11-21-14 LETTING ITEM 063

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	1
	ILLINOIS	CONTRACT NO. 68B85		

D-94-027-14

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROPOSED HIGHWAY PLANS

FAI 74 (I-74)
AT HENDERSON CREEK
SECTION 48-[(25B)BR, BR-1]
PROJECT ACNHPP-0074 (306)
BRIDGE REPLACEMENT
KNOX COUNTY

C-94-083-14

INDEX OF SHEETS

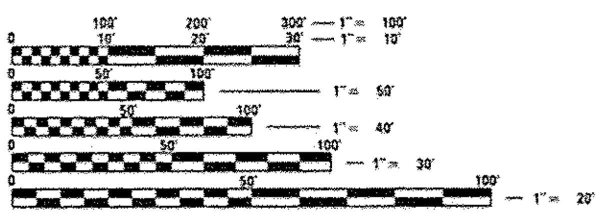
FOR IDOT HIGHWAY STANDARDS, SEE SHEET NO. 2

TRAFFIC DATA

F.A.I. 74
EXISTING TRAFFIC ADT: 13100 (2013)
EXISTING TRUCK ADT: 4700 (2013)
SPEED LIMIT: 70 MPH
SINGLE UNIT: 650
MULTI UNIT: 4050
DESIGN DESIGNATION: INTERSTATE

PROJECT LOCATED IN RIO TOWNSHIP IN KNOX COUNTY

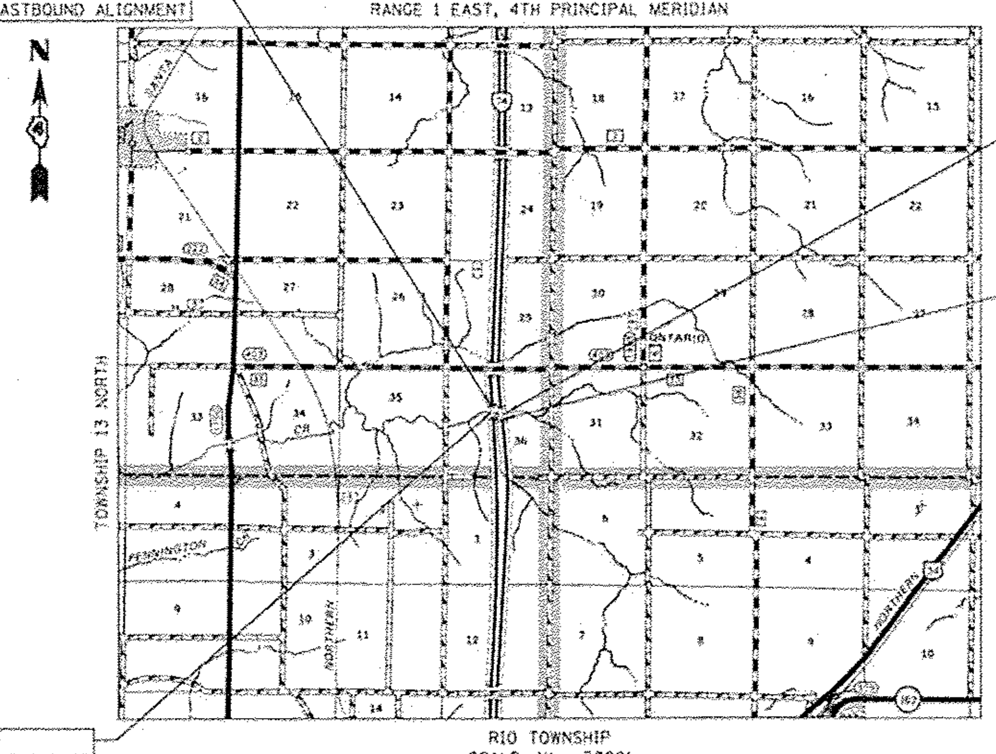
PROJECT DESCRIPTION:
PROJECT INCLUDES REMOVAL AND REPLACEMENT OF SUPERSTRUCTURE AND SUBSTRUCTURE OF EXISTING BRIDGES. INTERSTATE ROUTE 74 OVER HENDERSON CREEK IN RIO TOWNSHIP, KNOX COUNTY.



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.

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

PROJECT BEGINS
STA. 409+45.82
ON EASTBOUND ALIGNMENT



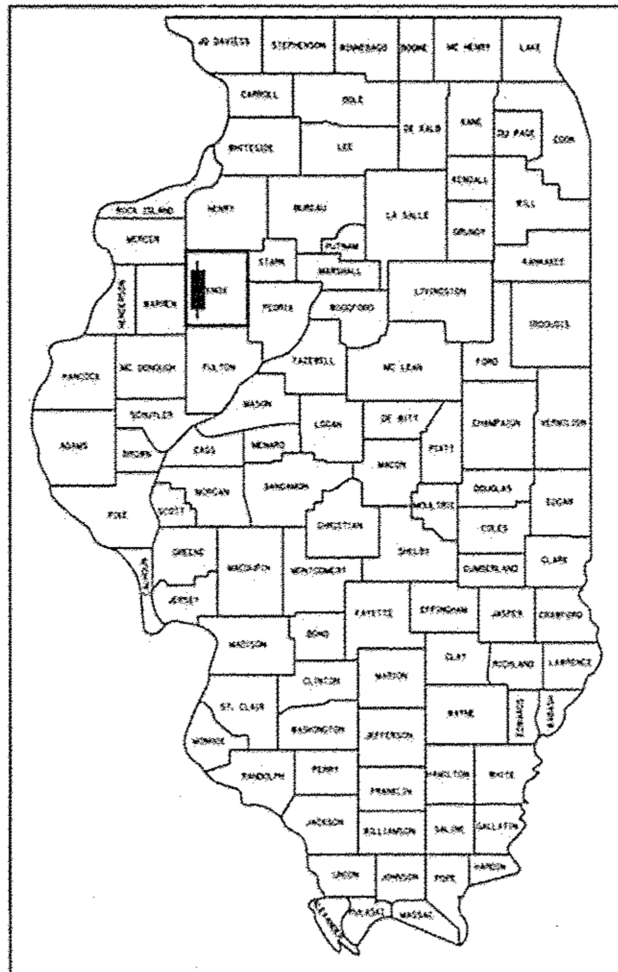
STA. 417+20.00
STRUCTURE NO. 048-0004
REMOVE EXISTING 115.0'
THREE SPAN STRUCTURE
PROPOSED S.N. 048-0091
SINGLE SPAN STRUCTURE

PROJECT ENDS
STA. 421+13.76
ON WESTBOUND ALIGNMENT

STA. 416+04.00
STRUCTURE NO. 048-0003
REMOVE EXISTING 121.5'
THREE SPAN STRUCTURE
PROPOSED S.N. 048-0090
SINGLE SPAN STRUCTURE

RIO TOWNSHIP
SCALE: 1" = 5000'

GROSS LENGTH = 1167.9 FT. = 0.221 MILE
NET LENGTH = 1167.9 FT. = 0.221 MILE



LOCATION OF SECTION INDICATED THUS:

PIYUSH K. CHATTERJEE
081-005076
LICENSED STRUCTURAL ENGINEER
ILLINOIS
Piyush K. Chatterjee 7/29/2014
Expires: 11/30/2014

062-057747
STATE OF ILLINOIS
7/31/2014
Expires: 11/30/2015

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED Aug 14 20 14
Kensil A. Garnett
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

Oct 17 20 14
John D. Baranzelli, P.E. for
acting ENGINEER OF DESIGN AND ENVIRONMENT

Oct 17 20 14
Omer Osman, P.E. for
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

EPSTEIN
600 W FULTON ST
CHICAGO, ILLINOIS
60661 1259
TEL 312 454 9100
FAX 312 559 1217
WEB www.epsteinglobal.com

PROJECT MANAGER: MICHAEL LEWIS (309)671-3454
PROJECT ENGINEER: MICHAEL MCLUCKIE (309)671-3468
CATALOG NO. 032264-03D
CONTRACT NO. 68B85

LIST OF STATE STANDARDS

STANDARD NUMBER	DESCRIPTION
000001-06	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
001006	DECIMAL OF AN INCH AND OF A FOOT
280001-07	TEMPORARY EROSION CONTROL SYSTEMS
420001-07	PAVEMENT JOINTS
420401-10	BRIDGE APPROACH PAVEMENT CONNECTOR
421001-02	BAR REINFORCEMENT FOR CRC PAVEMENT
421101-09	24' (7.2 M) CRC PAVEMENT
515001-03	NAME PLATE FOR BRIDGES
542401-01	METAL END SECTION FOR PIPE CULVERTS
601101-01	CONCRETE HEADWALL FOR PIPE DRAIN
606001-05	CONCRETE CURB TYPE B AND COMBINATION CONCRETE CURB AND GUTTER
609006-05	BRIDGE APPROACH PAVEMENT (DRAIN DETAIL)
610001-06	SHOULDER INLET WITH CURB
630001-10	STEEL PLATE BEAM GUARDRAIL
630301-06	SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
631011-09	TRAFFIC BARRIER TERMINAL, TYPE 2
631031-12	TRAFFIC BARRIER TERMINAL, TYPE 6
635001-01	DELINEATORS
635006-03	REFLECTOR AND TERMINAL MARKER PLACEMENT
635011-02	REFLECTOR MARKER AND MOUNTING DETAILS
665001-02	WOVEN WIRE FENCE
701101-04	OFF-RD OPERATIONS, MULTILANE, 15' (4.5 m) TO 24" (6 mm) FROM PAVEMENT EDGE
701106-02	OFF-RD OPERATIONS, MULTILANE, MORE THAN 15' (4.5 m) AWAY
701400-07	APPROACH TO LANE CLOSURE, FREEWAY/EXPRESSWAY
701402-09	LANE CLOSURE, FREEWAY/EXPRESSWAY, WITH BARRIER
701406-08	LANE CLOSURE, FREEWAY/EXPRESSWAY, DAY OPERATIONS ONLY
701426-06	LANE CLOSURE, MULTILANE, INTERMITTENT OR MOVING OPER., FOR SPEEDS >= 45 MPH
701428	TRAFFIC CONTROL SETUP AND REMOVAL FREEWAY/EXPRESSWAY
701901-03	TRAFFIC CONTROL DEVICES
704001-07	TEMPORARY CONCRETE BARRIER
720001-01	SIGN PANEL MOUNTING DETAILS
720006-04	SIGN PANEL ERECTION DETAILS
720011-01	METAL POSTS FOR SIGNS, MARKERS & DELINEATORS
780001-04	TYPICAL PAVEMENT MARKINGS

LIST OF DISTRICT FOUR CADD STANDARDS *

STANDARD NUMBER	DESCRIPTION
205001-D4	SLOPE STEPS DETAIL
601101-D4	SLOPE DRAIN DETAILS FOR BURIED PIPES
601301-D4	PIPE ELBOW
601401-D4	DETAILS OF SEEPAGE COLLARS FOR BURIED PIPES
630101-D4	GUARDRAIL EROSION CONTROL TREATMENTS

* INCLUDED AS SHEETS 72 - 77

GENERAL NOTES

1. MICROSTATION AND GEOPAK FILES OF THIS PROJECT WILL BE MADE AVAILABLE TO THE CONTRACTOR. IF THERE IS A CONFLICT BETWEEN THE ELECTRONIC FILES AND THE PRINTED AFTER CONTRACT AWARD PLANS AND DOCUMENTS, THE PRINTED CONTRACT PLANS AND DOCUMENTS SHALL TAKE PRECEDENCE OVER THE ELECTRONIC FILES. THE CONTRACTOR SHALL ACCEPT ALL RISK ASSOCIATED WITH USING THE ELECTRONIC FILES AND SHALL HOLD THE DEPARTMENT HARMLESS FOR ANY ERRORS OR OMISSIONS IN THE ELECTRONIC FILES AND THE DATA CONTAINED THEREIN. ERRORS OR DELAYS RESULTING FROM THE USE OF THE ELECTRONIC FILES BY THE CONTRACTOR SHALL NOT RESULT IN AN EXTENSION OF TIME FOR ANY INTERIM OR FINAL COMPLETION DATE OR SHALL NOT BE CONSIDERED CAUSE FOR ADDITIONAL COMPENSATION. THE CONTRACTOR SHALL NOT USE, SHARE, OR DISTRIBUTE THESE ELECTRONIC FILES EXCEPT FOR THE PURPOSE OF CONSTRUCTING THIS CONTRACT. ANY CLAIMS BY THIRD PARTIES DUE TO USE OR ERRORS SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL INCLUDE THIS DISCLAIMER WITH THE TRANSFER OF THESE ELECTRONIC FILES TO ANY OTHER PARTIES AND SHALL INCLUDE APPROPRIATE LANGUAGE BINDING THEM TO SIMILAR RESPONSIBILITIES.

2. NOT USED

3. ALL ELEVATIONS SHOWN ON THE PLANS ARE ESTABLISHED FROM U.S.G.S. MEAN SEA LEVEL DATUM.

4. THE CONTRACTOR WILL SUBMIT TO THE ENGINEER A SATISFACTORY PROGRESS SCHEDULE AND CRITICAL PATH SCHEDULE WHICH SHALL SHOW THE PROPOSED SEQUENCE OF WORK AT THE TIME OF THE PRE-CONSTRUCTION CONFERENCE.

5. AT LOCATIONS WHERE CLEARING IS INDICATED ON THE PLANS BEYOND THE LIMITS OF THE PROPOSED EXCAVATION OR EMBANKMENT, THE CONTRACTOR SHALL RESTORE THE DISTURBED EARTH BY BLADING AND SHAPING TO BLEND WITH THE ADJACENT GROUND. THE CLEARING WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF THE EXCAVATION PAY ITEMS IN THE PLANS. PAYMENT FOR RESEEDING OR RESODDING WILL BE AS PROVIDED IN THE PLANS.

6. EARTH EXCAVATION AND BACKFILL FOR THE PROPOSED CURB AND GUTTERS SHALL BE INCLUDED IN THE UNIT COST OF THE VARIOUS ITEMS.

7. THE CONTRACTOR SHALL CONSULT WITH THE ENGINEER IN REGARD TO THE EXACT LENGTH OF THE PIPE DRAINS REQUIRED PRIOR TO ORDERING THESE ITEMS.

8. IN ACCORDANCE WITH SECTION 602 OF THE STANDARD SPECIFICATIONS, THE CONNECTING OF EXISTING DRAIN TILES, PIPE CULVERTS, OR STORM SEWERS TO THE PROPOSED DRAINAGE SYSTEM STRUCTURES WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED AS INCLUDED IN THE PAY ITEMS PROVIDED.

9. TEN FEET (10 FT.) (3 M) TRANSITIONS SHALL BE USED TO MATCH PROPOSED ITEMS OF WORK TO EXISTING ITEMS IN THE FIELD UNLESS OTHERWISE SHOWN. THE TRANSITION SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PROPOSED ITEM OF WORK SPECIFIED.

10. THE WOVEN WIRE FENCE SHALL BE INSTALLED PRIOR TO THE REMOVAL OF THE EXISTING FARM FENCES. THE CONTRACTOR SHALL PROVIDE A PULL POST AT THE INTERSECTION OF NEW AND EXISTING FENCES. WHEN SO DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL INSTALL THE WOVEN WIRE FENCE PRIOR TO COMMENCING ANY OTHER WORK IN THE AREA. THE CONTRACTOR SHALL PERFORM ANY CLEARING AND MINOR GRADING AS DIRECTED BY THE ENGINEER TO PROVIDE A SMOOTH GROUND SURFACE FOR THE PROPOSED FENCE.

11. ADD THE FOLLOWING SENTENCE TO THE END OF PARAGRAPH 670.02 (I) AND 670.04 (e):
ALL OF THE TELEPHONE LINES PROVIDED SHALL HAVE UNPUBLISHED NUMBERS.

12. SIGN LOCATIONS MAY VARY FROM THE STATIONS SHOWN ON THE PLANS IN ACCORDANCE WITH DIRECTIONS FROM THE ENGINEER AT THE TIME OF CONSTRUCTION. SIGN LOCATIONS MAY BE ADJUSTED IN THE FIELD TO AVOID ANY FOUND UTILITIES.
ALL WOOD POST LOCATIONS SHALL BE VERIFIED WITH THE BUREAU OF OPERATIONS, TRAFFIC SECTION, BEFORE INSTALLATION.

13. NOT USED

14. NOT USED

15. ALL WORK NECESSARY FOR THE PLACEMENT OF RIP RAP INCLUDING EXCAVATION AND DEWATERING SHALL BE INCLUDED IN THE COST OF THE RIP RAP. REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES WILL BE PAID SEPARATELY.

16. SLOPE STABILIZATION REQUIRING DROP OFFS GREATER THAN 2 FEET SHALL BE COMPLETED IN LESS THAN 24 HOURS.

COMMITMENTS

NONE

FILE NAME = ...\04-174-HendersonCreek-Combined-sht202-in	DESIGNED - JCP	REVISED - -
	DRAWN - JCP	REVISED - -
PLOT TIME = 4:32:42 PM	CHECKED - CAG	REVISED - -
PLOT DATE = 7/30/2014	DATE - 08/01/14	REVISED - -

EPSTEIN
60 WEST FULTON STREET CHICAGO, ILLINOIS 60661-1259 TEL 312 454 3100 FAX 312 559 1217 WEB www.epsteinglobal.com

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STATE STANDARDS, GENERAL NOTES AND COMMITMENTS

SCALE: N.T.S. | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-1(25B)BR, BR-1)	KNOX	131	2
		CONTRACT NO. 68885		
	ILLINOIS FED. AID PROJECT			

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE 90% FED 10% STATE ROADWAY 0004 RURAL	90% FED 10% STATE BRIDGE 0011 048-0090	90% FED 10% STATE BRIDGE 0011 048-0091	90% FED 10% STATE TRAINEES 0042 RURAL	100% STATE ROADWAY 0004 RURAL	
20200100	EARTH EXCAVATION	CU YD	1530	1530					
20201200	REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL	CU YD	60	60					
20400800	FURNISHED EXCAVATION	CU YD	750	750					
20800150	TRENCH BACKFILL	CU YD	89	89					
21101505	TOPSOIL EXCAVATION AND PLACEMENT	CU YD	394	394					
21101615	TOPSOIL FURNISH AND PLACE, 4"	SQ YD	1825	1825					
25000210	SEEDING, CLASS 2A	ACRE	0.75	0.75					
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	64	64					
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	64	64					
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	64	64					
25000750	MOWING	ACRE	3.5					3.5	
25100635	HEAVY DUTY EROSION CONTROL BLANKET	SQ YD	3441	3441					
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	285	285					
28000305	TEMPORARY DITCH CHECKS	FOOT	128	128					

14

• DENOTES SPECIALTY ITEM

FILE NAME = ...\04-174-HendersonCreek-Combined-sht003-SQCDB.dgn	DESIGNED - JCP	REVISED - -
PLOT TIME = 11:17 PM	DRAWN - JCP	REVISED - -
PLOT DATE = 8/12/2014	CHECKED - GAO	REVISED - -
	DATE - 08/01/14	REVISED - -

SEPSTEIN
200 WEST ADAMS STREET
CHICAGO, ILLINOIS
60606-5219
TEL 312 456 8100
FAX 312 456 8199
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: N/A | SHEET NO. 1 OF 6 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-E(25B)BR, BR-13	KNOX	131	3
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE					
				90% FED 10% STATE	90% FED 10% STATE	90% FED 10% STATE	90% FED 10% STATE	100% STATE	
				ROADWAY	BRIDGE	BRIDGE	TRAINEES	ROADWAY	
				0004	0011	0011	0042	0004	
				RURAL	048-0090	048-0091	RURAL	RURAL	
28000315	AGGREGATE DITCH CHECKS	TON	23	23					
28000400	PERIMETER EROSION BARRIER	FOOT	2147	2147					
28000500	INLET AND PIPE PROTECTION	EACH	17	17					
28100105	STONE RIPRAP, CLASS A3	SQ YD	50	50					
28100107	STONE RIPRAP, CLASS A4	SQ YD	3333		1673	1660			
28200200	FILTER FABRIC	SQ YD	3463	130	1673	1660			
31101200	SUBBASE GRANULAR MATERIAL, TYPE B 4"	SQ YD	657	657					
42001300	PROTECTIVE COAT	SQ YD	647	647					
42001420	BRIDGE APPROACH PAVEMENT CONNECTOR (PCC)	SQ YD	647	647					
44000100	PAVEMENT REMOVAL	SQ YD	623	623					
44000500	COMBINATION CURB AND GUTTER REMOVAL	FOOT	117	117					
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	2		1	1			
50200100	STRUCTURE EXCAVATION	CU YD	1582		804	778			
50300225	CONCRETE STRUCTURES	CU YD	170.2		84.2	86.0			

* DENOTES SPECIALTY ITEM

FILE NAME : ...\D4-174-HendersonCreek-Combined-sht004-SOQ.dgn	DESIGNED - JCP	REVISED - -	EPSTEIN	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUMMARY OF QUANTITIES	F.A.I. RTE. 74	SECTION 48-(125B)BR, BR-1)	COUNTY KNOX	TOTAL SHEETS 131	SHEET NO. 4
PLOT TIME = 1:15:50 PM	DRAWN - JCP	REVISED - -						CONTRACT NO. 68885		
PLOT DATE = 8/12/2014	CHECKED - GAO	REVISED - -			SCALE: N/A	SHEET NO. 2 OF 6 SHEETS	STA.	TO STA.		
	DATE - 08/01/14	REVISED - -				ILLINOIS FED. AID PROJECT				

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE					
				90% FED 10% STATE ROADWAY 0004 RURAL	90% FED 10% STATE BRIDGE 0011 048-0090	90% FED 10% STATE BRIDGE 0011 048-0091	90% FED 10% STATE TRAINEES 0042 RURAL	100% STATE ROADWAY 0004 RURAL	
50300255	CONCRETE SUPERSTRUCTURE	CU YD	694.7		352.2	342.5			
50300260	BRIDGE DECK GROOVING	SQ YD	1457		736	721			
50300300	PROTECTIVE COAT	SQ YD	1751		897	854			
50400745	FURNISHING AND ERECTING PRECAST PRESTRESSED CONCRETE BULB T-BEAMS 72"	FOOT	1234.5		629	605.5			
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	171880		87610	84270			
50800515	BAR SPLICERS	EACH	1149		579	570			
51201710	FURNISHING STEEL PILES HP12X84	FOOT	1515		765	750			
51202305	DRIVING PILES	FOOT	1515		765	750			
51203710	TEST PILE STEEL HP12X84	EACH	4		2	2			
51500100	NAME PLATES	EACH	2		1	1			
54210182	PIPE ELBOW, 12"	EACH	16	16					
54213447	END SECTIONS 12"	EACH	8	8					
59100100	GEOCOMPOSITE WALL DRAIN	SQ YD	268		132	136			
60100945	PIPE DRAINS 12"	FOOT	386	386					

* DENOTES SPECIALTY ITEM

FILE NAME : ...\D4-I74-HendersonCreek-Combined-sht005-50...	DESIGNED - JCP	REVISED -	EPSTEIN 600 WEST FULTON STREET CHICAGO, ILLINOIS	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUMMARY OF QUANTITIES	F.A.I. RTE. 74
PLOT TIME : 1:20:51 PM	DRAWN - JCP	REVISED -			SCALE: N/A	SECTION 48-I(258)BR, BR-1
PLOT DATE : 8/12/2014	CHECKED - GAO	REVISED -			SHEET NO. 3 OF 6 SHEETS	COUNTY KNOX
	DATE - 08/01/14	REVISED -			STA. TO STA.	TOTAL SHEETS 131 SHEET NO. 5
						CONTRACT NO. 68B85
						ILLINOIS FED. AID PROJECT

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE					
				90% FED 10% STATE	90% FED 10% STATE	90% FED 10% STATE	90% FED 10% STATE	100% STATE	
				ROADWAY	BRIDGE	BRIDGE	TRAINEES	ROADWAY	
				0004	0011	0011	0042	0004	
				RURAL	048-0090	048-0091	RURAL	RURAL	
60603800	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12	FOOT	190	190					
60900515	CONCRETE THRUST BLOCKS	EACH	8	8					
61000225	TYPE F INLET BOX, STANDARD 610001	EACH	4	4					
61000335	TYPE G INLET BOX, STANDARD 610001	EACH	4	4					
• 63000003	STEEL PLATE BEAM GUARDRAIL, TYPE A, 9 FOOT POSTS	FOOT	1437.5	1437.5					
• 63100045	TRAFFIC BARRIER TERMINAL, TYPE 2	EACH	4	4					
• 63100085	TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	8	8					
• 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	4	4					
63200310	GUARDRAIL REMOVAL	FOOT	1992	1992					
66500105	WOVEN WIRE FENCE, 4'	FOOT	227	227					
66700205	PERMANENT SURVEY MARKERS, TYPE I	EACH	2	2					
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	7	7					
67100100	MOBILIZATION	L SUM	1	1					
70100207	TRAFFIC CONTROL AND PROTECTION, STANDARD 701402	EACH	2	2					

• DENOTES SPECIALTY ITEM

	CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE 90% FED 10% STATE ROADWAY 0004 RURAL	90% FED 10% STATE BRIDGE 0011 048-0090	90% FED 10% STATE BRIDGE 0011 048-0091	90% FED 10% STATE TRAINEES 0042 RURAL	100% STATE ROADWAY 0004 RURAL	
	70100700	TRAFFIC CONTROL AND PROTECTION, STANDARD 701406	L SUM	1	1					
	70103815	TRAFFIC CONTROL SURVEILLANCE	CAL DA	28	28					
	70400100	TEMPORARY CONCRETE BARRIER	FOOT	800	800					
	70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	800	800					
	70600305	IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, RESETTABLE), TEST LEVEL 3	EACH	2	2					
	70600330	IMPACT ATTENUATORS, RELOCATE (FULLY REDIRECTIVE), TEST LEVEL 3	EACH	2	2					
*	72000200	SIGN PANEL - TYPE 2	SQ FT	15	15					
•	78009004	MODIFIED URETHANE PAVEMENT MARKING - LINE 4"	FOOT	7681	7681					
•	78009006	MODIFIED URETHANE PAVEMENT MARKING - LINE 6"	FOOT	1221	1221					
•	78200420	GUARDRAIL MARKERS, TYPE B	EACH	26	26					
•	78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4	4					
	78300100	PAVEMENT MARKING REMOVAL	SQ FT	2968	2968					
	Z0001002	GUARDRAIL AGGREGATE EROSION CONTROL	TON	35	35					
	Z0004552	APPROACH SLAB REMOVAL	SQ YD	458	458					

• DENOTES SPECIALTY ITEM

FILE NAME = ...\04-174-HendersonCreek-Combined-sht007-SOQ	DESIGNED - JCP	REVISED -	EPSTEIN	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUMMARY OF QUANTITIES	F.A.I. RTE. 74 / SECTION 48-(125B)BR, BR-1) / COUNTY KNOX / TOTAL SHEETS 131 / SHEET NO. 7
PLOT TIME = 1:21:46 PM	DRAWN - JCP	REVISED -				CONTRACT NO. 68B85
PLOT DATE = 8/12/2014	CHECKED - GAO	REVISED -			SCALE: N/A / SHEET NO. 5 OF 6 SHEETS / STA. / TO STA.	ILLINOIS FED. AID PROJECT
	DATE - 08/01/14	REVISED -				

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE 90% FED 10% STATE ROADWAY 0004 RURAL	90% FED 10% STATE BRIDGE 0011 048-0090	90% FED 10% STATE BRIDGE 0011 048-0091	90% FED 10% STATE TRAINEES 0042 RURAL	100% STATE ROADWAY 0004 RURAL	
Z0013798	CONSTRUCTION LAYOUT	L SUM	1	1					
Z0018002	DRAINAGE SCUPPERS, DS-11	EACH	14		8	6			
Z0022800	FENCE REMOVAL	FOOT	263	263					
Z0030850	TEMPORARY INFORMATION SIGNING	SQ FT	54	54					
Z0046304	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	398		202	196			
Z0064540	SEEPAGE COLLAR	EACH	8	8					
Z0073002	TEMPORARY SOIL RETENTION SYSTEM	SQ FT	396		188	208			
Z0076600	TRAINEES	HOUR	1000				1000		
Z0076604	TRAINEES TRAINING PROGRAM GRADUATE	HOUR	1000				1000		
X0324044	EROSION CONTROL, TEMPORARY PIPE SLOPE DRAIN	EACH	2	2					
X5509900	ABANDON AND FILL EXISTING STORM SEWER	FOOT	205	205					
X5860110	GRANULAR BACKFILL FOR STRUCTURES	CU YD	710.6		318.2	392.4			
X7010410	SPEED DISPLAY TRAILER	CAL MO	7	7					

13

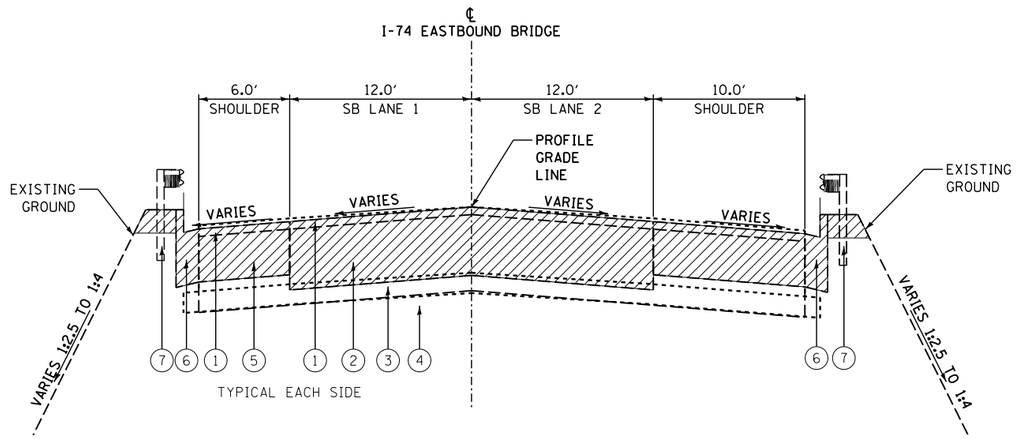
• DENOTES SPECIALTY ITEM

FILE NAME : ...\04-174-HendersonCreek-Combined-sht008-S00.DGN	DESIGNED - JCP	REVISED - -	EPSTEIN	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUMMARY OF QUANTITIES	F.A.I. RTE. 74	SECTION 48-I(25BIBR, BR-1)	COUNTY KNOX	TOTAL SHEETS 131	SHEET NO. 8
PLOT TIME = 1:22:48 PM	DRAWN - JCP	REVISED - -			SCALE: N/A	SHEET NO. 6 OF 6 SHEETS	STA.	TO STA.	CONTRACT NO. 68B85	
PLOT DATE = 8/12/2014	CHECKED - GAO	REVISED - -							ILLINOIS FED. AID PROJECT	
	DATE - 08/01/14	REVISED - -								

NOTES:

1. TYPE B6.12 CURB AND GUTTER REMOVAL
   FROM STA. 415+26.40 LT TO STA. 415+42.82 LT
   FROM STA. 415+29.89 RT TO STA. 415+43.43 RT
   FROM STA. 416+62.16 LT TO STA. 416+77.04 LT
   FROM STA. 416+61.86 RT TO STA. 416+75.72 RT

2. SEE DISTRICT 4 SLOPE STEPS DETAIL FOR ADDITIONAL INFORMATION.



EXISTING TYPICAL SECTION

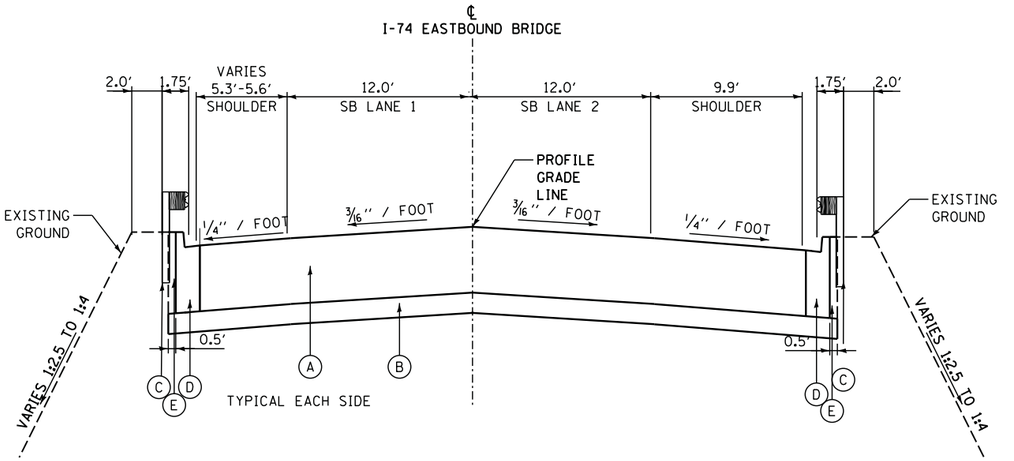
STA. 415+00.00 TO STA. 415+43.50
STA. 416+65.00 TO STA. 417+08.96
(BRIDGE OMISSION STA. 415+43.50 TO STA. 416+65.00)

EXISTING LEGEND:

1. 1½″ ASPHALT SURFACE
2. PCC PAVEMENT
3. VARIABLE SUBBASE GRANULAR MATERIAL
4. SUBGRADE
5. BITUMINOUS AGGREGATE SHOULDER
6. TYPE B-6.12 CURB AND GUTTER
7. GUARDRAIL

ROADWAY REMOVAL ITEM (SEE ROADWAY PLANS)

STRUCTURE REMOVAL ITEM (SEE STRUCTURE PLANS)



PROPOSED TYPICAL SECTION

STA. 415+00.00 TO STA. 415+21.25
STA. 416+86.75 TO STA. 417+08.96
(BRIDGE OMISSION STA. 415+50.25 TO STA. 416+57.75)

PROPOSED LEGEND:

- (A) BRIDGE APPROACH PAVEMENT CONNECTOR (PCC)
- (B) SUBBASE GRANULAR MATERIAL, TYPE B 4″
- (C) STEEL PLATE BEAM GUARDRAIL, TYPE A, 9 FOOT POSTS
- (D) COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12
- (E) FURNISHED EXCAVATION

FILE NAME = ...\D4-174-HendersonCreek-Combined-sht009-Eb-Design	DESIGNED - JCP	REVISED - -
	DRAWN - JCP	REVISED - -
PLOT TIME = 4:30:49 PM	CHECKED - GAO	REVISED - -
PLOT DATE = 7/30/2014	DATE - 08/01/14	REVISED - -

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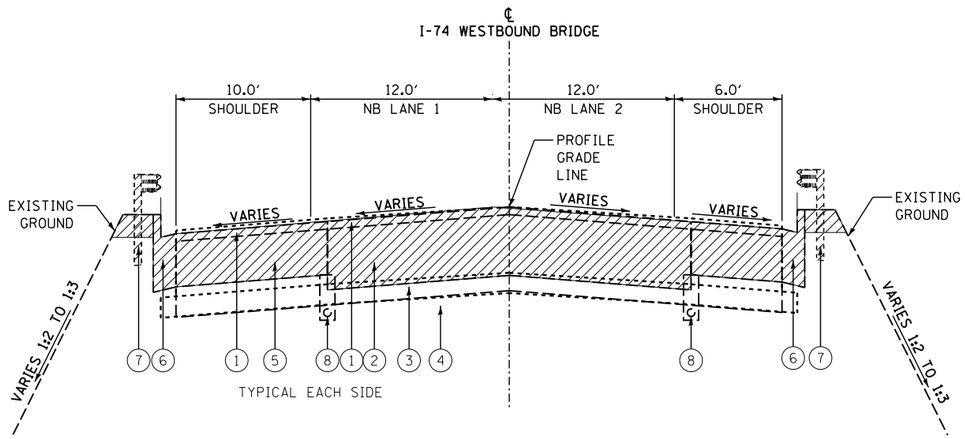
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-74 EASTBOUND
EXISTING AND PROPOSED TYPICAL SECTION

SCALE: N/A | SHEET NO. 1 OF 1 SHEETS | STA. N/A | TO STA. N/A

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	9
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			



NOTES:

1. TYPE B6.12 CURB AND GUTTER REMOVAL
   FROM STA. 415+26.40 LT TO STA. 415+42.82 LT
   FROM STA. 415+29.89 RT TO STA. 415+43.43 RT

2. SEE DISTRICT 4 SLOPE STEPS DETAIL FOR
   ADDITIONAL INFORMATION.

EXISTING LEGEND:

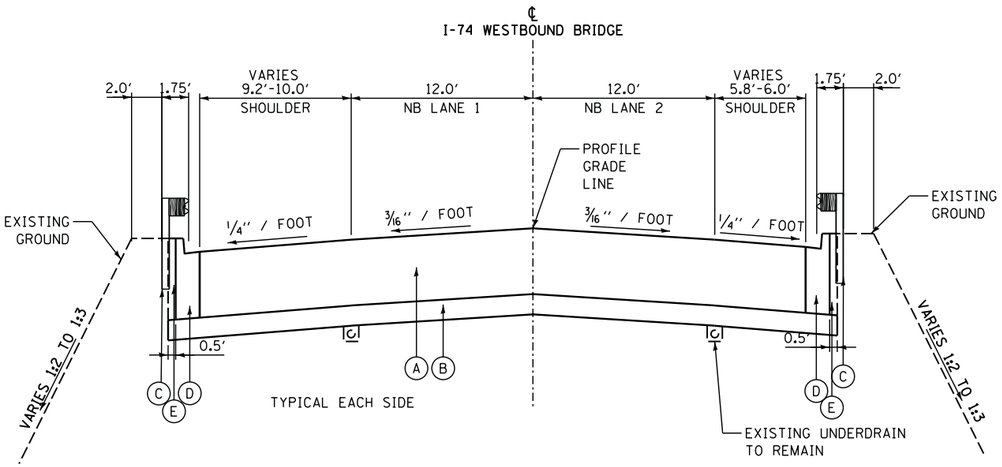
1. 1½″ ASPHALT SURFACE
2. PCC PAVEMENT
3. VARIABLE SUBBASE GRANULAR MATERIAL
4. SUBGRADE
5. BITUMINOUS AGGREGATE SHOULDER
6. TYPE B6.12 CURB AND GUTTER
7. GUARDRAIL
8. UNDERDRAIN

ROADWAY REMOVAL ITEM
(SEE ROADWAY PLANS)

STRUCTURE REMOVAL ITEM
(SEE STRUCTURE PLANS)

EXISTING TYPICAL SECTION

STA. 415+69.56 TO STA. 416+62.52
STA. 417+77.54 TO STA. 418+24.56
(BRIDGE OMISSION STA. 416+62.52 TO STA. 417+77.54)



PROPOSED LEGEND:

A. BRIDGE APPROACH PAVEMENT CONNECTOR (PCC)
B. SUBBASE GRANULAR MATERIAL, TYPE B 4″
C. STEEL PLATE BEAM GUARDRAIL, TYPE A, 9 FOOT POSTS
D. COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12
E. FURNISHED EXCAVATION

PROPOSED TYPICAL SECTION

STA. 415+69.56 TO STA. 416+39.18
STA. 418+00.81 TO STA. 418+24.56
(BRIDGE OMISSION STA. 416+68.14 TO STA. 417+71.86)

FILE NAME = ...\D4-174-HendersonCreek-Combined-sht010-Web.dgn	DESIGNED - JCP	REVISED - -
	DRAWN - JCP	REVISED - -
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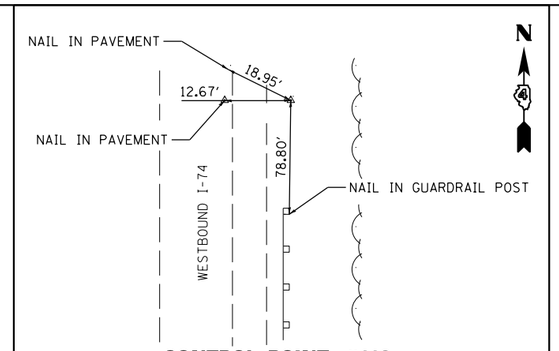
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-74 WESTBOUND
EXISTING AND PROPOSED TYPICAL SECTION

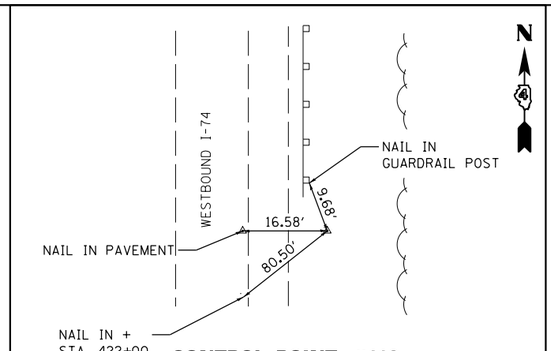
SCALE: N/A | SHEET NO. 1 OF 1 SHEETS | STA. N/A | TO STA. N/A

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	10
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			



CONTROL POINT #113

IRON PIN W/CAP
STA. 415+03.89
24.39 LT
N 1604904.65
E 2250482.11
ELEV. 755.825

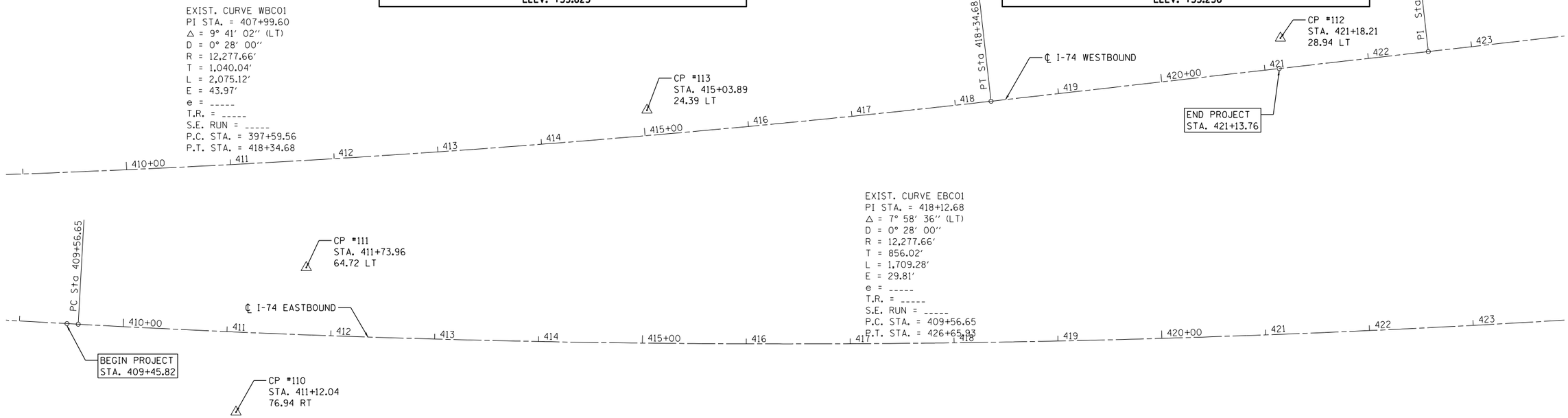


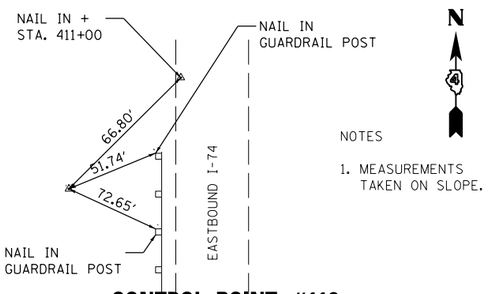
CONTROL POINT #112

IRON PIN W/CAP
STA. 421+18.21
28.94 LT
N 1604294.87
E 2250550.64
ELEV. 755.256

EXIST. CURVE WBC01
PI STA. = 407+99.60
△ = 9° 41' 02" (LT)
D = 0° 28' 00"
R = 12,277.66'
T = 1,040.04'
L = 2,075.12'
E = 43.97'
e = -----
T.R. = -----
S.E. RUN = -----
P.C. STA. = 397+59.56
P.T. STA. = 418+34.68

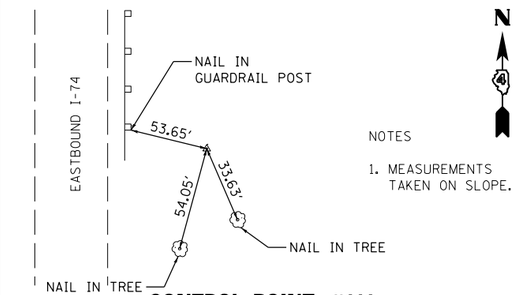
EXIST. CURVE EBC01
PI STA. = 418+12.68
△ = 7° 58' 36" (LT)
D = 0° 28' 00"
R = 12,277.66'
T = 856.02'
L = 1,709.28'
E = 29.81'
e = -----
T.R. = -----
S.E. RUN = -----
P.C. STA. = 409+56.65
P.T. STA. = 426+65.93





CONTROL POINT #110

IRON PIN W/CAP
STA. 411+12.04
76.94 RT
N 1605300.45
E 2250192.21
ELEV. 764.972



CONTROL POINT #111

IRON PIN W/CAP
STA. 411+73.96
64.72 LT
N 1604601.76
E 2250331.17
ELEV. 761.190

BENCHMARKS

BM #1 CHISELED SQUARE LOCATED ON THE NORTH END OF WEST WING WALL OF SOUTHBOUND HENDERSON CREEK BRIDGE (I-74)
ELEV. 758.260

BM #3 CHISELED SQUARE LOCATED ON THE SOUTH END OF WEST WING WALL OF NORTHBOUND HENDERSON CREEK BRIDGE (I-74)
ELEV. 757.278

GRAPHIC SCALE
0 25 50 100 200
SCALE: 1"=50'

FILE NAME = ...\D4-174-HendersonCreek-Combined-sht011-ATB.dgn	DESIGNED - JCP	REVISED - -
	DRAWN - JCP	REVISED - -
PLOT TIME = 1:28:52 PM	CHECKED - GAO	REVISED - -
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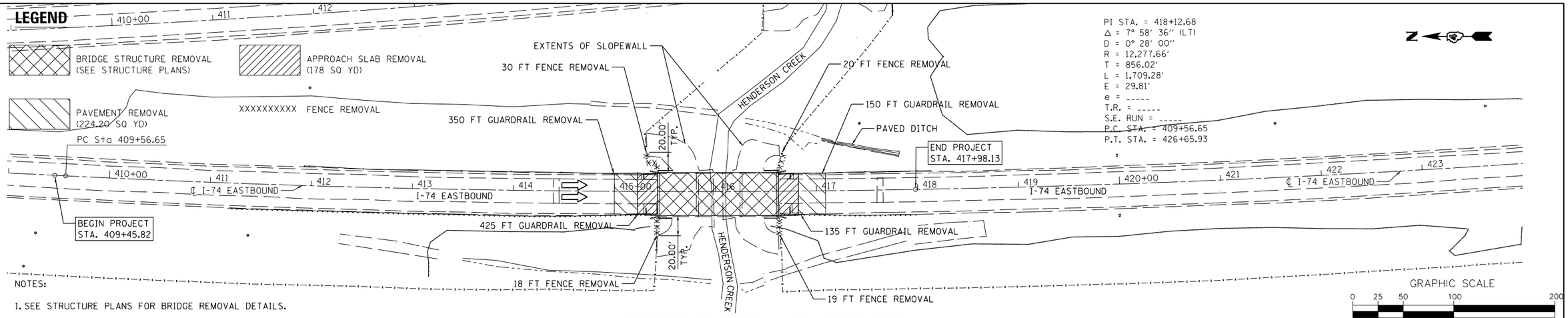
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

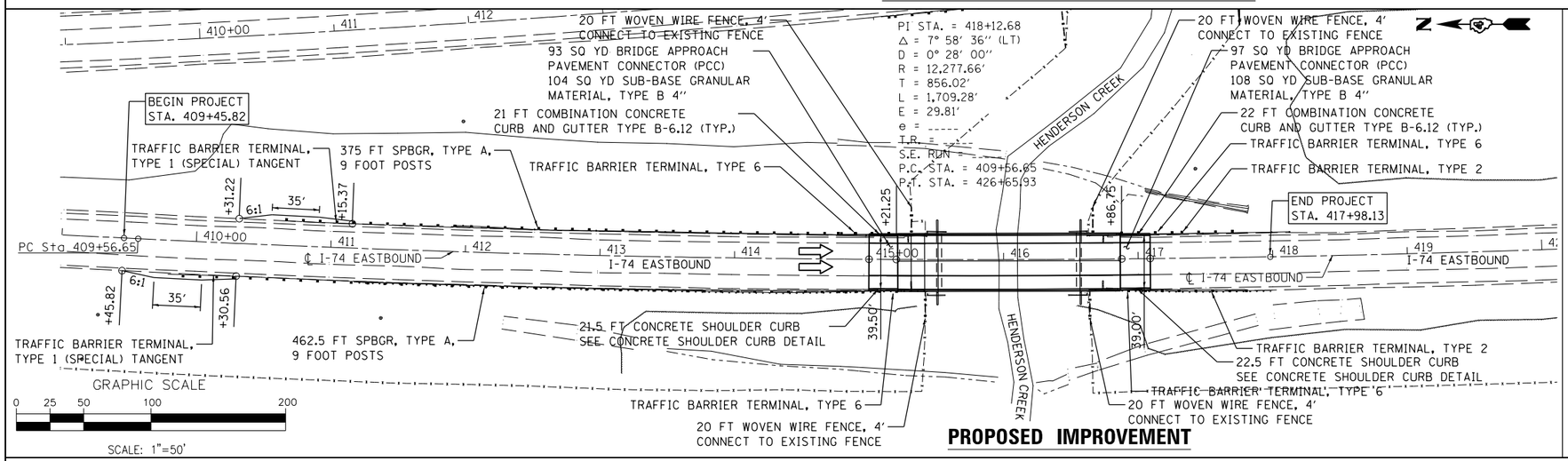
ALIGNMENT, TIES AND BENCHMARKS

SCALE: 1" = 50' | SHEET NO. 1 OF 1 SHEETS | STA. 415+00.00 TO STA. 418+24.56

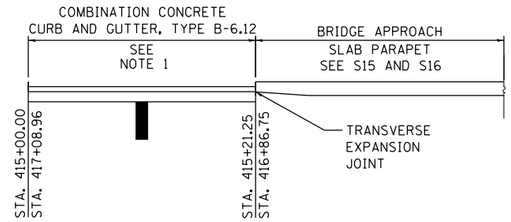
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	11
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			



EXISTING CONDITION AND DEMOLITION



PROPOSED IMPROVEMENT

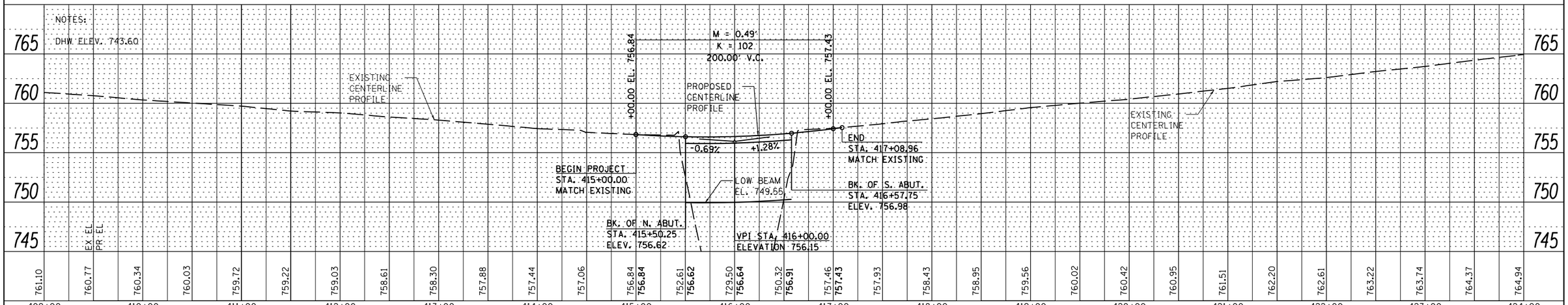


PLAN VIEW

NOTES:

1. REFER TO STANDARD DRAWING 606001 FOR COMBINATION CONCRETE CURB AND GUTTER DETAILS.
2. NORTHEAST CORNER SHOWN. SIMILAR FOR NORTHWEST, SOUTHEAST AND SOUTHWEST CORNERS.

CONCRETE SHOULDER CURB DETAIL



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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-74 EASTBOUND
ROADWAY PLAN AND PROFILE

SCALE: 1" = 50' | SHEET NO. 1 OF 1 SHEETS | STA. 409+00.00 TO STA. 424+00.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	12
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

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

PROFILE: SURVEYED, PLOTTED, PLOTTED CHECKED, BM: NOTED, STRUCTURE NOTATNS CHKD, NOTE BOOK, NO., BY, DATE

LEGEND

APPROACH SLAB REMOVAL (280 SQ YD)

PAVEMENT REMOVAL (399 SQ YD)

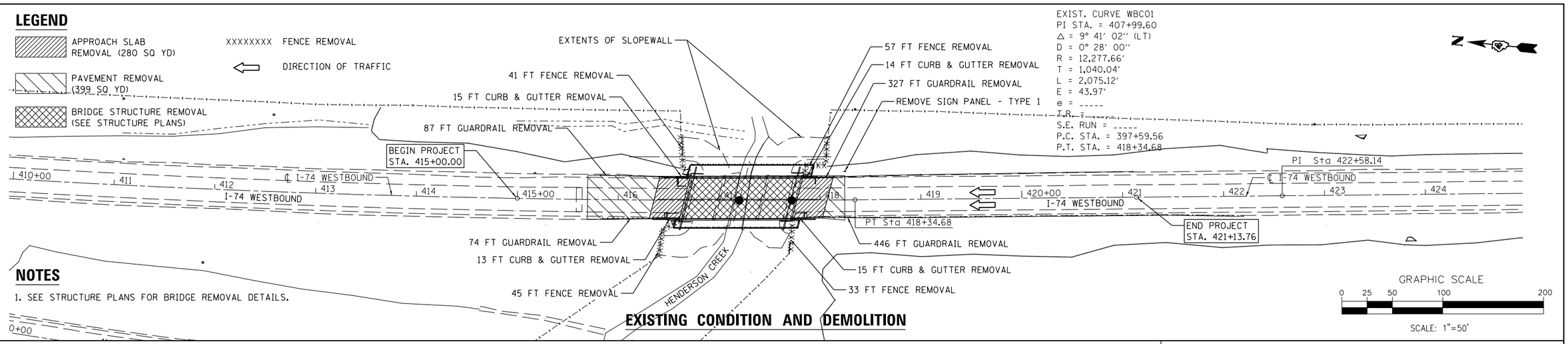
BRIDGE STRUCTURE REMOVAL (SEE STRUCTURE PLANS)

XXXXXXXX FENCE REMOVAL

DIRECTION OF TRAFFIC

NOTES

1. SEE STRUCTURE PLANS FOR BRIDGE REMOVAL DETAILS.



EXISTING CONDITION AND DEMOLITION

GRAPHIC SCALE
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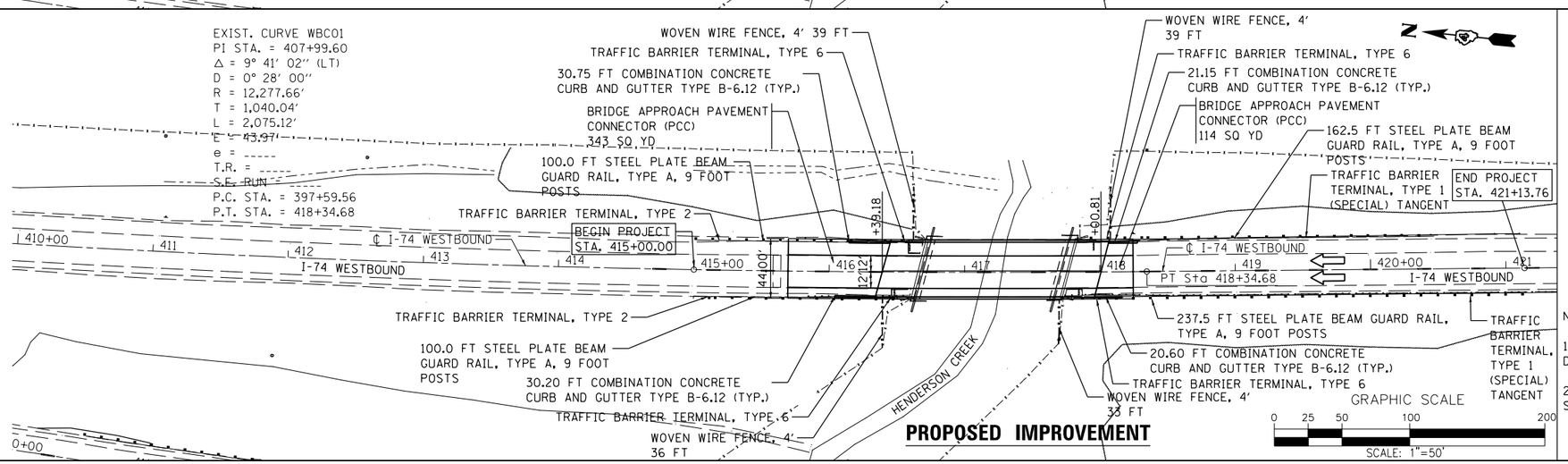
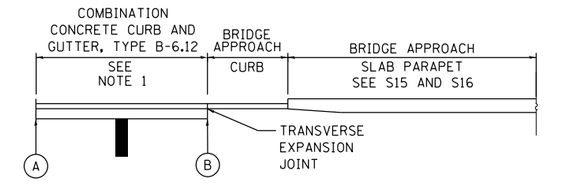
SCALE: 1"=50'



PROPOSED IMPROVEMENT

GRAPHIC SCALE
0 25 50 100 200
SCALE: 1"=50'



PLAN VIEW

(A) NE CORNER: STA. 416+14.34
NW CORNER: STA. 416+04.20
SE CORNER: STA. 418+22.90
SW CORNER: STA. 418+11.52

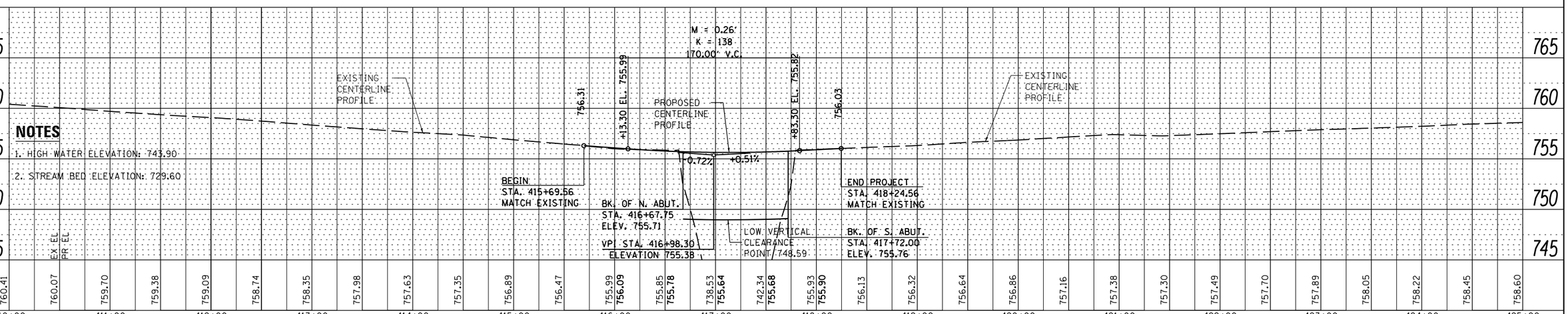
(B) NE CORNER: STA. 416+45.14
NW CORNER: STA. 416+34.15
SE CORNER: STA. 418+06.71
SW CORNER: STA. 417+95.80

NOTES:

1. REFER TO STANDARD DRAWING 606001 FOR CONCRETE CURB AND GUTTER DETAILS.

2. NORTHEAST CORNER SHOWN. SIMILAR FOR NORTHWEST, SOUTHEAST AND SOUTHWEST CORNERS.

CONCRETE SHOULDER CURB DETAIL



NOTES

1. HIGH WATER ELEVATION: 743.90
2. STREAM BED ELEVATION: 729.60

FILE NAME =	...\D4-174-HendersonCreek-Combined-sht013-WBp.dgn
PLOT TIME =	2:22:00 PM
PLOT DATE =	8/12/2014
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REVISED -	
REVISED -	

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-74 WESTBOUND
ROADWAY PLAN AND PROFILE

SCALE: 1" = 50' | SHEET NO. 1 OF 1 SHEETS | STA. 410+00.00 TO STA. 425+00.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	13
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

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

PROFILE: SURVEYED, PLOTTED, GRADES CHECKED, BM. NOTED, STRUCTURE NOTATNS CHKD, NOTE BOOK, NO. — BY, DATE

SUGGESTED CONSTRUCTION STAGING TRAFFIC CONTROL

THE FOLLOWING SEQUENCE OF TRAFFIC CONTROL IS SUGGESTED. VARIATIONS MAY BE MADE, WITH THE APPROVAL OF THE ENGINEER, IF THE PREVAILING SITE CONDITIONS AT THE TIME OF CONSTRUCTION ALLOW.

STAGE I

USE HIGHWAY STANDARD 701402 TO PLACE TEMPORARY CONCRETE BARRIER TO CLOSE LEFT EASTBOUND LANE OF INTERSTATE 74. REDIRECT TRAFFIC TO USE REMAINING EASTBOUND LANE FOR ONE-WAY TRAFFIC. REMOVE EAST HALF OF EXISTING BRIDGE DECK AND STRUCTURE. CONSTRUCT PROPOSED EAST HALF OF BRIDGE DECK AND STRUCTURE.

USE HIGHWAY STANDARD 701402 TO PLACE TEMPORARY CONCRETE BARRIER TO CLOSE LEFT WESTBOUND LANE OF INTERSTATE 74. REDIRECT TRAFFIC TO USE REMAINING WESTBOUND LANE FOR ONE-WAY TRAFFIC. REMOVE WEST HALF OF EXISTING BRIDGE DECK AND STRUCTURE. CONSTRUCT PROPOSED WEST HALF OF BRIDGE DECK AND STRUCTURE.

STAGE II

USE HIGHWAY STANDARD 701402 TO PLACE TEMPORARY CONCRETE BARRIER TO CLOSE RIGHT EASTBOUND LANE OF INTERSTATE 74. REDIRECT TRAFFIC TO USE REMAINING EASTBOUND LANE FOR ONE-WAY TRAFFIC. REMOVE WEST HALF OF EXISTING SUBSTRUCTURE AND BRIDGE DECK. CONSTRUCT PROPOSED WEST HALF OF SUBSTRUCTURE AND BRIDGE DECK.

USE HIGHWAY STANARD 701402 TO PLACE TEMPORARY CONCRETE BARRIER TO CLOSE RIGHT WESTBOUND LANE OF INTERSTATE 74. REDIRECT TRAFFIC TO USE REMAINING WESTBOUND LANE FOR ONE-WAY TRAFFIC. REMOVE EAST HALF OF EXISTING SUBSTRUCTURE AND BRIDGE DECK. CONSTRUCT PROPOSED EAST HALF OF SUBSTRUCTURE AND BRIDGE DECK.

SUGGESTED CONSTRUCTION STAGING TRAFFIC CONTROL NOTES

1. 4 INCH SOLID WHITE LINES SHALL BE USED TO DELINEATE THE TRAFFIC RIGHT EDGE OF THE PAVEMENT.

2. 4 INCH SOLID YELLOW LINES SHALL BE USED TO DELINEATE THE TRAFFIC LEFT EDGE OF THE PAVEMENT.

3. EXISTING SIGNS AND MESSAGES SHALL BE TEMPORARILY COVERED, MODIFIED OR REMOVED AS DIRECTED BY THE ENGINEER.

4. ALL OF THE TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE TRAFFIC CONTROL PLANS OR THE LATEST EDITION OF THE "ILLINOIS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" AND SHALL BE IN PLACE BEFORE CONSTRUCTION IS STARTED.

5. THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND TRAFFIC CONTROL DEVICES MAY BE ADJUSTED TO FIT FIELD CONDITIONS DIRECTED BY THE ENGINEER.

6. TEMPORARY CONCRETE BARRIER AND TEMPORARY IMPACT ATTENUATORS SHALL BE PLACED AS INDICATED IN THE PLANS AND IN ACCORDANCE WITH SECTION 701 OF THE STANDARD SPECIFICATIONS. TEMPORARY CONCRETE BARRIER SHALL BE IN ACCORDANCE WITH SECTION 704 OF THE STANDARD SPECIFICATIONS, AND SHALL BE PLACED WHERE THE TRAVEL LANE IS ADJACENT TO A DROP OF 3 FEET OR GREATER AND AT OTHER LOCATIONS AS DIRECTED BY THE ENGINEER.

7. THE CONTRACTOR SHALL PROVIDE ADVANCE NOTICE CONSTRUCTION SIGNING, SIGNS SHALL BE ERECTED ONE WEEK IN ADVANCE OF THE START OF CONSTRUCTION. SIGNS SHALL BE REMOVED OR COVERED WHEN PROTECTION IS NOT REQUIRED AND RESTORED AS APPROPRIATE.

8. CONSTRUCTION WORK WILL NOT COMMENCE UNTIL ALL SIGNS AND PAVEMENT MARKINGS IN CONFLICT WITH THE STAGED CONSTRUCTION HAVE BEEN REMOVED AND ALL TEMPORARY SIGNS, PAVEMENT MARKINGS AND BARRICADES ARE IN PLACE AND APPROVED BY THE ENGINEER.

9. THE CONTRACTOR SHALL PROVIDE ALL BARRIERS, SIGNS, SUPPORTS. PAVEMENT MARKING MATERIALS AND LABOR NECESSARY FOR THE MAINTENANCE OF TRAFFIC UNLESS NOTED OTHERWISE IN THE SPECIAL PROVISIONS.

10. IMMEDIATELY AFTER THE COMPLETION OF THE WORK, THE CONTRACTOR SHALL RESTORE ALL PERMANENT PAVEMENT MARKINGS, SIGNS AND OTHER TRAFFIC CONTROL DEVICES THAT WERE COVERED, REMOVED, MODIFIED, DAMAGED OR OTHERWISE AFFECTED BY THE CONSTRUCTION.

11. TRAFFIC CONTROL DEVICES AND TEMPORARY CONCRETE BARRIER WALL SHALL BE IN ACCORDANCE WITH I.D.O.T. TRAFFIC CONTROL STANDARD 701901 AND 704001.

12. FOR EACH STAGE OF CONSTRUCTION PROVIDE TRAFFIC CONTROL AS SHOWN ON THE MAINTENANCE OF TRAFFIC PLANS, COORDINATE INSTALLATION OF TEMPORARY PAVEMENT MARKINGS AND OTHER TRAFFIC CONTROL DEVICES WITH THE EXISTING TRAFFIC PATTERNS AT THE ENDS OF THE PROJECT.

13. COST OF ANCHORING TEMPORARY CONCRETE BARRIER TO BRIDGE DECK TO BE INCLUDED IN TRAFIC CONTROL AND PROTECTION, STANDARD 701402 PAY ITEM. SEE SHEET S5 OF S25.

FILE NAME =	DESIGNED - JCP	REVISED - -
...\D4-174-HendersonCreek-Combined-sht014-staging.dgn	DRAWN - JCP	REVISED - -
PLOT TIME = 4:30:55 PM	CHECKED - GAO	REVISED - -
PLOT DATE = 7/30/2014	DATE - 08/01/14	REVISED - -

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUGGESTED STAGES OF CONSTRUCTION AND TRAFFIC CONTROL NOTES

SCALE: N/A | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

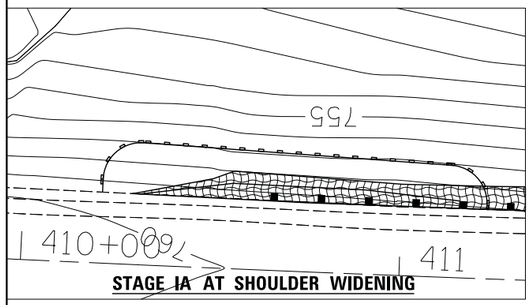
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-1(25B)BR, BR-1]	KNOX	131	14
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

LEGEND

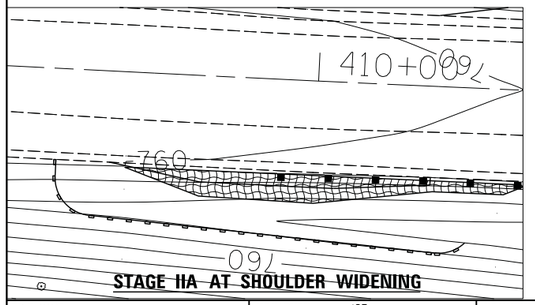
- PERIMETER EROSION BARRIER
- WORK ZONE
- TEMPORARY PIPE SLOPE DRAIN
- EXISTING PAVED DITCH
- RIP RAP
- FABRIC INLET PROTECTION
- TEMPORARY DITCH CHECKS
- HEAVY DUTY EROSION CONTROL BLANKET
- END SECTION, 12" (SEE DRAINAGE SHEET)

NOTES

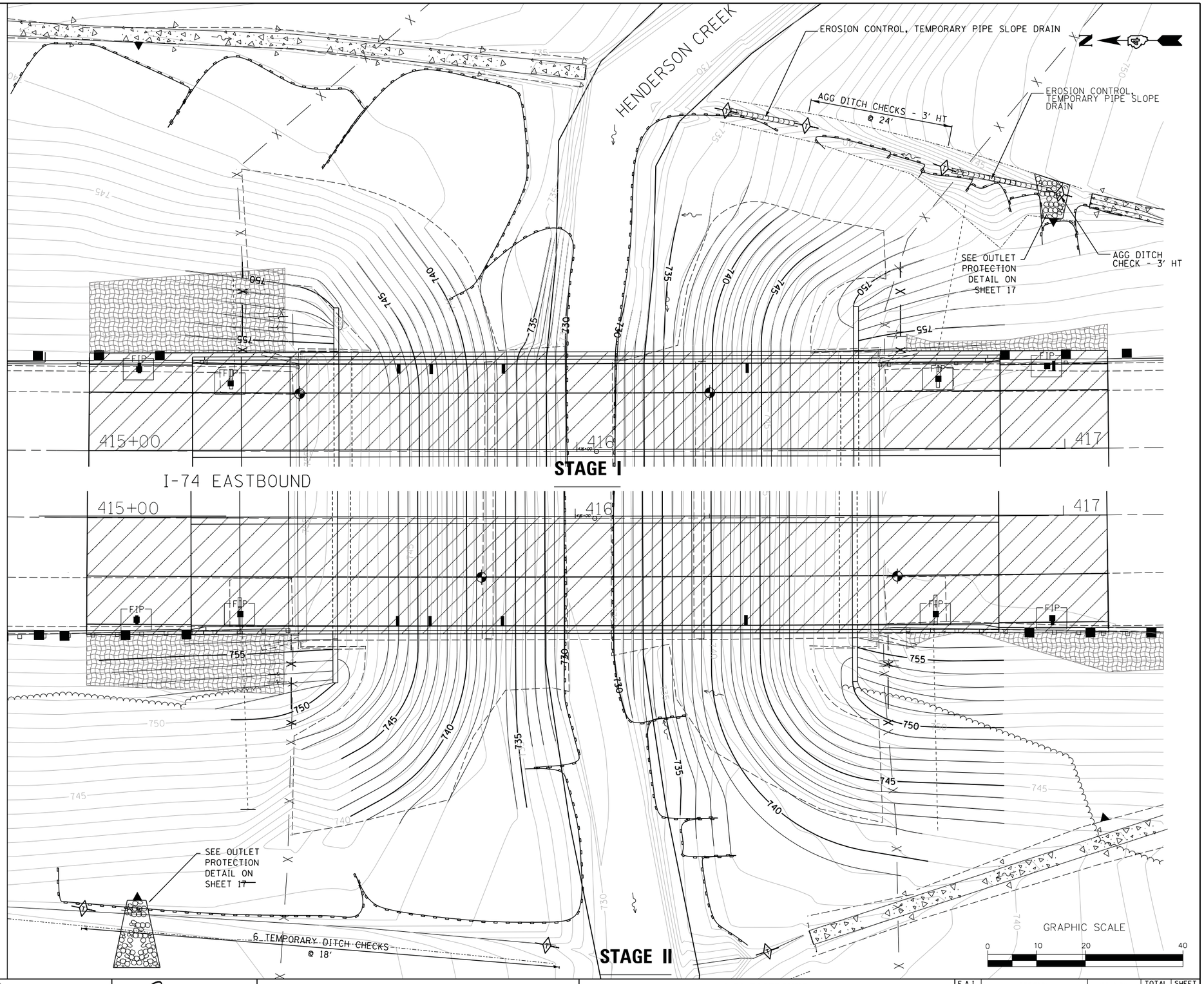
1. CONTRACTOR SHALL INSTALL PERIMETER EROSION BARRIER PRIOR TO STRIPPING VEGETATION.
2. NO SEDIMENT SHALL BE ALLOWED TO FLOW DOWNSTREAM AT ANY TIME. ALL WATER FROM DEWATERING OPERATIONS SHALL BE FILTERED TO REMOVE SEDIMENT BEFORE IT IS DISCHARGED INTO THE CREEK.
3. HEAVY DUTY EROSION CONTROL BLANKETS SHALL BE USED FOR AREAS ADJACENT TO BODIES OF WATER, FOR LINING DITCHES AND FOR SLOPES 1V:3H OR STEEPER.
4. FOR RIPRAP LIMITS SEE SHEET S1 OF S25 FOR STRUCTURE NO. 048-0090
5. ALL DISTURBED AREAS SHALL BE RESEEDED WITH SEEDING, CLASS 2A.
6. THE EXPECTED DISTURBED WORK AREA FOR THIS PROJECT IS APPROXIMATELY 0.74 ACRES. IF THE WORK AREA DISTURBANCE EXCEEDS 1 ACRE, NOTIFICATION TO THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY IS REQUIRED.



STAGE IA AT SHOULDER WIDENING



STAGE IIA AT SHOULDER WIDENING



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PLOT DATE = 7/30/2014	DATE - 08/01/14	REVISED -

EPSTEIN
600 WEST FULTON STREET
CHICAGO, ILLINOIS
60661-1259
TEL 312 454 9100
FAX 312 559 1217
WEB www.epsteinglobal.com

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

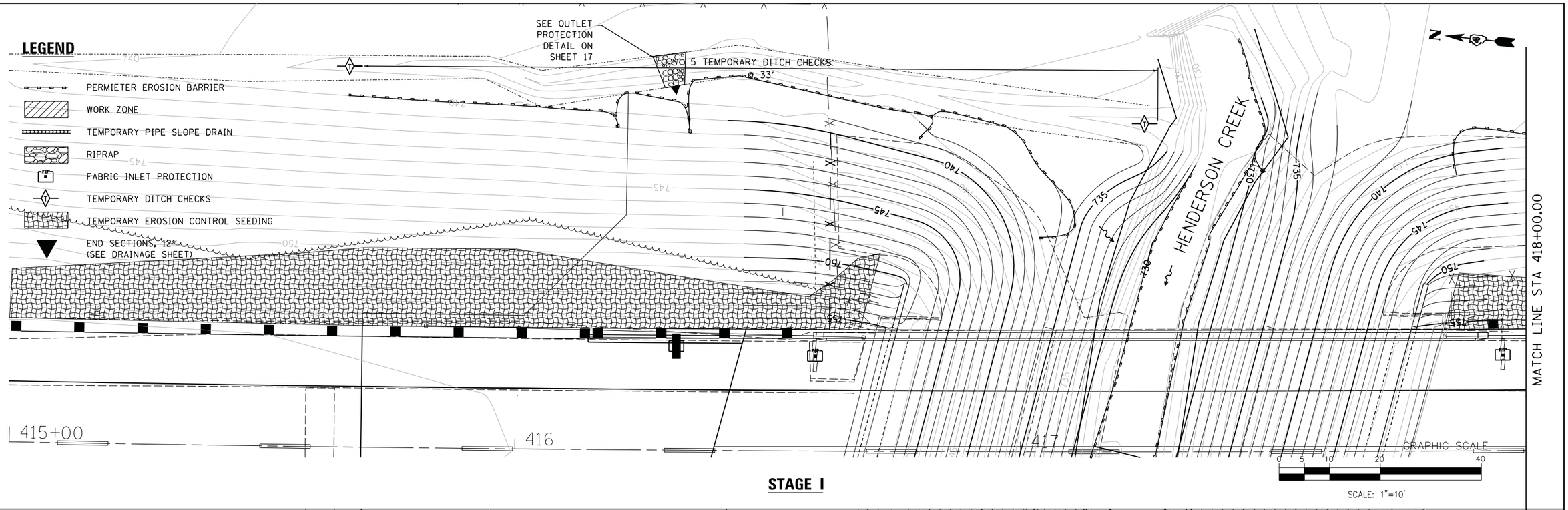
I-74 EASTBOUND
EROSION & SEDIMENT CONTROL PLAN

SCALE: 1" = 10' | SHEET NO. 1 OF 1 SHEETS | STA. 410+00.00 TO STA. 422+00.00

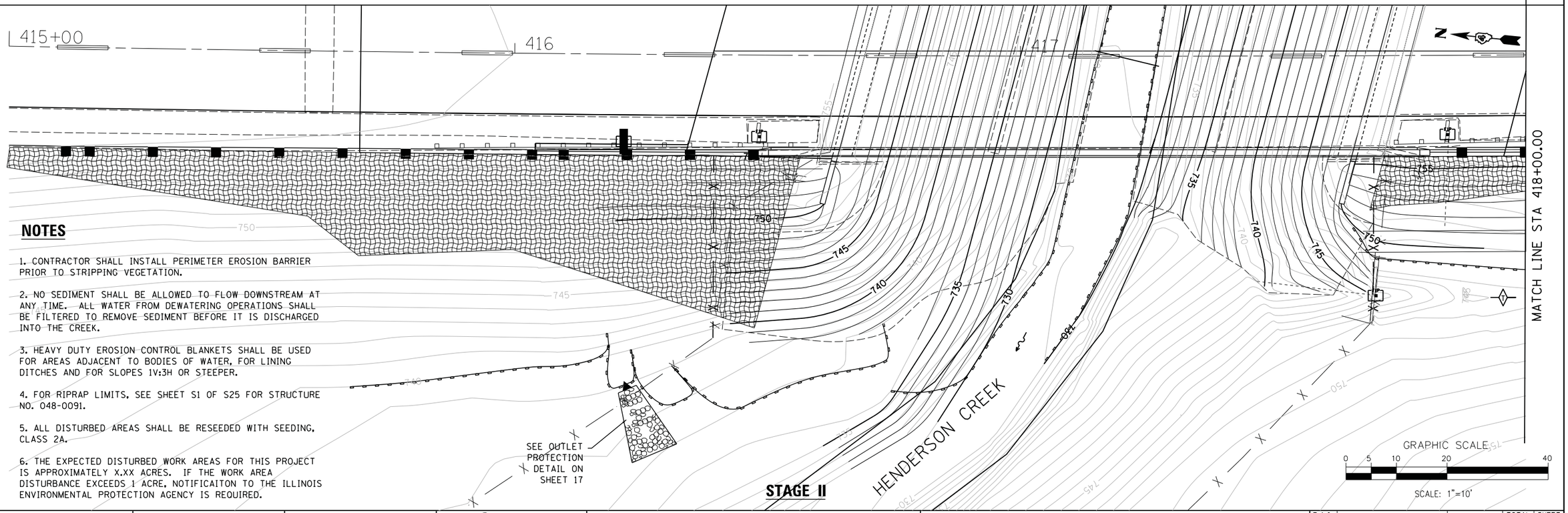
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-I(25B)BR, BR-1]	KNOX	131	15
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

LEGEND

- PERMIETER EROSION BARRIER
- WORK ZONE
- TEMPORARY PIPE SLOPE DRAIN
- RIPRAP
- FABRIC INLET PROTECTION
- TEMPORARY DITCH CHECKS
- TEMPORARY EROSION CONTROL SEEDING
- END SECTIONS, 12" (SEE DRAINAGE SHEET)



STAGE I



STAGE II

NOTES

1. CONTRACTOR SHALL INSTALL PERIMETER EROSION BARRIER PRIOR TO STRIPPING VEGETATION.

2. NO SEDIMENT SHALL BE ALLOWED TO FLOW DOWNSTREAM AT ANY TIME. ALL WATER FROM DEWATERING OPERATIONS SHALL BE FILTERED TO REMOVE SEDIMENT BEFORE IT IS DISCHARGED INTO THE CREEK.

3. HEAVY DUTY EROSION CONTROL BLANKETS SHALL BE USED FOR AREAS ADJACENT TO BODIES OF WATER, FOR LINING DITCHES AND FOR SLOPES 1V:3H OR STEEPER.

4. FOR RIPRAP LIMITS, SEE SHEET S1 OF S25 FOR STRUCTURE NO. 048-0091.

5. ALL DISTURBED AREAS SHALL BE RESEEDED WITH SEEDING, CLASS 2A.

6. THE EXPECTED DISTURBED WORK AREAS FOR THIS PROJECT IS APPROXIMATELY X.XX ACRES. IF THE WORK AREA DISTURBANCE EXCEEDS 1 ACRE, NOTIFICAITON TO THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY IS REQUIRED.

FILE NAME = ...\D4-I74-HendersonCreek-Combined-sht016-WB.dgn	DESIGNED - JCP	REVISED - -
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PLOT DATE = 7/30/2014	DATE - 08/01/14	REVISED - -

EPSTEIN
600 WEST FULTON STREET
CHICAGO, ILLINOIS
60661-1259
TEL 312 454 9100
FAX 312 559 1217
WEB www.epsteinglobal.com

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-74 WESTBOUND
EROSION & SEDIMENT CONTROL PLAN

SCALE: 1" = 10' | SHEET NO. 1 OF 2 SHEETS | STA. 415+00.00 TO STA. 418+00.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	16
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

LEGEND

- PERMIETER EROSION BARRIER
- WORK ZONE
- TEMPORARY PIPE SLOPE DRAIN
- RIPRAP
- FABRIC INLET PROTECTION
- TEMPORARY DITCH CHECKS
- TEMPORARY EROSION CONTROL SEEDING
- END SECTIONS, 12"
  (SEE DRAINAGE SHEET)

NOTES

1. CONTRACTOR SHALL INSTALL PERIMETER EROSION BARRIER PRIOR TO STRIPPING VEGETATION.

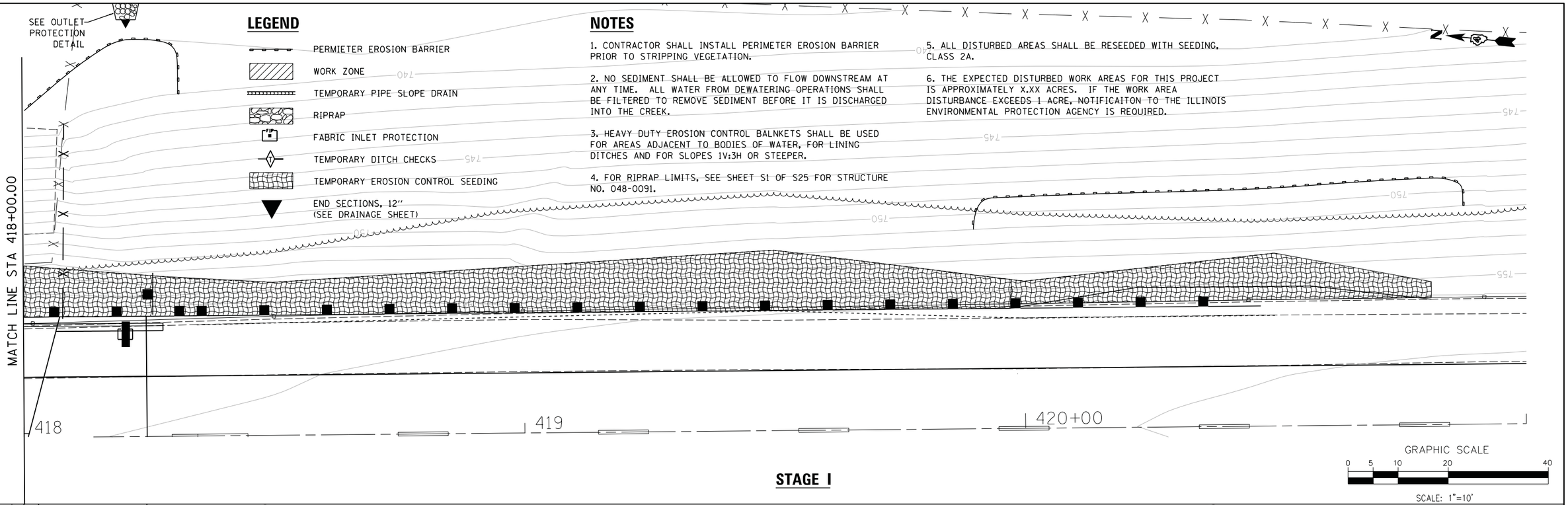
2. NO SEDIMENT SHALL BE ALLOWED TO FLOW DOWNSTREAM AT ANY TIME. ALL WATER FROM DEWATERING OPERATIONS SHALL BE FILTERED TO REMOVE SEDIMENT BEFORE IT IS DISCHARGED INTO THE CREEK.

3. HEAVY DUTY EROSION CONTROL BALNKETS SHALL BE USED FOR AREAS ADJACENT TO BODIES OF WATER, FOR LINING DITCHES AND FOR SLOPES 1V:3H OR STEEPER.

4. FOR RIPRAP LIMITS, SEE SHEET S1 OF S25 FOR STRUCTURE NO. 048-0091.

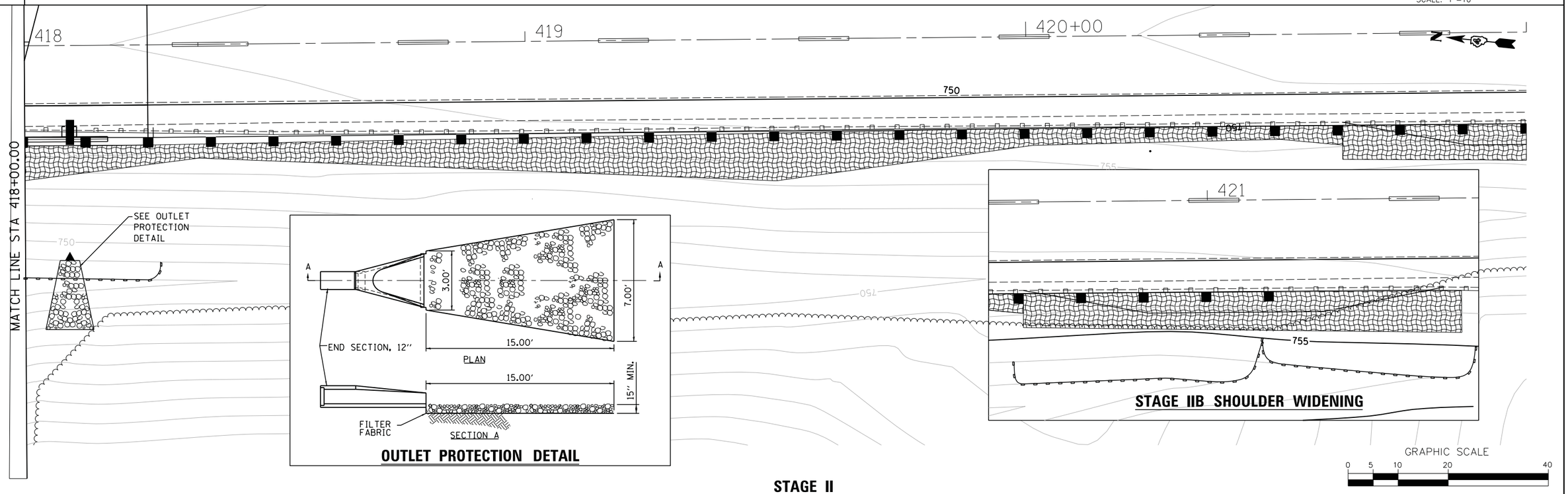
5. ALL DISTURBED AREAS SHALL BE RESEEDED WITH SEEDING, CLASS 2A.

6. THE EXPECTED DISTURBED WORK AREAS FOR THIS PROJECT IS APPROXIMATELY X.XX ACRES. IF THE WORK AREA DISTURBANCE EXCEEDS 1 ACRE, NOTIFICAITON TO THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY IS REQUIRED.



STAGE I

GRAPHIC SCALE
0 5 10 20 40
SCALE: 1"=10'



OUTLET PROTECTION DETAIL

STAGE IIB SHOULDER WIDENING

STAGE II

GRAPHIC SCALE
0 5 10 20 40
SCALE: 1"=10'

FILE NAME = ...\D4-174-HendersonCreek-Combined-sht017-WB-EC.dwg	DESIGNED - JCP	REVISED - -
	DRAWN - JCP	REVISED - -
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PLOT DATE = 7/30/2014	DATE - 08/01/14	REVISED - -

EPSTEIN
600 WEST FULTON STREET, CHICAGO, ILLINOIS 60661-1259
TEL 312 454 9100 FAX 312 559 1217 WEB www.epsteinglobal.com

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-74 WESTBOUND
EROSION & SEDIMENT CONTROL PLAN

SCALE: 1" = 10' | SHEET NO. 2 OF 2 SHEETS | STA. 418+00.00 TO STA. 421+00.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	17
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

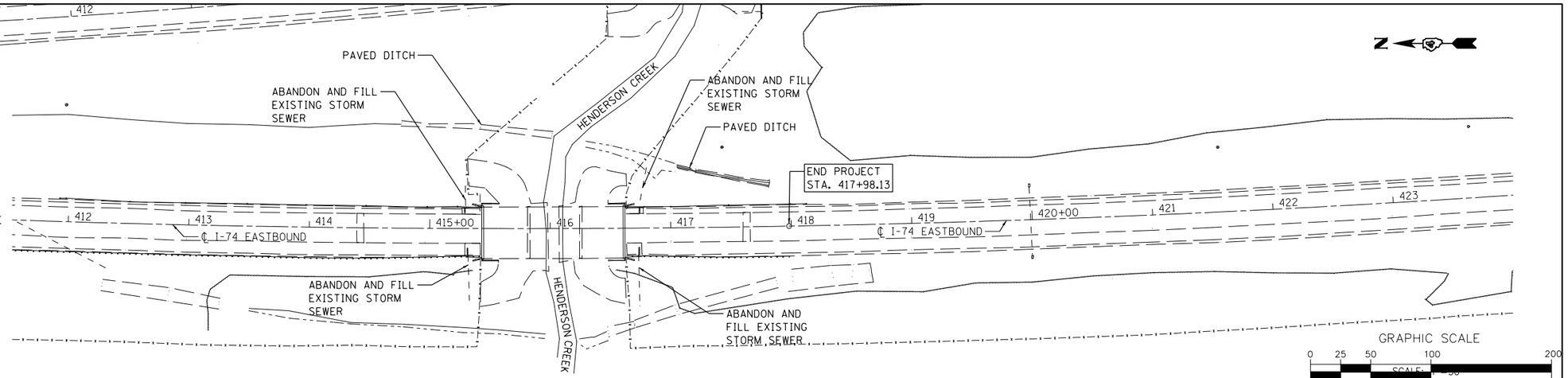
NOTES

1. ALL 4" PERFORATED PIPE UNDERDRAINS SHALL OUTLET TO DITCHES. SEE STRUCTURE PLANS FOR LOCATION AND DETAILS.

2. CONTRACTOR SHALL VERIFY EXISTING PIPE LOCATIONS AND INVERT ELEVATIONS PRIOR TO CONSTRUCTION.

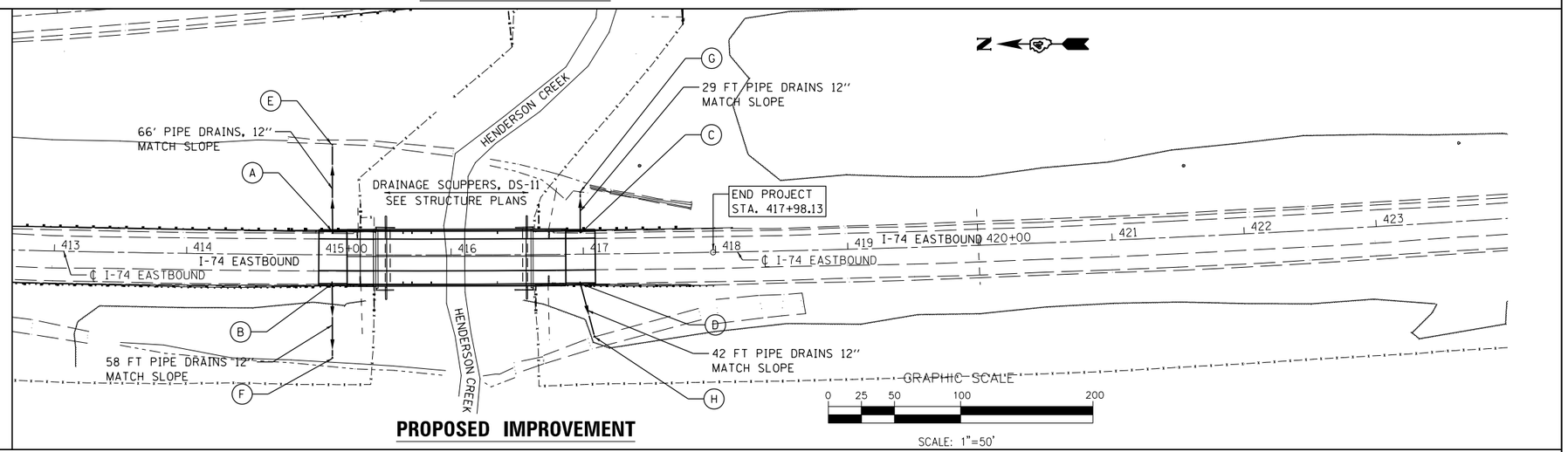
3. ALL OFFSETS AND RIM ELEVATIONS ARE TO EDGE OF SHOULDER.

4. PROVIDE SEEPAGE COLLAR AND CONCRETE THRUST BLOCK ACCORDING TO DISTRICT FOUR STANDARD 601101-D4 FOR EACH PIPE DRAIN 12" (FOUR LOCATIONS).

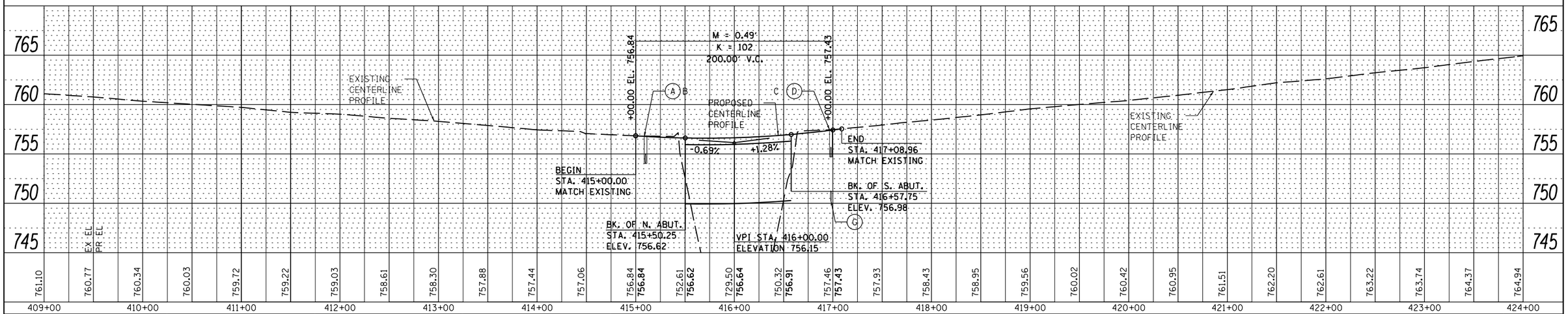


EXISTING CONDITION

- (A) TYPE G INLET BOX, STANDARD 610001
  STA. 415+10, 18 LT
  RIM EL. 756.47
  INV. EL. 753.72
- (B) TYPE F INLET BOX, STANDARD 610001
  STA. 415+10, 22 RT
  RIM EL. 756.39
  INV. EL. 753.64
- (C) TYPE G INLET BOX, STANDARD 610001
  STA. 416+98, 18 LT
  RIM EL. 757.10
  INV. EL. 754.35
- (D) TYPE F INLET BOX, STANDARD 610001
  STA. 416+98, 22 RT
  RIM EL. 757.02
  INV. EL. 754.27
- (E) END SECTIONS 12"
  OUTLET TO EXISTING DITCH
  STA. 415+10, 83 LT
  INV. EL. 737.742
- (F) END SECTIONS 12"
  OUTLET TO TREE LINE
  STA. 415+11, 78 RT
  INV. EL. 738.260
- (G) END SECTIONS 12"
  OUTLET TO EXISTING DITCH
  STA. 416+98, 45 LT
  INV. EL. 750.25
- (H) END SECTIONS 12"
  OUTLET TO EXISTING DITCH
  STA. 417+08, 63 RT
  INV. EL. 742.80



PROPOSED IMPROVEMENT



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PLOT DATE = 8/12/2014	CHECKED - GAO	REVISED -
	DATE - 08/01/14	REVISED -

EPSTEIN
600 WEST FULTON STREET
CHICAGO, ILLINOIS
60661-1259
TEL 312 454 9100
FAX 312 559 1217
WEB www.epsteinglobal.com

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-74 EASTBOUND
DRAINAGE PLAN AND PROFILE

SCALE: 1" = 50' | SHEET NO. 1 OF 1 SHEETS | STA. 409+00.00 TO STA. 424+00.00

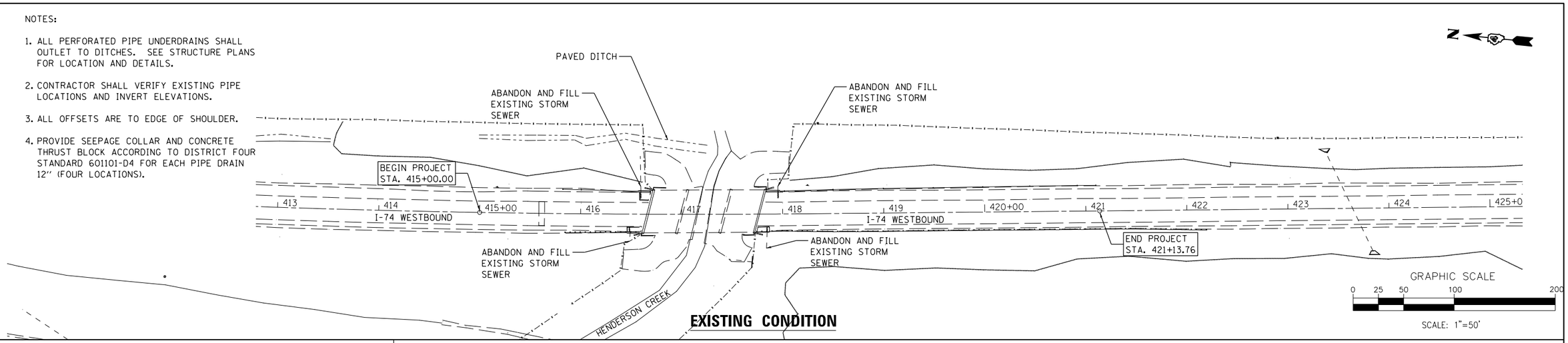
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	18
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

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

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

NOTES:

1. ALL PERFORATED PIPE UNDERDRAINS SHALL OUTLET TO DITCHES. SEE STRUCTURE PLANS FOR LOCATION AND DETAILS.
2. CONTRACTOR SHALL VERIFY EXISTING PIPE LOCATIONS AND INVERT ELEVATIONS.
3. ALL OFFSETS ARE TO EDGE OF SHOULDER.
4. PROVIDE SEEPAGE COLLAR AND CONCRETE THRUST BLOCK ACCORDING TO DISTRICT FOUR STANDARD 601101-D4 FOR EACH PIPE DRAIN 12" (FOUR LOCATIONS).



EXISTING CONDITION

(A) TYPE F INLET BOX, STANDARD 610001
STA. 416+31.84, 20.57 LT
RIM EL. 755.84
INV EL. 753.09

(B) TYPE G INLET BOX, STANDARD 610001
STA. 416+21.70, 17.26 RT
RIM EL. 755.64
INV EL. 752.89

(C) TYPE F INLET BOX, STANDARD 610001
STA. 418+20.40, 20.47 LT
RIM EL. 755.66
INV EL. 752.91

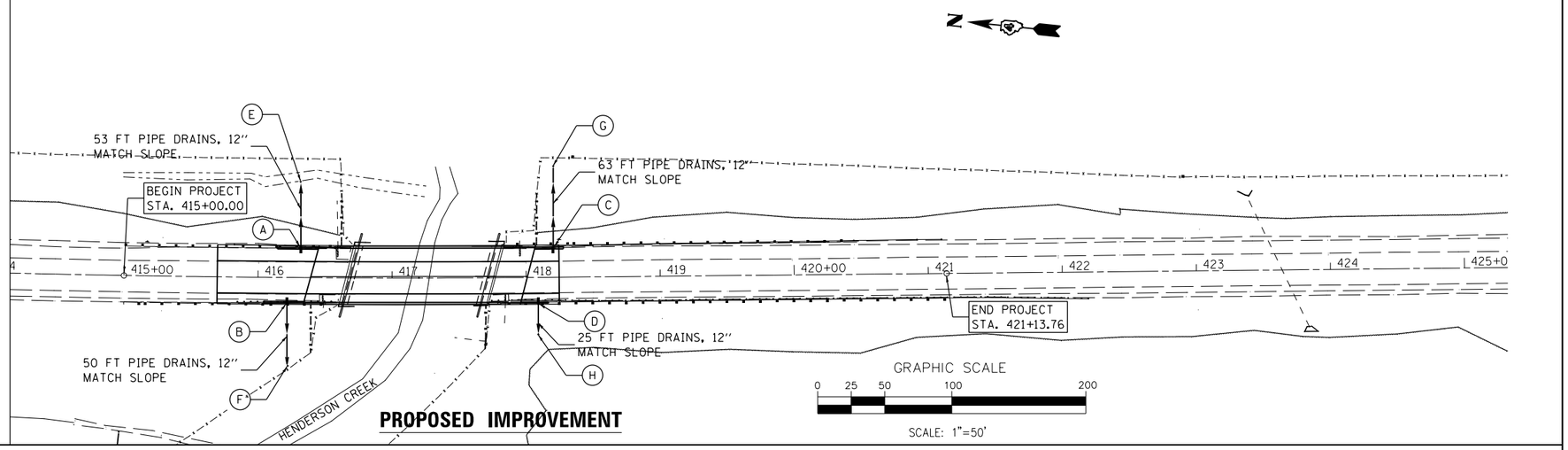
(D) TYPE G INLET BOX, STANDARD 610001
STA. 418+09.02, 17.39 RT
RIM EL. 755.66
INV EL. 752.91

(E) END SECTIONS, 12"
OUTLET TO EXISTING DITCH
STA. 416+31.23, 72 LT
INV EL. 738.56

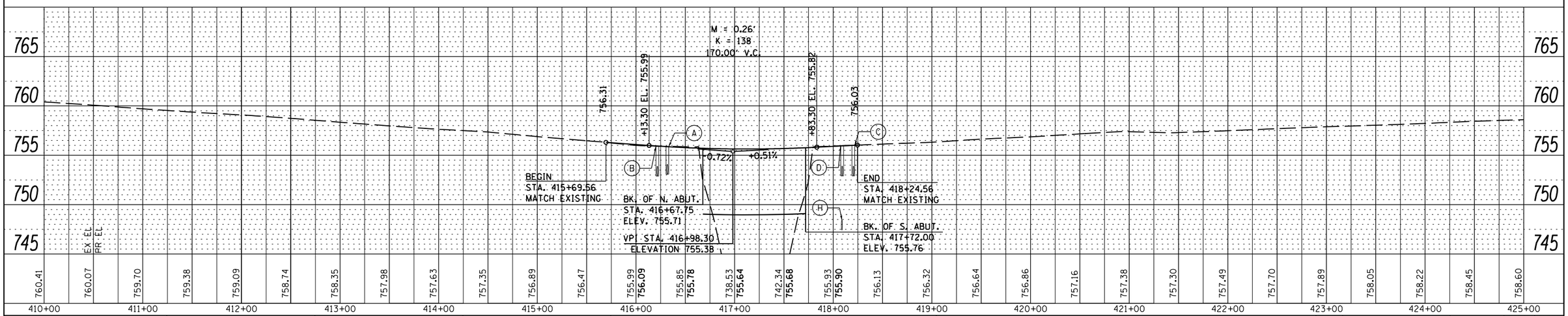
(F) END SECTIONS, 12"
OUTLET TO TREE LINE
STA. 416+22.07, 65 RT
INV EL. 739.00

(G) END SECTIONS, 12"
OUTLET TO EXISTING DITCH
STA. 418+20.89, 83 LT
INV EL. 738.75

(H) END SECTIONS, 12"
OUTLET TO EXISTING DITCH
STA. 418+08.80, 47 RT
INV EL. 749.00



PROPOSED IMPROVEMENT



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PLOT DATE = 8/12/2014	DATE - 08/01/14	REVISED -

EPSTEIN
600 WEST FULTON STREET
CHICAGO, ILLINOIS
60661-1259
TEL 312 454 9100
FAX 312 559 1217
WEB www.epsteinglobal.com

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-74 WESTBOUND
DRAINAGE PLAN AND PROFILE

SCALE: 1" = 50' | SHEET NO. 1 OF 1 SHEETS | STA. 410+00.00 TO STA. 425+00.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	19
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

PLAN: DATE | BY | SURVEYED | PLOTTED | DRAWN | CHECKED | QUANTITIES CHECKED | BM. NOTED | STRUCTURE NOTATNS CHKD | NOTE BOOK | NO.

PROFILE: DATE | BY | SURVEYED | PLOTTED | DRAWN | CHECKED | QUANTITIES CHECKED | BM. NOTED | STRUCTURE NOTATNS CHKD | NOTE BOOK | NO.

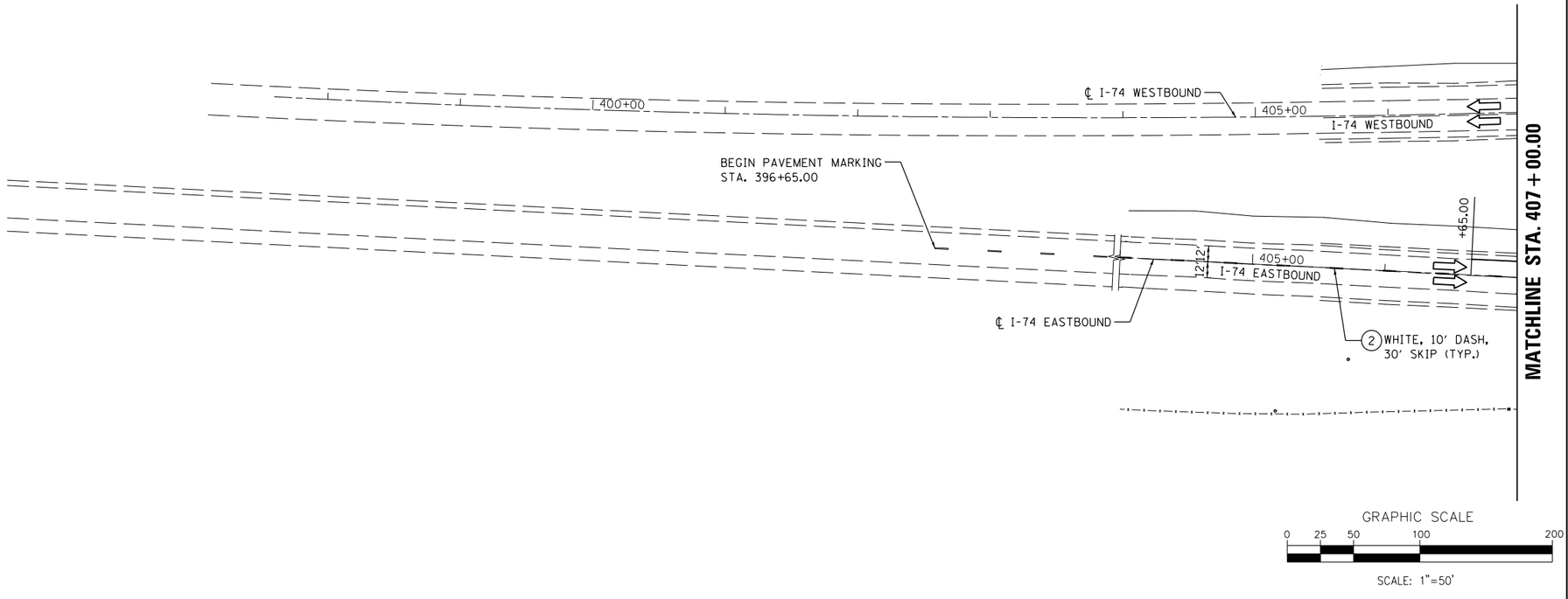
LEGEND

(1) MODIFIED URETHANE PAVEMENT MARKING - LINE 4"

(2) MODIFIED URETHANE PAVEMENT MARKING, - LINE 6"

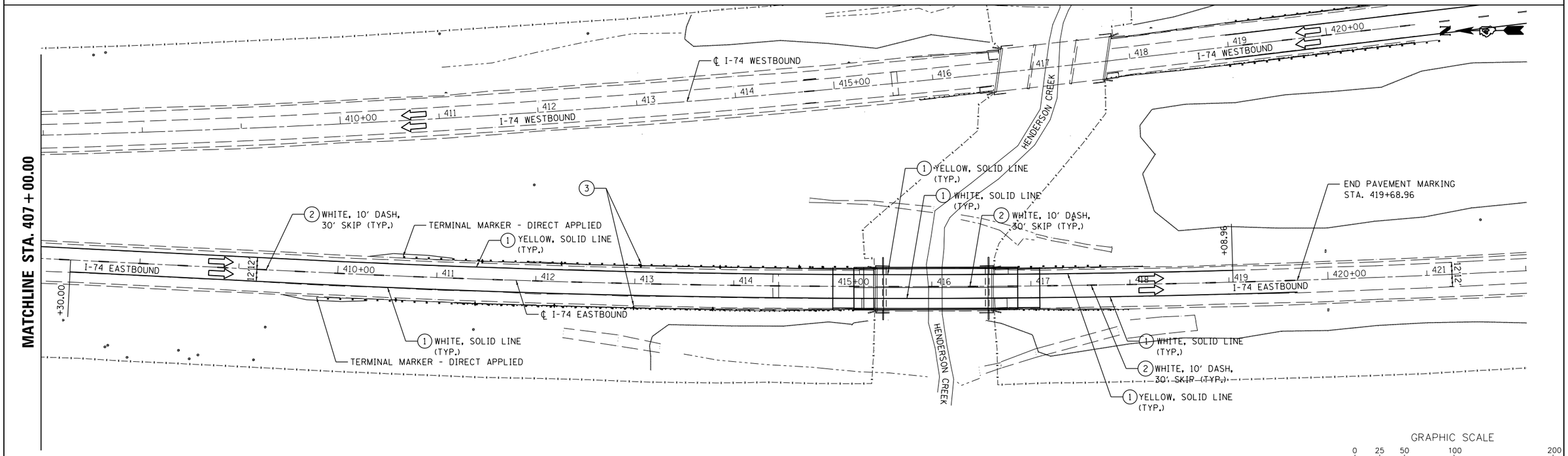
(3) GUARDRAIL MARKERS, TYPE B PER IDOT STANDARD 635001 AND 635006. MARKERS ON RIGHT SHALL BE CRYSTAL AND MARKERS ON LEFT SHALL BE AMBER.

⇨ DIRECTION OF TRAFFIC



GRAPHIC SCALE
0 25 50 100 200

SCALE: 1"=50'



GRAPHIC SCALE
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SCALE: 1"=50'

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PLOT DATE = 8/12/2014	DATE - 08/01/14	REVISED - ·

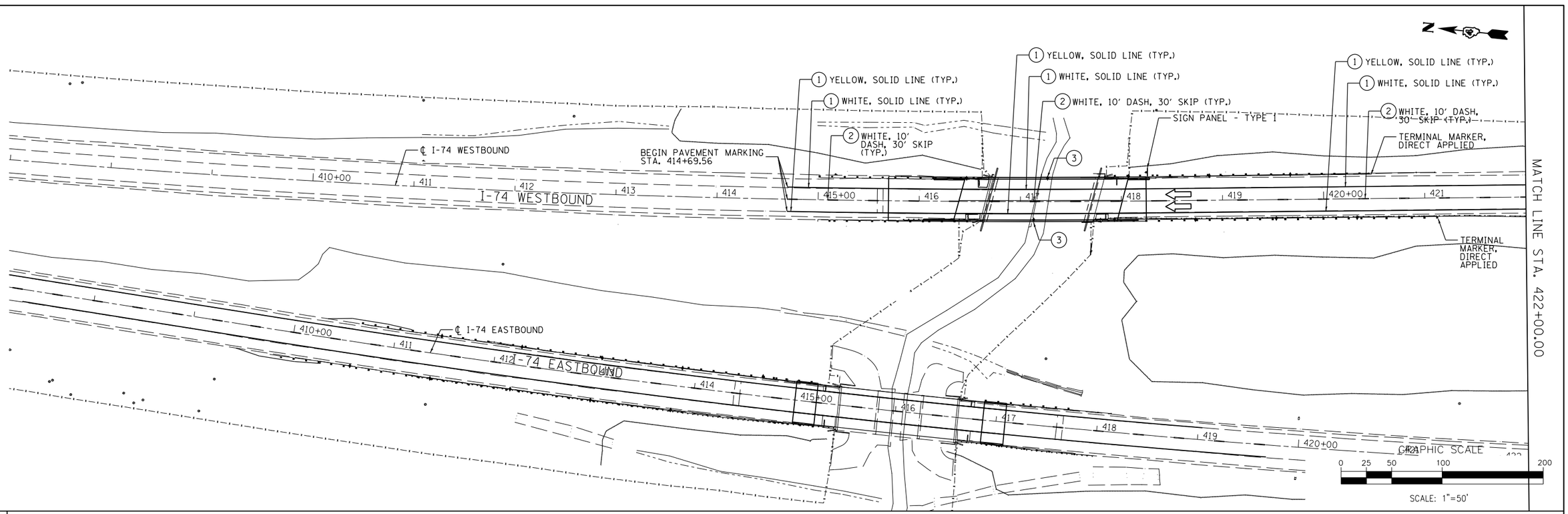
EPSTEIN
600 WEST FULTON STREET
CHICAGO, ILLINOIS
60661-1259
TEL 312 454 9100
FAX 312 559 1217
WEB www.epsteinglobal.com

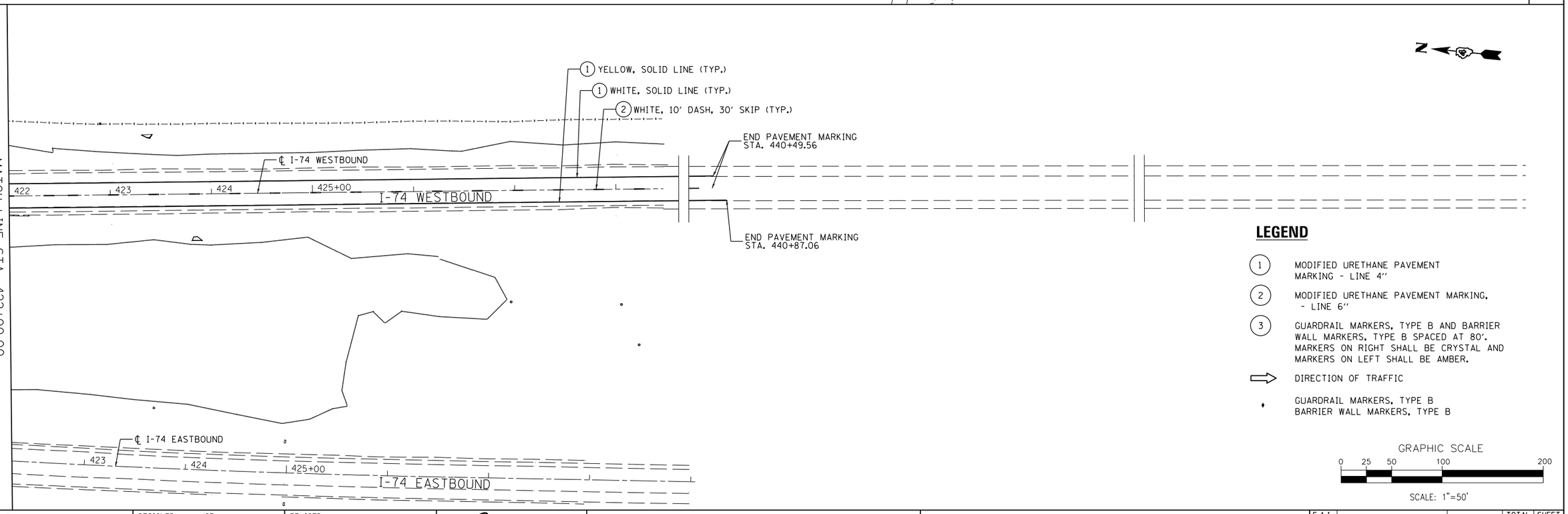
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-74 EASTBOUND
PAVEMENT MARKING PLAN

SCALE: 1" = 50 | SHEET NO. 1 OF 1 SHEETS | STA. 404+00.00 TO STA. 422+00.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	20
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			





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PLOT DATE = 8/12/2014	DATE - 08/01/14	REVISED - ·

EPSTEIN
600 WEST FULTON STREET
CHICAGO, ILLINOIS
60661-1259
TEL 312 454 9100
FAX 312 559 1217
WEB www.epsteinglobal.com

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-74 WESTBOUND
PAVEMENT MARKING AND SIGNING PLAN

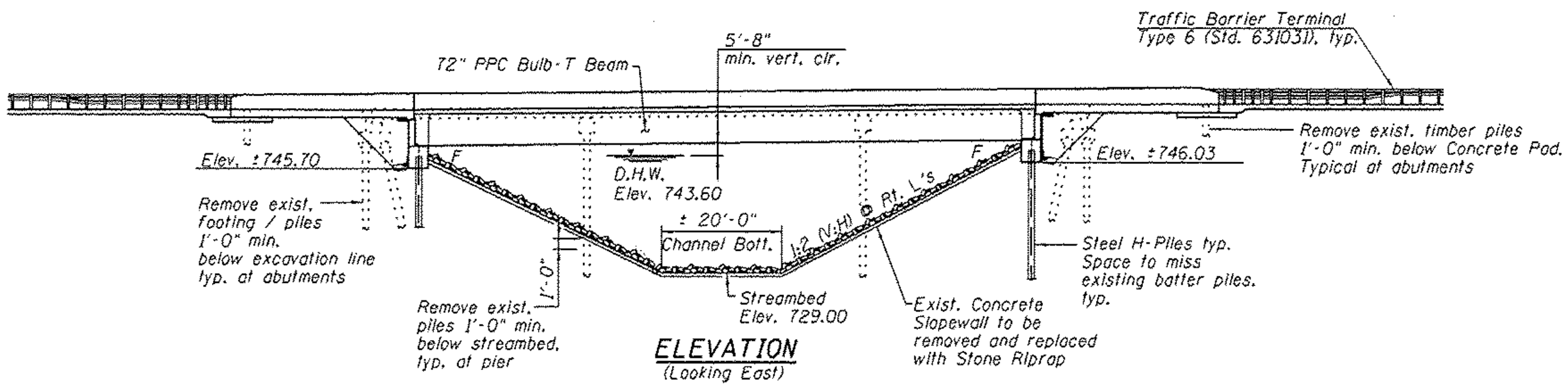
SCALE: 1" = 50' | SHEET NO. 1 OF 1 SHEETS | STA. 409+00.00 TO STA. 422+00.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	21
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

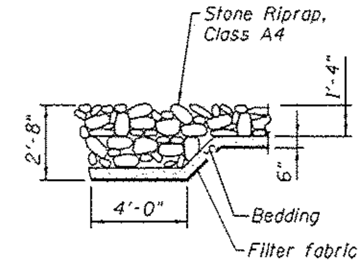
Bench Mark: BM#1 - Chiseled square located on the north end of the west wingwall EB I-74 Elevation 758.26

Existing Structure: S.N. 048-0003 built in 1965 as F.A.I. Route 74 (EB), Section 48-25B at Sta. 416+04. Existing structure consists of 3-span continuous reinforced concrete cast in place slab supported by closed concrete abutments and concrete pile bent piers. Structure is 121'-6" long Bk. to Bk. of abutments, width is 44'-0" Out to Out of deck. Structure to be removed and replaced. Traffic to be maintained utilizing stage construction.

No salvage



ELEVATION
(Looking East)



SECTION A-A

DESIGN SPECIFICATIONS
2012 AASHTO LRFD Bridge Design Specifications

LOADING HL-93
Allow 50#/sq. ft. for future wearing surface.

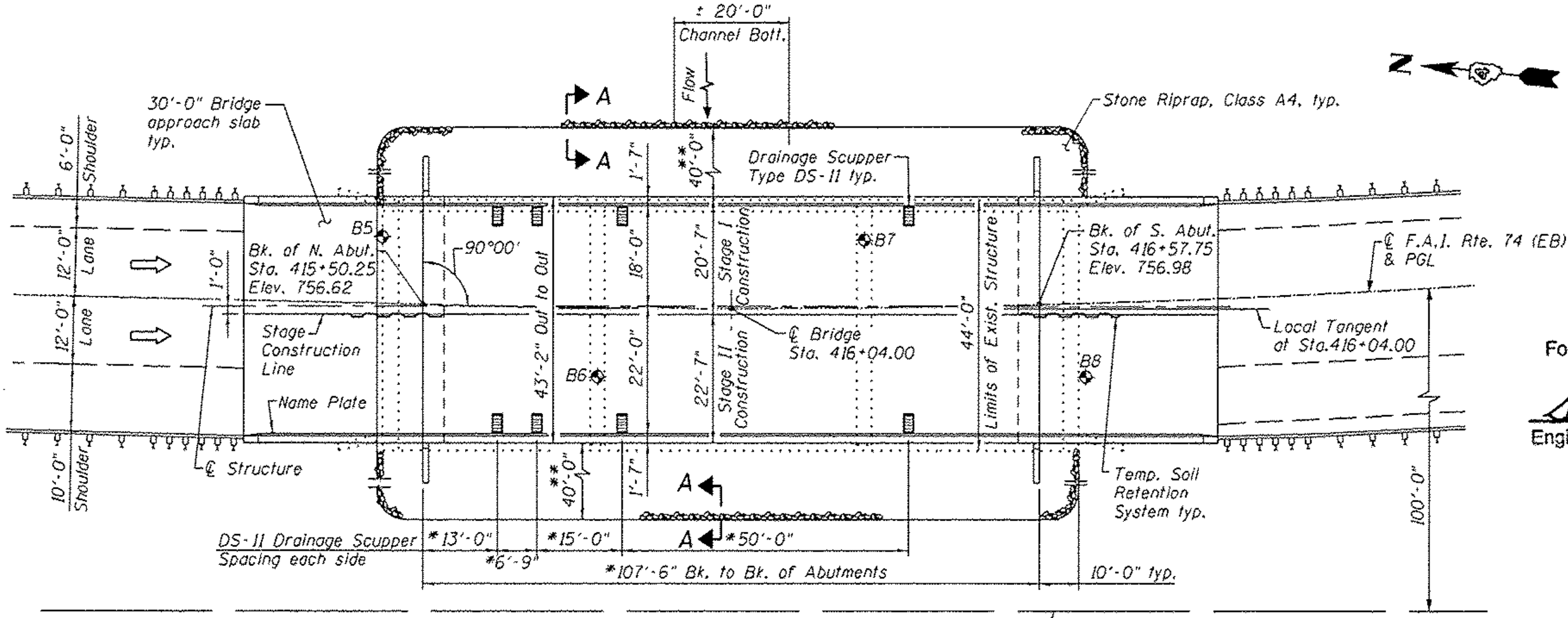
DESIGN STRESSES
FIELD UNITS

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

PRECAST PRESTRESSED UNITS

f'c = 6,000 psi
f'ci = 5,000 psi
fpu = 270,000 psi
(½"ϕ low lax strands)
fpbt = 201,960 psi
(½"ϕ low lax strands)

SEISMIC DATA
Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.070g
Design Spectral Acceleration at 0.2 sec. (SDS) = 0.111g
Soil Site Class = C



* Measured along local tangent

** For riprap limits the Contractor shall match limits of existing slope wall

PLAN

Note:
Lane and Shoulder dimensions are measured radially

DESIGN SCOUR ELEVATION TABLE

Design Scour	N. Abut.	S. Abut.
Elevation (ft.)	745.68	746.03

WATERWAY INFORMATION

Drainage Area = 9.34 sq. mi. Low Grade Elev. 756.87 ft @ Sta. 415+43.5

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
	10	1942	530	612	741.5	0.2	0.2	741.7	741.7
Design	50	3168	695	722	743.6	0.3	0.3	743.9	743.9
Base	100	3740	762	768	744.4	0.3	0.3	744.8	744.7
Overtopping									
Max. Calc.	500	5135	924	920	746.2	0.4	0.4	746.6	746.5

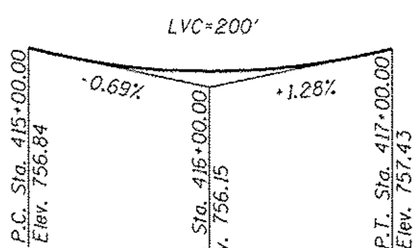
EWSE = 731.75 (per Survey taken 01-22-2010)

APPROVED
For Structural Adequacy Only
Engineer of Bridges & Structures

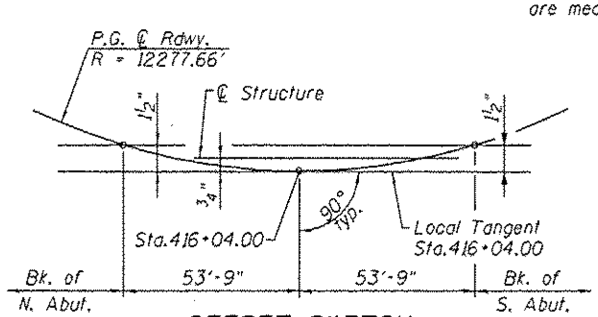
July 24, 2014
Expires: 11/30/2014

STATION 416+04.00
BUILT 201_ BY
STATE OF ILLINOIS
F.A.I. RT. 74 EB SEC. 48-[(25B)BR, BR-1]
LOADING HL-93
STR. NO. 048-0090

NAME PLATE
See Std. 515001

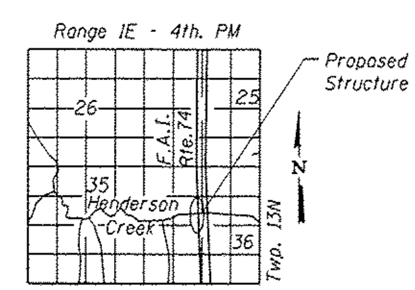


PROFILE GRADE
Along ℄ Roadway



OFFSET SKETCH

CURVE DATA
Δ = 7°-58'-36"
D = 0°-28'-00"
T = 856.02'
L = 1709.28'
E = 29.81'
R = 12277.66
P.C. = Sta. 409+56.65
P.T. = Sta. 426+65.93
P.I. = Sta. 418+12.68



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
EB I-74 OVER HENDERSON CREEK
F.A.I. RTE. 74 (EB) - SEC. 48-[(25B)BR, BR-1]
KNOX COUNTY
STATION 416+04.00
STRUCTURE NO. 048-0090

FILE NAME = ...\0480090-6B084-001-GPE.dgn	DESIGNED EV	REVISED -	EPSTEIN	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL PLAN AND ELEVATION STRUCTURE NO. 048-0090
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	CHECKED PC	REVISED -			
PLOT DATE = 9/29/2014	DATE 05 03 2013	REVISED -			SHEET NO. S1 OF 525 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	22
		CONTRACT NO. 68B85		
		ILLINOIS FED. AID PROJECT		

GENERAL NOTES

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

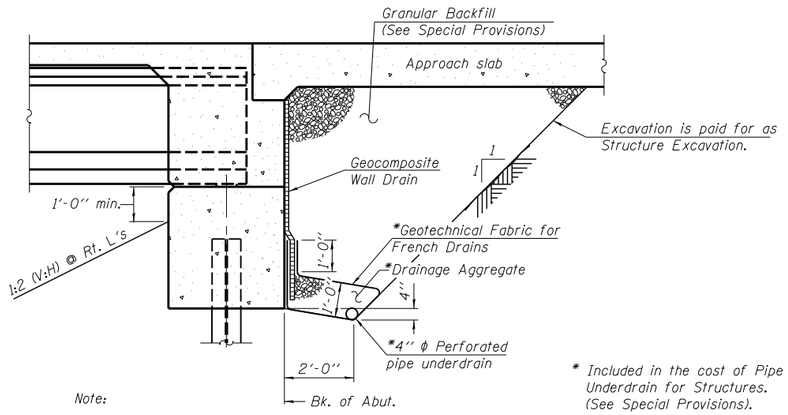
2. Layout of slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

3. Slipforming of the parapets is not allowed.

INDEX OF SHEETS

TOTAL BILL OF MATERIAL

ITEMS	UNITS	SUPERSTRUCTURE	SUBSTRUCTURE	TOTAL
Stone RipRap, Class A4	SQ YD		1,673	1,673
Filter Fabric	SQ YD		1,673	1,673
Removal of Existing Structures	EACH			1
Structure Excavation	CU YD		804	804
Concrete Structures	CU YD		84.2	84.2
Concrete Superstructure	CU YD	352.2		352.2
Bridge Deck Grooving	SQ YD	736		736
Protective Coat	SQ YD	897		897
Furnishing and Erecting Precast Prestressed Concrete Bulb T-Beams 72"	FOOT	629		629
Reinforcement Bars, Epoxy Coated	POUND	71,340	16,270	87,610
Bar Splicers	EACH	479	100	579
Furnishing Steel Piles HP12x84	FOOT		765	765
Driving Piles	FOOT		765	765
Test Pile Steel HP12x84	EACH		2	2
Name Plates	EACH	1		1
Geocomposite Wall Drain	SQ YD		132	132
Granular Backfill for Structures	CU YD		318.2	318.2
Drainage Scuppers, DS-11	EACH	8		8
Pipe Underdrains for Structures 4"	FOOT		202	202
Temporary Soil Retention System	SQ FT		188	188



* Included in the cost of Pipe Underdrain for Structures. (See Special Provisions).

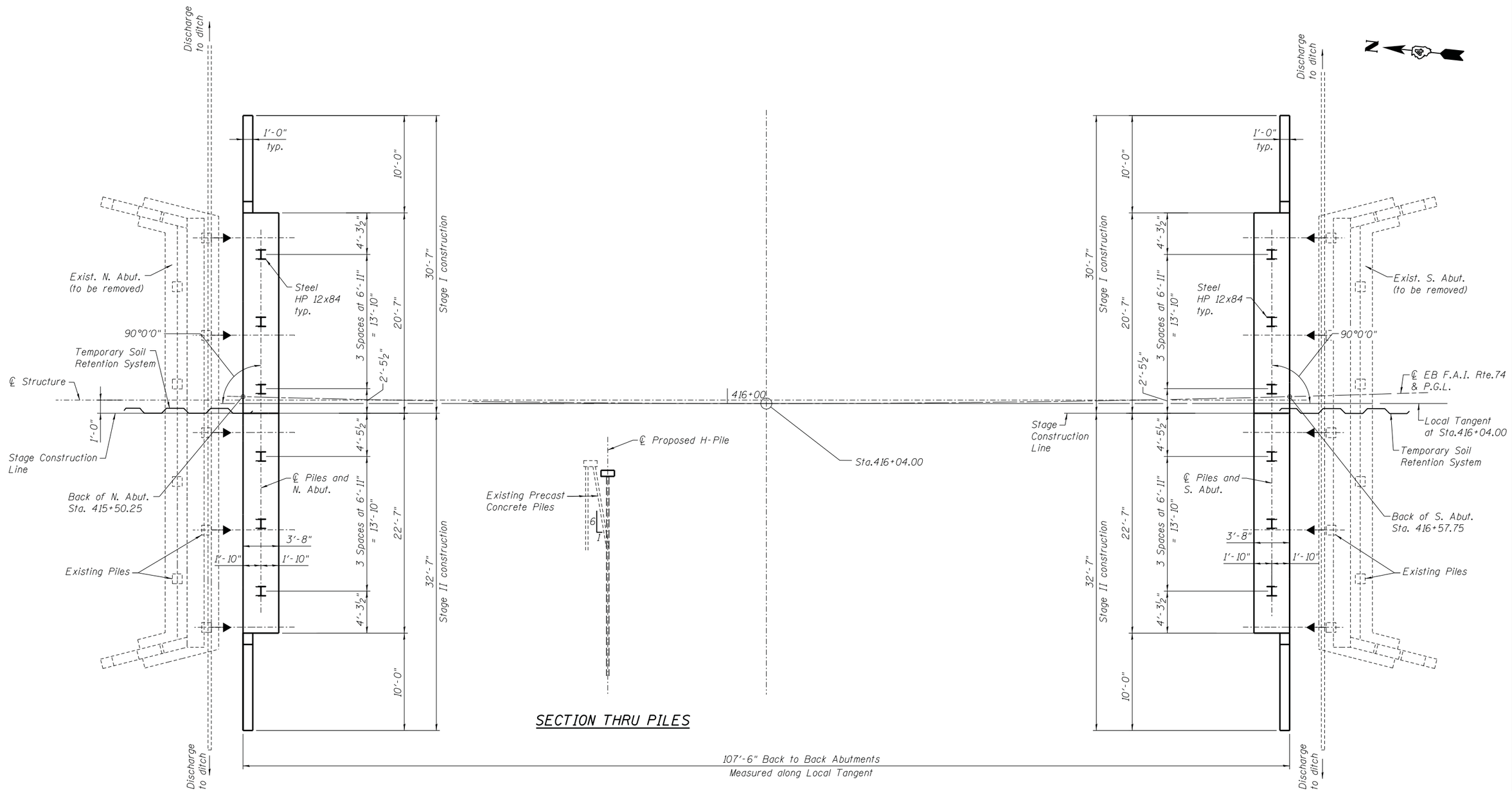
Note:

All drainage system components shall extend to 2'-0" from the end of each wingwall except an outlet pipe shall extend until intersecting with the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).

SECTION THRU INTEGRAL ABUTMENT

(Horiz. dim. @ Rt. L's)

FILE NAME = ...\0480090-68084-002-Gen_data.dgn	DESIGNED EV	REVISED -	EPSTEIN 600 WEST FULTON STREET CHICAGO, ILLINOIS 60661-1259 TEL 312 454 9100 FAX 312 559 1217 WEB www.epsteinglobal.com	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL DATA STRUCTURE NO. 048-0090	F.A.I. RTE. 74	SECTION 48-[(25B)BR, BR-1]
PLOT TIME = 4:31:08 PM	DRAWN JCP	REVISED -					COUNTY KNOX
PLOT DATE = 7/30/2014	CHECKED PC	REVISED -			SHEET NO. S2 OF S25 SHEETS		TOTAL SHEETS 131
	DATE 05 03 2013	REVISED -					SHEET NO. 23
							CONTRACT NO. 68B85
							ILLINOIS FED. AID PROJECT



SECTION THRU PILES

FOUNDATION PLAN

EXISTING PILE DATA

Type - Concrete Piles
Capacity - 25 Ton Min.
Est. Length - 35' Feet
No. Req'd - 22 (1 test pile at N. Abut. included)

NOTES

1. For Temporary Soil Retention system details see sheet S4 of S25.
2. For Abutment details see sheet S20 of S25.
3. For Steel HP Piles details see sheet S22 of S25.
4. Drive one test pile at each abutment.

FILE NAME = ...\0480090-68084-003-FootingPlan.dgn	DESIGNED EV	REVISED -	EPSTEIN 600 WEST FULTON STREET CHICAGO, ILLINOIS 60661-1259 TEL 312 454 9100 FAX 312 559 1217 WEB www.epsteinglobal.com	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUBSTRUCTURE LAYOUT STRUCTURE NO. 048-0090	F.A.I. RTE. 74	SECTION 48-[(25B)BR, BR-1]
PLOT TIME = 4:31:10 PM	DRAWN JCP	REVISED -					COUNTY KNOX
PLOT DATE = 7/30/2014	CHECKED PC	REVISED -			SHEET NO. S3 OF S25 SHEETS		TOTAL SHEETS 131
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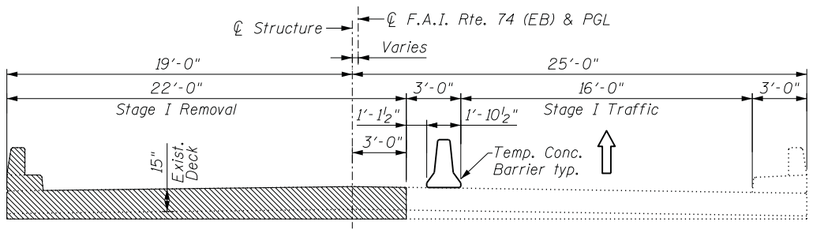
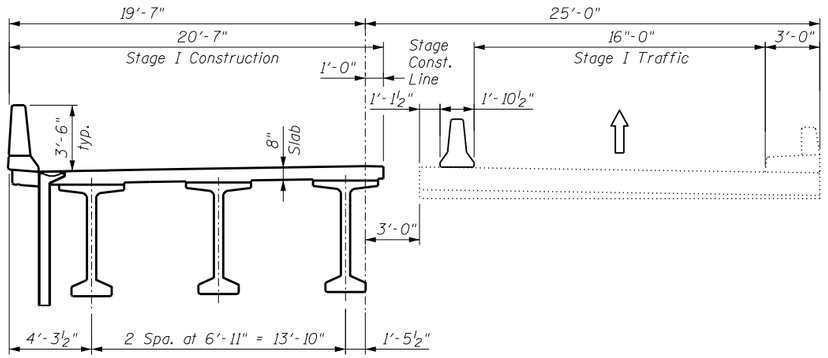
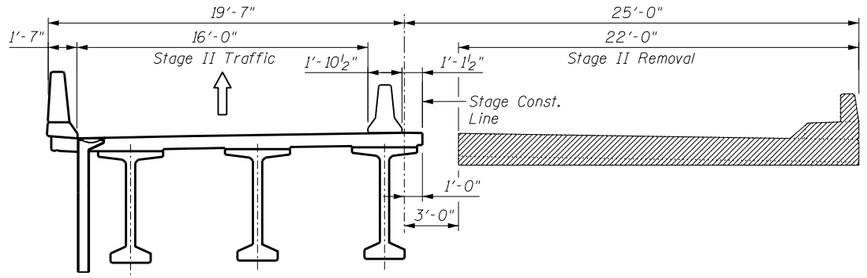
							CONTRACT NO. 68B85
							ILLINOIS FED. AID PROJECT



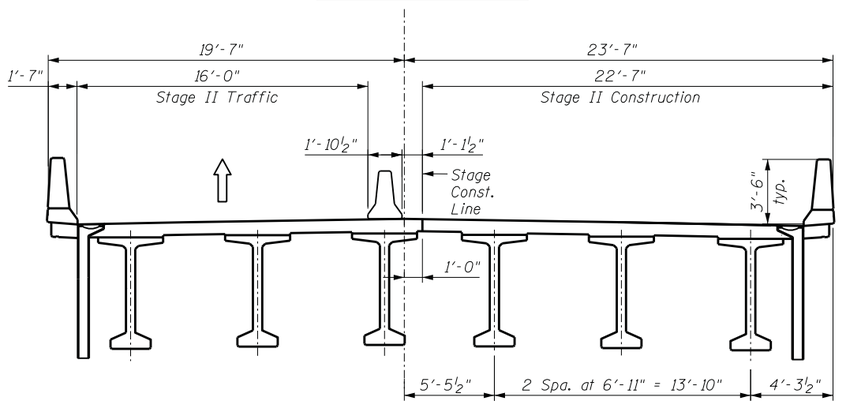
STAGE I REMOVAL



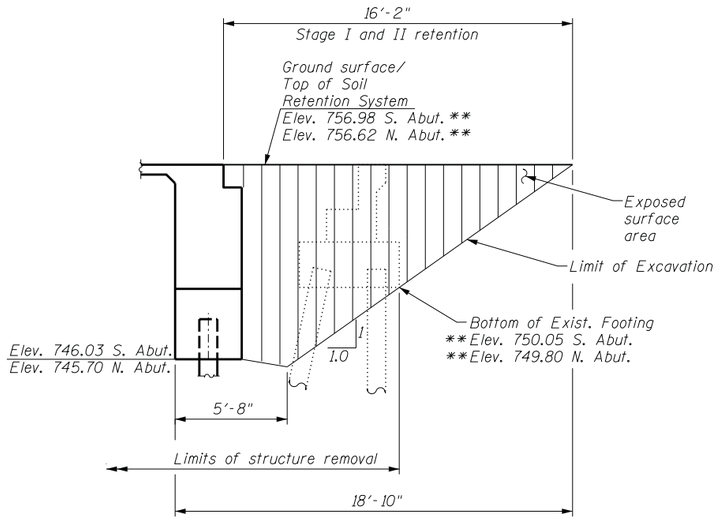
STAGE I CONSTRUCTION



STAGE II REMOVAL



STAGE II CONSTRUCTION



TEMPORARY SOIL RETENTION SYSTEM

**To be verified in field by the Contractor

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Temporary Soil Retention System	Sq. Ft.	188

NOTES

1. All stage cross sections are looking South.
2. See sheet S5 of S25 for Temporary Concrete Barrier.
3. Backfill shall be placed behind the abutment after the superstructure has been poured and false work removed. See Article 502.10 of the Standard Specifications.
4. 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.
5. Hatched area indicates Removal of Existing Structures.

FILE NAME = ...\04800090-68084-004-Stg.const.dgn	DESIGNED EV	REVISED -
	DRAWN JCP	REVISED -
PLOT TIME = 4:31:11 PM	CHECKED PC	REVISED -
PLOT DATE = 7/30/2014	DATE 05 03 2013	REVISED -

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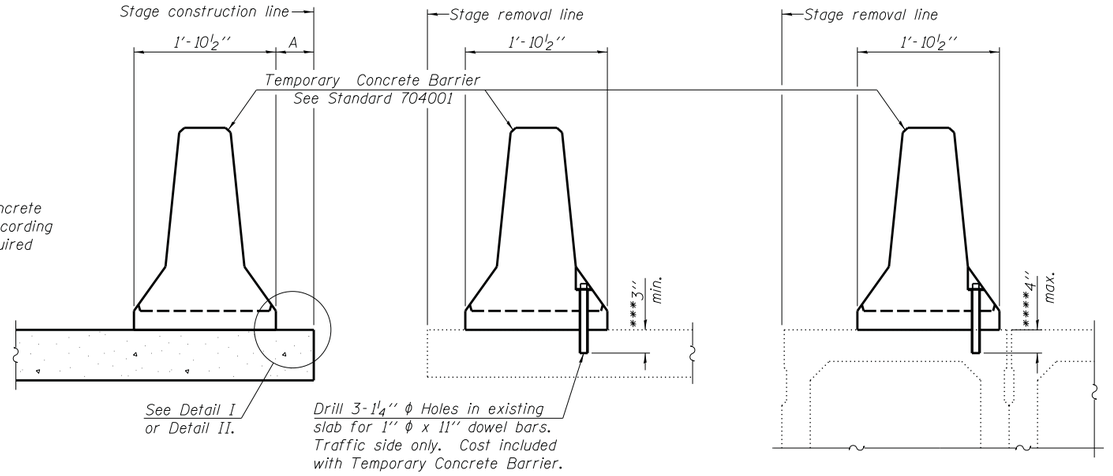
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE CONSTRUCTION DETAILS AND TEMP. SOIL RETENTION SYSTEM
STRUCTURE NO. 048-0090
SHEET NO. S4 OF S25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	25
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

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".



NEW SLAB

EXISTING SLAB

EXISTING DECK BEAM

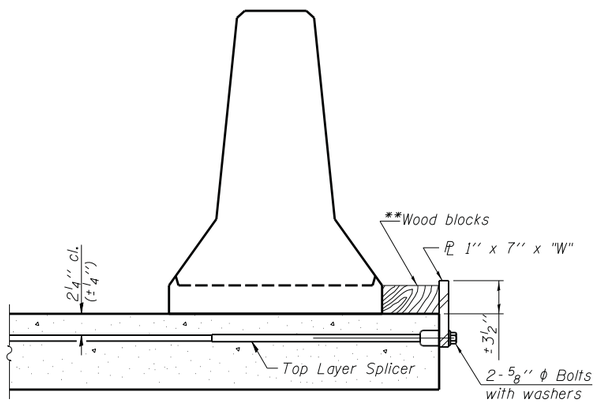
NOTES

1. Detail I - With Bar Splicer or Couplers:
   Connect one (1) 1" x 7' 'x "W" steel ℄ to the top layer of couplers with 2-⅝" ϕ bolts screwed to coupler at approximate ℄ of each barrier panel.
2. Detail II - With Extended Reinforcement Bars:
   Connect one (1) 1" x 7" x "W" steel ℄ to the concrete slab or concrete wearing surface with 2-⅝" ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate ℄ of each barrier panel.
3. Cost of anchorage is included with Temporary Concrete Barrier.
4. The 1" x 7" x "W" 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.

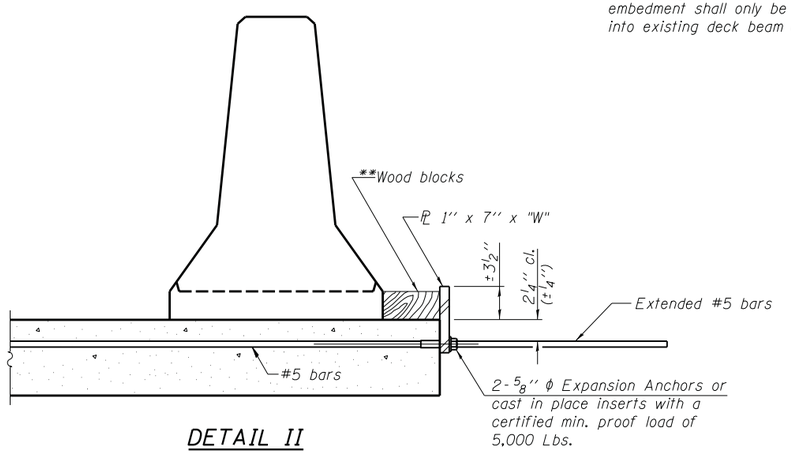
SECTIONS THRU SLAB OR DECK BEAM

*** 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.



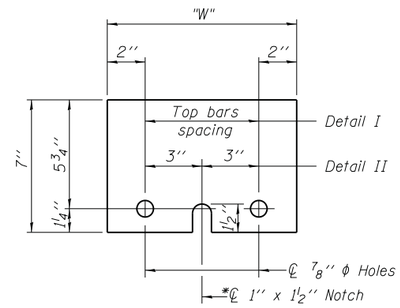
DETAIL I



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.

"W" = Top bars spacing + 4"



STEEL RETAINER ℄ 1" x 7" x "W"

* Required only with Detail II

R-27

7-1-10

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	DRAWN JCP	REVISED -	
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PLOT DATE = 7/30/2014	DATE 05 03 2013	REVISED -	

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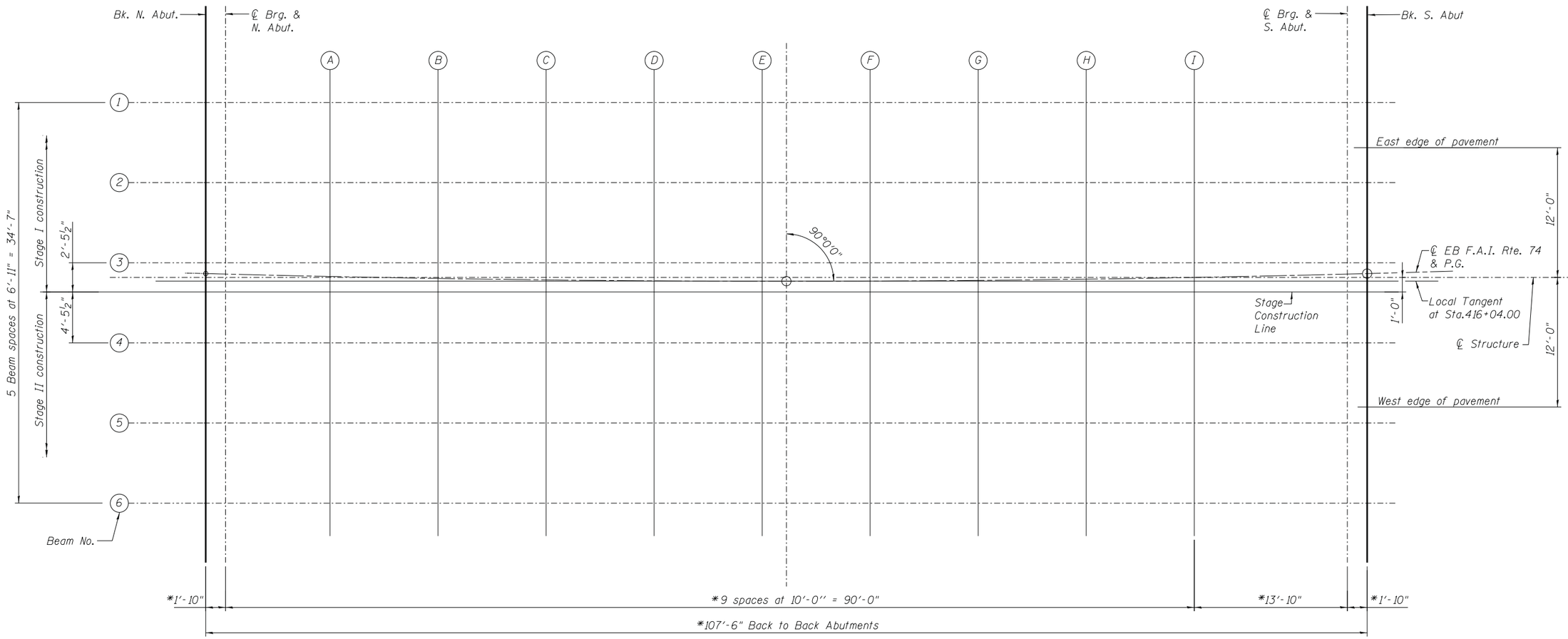
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION
STRUCTURE NO. 048-0090

SHEET NO. S5 OF S25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-1(25B)BR, BR-1]	KNOX	131	26
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			



* Measured along Local Tangent

PLAN

NOTES

1. For Top of Slab elevations at South Approach Slab see sheet S11 of S25.
2. For Top of Slab elevations at North Approach Slab see sheet S10 of S25.

FILE NAME = ...\0480090-68084-006-TOS.dgn	DESIGNED EV	REVISED -
PLOT TIME = 4:31:13 PM	DRAWN JCP	REVISED -
PLOT DATE = 7/30/2014	CHECKED PC	REVISED -
	DATE 05 03 2013	REVISED -

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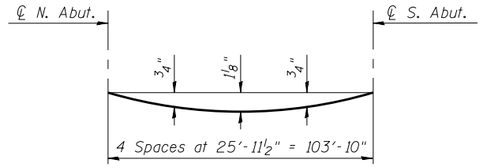
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF DECK
STRUCTURE NO. 048-0090
SHEET NO. S6 OF S25 SHEETS

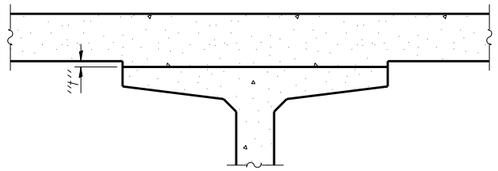
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	27
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			



DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete and barrier, excluding beams).

Note:
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown below and on sheets S8 and S9.



To determine "t": After all precast prestressed beams have been erected, elevations of the top flanges of the beams shall be taken at intervals shown on sheet S6. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflections" shown below and on sheets S8 and S9, minus slab thickness, equals the fillet heights "t" above top flanges of beams.

FILLET HEIGHTS

BEAM 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
BK N. ABUT.	415+50.25	-15.23	756.36	756.36
CL N. ABUT.	415+52.08	-15.24	756.36	756.36
A	415+62.08	-15.28	756.35	756.37
B	415+72.08	-15.30	756.34	756.39
C	415+82.08	-15.33	756.35	756.42
D	415+92.08	-15.34	756.37	756.44
E	416+02.08	-15.35	756.39	756.48
F	416+12.08	-15.34	756.43	756.51
G	416+22.08	-15.33	756.48	756.55
H	416+32.08	-15.31	756.53	756.59
I	416+42.08	-15.29	756.60	756.63
CL S. ABUT	416+55.92	-15.24	756.71	756.71
BK S. ABUT	416+57.75	-15.23	756.72	756.72

EAST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
BK N. ABUT.	415+50.25	-11.94	756.43	756.43
CL N. ABUT.	415+52.08	-11.94	756.43	756.43
A	415+62.08	-11.98	756.42	756.44
B	415+72.08	-12.01	756.41	756.46
C	415+82.08	-12.04	756.42	756.49
D	415+92.08	-12.05	756.49	756.56
E	416+02.08	-12.05	756.83	756.92
F	416+12.08	-12.05	756.50	756.58
G	416+22.08	-12.04	756.55	756.62
H	416+32.08	-12.02	756.60	756.66
I	416+42.08	-12.00	756.67	756.70
CL S. ABUT	416+55.92	-11.94	756.78	756.78
BK S. ABUT	416+57.75	-11.94	756.79	756.79

BEAM 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
BK N. ABUT.	415+50.25	-8.31	756.49	756.49
CL N. ABUT.	415+52.08	-8.32	756.48	756.48
A	415+62.08	-8.36	756.47	756.50
B	415+72.08	-8.39	756.47	756.52
C	415+82.08	-8.41	756.48	756.54
D	415+92.08	-8.42	756.49	756.57
E	416+02.08	-8.43	756.52	756.61
F	416+12.08	-8.43	756.56	756.64
G	416+22.08	-8.42	756.60	756.67
H	416+32.08	-8.40	756.66	756.72
I	416+42.08	-8.37	756.72	756.76
CL S. ABUT	416+55.92	-8.32	756.83	756.83
BK S. ABUT	416+57.75	-8.31	756.85	756.85

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PLOT TIME = 4:31:14 PM	DRAWN JCP	REVISED -
PLOT DATE = 7/30/2014	CHECKED PC	REVISED -
	DATE 05 03 2013	REVISED -

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF DECK ELEVATIONS I
STRUCTURE NO. 048-0090
SHEET NO. S7 OF S25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	28
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

BEAM 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
BK N. ABUT.	415+50.25	-1.40	756.60	756.60
CL N. ABUT.	415+52.08	-1.40	756.59	756.59
A	415+62.08	-1.44	756.58	756.60
B	415+72.08	-1.47	756.58	756.62
C	415+82.08	-1.49	756.58	756.65
D	415+92.08	-1.51	756.60	756.68
E	416+02.08	-1.51	756.63	756.71
F	416+12.08	-1.51	756.66	756.74
G	416+22.08	-1.50	756.71	756.78
H	416+32.08	-1.48	756.77	756.82
I	416+42.08	-1.45	756.83	756.87
CL S. ABUT	416+55.92	-1.40	756.94	756.94
BK S. ABUT	416+57.75	-1.40	756.96	756.96

℄ ROADWAY, PROFILE GRADE LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
BK N. ABUT.	415+50.25	0.00	756.62	756.62
CL N. ABUT.	415+52.08	0.00	756.61	756.61
A	415+62.08	0.00	756.60	756.63
B	415+72.08	0.00	756.60	756.65
C	415+82.08	0.00	756.61	756.67
D	415+92.08	0.00	756.62	756.70
E	416+02.08	0.00	756.65	756.74
F	416+12.08	0.00	756.69	756.77
G	416+22.08	0.00	756.73	756.80
H	416+32.08	0.00	756.79	756.85
I	416+42.08	0.00	756.85	756.89
CL S. ABUT	416+55.92	0.00	756.96	756.96
BK S. ABUT	416+57.75	0.00	756.98	756.98

STAGE CONSTRUCTION LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
BK N. ABUT.	415+50.25	1.06	756.60	756.60
CL N. ABUT.	415+52.08	1.05	756.60	756.60
A	415+62.08	1.02	756.58	756.61
B	415+72.08	0.99	756.58	756.63
C	415+82.08	0.96	756.59	756.66
D	415+92.08	0.95	756.61	756.68
E	416+02.08	0.95	756.63	756.72
F	416+12.08	0.95	756.67	756.75
G	416+22.08	0.96	756.72	756.79
H	416+32.08	0.98	756.77	756.83
I	416+42.08	1.00	756.84	756.87
CL S. ABUT	416+55.92	1.05	756.95	756.95
BK S. ABUT	416+57.75	1.06	756.96	756.96

BEAM 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
BK N. ABUT.	415+50.25	5.52	756.53	756.53
CL N. ABUT.	415+52.08	5.51	756.53	756.53
A	415+62.08	5.47	756.52	756.54
B	415+72.08	5.44	756.51	756.56
C	415+82.08	5.42	756.52	756.59
D	415+92.08	5.41	756.54	756.61
E	416+02.08	5.40	756.56	756.65
F	416+12.08	5.41	756.60	756.68
G	416+22.08	5.42	756.65	756.72
H	416+32.08	5.44	756.70	756.76
I	416+42.08	5.46	756.77	756.80
CL S. ABUT	416+55.92	5.51	756.88	756.88
BK S. ABUT	416+57.75	5.52	756.89	756.89

WEST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
BK N. ABUT.	415+50.25	12.06	756.43	756.43
CL N. ABUT.	415+52.08	12.05	756.43	756.43
A	415+62.08	12.02	756.41	756.44
B	415+72.08	11.99	756.41	756.46
C	415+82.08	11.96	756.42	756.48
D	415+92.08	11.95	756.43	756.51
E	416+02.08	11.95	756.46	756.55
F	416+12.08	11.95	756.50	756.58
G	416+22.08	11.96	756.54	756.61
H	416+32.08	11.98	756.60	756.66
I	416+42.08	12.00	756.67	756.70
CL S. ABUT	416+55.92	12.05	756.77	756.77
BK S. ABUT	416+57.75	12.06	756.79	756.79

BEAM 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
BK N. ABUT.	415+50.25	12.44	756.42	756.42
CL N. ABUT.	415+52.08	12.43	756.42	756.42
A	415+62.08	12.39	756.40	756.43
B	415+72.08	12.36	756.40	756.45
C	415+82.08	12.34	756.41	756.48
D	415+92.08	12.33	756.43	756.50
E	416+02.08	12.32	756.45	756.54
F	416+12.08	12.32	756.49	756.57
G	416+22.08	12.33	756.53	756.61
H	416+32.08	12.35	756.59	756.65
I	416+42.08	12.38	756.66	756.69
CL S. ABUT	416+55.92	12.43	756.76	756.76
BK S. ABUT	416+57.75	12.44	756.78	756.78

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DEPARTMENT OF TRANSPORTATION

TOP OF DECK ELEVATIONS II
STRUCTURE NO. 048-0090
SHEET NO. 58 OF S25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	29
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

BEAM 6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
BK N. ABUT.	415+50.25	19.35	756.28	756.28
CL N. ABUT.	415+52.08	19.34	756.27	756.27
A	415+62.08	19.31	756.26	756.28
B	415+72.08	19.28	756.26	756.31
C	415+82.08	19.25	756.26	756.33
D	415+92.08	19.24	756.28	756.36
E	416+02.08	19.24	756.31	756.39
F	416+12.08	19.24	756.34	756.43
G	416+22.08	19.25	756.39	756.46
H	416+32.08	19.27	756.45	756.50
I	416+42.08	19.29	756.51	756.55
CL S. ABUT	416+55.92	19.34	756.62	756.62
BK S. ABUT	416+57.75	19.35	756.64	756.64

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PLOT DATE = 7/30/2014	DATE 05 03 2013	REVISED -

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TOP OF DECK ELEVATIONS III
STRUCTURE NO. 048-0090

SHEET NO. S9 OF S25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	30
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

EAST EDGE OF SHOULDER

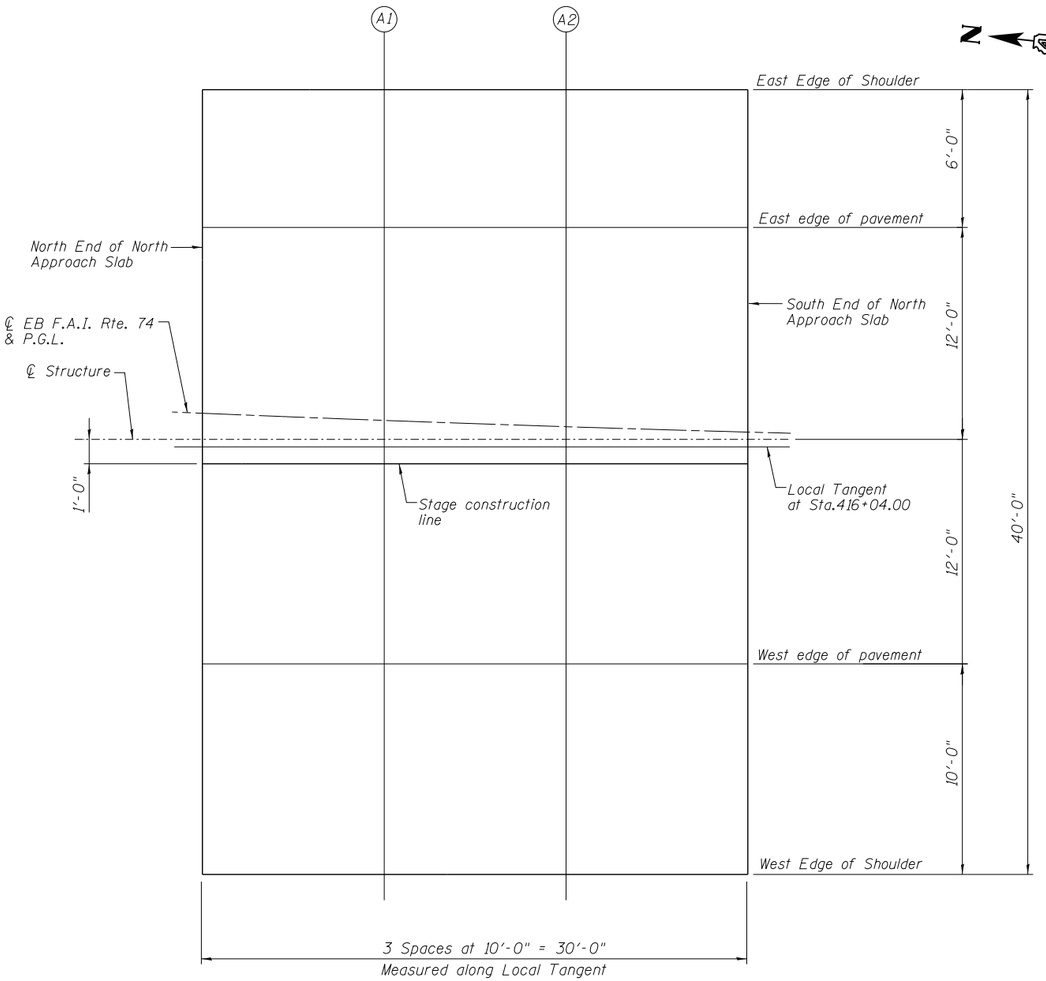
Location	Station	Offset	Theoretical Grade Elevations
N. End of N. Appr. Slab	415+21.25	-17.78	756.41
A1	415+31.25	-17.84	756.36
A2	415+41.25	-17.90	756.33
S. End of N. Appr. Slab	415+51.25	-17.95	756.30

EAST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
N. End of N. Appr. Slab	415+21.25	-11.78	756.53
A1	415+31.25	-11.84	756.49
A2	415+41.25	-11.90	756.45
S. End of N. Appr. Slab	415+51.25	-11.95	756.43

℄ ROADWAY, PROFILE GRADE LINE

Location	Station	Offset	Theoretical Grade Elevations
N. End of N. Appr. Slab	415+21.25	0.00	756.72
A1	415+31.25	0.00	756.67
A2	415+41.25	0.00	756.64
S. End of N. Appr. Slab	415+51.25	0.00	756.62



PLAN

STAGE CONSTRUCTION LINE

Location	Station	Offset	Theoretical Grade Elevations
N. End of N. Appr. Slab	415+21.25	1.22	756.70
A1	415+31.25	1.16	756.66
A2	415+41.25	1.10	756.63
S. End of N. Appr. Slab	415+51.25	1.05	756.60

WEST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
N. End of N. Appr. Slab	415+21.25	12.22	756.53
A1	415+31.25	12.16	756.49
A2	415+41.25	12.10	756.46
S. End of N. Appr. Slab	415+51.25	12.05	756.43

WEST EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
N. End of N. Appr. Slab	415+21.25	22.22	756.32
A1	415+31.25	22.16	756.28
A2	415+41.25	22.10	756.24
S. End of N. Appr. Slab	415+51.25	22.05	756.22

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TOP OF NORTH APPROACH SLAB ELEVATIONS
STRUCTURE NO. 048-0090
SHEET NO. S10 OF S25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-1(25B)BR, BR-1]	KNOX	131	31
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

EAST EDGE OF SHOULDER

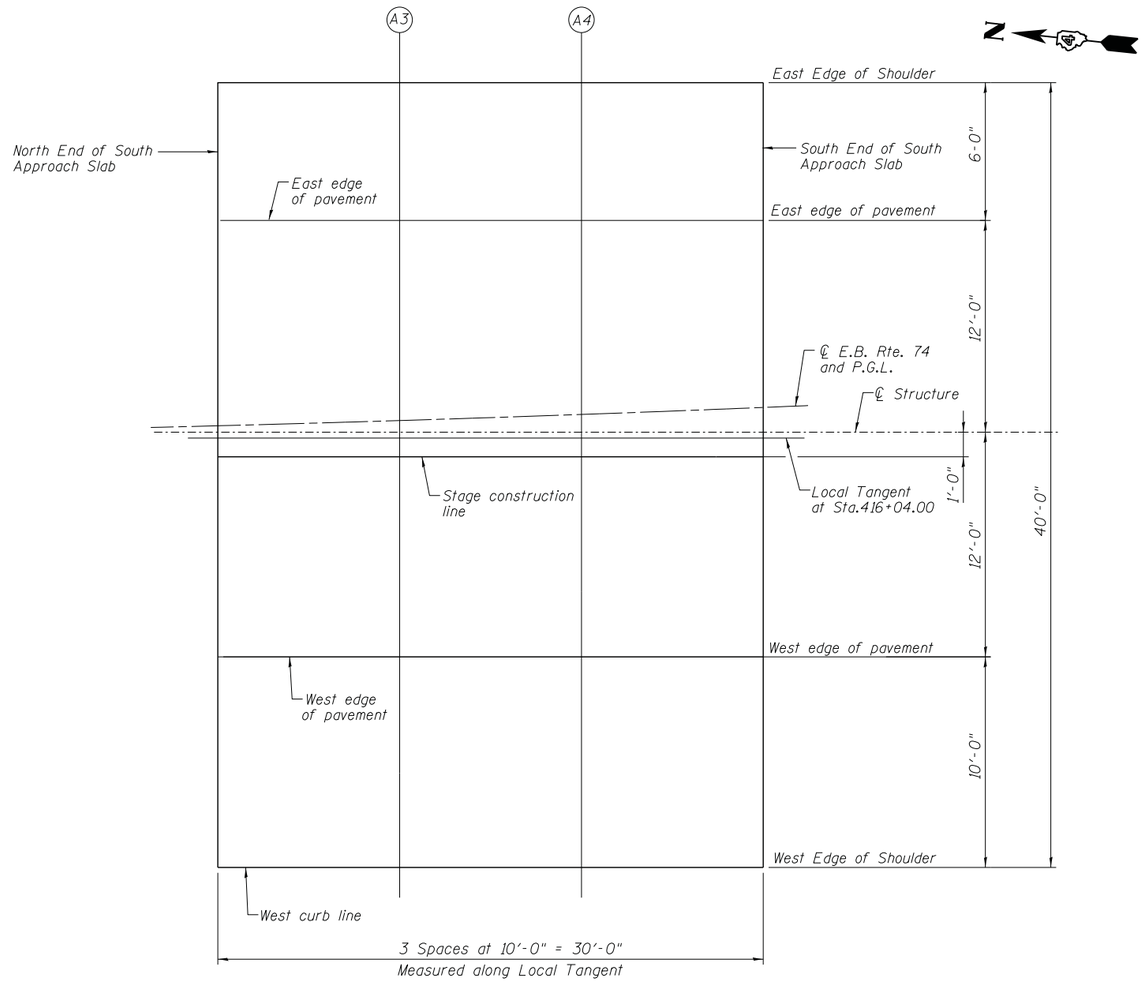
Location	Station	Offset	Theoretical Grade Elevations
N. End of S. Appr. Slab	416+56.75	-17.95	756.66
A3	416+66.75	-17.90	756.75
A4	416+76.75	-17.84	756.85
S. End of S. Appr. Slab	416+86.75	-17.78	756.96

EAST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
N. End of S. Appr. Slab	416+56.75	-11.95	756.78
A3	416+66.75	-11.90	756.87
A4	416+76.75	-11.84	756.97
S. End of S. Appr. Slab	416+86.75	-11.78	757.08

℄ ROADWAY, PROFILE GRADE LINE

Location	Station	Offset	Theoretical Grade Elevations
N. End of S. Appr. Slab	416+56.75	0.00	756.97
A3	416+66.75	0.00	757.06
A4	416+76.75	0.00	757.16
S. End of S. Appr. Slab	416+86.75	0.00	757.27



PLAN

STAGE CONSTRUCTION LINE

Location	Station	Offset	Theoretical Grade Elevations
N. End of S. Appr. Slab	416+56.75	1.05	756.95
A3	416+66.75	1.10	757.04
A4	416+76.75	1.16	757.14
S. End of S. Appr. Slab	416+86.75	1.22	757.25

WEST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
N. End of S. Appr. Slab	416+56.75	12.05	756.78
A3	416+66.75	12.10	756.87
A4	416+76.75	12.16	756.97
S. End of S. Appr. Slab	416+86.75	12.22	757.08

WEST EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
N. End of S. Appr. Slab	416+56.75	22.05	756.57
A3	416+66.75	22.10	756.66
A4	416+76.75	22.16	756.77
S. End of S. Appr. Slab	416+86.75	22.22	756.88

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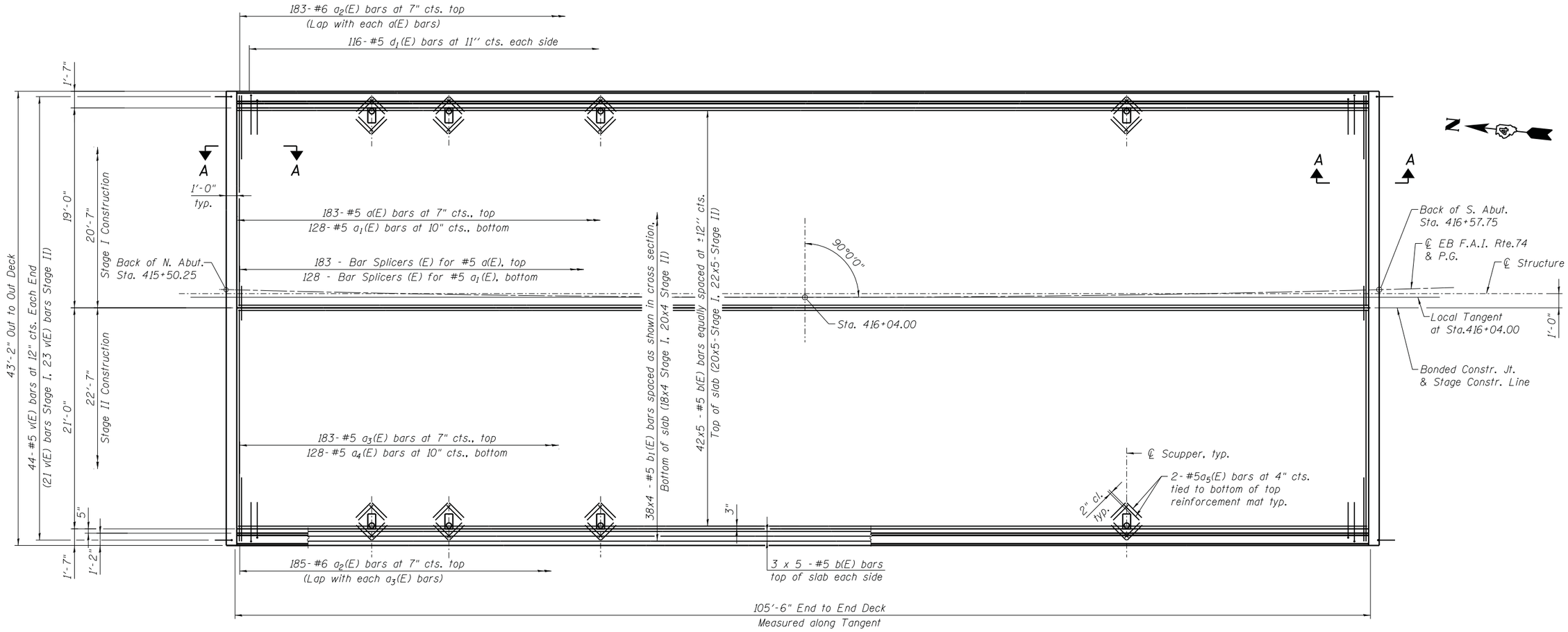
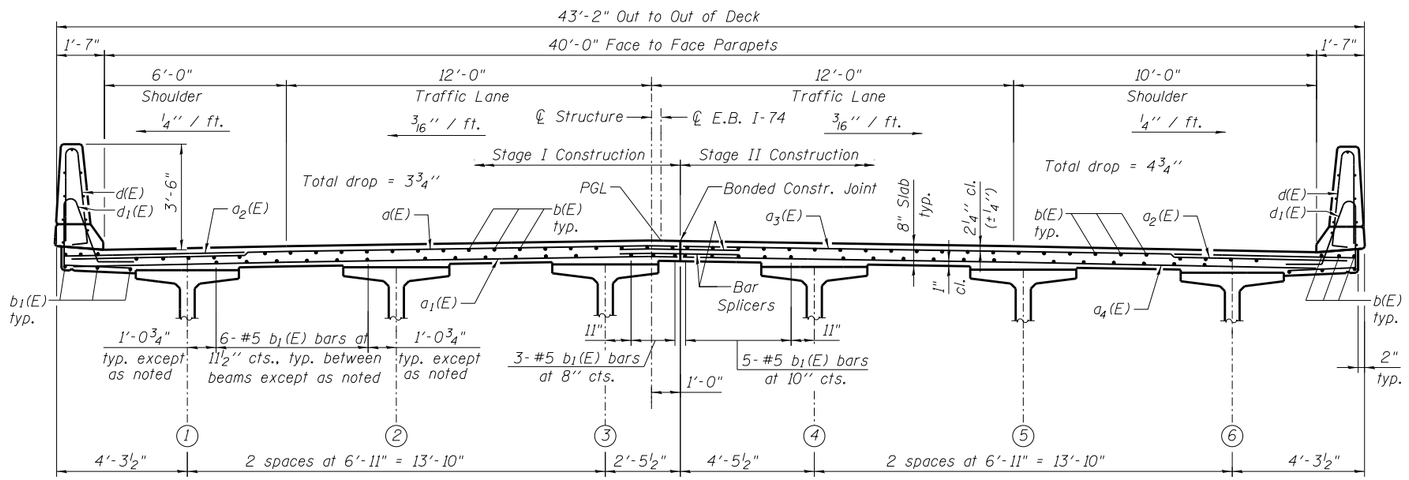
	DATE 05 03 2013	REVISED -						ILLINOIS FED. AID PROJECT		



PLAN



CROSS SECTION

(Looking South)

MINIMUM BAR LAP

#5 bar = 2'-7"

NOTES

1. For Parapet reinforcement, superstructure details and Bill of Material, see sheet S13 of S25.
2. For Section A-A and diaphragm details see sheet S14 of S25.
3. For Bar Splicer (E) details, see sheet S24 of S25.
4. Bars indicated thus 20 x 3- #5 etc. indicates 20 lines of bars with 3 lengths per line.
5. Cut longitudinal reinforcement to clear drainage scuppers.
6. For drainage scupper locations see sheet S1.

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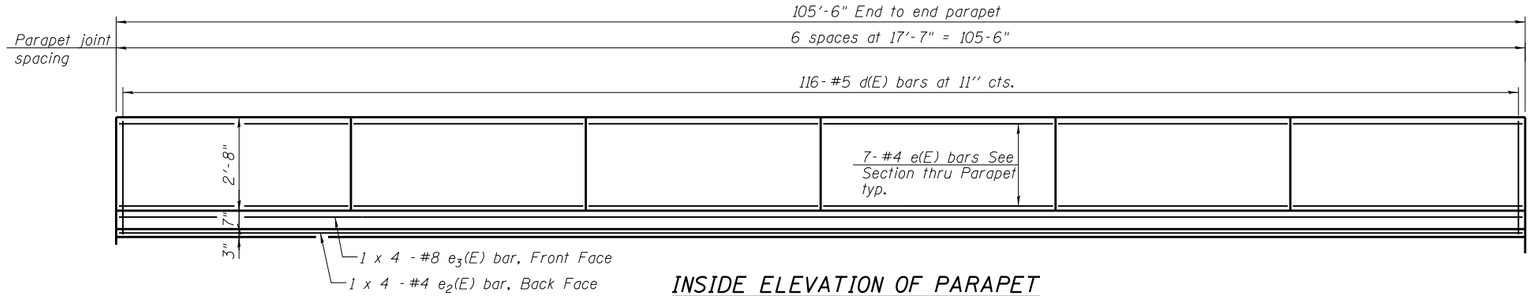
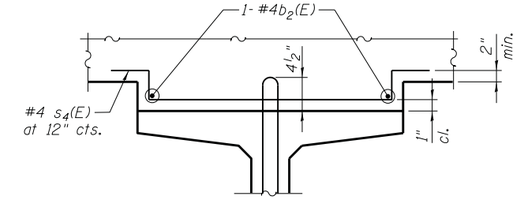
	DATE 05 03 2013	REVISED -			

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-(25B)BR, BR-1)	KNOX	131	33
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

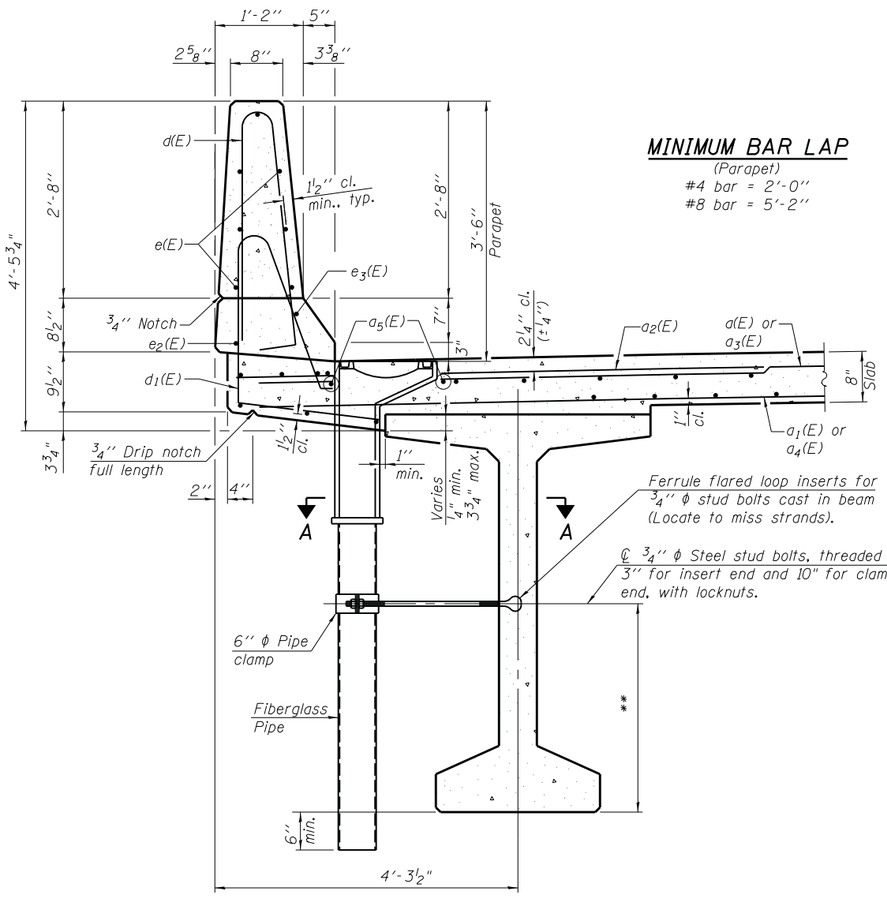


INSIDE ELEVATION OF PARAPET



FILLET REINFORCEMENT DETAIL

Bars $b_2(E)$ and $s_4(E)$ should be placed in locations where the fillet exceeds $2\frac{1}{2}$"

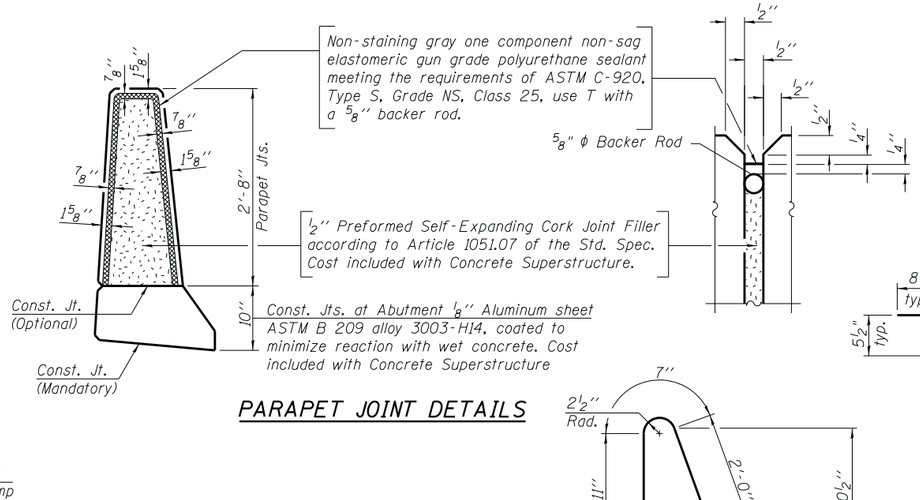


SECTION THRU PARAPET

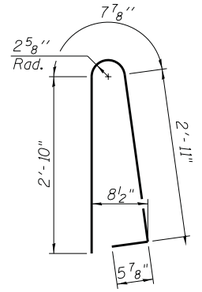
**For insert locations see sheet S18 of S25.

MINIMUM BAR LAP

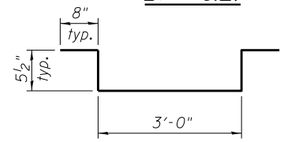
(Parapet)
#4 bar = 2'-0"
#8 bar = 5'-2"



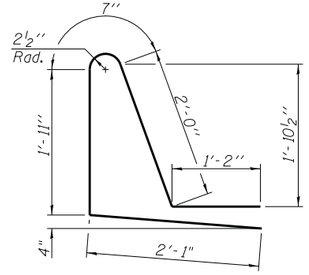
PARAPET JOINT DETAILS



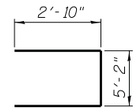
BAR d(E)



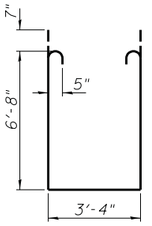
BAR s4(E)



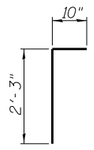
BAR d1(E)



BAR s(E)



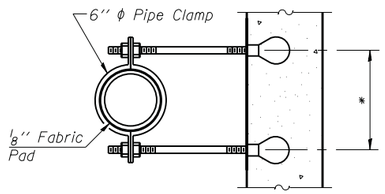
BAR s1(E)



BAR v(E)

Notes:

1. Fiberglass pipe shall conform to ASTM D2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum.
2. The clamping device and inserts shall be galvanized according to AASHTO M 232.
3. Cost of fiberglass pipe and clamping device and inserts included with Drainage Scupper, DS-11.



SECTION A-A

*Dimension as required by Pipe Clamp

SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d(E)	183	#5	20' - 1"	
a_1(E)	128	#5	20' - 2"	
a_2(E)	366	#6	6' - 6"	
a_3(E)	183	#5	22' - 2"	
a_4(E)	128	#5	22' - 1"	
a_5(E)	64	#5	1' - 6"	
b(E)	240	#5	23' - 7"	
b_1(E)	152	#5	28' - 9"	
b_2(E)	24	#4	27' - 0"	
d(E)	232	#5	6' - 11"	
d_1(E)	232	#5	7' - 9"	
e(E)	84	#4	17' - 3"	
e_2(E)	8	#4	28' - 0"	
e_3(E)	8	#8	30' - 4"	
m(E)	14	#6	20' - 3"	
m_1(E)	14	#6	22' - 3"	
m_2(E)	40	#6	6' - 3"	
m_3(E)	20	#6	3' - 9"	
m_4(E)	10	#6	1' - 10"	
m_5(E)	10	#6	3' - 11"	
m_6(E)	8	#6	4' - 6"	
m_7(E)	4	#6	2' - 11"	
m_8(E)	2	#6	1' - 1"	
m_9(E)	2	#6	3' - 1"	
m_{10}(E)	36	#5	4' - 0"	
s(E)	76	#5	10' - 10"	
s_1(E)	54	#5	17' - 10"	
s_4(E)	348	#4	5' - 3"	
v(E)	88	#5	3' - 1"	
Concrete Superstructure		Cu. Yd.	213.7	
Bridge Deck Grooving		Sq. Yd.	469	
Protective Coat		Sq. Yd.	571	
Reinforcement Bars, Epoxy Coated		Pound	38,660	

Bars indicated thus 1 x 4 -#8 etc. indicates 1 line of bars with 4 lengths per line.

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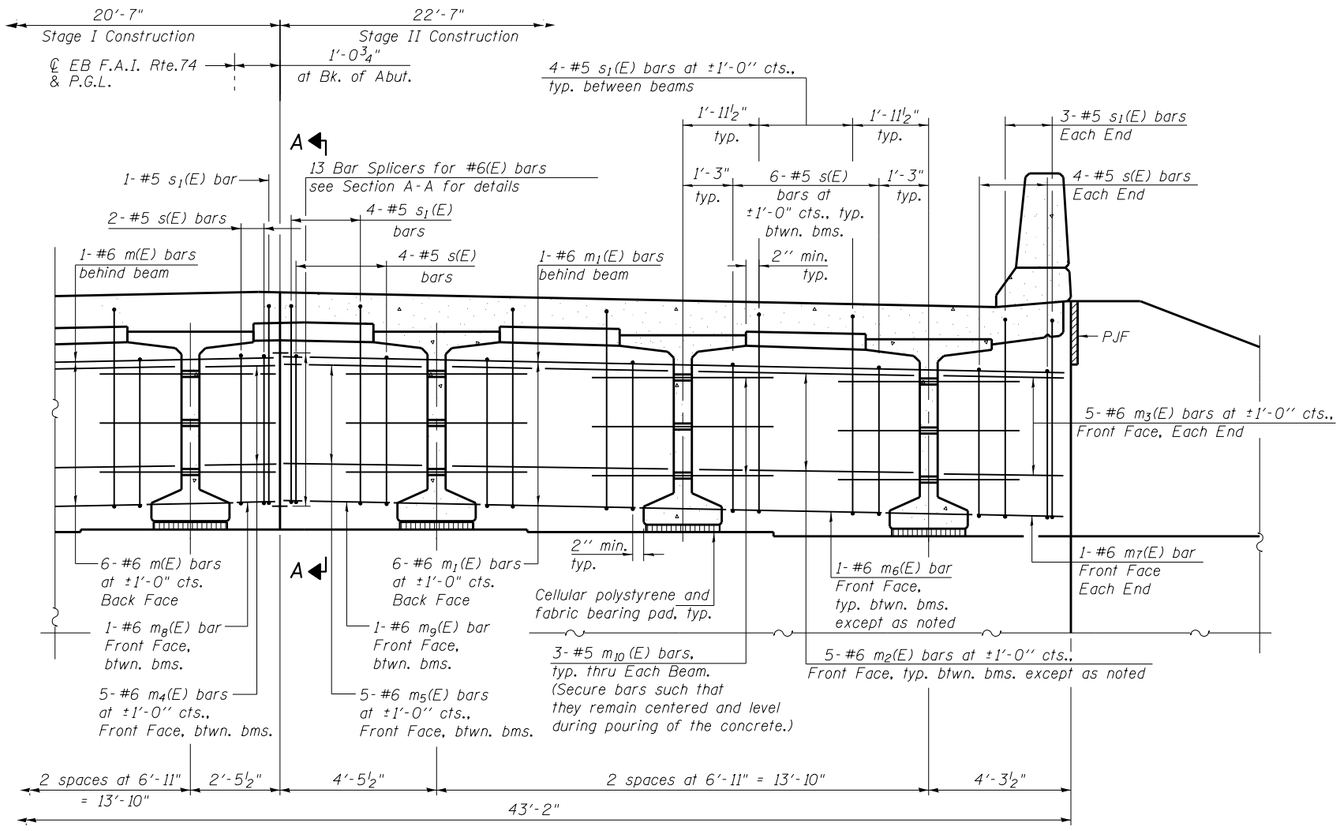
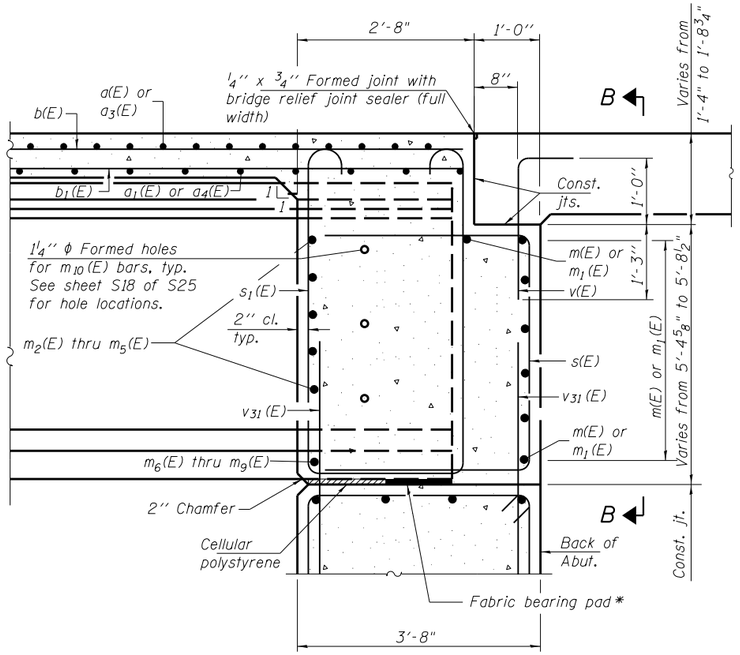
SUPERSTRUCTURE DETAILS
STRUCTURE NO. 048-0090
SHEET NO. S13 OF S25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	34
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

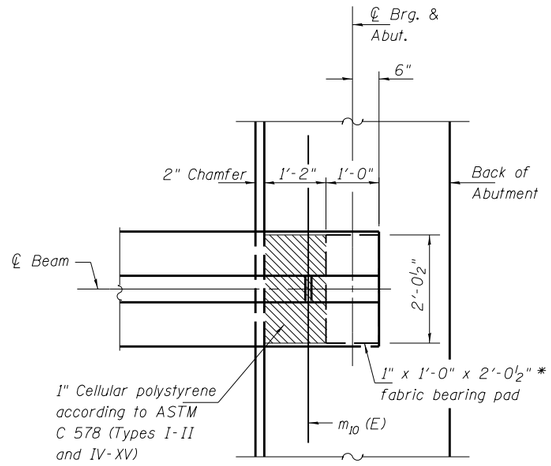


DIAPHRAGM ELEVATION AT ABUTMENT

SECTION B-B



SECTION A-A



PARTIAL PLAN AT ABUTMENT

(Showing bottom flange of beam)

*Cost of fabric bearing pad is included with Concrete Superstructure

NOTES

1. Reinforcement bars in diaphragm are billed with superstructure on sheet S13 of S25.
2. Concrete in diaphragm is included with Concrete Superstructure on sheet S13 of S25.
3. For details of bars s(E), s_1(E) and v(E) see sheet S13 of S25.
4. The approach slab seat shall have a constant slope determined from the control points shown.
5. Cost of cellular polystyrene is included with Concrete Superstructure.

FILE NAME = ...\0480090-68884-014-Diaphragm.dgn	DESIGNED EV	REVISED -
	DRAWN JCP	REVISED -
PLOT TIME = 9:31:50 AM	CHECKED PC	REVISED -
PLOT DATE = 10/1/2014	DATE 05 03 2013	REVISED -

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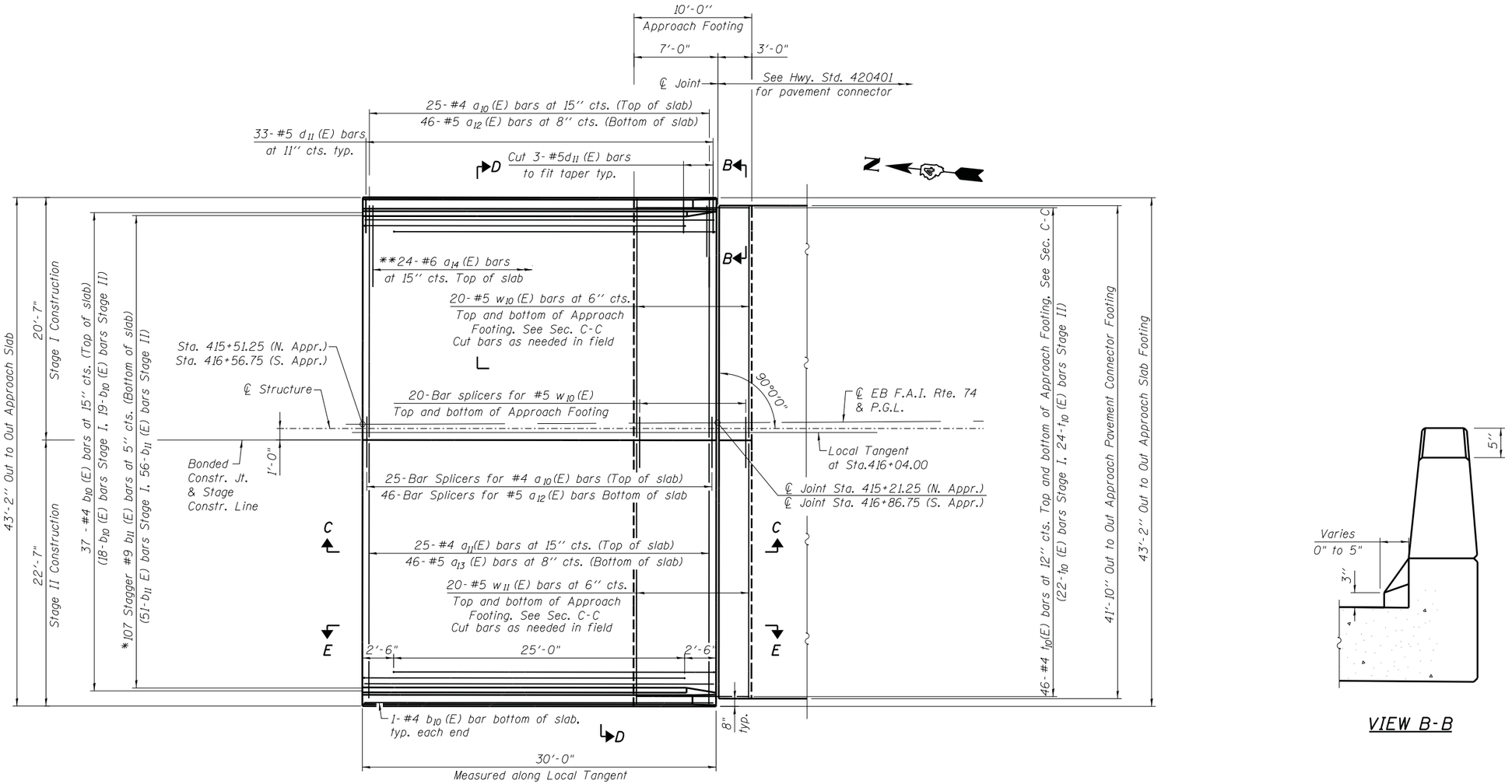
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DIAPHRAGM DETAILS
STRUCTURE NO. 048-0090
SHEET NO. S14 OF S25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	35
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			



PLAN

South Approach slab is shown,
North Approach slab is similar

VIEW B-B

* Tilt #9 b_{11}(E) bars as required to maintain clearance.
** Space between a_{10}(E) and a_{11}(E) bars, typ. ea. parapet.

NOTES

1. For Sections C-C & D-D, View E-E, bar bending diagrams and Bill of Materials see sheet S16 of S25.
2. For Bar Splicer (E) details see sheet S24 of S25.
3. a_{10}(E) thru a_{13}(E) bar spacings measured along ℄ Rdwy.

FILE NAME = ...\04800090-68084-015-ApprSlab.dgn	DESIGNED EV	REVISED -	EPSTEIN 600 WEST FULTON STREET CHICAGO, ILLINOIS 60661-1259 TEL 312 454 9100 FAX 312 559 1217 WEB www.epsteinglobal.com	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BRIDGE APPROACH SLAB STRUCTURE NO. 048-0090	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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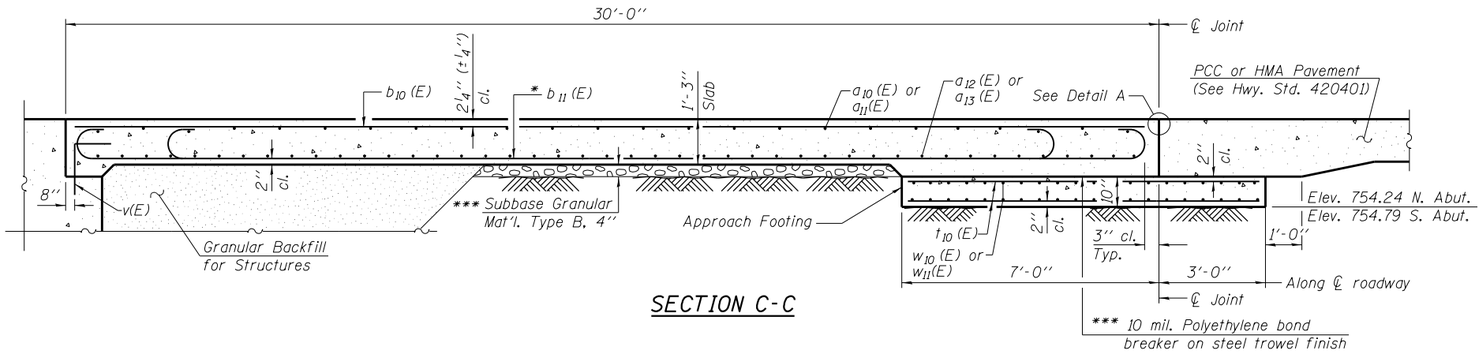
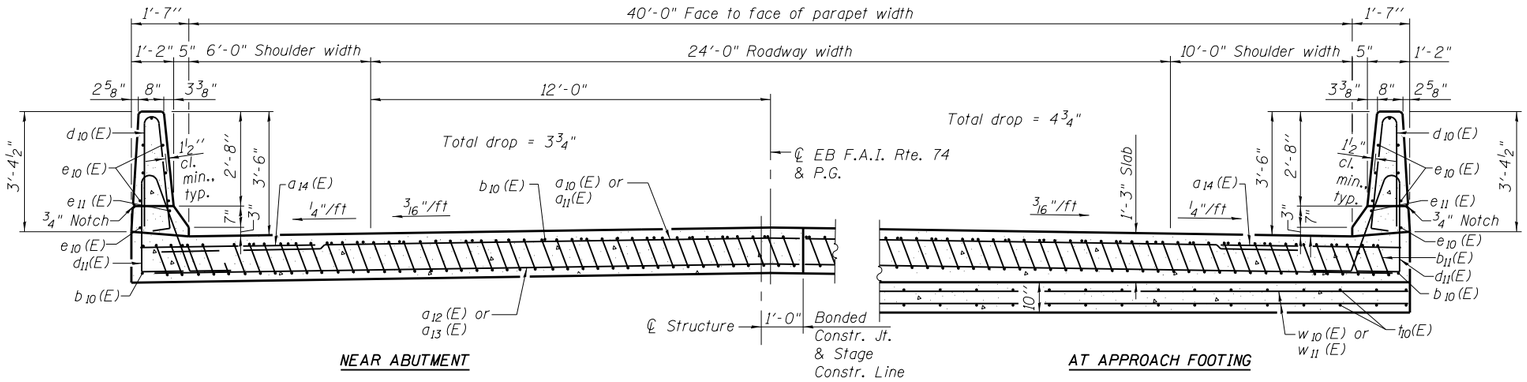
PLOT DATE = 7/30/2014	DATE 05 03 2013	REVISED -			SHEET NO. S15 OF S25 SHEETS			CONTRACT NO. 68B85		
							ILLINOIS FED. AID PROJECT			



SECTION C-C



NEAR ABUTMENT

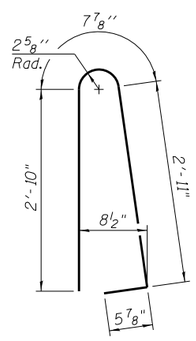
AT APPROACH FOOTING

SECTION D-D

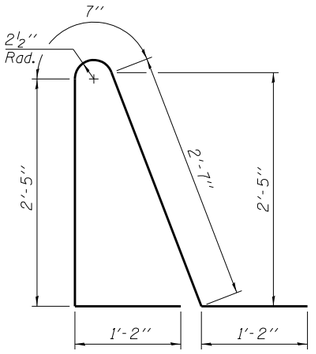
(See Plan for dimensions not shown)

NOTES

1. Approach slab and parapet concrete shall be paid for as Concrete Superstructure.
2. Approach footing concrete shall be paid for as Concrete Structures.
3. Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
4. For v(E) bar details, see sheet S13 of S25.
5. The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
6. For bar splicer details, see sheet S24 of S25.
7. Cost of excavation for approach footing included with Concrete Structures.
8. For Granular Backfill for Structures and drainage treatment details, see sheet S2 of S25.
9. For additional parapet details, see sheet S13 of S25.



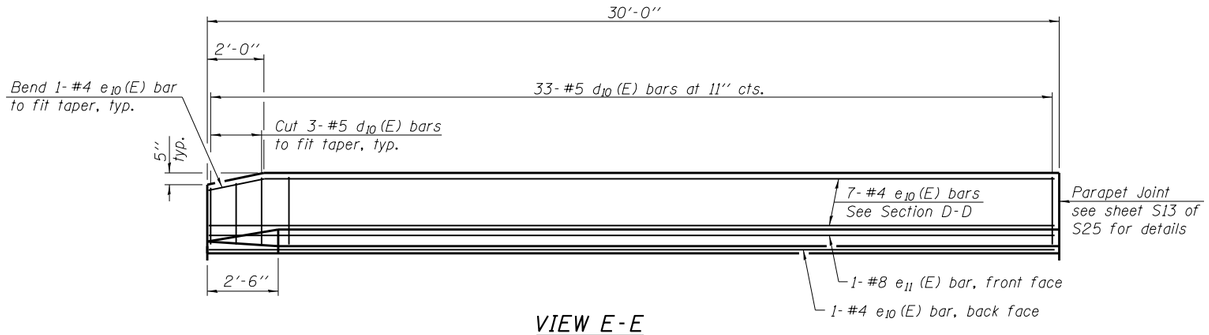
BAR d_{10}(E)



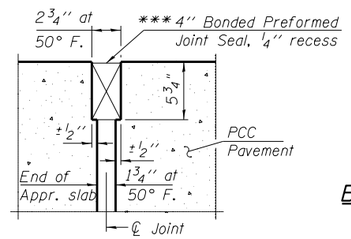
BAR d_{11}(E)

* Tilt #9 b_{11}(E) bars as required to maintain clearance.

*** Cost included with Concrete Superstructure.

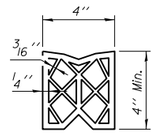


VIEW E-E

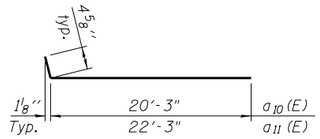


RIGID PAVEMENT

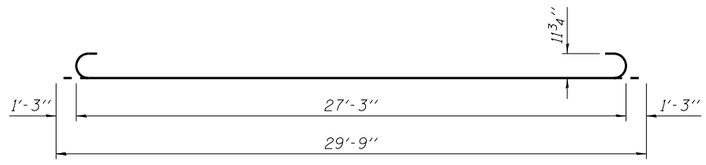
DETAIL A



BONDED PREFORMED JOINT SEAL



BARS a_{10}(E) and a_{11}(E)



BAR b_{11}(E)

TWO APPROACH SLABS BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a_{10}(E)	50	#4	20' - 8"	
a_{11}(E)	50	#4	22' - 8"	
a_{12}(E)	92	#5	20' - 4"	
a_{13}(E)	92	#5	22' - 4"	
a_{14}(E)	96	#6	6' - 6"	
b_{10}(E)	78	#4	29' - 8"	
b_{11}(E)	214	#9	29' - 9"	
d_{10}(E)	132	#5	6' - 11"	
d_{11}(E)	132	#5	7' - 11"	
e_{10}(E)	32	#4	29' - 8"	
e_{11}(E)	4	#8	29' - 8"	
t_{10}(E)	184	#4	9' - 8"	
w_{10}(E)	80	#5	20' - 4"	
w_{11}(E)	80	#5	22' - 4"	
Concrete Superstructure			Cu. Yd.	138.5
Concrete Structures			Cu. Yd.	26.6
Bridge Deck Grooving			Sq. Yd.	267
Protective Coat			Sq. Yd.	326
Reinforcement Bars, Epoxy Coated			Pound	37,430

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	DRAWN JCP	REVISED -
PLOT TIME = 3:12:47 PM	CHECKED PC	REVISED -
PLOT DATE = 8/12/2014	DATE 05 03 2013	REVISED -

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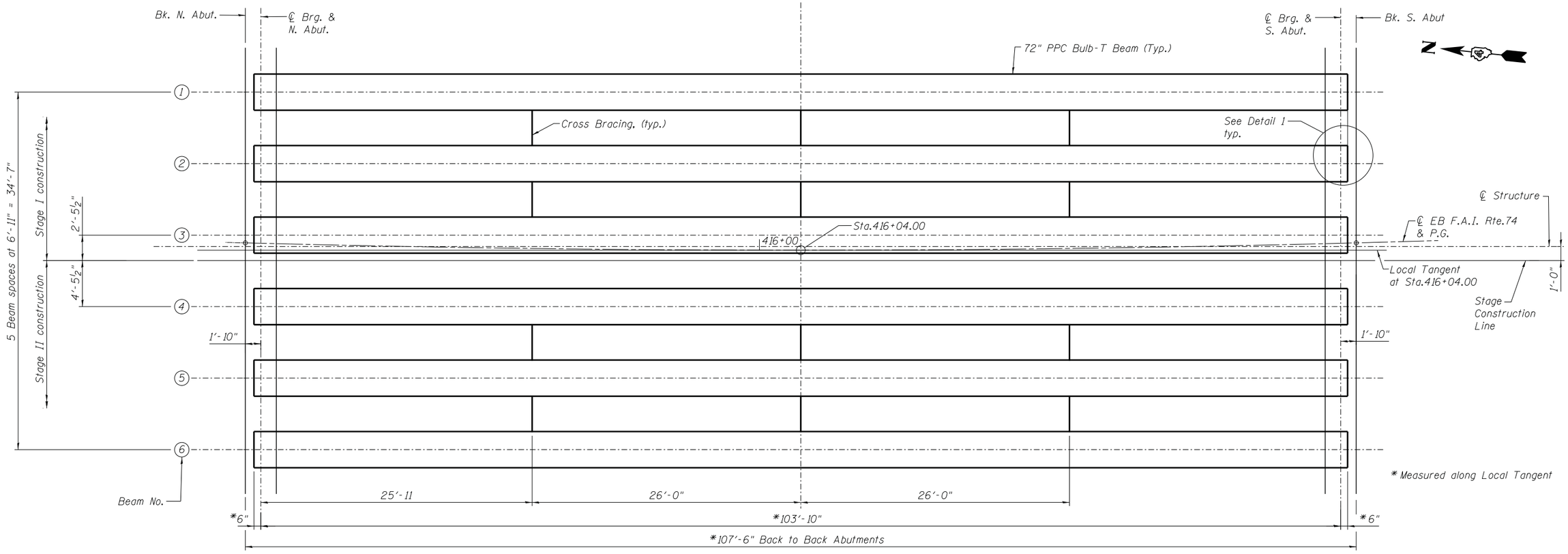
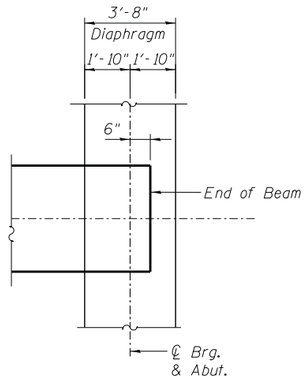
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 048-0090
SHEET NO. S16 OF S25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	37
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			



PLAN



DETAIL 1

INTERIOR BEAM MOMENT TABLE		0.5 Sp. 1
I	(in^4)	545894
I'	(in^4)	1043629
S_b	(in^3)	14915
S_b'	(in^3)	19847
S_t	(in^3)	15421
S_t'	(in^3)	53747
DC1	(k/')	1.534
M_{DC1}	('k)	2068.1
DC2	(k/')	0.173
M_{DC2}	('k)	233.6
DW	(k/')	0.333
M_{DW}	('k)	449.3
M_{L+IM}	('k)	1869

INTERIOR BEAM REACTION TABLE		Abut.
R_{DC1}	(k)	79.7**
R_{DC2}	(k)	9.0
R_{DW}	(k)	17.3
R_{L+IM}	(k)	89.0
R_{Total}	(k)	195.0

** End Diaphragm Load is excluded

I: Non-composite moment of inertia of beam section ($in.^4$).
I': Composite moment of inertia of beam section ($in.^4$).
S_b: Non-composite section modulus for the bottom fiber of the prestressed beam ($in.^3$).
S_b': Composite section modulus for the bottom fiber of the prestressed beam ($in.^3$).
S_t: Non-composite section modulus for the top fiber of the prestressed beam ($in.^3$).
S_t': Composite section modulus for the top fiber of the prestressed beam ($in.^3$).
DC1: Un-factored non-composite dead load (kips/ft.).
M_{DC1}: Un-factored moment due to non-composite dead load (kip-ft.).
DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).
M_{DC2}: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).
DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).
M_{DW}: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft).
M_{L+IM}: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).

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	DRAWN JCP	REVISED -
PLOT TIME = 4:31:28 PM	CHECKED PC	REVISED -
PLOT DATE = 7/30/2014	DATE 05 03 2013	REVISED -

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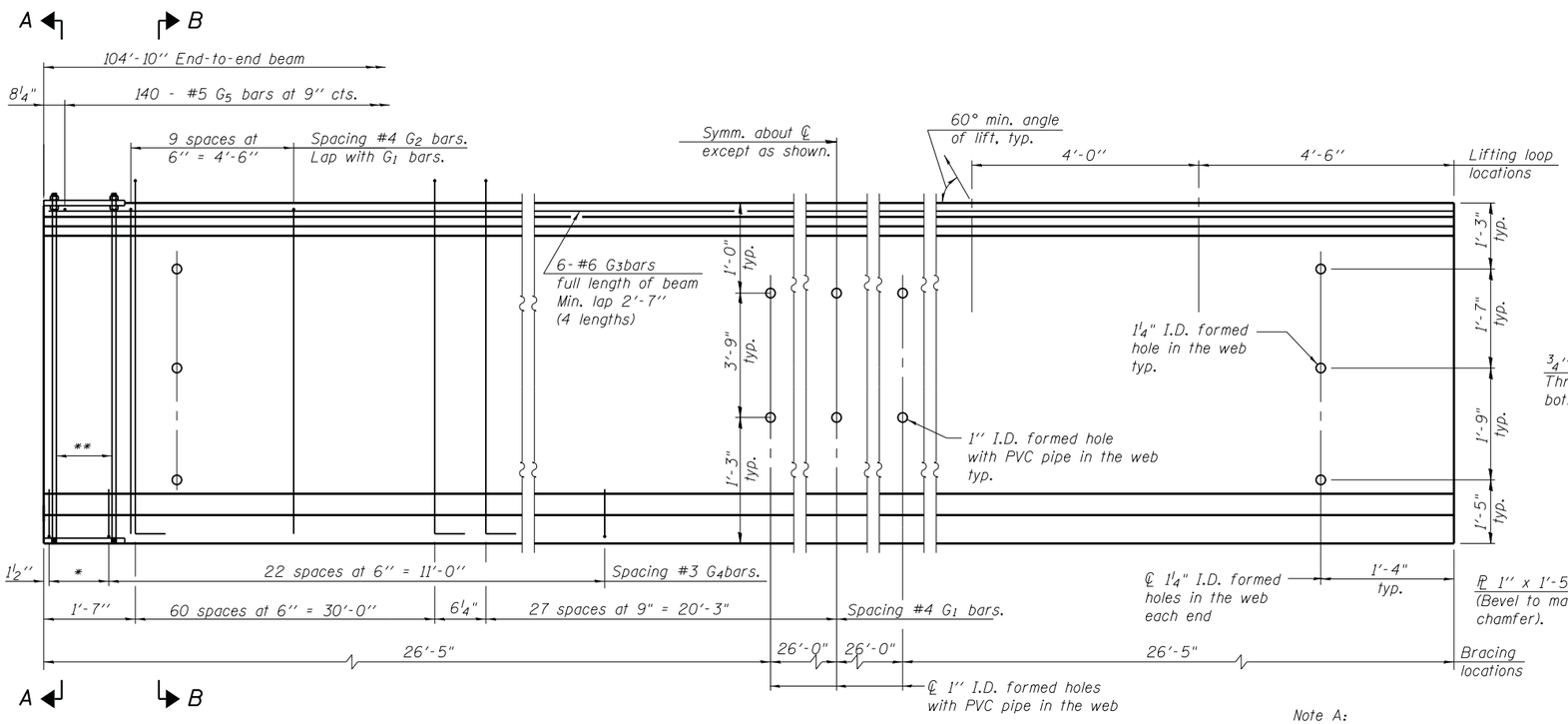
DEPARTMENT OF TRANSPORTATION

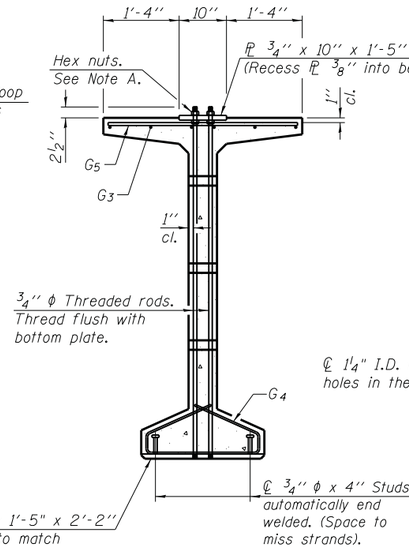
FRAMING PLAN
STRUCTURE NO. 048-0090
SHEET NO. S17 OF S25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-1(25B)BR, BR-1]	KNOX	131	38
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

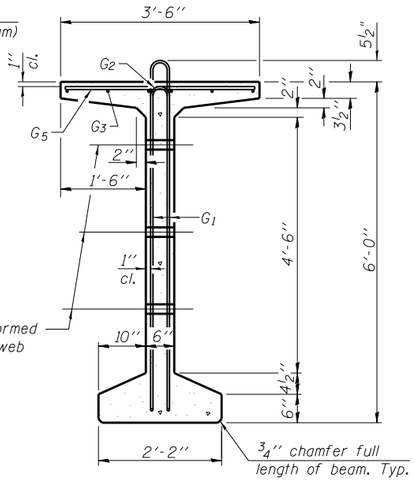


* 4 spaces at 3¼" = 1'-1".
** 5-¾" ϕ threaded dowel rods at 3¼" cts., each face.

ELEVATION OF BEAM
(Showing reinforcement & dimensions)

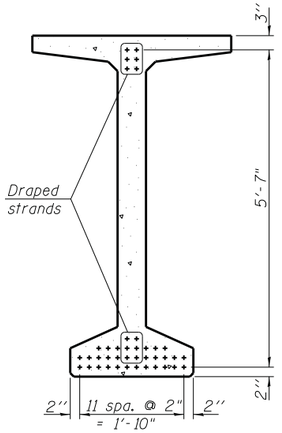


SECTION A-A

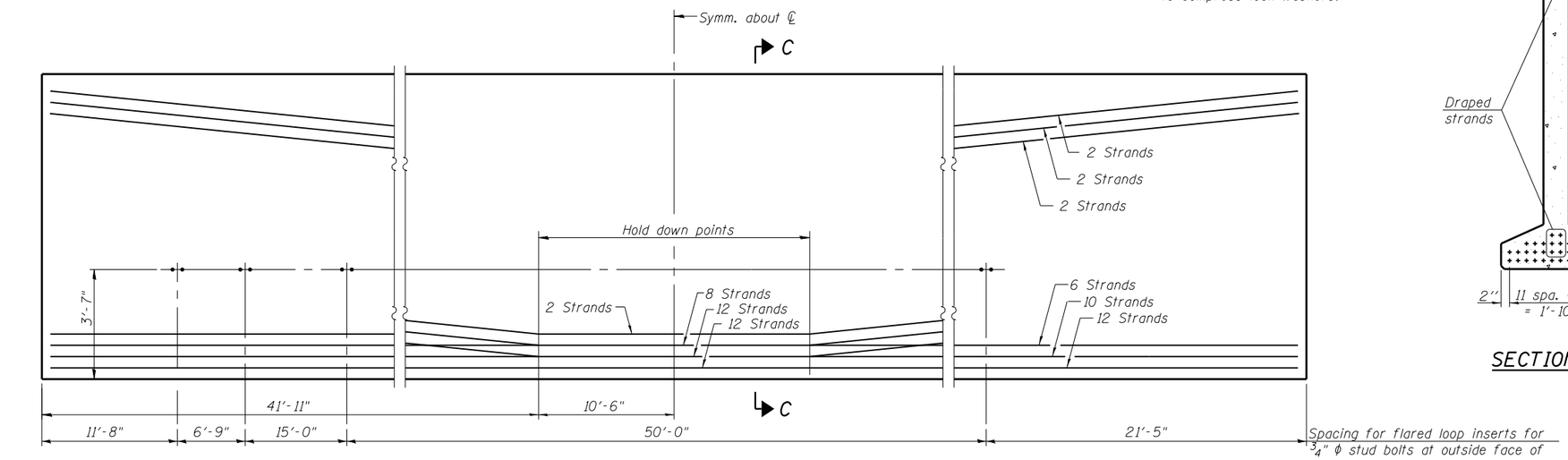


SECTION B-B

Note A:
Hex nuts (top and bottom) with lock washers (top). Only tighten sufficiently to compress lock washers.



SECTION C-C



ELEVATION OF BEAM
(Showing prestressing steel)

Spacing for flared loop inserts for ¾" ϕ stud bolts at outside face of exterior beams only. (Locate to miss strands). See sheet S13 of S25

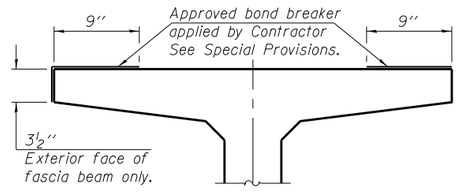
***BAR LIST
ONE BEAM ONLY

Bar	No.	Size	Length	Shape
G_1	178	#4	13'-7"	⊓⊔
G_2	20	#4	11'-8"	⊓
G_3	24	#6	28'-6"	—
G_4	54	#3	4'-11"	⌓
G_5	139	#5	3'-4"	—

***For information only

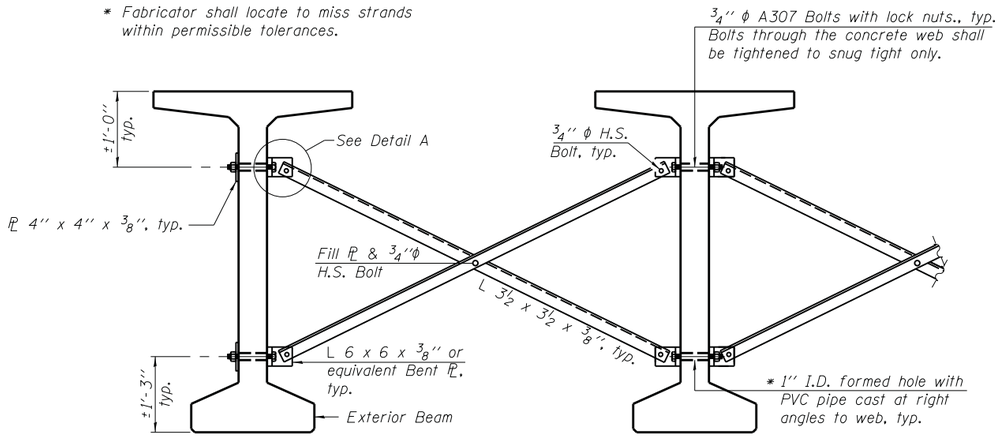
NOTES

1. See sheet S19 of S25 for additional details and Bill of Material.
2. Required release strength, f'ci, shall be 5,000 psi.
3. Apply approved bond breaker as shown in Section thru Top Flange full length of beam. See Special Provisions.



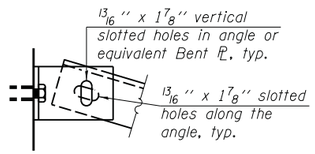
SECTION THRU TOP FLANGE
(Showing limits of bond breaker)

FILE NAME = ...\0480090-68084-018-PPC_T_beam.dgn	DESIGNED EV	REVISED -	EPSTEIN 600 WEST FULTON STREET CHICAGO, ILLINOIS 60661-1259 TEL 312 454 9100 FAX 312 559 1217 WEB www.epsteinglobal.com	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	72" PPC BULB T-BEAM STRUCTURE NO. 048-0090	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PLOT TIME = 4:31:30 PM	DRAWN JCP	REVISED -				74	48-[(25B)BR, BR-1]	KNOX	131	39
PLOT DATE = 7/30/2014	CHECKED PC	REVISED -			SHEET NO. S18 OF S25 SHEETS			CONTRACT NO. 68B85		
	DATE 05 03 2013	REVISED -						ILLINOIS FED. AID PROJECT		



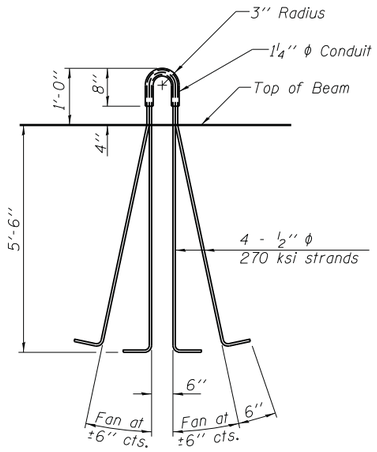
NOTES

1. All material for bracing shall be hot dip galvanized according to AASHTO M111 unless otherwise noted.
2. Two hardened washers are required for each set of oversized holes.
3. All holes shall be 15/16"ϕ unless otherwise noted.
4. 5/16" x 3" x 3" plate washers are required over all slotted holes.
5. All bolts shall be galvanized according to AASHTO M232.
6. Bracing shall be installed as beams are erected and tightened as soon as possible during erection.
7. Permanent bracing shall not be paid for separately, but shall be included in the cost of Furnishing and Erecting Precast Prestressed Concrete Bulb T-Beams.



DETAIL A

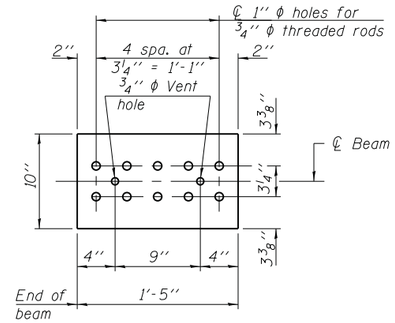
PERMANENT BRACING DETAILS FOR BULB-T BEAMS



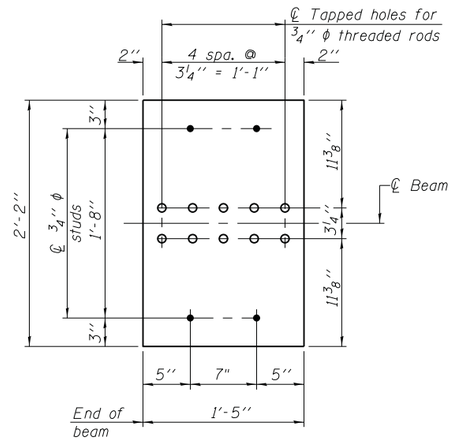
LIFTING LOOP DETAIL

NOTES

1. Inserts for 3/4" ϕ threaded dowel rods, when specified, are to be two strut, ferrule type for interior beams and single ferrule, flared loop type for exterior beams.
2. Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in.
3. Reinforcement bars shall conform to ASTM A 706, Grade 60.
4. A minimum 2 1/2" ϕ lifting pin shall be used to engage the lifting loops during handling.
5. The top and bottom plates shall be AASHTO M270 Grade 50.
6. The bottom plates and studs shall be galvanized according to AASHTO M111. Top plates and threaded rods need not be galvanized.
7. Threaded rods shall be ASTM F 1554 Grade 55.

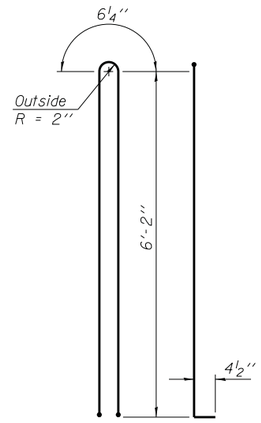


TOP PLATE

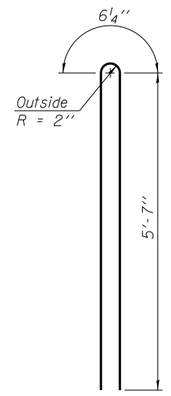


BOTTOM PLATE

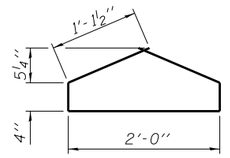
See bearing details for pintle hole locations when required.



BAR G1



BAR G2



BAR G4

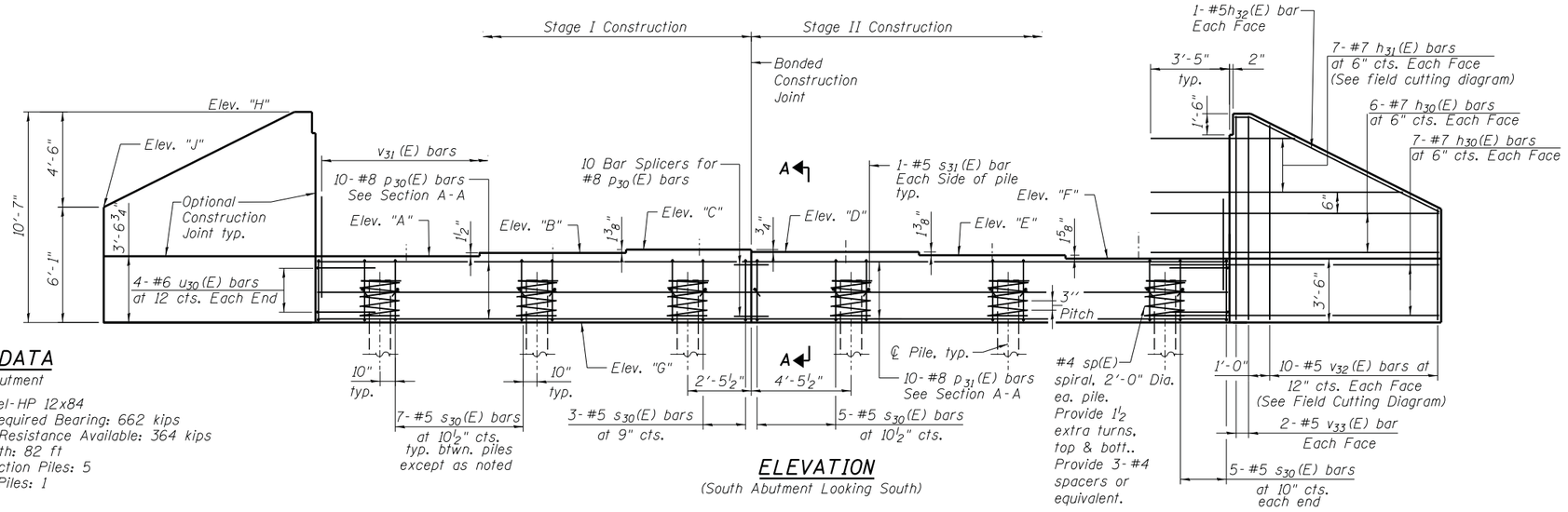
BILL OF MATERIAL

Item	Unit	Total
Furnishing and Erecting Precast Prestressed Concrete Bulb T-Beams, 72"	Ft.	629

FILE NAME = ...\0480090-68084-019-PPC_T_beam Details.dgn	DESIGNED EV	REVISED -	EPSTEIN 600 WEST FULTON STREET CHICAGO, ILLINOIS 60661-1259 TEL 312 454 9100 FAX 312 559 1217 WEB www.epsteinglobal.com	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	72" PPC BULB T-BEAM DETAILS STRUCTURE NO. 048-0090	F.A.I. RTE. 74	SECTION 48-[(25B)BR, BR-1]
PLOT TIME = 4:31:31 PM	DRAWN JCP	REVISED -					COUNTY KNOX
PLOT DATE = 7/30/2014	CHECKED PC	REVISED -			SHEET NO. S19 OF S25 SHEETS		TOTAL SHEETS 131
	DATE 05 03 2013	REVISED -					SHEET NO. 40
							CONTRACT NO. 68B85
							ILLINOIS FED. AID PROJECT

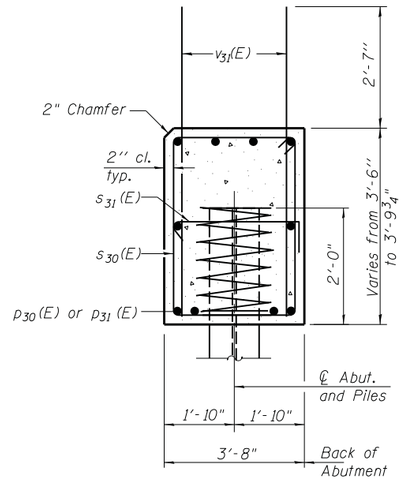
NOTES

1. Pour steps monolithically with cap.



ELEVATION

(South Abutment Looking South)



SECTION A-A

PILE DATA

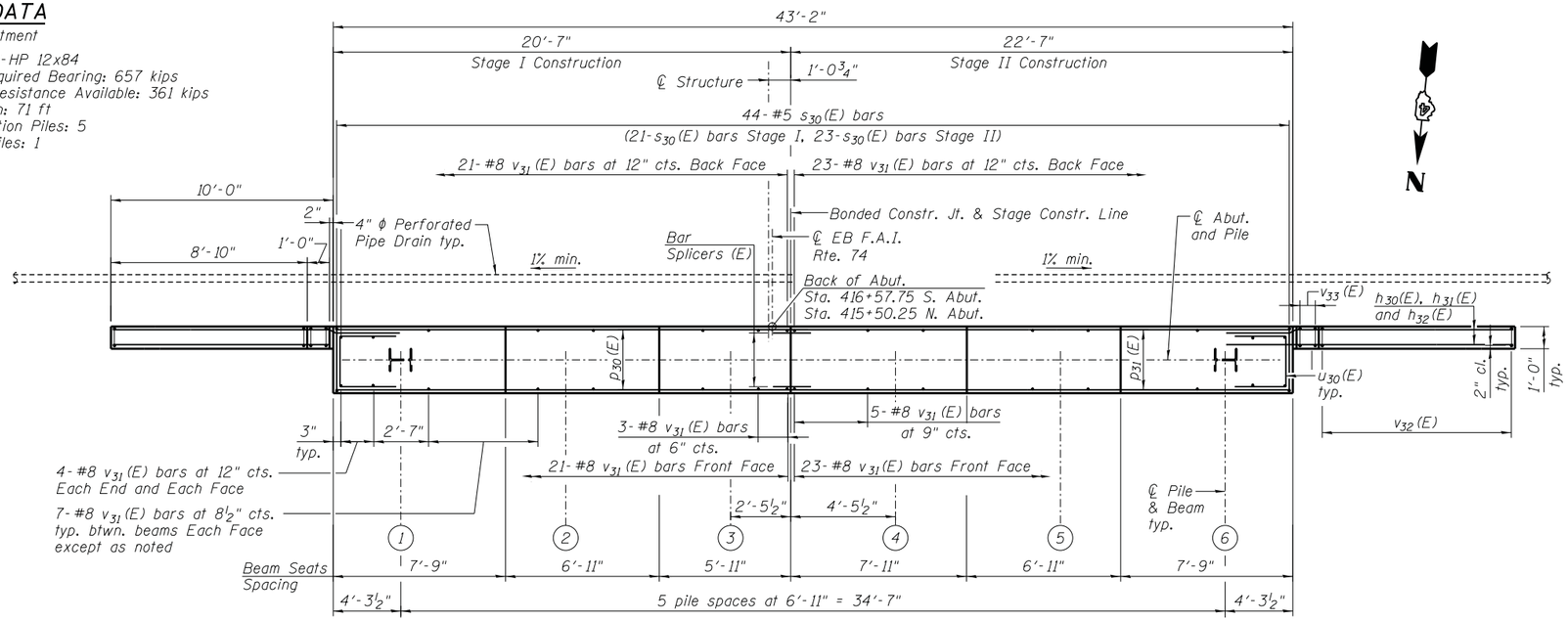
North Abutment

Type: Steel-HP 12x84
Nominal Required Bearing: 662 kips
Factored Resistance Available: 364 kips
Est. Length: 82 ft
No. Production Piles: 5
No. Test Piles: 1

PILE DATA

South Abutment

Type: Steel-HP 12x84
Nominal Required Bearing: 657 kips
Factored Resistance Available: 361 kips
Est. Length: 71 ft
No. Production Piles: 5
No. Test Piles: 1



PLAN

South Abutment show.
North Abutment is similar

	N. Abut.	S. Abut.
Elev. "A"	749.26	749.61
Elev. "B"	749.39	749.73
Elev. "C"	749.50	749.84
Elev. "D"	749.43	749.78
Elev. "E"	749.32	749.67
Elev. "F"	749.18	749.53
Elev. "G"	745.70	746.03
Elev. "H"	756.28	756.61
Elev. "J"	751.78	752.11

NOTES

1. For Section thru Abutment, drainage details, Bar Bending Diagrams and Bill of Materials see sheet S21 of S25.
2. Backfill shall be placed behind the abutment after the superstructure has been poured and falsework removed. See Article 502.10 of the Standard Specifications.
3. For Bar Splicer (E) details see sheet S24 of S25.
4. For details of piles see sheet S22 of S25.

FILE NAME = ...\0480090-68084-020-Abutment.dgn	DESIGNED EV	REVISED -
PLOT TIME = 4:31:33 PM	DRAWN JCP	REVISED -
PLOT DATE = 7/30/2014	CHECKED PC	REVISED -
	DATE 05 03 2013	REVISED -

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ABUTMENT PLAN AND ELEVATION
STRUCTURE NO. 048-0090
SHEET NO. S20 OF S25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	41
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

BILL OF MATERIAL

North Abutment

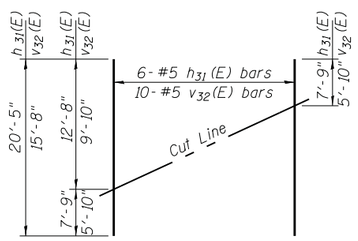
	Bar	No.	Size	Length	Shape
	$h_{30}(E)$	52	#7	13′ - 5″	
	$h_{31}(E)$	12	#7	20′ - 5″	
	$h_{32}(E)$	4	#5	10′ - 5″	
	$p_{30}(E)$	10	#8	20′ - 3″	
	$p_{31}(E)$	10	#8	22′ - 3″	
	$s_{30}(E)$	46	#5	13′ - 11″	
	$s_{31}(E)$	12	#5	4′ - 4″	
*	sp(E)	12	#4	2′ - 0″	
	$u_{30}(E)$	8	#6	11′ - 0″	
	$v_{31}(E)$	88	#8	6′ - 0″	
	$v_{32}(E)$	20	#5	15′ - 8″	
	$v_{33}(E)$	4	#5	10′ - 3″	
	Structure Excavation			Cu. Yd.	402
	Concrete Structures			Cu. Yd.	28.8
	Reinforcement Bars, Epoxy Coated			Pound	5,760
	Furnishing Steel Piles HP12x84			Foot	410
	Driving Piles			Foot	410
	Test Pile Steel HP12x84			Each	1
	Geocomposite Wall Drain			Sq. Yd.	66
	Granular Backfill for Structures			Cu. Yd.	159.1
	Pipe Underdrain for Structures, 4" dia.			Foot	100

* Length is height of spiral.

BILL OF MATERIAL

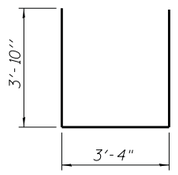
South Abutment

	Bar	No.	Size	Length	Shape
	$h_{30}(E)$	52	#7	13′ - 5″	
	$h_{31}(E)$	12	#7	20′ - 5″	
	$h_{32}(E)$	4	#5	10′ - 5″	
	$p_{30}(E)$	10	#8	20′ - 3″	
	$p_{31}(E)$	10	#8	22′ - 3″	
	$s_{30}(E)$	46	#5	13′ - 11″	
	$s_{31}(E)$	12	#5	4′ - 4″	
*	sp(E)	12	#4	2′ - 0″	
	$u_{30}(E)$	8	#6	11′ - 0″	
	$v_{31}(E)$	88	#8	6′ - 0″	
	$v_{32}(E)$	20	#5	15′ - 8″	
	$v_{33}(E)$	4	#5	10′ - 3″	
	Structure Excavation			Cu. Yd.	402
	Concrete Structures			Cu. Yd.	28.8
	Reinforcement Bars, Epoxy Coated			Pound	5,760
	Furnishing Steel Piles HP12x84			Foot	355
	Driving Piles			Foot	355
	Test Pile Steel HP12x84			Each	1
	Geocomposite Wall Drain			Sq. Yd.	66
	Granular Backfill for Structures			Cu. Yd.	159.1
	Pipe Underdrain for Structures, 4" dia.			Foot	102

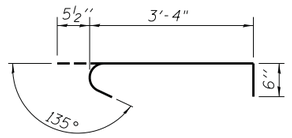


FIELD CUTTING DIAGRAM

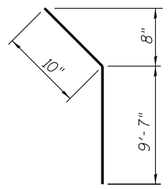
Order $h_{31}(E)$ and $v_{32}(E)$ full length. Cut as shown and use remainder of bars in opposite face.



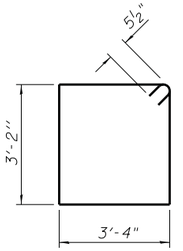
BAR $u_{30}(E)$



BAR $s_{31}(E)$



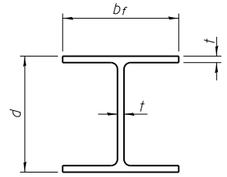
BAR $h_{32}(E)$



BAR $s_{30}(E)$

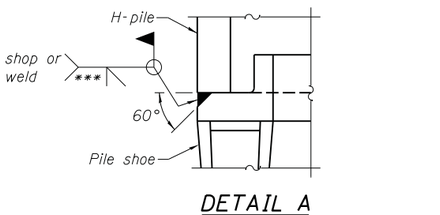
FILE NAME = ...\0480090-68084-021-Abutment_details.dgn	DESIGNED EV	REVISED -	EPSTEIN 600 WEST FULTON STREET CHICAGO, ILLINOIS 60661-1259 TEL 312 454 9100 FAX 312 559 1217 WEB www.epsteinglobal.com	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ABUTMENT DETAILS STRUCTURE NO. 048-0090
PLOT TIME = 4:31:34 PM	DRAWN JCP	REVISED -			
PLOT DATE = 7/30/2014	CHECKED PC	REVISED -			SHEET NO. S21 OF S25 SHEETS
	DATE 05 03 2013	REVISED -			

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	42
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			



STEEL PILE TABLE

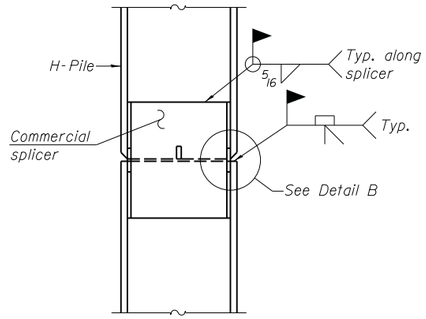
Designation	Depth d	Flange width b_f	Web and Flange thickness t	Encasement diameter A
HP 14x117	$14\frac{1}{4}''$	$14\frac{7}{8}''$	$\frac{13}{16}''$	30''
x102	14''	$14\frac{3}{4}''$	$\frac{11}{16}''$	30''
x89	$13\frac{7}{8}''$	$14\frac{3}{4}''$	$\frac{5}{8}''$	30''
x73	$13\frac{5}{8}''$	$14\frac{5}{8}''$	$\frac{1}{2}''$	30''
HP 12x84	$12\frac{1}{4}''$	$12\frac{1}{4}''$	$\frac{11}{16}''$	24''
x74	$12\frac{1}{8}''$	$12\frac{1}{4}''$	$\frac{5}{8}''$	24''
x63	12''	$12\frac{1}{8}''$	$\frac{1}{2}''$	24''
x53	$11\frac{3}{4}''$	12''	$\frac{7}{16}''$	24''
HP 10x57	10''	$10\frac{1}{4}''$	$\frac{9}{16}''$	24''
x42	$9\frac{3}{4}''$	$10\frac{1}{8}''$	$\frac{7}{16}''$	24''
HP 8x36	8''	$8\frac{1}{8}''$	$\frac{7}{16}''$	18''



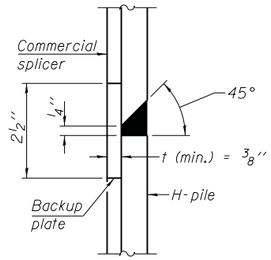
ELEVATION

DETAIL A

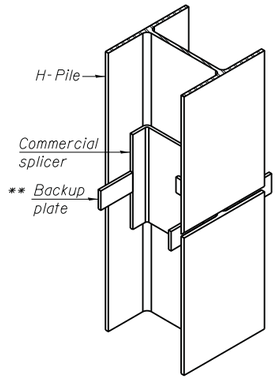
H-PILE SHOE ATTACHMENT



ELEVATION

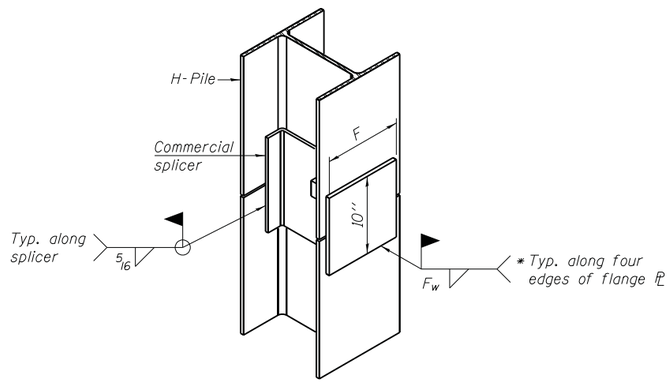


DETAIL "B"



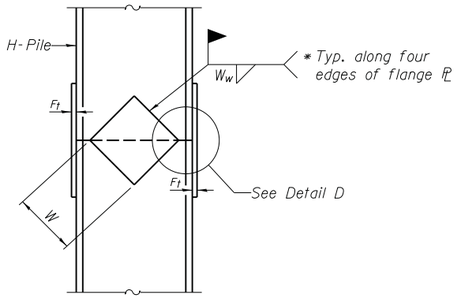
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE

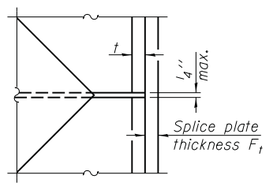


ISOMETRIC VIEW

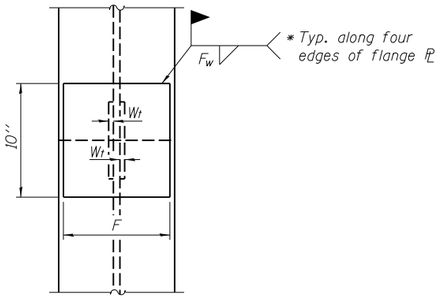
WELDED COMMERCIAL SPLICE ALTERNATE



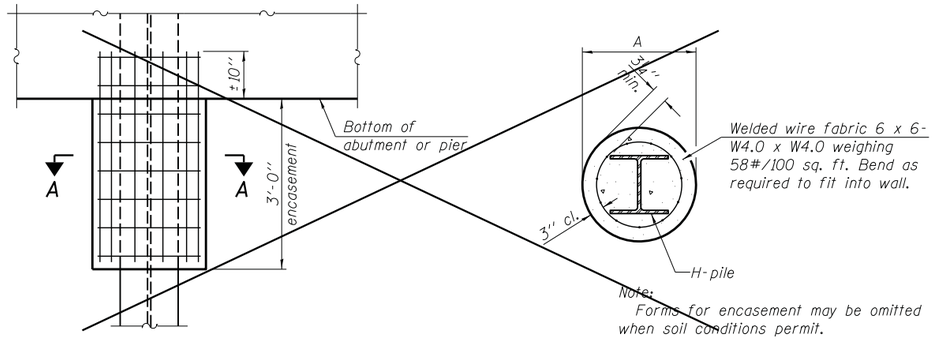
ELEVATION



DETAIL D



END VIEW



ELEVATION

SECTION A-A

PILE ENCASEMENT

Designation	F	F_t	F_w	W	W_t	W_w
HP 14x117	$12\frac{1}{2}''$	1''	$\frac{7}{8}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x102	$12\frac{1}{2}''$	$\frac{7}{8}''$	$\frac{3}{4}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x89	$12\frac{1}{2}''$	$\frac{3}{4}''$	$\frac{11}{16}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x73	$12\frac{1}{2}''$	$\frac{5}{8}''$	$\frac{9}{16}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
HP 12x84	10''	$\frac{7}{8}''$	$\frac{11}{16}''$	$6\frac{1}{2}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x74	10''	$\frac{7}{8}''$	$\frac{11}{16}''$	$6\frac{1}{2}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x63	10''	$\frac{5}{8}''$	$\frac{1}{2}''$	$6\frac{1}{2}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
x53	10''	$\frac{5}{8}''$	$\frac{1}{2}''$	$6\frac{1}{2}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
HP 10x57	8''	$\frac{3}{4}''$	$\frac{9}{16}''$	$5\frac{1}{4}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
x42	8''	$\frac{5}{8}''$	$\frac{9}{16}''$	$5\frac{1}{4}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
HP 8x36	7''	$\frac{5}{8}''$	$\frac{7}{16}''$	$4\frac{1}{4}''$	$\frac{1}{2}''$	$\frac{3}{8}''$

WELDED PLATE FIELD SPLICE

* Interrupt welds $\frac{1}{4}''$ from end of web and/or each flange.

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

*** Weld size per pile shoe manufacturer ($\frac{5}{16}''$ min.).

NOTES

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

F-HP 1-27-12

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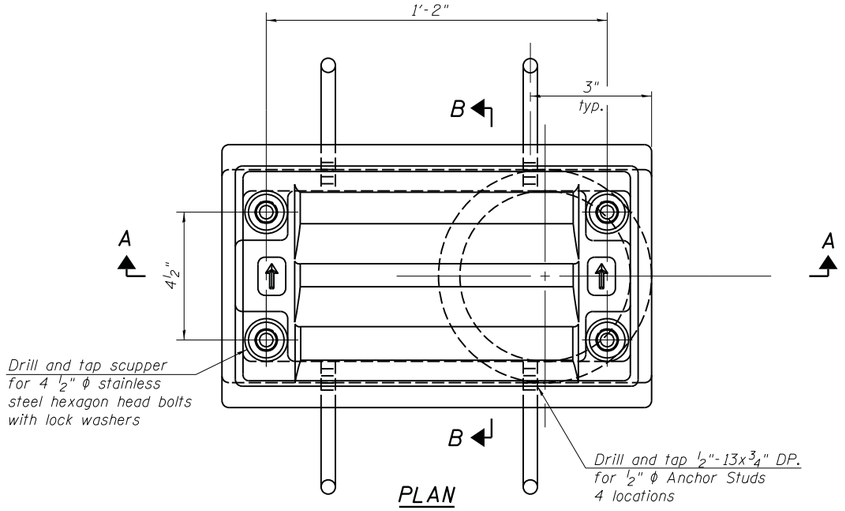
	DRAWN JCP	REVISED -
PLOT TIME = 4:31:35 PM	CHECKED PC	REVISED -
PLOT DATE = 7/30/2014	DATE 05 03 2013	REVISED -

EPSTEIN
600 WEST FULTON STREET
CHICAGO, ILLINOIS
60661-1259
TEL 312 454 9100
FAX 312 559 1217
WEB www.epsteinglobal.com

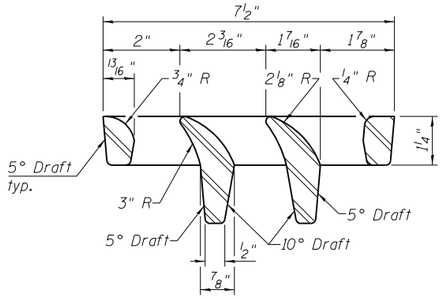
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HP PILE DETAILS
STRUCTURE NO. 048-0090
SHEET NO. S22 OF S25 SHEETS

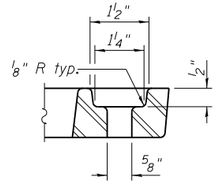
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	43
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			



PLAN



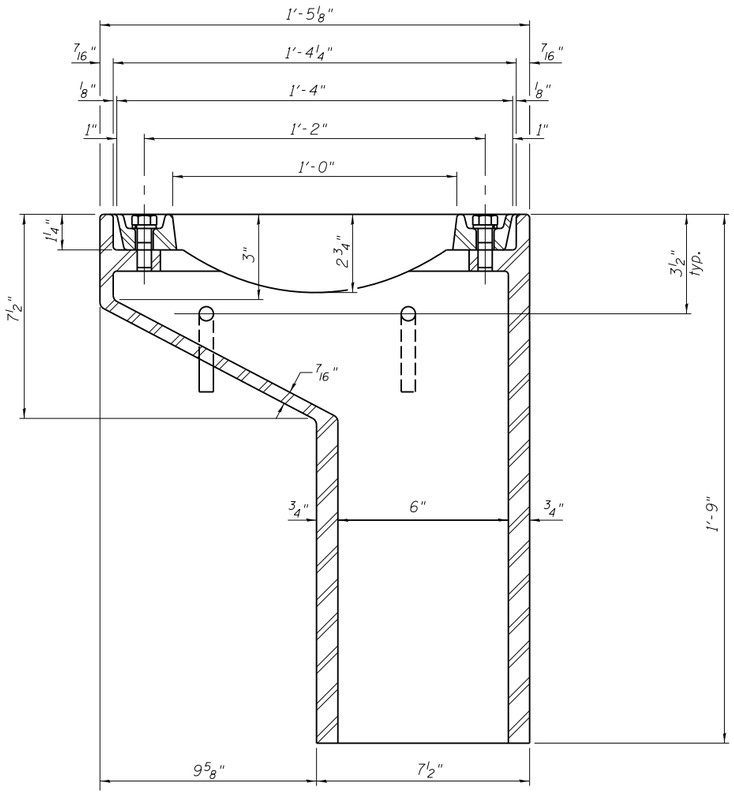
VANE GRATE DETAIL



BOLT HOLE DETAIL

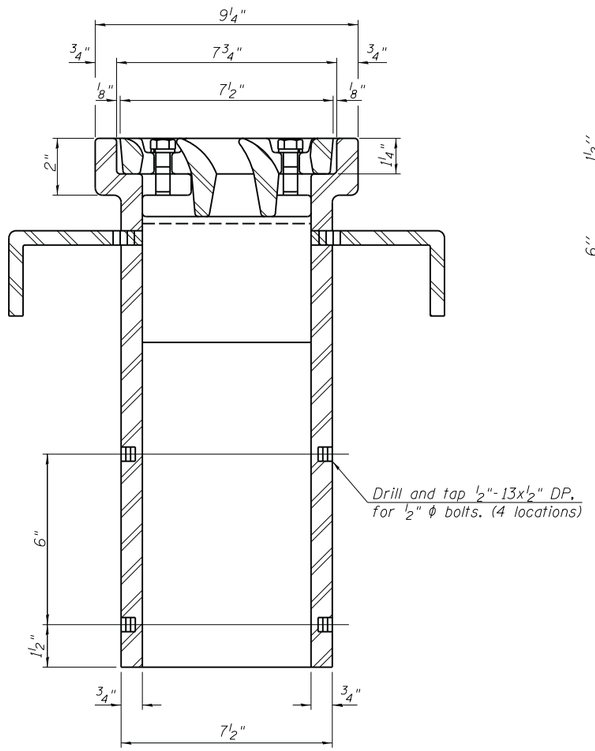
NOTES

1. All cast iron parts shall be gray iron conforming to the requirements of AASHTO M 105, Class 35B.
2. Bolts, anchor studs, washers and nuts shall conform to the requirements of ASTM A 307 and shall be galvanized according to AASHTO M 232.
3. Downspouts located on the exterior side of a painted steel fascia beam shall be painted with the finish coat specified for the exterior side of the fascia beam.
4. As an alternate, bolts, anchor studs, washers and nuts may be stainless steel according to Article 1006.29(d) of the Standard Specifications.
5. Structural steel weldments of equal sections and of the same configuration may be substituted for the cast iron scupper frame. Fillet or full penetration welds shall be used for the weldments. Details shall be submitted to the Engineer for approval. Structural steel weldments shall not be substituted for the cast iron scupper grate. Structural steel frames and downspouts shall be galvanized according to AASHTO M111.
6. The Contractor shall take appropriate measures to assure that Protective Coat is not applied to the scupper.
7. Cost of the Grate, Frame, Downspout, Anchor Studs, Bolts, Washers and Nuts including complete installation of the scupper shall be paid for at the contract unit price each for Drainage Scupper, DS-11.
8. Alternate fiberglass downspout conforming to ASTM D 2996 with a short-time rupture strength hoop tensile stress of 30,000 psi min. may be used in lieu of the cast iron or steel equivalent.

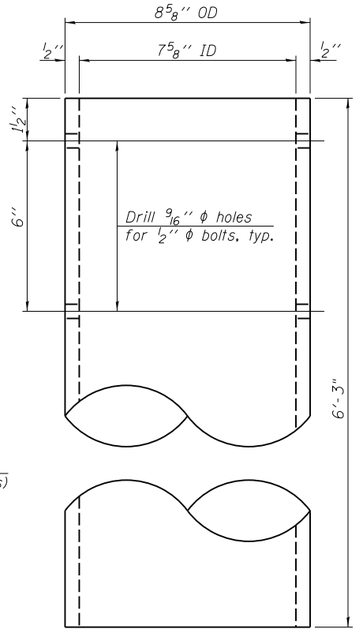


SECTION A-A

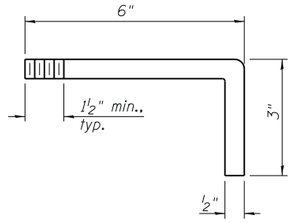
See sheet S13 of S25 for scupper location relative to parapet.



SECTION B-B



DOWNSPOUT



ANCHOR STUD DETAIL

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scupper, DS-11	Each	8

DS-11 7-1-10

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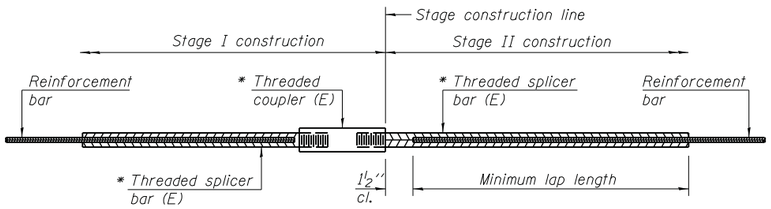
	DRAWN JCP	REVISED -	
PLOT TIME = 4:31:36 PM	CHECKED PC	REVISED -	
PLOT DATE = 7/30/2014	DATE 05 03 2013	REVISED -	

EPSTEIN
600 WEST FULTON STREET
CHICAGO, ILLINOIS
60661-1259
TEL 312 454 9100
FAX 312 559 1217
WEB www.epsteinglobal.com

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DRAINAGE SCUPPER DS-11
STRUCTURE NO. 048-0090
SHEET NO. S23 OF S25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	44
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			



STANDARD BAR SPLICER ASSEMBLY

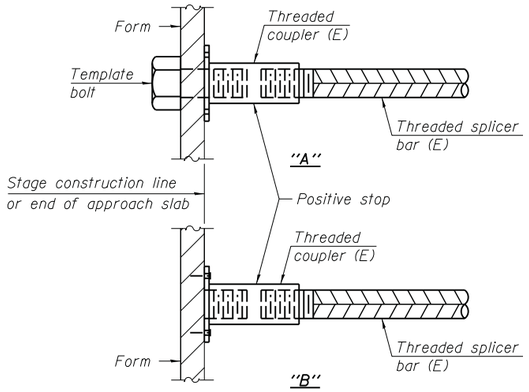
Minimum Lap Lengths						
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5	Table 6
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-7"	2'-11"
5	1'-9"	2'-5"	2'-7"	2'-11"	3'-3"	3'-8"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-10"	4'-5"
7	2'-9"	3'-10"	4'-2"	4'-8"	5'-2"	5'-10"
8	3'-8"	5'-1"	5'-5"	6'-2"	6'-9"	7'-8"
9	4'-7"	6'-5"	6'-10"	7'-9"	8'-7"	9'-8"

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

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

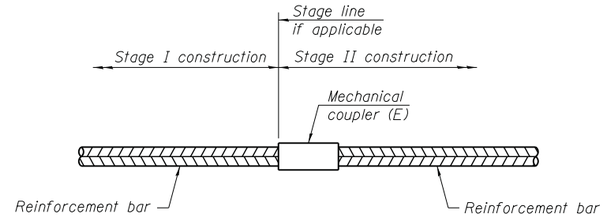
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length
Deck	#5	311	3
Diaphragm	#6	26	3
Abutments	#8	20	3
Approach Slab	#5	172	3
Approach Slab	#4	50	3



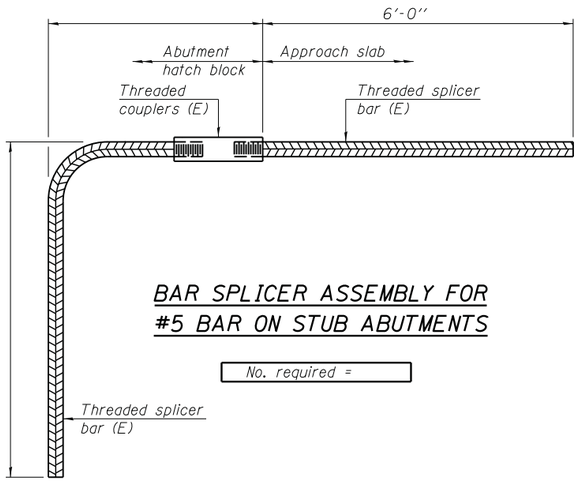
INSTALLATION AND SETTING METHODS

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



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required =

NOTES

1. Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.
2. All reinforcement shall be lapped and tied to the splicer bars.
3. Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.
4. See approved list of bar splicer assemblies and mechanical splicers for alternatives.

BSD-1 8-31-12

FILE NAME = ...\0480090-68084-024-Bar_splicers.dgn	DESIGNED EV	REVISED -	EPSTEIN 600 WEST FULTON STREET CHICAGO, ILLINOIS 60661-1259 TEL 312 454 9100 FAX 312 559 1217 WEB www.epsteinglobal.com	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS STRUCTURE NO. 048-0090	F.A.I. RTE. 74	SECTION 48-[(25B)BR, BR-1]
PLOT TIME = 4:31:38 PM	CHECKED PC	REVISED -					COUNTY KNOX
PLOT DATE = 7/30/2014	DATE 05 03 2013	REVISED -			SHEET NO. S24 OF S25 SHEETS		TOTAL SHEETS 131
							SHEET NO. 45
							CONTRACT NO. 68B85
							ILLINOIS FED. AID PROJECT

FORM NO. B.D. 137 REV. 9-60 Sh. 5 of 8 Sh.

BRIDGE FOUNDATION BORING LOG

PROJECT I-74-2( )38
ROUTE FAI 74
SEC. 48-25B
COUNTY Knox
Boring No. 5
Station 415+44
Offset 12' Lt of ℄ Rt Ln along Bk N6 Abut

BRIDGE FAI Route 74 over Henderson Creek
STA. 417+20 Left Lane 416+04 Right Lane

Date 1-3-62
Bored By Alvin E. Moine
Checked By

Surface Water El. --
Groundwater El. at Completion 733.3
After 18 Hours 737.8

Ground Surface	Elevation	Z	+/s.f. J	Q	w (%)
	737.80				
Soft Dark Brown Silty CLAY LOAM					
		4	0.5 B		35
	733.8				
Medium Black Silty CLAY	-5	7	1.0 E		34
	731.3				
Stiff Black Silty CLAY		13	1.5 E		-
	728.8				
Medium Brown CLAY LOAM	-10	5	0.7 B		26
		4	-		25
	724.8				
Loose Brown Sandy LOAM					
	722.8	5	1.2 B		28
Stiff Light Grayish Brown CLAY					
		9	1.5 E		-
	718.8				
Very Stiff Light Gray CLAY	-20	16	2.3 S		19

	Elevation	Z	+/s.f. J	Q	w (%)
Very Stiff Light Gray CLAY		23	2.5 E		-
	-25	34	2.5 S		12
	711.3				
Hard Gray CLAY		59	-		-
	-30	34	-		-
	703.8				
Hard Dark Gray Shaley CLAY	-35	78	-		-
		93	2.9 S		-
		93	-		-
	-40	100/ 5"	-		-
		50/ 3"	-		-
End of Boring	694.8				
	-45				

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

Qu - Unconfined Compressive Strength - t/sf

w - Water Content - percentage of oven dry weight-%.

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

FORM NO. B.D. 137 REV. 9-60 Sh. 8 of 8 Sh

BRIDGE FOUNDATION BORING LOG

PROJECT I-74-2( )38
ROUTE FAI 74
SEC. 48-25B
COUNTY Knox
Boring No. 8
Station 416+65
Offset 161 Rt of ℄ Rt Ln along Bk S6 Abut

BRIDGE FAI Route 74 over Henderson Creek
STA. 417+20 Left Lane 416+04 Right Lane

Date 1-8-62
Bored By Alvin E. Moine
Checked By

Surface Water El. --
Groundwater El. at Completion 733.7
After 24 Hours 733.7

Ground Surface	Elevation	Z	+/s.f. J	Q	w (%)
	740.70				
Stiff Brown CLAY					
		5	1.5 E		27
	-5	6	1.5 E		-
	734.2				
Very Stiff Brownish Gray CLAY		33	1.8 S		30
	-10	32	2.0 E		-
	729.2				
Hard Light Gray CLAY		98	1.8 S		9
	-15	50/ 5"	-		-
	724.2				
Hard Light Gray Shaley CLAY		50/ 4"	-		-
	-20	100/ 5"	-		-

	Elevation	Z	+/s.f. J	Q	w (%)
Hard Light Gray Shaley CLAY		50/ 4"	5.9 S		-
	-25	100/ 5"	5.2 S		-
End of Boring	715.2				
	-30				
	-35				
	-40				
	-45				

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

Qu - Unconfined Compressive Strength - t/sf

w - Water Content - percentage of oven dry weight-%.

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

NOTES

1. The structure boring for the project location completed during the year 1961-1962, furnished by Illinois Department of Transportation, has been included as Exhibit B in the Structure Geotechnical Report for the current project.

FILE NAME = ...\0480090-68B84-025-Soil_boring_logs.dgn	DESIGNED EV	REVISED -
PLOT TIME = 4:31:39 PM	DRAWN JCP	REVISED -
PLOT DATE = 7/30/2014	CHECKED PC	REVISED -
	DATE 05 03 2013	REVISED -

EPSTEIN
600 WEST FULTON STREET CHICAGO, ILLINOIS 60661-1259
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

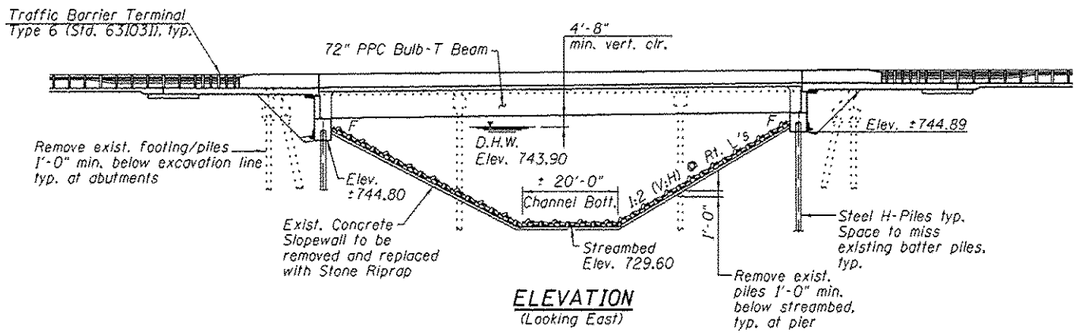
BORING LOGS
STRUCTURE NO. 048-0090
SHEET NO. S25 OF S25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	46
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

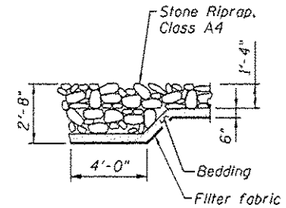
Bench Mark: BM#3 - Chiseled square located on the south end of the west wingwall WB I-74 Elevation 757.28

Existing Structure: S.N. 048-0004 built in 1965 as F.A.I. Route 74 (WB). Section 48-25B at Sta. 417+20. Existing structure consists of 3-span continuous reinforced concrete cast in place slab supported by closed concrete abutments and concrete pile bent piers. Structure is 115'-0" long Bk. to Bk. of abutments, width is 44'-0" Out to Out of deck. Structure to be removed and replaced. Traffic to be maintained utilizing stage construction.

No salvage



ELEVATION
(Looking East)



SECTION A-A

DESIGN SPECIFICATIONS

2012 AASHTO LRFD Bridge Design Specifications

LOADING HL-93

Allow 50#/sq. ft. for future wearing surface.

DESIGN STRESSES

FIELD UNITS

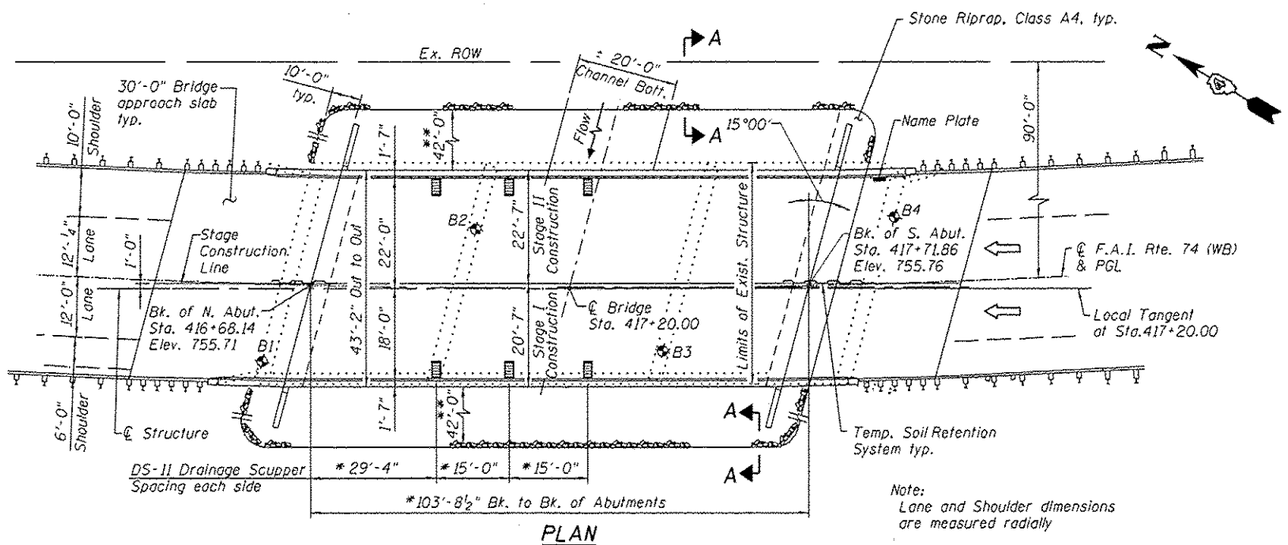
f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)

PRECAST PRESTRESSED UNITS

f'c = 6,000 psi
f'ci = 5,000 psi
fpu = 270,000 psi
($\frac{1}{2}$"ϕ low lax strands)
fpbt = 201,960 psi
($\frac{1}{2}$"ϕ low lax strands)

SEISMIC DATA

Seismic Performance Zone (SPZ) =1
Design Spectral Acceleration at 1.0 sec. (SD1) =0.070g
Design Spectral Acceleration at 0.2 sec. (SDS) = 0.111g
Soil Site Class = C



PLAN

Note:
Lane and Shoulder dimensions are measured radially

*Measured along local tangent

**For riprap limits the Contractor shall match limits of existing slope wall

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	N. Abut.	S. Abut.
	744.80	744.89

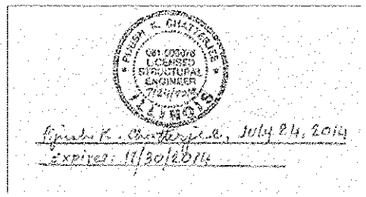
WATERWAY INFORMATION

Drainage Area = 9.34 sq. mi. Low Grade Elev. 755.95 ft @ Sta. 417+77.5

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
	10	1942	434	524	741.7	0.3	0.1	742.0	741.8
Design	50	3168	582	680	743.9	0.6	0.3	744.4	744.2
Base	100	3740	642	742	744.7	0.7	0.4	745.4	745.1
Overtopping									
Max. Calc.	500	5135	786	889	746.5	1.0	0.6	747.5	747.1

EWSE = 732.18 (per Survey taken 01-22-2010)

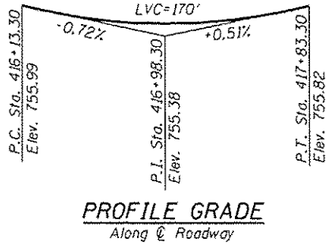
APPROVED
For Structural Adequacy Only
Engineer of Bridges & Structures



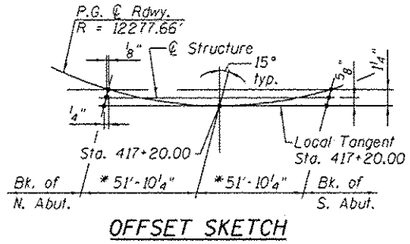
Signature, July 24, 2014
Expires: 11/30/2015

STATION 416+04.00
BUILT 201_ BY
STATE OF ILLINOIS
F.A.I. RT. 74 WB SEC. 48-[(25B)BR, BR-1]
LOADING HL-93
STR. NO. 048-0091

NAME PLATE
See Std. 515001



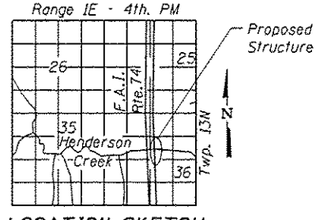
PROFILE GRADE
Along ℄ Roadway



OFFSET SKETCH

CURVE DATA

Δ = 9°-41'-02"
D = 0°-28'-00"
T = 1040.04'
L = 2075.12'
E = 43.97'
R = 12277.66
P.C. = Sta. 397+59.56
P.T. = Sta. 418+34.68
P.I. = Sta. 407+99.60



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
WB I-74 OVER HENDERSON CREEK
F.A.I. RTE. 74 (WB) - SEC. 48-[(25B)BR, BR-1]
KNOX COUNTY
STATION 417+20.00
STRUCTURE NO. 048-0091

FILE NAME = ...\048000091-S0084-001-GPE.dgn	DESIGNED EV	REVISED -	EPSTEIN 60 WEST FULTON STREET CHICAGO ILLINOIS 60601-3209 TEL 312 554 9100 FAX 312 559 1217 WEB www.epstein.biz	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL PLAN AND ELEVATION STRUCTURE NO. 048-0091
PLOT TIME = 4:09:11 PM	DRAWN JCP	REVISED -			SHEET NO. 51 OF 525 SHEETS
PLOT DATE = 9/29/2014	CHECKED PC	REVISED -			
	DATE 05 03 2013	REVISED -			

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	47
		CONTRACT NO. 68885		
	ILLINOIS FED. AID PROJECT			

GENERAL NOTES

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

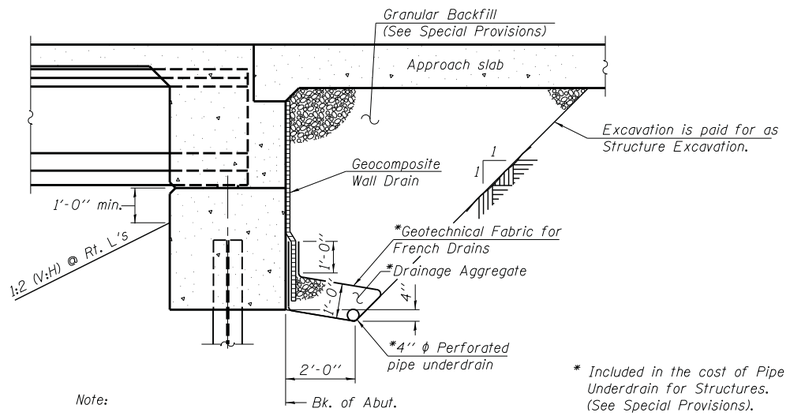
2. Layout of slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

3. Slipforming of the parapets is not allowed.

INDEX OF SHEETS

TOTAL BILL OF MATERIAL

ITEMS	UNITS	SUPERSTRUCTURE	SUBSTRUCTURE	TOTAL
Stone RipRap, Class A4	SQ YD		1,660	1,660
Filter Fabric	SQ YD		1,660	1,660
Removal of Existing Structures	EACH			1
Structure Excavation	CU YD		778	778
Concrete Structures	CU YD	26.7	59.3	86.0
Concrete Superstructure	CU YD	342.5		342.5
Bridge Deck Grooving	SQ YD	721		721
Protective Coat	SQ YD	854		854
Furnishing and Erecting Precast Prestressed Concrete Bulb T-Beams 72"	FOOT	605.5		605.5
Reinforcement Bars, Epoxy Coated	POUND	67,200	17,070	84,270
Bar Splicers	EACH	470	100	570
Furnishing Steel Piles HP12x84	FOOT		750	750
Driving Piles	FOOT		750	750
Test Pile Steel HP12x84	EACH		2	2
Name Plates	EACH	1		1
Geocomposite Wall Drain	SQ YD		136	136
Granular Backfill for Structures	CU YD		392.4	392.4
Drainage Scuppers, DS-11	EACH	6		6
Pipe Underdrains for Structures 4"	FOOT		196	196
Temporary Soil Retention System	SQ FT		208	208



* Included in the cost of Pipe Underdrain for Structures. (See Special Provisions).

Note:

All drainage system components shall extend to 2'-0" from the end of each wingwall except an outlet pipe shall extend until intersecting with the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).

SECTION THRU INTEGRAL ABUTMENT

(Horiz. dim. @ Rt. L's)

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	DRAWN JCP	REVISED -
PLOT TIME = 4:31:46 PM	CHECKED PC	REVISED -
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CHICAGO, ILLINOIS
60661-1259
TEL 312 454 9100
FAX 312 559 1217
WEB www.epsteinglobal.com

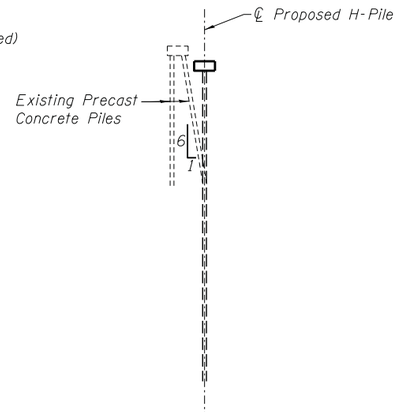
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL DATA
STRUCTURE NO. 048-0091
SHEET NO. S2 OF S25 SHEETS

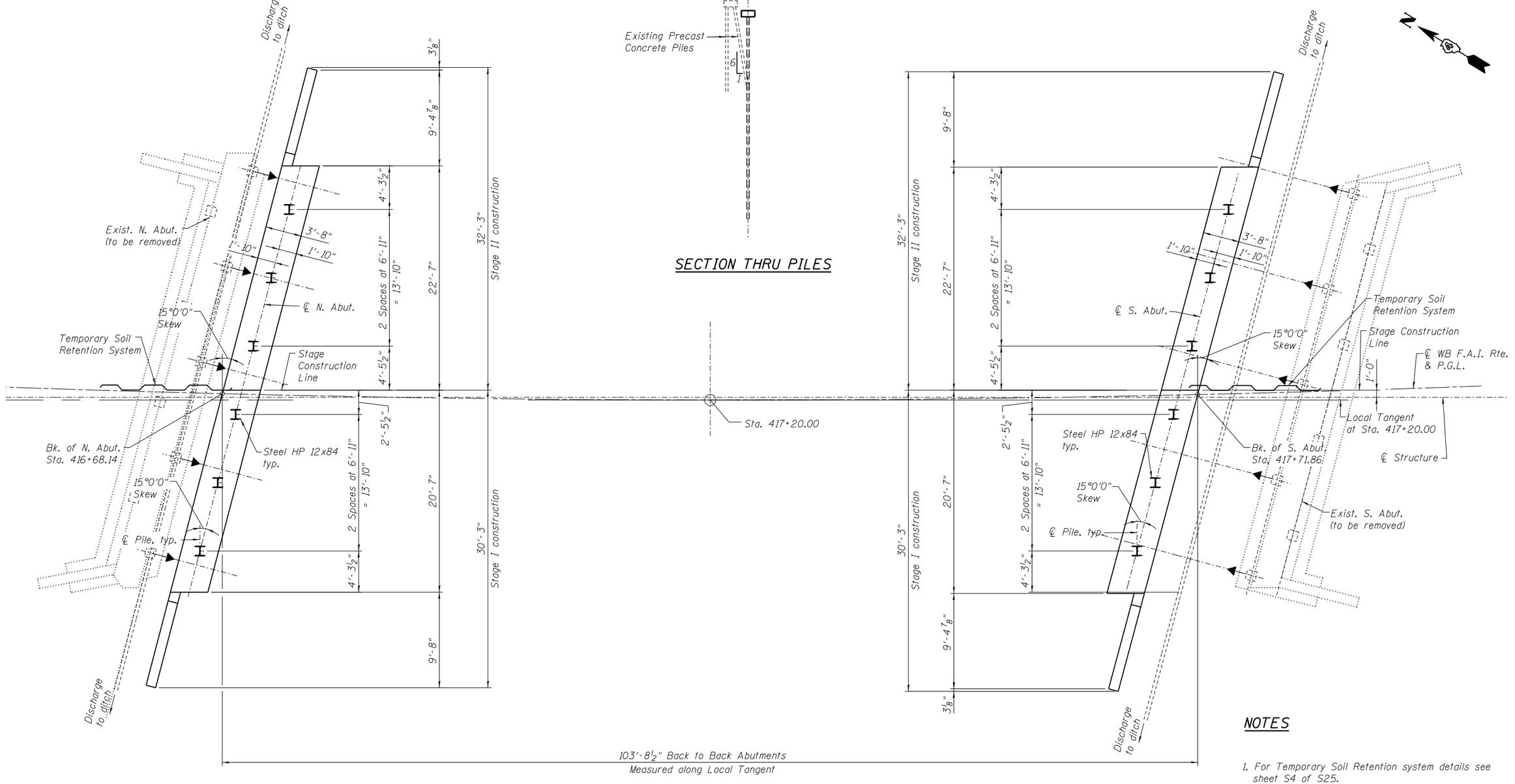
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	48
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

EXISTING PILE DATA

Type - Concrete Piles
Capacity - 25 Ton Min.
Est. Length - 35' Feet
No. Req'd - 22 (1 test pile at N. Abut. included)



SECTION THRU PILES



FOUNDATION PLAN

NOTES

1. For Temporary Soil Retention system details see sheet S4 of S25.
2. For Abutment details see sheet S20 of S25.
3. For Steel HP Piles details see sheet S22 of S25.
4. Drive one test pile at each abutment.

FILE NAME = ...\0480091-68084-003-Footing Plan.dgn	DESIGNED EV	REVISED -	EPSTEIN 600 WEST FULTON STREET CHICAGO, ILLINOIS 60661-1259 TEL 312 454 9100 FAX 312 559 1217 WEB www.epsteinglobal.com	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUBSTRUCTURE LAYOUT STRUCTURE NO. 048-0091
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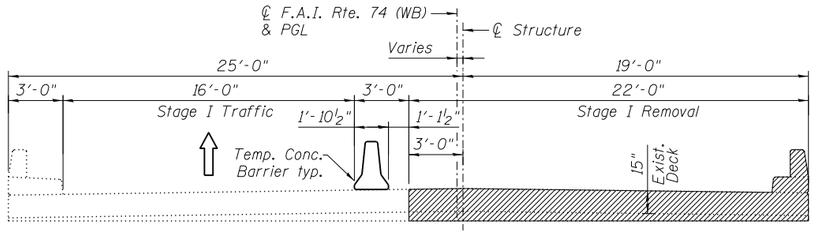
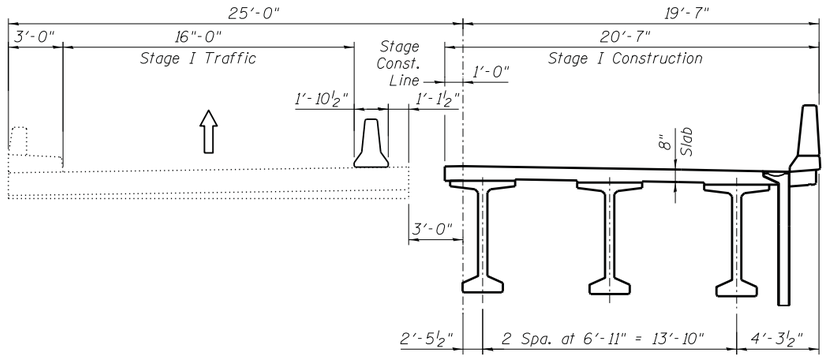
PLOT DATE = 7/30/2014	CHECKED PC	REVISED -			
	DATE 05 03 2013	REVISED -			

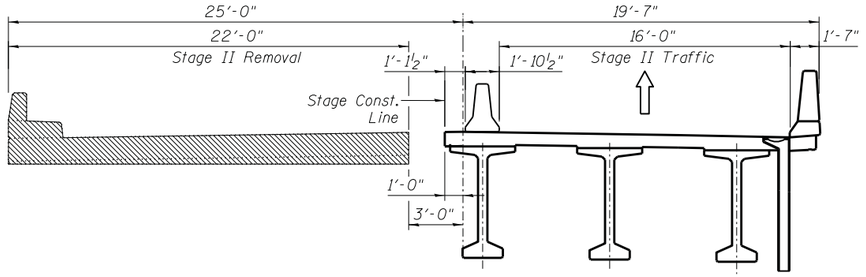
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-I(25B)BR, BR-1]	KNOX	131	49
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			



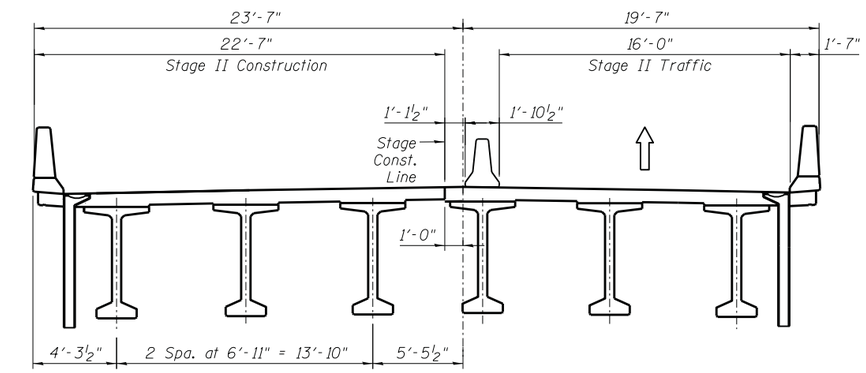
STAGE I REMOVAL



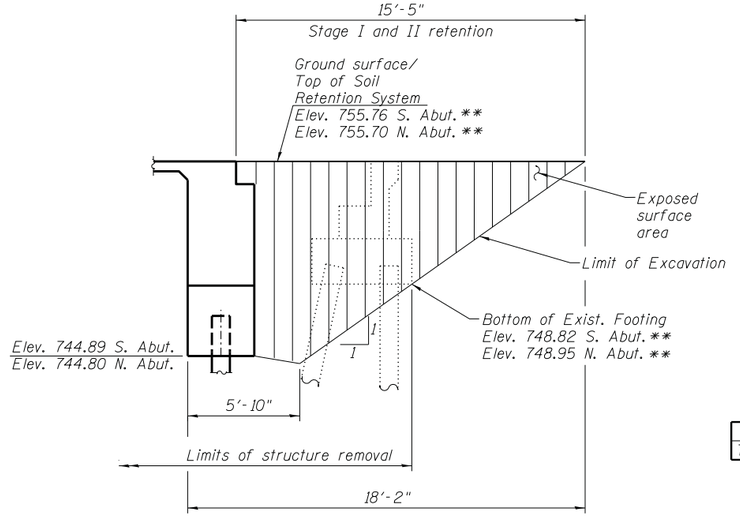
STAGE I CONSTRUCTION



STAGE II REMOVAL



STAGE II CONSTRUCTION



TEMPORARY SOIL RETENTION SYSTEM

**To be verified in field by the Contractor

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Temporary Soil Retention System	Sq. Ft.	208

NOTES

1. All stage cross sections are looking South.
2. See sheet S5 of S25 for Temporary Concrete Barrier.
3. Backfill shall be placed behind the abutment after the superstructure has been poured and false work removed. See Article 502.10 of the Standard Specifications.
4. 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.
5. Hatched area indicates Removal of Existing Structures.

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PLOT TIME = 4:31:49 PM	CHECKED PC	REVISED -	
PLOT DATE = 7/30/2014	DATE 05 03 2013	REVISED -	

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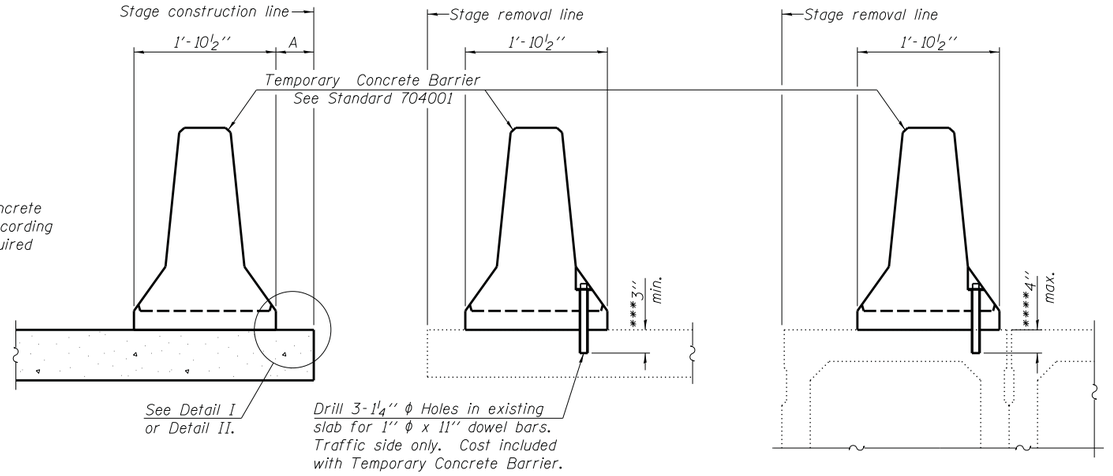
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE CONSTRUCTION DETAILS AND TEMP. SOIL RETENTION SYSTEM
SRUCTURE NO. 048-0091
SHEET NO. S4 OF S25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	50
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

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".



NEW SLAB | EXISTING SLAB | EXISTING DECK BEAM

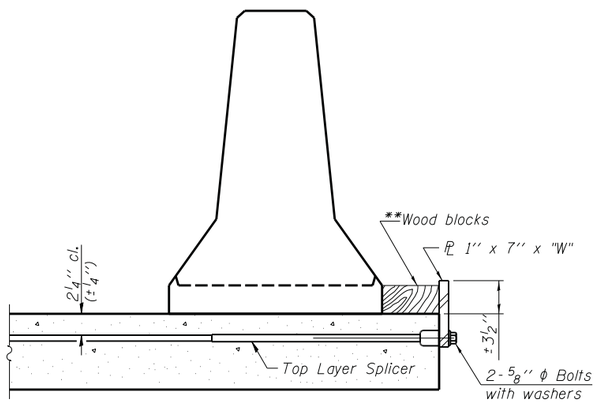
NOTES

1. Detail I - With Bar Splicer or Couplers:
   Connect one (1) 1" x 7" 'x "W" steel ℄ to the top layer of couplers with 2-⅝" ϕ bolts screwed to coupler at approximate ℄ of each barrier panel.
2. Detail II - With Extended Reinforcement Bars:
   Connect one (1) 1" x 7" x "W" steel ℄ to the concrete slab or concrete wearing surface with 2-⅝" ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate ℄ of each barrier panel.
3. Cost of anchorage is included with Temporary Concrete Barrier.
4. The 1" x 7" x "W" 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.

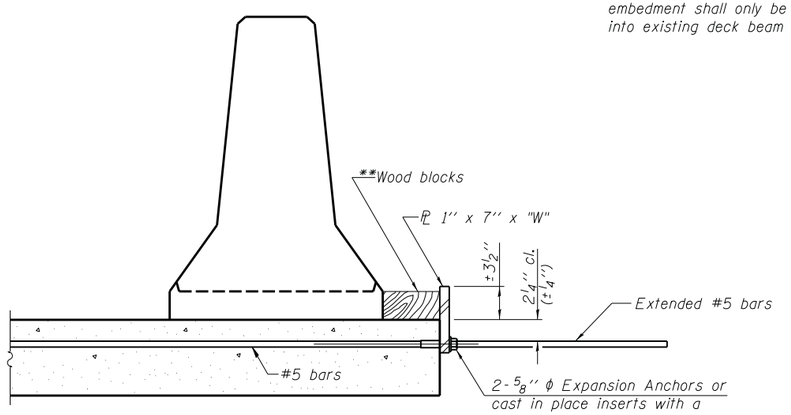
SECTIONS THRU SLAB OR DECK BEAM

*** 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.



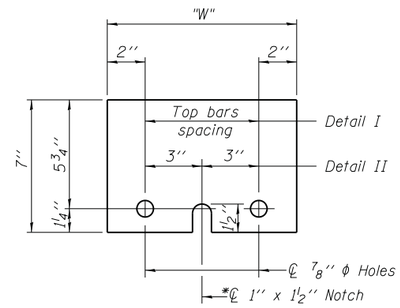
DETAIL I



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.

"W" = Top bars spacing + 4"



STEEL RETAINER ℄ 1" x 7" x "W"

* Required only with Detail II

R-27 7-1-10

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EPSTEIN
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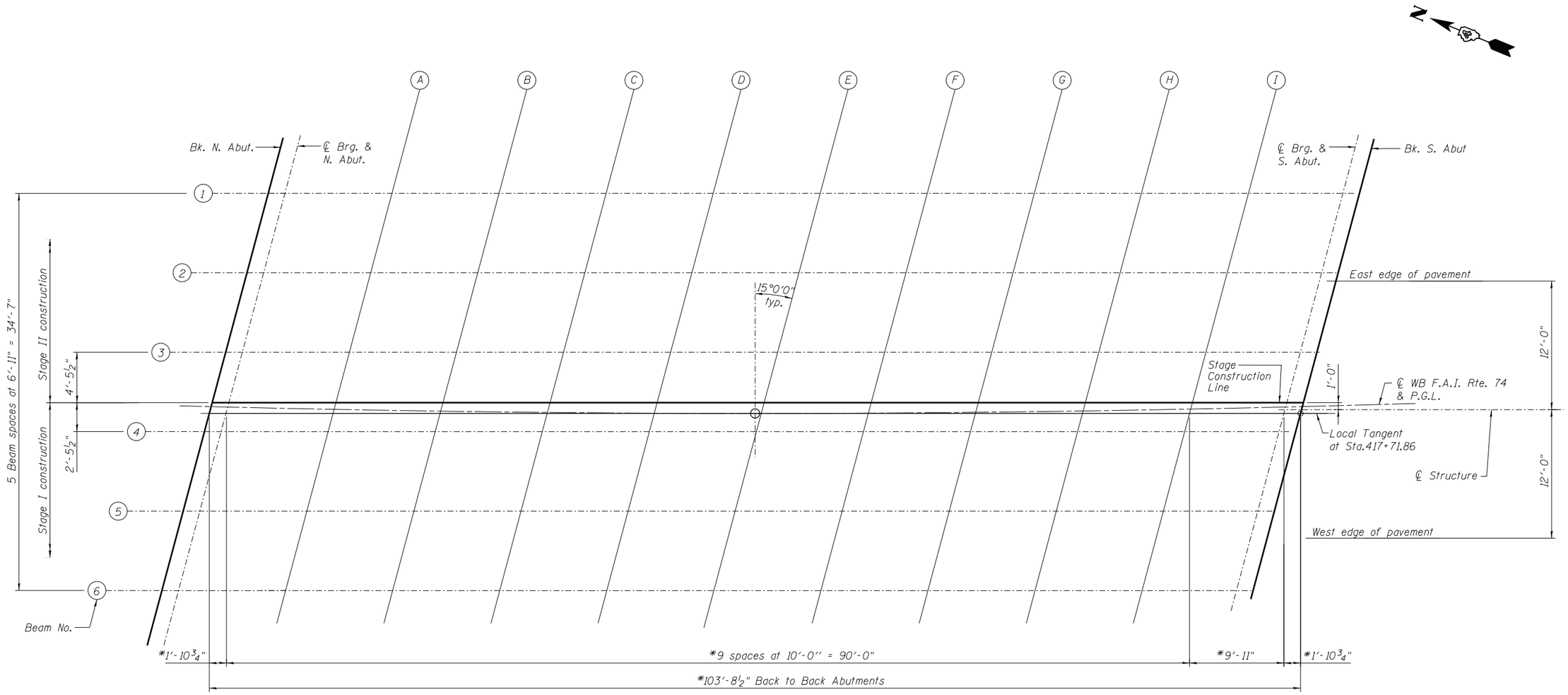
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION
STRUCTURE NO. 048-0091
SHEET NO. S5 OF S25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	51
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			



PLAN

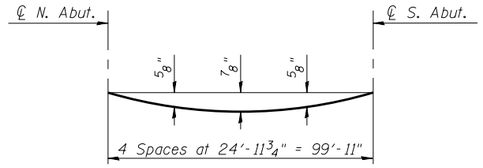
* Measured along Local Tangent

NOTES

1. For Top of Slab elevations at South Approach Slab see sheet S11 of S25.
2. For Top of Slab elevations at North Approach Slab see sheet S10 of S25.

FILE NAME = ...\0480091-68084-006-TOS.dgn	DESIGNED EV	REVISED -	EPSTEIN 600 WEST FULTON STREET CHICAGO, ILLINOIS 60661-1259 TEL 312 454 9100 FAX 312 559 1217 WEB www.epsteinglobal.com	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TOP OF DECK STRUCTURE NO. 048-0091
PLOT TIME = 4:31:52 PM	DRAWN JCP	REVISED -			SHEET NO. S6 OF S25 SHEETS
PLOT DATE = 7/30/2014	CHECKED PC	REVISED -			
	DATE 05 03 2013	REVISED -			

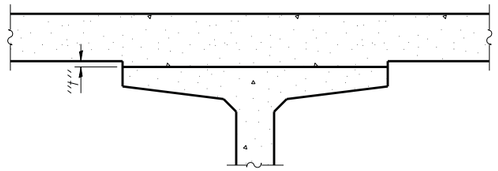
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	52
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			



DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete and barrier, excluding beams).

Note:
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown below and on sheets S8 and S9.



To determine "t": After all precast prestressed beams have been erected, elevations of the top flanges of the beams shall be taken at intervals shown on sheet S6. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflections" shown below and on sheets S8 and S9, minus slab thickness, equals the fillet heights "t" above top flanges of beams.

FILLET HEIGHTS

BEAM 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
BK N. ABUT.	416+73.30	19.26	755.35	755.35
CL N. ABUT.	416+75.20	19.27	755.35	755.35
A	416+85.20	19.30	755.32	755.34
B	416+95.20	19.32	755.30	755.35
C	417+05.20	19.34	755.30	755.35
D	417+15.20	19.35	755.29	755.36
E	417+25.20	19.35	755.30	755.38
F	417+35.20	19.34	755.31	755.38
G	417+45.20	19.32	755.33	755.39
H	417+55.20	19.30	755.36	755.40
I	417+65.20	19.27	755.39	755.42
CL BRG. S. ABUT	417+75.10	19.22	755.44	755.44
BK S. ABUT	417+77.00	19.22	755.44	755.44

BEAM 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
BK N. ABUT.	416+71.45	12.34	755.50	755.50
CL N. ABUT.	416+73.34	12.34	755.50	755.50
A	416+83.34	12.38	755.47	755.49
B	416+93.34	12.40	755.45	755.49
C	417+03.34	12.42	755.44	755.50
D	417+13.34	12.43	755.44	755.50
E	417+23.34	12.43	755.44	755.52
F	417+33.34	12.42	755.45	755.52
G	417+43.34	12.41	755.47	755.53
H	417+53.34	12.39	755.50	755.54
I	417+63.34	12.36	755.53	755.55
CL BRG. S. ABUT	417+73.25	12.32	755.57	755.57
BK S. ABUT	417+75.15	12.31	755.58	755.58

EAST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
BK N. ABUT.	416+71.34	11.96	755.51	755.51
CL N. ABUT.	416+73.25	11.97	755.50	755.50
A	416+83.25	12.00	755.48	755.50
B	416+93.25	12.03	755.46	755.50
C	417+03.25	12.04	755.45	755.51
D	417+13.25	12.05	755.45	755.51
E	417+23.25	12.06	755.45	755.53
F	417+33.25	12.05	755.46	755.53
G	417+43.25	12.03	755.48	755.54
H	417+53.25	12.01	755.51	755.55
I	417+63.25	11.98	755.54	755.56
CL BRG. S. ABUT	417+73.15	11.94	755.58	755.58
BK S. ABUT	417+75.04	11.93	755.59	755.59

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF DECK ELEVATIONS I
STRUCTURE NO. 048-0091
SHEET NO. S7 OF S25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	53
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

BEAM 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
BK N. ABUT.	416+69.59	5.41	755.62	755.62
CL N. ABUT.	416+71.49	5.42	755.61	755.61
A	416+81.49	5.46	755.58	755.61
B	416+91.49	5.48	755.56	755.61
C	417+01.49	5.50	755.55	755.61
D	417+11.49	5.51	755.55	755.62
E	417+21.49	5.52	755.55	755.63
F	417+31.49	5.51	755.56	755.63
G	417+41.49	5.50	755.58	755.64
H	417+51.49	5.48	755.60	755.65
I	417+61.49	5.45	755.63	755.66
CL BRG. S. ABUT	417+71.40	5.41	755.67	755.67
BK S. ABUT	417+73.30	5.40	755.68	755.68

STAGE CONSTRUCTION LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
BK N. ABUT.	416+68.39	0.95	755.69	755.69
CL N. ABUT.	416+70.30	0.95	755.68	755.68
A	416+80.30	0.99	755.66	755.68
B	416+90.30	1.02	755.64	755.68
C	417+00.30	1.04	755.62	755.68
D	417+10.30	1.05	755.62	755.69
E	417+20.30	1.06	755.62	755.70
F	417+30.30	1.05	755.63	755.70
G	417+40.30	1.04	755.65	755.70
H	417+50.30	1.02	755.67	755.71
I	417+60.30	0.99	755.70	755.72
CL BRG. S. ABUT	417+70.20	0.95	755.74	755.74
BK S. ABUT	417+72.10	0.95	755.75	755.75

℄ ROADWAY, PROFILE GRADE LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
BK N. ABUT.	416+68.14	0.00	755.71	755.71
CL N. ABUT.	416+70.04	0.00	755.70	755.70
A	416+80.04	0.00	755.67	755.69
B	416+90.04	0.00	755.65	755.70
C	417+00.04	0.00	755.64	755.70
D	417+10.04	0.00	755.63	755.70
E	417+20.04	0.00	755.64	755.71
F	417+30.04	0.00	755.64	755.71
G	417+40.04	0.00	755.66	755.72
H	417+50.04	0.00	755.68	755.73
I	417+60.04	0.00	755.71	755.74
CL BRG. S. ABUT	417+69.95	0.00	755.75	755.75
BK S. ABUT	417+71.85	0.00	755.76	755.76

BEAM 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
BK N. ABUT.	416+67.74	-1.51	755.68	755.68
CL N. ABUT.	416+69.64	-1.50	755.68	755.68
A	416+79.64	-1.47	755.65	755.67
B	416+89.64	-1.44	755.63	755.67
C	416+99.64	-1.42	755.62	755.68
D	417+09.64	-1.41	755.61	755.68
E	417+19.64	-1.40	755.61	755.69
F	417+29.64	-1.41	755.62	755.69
G	417+39.64	-1.42	755.64	755.70
H	417+49.64	-1.44	755.66	755.70
I	417+59.64	-1.47	755.69	755.71
CL BRG. S. ABUT	417+69.55	-1.50	755.73	755.73
BK S. ABUT	417+71.44	-1.51	755.73	755.73

WEST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
BK N. ABUT.	416+65.88	-8.44	755.58	755.58
CL N. ABUT.	416+67.78	-8.43	755.58	755.58
A	416+77.78	-8.39	755.55	755.57
B	416+87.78	-8.36	755.53	755.57
C	416+97.78	-8.34	755.51	755.57
D	417+07.78	-8.32	755.50	755.57
E	417+17.78	-8.32	755.50	755.58
F	417+27.78	-8.32	755.51	755.58
G	417+37.78	-8.33	755.53	755.58
H	417+47.78	-8.35	755.55	755.59
I	417+57.78	-8.38	755.58	755.60
CL BRG. S. ABUT	417+67.70	-8.41	755.61	755.61
BK S. ABUT	417+69.59	-8.42	755.62	755.62

BEAM 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
BK N. ABUT.	416+64.91	-12.07	755.53	755.53
CL N. ABUT.	416+66.81	-12.06	755.52	755.52
A	416+76.81	-12.02	755.49	755.51
B	416+86.81	-11.99	755.47	755.51
C	416+96.81	-11.96	755.46	755.51
D	417+06.81	-11.95	755.45	755.52
E	417+16.81	-11.94	755.45	755.52
F	417+26.81	-11.95	755.45	755.52
G	417+36.81	-11.96	755.47	755.53
H	417+46.81	-11.97	755.49	755.53
I	417+56.81	-12.00	755.52	755.54
CL BRG. S. ABUT	417+66.73	-12.03	755.55	755.55
BK S. ABUT	417+68.62	-12.04	755.62	755.62

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DEPARTMENT OF TRANSPORTATION

TOP OF DECK ELEVATIONS II
STRUCTURE NO. 048-0091
SHEET NO. 58 OF S25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	54
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

BEAM 6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
BK N. ABUT.	416+64.02	-15.36	755.46	755.46
CL N. ABUT.	416+65.92	-15.35	755.46	755.46
A	416+75.92	-15.31	755.43	755.45
B	416+85.92	-15.28	755.40	755.45
C	416+95.92	-15.26	755.39	755.45
D	417+05.92	-15.24	755.38	755.45
E	417+15.92	-15.24	755.38	755.46
F	417+25.92	-15.24	755.38	755.45
G	417+35.92	-15.25	755.40	755.46
H	417+45.92	-15.26	755.42	755.46
I	417+55.92	-15.29	755.44	755.47
CL BRG. S. ABUT	417+65.85	-15.32	755.48	755.48
BK S. ABUT	417+67.74	-15.33	755.49	755.49

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF DECK ELEVATIONS III
STRUCTURE NO. 048-0091

SHEET NO. S9 OF S25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	55
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

EAST EDGE OF SHOULDER

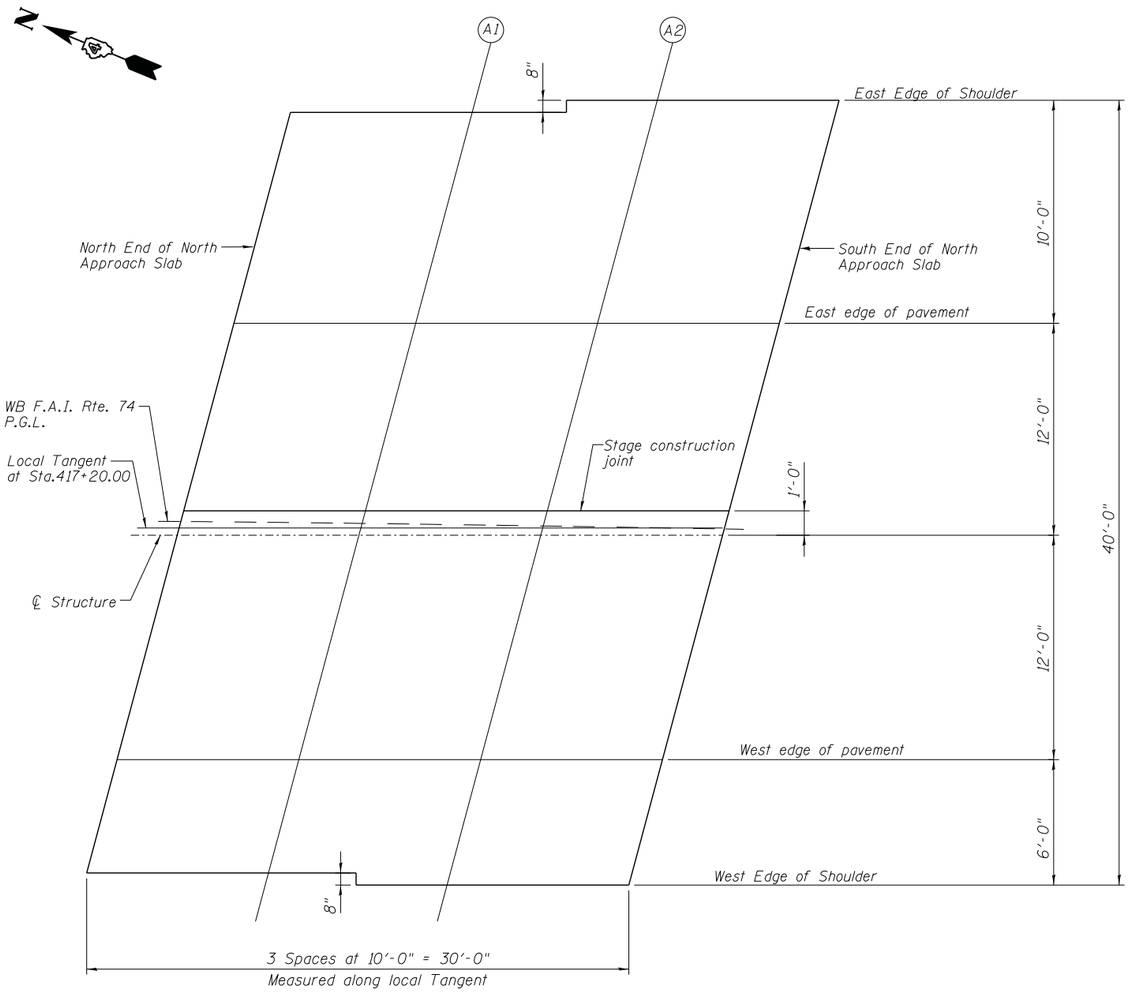
Location	Station	Offset	Theoretical Grade Elevations
N. End of N. Appr. Slab	416+45.06	21.16	755.42
A1	416+55.06	21.21	755.37
A2	416+65.06	21.93	755.32
S. End of N. Appr. Slab	416+75.06	21.97	755.29

EAST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
N. End of N. Appr. Slab	416+42.38	11.81	755.63
A1	416+52.38	11.87	755.58
A2	416+62.38	11.92	755.54
S. End of N. Appr. Slab	416+72.38	11.96	755.51

STAGE CONSTRUCTION LINE

Location	Station	Offset	Theoretical Grade Elevations
N. End of N. Appr. Slab	416+39.43	0.85	755.82
A1	416+49.43	0.90	755.77
A2	416+59.43	0.94	755.72
S. End of N. Appr. Slab	416+69.43	0.95	755.69



PLAN

℄ ROADWAY, PROFILE GRADE LINE

Location	Station	Offset	Theoretical Grade Elevations
N. End of N. Appr. Slab	416+39.18	0.00	755.83
A1	416+49.18	0.00	755.78
A2	416+59.18	0.00	755.73
S. End of N. Appr. Slab	416+69.18	0.00	755.70

WEST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
N. End of N. Appr. Slab	416+35.94	-12.23	755.66
A1	416+45.94	-12.17	755.61
A2	416+55.94	-12.12	755.57
S. End of N. Appr. Slab	416+65.94	-12.07	755.53

WEST EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
N. End of N. Appr. Slab	416+34.46	-17.58	755.56
A1	416+44.46	-17.51	755.51
A2	416+54.32	-18.12	755.45
S. End of N. Appr. Slab	416+64.32	-18.07	755.41

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DEPARTMENT OF TRANSPORTATION

TOP OF NORTH APPROACH SLAB ELEVATIONS
STRUCTURE NO. 048-0091
SHEET NO. S10 OF S25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	56
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

EAST EDGE OF SHOULDER

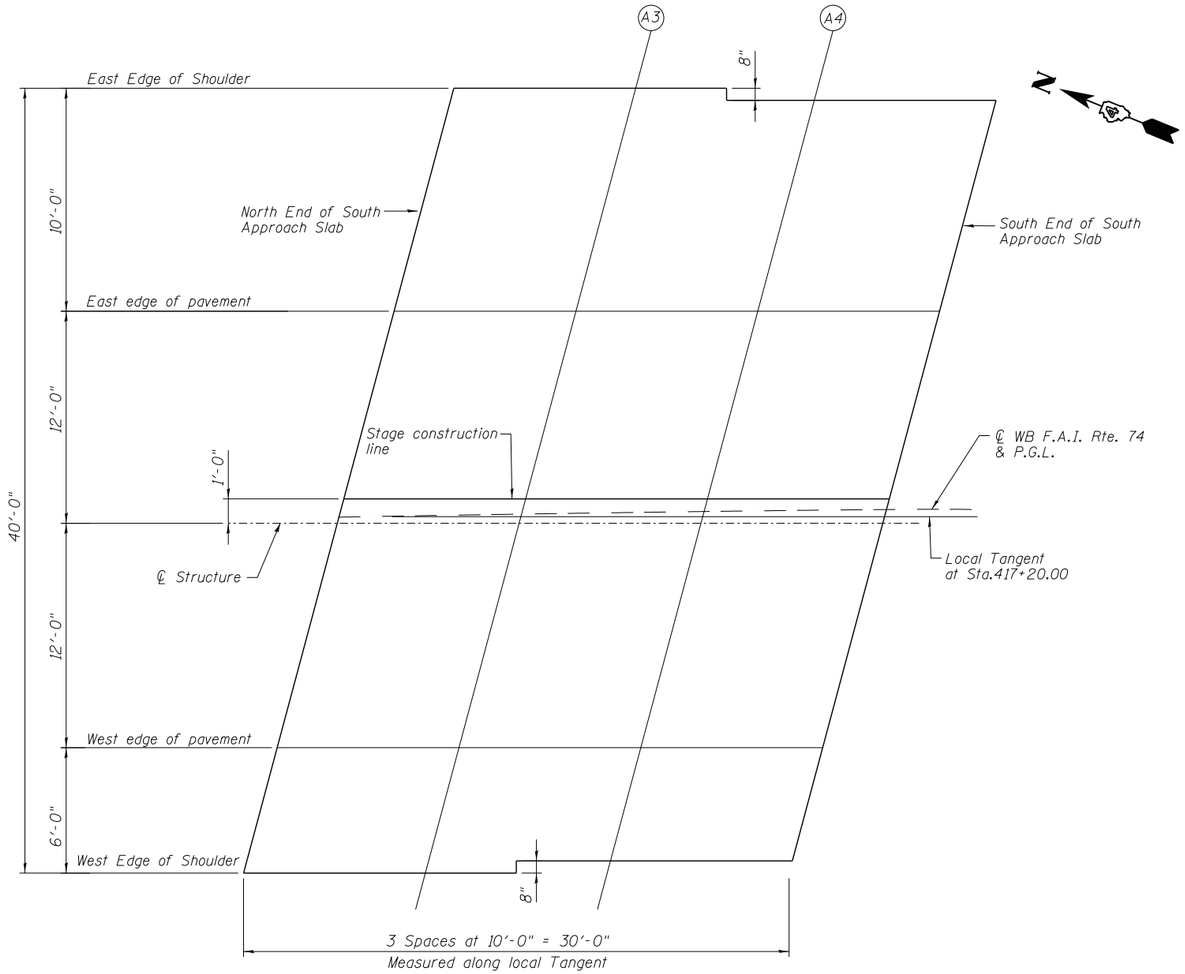
Location	Station	Offset	Theoretical Grade Elevations
N. End of S. Appr. Slab	417+76.69	21.92	755.39
A3	417+86.69	21.87	755.44
A4	417+96.69	21.15	755.50
S. End of S. Appr. Slab	418+06.69	21.08	755.56

EAST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
N. End of S. Appr. Slab	417+74.01	11.93	755.58
A3	417+84.01	11.89	755.63
A4	417+94.01	11.83	755.68
S. End of S. Appr. Slab	418+04.01	11.76	755.74

STAGE CONSTRUCTION JOINT

Location	Station	Offset	Theoretical Grade Elevations
N. End of S. Appr. Slab	417+71.07	0.95	755.74
A3	417+81.07	0.90	755.79
A4	417+91.07	0.85	755.84
S. End of S. Appr. Slab	418+01.07	0.78	755.89



PLAN

℄ ROADWAY, PROFILE GRADE LINE

Location	Station	Offset	Theoretical Grade Elevations
N. End of S. Appr. Slab	417+70.81	0.00	755.75
A3	417+80.81	0.00	755.80
A4	417+90.81	0.00	755.85
S. End of S. Appr. Slab	418+00.81	0.00	755.90

WEST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
N. End of S. Appr. Slab	417+67.59	-12.04	755.56
A3	417+77.59	-12.08	755.60
A4	417+87.59	-12.13	755.65
S. End of S. Appr. Slab	417+97.59	-12.19	755.70

WEST EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
N. End of S. Appr. Slab	417+65.98	-18.03	755.42
A3	417+75.98	-18.08	755.47
A4	417+85.98	-17.46	755.52
S. End of S. Appr. Slab	417+95.98	-17.52	755.57

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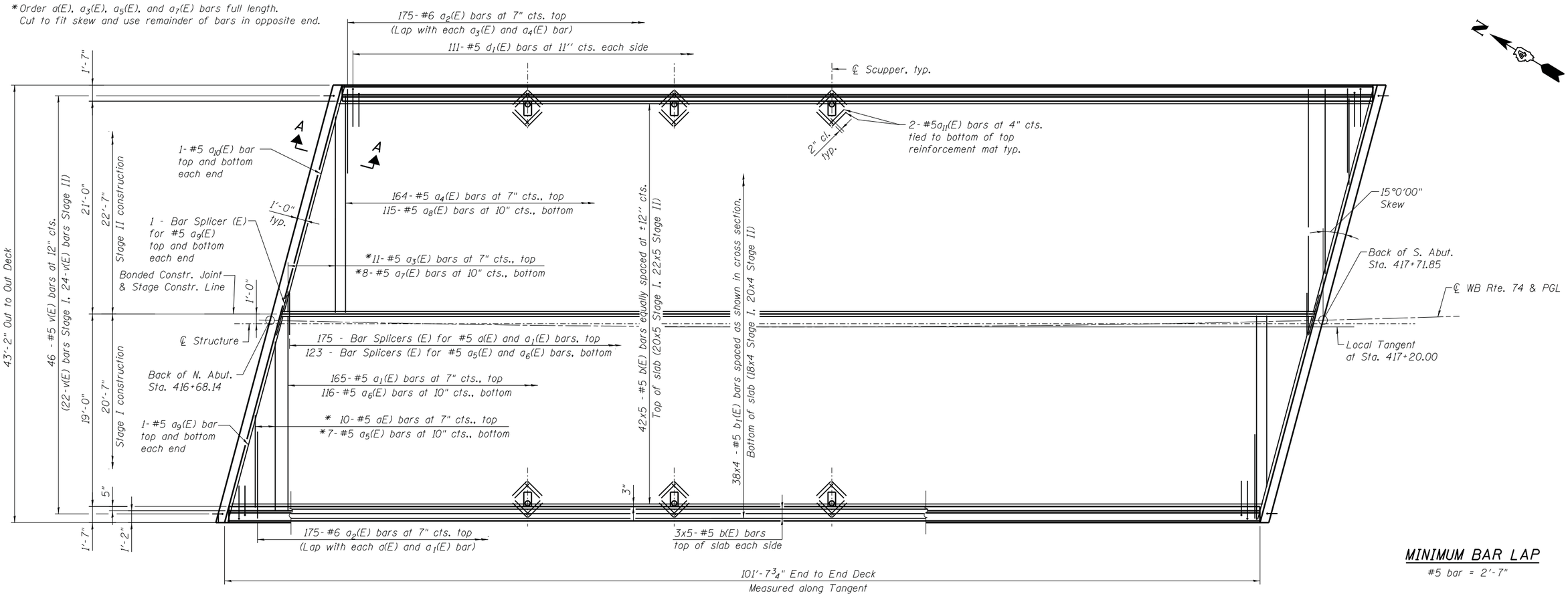
	DATE 05 03 2013	REVISED -	SHEET NO. S11 OF S25 SHEETS

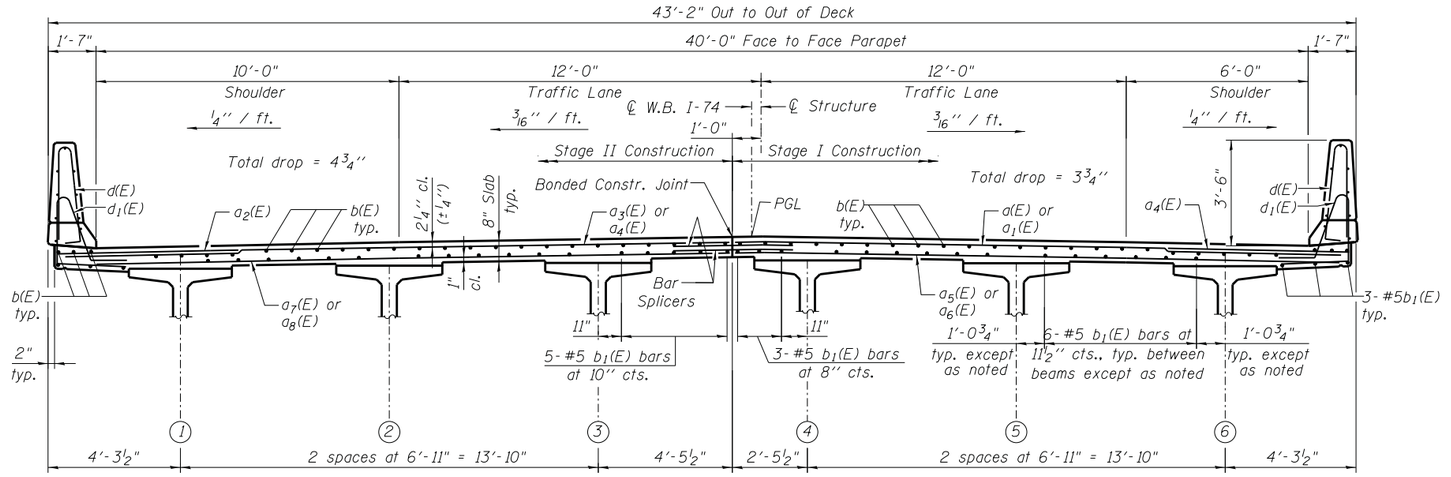
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	57
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			



MINIMUM BAR LAP

#5 bar = 2'-7"

PLAN



CROSS SECTION

(Looking South)

NOTES

1. For Parapet reinforcement, superstructure details and Bill of Material, see sheet S13 of S25.
2. For Section A-A and diaphragm details see sheet S14 of S25.
3. For Bar Splicer (E) details, see sheet S24 of S25.
4. Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
5. For drainage scuppers location see sheet S1.
6. Cut longitudinal reinforcement to clear drainage scuppers.

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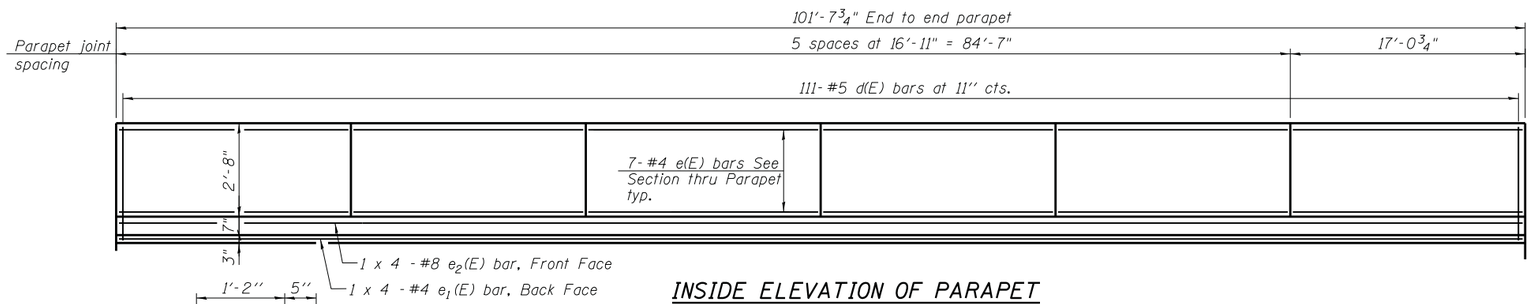
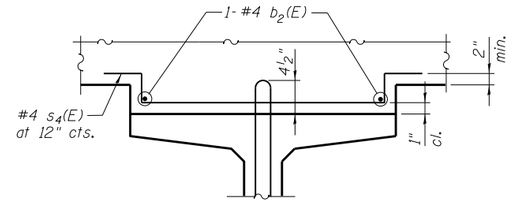
SUPERSTRUCTURE PLAN AND CROSS SECTION
STRUCTURE NO. 048-0091
SHEET NO. S12 OF S25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	58
		CONTRACT NO. 68B85		
		ILLINOIS FED. AID PROJECT		

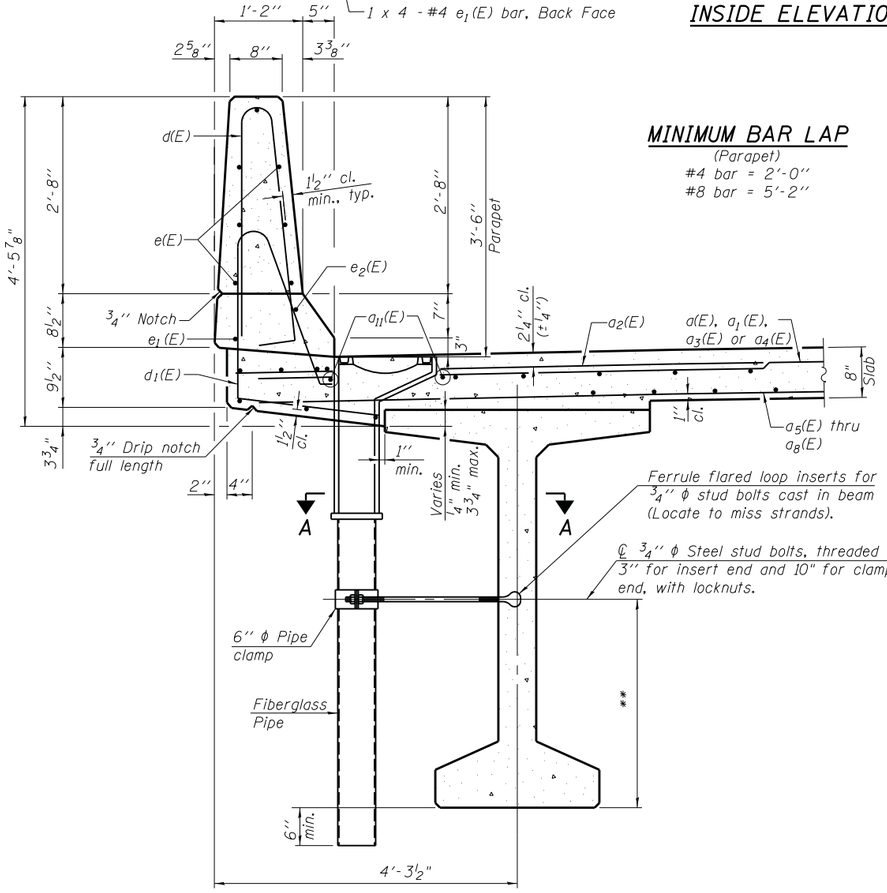


INSIDE ELEVATION OF PARAPET



FILLET REINFORCEMENT DETAIL

Bars $b_2(E)$ and $s_4(E)$ should be placed in locations where the fillet exceeds 2 1/2"

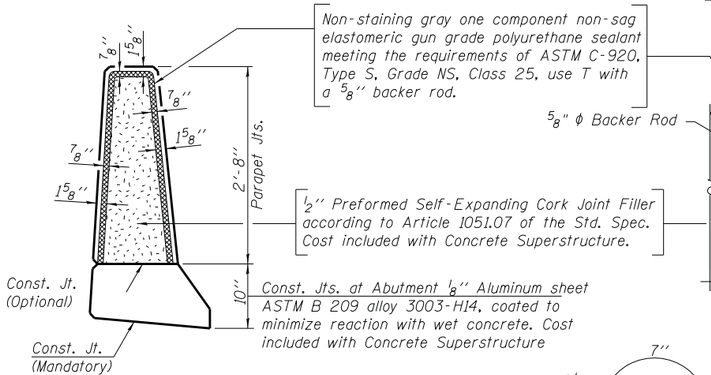


SECTION THRU PARAPET

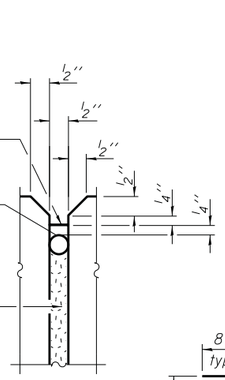
**For insert locations see sheet S18 of S25.

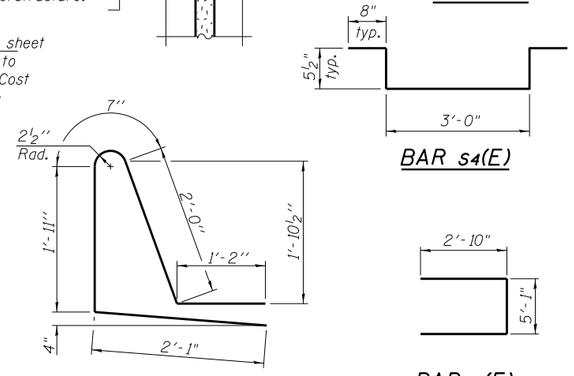
MINIMUM BAR LAP

(Parapet)
#4 bar = 2'-0"
#8 bar = 5'-2"

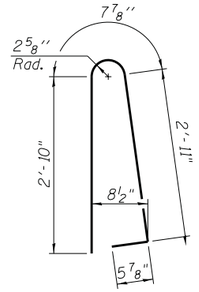


PARAPET JOINT DETAILS





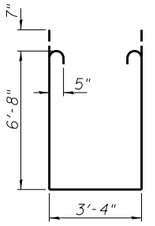
BAR $d_1(E)$



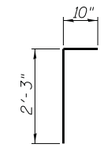
BAR d(E)

BAR $s_4(E)$

BAR s(E)



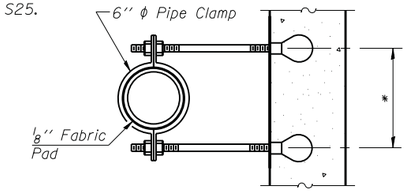
BAR $s_1(E)$



BAR v(E)

Notes:

1. Fiberglass pipe shall conform to ASTM D2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum.
2. The clamping device and inserts shall be galvanized according to AASHTO M 232.
3. Cost of fiberglass pipe and clamping device and inserts included with Drainage Scupper, DS-11.



SECTION A-A

*Dimension as required by Pipe Clamp

SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d(E)	10	#5	20' - 10"	
$a_1(E)$	165	#5	20' - 2"	
$a_2(E)$	350	#6	6' - 6"	
$a_3(E)$	11	#5	22' - 10"	
$a_4(E)$	164	#5	22' - 2"	
$a_5(E)$	7	#5	20' - 9"	
$a_6(E)$	116	#5	20' - 1"	
$a_7(E)$	8	#5	22' - 10"	
$a_8(E)$	115	#5	22' - 3"	
$a_9(E)$	4	#5	21' - 0"	
$a_{10}(E)$	4	#5	23' - 1"	
$a_{11}(E)$	48	#5	1' - 6"	
b(E)	240	#5	22' - 9"	
$b_1(E)$	152	#5	27' - 9"	
$b_2(E)$	24	#4	30' - 0"	
d(E)	222	#5	6' - 11	
$d_1(E)$	222	#5	7' - 9	
e(E)	84	#4	16' - 8"	
$e_1(E)$	8	#4	27' - 5"	
$e_2(E)$	8	#8	29' - 10"	
m(E)	14	#6	21' - 0"	
$m_1(E)$	14	#6	23' - 1"	
$m_2(E)$	40	#6	6' - 4"	
$m_3(E)$	20	#6	3' - 10"	
$m_4(E)$	10	#6	1' - 11"	
$m_5(E)$	10	#6	4' - 0"	
$m_6(E)$	8	#6	4' - 8"	
$m_7(E)$	4	#6	3' - 0"	
$m_8(E)$	2	#6	1' - 1"	
$m_9(E)$	2	#6	3' - 2"	
$m_{10}(E)$	36	#5	4' - 0"	
s(E)	76	#5	10' - 9"	
$s_1(E)$	54	#5	17' - 10"	
$s_4(E)$	372	#4	5' - 3"	
v(E)	88	#5	3' - 1"	
Concrete Superstructure		Cu. Yd.	211.4	
Bridge Deck Grooving		Sq. Yd.	452	
Protective Coat		Sq. Yd.	550	
Reinforcement Bars, Epoxy Coated		Pound	37,750	

Bars indicated thus 1 x 4 - #8 etc. indicates 1 line of bars with 4 lengths per line.

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PLOT DATE = 7/30/2014	DATE 05 03 2013	REVISED -

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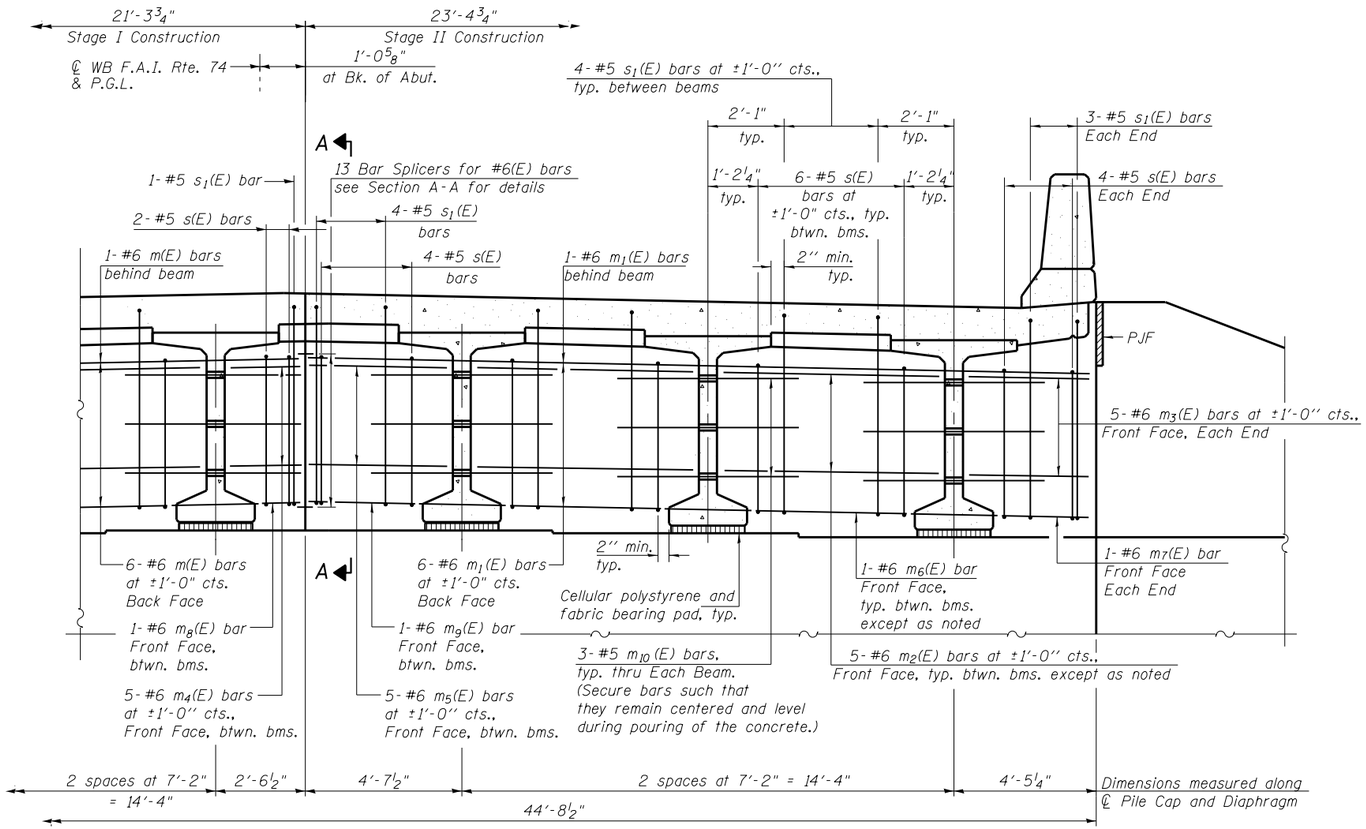
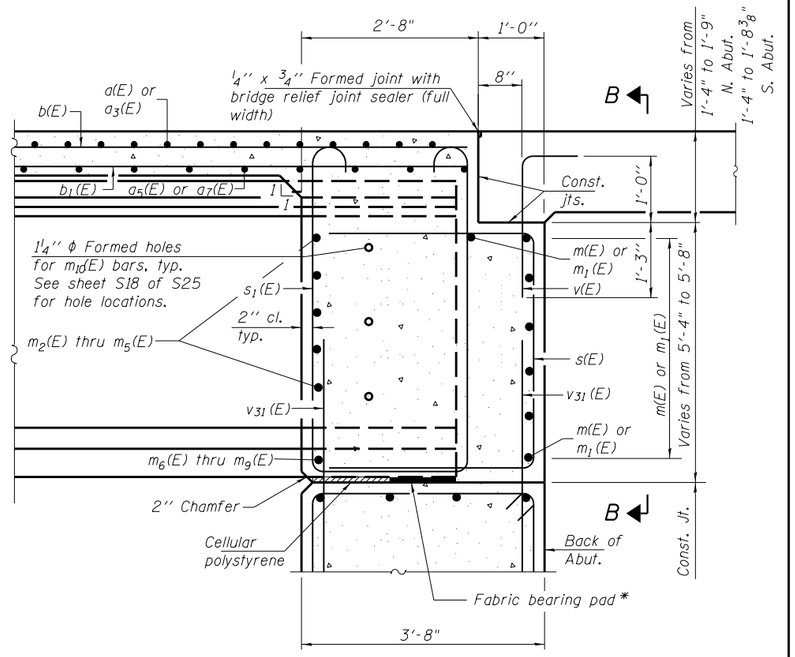
SUPERSTRUCTURE DETAILS
STRUCTURE NO. 048-0091
SHEET NO. S13 OF S25 SHEETS

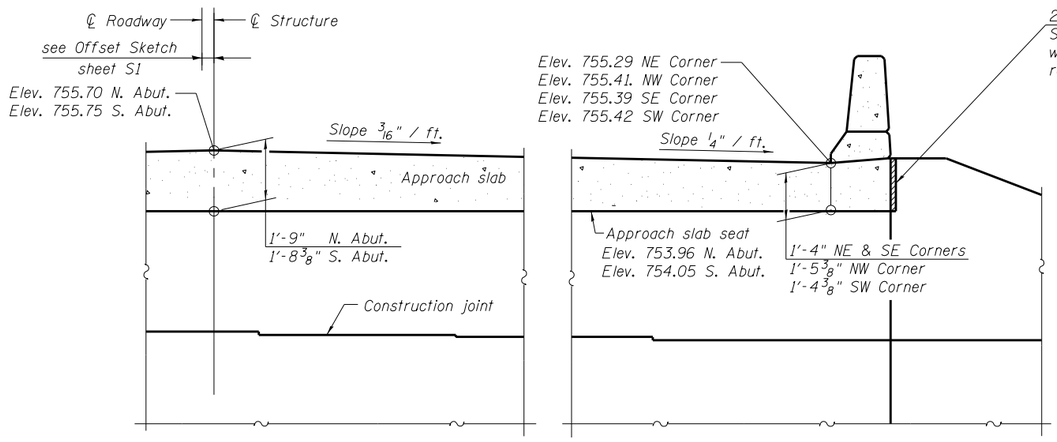
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	59
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			



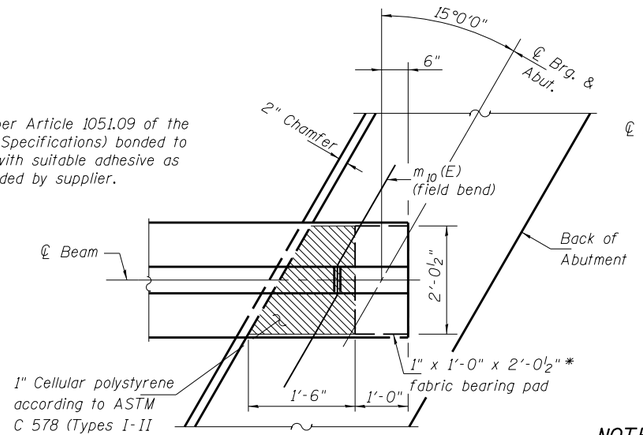
DIAPHRAGM ELEVATION AT ABUTMENT



SECTION A-A



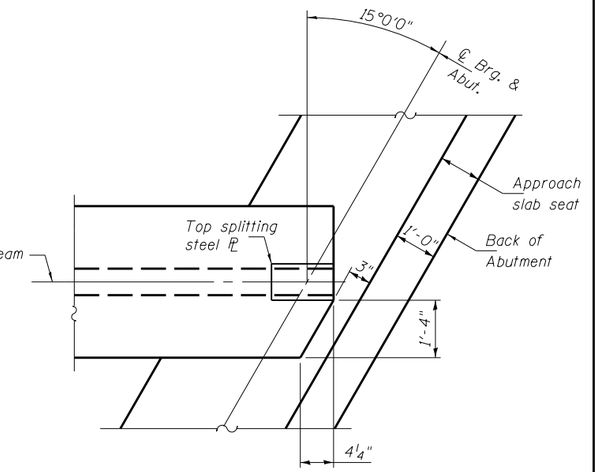
SECTION B-B



PARTIAL PLAN AT ABUTMENT

(Showing bottom flange of beam)

* Cost of fabric bearing pad is included with Concrete Superstructure



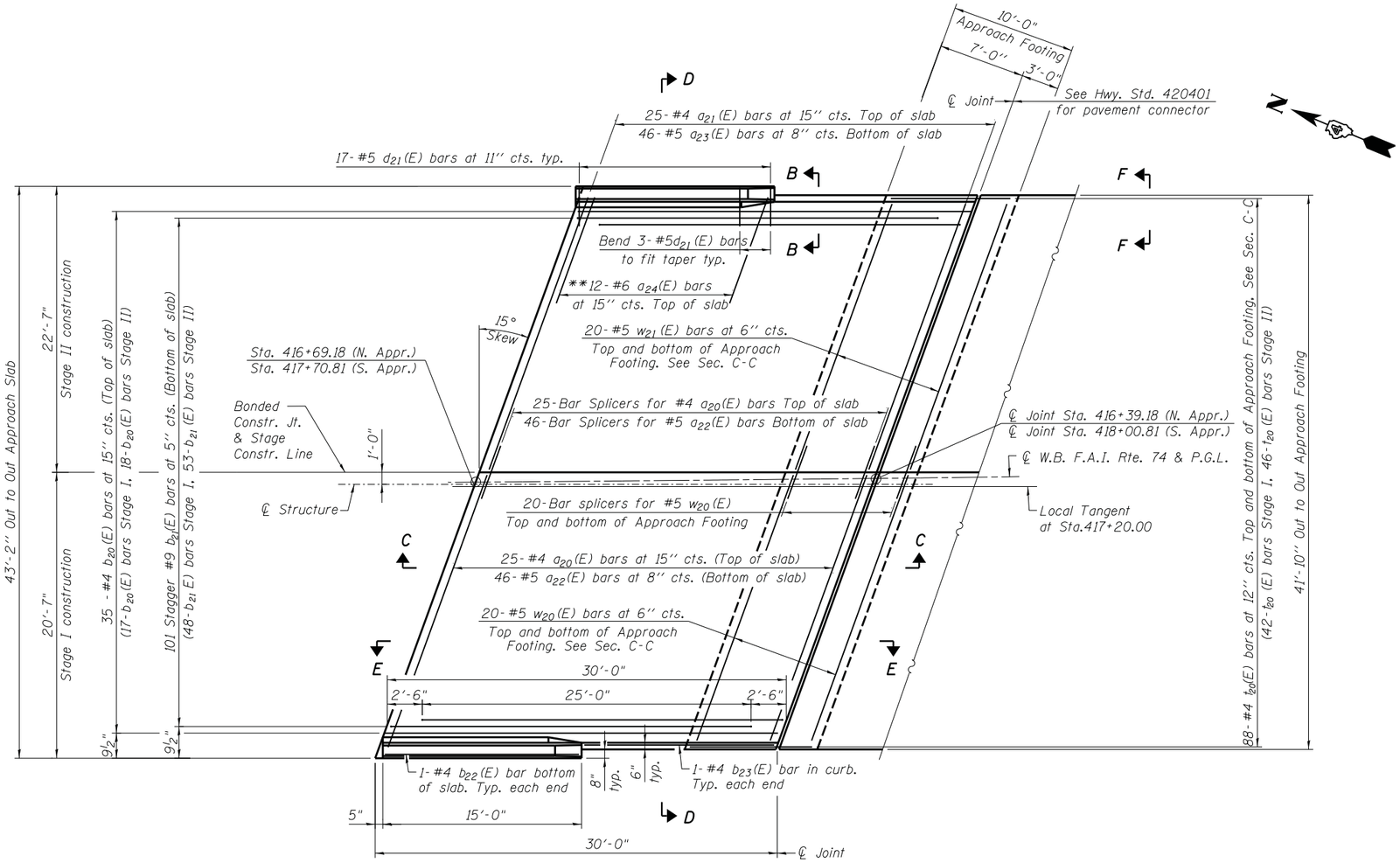
TOP FLANGE PLAN

(Showing top flange of beam)

NOTES

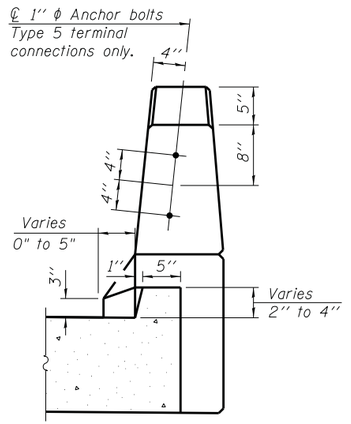
1. Reinforcement bars in diaphragm are billed with superstructure on sheet S13 of S25.
2. Concrete in diaphragm is included with Concrete Superstructure on sheet S13 of S25.
3. For details of bars s(E), s_1(E) and v(E) see sheet S13 of S25.
4. The approach slab seat shall have a constant slope determined from the control points shown.
5. Cost of cellular polystyrene is included with Concrete Superstructure.

FILE NAME = ...\04B0091-68084-014-Diaphragm.dgn	DESIGNED EV	REVISED -	EPSTEIN 600 WEST FULTON STREET CHICAGO, ILLINOIS 60661-1259 TEL 312 454 9100 FAX 312 559 1217 WEB www.epsteinglobal.com	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DIAPHRAGM DETAILS STRUCTURE NO. 048-0091	F.A.I. RTE. 74	SECTION 48-[(25B)BR, BR-1]
PLOT TIME = 9:32:31 AM	DRAWN JCP	REVISED -					COUNTY KNOX
PLOT DATE = 10/1/2014	CHECKED PC	REVISED -					TOTAL SHEETS 131
	DATE 05 03 2013	REVISED -			SHEET NO. S14 OF S25 SHEETS		SHEET NO. 60
							CONTRACT NO. 68B85
							ILLINOIS FED. AID PROJECT

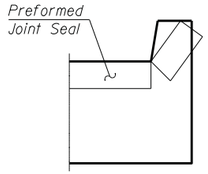


PLAN

South Approach slab is shown,
North Approach slab is similar



VIEW B-B



VIEW F-F

Angle Preformed Joint Seal at 45° at curbs when req'd for drainage.

* Tilt #9 b_{21}(E) bars as required to maintain clearance.
** Space between a_{20}(E) and a_{21}(E) bars, typ. ea. parapet.

NOTES

1. For Sections C-C & D-D, View E-E, bar bending diagrams and Bill of Materials see sheet S16 of S25.
2. For Bar Splicer (E) details see sheet S24 of S25.
3. a_{20}(E) thru a_{23}(E) bar spacings measured along ℄ Rdwy.

BA-L

12-12-12

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BRIDGE APPROACH SLAB
STRUCTURE NO. 048-0091

SHEET NO. S15 OF S25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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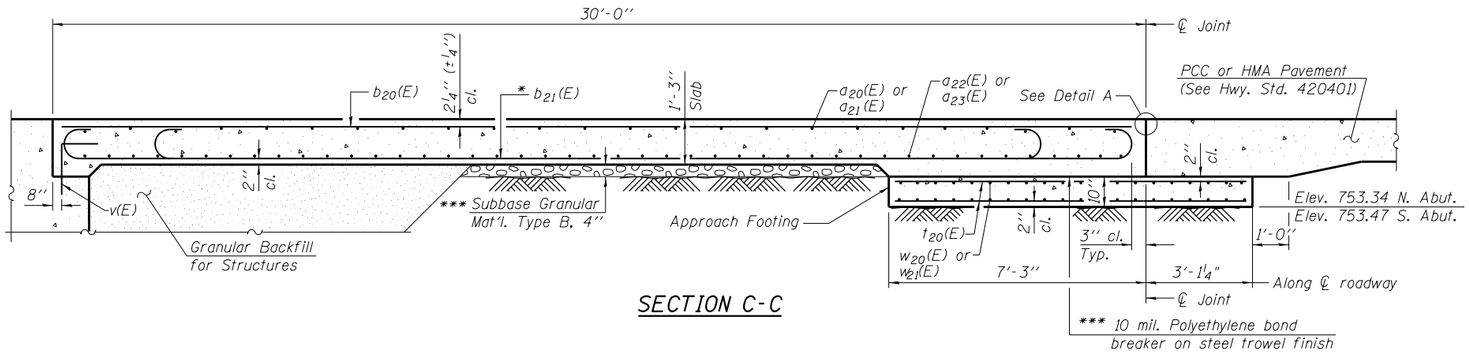
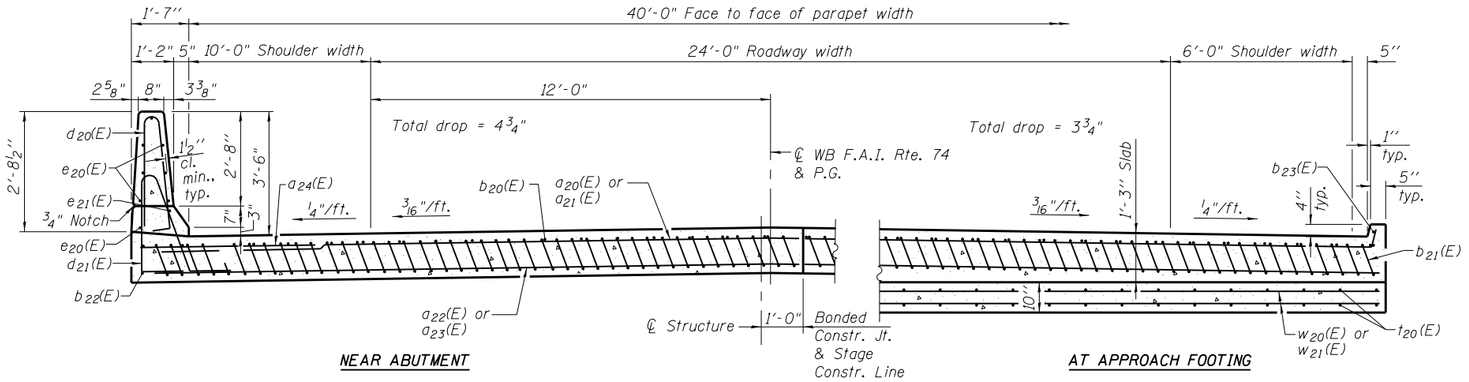
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

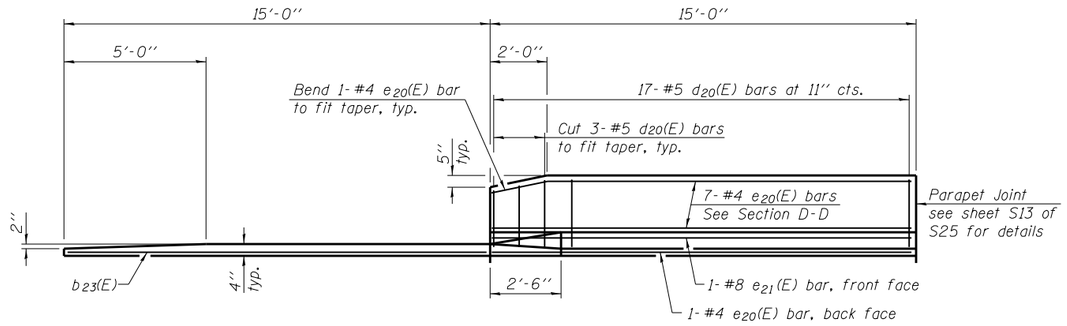


SECTION C-C

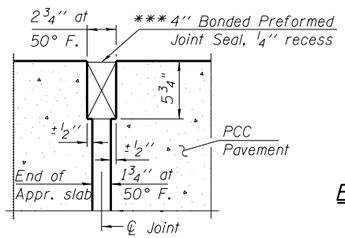


SECTION D-D

(See Plan for dimensions not shown)

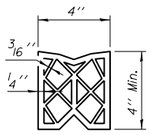


VIEW E-E

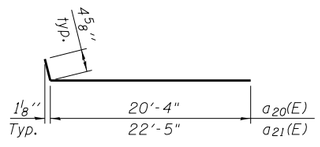


RIGID PAVEMENT

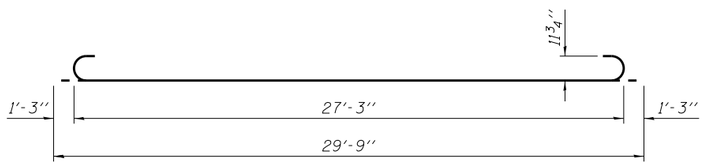
DETAIL A



BONDED PREFORMED JOINT SEAL



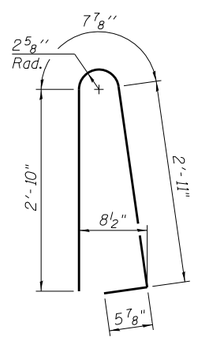
BARS $a_{20}(E)$ and $a_{21}(E)$



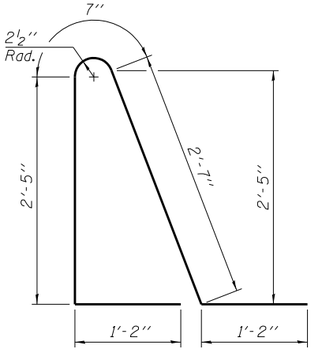
BAR $b_{21}(E)$

NOTES

1. Approach slab and parapet concrete shall be paid for as Concrete Superstructure.
2. Approach footing concrete shall be paid for as Concrete Structures.
3. Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
4. For v(E) bar details, see sheet S13 of S25.
5. The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
6. For bar splicer details, see sheet S24 of S25.
7. Cost of excavation for approach footing included with Concrete Structures.
8. For Granular Backfill for Structures and drainage treatment details, see sheet S2 of S25.
9. For additional parapet details, see sheet S13 of S25.



BAR $d_{20}(E)$



BAR $d_{21}(E)$

* Tilt #9 $b_{21}(E)$ bars as required to maintain clearance.

*** Cost included with Concrete Superstructure.

TWO APPROACH SLABS BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$a_{20}(E)$	50	#4	20' - 9"	
$a_{21}(E)$	50	#4	22' - 10"	
$a_{22}(E)$	92	#5	20' - 4"	
$a_{23}(E)$	92	#5	22' - 5"	
$a_{24}(E)$	48	#6	6' - 6"	
$b_{20}(E)$	70	#4	29' - 8"	
$b_{21}(E)$	202	#9	29' - 9"	
$b_{22}(E)$	4	#4	14' - 8"	
$b_{23}(E)$	4	#4	14' - 9"	
$d_{20}(E)$	68	#5	6' - 11"	
$d_{21}(E)$	68	#5	7' - 11"	
$e_{20}(E)$	32	#4	14' - 8"	
$e_{21}(E)$	4	#8	14' - 8"	
$t_{20}(E)$	176	#4	9' - 8"	
$w_{20}(E)$	80	#5	20' - 4"	
$w_{21}(E)$	80	#5	22' - 5"	
Concrete Superstructure		Cu. Yd.	131.1	
Concrete Structures		Cu. Yd.	26.7	
Bridge Deck Grooving		Sq. Yd.	269	
Protective Coat		Sq. Yd.	304	
Reinforcement Bars, Epoxy Coated		Pound	34,160	

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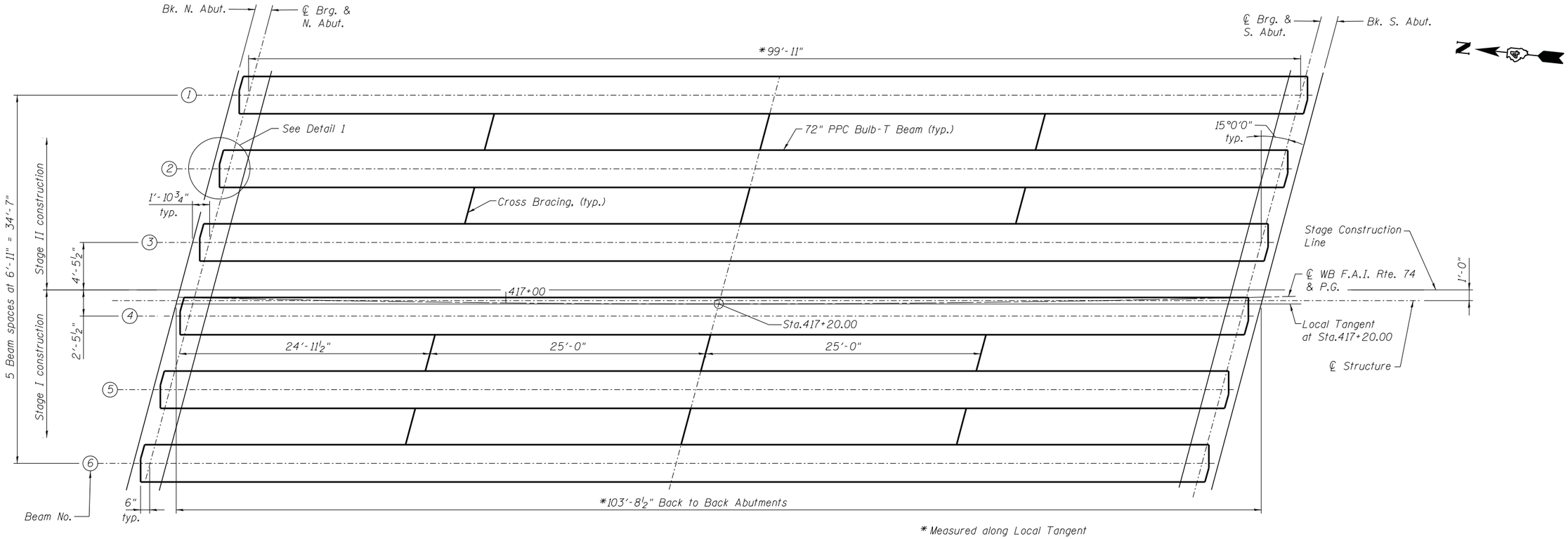
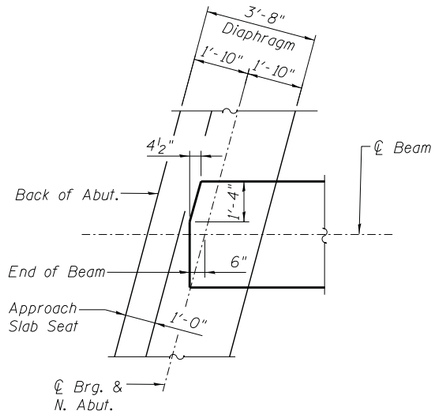
BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 048-0091
SHEET NO. S16 OF S25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	62
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			



PLAN



DETAIL 1

Clip Top Flange only

INTERIOR BEAM MOMENT TABLE		
		0.5 Sp. 1
I	(in^4)	545894
I'	(in^4)	1042047
S_b	(in^3)	14915
S_b'	(in^3)	19851
S_t	(in^3)	15421
S_t'	(in^3)	53421
$DC1$	($k/'$)	1.526
M_{DC1}	('k)	1905.2
$DC2$	($k/'$)	0.173
M_{DC2}	('k)	216.4
DW	($k/'$)	0.333
M_{DW}	('k)	416.2
M_{L+IM}	('k)	1.782

INTERIOR BEAM REACTION TABLE		
		Abut.
R_{DC1}	(k)	76.3**
R_{DC2}	(k)	8.7
R_{DW}	(k)	16.7
R_{L+IM}	(k)	87.6
R_{Total}	(k)	189.3

** End Diaphragm Load is excluded

I: Non-composite moment of inertia of beam section ($in.^4$).
I': Composite moment of inertia of beam section ($in.^4$).
S_b: Non-composite section modulus for the bottom fiber of the prestressed beam ($in.^3$).
S_b': Composite section modulus for the bottom fiber of the prestressed beam ($in.^3$).
S_t: Non-composite section modulus for the top fiber of the prestressed beam ($in.^3$).
S_t': Composite section modulus for the top fiber of the prestressed beam ($in.^3$).
$DC1$: Un-factored non-composite dead load (kips/ft.).
M_{DC1}: Un-factored moment due to non-composite dead load (kip-ft.).
$DC2$: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).
M_{DC2}: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).
DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).
M_{DW}: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft).
M_{L+IM}: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).

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PLOT DATE = 7/30/2014	CHECKED PC	REVISED -
	DATE 05 03 2013	REVISED -

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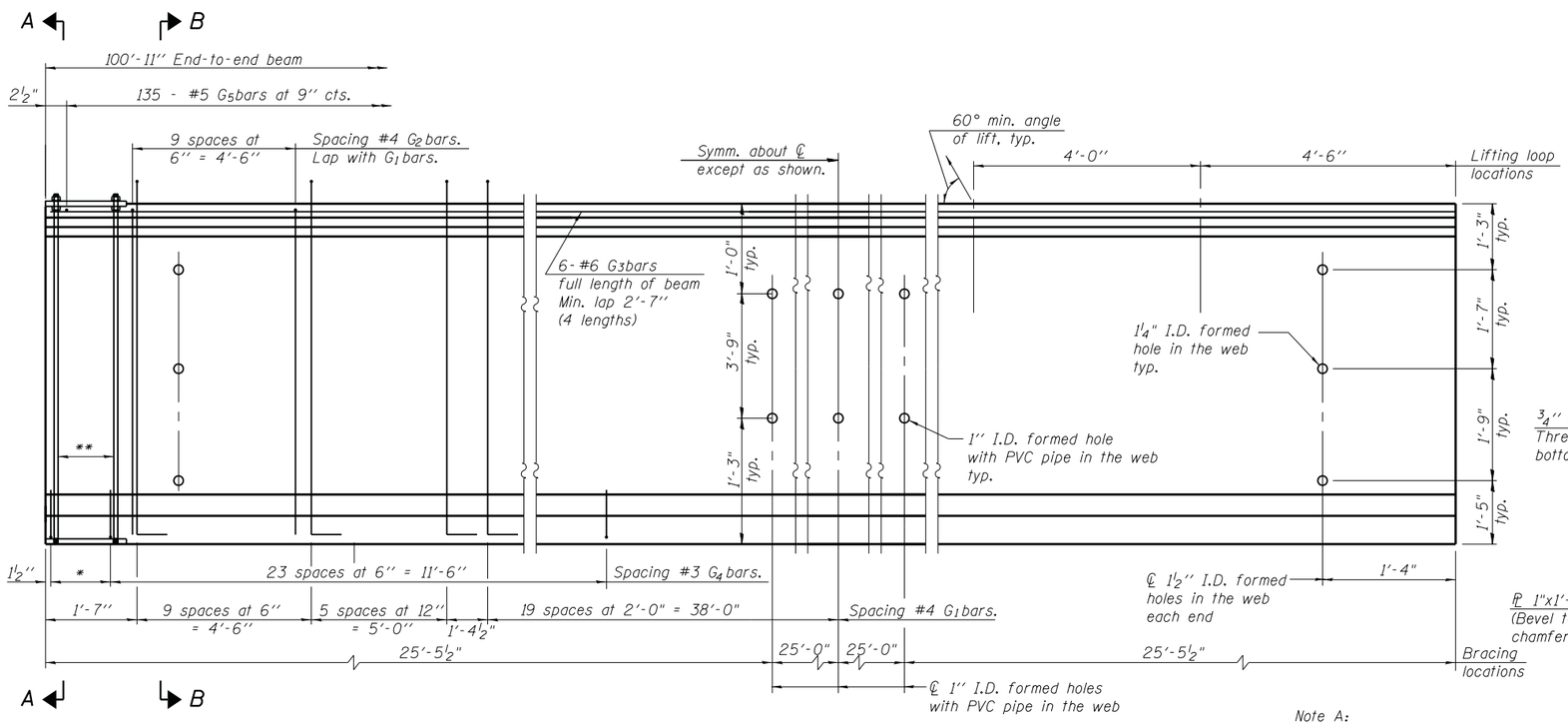
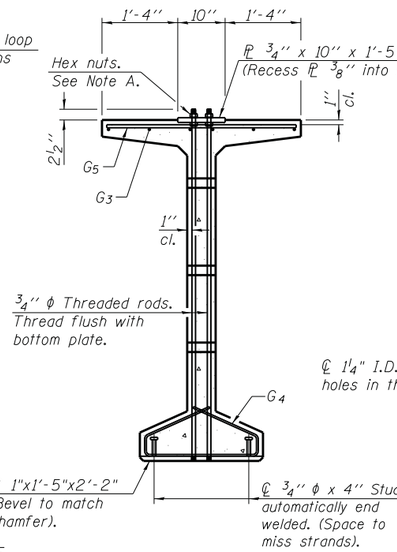
FRAMING PLAN
STRUCTURE NO. 048-0091
SHEET NO. S17 OF S25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-1(25B)BR, BR-1]	KNOX	131	63
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

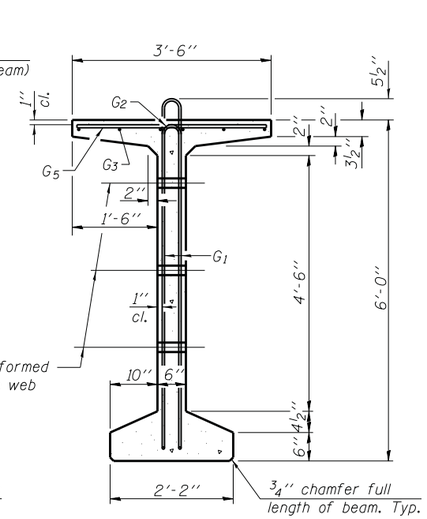


* 4 spaces at 3¼" = 1'-1".
** 5-¾" ϕ threaded dowel rods at 3¼" cts., each face.

ELEVATION OF BEAM
(Showing reinforcement & dimensions)

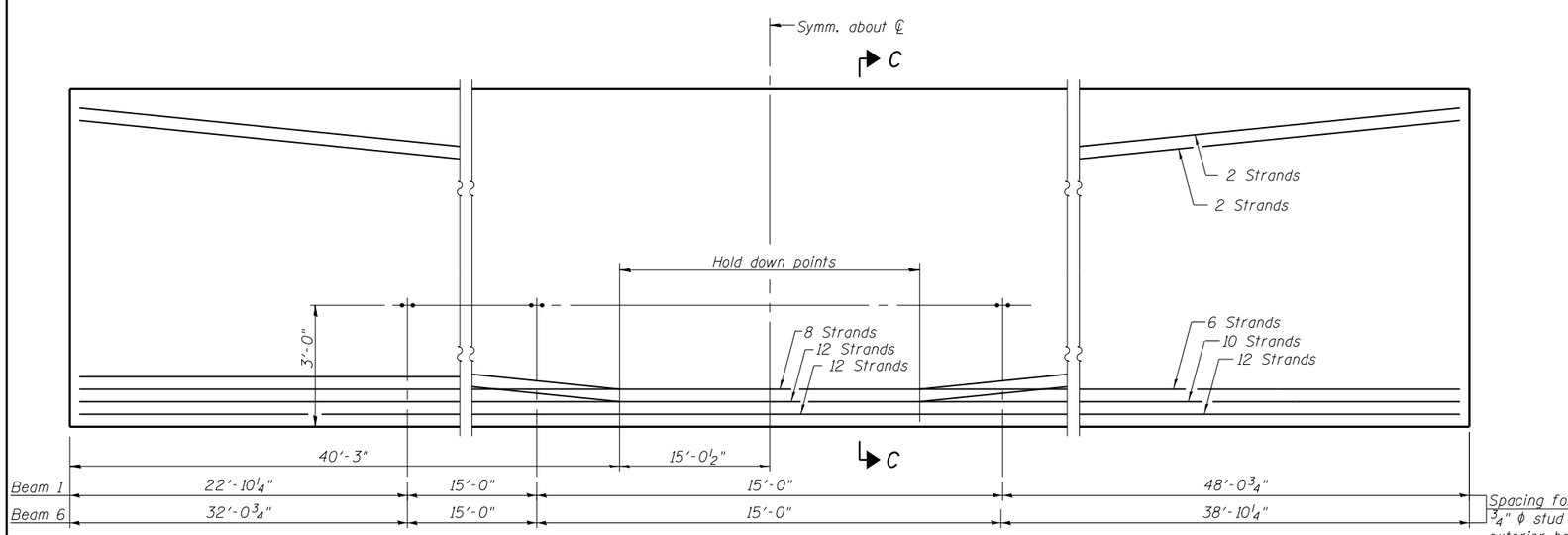


SECTION A-A



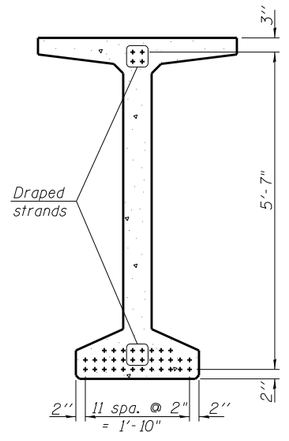
SECTION B-B

Note A:
Hex nuts (top and bottom) with lock washers (top). Only tighten sufficiently to compress lock washers.



ELEVATION OF BEAM
(Showing prestressing steel)

Spacing for flared loop inserts for ¾" ϕ stud bolts at outside face of exterior beams only. (Locate to miss strands). See sheet S13 of S25



SECTION C-C

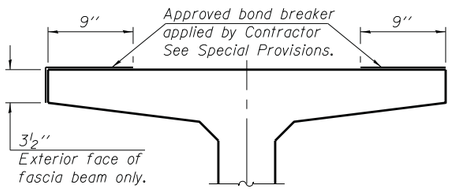
***BAR LIST
ONE BEAM ONLY

Bar	No.	Size	Length	Shape
G_1	69	#4	13'-7"	⊓L
G_2	20	#4	11'-8"	⊓
G_3	24	#6	27'-3"	—
G_4	56	#3	4'-11"	⌓
G_5	135	#5	3'-4"	—

***For information only

NOTES

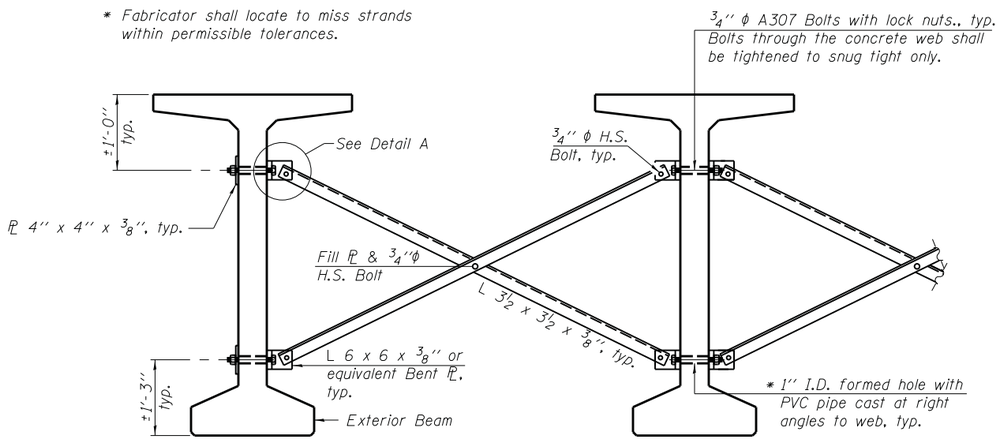
1. See sheet S19 of S25 for additional details and Bill of Material.
2. Required release strength, f'ci, shall be 5,000 psi.
3. Apply approved bond breaker as shown in Section thru Top Flange full length of beam. See Special Provisions.



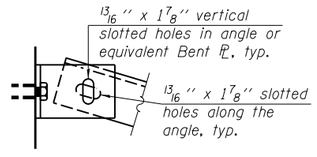
SECTION THRU TOP FLANGE
(Showing limits of bond breaker)

FILE NAME = ...\0480091-68084-018-PPC_T_beam.dgn	DESIGNED EV	REVISED -	EPSTEIN 600 WEST FULTON STREET CHICAGO, ILLINOIS 60661-1259 TEL 312 454 9100 FAX 312 559 1217 WEB www.epsteinglobal.com	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	72" PPC BULB T-BEAM STRUCTURE NO. 048-0091
PLOT TIME = 4:32:07 PM	DRAWN JCP	REVISED -			
PLOT DATE = 7/30/2014	CHECKED PC	REVISED -			SHEET NO. S18 OF S25 SHEETS
	DATE 05 03 2013	REVISED -			

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	64
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

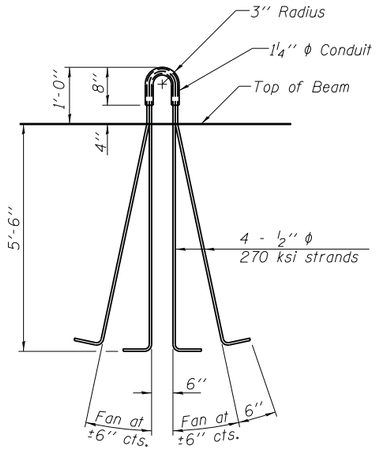


Notes:
All material for bracing shall be hot dip galvanized according to AASHTO M111 unless otherwise noted.
Two hardened washers are required for each set of oversized holes.
All holes shall be 15/16"ϕ unless otherwise noted.
5/16" x 3" x 3" plate washers are required over all slotted holes.
All bolts shall be galvanized according to AASHTO M232.
Bracing shall be installed as beams are erected and tightened as soon as possible during erection.
Permanent bracing shall not be paid for separately, but shall be included in the cost of Furnishing and Erecting Precast Prestressed Concrete Bulb T-Beams.



DETAIL A

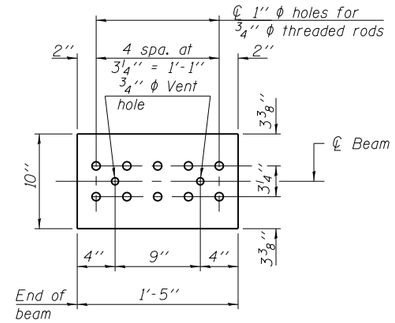
PERMANENT BRACING DETAILS FOR BULB-T BEAMS



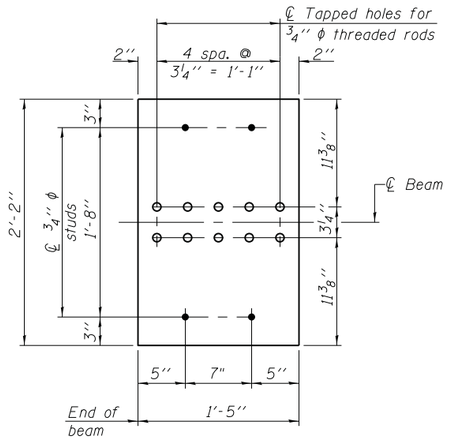
LIFTING LOOP DETAIL

NOTES

1. Inserts for 3/4" ϕ threaded dowel rods, when specified, are to be two strut, ferrule type for interior beams and single ferrule, flared loop type for exterior beams.
2. Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in.
3. Reinforcement bars shall conform to ASTM A 706, Grade 60.
4. A minimum 2 1/2" ϕ lifting pin shall be used to engage the lifting loops during handling.
5. The top and bottom plates shall be AASHTO M270 Grade 50.
6. The bottom plates and studs shall be galvanized according to AASHTO M111. Top plates and threaded rods need not be galvanized.
7. Threaded rods shall be ASTM F 1554 Grade 55.

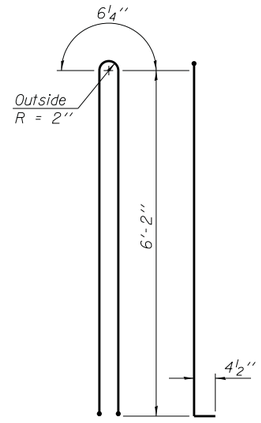


TOP PLATE

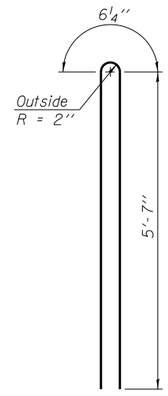


BOTTOM PLATE

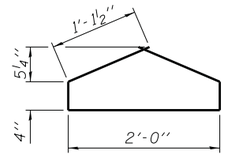
See bearing details for pintle hole locations when required.



BAR G1



BAR G2



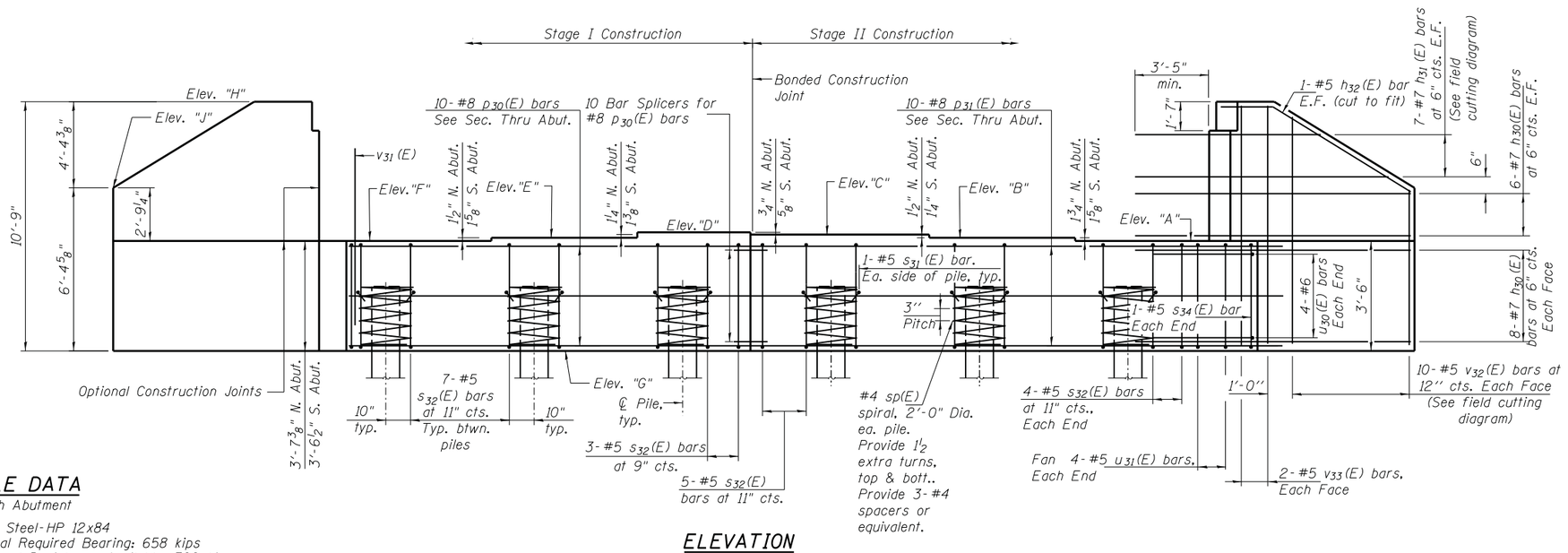
BAR G4

BILL OF MATERIAL

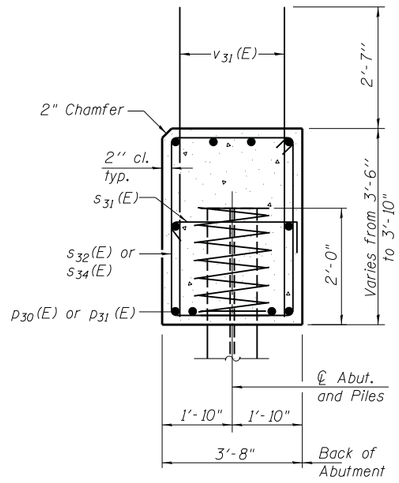
Item	Unit	Total
Furnishing and Erecting Precast Prestressed Concrete Bulb T-Beams, 72"	Ft.	605.5

FILE NAME = ...\0480091-68084-019-PPC_T_beam Details.dgn	DESIGNED EV	REVISED -	EPSTEIN 600 WEST FULTON STREET CHICAGO, ILLINOIS 60661-1259 TEL 312 454 9100 FAX 312 559 1217 WEB www.epsteinglobal.com	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	72" PPC BULB T-BEAM DETAILS STRUCTURE NO. 048-0091	F.A.I. RTE. 74	SECTION 48-[(25B)BR, BR-1]
PLOT TIME = 4:32:09 PM	DRAWN JCP	REVISED -					COUNTY KNOX
PLOT DATE = 7/30/2014	CHECKED PC	REVISED -			SHEET NO. S19 OF S25 SHEETS		TOTAL SHEETS 131
	DATE 05 03 2013	REVISED -					SHEET NO. 65
							CONTRACT NO. 68B85
							ILLINOIS FED. AID PROJECT

Notes:
Pour steps monolithically with cap.



ELEVATION
(N. Abut. Looking North)



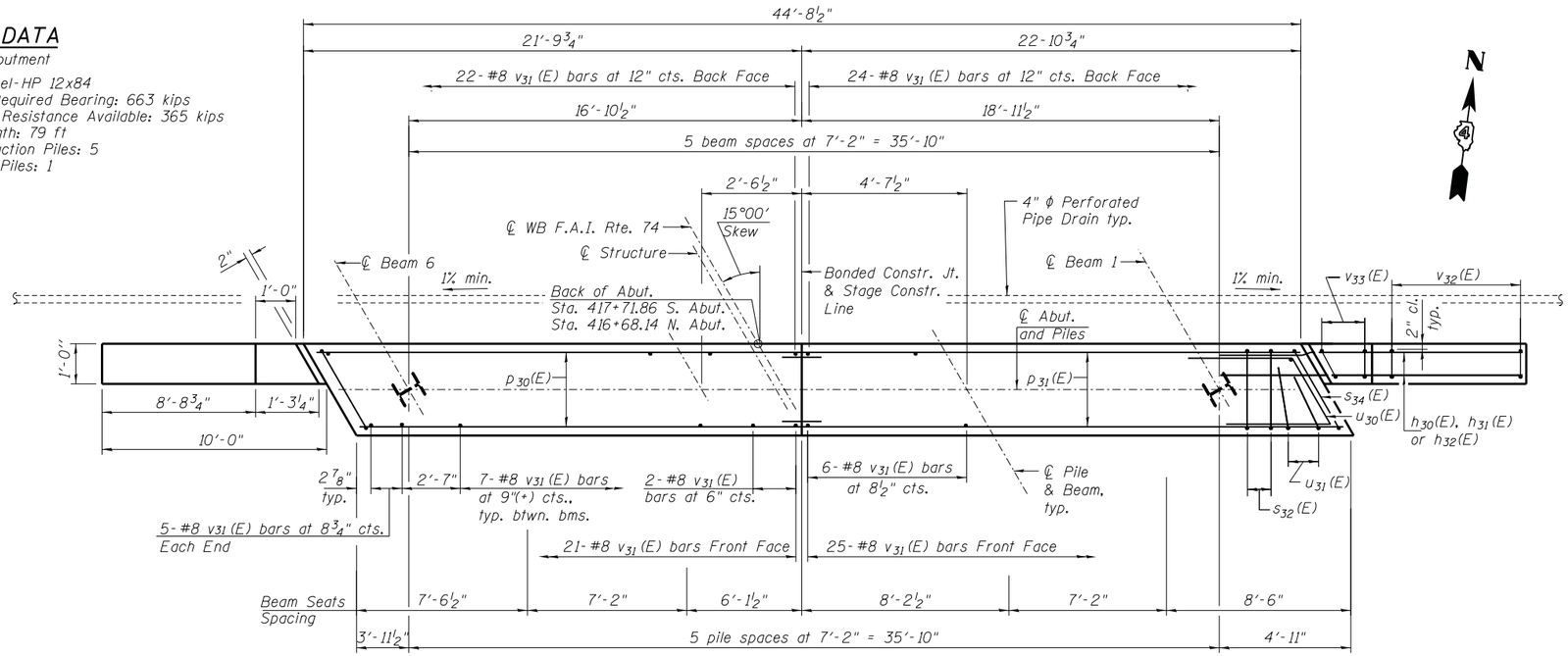
SEC. THRU ABUT.
Dimensions at right angles to abutment.

PILE DATA
North Abutment

Type: Steel-HP 12x84
Nominal Required Bearing: 658 kips
Factored Resistance Available: 362 kips
Est. Length: 71 ft
No. Production Piles: 5
No. Test Piles: 1

PILE DATA
South Abutment

Type: Steel-HP 12x84
Nominal Required Bearing: 663 kips
Factored Resistance Available: 365 kips
Est. Length: 79 ft
No. Production Piles: 5
No. Test Piles: 1



PLAN

	N. Abut.	S. Abut.
Elev. "A"	748.30	748.39
Elev. "B"	748.45	748.53
Elev. "C"	748.57	748.63
Elev. "D"	748.63	748.68
Elev. "E"	748.53	748.57
Elev. "F"	748.41	748.43
Elev. "G"	744.80	744.89
Elev. "H"	755.55	755.64
Elev. "J"	751.19	751.28

NOTES:

1. For Section thru Abutment, drainage details, Bar Bending Diagrams and Bill of Materials see sheet S21 of S25.
2. Backfill shall be placed behind the abutment after the superstructure has been poured and falsework removed. See Article 502.10 of the Standard Specifications.
3. For Bar Splicer (E) details see sheet S24 of S25.
4. For details of piles see sheet S22 of S25.

FILE NAME = ...\0480091-68084-020-Abutment.dgn	DESIGNED EV	REVISED -
	DRAWN JCP	REVISED -
PLOT TIME = 4:32:10 PM	CHECKED PC	REVISED -
PLOT DATE = 7/30/2014	DATE 05 03 2013	REVISED -

EPSTEIN
600 WEST FULTON STREET CHICAGO, ILLINOIS 60661-1259
TEL 312 454 9100 FAX 312 559 1217 WEB www.epsteinglobal.com

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ABUTMENT PLAN AND ELEVATION
STRUCTURE NO. 048-0091
SHEET NO. S20 OF S25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	66
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

BILL OF MATERIAL

North Abutment

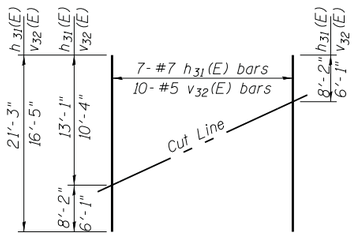
	Bar	No.	Size	Length	Shape
	$h_{30}(E)$	56	#7	13′ - 5″	
	$h_{31}(E)$	14	#7	21′ - 3″	
	$h_{32}(E)$	4	#5	10′ - 5″	
	$p_{30}(E)$	10	#8	20′ - 6″	
	$p_{31}(E)$	10	#8	22′ - 7″	
	$s_{31}(E)$	12	#5	4′ - 4″	
	$s_{32}(E)$	44	#5	13′ - 11″	
	$s_{34}(E)$	2	#5	14′ - 1″	
*	$sp(E)$	12	#4	2′ - 0″	
	$u_{30}(E)$	8	#6	11′ - 1″	
	$u_{31}(E)$	8	#5	9′ - 8″	
	$v_{31}(E)$	92	#8	5′ - 11″	
	$v_{32}(E)$	20	#5	16′ - 5″	
	$v_{33}(E)$	8	#5	10′ - 5″	
	Structure Excavation		Cu. Yd.	389	
	Concrete Structures		Cu. Yd.	29.7	
	Reinforcement Bars, Epoxy Coated		Pound	6,180	
	Furnishing Steel Piles HP12x84		Foot	355	
	Driving Piles		Foot	355	
	Test Pile Steel HP12x84		Each	1	
	Geocomposite Wall Drain		Sq. Yd.	68	
	Granular Backfill for Structures		Cu. Yd.	196.2	
	Pipe Underdrain for Structures, 4" dia.		Foot	99	

BILL OF MATERIAL

South Abutment

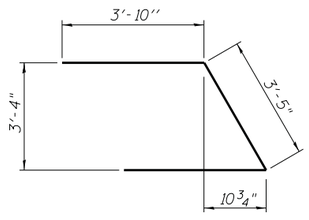
	Bar	No.	Size	Length	Shape
	$h_{30}(E)$	56	#7	13′ - 5″	
	$h_{31}(E)$	14	#7	21′ - 3″	
	$h_{32}(E)$	4	#5	10′ - 5″	
	$p_{30}(E)$	10	#8	20′ - 6″	
	$p_{31}(E)$	10	#8	22′ - 7″	
	$s_{31}(E)$	12	#5	4′ - 4″	
	$s_{32}(E)$	44	#5	13′ - 11″	
	$s_{34}(E)$	2	#5	14′ - 1″	
*	$sp(E)$	12	#4	2′ - 0″	
	$u_{30}(E)$	8	#6	11′ - 1″	
	$u_{31}(E)$	8	#5	9′ - 8″	
	$v_{31}(E)$	92	#8	5′ - 11″	
	$v_{32}(E)$	20	#5	16′ - 5″	
	$v_{33}(E)$	8	#5	10′ - 5″	
	Structure Excavation		Cu. Yd.	389	
	Concrete Structures		Cu. Yd.	29.7	
	Reinforcement Bars, Epoxy Coated		Pound	6,180	
	Furnishing Steel Piles HP12x84		Foot	395	
	Driving Piles		Foot	395	
	Test Pile Steel HP12x84		Each	1	
	Geocomposite Wall Drain		Sq. Yd.	68	
	Granular Backfill for Structures		Cu. Yd.	196.2	
	Pipe Underdrain for Structures, 4" dia.		Foot	97	

*Length is height of spiral.

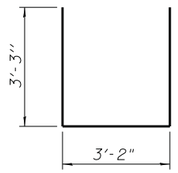


FIELD CUTTING DIAGRAM

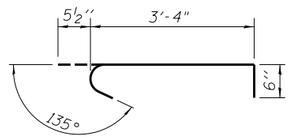
Order $h_{31}(E)$ and $v_{32}(E)$ full length. Cut as shown and use remainder of bars in opposite face.



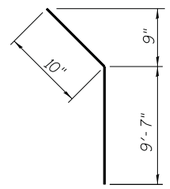
BAR $u_{30}(E)$



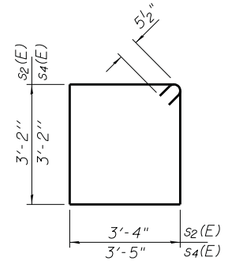
BAR $u_{31}(E)$



BAR $s_{30}(E)$

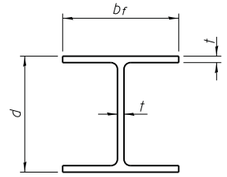


BAR $h_{32}(E)$



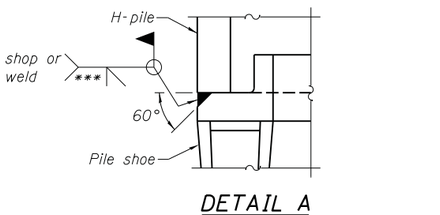
BARS $s_{31}(E)$ and $s_{32}(E)$

FILE NAME = ...\0480091-68084-021-Abutment_details.dgn	DESIGNED EV	REVISED -	EPSTEIN 600 WEST FULTON STREET CHICAGO, ILLINOIS 60661-1259 TEL 312 454 9100 FAX 312 559 1217 WEB www.epsteinglobal.com	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ABUTMENT DETAILS STRUCTURE NO. 048-0091	F.A.I. RTE. 74	SECTION 48-1(25B)BR, BR-1]
PLOT TIME = 4:32:12 PM	DRAWN JCP	REVISED -					COUNTY KNOX
PLOT DATE = 7/30/2014	CHECKED PC	REVISED -			SHEET NO. S21 OF S25 SHEETS		TOTAL SHEETS 131
	DATE 05 03 2013	REVISED -					SHEET NO. 67
							CONTRACT NO. 68B85
							ILLINOIS FED. AID PROJECT



STEEL PILE TABLE

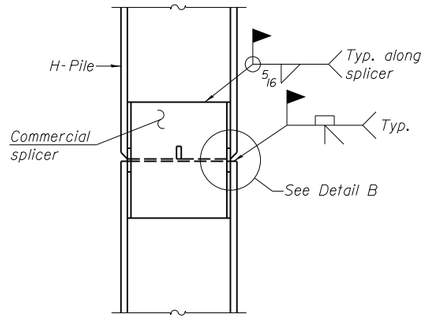
Designation	Depth d	Flange width b_f	Web and Flange thickness t	Encasement diameter A
HP 14x117	$14\frac{1}{4}''$	$14\frac{7}{8}''$	$\frac{13}{16}''$	30''
x102	14''	$14\frac{3}{4}''$	$\frac{11}{16}''$	30''
x89	$13\frac{7}{8}''$	$14\frac{3}{4}''$	$\frac{5}{8}''$	30''
x73	$13\frac{5}{8}''$	$14\frac{5}{8}''$	$\frac{1}{2}''$	30''
HP 12x84	$12\frac{1}{4}''$	$12\frac{1}{4}''$	$\frac{11}{16}''$	24''
x74	$12\frac{1}{8}''$	$12\frac{1}{4}''$	$\frac{5}{8}''$	24''
x63	12''	$12\frac{1}{8}''$	$\frac{1}{2}''$	24''
x53	$11\frac{3}{4}''$	12''	$\frac{7}{16}''$	24''
HP 10x57	10''	$10\frac{1}{4}''$	$\frac{9}{16}''$	24''
x42	$9\frac{3}{4}''$	$10\frac{1}{8}''$	$\frac{7}{16}''$	24''
HP 8x36	8''	$8\frac{1}{8}''$	$\frac{7}{16}''$	18''



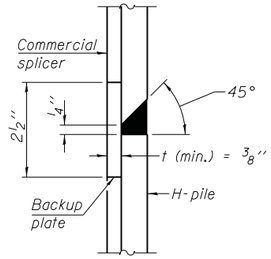
ELEVATION

DETAIL A

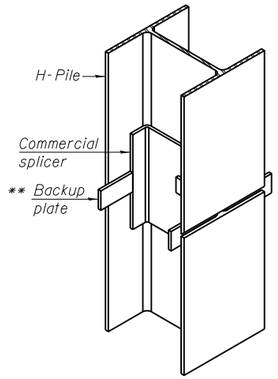
H-PILE SHOE ATTACHMENT



ELEVATION

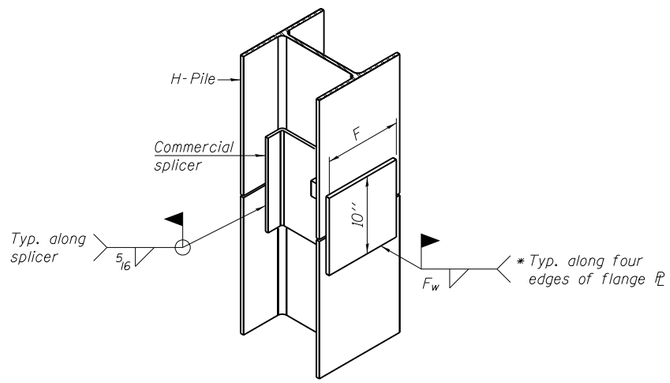


DETAIL "B"

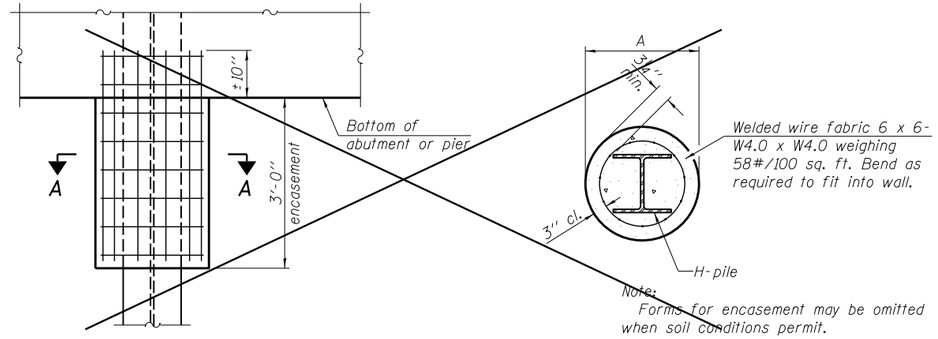


ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



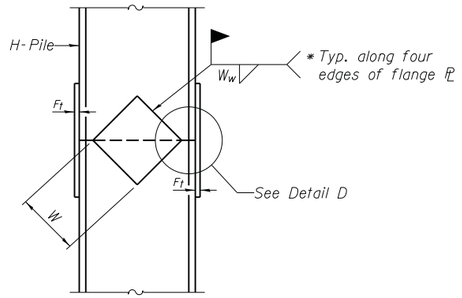
ISOMETRIC VIEW



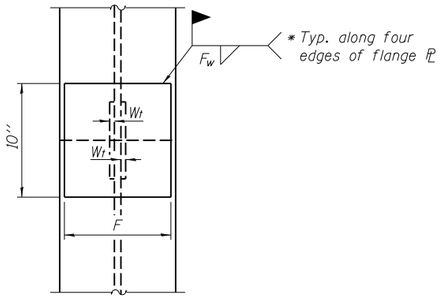
ELEVATION

SECTION A-A

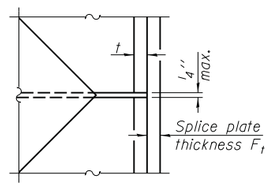
PILE ENCASEMENT



ELEVATION



END VIEW



DETAIL D

Designation	F	F_t	F_w	W	W_t	W_w
HP 14x117	$12\frac{1}{2}''$	1''	$\frac{7}{8}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x102	$12\frac{1}{2}''$	$\frac{7}{8}''$	$\frac{3}{4}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x89	$12\frac{1}{2}''$	$\frac{3}{4}''$	$\frac{11}{16}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x73	$12\frac{1}{2}''$	$\frac{5}{8}''$	$\frac{9}{16}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
HP 12x84	10''	$\frac{7}{8}''$	$\frac{11}{16}''$	$6\frac{1}{2}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x74	10''	$\frac{7}{8}''$	$\frac{11}{16}''$	$6\frac{1}{2}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x63	10''	$\frac{5}{8}''$	$\frac{1}{2}''$	$6\frac{1}{2}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
x53	10''	$\frac{5}{8}''$	$\frac{1}{2}''$	$6\frac{1}{2}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
HP 10x57	8''	$\frac{3}{4}''$	$\frac{9}{16}''$	$5\frac{1}{4}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
x42	8''	$\frac{5}{8}''$	$\frac{9}{16}''$	$5\frac{1}{4}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
HP 8x36	7''	$\frac{5}{8}''$	$\frac{7}{16}''$	$4\frac{1}{4}''$	$\frac{1}{2}''$	$\frac{3}{8}''$

WELDED PLATE FIELD SPLICE

WELDED COMMERCIAL SPLICE ALTERNATE

* Interrupt welds $\frac{1}{4}''$ from end of web and/or each flange.

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

*** Weld size per pile shoe manufacturer ($\frac{5}{16}''$ min.).

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

F-HP 1-27-12

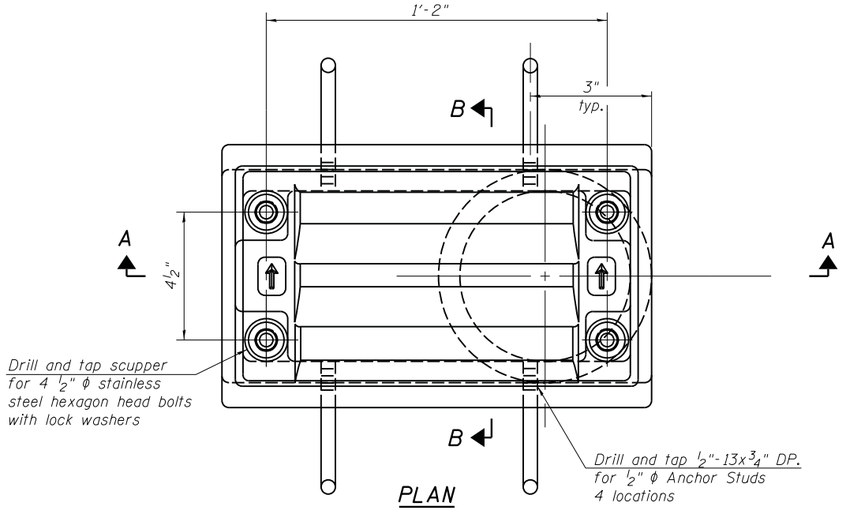
FILE NAME = ...\0480091-68084-022-Pile.details.dgn	DESIGNED EV	REVISED -	
	DRAWN JCP	REVISED -	
PLOT TIME = 4:32:13 PM	CHECKED PC	REVISED -	
PLOT DATE = 7/30/2014	DATE 05 03 2013	REVISED -	

EPSTEIN
600 WEST FULTON STREET
CHICAGO, ILLINOIS
60661-1259
TEL 312 454 9100
FAX 312 559 1217
WEB www.epsteinglobal.com

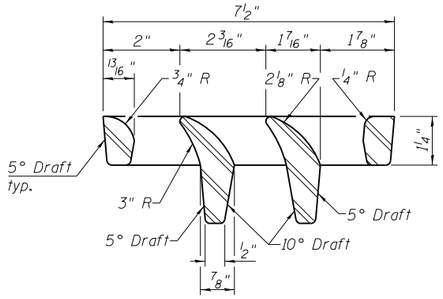
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HP PILE DETAILS
STRUCTURE NO. 048-0091
SHEET NO. S22 OF S25 SHEETS

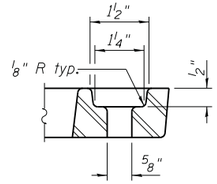
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	68
		CONTRACT NO. 68B85		
	ILLINOIS	FED. AID PROJECT		



PLAN



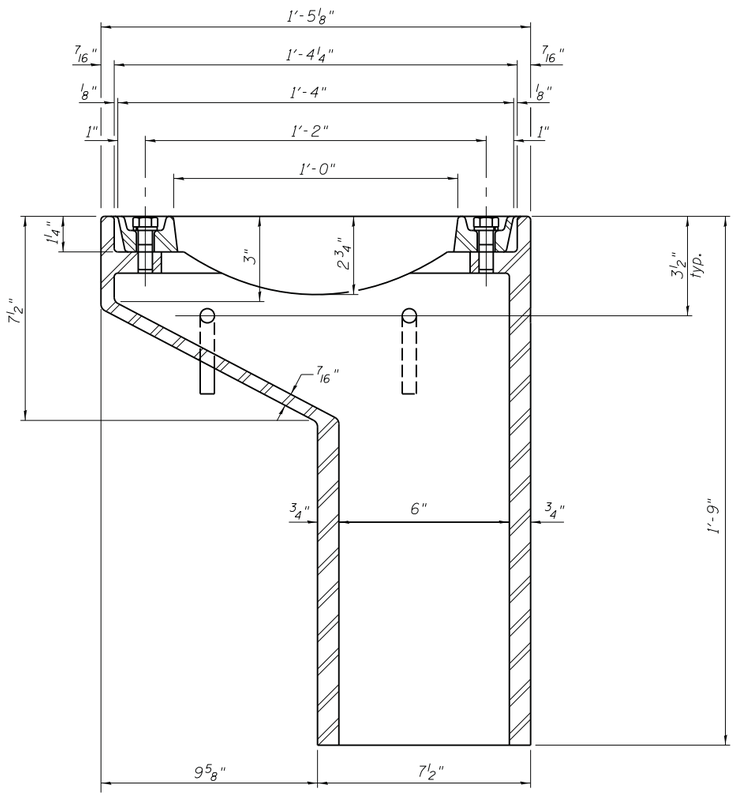
VANE GRATE DETAIL



BOLT HOLE DETAIL

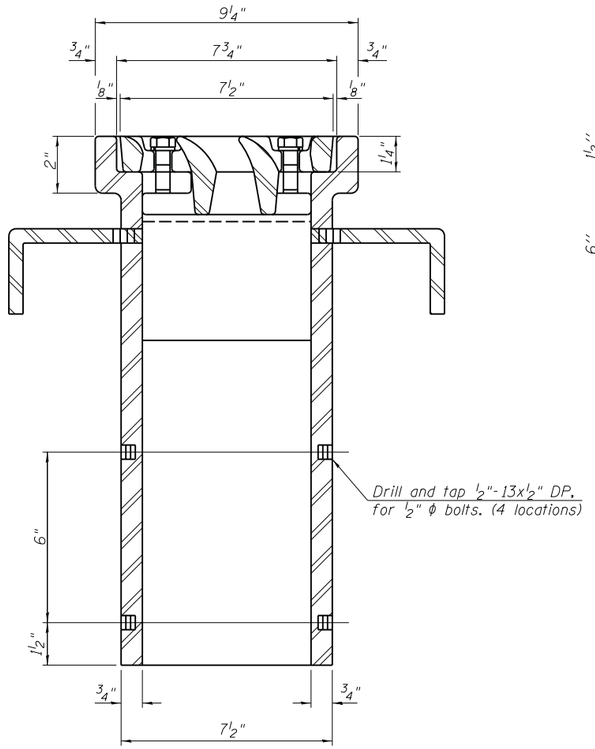
NOTES

1. All cast iron parts shall be gray iron conforming to the requirements of AASHTO M 105, Class 35B.
2. Bolts, anchor studs, washers and nuts shall conform to the requirements of ASTM A 307 and shall be galvanized according to AASHTO M 232.
3. Downspouts located on the exterior side of a painted steel fascia beam shall be painted with the finish coat specified for the exterior side of the fascia beam.
4. As an alternate, bolts, anchor studs, washers and nuts may be stainless steel according to Article 1006.29(d) of the Standard Specifications.
5. Structural steel weldments of equal sections and of the same configuration may be substituted for the cast iron scupper frame. Fillet or full penetration welds shall be used for the weldments. Details shall be submitted to the Engineer for approval. Structural steel weldments shall not be substituted for the cast iron scupper grate. Structural steel frames and downspouts shall be galvanized according to AASHTO M111.
6. The Contractor shall take appropriate measures to assure that Protective Coat is not applied to the scupper.
7. Cost of the Grate, Frame, Downspout, Anchor Studs, Bolts, Washers and Nuts including complete installation of the scupper shall be paid for at the contract unit price each for Drainage Scupper, DS-11.
8. Alternate fiberglass downspout conforming to ASTM D 2996 with a short-time rupture strength hoop tensile stress of 30,000 psi min. may be used in lieu of the cast iron or steel equivalent.

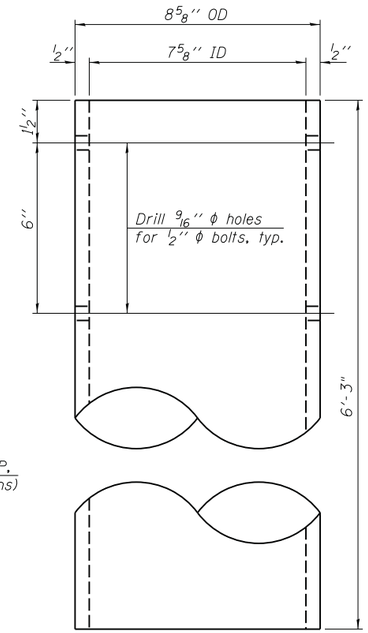


SECTION A-A

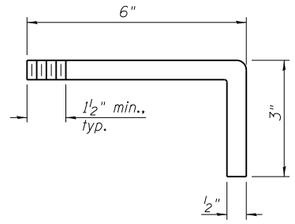
See sheet S13 of S25 for scupper location relative to parapet.



SECTION B-B



DOWNSPOUT



ANCHOR STUD DETAIL

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scupper, DS-11	Each	6

DS-11 7-1-10

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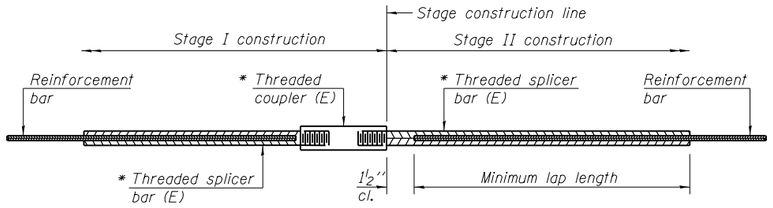
	DRAWN JCP	REVISED -	
PLOT TIME = 4:32:14 PM	CHECKED PC	REVISED -	
PLOT DATE = 7/30/2014	DATE 05 03 2013	REVISED -	

EPSTEIN
600 WEST FULTON STREET
CHICAGO, ILLINOIS
60661-1259
TEL 312 454 9100
FAX 312 559 1217
WEB www.epsteinglobal.com

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DRAINAGE SCUPPER DS-11
STRUCTURE NO. 048-0091
SHEET NO. S23 OF S25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	69
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			



STANDARD BAR SPLICER ASSEMBLY

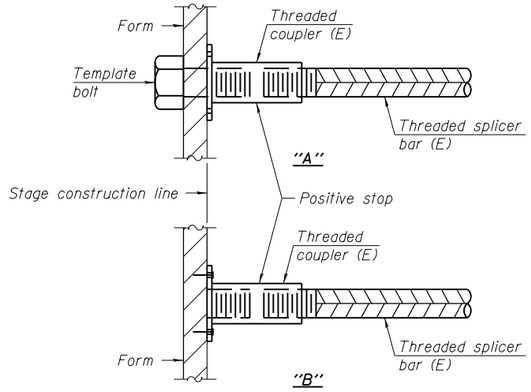
Minimum Lap Lengths					
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-3"
5	1'-9"	2'-5"	2'-7"	2'-11"	2'-10"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-4"
7	2'-9"	3'-10"	4'-2"	4'-8"	4'-6"
8	3'-8"	5'-1"	5'-5"	6'-2"	5'-10"
9	4'-7"	6'-5"	6'-10"	7'-9"	7'-5"

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

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

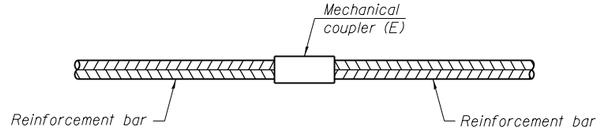
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length
Deck	#5	302	3
Diaphragm	#6	26	3
Abutments	#8	20	3
Approach Slab	#5	172	3
Approach Slab	#4	50	3



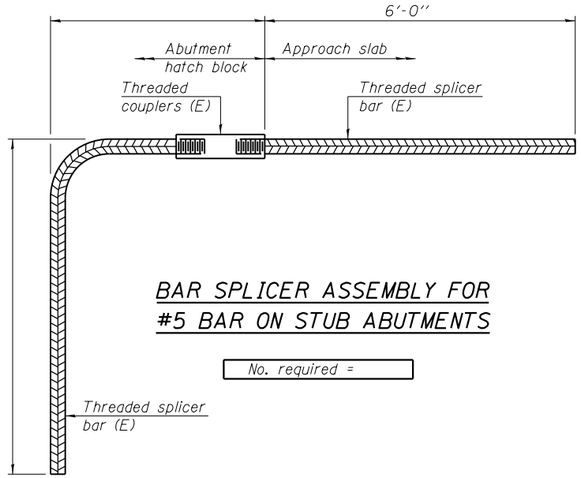
INSTALLATION AND SETTING METHODS

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



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required =

NOTES

1. Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.
2. All reinforcement shall be lapped and tied to the splicer bars.
3. Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.
4. See approved list of bar splicer assemblies and mechanical splicers for alternatives.

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	DRAWN JCP	REVISED -
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PLOT DATE = 10/1/2014	DATE 05 03 2013	REVISED -

EPSTEIN
600 WEST FULTON STREET
CHICAGO, ILLINOIS
60661-1259
TEL 312 454 9100
FAX 312 559 1217
WEB www.epsteinglobal.com

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 048-0091
SHEET NO. S24 OF S25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	70
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

FORM NO. B.D. 137 REV. 9-60 Sh. 1 of 8 Sh

BRIDGE FOUNDATION BORING LOG

PROJECT ~~I-74-2( )38~~ BRIDGE FAI Route 74 Date 12-29-61
ROUTE FAI 74 over Henderson Creek Bored By Alvin E. Moine
SEC. 48-25B STA. 117+20 Left Lane 116+04 Right Lane Checked By
COUNTY Knox

Boring No. 1
Station 116+68
Offset 121' Rt. of ℄ Rt. Ln along ℄ NB Abut

Surface Water El. -
Groundwater El. at Completion 735.1
After 22 Hours 733.6

Elevation	N	Qu t/s.f.	w (%)
Ground Surface 737.6			
Medium Dark Brown Silty CLAY LOAM			
	7	0.5 E	30
733.6			
Soft Dark Gray Silty CLAY LOAM -5	4	0.7 B	37
	4	0.7 E	-
-10	5	-	-
726.1			
Medium Dark Gray Sandy CLAY LOAM	23	-	-
723.6			
Hard Light Gray CLAY -15	31	2.9 S	14
	53	2.9 S	-
718.6			
Hard Light Gray Shaley CLAY -20	95	3.3 S	-

Elevation	N	Qu t/s.f.	w (%)
Hard Light Gray Shaley CLAY	100/ 6"	-	12
713.6			
Hard Gray Shaley CLAY -25	50/ 3"	-	-
	100/ 5"	-	-
-30	50/ 4"	-	-
	50/ 4"	-	-
-35	100/ 5"	-	-
End of Boring 702.1			
-40			
-45			

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

Qu - Unconfined Compressive Strength - t/sf

w - Water Content - percentage of oven dry weight-%.

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

FORM NO. B.D. 137 REV. 9-60 Sh. 4 of 8 Sh

BRIDGE FOUNDATION BORING LOG

PROJECT ~~I-74-2( )38~~ BRIDGE FAI Route 74 Date 1-17-62
ROUTE FAI 74 over Henderson Creek Bored By Alvin E. Moine
SEC. 48-25B STA. 117+20 Left Lane 116+04 Right Lane Checked By
COUNTY Knox

Boring No. 4
Station 117+78
Offset 10' Lt. of ℄ Lt. Ln along ℄ SB Abut

Surface Water El. -
Groundwater El. at Completion 733.2
After - Hours -

Elevation	N	Qu t/s.f.	w (%)
Ground Surface 737.7			
Medium Dark Brown Silty CLAY LOAM			
	5	-	-
-5	4	-	37
731.2			
Soft Dark Gray Silty CLAY LOAM	3	-	-
-10	3	0.8 B	-
726.2			
Medium Light Gray CLAY	13	0.9 S	15
723.7			
Hard Light Gray CLAY -15	92	3.0 E	10
721.2			
Very Stiff Light Gray CLAY	29	2.1 S	-
-20	30	3.1 S	-

Elevation	N	Qu t/s.f.	w (%)
Very Stiff Dark Gray CLAY	30	3.8 S	-
713.7			
Hard Dark Gray Shaley CLAY -25	100/ 8"	2.8 E	-
	100	2.0 S	-
-30	50/ 3"	2.0 E	19
End of Boring 707.2			
-35			
-40			
-45			

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

Qu - Unconfined Compressive Strength - t/sf

w - Water Content - percentage of oven dry weight-%.

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

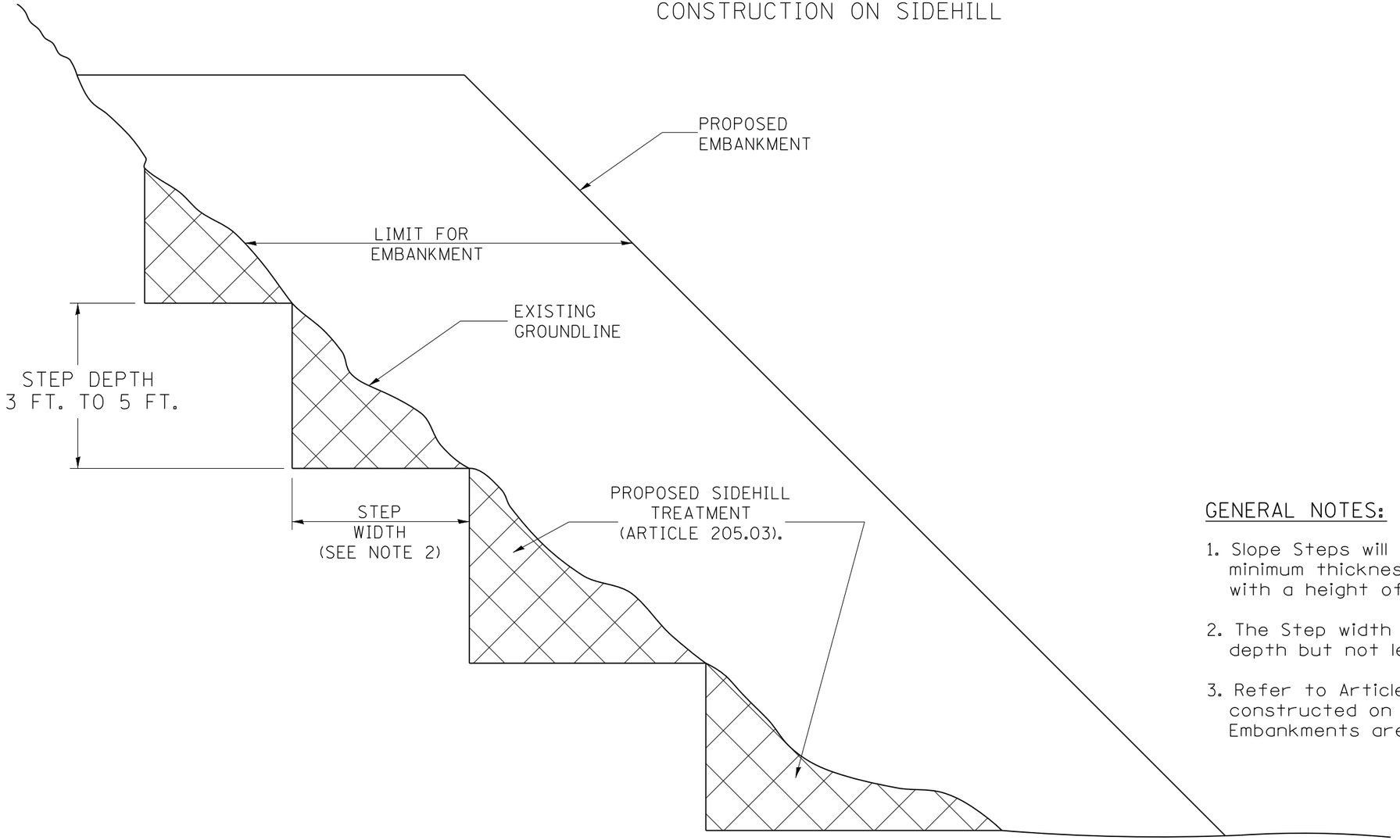
NOTES

1. *The structure boring for the project location completed during the year 1961-1962, furnished by Illinois Department of Transportation, has been included as Exhibit B in the Structure Geotechnical Report for the current project.*

FILE NAME = ...\0480091-68084-025-Soil.boring.logs.dgn	DESIGNED EV	REVISED -	EPSTEIN 600 WEST FULTON STREET CHICAGO, ILLINOIS 60661-1259 TEL 312 454 9100 FAX 312 559 1217 WEB www.epsteinglobal.com	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BORING LOGS STRUCTURE NO. 048-0091 SHEET NO. S25 OF S25 SHEETS	F.A.I. RTE. 74	SECTION 48-[(25B)BR, BR-1]
PLOT TIME = 4:32:16 PM	DRAWN JCP	REVISED -					COUNTY KNOX
PLOT DATE = 7/30/2014	CHECKED PC	REVISED -					TOTAL SHEETS 131
	DATE 05 03 2013	REVISED -					SHEET NO. 71
							CONTRACT NO. 68B85
							ILLINOIS FED. AID PROJECT

SLOPE STEPS DETAIL

TYPICAL CROSS-SECTION EMBANKMENT CONSTRUCTION ON SIDEHILL



GENERAL NOTES:

1. Slope Steps will be required for all 12(300) minimum thickness "silver fills" and on a fills with a height of 10'(3.0m).

2. The Step width shall be twice the Step depth but not less than 6 feet.

3. Refer to Article 205.03 for Embankment to be constructed on Hillside or Slopes, or if existing Embankments are to be widened.

REPLACEMENT MATERIAL:

STANDARD EMBANKMENT (IN ACCORDANCE WITH 205 OF THE STANDARD SPECIFACATION).

All dimensions are in inches (millimeters) unless otherwise noted.

1-1-97	RENUM. L-5.03, NEW REVISION BOX, REVISED TITLE	T.P.
	BOX, REVISED GENERAL NOTES.	
10-16-06	REVISED TO 2007 SPEC.	M.A.

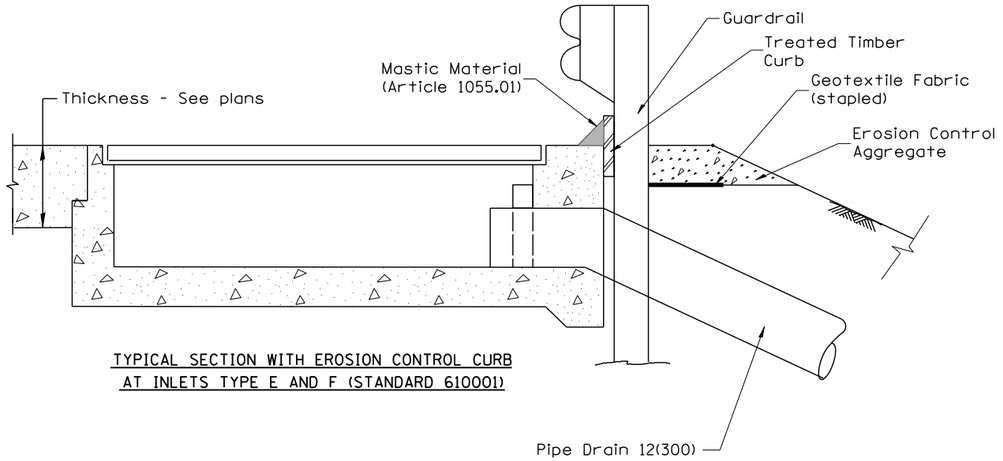
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SLOPE STEPS DETAIL

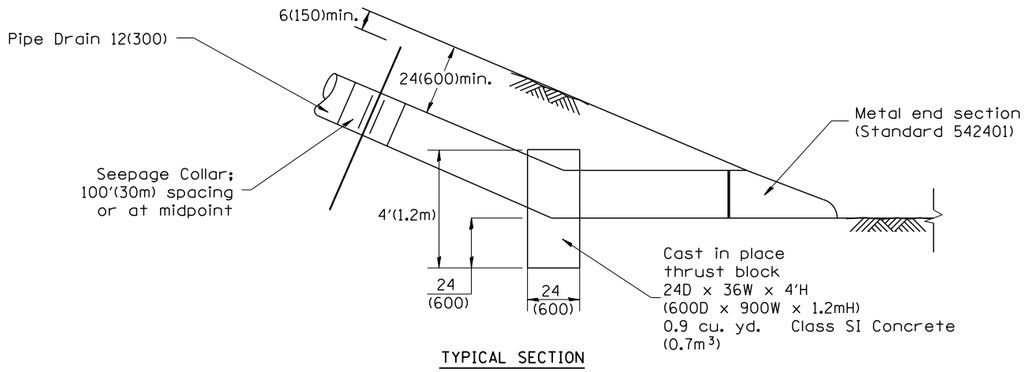
NOT TO SCALE

CADD STD. 205001-D4

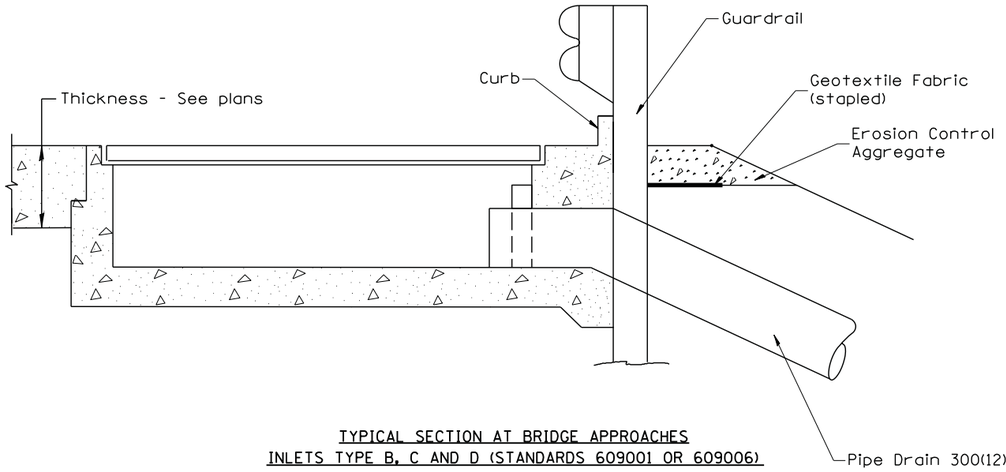
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	72
		CONTRACT NO. 68B85		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



TYPICAL SECTION WITH EROSION CONTROL CURB
AT INLETS TYPE E AND F (STANDARD 610001)



TYPICAL SECTION



TYPICAL SECTION AT BRIDGE APPROACHES
INLETS TYPE B, C AND D (STANDARDS 609001 OR 609006)

GENERAL NOTES

1. The material for Pipe Drains shall be bituminous coated corrugated steel culvert pipe or bituminous coated corrugated aluminum alloy pipe in accordance with Article 601.02(b) or 601.02(e).

2. An approved mastic material (Article 1055.01) shall be applied to the inside of the connecting bands.

QUANTITIES
CALC. BY: _____ DATE:
CHECKED BY: _____ DATE:
QUANTITY CALCULATIONS ARE ON FILE AT THE DISTRICT 4 OFFICE; BUREAU OF PROJECT IMPLEMENTATION; DOCUMENTATION SECTION

All dimensions are in inches (millimeters) unless otherwise noted.

01-01-97	RENUM. H-1.04, NEW REVISION BOX, REVISED TITLE	T.P.
	BOX, REVISED DESIGNER NOTES, ADDED QUANTITY	
	CALCULATION BOX	
10-16-06	REVISED TO 2007 SPEC.	M.A.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SLOPE DRAIN DETAILS FOR BURIED PIPES

NOT TO SCALE — CADD STD. 601101-D4

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	73
		CONTRACT NO. 68B85		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

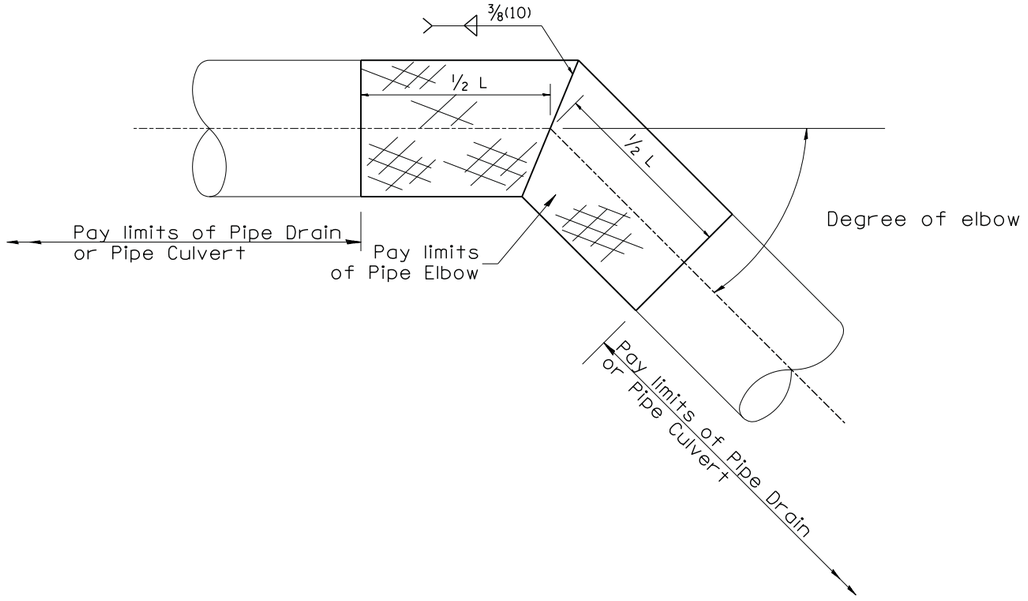


TABLE A		
ELBOW DESIGN CONTROLS		
PIPE DIAMETER	L = Pay limits of Pipe Elbow and minimum length of pipe required for fabrication	
	DEGREE OF ELBOW ≤ 45°	DEGREE OF ELBOW ≥ 46°
12(300)	24(600)	4'(1.22M)
15(375)	24(600)	4'(1.22M)
18(450)	24(600)	4'(1.22M)
21(525)	24(600)	4'(1.22M)
24(600)	4'(1.22M)	4'(1.22M)
30(750)	4'(1.22M)	6'(1.83M)
36(900)	4'(1.22M)	6'(1.83M)

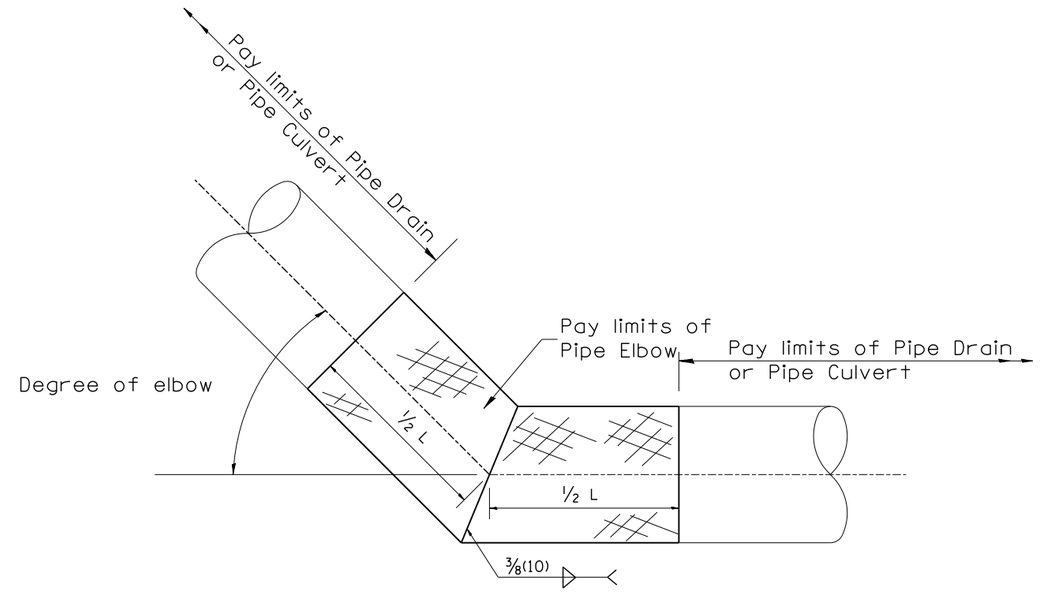


TABLE B	
ELBOW DESIGN CONTROLS	
EARTH SLOPE (V:H)	DEGREE OF ELBOW *
1:6	9°
1:4	14°
1:3	18°
1:2	26°
1:1 1/2	33°

* Approximate - based upon 0.5% inlet and outlet flowlines.

All dimensions are in inches (millimeters) unless otherwise noted.

01-01-97	RENUM. J-11.05, NEW REVISION BOX.	T.P.					
	REVISED TITLE BOX						
10-16-06	REVISED TO 2007 SPEC.	M.A.					

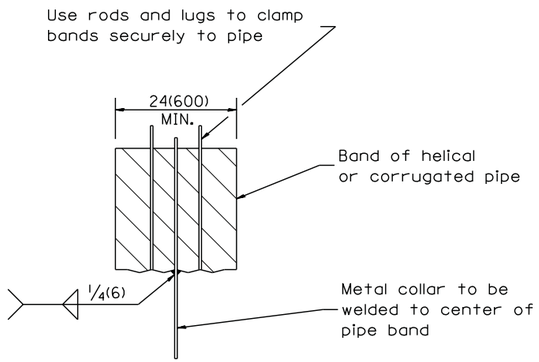
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIPE ELBOW

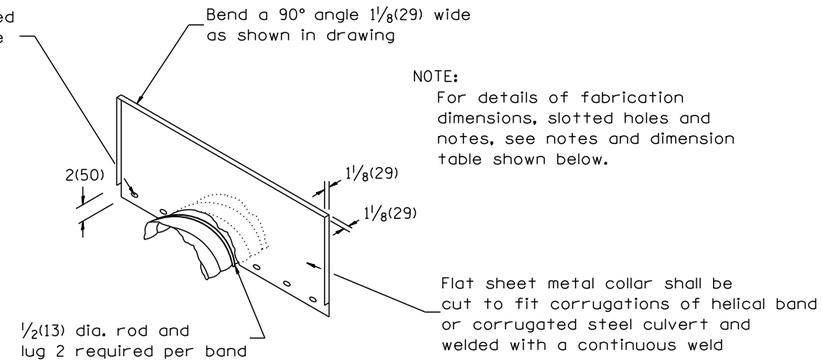
NOT TO SCALE

CADD STD. 601301-D4

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	74
		CONTRACT NO. 68B85		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



PARTIAL ELEVATION



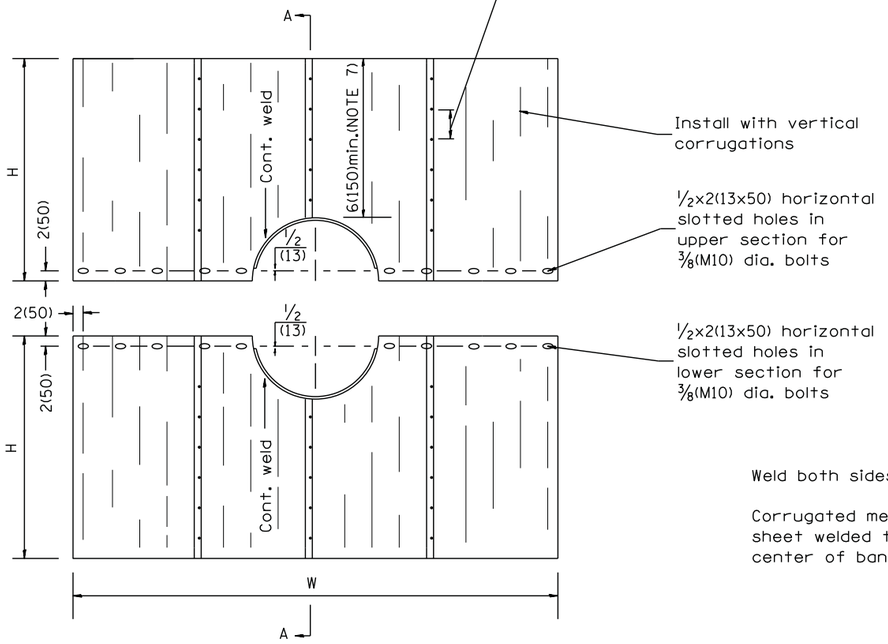
ISOMETRIC VIEW

NOTE:
For details of fabrication dimensions, slotted holes and notes, see notes and dimension table shown below.

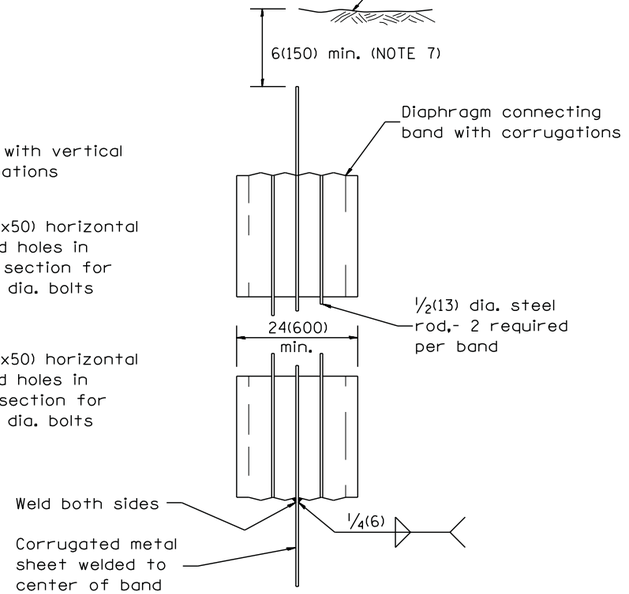
DETAILS OF CORRUGATED PIPE COLLAR

NOTES FOR COLLARS:

1. Materials and coatings for all collars shall be the same as that specified for the pipe.
2. Collars shall be shop fabricated, assembled and marked by painting to identify matching half sections of each collar.
3. The laps between the half sections and between the pipe and connecting bands shall be caulked with fiberized asphalt mastic at the time of installation.
4. All tank lugs, rods, and nuts shall be galvanized steel. Where aluminum collars are used, The rods and lugs shall be separated from the aluminum bands. By at least two (2) layers of 2(50) wide plastic tape with a total thickness of 2 1/4 mils or more.
5. The collars shall be welded to the connecting bands as shown on the drawings, all welds shall be treated as specified for class I, II, and III welds, miscellaneous. (Refer to AWS Standard Specifications)
6. Bands shall be fabricated from material having the same class of corrugations as the pipe to which it is to be attached.
7. Upper half of sheet may be cut shorter to provide 6(150) min. earth cover.



ELEVATION



SECTION A-A

SEEPAGE COLLAR DIMENSION TABLE

PIPE DIAMETER	NOMINAL COLLAR SIZE	FABRICATIONS DIMENSIONS	
		W(WIDTH)	H(HEIGHT)
12(300) 15(375), 18(450) 21(525), 24(600)	8'x6' (2.4m x 1.8m)	8'-0" (2.44m)	38(966)
27(675) 30(750)	8'x7' (2.4m x 2.1m)	8'-0" (2.44m)	3'-8" (1.12m)
36(900), 42(1050) 48(1200)	10'x7' (3.0m x 2.1m)	10'-0" (3.05m)	3'-8" (1.12m)

Collar dimensions shown may be increased to allow fabrication from standard size sheets.

DETAILS OF SEEPAGE COLLAR

SEEPAGE COLLAR SPACING
Less than 24(600) pipe: 100' (30m) spacing or midpoint
Equal to or greater than 24(600) pipe: 80' (24m) spacing or midpoint

All dimensions are in inches (millimeters) unless otherwise noted.

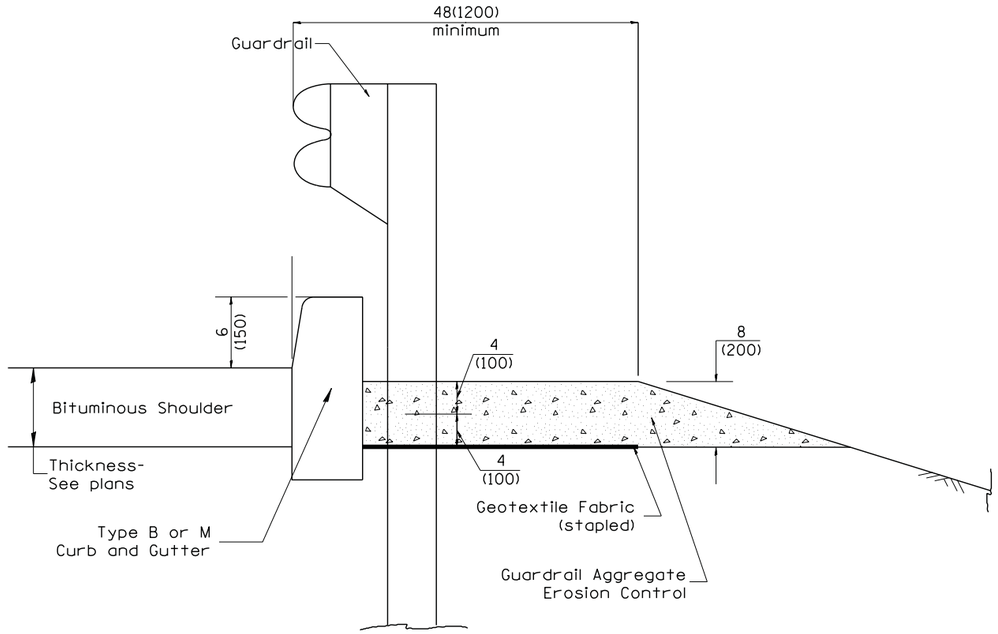
01-01-97	RENUM. J-10.02, NEW REVISION BOX, REVISED	T.P.
	TITLE BOX, REVISED DESIGNER NOTES	
10-16-06	REVISED TO 2007 SPEC.	M.A.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

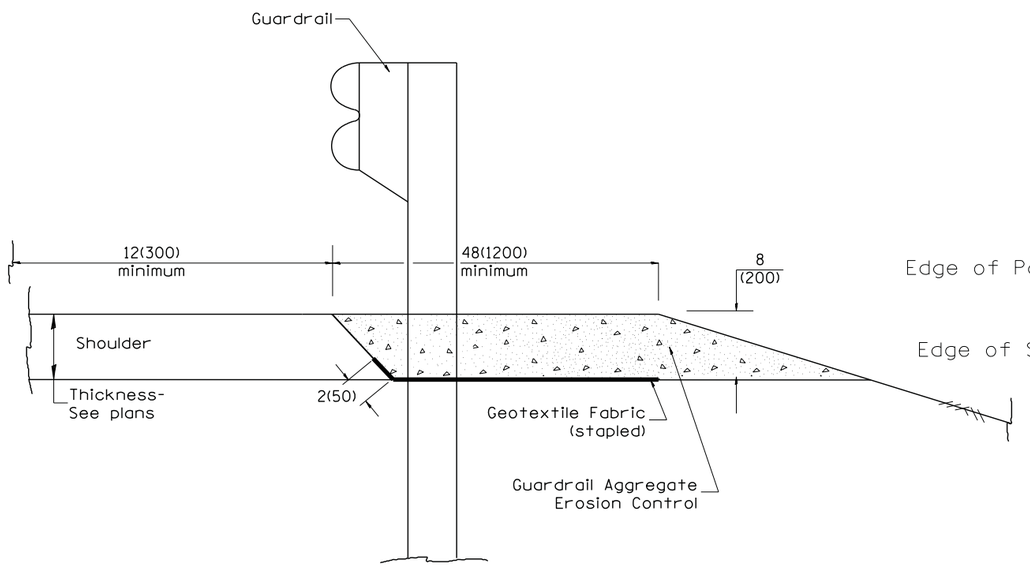
DETAILS OF SEEPAGE COLLARS FOR BURIED PIPES

NOT TO SCALE — CADD STD. 601401-D4

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	75
		CONTRACT NO. 68B85		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



TYPICAL SECTION WITH EROSION CONTROL CURB



TYPICAL SECTION WITHOUT EROSION CONTROL CURB

GENERAL NOTES: GUARDRAIL AGGREGATE EROSION CONTROL

1. This work shall consist of grading as needed, furnishing and installing geotextile fabric and staples, and furnishing, placing and shaping crushed aggregate around and behind Steel Plate Beam Guardrail posts in accordance with Plan Details.

2. Before placing the aggregate and the Geotextile Fabric, weeds and grass shall be removed from the area to be covered.

3. After the area has been prepared, and in a dry condition, the Geotextile fabric shall be placed with a 12(300) minimum overlap. A knife cut for guardrail post installation is necessary.

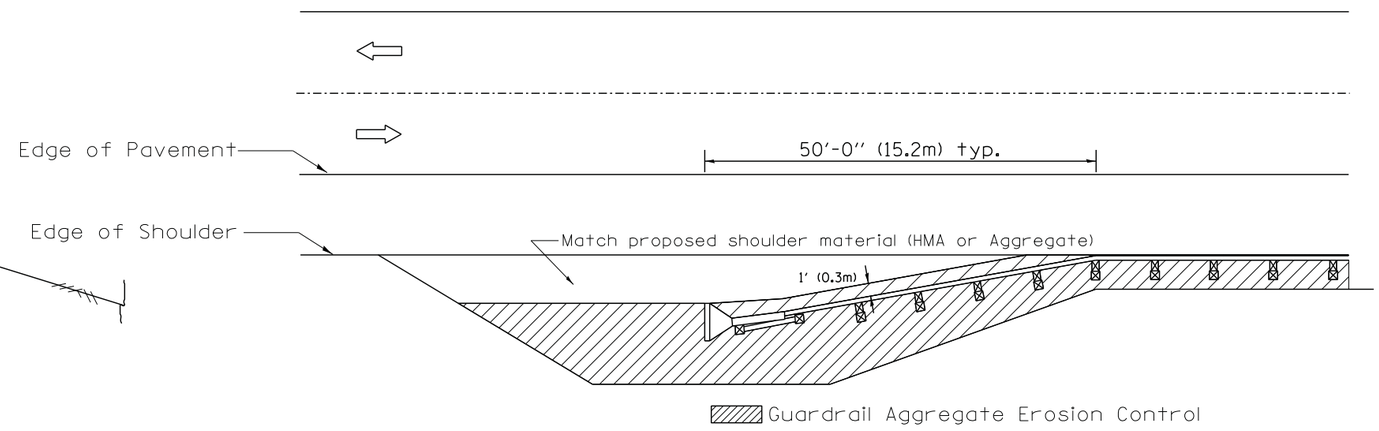
4. The aggregate shall be deposited, compacted and shaped by either mechanical or hand methods, in a manner reasonably true to line and grade.

5. The Contractor shall have the option of placing the guardrail before or after the Geotextile Fabric and Aggregate are in place. If the guardrail is placed after the Geotextile Fabric and Aggregate, then any voids must be filled and the aggregate returned to line and grade.

6. Materials shall meet the following requirements:

   A. The crushed aggregate shall be CA1 gradation in accordance with Article 1004.01(c) of the Standard Specifications.

   B. The Geotextile Fabric shall be nonwoven fabric in accordance with Article 1080.02 of the Standard Specifications.



All dimensions are in inches (millimeters) unless otherwise noted.

01-01-97	RENUM. C-22.01, NEW REVISION BOX	T.P.	3-7-11	Added Detail showing plan view	R.D.
03-01-97	CORRECT STD. NUMBERS IN NOTES PG. 2	J.A.	8-10-12	Revised curb "B" and aggregate	R.D.
11-03-00	CORRECTION TO NOTES	M.A.			
10-16-06	REVISED TO 2007 SPEC.	M.A.			

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

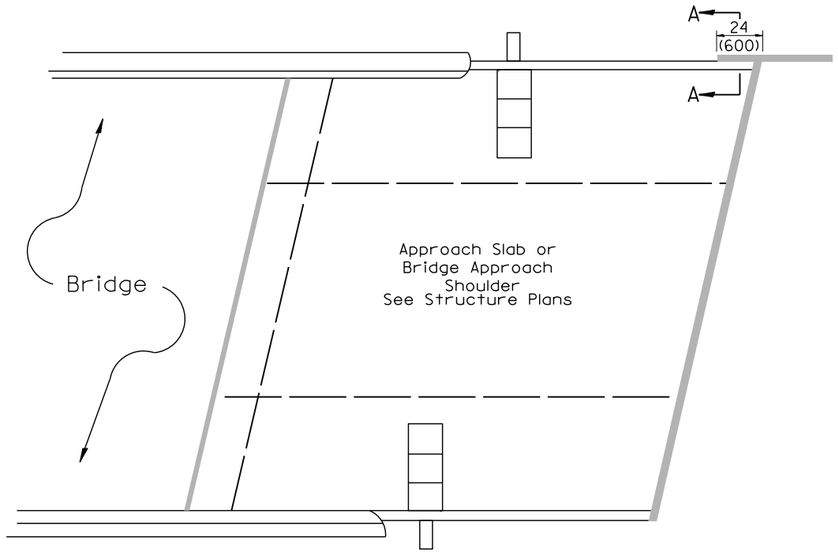
GUARDRAIL EROSION CONTROL TREATMENTS

SHT. 1 OF 2

NOT TO SCALE

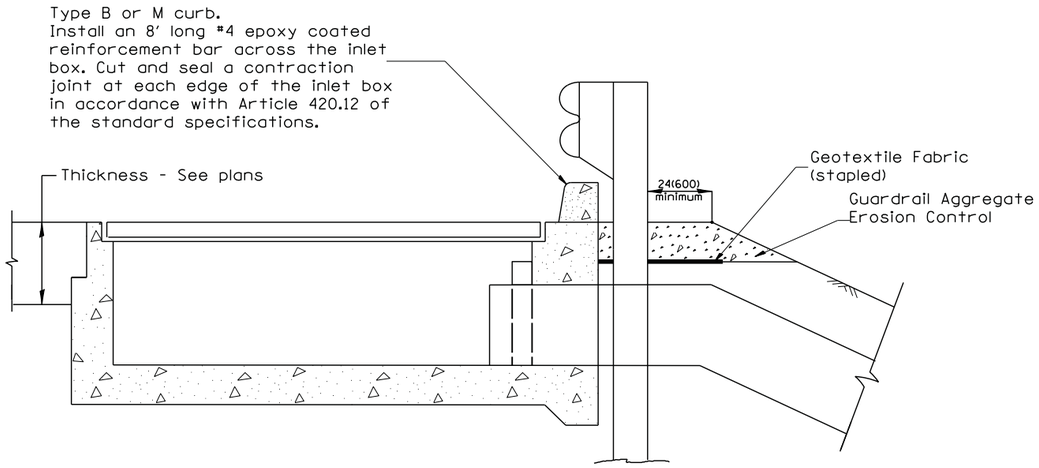
CADD STD. 630101-D4

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	76
		CONTRACT NO. 68B85		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

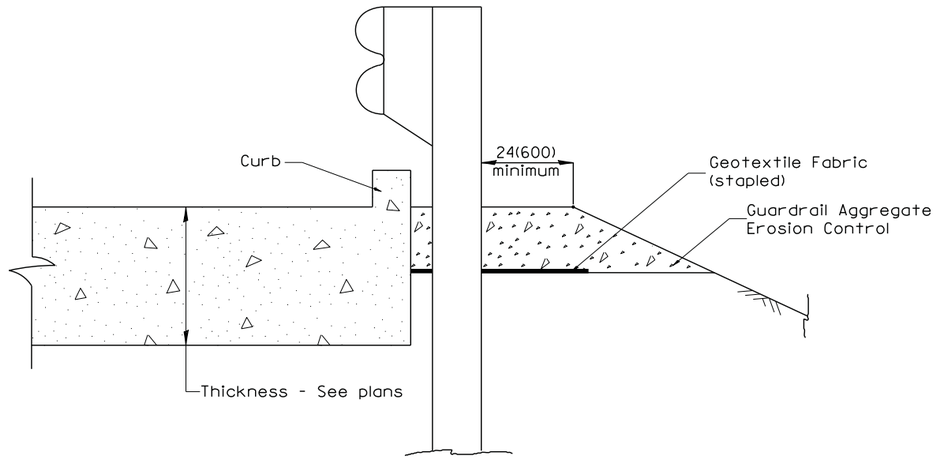


PLAN VIEW

APPROACH SLAB OR BRIDGE APPROACH SHOULDER
(STANDARD 609001 or 609006)



TYPICAL SECTION AT INLETS
TYPE E & F (STANDARD 610001)



SECTION A-A
TYPICAL SECTION WITH BRIDGE APPROACH CURB

All dimensions are in inches (millimeters) unless otherwise noted.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

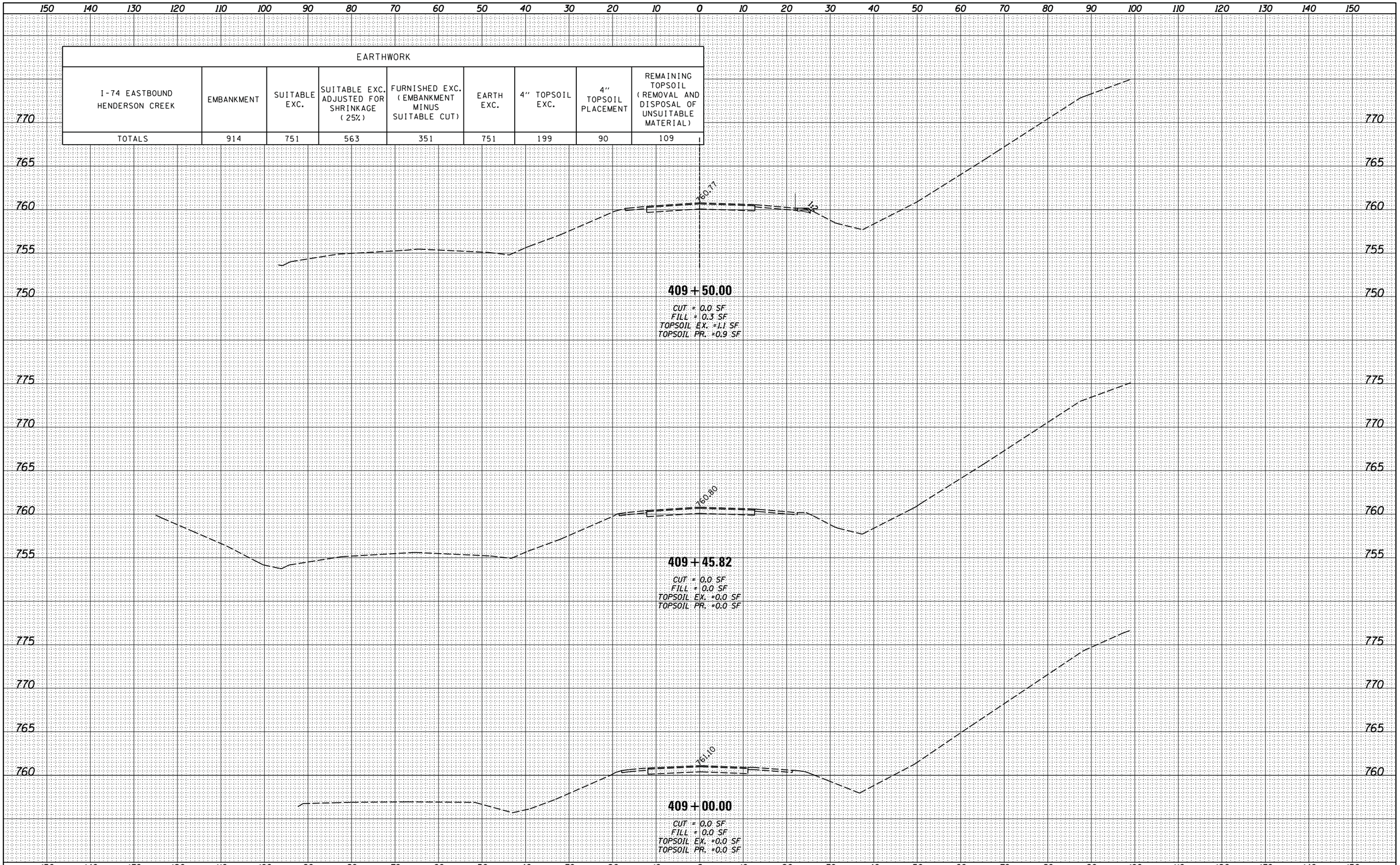
GUARDRAIL EROSION CONTROL TREATMENTS

NOT TO SCALE

SHT. 2 OF 2
CADD STD. 630101-D4

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	77
		CONTRACT NO. 68B85		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

EARTHWORK								
I-74 EASTBOUND HENDERSON CREEK	EMBANKMENT	SUITABLE EXC.	SUITABLE EXC. ADJUSTED FOR SHRINKAGE (25%)	FURNISHED EXC. (EMBANKMENT MINUS SUITABLE CUT)	EARTH EXC.	4" TOPSOIL EXC.	4" TOPSOIL PLACEMENT	REMAINING TOPSOIL (REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL)
TOTALS	914	751	563	351	751	199	90	109



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

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

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		DRAWN - TLM	REVISED -
	PLOT SCALE = $SCALE$	CHECKED - GAO	REVISED -
	PLOT DATE = 7/30/2014	DATE - 02/22/2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-74 EASTBOUND CROSS SECTIONS

SCALE: N/A | SHEET 1 OF 17 SHEETS | STA. 409+00.00 | TO STA. 409+50.00

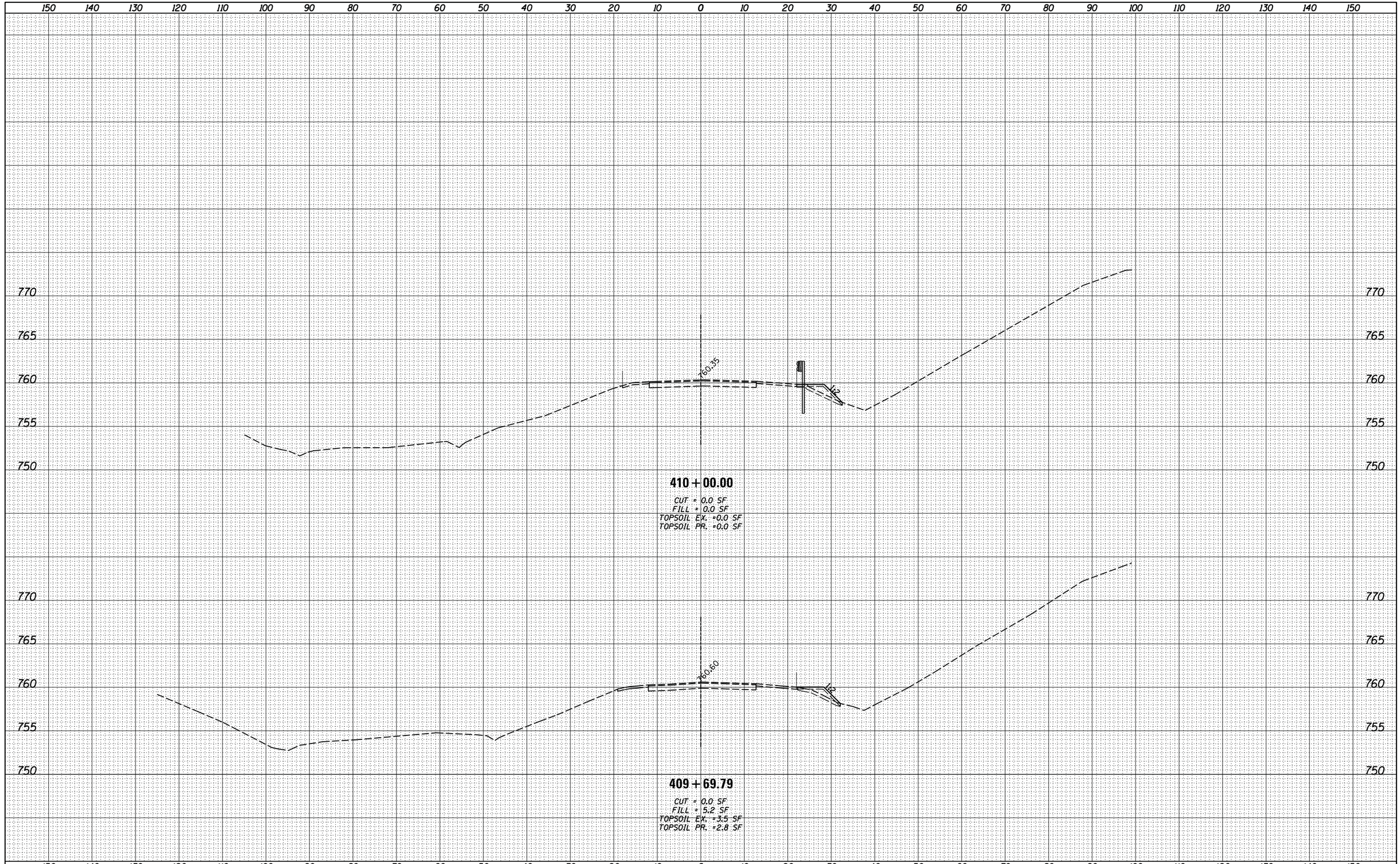
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	78
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

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

BY	DATE

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

BY	DATE



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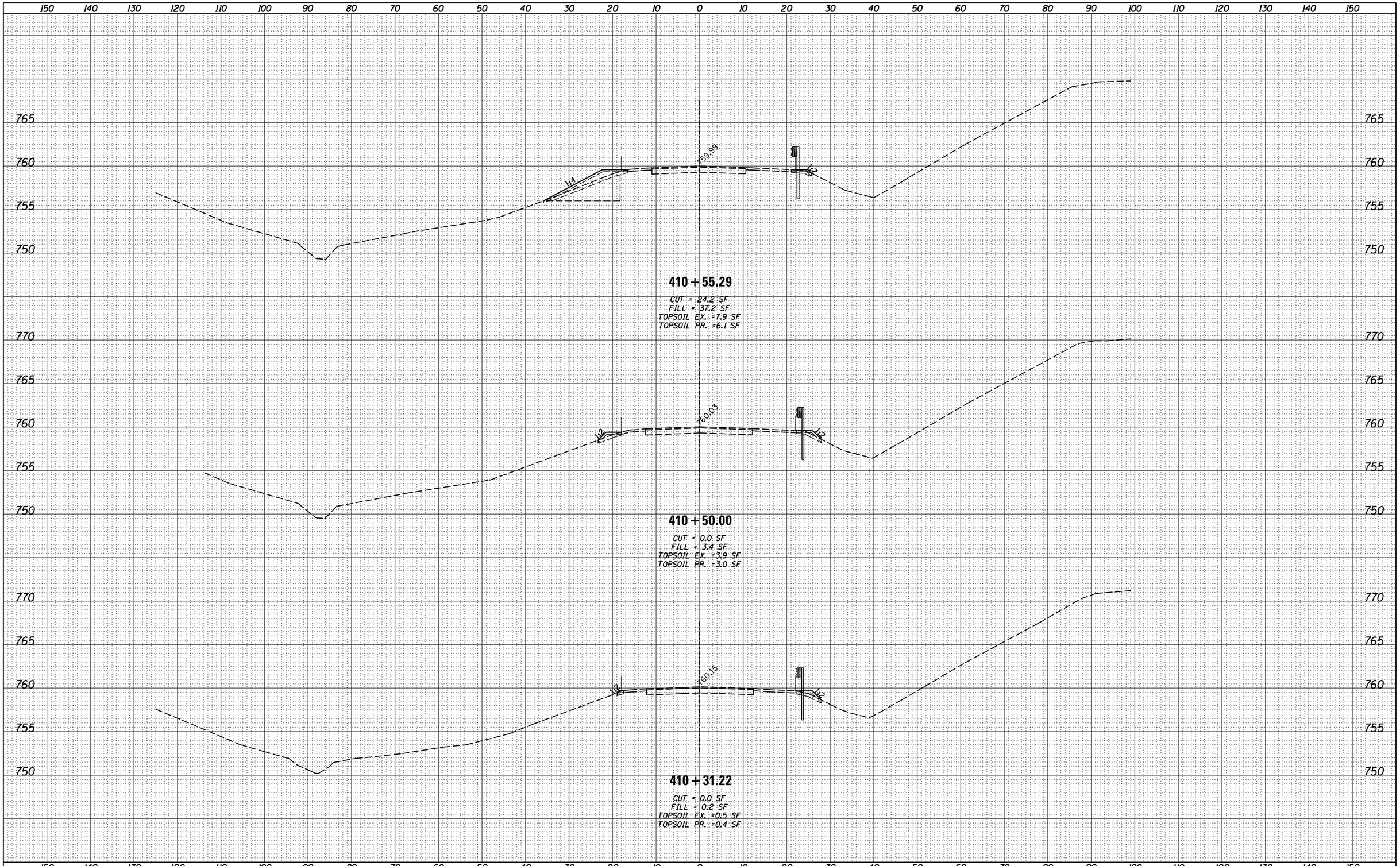
	PLOT DATE = 7/30/2014	DATE - 02/22/2013	REVISED -		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	79
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

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

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



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$MODELNAME$	PLOT DATE = 7/30/2014	DATE - 02/22/2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

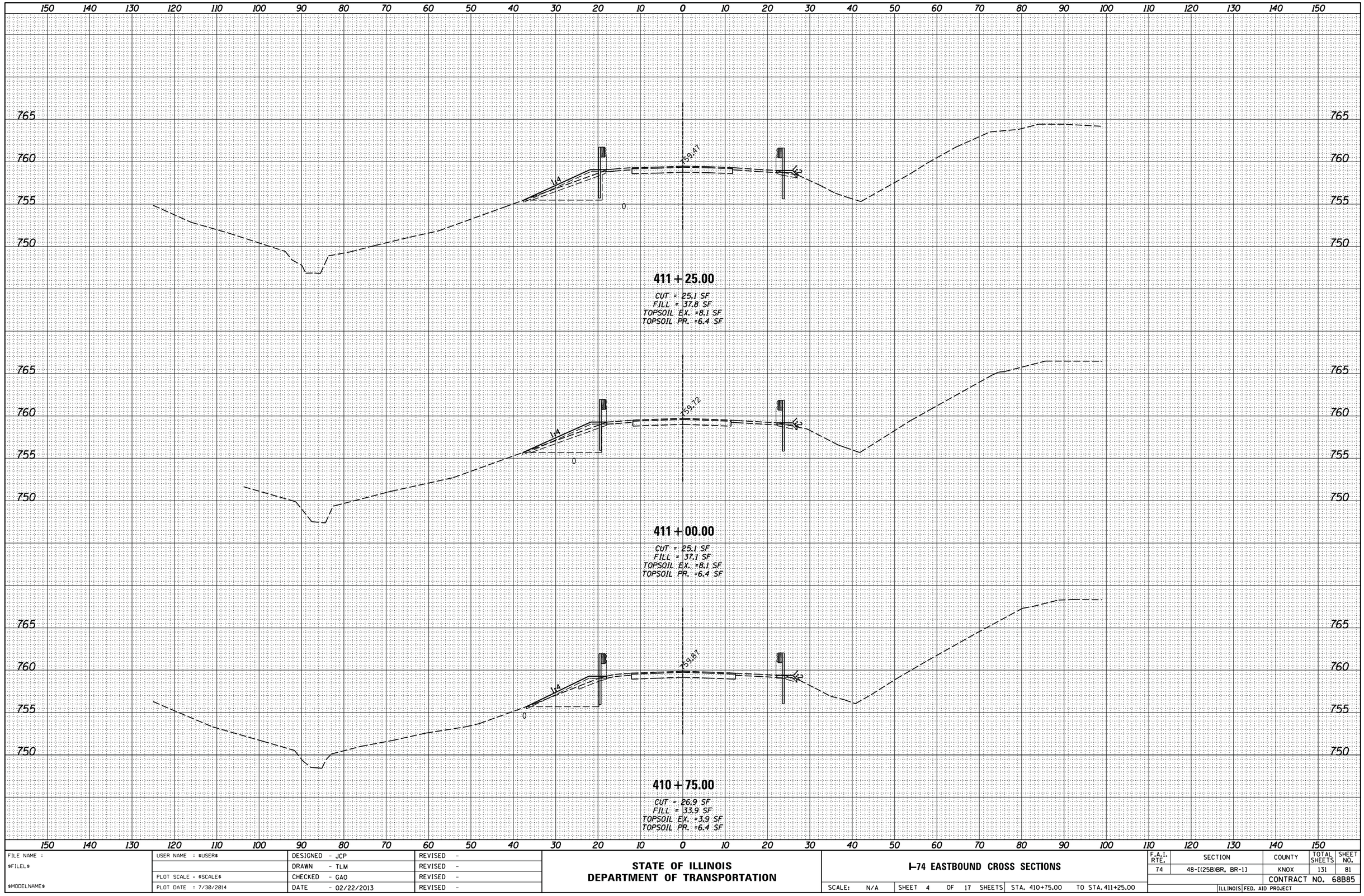
I-74 EASTBOUND CROSS SECTIONS

SCALE: N/A | SHEET 3 OF 17 SHEETS | STA. 410+31.22 | TO STA. 410+55.29

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	80
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

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

BY	DATE



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

BY	DATE

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	PLOT DATE = 7/30/2014	DATE - 02/22/2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-74 EASTBOUND CROSS SECTIONS

SCALE: N/A | SHEET 4 OF 17 SHEETS | STA. 410+75.00 TO STA. 411+25.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	81
		CONTRACT NO. 68B85		
		ILLINOIS FED. AID PROJECT		

FINAL SURVEY	NOTE BOOK	NO.
SURVEYED		
PLOTTED		
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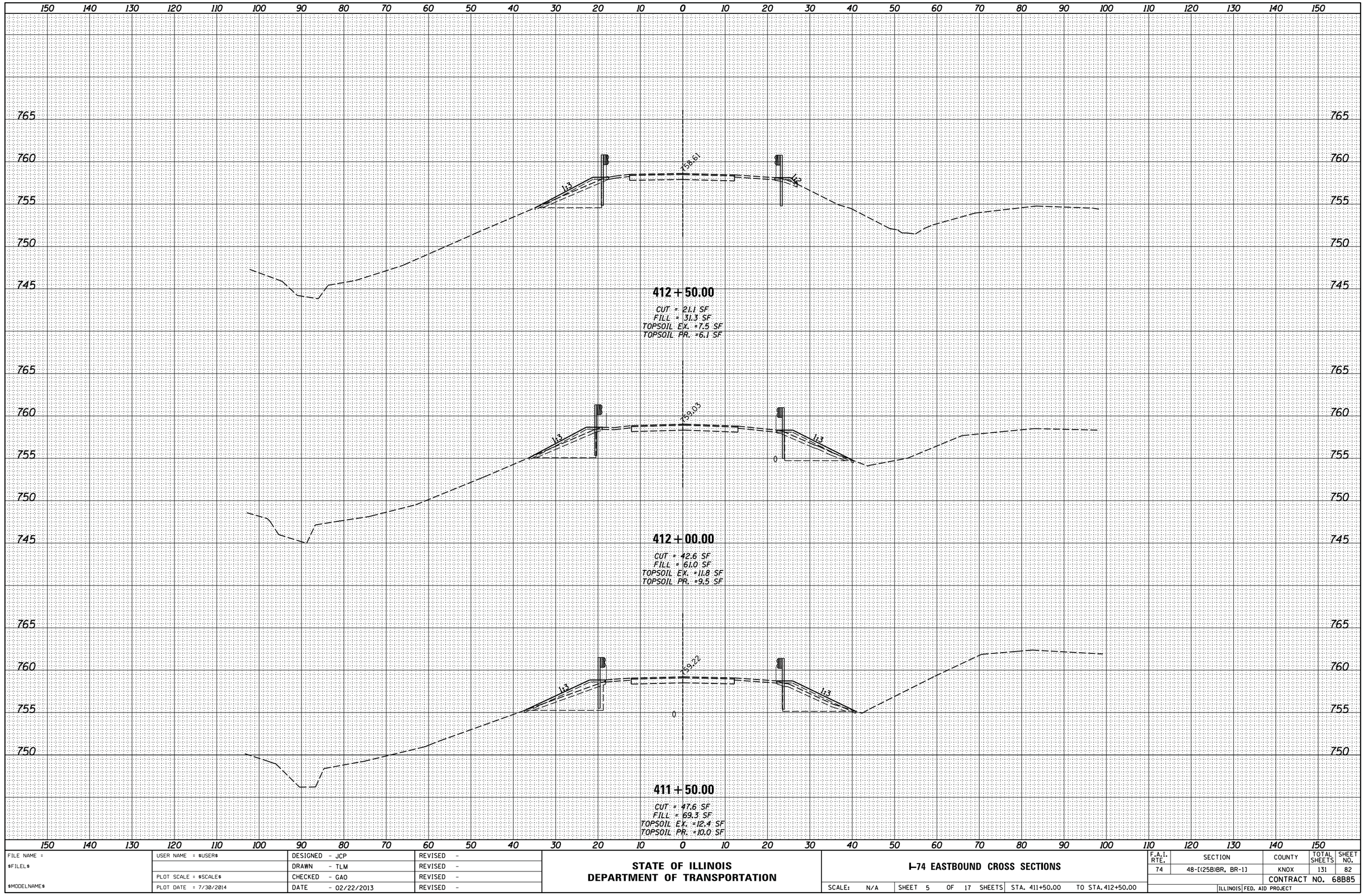
AREAS		
AREAS CHECKED		

BY	DATE



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SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

BY	DATE

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$MODELNAME$	PLOT DATE = 7/30/2014	DATE - 02/22/2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-74 EASTBOUND CROSS SECTIONS

SCALE: N/A | SHEET 5 OF 17 SHEETS | STA. 411+50.00 TO STA. 412+50.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	82
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

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

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SURVEYED		
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TEMPLATE		
NOTE BOOK		
AREAS		
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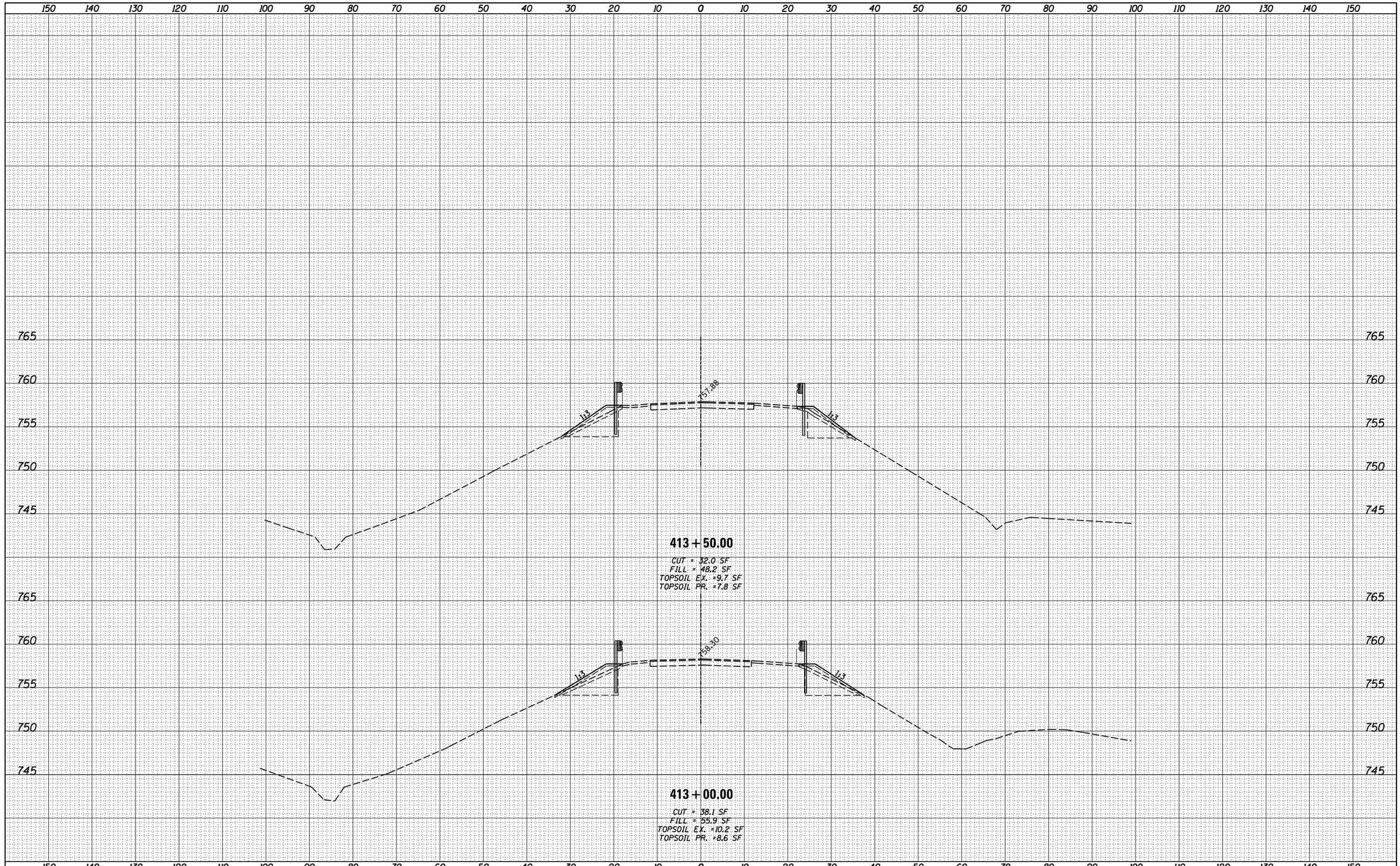

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	PLOT DATE = 7/30/2014	DATE - 02/22/2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-74 EASTBOUND CROSS SECTIONS

SCALE: N/A | SHEET 6 OF 17 SHEETS | STA. 413+00.00 | TO STA. 413+50.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	83
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

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

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

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

760 755 750 745 740

757.06

1:2 1:2

414 + 50.00

CUT = 31.8 SF
FILL = 43.1 SF
TOPSOIL EX. =9.0 SF
TOPSOIL PR. =4.7 SF

757.44

1:2 1:2

414 + 00.00

CUT = 31.2 SF
FILL = 43.6 SF
TOPSOIL EX. =8.9 SF
TOPSOIL PR. =5.2 SF

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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	PLOT DATE = 7/30/2014	DATE - 02/22/2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-74 EASTBOUND CROSS SECTIONS

SCALE: N/A | SHEET 7 OF 17 SHEETS | STA. 414+00.00 | TO STA. 414+50.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	84
		CONTRACT NO. 68B85		
		ILLINOIS FED. AID PROJECT		

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

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

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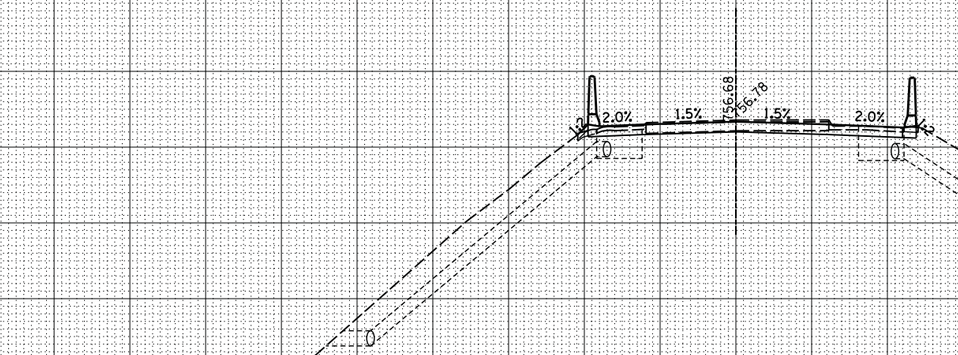
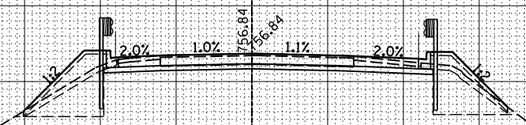
765 760 755 750 745 740



415+29.00

CUT = 9.4 SF
FILL = 0.3 SF
TOPSOIL EX. =1.5 SF
TOPSOIL PR. =0.5 SF



415+00.00

CUT = 52.9 SF
FILL = 52.4 SF
TOPSOIL EX. =9.2 SF
TOPSOIL PR. =6.5 SF

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

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - JCP	REVISED -
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	PLOT DATE = 7/30/2014	DATE - 02/22/2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

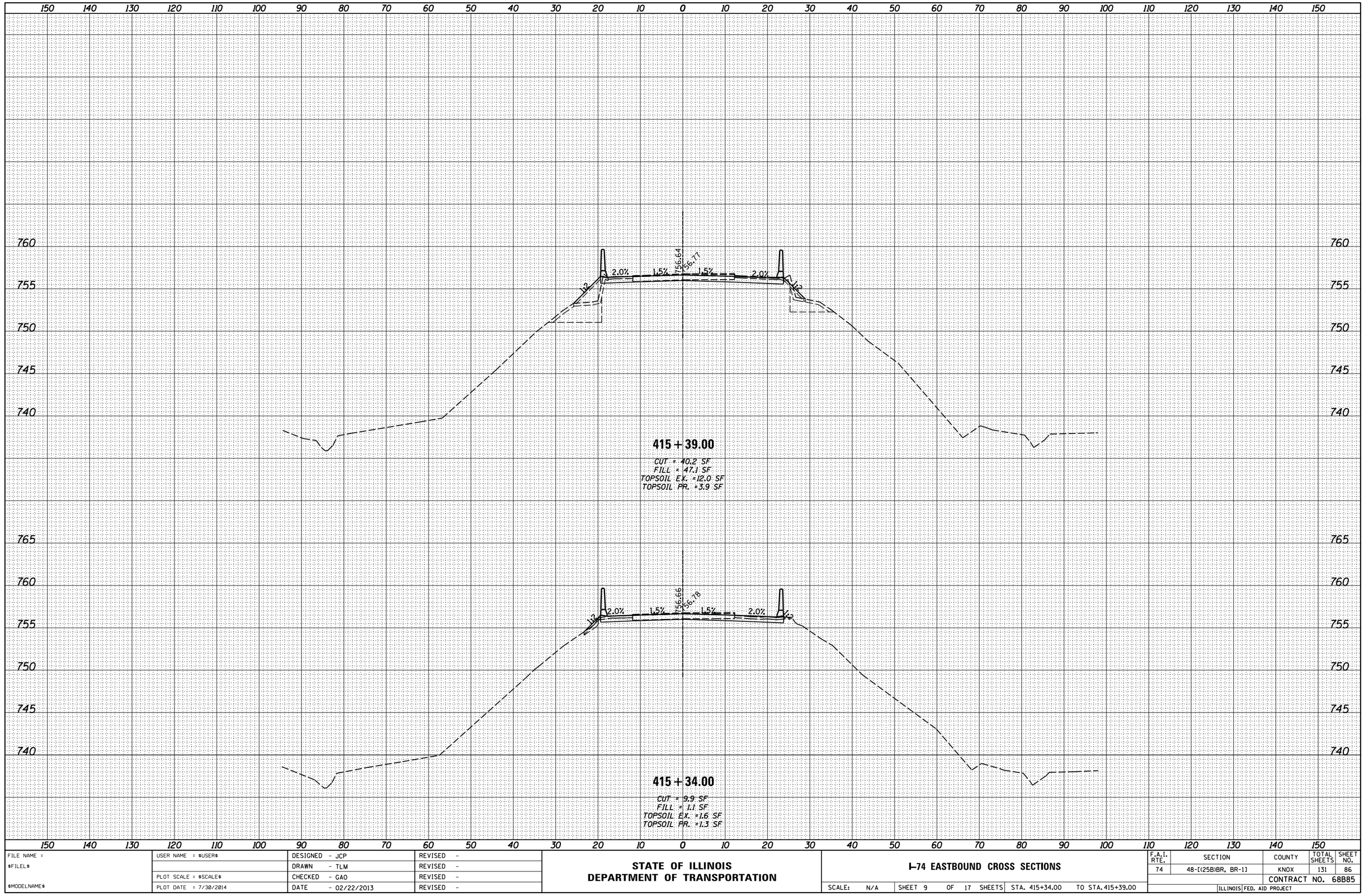
I-74 EASTBOUND CROSS SECTIONS

SCALE: N/A | SHEET 8 OF 17 SHEETS | STA. 415+00.00 | TO STA. 415+29.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	85
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

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

BY	DATE



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

BY	DATE

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - JCP	REVISED -
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	PLOT DATE = 7/30/2014	DATE - 02/22/2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-74 EASTBOUND CROSS SECTIONS

SCALE: N/A | SHEET 9 OF 17 SHEETS | STA. 415+34.00 | TO STA. 415+39.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	86
		CONTRACT NO. 68B85		
		ILLINOIS FED. AID PROJECT		

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

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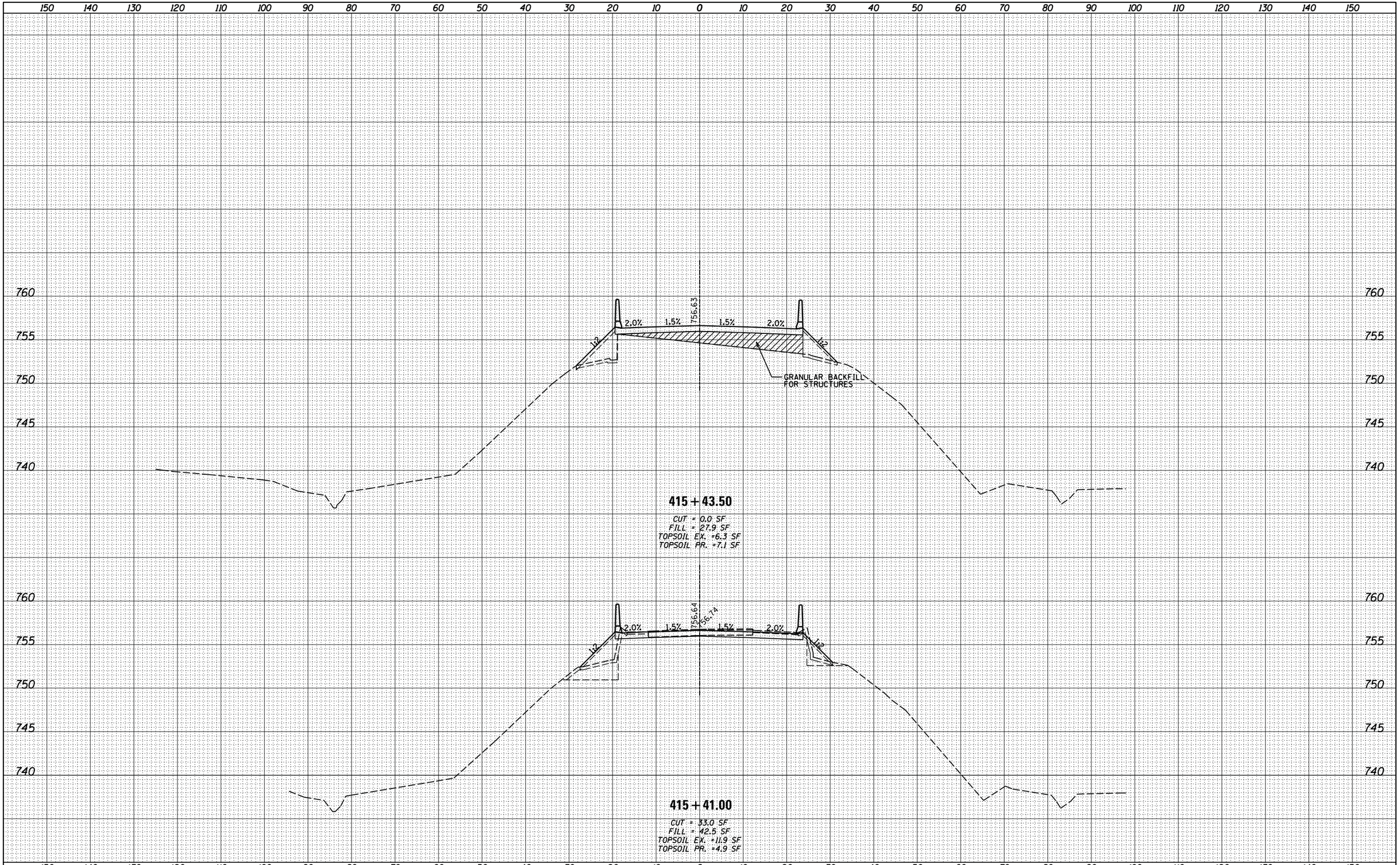
	PLOTTED	
	TEMPLATE	
	AREAS	
	AREAS CHECKED	
NO.	BY	DATE



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	PLOT DATE = 7/30/2014	DATE - 02/22/2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-74 EASTBOUND CROSS SECTIONS

SCALE: N/A | SHEET 10 OF 17 SHEETS | STA. 415+41.00 | TO STA. 415+43.50

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	87
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

FINAL SURVEY	
NOTE BOOK	
NO.	

	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

ORIGINAL SURVEY	
NOTE BOOK	
NO.	

	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

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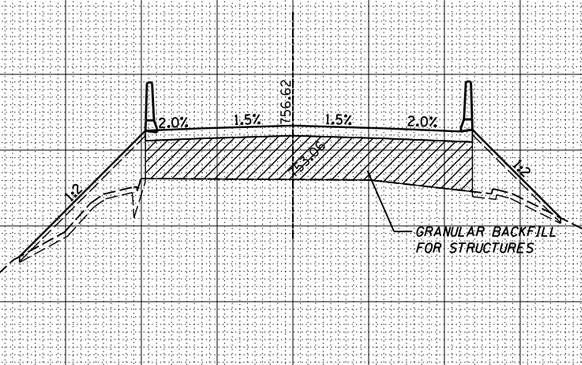
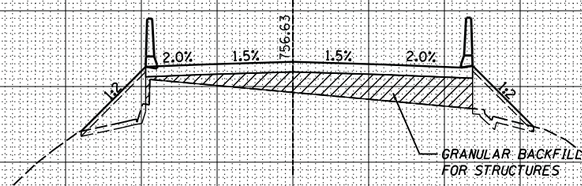
760 755 750 745 740



415 + 49.00

CUT = 0.0 SF
FILL = 46.4 SF
TOPSOIL EX. =12.0 SF
TOPSOIL PR. =9.4 SF



415 + 44.00

CUT = 0.0 SF
FILL = 26.3 SF
TOPSOIL EX. =6.5 SF
TOPSOIL PR. =5.5 SF

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	PLOT DATE = 7/30/2014	DATE - 02/22/2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-74 EASTBOUND CROSS SECTIONS

SCALE: N/A | SHEET 11 OF 17 SHEETS | STA. 415+44.00 | TO STA. 415+49.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	88
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

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

BY	DATE

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

BY	DATE

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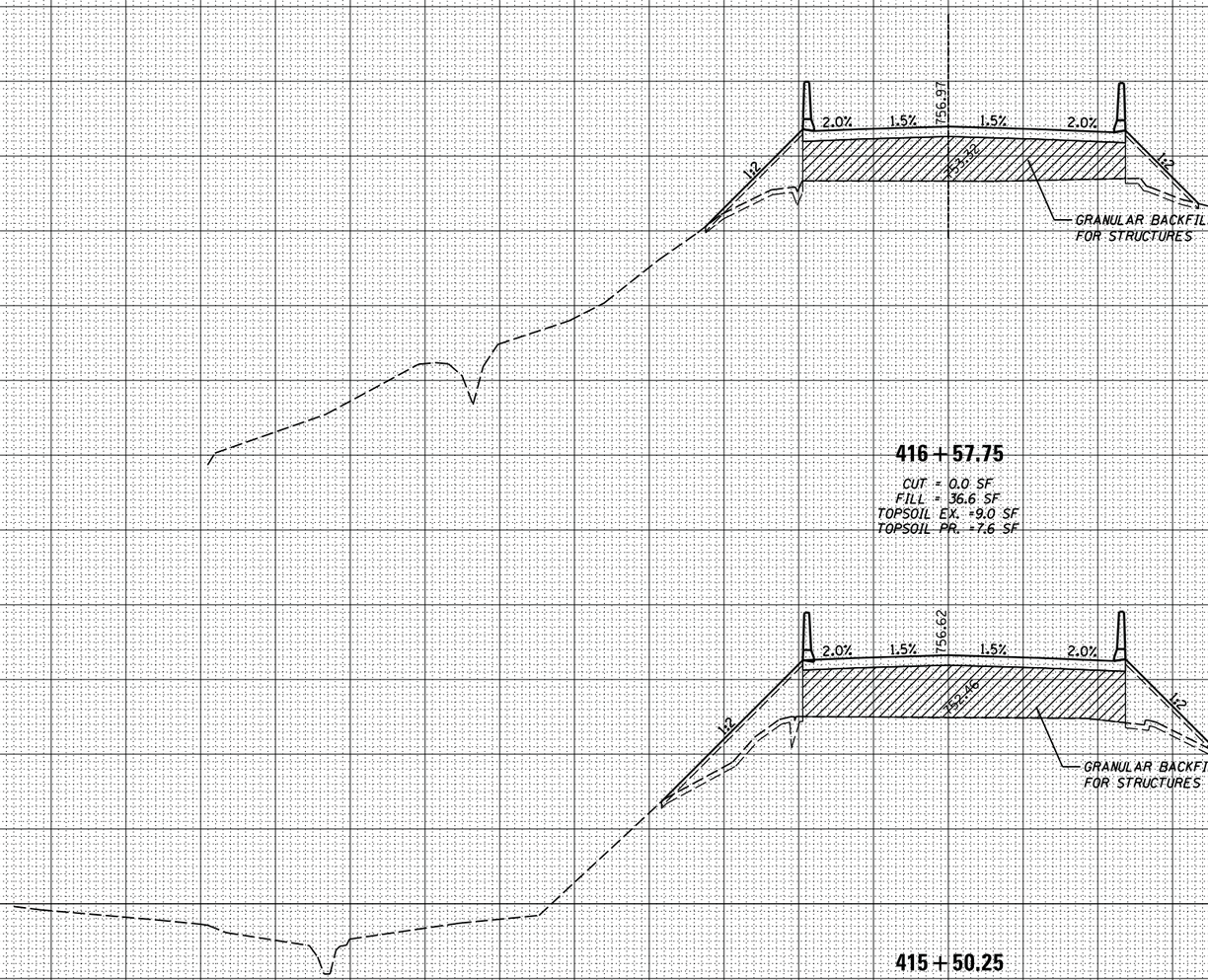
760 755 750 745 740 735



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	PLOT DATE = 7/30/2014	DATE - 02/22/2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

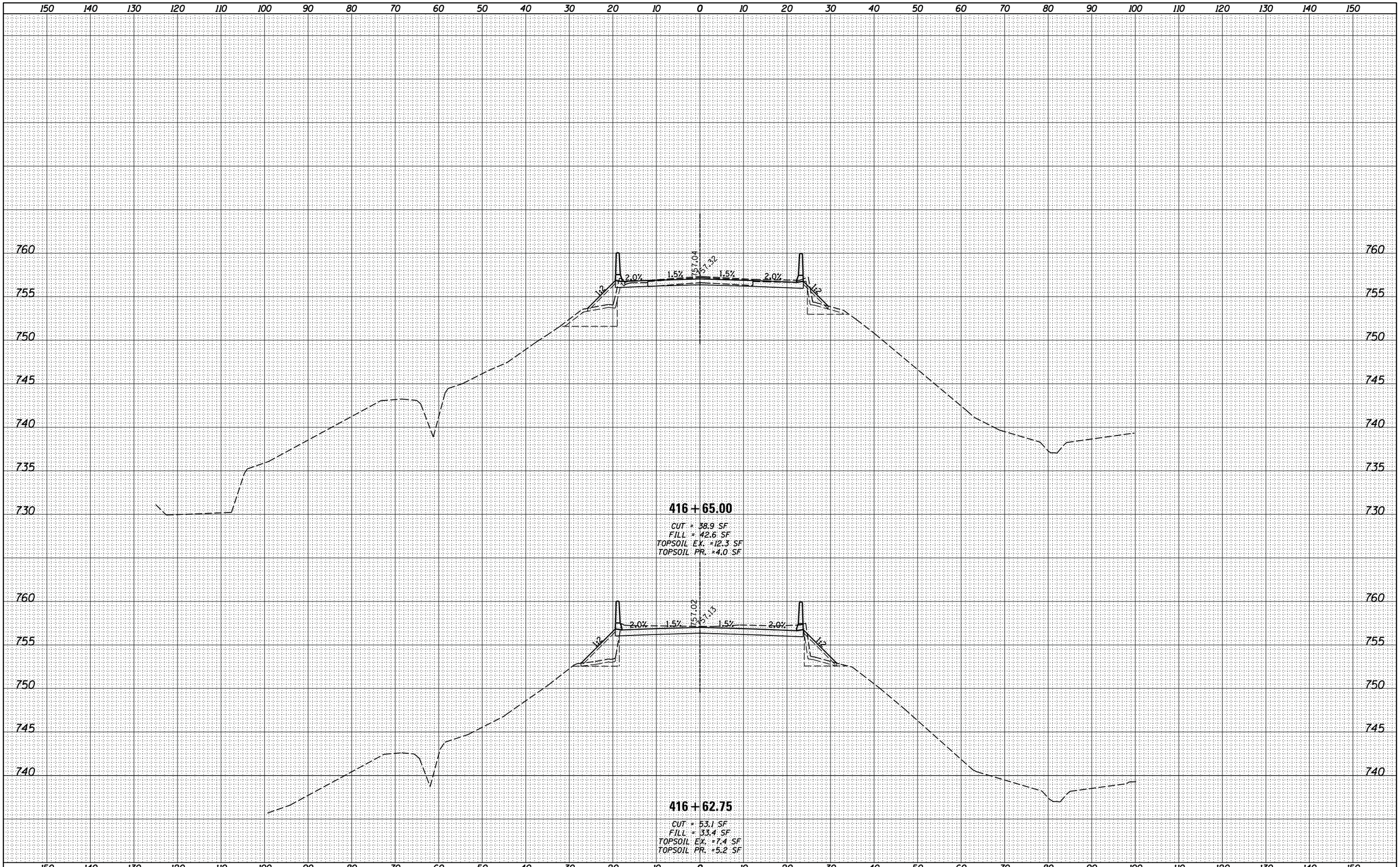
I-74 EASTBOUND CROSS SECTIONS

SCALE: N/A | SHEET 12 OF 17 SHEETS | STA. 415+50.25 | TO STA. 416+57.75

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	89
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

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

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



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	PLOT DATE = 7/30/2014	DATE - 02/22/2013	REVISED -

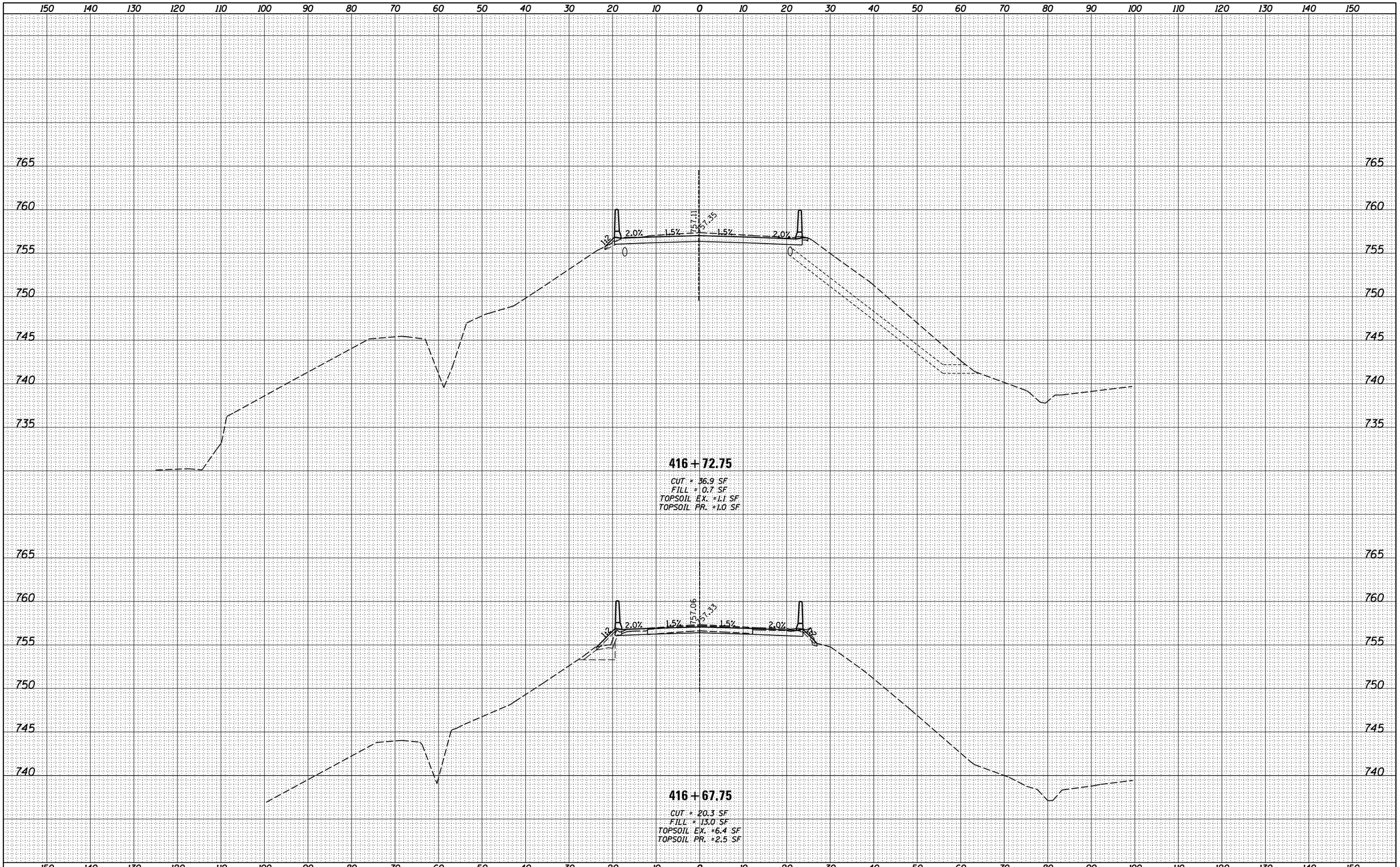
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-74 EASTBOUND CROSS SECTIONS

SCALE: N/A | SHEET 13 OF 17 SHEETS | STA. 416+62.75 | TO STA. 416+65.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-E(25B)BR, BR-1]	KNOX	131	90
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

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



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

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$MODELNAME$	PLOT DATE = 7/30/2014	DATE - 02/22/2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-74 EASTBOUND CROSS SECTIONS

SCALE: N/A | SHEET 14 OF 17 SHEETS | STA. 416+67.75 | TO STA. 416+72.75

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	91
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

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

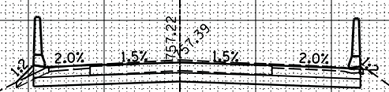
BY	DATE

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

BY	DATE

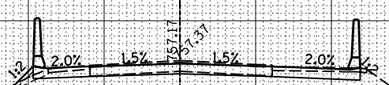
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

765 760 755 750 745 740



416+82.75

CUT = 35.3 SF
FILL = 0.7 SF
TOPSOIL EX. =1.7 SF
TOPSOIL PR. =0.9 SF



416+77.75

CUT = 10.1 SF
FILL = 0.7 SF
TOPSOIL EX. =1.5 SF
TOPSOIL PR. =0.8 SF

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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$MODELNAME$	PLOT DATE = 7/30/2014	DATE - 02/22/2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-74 EASTBOUND CROSS SECTIONS

SCALE: N/A | SHEET 15 OF 17 SHEETS | STA. 416+77.75 TO STA. 416+82.75

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	92
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

FINAL SURVEY	
NOTE BOOK	
NO.	

	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

ORIGINAL SURVEY	
NOTE BOOK	
NO.	

	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

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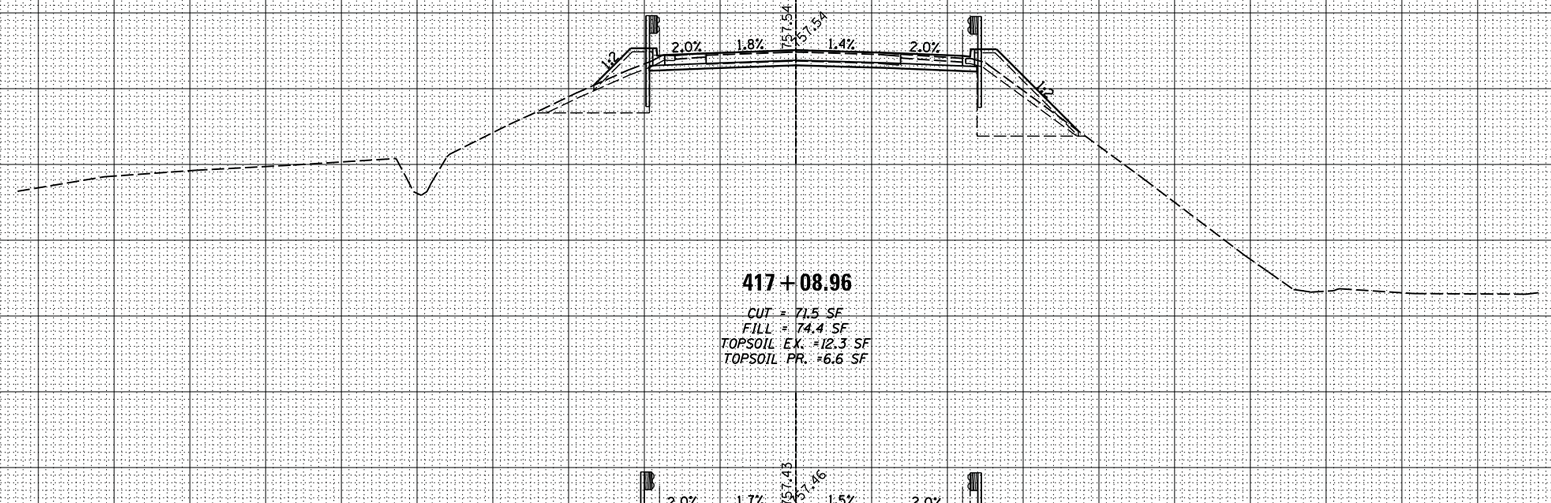
765 760 755 750 745



417 + 08.96

CUT = 71.5 SF
FILL = 74.4 SF
TOPSOIL EX. =12.3 SF
TOPSOIL PR. =6.6 SF

417 + 00.00

CUT = 69.0 SF
FILL = 70.9 SF
TOPSOIL EX. =12.1 SF
TOPSOIL PR. =7.0 SF

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - JCP	REVISED -
		DRAWN - TLM	REVISED -
$MODELNAME$	PLOT SCALE = $SCALE$	CHECKED - GAO	REVISED -
	PLOT DATE = 7/30/2014	DATE - 02/22/2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

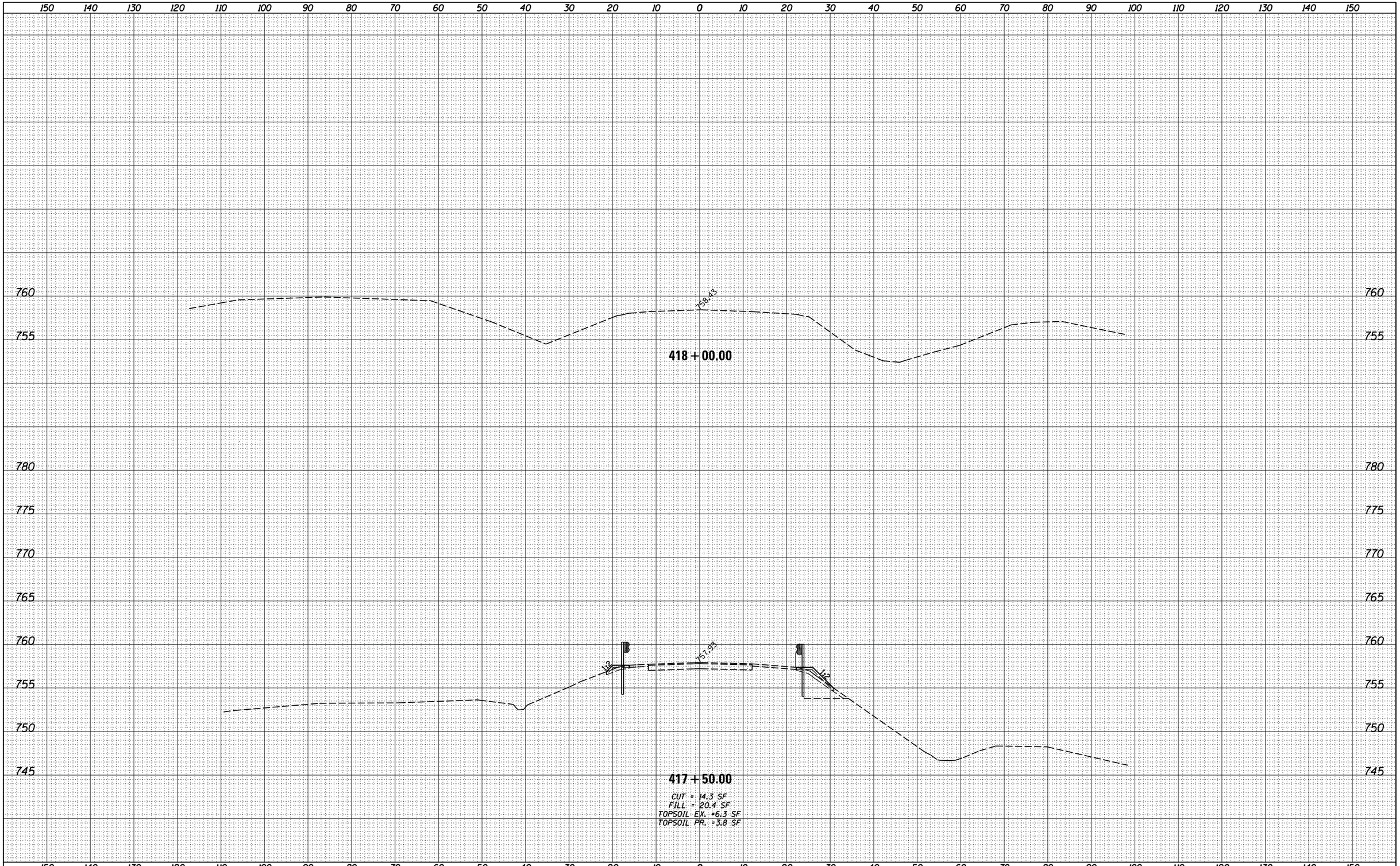
I-74 EASTBOUND CROSS SECTIONS

SCALE: N/A | SHEET 16 OF 17 SHEETS | STA. 417+00.00 | TO STA. 417+08.96

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	93
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

FINAL SURVEY	
NOTE BOOK	
NO.	

	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		



ORIGINAL SURVEY	
NOTE BOOK	
NO.	

	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - JCP	REVISED -
		DRAWN - TLM	REVISED -
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$MODELNAME$	PLOT DATE = 7/30/2014	DATE - 02/22/2013	REVISED -

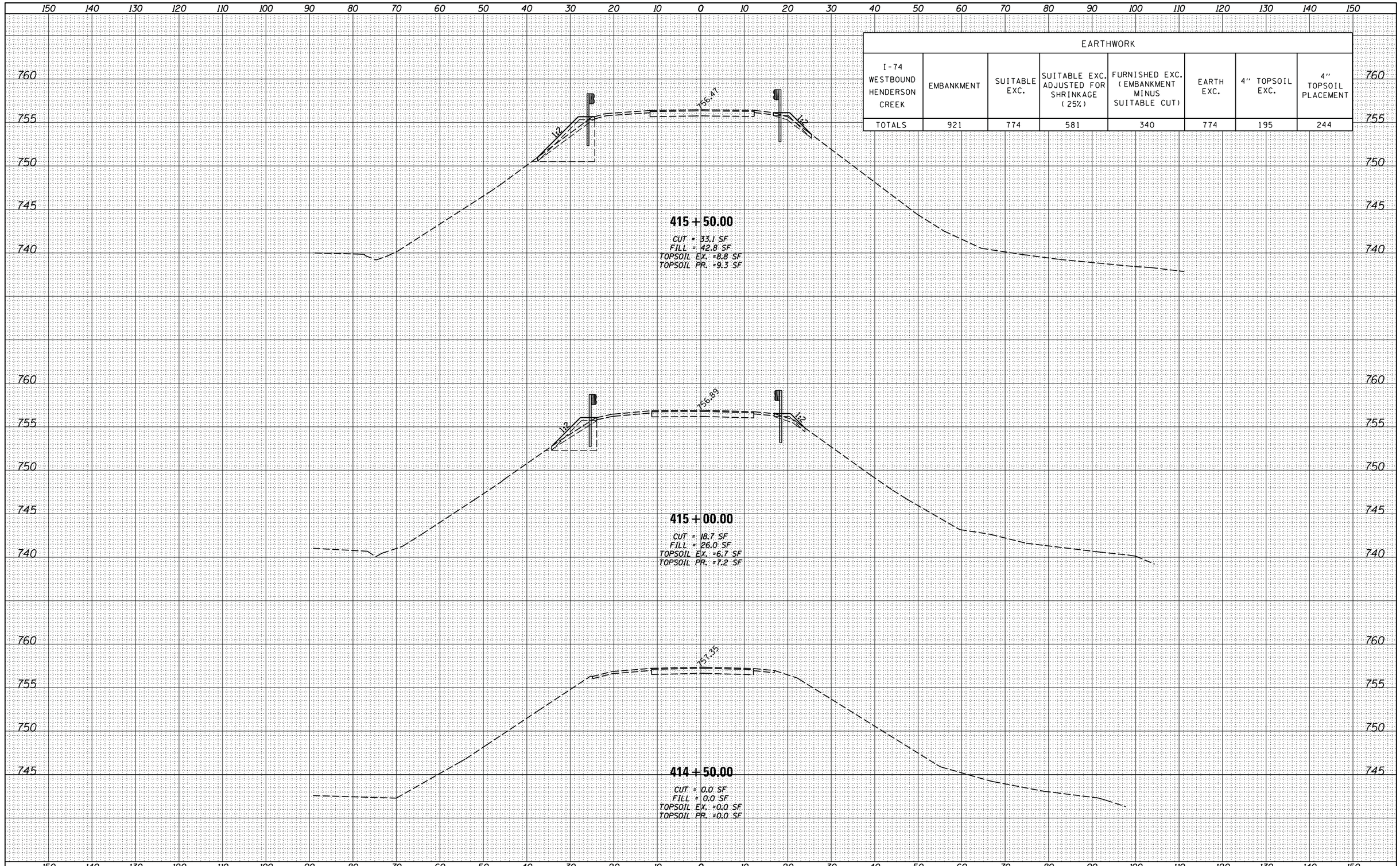
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-74 EASTBOUND CROSS SECTIONS

SCALE: N/A | SHEET 17 OF 17 SHEETS | STA. 417+50.00 | TO STA. 418+00.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	94
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

EARTHWORK							
I-74 WESTBOUND HENDERSON CREEK	EMBANKMENT	SUITABLE EXC.	SUITABLE EXC. ADJUSTED FOR SHRINKAGE (25%)	FURNISHED EXC. (EMBANKMENT MINUS SUITABLE CUT)	EARTH EXC.	4" TOPSOIL EXC.	4" TOPSOIL PLACEMENT
TOTALS	921	774	581	340	774	195	244



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

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

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - JCP	REVISED -
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$MODELNAME$	PLOT DATE = 7/30/2014	DATE - 02/22/2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

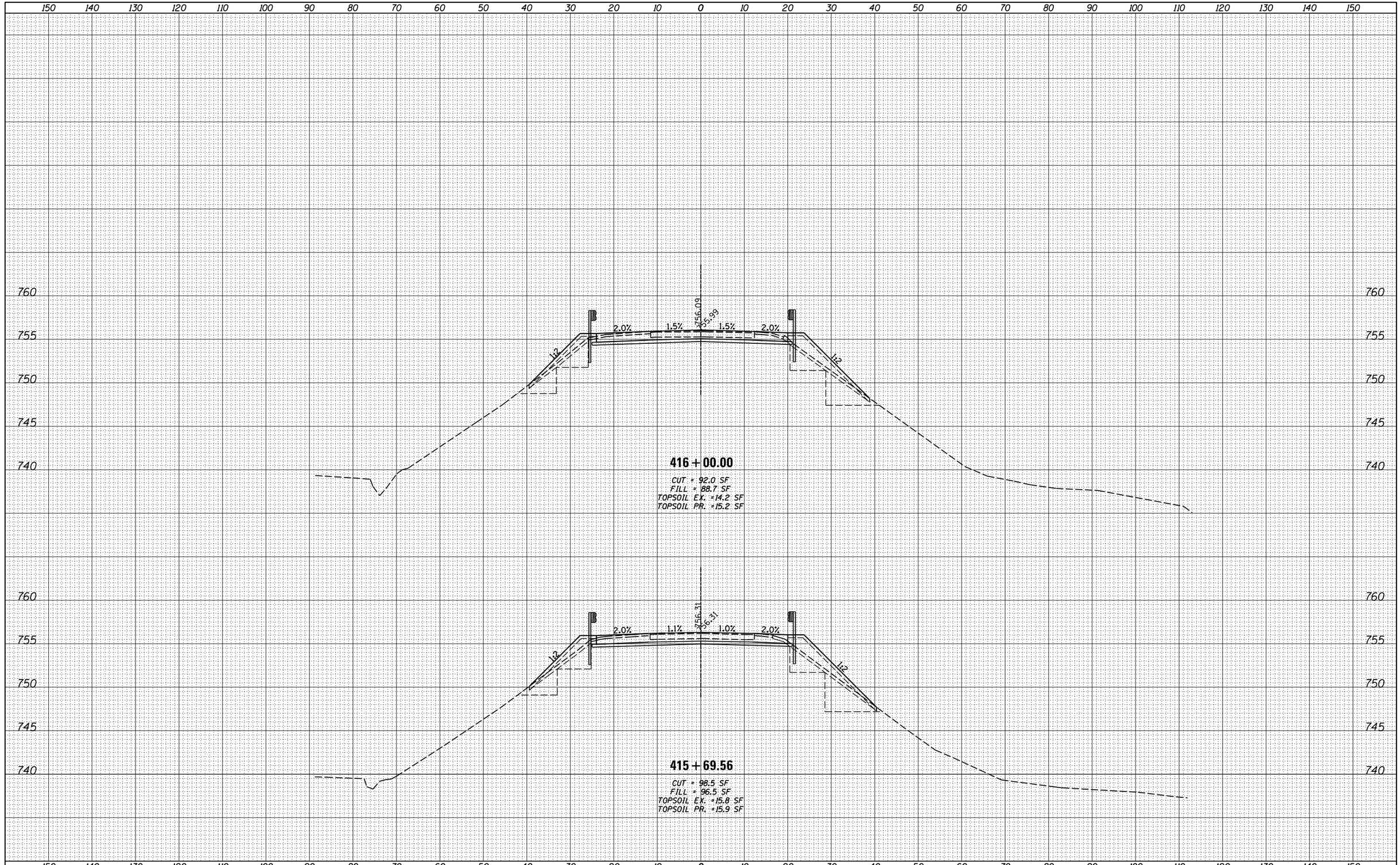
I-74 WESTBOUND CROSS SECTIONS

SCALE: N/A | SHEET 1 OF 17 SHEETS | STA. 414+50.00 | TO STA. 415+50.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	95
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

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

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



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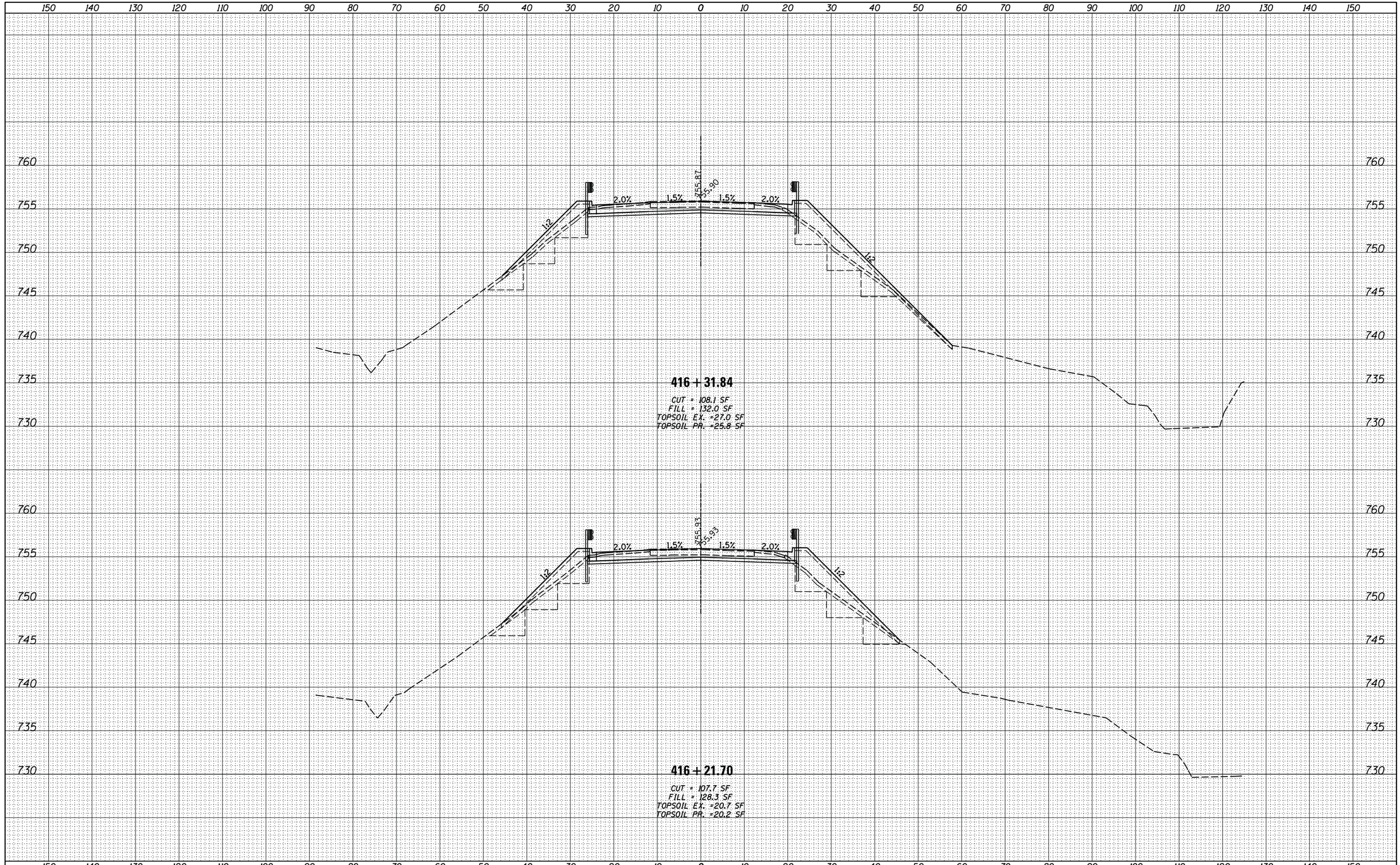
		DRAWN - TLM	REVISED -			74	48-[(25B)BR, BR-1]	KNOX	131	96
$MODELNAME$	PLOT SCALE = $SCALE$	CHECKED - GAO	REVISED -					CONTRACT NO. 68B85		
	PLOT DATE = 7/30/2014	DATE - 02/22/2013	REVISED -		SCALE: N/A SHEET 2 OF 17 SHEETS STA. 415+69.56 TO STA. 416+00.00			ILLINOIS FED. AID PROJECT		

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



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

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	PLOT DATE = 7/30/2014	DATE - 02/22/2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

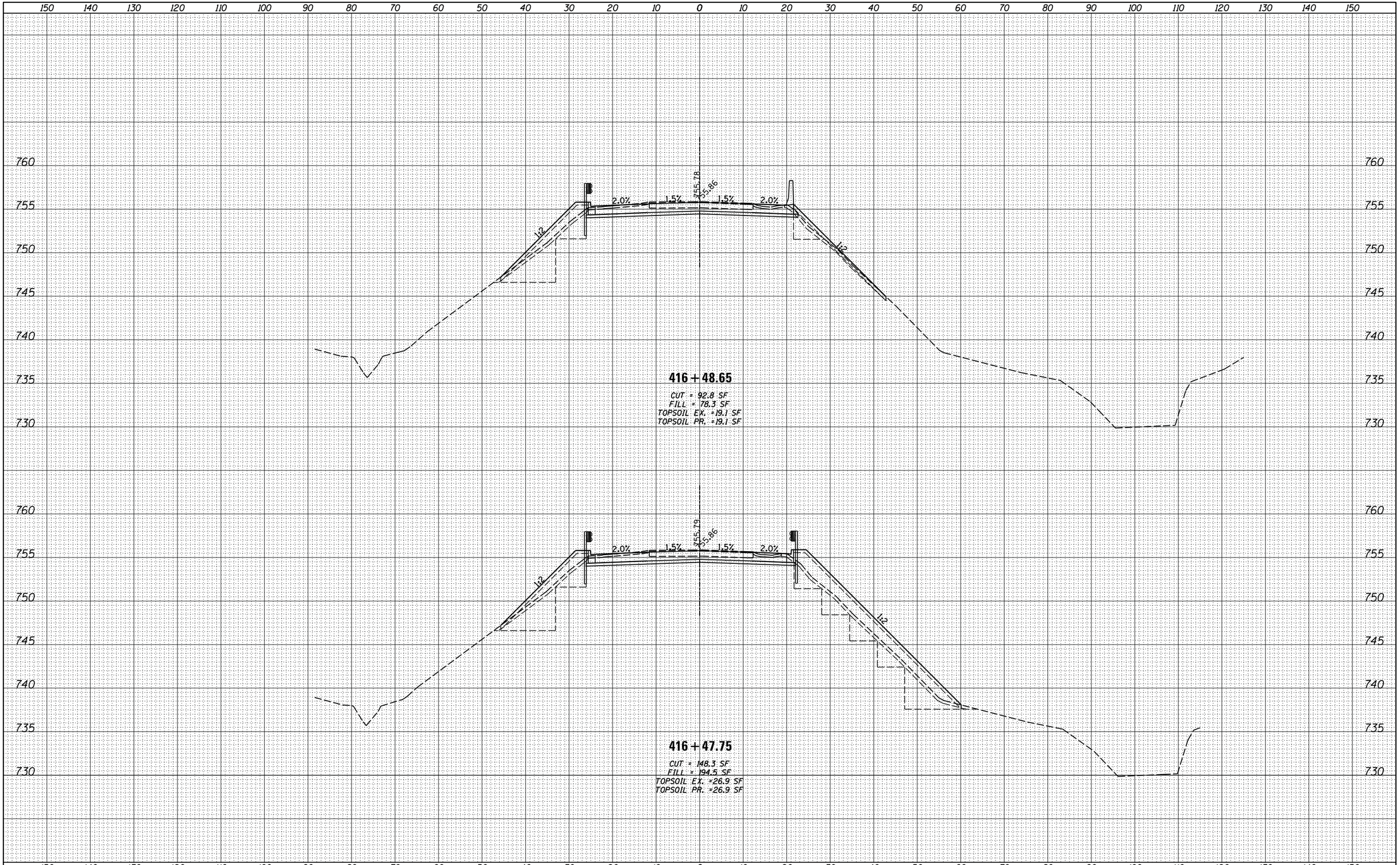
I-74 WESTBOUND CROSS SECTIONS

SCALE: N/A | SHEET 3 OF 17 SHEETS | STA. 416+21.70 | TO STA. 416+31.84

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	97
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

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

BY	DATE



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

BY	DATE

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	PLOT DATE = 7/30/2014	DATE - 02/22/2013	REVISED -

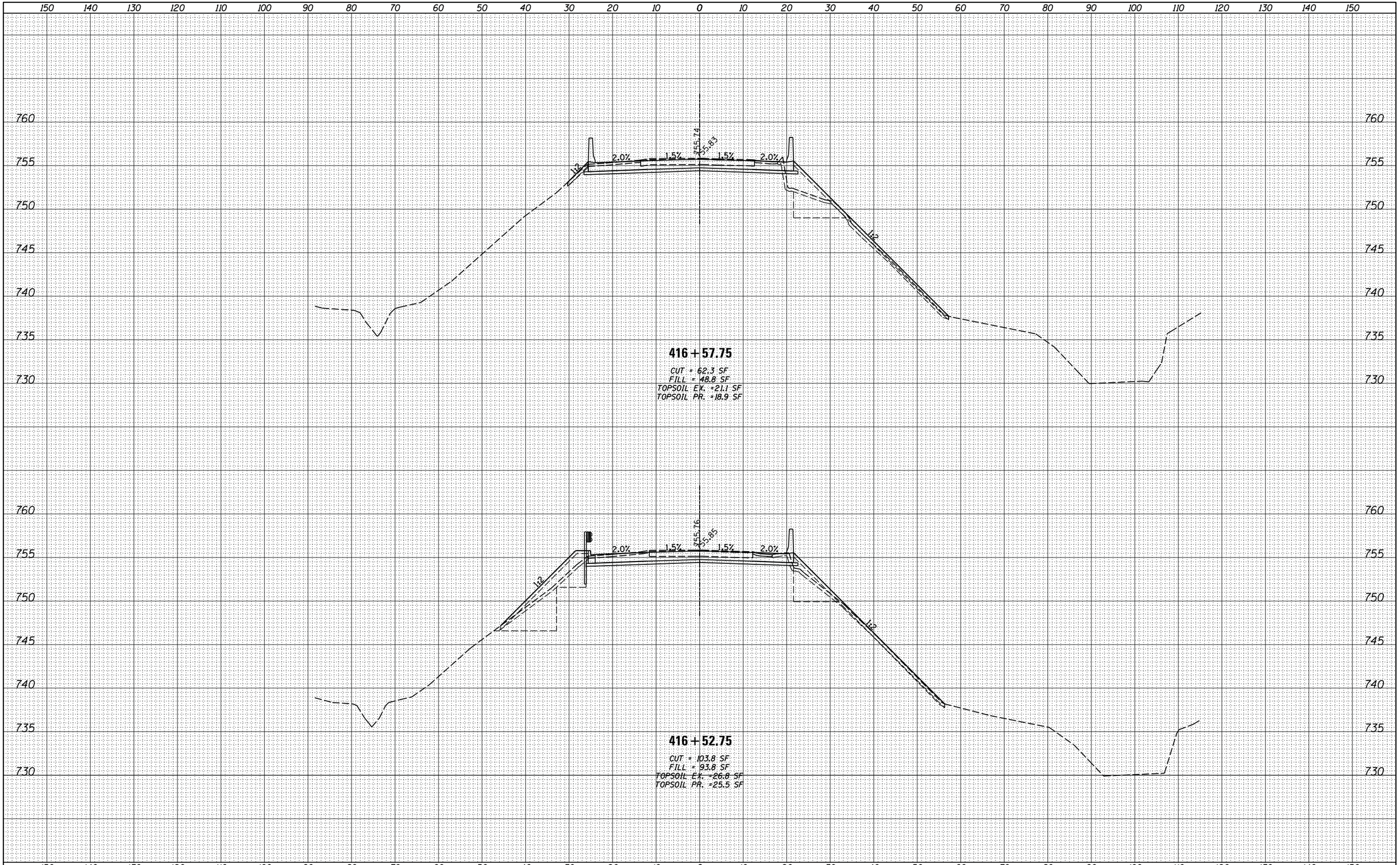
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-74 WESTBOUND CROSS SECTIONS

SCALE: N/A | SHEET 4 OF 17 SHEETS | STA. 416+47.75 | TO STA. 416+48.65

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	98
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

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



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

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		DRAWN - TLM	REVISED -		
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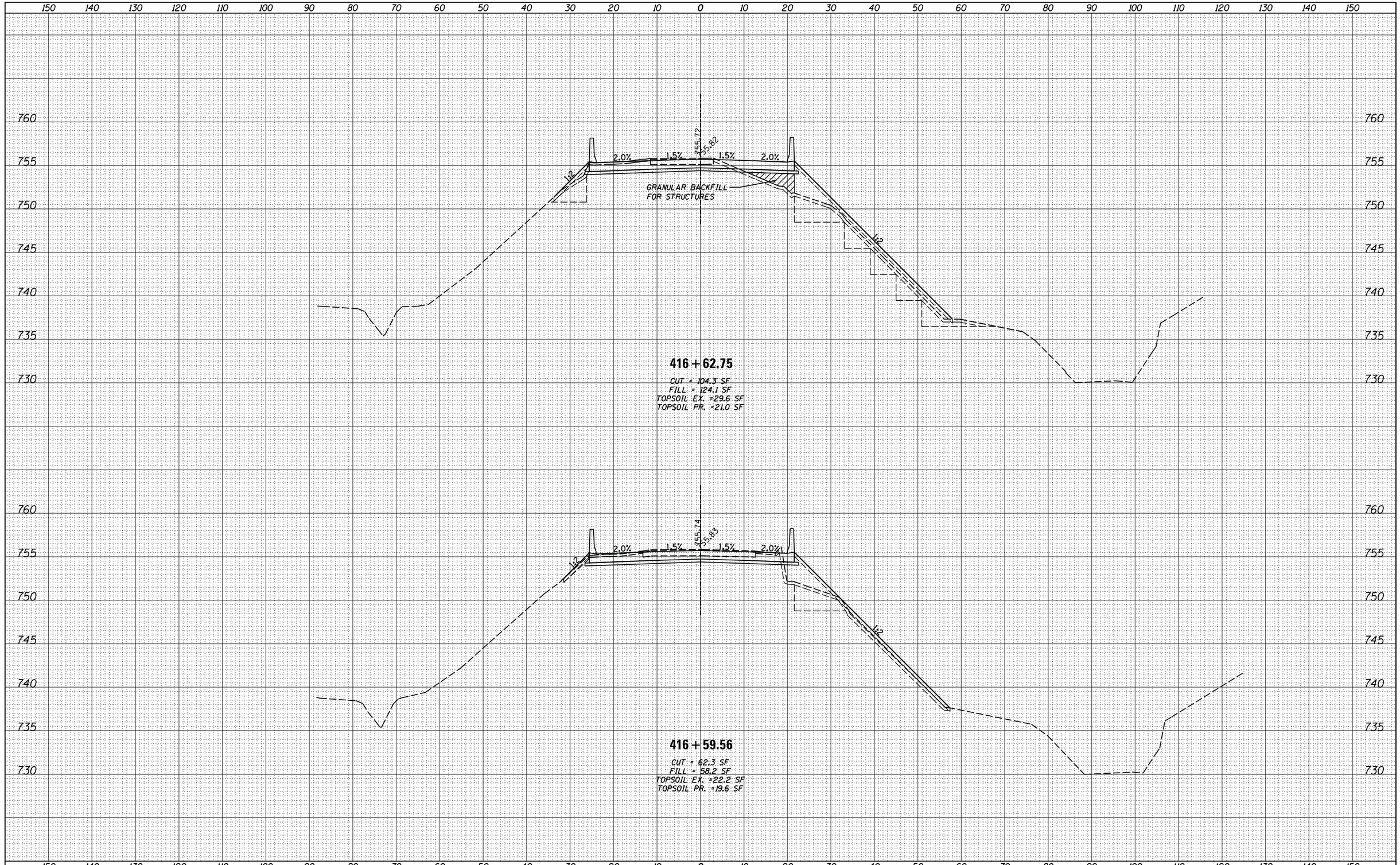
	PLOT DATE = 7/30/2014	DATE - 02/22/2013	REVISED -		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	99
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			

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



ORIGINAL SURVEY	NOTE BOOK	
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	PLOTED	
	TEMPLATE	
	AREAS	
	AREAS CHECKED	
NO.	BY	DATE

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	PLOT DATE = 7/30/2014	DATE - 02/22/2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-74 WESTBOUND CROSS SECTIONS

SCALE: N/A | SHEET 6 OF 17 SHEETS | STA. 416+59.56 | TO STA. 416+62.75

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	48-[(25B)BR, BR-1]	KNOX	131	100
		CONTRACT NO. 68B85		
	ILLINOIS FED. AID PROJECT			