drilling, Hole Grouted at Completion

Depth	N/6"	Qu tsf	W %	
GROUND SURFACE EL. 746.0	Ft			
Brown SAND and GRAVEL, A-1: FILL		6 9 5	-	6
Dark Grey to Black Silty Clay LOAM, A-6: FILL, stiff 743.0	5	2 2 2	1.20 B	21
Brown SAND and GRAVEL, A-1, wet, medium dense to dense 740.5		10 16 9	-	7
	10	6 10 23	-	11
		16 17 19	-	12
	15	6 14 21	-	8
Brown-Grey Clay LOAM, A-6, very stiff 730.5		13 14 16	4.33 B	16
	20	8 10 8	3.10 B	10
Brown-Grey Clay LOAM, A-6, very stiff 726.0	25	8 11 11	3.72 B	13
		8 10 13	3.67 B	14
		7 9 14	2.51 B	15
	30	6 9 10	2.71 B	13
		8 10 14	2.5 P	15
	35	ST	3.63 B	14
Grey and Brown Clay LOAM, A-6(6)* continued	40			

N-Standard Penetration Test- Blows per foot to drive 2 inch O.D. Split Spoon Sampler 12 inches with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf)
W- Water Content-percentage of oven dry weight (%)
ST- Shelby Tube Sample
* - Classification Test Results on Form BBS 2640

Type failure: B- Bulge Failure S- Shear Failure E- Estimated Value P-Penetrometer

MIDLAND STANDARD ENGINEERING & TESTING, INC.

BRIDGE FOUNDATION BORING LOG

SHEET 2 OF 2

BORING BB-4

Depth	N/6"	Qu tsf	W %	
CONTINUED	Ft			
Brown-Grey Clay LOAM, A-6(6)*, very stiff 706.0				
	45	5 7 13	1.74 B	15
Grey SAND and GRAVEL, A-2, medium dense 699.2				
	50	8 10 16	-	10
Brown-Grey Clay LOAM, A-6, stiff 694.0				
	55	2 3 6	1.43 BS	20
Brown Sandy Clay LOAM, A-6 to A-4, medium dense 690.0				
	60	6 10 14	2.38 B	10
Grey Sandy Clay LOAM, A-4 686.0				
Grey SAND and GRAVEL, A-1, dense 684.3				
	65	13 15 17	-	7
Grey SAND and GRAVEL, A-1, medium dense 681.0				
	70	14 13 13	-	8
Grey Dolomite Bedrock moderately to highly weathered, fine to medium grained, medium horizontal bedding, numerous horizontal fractures with frequent vertical fractures, moderately porous	75	ROCK CORE		
Core Run 1 Recovery = 99% RQD = 43%	80			
End of Boring @ 83.0' 663.0	85			

MIDLAND STANDARD ENGINEERING & TESTING, INC.

BRIDGE FOUNDATION BORING LOG

SHEET 1 OF 2

PROJECT IL. 31 - Algonquin Bypass | BRIDGE IL. 31 over Crystal Creek | DATE 1/8/09
ROUTE IL. Route 31 at IL. Route 62 | BORED BY SPE
SECTION | STATION 126+45 to 127+90 | CHECKED BY WJW
COUNTY McHenry
BORING BB-8
STATION 127+89
OFFSET 29' R of CL

WATER LEVEL DURING DRILLING 3.0'
GROUND WATER AT COMPLETION
Grouted at Completion

Depth	N/6"	Qu tsf	W %	
GROUND SURFACE EL. 739.6	Ft			
Black Clay LOAM, A-7-6, stiff		1 2 3	1.0 P	68
Brown SAND and GRAVEL, A-1, medium dense to very dense 736.6	5	7 8 14	-	5
		34 27 25	-	9
	10	26 50/3"	-	9
		8 10 13	-	8
Grey Silt LOAM, A-4, medium dense 726.6	15	7 9 11	-	14
Brown-Grey Clay LOAM, A-6, firm to stiff 724.1		4 6 7	0.93 B	15
	20	4 5 6	1.78 B	14
Brown and Grey Clay LOAM A-6, very stiff to hard 719.6	25	3 6 10	2.64 B	14
		4 8 11	3.17 B	13
	30	7 10 14	3.95 B	14
		7 11 16	3.52 B	13
	35	9 13 17	4.22 B	13
Grey SAND, A-2 700.1	40	3 3 4	3.0 P -	13

N-Standard Penetration Test- Blows per foot to drive 2 inch O.D. Split Spoon Sampler 12 inches with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf)
W- Water Content-percentage of oven dry weight (%)

Type failure: B- Bulge Failure S- Shear Failure E- Estimated Value P-Penetrometer

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Tel: 630.773.3900 Fax: 630.773.3975
www.civiltechinc.com

DRAWN	-	K. BOCHNOWSKI
DESIGNED	-	D. ATKINS
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS I
WALL D: IL RTE 31
STRUCTURE NO. 056-2501
SHEET NO. WD7 OF WD8 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	611
		CONTRACT NO. 60F72		
	ILLINOIS FED. AID PROJECT			

MIDLAND STANDARD ENGINEERING & TESTING, INC.

BRIDGE FOUNDATION BORING LOG

SHEET 2 OF 2

BORING BB-8

	Depth	N/6"	Qu tsf	W %
CONTINUED	Ft			
Grey SAND, A-2, slightly to medium dense 699.6	45	6 7 11	-	18
End of Boring @ 45.0' 694.6				

	Depth	N/6"	Qu tsf	W %
	Ft			

MIDLAND STANDARD ENGINEERING & TESTING, INC.

STRUCTURE FOUNDATION BORING LOG

SHEET 1 OF 1

PROJECT IL. Route 31 - Algonquin Bypass, IL. Route 31 Retaining Wall
ROUTE IL. Route 31 at IL. Route 62
SECTION STATION 128+00 to 138+00
COUNTY McHenry
BORING RW-8
STATION 128+70
OFFSET 28' R of CL

DATE 11/18/08
BORED BY SPE
CHECKED BY WJW

WATER LEVEL
DURING DRILLING 3.5'
GROUND WATER
AT COMPLETION 3.5'
Grouted at Completion

GROUND SURFACE EL. 740.7

Depth	N/6"	Qu tsf	W %
Ft			
Black Organic Silty CLAY, A-7-6	2 2 4	-	34
Brown SAND (f-c) and GRAVEL, A-1, medium dense to dense 737.7	17 22 9	-	17
5	7 9 10	-	12
	8 15 19	-	8
10	12 18 20	-	9
	12 17 21	-	16
Grey SILT, A-4, dense 726.7			
Grey Clay LOAM, A-6, very stiff 725.2	4 7 14	3.22 B	14
15	4 8 13	3.80 B	13
20			

Depth	N/6"	Qu tsf	W %
Ft			
Grey Clay LOAM, A-6, very stiff 720.7	8 9 12	3.76 B	13
25	5 9 13	3.22 B	14
	5 9 13	3.10 B	12
30	5 10 14	3.45 B	14
End of Boring @ 30.0' 710.7			

N-Standard Penetration Test- Blows per foot to drive 2 inch O.D. Split Spoon Sampler 12 inches with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf)
W- Water Content-percentage of oven dry weight (%)

Type failure: B- Bulge Failure S- Shear Failure E- Estimated Value P-Penetrometer

MIDLAND STANDARD ENGINEERING & TESTING, INC.

STRUCTURE FOUNDATION BORING LOG

SHEET 1 OF 1

PROJECT IL. Route 31 - Algonquin Bypass, IL. Route 31 Retaining Wall
ROUTE IL. Route 31 at IL. Route 62
SECTION STATION 128+00 to 130+00
COUNTY McHenry
BORING RW-9
STATION 130+00
OFFSET 40' R of CL

DATE 11/25/08
BORED BY SPE
CHECKED BY WJW

WATER LEVEL
DURING DRILLING 6.0'
GROUND WATER
AT COMPLETION 6.5'
Grouted at Completion

GROUND SURFACE EL. 745.4

Depth	N/6"	Qu tsf	W %
Ft			
Dark Brown Silty CLAY, A-6 mixed with Gravel, A-1: FILL	6 7 9	-	14
large PGE type Rock	3 4 14	-	7
Black Organic CLAY, A-8 739.9			
Grey SAND (f-), A-2, medium dense 738.4	1 3 5	-	177
Grey SAND (f-c) and GRAVEL, A-1, medium dense 736.9	12 9 7	-	18
dense	20 20 19	-	8
Pinkish-Brown to Grey Clay LOAM, A-6, very stiff 732.5	9 11 10	3.37 B	11
Brown SAND and GRAVEL, A-1, medium dense 729.9	7 14 14	-	10
Pinkish-Grey Clay LOAM, A-6, hard 727.4	11 12 16	4.84 B	12

Depth	N/6"	Qu tsf	W %
Ft			
Pinkish-Grey Clay LOAM, A-6, very stiff to hard 725.4	9 11 16	4.77 B	12
25	10 12 15	3.45 B	13
	10 11 14	3.14 B	14
30	8 9 15	2.87 B	14
End of Boring @ 30.0' 715.4			

N-Standard Penetration Test- Blows per foot to drive 2 inch O.D. Split Spoon Sampler 12 inches with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf)
W- Water Content-percentage of oven dry weight (%)

Type failure: B- Bulge Failure S- Shear Failure E- Estimated Value P-Penetrometer

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DRAWN	-	K. BOCHNOWSKI
DESIGNED	-	D. ATKINS
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

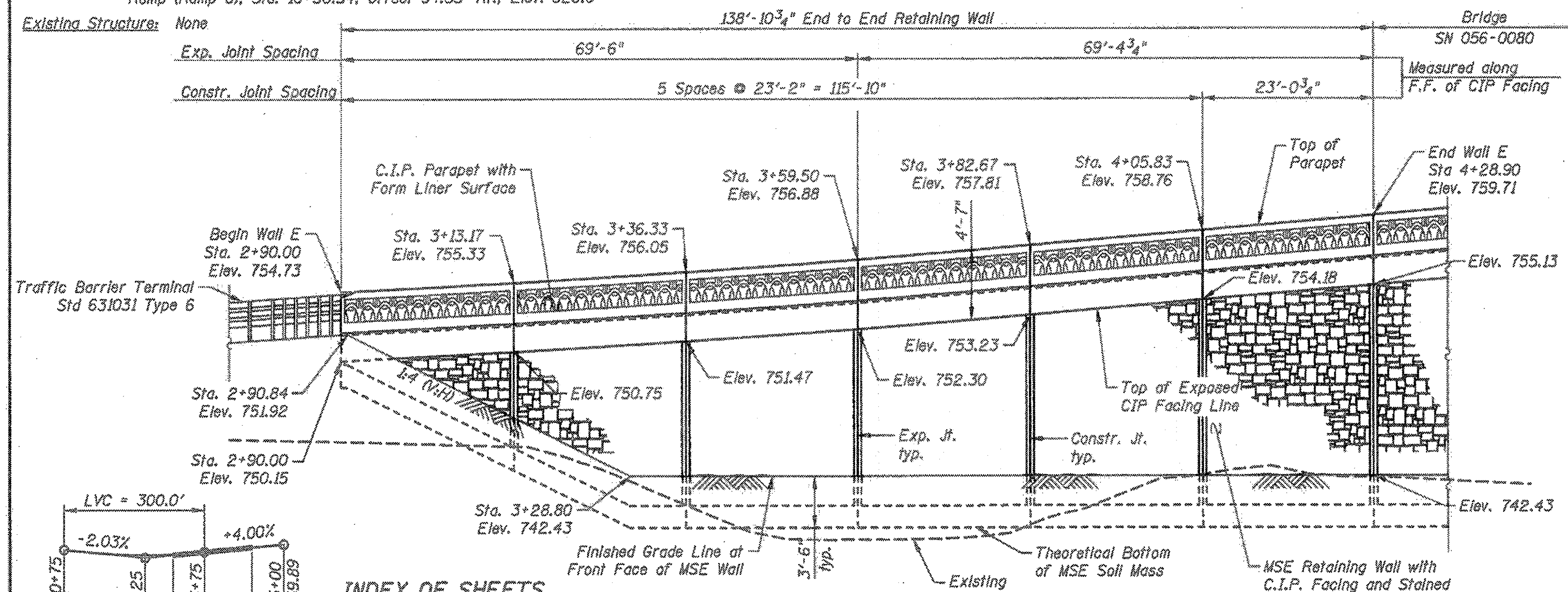
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS II
WALL D: IL RTE 31
STRUCTURE NO. 056-2501
SHEET NO. WD8 OF WD8 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	612
		CONTRACT NO. 60F72		
	ILLINOIS FED. AID PROJECT			

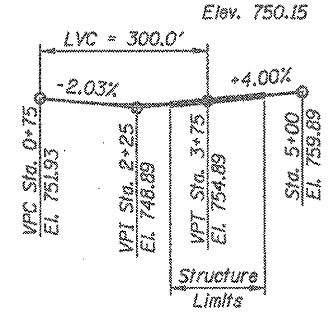
Bench Mark: Control Point CP43, Mag. Nail set, SB IL Rte. 31 Bypass Entrance Ramp (Ramp C), Sta. 10+30.54, Offset 94.55' Rt., Elev. 820.0

Existing Structure: None



ELEVATION

(Looking at Front Face of Wall)



PROPOSED PROFILE SB ENTR. RAMP C

INDEX OF SHEETS

◇ Settlement Platforms

Sta. 3+25, 4-ft. Right
Sta. 4+00, 4-ft. Right

Settlement Platforms shall be erected in accordance with Article 204.06 except that the platforms shall be placed at the bottom of the MSE soil mass. Cost shall be included in the cost of Mechanically Stabilized Earth Retaining Wall.

GENERAL NOTES

1. Reinforcement bars designated (E) shall be epoxy coated.
2. Neither the MSE wall cast-in-place concrete facing, anchorage slab & parapet, nor roadway pavement shall be constructed until after the roadway embankment and reinforced select fill have been in place for 4 months, after which time less than 1 inch of the total anticipated settlement of 6½ inches is assumed to remain, without the prior approval of the Engineer. The settlement period may be shortened at the discretion of the Engineer if the monitoring data indicates a lesser than predicted settlement.

APPROVED
For Structural Adequacy Only
Engineer of Bridges & Structures

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structure Excavation	Cu. Yd.	107
Concrete Superstructure	Cu. Yd.	84.0
Form Liner Textured Surface	Sq. Ft.	1,414
Protective Coat	Sq. Yd.	188
Reinforcement Bars, Epoxy Coated	Pound	11,150
Geocomposite Wall Drain	Sq. Yd.	18
Mechanically Stabilized Earth Retaining Walls	Sq. Ft.	1,686
Staining Concrete Structures	Sq. Yd.	157
Form Liner Textured Surface, Special	Sq. Ft.	200

CIVILTECH ENGINEERING, INC.
GREGORY J. HATLESTAD, S.E.

GREGORY J. HATLESTAD, S.E.
081-005562
EXP 11/30/12
DATE 3/15/12

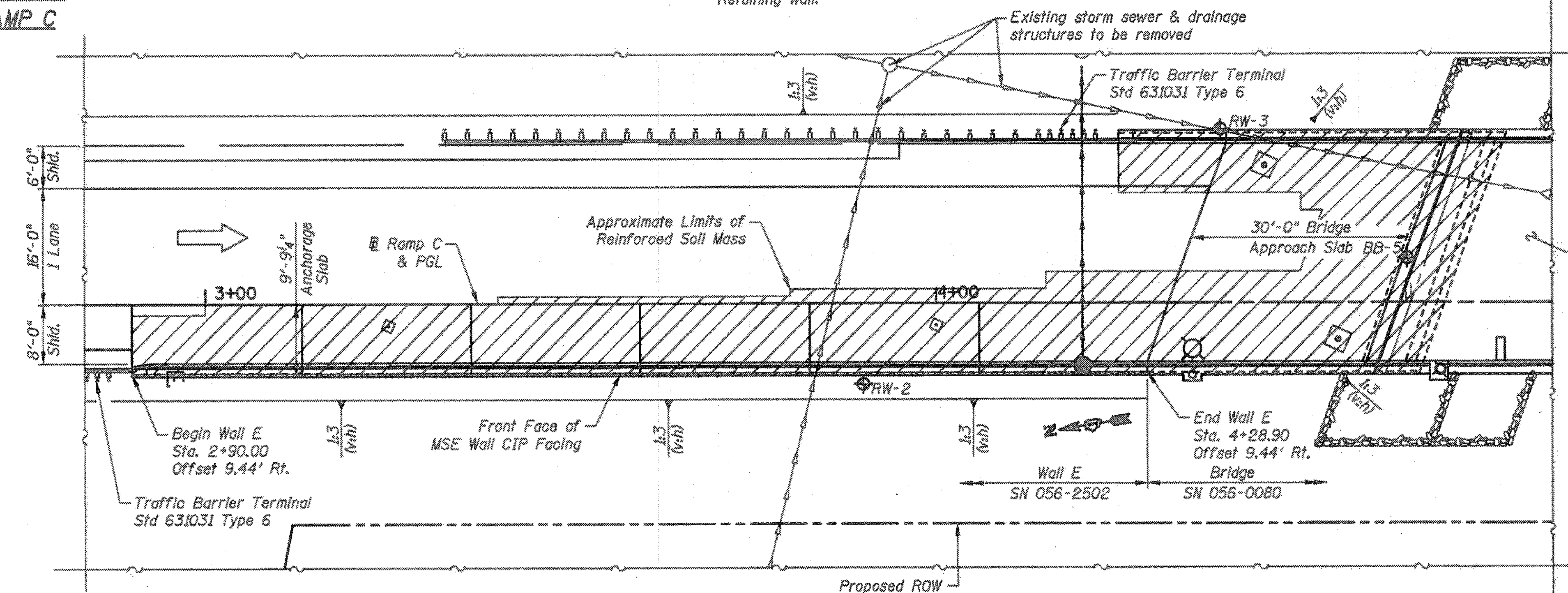
DESIGN SPECIFICATIONS

2002 AASHTO Standard Specification for Highway Bridges, 17th Ed.

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)

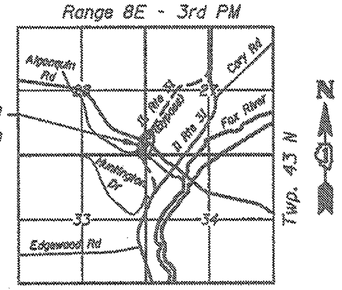


PLAN

Note:
Wall offsets measured from ℄ Ramp C to front face of CIP facing

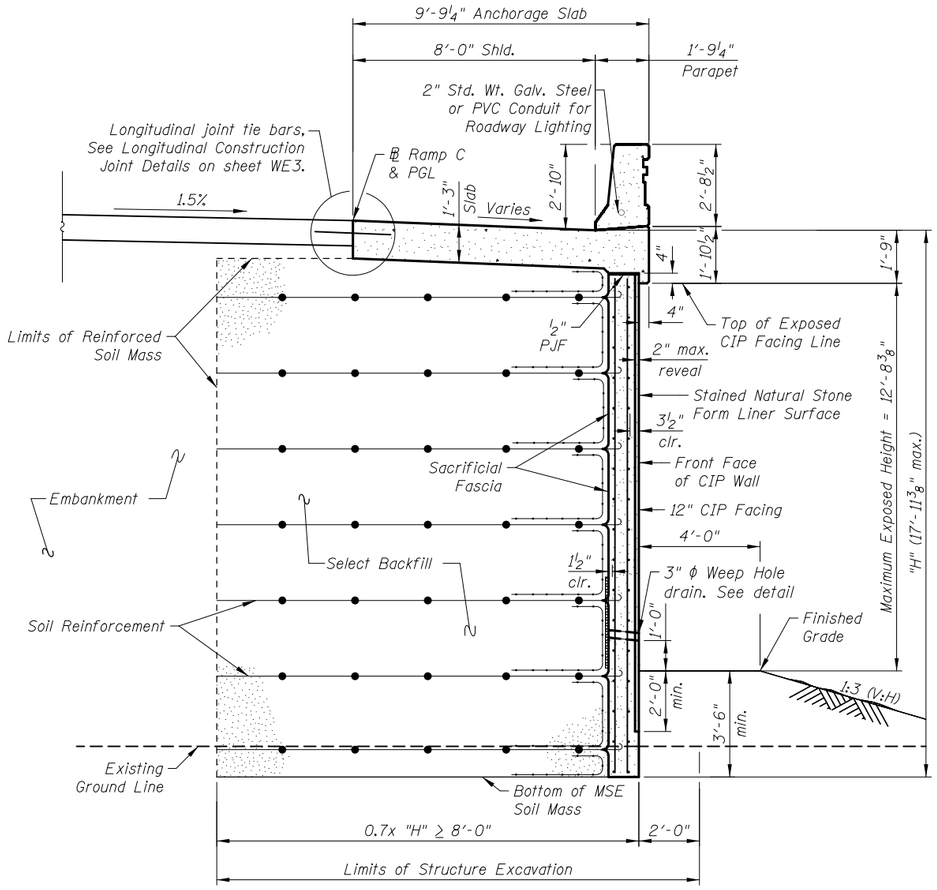
LEGEND

◈ Soil Borings
—▷— Existing Storm Sewer



LOCATION SKETCH

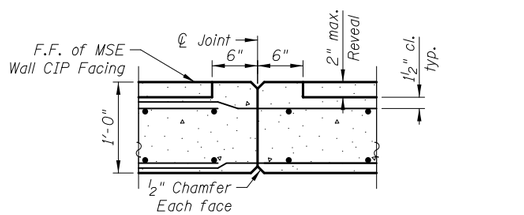
GENERAL PLAN & ELEVATION
WALL E: F.A.P. 339 SB ENTR. RAMP C
SECTION 18A-2, McHENRY COUNTY
STA. 2+90 TO STA. 4+28.90
STRUCTURE NO. 056-2502



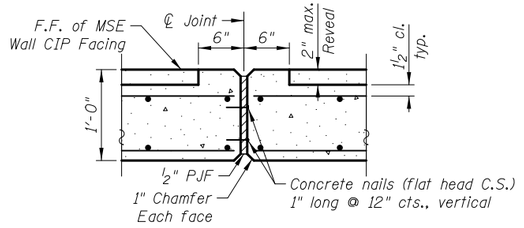
TYPICAL WALL SECTION

(Looking South)

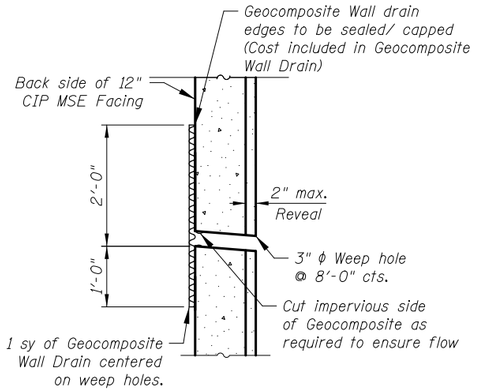
The MSE wall supplier's internal stability design shall account for the anchorage slab's bearing pressure surcharge of 1.0 ksf and horizontal sliding force of 0.5 kips/ft. of wall.



CONSTRUCTION JOINT

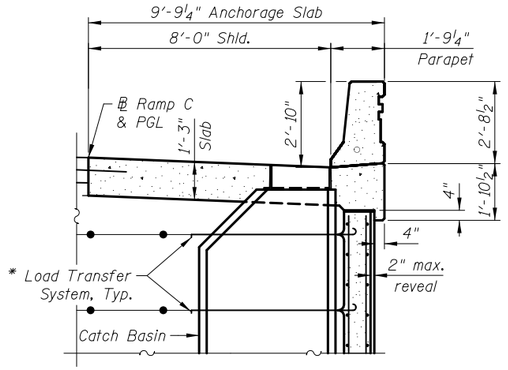


EXPANSION JOINT



WEEP HOLE DRAIN DETAIL

Weep hole spacing shall be at ±8'-0" horizontally



SECTION AT DRAINAGE STRUCTURE

(Looking South)

* *MSE supplier to design load transfer system to accommodate concrete pipe and catch basin.*

MSE WALL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structure Excavation	Cu. Yd.	87
Form Liner Textured Surface	Sq. Ft.	1,430
Geocomposite Wall Drain	Sq. Yd.	18
Mechanically Stabilized Earth Retaining Wallls	Sq. Ft.	1,686
Staining Concrete Structures	Sq. Yd.	159

Notes:

See sheet WE3 for reinforcement and remainder of dimensions of Anchorage Slab.

See sheet WE5 for Form Liner Textured Surface details.

Anchorage slab contraction and expansion joints shall be in line with pavement jointing.

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DESIGNED	D. ATKINS
CHECKED	G. HATLESTAD
DATE	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MSE WALL DETAILS
WALL E; RAMP C
STRUCTURE NO. 056-2502
SHEET NO. WE2 OF WE7 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	614
		CONTRACT NO. 60F72		
	ILLINOIS FED. AID PROJECT			

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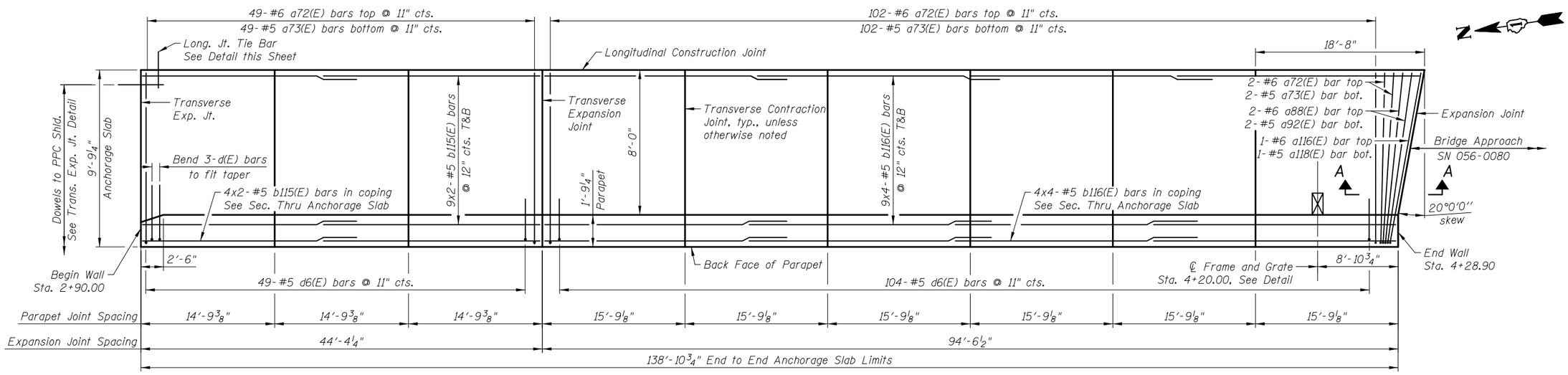
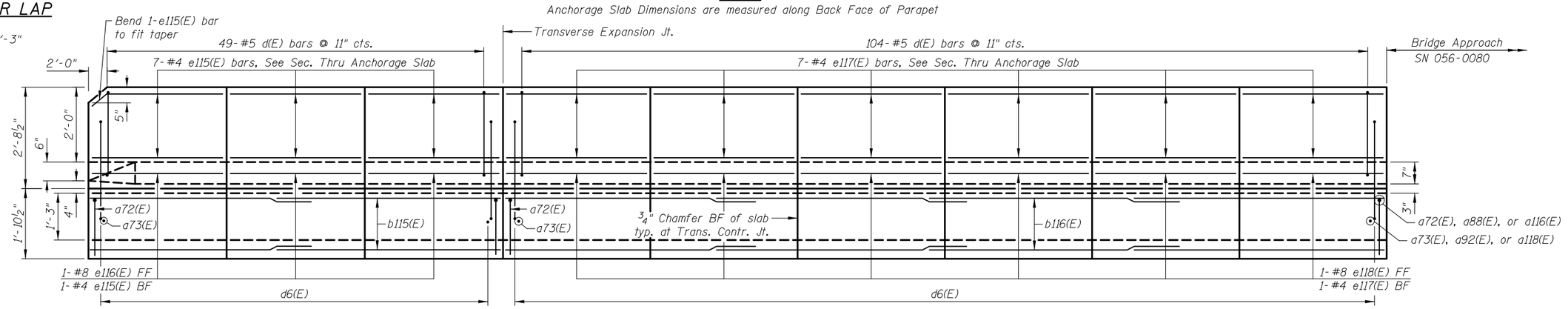


PLAN

Anchorage Slab Dimensions are measured along Back Face of Parapet

MINIMUM BAR LAP

(Slab)
#5 bar = 3'-3"

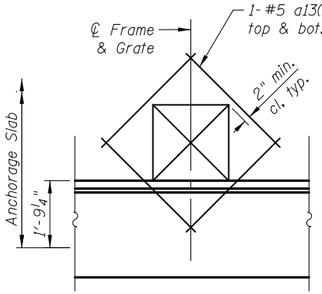


ELEVATION

(Back Face of Parapet)

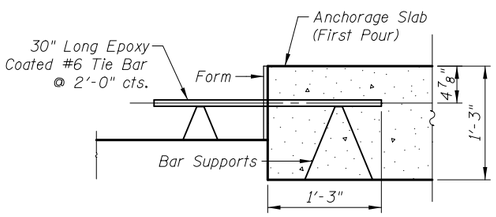
Notes:

See sheet WE4 for Bill of Material, Reinforcement Schedule, and Bar Diagrams.
See sheet WE4 for Section Thru Anchorage Slab.
See sheet WE4 for Transverse Expansion Joint Details.
See sheet WE2 for Anchorage Slab Key Plan.
Anchorage slab contraction and expansion joints shall be in line with pavement jointing.
Bars indicated thus 11x2-#5 etc. indicate 11 lines of bars with 2 lengths per line.
Field cut bars as required around Frame and Grate.

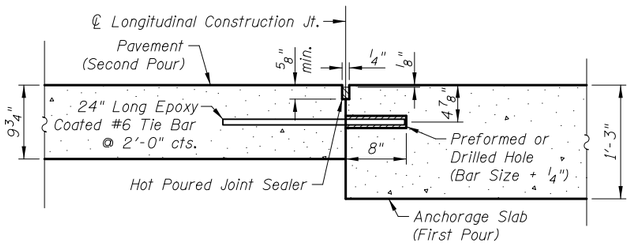


DETAIL OF REINFORCEMENT AT DRAINAGE STRUCTURE

(Cut longitudinal reinforcement to clear drainage structure)



TIE BAR FORMED IN PLACE



TIE BAR GROUTED IN PLACE

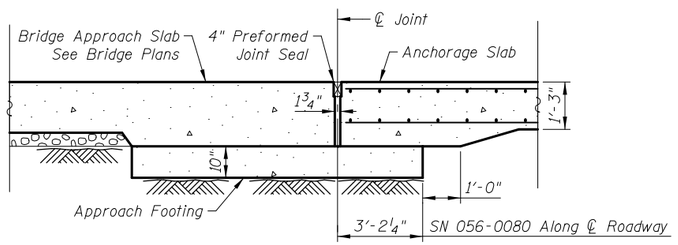
LONGITUDINAL CONSTRUCTION JOINT

PLAN

SECTION

TRANSVERSE CONTRACTION JOINT

See Art. 420.05(c) of Standard Specifications



SECTION A-A

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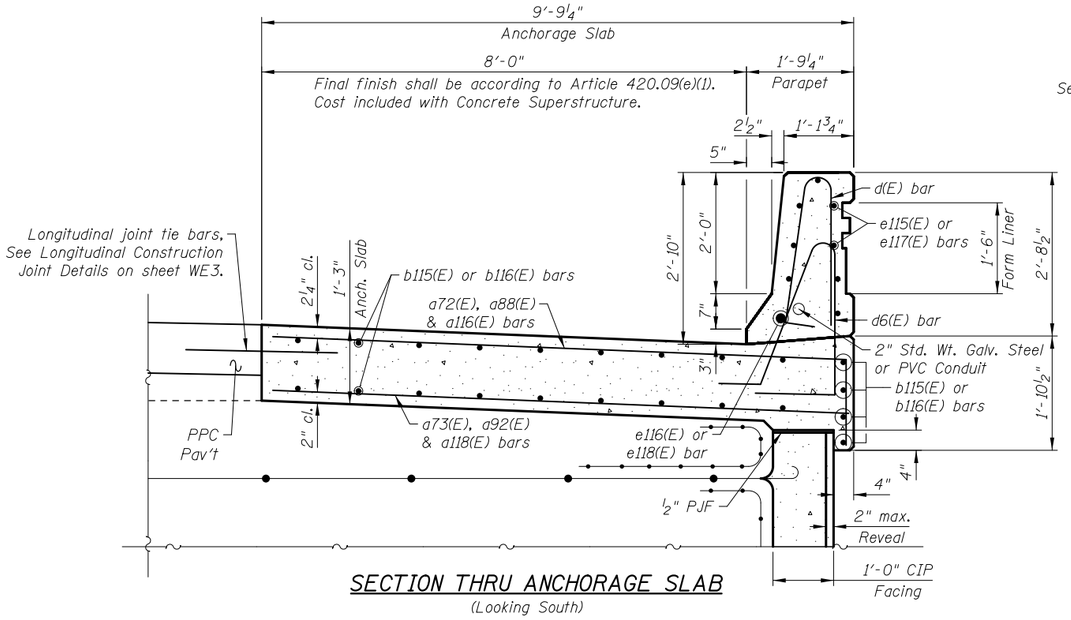
DESIGNED	-	D. ATKINS
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

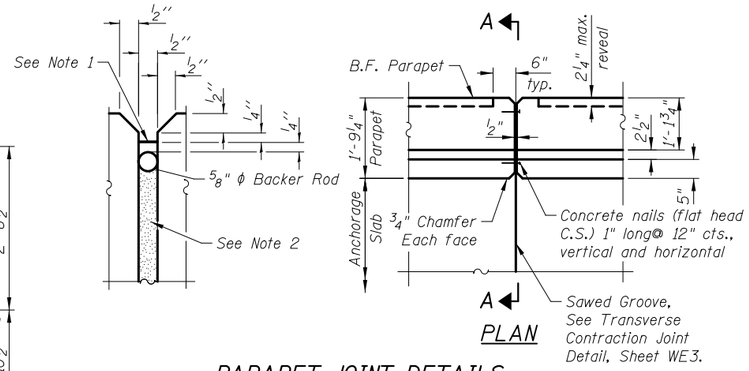
ANCHORAGE SLAB
WALL E; RAMP C
STRUCTURE NO. 056-2502
SHEET NO. WE3 OF WE7 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	615
		CONTRACT NO. 60F72		
	ILLINOIS FED. AID PROJECT			



SECTION THRU ANCHORAGE SLAB

(Looking South)



PLAN

PARAPET JOINT DETAILS

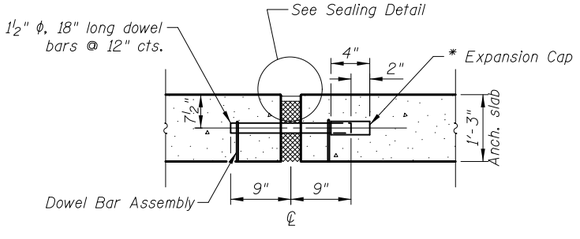
Parapet Joint Notes:

1. *Non-staining gray one component non-sag elastomeric gun grade polyurethane sealant meeting the requirements of ASTM C-920, Type S, Grade NS, Class 25, use T with a ⅝" backer rod.*
2. *½" Preformed Self-Expanding Cork Joint Filler according to Article 1051.07 of the Std. Spec. Cost included with Concrete Superstructure.*

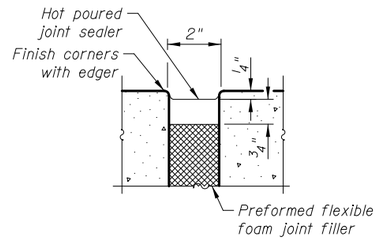
ANCHORAGE SLAB BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a13(E)	8	#5	3'-6"	
a72(E)	153	#6	10'-9"	
a73(E)	153	#5	9'-5"	
a88(E)	2	#6	11'-2"	
a92(E)	2	#5	9'-10"	
a116(E)	1	#6	11'-4"	
a118(E)	1	#5	10'-0"	
b115(E)	44	#5	23'-8"	
b116(E)	88	#5	26'-9"	
d(E)	153	#5	5'-7"	
d6(E)	153	#5	7'-11"	
e115(E)	24	#4	14'-5"	
e116(E)	3	#8	14'-5"	
e117(E)	48	#4	15'-5"	
e118(E)	6	#8	15'-5"	

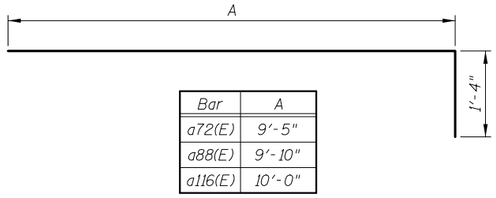
Item	Unit	Quantity
Concrete Superstructures	Cu. Yd.	84.6
Protective Coat	Sq. Yd.	188
Reinforcement Bars, Epoxy Coated	Pound	10,870
Form Liner Textured Surface, Special	Sq. Ft.	195



ANCHORAGE SLAB TO ANCHORAGE SLAB

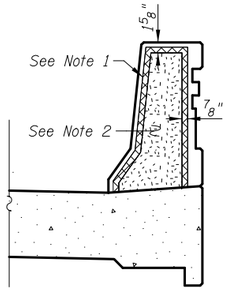


SEALING DETAIL



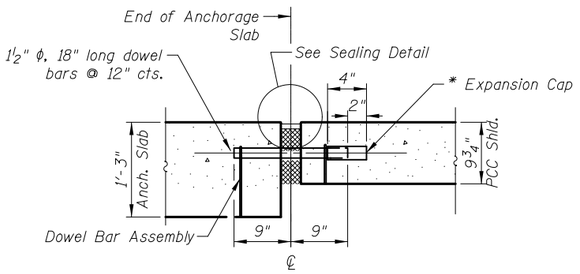
Bar	A
a72(E)	9'-5"
a88(E)	9'-10"
a116(E)	10'-0"

BAR a72(E), a88(E) & a116(E)



SECTION A-A

Note:
See sheet WE5 for Form Liner Textured Surface, Special details.

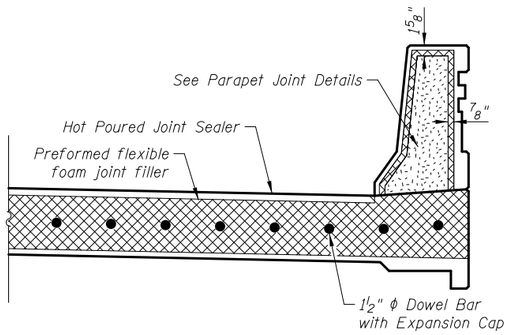


ANCHORAGE SLAB TO PCC SHOULDER

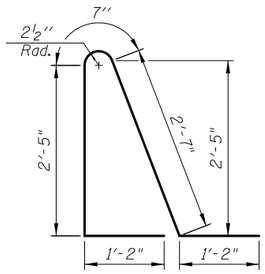
TRANSVERSE EXPANSION JOINT

Expansion Joint and Dowel Bars included in the cost of Concrete Superstructures.

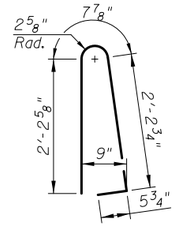
** Expansion caps shall be installed on the exposed end of each dowel bar once the header has been removed and the joint filler material has been installed.*



TRANSVERSE EXPANSION JOINT SECTION



BAR d6(E)



BAR d(E)

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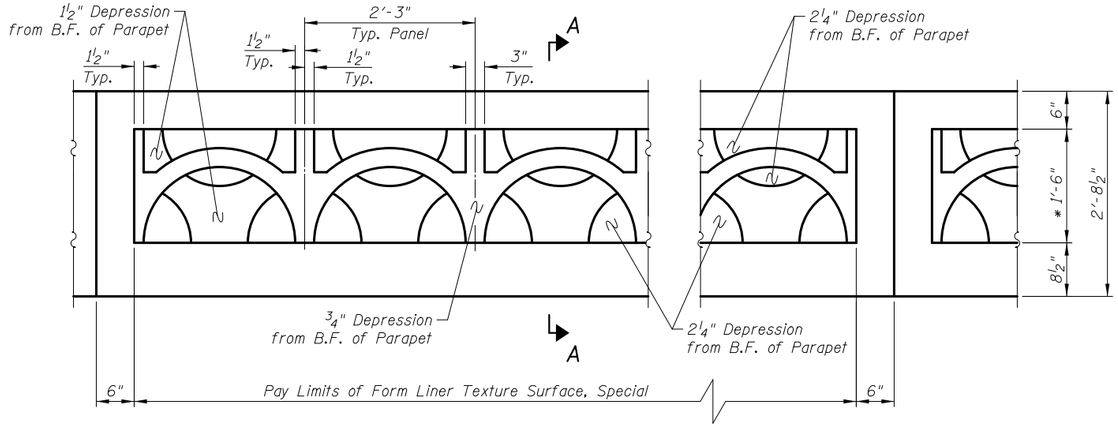
DRAWN	-	K. BOCHNOWSKI
DESIGNED	-	D. ATKINS
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

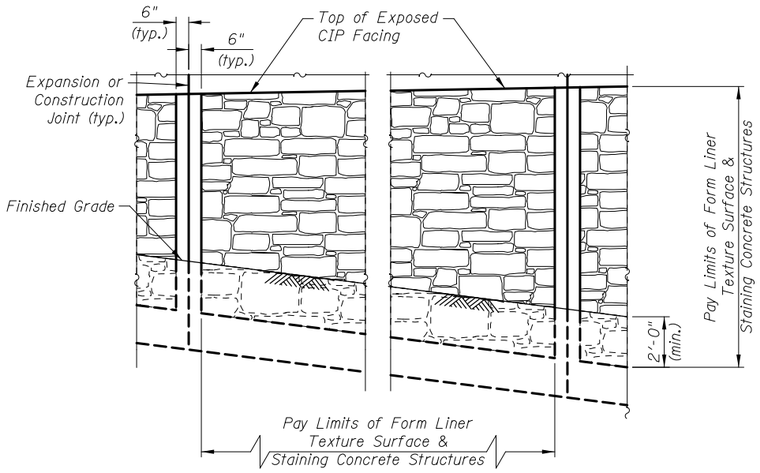
ANCHORAGE SLAB DETAILS
WALL E; RAMP C
STRUCTURE NO. 056-2502
SHEET NO. WE4 OF WE7 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	616
		CONTRACT NO. 60F72		
	ILLINOIS FED. AID PROJECT			

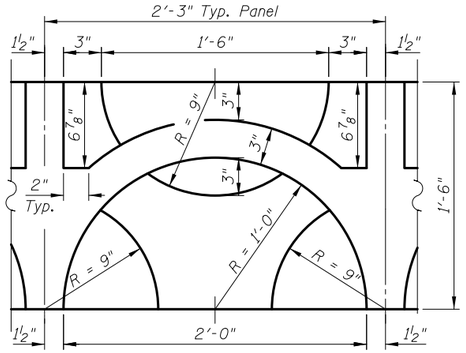


ELEVATION -OUTSIDE FACE OF PARAPET

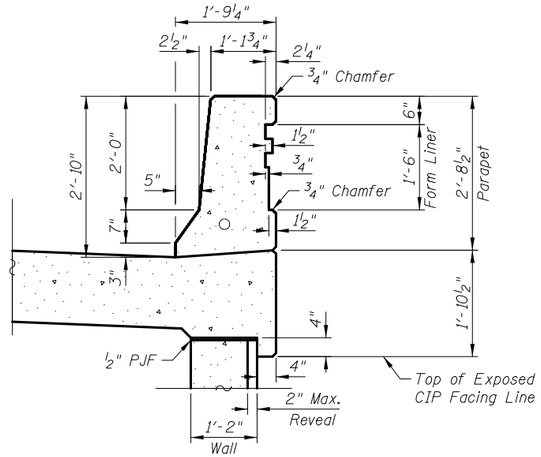
* Pay Limits of Form Liner Texture Surface, Special



FORM LINER TEXTURE SURFACE DETAIL



FORM LINER TEXTURE SURFACE, SPECIAL DETAIL



SECTION A-A

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5/2/2012

CIVILTECH
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DRAWN	-	K. BOCHNOWSKI
DESIGNED	-	D. ATKINS
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ARCHITECTURAL DETAILS
WALL E; RAMP C
STRUCTURE NO. 056-2502
SHEET NO. WE5 OF WE7 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	617
		CONTRACT NO. 60F72		
	ILLINOIS FED. AID PROJECT			

MIDLAND STANDARD ENGINEERING & TESTING, INC.

STRUCTURE FOUNDATION BORING LOG

SHEET 1 OF 1

PROJECT IL. Route 31 - Algonquin Bypass, Ramp C Retaining Wall
ROUTE IL. Route 31 at IL. Route 62
SECTION
STATION 2+50 to 4+65
DATE 11/25/08
BORED BY SPE
CHECKED BY WJW

COUNTY McHenry
BORING RW-1
STATION 2+60
OFFSET 9' R of CL

WATER LEVEL
DURING DRILLING 5.5'
GROUND WATER
AT COMPLETION 25.5'
Grouted at Completion

GROUND SURFACE EL. 746.0

2" Asphalt over Dark Brown SAND and GRAVEL Base Course
Black Silty CLAY, A-7-6, stiff — 745.0
Yellow-Brown SAND (f-c) and GRAVEL, A-1, medium dense — 743.0
to Grey SAND, A-2, wet
Grey Clay LOAM, A-6, very stiff — 739.2
Grey Clay LOAM, A-6, very stiff — 726.0
End of Boring @ 30.0' — 716.0

Depth	N/6"	Qu tsf	W %
Ft			
5	6 5 5	1.63 S	22
	6 10 12	-	13
	5 5 6	2.09 B	12
10	5 5 8	3.05 B	13
	5 6 9	3.26 B	12
15	5 6 10	2.91 B	12
	5 8 12	3.44 B	11
20	8 9 13	3.95 B	13
Ft			
25	5 8 8	3.41 B	14
	5 8 9	3.17 B	14
	8 10 12	2.98 B	13
30	8 9 13	3.64 B	13

N-Standard Penetration Test- Blows per foot to drive 2 inch O.D. Split Spoon Sampler 12 inches with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf)
W- Water Content-percentage of oven dry weight (%)

Type failure: B- Bulge Failure S- Shear Failure E- Estimated Value P-Penetrometer

MIDLAND STANDARD ENGINEERING & TESTING, INC.

STRUCTURE FOUNDATION BORING LOG

SHEET 1 OF 1

PROJECT IL. Route 31 - Algonquin Bypass, Ramp C Retaining Wall
ROUTE IL. Route 31 at IL. Route 62
SECTION
STATION 2+50 to 4+65
DATE 12/11/08
BORED BY SPE
CHECKED BY WJW

COUNTY McHenry
BORING RW-2
STATION 3+90
OFFSET 10' R of CL

WATER LEVEL
DURING DRILLING 4.0'
GROUND WATER
AT COMPLETION 23.3'
Grouted at Completion

GROUND SURFACE EL. 741.0

±5" Dark Brown Silty CLAY/TOPSOIL
Brown SAND (f-c), little Gravel, A-2, medium dense — 740.6
Grey SAND and GRAVEL, A-1 — 738.0
Brown-Grey Clay LOAM, A-6, very stiff — 736.5
Grey SILT, A-4, wet, medium dense — 733.0
Brown-Grey Clay LOAM, A-6, hard — 730.5
Brown-Grey Clay LOAM, A-6, hard to very stiff — 721.0
End of Boring @ 30.0' — 711.0

Depth	N/6"	Qu tsf	W %
Ft			
	4 4 8	-	10
5	8 11 16	-	15
	5 8 12	3.95 B	12
10	11 12 12	-	16
	6 8 12	4.15 BS	12
15	7 11 16	5.27 BS	13
	6 9 13	5.89 BS	12
20	5 8 13	4.81 BS	13
Ft			
	7 13 15	6.32 BS	13
25	7 13 16	6.28 BS	13
	7 11 16	3.72 B	15
30	7 12 15	3.49 B	13

N-Standard Penetration Test- Blows per foot to drive 2 inch O.D. Split Spoon Sampler 12 inches with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf)
W- Water Content-percentage of oven dry weight (%)

Type failure: B- Bulge Failure S- Shear Failure E- Estimated Value P-Penetrometer

MIDLAND STANDARD ENGINEERING & TESTING, INC.

STRUCTURE FOUNDATION BORING LOG

SHEET 1 OF 1

PROJECT IL. Route 31 - Algonquin Bypass, Ramp C Retaining Wall
ROUTE IL. Route 31 at IL. Route 62
SECTION
STATION 4+15 to 4+65
DATE 12/12/08
BORED BY SPE
CHECKED BY WJW

COUNTY McHenry
BORING RW-3
STATION 4+39
OFFSET 24' L of CL

WATER LEVEL
DURING DRILLING 3.5'
GROUND WATER
AT COMPLETION 4.0'
Grouted at Completion

GROUND SURFACE EL. 742.5

Black over Dark Brown Clay LOAM, A-7-6, stiff
Grey SAND and GRAVEL, A-1 — 739.5
Cobble @ 3.5'
Brown-Grey Clay LOAM, A-6, very stiff to hard — 733.3
Cobble @ 15.0'
Brown-Grey Clay LOAM, A-6, very stiff to hard — 722.5
End of Boring @ 30.0' — 712.5

Depth	N/6"	Qu tsf	W %
Ft			
	2 3 4	1.5 P	29
5	12 9 8	-	12
	6 9 15	-	13
10	9 6 11	2.09 B	13
	6 9 13	3.44 B	12
15	7 13 18	3.68 BS	13
	7 13 16	4.19 BS	13
20	9 13 20	3.84 BS	14
Ft			
	9 14 18	5.35 BS	12
25	6 12 17	3.88 BS	14
	6 11 13	4.26 BS	13
30	7 10 14	3.68 BS	14

N-Standard Penetration Test- Blows per foot to drive 2 inch O.D. Split Spoon Sampler 12 inches with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf)
W- Water Content-percentage of oven dry weight (%)

Type failure: B- Bulge Failure S- Shear Failure E- Estimated Value P-Penetrometer

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DRAWN	-	K. BOCHNOWSKI
DESIGNED	-	D. ATKINS
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS I
WALL E; RAMP C
STRUCTURE NO. 056-2502
SHEET NO. WE6 OF WE7 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	618
		CONTRACT NO. 60F72		
	ILLINOIS FED. AID PROJECT			

MIDLAND STANDARD ENGINEERING & TESTING, INC.

STRUCTURE FOUNDATION BORING LOG

SHEET 1 OF 1

PROJECT IL. Route 31 - Algonquin Bypass, IL. Route 31 Retaining Wall
ROUTE IL. Route 31 at IL. Route 62
SECTION
STATION 128+00 to 138+00
DATE 11/18/08
BORED BY SPE
CHECKED BY WJW

COUNTY McHenry
BORING RW-8
STATION 128+70
OFFSET 28' R of CL

WATER LEVEL DURING DRILLING 3.5'
GROUND WATER AT COMPLETION 3.5'
Grouted at Completion

	Depth	N/6"	Qu tsf	W %
GROUND SURFACE EL. 740.7	Ft			
Black Organic Silty CLAY, A-7-6		2 2 4	-	34
Brown SAND (f-c) and GRAVEL, A-1, medium dense to dense 737.7	5	17 22 9	-	17
		7 9 10	-	12
	10	8 15 19	-	8
		12 18 20	-	9
Grey SILT, A-4, dense 726.7	15	12 17 21	-	16
Grey Clay LOAM, A-6, very stiff 725.2		4 7 14	3.22 B	14
	20	4 8 13	3.80 B	13
Grey Clay LOAM, A-6, very stiff 720.7				
		8 9 12	3.76 B	13
	25	5 9 13	3.22 B	14
		5 9 13	3.10 B	12
End of Boring @ 30.0' 710.7	30	5 10 14	3.45 B	14

N-Standard Penetration Test- Blows per foot to drive 2 inch O.D. Split Spoon Sampler 12 inches with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf) W- Water Content-percentage of oven dry weight (%)

Type failure: B- Bulge Failure S- Shear Failure E- Estimated Value P-Penetrometer

MIDLAND STANDARD ENGINEERING & TESTING, INC.

STRUCTURE FOUNDATION BORING LOG

SHEET 1 OF 1

PROJECT IL. Route 31 - Algonquin Bypass, IL. Route 31 Retaining Wall
ROUTE IL. Route 31 at IL. Route 62
SECTION
STATION 128+00 to 130+00
DATE 11/25/08
BORED BY SPE
CHECKED BY WJW

COUNTY McHenry
BORING RW-9
STATION 130+00
OFFSET 40' R of CL

WATER LEVEL DURING DRILLING 6.0'
GROUND WATER AT COMPLETION 6.5'
Grouted at Completion

	Depth	N/6"	Qu tsf	W %
GROUND SURFACE EL. 745.4	Ft			
Dark Brown Silty CLAY, A-6 mixed with Gravel, A-1: FILL		6 7 9	-	14
	5	3 4 14	-	7
large PGE type Rock				
Black Organic CLAY, A-8 739.9		1 3 5	-	177
Grey SAND (f-), A-2, medium dense 738.4				
Grey SAND (f-c) and GRAVEL, A-1, medium dense 736.9	10	12 9 7	-	18
dense		20 20 19	-	8
Pinkish-Brown to Grey Clay LOAM, A-6, very stiff 732.5	15	9 11 10	3.37 B	11
Brown SAND and GRAVEL, A-1, medium dense 729.9		7 14 14	-	10
Pinkish-Grey Clay LOAM, A-6, hard 727.4	20	11 12 16	4.84 B	12
Pinkish-Grey Clay LOAM, A-6, very stiff to hard 725.4				
		9 11 16	4.77 B	12
	25	10 12 15	3.45 B	13
		10 11 14	3.14 B	14
End of Boring @ 30.0' 715.4	30	8 9 15	2.87 B	14

N-Standard Penetration Test- Blows per foot to drive 2 inch O.D. Split Spoon Sampler 12 inches with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf) W- Water Content-percentage of oven dry weight (%)

Type failure: B- Bulge Failure S- Shear Failure E- Estimated Value P-Penetrometer

CIVILTECH
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Tel: 630.773.3900 Fax: 630.773.3975
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DRAWN	K. BOCHNOWSKI
DESIGNED	D. ATKINS
CHECKED	G. HATLESTAD
DATE	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS II
WALL E; RAMP C
STRUCTURE NO. 056-2502
SHEET NO. WE7 OF WE7 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	619
		CONTRACT NO. 60F72		
	ILLINOIS FED. AID PROJECT			

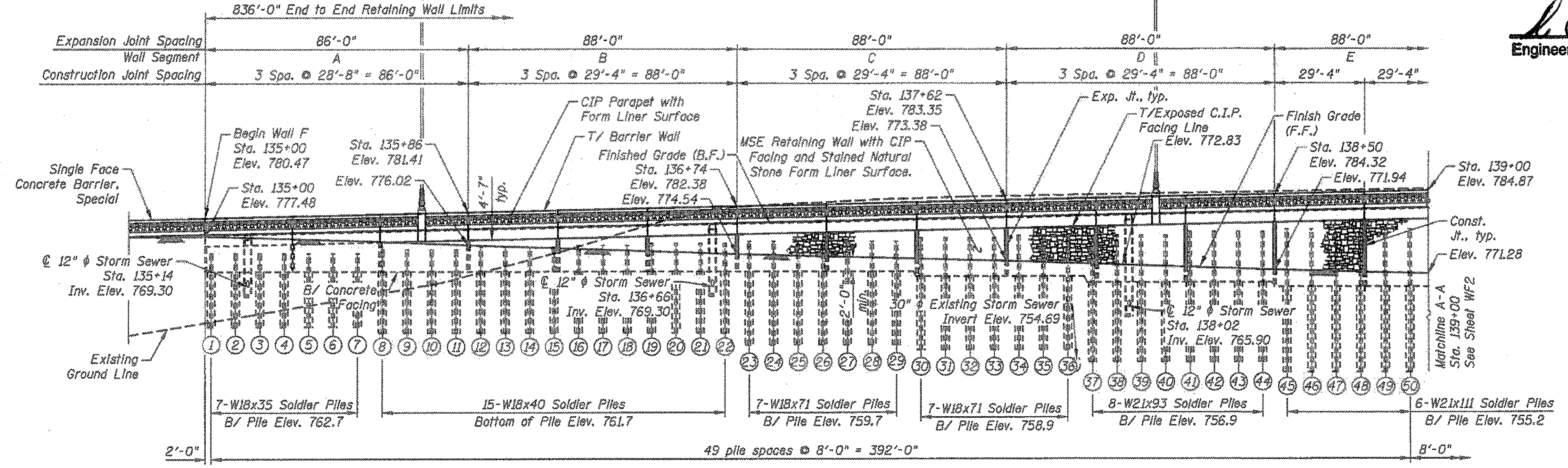
Bench Mark: Iron Rod, Control Point 10, IL Route 31 Bypass Sta. 127+66.44, Offset 99.87 Feet Right, Elev. 737.99
Existing Structure: None

APPROVED
For Structural Adequacy Only

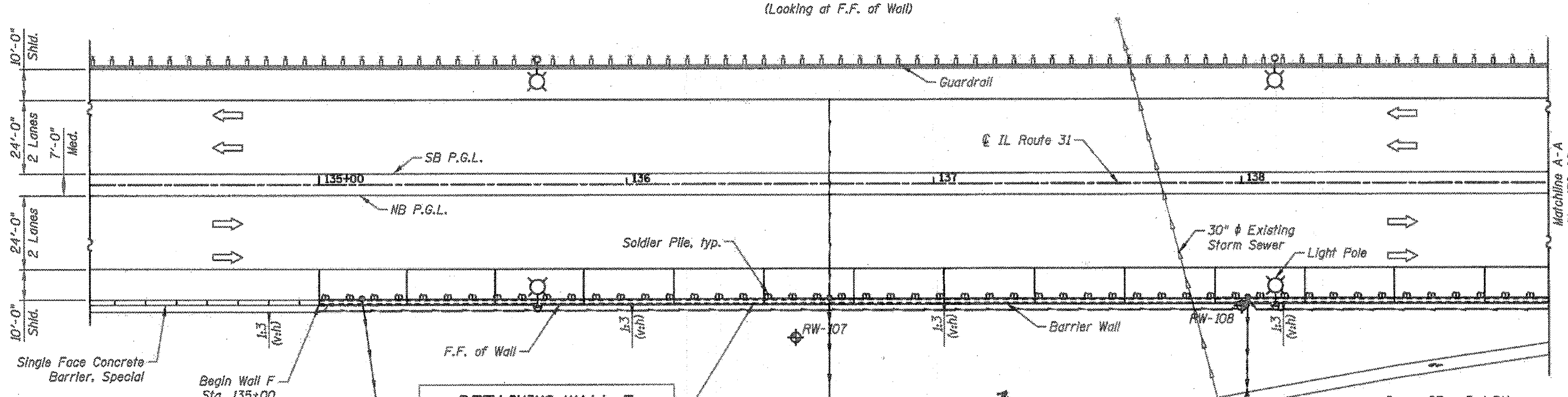
Engineer of Bridges & Structures

CIVILTECH ENGINEERING, INC.
GREGORY J. HATLESTAD, S.E.

GREGORY J. HATLESTAD, S.E.
081-005562
EXP 11/30/12
DATE 3/15/12



PARTIAL ELEVATION
(Looking at F.F. of Wall)

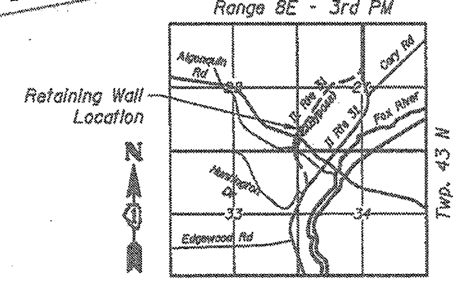


RETAINING WALL F
STRUCTURE NO. 056-2505

PARTIAL PLAN

LEGEND
- Soil Borings
- Existing Storm Sewer
- Proposed Storm Sewer
- Proposed Pipe Underdrain
- Ditch Flow

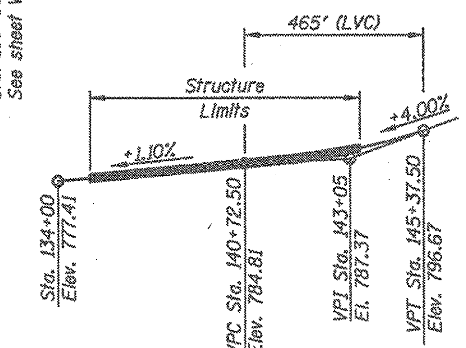
Notes:
Offsets are measured from ℄ IL Rte 31 to the front face of wall.
F.F. - Front Face
B.F. - Back Face



LOCATION SKETCH

DESIGN SPECIFICATIONS
2002 AASHTO Standard Specification for Highway Bridges, 17th Ed.

DESIGN STRESSES
FIELD UNITS
f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)
fy = 36,000 psi (M270 Gr. 36 Soldier Piles)



PROPOSED PROFILE
IL ROUTE 31

GENERAL PLAN AND ELEVATION
WALL F; RTE. 31 O.R. 0003
SECTION 18A-2, McHENRY COUNTY
STA. 135+00 TO STA. 143+36
STRUCTURE NO. 056-2505

CIVILTECH
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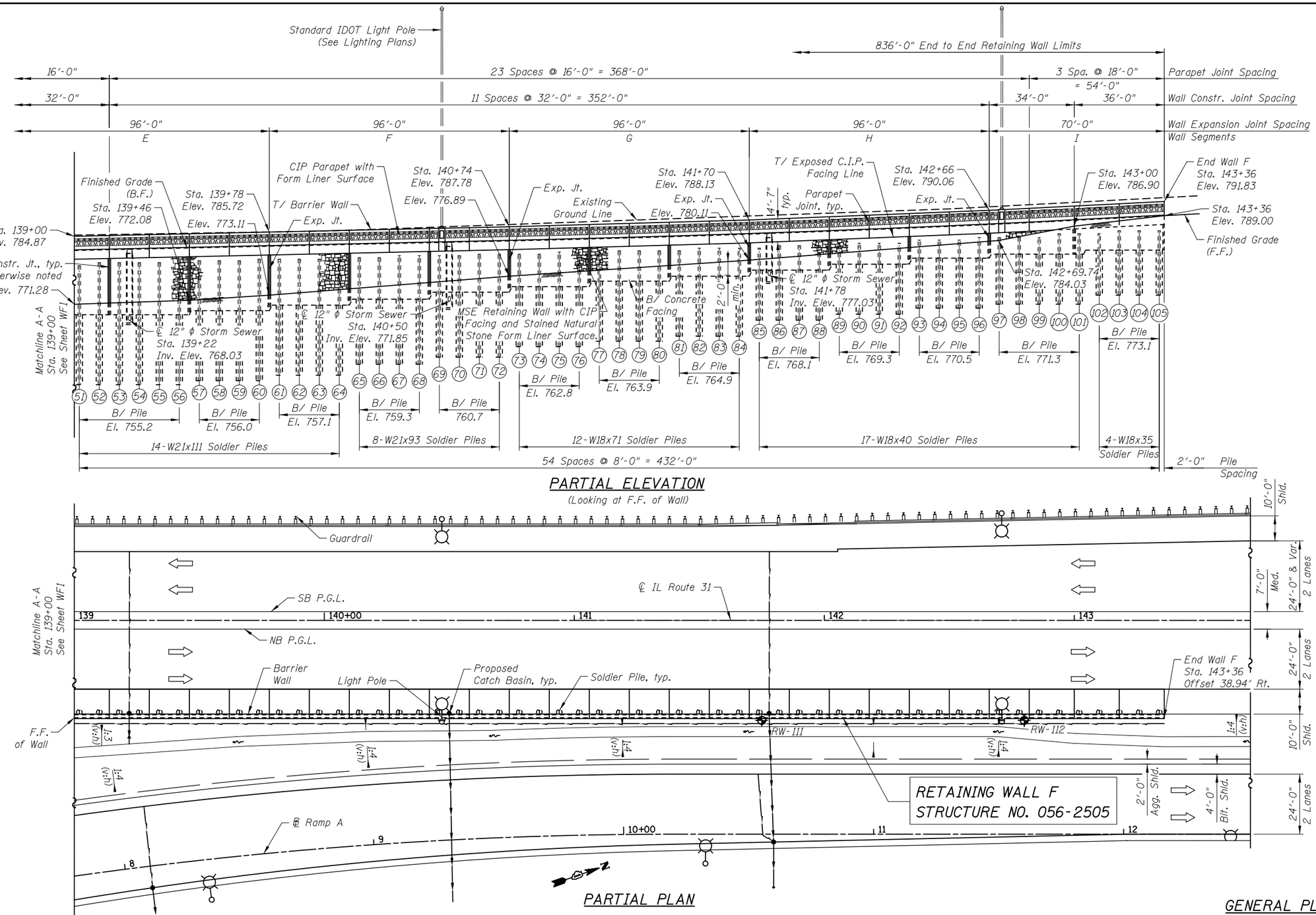
DRAWN	- C. BRABAND
DESIGNED	- D. ATKINS
CHECKED	- G. HATLESTAD
DATE	- 3/23/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION I
WALL F; IL RTE 31
STRUCTURE NO. 056-2505
SHEET NO. WF1 OF WF15 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	620
		CONTRACT NO. 60F72		

ILLINOIS FED. AID PROJECT



LEGEND

- Soil Borings
- Proposed Storm Sewer
- Proposed Pipe Underdrain
- Ditch Flow

Notes:
Offsets are measured from ℄ IL Route 31 to the front face of wall
F.F. - Front Face
B.F. - Back Face

GENERAL PLAN AND ELEVATION
WALL F; IL RTE 31 O.R. 0003
SECTION 18 A-2, McHENRY COUNTY
STA. 135+00 TO STA. 143+36
STRUCTURE NO. 056-2505

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DRAWN	-	C. BRABAND
DESIGNED	-	D. ATKINS
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

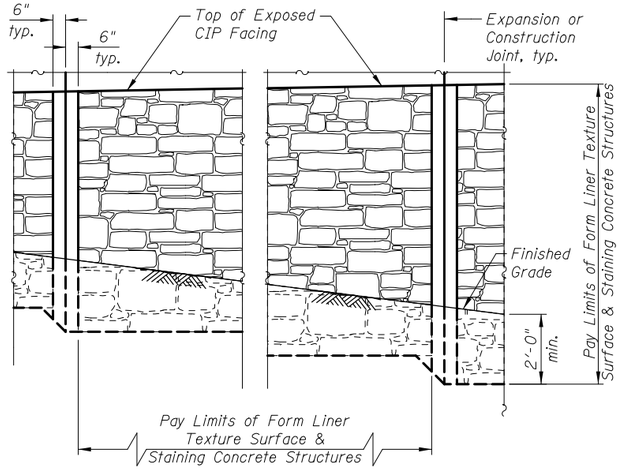
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION II
WALL F; IL RTE 31
STRUCTURE NO. 056-2505
SHEET NO. WF2 OF WF15 SHEETS

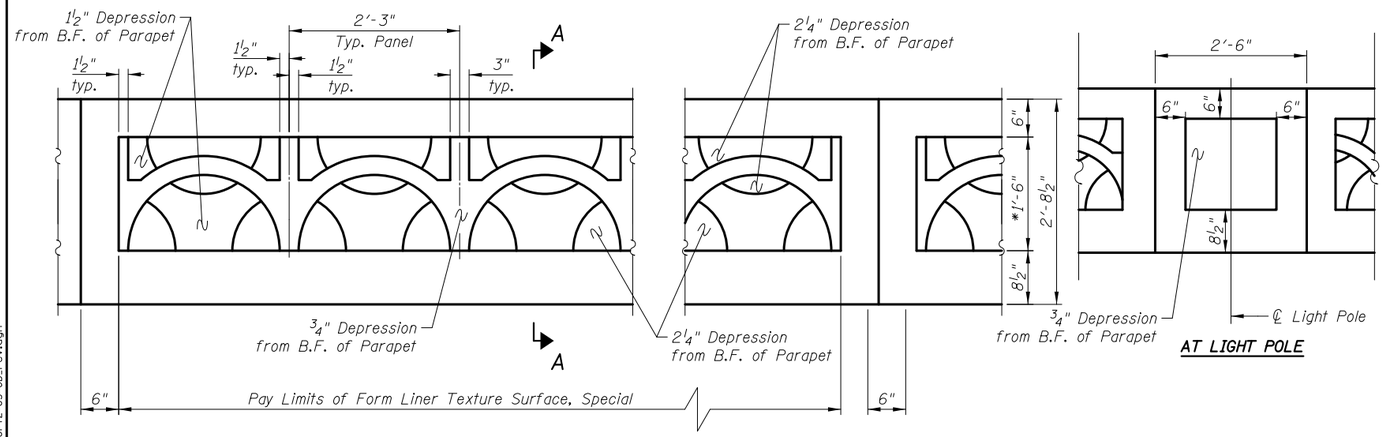
O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	621
		CONTRACT NO. 60F72		
		ILLINOIS FED. AID PROJECT		

TOTAL BILL OF MATERIALS

ITEM	UNIT	TOTAL QUANTITY
Structure Excavation	Cu. Yd.	958
Concrete Structures	Cu. Yd.	275.4
Concrete Superstructures	Cu. Yd.	581.4
Form Liner Textured Surface	Sq. Ft.	5,914
Protective Coat	Sq. Yd.	1,313
Stud Shear Connectors	Each	763
Reinforcement Bars, Epoxy Coated	Pound	91,210
Geocomposite Wall Drain	Sq. Yd.	395
Drilling and Setting Soldier Piles (In Soil)	Cu. Ft.	5,984
Untreated Timber Lagging	Sq. Ft.	4,784
Furnishing Soldier Piles (W Section)	Foot	1,839
Pipe Underdrains for Structures 4"	Foot	850
Staining Concrete Structures	Sq. Yd.	657
Form Liner Textured Surface, Special	Sq. Ft.	1,155

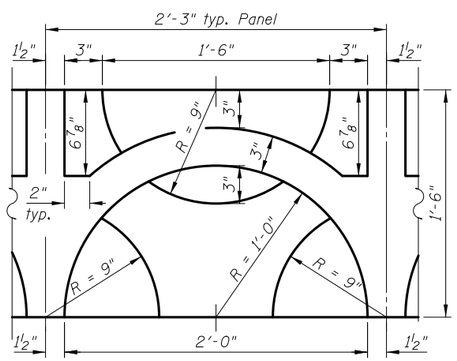


FORM LINER TEXTURE SURFACE DETAIL

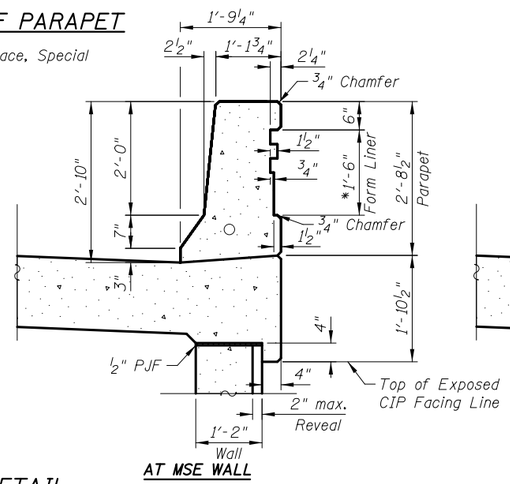


ELEVATION -OUTSIDE FACE OF PARAPET

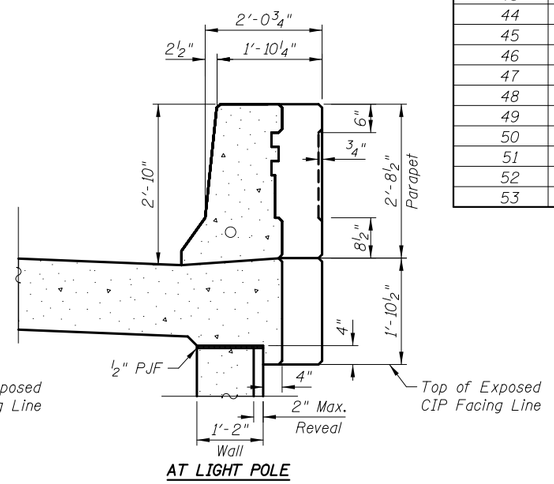
* Pay Limits of Form Liner Texture Surface, Special



FORM LINER TEXTURE SURFACE, SPECIAL DETAIL



AT MSE WALL



AT LIGHT POLE

SECTION A-A

PILE ELEVATIONS

Pile No.	Top of Pile Elevation	Bottom of CIP Facing	Stud Shear Connectors
1	774.70	771.70	4
2	774.70	771.70	4
3	774.70	771.70	4
4	774.70	771.70	4
5	774.70	771.70	4
6	774.70	771.70	4
7	774.70	771.70	4
8	775.30	771.70	5
9	775.30	771.70	5
10	775.30	771.70	5
11	775.30	771.70	5
12	775.70	771.70	5
13	775.70	771.70	5
14	775.70	771.70	5
15	775.70	771.70	5
16	776.00	771.70	6
17	776.00	771.70	6
18	776.00	771.70	6
19	776.30	771.70	6
20	776.30	771.70	6
21	776.30	771.70	6
22	776.30	771.70	6
23	776.60	771.70	6
24	776.60	771.70	6
25	776.60	771.70	6
26	776.60	771.70	6
27	776.60	771.70	6
28	776.60	771.70	6
29	777.20	771.00	8
30	777.20	771.00	8
31	777.20	771.00	8
32	777.20	771.00	8
33	777.20	771.00	8
34	777.60	771.00	8
35	777.60	771.00	8
36	777.60	771.00	8
37	777.60	769.90	9
38	777.60	769.90	9
39	777.60	769.90	9
40	777.60	769.90	9
41	778.20	769.90	10
42	778.20	769.90	10
43	778.20	769.90	10
44	778.20	769.90	10
45	778.60	769.20	11
46	778.60	769.20	11
47	778.60	769.20	11
48	778.60	769.20	11
49	778.60	769.20	11
50	778.60	769.20	11
51	779.10	769.20	11
52	779.10	769.20	11
53	779.10	769.20	11

Pile No.	Top of Pile Elevation	Bottom of CIP Facing	Stud Shear Connectors
54	779.10	769.20	11
55	779.10	769.20	11
56	779.10	769.20	11
57	779.60	770.00	11
58	779.60	770.00	11
59	779.60	770.00	11
60	779.60	770.00	11
61	780.00	771.10	10
62	780.00	771.10	10
63	780.00	771.10	10
64	780.00	771.10	10
65	780.30	772.30	9
66	780.30	772.30	9
67	780.30	772.30	9
68	780.30	772.30	9
69	780.70	773.70	8
70	780.70	773.70	8
71	780.70	773.70	8
72	780.70	773.70	8
73	781.10	774.80	8
74	781.10	774.80	8
75	781.10	774.80	8
76	781.10	774.80	8
77	781.40	775.90	7
78	781.40	775.90	7
79	781.40	775.90	7
80	781.40	775.90	7
81	781.90	776.90	6
82	781.90	776.90	6
83	781.90	776.90	6
84	781.90	776.90	6
85	782.40	778.10	6
86	782.40	778.10	6
87	782.40	778.10	6
88	782.40	778.10	6
89	783.00	779.30	5
90	783.00	779.30	5
91	783.00	779.30	5
92	783.00	779.30	5
93	783.60	780.50	5
94	783.60	780.50	5
95	784.00	780.50	5
96	784.00	780.50	5
97	784.40	781.30	5
98	784.40	781.30	5
99	784.40	781.30	5
100	784.90	781.30	5
101	784.90	781.30	5
102	785.30	782.10	5
103	785.30	782.10	5
104	785.80	782.10	5
105	785.80	782.10	5

INDEX OF SHEETS

GENERAL NOTES

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

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DESIGNED	-	D. ATKINS
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL DATA
WALL F; ILLINOIS ROUTE 31
STRUCTURE NO. 056-2505
SHEET NO. WF3 OF WF15 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	622
		CONTRACT NO. 60F72		
		ILLINOIS FED. AID PROJECT		

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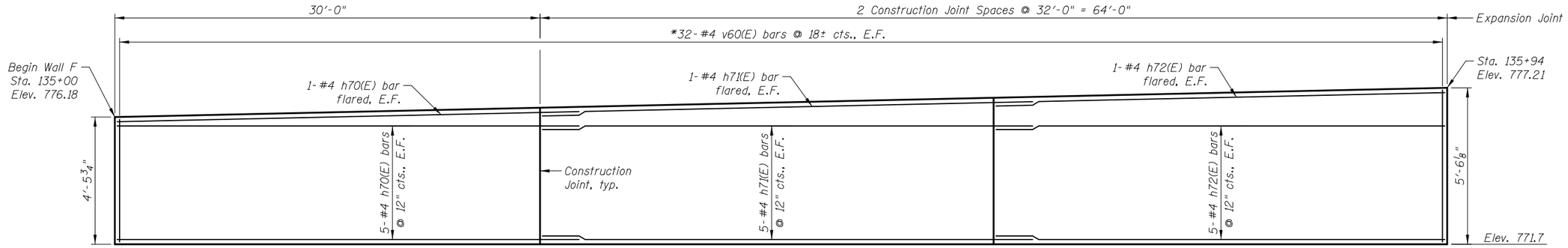
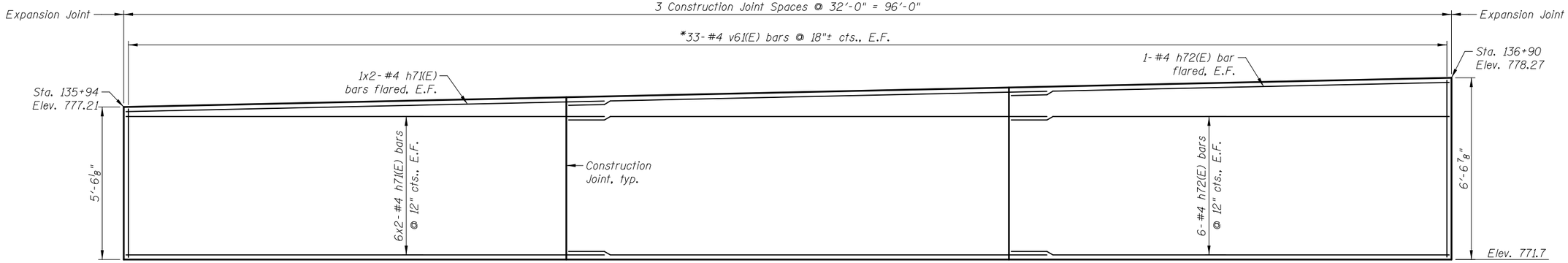
KLB
5/2/2012



ELEVATION A



ELEVATION B

* See Field Cutting Diagram on Sheet No. WF9.

MINIMUM BAR LAP

#4 bar = 2'-7''

Notes:
See sheet WF9 for Bill of Materials and Bar Bending Diagrams.
See sheets WF1 and WF2 for wall elevation locations.
Bars indicated thus 7x2-#5 etc. indicate 7 lines of bars with 2 lengths per line.

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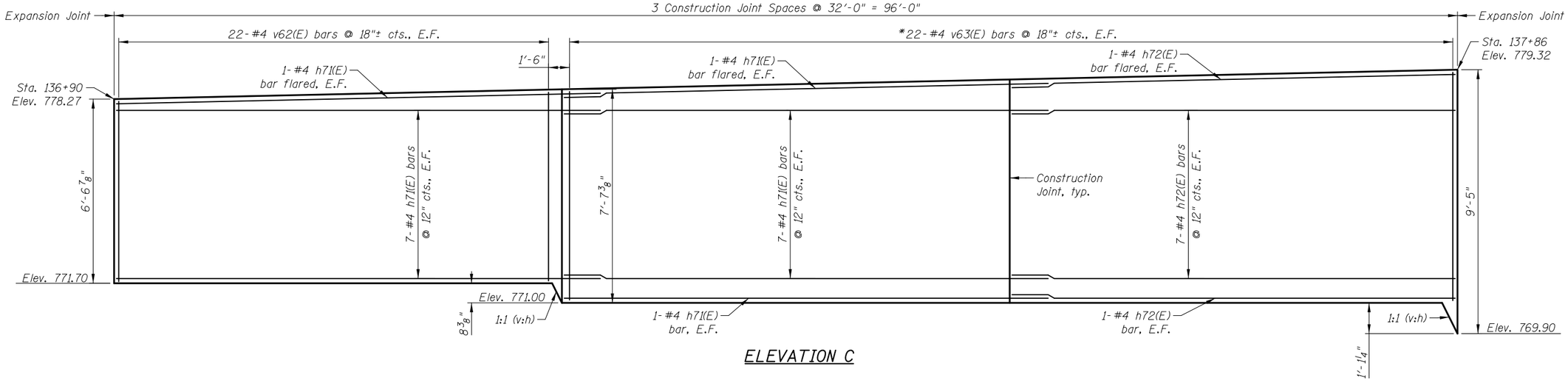
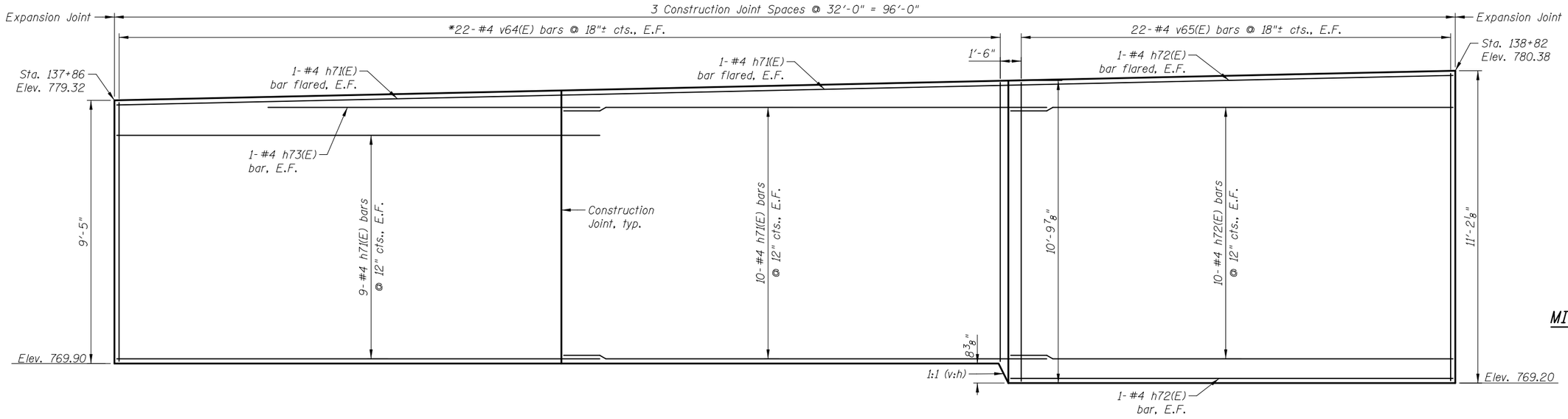
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RETAINING WALL I
WALL F; ILLINOIS ROUTE 31
STRUCTURE NO. 056-2505
SHEET NO. WF4 OF WF15 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	623
		CONTRACT NO. 60F72		
	ILLINOIS	FED. AID PROJECT		



ELEVATION C



ELEVATION D

MINIMUM BAR LAP

#4 bar = 2'-7"

* See Field Cutting Diagram on Sheet No. WF9.

Notes:
See sheet WF9 for Bill of Materials and Bar Bending Diagrams.
See sheets WF1 and WF2 for wall elevation locations.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RETAINING WALL II
WALL F; ILLINOIS ROUTE 31
STRUCTURE NO. 056-2505
SHEET NO. WF5 OF WF15 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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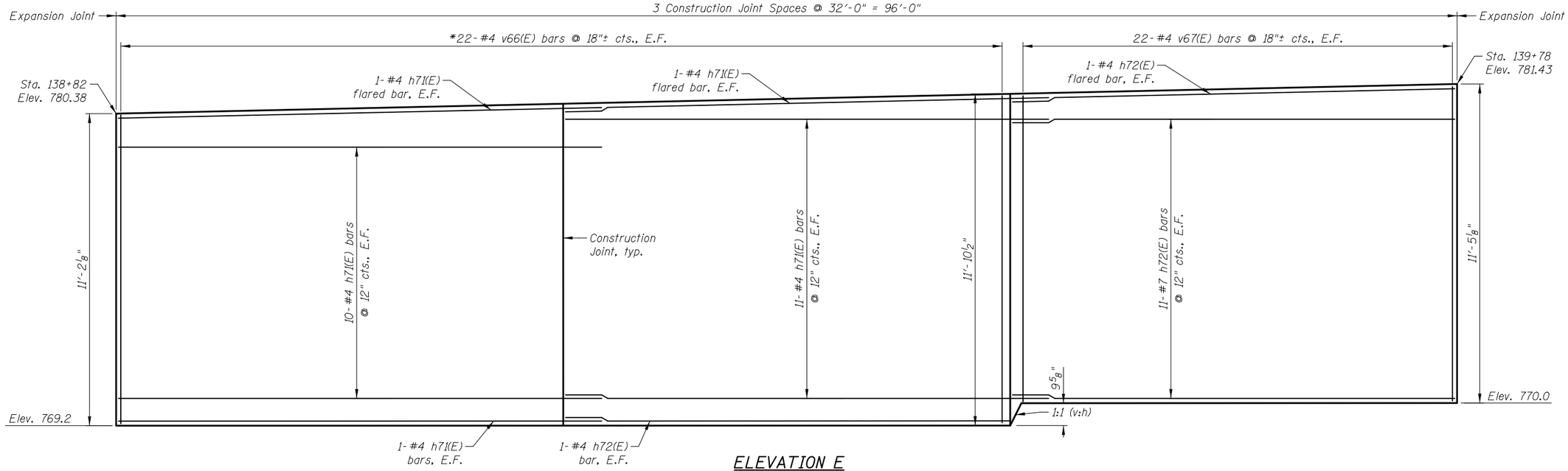
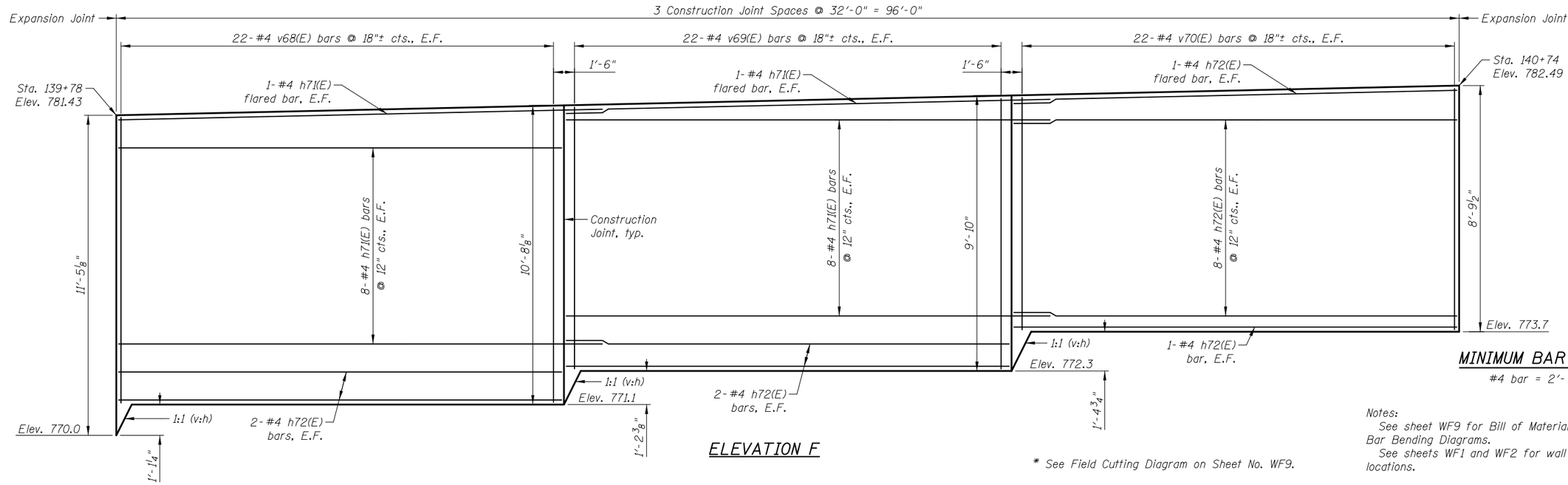
		CONTRACT NO. 60F72		
	ILLINOIS	FED. AID PROJECT		



ELEVATION E



ELEVATION F

* See Field Cutting Diagram on Sheet No. WF9.

MINIMUM BAR LAP

#4 bar = 2'-7"

Notes:

See sheet WF9 for Bill of Materials and Bar Bending Diagrams.

See sheets WF1 and WF2 for wall elevation locations.

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CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RETAINING WALL III
WALL F; ILLINOIS ROUTE 31
STRUCTURE NO. 056-2505
SHEET NO. WF6 OF WF15 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	625
		CONTRACT NO. 60F72		
	ILLINOIS FED. AID PROJECT			

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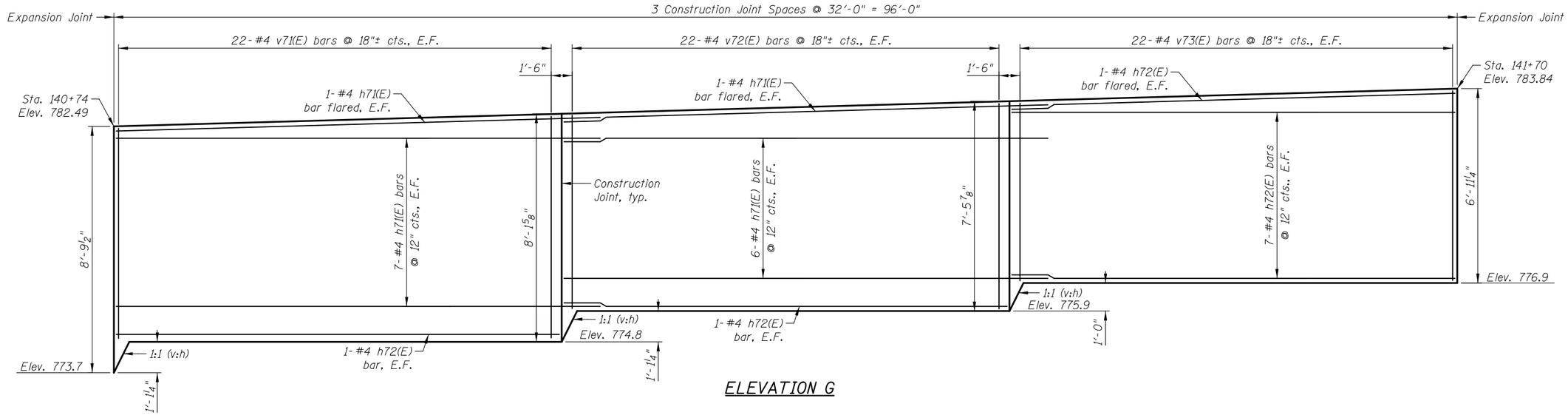
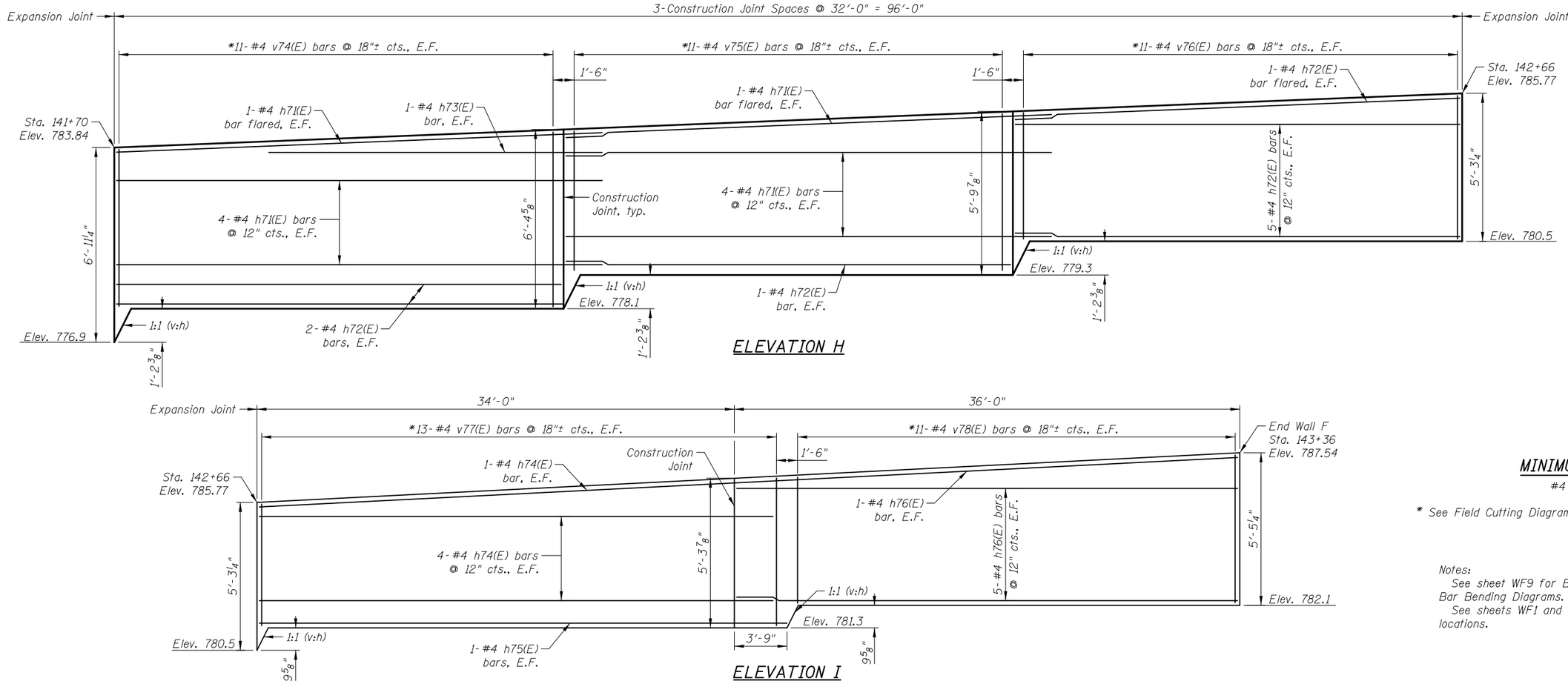


ELEVATION G



ELEVATION H

ELEVATION I

MINIMUM BAR LAP

#4 bar = 2'-7"

* See Field Cutting Diagram on Sheet No. WF9.

Notes:
See sheet WF9 for Bill of Materials and Bar Bending Diagrams.
See sheets WF1 and WF2 for wall elevation locations.

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DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RETAINING WALL IV
WALL F; ILLINOIS ROUTE 31
STRUCTURE NO. 056-2505
SHEET NO. WF7 OF WF15 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	626
		CONTRACT NO. 60F72		
		ILLINOIS	FED. AID PROJECT	

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WALL F; ILLINOIS ROUTE 31
STRUCTURE NO. 056-2505
SHEET NO. WF8 OF WF15 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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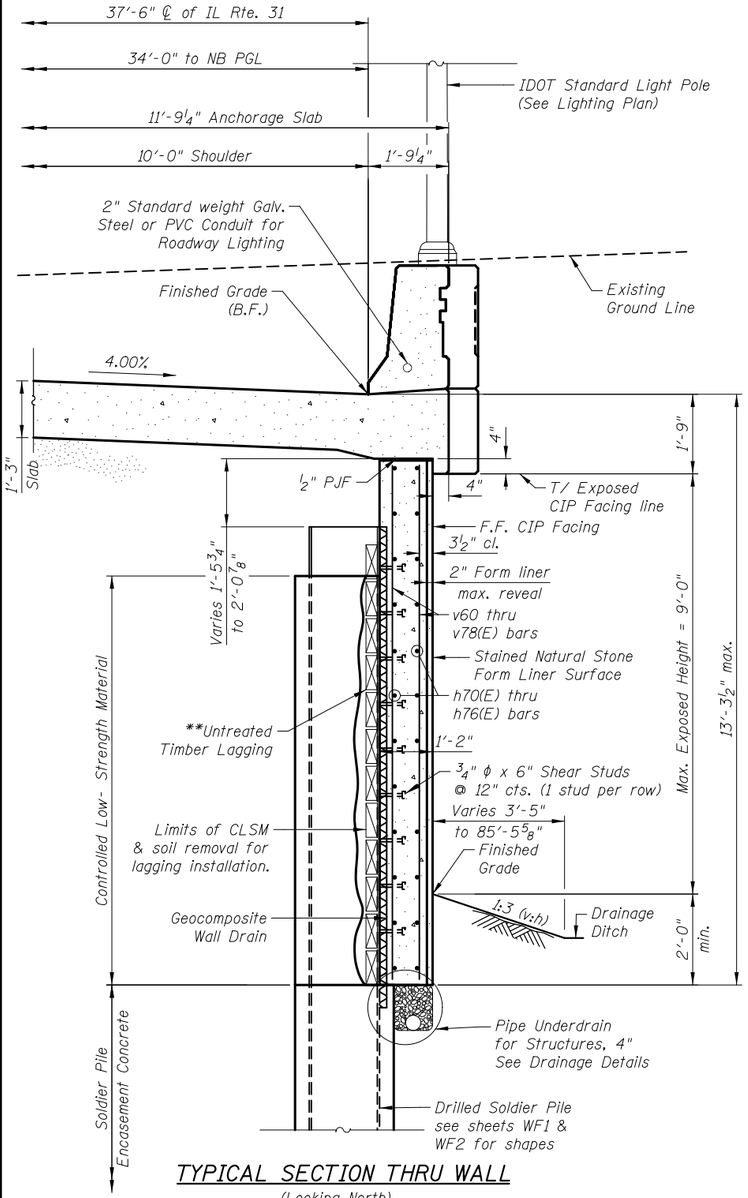
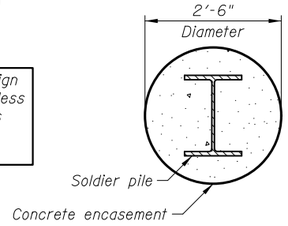
		CONTRACT NO. 60F72		
	ILLINOIS FED. AID PROJECT			



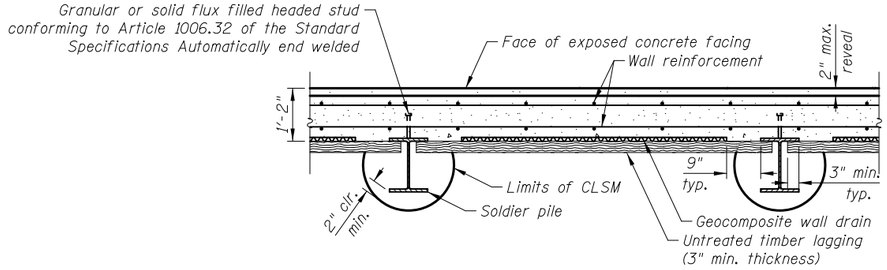
TYPICAL SECTION THRU WALL

(Looking North)

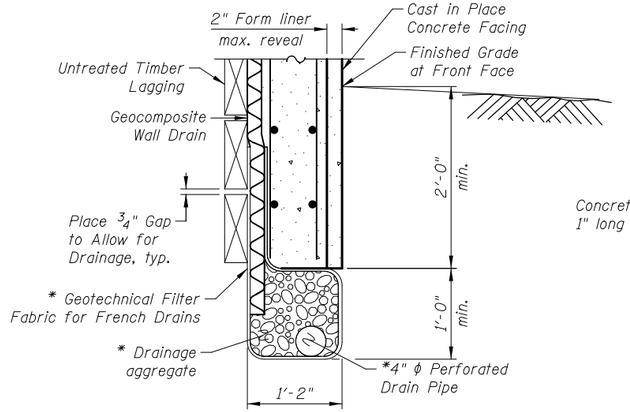
**The Contractor is responsible for the design and performance of the lagging using no less than a 3 in. nominal rough-sawn thickness and timber with a miniminum allowable bending stress of 1000 psi.



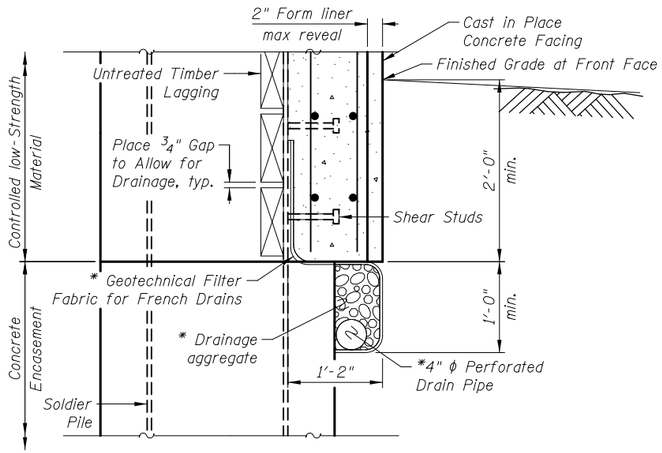
SOLDIER PILE ENCASEMENT



SECTION THRU DRILLED SOLDIER PILE WALL

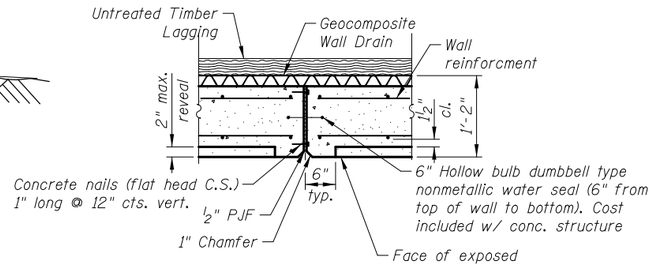


DRAINAGE DETAILS BETWEEN SOLDIER PILES

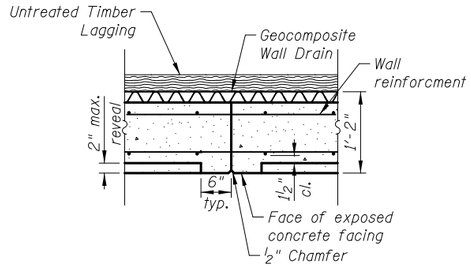


DRAINAGE DETAILS AT SOLDIER PILES

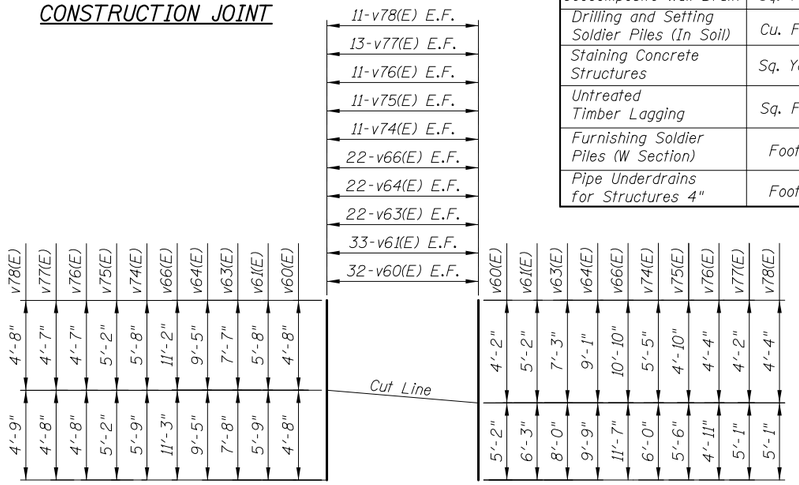
* Included in the cost of Pipe Underdrains for Structures, 4"



EXPANSION JOINT



CONSTRUCTION JOINT



FIELD CUTTING DIAGRAM

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h70(E)	12	#4	32'-7"	
h71(E)	250	#4	34'-7"	
h72(E)	160	#4	31'-8"	
h73(E)	4	#4	23'-9"	
h74(E)	10	#4	36'-7"	
h75(E)	2	#4	37'-7"	
h76(E)	12	#4	35'-8"	
v60(E)	64	#4	9'-4"	
v61(E)	66	#4	11'-5"	
v62(E)	44	#4	6'-5"	
v63(E)	44	#4	15'-3"	
v64(E)	44	#4	18'-10"	
v65(E)	44	#4	10'-8"	
v66(E)	44	#4	22'-5"	
v67(E)	44	#4	10'-11"	
v68(E)	44	#4	10'-2"	
v69(E)	44	#4	9'-4"	
v70(E)	44	#4	8'-3"	
v71(E)	44	#4	7'-5"	
v72(E)	44	#4	6'-11"	
v73(E)	44	#4	6'-4"	
v74(E)	22	#4	11'-5"	
v75(E)	22	#4	10'-4"	
v76(E)	22	#4	9'-3"	
v77(E)	26	#4	9'-3"	
v78(E)	22	#4	9'-5"	

Item	Unit	Quantity
Structure Excavation	Cu. Yd.	958
Concrete Structures	Cu. Yd.	275.4
Form Liner Textured Surface	Sq. Ft.	5,914
Stud Shear Connectors	Each	763
Reinforcement Bars, Epoxy Coated	Pound	15,630
Geocomposite Wall Drain	Sq. Yd.	395
Drilling and Setting Soldier Piles (In Soil)	Cu. Ft.	5,984
Staining Concrete Structures	Sq. Yd.	657
Untreated Timber Lagging	Sq. Ft.	4,784
Furnishing Soldier Piles (W Section)	Foot	1,839
Pipe Underdrains for Structures 4"	Foot	850

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DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RETAINING WALL DETAILS
WALL F; ILLINOIS ROUTE 31
STRUCTURE NO. 056-2505
SHEET NO. WF9 OF WF15 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	628
		CONTRACT NO. 60F72		
	ILLINOIS FED. AID PROJECT			

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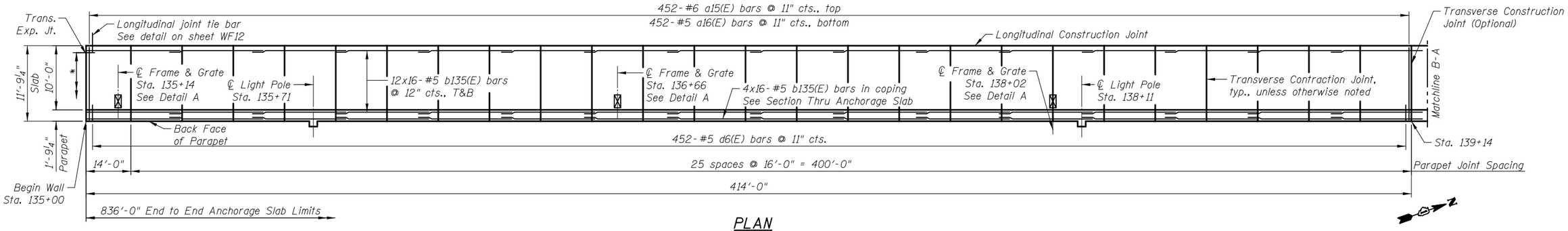
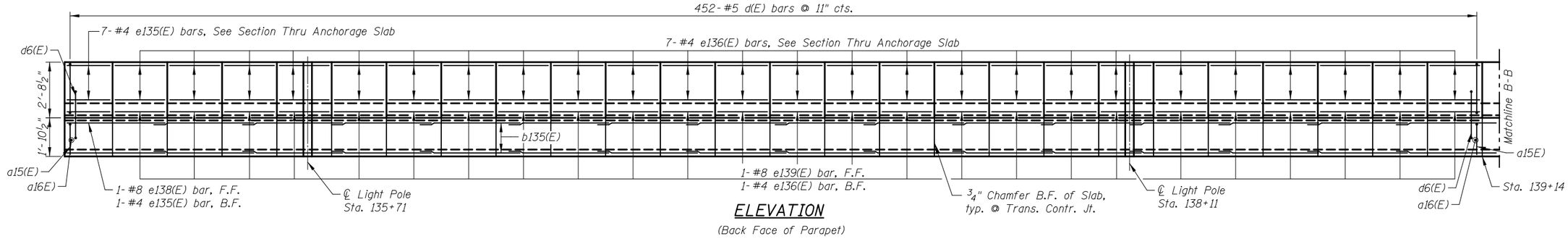
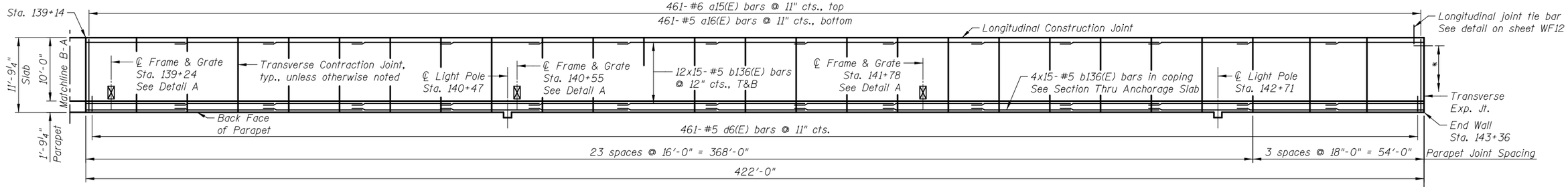


PLAN



ELEVATION

(Back Face of Parapet)



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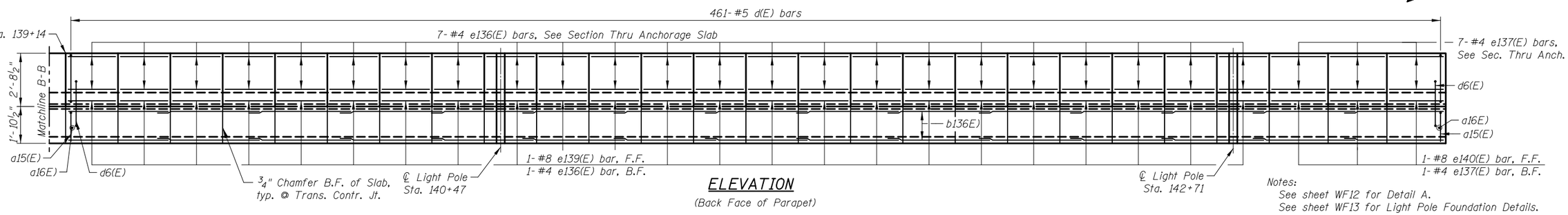

ELEVATION

(Back Face of Parapet)

MINIMUM BAR LAP

#5 bar = 3'-3"

* Dowels into PCC shoulder. See sheet WF12 for detail.

Notes:
See sheet WF12 for Detail A.
See sheet WF13 for Light Pole Foundation Details.
Bars indicated thus 11x2-#5 etc. indicates 11 lines of bars with 2 lengths per line.
Anchorage Slab contraction and construction joints shall be in line with pavement jointing.
Field cut bars as required around Frame and Grate.

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DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ANCHORAGE SLABS
WALL F; ILLINOIS ROUTE 31
STRUCTURE NO. 056-2505
SHEET NO. WF10 OF WF15 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	629
		CONTRACT NO. 60F72		
		ILLINOIS	FED. AID PROJECT	

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WALL F; ILLINOIS ROUTE 31
STRUCTURE NO. 056-2505
SHEET NO. WF11 OF WF15 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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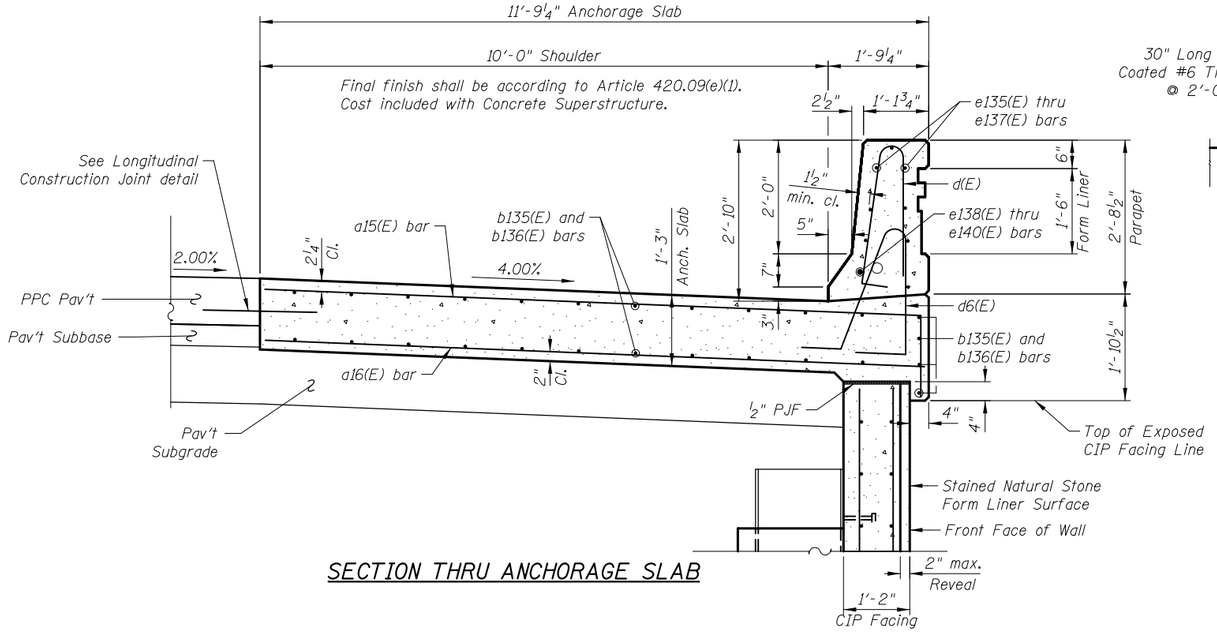
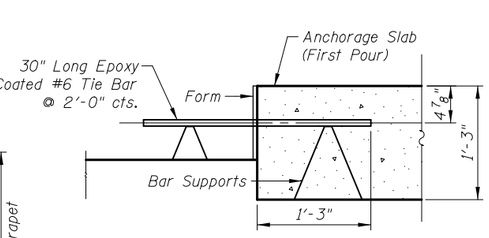
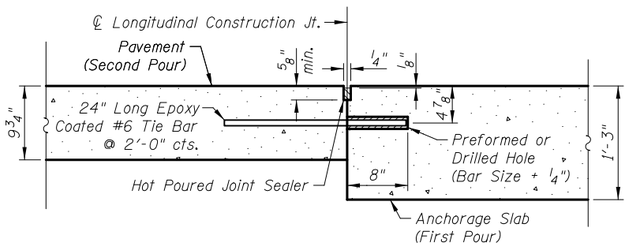
		CONTRACT NO. 60F72		
	ILLINOIS FED. AID PROJECT			



SECTION THRU ANCHORAGE SLAB

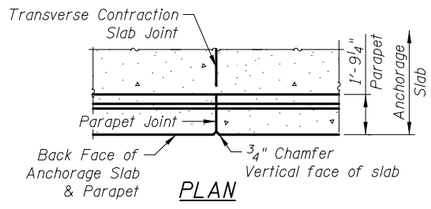


TIE BAR FORMED IN PLACE



TIE BAR GROUTED IN PLACE

LONGITUDINAL CONSTRUCTION JOINT



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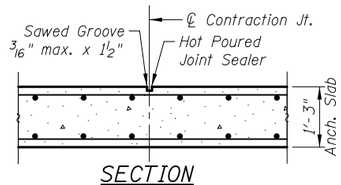
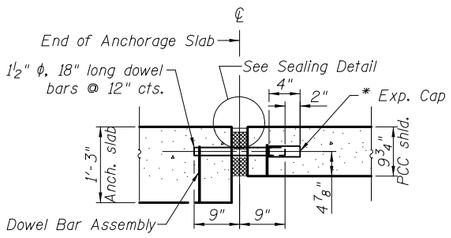


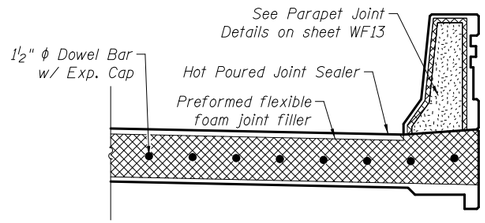
SECTION

TRANSVERSE CONTRACTION JOINT

See Art. 420.05(c) of Standard Specifications



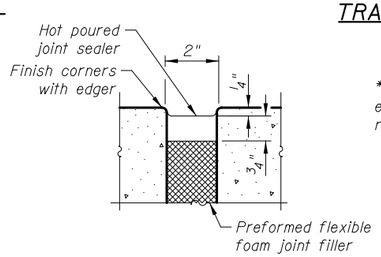
TRANSVERSE EXP. JOINT



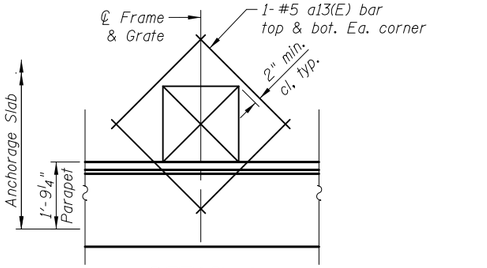
TRANSVERSE EXPANSION JOINT SECTION

Expansion Joint and Dowel Bars included in the cost of Concrete Superstructures.

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



SEALING DETAIL



DETAIL A

(Cut longitudinal reinforcement to clear drainage structure)

Notes:
See sheet WF3 for Parapet Form Liner Details.
See sheet WF13 for Bill of Material and Section At Drainage Structure.

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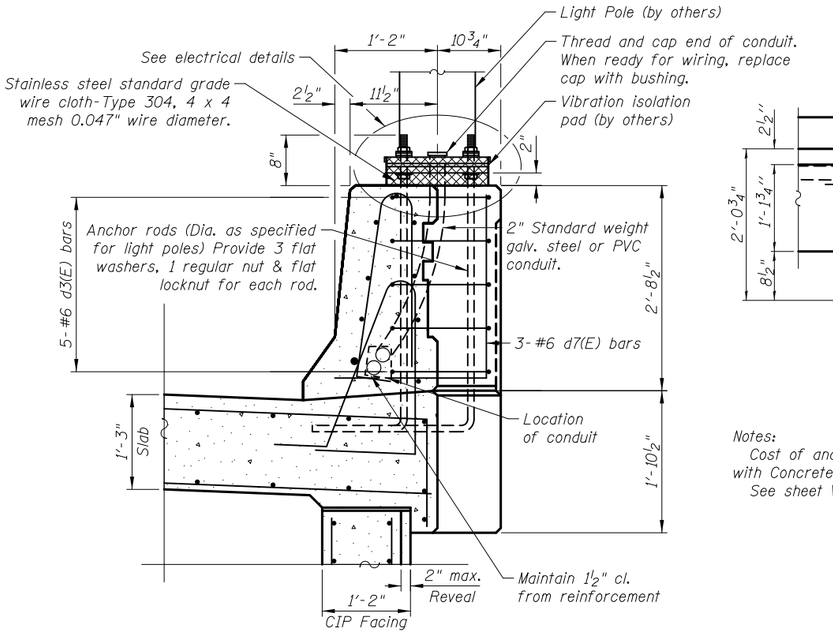
DATE	-	5/3/2012

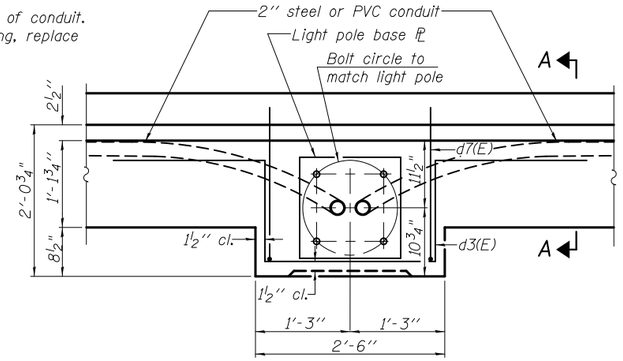
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ANCHORAGE SLABS DETAIL I
WALL F; ILLINOIS ROUTE 31
STRUCTURE NO. 056-2505
SHEET NO. WF12 OF WF15 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	631
		CONTRACT NO. 60F72		
	ILLINOIS	FED. AID PROJECT		

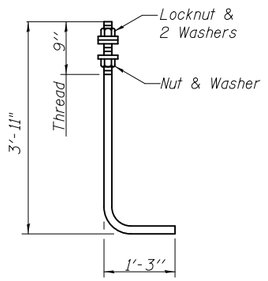


SECTION A-A



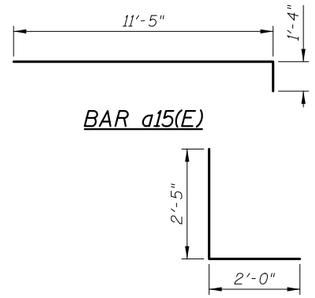
LIGHT POLE FOUNDATION PLAN

Notes:
Cost of anchor rods and conduit in Light Pole Foundation included with Concrete Superstructure.
See sheet WF3 for Form Liner Textured Surface, Special details.



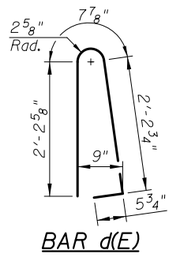
ANCHOR ROD

Diameter as specified for light poles. (ASTM F 1554 Grade 105)

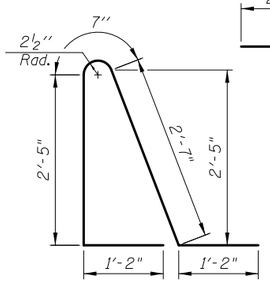


BAR a15(E)

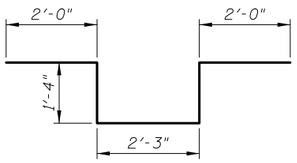
BAR d7(E)



BAR d(E)



BAR d6(E)

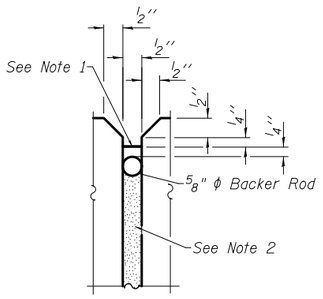


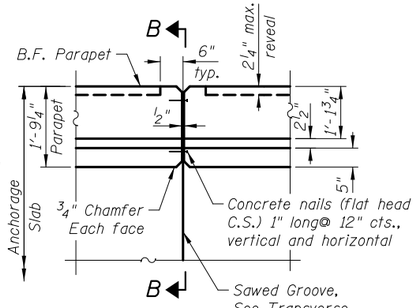
BAR d3(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a13(E)	48	#5	3'-6"	
a15(E)	913	#6	12'-9"	
a16(E)	913	#5	11'-5"	
b135(E)	448	#5	29'-2"	
b136(E)	420	#5	31'-2"	
d(E)	913	#5	5'-7"	
d3(E)	20	#6	8'-11"	
d6(E)	913	#5	7'-11"	
d7(E)	12	#6	4'-5"	
e135(E)	8	#4	13'-8"	
e136(E)	384	#4	15'-8"	
e137(E)	24	#4	17'-8"	
e138(E)	1	#8	13'-8"	
e139(E)	48	#8	15'-8"	
e140(E)	3	#8	17'-8"	

Item	Unit	Quantity
Concrete Superstructures	Cu. Yd.	581.4
Protective Coat	Sq. Yd.	1,313
Reinforcement Bars, Epoxy Coated	Pound	75,580
Form Liner Textured Surface, Special	Pound	1,155

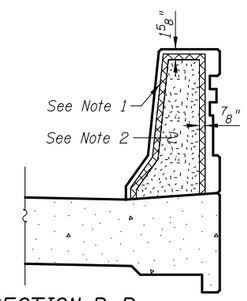




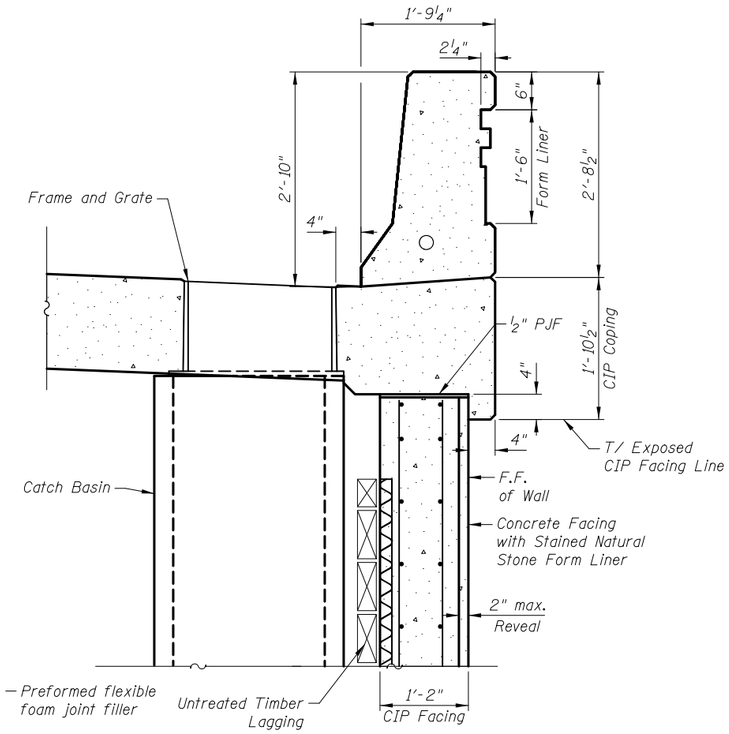
PLAN

PARAPET JOINT DETAILS

Parapet Joint Notes:
1. Non-staining gray one component non-sag elastomeric gun grade polyurethane sealant meeting the requirements of ASTM C-920, Type S, Grade NS, Class 25, use T with a 5/8'' backer rod.
2. 1/2" Preformed Self-Expanding Cork Joint Filler according to Article 1051.07 of the Std. Spec. Cost included with Concrete Superstructure.



SECTION B-B



SECTION AT DRAINAGE STRUCTURE

Note:
See sheet WF3 for Parapet Form Liner Details.
See Drainage and Utility Plans for Catch Basin and Frame and Grade Details.

CIVILTECH
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DRAWN	-	C. BRABAND
DESIGNED	-	D. ATKINS
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ANCHORAGE SLAB DETAILS II
WALL F; ILLINOIS ROUTE 31
STRUCTURE NO. 056-2505
SHEET NO. WF13 OF WF15 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	632
		CONTRACT NO. 60F72		
	ILLINOIS FED. AID PROJECT			

MIDLAND STANDARD ENGINEERING & TESTING, INC.

BORING LOG

SHEET 1 OF 1

PROJECT Algonquin Bypass — Retaining Wall - IL. Route 31 — DATE 1/12/09
ROUTE FAP 339/ILL 31 — BORED BY SPE
SECTION 96-00209-00-PV — STATION 136+00 to 144+00 — CHECKED BY WJW

COUNTY McHenry
BORING RW-107
STATION 136+55
OFFSET 50' R of CL

WATER LEVEL DURING DRILLING none
GROUND WATER AT COMPLETION dry

GROUND SURFACE EL. 774.9

Depth	N/6"	Qu tsf	W %	Depth	N/6"	Qu tsf	W %
Ft				Ft			
Brown Clay LOAM, A-6				Brown-Grey Silty CLAY, A-6 754.9			
	1 2 5	1.43 B	14		9 12 15	6.47 B	11
Brown-Grey							
5	6 8 10	5.97 B	11	25	8 11 16	4.88 B	11
	6 7 9	4.26 B	11		8 10 13	4.65 B	11
	6 9 10	6.08 B	11		7 10 12	5.89 B	12
10				30			
End of Boring @ 30.0' 744.9							
	6 8 10	6.43 B	10				
	8 11 13	5.12 B	10				
15							
	7 10 12	6.05 B	10				
	12 14 18	6.70 B	10				
20							

N-Standard Penetration Test-
Blows per foot to drive 2 inch
O.D. Split Spoon Sampler 12 inches
with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf)
W- Water Content-percentage of oven dry weight (%)

Type failure: B- Bulge Failure, S- Shear Failure, E- Estimated Value, P-Penetrometer

MIDLAND STANDARD ENGINEERING & TESTING, INC.

BORING LOG

SHEET 1 OF 1

PROJECT Algonquin Bypass — Retaining Wall - IL. Route 31 — DATE 2/3/09
ROUTE FAP 339/ILL 31 — BORED BY SPE
SECTION 96-00209-00-PV — STATION 136+00 to 144+00 — CHECKED BY WJW

COUNTY McHenry
BORING RW-108
STATION 138+00
OFFSET 40' R of CL

WATER LEVEL DURING DRILLING 29.0'
GROUND WATER AT COMPLETION 31.2'

GROUND SURFACE EL. 792.2

Depth	N/6"	Qu tsf	W %	Depth	N/6"	Qu tsf	W %
Ft				Ft			
Brown Clay LOAM, A-6				Grey-Brown Clay LOAM, A-6 772.2			
	5 6 7	2.95 B	12				
	7 8 10	3.41 B	12		8 10 12	6.05 BS	11
Brown-Grey							
5	4 6 9	2.95 B	13	25			
	6 8 10	3.33 B	12	Grey-Brown Clay LOAM, A-6(4)*	ST	1.78 B	12
10				30			
	14 17 13	3.88 BS	12		9 10 13	3.29 B	12
15				35			
Grey SAND (f), A-3 780.5							
Grey Clay LOAM, A-6 778.2							
	6 9 13	4.77 B	11		10 12 18	5.70 B	12
20				End of Boring @ 40.0' 752.2 40			

N-Standard Penetration Test-
Blows per foot to drive 2 inch
O.D. Split Spoon Sampler 12 inches
with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf)
W- Water Content-percentage of oven dry weight (%)
ST- Shelby Tube Sample
* - Classification Test Results on Form BBS 2640

Type failure: B- Bulge Failure, S- Shear Failure, E- Estimated Value, P-Penetrometer

MIDLAND STANDARD ENGINEERING & TESTING, INC.

BORING LOG

SHEET 1 OF 2

PROJECT Algonquin Bypass — Retaining Wall - IL. Route 31 — DATE 1/7/09
ROUTE FAP 339/ILL 31 — BORED BY CD
SECTION 96-00209-00-PV — STATION 136+00 to 144+00 — CHECKED BY WJW

COUNTY McHenry
BORING RW-111
STATION 141+75
OFFSET 40' R of CL

WATER LEVEL DURING DRILLING 78.0'
GROUND WATER AT COMPLETION 77.8'

GROUND SURFACE EL. 831.5

Depth	N/6"	Qu tsf	W %	Depth	N/6"	Qu tsf	W %
Ft				Ft			
Red-Brown Clay LOAM, A-6				Brown-Grey Clay LOAM, A-6 811.5			
				thin, wet Sand seams			
	6 10 13	6.51 BS	12		5 8 12	1.82 BS	13
5				25			
Brown-Grey							
	5 8 13	3.49 BS	10		5 7 15	2.91 B	11
10				30			
	7 10 15	3.64 BS	12		8 9 15	4.15 B	12
15				35			
	9 16 24	2.95 B	13	continued	12 15 16	2.13 B	12
20				40			

N-Standard Penetration Test-
Blows per foot to drive 2 inch
O.D. Split Spoon Sampler 12 inches
with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf)
W- Water Content-percentage of oven dry weight (%)

Type failure: B- Bulge Failure, S- Shear Failure, E- Estimated Value, P-Penetrometer

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DRAWN	-	C. BRABAND
DESIGNED	-	D. ATKINS
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS I
WALL F; ILLINOIS ROUTE 31
STRUCTURE NO. 056-2505
SHEET NO. WF14 OF WF15 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	633
		CONTRACT NO. 60F72		
	ILLINOIS FED. AID PROJECT			

MIDLAND STANDARD ENGINEERING & TESTING, INC.

BORING LOG — SHEET 2 OF 2

BORING RW-111

Depth	N/6"	Qu tsf	W %
CONTINUED			
Ft			
Brown-Grey Clay LOAM, A-6 791.5			
45	9 12 13	4.11 B	12
50	8 12 14	3.80 BS	12
55	19 21 30	4.5 P	10
60	20 29 34	8.86 B	10
65	18 31 36	8.91 B	10
Brown-Grey Clay LOAM, A-6 766.5			
70	21 53 45	7.52 B	12
75	21 30 41	7.09 B	11
80	19 35 41	6.36 B	11
85	21 39 42	4.5+ P	9
End of Boring @ 85.0' 746.5			

MIDLAND STANDARD ENGINEERING & TESTING, INC.

BORING LOG — SHEET 1 OF 2

PROJECT Algonquin Bypass — Retaining Wall - IL. Route 31 — DATE 2/2/09
ROUTE FAP 339/ILL 31 — BORED BY SPE
SECTION 96-00209-00-PV — STATION 136+00 to 144+00 — CHECKED BY WJW
COUNTY McHenry
BORING RW-112
STATION 142+80
OFFSET 40' R of CL
WATER LEVEL DURING DRILLING none
GROUND WATER AT COMPLETION dry

Depth	N/6"	Qu tsf	W %
834.5			
Ft			
Brown SAND and GRAVEL, A-1			
Brown Clay LOAM A-6 831.5			
5	7 10 11	-	3
	6 9 12	2.56 B	11
	6 8 12	2.40 B	11
Brown-Grey			
10	5 9 10	3.72 B	12
hard			
15	7 12 14	3.49 S	10
20	8 9 10	2.13 B	12
Brown-Grey Clay LOAM, A-6 814.5			
occasional wet Sand seams			
25	5 8 12	2.71 B	11
30	5 6 9	2.05 B	11
35	5 7 8	1.94 B	14
40	ST	2.78 B	-
continued			

N-Standard Penetration Test-
Blows per foot to drive 2 inch
O.D. Split Spoon Sampler 12 inches
with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf)
W- Water Content-percentage of oven dry weight (%)
ST- Shelby Tube Sample

Type failure: B- Bulge Failure, S- Shear Failure, E- Estimated Value, P-Penetrometer

MIDLAND STANDARD ENGINEERING & TESTING, INC.

BORING LOG — SHEET 2 OF 2

BORING RW-112

Depth	N/6"	Qu tsf	W %
CONTINUED			
Ft			
Brown-Grey Clay LOAM, A-6 794.5			
45	7 8 8	1.87 B	14
50	7 9 10	2.13 B	14
End of Boring @ 50.0' 784.5			

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DESIGNED	-	D. ATKINS
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS II
WALL F; ILLINOIS ROUTE 31
STRUCTURE NO. 056-2505
SHEET NO. WF15 OF WF15 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	634
		CONTRACT NO. 60F72		
	ILLINOIS	FED. AID PROJECT		

Bench Mark: Control Point 32, Iron Rod, Station 178+93.08, offset 60.62 feet left; Elev. 800.00.

Existing Structure: None

GENERAL NOTES

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

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges, 17th Ed.

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi

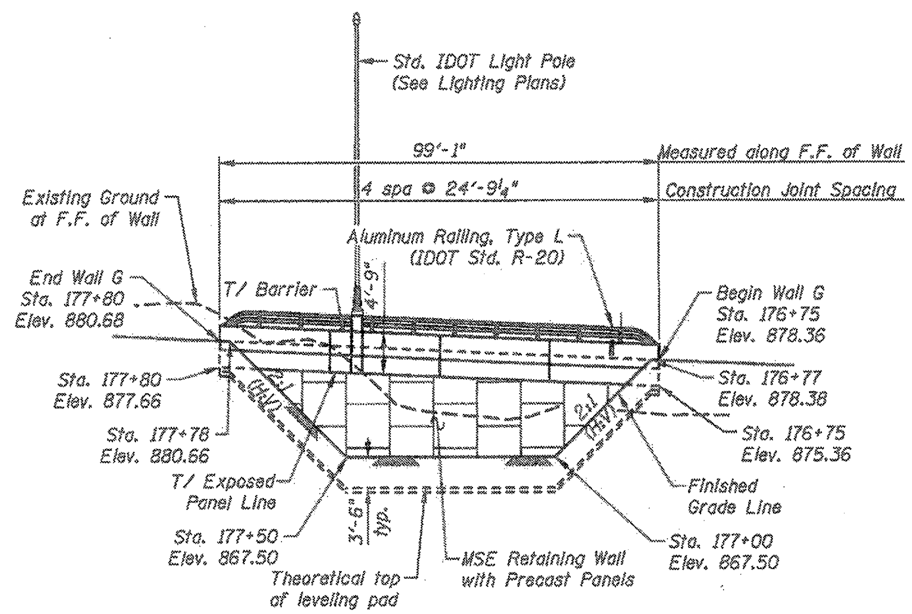
fy = 60,000 psi (Reinforcement)

PRECAST UNITS

f'c = 4,500 psi (Precast Panels)

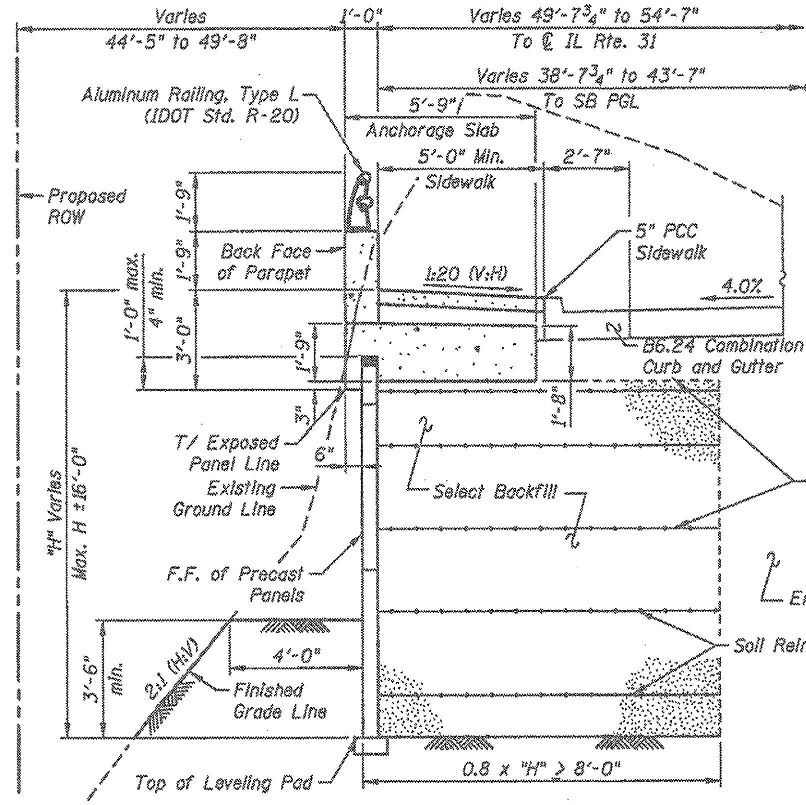
LEGEND

- Soil Borings
- Existing Storm Sewer
- Existing Telephone
- Existing Gasline
- Proposed Storm Sewer
- Direction of Ditch Flow



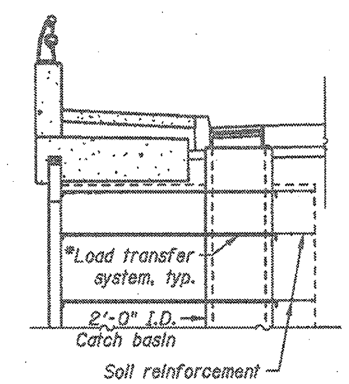
ELEVATION

(Looking west at front face of wall)



TYPICAL WALL SECTION

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 0.5 kips/ft of wall.



LOAD TRANSFER SYSTEM AROUND DRAINAGE

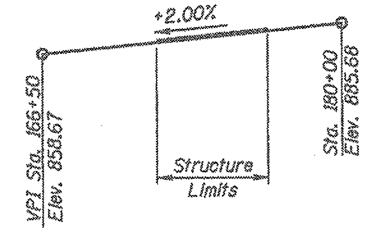
*MSE supplier to design load transfer system to accomodate catch basin.

CIVILTECH ENGINEERING, INC.
GREGORY J. HATLESTAD, S.E.

GREGORY J. HATLESTAD, S.E.
081-005562

EXP 11/30/12

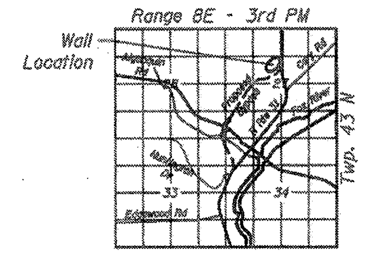
DATE 3/15/12



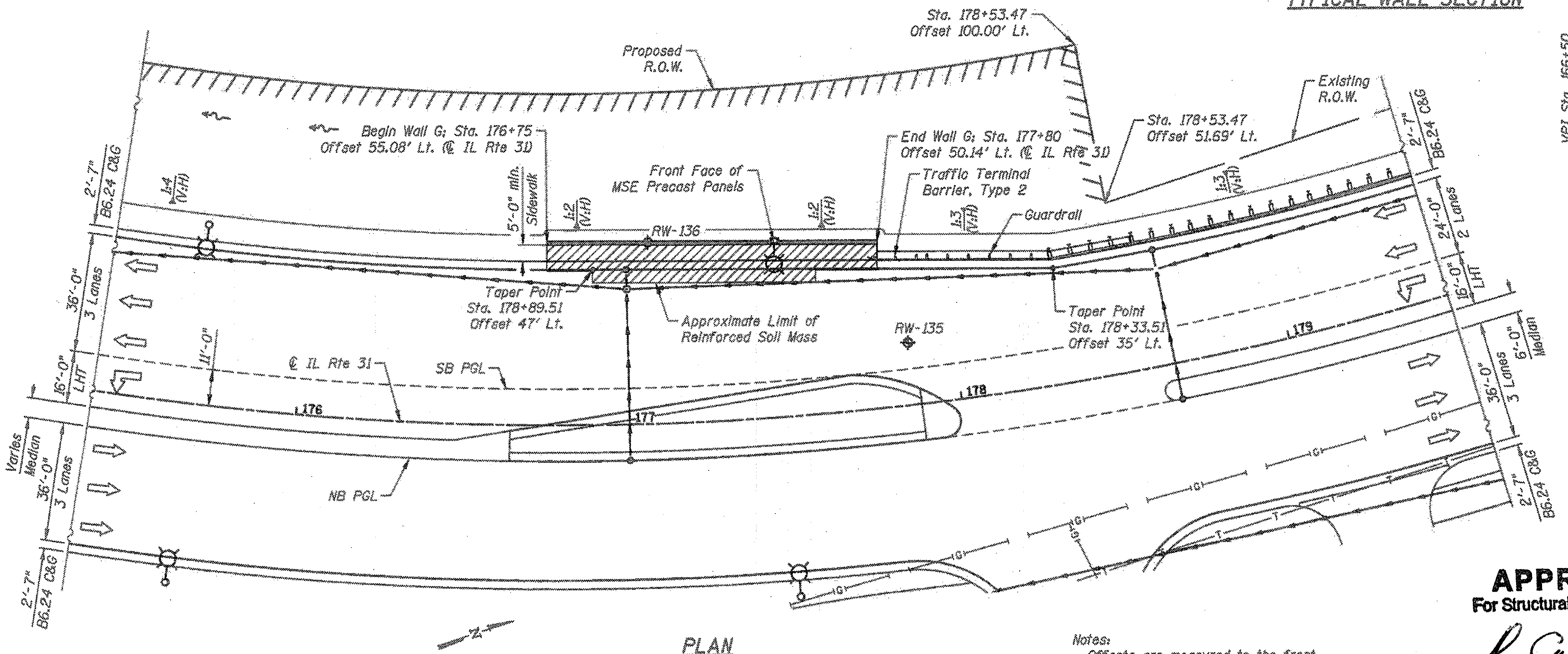
PROPOSED SB PROFILE
IL ROUTE 31 SOUTHBOUND

CURVE DATA

Δ = 80° 38' 27.05" (LT)
D = 6° 13' 38.74"
T = 780.83'
L = 1,294.93'
E = 286.67'
R = 920.06'
S.E. = 4.00%
P.C. = Sta. 166+78.62
P.T. = Sta. 179+73.55
P.I. = Sta. 174+59.44



LOCATION SKETCH



PLAN

Notes:
Offsets are measured to the front face (F.F.) of MSE precast panels.

APPROVED
For Structural Adequacy Only

Engineer of Bridges & Structures

GENERAL PLAN AND ELEVATION
WALL G; IL RTE 31, OR 0003
SECTION 18A-2
McHENRY COUNTY
STA. 176+75 TO STA. 177+80
STRUCTURE NO. 056-2506

CIVILTECH
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DRAWN	K. BOCHNOWSKI
DESIGNED	M. LANGE
CHECKED	G. HATLESTAD
DATE	3/23/2012

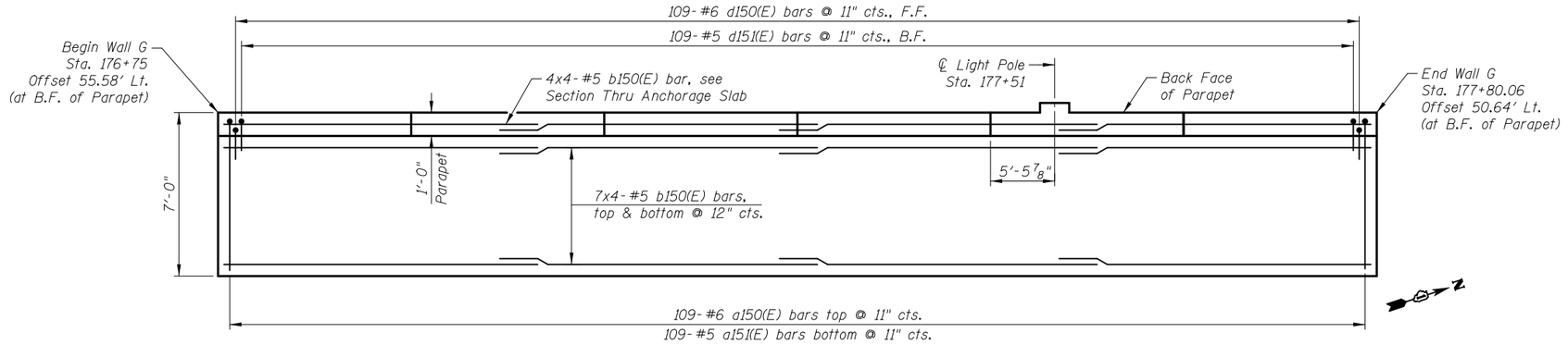
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
WALL G, IL RTE. 31
STRUCTURE NO. 056-2506

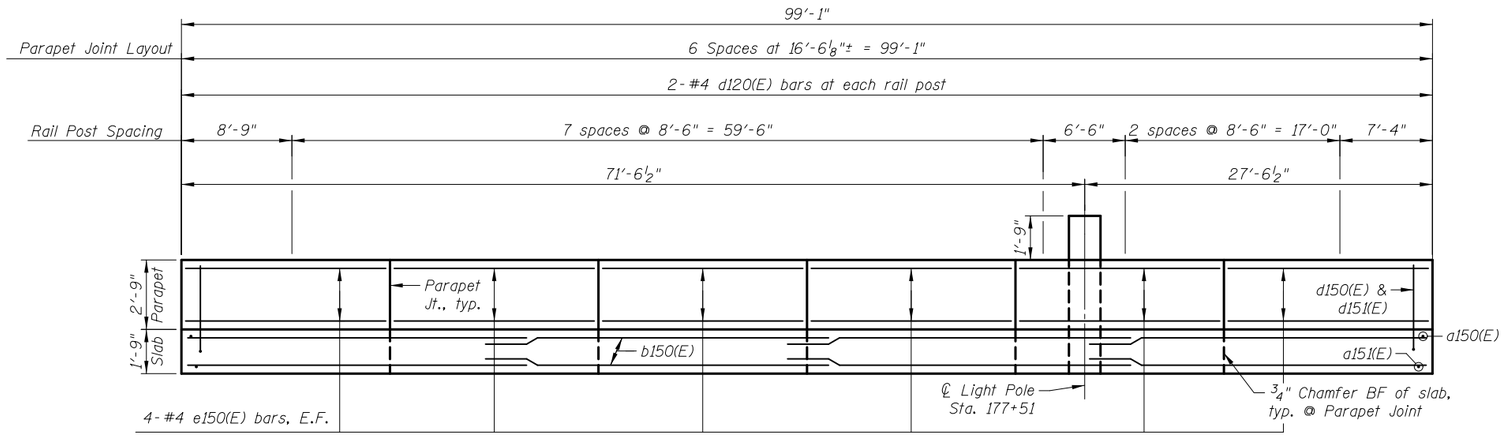
SHEET NO. WG1 OF WG5 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	635
		CONTRACT NO. 60F72		

ILLINOIS FED. AID PROJECT

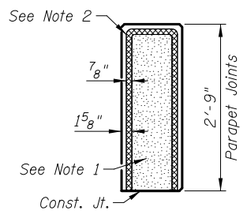


PLAN

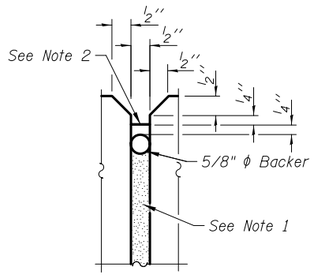


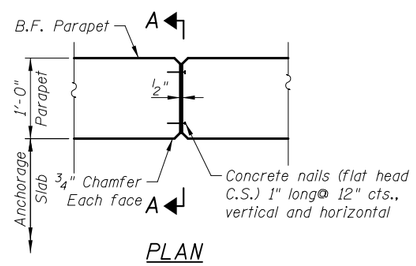
ELEVATION

(Looking at F.F. of Parapet)



SECTION A-A





PLAN

PARAPET JOINT DETAILS

Parapet Joint Notes:

1. Non-staining gray one component non-sag elastomeric gun grade polyurethane sealant meeting the requirements of ASTM C-920, Type S, Grade NS, Class 25, use T with a 5/8" backer rod.
2. 1/2" Preformed Self-Expanding Cork Joint Filler according to Article 1051.07 of the Std. Spec. Cost included with Concrete Superstructure.

INDEX OF SHEETS

TOTAL BILL OF MATERIALS

ITEM	UNIT	TOTAL QUANTITY
Structure Excavation	Cu. Yd.	534
Concrete Superstructures	Cu. Yd.	45.1
Protective Coat	Sq. Yd.	31
Reinforcement Bars, Epoxy Coated	Pound	6,050
Aluminum Railing, Type L	Foot	97
Mechanically Stabilized Earth Retaining Walls	Sq. Ft.	923

MINIMUM BAR LAP

(Slab)
#5 = 3'-3"

Notes:
See sheet WG3 for Bill of Material, Light Pole Foundation details and Section Thru Anchorage Slab
Bars indicated thus 11x2-#5 etc. indicates 11 lines of bars with 2 lengths per line.

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DESIGNED	-	M. LANGE
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ANCHORAGE SLAB DETAILS I
WALL G; IL RTE 31
STRUCTURE NO. 056-2506
SHEET NO. WG2 OF WG5 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	636
		CONTRACT NO. 60F72		
	ILLINOIS FED. AID PROJECT			

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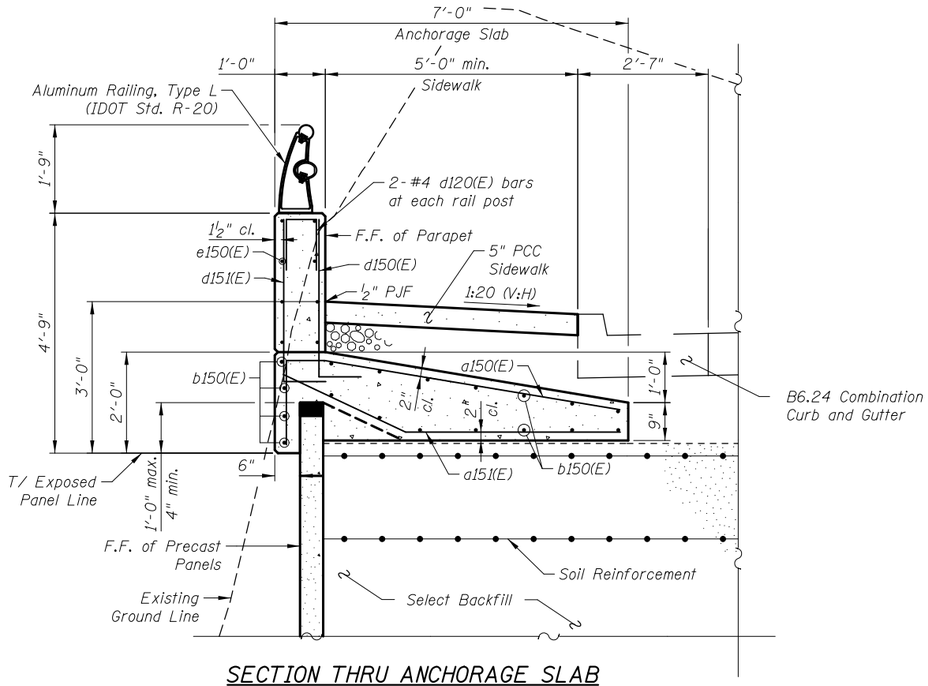
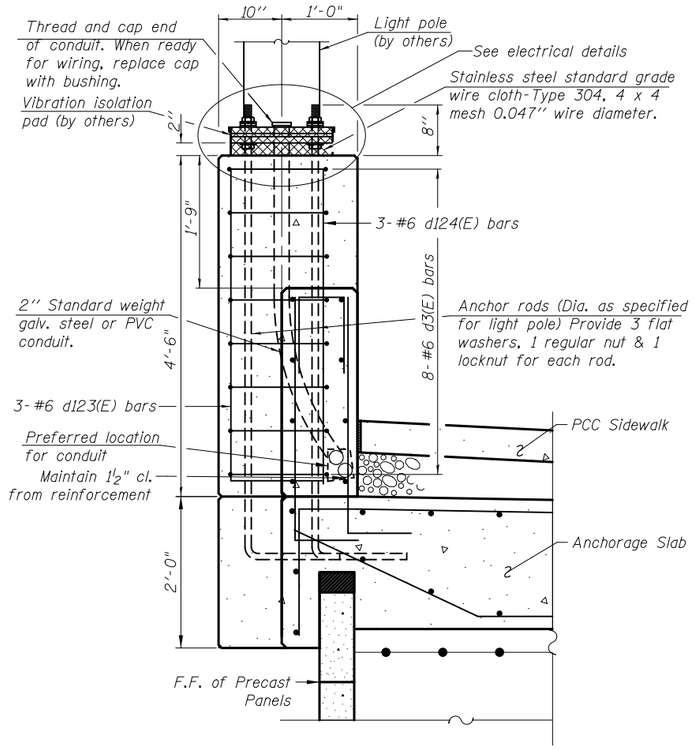
KLB
5/2/2012



SECTION THRU ANCHORAGE SLAB

(All exposed edges have a ¾" chamfer)

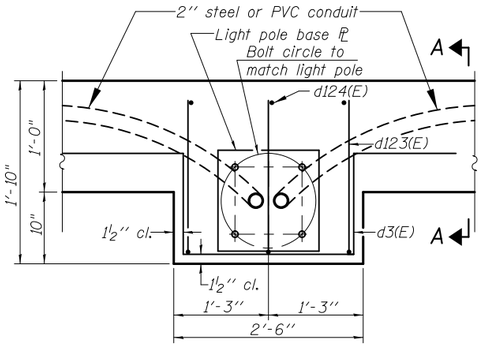


SECTION A-A

BILL OF MATERIAL

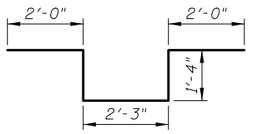
Bar	No.	Size	Length	Shape
a150(E)	109	#6	8'-5"	
a151(E)	109	#5	6'-11"	
b150(E)	72	#5	27'-2"	
d3(E)	8	#6	8'-11"	
d120(E)	22	#4	2'-4"	
d123(E)	3	#6	5'-8"	
d124(E)	3	#6	4'-2"	
d150(E)	109	#6	4'-2"	
d151(E)	109	#5	4'-0"	
e150(E)	48	#4	16'-2"	

Item	Unit	Quantity
Concrete Superstructures	Cu. Yd.	45.1
Protective Coat	Sq. Yd.	31
Reinforcement Bars, Epoxy Coated	Pound	6,050

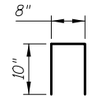


LIGHT POLE FOUNDATION PLAN

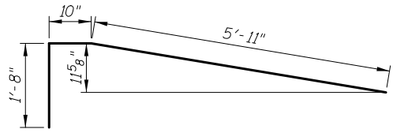
Note: Cost of anchor rods and conduit is included with Concrete Superstructure.



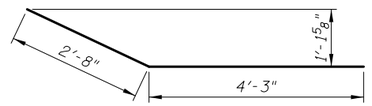
BAR d3(E)



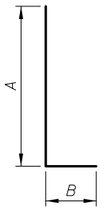
BAR d120(E)



BAR a150(E)



BAR a151(E)



BARS d123(E), d150(E) & d151(E)

Bar	A	B
d123(E)	4'-2"	1'-6"
d150(E)	3'-2"	1'-0"
d151(E)	3'-2"	10"

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DESIGNED	-	M. LANGE
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ANCHORAGE SLAB DETAILS II
WALL G; IL RTE 31
STRUCTURE NO. 056-2506
SHEET NO. WG3 OF WG5 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	637
		CONTRACT NO. 60F72		
	ILLINOIS FED. AID PROJECT			

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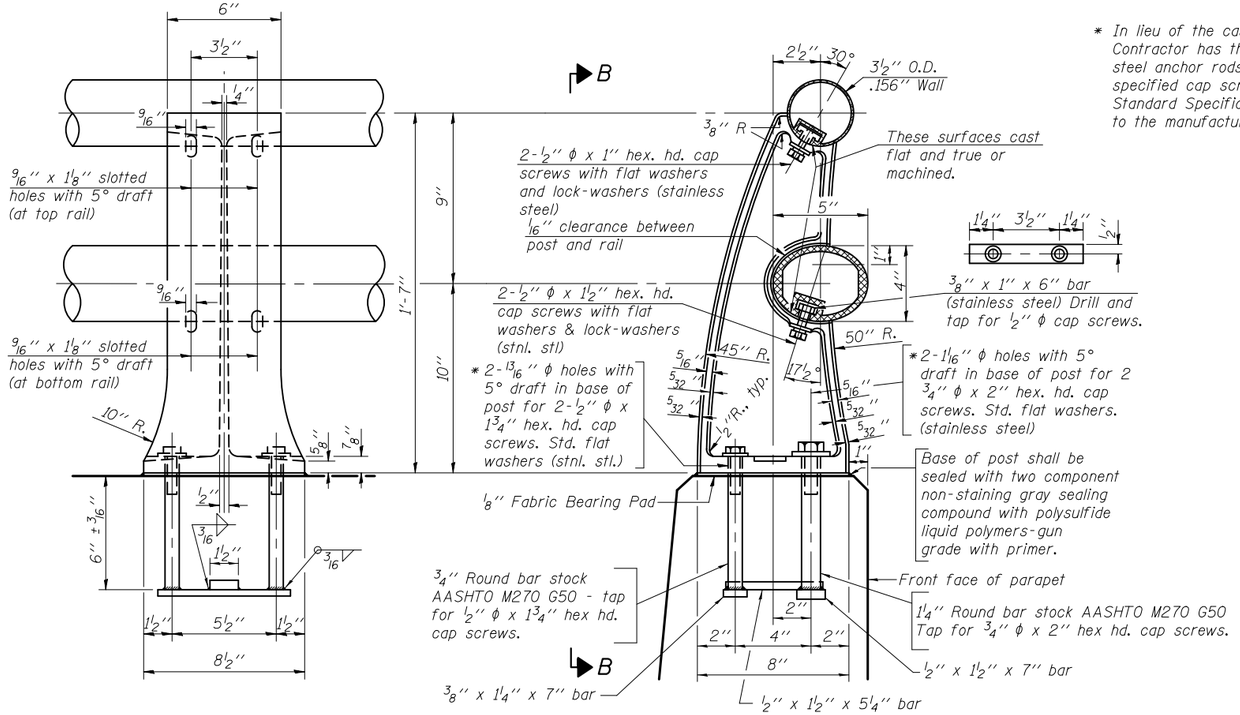
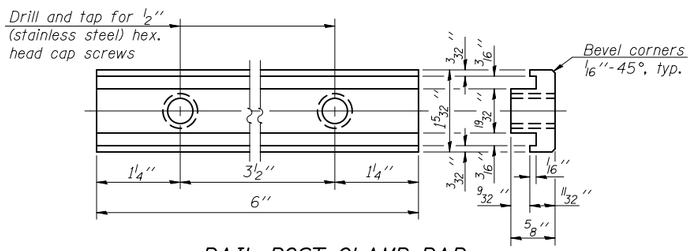


* *In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting stainless steel anchor rods of the same diameter and grade as the specified cap screws according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.*

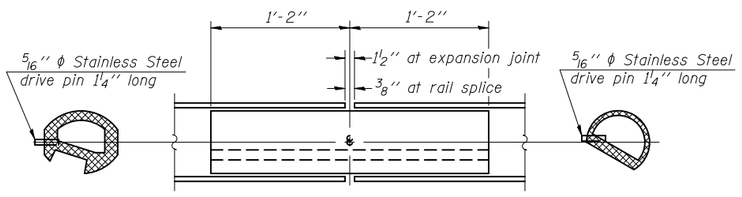
VIEW B-B

SECTION A-A

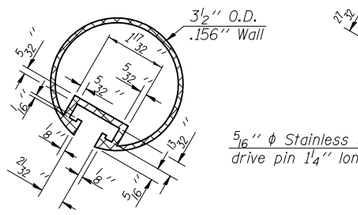
RAIL POST DETAILS



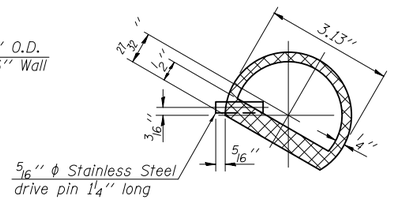
RAIL POST CLAMP BAR
For Top Rail



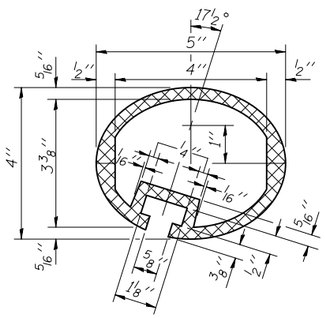
RAIL SPLICE
(7'-0'' to 10'-0'' Post spacing)



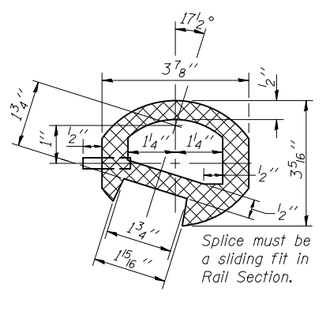
SECTION THRU TOP RAIL



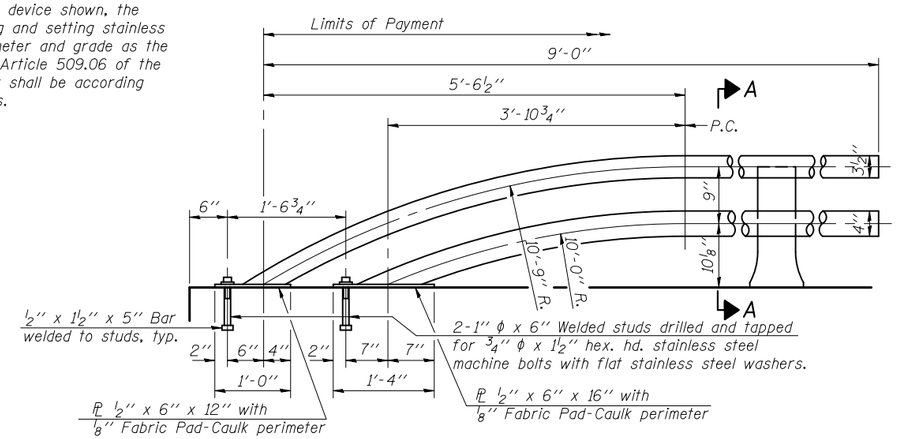
SECTION THRU SPLICE
For Top Rail



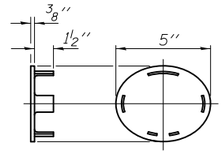
SEC. THRU ELLIPTICAL RAIL SECTION



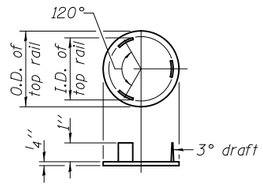
SEC. THRU SPLICE



RAIL TERMINAL SECTION

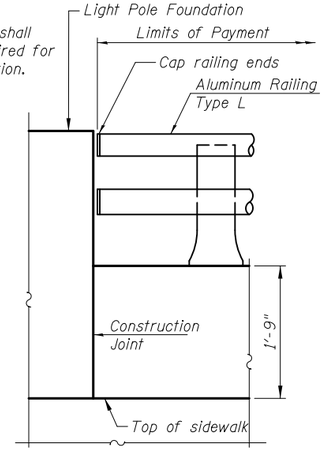


CAST END CAP
For bottom rail
DRIVE FIT TYPE



CAST END CAP
For top rail

Note:
The end rail post shall be set back as required for the terminal rail section.



RAIL END TREATMENT FOR LIGHT POLE FOUNDATION

Notes:
All Posts shall be normal to parapet.
All joints in rail shall be spliced per detail.
All exposed rail ends shall be capped per detail.
Provide 1-⅛'' and 2-1/16'' Aluminum Shims for 25% of the Posts. Rail elements shall be parallel to Grade-high spots will be ground and low spots shimmed.
See sheet WG2 for rail post spacing.

BILL OF MATERIAL

Item	Unit	Quantity
Aluminum Railing, Type L	Foot	97

CIVILTECH
450 E Devon Ave, Suite 300
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Tel: 630.773.3900 Fax: 630.773.3975
www.civiltechinc.com

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DESIGNED	-	M. LANGE
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALUMINUM RAILING, TYPE L
WALL G, IL RTE. 31
STRUCTURE NO. 056-2506
SHEET NO. WG4 OF WG5 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	638
		CONTRACT NO. 60F72		
ILLINOIS FED. AID PROJECT				

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MIDLAND STANDARD ENGINEERING & TESTING, INC.

STRUCTURE FOUNDATION BORING LOG

SHEET 1 OF 1

PROJECT Algonquin Bypass | STRUCTURE Retaining Wall G, 056-2506 | DATE 7/19/10

ROUTE FAP 339/ILL 31 | BORED BY SPE

SECTION 96-00209-00-PV | STATION 176+80 to 177+80 | CHECKED BY WJW

COUNTY McHenry

BORING RW-135

STATION 177+86

OFFSET 19' L

WATER SURFACE EL. none

GROUND WATER AT COMPLETION dry

GROUND SURFACE EL. 881.4 M (Ft)

Depth	N/6"	Qu tsf	W %	Depth	N/6"	Qu tsf	W %
Black Silty CLAY Topsoil							
	3 5 5	3.13 BS	23	861.4 Brown SAND & GRAVEL, A-1 Dense to very Dense	16 19 26	--	4
Brown and Dark Brown Silty CLAY, A-6: fill, very Stiff to Stiff 880.4							
	5 12 14	1.86 BS	24		14 22 33	--	3
Brown SAND & GRAVEL, A-1 medium dense 877.4							
	9 11 12	--	5	numerous Cobbles possible Boulders	19 26 36	--	4
	15 16 16	--	9		15 22 38	--	5
Brown Silt LOAM, A-4 870.9				End of Boring @ 30' 851.4			
	9 11 10	--	18				
Brown SAND and GRAVEL A-1 very Dense to Dense 869.4							
	13 24 30	--	3				
	14 17 19	--	3				
	16 18 17	--	4				

N-Standard Penetration Test- Blows per foot to drive 2 inch O.D. Split Spoon Sampler 12 inches with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf) W- Water Content-percentage of oven dry weight (%)

Type failure: B- Bulge Failure S- Shear Failure E- Estimated Value P-Penetrometer

MIDLAND STANDARD ENGINEERING & TESTING, INC.

STRUCTURE FOUNDATION BORING LOG

SHEET 1 OF 1

PROJECT Algonquin Bypass | STRUCTURE Retaining Wall G, 056-2506 | DATE 7/19/10

ROUTE FAP 339/ILL 31 | BORED BY SPE

SECTION 96-00209-00-PV | STATION 176+80 to 177+80 | CHECKED BY WJW

COUNTY McHenry

BORING RW-136

STATION 177+07

OFFSET 55' L

WATER SURFACE EL. none

GROUND WATER AT COMPLETION dry

GROUND SURFACE EL. 871.9 M (Ft)

Depth	N/6"	Qu tsf	W %	Depth	N/6"	Qu tsf	W %
				851.9			
Dark Brown Clay LOAM, A-6: fill, slightly Dense				Brown SAND and GRAVEL, A-1 Dense to very Dense	16 16 26	--	4
	2 4 5	--	11				
868.4					32 30 21	--	4
Black Clay LOAM, A-6 to A-7-6: fill, slightly to medium Dense	4 5 5	--	17				
865.4					50/0"	--	NR
Yellow-Brown Sandy LOAM, A-4: fill, slightly Dense	3 4 5	--	26	Cobble or Boulder at 26'			
	3 4 4	--	19		26 28 38	--	4
861.9				End of Boring @ 30' 841.9			
Brown Gravel LOAM, some Sand, A-4: possible fill, very Dense	6 17 40	--	10				
few Cobbles possible Boulders	6 44 10	--	15				
	6 15 25	--	8				
	17 21 25	--	20				

N-Standard Penetration Test- Blows per foot to drive 2 inch O.D. Split Spoon Sampler 12 inches with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf) W- Water Content-percentage of oven dry weight (%)

Type failure: B- Bulge Failure S- Shear Failure E- Estimated Value P-Penetrometer

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DESIGNED	-	M. LANGE
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS
WALL G; IL RTE 31
STRUCTURE NO. 056-2506
SHEET NO. WG5 OF WG5 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	639
		CONTRACT NO. 60F72		
	ILLINOIS FED. AID PROJECT			

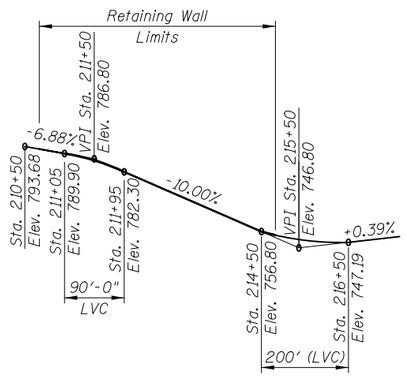
Bench Mark: Control Point CP4, X-cut in Curb Set, Huntington Drive Sta. 214+12.39, Offset 1.24 feet Rt., Elev. 766.40

Existing Structure: 4 tiered segmental concrete block wall, built in 2002.

Salvage: Existing blocks that are demed to be in good condition by the Engineer may be salvaged and incorporated into new construction.

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges, 17th Ed.



PROPOSED PROFILE
HUNTINGTON DRIVE

INDEX OF SHEETS

CURVE DATA

(℄ Huntington Drive)

Δ = 49° 07′ 32.59" (Rt.)
D = 9° 57′ 52.14"
T = 262.80
L = 493.01′
E = 57.21
R = 575.0′
P.C. = Sta. 211+21.76
P.T. = Sta. 216+14.77
P.I. = Sta. 213+84.56

Location	TIER 1 RADIUS	TIER 2 RADIUS	TIER 3 RADIUS	TIER 4 RADIUS
R1	414.0'	420.0'	426.0'	432.0'
R2	613.92'	619.92'	625.92'	631.92'
R3	615.08'	621.08'	627.08'	633.08'
R4	414.0'	420.0'	426.0'	432.0'

Radii measured at front face of wall.

LEGEND

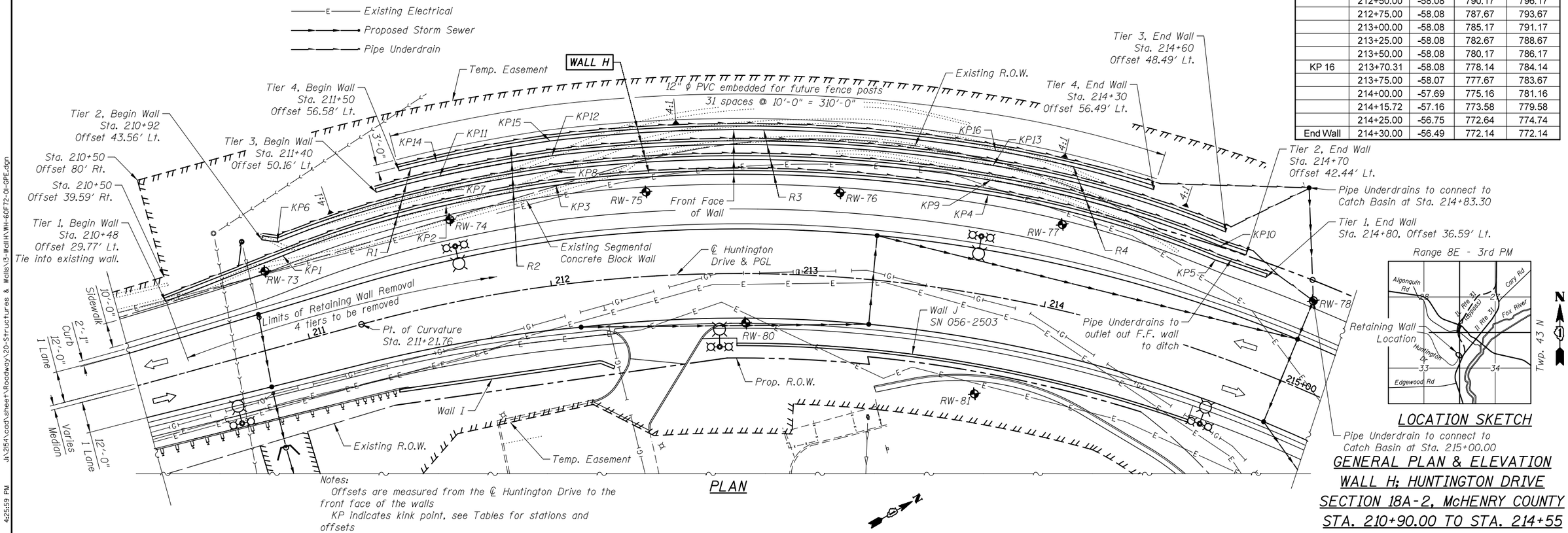
- Soil Borings
- Existing Storm Sewer
- Existing Gasline
- Existing Electrical
- Proposed Storm Sewer
- Pipe Underdrain

TIER 1				
Location	Station	Offset	Finished Grade F.F.	Finished Grade B.F.
Beg. Wall	210+48.00	-29.77	794.22	798.22
	210+50.00	-29.98	794.09	798.09
	210+75.00	-32.62	792.39	796.39
KP 1	210+98.48	-35.10	790.72	794.72
	211+00.00	-35.27	790.62	794.62
	211+25.00	-37.34	788.85	792.85
	211+50.00	-38.57	786.85	790.85
KP 2	211+64.55	-39.03	785.58	789.58
	211+75.00	-39.29	784.62	788.62
	212+00.00	-39.92	782.17	786.17
KP 3	212+06.69	-40.08	781.50	785.50
	212+25.00	-40.08	779.67	783.67
	212+50.00	-40.08	777.17	781.17
	212+75.00	-40.08	774.67	778.67
	213+00.00	-40.08	772.17	776.17
	213+25.00	-40.08	769.67	773.67
	213+50.00	-40.08	767.17	771.17
KP 4	213+70.31	-40.08	765.14	769.14
	213+75.00	-40.07	764.67	768.67
	214+00.00	-39.68	762.16	766.16
	214+25.00	-38.73	759.64	763.64
	214+50.00	-37.22	757.11	761.11
KP 5	214+59.68	-36.48	756.15	760.15
	214+70.23	-36.45	755.18	759.18
	214+75.00	-36.50	754.76	756.81
End Wall	214+80.00	-36.59	754.33	754.33

TIER 2				
Location	Station	Offset	Finished Grade F.F.	Finished Grade B.F.
Beg .Wall	210+92.00	-43.56	795.50	795.50
KP 6	210+97.78	-41.06	795.10	798.48
	210+98.85	-41.18	795.03	799.03
	211+00.00	-41.31	794.95	798.95
	211+25.00	-43.35	793.18	797.18
	211+50.00	-44.57	791.18	795.18
KP 7	211+64.42	-45.03	789.92	793.92
	211+75.00	-45.29	788.95	792.95
	212+00.00	-45.92	786.51	790.51
KP 8	212+06.62	-46.08	785.84	789.84
	212+25.00	-46.08	784.00	788.00
	212+50.00	-46.08	781.50	785.50
	212+75.00	-46.08	779.00	783.00
	213+00.00	-46.08	776.50	780.50
	213+25.00	-46.08	774.00	778.00
	213+50.00	-46.08	771.50	775.50
KP 9	213+70.31	-46.08	769.47	773.47
	213+75.00	-46.07	769.00	773.00
	214+00.00	-45.68	766.50	770.50
	214+25.00	-44.74	763.98	767.98
	214+50.00	-43.23	761.45	765.45
KP10	214+59.93	-42.48	760.46	764.46
	214+60.46	-42.47	760.41	764.41
End Wall	214+70.00	-42.44	759.53	759.53

TIER 3				
Location	Station	Offset	Finished Grade F.F.	Finished Grade B.F.
Beg. Wall	211+40.00	-50.16	796.34	796.34
	211+46.60	-50.45	795.80	799.80
	211+50.00	-50.58	795.51	799.51
KP 11	211+64.29	-51.03	794.27	798.27
	211+75.00	-51.29	793.28	797.28
	212+00.00	-51.92	790.84	794.84
KP 12	212+06.56	-52.08	790.18	794.18
	212+25.00	-52.08	788.34	792.34
	212+50.00	-52.08	785.84	789.84
	212+75.00	-52.08	783.34	787.34
	213+00.00	-52.08	780.84	784.84
	213+25.00	-52.08	778.34	782.34
	213+50.00	-52.08	775.84	779.84
KP 13	213+70.31	-52.08	773.81	777.81
	213+75.00	-52.07	773.34	777.34
	214+00.00	-51.69	770.83	774.83
	214+25.00	-50.74	768.31	772.31
	214+48.28	-49.37	765.95	769.95
	214+50.00	-49.25	765.78	769.20
End Wall	214+60.00	-48.49	764.79	764.79

TIER 4				
Location	Station	Offset	Finished Grade F.F.	Finished Grade B.F.
Beg. Wall	211+50.00	-56.58	799.85	799.85
	211+59.83	-56.81	799.00	805.00
KP 14	211+64.17	-57.02	798.61	804.61
	211+75.00	-57.29	797.62	803.62
	212+00.00	-57.92	795.17	801.17
KP 15	212+06.50	-58.08	794.52	800.52
	212+25.00	-58.08	792.67	798.67
	212+50.00	-58.08	790.17	796.17
	212+75.00	-58.08	787.67	793.67
	213+00.00	-58.08	785.17	791.17
	213+25.00	-58.08	782.67	788.67
	213+50.00	-58.08	780.17	786.17
KP 16	213+70.31	-58.08	778.14	784.14
	213+75.00	-58.07	777.67	783.67
	214+00.00	-57.69	775.16	781.16
	214+15.72	-57.16	773.58	779.58
	214+25.00	-56.75	772.64	774.74
End Wall	214+30.00	-56.49	772.14	772.14



PLAN

Notes:
Offsets are measured from the ℄ Huntington Drive to the front face of the walls
KP indicates kink point, see Tables for stations and offsets

Range 8E - 3rd PM

LOCATION SKETCH

GENERAL PLAN & ELEVATION
WALL H; HUNTINGTON DRIVE
SECTION 18A-2, McHENRY COUNTY
STA. 210+90.00 TO STA. 214+55

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DRAWN	-	D. ATKINS
DESIGNED	-	M. LANGE
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
WALL H; HUNTINGTON DRIVE

SHEET NO. WH1 OF WH5 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	640
		CONTRACT NO. 60F72		
		ILLINOIS FED. AID PROJECT		

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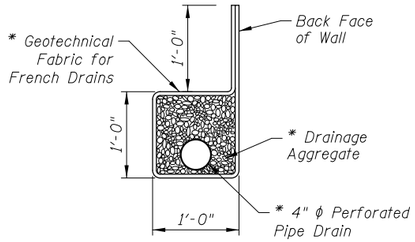
GENERAL NOTES:

1. Design and installation of segmented Concrete Block Walls (including need for Soil Reinforcement) to be in accordance with wall system Manufacturer Design Requirements and Specifications

2. The existing blocks are keystone standard units (21 ½" deep). New blocks shall match existing. Units shall be installed according to manufacturers instructions.

3. Existing blocks that are deemed to be in good condition by the Engineer may be salvaged and incorporated into the new construction.

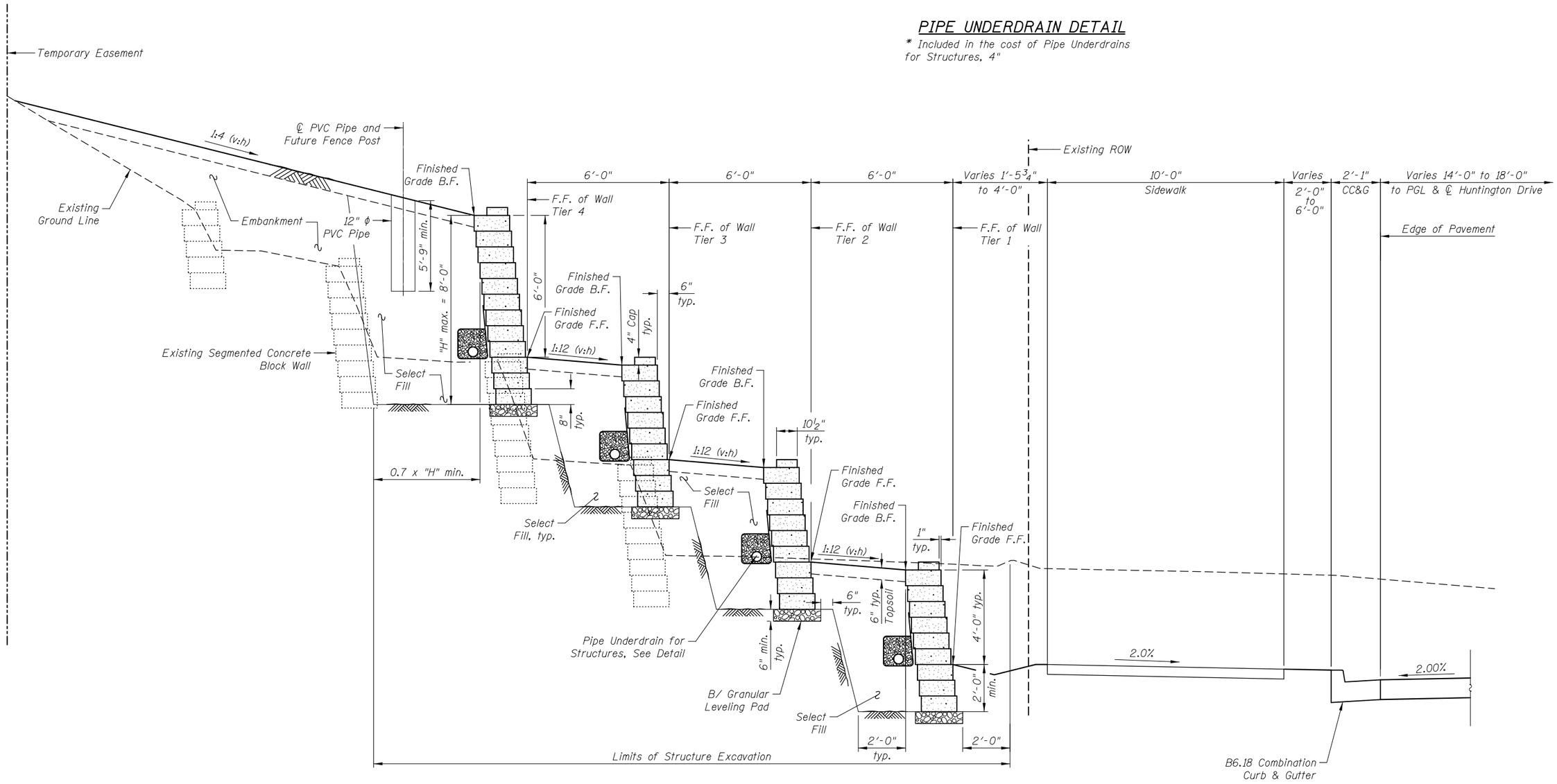


TOTAL BILL OF MATERIALS

ITEM	UNIT	TOTAL QUANTITY
Structure Excavation	Cu. Yd.	2,657
Segmental Concrete Block Wall	Sq. Ft.	10,073
Pipe Underdrains for Structures, 4"	Foot	1,690
Retaining Wall Removal	Foot	1,166

PIPE UNDERDRAIN DETAIL

* Included in the cost of Pipe Underdrains for Structures, 4"



TYPICAL WALL SECTION

CIVILTECH
450 E Devon Ave, Suite 300
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Tel: 630.773.3900 Fax: 630.773.3975
www.civiltechinc.com

DRAWN	-	D. ATKINS
DESIGNED	-	M. LANGE
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL DATA
WALL H; HUNTINGTON DRIVE

SHEET NO. WH2 OF WH5 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	641
		CONTRACT NO. 60F72		
	ILLINOIS	FED. AID PROJECT		

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5/2/2012

MIDLAND STANDARD ENGINEERING & TESTING, INC.

BORING LOG

SHEET 1 OF 1

PROJECT Algonquin Bypass — Retaining Wall — DATE 2/25/09
ROUTE FAP 339/ILL 31 — Huntington Drive — BORED BY SPE
SECTION 96-00209-00-PV — STATION 209+50 to 216+00 — CHECKED BY WJW
COUNTY McHenry
BORING RW-72
STATION 210+00
OFFSET 30' L of CL
WATER LEVEL DURING DRILLING none
GROUND WATER AT COMPLETION dry

Depth	N/6"	Qu tsf	W %	Depth	N/6"	Qu tsf	W %
GROUND SURFACE EL. 797.6 Ft				Ft			
2-1/2" Bituminous Concrete over 5-1/2" Brown SAND & GRAVEL, A-1				Grey Clay LOAM, A-6 777.6			
Brown and Grey Silty CLAY, A-6: FILL 796.9	10 8 5	1.36 S	11		6 8 10	3.68 BS	12
Reddish-Brown Clay LOAM, A-6 794.6	4 6 8	5.12 BS	12		5 11 14	4.15 BS	11
Brown-Grey	ST	3.69	13		8 11 14	5.70 BS	11
	5 6 7	2.95 BS	12		9 12 17	5.62 BS	12
				End of Boring @ 30.0' 747.6			
	5 6 7	3.22 BS	12				
	5 7 9	4.53 BS	12				
	7 8 9	3.60 BS	12				
	8 7 9	2.40 BS	13				

N-Standard Penetration Test- Blows per foot to drive 2 inch O.D. Split Spoon Sampler 12 inches with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf) W- Water Content-percentage of oven dry weight (%) ST- Shelby Tube Sample

Type failure: B- Bulge Failure S- Shear Failure E- Estimated Value P-Penetrometer

MIDLAND STANDARD ENGINEERING & TESTING, INC.

BORING LOG

SHEET 1 OF 1

PROJECT Algonquin Bypass — Retaining Wall — DATE 2/24/09
ROUTE FAP 339/ILL 31 — Huntington Drive — BORED BY SPE
SECTION 96-00209-00-PV — STATION 209+50 to 216+00 — CHECKED BY WJW
COUNTY McHenry
BORING RW-73
STATION 210+90
OFFSET 31' L of CL
WATER LEVEL DURING DRILLING none
GROUND WATER AT COMPLETION dry

Depth	N/6"	Qu tsf	W %	Depth	N/6"	Qu tsf	W %
GROUND SURFACE EL. 791.4 Ft				Ft			
3" Bituminous Concrete over 6-1/2" Brown SAND and GRAVEL				Grey Clay LOAM, A-6 771.4			
Brown and Dark Brown Silty CLAY, A-6: FILL 790.6	13 15 10	4.5+ P	8		9 10 12	6.01 BS	11
Brown SAND (f-c), A-2: FILL 789.1							
Red-Brown Clay LOAM A-6 788.4	4 6 8	3.29 BS	13	Grey-Brown Clay LOAM, A-6(5)*	ST	4.5+ P	11
Brown-Grey	5 7 10	3.99 BS	13		8 11 13	6.36 BS	10
	8 9 10	4.84 BS	8	End of Boring @ 30.0' 761.4			
	9 10 12	4.73 BS	12		9 10 14	6.70 BS	10
	5 8 9	4.0 P	12				
	5 7 8	3.68 BS	10				
	7 9 12	4.96 BS	11				

N-Standard Penetration Test- Blows per foot to drive 2 inch O.D. Split Spoon Sampler 12 inches with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf) W- Water Content-percentage of oven dry weight (%) ST- Shelby Tube Sample * - Classification Test Results on Form BBS 2640

Type failure: B- Bulge Failure S- Shear Failure E- Estimated Value P-Penetrometer

MIDLAND STANDARD ENGINEERING & TESTING, INC.

BORING LOG

SHEET 1 OF 1

PROJECT Algonquin Bypass — Retaining Wall — DATE 2/24/09
ROUTE FAP 339/ILL 31 — Huntington Drive — BORED BY SPE
SECTION 96-00209-00-PV — STATION 209+50 to 216+00 — CHECKED BY WJW
COUNTY McHenry
BORING RW-74
STATION 211+65
OFFSET 33' L of CL
WATER LEVEL DURING DRILLING 13.0'
GROUND WATER AT COMPLETION 12.8'

Depth	N/6"	Qu tsf	W %	Depth	N/6"	Qu tsf	W %
GROUND SURFACE EL. 788.0 Ft				Ft			
2-1/2" Bituminous Concrete over 7" Brown SAND and GRAVEL, A-1				Grey Clay LOAM, A-6 768.0			
Brown Clay LOAM, A-6 787.2	8 5 4	1.90 S	12		8 14 22	7.83 BS	11
Brown-Grey	4 6 7	3.68 BS	12	Grey SILT, A-4 765.0	9 21 31	5.04 S	11
	5 6 8	3.18 BS	12	Grey Clay LOAM, A-6 762.5	10 14 16	7.63 BS	10
	6 7 9	4.88 BS	12	End of Boring @ 30.0' 758.0	11 17 21	4.26 BS	12
	6 8 11	6.05 BS	11				
Grey SAND and GRAVEL, A-1 775.1							
Grey Clay LOAM, A-6 774.0	7 6 7	2.91 BS	13				
	7 8 13	3.53 BS	12				
	7 9 14	4.03 BS	12				

N-Standard Penetration Test- Blows per foot to drive 2 inch O.D. Split Spoon Sampler 12 inches with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf) W- Water Content-percentage of oven dry weight (%)

Type failure: B- Bulge Failure S- Shear Failure E- Estimated Value P-Penetrometer

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www.civiltechinc.com

DRAWN	-	D. ATKINS
DESIGNED	-	M. LANGE
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS I
WALL H; HUNTINGTON DRIVE

SHEET NO. WH3 OF WH5 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	642
		CONTRACT NO. 60F72		
	ILLINOIS	FED. AID PROJECT		

MIDLAND STANDARD ENGINEERING & TESTING, INC.

BORING LOG

SHEET 1 OF 1

PROJECT Algonquin Bypass — Retaining Wall — DATE 2/23/09
ROUTE FAP 339/ILL 31 — Huntington Drive — BORED BY SPE
SECTION 96-00209-00-PV — STATION 209+50 to 216+00 — CHECKED BY WJW
COUNTY McHenry
BORING RW-75
STATION 212+40
OFFSET 34' L of CL
WATER LEVEL DURING DRILLING none
GROUND WATER AT COMPLETION dry

GROUND SURFACE EL. 780.8

1-3/4" Bituminous Concrete over 6-1/2" Brown SAND & GRAVEL, A-1 780.1

Brown Clay LOAM, A-6

Brown-Grey

Grey Clay LOAM, A-6 760.8

few wet Sand seams

End of Boring @ 30.0' 750.8

Depth	N/6"	Qu tsf	W %
Ft			
	4 4 5	3.53 B	12
5	3 5 7	3.99 B	11
	6 7 10	3.72 BS	11
	6 9 11	4.53 BS	11
10	6 10 12	4.65 BS	12
	6 9 13	5.12 BS	11
15	7 11 14	4.84 BS	12
	11 12 10	7.21 BS	22
20			
25	10 12 21	3.88 B	12
	14 18 26	4.07 BS	11
30	11 12 17	5.70 BS	11

N-Standard Penetration Test-
Blows per foot to drive 2 inch
O.D. Split Spoon Sampler 12 inches
with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf)
W- Water Content-percentage of oven dry weight (%)

Type failure: B- Bulge Failure, S- Shear Failure, E- Estimated Value, P-Penetrometer

MIDLAND STANDARD ENGINEERING & TESTING, INC.

BORING LOG

SHEET 1 OF 1

PROJECT Algonquin Bypass — Retaining Wall — DATE 2/23/09
ROUTE FAP 339/ILL 31 — Huntington Drive — BORED BY SPE
SECTION 96-00209-00-PV — STATION 209+50 to 216+00 — CHECKED BY WJW
COUNTY McHenry
BORING RW-76
STATION 213+15
OFFSET 34' L of CL
WATER LEVEL DURING DRILLING 5.5'
GROUND WATER AT COMPLETION 6.5'

GROUND SURFACE EL. 775.2

2-1/2" Bituminous Concrete over 8-1/2" Brown SAND & GRAVEL, A-1

Brown-Grey Clay LOAM, A-6 774.3

Grey SAND, A-3, wet 769.7

Grey Clay LOAM, A-6 767.2

Grey Clay LOAM, A-6 755.2

End of Boring @ 30.0' 745.2

Depth	N/6"	Qu tsf	W %
Ft			
	4 4 4	2.60 B	12
5	8 10 12	5.12 BS	11
	10 11 11	-	16
	8 10 15	5.00 BS	12
10	9 12 16	5.04 BS	12
	10 14 21	6.74 BS	10
15	12 16 26	8.10 BS	9
	11 17 22	4.84 BS	11
20			
25	12 15 22	9.46 BS	10
	17 25 31	10.54 BS	11
	15 22 29	7.44 BS	10
30	11 12 17	6.98 BS	11

N-Standard Penetration Test-
Blows per foot to drive 2 inch
O.D. Split Spoon Sampler 12 inches
with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf)
W- Water Content-percentage of oven dry weight (%)

Type failure: B- Bulge Failure, S- Shear Failure, E- Estimated Value, P-Penetrometer

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DRAWN	-	D. ATKINS
DESIGNED	-	M. LANGE
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS II
WALL H; HUNTINGTON DRIVE

SHEET NO. WH4 OF WH5 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	643
		CONTRACT NO. 60F72		
		ILLINOIS FED. AID PROJECT		

MIDLAND STANDARD ENGINEERING & TESTING, INC.

BORING LOG

SHEET 1 OF 1

PROJECT: Algonquin Bypass — Retaining Wall
DATE: 2/23/09
ROUTE: FAP 339/ILL 31 — Huntington Drive
BORED BY: SPE
SECTION: 96-00209-00-PV
STATION: 209+50 to 216+00
CHECKED BY: WJW

COUNTY: McHenry
BORING: RW-77
STATION: 214+00
OFFSET: 34' L of CL

WATER LEVEL DURING DRILLING: 27.0'
GROUND WATER AT COMPLETION: 26.6'

GROUND SURFACE EL. 768.9

Description	Elev.	Depth (Ft)	N/6"	Qu tsf	W %
2-1/2" Bituminous Concrete over 11-1/2" Grey Crushed Limestone Base Course					
Brown Clay LOAM, A-6	767.7		4 4 6	1.78 BS	11
Brown-Grey		5	4 6 10	3.49 BS	11
			7 7 8	6.08 BS	11
		10	8 11 14	3.76 BS	10
			10 12 14	6.36 S	10
		15	10 10 12	7.09 BS	9
			10 11 12	4.5+ P	10
		20	11 12 14	5.04 BS	11
Grey Clay LOAM, A-6	748.9		10 11 12	6.51 BS	11
		25	9 9 13	4.65 BS	12
wet Sand seam @ 27.0'			8 10 13	5.27 BS	12
		30	8 11 14	4.5 P	11
End of Boring @ 30.0'	738.9				

N-Standard Penetration Test- Blows per foot to drive 2 inch O.D. Split Spoon Sampler 12 inches with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf)
W- Water Content-percentage of oven dry weight (%)

Type failure: B- Bulge Failure; S- Shear Failure; E- Estimated Value; P-Penetrometer

MIDLAND STANDARD ENGINEERING & TESTING, INC.

BORING LOG

SHEET 1 OF 1

PROJECT: Algonquin Bypass — Retaining Wall
DATE: 2/20/09
ROUTE: FAP 339/ILL 31 — Huntington Drive
BORED BY: SPE
SECTION: 96-00209-00-PV
STATION: 209+50 to 216+00
CHECKED BY: WJW

COUNTY: McHenry
BORING: RW-78
STATION: 215+00
OFFSET: 34' L of CL

WATER LEVEL DURING DRILLING: 11.5'
GROUND WATER AT COMPLETION: 15.8'

GROUND SURFACE EL. 764.5

Description	Elev.	Depth (Ft)	N/6"	Qu tsf	W %
±13" Dark Brown Silty CLAY/TOPSOIL					
Red-Brown Clay LOAM, A-6	763.4		4 5 5	2.09 B	14
		5	4 5 8	2.44 B	14
			5 8 10	3.88 BS	12
		10	6 8 11	3.14 BS	12
Grey SAND, A-2, wet	753.0		5 7 9	3.22 BS	12
Brown-Grey Clay LOAM, A-6	751.5	15	4 4 5	3.99 BS	11
			5 7 9	5.35 BS	12
		20	7 10 14	4.73 BS	11
Grey Clay LOAM, A-6	744.5		7 7 9	2.83 BS	13
		25	6 7 10	2.75 BS	14
			7 8 10	2.21 BS	13
		30	8 9 11	3.29 BS	13
End of Boring @ 30.0'	734.5				

N-Standard Penetration Test- Blows per foot to drive 2 inch O.D. Split Spoon Sampler 12 inches with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf)
W- Water Content-percentage of oven dry weight (%)

Type failure: B- Bulge Failure; S- Shear Failure; E- Estimated Value; P-Penetrometer

Bench Mark: Control Point 45, $^{5}/_{8}$" Iron Rod with cap set, Huntington Drive Sta. 207+78.52, Offset 39.35 feet Rt., Elev. 814.95

Existing Structure: None

INDEX OF SHEETS

CURVE DATA

Δ = 49° 07′ 32.59" (RT)
D = 9° 57′ 52.14"
T = 262.80′
L = 493.01′
E = 57.21′
R = 575.0′
P.C. = Sta. 211+21.76
P.T. = Sta. 216+14.77
P.I. = Sta. 213+84.56

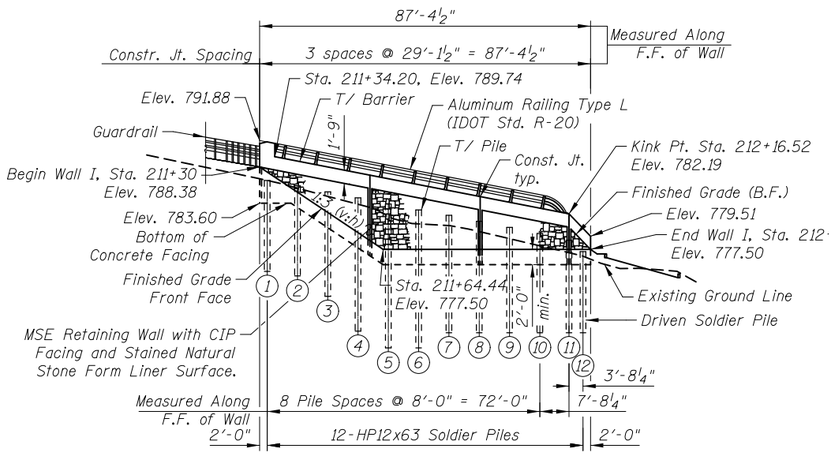
DESIGN SPECIFICATIONS

2002 AASHTO Standard Specification for Highway Bridges, 17th Ed.

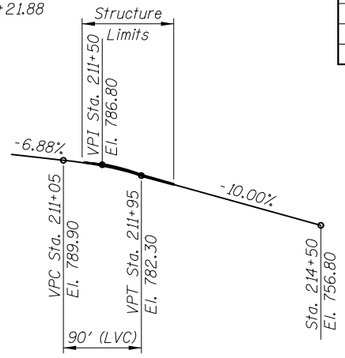
DESIGN STRESSES

FIELD UNITS

f′c = 3,500 psi
fy = 60,000 psi (Reinforcement)
fy = 36,000 psi (M270 Grade 36, Soldier Piles)



ELEVATION
(Looking @ F.F. of Wall)



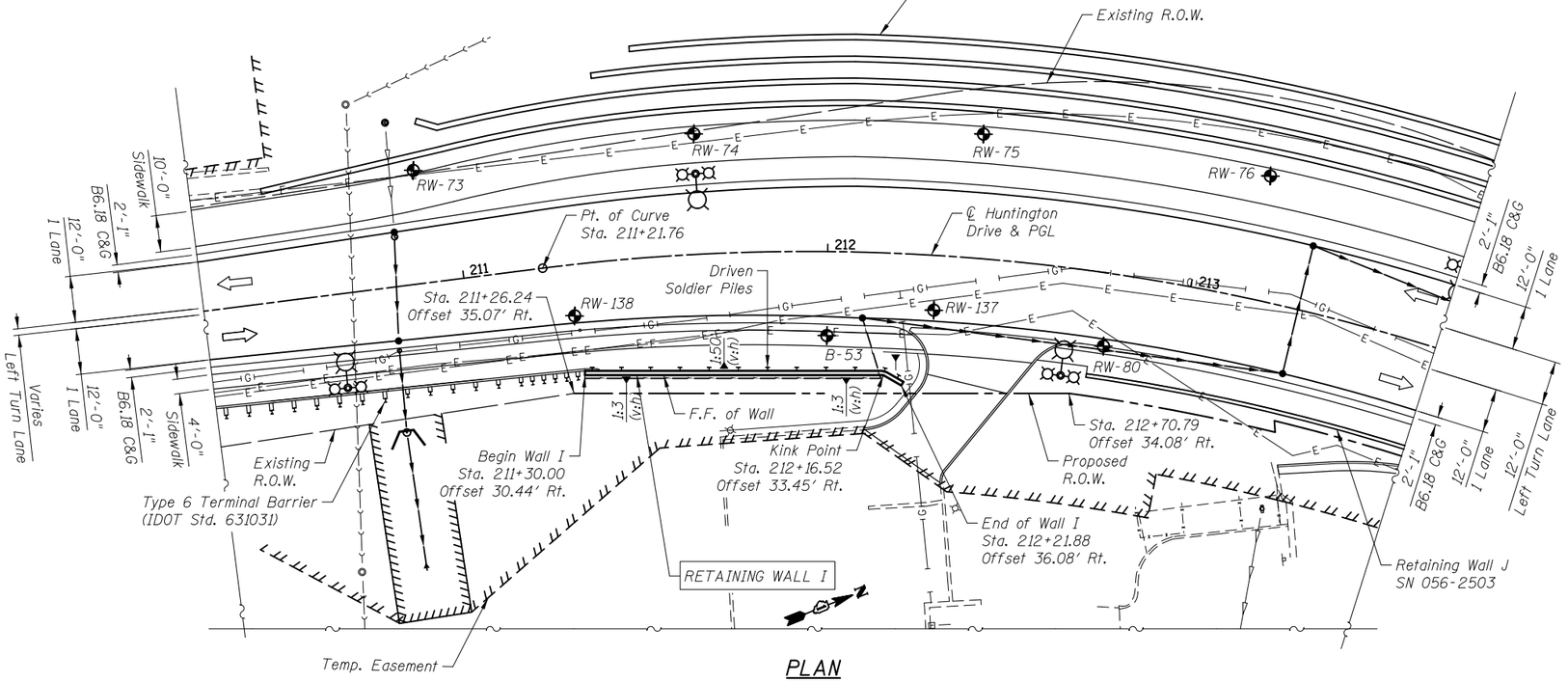
PROPOSED PROFILE
HUNTINGTON DRIVE

TOP OF WALL & PILE ELEVATIONS

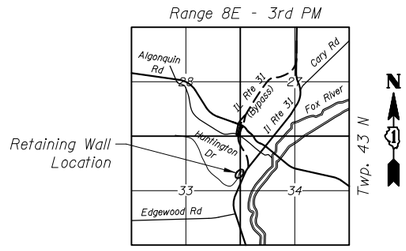
Pile No.	℄ Pile Station	℄ Pile Offset	Top of Barrier Elevation	Top of Pile Elevation	Bottom of Pile Elevation	Stud Shear Connectors
1	211+32.29	29.00	789.93	786.60	774.60	4
2	211+40.68	29.81	789.14	785.80	774.00	4
3	211+49.09	30.5	788.35	785.10	771.30	6
4	211+57.52	31.07	787.57	784.30	766.70	8
5	211+65.97	31.52	786.78	783.50	764.50	9
6	211+74.43	31.86	785.99	782.70	764.50	9
7	211+82.89	32.08	785.20	781.90	766.50	8
8	211+91.37	32.18	784.41	781.10	766.50	7
9	211+99.84	32.16	783.62	780.30	766.50	6
10	212+08.31	32.03	782.83	779.50	766.50	5
11	212+16.87	31.96	781.93	778.60	766.50	5
12	212+20.81	33.68	780.41	777.10	766.50	3

TOTAL BILL OF MATERIALS

ITEM	UNIT	TOTAL QUANTITY
Structure Excavation	Cu. Yd.	46
Concrete Structures	Cu. Yd.	32.1
Form Liner Textured Surface	Sq. Ft.	584
Stud Shear Connectors	Each	74
Reinforcement Bars, Epoxy Coated	Pound	2,090
Aluminum Railing, Type L	Foot	77
Geocomposite Wall Drain	Sq. Yd.	34
Driving Soldier Piles	Foot	172
Untreated Timber Lagging	Sq. Ft.	405
Furnishing Soldier Piles (HP Section)	Foot	172
Pipe Underdrains for Structures 4"	Foot	98
Staining Concrete Structures	Sq. Yd.	65



PLAN



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
WALL I; HUNTINGTON DR.; O.R. 0003
McHENRY COUNTY
STA. 211+30 TO STA. 212+25

CIVILTECH
450 E Devon Ave, Suite 300
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DRAWN	-	M. LANGE
DESIGNED	-	M. LANGE
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
WALL I; HUNTINGTON DRIVE
SHEET NO. WI1 OF WI5 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	645
		CONTRACT NO. 60F72		
ILLINOIS FED. AID PROJECT				

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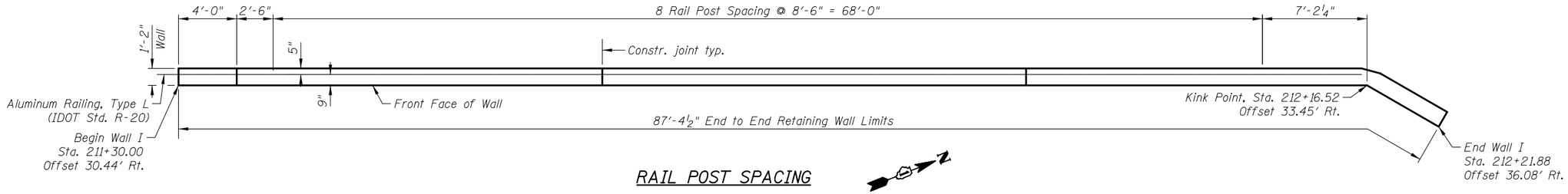
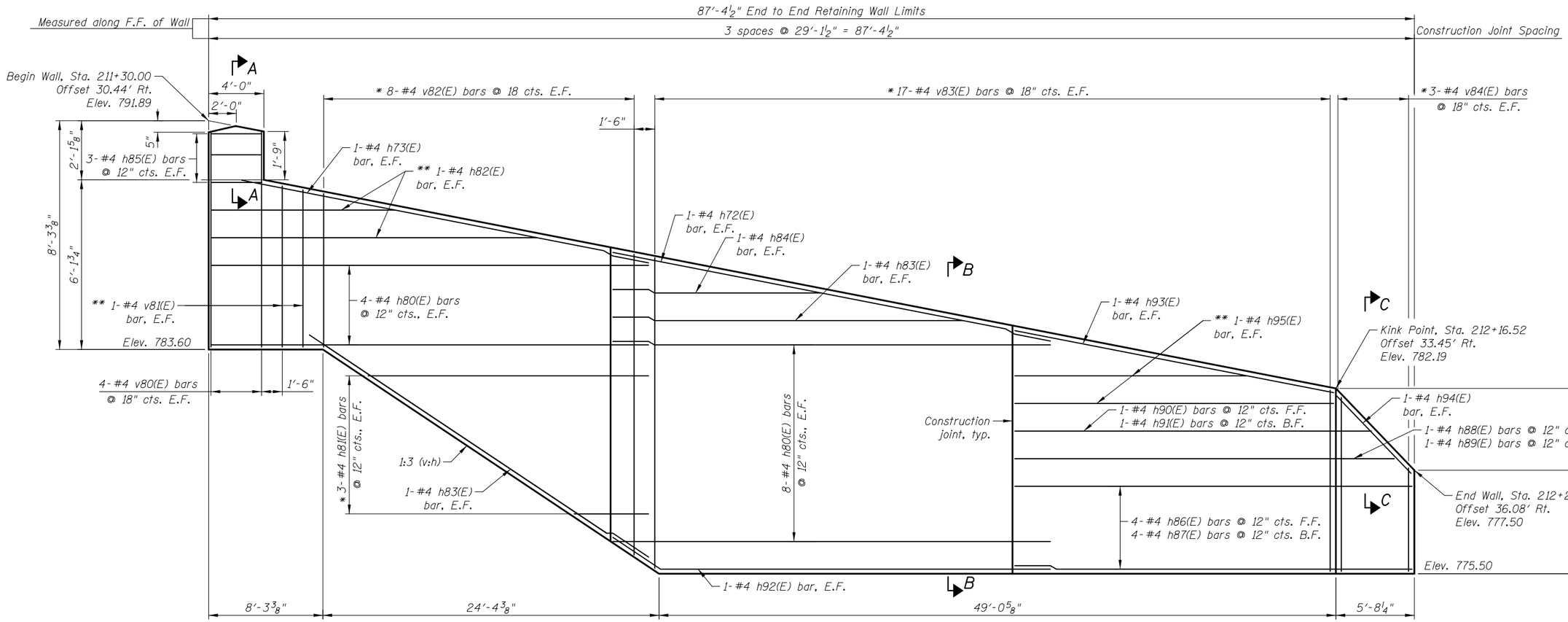


RAIL POST SPACING



WALL ELEVATION

MINIMUM BAR LAP

#4 bar = 2'-7"

* See Field Cutting Diagram on sheet WI3.
** Order bar full length. Cut to fit and use as designated.

Notes:
See sheet WI3 for Sections A-A and B-B and Form Liner details.
See sheet WI4 for Aluminum Railing, Type L details.

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450 E Devon Ave, Suite 300
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www.civiltechinc.com

DRAWN	-	M. LANGE
DESIGNED	-	M. LANGE
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RETAINING WALL
WALL I; HUNTINGTON DRIVE
SHEET NO. WI2 OF WI5 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	646

CONTRACT NO. 60F72
ILLINOIS FED. AID PROJECT

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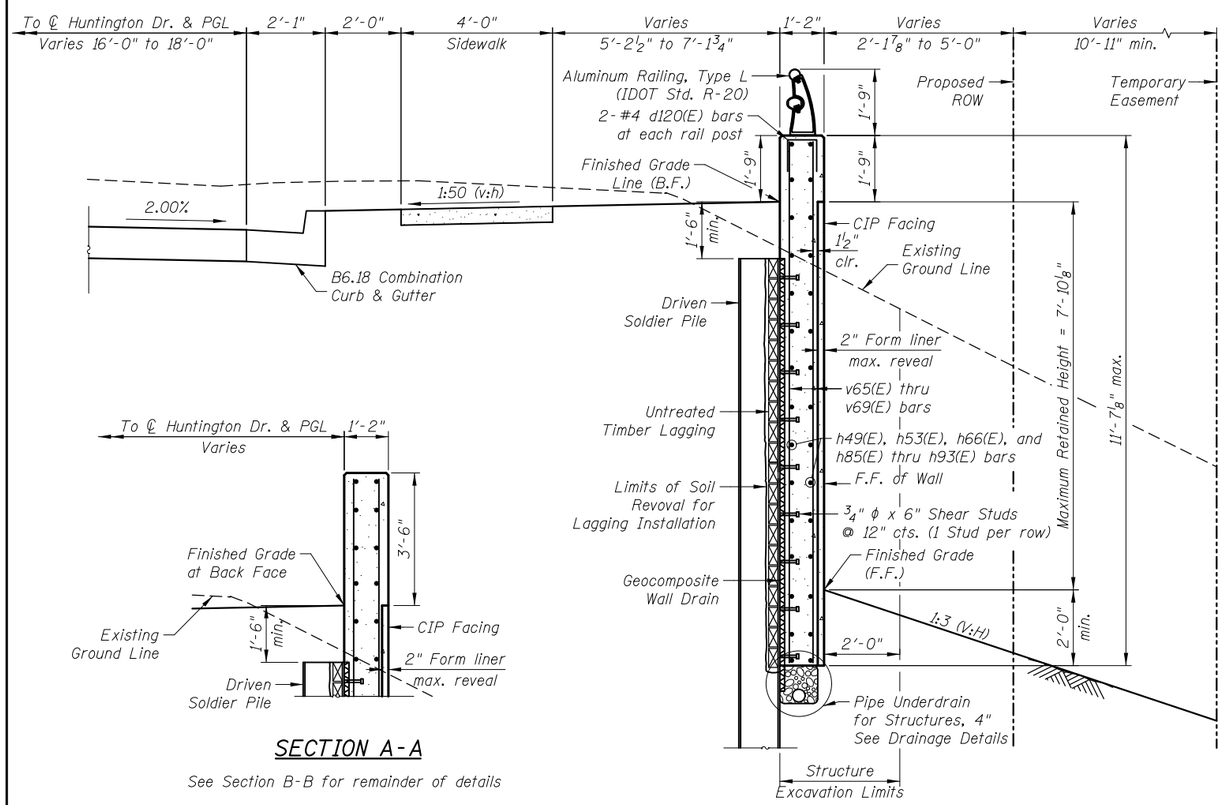
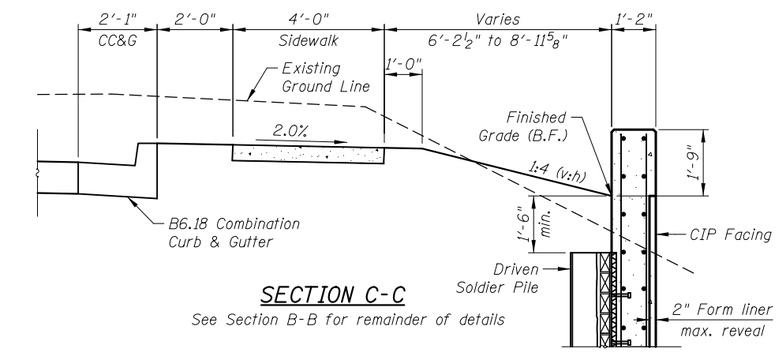


SECTION B-B

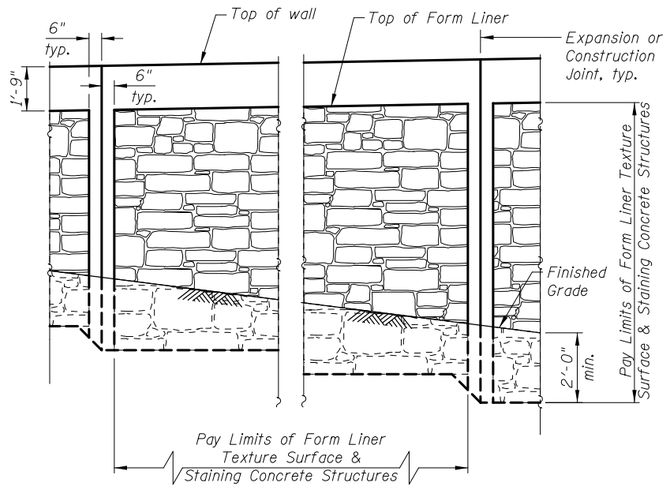
SECTION A-A

See Section B-B for remainder of details



SECTION C-C

See Section B-B for remainder of details

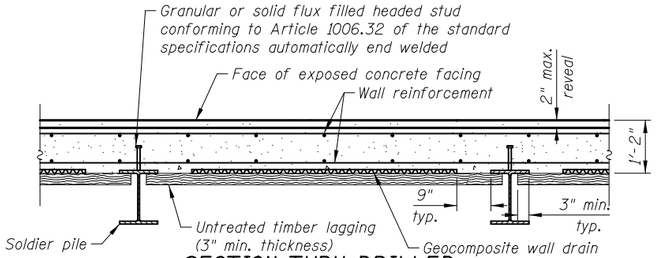


FORM LINER TEXTURE SURFACE DETAIL

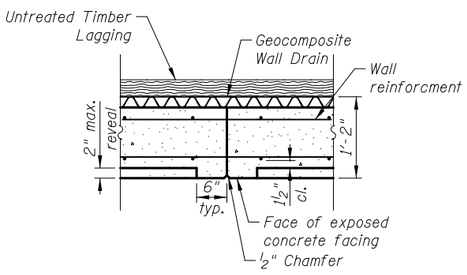
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d120(E)	18	#4	2'-4"	⊓
h72(E)	2	#4	31'-11"	—
h73(E)	2	#4	29'-0"	—
h80(E)	24	#4	31'-8"	—
h81(E)	6	#4	25'-4"	—
h82(E)	2	#4	37'-0"	—
h83(E)	4	#4	25'-4"	—
h84(E)	2	#4	15'-1"	—
h85(E)	6	#4	3'-8"	—
h86(E)	4	#4	28'-11"	⟋
h87(E)	4	#4	29'-3"	⟋
h88(E)	1	#4	28'-3"	⟋
h89(E)	1	#4	28'-7"	⟋
h90(E)	1	#4	26'-3"	⟋
h91(E)	1	#4	26'-7"	⟋
h92(E)	2	#4	31'-10"	⟋
h93(E)	2	#4	23'-2"	—
h94(E)	2	#4	6'-0"	—
h95(E)	2	#4	39'-10"	—
v80(E)	8	#4	7'-6"	—
v81(E)	2	#4	22'-4"	—
v82(E)	16	#4	32'-2"	—
v83(E)	34	#4	17'-7"	—
v84(E)	6	#4	9'-9"	—

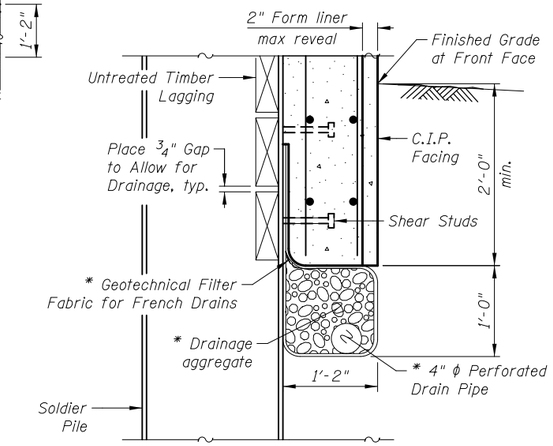
Item	Unit	Quantity
Concrete Structures	Cu. Yd.	32.1
Reinforcement Bars, Epoxy Coated	Pound	2,090



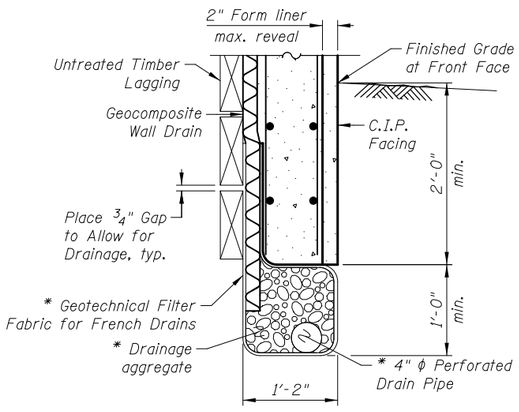
SECTION THRU DRILLED SOLDIER PILE WALL



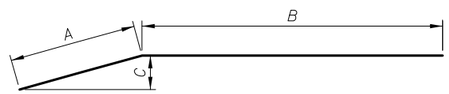
CONSTRUCTION JOINT



DRAINAGE DETAILS AT SOLDIER PILES

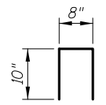


DRAINAGE DETAILS BETWEEN SOLDIER PILES

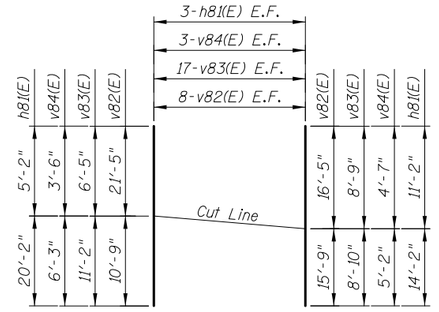


Bar	A	B	C
h86(E)	5'-7"	23'-4"	2'-9½"
h87(E)	5'-9"	23'-6"	2'-10½"
h88(E)	4'-11"	23'-4"	2'-5½"
h89(E)	5'-1"	23'-6"	2'-6½"
h90(E)	2'-11"	23'-4"	1'-5½"
h91(E)	3'-1"	23'-6"	1'-6½"
h92(E)	3'-7"	28'-3"	1'-1⅜"

BARS h86(E) thru h91(E)



BAR d120(E)



FIELD CUTTING DIAGRAM

* Included in the cost of Pipe Underdrains for Structures, 4"

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DESIGNED	-	M. LANGE
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RETAINING WALL DETAILS
WALL I; HUNTINGTON DRIVE
SHEET NO. WI3 OF WI5 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	647
		CONTRACT NO. 60F72		
		ILLINOIS FED. AID PROJECT		

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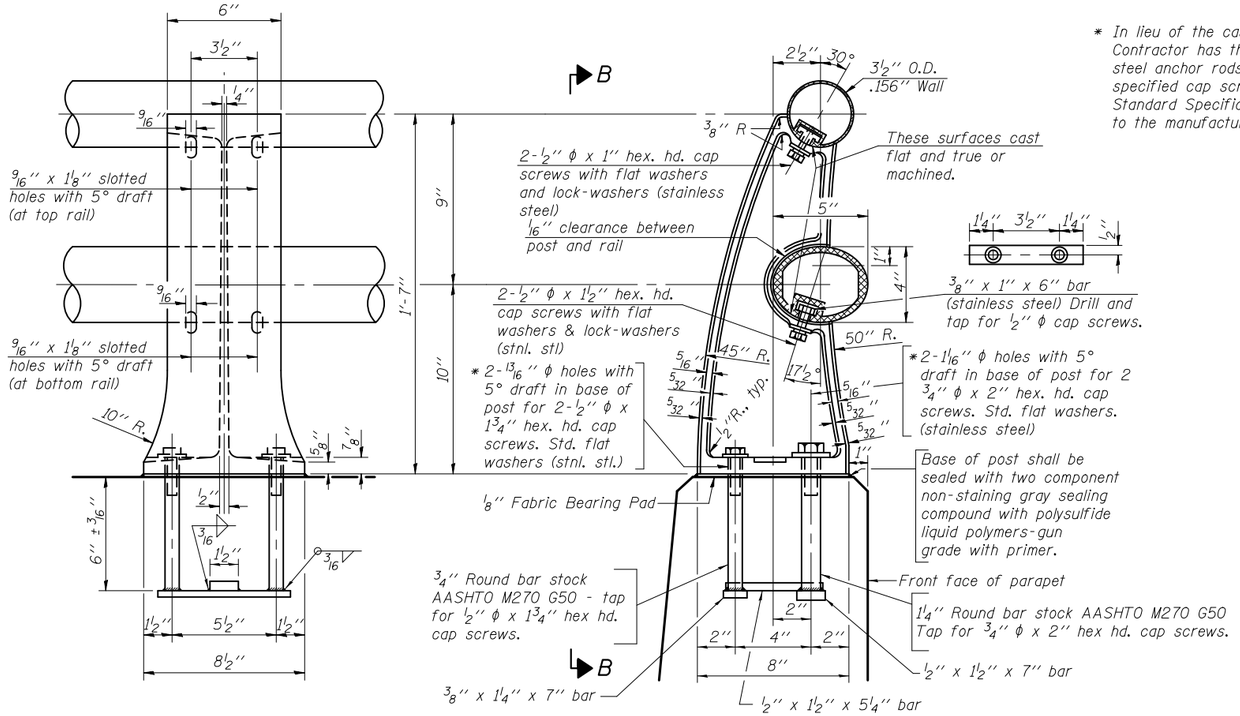
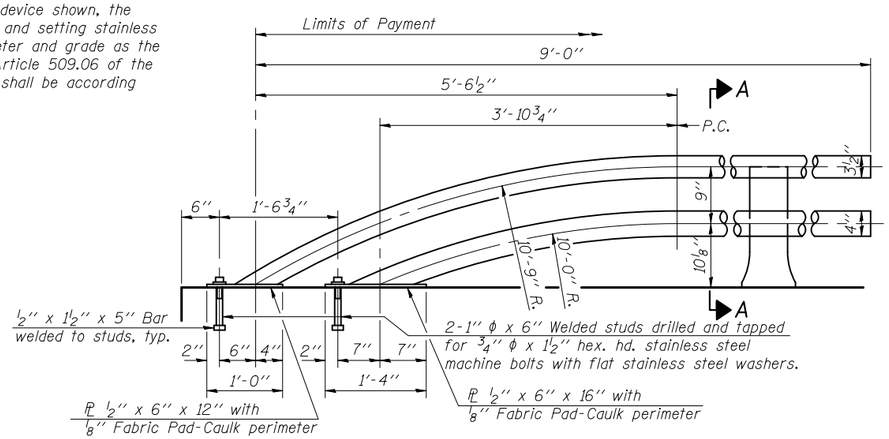
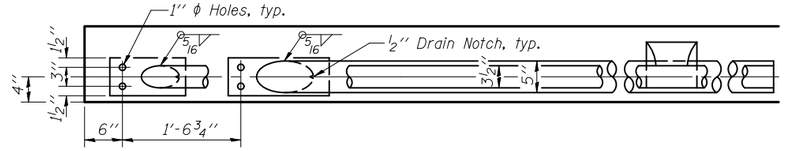


* *In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting stainless steel anchor rods of the same diameter and grade as the specified cap screws according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.*



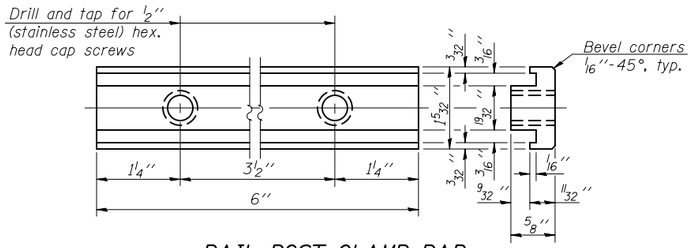


RAIL TERMINAL SECTION

VIEW B-B

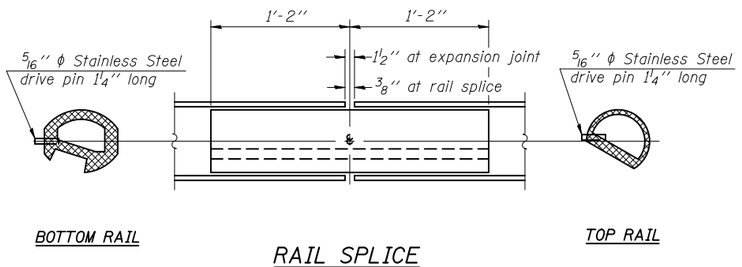
SECTION A-A

RAIL POST DETAILS



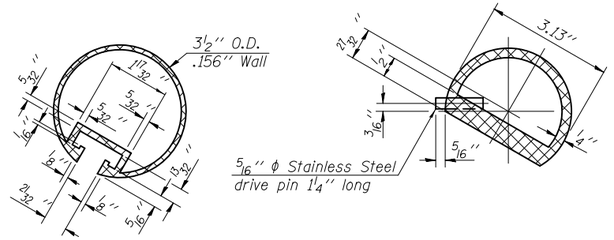
RAIL POST CLAMP BAR

For Top Rail



RAIL SPLICE

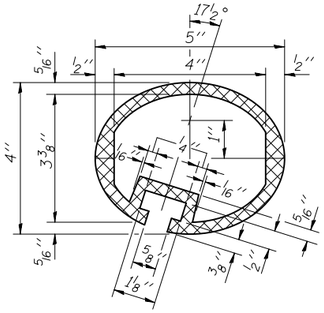
(7'-0'' to 10'-0'' Post spacing)



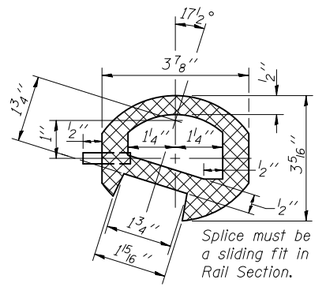
SECTION THRU TOP RAIL

SECTION THRU SPLICE

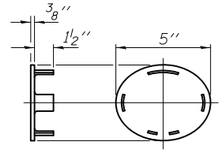
For Top Rail



SEC. THRU ELLIPTICAL RAIL SECTION

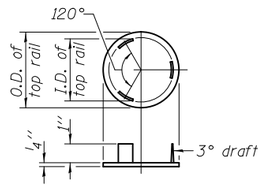


SEC. THRU SPLICE



CAST END CAP

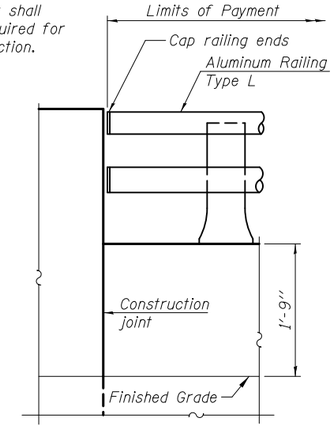
For bottom rail
DRIVE FIT TYPE



CAST END CAP

For top rail

Note:
The end rail post shall be set back as required for the terminal rail section.



RAIL END TREATMENT FOR TYPE 5 AND 6 TERMINAL

Notes:
All Posts shall be normal to parapet.
All joints in rail shall be spliced per detail.
All exposed rail ends shall be capped per detail.
Provide 1-⅛'' and 2-1/16'' Aluminum Shims for 25% of the Posts. Rail elements shall be parallel to Grade-high spots will be ground and low spots shimmed.
See sheet WI2 for rail post spacing.

BILL OF MATERIAL

Item	Unit	Quantity
Aluminum Railing, Type L	Foot	77

CIVILTECH
450 E Devon Ave, Suite 300
Itasca, Illinois 60143
Tel: 630.773.3900 Fax: 630.773.3975
www.civiltechinc.com

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DESIGNED	-	M. LANGE
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALUMINUM RAILING, TYPE L
WALL I; HUNTINGTON DRIVE
SHEET NO. WI4 OF WI5 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	648
		CONTRACT NO. 60F72		
	ILLINOIS	FED. AID PROJECT		

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MIDLAND STANDARD ENGINEERING & TESTING, INC.

STRUCTURE FOUNDATION BORING LOG

SHEET 1 OF 1

PROJECT Algonquin Bypass | STRUCTURE Retaining Wall I | DATE 7/13/10
ROUTE FAP 339/ILL 31 | BORED BY SPE
SECTION 96-00209-00-PV | STATION 211+30 to 212+25 | CHECKED BY WJW

COUNTY McHenry
BORING RW-137
STATION 212+30
OFFSET 15' R

WATER SURFACE EL. 27.0
GROUND WATER AT COMPLETION 26.5

GROUND SURFACE EL. 780.5 M (Ft)

Depth	N/6"	Qu tsf	W %
	Dark Brown Silty CLAY 780.0		
	Reddish Brown CLAY LOAM, A-6: very Stiff to Hard		
	3 3 5	2.29 BS	13
	4 8 10	3.88 BS	13
	6 7 11	4.90 BS	12
	Brown- Grey 772.5		
	Grey Silty CLAY LOAM, A-6 to Clay LOAM, A-4 very stiff to hard		
	4 7 10	3.88 BS	12
	5 7 10	3.45 B	12
	6 7 12	4.88 BS	11
	8 11 17	6.80 BS	9
ST		3.31 BS	10

Depth	N/6"	Qu tsf	W %
	M (Ft)		
	760.5		
	Grey Silty CLAY LOAM, A-6: very stiff to hard		
	9 14 22	7.97 B	10
	9 10 14	3.03 S	11
	8 11 16	5.20 BS	11
	9 14 18	6.84 BS	12
	End of Boring @ 30' 750.5		

N-Standard Penetration Test- Blows per foot to drive 2 inch O.D. Split Spoon Sampler 12 inches with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf) W- Water Content-percentage of oven dry weight (%)

Type failure: B- Bulge Failure S- Shear Failure E- Estimated Value P-Penetrometer

MIDLAND STANDARD ENGINEERING & TESTING, INC.

STRUCTURE FOUNDATION BORING LOG

SHEET 1 OF 1

PROJECT Algonquin Bypass | STRUCTURE Retaining Wall I | DATE 7/13/10
ROUTE FAP 339/ILL 31 | BORED BY SPE
SECTION 96-00209-00-PV | STATION 211+30 to 212+25 | CHECKED BY WJW

COUNTY McHenry
BORING RW-138
STATION 211+29
OFFSET 14' R

WATER SURFACE EL. 28.0
GROUND WATER AT COMPLETION 27.8

GROUND SURFACE EL. 788.1 M (Ft)

Depth	N/6"	Qu tsf	W %
	Black Silty CLAY, Top Soil		
	Grey Crushed Limestone 787.6		
	Dark Brown and Red Brown Silty CLAY mixed w/ Crushed Limestone Fill		
	785.1		
	Reddish Brown CLAY LOAM, A-6(4) very Stiff		
	5 4 3	--	7
	3 5 6	2.33 BS	14
	4 7 8	3.10 BS	12
ST		3.30 BS	13
	4 8 12	3.30 BS	11
	6 8 9	3.88 BS	12
	6 8 12	5.51 B	11
	6 8 11	4.95 BS	12
	Brown- Grey 775.1		
	Grey Clay LOAM, A-6 very Stiff to Hard		

Depth	N/6"	Qu tsf	W %
	M (Ft)		
	768.1		
	Grey Clay LOAM, A-6 very Stiff to very Hard		
	6 9 12	2.91 BS	11
	9 11 14	7.37 B	11
	8 10 14	10.86 B	9
	Grey SAND (f-m), A-3 760.1		
	Grey Silty CLAY, A-6 very Stiff 759.1		
	15 18 19	3.30 BS	11
	End of Boring @ 30' 758.1		

N-Standard Penetration Test- Blows per foot to drive 2 inch O.D. Split Spoon Sampler 12 inches with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf) W- Water Content-percentage of oven dry weight (%)

Type failure: B- Bulge Failure S- Shear Failure E- Estimated Value P-Penetrometer

MIDLAND STANDARD ENGINEERING & TESTING, INC.

BORING LOG

SHEET 1 OF 1

PROJECT Algonquin Bypass | Mainline - Huntington Road | DATE 2/25/09
ROUTE FAP 339/ILL 31 | BORED BY SPE
SECTION 96-00209-00-PV | STATION 209+00 to 220+00 | CHECKED BY WJW

COUNTY McHenry
BORING B-53
STATION 212+00
OFFSET 23' R of CL

WATER LEVEL DURING DRILLING none
GROUND WATER AT COMPLETION dry

GROUND SURFACE EL. 782.5 Ft

Depth	N/6"	Qu tsf	W %
	±3" Black Silty CLAY/TOPSOIL		
	Brown Silty Clay LOAM, A-6: FILL 782.2		
	4 5 7	3.25 P	17
	Red-Brown Clay LOAM, A-6 780.0		
	3 4 5	1.67 B	16
	6 9 13	2.91 BS	12
	6 8 10	5.46 BS	11
	End of Boring @ 10.0' 772.5		

N-Standard Penetration Test- Blows per foot to drive 2 inch O.D. Split Spoon Sampler 12 inches with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf) W- Water Content-percentage of oven dry weight (%)

Type failure: B- Bulge Failure S- Shear Failure E- Estimated Value P-Penetrometer

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DESIGNED	-	M. LANGE
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

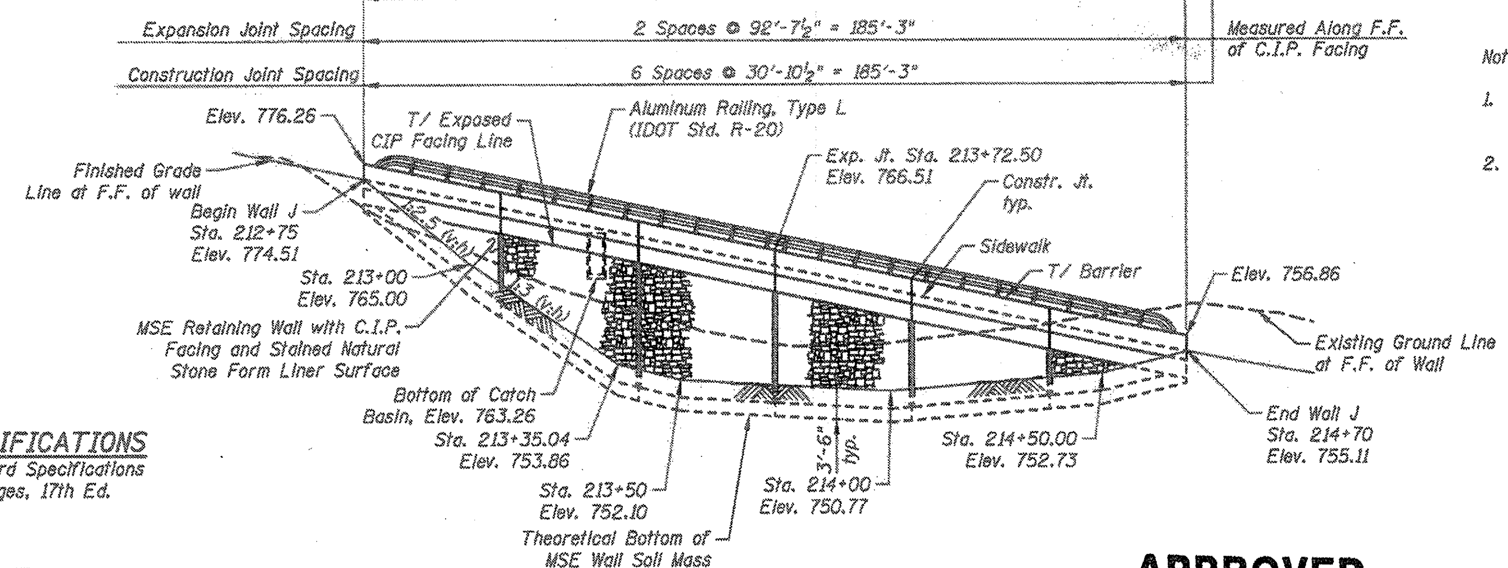
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS
WALL I; HUNTINGTON DRIVE
SHEET NO. WI5 OF WI5 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	649
		CONTRACT NO. 60F72		
	ILLINOIS FED. AID PROJECT			

Bench Mark: Control Point CP45, Iron rod Huntington Drive Sta. 207+78.52, Offset 39.35' Rt. Elev. 814.95

Existing Structure: None



ELEVATION

(Looking @ F.F. of Wall - Unfolded Elevation)

Notes:

1. Offsets are measured from the ℄ Huntington Dr. to the front face (F.F.) of CIP Facing.
2. For catch basin details, see Drainage & Utilities Plans.

INDEX OF SHEETS

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges, 17th Ed.

CURVE DATA

(℄ Huntington Drive)
Δ = 49° 07' 32.59" (Rt.)
D = 9° 57' 52.14"
T = 262.80'
L = 493.01'
E = 57.21'
R = 575.0'
P.C. = Sta. 211+21.76
P.T. = Sta. 216+14.77
P.I. = Sta. 213+84.56

APPROVED
For Structural Adequacy Only
[signature]
Engineer of Bridges & Structures

CIVILTECH ENGINEERING, INC.
GREGORY J. HATLESTAD, S.E.

[signature]
GREGORY J. HATLESTAD, S.E.
\# 081-005562

EXP 11/30/12

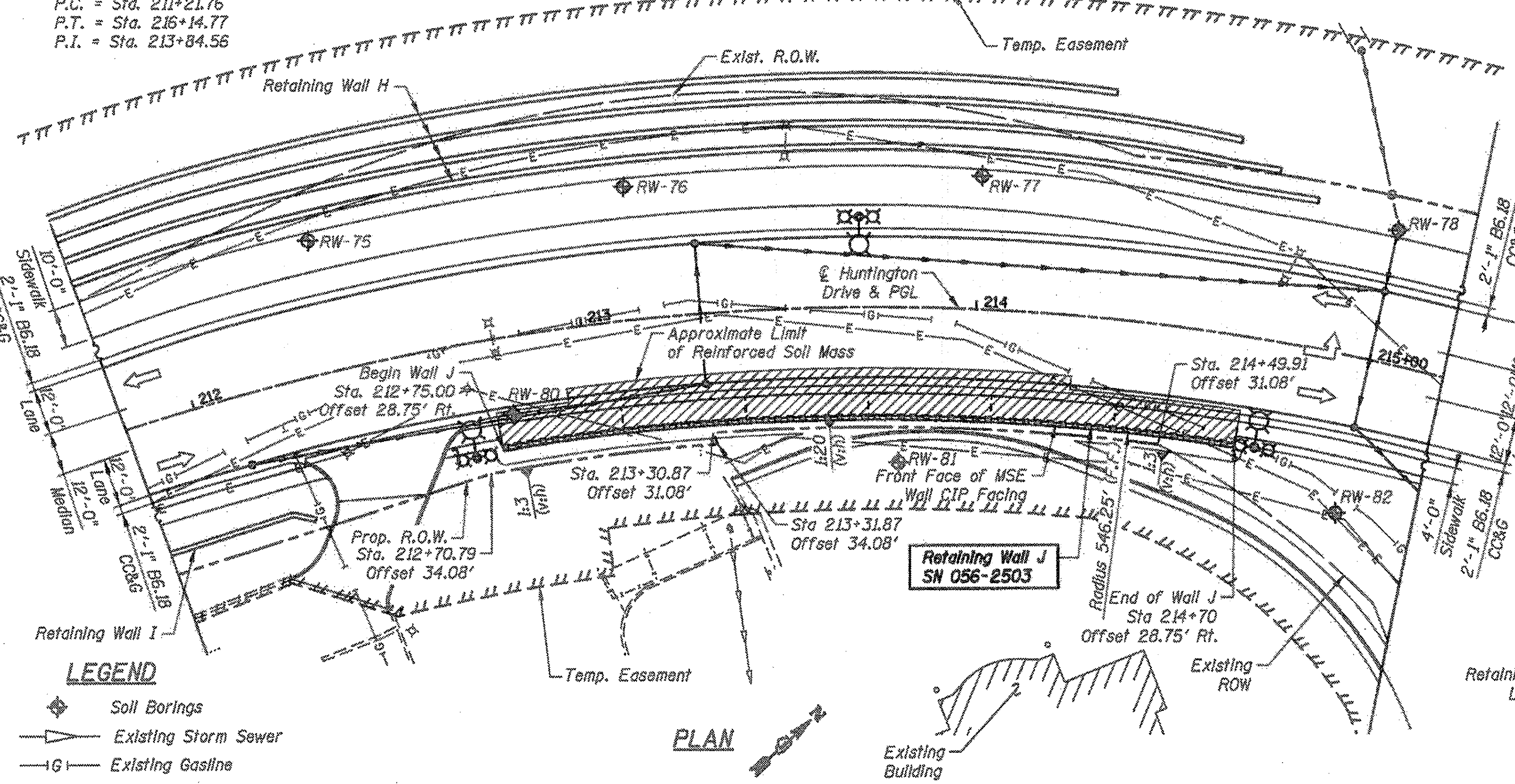
DATE 3/15/12

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL QUANTITY
Structure Excavation	Cu. Yd.	790
Concrete Superstructure	Cu. Yd.	86.7
Form Liner Textured Surface	Sq. Ft.	1,471
Protective Coat	Sq. Yd.	57
Reinforcement Bars, Epoxy Coated	Pound	10,800
Aluminum Railing, Type L	Foot	185
Geocomposite Wall Drain	Sq. Yd.	24
Mechanically Stabilized Earth Retaining Walls	Sq. Ft.	1,793
Staining Concrete Structures	Sq. Yd.	163

GENERAL NOTES

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



PLAN

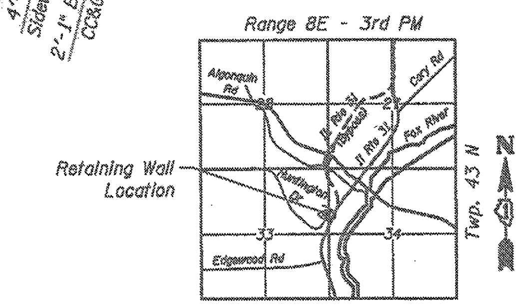
LEGEND

- Soil Borings
- Existing Storm Sewer
- G Existing Gasline
- E Existing Electrical
- Proposed Storm Sewer

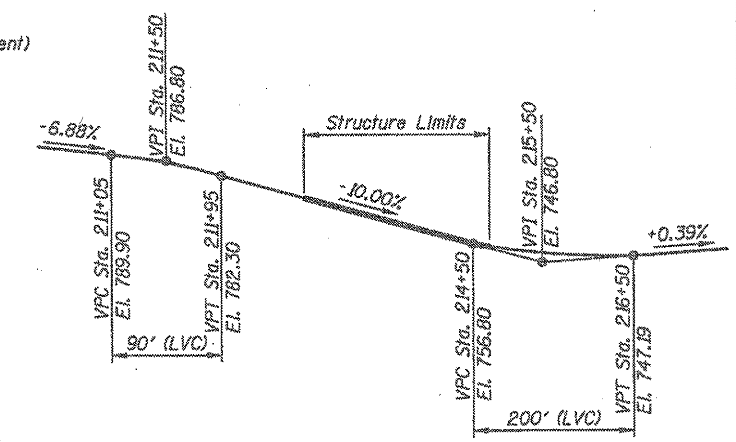
DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)



LOCATION SKETCH



PROPOSED PROFILE
HUNTINGTON DRIVE

GENERAL PLAN AND ELEVATION
WALL J: HUNTINGTON DRIVE
SECTION 18A-2, McHENRY COUNTY
STA. 212+75 TO STA. 214+70
STRUCTURE NO. 056-2503

CIVILTECH
450 E Devon Ave, Suite 300
Itasca, Illinois 60143
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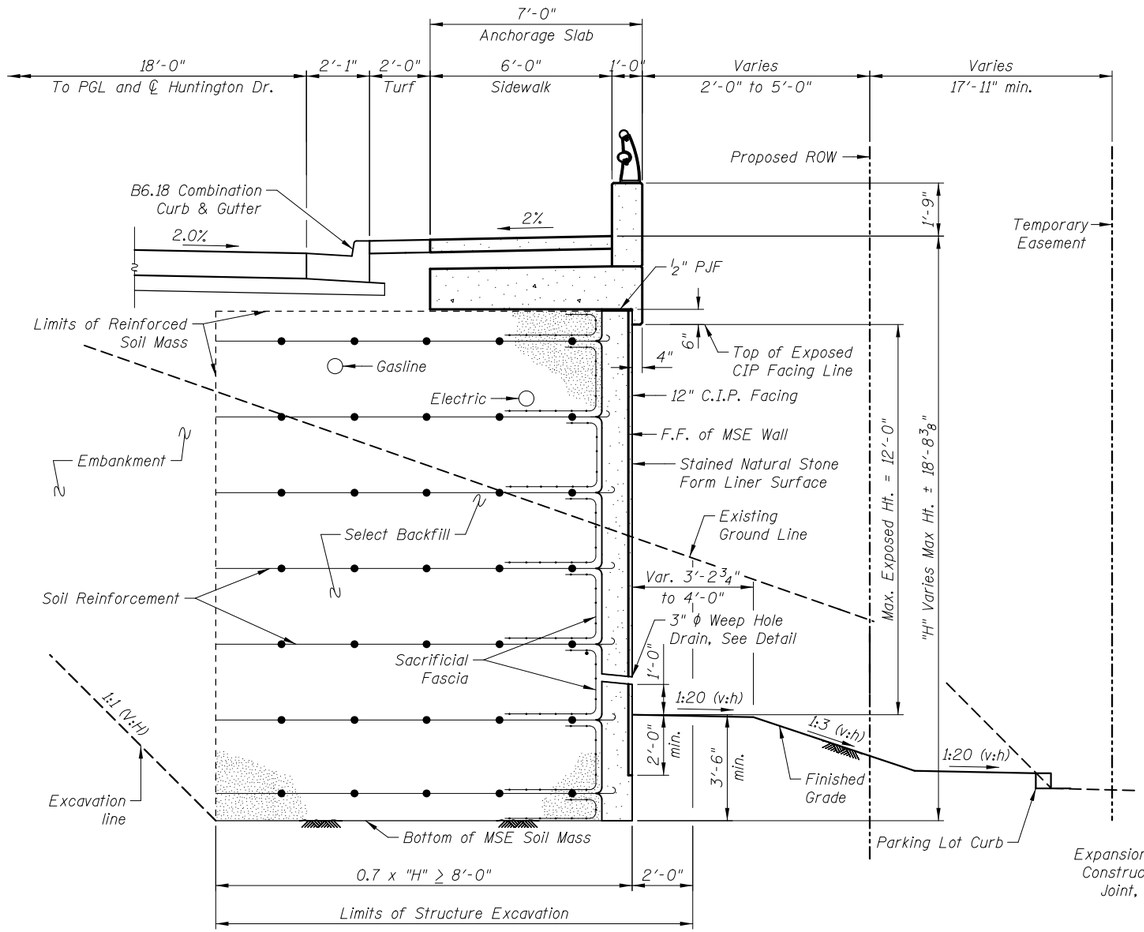
DRAWN	M. LANGE
DESIGNED	M. LANGE
CHECKED	G. HATLESTAD
DATE	JANUARY 27, 2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
WALL J; HUNTINGTON DRIVE
STRUCTURE NO. 056-2503
SHEET NO. WJ1 OF WJ6 SHEETS

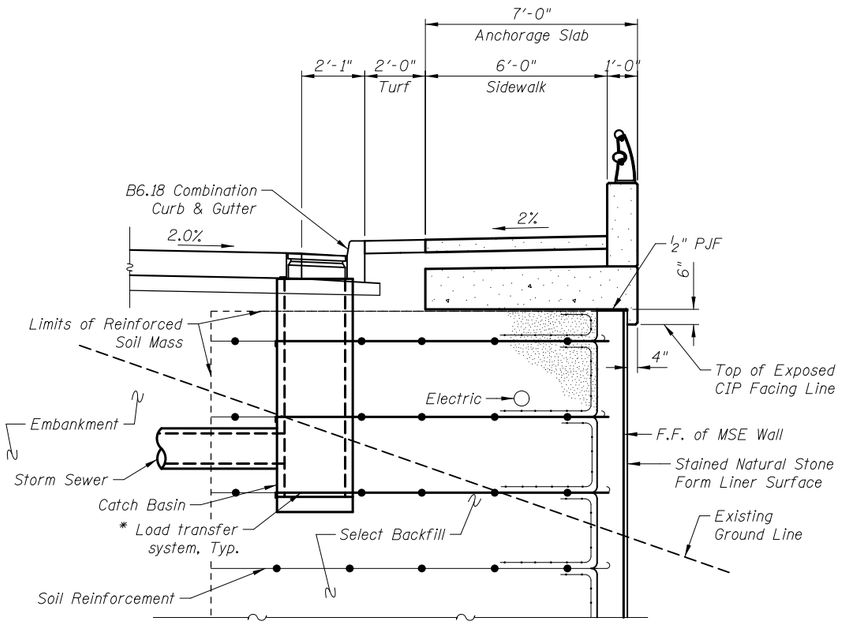
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	650
		CONTRACT NO. 60FT2		

ILLINOIS FED. AID PROJECT



TYPICAL WALL SECTION

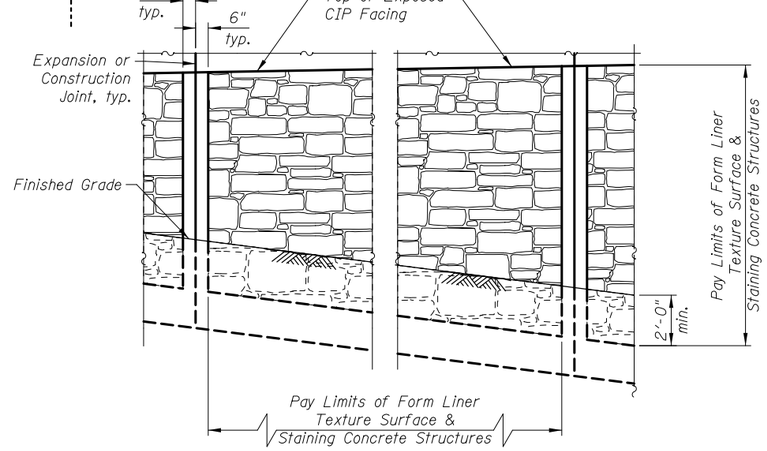
(Looking Northeast)



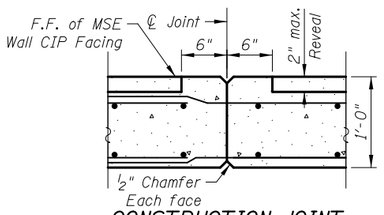
SECTION AT DRAINAGE STRUCTURE

(Looking Northeast)

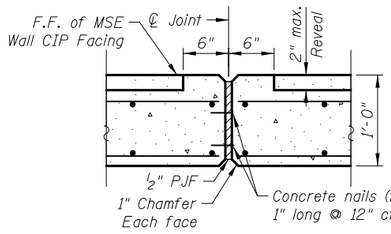
*MSE supplier to design load transfer system to accomodate catch basin.



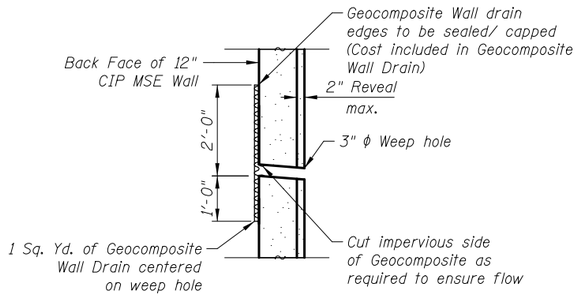
FORM LINER TEXTURE SURFACE DETAIL



CONSTRUCTION JOINT



EXPANSION JOINT



WEEP HOLE DRAIN DETAIL

Weep hole spacing shall be at 8'-0" horizontally

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 0.5 kips/ft. of wall.

Notes:
For Frame & Grate type, Catch Basin type, & rim invert elevations, see Drainage and Utility Plans.
See sheet WJ3 for dimensions & reinforcement of Anchorage Slab.

BILL OF MATERIAL

ITEM	UNIT	TOTAL QUANTITY
Structure Excavation	Cu. Yd.	790
Form Liner Textured Surface	Sq. Ft.	1,467
Geocomposite Wall Drain	Sq. Yd.	24
Mechanically Stabilized Earth Retaining Walls	Sq. Ft.	1,793
Staining Concrete Structures	Sq. Yd.	163

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DRAWN	-	D. ATKINS
DESIGNED	-	M. LANGE
CHECKED	-	G. HATLESTAD
DATE	-	JANUARY 27, 2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MSE WALL DETAILS
WALL J; HUNTINGTON DRIVE
STRUCTURE NO. 056-2503
SHEET NO. WJ2 OF WJ6 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	651
		CONTRACT NO. 60F72		
	ILLINOIS FED. AID PROJECT			

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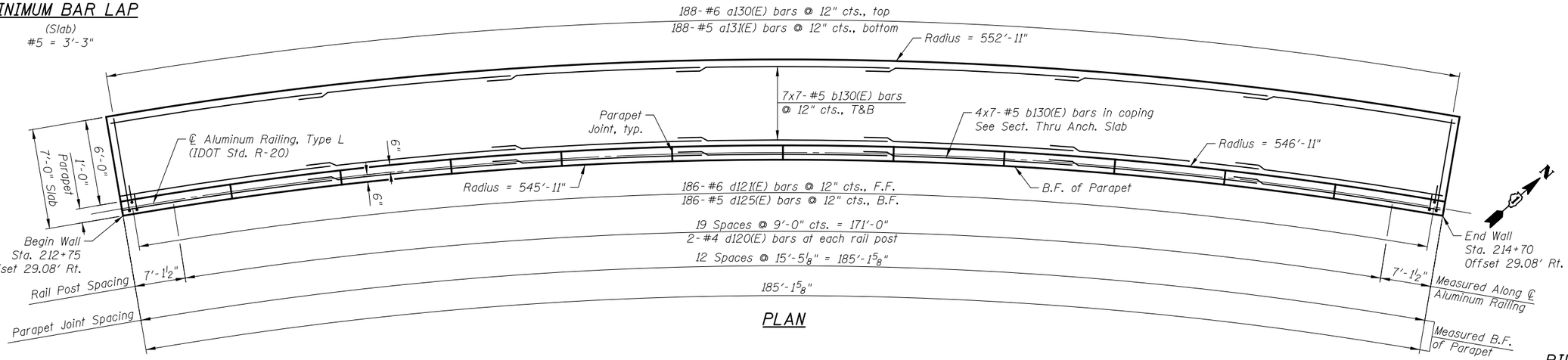
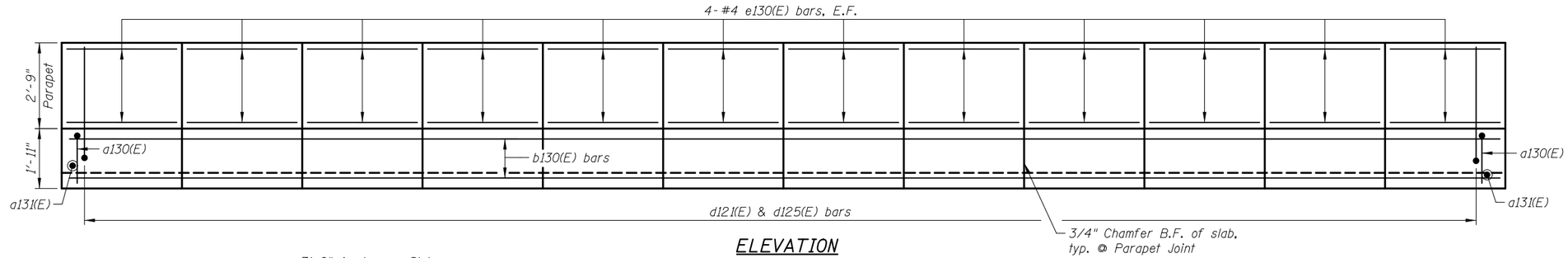
MINIMUM BAR LAP

(Slab)
#5 = 3'-3"

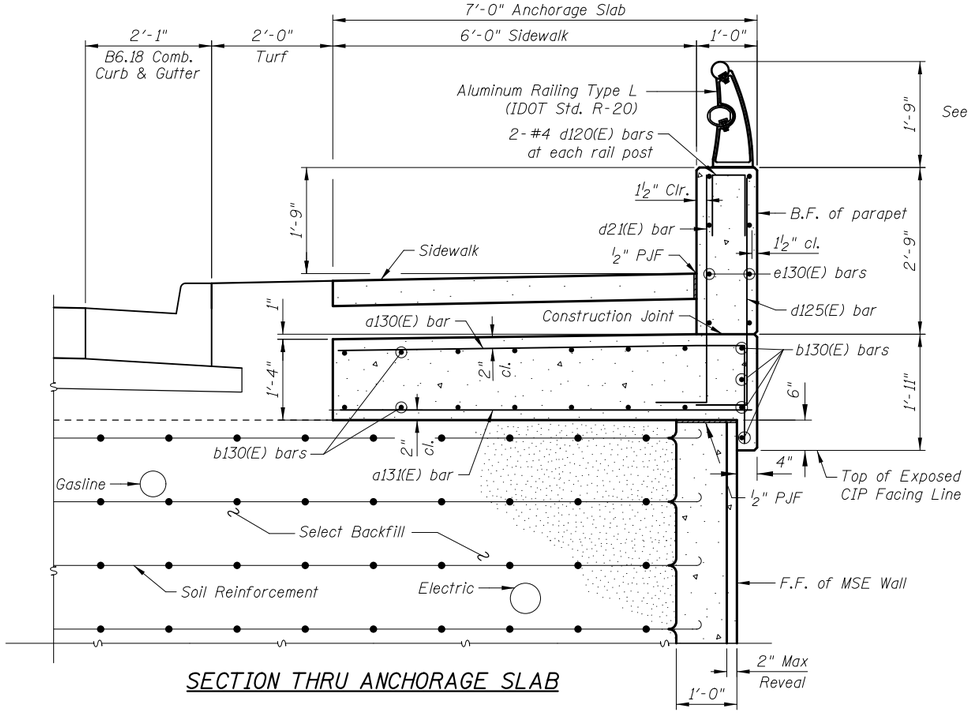


PLAN

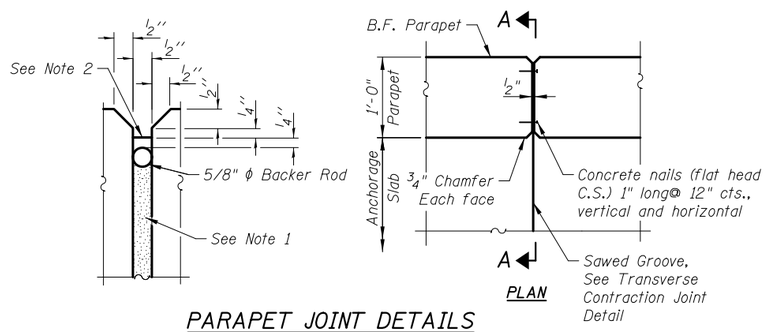


ELEVATION

(Back Face of Parapet)



SECTION THRU ANCHORAGE SLAB

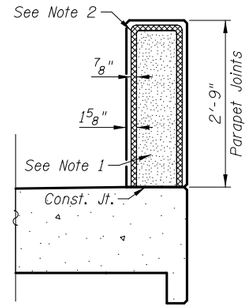


PLAN

PARAPET JOINT DETAILS

Parapet Joint Notes:
1. Non-staining gray one component non-sag elastomeric gun grade polyurethane sealant meeting the requirements of ASTM C-920, Type S, Grade NS, Class 25, use T with a 5/8" backer rod.
2. 1/2" Preformed Self-Expanding Cork Joint Filler according to Article 1051.07 of the Std. Spec. Cost included with Concrete Superstructure.

Notes:
Bars indicated thus 11x2-#5 etc. indicate 11 lines of bars with 2 lengths per line.
Offsets measured at Back Face of Parapet.

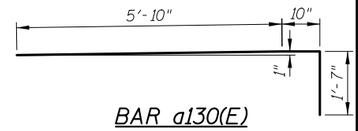


SECTION A-A

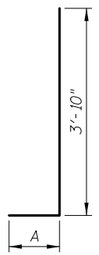
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a130(E)	188	#6	8'-3"	
a131(E)	188	#5	6'-8"	
b130(E)	126	#5	29'-6"	
d120(E)	40	#4	2'-4"	
d121(E)	186	#6	4'-10"	
d125(E)	186	#5	4'-8"	
e130(E)	96	#4	15'-1"	

Item	Unit	Quantity
Concrete Superstructures	Cu. Yd.	86.8
Protective Coat	Sq. Yd.	57
Reinforcement Bars, Epoxy Coated	Pound	10,800

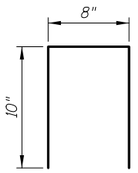


BAR a130(E)



BAR d121(E) & d125(E)

Bar	A
d121(E)	1'-0"
d125(E)	10"



BAR d120(E)

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DESIGNED	M. LANGE
CHECKED	G. HATLESTAD
DATE	JANUARY 27, 2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ANCHORAGE SLAB DETAILS
WALL J; HUNTINGTON DRIVE
STRUCTURE NO. 056-2503
SHEET NO. WJ3 OF WJ6 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	652
		CONTRACT NO. 60F72		
		ILLINOIS FED. AID PROJECT		

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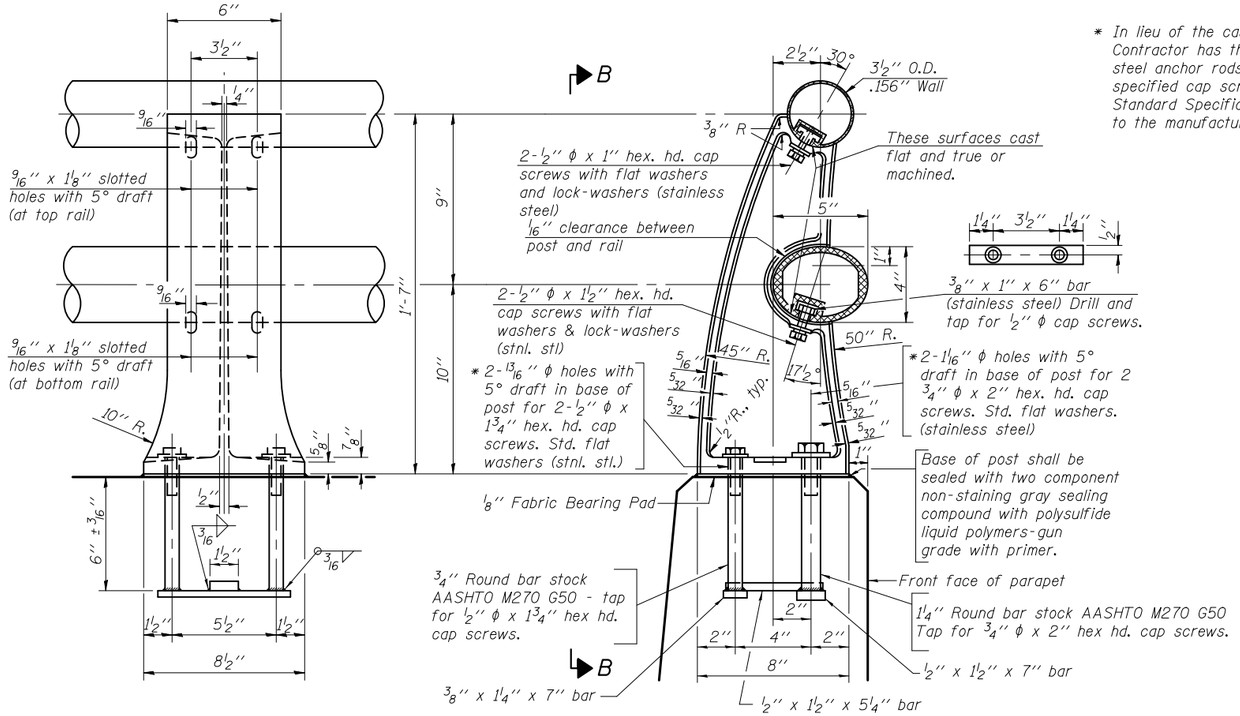
DESIGNED	-	M. LANGE
CHECKED	-	G. HATLESTAD
DATE	-	JANUARY 27, 2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WALL J; HUNTINGTON DRIVE
STRUCTURE NO. 056-2503
SHEET NO. WJ4 OF WJ6 SHEETS

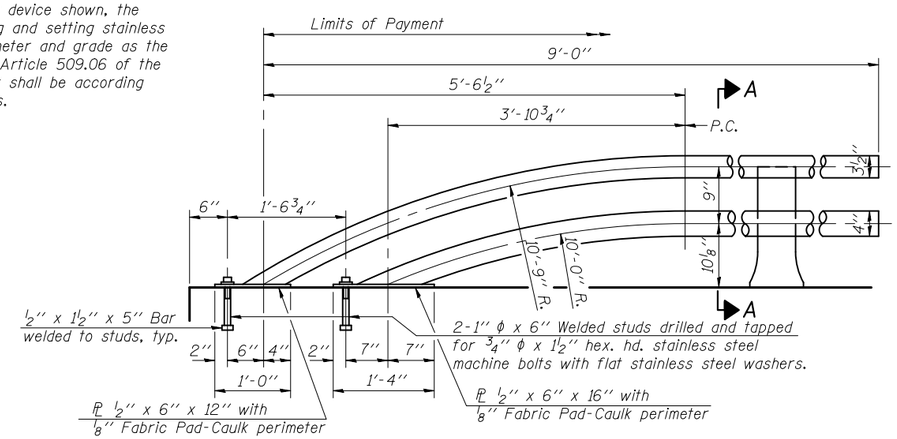
O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	653
		CONTRACT NO. 60F72		
	ILLINOIS FED. AID PROJECT			

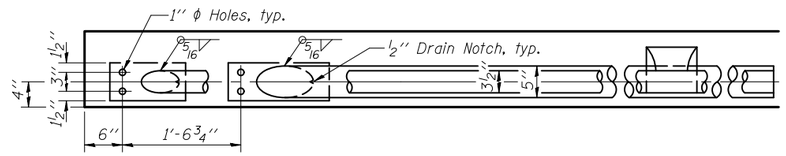


* *In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting stainless steel anchor rods of the same diameter and grade as the specified cap screws according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.*

VIEW B-B

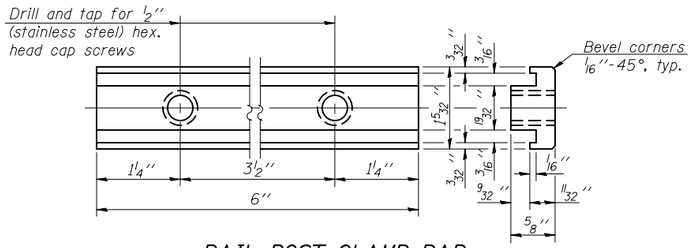
SECTION A-A





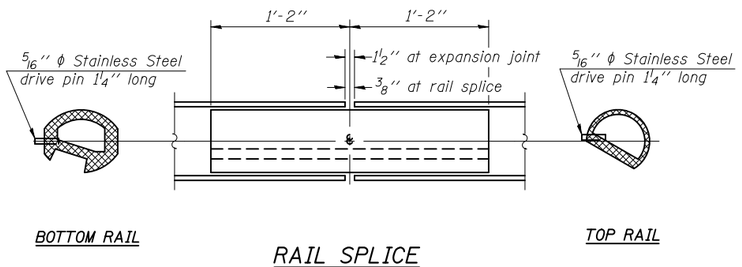
RAIL TERMINAL SECTION

RAIL POST DETAILS

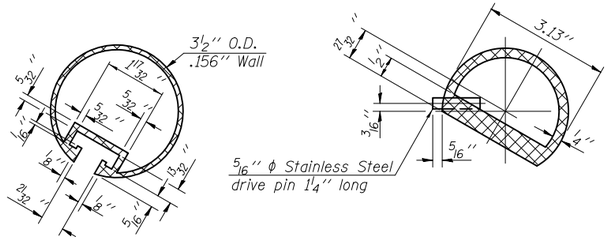


RAIL POST CLAMP BAR

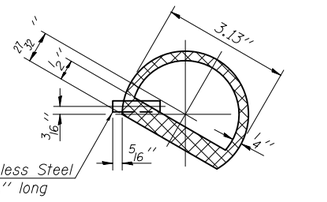
For Top Rail



RAIL SPLICE

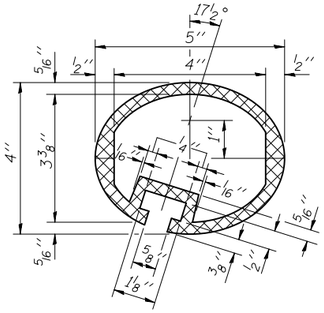


SECTION THRU TOP RAIL

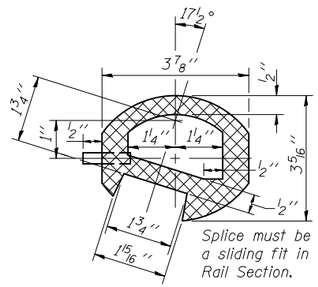


SECTION THRU SPLICE

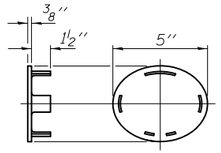
For Top Rail



SEC. THRU ELLIPTICAL RAIL SECTION

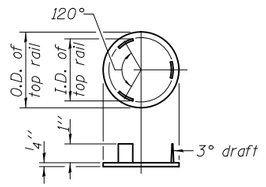


SEC. THRU SPLICE



CAST END CAP

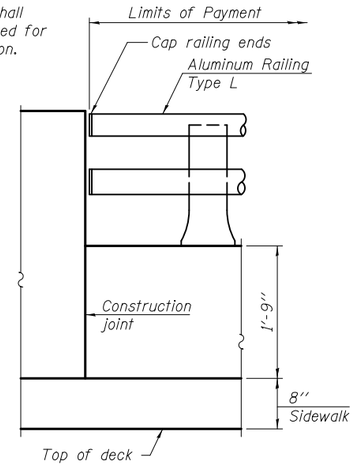
For bottom rail
DRIVE FIT TYPE



CAST END CAP

For top rail

Note:
The end rail post shall be set back as required for the terminal rail section.



RAIL END TREATMENT FOR TYPE 5 AND 6 TERMINAL

Notes:
All Posts shall be normal to parapet.
All joints in rail shall be spliced per detail.
All exposed rail ends shall be capped per detail.
Provide 1-⅛'' and 2-1/16'' Aluminum Shims for 25% of the Posts. Rail elements shall be parallel to Grade-high spots will be ground and low spots shimmed.
See sheet WJ3 for rail post spacing.

BILL OF MATERIAL

Item	Unit	Quantity
Aluminum Railing, Type L	Foot	185

R-20 7-1-10 (7'-0'' to 10'-0'' Post spacing)

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Itasca, Illinois 60143
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DESIGNED	-	M. LANGE
CHECKED	-	G. HATLESTAD
DATE	-	JANUARY 27, 2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALUMINUM RAILING, TYPE L
WALL J; HUNTINGTON DRIVE
STRUCTURE NO. 056-2503
SHEET NO. WJ5 OF WJ6 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	654
		CONTRACT NO. 60F72		
	ILLINOIS FED. AID PROJECT			

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MIDLAND STANDARD ENGINEERING & TESTING, INC.

BORING LOG

SHEET 1 OF 1

PROJECT Algonquin Bypass — Retaining Wall — DATE 2/25/09
ROUTE FAP 339/ILL 31 — Huntington Drive — BORED BY SPE
SECTION 96-00209-00-PV — STATION 212+00 to 216+00 — CHECKED BY WJW
COUNTY McHenry
BORING RW-80
STATION 212+80
OFFSET 20' R of CL
WATER LEVEL DURING DRILLING 8.0'
GROUND WATER AT COMPLETION 24.0'

GROUND SURFACE EL. 772.8

Depth	N/6"	Qu tsf	W %
Ft			
±3" Dark Brown Silty CLAY/TOPSOIL			
Red-Brown Clay LOAM, A-6 772.5			
	3 5 6	5.15 BS	12
	6 9 10	4.61 BS	11
5			
Brown-Grey			
	5 7 9	3.57 BS	12
Grey SAND, A-3 765.3			
Grey Clay LOAM, A-6 764.8			
	6 7 9	3.22 B	16
10			
	6 7 8	4.84 S	10
	7 9 12	5.89 BS	10
15			
	9 13 14	4.05 BS	10
	10 11 14	5.77 BS	10
20			

Depth	N/6"	Qu tsf	W %
Ft			
Grey Clay LOAM, A-6 752.8			
	10 11 17	5.43 S	10
	10 13 18	6.47 BS	10
25			
End of Boring @ 25.0' 747.8			

N-Standard Penetration Test- Blows per foot to drive 2 inch O.D. Split Spoon Sampler 12 inches with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf) W- Water Content-percentage of oven dry weight (%)

Type failure: B- Bulge Failure S- Shear Failure E- Estimated Value P-Penetrometer

MIDLAND STANDARD ENGINEERING & TESTING, INC.

BORING LOG

SHEET 1 OF 1

PROJECT Algonquin Bypass — Retaining Wall — DATE 3/3/09
ROUTE FAP 339/ILL 31 — Huntington Drive — BORED BY SPE
SECTION 96-00209-00-PV — STATION 212+00 to 216+00 — CHECKED BY WJW
COUNTY McHenry
BORING RW-81
STATION 213+80
OFFSET 40' R of CL
WATER LEVEL DURING DRILLING 14.0'
GROUND WATER AT COMPLETION 21.9'

GROUND SURFACE EL. 750.0

Depth	N/6"	Qu tsf	W %
Ft			
3" Bituminous Concrete over 3" Brown SAND and GRAVEL, A-1			
Grey Clay LOAM, A-6 749.5			
	12 10 12	4.97 B	12
	5 6 7	6.08 BS	11
5			
	5 6 11	5.15 BS	11
	6 9 10	3.33 BS	12
10			
	7 8 10	3.64 BS	12
wet SAND seam @ 14.0'			
	5 6 9	3.57 BS	12
15			
	5 6 9	2.83 BS	13
	9 8 10	2.13 BS	13
20			

Depth	N/6"	Qu tsf	W %
Ft			
Grey Clay LOAM, A-6 730.0			
	7 8 10	2.71 BS	14
	8 11 14	3.10 BS	13
25			
End of Boring @ 25.0' 725.0			

N-Standard Penetration Test- Blows per foot to drive 2 inch O.D. Split Spoon Sampler 12 inches with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf) W- Water Content-percentage of oven dry weight (%)

Type failure: B- Bulge Failure S- Shear Failure E- Estimated Value P-Penetrometer

MIDLAND STANDARD ENGINEERING & TESTING, INC.

BORING LOG

SHEET 1 OF 1

PROJECT Algonquin Bypass — Retaining Wall — DATE 2/25/09
ROUTE FAP 339/ILL 31 — Huntington Drive — BORED BY SPE
SECTION 96-00209-00-PV — STATION 212+00 to 216+00 — CHECKED BY WJW
COUNTY McHenry
BORING RW-82
STATION 215+00
OFFSET 40' R of CL
WATER LEVEL DURING DRILLING none
GROUND WATER AT COMPLETION dry

GROUND SURFACE EL. 758.2

Depth	N/6"	Qu tsf	W %
Ft			
Dark Brown and Black Silty Clay LOAM, A-6: FILL			
Red-Brown Clay LOAM, A-6 756.9			
	2 2 3	1.16 B	15
	3 4 4	1.98 B	3
5			
Yellow-Brown SILT, A-4, very moist 752.7			
	7 5 6	- 2.5 P	19
Red-Brown Clay LOAM, A-6 751.2			
Grey Clay LOAM, A-6 749.2			
	5 7 7	4.77 BS	10
10			
	ST	4.52 BS	11
	4 5 7	5.15 BS	12
15			
	4 5 7	2.05 BS	13
	4 6 8	3.99 BS	12
20			

Depth	N/6"	Qu tsf	W %
Ft			
Grey Clay LOAM, A-6 738.2			
	3 5 6	2.48 BS	14
	3 4 7	2.25 BS	13
25			
End of Boring @ 25.0' 733.2			

N-Standard Penetration Test- Blows per foot to drive 2 inch O.D. Split Spoon Sampler 12 inches with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf) W- Water Content-percentage of oven dry weight (%) ST- Shelby Tube Sample

Type failure: B- Bulge Failure S- Shear Failure E- Estimated Value P-Penetrometer

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DESIGNED	-	M. LANGE
CHECKED	-	G. HATLESTAD
DATE	-	JANUARY 27, 2012

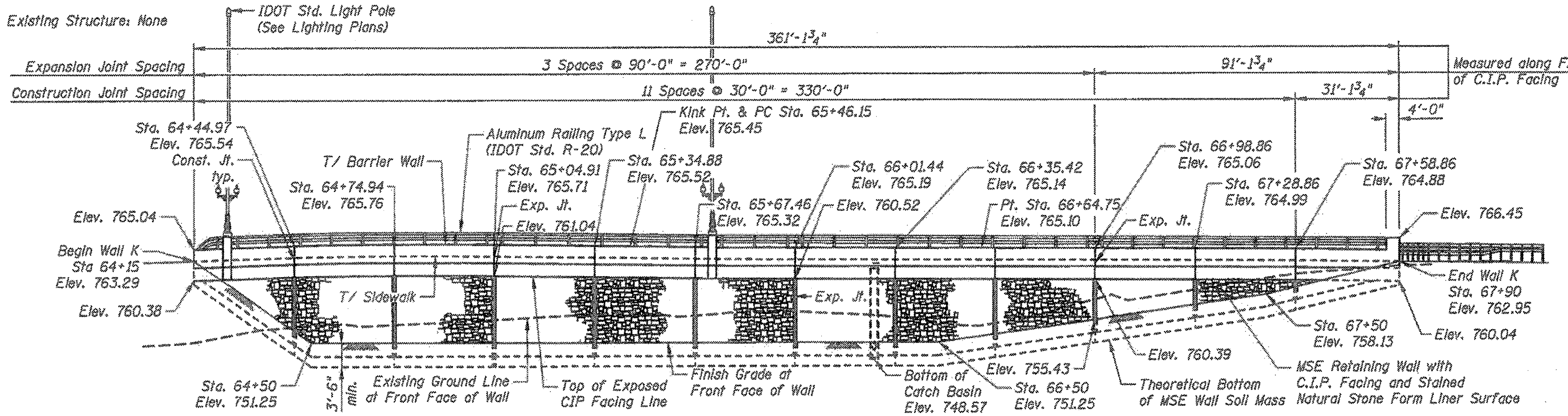
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS
WALL J; HUNTINGTON DRIVE
STRUCTURE NO. 056-2503
SHEET NO. WJ6 OF WJ6 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	655
		CONTRACT NO. 60F72		
	ILLINOIS FED. AID PROJECT			

Bench Mark: Control Point CP21, Mag Nail located in bituminous shoulder behind the back of curb, Station 66+81.96, offset 21.99 feet Rt., Elev. 762.75.

Existing Structure: None



ELEVATION

(Looking North @ F.F. of Wall)

CURVE No. A2	CURVE No. A3
Δ = 22° 25' 15.23" (RT)	Δ = 55° 11' 27.92" (LT)
D = 18° 47' 07.8"	D = 19° 24' 32.9"
T = 60.45'	T = 154.30'
L = 119.35'	L = 284.36'
E = 5.93'	E = 37.89'
R = 305.0'	R = 295.20'
P.C. = Sta. 65+45.40	P.C. = Sta. 68+16.41
P.T. = Sta. 66+64.75	P.T. = Sta. 71+00.77
P.I. = Sta. 66+05.85	P.I. = Sta. 69+70.71
S.E. = 2.00%	S.E. = 2.00%
	T.R. = 149.5' (EB)
	S.E. Runoff = 74.7' (EB)

DESIGN SPECIFICATIONS

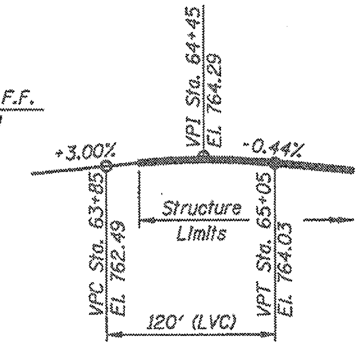
2002 AASHTO Standard Specification for Highway Bridges, 17th Ed.

DESIGN STRESSES

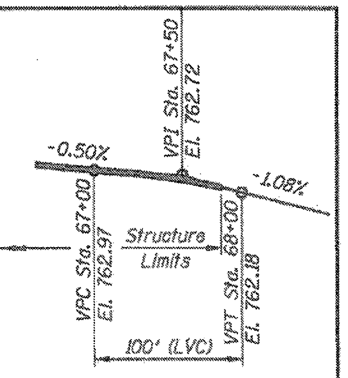
FIELD UNITS

f'c = 3,500 psi

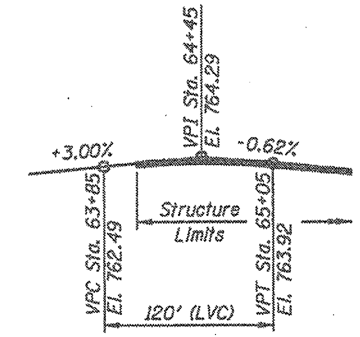
fy = 60,000 psi (Reinforcement)



PROPOSED PROFILE WB ALGONQUIN ROAD



PROPOSED PROFILE ALOGNQUIN ROAD



PROPOSED PROFILE EB ALGONQUIN ROAD

CIVILTECH ENGINEERING, INC.
GREGORY J. HATLESTAD, S.E.

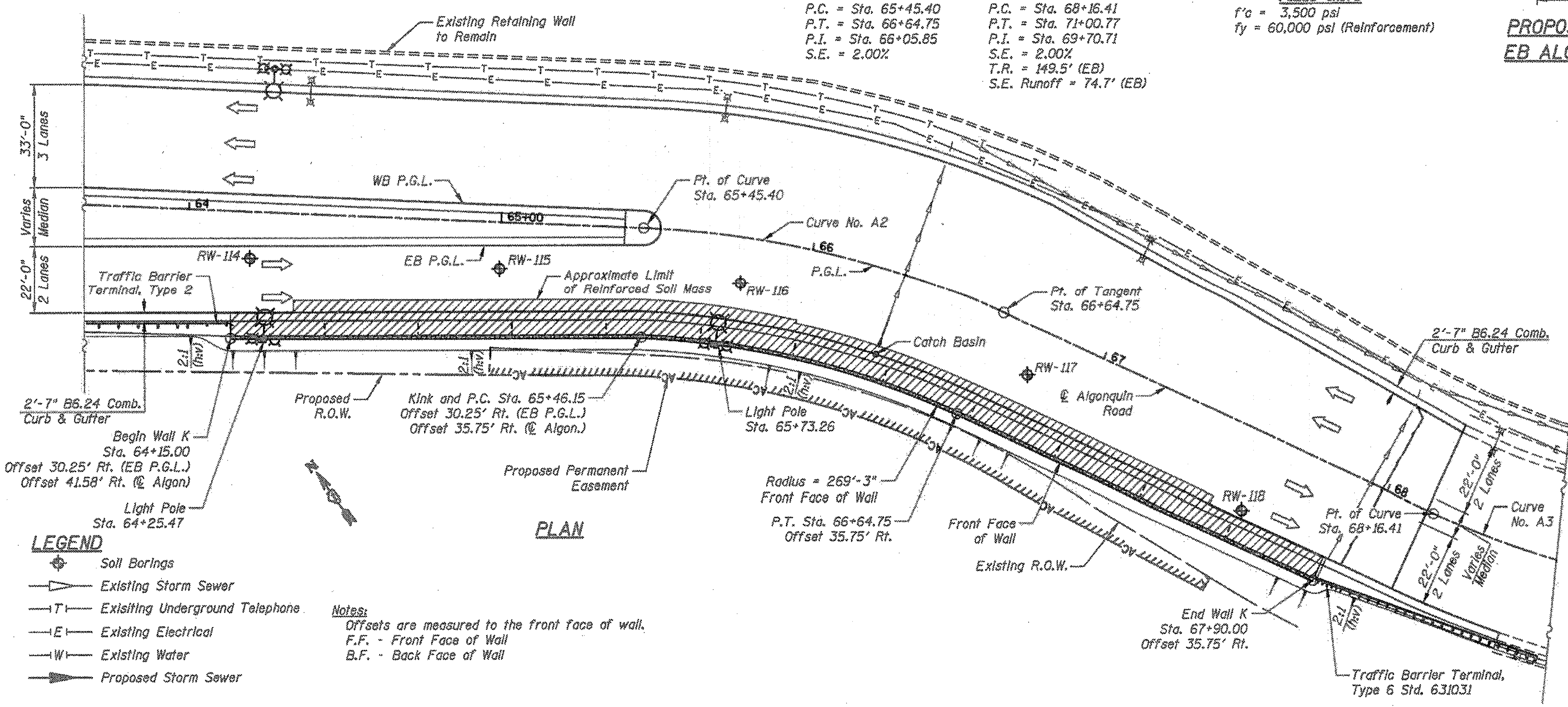
GREGORY J. HATLESTAD, S.E.
081-005562

EXP 11/30/12

DATE 3/15/12

APPROVED
For Structural Adequacy Only

Engineer of Bridges & Structures



PLAN

LEGEND

- Soil Borings
- Existing Storm Sewer
- T — Existing Underground Telephone
- E — Existing Electrical
- W — Existing Water
- Proposed Storm Sewer

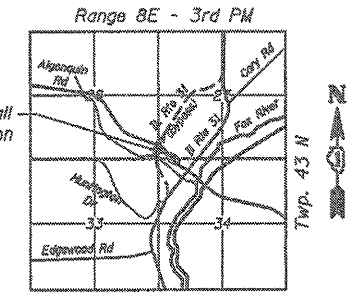
Notes:

Offsets are measured to the front face of wall.

F.F. - Front Face of Wall

B.F. - Back Face of Wall

Retaining Wall Location



LOCATION SKETCH

GENERAL PLAN & ELEVATION
WALL K: ALGONQUIN ROAD - F.A.P. 339
SECTION 18A-2, McHENRY COUNTY
STA. 64+15 TO STA. 67+90
STRUCTURE NO. 056-2504

CIVILTECH
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DESIGNED	D. ATKINS
CHECKED	G. HATLESTAD
DATE	3/23/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION
WALL K; ALGONQUIN ROAD
STRUCTURE NO. 056-2504

SHEET NO. WK1 OF WK9 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	656
		CONTRACT NO. 60F72		
	ILLINOIS FED. AID PROJECT			

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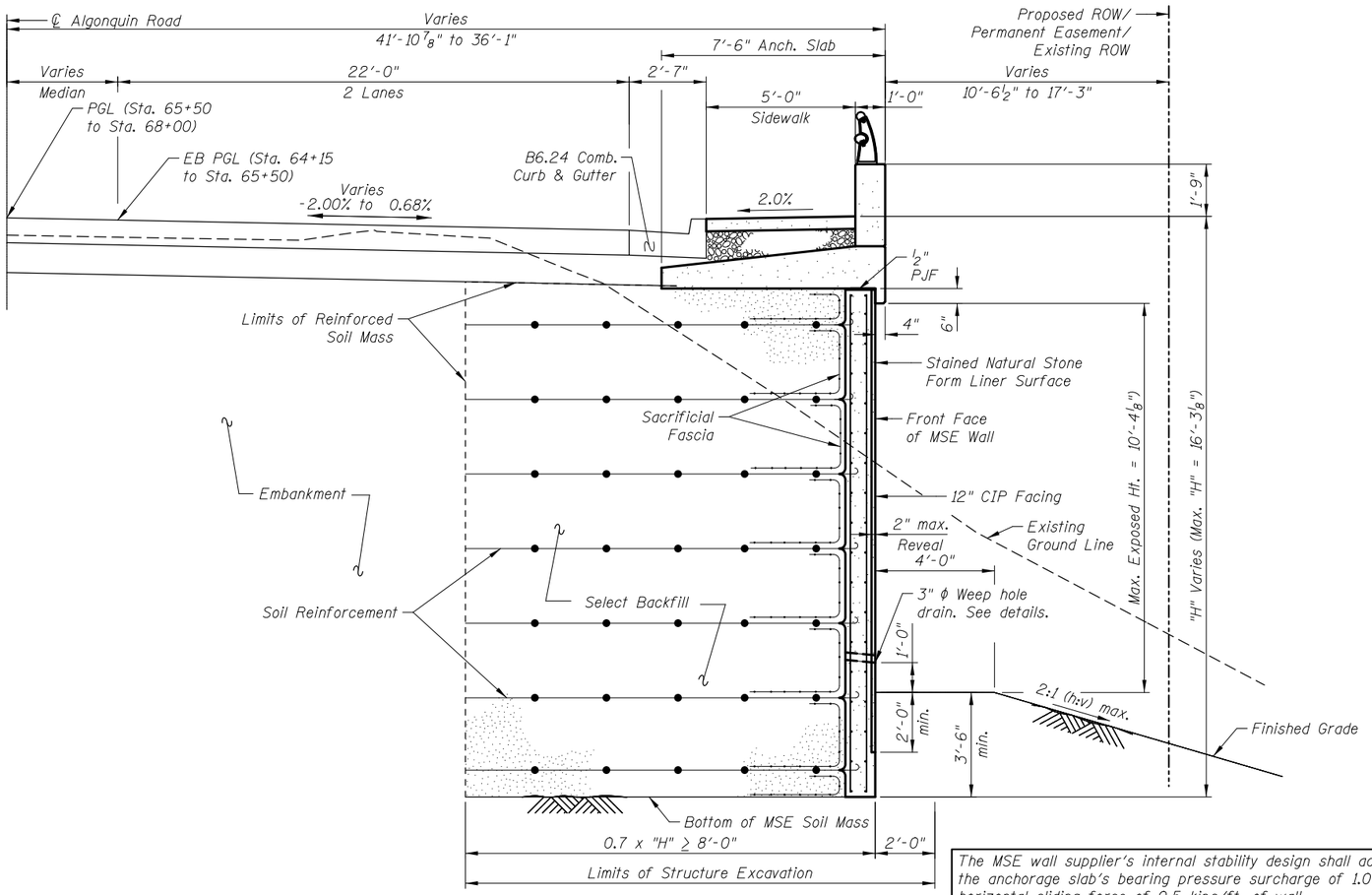
DESIGNED	-	D. ATKINS
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WALL K; ALGONQUIN ROAD
STRUCTURE NO. 056-2504
SHEET NO. WK2 OF WK9 SHEETS

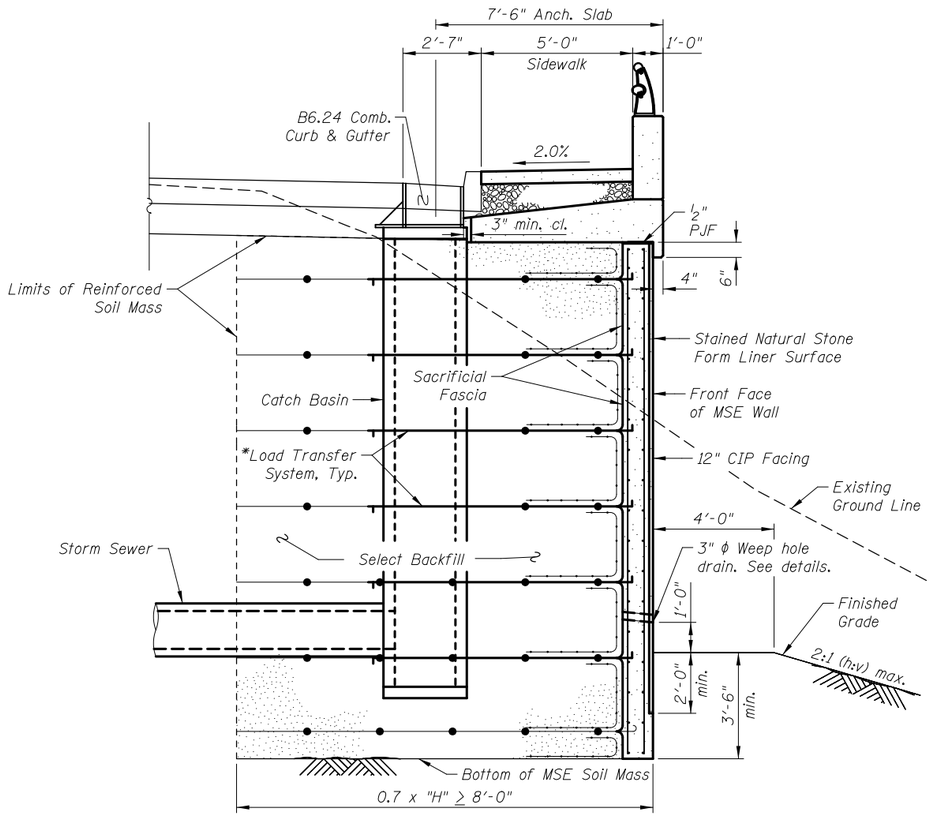
O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	657
		CONTRACT NO. 60F72		
	ILLINOIS	FED. AID PROJECT		



TYPICAL WALL SECTION

(Looking East)

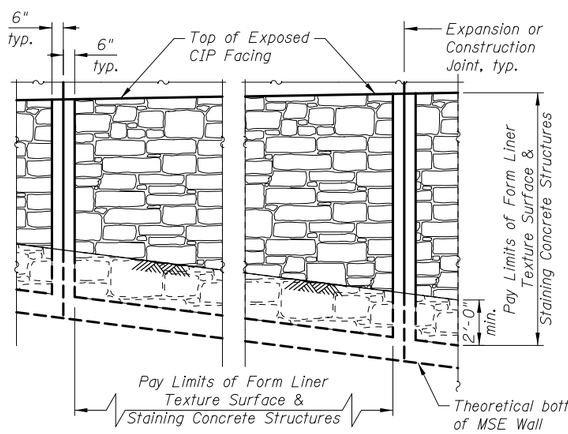
The MSE wall supplier's internal stability design shall account for the anchorage slab's bearing pressure surcharge of 1.0 ksf and horizontal sliding force of 0.5 kips/ft. of wall.



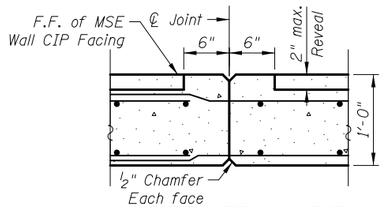
SECTION AT DRAINAGE STRUCTURE

(Looking East)

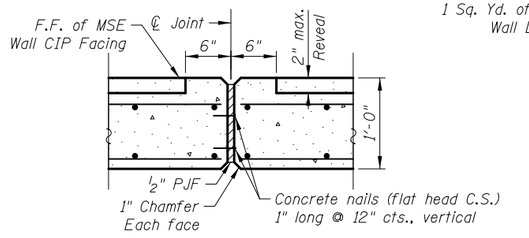
* MSE supplier to design load transfer system to accomodate concrete pipe and catch basin



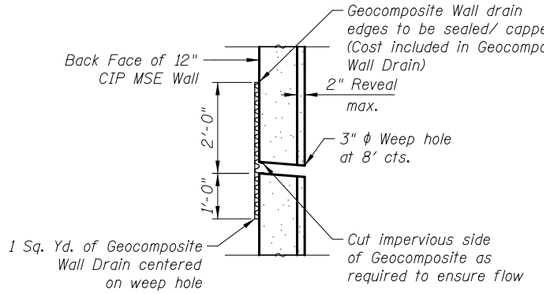
FORM LINER TEXTURE SURFACE DETAIL



CONSTRUCTION JOINT



EXPANSION JOINT



WEEP HOLE DRAIN DETAIL

Weep hole spacing shall be at 8'-0" horizontally

MSE WALL BILL OF MATERIALS

ITEM	UNIT	QUANTITY
Structure Excavation	Cu. Yd.	1,366
Form Liner Textured Surface	Sq. Ft.	3,239
Geocomposite Wall Drain	Sq. Yd.	46
Mechanically Stabilized Earth Retaining Walls	Sq. Ft.	3,711
Staining Concrete Structures	Sq. Yd.	360

Note:
For Frame & Grate type, catch basin type and rim elevations see Drainage & Utility Plans.
See sheet WK6 for dimensions and reinforcement of Anchorage Slab.

CIVILTECH
450 E Devon Ave, Suite 300
Itasca, Illinois 60143
Tel: 630.773.3900 Fax: 630.773.3975
www.civiltechinc.com

DRAWN	-	K. BOCHNOWSKI
DESIGNED	-	D. ATKINS
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MSE WALL DETAILS
WALL K; ALGONQUIN ROAD
STRUCTURE NO. 056-2504
SHEET NO. WK3 OF WK9 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	658
		CONTRACT NO. 60F72		
	ILLINOIS FED. AID PROJECT			

klb
5/2/2012
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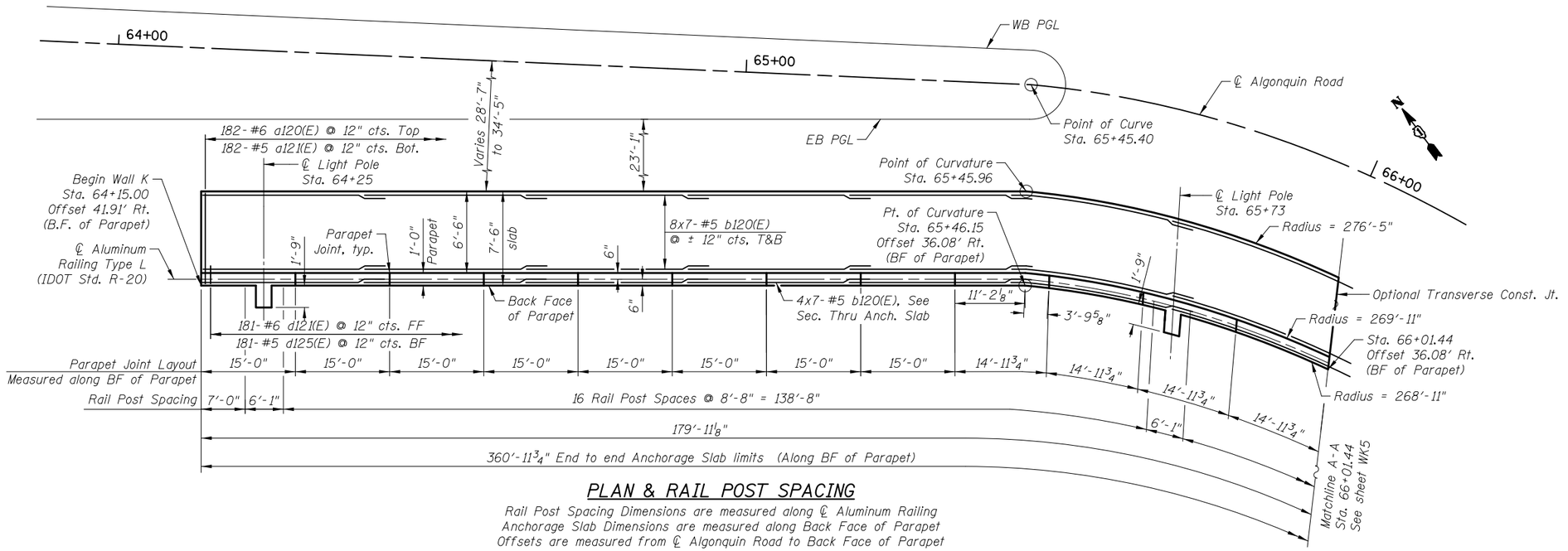
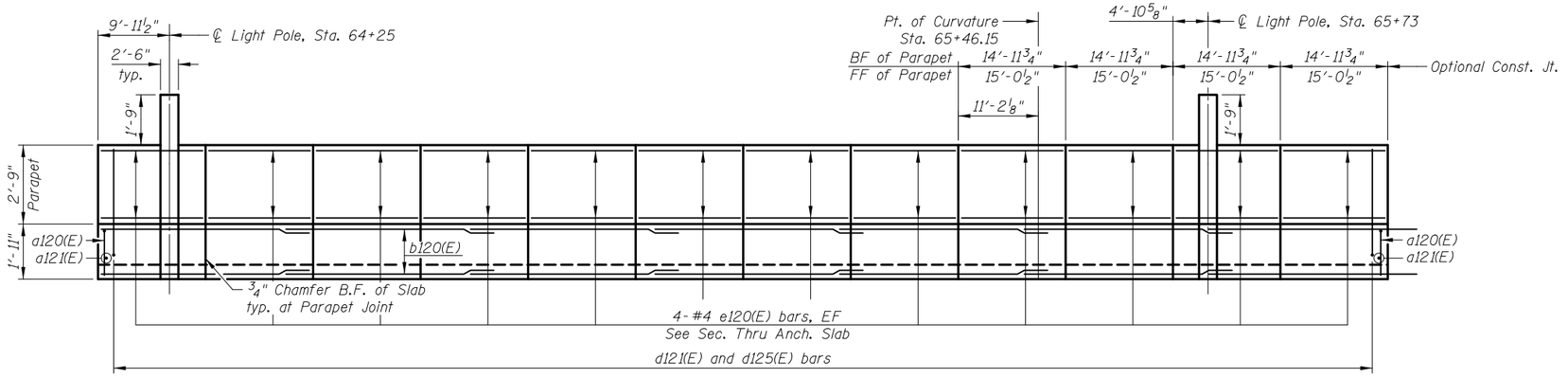
MINIMUM BAR LAP

(Slab)
#5 Bar = 3′-3"



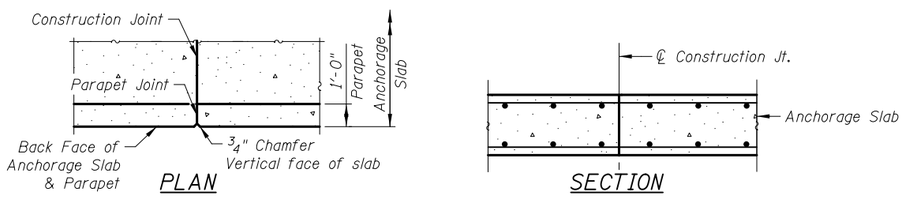
PLAN & RAIL POST SPACING

Rail Post Spacing Dimensions are measured along ℄ Aluminum Railing
Anchorage Slab Dimensions are measured along Back Face of Parapet
Offsets are measured from ℄ Algonquin Road to Back Face of Parapet



ELEVATION

(Back Face of Parapet)



TRANSVERSE CONSTRUCTION JOINT

See Art. 420.05(e) of Standard Specifications

Notes:

See sheet WK6 for Bill of Material, Reinforcement Schedule, and Bar Diagrams.
See sheet WK6 for Light Pole Foundation Details, Section Thru Anchorage Slab, and Parapet Joint Details.
Bars indicated thus 11x2-#5 etc. indicate 11 lines of bars with 2 lengths per line.

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CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

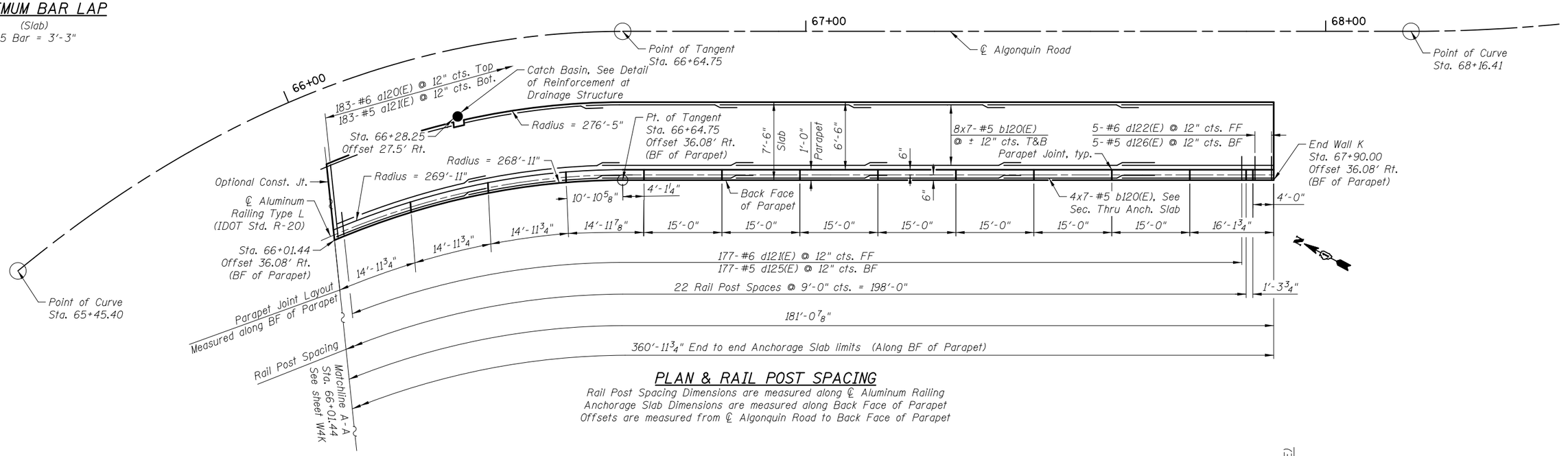
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ANCHORAGE SLABS I
WALL K; ALGONQUIN ROAD
STRUCTURE NO. 056-2504
SHEET NO. WK4 OF WK9 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	659
		CONTRACT NO. 60F72		
	ILLINOIS FED. AID PROJECT			

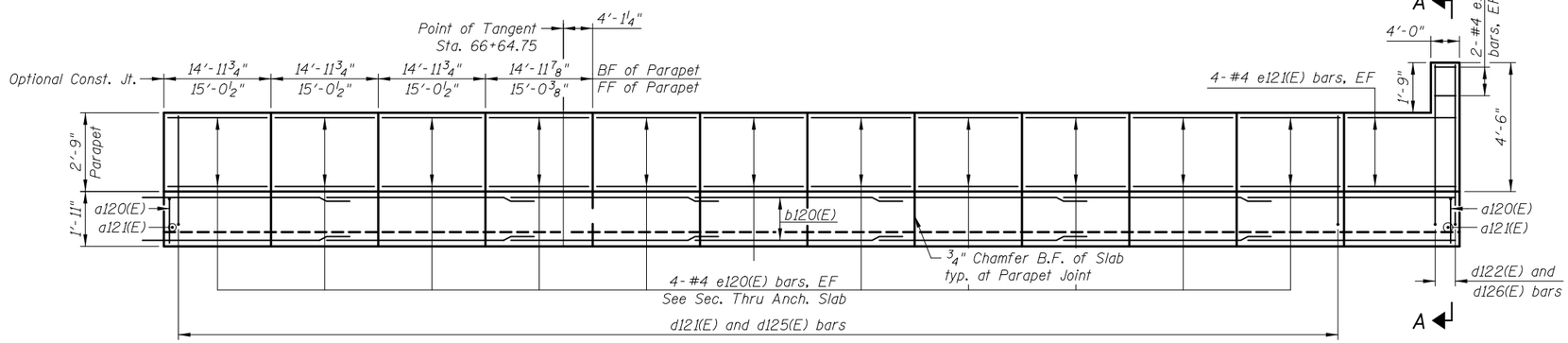
MINIMUM BAR LAP

(Slab)
#5 Bar = 3′-3″



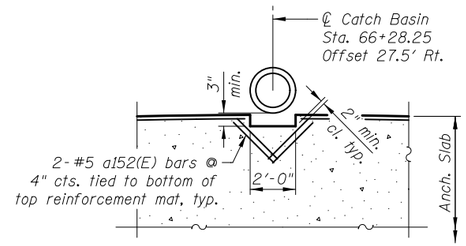
PLAN & RAIL POST SPACING

Rail Post Spacing Dimensions are measured along ℄ Aluminum Railing
Anchorage Slab Dimensions are measured along Back Face of Parapet
Offsets are measured from ℄ Algonquin Road to Back Face of Parapet



ELEVATION

(Back Face of Parapet)



DETAIL OF REINFORCEMENT AT DRAINAGE STRUCTURE

Field cut bars as required around catch basin.

Notes:

See sheet WK4 for Transverse Construction Joint Detail.
See sheet WK6 for Bill of Material, Reinforcement Schedule, Bar Diagrams, and Section A-A.
See sheet WK6 for Light Pole Foundation Details, Section Thru Anchorage Slab, and Parapet Joint Details.
Bars indicated thus 11x2-#5 etc. indicate 11 lines of bars with 2 lengths per line.

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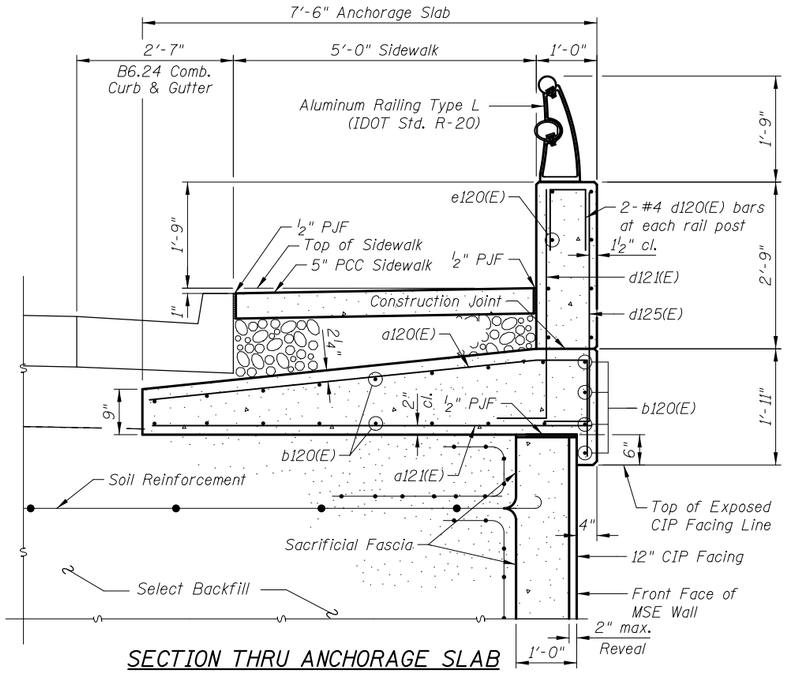
DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

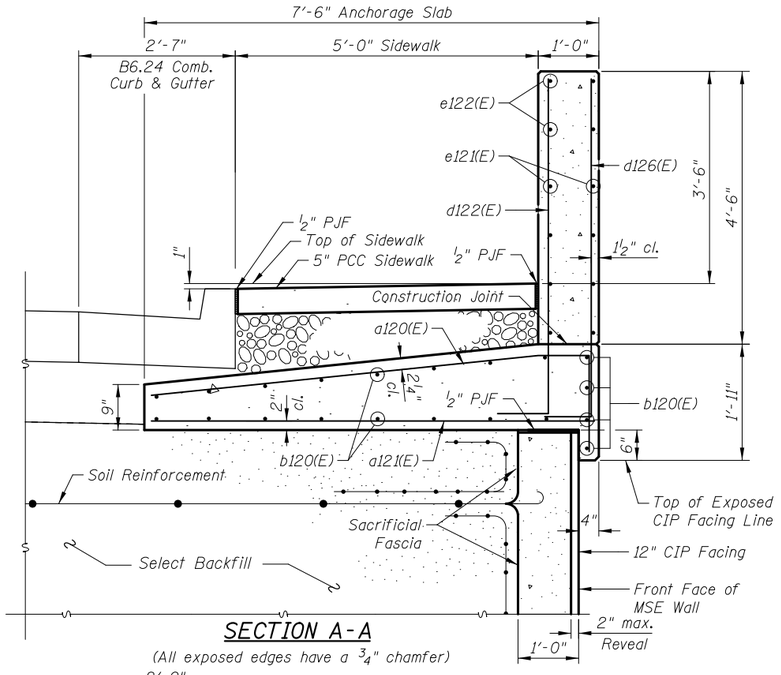
ANCHORAGE SLABS II
WALL K; ALGONQUIN ROAD
STRUCTURE NO. 056-2504
SHEET NO. WK5 OF WK9 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	660
		CONTRACT NO. 60F72		
	ILLINOIS FED. AID PROJECT			



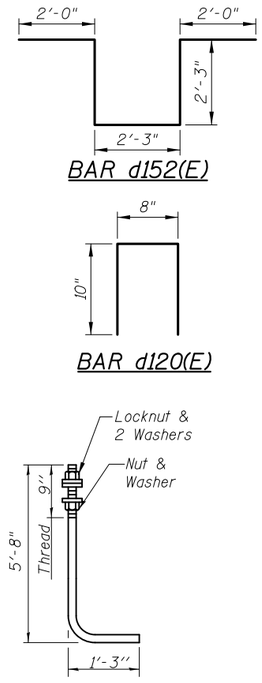
SECTION THRU ANCHORAGE SLAB

(All exposed edges have a $\frac{3}{4}$" chamfer)



SECTION A-A

(All exposed edges have a $\frac{3}{4}$" chamfer)



BAR d152(E)

BAR d120(E)

ANCHOR ROD

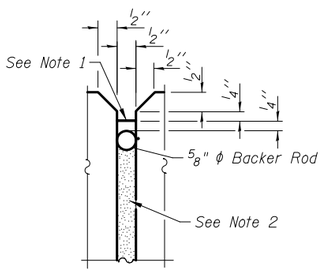
Diameter as specified for light poles. (ASTM F 1554 Grade 105)

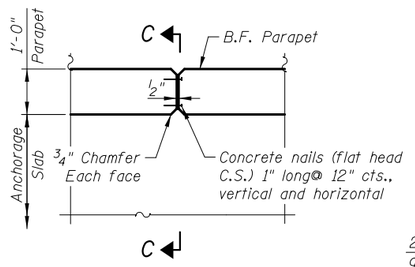
ANCHORAGE SLABS BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a120(E)	365	#6	8'-10"	
a121(E)	365	#5	7'-2"	
a152(E)	4	#5	2'-6"	
b120(E)	280	#5	29'-0"	
d120(E)	82	#4	2'-4"	
d121(E)	358	#6	4'-10"	
d122(E)	5	#6	6'-7"	
d124(E)	6	#6	4'-2"	
d125(E)	358	#5	4'-8"	
d126(E)	5	#5	6'-5"	
d152(E)	16	#6	10'-9"	
d153(E)	6	#6	6'-7"	
e120(E)	184	#4	14'-8"	
e121(E)	8	#4	15'-10"	
e122(E)	4	#4	3'-8"	

Item	Unit	Quantity
Concrete Superstructures	Cu. Yd.	155.5
Protective Coat	Sq. Yd.	112
Reinforcement Bars, Epoxy Coated	Pound	22,910

Notes:
See sheet WK7 for Aluminum Railing, Type L details.
See sheet WK5 for Section A-A.

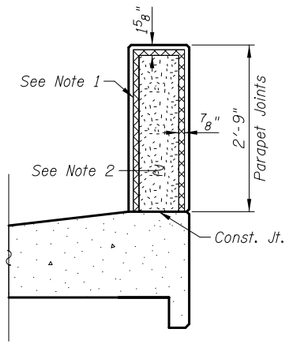




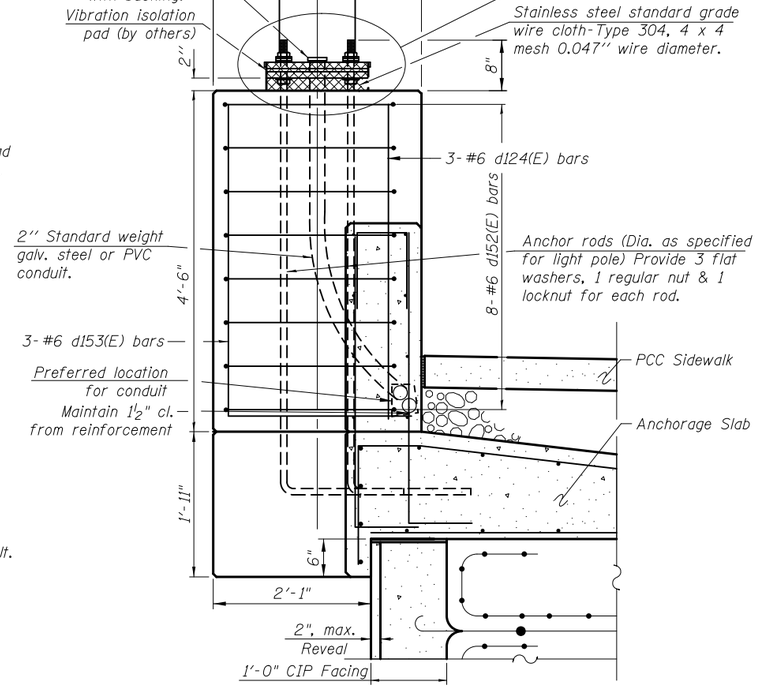
PLAN

PARAPET JOINT DETAILS

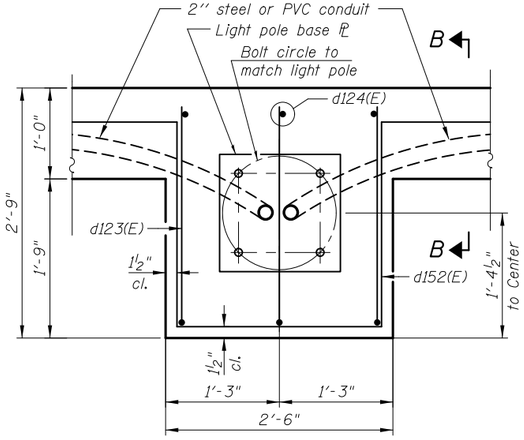
Parapet Joint Notes:
1. Non-staining gray one component non-sag elastomeric gun grade polyurethane sealant meeting the requirements of ASTM C-920, Type S, Grade NS, Class 25, use T with a ⅝" backer rod.
2. ½" Preformed Self-Expanding Cork Joint Filler according to Article 1051.07 of the Std. Spec. Cost included with Concrete Superstructure.



SECTION C-C

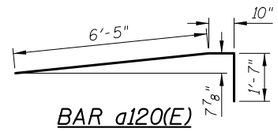


SECTION B-B

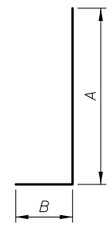


LIGHT POLE FOUNDATION PLAN

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



BAR d120(E)



BARS d121(E), d122(E), d125(E), d126(E) & d153(E)

Bar	A	B
d121(E)	3'-10"	1'-0"
d122(E)	5'-7"	1'-0"
d125(E)	3'-10"	10"
d126(E)	5'-7"	10"
d153(E)	4'-2"	2'-5"

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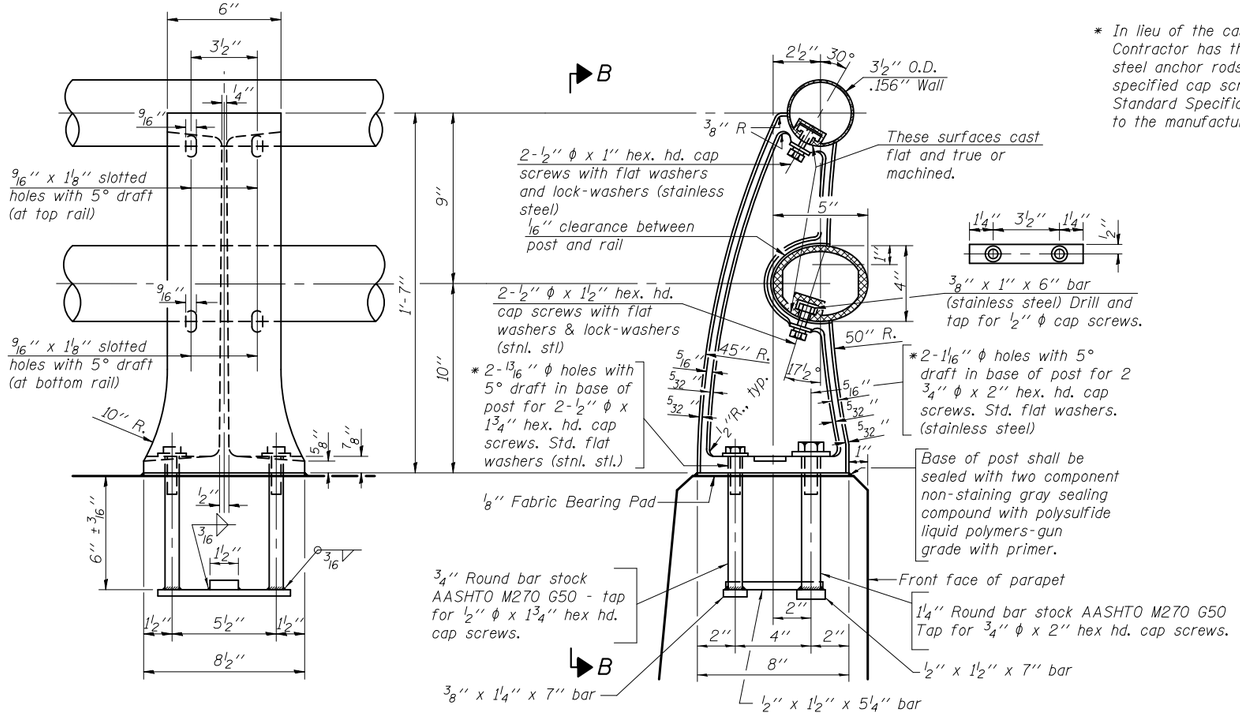
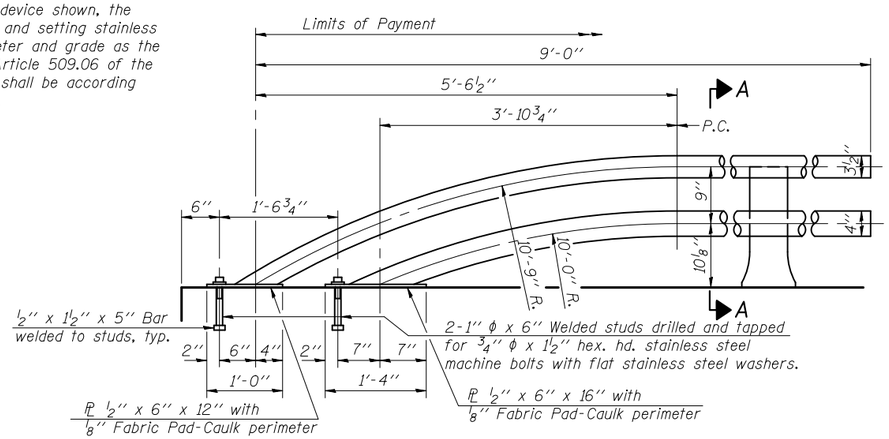
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

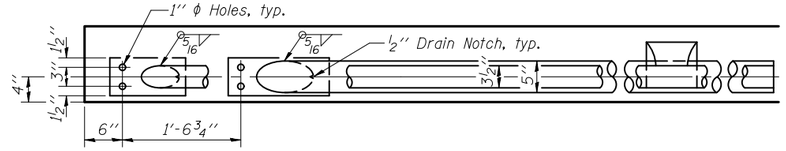
ANCHORAGE SLAB DETAILS
WALL K; ALGONQUIN ROAD
STRUCTURE NO. 056-2504
SHEET NO. WK6 OF WK9 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	661
		CONTRACT NO. 60F72		
	ILLINOIS FED. AID PROJECT			



* *In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting stainless steel anchor rods of the same diameter and grade as the specified cap screws according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.*



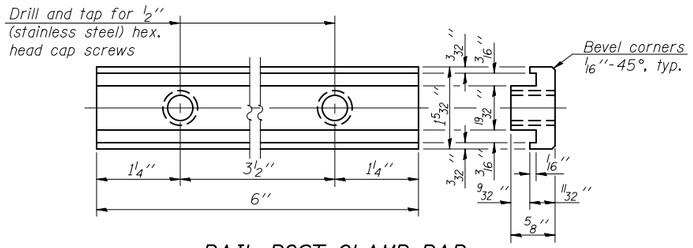


RAIL TERMINAL SECTION

VIEW B-B

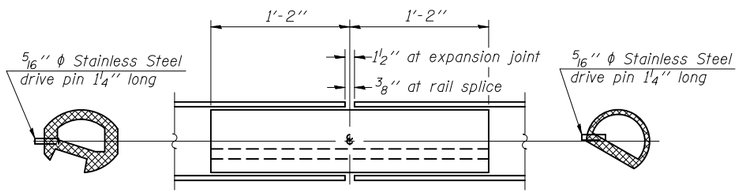
SECTION A-A

RAIL POST DETAILS



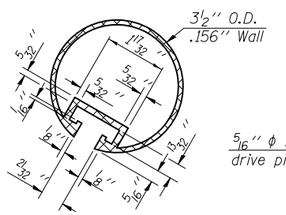
RAIL POST CLAMP BAR

For Top Rail

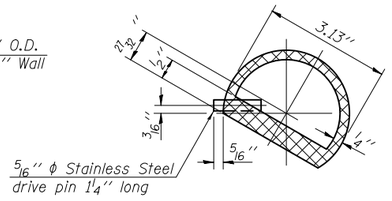


RAIL SPLICE

(7'-0'' to 10'-0'' Post spacing)

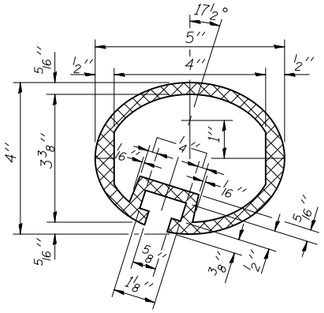


SECTION THRU TOP RAIL

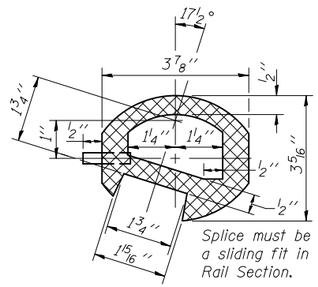


SECTION THRU SPLICE

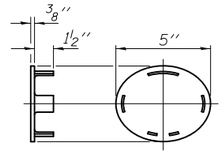
For Top Rail



SEC. THRU ELLIPTICAL RAIL SECTION

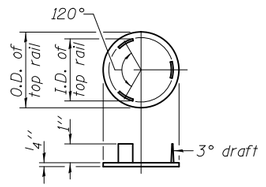


SEC. THRU SPLICE



CAST END CAP

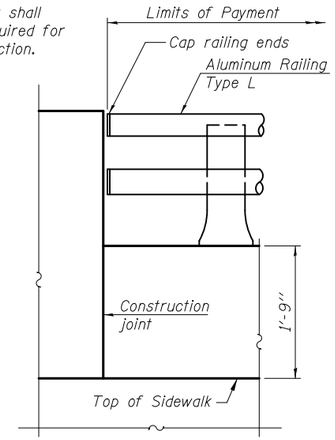
For bottom rail
DRIVE FIT TYPE



CAST END CAP

For top rail

Note:
The end rail post shall be set back as required for the terminal rail section.



RAIL END TREATMENT FOR TYPE 6 TERMINAL AND LIGHT POLE FOUNDATION

Notes:
All Posts shall be normal to parapet.
All joints in rail shall be spliced per detail.
All exposed rail ends shall be capped per detail.
Provide 1-⅛'' and 2-1/16'' Aluminum Shims for 25% of the Posts. Rail elements shall be parallel to Grade-high spots will be ground and low spots shimmed.
See sheets WK4 and WK5 for rail post spacing.

BILL OF MATERIAL

Item	Unit	Quantity
Aluminum Railing, Type L	Foot	356

CIVILTECH
450 E Devon Ave, Suite 300
Itasca, Illinois 60143
Tel: 630.773.3900 Fax: 630.773.3975
www.civiltechinc.com

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DESIGNED	-	D. ATKINS
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALUMINUM RAILING, TYPE L
WALL K; ALGONQUIN ROAD
STRUCTURE NO. 056-2504
SHEET NO. WK7 OF WK9 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	662
		CONTRACT NO. 60F72		
	ILLINOIS FED. AID PROJECT			

MIDLAND STANDARD ENGINEERING & TESTING, INC.

BORING LOG

SHEET 1 OF 1

PROJECT Algonquin Bypass — Retaining Wall — DATE 3/9/09
ROUTE FAP 339/ILL 31 — Algonquin Road — BORED BY SPE
SECTION 96-00209-00-PV — STATION 63+00 to 69+50 — CHECKED BY WJW
COUNTY McHenry
BORING RW-114
STATION 64+20
OFFSET 15' R of CL
WATER LEVEL DURING DRILLING none
GROUND WATER AT COMPLETION dry

GROUND SURFACE EL. 762.4

16" Bituminous Concrete over 6" Grey Crushed Limestone

Brown SAND and GRAVEL, A-1: FILL 760.6

Dark Brown Silty Clay LOAM, A-6 759.4

Brown to Red-Brown Clay LOAM, A-6 756.9

Brown-Grey to Grey

Brown-Grey to Grey Clay LOAM, A-6 742.4

End of Boring @ 30.0' 732.4

Depth	N/6"	Qu tsf	W %
Ft			
5	20 22 14	-	4
	3 4 5	2.0 P	15
	8 10 18	3.49 BS	10
10	8 11 15	4.26 BS	10
	9 11 13	6.12 BS	10
15	6 11 12	9.26 BS	12
	6 9 11	5.93 BS	11
20	6 7 7	4.07 S	12
25	5 6 7	5.77 BS	12
	5 6 6	3.88 B	12
	5 6 7	3.60 B	12
30	5 6 8	3.57 B	12

N-Standard Penetration Test- Blows per foot to drive 2 inch O.D. Split Spoon Sampler 12 inches with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf) W- Water Content-percentage of oven dry weight (%)

Type failure: B- Bulge Failure S- Shear Failure E- Estimated Value P-Penetrometer

MIDLAND STANDARD ENGINEERING & TESTING, INC.

BORING LOG

SHEET 1 OF 1

PROJECT Algonquin Bypass — Retaining Wall — DATE 3/9/09
ROUTE FAP 339/ILL 31 — Algonquin Road — BORED BY SPE
SECTION 96-00209-00-PV — STATION 63+00 to 69+50 — CHECKED BY WJW
COUNTY McHenry
BORING RW-115
STATION 65+00
OFFSET 15' R of CL
WATER LEVEL DURING DRILLING none
GROUND WATER AT COMPLETION dry

GROUND SURFACE EL. 762.4

16" Bituminous Concrete over 7" Grey Crushed Limestone

Brown SAND and GRAVEL, A-1: FILL 760.5

Brown to Red-Brown Clay LOAM, A-6 759.4

Brown-Grey to Grey

Brown-Grey to Grey Silty CLAY, A-6 742.4

End of Boring @ 35.0' 727.4

Depth	N/6"	Qu tsf	W %
Ft			
5	17 12 8	-	5
	7 7 9	5.77 BS	10
	8 10 17	8.22 BS	11
10	7 9 11	4.61 S	10
	8 10 14	6.70 BS	10
15	8 8 9	7.21 BS	10
	7 8 9	3.64 BS	11
20	6 8 9	4.5 P	11
25	7 7 10	3.88 B	12
	ST	4.81 B	13
	7 8 9	3.88 B	12
30	6 8 10	2.75 B	12
	7 7 10	3.41 B	12

N-Standard Penetration Test- Blows per foot to drive 2 inch O.D. Split Spoon Sampler 12 inches with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf) W- Water Content-percentage of oven dry weight (%) ST- Shelby Tube Sample

Type failure: B- Bulge Failure S- Shear Failure E- Estimated Value P-Penetrometer

MIDLAND STANDARD ENGINEERING & TESTING, INC.

BORING LOG

SHEET 1 OF 1

PROJECT Algonquin Bypass — Retaining Wall — DATE 3/10/09
ROUTE FAP 339/ILL 31 — Algonquin Road — BORED BY SPE
SECTION 96-00209-00-PV — STATION 63+00 to 69+50 — CHECKED BY WJW
COUNTY McHenry
BORING RW-116
STATION 65+80
OFFSET 15' R of CL
WATER LEVEL DURING DRILLING none
GROUND WATER AT COMPLETION dry

GROUND SURFACE EL. 761.9

16-17.2" Bituminous Concrete over 3" Grey Crushed Limestone

Brown SAND and GRAVEL, A-1: FILL 760.3

Dark Brown Silty Clay LOAM, A-6 759.9

Brown to Red-Brown Clay LOAM, A-6 758.7

Brown-Grey to Grey

Grey Clay LOAM, A-6 743.1

End of Boring @ 35.0' 726.9

Depth	N/6"	Qu tsf	W %	
Ft				
5	13 6 5	- T.S	21	
	4 5 7	3.22 BS	12	
	8 13 15	6.16 BS	10	Brown-Grey
10	9 10 13	5.43 BS	9	Brown-Grey Clay LOAM, A-6(5)*
	8 12 15	5.08 BS	11	
15	8 13 17	7.87 BS	11	
	9 13 14	8.68 BS	11	
20	5 8 10	3.10 B	12	
25	5 8 8	5.15 BS	9	
	5 7 9	2.09 B	12	
	8 9 11	4.07 B	12	
30	ST	4.12 B	13	
	5 7 8	2.91 B	13	

N-Standard Penetration Test- Blows per foot to drive 2 inch O.D. Split Spoon Sampler 12 inches with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf) W- Water Content-percentage of oven dry weight (%) * - Classification Test Results on Form BBS 2640

Type failure: B- Bulge Failure S- Shear Failure E- Estimated Value P-Penetrometer

CIVILTECH
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DRAWN	-	K. BOCHNOWSKI
DESIGNED	-	D. ATKINS
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS I
WALL K; ALGONQUIN ROAD
STRUCTURE NO. 056-2504
SHEET NO. WK8 OF WK9 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	663
		CONTRACT NO. 60F72		
	ILLINOIS FED. AID PROJECT			

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MIDLAND STANDARD ENGINEERING & TESTING, INC.

BORING LOG

SHEET 1 OF 1

PROJECT Algonquin Bypass — Retaining Wall — DATE 3/10/09
ROUTE FAP 339/ILL 31 — Algonquin Road — BORED BY SPE
SECTION 96-00209-00-PV — STATION 63+00 to 69+50 — CHECKED BY WJW
COUNTY McHenry — WATER LEVEL DURING DRILLING none
BORING RW-117 — GROUND WATER AT COMPLETION dry
STATION 66+80
OFFSET 15' R of CL

Depth	N/6"	Qu tsf	W %	
GROUND SURFACE EL. 763.1				
17" Bituminous Concrete over 4" Grey Crushed Limestone				
Brown SAND and GRAVEL, A-1: FILL 761.3	13 13 12	-	9	
Red-Brown and Brown Silty CLAY, A-6: FILL 760.1	6 6 7	2.67 BS	12	
Dark Brown Clay LOAM, A-6 758.3	4 5 7	- 2.0 P	15	
Red-Brown Clay LOAM, A-6 Cobble or Boulder 756.1	6 10 11	2.25 P	7	few intermittent damp Silt seams
	8 10 12	4.26 BS	11	
	11 15 18	9.49 BS	11	
	7 9 12	4.84 BS	12	
Brown-Grey	8 10 13	5.08 BS	12	
Grey Clay LOAM, A-6 743.1	6 8 11	3.41 BS	11	
	6 8 12	2.52 B	13	
	6 8 11	3.33 B	12	
	6 7 10	2.36 B	14	
End of Boring @ 35.0' 728.1	6 8 10	2.29 B	13	

N-Standarc Penetration Test- Blows per foot to drive 2 inch O.D. Split Spoon Sampler 12 inches with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf) W- Water Content-percentage of oven dry weight (%)

Type failure: B- Bulge Failure S- Shear Failure E- Estimated Value P-Penetrometer

MIDLAND STANDARD ENGINEERING & TESTING, INC.

BORING LOG

SHEET 1 OF 1

PROJECT Algonquin Bypass — Retaining Wall — DATE 3/11/09
ROUTE FAP 339/ILL 31 — Algonquin Road — BORED BY SPE
SECTION 96-00209-00-PV — STATION 63+00 to 69+50 — CHECKED BY WJW
COUNTY McHenry — WATER LEVEL DURING DRILLING none
BORING RW-118 — GROUND WATER AT COMPLETION dry
STATION 67+60
OFFSET 25' R of CL

Depth	N/6"	Qu tsf	W %	
GROUND SURFACE EL. 762.1				
17-1/2" Bituminous Concrete over 3" Grey Crushed Limestone				
Brown SAND and GRAVEL, A-1: FILL 760.4	13 15 14	-	5	
Dark Brown Silty Clay LOAM, A-6: FILL 759.1	8 9 9	2.0 P	8	
Brown Clay LOAM A-6 756.6	5 6 11	4.5+ P	13	
	11 15 21	13.56 BS	10	
	10 14 20	11.78 BS	10	
	9 13 18	7.01 BS	11	
	10 14 15	9.42 BS	9	
Brown-Grey	6 8 11	4.73 BS	12	
Brown-Grey to Grey Clay LOAM, A-6 742.1	6 8 11	1.90 S	11	
	6 8 10	4.38 BS	12	
	6 8 9	3.88 BS	12	
	6 8 9	2.60 B	13	
End of Boring @ 35.0' 727.1	5 7 11	2.52 B	13	

N-Standard Penetration Test- Blows per foot to drive 2 inch O.D. Split Spoon Sampler 12 inches with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf) W- Water Content-percentage of oven dry weight (%)

Type failure: B- Bulge Failure S- Shear Failure E- Estimated Value P-Penetrometer

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DRAWN	-	K. BOCHNOWSKI
DESIGNED	-	D. ATKINS
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS II
WALL K; ALGONQUIN ROAD
STRUCTURE NO. 056-2504
SHEET NO. WK9 OF WK9 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	664
		CONTRACT NO. 60F72		
	ILLINOIS FED. AID PROJECT			

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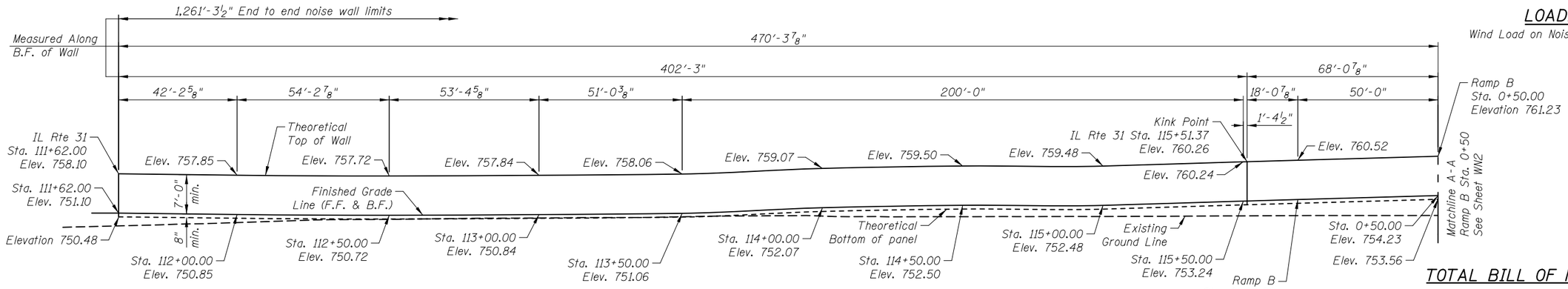
Bench Mark: Control Point CP6, $\frac{5}{8}$" Iron Rod with cap set, IL Rte 31 Station 111+35.89, Offset 58.04 feet Right; Elev. 749.30
Existing Structure: None

DESIGN STRESSES
FIELD UNITS

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)

LOADING
Wind Load on Noise Wall = 25psf

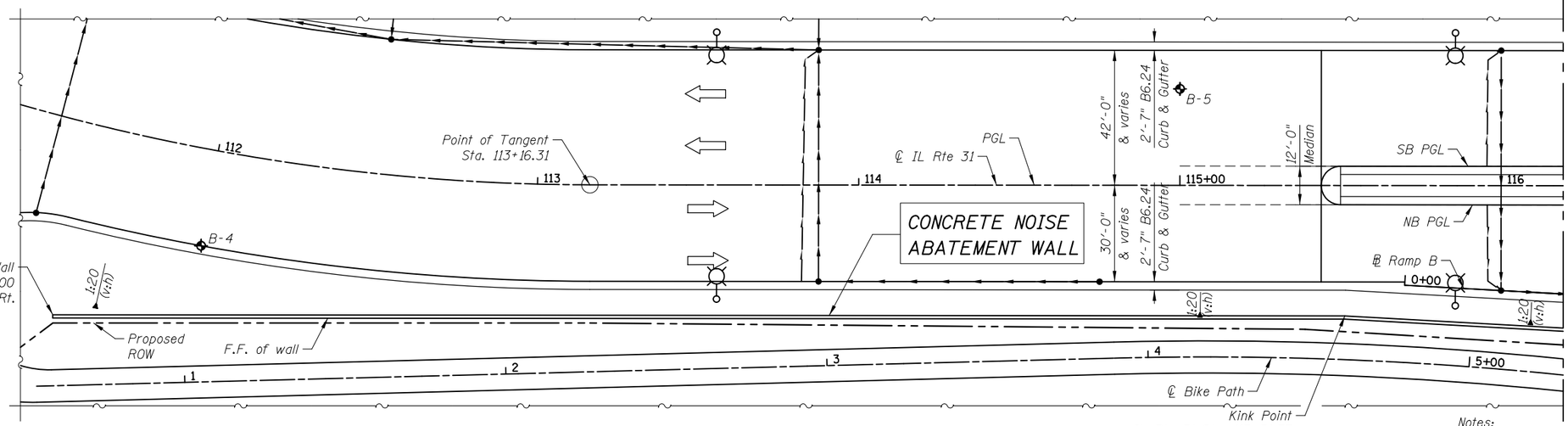


ELEVATION
(Looking at F.F. of Wall)
(Unfolded Elevation)

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Noise Abatement Wall, Ground Mounted	Sq. Ft.	9,670

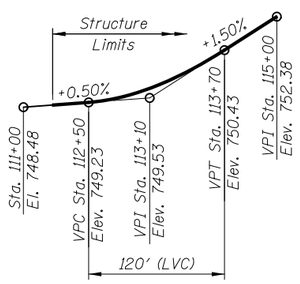
INDEX OF SHEETS



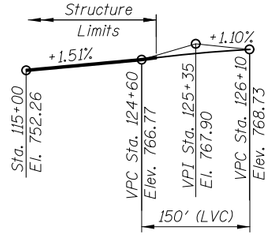
PLAN

LEGEND
- Soil Borings
- Proposed Storm Sewer
- Proposed Pipe Underdrain

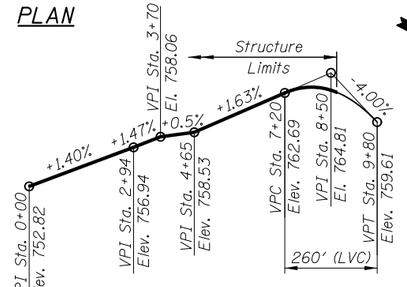
CURVE DATA
℄ IL Rte 31
Δ = 45° 11' 23" (LT)
D = 8° 51' 43"
T = 269.06'
L = 509.93'
E = 53.75'
R = 646.54'
P.C. = Sta. 108+06.38
P.T. = Sta. 113+16.31
P.I. = Sta. 110+75.44
S.E. = 2.00%
S.E. Runoff = 92.5' (NB)
S.E. Runoff Sta. 112+90 to 113+82.5 (NB)



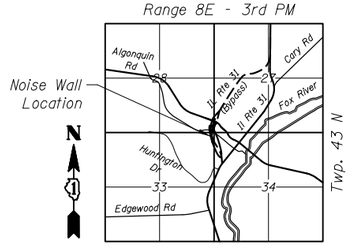
PROPOSED PROFILE
IL ROUTE 31
(Along ℄ IL Rte 31)



PROPOSED PROFILE
IL ROUTE 31
(Along NB PGL)



PROPOSED PROFILE
NB EXIT RAMP B
(Along ℄ Ramp B)



LOCATION SKETCH

Notes:
The foundation, posts & noise wall panels shall be designed to accommodate the ultimate or maximum Noise Wall height and earth retainment conditions.
The foundation is to be designed by the Contractor. The foundation is not to be placed within 1'-0" of any pipes or utilities.
The Contractor shall verify any obstruction to pipes and utilities prior to construction of foundation.
Offsets are measured to the back face of wall.
F.F. = Front Face
B.F. = Back Face

GENERAL PLAN & ELEVATION I
CONCRETE NOISE ABATEMENT WALL
IL RTE. 31 & NB EXIT RAMP (RAMP B); O.R. 0003
SECTION 18A-2, McHENRY COUNTY
IL RTE. 31 STA. 111+62 TO STA. 124+58.29

CIVILTECH
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www.civiltechinc.com

DRAWN	-	D. ATKINS
DESIGNED	-	M. LANGE
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION I
CONCRETE NOISE ABATEMENT WALL
IL RTE 31 & NB EXIT RAMP (RAMP B)
SHEET NO. WN1 OF WN5 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	665
		CONTRACT NO. 60F72		
	ILLINOIS FED. AID PROJECT			

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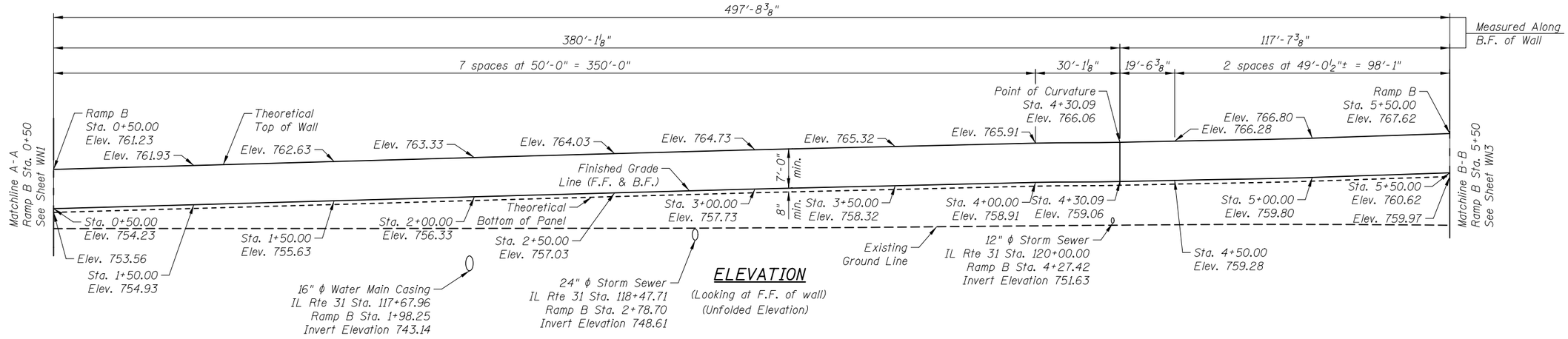

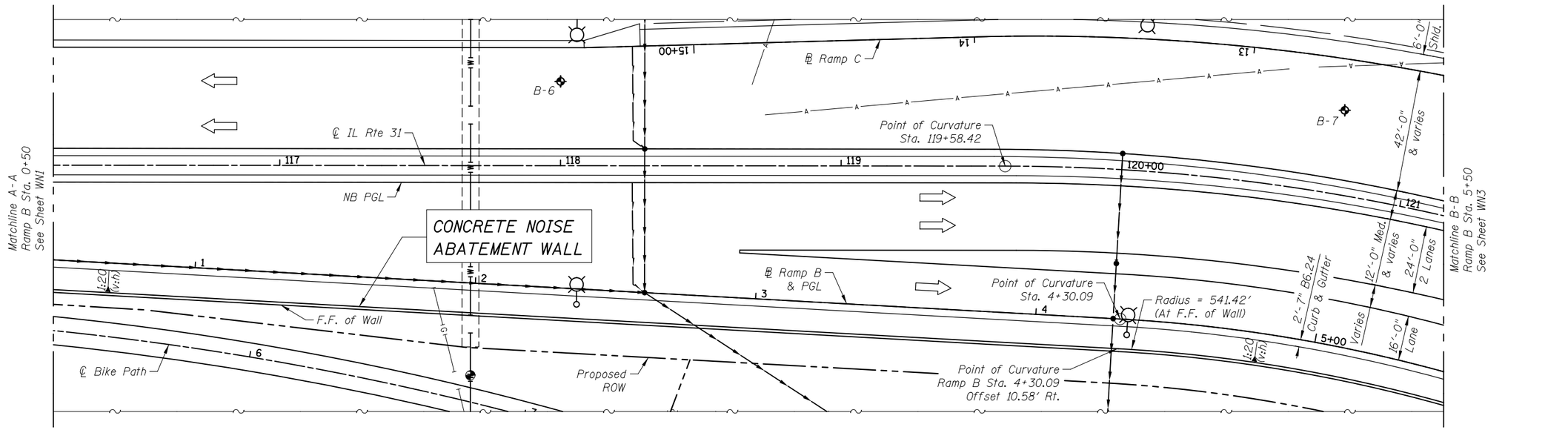

PLAN

CURVE DATA

℄ IL Rte 31
Δ = 45° 06' 40" (RT)
D = 8° 07' 36"
T = 292.84'
L = 555.10'
E = 58.40'
R = 705.04'
P.C. = Sta. 119+58.42
P.T. = Sta. 125+13.52
P.I. = Sta. 122+51.26
S.E. = 4.00%
S.E. Runoff = 100' (NB)
S.E. Runoff Sta. 119+25 to 120+25 (NB)

CURVE DATA

℄ Ramp B
Δ = 47° 17' 41" (RT)
D = 10° 22' 47"
T = 241.71'
L = 455.65'
E = 50.60'
R = 552.00'
P.C. = Sta. 4+30.09
P.T. = Sta. 8+85.74
P.I. = 6+71.79
S.E. = 6.00%
S.E. Runoff = 122' (NB)
S.E. Runoff Sta. 8+30 to 9+52

LEGEND

- Soil Borings
- Proposed Storm Sewer
- G — Existing Gas Line
- A — Existing Ariel Lines
- Proposed Pipe Underdrain
- W — Proposed Water Main

Notes:
The foundation, posts & noise wall panels shall be designed to accommodate the ultimate or maximum Noise Wall height and earth retainment conditions.
The foundation is to be designed by the Contractor. The foundation is not to be placed within 1'-0" of any pipes or utilities.
The Contractor shall verify any obstruction to pipes and utilities prior to construction of foundation.
Offsets are measured to the back face of wall.
F.F. = Front Face
B.F. = Back Face

N

GENERAL PLAN & ELEVATION II
CONCRETE NOISE ABATEMENT WALL
IL RTE. 31 & NB EXIT RAMP (RAMP B); O.R. 0003
SECTION 18A-2, McHENRY COUNTY
IL RTE. 31 STA. 111+62 TO STA. 124+58.29

CIVILTECH
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DRAWN	-	D. ATKINS
DESIGNED	-	M. LANGE
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION II
CONCRETE NOISE ABATEMENT WALL
IL RTE 31 & NB EXIT RAMP (RAMP B)
SHEET NO. WN 2 OF WN5 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	666
		CONTRACT NO. 60F72		
	ILLINOIS FED. AID PROJECT			

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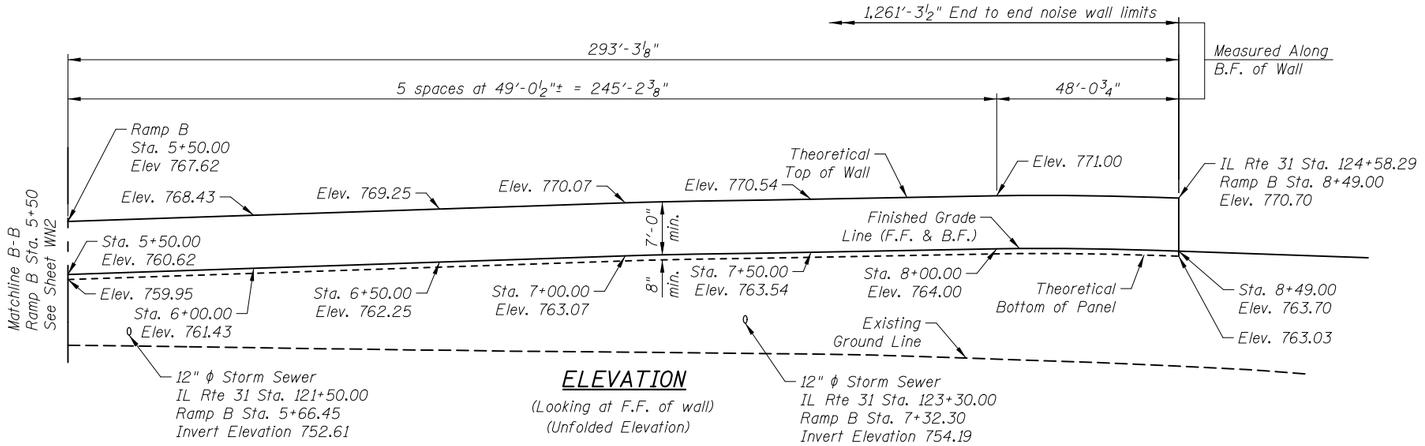
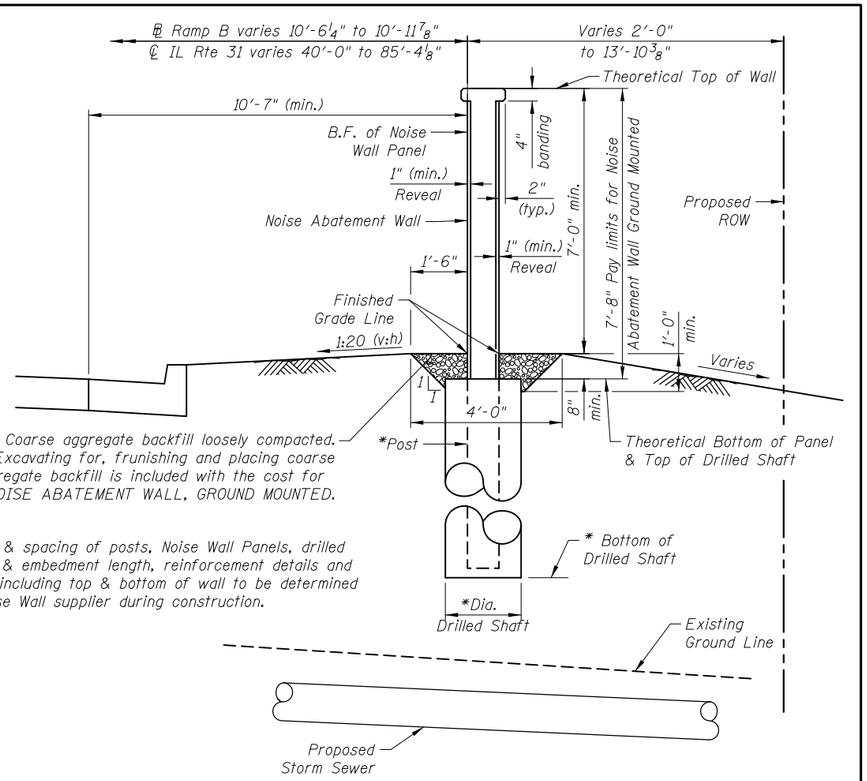


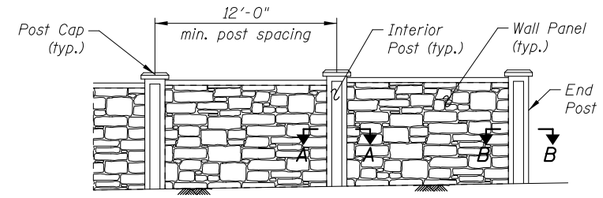
ELEVATION

(Looking at F.F. of wall)
(Unfolded Elevation)

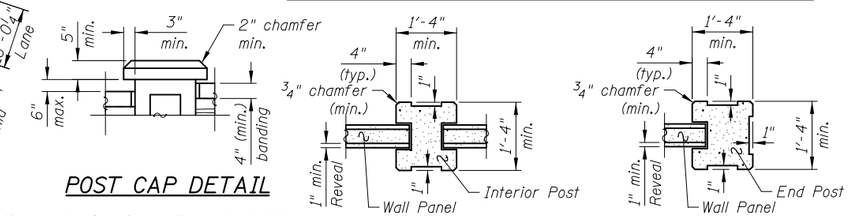


* Type, size & spacing of posts, Noise Wall Panels, drilled shaft size & embedment length, reinforcement details and wall limits including top & bottom of wall to be determined by the Noise Wall supplier during construction.

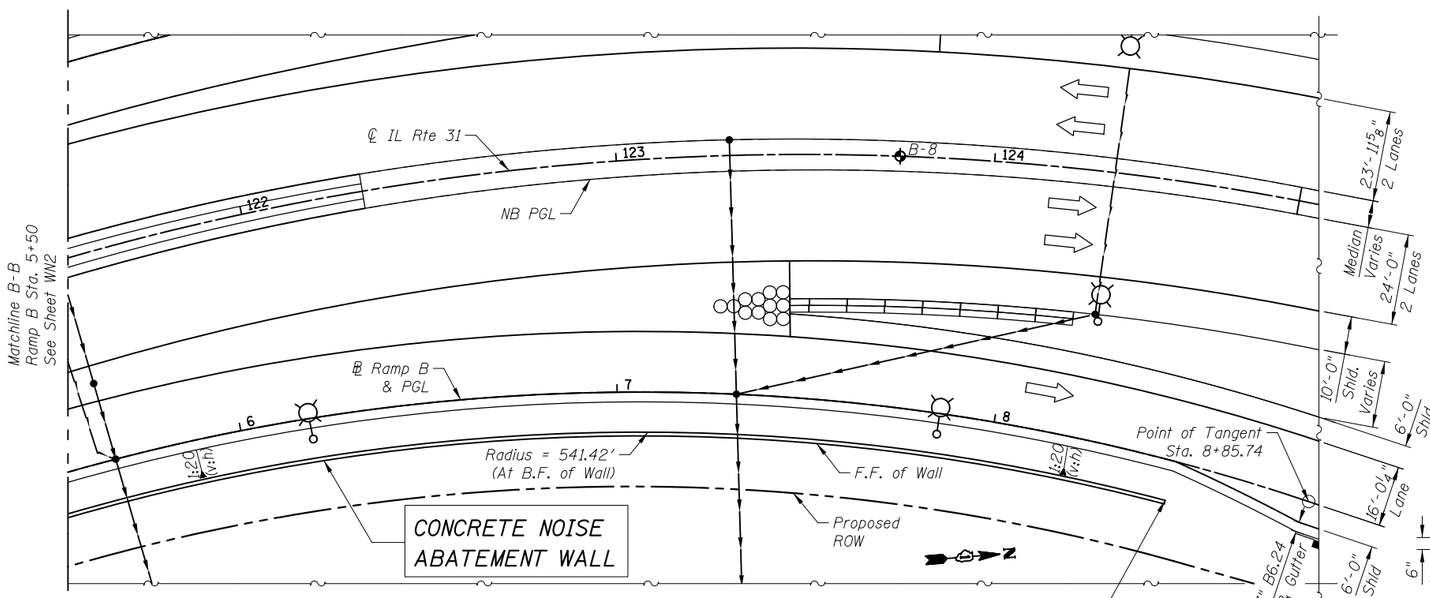
TYPICAL SECTION THRU NOISE WALL



PARTIAL NOISE ABATEMENT WALL ELEVATION



POST CAP DETAIL



PLAN

CURVE DATA

℄ IL Rte 31
Δ = 45° 06' 40" (RT)
D = 8° 07' 36"
T = 292.84'
L = 555.10'
E = 58.40'
R = 705.04'
P.C. = Sta. 119+58.42
P.T. = Sta. 125+13.52
P.I. = Sta. 122+51.26
S.E. = 4.00%
S.E. Runoff = 100' (NB)
S.E. Runoff Sta. 119+25 to 120+25 (NB)

CURVE DATA

℄ Ramp B
Δ = 47° 17' 41" (RT)
D = 10° 22' 47"
T = 241.71'
L = 455.65'
E = 50.60'
R = 552.00'
P.C. = Sta. 4+30.09
P.T. = Sta. 8+85.74
P.I. = 6+71.79
S.E. = 6.00%
S.E. Runoff = 122' (NB)
S.E. Runoff Sta. 8+30 to 9+52

LEGEND

- Soil Borings
- Proposed Storm Sewer
- Proposed Pipe Underdrain

Notes:

The foundation, posts & noise wall panels shall be designed to accommodate the ultimate or maximum Noise Wall height and earth retainment conditions.

The foundation is to be designed by the Contractor. The foundation is not to be placed within 1'-0" of any pipes or utilities.

The Contractor shall verify any obstruction to pipes and utilities prior to construction of foundation.

Offsets are measured to the back face of wall.

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

GENERAL PLAN & ELEVATION III
CONCRETE NOISE ABATEMENT WALL
IL RTE. 31 & NB EXIT RAMP (RAMP B); O.R. 0003
SECTION 18A-2, McHENRY COUNTY
IL RTE. 31 STA. 111+62 TO STA. 124+58.29

CIVILTECH
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www.civiltechinc.com

DRAWN	-	D. ATKINS
DESIGNED	-	M. LANGE
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION III
CONCRETE NOISE ABATEMENT WALL
IL RTE 31 & NB EXIT RAMP (RAMP B)
SHEET NO. WN3 OF WN5 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	667
		CONTRACT NO. 60F72		
	ILLINOIS	FED. AID PROJECT		

MIDLAND STANDARD ENGINEERING & TESTING, INC.

BORING LOG

SHEET 1 OF 1

PROJECT Algonquin Bypass — Mainline - IL. Route 31
ROUTE FAP 339/ILL 31
SECTION 96-00209-00-PV — STATION 100+00 to 180+00
DATE 2/24/09
BORED BY SPE
CHECKED BY WJW

COUNTY McHenry
BORING B-4
STATION 112+00
OFFSET 30' R of CL

WATER LEVEL DURING DRILLING none
GROUND WATER AT COMPLETION dry

GROUND SURFACE EL. 752.4	Depth Ft	N/6"	Qu tsf	W %
Black Silty CLAY, mixed with Sand and Cinders, A-5: FILL	5	2 4 5	1.5 P	17
Black and Grey Sandy LOAM, A-2-4(0)* 748.9		3 4 5	1.5 P	16
Black Silty CLAY, A-7-6 746.9		3 5 7	1.25 P	27
Brown Clay LOAM, A-6 744.4	10	2 3 4	1.36 B	19
End of Boring @ 10.0' 742.4				

N-Standard Penetration Test- Blows per foot to drive 2 inch O.D. Split Spoon Sampler 12 inches with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf) W- Water Content-percentage of oven dry weight (%) * - Classification Test Results on Form BBS 2640

Type failure: B- Bulge Failure S- Shear Failure E- Estimated Value P-Penetrometer

MIDLAND STANDARD ENGINEERING & TESTING, INC.

BORING LOG

SHEET 1 OF 1

PROJECT Algonquin Bypass — Mainline - IL. Route 31
ROUTE FAP 339/ILL 31
SECTION 96-00209-00-PV — STATION 100+00 to 180+00
DATE 2/24/09
BORED BY SPE
CHECKED BY WJW

COUNTY McHenry
BORING B-5
STATION 115+00
OFFSET 30' L of CL

WATER LEVEL DURING DRILLING none
GROUND WATER AT COMPLETION dry

GROUND SURFACE EL. 752.4	Depth Ft	N/6"	Qu tsf	W %
±5" Black Silty CLAY/TOPSOIL over Black and Brown Silty CLAY, A-6: FILL mixed with Sand, Gravel, and Cinders	5	4 3 4	2.0 P	13
Red-Brown Clay LOAM, A-6: FILL 748.9		2 3 3	1.5 P	14
Black Silty CLAY, A-7-6 746.9		2 3 4	1.0 P 2.5 P	32
Brown Clay LOAM, A-6 to Brown and Grey 745.1	10	3 4 5	1.82 B	27
End of Boring @ 10.0' 742.4				

N-Standard Penetration Test- Blows per foot to drive 2 inch O.D. Split Spoon Sampler 12 inches with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf) W- Water Content-percentage of oven dry weight (%)

Type failure: B- Bulge Failure S- Shear Failure E- Estimated Value P-Penetrometer

MIDLAND STANDARD ENGINEERING & TESTING, INC.

BORING LOG

SHEET 1 OF 1

PROJECT Algonquin Bypass — Mainline - IL. Route 31
ROUTE FAP 339/ILL 31
SECTION 96-00209-00-PV — STATION 100+00 to 180+00
DATE 2/24/09
BORED BY SPE
CHECKED BY WJW

COUNTY McHenry
BORING B-6
STATION 118+00
OFFSET 30' L of CL

WATER LEVEL DURING DRILLING 8.0'
GROUND WATER AT COMPLETION dry

GROUND SURFACE EL. 753.9	Depth Ft	N/6"	Qu tsf	W %
Black Silty CLAY mixed with Sand and Cinders, A-6: FILL	5	3 3 2	-	25
Red-Brown and Dark Brown CLAY LOAM, A-6, mixed FILL, very soft 751.9		WOH	0.43 B	18
Brown Clay LOAM, A-6 749.4		3 4 3	1.40 B	25
Red-Brown Sandy LOAM, A-4 and SAND, A-3, damp 745.9	10	3 3 3	-	19
End of Boring @ 10.0' 743.9				

N-Standard Penetration Test- Blows per foot to drive 2 inch O.D. Split Spoon Sampler 12 inches with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf) W- Water Content-percentage of oven dry weight (%) WOH- Weight of Hammer

Type failure: B- Bulge Failure S- Shear Failure E- Estimated Value P-Penetrometer

CIVILTECH
450 E Devon Ave, Suite 300
Itasca, Illinois 60143
Tel: 630.773.3900 Fax: 630.773.3975
www.civiltechinc.com

DRAWN	-	D. ATKINS
DESIGNED	-	M. LANGE
CHECKED	-	G. HATLESTAD
DATE	-	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS I
CONCRETE NOISE ABATEMENT WALL
IL RTE 31 & NB EXIT RAMP (RAMP B)
SHEET NO. WN4 OF WN5 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	668
		CONTRACT NO. 60F72		
	ILLINOIS FED. AID PROJECT			

MIDLAND STANDARD ENGINEERING & TESTING, INC.

BORING LOG

SHEET 1 OF 1

PROJECT Algonquin Bypass — Mainline - IL. Route 31 — DATE 2/24/09
ROUTE FAP 339/ILL 31 — BORED BY SPE
SECTION 96-00209-00-PV — STATION 100+00 to 180+00 — CHECKED BY WJW
COUNTY McHenry
BORING B-7
STATION 120+75
OFFSET 30' L of CL

WATER LEVEL DURING DRILLING 7.0'
GROUND WATER AT COMPLETION 9.0'

GROUND SURFACE EL. 755.7	Depth Ft	N/6"	Qu tsf	W %
Black Silty CLAY mixed with Sand and Cinders, A-6: FILL		7 5 5	1.47 B	11
Brown Clay LOAM, A-6 753.7	5	3 5 6	1.74 S	12
Brown Sandy LOAM, A-4 to SAND, A-3 750.2		4 4 3	-	15
Red-Brown Clay LOAM, A-6 746.5	10	3 4 4	0.62 B	19
End of Boring @ 10.0' 745.7				

Depth Ft	N/6"	Qu tsf	W %

N-Standard Penetration Test- Blows per foot to drive 2 inch O.D. Split Spoon Sampler 12 inches with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf) W- Water Content-percentage of oven dry weight (%)

Type failure: B- Bulge Failure S- Shear Failure E- Estimated Value P-Penetrometer

MIDLAND STANDARD ENGINEERING & TESTING, INC.

BORING LOG

SHEET 1 OF 1

PROJECT Algonquin Bypass — Mainline - IL. Route 31 — DATE 4/6/09
ROUTE FAP 339/ILL 31 — BORED BY SPE
SECTION 96-00209-00-PV — STATION 100+00 to 180+00 — CHECKED BY WJW
COUNTY McHenry
BORING B-8
STATION 123+75
OFFSET on CL

WATER LEVEL DURING DRILLING none
GROUND WATER AT COMPLETION dry

GROUND SURFACE EL. 752.5	Depth Ft	N/6"	Qu tsf	W %
Brown and Black Silty CLAY, little Sand, little Gravel, trace Cinders, A-6: FILL		6 6 7	0.58 S	18
Brown Clay LOAM, A-6 748.0	5	6 8 7	1.55 S	17
Brown SAND (f-m), A-3, damp 743.5		4 6 7	1.47 B	22
End of Boring @ 10.0' 742.5	10	3 3 3	-	11

Depth Ft	N/6"	Qu tsf	W %

N-Standard Penetration Test- Blows per foot to drive 2 inch O.D. Split Spoon Sampler 12 inches with 140 lbs. hammer falling 30 inches

Qu- Unconfined Compressive Strength (tsf) W- Water Content-percentage of oven dry weight (%)

Type failure: B- Bulge Failure S- Shear Failure E- Estimated Value P-Penetrometer

CIVILTECH
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Tel: 630.773.3900 Fax: 630.773.3975
www.civiltechinc.com

DRAWN	D. ATKINS
DESIGNED	M. LANGE
CHECKED	G. HATLESTAD
DATE	5/3/2012

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS II
CONCRETE NOISE ABATEMENT WALL
IL RTE 31 & NB EXIT RAMP (RAMP B)
SHEET NO. WN5 OF WN5 SHEETS

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	669
		CONTRACT NO. 60F72		
	ILLINOIS FED. AID PROJECT			

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O.R. RTE.	SECTION		COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2		MCHENRY	825	670
FED. ROAD DIST. NO. 1		ILLINOIS	CONTRACT NO. 60F72		

VOLUME IV

FOR INDEX OF SHEETS, SEE SHEET NO. 671

SUBSURFACE UTILITY ENGINEERING (S.U.E.)
UTILIZED ON THIS PROJECT

PROJECT LOCATED IN THE
VILLAGE OF ALGONQUIN

DESIGN DESIGNATION

34,000(30) OTHER PRINCIPAL ARTERIAL 6.03 (PCC–20)

TRAFFIC DATA

	ADT (2030)	DESIGN SPEED	POSTED SPEED
IL ROUTE 31 (EDGEWOOD DRIVE TO HUNTINGTON DRIVE)	26,000	40 MPH	35 MPH
IL ROUTE 31 (HUNTINGTON DRIVE TO IL ROUTE 62)	16,000	40 MPH	40 MPH
IL ROUTE 31 (IL ROUTE 62 TO CARY–ALGONQUIN ROAD)	34,000	50 MPH	45 MPH
IL ROUTE 31 (CARY–ALGONQUIN ROAD TO KLASEN ROAD)	43,000	50 MPH	45 MPH
EDGEWOOD DRIVE	9,000	35 MPH	30 MPH
HUNTINGTON DRIVE	7,000	35 MPH	30 MPH
IL ROUTE 62 (EAST OF PROPOSED IL ROUTE 31)	48,000	35 MPH	30 MPH
IL ROUTE 62 (WEST OF PROPOSED IL ROUTE 31)	32,000	35 MPH	30 MPH

0 100′ 200′ 300′ — 1″ = 100′
0 10′ 20′ 30′ — 1″ = 10′
0 50′ 100′ — 1″ = 50′
0 50′ 100′ — 1″ = 40′
0 50′ 100′ — 1″ = 30′
0 50′ 100′ — 1″ = 20′

FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1–800–892–0123
OR 811

DISTRICT ONE – DESIGN
PROJECT MANAGER: ISAAC KWARTENG (847) 705–4230
PROJECT ENGINEER: ALIX BRICE (847) 705–4552

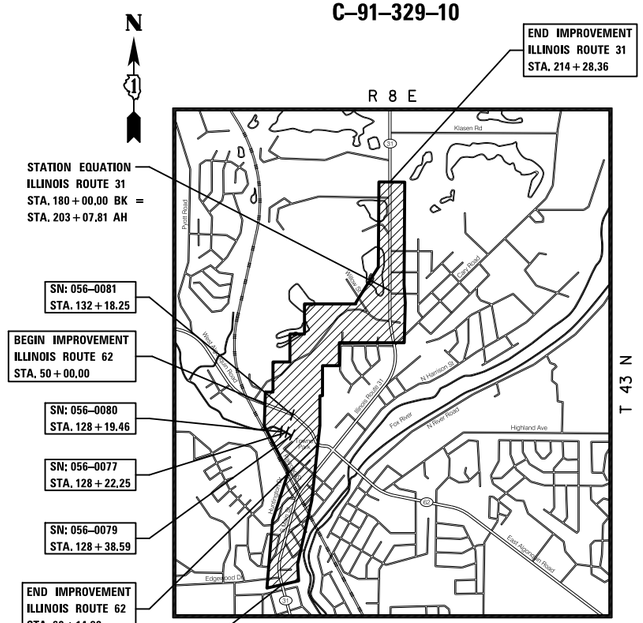
CONTRACT NO. 60F72

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROPOSED
HIGHWAY PLANS

O.R. ROUTE 0003 (ALGONQUIN BYPASS)
SECTION 18A–2
ILLINOIS ROUTE 31 (N. JCT) TO ILLINOIS ROUTE 31 (S. JCT)
PROJECT NO.:
NEW CONSTRUCTION, BRIDGE (NEW), RETAINING WALL
McHENRY COUNTY

C–91–329–10



ALGONQUIN TOWNSHIP
LOCATION MAP
NOT TO SCALE

GROSS LENGTH = 11,153.55 FT. = 2.112 MILES
NET LENGTH = 11,153.55 FT. = 2.112 MILES

D–91–329–10

LOCATION OF SECTION INDICATED THUS: –

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED _____ 20 _____

_____
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

_____ 20 _____

_____
ENGINEER OF DESIGN AND ENVIRONMENT

_____ 20 _____

_____
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

PLANS PREPARED BY: _____

CIVILTECH
450 E. Devon Ave, Suite 300 - Itasca, Illinois 60143
Tel: 630.773.3900 - Fax: 630.773.3975
www.civiltechinc.com

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INDEX OF SHEETS

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24 - 38	TYPICAL SECTIONS
39 - 49	SCHEDULE OF QUANTITIES
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70 - 83	ROADWAY PLANS
84 -102	ROADWAY PROFILES
103 - 147	MAINTENANCE OF TRAFFIC
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

INDEX OF SHEETS

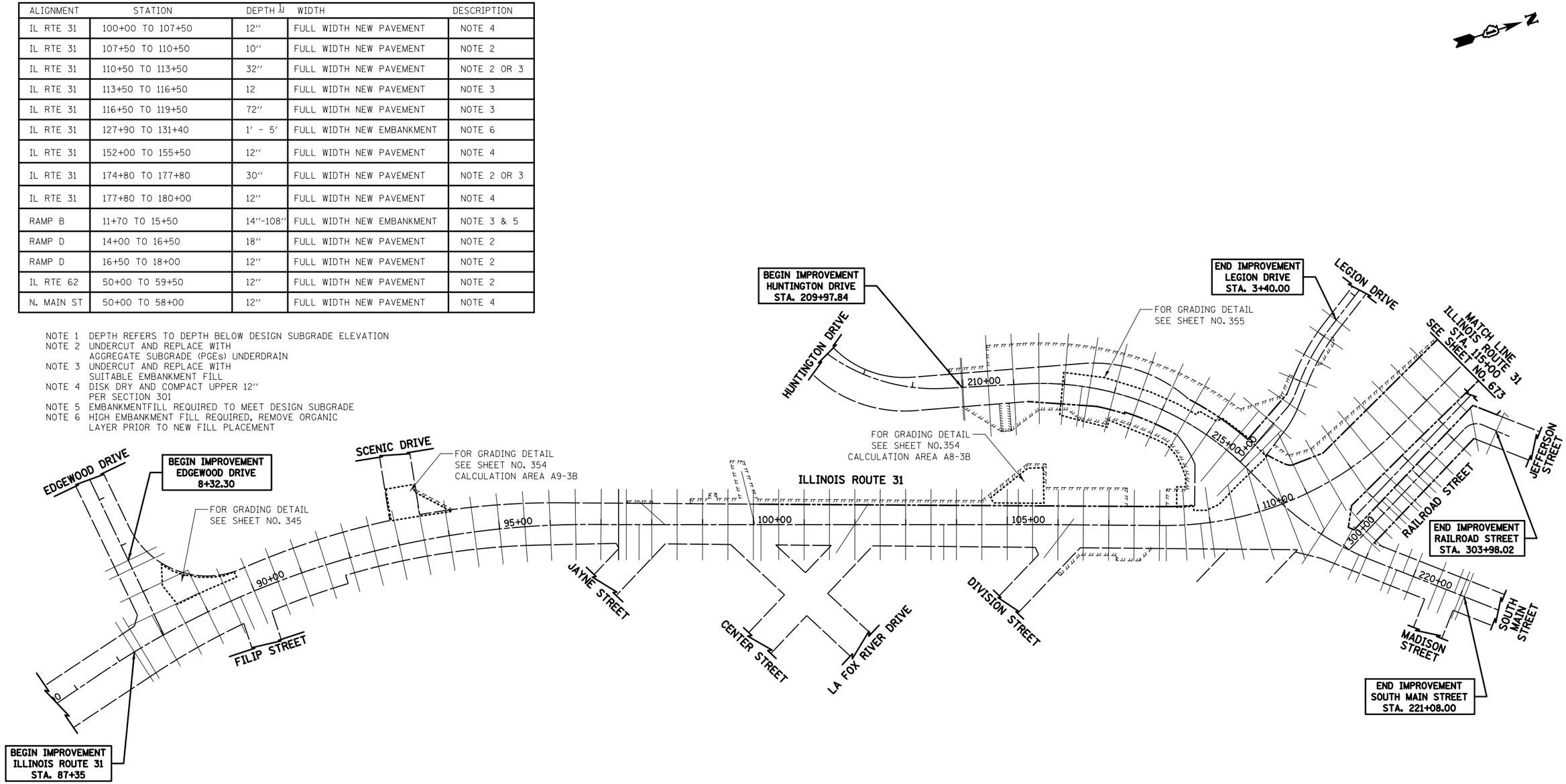
SCALE: | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	671
		CONTRACT NO. 60F72		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

REMEDIAL TREATMENT AREAS

ALIGNMENT	STATION	DEPTH [1]	WIDTH	DESCRIPTION
IL RTE 31	100+00 TO 107+50	12''	FULL WIDTH NEW PAVEMENT	NOTE 4
IL RTE 31	107+50 TO 110+50	10''	FULL WIDTH NEW PAVEMENT	NOTE 2
IL RTE 31	110+50 TO 113+50	32''	FULL WIDTH NEW PAVEMENT	NOTE 2 OR 3
IL RTE 31	113+50 TO 116+50	12	FULL WIDTH NEW PAVEMENT	NOTE 3
IL RTE 31	116+50 TO 119+50	72''	FULL WIDTH NEW PAVEMENT	NOTE 3
IL RTE 31	127+90 TO 131+40	1' - 5'	FULL WIDTH NEW EMBANKMENT	NOTE 6
IL RTE 31	152+00 TO 155+50	12''	FULL WIDTH NEW PAVEMENT	NOTE 4
IL RTE 31	174+80 TO 177+80	30''	FULL WIDTH NEW PAVEMENT	NOTE 2 OR 3
IL RTE 31	177+80 TO 180+00	12''	FULL WIDTH NEW PAVEMENT	NOTE 4
RAMP B	11+70 TO 15+50	14''-108''	FULL WIDTH NEW EMBANKMENT	NOTE 3 & 5
RAMP D	14+00 TO 16+50	18''	FULL WIDTH NEW PAVEMENT	NOTE 2
RAMP D	16+50 TO 18+00	12''	FULL WIDTH NEW PAVEMENT	NOTE 2
IL RTE 62	50+00 TO 59+50	12''	FULL WIDTH NEW PAVEMENT	NOTE 2
N. MAIN ST	50+00 TO 58+00	12''	FULL WIDTH NEW PAVEMENT	NOTE 4

NOTE 1 DEPTH REFERS TO DEPTH BELOW DESIGN SUBGRADE ELEVATION
NOTE 2 UNDERCUT AND REPLACE WITH AGGREGATE SUBGRADE (PGEs) UNDERDRAIN
NOTE 3 UNDERCUT AND REPLACE WITH SUITABLE EMBANKMENT FILL
NOTE 4 DISK DRY AND COMPACT UPPER 12'' PER SECTION 301
NOTE 5 EMBANKMENTFILL REQUIRED TO MEET DESIGN SUBGRADE
NOTE 6 HIGH EMBANKMENT FILL REQUIRED, REMOVE ORGANIC LAYER PRIOR TO NEW FILL PLACEMENT



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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

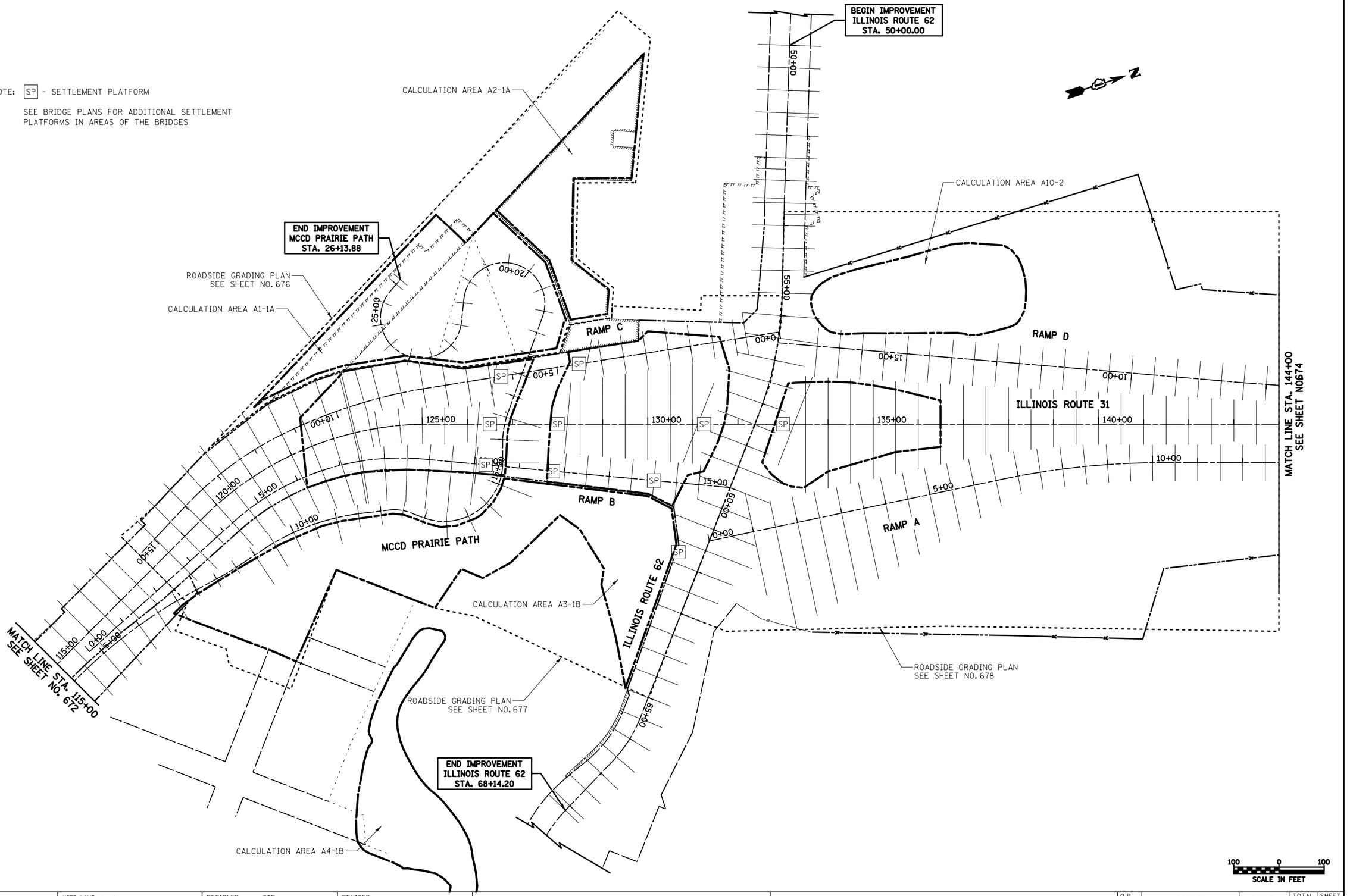
CROSS SECTION LOCATIONS

SCALE: 1'' = 100' | SHEET NO. 1 OF 4 SHEETS | STA. | TO STA.

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	672
		CONTRACT NO. 60F72		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

NOTE: SP - SETTLEMENT PLATFORM

SEE BRIDGE PLANS FOR ADDITIONAL SETTLEMENT PLATFORMS IN AREAS OF THE BRIDGES



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		DRAWN - AKW	REVISED -			0003	18A-2	MCHENRY	825	673
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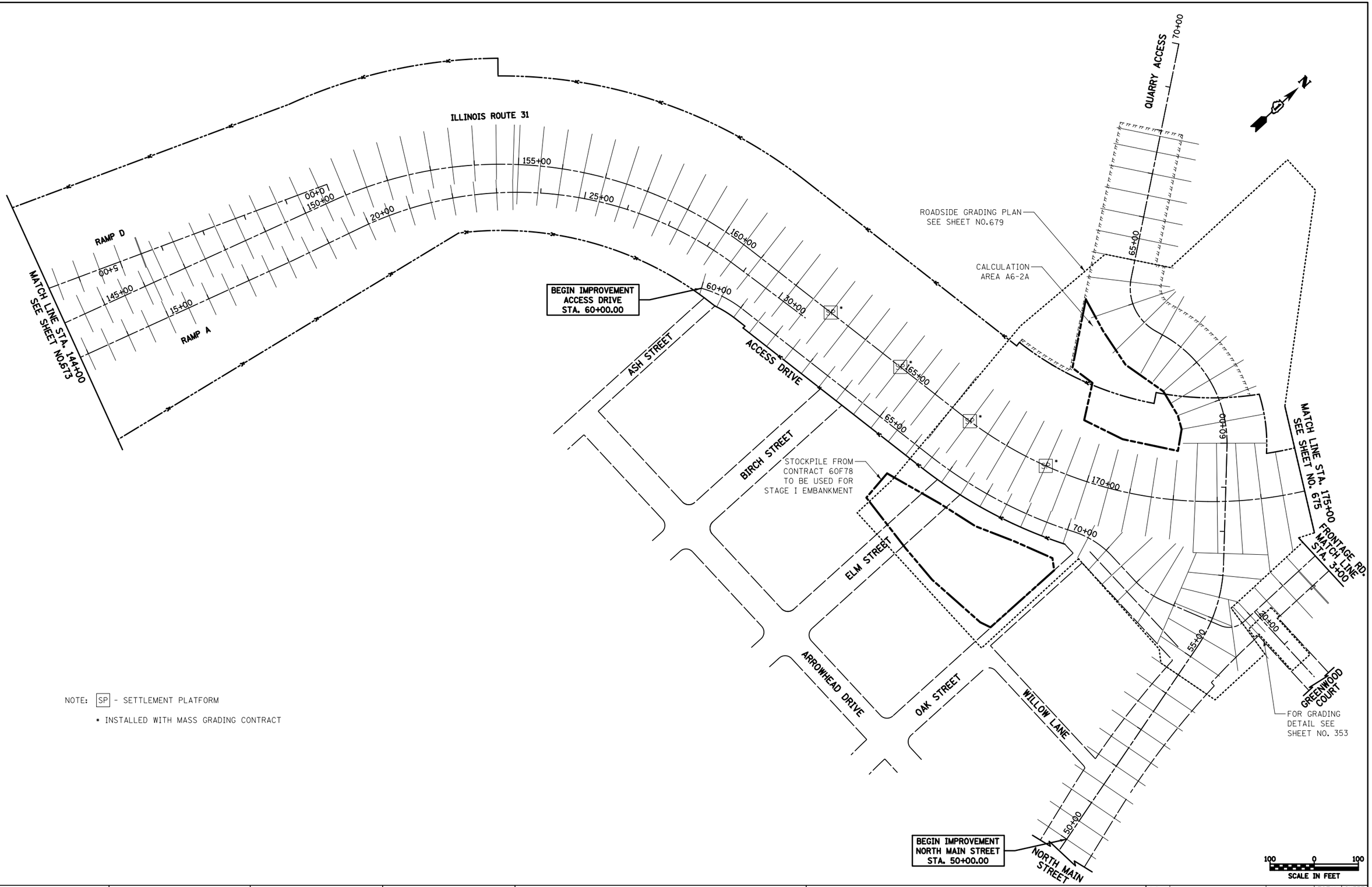
	PLOT DATE = 5/3/2012	DATE - 5/3/2012	REVISED -		SCALE: 1" = 100' SHEET NO. 2 OF 4 SHEETS STA. TO STA.	FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



NOTE: SP - SETTLEMENT PLATFORM

• INSTALLED WITH MASS GRADING CONTRACT

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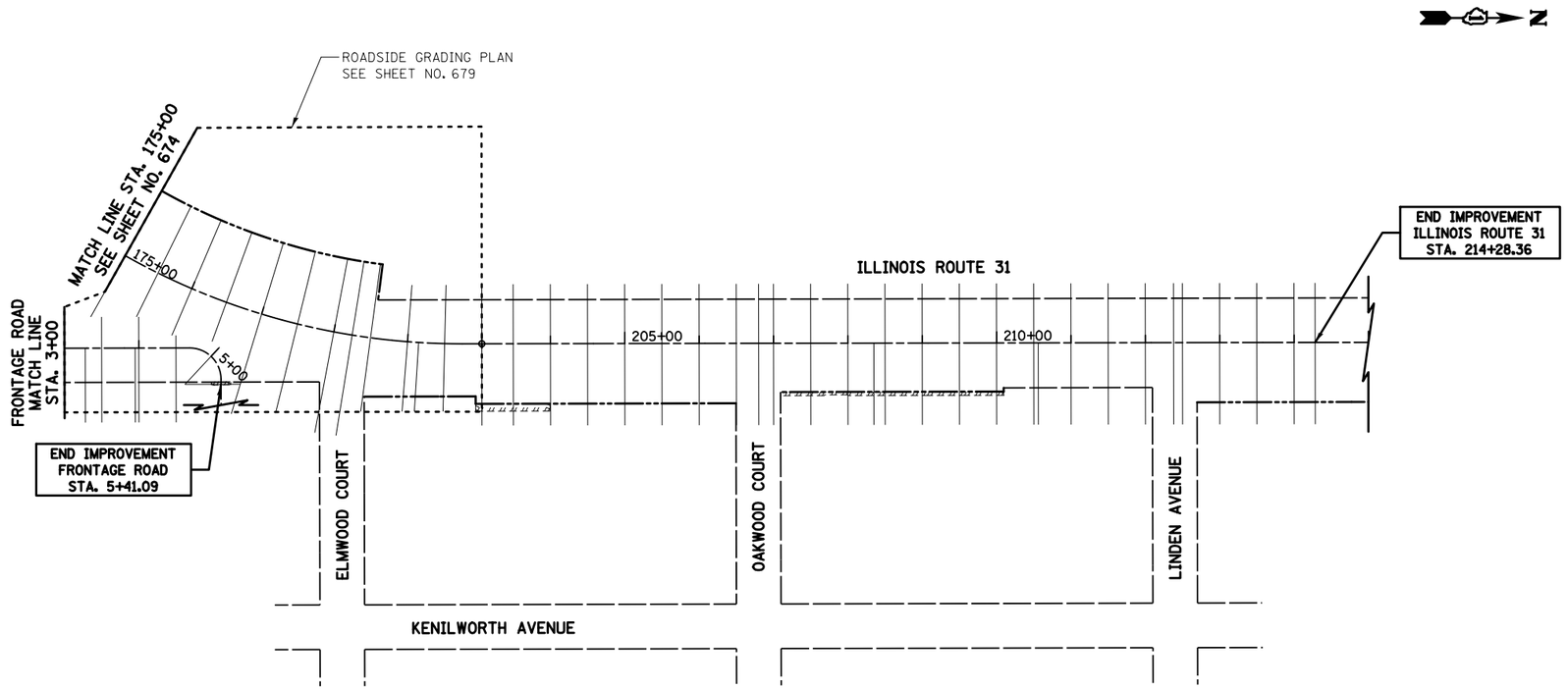
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTION LOCATIONS

SCALE: 1" = 100' | SHEET NO. 3 OF 4 SHEETS | STA. | TO STA.

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	674
		CONTRACT NO. 60F72		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



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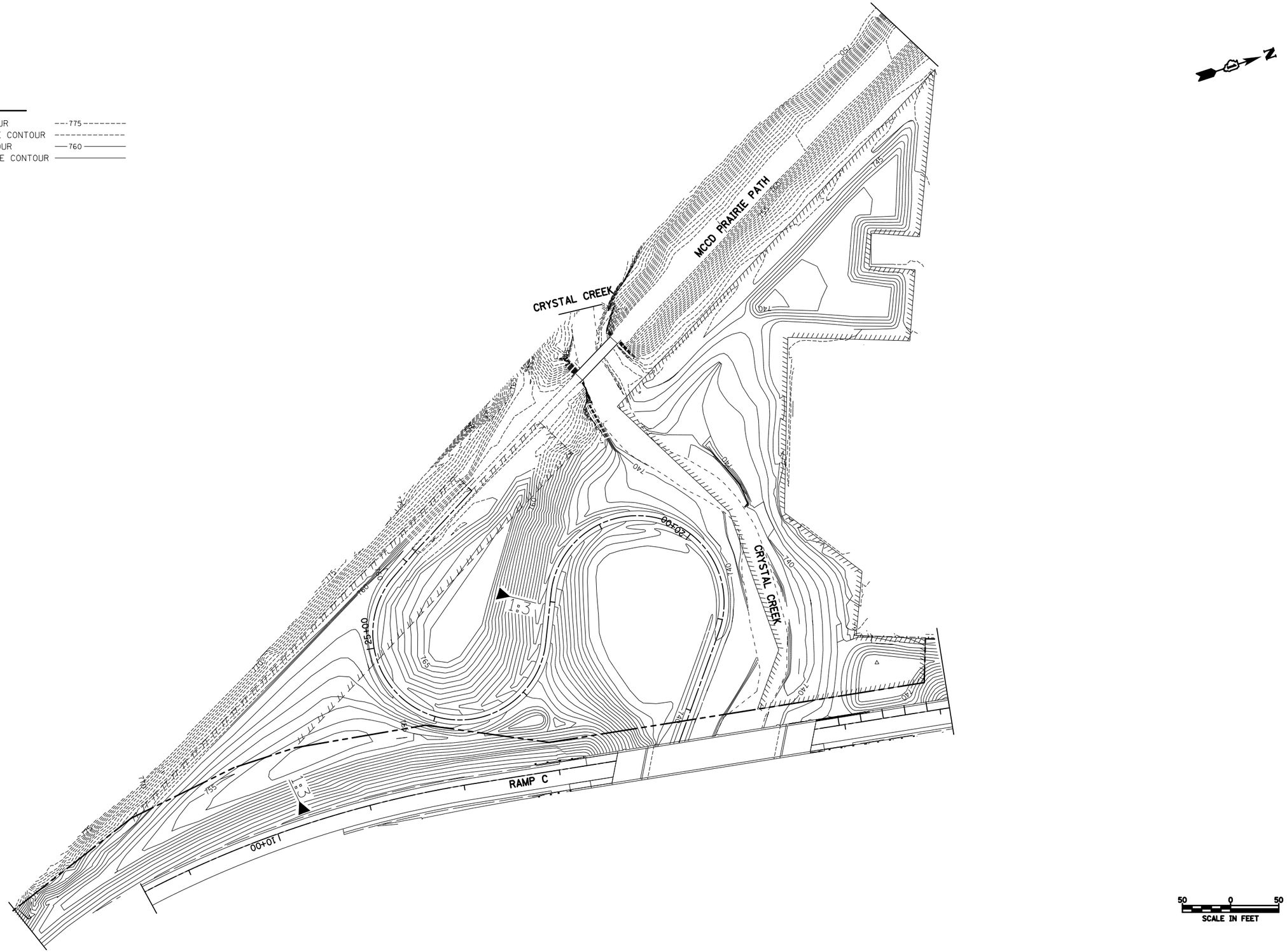
		DRAWN - AKW	REVISED -			0003	18A-2	MCHENRY	825	675
	PLOT SCALE = 200.0000 ' / in.	CHECKED - PML	REVISED -							CONTRACT NO. 60F72
	PLOT DATE = 5/2/2012	DATE - 5/3/2012	REVISED -		SCALE: 1" = 100' SHEET NO. 4 OF 4 SHEETS STA. TO STA.	FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

LEGEND

EXISTING INDEX CONTOUR ---775---
EXISTING INTERMEDIATE CONTOUR ----------
PROPOSED INDEX CONTOUR —760—
PROPOSED INTERMEDIATE CONTOUR ——————



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	PLOT DATE = 5/2/2012	DATE - 5/3/2012	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

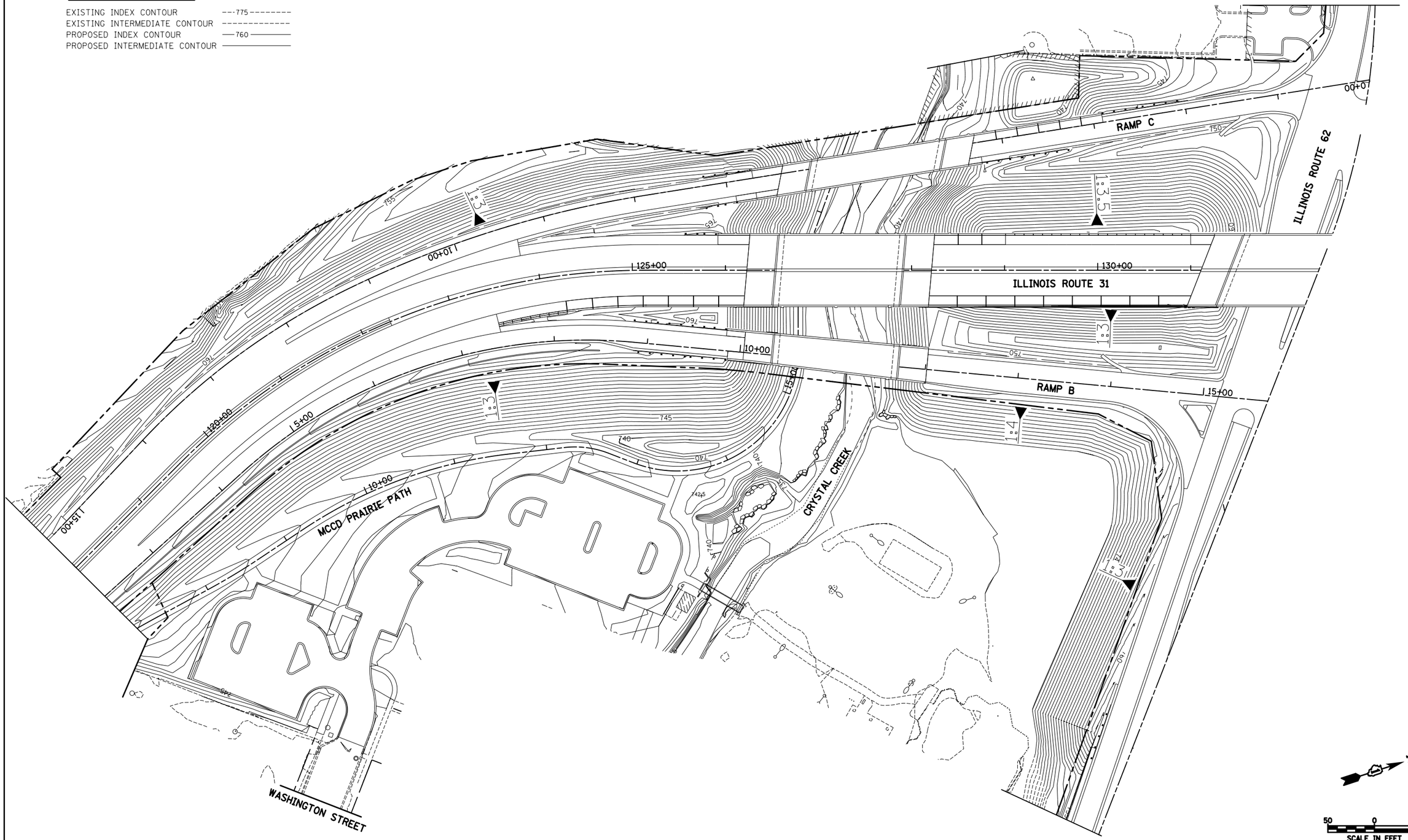
ROADSIDE GRADING PLAN

SCALE: 1" = 50' | SHEET NO. 1 OF 4 SHEETS | STA. | TO STA.

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	676
		CONTRACT NO. 60F72		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

LEGEND

EXISTING INDEX CONTOUR ---775---
EXISTING INTERMEDIATE CONTOUR ----------
PROPOSED INDEX CONTOUR —760—
PROPOSED INTERMEDIATE CONTOUR ——————



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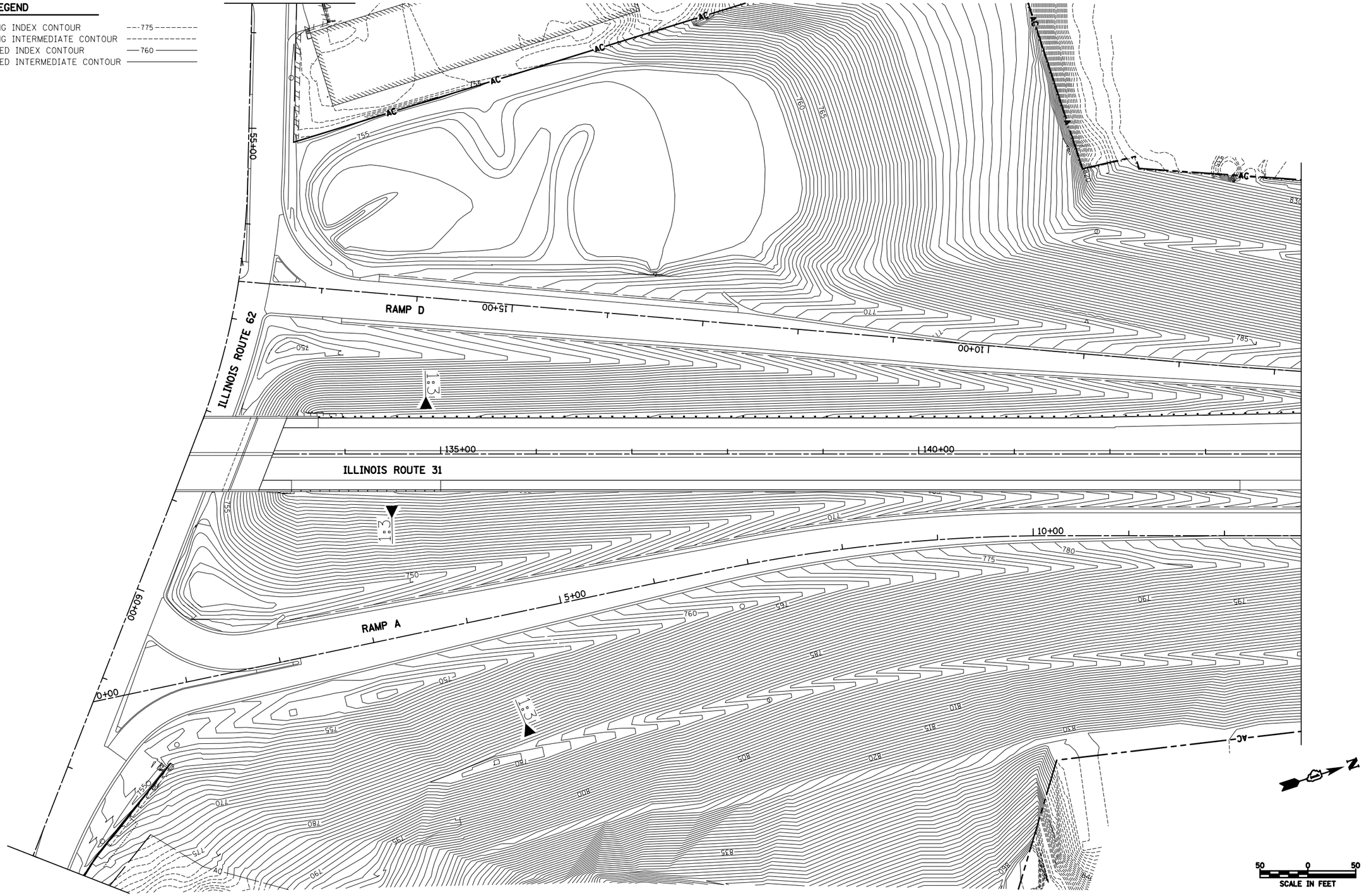
		DRAWN - AKW	REVISED -		
	PLOT SCALE = 100.0000 ' / in.	CHECKED - PML	REVISED -		SCALE: 1" = 50' | SHEET NO. 2 OF 4 SHEETS | STA. | TO STA.
	PLOT DATE = 5/2/2012	DATE - 5/3/2012	REVISED -		

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	677
		CONTRACT NO. 60F72		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

LEGEND

EXISTING INDEX CONTOUR ---775---
EXISTING INTERMEDIATE CONTOUR ----------
PROPOSED INDEX CONTOUR —760—
PROPOSED INTERMEDIATE CONTOUR ——————



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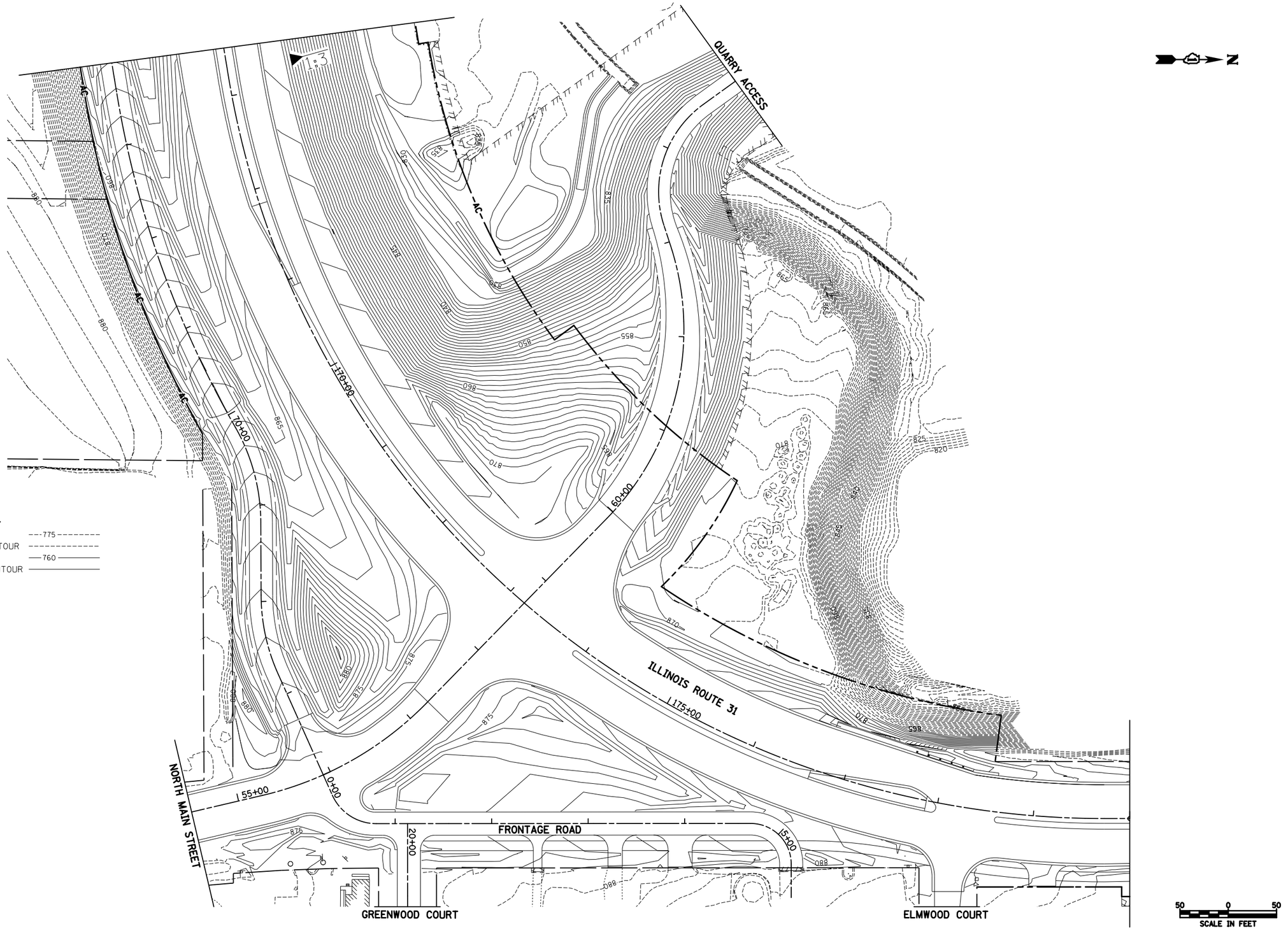
	PLOT DATE = 5/2/2012	DATE - 5/3/2012	REVISED -		SCALE: 1" = 50'	SHEET NO. 3 OF 4 SHEETS	STA.	TO STA.

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	678
		CONTRACT NO. 60F72		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



LEGEND

EXISTING INDEX CONTOUR ---775---
EXISTING INTERMEDIATE CONTOUR ----------
PROPOSED INDEX CONTOUR ——760——
PROPOSED INTERMEDIATE CONTOUR ——————

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SCALE IN FEET

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		DRAWN - AKW	REVISED -
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	PLOT DATE = 5/2/2012	DATE - 5/3/2012	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

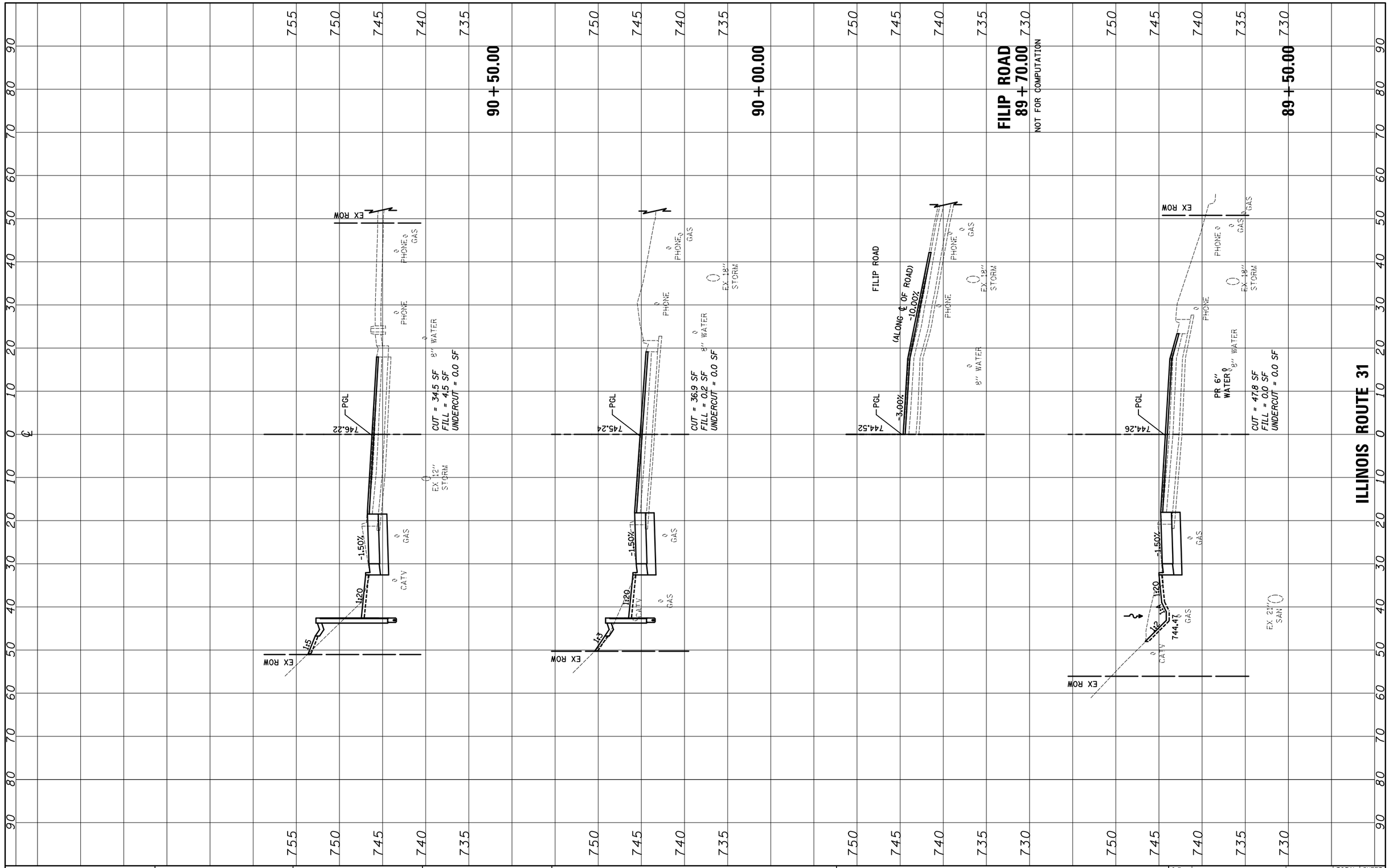
ROADSIDE GRADING PLAN

SCALE: 1" = 50' | SHEET NO. 4 OF 4 SHEETS | STA. | TO STA.

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	679
		CONTRACT NO. 60F72		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
	TEMPLATE		
	AREAS		
NO.	AREAS CHECKED		

ORIGINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
	TEMPLATE		
	AREAS		
NO.	AREAS CHECKED		



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		DRAWN - PML	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED - GAB	REVISED -
	PLOT DATE = 5/2/2012	DATE - 5/3/2012	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

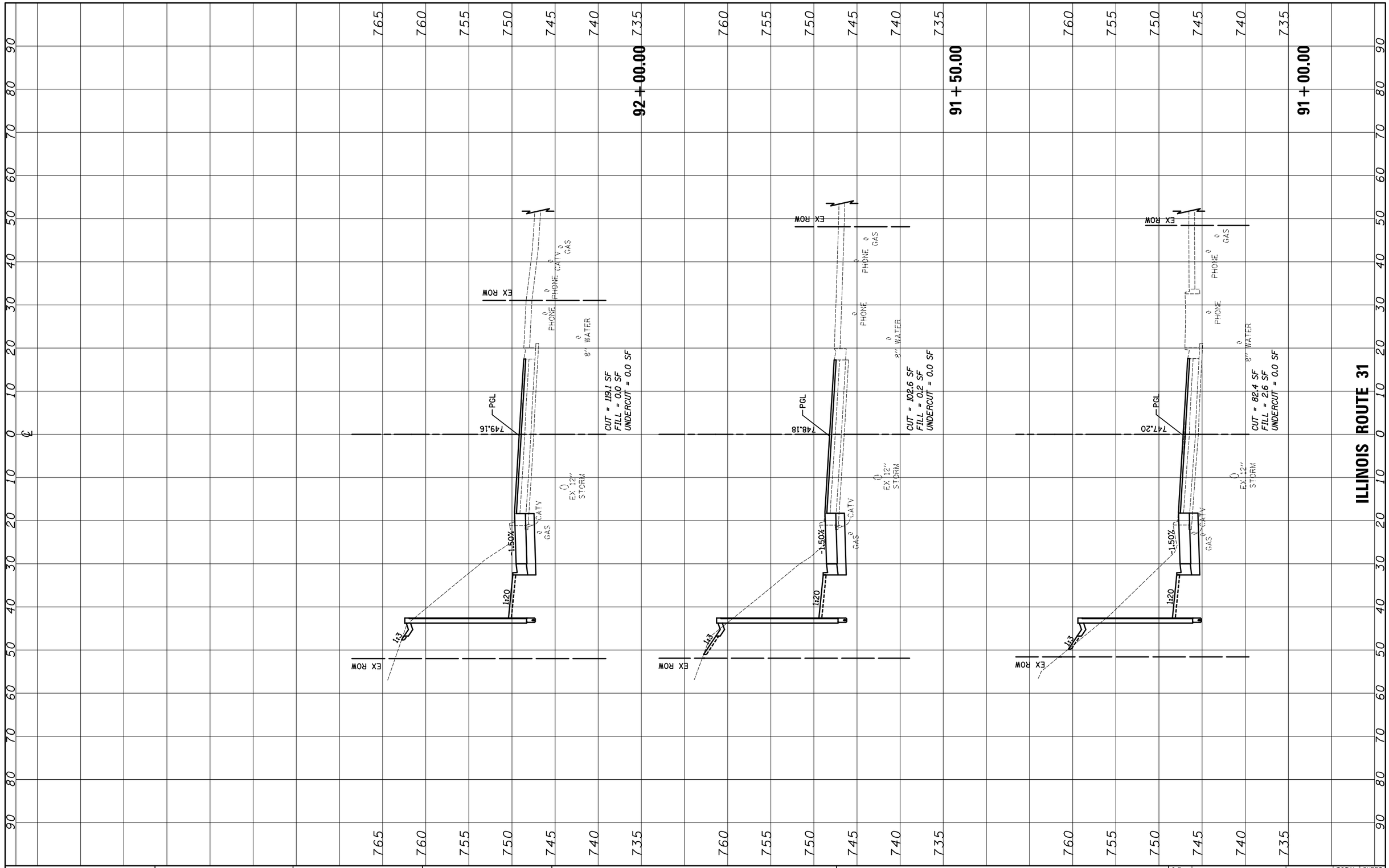
CROSS SECTIONS

SCALE: 10'H: 5'V | SHEET NO. 2 OF 64 SHEETS | STA. 89+50.00 TO STA. 90+50.00

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	681
		CONTRACT NO. 60F72		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

FINAL SURVEY		BY	DATE
	SURVEYED		
	PLOTTED		
NOTE BOOK	TEMPLATE		
	AREAS		
NO.	AREAS CHECKED		

ORIGINAL SURVEY		BY	DATE
	SURVEYED		
	PLOTTED		
NOTE BOOK	TEMPLATE		
	AREAS		
NO.	AREAS CHECKED		



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		DRAWN - PML	REVISED -		
	PLOT SCALE = 20.0000 ' / in.	CHECKED - GAB	REVISED -		
	PLOT DATE = 5/2/2012	DATE - 5/3/2012	REVISED -		

SCALE: 10'H: 5'V | SHEET NO. 3 OF 64 SHEETS | STA. 91+00.00 TO STA. 92+00.00

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	682
		CONTRACT NO. 60F72		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

ORIGINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	AREAS CHECKED		

FINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	AREAS CHECKED		

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USER NAME = dkw

PLOT SCALE = 20.0000 ' / in.

PLOT DATE = 5/2/2012

DESIGNED	-	PML
DRAWN	-	PML
CHECKED	-	GAB
DATE	-	5/3/2012

REVISED	-	
REVISED	-	
REVISED	-	
REVISED	-	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

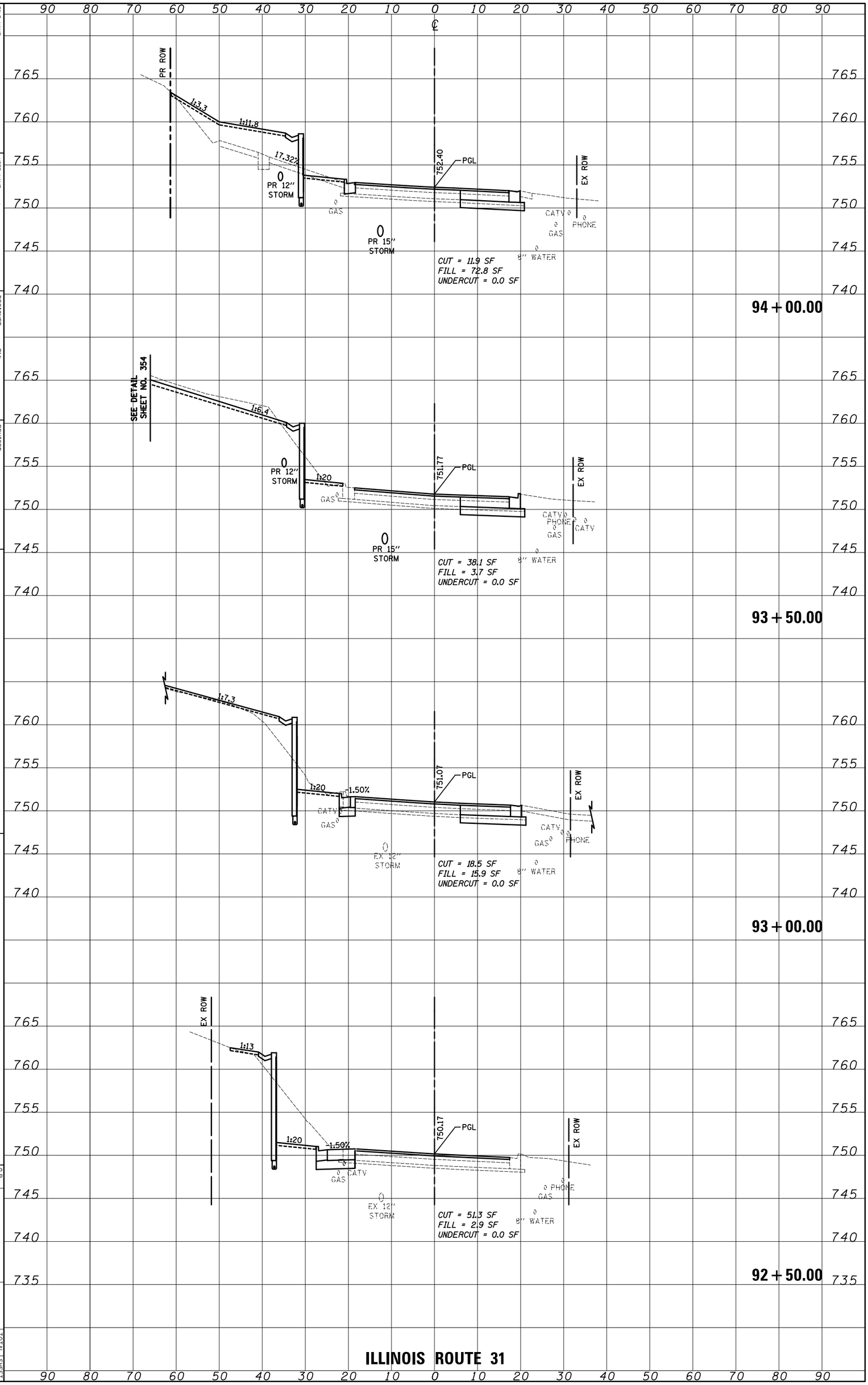
CROSS SECTIONS

SCALE: 10'H: 5'V | SHEET NO. 4 OF 64 SHEETS | STA. 92+50.00 TO STA. 94+00.00

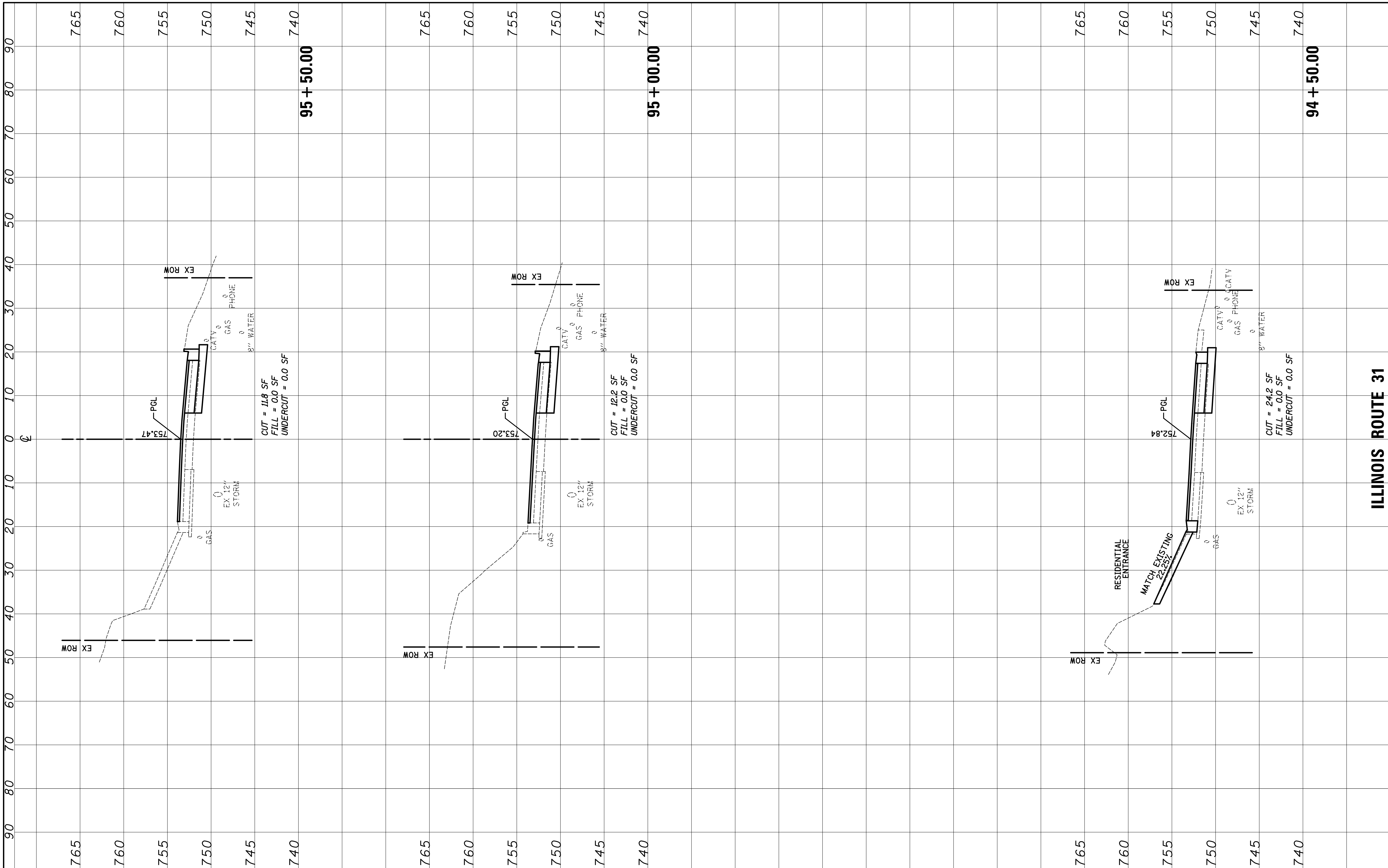
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	683

FED. ROAD DIST. NO. 1 | ILLINOIS | FED. AID PROJECT

CONTRACT NO. 60F72



ILLINOIS ROUTE 31



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	PLOT SCALE = 20.0000 ' / in.	CHECKED - GAB	REVISED -	
	PLOT DATE = 5/2/2012	DATE - 5/3/2012	REVISED -	

CROSS SECTIONS

SCALE: 10'H: 5'V | SHEET NO. 5 OF 64 SHEETS | STA. 94+50.00 TO STA. 95+50.00

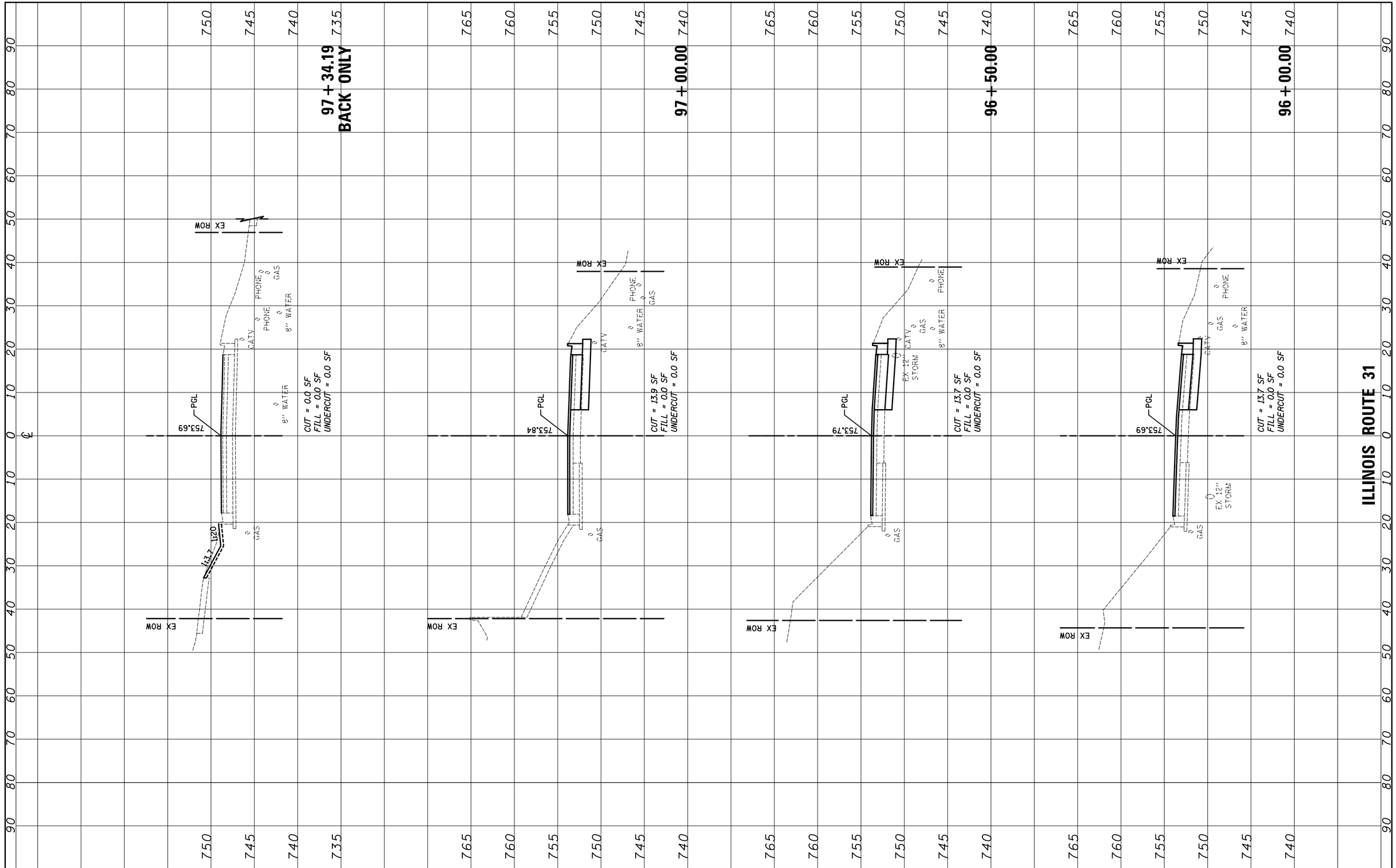
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	684

CONTRACT NO. 60F72

FED. ROAD DIST. NO. 1 | ILLINOIS | FED. AID PROJECT

FINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
NO.	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		

ORIGINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
NO.	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		



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	PLOT DATE = 5/2/2012	DATE - 5/3/2012	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

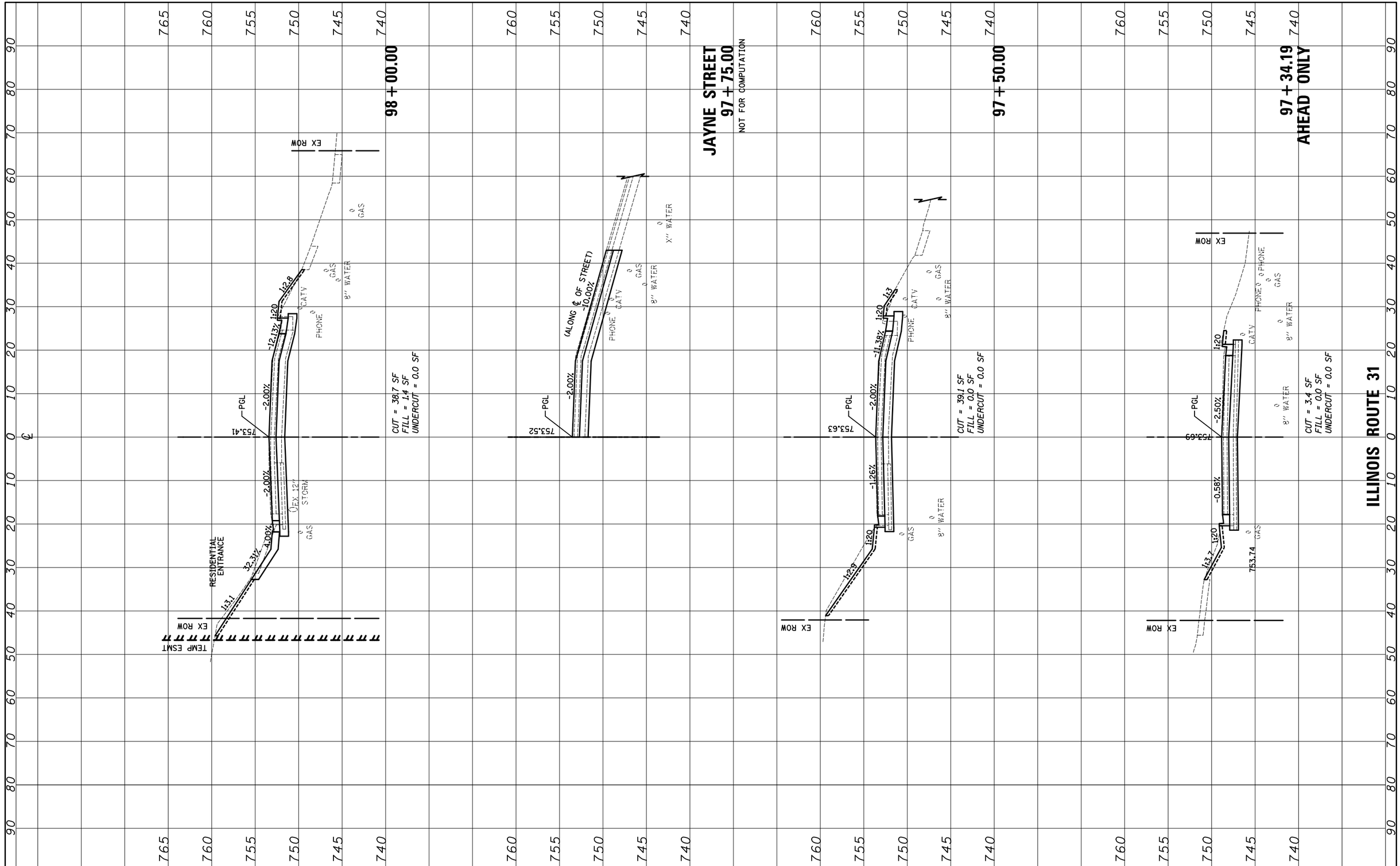
CROSS SECTIONS

SCALE: 10'H: 5'V | SHEET NO. 6 OF 64 SHEETS | STA. 96+00.00 TO STA. 97+34.19(BK)

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	685
		CONTRACT NO. 60F72		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	AREAS CHECKED		

ORIGINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	AREAS CHECKED		



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	PLOT DATE = 5/2/2012	DATE - 5/3/2012	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

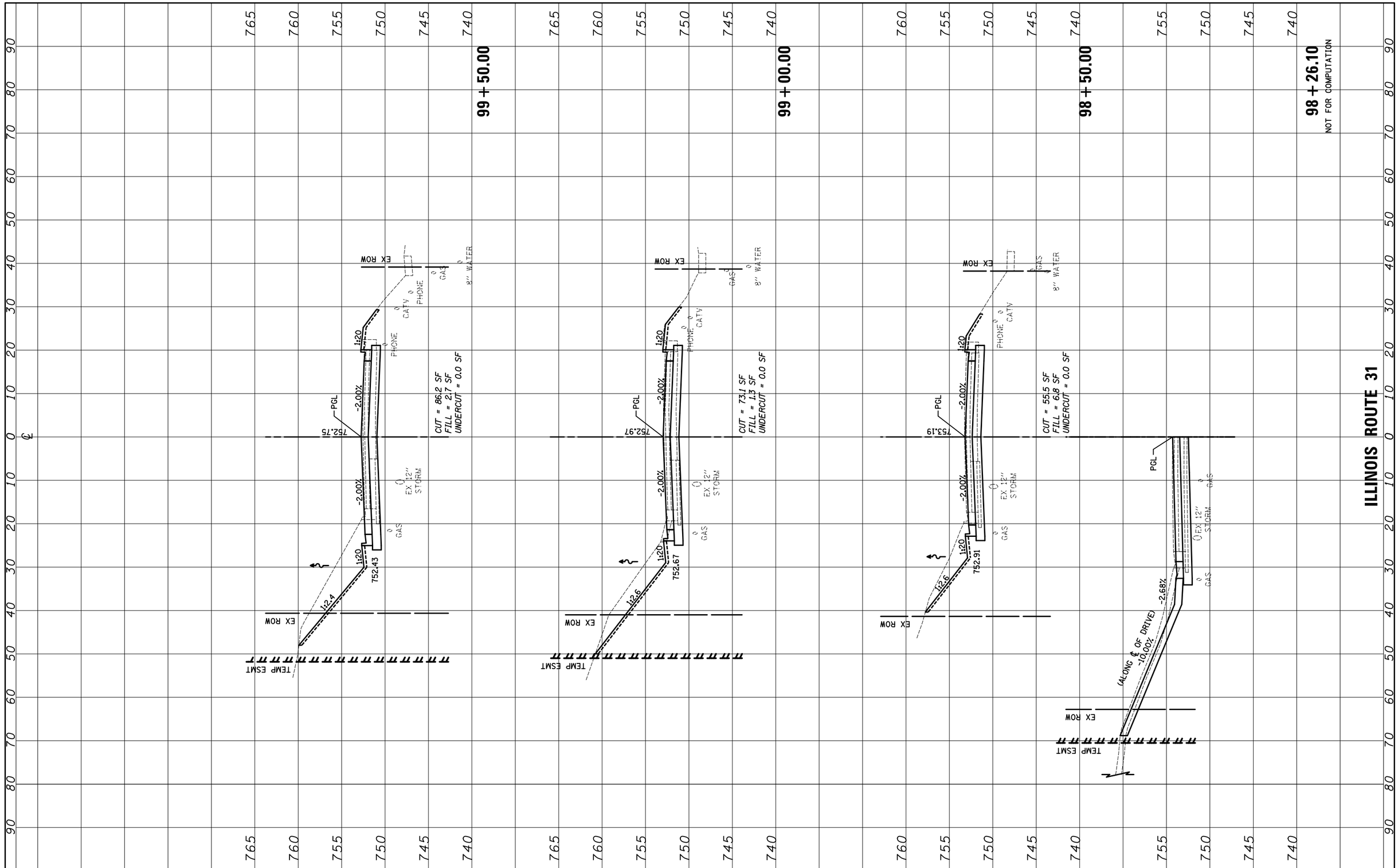
CROSS SECTIONS

SCALE: 10'H: 5'V | SHEET NO. 7 OF 64 SHEETS | STA. 97+34.19(AH) TO STA. 98+00.00

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	686
		CONTRACT NO. 60F72		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

FINAL SURVEY	SURVEYED	BY	DATE
	PLOTTED		
NOTE BOOK	TEMPLATE		
NO.	AREAS		
	AREAS CHECKED		

ORIGINAL SURVEY	SURVEYED	BY	DATE
	PLOTTED		
NOTE BOOK	TEMPLATE		
NO.	AREAS		
	AREAS CHECKED		



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	PLOT DATE = 5/2/2012	DATE - 5/3/2012	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS

SCALE: 10'H: 5'V | SHEET NO. 8 OF 64 SHEETS | STA. 98+26.10 TO STA. 99+50.00

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	687
		CONTRACT NO. 60F72		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

ORIGINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
NO.	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		

FINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
NO.	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		

FILE NAME = ...\D1608772-sht-xssht-01_Bypass_South.dgn

USER NAME = dkw

PLOT SCALE = 20.0000 ' / in.

PLOT DATE = 5/2/2012

	DESIGNED	-	PML	REVISED	-
	DRAWN	-	PML	REVISED	-
DATE	CHECKED	-	GAB	REVISED	-
5/3/2012				REVISED	-

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

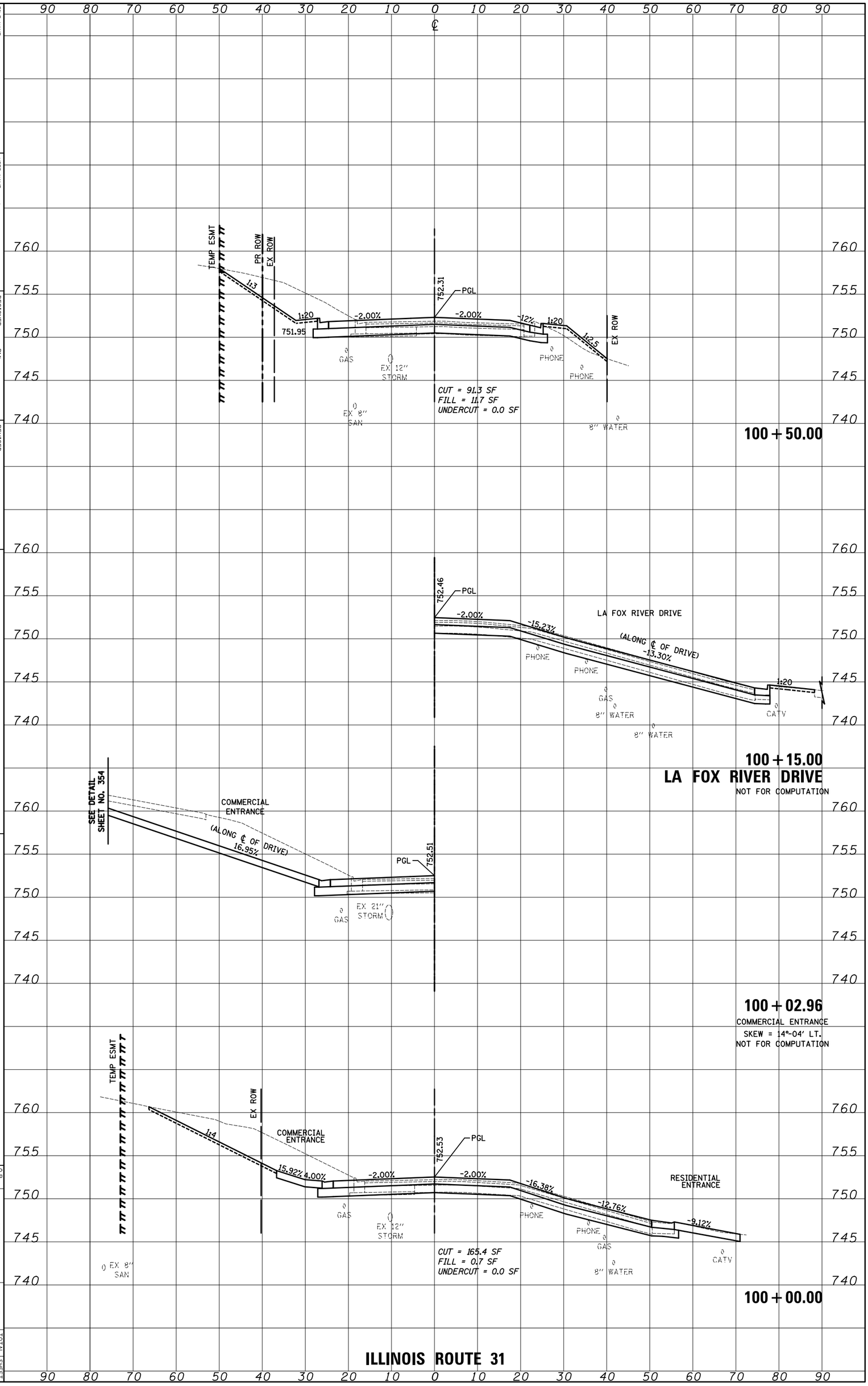
CROSS SECTIONS

SCALE: 10'H: 5'V | SHEET NO. 9 OF 64 SHEETS | STA. 100+00.00 TO STA. 100+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	184-2	MCHENRY	825	688

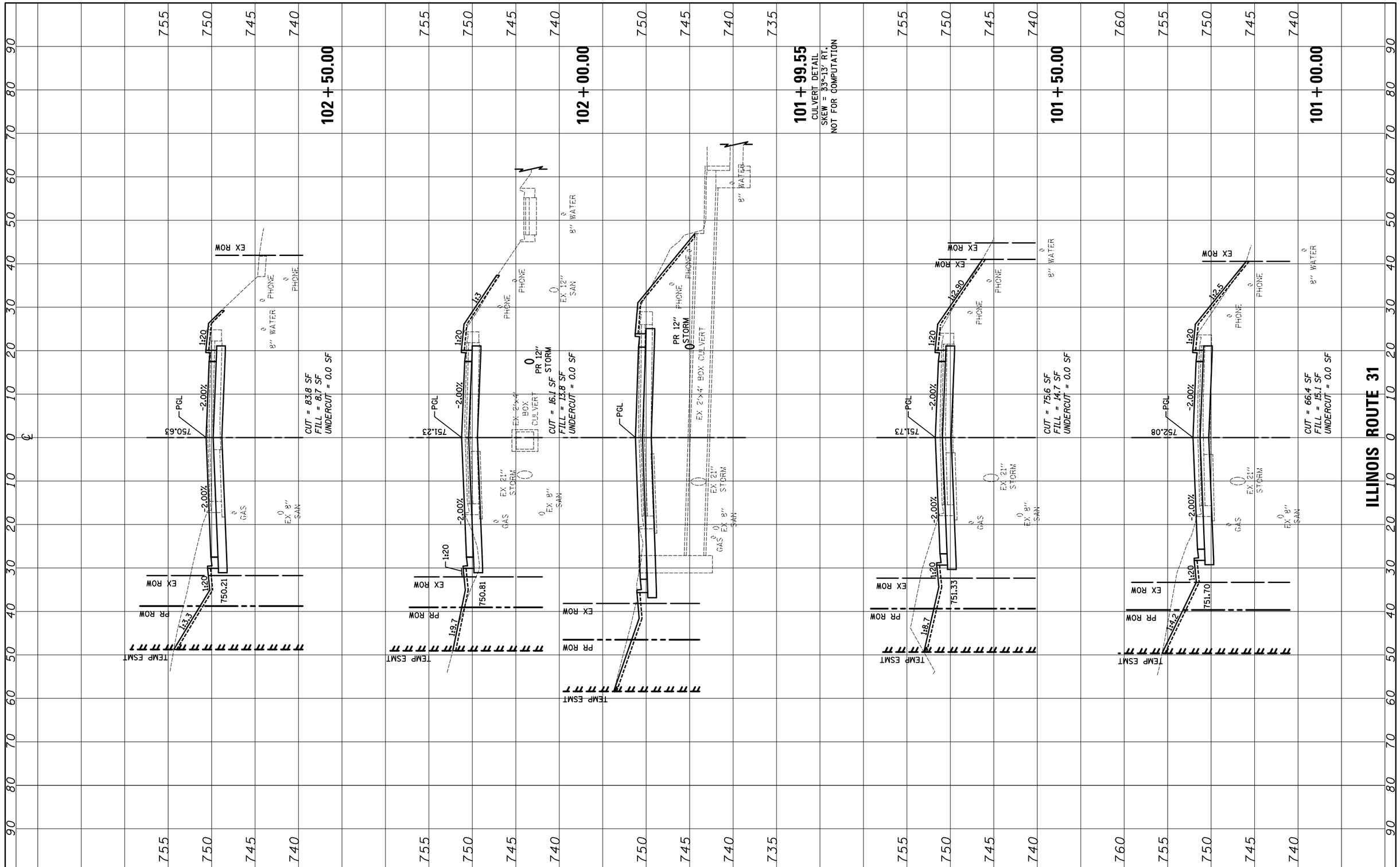
FED. ROAD DIST. NO. 1 | ILLINOIS | FED. AID PROJECT

CONTRACT NO. 60F72



FINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
NO.	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		

ORIGINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
NO.	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		



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	PLOT DATE = 5/2/2012	DATE - 5/3/2012	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

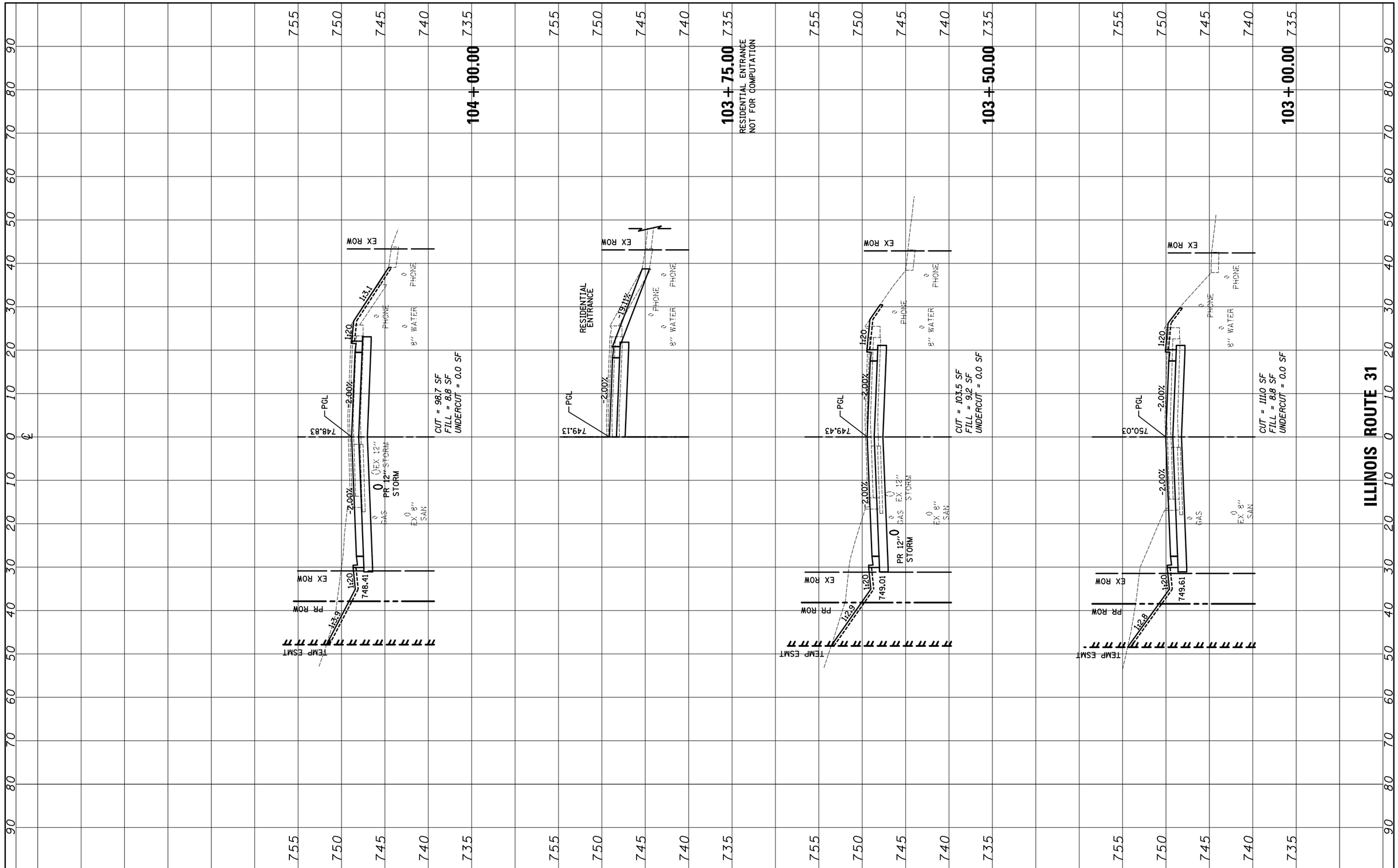
CROSS SECTIONS

SCALE: 10'H: 5'V | SHEET NO. 10 OF 64 SHEETS | STA. 101+00.00 TO STA. 102+50.00

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	689
		CONTRACT NO. 60F72		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	AREAS CHECKED		

ORIGINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	AREAS CHECKED		



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	PLOT DATE = 5/2/2012	DATE - 5/3/2012	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

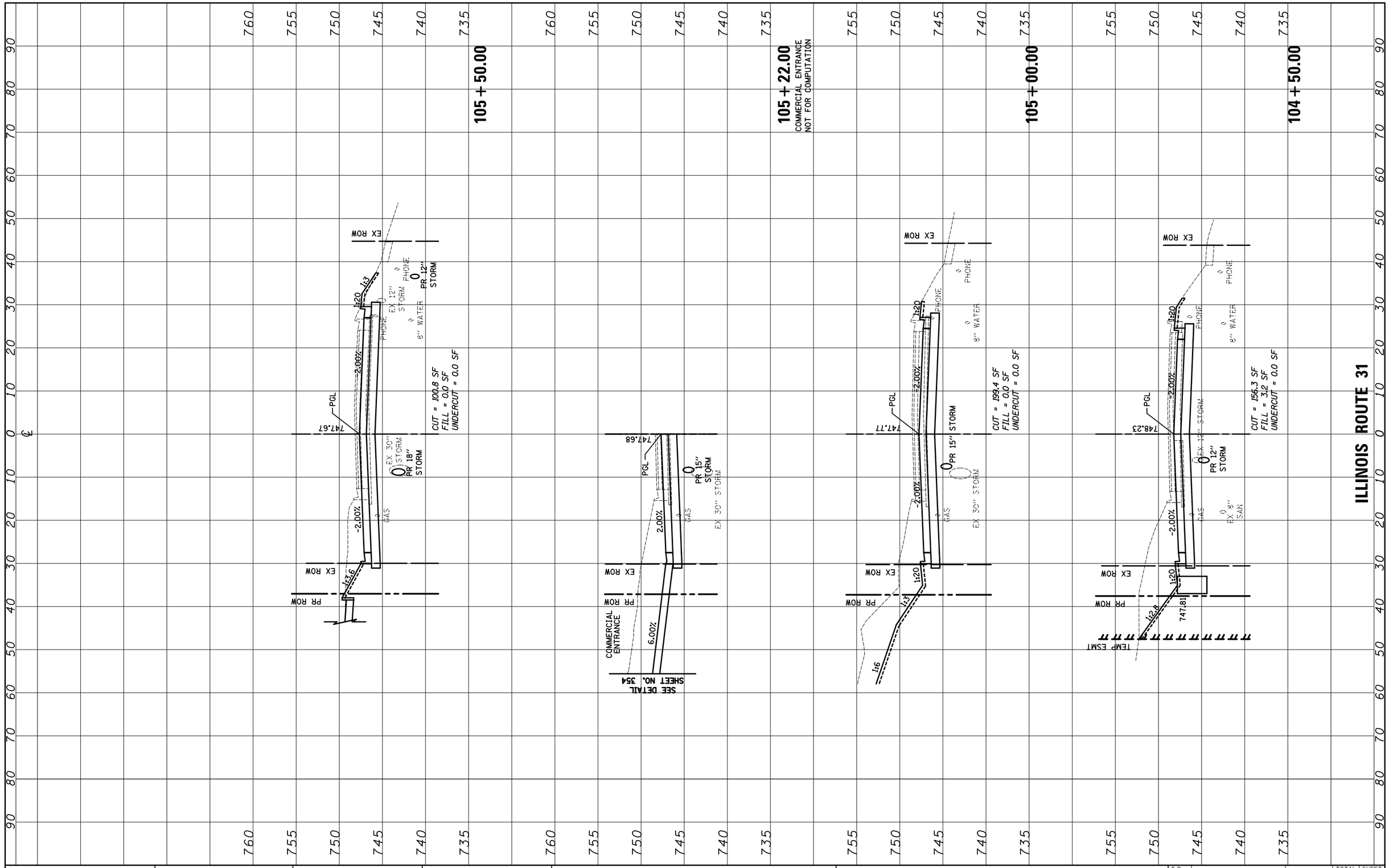
CROSS SECTIONS

SCALE: 10'H: 5'V | SHEET NO. 11 OF 64 SHEETS | STA. 103+00.00 TO STA. 104+00.00

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	690
		CONTRACT NO. 60F72		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

FINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
NO.	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		

ORIGINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
NO.	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		



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	PLOT SCALE = 20.0000 ' / in.	CHECKED - GAB	REVISED -
	PLOT DATE = 5/2/2012	DATE - 5/3/2012	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS

SCALE: 10'H: 5'V | SHEET NO. 12 OF 64 SHEETS | STA. 104+50.00 TO STA. 105+50.00

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	691
		CONTRACT NO. 60F72		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

ORIGINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
NO.	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		

FINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
NO.	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		

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USER NAME = dkw

PLOT SCALE = 20.0000 ' / in.

PLOT DATE = 5/2/2012

DESIGNED	-	PML
DRAWN	-	PML
CHECKED	-	GAB
DATE	-	5/3/2012

REVISED	-	
REVISED	-	
REVISED	-	
REVISED	-	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

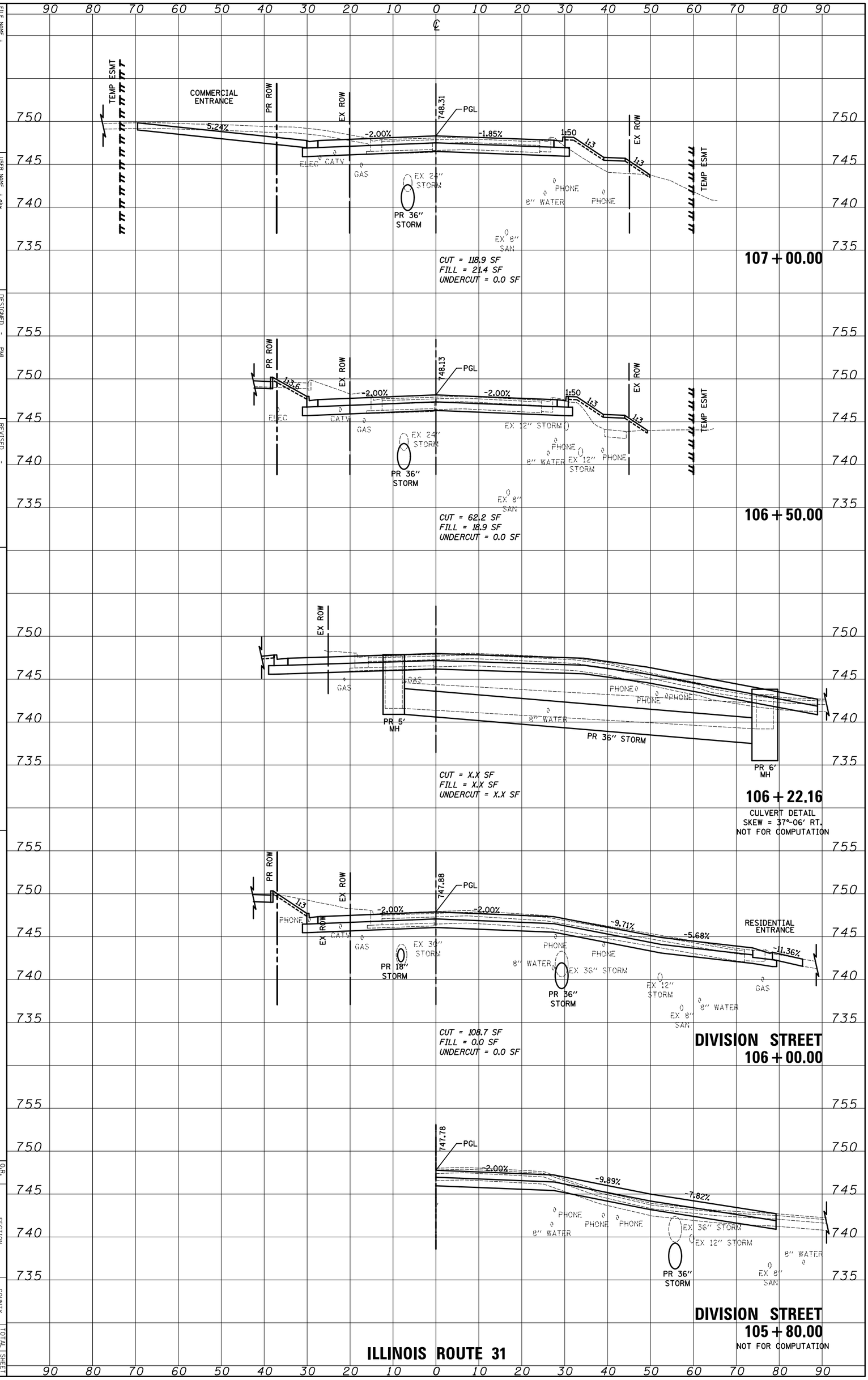
CROSS SECTIONS

SCALE: 10'H: 5'V | SHEET NO. 13 OF 64 SHEETS | STA. 105+80.00 TO STA. 107+00.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	692

FED. ROAD DIST. NO. 1 | ILLINOIS | FED. AID PROJECT

CONTRACT NO. 60F72



ORIGINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
NO.	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		

FINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
NO.	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		

FILE NAME = ...\D1608772-sht-xssht-01.Bypass.South.dgn

USER NAME = dkw

PLOT SCALE = 20.0000 ' / in.

PLOT DATE = 5/2/2012

	DESIGNED	-	PML
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	CHECKED	-	GAB
	DATE	-	5/3/2012

	REVISED	-
	REVISED	-
	REVISED	-
	REVISED	-

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

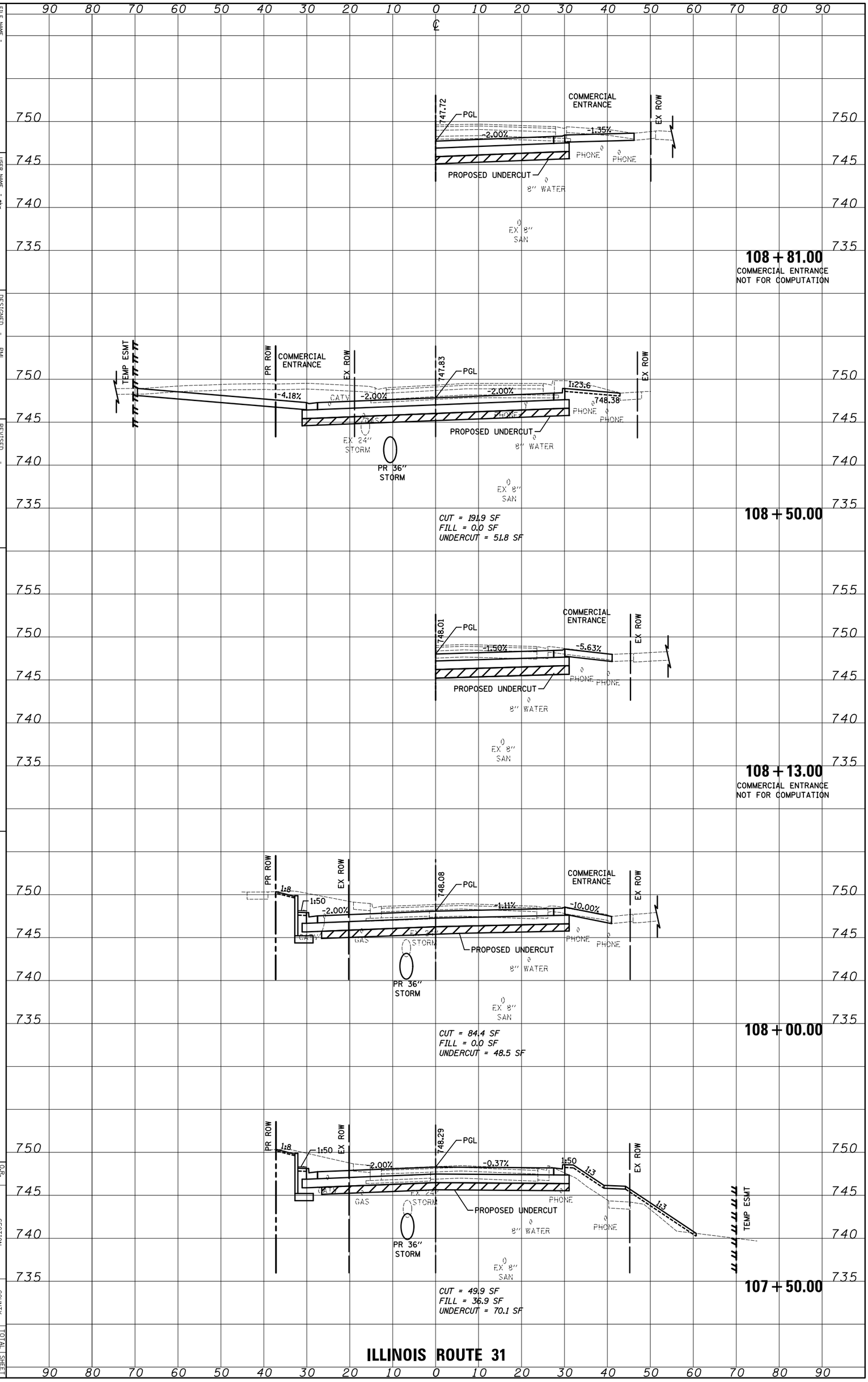
CROSS SECTIONS

SCALE: 10'H: 5'V | SHEET NO. 14 OF 64 SHEETS | STA. 107+50.00 TO STA. 108+81.00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	693

FED. ROAD DIST. NO. 1 | ILLINOIS | FED. AID PROJECT

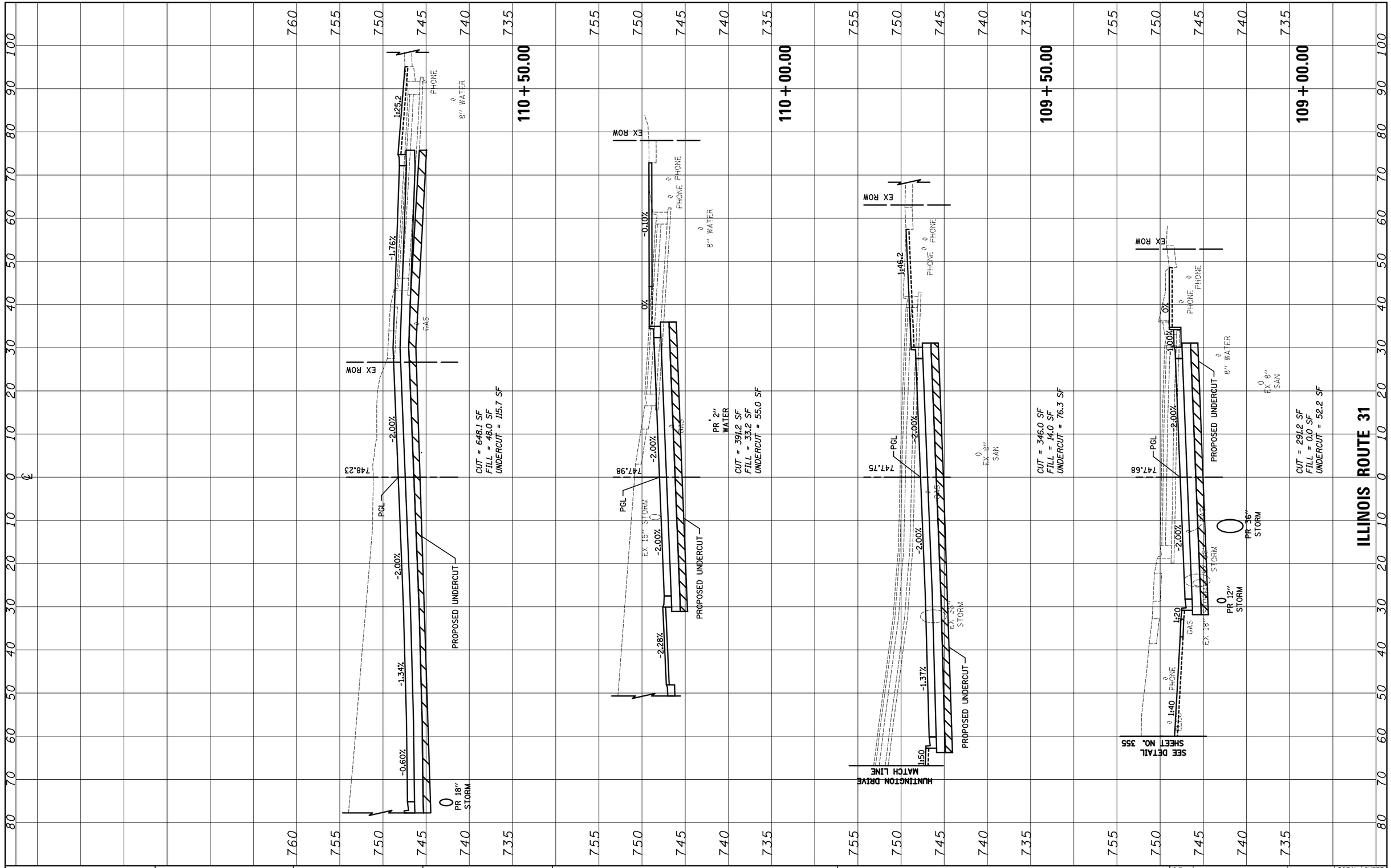
CONTRACT NO. 60F72



ILLINOIS ROUTE 31

FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	AREAS CHECKED		

ORIGINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	AREAS CHECKED		



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	PLOT SCALE = 20.0000 ' / in.	CHECKED - GAB	REVISED -
	PLOT DATE = 5/2/2012	DATE - 5/3/2012	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

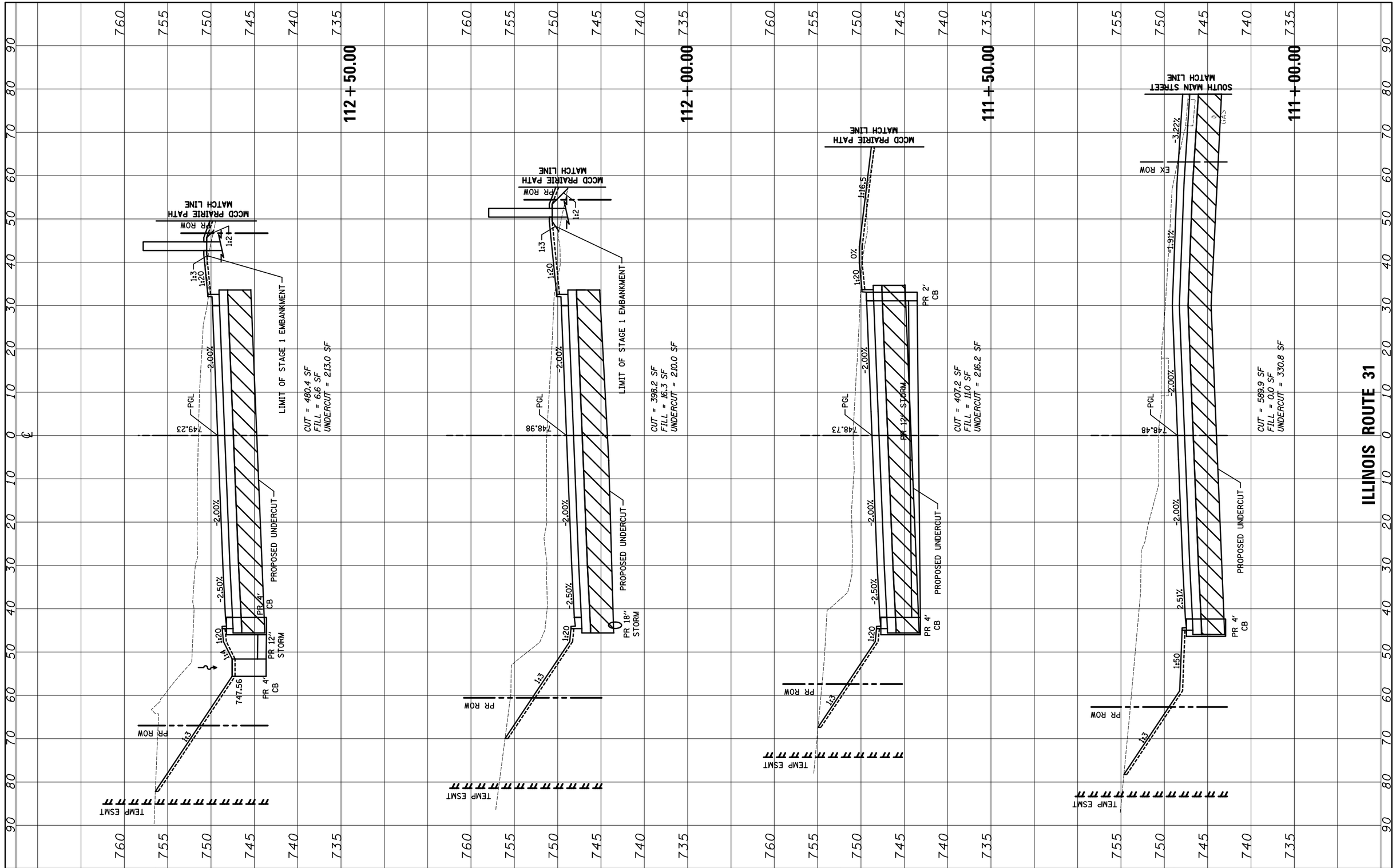
CROSS SECTIONS

SCALE: 10'H: 5'V | SHEET NO. 15 OF 64 SHEETS | STA. 109+00.00 TO STA. 110+50.00

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	694
		CONTRACT NO. 60F72		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	AREAS CHECKED		

ORIGINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	AREAS CHECKED		



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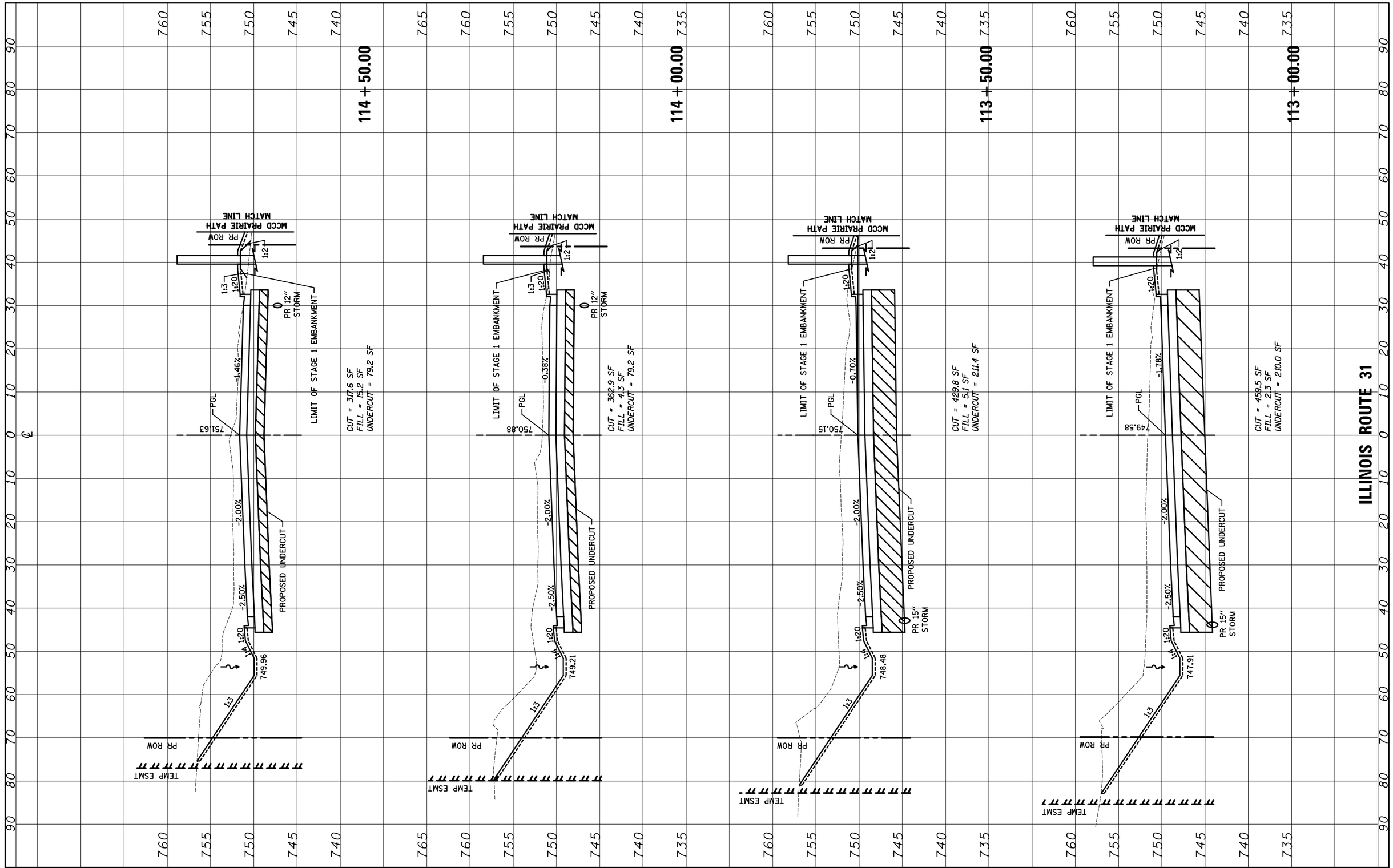
		DRAWN - PML	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED - GAB	REVISED -
	PLOT DATE = 5/2/2012	DATE - 5/3/2012	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS

SCALE: 10'H: 5'V | SHEET NO. 16 OF 64 SHEETS | STA. 111+00.00 TO STA. 112+50.00

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	695
		CONTRACT NO. 60F72		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



FINAL SURVEY

	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
	TEMPLATE		
	AREAS		
NO.	AREAS CHECKED		

ORIGINAL SURVEY

	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
	TEMPLATE		
	AREAS		
NO.	AREAS CHECKED		

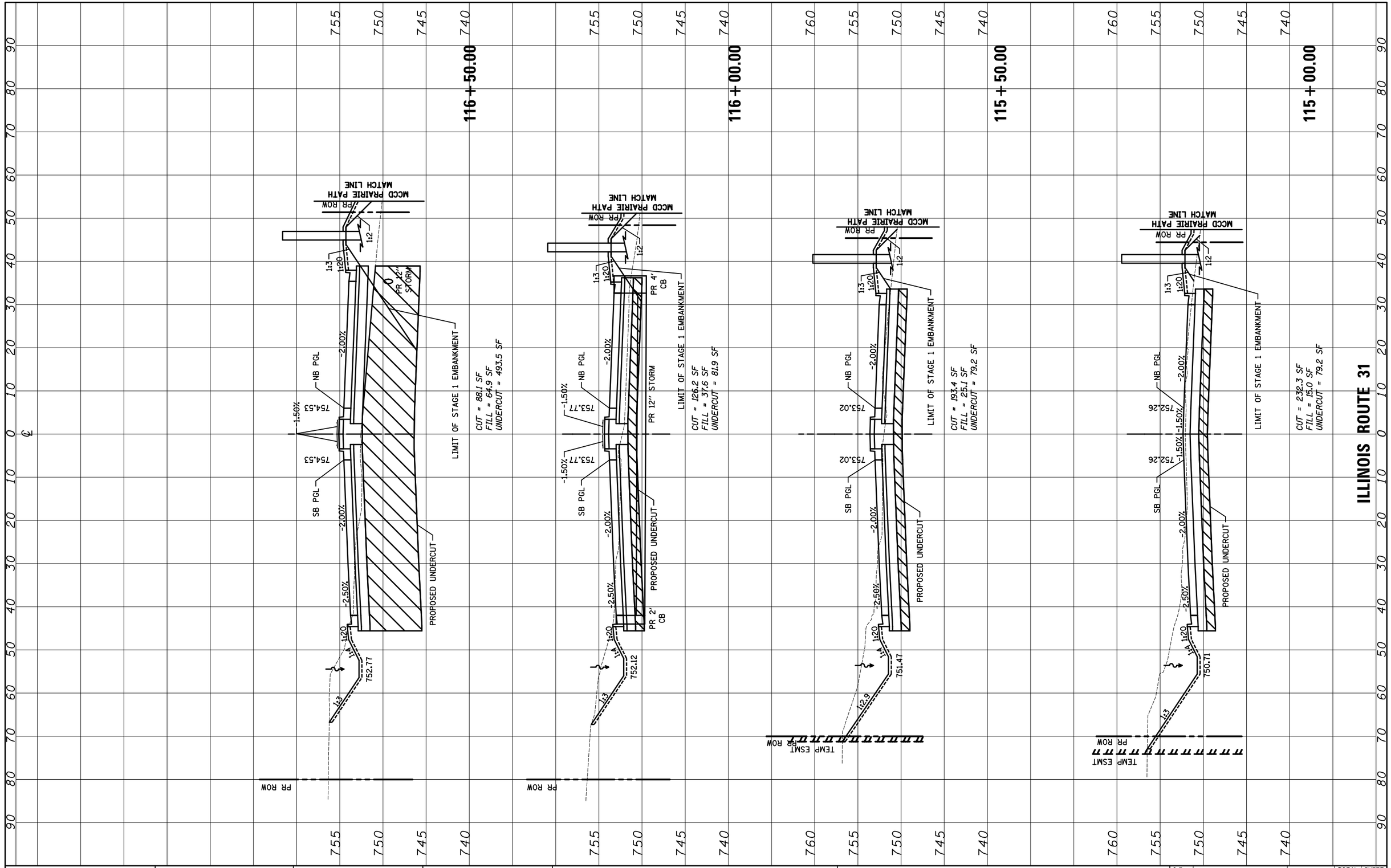
FILE NAME = ...\D160F72-sht-xssht-01_Bypass_South.dgn	USER NAME = akw	DESIGNED - PML	REVISED -
		DRAWN - PML	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED - GAB	REVISED -
	PLOT DATE = 5/2/2012	DATE - 5/3/2012	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS

SCALE: 10' H=5' V | SHEET NO. 17 OF 64 SHEETS | STA. 113+00.00 TO STA. 114+50.00

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	696
		CONTRACT NO. 60F72		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



ILLINOIS ROUTE 31

FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	AREAS CHECKED		

ORIGINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	AREAS CHECKED		

FILE NAME = ...\D160F72-sht-xssht-01_Bypass_South.dgn	USER NAME = dkw	DESIGNED - PML	REVISED -
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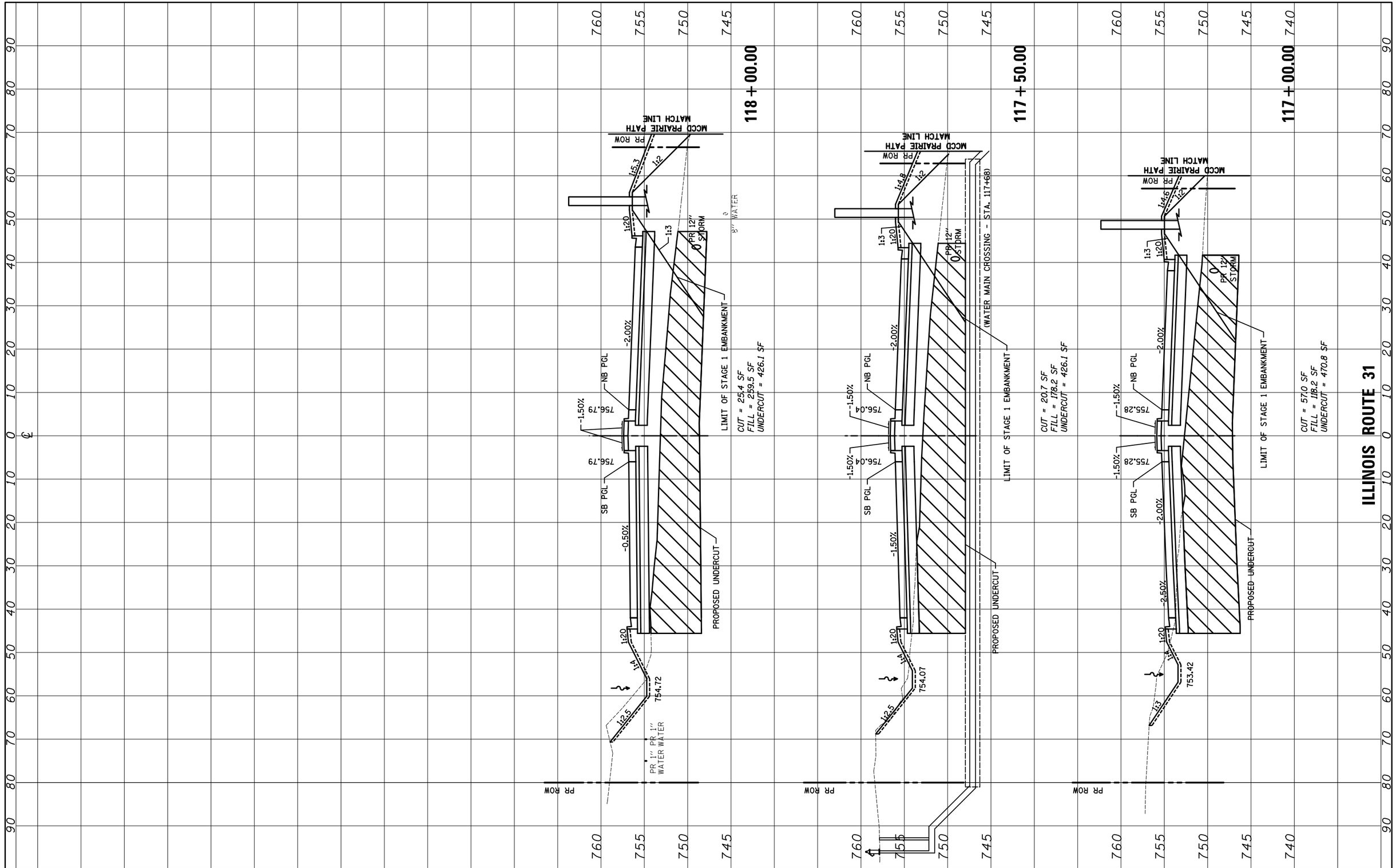
	PLOT DATE = 5/2/2012	DATE - 5/3/2012	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS

SCALE: 10'H: 5'V | SHEET NO. 18 OF 64 SHEETS | STA. 115+00.00 TO STA. 116+50.00

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	697
		CONTRACT NO. 60F72		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



FINAL SURVEY

	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

NOTE BOOK
NO.

ORIGINAL SURVEY

	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

NOTE BOOK
NO.

FILE NAME = ...\D160F72-sht-xssht-01_Bypass_South.dgn	USER NAME = akw	DESIGNED - PML	REVISED -
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	PLOT DATE = 5/2/2012	DATE - 5/3/2012	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

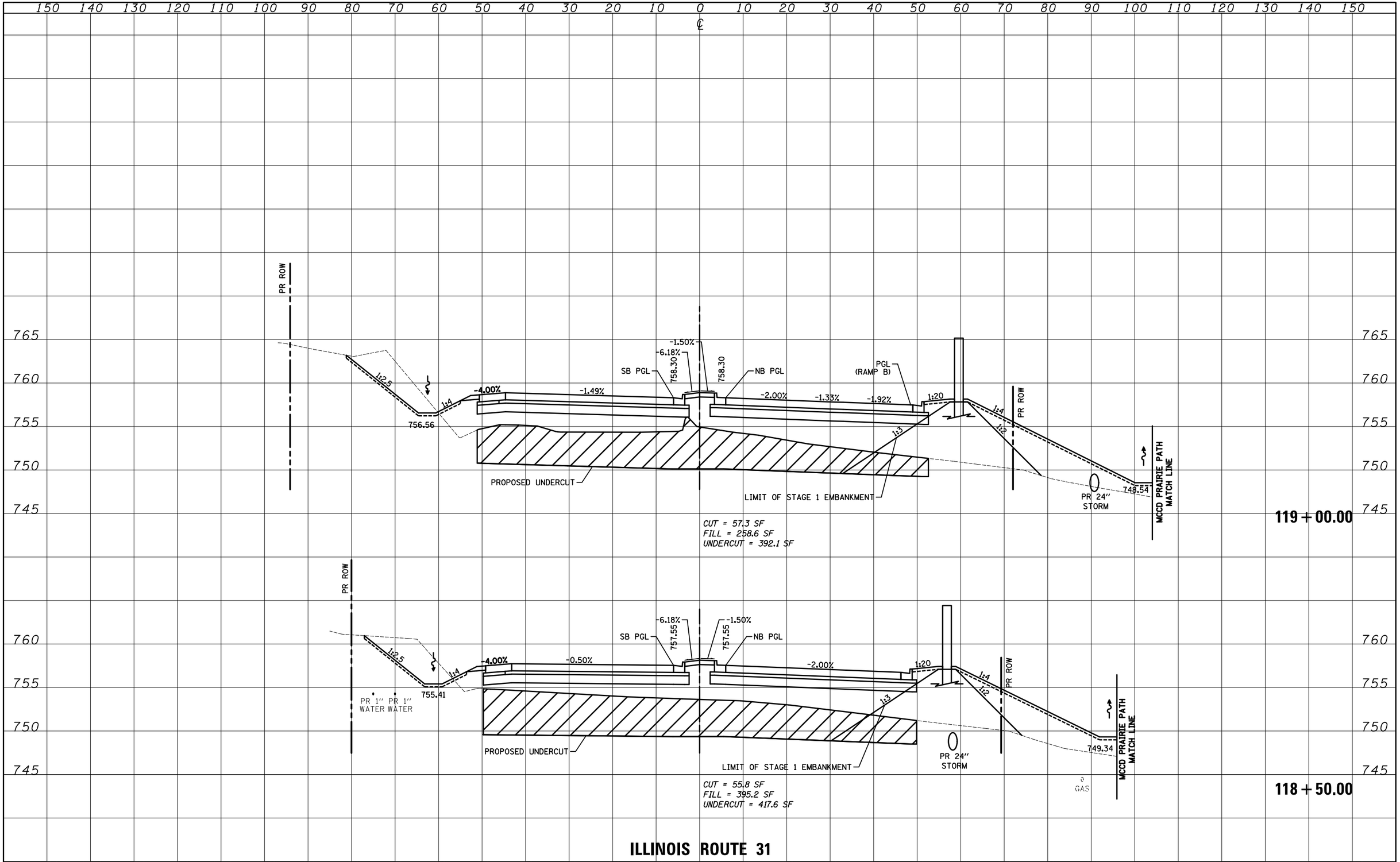
CROSS SECTIONS

SCALE: 10'H: 5'V | SHEET NO. 19 OF 64 SHEETS | STA. 117+00.00 TO STA. 118+00.00

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	698
		CONTRACT NO. 60F72		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

ILLINOIS ROUTE 31

FINAL SURVEY	NOTE BOOK	NO.
SURVEYED	BY	
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		DATE



ORIGINAL SURVEY	NOTE BOOK	NO.
SURVEYED	BY	
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		DATE

FILE NAME = ...\D160F72-sht-xssht-01_Bypass_South.dgn	USER NAME = akw	DESIGNED - PML	REVISED -
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	PLOT SCALE = 20.0000 ' / in.	CHECKED - GAB	REVISED -
	PLOT DATE = 5/2/2012	DATE - 5/3/2012	REVISED -

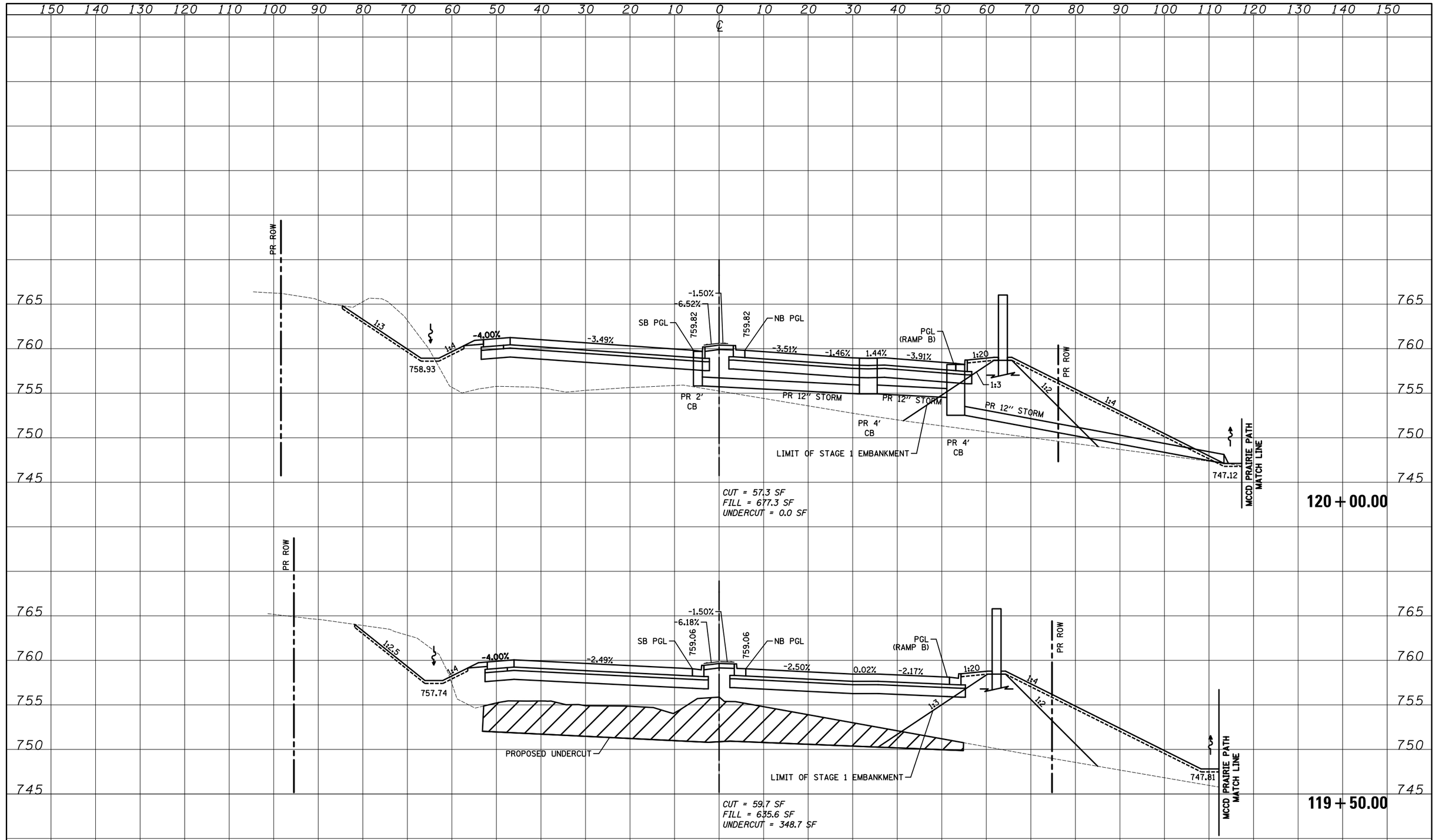
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS

SCALE: 10'H: 5'V | SHEET NO. 20 OF 64 SHEETS | STA. 118+50.00 TO STA. 119+00.00

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	699
			CONTRACT NO. 60F72	
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

FINAL SURVEY	NOTE BOOK	SURVEYED	PLOTTED	TEMPLATE	AREAS	AREAS CHECKED	BY	DATE
NO.								



ORIGINAL SURVEY	NOTE BOOK	SURVEYED	PLOTTED	TEMPLATE	AREAS	AREAS CHECKED	BY	DATE
NO.								

ILLINOIS ROUTE 31

FILE NAME = ...\D160F72-sht-xssht-01_Bypass_South.dgn	USER NAME = akw	DESIGNED - PML	REVISED -
		DRAWN - PML	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED - GAB	REVISED -
	PLOT DATE = 5/2/2012	DATE - 5/3/2012	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS

SCALE: 10'V: 5'V | SHEET NO. 21 OF 64 SHEETS | STA. 119+50.00 TO STA. 120+00.00

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	700
		CONTRACT NO. 60F72		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		