

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

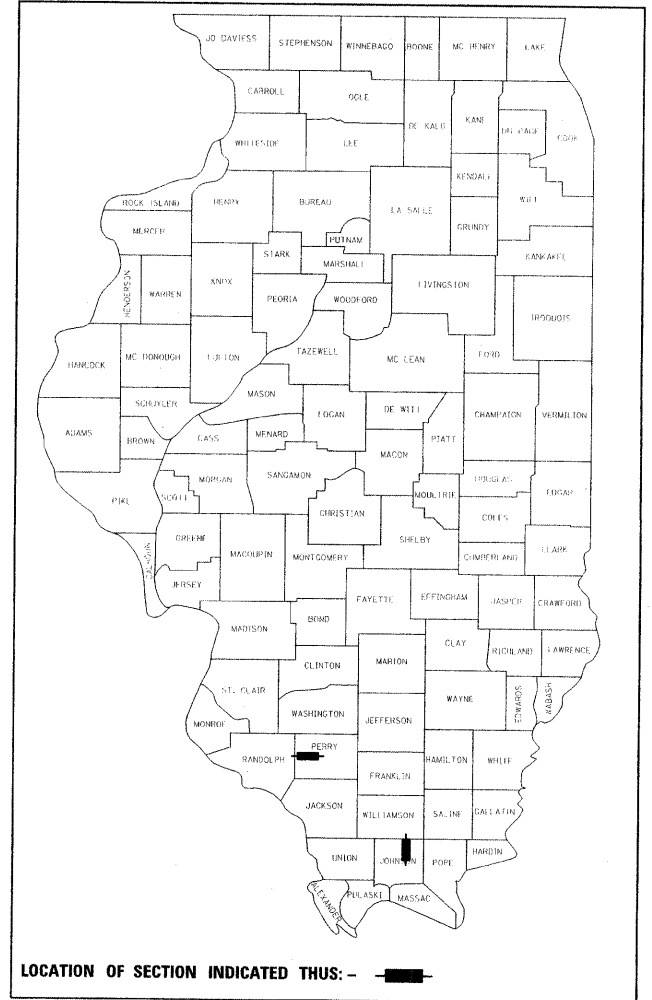
**PROPOSED
HIGHWAY PLANS**

FAP ROUTE 881 (US 45)
SECTION 35B-1
REPLACE STRUCTURE 044-7014 OVER DITCH
JOHNSON COUNTY
PROJECT NO: ACF-0005(677)
FAP ROUTE 329 (IL 154)
SECTION 18B-1
REPLACE STRUCTURE 073-7053 OVER CREEK
PERRY COUNTY
C-99-055-08

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
881/329	35B-1/18B-1	JOHNSON/PERRY	26	1
		ILLINOIS	CONTRACT NO. 78069	

FOR INDEX OF SHEETS, SEE SHEET NO. 2

D-99-035-08

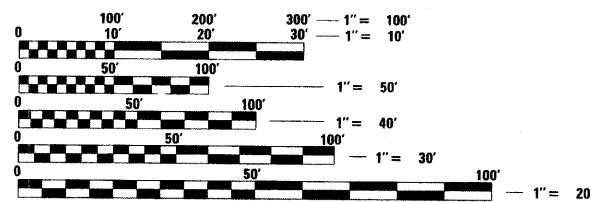


TRAFFIC DATA

US 45: ADT: 1870 (2008)
POSTED SPEED: 55 MPH

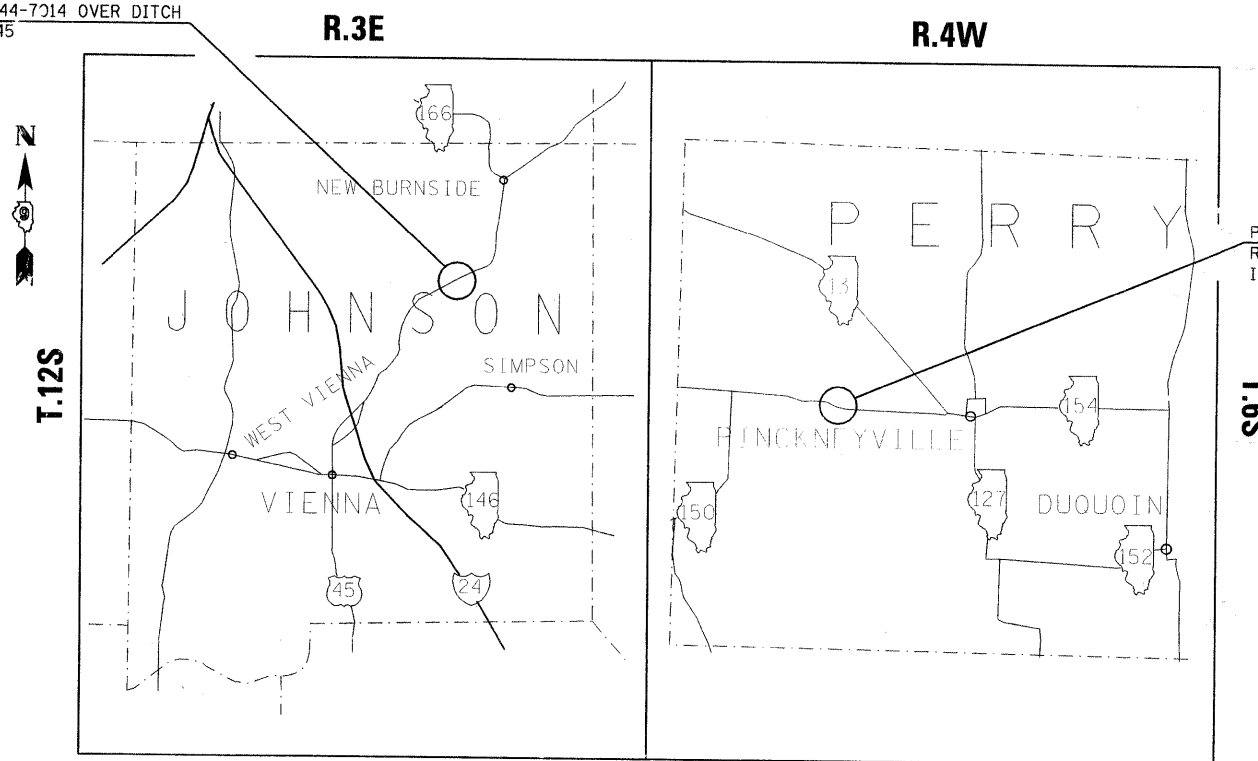
IL 154: ADT: 2770 (2007)
POSTED SPEED: 55 MPH

PROPOSED IMPROVEMENT
REPLACE STRUCTURE NO. 044-7014 OVER DITCH
3.85 MILES SOUTH OF US 45
AND IL 166 INTERSECTION



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

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



PROPOSED IMPROVEMENT MILE POST 6.2
REPLACE STRUCTURE NO. 073-7053 OVER CREEK
IL 154

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED March 18, 2009
May C. Krami
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

May 8, 2009
Charles J. Ingersoll
ENGINEER OF DESIGN AND ENVIRONMENT

May 8, 2009
Christine M. Reed
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

CUTLER & BLOOMFIELD TOWNSHIPS
CONTRACT NO. 78069

TOTAL LENGTH OF PROJECT = 56 FT (0.011 MI) TOTAL LENGTH OF PROJECT = 50 FT (0.009 MI)
NET LENGTH OF PROJECT = 56 FT (0.011 MI) NET LENGTH OF PROJECT = 50 FT (0.009 MI)

**PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS**

PROJECT ENGINEER: DAVID PICHE (618) 351-5227
DESIGNER: JOE MASON (618) 351-5226

GENERAL NOTES

- THE THICKNESS OF HOT-MIX ASPHALT MIXTURE SHOWN ON THE PLANS IS THE NOMINAL THICKNESS. DEVIATIONS FROM THE NOMINAL THICKNESS WILL BE PERMITTED WHEN SUCH DEVIATIONS OCCUR DUE TO IRREGULARITIES IN THE EXISTING SURFACE OR BASE ON WHICH THE BITUMINOUS MIXTURE IS PLACED.
- FACTORS USED FOR ESTIMATING PLAN QUANTITIES ARE AS FOLLOWS AND SHALL NOT BE USED FOR THE BASIS OF FINAL QUANTITIES:
 - ALL BITUMINOUS CONCRETE ----- 2.392 METRIC TONS/CU. METER (2.016 TONS/CU. YD.)
 - ALL AGGREGATE ----- 2.43 METRIC TONS/CU. METER (2.05 TONS/CU. YD.)
 - BITUMINOUS MATERIALS:
 - ON PAVEMENT ----- 0.41 LITERS/SQ. METER (0.09 GAL./SQ. YD.)
 - INTERMEDIATE LIFTS ----- 0.41 LITERS/SQ. METER (0.09 GAL./SQ. YD.) (FOG COAT)
 - ON AGGREGATE SURFACE ----- 1.45 LITERS/SQ. METER (0.32 GAL./SQ. YD.)
 - AGGREGATE (PRIME COAT) ----- 0.0016 METRIC TONS/SQ. METER (0.0015 TONS/SQ. YD.)
 - RIPRAP ----- 1.78 METRIC TONS/CU. METER (1.50 TONS/CU. YD.)
- EMBANKMENT SHALL BE CONSTRUCTED USING STRUCTURE EXCAVATION.
- IF THE CONTRACTOR ELECTS TO USE PCC BASE COURSE WIDENING, SUCH WIDENING SHALL BE PRIMED ACCORDING TO ARTICLE 406.02, EXCEPT THIS WORK WILL NOT BE PAID FOR SEPERATELY BUT SHALL BE INCLUDED IN THE COST OF THE WIDENING.
- AT ALL LOCATIONS WHERE EXISTING HOT-MIX ASPHALT OR CONCRETE PAVEMENT JOINS AN EXISTING HOT-MIX ASPHALT OR CONCRETE PAVEMENT, A FULL DEPTH SAWED JOINT SHALL BE CONSTRUCTED. THE COST OF THIS JOINT WILL BE INCLUDED IN THE COST OF THE TYPE OF PAVEMENT BEING CONSTRUCTED.
- PRIOR TO PLACEMENT OF THE FINAL PAVEMENT MARKINGS THE RESIDENT ENGINEER SHOULD CONTACT THE BUREAU OF OPERATIONS AND ARRANGE FOR INSPECTION AND APPROVAL OF THE PAVEMENT MARKING LAYOUT.
- THE ADVANCE DETEC FOR LOOPS ARE TYPICALLY LOCATED 275 FEET IN ADVANCE OF THE STOP BAR. THE BUREAU OF OPERATIONS SHOULD APPROVE THE LOOP LOCATIONS PRIOR TO INSTALLATION.
- THE CENTERLINE PAVEMENT MARKING SHOULD BE REMOVED FROM THE STOP BAR TO THE SAND ATTENUATORS OR DRUMS. EDGE LINE PAVEMENT MARKING SHOULD BE REMOVED IF A 10 FOOT LANE WIDTH CANNOT BE MAINTAINED. TEMPORARY EDGE LINES SHOULD BE INSTALLED WHEN EDGE LINES ARE REMOVED.
- ANY TIME THE CONCRETE BARRIER IS NOT IN THE PROPER POSITION, FLAGGERS SHALL BE IN PLACE TO CONTROL TRAFFIC. THE TEMPORARY TRAFFIC SIGNALS SHALL BE SET TO FLASH ALL RED.

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	INDEX OF SHEETS, HIGHWAY STANDARDS, GENERAL NOTES, AND MIXTURE REQUIREMENTS
3 - 4	SUMMARY OF QUANTITIES
5	TYPICAL SECTION (044-7014)
6	PLAN AND PROFILE (044-7014)
7	GENERAL PLAN AND ELEVATION (044-7014)
8	EROSION CONTROL (044-7014)
9	EXPANSION BOLT DETAIL
10	PRECAST CULVERT DETAIL
11-13	CROSS SECTIONS (044-7014)
14	DETOUR SIGNING (073-7053)
15	TYPICAL SECTION (073-7053)
16	PLAN AND PROFILE (073-7053)
17	TRAFFIC STAGING (073-7053)
18	GENERAL PLAN AND ELEVATION (073-7053)
19	CONSTRUCTION DETAILS (073-7053)
20	EROSION CONTROL (073-7053)
21	BAR SPLICER ASSEMBLY DETAIL
22	TEMPORARY CONCRETE BARRIER
23	STEEL RAILING DETAIL
24-26	CROSS SECTIONS (073-7053)

HIGHWAY STANDARDS

000001-05	ABBREVIATIONS, SYMBOLS AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
280001-04	TEMPORARY EROSION CONTROL SYSTEMS
420001-07	PAVEMENT JOINTS
420101-04	24' JOINTED PCC PAVEMENT
630001-08	STEEL PLATE BEAM GUARDRAIL
631032-04	TRAFFIC BARRIER TERMINAL, TYPE 6A
635011-02	REFLECTOR MARKER AND MOUNTING DETAILS
701001-02	OFF-ROAD OPERATIONS, 2L, 2W, MORE THAN 15' AWAY
701006-03	OFF-ROAD OPERATIONS, 2L, 2W, 15' TO 24" FROM PAVEMENT EDGE
701011-02	OFF-ROAD OPERATIONS, MULTILANE 15' TO 24" FROM PAVEMENT EDGE
701201-03	LANE CLOSURE, 2L, 2W, DAY ONLY, FOR SPEEDS ≥ 45 MPH
701311-03	LANE CLOSURE, 2L, 2W, MOVING OPERATIONS - DAY ONLY
701321-10	LANE CLOSURE, 2L, 2W, BRIDGE REPAIR WITH BARRIER
701326-03	LANE CLOSURE, 2L, 2W, PAVEMENT WIDENING, FOR SPEEDS ≥ 45 MPH
701901-01	TRAFFIC CONTROL DEVICES
704001-05	TEMPORARY CONCRETE BARRIER
780001-02	TYPICAL PAVEMENT MARKINGS
BLR 21-8	TYPICAL APPLICATIONS OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

MIXTURE REQUIREMENTS

LOCATION(S):	HOT-MIX ASPHALT SURFACE COURSE, 1 1/4"
MIXTURE USE(S):	HOT-MIX ASPHALT SURFACE COURSE, MIX C, N90
AC/PG:	PG64-22
RAP % (MAX):	10
DESIGN AIR VOIDS:	4.0%, 90 GYRATION DESIGN
MIXTURE COMPOSITION: (GRADATION MIXTURE)	IL-9.5 mm or IL 12.5 mm
FRICTION AGGREGATE:	C SURFACE

LOCATION(S):	HOT-MIX ASPHALT BASE COURSE WIDENING, 10" HOT-MIX ASPHALT BINDER COURSE 8 3/4"
MIXTURE USE(S):	HOT-MIX ASPHALT BINDER COURSE, N90, IL-19.0
AC/PG:	PG64-22
RAP % (MAX):	10
DESIGN AIR VOIDS:	4.0%, 90 GYRATION DESIGN
MIXTURE COMPOSITION: (GRADATION MIXTURE)	IL-19.0 mm
FRICTION AGGREGATE:	NONE

COMMITMENTS

NONE

Prepared By: *Joe Zambewia*
DISTRICT STUDIES & PLANS ENGINEER

Examined By: *James Eric Emery*
DISTRICT LAND ACQUISITION ENGINEER

Examined By: *Carrie Nelson*
DISTRICT PROGRAM DEVELOPMENT ENGINEER

Examined By: *Will Wiley*
DISTRICT OPERATIONS ENGINEER

Examined By: *Jim Swathlow*
DISTRICT CONSTRUCTION ENGINEER

Examined By: *Bruce W. Beckler*
DISTRICT MATERIALS ENGINEER

Examined By: *Jim Swathlow*
DISTRICT PROJECT IMPLEMENTATION ENGINEER

Examined By: *James L. Clayton*
ASSISTANT REGIONAL ENGINEER

Approved By: *Way C. Romci*
DEPUTY DIRECTOR OF HIGHWAYS, REGION 5 ENGINEER

DATE: *March 10* 20 *09*

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

INDEX OF SHEETS, GENERAL NOTES, STANDARDS & MIX REQUIREMENTS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
881/329	35B-1/18B-1	JOHNSON/PERRY	26	2
CONTRACT NO. 78069				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

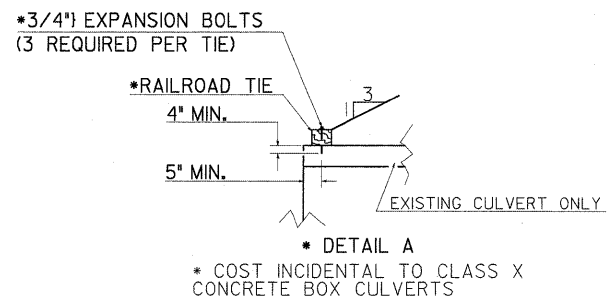
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SUMMARY OF QUANTITIES

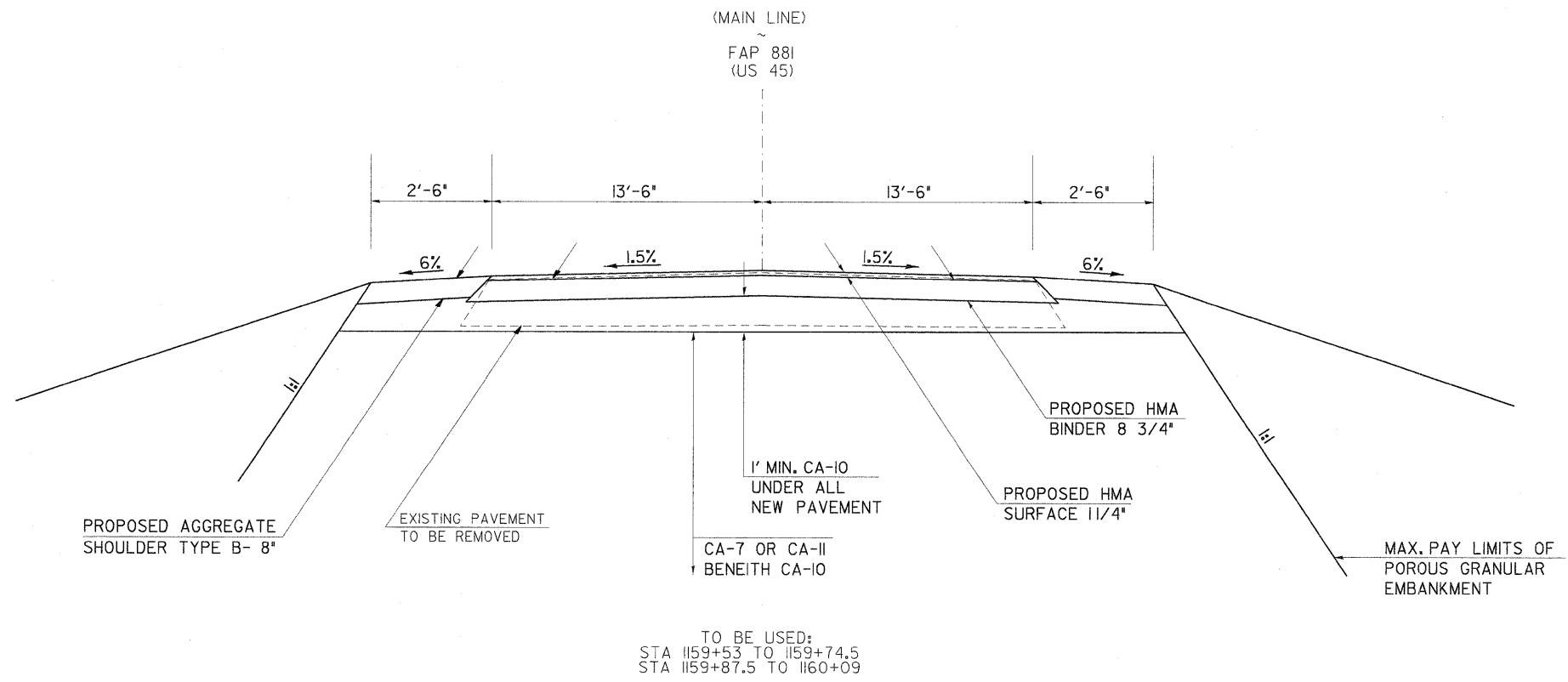
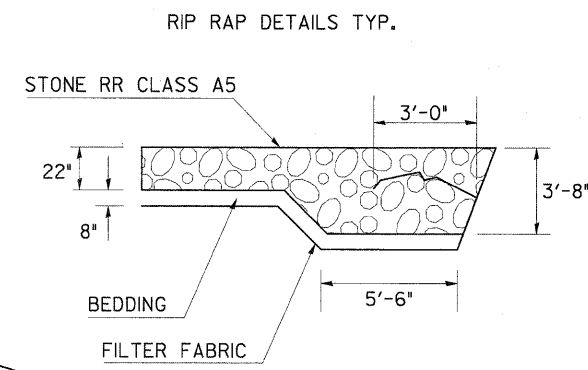
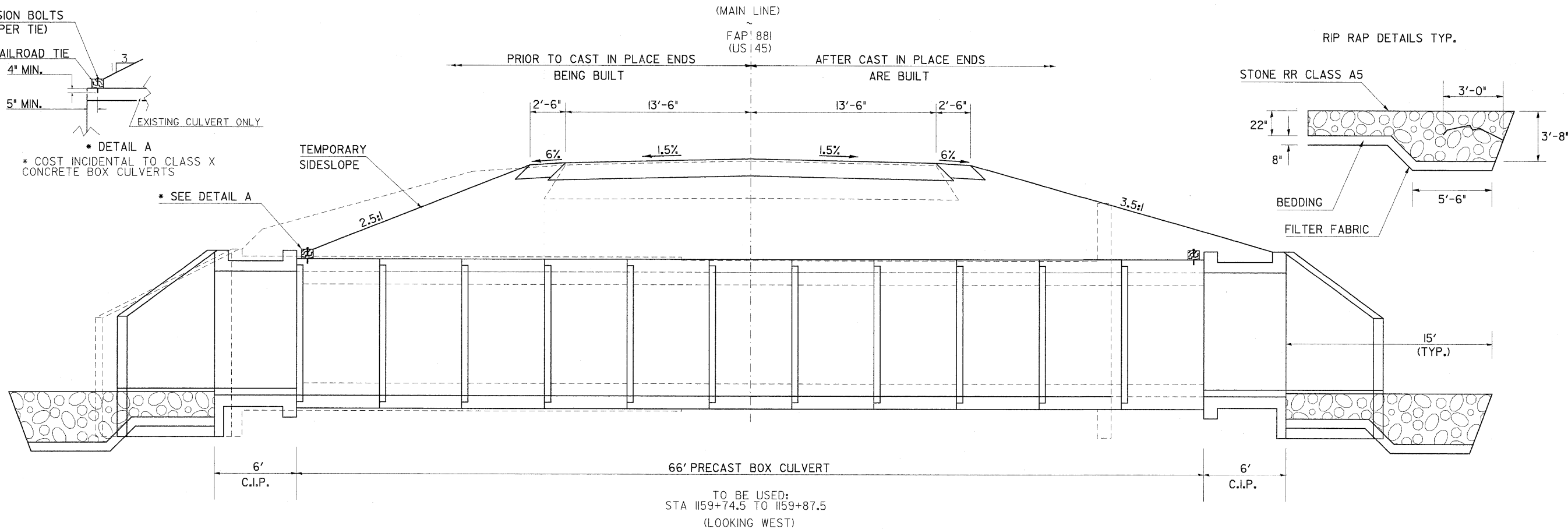
CODE NUMBER	ITEM DESCRIPTION	UNIT	TOTAL QUANTITY	HBP FUNDING	
				80% FEDERAL; X028-2A	20% STATE
				JOHNSON SN 044-7014	PERRY SN 073-7053
QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY
20300100	CHANNEL EXCAVATION	CU YD	23	8.0	15
20700220	POROUS GRANULAR EMBANKMENT	CU YD	1080	740	340
25000200	SEEDING, CLASS 2	ACRE	0.3	0.2	0.1
25000350	SEEDING, CLASS 7	ACRE	0.3	0.2	0.1
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	39	26.0	13.0
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	27	18.0	9.0
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	27	18.0	9.0
25000700	AGRICULTURAL GROUND LIMESTONE	TON	0.6	0.4	0.2
25100115	MULCH, METHOD 2	ACRE	0.6	0.4	0.2
28000300	TEMPORARY DITCH CHECKS	EACH	6	2	4
28000400	PERIMETER EROSION BARRIER	FOOT	773	248.0	525.0
28100209	STONE RIPRAP, CLASS A5	TON	146	146.0	0.0
28100210	STONE RIPRAP, CLASS A5(SPECIAL)	TON	57	0.0	57.0
28200200	FILTER FABRIC	SQ YD	105	73	32
35600716	HOT-MIX ASPHALT BASE COURSE WIDENING, 10"	SQ YD	170	0	170
40603090	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N90	TON	83	83.0	0.0
40603320	HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N90	TON	12	12.0	0.0
42000501	PORTLAND CEMENT CONCRETE PAVEMENT 10" (JOINTED)	SQ YD	145	0	145
44000100	PAVEMENT REMOVAL	SQ YD	313	170	143
48101600	AGGREGATE SHOULDERS, TYPE B 8"	SQ YD	32	32	0
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	2	1	1
50200100	STRUCTURE EXCAVATION	CU YD	1286	1021	265
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	20990	5750	15240
50800515	BAR SPLICERS	EACH	58	0	58
51205200	TEMPORARY SHEET PILING	SQ FT	890	0	890
54011109	PRECAST CONCRETE BOX CULVERT 11'x9'	FOOT	66	66.0	0.0
54002020	EXPANSION BOLTS 3/4 INCH	EACH	56	56	0
54003000	CONCRETE BOX CULVERTS	CU YD	123.6	35.0	88.6
63100087	TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	4	0	4
63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	3	0	3
63200310	GUARDRAIL REMOVAL	FOOT	237.5	0	237.5
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	3	0	3

FILE NAME	USER NAME = cornellm	DESIGNED	REVISED	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUMMARY OF QUANTITIES	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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PLOT DATE = 3/18/2009	DATE	REVISED	FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT				
SCALE:						SHEET NO. OF	SHEETS	STA.	TO STA.	



* DETAIL A
* COST INCIDENTAL TO CLASS X
CONCRETE BOX CULVERTS

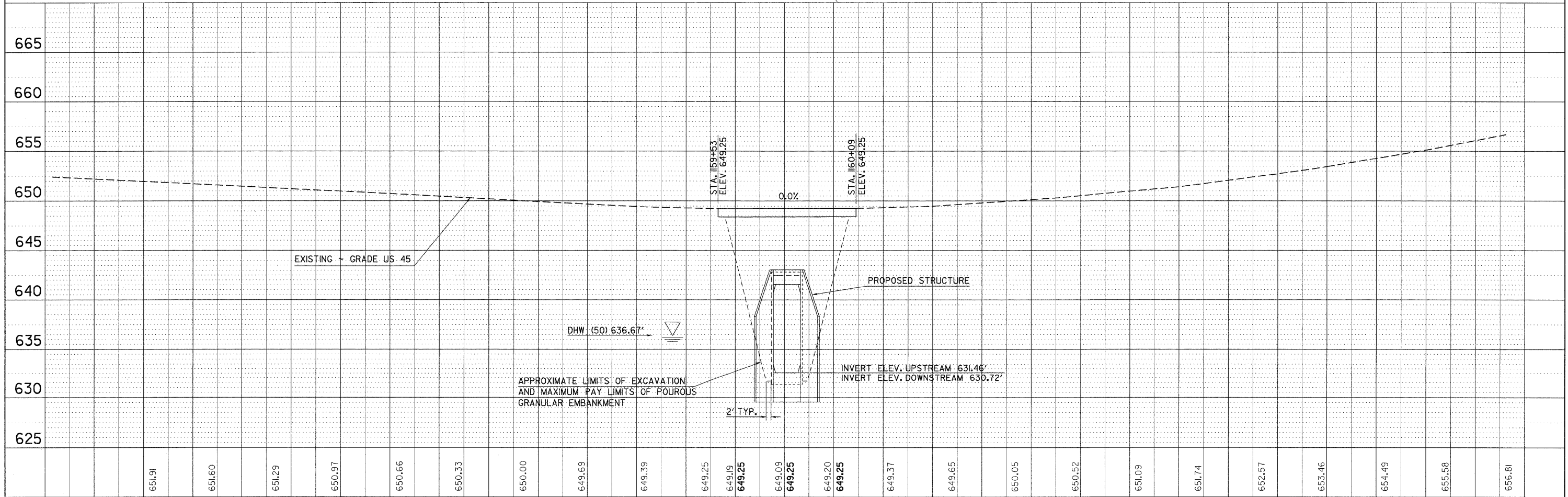
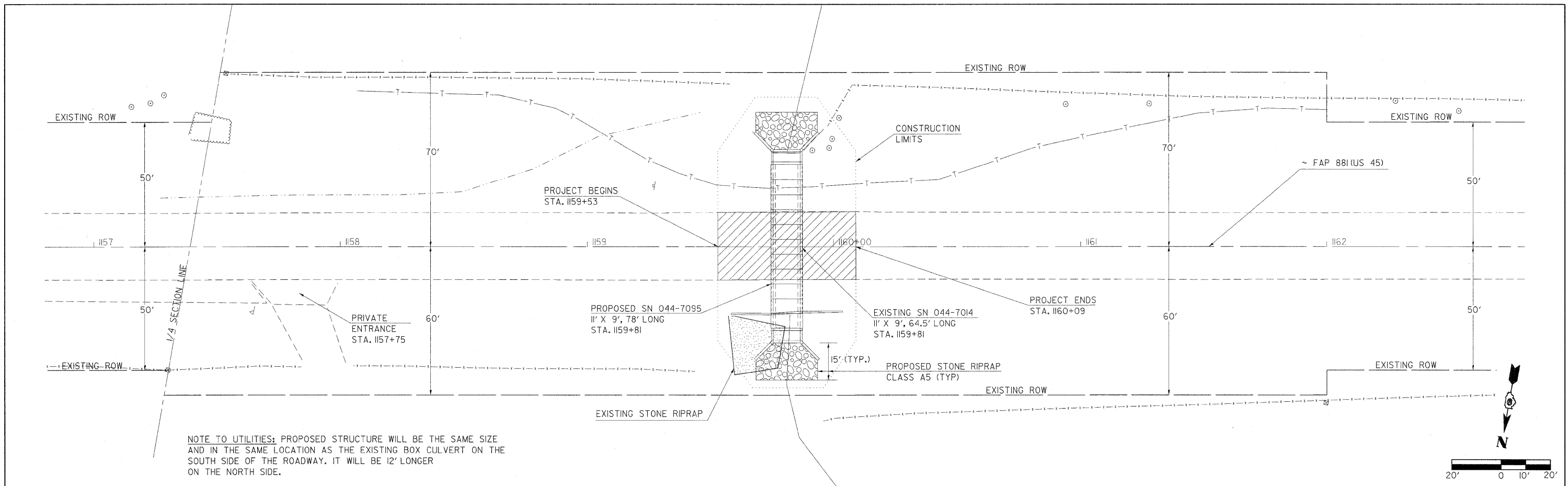
* SEE DETAIL A



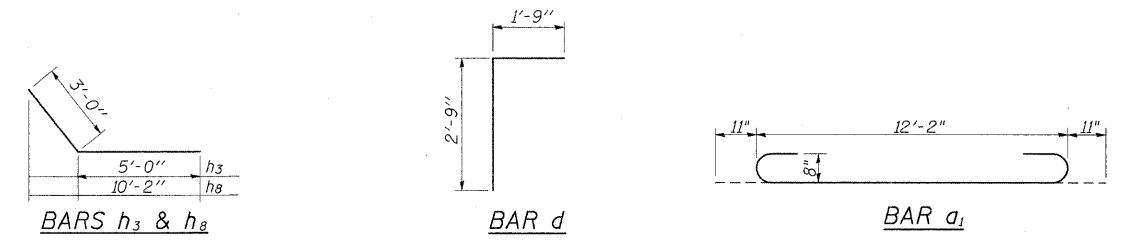
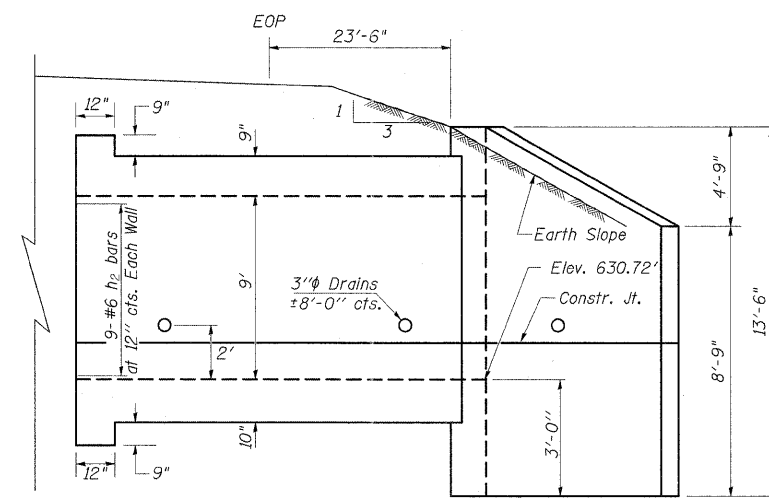
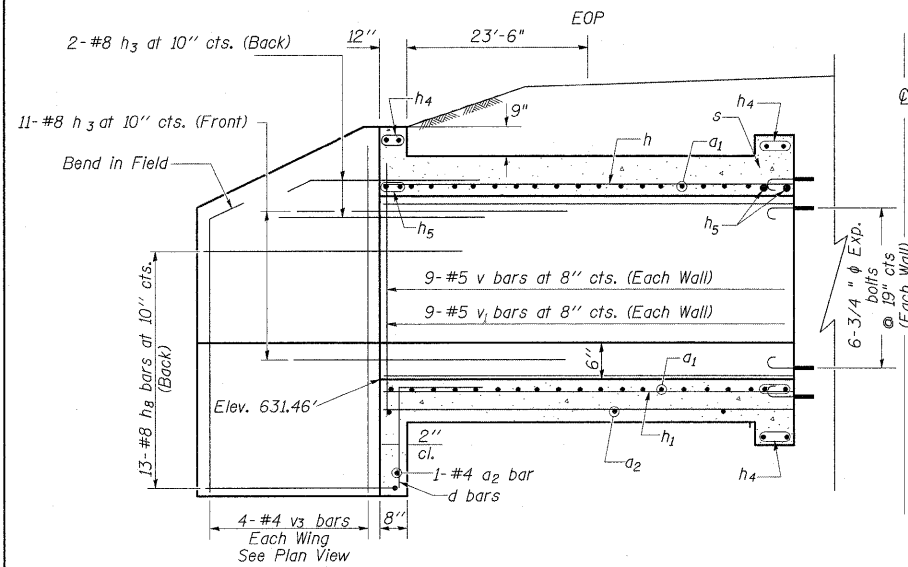
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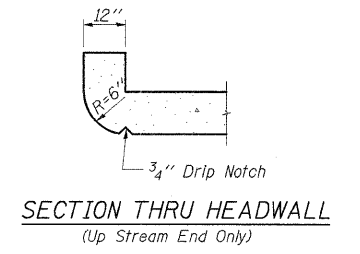
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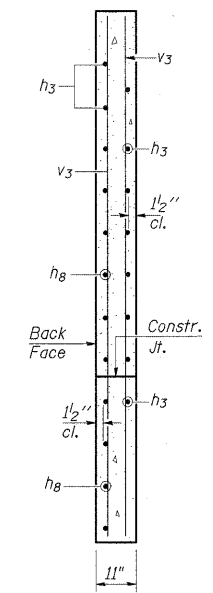
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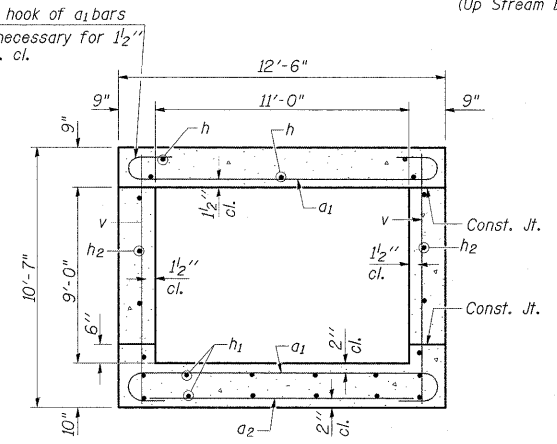
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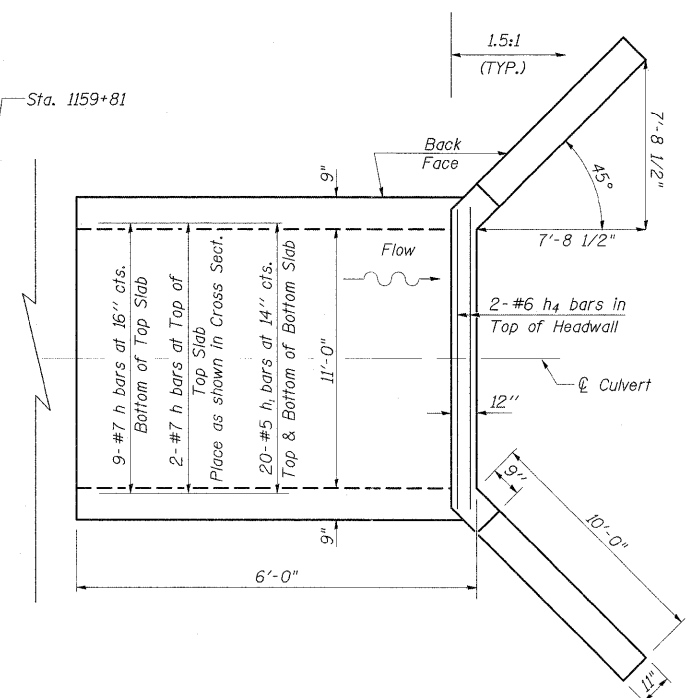
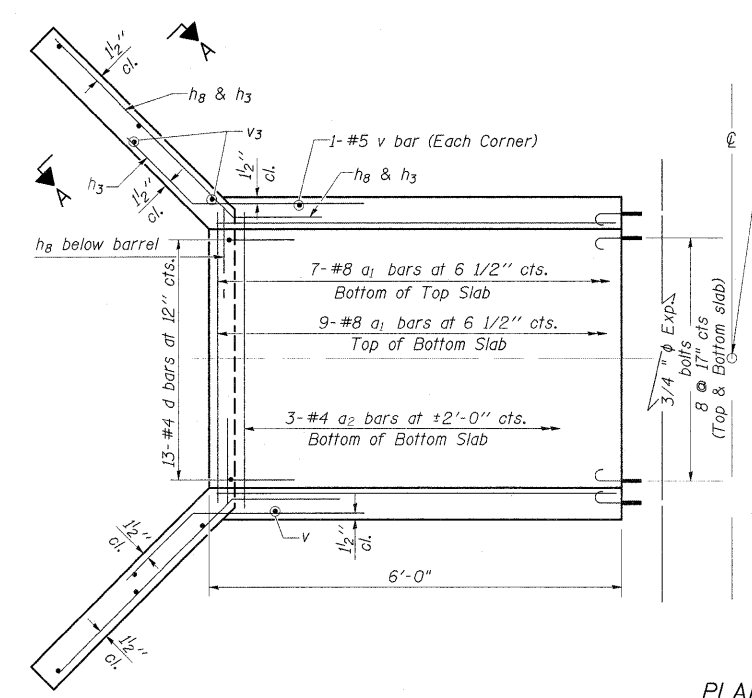
ELEVATION
 Dimensions at Rt. L's to \bar{C} Roadway



SECTION A-A



SECTION THRU BARREL



PLAN

NOTES

Reinforcement Bars shall conform to the requirements of AASHTO M-31, M-42 or M-53, Grade 60.
 Bars indicated thus 12 x 4-#5 etc. indicates 12 lines of bars with 4 lengths per line.
 A distance of half the length of the wingwall but not less than six feet of the barrel shall be poured monolithically with the wingwalls.

All construction joints shall be bonded.
 Expansion bolts shall be 3/4" ϕ x 12" hooked bolts. Hooked bolts shall extend a minimum of 9" into new concrete and have a minimum certified proof load of 4,080 lbs.

BILL OF MATERIAL
 (FOR TWO EXTENSIONS)

Bar	No.	Size	Length	Shape
a1	32	#8	14'-0"	
a2	8	#4	12'-2"	
d	13	#4	4'-6"	
h	22	#4	5'-9"	
h1	40	#4	5'-9"	
h2	36	#6	5'-9"	
h3	52	#8	8'-0"	
h4	12	#6	11'-6"	
h5	12	#8	11'-6"	
h8	52	#8	10'-2"	
v	40	#5	9'-1"	
v1	36	#5	2'-4"	
v3	16	#4	13'-0"	
Concrete Box Culverts	Cu. Yd.		35	
Reinforcement Bars	Pound		5748	
3/4" Expansion bolts	Each		56	

BOX CULVERT EXTENSION
F.A.P. ROUTE 881 (US 45)
JOHNSON COUNTY
STA. 1159+81.00
S.N. 044-7014

SSB-H-0 6-1-2000

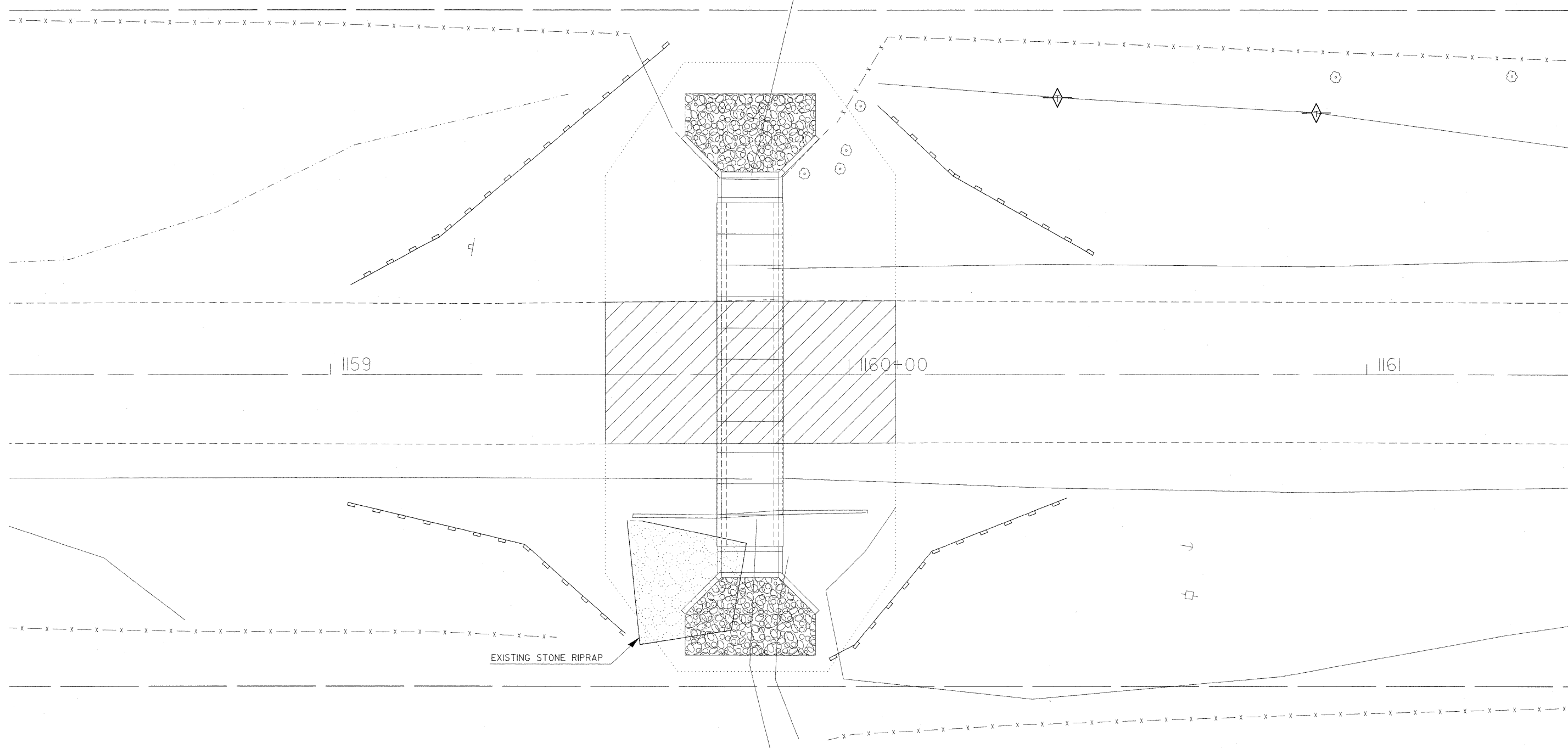
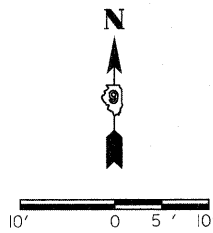
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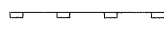


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
SN 044-7014

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

F.A.P. RTE. 881/329	SECTION 35B-1 / 18B-1	COUNTY JOHNSON/PERRY	TOTAL SHEETS 26	SHEET NO. 7
CONTRACT NO. 78069			ILLINOIS FED. AID PROJECT	



-  PERIMETER EROSION BARRIER
-  TEMPORARY DITCH CHECKS
-  STONE RIPRAP, CLASS A5

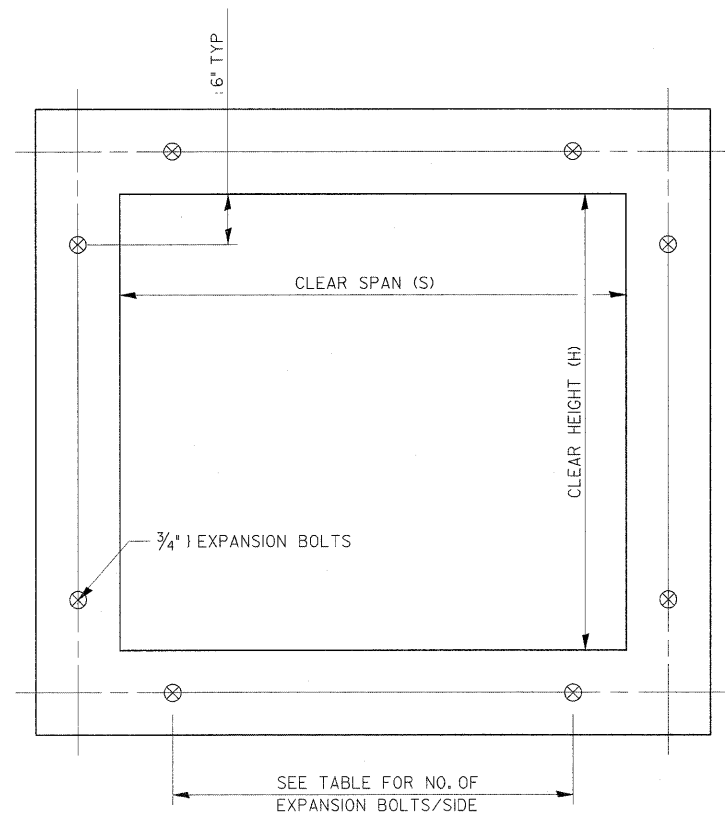
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	PLOT DATE = 3/18/2009	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

EROSION CONTROL			
SN 044-7014			
SCALE:	SHEET NO. OF	SHEETS	STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
881/329	35B-1/18B-1	JOHNSON/PERRY	26	8
CONTRACT NO. 78069				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

EXPANSION BOLTS REQUIRED FOR CULVERT EXTENSIONS



CROSS SECTION THRU BARREL

FOR ANCHOR BOLT REQUIREMENTS,
SEE ARTICLE 1006.09 OF THE
STANDARD SPECIFICATIONS.

EXPANSION BOLTS SHALL
CONSIST OF SELF DRILLING
EXPANSION SHIELDS AND 3/4" J
HOOKED BOLTS. HOOKED BOLTS
SHALL EXTEND A MINIMUM OF 9"
INTO NEW CONCRETE.

MINIMUM CERTIFIED PROOF
LOAD=7500 LBS.

BOLTS SHALL BE PAID FOR
AT THE CONTRACT UNIT PRICE
EACH FOR EXPANSION BOLTS,
3/4 INCH.

H OR S	NO. EXPANSION BOLTS REQ'D/SIDE			
	EXTENSION ≤ 15'		EXTENSION > 15'	
	NO.	SPACING	NO.	SPACING
2.0	*	*	*	*
2.5	2	18"	2	18"
3.0	2	24"	2	24"
4.0	3	18"	3	18"
5.0	4	16"	3	24"
6.0	5	15"	4	20"
7.0	5	18"	4	24"
8.0	6	17"	5	21"
9.0	6	19"	5	24"
10.0	7	18"	6	21"
11.0	8	17"	6	24"
12.0	8	19"	7	22"

* NOTE: USE MINIMUM OF 1 EXPANSION
BOLT AT EACH CORNER.

EXAMPLE:

6' X 4' BOX CULVERT TO BE
EXTENDED 18' AT ONE END
ONLY.

FROM TABLE FIND:

6' SIDE REQUIRES (4)-3/4" J
EXPANSION BOLTS AT
20" CENTERS

4' SIDE REQUIRES (3)-3/4" J
EXPANSION BOLTS AT
18" CENTERS

TOTAL NO. REQUIRED
(4+3)2 = (14)-3/4" J EXPAN. BOLTS

REVISIONS	
REDRAWN	2-15-89
REVISED	8-15-94
REVISED	12-14-01
REVISED	

STD. 9-9

DETAIL OF PRECAST CONCRETE BOX CULVERT SECTION

(WITH COVER 2 FEET OR GREATER -
AASHTO DESIGNATION M259)
DESIGN LOADING: HS-20-44

GENERAL NOTES

SHOP PLANS FOR THE REINFORCEMENT SHALL BE SUBMITTED IN ACCORDANCE WITH THE REQUIREMENTS OF ARTICLE 504.04 OF THE STANDARD SPECIFICATIONS.

MINIMUM CONCRETE STRENGTH SHALL BE 5000 PSI AFTER 28 DAYS.

THE JOINTS OF THE PRECAST BOX SECTIONS SHALL BE SEALED WITH MASTIC IN ACCORDANCE WITH ARTICLE 1055.01 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

LIFTING HOLES SHALL BE FILLED WITH CONCRETE PLUGS AND MASTIC AFTER THE BOX SECTIONS ARE IN PLACE.

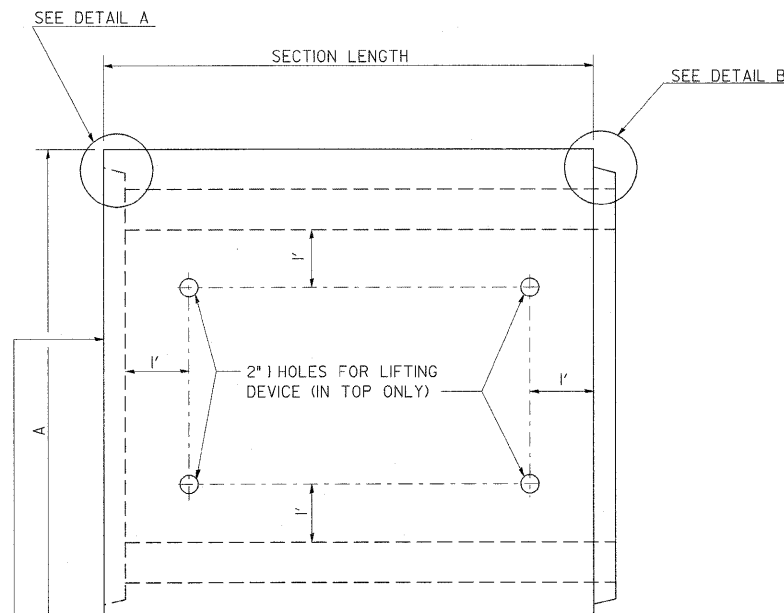
THE TERMS AS1, AS2, & AS3 DENOTE THE REQUIRED STEEL AREAS FOR REINFORCEMENT AS SPECIFIED IN AASHTO M259. REINFORCEMENT SHALL BE WELDED WIRE FABRIC CONFORMING TO AASHTO M55-81.

DRAINAGE OPENINGS SHALL BE PROVIDED IN ACCORDANCE WITH ARTICLE 503.11 OF THE STANDARD SPECIFICATIONS. LOCATION AND SPACING OF THE OPENINGS SHALL BE SHOWN ON THE SHOP DRAWINGS.

DIMENSIONS

SPAN X RISE	T (INCHES)	A (FT.-IN.)	B (FT.-IN.)	C (INCHES)
2' X 2'	4	2-8	2-8	4
3' X 2'	4	3-8	2-8	4
3' X 3'	4	3-8	3-8	4
4' X 2'	5	4-10	2-10	5
4' X 3'	5	4-10	3-10	5
4' X 4'	5	4-10	4-10	5
5' X 2'	6	6-0	3-0	6
5' X 3'	6	6-0	4-0	6
5' X 4'	6	6-0	5-0	6
5' X 5'	6	6-0	6-0	6
6' X 2'	7	7-2	3-2	7
6' X 3'	7	7-2	4-2	7
6' X 4'	7	7-2	5-2	7
6' X 5'	7	7-2	6-2	7
6' X 6'	7	7-2	7-2	7
7' X 4'	8	8-4	5-4	8
7' X 5'	8	8-4	6-4	8
7' X 6'	8	8-4	7-4	8
7' X 7'	8	8-4	8-4	8
8' X 4'	8	9-4	5-4	8
8' X 5'	8	9-4	6-4	8
8' X 6'	8	9-4	7-4	8
8' X 7'	8	9-4	8-4	8
8' X 8'	8	9-4	9-4	8

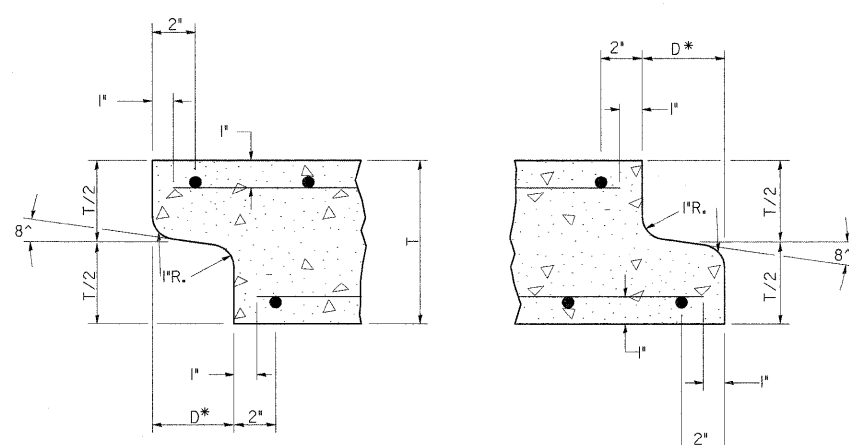
SPAN X RISE	T (INCHES)	A (FT.-IN.)	B (FT.-IN.)	C (INCHES)
9' X 5'	9	10-6	6-6	9
9' X 6'	9	10-6	7-6	9
9' X 7'	9	10-6	8-6	9
9' X 8'	9	10-6	9-6	9
9' X 9'	9	10-6	10-6	9
10' X 5'	10	11-8	6-8	10
10' X 6'	10	11-8	7-8	10
10' X 7'	10	11-8	8-8	10
10' X 8'	10	11-8	9-8	10
10' X 9'	10	11-8	10-8	10
10' X 10'	10	11-8	11-8	10
11' X 4'	11	12-10	5-10	11
11' X 6'	11	12-10	7-10	11
11' X 8'	11	12-10	9-10	11
11' X 9'	11	12-10	11-10	11
11' X 11'	11	12-10	12-10	11
12' X 4'	12	14-0	6-0	12
12' X 6'	12	14-0	8-0	12
12' X 8'	12	14-0	10-0	12
12' X 10'	12	14-0	12-0	12
12' X 12'	12	14-0	14-0	12



WHEN EXTENDING AN EXISTING BOX, PLACE THIS END AGAINST THE EXISTING HEADWALL

PLAN

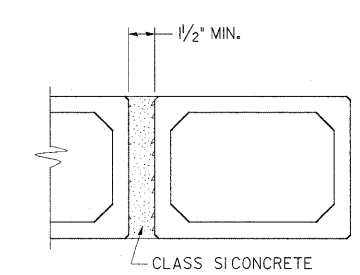
LOCATION OF LIFTING HOLES MAY BE VARIED AS NEEDED TO CLEAR REINFORCEMENT.



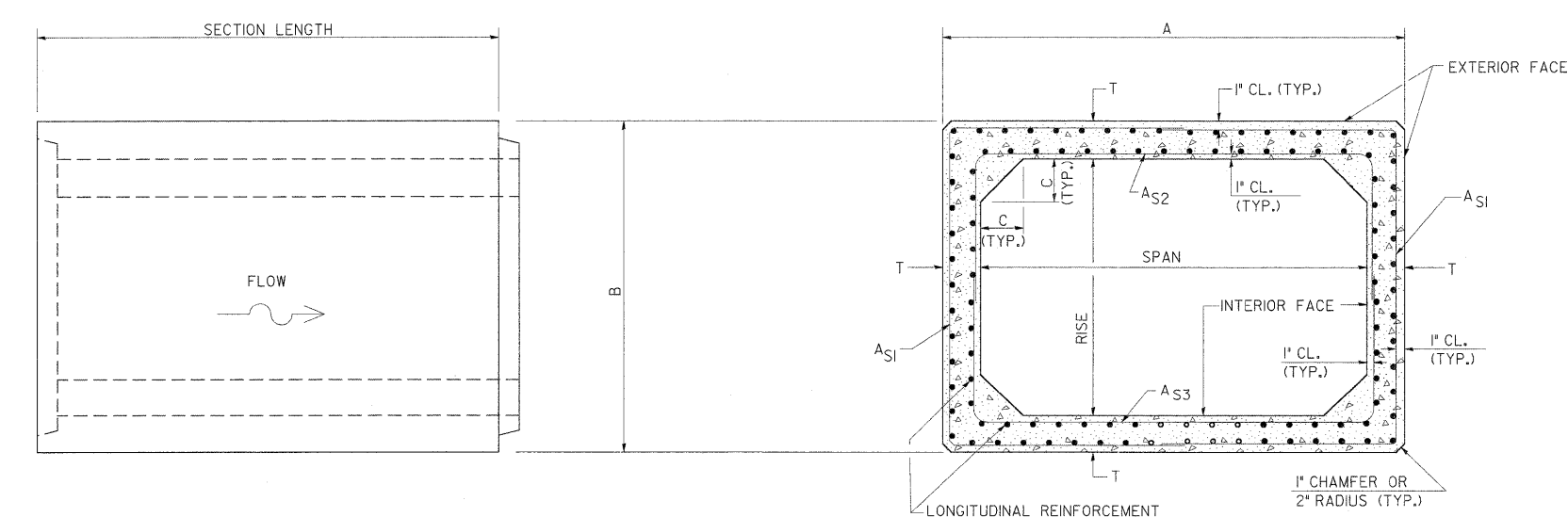
DETAIL A
(TYP. INLET END)

DETAIL B
(TYP. OUTLET END)

NOTE: INLET AND OUTLET ENDS SHALL BE COMPATIBLE.
*THE D DIMENSION SHALL CONFORM TO THE MANUFACTURER'S STANDARDS.



MULTIPLE UNIT PLACEMENT



ELEVATION

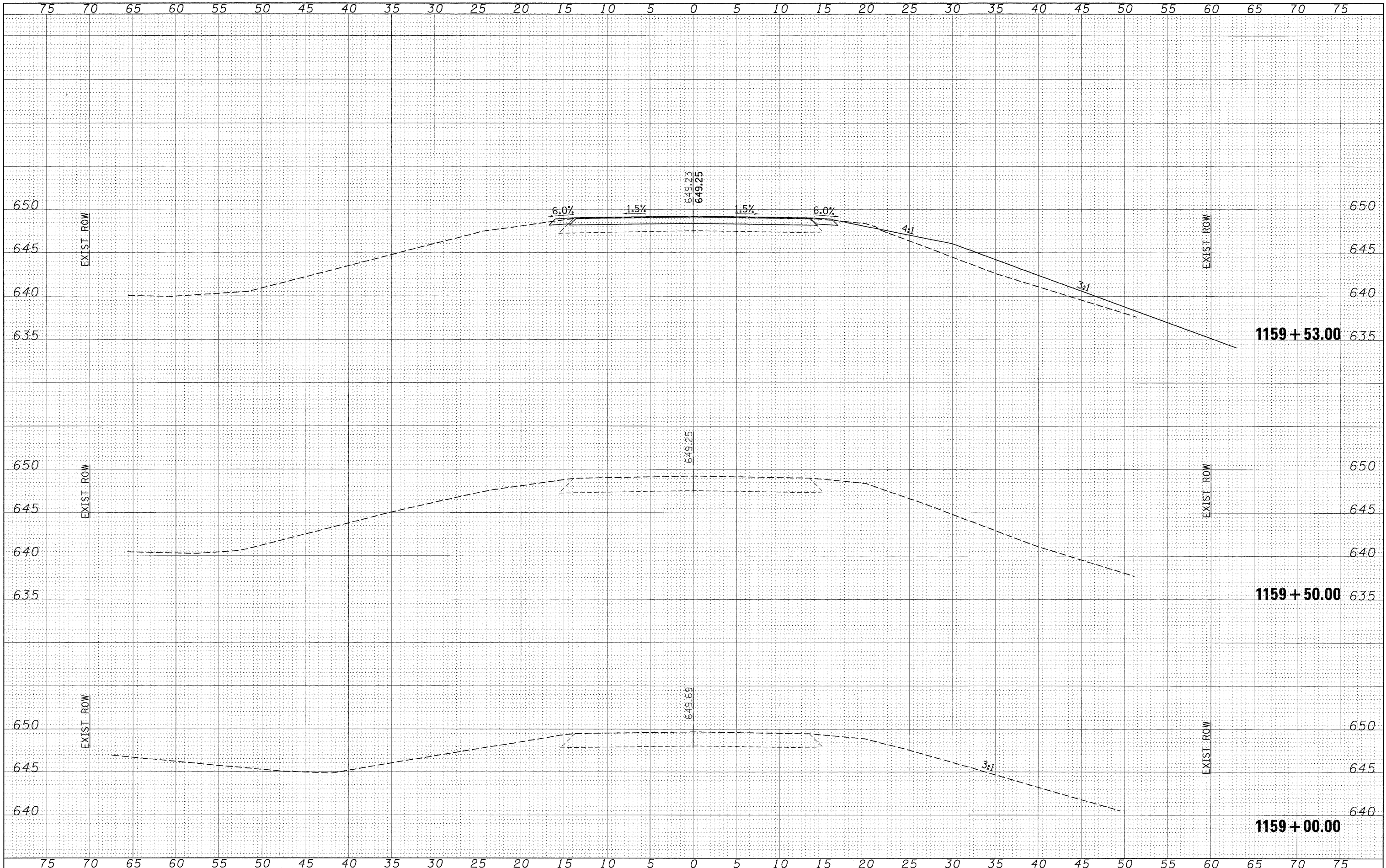
CROSS SECTION

STD. 9-48

REVISIONS
DRAWN 3-7-89
REVISED 3-27-90
REVISED 8-16-94
REVISED 01-10-07
RESIZED 5-6-08

BY	DATE
SURVEYED	
PLOTTED	
NOTE BOOK	
AREAS CHECKED	

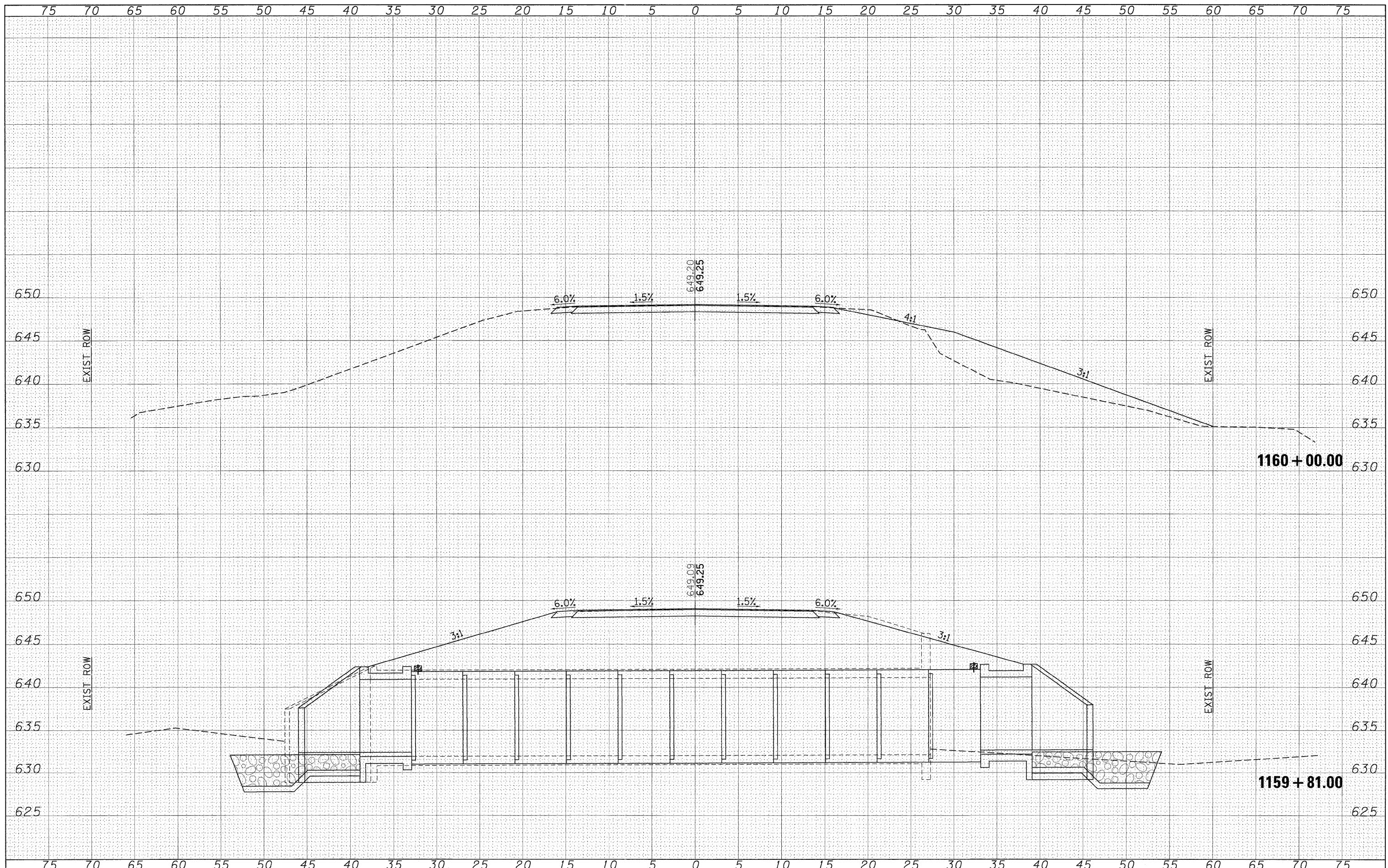
BY	DATE
SURVEYED	
PLOTTED	
NOTE BOOK	
AREAS CHECKED	



FILE NAME =	USER NAME = cornellm	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	CROSS SECTIONS SN 044-7014			F.A.P. RTE. 881/329	SECTION 35B-1/18B-1	COUNTY JOHNSON/PERRY	TOTAL SHEETS 26	SHEET NO. 11
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	PLOT SCALE = 5.0000 "/ IN.	CHECKED -	REVISED -									
	PLOT DATE = 3/19/2009	DATE -	REVISED -									

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	

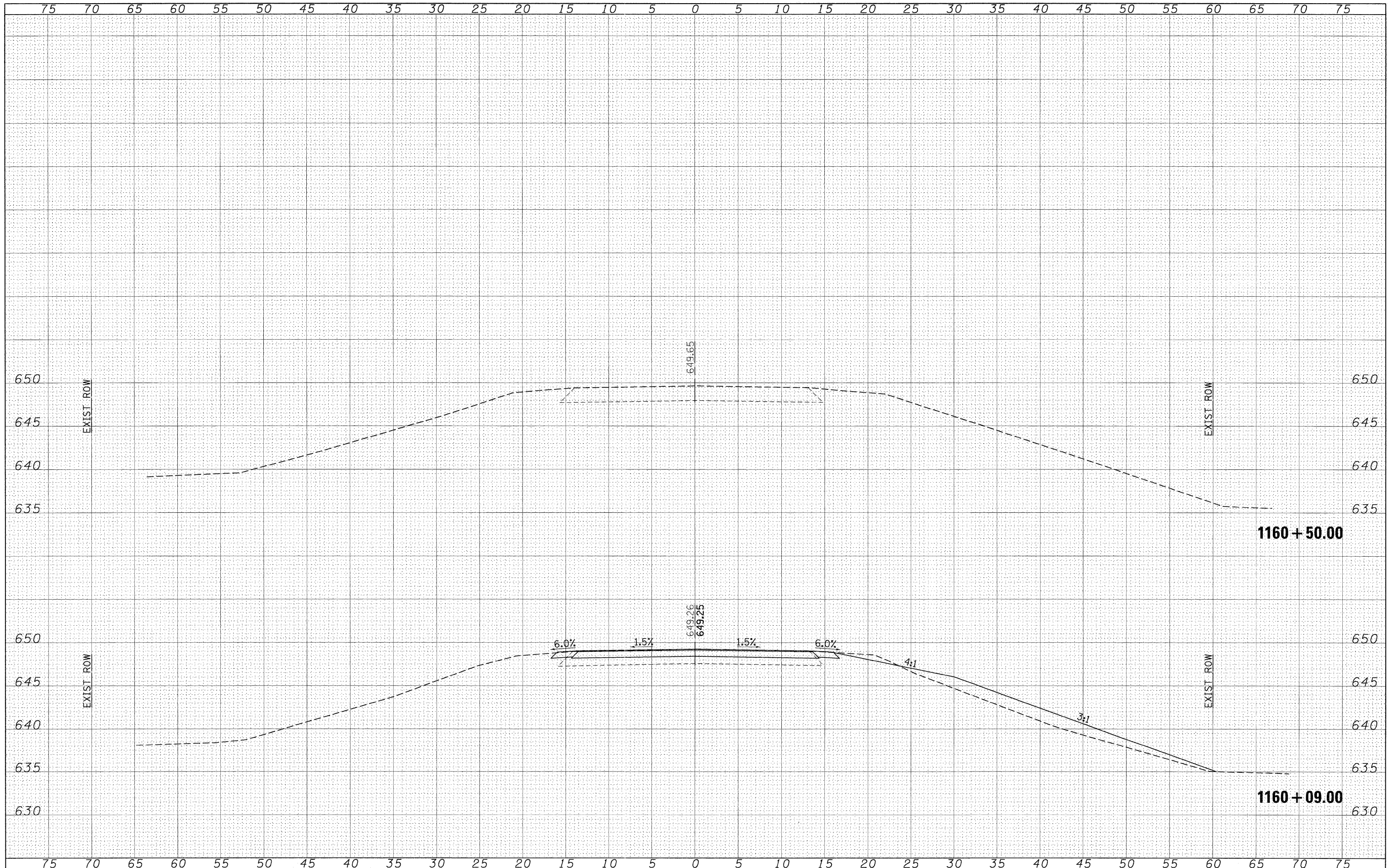
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BY	
SURVEYED	
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NOTE BOOK	
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c:\pw_work\K\PWID0\CORNELLM\dms49840\978869	sh-t-0447014-rs.dgn	DRAWN -	REVISED -		SCALE: 1"=5'	SHEET NO.	OF	SHEETS	STA. 1159+81.00	TO STA. 1160+00.00	881/329	35B-1/18B-1	JOHNSON/PERRY	26	12
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	PLOT DATE = 3/19/2009	DATE -	REVISED -												
CONTRACT NO. 78069											ILLINOIS FED. AID PROJECT				

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

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



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USER NAME = cornellm
 sh1-0447014-xs.dgn
 PLOT SCALE = 5.0000 "/ IN.
 PLOT DATE = 3/19/2009

DESIGNED -
 DRAWN -
 CHECKED -
 DATE -

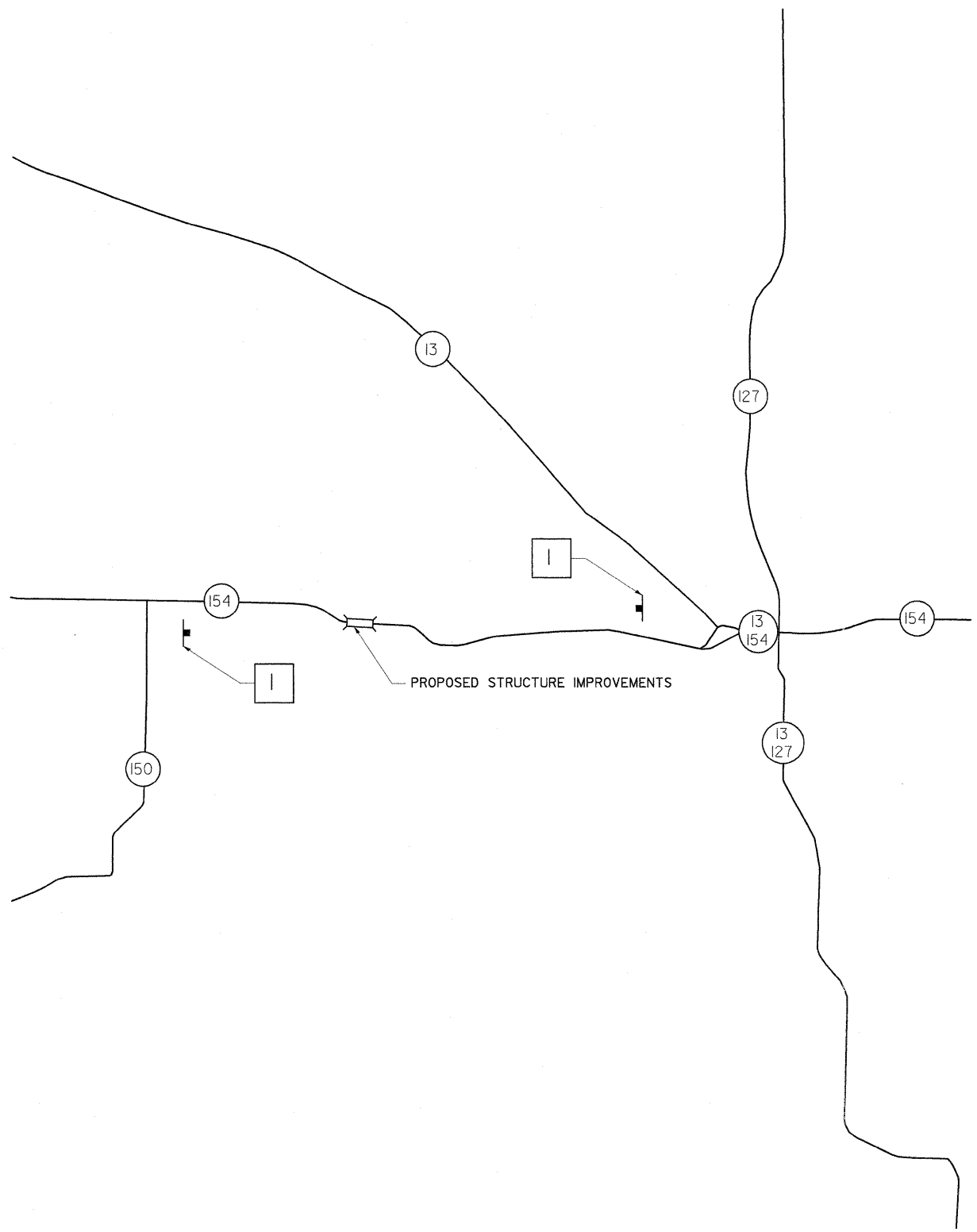
REVISED -
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**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS
 SN 044-7014**

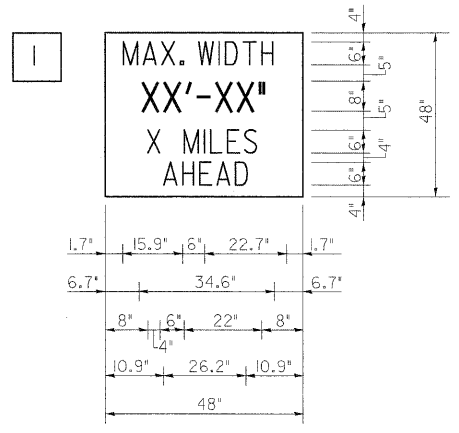
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F.A.P. RTE. 881/329	SECTION 35B-1/18B-1	COUNTY JOHNSON/PERRY	TOTAL SHEETS 26	SHEET NO. 13
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 78069	



DETOUR SIGNING PLAN

SIGN LEGEND

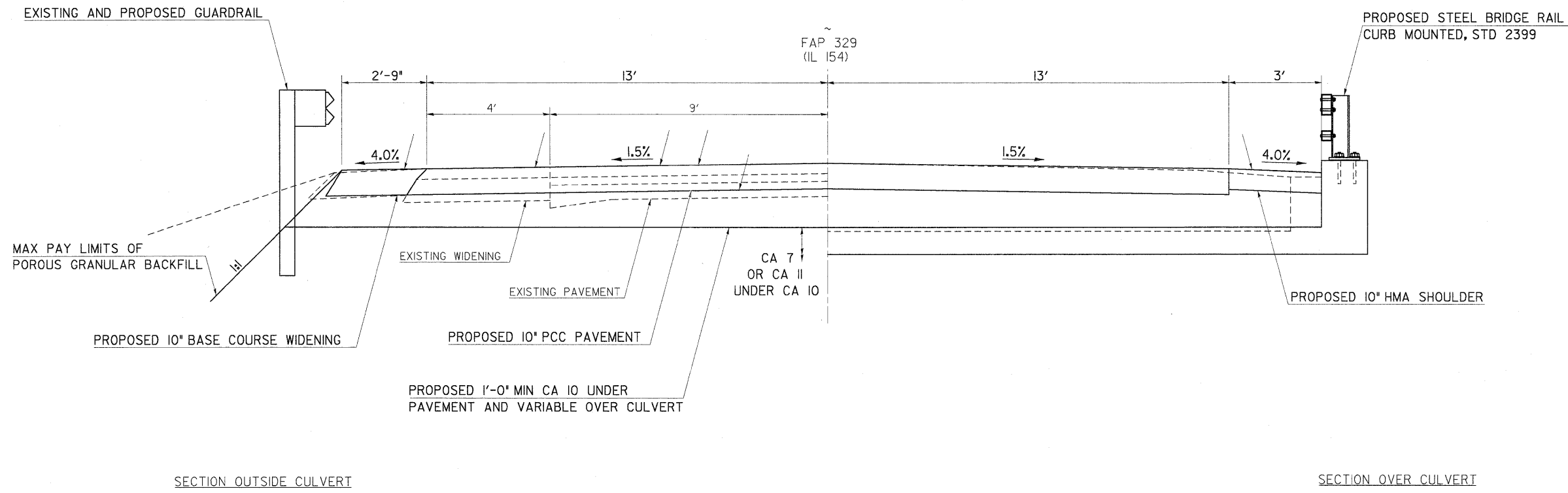


W12-1103
 SERIES D ALPHABET. NO BORDER.
 BLACK ON WHITE.

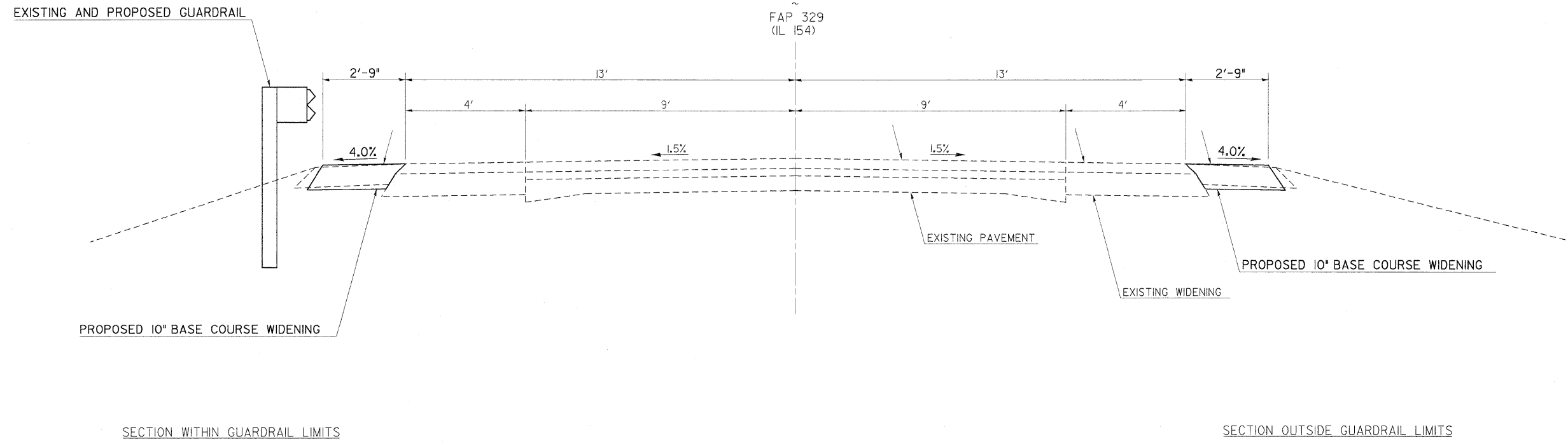
DETOUR NOTES

1. THE CONTRACTOR SHALL FURNISH THE POSTS AND ERECT THE SIGNS AT THE LOCATIONS DIRECTED BY THE ENGINEER. ALL SIGNS SHALL BE POST MOUNTED
2. THE ABOVE NOTED WORK, INCLUDING SIGN, POSTS, HARDWARE AND LABOR SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE, EACH, FOR TRAFFIC CONTROL AND PROTECTION, STD 701321 AND NO OTHER COMPENSATION WILL BE ALLOWED.
3. THE WIDTH SHOWN ON THE W12-1103 SIGN SHALL BE 1'-6" LESS THAN STAGE TRAFFIC CLEAR WIDTH OR AS DIRECTED BY THE ENGINEER. THE 'X' MILES AHEAD WILL BE DETERMINED BY THE ENGINEER.

FILE NAME = c:\pw_work\pwidot\cornellm\dms49848\d978069_sht.msc.dgn	USER NAME = cornellm	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DETOUR SIGNING		F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
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PLOT DATE = 3/18/2009	CHECKED -	REVISED -	SCALE:		SHEET NO.	OF	SHEETS	CONTRACT NO. 78069				
DATE	REVISED -	FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT									



TYPICAL SECTION WITHIN PAVEMENT REMOVAL

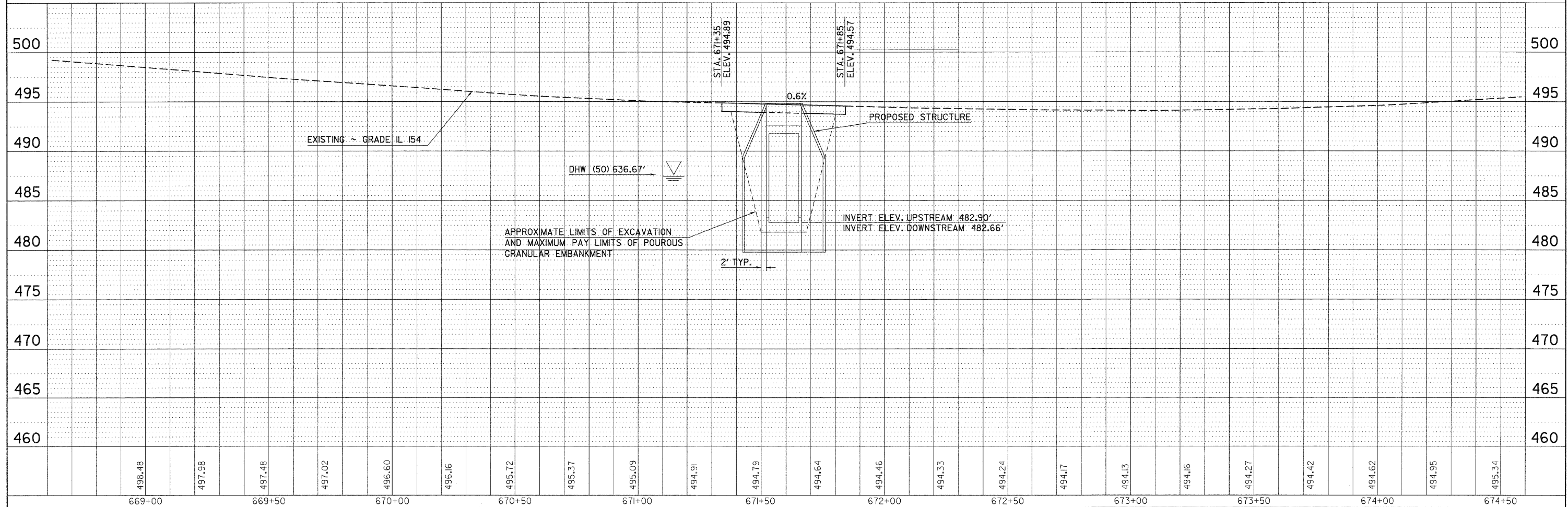
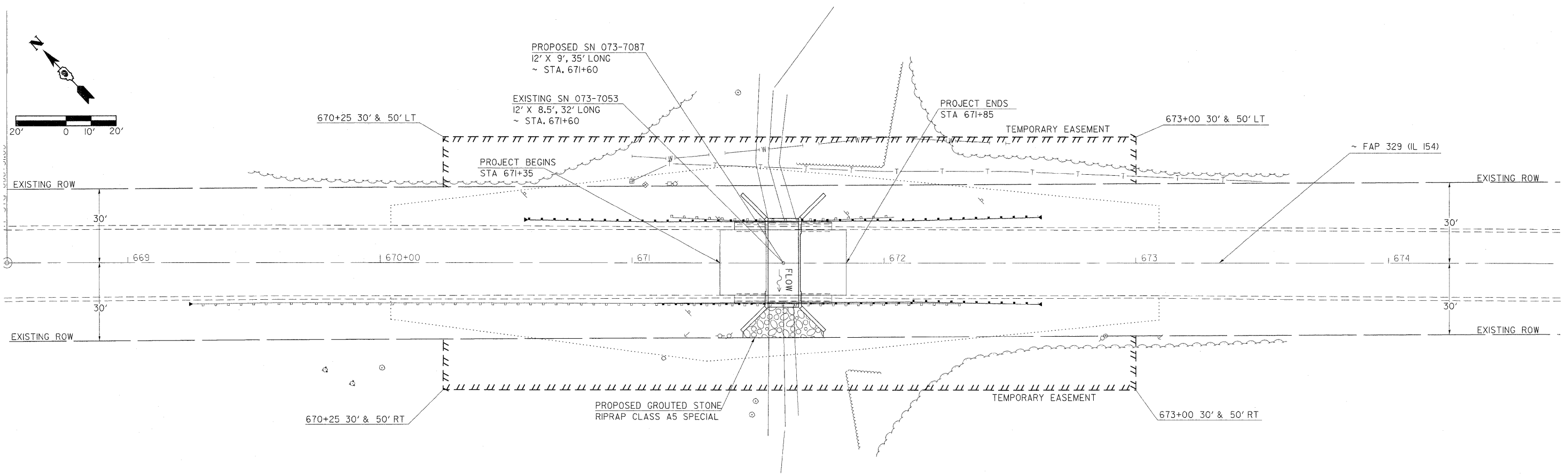


TYPICAL SECTION OUTSIDE PAVEMENT REMOVAL

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	PLOT DATE = 3/18/2009	DATE -			SCALE:	SHEET NO. OF SHEETS	STA. TO STA.	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT
	CONTRACT NO. 78069									

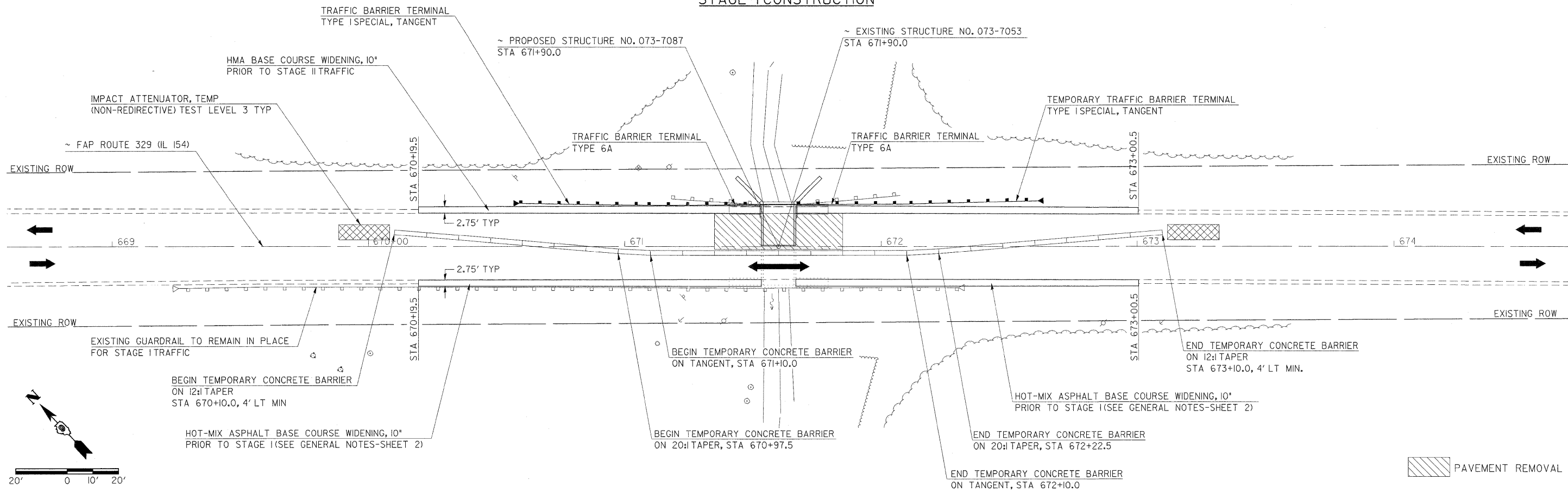
PLAN	SURVEYED	BY	DATE
	PLOTTED		
	CHECKED		
	REVISIONS		
	NO. DATE		
	NO.		

PROFILE	SURVEYED	BY	DATE
	PLOTTED		
	CHECKED		
	REVISIONS		
	NO. DATE		
	NO.		

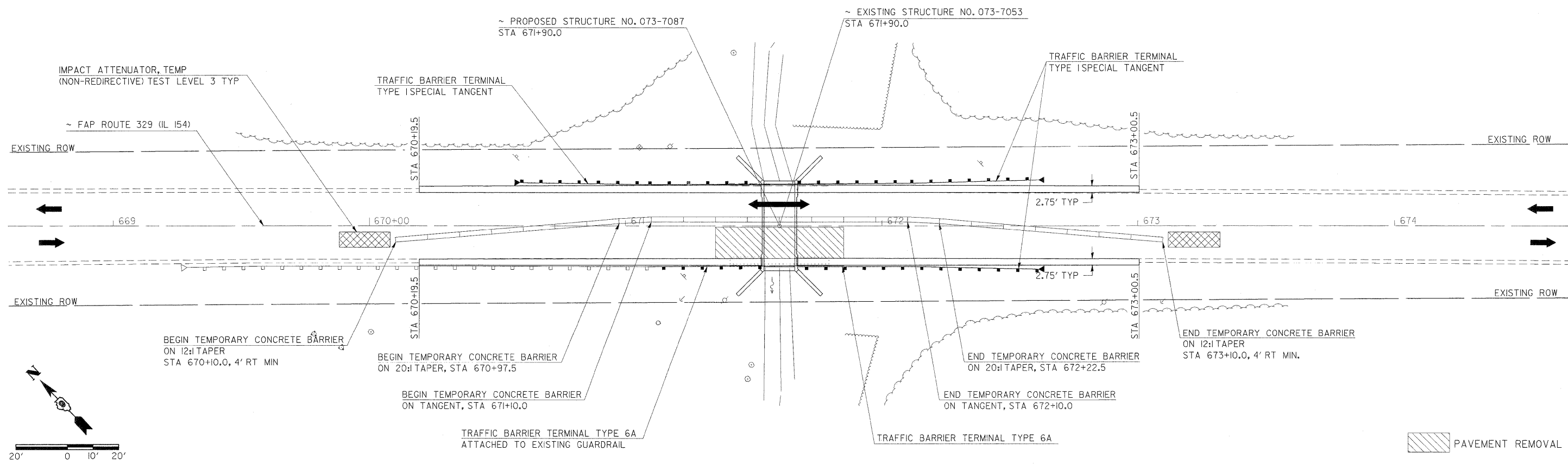


FILE NAME =	USER NAME = cornellm	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PLAN /PROFILE SN 073-7053			F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
c:\pw\work\p\idot\cornellm\dms49840\c9782691_sht.pln\p.f.dgn		DRAWN -	REVISED -		881/329	35B-1/18B-1	JOHNSON/PERRY	26	16	CONTRACT NO. 78069		
PLOT SCALE = 20,0000' / IN.		CHECKED -	REVISED -		SCALE: 1"=20'	SHEET NO. OF	SHEETS	STA.	TO STA.	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT
PLOT DATE = 3/18/2009		DATE -	REVISED -									

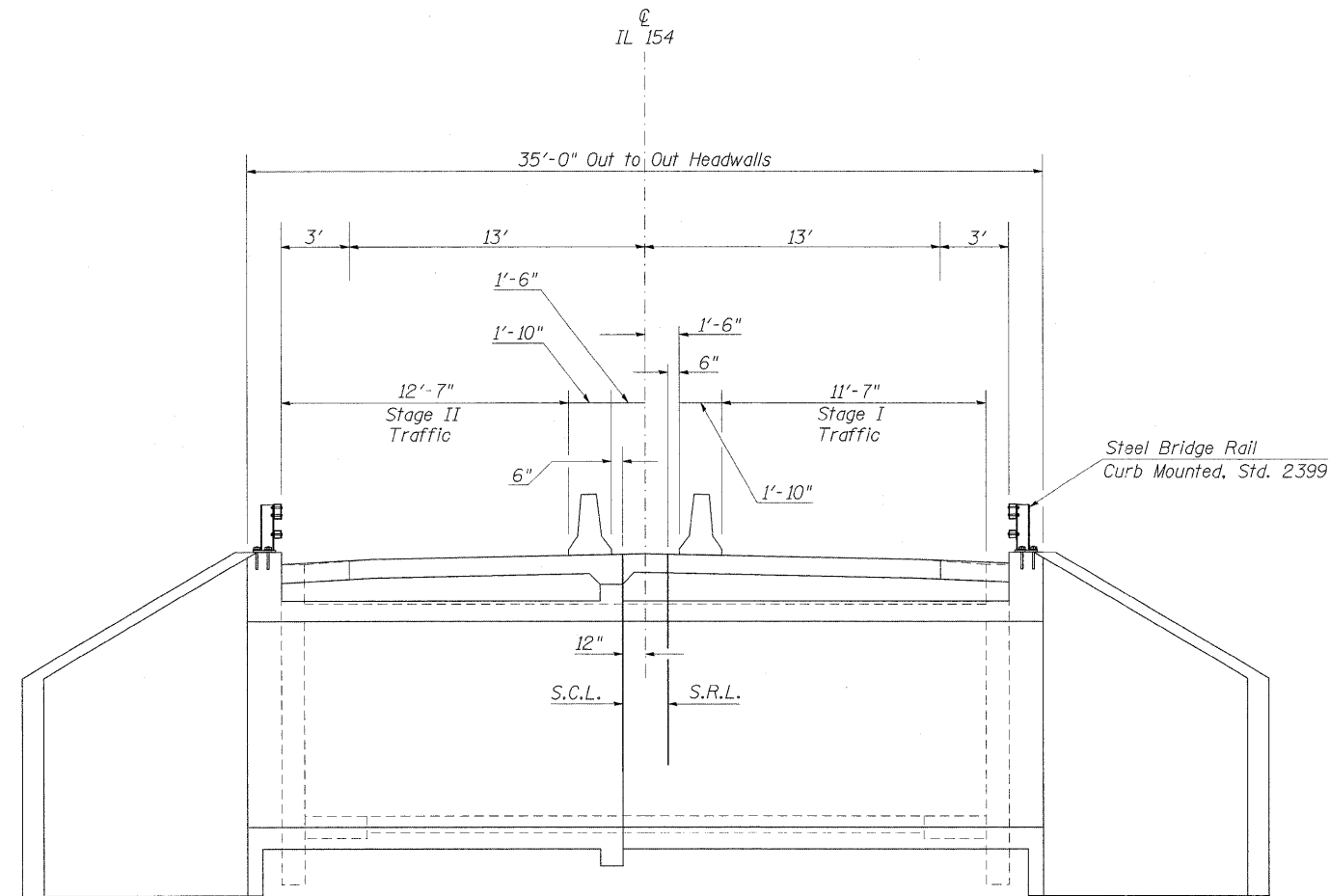
STAGE I CONSTRUCTION



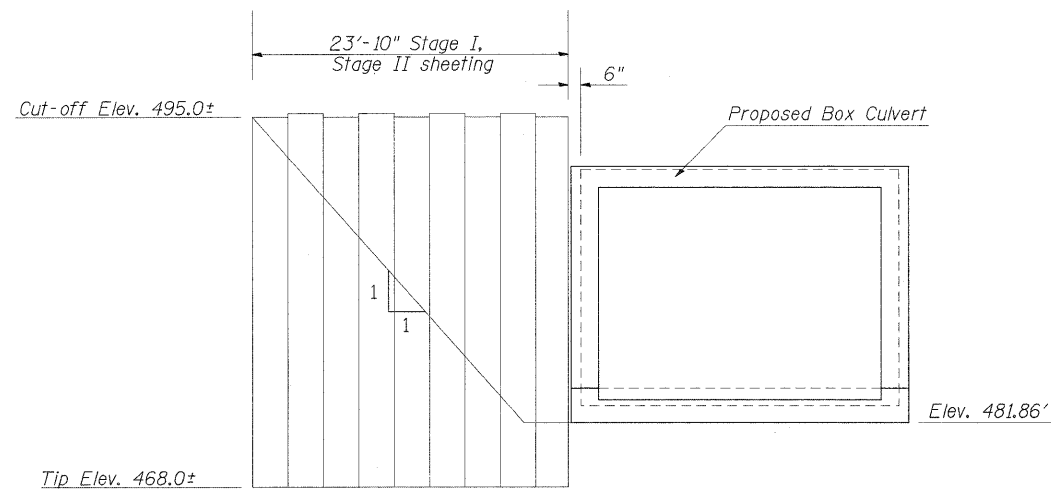
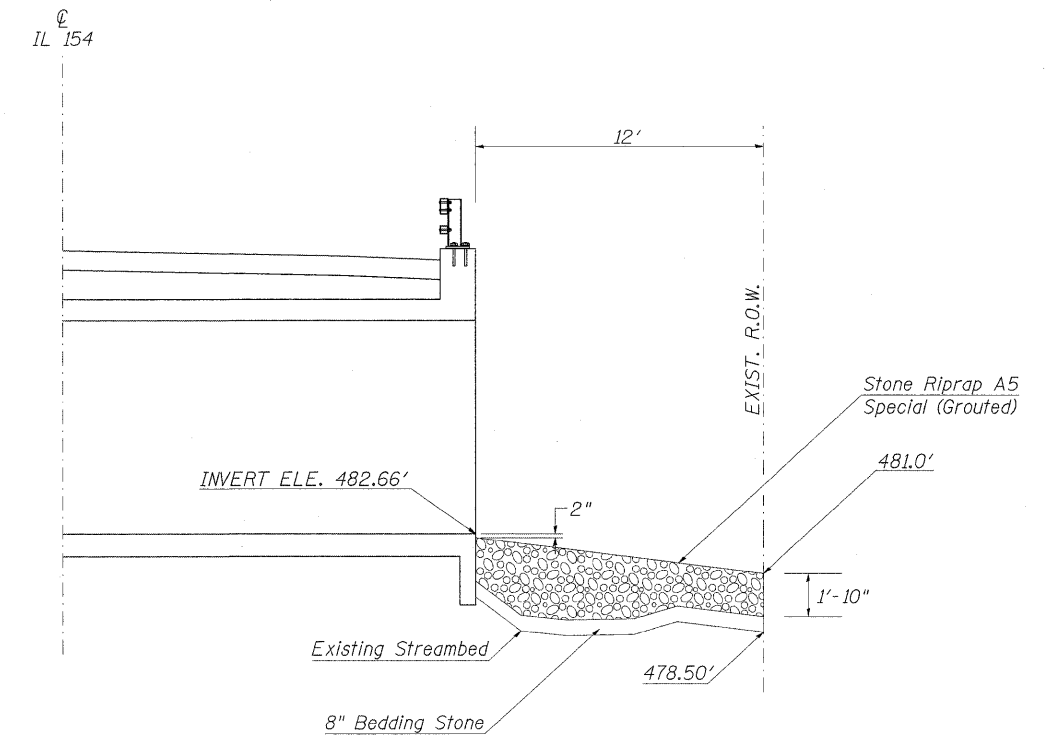
STAGE II CONSTRUCTION



FILE NAME =	USER NAME = cornell1m	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STAGE CONSTRUCTION SN 073-7053			F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
ca:\pk_work\p\dtdot\cornell1m\dms49849\d990069_sht_misc.dgn		DRAWN -	REVISED -		SCALE: 1"=20'	SHEET NO. OF	SHEETS	STA. 669+00 TO STA. 674+00	881/329	35B-1/18B-1	JOHNSON/PERRY	26	17
		CHECKED -	REVISED -						CONTRACT NO. 78069				
		DATE -	REVISED -						FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



Downstream Slope Protection
SN 073-7053 over Creek
To be used on downstream end only

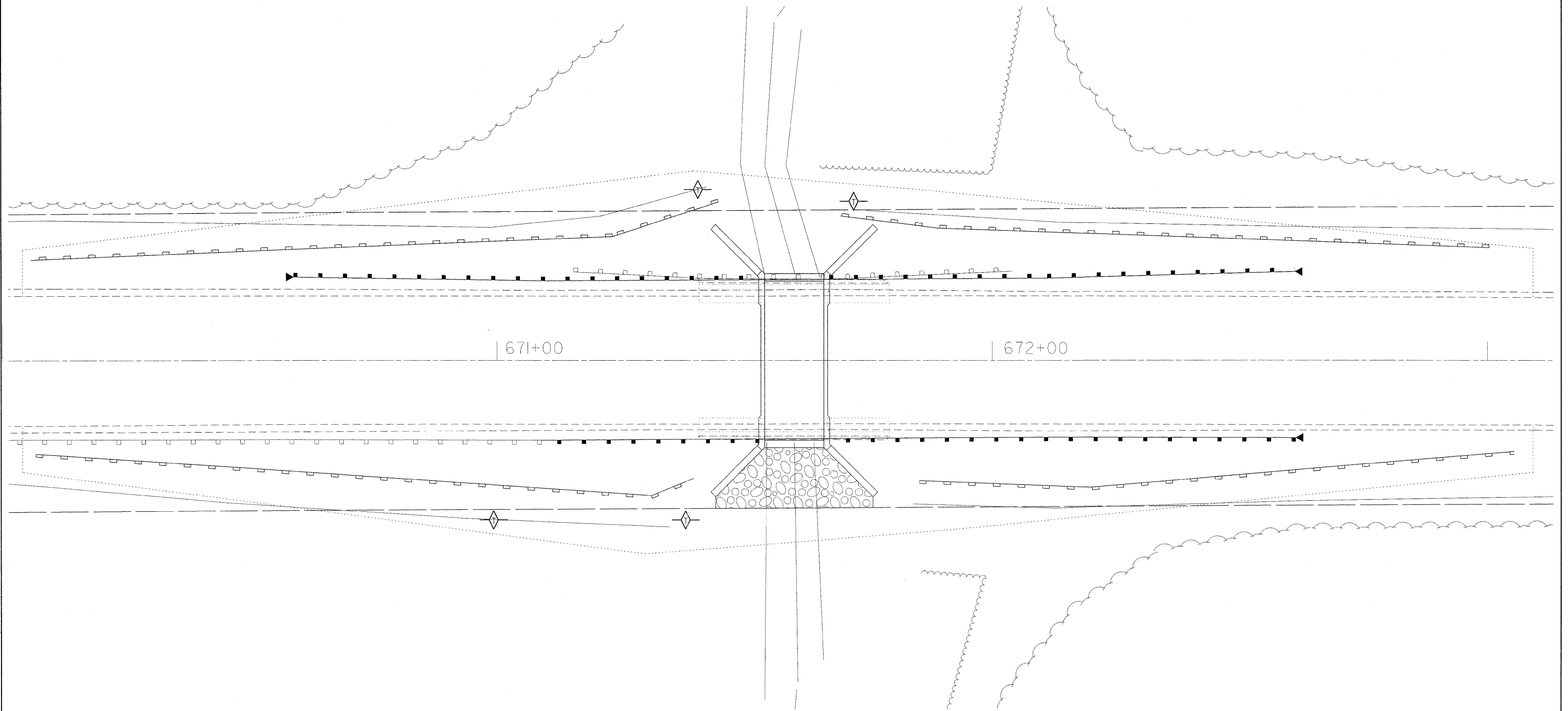
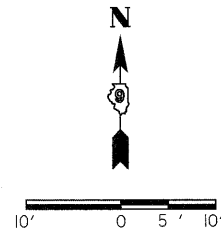


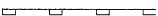


NOTES

- Dotted lines indicate "Removal of Existing Structures."
- For quantities of Temporary Concrete Barrier, see roadway plans.
- All dimensions are at right angles to the centerline of the roadway.
- For detail of Temporary Concrete Barrier, see Sheet 22.
- Minimum temporary sheet pile Section Modulus = 16.0 in³/ft and f_y = 39,000 psi.
- If the Contractor chooses to alter the temporary cantilevered sheet piling design requirements shown on the plans, a design submittal including plan details and calculations will be required for review and acceptance by the Engineer.

**STAGE CONSTRUCTION
DETAILS**
F.A.P. ROUTE 329 (IL 154)
PERRY COUNTY
STA. 671+60.00
S.N. 073-7053

FILE NAME =	USER NAME = cornellm	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STAGE CONSTRUCTION DETAILS SN 073-7053				F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
c:\pwork\pwork\DOT\CORNELLM\dms49846\d	7/8069_sht_misc.dgn	DRAWN -	REVISED -		881/329	35B-1/18B-1	JOHNSON/PERRY	26	19				
	PLOT SCALE = 4.0000' / IN.	CHECKED -	REVISED -		CONTRACT NO. 78069								
	PLOT DATE = 3/19/2009	DATE -	REVISED -		SCALE:	SHEET NO.	OF SHEETS	STA.	TO STA.	FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT		



-  PERIMETER EROSION BARRIER
-  TEMPORARY DITCH CHECKS
-  GROUTED RIPRAP, CLASS A5

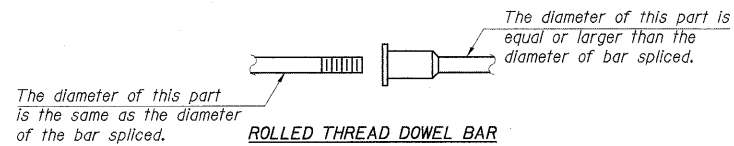
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	PLOT DATE = 3/18/2009	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

EROSION CONTROL SN 073-7053			
SCALE: 1"=10'	SHEET NO. OF	SHEETS	STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
881/329	35B-1/18B-1	JOHNSON/PERRY	26	20
CONTRACT NO. 78069				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

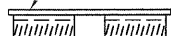


ROLLED THREAD DOWEL BAR



** ONE PIECE

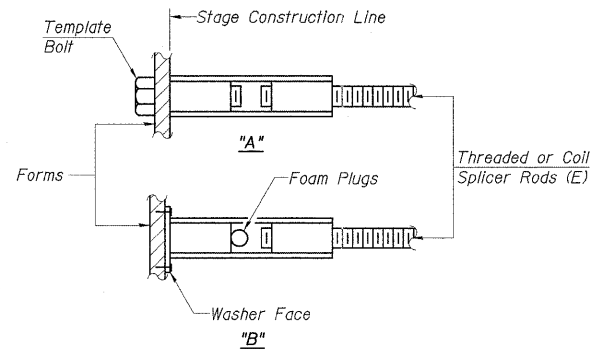
Wire Connector



WELDED SECTIONS

BAR SPLICER ASSEMBLY ALTERNATIVES

**Heavy Hex Nuts conforming to ASTM A 563, Grade C, D or DH may be used.



INSTALLATION AND SETTING METHODS

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

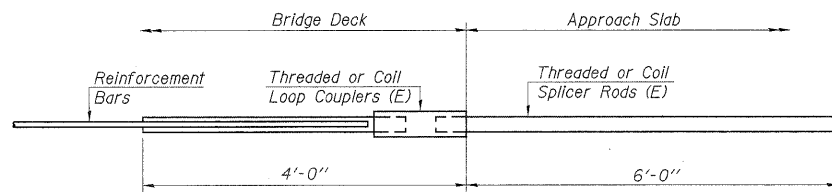
NOTES

Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.
Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.
All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

- ① Minimum Capacity = $1.25 \times f_y \times A_s$
(Tension in kips)
- ② Minimum *Pull-out Strength = $0.66 \times f_y \times A_s$
(Tension in kips)

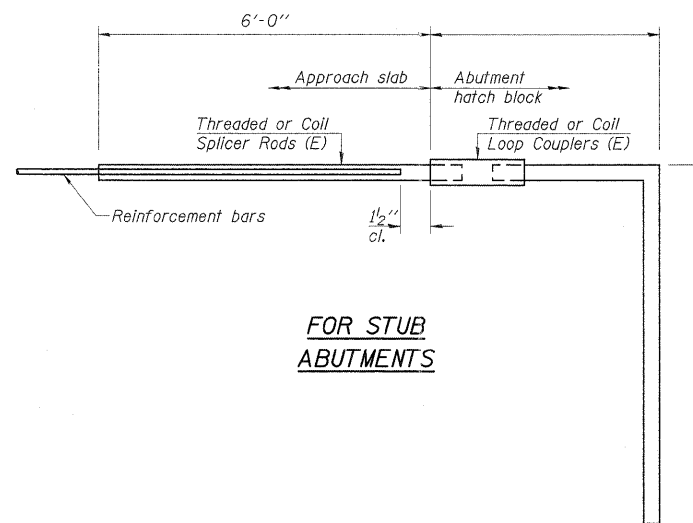
Where f_y = Yield strength of lapped reinforcement bars in ksi.
 A_s = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

BAR SPLICER ASSEMBLIES			
Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#4	1'-8"	14.7	7.9
#5	2'-2"	23.0	12.3
#6	2'-7"	33.1	17.4
#7	3'-5"	45.1	23.8
#8	4'-6"	58.9	31.3
#9	5'-9"	75.0	39.6
#10	7'-3"	95.0	50.3
#11	9'-0"	117.4	61.8



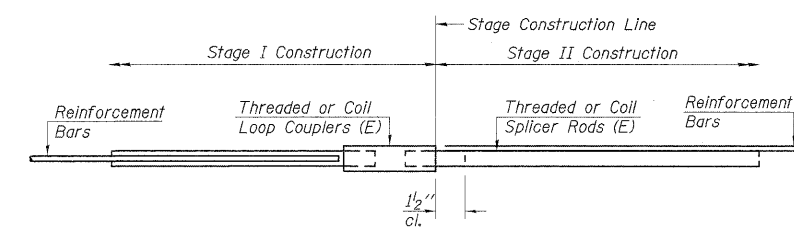
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 12.3 kips - tension
No. Required =



FOR STUB ABUTMENTS

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 12.3 kips - tension
No. Required =



STANDARD

Bar Size	No. Assemblies Required	Location
#7	2	Top of Top of Slab
#7	12	Bottom of Top of Slab
#5	13	Top of Bottom of Slab
#5	13	Bottom of Bottom of Slab
#6	18	Both Walls

BAR SPLICER ASSEMBLY DETAILS
IL 154 OVER CREEK
FAP 329; SECTION 18B-1
PERRY COUNTY
STA 671+60.00
STRUCTURE NO 073-7053

BSD-1 10-1-08

FILE NAME =	USER NAME = cornellm	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BAR SPLICER ASSEMBLY DETAIL SN 073-7053				F.A.P. RTE. 881/329	SECTION 35B-1/18B-1	COUNTY JOHNSON/PERRY	TOTAL SHEETS 26	SHEET NO. 21
cu\pwork\pwork\CORNELLM\dms49842\dms49842.dgn	79869.sht.msxdgn	DRAWN -	REVISED -		SCALE:	SHEET NO.	OF	SHEETS	STA.	TO STA.	CONTRACT NO. 78069		
	PLT SCALE = 1.0000 "/td> <td>CHECKED -</td> <td>REVISED -</td> <td colspan="9" style="text-align: center;">ILLINOIS FED. AID PROJECT</td>	CHECKED -	REVISED -		ILLINOIS FED. AID PROJECT								
	PLT DATE = 3/19/2009	DATE -	REVISED -										

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

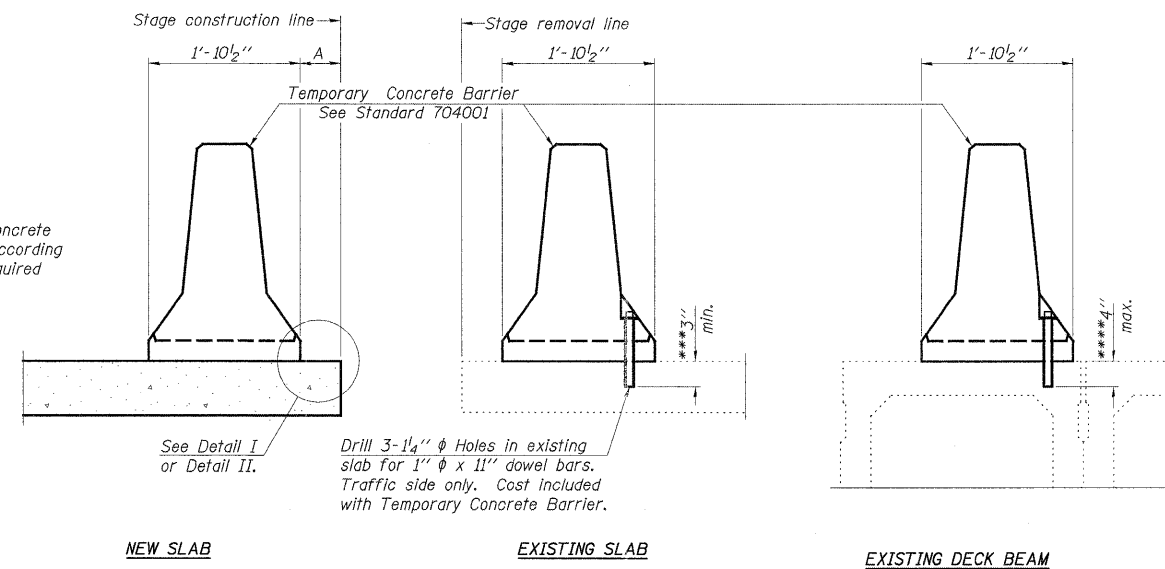
NOTES

Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x7"x10" steel \bar{r} to the top layer of couplers with 2- $\frac{5}{8}$ " ϕ bolts screwed to coupler at approximate \bar{c} of each barrier panel.

Detail II - With Extended Reinforcement Bars:
Connect one (1) 1"x7"x10" steel \bar{r} to the concrete slab or concrete wearing surface with 2- $\frac{5}{8}$ " ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate \bar{c} of each barrier panel.

Cost of anchorage is included with Temporary Concrete Barrier.
The 1" x 7" x 10" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

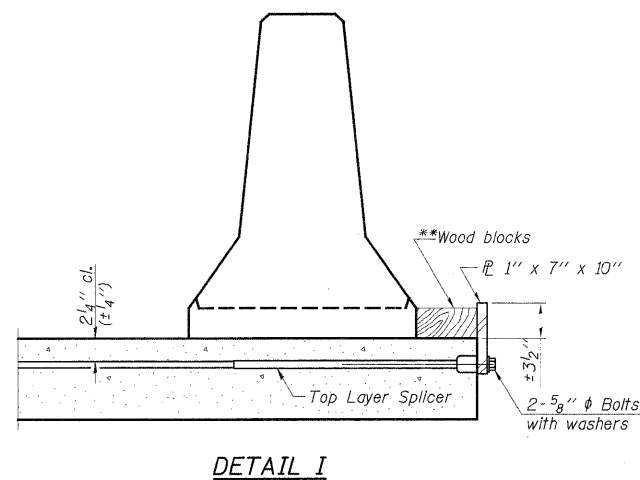
When "A" is 3'-6" or less, the temporary concrete barrier shall be anchored to the new slab according to Detail I or Detail II. No anchorage is required when "A" is greater than 3'-6".



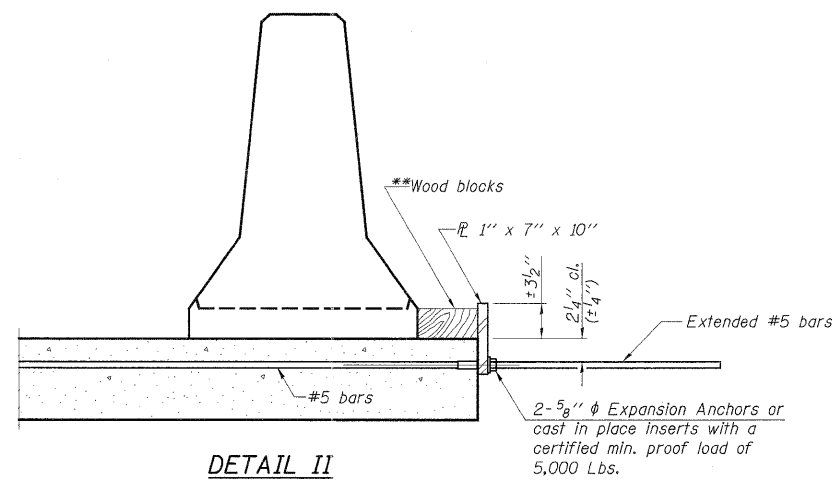
SECTIONS THRU SLAB OR DECK BEAM

*** Dimension shown is minimum required embedment into concrete.
If hot-mix asphalt wearing surface is present, minimum embedment shall be in addition to wearing surface depth.

**** If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.

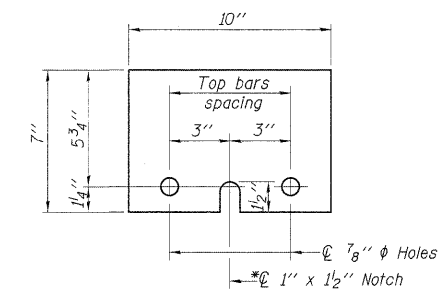


DETAIL I



DETAIL II

**Wood blocks may be omitted when required to provide minimum stage traffic lane width. When the wood blocks are omitted, the concrete barrier shall be in direct contact with the steel retainer plate.



STEEL RETAINER \bar{r} 1" x 7" x 10"

* Required only with Detail II

TEMPORARY CONCRETE BARRIER
IL 154 OVER CREEK
FAP 329; SECTION 18B-1
PERRY COUNTY
STA 671+60.00
STRUCTURE NO 073-7053

R-27

10-1-08

FILE NAME =	USER NAME = cornellm	DESIGNED -	REVISED -
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PLOT DATE = 3/19/2009	DATE -	REVISED -	REVISED -

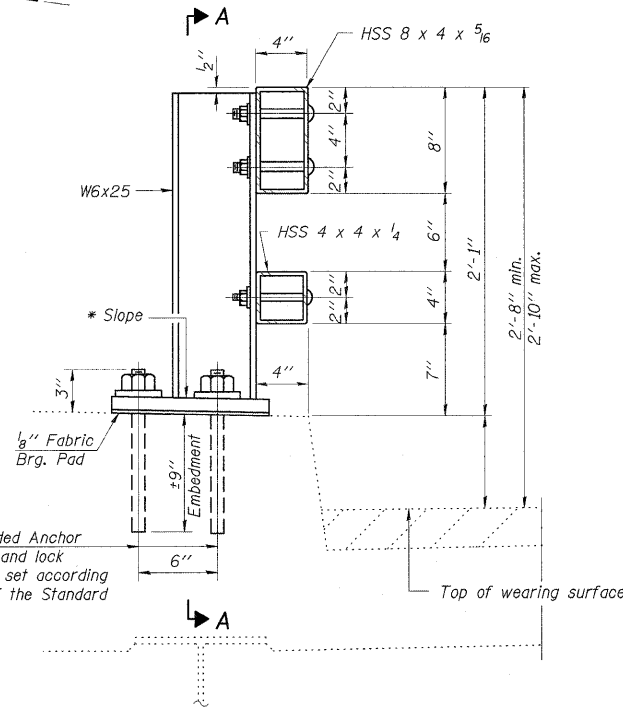
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE BARRIER DETAIL
SN 073-7053

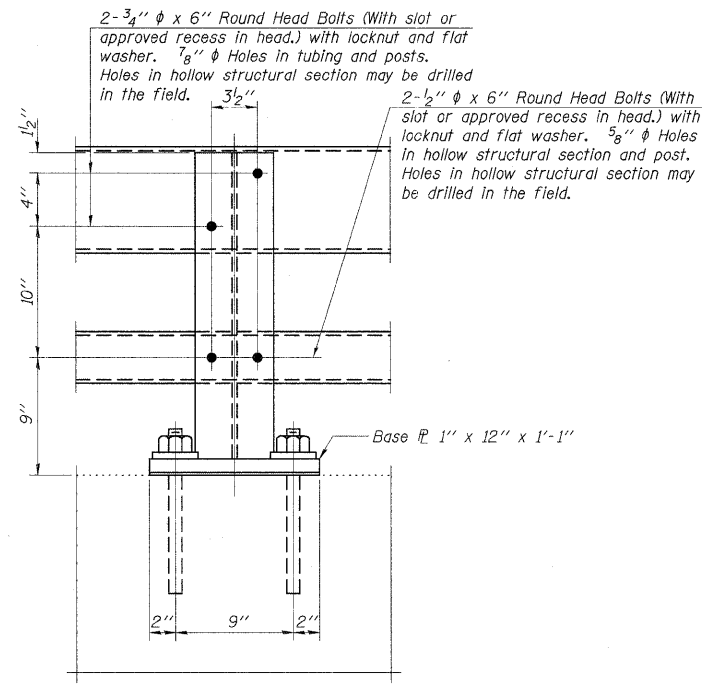
SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
881/329	35B-1/18B-1	JOHNSON/PERRY	26	22
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 78069	

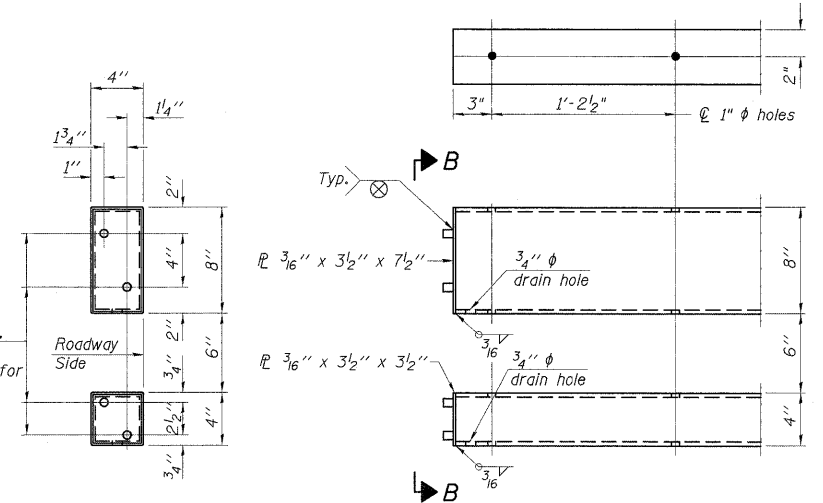
* Cut bottom end of post to curb slope.



SECTION AT RAIL POST



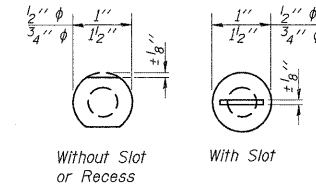
SECTION A-A



VIEW B-B

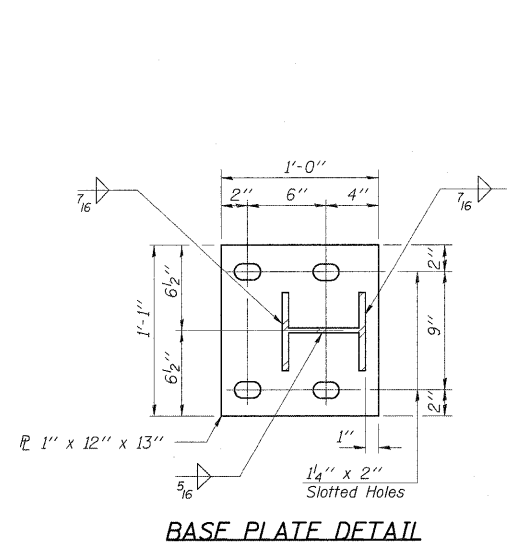
END OF RAIL DETAILS

④ - 5/8" reduced base welded studs. Provide 4 - 5/8" washers and self-locking nuts or nuts and jam nuts for guardrail connection shown on Std. 631032.

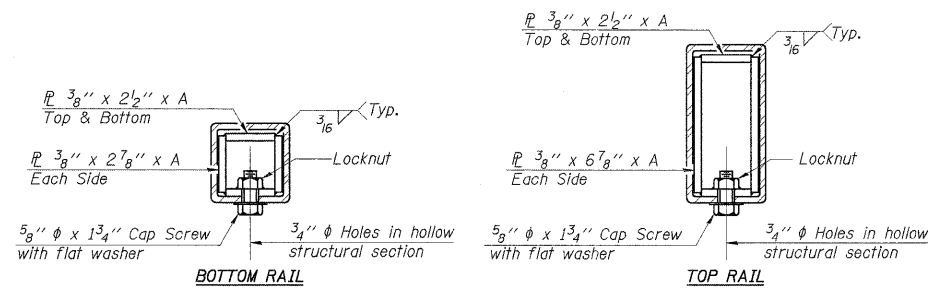


VIEW C-C

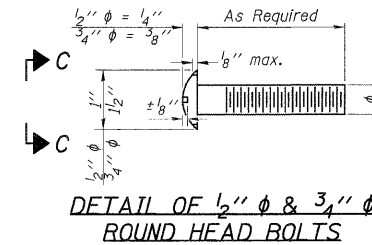
Notes:
 All field drilled holes shall be coated with an approved zinc rich paint before erection.
 Posts shall not be located closer than 1'-3" to an existing bridge expansion joint or end of bridge.
 Steel Bridge Rail expansion joint shall be provided between any two (2) posts which span a bridge expansion joint. Bolts located at expansion joint shall be provided with locknuts and shall be tightened only to a point that will allow ralling movement.
 Provide one 1/8" and two 1/16" steel shims for 25% of the posts. Shims shall be similar to base plates in size and holes.
 All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.



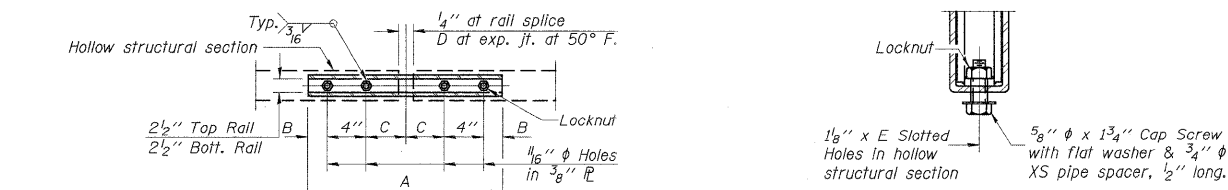
BASE PLATE DETAIL



SECTIONS AT RAIL SPLICE



DETAIL OF 1/2" & 3/4" ROUND HEAD BOLTS



PLAN-BOTT. SPLICE & TYPICAL

RAIL SPLICE CONNECTION AT EXPANSION JT.

(6'-3" Maximum Post Spacing)

SPLICE DIMENSIONS

T	D	A	B	C	E
≤ 4"	2 1/2"	1'-8"	2"	4"	2 1/2"
> 4" ≤ 6 1/2"	3 3/4"	2'-0"	2 1/2"	5 1/2"	3 1/2"
> 6 1/2" ≤ 9"	5"	2'-4"	3 1/2"	6 1/2"	9"
> 9" ≤ 13"	7"	2'-10"	4 1/2"	8 1/2"	11"
Rail Splice	1/4"	1'-8"	2"	4"	—

T = Total movement at expansion joint as shown on the design plans.

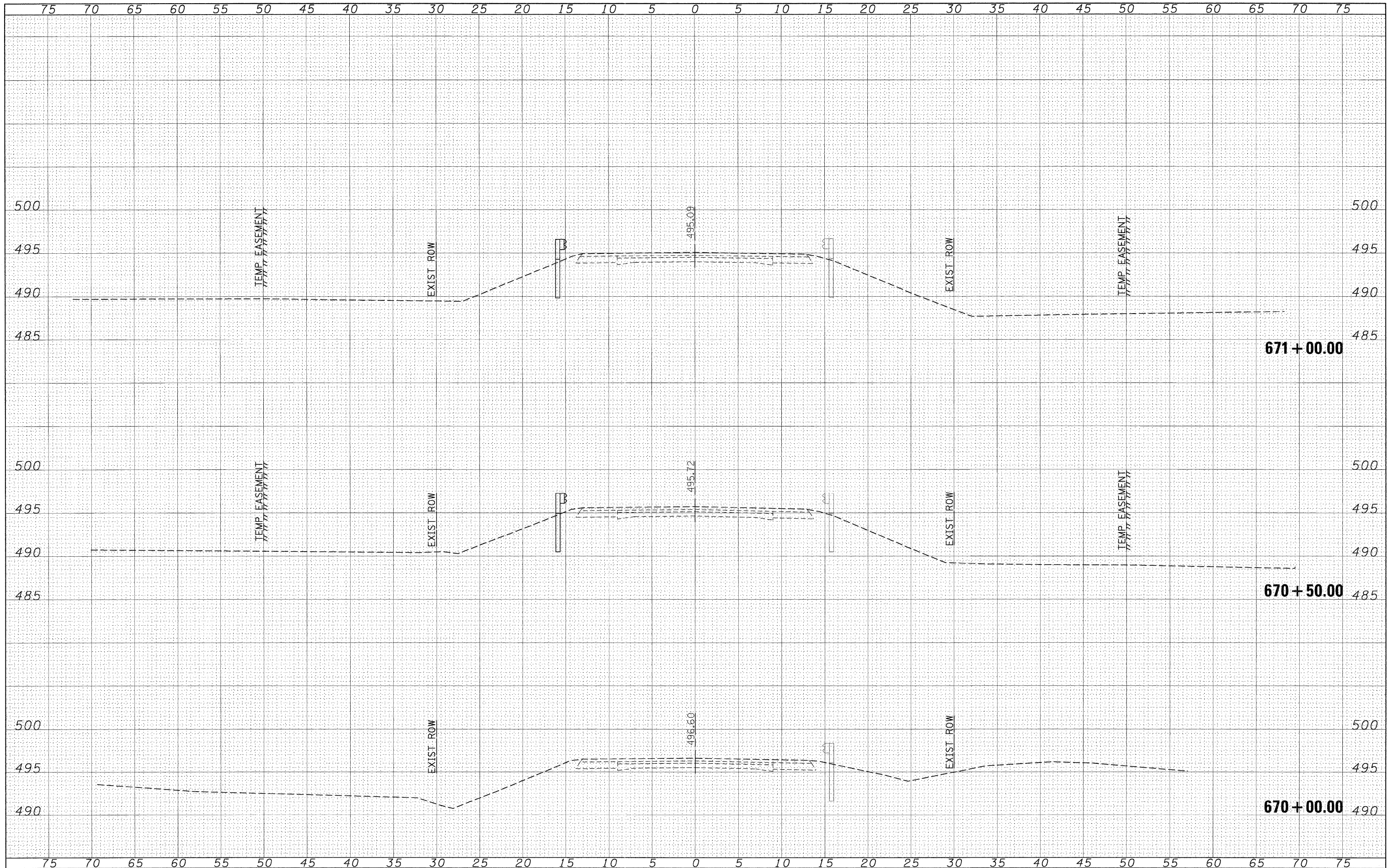
BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type 2399	Foot	29

STEEL RAILING, TYPE 2399
 IL 154 OVER CREEK
 FAP 329; SECTION 18B-1
 PERRY COUNTY
 STA 671+60.00
 STRUCTURE NO 073-7053

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

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



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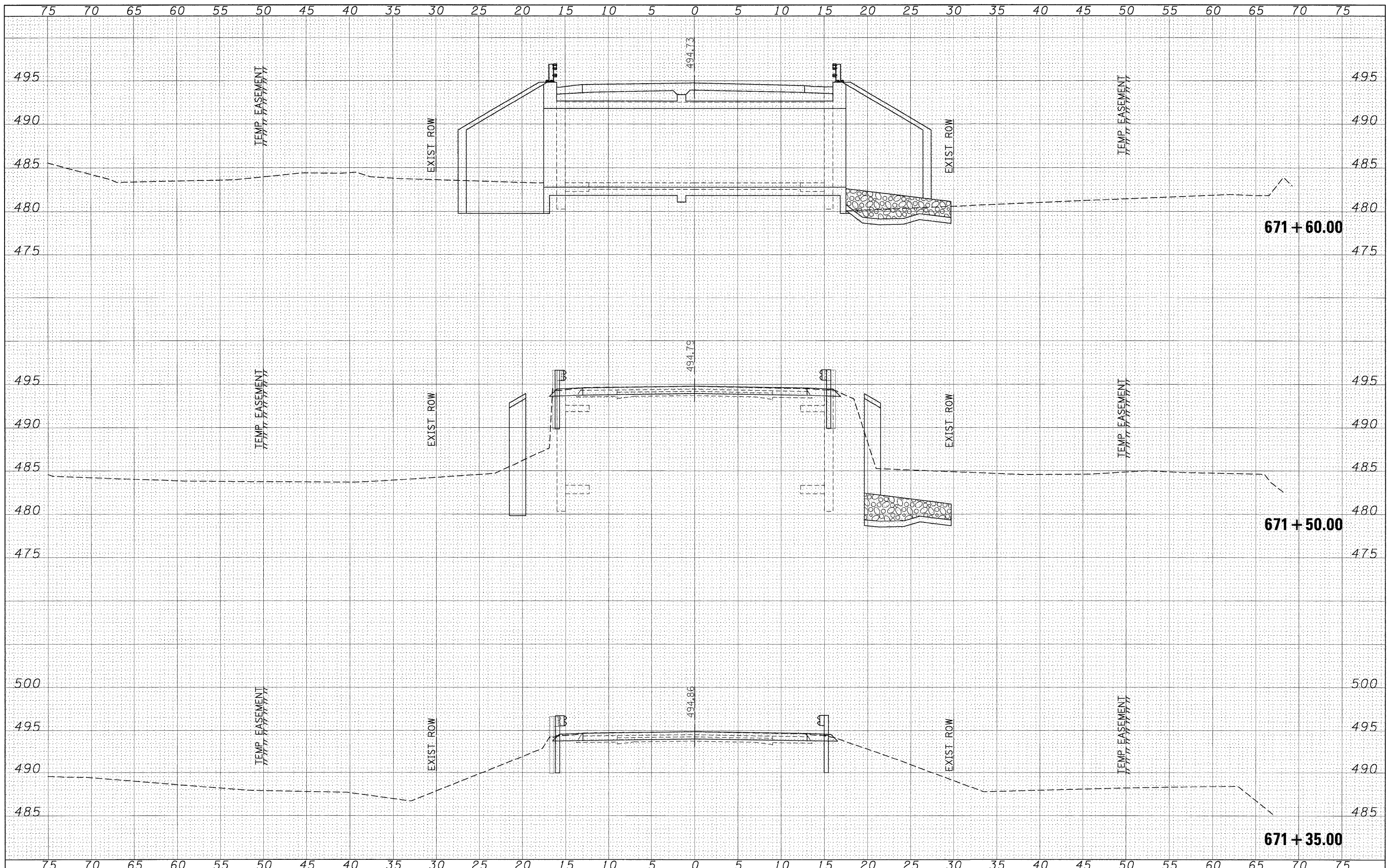
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
 SN 073-7053
 SCALE: 1"=5'
 SHEET NO. OF SHEETS STA. 670+00.00 TO STA. 671+00.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
881/329	35B-1/18B-1	JOHNSON/PERRY	26	24
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
CONTRACT NO. 78069				

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	

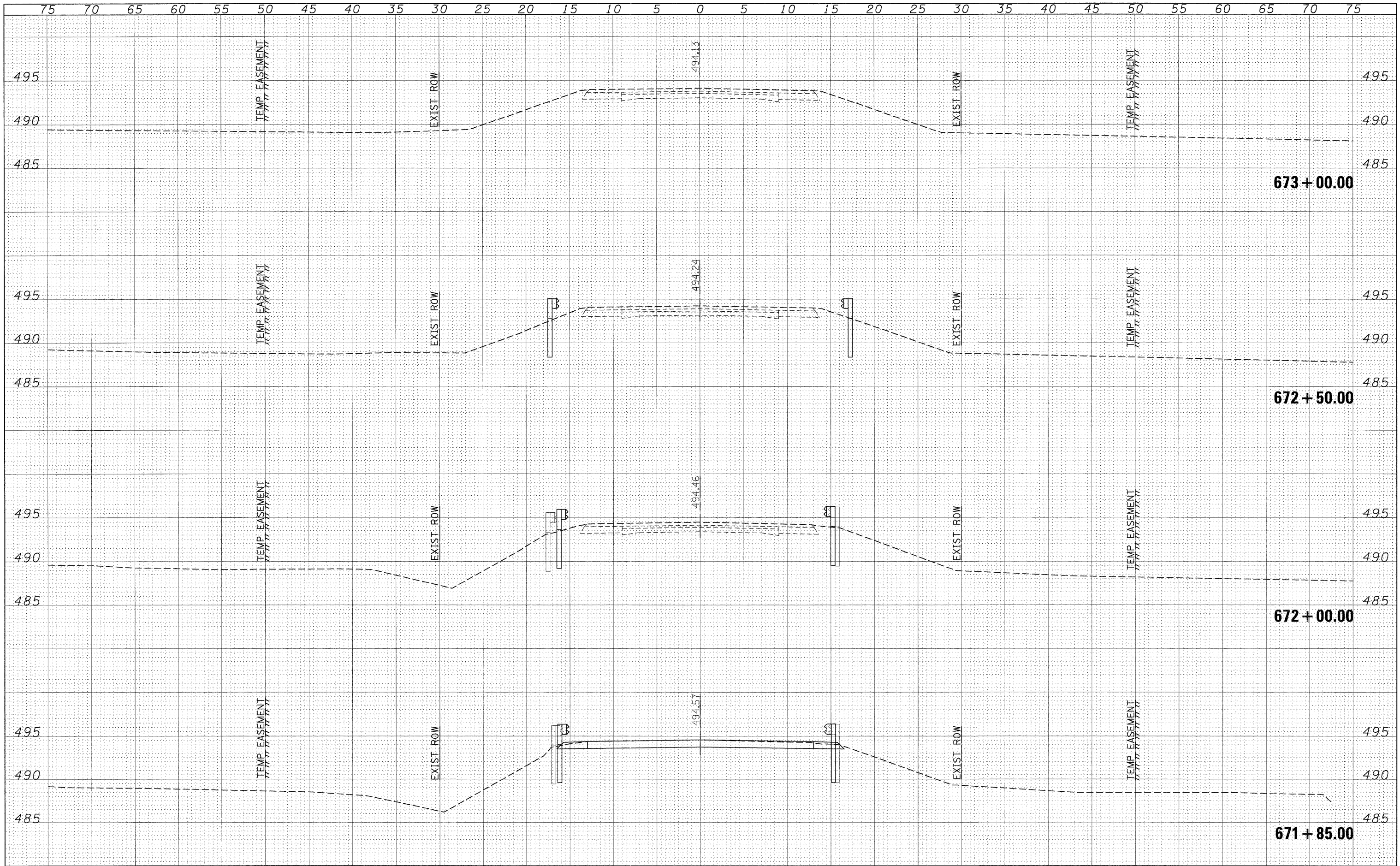
DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	



FILE NAME =	USER NAME = cornell1m	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	CROSS SECTIONS SN 073-7053			F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
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	PLOT SCALE = 5.0000 ' / IN.	CHECKED -	REVISED -		STA. 671+35.00	TO STA. 671+60.00	CONTRACT NO. 78069						
	PLOT DATE = 3/19/2009	DATE -	REVISED -		ILLINOIS FED. AID PROJECT								

FINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
CHECKED		
NO.		

ORIGINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
CHECKED		
NO.		



FILE NAME =	USER NAME = cornellm	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	CROSS SECTIONS SN 073-7053			F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.		
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	PLOT SCALE = 5.0000' / IN.	CHECKED -	REVISED -									CONTRACT NO. 78069		
	PLOT DATE = 3/19/2009	DATE -	REVISED -									ILLINOIS FED. AID PROJECT		