CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	*	CLAY	109	1

*(6BR-1, 6BR-3, 8BR-3, 8BR-4)B-1

P-97-027-05
D-97-031-06

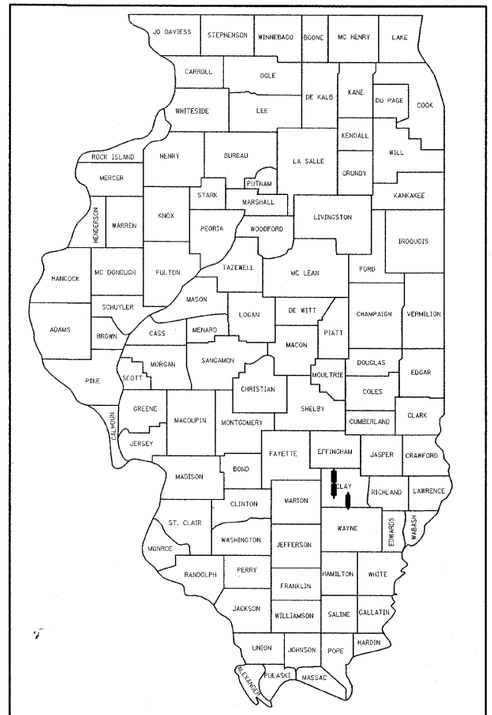
SEE SHEET 2 FOR INDEX OF SHEETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

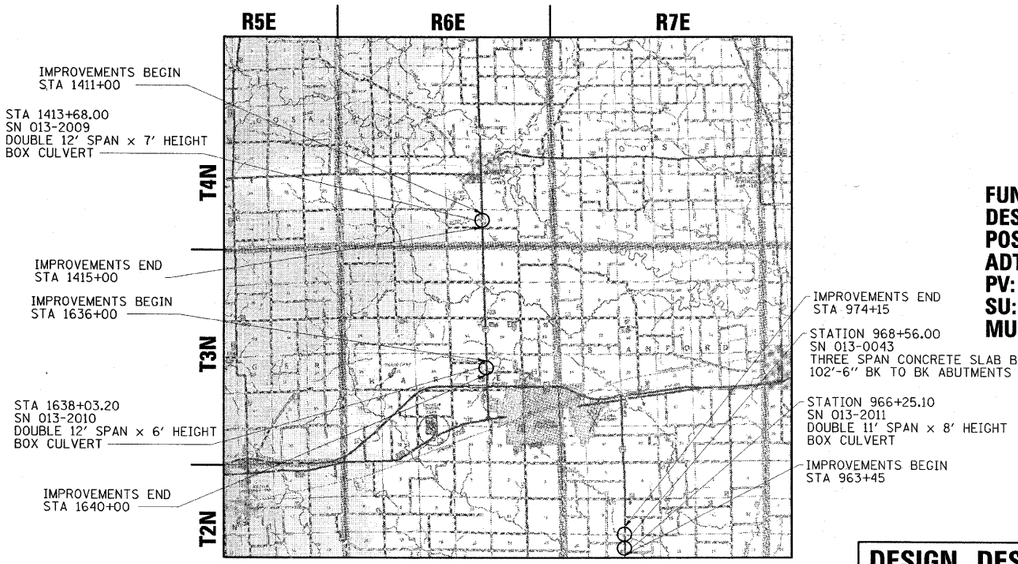
PROPOSED
HIGHWAY PLANS

FAP RTE 328 (US 45)
SECTIONS (6BR–1, 6BR–3, 8BR–3, 8BR–4)B–1
PROJECT: ACF-ACBRF-0328(024)
CLAY COUNTY
C – 97 – 071 – 05

STRUCTURE REPLACEMENTS
OVER GROVE CREEK, BRANCH OF ELM CREEK,
SEMINARY CREEK OVERFLOW, & SEMINARY CREEK



LOCATION OF SECTION INDICATED THUS: ■



LOCATION MAP

SCALE
0 1 2 3 4 5 MILES
0 5000 10000 15000 20000 25000 FEET

FUNCTIONAL CLASSIFICATION:	**OTHER PRINCIPAL ARTERIAL**
DESIGN SPEED:	**55 mph**
POSTED SPEED:	**55 mph**
ADT: (6BR–1; 6BR–3; 8BR–3, & 8BR–4)B–1	**5001; 4294; 2366(2008)**
PV: (6BR–1; 6BR–3; 8BR–3, & 8BR–4)B–1	**88%; 88%; 85%**
SU: (6BR–1; 6BR–3; 8BR–3, & 8BR–4)B–1	**7%; 6%; 7%**
MU: (6BR–1; 6BR–3; 8BR–3, & 8BR–4)B–1	**5%; 6%; 8%**

0 20 40 60
SCALE IN FEET – PLAN & PROFILE

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.

MICROFILMED _____
REEL NUMBER _____
AWARDED _____
RESIDENT ENGINEER _____
AS BUILT CHANGES WERE MADE
ON THE FOLLOWING SHEETS _____

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

DISTRICT 7 NO. (217) 342–3951

PROJECT ENGINEER: MARK DAUGHERTY
UNIT CHIEF:
TOWNSHIP: STANFORD, HARTER, & LOUISVILLE
CONTRACT NO.: 74107

ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS
URBANA, ILLINOIS

	(6BR–1)B–1	(6BR–3)B–1	(8BR–3, 8BR–4)B–1
GROSS LENGTH	**= 400 FT. = 0.076 MI.;**	**= 400 FT. = 0.076 MI.;**	**= 1070 FT.= 0.203 MI.;**
NET LENGTH	**= 400 FT. = 0.076 MI.;**	**= 400 FT. = 0.076 MI.;**	**= 1070 FT.= 0.203 MI.;**

DESIGN DESIGNATION
N.A.

RICHARD D. PAYNE 37421 LICENSED PROFESSIONAL ENGINEER OF ILLINOIS

Richard D. Payne DATE: 08/12/08
ILLINOIS PROFESSIONAL LICENSE NO. 37421
(EXPIRATION DATE: 11–30–09)

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED August 14 20 08
Roger L. Driskell
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER
December 5, 2008
Eric E. Harm
Interim ENGINEER OF DESIGN AND ENVIRONMENT
December 5, 20 08
Christine M. Reed
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	*	CLAY	109	2
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
*(6BR-1, 6BR-3, 8BR-3, 8BR-4)B-1				

INDEX OF SHEETS

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	04/08
DRAWN BY:	HAS	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

GENERAL NOTES

1. THE ENGINEER SHALL BE THE SOLE JUDGE CONCERNING CURING TIME FOR THE VARIOUS HMA LIFTS.
2. EXCEPT AS NOTED ON THE PLANS, PAVEMENT GRADES SHOWN ARE AT THE TOP OF PAVEMENT SURFACES.
3. ALL SAWCUTTING OF EXISTING PAVEMENT SHALL BE CONSIDERED INCLUDED IN THE PAY ITEMS INVOLVED. THE MINIMUM SAW DEPTH IN THE PAVEMENT SHALL BE 1½" UNLESS OTHERWISE NOTED.
4. WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL MONUMENTS UNTIL AN AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING AN AUTHORIZED SURVEYOR REESTABLISH ANY SECTION OR SUBSECTION MONUMENTS DESTROYED BY HIS OPERATIONS.
5. THE THICKNESS OF HMA MIXTURES SHOWN ON THE PLANS IS THE NOMINAL THICKNESS. DEVIATIONS FROM THE NOMINAL THICKNESS WILL BE PERMITTED WHEN SUCH DEVIATIONS OCCUR DUE TO IRREGULARITIES IN THE EXISTING SURFACE OR BASE ON WHICH THE HMA MIXTURE IS PLACED.
6. ANY REFERENCE TO A STANDARD IN THESE PLANS SHALL BE INTERPRETED TO MEAN THE EDITION AS INDICATED BY THE SUBNUMBER LISTED ON THE INDEX OF SHEETS OR THE COPY OF THE STANDARD INCLUDED IN THESE PLANS.
7. FACTORS USED FOR ESTIMATING PLAN QUANTITIES ARE AS FOLLOWS AND SHALL NOT BE USED FOR THE BASIS OF FINAL QUANTITES:

ALL HOT-MIX ASPHALT	2.016 TONS/CU YD
ALL AGGREGATE	2.05 TONS/CU YD
BITUMINOUS MATERIALS:	
ON PAVEMENT	0.09 GAL/SQ YD
INTERMEDIATE LIFTS (FOG COAT)	0.04 GAL/SQ YD
ON AGGREGATE SURFACE	0.32 GAL/SQ YD
AGGREGATE (PRIME COAT)	0.0015 TONS/SQ YD

8. ABANDONED UNDERGROUND UTILITIES THAT CONFLICT WITH CONSTRUCTION SHALL BE DISPOSED OF OUTSIDE THE LIMITS OF THE RIGHT OF WAY ACCORDING TO ARTICLE 202.03 OF THE STANDARD SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER. THIS WORK WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION.
9. ALL DISTURBED AREAS WITHIN THE CONSTRUCTION LIMITS SHALL BE FERTILIZED AND SEEDED. SEEDING SHALL BE CLASS 2A ACCORDING TO THE APPLICABLE ARTICLES OF SECTION 250 OF THE STANDARD SPECIFICATIONS. SEEDING SHALL NOT BE PERMITTED AT ANY TIME WHEN THE GROUND IS FROZEN, WET, OR IN AN UNTILLABLE CONDITION. LOCATIONS TO BE SEEDED WILL BE DETERMINED BY THE ENGINEER.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING UTILITY PROPERTY FROM CONSTRUCTION OPERATIONS AS OUTLINED IN ARTICLE 107.31 OF THE STANDARD SPECIFICATIONS. THE JULIE NUMBER IS 800-892-0123. A MINIMUM OF 48 HOURS ADVANCE NOTICE IS REQUIRED.
11. EXISTING TRAFFIC BARRIER TERMINALS TO BE REMOVED SHALL BE PAID FOR AS GUARDRAIL REMOVAL.
12. ALL ELEVATIONS REFERRING TO U.S.G.S. MEAN SEA LEVEL DATUM.
13. TREES SHALL BE PRESERVED THROUGHOUT THIS SECTION EXCEPT AS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER. GENERALLY, TREES OUTSIDE THE CLEAR ZONE, AND WHICH DO NOT INTERFERE WITH CONSTRUCTION, SHALL NOT BE DISTURBED.
14. FOR STABILIZATION, ALL TYPE III BARRICADES SHALL REQUIRE A MINIMUM OF FOUR SANDBAGS PER BARRICADE.
15. THE QUANTITY OF SHORT TERM PAVEMENT MARKING SHOWN IN THE PLANS IS BASED ON ONE APPLICATION EACH FOR THE INITIAL OPENING OF THE COMPLETED STRUCTURE TO TWO LANE TRAFFIC, THE PRIME COAT, BINDER COURSE, AND SURFACE COURSE.
16. SHORT TERM PAVEMENT MARKING ON MILLED SURFACES SHALL BE PAINT.
17. THE ADVANCE DETECTOR LOOPS ARE TYPICALLY LOCATED 275 FEET IN ADVANCE OF THE STOP BAR. THE BUREAU OF OPERATIONS SHALL APPROVE THE LOOP LOCATIONS PRIOR TO INSTALLATION.
18. THE CENTERLINE PAVEMENT MARKING SHOULD BE REMOVED FROM THE STOP BAR TO THE SAND ATTENUATORS OR DRUMS. EDGE LINE PAVEMENT MARKING SHOULD BE REMOVED IF A 10 FOOT LANE WIDTH CANNOT BE MAINTAINED. TEMPORARY EDGE LINES SHOULD BE INSTALLED WHEN THE EDGE LINES ARE REMOVED.
19. THE CONTRACTOR SHALL PROVIDE INTERNET ACCESSIBILITY TO THE HMA PLANT QUALITY CONTROL LAB SO THAT HMA PLANT REPORTS CAN BE EMAILED TO THE DISTRICT HEADQUARTERS. THIS WORK SHALL BE INCLUDED IN THE COST OF ALL HOT-MIX ASPHALT ITEMS.
20. ANY TIME THE CONCRETE BARRIER IS NOT IN THE PROPER POSITION, FLAGGERS SHALL BE IN PLACE TO CONTROL TRAFFIC AND THE TEMPORARY TRAFFIC SIGNALS SHALL BE TURNED OR COVERED.
21. THE CONTRACTOR SHALL USE EITHER RC-70 OR AN EMULSIFIED POLYMER PRIME SS-1HP FOR THE PAY ITEM BITUMINOUS MATERIALS (PRIME COAT).
22. THE TOP 4 IN. OF TOPSOIL SHALL BE STRIPPED FROM ALL AREAS WITHIN THE CONSTRUCTION LIMITS. THIS MATERIAL SHALL BE STOCKPILED AT A LOCATION APPROVED BY THE ENGINEER AND REPLACED AFTER MAJOR GRADING OPERATIONS ARE COMPLETED. THIS WORK WILL BE PAID FOR AS TOPSOIL EXCAVATION AND PLACEMENT. ADDITIONAL TOPSOIL REQUIRED WILL BE PAID FOR AS TOPSOIL FURNISH AND PLACE, 4 IN.
23. BASE COURSE WIDENING EXCEEDING 6' IN WIDTH WILL BE PAID FOR AS BASE COURSE WIDENING OF THE THICKNESS SPECIFIED.
24. AGGREGATE SHOULDERS, TYPE B SHALL BE CRUSHED STONE, CRUSHED CONCRETE, OR RAP.
25. ALL WORK NECESSARY TO ATTACH THE PIPE DRAIN TO THE ABUTMENT DRAIN PIPE, TRENCHING IN THE PIPE DRAINS AND INSTALLING THE PIPE DRAIN TO THE CONCRETE HEADWALLS IS INCLUDED IN THE PAY ITEM OF PIPE DRAINS OF THE DIAMETER SPECIFIED.

COMMITMENTS

1. NONE AS OF AUGUST 15, 2008. REFER TO COMMITMENT FILE FOR ANY COMMITMENTS AFTER THIS DATE.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PREPARED BY: _____
DISTRICT STUDIES & PLANS ENGINEER

EXAMINED BY: _____
DISTRICT LAND ACQUISITION ENGINEER

EXAMINED BY: _____
DISTRICT PROGRAM DEVELOPMENT ENGINEER

EXAMINED BY: _____
DISTRICT OPERATIONS ENGINEER

EXAMINED BY: _____
DISTRICT CONSTRUCTION ENGINEER

EXAMINED BY: _____
DISTRICT MATERIALS ENGINEER

EXAMINED BY: _____
DISTRICT PROJECT IMPLEMENTATION ENGINEER

EXAMINED BY: _____
ASSISTANT REGIONAL ENGINEER

APPROVED BY: _____
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

_____ 20
DATE

HMA MIXTURES REQUIREMENTS

LOCATION(S):	HOT MIX ASPHALT SURFACE COURSE AND LEVELING BINDER	BASE COURSE AND BASE COURSE WIDENING	HOT MIX ASPHALT SHOULDERS AND INC. HMA SURFACING
MIXTURE USE(S):	HOT MIX ASPHALT SURFACE COURSE, MIX C, N90	HOT MIX ASPHALT BINDER COURSE, N90, IL-19.0	HOT MIX ASPHALT SHOULDERS
AC/PG:	PG64-22	PG64-22	PG58-22
RAP % (MAX): ***	10	10	50
DESIGN AIR VOIDS:	4.0%, 90 GYRATION DESIGN	4.0%, 90 GYRATION DESIGN	2.0%, 30 GYRATION DESIGN
MIXTURE COMPOSITION: (GRADATION MIXTURE)	IL-9.5 OR IL-12.5	IL-19.0	HMA SHOULDERS
FRICTION AGGREGATE:	C SURFACE	NONE	NONE

*** IF RAP OPTION IS SELECTED, THE ASPHALT CEMENT GRADE MAY NEED TO BE ADJUSTED. THIS WILL BE DETERMINED BY THE ENGINEER.

GENERAL NOTES AND INDEX
FAP RTE 328 (US 45)
SECTIONS (6BR-1, 6BR-3, 8BR-3, 8BR-4)B-1
CLAY COUNTY

CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	•	CLAY	108	3
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

•(6BR-1, 6BR-3, 8BR-3, 8BR-4)B-1

LIST OF ILLINOIS DOT HIGHWAY STANDARDS

STANDARD NO.	DESCRIPTION
000001-05	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
001006	DECIMAL OF AN INCH AND OF A FOOT
280001-04	TEMPORARY EROSION CONTROL SYSTEMS
420001-07	PAVEMENT JOINTS
420401-07	BRIDGE APPROACH PAVEMENT
515001-03	NAME PLATE FOR BRIDGES
601101-01	CONCRETE HEADWALL FOR PIPE DRAIN
630001-08	STEEL PLATE BEAM GUARDRAIL
630201-00	PCC/HMA STABILIZATION AT SPBGR
630301-05	SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
631031-07	TRAFFIC BARRIER TERMINAL, TYPE 6
631032-04	TRAFFIC BARRIER TERMINAL, TYPE 6A
635001-01	DELINEATORS
635006-03	REFLECTOR AND TERMINAL MARKER PLACEMENT
635011-02	REFLECTOR MARKER AND MOUNTING DETAILS
666001-01	RIGHT OF WAY MARKERS
701001-02	OFF-RD OPERATIONS, 2L, 2W, MORE THAN 4.5m (15') AWAY
701006-03	OFF-RD OPERATIONS, 2L, 2W, 4.5 m (15') TO 600mm (24") FROM PAVEMENT EDGE
701011-02	OFF-RD MOVING OPERATIONS, 2L, 2W, DAY ONLY
701201-03	LANE CLOSURE, 2L, 2W, DAY ONLY, FOR SPEEDS ≥ 45 MPH
701301-03	LANE CLOSURE, 2L, 2W, SHORT TIME OPERATIONS
701311-03	LANE CLOSURE, 2L, 2W, MOVING OPERATIONS - DAY ONLY
701321-10	LANE CLOSURE, 2L, 2W, BRIDGE REPAIR WITH BARRIER
701326-03	LANE CLOSURE, 2L, 2W, PAVEMENT WIDENING, FOR SPEEDS ≥ 45 MPH
701901-01	TRAFFIC CONTROL DEVICES
704001-05	TEMPORARY CONCRETE BARRIER
720001-01	SIGN PANEL MOUNTING DETAILS
720006-02	SIGN PANEL ERECTION DETAILS
720011-01	METAL POSTS FOR SIGNS, MARKERS & DELINEATORS
729001-01	APPLICATIONS OF TYPES A & B METAL POSTS (FOR SIGNS & MARKERS)
780001-02	TYPICAL PAVEMENT MARKINGS
781001-03	TYPICAL APPLICATIONS RAISED REFLECTIVE PAVEMENT MARKERS

SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	80% FED. 20% STATE TOTAL	CONSTRUCTION TYPE CODE: ACBRF X028-2A SN 013-2009	ACF X028-2A SN 013-2010	ACF X028-2A SN 013-2011	ACBRF X020-2A SN 013-0043
20100500	TREE REMOVAL, ACRES	ACRE	0.3	-	-	0.14	0.16
20200100	EARTH EXCAVATION	CU YD	1165	320	210	487	148
20201200	REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL	CU YD	335	125	115	95	-
20300100	CHANNEL EXCAVATION	CU YD	260	-	-	-	260
20400800	FURNISHED EXCAVATION	CU YD	460	150	25	-	285
20700220	POROUS GRANULAR EMBANKMENT	CU YD	715	290	175	250	-
20700400	POROUS GRANULAR EMBANKMENT, SPECIAL	CU YD	54	-	-	-	54
21101505	TOPSOIL EXCAVATION AND PLACEMENT	CU YD	550	115	65	135	235
21101615	TOPSOIL FURNISH AND PLACE, 4"	SQ YD	76	-	76	-	-
25000350	SEEDING, CLASS 7	ACRE	1.2	0.3	0.3	0.2	0.4
25001000	SEEDING, CLASS 2 (SPECIAL)	ACRE	1.2	0.3	0.3	0.2	0.4
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	240	60	60	40	80
28000300	TEMPORARY DITCH CHECKS	EACH	11	3	-	4	4
28000400	PERIMETER EROSION BARRIER	FOOT	3540	835	740	615	1350
28100107	STONE RIPRAP, CLASS A4	SQ YD	2024	362	281	281	1100
28200200	FILTER FABRIC	SQ YD	2024	362	281	281	1100
31100300	SUB-BASE GRANULAR MATERIAL, TYPE A 4"	SQ YD	602	273	116	213	-
35501324	HOT-MIX ASPHALT BASE COURSE, 10"	SQ YD	586	231	175	180	-
35650500	BASE COURSE WIDENING 10"	SQ YD	1744	403	514	473	354
40600100	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	702	138	168	173	223
40600300	AGGREGATE (PRIME COAT)	TON	13.2	2.3	3.2	3.5	4.2
40600645	LEVELING BINDER (MACHINE METHOD), N90	TON	166	-	30	38	98
40600982	HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT	SQ YD	1266	491	370	217	188
40600990	TEMPORARY RAMP	SQ YD	212	29	29	15	139
40603320	HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N90	TON	475	120	110	95	150
40800050	INCIDENTAL HOT-MIX ASPHALT SURFACING	TON	4	-	4	-	-
42001165	BRIDGE APPROACH PAVEMENT	SQ YD	267	-	-	-	267
44000100	PAVEMENT REMOVAL	SQ YD	1199	340	342	131	386
44004250	PAVED SHOULDER REMOVAL	SQ YD	271	115	156	-	-
48101200	AGGREGATE SHOULDERS, TYPE B	TON	269	112	112	1	44
48203100	HOT-MIX ASPHALT SHOULDERS	TON	554	117	62	207	168
50100300	REMOVAL OF EXISTING STRUCTURES NO. 1	EACH	1	1	-	-	-
50100400	REMOVAL OF EXISTING STRUCTURES NO. 2	EACH	1	-	1	-	-
50100500	REMOVAL OF EXISTING STRUCTURES NO. 3	EACH	1	-	-	1	-
50100600	REMOVAL OF EXISTING STRUCTURES NO. 4	EACH	1	-	-	-	1
50200100	STRUCTURE EXCAVATION	CU YD	225	-	-	-	225
50300100	FLOOR DRAINS	EACH	8	-	-	-	8
50300225	CONCRETE STRUCTURES	CU YD	129.4	-	-	-	129.4
50300255	CONCRETE SUPERSTRUCTURE	CU YD	277.6	-	-	-	277.6
50300260	BRIDGE DECK GROOVING	SQ YD	428	-	-	-	428
50300280	CONCRETE ENCASEMENT	CU YD	12.6	-	-	-	12.6
50300300	PROTECTIVE COAT	SQ YD	536	-	-	-	536

* SPECIALTY ITEM

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	04/08
DRAWN BY:	HAS	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

STANDARDS AND SUMMARY OF QUANTITIES
FAP RTE 328 (US 45)
SECTIONS (6BR-1, 6BR-3, 8BR-3, 8BR-4)B-1
CLAY COUNTY

ESCA CONSULTANTS, INC.
CIVIL • GEOTECHNICAL • ENVIRONMENTAL • TRANSPORTATION

CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	*	CLAY	108	4
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

*(6BR-1, 6BR-3, 8BR-3, 8BR-4)B-1

SUMMARY OF QUANTITIES

	CODE NO.	ITEM	UNIT	80% FED. 20% STATE TOTAL	CONSTRUCTION TYPE CODE ACBRF X028-2A SN 013-2009	ACF X028-2A SN 013-2010	ACF X028-2A SN 013-2011	ACBRF X020-2A SN 013-0043
	50800105	REINFORCEMENT BARS	POUND	91,790	36,450	29,790	25,550	-
	50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	61,170	-	-	-	61,170
	50800515	BAR SPLICERS	EACH	715	142	129	122	322
	51201600	FURNISHING STEEL PILES HP12x53	FOOT	2817	-	-	-	2817
	51202305	DRIVING PILES	FOOT	2817	-	-	-	2817
	51203600	TEST PILE STEEL HP12x53	EACH	4	-	-	-	4
	51205200	TEMPORARY SHEET PILING	SQ FT	1570	-	-	555	1015
	51500100	NAME PLATES	EACH	4	1	1	1	1
	54003000	CONCRETE BOX CULVERTS	CU YD	489	183	167	139	-
*	54391000	HOLES DRILLED	EACH	12	-	-	6	6
	59100100	GEOCOMPOSITE WALL DRAIN	SQ YD	40	-	-	-	40
	60100905	PIPE DRAINS 4"	FOOT	50	-	-	-	50
	60109580	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	150	-	-	-	150
*	63000000	STEEL PLATE BEAM GUARDRAIL, TYPE A	FOOT	462.5	-	-	237.5	225
*	63100085	TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	4	-	-	-	4
*	63100087	TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	2	-	-	2	-
*	63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	6	-	-	3	3
	63200310	GUARDRAIL REMOVAL	FOOT	1877	660	531	324	362
	63301990	REMOVE AND RE-ERECT TRAFFIC BARRIER TERMINAL, TYPE 1	EACH	2	-	-	1	1
	66503400	BARBED WIRE FENCE REMOVAL	FOOT	975	-	-	397	578
	66600105	FURNISHING AND ERECTING RIGHT-OF-WAY MARKERS	EACH	4			2	2
	67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	9	2.5	2.5	2	2
	66700205	PERMANENT SURVEY MARKERS, TYPE I	EACH	1				1
	67100100	MOBILIZATION	L SUM	1	0.25	0.25	0.25	0.25
	70100405	TRAFFIC CONTROL AND PROTECTION, STANDARD 701321	EACH	3	1	1	0.5	0.5
	70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1	0.3	0.3	0.2	0.2
	70100500	TRAFFIC CONTROL AND PROTECTION, STANDARD 701326	L SUM	1	0.3	0.3	0.2	0.2
	70103815	TRAFFIC CONTROL SURVEILLANCE	CAL DA	20	5	5	5	5
	70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	3	1	1	0.5	0.5
	70106700	TEMPORARY RUMBLE STRIP	EACH	18	6	6	3	3
	70300100	SHORT-TERM PAVEMENT MARKING	FOOT	740	140	184	148	268
	70300220	TEMPORARY PAVEMENT MARKING - LINE 4"	FOOT	4250	1000	840	830	1580
	70301000	WORK ZONE PAVEMENT MARKING REMOVAL	SQ FT	1665	380	342	326	617
	70400100	TEMPORARY CONCRETE BARRIER	FOOT	1675	575	500	250	350
	70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	1087.5	287.5	200	250	350
*	78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	4250	1000	840	830	1580
*	78200410	GUARDRAIL MARKERS, TYPE A	EACH	12	-	-	6	6
*	78200520	BARRIER WALL MARKERS, TYPE B	EACH	3	-	-	-	3
*	78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	6	-	-	3	3
	78300100	PAVEMENT MARKING REMOVAL	SQ FT	817	215	234	167	201
	78300200	RAISED REFLECTIVE PAVEMENT MARKER REMOVAL	EACH	19	5	4	4	6
	50900200	STEEL RAILING, TYPE 2399	FOOT	46	-	-	46	-
	X0325766	TEMPORARY SOIL RETENTION SYSTEM, (LOCATION 1)	SQ FT	405	405	-	-	-

* SPECIALTY ITEM

SUMMARY OF QUANTITIES

	CODE NO.	ITEM	UNIT	80% FED. 20% STATE TOTAL	CONSTRUCTION TYPE CODE ACBRF X028-2A SN 013-2009	ACF X028-2A SN 013-2010	ACF X028-2A SN 013-2011	ACBRF X020-2A SN 013-0043
	X0325767	TEMPORARY SOIL RETENTION SYSTEM, (LOCATION 2)	SQ FT	255	-	255	-	-
	X5020501	UNDERWATER STRUCTURE EXCAVATION PROTECTION - LOCATION 1	EACH	1	-	-	-	1
	X5020502	UNDERWATER STRUCTURE EXCAVATION PROTECTION - LOCATION 2	EACH	1	-	-	-	1
*	XX005496	TRAFFIC BARRIER TERMINAL TYPE 6A (SPECIAL)	EACH	2	-	-	2	-
	Z0001900	ASBESTOS BEARING PAD REMOVAL	EACH	22	-	-	-	22
*	Z0019300	DRY GROUT SOLIDS	CU FT	600	-	-	300	300
	Z0030250	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3	EACH	6	2	2	1	1
	Z0030260	IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3	EACH	4	2	2	-	-
	Z0030330	IMPACT ATTENUATORS, RELOCATE (FULLY REDIRECTIVE), TEST LEVEL 3	EACH	1	-	1	-	-
	Z0030350	IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 3	EACH	6	2	2	1	1
*	Z0054505	ROCK FILL - REPLACEMENT	TON	335	125	115	95	-
	Z0025500	FURNISHING AND INSTALLING PROPERTY MARKERS	EACH	1				1

* SPECIALTY ITEM

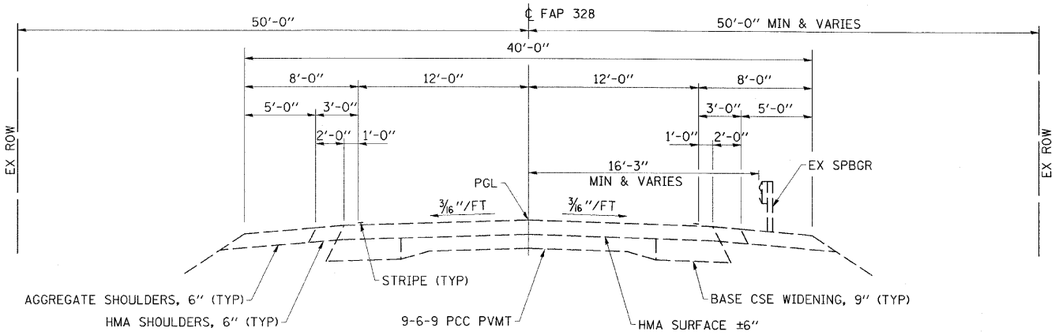
ESCA CONSULTANTS, INC.		
DESIGNED BY:	DAJ	04/08
DRAWN BY:	HAS	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

SUMMARY OF QUANTITIES
FAP RTE 328 (US 45)
SECTIONS (6BR-1, 6BR-3, 8BR-3, 8BR-4)B-1
CLAY COUNTY

Rev.

CONTRACT NO. 74107

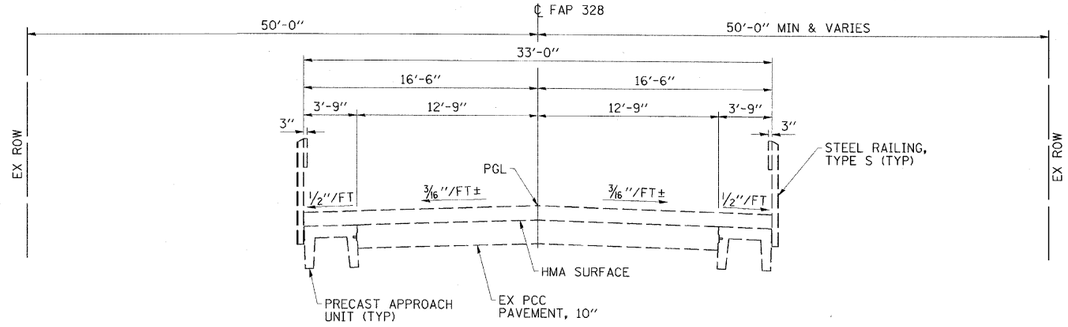
FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(6BR-1)B-1	CLAY	109	5
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



WITHOUT GUARDRAIL **WITH GUARDRAIL**

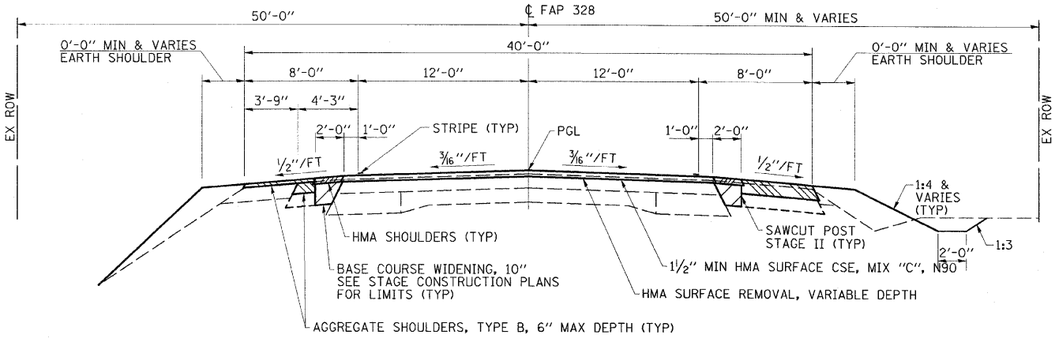
EXISTING TYPICAL ROADWAY SECTION

STA 1410+50 TO 1416+50
OMISSION STA 1413+38.01 TO 1414+08.17



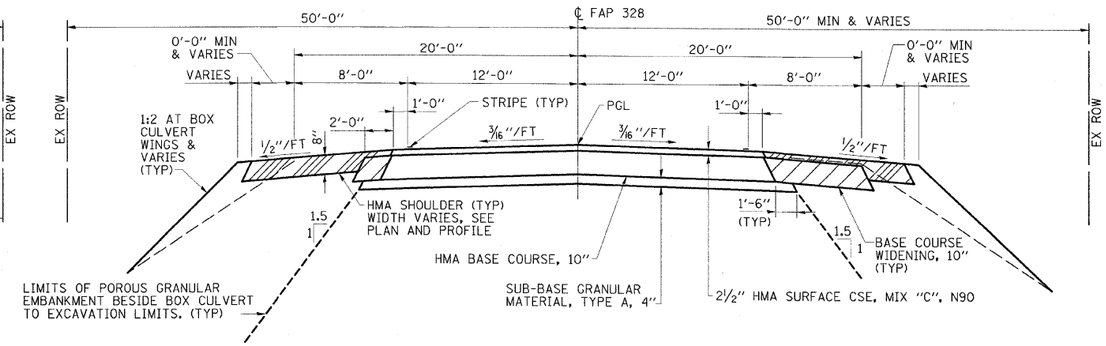
EXISTING BRIDGE APPROACH SECTION

STA 1413+38.01 TO 1414+08.17
OMISSION STA 1413+57.92 TO 1413+88.26



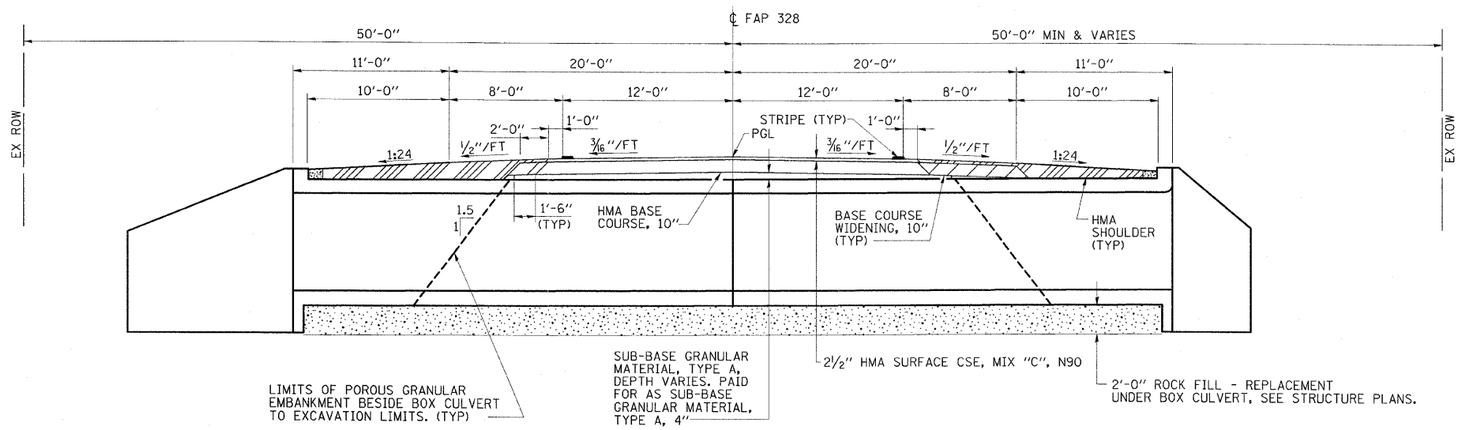
PROPOSED TYPICAL ROADWAY SECTION

STA 1411+00 TO 1415+00
OMISSION STA 1413+30 TO 1414+10



PROPOSED TYPICAL ROADWAY SECTION

STA 1413+30 TO 1414+10
OMISSION STA 1413+53.88 TO 1413+82.12



SECTION THRU BOX CULVERT

STA 1413+53.88 TO 1413+82.12

ESCA CONSULTANTS, INC.		
DESIGNED BY:	JMS	04/08
DRAWN BY:	CJ	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

TYPICAL SECTIONS
US 45 OVER GROVE CREEK
FAP ROUTE 328 - SECTION (6BR-1)B-1
CLAY COUNTY
STATION 1413+68.00
STRUCTURE NO. 013-2009

ESCA CONSULTANTS, INC.
CIVIL, STRUCTURAL, TRANSPORTATION ENGINEERS

CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(6BR-1)B-1	CLAY	109	6
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

EARTHWORK SCHEDULE

LOCATION	SUITABLE EARTH EXCAVATION	SUITABLE EARTH EXCAVATION ADJUSTED FOR SHRINKAGE	SUITABLE INCIDENTAL EXCAVATION MATERIAL	SUITABLE INCIDENTAL EXC. MATERIAL ADJUSTED FOR SHRINKAGE	EMBANKMENT (NOT A PAY ITEM)	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)
	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD
NE QUADRANT CUTS & FILLS	20	15	-	-	160	-145
SE QUADRANT CUTS & FILLS	35	26.25	-	-	80	-55
NW QUADRANT CUTS & FILLS	50	37.5	-	-	90	-53
SW QUADRANT CUTS & FILLS	25	18.75	-	-	70	-52
BOX CULVERT TRENCH	190	142.5	110	82.5	70	+155
TOTALS	320	240	110	82.5	470	-150

NOTES:
1. EXCAVATION USED AS EMBANKMENT = (SUITABLE EARTH EXCAVATION + SUITABLE INCIDENTAL EXCAVATION)•0.75

PAVEMENT MARKING SCHEDULE

LOCATION	DESCRIPTION	SHORT-TERM PAVEMENT MARKING (1)	PAINT PAVEMENT MARKING - LINE	TEMP PAVEMENT MARKING - LINE
			4"	4"
		FOOT	FOOT	FOOT
STA 1410+64.25 TO 1416+71.75, CENTERLINE	SKIP-DASH YELLOW CENTERLINE	140	150	150
STA 1411+00 TO 1415+00, LT	SOLID WHITE EDGE LINE	-	415	415
STA 1411+00 TO 1415+00, RT	SOLID WHITE EDGE LINE	-	435	435
	TOTALS	140	1000	1000

(1) INCLUDES 2 ADDITIONAL APPLICATIONS FROM STA 1411+00 TO STA 1415+00

SEEDING SCHEDULE

LOCATION	SEEDING, CLASS 2 (SPECIAL)	SEEDING, CLASS 7
	ACRE	ACRE
NE QUADRANT	0.12	0.12
SE QUADRANT	0.05	0.05
NW QUADRANT	0.08	0.08
SW QUADRANT	0.05	0.05
TOTALS	0.3	0.3

WORK ZONE AND PAVEMENT MARKING REMOVAL SCHEDULE

LOCATION	PAVEMENT MARKING DESCRIPTION	WORK ZONE PAVEMENT MARKING REMOVAL	PAVEMENT MARKING REMOVAL
		SQ FT	SQ FT
STA 1410+64.25 TO 1416+71.75, ℄	CENTERLINE	46.7	45
EDGELINES	TEMPORARY	283.3	-
CENTERLINE	TEMPORARY	50	-
STA 1412+33.25 TO 1415+02.75, LT	EDGELINE	-	90
STA 1412+12.25 TO 1413+31.30, RT	EDGELINE	-	40
STA 1414+03.60 TO 1415+23.75, RT	EDGELINE	-	40
TOTALS		380	215

PAVEMENT MARKER REMOVAL SCHEDULE

LOCATION	RRPM REMOVAL
	EACH
STA 1411+25	1
STA 1412+00	1
STA 1412+75	1
STA 1414+25	1
STA 1415+00	1
TOTAL	5

TOPSOIL EXCAVATION AND PLACEMENT SCHEDULE

LOCATION	TOPSOIL EXCAVATION AND PLACEMENT
	CU YD
NE QUADRANT	57
SE QUADRANT	32
NW QUADRANT	19
SW QUADRANT	7
TOTAL	115

GUARDRAIL REMOVAL SCHEDULE

LOCATION	GUARDRAIL REMOVAL
	FOOT
NE QUADRANT	127.5
SE QUADRANT	202.5
NW QUADRANT	202.5
SW QUADRANT	127.5
TOTAL	660

PAVING SCHEDULE

LOCATION	BITUMINOUS MATERIALS (PRIME COAT)	AGGREGATE (PRIME COAT)	HMA SURFACE COURSE, MIX "C", N90	HMA SHOULDERS
	GALLON	TON	TON	TON
STA 1411+00 TO 1415+00	138	2.3	120	-
STA 1411+00 TO 1415+00, LT	-	-	-	68
STA 1411+00 TO 1415+00, RT	-	-	-	49
TOTALS	138	2.3	120	117

REMOVAL SCHEDULE

LOCATION	PAVEMENT REMOVAL	PAVED SHOULDER REMOVAL
	SQ YD	SQ YD
STA 1411+88 TO 1413+38.01, LT	23	26
STA 1411+88 TO 1413+38.01, RT	-	34
STA 1414+08.17 TO 1415+48, LT	20	24
STA 1414+08.17 TO 1415+48, RT	-	31
STA 1411+88 TO 1413+21, RT	74	-
STA 1413+88.65 TO 1415+48, RT	81	-
STA 1413+30 TO 1413+58	80	-
STA 1413+88 TO 1414+10	62	-
TOTALS	340	115

EROSION CONTROL SCHEDULE

LOCATION	PERIMETER EROSION BARRIER	TEMPORARY EROSION CONTROL SEEDING (2 APPLICATIONS)	TEMPORARY DITCH CHECKS
	FOOT	POUND	EACH
NE QUADRANT	280	24	-
SE QUADRANT	125	10	-
NW QUADRANT	250	16	-
SW QUADRANT	180	10	-
STA 1412+50, RT	-	-	1
STA 1413+00, LT	-	-	1
STA 1414+50, LT	-	-	1
TOTALS	835	60	3

BASE COURSE SCHEDULE

LOCATION	HMA BASE COURSE, 10"	BASE COURSE WIDENING, 10"
	SQ YD	SQ YD
STA 1411+88 TO 1413+38.01, LT	-	54
STA 1414+08.17 TO 1415+48, LT	-	51
STA 1411+88 TO 1415+48, RT	-	280
STA 1413+30 TO 1414+10	231	-
STA 1413+30 TO 1414+10, LT	-	18
TOTALS	231	403

HMA SURF REMOVAL SCHEDULE

LOCATION	BUTT JOINT
	SQ YD
STA 1411+00 TO 1412+15	332
STA 1414+45 TO 1415+00	159
TOTAL	491

AGGREGATE SHOULDERS SCHEDULE

LOCATION	AGGREGATE SHOULDERS, TYPE B
	TON
NE QUADRANT	36
SE QUADRANT	15
NW QUADRANT	29
SW QUADRANT	32
TOTAL	112

SUB-BASE GRANULAR MATERIAL SCHEDULE

LOCATION	SUB-BASE GRANULAR MATERIAL, TYPE A 4"
	SQ YD
STA 1413+30 TO 1414+10	273
TOTAL	273

POROUS GRANULAR EMBANKMENT SCHEDULE

LOCATION	POROUS GRANULAR EMBANKMENT
	CU YD
BOX CULVERT TRENCH	290
TOTAL	290

ESCA CONSULTANTS, INC.

DESIGNED BY:	JMS	04/08
DRAWN BY:	HAS	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

SCHEDULES OF QUANTITIES
US 45 OVER GROVE CREEK
FAP RTE 328 - SECTION (6BR-1)B-1
CLAY COUNTY
STATION 1413+68.00
STRUCTURE NO. 013-2009

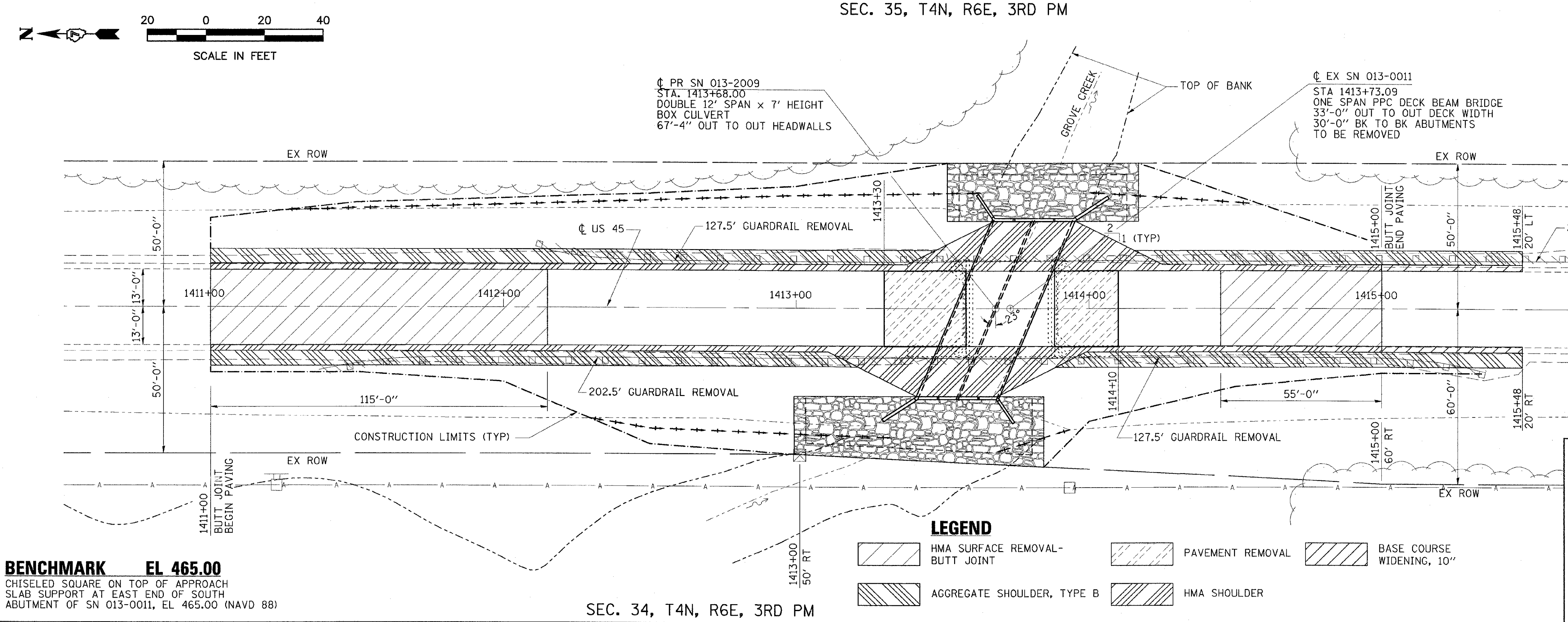
ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS
URBANA, ILLINOIS

CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(6BR-1)B-1	CLAY	109	7
STA. 1410+50		TO STA. 1416+50		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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

PROFILE		BY	DATE
NOTE BOOK NO. ____	SURVEYED		
	PLOTTED		
	GRADES CHECKED		
	B.M. NOTED		
	STRUCTURE NOTAT'NS CH'KD		



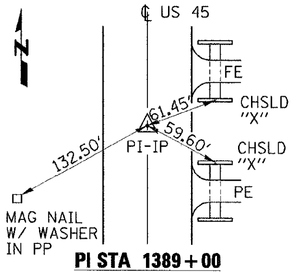
LEGEND

▨	HMA SURFACE REMOVAL-BUTT JOINT	▨	PAVEMENT REMOVAL
▨	BASE COURSE WIDENING, 10"	▨	AGGREGATE SHOULDER, TYPE B
▨	HMA SHOULDER		

BENCHMARK EL 465.00

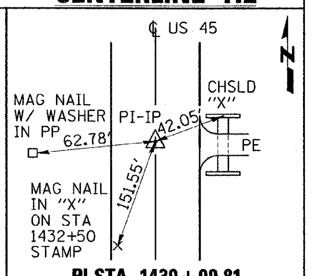
CHISELED SQUARE ON TOP OF APPROACH
SLAB SUPPORT AT EAST END OF SOUTH
ABUTMENT OF SN 013-0011, EL 465.00 (NAVD 88)

CENTERLINE TIE

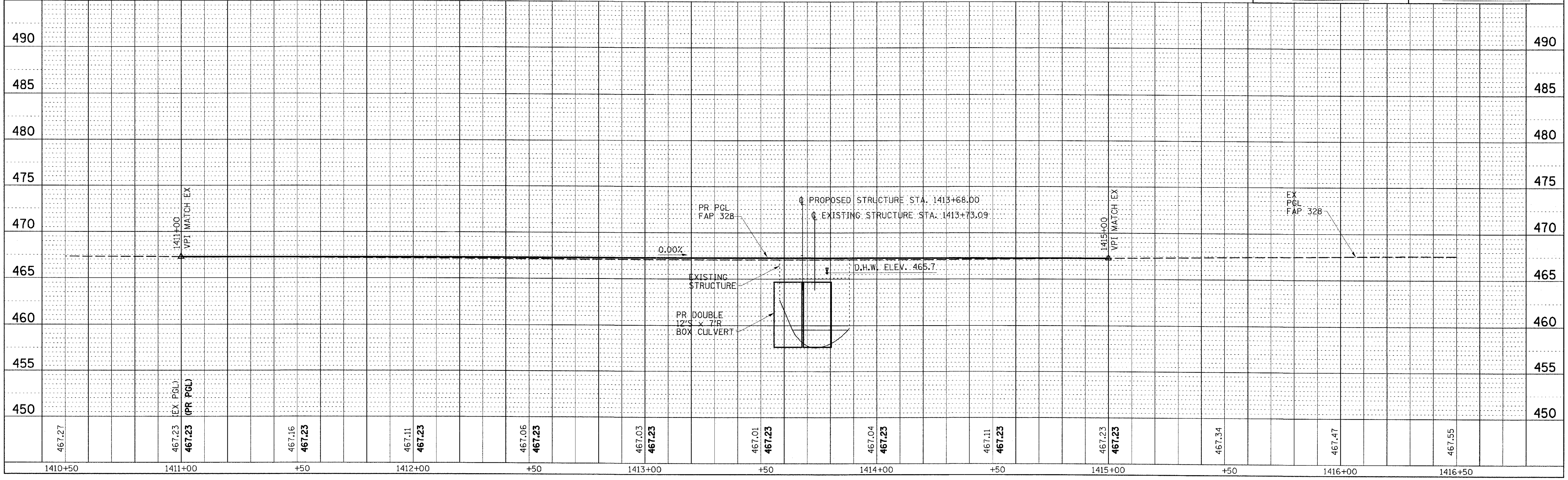


PI STA 1389+00

CENTERLINE TIE



PI STA 1430+99.81



FAP RTE 328 (US 45) PLAN AND PROFILE
STA 1410+50 TO STA 1416+50

CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(6BR-1)B-1	CLAY	109	8
STA. 1409+00		TO STA. 1419+00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

LEGEND

30 0 30 60
SCALE IN FEET

TRAFFIC SIGNAL WITH BACKPLATE
SIGNAL DIRECTION INDICATED

BASE COURSE WIDENING, 10"

PAVEMENT REMOVAL

SCHEDULE OF QUANTITIES

TEMPORARY CONCRETE BARRIER

STATION	TO	STATION	FEET
1412+24.25		1415+11.75	287.5
		TOTAL	287.5

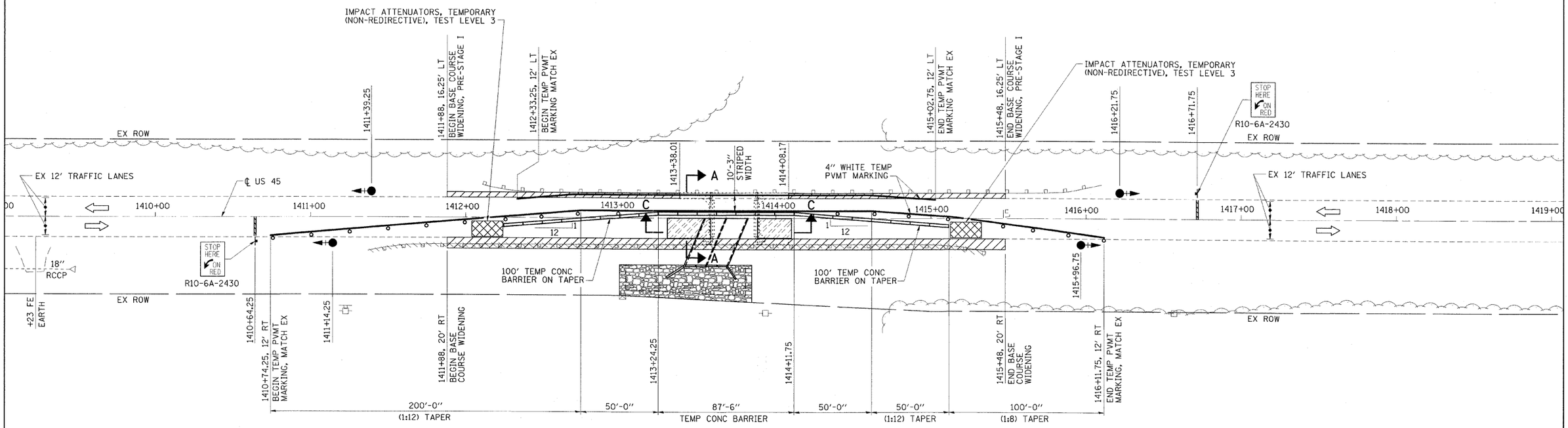
TEMPORARY BRIDGE TRAFFIC SIGNALS - 1 EACH

TEMPORARY RUMBLE STRIPS - 6 EACH

IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3 - 2 EACH

GENERAL NOTES

1. TRAFFIC CONTROL SHALL BE ERECTED AS SHOWN AND ACCORDING TO "TRAFFIC CONTROL AND PROTECTION, STANDARD 701321."
2. SEE SPECIAL PROVISIONS FOR ADDITIONAL TRAFFIC CONTROL REQUIREMENTS.
3. COORDINATE LOCATION OF SIGNALS WITH FINAL WORK AS DIRECTED BY THE ENGINEER.
4. CONSTRUCT TEMPORARY RUMBLE STRIPS AT LOCATIONS SHOWN ON STANDARD 701321.
5. THE DIMENSION SHOWN ON THE WIDTH RESTRICTION SIGN (W12-1102(O)-48) SHOWN ON STANDARD 701321 SHALL BE 10'-9" FOR STAGE I CONSTRUCTION.



STAGE I CONSTRUCTION
US 45 OVER GROVE CREEK
FAP ROUTE 328 - SECTION (6BR-1)B-1
CLAY COUNTY
STATION 1413+68.00
STRUCTURE NO. 013-2009

ESCA CONSULTANTS, INC.

DESIGNED BY:	JMS	05/08
DRAWN BY:	CJ	05/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

PLOT DATE =
FILE NAME =
PLOT SCALE =
REFERENCE =

CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(6BR-1)B-1	CLAY	109	9
STA. 1409+00		TO STA. 1419+00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

N

30 0 30 60

SCALE IN FEET

LEGEND

- TRAFFIC SIGNAL WITH BACKPLATE SIGNAL DIRECTION INDICATED
- PAVEMENT REMOVAL
- BASE COURSE WIDENING, 10"

SCHEDULE OF QUANTITIES

TEMPORARY CONCRETE BARRIER

STATION	TO	STATION	FEET
1412+24.25		1415+11.75	287.5
		TOTAL	287.5

RELOCATE TEMPORARY CONCRETE BARRIER

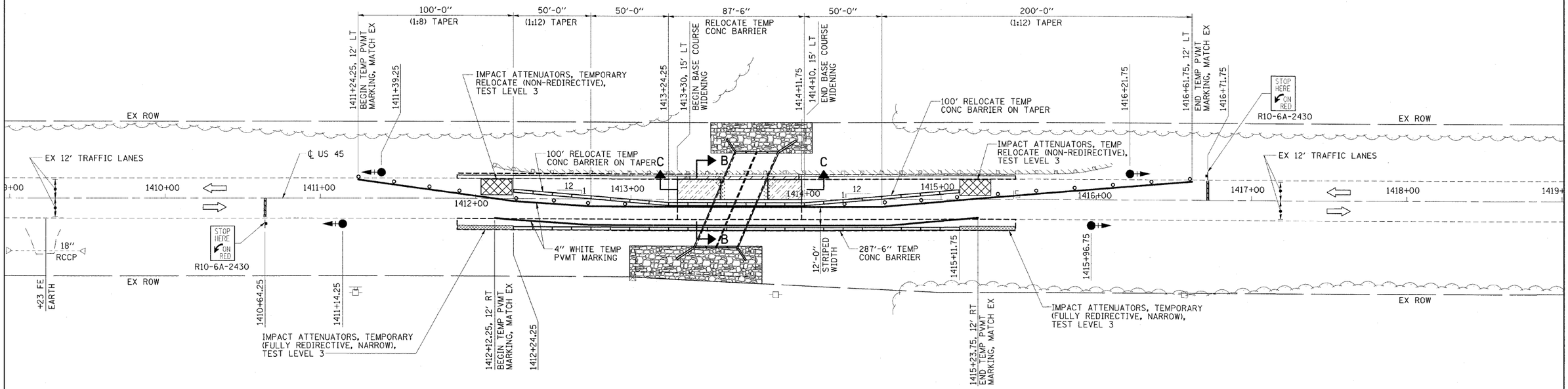
STATION	TO	STATION	FEET
1412+24.25		1415+11.75	287.5
		TOTAL	287.5

IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 3 - 2 EACH

IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3 - 2 EACH

GENERAL NOTES

1. TRAFFIC CONTROL SHALL BE ERECTED AS SHOWN AND ACCORDING TO "TRAFFIC CONTROL AND PROTECTION, STANDARD 701321."
2. SEE SPECIAL PROVISIONS FOR ADDITIONAL TRAFFIC CONTROL REQUIREMENTS.
3. COORDINATE LOCATION OF SIGNALS WITH FINAL WORK AS DIRECTED BY THE ENGINEER.
4. CONSTRUCT TEMPORARY RUMBLE STRIPS AT LOCATIONS SHOWN ON STANDARD 701321.
5. THE DIMENSION SHOWN ON THE WIDTH RESTRICTION SIGN (W12-1102(O)-48) SHOWN ON STANDARD 701321 SHALL BE 12'-6" FOR STAGE II CONSTRUCTION.



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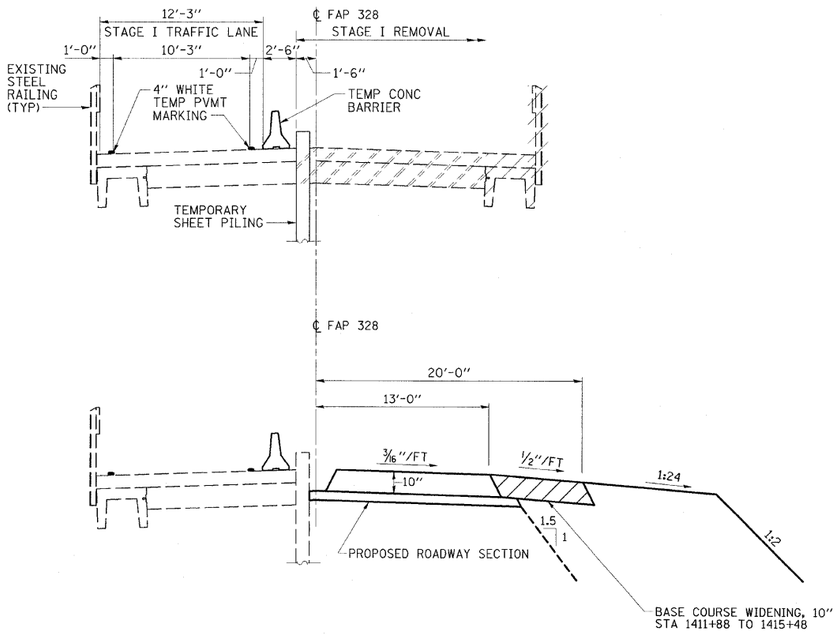
DESIGNED BY:	JMS	05/08
DRAWN BY:	CJ	05/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

PLOT DATE =
FILE NAME =
PLOT SCALE =
REFERENCE =

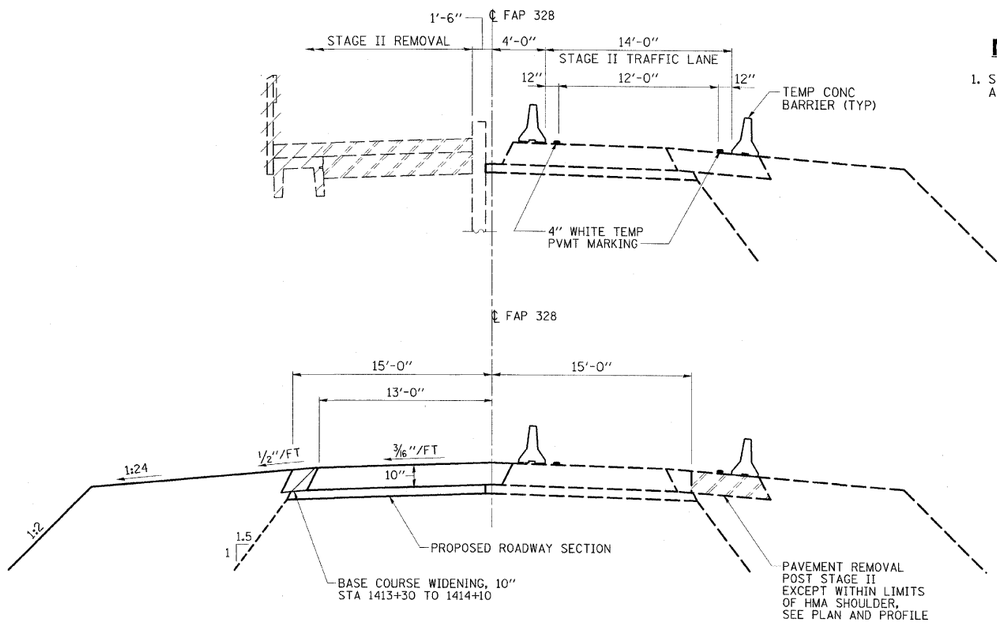
STAGE II CONSTRUCTION
US 45 OVER GROVE CREEK
FAP ROUTE 328 - SECTION (6BR-1)B-1
CLAY COUNTY
STATION 1413+68.00
STRUCTURE NO. 013-2009

CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(6BR-1)B-1	CLAY	109	10
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



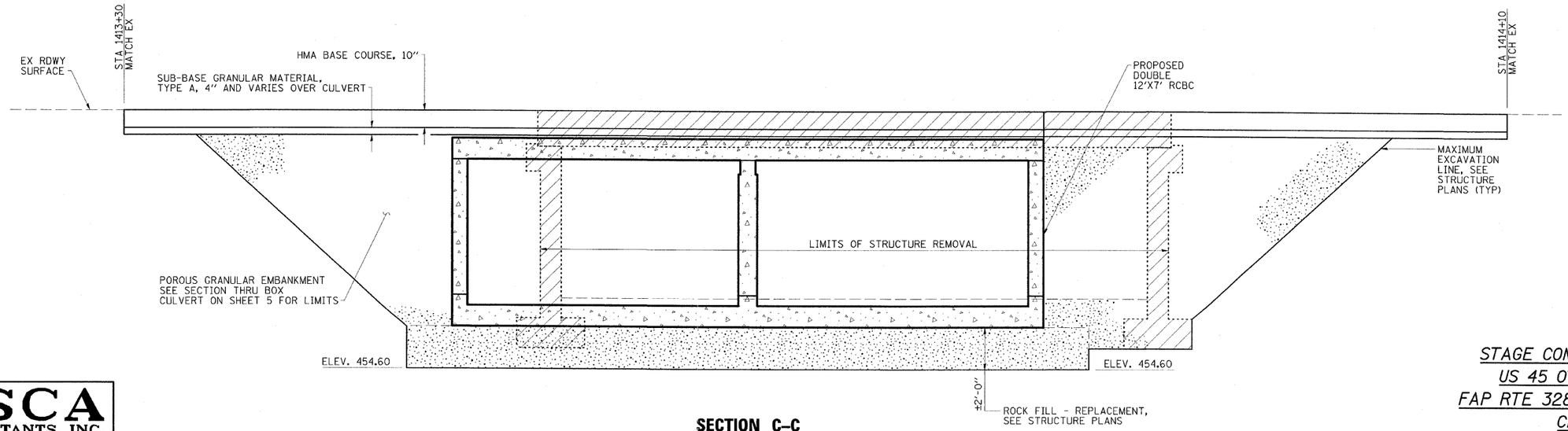
SECTION A–A
(STAGE I)



SECTION B–B
(STAGE II)

NOTES

1. SEE STRUCTURE PLANS FOR ADDITIONAL SECTIONS.



SECTION C–C

STAGE CONSTRUCTION DETAILS
US 45 OVER GROVE CREEK
FAP RTE 328 - SECTION (6BR-1)B-1
CLAY COUNTY
STATION 1413+68.00
STRUCTURE NO. 013-2009

ESCA CONSULTANTS, INC.

DESIGNED BY:	JMS	05/08
DRAWN BY:	CJ	05/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

PLOT DATE =
FILE NAME =
PLOT SCALE =
REFERENCE =

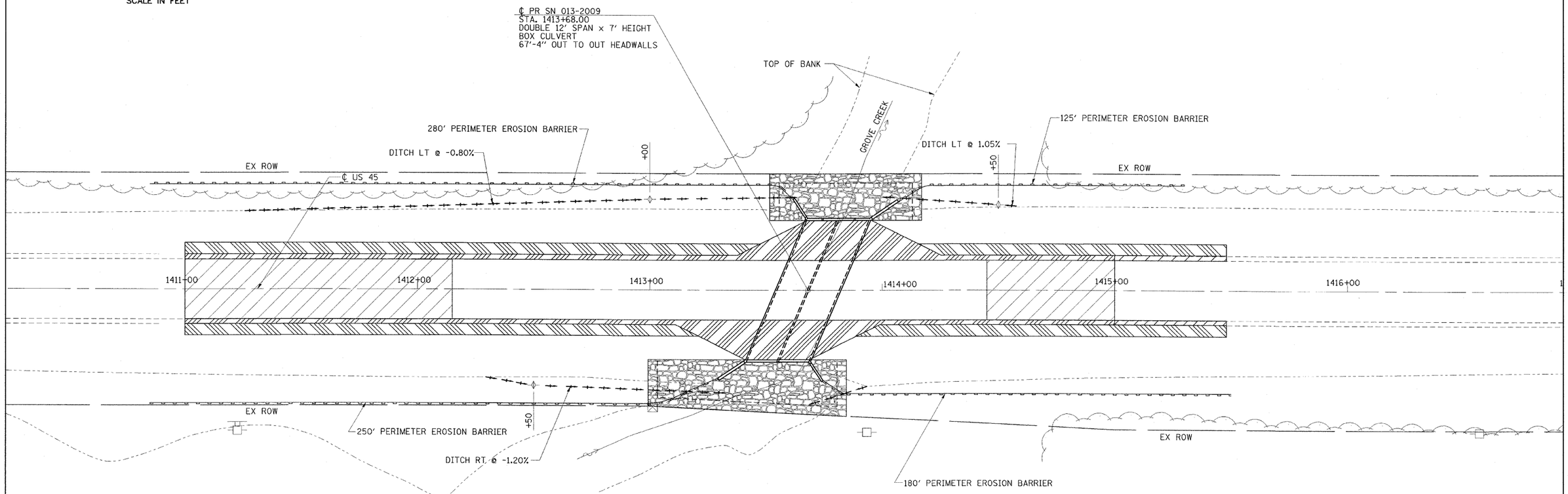
CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(6BR-1)B-1	CLAY	109	11
STA. 1410+00		TO STA. 1417+00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

N

20 0 20 40

SCALE IN FEET



LEGEND

PERIMETER EROSION BARRIER

TEMPORARY DITCH CHECK

ESCA CONSULTANTS, INC.

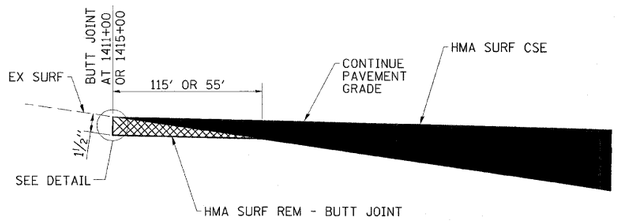
DESIGNED BY:	JMS	05/08
DRAWN BY:	CJ	05/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

PLOT DATE
FILE NAME
PLOT SCALE
REFERENCE

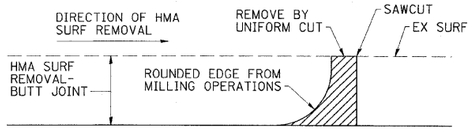
EROSION CONTROL
US 45 OVER GROVE CREEK
FAP RTE 328 - SECTION (6BR-1)B-1
CLAY COUNTY
STATION 1413+68.00
STRUCTURE NO. 013-2009

CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(6BR-1)B-1	CLAY	109	12
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



TYPICAL BUTT JOINT SECTION
SN 013-2009



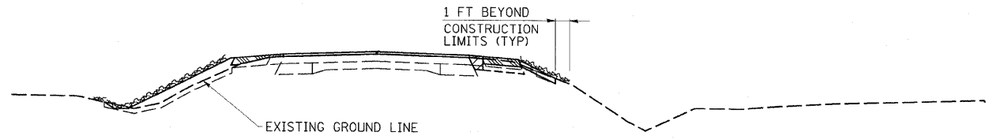
DETAIL AT BUTT JOINT

NOTE:
WHEN MILLING OPERATIONS PRODUCE A ROUNDED EDGE, THEN A SAWCUT SHALL BE USED TO MANUFACTURE A PERPENDICULAR EDGE AS SHOWN IN THE DETAIL. THE COST OF ALL WORK SHOWN IN THE DETAIL IS INCLUDED IN HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT. THE ENGINEER SHALL BE THE SOLE JUDGE CONCERNING THE USE OF THIS DETAIL.

ESCA CONSULTANTS, INC.

DESIGNED BY:	JMS	04/08
DRAWN BY:	HAS	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

SEEDING & MULCHING



INDICATES LIMITS OF SEEDING AND MULCHING

GENERAL NOTES

IN GENERAL, ALL EARTH SURFACES DISTURBED DURING CONSTRUCTION OPERATIONS SHALL BE SEEDED AND MULCHED UPON COMPLETION OF ALL GRADING OPERATIONS.

FERTILIZER NUTRIENTS AND LIMESTONE SHALL BE APPLIED TO ALL SEEDED AREAS.

THE RATES OF APPLICATION OF FERTILIZER, MULCH AND LIMESTONE SHALL BE AS SPECIFIED IN THE SPECIAL PROVISIONS.

SECTIONS 250 AND 251 OF THE STANDARD SPECIFICATIONS SHALL GOVERN THIS WORK EXCEPT AS SPECIFIED HEREIN OR AS NOTED IN THE SPECIAL PROVISIONS.

MISCELLANEOUS DETAILS
US 45 OVER GROVE CREEK
FAP RTE 328 - SECTION (6BR-1)B-1
CLAY COUNTY
STATION 1413+68.00
STRUCTURE NO. 013-2009

BENCHMARK: BM 131-Chiseled square on top of approach slab support at East end of South abutment of SN 013-0011, Elev. 465.00 (NAVD 88)

EXISTING STRUCTURE:
SN 013-0011 was originally built in 1920 as SBI 25, Section 6A and was reconstructed in 1972 as SBI 25, Section 6BR-1. It is a single span structure consisting of 17" PPC Deck Beams on closed abutments and wingwalls on spread footings. The deck width is 33'-0" and the length is 30'-0" back to back of abutments. Traffic shall be maintained utilizing stage construction.

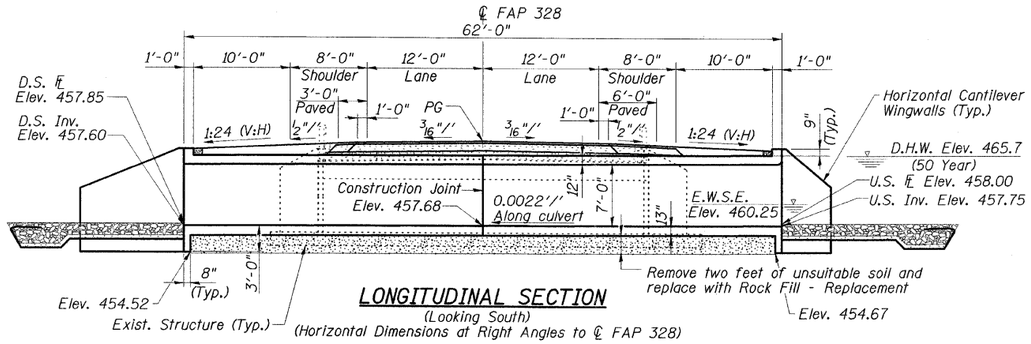
No salvage.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

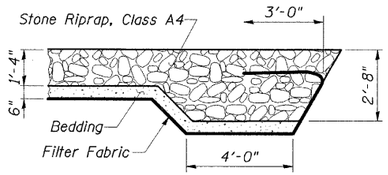
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 328	*	CLAY	109	13
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 1
6 SHEETS

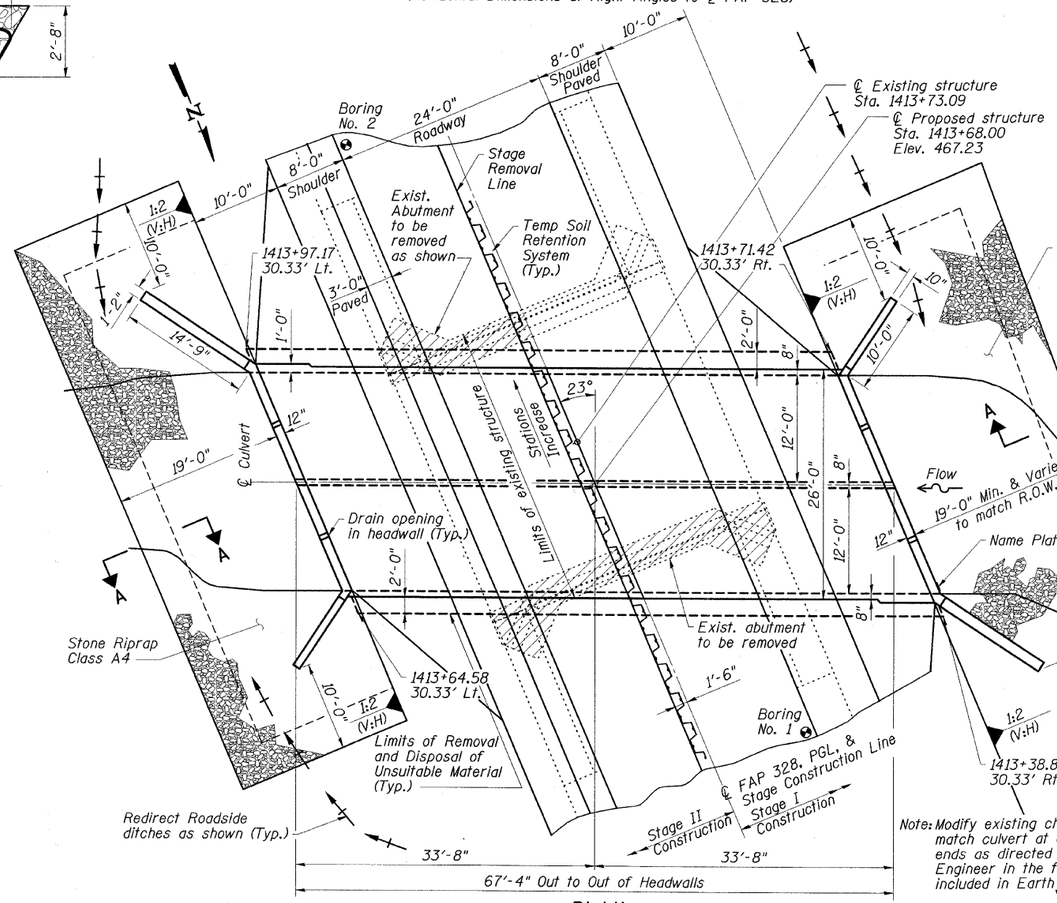
Contract #74107 *(6BR-1)B-1



LONGITUDINAL SECTION
(Looking South)
(Horizontal Dimensions at Right Angles to ℄ FAP 328)



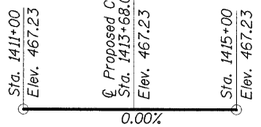
SECTION A-A



PLAN

STATION 1413+68.00
BUILT 200_ BY
STATE OF ILLINOIS
FAP RT. 328 SEC. (6BR-1)B-1
LOADING HS20-44
STR. NO. 013-2009

NAME PLATE
See Std. 515001



PROFILE GRADE
(Along ℄ Roadway)

SCOUR INFORMATION

	Upstream	Downstream
Design Scour Elevation (Ft.)	454.75	454.60

DESIGNED BY:	FMA	02/08
DRAWN BY:	CJ	02/08
CHECKED BY:	ELH	05/08
APPROVED BY:	RDP	08/08

ESCA CONSULTANTS, INC.

WATERWAY INFORMATION

Drainage Area = 3.28 Sq. Mi.
Exist. Low Grade Elev. = 467.01 Ft. @ Sta. 1413+58
Prop. Low Grade Elev. = 467.23 Ft. @ Sta. 1413+58

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	989	153	168	464.8	1.0	0.6	465.8	465.4
Design	50	1610	159	168	465.7	1.6	1.6	467.3	467.3
Base	100	1892	159	168	466.1	1.6	1.6	467.7	467.7
Overtopping	30	1433	159	168	465.5	1.6	1.6	467.1	467.1

DESIGN SPECIFICATIONS
2002 AASHTO

LOADING HS20-44
Allow 50 psf for future wearing surface.

DESIGN STRESSES
FIELD UNITS
f'c = 3,500 psi
fy = 60,000 psi (Reinf.)

STRUCTURE INDEX OF SHEETS

GENERAL NOTES

1. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60 (IL Modified). See Special Provisions.
2. Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.
3. The Contractor is advised that the existing PPC Deck Beams are in a deteriorated condition with reduced load carrying capacity. It is the Contractor's responsibility to account for the condition of the beams when developing construction procedures for removal of the superstructure.
4. If the Contractor's procedure for existing deck beam removal involves placement of cranes or other heavy equipment on the existing deck beams, a detailed procedure shall be submitted to the Engineer for approval. The procedure shall include calculations, prepared and sealed by an Illinois Licensed Structural Engineer, verifying the structural adequacy of the beams for the proposed loads. Costs included in Removal of Existing Structures.
5. The cost of the removal of existing precast concrete units and approach caps at the approaches is included in the cost of Removal of Existing Structures.
6. Excavation behind existing abutment walls shall be performed to balance front and back soil pressure before Stage I removal of the existing superstructure. The Contractor shall sawcut the upper portion of the existing abutment at the stage removal line before Stage I removal to ensure the remaining portion will not be prematurely damaged.
7. For backfilling and embankment, see Standard Specifications.
8. At least 7'-6" of the barrel shall be poured monolithically with wingwalls.
9. Precast alternate is not allowed.
10. The limits and quantities of Removal and Disposal of Unsuitable Material shown are based on the boring data and may be modified by the District Geotechnical and Field Engineers for variable subsurface conditions encountered in the field.

TOTAL BILL OF MATERIAL

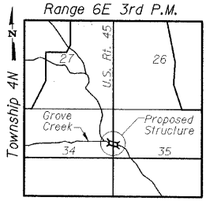
ITEM	UNIT	QUANTITY
Rock Fill - Replacement	Cu. Yd.	125
Removal and Disposal of Unsuitable Material	Cu. Yd.	125
Stone Riprap, Class A4	Sq. Yd.	362
Filter Fabric	Sq. Yd.	362
Removal of Existing Structures No. 1	Each	1
Bar Splicers	Each	142
Concrete Box Culverts	Cu. Yds.	183
Reinforcement Bars	Pounds	36,450
Temporary Soil Retention System, (Location 1)	Sq. Ft.	405
Name Plates	Each	1

See Roadway Plans for quantities of Temporary Concrete Barrier, Earth Excavation, and Porous Granular Embankment.

STATE OF ILLINOIS
RICHARD D. PAYNE
No. 4647
LICENSED STRUCTURAL ENGINEER

EXPIRES 11-30-08
SIGNATURE
8-12-08
DATE

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
ENGINEER OF BRIDGES AND STRUCTURES



LOCATION SKETCH

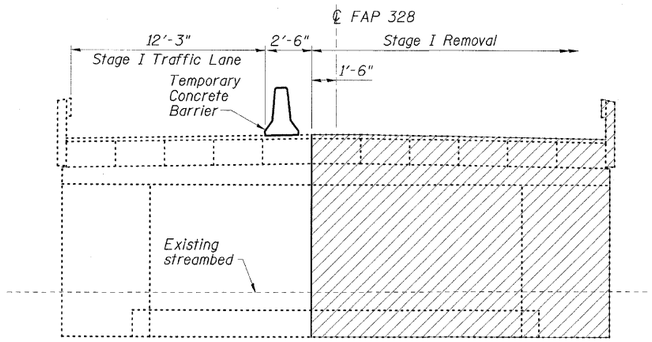
GENERAL PLAN
US 45 OVER GROVE CREEK
FAP ROUTE 328 - SECTION (6BR-1)B-1
CLAY COUNTY
STATION 1413+68.00
STRUCTURE NO. 013-2009

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 328	*	CLAY	109	14
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 2
6 SHEETS

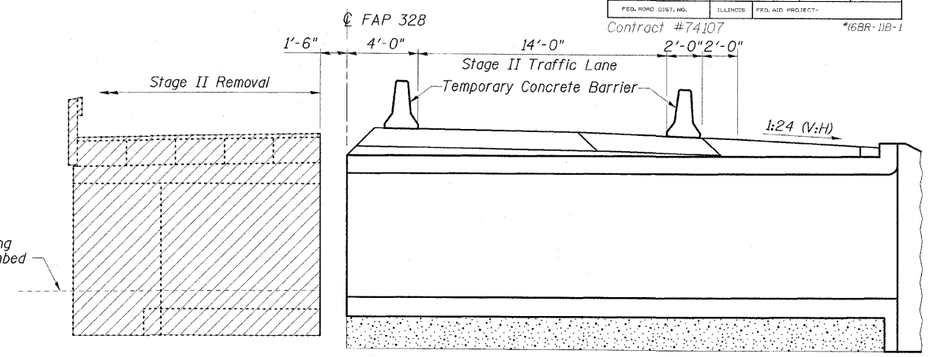
Contract #74107 *(6BR-1)B-1



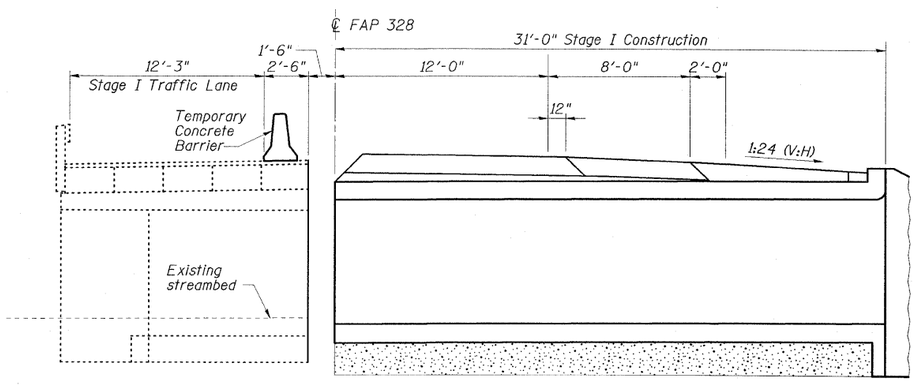
STAGE I REMOVAL

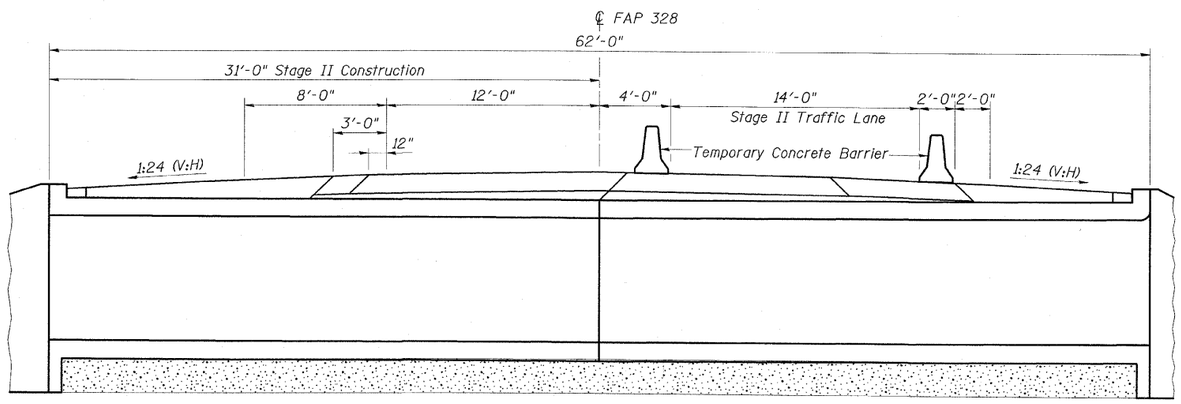
STAGE CONSTRUCTION NOTES

1. Hatched areas indicate Removal of Existing Structures.
2. For details of Temporary Concrete Barrier, see Sht. No. 6 of 6.
3. Removal of existing bridge rail is included with Removal of Existing Structures.
4. All sections are looking South.
5. Horizontal dimensions are at right angles to ℄ FAP 328.



STAGE II REMOVAL



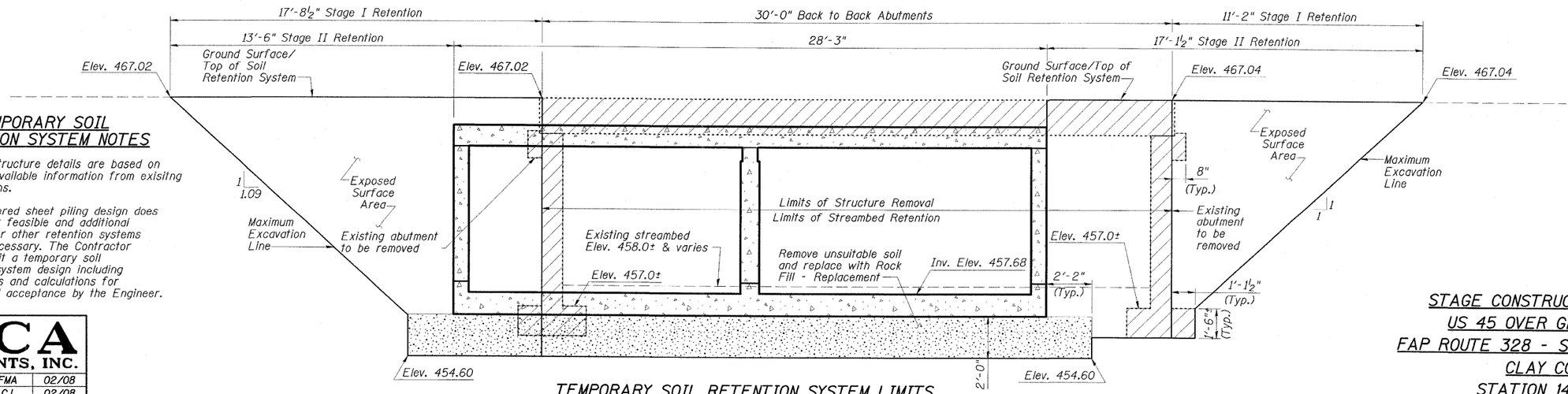


STAGE I CONSTRUCTION

STAGE II CONSTRUCTION

TEMPORARY SOIL RETENTION SYSTEM NOTES

1. Existing structure details are based on the best available information from exisitng bridge plans.
2. 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.



TEMPORARY SOIL RETENTION SYSTEM LIMITS

(Looking East)
Note: Dimensions along ℄ of FAP 328

ESCA CONSULTANTS, INC.		
DESIGNED BY:	FMA	02/08
DRAWN BY:	CJ	02/08
CHECKED BY:	ELH	05/08
APPROVED BY:	RDP	08/08

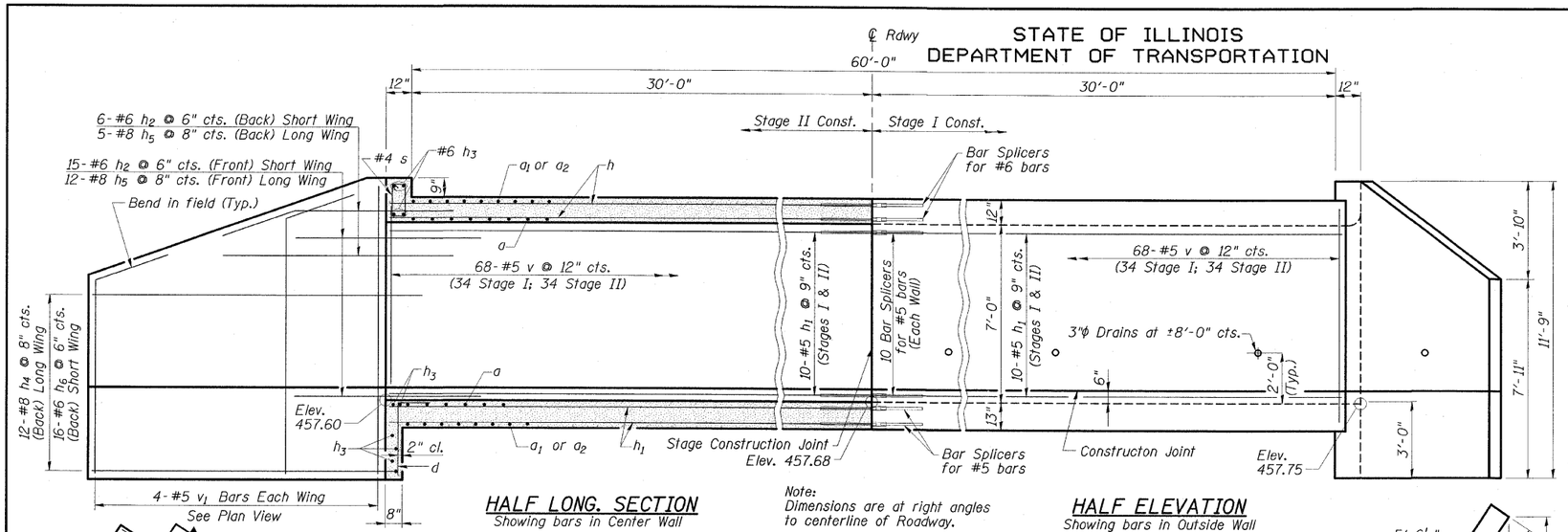
STAGE CONSTRUCTION DETAILS
US 45 OVER GROVE CREEK
FAP ROUTE 328 - SECTION (6BR-1)B-1
CLAY COUNTY
STATION 1413+68.00
STRUCTURE NO. 013-2009

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 328	*	CLAY	109	15
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 3
6 SHEETS

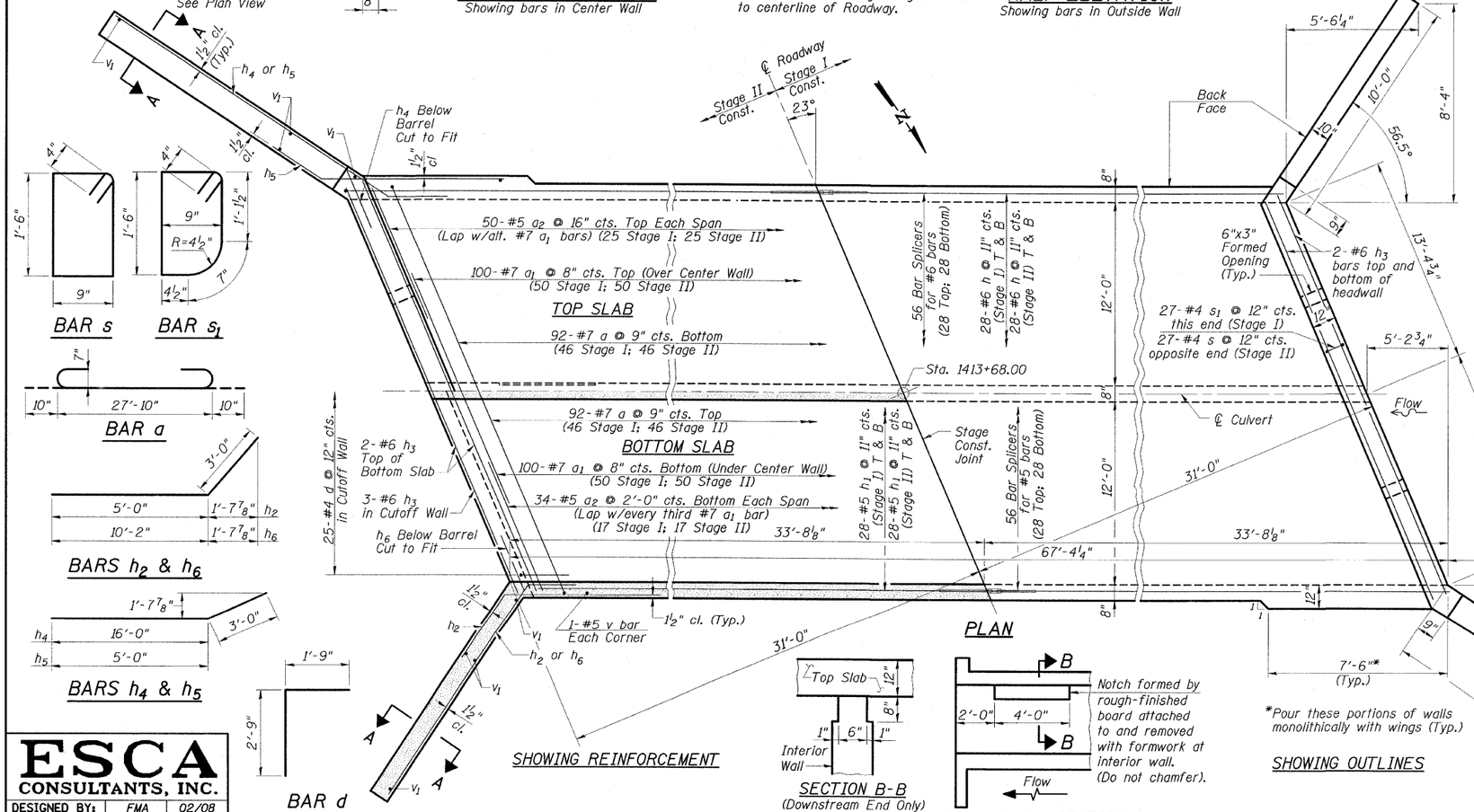
Contract #74107 *(6BR-DB-1



HALF LONG. SECTION
Showing bars in Center Wall

Note:
Dimensions are at right angles to centerline of Roadway.

HALF ELEVATION
Showing bars in Outside Wall



PLAN

SHOWING REINFORCEMENT

SECTION B-B
(Downstream End Only)

Notch formed by rough-finished board attached to and removed with formwork at interior wall. (Do not chamfer).

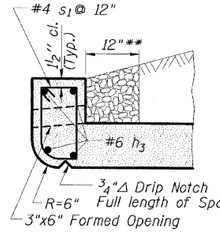
LONGITUDINAL SECTION

PHOEBE NESTING SITE DETAILS

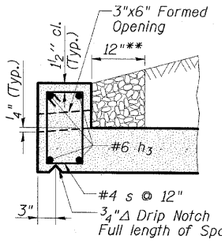
*Pour these portions of walls monolithically with wings (Typ.)

SHOWING OUTLINES

** Coarse aggregate full length of both headwalls. To be placed by Grading Contractor. Cost included with Concrete Box Culverts.

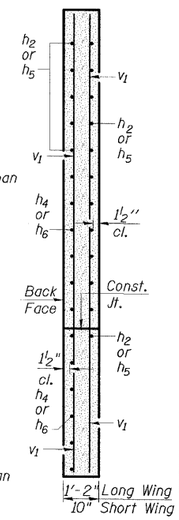


AT UPSTREAM END



AT DOWNSTREAM END

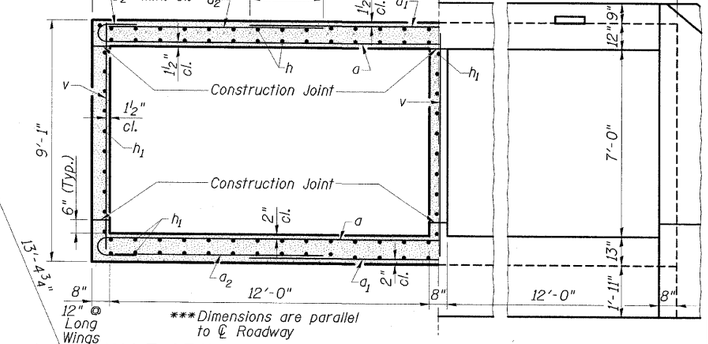
DRAIN DETAILS



SECTION A-A
(Bars shown are in long wing)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a	184	#7	29'-6"	
a1	200	#7	14'-2"	
a2	168	#5	9'-8"	
d	50	#4	4'-6"	
h	112	#6	33'-5"	
h1	172	#5	33'-5"	
h2	42	#6	8'-0"	
h3	18	#6	28'-0"	
h4	24	#8	19'-0"	
h5	34	#8	8'-0"	
h6	32	#6	13'-2"	
s	27	#4	5'-2"	
s1	27	#4	5'-0"	
v	208	#5	8'-9"	
v1	16	#5	10'-9"	
Concrete Box Culverts			Cu. Yd.	183
Reinforcement Bars			Pound	36,450
Bar Splicers			Each	142



*** Dimensions are parallel to ℄ Roadway

HALF SECTION THRU BARREL

HALF END ELEVATION

BOX CULVERT DETAILS
US 45 OVER GROVE CREEK
FAP ROUTE 328 - SECTION (6BR-1)B-1
CLAY COUNTY
STATION 1413+68.00
STRUCTURE NO. 013-2009

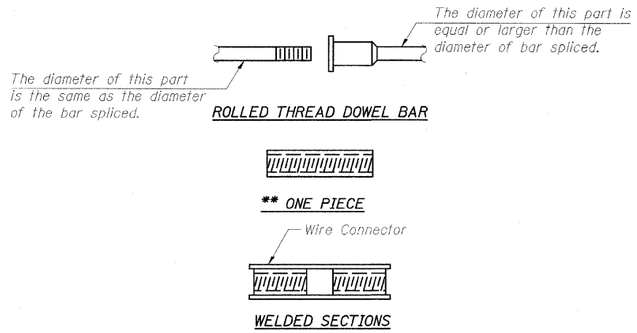
ESCA CONSULTANTS, INC.		
DESIGNED BY:	FMA	02/08
DRAWN BY:	CJ	02/08
CHECKED BY:	ELH	05/08
APPROVED BY:	RDP	08/08

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 328	*	CLAY	109	16
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT-		

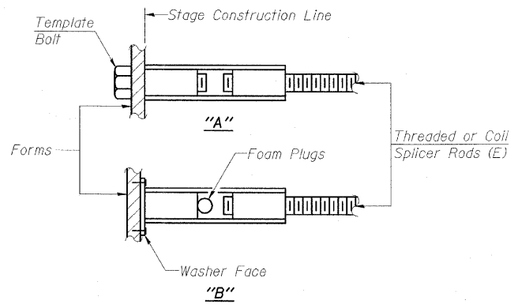
SHEET NO. 4
6 SHEETS

Contract #74107 *(6BR-1)B-1



BAR SPLICER ASSEMBLY ALTERNATIVES

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



INSTALLATION AND SETTING METHODS

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

NOTES

Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.

Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.

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

Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.

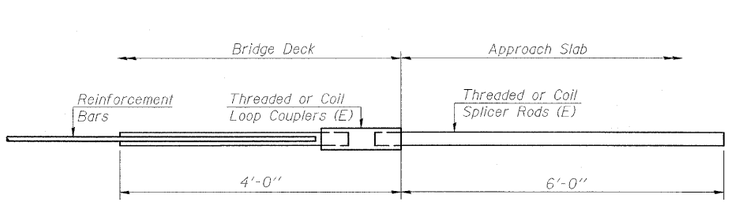
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

① Minimum Capacity (Tension in kips) = $1.25 \times f_y \times A_t$

② Minimum *Pull-out Strength (Tension in kips) = $0.66 \times f_y \times A_t$

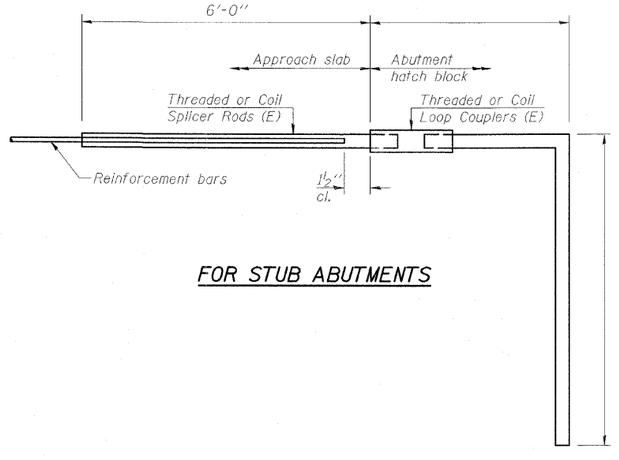
Where f_y = Yield strength of lapped reinforcement bars in ksi.
A_t = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

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



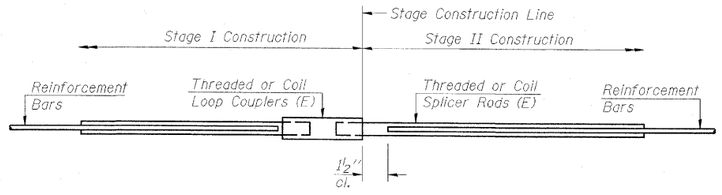
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 12.3 kips - tension
No. Required = 0



FOR STUB ABUTMENTS

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



STANDARD

Bar Size	No. Assemblies Required	Location
#5	56	Bottom Slab
#5	30	Walls
#6	56	Top Slab

ESCA CONSULTANTS, INC.

DESIGNED BY:	FMA	02/08
DRAWN BY:	CJ	02/08
CHECKED BY:	ELH	05/08
APPROVED BY:	RDP	08/08

BSD-1 5-16-08

BAR SPLICER ASSEMBLY DETAILS
US 45 OVER GROVE CREEK
FAP ROUTE 328 - SECTION (6BR-1)B-1
CLAY COUNTY
STATION 1413+68.00
STRUCTURE NO. 013-2009

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 328	*	CLAY	109	17
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT - A10	

SHEET NO. 5
6 SHEETS

Contract #74107 *(6BR-DB-1

Illinois Department of Transportation
Division of Highways
Illinois Department of Transportation

SOIL BORING LOG

Page 1 of 1

Date 6/19/07

ROUTE FAP 328 (US 45) DESCRIPTION Grove Creek LOGGED BY E. Sandschafer

SECTION (6BR1)B-1 LOCATION Sec 34 - NE 1/4, Sec 35 - NW 1/4, SEC. , TWP. 4 N, RNG. 6 E, 3 PM

COUNTY Clay DRILLING METHOD Hollow stem auger & split spoon HAMMER TYPE Auto 140#

STRUCT. NO. 013-0011
Station 1413+73

BORING NO. 1
Station 1413+05
Offset 11.00ft Rt
Ground Surface Elev. 466.83 ft

Surface Water Elev. 473.43 ft
Stream Bed Elev. 471.31 ft

Groundwater Elev.:
First Encounter 458.4 ft
Upon Completion 458.8 ft
After 24 Hrs. 459.0 ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
4.5" asphalt on 10" concrete pavement.			
465.63			
Medium to stiff, damp, brown, CLAY.	2		
463.83	2	1.0	21
Very soft, very damp, gray, SANDY LOAM.	3	B	
-5	0		
	0	0.2	27
	1	B	
	3		
458.43	3	0.3	15
	5	S	
Brown, fine grained, SAND.			
457.33			
Medium, damp, gray, SANDY LOAM.	1		
-10	5	0.8	19
456.03	5	B	
Gray, fine grained, SAND.			
454.83			
Gray, SANDY LOAM.	1		
454.43	3	1.1	24
Stiff, damp, dark gray, SILTY CLAY.	4	B	
451.83 -15	50/5"		
Very dense, moist, black, SILTY CLAY SHALE. *Samples pokerchipped.*	50/2"		7
	50/1"		
	50/5"		
449.03	50/3"		9
Extent of exploration.	50/1"		
-20			

Benchmark: BM 131 chiseled square on top of footing of approach slab at SE corner of existing structure 013-0011 = 465.00' elevation. Provided by Program Development.

-25 -30 -35 -40

Latitude N 38 deg 30.451 min, Longitude W 89 deg 44.886 min, Map Datum WGS 84

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, from 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
Illinois Department of Transportation

SOIL BORING LOG

Page 1 of 1

Date 6/19/07

ROUTE FAP 328 (US 45) DESCRIPTION Grove Creek LOGGED BY E. Sandschafer

SECTION (6BR1) B-1 LOCATION Sec 34 - NE 1/4, Sec 35 - NW 1/4, SEC. , TWP. 4 N, RNG. 6 E, 3 PM

COUNTY Clay DRILLING METHOD Hollow stem auger & split spoon HAMMER TYPE Auto 140#

STRUCT. NO. 013-0011
Station 1413+73

BORING NO. 2
Station 1413+86
Offset 11.00ft Lt
Ground Surface Elev. 466.90 ft

Surface Water Elev. 473.43 ft
Stream Bed Elev. 471.31 ft

Groundwater Elev.:
First Encounter 456.4 ft
Upon Completion 458.9 ft
After 24 Hrs. 460.1 ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
17" asphalt.			
465.50			
Stiff, damp, brown marbled red, SILTY CLAY.	0		
	3	1.1	23
	2	B	
462.40			
-5	0		
Very soft, very damp, gray, SILTY LOAM.	0	0.1	21
461.20	50/5"	B	
Very dense, powdered, estimated CONCRETE or flowable fill.			
	42		
458.90	16		14
Soft, damp, gray, SILTY LOAM.	7		
-10	2		
456.40	6	0.3	23
Gray, SANDY LOAM.	4	B	
454.90			
Medium, very moist, dark gray, SILTY CLAY.	2		
453.70	4		9
Very dense, moist, gray, SILTY CLAY SHALE.	15		
-15	46		
451.80	50/2"		7
Extent of exploration.	50/1"		
-20			

Benchmark: BM 131 chiseled square on top of footing of approach slab at SE corner of existing structure 013-0011 = 465.00' elevation. Provided by Program Development.

Latitude N 38 deg 30.477 min, Longitude W 89 deg 44.875 min, Map Datum WGS 84

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, from 137 (Rev. 8-99)

ESCA CONSULTANTS, INC.

DESIGNED BY:	FMA	02/08
DRAWN BY:	CJ	02/08
CHECKED BY:	ELH	05/08
APPROVED BY:	RDP	08/08

SOIL BORING LOGS
US 45 OVER GROVE CREEK
FAP ROUTE 328 - SECTION (6BR-1)B-1
CLAY COUNTY
STATION 1413+68.00
STRUCTURE NO. 013-2009

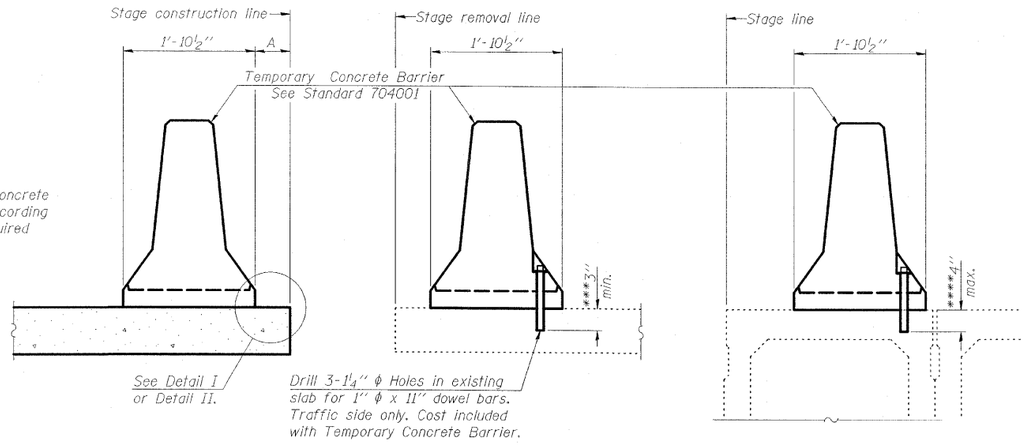
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 328	*	CLAY	109	18
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 6
6 SHEETS

Contract #74107 *(6BR-1)B-1

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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

Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x7"x10" steel ℄ to the top layer of couplers with 2-⅝" ϕ bolts screwed to coupler at approximate ℄ of each barrier panel.

Detail II - With Extended Reinforcement Bars:
Connect one (1) 1"x7"x10" 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.

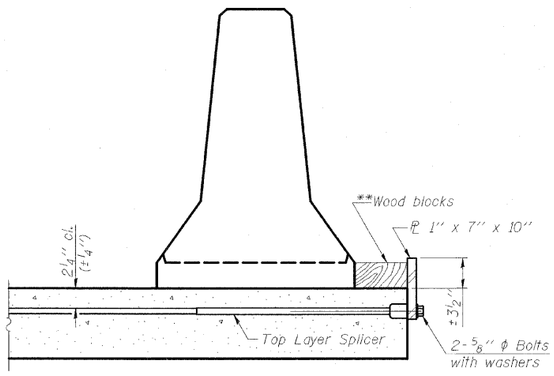
Cost of anchorage is included with Temporary Concrete Barrier.

The 1" x 7" x 10" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

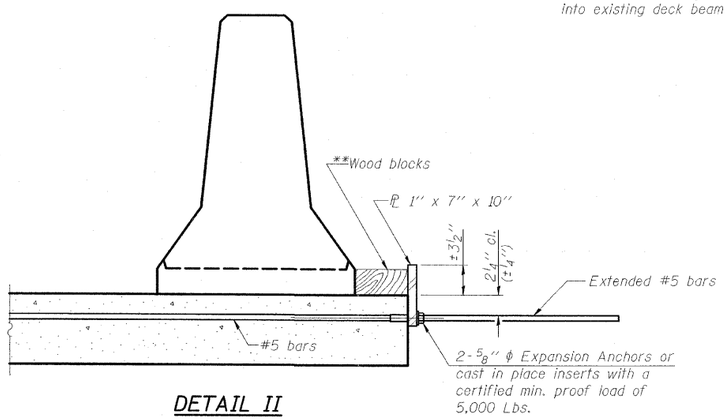
SECTIONS THRU SLAB OR DECK BEAM

***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.

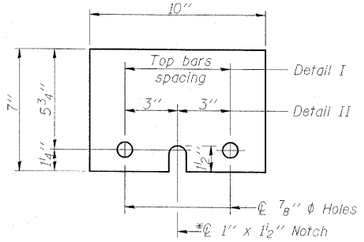
****If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



DETAIL I



DETAIL II



STEEL RETAINER ℄ 1" x 7" x 10"

*Required only with 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.

ESCA CONSULTANTS, INC.

DESIGNED BY:	FMA	02/08
DRAWN BY:	CJ	02/08
CHECKED BY:	ELH	05/08
APPROVED BY:	RDP	08/08

R-27 5-16-08

TEMPORARY CONCRETE BARRIER
FOR STAGE CONSTRUCTION
US 45 OVER GROVE CREEK
FAP ROUTE 328 - SECTION (6BR-1)B-1
CLAY COUNTY
STATION 1413+68.00
STRUCTURE NO. 013-2009

CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(6BR-1)B-1	CLAY	109	19
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

Bench Mark: #4 Chiseled "a" Top S.E. wing Grove Creek Bridge Sta. 1414+01 Elev. 464.29

Existing Structure built in 1920 as SBI 25, Section 6A, Station 1414+01. Superstructure - RC Slab, Substructure - RC Closed Abuts

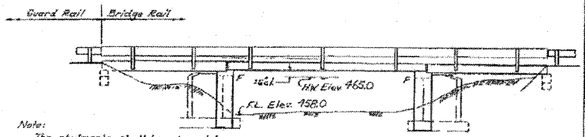
Contractor shall remove existing superstructure using stage construction, so as to maintain one way traffic at all times.

Bridge railing and posts to be stored on the Right-of-way for salvage by the State.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

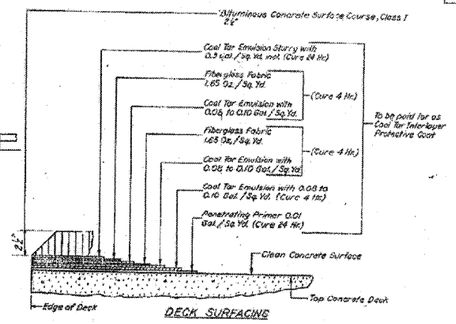
FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(6BR-1)B-1	CLAY	8	4

SHEET NO. 1 OF 5 SHEETS



Note:
The abutments shall be adequately braced to prevent forward rotation from unrestrained earth pressure before existing superstructure is removed.

ELEVATION



DECK SURFACING

GENERAL NOTES

All reinforcement bars shall be lapped 24 diameters unless otherwise shown.

It shall be the responsibility of the Contractor to verify all dimensions and conditions existing in the field prior to construction and ordering of materials.

An alternate strand pattern using Extra High Strength Prestressing strand (270 KSI.) is permitted.

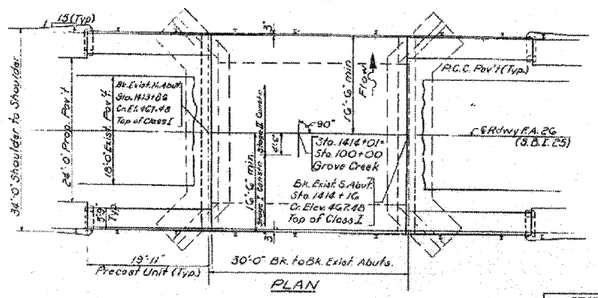
Expansion bolts shall consist of self drilling expansion anchors and ¾" hooked bolts. Hooked bolts shall extend a minimum of 12" into new concrete, unless otherwise shown.

Shoulder transition to wingwall shall be shaped with broken concrete.

Cost Incidental

WATERWAY INFORMATION

Drainage Area	3.83 Sq. Miles
Character	flat
Present Opening	172 Sq. Ft.
Required Opening	172 Sq. Ft.
Proposed Opening	172 Sq. Ft.
Q(50)	1590 cfs



PLAN

PROFILE GRADE
(Top Class I)

STATION 1414+01
REBUILT 19 BY
STATE OF ILLINOIS
F.A. RT. 26 SEC. 6BR-1
LOADING HS 20

NAME PLATE
See Std. 2113

DESIGN STRESSES

FIELD UNITS
Fc = 1900 p.s.i. Sub.
Fs = 20000 p.s.i. Reinf.
n = 10

PRECAST PRESTR. UNITS
Fc = 5000 p.s.i.
Fci = 4000 p.s.i.
Fs = 248,000 p.s.i. ½" ø Strands
Fsi = 173,600 p.s.i. ½" ø Strands

PRECAST UNITS
Fc = 4500 p.s.i.
Fc = 1800 p.s.i.
Fs = 20000 p.s.i.
n = 8

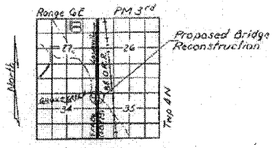
Design Specifications 1969 AASHTO (as applicable)

Allow 25 lb per sq. ft. for future wearing surface

HS 20-44 LOADING (New Constr.)

TOTAL BILL OF MATERIAL

Item	Unit	Super.	Sub.	Total
Bituminous Concrete Surface Course, Class I	Tons	12		12
Portland Cement Concrete Pavement (10")	Sq. Yds.	33		33
Pavement Fabric	Sq. Yds.	33		33
Concrete Removal	Cu. Yds.		1	1
Expansion Bolts (¾"ø)	Each	52	70	122
Class X Concrete	Cu. Yds.	1.6	19.9	21.5
Precast Concrete Bridge Slab	Sq. Ft.	299		299
Precast Prestressed Concrete Deck Beams (17")	Sq. Ft.	998		998
Steel Railing, Type S	Lin. Ft.	141		141
Reinforcement Bars	Lbs.		1030	1030
Pavement Removal & R.C.C. Replacement, Type I (10")	Sq. Yds.	8		8
Removal of Existing Superstructures	Each			1
Coal Tar Interlayer Protective Coat	Sq. Yds.	115		115
Name Plates	Each	1		1
Temporary Guard Rail	Lin. Ft.	30		30



LOCATION SKETCH

GENERAL PLAN & ELEVATION
F.A. ROUTE 26 (S.B.I. 25)
OVER GROVE CREEK
SECTION 6BR-1
CLAY COUNTY
STATION 1414+01

DESIGNED		
CHECKED		
DRAWN		
CHECKED	JP	

EXAMINED March 5, 1972
PASSED
APPROVED

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	04/08
DRAWN BY:	HAS	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
US 45 OVER GROVE CREEK
FAP ROUTE 328 - SECTION (6BR-1)B-1
CLAY COUNTY

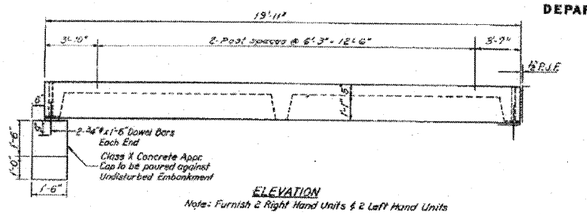
CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(6BR-1)B-1	CLAY	109	20
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

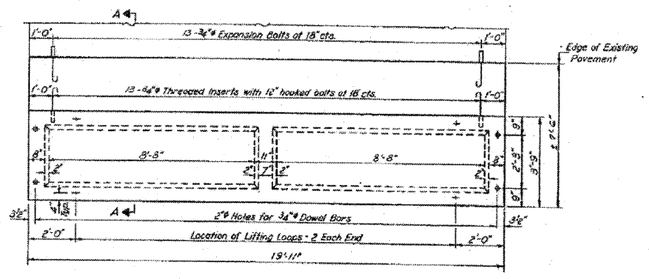
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
A.I. 24	6BR-1	CLAY	8	5

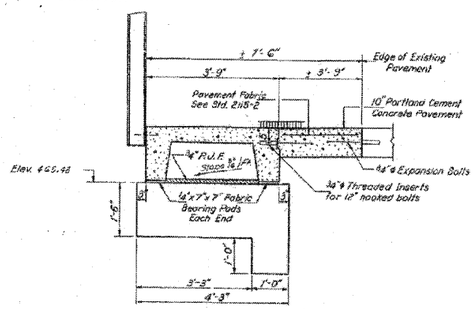
SHEET NO. 5 SHEETS



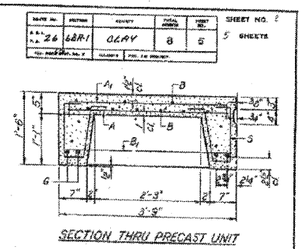
ELEVATION
Note: Furnish 2 Right Hand Units & 2 Left Hand Units



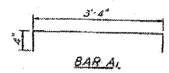
PARTIAL PLAN OF APPROACH



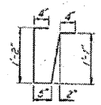
SECTION A-A



SECTION THRU PRECAST UNIT



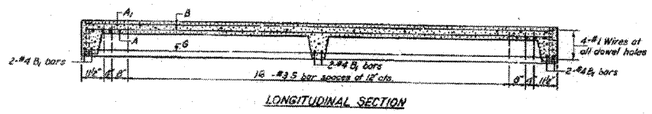
BAR A1



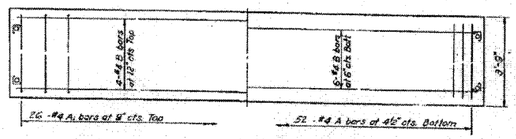
BAR S

BAR LIST - ONE UNIT
Reinforcement to be cast into slab

Bar	No	Size	Length	Shape
A	52	#4	3'-3"	
A1	26	#4	4'-0"	
B	10	#4	19'-8"	
B1	6	#4	3'-6"	
G	4	#10	19'-8"	
S	52	#3	3'-4"	

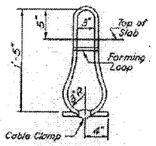


LONGITUDINAL SECTION



SLAB REINFORCEMENT

DESIGNED	Simon Al-Shamma	
CHECKED	Nabil Kanaz	EXAMINED
DRAWN	Simon Al-Shamma	PASSED
CHECKED	W	APPROVED



LIFTING LOOP DETAIL

BILL OF MATERIAL

Item	Unit	Quantity
Precast Concrete Bridge Slab	Sq. Ft.	693
Portland Cement Concrete Pavement (10")	Sq. Yds.	33
Pavement Fabric	Sq. Yds.	33
Expansion Bolts 3/4"ø	Each	52
Class X Concrete	Cu. Yds.	7.6

NOTES

Unless otherwise approved by the Engineer, lifting loops shall be 1/2"ø 6x19 class wire rope with fiber core and shall have a minimum ultimate strength of 15,700 lbs. Loops shall be burned off after slab has been erected.

Holes shall be drilled and anchor dowels grouted in place.

Cost of reinforcement and accessories cast into the slab unit, bearing pads, furnishing, drilling for, placing and grouting anchor dowels and 3/4"ø hooked bolts is included in Unit bid price for "Precast Concrete Bridge Slab."

The Precast Concrete Bridge Slab shall be erected and aligned with the exterior face of the exterior Deck Beam after Deck Beams are in final position.

STRESSES
f_c = 4,500 psi.
f_c = 1,800 psi.
f_s = 20,000 psi.
n = 8

LOADING HS-20

APPROACH DETAILS
F.A.R.P.R.2(S-B).R.T.2(5) OVER GROVE CREEK
SECTION 6 BR-1.
CLAY COUNTY
STA. 14+14.01

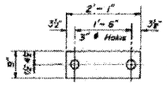
W- A.P-1 20' Precast Appr. Unit (Rt. L) (11-18-11)

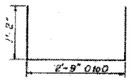
ESCA CONSULTANTS, INC.

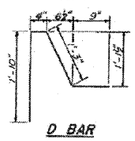
DESIGNED BY:	DAJ	04/08
DRAWN BY:	HAS	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

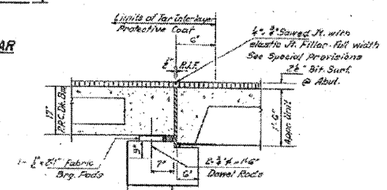
FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
US 45 OVER GROVE CREEK
FAP RTE 328 - SECTION (6BR-1)B-1
CLAY COUNTY









CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(6BR-1)B-1	CLAY	109	21
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS
GERMAN, ILLINOIS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

1-26	6BR-1	CLAY	8	6	SHEET NO. 3 5 SHEETS

GENERAL NOTES

Prestressing steel shall be non-galvanized high strength, stress-relieved 7-wire strand.

The nominal diameter shall be ⅜" and the nominal cross-sectional area shall be 0.109 sq. in..

Lifting loops shall be ½" diameter, 6x19 class wire rope with fiber core and shall have a minimum ultimate tensile strength of 13,700 lbs.

The 1" ϕ rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bar on outside beam shall be filled with grout after transverse tie assembly is in place.

Longitudinal shear keys shall be packed with a very dry mix of 2:1 sand and P.C. mortar.

After beams have been erected, holes for the dowel anchors shall be drilled into the sub-structure and the anchor dowels shall be grouted in place.

Dowel rods shall be A.S.T.M. A-306 or A.S.T.M. A-615. Transverse tie rods shall be A.S.T.M. A-306, Grade 70-80.

After fabrication the transverse tie assemblies (tie rods, nuts, washers and sleeves) shall be hot-dipped galvanized in accordance with A.S.T.M. Designation: A153.

Cost of reinforcement and accessories cast into the beam, of bearing pads, of armor angles, and of grouting longitudinal shear keys is included in unit price bid for "Precast Prestressed Concrete Deck Beams."

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
Precast Prestressed Concrete Deck Beams (17")			Sq. Ft.	998

SUPERSTRUCTURE
F.A.RT. 26 (S.B.I. 25) OVER GROVE CR.
SECTION 6 BR-1
CLAY COUNTY
STA. 141+01

ESCA CONSULTANTS, INC.		
DESIGNED BY:	DAJ	04/08
DRAWN BY:	HAS	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	05/08

FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
FAP RTE 328 (US 45)
SECTION (6BR-1)B-1
CLAY COUNTY

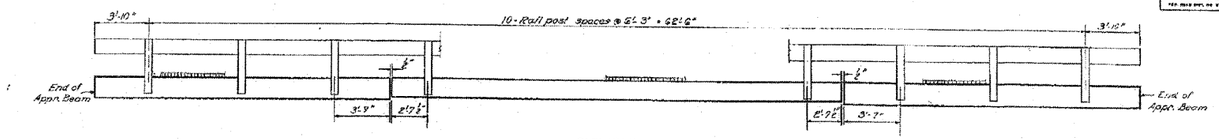
CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(6BR-1)B-1	CLAY	109	22
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

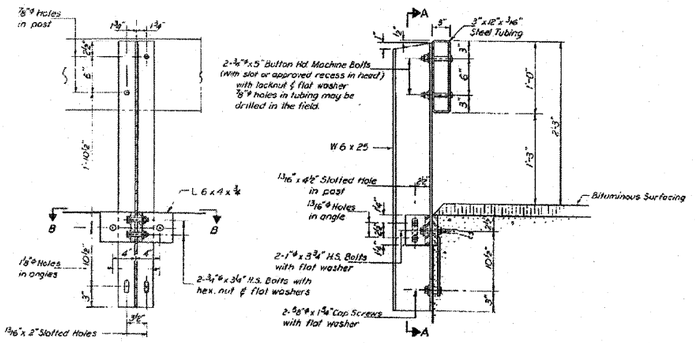
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
(6BR)1	CLAY	8	7

SHEET NO. 6
5 SHEETS

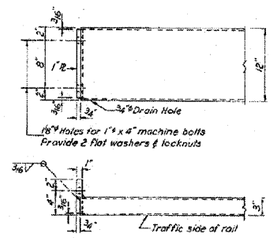


ELEVATION



SECTION A-A

SECTION AT RAIL POST



END OF RAIL DETAILS

NOTES

Hollow structural steel tubing shall conform to the requirements of A.S.T.M. designation A-500 Grade B or A-501 Structural Steel Tubing.

All other steel shapes and plates shall conform to the requirements of A.S.T.M. designation A-36 except posts shall conform to A.S.T.M. A-441.

Bolts, cap screws, and nuts shall conform to the requirement of A.S.T.M. designation A-307 except for high strength bolts, nuts and washers noted which shall conform to A.S.T.M. designation A-325.

All bolts, nuts, cap screws, washers and lock washers shall be galvanized in accordance with A.S.T.M. designation A-153.

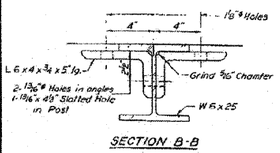
All posts, railing, rail splices, anchor devices and angles shall be galvanized after shop fabrication in accordance with A.S.T.M. designation A-123 and A-385. Galvanized rail shall not be painted.

Railing shall be in accordance with Section 508 of the Standard Specifications, except as noted, and shall be paid for at the contract unit price per linear foot for STEEL RAILING, TYPE S.

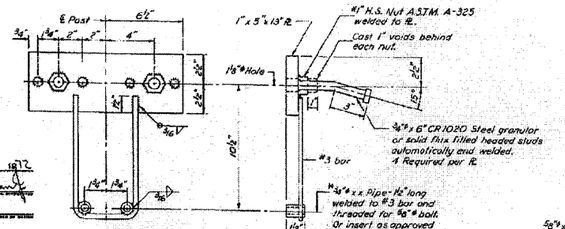
All field drilled holes shall be coated with an approved zinc rich paint before erection.

The lower portion of the post flange in contact with concrete shall receive two coats of asphalt paint conforming to Section 711.08 Type B to place 6" fabric bearing pad between the post and concrete.

The ¾"ø high strength bolts used to connect the 6 x 4 x ⅜ angles to the post shall be tightened in accordance with Article 710.11 of the Standard Specifications. The 1"ø high strength bolts connecting the angles to the concrete shall be tightened to a snug fit and given an additional ⅛ turn.

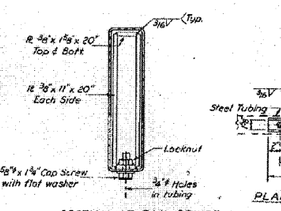


SECTION B-B

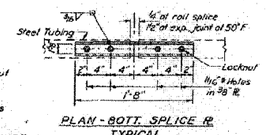


ANCHOR DEVICE

*Threaded areas shall be plugged or cracked off during casting of beam.



SECTION AT RAIL SPLICE



PLAN - BOTT. SPLICE R. TYPICAL

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S	L.in.Ft	141

TYPE S
STEEL RAILING
F.A.R.T. 26 (S.B.I.R.T. 25) OVER GROVE CREEK
SECTION 6BR-1
CLAY COUNTY
STA. 1414+01

DESIGNED	Simon Victorsen	
CHECKED	James Bond	
DRAWN	Simon Victorsen	
CHECKED	JV	

EXAMINED March 9 1972
PASSED
APPROVED

R-23 (12-10-71) (6'-3" Maximum Post Spacing)

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	04/08
DRAWN BY:	HAS	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
US 45 OVER GROVE CREEK
FAP RTE 328 - SECTION (6BR-1)B-1
CLAY COUNTY

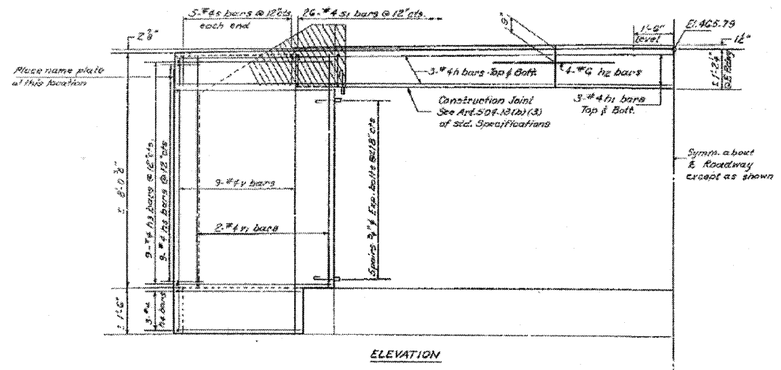
CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(6BR-1)B-1	CLAY	109	23
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

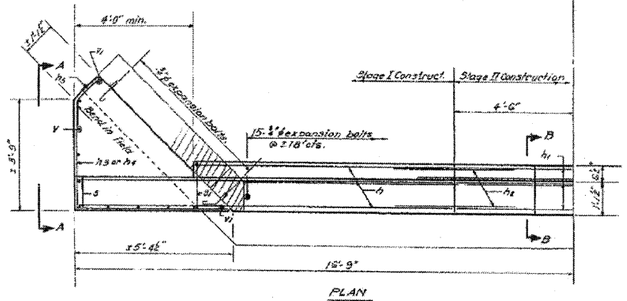
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 328	6BR-1	CLAY	8	8
FED. ROAD DIST. NO. 5	ILLINOIS	FED. AID PROJECT		

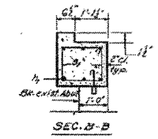
SHEET NO. 5
5 SHEETS



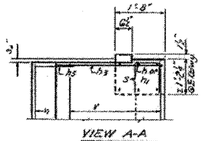
ELEVATION



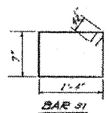
PLAN



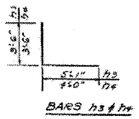
SEC. B-B



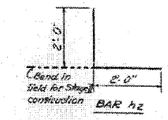
VIEW A-A



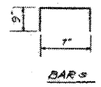
BAR s1



BARS h3 & h4

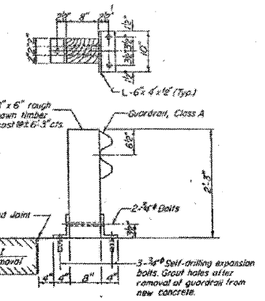


BAR h2



BAR s

h bars shall conform to the requirements of A.S.T.M. A-615 or A-617, except the minimum yield strength shall be not less than 33000 psi nor more than 45,000 psi.



TEMPORARY GUARDRAIL DETAIL
See Special Provisions

TWO ABUTMENTS
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h	12	#5	16'-0"	—
h1	12	#5	21'-0"	—
h2	8	#6	8'-0"	L
h3	36	#4	8'-7"	L
h4	12	#4	7'-6"	L
h5	36	#4	2'-0"	—
s	22	#6	21'-3"	□
s1	52	#4	6'-7"	□
v	16	#4	11'-8"	—
v1	8	#4	5'-11"	—
Class A Concrete		Cu. Yds.		19.9
Reinforcement Bars		Lbs.		1930
Expansion Bolts 3/4 ℄		Each		70
Concrete Removal		Cu. Yds.		1

Notes:
Hatched area indicates concrete Removal. Reinforcement extending into removed area shall be cleaned and incorporated into the new construction.
Expansion bolts shall be anchored in sound concrete.
All edges shall have standard ¾" chamfers except as noted.

ABUTMENTS
F.A.R.T. 2615 B, B.R.T. 2310 OVER GROVE CR.
SECTION 6BR-1
CLAY COUNTY
STA. 1414+01

DESIGNED	Simon Ustruck	
CHECKED	Mike Hirst	
DRAWN	Simon Ustruck	
CHECKED	JP	
EXAMINED		
PASSED		
APPROVED		

1-1-72

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	04/08
DRAWN BY:	HAS	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
US 45 OVER GROVE CREEK
FAP RTE 328 - SECTION (6BR-1)B-1
CLAY COUNTY

ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS
SPRINGFIELD, ILLINOIS

CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(6BR-1)B-1	CLAY	109	24
STA. 1408+00.00		TO STA. 1409+23.00		
FED. ROAD DIST. NO.	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

STA. 1409+23.00
FE RT

STA. 1409+00.00

STA. 1408+50.00

STA. 1408+00.00

18" RCCP

EX. ROW

467.68

468.06

468.63

FAP 328 (US 45) CROSS SECTIONS

ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS

CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(6BR-1)B-1	CLAY	109	25
STA. 1409+50.00		TO STA. 1411+50.00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

FINAL SURVEY — SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED — BY / DATE
NOTE BOOK
NOS.

ORIGINAL SURVEY — SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED — BY / DATE
NOTE BOOK
NOS.

STA. 1411+50.00

EX ROW — 467.23 — 1:4 — 1:4 — EL 463.46

LEFT	RIGHT
TOPSOIL C = 5.69	TOPSOIL C = 0.00
TOPSOIL F = 5.86	TOPSOIL F = 0.73
EARTH C = 0.31	EARTH C = 0.55
EARTH F = 4.06	EARTH F = 0.00

STA. 1411+00.00

EX ROW — 467.23 — 1:4 — 1:4

LEFT	RIGHT
TOPSOIL C = 3.72	TOPSOIL C = 0.00
TOPSOIL F = 3.89	TOPSOIL F = 0.73
EARTH C = 0.00	EARTH C = 0.55
EARTH F = 1.99	EARTH F = 0.00

STA. 1410+50.00

EX ROW — 467.23

STA. 1410+00.00

EX ROW — 467.32

STA. 1409+50.00

EX ROW — 467.48

FAP 328 (US 45) CROSS SECTIONS

ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS
ENVIRONMENTAL SCIENTISTS

CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(6BR-1)B-1	CLAY	109	26
STA. 1412+00.00		TO STA. 1413+50.00		
FED. ROAD DIST. NO.	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

STA. 1413+50.00

EX ROW — 1:2 — 467.23 — EX ROW

EL 461.95

STONE RIPRAP CLASS A4

LEFT	RIGHT
TOPSOIL C = 9.08	TOPSOIL C = 0.00
TOPSOIL F = 8.91	TOPSOIL F = 0.00
EARTH C = 2.73	EARTH C = 1.27
EARTH F = 41.17	EARTH F = 0.00

STA. 1413+00.00

EX ROW — 1:3 — 467.23 — 1:3 — EX ROW

EL 462.35

STONE RIPRAP CLASS A4

EL 460.80

LEFT	RIGHT
TOPSOIL C = 7.95	TOPSOIL C = 11.06
TOPSOIL F = 8.19	TOPSOIL F = 3.34
EARTH C = 3.15	EARTH C = 10.60
EARTH F = 25.86	EARTH F = 22.16

STA. 1412+50.00

EX ROW — 1:4 — 467.23 — 1:2 — EX ROW

EL 462.75

EL 461.40

LEFT	RIGHT
TOPSOIL C = 7.12	TOPSOIL C = 9.12
TOPSOIL F = 7.13	TOPSOIL F = 10.13
EARTH C = 2.58	EARTH C = 7.51
EARTH F = 12.43	EARTH F = 16.48

STA. 1412+00.00

EX ROW — 1:4 — 467.23 — 1:4 — EX ROW

EL 463.15

LEFT	RIGHT
TOPSOIL C = 6.30	TOPSOIL C = 0.96
TOPSOIL F = 6.43	TOPSOIL F = 1.90
EARTH C = 0.42	EARTH C = 4.90
EARTH F = 6.77	EARTH F = 2.74

FAP 328 (US 45) CROSS SECTIONS

ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS
SPRINGFIELD, ILLINOIS

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(GBR-1)B-1	CLAY	109	27
STA. 1414+00.00		TO STA. 1415+50.00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 74107

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

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

STA. 1415+50.00

EX ROW

467.23

LEFT
TOPSOIL C = 0.00
TOPSOIL F = 0.65
EARTH C = 2.36
EARTH F = 0.66

RIGHT
TOPSOIL C = 0.00
TOPSOIL F = 0.44
EARTH C = 5.44
EARTH F = 2.61

STA. 1415+00.00

EX ROW

467.23

LEFT
TOPSOIL C = 0.00
TOPSOIL F = 0.65
EARTH C = 2.36
EARTH F = 0.66

RIGHT
TOPSOIL C = 0.00
TOPSOIL F = 0.44
EARTH C = 5.44
EARTH F = 2.61

STA. 1414+50.00

EX ROW

467.23

1:3

EL 462.30

LEFT
TOPSOIL C = 6.54
TOPSOIL F = 7.25
EARTH C = 1.94
EARTH F = 13.99

RIGHT
TOPSOIL C = 0.00
TOPSOIL F = 2.26
EARTH C = 5.58
EARTH F = 3.18

STA. 1414+00.00

EX ROW

467.23

STONE RIPRAP
CLASS A4 (TYP)

LEFT
TOPSOIL C = 0.00
TOPSOIL F = 0.00
EARTH C = 25.14
EARTH F = 47.76

RIGHT
TOPSOIL C = 7.67
TOPSOIL F = 7.09
EARTH C = 0.00
EARTH F = 26.40

FAP 328 (US 45) CROSS SECTIONS

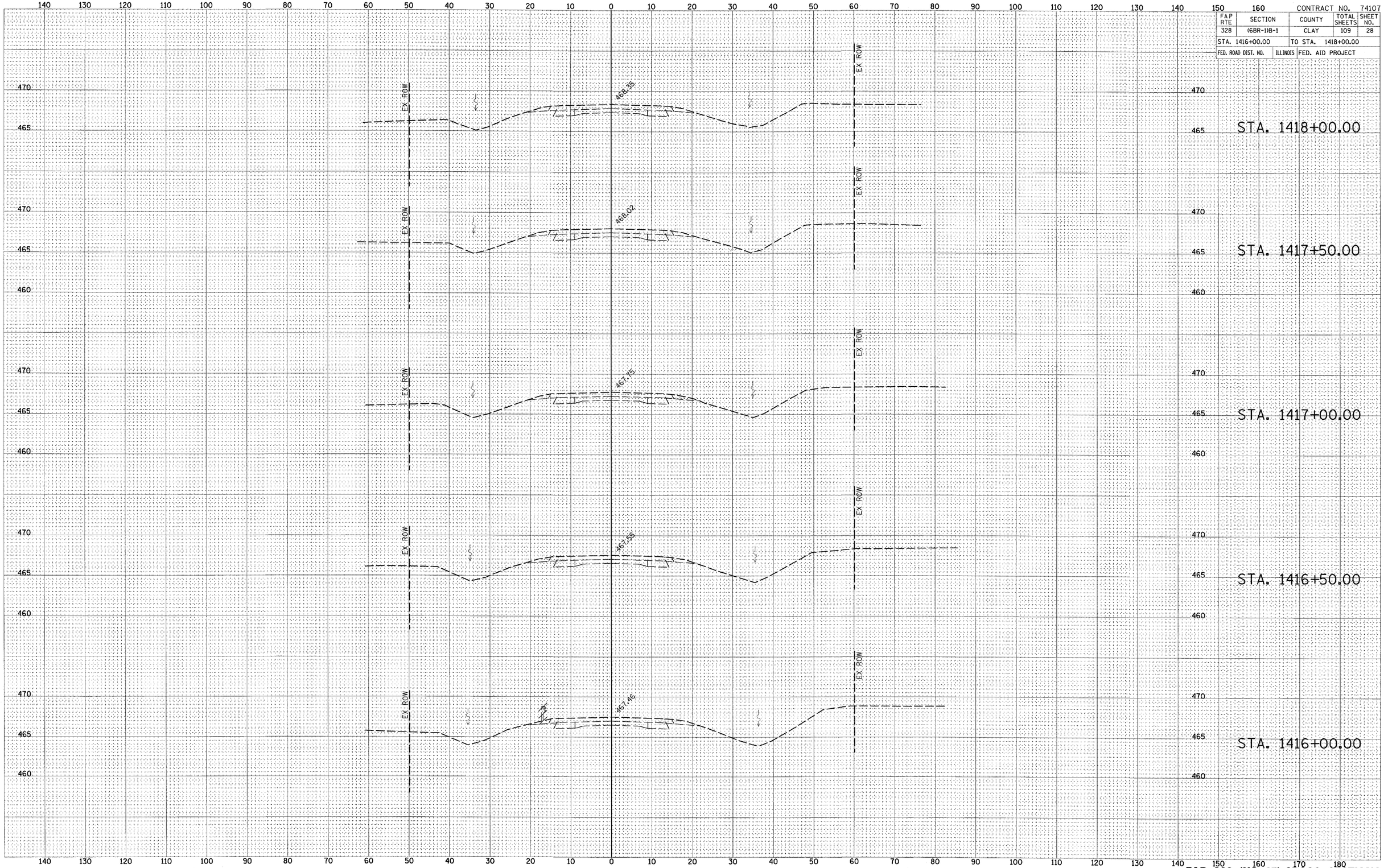
ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS
ENVIRONMENTAL SCIENTISTS

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(6BR-1)B-1	CLAY	109	28
STA. 1416+00.00		TO STA. 1418+00.00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 74107

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

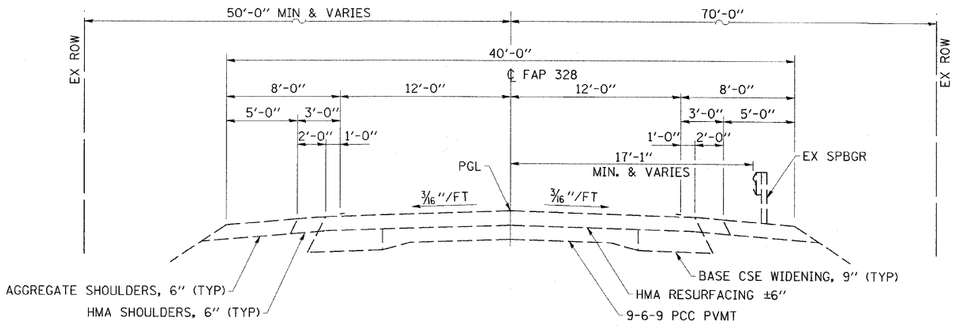
ORIGINAL SURVEY	DATE
SURVEYED	
PLOTTED	
NOTE BOOK	
AREAS TEMPLATE	
AREAS CHECKED	
NO.	BY



FAP 328 (US 45) CROSS SECTIONS

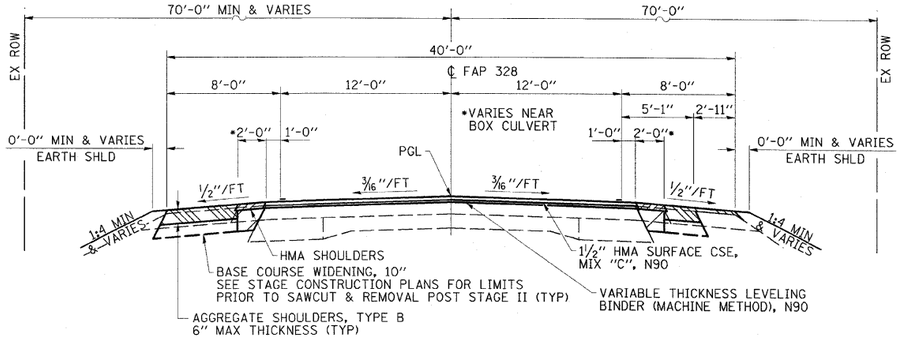
CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(6BR-3)B-1	CLAY	109	29
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

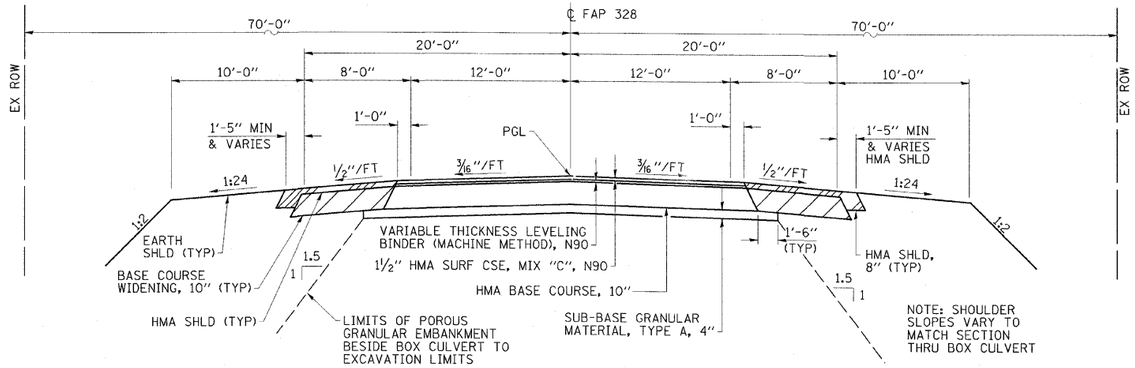


WITHOUT GUARDRAIL **WITH GUARDRAIL**

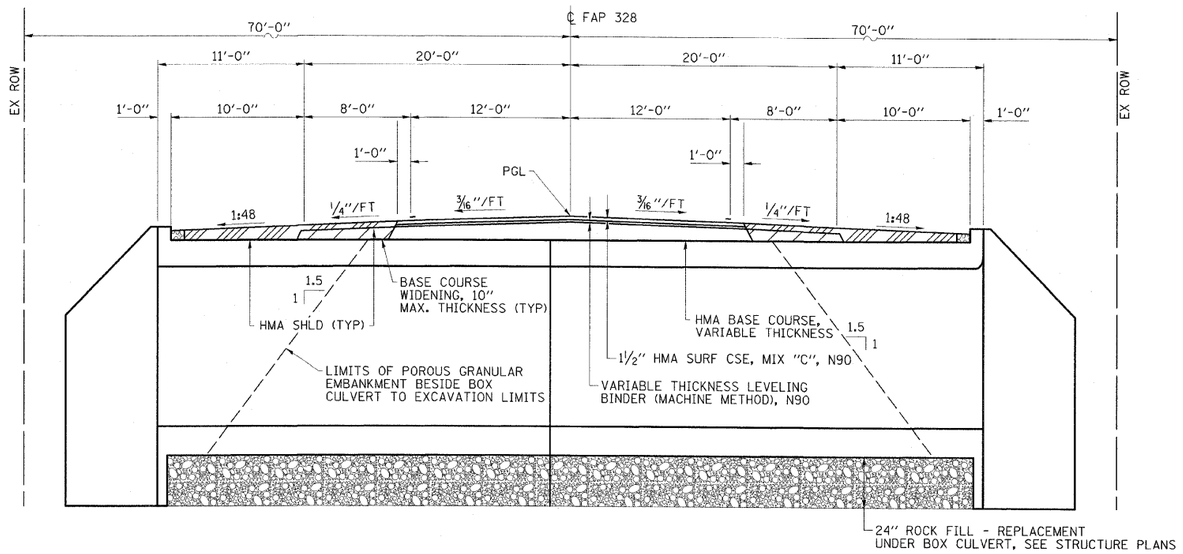
EXISTING TYPICAL ROADWAY SECTION
STA 1635+00.00 TO 1641+00.00
BRIDGE OMISSION STA 1637+92.20 TO 1638+14.20



PROPOSED TYPICAL ROADWAY SECTION
STA 1636+00.00 TO 1640+00.00
OMISSION STA 1637+73.00 TO 1638+33.00



PROPOSED TYPICAL ROADWAY SECTION
STA 1637+73.00 TO 1638+33.00
OMISSION STA 1637+90.20 TO 1638+16.20



SECTION THRU BOX CULVERT
STA 1637+90.20 TO 1638+16.20

ESCA CONSULTANTS, INC.		
DESIGNED BY:	DAJ	04/08
DRAWN BY:	HAS	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

TYPICAL SECTIONS
US 45 OVER BRANCH OF ELM CREEK
FAP ROUTE 328 - SECTION (6BR-3)B-1
CLAY COUNTY
STATION 1638+03.20
STRUCTURE NO. 013-2010

CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(6BR-3)B-1	CLAY	109	30
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

EARTHWORK SCHEDULE

LOCATION	SUITABLE EARTH EXCAVATION (WIDENING)	SUITABLE EARTH EXCAVATION ADJUSTED FOR SHRINKAGE	SUITABLE INCIDENTAL EXCAVATION MATERIAL	SUITABLE INCIDENTAL EXC. MATERIAL ADJUSTED FOR SHRINKAGE	EMBANKMENT (NOT A PAY ITEM)	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)
	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD
NE QUADRANT CUTS & FILLS	30	22.5	-	-	66.5	-44.0
SE QUADRANT CUTS & FILLS	29	21.75	-	-	61.0	-39.25
NW QUADRANT CUTS & FILLS	16	12	-	-	37.5	-25.5
SW QUADRANT CUTS & FILLS	15	11.25	-	-	38.5	-27.25
BOX CULVERT TRENCH	120	90	105	78.75	57.75	+111.0
TOTALS	210	157.5	105	78.75	261.25	-25

NOTES:
1. EXCAVATION USED AS EMBANKMENT = (SUITABLE EARTH EXCAVATION + SUITABLE INCIDENTAL EXCAVATION)•0.75

PAVEMENT MARKING SCHEDULE

LOCATION	DESCRIPTION	SHORT-TERM PAVEMENT MARKING (1)	PAINT PAVEMENT MARKING - LINE 4"	TEMP PAVEMENT MARKING - LINE 4"
		FOOT	FOOT	FOOT
STA 1634+93 TO 1641+13, CENTERLINE	SKIP-DASH YELLOW CENTERLINE	184	160	160
STA 1636+15 TO 1639+77, LT	SOLID WHITE EDGE LINE	-	362	362
STA 1636+49 TO 1639+62, RT	SOLID WHITE EDGE LINE	-	318	318
TOTALS		184	840	840

(1) INCLUDES 3 ADDITIONAL APPLICATIONS FROM STA 1636+00 TO STA 1640+00

SEEDING SCHEDULE

LOCATION	SEEDING, CLASS 2 (SPECIAL)	SEEDING, CLASS 7
	ACRE	ACRE
NE QUADRANT	0.075	0.075
SE QUADRANT	0.075	0.075
NW QUADRANT	0.075	0.075
SW QUADRANT	0.075	0.075
TOTALS	0.3	0.3

WORK ZONE AND PAVEMENT MARKING REMOVAL SCHEDULE

LOCATION	PAVEMENT MARKING DESCRIPTION	WORK ZONE PAVEMENT MARKING REMOVAL	PAVEMENT MARKING REMOVAL
		SQ FT	SQ FT
STA 1634+93 TO 1641+13, ℄	CENTERLINE	62	44
EDGELINES	TEMPORARY	53	
CENTERLINE	TEMPORARY	227	
STA 1636+51 TO 1639+55, RT	EDGELINE		102
STA 1636+41 TO 1637+73, LT	EDGELINE		44
STA 1638+33 TO 1639+65, LT	EDGELINE		44
TOTALS		342	234

PAVEMENT MARKER REMOVAL SCHEDULE

LOCATION	RRPM REMOVAL
	EACH
STA 1636+25	1
STA 1637+00	1
STA 1638+50	1
STA 1640+00	1
TOTAL	4

TOPSOIL EXCAVATION AND PLACEMENT SCHEDULE

LOCATION	TOPSOIL EXCAVATION AND PLACEMENT	TOPSOIL FURNISH AND PLACE, 4"
	CU YD	SQ YD
NE QUADRANT CUTS & FILLS	16	2
SE QUADRANT CUTS & FILLS	16	13
NW QUADRANT CUTS & FILLS	17	9
SW QUADRANT CUTS & FILLS	16	52
TOTALS	65	76

POROUS GRANULAR EMBANKMENT SCHEDULE

LOCATION	CU YD
BOX CULVERT TRENCH	175
TOTAL	175

PAVING SCHEDULE

LOCATION	BITUMINOUS MATERIALS (PRIME COAT)	AGGREGATE (PRIME COAT)	LEVELING BINDER (MACHINE METHOD), N90	HMA SURFACE COURSE, MIX "C", N90	HMA SHOULDERS	INCIDENTAL HMA SURFACING
	GALLON	TON	TON	TON	TON	TON
SN 013-2010	168	3.2	30	110	62	
STA 1639+15, LT						4
TOTALS	168	3.2	30	110	62	4

EROSION CONTROL SCHEDULE

LOCATION	PERIMETER EROSION BARRIER	TEMPORARY EROSION CONTROL SEEDING (2 APPLICATIONS)
	FOOT	POUND
NE QUADRANT	190	15
SE QUADRANT	175	15
NW QUADRANT	190	15
SW QUADRANT	185	15
TOTALS	740	60

GUARDRAIL REMOVAL SCHEDULE

LOCATION	FOOT
NE QUADRANT	125
SE QUADRANT	78
NW QUADRANT	202
SW QUADRANT	126
TOTAL	531

BASE COURSE SCHEDULE

LOCATION	HMA BASE COURSE, 10"	BASE COURSE WIDENING, 10"
	SQ YD	SQ YD
STA 1635+93 TO 1640+13, LT		327
STA 1636+94 TO BRIDGE, RT		70
BRIDGE TO STA 1639+62, RT		70
STA 1637+73 TO 1638+33	175	
STA 1637+73 TO 1638+33, RT		47
TOTALS	175	514

REMOVAL SCHEDULE

LOCATION	PAVEMENT REMOVAL	PAVED SHOULDER REMOVAL
	SQ YD	SQ YD
STA 1637+73 TO 1638+33	110	
STA 1635+93 TO 1637+73, LT	100	
STA 1638+33 TO 1638+92, LT	33	
STA 1639+46 TO 1640+13, LT	37	
STA 1636+39 TO 1637+73, RT	31	
STA 1638+33 TO 1639+67, RT	31	
STA 1635+93 TO 1637+73, LT		40.5
STA 1636+00 TO 1637+73, RT		33.5
STA 1638+33 TO 1640+13, LT		40.0
STA 1638+33 TO 1640+00, RT		37.0
TOTALS	342	156

SUB-BASE GRANULAR MATERIAL SCHEDULE

LOCATION	SUB-BASE GRANULAR MATERIAL, TYPE A 4"
	SQ YD
STA 1637+73 TO 1637+90.2	59
STA 1638+16.2 TO 1638+33	57
TOTAL	116

AGGREGATE SHOULDERS SCHEDULE

LOCATION	AGGREGATE SHOULDERS, TYPE B
	TON
NE QUADRANT	30.5
SE QUADRANT	17.8
NW QUADRANT	44.1
SW QUADRANT	19.6
TOTAL	112

HMA SURF REMOVAL SCHEDULE

LOCATION	BUTT JOINT
	SQ YD
STA 1636+00 TO 1636+65	190
STA 1639+38 TO 1640+00	180
TOTAL	370

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	04/08
DRAWN BY:	HAS	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

SCHEDULES OF QUANTITIES
US 45 OVER BRANCH OF ELM CREEK
FAP ROUTE 328 - SECTION (6BR-3)B-1
CLAY COUNTY
STATION 1638+03.20
STRUCTURE NO. 013-2010

CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(6BR-3)B-1	CLAY	109	31
STA. 1635+00		TO STA. 1641+00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

ESCA CONSULTANTS, INC.
CIVIL & ENVIRONMENTAL ENGINEERS

PLAN
SURVEYED
DRAWN
ALIGNMENT CHECKED
GRADES CHECKED
CADD FILE NAME
NOTE BOOK
NO.
BY
DATE

PROFILE
SURVEYED
DRAWN
GRADES CHECKED
BALANCED
STRUCTURE NOTATIONS CHKD
NOTE BOOK
NO.
BY
DATE

20 0 20 40
SCALE IN FEET

SEC. 23, T3N, R6E, 3RD P.M.

EX ROW
BRANCH OF ELM CREEK
CONSTRUCTION LIMITS (TYP)
T/O BANK
15" RCCP
+06 PE HMA
50'
1635+93
1636+00 BUTT JOINT BEGIN PAVING
70'
℄ FAP 328 (US 45)
125' GUARDRAIL REMOVAL
+73
+33
78' GUARDRAIL REMOVAL
15" SSON HMA OIL & CHIP
24" RCCP
1640+13
15" RCCP
+60 FE EARTH
70'
-00
20'
12'
12'
20'
1636+00
1637+00
1638+00
1639+00
1640+00
1641
13'
13'
13'
13'
12'
12'
20'
20'
1636+65
202' GUARDRAIL REMOVAL
126' GUARDRAIL REMOVAL
1639+38
1640+00 BUTT JOINT END PAVING
70'
70'
18" RCCP
+62 PE HMA
EX ROW
EX ROW

CENTERLINE TIE

FE (DIRT)
CHIS. "X" ON TOP OF S. END OF 15" RCP FLARED END SECTION
MAG NAIL W/ WASHER
105.00'
MAG NAIL & WASHER IN P.P.
81.05'
118.55'
℄ US 45
I.P. W/ CAP BEHIND R.O.W. MARKER
PI STA 1633+00.00

LEGEND

- HMA SHOULDER
- AGG SHOULDERS, TYPE B
- INCIDENTAL HMA SURFACING
- PAVEMENT REMOVAL
- HMA SURF REMOVAL - BUTT JOINT
- BASE COURSE WIDENING, 10"

℄ EX SN 013-0013
STA 1638+03.20
ONE SPAN PPC
DECK BEAM BRIDGE
34'-8" OUT TO OUT DECK WIDTH
22'-0" BK TO BK ABUTMENTS
TO BE REMOVED

℄ PR SN 013-2010
STA 1638+03.20
DOUBLE 12' SPAN X 6' HEIGHT
BOX CULVERT
62'-0" OUT TO OUT HEADWALLS

CENTERLINE TIE

MAG NAIL W/ ALUM. TAG IN WOOD FENCE POST
75.64'
I.P. W/ CAP TRAV. PT. #101
86.67'
MAG NAIL W/ WASHER
127.58'
℄ US 45
MAG NAIL W/ ALUM TAG IN P.P.
POT STA 1638+03.20

CENTERLINE TIE

FE (DIRT)
CHIS. "X" ON TOP OF 15" RCP FLARED END SECTION
MAG NAIL W/ ALUM. TAG IN 10" ASH
82.35'
54.00'
MAG NAIL W/ WASHER
℄ US 45
34.85'
I.P. W/ CAP TRAV PT #100
PI STA 1651+00.00

SEC. 22, T3N, R6E, 3RD P.M.

BENCHMARK 262 EL 479.07 (NAVD 88)
CHISELED SQUARE ON TOP OF CURB AT SOUTHWEST CORNER OF BRIDGE SN 013-0013 STATION 1638+14, 17.42' RT

500
490
485
480
475
470
465
460
455

℄ STRUCTURE STA 1638+03.20
1636+00 VPI MATCH EX
1640+00 VPI MATCH EX
PR PGL FAP 328
1¼" CL.
-0.06%
D.H.W. ELEV. 476.9
EX PGL FAP 328
EXISTING STRUCTURE
PR DOUBLE 12'S x 6'R BOX CULVERT

	1635+00	1635+50	1636+00	1636+50	1637+00	1637+50	1638+00	1638+50	1639+00	1639+50	1640+00	1640+50	1641+00
(EX PGL)	479.21	479.08	478.96	478.83	478.72	478.66	478.60	478.58	478.58	478.66	478.73	478.70	478.66
(PR PGL)			**478.96**	**478.93**	**478.90**	**478.87**	**478.84**	**478.82**	**478.79**	**478.76**	**478.73**		

FAP RTE 328 (US 45) PLAN AND PROFILE

CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(6BR-3)B-1	CLAY	109	32
STA. 1634+00		TO STA. 1643+00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

N

30 0 30 60

SCALE IN FEET

LEGEND

TRAFFIC SIGNAL WITH BACKPLATE, SIGNAL DIRECTION INDICATED

PAVEMENT REMOVAL

BASE COURSE WIDENING, 10"

SCHEDULE OF QUANTITIES

TEMPORARY CONCRETE BARRIER

STATION	TO	STATION	FEET
1636+53		1638+53	200
		TOTAL	200

TEMPORARY BRIDGE TRAFFIC SIGNALS - 1 EACH

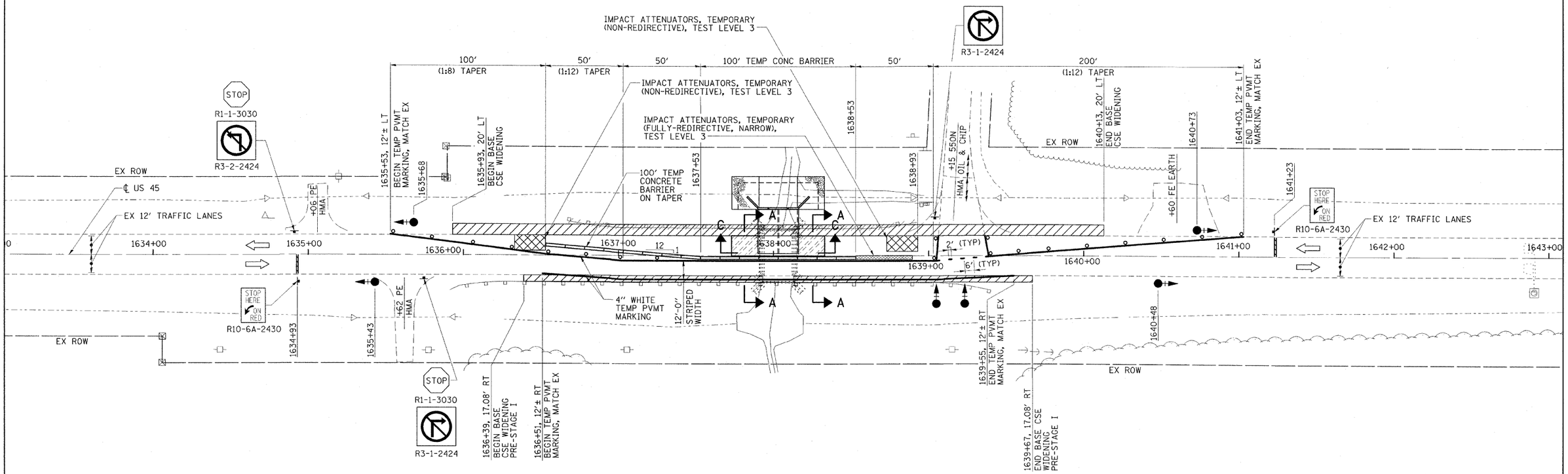
TEMPORARY RUMBLE STRIPS - 6 EACH

IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3 - 2 EACH

IMPACT ATTENUATORS, TEMPORARY (FULLY-REDIRECTIVE, NARROW), TEST LEVEL 3 - 1 EACH

GENERAL NOTES

1. TRAFFIC CONTROL SHALL BE ERECTED AS SHOWN AND ACCORDING TO "TRAFFIC CONTROL AND PROTECTION, STANDARD 701321."
2. SEE SPECIAL PROVISIONS FOR ADDITIONAL TRAFFIC CONTROL REQUIREMENTS.
3. COORDINATE LOCATION OF SIGNALS WITH FINAL WORK AS DIRECTED BY THE ENGINEER.
4. CONSTRUCT TEMPORARY RUMBLE STRIPS AT LOCATIONS SHOWN ON STANDARD 701321.
5. THE DIMENSION SHOWN ON THE WIDTH RESTRICTION SIGN (W12-I102(O)-48) SHOWN ON STANDARD 701321 SHALL BE 12'-6" FOR STAGE I CONSTRUCTION.
6. ADDITIONAL SIGNAGE AND BARRICADES SHOWN FOR SIDE-ROADS AND ENTRANCES SHALL BE INCLUDED IN THE COST OF STANDARD 701321.



ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	04/08
DRAWN BY:	CJ	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

PLOT DATE =
FILE NAME =
PLOT SCALE =
REFERENCE =

STAGE I CONSTRUCTION
US 45 OVER BRANCH OF ELM CREEK
FAP ROUTE 328 - SECTION (6BR-3)B-1
CLAY COUNTY
STATION 1638+03.20
STRUCTURE NO. 013-2010

CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(6BR-3)B-1	CLAY	109	33
STA. 1634+00		TO STA. 1643+00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

30 0 30 60

SCALE IN FEET

LEGEND

TRAFFIC SIGNAL WITH BACKPLATE, SIGNAL DIRECTION INDICATED

PAVEMENT REMOVAL

BASE COURSE WIDENING, 10"

SCHEDULE OF QUANTITIES

TEMPORARY CONCRETE BARRIER

STATION	TO	STATION	FEET
1638+53		1639+53	100
1636+53		1638+53	200
		TOTAL	300

RELOCATE TEMPORARY CONCRETE BARRIER

STATION	TO	STATION	FEET
1636+53		1638+53	200
		TOTAL	200

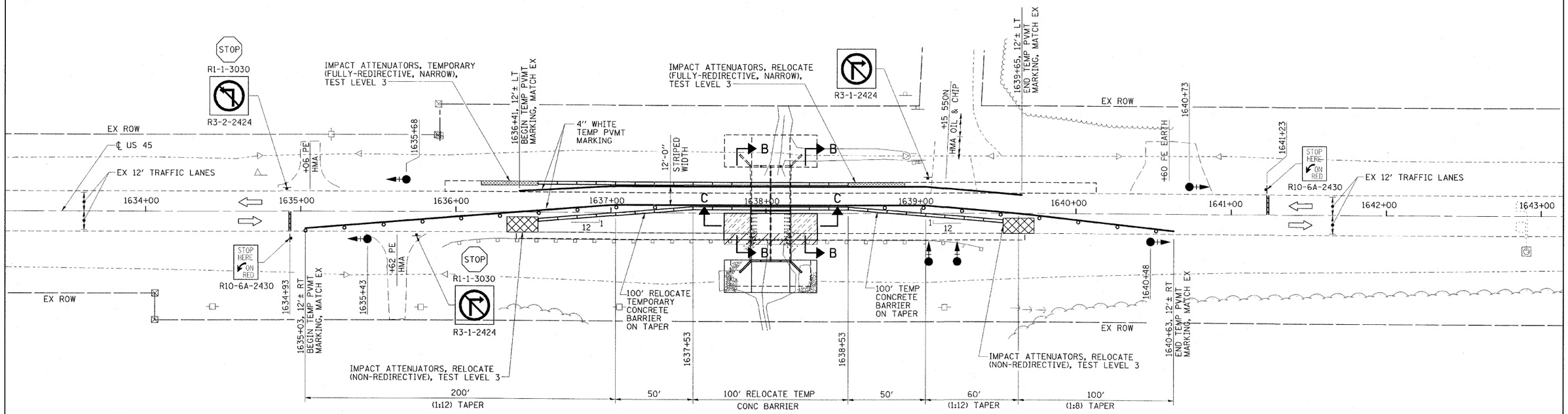
IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 3 - 2 EACH

IMPACT ATTENUATORS, TEMPORARY (FULLY-REDIRECTIVE, NARROW), TEST LEVEL 3 - 1 EACH

IMPACT ATTENUATORS, RELOCATE (FULLY-REDIRECTIVE, NARROW), TEST LEVEL 3 - 1 EACH

GENERAL NOTES

1. TRAFFIC CONTROL SHALL BE ERECTED AS SHOWN AND ACCORDING TO "TRAFFIC CONTROL AND PROTECTION, STANDARD 701321."
2. SEE SPECIAL PROVISIONS FOR ADDITIONAL TRAFFIC CONTROL REQUIREMENTS.
3. COORDINATE LOCATION OF SIGNALS WITH FINAL WORK AS DIRECTED BY THE ENGINEER.
4. CONSTRUCT TEMPORARY RUMBLE STRIPS AT LOCATIONS SHOWN ON STANDARD 701321.
5. THE DIMENSION SHOWN ON THE WIDTH RESTRICTION SIGN (W12-1102(O)-48) SHOWN ON STANDARD 701321 SHALL BE 12'-6" FOR STAGE II CONSTRUCTION.
6. ADDITIONAL SIGNAGE AND BARRICADES SHOWN FOR SIDE-ROADS AND ENTRANCES SHALL BE INCLUDED IN THE COST OF STANDARD 701321.



ESCA CONSULTANTS, INC.

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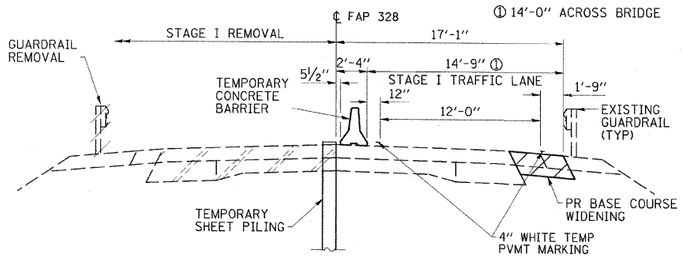
DRAWN BY:	CJ	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

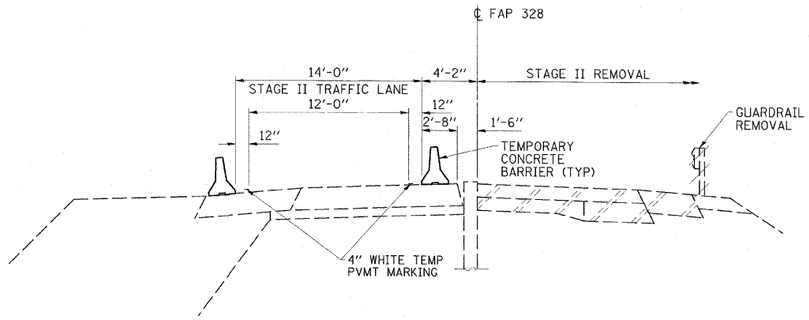
PLOT DATE =
FILE NAME =
PLOT SCALE =
REFERENCE =

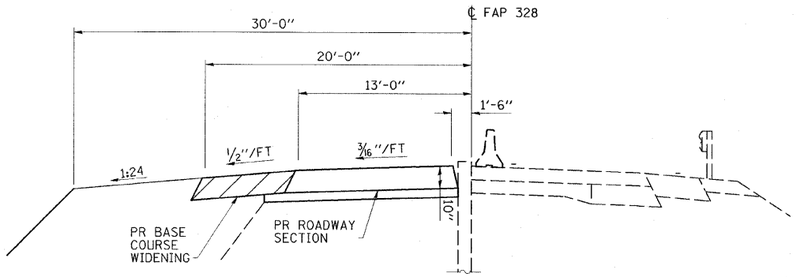
STAGE II CONSTRUCTION
US 45 OVER BRANCH OF ELM CREEK
FAP ROUTE 328 - SECTION (6BR-3)B-1
CLAY COUNTY
STATION 1638+03.20
STRUCTURE NO. 2010

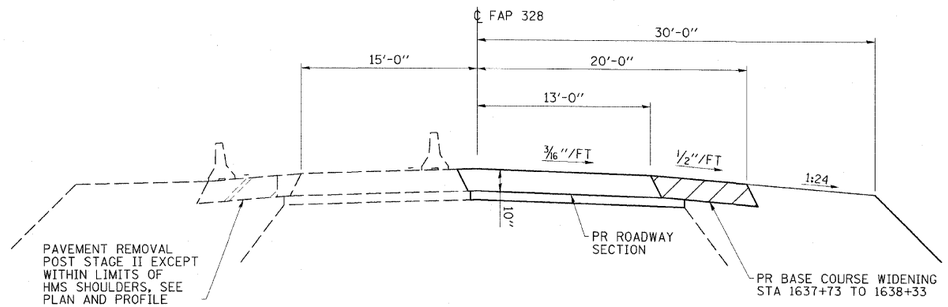
CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(6BR-3)B-1	CLAY	109	34
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



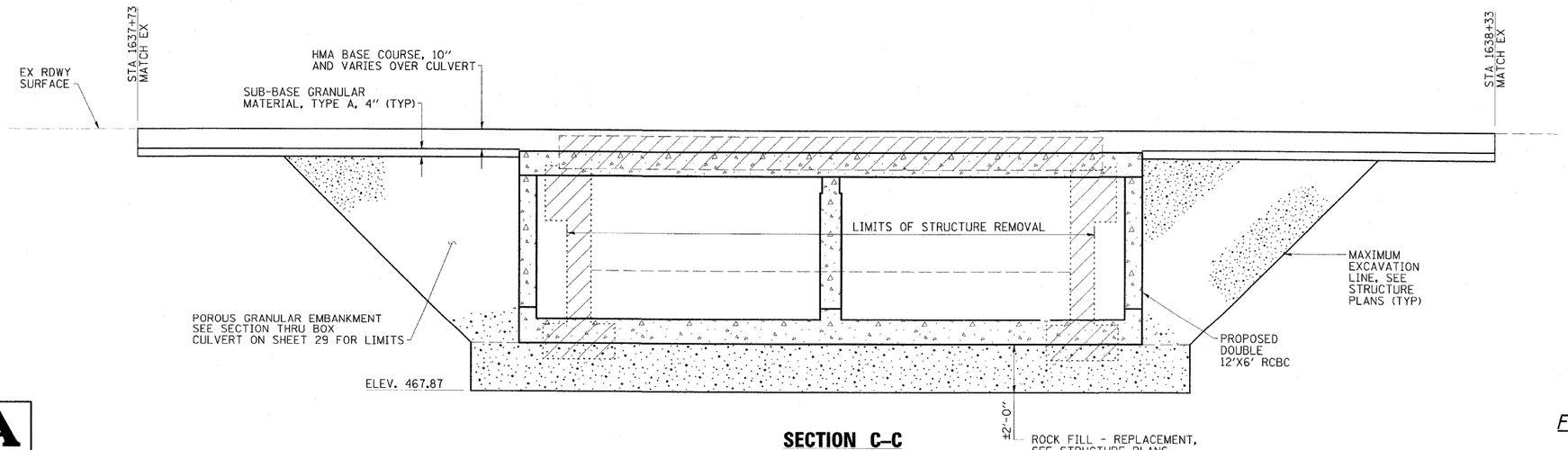






SECTION A–A (STAGE I)

SECTION B–B (STAGE II)



SECTION C–C

NOTES

1. SEE STRUCTURE PLANS FOR ADDITIONAL SECTIONS.

ESCA CONSULTANTS, INC.		
DESIGNED BY:	DAJ	04/08
DRAWN BY:	HAS	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

STAGE CONSTRUCTION DETAILS
US 45 OVER BRANCH OF ELM CREEK
FAP ROUTE 328 - SECTION (6BR-3)B-1
CLAY COUNTY
STATION 1638+03.20
STRUCTURE NO. 013-2010

ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS
QUINCY, ILLINOIS

CONTRACT NO. 74107

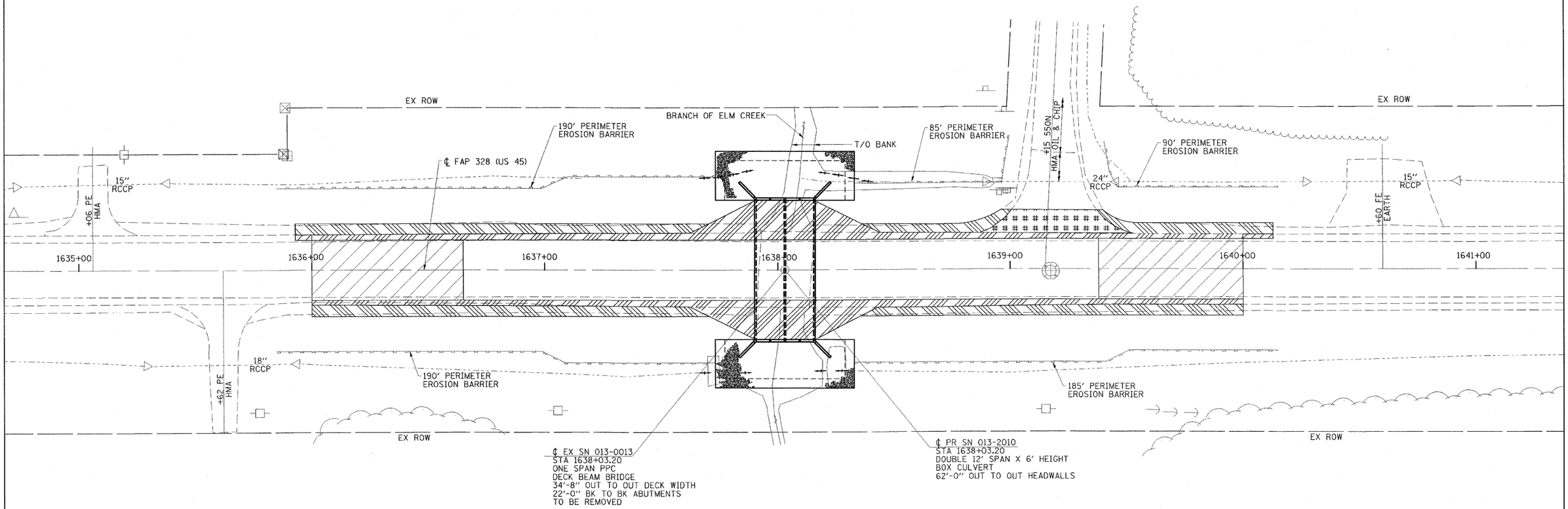
FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(6BR-3)B-1	CLAY	109	35
STA. 1635+00		TO STA. 1641+00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

N

20 0 20 40
SCALE IN FEET

LEGEND

PERIMETER EROSION BARRIER



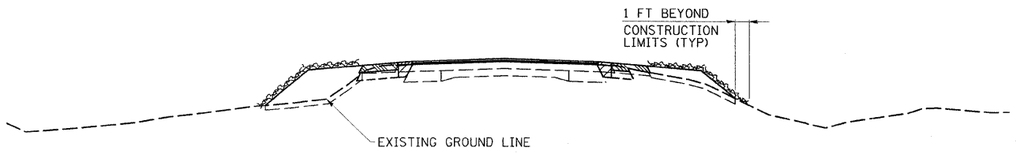
ESCA CONSULTANTS, INC.		
DESIGNED BY:	DAJ	04/08
DRAWN BY:	HAS	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

EROSION CONTROL
AND DRAINAGE PLAN
US 45 OVER BRANCH OF ELM CREEK
FAP ROUTE 328 - SECTION (6BR-3)B-1
CLAY COUNTY
STATION 1638+03.20
STRUCTURE NO. 013-2010

CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP	(6BR-3)B-1	CLAY	109	36
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

SEEDING & MULCHING



INDICATES LIMITS OF SEEDING AND MULCHING

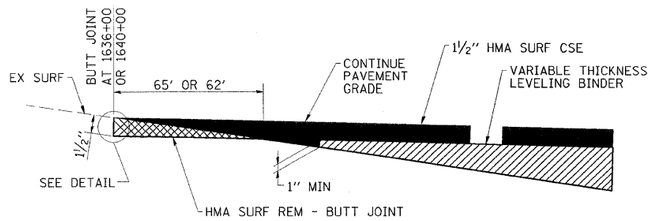
GENERAL NOTES

IN GENERAL, ALL EARTH SURFACES DISTURBED DURING CONSTRUCTION OPERATIONS SHALL BE SEEDED AND MULCHED UPON COMPLETION OF ALL GRADING OPERATIONS.

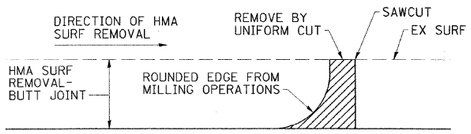
FERTILIZER NUTRIENTS AND LIMESTONE SHALL BE APPLIED TO ALL SEEDED AREAS.

THE RATES OF APPLICATION OF FERTILIZER, MULCH AND LIMESTONE SHALL BE AS SPECIFIED IN THE SPECIAL PROVISIONS.

SECTIONS 250 AND 251 OF THE STANDARD SPECIFICATIONS SHALL GOVERN THIS WORK EXCEPT AS SPECIFIED HEREIN OR AS NOTED IN THE SPECIAL PROVISIONS.



TYPICAL BUTT JOINT SECTION
SN 013-2010



DETAIL AT BUTT JOINT

NOTE:
WHEN MILLING OPERATIONS PRODUCE A ROUNDED EDGE, THEN A SAWCUT SHALL BE USED TO MANUFACTURE A PERPENDICULAR EDGE AS SHOWN IN THE DETAIL. THE COST OF ALL WORK SHOWN IN THE DETAIL IS INCLUDED IN HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT. THE ENGINEER SHALL BE THE SOLE JUDGE CONCERNING THE USE OF THIS DETAIL.

ESCA CONSULTANTS, INC.		
DESIGNED BY:	DAJ	04/08
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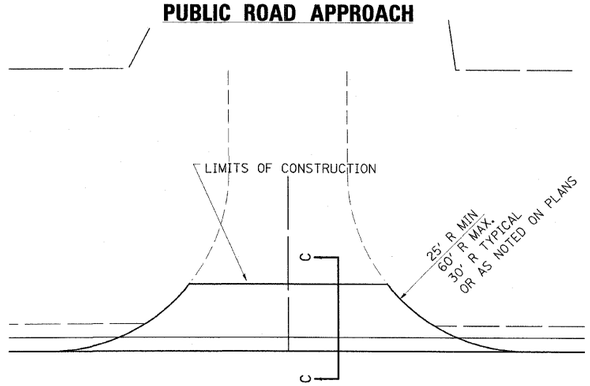
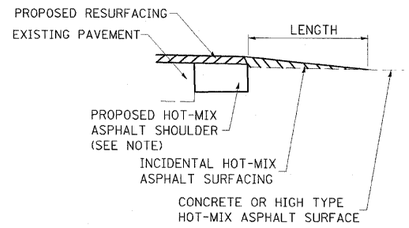
PUBLIC ROAD APPROACH





SECTION C-C

NOTES

LENGTH = 10' UNLESS OTHERWISE NOTED ON PLANS

THE THICKNESS OF THE HOT-MIX ASPHALT SHOULDERS THROUGH COMMERCIAL ENTRANCES (HOT-MIX ASPHALT) AND PUBLIC ROADS SHALL BE 10". THE COST OF THE EXTRA THICKNESS SHALL BE INCLUDED WITH THE HOT-MIX ASPHALT SHOULDERS PAY ITEM.

HOT-MIX ASPHALT SHOULDERS SHALL NOT BE CONSTRUCTED THROUGH A PCC ENTRANCE OR PCC PUBLIC ROAD APPROACH.

THE COST OF EXCAVATION IS INCLUDED IN THE PAY ITEM INCIDENTAL HOT-MIX ASPHALT SURFACING.

THE COST OF THE BITUMINOUS MATERIALS AND AGGREGATE (PRIME COAT) FOR ENTRANCES AND PUBLIC ROAD APPROACHES SHALL BE INCLUDED IN THE PAY ITEM INCIDENTAL HOT-MIX ASPHALT SURFACING.

SIDE	STATION	TYPE	INCIDENTAL HOT-MIX ASPHALT SURFACING	AGGREGATE SURFACE COURSE, TYPE B
			TON	TON
LT	1639+15	PRA	4	

FE=FIELD ENTRANCE
PE=PRIVATE ENTRANCE
CE=COMMERCIAL ENTRANCE
PRA - PUBLIC ROAD APPROACH
MBT - MAILBOX TURNOUT

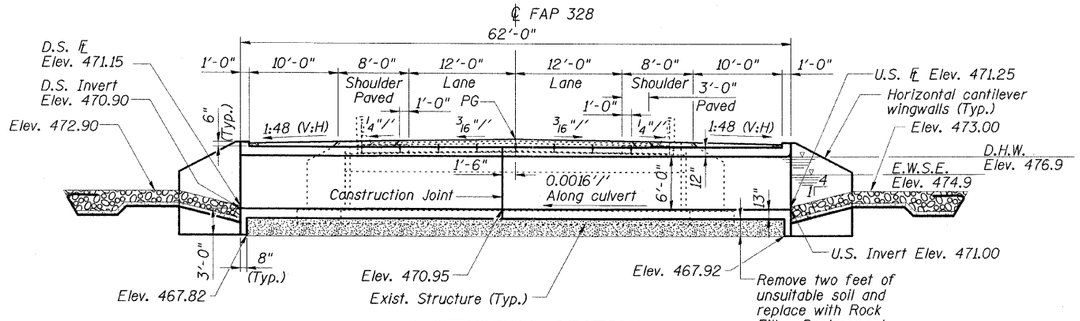
MISCELLANEOUS DETAILS
US 45 OVER BRANCH OF ELM CREEK
FAP RTE 328 - SECTION (6BR-3)B-1
CLAY COUNTY
STATION 1638+03.20
STRUCTURE NO. 013-2010

BENCHMARK: BM 262 - Chiseled square on top of curb at SW corner of SN 013-0013, Station 1638+14, 17.42' Rt. Elev. 479.07 (NAVD 88)

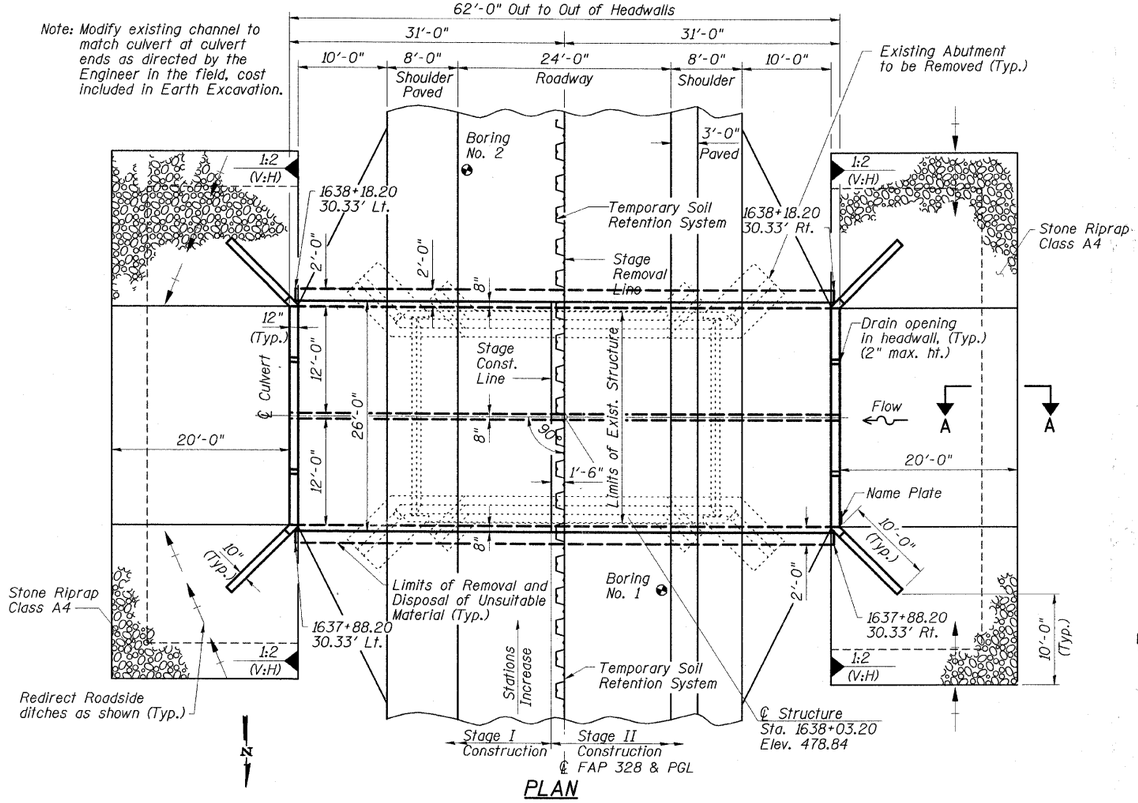
EXISTING STRUCTURE:
SN 013-0013 was originally built in 1920 as SBI 25, Section 6A and was reconstructed in 1972 as SBI 25, Section 6BR-3. It is a single span structure consisting of 11" PPC Deck Beams on closed abutments and wingwalls on spread footings. The deck width is 34'-8" and the length is 22'-0" back to back of abutments. Traffic shall be maintained utilizing stage construction.

No salvage.

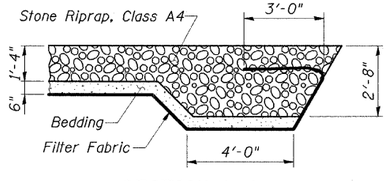
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



LONGITUDINAL SECTION
(Looking South)



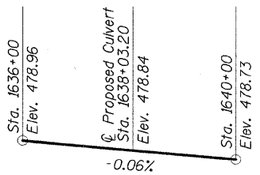
PLAN



SECTION A-A

STATION 1638+03.20
BUILT 200_ BY
STATE OF ILLINOIS
FAP RT. 328 SEC. (6BR-3)B-1
LOADING HS20-44
STR. NO. 013-2010

NAME PLATE
See Std. 515001



PROFILE GRADE
(Along ℄ Roadway)

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 328	**	CLAY	109	37
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT:		

SHEET NO. 1
6 SHEETS

Contract #74107 **(6BR-3)B-1

STRUCTURE INDEX OF SHEETS

GENERAL NOTES

1. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60 (IL Modified). See Special Provisions.
2. Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.
3. The Contractor is advised that the existing PPC Deck Beams are in a deteriorated condition with reduced load carrying capacity. It is the Contractor's responsibility to account for the condition of the beams when developing construction procedures for removal of the superstructure.
4. If the Contractor's procedure for existing deck beam removal involves placement of cranes or other heavy equipment on the existing deck beams, a detailed procedure shall be submitted to the Engineer for approval. The procedure shall include calculations, prepared and sealed by an Illinois Licensed Structural Engineer, verifying the structural adequacy of the beams for the proposed loads. Costs included in Removal of Existing Structures.
5. The cost of the removal of existing precast concrete units and approach caps at the approaches is included in the cost of Removal of Existing Structures.
6. Excavation behind existing abutment walls shall be performed to balance front and back soil pressure before Stage I removal of the existing superstructure. The Contractor shall sawcut the upper portion of the existing abutment at the stage removal line before Stage I removal to ensure the remaining portion will not be prematurely damaged.
7. For backfilling and embankment, see Standard Specifications.
8. At least 6'-0" of the barrel shall be poured monolithically with wingwalls.
9. Precast alternate is not allowed.
10. The limits and quantities of Removal and Disposal of Unsuitable Material shown are based on the boring data and may be modified by the District Geotechnical and Field Engineers for variable subsurface conditions encountered in the field.

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Stone Riprap, Class A4	Sq. Yd.	281
Filter Fabric	Sq. Yd.	281
Removal of Existing Structures No. 2	Each	1
Concrete Box Culverts	Cu. Yd.	167
Reinforcement Bars	Pound	29,790
Temporary Soil Retention System, (Location 2)	Sq. Ft.	255
Name Plates	Each	1
Bar Splicers	Each	129
Rock Fill - Replacement	Cu. Yd.	115
Removal and Disposal of Unsuitable Material	Cu. Yd.	115

See Roadway Plans for quantities of Temporary Concrete Barrier, Earth Excavation, and Porous Granular Embankment.

STATE OF ILLINOIS
RICHARD D. PAYNE
No. 4647
LICENSED STRUCTURAL ENGINEER
EXPIRES 11-30-08
SIGNATURE
8-12-08
DATE

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
Ralph E Anderson (for)
ENGINEER OF BRIDGES AND STRUCTURES

WATERWAY INFORMATION

Drainage Area = 0.66 Sq. Mi. Exist. Low Grade Elev. = 478.58 Ft. @ Sta. 1638+14
Prop. Low Grade Elev. = 478.66 Ft. @ Sta. 1641+00

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	393	66	76	476.4	1.0	0.3	477.4	476.7
Design	50	657	76	88	476.9	1.7	1.1	478.6	478.0
Base	100	780	80	88	477.1	1.7	1.4	478.8	478.5
Overtopping	35	590	70	-	476.8	1.7	-	478.5	-
Overtopping	100	780	-	88	477.1	-	1.4	-	478.5

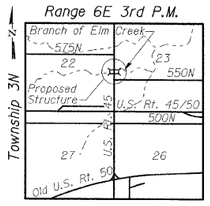
SCOUR INFORMATION

	Upstream	Downstream
Design Scour Elevation (Ft.)	468.00	467.90

DESIGN SPECIFICATIONS
2002 AASHTO

LOADING HS20-44
Allow 50 psf for future wearing surface.

DESIGN STRESSES
FIELD UNITS
f'c = 3,500 psi
fy = 60,000 psi (Reinf.)



LOCATION SKETCH

GENERAL PLAN
US 45 OVER BRANCH OF ELM CREEK
FAP ROUTE 328 - SECTION (6BR-3)B-1
CLAY COUNTY
STATION 1638+03.20
STRUCTURE NO. 013-2010

ESCA CONSULTANTS, INC.		
DESIGNED BY:	FMA	03/08
DRAWN BY:	CJ	03/08
CHECKED BY:	ELH	05/08
APPROVED BY:	RDP	08/08

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

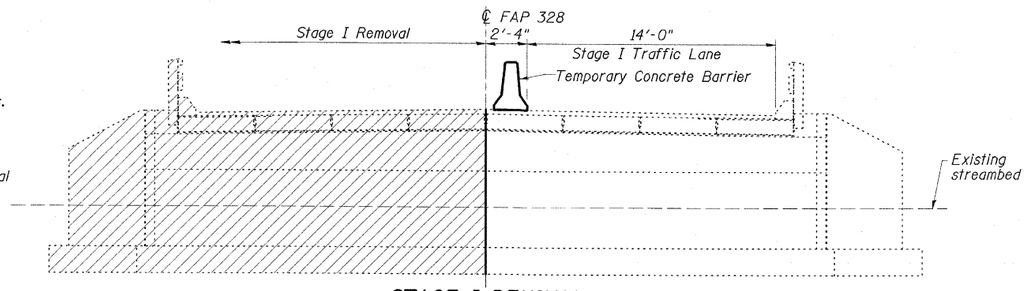
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 328	**	CLAY	109	38
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 2
6 SHEETS

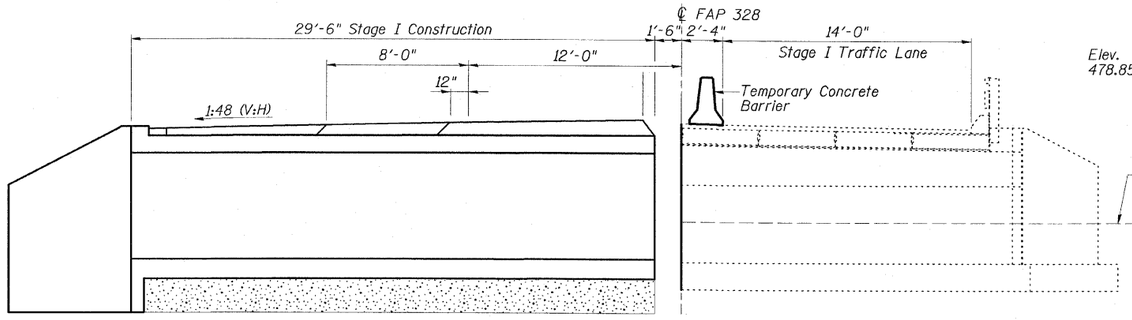
Contract #74107 **(6BR-3)B-1

STAGE CONSTRUCTION NOTES

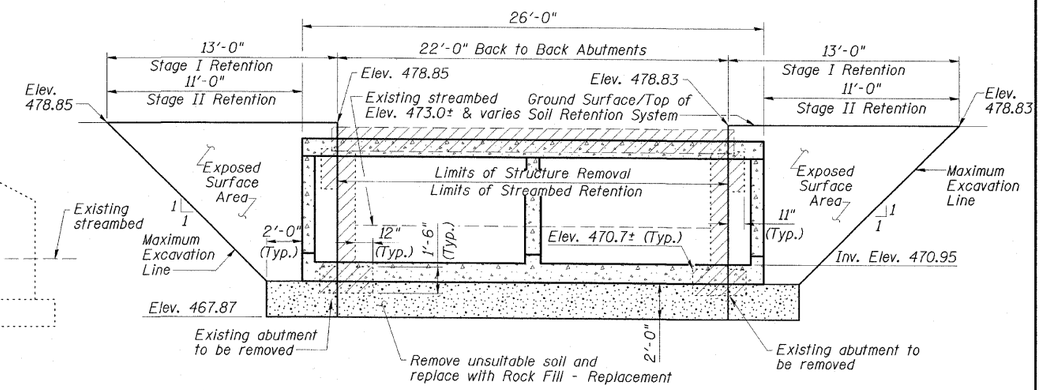
1. Hatched areas indicate Removal of Existing Structures.
2. For details of Temporary Concrete Barrier, see Sht. No. 6 of 6.
3. Removal of existing bridge rail is included with Removal of Existing Structures.
4. All sections are looking South.



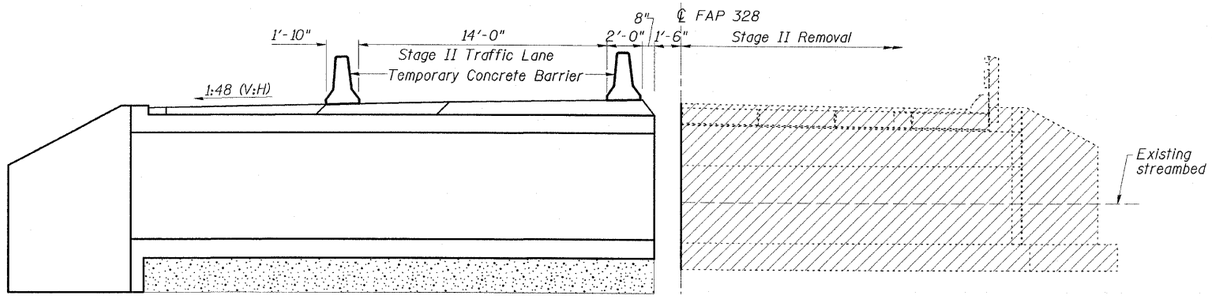
STAGE I REMOVAL



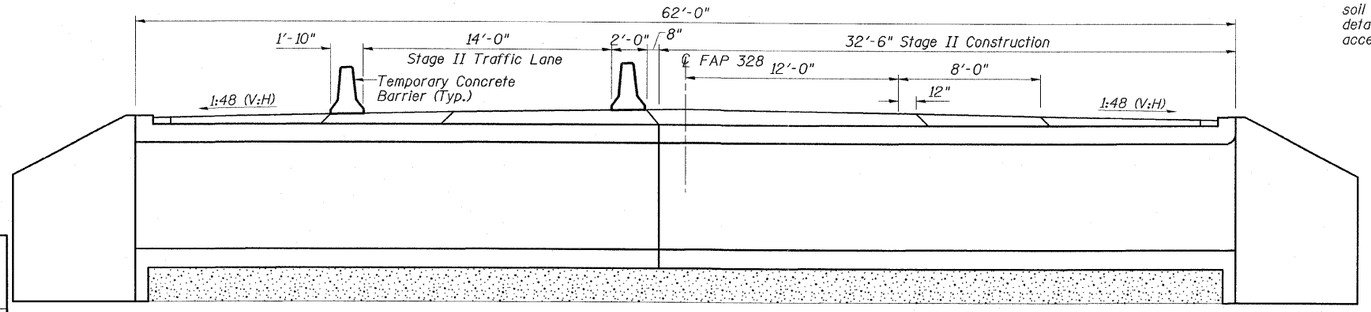
STAGE I CONSTRUCTION



TEMPORARY SOIL RETENTION SYSTEM LIMITS
(Looking East)
Note: Dimensions along ℄ of FAP 328



STAGE II REMOVAL



STAGE II CONSTRUCTION

TEMPORARY SOIL RETENTION SYSTEM NOTES

1. Existing structure details are based on the best available information from existing bridge plans.
2. 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.

ESCA CONSULTANTS, INC.		
DESIGNED BY:	FMA	03/08
DRAWN BY:	CJ	03/08
CHECKED BY:	ELH	05/08
APPROVED BY:	RDP	08/08

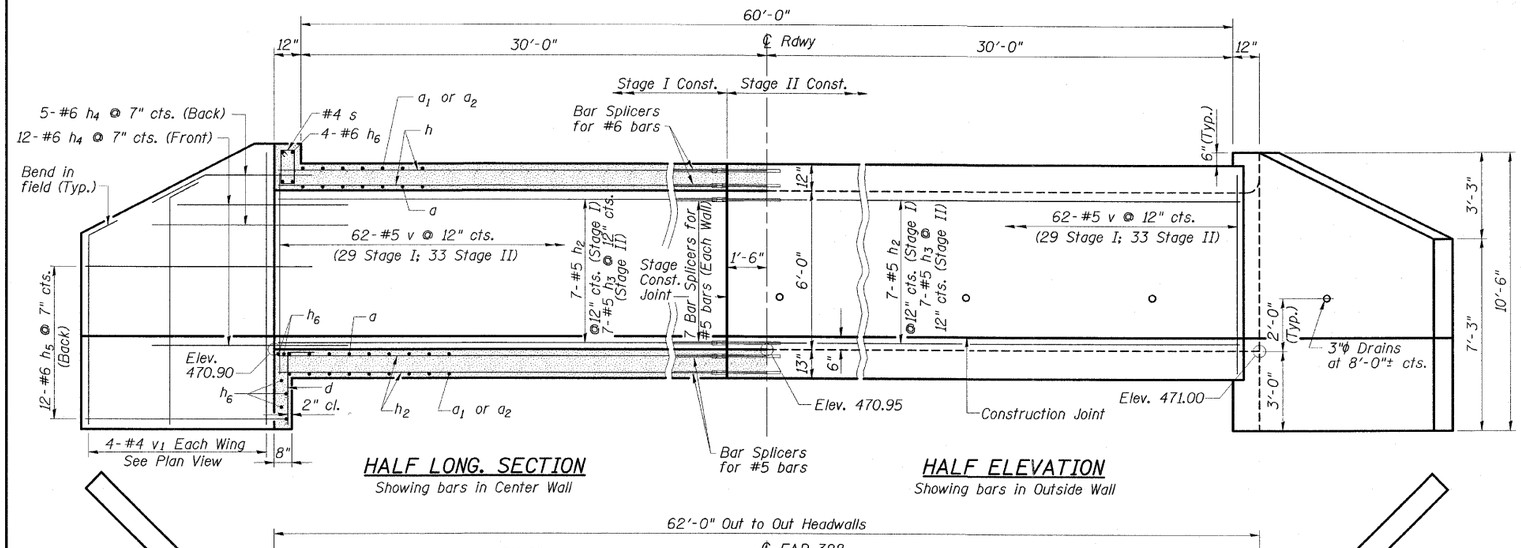
STAGE CONSTRUCTION DETAILS
US 45 OVER BRANCH OF ELM CREEK
FAP ROUTE 328 - SECTION (6BR-3)B-1
CLAY COUNTY
STATION 1638+03.20
STRUCTURE NO. 013-2010

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 328	***	CLAY	109	39
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT-		

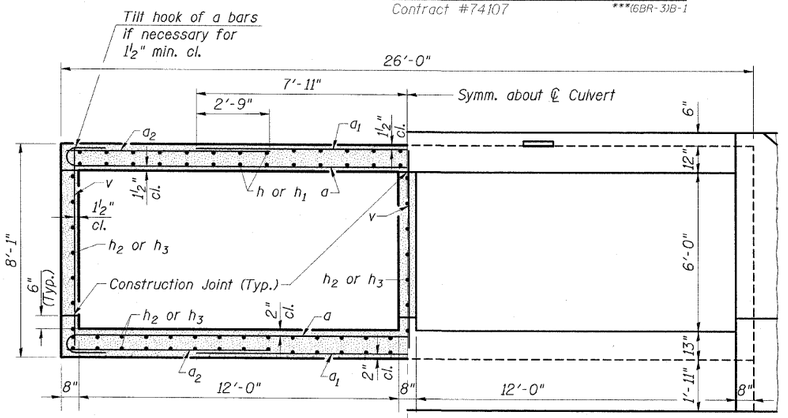
SHEET NO. 3
6 SHEETS

Contract #74107 ***(6BR-3)B-1



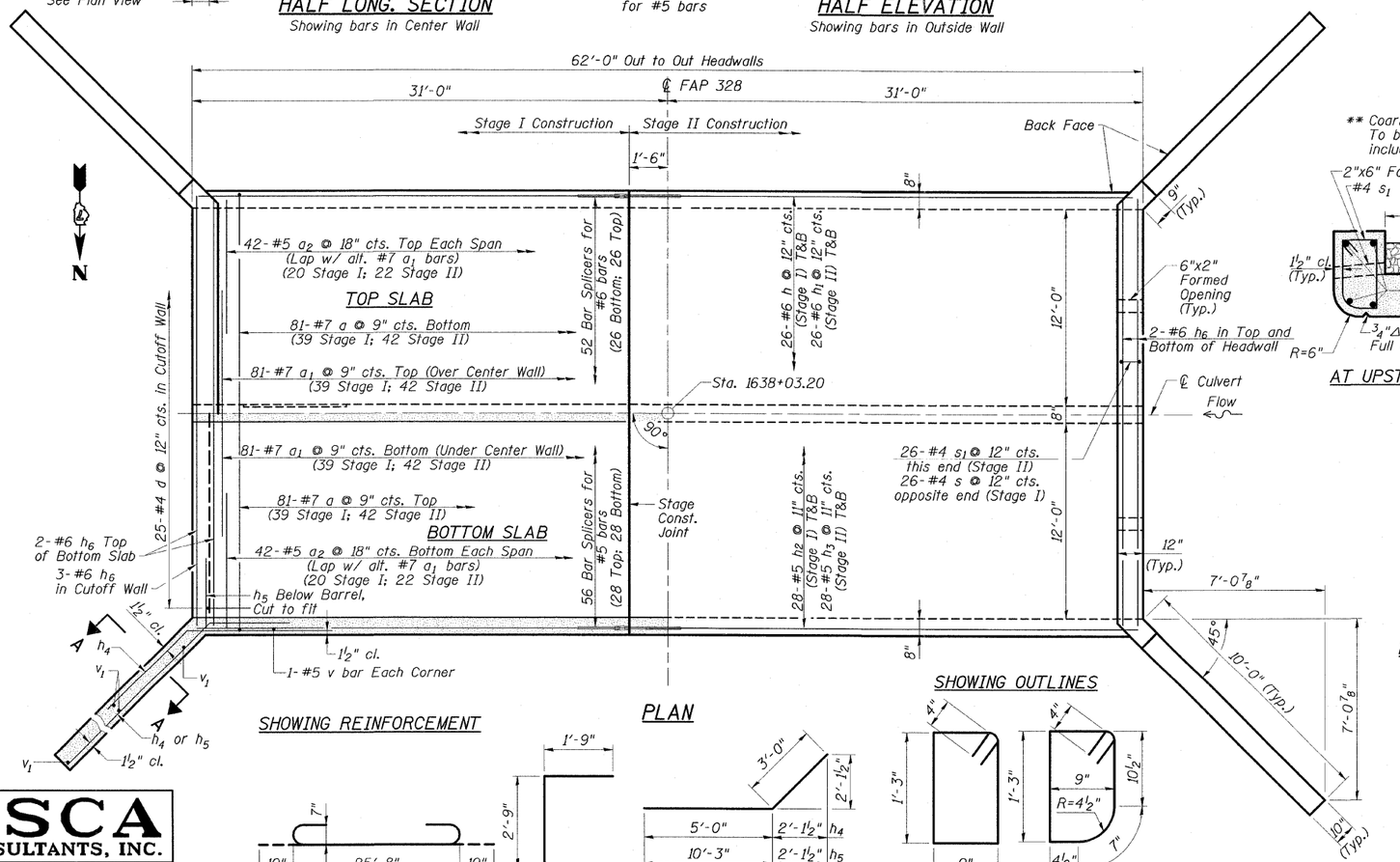
HALF LONG. SECTION
Showing bars in Center Wall

HALF ELEVATION
Showing bars in Outside Wall



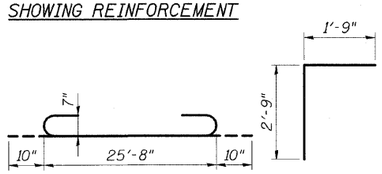
HALF SECTION THRU BARREL

HALF END ELEVATION



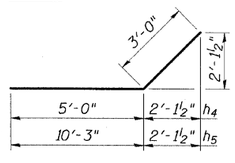
PLAN

SHOWING REINFORCEMENT



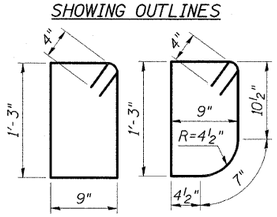
BAR a

BAR d



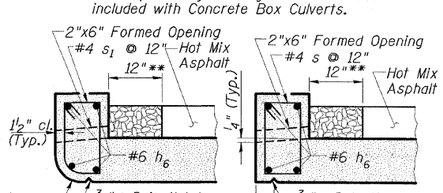
BARS h4 & h5

SHOWING OUTLINES



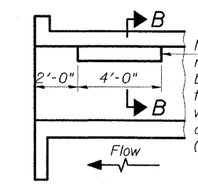
BAR s BAR s1

** Coarse aggregate full length of both headwalls. To be placed by Grading Contractor. Cost included with Concrete Box Culverts.



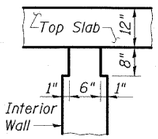
AT UPSTREAM END AT DOWNSTREAM END

DRAIN DETAILS



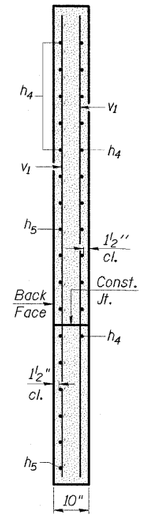
Notch formed by rough-finished board attached to and removed with formwork at interior wall. (Do not chamfer).

LONGITUDINAL SECTION



SECTION B-B
(Downstream End Only)

PHOEBE NESTING SITE DETAILS



SECTION A-A

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a	162	#7	27'-4"	
a1	162	#7	15'-10"	
a2	168	#5	7'-8"	
d	50	#4	4'-6"	
h	52	#6	29'-3"	
h1	52	#6	32'-3"	
h2	77	#5	29'-3"	
h3	77	#5	32'-3"	
h4	68	#6	8'-0"	
h5	48	#6	13'-3"	
h6	18	#6	25'-6"	
s	26	#4	4'-8"	
s1	26	#4	4'-6"	
v	190	#5	7'-9"	
v1	16	#4	9'-6"	
Concrete Box Culverts			Cu. Yd.	167
Reinforcement Bars			Pound	29,790
Bar Splicers			Each	129

ESCA CONSULTANTS, INC.		
DESIGNED BY:	FMA	03/08
DRAWN BY:	CJ	03/08
CHECKED BY:	ELH	05/08
APPROVED BY:	RDP	08/08

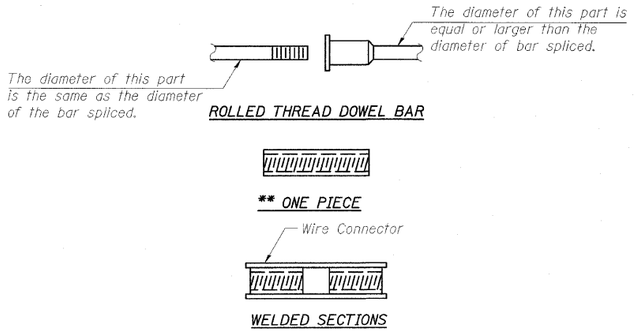
BOX CULVERT DETAILS
US 45 OVER BRANCH OF ELM CREEK
FAP ROUTE 328 - SECTION (6BR-3)B-1
CLAY COUNTY
STATION 1638+03.20
STRUCTURE NO. 013-2010

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 328	**	CLAY	109	40
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

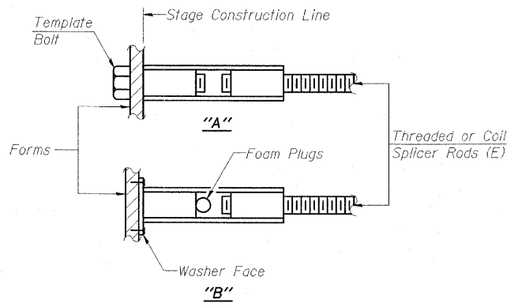
SHEET NO. 4
6 SHEETS

Contract #74107 **(6BR-3)B-1



BAR SPLICER ASSEMBLY ALTERNATIVES

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



INSTALLATION AND SETTING METHODS

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

NOTES

Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.

Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.

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

Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.

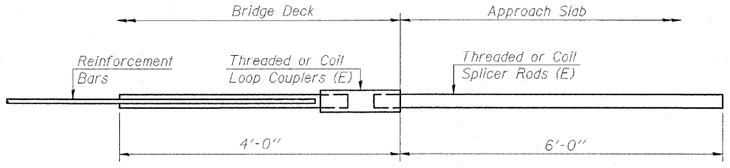
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

① Minimum Capacity (Tension in kips) = $1.25 \times f_y \times A_t$

② Minimum *Pull-out Strength (Tension in kips) = $0.66 \times f_y \times A_t$

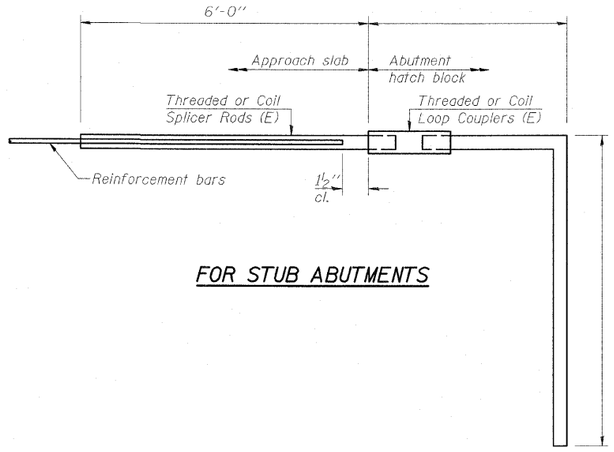
Where f_y = Yield strength of lapped reinforcement bars in ksi.
A_t = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

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



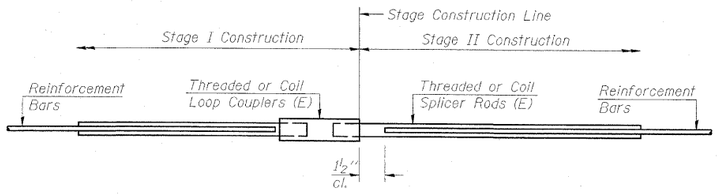
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 12.3 kips - tension
No. Required = 0



FOR STUB ABUTMENTS

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



STANDARD

Bar Size	No. Assemblies Required	Location
#5	21	Walls
#5	56	Bottom Slab
#6	52	Top Slab

BAR SPLICER ASSEMBLY DETAILS
US 45 OVER BRANCH OF ELM CREEK
FAP ROUTE 328 - SECTION (6BR-3)B-1
CLAY COUNTY
STATION 1638+03.20
STRUCTURE NO. 013-2010

ESCA CONSULTANTS, INC.

DESIGNED BY:	FMA	03/08
DRAWN BY:	CJ	03/08
CHECKED BY:	ELH	05/08
APPROVED BY:	RDP	08/08

BSD-1 5-16-08

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 328	*	CLAY	109	41
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT- ACD		

SHEET NO. 5
6 SHEETS

Contract #74107 *(6BR-3)B-1

Illinois Department of Transportation
Division of Highways
Illinois Department of Transportation

SOIL BORING LOG

Page 1 of 1

Date 6/20/07

ROUTE FAP 328 (US 45) DESCRIPTION Branch of Elm River LOGGED BY E. Sandschafer
SECTION (6BR1,6BR3, 8BR3, 8BR4)B-1 LOCATION Sec 22 - NE 1/4, Sec 23 - NW 1/4, SEC., TWP. 3 N, RNG. 6 E, 3 PM
COUNTY Clay DRILLING METHOD Hollow stem auger & split spoon HAMMER TYPE Auto 140#

STRUCT. NO. 013-0013
Station 1638+03.2

BORING NO. 1
Station 1637+84
Offset 11.00ft Rt
Ground Surface Elev. 478.42 ft

Surface Water Elev. 473.43 ft
Stream Bed Elev. 471.31 ft

Groundwater Elev.:
First Encounter Dry ft
Upon Completion 470.4 ft
After 24 Hrs. 472.9 ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
477.32				4" asphalt on 9" concrete pavement.
476.42				Gray, SILTY CLAY.
	2			Medium, damp, gray, SILTY LOAM.
	2	0.6	19	
	2	B		
473.92				
-5	0			Soft, damp, gray, SILTY CLAY.
	0	1.0	21	
	0	PP		
471.42				
	0			Soft, damp, gray, SILTY LOAM.
	0	0.3	23	
	1	B		
468.72				
-10	1			Stiff, damp, red marbled gray, CLAY LOAM TILL.
	3	1.5	19	
	3	B		
	3			
465.42				
	3	0.9	15	Medium, damp, red, SANDY CLAY TILL.
	5	B		
463.42				
-15	8			
	15	+4.5	8	Very dense, moist, red/tan/gray, CLAY LOAM SHALE.
	17	PP		
	18			
	50/5"	+4.5	6	
	50/1"	PP		
458.52				
-20				

Extent of exploration.

Benchmark: BM 262 chiseled square on SW corner of parapet on existing bridge 013-0013, Sta 1638+14, 17.42' Rt = 479.07' elevation. Provide by Program Development.

-25 -30 -35 -40

Latitude W 88 deg 30 475 min. Longitude N 38 deg 41 190 min. Map Datum WGS 84

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, from 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
Illinois Department of Transportation

SOIL BORING LOG

Page 1 of 1

Date 6/20/07

ROUTE FAP 328 (US 45) DESCRIPTION Branch of Elm River LOGGED BY E. Sandschafer
SECTION (6BR1,6BR3, 8BR3, 8BR4)B-1 LOCATION Sec 22 - NE 1/4, Sec 23 - NW 1/4, SEC., TWP. 3 N, RNG. 6 E, 3 PM
COUNTY Clay DRILLING METHOD Hollow stem auger & split spoon HAMMER TYPE Auto 140#

STRUCT. NO. 013-0013
Station 1638+03.2

BORING NO. 2
Station 1638+31
Offset 11.00ft Lt
Ground Surface Elev. 478.41 ft

Surface Water Elev. 473.43 ft
Stream Bed Elev. 471.31 ft

Groundwater Elev.:
First Encounter Dry ft
Upon Completion Dry ft
After 24 Hrs. 472.2 ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
477.41				12" asphalt.
476.41				Brown, SILTY CLAY.
	1			Very soft, very damp, gray, SILTY LOAM.
	0	0.2	26	
	1	B		
-5	0			
	0	0.1	28	
	1	B		
	2			
470.41				
	2	1.4	16	Stiff, damp, gray, CLAY TILL.
	3	B		
468.91				
-10	2			Stiff to medium, damp, red mottled gray, CLAY LOAM TILL.
	3	1.5	20	
	4	B		
	2			
	4	0.7	15	
	4	B		
463.21				
-15	10			
	41	4.5	10	Very dense, moist, brown/gray, CLAY LOAM SHALE. *Samples pokerchipped.*
	50/4"	S		
	27			
460.41	50/4"		9	
	50/2"			Extent of exploration.
-20				

Benchmark: BM 262 chiseled square on SW corner of parapet on existing bridge 013-0013, Sta 1638+14, 17.42' Rt = 479.07' elevation. Provide by Program Development.

-25 -30 -35 -40

Latitude W 88 deg 30 472 min. Longitude N 38 deg 41 186 min. Map Datum WGS 84

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, from 137 (Rev. 8-99)

ESCA CONSULTANTS, INC.

DESIGNED BY:	FMA	05/08
DRAWN BY:	CJ	05/08
CHECKED BY:	ELH	05/08
APPROVED BY:	RDP	08/08

SOIL BORING LOGS
US 45 OVER BRANCH OF ELM CREEK
FAP ROUTE 328 - SECTION (6BR-3)B-1
CLAY COUNTY
STATION 1638+03.20
STRUCTURE NO. 013-2010

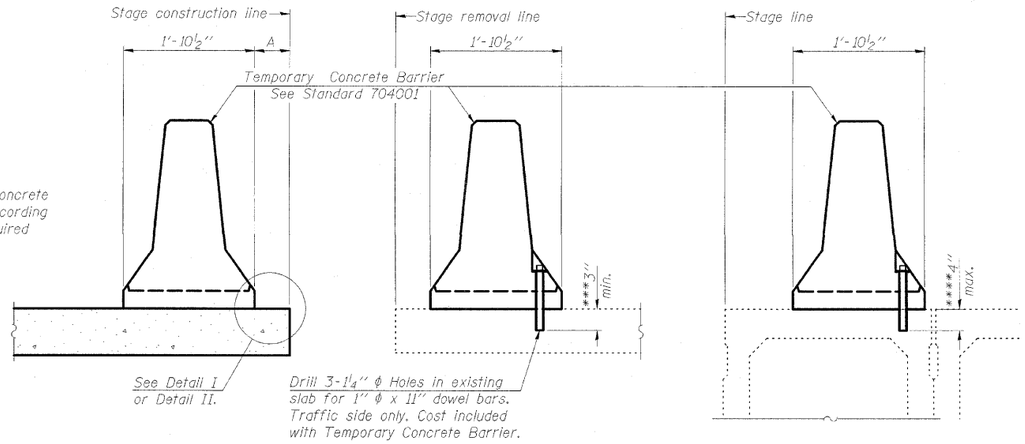
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 328	**	CLAY	109	42
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 6
6 SHEETS

Contract #74107 **(6BR-3)B-1

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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

Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x7"x10" steel ℙ to the top layer of couplers with 2-⅝" ϕ bolts screwed to coupler at approximate ℄ of each barrier panel.

Detail II - With Extended Reinforcement Bars:
Connect one (1) 1"x7"x10" steel ℙ 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.

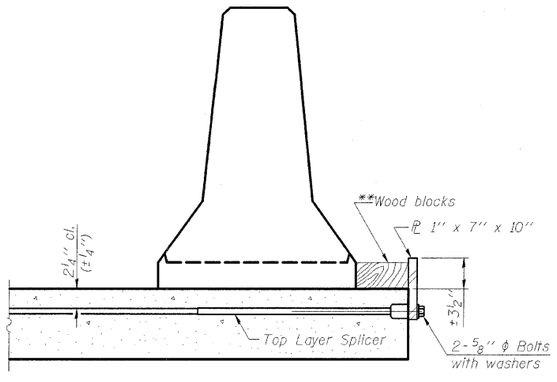
Cost of anchorage is included with Temporary Concrete Barrier.

The 1" x 7" x 10" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

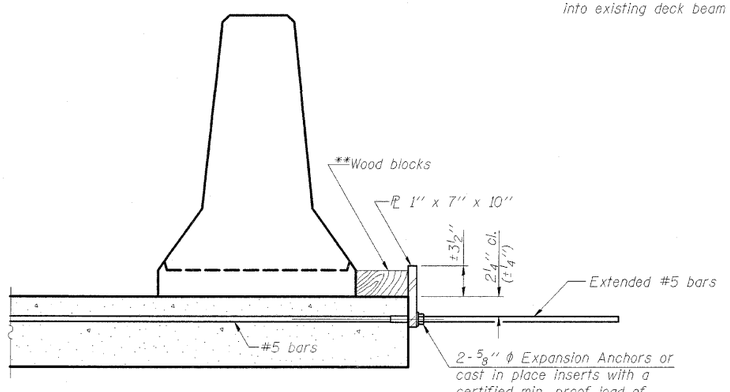
SECTIONS THRU SLAB OR DECK BEAM

***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.

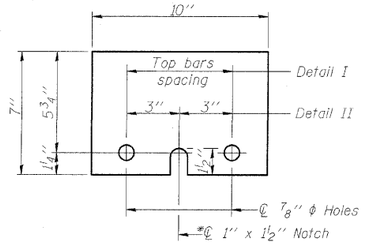
****If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



DETAIL I



DETAIL II



STEEL RETAINER ℙ 1" x 7" x 10"

*Required only with 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.

TEMPORARY CONCRETE BARRIER
FOR STAGE CONSTRUCTION
US 45 OVER BRANCH OF ELM CREEK
FAP ROUTE 328 - SECTION (6BR-3)B-1
CLAY COUNTY
STATION 1638+03.20
STRUCTURE NO. 013-2010

ESCA CONSULTANTS, INC.		
DESIGNED BY:	FMA	03/08
DRAWN BY:	CJ	03/08
CHECKED BY:	ELH	05/08
APPROVED BY:	RDP	08/08

R-27 5-16-08

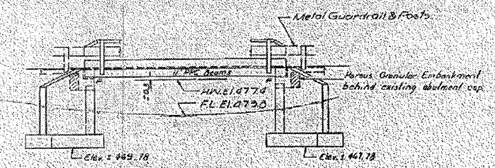
ESCA CONSULTANTS, INC.
CIVIL · STRUCTURAL · TRANSPORTATION
GARLAND, TEXAS

CONTRACT NO. 74107

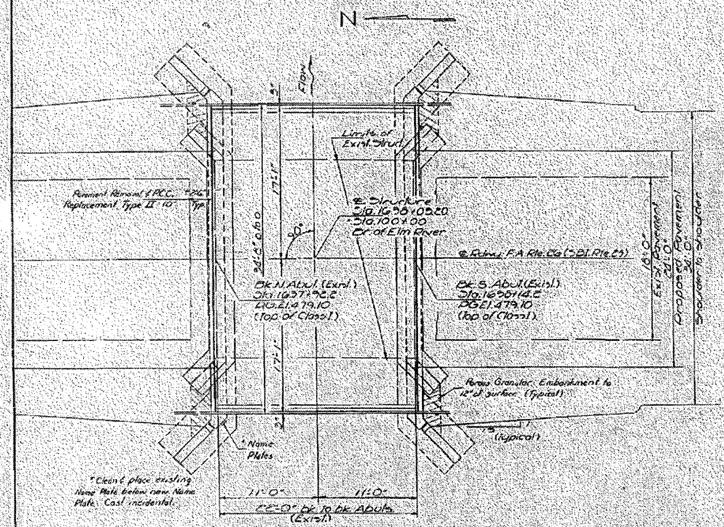
FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(6BR-3)B-1	CLAY	109	43
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

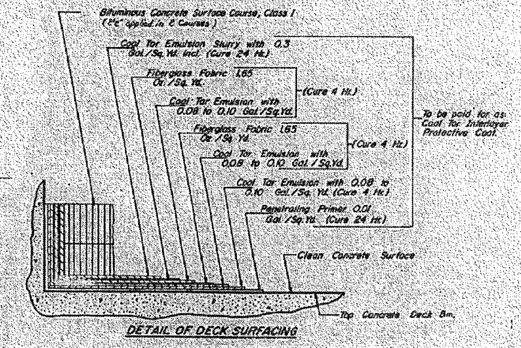
Str. No. 016-0103 Elev. 473.05
Existing Structure: Built 1920 Str. No. 016-0103.00 301 Route 67 Sec. 6A
Superstructure: RC Slab Substructure: RC Closed Abuts.
Superstructure to be removed utilizing staged construction.
Bridge railing and joints to be salvaged.



ELEVATION



PLAN



DETAIL OF DECK SURFACING

STATION 16+38+03.20
RESULT (9) - 81
STATE OF ILLINOIS
FA RT 26, SEC 6 BR 3
LOADING HS 20

NAME PLATE
See Sht. 2113

DESIGN STRESSES

FIELD UNITS
f'_c = 1000 psi sub
f_s = 20,000 psi
n = 10
f'_c = 1800 psi cure

PRECAST PRESTRESSED UNITS
f'_c = 5000 psi
f'_{ci} = 4000 psi
f_{pu} = 270,000 psi 7/16" Strands
f_{pi} = 188,100 psi 7/16" Strands

Allow 25 psi for future wearing surf.
Design Specifications (1969) as applicable

WATERWAY INFORMATION
Drainage Area ---- 30.0 Acres
Character ---- Cultivated
Present Opening ---- 76.2 sq.ft.
Recommended Opening ---- 92.5 sq.ft.
(Less) 23.3%

DESIGNED	J. J. Hurd	1972
CHECKED	G.E. Cusumano	
DRAWN	JAS	
CHECKED	G.E.C.	

EXAMINED
PASSED
APPROVED

				SHEET NO.
6BR3	CLAY	109	43	7 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

GENERAL NOTES

All reinforcement bars shall be lapped 24 diameters unless otherwise shown.

It shall be the responsibility of the Contractor to verify all dimensions and conditions existing in the field prior to construction and ordering of materials.

Protective Coat shall not be applied to surfaces to which Coal Tar Interlayer Protective Coat is applied.

Expansion bolts shall consist of self drilling expansion anchors and ¾" x 12" hooked bolts.

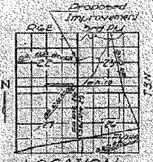
The back surfaces of new abutments & wings shall be waterproofed above the tops of the footings to within 6" of the top of the wing walls.

Contractor shall complete necessary excavation for Slope Construction behind existing abutments before removing the portion of bridge shall of that location. No backfill shall be placed until all steel beams for the slope have been placed & dowel holes grouted. See Article 502.11 of the Standard Specifications.

TOTAL BILL OF MATERIAL

Item	Unit	Super.	Sub.	Total
Bituminous Concrete Surface Course, Class 1	Tons	10		10
Removal of Existing Superstructure	Each	1		1
Concrete Removal	Cu. Yds.		5	5
Class X Concrete	Cu. Yds.	1.5	34.3	35.8
P.C.C. Deck Beams 11"	Sq. Ft.	774		774
Steel Railing, Type 7	Lin. Ft.	45		95
Reinforcement Bars	Lbs.	60	3030	3090
Name Plates	Each	1		
Protective Coat	Sq. Yds.	80		80
Coal Tar Interlayer Protective Coat	Sq. Yds.	116		86
Pavement Removal & P.C.C. Replacement (Type II) 10"	Sq. Yds.	13		13
Temporary Guardrail	Lin. Ft.	63		63
Expansion Bolts ¾ ø	Each		24	24
Porous Granular Embankment	Cu. Yds.		16	16
Structure Excavation	Cu. Yds.		110	110

* Bituminous Concrete Surfacing quantity is 6" beyond end of Deck Beams



BRANCH OF ELM RIVER
F.A. ROUTE 26 (SBI RTE 67)
SECTION 6BR3
CLAY COUNTY
STATION 1639+03.20

ESCA CONSULTANTS, INC.		
DESIGNED BY:	DAJ	04/08
DRAWN BY:	HAS	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
US 45 OVER BRANCH OF ELM CREEK
FAP ROUTE 328 - SECTION (6BR-3)B-1
CLAY COUNTY

ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS
DECATUR, ILLINOIS

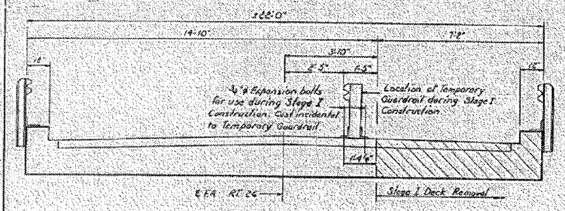
CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(6BR-3)B-1	CLAY	109	44
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

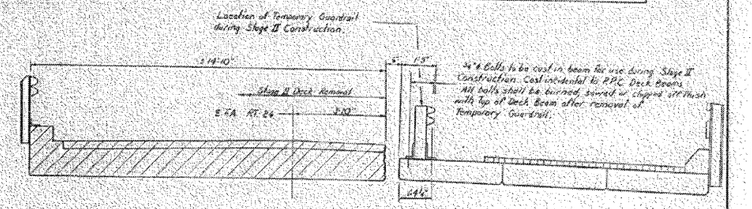
WORK NO.	COUNTIES	SECTION	TOTAL SHEETS	SHEET NO.
****-**	6BR5	CLAY	10	5
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJ. (ILLI)		

SHEET NO. 2
7 SHEETS

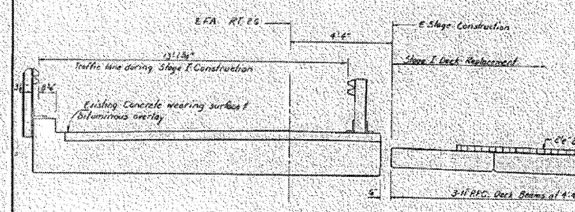


*STAGE I DECK REMOVAL

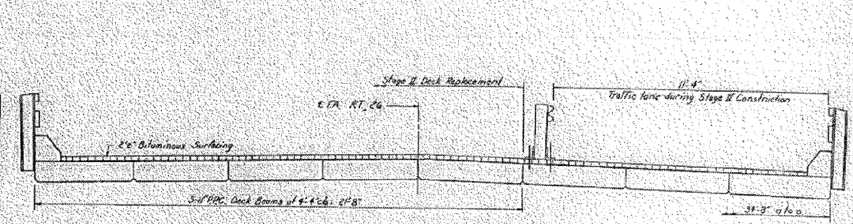
*Note
All Stage Construction moves Eastbound Upstation.



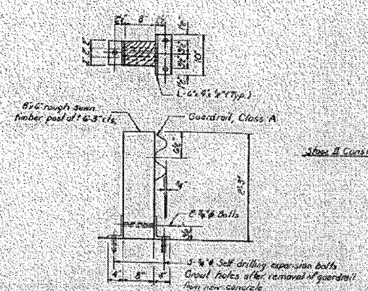
*STAGE II DECK REMOVAL



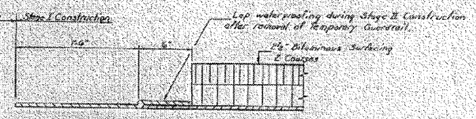
*STAGE I DECK REPLACEMENT



*STAGE II DECK REPLACEMENT



TEMPORARY GUARDRAIL DETAIL
See Special Provisions



WATERPROOFING TREATMENT

DESIGNED	T. J. Hanish	
CHECKED	G.E. Ungert	
DRAWN	S.E. Lindsey	
CHECKED	G.E.O.	

DRAWING NO. 95-0[illegible]
PASSED
APPROVED

STAGE CONSTRUCTION
FA RT 26 SEC 6BR 3
CLAY COUNTY
STA 1438+03.20

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	04/08
DRAWN BY:	HAS	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

FOR INFORMATION ONLY

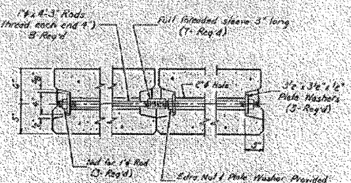
EXISTING STRUCTURE PLANS
US 45 OVER BRANCH OF ELM CREEK
FAP RTE 328 - SECTION (6BR-3)B-1
CLAY COUNTY

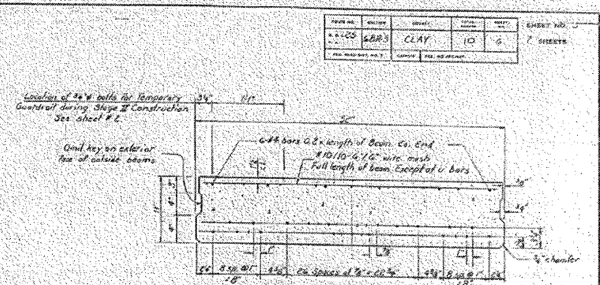
ESCA CONSULTANTS, INC.
CIVIL · STRUCTURAL · TRANSPORTATION

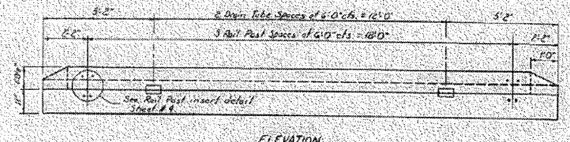
CONTRACT NO. 74107

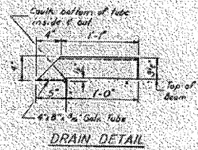
FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(6BR-3)B-1	CLAY	109	45
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

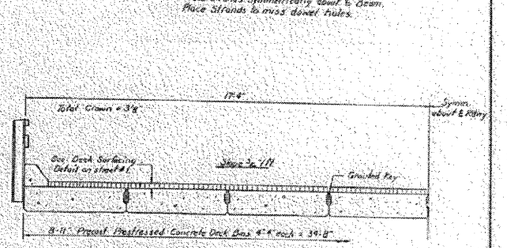
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

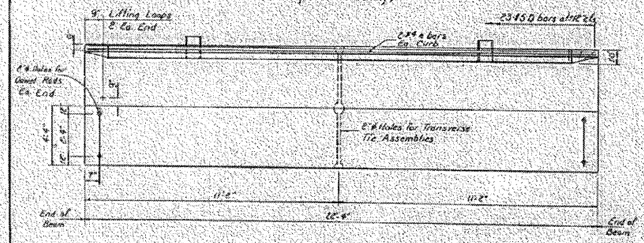


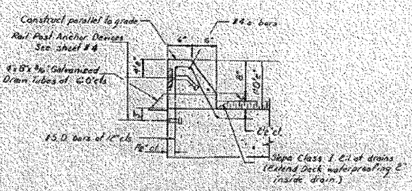


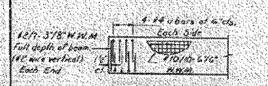


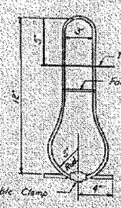












GENERAL NOTES

Prestressing steel shall be non-galvanized extra high strength stress-relieved 7-wire strand. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.169 sq. in. Lifting loops shall be 1" diameter 6x19 class wire rope with fiber core and shall have a minimum ultimate tensile strength of 16,700 lbs.

The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bar on outside beam shall be filled with grout after tightening the tie-rods in place.

Long-slotted shear keys shall be packed with a very dry mix of 2:1 sand and P.C. mortar. Any debris have been placed holes for the dowel anchors shall be drilled into the sub-structure and the anchor dowels shall be grouted in place.

Dowel rods shall be ASTM A-306 or ASTM A-36 bent. Transverse tie rods shall be ASTM A 306, Grade 70-80.

All fabrication, fabrication of transverse tie assemblies (all rods, nuts, washers, and sleeves) shall be hot dipped galvanized in accordance with A.S.T.M. Designation: A153.

Cost of reinforcement and accessories cast into the beam, of bearing pads, and of grouting, long-slotted shear keys is included in the price bid for "Precast Prestressed Concrete Deck Beams"

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
Precast Prestressed Concrete Deck Bms. (11")	34	Ft.	34'-8"	

SUPERSTRUCTURE
F.A. RT. 26 SEC. 6 BR-3
CLAY COUNTY
STA. 1638+03.20

DESIGNED	Y. A. Hanik	EXAMINED	19
CHECKED	G.E. Osgood	PASSED	
DRAWN	S.L.	APPROVED	
CHECKED	G.E.O.		

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	04/08
DRAWN BY:	HAS	04/08
CHECKED BY:	ELH	05/08
APPROVED BY:	RDP	08/08

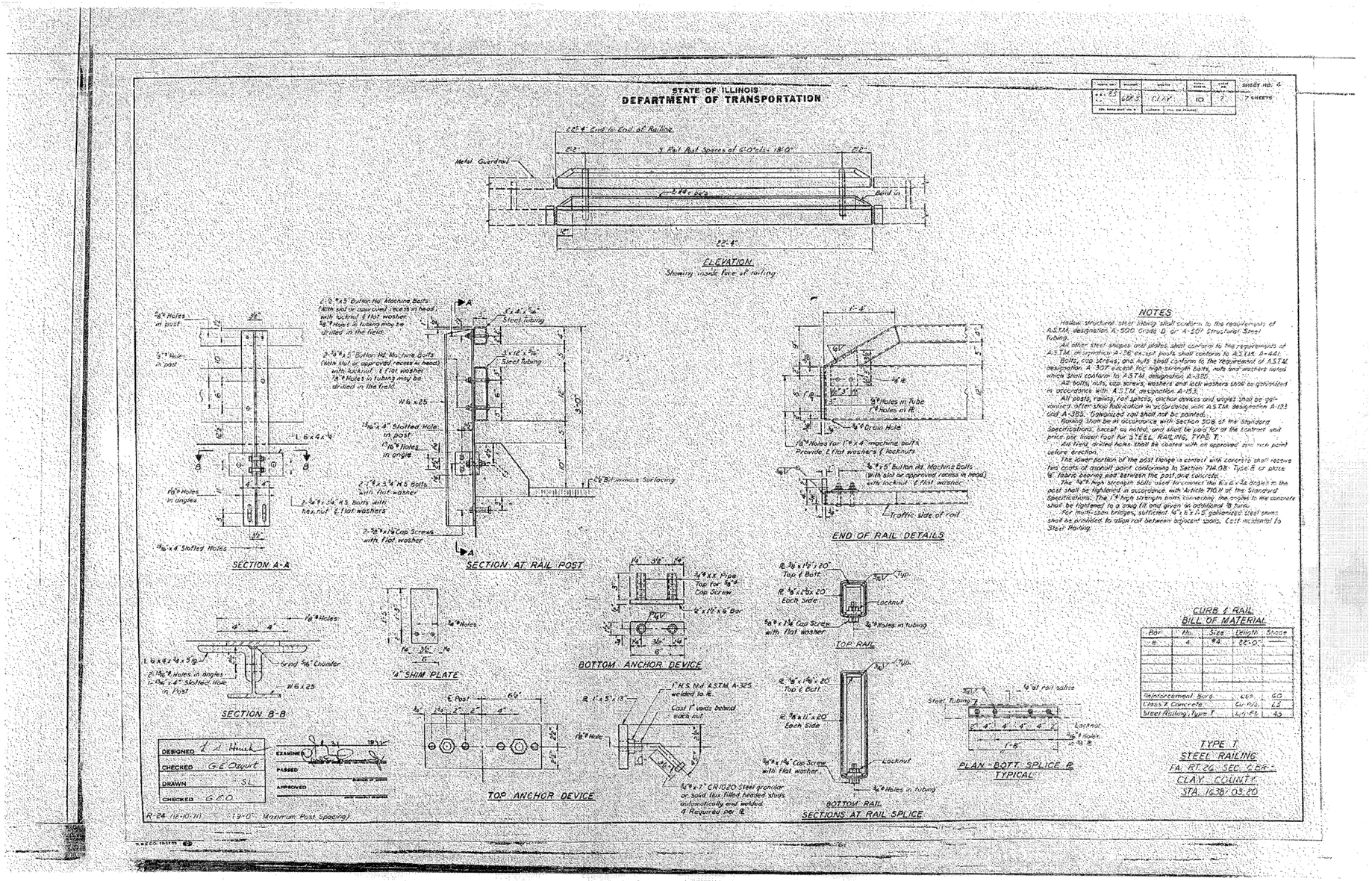
FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
US 45 OVER BRANCH OF ELM CREEK
FAP ROUTE 328 - SECTION (6BR-3)B-1
CLAY COUNTY

CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(6BR-3)B-1	CLAY	109	46
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



NOTES

Hollow structural steel tubing shall conform to the requirements of A.S.T.M. designation A-500, Grade B, or A-501 Structural Steel Tubing.

All other steel shapes and plates shall conform to the requirements of A.S.T.M. designation A-36 except posts shall conform to A.S.T.M. A-441.

Bolts, cap screws, and nuts shall conform to the requirement of A.S.T.M. designation A-307 except for high strength bolts, nuts and washers used which shall conform to A.S.T.M. designation A-325.

All bolts, nuts, cap screws, washers and lock washers shall be galvanized in accordance with A.S.T.M. designation A-153.

All posts, railing, rail splices, anchor devices and angles shall be galvanized after shop fabrication in accordance with A.S.T.M. designation A-123 and A-385. Galvanized rail shall not be painted.

Railing shall be in accordance with Section 508 of the Standard Specifications, except as noted, and shall be paid for at the contract unit price, per linear foot for STEEL RAILING, TYPE T.

All field drilled holes shall be coated with an approved zinc rich paint before erection.

The lower portion of the post flange in contact with concrete shall receive two coats of asphalt paint conforming to Section 714.08 Type B or plate 16 fabric bearing pad between the post and concrete.

The 3/4"ø high strength bolts used to connect the 6"x 6"x 3/8" angles to the post shall be tightened in accordance with Article 7M.11 of the Standard Specifications. The 1"ø high strength bolts connecting the angles to the concrete shall be tightened to a snug fit and given an additional 1/3 turn.

For multi-span bridges, sufficient 1/8"x 1"x 1'-0" galvanized steel shims shall be provided to align rail between adjacent spans. Cost incidental to Steel Railing.

CURB & RAIL
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
B	4	#4	22'-0"	
Reinforcement Bars		Lump		G.O.
Class X Concrete		Cu. Yds.		1.5
Steel Railing, Type T		Lin. Ft.		43

TYPE T
STEEL RAILING
FA RT 26 SEC C&R
CLAY COUNTY
STA. 1638+05.20

328	(6BR-3)B-1	CLAY	109	47	7 SHEETS
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT			

SHEET NO. 6

ESCA CONSULTANTS, INC.		
DESIGNED BY:	DAJ	04/08
DRAWN BY:	HAS	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

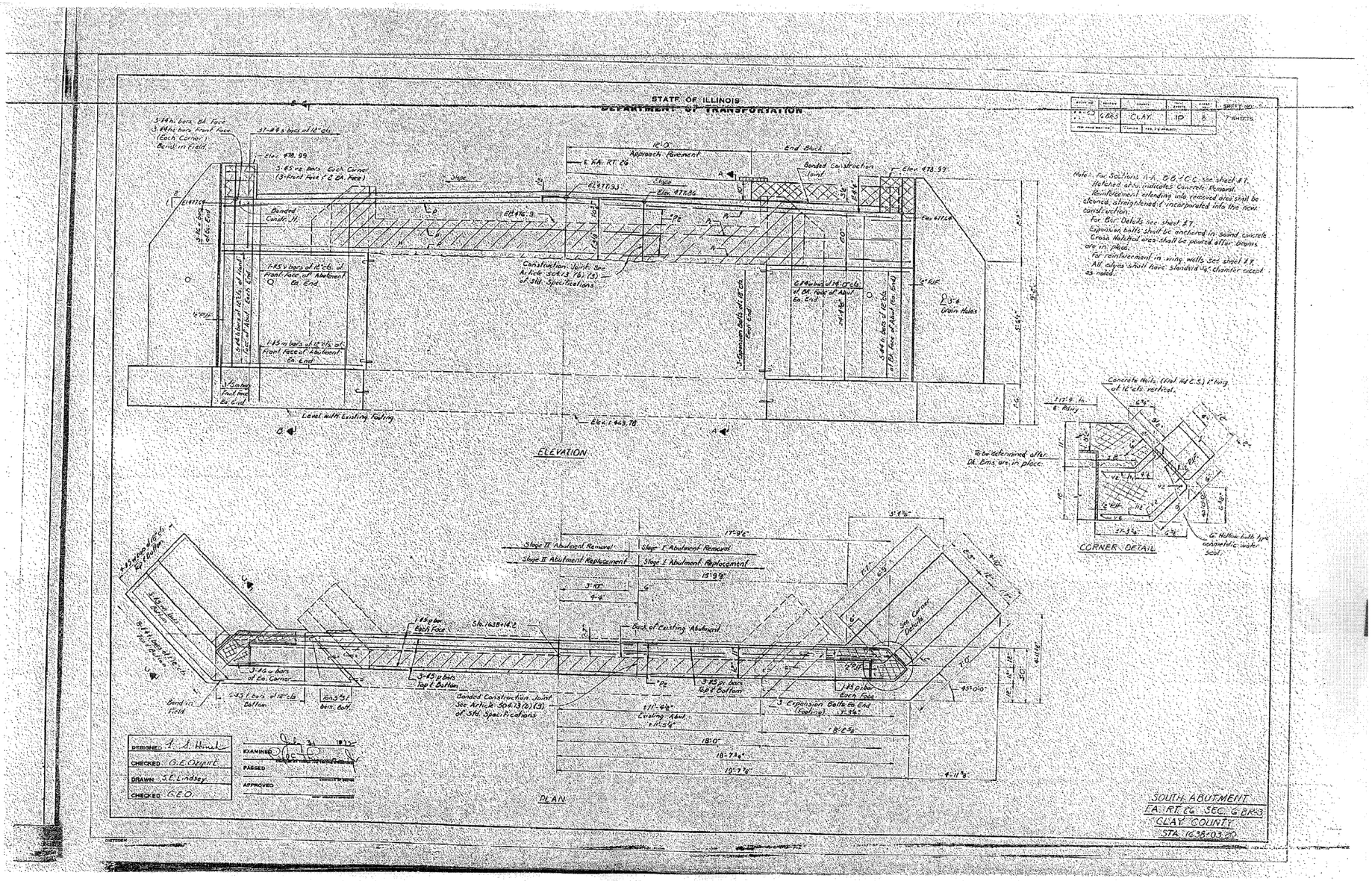
FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
US 45 OVER BRANCH OF ELM CREEK
FAP ROUTE 328 - SECTION (6BR-3)B-1
CLAY COUNTY

ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS
SPRINGFIELD, ILLINOIS

CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(6BR-3)B-1	CLAY	109	47
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



Note: For Sections A-A, B-B, C-C, see sheet #7.
Hatched area indicates Concrete Removal.
Reinforcement standing into removed area shall be cleaned, straightened & incorporated into the new construction.
For Bar Details see sheet #7.
Expansion bolts shall be anchored in sound concrete. Cross hatched area shall be poured after beams are in place.
For reinforcement in wing walls see sheet #7.
All edges shall have standard 3/4" chamfer except as noted.

DESIGNED BY:	DAJ 04/08
DRAWN BY:	HAS 04/08
CHECKED BY:	ELH 05/08
APPROVED BY:	RDP 08/08

FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
US 45 OVER BRANCH OF ELM CREEK
FAP ROUTE 328 - SECTION (6BR-3)B-1
CLAY COUNTY

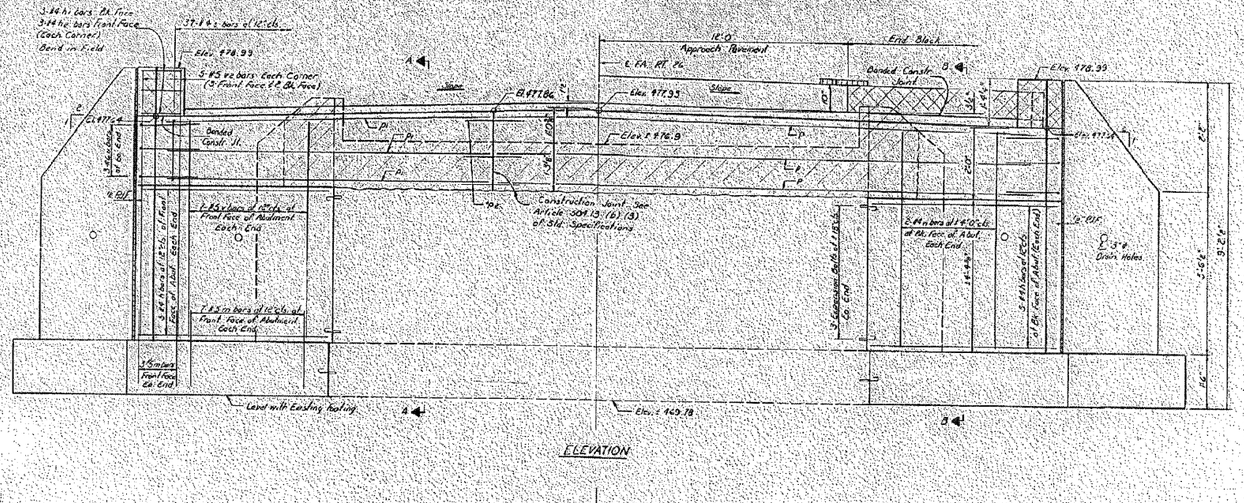
CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(6BR-3)B-1	CLAY	109	48
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE NO.	SECTION	COUNTY	SHEETS	SHEET NO.
03	6BR3	CLAY	10	9

PROJECT NO. 0
7 SHEETS



Note: For Sections A-A, B-B, C-C See Sheet #7.
Hatched area indicates Concrete Removal. Reinforcement in ability into remained area shall be cleaned, straightened & incorporated into the new construction.
For Bar Details see Sheet #7.
Expansion bolts shall be anchored in sound concrete. Cross Hatched area shall be poured after beams are in place.
For reinforcement in wing walls see sheet #7.
All edges shall have standard 3/4" chamfer except as noted.

DESIGNED	T. A. Hisel
CHECKED	G. E. Oesjet
DRAWN	J.C. Lindsey
CHECKED	G.E.O.
EXAMINED	
PASSED	
APPROVED	

NORTH ABUTMENT
EA. RT. 26 SEC. (6BR-3)
CLAY COUNTY
STA. 1630+03.20

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	04/08
DRAWN BY:	HAS	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

FOR INFORMATION ONLY

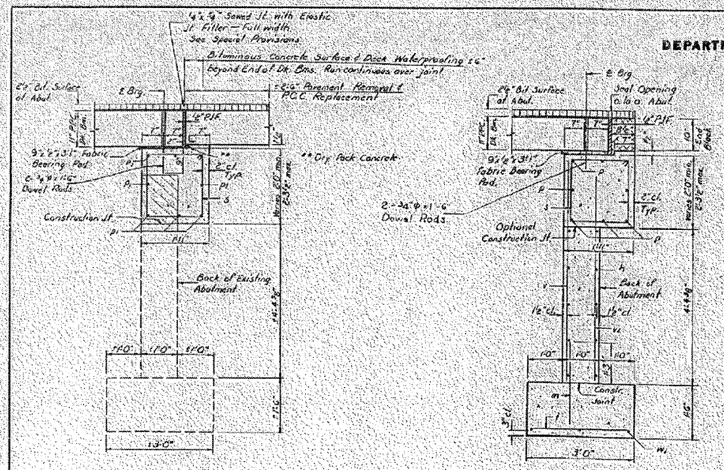
EXISTING STRUCTURE PLANS
US 45 OVER BRANCH OF ELM CREEK
FAP RTE 328 - SECTION (6BR-3)B-1
CLAY COUNTY

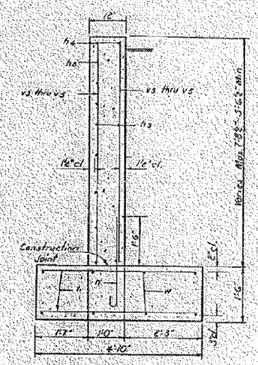
ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS
SPRINGFIELD, ILLINOIS

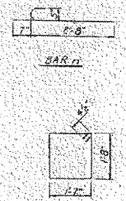
CONTRACT NO. 74107

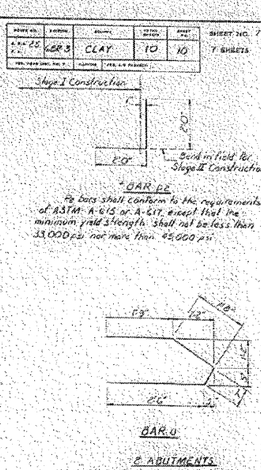
FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(6BR-3)B-1	CLAY	109	49
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION





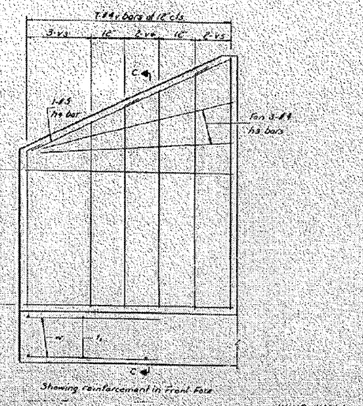




All bars shall conform to the requirements of ASTM A 615 or A-617, except that the minimum yield strength shall not be less than 33,000 psi nor more than 42,000 psi.

2 ABUTMENTS
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h1	40	#6	6'-8"	
h2	12	#6	11'-0"	
h3	10	#6	11'-9"	
h4	8	#5	12'-3"	
m	40	#5	5'-6"	
n	20	#5	5'-3"	
o	16	#3	2'-5"	
p	16	#3	22'-3"	
p1	16	#3	13'-8"	
p2	16	#3	4'-0"	
s	78	#4	7'-3"	
t	36	#5	2'-8"	
u	64	#4	1'-7"	
v	12	#6	6'-6"	
v1	28	#5	6'-8"	
v2	8	#4	1'-3"	
v3	20	#5	7'-6"	
v4	24	#4	6'-0"	
v5	16	#4	6'-9"	
v6	14	#4	7'-6"	
w	32	#5	7'-7"	
w1	12	#5	8'-0"	
Expansion Plate 3/4"		Each		24
Class X Concrete		Cu. Yds.		36.3
Reinforcement Bars		Lbs.		5090
Concrete Armour		Cu. Yds.		3



ABUTMENT DETAILS
FA RT 26 SEC 6 BR-3
CLAY COUNTY
STA. 1636+03.00

DESIGNED	T.J. Hunt
CHECKED	G.E. Ozyurt
DRAWN	S.L. Lindsey
CHECKED	G.E.O.
EXAMINED	
PASSED	
APPROVED	

ESCA CONSULTANTS, INC.		
DESIGNED BY:	DAJ	04/08
DRAWN BY:	HAS	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
US 45 OVER BRANCH OF ELM CREEK
FAP ROUTE 328 - SECTION (6BR-3)B-1
CLAY COUNTY

ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(6BR-3)B-1	CLAY	109	50
STA. 1635+00.00		TO STA. 1635+62.00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 74107

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

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

STA. 1635+62.00
PE RT

STA. 1635+50.00

STA. 1635+06.00
PE LT

STA. 1635+00.00

EX ROW

18" RCCP

15" RCCP

FAP 328 (US 45) CROSS SECTIONS

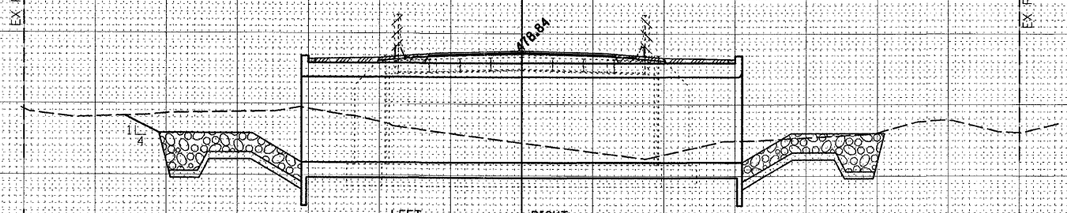
ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS
ENVIRONMENTAL SCIENTISTS

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(6BR-3)B-1	CLAY	109	51
STA. 1636+00.00		TO STA. 1638+00.00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 74107

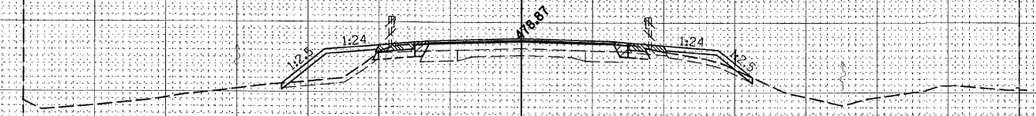
FINAL SURVEY / ORIGINAL SURVEY
NOTE BOOK
NO.
SURVEYED / DRAWN / TEMPLATE / AREAS / CHECKED
BY / DATE

STA. 1638+00.00



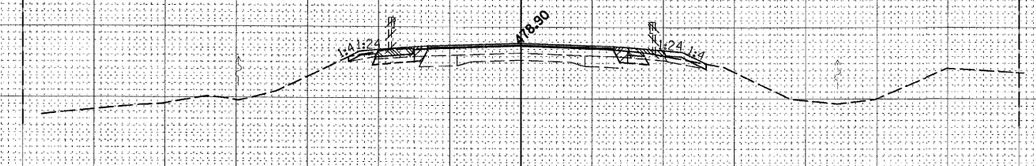
LEFT		RIGHT	
TOPSOIL	C = 0.00	TOPSOIL	C = 0.00
TOPSOIL	F = 0.00	TOPSOIL	F = 0.00
EARTH	C = 116.12	EARTH	C = 40.02
EARTH	F = 0.00	EARTH	F = 0.00

STA. 1637+50.00



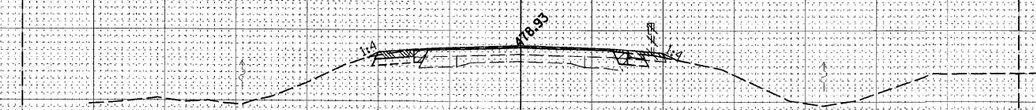
LEFT		RIGHT	
TOPSOIL	C = 4.73	TOPSOIL	C = 4.57
TOPSOIL	F = 4.77	TOPSOIL	F = 4.99
EARTH	C = 4.60	EARTH	C = 2.64
EARTH	F = 20.92	EARTH	F = 9.24

STA. 1637+00.00



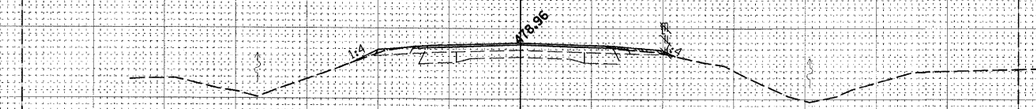
LEFT		RIGHT	
TOPSOIL	C = 1.38	TOPSOIL	C = 1.85
TOPSOIL	F = 1.51	TOPSOIL	F = 1.98
EARTH	C = 5.53	EARTH	C = 2.45
EARTH	F = 3.75	EARTH	F = 3.38

STA. 1636+50.00



LEFT		RIGHT	
TOPSOIL	C = 0.00	TOPSOIL	C = 0.00
TOPSOIL	F = 0.00	TOPSOIL	F = 0.00
EARTH	C = 4.60	EARTH	C = 2.52
EARTH	F = 2.58	EARTH	F = 1.59

STA. 1636+00.00



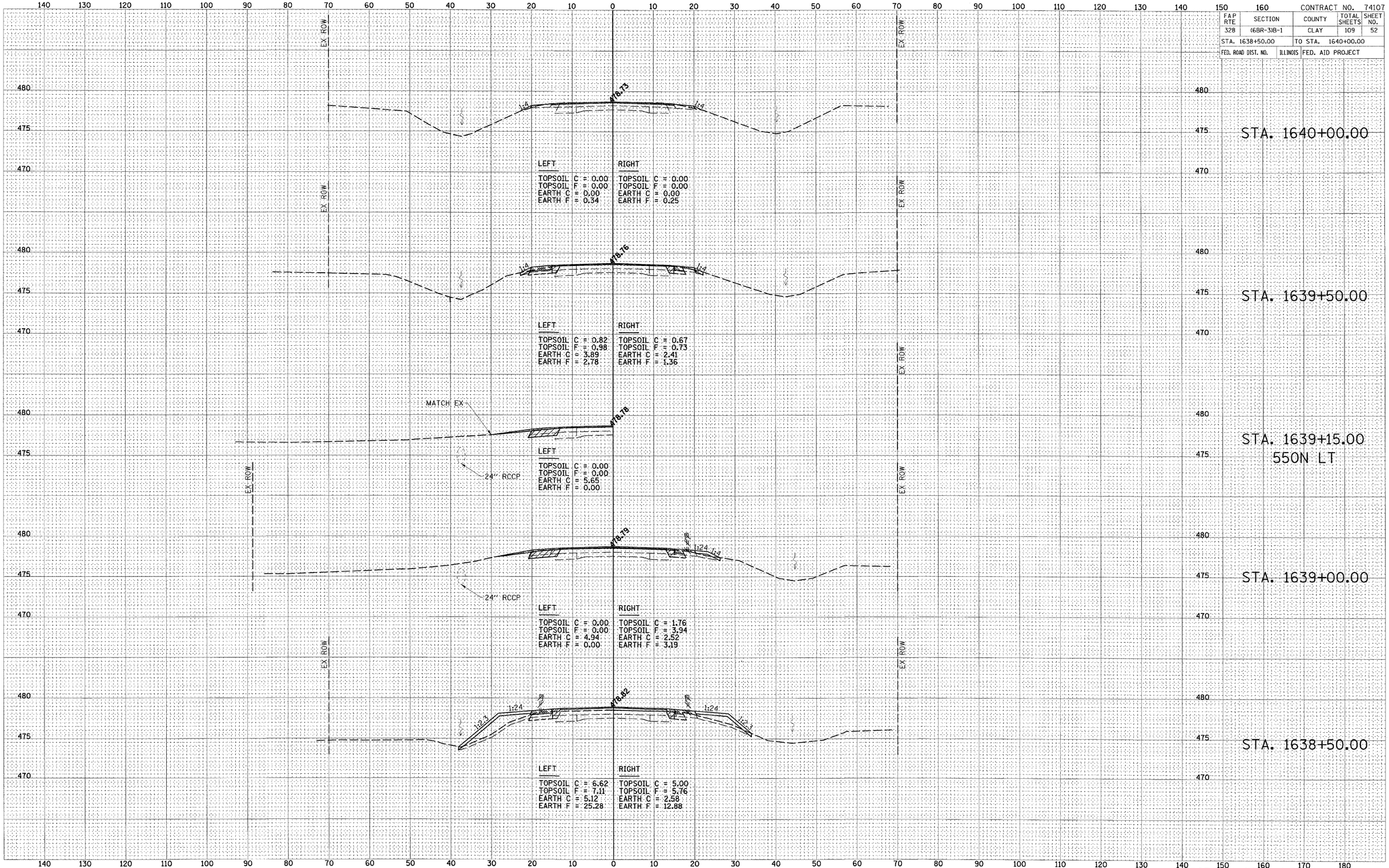
LEFT		RIGHT	
TOPSOIL	C = 0.00	TOPSOIL	C = 0.00
TOPSOIL	F = 0.00	TOPSOIL	F = 0.00
EARTH	C = 0.00	EARTH	C = 0.00
EARTH	F = 0.44	EARTH	F = 0.17

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

FAP 328 (US 45) CROSS SECTIONS

CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(6BR-3)B-1	CLAY	109	52
STA. 1638+50.00		TO STA. 1640+00.00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



FAP 328 (US 45) CROSS SECTIONS

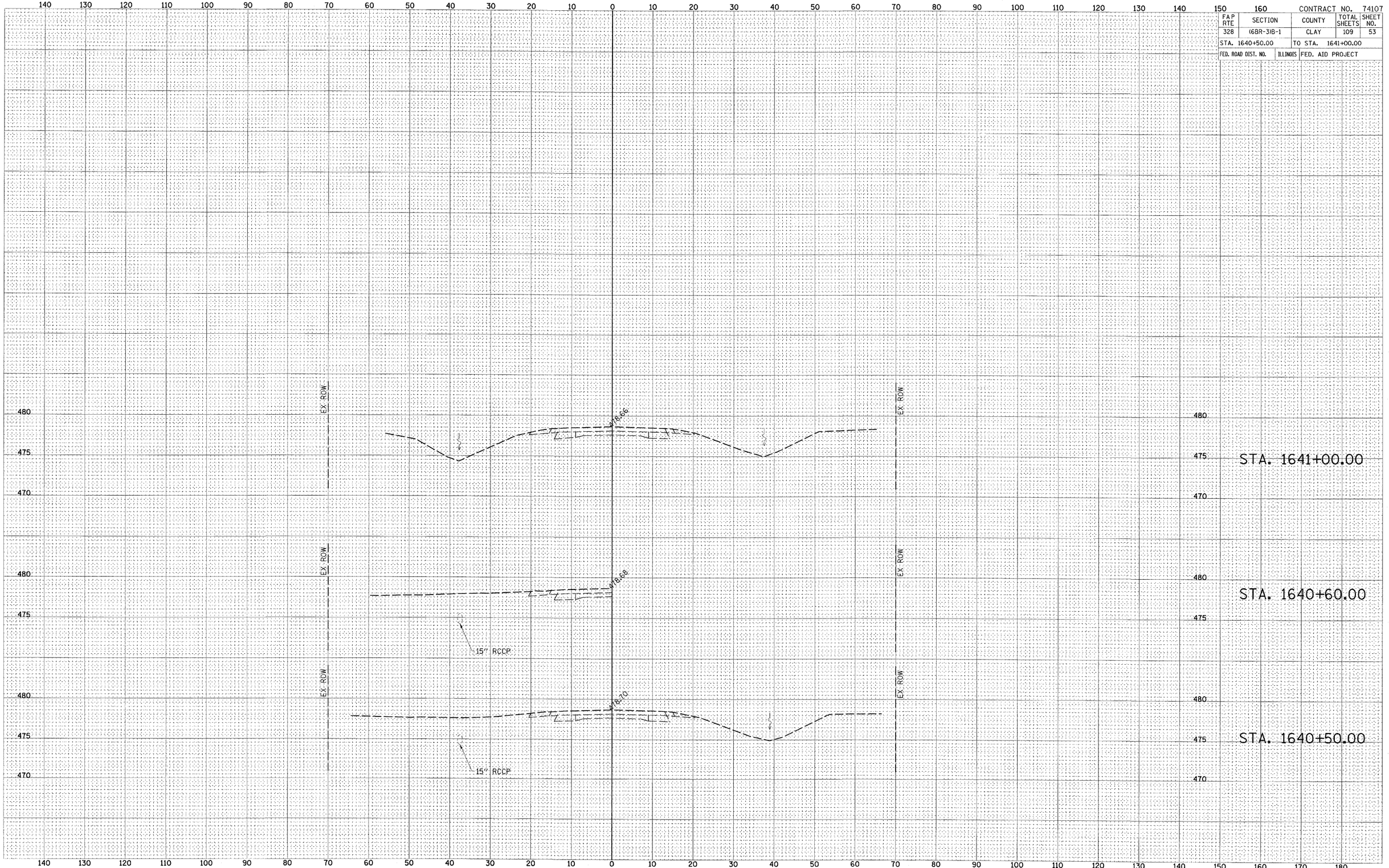
ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS

CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(6BR-3)B-1	CLAY	109	53
STA. 1640+50.00		TO STA. 1641+00.00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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

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

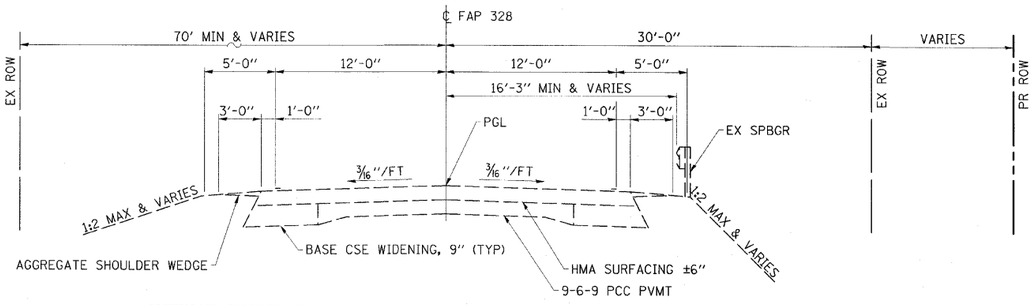


FAP 328 (US 45) CROSS SECTIONS

CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	*	CLAY	109	54
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

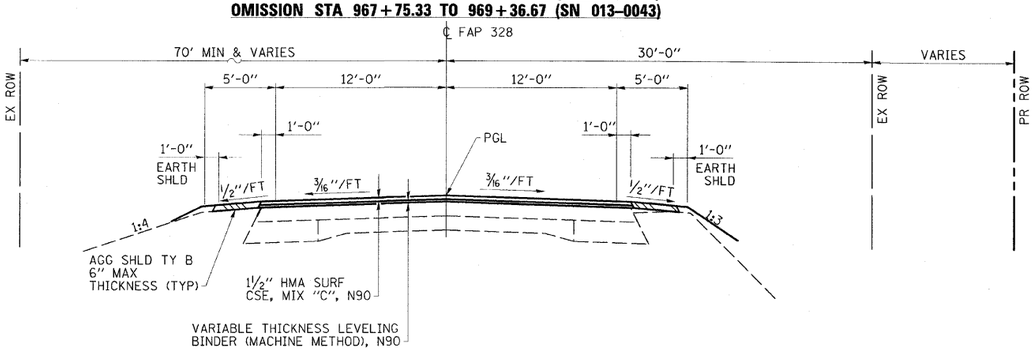
*(8BR-3, 8BR-4)B-1



WITHOUT GUARDRAIL **WITH GUARDRAIL**

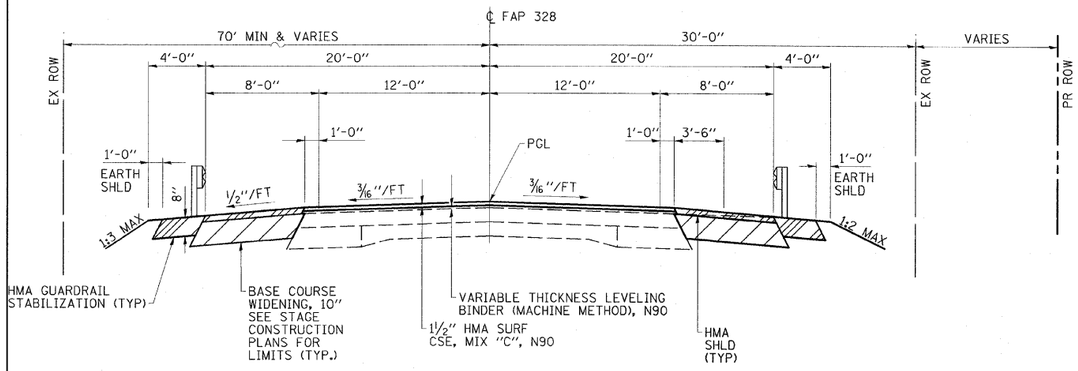
EXISTING TYPICAL ROADWAY SECTION

STA 960+00.00 TO 975+00.00
OMISSION STA 965+93.67 TO 966+55.94 (SN 013-2011)
OMISSION STA 967+75.33 TO 969+36.67 (SN 013-0043)



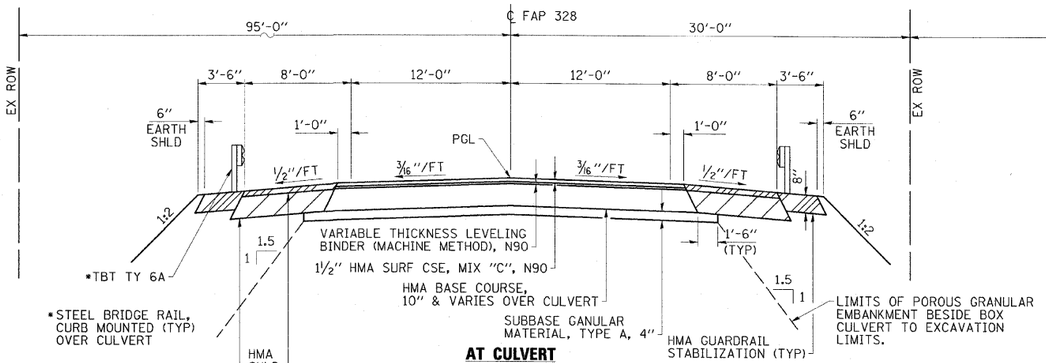
PROPOSED TYPICAL ROADWAY SECTION WITHOUT GUARDRAIL

STA 963+45.00 TO 964+42.00, LT AND STA 963+45.00 TO 963+58.00, RT
STA 971+74.00 TO 974+15.00, LT AND STA 970+74.00 TO 974+71.00, RT



PROPOSED TYPICAL ROADWAY SECTION WITH GUARDRAIL

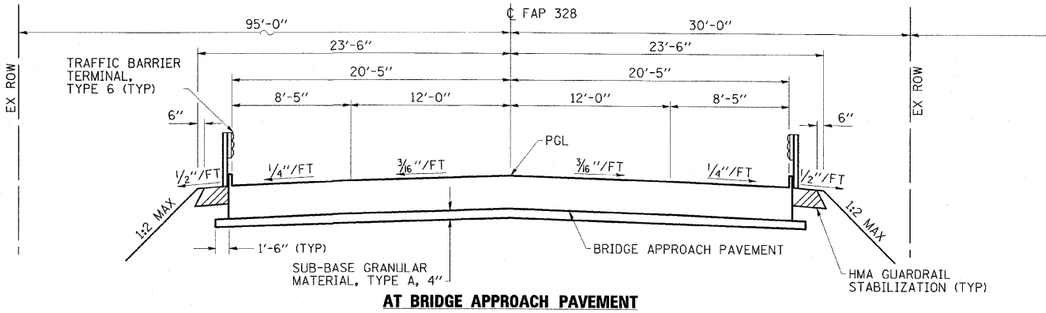
STA 964+42.00 TO 971+74.00, LT AND STA 963+58.00 TO 970+74.00, RT
OMISSION STA 965+93.67 TO 966+55.94 (SN 013-2011)
OMISSION STA 967+75.33 TO 969+36.67 (SN 013-0043)



AT CULVERT

PROPOSED TYPICAL ROADWAY SECTION

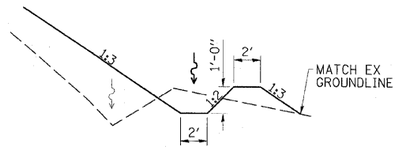
STA 965+93.67 TO 966+55.94



AT BRIDGE APPROACH PAVEMENT

PROPOSED TYPICAL ROADWAY SECTION

STA 967+75.33 TO 969+36.67
BRIDGE OMISSION STA 968+04.75 TO 969+07.25



SPECIAL DITCH RT

STA 970+00.00 TO 973+00.00

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	04/08
DRAWN BY:	HAS	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

TYPICAL SECTIONS
US 45 OVER SEMINARY CREEK & OVERFLOW
FAP ROUTE 328 - SECTIONS (8BR-3, 8BR-4)B-1
CLAY COUNTY

CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(8BR-3)B-1	CLAY	109	55
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

EARTHWORK SCHEDULE

LOCATION	SUITABLE EARTH EXCAVATION (WIDENING)	SUITABLE EARTH EXCAVATION ADJUSTED FOR SHRINKAGE	SUITABLE INCIDENTAL EXCAVATION MATERIAL	SUITABLE INCIDENTAL EXC. MATERIAL ADJUSTED FOR SHRINKAGE	EMBANKMENT (NOT A PAY ITEM)	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)
	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD
SE QUADRANT CUTS & FILLS	231	173.25	-	-	122	+51.25
SW QUADRANT CUTS & FILLS	34	25.5	-	-	23	+2.5
STRUCTURE TO STA 967+15, RT CUTS & FILLS	5	3.75	-	-	154	-150.25
STRUCTURE TO STA 967+15, LT CUTS & FILLS	27	20.25	-	-	4	+16.25
BOX CULVERT TRENCH	190	142.5	102	76.5	70	+149
BRIDGE EMBANKMENT	-	-	-	-	68.75	-68.75
TOTALS	487	365.25	102	76.5	373	0

NOTES:
1. EXCAVATION USED AS EMBANKMENT = (SUITABLE EARTH EXCAVATION + SUITABLE INCIDENTAL EXCAVATION)*0.75

PAVEMENT MARKING SCHEDULE

LOCATION	DESCRIPTION	SHORT-TERM PAVEMENT MARKING (1)	PAINT PAVEMENT MARKING - LINE	TEMP PAVEMENT MARKING - LINE
			4"	4"
		FOOT	FOOT	FOOT
STA 963+05 TO 967+15, CENTERLINE	SKIP-DASH YELLOW CENTERLINE	148	90	90
STA 964+37 TO 967+15, LT	SOLID WHITE EDGE LINE	-	370	370
STA 963+51 TO 967+15, RT	SOLID WHITE EDGE LINE	-	370	370
TOTALS		148	830	830

(1) INCLUDES 3 ADDITIONAL APPLICATIONS FROM STA 963+45 TO STA 967+15

TREE REMOVAL

LOCATION	ACRE
STA 963+00 TO 967+15	0.14
TOTAL	0.14

SEEDING SCHEDULE

LOCATION	SEEDING, CLASS 2 (SPECIAL)	SEEDING, CLASS 7
	ACRE	ACRE
SE QUADRANT	0.100	0.100
SW QUADRANT	0.075	0.075
STRUCTURE TO STA 967+15, RT	0.010	0.010
STRUCTURE TO STA 967+15, LT	0.015	0.015
TOTALS	0.2	0.2

POROUS GRANULAR EMBANKMENT SCHEDULE

LOCATION	CU YD
BOX CULVERT TRENCH	250
TOTAL	250

FENCING SCHEDULE

LOCATION	BARBED WIRE FENCE TO BE REMOVED
	FOOT
STA 963+00 TO 967+15	397
TOTAL	397

WORK ZONE AND PAVEMENT MARKING REMOVAL SCHEDULE

LOCATION	PAVEMENT MARKING DESCRIPTION	WORK ZONE PAVEMENT MARKING REMOVAL	PAVEMENT MARKING REMOVAL
		SQ FT	SQ FT
STA 963+04 TO 972+15, ℄	CENTERLINE	49	22
EDGELINES	TEMPORARY	247	
CENTERLINES	TEMPORARY	30	
STA 964+77 TO 967+15, RT	EDGELINE		79
STA 964+55 TO 965+94, LT	EDGELINE		46
STA 966+56 TO 967+15, LT	EDGELINE		20
TOTALS		326	167

PAVEMENT MARKER REMOVAL SCHEDULE

LOCATION	RRPM REMOVAL
	EACH
STA 964+00	1
STA 964+75	1
STA 965+50	1
STA 967+00	1
TOTAL	4

TOPSOIL EXCAVATION AND PLACEMENT SCHEDULE

LOCATION	TOPSOIL EXCAVATION AND PLACEMENT
	CU YD
SE QUADRANT CUTS & FILLS	69
SW QUADRANT CUTS & FILLS	28
STRUCTURE TO STA 967+15, RT	21
STRUCTURE TO STA 967+15, LT	17
TOTAL	135

TEMPORARY DITCH CHECKS

LOCATION	EACH
STA 964+00, RT	1
STA 964+50, RT	1
STA 965+00, RT	1
STA 965+50, RT	1
TOTAL	4

PAVING SCHEDULE

LOCATION	BITUMINOUS MATERIALS (PRIME COAT)	AGGREGATE (PRIME COAT)	LEVELING BINDER (MACHINE METHOD), N90	HMA SURFACE COURSE, MIX "C", N90	HMA SHOULDERS
	GALLON	TON	TON	TON	TON
SN 013-2011	173	3.5	38	95	207
TOTALS	173	3.5	38	95	207

SUB-BASE GRANULAR MATERIAL SCHEDULE

LOCATION	SUB-BASE GRANULAR MATERIAL, TYPE A 4"
	SQ YD
STA 965+93.67 TO 966+55.94	213
TOTAL	213

EROSION CONTROL SCHEDULE

LOCATION	PERIMETER EROSION BARRIER	TEMPORARY EROSION CONTROL SEEDING (2 APPLICATIONS)
	FOOT	POUND
SE QUADRANT	130	20
SW QUADRANT	320	15
STRUCTURE TO STA 967+15, RT	75	2
STRUCTURE TO STA 967+15, LT	90	3
TOTALS	615	40

GUARDRAIL REMOVAL SCHEDULE

LOCATION	FOOT
STRUCTURE TO STA 967+15, RT	159
STRUCTURE TO STA 967+15, LT	165
TOTAL	324

BASE COURSE SCHEDULE

LOCATION	HMA BASE COURSE, 10"	BASE COURSE WIDENING, 10"
	SQ YD	SQ YD
SE QUADRANT		151
SW QUADRANT		151
STRUCTURE TO STA 967+15, RT		70
STRUCTURE TO STA 967+15, LT		70
STA 965+93.67 TO 966+55.94	180	31
TOTALS	180	473

AGGREGATE SHOULDERS SCHEDULE

LOCATION	AGGREGATE SHOULDERS, TYPE B
	TON
SE QUADRANT	0.4
SW QUADRANT	0.6
TOTAL	1

HMA SURF REMOVAL SCHEDULE

LOCATION	BUTT JOINT
	SQ YD
STA 963+45 TO 964+20	217
TOTAL	217

GUARDRAIL SCHEDULE

LOCATION	TRAFFIC BARRIER TERMINAL, TYPE 6A SPECIAL	TRAFFIC BARRIER TERMINAL, TYPE 6A	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	REMOVE & RE-ERECT TRAFFIC BARRIER TERMINAL, TYPE 1	GUARDRAIL MARKERS, TYPE A	STEEL PLATE BEAM GUARDRAIL, TY A
	EACH	EACH	EACH	EACH	EACH	EACH
SE QUADRANT		1	1	1	3	137.5
SW QUADRANT		1	1		2	50
STRUCTURE TO STA 967+15, RT	1				1	50
STRUCTURE TO STA 967+15, LT	1		1			
TOTALS	2	2	3	1	6	237.5

MARKER SCHEDULE

LOCATION	F & E ROW MARKERS
	EACH
STA 960+50, 30.00' RT	1
STA 965+50, 55.00' RT	1
TOTALS	2

REMOVAL SCHEDULE

LOCATION	PAVEMENT REMOVAL
	SQ YD
STA 965+93.67 TO 966+55.94	116
STA 964+31 TO 964+50	15
TOTALS	131

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	04/08
DRAWN BY:	HAS	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

SCHEDULES OF QUANTITIES
US 45 OVER SEMINARY CREEK OVERFLOW
FAP ROUTE 328 - SECTION (8BR-3)B-1
CLAY COUNTY

CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(8BR-4)B-1	CLAY	109	56
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

EARTHWORK SCHEDULE

LOCATION	SUITABLE EARTH EXCAVATION (WIDENING)	SUITABLE EARTH EXCAVATION ADJUSTED FOR SHRINKAGE	SUITABLE INCIDENTAL EXCAVATION MATERIAL	SUITABLE INCIDENTAL EXC. MATERIAL ADJUSTED FOR SHRINKAGE	EMBANKMENT (NOT A PAY ITEM)	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)
	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD
NE QUADRANT CUTS & FILLS	108	81	-	-	487	-406
NW QUADRANT CUTS & FILLS	22	16.5	-	-	47	-30.5
STA 967+15 TO STRUCTURE, RT CUTS & FILLS	15	11.25	-	-	41	-29.75
STA 967+15 TO STRUCTURE, LT CUTS & FILLS	3	2.25	-	-	6	-3.75
ABUTMENT EXCAVATIONS	-	-	155	116.25	-	+116.25
CULVERT WASTE	-	-	-	68.75	-	+68.75
TOTALS	148	111	155	116.25	581	-285

NOTES:
1. EXCAVATION USED AS EMBANKMENT = (SUITABLE EARTH EXCAVATION + SUITABLE INCIDENTAL EXCAVATION)•0.75

PAVEMENT MARKING SCHEDULE

LOCATION	DESCRIPTION	SHORT-TERM PAVEMENT MARKING (1)	PAINT PAVEMENT MARKING - LINE	TEMP PAVEMENT MARKING - LINE
			4"	4"
		FOOT	FOOT	FOOT
STA 967+15 TO 972+25, CENTERLINE	SKIP-DASH YELLOW CENTERLINE	268	180	180
STA 967+15 TO 971+80, LT	SOLID WHITE EDGE LINE	-	700	700
STA 967+15 TO 970+81, RT	SOLID WHITE EDGE LINE	-	700	700
TOTALS		268	1580	1580

(1) INCLUDES 3 ADDITIONAL APPLICATIONS FROM STA 967+15 TO STA 974+15

TREE REMOVAL

LOCATION	ACRE
STA 967+15 TO 975+00	0.16
TOTAL	0.16

SEEDING SCHEDULE

LOCATION	SEEDING, CLASS 2 (SPECIAL)	SEEDING, CLASS 7
	ACRE	ACRE
NE QUADRANT	0.175	0.175
NW QUADRANT	0.100	0.100
STA 967+15 TO STRUCTURE, RT	0.050	0.050
STA 967+15 TO STRUCTURE, LT	0.075	0.075
TOTALS	0.4	0.4

FENCING SCHEDULE

LOCATION	BARBED WIRE FENCE TO BE REMOVED
	FOOT
STA 967+15 TO 975+00	578
TOTAL	578

WORK ZONE AND PAVEMENT MARKING REMOVAL SCHEDULE

LOCATION	PAVEMENT MARKING DESCRIPTION	WORK ZONE PAVEMENT MARKING REMOVAL	PAVEMENT MARKING REMOVAL
		SQ FT	SQ FT
STA 967+15 TO 972+25, ℄	CENTERLINE	90	22
EDGELINES	TEMPORARY	467	
CENTERLINES	TEMPORARY	60	
STA 967+15 TO 970+53, RT	EDGELINE		113
STA 967+15 TO 967+87.3, LT	EDGELINE		24
STA 969+48.6 TO 970+75, LT	EDGELINE		42
TOTALS		617	201

PAVEMENT MARKER REMOVAL SCHEDULE

LOCATION	RRPM REMOVAL
	EACH
STA 969+75	1
STA 970+50	1
STA 971+25	1
STA 972+00	1
STA 972+75	1
STA 973+50	1
TOTAL	6

TOPSOIL EXCAVATION AND PLACEMENT SCHEDULE

LOCATION	TOPSOIL EXCAVATION AND PLACEMENT
	CU YD
NE QUADRANT CUTS & FILLS	153
NW QUADRANT CUTS & FILLS	57
STA 967+15 TO STRUCTURE, RT	18
STA 967+15 TO STRUCTURE, LT	7
TOTAL	235

TEMPORARY DITCH CHECKS

LOCATION	EACH
STA 969+50, RT	1
STA 970+50, RT	1
STA 971+50, RT	1
STA 973+00, RT	1
TOTAL	4

PAVING SCHEDULE

LOCATION	BITUMINOUS MATERIALS (PRIME COAT)	AGGREGATE (PRIME COAT)	LEVELING BINDER (MACHINE METHOD), N90	HMA SURFACE COURSE, MIX "C", N90	HMA SHOULDERS	BRIDGE APPROACH PAVEMENT
	GALLON	TON	TON	TON	TON	SQ YD
SN 013-0043	223	4.2	98	150	168	
STA 967+75.33 TO 968+04.75						134
STA 969+07.25 TO 969+36.67						133
TOTALS	223	4.2	98	150	168	267

REMOVAL SCHEDULE

LOCATION	PAVEMENT REMOVAL
	SQ YD
STA 967+69.33 TO 969+42.67	356
STA 970+60 TO 970+99	30
TOTALS	386

EROSION CONTROL SCHEDULE

LOCATION	PERIMETER EROSION BARRIER	TEMPORARY EROSION CONTROL SEEDING (2 APPLICATIONS)
	FOOT	POUND
NE QUADRANT	615	35
NW QUADRANT	505	20
STA 967+15 TO STRUCTURE, RT	80	10
STA 967+15 TO STRUCTURE, LT	150	15
TOTALS	1350	80

GUARDRAIL REMOVAL SCHEDULE

LOCATION	FOOT
STA 967+15 TO STRUCTURE, RT	197
STA 967+15 TO STRUCTURE, LT	165
TOTAL	362

BASE COURSE SCHEDULE

LOCATION	BASE COURSE WIDENING, 10"
	SQ YD
NE QUADRANT	152
NW QUADRANT	119
STA 967+15 TO STRUCTURE, RT	35
STA 967+15 TO STRUCTURE, LT	53
TOTALS	359

AGGREGATE SHOULDERS SCHEDULE

LOCATION	AGGREGATE SHOULDERS, TYPE B
	TON
NE QUADRANT	29.5
NW QUADRANT	14.5
TOTAL	44

HMA SURF REMOVAL SCHEDULE

LOCATION	BUTT JOINT
	SQ YD
STA 973+50 TO 974+15	188
TOTAL	188

GUARDRAIL SCHEDULE

LOCATION	TRAFFIC BARRIER TERMINAL TYPE 6	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	REMOVE & RE-ERECT TRAFFIC BARRIER TERMINAL, TYPE 1	GUARDRAIL MARKERS, TYPE A	BARRIER WALL MARKERS, TYPE B	STEEL PLATE BEAM GUARDRAIL, TY A
	EACH	EACH	EACH	EACH	EACH	EACH
NE QUADRANT	1	1	1	1		50
NW QUADRANT	1	1		3		137.5
STA 967+15 TO STRUCTURE, RT	1			1		37.5
STA 967+15 TO STRUCTURE, LT	1	1		1		
CONCRETE PARAPETS					3	
TOTALS	4	3	1	6	3	225

MARKER SCHEDULE

LOCATION	F & E ROW MARKERS	PSM, TYPE 1	F & I PROPERTY MARKERS
	EACH	EACH	EACH
STA 968+32.59, 2.73' RT			1
STA 970+50, 55.00' RT	1		
STA 973+00, PI (NO CURVE)		1	
STA 975+50, 30.00' RT	1		
TOTALS	2	1	1

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	04/08
DRAWN BY:	HAS	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

SCHEDULES OF QUANTITIES
US 45 OVER SEMINARY CREEK
FAP ROUTE 328 - SECTION (8BR-4)B-1
CLAY COUNTY

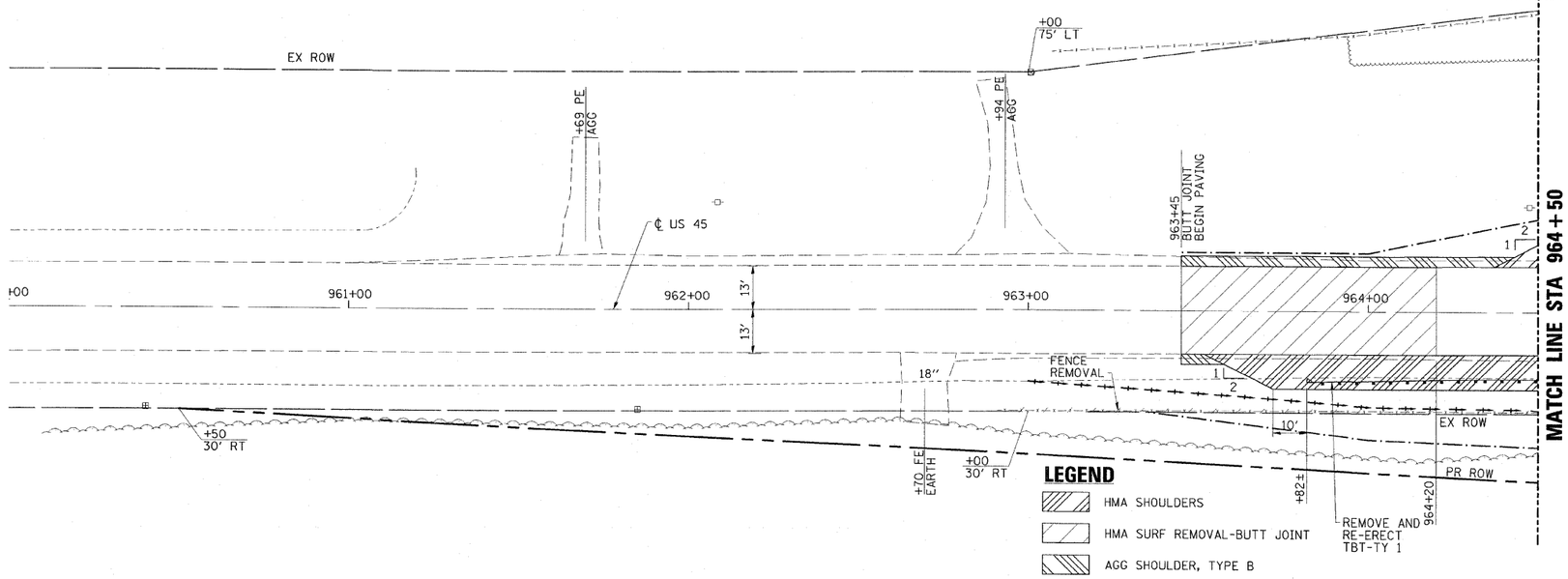
CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	*	CLAY	109	57
STA. 960+00		TO STA. 964+50		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

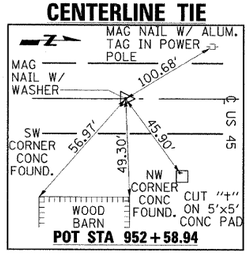
* (8BR-3, 8BR-4) B-1

SCALE 20 0 20 40

SEC. 17, T2N, R7E, 3RD PM



CENTERLINE TIE

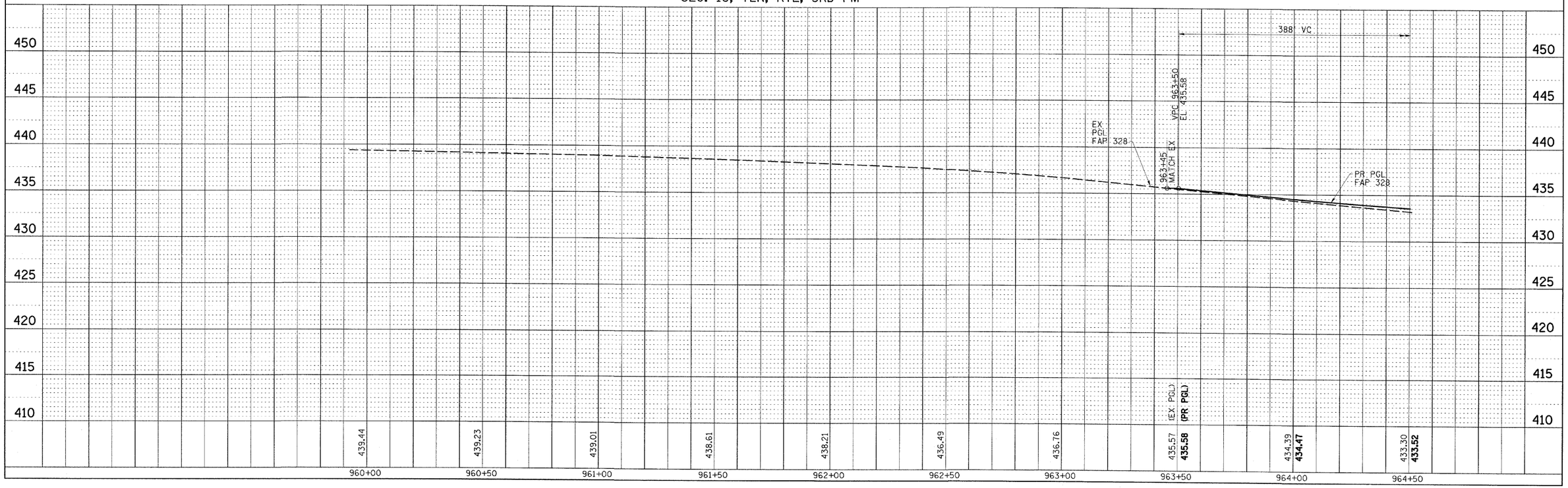


POT STA 952+58.94

BENCHMARK: BM 209 EL 429.86 (NAVD 88)

RAILROAD SPIKE IN POWER POLE NO. 217, STA 969+25, 29.7' LT

SEC. 16, T2N, R7E, 3RD PM



FAP RTE 328 (US 45) PLAN AND PROFILE

STA 960+00 TO STA 964+50

ESCA CONSULTANTS, INC.
CIVIL STRUCTURAL TRANSPORTATION

CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	*	CLAY	109	58
STA. 964+50		TO STA. 970+50		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
*(8BR-3, 8BR-4)B-1				

SCALE 20 0 20 40

N

SEC. 17, T2N, R7E, 3RD PM

EX ROW

+00 95' LT

℄ PR SN 013-2011
STA 966+25.10
DOUBLE 11' SPAN X 8' HEIGHT BOX CULVERT
40'-0" CLR RDWY WIDTH
44'-0" OUT TO OUT HEADWALLS

℄ PR SN 013-0043
STA 968+56.00
THREE SPAN CONCRETE SLAB BRIDGE
40'-0" CLR RDWY WIDTH
102'-6" BK TO BK ABUTMENTS

SEMINARY CREEK OVERFLOW

T/O BANK

SEMINARY CREEK

℄ US 45

TBT TY 1 (SPL) TANGENT

TBT TY 6A

TBT TY 6A (SPECIAL), SEE SHEET NO. 65 FOR DETAILS

50' SPBGR TY A

101' GUARDRAIL REMOVAL

64' GUARDRAIL REMOVAL

TBT TY 6

137.5' SPBGR TY A

MATCH LINE STA 964+50

MATCH LINE STA 970+50

965+00 966+00 967+00 968+00 969+00 970+00

+93± +93.67 +55.94 +69.33 +42.67

30° 7' 13' 30'

+50 55' RT

87.5' SPBGR TY A

154' GUARDRAIL REMOVAL

FENCE TO BE REMOVED

6'

PR ROW

PROPOSED ROW

REMOVE AND RE-ERECT TBT TY 1

℄ EX SN 013-0016
STA 966+25.10
ONE SPAN PC CHANNEL SLAB BRIDGE
33'-9" OUT TO OUT DECK WIDTH
22'-0" BK TO BK ABUTMENTS
TO BE REMOVED

℄ EX SN 013-0015
STA 968+56.00
ONE SPAN PPC DECK BEAM BRIDGE
33'-0" OUT TO OUT DECK WIDTH
53'-0" BK TO BK ABUTMENTS
TO BE REMOVED

LEGEND
- HMA SHOULDERS
- PAVEMENT REMOVAL

BENCHMARK: BM 209 EL 429.86 (NAVD 88)
RAILROAD SPIKE IN POWER POLE NO. 217, STA 969+25, 29.7' LT

SEC. 16, T2N, R7E, 3RD PM

PLAN
SURVEYED
PLANS PREPARED
ALIGNMENTS CHECKED
GRADES CHECKED
QUANTITIES VERIFIED
CADD FILE NAME
NOTE BOOK
NO.
BY
DATE

PROFILE
SURVEYED
PLANS PREPARED
GRADES CHECKED
QUANTITIES VERIFIED
STRUCTURE NO'S/ATNS CHK'D
NOTE BOOK
NO.
BY
DATE

388' VC

VPI 965+44
EL 431.00
E = 41.85

VPT 967+38
EL 431.00

℄ STRUCTURE STA 966+25.10

2-3" CLR.

℄ STRUCTURE STA 968+56.00

2'-0" CLR.

PR PGL FAP 328

EX PGL FAP 328

-2.36% 0.00% 0.00%

EXISTING STRUCTURE

D.H.W. ELEV. 427.1

PR DOUBLE 11'S x 8'R BOX CULVERT

PR STRUCTURE

EXISTING STRUCTURE

	964+50	965+00	965+50	966+00	966+50	967+00	967+50	968+00	968+50	969+00	969+50	970+00	970+50
(EX PGL)	433.30	432.21	431.67	431.18	431.00	430.94	430.88	430.81	430.77	430.74	430.81	430.84	430.82
(PR PGL)	433.52	432.72	432.07	431.58	431.24	431.04	431.00	431.00	431.00	431.00	431.00	431.00	431.00

FAP RTE 328 (US 45) PLAN AND PROFILE
STA 964+50 TO STA 970+50

ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS

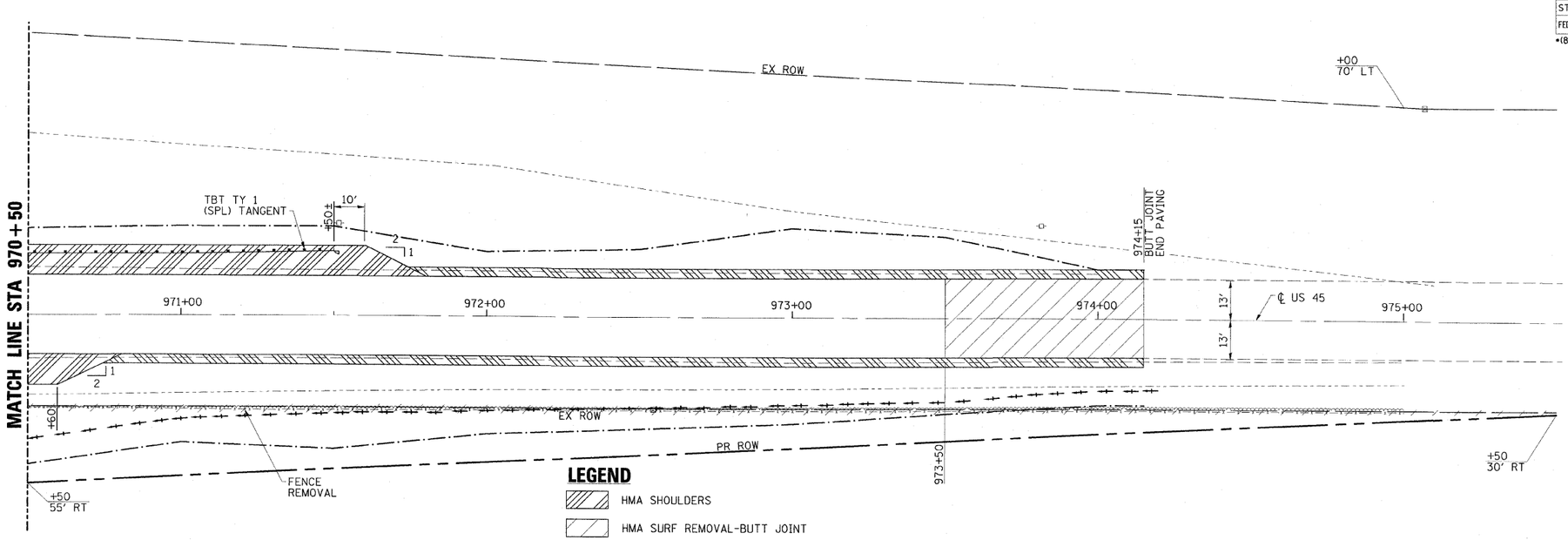
CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	*	CLAY	109	59
STA. 970+50		TO STA. 975+00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

*(8BR-3, 8BR-4)B-1

SCALE 20 0 20 40

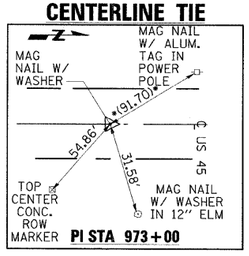
SEC. 17, T2N, R7E, 3RD PM



LEGEND

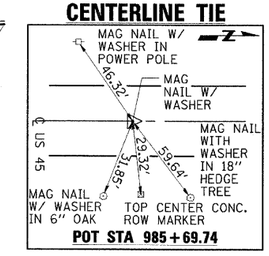
- HMA SHOULDERS
- HMA SURF REMOVAL-BUTT JOINT
- AGG SHOULDER, TYPE B

CENTERLINE TIE



PI STA 973+00

CENTERLINE TIE

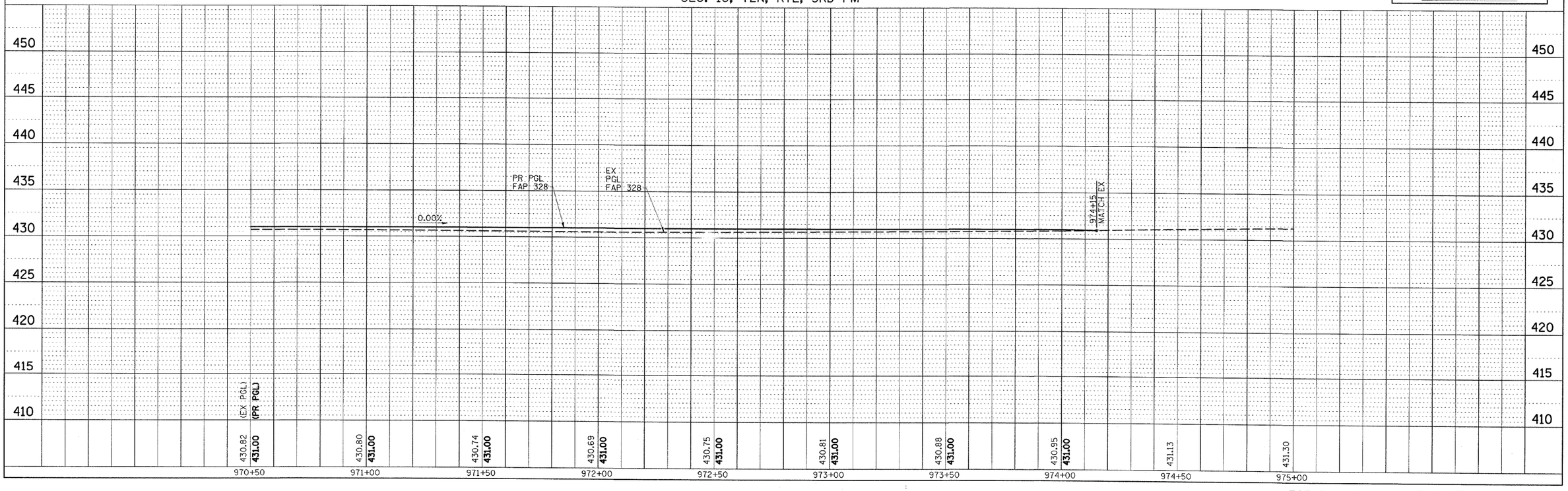


POT STA 985+69.74

BENCHMARK: BM 209 EL 429.86 (NAVD 88)

RAILROAD SPIKE IN POWER POLE NO. 217 STA 969+25, 29.7' LT

SEC. 16, T2N, R7E, 3RD PM



FAP RTE 328 (US 45) PLAN AND PROFILE
STA 970+50 TO STA 975+00

CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	*	CLAY	109	60
STA. 963+00		TO STA. 972+00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

*(8BR-3, 8BR-4)B-1

LEGEND

30 0 30 60
SCALE IN FEET

- TRAFFIC SIGNAL WITH BACKPLATE, SIGNAL DIRECTION INDICATED
- TEMPORARY RAMP
- PAVEMENT REMOVAL
- BASE COURSE WIDENING, 10"
- HMA SHOULDER

SCHEDULE OF QUANTITIES

TEMPORARY CONCRETE BARRIER

STATION	TO	STATION	FEET
964+65		970+65	600
		TOTAL	600

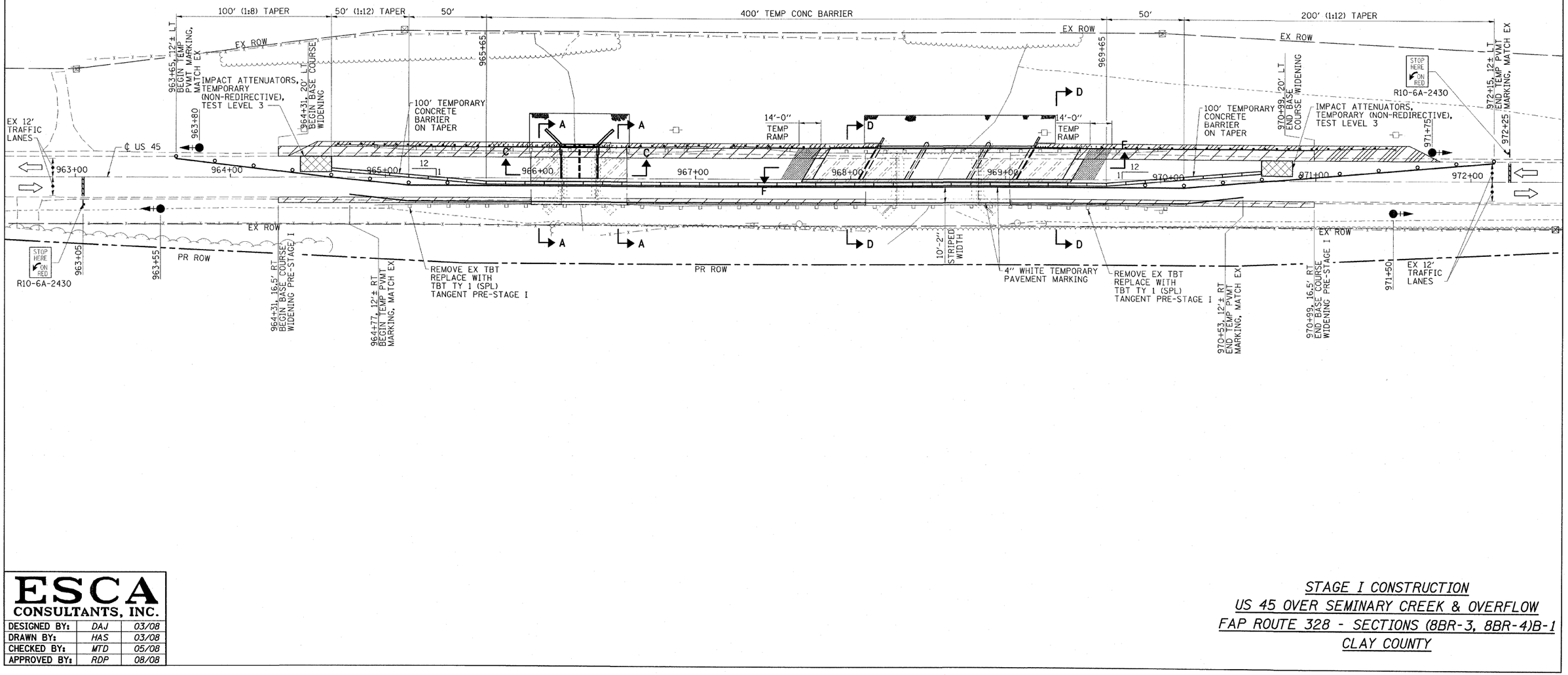
TEMPORARY BRIDGE TRAFFIC SIGNALS - 1 EACH

TEMPORARY RUMBLE STRIPS - 6 EACH

IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3 - 2 EACH

GENERAL NOTES

1. TRAFFIC CONTROL SHALL BE ERECTED AS SHOWN AND ACCORDING TO "TRAFFIC CONTROL AND PROTECTION, STANDARD 701321."
2. SEE SPECIAL PROVISIONS FOR ADDITIONAL TRAFFIC CONTROL REQUIREMENTS.
3. COORDINATE LOCATION OF SIGNALS WITH FINAL WORK AS DIRECTED BY THE ENGINEER.
4. CONSTRUCT TEMPORARY RUMBLE STRIPS AT LOCATIONS SHOWN ON STANDARD 701321.
5. THE DIMENSION SHOWN ON THE WIDTH RESTRICTION SIGN (W12-1102(O)-4B) SHOWN ON STANDARD 701321 SHALL BE 10'-9" FOR STAGE I CONSTRUCTION.
6. THE EXISTING TBT AT THE NE & SE SIDE MUST BE REMOVED AND REPLACED WITH NEW TBT TY 1 (SPECIAL) TANGENT PRIOR TO SHIFTING TRAFFIC TO THE STAGE I LANE.
7. THE EXISTING PRECAST APPROACH UNITS AND ADJACENT PAVEMENT UNDER THE STAGE 1 TRAFFIC LANE SHALL BE SUBSEALED PRIOR TO IMPLEMENTING STAGE I TRAFFIC. SEE DETAIL ON SHEET 64.



ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	03/08
DRAWN BY:	HAS	03/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

STAGE I CONSTRUCTION
US 45 OVER SEMINARY CREEK & OVERFLOW
FAP ROUTE 328 - SECTIONS (8BR-3, 8BR-4)B-1
CLAY COUNTY

CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	*	CLAY	109	61
STA. 963+00		TO STA. 972+00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

*(8BR-3, 8BR-4)B-1

LEGEND

- TRAFFIC SIGNAL WITH BACKPLATE, SIGNAL DIRECTION INDICATED
- TEMPORARY RAMP
- PAVEMENT REMOVAL
- BASE COURSE WIDENING, 10"
- HMA SHOULDER

30 0 30 60

SCALE IN FEET

SCHEDULE OF QUANTITIES

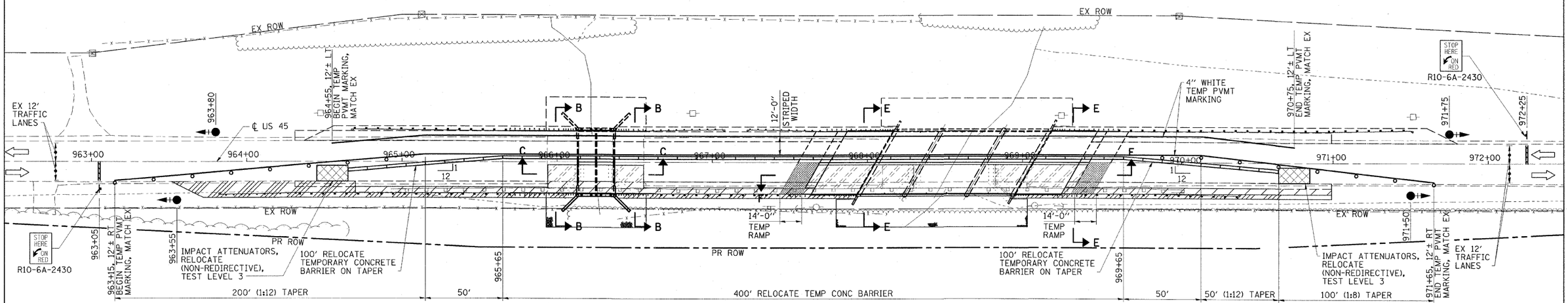
RELOCATE TEMPORARY CONCRETE BARRIER

STATION	TO	STATION	FEET
964+65		970+65	600
		TOTAL	600

IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 3 - 2 EACH

GENERAL NOTES

1. TRAFFIC CONTROL SHALL BE ERECTED AS SHOWN AND ACCORDING TO "TRAFFIC CONTROL AND PROTECTION, STANDARD 701321."
2. SEE SPECIAL PROVISIONS FOR ADDITIONAL TRAFFIC CONTROL REQUIREMENTS.
3. COORDINATE LOCATION OF SIGNALS WITH FINAL WORK AS DIRECTED BY THE ENGINEER.
4. CONSTRUCT TEMPORARY RUMBLE STRIPS AT LOCATIONS SHOWN ON STANDARD 701321.
5. THE DIMENSION SHOWN ON THE WIDTH RESTRICTION SIGN (W12-1102(0)-48) SHOWN ON STANDARD 701321 SHALL BE 14'-6" FOR STAGE II CONSTRUCTION.



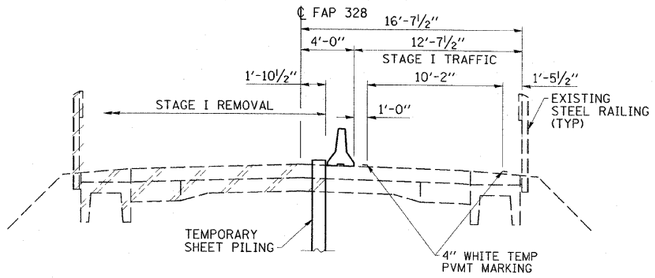
ESCA CONSULTANTS, INC.		
DESIGNED BY:	DAJ	03/08
DRAWN BY:	HAS	03/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

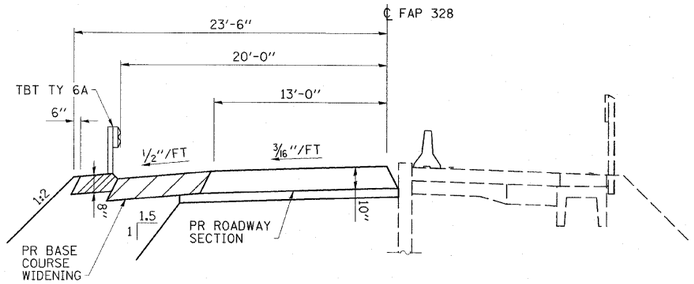
STAGE II CONSTRUCTION
US 45 OVER SEMINARY CREEK & OVERFLOW
FAP ROUTE 328 - SECTIONS (8BR-3, 8BR-4)B-1
CLAY COUNTY

ESCA CONSULTANTS, INC.
CIVIL · STRUCTURAL · ENVIRONMENTAL
SPRINGFIELD, ILLINOIS

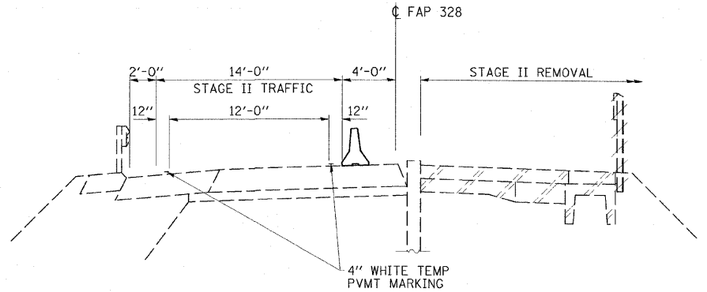
CONTRACT NO. 74107

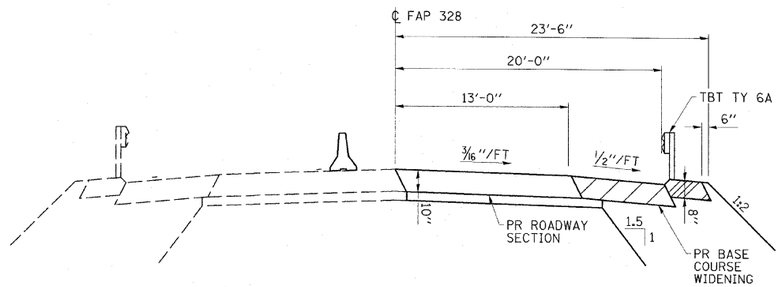
FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(8BR-3)B-1	CLAY	109	62
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		





SECTION A–A
(STAGE I)

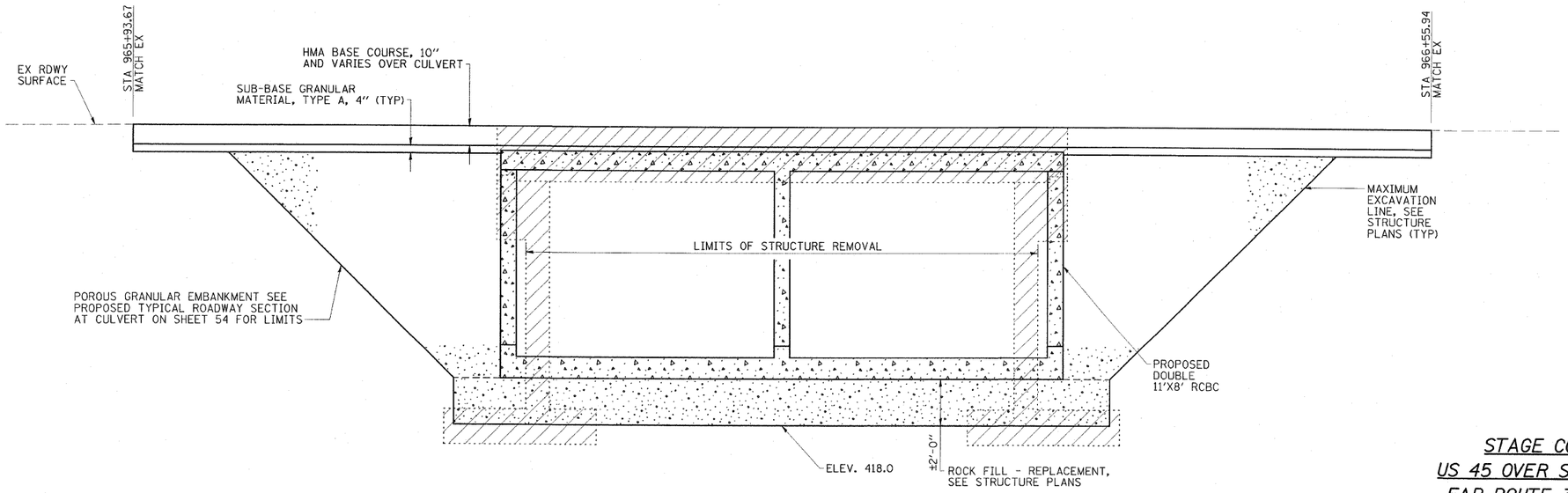




SECTION B–B
(STAGE II)

NOTES

1. SEE STRUCTURE PLANS FOR ADDITIONAL SECTIONS.



SECTION C–C

ESCA CONSULTANTS, INC.		
DESIGNED BY:	DAJ	04/08
DRAWN BY:	HAS	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

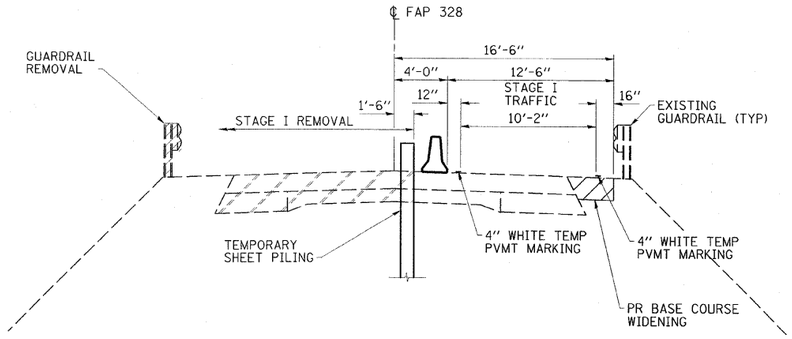
STAGE CONSTRUCTION DETAILS
US 45 OVER SEMINARY CREEK OVERFLOW
FAP ROUTE 328 - SECTION (8BR-3)B-1
CLAY COUNTY

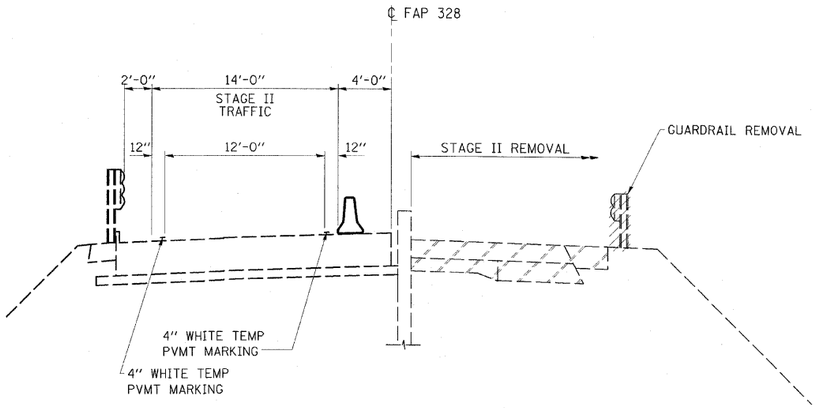
CONTRACT NO. 74107

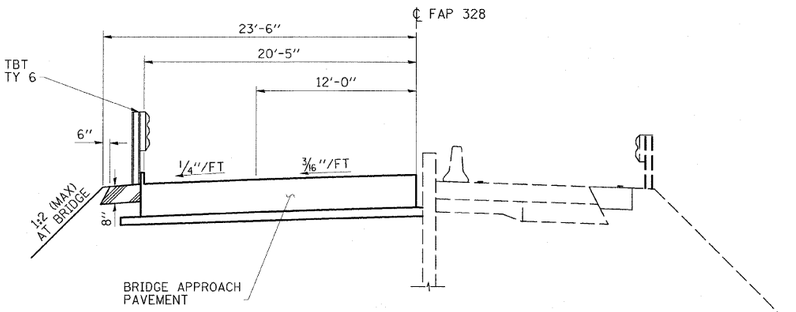
FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(8BR-4)B-1	CLAY	109	63
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

NOTES

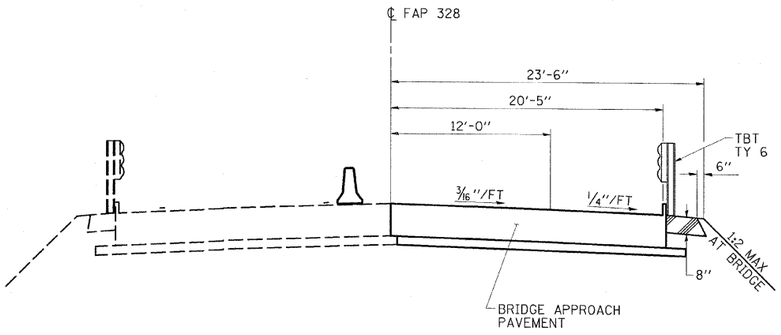
1. SEE STRUCTURE PLANS FOR ADDITIONAL SECTIONS.



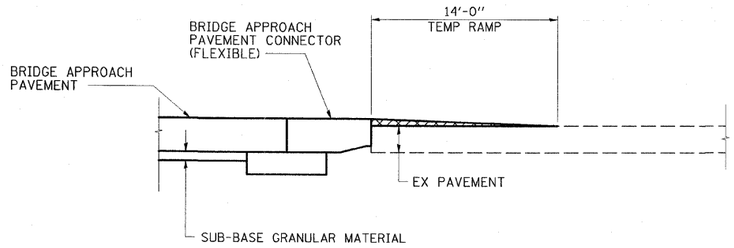




SECTION D–D
(STAGE I)



SECTION E–E
(STAGE II)



SECTION F

ESCA CONSULTANTS, INC.		
DESIGNED BY:	DAJ	04/08
DRAWN BY:	HAS	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

STAGE CONSTRUCTION DETAILS
US 45 OVER SEMINARY CREEK
FAP ROUTE 328 - SECTION (8BR-4)B-1
CLAY COUNTY

CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	*	CLAY	109	64
STA. 963+00		TO STA. 975+00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
*(8BR-3, 8BR-4)B-1				

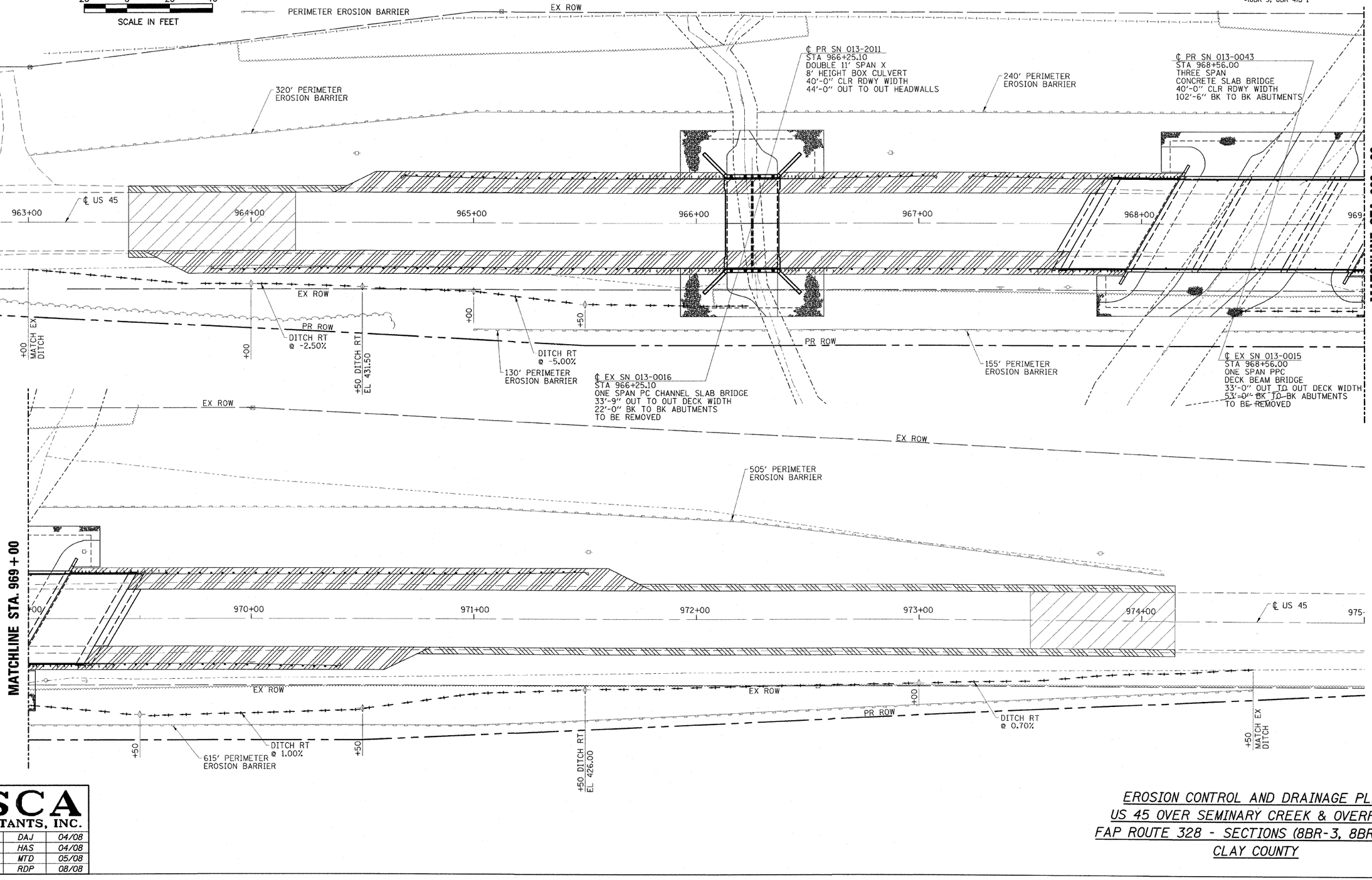
LEGEND

TEMPORARY DITCH CHECK

PERIMETER EROSION BARRIER

20 0 20 40

SCALE IN FEET



ESCA CONSULTANTS, INC.		
DESIGNED BY:	DAJ	04/08
DRAWN BY:	HAS	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

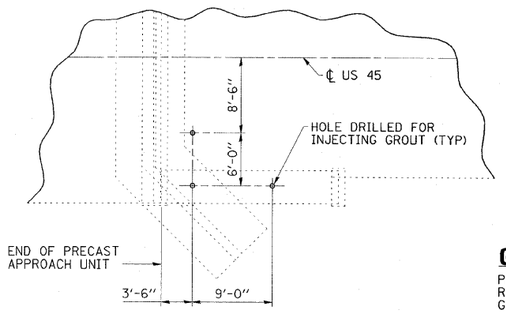
EROSION CONTROL AND DRAINAGE PLAN
US 45 OVER SEMINARY CREEK & OVERFLOW
FAP ROUTE 328 - SECTIONS (8BR-3, 8BR-4)B-1
CLAY COUNTY

ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS

CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP	*	CLAY	109	65
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

*(8BR-3, 8BR-4)B-1



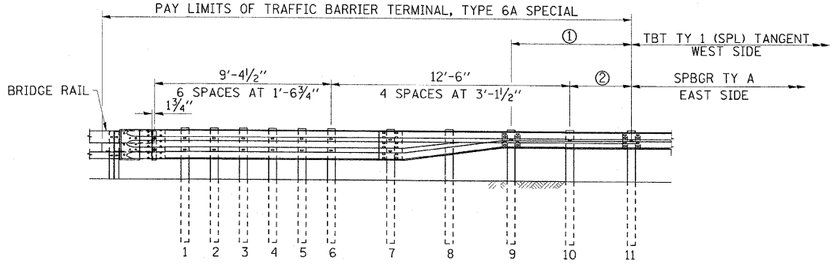
SUBSEALING DETAIL

GENERAL NOTES

PROVIDE FORMWORK AS REQUIRED TO CONTAIN GROUT, COST INCLUDED.

DRILL HOLES AS SHOWN OR AS DIRECTED BY THE ENGINEER.

APPLY DETAIL AT NE AND SE CORNERS OF SN 013-0015 AND SN 013-0016.



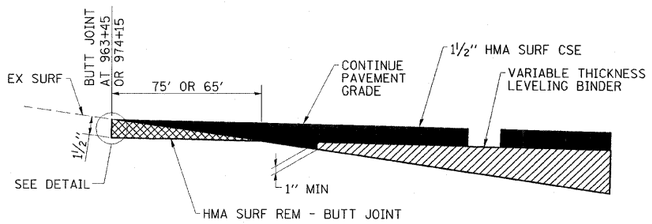
① OMIT THIS SECTION OF RAIL ON WEST SIDE

② VARY SPACING AS REQUIRED TO TIE INTO SPBGR

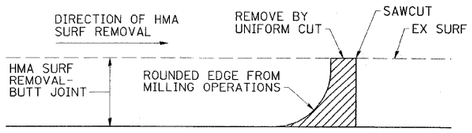
TBT, TYPE 6A SPECIAL

NOTES: 1. OMIT SINGLE SECTION OF THRIE BEAM SHOWN ON STANDARD 631032.

2. SEE STANDARD 631032 FOR ADDITIONAL DETAILS.



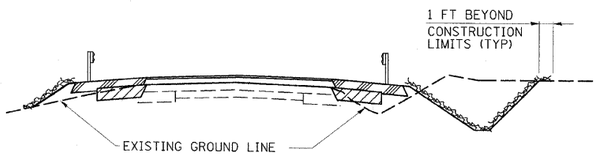
TYPICAL BUTT JOINT SECTION SN 013-2011 & SN 013-0043



DETAIL AT BUTT JOINT

NOTE:
WHEN MILLING OPERATIONS PRODUCE A ROUNDED EDGE, THEN A SAWCUT SHALL BE USED TO MANUFACTURE A PERPENDICULAR EDGE AS SHOWN IN THE DETAIL. THE COST OF ALL WORK SHOWN IN THE DETAIL IS INCLUDED IN HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT. THE ENGINEER SHALL BE THE SOLE JUDGE CONCERNING THE USE OF THIS DETAIL.

SEEDING & MULCHING



INDICATES LIMITS OF SEEDING AND MULCHING

GENERAL NOTES

IN GENERAL, ALL EARTH SURFACES DISTURBED DURING CONSTRUCTION OPERATIONS SHALL BE SEEDED AND MULCHED UPON COMPLETION OF ALL GRADING OPERATIONS.

FERTILIZER NUTRIENTS AND LIMESTONE SHALL BE APPLIED TO ALL SEEDED AREAS.

THE RATES OF APPLICATION OF FERTILIZER, MULCH AND LIMESTONE SHALL BE AS SPECIFIED IN THE SPECIAL PROVISIONS.

SECTIONS 250 AND 251 OF THE STANDARD SPECIFICATIONS SHALL GOVERN THIS WORK EXCEPT AS SPECIFIED HEREIN OR AS NOTED IN THE SPECIAL PROVISIONS.

ESCA CONSULTANTS, INC.

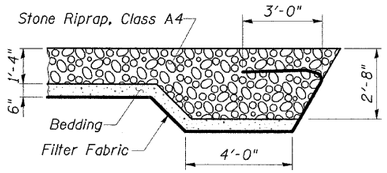
DESIGNED BY:	DAJ	04/08
DRAWN BY:	HAS	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

MISCELLANEOUS DETAILS
US 45 OVER SEMINARY CREEK & OVERFLOW
FAP ROUTE 328 - SECTIONS (8BR-3, 8BR-4)B-1
CLAY COUNTY

BENCHMARK:
BM 209 - Railroad spike in Power Pole No. 217, Sta. 969+25, 29.7' Lt., Elev. 429.86 (NAVD 88)

EXISTING STRUCTURE:
SN 013-0016
was originally built in 1921 as SBI 25, Section 8B and was reconstructed in 1974 as SBI 25, Section 8BR-3. It is a single span structure consisting of 21" PC channel slabs on closed abutments and wingwalls on spread footings. The deck width is 33'-9" and the length is 22'-0" back to back of abutments. Traffic shall be maintained utilizing stage construction.

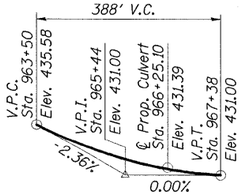
No salvage.



SECTION A-A

STATION 966+25.10
BUILT 200_ BY
STATE OF ILLINOIS
FAP RT. 328 SEC. (8BR-3)B-1
LOADING HS20-44
STR. NO. 013-2011

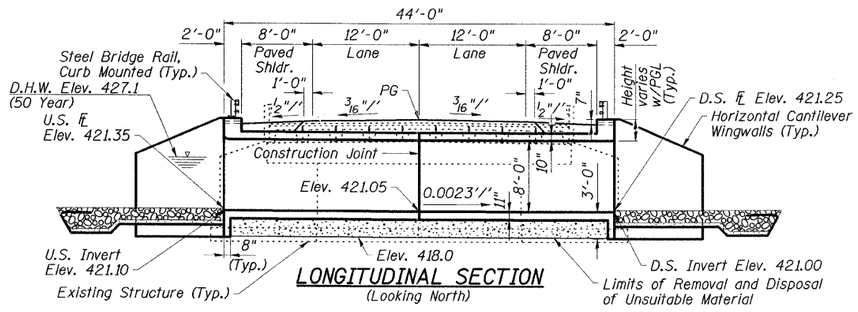
NAME PLATE
See Std. 515001



PROFILE GRADE
(Along ℄ Roadway)

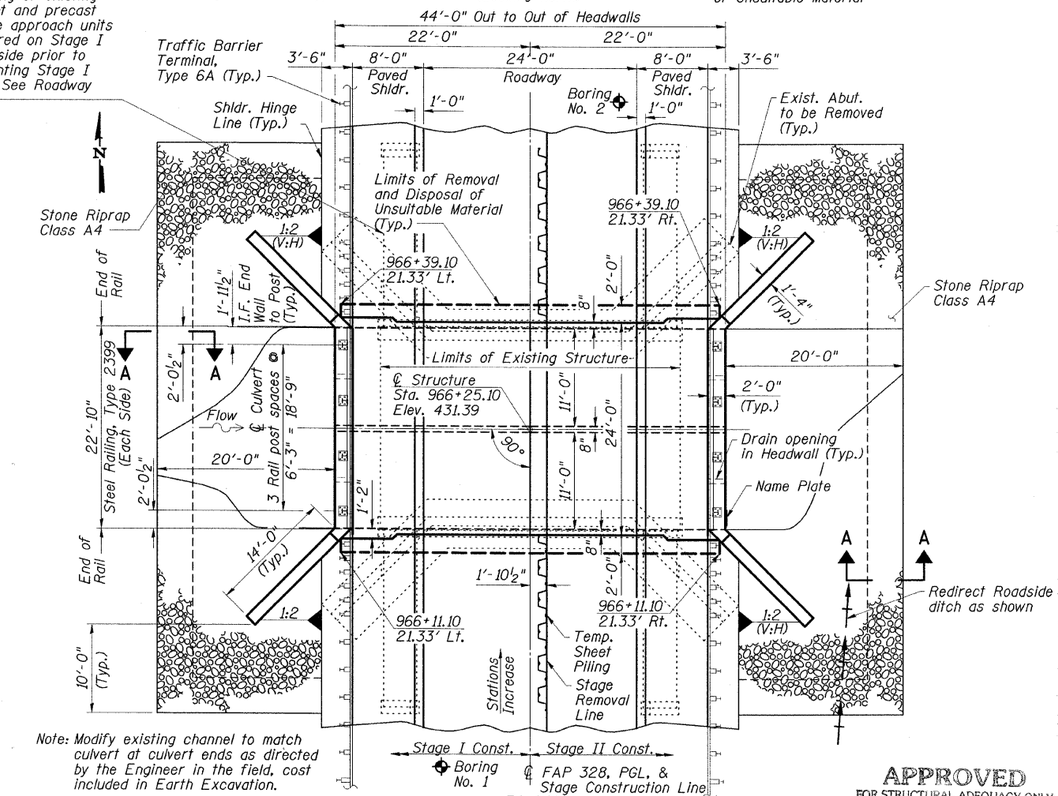
ESCA CONSULTANTS, INC.		
DESIGNED BY:	FMA	03/08
DRAWN BY:	CJ	03/08
CHECKED BY:	ELH	05/08
APPROVED BY:	RDP	08/08

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



LONGITUDINAL SECTION
(Looking North)

Subsealing of existing pavement and precast concrete approach units is required on Stage I traffic side prior to implementing Stage I traffic, See Roadway Plans



Note: Modify existing channel to match culvert at culvert ends as directed by the Engineer in the field, cost included in Earth Excavation.

PLAN

WATERWAY INFORMATION

Total Drainage Area = 6.77 Sq. Mi.
Exist. Low Grade Elev. = 430.8 Ft. @ Sta. 971+00
Prop. Low Grade Elev. = 431.0 Ft. @ Sta. 971+00

Flood	Freq. Yr.		Q-C.F.S. Exist.	Q-C.F.S. Prop.	Opening-Sq. Ft. Exist.	Opening-Sq. Ft. Prop.	Nat. H.W.E.	Head-Ft. Exist.	Head-Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
		Main Channel	1138	952	233	280					
	10	Overflow	381	567	74	107	426.2	0.6	0.5	426.8	426.7
		Total	1519	1519	307	387					
		Main Channel	1815	1743	278	348					
Design	50	Overflow	641	713	92	127	427.1	1.1	0.7	428.2	427.8
		Total	2456	2456	370	475					
		Main Channel	2137	2040	293	372					
Base	100	Overflow	742	839	98	133	427.4	1.8	0.9	429.2	428.3
		Total	2879	2879	391	505					
		Main Channel									
Overtopping	-	Overflow	-	-	-	-	-	-	-	-	-
		Total									
		Main Channel	2856	2687	328	426					
Max. Calc.	500	Overflow	1060	1229	112	148	428.1	2.2	1.6	430.3	429.7
		Total	3916	3916	440	574					

DESIGN SPECIFICATIONS
2002 AASHTO

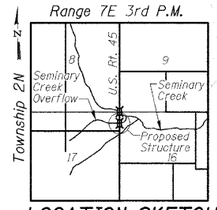
LOADING HS20-44
Allow 50 psf for future wearing surface.

DESIGN STRESSES
FIELD UNITS
f'c = 3,500 psi
fy = 60,000 psi (Reinf.)

SCOUR INFORMATION

Design Scour Elevation (Ft.)	Upstream	Downstream
	418.1	418.0

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
Ralph E. Anderson (TDD)
ENGINEER OF BRIDGES AND STRUCTURES



LOCATION SKETCH

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 328	*	CLAY	109	66
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

Contract #74107 *(8BR-3)B-1

SHEET NO. 1
7 SHEETS

STRUCTURE INDEX OF SHEETS

GENERAL NOTES

1. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60 (IL Modified). See Special Provisions.
2. Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.
3. The Contractor is advised that the existing PC channel slabs are in a deteriorated condition with reduced load carrying capacity. It is the Contractor's responsibility to account for the condition of the slabs when developing construction procedures for removal of the superstructure.
4. If the Contractor's procedure for existing channel slab removal involves placement of cranes or other heavy equipment on the existing channel slabs, a detailed procedure shall be submitted to the Engineer for approval. The procedure shall include calculations, prepared and sealed by an Illinois Licensed Structural Engineer, verifying the structural adequacy of the slabs for the proposed loads. Costs included in Removal of Existing Structures.
5. The cost of the removal of existing PC channel slabs and approach caps at the approaches is included in the cost of Removal of Existing Structures.
6. Excavation behind existing abutment walls shall be performed to balance front and back soil pressure before Stage I removal of the existing superstructure. The Contractor shall sawcut the upper portion of the existing abutment at the stage removal line before Stage I removal to ensure the remaining portion will not be prematurely damaged.
7. For backfilling and embankment, see Standard Specifications.
8. At least 7'-0" of the barrel shall be poured monolithically with wingwalls.
9. Precast alternate is not allowed.
10. The limits and quantities of Removal and Disposal of Unsuitable Material shown are based on the boring data and may be modified by the District Geotechnical and Field Engineers for variable subsurface conditions encountered in the field.

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Rock Fill - Replacement	Cu. Yd.	95
Removal and Disposal of Unsuitable Material	Cu. Yd.	95
Stone Riprap, Class A4	Sq. Yd.	281
Filter Fabric	Sq. Yd.	281
Removal of Existing Structures No. 3	Each	1
Bar Splicers	Each	122
Concrete Box Culverts	Cu. Yd.	139
Reinforcement Bars	Pound	25,550
Temporary Sheet Piling	Sq. Ft.	555
Steel Railing, Type 2399	Foot	46
Name Plates	Each	1

See Roadway Plans for quantities of Temporary Concrete Barrier, Earth Excavation, and Porous Granular Embankment.

STATE OF ILLINOIS
RICHARD D. PAYNE
No. 4647
LICENSED STRUCTURAL ENGINEER
EXPIRES 11-30-08
SIGNATURE
08-12-08
DATE

GENERAL PLAN
US 45 OVER SEMINARY CREEK OVERFLOW
FAP ROUTE 328 - SECTION (8BR-3)B-1
CLAY COUNTY
STATION 966+25.10
STRUCTURE NO. 013-2011

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

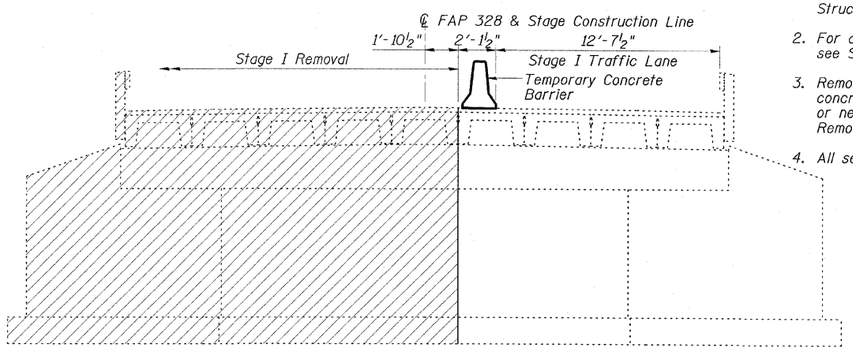
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 328	*	CLAY	109	67
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 2
7 SHEETS

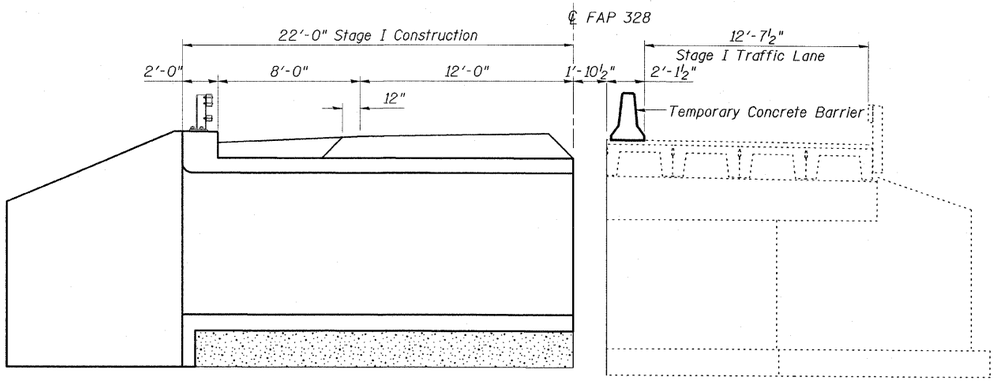
Contract #74107 *(8BR-3)B-1

STAGE CONSTRUCTION NOTES

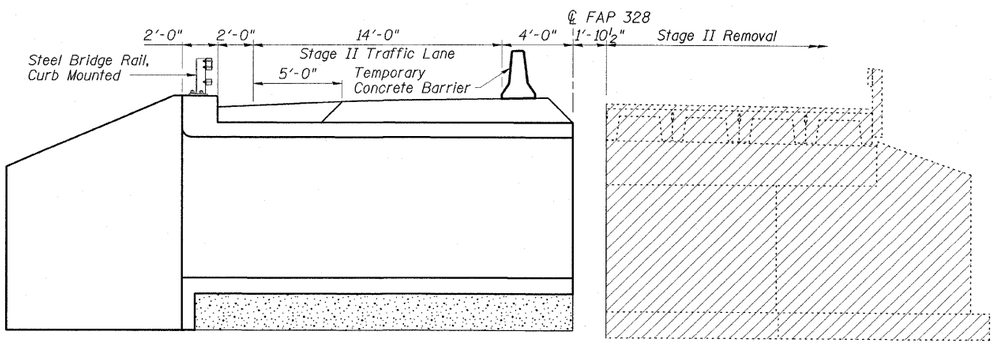
1. Hatched areas indicate Removal of Existing Structures.
2. For details of Temporary Concrete Barrier, see Sht. No. 6 of 7.
3. Removal of existing bridge rail, precast concrete units, approach caps, and existing or new subseal materials is included with Removal of Existing Structures.
4. All sections are looking North.



STAGE I REMOVAL



STAGE I CONSTRUCTION



STAGE II REMOVAL

Use ¼" steel ℄ to close gap between sheeting and proposed box in Stage II, cost included in Temp. Sheet Piling

22'-0" back to back Abutments

13'-0" Sheeting Stages I & II

Ground Surface/Top of Sheet Piling

Elev. 431.20 N. Abut.
Elev. 431.40 S. Abut.

Close space w/ ¼" Steel ℄ in Stage I, Cost included in Temp. Sheet Piling

1'-3"

Existing Abutment to be removed

Proposed Double Box Culvert

2'-0"

Elev. 420.13

Elev. 418.00

Maximum Excavation Line

Temporary Sheet Piling

Elev. Unknown (418.5 Assumed)

Remove unsuitable material and replace with Rock Fill - Replacement

Unknown (2'-6" Assumed)

Elev. 419.2 N. Abut.
Elev. 407.4 S. Abut.

TEMPORARY SHEET PILING NOTES

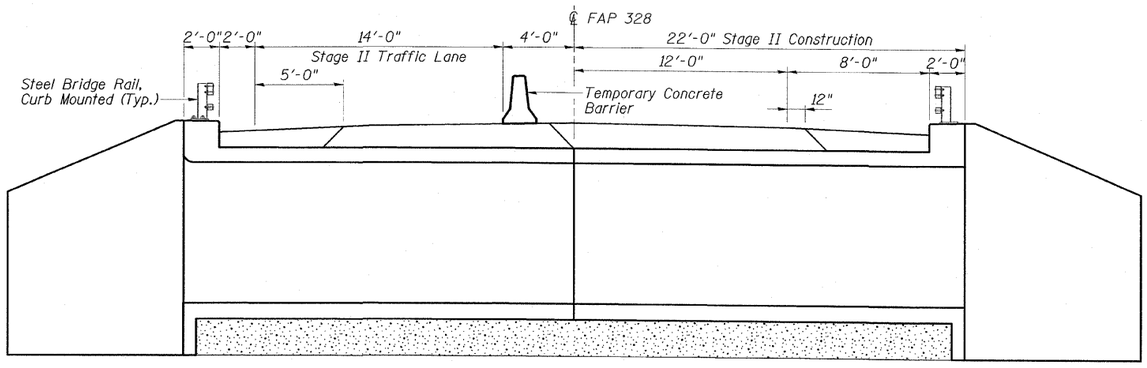
1. If the Contractor chooses to alter the temporary cantilevered sheet piling design requirements shown on the plans, a design submittal including plan details and calculations will be required for review and acceptance by the Engineer.
2. The Contractor shall connect the first sheet to the existing abutment wall to ensure stability of sheets driven to the top of the existing footing. This connection shall be reviewed and accepted by the Engineer and included in the cost for Temporary Sheet Piling.
3. Existing structure details are based on the best available information from existing bridge plans.

Minimum tip elevation of Sheet Piling

Elev. 408.63 N. Abut.
Elev. 396.63 S. Abut.

13'-0"
Minimum Section Modulus = 13.5 in.³/ft.

TEMPORARY SHEET PILING



STAGE II CONSTRUCTION

ESCA CONSULTANTS, INC.

DESIGNED BY:	FMA	03/08
DRAWN BY:	CJ	03/08
CHECKED BY:	ELH	05/08
APPROVED BY:	RDP	08/08

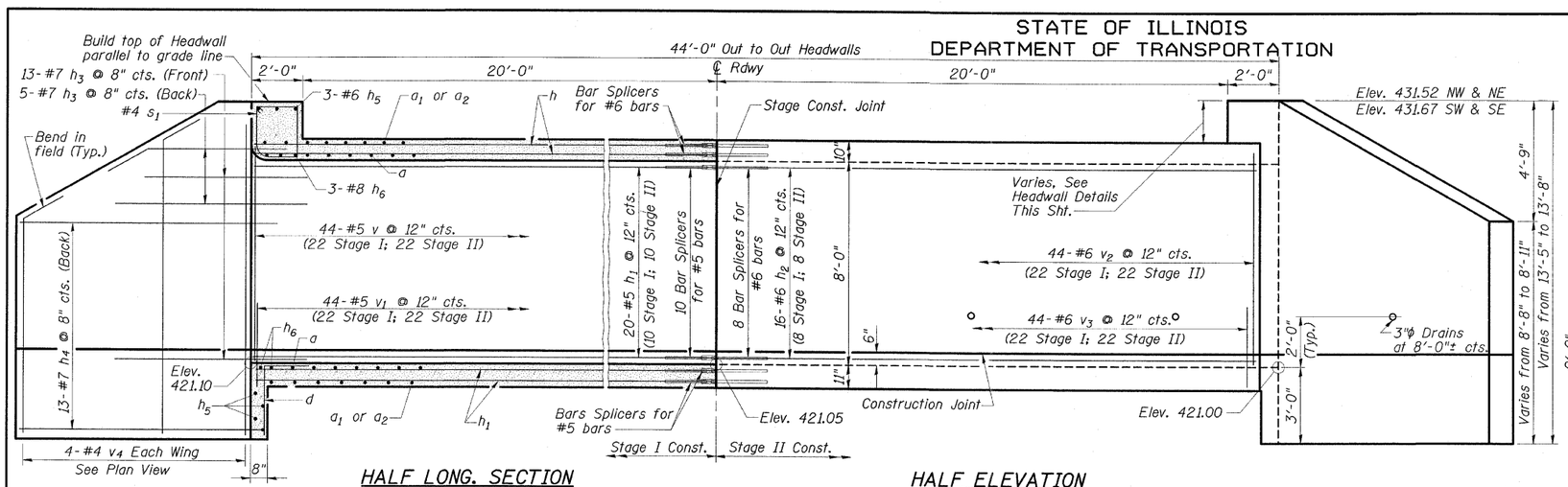
STAGE CONSTRUCTION DETAILS
US 45 OVER SEMINARY CREEK OVERFLOW
FAP ROUTE 328 - SECTION (8BR-3)B-1
CLAY COUNTY
STATION 966+25.10
STRUCTURE NO. 013-2011

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 328	**	CLAY	109	68
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT-		

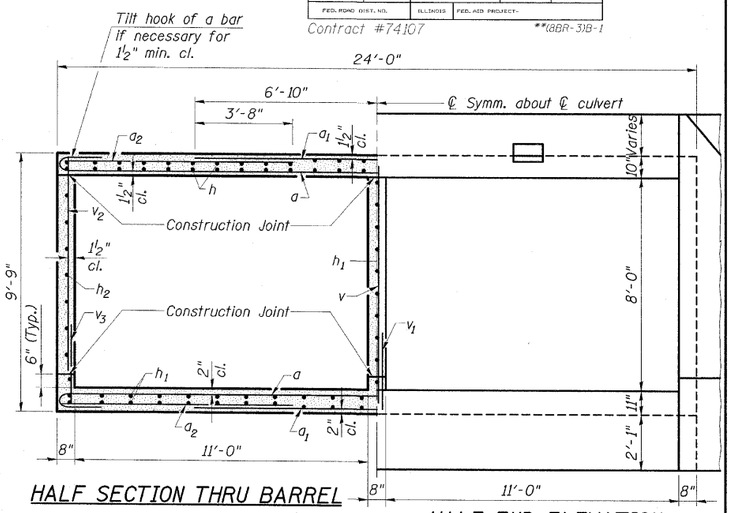
SHEET NO. 3
7 SHEETS

Contract #74107 **(8BR-3)B-1



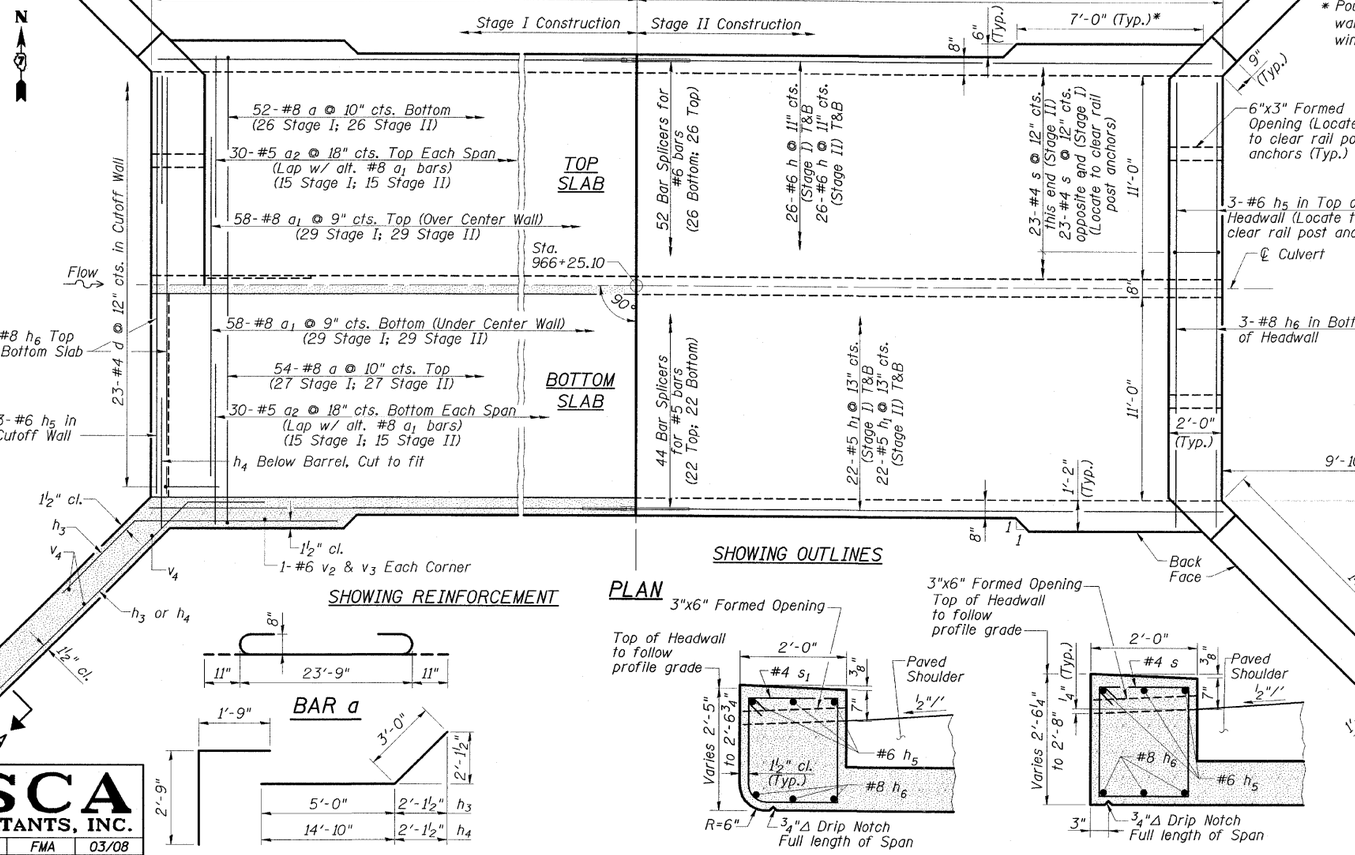
HALF LONG. SECTION
Showing bars in Center Wall

HALF ELEVATION
Showing bars in Outside Wall



HALF SECTION THRU BARREL

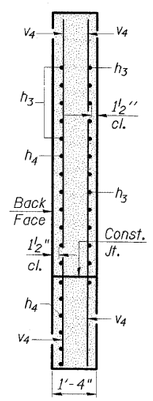
HALF END ELEVATION



SHOWING REINFORCEMENT

SHOWING OUTLINES

HEADWALL DETAILS



BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a	106	#8	25'-7"	
a1	116	#8	13'-8"	
a2	60	#5	8'-9"	
d	46	#4	4'-6"	
h	104	#6	21'-9"	
h1	108	#5	21'-9"	
h2	32	#6	21'-9"	
h3	72	#7	8'-0"	
h4	52	#7	17'-10"	
h5	12	#6	22'-5"	
h6	10	#8	24'-9"	
s	23	#4	8'-8"	
s1	23	#4	8'-3"	
v	44	#5	8'-2"	
v1	44	#5	2'-6"	
v2	92	#6	8'-2"	
v3	92	#6	2'-6"	
v4	16	#4	12'-5"	
Concrete Box Culverts			Cu. Yd.	139
Reinforcement Bars			Pound	25,550
Bar Splicers			Each	122

ESCA CONSULTANTS, INC.		
DESIGNED BY:	FMA	03/08
DRAWN BY:	CJ	03/08
CHECKED BY:	ELH	05/08
APPROVED BY:	RDP	08/08

BOX CULVERT DETAILS
US 45 OVER SEMINARY CREEK OVERFLOW
FAP ROUTE 328 - SECTION (8BR-3)B-1
CLAY COUNTY
STATION 966+25.10
STRUCTURE NO. 013-2011

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 328	*	CLAY	109	69
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 4
7 SHEETS

Contract #74107 *(BBR-31B-1

NOTES

Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.

Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.

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

Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.

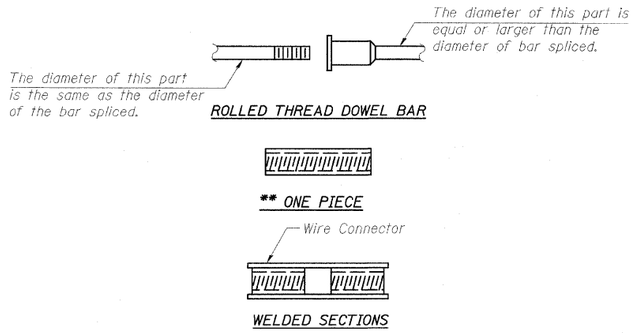
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

① Minimum Capacity (Tension in kips) = 1.25 x fy x A_t

② Minimum *Pull-out Strength (Tension in kips) = 0.66 x fy x A_t

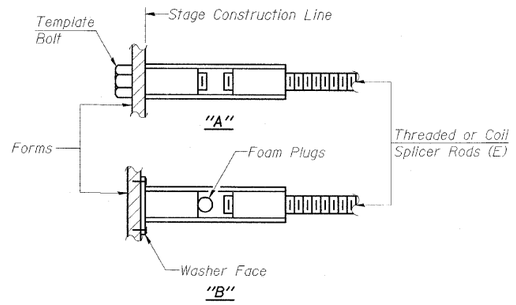
Where fy = Yield strength of lapped reinforcement bars in ksi.
A_t = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

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



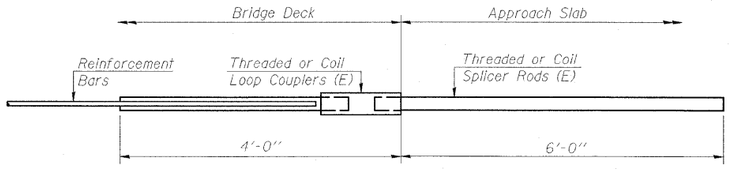
BAR SPLICER ASSEMBLY ALTERNATIVES

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



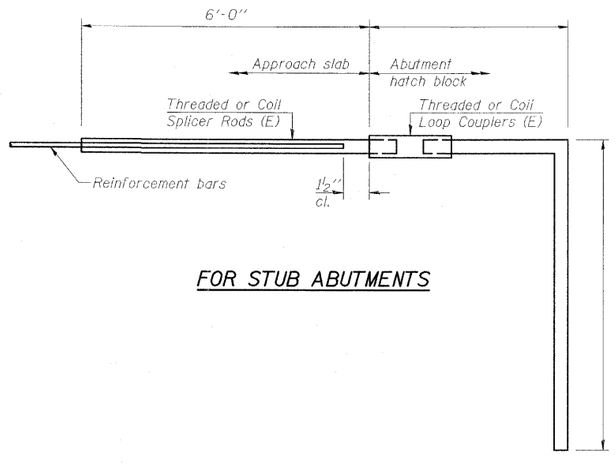
INSTALLATION AND SETTING METHODS

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



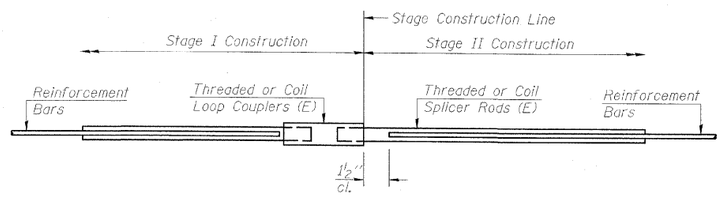
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 12.3 kips - tension
No. Required = 0



FOR STUB ABUTMENTS

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



STANDARD

Bar Size	No. Assemblies Required	Location
#5	44	Bottom Slab
#6	52	Top Slab
#5	10	Center Wall
#6	16	End Walls

ESCA CONSULTANTS, INC.

DESIGNED BY:	FMA	03/08
DRAWN BY:	CJ	03/08
CHECKED BY:	ELH	05/08
APPROVED BY:	RDP	08/08

BAR SPLICER ASSEMBLY DETAILS
US 45 OVER SEMINARY CREEK OVERFLOW
FAP ROUTE 328 - SECTION (8BR-3)B-1
CLAY COUNTY
STATION 966+25.10
STRUCTURE NO. 013-2011

BSD-1 5-16-08

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 328	*	CLAY	109	70
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT= AID		

SHEET NO. 5

7 SHEETS

Contract #74107 *(8BR-3)B-1

Illinois Department of Transportation — SOIL BORING LOG

Division of Highways, Illinois Department of Transportation

Page 1 of 3

Date 7/18/07

ROUTE FAP 328 (US 45) DESCRIPTION Seminary Creek Overflow LOGGED BY E. Sandschafer

SECTION 8BR1,8BR3,8BR3,8BR4B-1 LOCATION Sec 16 - NW 1/4, Sec 17 - NE 1/4, SEC. , TWP. 2 N, RNG. 7 E, 3 PM

COUNTY Clay DRILLING METHOD Hollow stem auger & split spoon HAMMER TYPE Auto 140#

STRUCT. NO. 013-0016 Station 966+25.1

BORING NO. 1 Station 965+87 Offset 10.00ft Lt Ground Surface Elev. 431.11 ft

Surface Water Elev. Dry ft Stream Bed Elev. 421.46 ft

Groundwater Elev.: First Encounter 361.8 ft Upon Completion Washed ft After 24 Hrs. 420.0 ft

DEPTH (ft)	BLOWS (6")	UCS Qu (tsf)	MOIST (%)	DEPTH (ft)	BLOWS (6")	UCS Qu (tsf)	MOIST (%)
19" asphalt pavement.				Stiff, damp, red marbled gray, SILTY CLAY T.ILL. *(continued)*	3 4	1.3 B	14
429.61				409.11			
Soft to medium, damp, gray, SILTY LOAM.	0			Medium, damp, gray marbled red, CLAY LOAM TILL.	1		
	1 2	0.3 B	15		2 3	0.7 B	13
-5	0			-25	0		
	0 2	0.6 B	20	Medium, damp, gray, SILTY LOAM w/ wood fragments.	1 2	0.8 B	13
				404.11			
	0			Medium, damp, gray, SANDY LOAM.	0		
	1 2	0.3 B	24		1 2	0.8 B	14
-10	0			Stiff, damp, gray, CLAY TILL. 401.61	1		
	0 0	0.1 B	20	-30 Brown, gravelly, SAND. 401.11	3 3	1.5 B	16
	2			Stiff to medium, damp, gray, CLAY TILL w/ wood fragments. 420.61			
	2 3	0.7 B	24				
-15	0			-35	2		
	1 2	0.3 B	22		3 5	1.4 B	17
414.11							
Soft to medium, damp, grey mottled brown, SILTY CLAY.	1						
	2 2	0.5 B	15				
411.01							
-20	1			-40	2		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, from 137 (Rev. 8-99)

Illinois Department of Transportation — SOIL BORING LOG

Division of Highways, Illinois Department of Transportation

Page 2 of 3

Date 7/18/07

ROUTE FAP 328 (US 45) DESCRIPTION Seminary Creek Overflow LOGGED BY E. Sandschafer

SECTION 8BR1,8BR3,8BR3,8BR4B-1 LOCATION Sec 16 - NW 1/4, Sec 17 - NE 1/4, SEC. , TWP. 2 N, RNG. 7 E, 3 PM

COUNTY Clay DRILLING METHOD Hollow stem auger & split spoon HAMMER TYPE Auto 140#

STRUCT. NO. 013-0016 Station 966+25.1

BORING NO. 1 Station 965+87 Offset 10.00ft Lt Ground Surface Elev. 431.11 ft

Surface Water Elev. Dry ft Stream Bed Elev. 421.46 ft

Groundwater Elev.: First Encounter 361.8 ft Upon Completion Washed ft After 24 Hrs. 420.0 ft

DEPTH (ft)	BLOWS (6")	UCS Qu (tsf)	MOIST (%)	DEPTH (ft)	BLOWS (6")	UCS Qu (tsf)	MOIST (%)
Stiff to medium, damp, gray, CLAY TILL w/ wood fragments. *(continued)*	3 5	0.9 B	18	Medium, damp, grey, SILTY CLAY TILL. *(continued)*	2 3	1.0 B	21
-40	2			-55			
	3 3	0.9 B	22				
Medium, damp, gray, SILTY CLAY TILL. 361.61	0			-60			
-50	3 3	0.9 B	22				
				-65			
				Soft, damp, gray, SANDY LOAM. 351.61	0 4	0.3 B	24
				-70			
				-75			
-55	0			351.61	6		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, from 137 (Rev. 8-99)

Illinois Department of Transportation — SOIL BORING LOG

Division of Highways, Illinois Department of Transportation

Page 3 of 3

Date 7/18/07

ROUTE FAP 328 (US 45) DESCRIPTION Seminary Creek Overflow LOGGED BY E. Sandschafer

SECTION 8BR1,8BR3,8BR3,8BR4B-1 LOCATION Sec 16 - NW 1/4, Sec 17 - NE 1/4, SEC. , TWP. 2 N, RNG. 7 E, 3 PM

COUNTY Clay DRILLING METHOD Hollow stem auger & split spoon HAMMER TYPE Auto 140#

STRUCT. NO. 013-0016 Station 966+25.1

BORING NO. 1 Station 965+87 Offset 10.00ft Lt Ground Surface Elev. 431.11 ft

Surface Water Elev. Dry ft Stream Bed Elev. 421.46 ft

Groundwater Elev.: First Encounter 361.8 ft Upon Completion Washed ft After 24 Hrs. 420.0 ft

DEPTH (ft)	BLOWS (6")	UCS Qu (tsf)	MOIST (%)	DEPTH (ft)	BLOWS (6")	UCS Qu (tsf)	MOIST (%)
Medium, wet, brown, fine grained, SAND, *75 passing #200 sieve.* *(continued)*	13 11		25				
-95							
Hard, moist, gray SANDSTONE. 343.61							
Extent of exploration. 341.31	50/5"						
-100	50/1"						
Benchmark: BM 209 RR Spike in PP (Z177) on W side of US 45, Sta 966+25, 29.7' W of US 45 = 428.66' elevation. Provided by Program Development.	50/1"						

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, from 137 (Rev. 8-99)

Illinois Department of Transportation — SOIL BORING LOG

Division of Highways, Illinois Department of Transportation

Page 1 of 4

Date 7/17/07

ROUTE FAP 328 (US 45) DESCRIPTION Seminary Creek Overflow LOGGED BY E. Sandschafer

SECTION 8BR1,8BR3,8BR3,8BR4B-1 LOCATION Sec 16 - NW 1/4, Sec 17 - NE 1/4, SEC. , TWP. 2 N, RNG. 7 E, 3 PM

COUNTY Clay DRILLING METHOD Hollow stem auger & split spoon HAMMER TYPE Auto 140#

STRUCT. NO. 013-0016 Station 966+62

BORING NO. 2 Station 966+62 Offset 10.00ft Rt Ground Surface Elev. 430.84 ft

Surface Water Elev. Dry ft Stream Bed Elev. 421.46 ft

Groundwater Elev.: First Encounter 361.3 ft Upon Completion Washed ft After 48 Hrs. 418.7 ft

DEPTH (ft)	BLOWS (6")	UCS Qu (tsf)	MOIST (%)	DEPTH (ft)	BLOWS (6")	UCS Qu (tsf)	MOIST (%)
17.5" asphalt pavement.				Hard, damp, brown marbled gray, CLAY LOAM TILL *(continued)*	5 9	4.1 B	22
429.34				403.84			
Stiff to medium, damp, gray, SILTY CLAY.	1			Stiff, damp, gray, CLAY TILL.	4		
	2 3	1.5 PP	25		11 17	3.6 B	22
-5	2			-45	6		
	2 2	0.8 B	25		11 16	4.4 B	23
423.84							
Very soft to medium, damp, grey SILTY LOAM.	1				8		
	2 2	0.2 B	24		9 12	+4.5 PP	22
-10	1			-50	4		
	3 3	1.0 B	24		6 9	1.5 B	17
	1						
	2 3	0.7 B	22				
-15	0			-55	2		
	1 3	0.8 B	25		3 6	1.7 B	19
413.34	2						
Very stiff, damp, gray marbled red, CLAY TILL.	4 7	2.8 B	23				
411.34							
-20	4			-60	1		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, from 137 (Rev. 8-99)

Illinois Department of Transportation — SOIL BORING LOG

Division of Highways, Illinois Department of Transportation

Page 2 of 4

Date 7/17/07

ROUTE FAP 328 (US 45) DESCRIPTION Seminary Creek Overflow LOGGED BY E. Sandschafer

SECTION 8BR1,8BR3,8BR3,8BR4B-1 LOCATION Sec 16 - NW 1/4, Sec 17 - NE 1/4, SEC. , TWP. 2 N, RNG. 7 E, 3 PM

COUNTY Clay DRILLING METHOD Hollow stem auger & split spoon HAMMER TYPE Auto 140#

STRUCT. NO. 013-0016 Station 966+25.1

BORING NO. 2 Station 966+62 Offset 10.00ft Rt Ground Surface Elev. 430.84 ft

Surface Water Elev. Dry ft Stream Bed Elev. 421.46 ft

Groundwater Elev.: First Encounter 361.3 ft Upon Completion Washed ft After 48 Hrs. 418.7 ft

DEPTH (ft)	BLOWS (6")	UCS Qu (tsf)	MOIST (%)	DEPTH (ft)	BLOWS (6")	UCS Qu (tsf)	MOIST (%)
Stiff, damp, gray, CLAY TILL. *(continued)*	4 10	2.0 B	21	Very stiff, damp, gray mottled red, CLAY TILL. *(continued)*	3 5	2.1 B	22
390.34				-65			
Blue, SANDY LOAM.							
386.34							
Medium, damp, gray, CLAY TILL.	0						
-60	2 3	0.7 B	21				
381.34	0			361.34	1		
Medium, damp, gray, SILTY CLAY TILL w/ wood fragments.				Gray, fine grained, SAND. 77% passing #200 sieve. 360.84			
-70	1 2	0.6 B	21	Medium, damp, gray, SILTY LOAM.	1 3	0.7 B	28
				-75			
371.34	1			351.34	0		
-80				Medium, damp, gray, LOAM.			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, from 137 (Rev. 8-99)

Illinois Department of Transportation — SOIL BORING LOG

Division of Highways, Illinois Department of Transportation

Page 3 of 4

Date 7/17/07

ROUTE FAP 328 (US 45) DESCRIPTION Seminary Creek Overflow LOGGED BY E. Sandschafer

SECTION 8BR1,8BR3,8BR3,8BR4B-1 LOCATION Sec 16 - NW 1/4, Sec 17 - NE 1/4, SEC. , TWP. 2 N, RNG. 7 E, 3 PM

COUNTY Clay DRILLING METHOD Hollow stem auger & split spoon HAMMER TYPE Auto 140#

STRUCT. NO. 013-0016 Station 966+25.1

BORING NO. 2 Station 966+62 Offset 10.00ft Rt Ground Surface Elev. 430.84 ft

Surface Water Elev. Dry ft Stream Bed Elev. 421.46 ft

Groundwater Elev.: First Encounter 361.3 ft Upon Completion Washed ft After 48 Hrs. 418.7 ft

DEPTH (ft)	BLOWS (6")	UCS Qu (tsf)	MOIST (%)
Medium, damp, gray, LOAM. *(continued)*	3 5	0.8 B	19
-90			
341.34			
Very dense, moist, gray, SANDSTONE. 340.94	50/3"		
-100	50/1"		
Borehole continued with rock coring.	50/1"		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, from 137 (Rev. 8-99)

ESCA CONSULTANTS, INC.

DESIGNED BY:	FMA	03/08
DRAWN BY:	CJ	03/08
CHECKED BY:	ELH	05/08
APPROVED BY:	RDP	08/08

SOIL BORING LOGS
US 45 OVER SEMINARY CREEK OVERFLOW
FAP ROUTE 328 - SECTION (8BR-3)B-1
CLAY COUNTY
STATION 966+25.10
STRUCTURE NO. 013-2011

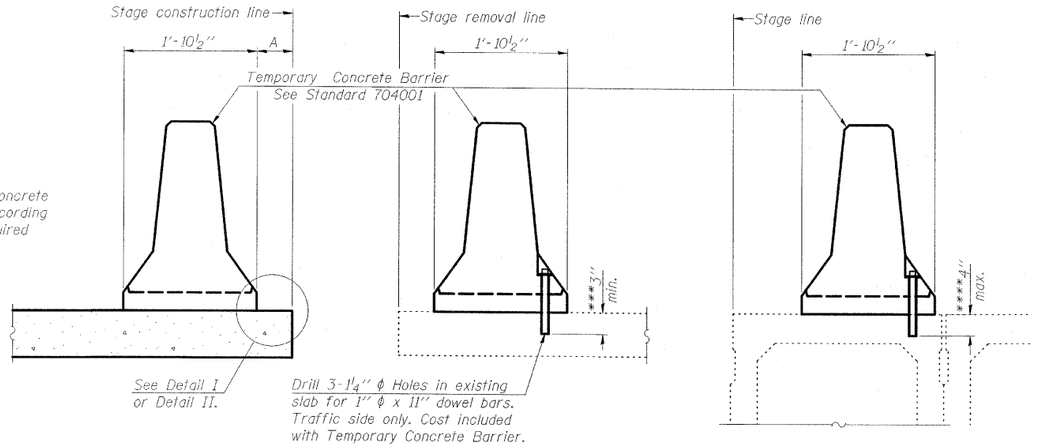
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 328	*	CLAY	109	71
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 6
7 SHEETS

Contract #74107 *(8BR-3)B-1

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

Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x7"x10" steel ℄ to the top layer of couplers with 2-⅝" ϕ bolts screwed to coupler at approximate ℄ of each barrier panel.

Detail II - With Extended Reinforcement Bars:
Connect one (1) 1"x7"x10" 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.

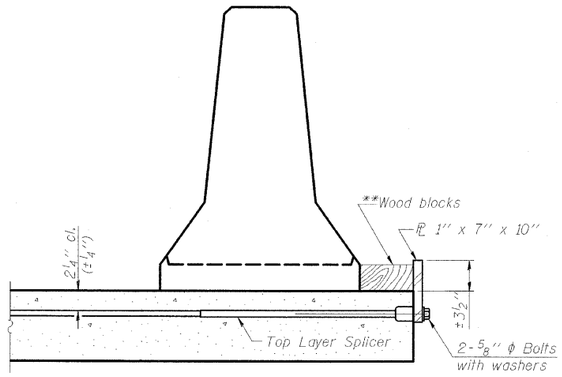
Cost of anchorage is included with Temporary Concrete Barrier.

The 1" x 7" x 10" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

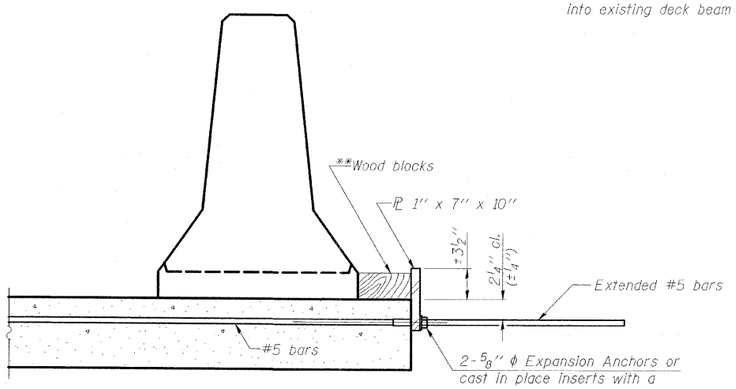
SECTIONS THRU SLAB OR DECK BEAM

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

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

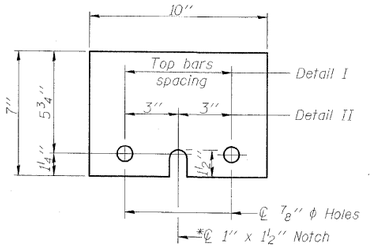


DETAIL I



DETAIL II

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



STEEL RETAINER ℄ 1" x 7" x 10"

*Required only with Detail II

TEMPORARY CONCRETE BARRIER
FOR STAGE CONSTRUCTION
US 45 OVER SEMINARY CREEK OVERFLOW
FAP ROUTE 328 - SECTION (8BR-3)B-1
CLAY COUNTY
STATION 966+25.10
STRUCTURE NO. 013-2011

ESCA CONSULTANTS, INC.

DESIGNED BY:	FMA	03/08
DRAWN BY:	CJ	03/08
CHECKED BY:	ELH	05/08
APPROVED BY:	RDP	08/08

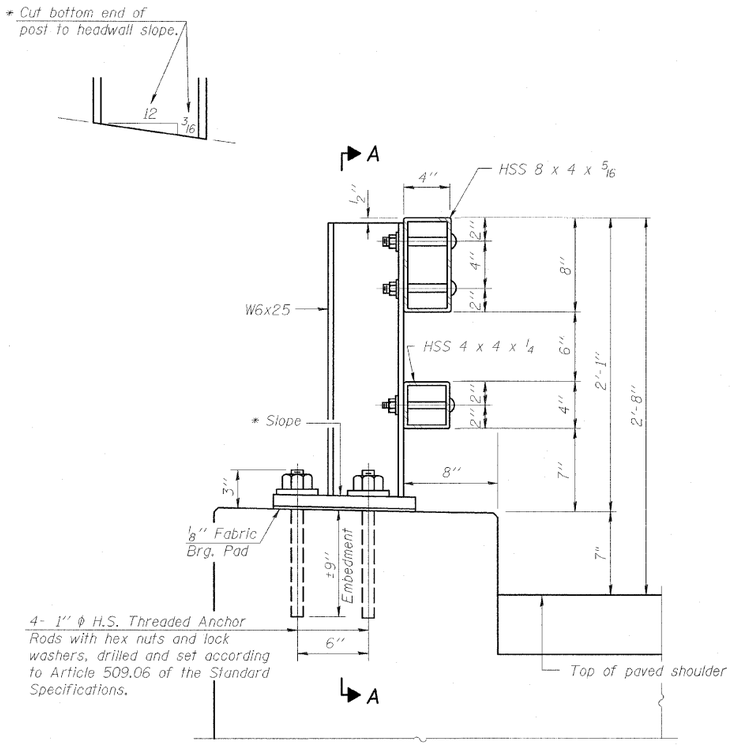
R-27 5-16-08

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

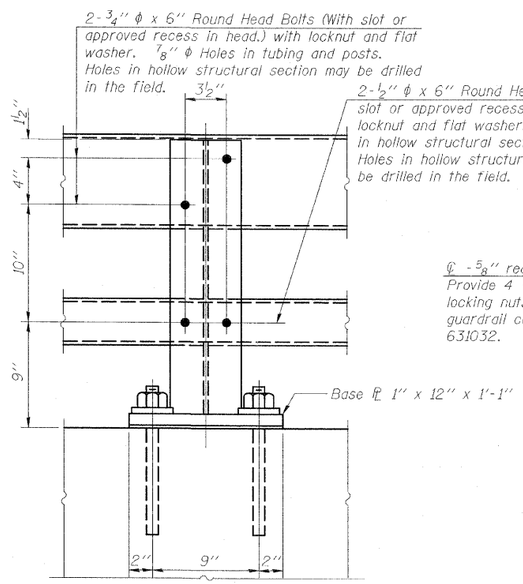
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 328	*	CLAY	109	72
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 7
7 SHEETS

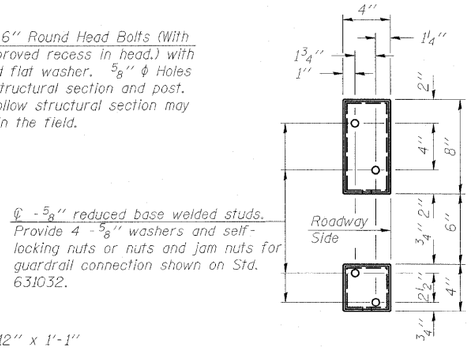
Contract #74107 *(8BR-3)B-1



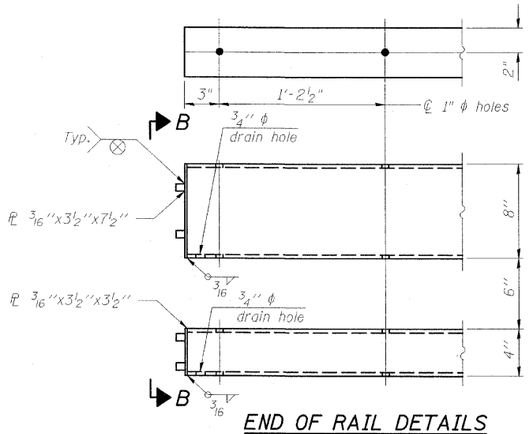
SECTION AT RAIL POST



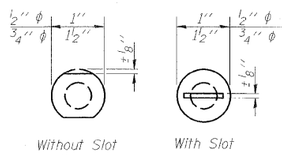
SECTION A-A



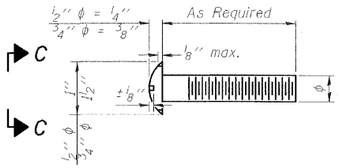
VIEW B-B



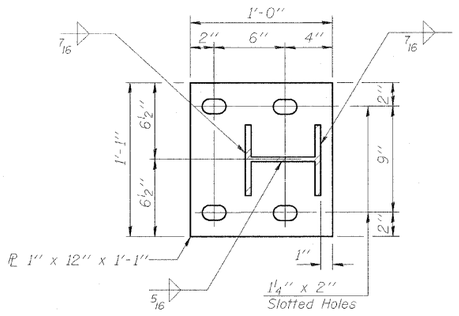
END OF RAIL DETAILS



VIEW C-C



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



BASE PLATE DETAIL

Notes:
All field drilled holes shall be coated with an approved zinc rich paint before erection.
Provide one 1/8" and two 1/16" steel shims for 25% of the posts. Shims shall be similar to base plates in size and holes.
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type 2399	Foot	46

ESCA CONSULTANTS, INC.		
DESIGNED BY:	FMA	03/08
DRAWN BY:	CJ	03/08
CHECKED BY:	ELH	05/08
APPROVED BY:	RDP	08/08

(6'-3" Maximum Post Spacing)

STEEL RAILING, TYPE 2399
US 45 OVER SEMINARY CREEK OVERFLOW
FAP ROUTE 328 - SECTION (8BR-3)B-1
CLAY COUNTY
STATION 966+25.10
STRUCTURE NO. 013-2011

CONTRACT NO. 74107

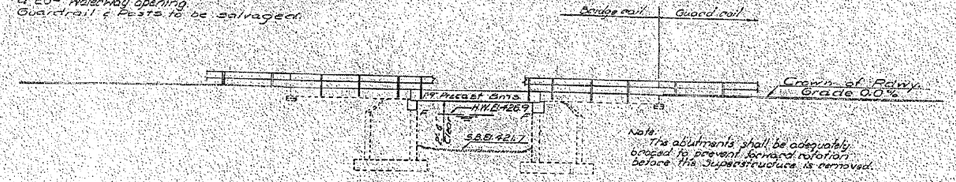
FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(8BR-3)B-1	CLAY	109	73
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

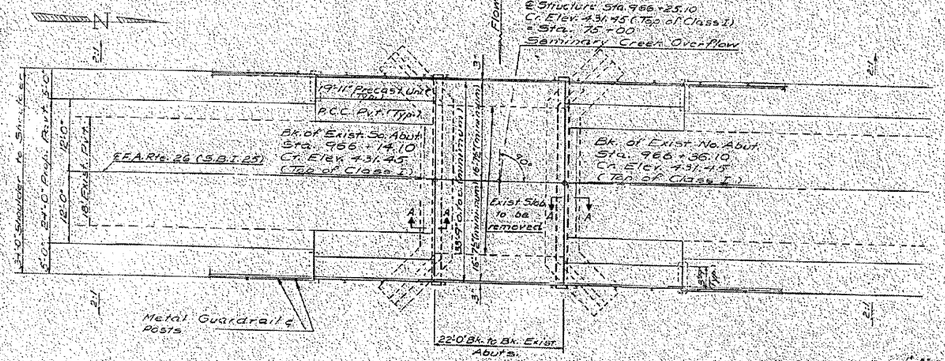
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 328	(8BR-3)B-1	CLAY	21	7
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 7
5 SHEETS

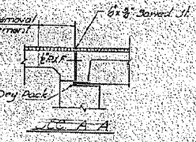
8 n.l. -7 Grouted 2' Top S.E. Wingwall bridge
Sta. 966+25 Elev. 430.63
Existing structure: Built as SBI 25, Route Sec. 6B in the year of 1980. R.C. Slab, single span Rdwy width 20'. Remove and Replace the existing Superstructure. Widen the existing Substructure. The ℄ of Detour shall be located 60' West of the Existing ℄ Structure and provide a 20' Waterway opening.
Guardrail & Posts to be salvaged.



ELEVATION



PLAN



STATION 966+25.10
REBUILT 19 BY
STATE OF ILLINOIS
F.A.RT. 26 SEC. 8BR-3

LOADING HS 20
NAME PLATES
See Std. 815

DESIGNED	D.R.P.	
CHECKED	[illegible]	
DRAWN	V.H.	
CHECKED	J.P.	

EXAMINED January 17, 1972
PASSED
APPROVED

WATERWAY INFORMATION

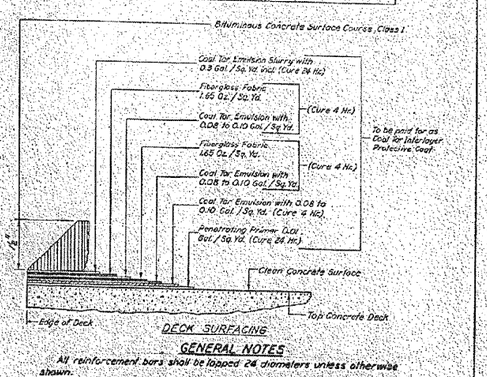
Drainage Area	0.5 Sq. miles
Character	
Present opening	95.5± Ft.
Proposed opening	95.0± Ft.
Required opening	95.5± Ft.
(H.W. Elev. 426.90)	

$Q_{(50)}$ = 719 cfs

FIELD UNITS		PRECAST UNITS	
fc' =	1400 psi	fc' =	4,500 psi
fs =	20000 psi (Reinf.)	fc =	1,800 psi
n =	10	fs =	20000 psi
Vc =	90 psi	n =	8

Loading HS 20-44
Allow. 25 #/Sq. Ft. for FUTURE W.S.
Design Specifications: AASHO 1969, as applicable

LOCATION SKETCH



DECK SURFACING

GENERAL NOTES

All reinforcement bars shall be lapped 24 diameters unless otherwise shown.

It shall be the responsibility of the Contractor to verify all dimensions and conditions existing in the field prior to construction and ordering of materials.

An alternate strand pattern using Extra High Strength Prestressing strand (270 Ksi.) is permitted.

Expansion bolts shall consist of self drilling expansion anchors and 4'-6" hooked bolts. Hooked bolts shall extend a minimum of 12" into new concrete, unless otherwise shown.

Shoulder transition to wingwall shall be shaped with broken concrete.

Cost Incidental

TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub	Total
* Bituminous Concrete Surface Course, Class 1	Tons	7		7
Portland Cement Concrete Pavement (10")	Sq. Yds.	33		33
Pavement Fabric	Sq. Yds.	33		33
Concrete Removal	Cu. Yds.		8	8
Expansion Bolts (4'-6")	Each	32	32	64
Class X Concrete	Cu. Yds.	1.9	14.1	12.7
Precast Concrete Bridge Slab	Sq. Ft.	1039		1039
Steel Railing, Type 3	Lin. Ft.	124		124
Reinforcement Bars	Lbs.		2290	2290
Pavement Removal & RCC. Replacement, Type 2 (10")	Sq. Yds.	8		8
Removal of Existing Superstructures	Each	1		1
Coal Tar Interlayer Protective Coat	Sq. Yds.	80		80
Name Plates	Each		1	1

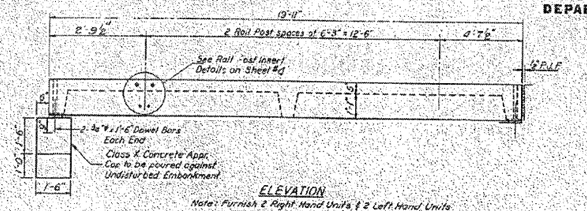
* Bit. to Bk. Exist. Abuts.

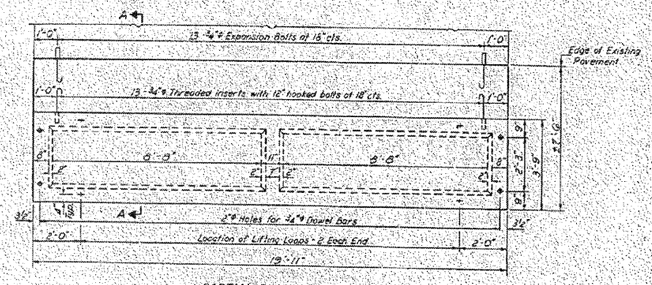
GENERAL PLAN & ELEVATION
F.A.RTE. 26 (SBI 25) OVER OVER
FLOW SEMINARY CREEK
F.A.RTE. 26 (SBI 25) SEC. (8BR-3)
CLAY COUNTY
STA. 966+25.10

ESCA CONSULTANTS, INC.		
DESIGNED BY:	DAJ	04/08
DRAWN BY:	HAS	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
US 45 OVER SEMINARY CREEK OVERFLOW
FAP ROUTE 328 - SECTION (8BR-3)B-1
CLAY COUNTY





CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(8BR-3)B-1	CLAY	109	74
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

NOTES

Unless otherwise approved by the Engineer, lifting loops shall be ½"φ 6×19 class wire rope with fiber core and shall have a minimum ultimate strength of 18,700 lbs. Loops shall be burned off after slab has been erected.

Holes shall be drilled and anchor dowels grouted in place.

Cost of reinforcement and accessories cast into the slab unit, bearing pads, furnishing, drilling for, placing and grouting anchor dowels and ¾"φ hooked bolts is included in Unit bid price for "Precast Concrete Bridge Slab."

The Precast Concrete Bridge Slab shall be erected and aligned with the exterior face of the exterior Deck Beam after Deck Beams are in final position.

BAR LIST - ONE UNIT

Reinforcement to be cast into slab

Bar	No	Size	Length	Shape
A	52	#4	3'-3"	―
A1	26	#4	4'-0"	⊓
B	10	#4	19'-8"	―
B1	6	#4	3'-6"	―
G	4	#10	19'-8"	―
S	22	#3	3'-4"	⊏

BILL OF MATERIAL

Item	Unit	Quantity
Precast Concrete Bridge Slab	Sq. Ft.	299
Portland Cement Concrete Pavement (10")	Sq. Yds.	33
Pavement Fabric	Sq. Yds.	33
Expansion Bolts ¾"φ	Each	52
Class X Concrete	Cu. Yds.	1.5

STRESSES

f'c = 4,500 psi.
fc = 1,800 psi.
fs = 20,000 psi.
n = 8

LOADING HS-20

APPROACH DETAILS
F.A. RT. 26 SEC. 8BR-3
CLAY COUNTY
STA. 969+25.10

DESIGNED
CHECKED James Price
DRAWN J. SCHNELLER
CHECKED JP

EXAMINED Jan 17 1972
PASSED
APPROVED

AP-1 20' Precast Appr. Unit (Rt-L) (5-19-71)

ESCA
CONSULTANTS, INC.

DESIGNED BY:	DAJ	04/08
DRAWN BY:	HAS	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

FOR INFORMATION ONLY

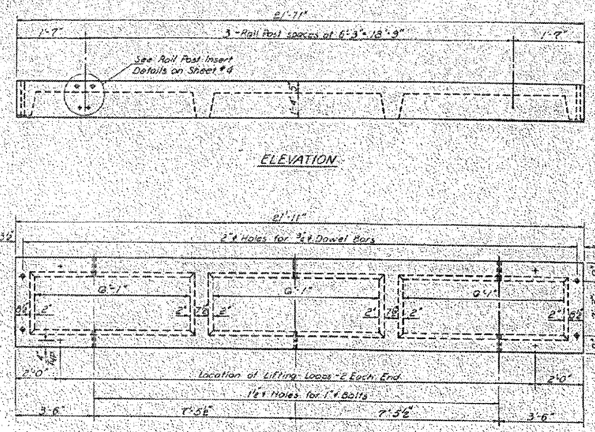
EXISTING STRUCTURE PLANS
US 45 OVER SEMINARY CREEK OVERFLOW
FAP ROUTE 328 - SECTION (8BR-3)B-1
CLAY COUNTY

ESCA CONSULTANTS, INC.
CIVIL • STRUCTURAL • TRANSPORTATION

CONTRACT NO. 74107

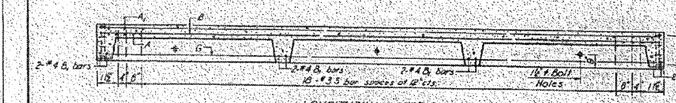
FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(8BR-3)B-1	CLAY	109	75
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ELEVATION

PLAN OF ONE UNIT



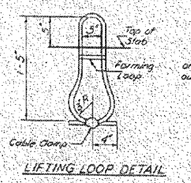
LONGITUDINAL SECTION

SLAB REINFORCEMENT

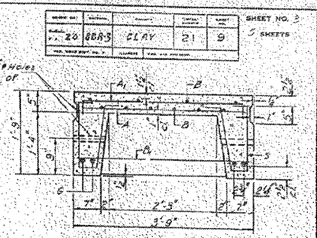
DESIGNED
CHECKED
DRAWN J. SCHNELLER
CHECKED
EXAMINED
PASSED
APPROVED

STRESSES
f'c = 4,500 psi.
fc = 1,800 psi.
fs = 20,000 psi.
n = 8

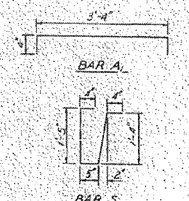
LOADING HS-20



LIFTING LOOP DETAIL



SECTION THRU PRECAST UNIT

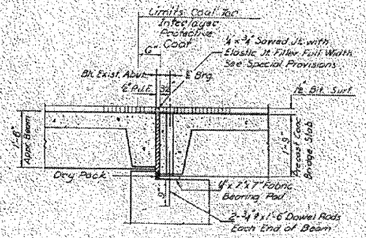


BAR A

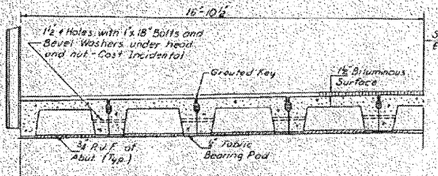
BAR S

BAR LIST - ONE UNIT
Reinforcement to be cast into Slab

Bar	No	Size	Length	Shape
A	38	#4	3'-6"	
A1	29	#4	2'-0"	
B	10	#4	21'-5"	
B1	8	#4	3'-6"	
G	4	#10	21'-9"	
S	66	#3	3'-10"	



SECTION THRU ABUT. AT OUTSIDE BEAM



HALF CROSS SECTION

NOTES:
Unless otherwise approved by the Engineer, lifting loops shall be 6' ø 6 x 19 class wire rope with fiber core and shall have a minimum ultimate strength of 18,700 lbs. Loops shall be burned off after slab has been erected.
Holes shall be drilled and anchor dowels grouted in place.
Cost of reinforcement and accessories cast into the slab unit, bearing pads, furnishing, drilling for, placing and grouting anchor dowels is included in Unit bid price for "Precast Concrete Bridge Slab."

BILL OF MATERIAL

Item	Unit	Quantity
Precast Concrete Bridge Slab	Sq. Ft.	450
Removal of Existing Superstructure	Each	1

SUPERSTRUCTURE
F.A.R.T. 328 SEC. 8BR-3
CLAY COUNTY
STA. 966+85.70

ESCA CONSULTANTS, INC.		
DESIGNED BY:	DAJ	04/08
DRAWN BY:	HAS	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
US 45 OVER SEMINARY CREEK OVERFLOW
FAP ROUTE 328 - SECTION (8BR-3)B-1
CLAY COUNTY

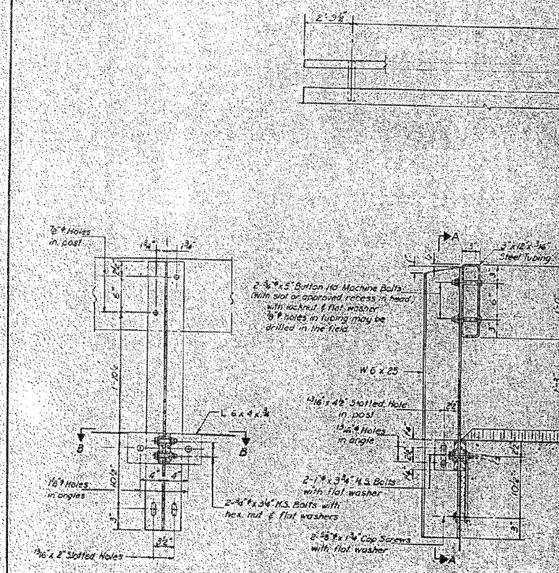
ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS

CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(8BR-3)B-1	CLAY	109	76
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

					SHEET NO. 4
F.A. 26	(8BR-3	CLAY	21	10	OF SHEETS



ESCA CONSULTANTS, INC.		
DESIGNED BY:	DAJ	04/08
DRAWN BY:	HAS	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
US 45 OVER SEMINARY CREEK OVERFLOW
FAP ROUTE 328 - SECTION (8BR-3)B-1
CLAY COUNTY

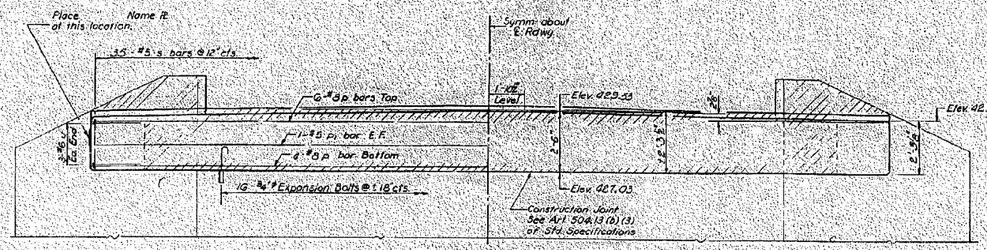
CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(8BR-3)B-1	CLAY	109	77
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

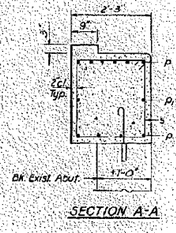
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	8BR3	CLAY	21	11

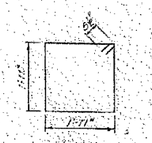
SHEET NO. 5 OF 5 SHEETS



ELEVATION

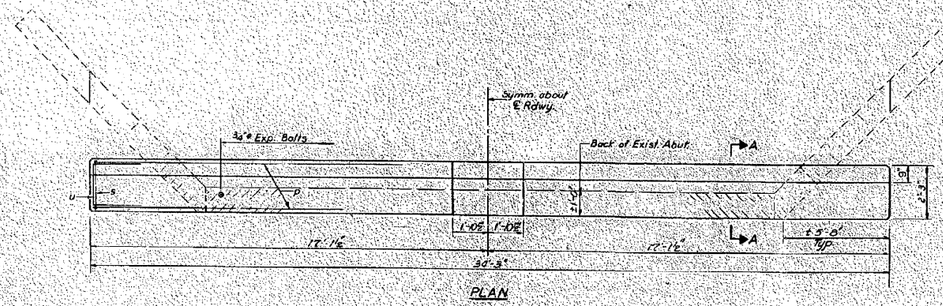


SECTION A-A



BAR S

BAR U



PLAN

TWO ABUTMENTS
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
P	20	#8	32'-0"	—
P1	4	#5	32'-7"	—
S	70	#5	8'-2"	□
U	16	#6	5'-10"	⊏
Class X Concrete		Cu Yds		161
Reinforcement Bars		Lbs		8090
Expansion Bolts ¾" ϕ		Each		32
Concrete Removal		Cu Yds		8

DESIGNED	J. Schneider	
CHECKED	James Bull	
DRAWN	J. Schneider	
CHECKED	MP	
EXAMINED		Jan 17 1812
PASSED		
APPROVED		

NOTE:
Hatched area indicates Concrete Removal. Reinforcement extending into removed area shall be cleaned and incorporated into the new construction.
Expansion bolts shall be anchored in sound concrete.
All edges shall have standard ¾" chamfers except as noted.

ABUTMENTS
F.A. RT. 328 SEC. 8BR-3
CLAY COUNTY
STA. 502+75.10

A-1 (5-6-11) Final

ESCA CONSULTANTS, INC.		
DESIGNED BY:	DAJ	04/08
DRAWN BY:	HAS	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
US 45 OVER SEMINARY CREEK OVERFLOW
FAP ROUTE 328 - SECTION (8BR-3)B-1
CLAY COUNTY

BENCHMARK: BM 209 - Railroad spike in Power Pole No. 217, Sta. 969+25, 29.7' Lt., Elev. 429.86 (NAVD 88)

EXISTING STRUCTURE: SN 013-0015 was originally built in 1921 as SBI 25, Section 8B and was reconstructed in 1974 as SBI 25, Section 8BR-4. It is a single span structure consisting of 21" PPC Deck Beams on closed abutments and wingwalls on spread footings. The deck width is 33'-0" and the length is 53'-0" back to back of abutments. Traffic shall be maintained utilizing stage construction.

No salvage.

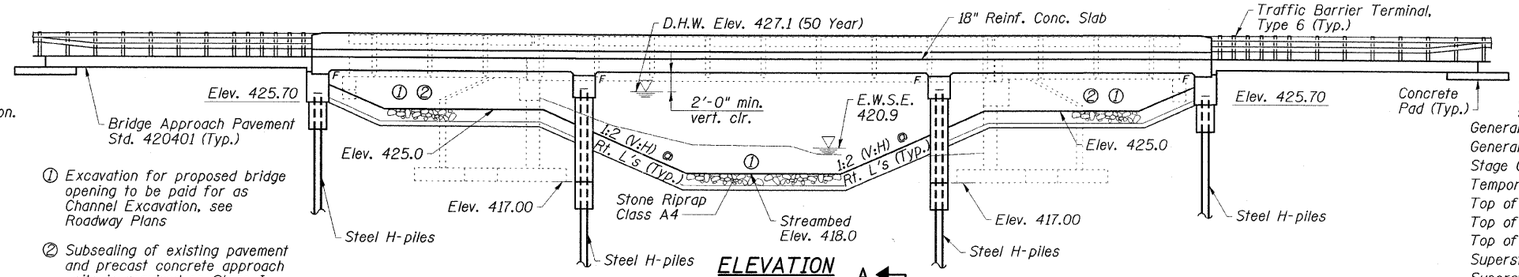
STATION 968+56.00
BUILT 200 BY
STATE OF ILLINOIS
F.A.P. RT. 328 SEC. (8BR-4)B-1
LOADING HL-93
STR. NO. 013-0043

NAME PLATE
See Std. 515001

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 328	*	CLAY	109	78
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 1
18 SHEETS
CONTRACT NO. 74107 *(8BR-4)B-1

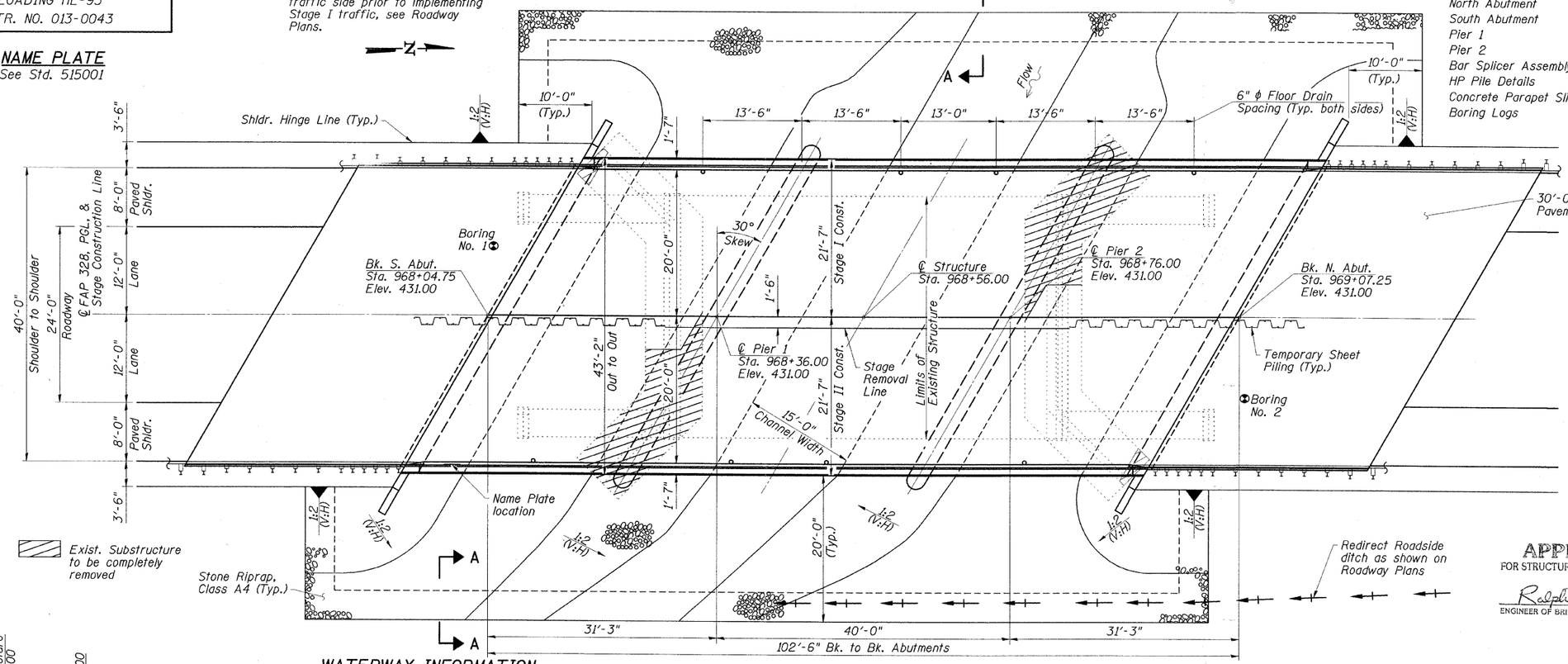


ELEVATION

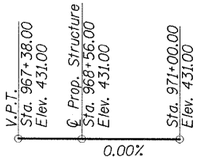
① Excavation for proposed bridge opening to be paid for as Channel Excavation, see Roadway Plans

② Subsealing of existing pavement and precast concrete approach units is required on Stage I traffic side prior to implementing Stage I traffic, see Roadway Plans.

STRUCTURE INDEX OF SHEETS



PLAN



PROFILE GRADE
(Along ℄ Roadway)

Exist. Substructure to be completely removed

WATERWAY INFORMATION

Total Drainage Area = 6.77 Sq. Mi.
Exist. Low Grade Elev. = 430.8 Ft. @ Sta. 971+00
Prop. Low Grade Elev. = 431.0 Ft. @ Sta. 971+00

Flood	Freq. Yr.		Q - C.F.S. Exist.	Q - C.F.S. Prop.	Opening - Sq. Ft. Exist.	Opening - Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	10	Main Channel	1138	952	233	280	426.2	0.6	0.5	426.8	426.7
		Overflow	381	567	74	107					
		Total	1519	1519	307	387					
	50	Main Channel	1815	1743	278	348	427.1	1.1	0.7	428.2	427.8
		Overflow	641	713	92	127					
		Total	2456	2456	370	475					
Base	100	Main Channel	2137	2040	293	372	427.4	1.8	0.9	429.2	428.3
		Overflow	742	839	98	133					
		Total	2879	2879	391	505					
Overtopping	-	Main Channel	-	-	-	-	-	-	-	-	-
		Overflow									
		Total									
Max. Calc.	500	Main Channel	2856	2687	328	426	428.1	2.2	1.6	430.3	429.7
		Overflow	1060	1229	112	148					
		Total	3916	3916	440	574					

SCOUR INFORMATION

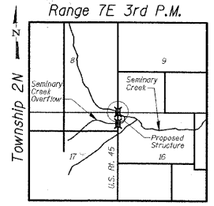
Design Scour Elevation (Ft.)	S. Abut.	Pier 1	Pier 2	N. Abut.
	425.70	422.40	422.40	425.70

DESIGN SPECIFICATIONS
2007 AASHTO LRFD

LOADING HL-93
Allow 50 psf for future wearing surface.

DESIGN STRESSES
FIELD UNITS
f'c = 3,500 psi
fy = 60,000 psi (Reinf.)

SEISMIC DATA
Seismic Performance Zone (SPZ) = 1
Bedrock Acceleration Coefficient (A) = 0.09g
Site Coefficient (S) = 1.0



LOCATION SKETCH

STATE OF ILLINOIS
RICHARD D. PAYNE
No. 4647
LICENSED STRUCTURAL ENGINEER
EXPIRES 11-30-08
SIGNATURE
08-12-08
DATE

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
Ralph E. Anderson (TDD)
ENGINEER OF BRIDGES AND STRUCTURES

GENERAL PLAN
US 45 OVER SEMINARY CREEK
FAP ROUTE 328 - SECTION (8BR-4)B-1
CLAY COUNTY
STATION 968+56.00
STRUCTURE NO. 013-0043

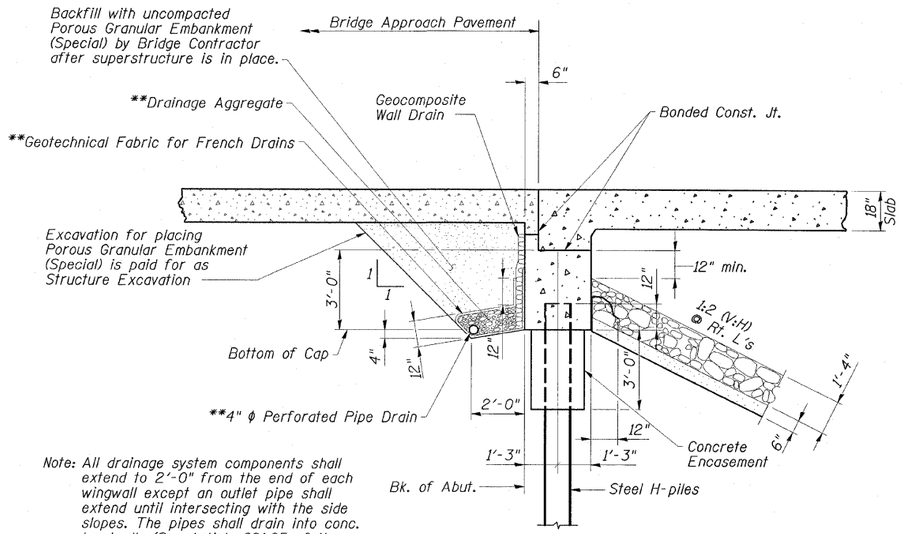
ESCA CONSULTANTS, INC.

DESIGNED BY:	MTD	04/08
DRAWN BY:	DWH	04/08
CHECKED BY:	DAJ	05/08
APPROVED BY:	RDP	08/08

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 328	*	CLAY	109	79
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 2
18 SHEETS
CONTRACT NO. 74107
*(8BR-4)B-1

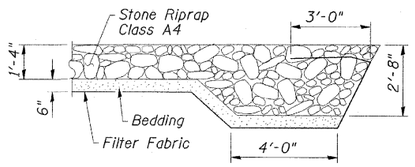


Note: All drainage system components shall extend to 2'-0" from the end of each wingwall except an outlet pipe shall extend until intersecting with the side slopes. The pipes shall drain into conc. headwalls (See Article 601.05 of the Std. Spec's. and Hwy. Std. 601101).

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

SECTION THRU ABUTMENT

(Horizontal Dim. @ Rt. L's)



SECTION A-A

GENERAL NOTES

1. The Contractor shall make allowance for the deflection of forms, shrinkage and settlement of falsework, in addition to allowance for dead load deflection. Forms for deck slab shall be removed prior to placement of bridge approach pavement.
2. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60 (IL Modified). See Special Provisions.
3. Reinforcement bars designated (E) shall be epoxy coated.
4. The Contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at substructures specified or approved by the Engineer before ordering the remainder of piles.
5. Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.
6. The Contractor is advised that the existing PPC Deck Beams are in a deteriorated condition with reduced load carrying capacity. It is the Contractor's responsibility to account for the condition of the beams when developing construction procedures for removal of the superstructure.
7. If the Contractor's procedure for existing deck beam removal involves placement of cranes or other heavy equipment on the existing deck beams, a detailed procedure shall be submitted to the Engineer for approval. The procedure shall include calculations, prepared and sealed by an Illinois Licensed Structural Engineer, verifying the structural adequacy of the beams for the proposed loads. Cost included in Removal of Existing Structures No. 4.
8. The existing expansion bearing pads contain asbestos. See Special Provisions for Asbestos Bearing Pad Removal.
9. The cost of the removal of existing precast concrete units, approach caps and existing or new subseal materials at the approach shoulders is included in the cost of Removal of Existing Structures No. 4.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment, Special	Cu. Yd.		54	54
Stone Riprap, Class A4	Sq. Yd.		1100	1100
Filter Fabric	Sq. Yd.		1100	1100
Removal of Existing Structures No. 4	Each	1		1
Structure Excavation	Cu. Yd.		225	225
Floor Drains	Each	8		8
Concrete Structures	Cu. Yd.		129.4	129.4
Concrete Superstructure	Cu. Yd.	277.6		277.6
Bridge Deck Grooving	Sq. Yd.	428		428
Concrete Encasement	Cu. Yd.		12.6	12.6
Protective Coat	Sq. Yd.	536		536
Reinforcement Bars, Epoxy Coated	Pound	47610	13560	61170
Bar Splicers	Each	242	80	322
Furnishing Steel Piles HP12x53	Foot		2817	2817
Driving Piles	Foot		2817	2817
Test Pile Steel HP12x53	Each		4	4
Temporary Sheet Piling	Sq. Ft.		1015	1015
Name Plates	Each	1		1
Geocomposite Wall Drain	Sq. Yd.		40	40
Pipe Underdrains for Structures 4"	Foot		150	150
Underwater Structure Excavation Protection-Location 1	Each		1	1
Underwater Structure Excavation Protection-Location 2	Each		1	1
Asbestos Bearing Pad Removal	Each		22	22

ESCA CONSULTANTS, INC.

DESIGNED BY:	MTD	04/08
DRAWN BY:	DWH	04/08
CHECKED BY:	DAJ	05/08
APPROVED BY:	RDP	08/08

GENERAL DATA
US 45 OVER SEMINARY CREEK
FAP ROUTE 328 - SECTION (8BR-4)B-1
CLAY COUNTY
STATION 968+56.00
STRUCTURE NO. 013-0043

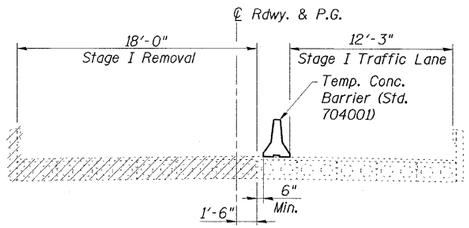
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 328	*	CLAY	109	80
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT-		

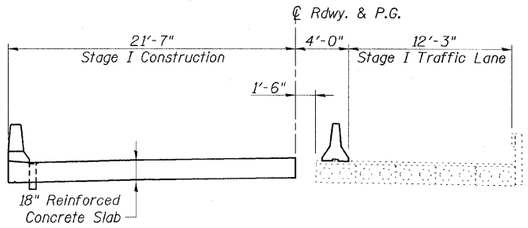
SHEET NO. 3
18 SHEETS
CONTRACT NO. 74107 *(8BR-4)B-1

STAGE CONSTRUCTION NOTES

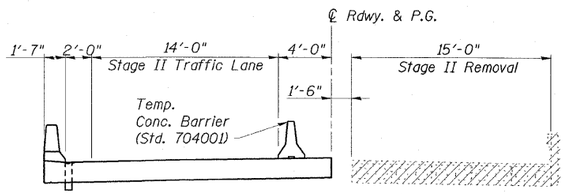
1. Hatched areas indicate Removal of Existing Structures No. 4.
2. All staging sections are looking North.
3. For quantities of Temporary Concrete Barrier see Roadway Plans.
4. The stage construction lines for the piers differ from the stage construction line for the superstructure. See details on the pier sheets.



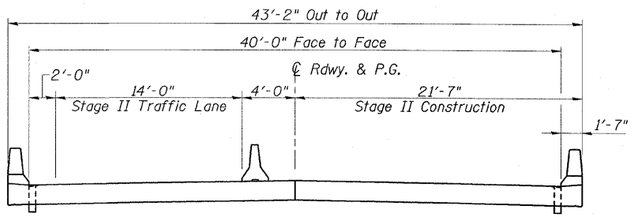
STAGE I REMOVAL



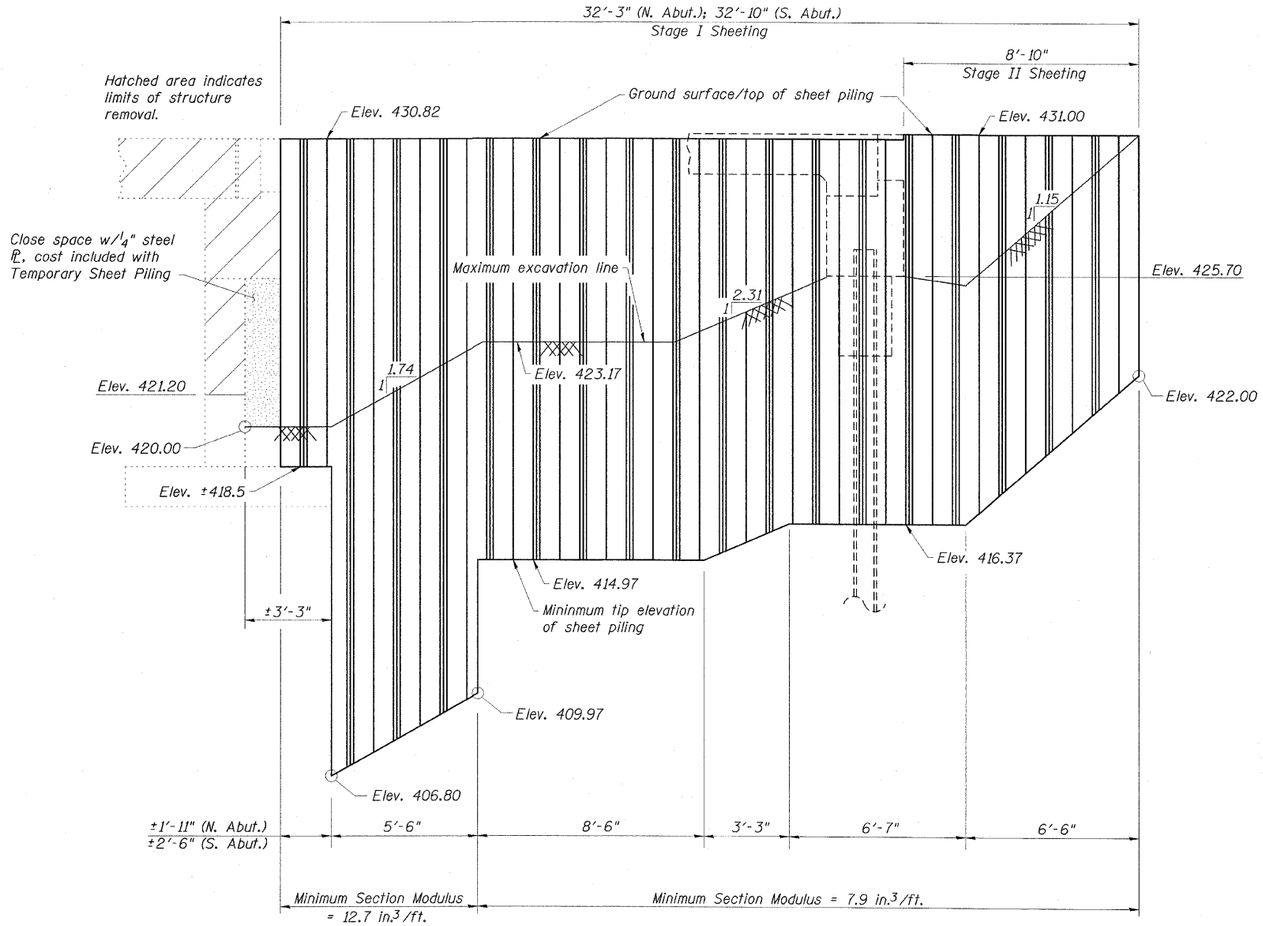
STAGE I CONSTRUCTION



STAGE II REMOVAL



STAGE II CONSTRUCTION



TEMPORARY SHEET PILING
(North Abutment shown; South Abutment similar)

TEMPORARY SHEET PILING NOTES

1. If the Contractor chooses to alter the temporary cantilevered sheet piling design requirements shown on the plans, a design submittal including plan details and calculations will be required for review and acceptance by the Engineer.
2. The Contractor shall connect the first sheet to the existing abutment wall to ensure stability of sheets driven to the top of the existing footing. This connection shall be reviewed and accepted by the Engineer and included in the cost for Temporary Sheet Piling.

ESCA CONSULTANTS, INC.		
DESIGNED BY:	MTD	04/08
DRAWN BY:	DWH	04/08
CHECKED BY:	DAJ	05/08
APPROVED BY:	RDP	08/08

STAGE CONSTRUCTION DETAILS
US 45 OVER SEMINARY CREEK
FAP ROUTE 328 - SECTION (8BR-4)B-1
CLAY COUNTY
STATION 968+56.00
STRUCTURE NO. 013-0043

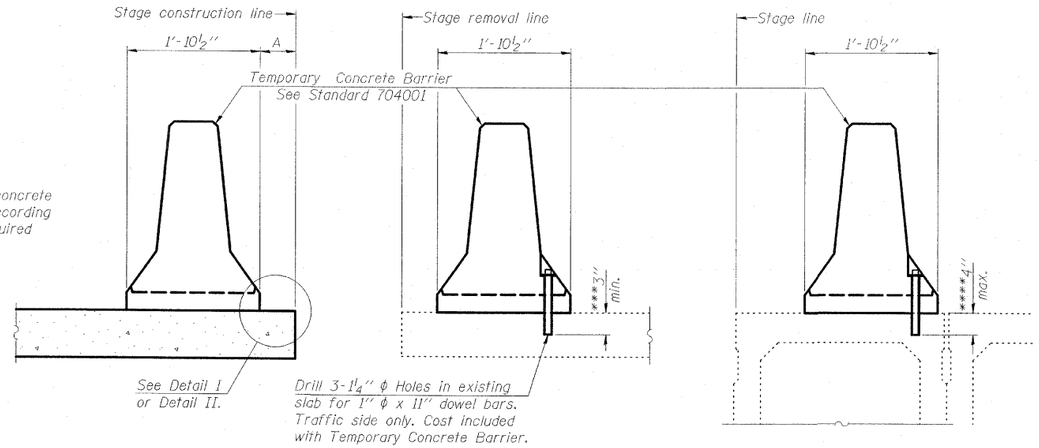
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 328	*	CLAY	109	81
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 4
18 SHEETS

CONTRACT NO. 74107 *(8BR-4)B-1

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

Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x7"x10" steel ℙ to the top layer of couplers with 2-⅝" ϕ bolts screwed to coupler at approximate ℄ of each barrier panel.

Detail II - With Extended Reinforcement Bars:
Connect one (1) 1"x7"x10" steel ℙ 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.

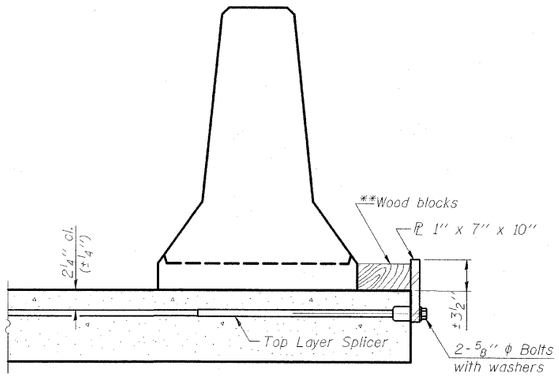
Cost of anchorage is included with Temporary Concrete Barrier.

The 1" x 7" x 10" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

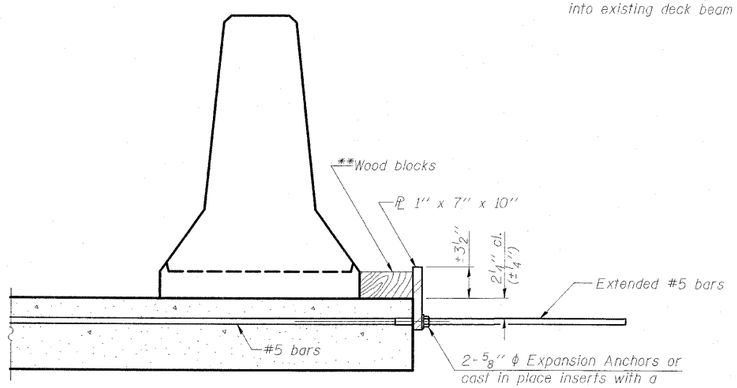
SECTIONS THRU SLAB OR DECK BEAM

***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.

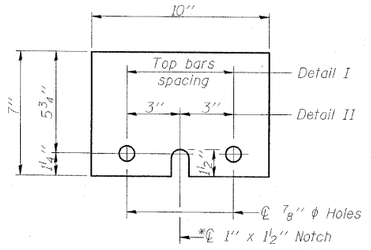
****If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



DETAIL I



DETAIL II



STEEL RETAINER ℙ 1" x 7" x 10"

*Required only with 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.

ESCA CONSULTANTS, INC.		
DESIGNED BY:	MTD	04/08
DRAWN BY:	DWH	04/08
CHECKED BY:	DAJ	05/08
APPROVED BY:	RDP	08/08

R-27

5-16-08

TEMPORARY CONCRETE BARRIER
FOR STAGE CONSTRUCTION
US 45 OVER SEMINARY CREEK
FAP ROUTE 328 - SECTION (8BR-4)B-1
CLAY COUNTY
STATION 968+56.00
STRUCTURE NO. 013-0043

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 328	*	CLAY	109	82
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT=		

SHEET NO. 5
18 SHEETS

CONTRACT NO. 74107 *(8BR-4)B-1

INSIDE FACE OF WEST PARAPET

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
S. End of Slab	968+16.87	-20.00	430.65	430.65
℄ S. Abut.	968+17.74	-20.00	430.65	430.65
a	968+27.74	-20.00	430.65	430.66
b	968+37.74	-20.00	430.65	430.65
℄ Pier 1	968+47.55	-20.00	430.65	430.65
c	968+57.55	-20.00	430.65	430.66
d	968+67.55	-20.00	430.65	430.66
e	968+77.55	-20.00	430.65	430.66
℄ Pier 2	968+87.55	-20.00	430.65	430.65
f	968+97.55	-20.00	430.65	430.65
g	969+07.55	-20.00	430.65	430.66
℄ N. Abut	969+17.35	-20.00	430.65	430.65
N. End of Slab	969+18.22	-20.00	430.65	430.65

WEST EDGE OF ROADWAY

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
S. End of Slab	968+12.26	-12.00	430.81	430.81
℄ S. Abut.	968+13.12	-12.00	430.81	430.81
a	968+23.12	-12.00	430.81	430.82
b	968+33.12	-12.00	430.81	430.81
℄ Pier 1	968+42.93	-12.00	430.81	430.81
c	968+52.93	-12.00	430.81	430.82
d	968+62.93	-12.00	430.81	430.82
e	968+72.93	-12.00	430.81	430.82
℄ Pier 2	968+82.93	-12.00	430.81	430.81
f	968+92.93	-12.00	430.81	430.81
g	969+02.93	-12.00	430.81	430.82
℄ N. Abut	969+12.73	-12.00	430.81	430.81
N. End of Slab	969+13.60	-12.00	430.81	430.81

℄ ROADWAY, PROFILE GRADE & STAGE CONST. JT.

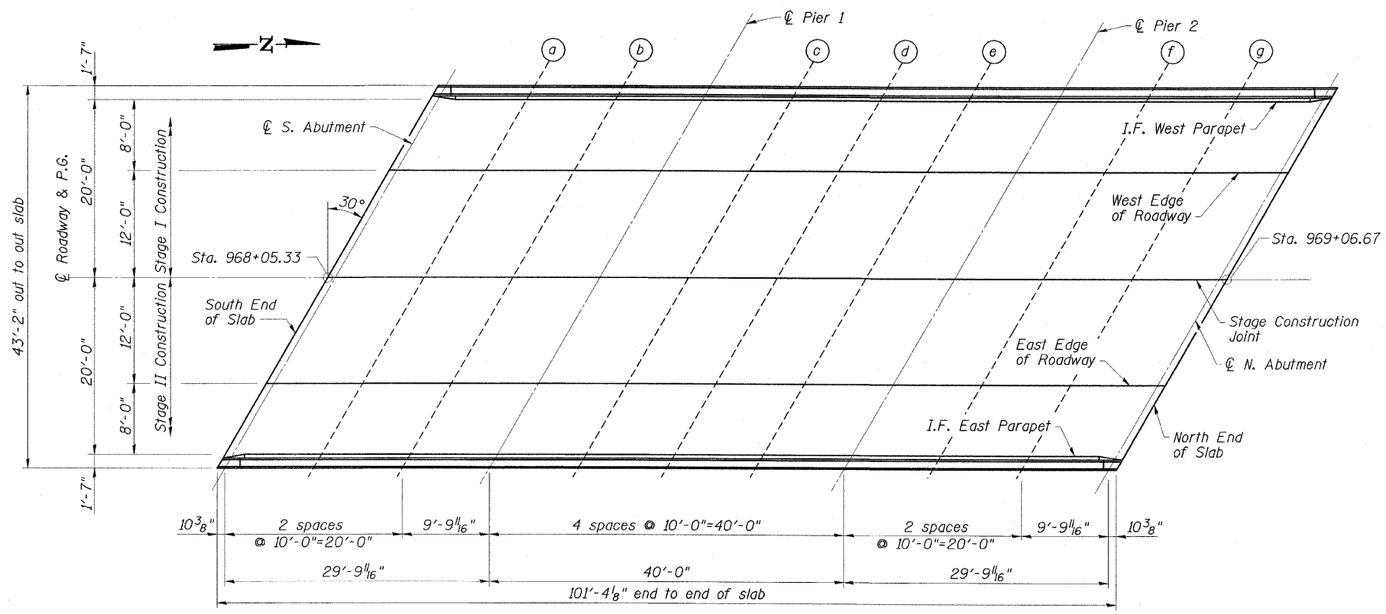
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
S. End of Slab	968+05.33	0.00	431.00	431.00
℄ S. Abut.	968+06.19	0.00	431.00	431.00
a	968+16.19	0.00	431.00	431.01
b	968+26.19	0.00	431.00	431.00
℄ Pier 1	968+36.00	0.00	431.00	431.00
c	968+46.00	0.00	431.00	431.01
d	968+56.00	0.00	431.00	431.01
e	968+66.00	0.00	431.00	431.01
℄ Pier 2	968+76.00	0.00	431.00	431.00
f	968+86.00	0.00	431.00	431.00
g	968+96.00	0.00	431.00	431.01
℄ N. Abut	969+05.81	0.00	431.00	431.00
N. End of Slab	969+06.67	0.00	431.00	431.00

EAST EDGE OF ROADWAY

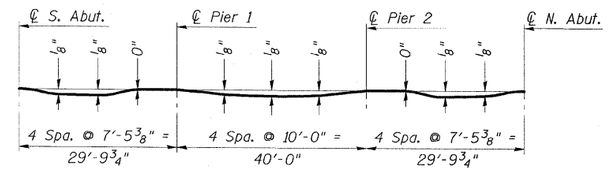
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
S. End of Slab	967+98.40	12.00	430.81	430.81
℄ S. Abut.	967+99.27	12.00	430.81	430.81
a	968+09.27	12.00	430.81	430.82
b	968+19.27	12.00	430.81	430.81
℄ Pier 1	968+29.07	12.00	430.81	430.81
c	968+39.07	12.00	430.81	430.82
d	968+49.07	12.00	430.81	430.82
e	968+59.07	12.00	430.81	430.82
℄ Pier 2	968+69.07	12.00	430.81	430.81
f	968+79.07	12.00	430.81	430.81
g	968+89.07	12.00	430.81	430.82
℄ N. Abut	968+98.88	12.00	430.81	430.81
N. End of Slab	968+99.74	12.00	430.81	430.81

INSIDE FACE OF EAST PARAPET

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
S. End of Slab	967+93.78	20.00	430.65	430.65
℄ S. Abut.	967+94.65	20.00	430.65	430.65
a	968+04.65	20.00	430.65	430.66
b	968+14.65	20.00	430.65	430.65
℄ Pier 1	968+24.45	20.00	430.65	430.65
c	968+34.45	20.00	430.65	430.66
d	968+44.45	20.00	430.65	430.66
e	968+54.45	20.00	430.65	430.66
℄ Pier 2	968+64.45	20.00	430.65	430.65
f	968+74.45	20.00	430.65	430.65
g	968+84.45	20.00	430.65	430.66
℄ N. Abut	968+94.26	20.00	430.65	430.65
N. End of Slab	968+95.13	20.00	430.65	430.65



PLAN



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 on this sheet.

DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only.)

ESCA CONSULTANTS, INC.

DESIGNED BY:	FMA	04/08
DRAWN BY:	DWH	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

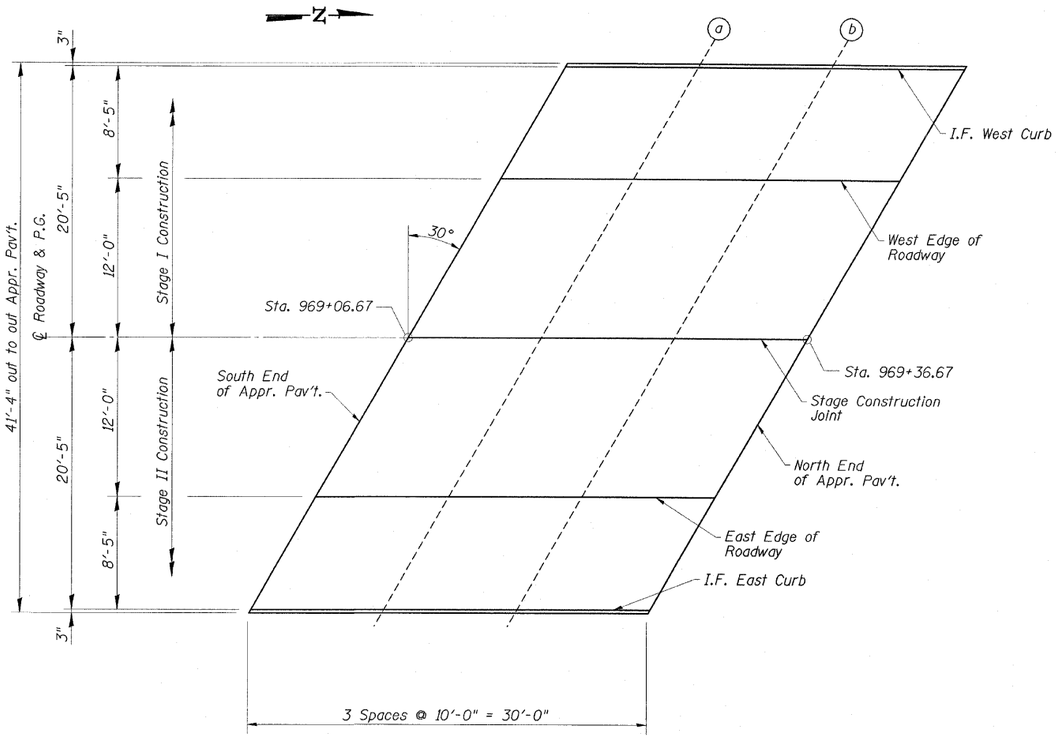
TOP OF SLAB ELEVATIONS
US 45 OVER SEMINARY CREEK
FAP ROUTE 328 - SECTION (8BR-4)B-1
CLAY COUNTY
STATION 968+56.00
STRUCTURE NO. 013-0043

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 328	*	CLAY	109	83
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 6
18 SHEETS

CONTRACT NO. 74107 *(8BR-4)B-1



PLAN

INSIDE FACE OF WEST CURB

Location	Station	Offset	Theoretical Grade Elevations
S. End Appr. Pav't	969+18.46	-20.42	430.64
a	969+28.46	-20.42	430.64
b	969+38.46	-20.42	430.64
N. End Appr. Pav't	969+48.46	-20.42	430.64

EAST EDGE OF ROADWAY

Location	Station	Offset	Theoretical Grade Elevations
S. End Appr. Pav't	968+99.74	12.00	430.81
a	969+09.74	12.00	430.81
b	969+19.74	12.00	430.81
N. End Appr. Pav't	969+29.74	12.00	430.81

WEST EDGE OF ROADWAY

Location	Station	Offset	Theoretical Grade Elevations
S. End Appr. Pav't	969+13.60	-12.00	430.81
a	969+23.60	-12.00	430.81
b	969+33.60	-12.00	430.81
N. End Appr. Pav't	969+43.60	-12.00	430.81

INSIDE FACE OF EAST CURB

Location	Station	Offset	Theoretical Grade Elevations
S. End Appr. Pav't	968+94.89	20.42	430.64
a	969+04.89	20.42	430.64
b	969+14.89	20.42	430.64
N. End Appr. Pav't	969+24.89	20.42	430.64

℄ ROADWAY, PROFILE GRADE & STAGE CONST. JT.

Location	Station	Offset	Theoretical Grade Elevations
S. End Appr. Pav't	969+06.67	0.00	431.00
a	969+16.67	0.00	431.00
b	969+26.67	0.00	431.00
N. End Appr. Pav't	969+36.67	0.00	431.00

ESCA
CONSULTANTS, INC.

DESIGNED BY:	FMA	04/08
DRAWN BY:	DWH	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

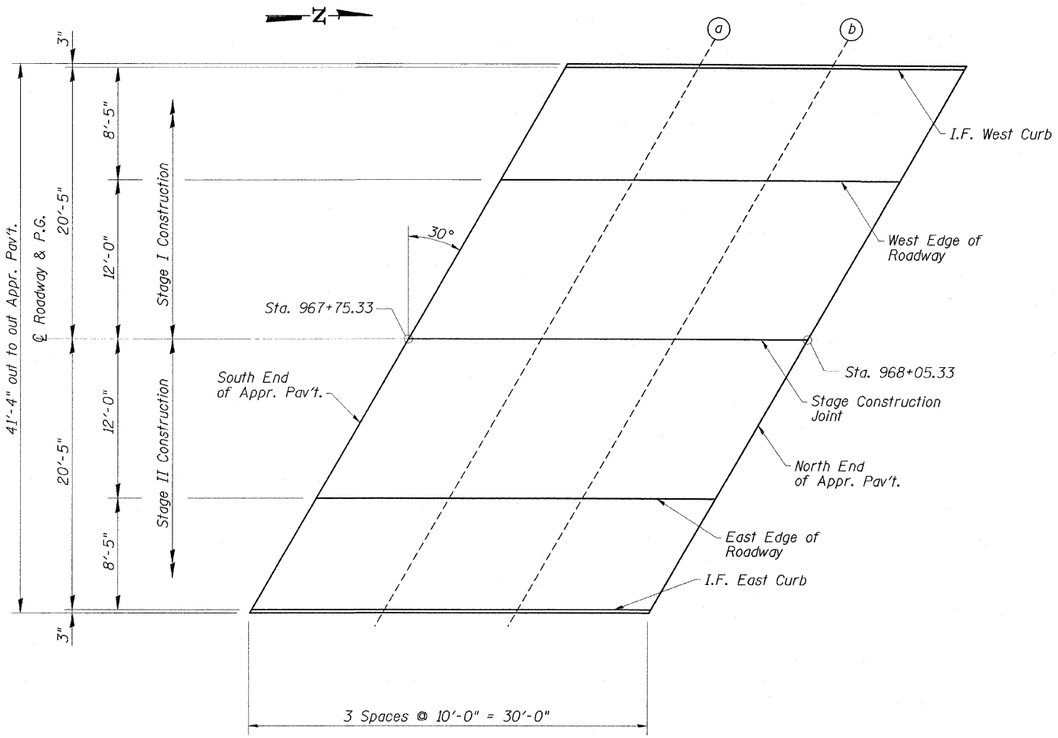
TOP OF NORTH APPROACH
SLAB ELEVATIONS
US 45 OVER SEMINARY CREEK
FAP ROUTE 328 - SECTION (8BR-4)B-1
CLAY COUNTY
STATION 968+56.00
STRUCTURE NO. 013-0043

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 328	*	CLAY	109	84
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 7
18 SHEETS

CONTRACT NO. 74107 *(8BR-4)B-1



PLAN

INSIDE FACE OF WEST CURB

Location	Station	Offset	Theoretical Grade Elevations
S. End Appr. Pav't	967+87.11	-20.42	430.64
a	967+97.11	-20.42	430.64
b	968+07.11	-20.42	430.64
N. End Appr. Pav't	968+17.11	-20.42	430.64

EAST EDGE OF ROADWAY

Location	Station	Offset	Theoretical Grade Elevations
S. End Appr. Pav't	967+68.40	12.00	430.81
a	967+78.40	12.00	430.81
b	967+88.40	12.00	430.81
N. End Appr. Pav't	967+98.40	12.00	430.81

WEST EDGE OF ROADWAY

Location	Station	Offset	Theoretical Grade Elevations
S. End Appr. Pav't	967+82.26	-12.00	430.81
a	967+92.26	-12.00	430.81
b	968+02.26	-12.00	430.81
N. End Appr. Pav't	968+12.26	-12.00	430.81

INSIDE FACE OF EAST CURB

Location	Station	Offset	Theoretical Grade Elevations
S. End Appr. Pav't	967+63.54	20.42	430.64
a	967+73.54	20.42	430.64
b	967+83.54	20.42	430.64
N. End Appr. Pav't	967+93.54	20.42	430.64

℄ ROADWAY, PROFILE GRADE & STAGE CONST. JT.

Location	Station	Offset	Theoretical Grade Elevations
S. End Appr. Pav't	967+75.33	0.00	431.00
a	967+85.33	0.00	431.00
b	967+95.33	0.00	431.00
N. End Appr. Pav't	968+05.33	0.00	431.00

ESCA CONSULTANTS, INC.

DESIGNED BY:	FWA	04/08
DRAWN BY:	DWH	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

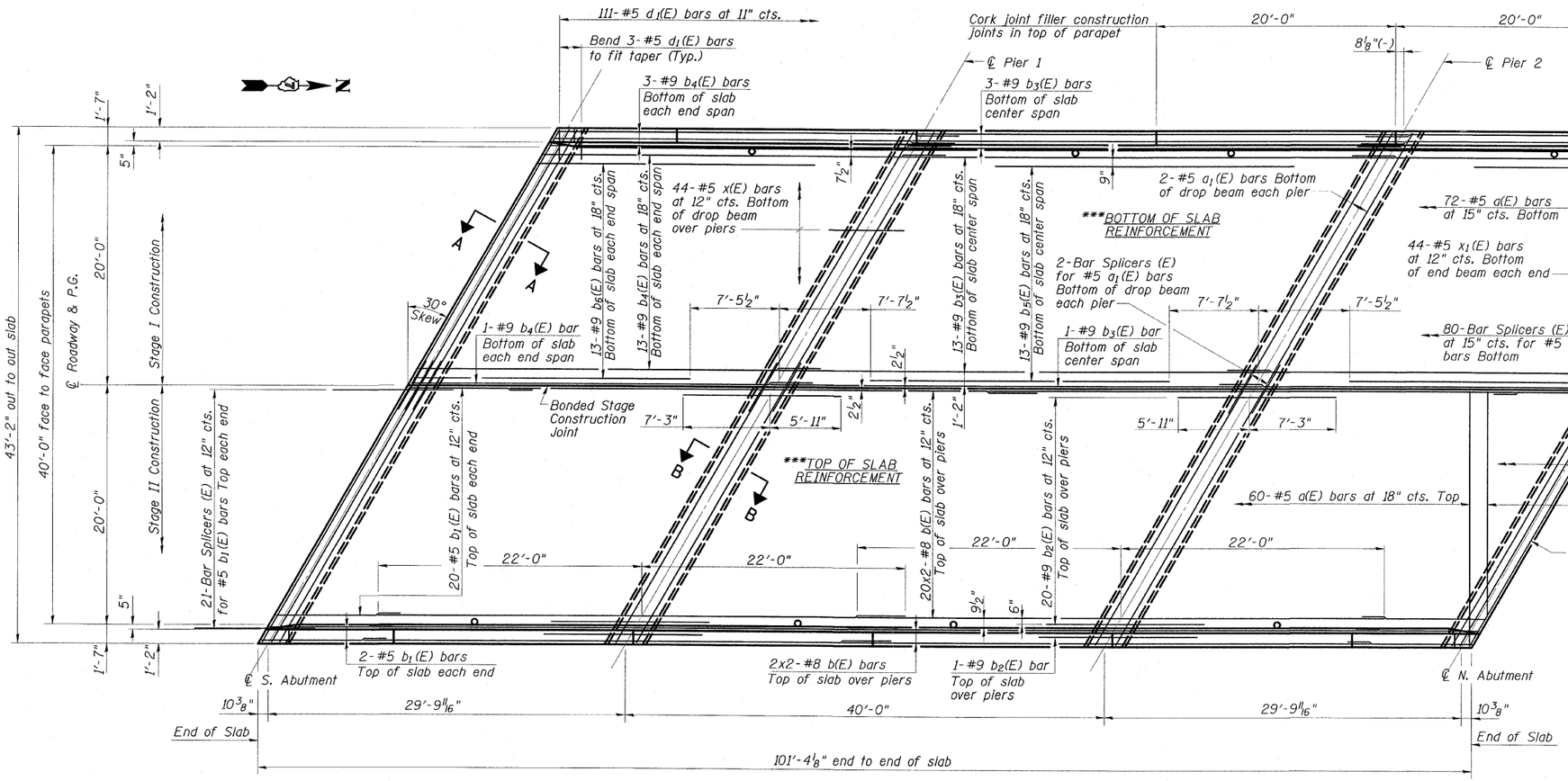
TOP OF SOUTH APPROACH
SLAB ELEVATIONS
US 45 OVER SEMINARY CREEK
FAP ROUTE 328 - SECTION (8BR-4)B-1
CLAY COUNTY
STATION 968+56.00
STRUCTURE NO. 013-0043

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 328	*	CLAY	109	85
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 8
18 SHEETS

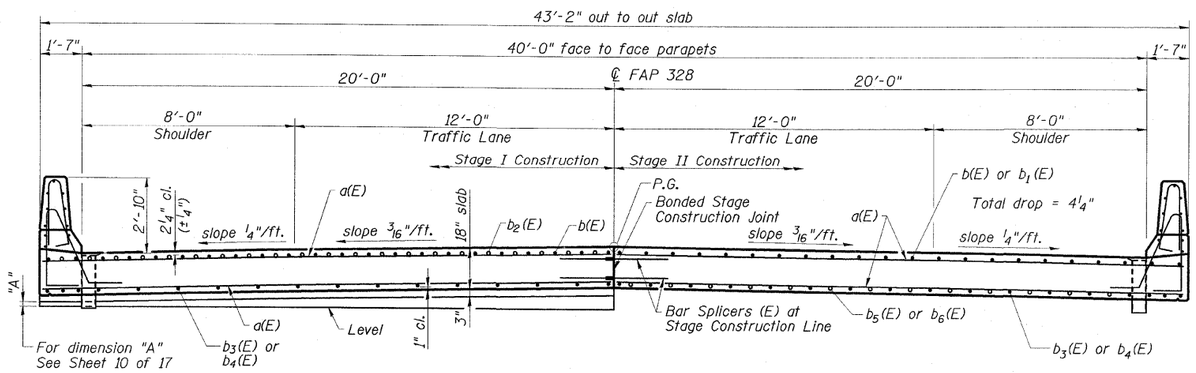
CONTRACT NO. 74107 *(8BR-4)B-1



*** Reinforcement shown is symmetrical about Stage Construction Joint

PLAN

MINIMUM BAR LAP
(Slab)
#5 = 1'-10" (Top bars)
#8 = 3'-11" (Top bars)
#9 = 3'-6"



NEAR PIER — CROSS SECTION (Looking North) — NEAR MIDSPAN

NOTES

1. See Sheet 9 of 18 for superstructure details, Bill of Material, and parapet reinforcement.
2. Bars indicated thus: 20 x 2-#8 etc. indicates 20 lines of bars with 2 lengths per line.
3. See Sheet 10 of 18 for sections and additional superstructure details.

ESCA CONSULTANTS, INC.		
DESIGNED BY:	MTD	04/08
DRAWN BY:	DWH	04/08
CHECKED BY:	DAJ	05/08
APPROVED BY:	RDP	08/08

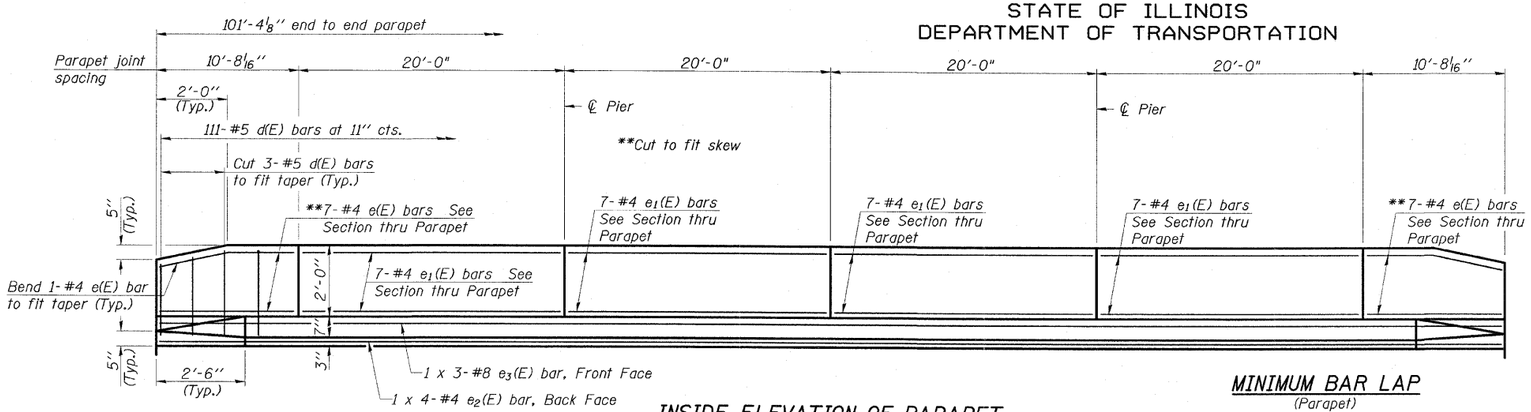
SUPERSTRUCTURE
US 45 OVER SEMINARY CREEK
FAP ROUTE 328 - SECTION (8BR-4)B-1
CLAY COUNTY
STATION 968+56.00
STRUCTURE NO. 013-0043

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 328	*	CLAY	109	86
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 9
18 SHEETS

CONTRACT NO. 74107 *(8BR-4)B-1

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



INSIDE ELEVATION OF PARAPET

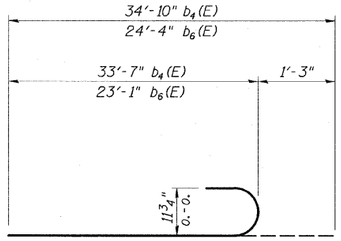
MINIMUM BAR LAP

(Parapet)
#4 bar = 1'-4"
#8 bar = 3'-5"

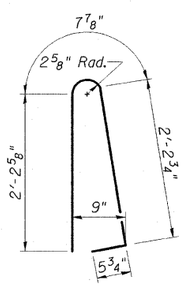
SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d(E)	294	#5	21'-3"	
a_1(E)	24	#5	24'-6"	
b(E)	88	#8	44'-0"	
b_1(E)	88	#5	10'-6"	
b_2(E)	84	#9	13'-2"	
b_3(E)	34	#9	41'-0"	
b_4(E)	68	#9	34'-10"	
b_5(E)	26	#9	24'-9"	
b_6(E)	52	#9	24'-4"	
d(E)	222	#5	5'-7"	
d_1(E)	222	#5	8'-9"	
e(E)	28	#4	10'-4"	
e_1(E)	56	#4	19'-8"	
e_2(E)	8	#4	26'-4"	
e_3(E)	6	#8	36'-0"	
x(E)	88	#5	6'-11"	
x_1(E)	88	#5	5'-9"	
Reinforcement Bars, Epoxy Coated		Pound	47,610	
Concrete Superstructure		Cu. Yd.	277.6	

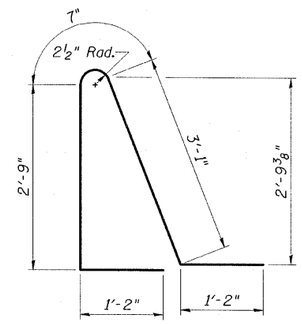
Bars indicated thus: 1x3-#8 etc. indicates 1 line of bars with 3 lengths per line.
For details of Bar Splicers, see Sheet 15 of 18.
Name Plate to be mounted on inside face of parapet, see Sheet 1 of 18.



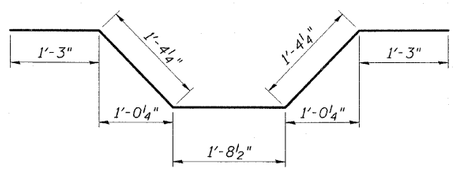
BARS b_4(E) & b_6(E)



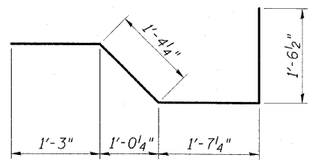
BAR d(E)



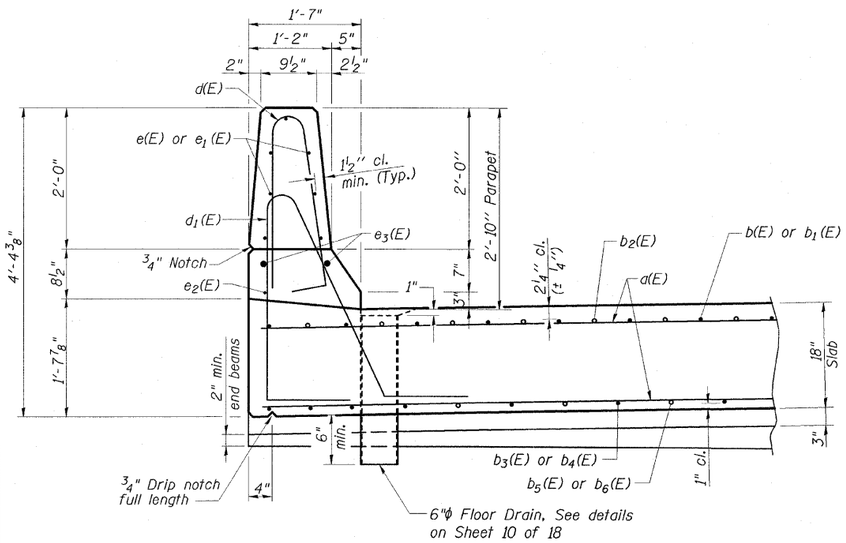
BAR d_1(E)



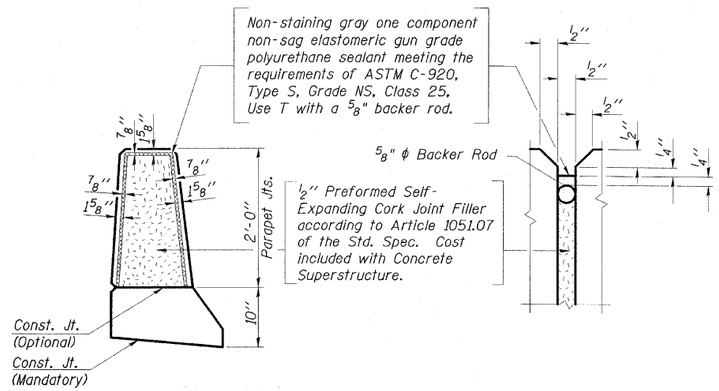
BAR x(E)



BAR x_1(E)



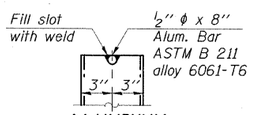
SECTION THRU PARAPET



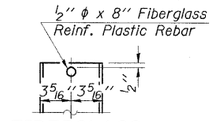
PARAPET JOINT DETAILS

ESCA CONSULTANTS, INC.		
DESIGNED BY:	MTD	04/08
DRAWN BY:	DWH	04/08
CHECKED BY:	DAJ	05/08
APPROVED BY:	RDP	08/08

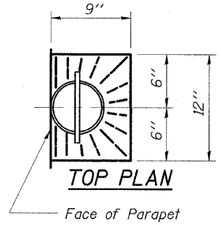
SUPERSTRUCTURE DETAILS
US 45 OVER SEMINARY CREEK
FAP ROUTE 328 - SECTION (8BR-4)B-1
CLAY COUNTY
STATION 968+56.00
STRUCTURE NO. 013-0043



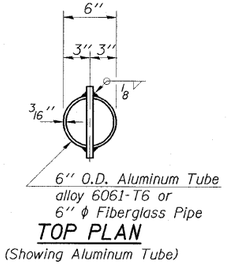
ALUMINUM TUBE



FIBERGLASS PIPE



TOP PLAN



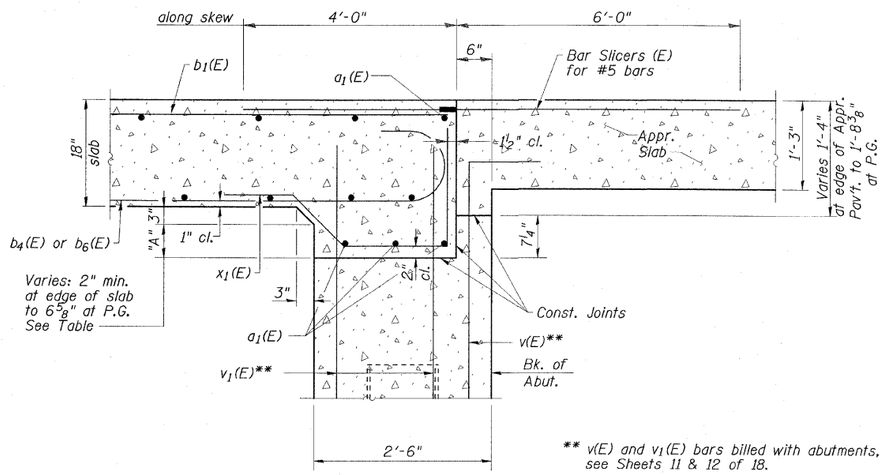
TOP PLAN
(Showing Aluminum Tube)

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 328	*	CLAY	109	87
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 10
18 SHEETS

CONTRACT NO. 74107 *(8BR-4)B-1



** v(E) and v1(E) bars billed with abutments, see Sheets 11 & 12 of 18.

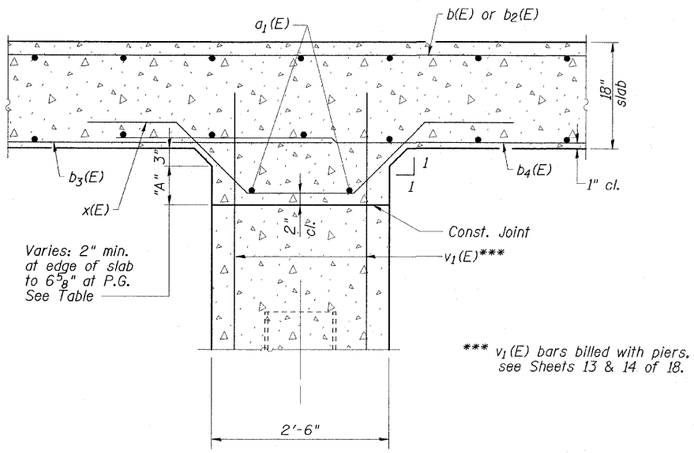
FLOOR DRAIN DETAILS

Notes:
Fiberglass pipe shall conform to ASTM D2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum. The exterior surfaces of the Floor Drains shall be coated or pigmented by the manufacturer with a color that matches the concrete.

SECTION A-A

DIMENSION "A"

	South Abutment	Pier 1	Pier 2	North Abutment
West edge of superstructure	2"	2"	2"	2"
West edge of roadway	4 3/8"	4 3/8"	4 3/8"	4 3/8"
℄ Roadway & P.G.	6 5/8"	6 5/8"	6 5/8"	6 5/8"
East edge of roadway	4 3/8"	4 3/8"	4 3/8"	4 3/8"
East edge of superstructure	2"	2"	2"	2"



*** v1(E) bars billed with piers, see Sheets 13 & 14 of 18.

SECTION B-B

ESCA CONSULTANTS, INC.		
DESIGNED BY:	MTD	04/08
DRAWN BY:	DWH	04/08
CHECKED BY:	DAJ	05/08
APPROVED BY:	RDP	08/08

SUPERSTRUCTURE DETAILS
US 45 OVER SEMINARY CREEK
FAP ROUTE 328 - SECTION (8BR-4)B-1
CLAY COUNTY
STATION 968+56.00
STRUCTURE NO. 013-0043

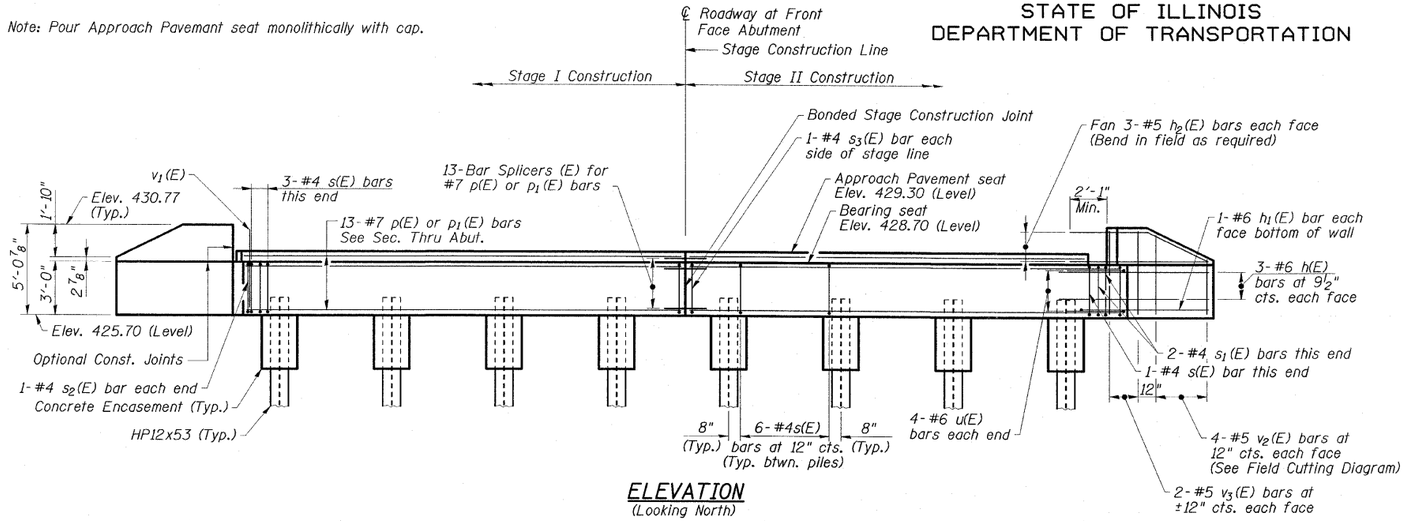
Note: Pour Approach Pavemant seat monolithically with cap.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

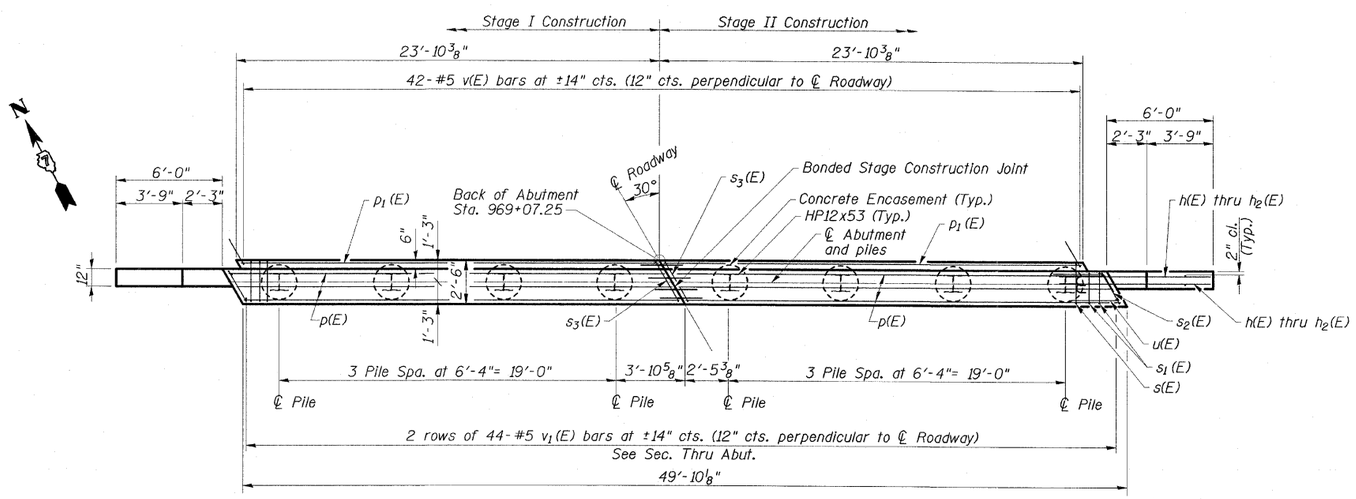
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 328	*	CLAY	109	88
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 11
18 SHEETS

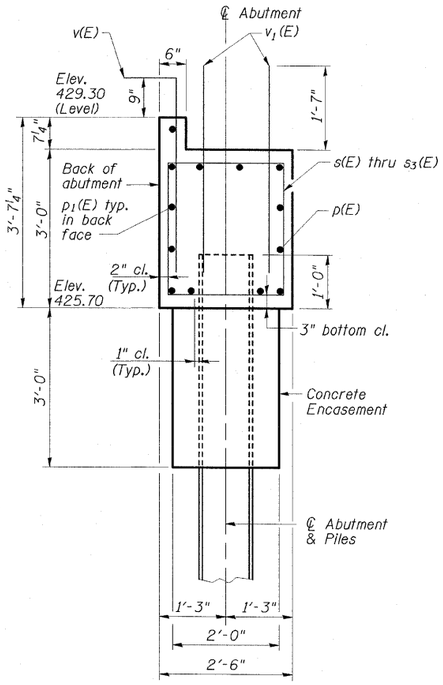
CONTRACT NO. 74107 *(8BR-4)B-1



ELEVATION
(Looking North)



PLAN



SECTION THRU NORTH ABUTMENT

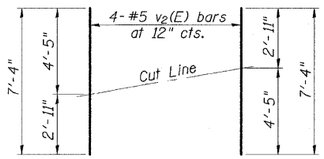
NORTH ABUTMENT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	12	#6	8'-5"	
h_1(E)	4	#6	8'-2"	
h_2(E)	12	#5	8'-5"	
p(E)	16	#7	24'-7"	
p_1(E)	10	#7	23'-6"	
s(E)	46	#4	10'-3"	
s_1(E)	2	#4	9'-3"	
s_2(E)	2	#4	9'-9"	
s_3(E)	2	#4	10'-11"	
u(E)	8	#6	7'-6"	
v(E)	42	#5	4'-9"	
v_1(E)	88	#5	3'-11"	
v_2(E)	8	#5	7'-4"	
v_3(E)	8	#5	4'-8"	
Structure Excavation		Cu. Yd.	80	
Concrete Structures		Cu. Yd.	16.3	
Reinforcement Bars, Epoxy Coated		Pound	2705	
Furnishing Steel Piles, HP12x53		Lin. Ft.	619.5	
Driving Piles		Lin. Ft.	619.5	
Test Pile, Steel HP12x53		Each	1	
Concrete Encasement		Cu. Yd.	2.8	
Porous Granular Embankment, Special		Cu. Yd.	27	
Geocomposite Wall Drain		Sq. Yd.	20	
Pipe Underdrains for Structures, 4"		Foot	75	

For details of piles and Concrete Encasement, see Sheet 16 of 18.
For details of Bar Splicers, see Sheet 15 of 18.

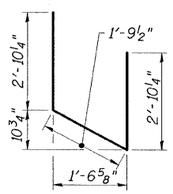
PILE DATA

Type: Steel HP12x53
Nominal Required Bearing: 419 kips
Factored Resistance Available: 209.5 kips
Estimated Length: 88.5'
No. Production Piles: 7
No. Test Piles: 1

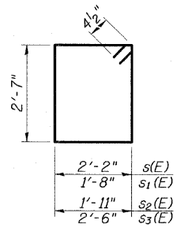


BAR v_2(E)

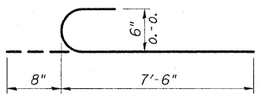
FIELD CUTTING DIAGRAM
Order v_2(E) full length. Cut as shown and use remainder of bars in opposite face.



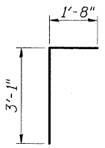
BAR u(E)



BARS s(E) thru s_3(E)



BAR h_1(E)



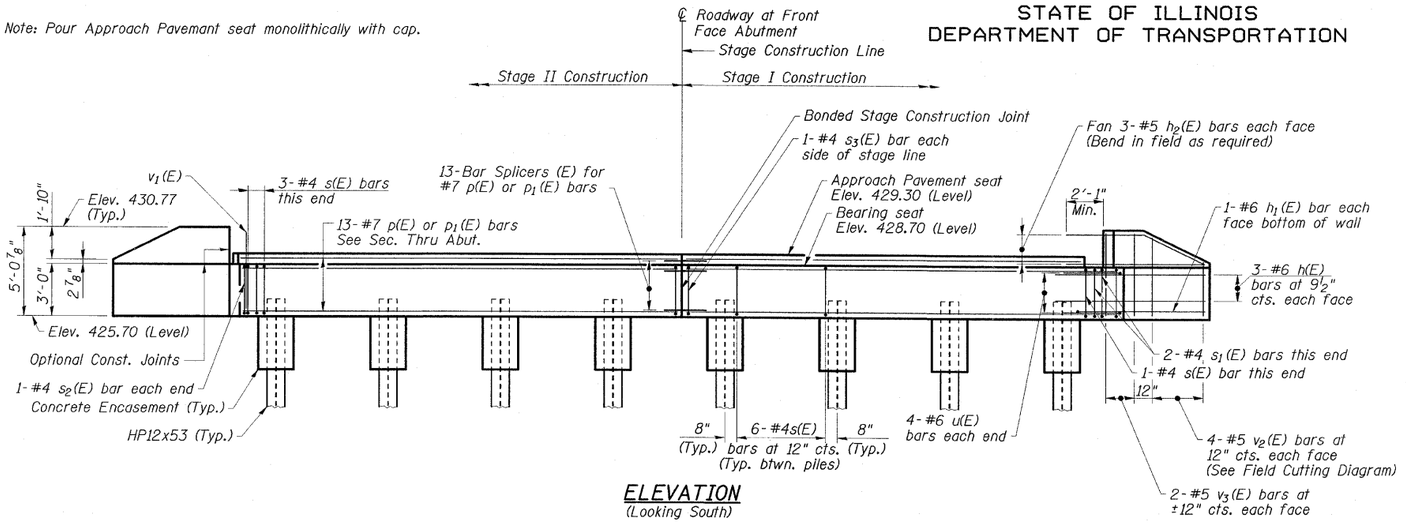
BAR v(E)

ESCA CONSULTANTS, INC.		
DESIGNED BY:	MTD	04/08
DRAWN BY:	DWH	04/08
CHECKED BY:	DAJ	05/08
APPROVED BY:	RDP	08/08

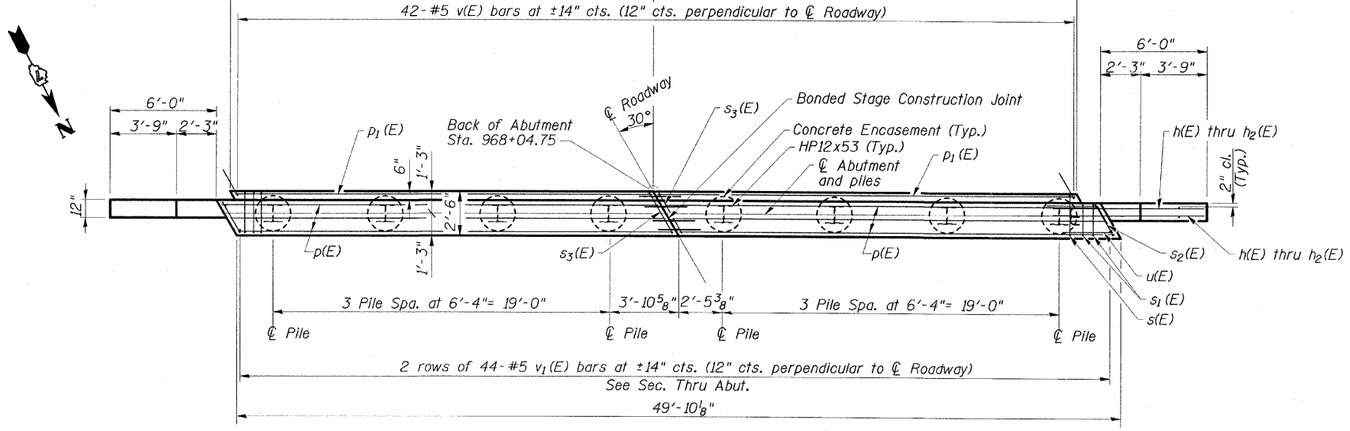
NORTH ABUTMENT
US 45 OVER SEMINARY CREEK
FAP ROUTE 328 - SECTION (8BR-4)B-1
CLAY COUNTY
STATION 968+56.00
STRUCTURE NO. 013-0043

Note: Pour Approach Pavemant seat monolithically with cap.

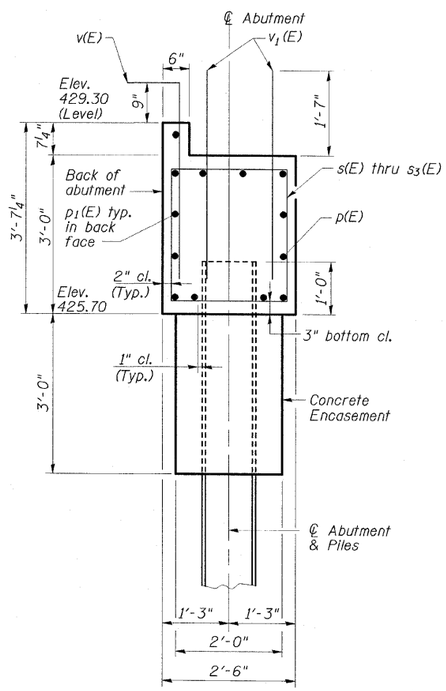
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ELEVATION
(Looking South)



PLAN



SECTION THRU
SOUTH ABUTMENT

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 328	*	CLAY	109	89
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 12
18 SHEETS

CONTRACT NO. 74107 *(8BR-4)B-1

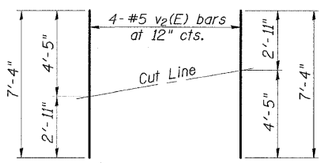
SOUTH ABUTMENT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	12	#6	8'-5"	
h_1(E)	4	#6	8'-2"	
h_2(E)	12	#5	8'-5"	
p(E)	16	#7	24'-7"	
p_1(E)	10	#7	23'-6"	
s(E)	46	#4	10'-3"	
s_1(E)	2	#4	9'-3"	
s_2(E)	2	#4	9'-9"	
s_3(E)	2	#4	10'-11"	
u(E)	8	#6	7'-6"	
v(E)	42	#5	4'-9"	
v_1(E)	88	#5	3'-11"	
v_2(E)	8	#5	7'-4"	
v_3(E)	8	#5	4'-8"	
Structure Excavation		Cu. Yd.	75	
Concrete Structures		Cu. Yd.	16.3	
Reinforcement Bars, Epoxy Coated		Pound	2705	
Furnishing Steel Piles, HP12x53		Lin. Ft.	609.0	
Driving Piles		Lin. Ft.	609.0	
Test Pile, Steel HP12x53		Each	1	
Concrete Encasement		Cu. Yd.	2.8	
Porous Granular Embankment, Special		Cu. Yd.	27	
Geocomposite Wall Drain		Sq. Yd.	20	
Pipe Underdrains for Structures, 4"		Foot	75	

For details of piles and Concrete Encasement, see Sheet 16 of 18.
For details of Bar Splicers, see Sheet 15 of 18.

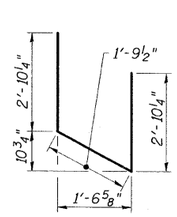
PILE DATA

Type: Steel HP12x53
Nominal Required Bearing: 419 kips
Factored Resistance Available: 209.5 kips
Estimated Length: 87.0'
No. Production Piles: 7
No. Test Piles: 1

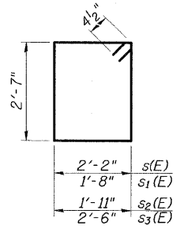


BAR v_2(E)

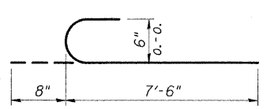
FIELD CUTTING DIAGRAM
Order v_2(E) full length. Cut as shown and use remainder of bars in opposite face.



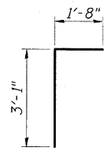
BAR u(E)



BARS s(E) thru s_3(E)



BAR h_1(E)



BAR v(E)

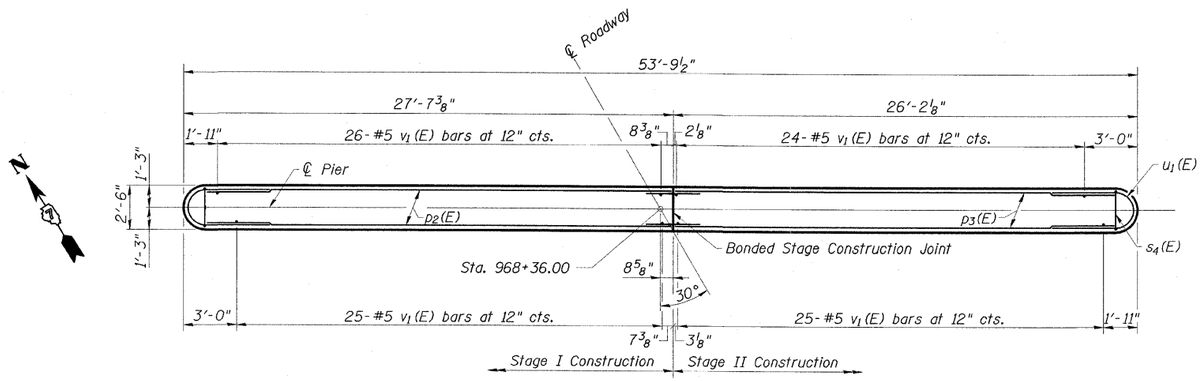
ESCA CONSULTANTS, INC.		
DESIGNED BY:	MTD	04/08
DRAWN BY:	DWH	04/08
CHECKED BY:	DAJ	05/08
APPROVED BY:	RDP	08/08

SOUTH ABUTMENT
US 45 OVER SEMINARY CREEK
FAP ROUTE 328 - SECTION (8BR-4)B-1
CLAY COUNTY
STATION 968+56.00
STRUCTURE NO. 013-0043

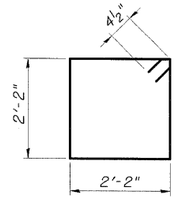
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 328	*	CLAY	109	90
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT-		

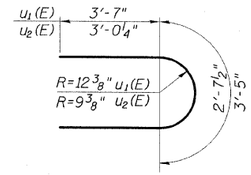
SHEET NO. 13
18 SHEETS
CONTRACT NO. 74107 *(8BR-4)B-1



TOP PLAN



BAR $s_4(E)$



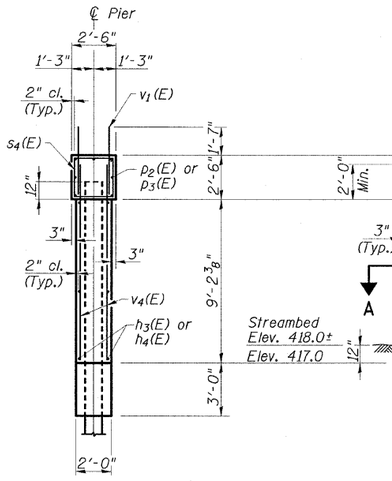
BARS $u_1(E)$ & $u_2(E)$

PIER 1
BILL OF MATERIAL

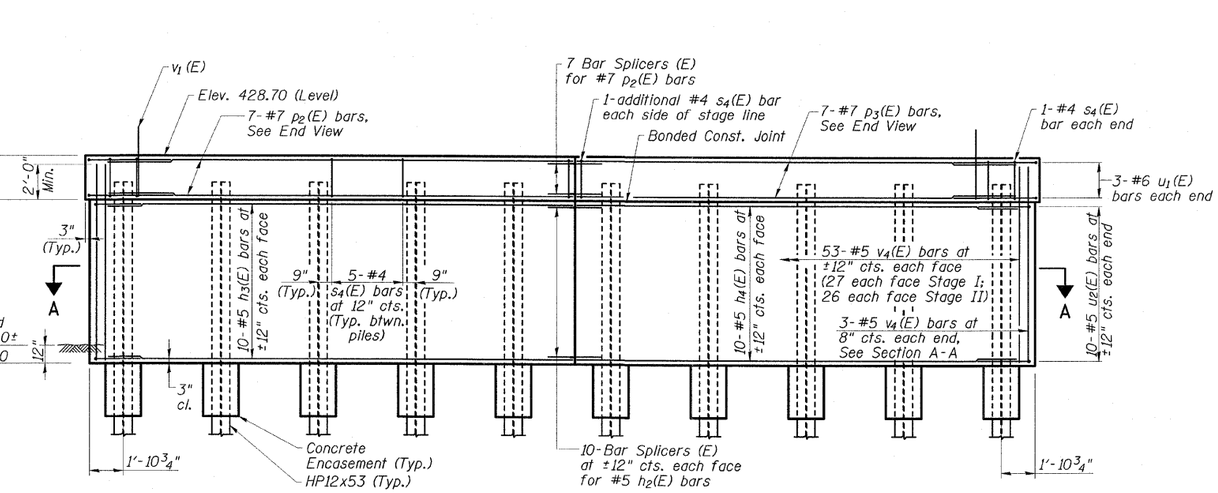
Bar	No.	Size	Length	Shape
$h_3(E)$	20	#5	26'-3"	——
$h_4(E)$	20	#5	24'-9"	——
$p_2(E)$	7	#7	26'-3"	——
$p_3(E)$	7	#7	24'-9"	——
$s_4(E)$	49	#4	9'-5"	□
$u_1(E)$	6	#6	10'-7"	⊔
$u_2(E)$	20	#5	8'-8"	⊔
$v_1(E)$	100	#5	3'-11"	——
$v_4(E)$	112	#5	11'-0"	——

Structure Excavation	Cu. Yd.	35
Concrete Structures	Cu. Yd.	48.4
Reinforcement Bars, Epoxy Coated	Pound	4075
Furnishing Steel Piles, HP12x53	Lin. Ft.	792.0
Driving Piles	Lin. Ft.	792.0
Test Pile, Steel HP12x53	Each	1
Concrete Encasement	Cu. Yd.	3.5
Underwater Structure Excavation Protection Location 1	Each	1

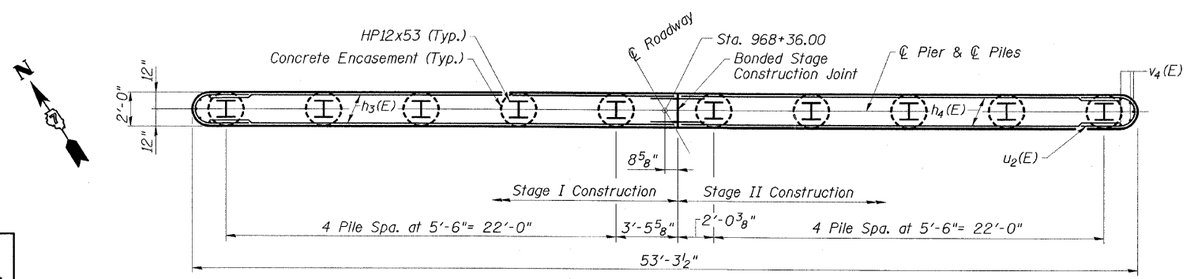
For details of piles and Concrete Encasement, see Sheet 16 of 18.
For details of Bar Splicers, see Sheet 15 of 18.



END VIEW



ELEVATION
(Looking North)



SECTION A-A

PILE DATA

Type: Steel HP12x53
Nominal Required Bearing: 419 kips
Factored Resistance Available: 209.5 kips
Estimated Length: 88.0'
No. Production Piles: 9
No. Test Piles: 1

ESCA CONSULTANTS, INC.		
DESIGNED BY:	MTD	04/08
DRAWN BY:	DWH	04/08
CHECKED BY:	DAJ	05/08
APPROVED BY:	RDP	08/08

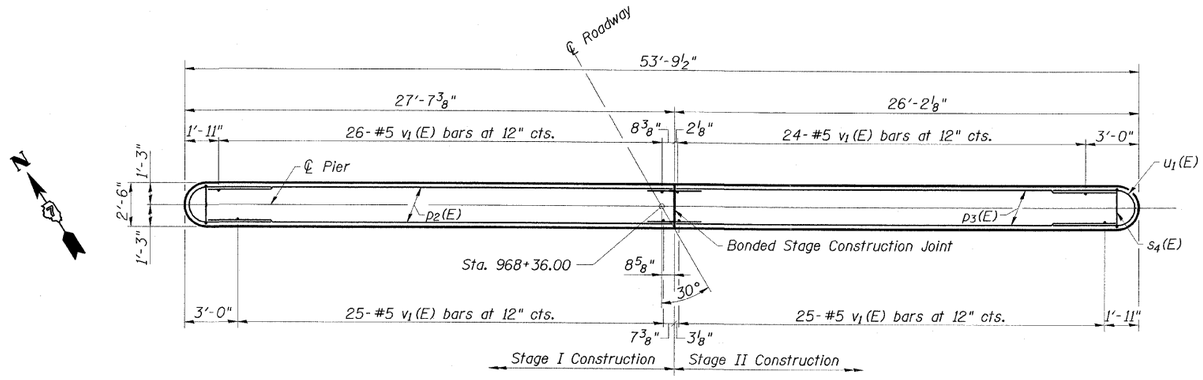
PIER 1
US 45 OVER SEMINARY CREEK
FAP ROUTE 328 - SECTION (8BR-4)B-1
CLAY COUNTY
STATION 968+56.00
STRUCTURE NO. 013-0043

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

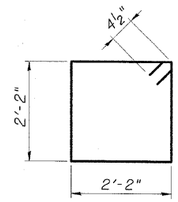
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 328	*	CLAY	109	91
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 14
18 SHEETS

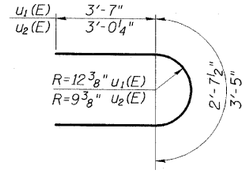
CONTRACT NO. 74107 *(8BR-4)B-1



TOP PLAN



BAR $s_4(E)$



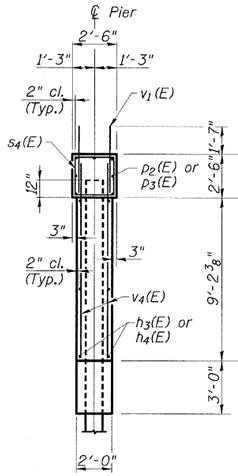
BARS $u_1(E)$ & $u_2(E)$

PIER 2
BILL OF MATERIAL

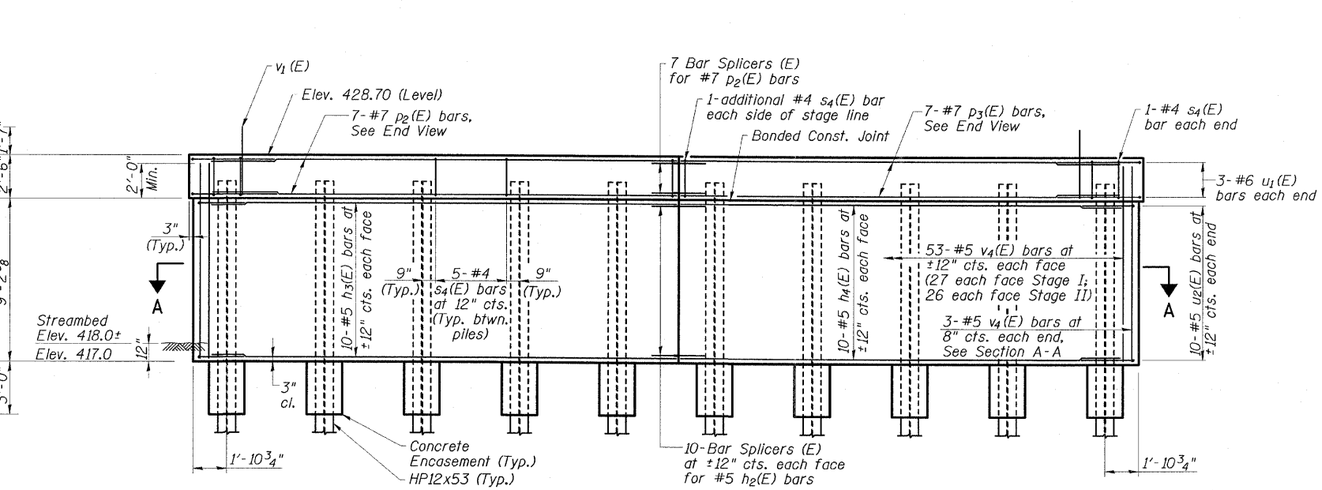
Bar	No.	Size	Length	Shape
$h_3(E)$	20	#5	26'-3"	——
$h_4(E)$	20	#5	24'-9"	——
$p_2(E)$	7	#7	26'-3"	——
$p_3(E)$	7	#7	24'-9"	——
$s_4(E)$	49	#4	9'-5"	□
$u_1(E)$	6	#6	10'-7"	⊃
$u_2(E)$	20	#5	8'-8"	⊃
$v_1(E)$	100	#5	3'-11"	——
$v_4(E)$	112	#5	11'-0"	——

Structure Excavation	Cu. Yd.	35
Concrete Structures	Cu. Yd.	48.4
Reinforcement Bars, Epoxy Coated	Pound	4075
Furnishing Steel Piles, HP12x53	Lin. Ft.	796.5
Driving Piles	Lin. Ft.	796.5
Test Pile, Steel HP12x53	Each	1
Concrete Encasement	Cu. Yd.	3.5
Underwater Structure Excavation Protection Location 2	Each	1

For details of piles and Concrete Encasement, see Sheet 16 of 18.
For details of Bar Splicers, see Sheet 15 of 18.



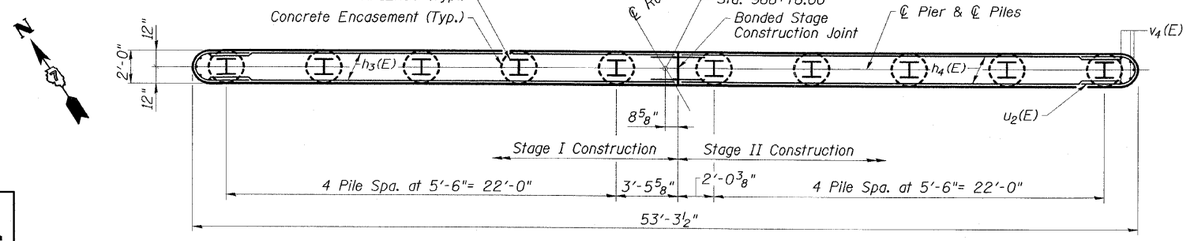
END VIEW



ELEVATION
(Looking North)

PILE DATA

Type: Steel HP12x53
Nominal Required Bearing: 419 kips
Factored Resistance Available: 209.5 kips
Estimated Length: 88.5'
No. Production Piles: 9
No. Test Piles: 1



SECTION A-A

ESCA CONSULTANTS, INC.		
DESIGNED BY:	MTD	04/08
DRAWN BY:	DWH	04/08
CHECKED BY:	DAJ	05/08
APPROVED BY:	RDP	08/08

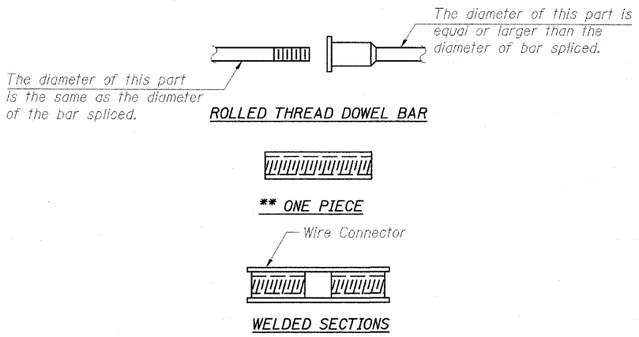
PIER 2
US 45 OVER SEMINARY CREEK
FAP ROUTE 328 - SECTION (8BR-4)B-1
CLAY COUNTY
STATION 968+56.00
STRUCTURE NO. 013-0043

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 328	*	CLAY	109	92
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

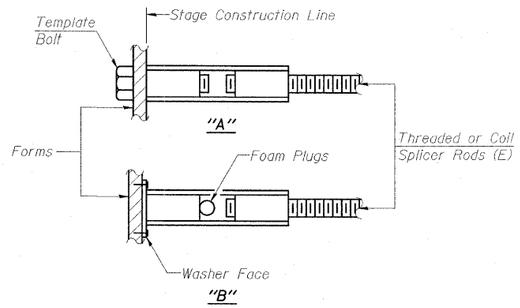
SHEET NO. 15
18 SHEETS

CONTRACT NO. 74107 *(8BR-4)B-1



BAR SPLICER ASSEMBLY ALTERNATIVES

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



INSTALLATION AND SETTING METHODS

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

NOTES

Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.

Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.

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

Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.

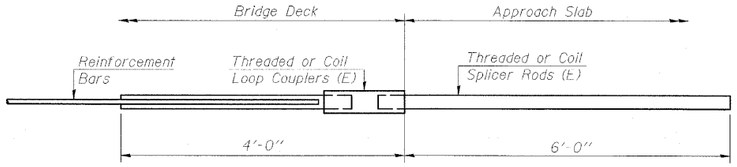
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

① Minimum Capacity (Tension in kips) = 1.25 x fy x A_t

② Minimum *Pull-out Strength (Tension in kips) = 0.66 x fy x A_t

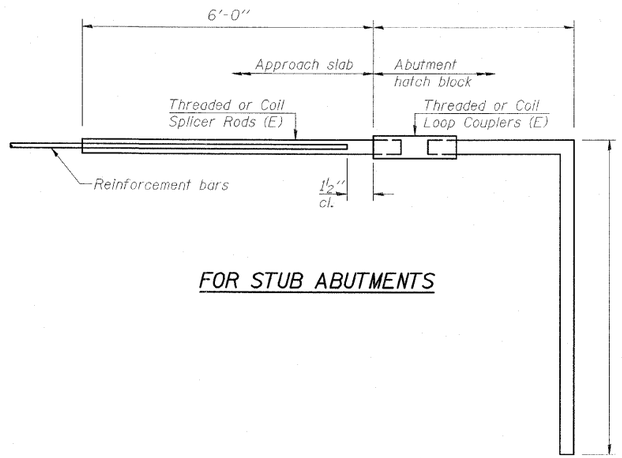
Where fy = Yield strength of lapped reinforcement bars in ksi.
A_t = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

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



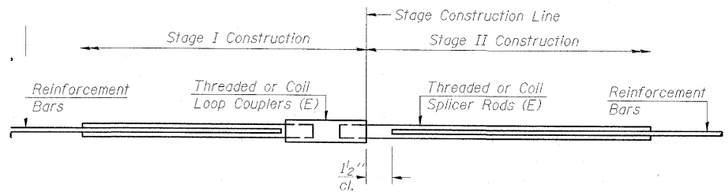
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 12.3 kips - tension
No. Required = 84



FOR STUB ABUTMENTS

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



STANDARD

Bar Size	No. Assemblies Required	Location
#5	40	Piers
#7	14	Piers
#7	26	Abutments
#5	158	Slab

BAR SPLICER ASSEMBLY DETAILS
US 45 OVER SEMINARY CREEK
FAP ROUTE 328 - SECTION (8BR-4)B-1
CLAY COUNTY
STATION 968+56.00
STRUCTURE NO. 013-0043

ESCA CONSULTANTS, INC.		
DESIGNED BY:	MTD	04/08
DRAWN BY:	DWH	04/08
CHECKED BY:	DAJ	05/08
APPROVED BY:	RDP	08/08

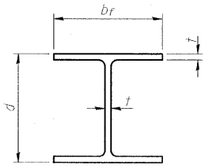
BSD-1 5-16-08

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 328	*	CLAY	109	93
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

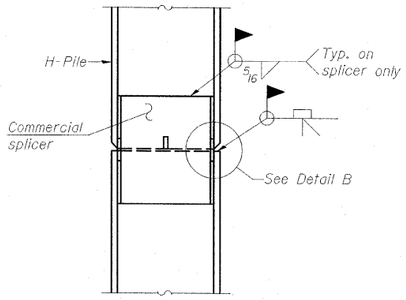
SHEET NO. 16
18 SHEETS

CONTRACT NO. 74107 *(8BR-4)B-1

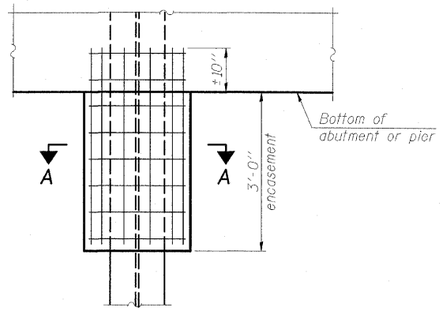


STEEL PILE TABLE

Designation	Depth d	Flange width b_f	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	11/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	11/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 3/4"	12"	7/16"	24"
HP 10x57	10"	10 1/4"	9/16"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP 8x36	8"	8 1/8"	7/16"	18"



ELEVATION



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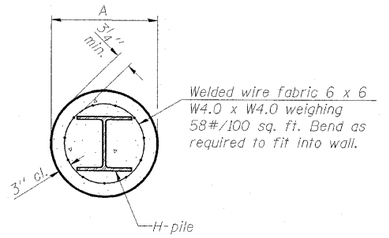
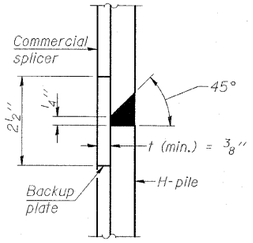


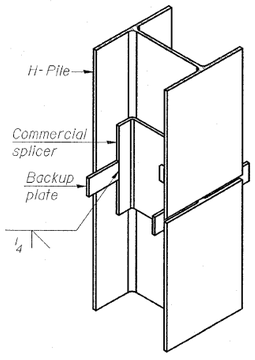
SECTION A-A

Note: Forms for encasement may be omitted when soil conditions permit.

PILE ENCASEMENT

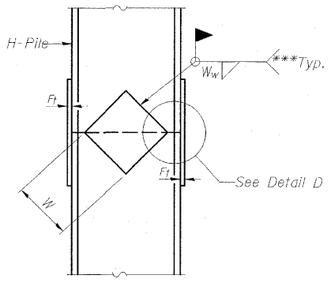


DETAIL "B"

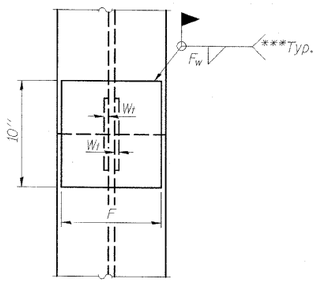


ISOMETRIC VIEW

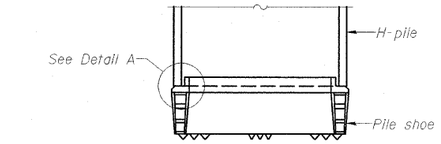
WELDED COMMERCIAL SPLICE



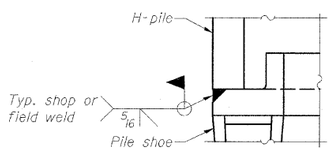
ELEVATION



END VIEW

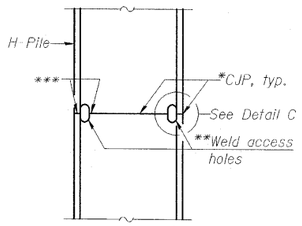


ELEVATION

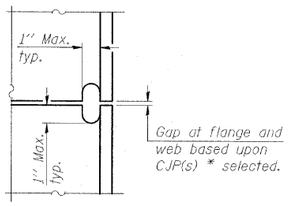


DETAIL A

H-PILE SHOE ATTACHMENT

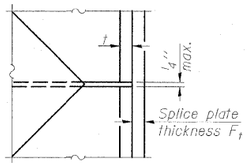


ELEVATION



DETAIL C

COMPLETE PENETRATION WELD SPLICE



DETAIL D

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

*Use joint conforming to Figure 3.4 in AWS D1.1, Structure Welding Code-Steel.

**Preparation per Fig. 5.2 in AWS D1.1, Structure Welding Code-Steel.

***Interrupt welds 1/4" from end of each pile.

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

HP PILE DETAILS
US 45 OVER SEMINARY CREEK
FAP ROUTE 328 - SECTION (8BR-4)B-1
CLAY COUNTY
STATION 968+56.00
STRUCTURE NO. 013-0043

ESCA CONSULTANTS, INC.

DESIGNED BY:	MTD	04/08
DRAWN BY:	DWH	04/08
CHECKED BY:	DAJ	05/08
APPROVED BY:	RDP	08/08

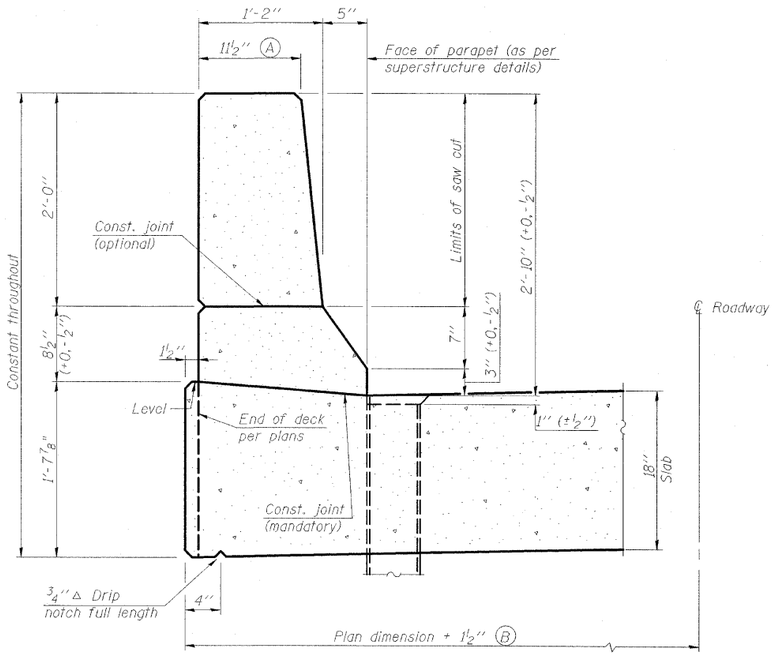
F-HP 5-16-08

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

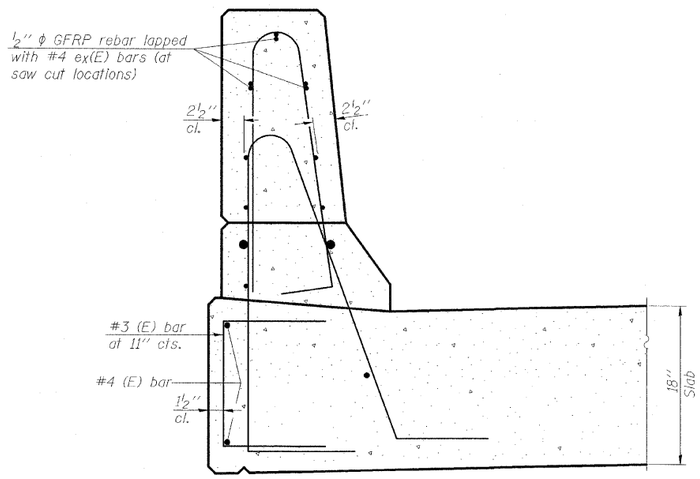
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 328	*	CLAY	109	94
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 17
18 SHEETS

CONTRACT NO. 74107 *(8BR-4)B-1



SECTION
(Showing dimensions)

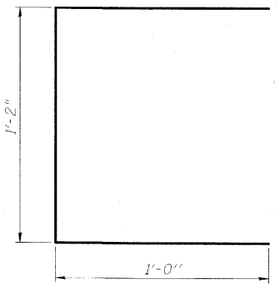


SECTION
(Showing reinforcement clearances for slip forming and additional reinforcement bars)

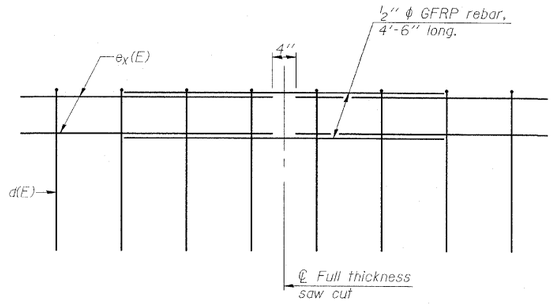
GENERAL NOTES

All dimensions shall remain the same as shown on contract plans, except dimensions A and B which are to be revised as shown to provide additional clearance. Additional concrete needed to revise dimension A and B= 0.0138 cu. yds./ft. of parapet.

Full thickness saw cut at all joint locations in lieu of cork joint filler.



#3 (E) BAR



GFRP REBAR STIFFENING DETAIL
(Place as shown in parapet section at each parapet joint location.)

ESCA CONSULTANTS, INC.

DESIGNED BY:	MTD	04/08
DRAWN BY:	DWH	04/08
CHECKED BY:	DAJ	05/08
APPROVED BY:	RDP	08/08

CONCRETE PARAPET
SLIPFORMING OPTION
US 45 OVER SEMINARY CREEK
FAP ROUTE 328 - SECTION (8BR-4)B-1
CLAY COUNTY
STATION 968+56.00
STRUCTURE NO. 013-0043

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 328	*	CLAY	109	95
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 18
18 SHEETS

CONTRACT NO. 74107 *(8BR-4)B-1

Illinois Department of Transportation — SOIL BORING LOG — Page 1 of 3

Date 7/12/07

ROUTE FAP 328 (US 45) DESCRIPTION Seminary Creek LOGGED BY E. Sandschafer

SECTION(8BR1,8BR3,8BR4)B-1LOCATION Sec 16 - NW 1/4, Sec 17 - NE 1/4, SEC. TWP. 2 N, RNG. 7 E, 3 PM

COUNTY Clay DRILLING METHOD Hollow stem auger & split spoon HAMMER TYPE Auto 140#

STRUCT. NO. 013-0015 Station 968+56
BORING NO. 1 Station 968+04 Offset 11.00ft Rt
Ground Surface Elev. 430.69 ft

Surface Water Elev. 420.40 ft
Stream Bed Elev. 420.33 ft
Groundwater Elev.:
First Encounter 381.2 ft
Upon Completion Washed ft
After 168 Hrs. 419.1 ft

DEPTH (ft)	BLOWS (#/6")	UCS (tsf)	MOIST (%)
15" asphalt pavement			
429.26			
Very soft to medium, very damp, gray, SILTY LOAM	3		
	4	1.0	17
	3	PP	
	0		
	0		
405.65	2	0.4	24
Soft, damp, brown/gray/red, CLAY TILL	2	B	
	0		
	1	0.2	24
	1	B	
	2		
	3	1.9	24
416.65	4	B	
Medium to soft, damp, brown, SANDY LOAM	3		
	4	0.7	19
	4	B	
	0		
	0	0.3	22
	3	B	
Soft, damp, brown marbled gray, CLAY	1		
	2	1.9	20
411.15	5	B	
	1		

DEPTH (ft)	BLOWS (#/6")	UCS (tsf)	MOIST (%)
396.15			
Soft, damp, gray, CLAY TILL	1		
	3	1.2	18
	5	B	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)
BBS, from 137 (Rev. 8-99)

Illinois Department of Transportation — SOIL BORING LOG — Page 2 of 3

Date 7/12/07

ROUTE FAP 328 (US 45) DESCRIPTION Seminary Creek LOGGED BY E. Sandschafer

SECTION(8BR1,8BR3,8BR4)B-1LOCATION Sec 16 - NW 1/4, Sec 17 - NE 1/4, SEC. TWP. 2 N, RNG. 7 E, 3 PM

COUNTY Clay DRILLING METHOD Hollow stem auger & split spoon HAMMER TYPE Auto 140#

STRUCT. NO. 013-0015 Station 968+56
BORING NO. 1 Station 968+04 Offset 11.00ft Rt
Ground Surface Elev. 430.69 ft

Surface Water Elev. 420.40 ft
Stream Bed Elev. 420.33 ft
Groundwater Elev.:
First Encounter 381.2 ft
Upon Completion Washed ft
After 168 Hrs. 419.1 ft

DEPTH (ft)	BLOWS (#/6")	UCS (tsf)	MOIST (%)
Stiff, damp, gray, CLAY TILL (continued)	3		
	4	1.2	19
	5	B	
396.19			
Stiff, damp, gray, CLAY LOAM TILL	1		
	2	1.3	20
	3	B	
	1		
	2	0.8	18
	3	B	

DEPTH (ft)	BLOWS (#/6")	UCS (tsf)	MOIST (%)
Stiff, damp, gray, CLAY LOAM TILL (continued)	3		
	3	0.7	20
	5	B	
Medium to stiff, damp, red marbled gray, LOAM	1		
	3	1.0	16
	4	B	
405.65	2		
Stiff, damp, brown/gray/red, CLAY TILL	4	1.5	17
	7	B	
	2		
	4	2.4	17
	5	B	
	2		
	4	1.2	17
	5	B	
381.15			
Medium, wet, gray, fine grained SAND, 13% passing #200 sieve	4		
	6		21
	9		
Soft, damp, gray, SANDY LOAM	7		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)
BBS, from 137 (Rev. 8-99)

Illinois Department of Transportation — SOIL BORING LOG — Page 3 of 3

Date 7/12/07

ROUTE FAP 328 (US 45) DESCRIPTION Seminary Creek LOGGED BY E. Sandschafer

SECTION(8BR1,8BR3,8BR4)B-1LOCATION Sec 16 - NW 1/4, Sec 17 - NE 1/4, SEC. TWP. 2 N, RNG. 7 E, 3 PM

COUNTY Clay DRILLING METHOD Hollow stem auger & split spoon HAMMER TYPE Auto 140#

STRUCT. NO. 013-0015 Station 968+56
BORING NO. 1 Station 968+04 Offset 11.00ft Rt
Ground Surface Elev. 430.86 ft

Surface Water Elev. 420.40 ft
Stream Bed Elev. 420.23 ft
Groundwater Elev.:
First Encounter 381.2 ft
Upon Completion Washed ft
After 168 Hrs. 419.1 ft

DEPTH (ft)	BLOWS (#/6")	UCS (tsf)	MOIST (%)
Soft, damp, gray, SANDY LOAM (continued)	11		
	17	0.4	15
		S	
Very dense, moist, gray, SANDSTONE	343.10		
Extent of exploration.	340.96	50/5"	
		50/1"	
		50/1"	

Benchmark: BM 208 RR Spike in PP (#207) on W side of US 45, Sta 969+25, 29.7' W of centerline = 429.85' elevation. Provided by Program Development.

Illinois Department of Transportation — SOIL BORING LOG — Page 1 of 4

Date 7/11/07

ROUTE FAP 328 (US 45) DESCRIPTION Seminary Creek LOGGED BY E. Sandschafer

SECTION(8BR1,8BR3,8BR4)B-1LOCATION Sec 16 - NW 1/4, Sec 17 - NE 1/4, SEC. TWP. 2 N, RNG. 7 E, 3 PM

COUNTY Clay DRILLING METHOD Hollow stem auger & split spoon HAMMER TYPE Auto 140#

STRUCT. NO. 013-0015 Station 968+56
BORING NO. 2 Station 969+05 Offset 11.00ft Rt
Ground Surface Elev. 430.53 ft

Surface Water Elev. 420.40 ft
Stream Bed Elev. 420.33 ft
Groundwater Elev.:
First Encounter 361.1 ft
Upon Completion Washed ft
After 24 Hrs. 414.4 ft

DEPTH (ft)	BLOWS (#/6")	UCS (tsf)	MOIST (%)
15" asphalt pavement			
429.26			
Very soft to medium, very damp, gray, SILTY LOAM	2		
	1	0.6	22
	2	0	
	2		
	3	0.8	21
	6	B	
	1		
	1	0.1	27
	1	0	
Stiff, damp, gray, SILTY CLAY	2		
	3	1.1	25
418.68	3	B	
Stiff, damp, gray, SILTY LOAM	0		
	2	0.8	28
	2	B	
410.03			
Stiff, damp, gray mottled red, SILTY CLAY	0		
	0	1.4	22
	3	B	
Stiff, damp, reddish/gray, CLAY LOAM TILL	2		
	3	1.6	20
413.68	4	B	

DEPTH (ft)	BLOWS (#/6")	UCS (tsf)	MOIST (%)
Stiff, damp, reddish/gray, CLAY LOAM TILL (continued)	7	3.6	
	10	B	
	3		
	9	2.6	14
	13	B	
	6		
	7	4.5	15
	14	B	
	4		
	7	3.6	15
	11	B	
	3		
Stiff, damp, gray, SILTY CLAY	7	1.8	15
	9	B	
393.03			
Stiff, damp, gray mottled blue, CLAY w/ trace Gravel	2		
	4	1.9	18
	6	B	
	1		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)
BBS, from 137 (Rev. 8-99)

Illinois Department of Transportation — SOIL BORING LOG — Page 2 of 4

Date 7/11/07

ROUTE FAP 328 (US 45) DESCRIPTION Seminary Creek LOGGED BY E. Sandschafer

SECTION(8BR1,8BR3,8BR4)B-1LOCATION Sec 16 - NW 1/4, Sec 17 - NE 1/4, SEC. TWP. 2 N, RNG. 7 E, 3 PM

COUNTY Clay DRILLING METHOD Hollow stem auger & split spoon HAMMER TYPE Auto 140#

STRUCT. NO. 013-0015 Station 968+56
BORING NO. 2 Station 969+05 Offset 11.00ft Rt
Ground Surface Elev. 430.53 ft

Surface Water Elev. 420.40 ft
Stream Bed Elev. 420.33 ft
Groundwater Elev.:
First Encounter 361.1 ft
Upon Completion Washed ft
After 24 Hrs. 414.4 ft

DEPTH (ft)	BLOWS (#/6")	UCS (tsf)	MOIST (%)
Stiff, damp, gray marbled blue, CLAY w/ trace Gravel (continued)	4	1.5	19
	4	B	
396.28			
Medium to stiff, damp, gray, SILTY CLAY	0		
	2	0.7	22
	2	B	
	1		
	3	0.7	20
	3	B	
391.28			
Medium to stiff, damp, gray, SILTY CLAY	7		
	8	B	22
	13		
381.08			
Very soft, wet, gray, SANDY LOAM	6		
	3	1.7	20
	2	B	
Stiff, damp, gray, SANDY LOAM	7		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)
BBS, from 137 (Rev. 8-99)

Illinois Department of Transportation — SOIL BORING LOG — Page 3 of 4

Date 7/11/07

ROUTE FAP 328 (US 45) DESCRIPTION Seminary Creek LOGGED BY E. Sandschafer

SECTION(8BR1,8BR3,8BR4)B-1LOCATION Sec 16 - NW 1/4, Sec 17 - NE 1/4, SEC. TWP. 2 N, RNG. 7 E, 3 PM

COUNTY Clay DRILLING METHOD Hollow stem auger & split spoon HAMMER TYPE Auto 140#

STRUCT. NO. 013-0015 Station 968+56
BORING NO. 2 Station 969+05 Offset 11.00ft Rt
Ground Surface Elev. 430.53 ft

Surface Water Elev. 420.40 ft
Stream Bed Elev. 420.33 ft
Groundwater Elev.:
First Encounter 361.1 ft
Upon Completion Washed ft
After 24 Hrs. 414.4 ft

DEPTH (ft)	BLOWS (#/6")	UCS (tsf)	MOIST (%)
Loose, wet, gray, fine grained SAND, 4% passing #200 sieve (continued)	3		
	5		24
Very dense, moist, gray, SANDSTONE	341.28		
	340.98	50/2"	
		50/1"	
		50/1"	
Borehole continued with rock coring			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)
BBS, from 137 (Rev. 8-99)

Illinois Department of Transportation — ROCK CORE LOG — Page 4 of 4

Date 7/11/07

ROUTE FAP 328 (US 45) DESCRIPTION Seminary Creek LOGGED BY E. Sandschafer

SECTION(8BR1,8BR3,8BR4)B-1LOCATION Sec 16 - NW 1/4, Sec 17 - NE 1/4, SEC. TWP. 2 N, RNG. 7 E, 3 PM

COUNTY Clay CORING METHOD Rotary, surf set diamond bit

STRUCT. NO. 013-0015 Station 968+56
BORING NO. 2 Station 969+05 Offset 11.00ft Rt
Ground Surface Elev. 430.53 ft

CORING BARREL TYPE & SIZE: NW, conv cal rod, split inner
Core Diameter 2.05 in
Top of Rock Elev. 341.08 ft
Begin Core Elev. 340.68 ft

DEPTH (ft)	RECOVERY (ft)	RECOVERY (%)	RQD (in)	CORE RUN (ft)	CORE STRENGTH (psi)
Soft, gray, moderately weathered, SANDSTONE	340.68				
	50-1	60	24	0.2	
Rock core B2A @ 50.7' to 94.7' depth = 173 lbf					
	50-2	64	0	0.2	
Black COAL	330.08				
Soft, gray, moderately weathered, SANDSTONE	329.98				
Extent of exploration.					

Benchmark: BM 209 RR Spike in PP (#207) on W side of US 45, Sta 969+25, 29.7' W of centerline = 429.85' elevation. Provided by Program Development.

Color pictures of the cores Available on request
Cores will be stored for examination until 07/11/08
The "Strength" column represents the tensile compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

ESCA CONSULTANTS, INC.		
DESIGNED BY:	MTD	04/08
DRAWN BY:	DWH	04/08
CHECKED BY:	DAJ	05/08
APPROVED BY:	RDP	08/08

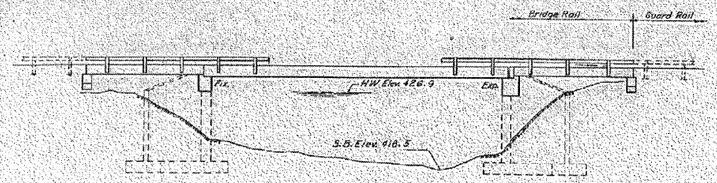
BORING LOGS
US 45 OVER SEMINARY CREEK
FAP ROUTE 328 - SECTION (8BR-4)B-1
CLAY COUNTY
STATION 968+56.00
STRUCTURE NO. 013-0043

CONTRACT NO. 74107

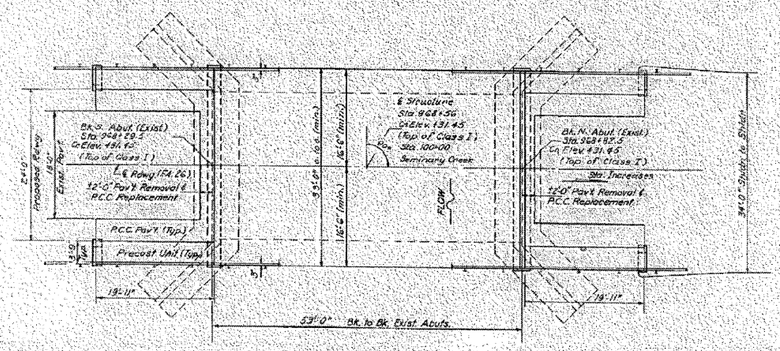
FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(8BR-4)B-1	CLAY	109	96
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Bm. "T" crossed "O" top of SE Wingwall Sta. 966+25. Elev. 430.83
Existing Structure: Built as S.B.I. 25, Sec. 85, Sta. 968+56
in 1920. Superstructure is R.C. thru Girder on R.C. closed Abutments.
Contractor shall remove existing Structure after completion
of reloin. 3 detour 2.00' West of exist. Structure. No Salvage.
Temporary Bridge shall have 75 Sq.Ft. waterway opening.



ELEVATION



PLAN

WATERWAY INFORMATION

Drainage Area: 62.1 Sq. mile

Present Opening	300 Sq. Ft.
Proposed Opening	300 Sq. Ft.
Q (50) 1350 c.f.s.	

STATION 968+56
RESULT 19 BY
STATE OF ILLINOIS
F.A.P.T. 26 SEC. 8BR-4
LOADING HS 20

NAME PLATE
(Sec. Std. 2118)

DESIGNED	Simon Wetmore	January 19 1972
CHECKED	Simon Bruce	EXAMINED
DRAWN	Simon Wetmore	PASSED
CHECKED	JP	APPROVED

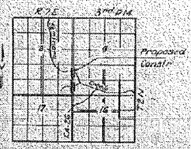
FIELD UNITS
f'_c = 1000 psi (sub.)
f_s = 20000 psi (reinf.)
n = 10

DESIGN STRESSES

PRECAST PRESTR. UNITS	PRECAST UNITS
f'_c = 5000 psi.	f'_c = 4500 psi.
f'_{ci} = 4000 psi.	f'_{ci} = 3900 psi.
f_s = 248,000 psi. (7/16" Strands)	f_s = 20,000 psi
f_{si} = 173,600 psi. (7/16" Strands)	n = 8

Design Specifications 1969 AASHO (as applicable)

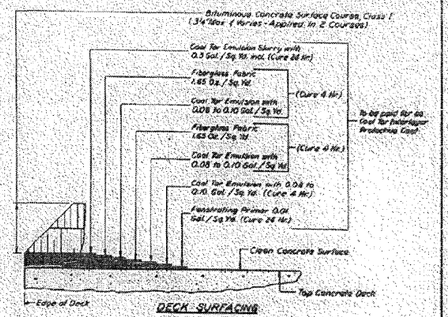
LOADING HS 20-44



LOCATION SKETCH

Route	Section	County	Total Sheets	Sheet No.
328	8BR-4	CLAY	21	12
Fed. Road Dist. No. 7	Illinois	Fed. Aid Project		

SHEET NO.
? SHEETS



DECK SURFACING

GENERAL NOTES

All reinforcement bars shall be lapped 24 diameters unless otherwise shown.

It shall be the responsibility of the Contractor to verify all dimensions and conditions existing in the field prior to construction and ordering of materials.

An alternate strand pattern using Extra High Strength Prestressing strand (270 Ksi.) is permitted.

Expansion bolts shall consist of self drilling expansion anchors and 3/4" ø hooked bolts. Hooked bolts shall extend a minimum of 12" into new concrete, unless otherwise shown.

Shoulder transition to wingwall shall be shaped with broken concrete. Cost Incidental

TOTAL BILL OF MATERIAL

Item	Unit	Super.	Sub.	Total
Bituminous Concrete Surface Course, Class I	Tons	29		29
Portland Cement Concrete Pavement (10")	Sq. Yds.	33		33
Pavement Fabric	Sq. Yds.	33		33
Concrete Removal	Cu. Yds.		6.0	8.0
Expansion Bolts (3/4")	Each	52	52	104
Class X Concrete	Cu. Yds.	1.6	18.2	20.3
Precast Concrete Bridge Slab	Sq. Ft.	295		295
Precast Prestressed Concrete Deck Beams (24")	Sq. Ft.	1739		1739
Steel Railing, Type 3	Lin. Ft.	107		107
Reinforcement Bars	Lbs.		5390	5390
Pavement Removal & P.C.C. Replacement, Type 2 (10")	Sq. Yds.	8		8
Removal of Existing Superstructures	Each	1		1
Coal Tar Interlayer Protective Coat	Sq. Yds.	135		135
Name Plates	Each	1		1
Preformed Joint Sealer	Lin. Ft.	53		53
Structural Steel	Lbs.	6990		6990
Temporary Bridge Complete	Each	1		1

* Bk. to Bk. Existing Abutments.

GENERAL PLAN & ELEVATION
F.A.R.T. 26 OVER SEMINARY CREEK
F.A.R.T. SEC. 8BR-4
CLAY COUNTY
STA. 968+56

GP-1 (5-15-71)

DESIGNED BY:	DAJ	04/08
DRAWN BY:	HAS	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

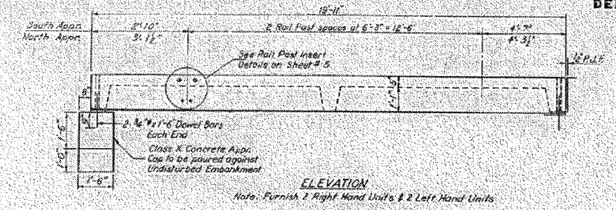
FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
US 45 OVER SEMINARY CREEK
FAP ROUTE 328 - SECTION (8BR-4)B-1
CLAY COUNTY

CONTRACT NO. 74107

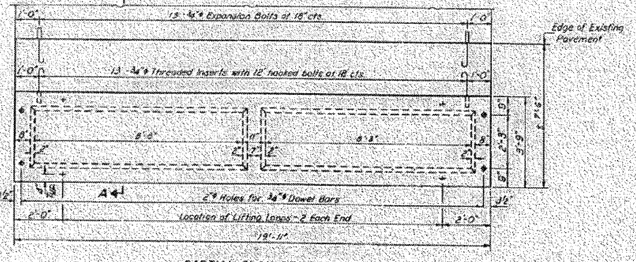
FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(8BR-4)B-1	CLAY	109	97
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

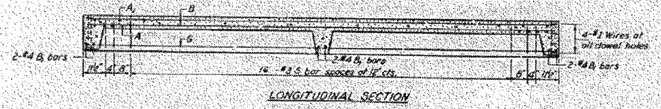


ELEVATION

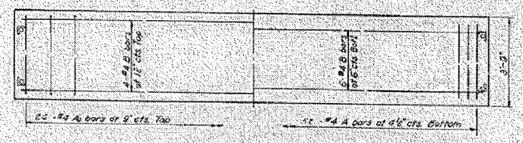
Note: Furnish 2 Right Hand Units & 2 Left Hand Units



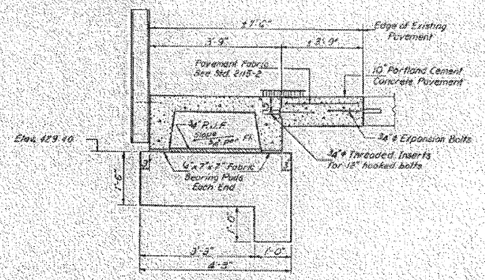
PARTIAL PLAN OF APPROACH



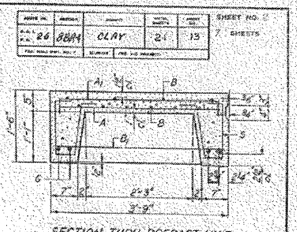
LONGITUDINAL SECTION



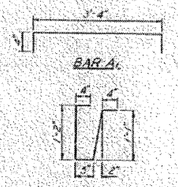
SLAB REINFORCEMENT



SECTION A-A



SECTION THRU PRECAST UNIT



BAR LIST - ONE UNIT

Reinforcement to be cast into slab.

Bar	No.	Size	Length	Shape
A	22	#4	3'-3"	
A1	24	#4	4'-0"	
B	10	#4	19'-2"	
B1	6	#4	3'-6"	
G	4	#16	19'-8"	
S	49	#3	3'-4"	

NOTES

Unless otherwise approved by the Engineer, lifting loops shall be ½"ø, 6 x 19 class wire rope with fiber core and shall have a minimum ultimate strength of 18,900 lbs. Loops shall be burned off after slab has been erected.

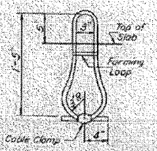
Holes shall be drilled and anchor dowels grouted in place.

Cost of reinforcement and accessories cast into the slab unit, bearing pads, furnishing, drilling for, placing and grouting anchor dowels and ¾"ø hooked bolts is included in Unit bid price for "Precast Concrete Bridge Slab."

The Precast Concrete Bridge Slab shall be erected and aligned with the exterior face of the exterior Deck Beam after Deck Beams are in final position.

BILL OF MATERIAL

Item	Unit	Quantity
Precast Concrete Bridge Slab	Sq. Ft.	199
Portland Cement Concrete Pavement (10")	Sq. Yds.	33
Pavement Fabric	Sq. Yds.	33
Expansion Bolts ¾"ø	Each	52
Class X Concrete	Cu. Yds.	1.6



LIFTING LOOP DETAIL

STRESSES

fc = 4,500 psi.
fc = 1,800 psi.
fs = 20,000 psi.
n = 8

LOADING H S-20

APPROACH DETAILS
F.A.R.T. 26 SEC. 6 BR-4
CLAY COUNTY
STA. 969+56

DESIGNED	Simmons Hall Bunker	Sept. 18 19 75
CHECKED	Ames Power	EXAMINED
DRAWN	Simmons Hall Bunker	PASSED
CHECKED	JP	APPROVED

AP-1 20' Precast Appr. Unit (Rt. ℄ (5-18-76)

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	04/08
DRAWN BY:	HAS	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

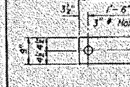
FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
US 45 OVER SEMINARY CREEK
FAP ROUTE 328 - SECTION (8BR-4)B-1
CLAY COUNTY

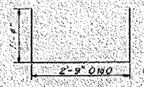
CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(8BR-4)B-1	CLAY	109	98
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

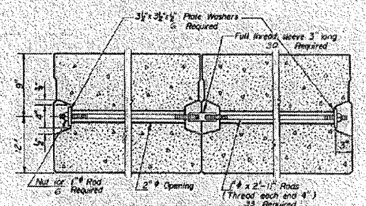


FABRIC BEARING PAD

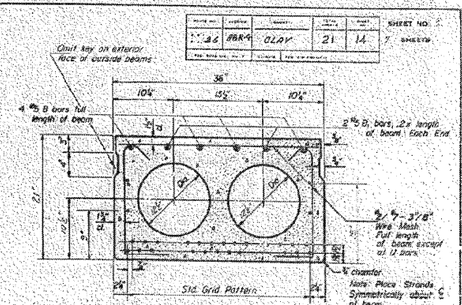


U BAR

GRAPHITED ASBESTOS BEARING PAD

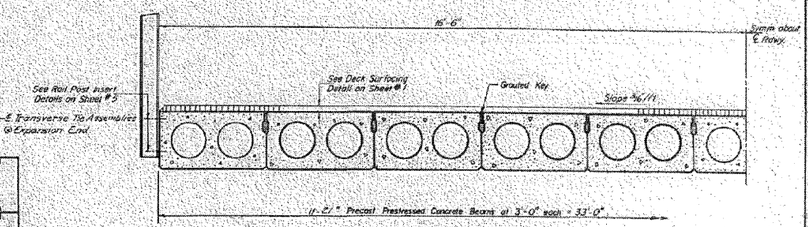


TYPICAL TRANSVERSE TIE ASSEMBLY

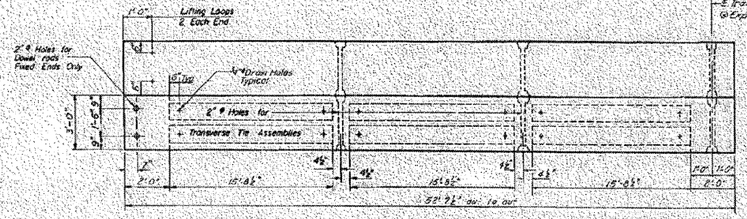


TYPICAL SECTION

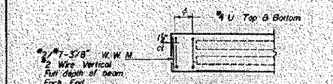
½ ø Strands: Each Strand Stressed to 18,900 lbs.
11 Strands, 1½" up, 12 Strands 3½" up, 6 Strands 9" up, 2 Strands 15" up.



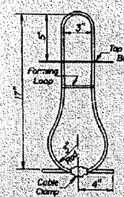
HALF CROSS SECTION



PLAN



END PLAN



LIFTING LOOP DETAIL

DESIGNED		
CHECKED		
DRAWN		
CHECKED		

EXAMINED
PASSED
APPROVED

PD-1-2-11-19-65-Rev 5-20-68
SR-1 (5-15-71)

GENERAL NOTES

Prestressing steel shall be non-galvanized high strength, stress-relieved, 7-wire strand.
The working diameter shall be ½" and the nominal cross-sectional area shall be 0.153 sq. in.
Lifting loops shall be ⅝" diameter, 6x19 class wire rope with fiber core and shall have a minimum ultimate tensile strength of 25,000 lbs.
The 1" ø rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bar on outside beam shall be filled with grout after transverse tie assembly is in place.
Longitudinal shear keys shall be packed with a very dry mix of 2:1 sand and P.C. mortar. After beams have been erected, holes for the dowel anchors shall be drilled into the sub-structure and the anchor sleeves shall be grouted in place.
Dowel rods shall be A.S.T.M. A-306 or A.S.T.M. A-615. Transverse tie rods shall be A.S.T.M. A-306, Grade 70-90.
After fabrication the transverse tie assemblies (tie rods, nuts, washers and sleeves) shall be hot-dipped galvanized in accordance with A.S.T.M. Designation A153.
Cost of reinforcement and accessories cast into the beams, of bearing pads, of armor angles, and of grooving, longitudinal shear keys is included in unit price bid for "Precast Prestressed Concrete Deck Beams."

BILL OF MATERIAL

Precast Prestressed Concrete Deck Beams		Sq. Ft.	1737	

SUPERSTRUCTURE
F.A. RTE 26 SEC. 8BR-4
CLAY COUNTY
STA. 966+56

ESCA CONSULTANTS, INC.		
DESIGNED BY:	DAJ	04/08
DRAWN BY:	HAS	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
US 45 OVER SEMINARY CREEK
FAP ROUTE 328 - SECTION (8BR-4)B-1
CLAY COUNTY

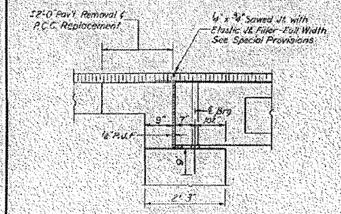
CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(8BR-4)B-1	CLAY	109	99
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

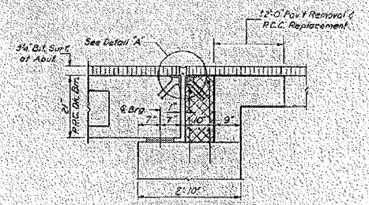
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROJECT NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A. 26	8BR-4	CLAY	21	15

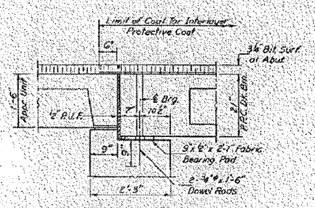
SHEET NO. 7 OF SHEETS



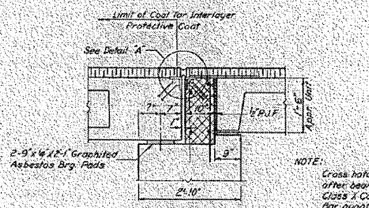
SECTION THRU S. ABUT. AT ℄ ROWY.



SECTION THRU N. ABUT. AT ℄ ROWY.

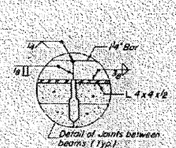


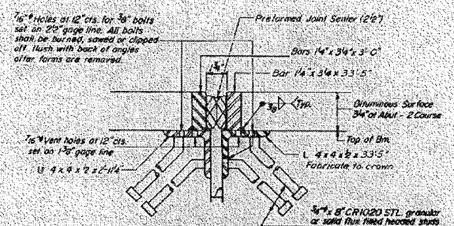
SECTION THRU S. ABUT. AT OUTSIDE BEAM



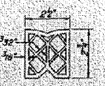
SECTION THRU N. ABUT. AT OUTSIDE BEAM

NOTE:
Cross hatched area to be poured after beams are in place. Class X Concrete & Reinforcement Bar quantities are billed with the abutment.





DETAIL "A"



PREFORMED JOINT SEALER (2'6")

DESIGNED	Simon Ustynuk	
CHECKED		
DRAWN	Simon Ustynuk	
CHECKED		

EXAMINED — JAN. 12
PASSED
APPROVED

SUPERSTRUCTURE DETAILS
F.A. RTE. 26 SEC. 8BR-4
CLAY COUNTY
STA. 968+56

S.R. D (2-15-71)

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	04/08
DRAWN BY:	HAS	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
US 45 OVER SEMINARY CREEK
FAP ROUTE 328 - SECTION (8BR-4)B-1
CLAY COUNTY

ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS
SURVEYING & TESTING

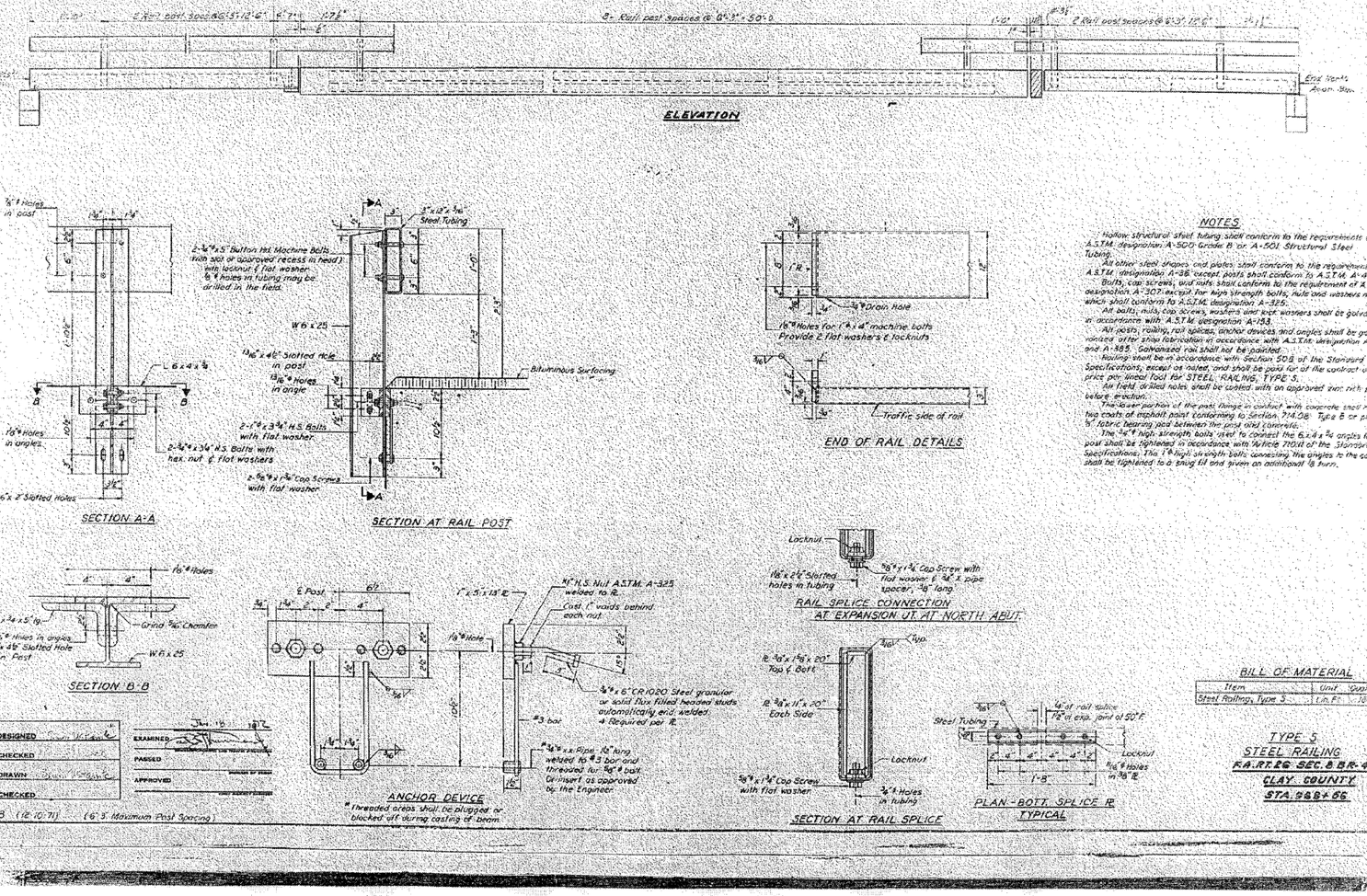
CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(8BR-4)B-1	CLAY	109	100
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

26	8BR-4	CLAY	21	16

SHEET NO. SHEETS



BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S	Ln. Ft.	12

TYPE S
STEEL RAILING
FA.RTE 6 SEC. 8 BR-4
CLAY COUNTY
STA. 988+66

DESIGNED:	DAJ	04/08
DRAWN BY:	HAS	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

ESCA CONSULTANTS, INC.

FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
US 45 OVER SEMINARY CREEK
FAP ROUTE 328 - SECTION (8BR-4)B-1
CLAY COUNTY

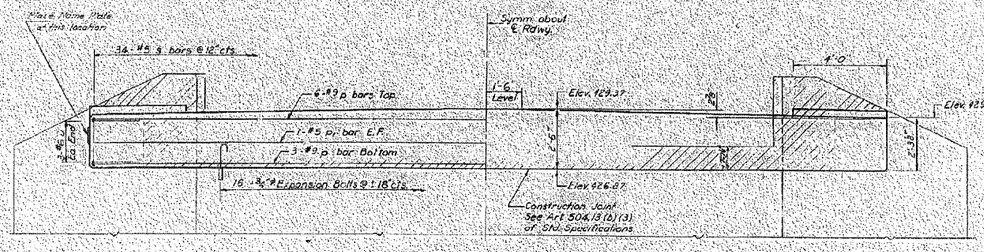
CONTRACT NO. 74107

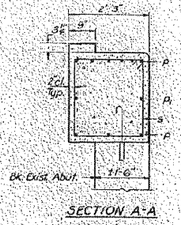
FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(8BR-4)B-1	CLAY	109	101
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

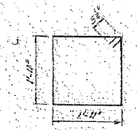
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

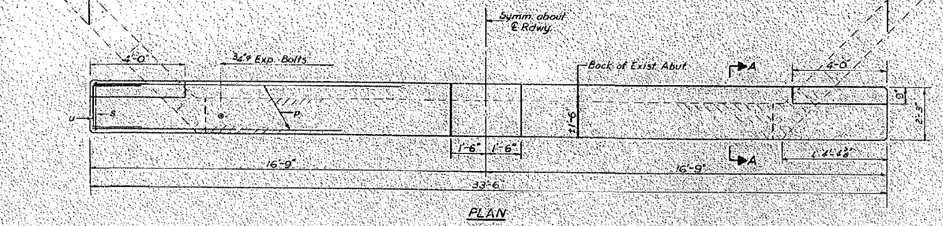
DIST. NO.	DIVISION	COUNTY	TOTAL SHEETS	SHEET NO.
26	BR-4	CLAY	22	17

SHEET NO. 5 OF SHEETS









BILL OF MATERIAL

Bar	No.	Size	Length	Shape
S	9	#9	33'-3"	
P1	12	#5	33'-3"	
P2	1	#5	33'-3"	
U	34	#5	3'-7"	
U	16	#6	5'-10"	
Class X Concrete			Cu Yds	6.7
Reinforcement Bars			Lbs	1440
Expansion Bolts ¾ø			Each	16
Concrete Removal			Cu Yds	1.0

NOTE
Hatched area indicates Concrete Removal. Reinforcement extending into removed area shall be cleaned and incorporated into the new construction.
Expansion bolts shall be anchored in sound concrete.
All edges shall have standard ¾ chamfers except as noted.

SOUTH ABUTMENT
F.A. RTE. 26 SEC. 8 BR-4
CLAY COUNTY
STA. 368+56

DESIGNED	Sonia Victoria	
CHECKED		
DRAWN	Sonia Victoria	
CHECKED		
EXAMINED		June 19 19 72
PASSED		
APPROVED		

A-1 (5-15-11) Fixed

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	04/08
DRAWN BY:	HAS	04/08
CHECKED BY:	MTD	05/08
APPROVED BY:	RDP	08/08

FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
US 45 OVER SEMINARY CREEK
FAP ROUTE 328 - SECTION (8BR-4)B-1
CLAY COUNTY

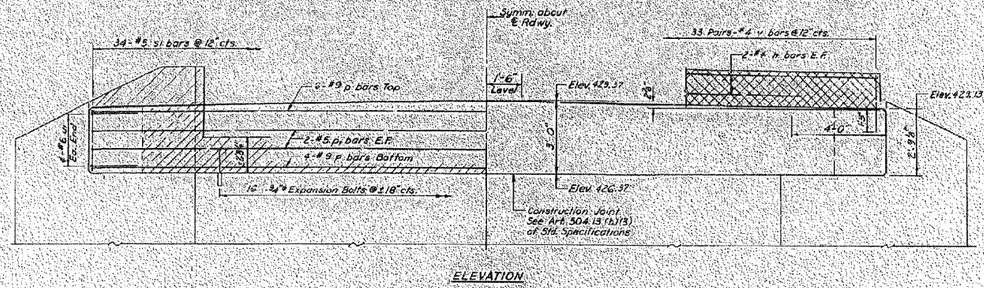
CONTRACT NO. 74107

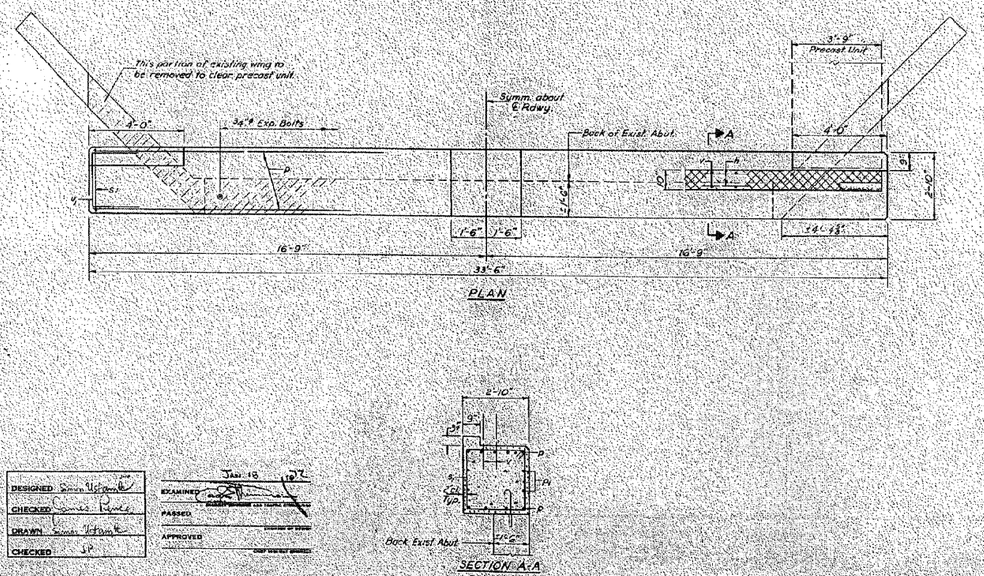
FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	(8BR-4)B-1	CLAY	109	102
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

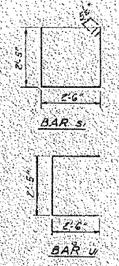
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A. 24	8BR-4	CLAY	21	18

SHEET NO. 7 OF 7 SHEETS





NOTES:
1. Hatched area indicates Concrete Removal. Reinforcement extending into removed area shall be cleaned and incorporated into the new construction.
2. Cross hatched area shall be poured after beams are in place.
3. Expansion Bolts shall be anchored in sound concrete.
4. All edges shall have standard ¾" chamfers except as noted.



BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h.	4	#6	32'-5"	
p.	10	#9	33'-3"	
pt.	6	#5	33'-5"	
s.	34	#5	10'-9"	
u.	8	#6	7'-5"	
v.	66	#4	2'-7"	
Class X Concrete			Cu Yds	12.0
Reinforcement Bars			Lbs.	1940
Expansion Bolts ¾"ø			Each	16
Concrete Removal			Cu Yds.	4.0

NORTH ABUTMENT
F.A.P. RT. 328 SEC. 8 BR-4
CLAY COUNTY
STA. 868+56

DESIGNED
CHECKED
DRAWN
CHECKED
EXAMINED
PASSED
APPROVED

A-2 (12-16-11) Expansion

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	04/08
DRAWN BY:	HAS	04/08
CHECKED BY:	ELH	05/08
APPROVED BY:	RDP	08/08

EXISTING STRUCTURE PLANS
US 45 OVER SEMINARY CREEK
FAP ROUTE 328 - SECTION (8BR-4)B-1
CLAY COUNTY

ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS

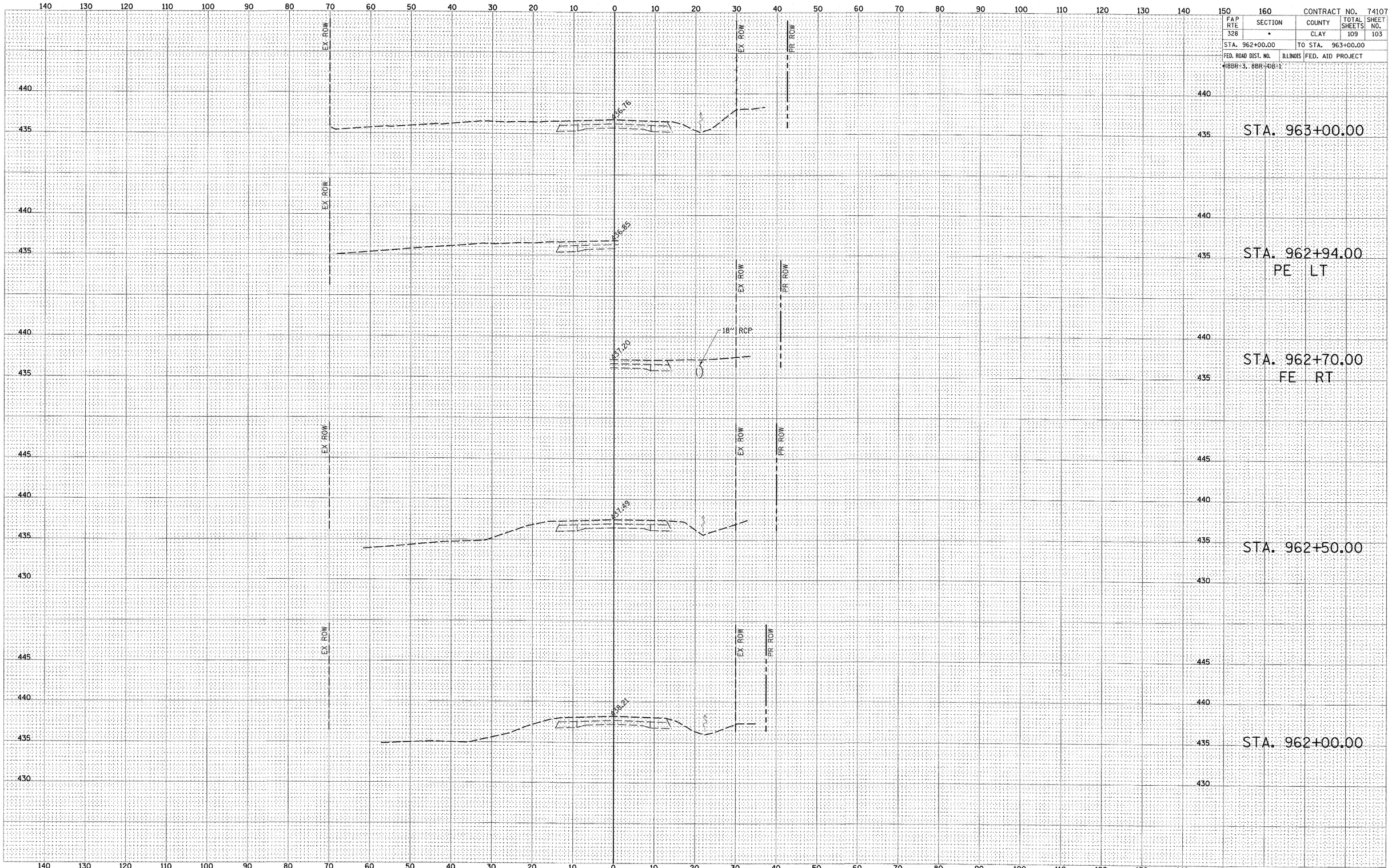
CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	*	CLAY	109	103
STA. 962+00.00		TO STA. 963+00.00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

*(BBR-3, BBR-4)B-1

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

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



FAP 328 (US 45) CROSS SECTIONS

ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS
SPRINGFIELD, ILLINOIS

CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	•	CLAY	109	104
STA. 963+50.00		TO STA. 965+50.00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
•(BBR-3, BBR-4B-1				

FINAL SURVEY — NOTE BOOK — NO. — SURFACED — SHOULDERS — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

ORIGINAL SURVEY — NOTE BOOK — NO. — SURFACED — SHOULDERS — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

STA. 965+50.00

PR SPBGR TY A
EX ROW
PR ROW
432.07
1:3
1:2
EL 426.50

LEFT		RIGHT	
TOPSOIL C =	3.69	TOPSOIL C =	9.61
TOPSOIL F =	1.84	TOPSOIL F =	7.63
EARTH C =	2.66	EARTH C =	16.24
EARTH F =	4.15	EARTH F =	28.57

STA. 965+00.00

PR TBT TY 1
(SPL) TANGENT
PR SPBGR TY A
EX ROW
PR ROW
432.72
1:3
1:2
EL 429.00

LEFT		RIGHT	
TOPSOIL C =	3.86	TOPSOIL C =	8.57
TOPSOIL F =	2.03	TOPSOIL F =	6.78
EARTH C =	3.42	EARTH C =	38.28
EARTH F =	4.90	EARTH F =	7.71

STA. 964+50.00

PR SPBGR TY A
EX ROW
PR ROW
433.52
1:4
1:3
1:2
EL 431.50

LEFT		RIGHT	
TOPSOIL C =	3.41	TOPSOIL C =	8.05
TOPSOIL F =	2.52	TOPSOIL F =	6.05
EARTH C =	3.97	EARTH C =	40.34
EARTH F =	2.45	EARTH F =	5.16

STA. 964+00.00

PR TBT TY 1
(SPL) TANGENT
EX ROW
PR ROW
2' FLAT BOTTOM (TYP)
434.47
1:3
1:2
EL 432.75

LEFT		RIGHT	
TOPSOIL C =	0.00	TOPSOIL C =	8.03
TOPSOIL F =	0.00	TOPSOIL F =	5.26
EARTH C =	0.00	EARTH C =	25.10
EARTH F =	0.00	EARTH F =	2.46

STA. 963+50.00

EX ROW
PR ROW
435.58
1:3
1:2
EL 434.00

LEFT		RIGHT	
TOPSOIL C =	0.00	TOPSOIL C =	5.98
TOPSOIL F =	0.00	TOPSOIL F =	6.28
EARTH C =	0.00	EARTH C =	8.80
EARTH F =	0.00	EARTH F =	3.48

FAP 328 (US 45) CROSS SECTIONS

ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	•	CLAY	109	105
STA. 966+00.00		TO STA. 967+00.00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 74107

•(8BR-3, 8BR-4DB-1.

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

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

STA. 967+00.00

EX ROW — PR TBT TY1 (SPL) TANGENT — 431.04 — PR SPBGR TY A — EX ROW — PR ROW

LEFT
TOPSOIL C = 3.55
TOPSOIL F = 1.13
EARTH C = 4.02
EARTH F = 1.07

RIGHT
TOPSOIL C = 7.44
TOPSOIL F = 4.33
EARTH C = 1.69
EARTH F = 40.72

STA. 966+50.00

EX ROW — PR TBT TY 6A (SPECIAL) — 431.24 — PR TBT TY 6A (SPECIAL) — EX ROW — PR ROW — STONE RIPRAP CLASS A4

LEFT
TOPSOIL C = 5.18
TOPSOIL F = 0.00
EARTH C = 12.80
EARTH F = 0.15

RIGHT
TOPSOIL C = 0.00
TOPSOIL F = 0.00
EARTH C = 0.00
EARTH F = 28.78

STA. 966+25.10

EX ROW — 431.39 — STONE RIPRAP CLASS A4 — EX ROW — PR ROW

STA. 966+00.00

EX ROW — PR TBT TY 6A — PR TBT TY 6A — 431.58 — STONE RIPRAP CLASS A4 — EX ROW — PR ROW — EL 424.00

LEFT
TOPSOIL C = 6.14
TOPSOIL F = 0.00
EARTH C = 11.28
EARTH F = 1.03

RIGHT
TOPSOIL C = 0.00
TOPSOIL F = 0.00
EARTH C = 0.00
EARTH F = 27.42

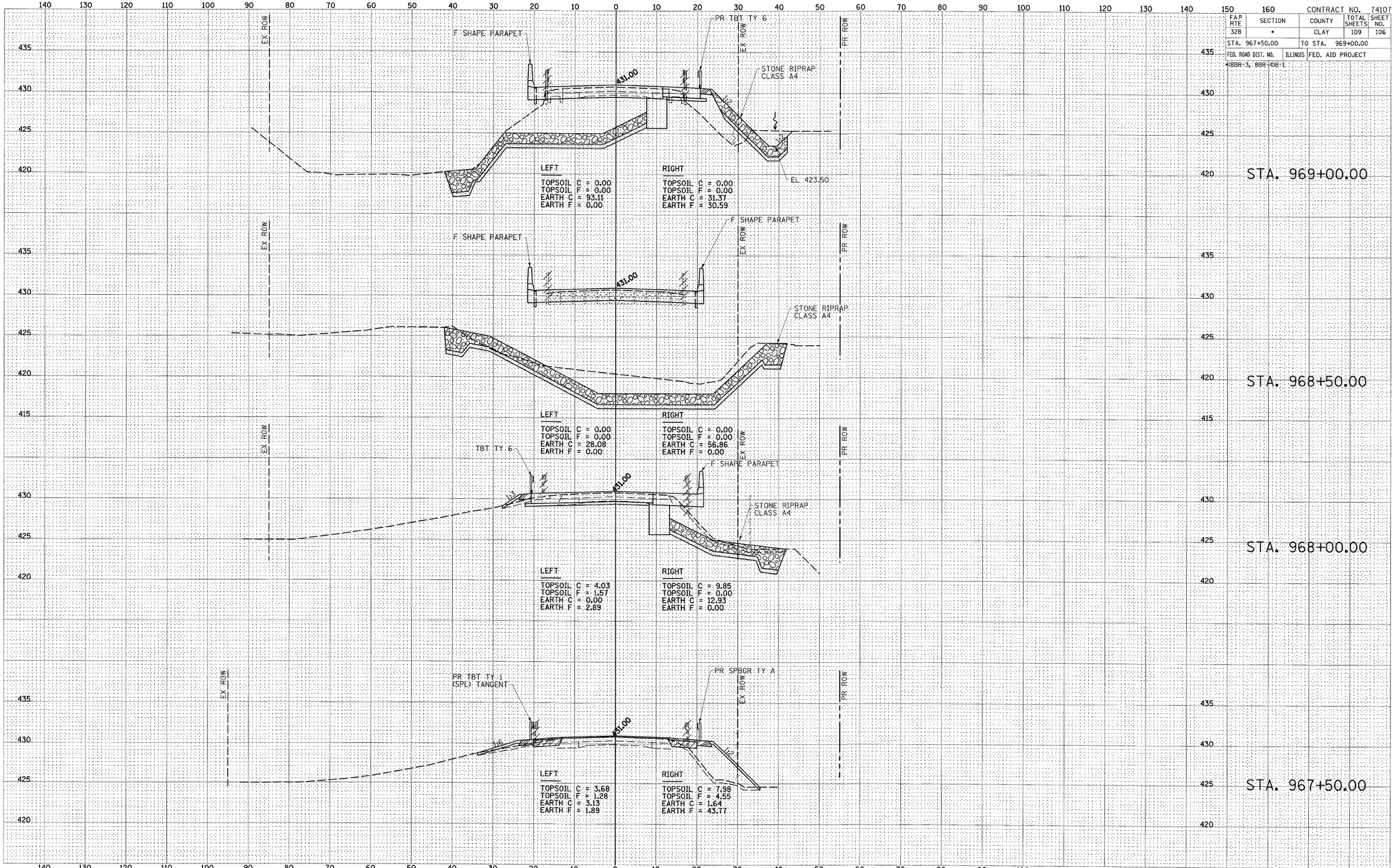
FAP 328 (US 45) CROSS SECTIONS

ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS
SPRINGFIELD, ILLINOIS

CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	*	CLAY	109	106
STA. 967+50.00		TO STA. 969+00.00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

*(BBR-3, BBR-4B-1



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

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

FAP 328 (US 45) CROSS SECTIONS

CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	•	CLAY	109	107

STA. 969+50.00 TO STA. 971+00.00

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

•(8BR-3, 8BR-4DB-1

ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS

FINAL SURVEY NOTE BOOK — SURVEYED BY — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — MD_____ — BY — DATE

ORIGINAL SURVEY NOTE BOOK — SURVEYED BY — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — MD_____ — BY — DATE

STA. 971+00.00

PR TBT TY 1 (SPL) TANGENT

EX ROW | EX ROW | PR ROW

451.00

EL 425.50

LEFT		RIGHT	
TOPSOIL C	= 3.72	TOPSOIL C	= 9.89
TOPSOIL F	= 2.13	TOPSOIL F	= 8.88
EARTH C	= 1.39	EARTH C	= 2.93
EARTH F	= 3.80	EARTH F	= 21.85

STA. 970+50.00

PR SPBGR TY A

EX ROW | EX ROW | PR ROW

451.00

EL 425.00

LEFT		RIGHT	
TOPSOIL C	= 3.46	TOPSOIL C	= 10.13
TOPSOIL F	= 1.83	TOPSOIL F	= 9.15
EARTH C	= 2.70	EARTH C	= 2.86
EARTH F	= 2.79	EARTH F	= 49.02

STA. 970+00.00

PR SPBGR TY A

TBT TY 1 (SPL) TANGENT

EX ROW | EX ROW | PR ROW

451.00

EL 424.50

LEFT		RIGHT	
TOPSOIL C	= 4.00	TOPSOIL C	= 10.75
TOPSOIL F	= 1.56	TOPSOIL F	= 9.10
EARTH C	= 3.62	EARTH C	= 3.99
EARTH F	= 2.42	EARTH F	= 57.21

STA. 969+50.00

PR TBT TY 6

PR SPBGR TY A

EX ROW | EX ROW | PR ROW

451.00

2' FLAT BOTTOM (TYP)

EL 424.00

LEFT		RIGHT	
TOPSOIL C	= 3.03	TOPSOIL C	= 10.60
TOPSOIL F	= 1.32	TOPSOIL F	= 8.39
EARTH C	= 3.02	EARTH C	= 7.17
EARTH F	= 1.37	EARTH F	= 56.11

FAP 328 (US 45) CROSS SECTIONS

ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS
SPRINGFIELD, ILLINOIS

CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	*	CLAY	109	108
STA. 971+50.00		TO STA. 973+00.00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

*(8BR-3, 8BR-4)B-1

EX ROW | PR ROW

STA. 973+00.00

LEFT
TOPSOIL C = 3.86
TOPSOIL F = 4.48
EARTH C = 0.00
EARTH F = 3.28

RIGHT
TOPSOIL C = 7.40
TOPSOIL F = 6.52
EARTH C = 5.00
EARTH F = 12.12

EL. 427.05

STA. 972+50.00

LEFT
TOPSOIL C = 1.78
TOPSOIL F = 2.12
EARTH C = 0.00
EARTH F = 1.41

RIGHT
TOPSOIL C = 6.56
TOPSOIL F = 7.15
EARTH C = 4.74
EARTH F = 13.33

EL. 426.70

STA. 972+00.00

LEFT
TOPSOIL C = 1.47
TOPSOIL F = 1.75
EARTH C = 0.00
EARTH F = 1.27

RIGHT
TOPSOIL C = 7.11
TOPSOIL F = 7.80
EARTH C = 3.81
EARTH F = 15.92

PR TBT TY 1 (SPL) TANGENT

EL. 426.35

STA. 971+50.00

LEFT
TOPSOIL C = 4.44
TOPSOIL F = 2.11
EARTH C = 1.05
EARTH F = 5.42

RIGHT
TOPSOIL C = 8.12
TOPSOIL F = 8.37
EARTH C = 2.54
EARTH F = 17.88

EL. 426.00

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

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

FAP 328 (US 45) CROSS SECTIONS

ESCA CONSULTANTS, INC.
CIVIL ENGINEERS
SPRINGFIELD, ILLINOIS

CONTRACT NO. 74107

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	•	CLAY	109	109

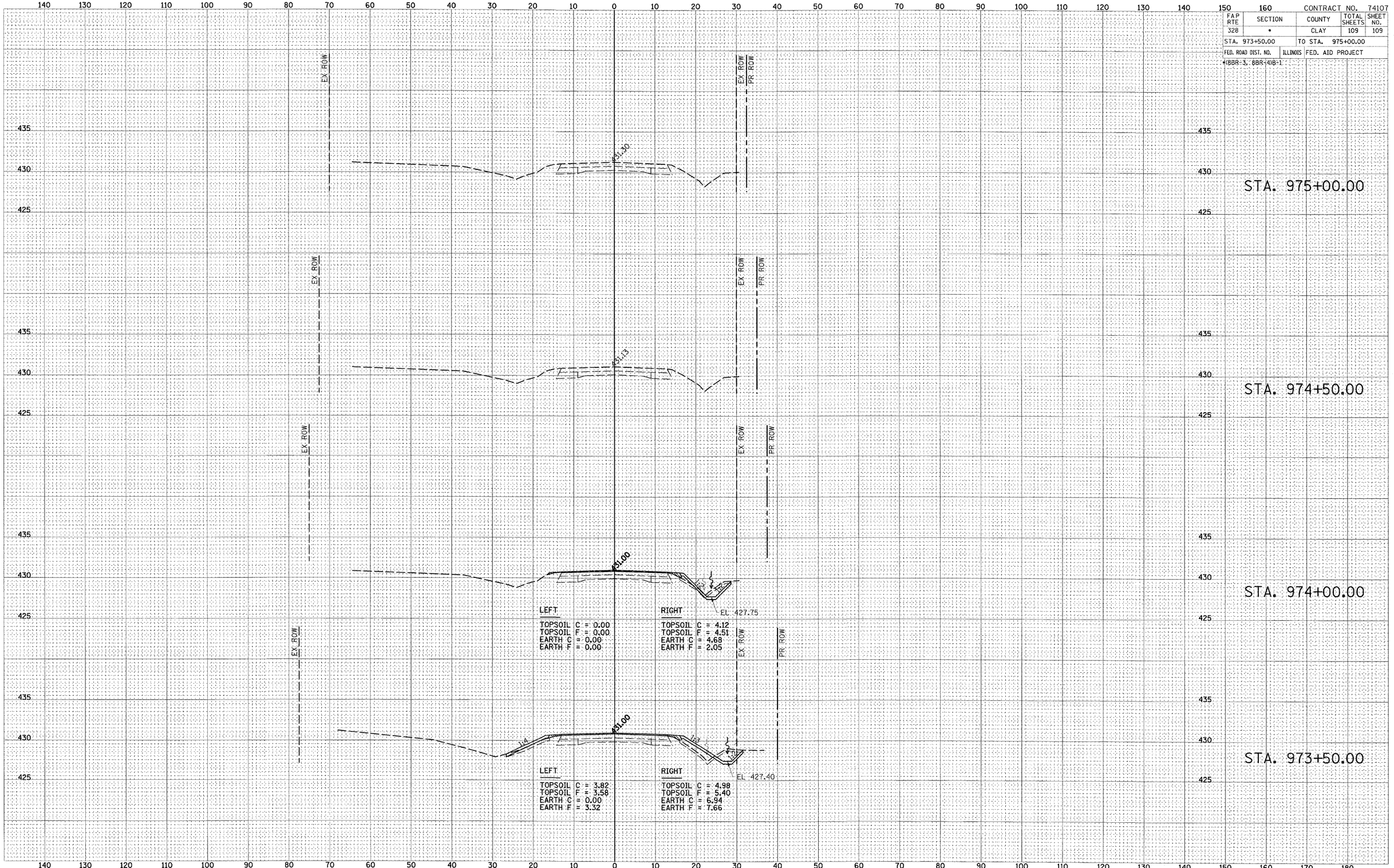
STA. 973+50.00 TO STA. 975+00.00

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

•(BBR-3, BBR-4)B-1

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

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



FAP 328 (US 45) CROSS SECTIONS