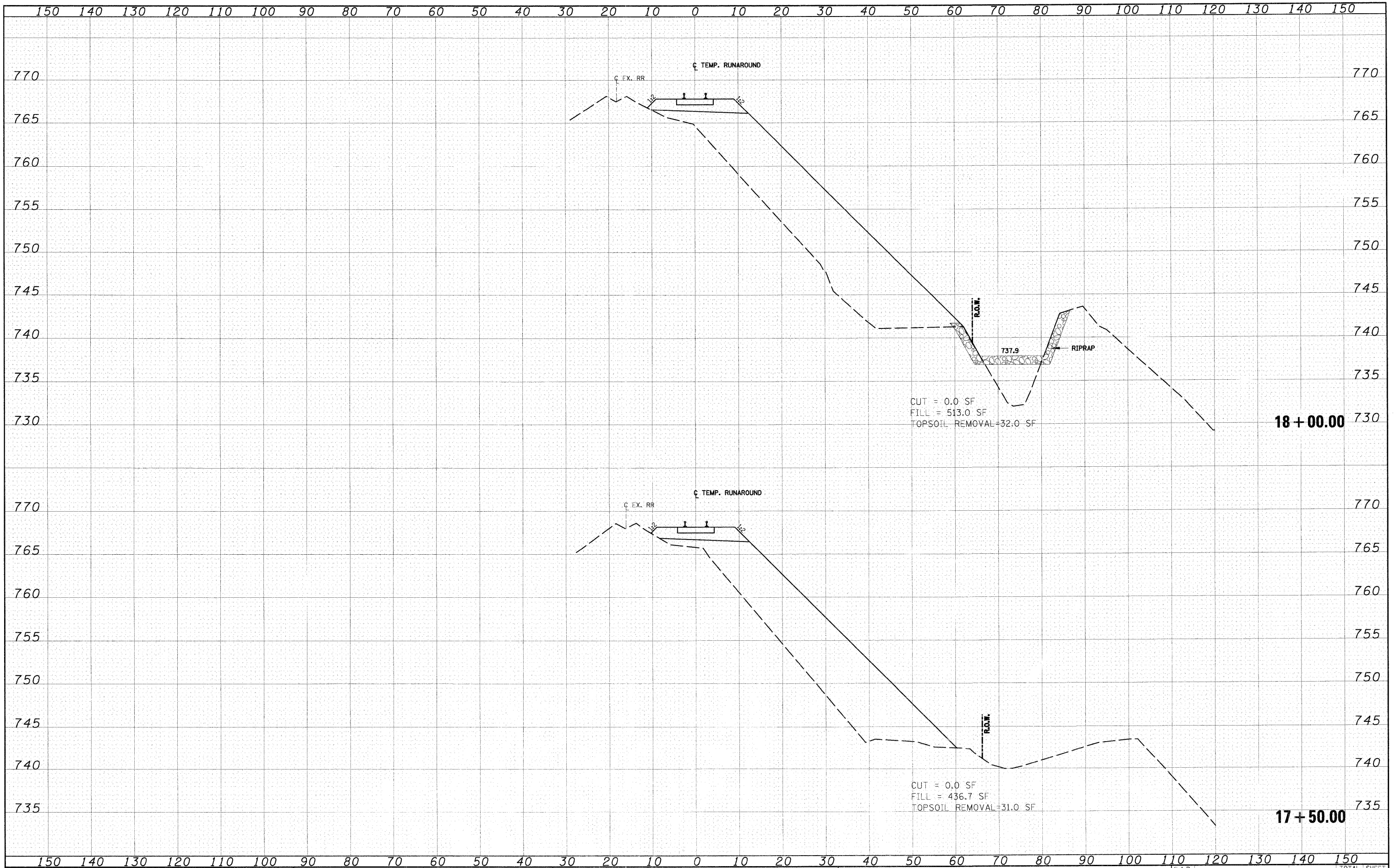


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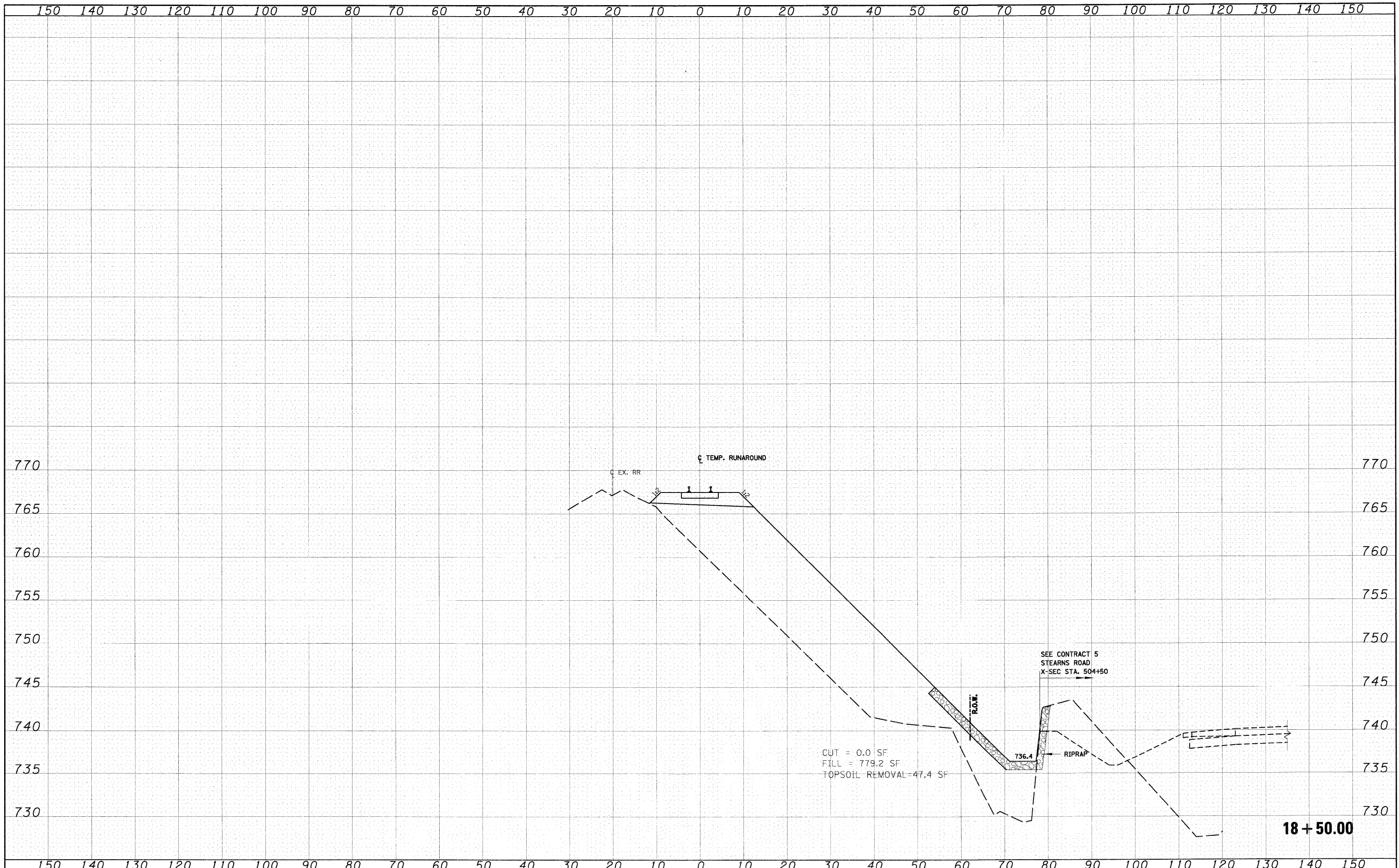
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PLOT SCALE = 1:10	CHECKED - TMT	REVISIED -	SCALE: 1"=10'H; 1"=5'V			SHEET NO. 8 OF 25 SHEETS	STA. 18+00.00 TO STA. 18+00.00	CONTRACT NO. 63073				
PLOT DATE = 4/29/2009	DATE = 3/27/09	REVISIED -	FED. ROAD DIST. NO. 1 (ILLINOIS) FED. AID PROJECT									

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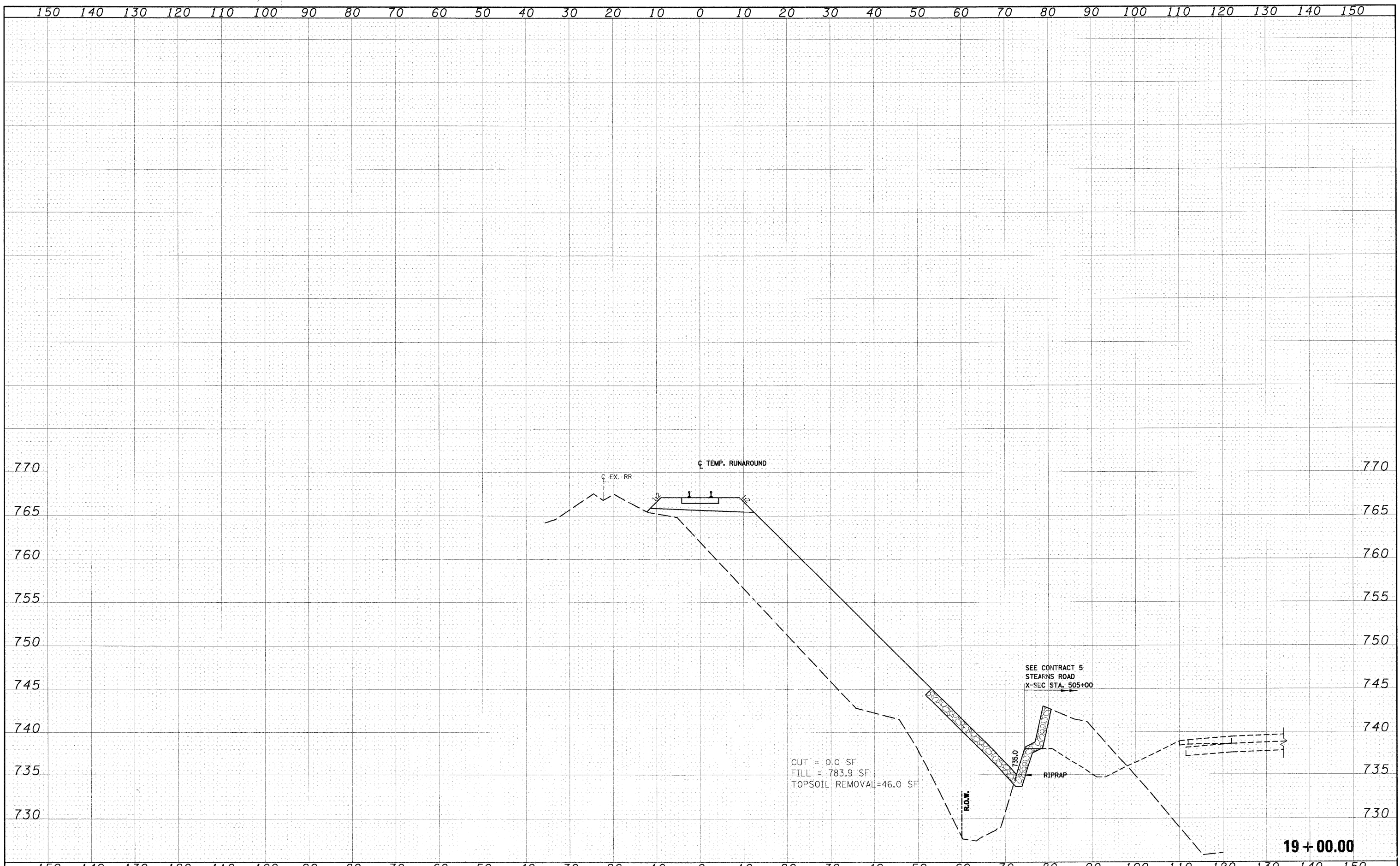
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**KANE COUNTY  
DEPARTMENT OF TRANSPORTATION**

**CC&P RR TEMPORARY RUN-AROUND CROSS SECTIONS**

SCALE: 1"=10'H; 1"=5'V SHEET NO. 9 OF 25 SHEETS STA. 18+50.00 TO STA. 18+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
361	06-00214-10-BR	KANE	219	102
CONTRACT NO. 63073				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



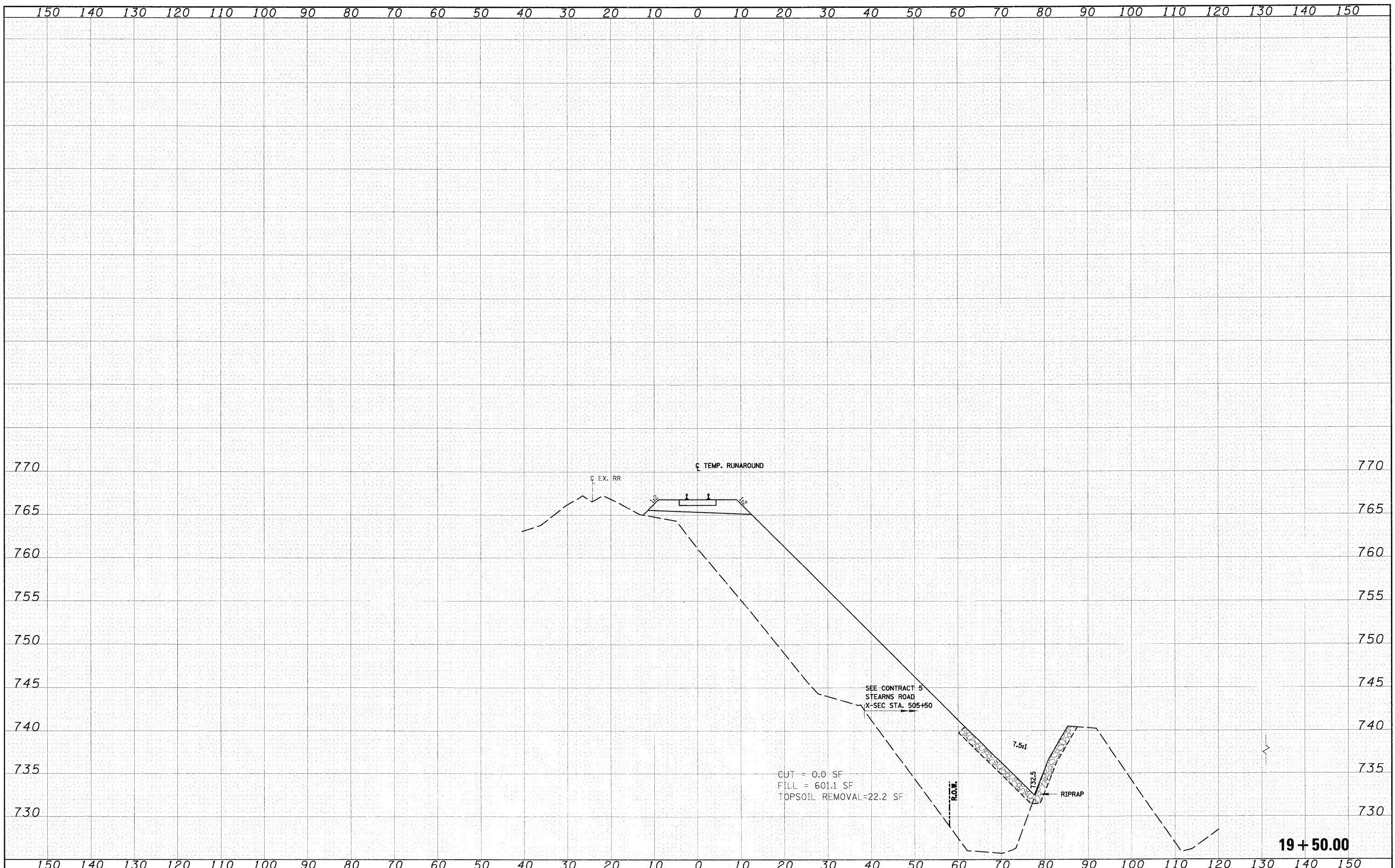
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PLOT SCALE = 1:10	CHECKED - TMT	DATE - 3/27/09	REVISED			SCALE: 1"=10'H; 1"=5'V SHEET NO. 10 OF 25 SHEETS	STA. 19+00.00 TO STA. 19+00.00	CONTRACT NO. 63073			
PLOT DATE = 4/29/2009	DATE - 3/27/09	REVISED				FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

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**KANE COUNTY  
DEPARTMENT OF TRANSPORTATION**

**CC&P RR TEMPORARY RUN-AROUND CROSS SECTIONS**

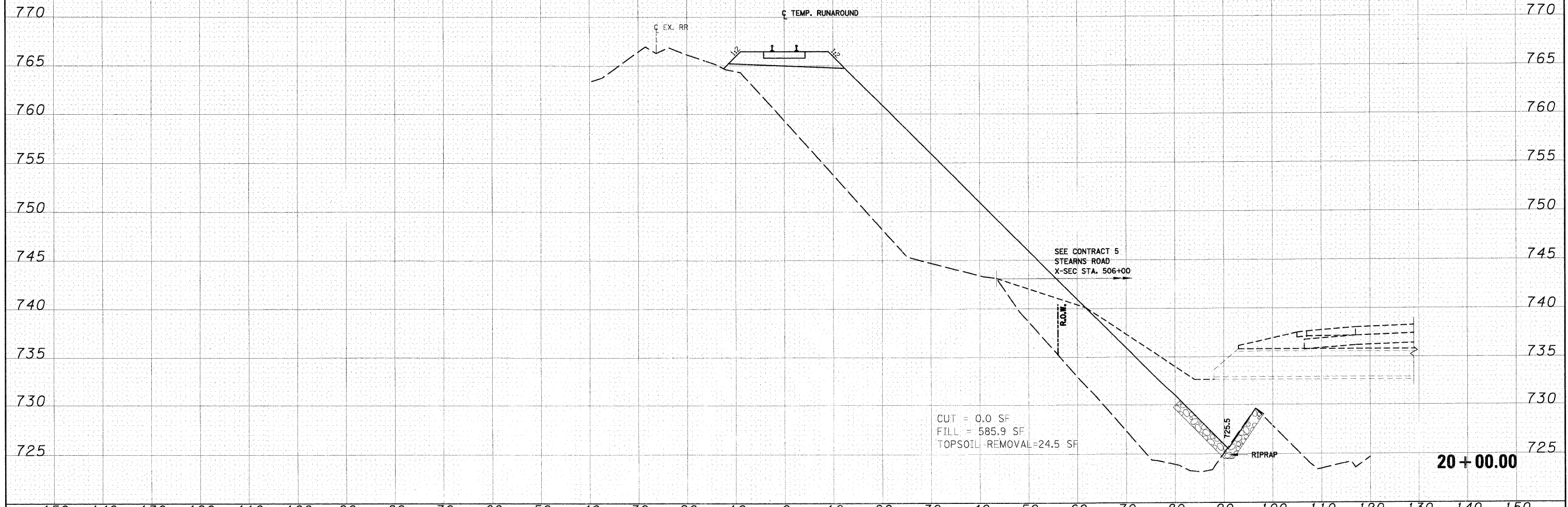
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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
361	06-00214-10-BR	KANE	219	104
CONTRACT NO. 63073				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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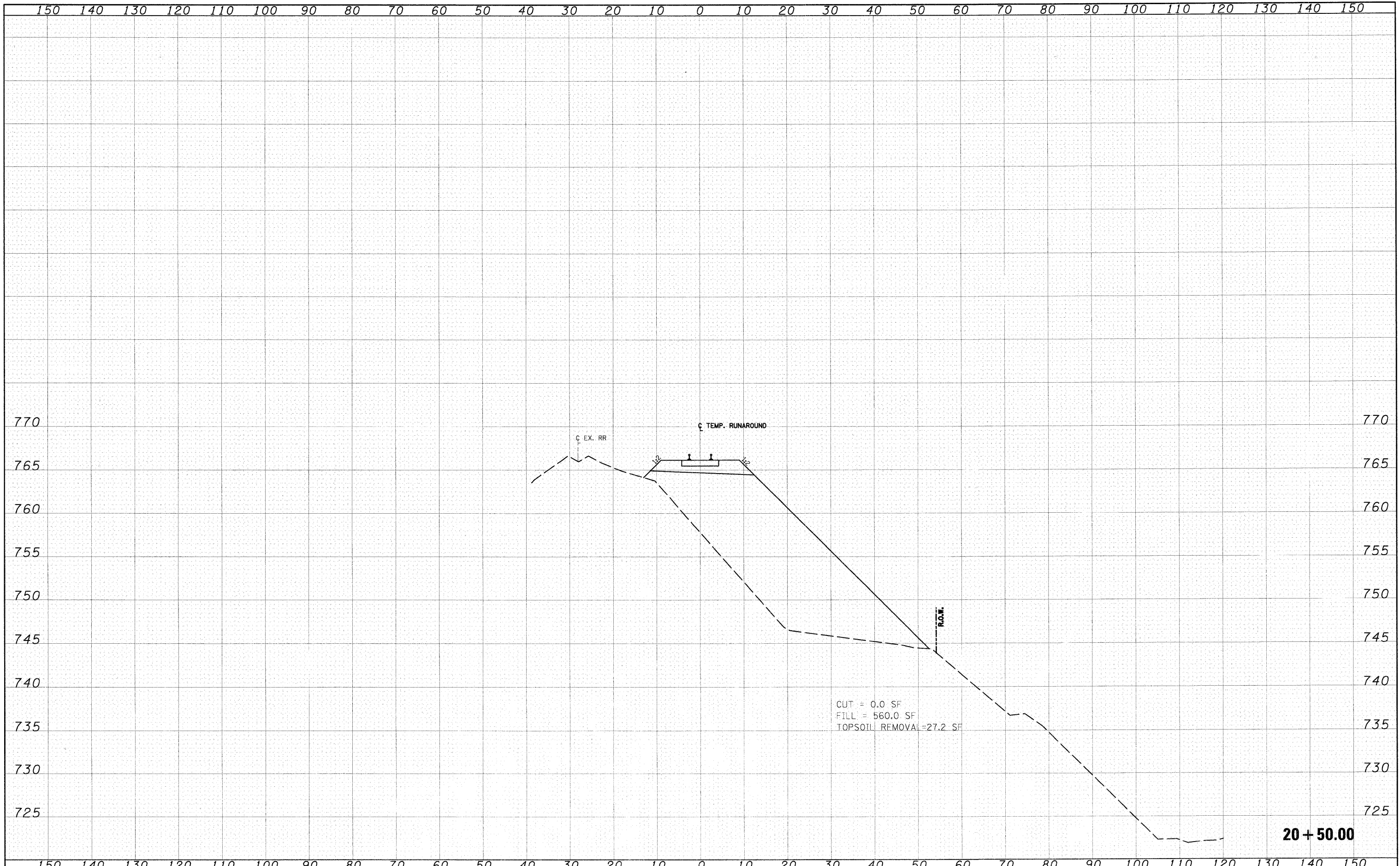
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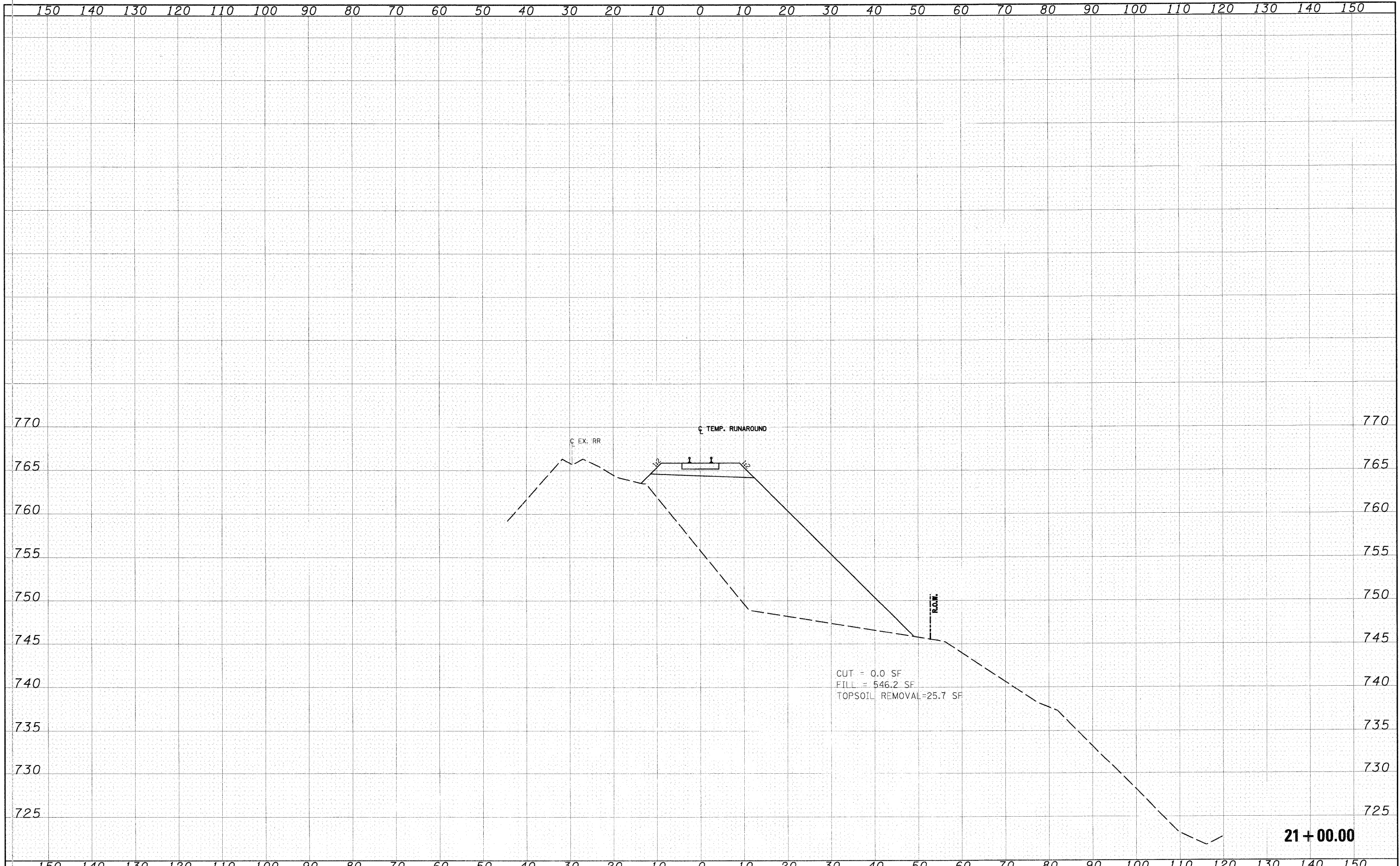
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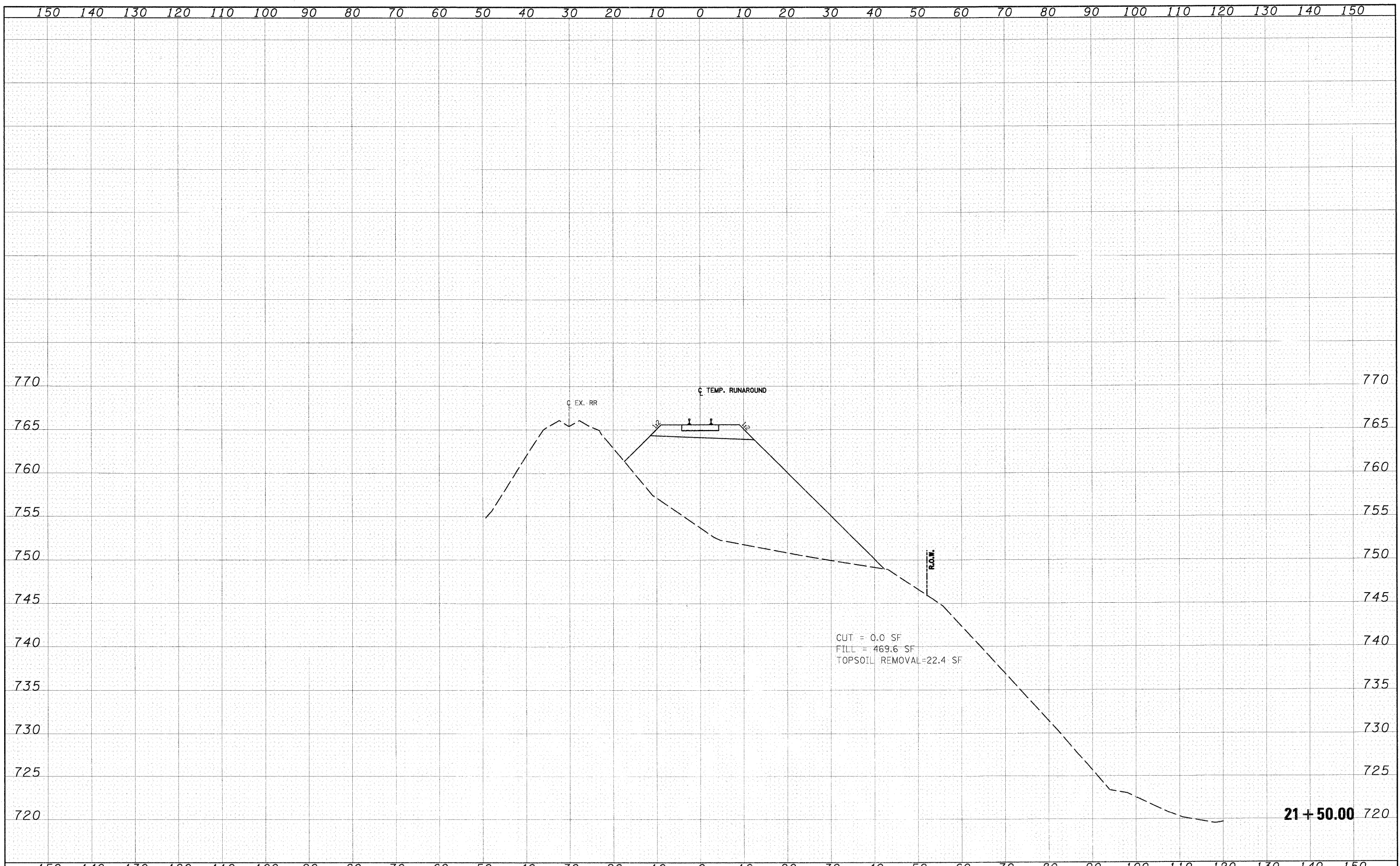
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	PLOT SCALE = 1:10	DRAWN - KBN	REVISED -			SCALE: 1"=10'+11"=5' V	SHEET NO. 13 OF 25 SHEETS	STA. 20+50.00	TO STA. 20+50.00	CONTRACT NO. 63073		
	PLOT DATE = 4/29/2009	CHECKED - TMT	REVISED -			FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT						
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	PLOT SCALE = 1:10	DRAWN - KBN	REVISIED -			SCALE: 1"=10' H: 1"=5' V	SHEET NO. 14 OF 25 SHEETS	STA. 21+00.00	TO STA. 21+00.00	CONTRACT NO. 63073		
	PLOT DATE = 4/29/2009	CHECKED - TMT	REVISIED -			FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT						
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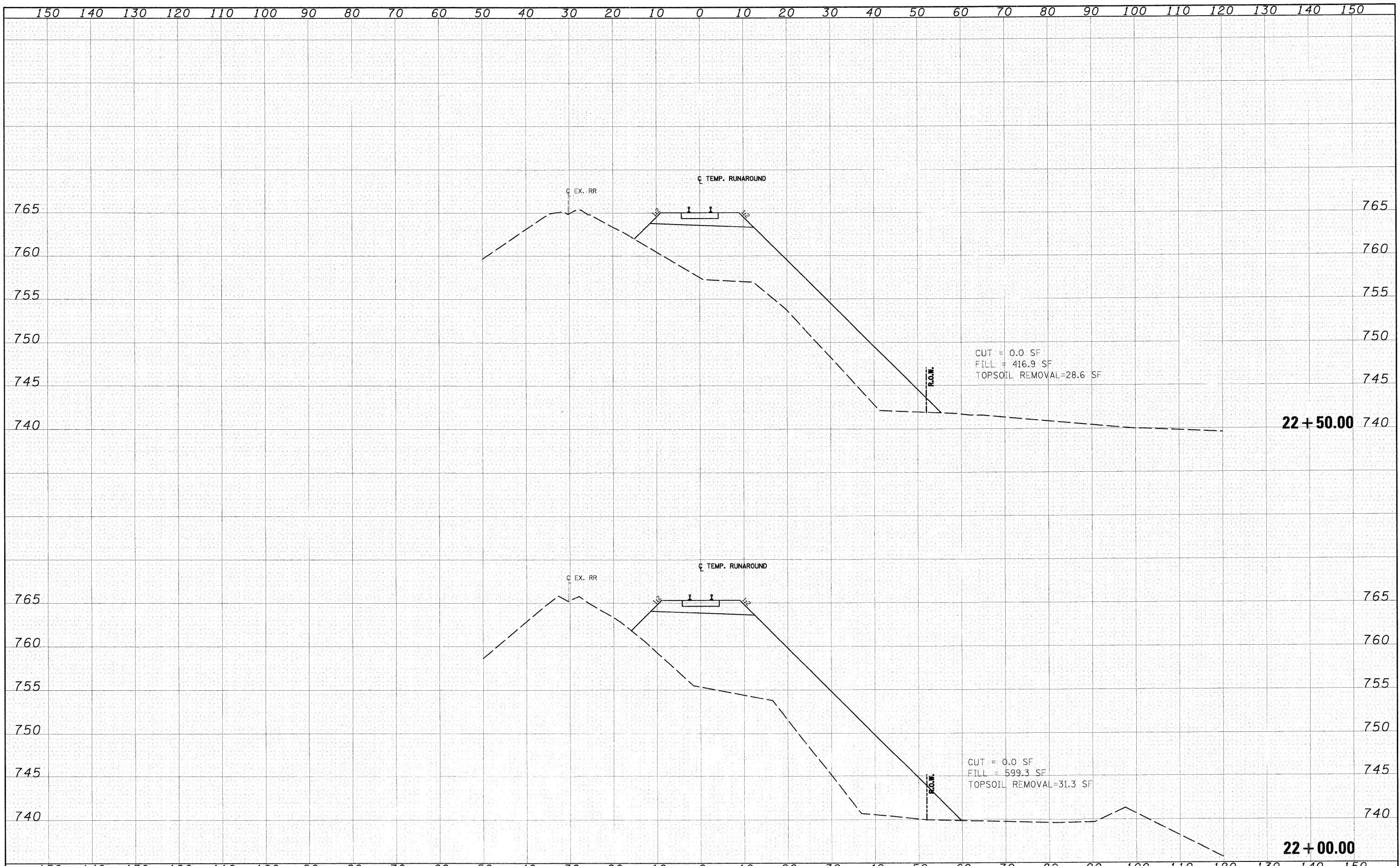
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PLOT SCALE = 1:10	CHECKED - TMT	REVISED -	SCALE: 1"=10'H; 1/2"=5'V SHEET NO. 15 OF 25 SHEETS			STA. 21+50.00 TO STA. 21+50.00	CONTRACT NO. 63073			
PLOT DATE = 4/29/2009	DATE = 3/27/09	REVISED -	FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT							



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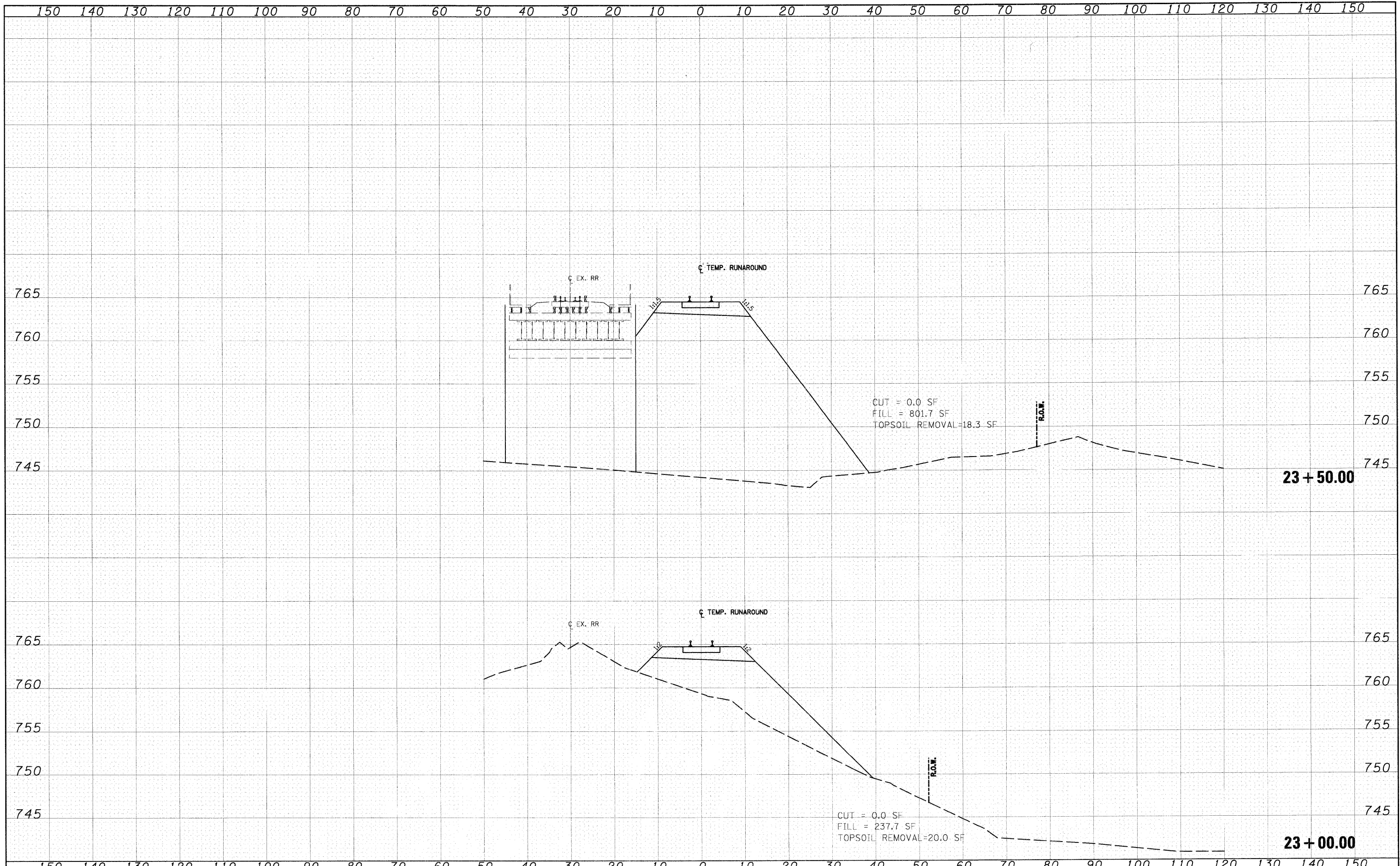
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PLT DATE = 4/29/2009	DATE = 3/27/09	CHECKED - TMT	REVISED -			CONTRACT NO. 63073				
		DATE = 3/27/09	REVISED -			FED. ROAD DIST. NO. 1 (ILLINOIS) FED. AID PROJECT				
SCALE: 1"=10'H 1/4"=5'V SHEET NO. 16 OF 25 SHEETS STA. 22+00.00 TO STA. 22+50.00										

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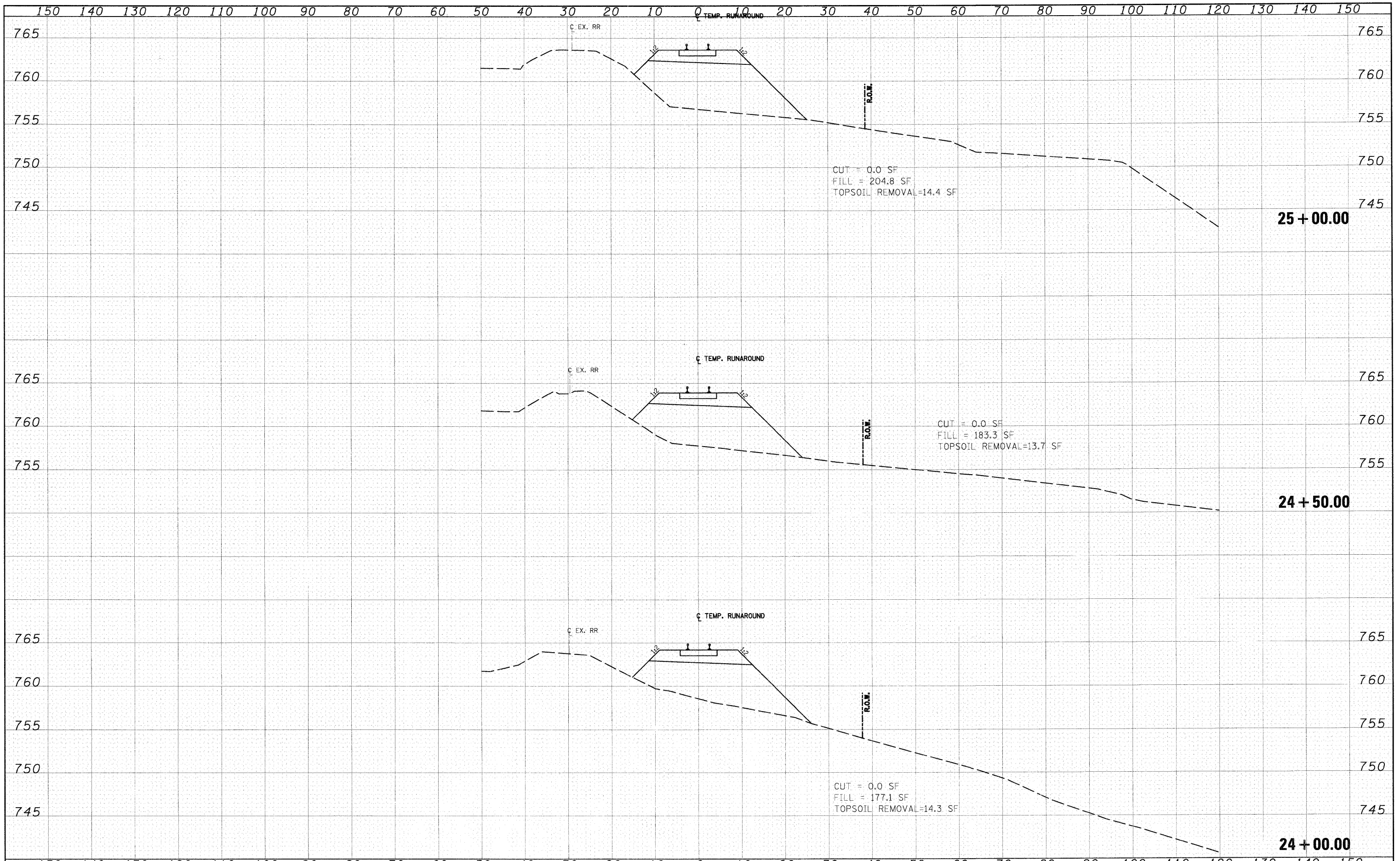
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PLOT DATE = 4/29/2009	DATE - 3/27/09	REVISIED -	REVISIED -			FED. ROAD DIST. NO. 1   ILLINOIS FED. AID PROJECT					
						CONTRACT NO. 63073					

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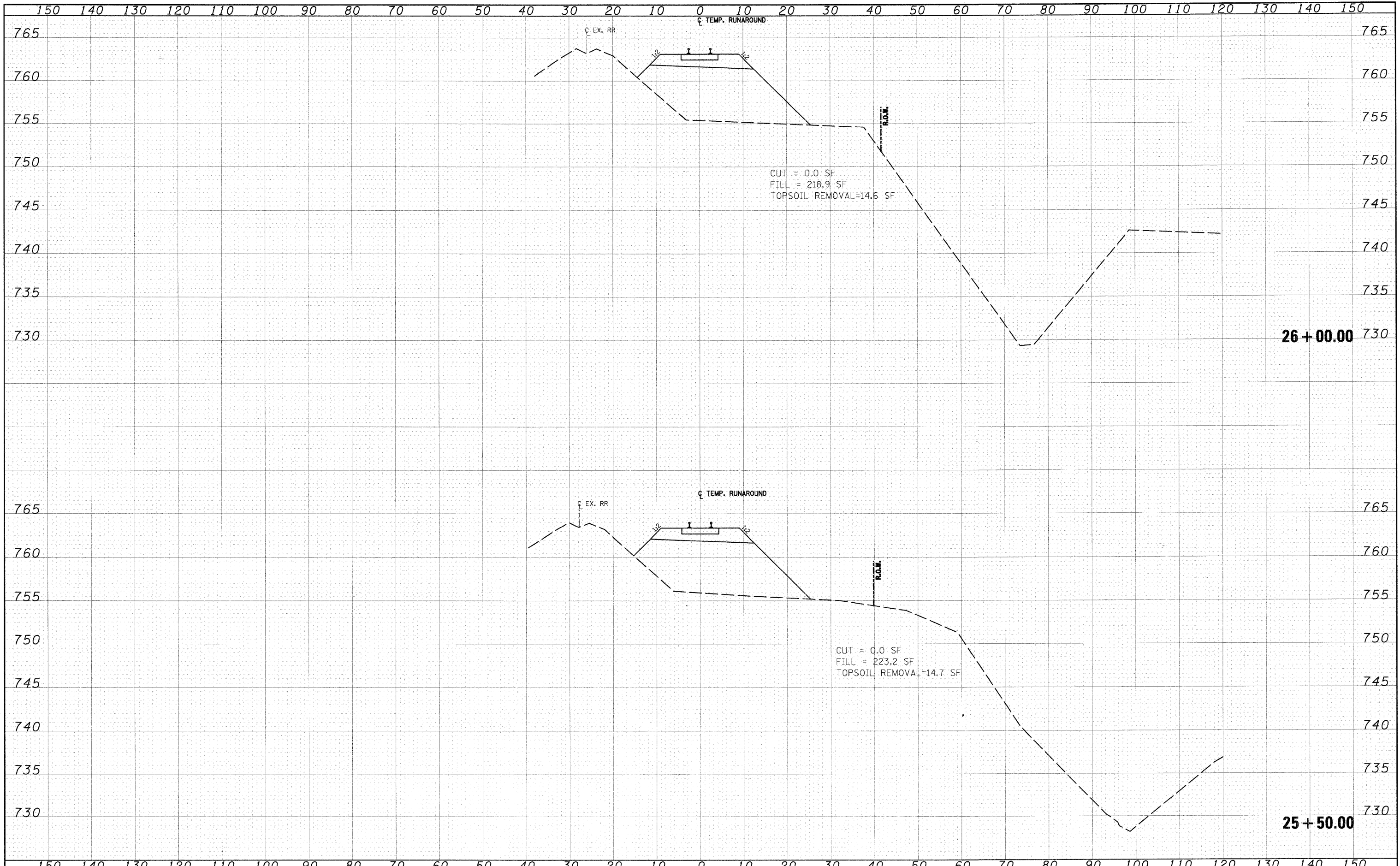
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PLOT SCALE = 1:10	CHECKED - TMT	REVISED -	SCALE: 1"=10'H; 1"=5'V			SHEET NO. 18 OF 25 SHEETS	STA. 24+00.00 TO STA. 25+00.00	CONTRACT NO. 63073				
PLOT DATE = 4/29/2009	DATE = 3/27/09	REVISED -	FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT									

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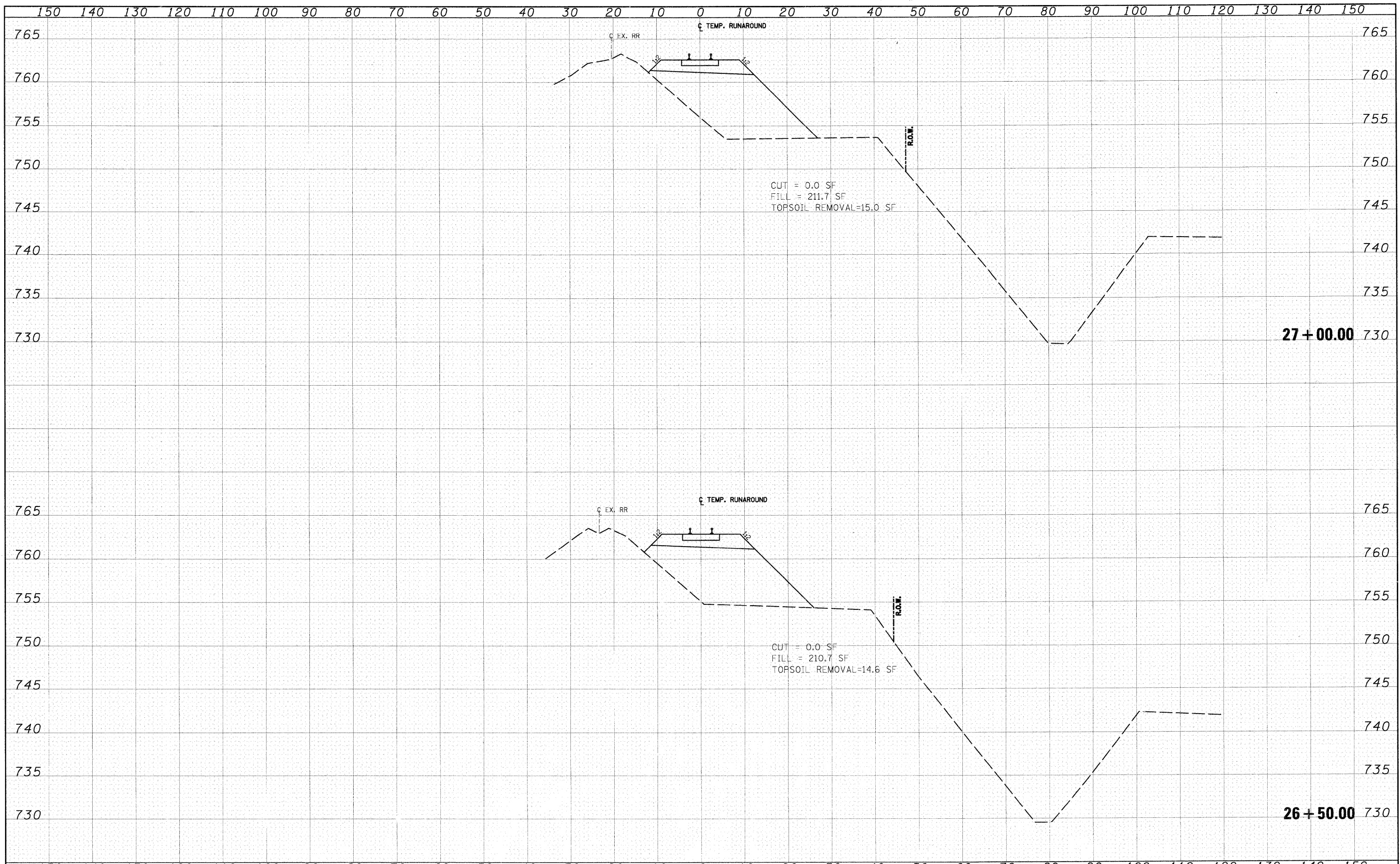
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PLOT SCALE = 1:10	CHECKED - TMT	DATE = 3/27/09	REVISED -			SCALE: 1"=10'H; 1"=5'V	SHEET NO. 19 OF 25 SHEETS	STA. 25+50.00	TO STA. 26+00.00	CONTRACT NO. 63073		
PLOT DATE = 4/29/2009	DATE = 3/27/09	REVISED -	REVISED -			FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT						

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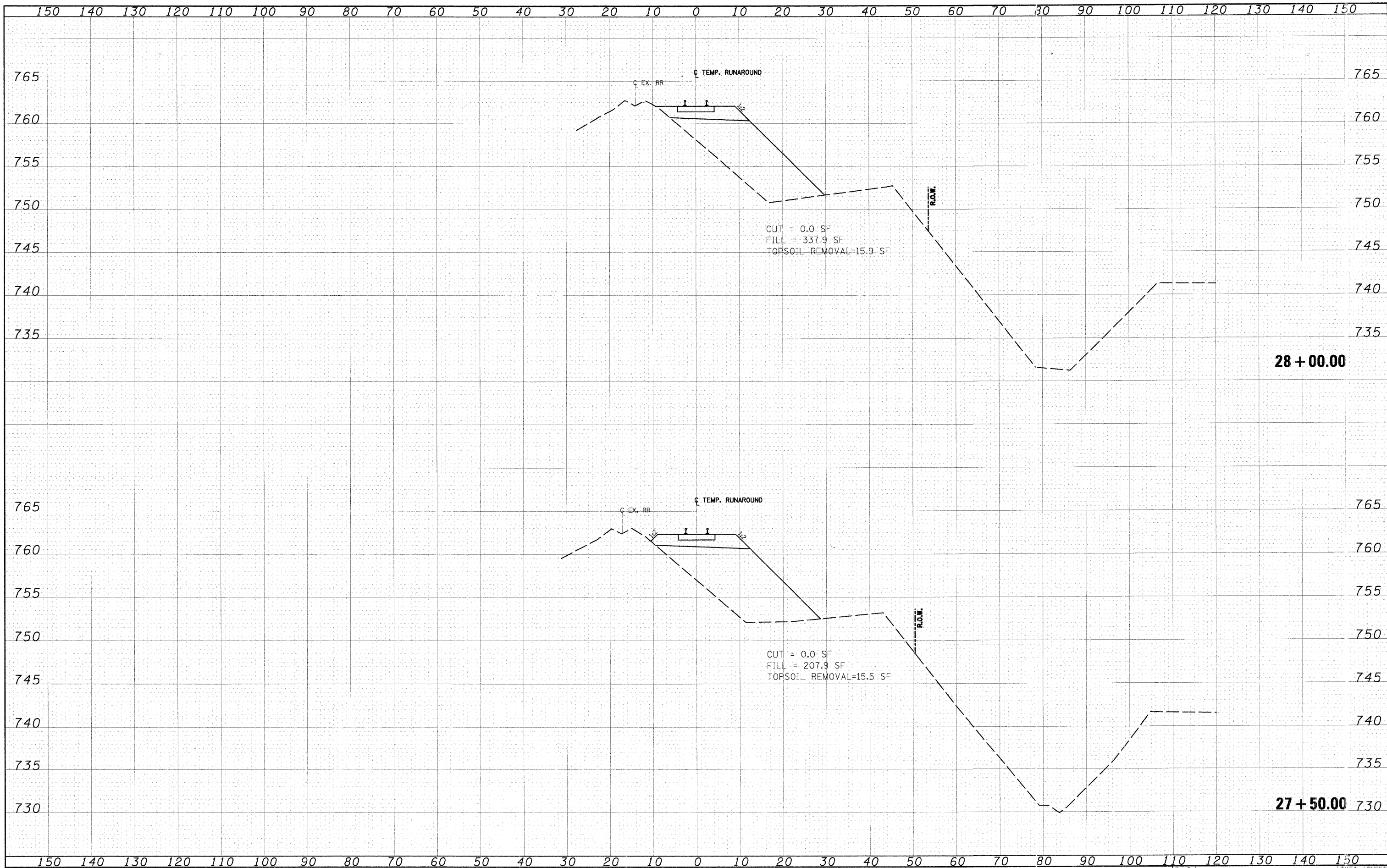
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PLOT DATE = 4/29/2009	DATE = 3/27/09	REVISED -	FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT							

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**KANE COUNTY  
 DEPARTMENT OF TRANSPORTATION**

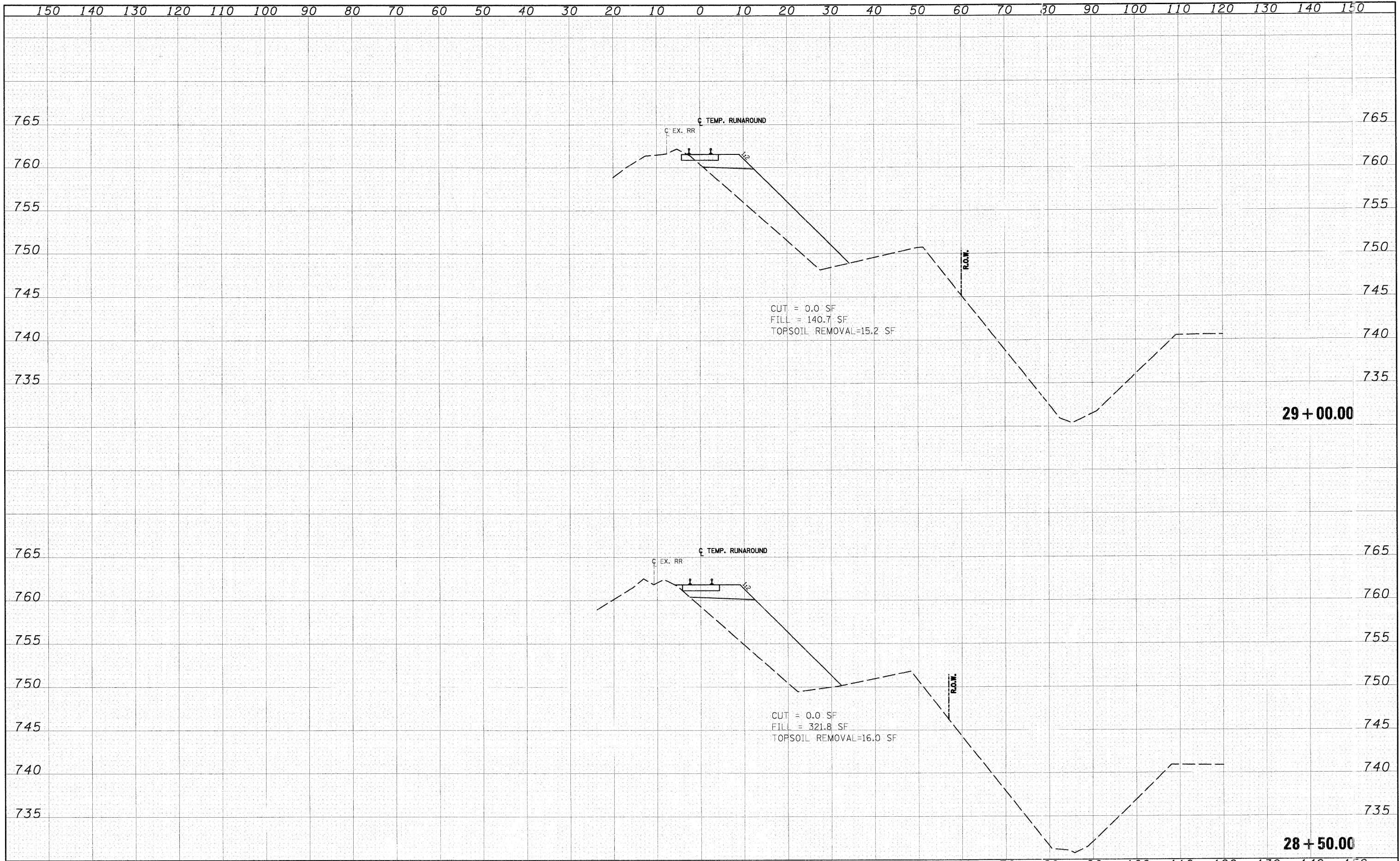
**CC&P RR TEMPORARY RUN-AROUND CROSS SECTIONS**

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
361	06-00214-10-BR	KANE	219	114
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT			CONTRACT NO. 63073	

SCALE: 1"=10'H; 1/4"=5'V SHEET NO. 21 OF 25 SHEETS STA. 27+50.00 TO STA. 28+00.00

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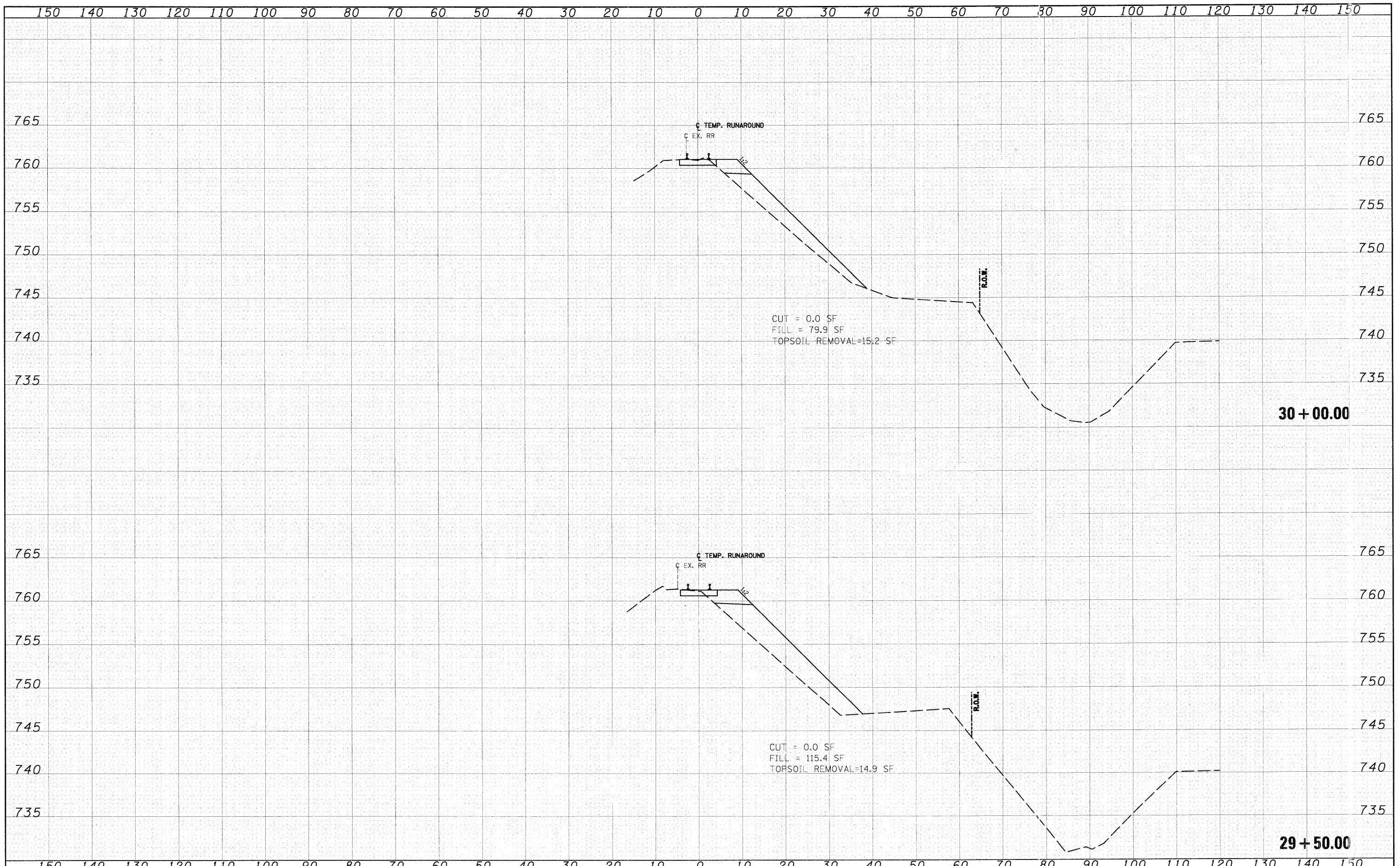
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	PLOT DATE = 4/29/2009	CHECKED - TMT	REVISIED -			CONTRACT NO. 63073						
		DATE = 3/27/09	REVISIED -									

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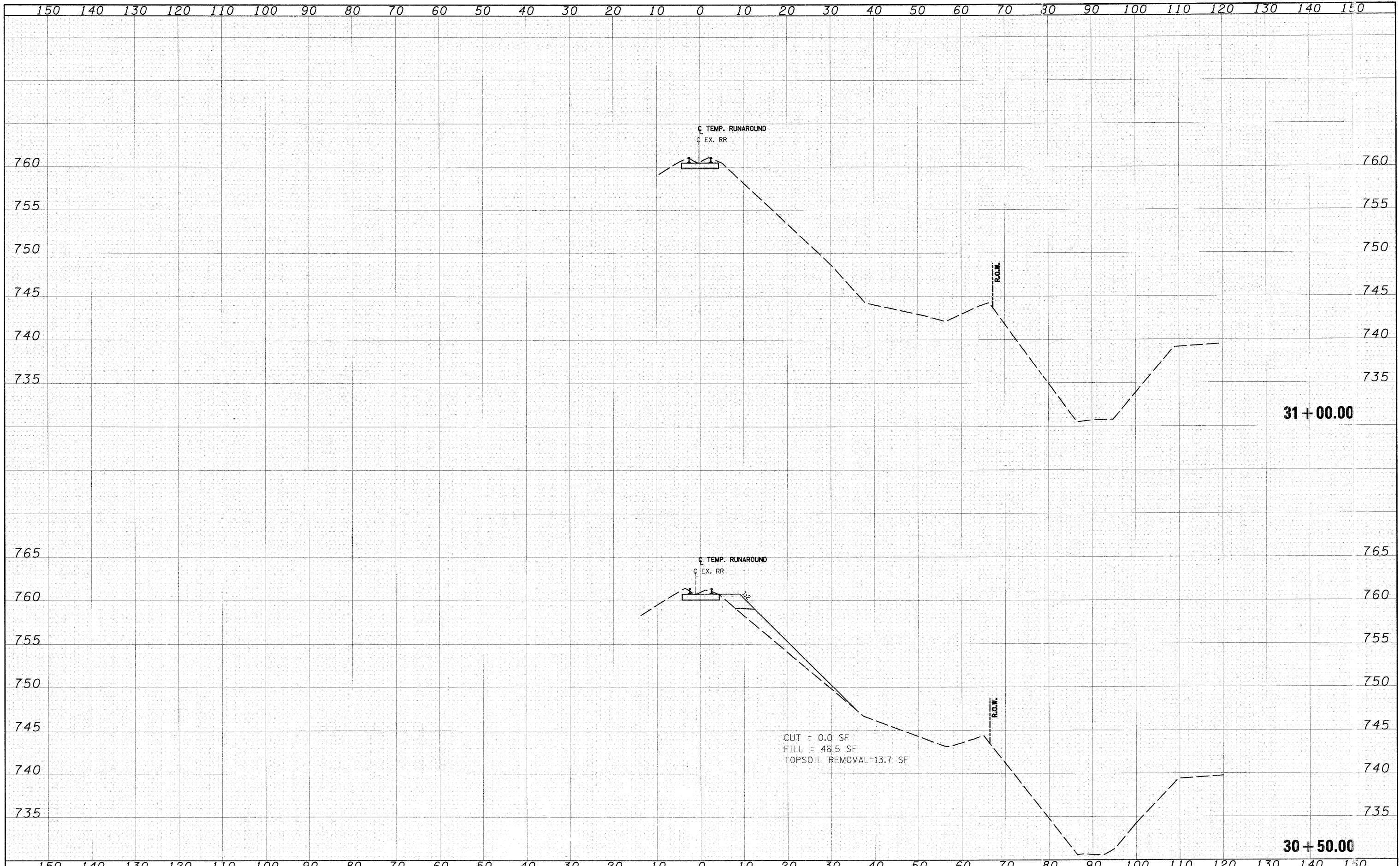


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	PLOT DATE = 4/29/2009	CHECKED - TMT	REVISED -			FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT						
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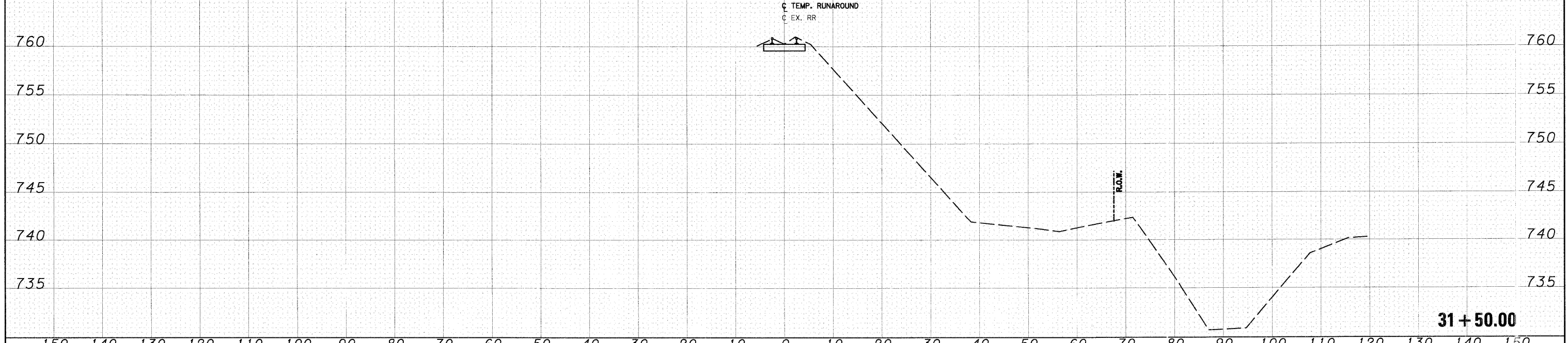


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	PLOT DATE = 4/29/2009	CHECKED - TMT	REVISED -			FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT						
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PLOT DATE = 4/29/2009	DATE - 3/27/09	REVISED -	ILLINOIS FED. AID PROJECT									

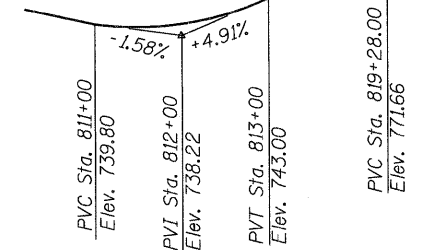
**Benchmark RM-12:**

A Standard US Geological Survey Disk set in the south headwall of a culvert located on State Route 31, about 130 feet west of McLean Boulevard. Elevation of 710.37 (NGVD of 1929) as shown on Firm Community Panel Number 170896 0040A, effective date March 1, 1982. (Also known as NGS-K19, RESET 1967). The Contractor shall use this benchmark to establish temporary control points as required and establish a new benchmark on the headwall of the new culvert.

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**GENERAL NOTES**

1. Reinforcement bars shall conform to the requirements of AASHTO M-31 or M-42 grade 60.
2. Backfill shall not be placed behind the walls of concrete culvert until the top slab is placed and cured. Backfill behind sidewalls shall be carried up simultaneously behind opposite side walls, and at no time shall the fill behind one sidewall be more than 2ft higher than behind the opposite wall.
3. Waterflow shall be maintained during the removal of the existing culvert and construction of the proposed culverts and junction chamber. The cost shall be included in the pay item "Remove Existing Culverts". Contractor will receive no additional compensation.
4. The Contractor shall be responsible for diverting the water flow from the construction area using a method meeting the approval of the Engineer.
5. The temporary Soil Retention System shown on the plans is for information only. It is the Contractor's responsibility to design and install a system that can safely support all lateral and vertical loads during the various construction phases to the satisfaction of the Engineer. The Contractor shall submit calculations and drawings prepared by a licensed Structural Engineer of Illinois for the proposed system to the Engineer for approval. The cost for the temporary Soil Retention System shall be included in the pay item "Remove Existing Culverts".
6. The cost for the temporary bulkhead shall be included in the unit bid price of "Concrete Box Culverts".
7. Pre-Fabricated Culverts are not permitted.
8. Rock Excavation shall conform to the requirements of the Standard Specifications Section 502.5. Large voids may be filled with Porous Granular Backfill, but only if approved by the Engineer. Otherwise any excess voids or over excavation into bedrock shall be filled with concrete.
9. Reinforcement bars designated (E) shall be Epoxy coated.
10. Broken stone deposits and filter fabric screens at the outside of drain holes shall be included in pay item "Concrete Box Culverts".



**PROFILE GRADE  
McLEAN BOULEVARD**

**DESIGN SPECIFICATIONS**

2002 AASHTO LFD Specifications

**DESIGN STRESSES**

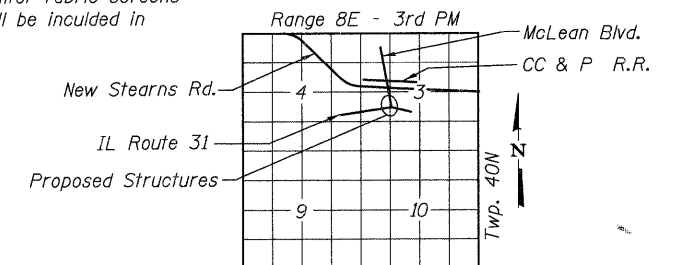
**FIELD UNITS**

$f_y = 60,000$  psi (Reinforcement)

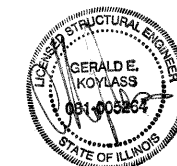
$f'_c = 3,500$  psi

**SEISMIC DATA**

Seismic Performance Category A  
Bedrock Acceleration Coefficient (A) = 0.037g  
Site Coefficient (S) = 1.0



**LOCATION SKETCH**

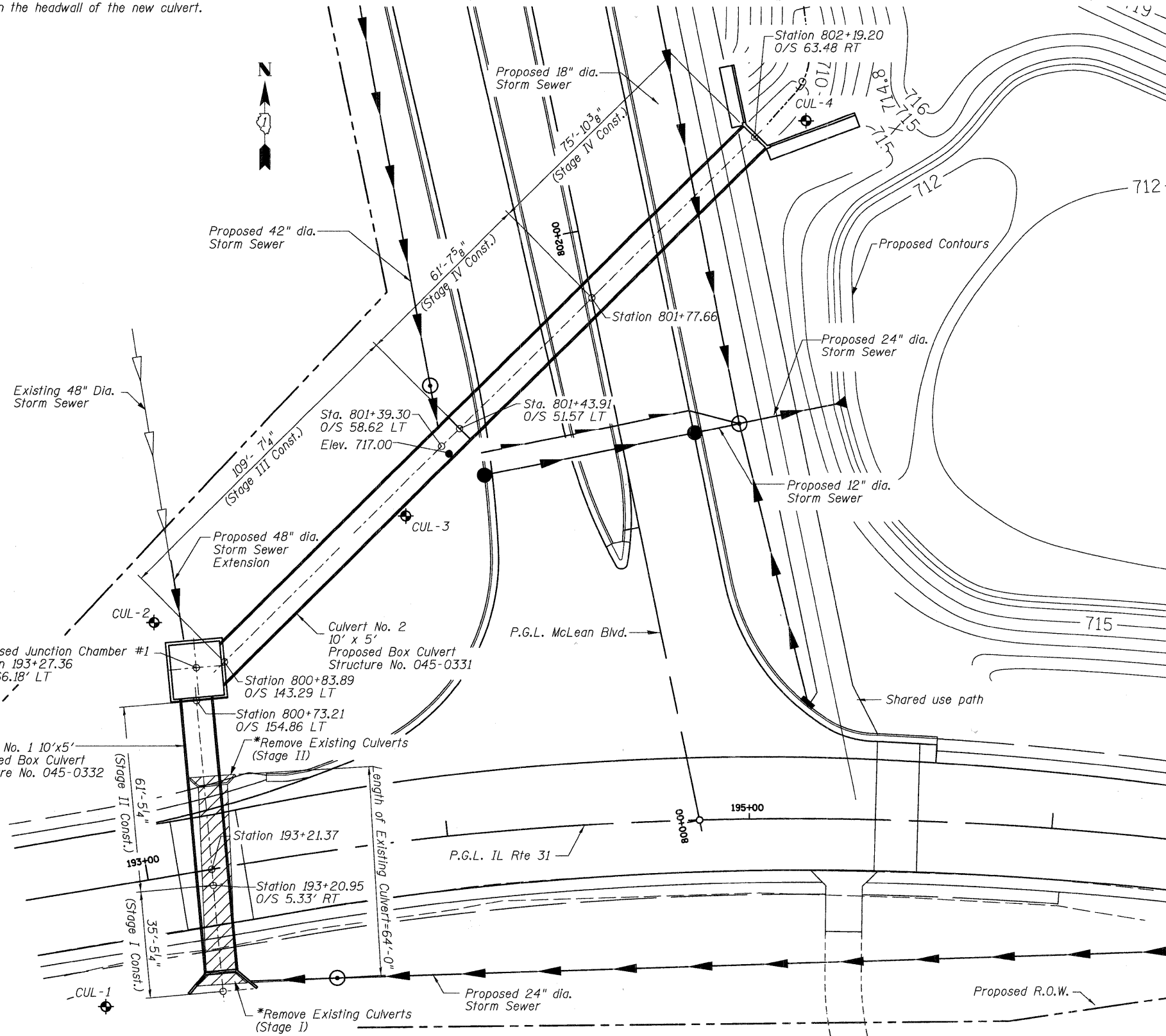


Exp 11/30/2010

**LEGEND**

Soil Boring Location

**KEY PLAN  
BOX CULVERTS AND  
JUNCTION CHAMBER  
McLEAN BOULEVARD AND  
IL ROUTE 31  
SECTION 06-00214-02 BR  
KANE COUNTY**



DESIGNED	200
CHECKED	EXAMINED
DRAWN	PASSED
CHECKED	ENGINEER OF BRIDGES AND STRUCTURES

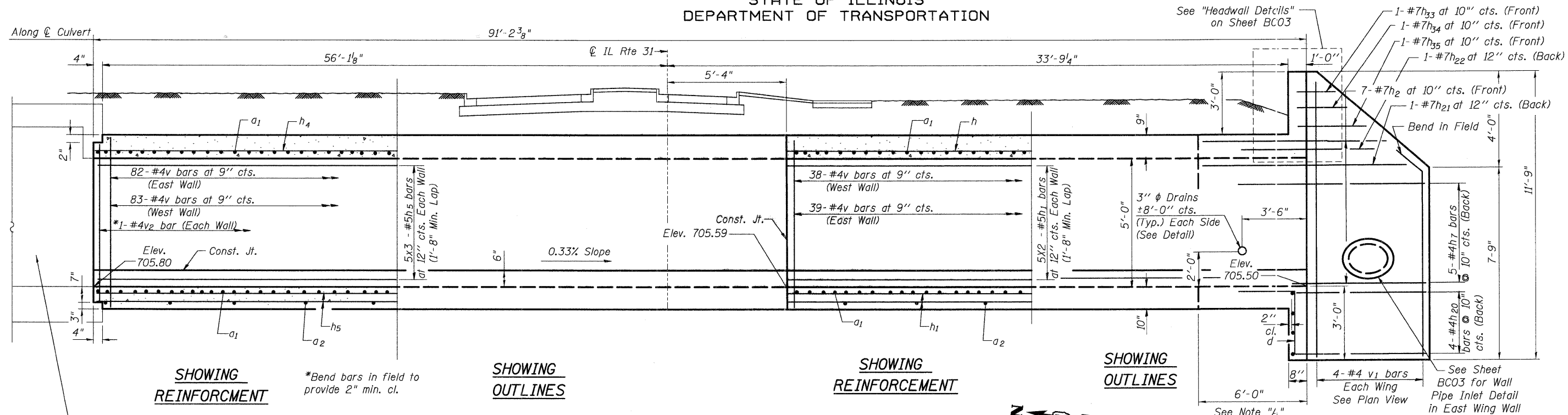
\*Size of Existing Culvert: 3'Hx9'W

**KEY PLAN**

**McDonough Associates Inc.**  
Engineers / Architects  
130 East Randolph Street  
Chicago, Illinois 60601  
(312) 946-8600

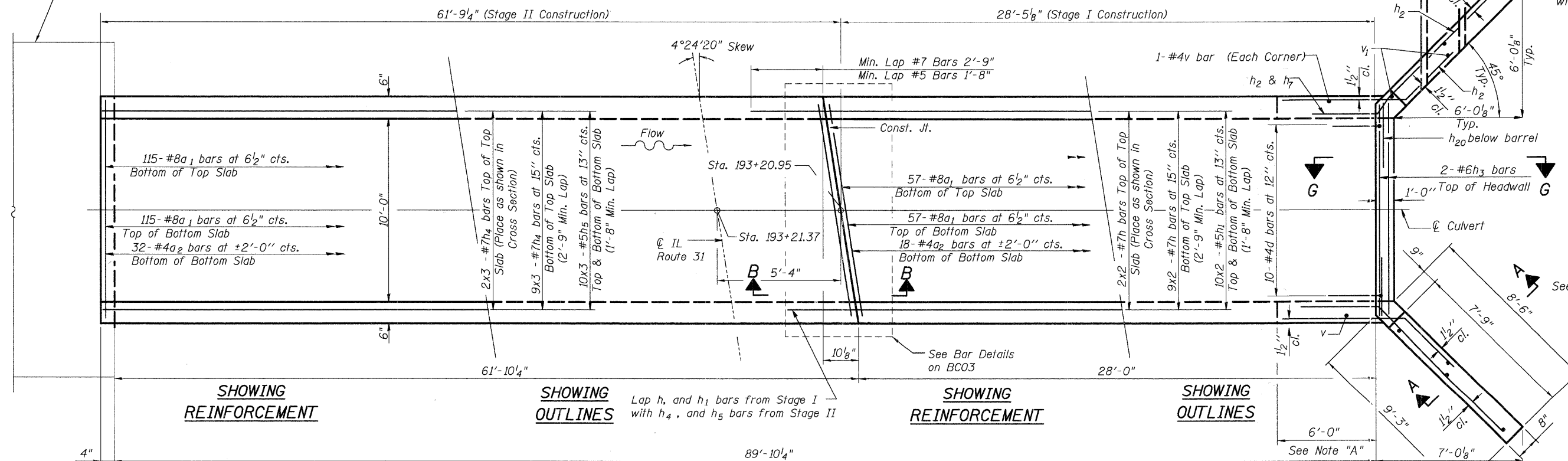
SHEET NO. 3001 BC09 SHEETS	RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	361	06-00214-02-BR	KANE	219	119
CONTRACT NO. 63073					
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



ELEVATION

Junction Chamber #1  
See Sheet BC06



PLAN

**Note "A"**  
This portion of the Culvert Barrel shall be poured monolithically with the wingwalls.

**CULVERT NO. 1  
PLAN & ELEVATION  
STRUCTURE NO. 045-0332**

DESIGNED	200
CHECKED	EXAMINED
DRAWN	PASSED
CHECKED	ENGINEER OF BRIDGES AND STRUCTURES

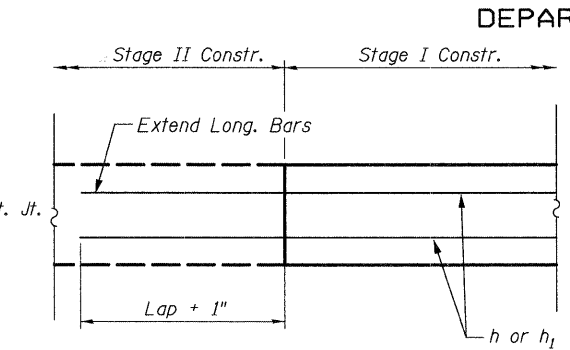
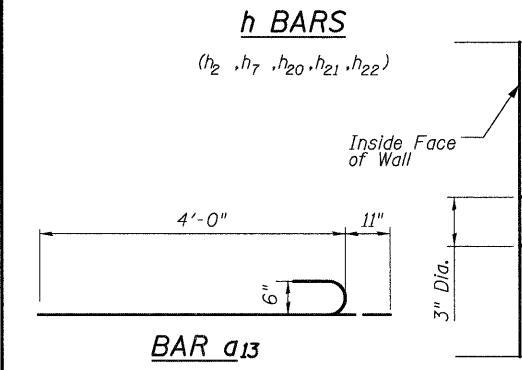
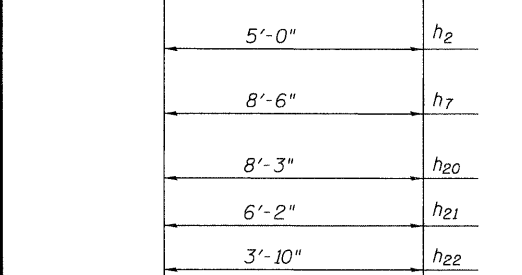
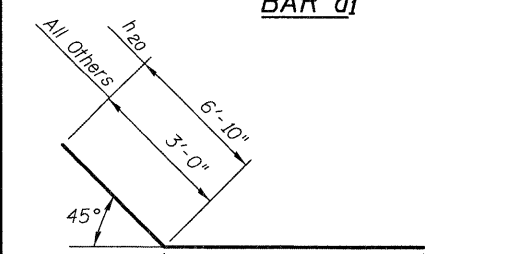
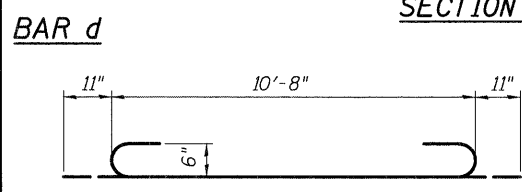
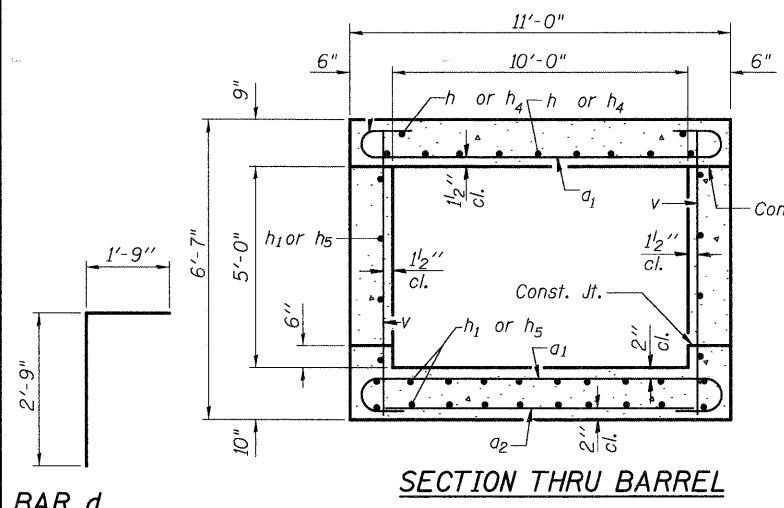
Min Lap Length #7 bars = 2'-9"  
Min Lap Length #5 bars = 1'-8"

**McDonough Associates Inc.**  
Engineers / Architects  
130 East Randolph Street  
Chicago, Illinois 60601  
(312) 946-8600

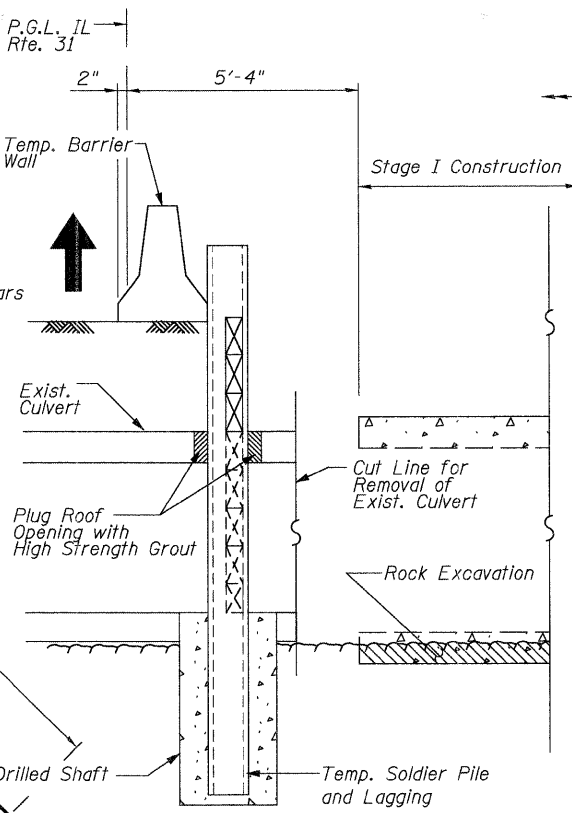
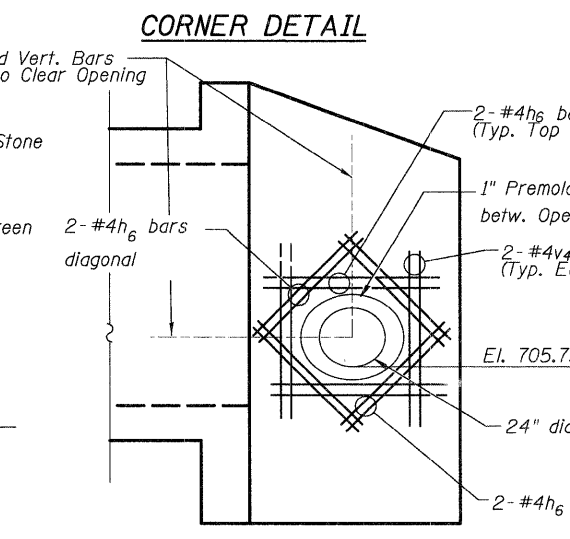
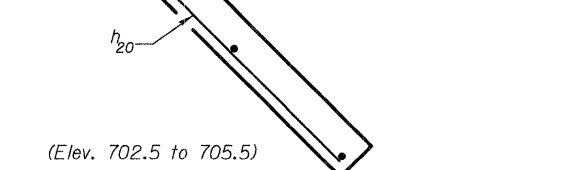
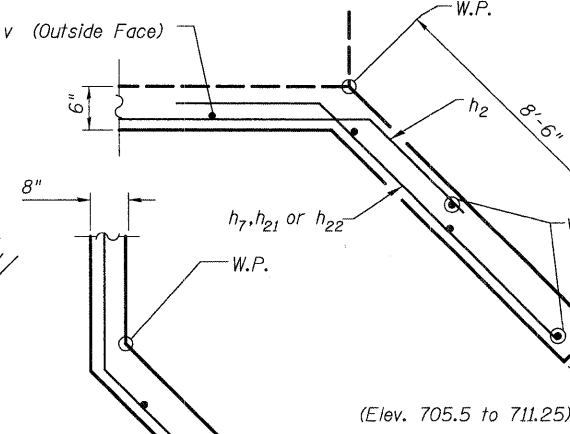
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	361	06-00214-02-BR	KANE	219	120
BC09 SHEETS	SN 045-0331		CONTRACT NO. 63073		
	FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

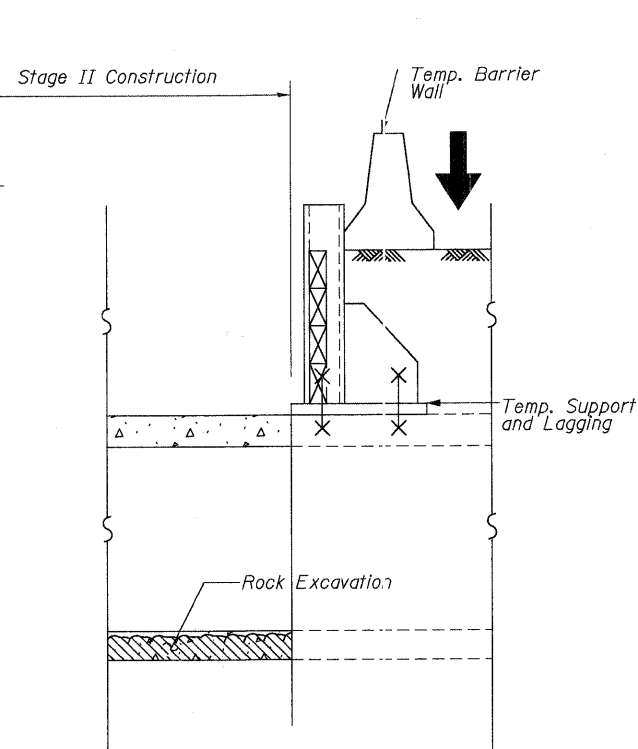
**BILL OF MATERIAL**  
**CULVERT 1 - STAGE I&II**



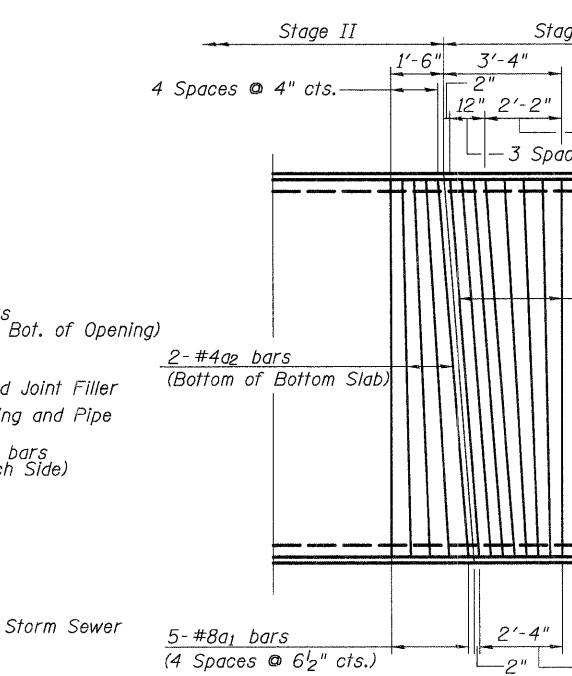
**SECTION B-B**  
Lap Length #5 Bar = 1'-8"  
Lap Length #7 Bar = 2'-9"  
Note: Contractor may use bar splicers.



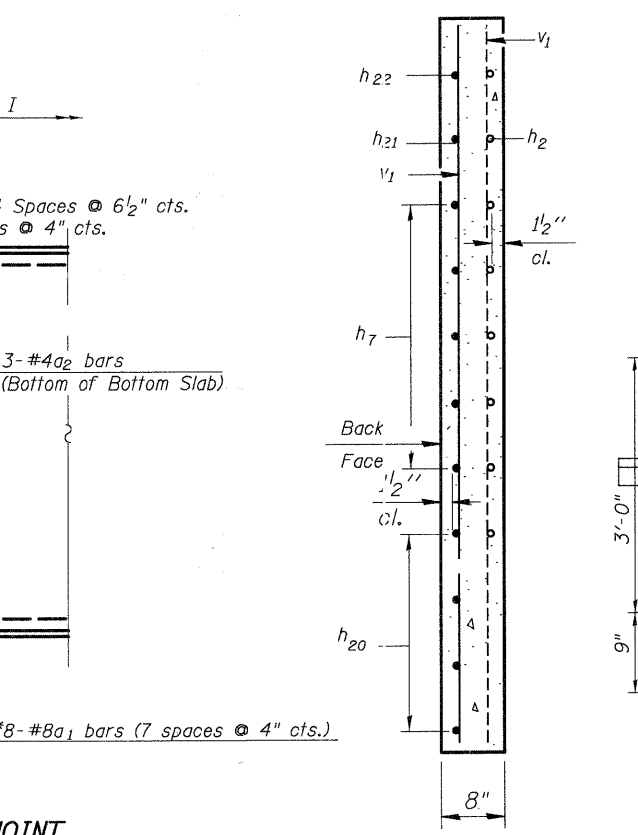
**STAGE I CONSTRUCTION**



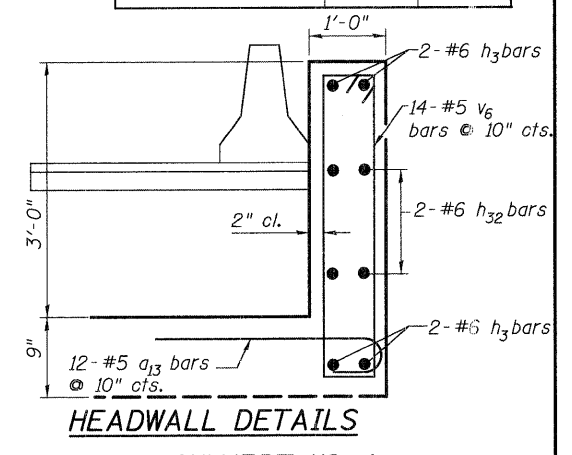
**STAGE II CONSTRUCTION**



**BAR DETAILS AT CONSTRUCTION JOINT**  
\*Bottom of Top Slab and Top of Bottom Slab



**SECTION A-A**



**HEADWALL DETAILS**  
**CULVERT NO. 1**  
**SECTIONS & DETAILS**  
**STRUCTURE NO. 045-0332**

Bar	No.	Size	Length	Shape
a1	344	#8	12'-6"	U
a2	50	#4	10'-9"	U
a13	12	#5	4'-11"	U
d	10	#4	4'-6"	U
h	22	#7	17'-8"	—
h1	60	#5	16'-7"	—
h2	14	#7	8'-0"	—
h3	4	#6	10'-8"	—
h4	33	#7	22'-6"	—
h5	90	#5	21'-10"	—
h6	12	#4	4'-6"	—
h7	10	#7	11'-6"	—
h20	8	#7	15'-1"	—
h21	2	#7	9'-2"	—
h22	2	#7	6'-10"	—
h32	4	#6	10'-8"	—
h33	2	#7	1'-2"	—
h34	2	#7	2'-11"	—
h35	2	#7	6'-6"	—
v	244	#4	6'-3"	—
v1	8	#4	9'-2"	—
v2	2	#4	5'-11"	—
v4	4	#4	4'-0"	—
v6	14	#5	9'-1"	—

Concrete Box Culverts	Cu. Yd.	82
Reinforcement Bars	Pound	19,534
Structure Excavation	Cu. Yd.	240
Rock Excavation	Cu. Yd.	240
Remove Existing Culverts	Each	1

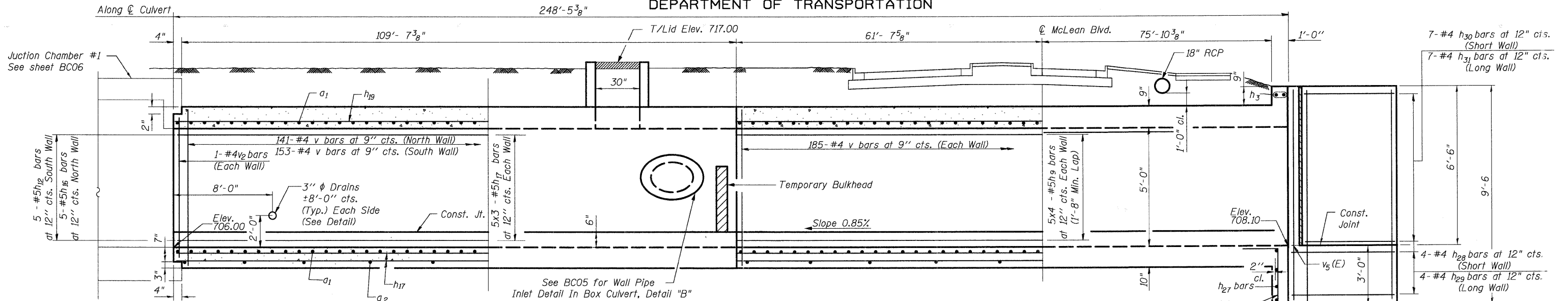
DESIGNED	200
CHECKED	EXAMINED
DRAWN	PASSED
CHECKED	ENGINEER OF BRIDGES AND STRUCTURES

**ADDITIONAL REINFORCEMENT IN EAST WALL OPENING**

**McDonough Associates Inc.**  
Engineers / Architects  
130 East Randolph Street  
Chicago, Illinois 60601  
(312) 946-8600

SHEET NO. BC03	RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
BC09 SHEETS	361	06-00214-02-BR	KANE	219	121
SN 045-0331			CONTRACT NO. 63073		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



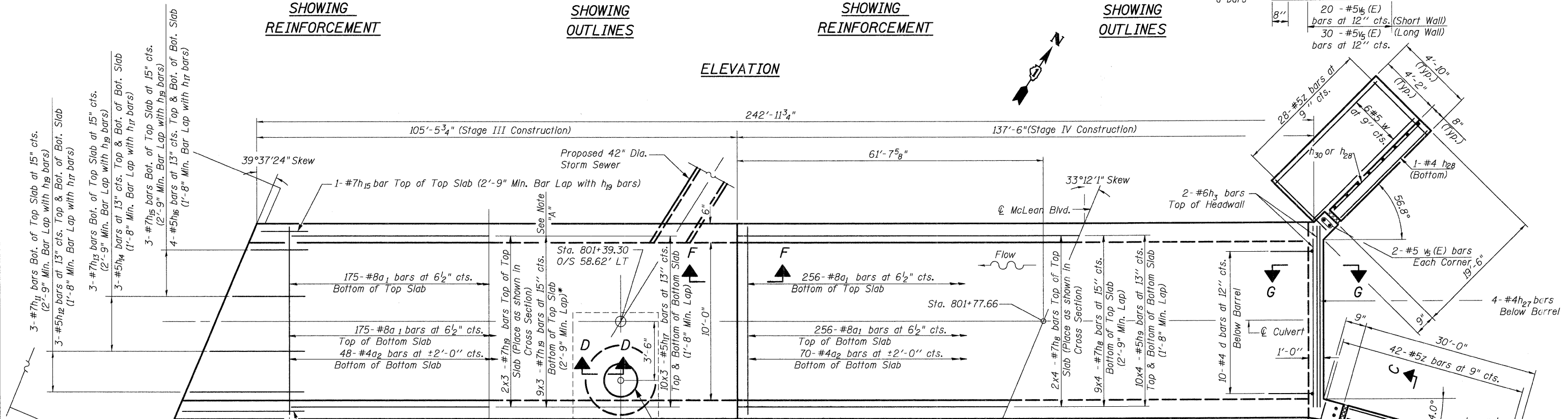
SHOWING REINFORCEMENT

SHOWING OUTLINES

SHOWING REINFORCEMENT

SHOWING OUTLINES

ELEVATION



SHOWING REINFORCEMENT

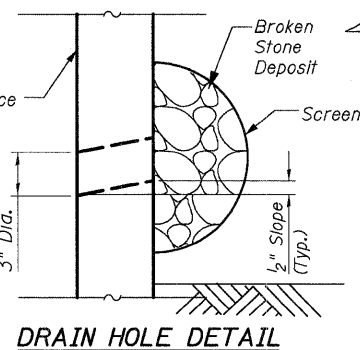
SHOWING OUTLINES

SHOWING REINFORCEMENT

SHOWING OUTLINES

PLAN

SECTION D-D



DRAIN HOLE DETAIL

30" Dia. Opening Frame and Lid NEENAH No. R-6077 or Approved Equal See Detail "A" for Reinforcement Details. Cost of Manhole Frame and Lid shall be Included in the Unit Bid Price of "Concrete Box Culverts"

Note "A"  
Adjust Placement of  $h_{19}$  bars as Indicated in Detail "A"

\*Omit One Bar at Manhole Opening (See Detail "A" on BC05).

See Corner Dimensions on Sheet BC05

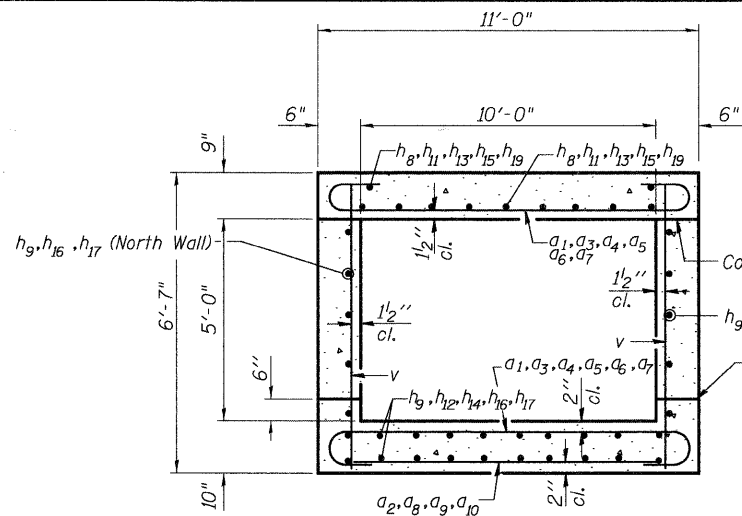
See Sheet BC05 for Sections CC, FF, GG and Details "A" and "B"

CULVERT NO. 2  
PLAN & ELEVATION  
STRUCTURE NO. 045-0331

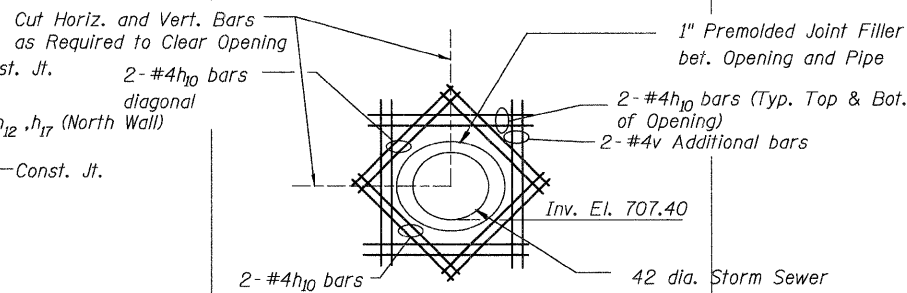
DESIGNED	200
CHECKED	EXAMINED
DRAWN	PASSED
CHECKED	ENGINEER OF BRIDGES AND STRUCTURES

SHEET NO. BC04	RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
BC09 SHEETS	361	06-00214-02-BR	KANE	219	122
SN 045-0331			CONTRACT NO. 63073		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

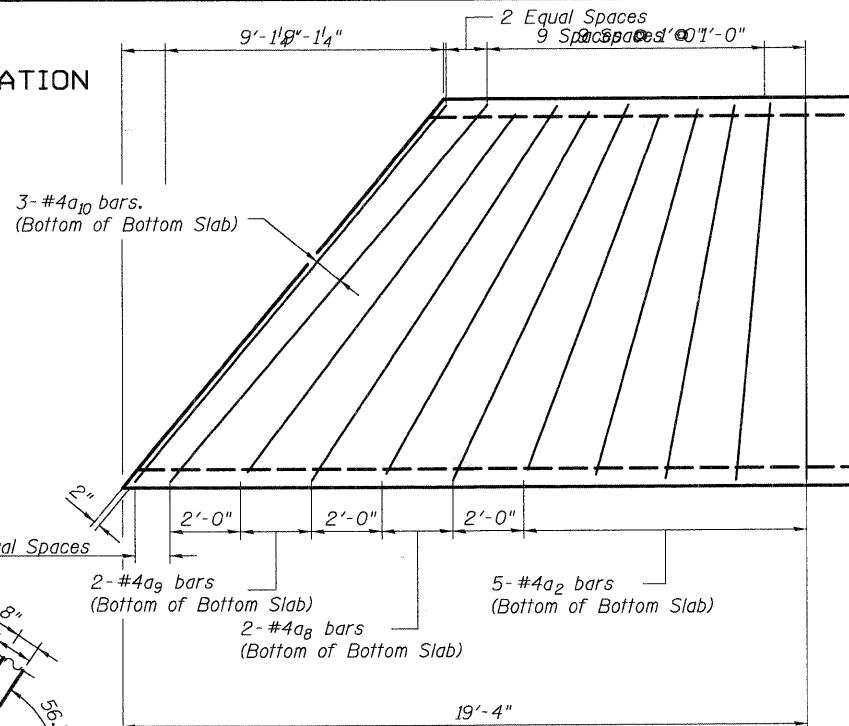
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



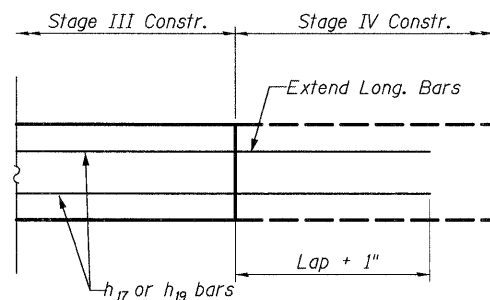
SECTION THRU BARREL



DETAIL "B"

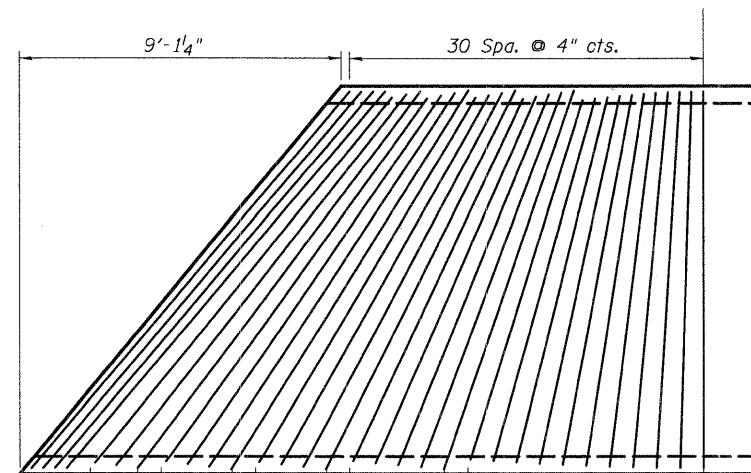


END CULVERT BAR DIAGRAM  
Bottom of Bottom Slab

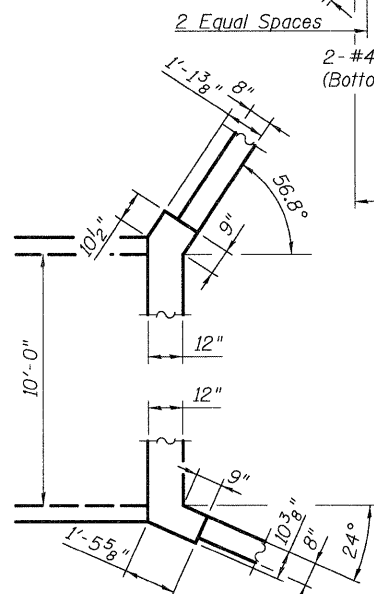


SECTION F-F

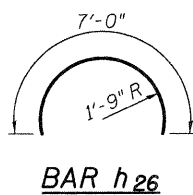
Lap Length #5 Bar = 1'-8"  
Lap Length #7 Bar = 2'-9"  
Note: Contractor may use bar splicers.



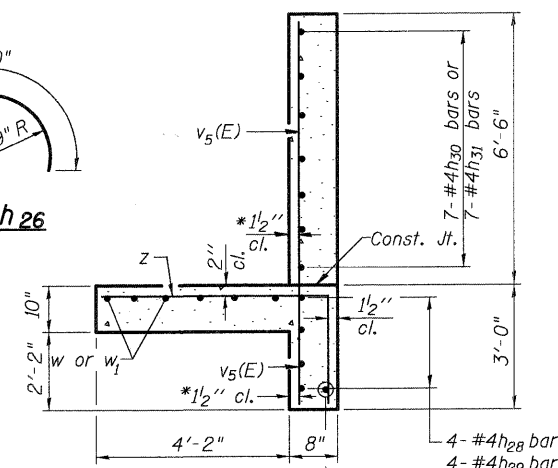
END CULVERT BAR DIAGRAM  
Bottom of Top Slab and Top of Bottom Slab



CORNER DIMENSIONS  
(Elev. 713.85 to 714.60)

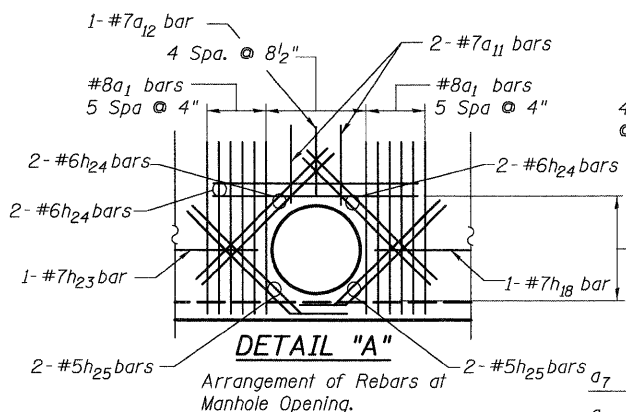


BAR h26



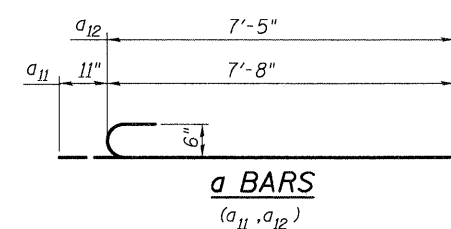
SECTION C-C  
TYPICAL WINGWALL SECTION

\*v5(E) bars shall not be placed more than 1/2" cl. from back face of wingwall.

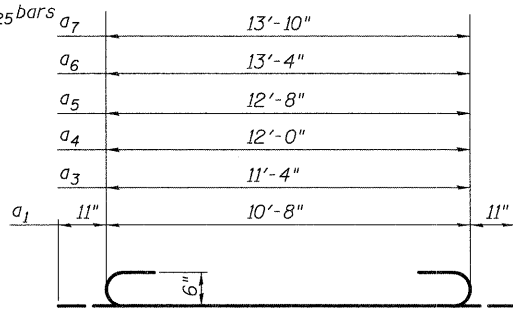


DETAIL "A"

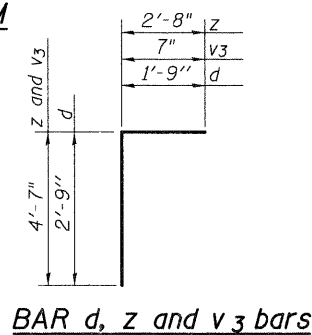
Arrangement of Rebars at Manhole Opening.



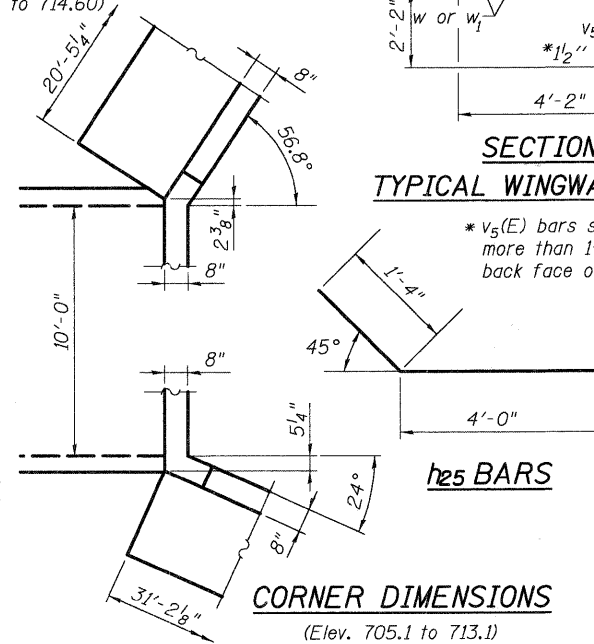
a BARS  
(a11, a12)



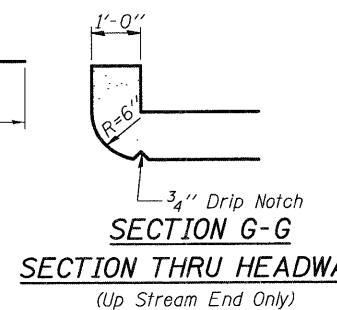
a BARS  
(a1, a3, a4, a5, a6, a7)



BAR d, z and v3 bars



CORNER DIMENSIONS  
(Elev. 705.1 to 713.1)



SECTION G-G  
SECTION THRU HEADWALL  
(Up Stream End Only)

BILL OF MATERIAL  
CULVERT 2 - STAGE III & IV

Bar	No.	Size	Length	Shape
a1	888	#8	12'-6"	U
a2	122	#4	10'-9"	U
a3	5	#8	13'-2"	U
a4	4	#8	13'-10"	U
a5	4	#8	14'-6"	U
a6	3	#8	15'-2"	U
a7	4	#8	15'-8"	U
a8	2	#4	11'-9"	U
a9	2	#4	12'-8"	U
a10	3	#4	13'-10"	U
a11	2	#7	8'-7"	U
a12	1	#7	8'-4"	U
d	10	#4	4'-6"	L
h3	2	#6	10'-8"	U
h8	44	#7	36'-8"	U
h9	120	#5	35'-10"	U
h10	12	#4	6'-4"	U
h11	4	#7	21'-10"	U
h12	11	#5	20'-8"	U
h13	3	#7	19'-0"	U
h14	6	#5	17'-10"	U
h15	4	#7	16'-2"	U
h16	13	#5	15'-0"	U
h17	90	#5	33'-5"	U
h18	1	#7	9'-9"	U
h19	32	#7	34'-6"	U
h23	1	#7	22'-0"	U
h24	4	#6	5'-3"	U
h25	4	#5	5'-4"	U
h26	10	#5	7'-0"	U
h27	4	#4	10'-8"	U
h28	5	#4	21'-7"	U
h29	5	#4	32'-4"	U
h30	7	#4	19'-2"	U
h31	7	#4	29'-8"	U
v	668	#4	6'-3"	U
v2	12	#4	5'-11"	U
v3	2	#4	5'-2"	U
v5(E)	54	#5	9'-2"	U
w	6	#5	20'-1"	U
w1	6	#5	30'-10"	U
z	70	#5	7'-3"	U

Concrete Box Culverts	Cu. Yd.	231
Reinforcement Bars	Pound	49,998
Epoxy Coated Reinforcement Bars	Pound	517
Structure Excavation	Cu. Yd.	500
Rock Excavation	Cu. Yd.	1,857

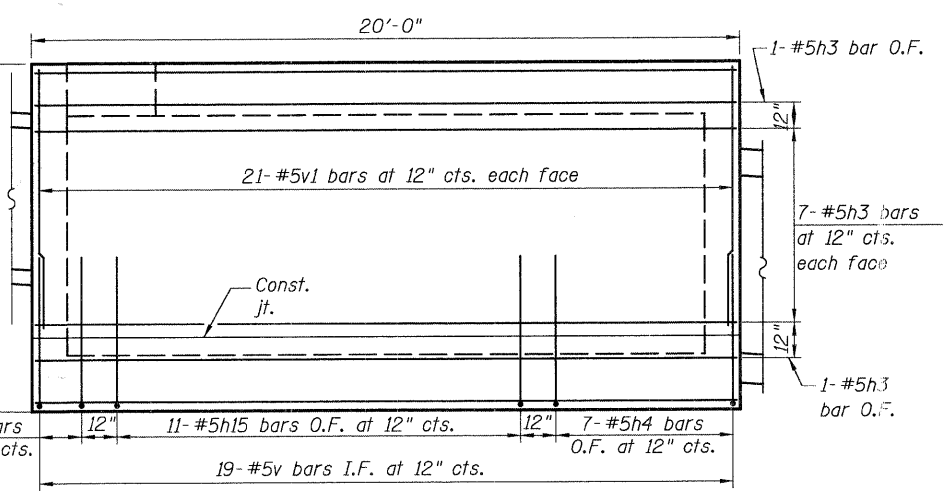
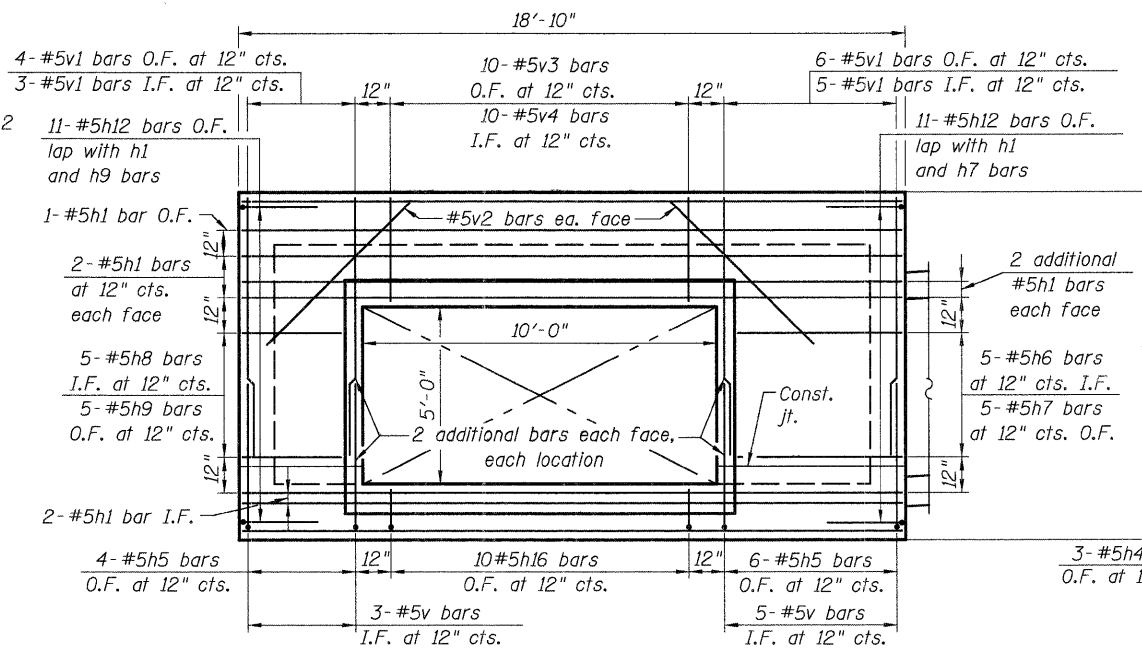
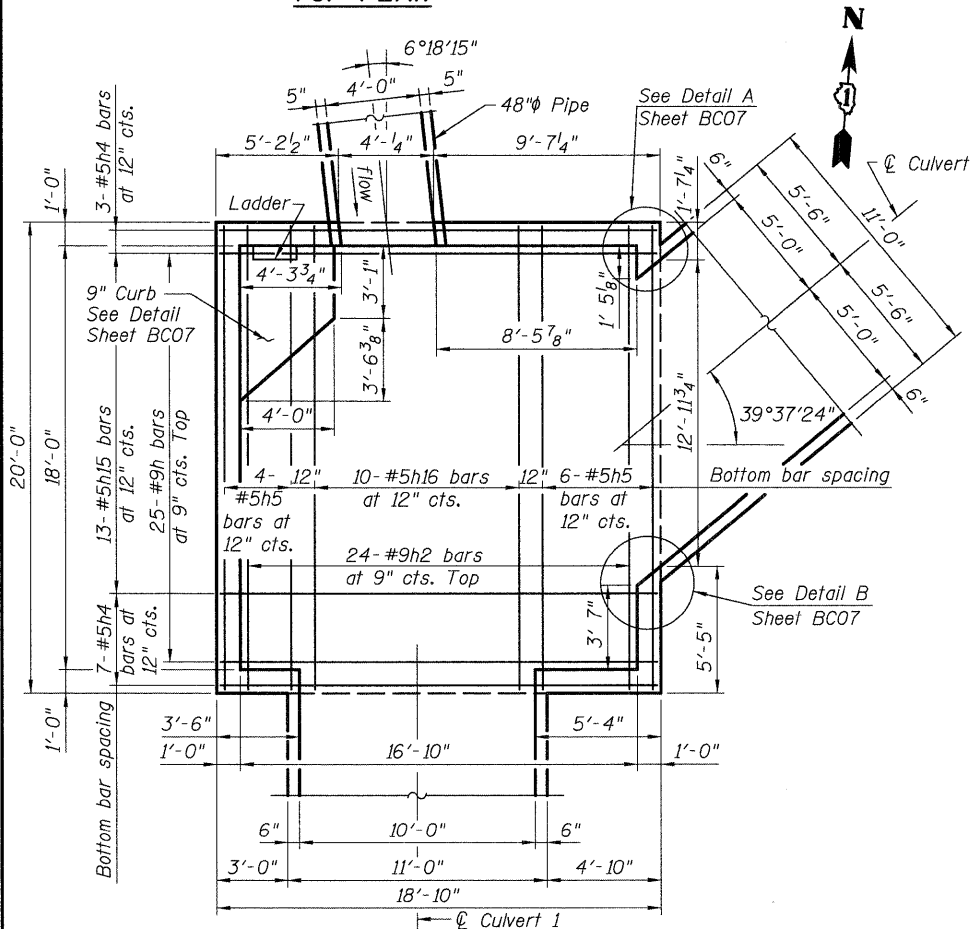
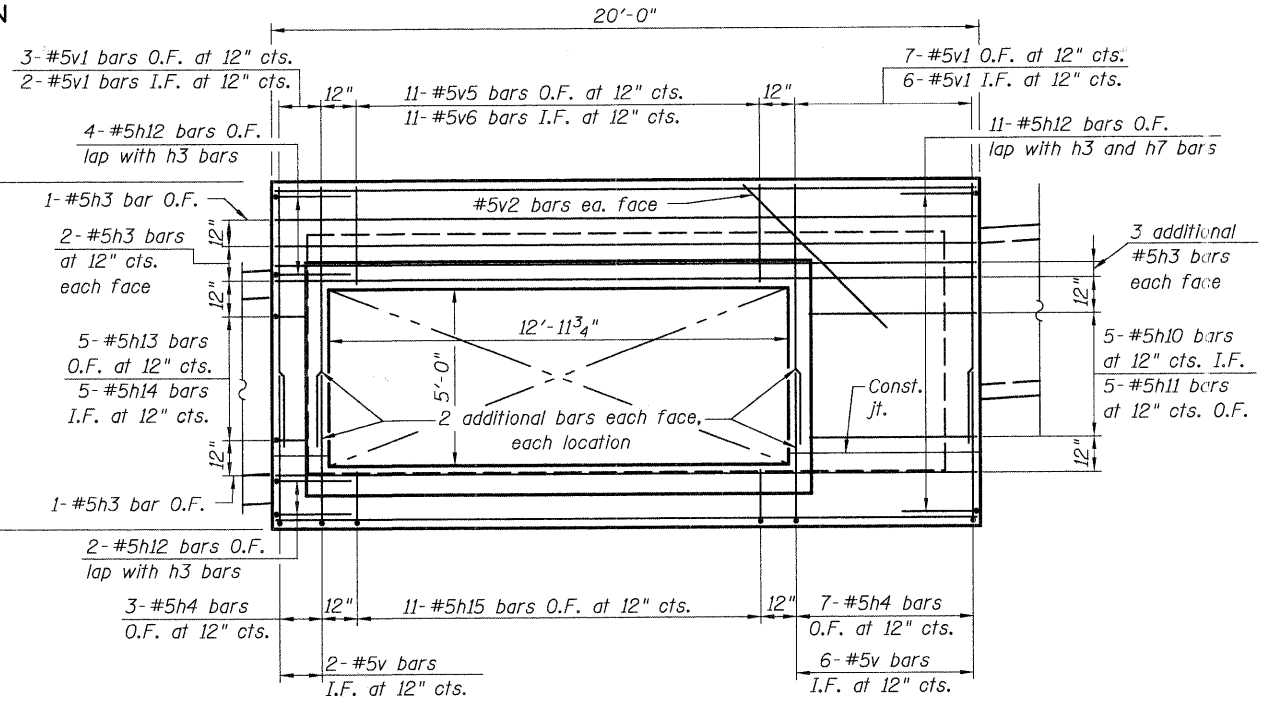
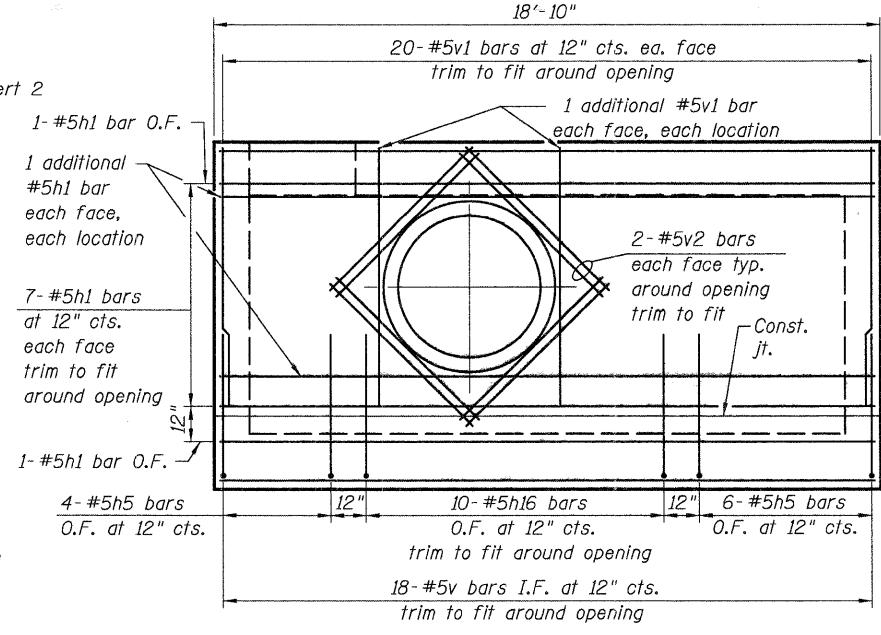
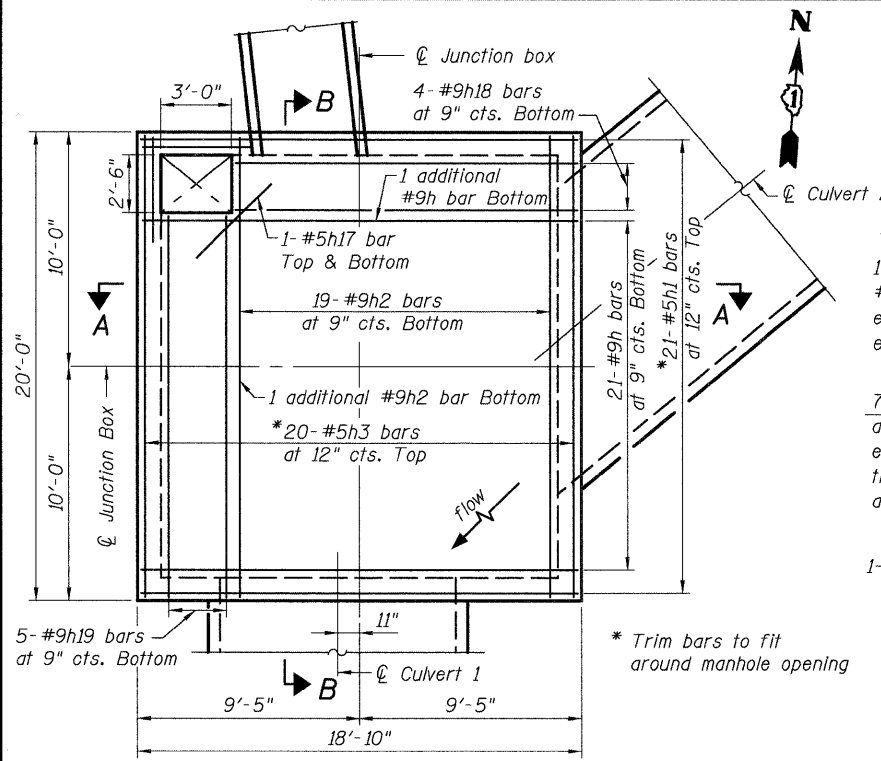
CULVERT NO. 2  
SECTIONS & DETAILS  
STRUCTURE NO. 045-0331

DESIGNED	200
CHECKED	EXAMINED
DRAWN	PASSED
CHECKED	ENGINEER OF BRIDGES AND STRUCTURES

McDonough Associates Inc.  
Engineers / Architects  
130 East Randolph Street  
Chicago, Illinois 60601  
(312) 946-8600

SHEET NO. BC05	RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
BC09 SHEETS	361	06-00214-02-BR	KANE	219	123
SN 045-0331			CONTRACT NO. 63073		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



**JUNCTION CHAMBER NO. 1**  
**PLANS AND ELEVATIONS**  
**MCLEAN BOULEVARD**  
**SECTION 06-00214-02 BR**  
**KANE COUNTY**  
**STA 812+24.37 TO STA 819.00**  
**STRUCTURE NO. 045-2039**

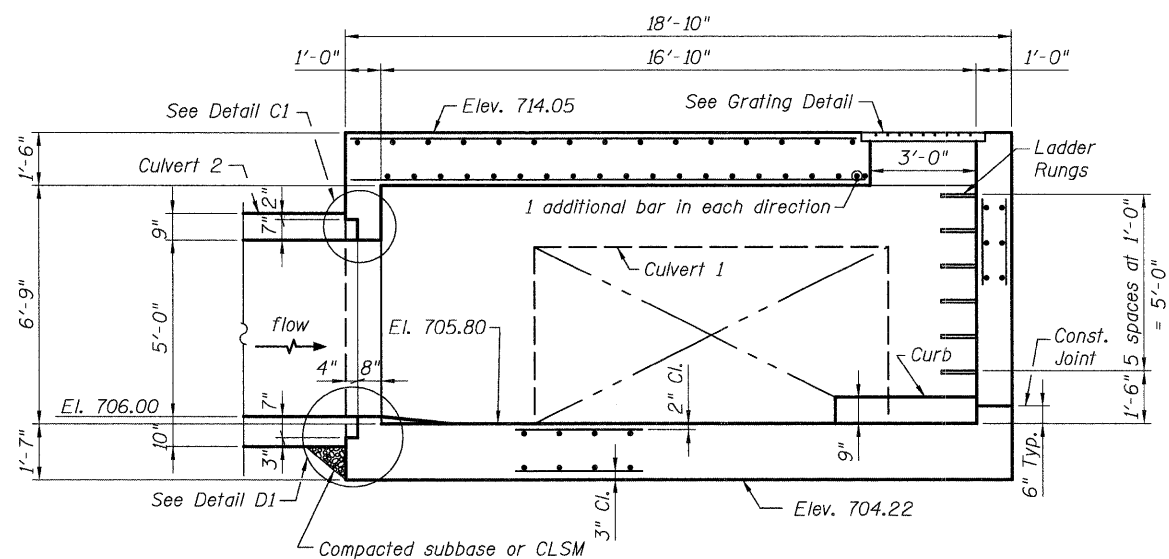
DESIGNED	200
CHECKED	EXAMINED
DRAWN	PASSED
CHECKED	ENGINEER OF BRIDGES AND STRUCTURES

**McDonough Associates Inc.**  
Engineers / Architects  
130 East Randolph Street  
Chicago, Illinois 60601  
(312) 946-8600

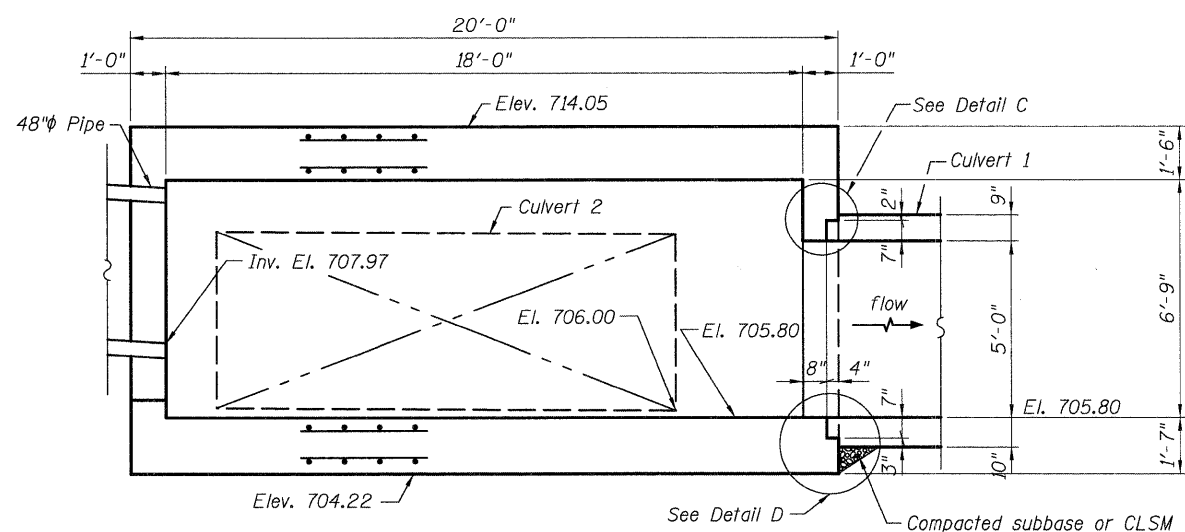
SHEET NO.	RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
BC06	361	06-00214-02-BR	KANE	219	124
BC09 SHEETS		SN 045-2039		CONTRACT NO. 63073	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					



STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

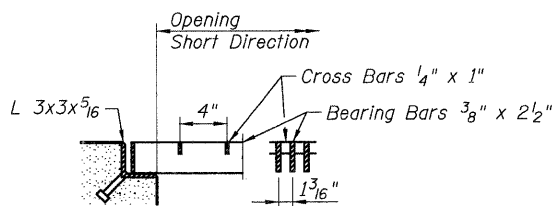


SECTION A-A



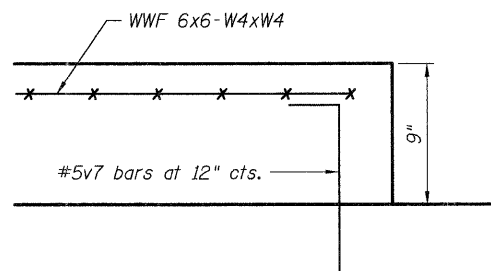
SECTION B-B

Note: All costs for compacted subbase, grating and frame, ladder rungs, welded wire fabric and all other appurtenances required to complete this work shall be included in the item "Junction Chamber."

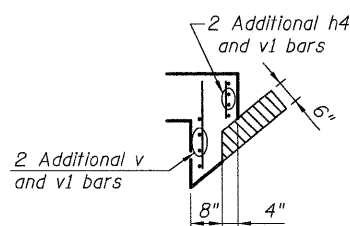


GRATING DETAIL

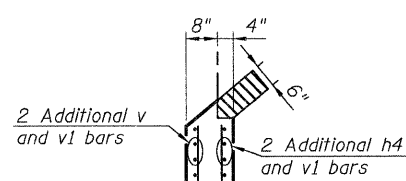
Grating plates, bars and angles shall conform to ASTM A36, galvanized in accordance with ASTM A123, or be fabricated from aluminum, conforming to ASTM B361-alloy 6061-T6. Aluminum surfaces in contact with concrete shall receive a heavy coat of bituminous paint or cold applied asphaltic mastic. Fastener shall consist of stainless steel, Type 304, or be zinc plated conforming to ASTM B633 for exterior use. Provide stainless steel fasteners for aluminum grating.



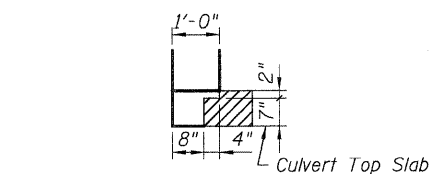
CURB DETAIL



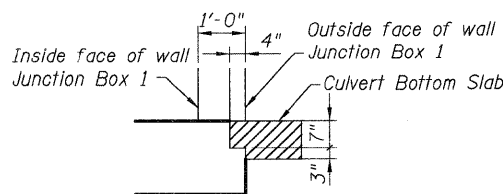
DETAIL A



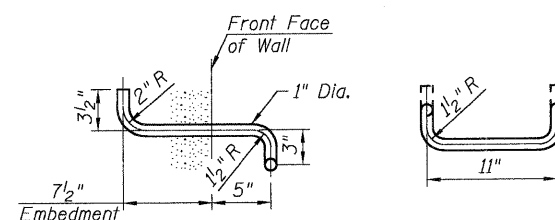
DETAIL B



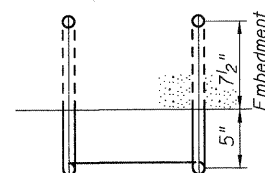
DETAIL C  
DETAIL C1 - OPPOSITE HAND



DETAIL D  
DETAIL D1 - OPPOSITE HAND



SIDE VIEW FRONT VIEW  
TYPE Z LADDER RUNG ELEVATIONS



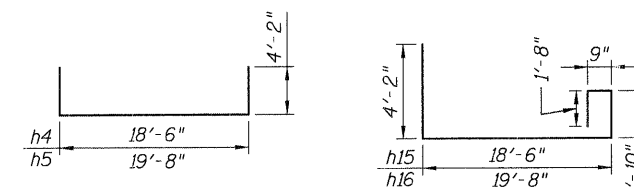
TYPE Z LADDER RUNG PLAN

- The ladder rungs shall be aluminum, conforming to ASTM B361-Alloy 6061-T6 or shall be ductile iron. Aluminum ladder rungs shall receive a heavy coat of bituminous paint or cold applied asphaltic mastic for the portion embedded in concrete. The coating must extend beyond the embedment at least two inches.
- The contractor may submit an alternative ladder rung detail for Engineer's approval.

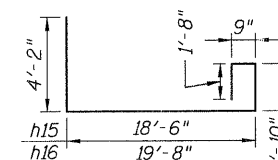
\*Quantities are included in Pay Item "Junction Chamber". Contractor will not be compensated additionally for these items.

BILL OF MATERIAL

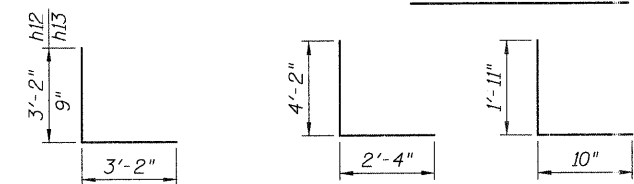
Bar	No.	Size	Length	Shape
h	47	#9	18'-6"	—
h1	52	#5	18'-6"	—
h2	44	#9	19'-8"	—
h3	48	#5	19'-8"	—
h4	14	#5	26'-10"	—
h5	14	#5	28'-0"	—
h6	5	#5	5'-0"	—
h7	5	#5	4'-6"	—
h8	5	#5	3'-2"	—
h9	5	#5	2'-8"	—
h10	5	#5	4'-3"	—
h11	5	#5	4'-7"	—
h12	39	#5	6'-4"	—
h13	5	#5	3'-11"	—
h14	5	#5	2'-0"	—
h15	11	#5	26'-11"	—
h16	10	#5	28'-1"	—
h17	2	#5	4'-0"	—
h18	4	#9	14'-6"	—
h19	5	#9	16'-2"	—
v	61	#5	6'-6"	—
v1	138	#5	7'-5"	—
v2	22	#5	6'-0"	—
v3	10	#5	2'-5"	—
v4	10	#5	2'-11"	—
v5	11	#5	2'-0"	—
v6	11	#5	2'-8"	—
v7	13	#5	2'-9"	—
Junction Chamber No. 1	Each		1	
*Concrete Box Culverts	Cu. Yd.		57	
*Reinforcement Bars	Pound		11,960	
*Structure Excavation	Cu. Yd.		55	
Rock Excavation	Cu. Yd.		144	



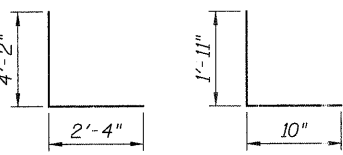
BARS h4 & h5



BARS h15 & h16



BARS h12 & h13



BAR v

BAR v7

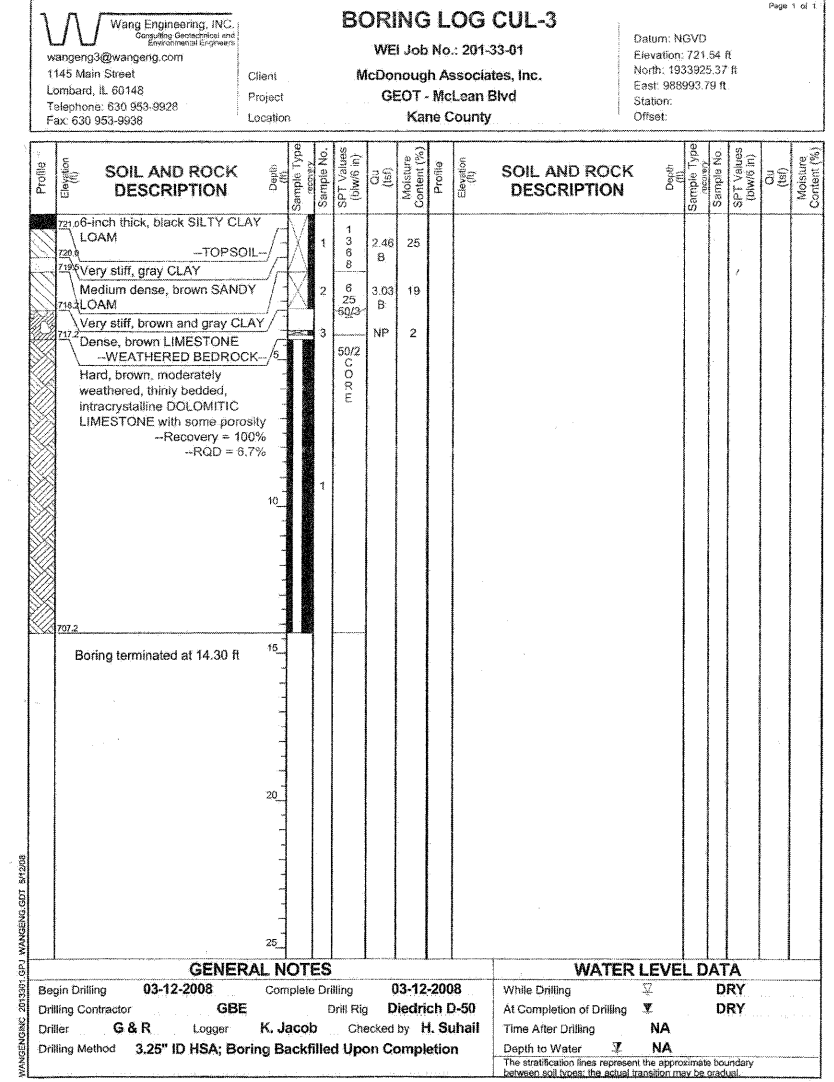
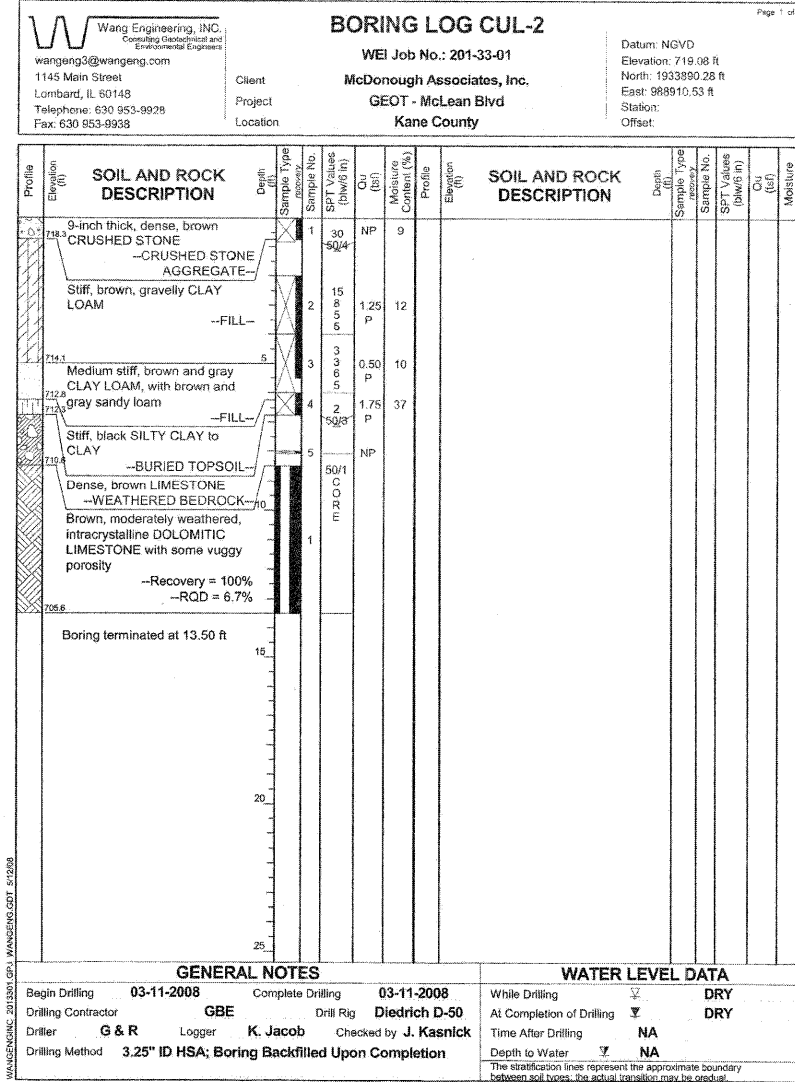
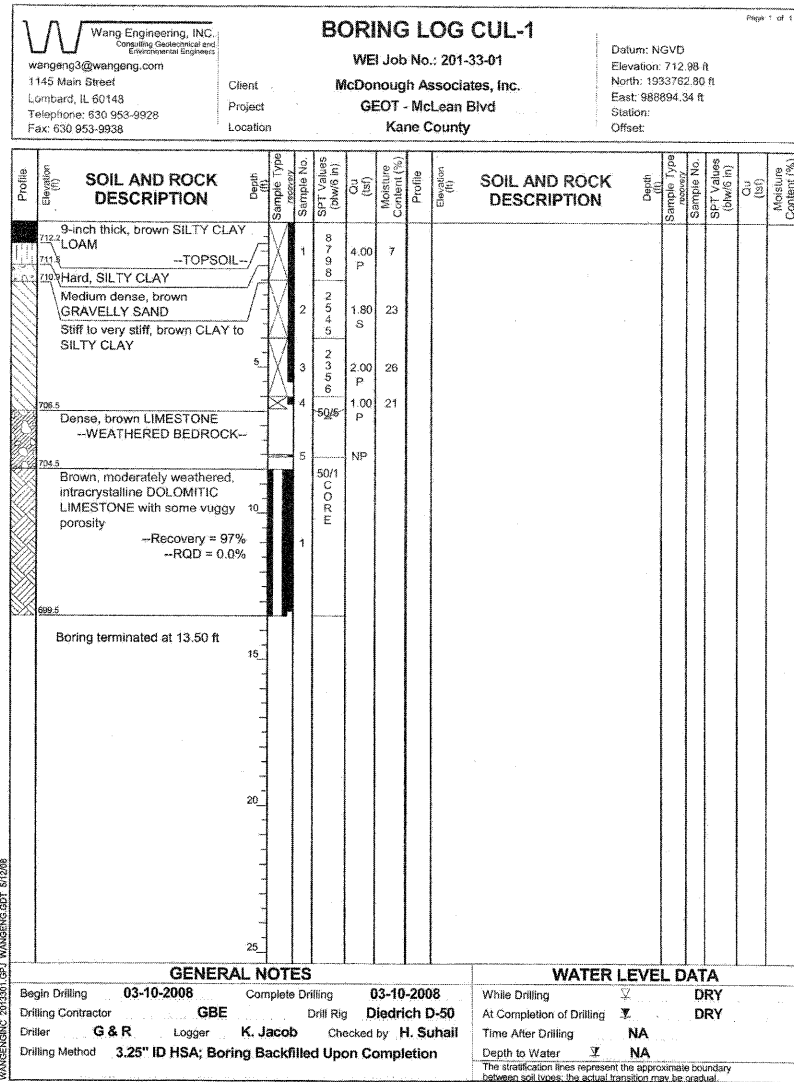
JUNCTION CHAMBER NO. 1  
PLANS AND ELEVATIONS  
STRUCTURE NO. 045-2039

DESIGNED	200
CHECKED	EXAMINED
DRAWN	ENGINEER OF BRIDGE DESIGN
CHECKED	PASSED
	ENGINEER OF BRIDGES AND STRUCTURES

McDonough Associates Inc.  
Engineers / Architects  
130 East Randolph Street  
Chicago, Illinois 60601  
(312) 946-8600

SHEET NO. BC07	RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	361	06-00214-02-BR	KANE	219	125
BC09 SHEETS	SN 045-2039		CONTRACT NO. 63073		
	FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



DESIGNED	200
CHECKED	EXAMINED
DRAWN	PASSED
CHECKED	

SOIL BORING LOGS  
STRUCTURE NO. 045-0331 AND  
STRUCTURE NO. 045-0332

**McDonough Associates Inc.**  
Engineers / Architects  
130 East Randolph Street  
Chicago, Illinois 60601  
(312) 946-8600

SHEET NO. BC08	RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	361	06-00214-02-BR	KANE	219	126
BC09 SHEETS	SN 045-2039		CONTRACT NO. 63073		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

<p>Wang Engineering, Inc. Consulting Geotechnical and Environmental Engineers wangeng3@wangeng.com 1145 Main Street Lombard, IL 60148 Telephone: 630 953-9926 Fax: 630 953-9938</p>	<b>BORING LOG CUL-4</b>		Page 1 of 1
	WEI Job No.: 201-33-01		Date: NGVD
	Client	McDonough Associates, Inc.	Elevation: 722.33 ft
	Project	GEO - McLean Blvd	North: 1934056.49 ft
Location	Kane County	East: 989126.34 ft	Station:
		Offset:	

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/in)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/in)	Qu (tsf)	Moisture Content (%)
722.04	0.4-0.8 inch thick brown GRAVELLY SAND	1	7	10	NP		722.04						
720.3	Medium dense, Light brown GRAVELLY SAND	2	2	18	B		720.3						
718.5	6-inch thick brown, SILTY CLAY LOAM	3	3	12	P		718.5						
716.8	Dense, brown LIMESTONE	4	50/2				716.8						
714.8	Dense, brown, moderately weathered DOLOMITIC LIMESTONE	5					714.8						
712.8	Boring terminated at 17.50 ft						712.8						

<b>GENERAL NOTES</b>		<b>WATER LEVEL DATA</b>	
Begin Drilling	05-01-2008	Complete Drilling	05-01-2008
Drilling Contractor	GBE	Drill Rig	Diedrich D-50
Driller	G & R	Logger	K. Jacob
Drilling Method	3.25" ID HSA	Checked by	
		While Drilling	DRY
		At Completion of Drilling	DRY
		Time After Drilling	NA
		Depth to Water	NA

**SOIL BORING LOGS**  
**STRUCTURE NO. 045-0331 AND**  
**STRUCTURE NO. 045-0332**

DESIGNED	200
CHECKED	EXAMINED
DRAWN	ENGINEER OF BRIDGE DESIGN
CHECKED	PASSED
	ENGINEER OF BRIDGES AND STRUCTURES

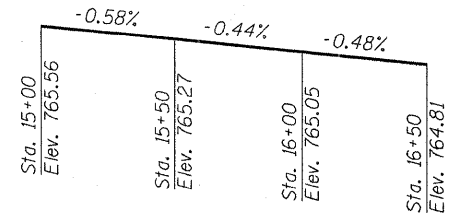
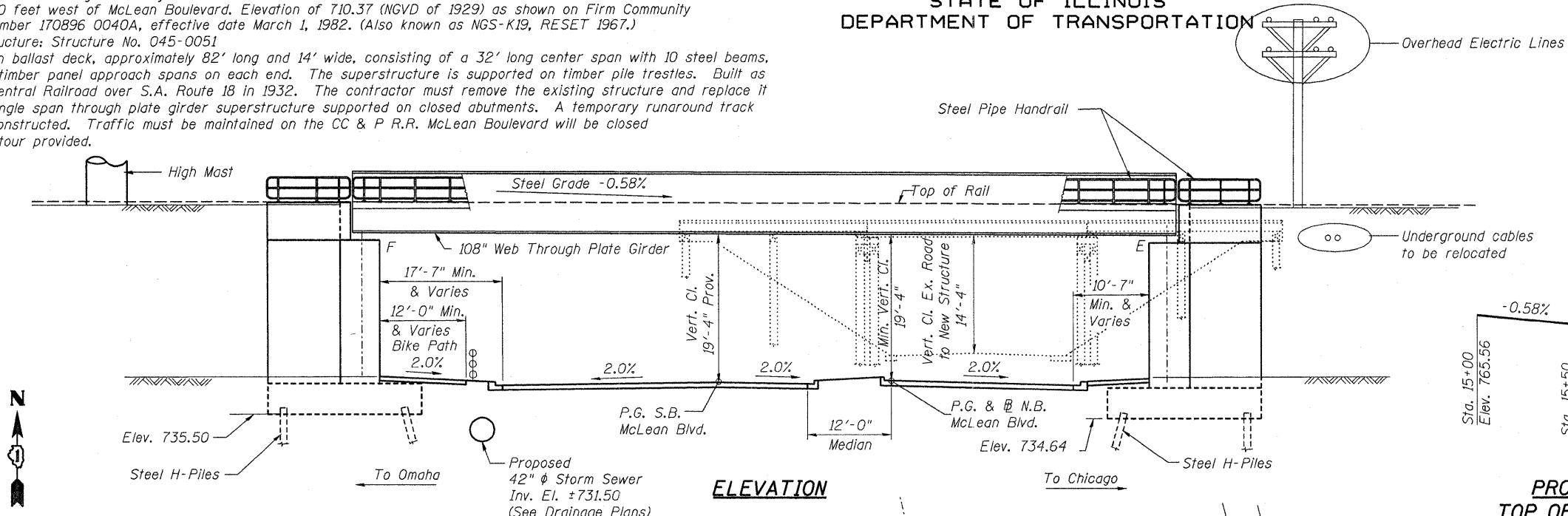
McDonough Associates Inc.  
Engineers / Architects  
130 East Randolph Street  
Chicago, Illinois 60601  
(312) 946-8600

SHEET NO. BC09	RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	361	06-00214-02-BR	KANE	219	127
BC09 SHEETS	SN 045-2039		CONTRACT NO. 63073		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

Benchmark RM-12:  
 A Standard US Geological Survey Disk set in the south headwall of a culvert located on State Route 31, about 130 feet west of McLean Boulevard. Elevation of 710.37 (NGVD of 1929) as shown on Firm Community Panel Number 170896 0040A, effective date March 1, 1982. (Also known as NGS-K19, RESET 1967.)

Existing Structure: Structure No. 045-0051  
 Five-span ballast deck, approximately 82' long and 14' wide, consisting of a 32' long center span with 10 steel beams, and two timber panel approach spans on each end. The superstructure is supported on timber pile trestles. Built as Illinois Central Railroad over S.A. Route 18 in 1932. The contractor must remove the existing structure and replace it with a single span through plate girder superstructure supported on closed abutments. A temporary runaround track will be constructed. Traffic must be maintained on the CC & P R.R. McLean Boulevard will be closed and a detour provided.

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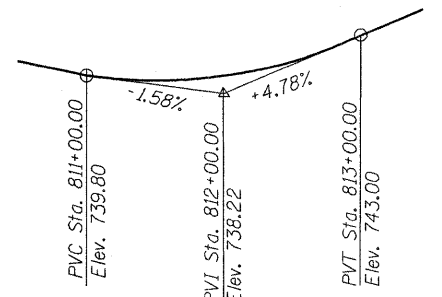
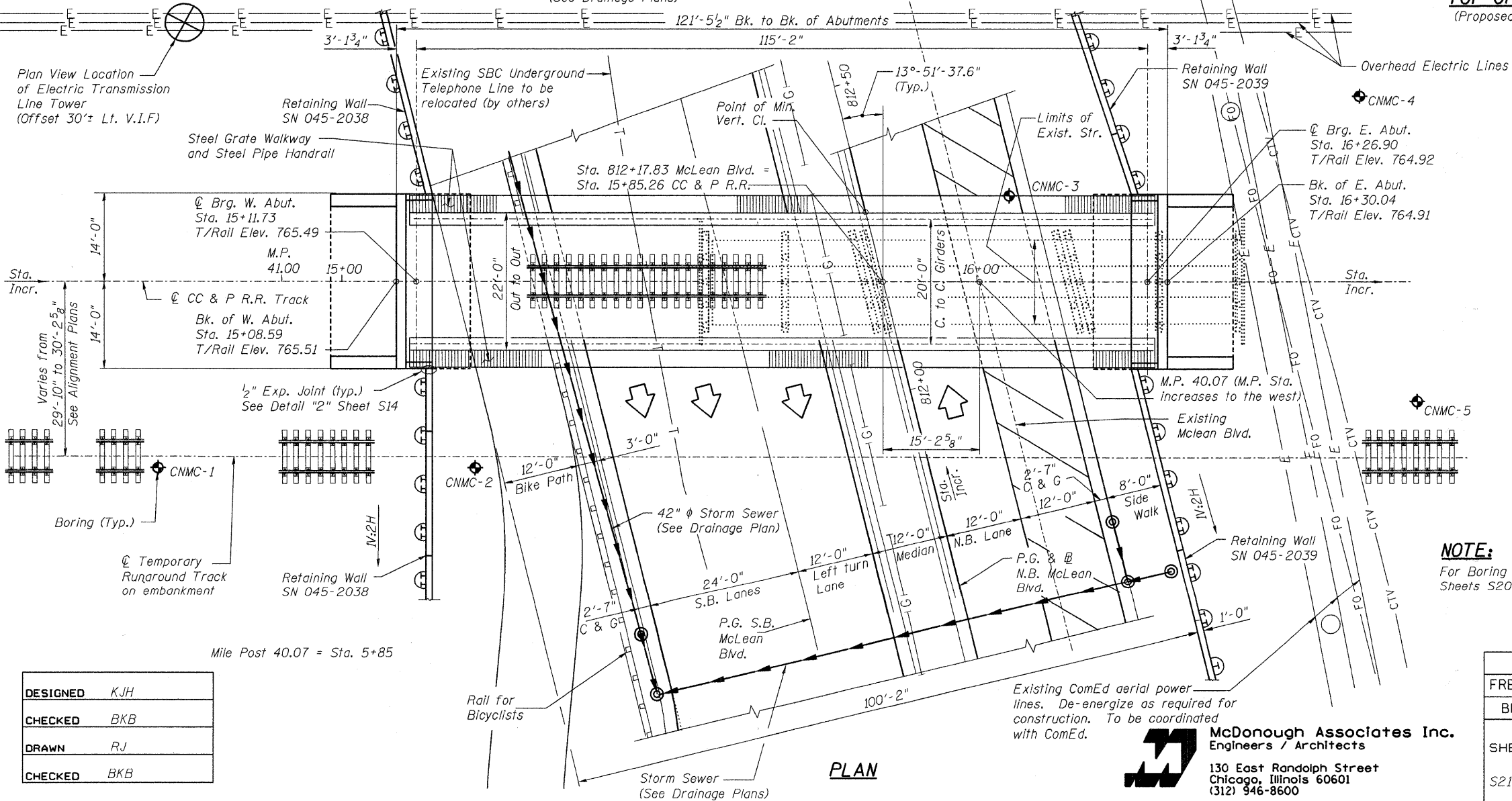
**PROFILE GRADE  
 TOP OF RAIL PROFILE**  
 (Proposed CC & P R.R. Tracks)

**LOADING COOPER E-90 OR  
 ALTERNATE LIVE LOADING**  
 IMPACT: Diesel Impact  
 Allow Imposed Dead Load of 28" of Ballast

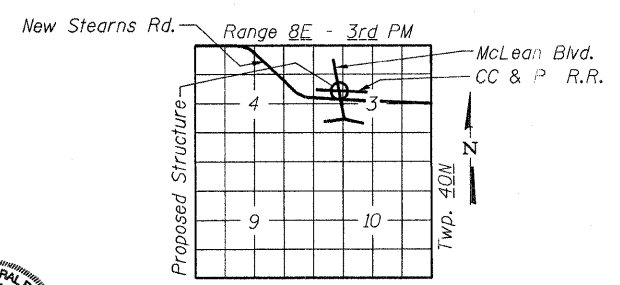
**DESIGN SPECIFICATIONS**  
 2008 AREMA Specifications  
 Live Load+Impact Deflection: L/750  
 Design Speed: 60 m.p.h.

**DESIGN STRESSES  
 FIELD UNITS**  
 $f'_c = 5,000$  psi  
 $f_y = 60,000$  psi (Reinforcement)  
 $f_y = 50,000$  psi (Structural Steel)

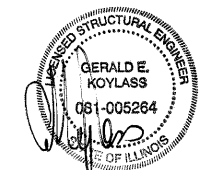
**SEISMIC DATA**  
 Seismic Performance Category (SPC) = A  
 Bedrock Acceleration Coefficient (A) = 0.037g  
 Site Coefficient (S) = 1.0



**PROFILE GRADE  
 McLEAN BOULEVARD**



**LOCATION SKETCH**



Exp: 11/30/2010

**NOTE:**  
 For Boring data see  
 Sheets S20 and S21.

DESIGNED	KJH
CHECKED	BKB
DRAWN	RJ
CHECKED	BKB

**McDonough Associates Inc.**  
 Engineers / Architects  
 130 East Randolph Street  
 Chicago, Illinois 60601  
 (312) 946-8600

Norfolk Southern Railroad		SECTION		COUNTY	TOTAL SHEETS	SHEET NO.
FREEPORT SUBDIVISION		06-00214-02-BR		KANE	219	128
BRIDGE NO. W40.07		SN 045-3163		CONTRACT NO. 63073		
SHEET NO. S1		RTE. 361		FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT		
S21 SHEETS						

**GENERAL PLAN  
 CHICAGO CENTRAL & PACIFIC R.R.  
 OVER McLEAN BOULEVARD  
 SECTION 06-00214-02-BR  
 KANE COUNTY  
 STATION 5+85.26  
 STRUCTURE NO. 045-3163**

**CAST IN-PLACE CONCRETE**

- All substructure concrete shall have a compressive strength of 5,000 psi at 28 days.
- All exposed concrete edges shall have a 3/4" x 45 degree chamfer. Chamfer on vertical edges shall be continued a minimum of one foot below finished ground level.

**REINFORCING STEEL**

- Reinforcement bars, including epoxy coated reinforcement bars, shall conform to the requirements of ASTM A706 Grade 60 deformed bars.
- Cover from the face of concrete to face of reinforcement bars shall be 3" for surfaces cast against earth and 2" for all other surfaces unless shown otherwise.
- Reinforcing bar bending dimensions are out to out.
- Reinforcement bending details shall be in accordance with the "Manual of Standard Practice for Detailing Reinforced Concrete Structures," ACI 315 latest edition.
- Reinforcement bars designated "(E)" shall be epoxy coated.
- Bars noted thus, 3x2-#5 indicates 3 lines of bars with 2 lengths of bars per line.
- Reinforcement bar splices shall be in accordance with the following table, unless shown otherwise on the drawing.

BAR SIZE	CLASS "C" SPLICE BASIC LAP f'c= 5,000 PSI	BAR SIZE	CLASS "C" SPLICE TOP BARS f'c= 5,000 PSI
#4	1'-9"	#4	2'-11"
#5	2'-2"	#5	3'-8"
#6	2'-7"	#6	4'-4"
#7	3'-0"	#7	5'-1"
#8	3'-10"	#8	6'-6"
#9	4'-10"	#9	8'-3"
#10	6'-2"	#10	10'-5"
#11	7'-6"	#11	12'-10"

**GENERAL NOTES**

- Not used.
- Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of work, however, the contractor will be paid for the quantity actually furnished or removed at the unit price.
- Do not scale dimensions for construction.
- No construction joints except those shown on the plans will be allowed unless ordered by the Engineer.
- Temporary soil retention system shall be designed to retain the exposed surface area and the dead load plus live load surcharge. The live load surcharge shall be for Cooper E-90 loading.
- Not used.
- Concrete Sealer shall be applied to the seat area of the east and west abutments and the inside face of both abutment backwalls and front face of abutments and wingwalls.
- The Contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at substructures specified or approved by the Engineer before ordering the remainder of piles.
- It shall be the contractor's responsibility to verify the location of all utilities prior to starting construction. Contact J.U.I.E. at 800-892-0123.
- Upon completion of the bridge, the contractor shall measure the resulting horizontal and vertical clearances and submit them to the engineer for review, and include in the as-built plans.
- Not used.

DESIGNED	KJH
CHECKED	MGB
DRAWN	RJ
CHECKED	BKB

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

- All construction joints shall be bonded.

**STRUCTURAL STEEL**

- All structural steel shall conform to ASTM A709, Grade 50 unless otherwise noted on the plans or in the special provisions. Structural steel is to be paid for at the Contract Lump Sum Price for "Furnishing and Erecting Structural Steel".  
Calculated Wt of A709 Grade50 steel is-----363,900 lbs.  
Calculated Wt of A709 Grade 50W Corrosion Resistant (C.R.) steel is-----89,900 lbs.  
Total weight is--453,800 lbs.
- The webs and tension flanges of the through-plate girders, and their bearing stiffeners are designated as "Fracture Critical Members"(FCM) and shall conform to the fracture control plan for fracture critical members of the AREMA specifications for Zone 3. These components are noted on the plans as (FCM). Their fabrication shall conform to Chapter 15, Section 1.14 of the AREMA Specifications.
- The main load carrying member components subject to tensile stress, other than fracture critical members, shall conform to the supplemental requirements for notch toughness, Zone 3. These components are the floor beams and are noted on the plans as (NTR).
- Steel noted on the plans (C.R.) shall be high-strength low-alloy structural steel conforming to ASTM A709, Grade 50W, except as otherwise specified on the plans or special provisions.
- Field welding of construction accessories will not be permitted.
- All shop and field connections shall be bolted with high-strength bolts, except where otherwise shown or noted on the drawings to be bolted with machine bolts or welded. All high-strength bolts, nuts and washers shall conform to ASTM A325 Type 1. Bolts shall be 7/8" diameter unless otherwise noted. Holes shall be 1/16" larger than bolt size unless otherwise noted. Holes for shop fasteners shall be subpunched or drilled and reamed through a template in accordance with AREMA specifications and as specified in the special provisions.
- The Organic zinc-Rich Primer / Epoxy / Urethane Paint System shall be used for painting of new structural steel except where otherwise noted. The entire system shall be shop applied, with the exception that masked off connection surfaces, field installed fasteners and damaged areas shall be touched up in the field. The color of the final finish coat for all interior steel surfaces shall be Gray, Munsell No. 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia beams be (\*\*). See Special Provision for "Cleaning and Painting New Metal Structures".
- Steel deck (to be waterproofed) shall be detailed with countersunk bolt connections.
- The existing structural steel coating may contain lead. The Contractor shall take appropriate precautions to deal with the presence of any lead on this project.

**DESIGN CRITERIA**

**SPECIFICATIONS:**  
Steel design in accordance with AREMA Specifications for steel structures, dated 2008. Concrete design in accordance with AREMA Specifications for Concrete Structures and Foundations, dated 2008. Workmanship and materials in accordance with the Standard Specifications for Road and Bridge Construction of the State of Illinois, Department of Transportation, adopted Jan 1, 2007. (Including supplemental specifications and recurring special provisions.) Except that wherever applicable, steel fabrication shall be in accordance with the AREMA Specifications. Welding shall be in accordance with the above AREMA Specifications.

**LIVE LOAD**  
Cooper E90 or Alternate Live Load plus Impact for equipment without hammer blow.

**MAXIMUM LIVE LOAD PLUS IMPACT DEFLECTION**  
L/750 for Railroad Super Structure.

**ABBREVIATIONS:**

PGL Profile Grade Line	WW Wingwall
BF Back Face	NE North East
IF Inside Face	NW North West
OF Outside Face	SE South East
EF Each Face	SW South West
FF Front Face	E Expansion Bearings
WA West Abutment	F Fixed Bearings
EA East Abutment	UNO Unless Noted Otherwise
PJF Prefomed Joint Filler	
PJS Prefomed Joint Sealer	
EB East Bound	
WB West Bound	
NB North Bound	
SB South Bound	

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment	Cu. Yd.	-	255	255
Structure Excavation	Cu. Yd.	-	1,637	1,637
Concrete Structures	Cu. Yd.	-	537	537
Furnishing And Erecting Structural Steel	L. Sum	1	-	1
Reinforcement Bars, Epoxy Coated	Pound	-	70,670	70,670
Pipe Handrail	Foot	284	-	284
Furnishing Steel Piles HPI2X53	Foot	-	1,470	1,470
Driving Piles	Foot	-	1,470	1,470
Test Pile Steel HPI2X53	Each	-	2	2
Name Plates	Each	1	-	1
Name Plates (Special)	Each	1	-	1
Membrane Waterproofing	Sq. Ft.	2,350	-	2,350
Concrete Sealer	Sq. Ft.	-	3,030	3,030
Geocomposite Wall Drain	Sq. Yd.	-	2,095	2,095
Grating	Sq. Ft.	830	-	830
Deck Drains	Foot	240	-	240
Pipe Drains 6"	Foot	-	40	40
Pipe Underdrains for Structures 8"	Foot	-	110	110
Temporary Soil Retention System	L. Sum	-	1	1
Spherical Bearings 800K - Fixed	Each	2	-	2
Spherical Bearings 800K - Expansion	Each	2	-	2
Removal of Existing Structures	Each	1	-	1
Stud Shear Connectors	Each	92	-	92
Pile Shoes	Each	-	70	70

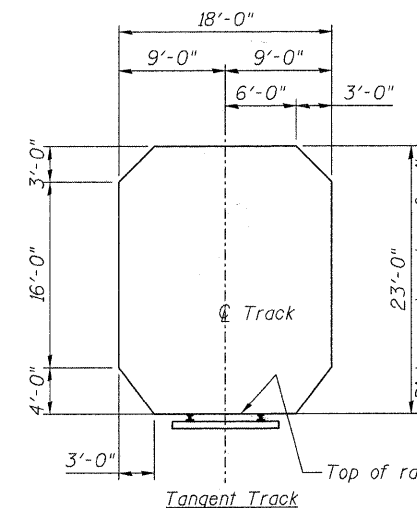
\* Excavation within the bracing for the construction of the abutments and wingwalls will be Paid for under the item "Structure Excavation".

\*\* Colors for fascias:

- Interstate Green, Munsell No. 7.5G 4/8.
- Reddish Brown, Munsell No. 2.5YR 3/4.
- Blue, Munsell No. 10B 3/6.
- Gray, Munsell No. 5B 7/1.

**INDEX OF SHEETS**

S1	General Plan (SN 045-3163)
S2	General Notes & Bill of Material (SN 045-3163)
S3	Construction Staging -1 (SN 045-3163)
S4	Construction Staging -2 (SN 045-3163)
S5	Construction Staging -3 (SN 045-3163)
S6	Framing Plan (SN 045-3163)
S7	Typical Cross Section and Details (SN 045-3163)
S8	Steel Details -1 (SN 045-3163)
S9	Steel Details -2 (SN 045-3163)
S10	Steel Details -3 (SN 045-3163)
S11	Steel Details -4 (SN 045-3163)
S12	Design Data -Stress Tables (SN 045-3163)
S13	Bearing Details (SN 045-3163)
S14	E. & W. Abutment Footings (SN 045-3163)
S15	E. & W. Abutment Details (SN 045-3163)
S16	West Abutment and Details (SN 045-3163)
S17	East Abutment and Details (SN 045-3163)
S18	Temporart Soil retention System (SN 045-3163)
S19	Bridge Drainage Details (SN 045-3163)
S20	Boring data Logs (SN 045-3163)
S21	Boring data Logs (SN 045-3163)



**CN STANDARD CLEARANCE DIAGRAM**

Note: See Article 1.2.6a for curve corrections.  
AREMA Manual for Railway Engineering-Chapter 15.

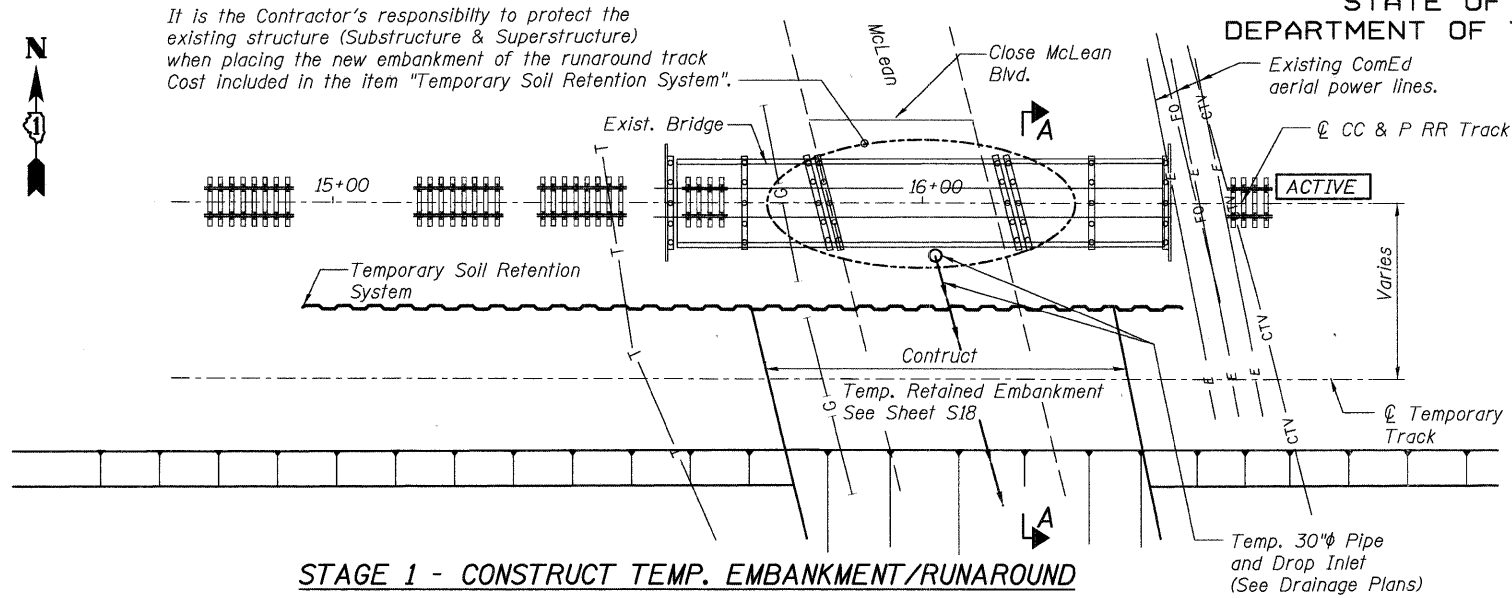
CN North America's Railroad	
FREEPORT SUBDIVISION	
BRIDGE NO. W40.07	
SHEET NO. S2	RTE.
S21 SHEETS	361
SECTION	
COUNTY	
TOTAL SHEETS	
SHEET NO.	
SN 045-3163	
CONTRACT NO. 63073	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT	

**GENERAL NOTES & BILL OF MATERIAL  
STRUCTURE NO. 045-3163**

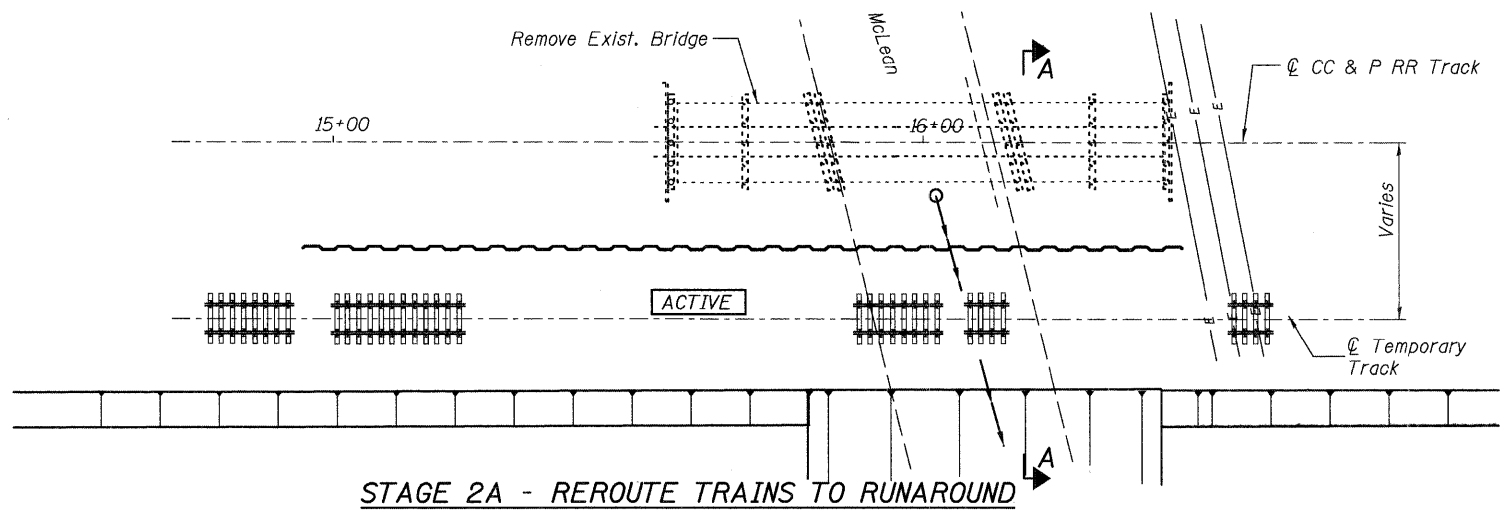
**McDonough Associates Inc.**  
Engineers / Architects  
130 East Randolph Street  
Chicago, Illinois 60601  
(312) 946-8600

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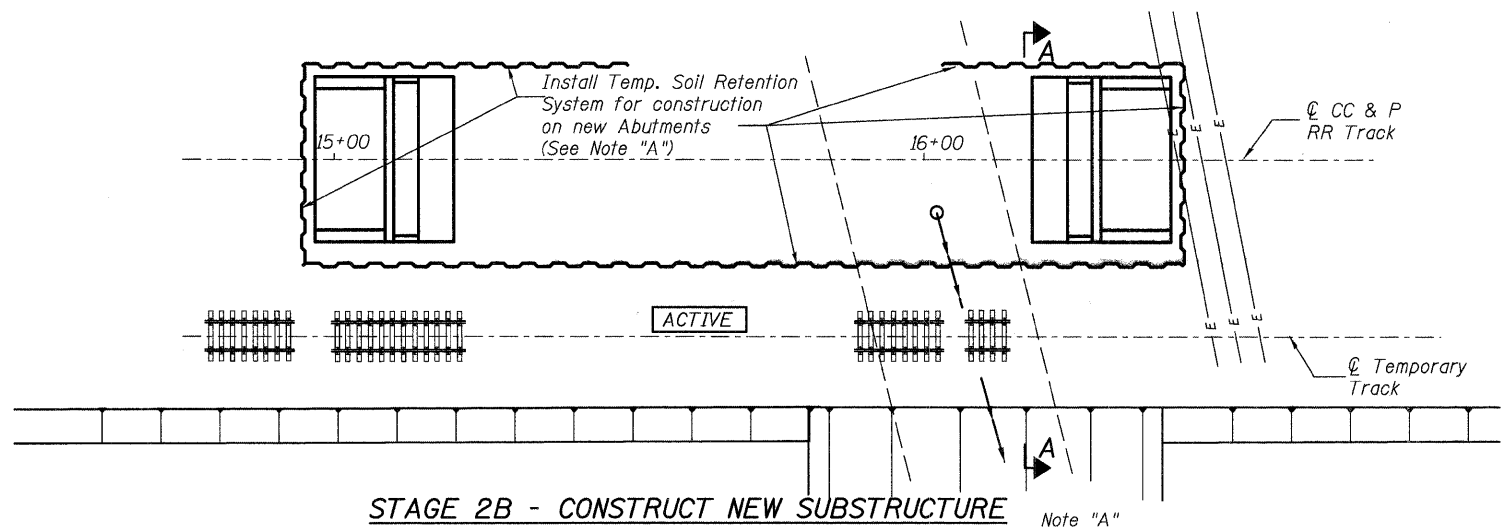
It is the Contractor's responsibility to protect the existing structure (Substructure & Superstructure) when placing the new embankment of the runaround track. Cost included in the item "Temporary Soil Retention System".



STAGE 1 - CONSTRUCT TEMP. EMBANKMENT/RUNAROUND

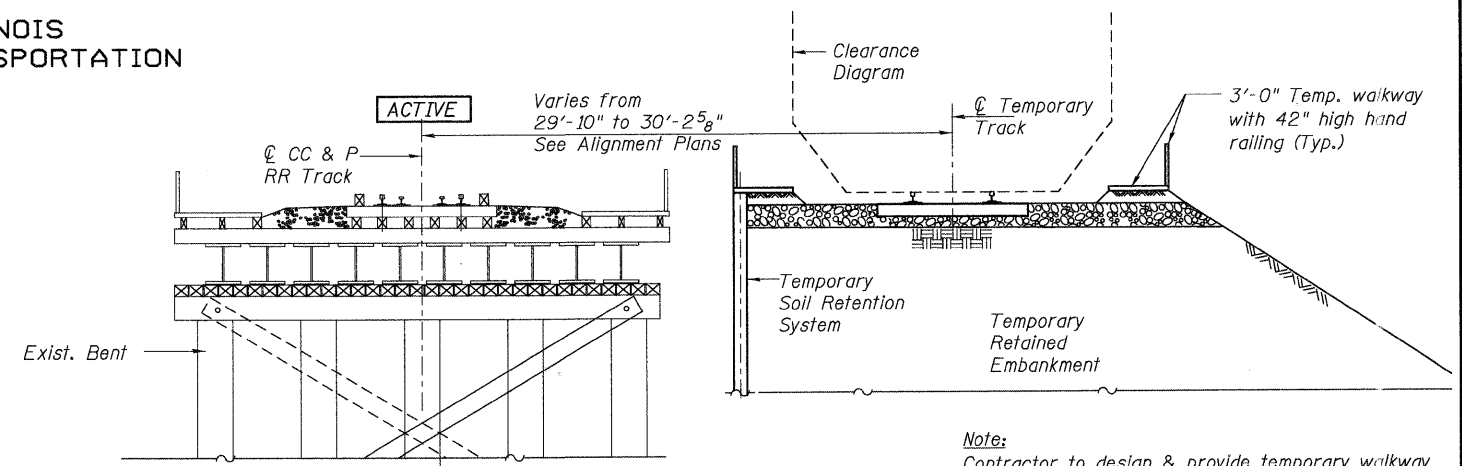


STAGE 2A - REROUTE TRAINS TO RUNAROUND

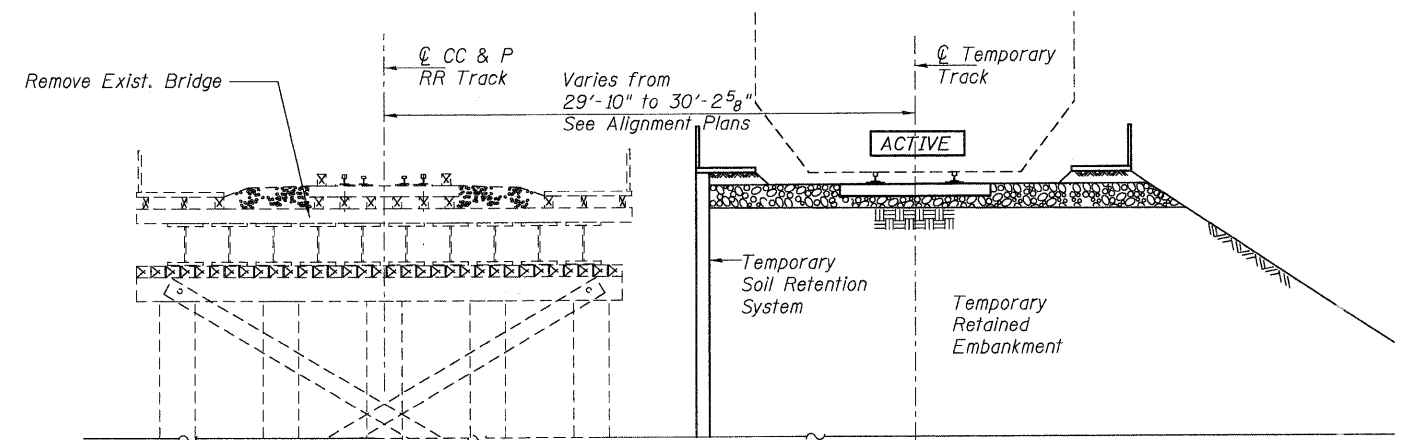


STAGE 2B - CONSTRUCT NEW SUBSTRUCTURE

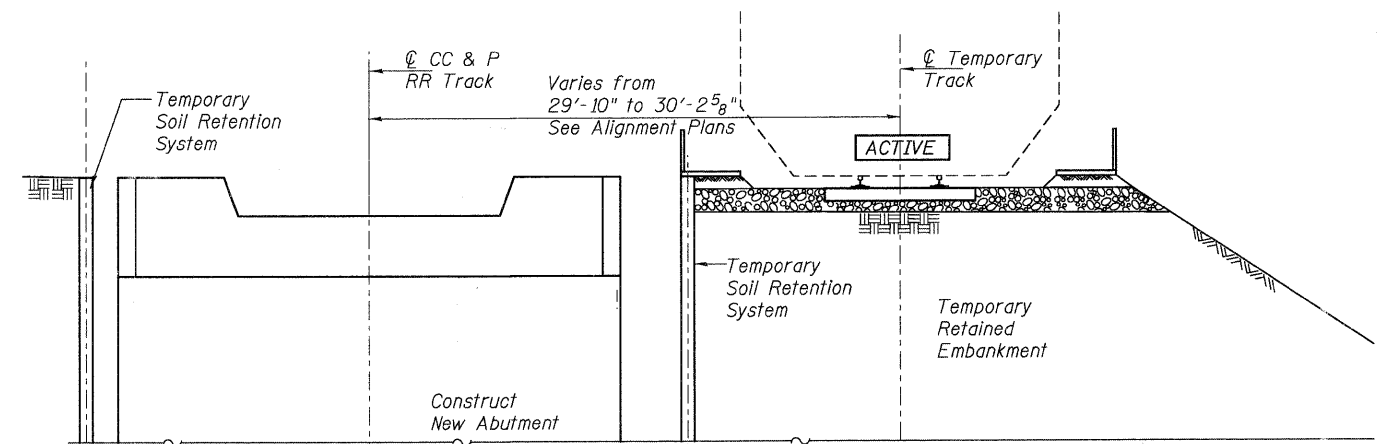
Note "A"  
All work related to the designing, furnishing installing and later removing the excavation bracing will be paid for under the item "Temporary Soil Retention System".



SECTION A-A THRU STAGE 1



SECTION A-A THRU STAGE 2A



SECTION A-A THRU STAGE 2B

NOTES:

Contractor shall locate and protect all utilities. Cost of locating and protecting utilities is included in the pay item "Temporary Soil Retention System".

DESIGNED	KJH	200
CHECKED	MGB	EXAMINED
DRAWN	RJ	PASSED
CHECKED	KJH	ENGINEER OF BRIDGES AND STRUCTURES

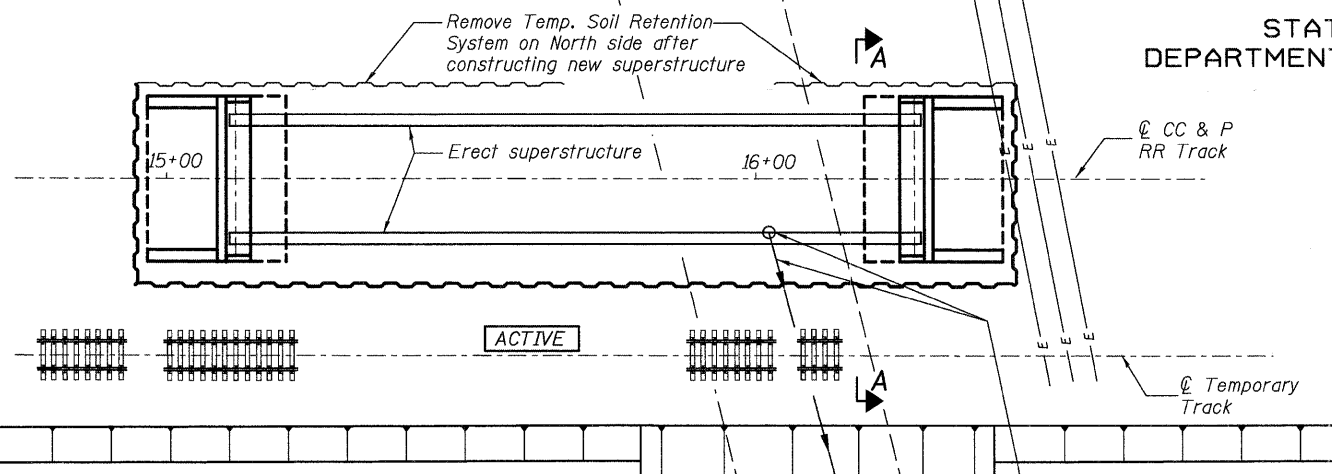
**McDonough Associates Inc.**  
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Chicago, Illinois 60601  
(312) 946-8600

North American Railroad	
FREEPORT SUBDIVISION	
BRIDGE NO. W40.07	
SHEET NO. S3	RTE.
S21 SHEETS	361
SECTION	
06-00214-02-BR	
SN 045-3163	
FED. ROAD DIST. NO. 1	

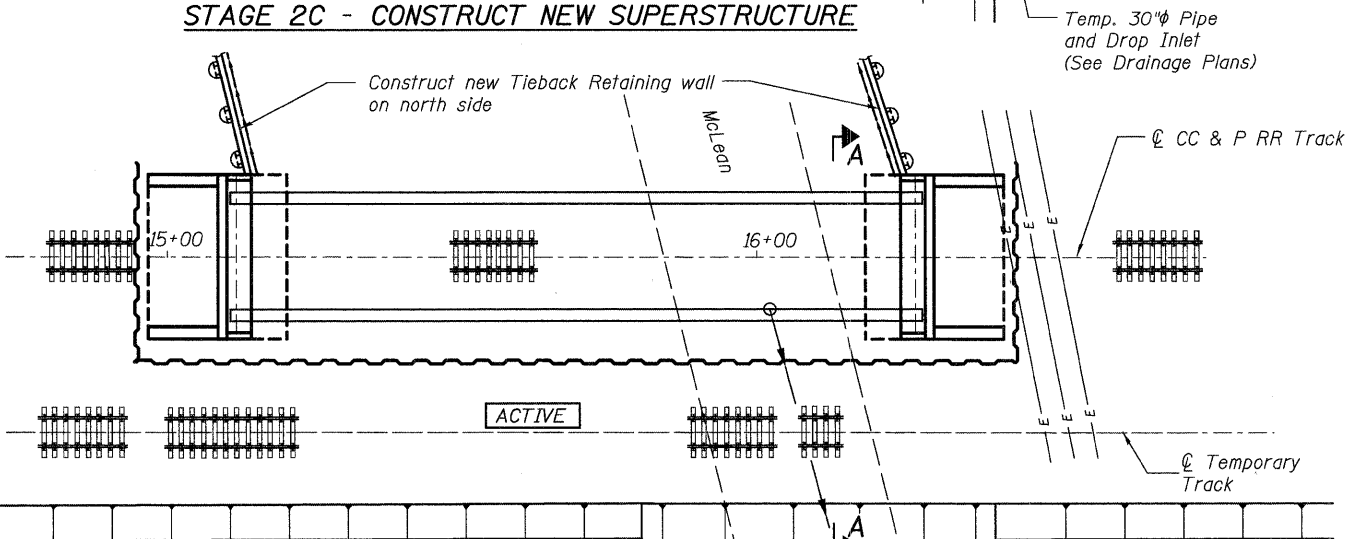
CONSTRUCTION STAGING -1  
STRUCTURE NO. 045-3163

COUNTY	TOTAL SHEETS	SHEET NO.
KANE	219	130
CONTRACT NO. 63073		
ILLINOIS FED. AID PROJECT		

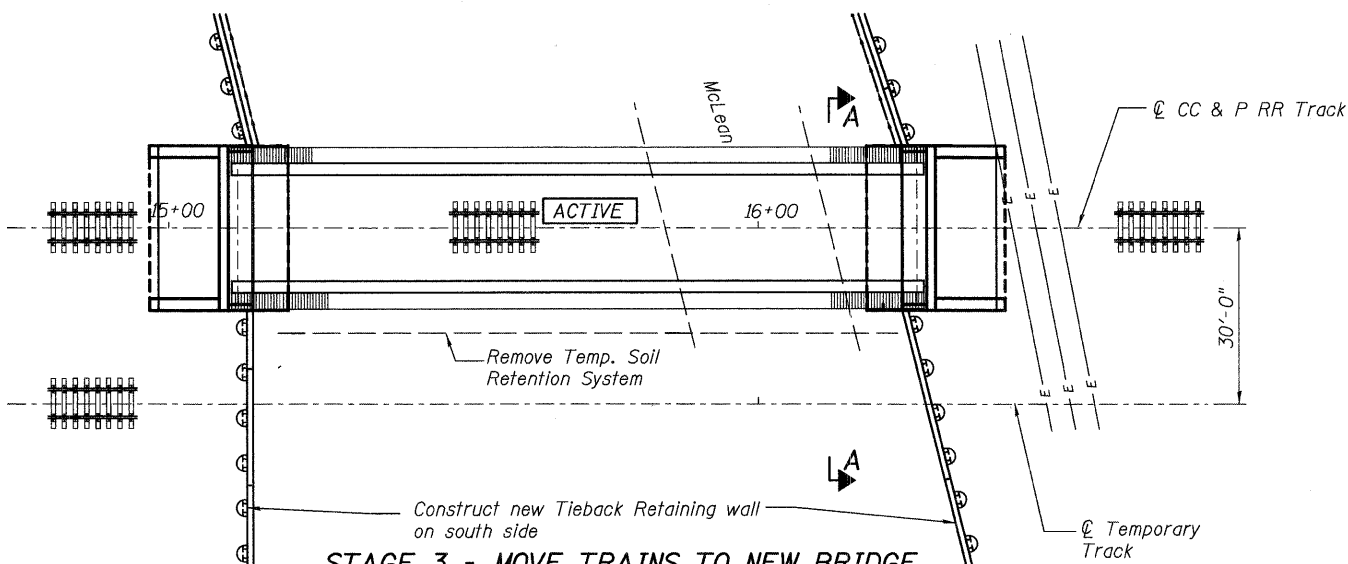
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



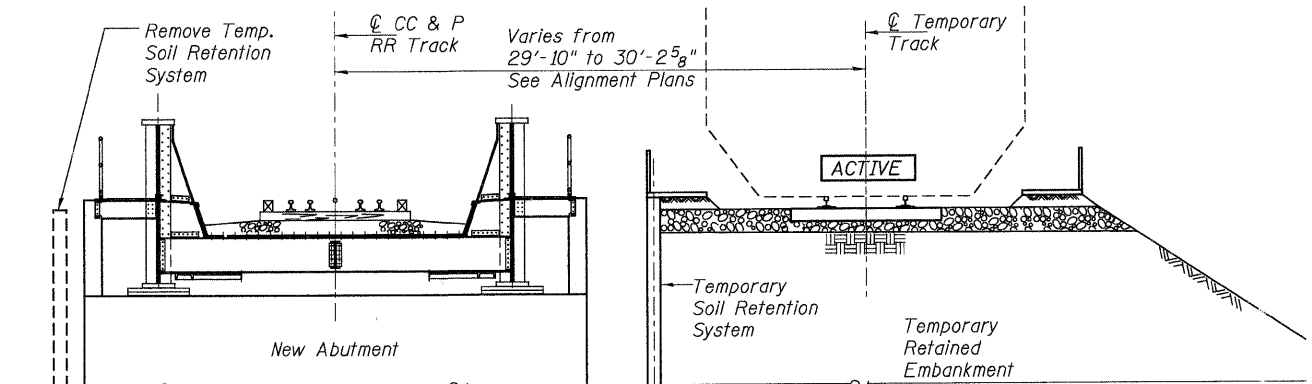
STAGE 2C - CONSTRUCT NEW SUPERSTRUCTURE



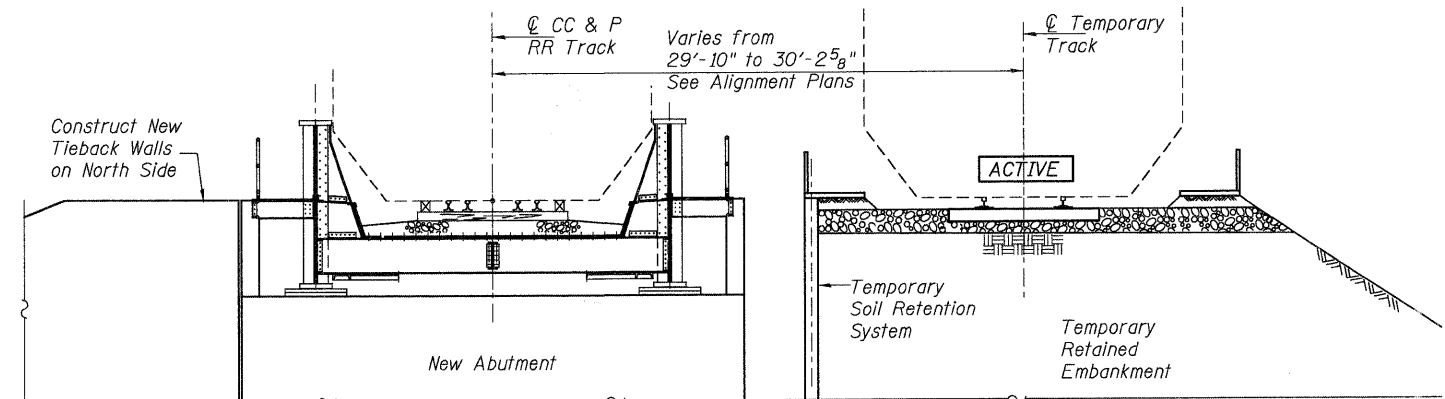
STAGE 2D - CONSTRUCT NEW TIEBACK WALL (North SIDE)



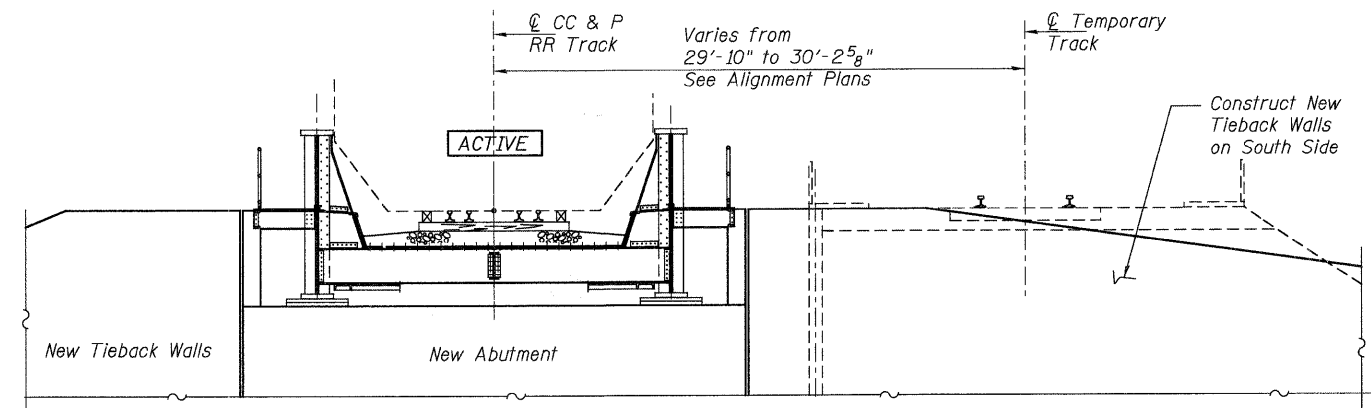
STAGE 3 - MOVE TRAINS TO NEW BRIDGE  
CONSTRUCT NEW TIEBACK WALL (SOUTH SIDE)



SECTION A-A THRU STAGE 2C



SECTION A-A THRU STAGE 2D



SECTION A-A THRU STAGE 3

DESIGNED	KJH
CHECKED	MGB
DRAWN	RJ
CHECKED	KJH

EXAMINED	200
PASSED	ENGINEER OF BRIDGE DESIGN
	ENGINEER OF BRIDGES AND STRUCTURES



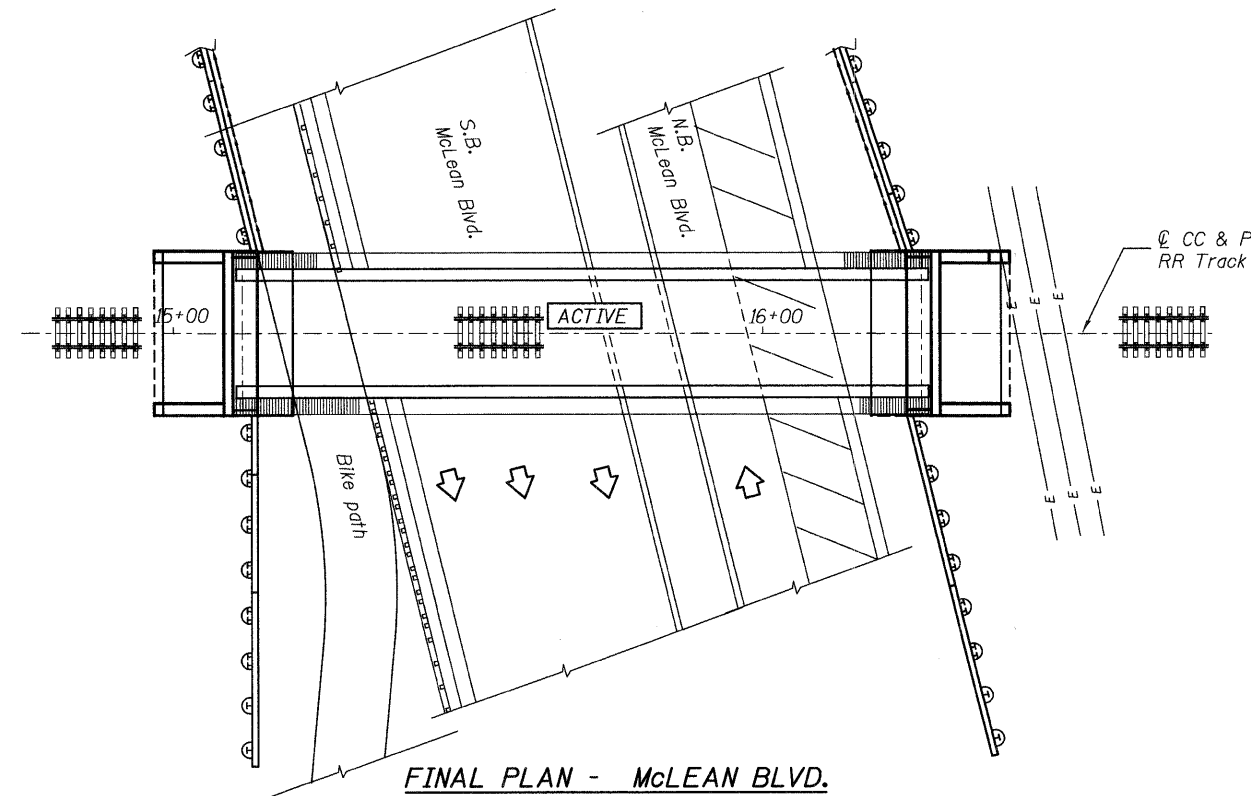
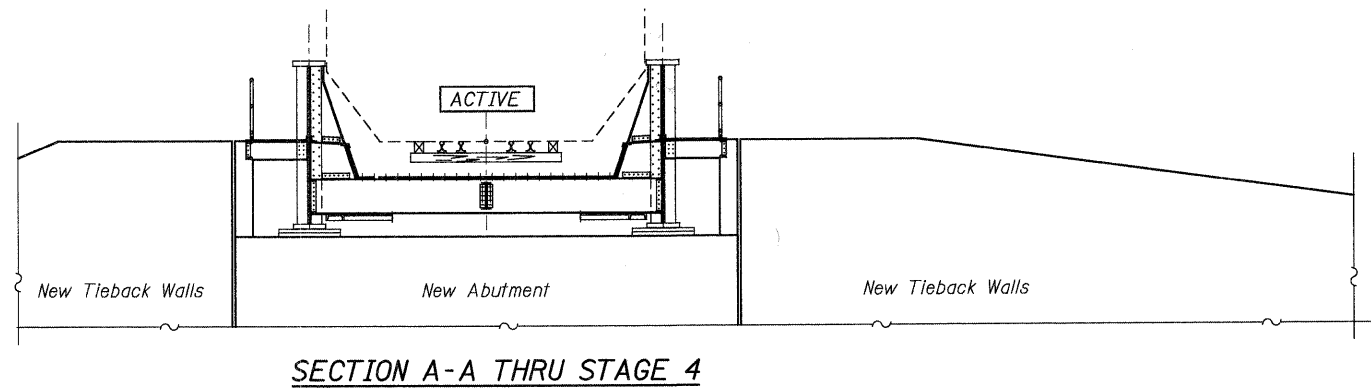
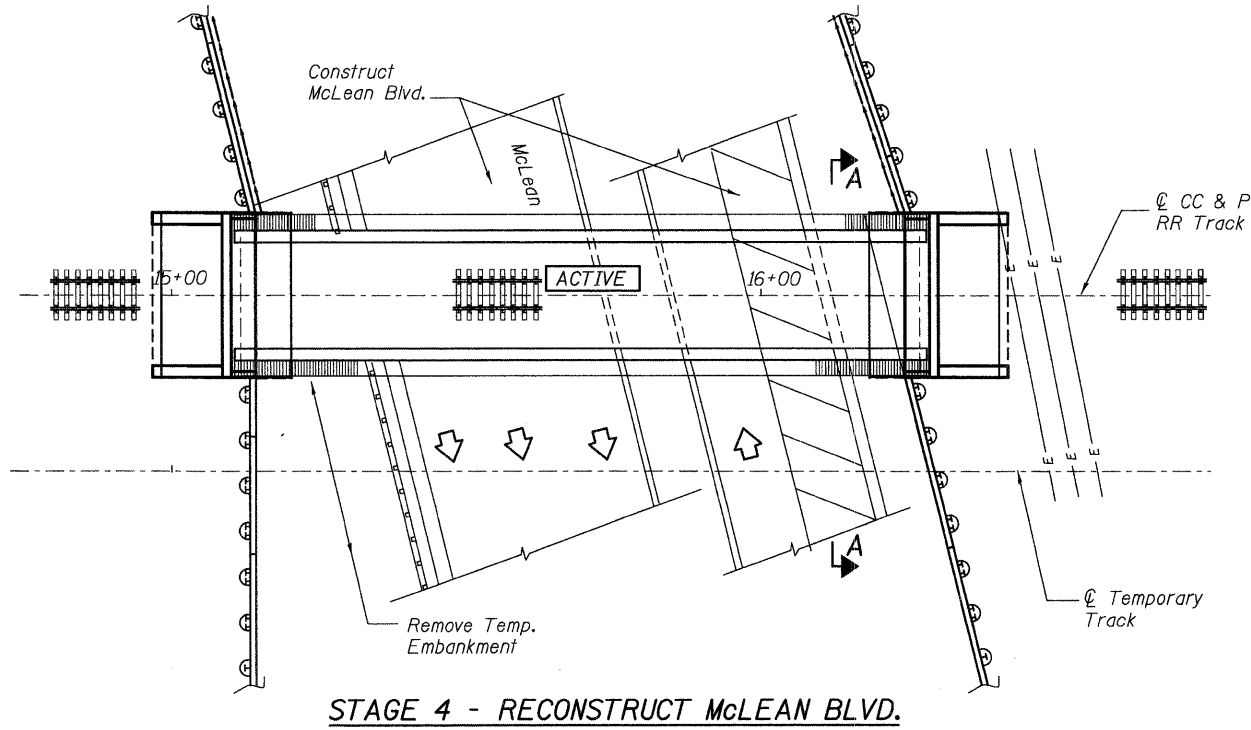
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SHEET NO. S4	RTE. 361
S21 SHEETS	SECTION 06-00214-02-BR
	SN 045-3163
	FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT

CONSTRUCTION STAGING -2  
STRUCTURE NO. 045-3163

COUNTY	TOTAL SHEETS	SHEET NO.
KANE	219	131
CONTRACT NO. 63073		

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION




DESIGNED	KJH
CHECKED	MGB
DRAWN	RJ
CHECKED	KJH

EXAMINED	200
PASSED	ENGINEER OF BRIDGE DESIGN
	ENGINEER OF BRIDGES AND STRUCTURES



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 <small>North America's Railroad</small> FREEPORT SUBDIVISION BRIDGE NO. W40.07	
SHEET NO. S5	RTE.
S21 SHEETS	361

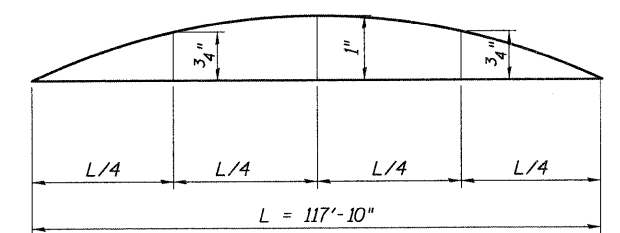
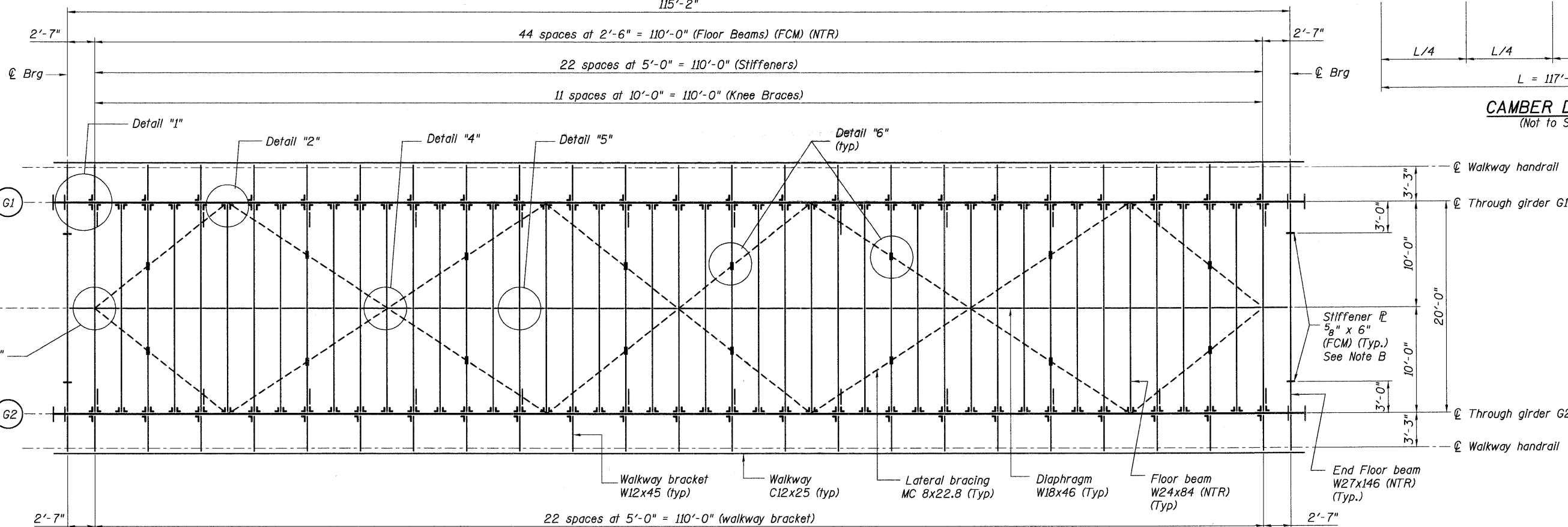
**CONSTRUCTION STAGING -3**  
**STRUCTURE NO. 045-3163**

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
06-00214-02-BR	KANE	219	132
SN 045-3163		CONTRACT NO. 63073	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT			



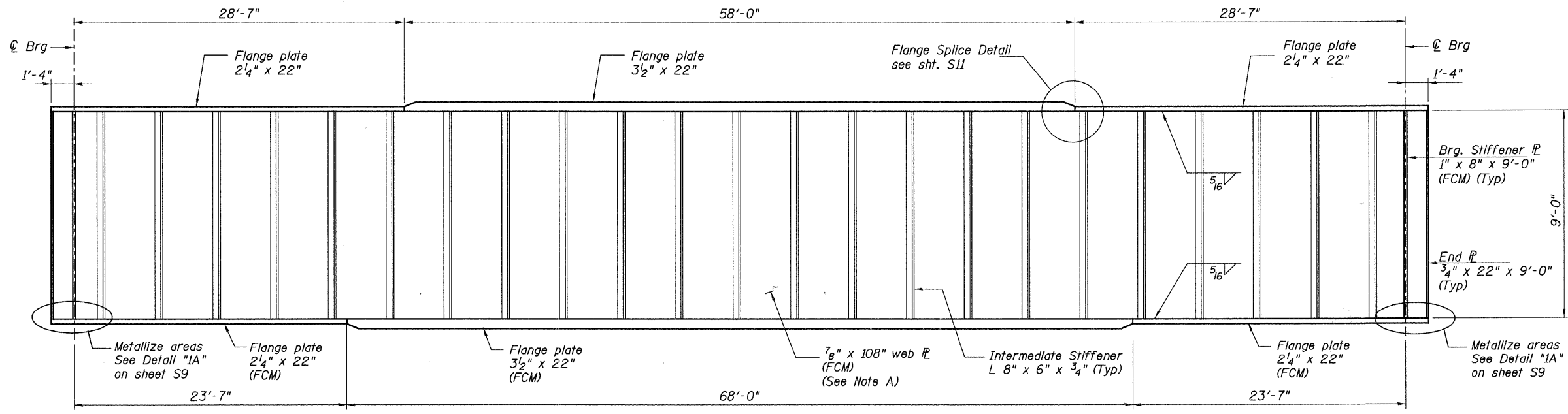
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

115'-2"



**CAMBER DIAGRAM**  
(Not to Scale)

**FRAMING PLAN**



**GIRDER ELEVATION**  
G2 shown G1 similar

**Notes:**

- Note A:  
Provide web shop splices as follows:  
1. For G1 40'-6" from each end.  
2. For G2 45'-6" from each end.
- Note B:  
Stiffeners are located at points where DL reaction may be supported on Jacks.
- For details 1 thru 6 see sheet no. S8.
- For flange to web weld, flange splice & web splice details see sheet S11.

**FRAMING PLAN**  
**STRUCTURE NO. 045-3163**

DESIGNED	KJH
CHECKED	MGB
DRAWN	RJ
CHECKED	BKB

EXAMINED	200
PASSED	ENGINEER OF BRIDGE DESIGN
	ENGINEER OF BRIDGES AND STRUCTURES

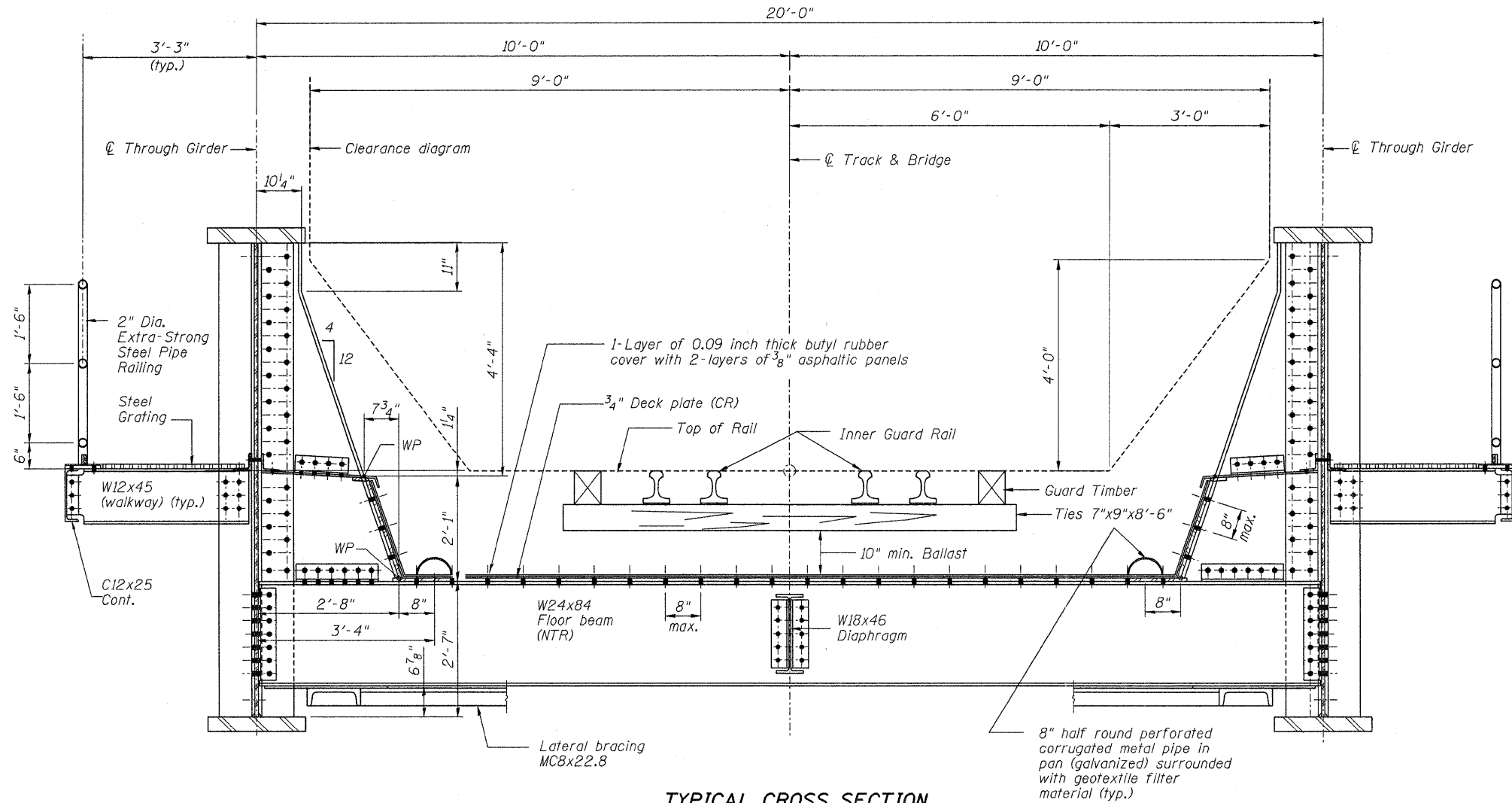
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<b>CN</b> North America's Railroad
FREEPORT SUBDIVISION
BRIDGE NO. W40.07

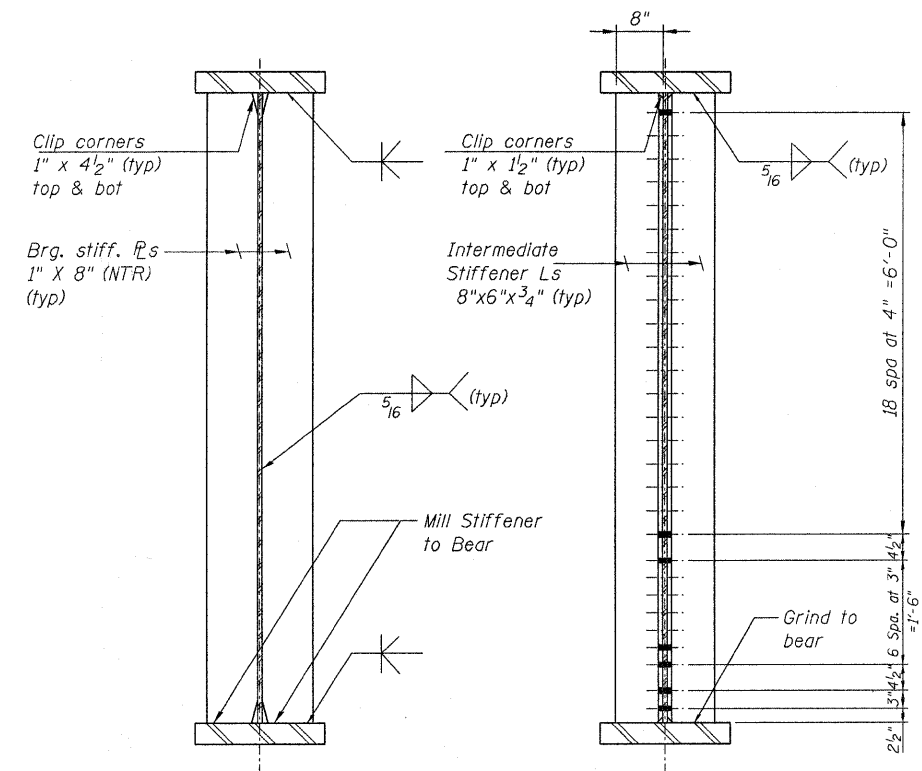
SHEET NO. S6	RTE.
S21 SHEETS	361

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
06-00214-02-BR	KANE	219	133
SN 045-3163		CONTRACT NO. 63073	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT			

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



TYPICAL CROSS SECTION



BEARING STIFFENER

INTERMEDIATE STIFFENER

NOTES:

(C.R.) Denotes Corrosion Resistant.

Membrane Waterproofing - (0.09") thickness Butyl Rubber covered with 2-layers (3/8") thick Asphaltic panels. The Membrane shall be bonded to the Floor and Ballast Stop Plates with adhesive applied to the entire surface in accordance with the recommendations of the Membrane Manufacturer, the Protective Panels shall be bonded to the Membrane and to each other with the same adhesive used for bonding the Membrane and be compatible with all materials it contacts.

All shop and field welds on the deck shall be continuous unless otherwise shown and shall result in a watertight deck.

Remove sharp edges or any projections from floor plates or welds that may damage the Butyl Rubber Membrane.

DESIGNED	KJH
CHECKED	MGB
DRAWN	RJ
CHECKED	BKB

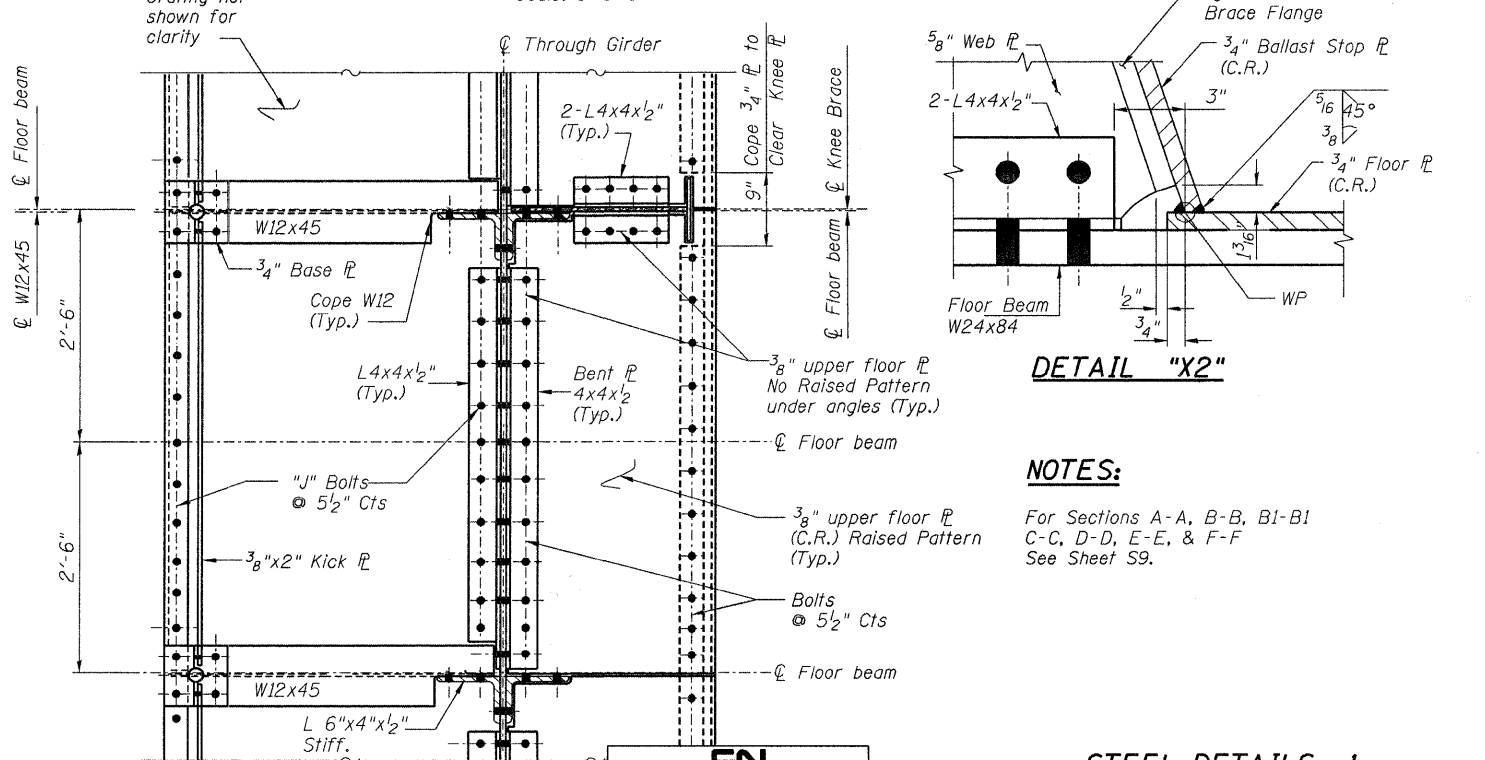
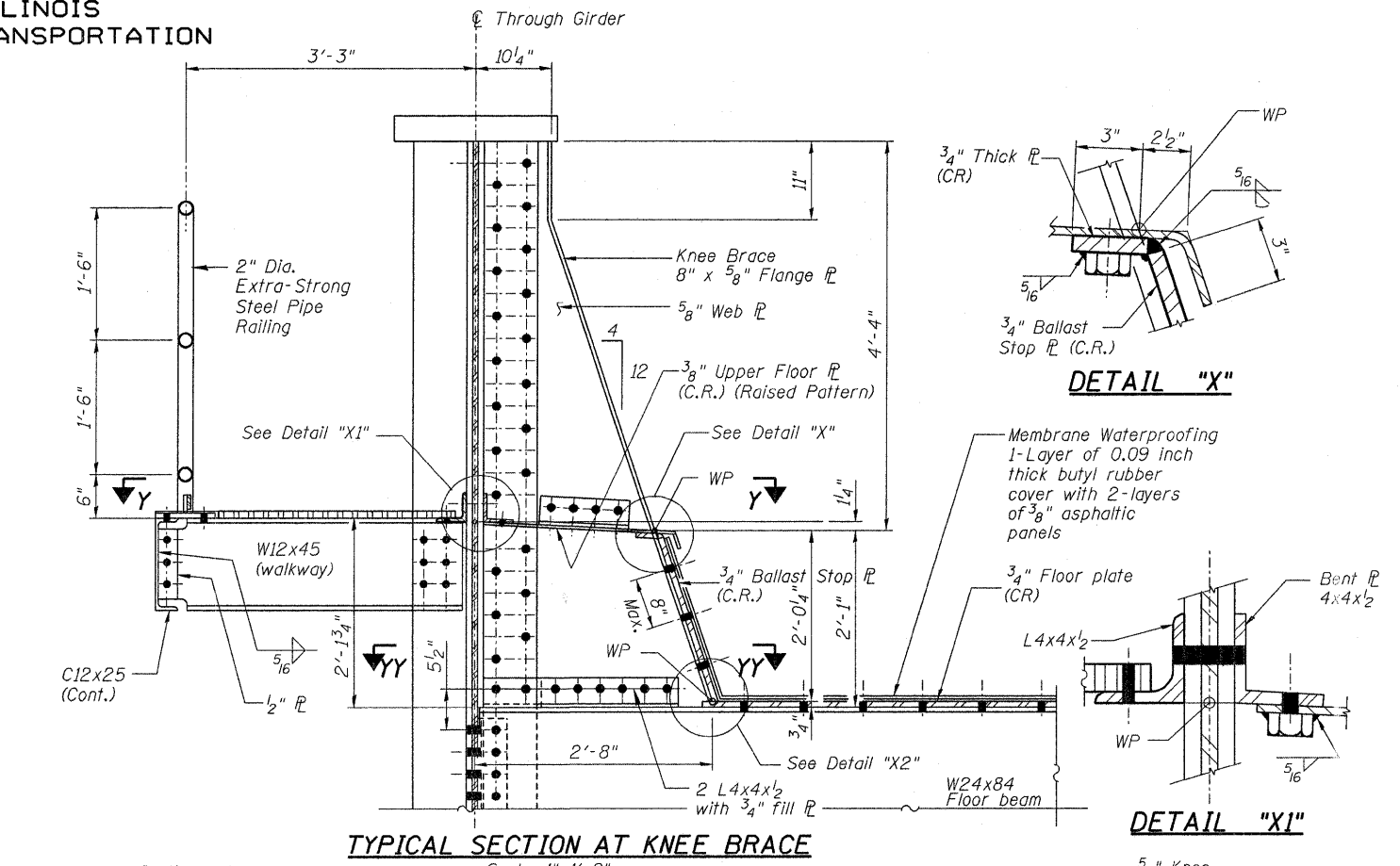
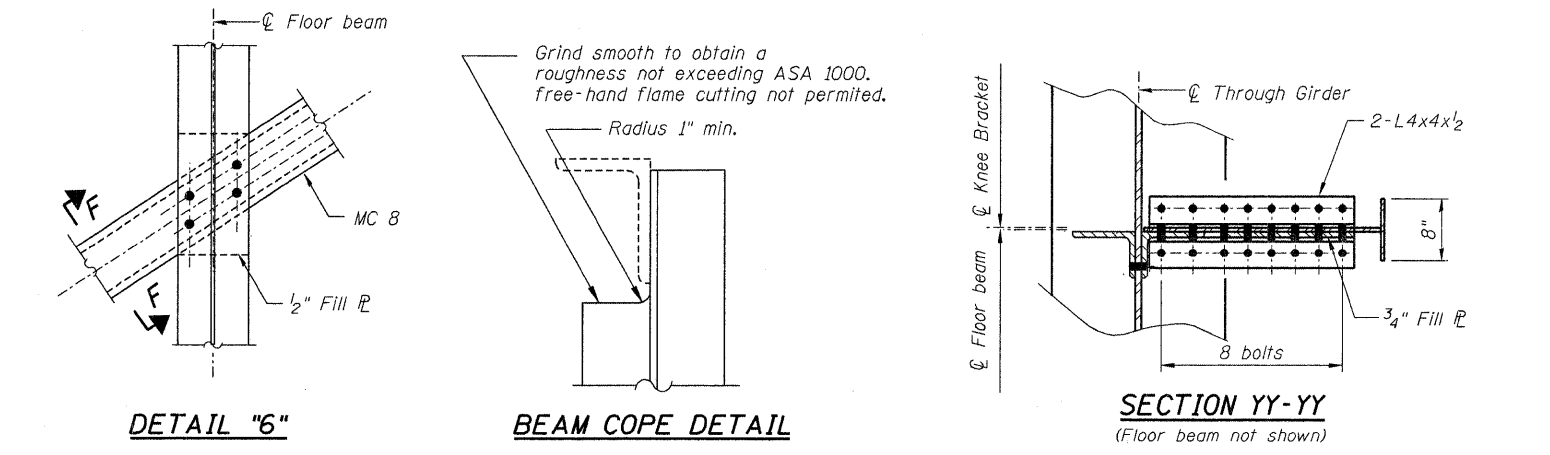
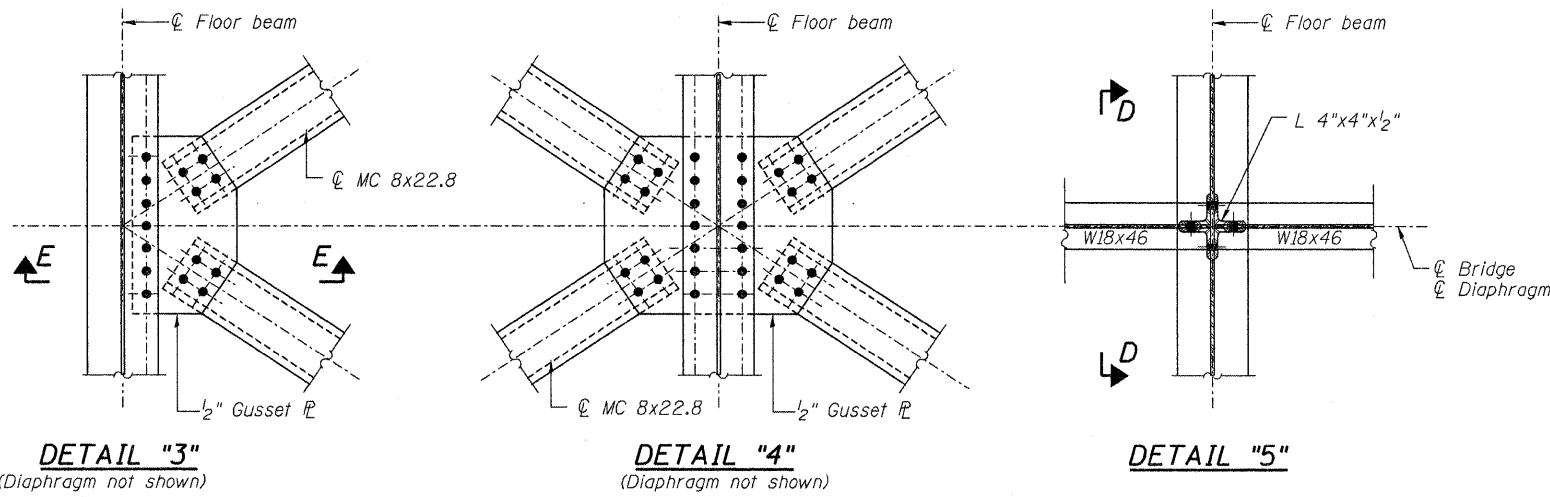
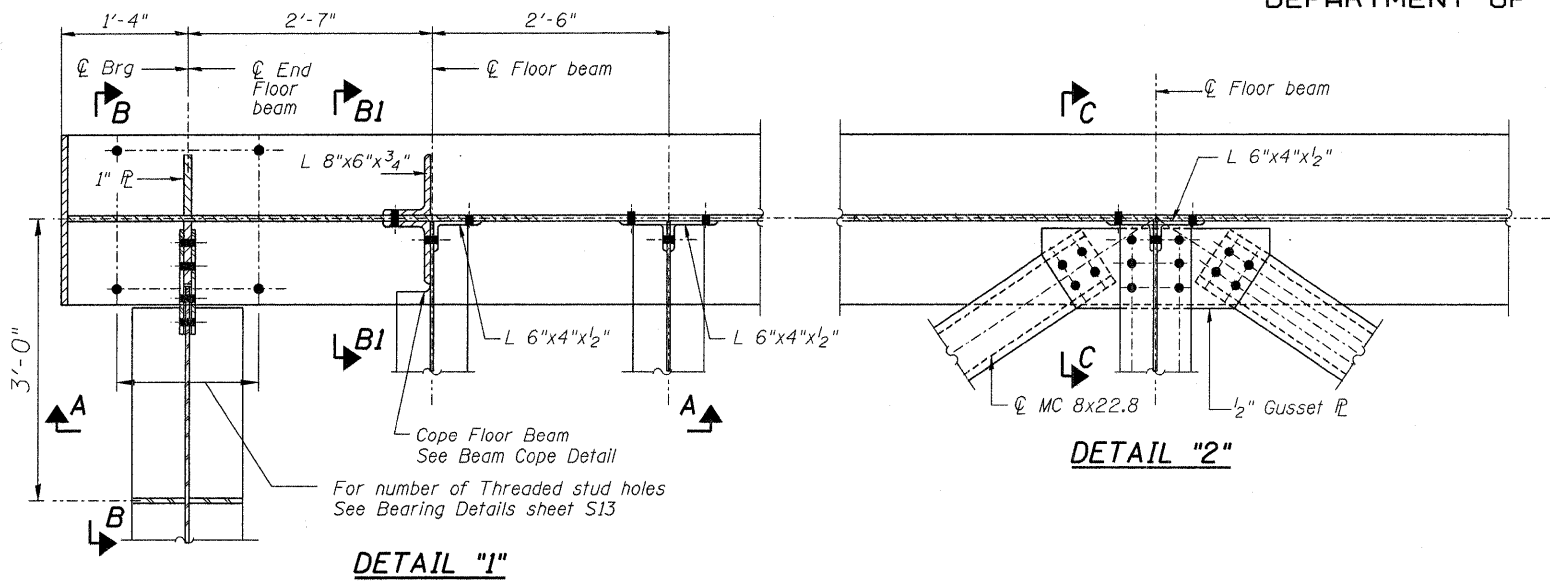
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<b>CN</b> North America's Railroad	
FREEPORT SUBDIVISION	
BRIDGE NO. W40.07	
SHEET NO. 57	RTE.
	361
S21 SHEETS	

TYPICAL CROSS SECTION AND DETAILS  
STRUCTURE NO. 045-3163

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
06-00214-02-BR	KANE	219	134
SN 045-3163		CONTRACT NO. 63073	
FED. ROAD DIST. NO. 1		ILLINOIS FED. AID PROJECT	

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



**NOTES:**  
For Sections A-A, B-B, BI-BI  
C-C, D-D, E-E, & F-F  
See Sheet S9.

DESIGNED	KJH
CHECKED	MGB
DRAWN	RJ
CHECKED	BKB

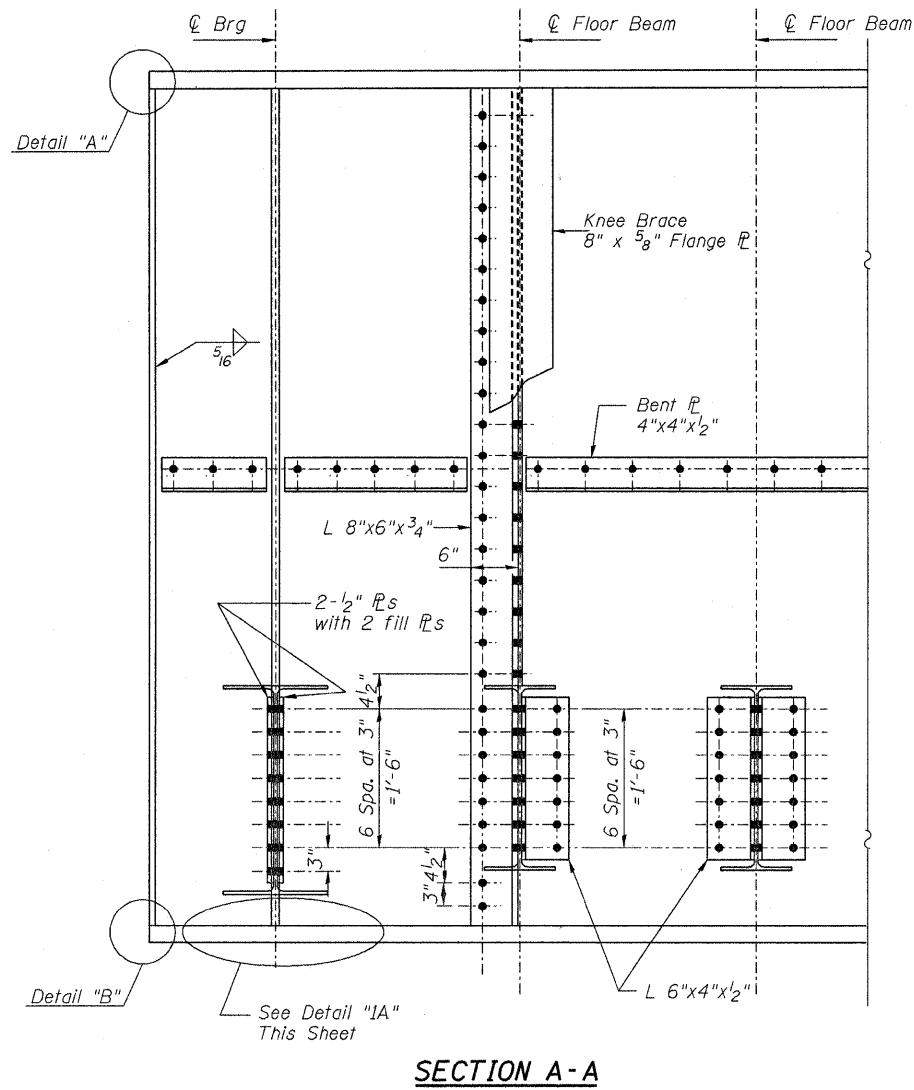
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North America's Railroad	
FREEPORT SUBDIVISION	
BRIDGE NO. W40.07	
SHEET NO. S8	RTE.
S21 SHEETS	361

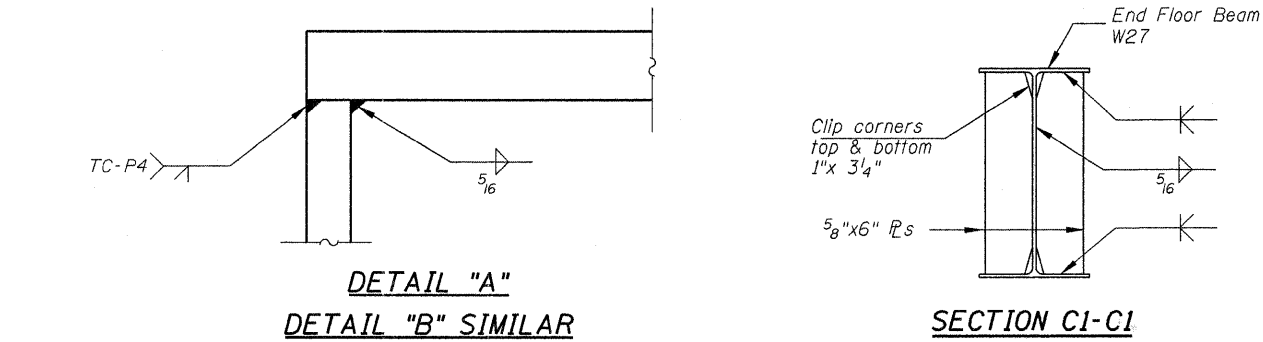
SECTION		COUNTY		TOTAL SHEETS	SHEET NO.
06-00214-02-BR		KANE		219	135
SN 045-3163			CONTRACT NO. 63073		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

**STEEL DETAILS - 1**  
**STRUCTURE NO. 045-3163**

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

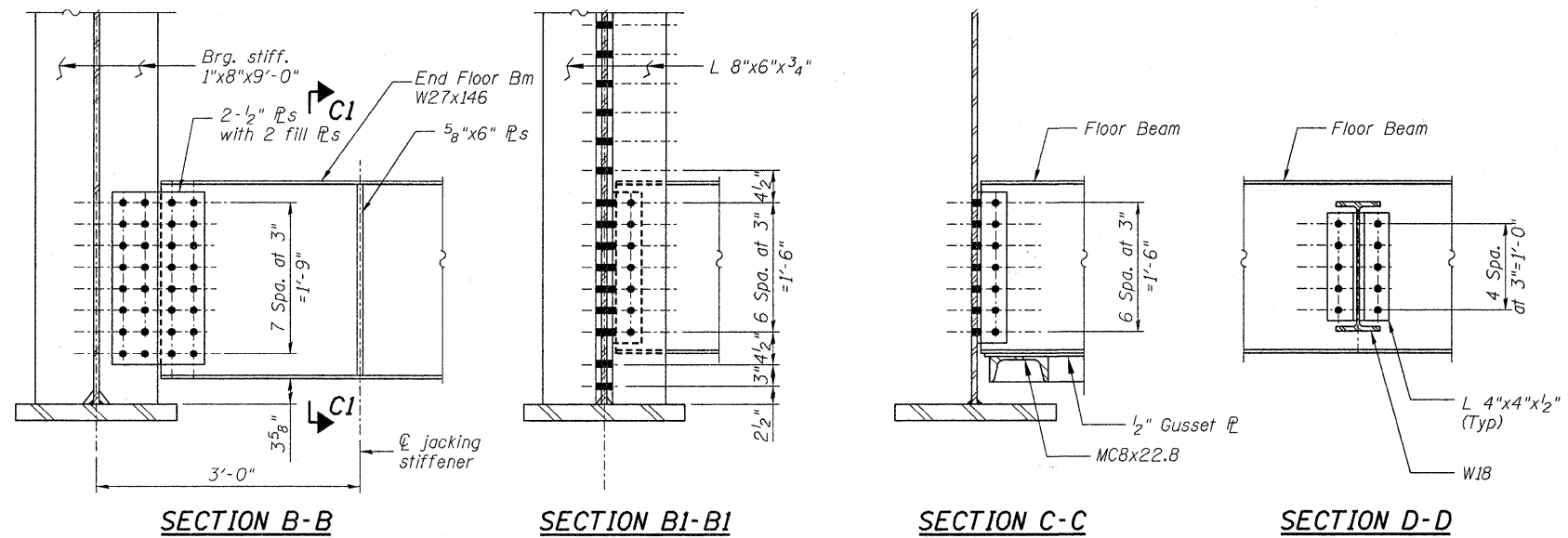


SECTION A-A



DETAIL "A"  
DETAIL "B" SIMILAR

SECTION C1-C1

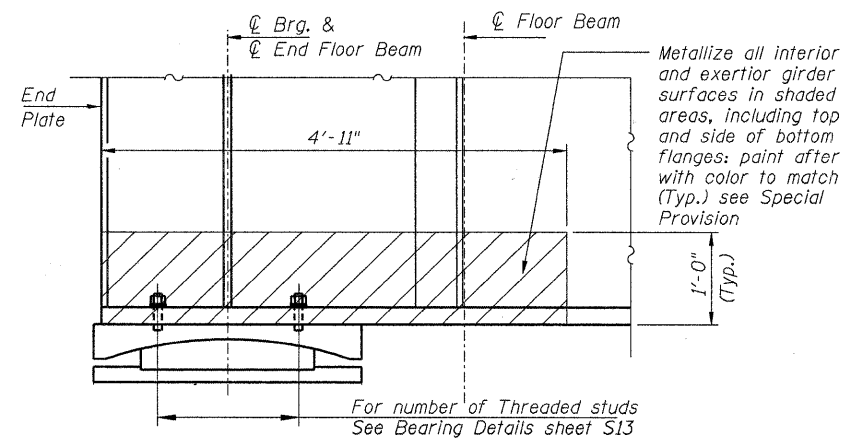


SECTION B-B

SECTION B1-B1

SECTION C-C

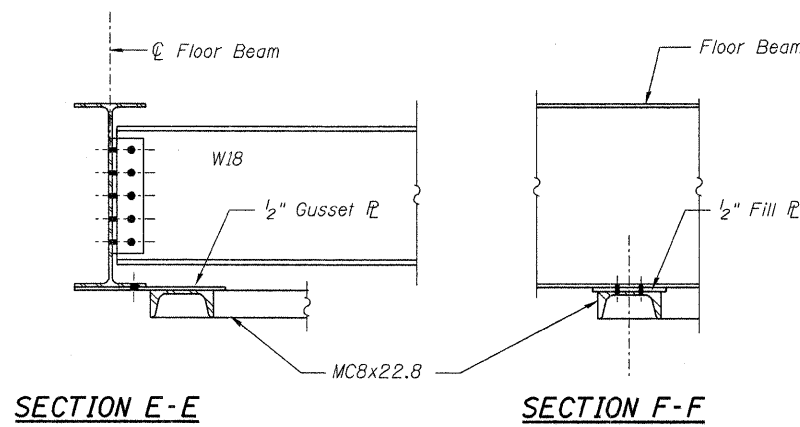
SECTION D-D



DETAIL "IA"

NOTES:  
Metallizing in accordance with SSPC-CS 23.00  
or ASTM B833 Zinc Metallizing shall not be less  
than 0.01" thickness.

DESIGNED	KJH
CHECKED	MGB
DRAWN	RJ
CHECKED	BKB



SECTION E-E

SECTION F-F

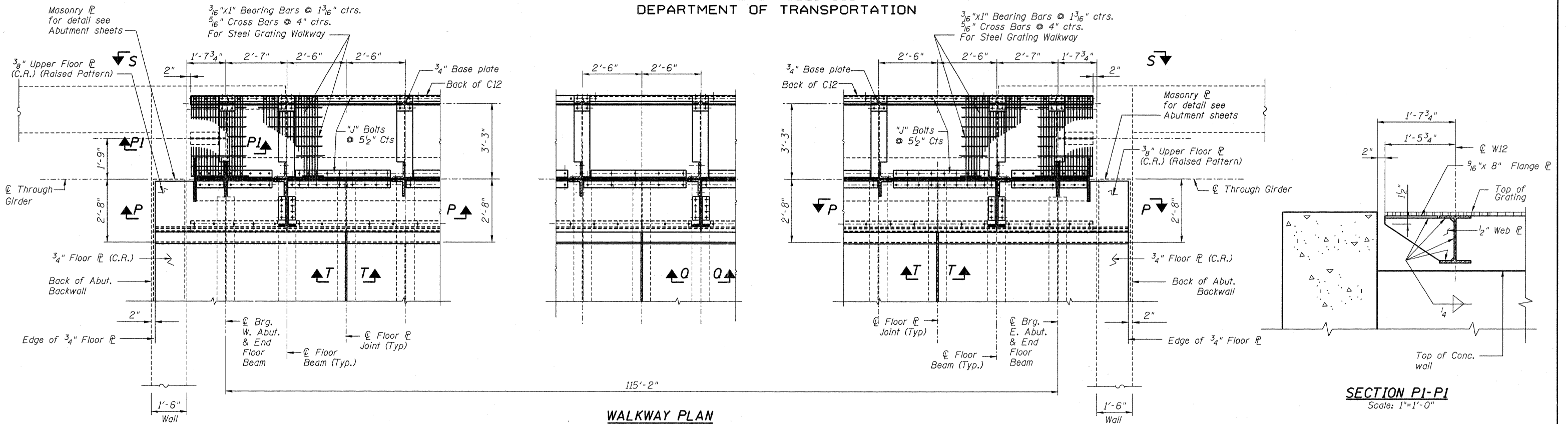
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FREEPORT SUBDIVISION	
BRIDGE NO. W40.07	

**STEEL DETAILS -2**  
**STRUCTURE NO. 045-3163**

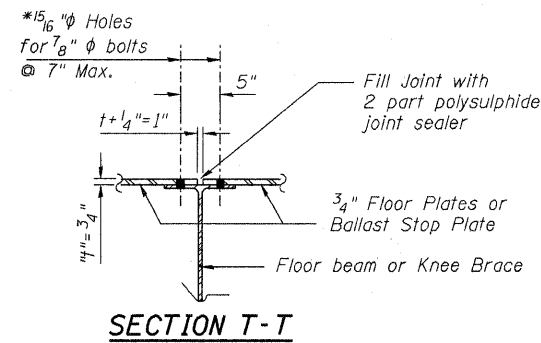
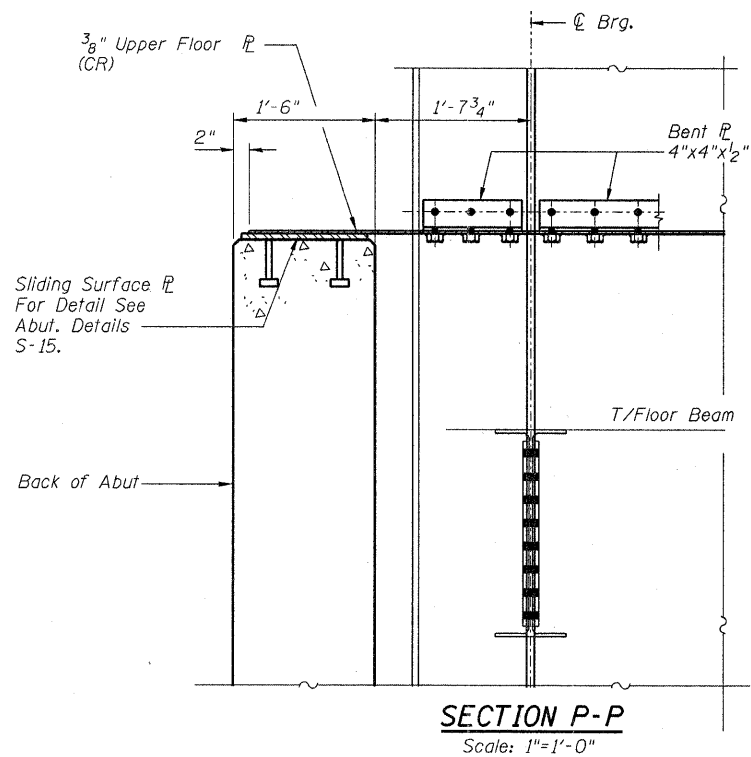
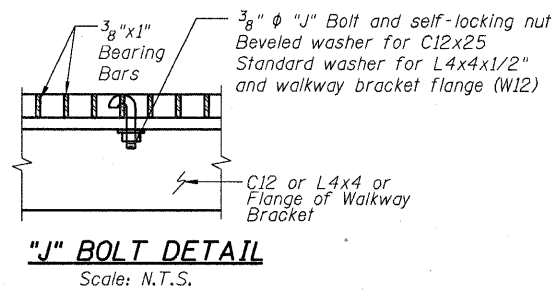
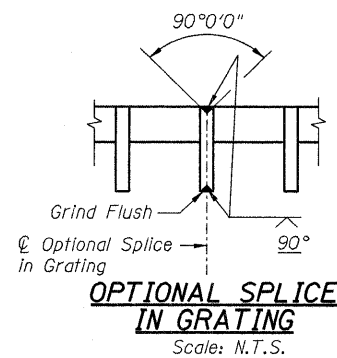
SHEET NO. S9	RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	361	06-00214-02-BR	KANE	219	136
S21 SHEETS	SN 045-3163		CONTRACT NO. 63073		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



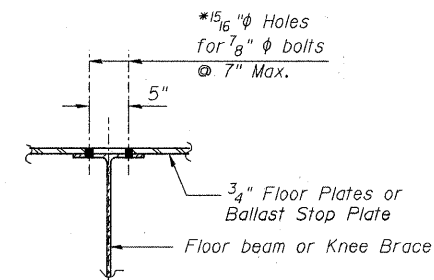
**WALKWAY PLAN**  
(North walkway shown  
South walkway similar)

**SECTION P1-P1**  
Scale: 1"=1'-0"



**SECTION T-T**

At floor plate joints  
See Note A and also note 30  
Sheet No. S2.



**SECTION Q-Q**

See Note A and also note 30  
Sheet No. S2.

**NOTES:**

Grating plates, bars and angles shall conform to ASTM A36, Galvanized in accordance with ASTM A123, or be fabricated from aluminum conforming to ASTM B361-Alloy 6061-T6. Aluminum surfaces in contact with concrete shall receive a heavy coat of bituminous paint or cold applied asphaltic mastic. Fastener shall consist of stainless steel, type 304, or be Zinc plated conforming to ASTM B633 for exterior use. Provide stainless steel fasteners for aluminum grating.

Grating shall be bolted to longitudinal channel and along Girder and walkway bracket by means of "J" bolts or other type of bolts Approved by the Engineer. Each panel shall have one bolt in each corner with a maximum longitudinal spacing of 1'-0" ctrs. between bolts. Drill 7/16" diameter holes for "J" bolts in field.

Joints in 3/4" floor plate and ballast stop plate and 3/8" upper floor plate to be at 10 ft. max. centers.

For View S-S See Sheet no. S11.

Note A:  
Floor plate details at floor beams shown,  
Floor plate details at knee brace similar.

\* Nuts need to be secured after tightening to prevent them from loosening or coming off per Standard Specification.

DESIGNED	KJH
CHECKED	MGB
DRAWN	RJ
CHECKED	BKB

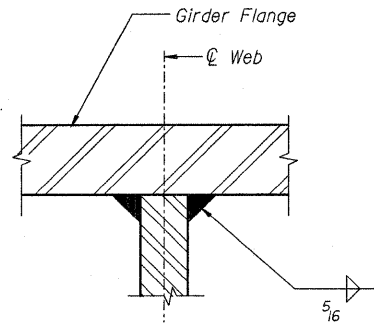
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 <small>North America's Railroad</small> FREEPORT SUBDIVISION BRIDGE NO. W40.07	
SHEET NO. S10	RTE.
S21 SHEETS	361

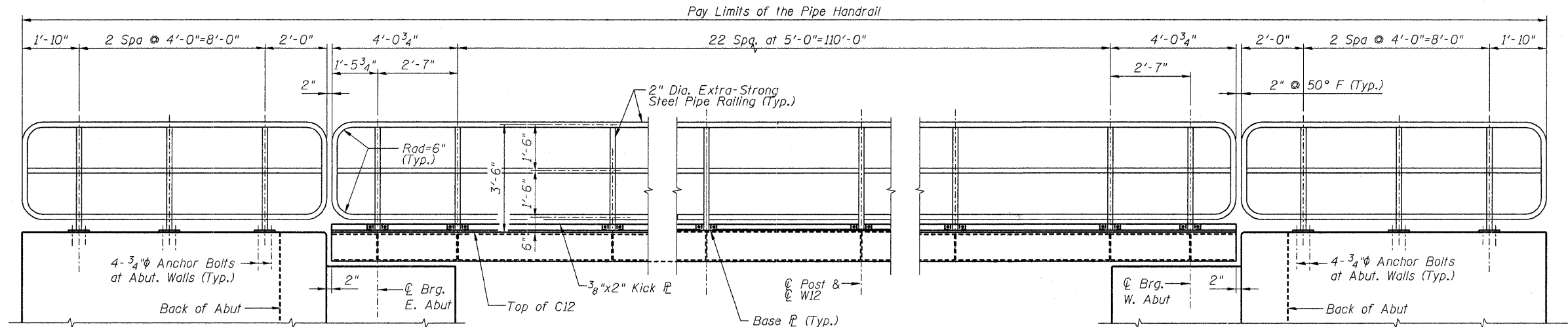
**STEEL DETAILS - 3**  
**STRUCTURE NO. 045-3163**

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
06-00214-02-BR	KANE	219	137
SN 045-3163		CONTRACT NO. 63073	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT			

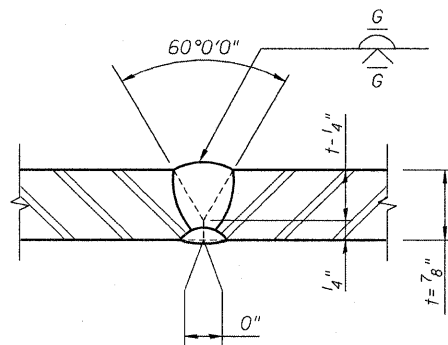
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



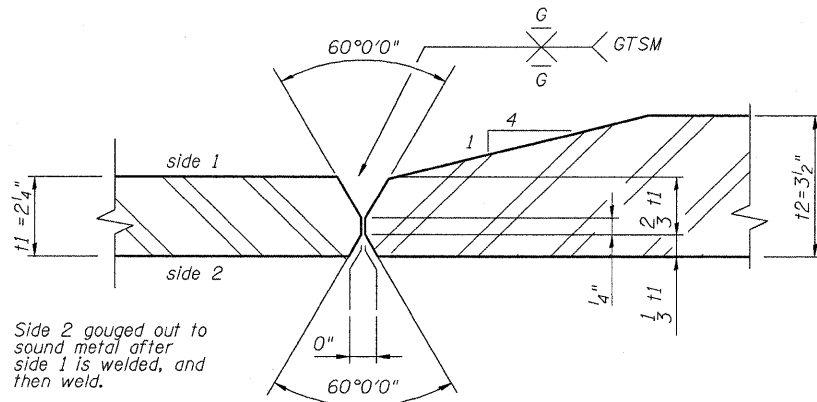
**FLANGE TO WEB WELD**  
Scale: N.T.S.



**VIEW S-S RAILING ELEVATION**  
(Looking South)

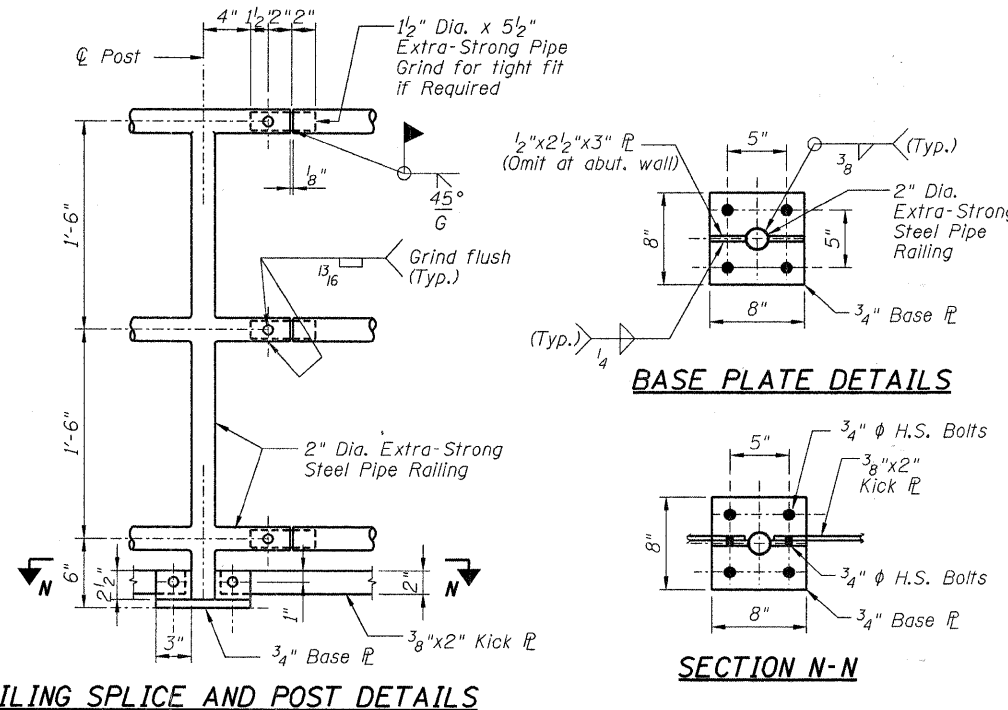


**WEB PLATE SPLICE DETAIL**  
B-L2C-S  
AWS Prequalified weld  
Scale: N.T.S.

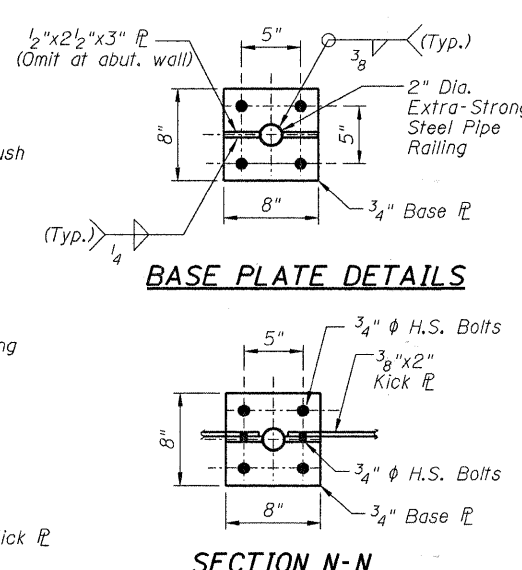


**FLANGE PLATE SPLICE DETAIL**  
B-U3C-S  
AWS Prequalified weld  
Scale: N.T.S.

Notes:  
All welding shall be performed in flat position.  
All welding shall be per AWS "Bridge Welding Code" and shall also comply with Railroad (CN).

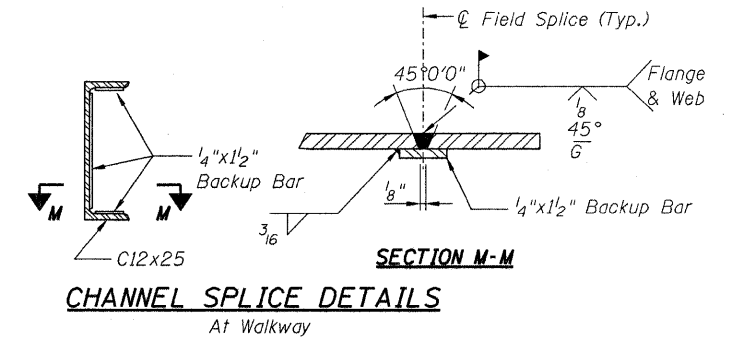


**RAILING SPLICE AND POST DETAILS**



**BASE PLATE DETAILS**

**SECTION N-N**



**CHANNEL SPLICE DETAILS**  
At Walkway

DESIGNED	KJH
CHECKED	MGB
DRAWN	RJ
CHECKED	BKB

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FREEPORT SUBDIVISION	
BRIDGE NO. W40.07	
SHEET NO. S11	RTE.
S21 SHEETS	361

<b>STEEL DETAILS - 4</b>				
<b>STRUCTURE NO. 045-3163</b>				
SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
06-00214-02-BR	KANE	219	138	
SN 045-3163		CONTRACT NO. 63073		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

**TYPICAL FLOOR BEAM**

Span Length = 20'-0"  
Beam Size = W24x84  
 $I_{Gross} = 2370 \text{ in}^4$   
 $S_{x-x} = 196 \text{ in}^3$

**TABLE OF STRESSES**

	END REACTION Kips	SHEAR STRESS Ksi	BENDING MOMENT Ft. Kips	BENDING STRESS BOTTOM FLANGE Ksi
DEAD LOAD	8.55	0.81	50.1	3.07
LIVE LOAD (E90)	28.75	2.71	215.6	13.20
Impact +Rocking Effect (20.75+20)%	11.59	1.09	86.9	5.32
Total DL+LL+I	48.89	4.61	352.6	21.59
Allowable Stress	-	17.50	-	27.5
Ratio of Working Stress to allowable	-	0.26	-	0.79

$$\frac{\Delta LL+Imp}{Span} = \frac{0.298}{20 \times 12} = 0.0013$$

Span / deflection = 779

$$\frac{Max \text{ Stress Range}}{Permissible \text{ Fatigue Stress}} = \frac{(13.20 + 0.35 \times 5.32)}{24} = 0.63$$

**MAIN GIRDER**

Span Length = 115'-2"  
Top Flange Plate Size = 3/2"x22"  
Web Plate Size = 7/8"x108"  
Bottom Flange Plate Size = 3/2"x22"  
 $I_{Gross} = 570652 \text{ in}^4$   
 $S_{x-x \text{ Top}} = 9924 \text{ in}^3$   
 $S_{x-x \text{ Bot}} = 9924 \text{ in}^3$

**TABLE OF STRESSES**

	END REACTION Kips	SHEAR STRESS Ksi	BENDING MOMENT Ft. Kips	BENDING STRESS BOTTOM FLANGE Ksi
DEAD LOAD	240	2.54	6550	7.92
LIVE LOAD (E90)	378	4.00	9624	11.64
Impact +Rocking Effect (20.75+5)%	97	1.03	2478	3.00
Total DL+LL+I	715	7.44	18652	22.56
Allowable Stress	-	17.50	-	27.5
Ratio of Working Stress to allowable	-	0.43	-	0.83

$$\frac{\Delta LL+Imp}{Span} = \frac{1.80}{115.17 \times 12} = 0.0013$$

Span / deflection = 768

Allowable Stress Range for Fatigue  
Category "B" for  $N > 2,000,000$  cycles  
 $S_{Rfat} = 16 \text{ Ksi}$

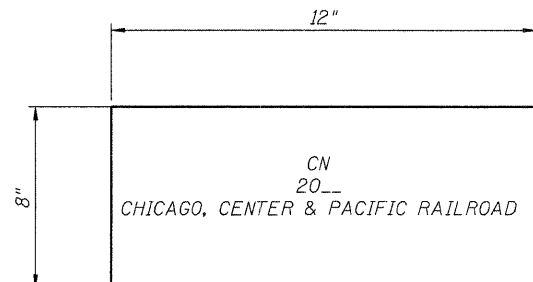
Maximum Design Stress Range at  
Bottom Flange to Web weld at Midspan

$$MPa = (11.64 + 0.35 \times 3.00) = 12.69 \text{ ksi}$$

**NOTES:**

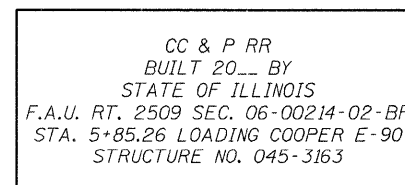
- For General Notes see Sheet S2.
- Design and Workmanship shall be in accordance with AREMA Manual Chapter 15.
- Material shall be in accordance with the following Spec's:
  - Structural Steel :  
All structural steel except as noted ASTM A709, grade 50.  
Deck plates, ballast stop plates & upper floor plates  
ASTM A709, grade 50 corrosion resistant.
  - Welding :  
Aws D1.5.
  - H.S. Bolts :  
ASTM A325 mechanical galvanized

- All holes shall be drilled or sub-punched and reamed.
- All H.S. bolts shall be tightened by the turn-of-nut-method.



**NAME PLATE, SPECIAL**

Locate Name Plate, Special on the inside of the web of the North Girder, near the East End. Locate in plain view above the upper floor plate.



**NAME PLATE**

See STD 515001

DESIGNED	KJH
CHECKED	MGB
DRAWN	RJ
CHECKED	BKB

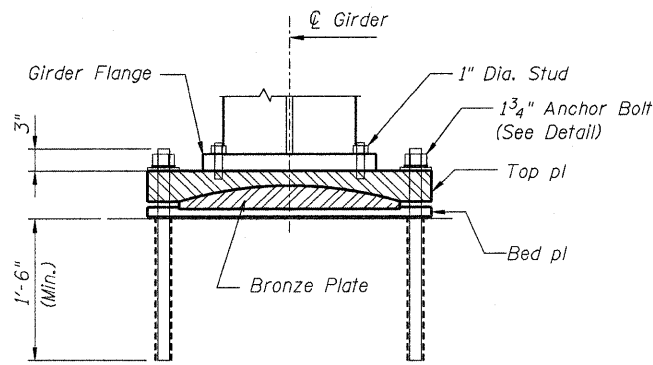
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FREEPORT SUBDIVISION BRIDGE NO. W40.07	
SHEET NO. S12	RTE.
S21 SHEETS	361

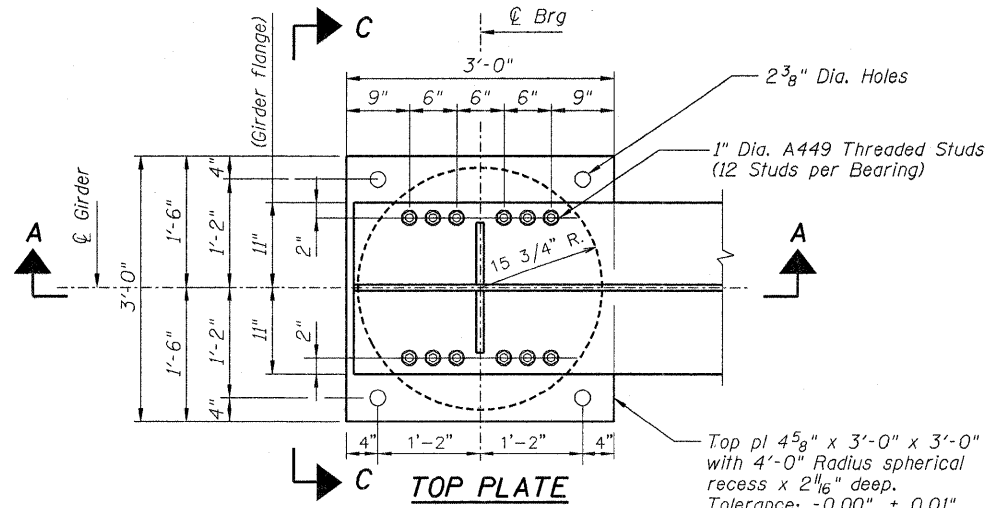
**DESIGN DATA - STRESS TABLES**  
**STRUCTURE NO. 045-3163**

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
06-00214-02-BR	KANE	219	139
SN 045-3163		CONTRACT NO. 63073	
FED. ROAD DIST. NO. 1		ILLINOIS FED. AID PROJECT	

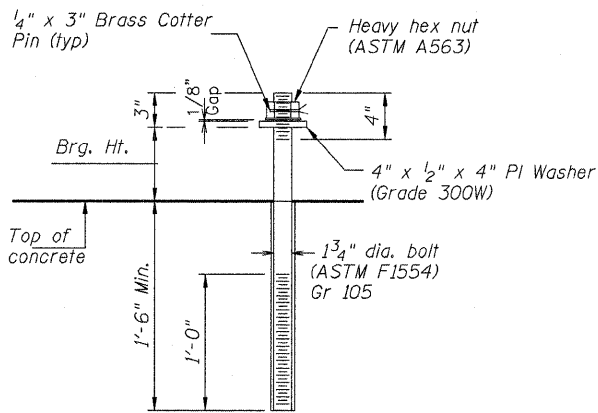
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



SECTION C-C



TOP PLATE



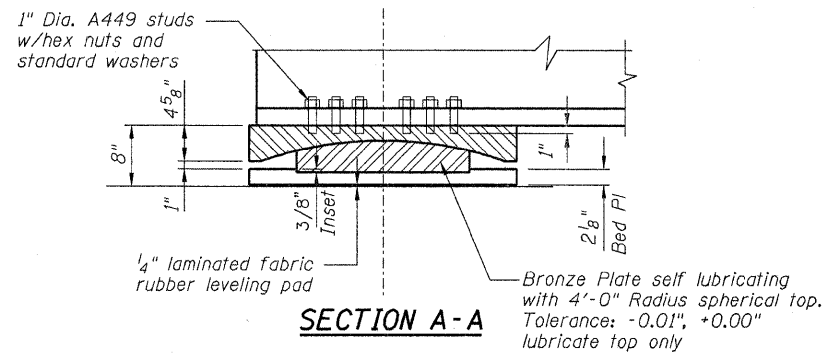
ANCHOR BOLT DETAIL

Notes:  
Concrete to be drilled after determining bolt location. Bolts to be grouted using non-shrink grout. Bolts, Nuts and Washers shall be fully galvanized.

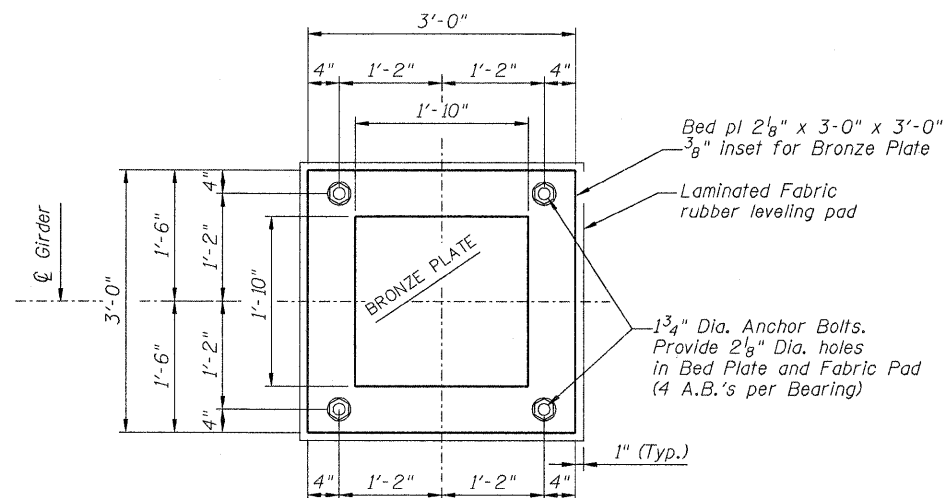
BEARING NOTES:

- Design and workmanship shall be in accordance with AREMA Chapter 15.
- Material shall be in accordance with the following Specifications:  
Structural Steel: ASTM A709 grade 50.  
Bronze Plates: ASTM B22-82 Copper alloy UNS No. C863000, C91100 or C91300.  
Welding: AWS D1.5  
Anchor Bolts: ASTM F1554 (Grade 55)  
Studs: A449, Type 1 Galvanized (See Special Provisions)
- All holes shall be drilled and sub-punched and reamed.
- All non-sliding surfaces of bearings shall be zinc-metallized in accordance with CAS G189. Zinc coating shall not be less than 0.01".
- Bearings shall be shipped assembled with 5/16 inch plates and 5/8 inch diameter machine bolts. Plates shall be removed after anchor bolts have been installed (3 plates per Bearing).

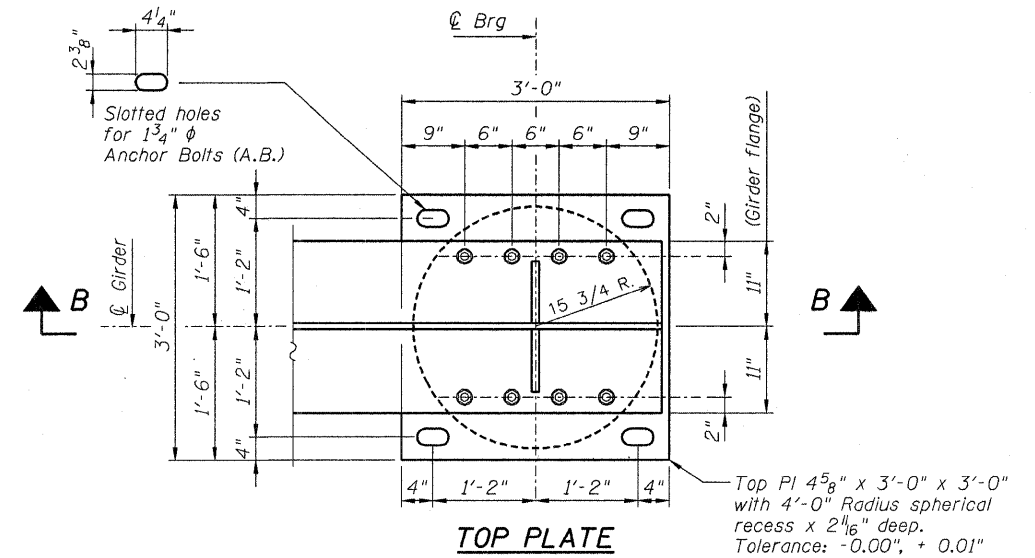
DESIGNED	KJH
CHECKED	BKB
DRAWN	RJ
CHECKED	BKB



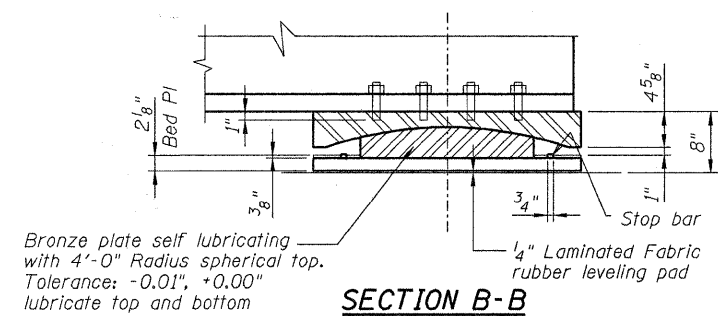
SECTION A-A



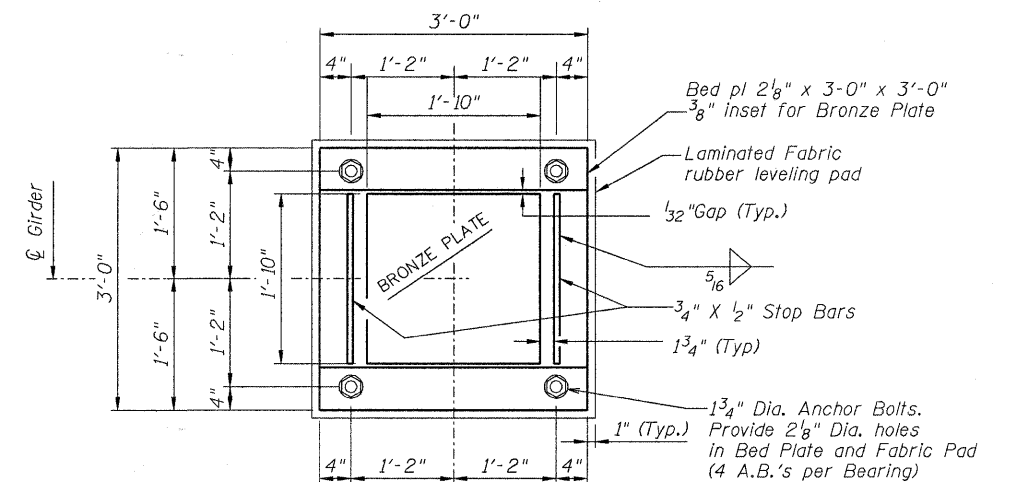
BED PLATE AND FABRIC PAD  
FIXED BEARING DETAILS



TOP PLATE



SECTION B-B



BED PLATE AND FABRIC PAD  
EXPANSION BEARING DETAILS



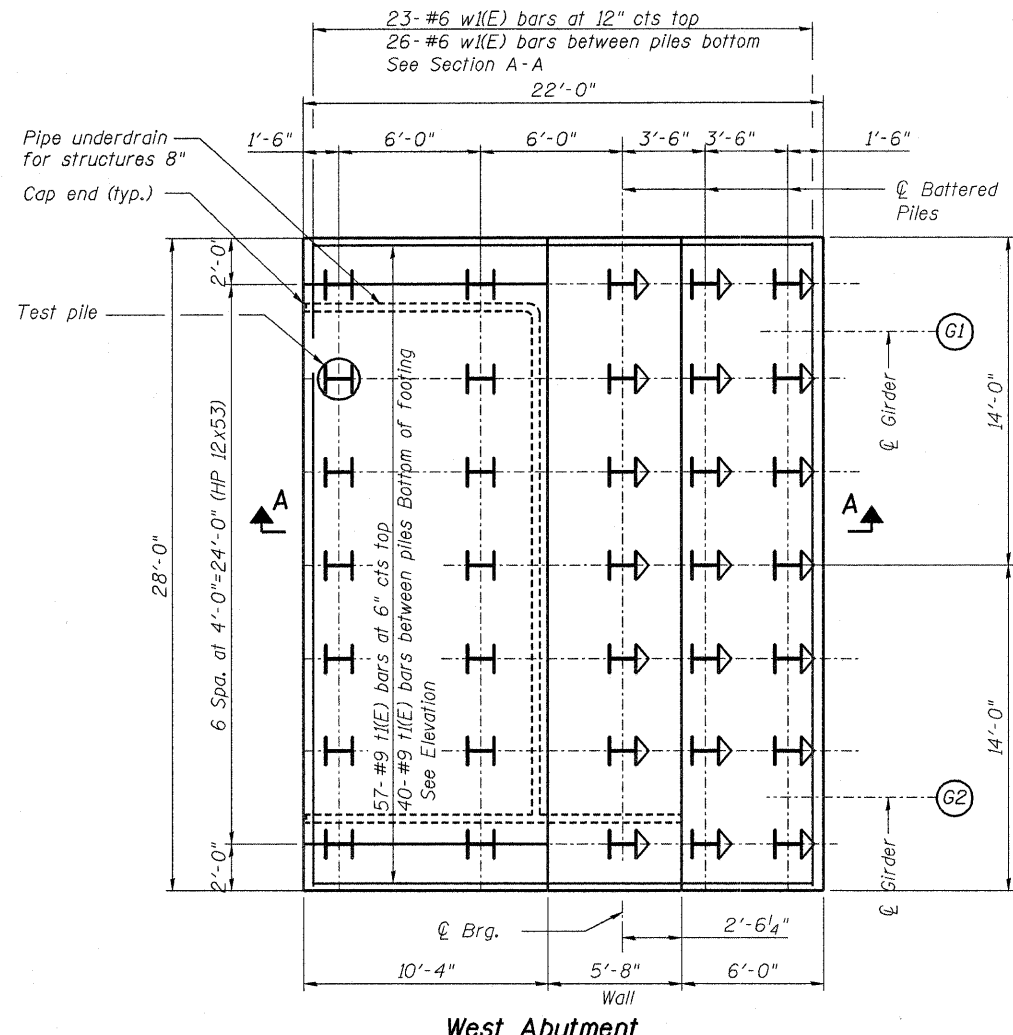
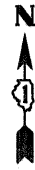
McDonough Associates Inc.  
Engineers / Architects  
130 East Randolph Street  
Chicago, Illinois 60601  
(312) 946-8600

CN North America's Railroad	
FREEPORT SUBDIVISION	
BRIDGE NO. W40.07	
SHEET NO. S13	RTE.
S21 SHEETS	361

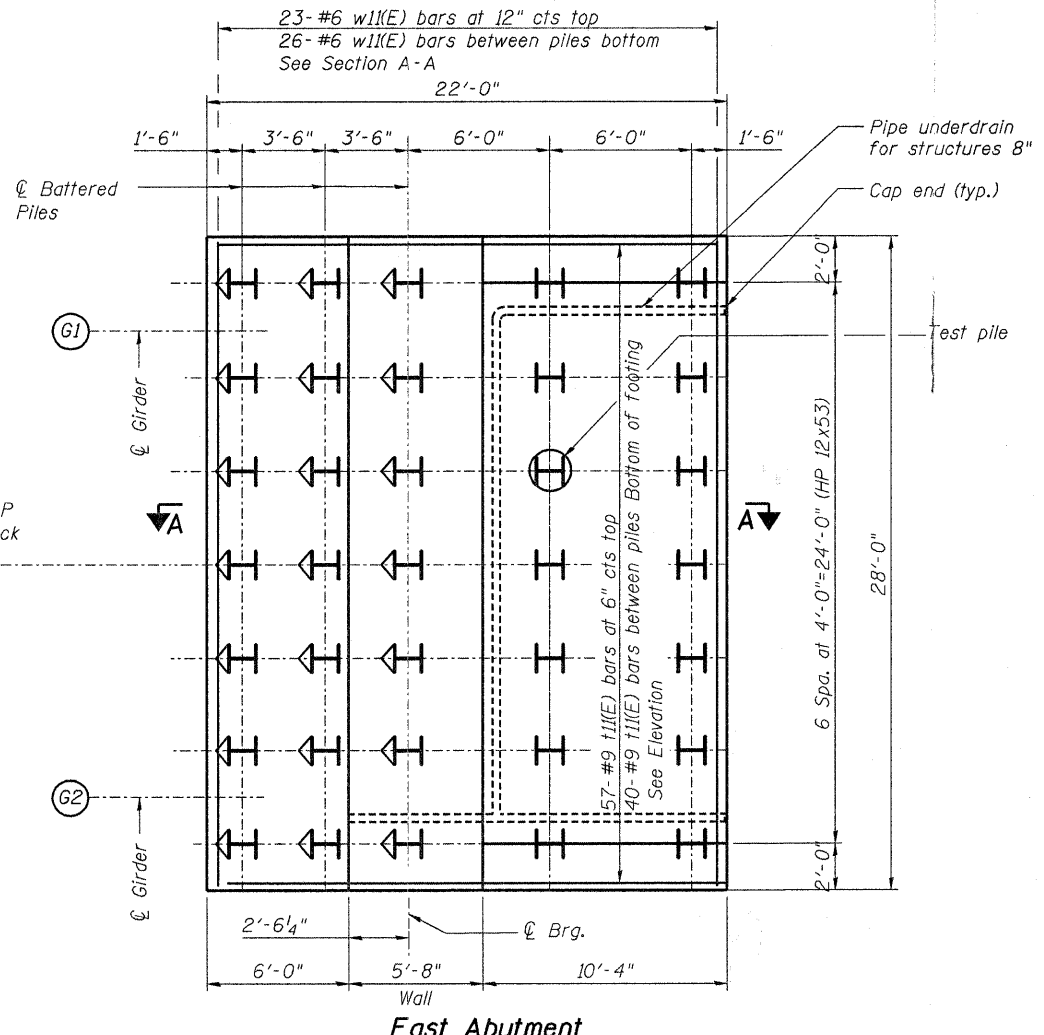
BEARING DETAILS STRUCTURE NO. 045-3163				
SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
06-00214-02-BR	KANE	219	140	
SN 045-3163		CONTRACT NO. 63073		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



West Abutment



East Abutment

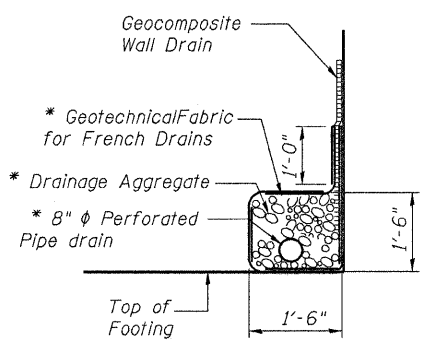
FOOTING PLAN

PILE DATA

Type : Steel HP12x53  
Nominal required bearing : 419 k  
Allowable resistance available: 139 k  
Est. Length: 21 Ft.  
No. of Pile Shoes = 70

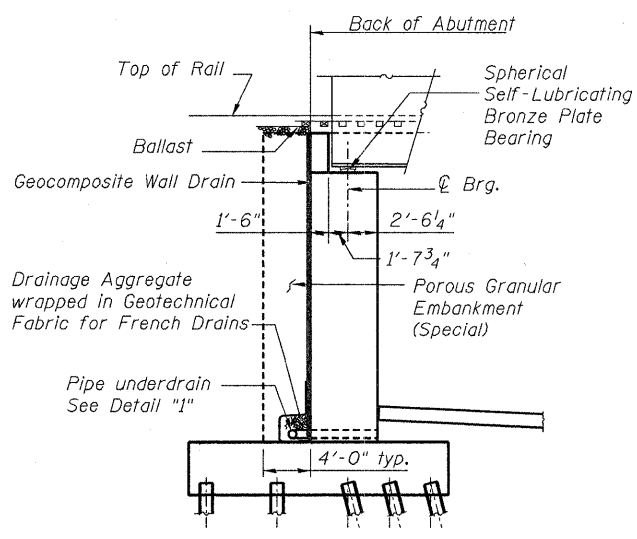
Note:  
The Steel Piles shall be According  
to AASHTO M270 Grade 50.

← Indicates Battered Pile (3:12)

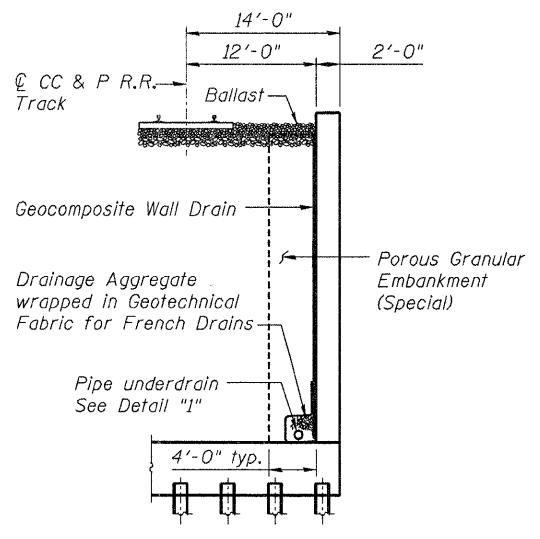


DETAIL "1"

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



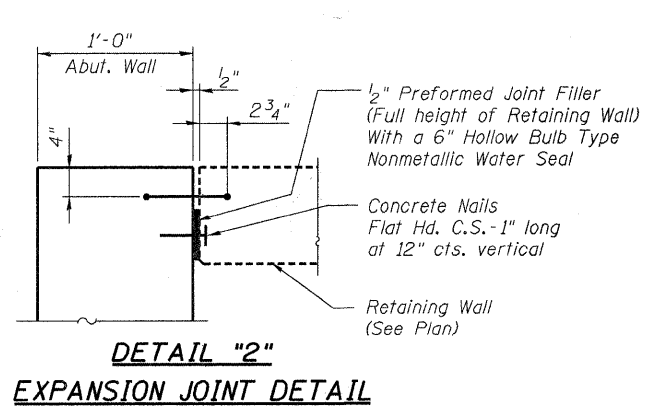
SECTION THRU ABUTMENT



SECTION THRU WINGWALL

DRAINAGE DETAILS

See Sheet S19 for additional drainage Details



DETAIL "2"

EXPANSION JOINT DETAIL

Notes :

For Section A-A, See Sheet S16.

DESIGNED	KJH
CHECKED	MGB
DRAWN	RJ
CHECKED	BKB

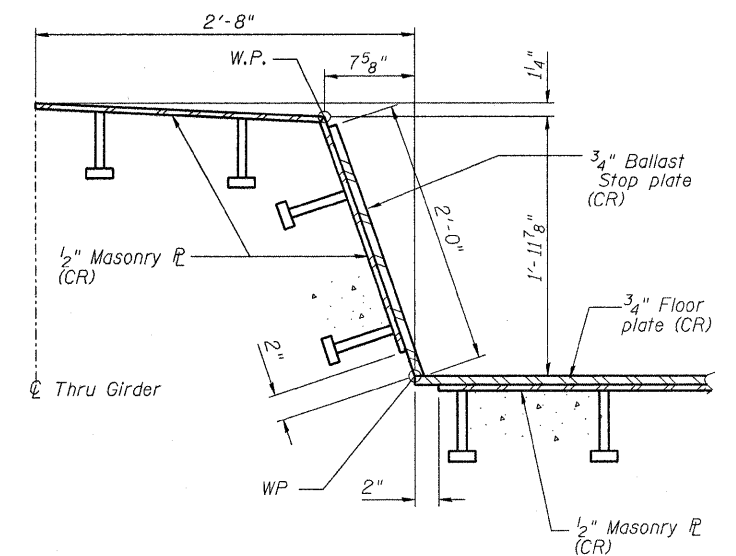
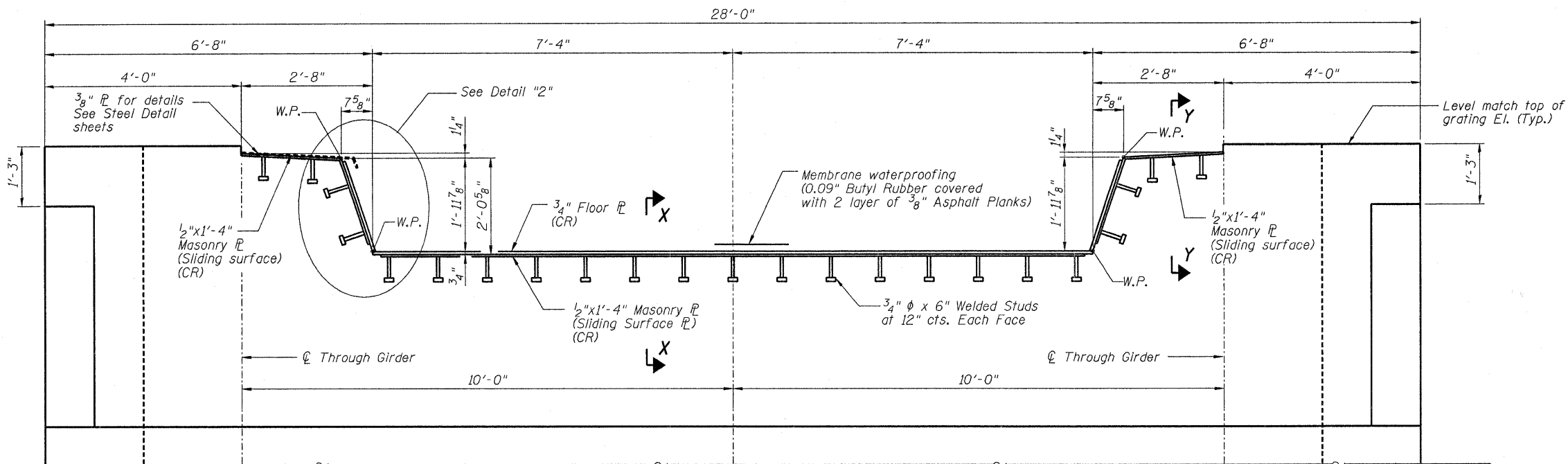
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130 East Randolph Street  
Chicago, Illinois 60601  
(312) 946-8600

FREEPORT SUBDIVISION	
BRIDGE NO. W40.07	
SHEET NO. S14	RTE.
S21 SHEETS	361

E. & W. ABUTMENT FOOTINGS  
STRUCTURE NO. 045-3163

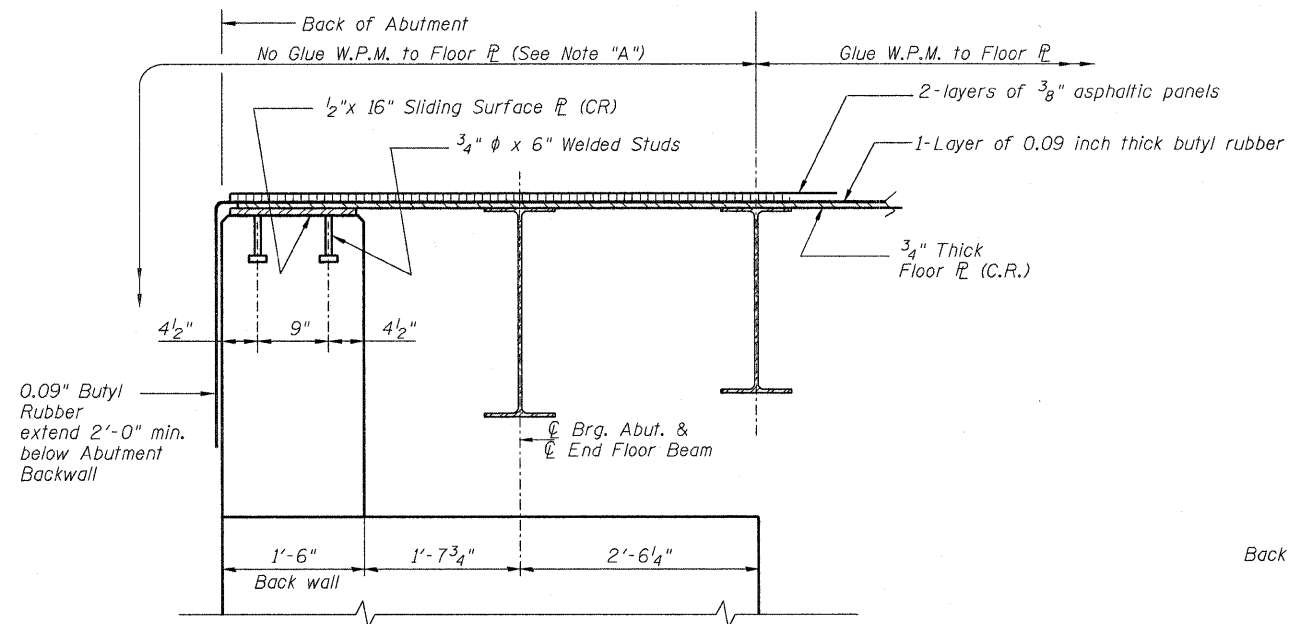
SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
06-00214-02-BR	KANE	219	141
SN 045-3163		CONTRACT NO. 63073	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT			

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

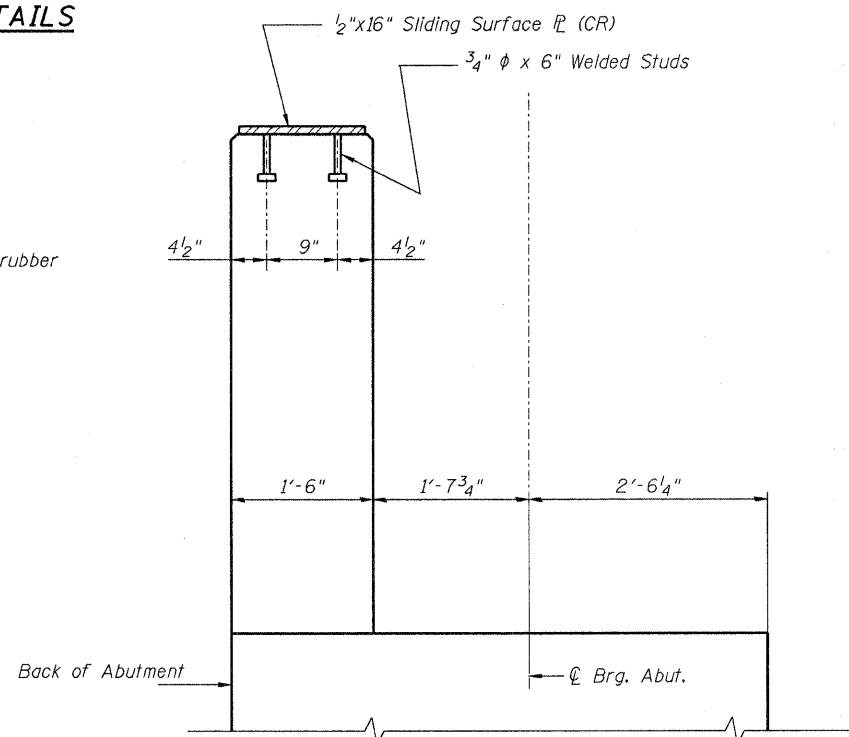


DETAIL "2"

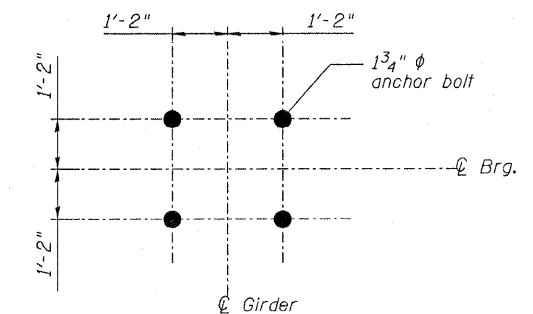
DETAIL "1" - MASONRY PLATE DETAILS



SECTION X-X



SECTION Y-Y



ANCHOR BOLT LAYOUT

Note "A"  
No Glue. The Water Proofing Membrane (W.P.M.) (0.09" Butyl Rubber) in this area shall not adhere to the Floor Plate or the Abutment Backwall.

DESIGNED	KJH
CHECKED	MGB
DRAWN	RJ
CHECKED	BKB

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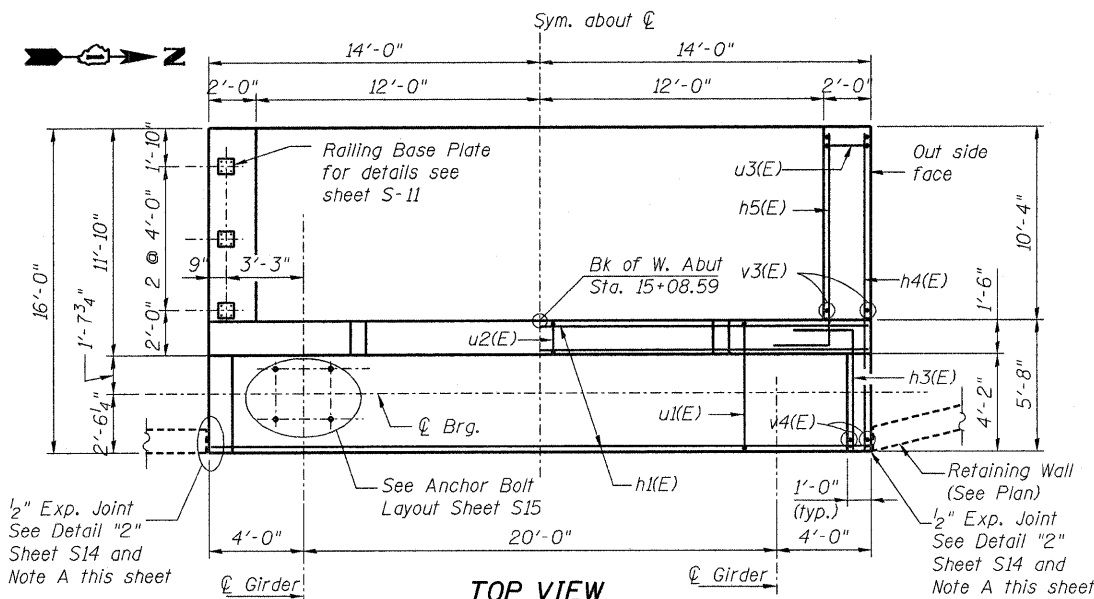
FREEPORT SUBDIVISION	
BRIDGE NO. W40.07	
SHEET NO. S15	RTE.
S21 SHEETS	361

**E. & W. ABUTMENT DETAILS**  
**STRUCTURE NO. 045-3163**

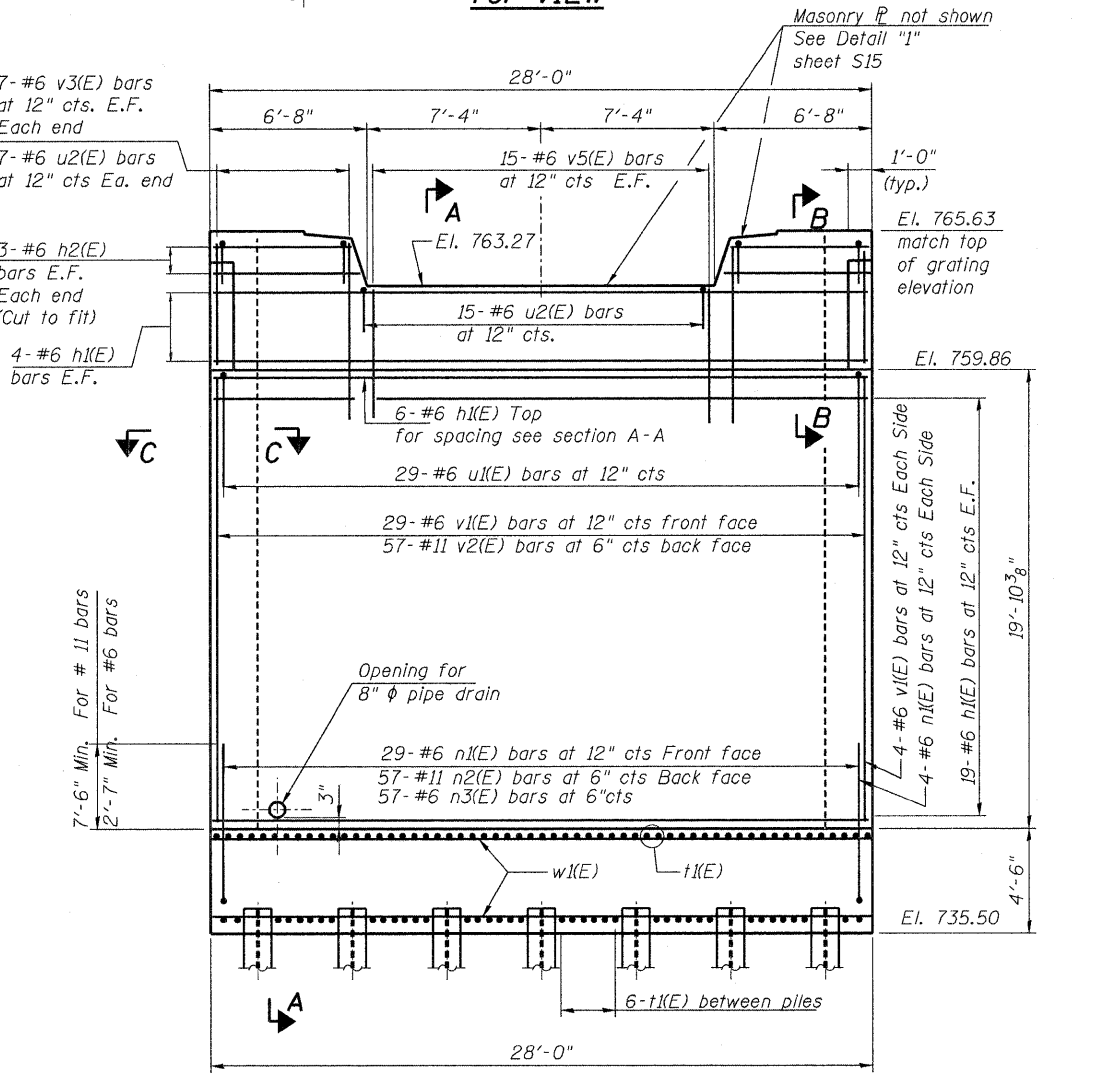
SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
06-00214-02-BR	KANE	219	142
SN 045-3163		CONTRACT NO. 63073	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT			

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

**BILL OF MATERIAL**  
**WEST ABUTMENT**

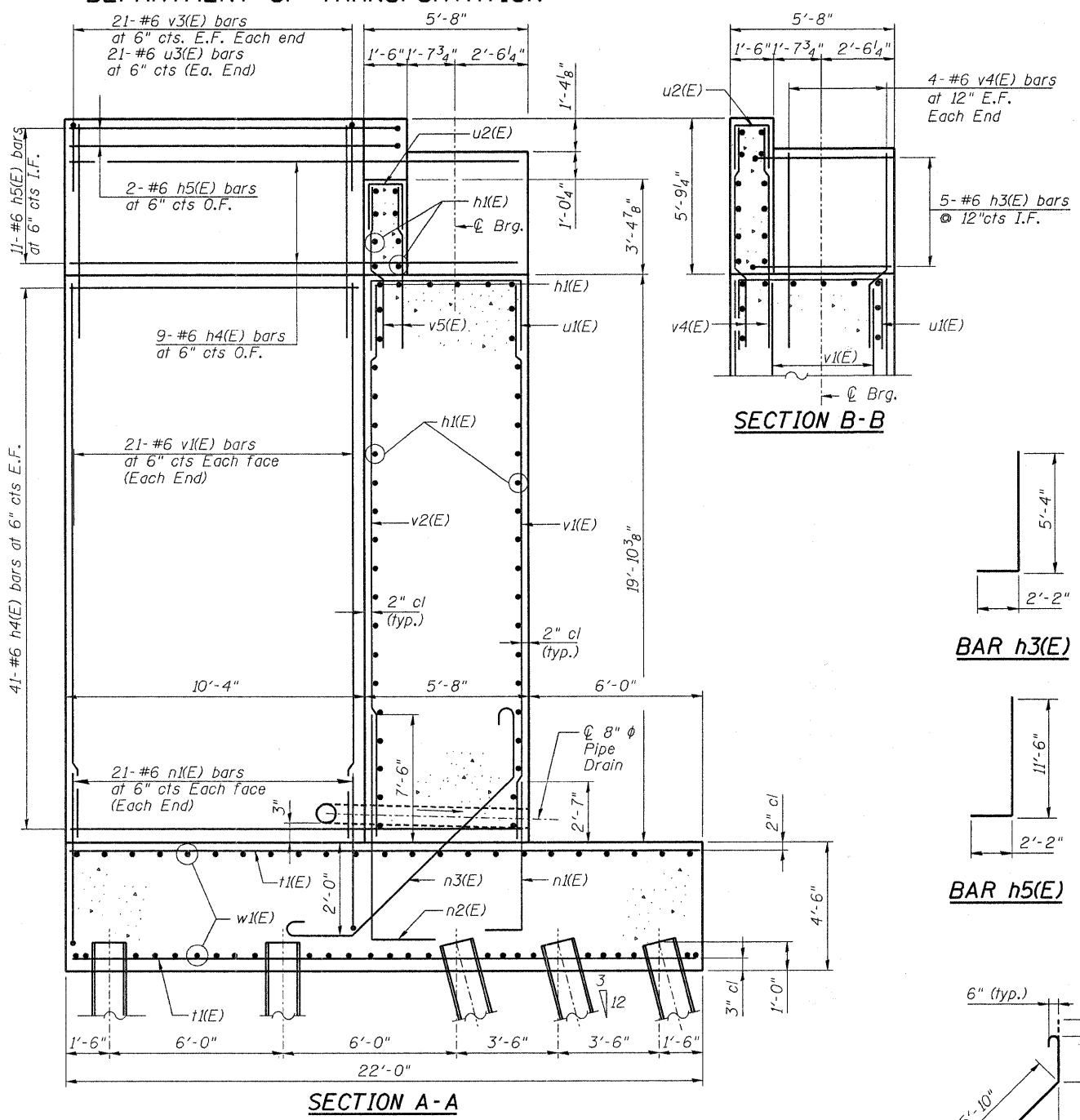


**TOP VIEW**



**ELEVATION**

DESIGNED	KJH
CHECKED	MGB
DRAWN	RJ
CHECKED	BKB



**SECTION A-A**

**SECTION B-B**

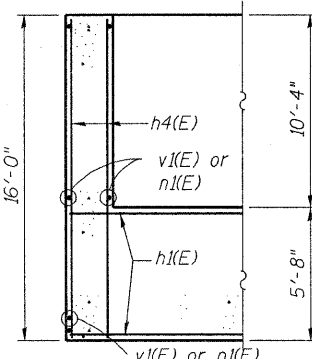
**BAR h3(E)**

**BAR h5(E)**

**BAR n3(E)**

**BAR n2(E)**

**BAR n1(E)**



**SECTION C-C**

**Dimensions**

Bar	A	B
u1(E)	2'-7"	5'-4"
u2(E)	2'-7"	1'-2"
u3(E)	2'-7"	1'-8"

**BARs u1(E), u2(E) & u3(E)**

FREEPORT SUBDIVISION	
BRIDGE NO. W40.07	
SHEET NO. S16	RTE. 361
S21 SHEETS	

<b>WEST ABUTMENT AND DETAILS</b>				
<b>STRUCTURE NO. 045-3163</b>				
SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
06-00214-02-BR	KANE	219	143	
SN 045-3163		CONTRACT NO. 63073		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

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Bar	No.	Size	Length	Shape
h1(E)	52	#6	27'-8"	—
h2(E)	12	#6	6'-4"	—
h3(E)	10	#6	7'-6"	—
h4(E)	182	#6	15'-8"	—
h5(E)	26	#6	13'-8"	—
n1(E)	121	#6	7'-8"	—
n2(E)	57	#11	13'-7"	—
n3(E)	57	#6	11'-2"	—
t1(E)	97	#9	21'-8"	—
u1(E)	29	#6	10'-6"	—
u2(E)	29	#6	6'-4"	—
u3(E)	42	#6	6'-10"	—
v1(E)	121	#6	19'-6"	—
v2(E)	57	#11	19'-6"	—
v3(E)	112	#6	8'-1"	—
v4(E)	16	#6	7'-0"	—
v5(E)	30	#6	5'-10"	—
w1(E)	49	#6	27'-8"	—
Porous Granular Embankment		Cu. Yd.	127	
Concrete Structures		Cu. Yd.	268	
Reinforcement Bars, Epoxy Coated		Pound	35,290	
Furnishing Steel Piles, HP 12X53		Foot	735	
Driving Piles		Foot	735	
Test Piles Steel, HP 12X53		Each	1	
Concrete Sealer		Sq. Ft.	1,509	
Geocomposite Wall Drain		Sq. Yd.	1,044	
Stud Shear Connectors		Each	46	
Pile Shoes		Each	35	

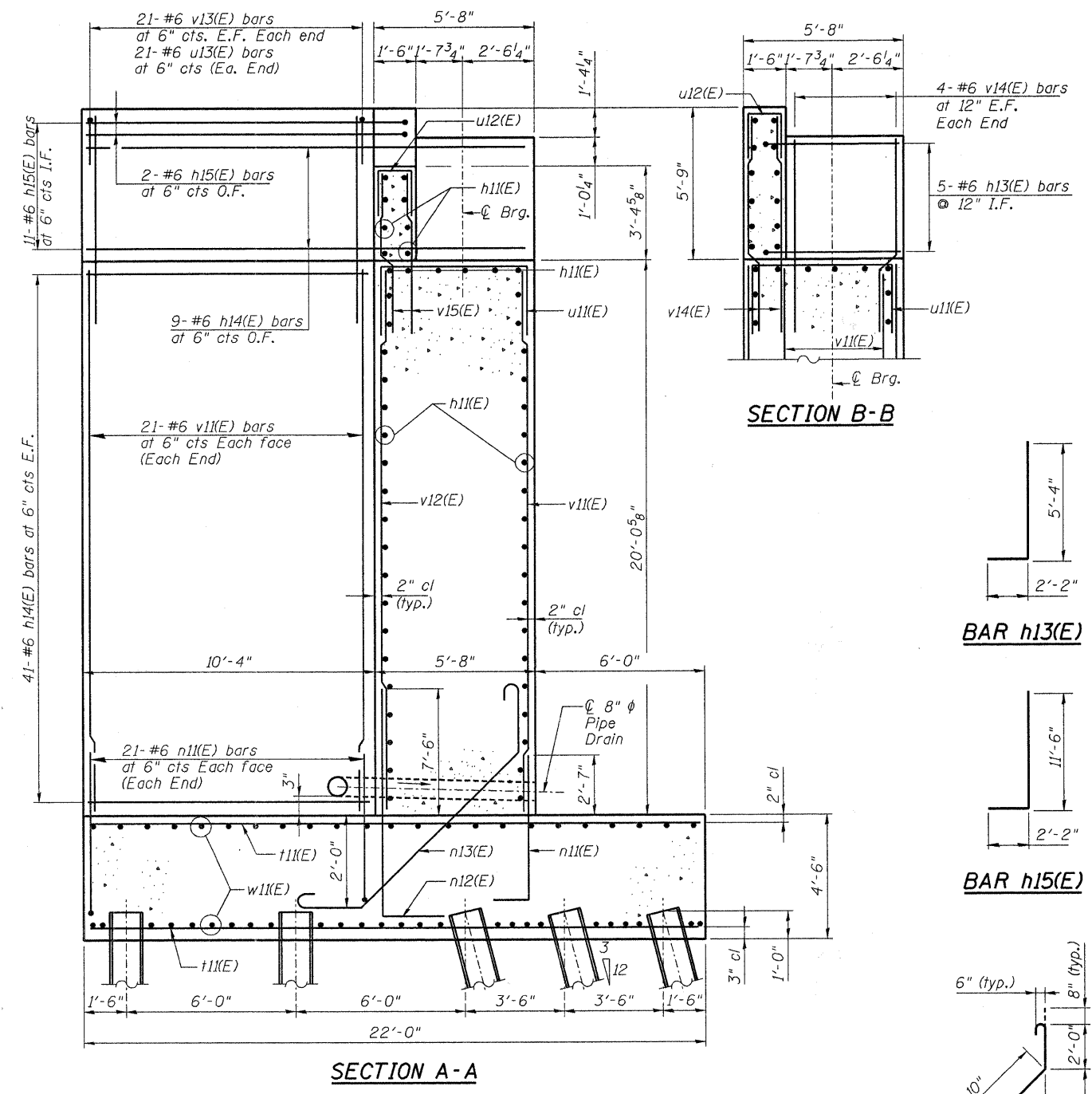
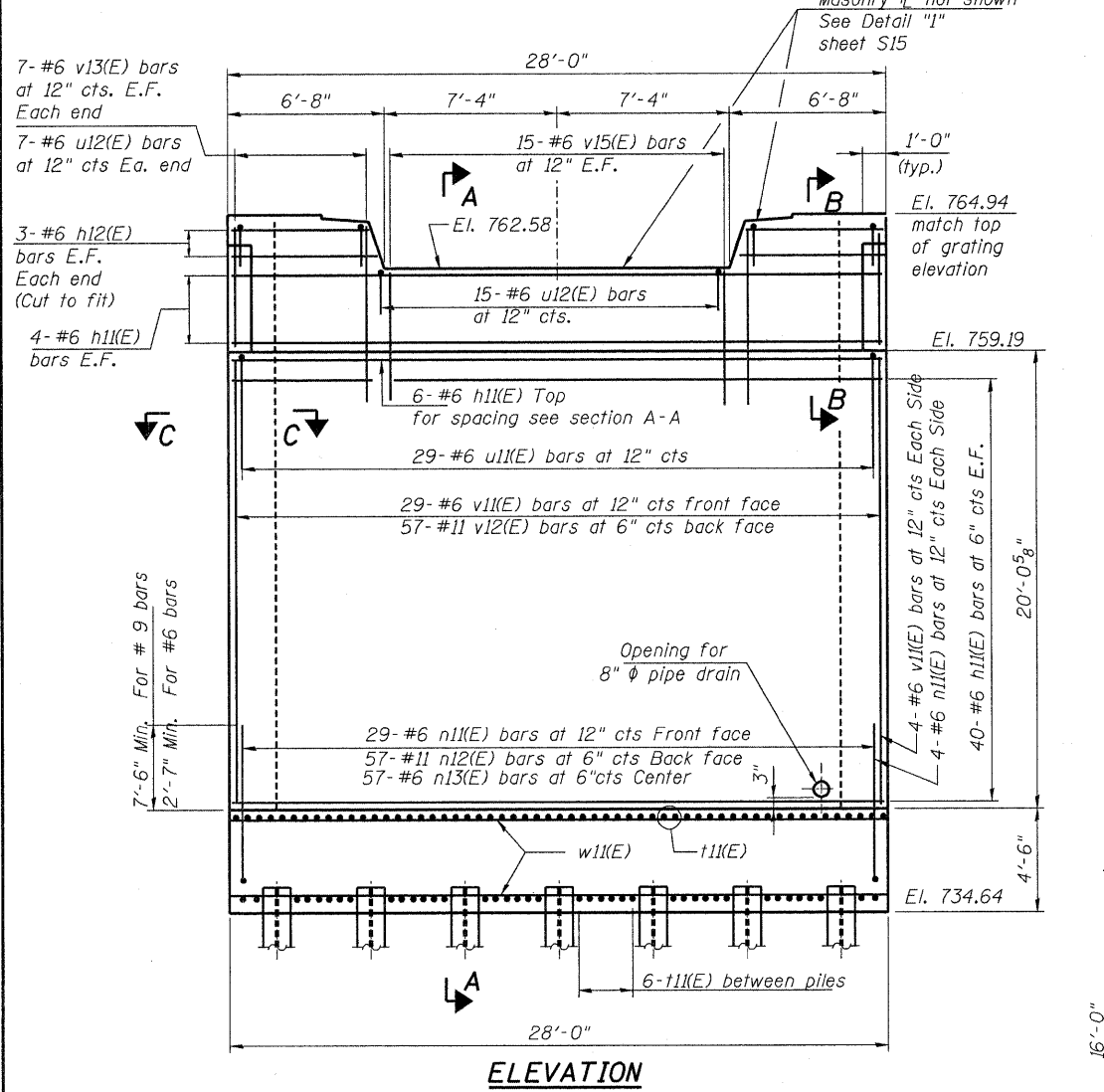
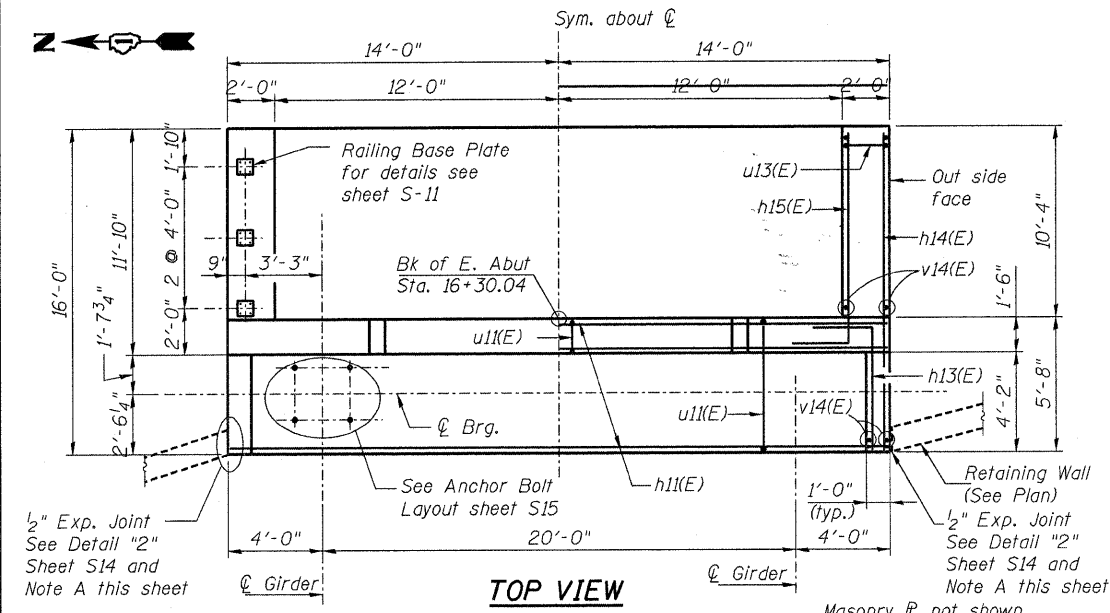
**Notes:**  
Place bars to miss anchor bolts.

The Year concrete is poured should be formed into each Abutment per CN Std. R15-11.

**Note A:**  
At the interface between side walls of abutment and the adjacent Retaining Walls, the Contractor shall make provisions as required for the lateral support of the timber lagging of the retaining walls. Cost included in pay item "Concrete Structures".

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

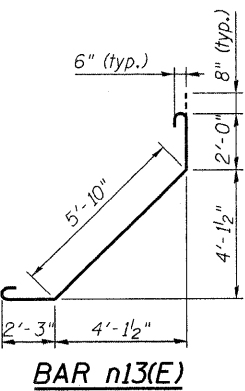
BILL OF MATERIAL  
EAST ABUTMENT



Bar	No.	Size	Length	Shape
h1(E)	52	#6	27'-8"	—
h2(E)	12	#6	6'-4"	—
h3(E)	10	#6	7'-6"	—
h4(E)	182	#6	15'-8"	—
h5(E)	26	#6	13'-8"	—
n1(E)	121	#6	7'-8"	—
n2(E)	57	#11	13'-7"	—
n3(E)	57	#6	11'-2"	—
h1(E)	97	#9	21'-8"	—
u1(E)	29	#6	10'-6"	—
u2(E)	29	#6	6'-4"	—
u3(E)	42	#6	6'-10"	—
v1(E)	121	#6	19'-8"	—
v2(E)	57	#11	19'-8"	—
v3(E)	112	#6	8'-1"	—
v4(E)	16	#6	7'-0"	—
v5(E)	30	#6	5'-10"	—
w1(E)	49	#6	27'-8"	—
Porous Granular Embankment			Cu. Yd.	128
Concrete Structures			Cu. Yd.	269
Reinforcement Bars, Epoxy Coated			Pound	35,380
Furnishing Steel Piles, HP 12X53			Foot	735
Driving Piles			Foot	735
Test Piles Steel, HP 12X53			Each	1
Concrete Sealer			Sq. Ft.	1,521
Geocomposite Wall Drain			Sq. Yd.	1,051
Stud Shear Connectors			Each	46
Pile Shoes			Each	35

BAR h13(E)

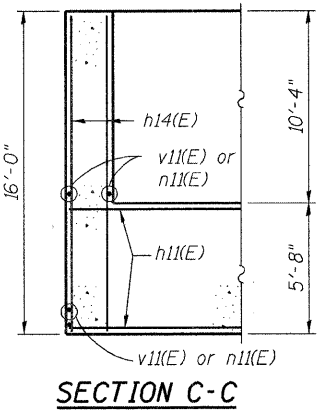
BAR h15(E)



**Dimensions**

Bar	A	B
u1(E)	2'-7"	5'-4"
u2(E)	2'-7"	1'-2"
u3(E)	2'-7"	1'-8"

**BARs u1(E), u2(E) & u3(E)**



DESIGNED	KJH
CHECKED	MGB
DRAWN	RJ
CHECKED	BKB

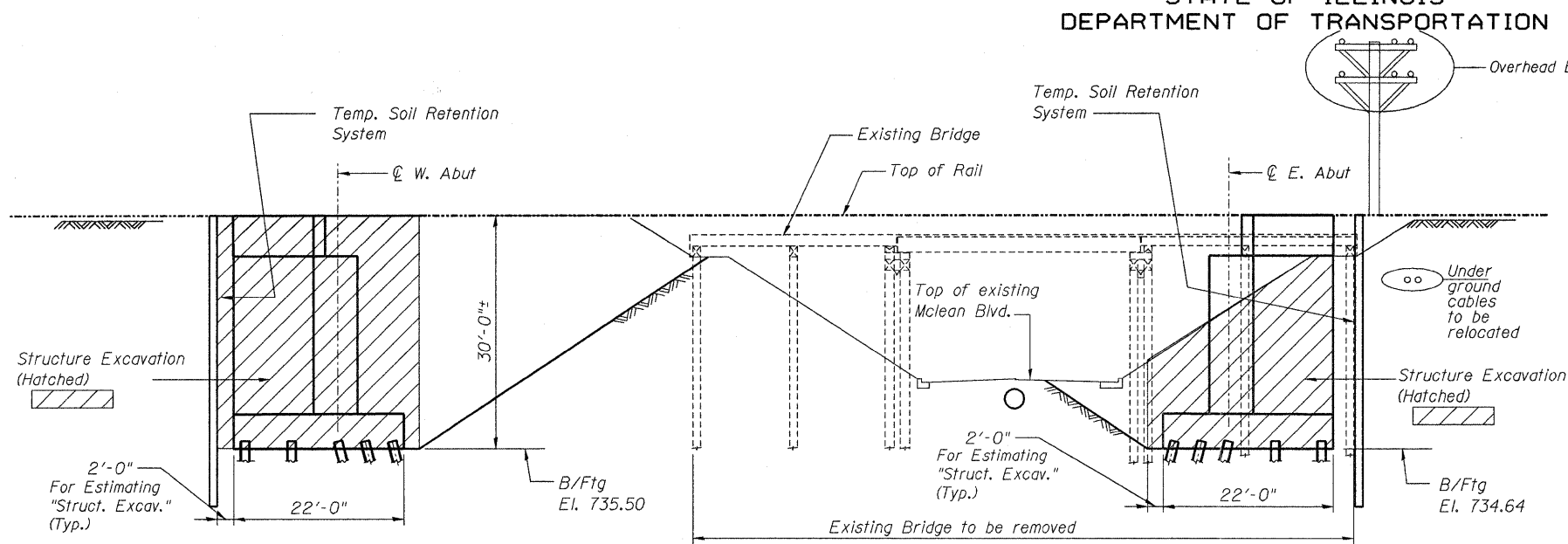
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(312) 946-8600

CN North America's Railroad	
FREEPORT SUBDIVISION	
BRIDGE NO. W40.07	
SHEET NO. S17	RTE.
S21 SHEETS	361

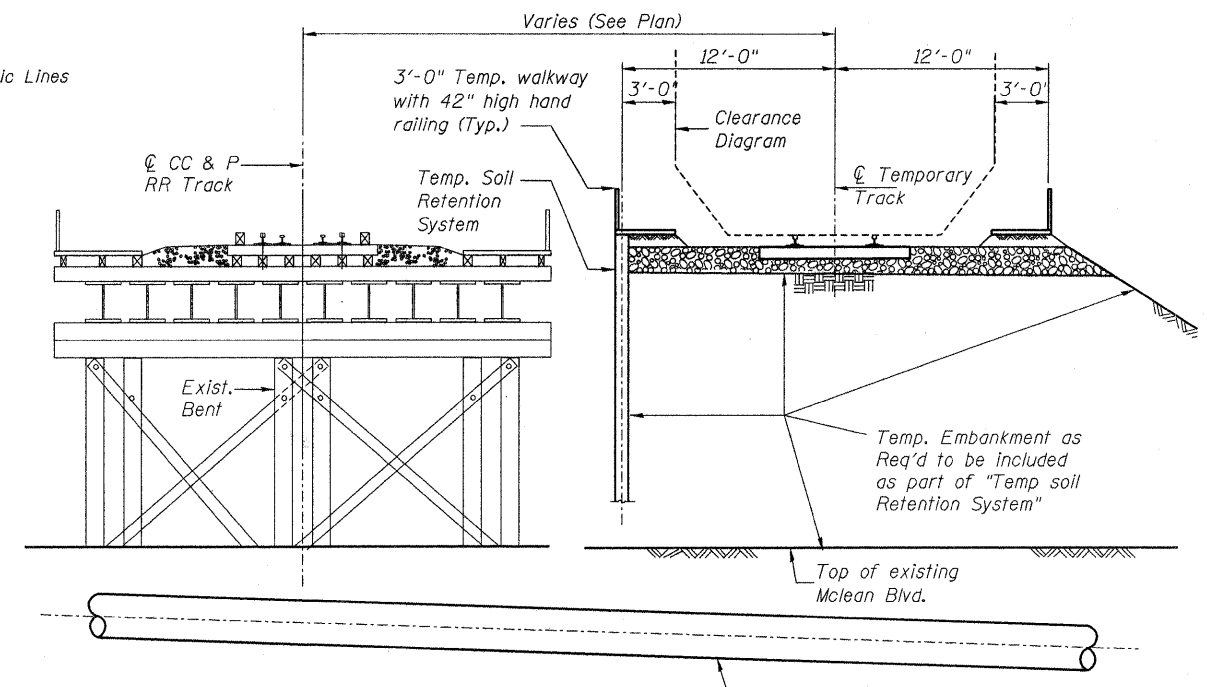
**EAST ABUTMENT AND DETAILS  
STRUCTURE NO. 045-3163**

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
06-00214-02-BR	KANE	219	144
SN 045-3163		CONTRACT NO. 63073	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT			

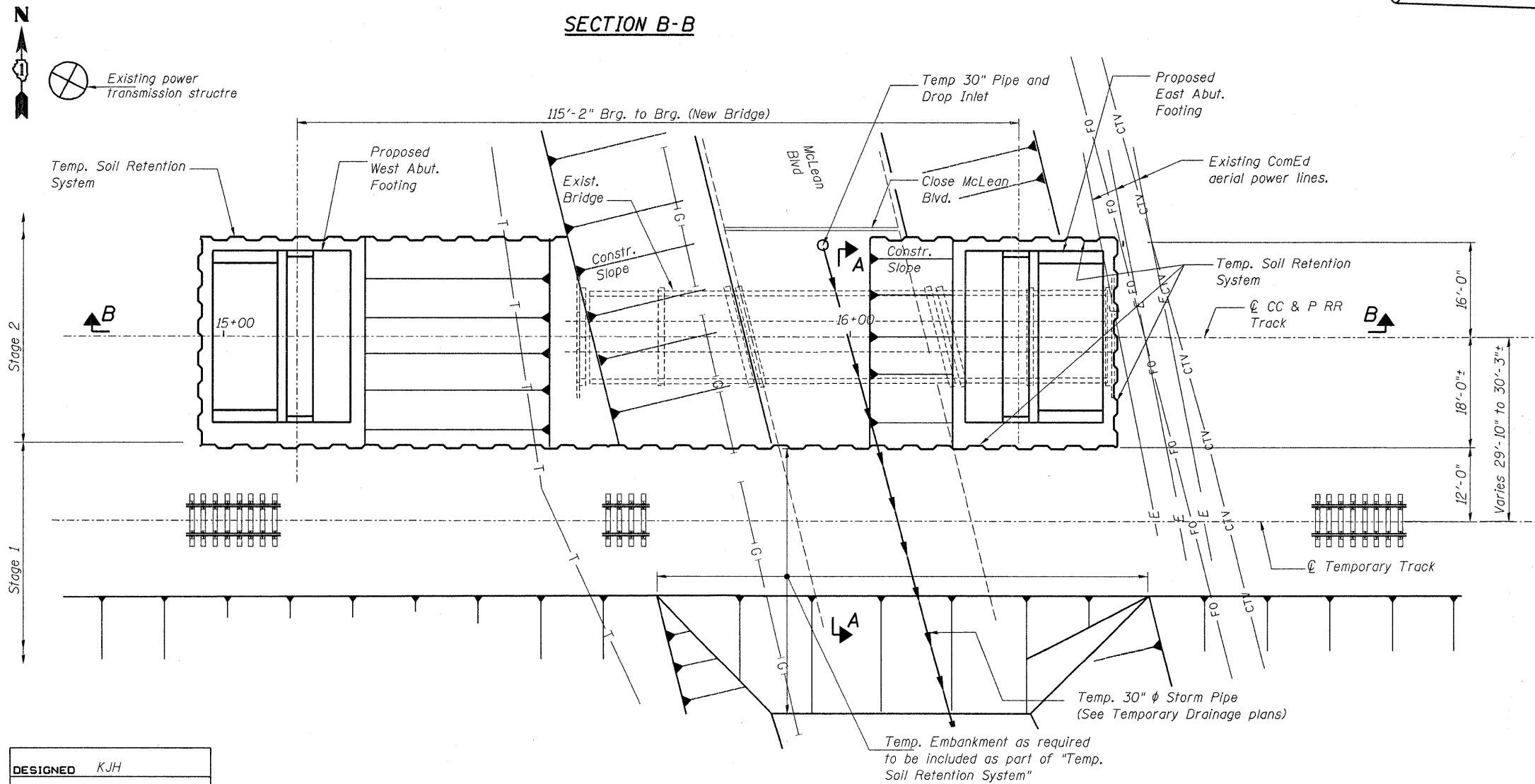
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



SECTION B-B



SECTION A-A



PLAN - TEMPORARY SOIL RETENTION SYSTEM

NOTES:

- Excavation within the bracing for the construction of the abutments and wingwalls will be Paid for under the item "Structure Excavation".
- Contractor shall locate and protect all utilities. Cost of locating and protecting the utilities is included in the pay item "Temporary Soil Retention System".
- A cantilevered sheet piling design does not appear feasible and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan details and calculations for review and acceptance by the Engineer, and the Railroad in accordance with the special provisions "Temporary Soil Retention System".
- Contractor to design & provide temporary walkway on both sides of the temporary track cost included with item "Temporary Soil Retention System".

BILL OF MATERIAL

Structure Excavation	Cu. Yd.	1,637
Temporary Soil Retention System	L. Sum	1

DESIGNED	KJH
CHECKED	
DRAWN	RJ
CHECKED	KJH

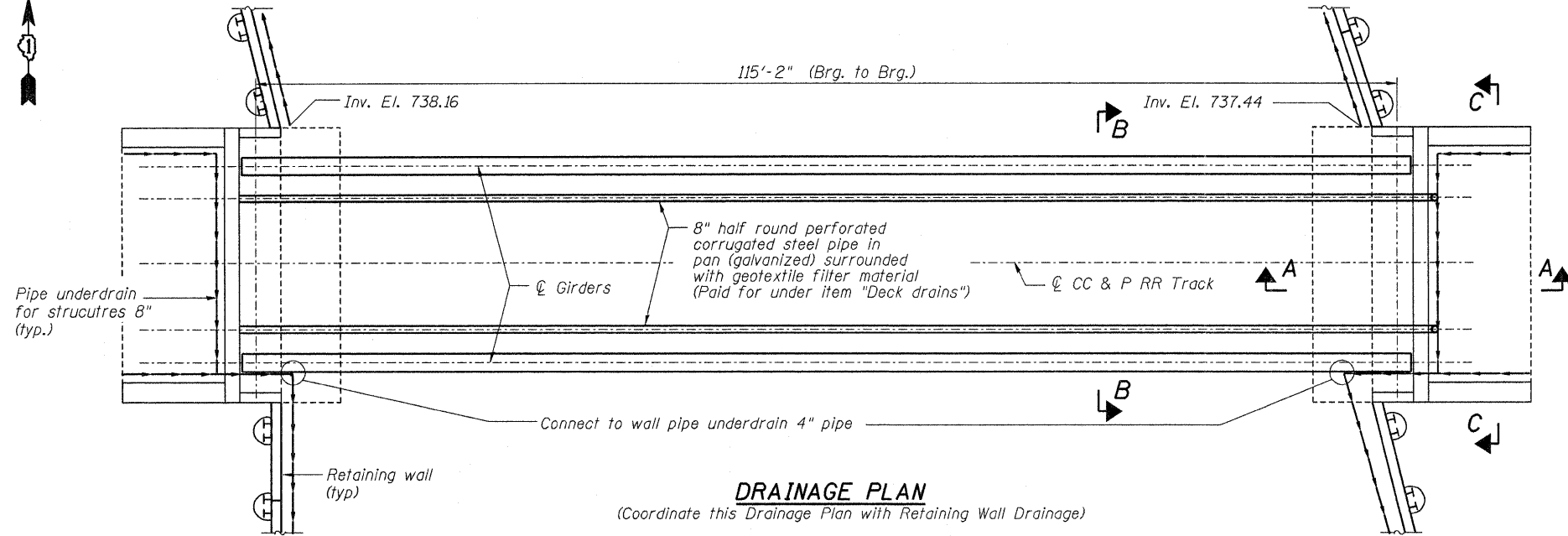
 North America's Railroad	
FREEPORT SUBDIVISION	
BRIDGE NO. W40.07	
SHEET NO. S18	RTE.
S21 SHEETS	361

TEMPORARY SOIL RETENTION SYSTEM  
STRUCTURE NO. 045-3163

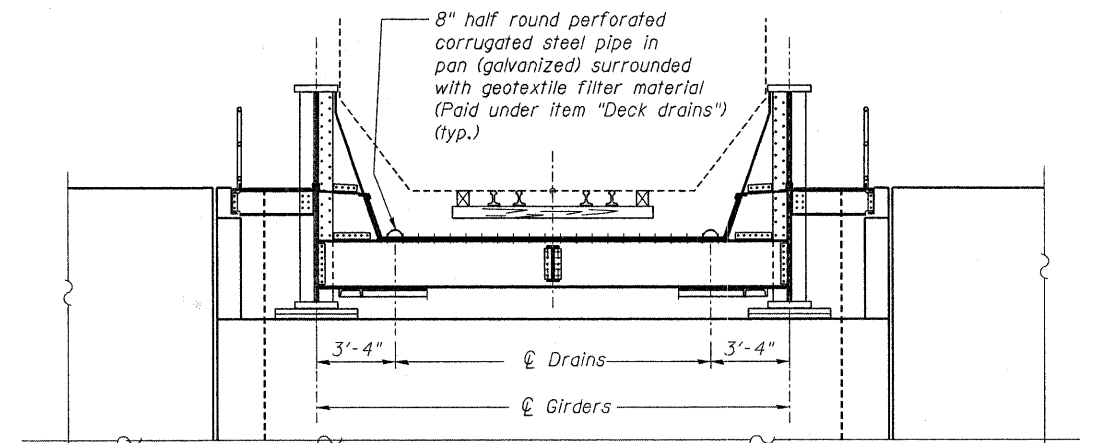
SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
06-00214-02-BR	KANE	219	145
SN 045-3163		CONTRACT NO. 63073	
FED. ROAD DIST. NO. 1   ILLINOIS   FED. AID PROJECT			

McDonough Associates Inc.  
Engineers / Architects  
130 East Randolph Street  
Chicago, Illinois 60601  
(312) 946-8600

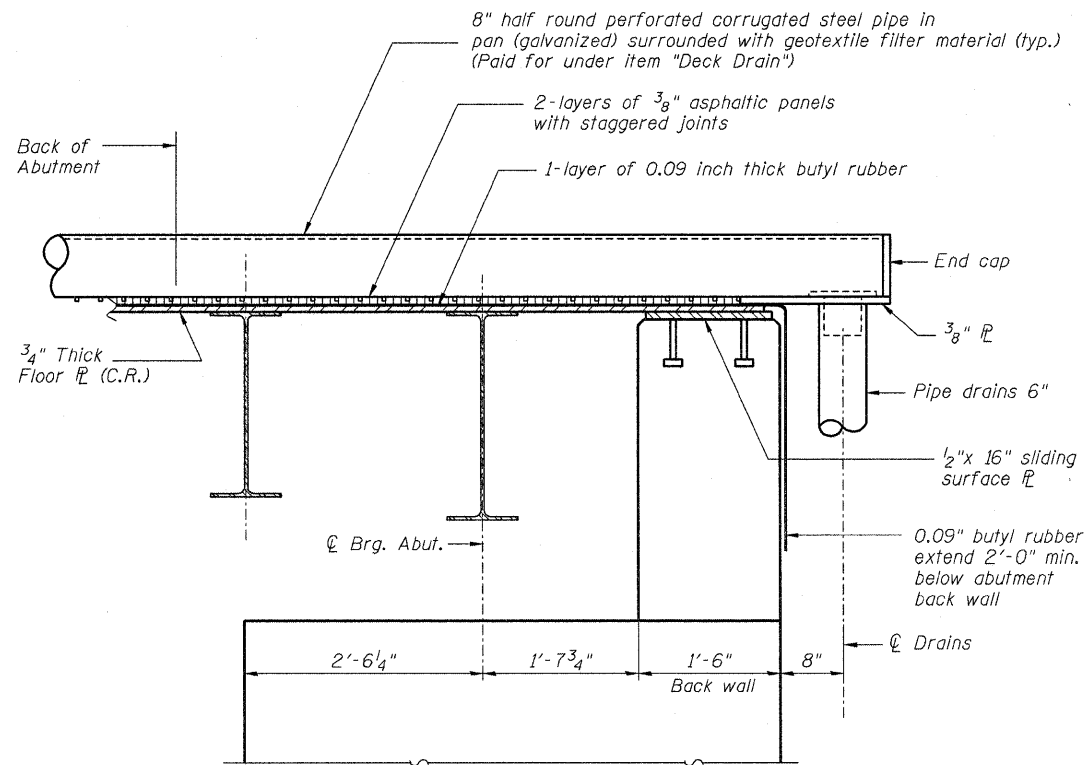
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



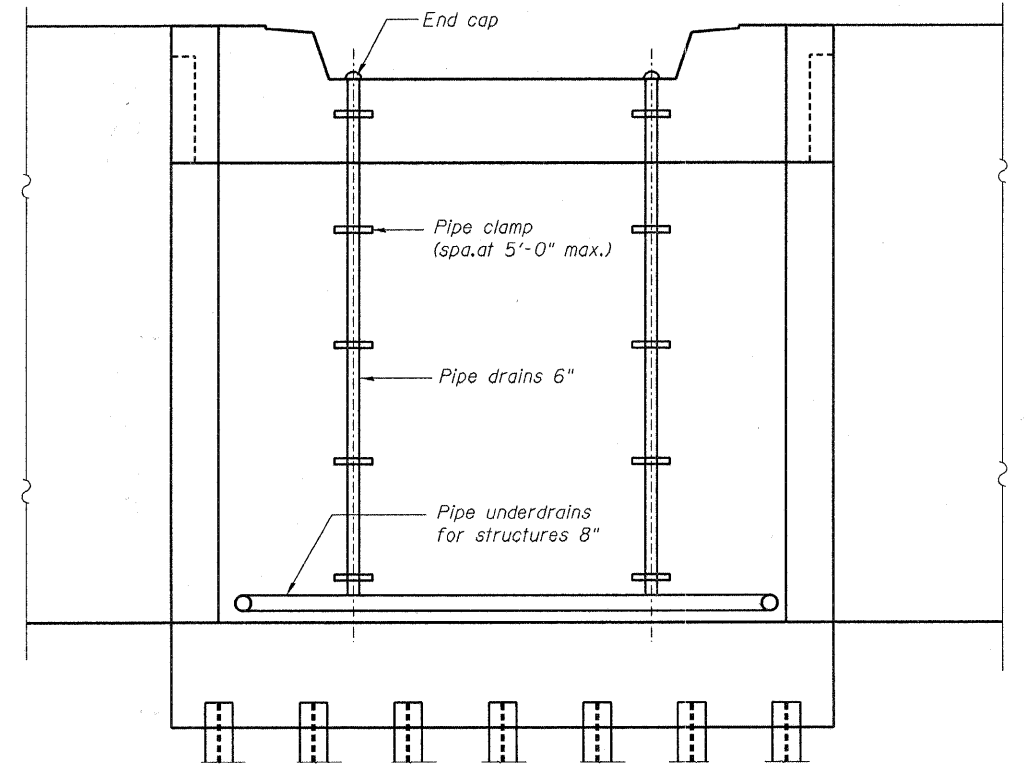
**DRAINAGE PLAN**  
(Coordinate this Drainage Plan with Retaining Wall Drainage)



**SECTION B-B**



**SECTION A-A**



**SECTION C-C**

**BILL OF MATERIAL**

Item	Foot	Quantity
Deck Drains	Foot	240
Pipe Drains 6"	Foot	40
Pipe Underdrains for structures 8"	Foot	110

**NOTES:**

- For General Notes See Sheet S2.

DESIGNED
CHECKED
DRAWN
CHECKED



**McDonough Associates Inc.**  
Engineers / Architects  
130 East Randolph Street  
Chicago, Illinois 60601  
(312) 946-8600

FREEPORT SUBDIVISION	
BRIDGE NO. W40.07	
SHEET NO. S19	RTE.
S21 SHEETS	361

**BRIDGE DRAINAGE DETAILS**  
**STRUCTURE NO. 045-3163**

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
06-00214-02-BR	KANE	219	146
SN 045-3163		CONTRACT NO. 63073	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT			

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ILLINOIS DEPARTMENT OF TRANSPORTATION  
Testing Service Corporation  
STRUCTURE BORING LOG

Page 1 of 1  
Date Started 8/16/04  
Date Completed 8/16/04

ROUTE F.A.U. 2509 DESCRIPTION CC & P Railroad over McLean Boulevard  
SECT. 98-00214-02-BR STRUCT. NO. 045-3163 DRILLED BY TSC L-60.393  
COUNTY Kane LOCATION South End West Abutment S. 3 - NW 1/4, TWP. 40 N., RNG. 8 E.

Boring No.	Station	Offset	Surface Elev.	Depth	Penetration	Bulge	Shear	Penetration Test	Surface Water Elev.	Groundwater Elev.	when drilling	at Completion	after	Hrs.
CNMC-2	5+22 CL CC & P RR	25.80 ft RT	758.56								722.6	726.6		
FILL - Dark brown clayey Topsoil														
FILL - Brown CLAY, trace gravel, moist														
Hard brown and gray CLAY, trace gravel, moist														
Hard brown and gray CLAY, trace gravel, moist														
Hard brown and gray CLAY, trace gravel, moist														
Very stiff to hard gray CLAY, trace gravel, moist														
Medium dense brown and gray SAND and GRAVEL, occasional Cobbles, (rock fragments recovered), saturated														
(Disturbed sample)														
Probable Dolomite Rock Surface (hard drilling)														
Auger Refusal at 40.0'														
CME 55 on Remote Controlled ATV Carrier (#242)														
CME Automatic Hammer														
3.25" (83 mm) ID HSA														
Very stiff to hard gray CLAY, trace gravel, moist														
Very stiff to hard gray CLAY, trace gravel, moist														
Very stiff to hard gray CLAY, trace gravel, moist														
Very dense gray SAND and GRAVEL, occasional Cobbles, (rock fragments recovered), possible fractured rock														
Probable Dolomite Rock Surface (hard drilling)														
Auger Refusal at 41.0'														
CME 55 on Remote Controlled ATV Carrier (#242)														
CME Automatic Hammer														
3.25" (83 mm) ID HSA														
Very stiff to hard gray CLAY, trace gravel, moist														
Very stiff to hard gray CLAY, trace gravel, moist														
Very dense brown and gray SAND and GRAVEL, moist														

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test Stations, Depths, Offset, and Elevations are in Feet

ILLINOIS DEPARTMENT OF TRANSPORTATION  
Testing Service Corporation  
STRUCTURE BORING LOG

Page 1 of 1  
Date Started 6/24/04  
Date Completed 6/24/04

ROUTE F.A.U. 2509 DESCRIPTION CC & P Railroad over McLean Boulevard  
SECT. 98-00214-02-BR STRUCT. NO. 045-3163 DRILLED BY TSC L-60.393  
COUNTY Kane LOCATION North End East Abutment S. 3 - NW 1/4, TWP. 40 N., RNG. 8 E.

Boring No.	Station	Offset	Surface Elev.	Depth	Penetration	Bulge	Shear	Penetration Test	Surface Water Elev.	Groundwater Elev.	when drilling	at Completion	after	Hrs.
CNMC-3	812+24 BL NB McLean	22.00 ft RT	745.63								741.6	735.6		
11" P.C. Concrete														
FILL - Crushed Stone and Sand, moist to saturated														
Dolomite, tan, silty, thin bedded with occasional green clay partings, few small vugs (<1/4"), moderately fractured from 28.5 to 30 ft. and 34.5 to 35.5 ft., heavily fractured at 43 ft.														
(Sample disturbed by large gravel)														
Very stiff gray CLAY, trace gravel, moist														
Core Run 1 from 28 to 38 feet Recovery = 85% RQD = 7%														
Core Run 2 from 38 to 48 feet Recovery = 52% RQD = 10%														
Diedrich D-120 Truck Rig (#282)														
CME Automatic Hammer														
3.25" (83 mm) ID HSA														
Rock Core with NX Core Barrel														
Very dense brown and gray SAND and GRAVEL, moist														
End of Core at 48.0'														

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test Stations, Depths, Offset, and Elevations are in Feet

ILLINOIS DEPARTMENT OF TRANSPORTATION  
Testing Service Corporation  
STRUCTURE BORING LOG  
Page 1 of 1  
Date Started 8/16/04  
Date Completed 8/16/04  
ROUTE F.A.U. 2509 DESCRIPTION CC & P Railroad over McLean Boulevard  
SECT. 98-00214-02-BR STRUCT. NO. 045-3163 DRILLED BY TSC L-60.393  
COUNTY Kane LOCATION South Wall West Abutment S. 3 - NW 1/4, TWP. 40 N., RNG. 8 E.

Boring No.	Station	Offset	Surface Elev.	Depth	Penetration	Bulge	Shear	Penetration Test	Surface Water Elev.	Groundwater Elev.	when drilling	at Completion	after	Hrs.
CNMC-1	4+78 CL CC & P RR	27.00 ft RT	756.75								722.3	726.8		
Firm brown CLAY, trace gravel, trace cinders, moist														
Black clayey Topsoil														
Hard gray CLAY, trace gravel, moist														
Hard brown and gray CLAY, trace gravel, moist														
Hard brown and gray CLAY, trace gravel, moist														
Very stiff to hard gray CLAY, trace gravel, moist														
Medium dense brown and gray SAND and GRAVEL, occasional Cobbles, (rock fragments recovered), saturated														
(Disturbed sample)														
Probable Dolomite Rock Surface (hard drilling)														
Auger Refusal at 40.0'														
CME 55 on Remote Controlled ATV Carrier (#242)														
CME Automatic Hammer														
3.25" (83 mm) ID HSA														
Very stiff to hard gray CLAY, trace gravel, moist														
Very stiff to hard gray CLAY, trace gravel, moist														
Hard gray CLAY, trace gravel, moist														
Hard gray CLAY, trace gravel, moist														

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test Stations, Depths, Offset, and Elevations are in Feet

DESIGNED	JCE/KJH
CHECKED	PMH
DRAWN	JCE/PMH
CHECKED	KJH

EXAMINED	200
PASSED	ENGINEER OF BRIDGE DESIGN
	ENGINEER OF BRIDGES AND STRUCTURES

**McDonough Associates Inc.**  
Engineers / Architects  
130 East Randolph Street  
Chicago, Illinois 60601  
(312) 946-8600

FREEPORT SUBDIVISION	
BRIDGE NO. W40.07	
SHEET NO. S20	RTE. 361
S21 SHEETS	
SECTION 06-00214-02-BR	
SN 045-3163	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT	

SOIL BORING LOGS  
STRUCTURE NO. 045-3163

COUNTY	TOTAL SHEETS	SHEET NO.
KANE	219	147
CONTRACT NO. 63073		

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ILLINOIS DEPARTMENT OF TRANSPORTATION  
Testing Service Corporation  
STRUCTURE BORING LOG

Page 1 of 1  
Date Started 8/17/04  
Date Completed 8/17/04

ROUTE F.A.U. 2509 DESCRIPTION CC & P Railroad over McLean Boulevard  
SECT. 98-00214-02-BR STRUCT. NO. 045-3163 DRILLED BY TSC L-60,393  
COUNTY Kane LOCATION North End East Abutment S. 3 - NW 1/4, TWP. 40 N., RNG. 8 E.

Boring No.	Station	Offset	DEPTH	SOIL	Qu	W %	Surface Water Elev.	Groundwater Elev.	DEPTH	SOIL	Qu	W %
CNMC-4	6+72 CL CC & P RR	19.00R LT										
			761.90									
			756.40	S 5.0 16.1								
			753.15	B 3.0 21.9								
			753.15	S 3.0 14.8								
			753.15	B 2.7 22.0								
			728.90	S 8.9 14.6								
			728.90	B 9.3 16.5								
			724.90	B 9.1 17.4								
			724.90	B 9.1 17.4								
			743.90	B 8.7 17.6								
			743.90	B 4.1 17.9								
			716.90	B 3.5 19.5								
			716.90	B 3.5 19.5								
			716.90	B 2.7 18.7								
			716.90	B 3.9 22.0								

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test  
Stations, Depths, Offset, and Elevations are in Feet

ILLINOIS DEPARTMENT OF TRANSPORTATION  
Testing Service Corporation  
STRUCTURE BORING LOG

Page 1 of 1  
Date Started 8/17/04  
Date Completed 8/17/04

ROUTE F.A.U. 2509 DESCRIPTION CC & P Railroad over McLean Boulevard  
SECT. 98-00214-02-BR STRUCT. NO. 045-3163 DRILLED BY TSC L-60,393  
COUNTY Kane LOCATION South Wall East Abutment S. 3 - NW 1/4, TWP. 40 N., RNG. 8 E.


Boring No.	Station	Offset	DEPTH	SOIL	Qu	W %	Surface Water Elev.	Groundwater Elev.	DEPTH	SOIL	Qu	W %
CNMC-5	6+76 CL CC & P RR	21.00R RT										
			758.65									
			758.25									
			753.15	P 4.5 16.7								
			753.15	S 3.3 13.6								
			753.15	B 2.8 21.9								
			753.15	B 2.9 22.0								
			727.65	B 8.9 16.1								
			727.65	B 9.1 14.8								
			727.65	B 6.7 17.6								
			727.65	B 4.5 19.4								
			743.15	B 4.5 15%								
			743.15	B 2.8 20.6								
			743.15	B 3.4 20.3								
			738.15	B 1.8 22.4								
			738.15	B 3.3 21.1								

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test  
Stations, Depths, Offset, and Elevations are in Feet

DESIGNED	JCE/KJH
CHECKED	PMH
DRAWN	JCE/PMH
CHECKED	KJH

EXAMINED	200
PASSED	ENGINEER OF BRIDGE DESIGN
	ENGINEER OF BRIDGES AND STRUCTURES

**McDonough Associates Inc.**  
Engineers / Architects  
130 East Randolph Street  
Chicago, Illinois 60601  
(312) 946-8600

 North America's Railroad FREEPORT SUBDIVISION BRIDGE NO. W40.07		SOIL BORING LOGS STRUCTURE NO. 045-3163			
SHEET NO. S21	RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S21 SHEETS	361	06-00214-02-BR	KANE	219	148
SN 045-3263			CONTRACT NO. 63073		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					



Benchmark RM-12:  
 A Standard US Geological Survey Disk set in the south headwall of a culvert located on State Route 31, about 130 feet west of McLean Boulevard. Elevation of 710.37 (NGVD of 1929) as shown on Firm Community Panel Number 170896 0040A, effective date March 1, 1982. (Also known as NGS-K19, RESET 1967.)

Existing Structure: None

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION **TOTAL BILL OF MATERIAL**

Pay Item	Unit	Quantity
Structure Excavation	Cu Yd	650
Concrete Structures	Cu Yd	123
Form Liner Textured Surface	Sq Ft	2,958
Stud Shear Connectors	Each	750
Untreated Timber Lagging	Sq Ft	2,790
Reinforcement Bars, Epoxy Coated	Pound	15,380
Steel Railing	Foot	207
Furnishing Soldier Piles (HP Section)	Foot	94
Furnishing Soldier Piles (Built-Up Section)	Foot	775
Name Plate	Each	1
Geocomposite Wall Drain	Sq Yd	310
Pipe Underdrains For Structures 4"	Foot	206
Concrete Gutter, Type B	Foot	71
Permanent Ground Anchor	Each	35
Drilling And Setting Soldier Piles (In Soil)	Cu Ft	2,404
Drilling And Setting Soldier Piles (In Rock)	Cu Ft	50.0

\* Special Provisions

**GENERAL NOTES:**

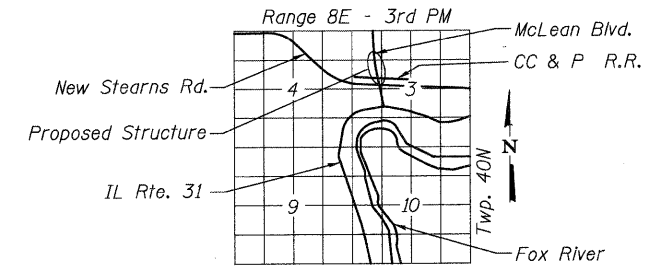
1. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60 deformed bars.
2. Reinforcement bars designated (E) shall be epoxy coated.
3. All exposed concrete edges shall have a 3/4" x 45 degree chamfer.
4. It shall be the contractor's responsibility to verify the location of all utilities prior to starting construction. Contact j.u.l.i.e. at 800-892-0123.
5. See drainage sheets for location of drainage structures for connection of underdrain system.
6. Contractor shall be responsible for design of timber lagging (per special provisions). Lagging design shall be submitted to engineer for approval. Quantity shown in bill of materials is an estimate for bidding purposes only.
7. See special provision "Permanent Ground Anchor" for installation and testing of permanent ground anchors.
8. Paved ditches shall have transverse joints cut 1/3" deep every 10'. Joints shall then be sealed with hot poured joint sealer. Paved ditch construction shall conform to Section 606. Joint sealer shall be in accordance with Section 420.14 and Section 1050.02.
9. If the Contractor elects to use form ties, only fiberglass ties shall be allowed. See Special Provisions.

**INDEX OF SHEETS**

WW1	General Plan and Notes
WW2-WW3	Pile and Anchor Locations
WW4	Pile and Anchor Schedule
WW5	Concrete Facing Details
WW6	Section & Details
WW7	Railing Details
WW8-WW9	Soil Boring Logs

STATION 811+62.99  
 BUILT 20\_\_ BY  
 STATE OF ILLINOIS  
 F.A.U. RT. 2509 SEC. 06-00214-02-BR  
 STRUCTURE NO. 045-2038

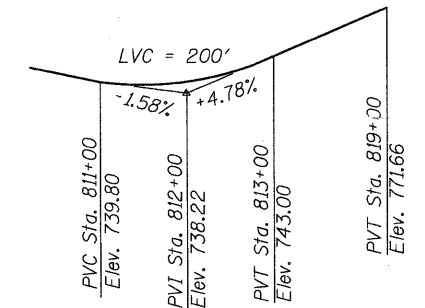
**NAME PLATE**  
 See STD 515001



**LOCATION SKETCH**

**LEGEND**

- ◆ Soil Boring Location
- Ⓜ Pile Number



**PROFILE GRADE  
 McLEAN BOULEVARD**

**DESIGN SPECIFICATIONS**

2002 AASHTO Standard Specifications

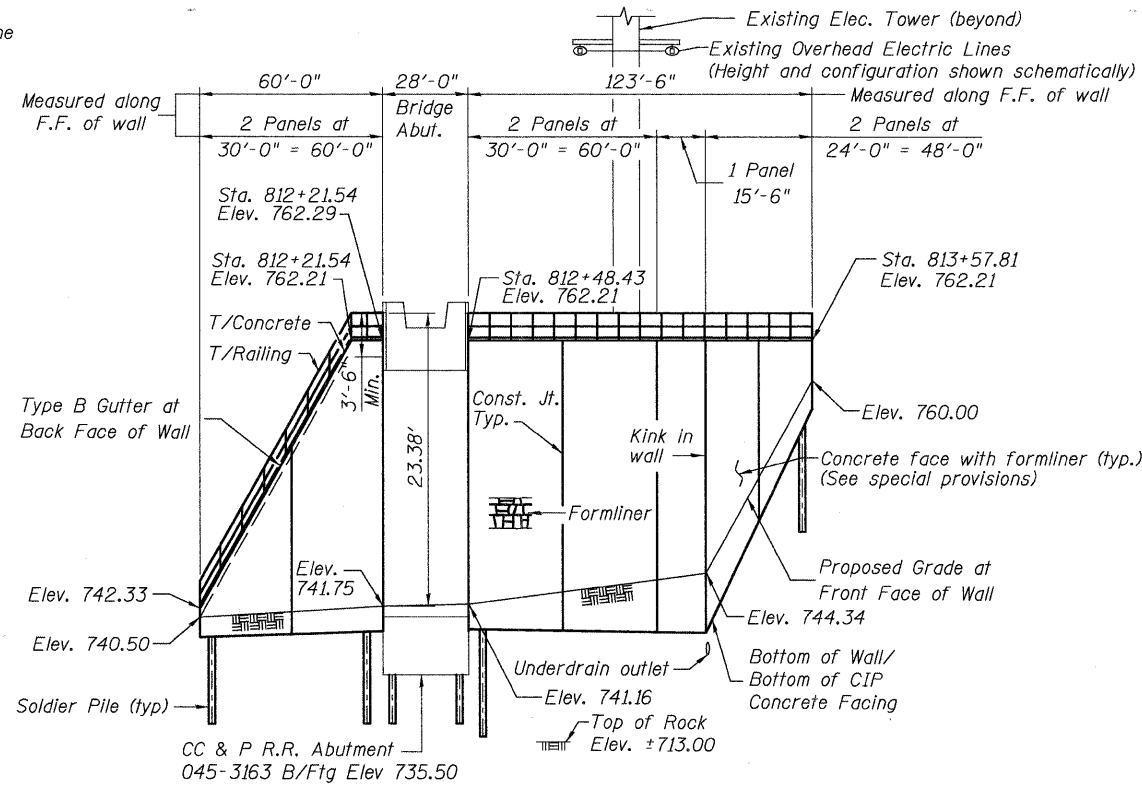
**DESIGN STRESSES**

**FIELD UNITS**

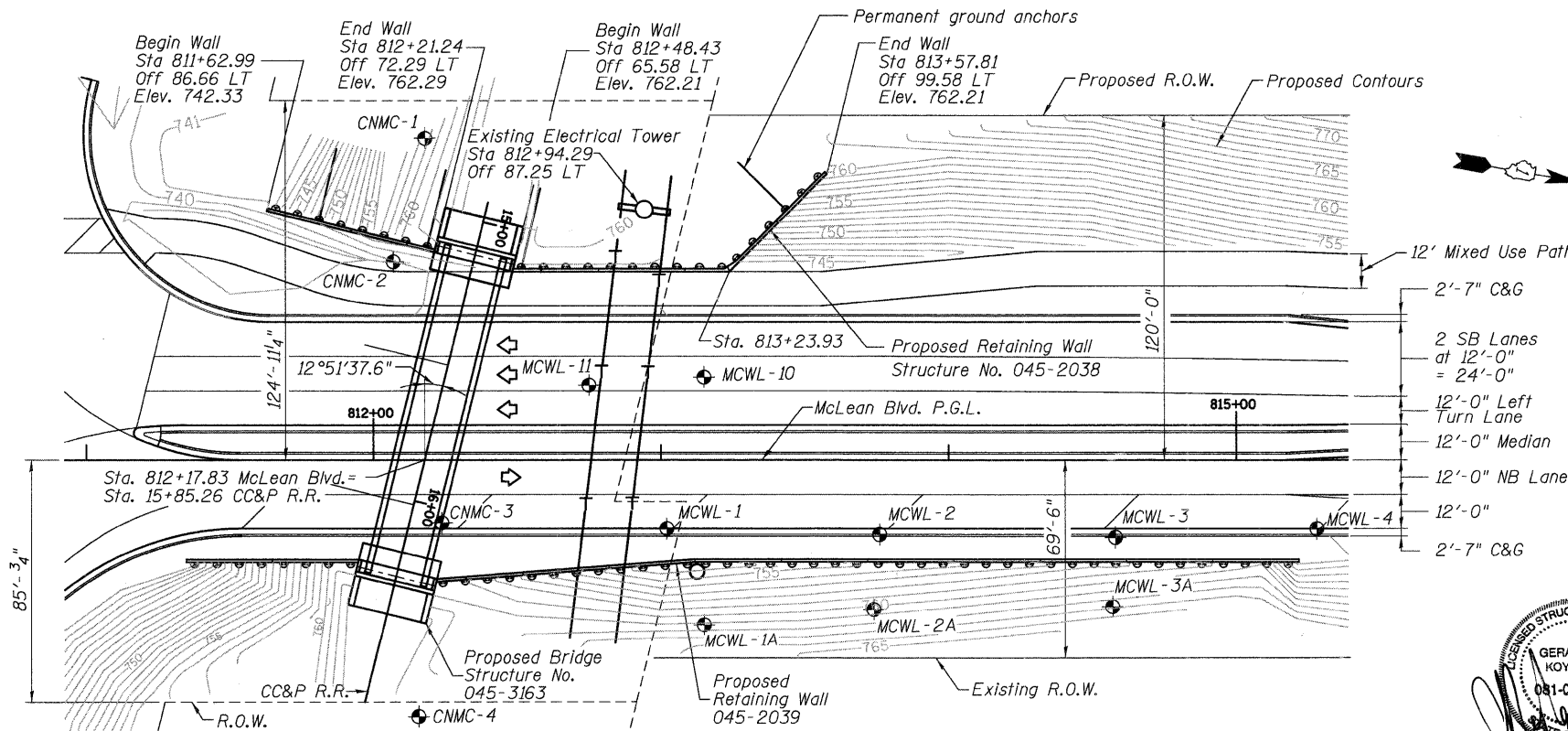
- $f'_s$  (Anchor Strands) = 270,000 psi
- $f'_{sj}$  (Anchor Strands) = 201,900 psi
- $f_y$  (Piles) = 36,000 psi (AASHTO M270 Gr. 36)
- $f_y$  (Anchor Bearing P's) = 36,000 psi
- $f_y$  (Reinforcement) = 60,000 psi
- $f'_c$  (Concrete) = 3,500 psi
- $f'_c$  (Grout) = 4,000 psi
- $f'_c$  (Encasement) = 4,000 psi

**GENERAL PLAN**

**DRILLED SOLDIER PILE WALL  
 McLEAN BOULEVARD  
 SECTION 06-00214-02 BR  
 KANE COUNTY  
 STA 811+62.99 TO STA 813+57.81  
 STRUCTURE NO. 045-2038**

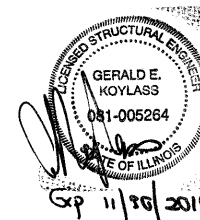


**ELEVATION - RETAINING WALL STRUCTURE NO. 045-2038**



**PLAN**

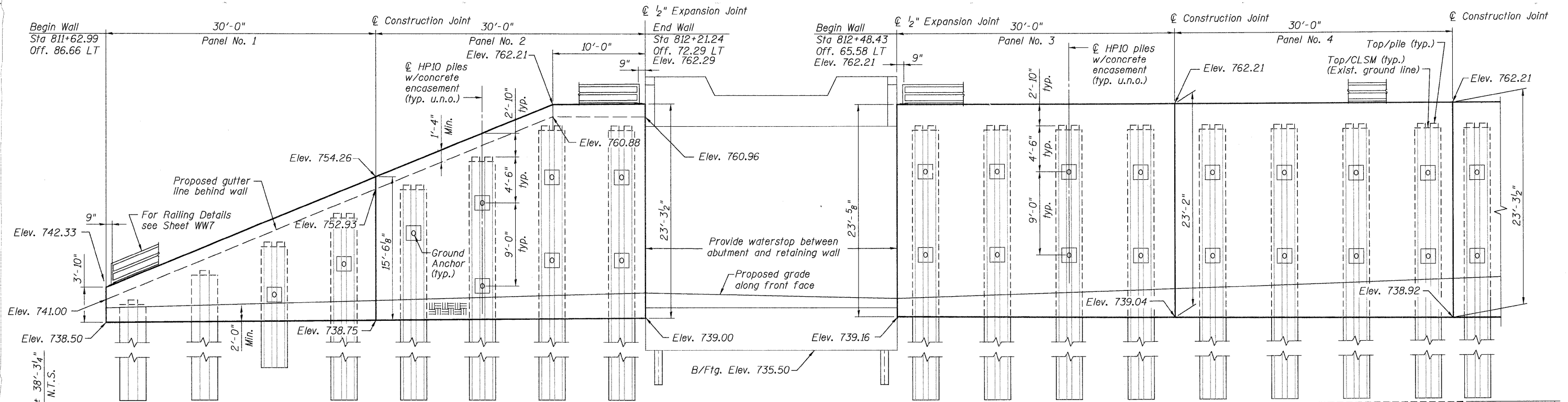
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CHECKED	PMH
DRAWN	JCE/PMH
CHECKED	KJH



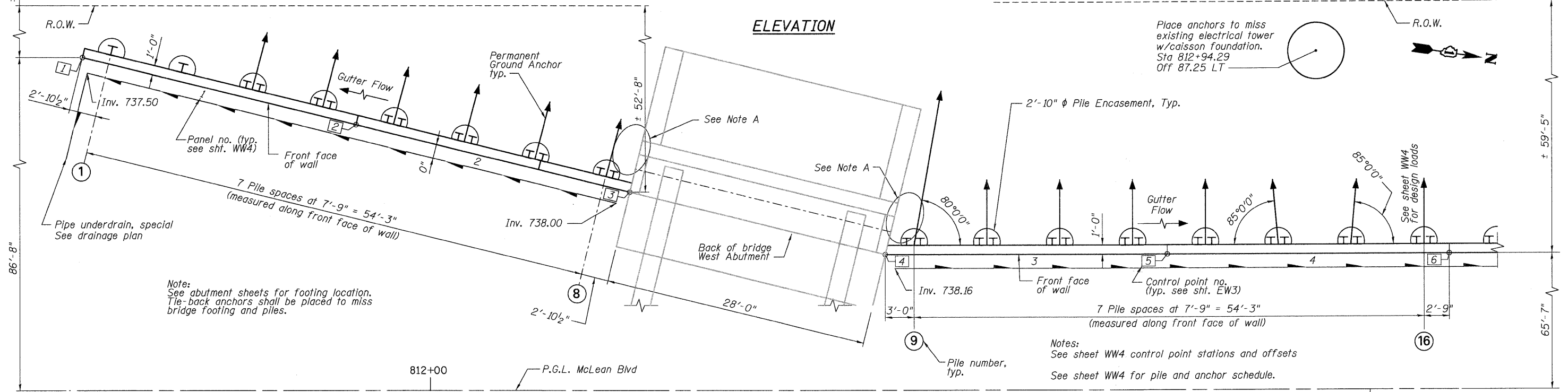
**McDonough Associates Inc.**  
 Engineers / Architects  
 130 East Randolph Street  
 Chicago, Illinois 60601  
 (312) 946-8600

SHEET NO. WW1 WW9 SHEETS	RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	361	06-00214-02-BR	KANE	219	149
CONTRACT NO. 63073					
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



ELEVATION



PLAN

Note A:  
The Contractor shall be aware that the ground adjacent to the abutment may be somewhat disturbed resulting from the excavation. The actual soil condition shall be considered in the ground anchor design and anchor length and inclination shall be adjusted to obtain the required anchor loads.

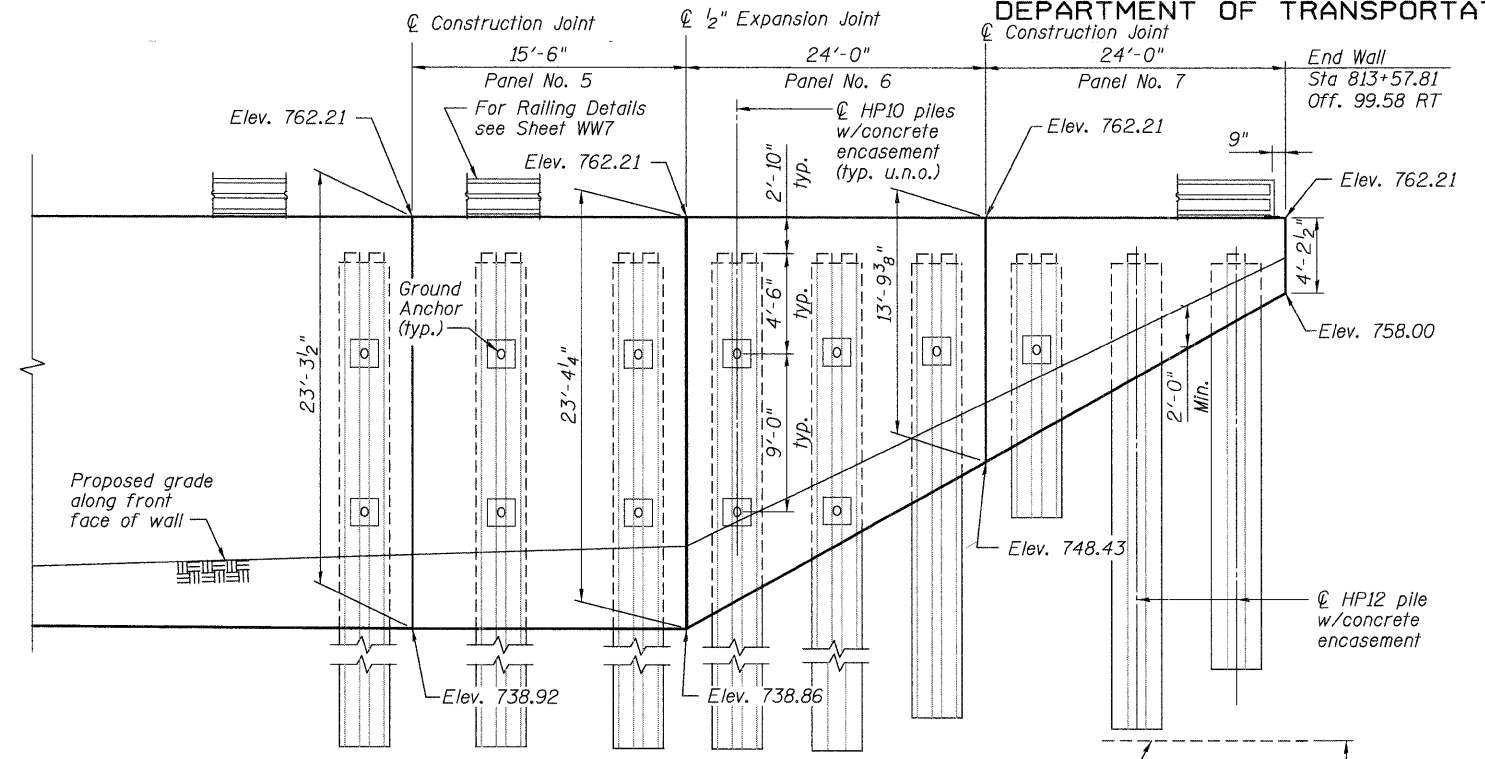
DESIGNED	JCE/KJH
CHECKED	PMH
DRAWN	JCE/PMH
CHECKED	KJH

**McDonough Associates Inc.**  
Engineers / Architects  
130 East Randolph Street  
Chicago, Illinois 60601  
(312) 946-8600

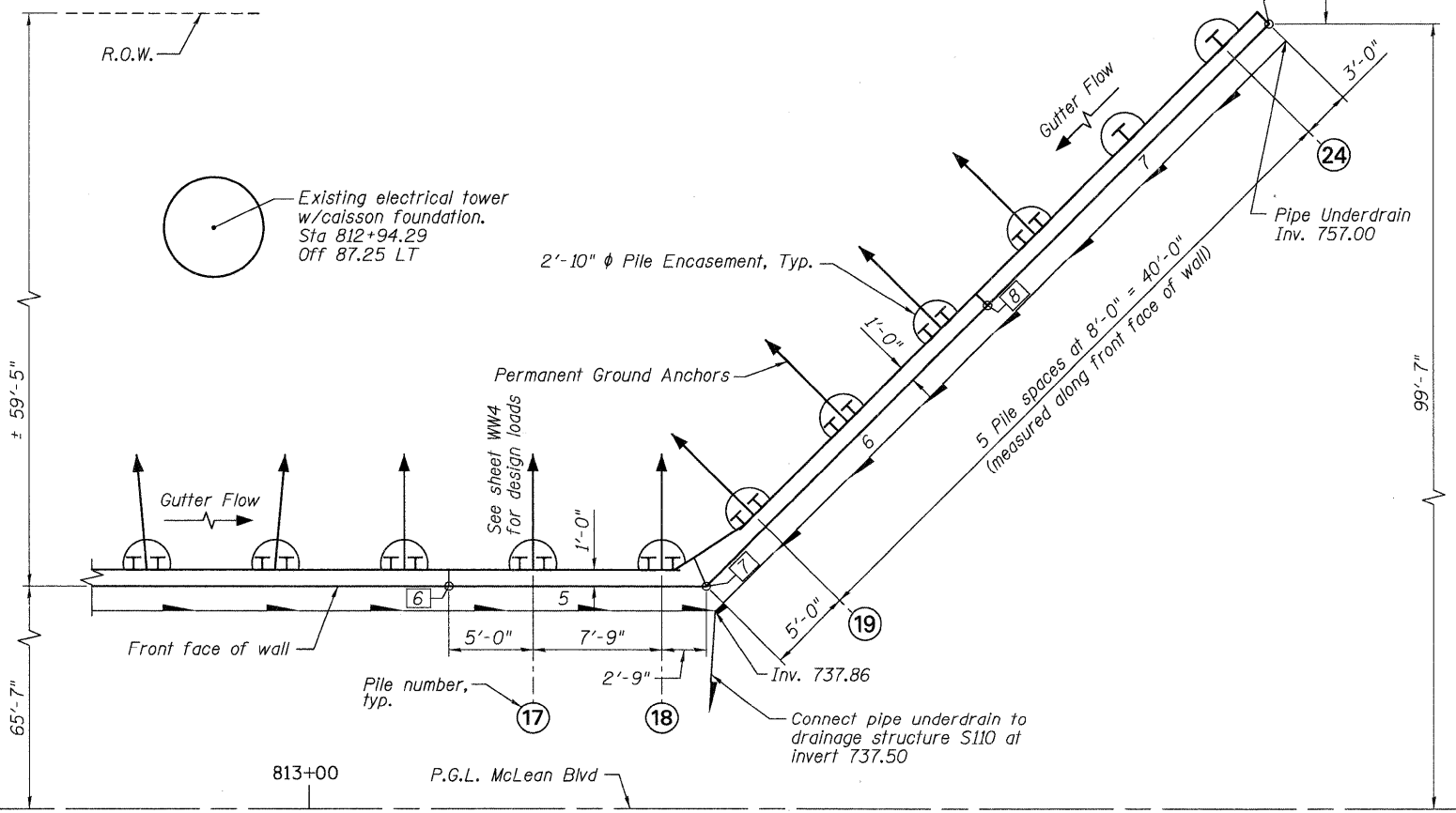
PILE AND ANCHOR LOCATIONS  
STRUCTURE NO. 045-2038

SHEET NO. WW2	RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	361	06-00214-02-BR	KANE	219	150
WW9 SHEETS	CONTRACT NO. 63073				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



ELEVATION



PLAN

Notes:  
See sheet WW4 control point stations and offsets  
See sheet WW4 for pile and anchor schedule.

DESIGNED	JCE/KJH
CHECKED	PMH
DRAWN	JCE/PMH
CHECKED	KJH

**McDonough Associates Inc.**  
Engineers / Architects  
130 East Randolph Street  
Chicago, Illinois 60601  
(312) 946-8600

PILE AND ANCHOR LOCATIONS  
STRUCTURE NO. 045-2038

SHEET NO. WW3	RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	361	06-00214-02-BR	KANE	219	151
WW9 SHEETS	CONTRACT NO. 63073				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PILE & ANCHOR SCHEDULE

Pile Number	Pile Type	Top/Pile Elev.	Pile Tip Elev.	Est. Pile Length (Ft.)	Stud Spc. (In.)	*No. of Studs Per Beam	Anchor Number	Design Load (k)	Inclination (Deg.)	Est. Unbonded Length (Ft.)	Est. Bond Length (Ft.)	Est. Total Length (Ft.)	**Dist. To R.O.W. (Ft.)
1	HP12x84	740.64	720.64	20.00	12	2	-	-	-	-	-	-	-
2	HP12x84	743.73	721.73	22.00	12	5	-	-	-	-	-	-	-
3	(2)-HP10x42	746.81	732.81	14.00	12	8	3	55.94	15	10.0	14.9	24.9	43.0
4	(2)-HP10x42	749.89	725.89	24.00	12	11	4	122.40	15	10.9	31.7	42.6	44.9
5	(2)-HP10x42	752.97	724.97	28.00	12	14	5	122.40	15	10.9	32.7	43.6	46.8
6	(2)-HP10x42	756.05	722.05	34.00	12	17	6-U	91.93	15	12.9	24.5	37.4	48.7
							6-L	66.28	15	10.0	17.7	27.7	48.7
7	(2)-HP10x42	759.13	713.13	46.00	12	20	7-U	112.79	15	15.0	30.1	45.1	50.6
							7-L	103.39	15	10.0	27.6	37.6	50.6
8	(2)-HP10x42	759.44	715.44	44.00	12	20	8-U	98.24	15	15.0	26.2	41.2	52.5
							8-L	90.05	15	10.0	24.0	34.0	52.5
9	(2)-HP10x42	759.38	715.38	44.00	12	20	9-U	99.25	15	14.9	26.5	41.4	59.3
							9-L	90.15	15	10.0	24.0	34.0	59.3
10	(2)-HP10x42	759.38	713.38	46.00	12	20	10-U	111.89	15	14.9	29.9	44.8	58.4
							10-L	101.62	15	10.0	27.1	37.1	58.4
11	(2)-HP10x42	759.38	713.38	46.00	12	20	11-U	111.89	15	14.9	29.9	44.8	58.4
							11-L	101.62	15	10.0	27.1	37.1	58.4
12	(2)-HP10x42	759.38	713.38	46.00	12	20	12-U	111.89	15	14.9	29.9	44.8	58.4
							12-L	101.62	15	10.0	27.1	37.1	58.4
13	(2)-HP10x42	759.38	713.38	46.00	12	20	13-U	111.89	15	14.9	29.9	44.8	58.4
							13-L	101.62	15	10.0	27.1	37.1	58.4
14	(2)-HP10x42	759.38	713.38	46.00	12	20	14-U	111.89	15	14.9	29.9	44.8	58.6
							14-L	101.62	15	10.0	27.1	37.1	58.6
15	(2)-HP10x42	759.38	713.38	46.00	12	20	15-U	111.89	15	14.9	29.9	44.8	58.6
							15-L	101.62	15	10.0	27.1	37.1	58.6
16	(2)-HP10x42	759.38	713.38	46.00	12	20	16-U	111.89	15	14.9	29.9	44.8	58.4
							16-L	101.62	15	10.0	27.1	37.1	58.4
17	(2)-HP10x42	759.38	713.38	46.00	12	20	17-U	111.89	15	14.9	29.9	44.8	58.4
							17-L	101.62	15	10.0	27.1	37.1	58.4
18	(2)-HP10x42	759.38	717.38	42.00	12	21	18-U	95.64	15	14.9	25.5	40.4	53.4
							18-L	86.87	15	10.0	23.2	33.2	53.4
19	(2)-HP10x42	759.38	712.38	47.00	12	19	19-U	129.17	30	12.9	34.5	47.4	78.1
							19-L	102.61	30	10.0	27.4	37.4	78.1
20	(2)-HP10x42	759.38	721.38	38.00	12	15	20-U	93.50	30	11.1	25.0	36.1	70.0
							20-L	57.93	30	10.0	15.4	25.4	70.0
21	(2)-HP10x42	759.38	731.38	28.00	12	12	21	106.19	30	10.0	28.3	38.3	62.0
22	(2)-HP10x42	759.38	741.38	18.00	12	9	22	70.06	30	10.0	18.7	28.7	54.0
23	HP12x84	759.38	731.38	28.00	12	6	-	-	-	-	-	-	-
24	HP12x84	759.38	735.38	24.00	12	3	-	-	-	-	-	-	-

\* Number of studs per beam shown. Number of studs per pile for built-up section will be twice number shown.

\*\* Horizontal distance from front face of wall to R.O.W. Contractor to verify.

DESIGN ASSUMPTIONS (USED TO CHECK FEASIBILITY ONLY):

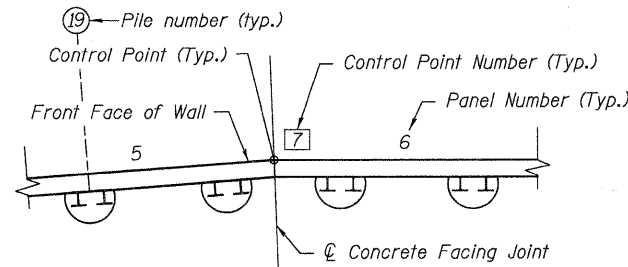
1. Estimated ultimate transfer load = 7.5k/ft.
2. Maximum allowable design load = Estimated ultimate transfer load divided by 2.
3. Bar tendons were assumed for checking feasibility.
4. Unbonded portion must extend 5' beyond active failure wedge, not less than 10' minimum length for bar tendons. If strand type anchors are used, the minimum unbonded length shall be 15'.

Note: The above assumptions have been used only for the purpose of establishing minimum dimensions for drill hole diameter, unbonded length and bond length. The contractor shall be responsible for determining the selection and installation of the anchors that will provide the required design load, fitting within the R.O.W. limits of the site.

DESIGNED	JCE/KJH
CHECKED	PMH
DRAWN	JCE/PMH
CHECKED	KJH

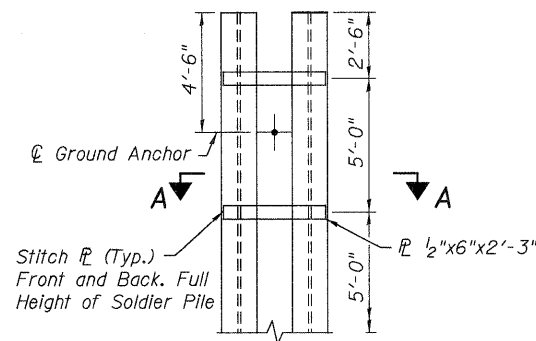
CONTROL POINTS

Panel	Control Point No.	McLean Blvd. Station	Offset Lt. (Ft.)
1	1	811+62.99	86.66
2	2	811+92.12	79.48
3	3	812+21.24	72.29
4	4	812+48.43	65.58
5	5	812+78.43	65.58
6	6	813+08.43	65.58
7	7	813+23.93	65.58
8	8	813+40.87	82.58
9	9	813+57.81	99.58



TYPICAL CONTROL POINT LOCATION

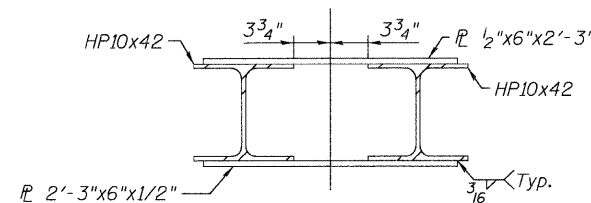
Plan View



FRONT VIEW OF SOLDIER PILE

BUILT-UP SECTION

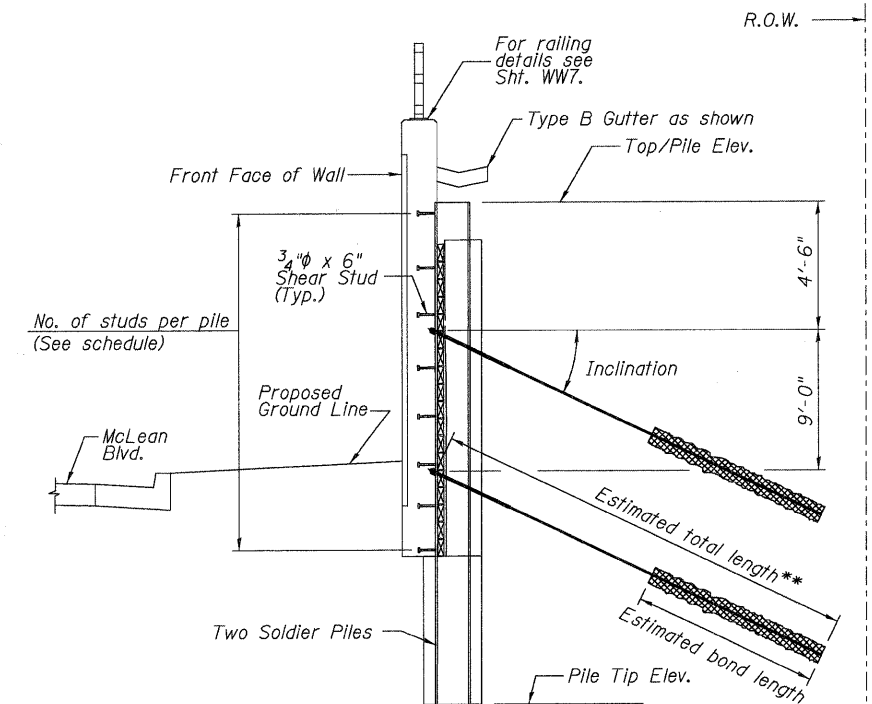
Typical, Piles 2 to 21



SECTION A-A

SUGGESTED SEQUENCE OF CONSTRUCTION

1. Drill holes for soldier piles. Do not excavate near these holes at this stage.
2. Set soldier piles.
3. Place soldier pile encasement concrete and controlled low-strength material (CLSM), as shown on plans.
4. Begin earth excavation. Remove only earth and CLSM as necessary to install timber lagging.
5. Install permanent ground anchors. Earth excavation shall be no more than two feet below anchor location.
6. Test permanent ground anchors and fill cover with anti-corrosion grout.
7. Complete remaining earth excavation and installation of wall components as in Step #5.
8. Install geocomposite wall drain.
9. Install stud shear connectors.
10. Backfill timber lagging.
11. Construct concrete fascia.



WALL SECTION W/GROUND ANCHORS

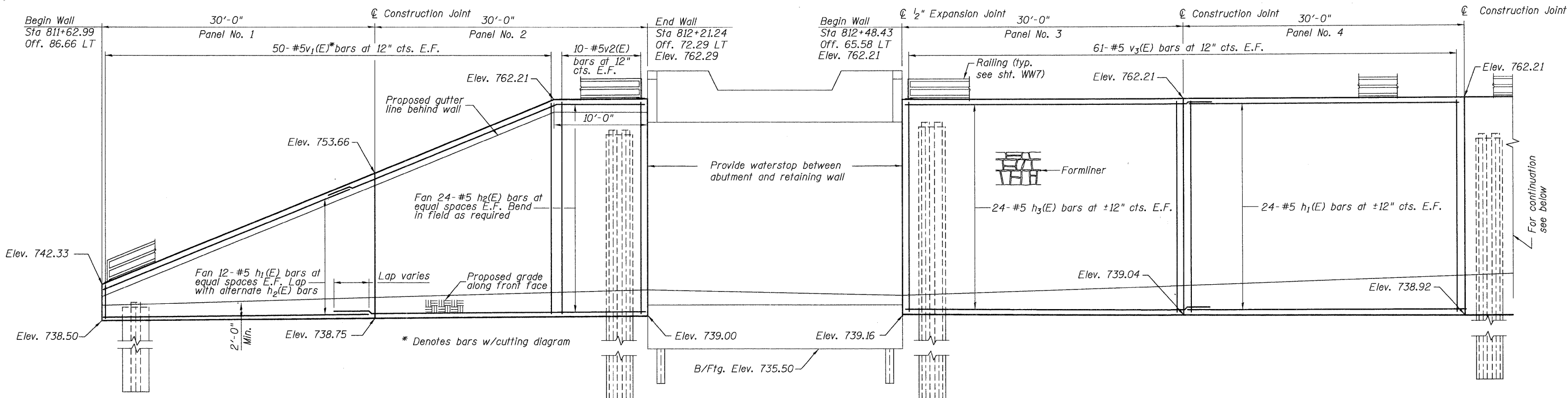
\*\* Note: Actual required anchor length is to be determined by Contractor. Length shall not exceed the estimated total length shown in schedule, due to R.O.W. constraints.

PILE AND ANCHOR SCHEDULE  
STRUCTURE NO. 045-2038

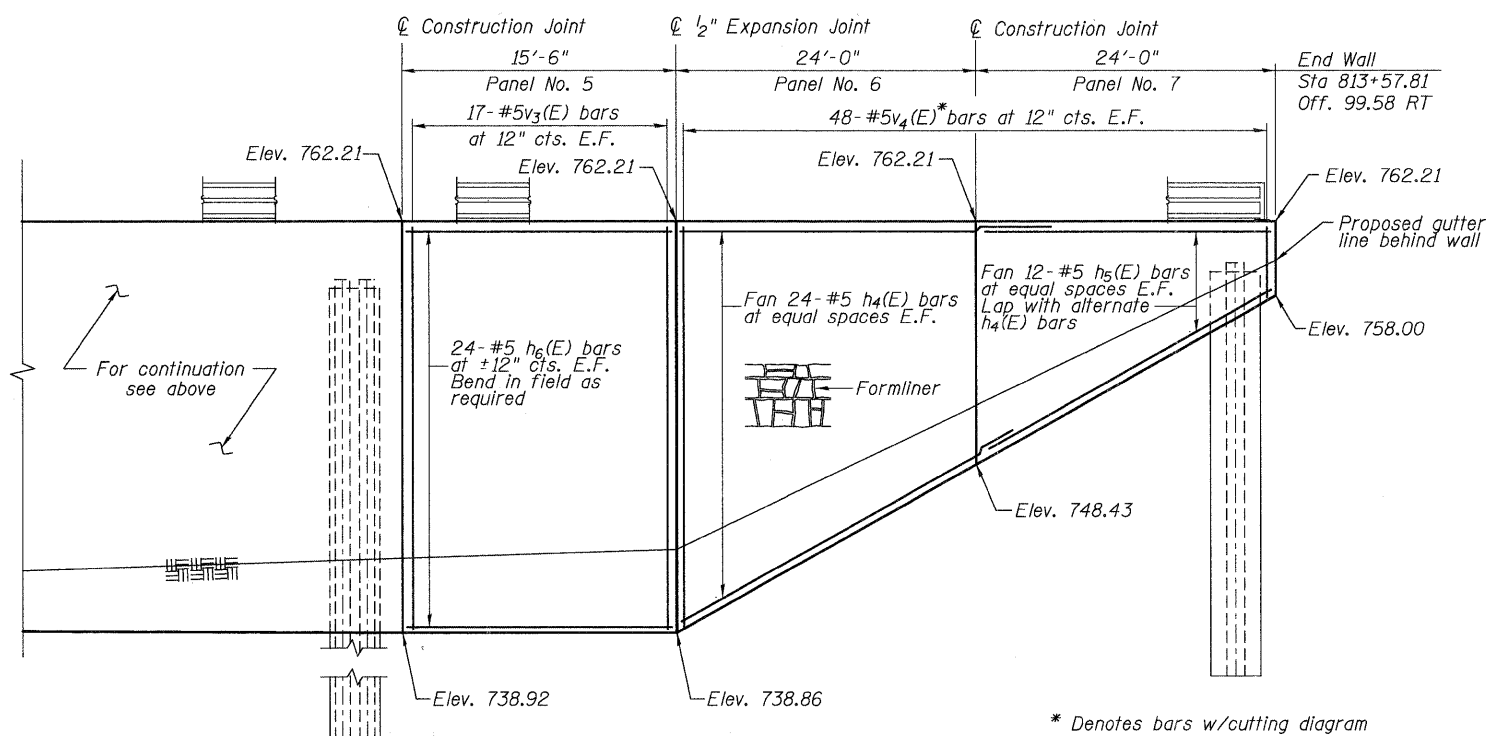
SHEET NO. WW4	RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	361	06-00214-02-BR	KANE	219	152
WW9 SHEETS	CONTRACT NO. 63073				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

McDonough Associates Inc.  
Engineers / Architects  
130 East Randolph Street  
Chicago, Illinois 60601  
(312) 946-8600

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



ELEVATION



\* Denotes bars w/cutting diagram

ELEVATION (continued)

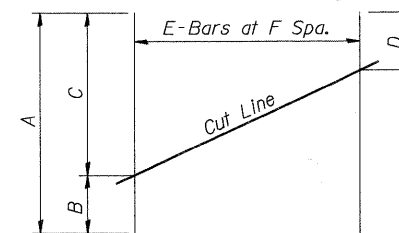
BAR LIST

Bar	No.	Size	Length	Shape
$h_1(E)$	72	#5	29'-8"	————
$h_2(E)$	48	#5	36'-8"	————
$h_3(E)$	48	#5	32'-4"	————
$h_4(E)$	48	#5	30'-6"	————
$h_5(E)$	24	#5	23'-8"	————
$h_6(E)$	48	#5	15'-2"	————
* $v_1(E)$	50	#5	26'-4"	————
$v_2(E)$	20	#5	22'-10"	————
$v_3(E)$	156	#5	22'-7"	————
* $v_4(E)$	48	#5	25'-9"	————
Reinforcement Bars, Epoxy Coated			Pound	15,380

\* Indicates cutting diagram

Reinforcement bars designated (E) shall be epoxy coated.

Min. bar lap = 2'-2"



FIELD CUTTING DIAGRAM

Order bars full length and cut as shown

Bar	A	B	C	D	E	F
$v_1(E)$	26'-4"	3'-6"	22'-10"	3'-6"	50	1'-0"
$v_4(E)$	25'-9"	2'-10"	22'-11"	2'-10"	48	1'-0"

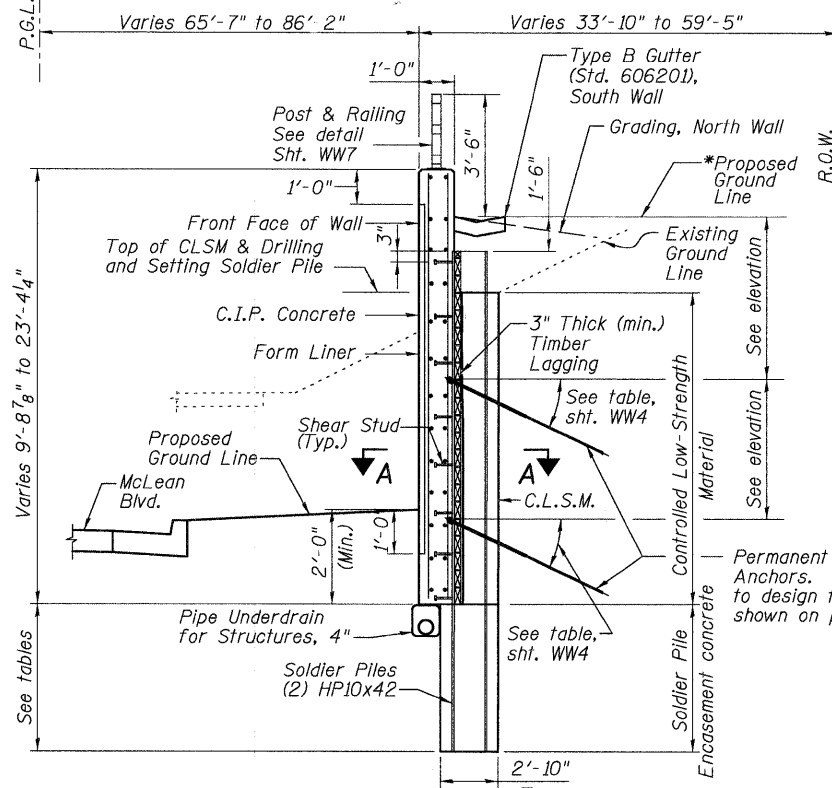
DESIGNED	JCE/KJH	200
CHECKED	PMH	EXAMINED
DRAWN	JCE/PMH	PASSED
CHECKED	KJH	ENGINEER OF BRIDGE DESIGN
		ENGINEER OF BRIDGES AND STRUCTURES

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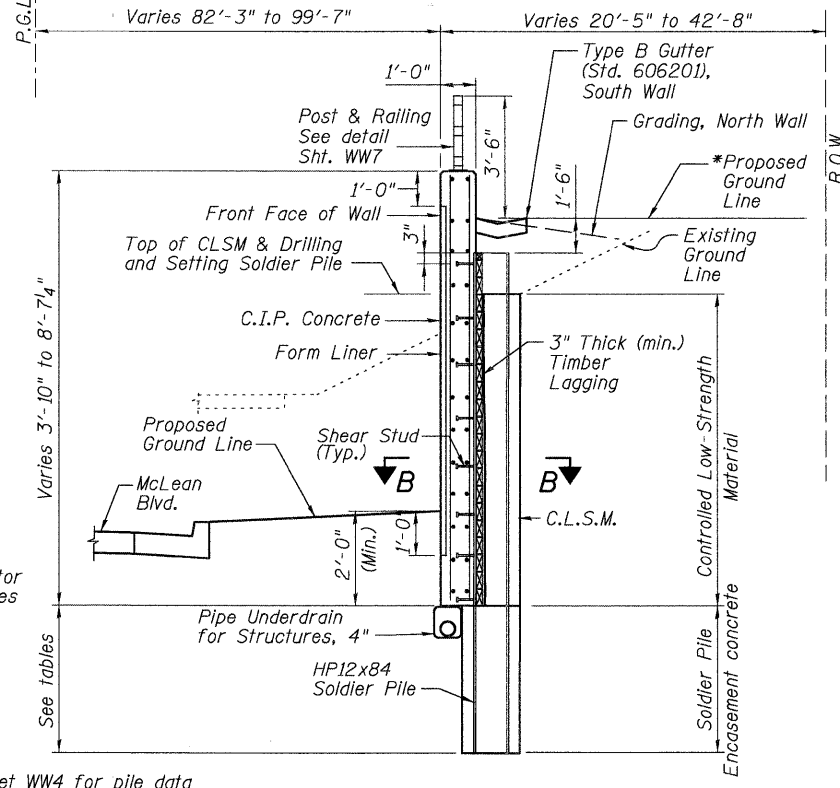
SHEET NO. WW5	RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	361	06-00214-02-BR	KANE	219	153
WW9 SHEETS	CONTRACT NO. 63073				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

CONCRETE FACING DETAILS  
STRUCTURE NO. 045-2038

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

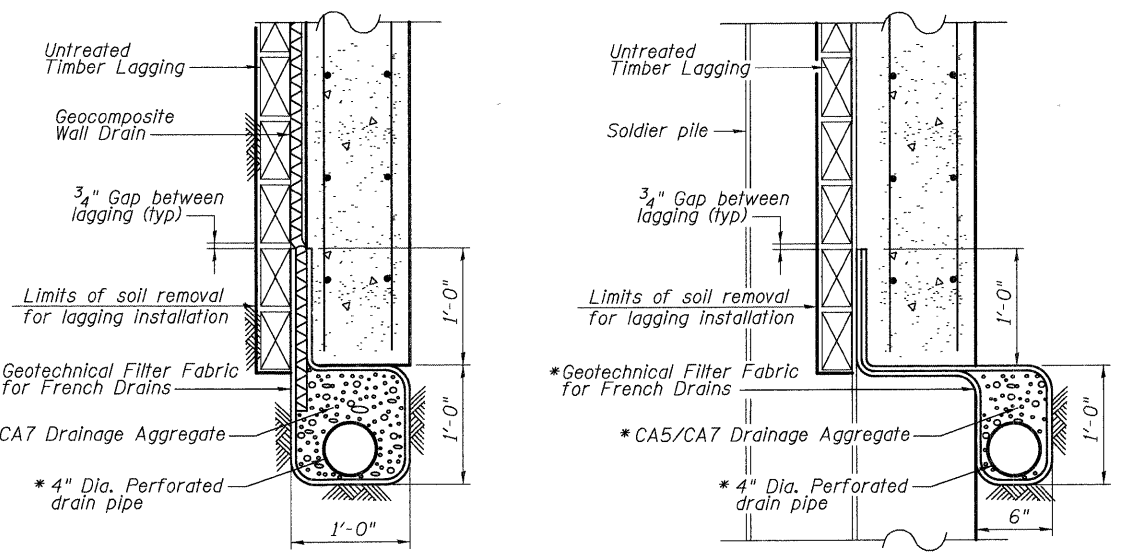


**WALL SECTION W/GROUND ANCHORS**



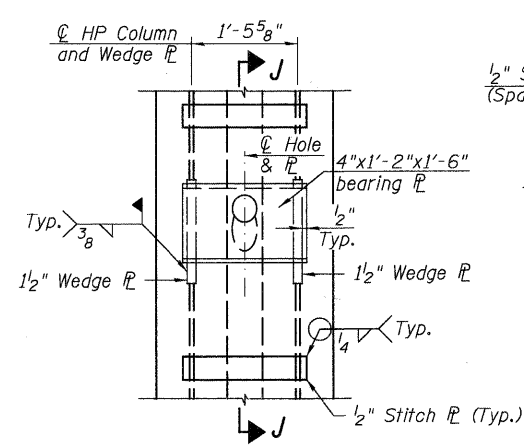
**WALL SECTION W/O GROUND ANCHORS**

\* See civil plans for backslope grading.

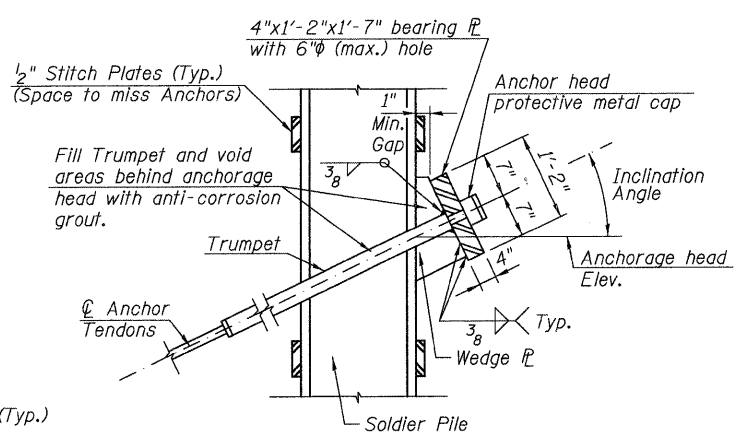


**PIPE UNDERDRAIN DETAIL**  
Between piles

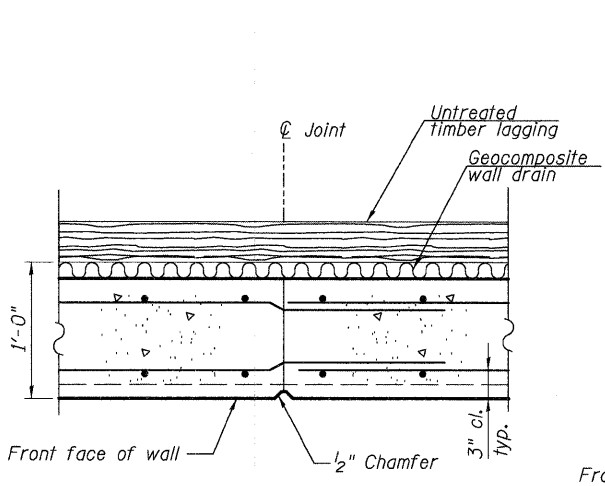
**PIPE UNDERDRAIN DETAIL**  
At piles



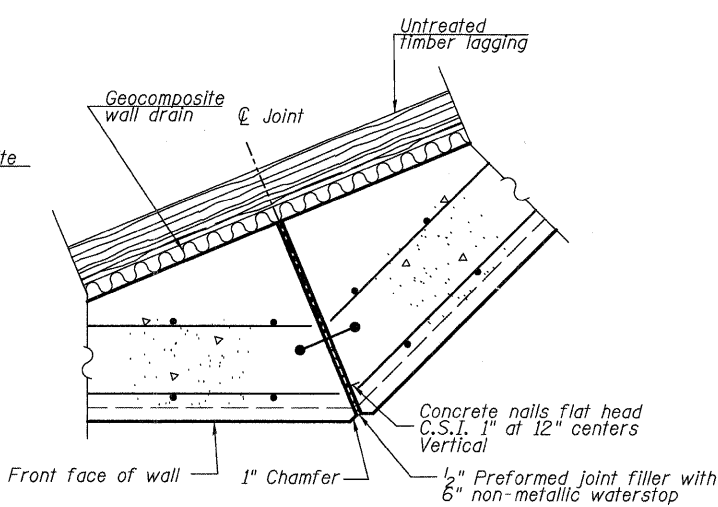
**ELEVATION**



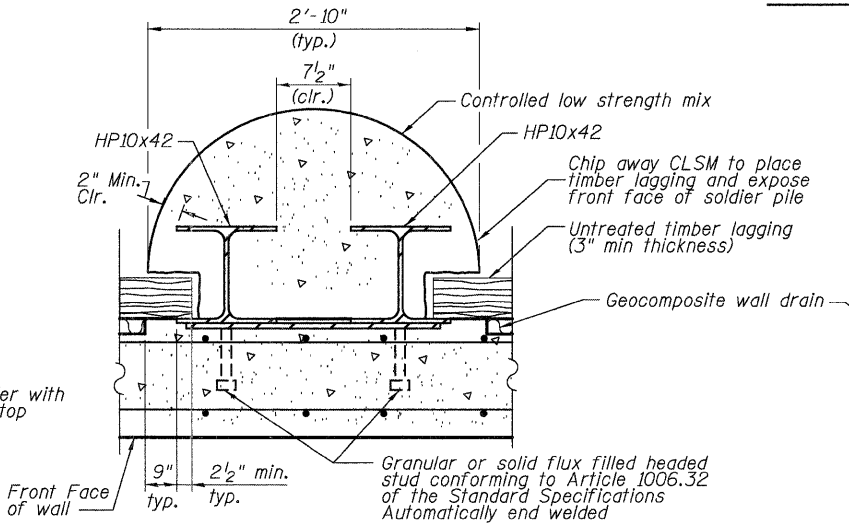
**SECTION J-J**



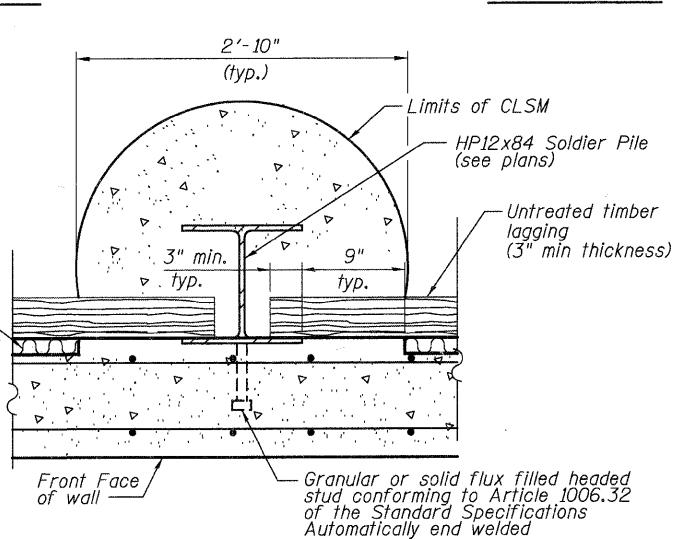
**CONSTRUCTION JOINT DETAILS**



**EXPANSION JOINT DETAILS**



**SECTION A-A**



**SECTION B-B**

**SECTIONS & DETAILS  
STRUCTURES NO. 045-2038**

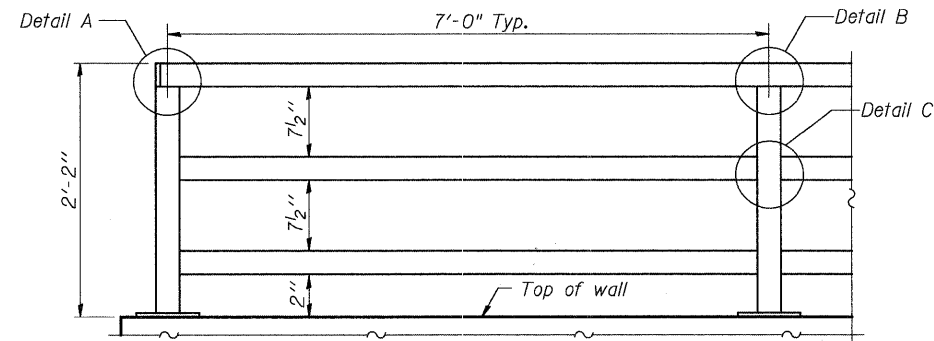
\* Any over excavation done as part of the installation of the timber lagging shall be backfilled with FA4 at the contractor's expense.

DESIGNED	JCE/KJH
CHECKED	PMH
DRAWN	JCE/PMH
CHECKED	KJH

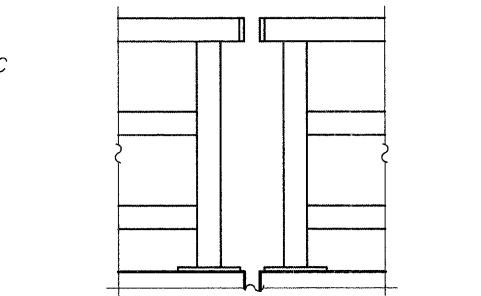
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Chicago, Illinois 60601  
(312) 946-8600

SHEET NO. WW6	RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	361	06-00214-02-BR	KANE	219	154
WW9 SHEETS	CONTRACT NO. 63073				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

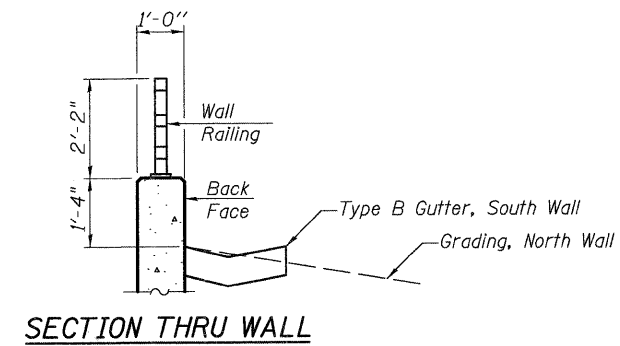
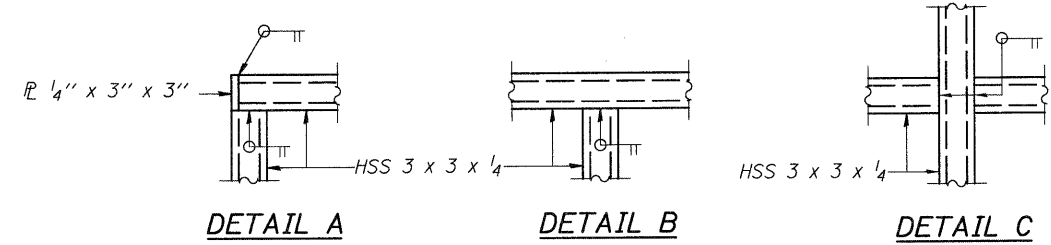
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



**WALL RAILING  
ELEVATION**  
(Inside Face of Rail)

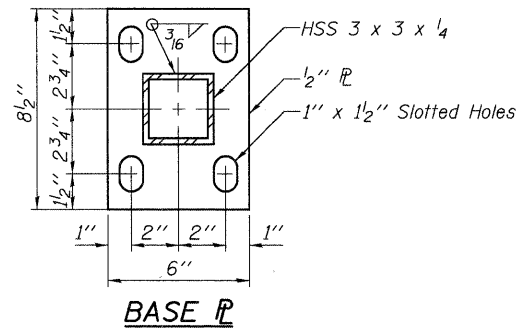


**WALL RAILING  
ELEVATION AT EXPANSION JOINT**

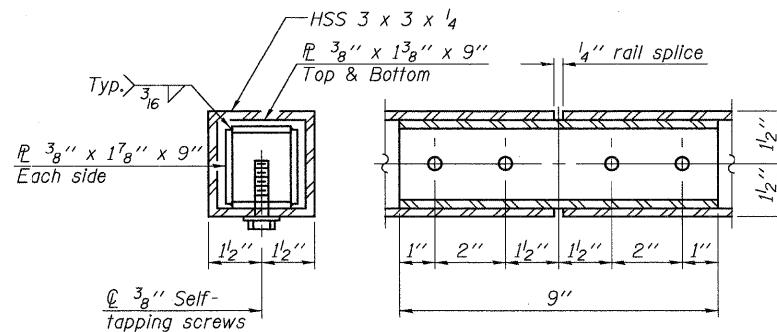


**SECTION THRU WALL**

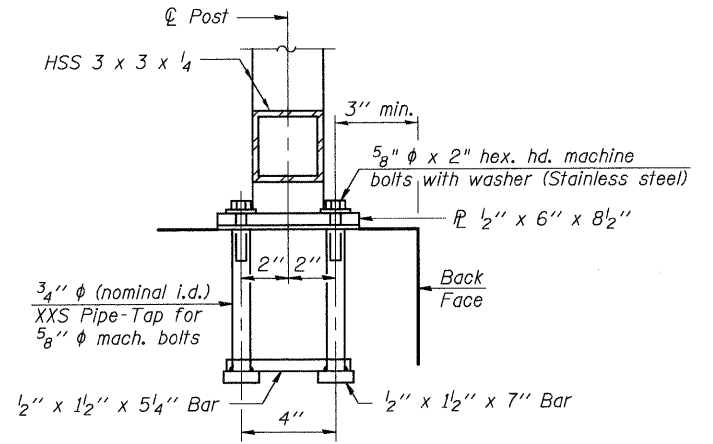
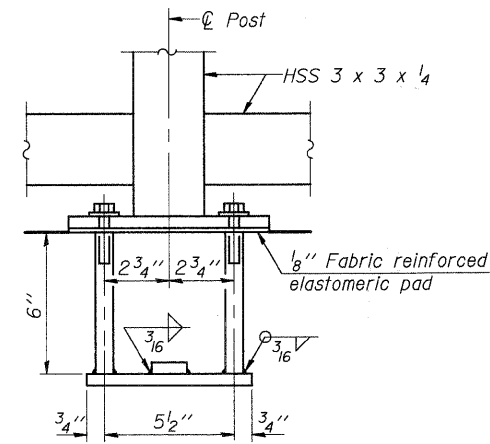
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.



**BASE PLATE**



**RAIL SPLICE**



**ANCHOR BOLT DETAILS**

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

**RAILING DETAILS  
STRUCTURE NO. 045-2038**

DESIGNED	JCE/KJH	200
CHECKED	PMH	EXAMINED
DRAWN	JCE/PMH	ENGINEER OF BRIDGE DESIGN
CHECKED	KJH	PASSED
		ENGINEER OF BRIDGES AND STRUCTURES

**McDonough Associates Inc.**  
Engineers / Architects  
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(312) 946-8600

SHEET NO. WW7	RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	361	06-00214-02-BR	KANE	219	155
WW9 SHEETS			CONTRACT NO. 63073		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					





STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ILLINOIS DEPARTMENT OF TRANSPORTATION  
Testing Service Corporation  
STRUCTURE BORING LOG

Page 1 of 1

Date Started 9/24/04

Date Completed 9/24/04

ROUTE \_\_\_\_\_ DESCRIPTION McLean Blvd., Retaining Wall-West Side  
SECT. \_\_\_\_\_ STRUCT. NO. \_\_\_\_\_ DRILLED BY TSC L-60.393  
COUNTY Kane LOCATION West Side McLean Blvd. S. 3 - NW 1/4, TWP. 40 N, RNG. 8 E

Boring No. MCWL-11 D E L O T W Qu W  
Station 812+75 P O S tsf %  
Offset 26.00ft LT  
Surface Elev. 761.11 ft H S  
Surface Water Elev. \_\_\_\_\_  
Groundwater Elev.: \_\_\_\_\_  
when drilling \_\_\_\_\_ Dry  
at Completion \_\_\_\_\_ Dry  
after \_\_\_\_\_ Hrs. \_\_\_\_\_

FILL - Brown clayey Topsoil	760.41					
FILL - Brown CLAY LOAM, trace root seams, damp A-4/A-6 (fractured)	758.11				11.3	
Hard brown and gray CLAY LOAM, trace gravel, damp A-4/A-6 (fractured)	755.61				14.3	
Brown SILT, damp A-4	753.11				4.7	
Very stiff brown SILTY CLAY LOAM, moist A-4/A-6	750.11			P 3.5	12.8	
Hard brown CLAY, trace gravel, moist A-6				B 4.4 15%	15.6	
				B 5.1 15%	17.8	
Very stiff gray CLAY, trace gravel, moist A-6				B 3.7 15%	18.6	
				B 3.2 15%	20.2	
End of Boring at 20.0'						
GeoProbe on ATV Carrier (#294)						
MC = Continuous Macro-core samples (1.5" diam.) using ATV GeoProbe rig						

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test Stations, Depths, Offset, and Elevations are in Feet

DESIGNED	JCE/KJH	200
CHECKED	PMH	EXAMINED
DRAWN	JCE/PMH	PASSED
CHECKED	KJH	ENGINEER OF BRIDGES AND STRUCTURES

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Engineers / Architects  
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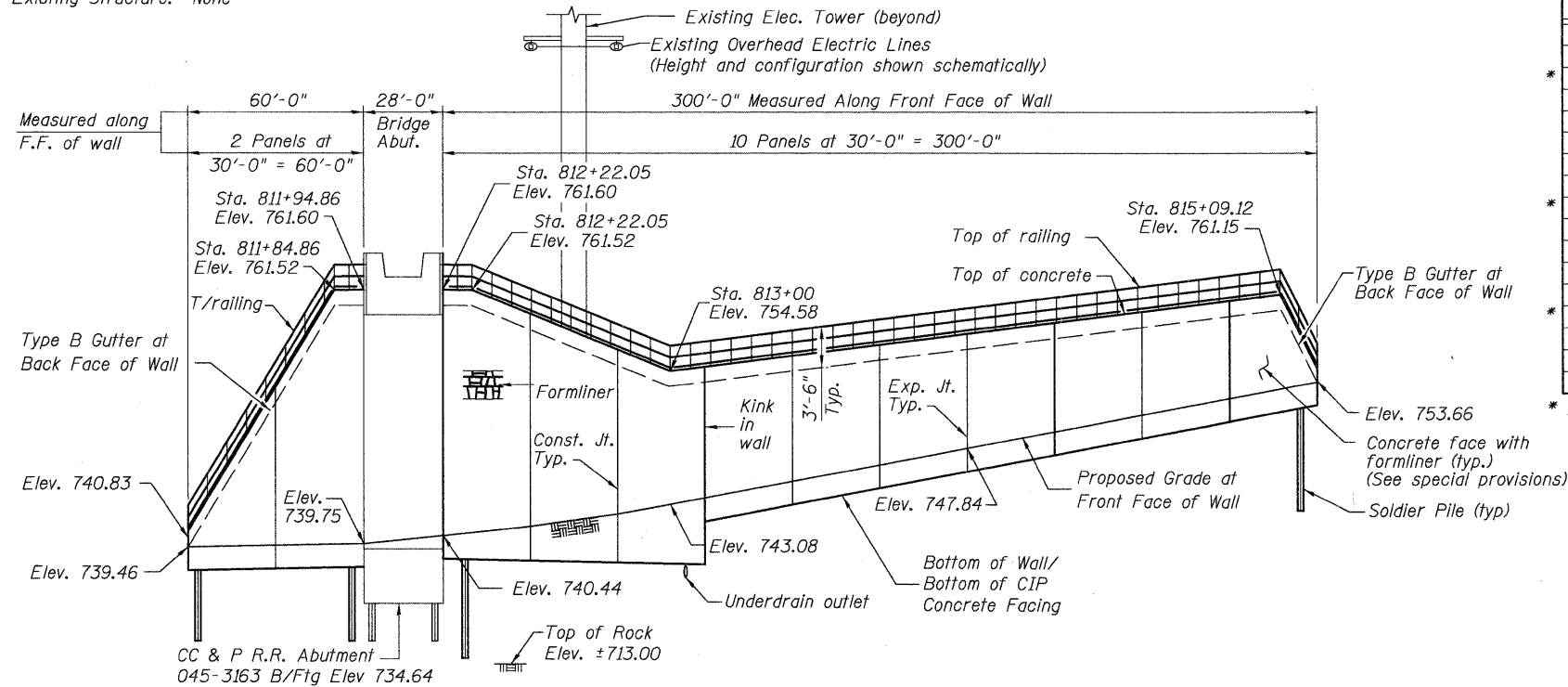
SOIL BORING LOGS  
STRUCTURE NO. 045-2038

SHEET NO. <u>WW9</u>	RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
<u>WW9</u> SHEETS	361	06-00214-02-BR	KANE	219	157
FED. ROAD DIST. NO. 1			ILLINOIS FED. AID PROJECT		
CONTRACT NO. 63073					

Benchmark RM-12:  
 A Standard US Geological Survey Disk set in the south headwall of a culvert located on State Route 31, about 130 feet west of McLean Boulevard. Elevation of 710.37 (NGVD of 1929) as shown on Firm Community Panel Number 170896 0040A, effective date March 1, 1982. (Also known as NGS-K19, RESET 1967.)

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION  
**TOTAL BILL OF MATERIAL**

Existing Structure: None



**REFLECTED ELEVATION - RETAINING WALL STRUCTURE NO. 2039**

Pay Item	Unit	Quantity
Structure Excavation	Cu Yd	1,006
Concrete Structures	Cu Yd	188
* Form Liner Textured Surface	Sq Ft	4,353
Stud Shear Connectors	Each	1,120
Untreated Timber Lagging	Sq Ft	4,053
Reinforcement Bars, Epoxy Coated	Pound	27,720
Steel Railing	Foot	403
Furnishing Soldier Piles (HP Section)	Foot	76
* Furnishing Soldier Piles (Built-Up Section)	Foot	1,059
Name Plate	Each	1
Geocomposite Wall Drain	Sq Yd	451
Pipe Underdrains For Structures 4"	Foot	397
Concrete Gutter, Type B	Foot	403
* Permanent Ground Anchor	Each	60
Drilling And Setting Soldier Piles (In Soil)	Cu Ft	3,213
Drilling And Setting Soldier Piles (In Rock)	Cu Ft	20.0

\* Special Provisions

**NOTES:**

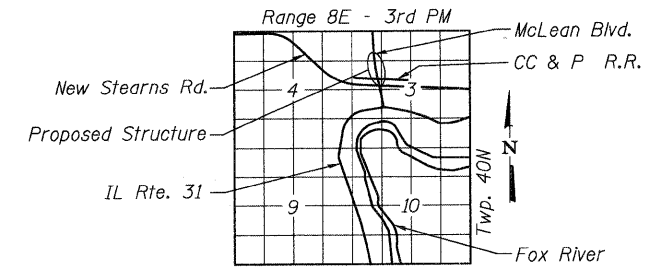
- Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60 deformed bars.
- Reinforcement bars designated (E) shall be epoxy coated.
- All exposed concrete edges shall have a 3/4" x 45 degree chamfer.
- It shall be the contractor's responsibility to verify the location of all utilities prior to starting construction. Contact J.U.I.E. at 800-892-0123.
- See drainage sheets for location of drainage structures for connection of underdrain system.
- Contractor shall be responsible for design of timber lagging (per special provisions). Lagging design shall be submitted to engineer for approval. Quantity shown in bill of materials is an estimate for bidding purposes only.
- See special provision "Permanent Ground Anchor" for installation and testing of permanent ground anchors.
- Paved ditches shall have transverse joints cut 1/3" deep every 10'. Joints shall then be sealed with hot poured joint sealer. Paved ditch construction shall conform to Section 606. Joint sealer shall be in accordance with Section 420.14 and Section 1050.02.
- If the Contractor elects to use form ties, only fiberglass ties shall be allowed. See special provisions.

**INDEX OF SHEETS**

EW1	General Plan and Notes
EW2-EW4	Pile and Anchor Locations
EW5	Pile and Anchor Schedule
EW6-EW7	Concrete Facing Details
EW8	Sections & Details
EW9	Railing Details
EW10-EW13	Soil Boring Logs

STATION 811+62.99  
 BUILT 20\_\_ BY  
 STATE OF ILLINOIS  
 F.A.U. RT. 2509 SEC. 06-00214-02-BR  
 STRUCTURE NO. 045-2039

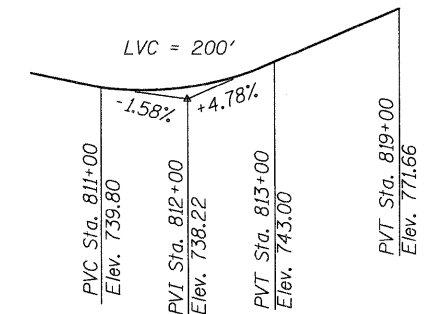
**NAME PLATE**  
 See STD 515001



**LOCATION SKETCH**

**LEGEND**

- Soil Boring Location
- Pile Number



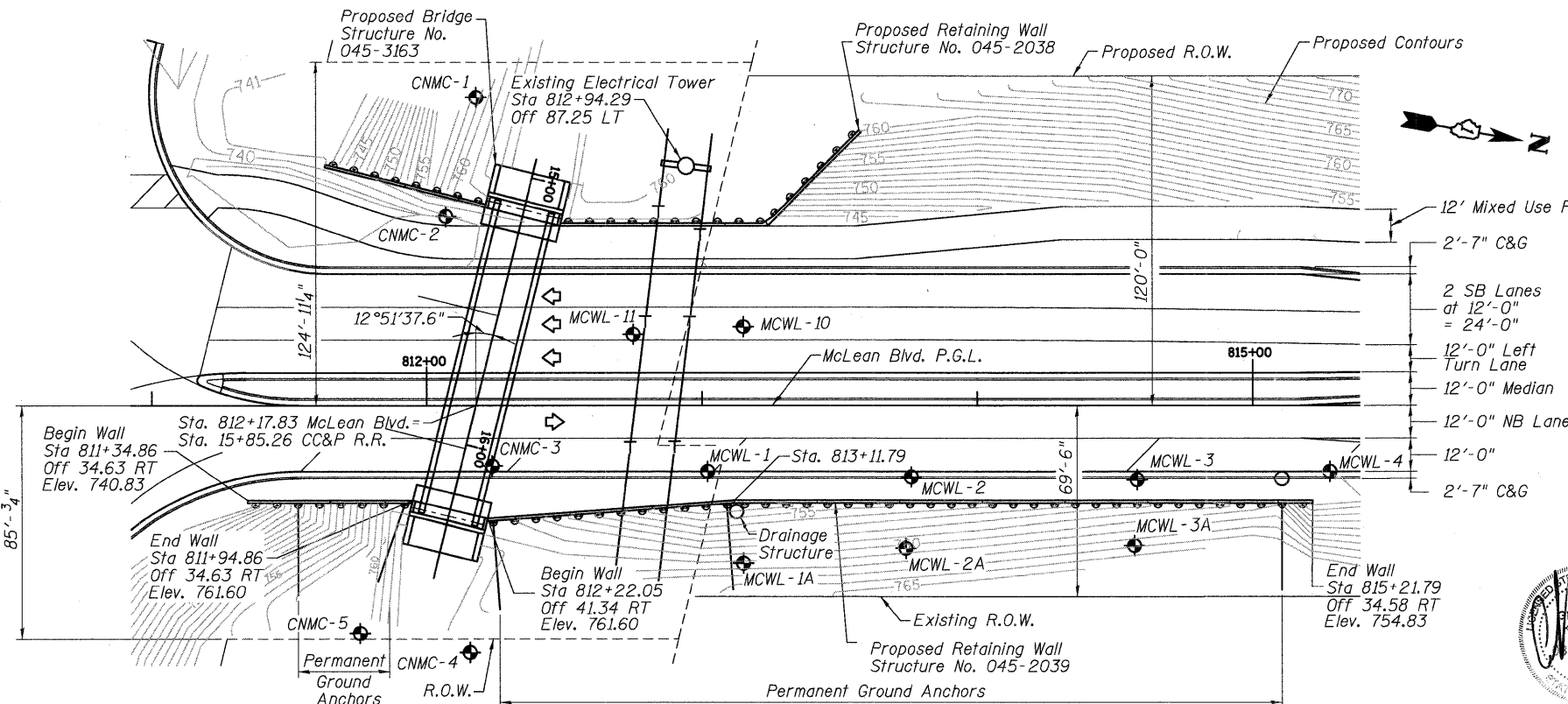
**PROFILE GRADE  
 McLEAN BOULEVARD**

**DESIGN SPECIFICATIONS**  
 2002 AASHTO Standard Specifications

**DESIGN STRESSES**

**FIELD UNITS**

- $f_s$  (Anchor Strands) = 270,000 psi
- $f_{sj}$  (Anchor Strands) = 201,900 psi
- $f_y$  (Piles) = 36,000 psi (AASHTO M270 Gr. 36)
- $f_y$  (Anchor Bearing  $R_s$ 's) = 36,000 psi
- $f_y$  (Reinforcement) = 60,000 psi
- $f'_c$  (Concrete) = 3,500 psi
- $f'_c$  (Grout) = 4,000 psi
- $f'_c$  (Encasement) = 4,000 psi



**PLAN**

Note: Offsets are measured from @ to the Front Face of wall



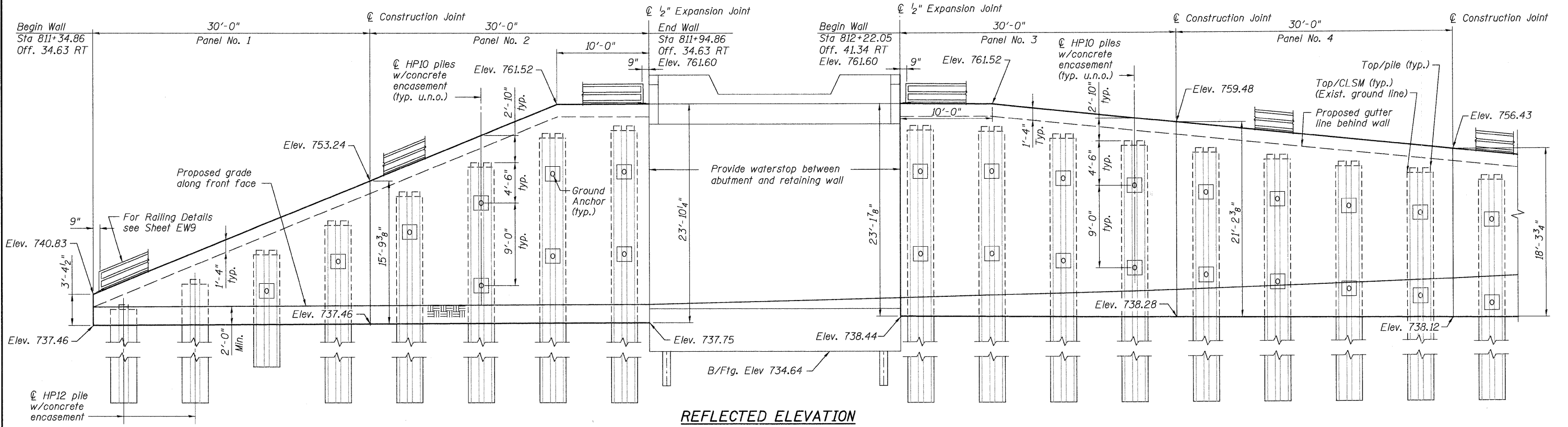
Exp: 11/30/2010

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CHECKED	PMH
DRAWN	JCE/PMH
CHECKED	KJH

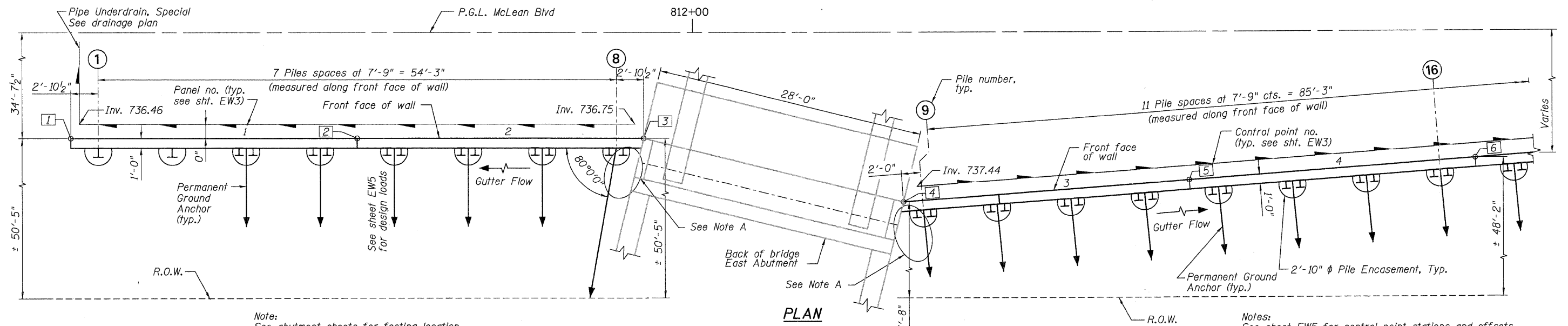
**McDonough Associates Inc.**  
 Engineers / Architects  
 130 East Randolph Street  
 Chicago, Illinois 60601  
 (312) 946-8600

SHEET NO. EW1	RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
EW13 SHEETS	361	06-00214-02-BR	KANE	219	158
CONTRACT NO. 63073					
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



REFLECTED ELEVATION



PLAN

Note:  
See abutment sheets for footing location.  
Tie-back anchors shall be placed to miss  
bridge footing and piles.

Note A:  
The Contractor shall be aware that the ground  
adjacent to the abutment may be somewhat disturbed  
resulting from the excavation. The actual soil  
condition shall be considered in the ground anchor  
design and anchor length and inclination shall be  
adjusted to obtain the required anchor loads.

Notes:  
See sheet EW5 for control point stations and offsets.  
See sheet EW5 for pile and anchor schedule.

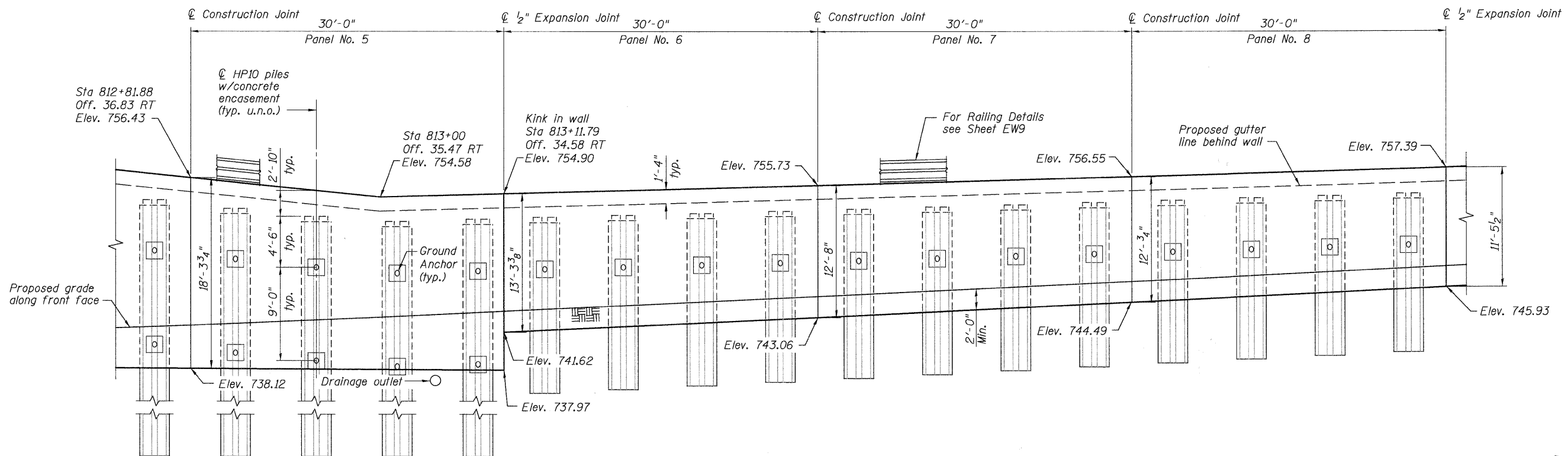
DESIGNED	JCE/KJH
CHECKED	PMH
DRAWN	JCE/PMH
CHECKED	KJH

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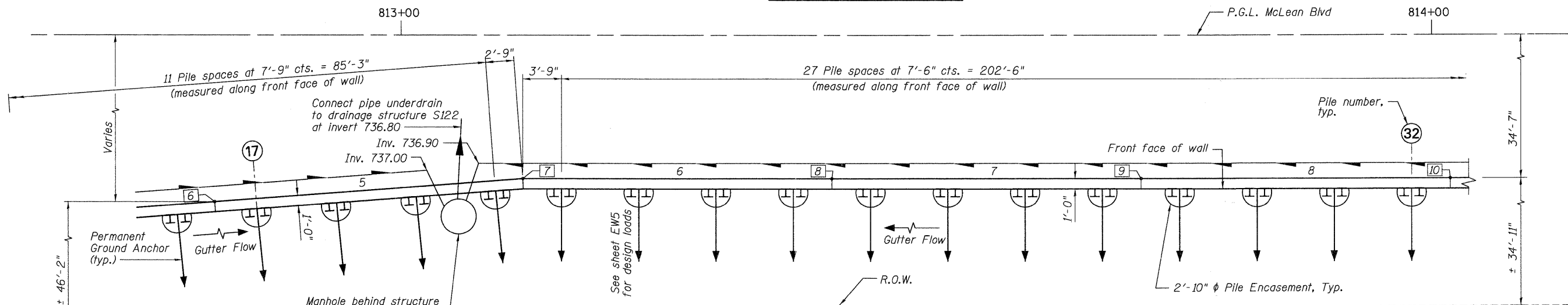
PILE AND ANCHOR LOCATIONS  
STRUCTURE NO. 045-2039

SHEET NO. EW2	RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	361	06-00214-02-BR	KANE	219	159
EW13 SHEETS	CONTRACT NO. 63073				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



**REFLECTED ELEVATION**



**PLAN**

Notes:  
See sheet EW5 for control point stations and offsets.  
See sheet EW5 for pile and anchor schedule.

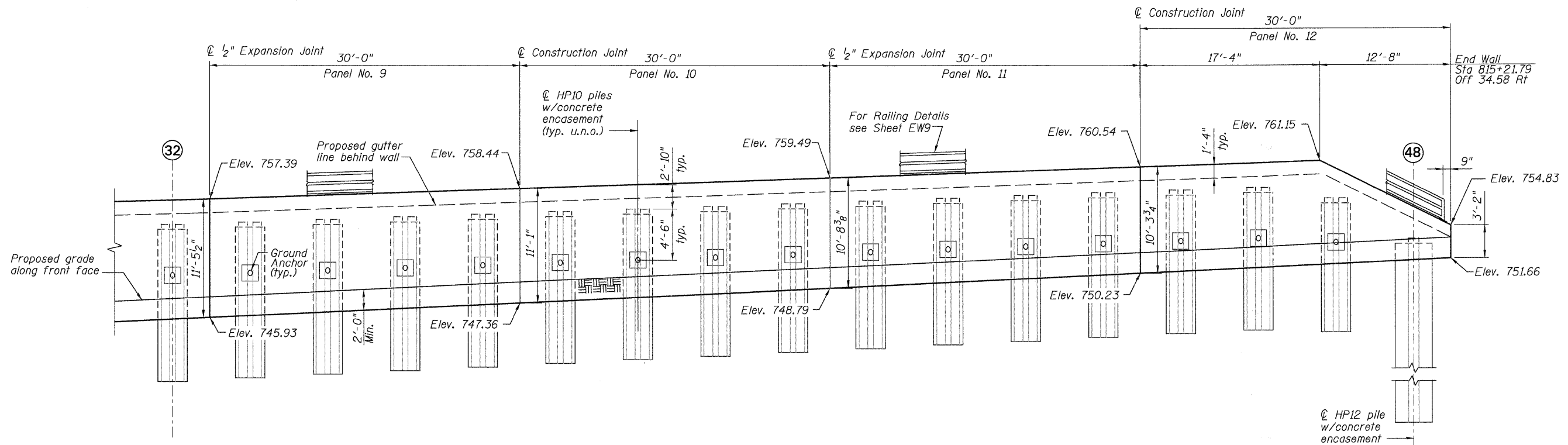
DESIGNED	JCE/KJH
CHECKED	PMH
DRAWN	JCE/PMH
CHECKED	KJH

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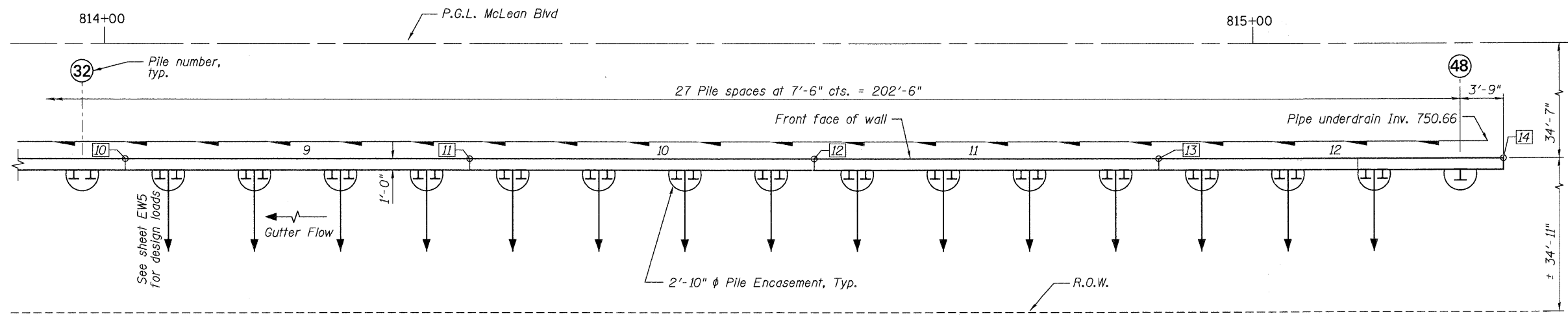
**PILE AND ANCHOR LOCATIONS  
STRUCTURE NO. 045-2039**

SHEET NO. EW3	RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	361	06-00214-02-BR	KANE	219	160
EW13 SHEETS	CONTRACT NO. 63073				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



**REFLECTED ELEVATION**



**PLAN**

Notes:  
See sheet EW5 for control point stations and offsets.  
See sheet EW5 for pile and anchor schedule.

DESIGNED	JCE/KJH
CHECKED	PMH
DRAWN	JCE/PMH
CHECKED	KJH

**McDonough Associates Inc.**  
Engineers / Architects  
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Chicago, Illinois 60601  
(312) 946-8600

**PILE AND ANCHOR LOCATIONS  
STRUCTURE NO. 045-2039**

SHEET NO. EW4	RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	361	06-00214-02-BR	KANE	219	161
EW13 SHEETS			CONTRACT NO. 63073		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

**PILE & ANCHOR SCHEDULE**

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

Pile Number	Pile Type	Top/Pile Elev.	Pile Tip Elev.	Est. Pile Length (Ft.)	Stud Spa. (In.)	*No. of Studs Per Beam	Anchor Number	Design Load (k)	Inclination (Deg.)	Est. Unbonded Length (Ft.)	Est. Bond Length (Ft.)	Est. Total Length (Ft.)	**Dist. to R.O.W. (Ft.)
1	HP12X84	739.19	715.19	24.00	12	2	-	-	-	-	-	-	-
2	HP12X84	742.39	714.39	28.00	12	5	-	-	-	-	-	-	-
3	(2)-HP10x42	745.60	731.60	14.00	12	8	3	55.18	15	10.0	14.7	24.7	49.4
4	(2)-HP10x42	748.80	728.80	20.00	12	11	4	89.32	15	10.0	23.8	33.8	49.4
5	(2)-HP10x42	752.01	724.01	28.00	12	15	5	124.43	15	11.4	33.2	44.6	49.4
6	(2)-HP10x42	755.22	717.22	38.00	12	18	6-U	96.19	15	13.3	25.7	39.0	49.4
							6-L	73.21	15	10.0	19.5	29.5	49.4
7	(2)-HP10x42	758.43	712.43	46.00	12	21	7-U	117.99	15	15.5	31.5	47.0	49.4
							7-L	113.88	15	10.0	30.4	40.4	49.4
8	(2)-HP10x42	758.74	712.74	46.00	12	21	8-U	102.76	15	15.5	27.4	42.9	50.2
							8-L	99.19	15	10.0	26.5	36.5	50.2
9	(2)-HP10x42	758.75	716.75	42.00	12	20	9-U	84.95	15	14.9	22.7	37.6	43.0
							9-L	77.30	15	10.0	20.6	30.6	43.0
10	(2)-HP10x42	758.69	713.69	45.00	12	20	10-U	112.07	15	15.0	29.9	44.9	43.5
							10-L	101.97	15	10.0	27.2	37.2	43.5
11	(2)-HP10x42	757.92	713.92	44.00	12	20	11-U	112.07	15	15.0	29.9	44.9	44.1
							11-L	101.97	15	10.0	27.2	37.2	44.1
12	(2)-HP10x42	757.13	713.13	44.00	12	19	12-U	112.07	15	15.0	29.9	44.9	44.7
							12-L	101.97	15	10.0	27.2	37.2	44.7
13	(2)-HP10x42	756.34	716.34	40.00	12	18	13-U	99.79	15	13.7	26.6	40.3	45.3
							13-L	79.32	15	10.0	21.1	31.1	45.3
14	(2)-HP10x42	755.55	717.55	38.00	12	17	14-U	99.79	15	13.7	26.6	40.3	45.9
							14-L	79.32	15	10.0	21.1	31.1	45.9
15	(2)-HP10x42	754.77	716.77	38.00	12	17	15-U	99.79	15	13.7	26.6	40.3	46.4
							15-L	79.32	15	10.0	21.1	31.1	46.4
16	(2)-HP10x42	753.98	717.98	36.00	12	16	16-U	99.79	15	13.7	26.6	40.3	47.0
							16-L	79.32	15	10.0	21.1	31.1	47.0
17	(2)-HP10x42	753.19	723.19	30.00	12	15	17-U	81.15	15	11.8	21.7	33.5	47.6
							17-L	50.24	15	10.0	13.4	23.4	47.6
18	(2)-HP10x42	752.40	722.40	30.00	12	14	18-U	76.71	15	11.3	20.5	31.8	32.7
							18-L	44.24	15	10.0	11.8	21.8	32.7
19	(2)-HP10x42	751.78	723.78	28.00	12	14	19-U	76.71	15	11.3	20.5	31.8	33.3
							19-L	44.24	15	10.0	11.8	21.8	33.3
20	(2)-HP10x42	751.99	721.99	30.00	12	14	20-U	76.71	15	11.3	20.5	31.8	33.9
							20-L	44.24	15	10.0	11.8	21.8	33.9
21	(2)-HP10x42	752.17	734.17	18.00	12	10	21	74.74	15	10.0	19.9	29.9	34.0
22	(2)-HP10x42	752.38	734.38	18.00	12	10	22	74.74	15	10.0	19.9	29.9	34.0
23	(2)-HP10x42	752.59	734.59	18.00	12	10	23	74.74	15	10.0	19.9	29.9	34.0
24	(2)-HP10x42	752.79	736.79	16.00	12	10	24	74.74	15	10.0	19.9	29.9	34.0
25	(2)-HP10x42	753.00	737.00	16.00	12	10	25	74.74	15	10.0	19.9	29.9	34.0
26	(2)-HP10x42	753.20	737.20	16.00	12	10	26	74.74	15	10.0	19.9	29.9	33.9
27	(2)-HP10x42	753.41	737.41	16.00	12	9	27	74.74	15	10.0	19.9	29.9	33.9
28	(2)-HP10x42	753.61	737.61	16.00	12	9	28	74.74	15	10.0	19.9	29.9	33.9
29	(2)-HP10x42	753.82	737.82	16.00	12	9	29	74.74	15	10.0	19.9	29.9	33.9
30	(2)-HP10x42	754.03	738.03	16.00	12	9	30	74.74	15	10.0	19.9	29.9	33.9
31	(2)-HP10x42	754.24	738.24	16.00	12	9	31	74.74	15	10.0	19.9	29.9	33.9
32	(2)-HP10x42	754.45	738.45	16.00	12	9	32	74.74	15	10.0	19.9	29.9	33.9
33	(2)-HP10x42	754.69	738.69	16.00	12	9	33	56.35	15	10.0	15.0	25.0	33.9
34	(2)-HP10x42	754.95	738.95	16.00	12	8	34	56.35	15	10.0	15.0	25.0	33.9
35	(2)-HP10x42	755.21	739.21	16.00	12	8	35	56.35	15	10.0	15.0	25.0	33.9
36	(2)-HP10x42	755.48	739.48	16.00	12	8	36	56.35	15	10.0	15.0	25.0	33.9
37	(2)-HP10x42	755.74	739.74	16.00	12	8	37	56.35	15	10.0	15.0	25.0	33.9
38	(2)-HP10x42	756.00	740.00	16.00	12	8	38	56.35	15	10.0	15.0	25.0	33.9
39	(2)-HP10x42	756.26	740.26	16.00	12	8	39	56.35	15	10.0	15.0	25.0	33.9
40	(2)-HP10x42	756.53	742.53	14.00	12	8	40	56.35	15	10.0	15.0	25.0	33.9
41	(2)-HP10x42	756.79	742.79	14.00	12	8	41	56.35	15	10.0	15.0	25.0	33.9
42	(2)-HP10x42	757.05	743.05	14.00	12	8	42	56.35	15	10.0	15.0	25.0	33.9
43	(2)-HP10x42	757.31	743.31	14.00	12	8	43	56.35	15	10.0	15.0	25.0	33.9
44	(2)-HP10x42	757.58	743.58	14.00	12	8	44	56.35	15	10.0	15.0	25.0	33.9
45	(2)-HP10x42	757.84	743.84	14.00	12	7	45	56.35	15	10.0	15.0	25.0	33.9
46	(2)-HP10x42	758.10	744.10	14.00	12	7	46	56.35	15	10.0	15.0	25.0	33.9
47	(2)-HP10x42	757.61	743.61	14.00	12	6	47	56.35	15	10.0	15.0	25.0	33.9
48	HP12X84	753.87	729.87	24.00	12	2	-	-	-	-	-	-	-

\* Number of studs per beam shown. Number of studs per pile for built-up section will be twice number shown.  
\*\* Horizontal distance from face of wall to R.O.W. Contractor to verify.

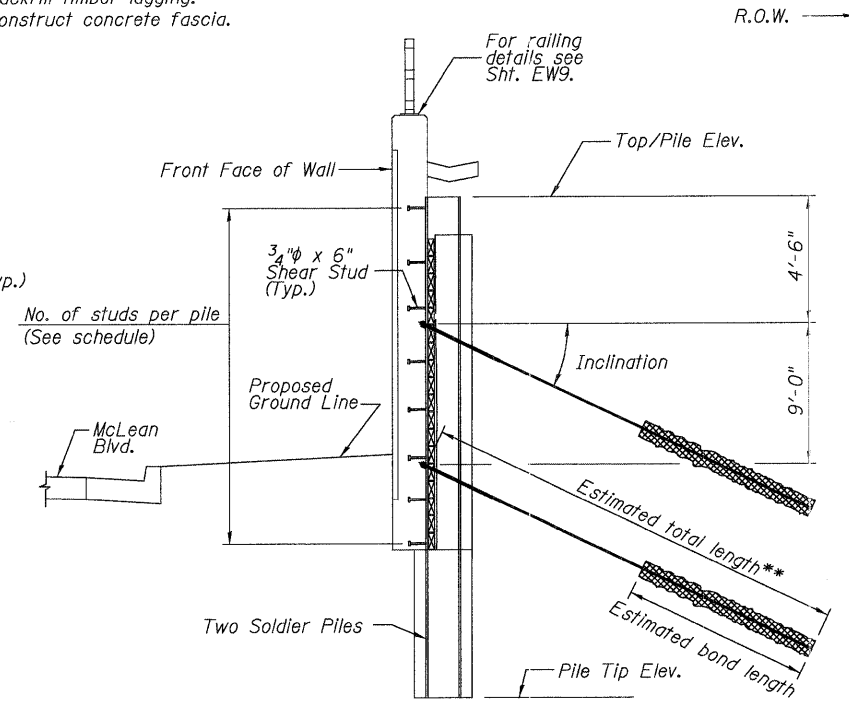
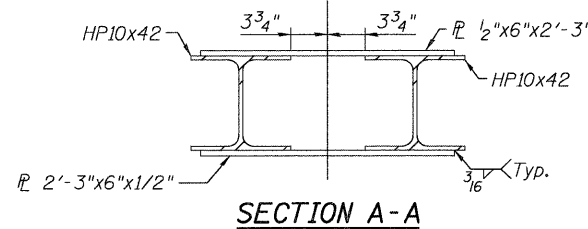
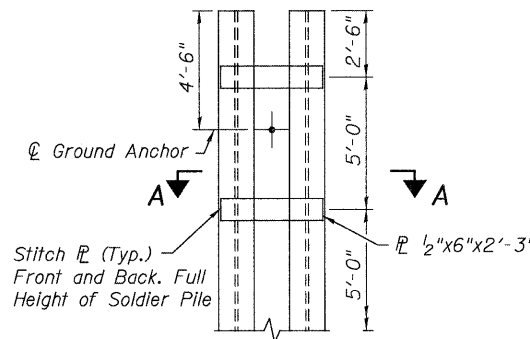
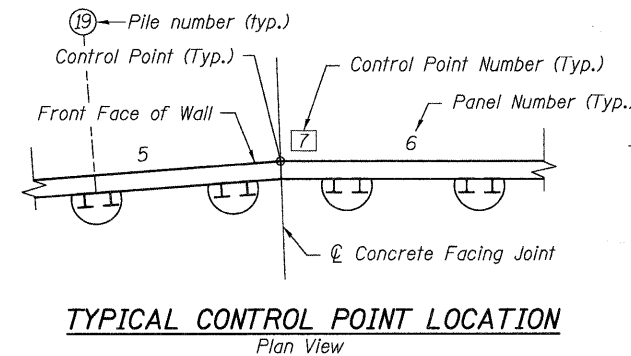
DESIGNED	JCE/KJH
CHECKED	PMH
DRAWN	JCE/PMH
CHECKED	KJH

**SUGGESTED SEQUENCE OF CONSTRUCTION**

1. Drill holes for soldier piles. Do not excavate near these holes at this stage.
2. Set soldier piles.
3. Place soldier pile encasement concrete and controlled low-strength material (CLSM), as shown on plans.
4. Begin earth excavation. Remove only earth and CLSM as necessary to install timber lagging.
5. Install permanent ground anchors. Earth excavation shall be no more than two feet below anchor location.
6. Test permanent ground anchors and fill cover with anti-corrosion grout.
7. Complete remaining earth excavation and installation of wall components as in Step #5.
8. Install geocomposite wall drain.
9. Install stud shear connectors.
10. Backfill timber lagging.
11. Construct concrete fascia.

**CONTROL POINTS**

Panel	Control Point No.	McLean Blvd. Station	Offset Rt. (Ft.)
1	1	811+34.86	34.63
2	2	811+64.86	34.63
3	3	811+94.86	34.63
4	4	812+22.05	41.34
5	5	812+51.96	39.08
6	6	812+81.88	36.83
7	7	813+11.79	34.58
8	8	813+41.79	34.58
9	9	813+71.79	34.58
10	10	814+01.79	34.58
11	11	814+31.79	34.58
12	12	814+61.79	34.58
13	13	814+91.79	34.58
14	14	815+21.79	34.58



\*\* Note: Actual required anchor length is to be determined by Contractor. Length shall not exceed the estimated total length shown in schedule, due to R.O.W. constraints.

**DESIGN ASSUMPTIONS (USED TO CHECK FEASIBILITY ONLY):**

1. Estimated ultimate transfer load = 7.5k/ft.
2. Maximum allowable design load = Estimated ultimate transfer load divided by 2.
3. Bar tendons were assumed for checking feasibility.
4. Unbonded portion must extend 5' beyond active failure wedge, not less than 10' minimum length for bar tendons. If strand type anchors are used, the minimum unbonded length shall be 15'.

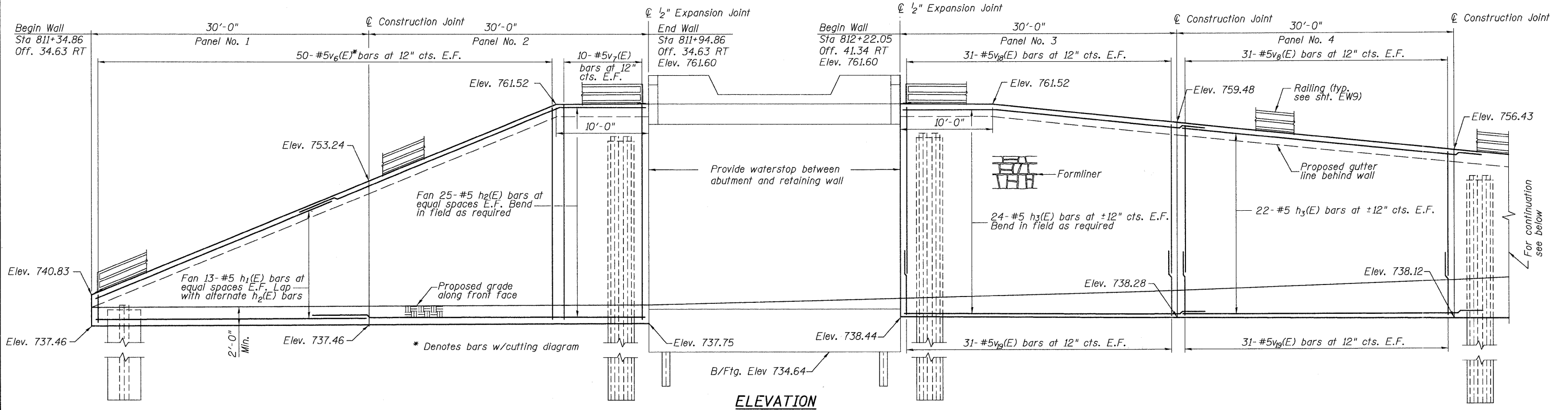
Note: The above assumptions have been used only for the purpose of establishing minimum dimensions for drill hole diameter, unbonded length and bond length. The contractor shall be responsible for determining the selection and installation of the anchors that will provide the required design load, fitting within the R.O.W. limits of the site.

**PILE AND ANCHOR SCHEDULE  
STRUCTURE NO. 045-2039**

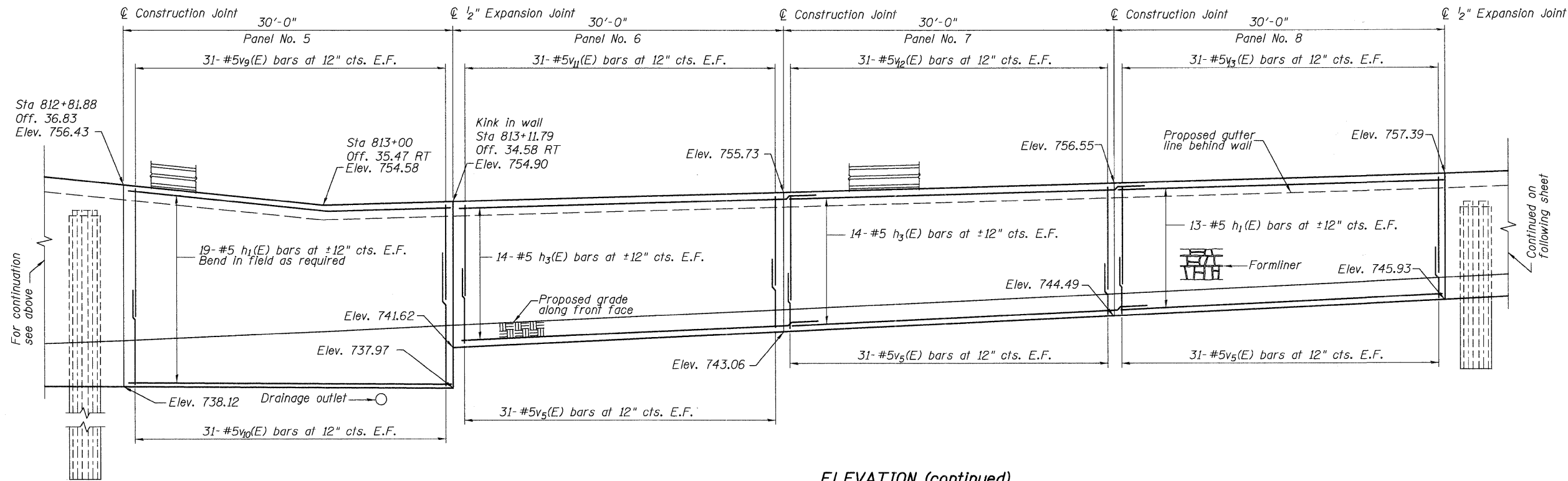
SHEET NO. EW5	RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	361	06-00214-02-BR	KANE	219	162
CONTRACT NO. 63073					
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

McDonough Associates Inc.  
Engineers / Architects  
130 East Randolph Street  
Chicago, Illinois 60601  
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DEPARTMENT OF TRANSPORTATION



ELEVATION



ELEVATION (continued)

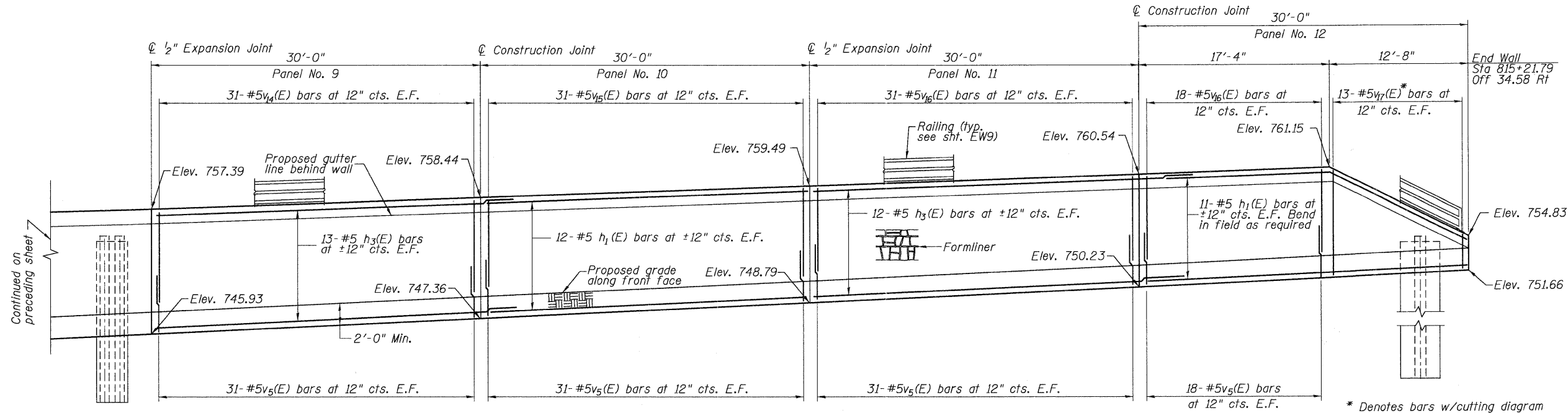
DESIGNED	JCE/KJH
CHECKED	PMH
DRAWN	JCE/PMH
CHECKED	KJH

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Engineers / Architects  
130 East Randolph Street  
Chicago, Illinois 60601  
(312) 946-8600

CONCRETE FACING DETAILS  
STRUCTURE NO. 045-2039

SHEET NO. EW6	RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	361	06-00214-02-BR	KANE	219	163
EW13 SHEETS	CONTRACT NO. 63073				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



**ELEVATION**

**BAR LIST**

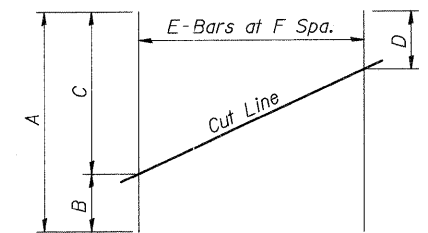
Bar	No.	Size	Length	Shape
h <sub>1</sub> (E)	136	#5	29'-8"	
h <sub>2</sub> (E)	50	#5	36'-8"	
h <sub>3</sub> (E)	198	#5	32'-4"	
h <sub>7</sub> (E)	68	#5	33'-9"	
v <sub>5</sub> (E)	408	#5	5'-0"	
v <sub>6</sub> (E)	50	#5	26'-5"	
v <sub>7</sub> (E)	20	#5	23'-5"	
v <sub>8</sub> (E)	62	#5	16'-4"	
v <sub>9</sub> (E)	62	#5	12'-11"	
v <sub>10</sub> (E)	62	#5	8'-3"	
v <sub>11</sub> (E)	62	#5	10'-5"	
v <sub>12</sub> (E)	62	#5	9'-10"	
v <sub>13</sub> (E)	62	#5	9'-3"	
v <sub>14</sub> (E)	62	#5	8'-8"	
v <sub>15</sub> (E)	62	#5	8'-3"	
v <sub>16</sub> (E)	98	#5	7'-10"	
v <sub>17</sub> (E)	13	#5	12'-7"	
v <sub>18</sub> (E)	62	#5	19'-0"	
v <sub>19</sub> (E)	124	#5	7'-0"	
Reinforcement Bars, Epoxy Coated			Pound	4,052

\* Denotes bars w/cutting diagram

\* Indicates cutting diagram

Reinforcement bars designated (E) shall be epoxy coated.

Min bar lap = 2'-2"



**FIELD CUTTING DIAGRAM**

Order bars full length and cut as shown

Bar	A	B	C	D	E	F
v <sub>6</sub> (E)	26'-5"	3'-0"	23'-5"	3'-0"	50	1'-0"
v <sub>7</sub> (E)	12'-7"	2'-10"	9'-9"	2'-10"	13	1'-0"

DESIGNED	JCE/KJH	200
CHECKED	PMH	EXAMINED
DRAWN	JCE/PMH	ENGINEER OF BRIDGE DESIGN
CHECKED	KJH	PASSED
		ENGINEER OF BRIDGES AND STRUCTURES

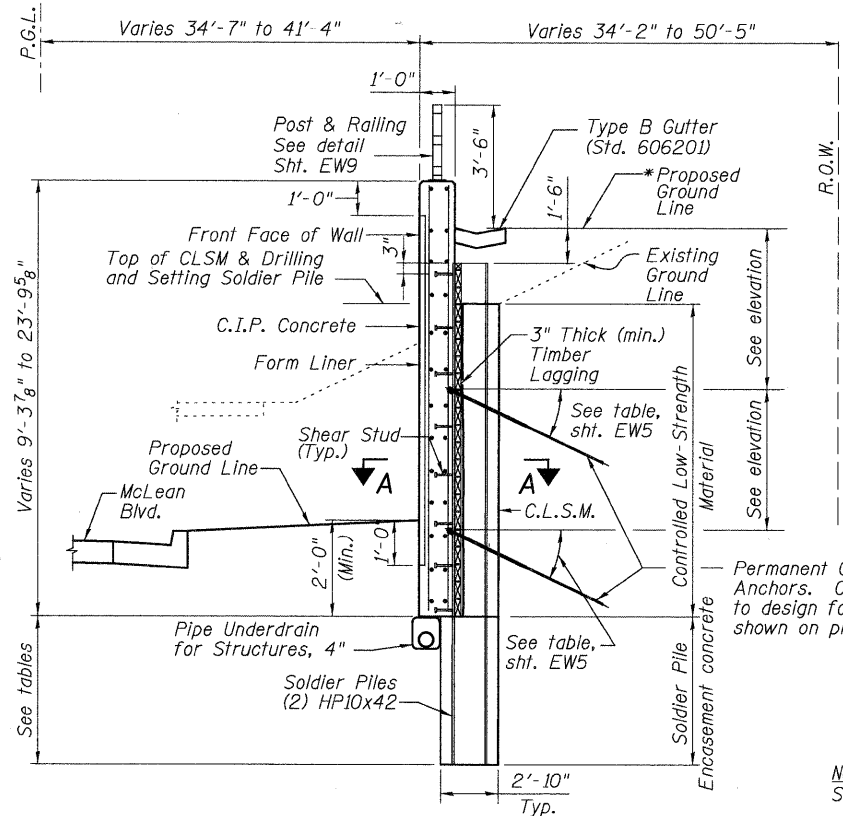
**McDonough Associates Inc.**  
Engineers / Architects  
130 East Randolph Street  
Chicago, Illinois 60601  
(312) 946-8600

SHEET NO. EW7	RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	361	06-00214-02-BR	KANE	219	164
EW13 SHEETS	CONTRACT NO. 63073				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

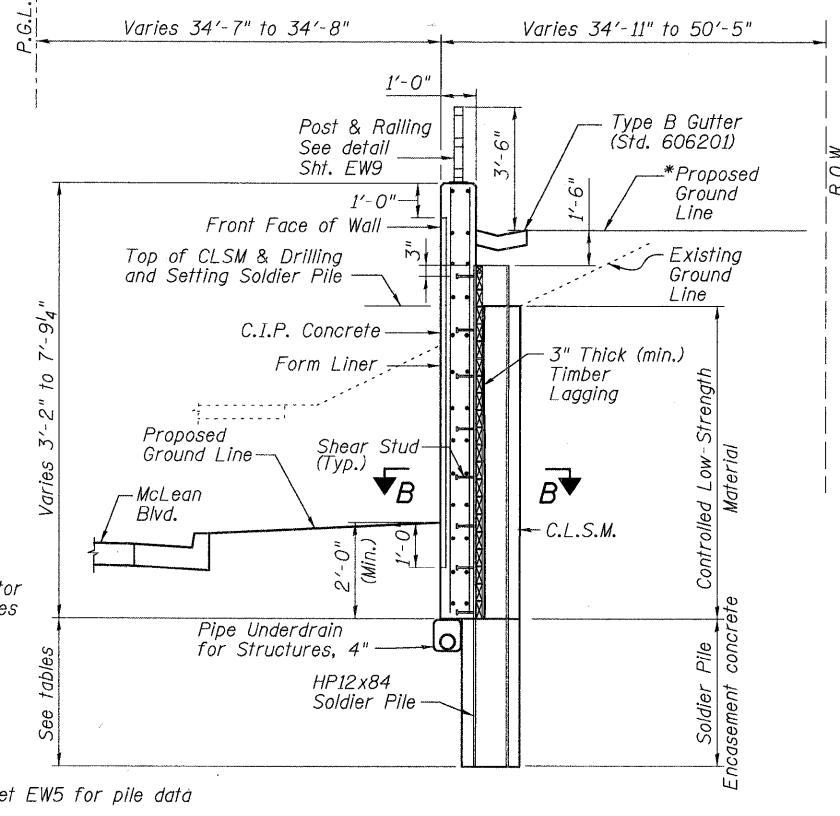
**CONCRETE FACING DETAILS  
STRUCTURE NO. 045-2039**



STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



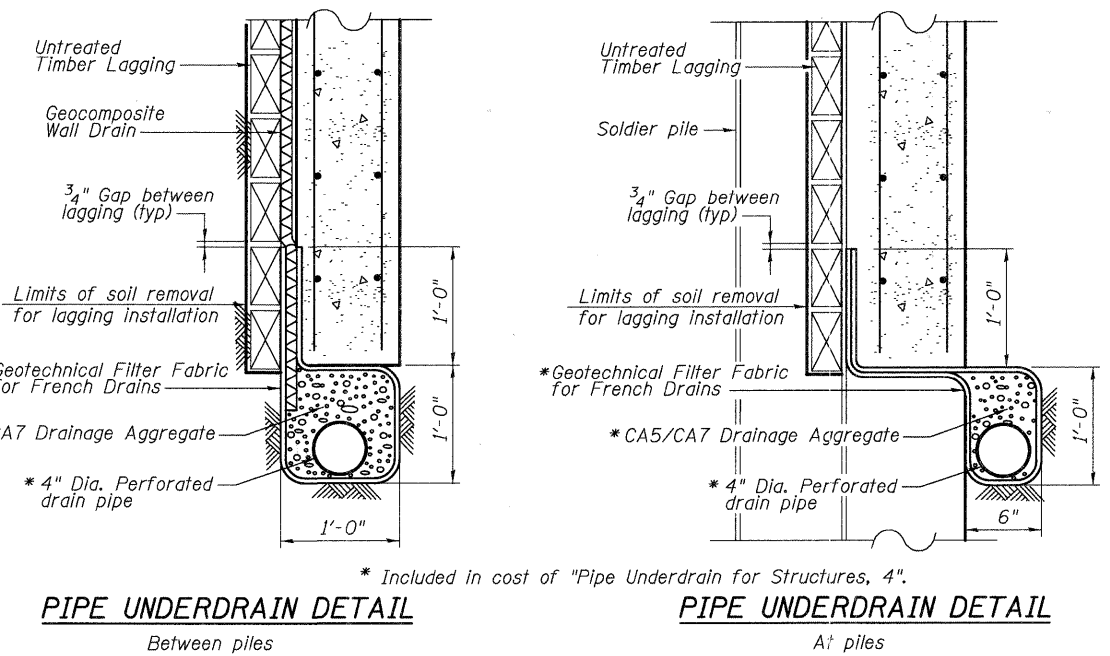
**WALL SECTION W/GROUND ANCHORS**



**WALL SECTION W/O GROUND ANCHORS**

Note:  
See sheet EW5 for pile data

\* See civil plans for backslope grading.

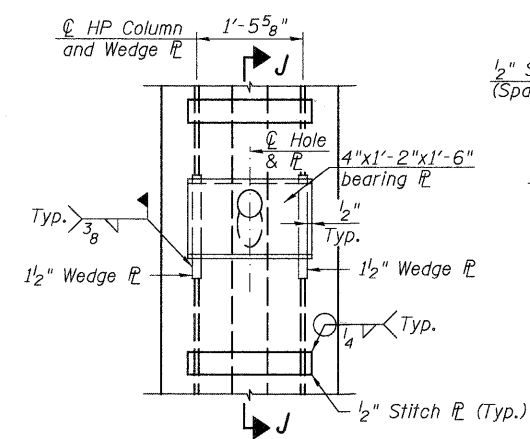


**PIPE UNDERDRAIN DETAIL**

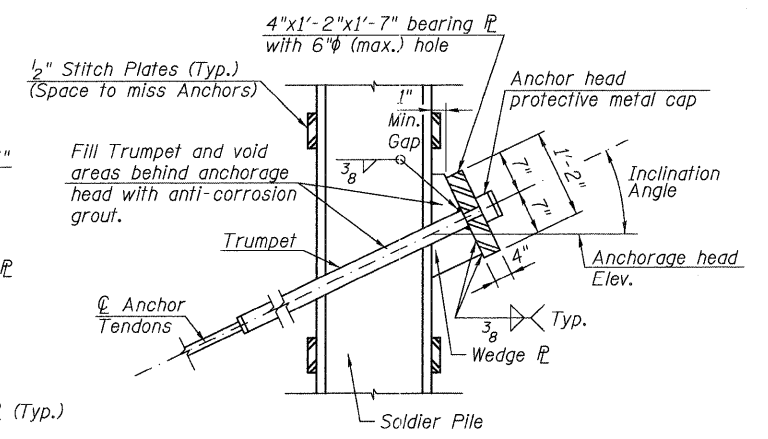
Between piles

**PIPE UNDERDRAIN DETAIL**

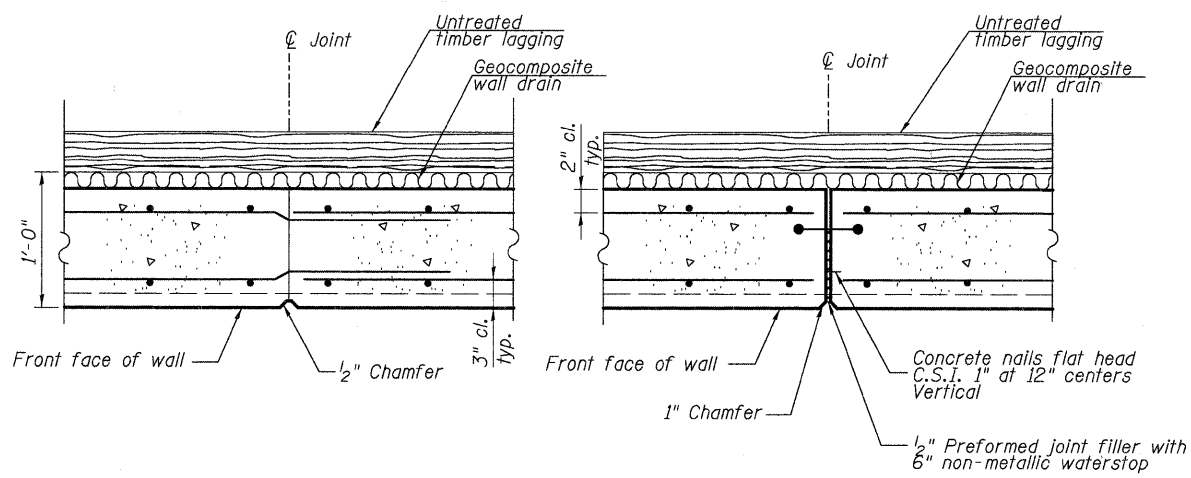
At piles



**ELEVATION**

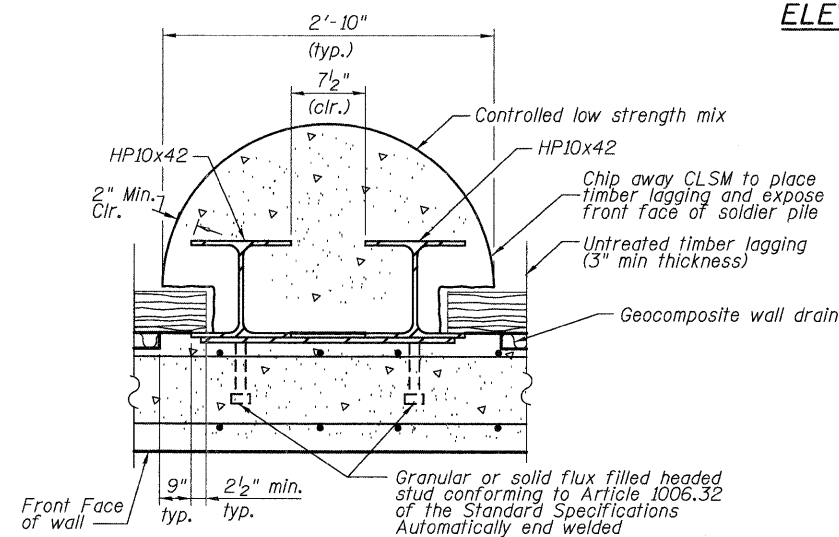


**SECTION J-J**

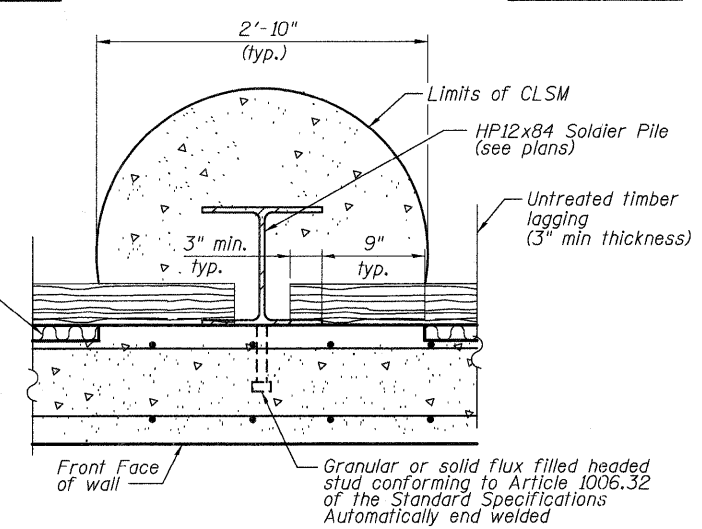


**CONSTRUCTION JOINT DETAILS**

**EXPANSION JOINT DETAILS**



**SECTION A-A**



**SECTION B-B**

**SECTIONS & DETAILS  
STRUCTURE NO. 045-2039**

\* Any over excavation done as part of the installation of the timber lagging shall be backfilled with FA4 at the contractor's expense.

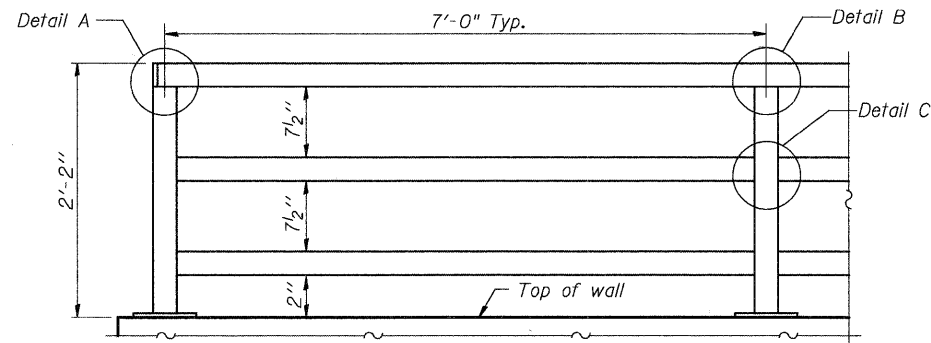
DESIGNED	JCE/KJH
CHECKED	PMH
DRAWN	JCE/PMH
CHECKED	KJH



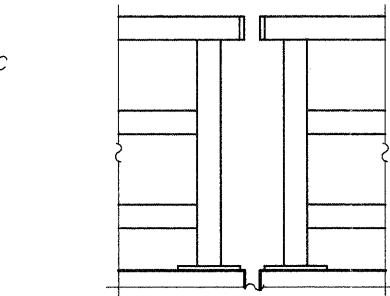
McDonough Associates Inc.  
Engineers / Architects  
130 East Randolph Street  
Chicago, Illinois 60601  
(312) 946-8600

SHEET NO. EW8	RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	361	06-00214-02-BR	KANE	219	165
EW13 SHEETS	CONTRACT NO. 63073				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

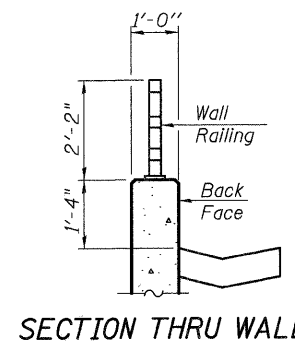
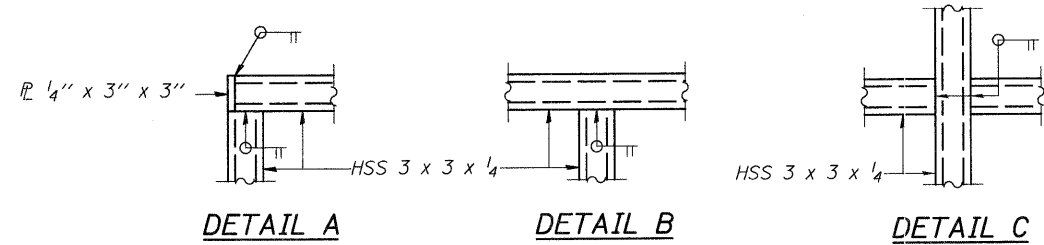
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



**WALL RAILING  
ELEVATION**  
(Inside Face of Rail)

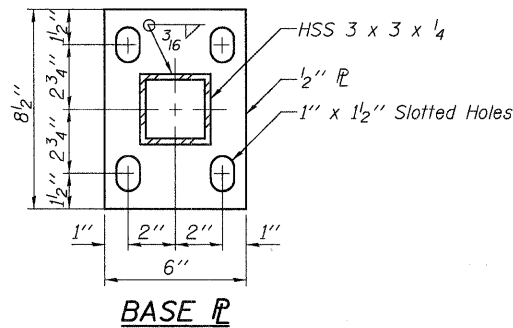


**WALL RAILING  
ELEVATION AT EXPANSION JOINT**

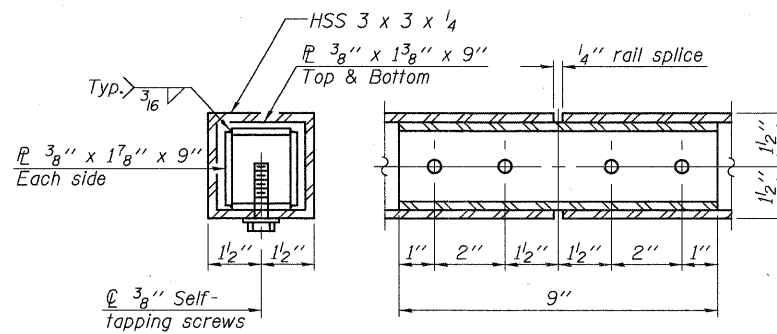


**SECTION THRU WALL**

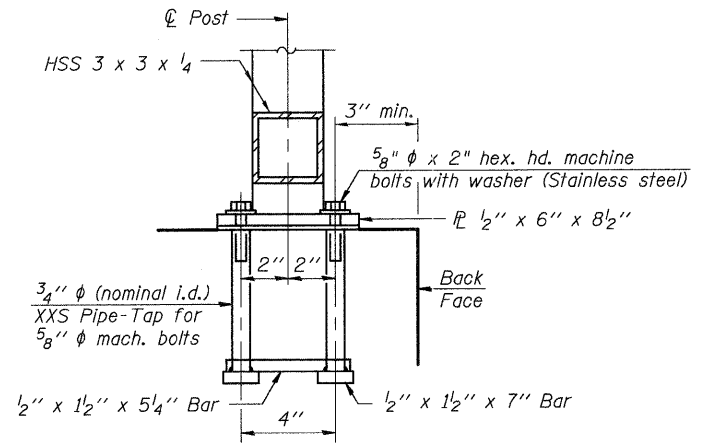
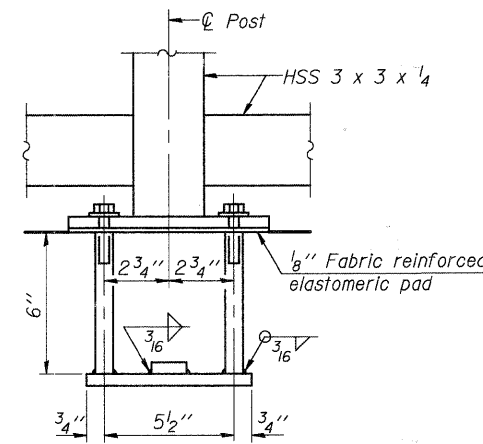
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.



**BASE PLATE**



**RAIL SPLICE**



**ANCHOR BOLT DETAILS**

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

**RAILING DETAILS  
STRUCTURE NO. 045-2039**

DESIGNED	JCE/KJH	200
CHECKED	PMH	EXAMINED
DRAWN	JCE/PMH	ENGINEER OF BRIDGE DESIGN
CHECKED	KJH	PASSED
		ENGINEER OF BRIDGES AND STRUCTURES

**McDonough Associates Inc.**  
Engineers / Architects  
130 East Randolph Street  
Chicago, Illinois 60601  
(312) 946-8600

SHEET NO. EW9	RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	361	06-00214-02-BR	KANE	219	166
EW13 SHEETS			CONTRACT NO. 63073		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ILLINOIS DEPARTMENT OF TRANSPORTATION  
Testing Service Corporation  
STRUCTURE BORING LOG

Page 1 of 1  
Date Started 6/25/04  
Date Completed 6/25/04

ROUTE \_\_\_\_\_ DESCRIPTION McLean Boulevard Retaining Wall - East Side  
SECT. \_\_\_\_\_ STRUCT. NO. \_\_\_\_\_ DRILLED BY TSC L-60,393  
COUNTY Kane LOCATION S. 3 - NW 1/4, TWP. 40 N, RNG. 8 E

Boring No.	Station	Offset	Surface Elev.	D	B	L	Qu	W	Surface Water Elev.	D	B	L	Qu	W
MCWL-1	813+02	24.00R RT	748.64	H	S	T	tsf	%		H	S	T	tsf	%
1" Asphaltic Concrete														
12" P.C. Concrete														
747.54					8				Very stiff gray CLAY, trace to little gravel, moist		8	P		
FILL - Crushed Limestone, damp A-1-a				745.64	10				(Sample disturbed by gravel)		10	2.0	19.4	
Very stiff brown and gray SILTY CLAY LOAM, occasional silt seams, moist A-6				743.14	7	B	16.5		Large Boulder		100/4"		5.3	
Medium dense gray clayey SILT, moist A-4				740.64	10		14.9		Hard black and dark brown CLAY, moist A-6/A-7-6		10	P	4.5	18.4
Very stiff gray CLAY, occasional silt seams, trace gravel, moist A-6				733.64	7	B	20.2		Dolomite, tan to light gray, silty, thin bedded with occasional green clay partings, dense		100/5"	P	4.5	20.7
Core Run from 34 to 44 feet Recovery = 88% RQD = 15%				704.64	9	B	21.0		End of Core at 44.0'					
Hard to very stiff gray CLAY, trace gravel, moist A-6				723.64	10	B	22.0		Diedrich D-120 Truck Rig (#282)					
Rock Core with NX Core Barrel					11	B	19.1		CME Automatic Hammer					
					10	B			3.25" (83 mm) ID HSA					
					9	B			Rock Core with NX Core Barrel					

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test Stations, Depths, Offset, and Elevations are in Feet

ILLINOIS DEPARTMENT OF TRANSPORTATION  
Testing Service Corporation  
STRUCTURE BORING LOG

Page 1 of 1  
Date Started 8/17/04  
Date Completed 8/17/04

ROUTE F.A.U. 2509 DESCRIPTION CC & P Railroad over McLean Boulevard  
SECT. 98-00214-02-BR STRUCT. NO. 045-3163 DRILLED BY TSC L-60,393  
COUNTY Kane LOCATION North End East Abutment S. 3 - NW 1/4, TWP. 40 N, RNG. 8 E

Boring No.	Station	Offset	Surface Elev.	D	B	L	Qu	W	Surface Water Elev.	D	B	L	Qu	W
CNMC-4	6+72 CL CC & P RR	19.00R LT	761.90	H	S	T	tsf	%		H	S	T	tsf	%
FILL - Brown to dark brown CLAY and CLAY LOAM, trace gravel and cinders, moist A-6														
756.40					6	S	16.1		Very stiff gray CLAY, trace gravel, moist A-6		3	B	2.9	21.9
Hard brown CLAY, trace gravel, moist A-6				728.90	6	S	14.8		Very dense brown and gray GRAVEL, occasional Cobbles, (rock fragments recovered), moist A-1-a		29	28	50/3"	5.6
Hard gray CLAY, trace gravel, moist A-6				743.90	3	B	17.9		Very dense gray GRAVEL, little sand, occasional Cobbles, moist A-1-a		16	28	98	6.2
Very stiff gray CLAY, trace gravel, moist A-6				716.90	3	B	19.5		Very dense clayey SAND and GRAVEL, occasional Cobbles and Boulders, saturated A-1		50/6"		23.7	
Auger Refusal at 45.0'					3	B	18.7		Auger Refusal at 45.0'					
CME 55 on Remote Controlled ATV Carrier (#242)					4	2.7	15%		CME 55 on Remote Controlled ATV Carrier (#242)					
CME Automatic Hammer					3	B	22.0		3.25" (83 mm) ID HSA					
Rock Core with NX Core Barrel					3	B	22.0		3.25" (83 mm) ID HSA					

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test Stations, Depths, Offset, and Elevations are in Feet

ILLINOIS DEPARTMENT OF TRANSPORTATION  
Testing Service Corporation  
STRUCTURE BORING LOG

Page 1 of 1  
Date Started 8/17/04  
Date Completed 8/17/04

ROUTE F.A.U. 2509 DESCRIPTION CC & P Railroad over McLean Boulevard  
SECT. 98-00214-02-BR STRUCT. NO. 045-3163 DRILLED BY TSC L-60,393  
COUNTY Kane LOCATION South Wall East Abutment S. 3 - NW 1/4, TWP. 40 N, RNG. 8 E

Boring No.	Station	Offset	Surface Elev.	D	B	L	Qu	W	Surface Water Elev.	D	B	L	Qu	W
CNMC-5	6+76 CL CC & P RR	21.00R RT	758.65	H	S	T	tsf	%		H	S	T	tsf	%
FILL - Black clayey Topsoil														
758.25					5	P	16.7		Very stiff gray CLAY, trace gravel, moist A-6		3	B	3.1	21.2
FILL - Brown and gray CLAY and CLAY LOAM, trace gravel, moist A-6				753.15	5	S	13.6		Very stiff gray CLAY, trace gravel, moist A-6		2	B	3.9	21.9
Hard brown CLAY, trace gravel, moist A-6				727.85	5	B	16.1		Hard brown CLAY LOAM, trace gravel, moist A-6		3	P	4.5	10.2
Very hard brown CLAY, little gravel, damp A-6				721.65	4	B	19.4		Very hard brown CLAY, little gravel, damp A-6		14	S	14.3	15.0
Very stiff gray CLAY, trace gravel, moist A-6				717.65	3	B	20.6		Very dense Cobbles and Boulders, (rock fragments recovered), possible fractured bedrock					
Auger Refusal at 43.5'					3	B	20.3		Auger Refusal at 43.5'					
CME 55 on Remote Controlled ATV Carrier (#242)					4	3.4	15%		CME 55 on Remote Controlled ATV Carrier (#242)					
CME Automatic Hammer					3	B	22.4		CME Automatic Hammer					
3.25" (83 mm) ID HSA					4	1.8	15%		3.25" (83 mm) ID HSA					
Very stiff gray CLAY, moist A-6				733.65	2	B	21.1							

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test Stations, Depths, Offset, and Elevations are in Feet

DESIGNED	JCE/KJH	200
CHECKED	PMH	EXAMINED
DRAWN	JCE/PMH	PASSED
CHECKED	KJH	ENGINEER OF BRIDGES AND STRUCTURES

**McDonough Associates Inc.**  
Engineers / Architects  
130 East Randolph Street  
Chicago, Illinois 60601  
(312) 946-8600

**SOIL BORING LOGS**  
**STRUCTURE NO. 045-2039**

SHEET NO.	RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
EW10	361	06-00214-02-BR	KANE	219	167
CONTRACT NO. 63073					
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ILLINOIS DEPARTMENT OF TRANSPORTATION  
Testing Service Corporation  
STRUCTURE BORING LOG

Page 1 of 1

Date Started 6/25/04

Date Completed 6/25/04

ROUTE DESCRIPTION McLean Boulevard Retaining Wall - East Side

SECT. STRUCT. NO. DRILLED BY TSC L-60.393

COUNTY Kane LOCATION S. 3 - NW 1/4, TWP. 40 N, RNG. 8 E

Boring No.	Station	Offset	Surface Elev.	D	B	L	W	Qu	W	Surface Water Elev.	D	B	L	W	Qu	W
MCWL-1	813+02	24.00R RT	748.64 ft	H	T	O	S	tsf	%	715.1	H	T	O	S	tsf	%
1" Asphaltic Concrete 12" P.C. Concrete																
FILL - Crushed Limestone, damp A-1-a																
Very stiff brown and gray SILTY CLAY LOAM, occasional silt seams, moist A-6																
Medium dense gray clayey SILT, moist A-4																
Very stiff gray CLAY, occasional silt seams, trace gravel, moist A-5																
Dolomite, tan to light gray, silty, thin bedded with occasional green clay partings, dense																
Core Run from 34 to 44 feet Recovery = 88% RQD = 15%																
End of Core at 44.0'																
Diedrich D-120 Truck Rig (#282) CME Automatic Hammer																
3.25" (83 mm) ID HSA																
Rock Core with NX Core Barrel																
End of Boring at 20.0'																
GeoProbe on ATV Carrier (#294)																
MC = Continuous Macro-core samples (1.5" diam.) using ATV GeoProbe rig																

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test  
Stations, Depths, Offset, and Elevations are in Feet

ILLINOIS DEPARTMENT OF TRANSPORTATION  
Testing Service Corporation  
STRUCTURE BORING LOG

Page 1 of 1

Date Started 8/18/04

Date Completed 8/18/04

ROUTE DESCRIPTION McLean Boulevard Retaining Wall - East Side

SECT. STRUCT. NO. DRILLED BY TSC L-60.393

COUNTY Kane LOCATION S. 3 - NW 1/4, TWP. 40 N, RNG. 8 E

Boring No.	Station	Offset	Surface Elev.	D	B	L	W	Qu	W	Surface Water Elev.	D	B	L	W	Qu	W	
MCWL-1A	813+15	57.40R RT	763.94 ft	H	T	O	S	tsf	%	718.6	H	T	O	S	tsf	%	
FILL - Black clayey Topsoil																	
Hard brown CLAY LOAM, damp A-6 (fractured, possible fill)																	
Hard brown CLAY, trace gravel, moist A-6																	
(occasional silt seams)																	
End of Boring at 20.0'																	
GeoProbe on ATV Carrier (#294)																	
MC = Continuous Macro-core samples (1.5" diam.) using ATV GeoProbe rig																	

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test  
Stations, Depths, Offset, and Elevations are in Feet

ILLINOIS DEPARTMENT OF TRANSPORTATION  
Testing Service Corporation  
STRUCTURE BORING LOG

Page 1 of 1

Date Started 6/28/04

Date Completed 6/28/04

ROUTE DESCRIPTION McLean Boulevard Retaining Wall - East Side

SECT. STRUCT. NO. DRILLED BY TSC L-60.393

COUNTY Kane LOCATION S. 3 - NW 1/4, TWP. 40 N, RNG. 8 E

Boring No.	Station	Offset	Surface Elev.	D	B	L	W	Qu	W	Surface Water Elev.	D	B	L	W	Qu	W
MCWL-2	813+76	26.00R RT	752.10 ft	H	T	O	S	tsf	%	723.6	H	T	O	S	tsf	%
18" Asphaltic Concrete																
FILL - Gravel Subbase, damp A-1-a																
Very stiff gray CLAY, trace gravel, moist A-6																
Dense to medium dense gray SAND and GRAVEL, trace silt, saturated A-1-a																
Dense Gravel and Cobbles, saturated A-1-a																
Stiff gray SANDY LOAM, trace to little gravel, moist A-2-4/A-4																
Very dense Fractured and Broken Rock																
Dolomite, tan to light gray, silty, thin bedded with occasional green clay partings, dense																
Core Run from 38 to 48 feet Recovery = 100% RQD = 68%																
Diedrich D-120 Truck Rig (#282) CME Automatic Hammer																
3.25" (83 mm) ID HSA																
Rock Core with NX Core Barrel																
End of Core at 48.0'																

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test  
Stations, Depths, Offset, and Elevations are in Feet

DESIGNED	JCE/KJH	200
CHECKED	PMH	EXAMINED
DRAWN	JCE/PMH	PASSED
CHECKED	KJH	ENGINEER OF BRIDGE DESIGN
		ENGINEER OF BRIDGES AND STRUCTURES

**McDonough Associates Inc.**  
Engineers / Architects  
130 East Randolph Street  
Chicago, Illinois 60601  
(312) 946-8600

SOIL BORING LOGS  
STRUCTURE NO. 045-2039

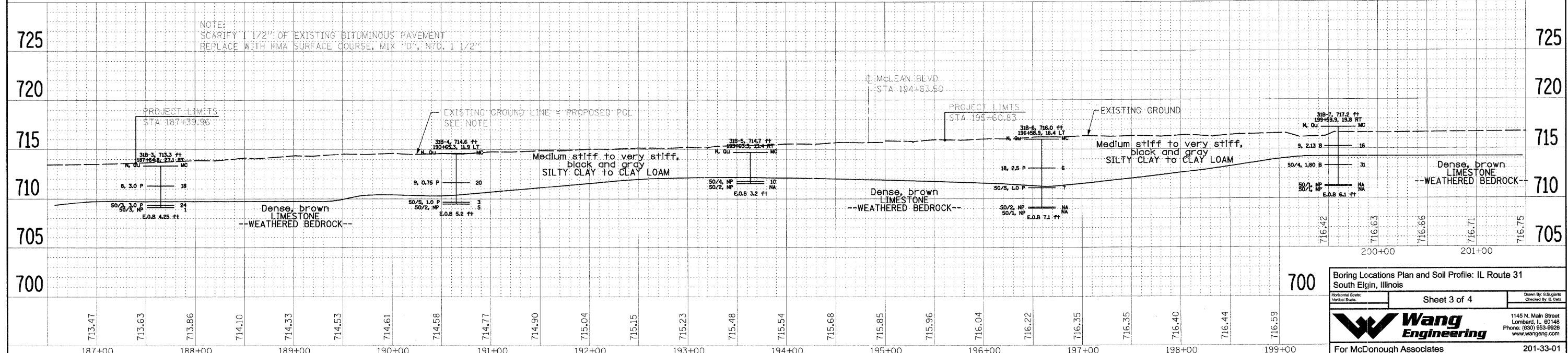
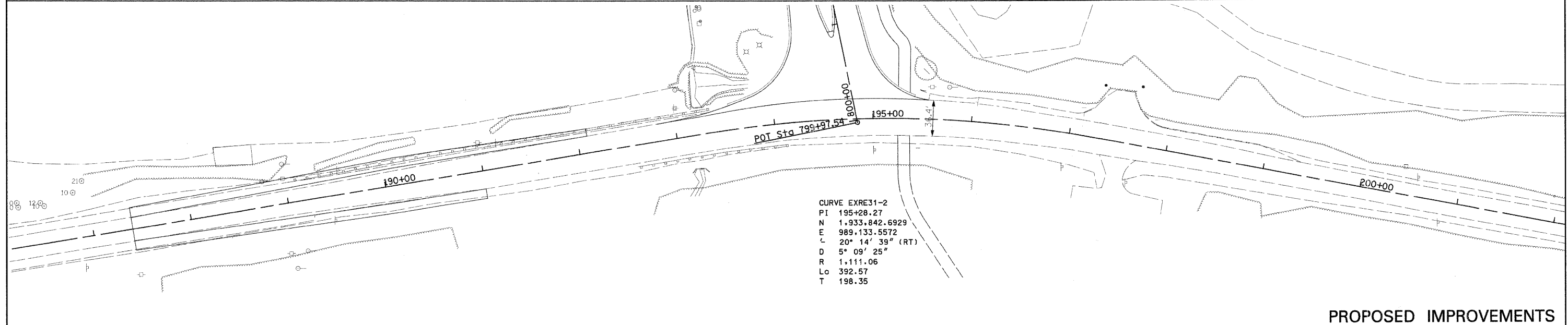
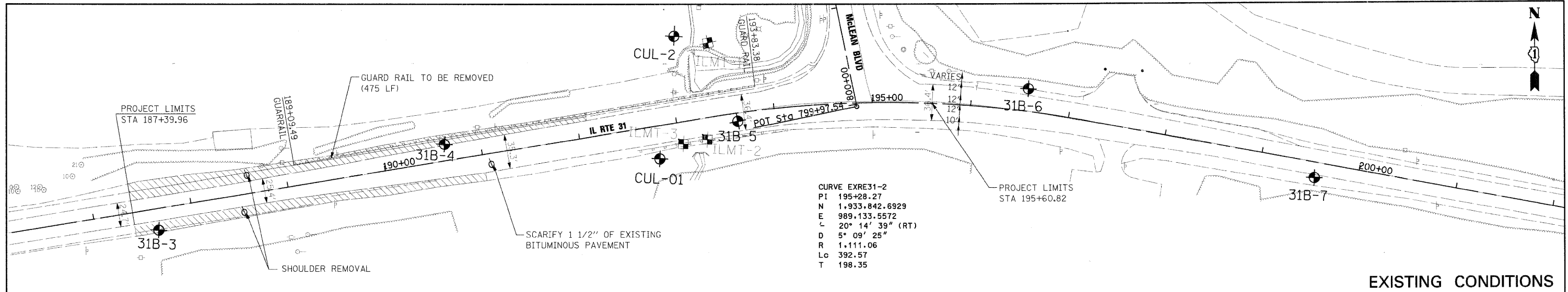
SHEET NO. EW11	RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
EW13 SHEETS	361	06-00214-02-BR	KANE	219	168
FED. ROAD DIST. NO. 1 ILLINOIS			FED. AID PROJECT		
CONTRACT NO. 63073					





PLAN	SURVEYED	DATE
	PLOTTED	BY
	CHECKED	
	REVISIONS	
	NO. OF WAY CHECKED	
	CADD FILE NAME	
	NO.	

PROFILE	SURVEYED	DATE
	PLOTTED	BY
	CHECKED	
	REVISIONS	
	NOTATIONS CHECKED	
	NO.	



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PLOT DATE = 3/29/2009	DATE = 3/27/09	REVISIONS =								



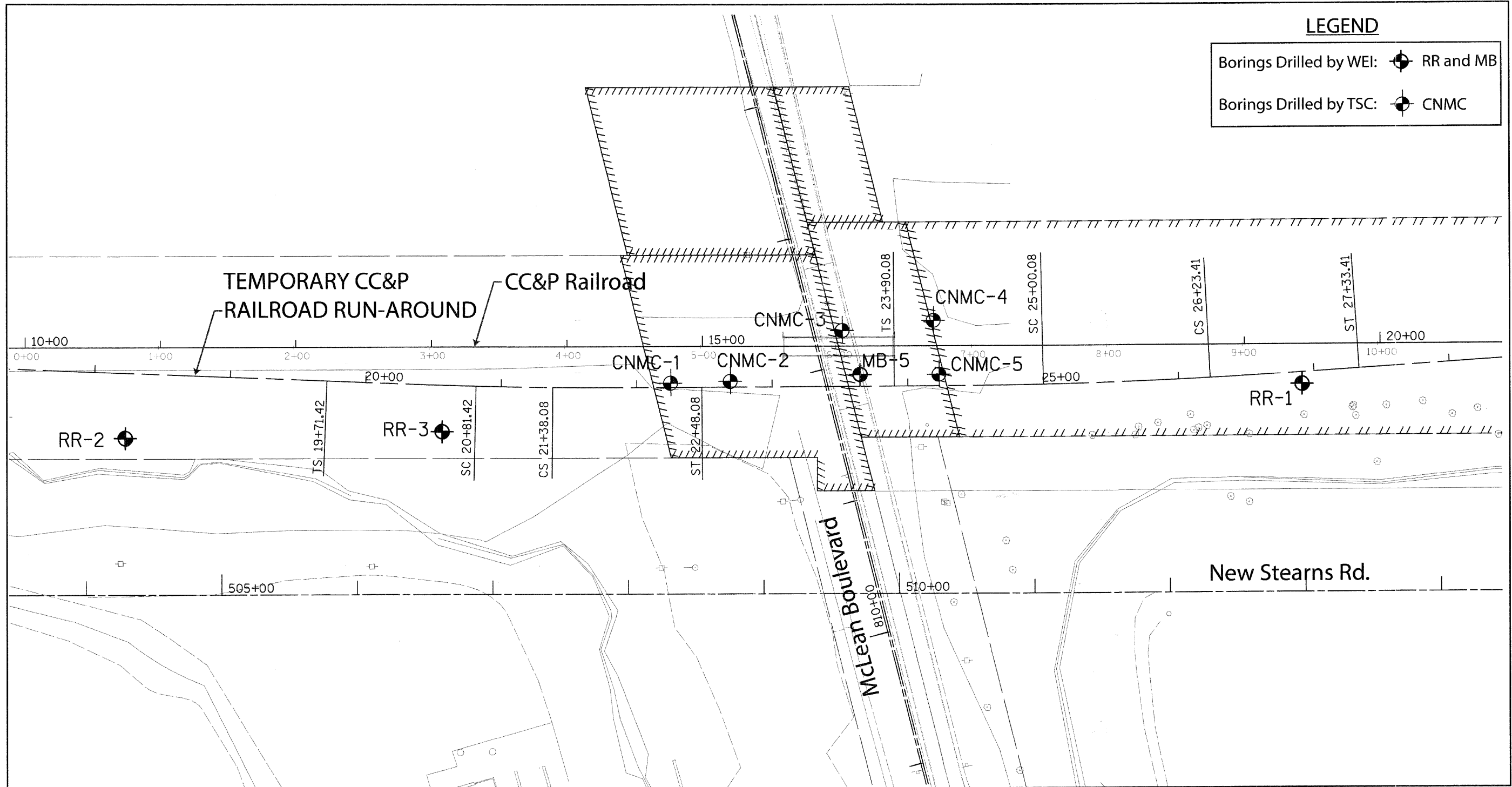






### LEGEND

- Borings Drilled by WEI: RR and MB
- Borings Drilled by TSC: CNMC



BORING LOCATION PLANS NEW RAILROAD RUN-AROUND:  
NEW STEARNS ROAD, STAGE 2, SOUTH ELGIN, KANE COUNTY, IL

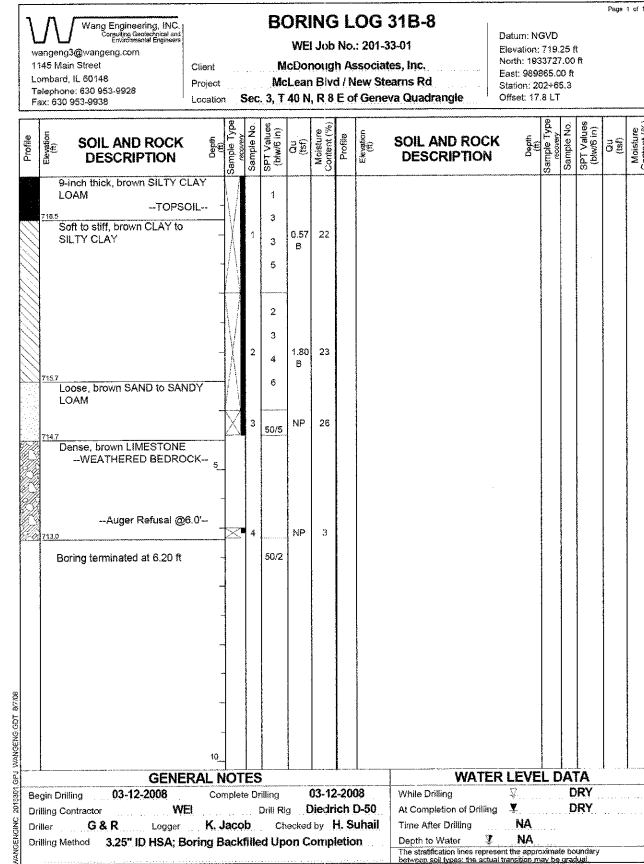
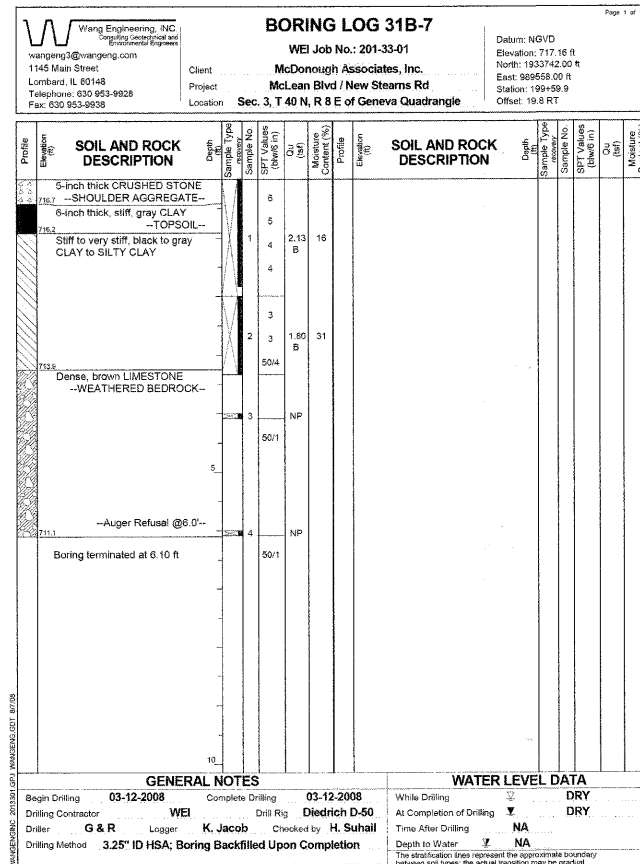
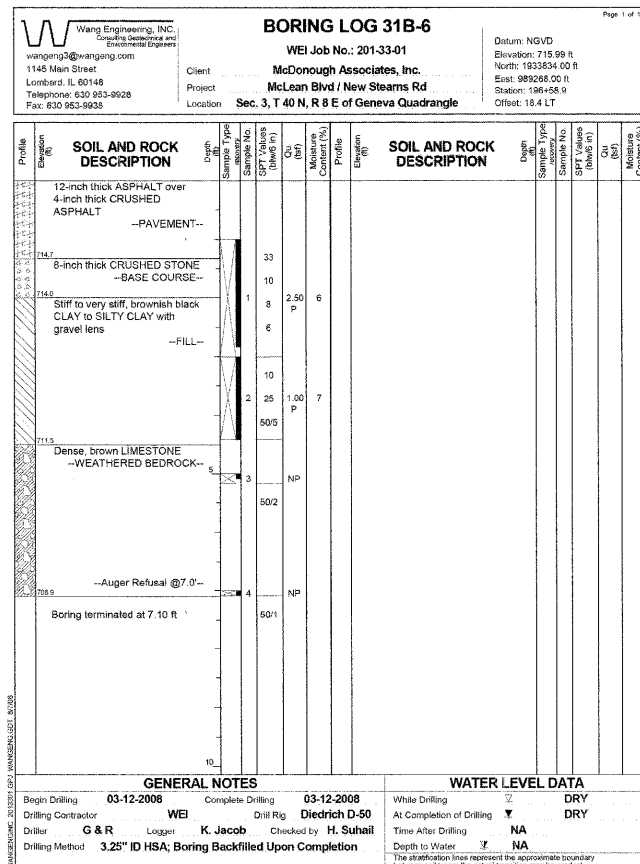
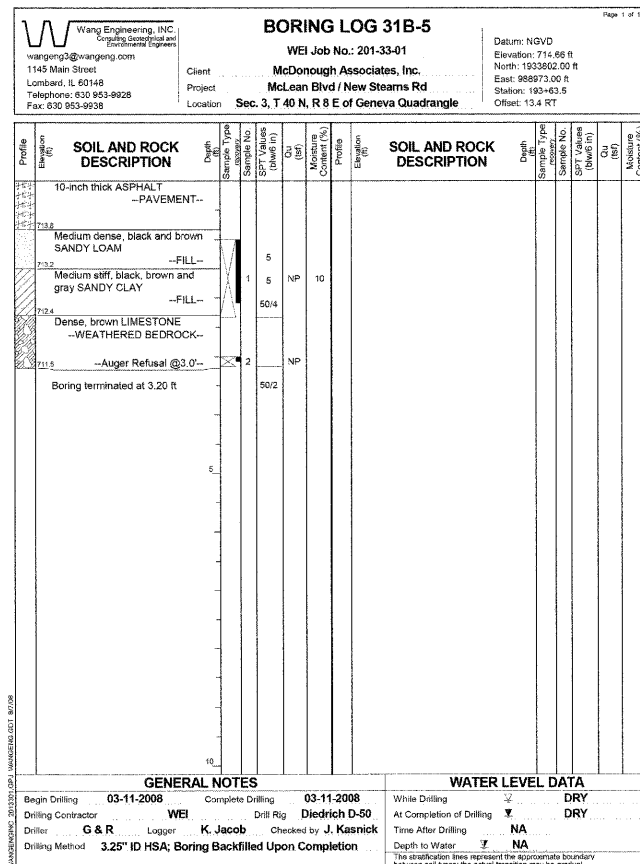
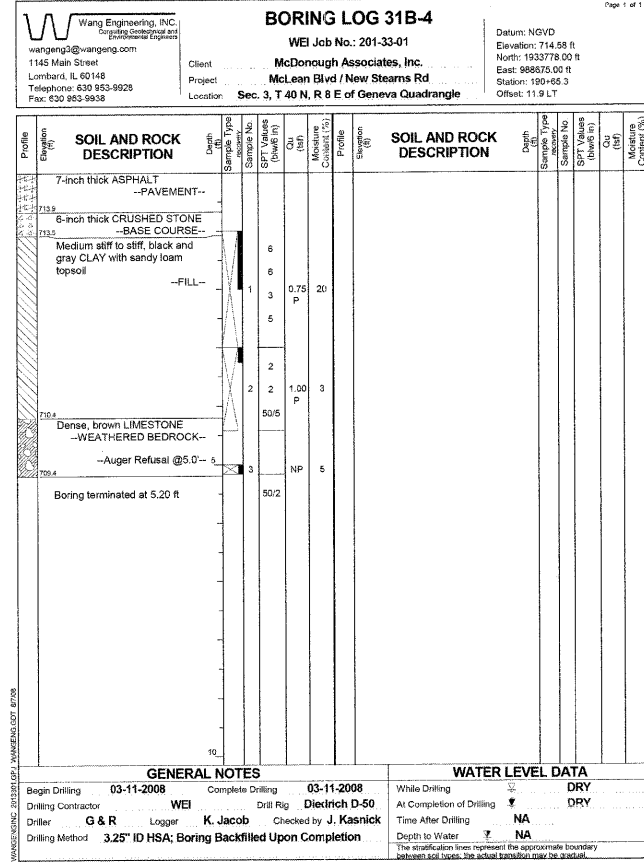
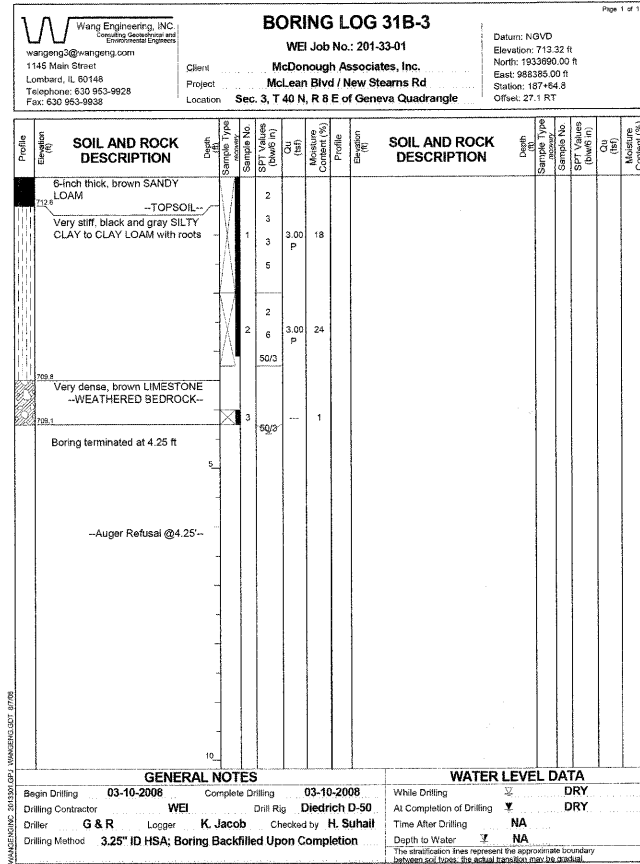
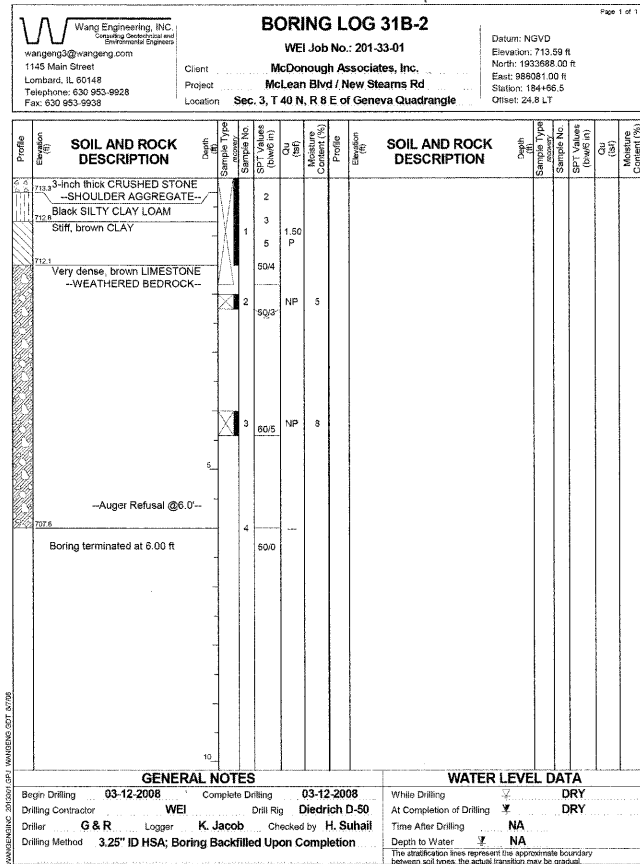
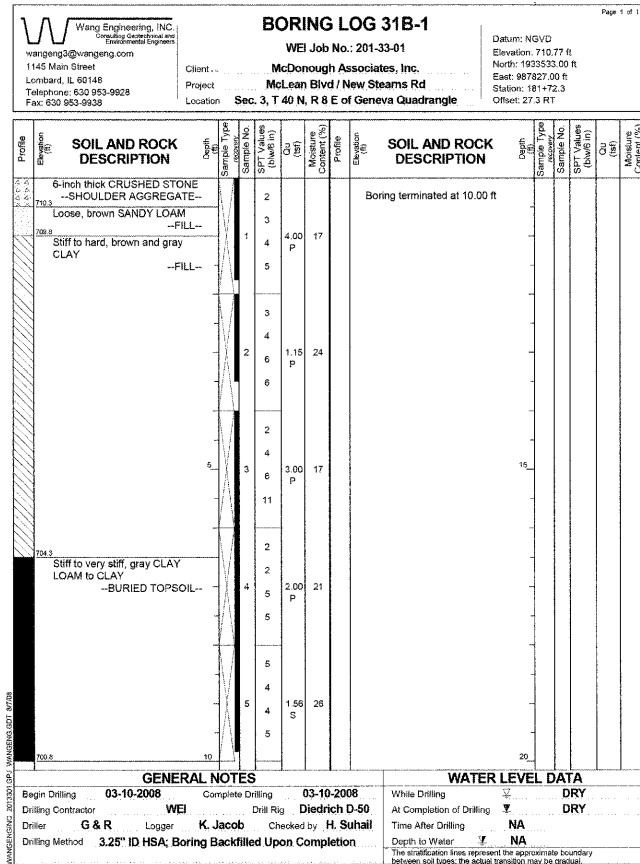
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CHECKED BY: MAK

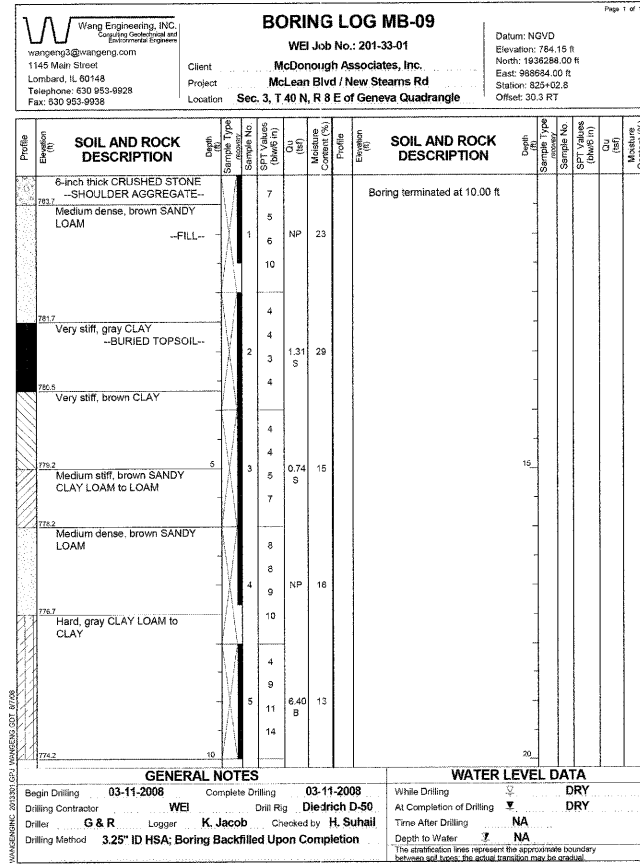
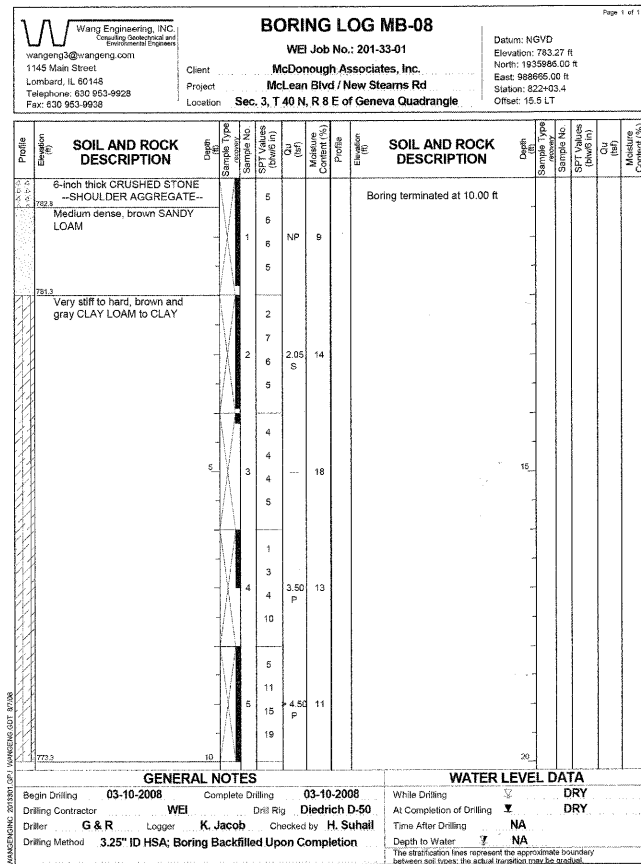
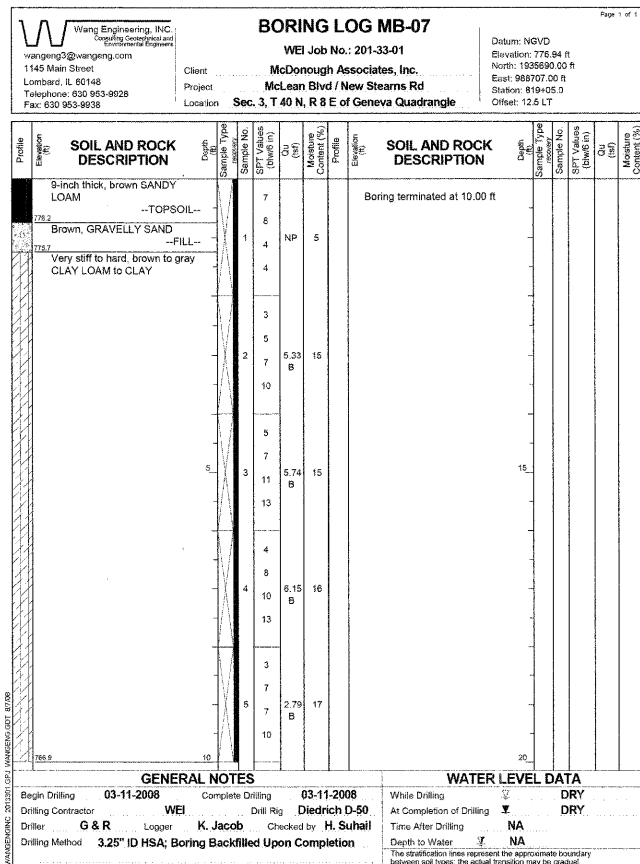
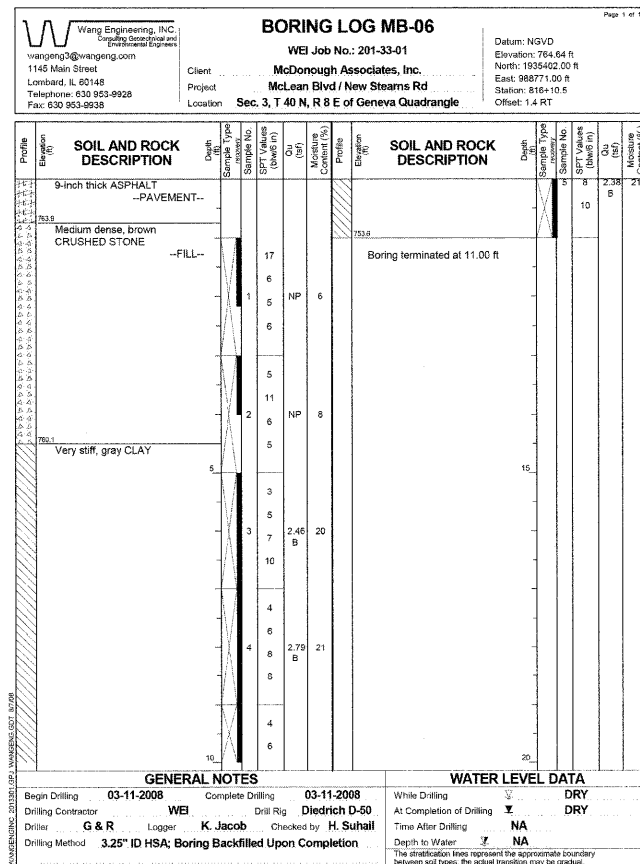
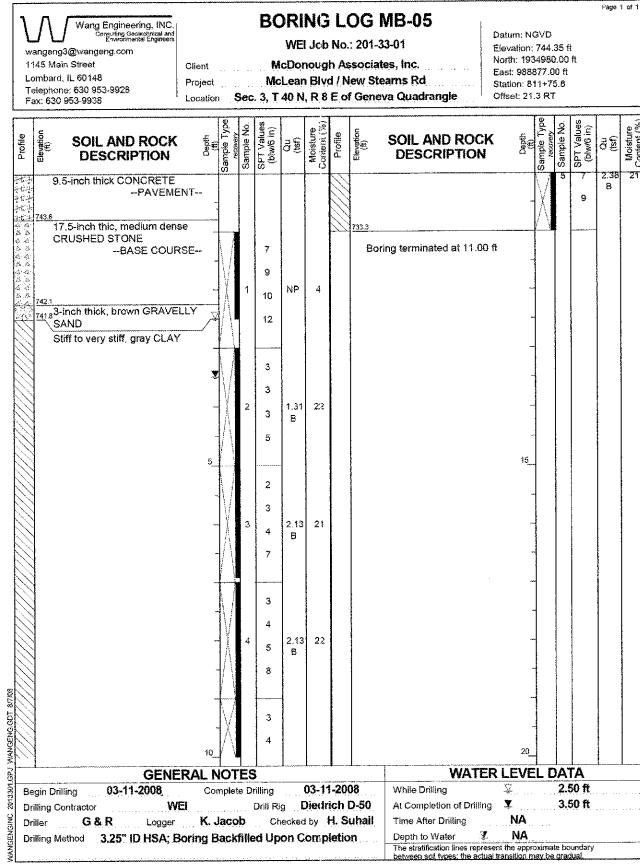
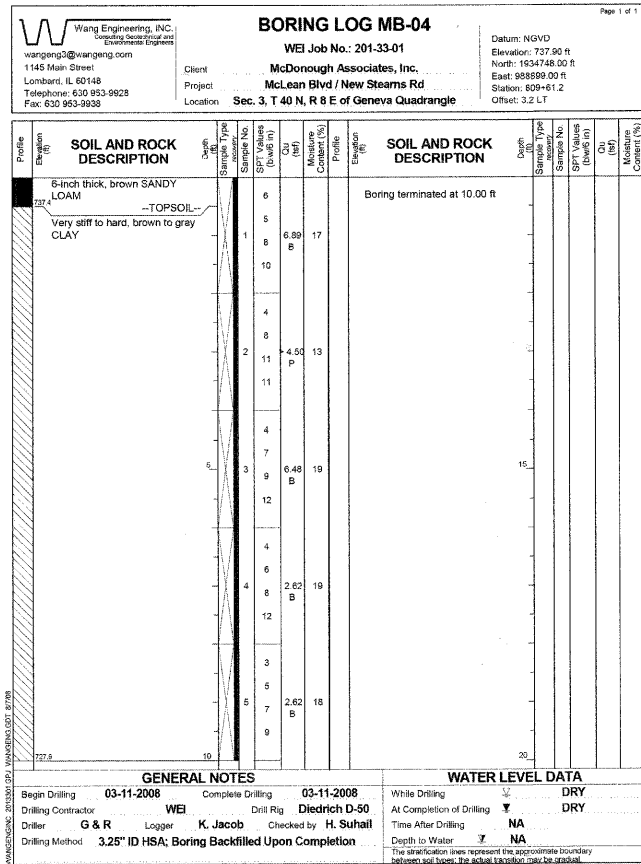
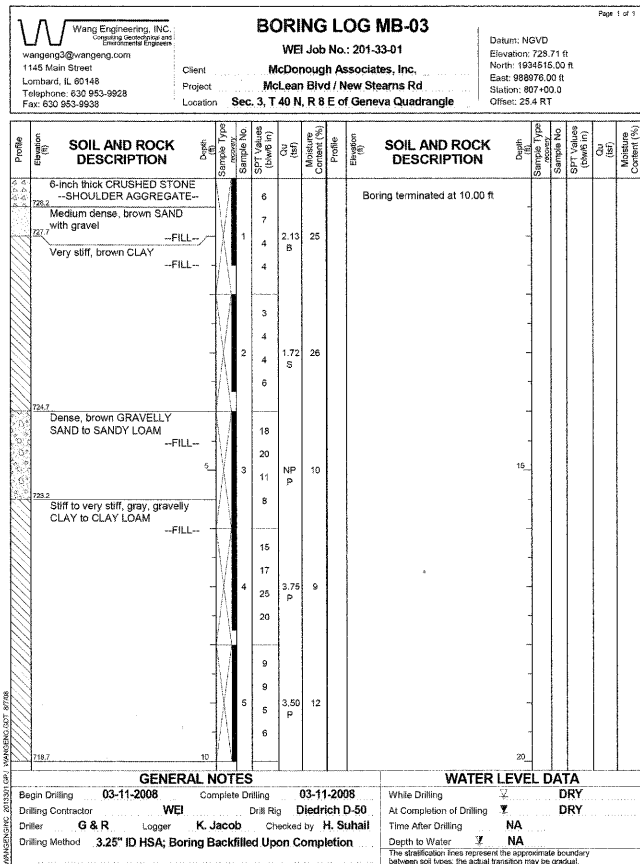
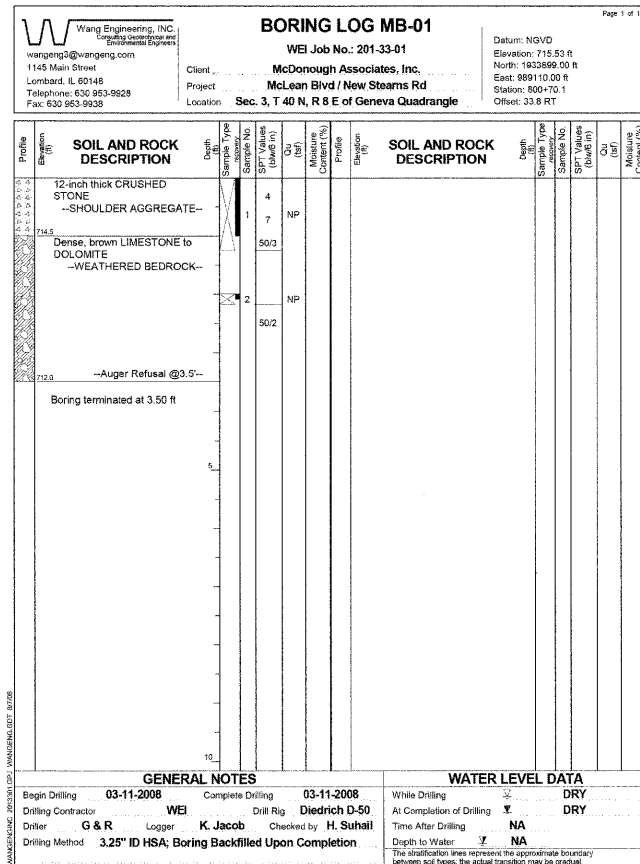


1145 N. Main Street  
Lombard, IL 60148  
www.wangeng.com

FOR MCDONOUGH ASSOCIATES, INC.

201-33-01





FILE NAME = I:\Dgn\Civil\Sheet\Boring Sheets\sb026.dgn	USER NAME = tthornton	DESIGNED -	REVISED -	<b>KANE COUNTY DIVISION OF TRANSPORTATION</b>	<b>NEW STEARNS ROAD - STAGE 2 SOIL BORING LOGS</b>	F.A.P R.T.E. = 361	SECTION = 06-00214-10-BR	COUNTY = KANE	TOTAL SHEETS = 219	SHEET NO. = 176
PLOT SCALE = 1:1	CHECKED -	REVISED -	SCALE: SHEET NO. OF SHEETS STA. TO STA.			FED. ROAD DIST. NO. 1	ILLINOIS FED. AID PROJECT			
PLOT DATE = 3/29/2009	DATE = 3/27/09	REVISED -	CONTRACT NO. 63073							

ILLINOIS DEPARTMENT OF TRANSPORTATION  
Testing Service Corporation  
STRUCTURE BORING LOG

Page 1 of 1  
Date Started 8/29/04  
Date Completed 8/29/04

ROUTE DESCRIPTION Box Culvert - IL Route 31  
SECT. STRUCT. NO. DRILLED BY TSC L-60,393  
COUNTY Kane LOCATION North End Culvert S. 3 - SW 1/4, TWP. 40 N., RNG. 8 E.

Boring No. ILMT-1  
Station 302+58  
Offset 60.00R LT  
Surface Elev. 717.95 ft

DEPTH (ft)	DESCRIPTION	B	L	W	Qu	W	Surface Water Elev.	Groundwater Elev.	Penetration Test	Blow Count	Notes
0											
8	FILL - Black and brown CLAY LOAM, some topsoil, trace gravel, moist A-4/A-5	8	13	1.9	17.7						
13											
10	FILL - Gray and brown Cobbles and Boulders, (rock fragments recovered), damp	10	13	1.9	9.2						
13											
8	Black CLAY (topsoil), very moist A-7-5	8	13	1.0	4.9						
13											
7	Broken and Fractured Rock, hard drilling	7									
10001*											
Auger Refusal at 9.0'											

Diaphragm D-120 Truck Rig (#282)  
CME Automatic Hammer  
4.5" (114 mm) SFA

SPT, (N) = Sum of last two blow values in sample. (Qu) B=Blow S=Shear P=Penetration Test Stations, Depths, Offset, and Elevations are in Feet

ILLINOIS DEPARTMENT OF TRANSPORTATION  
Testing Service Corporation  
STRUCTURE BORING LOG

Page 1 of 1  
Date Started 8/19/04  
Date Completed 8/19/04

ROUTE DESCRIPTION Box Culvert - IL Route 31  
SECT. STRUCT. NO. DRILLED BY TSC L-60,393  
COUNTY Kane LOCATION South End Culvert S. 3 - SW 1/4, TWP. 40 N., RNG. 8 E.

Boring No. ILMT-2  
Station 302+58  
Offset 37.00R RT  
Surface Elev. 713.16 ft

DEPTH (ft)	DESCRIPTION	B	L	W	Qu	W	Surface Water Elev.	Groundwater Elev.	Penetration Test	Blow Count	Notes
0											
7	FILL - Brown and black clayey Topsoil	7									
13											
8	FILL - Dark brown and brown CLAY LOAM, moist A-4/A-5	8			9.9	15.4					
13											
8	FILL - Dark brown CLAY, trace gravel, moist A-7-5	8			1.9	27.1					
13											
7	FILL - Black and brown CLAY, moist A-7-5	7			1.25	31.6					
13											
Refusal at 6.0'	on probable rock surface										
GeoProbe on ATV Carrier (#294)											
MC = Continuous Macro-core samples (1.5" diam.) using ATV GeoProbe rig											

Refusal at 6.0' on probable rock surface

GeoProbe on ATV Carrier (#294)

MC = Continuous Macro-core samples (1.5" diam.) using ATV GeoProbe rig

SPT, (N) = Sum of last two blow values in sample. (Qu) B=Blow S=Shear P=Penetration Test Stations, Depths, Offset, and Elevations are in Feet

ILLINOIS DEPARTMENT OF TRANSPORTATION  
Testing Service Corporation  
STRUCTURE BORING LOG

Page 1 of 1  
Date Started 8/19/04  
Date Completed 8/19/04

ROUTE DESCRIPTION Box Culvert - IL Route 31  
SECT. STRUCT. NO. DRILLED BY TSC L-60,393  
COUNTY Kane LOCATION S. 3 - SW 1/4, TWP. 40 N., RNG. 8 E.

Boring No. ILMT-3  
Station 302+43  
Offset 37.00R RT  
Surface Elev. 712.93 ft

DEPTH (ft)	DESCRIPTION	B	L	W	Qu	W	Surface Water Elev.	Groundwater Elev.	Penetration Test	Blow Count	Notes
0											
7	FILL - Black clayey Topsoil	7									
13											
3.0	FILL - Brown CLAY, moist A-6	3.0			17.2						
19.0											
3.0	FILL - Brown clayey SAND and GRAVEL with pieces of concrete, wet A-2-4	3.0			9.8						
27.2											
0.25	Soft black CLAY LOAM, very moist A-5	0.25			27.2						
27.2											
Refusal at 8.2'	on probable rock surface										
GeoProbe on ATV Carrier (#294)											
MC = Continuous Macro-core samples (1.5" diam.) using ATV GeoProbe rig											

Refusal at 8.2' on probable rock surface

GeoProbe on ATV Carrier (#294)

MC = Continuous Macro-core samples (1.5" diam.) using ATV GeoProbe rig

SPT, (N) = Sum of last two blow values in sample. (Qu) B=Blow S=Shear P=Penetration Test Stations, Depths, Offset, and Elevations are in Feet

ILLINOIS DEPARTMENT OF TRANSPORTATION  
Testing Service Corporation  
STRUCTURE BORING LOG

Page 1 of 1  
Date Started 8/29/04  
Date Completed 8/29/04

ROUTE DESCRIPTION Drainage Ditch Realignment - McLean Boulevard  
SECT. STRUCT. NO. DRILLED BY TSC L-60,393  
COUNTY Kane LOCATION S. 3 - SW 1/4, TWP. 40 N., RNG. 8 E.

Boring No. MCDT-1  
Station 853+10  
Offset 60.00R LT  
Surface Elev. 729.70 ft

DEPTH (ft)	DESCRIPTION	B	L	W	Qu	W	Surface Water Elev.	Groundwater Elev.	Penetration Test	Blow Count	Notes
0											
10	FILL - Crushed Limestone	10									
12											
13	FILL - Black SILTY CLAY (topsoil), moist A-7-5	13			21.3						
21.3											
Auger Refusal at 26.5'											
Diaphragm D-120 Truck Rig (#282) CME Automatic Hammer 4.5" (114 mm) SFA											
8	FILL - Brown clayey SAND, trace gravel, moist A-1/A-2	8			12.3						
12											
8	FILL - Brown silty SAND, little gravel, moist to very moist A-1-b	8			10.8						
12											
4	FILL - Brown and gray CLAY, trace to little gravel, moist A-5	4			21.2						
15											
0.4		0.4			26.7						
15											
0.5		0.5			21.0						
15											
0.4		0.4			27.0						
15											
0.6		0.6			26.6						
15											
4		4			22.4						
15											
0.5		0.5			25.3						
15											

Diaphragm D-120 Truck Rig (#282)  
CME Automatic Hammer

Auger Refusal at 4.5'

SPT, (N) = Sum of last two blow values in sample. (Qu) B=Blow S=Shear P=Penetration Test Stations, Depths, Offset, and Elevations are in Feet

ILLINOIS DEPARTMENT OF TRANSPORTATION  
Testing Service Corporation  
STRUCTURE BORING LOG

Page 1 of 1  
Date Started 8/29/04  
Date Completed 8/29/04

ROUTE DESCRIPTION Drainage Ditch Realignment - McLean Boulevard  
SECT. STRUCT. NO. DRILLED BY TSC L-60,393  
COUNTY Kane LOCATION S. 3 - SW 1/4, TWP. 40 N., RNG. 8 E.

Boring No. MCDT-2  
Station 852+52  
Offset 57.00R LT  
Surface Elev. 720.22 ft

DEPTH (ft)	DESCRIPTION	B	L	W	Qu	W	Surface Water Elev.	Groundwater Elev.	Penetration Test	Blow Count	Notes
0											
7	FILL - Crushed Limestone	7									
17.2											
2.8	Black CLAY LOAM (topsoil), moist A-6	2.8			17.2						
17.2											
Diaphragm D-120 Truck Rig (#282) CME Automatic Hammer											
7	Fractured and Broken Rock, hard drilling	7									
10002*											
Auger Refusal at 4.5'											

Diaphragm D-120 Truck Rig (#282)  
CME Automatic Hammer

Auger Refusal at 4.5'

SPT, (N) = Sum of last two blow values in sample. (Qu) B=Blow S=Shear P=Penetration Test Stations, Depths, Offset, and Elevations are in Feet

ILLINOIS DEPARTMENT OF TRANSPORTATION  
Testing Service Corporation  
STRUCTURE BORING LOG

Page 1 of 1  
Date Started 8/29/04  
Date Completed 8/29/04

ROUTE DESCRIPTION Drainage Ditch Realignment - McLean Boulevard  
SECT. STRUCT. NO. DRILLED BY TSC L-60,393  
COUNTY Kane LOCATION S. 3 - SW 1/4, TWP. 40 N., RNG. 8 E.

Boring No. MCDT-3  
Station 851+20  
Offset 64.00R LT  
Surface Elev. 719.33 ft

DEPTH (ft)	DESCRIPTION	B	L	W	Qu	W	Surface Water Elev.	Groundwater Elev.	Penetration Test	Blow Count	Notes
0											
7	FILL - Black clayey Topsoil	7									
15.3											
10	FILL - Brown CLAY LOAM, some black clay, trace gravel and brooks, moist A-6	10			15.3						
15.3											
Diaphragm D-120 Truck Rig (#282) CME Automatic Hammer											
7	Fractured and Broken Rock, hard drilling	7			8.3						
5003*											
Auger Refusal at 4.5'											

Diaphragm D-120 Truck Rig (#282)  
CME Automatic Hammer

Auger Refusal at 4.5'

SPT, (N) = Sum of last two blow values in sample. (Qu) B=Blow S=Shear P=Penetration Test Stations, Depths, Offset, and Elevations are in Feet

FILE NAME = [D:\Dgn\civil\Sheet\Boring Sheets\sb027.dgn	USER NAME = thorton	DESIGNED -	REVISED -	<b>KANE COUNTY DIVISION OF TRANSPORTATION</b>	<b>NEW STEARNS ROAD - STAGE 2 SOIL BORING LOGS</b>	F.A.P. RTE. 361	SECTION 06-00214-10-BR	COUNTY KANE	TOTAL SHEETS 219	SHEET NO. 177
PLOT SCALE = 1/1"	CHECKED -	REVISED -	SCALE:			SHEET NO. OF SHEETS   STA. TO STA.	FED. ROAD DIST. NO. 1	ILLINOIS FED. AID PROJECT	CONTRACT NO. 63073	
PLOT DATE = 3/29/2009	DATE = 3/27/09	REVISED -								

ILLINOIS DEPARTMENT OF TRANSPORTATION  
Testing Service Corporation  
STRUCTURE BORING LOG

Page 1 of 1  
Date Started 8/24/04  
Date Completed 8/24/04

ROUTE DESCRIPTION Box Culvert & Ditch - McLean Boulevard  
SECT. STRUCT. NO. DRILLED BY TSC L-60,393  
COUNTY Kane LOCATION S. 3 - SW 1/4, TWP. 40 N, RNG. 8 E

Boring No.	Station	Offset	Surface Elev.	D	B	L	O	W	S	Qu	W	Surface Water Elev.	D	B	L	O	W	S	Qu	W
MCSR-1	803-82	83.00R LT	721.49	H	T	P	O	W	S	tsf	%	when drilling	H	T	P	O	W	S	tsf	%
FILL - Crushed Limestone 726.78																				
FILL - Gray clayey SAND and GRAVEL, occasional Cobbles, moist A-1 718.45																				
FILL - Gray and brown CLAY and CLAY LOAM, trace gravel, moist A-6 715.49																				
FILL - Black CLAY LOAM, trace to little gravel, moist A-6 715.99																				
FILL - Soft black SANDY LOAM and CLAY LOAM, trace to little gravel, very moist A-6 705.49																				
FILL - Brown and gray CLAY and CLAY LOAM, trace to little gravel, moist to very moist A-6																				

SPT, (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test Stations, Depths, Offset, and Elevations are in Feet

ILLINOIS DEPARTMENT OF TRANSPORTATION  
Testing Service Corporation  
STRUCTURE BORING LOG

Page 1 of 1  
Date Started 8/24/04  
Date Completed 8/24/04

ROUTE DESCRIPTION Box Culvert & Ditch - McLean Boulevard  
SECT. STRUCT. NO. DRILLED BY TSC L-60,393  
COUNTY Kane LOCATION S. 3 - SW 1/4, TWP. 40 N, RNG. 8 E

Boring No.	Station	Offset	Surface Elev.	D	B	L	O	W	S	Qu	W	Surface Water Elev.	D	B	L	O	W	S	Qu	W
MCSR-2	804-12	14.00R LT	722.41	H	T	P	O	W	S	tsf	%	when drilling	H	T	P	O	W	S	tsf	%
FILL - Crushed Limestone 721.81																				
FILL - Brown and dark gray CLAY, moist A-6 718.41																				
FILL - Brown and black SANDY LOAM, little gravel, moist A-2-4/A-4 716.41																				
Fractured Rock, hard drilling 716.91																				
Auger Refusal at 6.5'																				

SPT, (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test Stations, Depths, Offset, and Elevations are in Feet

ILLINOIS DEPARTMENT OF TRANSPORTATION  
Testing Service Corporation  
STRUCTURE BORING LOG

Page 1 of 1  
Date Started 8/24/04  
Date Completed 8/24/04

ROUTE DESCRIPTION Box Culvert & Ditch - McLean Boulevard  
SECT. STRUCT. NO. DRILLED BY TSC L-60,393  
COUNTY Kane LOCATION S. 3 - SW 1/4, TWP. 40 N, RNG. 8 E

Boring No.	Station	Offset	Surface Elev.	D	B	L	O	W	S	Qu	W	Surface Water Elev.	D	B	L	O	W	S	Qu	W
MCSR-3	804-46	31.00R RT	723.05	H	T	P	O	W	S	tsf	%	when drilling	H	T	P	O	W	S	tsf	%
FILL - Crushed Limestone 722.54																				
FILL - Brown and dark brown SANDY LOAM, little gravel, moist A-2-4 720.05																				
FILL - Brown and black clayey SAND with gravel, moist A-1-b 717.55																				
Fractured Rock, hard drilling 716.55																				
Auger Refusal at 6.5'																				

SPT, (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test Stations, Depths, Offset, and Elevations are in Feet

ILLINOIS DEPARTMENT OF TRANSPORTATION  
Testing Service Corporation  
STRUCTURE BORING LOG

Page 1 of 1  
Date Started 8/19/04  
Date Completed 8/19/04

ROUTE DESCRIPTION Box Culvert & Ditch - McLean Boulevard  
SECT. STRUCT. NO. DRILLED BY TSC L-60,393  
COUNTY Kane LOCATION S. 3 - SW 1/4, TWP. 40 N, RNG. 8 E

Boring No.	Station	Offset	Surface Elev.	D	B	L	O	W	S	Qu	W	Surface Water Elev.	D	B	L	O	W	S	Qu	W
MCSR-4	803-16	43.70R RT	721.13	H	T	P	O	W	S	tsf	%	when drilling	H	T	P	O	W	S	tsf	%
FILL - Black clayey Topsoil 729.45																				
FILL - Brown and gray CLAY LOAM, trace organic, moist A-6/A-6 719.15																				
Possible fractured bedrock surface Refusal at 2.0'																				
GeoProbe on ATV Carrier (#294)																				
MC = Continuous Macro-core samples (1.5" diam.) using ATV GeoProbe rig																				

SPT, (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test Stations, Depths, Offset, and Elevations are in Feet

ILLINOIS DEPARTMENT OF TRANSPORTATION  
Testing Service Corporation  
STRUCTURE BORING LOG

Page 1 of 1  
Date Started 8/19/04  
Date Completed 8/19/04

ROUTE DESCRIPTION Box Culvert & Ditch - McLean Boulevard  
SECT. STRUCT. NO. DRILLED BY TSC L-60,393  
COUNTY Kane LOCATION S. 3 - SW 1/4, TWP. 40 N, RNG. 8 E

Boring No.	Station	Offset	Surface Elev.	D	B	L	O	W	S	Qu	W	Surface Water Elev.	D	B	L	O	W	S	Qu	W
MCSR-5	801-97	40.80R RT	718.28	H	T	P	O	W	S	tsf	%	when drilling	H	T	P	O	W	S	tsf	%
FILL - Brown CLAY LOAM, trace gravel, moist A-2-4 717.28																				
FILL - Brown clayey SAND, little gravel, moist A-2-4 716.78																				
Possible fractured bedrock surface Refusal at 1.5'																				
GeoProbe on ATV Carrier (#294)																				
MC = Continuous Macro-core samples (1.5" diam.) using ATV GeoProbe rig																				

SPT, (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test Stations, Depths, Offset, and Elevations are in Feet

ILLINOIS DEPARTMENT OF TRANSPORTATION  
Testing Service Corporation  
STRUCTURE BORING LOG

Page 1 of 1  
Date Started 8/19/04  
Date Completed 8/19/04

ROUTE DESCRIPTION Box Culvert & Ditch - McLean Boulevard  
SECT. STRUCT. NO. DRILLED BY TSC L-60,393  
COUNTY Kane LOCATION S. 3 - SW 1/4, TWP. 40 N, RNG. 8 E

Boring No.	Station	Offset	Surface Elev.	D	B	L	O	W	S	Qu	W	Surface Water Elev.	D	B	L	O	W	S	Qu	W
MCSR-6	801-55	26.70R LT	718.42	H	T	P	O	W	S	tsf	%	when drilling	H	T	P	O	W	S	tsf	%
FILL - Black clayey Topsoil 716.42																				
FILL - Brown clayey SAND and GRAVEL, moist A-2-4 716.92																				
Possible fractured bedrock surface Refusal at 1.5'																				
GeoProbe on ATV Carrier (#294)																				
MC = Continuous Macro-core samples (1.5" diam.) using ATV GeoProbe rig																				

SPT, (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test Stations, Depths, Offset, and Elevations are in Feet

W Wang Engineering, Inc. Client: McDonough Associates, Inc.  
1145 Main Street Lombard, IL 60148  
Telephone: 630-953-9928 Fax: 630-953-9928

**BORING LOG MDB-1**  
WEI Job No.: 201-33-01  
Location: Sec. 3, T 40 N, R 8 E of Geneva Quadrangle

Datum: NGVD  
Elevation: 716.94 ft  
North: 1933915.05 ft  
East: 369355.24 ft  
Station: 716.94  
Offset:

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/ft)	Moisture Content (%)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/ft)	Moisture Content (%)
716.94	5-inch thick, brown SANDY CLAY LOAM	0				TOPSOIL	0			
716.78	Very dense, brown and gray GRAVELLY SAND	16				FILL	16			
716.78	SMt, brown and gray CLAY, trace sand and gravel	3				FILL	3			
716.42	Very dense, brown GRAVEL with sand	12					12			
709.00	Hard, brown, moderately weathered, intracrystalline DOLOMITIC LIMESTONE with some vuggy porosity	10				C O R E	10			

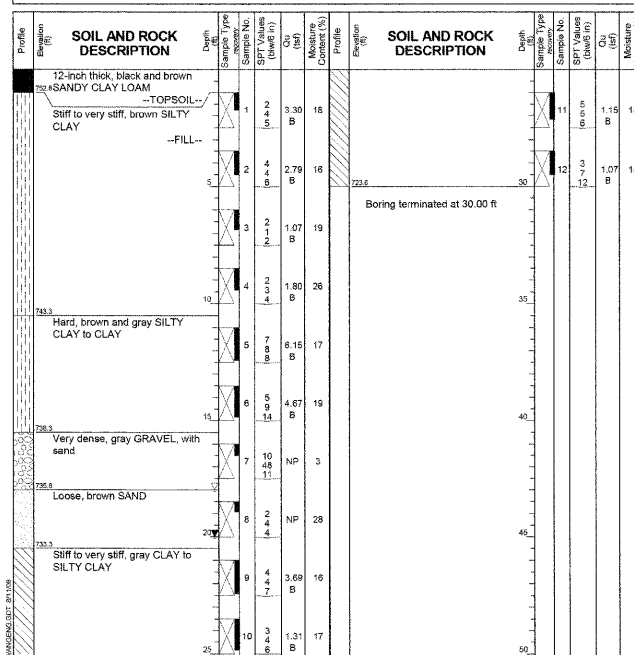
**GENERAL NOTES**  
Begin Drilling 07-25-2008 Complete Drilling 07-25-2008  
Drilling Contractor WTS Drill Rig D-120 ATV  
Driker K & J Logger F.B. Checked by W. Wang  
Drilling Method 4.25" IDA HSA

**WATER LEVEL DATA**  
White Drilling  DRY  
At Completion of Drilling  DRY  
Time After Drilling NA  
Depth to Water NA

**Wang Engineering, Inc.**  
 wangeng3@wangeng.com  
 1145 Main Street  
 Lombard, IL 60148  
 Telephone: 630 953-9928  
 Fax: 630 953-9938

**BORING LOG RR-1**  
 WEI Job No.: 201-33-01  
 Client: McDonough Associates, Inc.  
 Project: McLean Blvd / New Stearns Rd  
 Location: Sec. 3, T 40 N, R 8 E of Geneva Quadrangle

Datum: NGVD  
 Elevation: 753.80 ft  
 North: 1934972.70 ft  
 East: 988203.41 ft  
 Station: 20+91.7  
 Offset: 0.6 RT



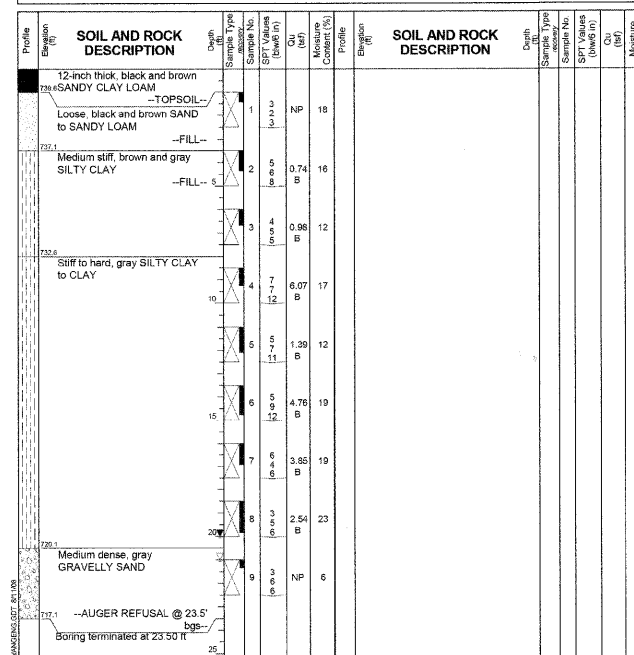
**GENERAL NOTES**  
 Begin Drilling: 07-30-2008  
 Drilling Contractor: TSC  
 Driller: J & J  
 Drilling Method: 2.5" ID HSA; Boring Backfilled Upon Completion

**WATER LEVEL DATA**  
 Complete Drilling: 07-30-2008  
 Drill Rig: CME 55 ATV  
 Checked by: W. Wang  
 At Completion of Drilling: 18.00 ft  
 Time After Drilling: NA  
 Depth to Water: NA

**Wang Engineering, Inc.**  
 wangeng3@wangeng.com  
 1145 Main Street  
 Lombard, IL 60148  
 Telephone: 630 953-9928  
 Fax: 630 953-9938

**BORING LOG RR-2**  
 WEI Job No.: 201-33-01  
 Client: McDonough Associates, Inc.  
 Project: McLean Blvd / New Stearns Rd  
 Location: Sec. 3, T 40 N, R 8 E of Geneva Quadrangle

Datum: NGVD  
 Elevation: 740.80 ft  
 North: 1934970.97 ft  
 East: 988324.03 ft  
 Station: 19+24.2  
 Offset: 47.8 RT



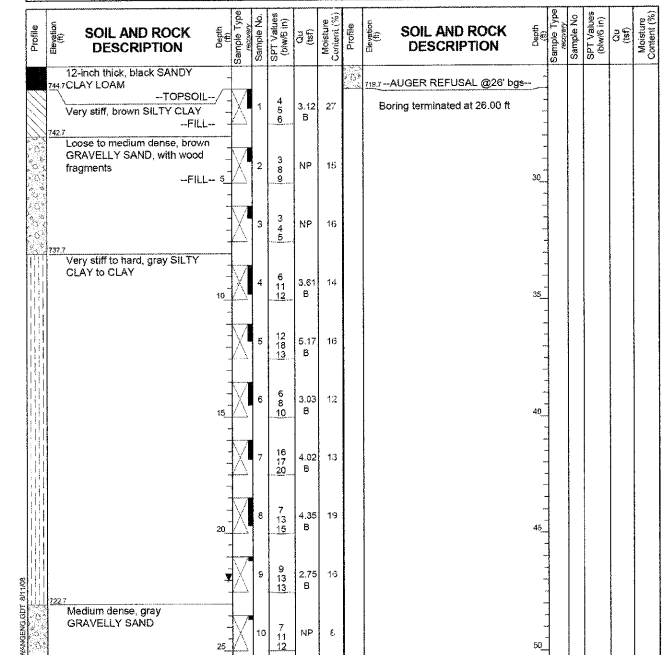
**GENERAL NOTES**  
 Begin Drilling: 07-30-2008  
 Drilling Contractor: TSC  
 Driller: J & J  
 Drilling Method: 2.5" ID HSA; Boring Backfilled Upon Completion

**WATER LEVEL DATA**  
 Complete Drilling: 07-30-2008  
 Drill Rig: CME 55 ATV  
 Checked by: W. Wang  
 At Completion of Drilling: 21.00 ft  
 Time After Drilling: NA  
 Depth to Water: NA

**Wang Engineering, Inc.**  
 wangeng3@wangeng.com  
 1145 Main Street  
 Lombard, IL 60148  
 Telephone: 630 953-9928  
 Fax: 630 953-9938

**BORING LOG RR-3**  
 WEI Job No.: 201-33-01  
 Client: McDonough Associates, Inc.  
 Project: McLean Blvd / New Stearns Rd  
 Location: Sec. 3, T 40 N, R 8 E of Geneva Quadrangle

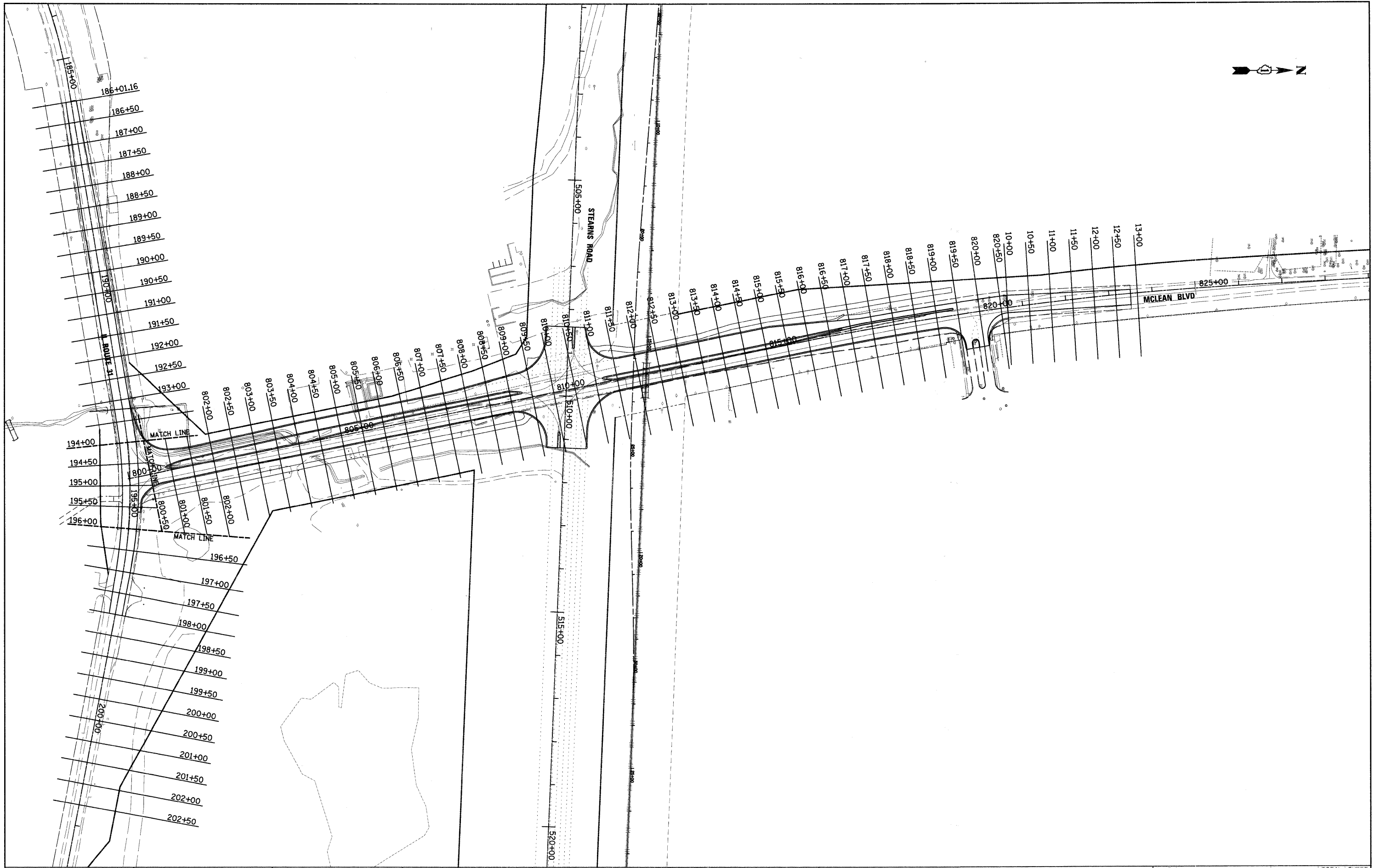
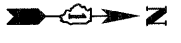
Datum: NGVD  
 Elevation: 745.70 ft  
 North: 1934965.80 ft  
 East: 988567.82 ft  
 Station: 20+58.0  
 Offset: 34.2 RT



**GENERAL NOTES**  
 Begin Drilling: 07-30-2008  
 Drilling Contractor: TSC  
 Driller: J & J  
 Drilling Method: 2.5" ID HSA; Boring Backfilled Upon Completion

**WATER LEVEL DATA**  
 Complete Drilling: 07-30-2008  
 Drill Rig: CME 55 ATV  
 Checked by: W. Wang  
 At Completion of Drilling: 22.00 ft  
 Time After Drilling: NA  
 Depth to Water: NA

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PLOT SCALE = 1:1	CHECKED -	REVISED -	REVISED -		SCALE:	SHEET NO. OF SHEETS	STA. TO STA.	FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT	CONTRACT NO. 63073		
PLOT DATE = 3/29/2009	DATE = 3/27/09	REVISED -	REVISED -										



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USER NAME = tthornton  
 PLOT SCALE = 1:100  
 PLOT DATE = 3/29/2009

DESIGNED -  
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 CHECKED -  
 DATE = 3/27/09

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**KANE COUNTY  
 DIVISION OF TRANSPORTATION**

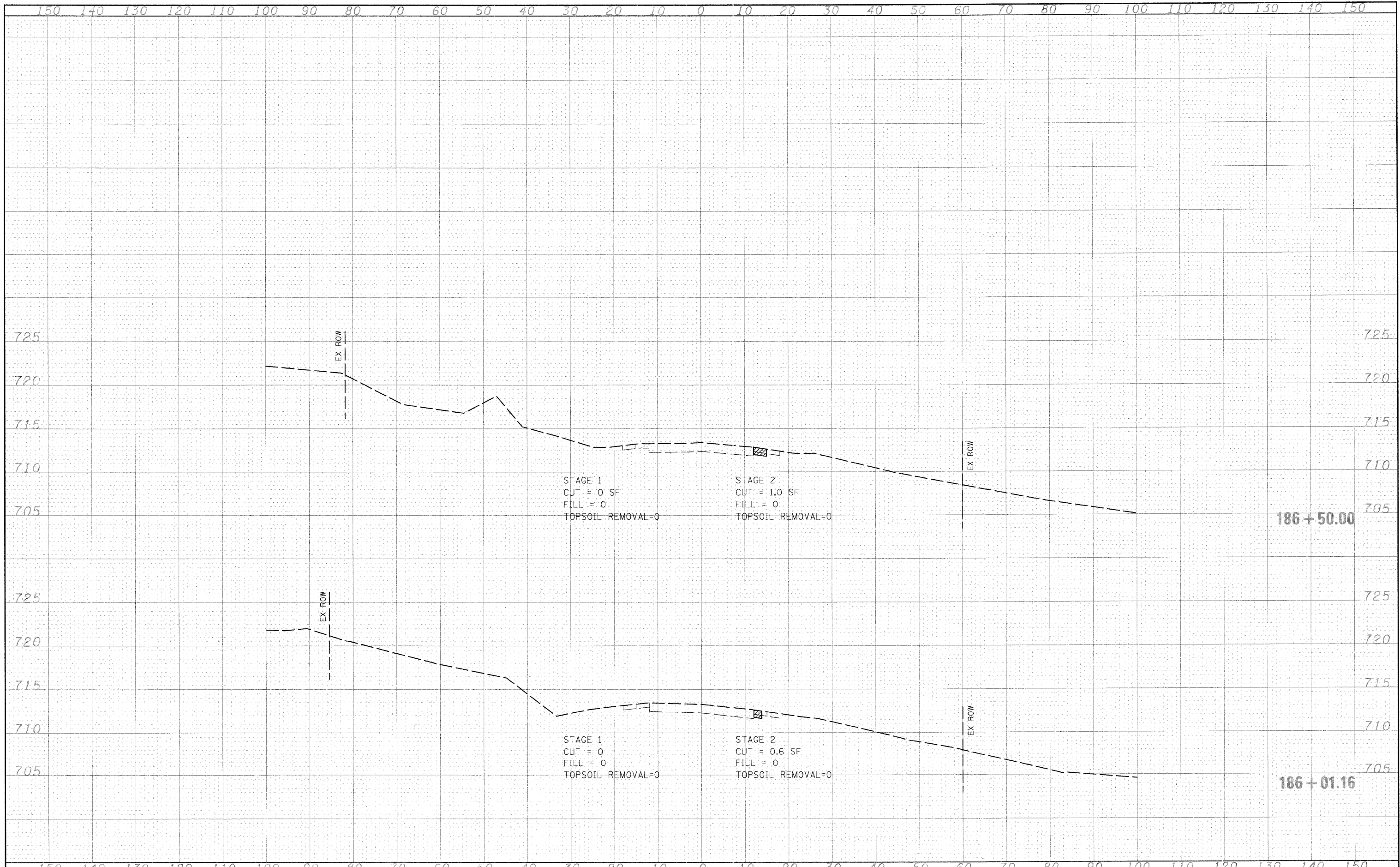
**CROSS SECTION KEY MAP**  
 SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
361	06-00214-10-BR	KANE	219	180
				CONTRACT NO. 63073
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



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FINISHED	
SURVEYED	
PLOTTED	
NOTE BOOK	
AREAS CHECKED	

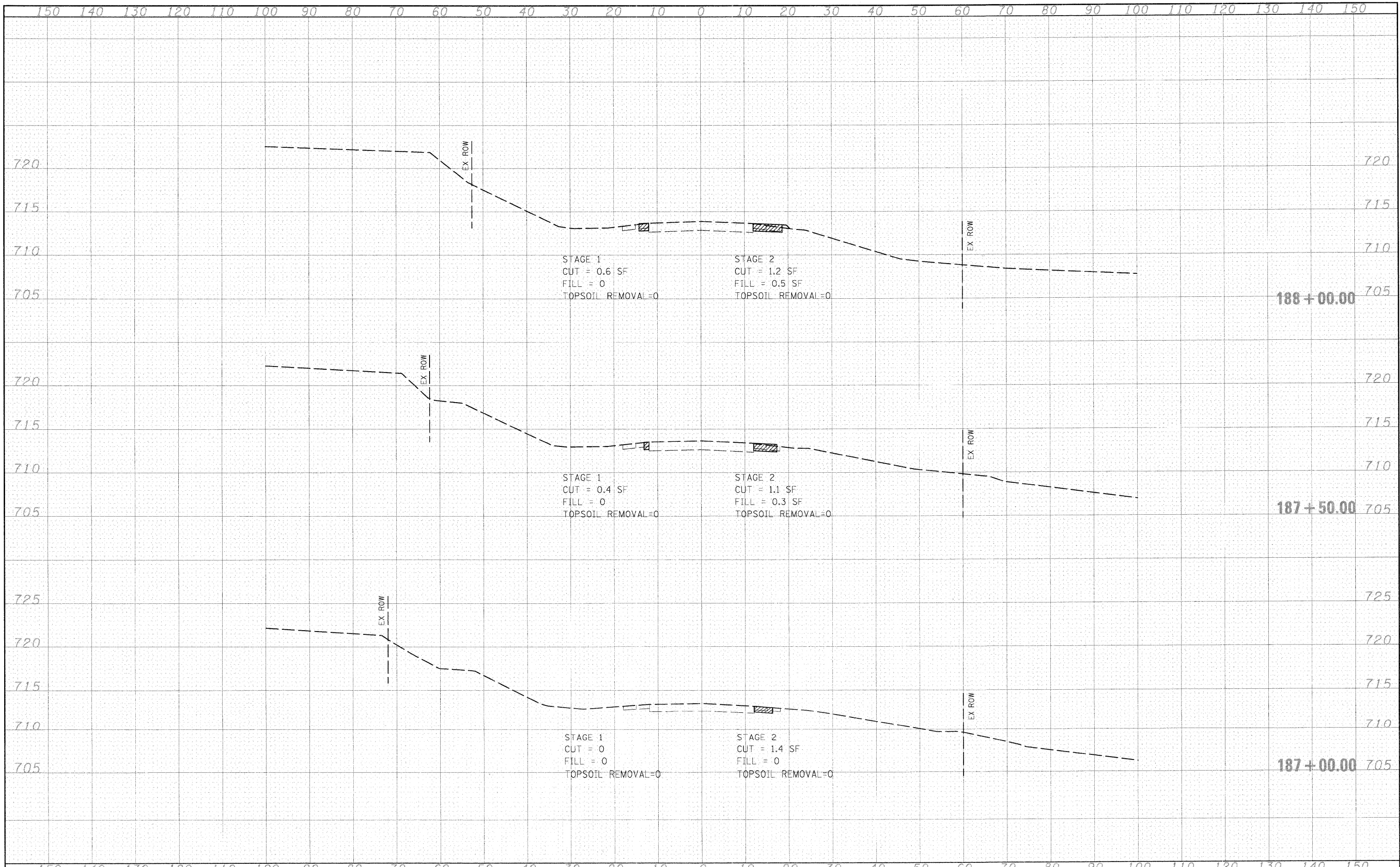
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BY	
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SURVEY	
PLOTTED	
NOTE BOOK	
AREAS CHECKED	



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PLOT SCALE = 1:10	CHECKED -	REVISED -	CONTRACT NO. 63073							
PLOT DATE = 3/27/2009	DATE = 3/27/09	REVISED -	SCALE: 1"=10'H; 1"=5'V SHEET NO. 1 OF 6 SHEETS STA. 186+00.00 TO STA. 186+50.00							
						FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

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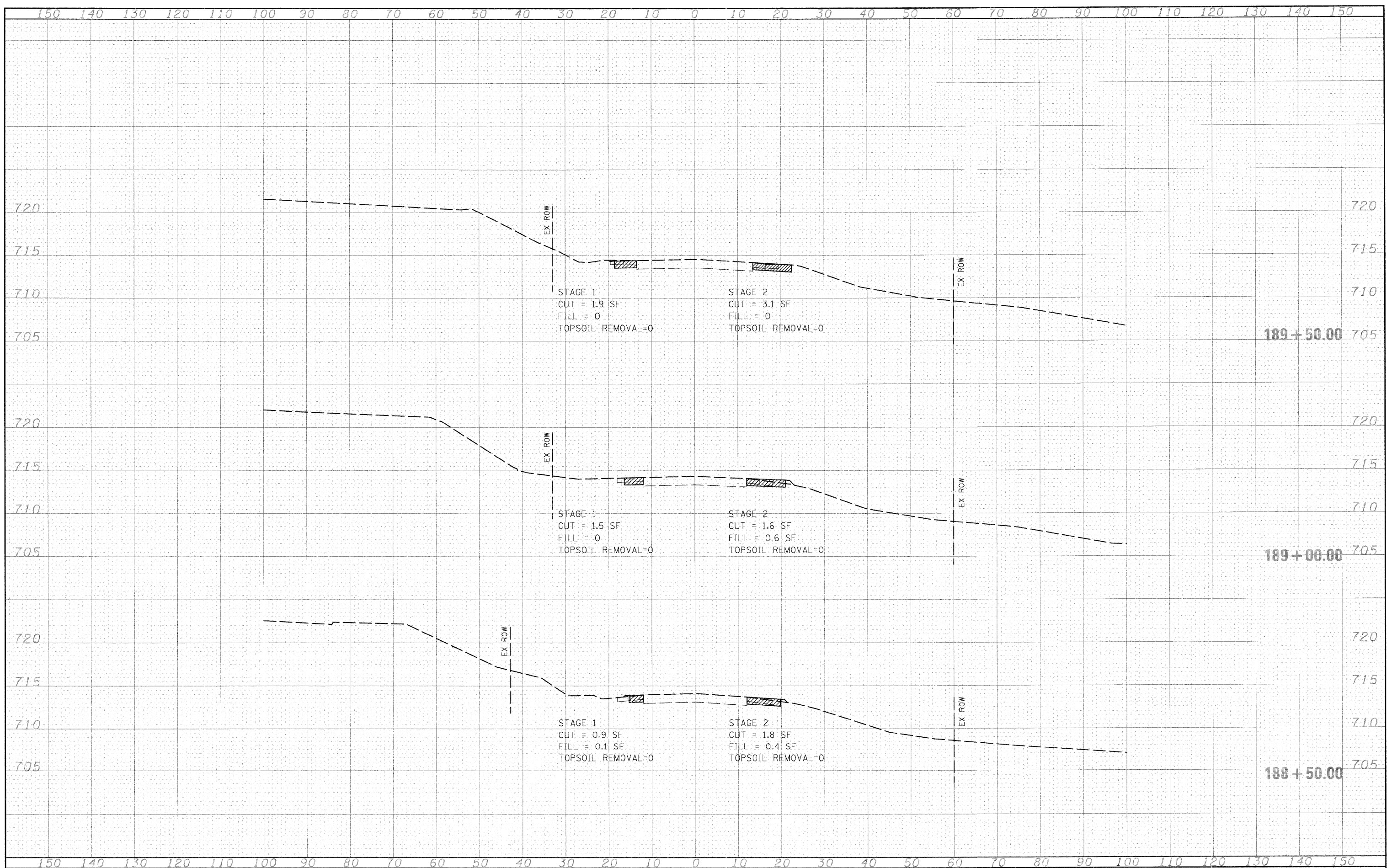
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PLOT SCALE = 1:10	CHECKED -	REVISED -	SCALE: 1"=10'H; 1"=5'V SHEET NO. OF 6 SHEETS STA. 187+00.00 TO STA. 188+00.00			CONTRACT NO. 63073				
PLOT DATE = 3/29/2009	DATE = 3/27/09	REVISED -	FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT							
		REVISED -								

BY	DATE
SURVEYED	PLOTTED
NOTE BOOK	TEMP. A/E
NO.	AREAS CHECKED

BY	DATE
SURVEYED	PLOTTED
NOTE BOOK	TEMP. A/E
NO.	AREAS CHECKED



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PLOT SCALE = 1:10  
PLOT DATE = 3/29/2009

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DATE = 3/27/09

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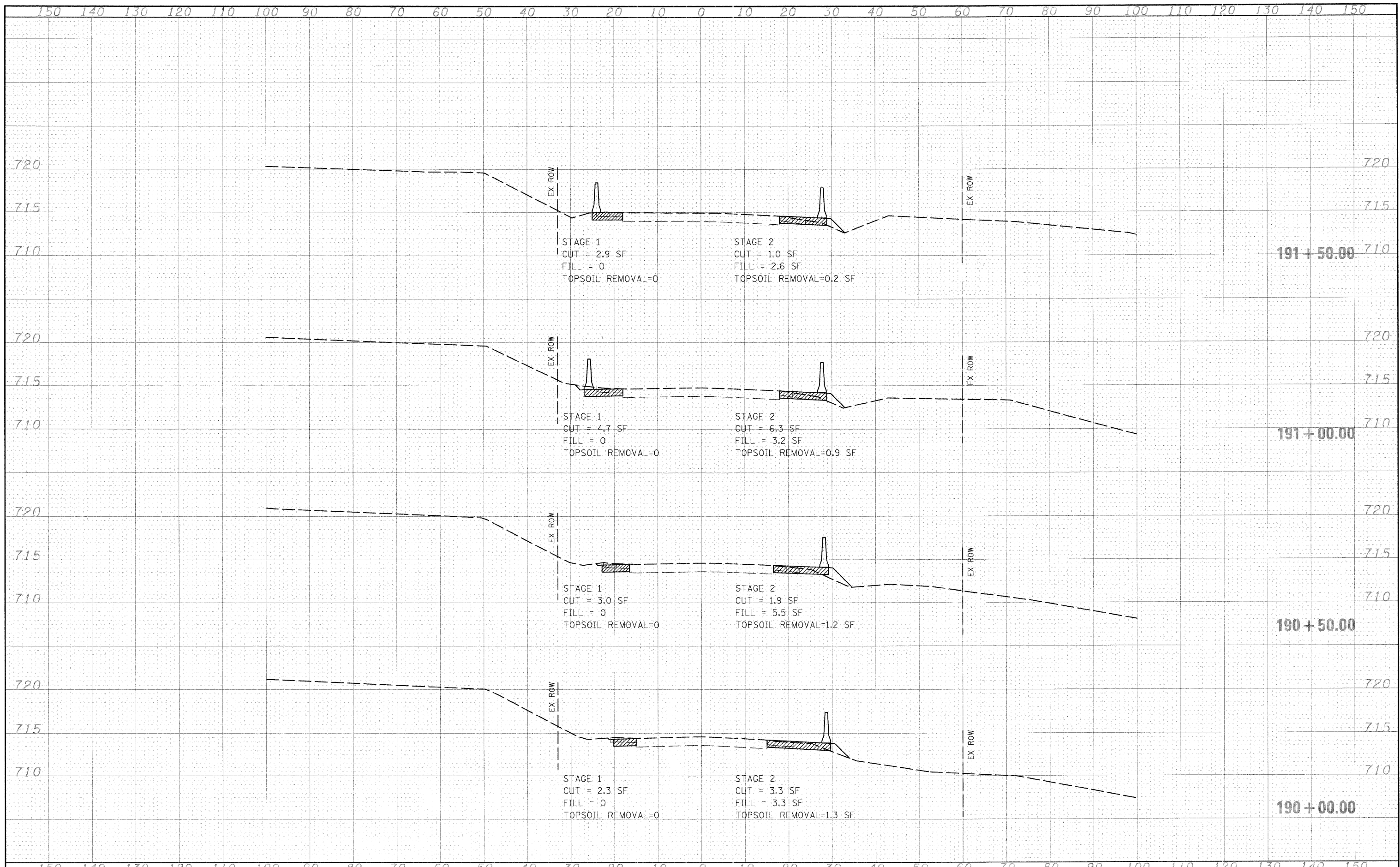
**KANE COUNTY  
DEPARTMENT OF TRANSPORTATION**

**ILLINOIS ROUTE 31 CROSS SECTIONS - TEMPORARY PAVEMENT**  
SCALE: 1"=10'H; 1"=5'V SHEET NO. 3 OF 6 SHEETS STA. 188+50.00 TO STA. 189+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
361	06-00214-10-BR	KANE	219	183
CONTRACT NO. 63073			ILLINOIS FED. AID PROJECT	

DATE: \_\_\_\_\_  
 BY: \_\_\_\_\_  
 SURVEYED \_\_\_\_\_  
 PLOTTED \_\_\_\_\_  
 NOTE BOOK \_\_\_\_\_  
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 AS CHECKED \_\_\_\_\_  
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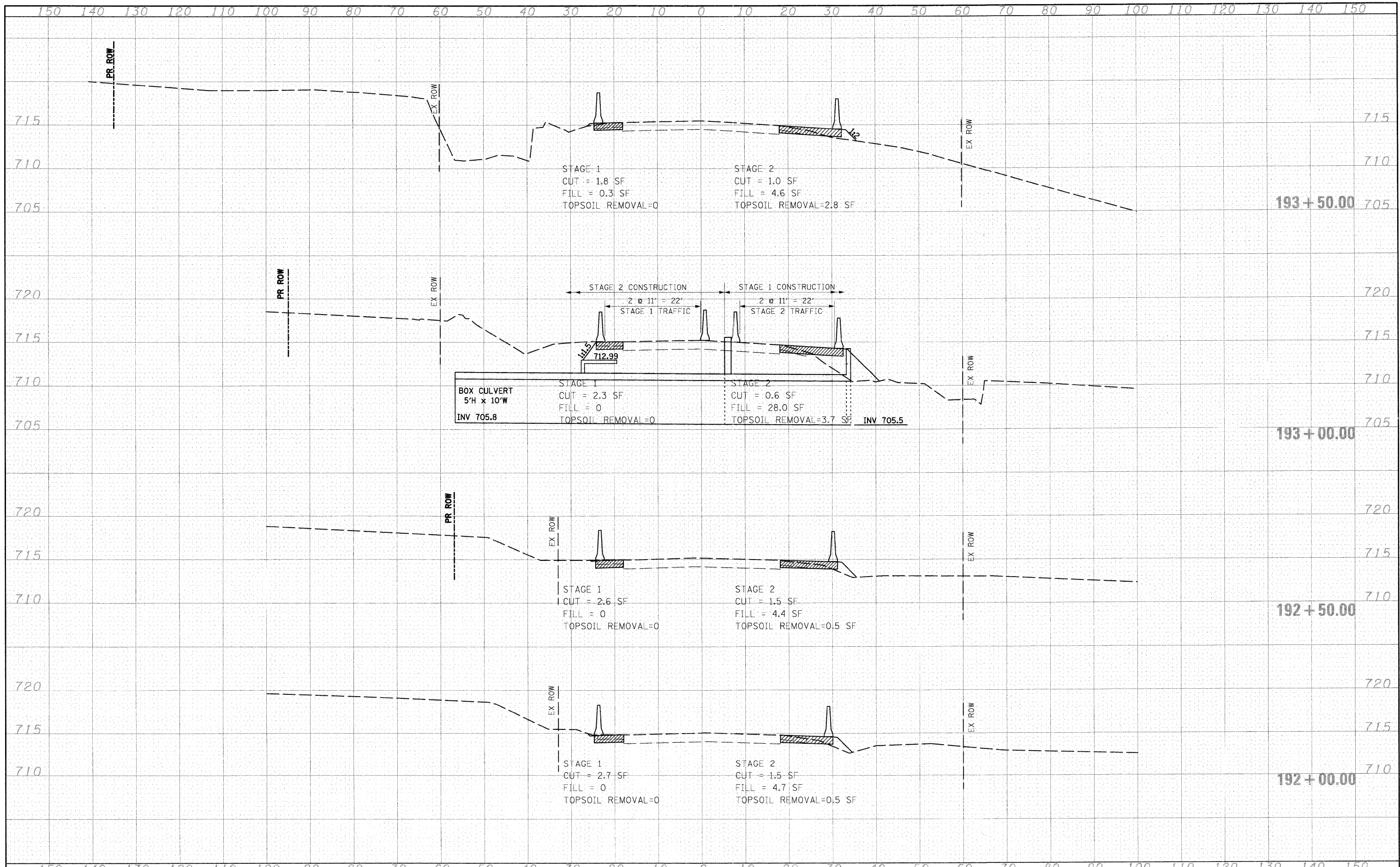
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 AS CHECKED \_\_\_\_\_  
 AREAS CHECKED \_\_\_\_\_



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PLOT SCALE = 1:10	CHECKED DATE - 3/27/09	REVISED REVISED -	REVISED REVISED -			SCALE: 1"=10'H; 1"=5'V SHEET NO. 4 OF 6 SHEETS	STA. 190+00.00 TO STA. 191+50.00	CONTRACT NO. 63073		FED. ROAD DIST. NO. 1	ILLINOIS FED. AID PROJECT
PLOT DATE = 3/29/2009	DATE - 3/27/09	REVISED REVISED -	REVISED REVISED -								

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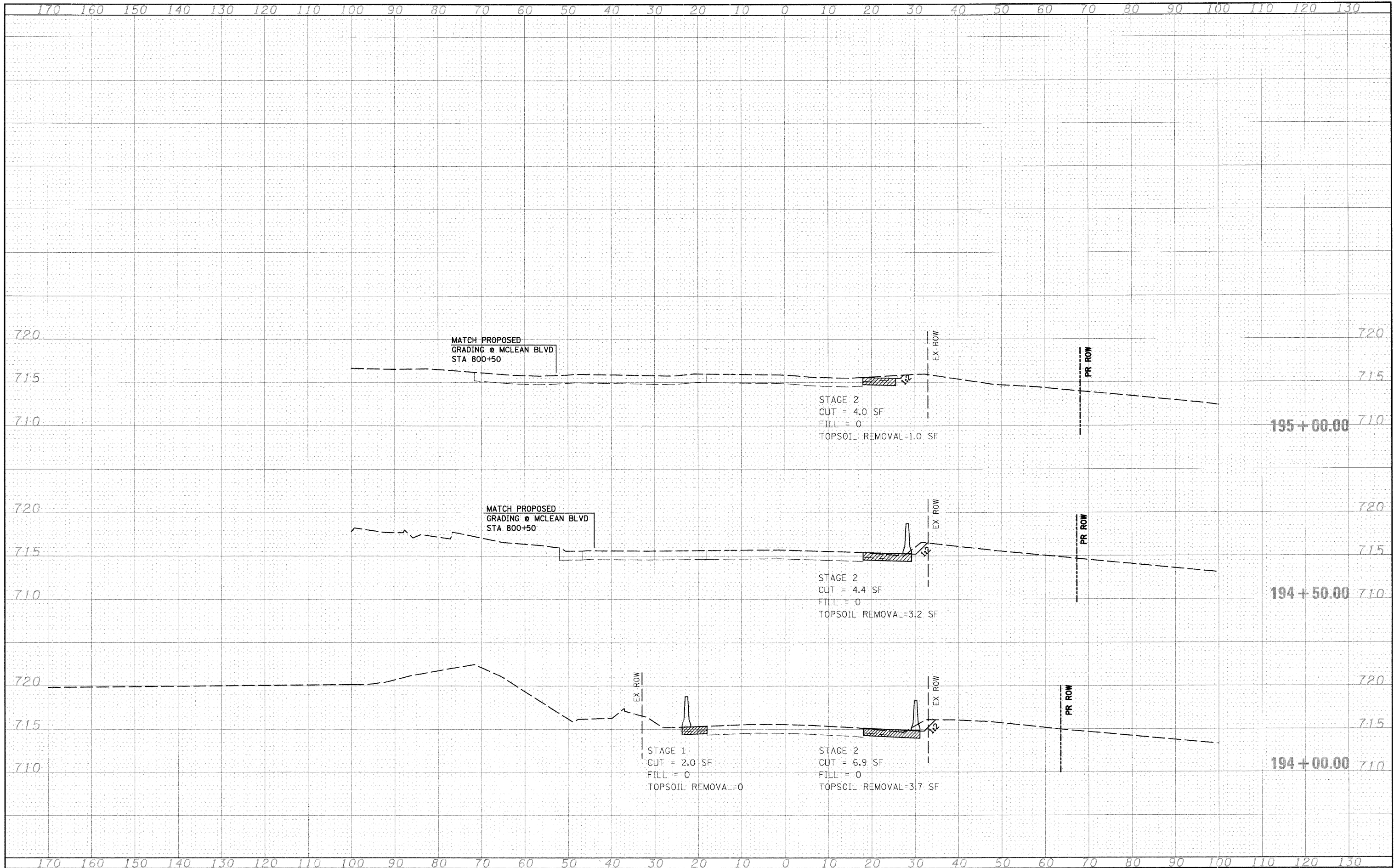
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SCALE: 1"=10'H; 1"=5'V SHEET NO. 5 OF 6 SHEETS STA. 192+00.00 TO STA. 193+50.00						FED. ROAD DIST. NO. 1 (ILLINOIS) FED. AID PROJECT					

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SURVEYED	
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TEMPLATE	
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TEMPLATE	
NOTE BOOK	
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AREAS CHECKED	



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 PLOT DATE = 3/29/2009

DESIGNED -  
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 DATE - 3/27/09

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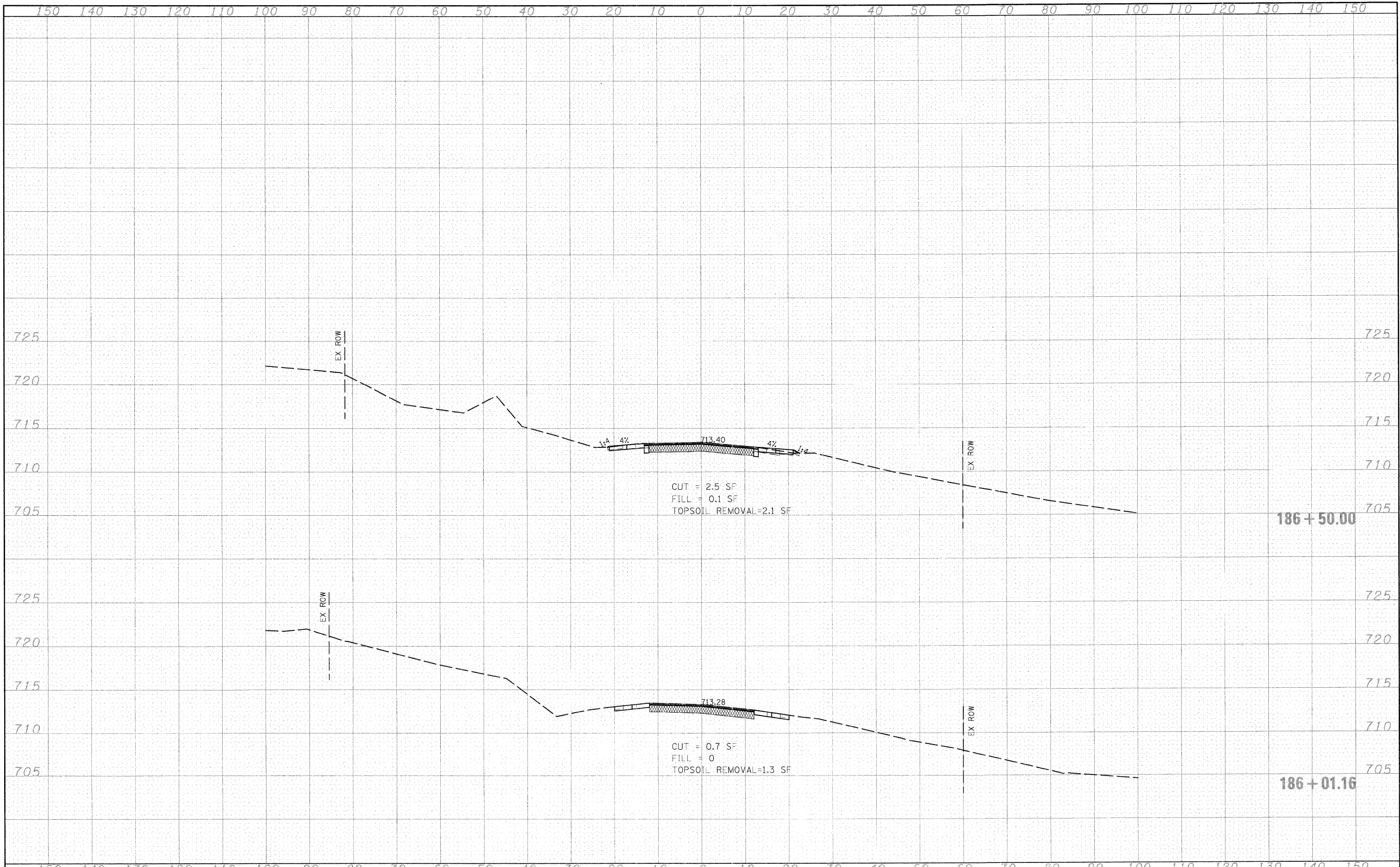
**KANE COUNTY  
 DEPARTMENT OF TRANSPORTATION**

**ILLINOIS ROUTE 31 CROSS SECTIONS - TEMPORARY PAVEMENT**  
 SCALE: 1"=10'H; 1"=5'V SHEET NO. 6 OF 6 SHEETS STA. 194+00.00 TO STA. 195+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
361	06-00214-10-BR	KANE	219	186
CONTRACT NO. 63073			FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT	

DATE	
BY	
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PLOTTED	
TEMPLATE	
NOTE BOOK	
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AREAS CHECKED	
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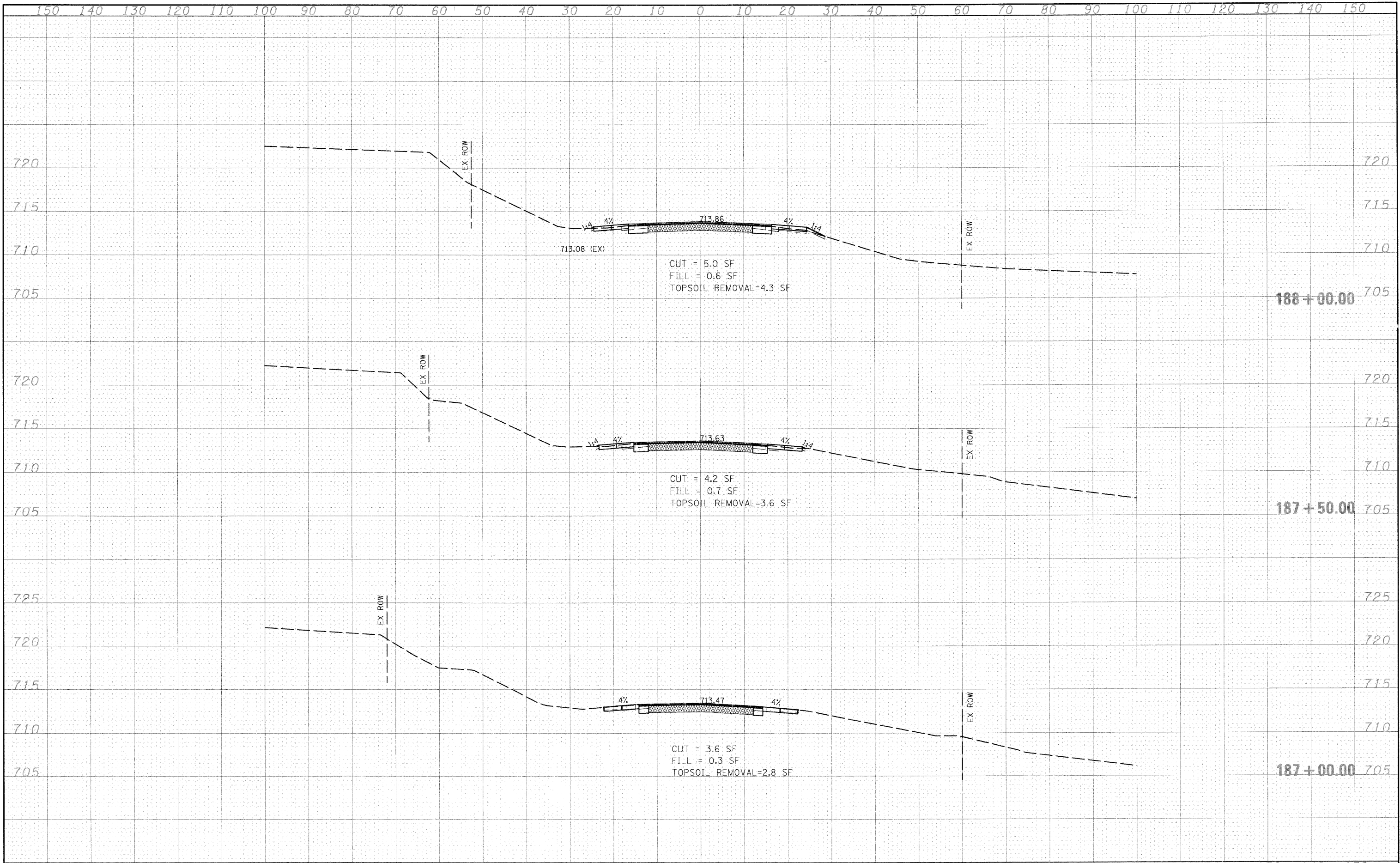
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SURVEYED	
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
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	PLOT SCALE = 1:10	DRAWN -	REVISED -			SCALE: 1"=10'H; 1"=5'V	SHEET NO. 1 OF 6 SHEETS	STA. 186+00.00 TO STA. 186+50.00	FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT			
	PLOT DATE = 3/29/2009	CHECKED -	REVISED -			CONTRACT NO. 63073						
		DATE = 3/27/09	REVISED -									

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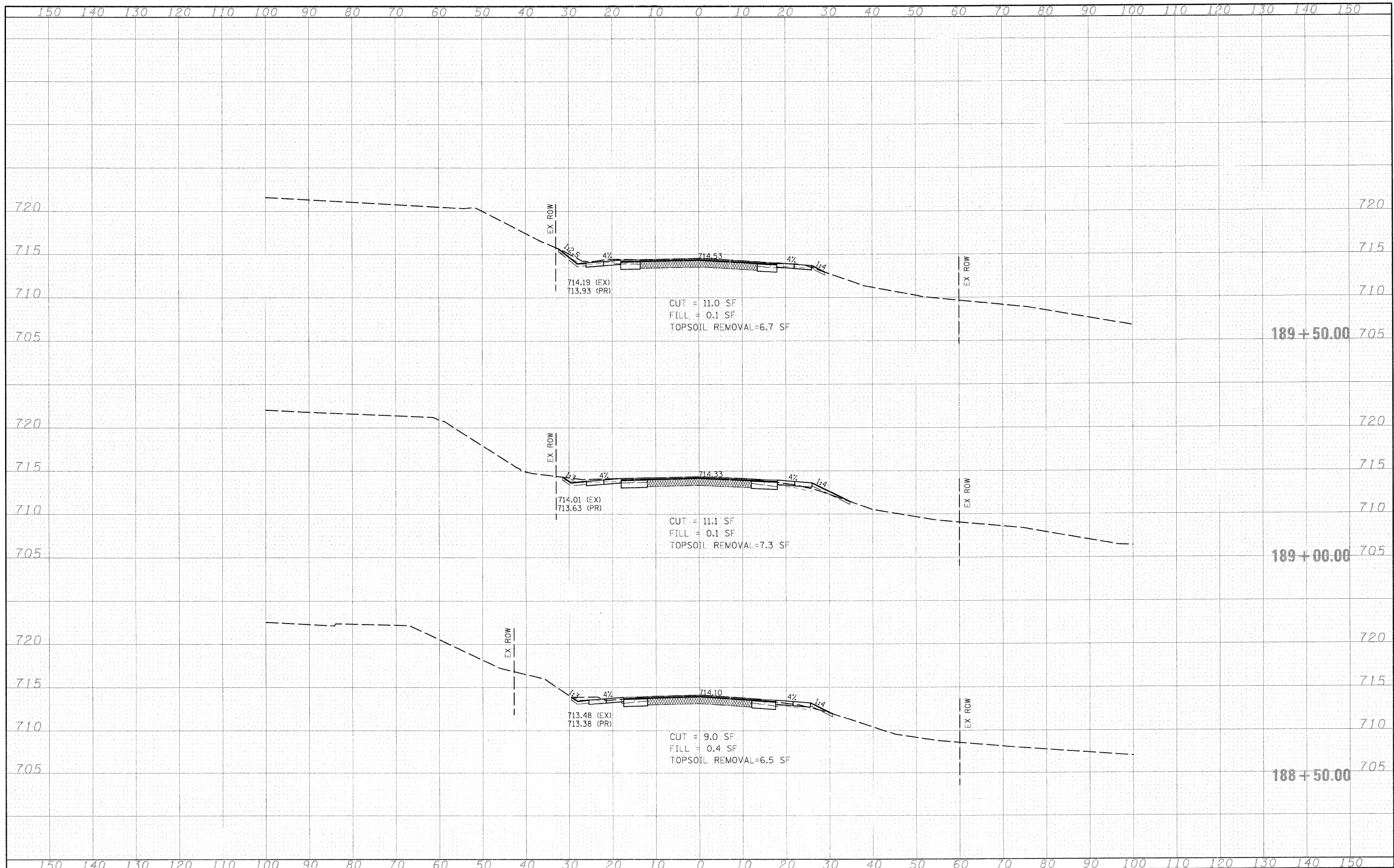


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PLOT SCALE = 1:10	CHECKED -	REVISED -	SCALE: 1"=10'H; 1"=5'V SHEET NO. OF 6 SHEETS			STA. 187+00.00 TO STA. 188+00.00	FED. ROAD DIST. NO. 1	ILLINOIS FED. AID PROJECT	CONTRACT NO. 63073		
PLOT DATE = 3/29/2009	DATE = 3/27/09	REVISED -									



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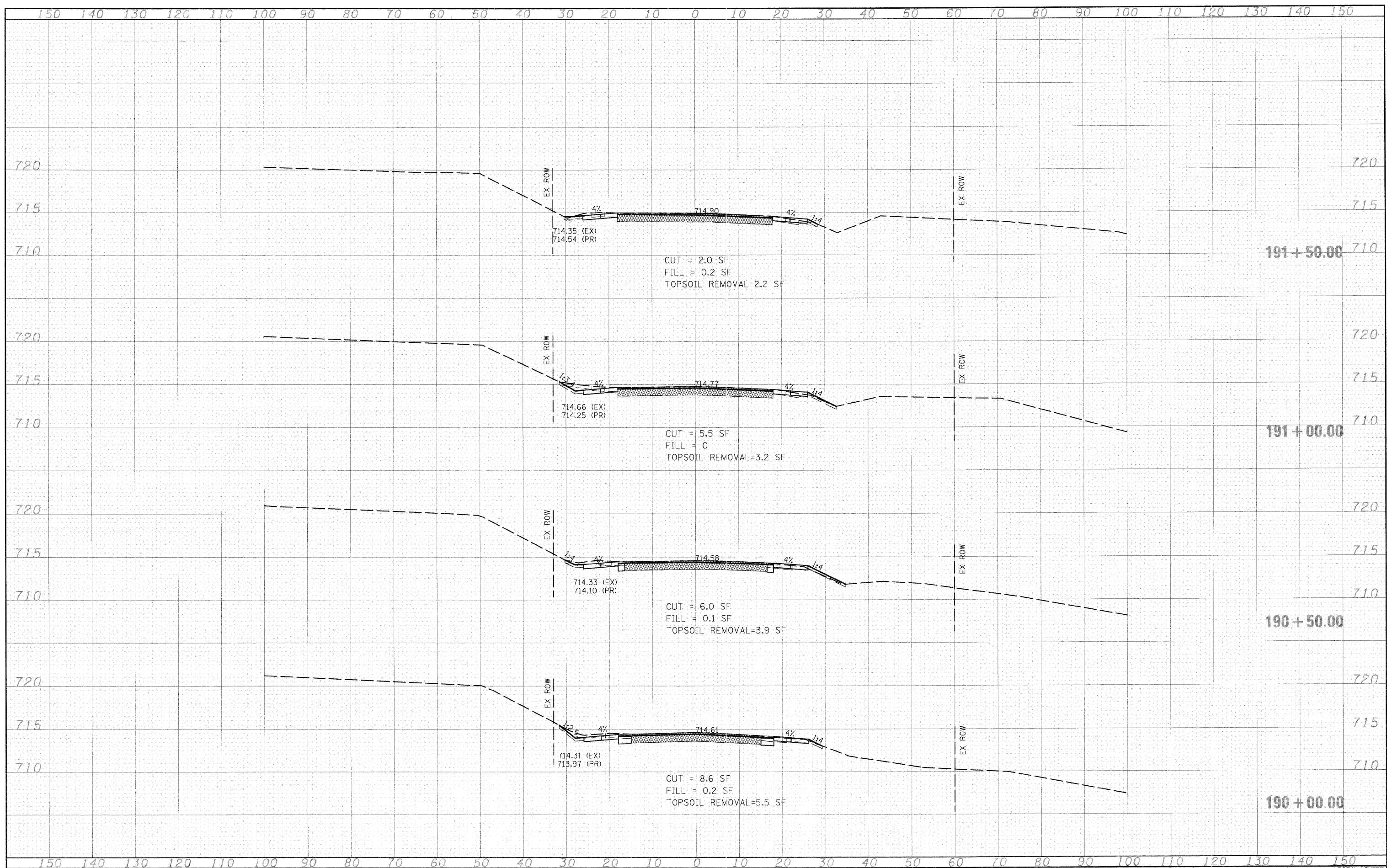
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SCALE: 1"=10'H; 1"=5'V SHEET NO. 3 OF 6 SHEETS STA. 188+50.00 TO STA. 189+50.00						CONTRACT NO. 63073		FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT		

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NOTE BOOK	PLOTTED
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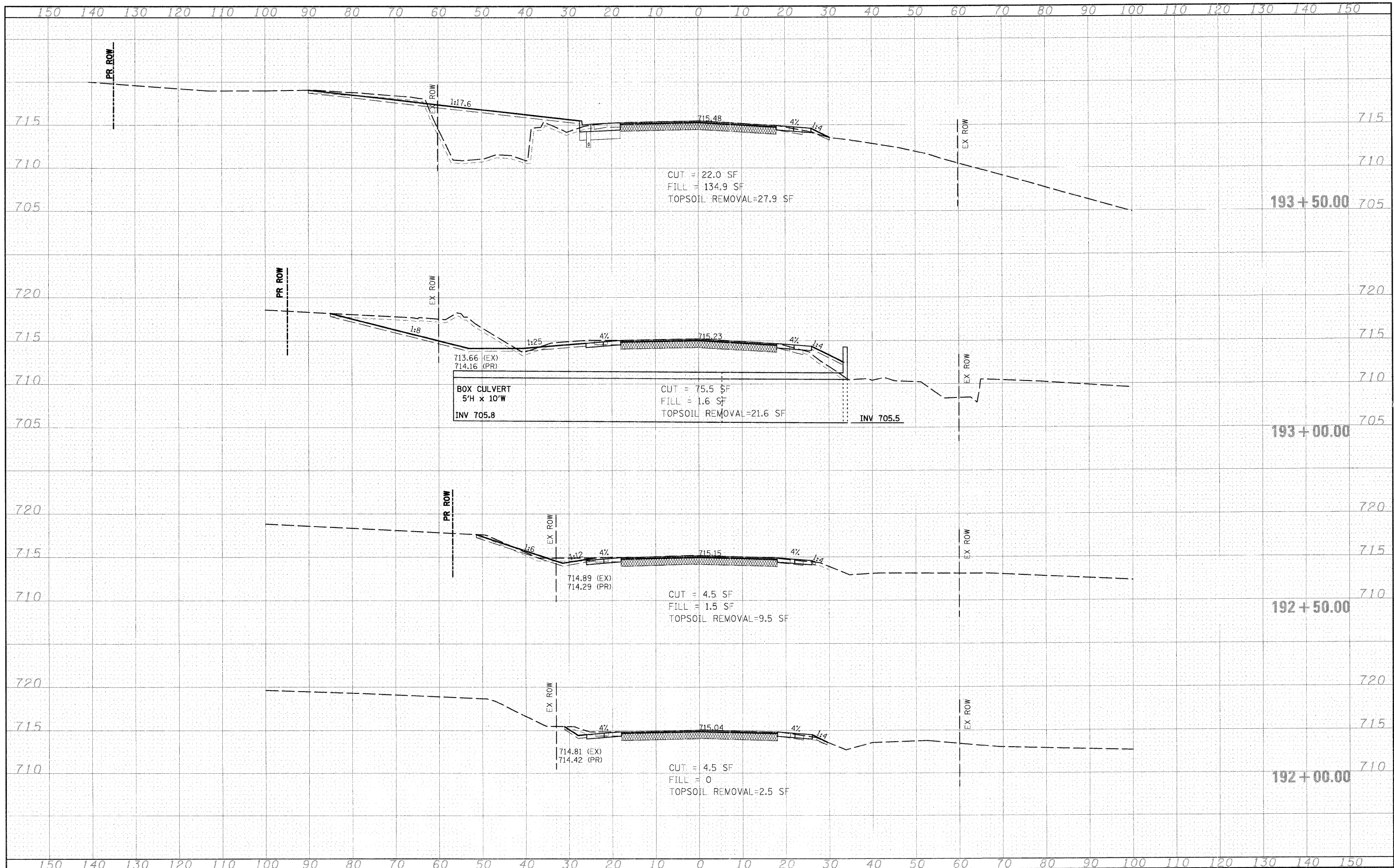
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SCALE: 1"=10'H; 1"=5'V SHEET NO. 4 OF 6 SHEETS STA. 190+00.00 TO STA. 191+50.00								CONTRACT NO. 63073 FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

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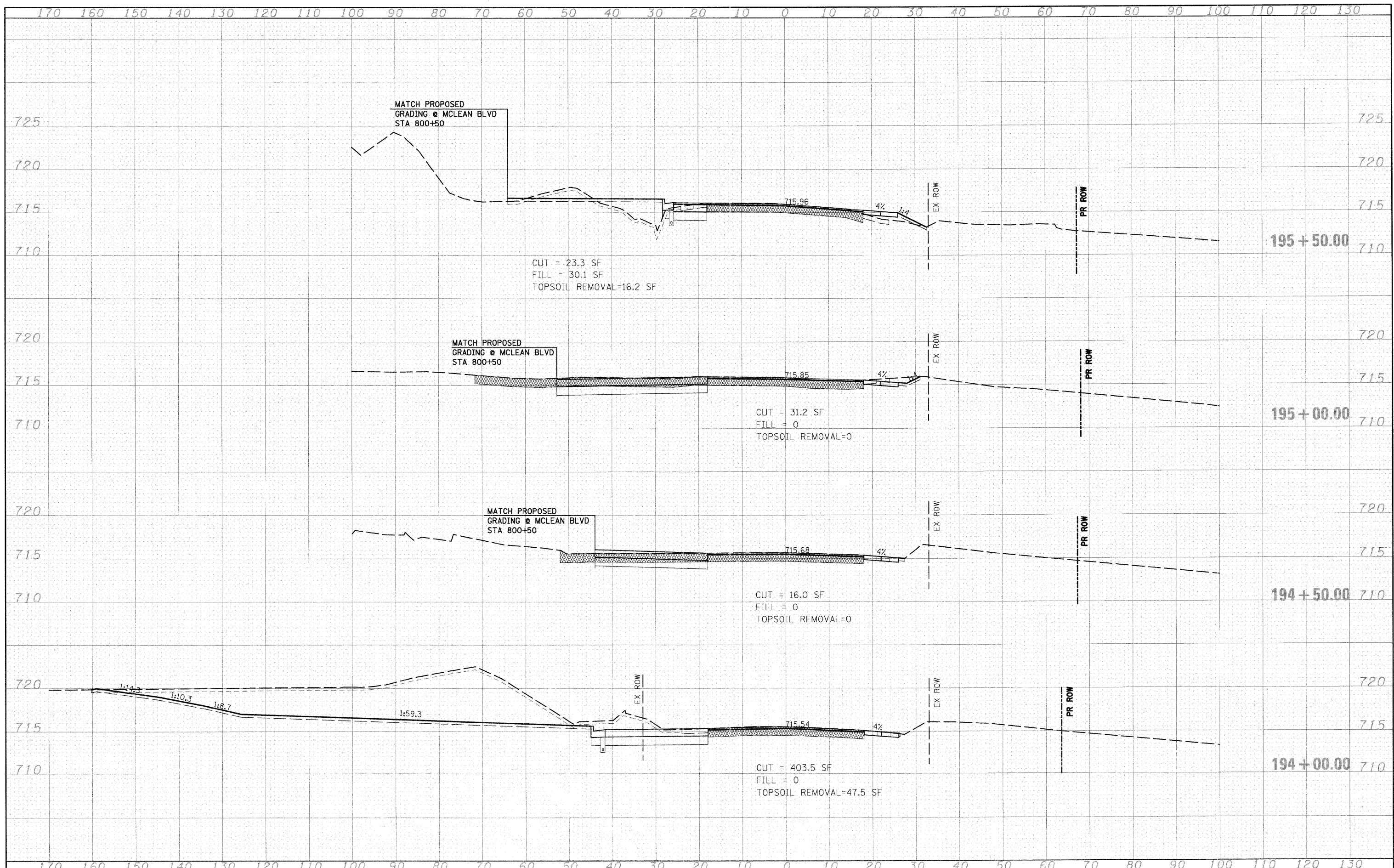
**KANE COUNTY  
 DEPARTMENT OF TRANSPORTATION**

**ILLINOIS ROUTE 31 CROSS SECTIONS**  
 SCALE: 1"=10'H; 1"=5'V SHEET NO. 5 OF 6 SHEETS STA. 192+00.00 TO STA. 193+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
361	06-00214-10-BR	KANE	219	191
CONTRACT NO. 63073			FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT	

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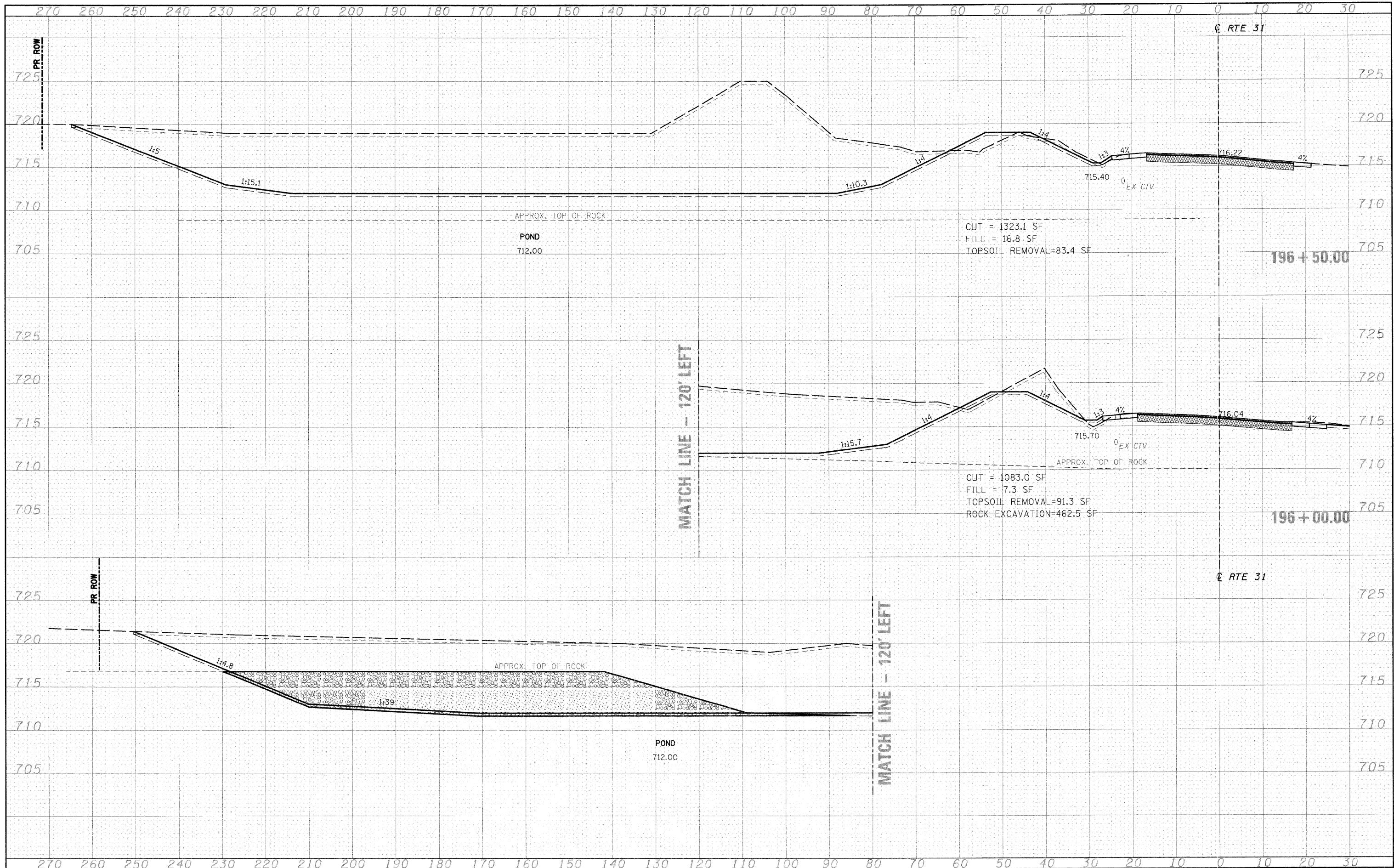
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						SCALE: 1"=10'H H1"=5' V SHEET NO. 6 OF 6 SHEETS STA. 194+00.00 TO STA. 195+50.00	CONTRACT NO. 63073		FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT	

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**KANE COUNTY  
 DEPARTMENT OF TRANSPORTATION**

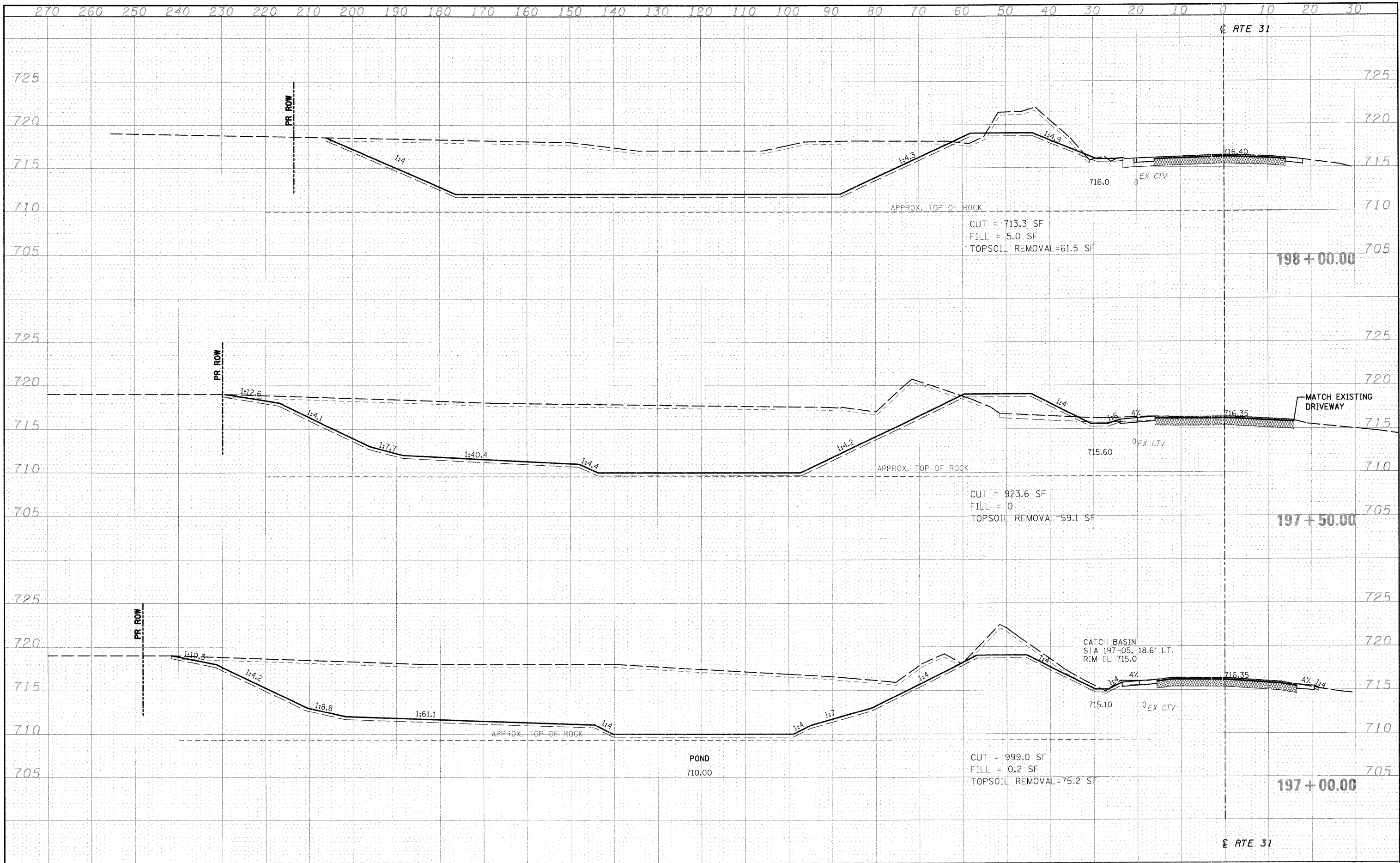
**ILLINOIS ROUTE 31 CROSS SECTIONS**

SCALE: 1"=10'H; 1"=5'V SHEET NO. 1 OF 6 SHEETS STA. 186+00.00 TO STA. 186+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
361	06-00214-10-BR	KANE	219	193
CONTRACT NO. 63073			FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT	

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 PLOT DATE = 3/29/2009

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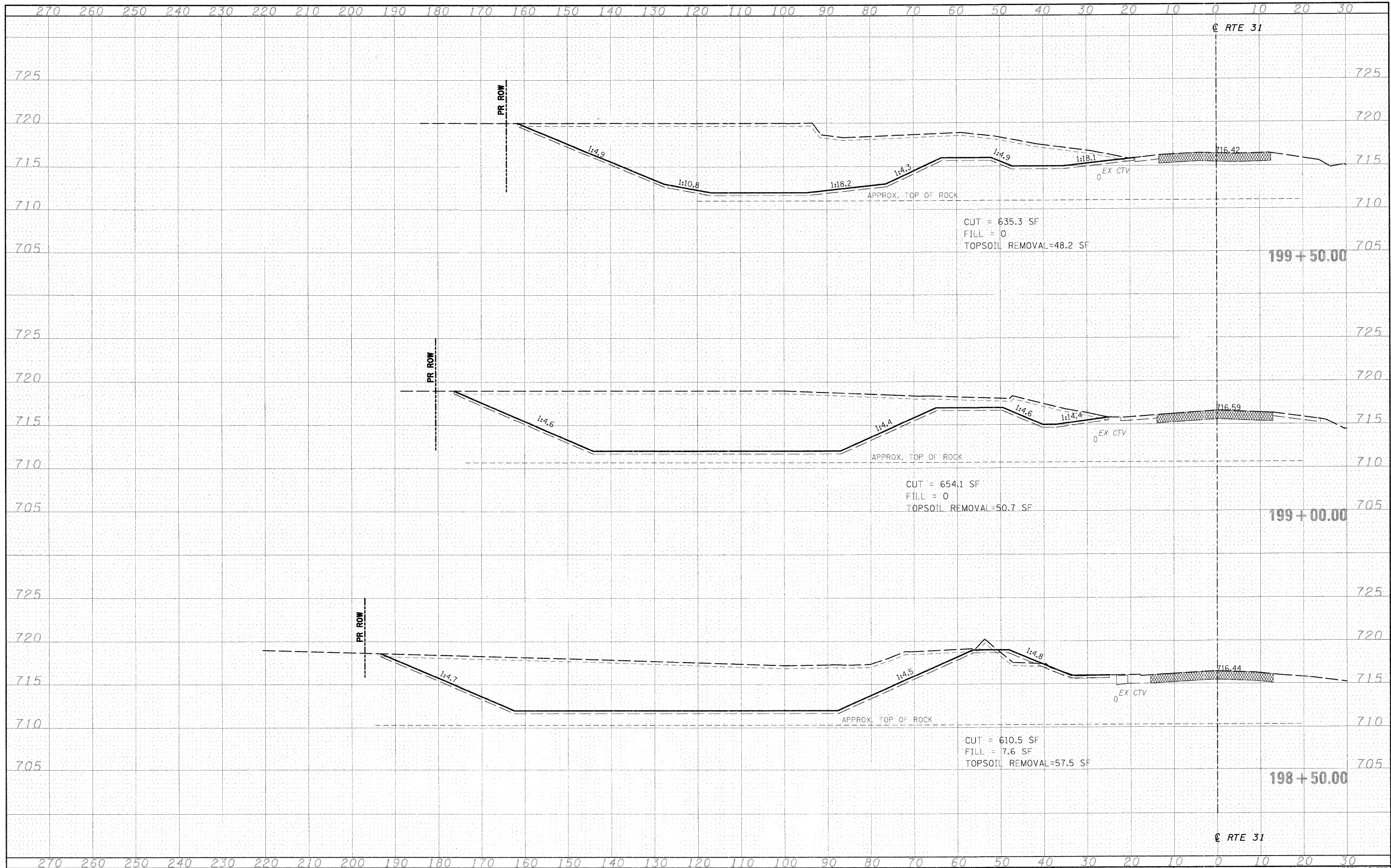
**KANE COUNTY  
 DEPARTMENT OF TRANSPORTATION**

**ILLINOIS ROUTE 31 CROSS SECTIONS**  
 SCALE: 1"=10'H; 1"=5'V SHEET NO. 1 OF 6 SHEETS STA. 186+00.00 TO STA. 186+50.00

F.A.P. RTE. 361	SECTION 06-00214-10-BR	COUNTY KANE	TOTAL SHEETS 219	SHEET NO. 194
CONTRACT NO. 63073				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

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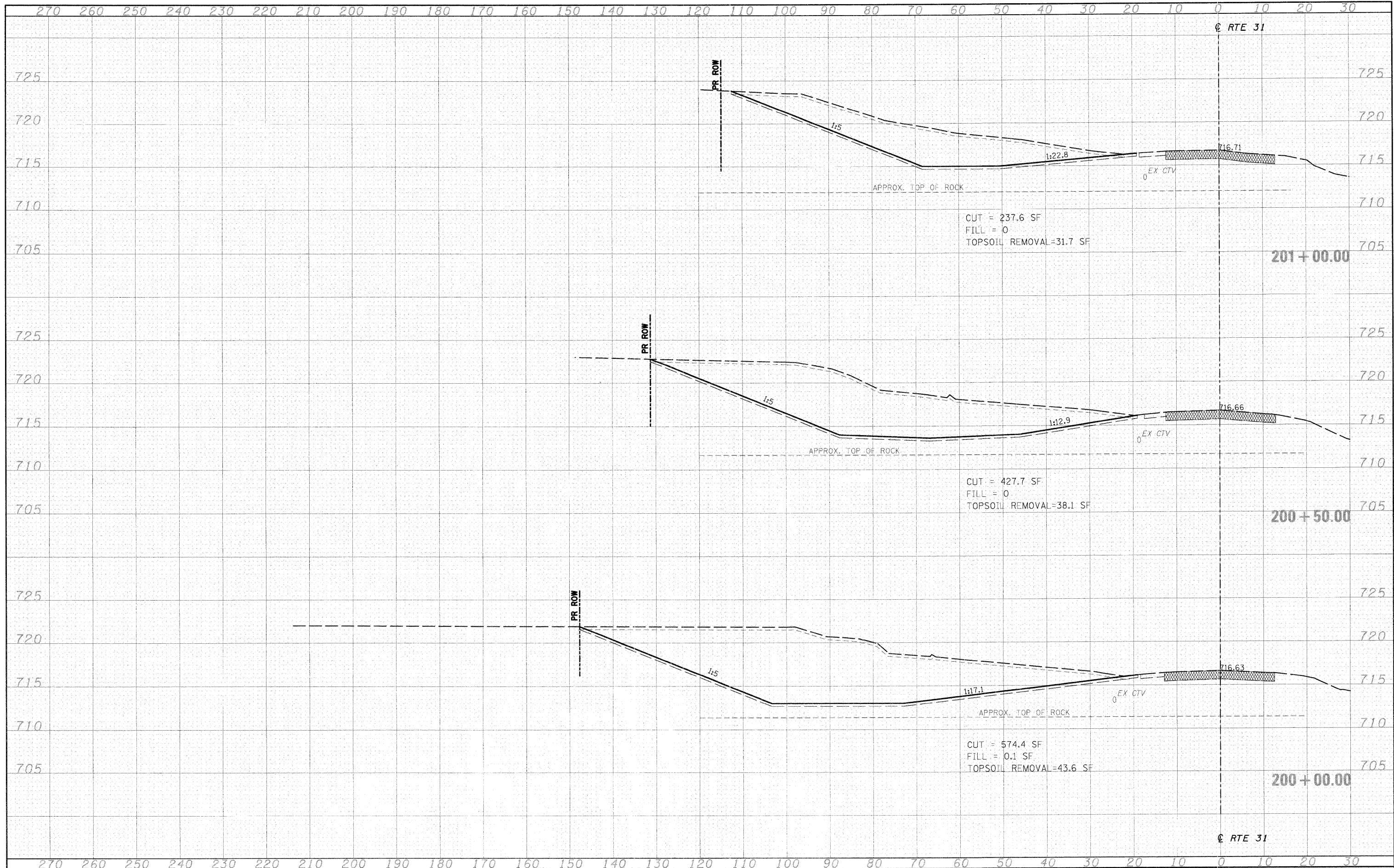
**KANE COUNTY  
 DEPARTMENT OF TRANSPORTATION**

**ILLINOIS ROUTE 31 CROSS SECTIONS**  
 SCALE: 1"=10'H; 1"=5'V SHEET NO. 1 OF 6 SHEETS STA. 186+00.00 TO STA. 186+50.00

F.A.P. RTE. 361	SECTION 06-00214-10-BR	COUNTY KANE	TOTAL SHEETS 219	SHEET NO. 195
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT			CONTRACT NO. 63073	

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**KANE COUNTY  
 DEPARTMENT OF TRANSPORTATION**

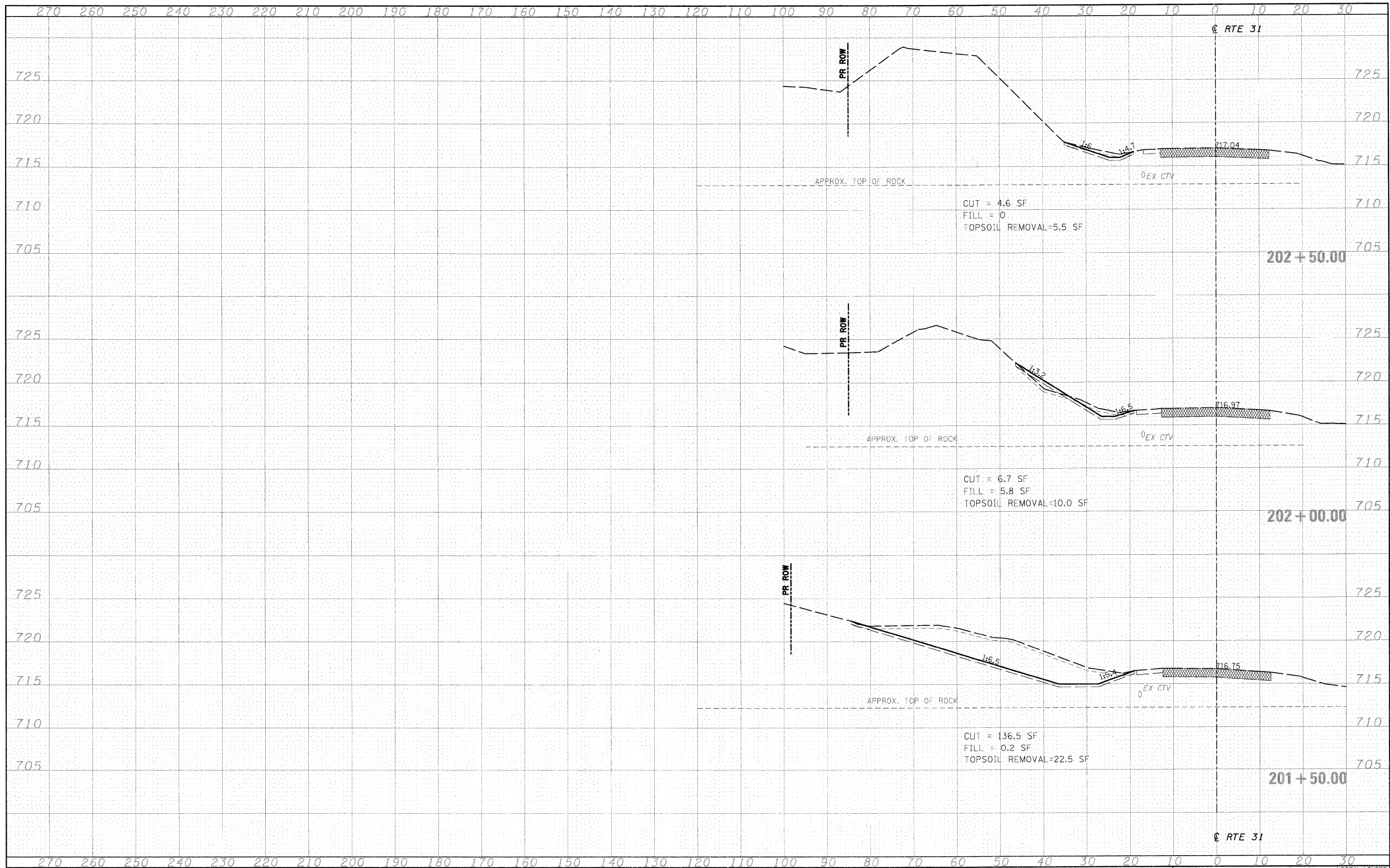
**ILLINOIS ROUTE 31 CROSS SECTIONS**  
 SCALE: 1"=10'H 1"=5' V SHEET NO. 1 OF 6 SHEETS STA. 186+00.00 TO STA. 186+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
361	06-00214-10-BR	KANE	219	196
CONTRACT NO. 63073			FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT	



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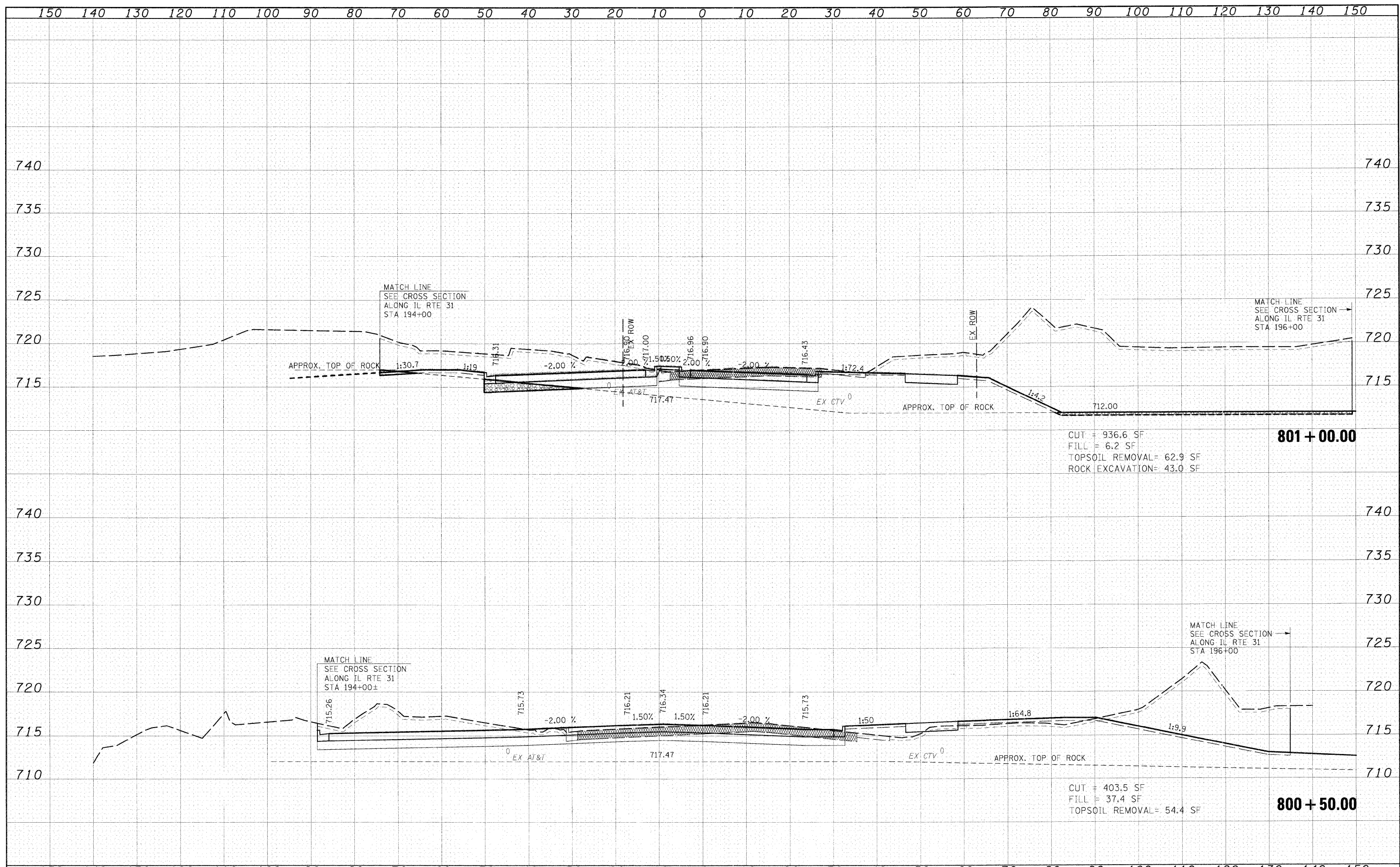
**KANE COUNTY  
 DEPARTMENT OF TRANSPORTATION**

**ILLINOIS ROUTE 31 CROSS SECTIONS**  
 SCALE: 1"=10'H; 1"=5'V SHEET NO. 1 OF 6 SHEETS STA. 186+00.00 TO STA. 186+50.00

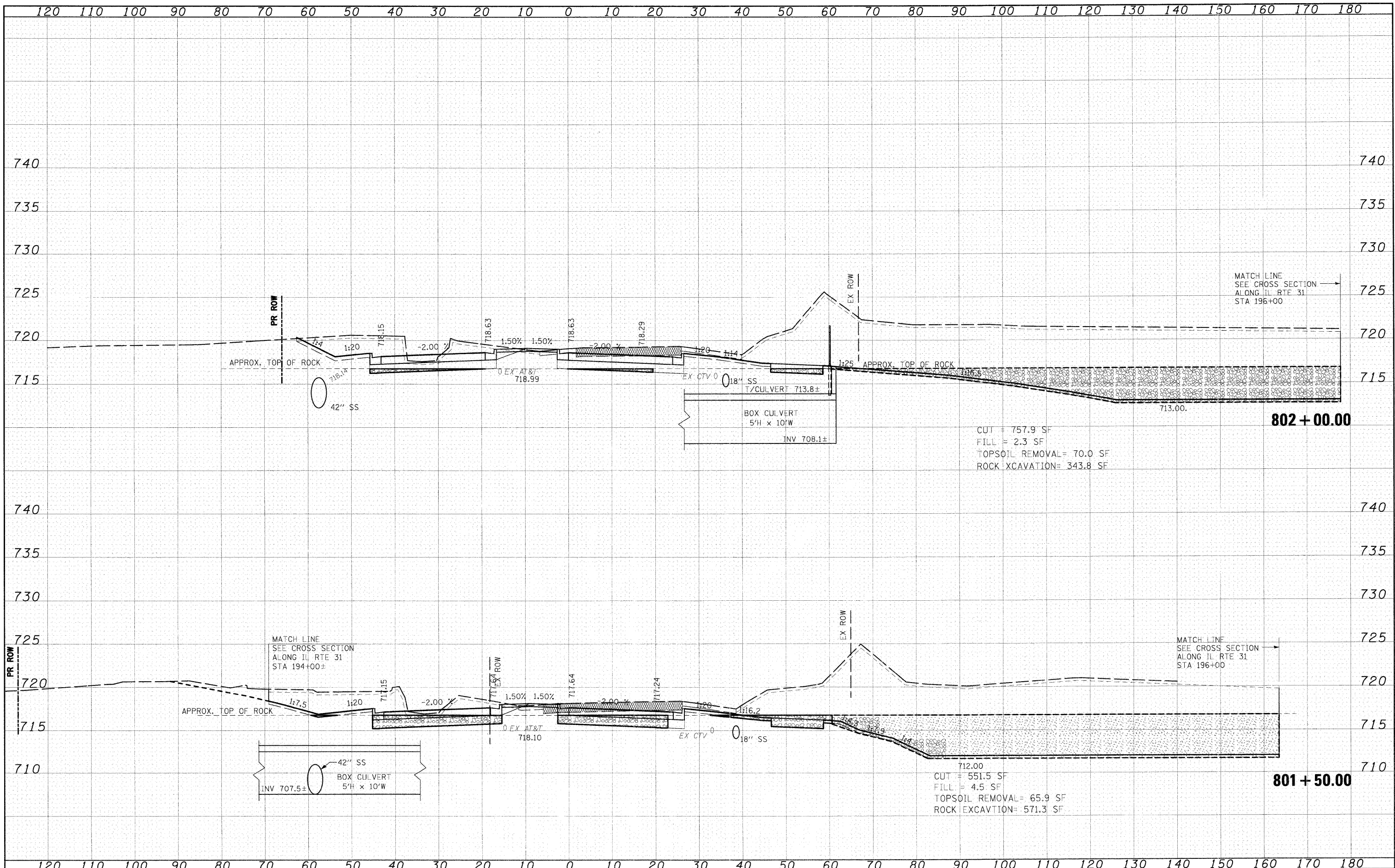
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
361	06-00214-10-BR	KANE	219	197
CONTRACT NO. 63073				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

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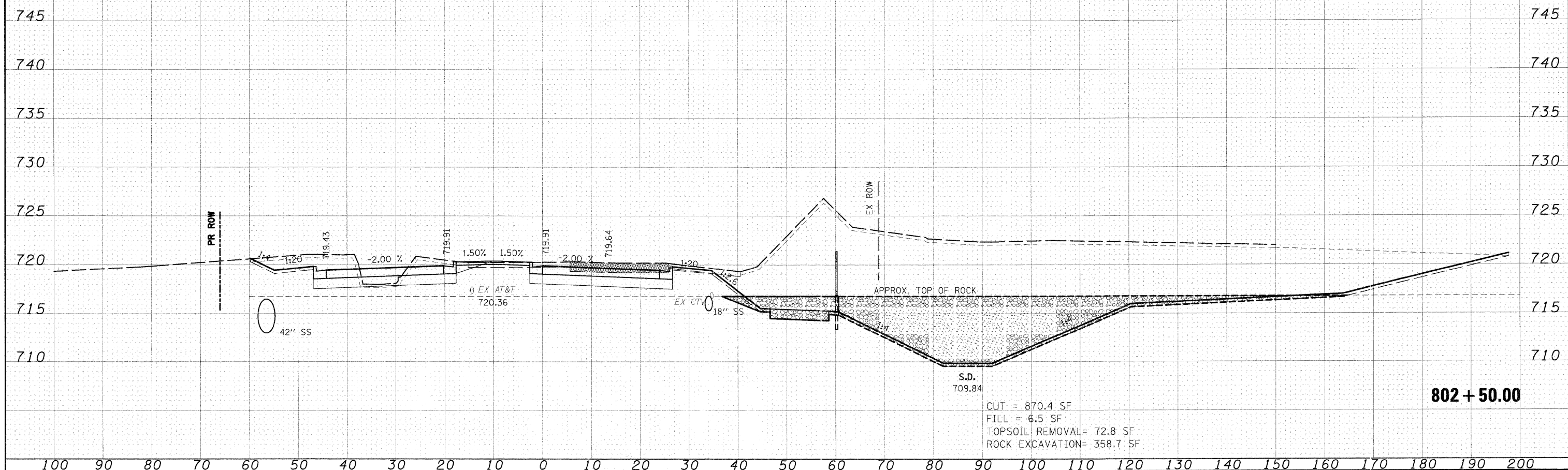
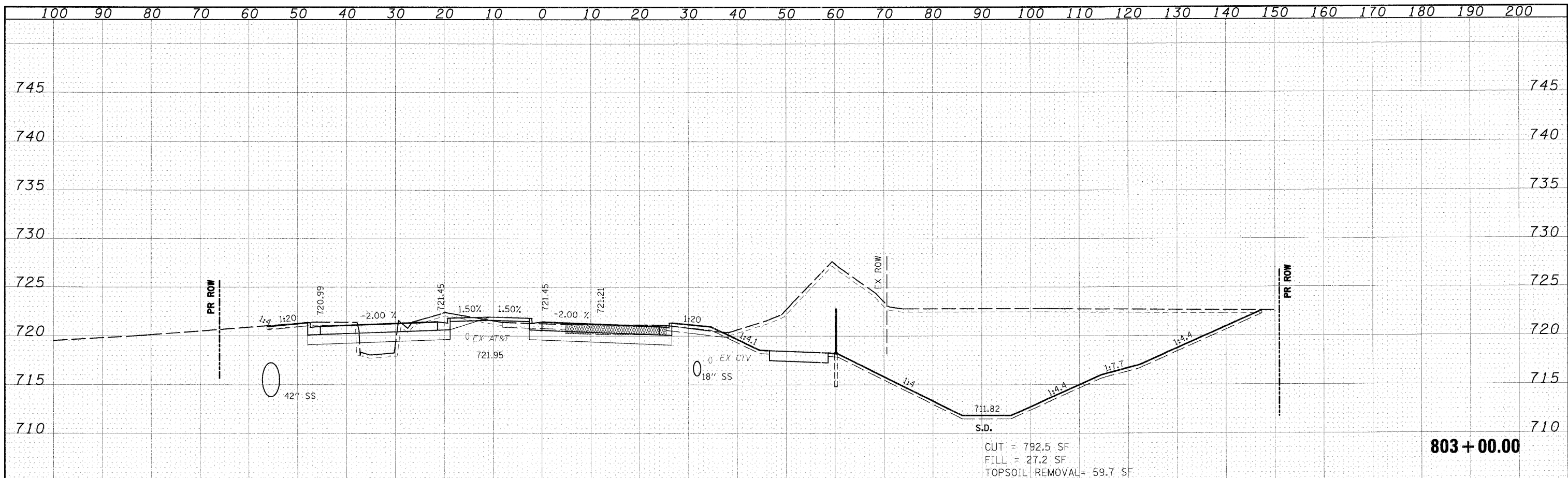
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PLOT SCALE = 1:10	CHECKED - MJT	DATE = 3/27/09	REVISED -			SCALE: 1"=10'H; 1"=5'V SHEET NO. OF 17 SHEETS	STA. 800+50.00 TO STA. 801+00.00	CONTRACT NO. 63073		FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT	
PLOT DATE = 3/30/2009	DATE = 3/27/09	REVISED -	REVISED -								



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PLOT SCALE = 1:100	CHECKED - MJT	REVISOR -	SCALE: 1"=10'H; 1"=5'V SHEET NO. OF 17 SHEETS STA. 801+50.00 TO STA. 802+00.00			FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT	CONTRACT NO. 63073			
PLOT DATE = 3/30/2009	DATE - 3/27/09	REVISOR -								



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DESIGNED - JWM  
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**KANE COUNTY  
 DEPARTMENT OF TRANSPORTATION**

**MCLEAN CROSS SECTIONS**  
 SCALE: 1"=10'H; 1"=5'V SHEET NO. OF 17 SHEETS STA. 802+50.00 TO STA. 803+00.00

F.A.P. R/L	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
361	06-00214-10-BR	KANE	219	200
CONTRACT NO. 63073			FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT	