

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
322	24BR-1	FAYETTE	57	1
FED. ROAD DIST. NO.	ILLINOIS	CONTRACT NO. 94770		

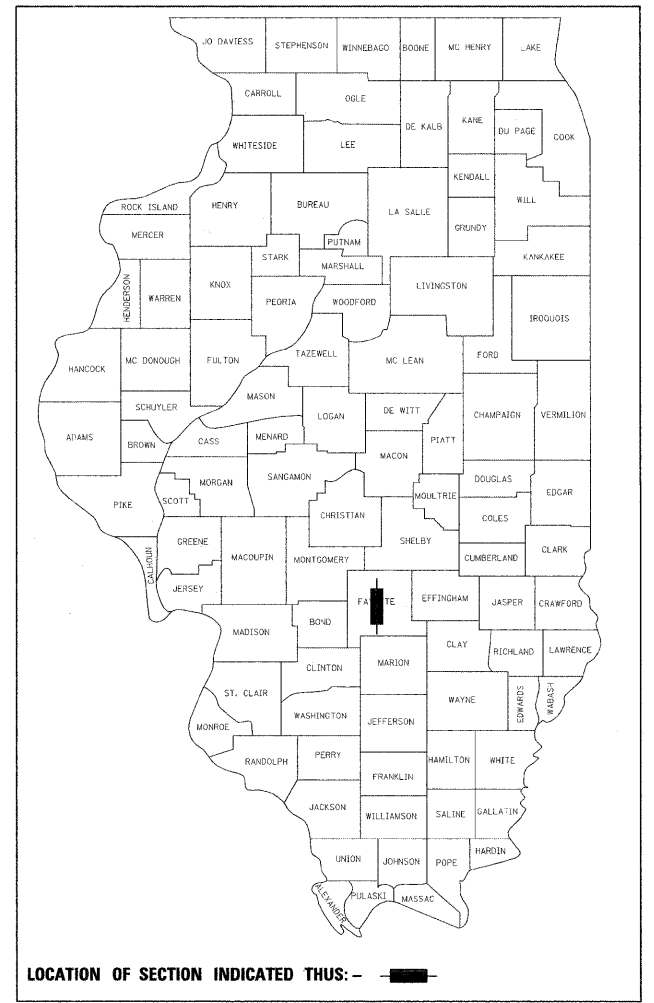
**D-97-031-05**

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS**

**PROPOSED  
HIGHWAY PLANS**

**FAP ROUTE 322 (US 51)  
SECTION 24BR-1  
PROJECT : ACF-0322(086)  
FAYETTE COUNTY  
C-97-066-05  
BRIDGE REPLACEMENT**

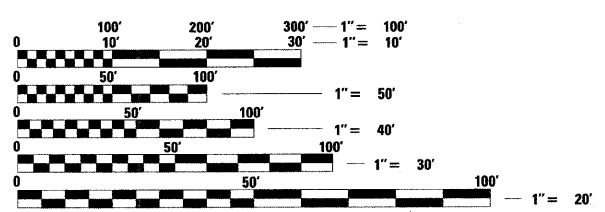
FOR INDEX OF SHEETS, SEE SHEET NO. 2



LOCATION OF SECTION INDICATED THUS: - ■ -

**HIGHWAY CLASSIFICATION**

ROUTE:	F.A.P. 322 (US 51)
CLASSIFICATION:	OTHER PRINCIPAL ARTERIAL
A.D.T.:	3950 (2007)
A.D.T.T.:	725 (2007)
D.H.V.:	474 (2007)
DESIGN SPEED:	60 M.P.H.

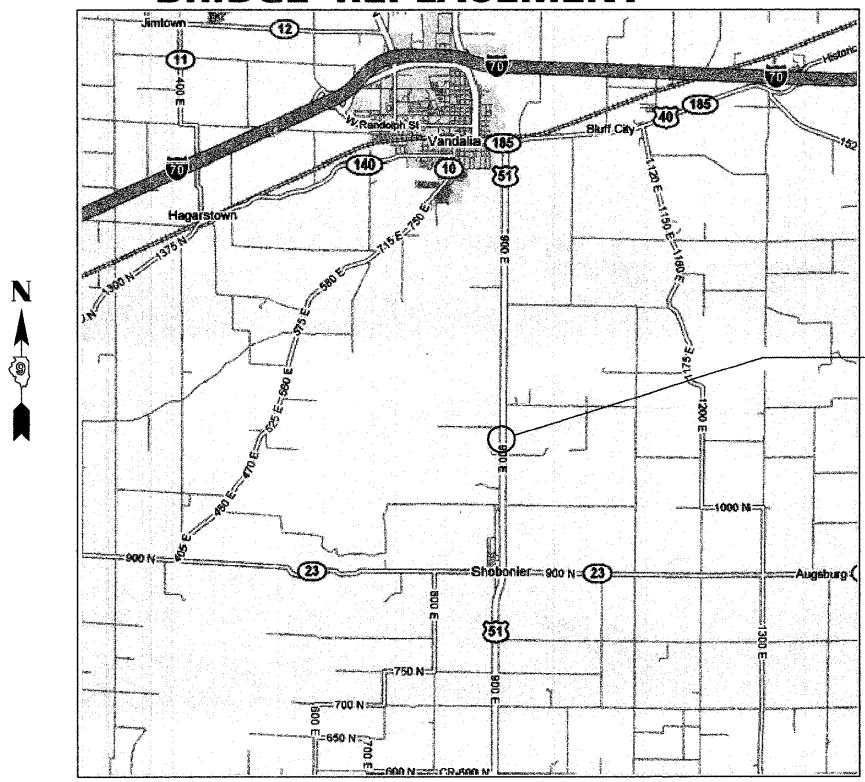


FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

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

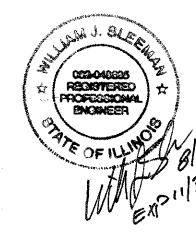
**PROJECT ENGINEER  
PROJECT MANAGER**

**CONTRACT NO. 94770**



**LOCATION MAP  
NOT TO SCALE**

SECTION 24BR-1  
NEW SN 026-0104  
STATION 228+67.00  
EXISTING SN 026-0038  
STATION 228+67.40  
BRIDGE REPLACEMENT  
BEGIN IMPROVEMENTS STA 221+00.00  
END IMPROVEMENTS STA 235+00.00



*WJB*  
10/25/08  
EXP 11/30/09

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS**

SUBMITTED *August 27, 2008*

*Ron K. Dinkel*  
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

*Eric E. Harv*  
INTERIM ENGINEER OF DESIGN AND ENVIRONMENT

*October 3, 2008*  
*Christine M. Reed*  
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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

TOTAL LENGTH OF PROJECT = 1,400 FT (0.265 MI)  
NET LENGTH OF PROJECT = 1,400 FT (0.265 MI)

**BENTON & ASSOCIATES, INC.**  
Consulting Engineers / Land Surveyors  
1970 West Lafayette Ave. Jacksonville, IL 62650  
Phone: 217-245-4146 Fax: 217-245-4149  
IL Design Firm Registration No. 184-000852



SUMMARY OF QUANTITIES					
CODE NO.	ITEM	UNITS	TOTAL	CONSTRUCTION TYPE CODE 20% STATE / 80% FEDERAL	
				ROADWAY	BRIDGE
				I000-2A	X071-2A
20200100	EARTH EXCAVATION	CU YD	599	599	
20300100	CHANNEL EXCAVATION	CU YD	757	757	
20400800	FURNISHED EXCAVATION	CU YD	1626	1626	
20600200	GRANULAR EMBANKMENT, SPECIAL	CU YD	867	867	
20700400	POROUS GRANULAR EMBANKMENT, SPECIAL	CU YD	128		128
25001000	SEEDING, CLASS 2 (SPECIAL)	ACRE	1.25	1.25	
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	104	104	
28000300	TEMPORARY DITCH CHECKS	EACH	9	9	
28000400	PERIMETER EROSION BARRIER	FOOT	2579	2579	
28000500	INLET AND PIPE PROTECTION	EACH	5	5	
28100107	STONE RIP RAP, CLASS A4	SQ YD	773		773
28200200	FILTER FABRIC	SQ YD	773		773
35101400	AGGREGATE BASE COURSE, TYPE B	TON	52	52	
35650300	BASE COURSE WIDENING 8"	SQ YD	1357	1357	
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	112	112	
40201000	AGGREGATE FOR TEMPORARY ACCESS	TON	50	50	
40600100	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	609	609	
40600300	AGGREGATE (PRIME COAT)	TON	13	13	
40600982	HOT-MIX ASPHALT SURFACE REMOVAL-BUTT JOINT	SQ YD	54	54	
40600990	TEMPORARY RAMP	SQ YD	94	94	
40603085	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N70	TON	454	454	
40603315	HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N70	TON	224	224	
40701956	HOT-MIX ASPHALT PAVEMENT (FULL DEPTH), 13 3/4"	SQ YD	1344	1344	
40800050	INCIDENTAL HOT-MIX ASPHALT SURFACING	TON	28	28	
42001165	BRIDGE APPROACH PAVEMENT	SQ YD	250	250	
42001430	BRIDGE APPROACH PAVEMENT CONNECTOR (FLEXIBLE)	SQ YD	50	50	
44000100	PAVEMENT REMOVAL	SQ YD	1786	1786	
44000198	HOT-MIX ASPHALT SURFACE REMOVAL, VARIABLE DEPTH	SQ YD	347	347	
48101200	AGGREGATE SHOULDERS, TYPE B	TON	288	288	
48203100	HOT-MIX ASPHALT SHOULDERS	TON	474	474	
50100200	REMOVAL OF EXISTING STRUCTURES	L SUM	1		1
50105220	PIPE CULVERT REMOVAL	FOOT	194	194	
50200100	STRUCTURE EXCAVATION	CU YD	179		179
50300225	CONCRETE STRUCTURES	CU YD	113.8		113.8
50300255	CONCRETE SUPERSTRUCTURE	CU YD	178		178
50300260	BRIDGE DECK GROOVING	SQ YD	491		491
50300280	CONCRETE ENCASEMENT	CU YD	9.8		9.8
50300300	PROTECTIVE COAT	SQ YD	879	250	629

SUMMARY OF QUANTITIES					
CODE NO.	ITEM	UNITS	TOTAL	CONSTRUCTION TYPE CODE 20% STATE / 80% FEDERAL	
				ROADWAY	BRIDGE
				I000-2A	X071-2A
50500105	FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	1		1
50500505	STUD SHEAR CONNECTORS	EACH	2970		2970
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	53630		53630
50800515	BAR SPLICERS	EACH	538		538
51201600	FURNISHING STEEL PILES HP12 X 53	FOOT	692.5		692.5
51202305	DRIVING PILES	FOOT	692.5		692.5
51203600	TEST PILE STEEL HP 12 X 53	EACH	4		4
51204650	PILE SHOES	EACH	28		28
51205200	TEMPORARY SHEET PILING	SQ FT	1170		1170
51500100	NAME PLATES	EACH	1		1
52100520	ANCHOR BOLTS, 1"	EACH	48		48
542D1060	PIPE CULVERTS, CLASS D, TYPE 2 15"	FOOT	40	40	
542D1063	PIPE CULVERTS, CLASS D, TYPE 2 18"	FOOT	88	88	
542D1075	PIPE CULVERTS, CLASS D, TYPE 2 30"	FOOT	102	102	
54215553	METAL END SECTIONS 18"	EACH	4	4	
54215565	METAL END SECTIONS 30"	EACH	4	4	
59100100	GEOCOMPOSITE WALL DRAIN	SQ YD	79		79
60100905	PIPE DRAINS 4"	FOOT	40		40
60109580	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	127		127
* 63000000	STEEL PLATE BEAM GUARDRAIL, TYPE A	FOOT	375	375	
* 63100085	TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	4	4	
* 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL), TANGENT	EACH	4	4	
63200310	GUARDRAIL REMOVAL	FOOT	469	469	
66700205	PERMANENT SURVEY MARKERS, TYPE I	EACH	3	3	
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	6	6	
67100100	MOBILIZATION	L SUM	1	1	
70100405	TRAFFIC CONTROL AND PROTECTION, STANDARD 701321	EACH	1	1	
70100450	TRAFFIC CONSTROL AND PROTECTION, STANDARD 701201	L SUM	1	1	
70100460	TRAFFIC CONTROL AND PROTECTION, STANDARD 701306	L SUM	1	1	
70100500	TRAFFIC CONTROL AND PROTECTION, STANDARD 701326	L SUM	1	1	
70101800	TRAFFIC CONTROL AND PROTECTION (SPECIAL)	L SUM	1	1	
70103815	TRAFFIC CONTROL SURVEILLANCE	CAL DA	10	10	
70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	1	1	
70300100	SHORT-TERM PAVEMENT MARKING	FOOT	480	480	
70300220	TEMPORARY PAVEMENT MARKING-4" LINE 4"	FOOT	3094	3094	
70301000	WORK ZONE PAVEMENT MARKING REMOVAL	SQ FT	1190	1190	
70400100	TEMPORARY CONCRETE BARRIER	FOOT	1637.5	1637.5	

FILE NAME =	USER NAME = #USER#	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 20.0000' / IN.	CHECKED -	REVISED -
	PLOT DATE = 8/25/2008	DATE -	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

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

\* Specialty Items

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
322	24BR-1	FAYETTE	57	3
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 94770	







EARTHWORK SCHEDULE			EARTH EXCAVATION	EMBANKMENT (NOT A PAY ITEM)	SHRINKAGE FACTOR	EMBANKMENT ADJUSTED FOR SHRINKAGE	GRANULAR EMBANKMENT SPECIAL	FURNISHED EXCAVATION (EARTHWORK BALANCE)	CHANNEL EXCAVATION	NOTES
STATION	TO	STATION	CU YD	CU YD		CU YD	CU YD	CU YD	CU YD	
221+00		235+00	498	845	25%	1056	370	-558		STAGE I CONST.
221+00		235+00	101	935	25%	1169	497	-1068		STAGE II CONST.
228+02		229+32							373.25	STAGE I CONST.
228+02		229+32							373.25	STAGE II CONST.
TOTAL			599	1780		2225	867	-1626	756.5	

FURNISHED EXCAVATION = EARTH EXCAVATION - EMBANKMENT ADJUSTED FOR SHRINKAGE  
25% ADJUSTMENT FOR SHRINKAGE

CULVERT REMOVAL SCHEDULE			PIPE CULVERT REMOVAL
STATION	TO	STATION	FOOT
224+11.2		224+47.9	RT 36.7
225+37.8		225+85.0	RT 47.2
226+07.0		226+43.3	LT 36.3
229+85.6		230+22.7	LT 37.1
230+27.1		230+63.6	RT 36.5
TOTAL			193.8

PAVEMENT REMOVAL SCHEDULE			HMA SURFACE REMOVAL - BUTT JOINT	PAVEMENT REMOVAL	HMA SURFACE REMOVAL (VARIABLE DEPTH)	NOTES
STATION	TO	STATION	SQ YD	SQ YD	SQ YD	
219+07.2		228+19.0	RT	664.9		PRE-STAGE CONST.
219+53.2		221+36.5	LT	63.8		STAGE I CONST.
221+00.00		221+10.00	LT	13.3		STAGE I CONST.
221+00.00		221+10.00	RT	13.3		STAGE II CONST.
221+10.00		221+92.00	LT		109.3	STAGE I CONST.
221+10.00		221+92.00	RT		109.3	STAGE II CONST.
225+62.86		RT (SIDE ROAD)		32.9		PRE-STAGE CONST.
227+69.00		228+19.00	LT	100		STAGE I CONST.
227+69.00		228+19.00	RT	100		STAGE II CONST.
229+16.00		229+65.00	LT	98		STAGE I CONST.
229+16.00		229+65.00	RT	98		STAGE II CONST.
229+16.0		236+95.2	RT	561.7		PRE-STAGE CONST.
234+42.00		235+00.00	LT		64.0	STAGE I CONST.
234+42.00		235+00.00	RT		64.0	STAGE II CONST.
234+50.0		236+39.8	LT	66.3		STAGE I CONST.
234+90.00		235+00.00	LT	13.3		STAGE I CONST.
234+90.00		235+00.00	RT	13.3		STAGE II CONST.
TOTAL			53.2	1785.6	346.6	

WIDENING SCHEDULE			BASE COURSE WIDENING	NOTES
STATION	TO	STATION	SY	
219+07.2		228+19.0	RT 664.9	PRE-STAGE CONST.
219+53.2		221+36.5	LT 63.8	STAGE I CONST.
229+16.0		236+95.2	RT 561.7	PRE-STAGE CONST.
234+50.0		236+39.8	LT 66.3	STAGE I CONST.
TOTAL			1356.7	

IMPACT ATTENUATORS SCHEDULE		IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE)	IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE)	IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE) NARROW, TEST LEVEL 3	IMPACT ATTENUATORS, RELOCATE (FULLY REDIRECTIVE) TEST LEVEL 3	NOTES
STATION		TEST LEVEL 3 EACH	TEST LEVEL 3 EACH	TEST LEVEL 3 EACH	TEST LEVEL 3 EACH	
219+30.0	LT			1		STAGE I CONST.
219+91.0	RT		1			STAGE II CONST.
225+12.5	RT				1	STAGE II CONST.
225+73.0	RT	1				STAGE I CONST.
226+12.5	RT				1	STAGE II CONST.
236+09.1	RT		1			STAGE II CONST.
236+58.7	LT			1		STAGE I CONST.
236+73.3	RT	1				STAGE I CONST.
TOTAL		2	2	2	2	

PAVEMENT MARKING REMOVAL SCHEDULE			PAVEMENT MARKING REMOVAL	NOTES
STATION	TO	STATION	SQ FT	
217+58.4		219+18.4	CL 13.3	STAGE I CONST.
218+18.4		219+49.5	LT 43.7	STAGE II CONST.
219+08.9		236+95.3	RT 594.9	STAGE I CONST.
219+18.4		219+77.1	CL 6.7	STAGE II CONST.
219+49.5		221+00.0	LT 50.1	STAGE II CONST.
235+00.0		236+48.6	LT 49.5	STAGE II CONST.
236+23.0		236+71.0	CL 3.3	STAGE II CONST.
236+56.9		238+10	LT 51.0	STAGE II CONST.
236+71.0		238+20.0	CL 13.3	STAGE I CONST.
TOTAL			825.8	

TEMPORARY CONCRETE BARRIER SCHEDULE		TEMPORARY CONCRETE BARRIER	NOTES	
STATION	TO	STATION	FOOT	
219+30.0		220+50.0	125	STAGE I CONST.
220+50.0		225+73.0	525	STAGE I CONST.
226+73.0		235+25.0	850	STAGE I CONST.
235+25.0		236+58.7	137.5	STAGE I CONST.
TOTAL			1637.5	

RELOCATE TEMPORARY CONCRETE BARRIER SCHEDULE			RELOCATE TEMPORARY CONCRETE BARRIER	NOTES
STATION	TO	STATION	FOOT	
219+91.0		220+75.0	87.5	STAGE II CONST.
220+75.0		225+12.5	437.5	STAGE II CONST.
226+12.5		235+25.0	912.5	STAGE II CONST.
235+25.0		236+09.1	87.5	STAGE II CONST.
TOTAL			1525	

BRIDGE APPROACH PAVEMENT SCHEDULE			BRIDGE APPROACH PAVEMENT	BRIDGE APPROACH PAVEMENT CONNECTOR (FLEXIBLE)	PROTECTIVE COAT	PAVEMENT GROOVING	NOTES
STATION TO	STATION		SQ YD	SQ YD	SQ YD	SQ YD	
227+72.00	228+02.00			25			STAGE I CONST.
227+72.00	228+02.00		125		125	125	STAGE II CONST.
229+32.00	229+62.00		125		125	125	STAGE I CONST.
229+32.00	229+62.00			25			STAGE II CONST.
TOTAL			250	50	250	250	

GUARD RAIL REMOVAL SCHEDULE			GUARDRAIL REMOVAL	NOTES
STATION TO	STATION		FOOT	
227+16.19	228+18.65	LT	102.5	STAGE I CONST.
229+16.15	229+94.21	LT	78.1	STAGE I CONST.
226+40.97	228+18.65	RT	177.7	STAGE II CONST.
229+16.15	230+26.89	RT	110.7	STAGE II CONST.
TOTAL			469.0	

GUARD RAIL SCHEDULE			TRAFFIC BARRIER TERMINAL, TYPE 6 EACH	TRAFFIC BARRIER TERMINAL, TYPE 1 SPECIAL (TANGENT) EACH	STEEL PLATE BEAM GUARDRAIL TYPE A FOOT	GUARD RAIL MARKERS TYPE A EACH	GUARD RAIL MARKERS TYPE B EACH	TERMINAL MARKER DIRECT APPLIED EACH	NOTES
STATION TO	STATION								
225+96.35	226+46.35	RT		1				1	STAGE II CONST.
225+96.35	228+02.00	RT				3			STAGE II CONST.
226+46.35	227+71.35	RT			125				STAGE II CONST.
226+58.85	227+08.85	LT		1				1	STAGE I CONST.
226+58.85	228+02.00	LT				2			STAGE I CONST.
227+08.85	227+71.35	LT			62.5				STAGE I CONST.
227+71.35	228+02.00	LT	1						STAGE I CONST.
227+71.35	228+02.00	RT	1						STAGE II CONST.
228+02.00	229+32.00	LT					2		STAGE I CONST.
228+02.00	229+32.00	RT					2		STAGE II CONST.
229+32.00	229+62.65	LT	1						STAGE I CONST.
229+32.00	229+62.65	RT	1						STAGE II CONST.
229+32.00	230+75.15	RT				2			STAGE II CONST.
229+32.00	231+37.65	LT				3			STAGE I CONST.
229+62.65	230+87.65	LT			125				STAGE I CONST.
229+62.65	230+25.15	RT			62.5				STAGE II CONST.
230+25.15	230+75.15	RT		1				1	STAGE II CONST.
230+87.65	231+37.65	LT		1				1	STAGE I CONST.
TOTAL			4	4	375	10	4	4	

PAVEMENT SCHEDULE			BITUMIONOUS MATERIALS (PRIME COAT)	HMA SURFACE COURSE MIX "C", N70	HMA BINDER COURSE IL-19.0, N70	FULL DEPTH PAVEMENT 13.75"	AGGREGATE PRIME COAT	NOTES
STATION TO	STATION		GAL	TON	TON	SY	TON	
221+00.00	224+08.00	LT		49.3				STAGE I CONST.
221+00.00	224+08.00	RT		62.7				STAGE II CONST.
221+00.00	227+72.00	LT	168.7				3.4	STAGE I CONST.
221+00.00	227+72.00	RT	168.7				3.4	STAGE II CONST.
221+79.00	234+42.00	LT			214.8			STAGE I CONST.
221+79.00	234+42.00	RT			238.4			STAGE II CONST.
224+08.00	227+69.00	LT				481.3		STAGE I CONST.
224+08.00	227+69.00	RT				481.3		STAGE II CONST.
229+62.00	235+00.00	LT	135.7				2.7	STAGE I CONST.
229+62.00	235+00.00	RT	135.7				2.7	STAGE II CONST.
229+65.00	231+08.00	LT				190.7		STAGE I CONST.
229+65.00	231+08.00	RT				190.7		STAGE II CONST.
231+08.00	235+00.00	LT		49.3				STAGE I CONST.
231+08.00	235+00.00	RT		62.7				STAGE II CONST.
TOTAL			608.8	224.0	453.2	1344.0	12.2	

HMA SHOULDER			HMA SHOULDER	NOTES
STATION TO	STATION		TON	
221+00.00	224+00.80	LT	61.6	STAGE I CONST.
221+00.00	227+72.00	RT	120.4	STAGE II CONST.
224+33.82	225+80.45	LT	38.0	STAGE I CONST.
226+43.02	227+72.00	LT	36.1	STAGE I CONST.
229+62.00	235+00.00	RT	89.0	STAGE II CONST.
229+62.00	235+00.00	LT	128.7	STAGE I CONST.
TOTAL			473.8	

AGGREGATE SHOULDER SCHEDULE			AGGREGATE SHOULDERS, TYPE B	NOTES
STATION TO	STATION		TON	
221+00.0	224+05.8	LT	17.5	STAGE I CONST.
221+00.0	224+15.0	RT	50.6	STAGE II CONST.
224+25.8	225+85.6	LT	15.6	STAGE I CONST.
224+42.3	227+72.0	RT	52.3	STAGE II CONST.
225+40.2	227+72.0	LT	17.8	STAGE I CONST.
229+62.0	235+00.0	LT	47.4	STAGE I CONST.
229+62.0	235+00.0	RT	86.2	STAGE II CONST.
TOTAL			287.4	

EROSION CONTROL SCHEDULE		TEMPORARY EROSION CONTROL SEEDING LB	TEMPORARY DITCH CHECKS EACH	INLET AND PIPE PROTECTION EACH	PERIMETER EROSION BARRIER FOOT	SEEDING CLASS 2 (SPECIAL) ACRE
LOCATION						
SW QUADRANT		21			630	0.21
SE QUADRANT		23			597	0.23
NW QUADRANT		33			669	0.33
NE QUADRANT		27			683	0.27
223+25.0	RT		1			
224+09.7	RT			1		
225+00.0	LT & RT		2			
225+36.98	RT			1		
226+08.8	LT			1		
227+00.0	LT & RT		2			
231+51.7	RT			1		
232+83.6	LT			1		
ENGINEER DISCRETION			4			
TOTAL		104	9	5	2579	1.04

CULVERT SCHEDULE		PIPE CULVERTS, CLASS D, TYPE II 15"	PIPE CULVERTS, CLASS D, TYPE II 18"	PIPE CULVERTS, CLASS D, TYPE II 30"	METAL END SECTIONS 18" EACH	METAL END SECTIONS 30" EACH
STATION		FOOT	FOOT	FOOT		
224+26.70	RT (PE)	40.0				
225+62.89	RT (SIDE ROAD)		54.0		2	
226.22.58 +	MAILBOX TURNOUT LT (PE)		34.0		2	
231+20.00	RT (FE)			65.0		2
232+65.00	LT (FE)			37.0		2
TOTAL		40.0	88.0	102.0	4	4

RAMP SCHEDULE		TEMPORARY RAMP SQ YD	NOTES
STATION TO	STATION		
221+00.00	221+08.04	10.7	STAGE I CONST.
221+00.00	221+08.04	10.7	STAGE II CONST.
227+96.20	228+02.00	11.6	STAGE I CONST.
227+96.20	228+02.00	11.6	STAGE II CONST.
229+32.00	229+39.83	15.7	STAGE I CONST.
229+32.00	229+39.83	15.7	STAGE II CONST.
234+93.26	235+00.00	9.0	STAGE I CONST.
234+93.26	235+00.00	9.0	STAGE II CONST.
TOTAL		94.0	

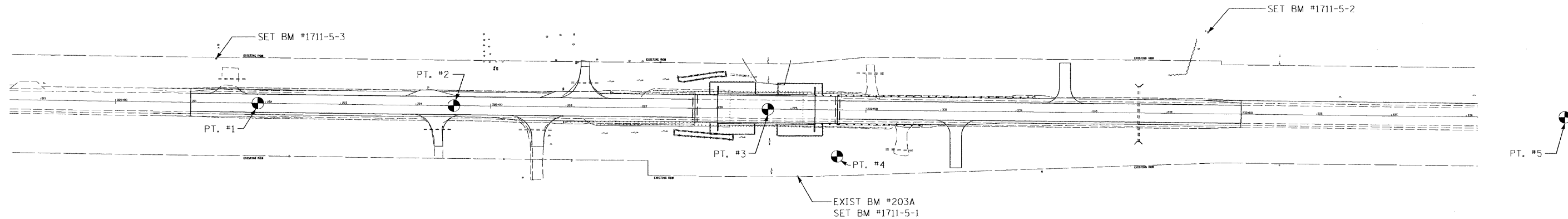
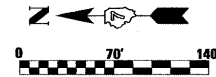
ENTRANCE SCHEDULE		WIDTH	LENGTH	RADII	INCIDENTAL HMA SURFACING TON	AGGREGATE SURFACE COURSE, TYPE B TON	AGGREGATE BASE COURSE TYPE B 6" TON
TYPE	STATION		L1 L2				
FE	221+49.71 LT	24'		20'			
MBT	224+15.78 (MAILBOX TURNOUT) RT				7.4		14.0
PE	224+26.70 RT	12'	25.82' 16.10'	25'	9.7	7.6	18.3
FE	225+62.89 RT	16'	41.30' 12.07'	30'		23.5	
PE	226.22.58 + MAILBOX TURNOUT LT	12'	29.93' 11.43'	30'	10.2	21.3	19.4
FE	231+20.00 RT	15'	20.22' 47.85'	20'		32.7	
FE	232+65.00 LT	15'	20.35' 37.65'	20'		26.9	
TOTAL					27.3	112.0	51.7

PAVEMENT MARKING SCHEDULE		SHORT TERM PAVEMENT MARKING FOOT	TEMPORARY PAVEMENT MARKING-LINE 4" (YELLOW - SKIP) FOOT	TEMPORARY PAVEMENT MARKING-LINE 4" (WHITE-SOLID) FOOT	PAINT PAVEMENT MARKING-LINE 4" (YELLOW - SKIP) FOOT	PAINT PAVEMENT MARKING-LINE 4" (WHITE-SOLID) FOOT	WORK ZONE PAVEMENT MARKING REMOVAL SQ FT	RAISED REFLECTIVE PAVEMENT MARKER EACH	RAISED REFLECTIVE PAVEMENT MARKER (BRIDGE) EACH
STATION TO	STATION								
221+00	228+02	CL						10	
221+00	235+00	CL	128	350		350	85.2		
221+00	235+00	LT & RT			2744	2744	1030.3		
221+00	235+00	RT	112				74.6		
228+02	229+32	CL							2
229+32	235+00	CL						7	
388+44	389+37	CL							
TOTAL			480*	350	2744	350	1190.1	17	2

(CL INCLUDED FOR WORK ZONE PVT MARK.)

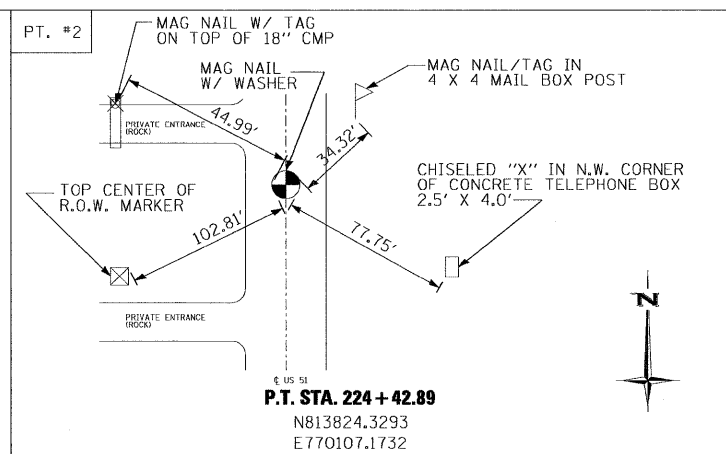
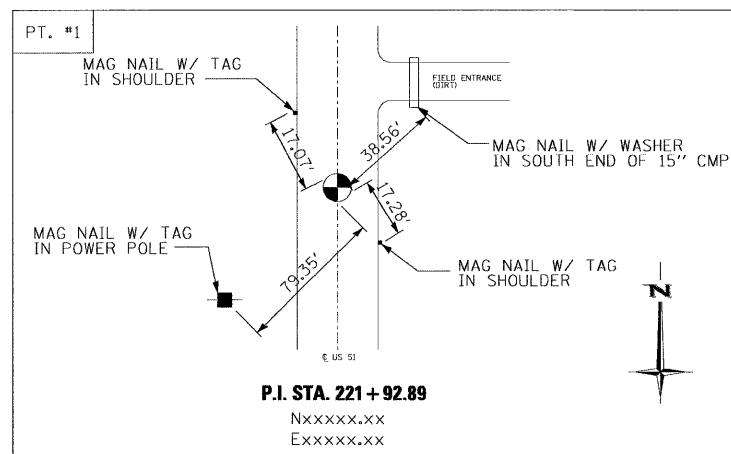
\* ASSUME TWO (2) LIFTS OF HMA BINDER & SURFACE FOR TOTAL QUANTITY

FILE NAME =	USER NAME = #USER#	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>SCHEDULE OF QUANTITIES</b>			F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED -					322	24BR-1	FAYETTE	57	8
	PLOT SCALE = 28,0000' / IN.	CHECKED -	REVISED -		SCALE: NTS	SHEET NO.	OF SHEETS	STA.	TO STA.	CONTRACT NO. 94770		
	PLOT DATE = 8/26/2008	DATE -	REVISED -					FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



NOTE: ALL CONTROL TIES ARE "DIRECT" MEASURED

NOTE  
CONTRACTOR SHALL INSTALL PERMANENT SURVEY MARKERS, TYPE 1 FOR POINTS #1, #2, & #5.



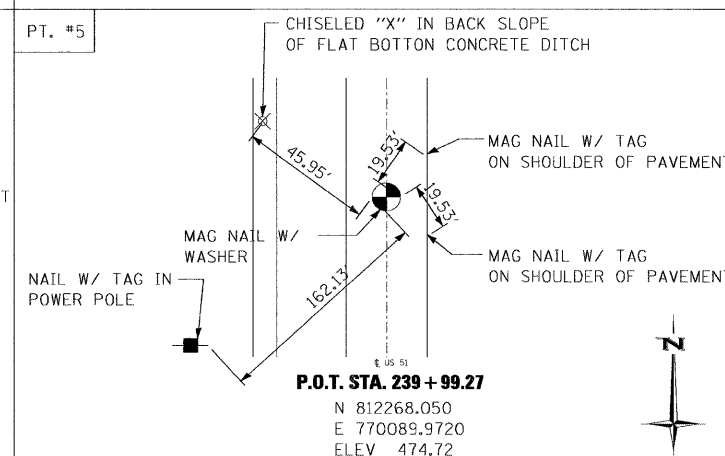
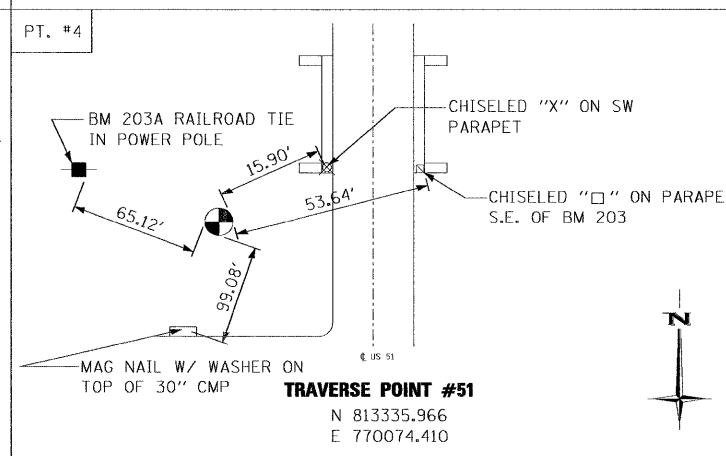
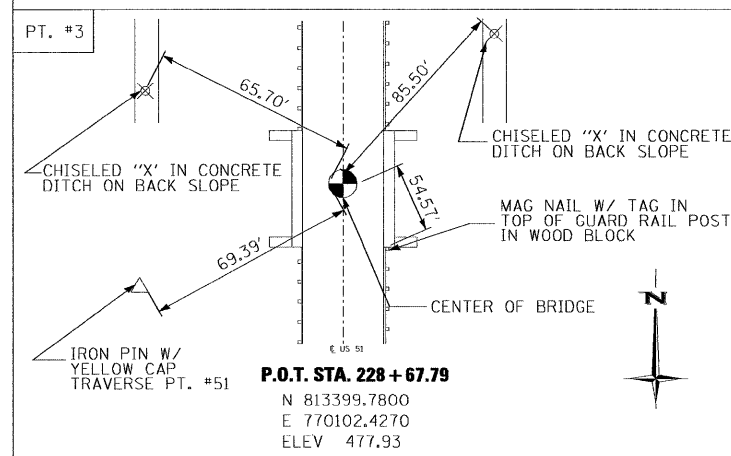
**BENCHMARKS**

EXIST BM #203 - CHISELED "□" ON THE SOUTHEAST CORNER OF BRIDGE ABUTMENT STRUCTURE #026-0038 ELEV. 478.21

SET BM #1711-5-1 - EXISTING RAILROAD SPIKE IN EAST SIDE POWER POLE IN SOUTHWEST QUADRANT OF BRIDGE & RICHLAND CREEK ON US 51 (SEE TRAV. 51) ELEV. 475.33

SET BM #1711-5-2 - TOP OF NORTHEAST BOLT NEXT TO "O" IN "OPEN", TOP FLANGE OF FLUSHING HYDRANT ON EAST SIDE OF US 51 ±550' SOUTH OF BRIDGE & EXISTING BM #203 ELEV. 475.21

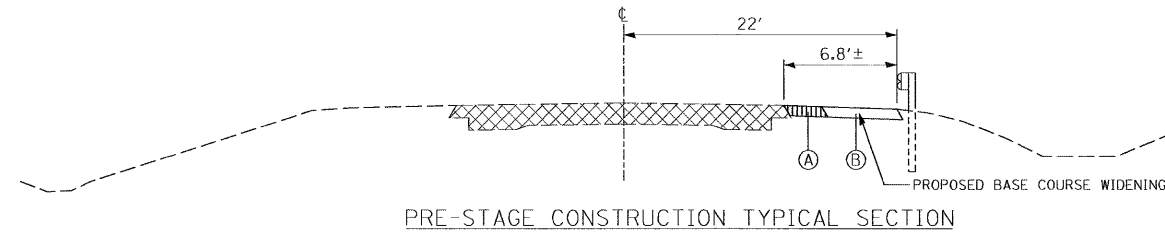
SET BM #1711-5-3 - YELLOW BENCHMARK SPIKE ON EAST SIDE OF 6" WOOD POST, AT TELEPHONE PEDESTAL ON EAST SIDE OF US 51 ±900' NORTH OF BM #203 ELEV. 486.48



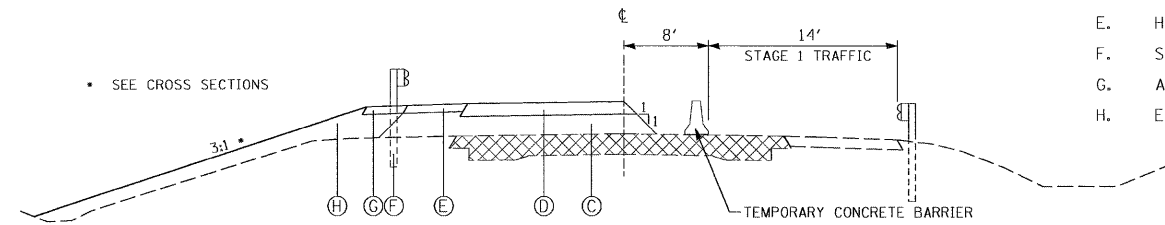
FILE NAME =	USER NAME = #USER#	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>CONTROL TIES &amp; BENCHMARKS</b>			F.A.P. RTE. =	SECTION =	COUNTY =	TOTAL SHEETS =	SHEET NO. =
		DRAWN -	REVISED -					322	24BR-1	FAYETTE	57	9
		CHECKED -	REVISED -					SCALE: SHEET NO. OF SHEETS STA. TO STA.			CONTRACT NO. 94770	
		DATE = 9/26/2008	REVISED -					FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

NOTES:

1. ALL DIMENSIONS, BARRICADES, SIGNS, ETC., AS SHOWN ON TRAFFIC CONTROL AND PROTECTION STANDARD 701321 SHALL APPLY.
2. ALL TEMPORARY PAVEMENT MARKING NECESSARY TO COMPLY WITH THIS DETAIL SHALL BE CONSIDERED INCLUDED IN THE TRAFFIC CONTROL PAY ITEMS IN THE PLANS.
3. CONTRACTOR SHALL FILL EXISTING GUARD RAIL POST AFTER REMOVING AND SHALL BE CONSIDERED INCIDENTAL TO STEEL PLATE BEAM GUARD RAIL REMOVAL.
4. CONTRACTOR SHALL PROVIDE TEMPORARY PARKING/ACCESS FOR PRIVATE ENTRANCE AT STA. 226+22.6 LT DURING STAGE I CONSTRUCTION.
5. CONTRACTOR TO ALLOW ACCESS TO FIELD ENTRANCES WITHIN PROJECT LIMITS DURING STAGE CONSTRUCTION WITH 48 HR NOTIFICATION BY THE ENGINEER.



PRE-STAGE CONSTRUCTION TYPICAL SECTION



STAGE 1 CONSTRUCTION TYPICAL SECTION

- A. EXISTING AGGREGATE SHOULDER TO BE REMOVED\*
- B. HMA BASE COURSE WIDENING (STAGE I TRAFFIC)
- C. GRANULAR EMBANKMENT, SPECIAL
- D. HMA BINDER COURSE
- E. HMA SHOULDER
- F. STEEL PLATE BEAM GUARD RAIL
- G. AGGREGATE SHOULDER
- H. EARTH EMBANKMENT

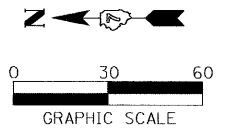
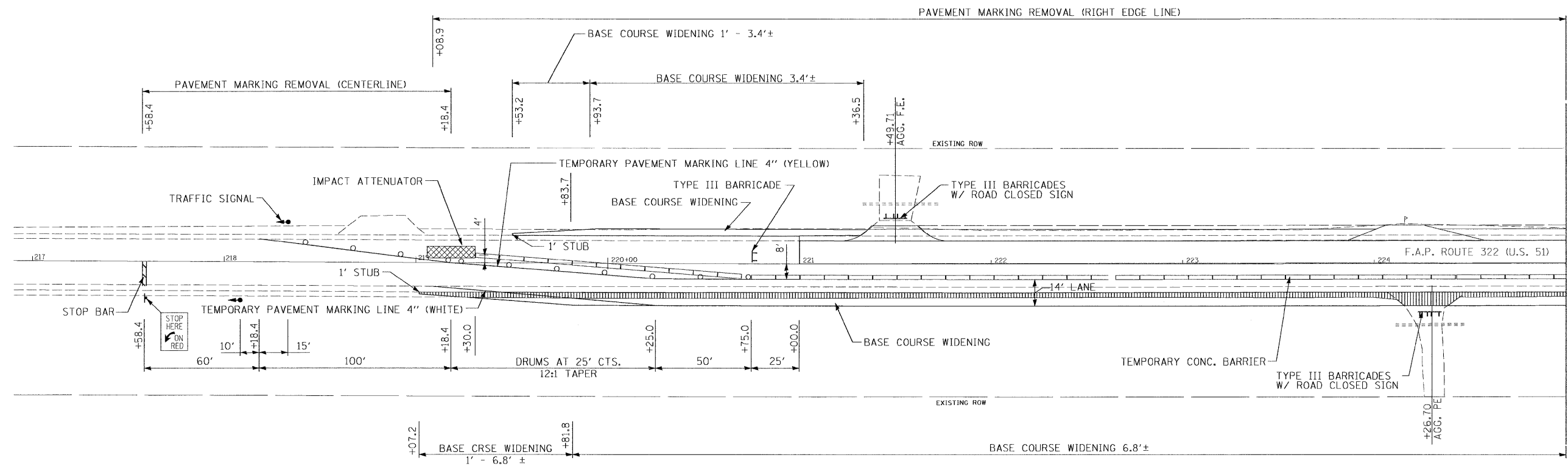
\* AGGREGATE SHOULDER REMOVAL INCLUDED IN EARTH EXCAVATION WIDENING.

SUGGESTED PRE-STAGE PROCEDURES

1. CONSTRUCT BASE COURSE WIDENING ON WEST SIDE OF US 51.
2. INSTALL TEMPORARY TRAFFIC SIGNALS.

SUGGESTED STAGE I PROCEDURES

1. ACTIVATE TEMPORARY TRAFFIC SIGNALS.
2. MOVE ALL TRAFFIC TO SOUTHBOUND LANE.
3. INSTALL TEMPORARY CONCRETE BARRIERS, TEMPORARY IMPACT ATTENUATORS AND TRAFFIC CONTROL DEVICES.
4. REMOVE PAVEMENT AND INSTALL TEMPORARY SHEET PILE.
5. REMOVE EXISTING BRIDGE STRUCTURE AND CONSTRUCT NEW BRIDGE AS SHOWN ON PLANS.
6. REMOVE EXISTING GUADRAIL.
7. CONSTRUCT NEW ROADWAY AND ENTRANCES AS SHOWN ON PLANS, EXCEPT FOR HMA SURFACE COURSE.
8. INSTALL NEW GUADRAIL AS SHOWN ON PLANS.

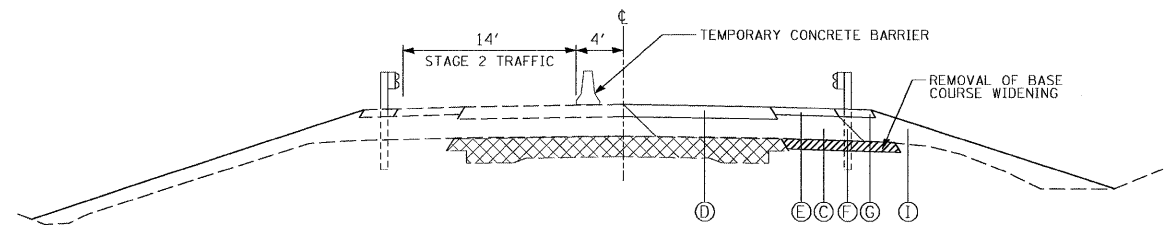


- PAVEMENT REMOVAL
- AGGREGATE SHOULDER REMOVAL (INCLUDED IN EARTH EXCAVATION QUANTITIES)

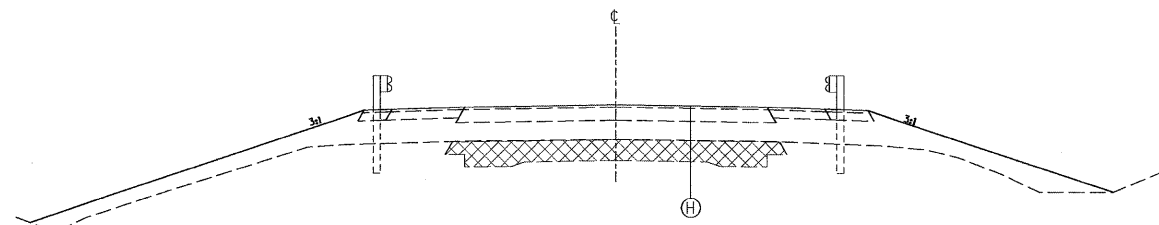
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P:\06e1711-5\Design\Plans\1711-5 STAGE CONSTRUCTION.dgn		DRAWN -	REVISED -					SCALE:	SHEET NO.	OF	SHEETS	STA.	TO STA.	FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT
		CHECKED -	REVISED -												
		DATE -	REVISED -												







STAGE 2 CONSTRUCTION TYPICAL SECTION



FINAL STAGE CONSTRUCTION TYPICAL SECTION

NOTES:

1. ALL DIMENSIONS, BARRICADES, SIGNS, ETC. AS SHOWN ON TRAFFIC CONTROL AND PROTECTION STANDARD 701321 SHALL APPLY.
2. ALL TEMPORARY PAVEMENT MARKING NECESSARY TO COMPLY WITH THIS DETAIL SHALL BE CONSIDERED INCLUDED IN THE TRAFFIC CONTROL PAY ITEMS IN THE PLANS.
3. CONTRACTOR SHALL FILL EXISTING GUARD RAIL POST AFTER REMOVING AND SHALL BE CONSIDERED INCIDENTAL TO STEEL PLATE BEAM GUARD RAIL REMOVAL.
4. CONTRACTOR SHALL PROVIDE TEMPORARY PARKING/ACCESS FOR ENTRANCE AT STA 225+62.9 RT DURING STAGE II CONSTRUCTION.
5. CONTRACTOR TO ALLOW ACCESS TO FIELD ENTRANCES WITHIN PROJECT LIMITS DURING STAGE CONSTRUCTION WITH 48 HR NOTIFICATION BY THE ENGINEER.

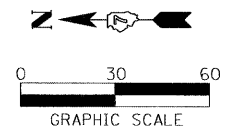
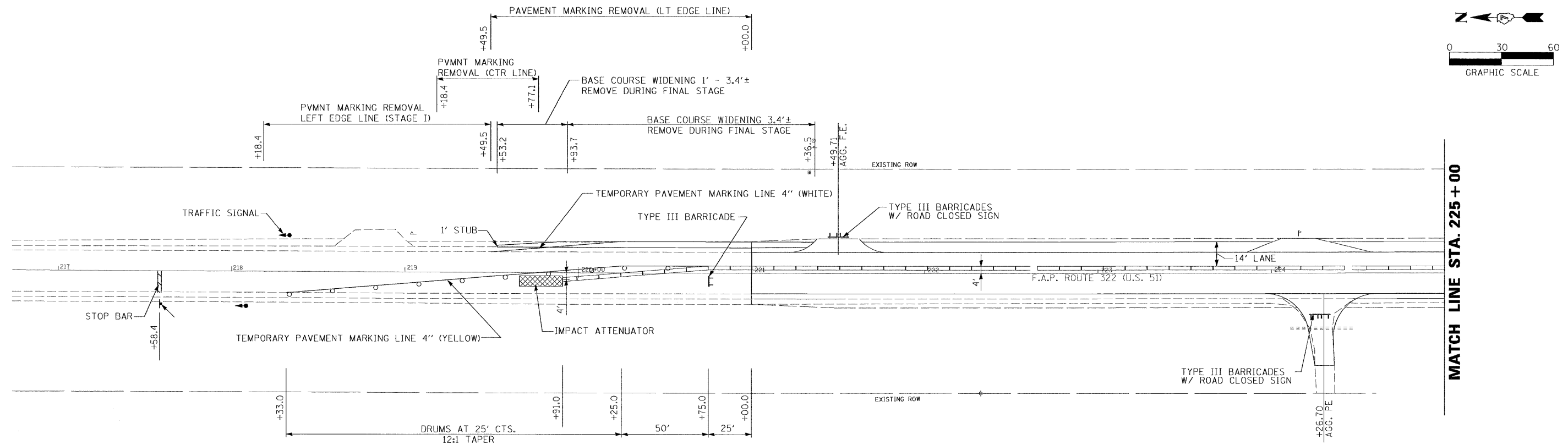
- C. GRANULAR EMBANKMENT, SPECIAL
- D. HMA BINDER COURSE
- E. HMA SHOULDER
- F. STEEL PLATE BEAM GUARD RAIL
- G. AGGREGATE SHOULDER
- H. HMA SURFACE COURSES
- I. EARTH EMBANKMENT

SUGGESTED STAGE II PROCEDURES

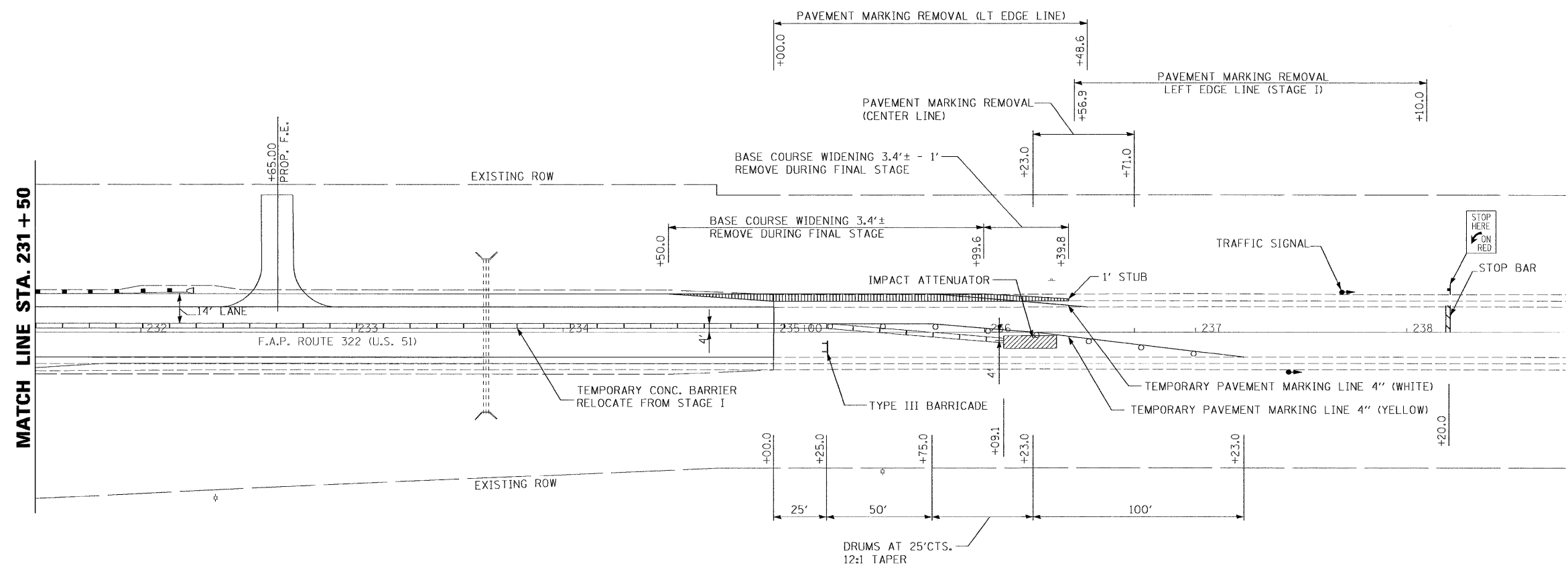
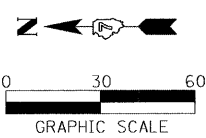
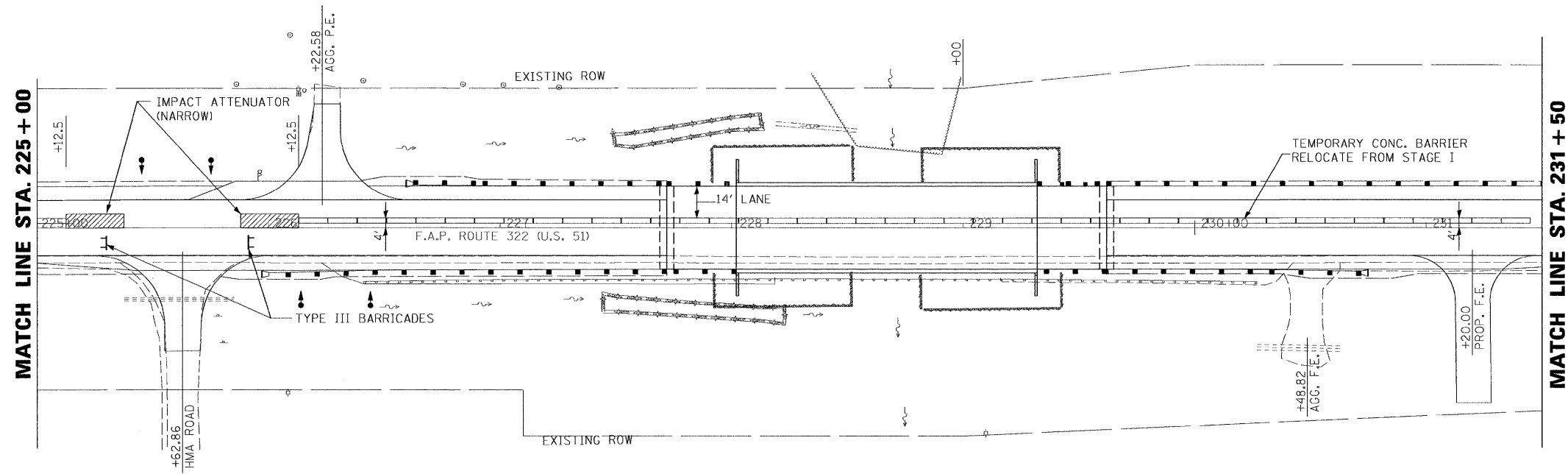
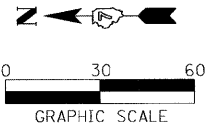
1. RELOCATE TEMPORARY CONCRETE BARRIERS, IMPACT ATTENUATORS, AND TRAFFIC CONTROL DEVICES AS REQ'D.
2. MOVE ALL TRAFFIC TO NORTHBOUND LANE.
3. REMOVE BASE COURSE WIDENING FROM WEST SIDE OF US 51 (STAGE I).
4. REMOVE PAVEMENT.
5. REMOVE EXISTING BRIDGE STRUCTURE AND CONSTRUCT NEW BRIDGE AS SHOWN ON PLANS.
6. REMOVE EXISTING GUARDAIL.
7. CONSTRUCT NEW ROADWAY AS SHOWN ON PLANS, EXCEPT FOR HMA SURFACE COURSE.
8. INSTALL NEW GUADRAIL AS SHOWN ON PLANS.

SUGGESTED FINAL STAGE PROCEDURES

1. REMOVE BASE COURSE WIDENING FROM EAST SIDE OF US 51 (STAGE II).
2. REMOVE ALL TEMPORARY TRAFFIC BARRIERS AND CONTROL DEVICES.
3. INSTALL SHORT-TERM PAVEMENT MARKINGS.
4. OPEN ROADWAY TO TWO-WAY TRAFFIC
5. CONSTRUCT SURFACE COURSE, HMA SHOULDER SURFACE AND AGGREGATE SHOULDER SURFACE.
6. CONSTRUCT STRIPING ON ROADWAY AS SHOWN ON PLANS.



FILE NAME =	USER NAME = #USER#	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>STAGE II &amp; FINAL STAGE CONSTRUCTION SHEET</b>	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
P:\2061711-5\Design\Plans\1711-5 STAGE CONSTRUCTION.dgn		DRAWN -	REVISED -			322	24BR-1	FAYETTE	57	12	
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PLOT DATE = 8/26/2008		DATE -	REVISED -			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT					
SCALE: SHEET NO. OF SHEETS STA. TO STA.											



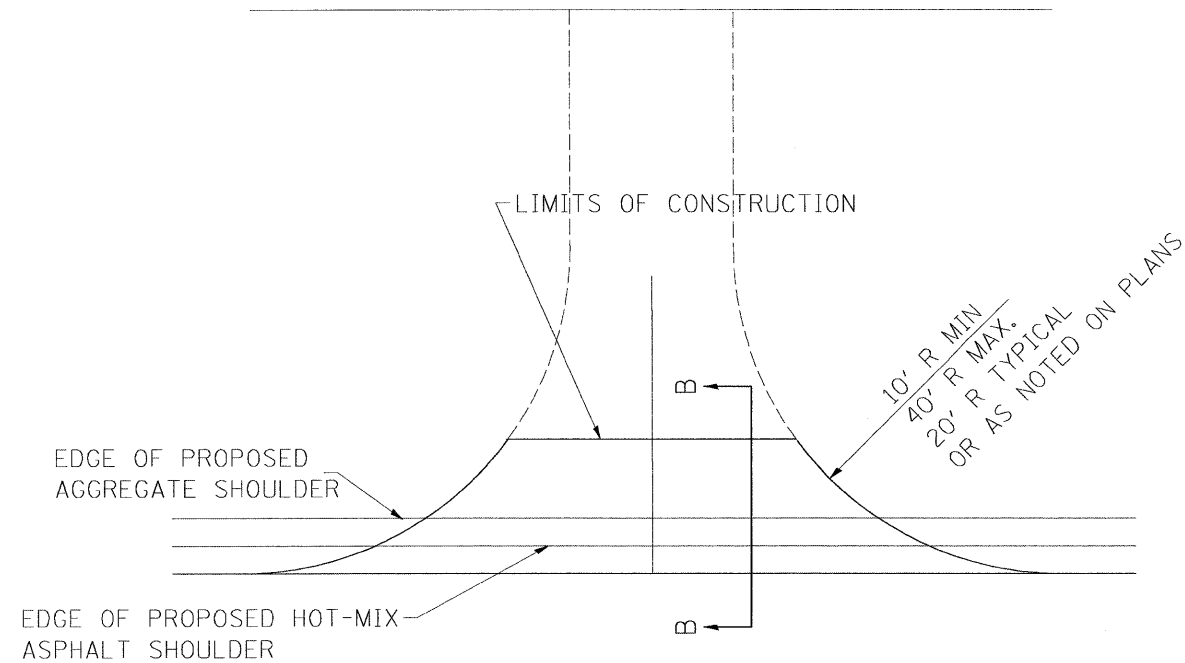
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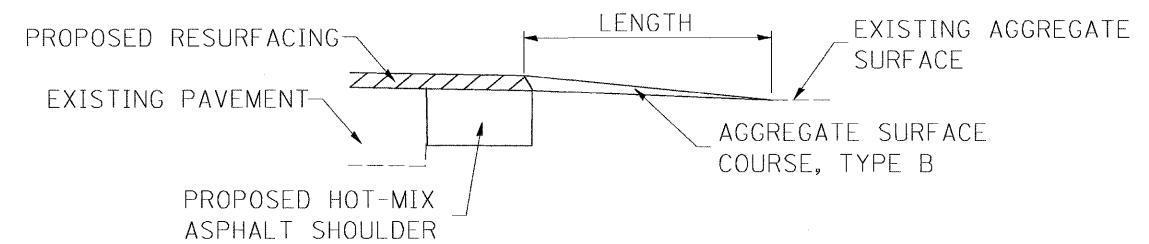
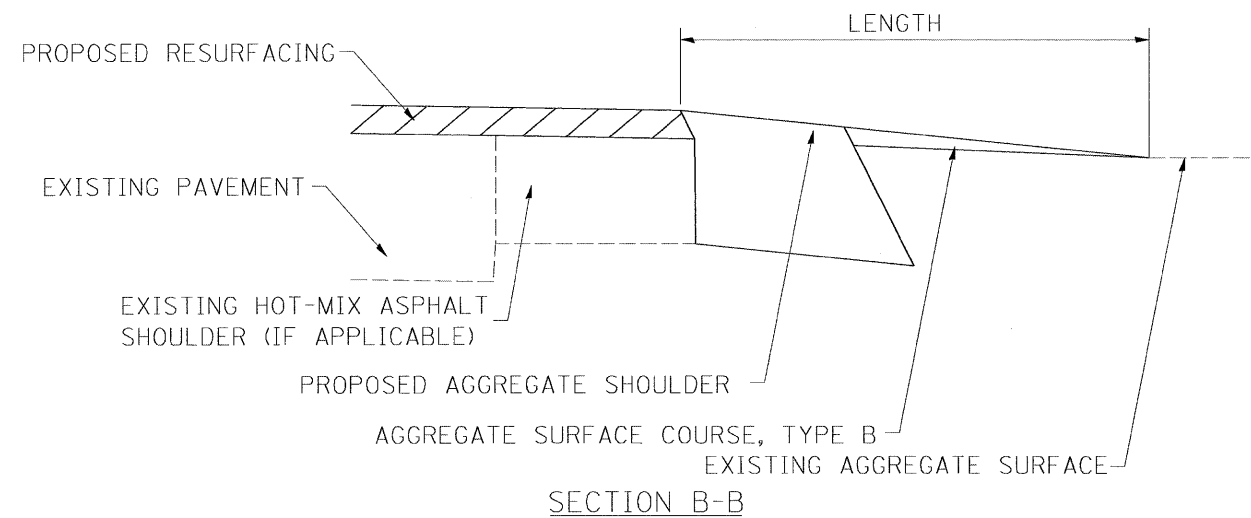
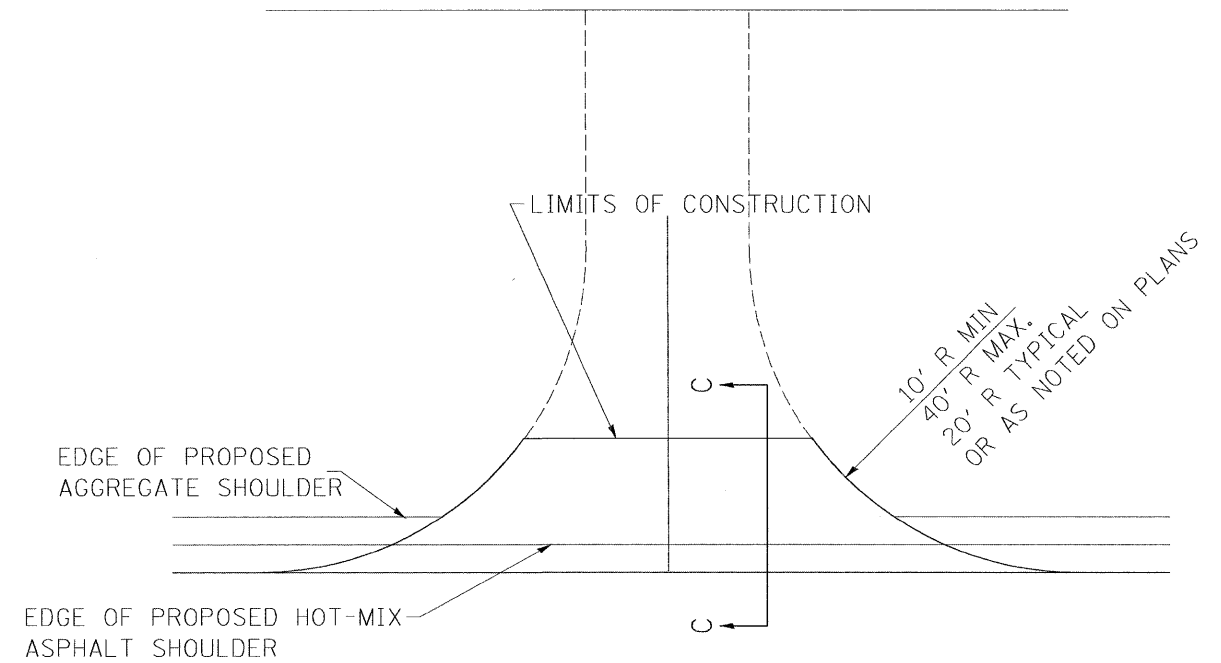




FIELD ENTRANCE



PRIVATE ENTRANCE



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.

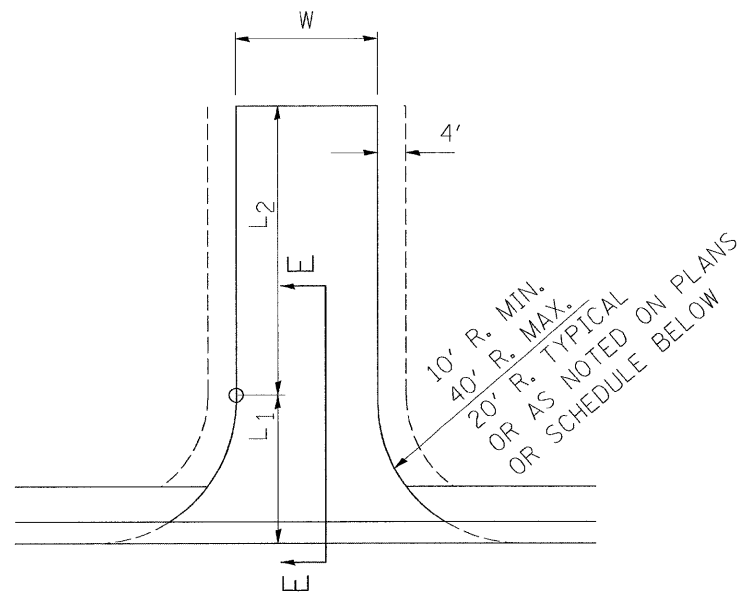
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PLOT DATE = 8/26/2008		DATE -	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

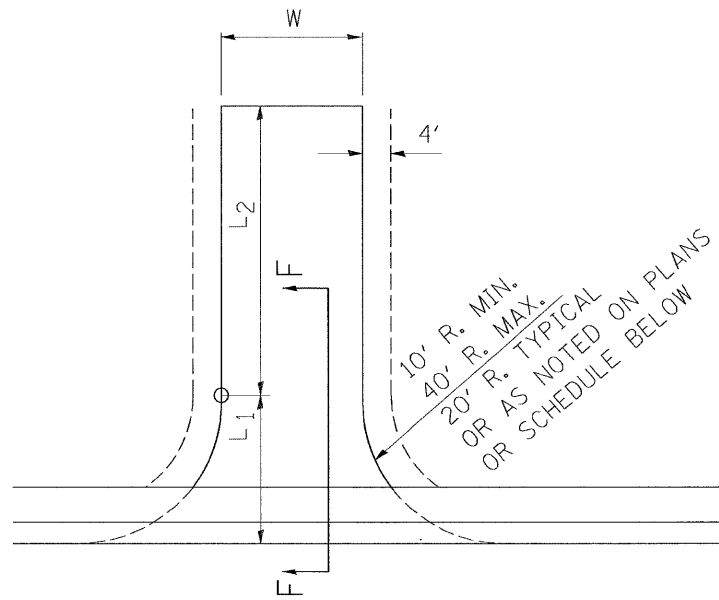
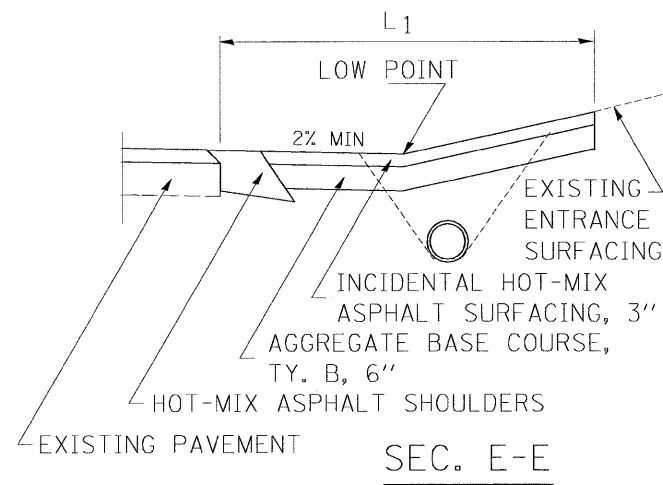
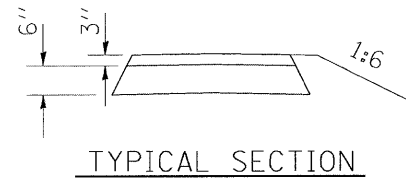
ROADWAY ENTRANCE DETAILS

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

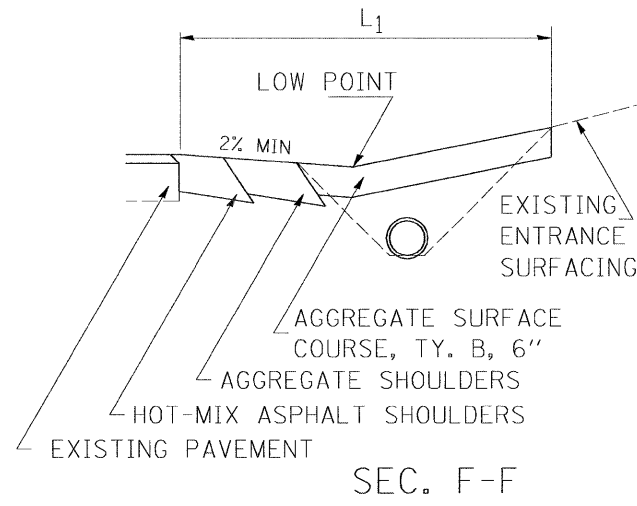
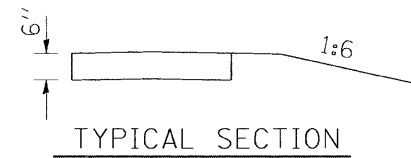
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
322	24BR-1	FAYETTE	57	17
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 94770	



**PRIVATE ENTRANCE  
(HOT-MIX ASPHALT)**



**FIELD ENTRANCE  
(AGGREGATE)**



**NOTES**

L<sub>1</sub> = DISTANCE FROM EDGE OF PAVEMENT TO RADIUS POINT OR MAXIMUM DISTANCE OF 30'.  
 L<sub>2</sub> = DISTANCE FROM RADIUS POINT OR MAXIMUM DISTANCE OF 30' FROM EDGE OF PAVEMENT TO R.O.W. LINE  
 MATERIAL USED TO CONSTRUCT L<sub>2</sub> LENGTH SHALL BE THE SAME TYPE OF MATERIAL AS THE EXISTING ENTRANCE

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.

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.

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

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

FILE NAME =	USER NAME = *USER*	DESIGNED -	REVISED -
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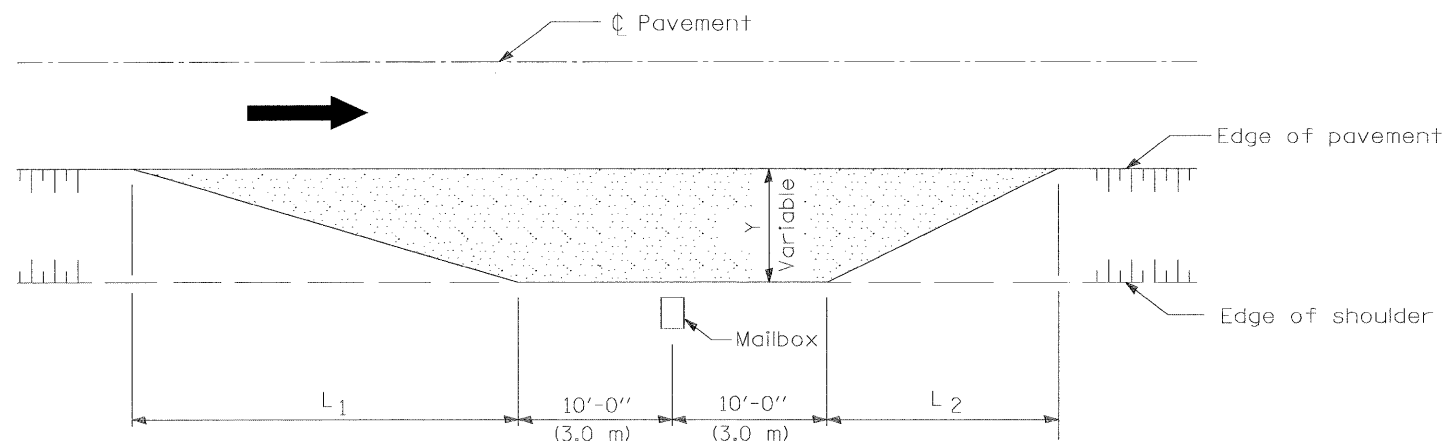
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**ROADWAY ENTRANCE DETAILS**

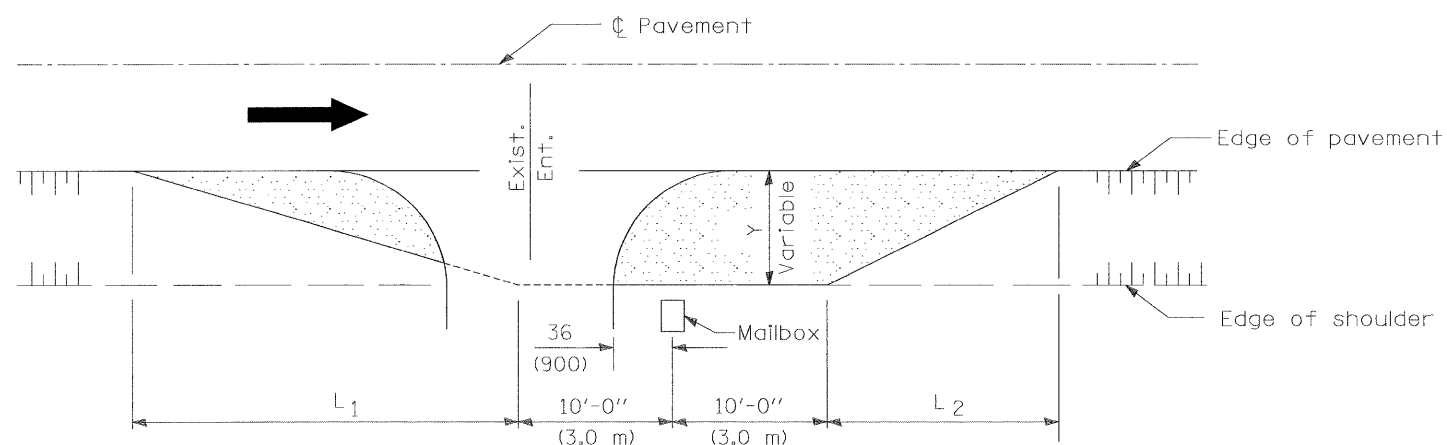
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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 94770	

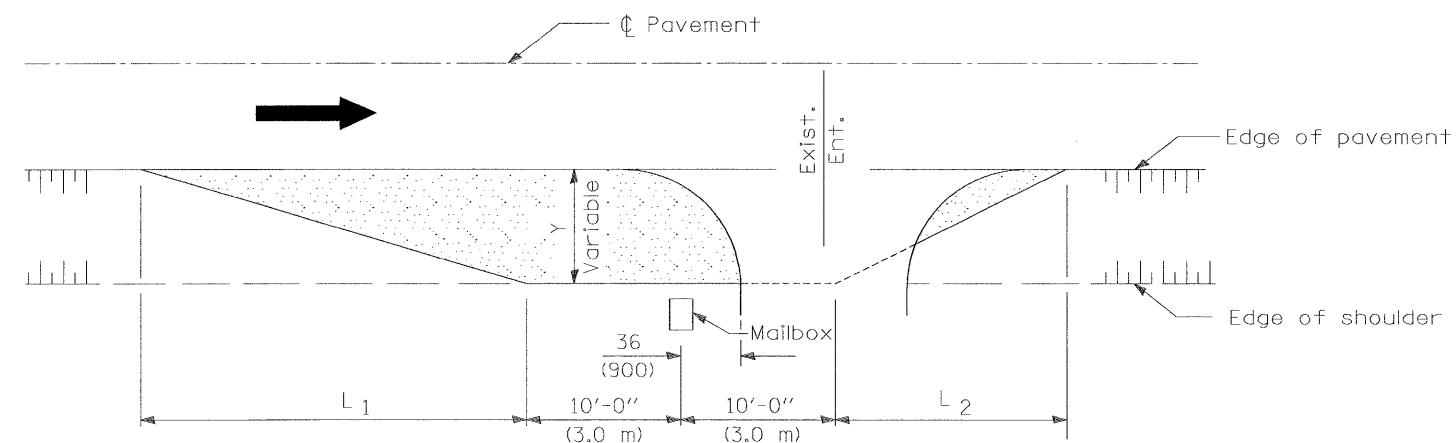




TYPICAL APPLICATION



MAILBOX ON FAR SIDE OF ENTRANCE



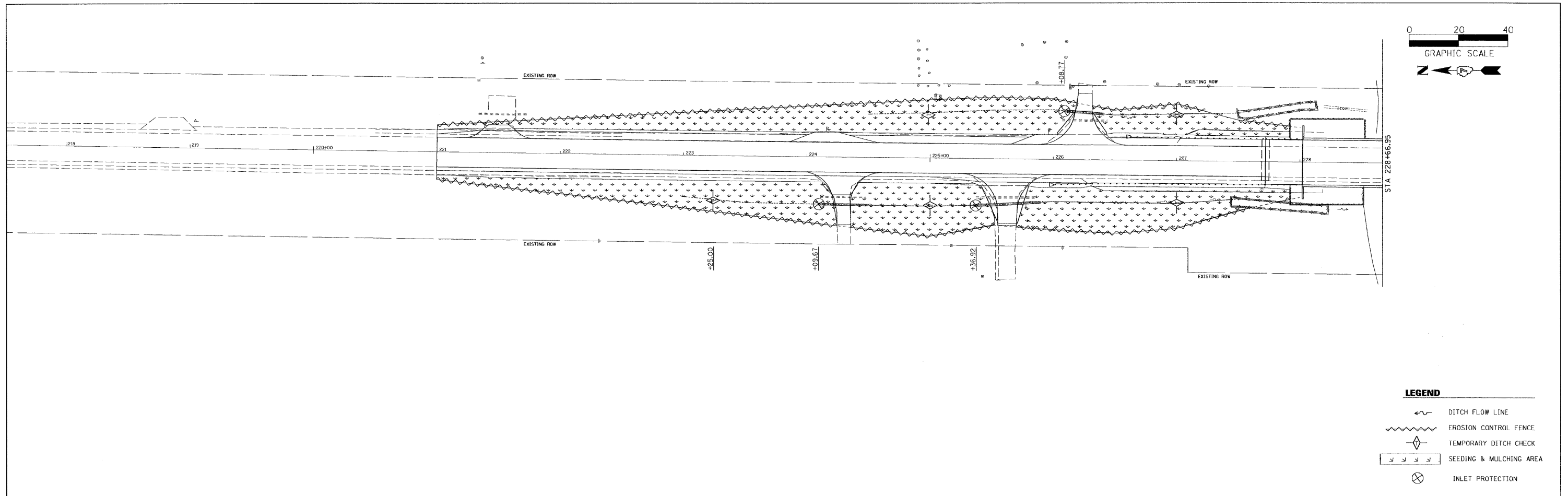
MAILBOX ON NEAR SIDE OF ENTRANCE

DIMENSIONS - ft. (m)		
Width of Shoulder	4-8 (1.2-2.4)	10 (3.0)
Width of Turnout (Y)	8 (2.4)	8-10 (2.4-3.0)
L <sub>1</sub>	32 (9.5)	32 (9.5)
L <sub>2</sub>	20 (6.0)	20 (6.0)

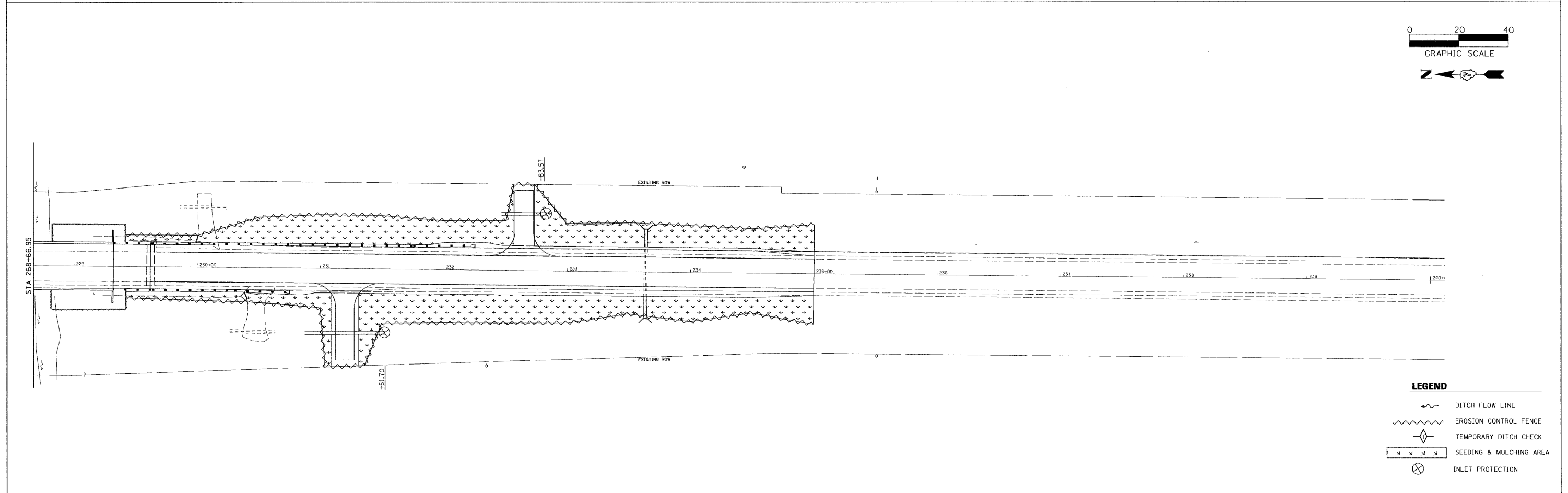
GENERAL NOTES

Mailboxes shall be mounted such that the face of the mailbox is 6 (150) to 12 (300), and the post a minimum of 24 (600), from the edge of the turnout surfacing.

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



- LEGEND**
- DITCH FLOW LINE
  - EROSION CONTROL FENCE
  - TEMPORARY DITCH CHECK
  - SEEDING & MULCHING AREA
  - INLET PROTECTION



- LEGEND**
- DITCH FLOW LINE
  - EROSION CONTROL FENCE
  - TEMPORARY DITCH CHECK
  - SEEDING & MULCHING AREA
  - INLET PROTECTION

FILE NAME =	USER NAME = #USER#	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>EROSION AND SEDIMENT CONTROL SHEET</b>	F.A.P. RTE. 322	SECTION 24BR-1	COUNTY FAYETTE	TOTAL SHEETS 57	SHEET NO. 20	
P:\06e1711-5\Design\Plans\xx-D794770-sht	eros.dgn	DRAWN -	REVISED -			SCALE:	SHEET NO. OF SHEETS	STA. TO STA.	FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT	CONTRACT NO. 94770
	PLOT SCALE = 48.0000' / IN.	CHECKED -	REVISED -								
	PLOT DATE = 8/26/2008	DATE -	REVISED -								

B.M.: #203; Chiseled Square on the Southeast Corner of Str. 026-0038 Elevation 478.21

Existing Structure: SN 026-0038, Built-1938 Reconstruction-1965, 3-Span Wide Flange Beam Bridge, 97.5' Long, original width of 24' and widened to 46.5', Supported on Spread Foundation Abut. & Piers, to be removed.

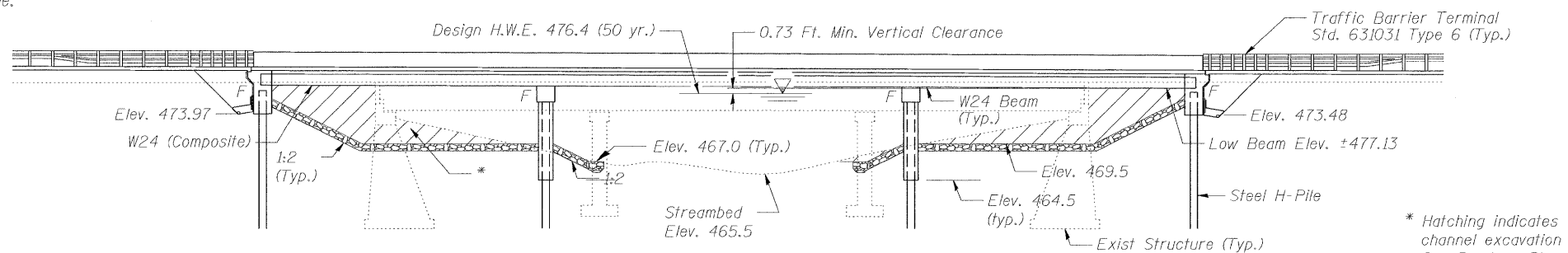
Staging: Traffic shall be maintained during replacement by Staged Construction.

Salvage: None.

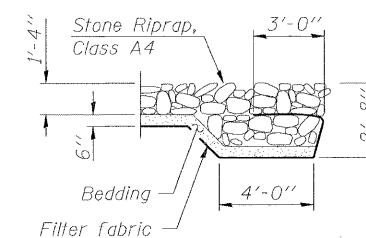
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 1
FAP 322	24BR-1	FAYETTE	57	21	22 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

Contract # 94170



ELEVATION

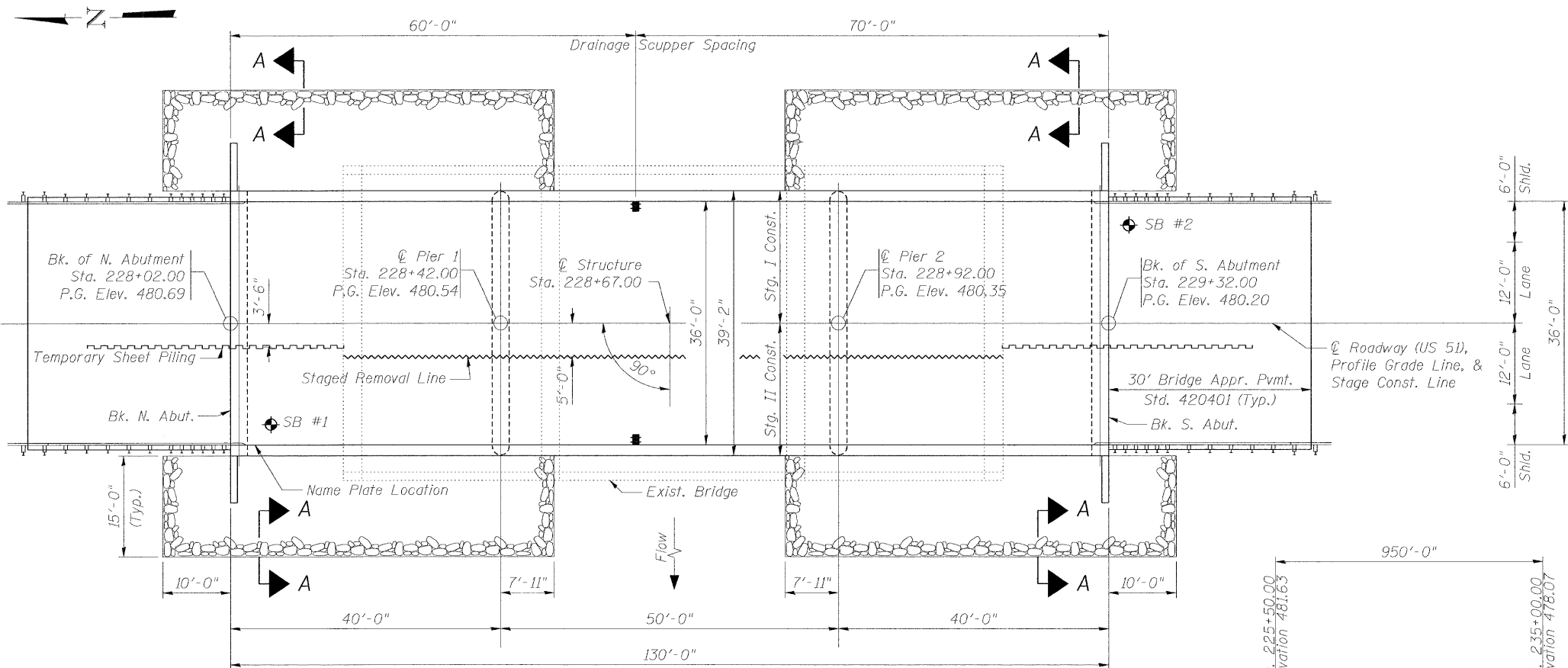


SECTION A-A

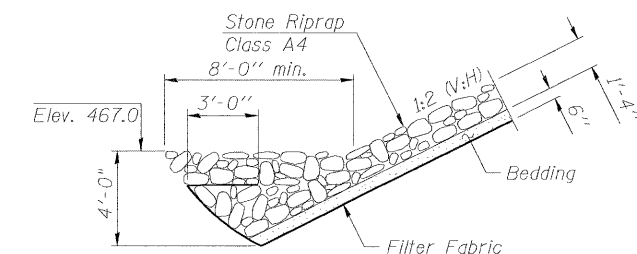
SHEET INDEX

Plan & Elevation	1
General Notes & Quantities	2
Staged Construction	3
Drainage Scupper	4
Temp. Concrete Barrier	5
Top of Slab Elevations	6-9
Superstructure	10
Superstructure Details	11-12
Cantilever Forming Brackets	13
Framing & Beam Details	14
Bearings	15
Abutments	16
Pier 1 & 2	17
Steel H-Pile Details	18
Bar Splicer Details	19
Soil Borings	20-22

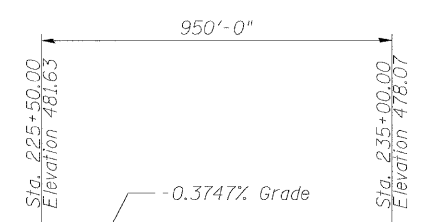
\* Hatching indicates channel excavation See Roadway Plans



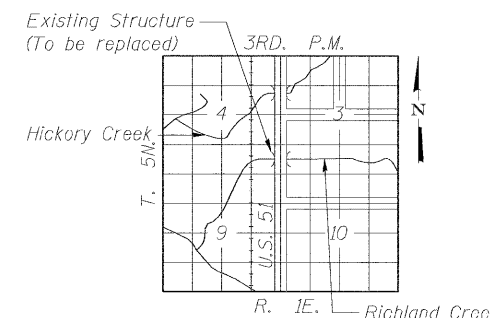
PLAN



STONE RIPRAP ANCHOR DETAIL



PROFILE GRADE



LOCATION SKETCH

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	N. Abutment	Pier 1	Pier 2	S. Abutment
	474.1	463.3	463.3	473.6

WATERWAY INFORMATION

Drainage Area = 12.44 sq. mi. Proposed Low Grade Elev. = 478.07 @ Sta. 235+00.00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.	Nat. Head - Ft.	Headwater El.
Design	50	2986	525	881	476.4
Base	100	3424	525	917	476.7
Overtopping (Proposed)	300	4229	968	477.3	477.3
Max. Calc.	500	4471	525	968	477.6

LOADING HS20-44

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

SEISMIC DATA

Seismic Performance Category (SPC) = A  
Bedrock Acceleration Coefficient (A) = .075  
Site Coefficient (S) = 1.0

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications - 17th ed.

DESIGN STRESSES

FIELD UNITS  
f'c = 3,500 psi  
fy = 60,000 psi (reinf.)  
fy = 50,000 psi (M270 Grade 50)

APPROVED FOR STRUCTURAL ADEQUACY ONLY

REGINALD H. BENTON  
ENGINEER OF BRIDGES AND STRUCTURES



9/23/08  
REGINALD H. BENTON

PLAN AND ELEVATION  
US 51 / RICHLAND CREEK

F.A.P. RT. 322  
SEC. 24BR-1  
FAYETTE COUNTY  
STA. 228+67.40  
SN. 026-0104

BENTON & ASSOCIATES, INC.

DESIGNED	MBH
CHECKED	NRF
DRAWN	MBH
CHECKED	NRF



BENTON & ASSOCIATES, INC.  
Consulting Engineers / Land Surveyors  
1970 West Lafayette Ave. Jacksonville, IL 62650  
Phone: 217-245-4146 Fax: 217-245-4149  
IL Design Firm Registration No. 184-000852

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 2 22 SHEETS
FAP 322	24BR-1	FAYETTE	57	22	
FED. ROAD DIST. NO. 7	ILLINOIS		FED. AID PROJECT		

Contract # 94770

GENERAL NOTES

- Fasteners shall be AASHTO M 164 Type I, mechanically galvanized bolts. Bolts  $\frac{7}{8}$ "  $\phi$ , holes  $\frac{15}{16}$ "  $\phi$ , unless otherwise noted.
- Calculated weight of Structural Steel = 77910 lbs., Grade 50  
7360 lbs., Grade 36
- Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of  $\frac{1}{8}$  in. (0.01 ft.). Adjustment shall be made by grinding the surface or by shimming the bearings.
- No field welding is permitted except as specified in the contract documents.
- Reinforcement bars shall conform to the requirements of ASTM A706 Gr.60 (IL Modified). See Special Provisions.
- Reinforcement bars designated (E) shall be epoxy coated.
- 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.
- Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.
- The existing structural steel coating contains lead. The Contractor shall take the appropriate precautions to deal with the presence of lead on this project.
- Slipforming of the parapets is not allowed.
- The Organic Zinc Rich Primer / Epoxy / Urethane Paint System shall be used for painting of new structural steel except where otherwise noted. The entire system shall be shop applied, with the exception that masked off connection surfaces, field installed fasteners and damaged areas shall be touched up in the field. The color of the final finish coat for all interior steel surfaces shall be Gray, Munsell No. 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia beams shall be Gray, Munsell No. 5B 7/1. See Special Provision for "Cleaning and Painting New Metal Structures".

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Structures	Each			1
Structure Excavation	Cu. Yd.		179	179
Underwater Structure Excavation Protection--Location 1	Each		1	1
Underwater Structure Excavation Protection--Location 2	Each		1	1
Porous Granular Embankment (Special)	Cu. Yd.		128	128
Geocomposite Wall Drain	Sq. Yd.		79	79
Pipe Underdrains for Structures, 4"	Foot		127	127
Filter Fabric	Sq. Yd.		773	773
Stone Riprap, Class A4	Sq. Yd.		773	773
Pipe Drains, 4"	Foot		40	40
Concrete Structures	Cu. Yd.		113.8	113.8
Concrete Superstructure	Cu. Yd.	178		178
Concrete Encasement	Cu. Yd.		9.8	9.8
Furnishing and Erecting Structural Steel	L. Sum	1		1
Stud Shear Connectors	Each	2970		2970
Reinforcement Bars, Epoxy Coated	Pound	41110	12520	53630
Bridge Deck Grooving	Sq. Yd.	491		491
Protective Coat	Sq. Yd.	629		629
Drainage Scuppers, DS-11	Each	2		2
Temporary Sheet Piling	Sq. Ft.		1170	1170
Furnishing Steel Piles, HP 12x53	Foot		692.5	692.5
Driving Piles	Foot		692.5	692.5
Test Pile Steel, HP 12x53	Each		4	4
Pile Shoes	Each		28	28
Anchor Bolts, 1"	Each	48		48
Bar Splicers	Each	454	84	538
Name Plates	Each	1		1

STA. 228+67.40  
BUILT 200\_ BY  
STATE OF ILLINOIS  
F.A.P. RT. 322  
SEC. 24BR-1  
LOADING HS20  
STR. NO. 026-0104

NAME PLATE  
See Std. 515001

**BENTON & ASSOCIATES, INC.**

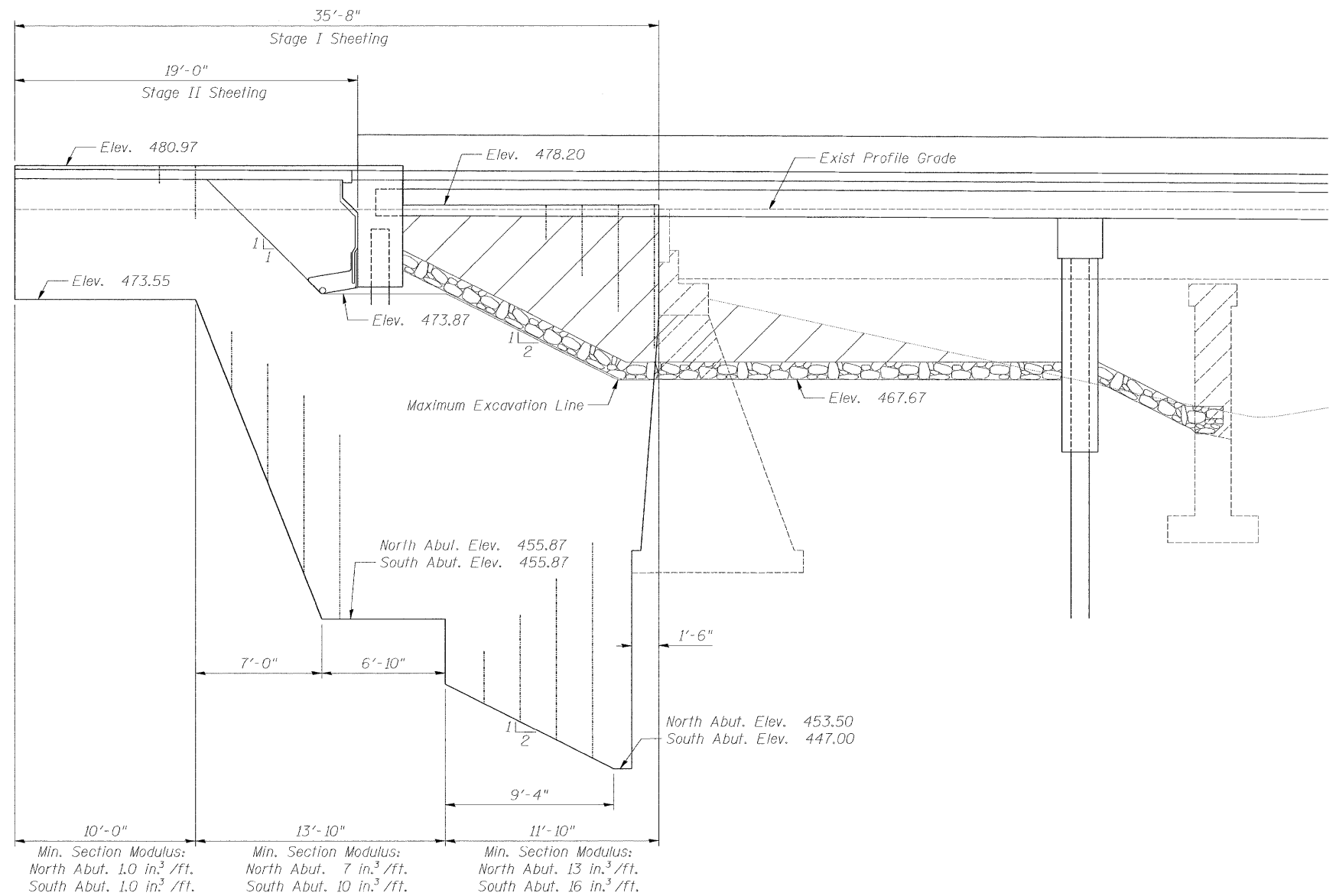
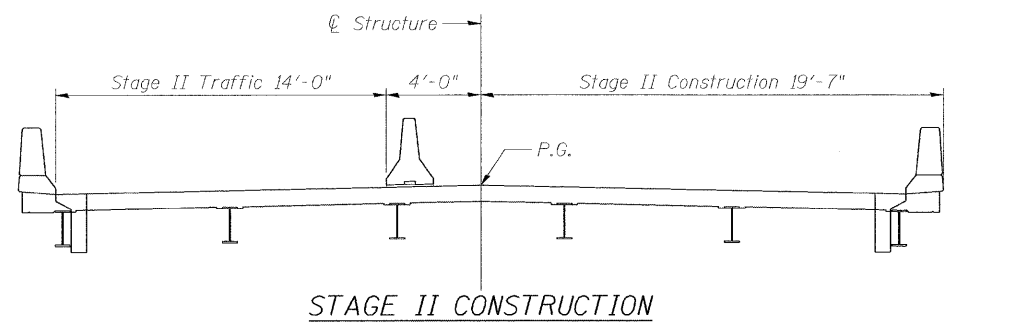
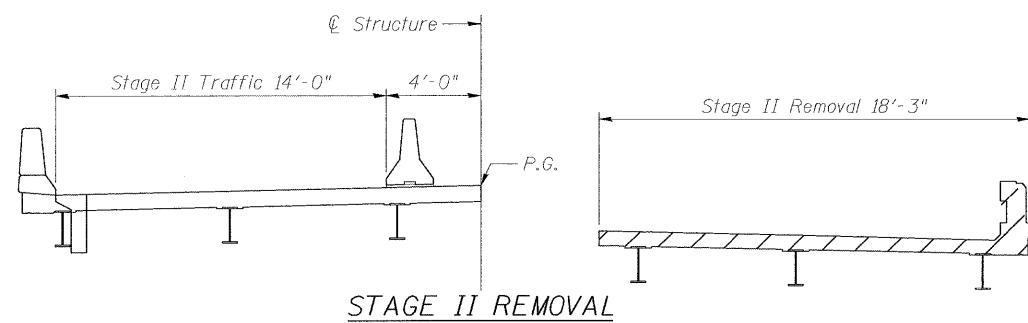
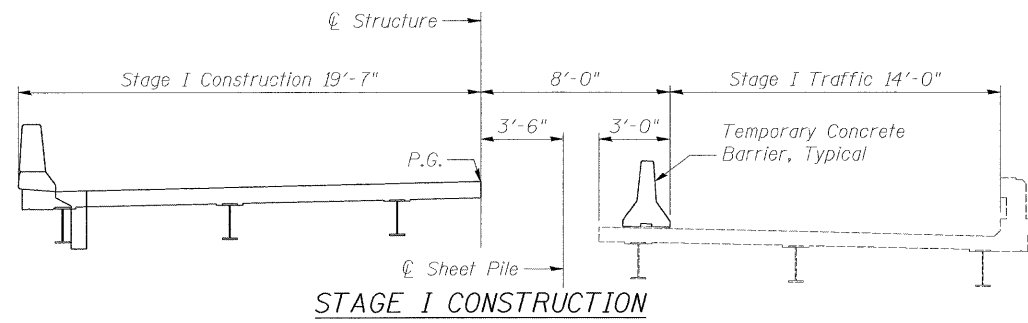
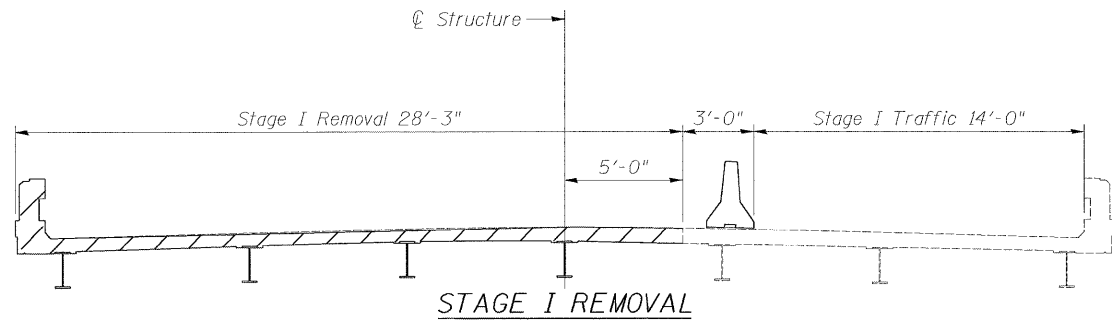
DESIGNED	MBH
CHECKED	NRF
DRAWN	MBH
CHECKED	NRF

GENERAL NOTES & QUANTITIES  
US 51 / RICHLAND CREEK  
F.A.P. RT. 322  
FAYETTE COUNTY  
SN. 026-0104

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 3
FAP 322	24BR-1	FAYETTE	57	23	22 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

Contract # 94770



**SHEET PILING ELEVATION**  
(North Abut. shown: South Abut. similar)

Notes:

1. Hatched areas indicate removal.
2. All staging sections are looking South.
3. For quantity of Temporary Concrete Barrier, see roadway plans.
4. For details of Temporary Concrete Barrier see Sheet 5 of 22.

Notes:

1. Minimum section modulus of temporary sheet piling shall be as shown in the Elevation View of this sheet.
2. If the contractor chooses to alter the temporary cantilevered sheet pile design requirements shown on the plans for lesser design requirements, the full design calculations with the required seals shall be submitted to the Department for review and approval.
3. The contractor shall connect the first sheet to the existing abutment wall to ensure stability of the sheets driven to the top of the footing. This connection shall be reviewed and accepted by the Engineer and included in the cost for Temporary Sheet Piling.

**BENTON & ASSOCIATES, INC.**

DESIGNED	MBH
CHECKED	NRF
DRAWN	MBH
CHECKED	NRF

**STAGED CONSTRUCTION**  
**US 51 / RICHLAND CREEK**  
**F.A.P. RT. 322**  
**FAYETTE COUNTY**  
**SN. 026-0104**

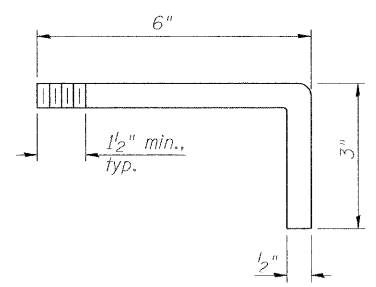
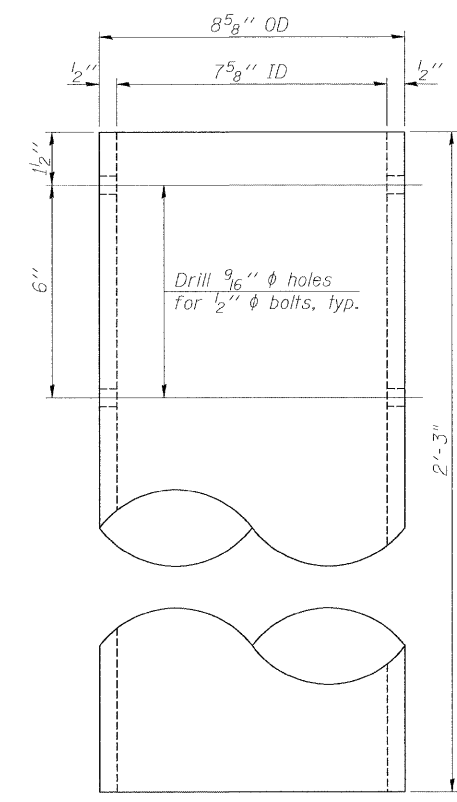
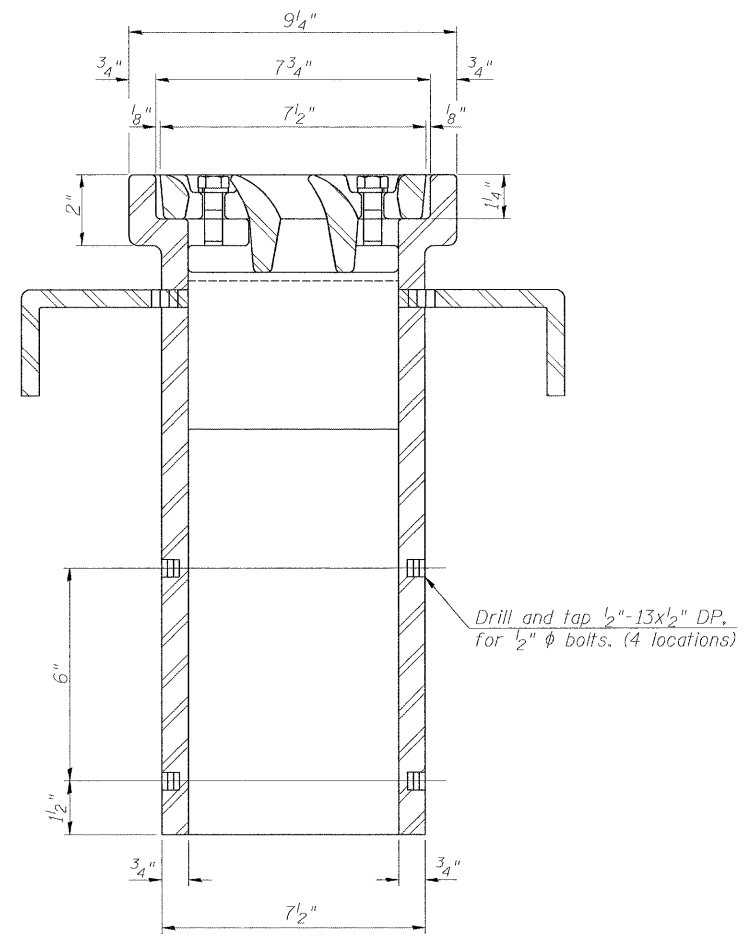
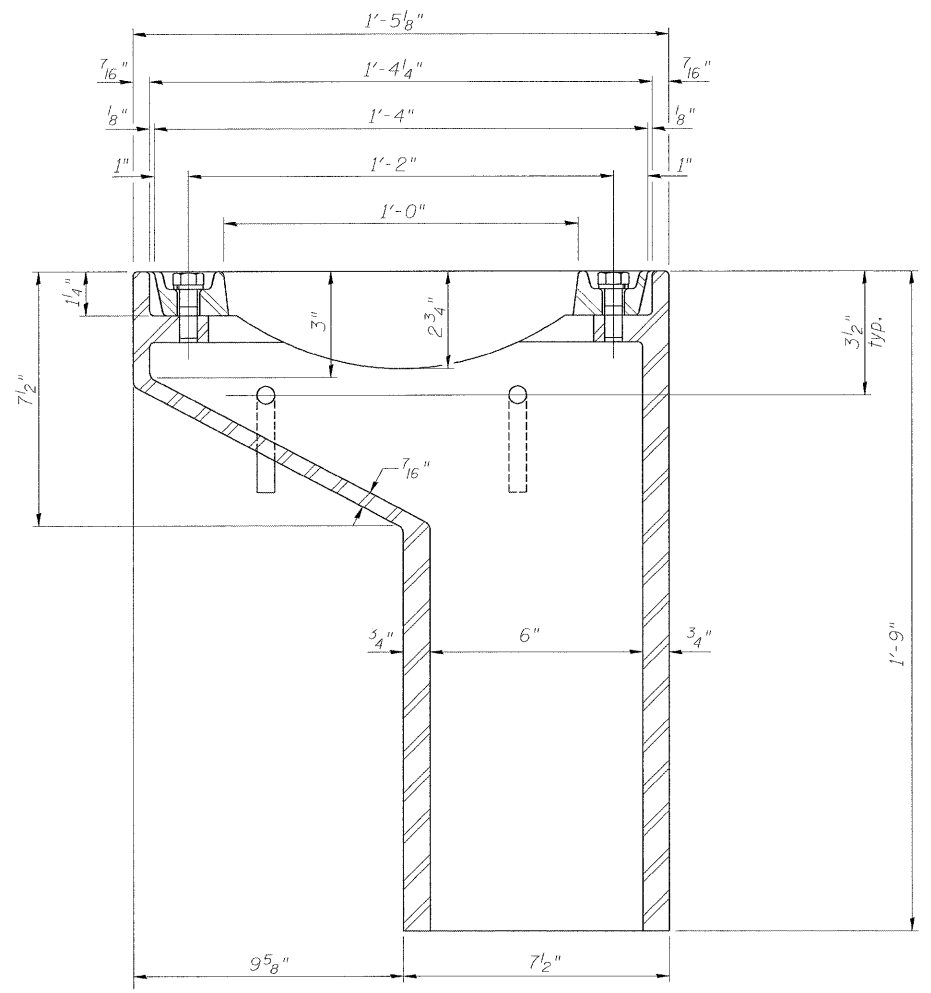
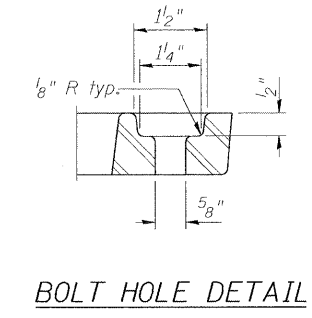
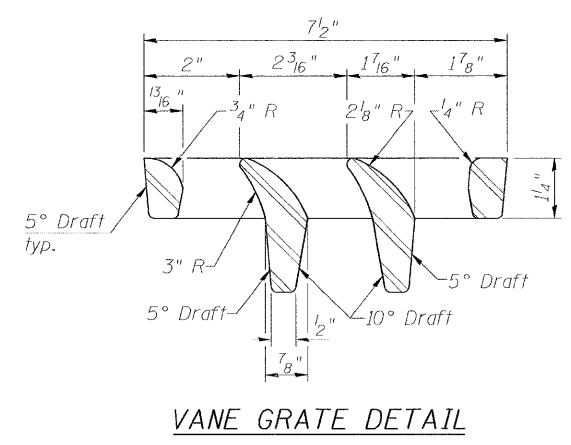
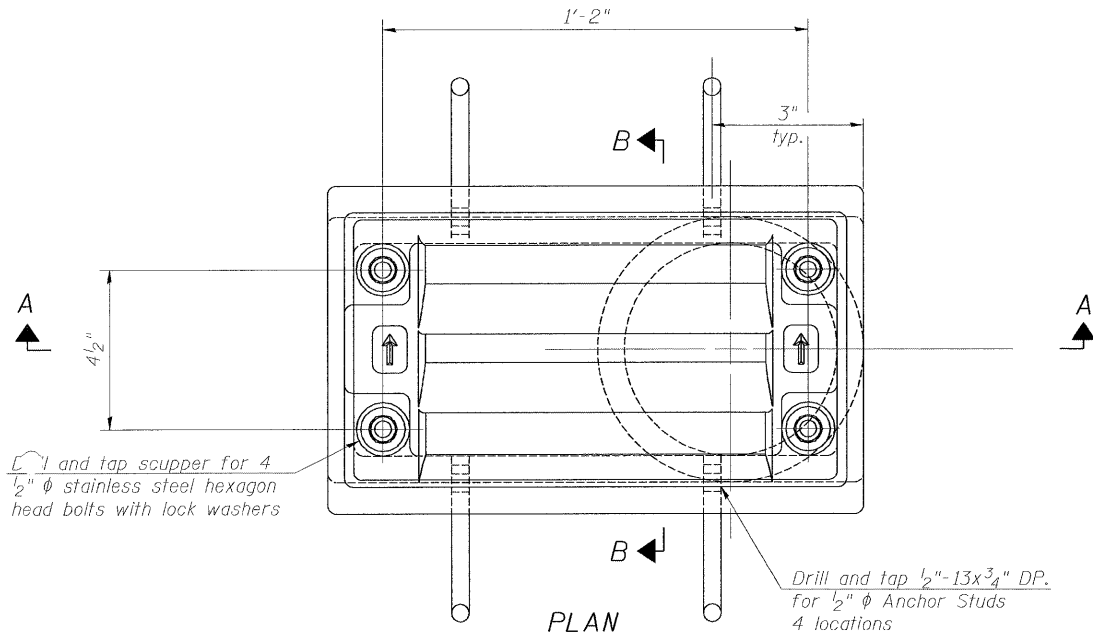
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	DATE SHEETS	SHEET NO.	SHEET NO. 4
FAP 322	24BR-1	FAYETTE	57	24	22 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-			

Contract # 94770

Notes:

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



See sheet 11 of 22 for scupper location relative to parapet.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scupper, DS-11	Each	2

DESIGNED	MBH
CHECKED	NRF
DRAWN	MBH
CHECKED	NRF

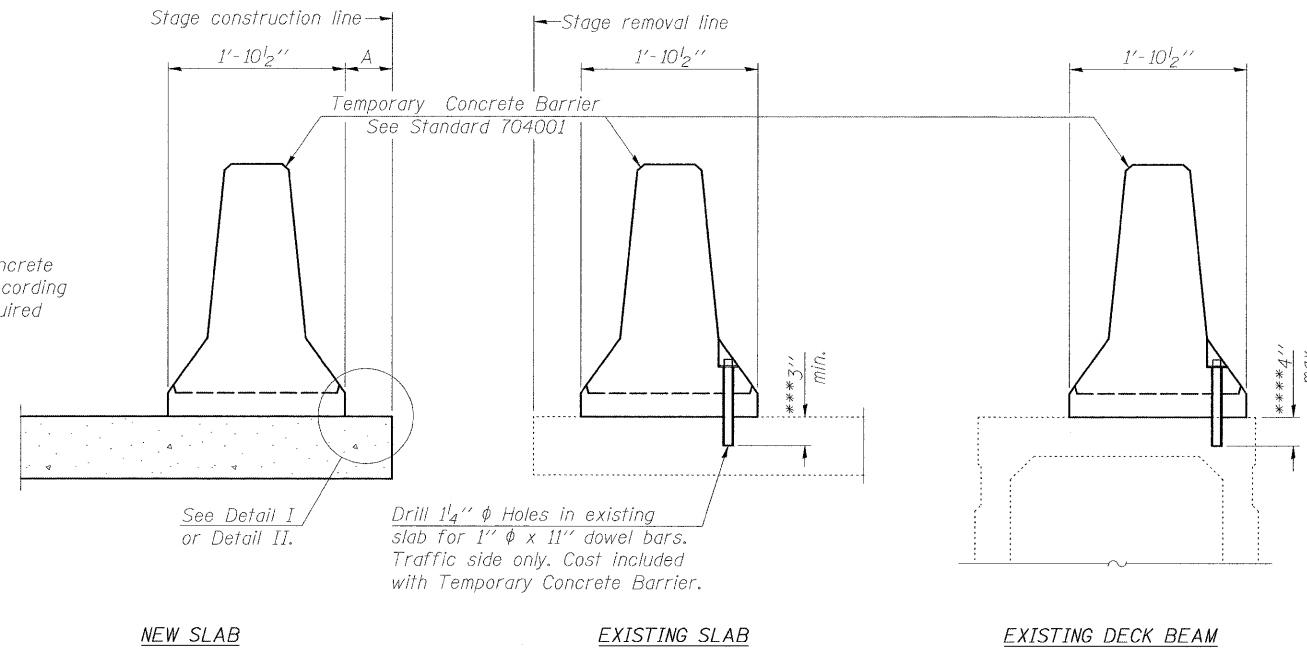
DS-11 9-3-07

DRAINAGE SCUPPER, DS-11  
US 51 / RICHLAND CREEK  
F.A.P. RT. 322  
FAYETTE COUNTY  
SN. 026-0104

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 5 22 SHEETS
FAP 322	24BR-1	FAYETTE	57	25	
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT		

Contract # 94770



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

SECTIONS THRU SLAB OR DECK BEAM

NOTES

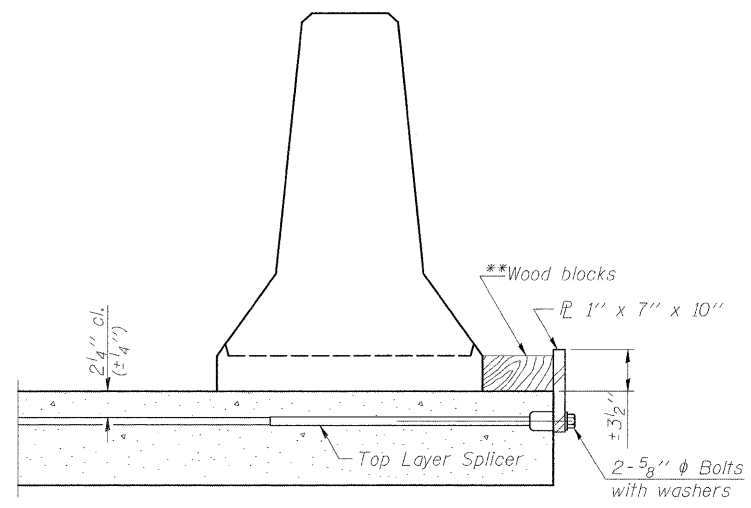
Detail I - With Bar Splicer or Couplers:  
Connect one (1) 1"x7"x10" steel PL to the top layer of couplers with 2-5/8" φ bolts screwed to coupler at approximate C of each barrier panel.

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

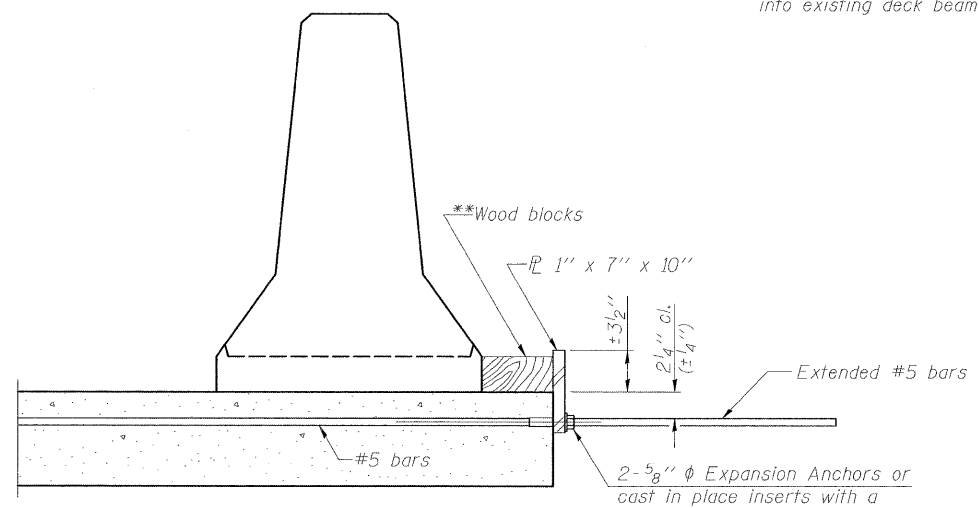
Cost of anchorage is included with Temporary Concrete Barrier. The 1" x 7" x 10" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

\*\*\*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.

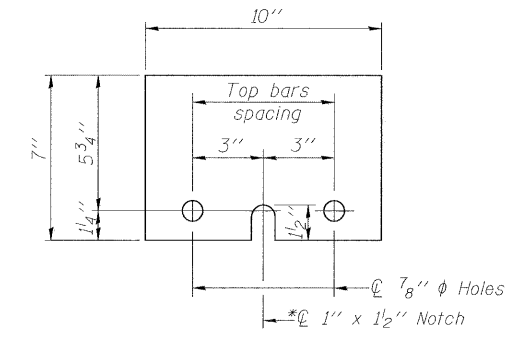
\*\*\*\*If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



DETAIL I



DETAIL II



STEEL RETAINER PL 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.

BENTON & ASSOCIATES, INC.

DESIGNED	MBH
CHECKED	NRF
DRAWN	MBH
CHECKED	NRF

R-27

9-3-07

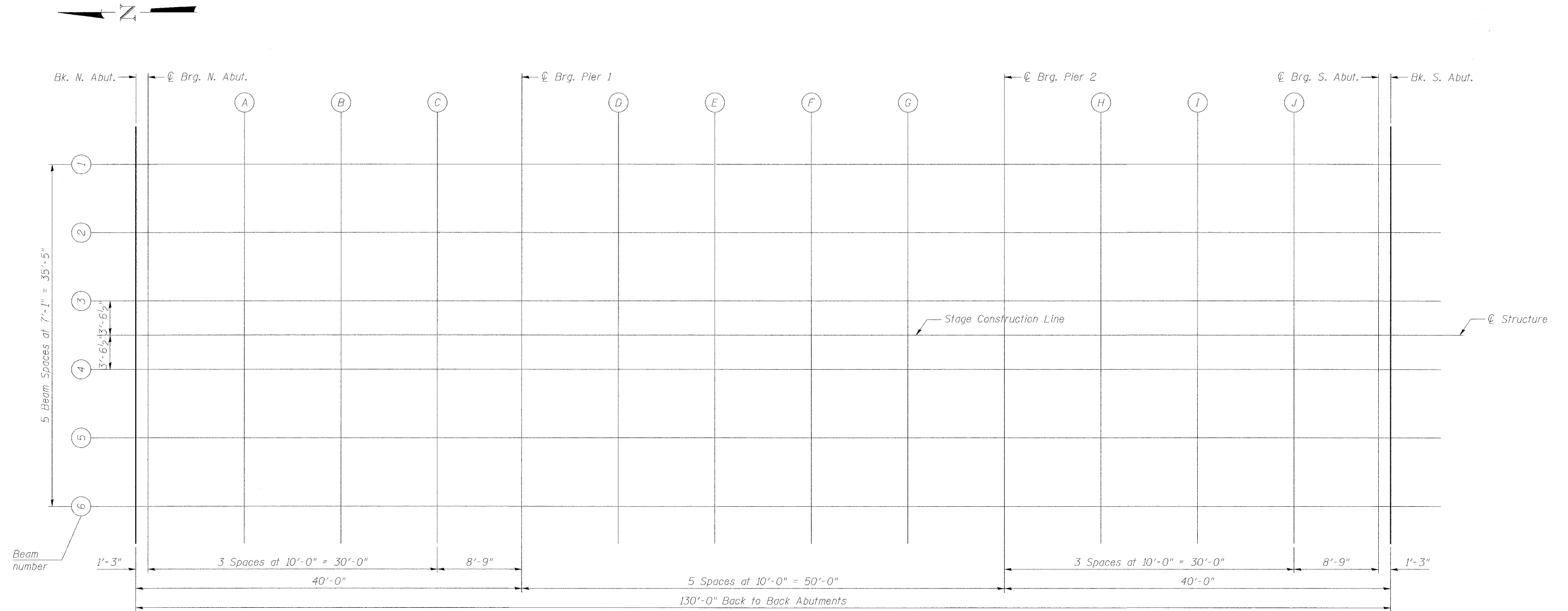
TEMP. CONCRETE BARRIER  
US 51 / RICHLAND CREEK  
F.A.P. RT. 322  
FAYETTE COUNTY  
SN. 026-0104



STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 6 22 SHEETS
FAP 322	24BR-1	FAYETTE	57	26	
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

Contract # 94770



PLAN

BENTON & ASSOCIATES, INC.

DESIGNED	MBH
CHECKED	NRF
DRAWN	MBH
CHECKED	NRF

E-S

11-1-06

TOP OF SLAB ELEVATIONS  
US 51 / RICHLAND CREEK  
F.A.P. RT. 322  
FAYETTE COUNTY  
SN. 026-0104

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 7 22 SHEETS
FAP 322	24BR-1	FAYETTE	57	27	
FED. ROAD DIST. NO. 7		BLANDED	FED. AID PROJECT		

Contract # 94770

☉ STRUCTURE & STAGED CONSTRUCTION JOINT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	228+02.00	0	480.69	480.69
☉ Brg. N. Abut.	228+03.25	0	480.68	480.68
A	228+13.25	0	480.64	480.66
B	228+23.25	0	480.61	480.62
C	228+33.25	0	480.57	480.57
☉ Pier	228+42.00	0	480.54	480.54
D	228+52.00	0	480.50	480.51
E	228+62.00	0	480.46	480.48
F	228+72.00	0	480.42	480.45
G	228+82.00	0	480.39	480.40
☉ Pier	228+92.00	0	480.35	480.35
H	229+02.00	0	480.31	480.32
I	229+12.00	0	480.27	480.29
J	229+22.00	0	480.24	480.25
☉ Brg. S. Abut.	229+30.75	0	480.20	480.20
Bk. S. Abut.	229+32.00	0	480.20	480.20

BEAM 1 & 6

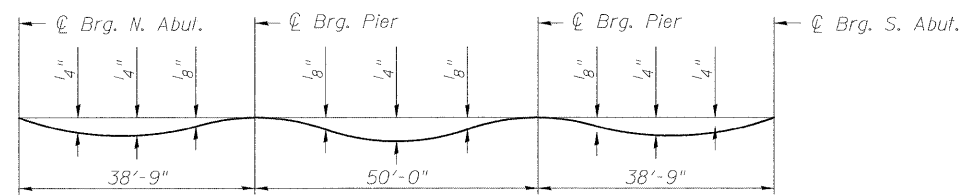
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	228+02.00	17.71'	480.38	480.38
☉ Brg. N. Abut.	228+03.25	17.71'	480.38	480.38
A	228+13.25	17.71'	480.34	480.35
B	228+23.25	17.71'	480.30	480.31
C	228+33.25	17.71'	480.26	480.27
☉ Pier	228+42.00	17.71'	480.23	480.23
D	228+52.00	17.71'	480.19	480.20
E	228+62.00	17.71'	480.16	480.18
F	228+72.00	17.71'	480.12	480.14
G	228+82.00	17.71'	480.08	480.09
☉ Pier	228+92.00	17.71'	480.04	480.04
H	229+02.00	17.71'	480.01	480.01
I	229+12.00	17.71'	479.97	479.98
J	229+22.00	17.71'	479.93	479.94
☉ Brg. S. Abut.	229+30.75	17.71'	479.90	479.90
Bk. S. Abut.	229+32.00	17.71'	479.89	479.89

BEAM 2 & 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	228+02.00	10.63'	480.52	480.52
☉ Brg. N. Abut.	228+03.25	10.63'	480.52	480.52
A	228+13.25	10.63'	480.48	480.49
B	228+23.25	10.63'	480.44	480.45
C	228+33.25	10.63'	480.40	480.41
☉ Pier	228+42.00	10.63'	480.37	480.37
D	228+52.00	10.63'	480.33	480.34
E	228+62.00	10.63'	480.30	480.32
F	228+72.00	10.63'	480.26	480.28
G	228+82.00	10.63'	480.22	480.23
☉ Pier	228+92.00	10.63'	480.18	480.18
H	229+02.00	10.63'	480.15	480.15
I	229+12.00	10.63'	480.11	480.12
J	229+22.00	10.63'	480.07	480.08
☉ Brg. S. Abut.	229+30.75	10.63'	480.04	480.04
Bk. S. Abut.	229+32.00	10.63'	480.03	480.03

BEAM 3 & 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	228+02.00	3.54'	480.63	480.63
☉ Brg. N. Abut.	228+03.25	3.54'	480.63	480.63
A	228+13.25	3.54'	480.59	480.60
B	228+23.25	3.54'	480.55	480.56
C	228+33.25	3.54'	480.51	480.52
☉ Pier	228+42.00	3.54'	480.48	480.48
D	228+52.00	3.54'	480.44	480.45
E	228+62.00	3.54'	480.41	480.43
F	228+72.00	3.54'	480.37	480.39
G	228+82.00	3.54'	480.33	480.34
☉ Pier	228+92.00	3.54'	480.29	480.29
H	229+02.00	3.54'	480.26	480.26
I	229+12.00	3.54'	480.22	480.23
J	229+22.00	3.54'	480.18	480.19
☉ Brg. S. Abut.	229+30.75	3.54'	480.15	480.15
Bk. S. Abut.	229+32.00	3.54'	480.14	480.14



DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only.)

Note:

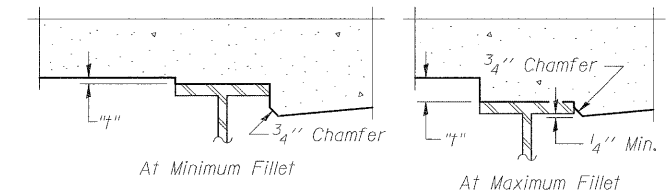
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown above.

BENTON & ASSOCIATES, INC.

DESIGNED	MBH
CHECKED	NRF
DRAWN	MBH
CHECKED	NRF

E-S

11-1-06



To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown above. These elevations subtracted from the "Theoretical Grade Elevations Adjusted For Dead Load Deflection" shown below, minus slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS

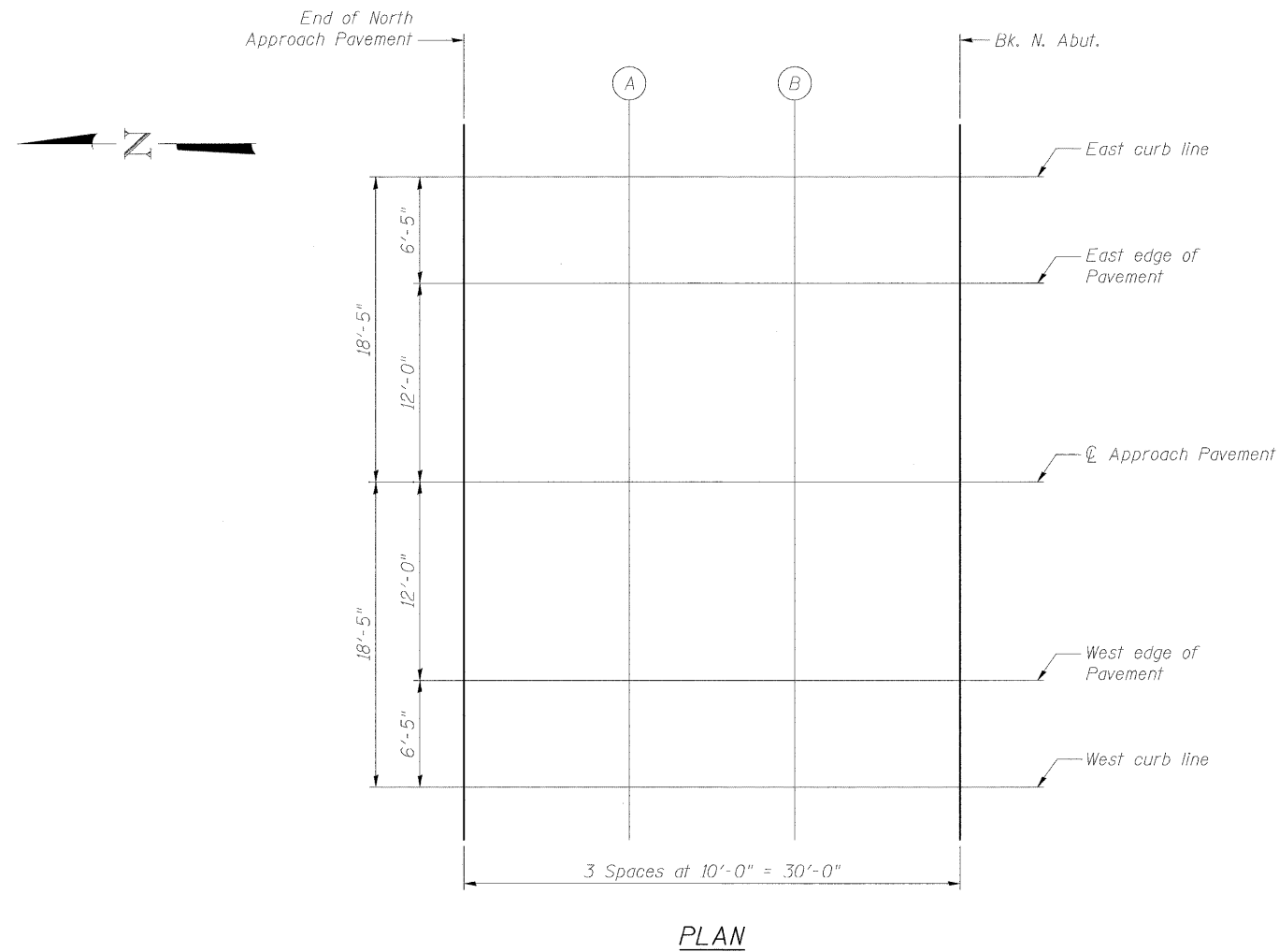
TOP OF SLAB ELEVATIONS  
US 51 / RICHLAND CREEK  
F.A.P. RT. 322  
FAYETTE COUNTY  
SN. 026-0104

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 322	24BR-1	FAYETTE	57	28
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 8  
22 SHEETS

Contract # 94770



PLAN

WEST CURB LINE & EAST CURB LINE

Location	Station	Offset	Theoretical Grade Elevations
End. N. Appr. Pav't.	227+72.00	18.42'	480.48
A	227+82.00	18.42'	480.44
B	227+92.00	18.42'	480.40
Bk. N. Abut.	228+02.00	18.42'	480.37

WEST EDGE OF PAVEMENT & EAST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
End. N. Appr. Pav't.	227+72.00	12.00'	480.61
A	227+82.00	12.00'	480.57
B	227+92.00	12.00'	480.54
Bk. N. Abut.	228+02.00	12.00'	480.50

APPROACH PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
End. N. Appr. Pav't.	227+72.00	0.00'	480.80
A	227+82.00	0.00'	480.76
B	227+92.00	0.00'	480.72
Bk. N. Abut.	228+02.00	0.00'	480.69

BENTON & ASSOCIATES, INC.

DESIGNED	MBH
CHECKED	NRF
DRAWN	MBH
CHECKED	NRF

E-AS

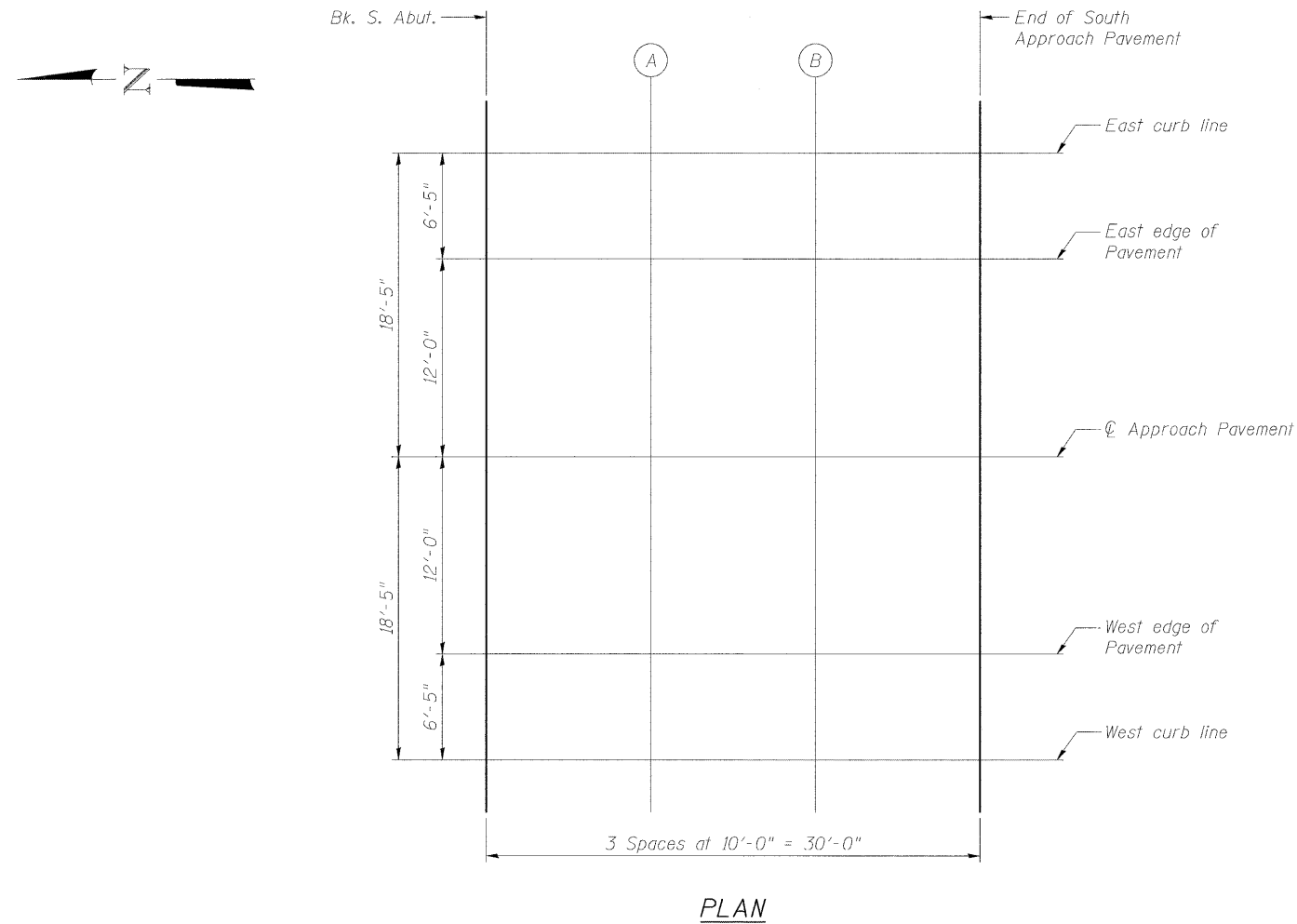
9-3-07

TOP OF SLAB ELEVATIONS  
NORTH APPROACH  
US 51 / RICHLAND CREEK  
F.A.P. RT. 322  
FAYETTE COUNTY  
SN. 026-0104

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 9 22 SHEETS
FAP 322	24BR-1	FAYETTE	57	29	
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-			

Contract # 94770



PLAN

WEST CURB LINE & EAST CURB LINE

Location	Station	Offset	Theoretical Grade Elevations
Bk. S. Abut.	229+32.00	18.42'	479.88
A	229+42.00	18.42'	479.84
B	229+52.00	18.42'	479.80
End S. Appr. Pav't.	229+62.00	18.42'	479.77

WEST EDGE OF PAVEMENT & EAST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
Bk. S. Abut.	229+32.00	12.00'	480.01
A	229+42.00	12.00'	479.97
B	229+52.00	12.00'	479.94
End S. Appr. Pav't.	229+62.00	12.00'	479.90

Centerline of Approach Pavement

Location	Station	Offset	Theoretical Grade Elevations
Bk. S. Abut.	229+32.00	0.00'	480.20
A	229+42.00	0.00'	480.16
B	229+52.00	0.00'	480.12
End S. Appr. Pav't.	229+62.00	0.00'	480.09

BENTON & ASSOCIATES, INC.

DESIGNED	MBH
CHECKED	NRF
DRAWN	MBH
CHECKED	NRF

E-AS

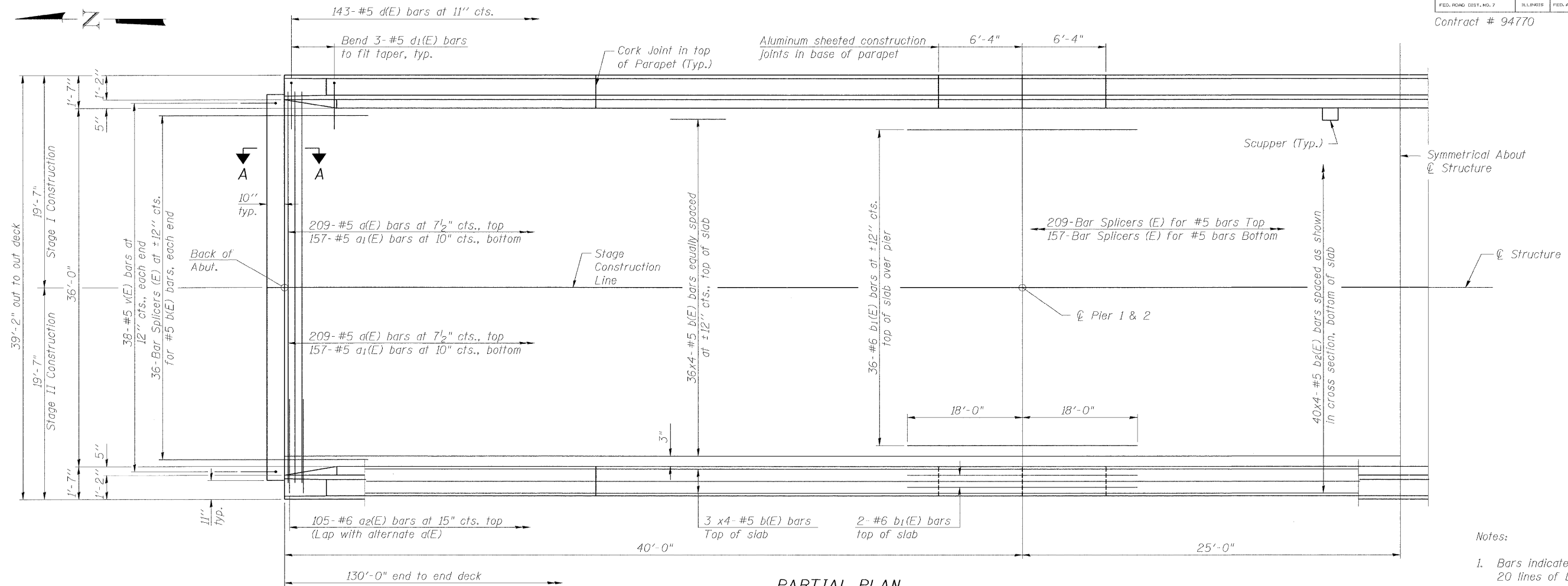
9-3-07

TOP OF SLAB ELEVATIONS  
SOUTH APPROACH  
US 51 / RICHLAND CREEK  
F.A.P. RT. 322  
FAYETTE COUNTY  
SN. 026-0104

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 10
FAP 322	24BR-1	FAYETTE	57	30	22 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

Contract # 94770

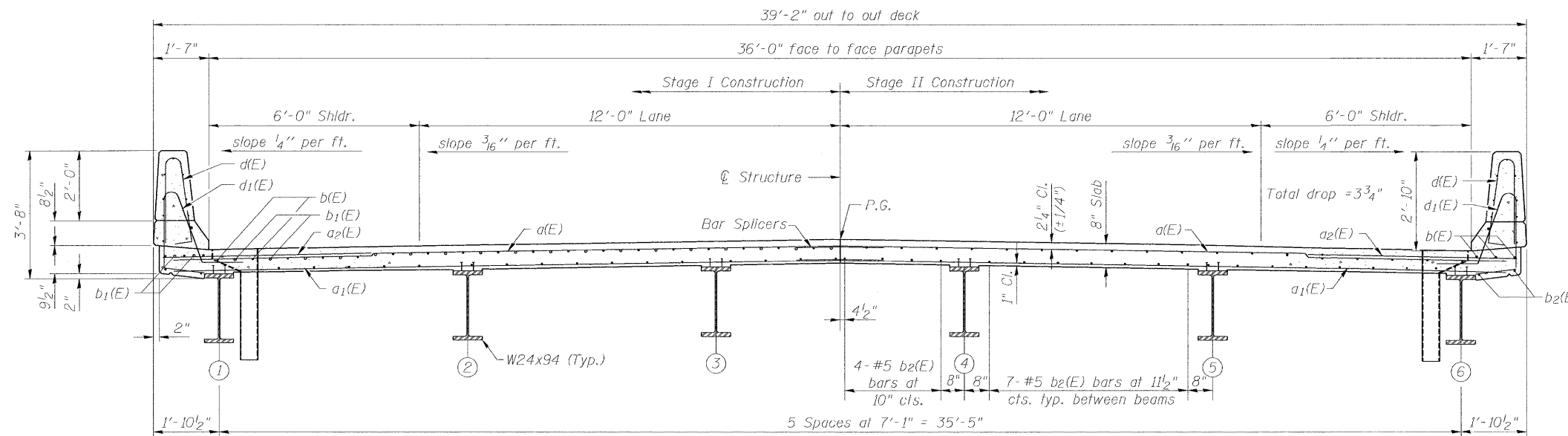


Notes:

1. Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
2. See Sheet 11 of 22 for superstructure details and Bill of Material.
3. See Sheet 11 of 22 for parapet reinforcement.
4. See Sheet 12 of 22 for Section A-A and diaphragm details.

**MINIMUM BAR LAP**

#5 bar = 1'-8"



NEAR PIER

CROSS SECTION  
(Looking South)

NEAR MIDSPAN

BENTON & ASSOCIATES, INC.

DESIGNED	MBH
CHECKED	NRF
DRAWN	JLL
CHECKED	NRF

SI-2-0

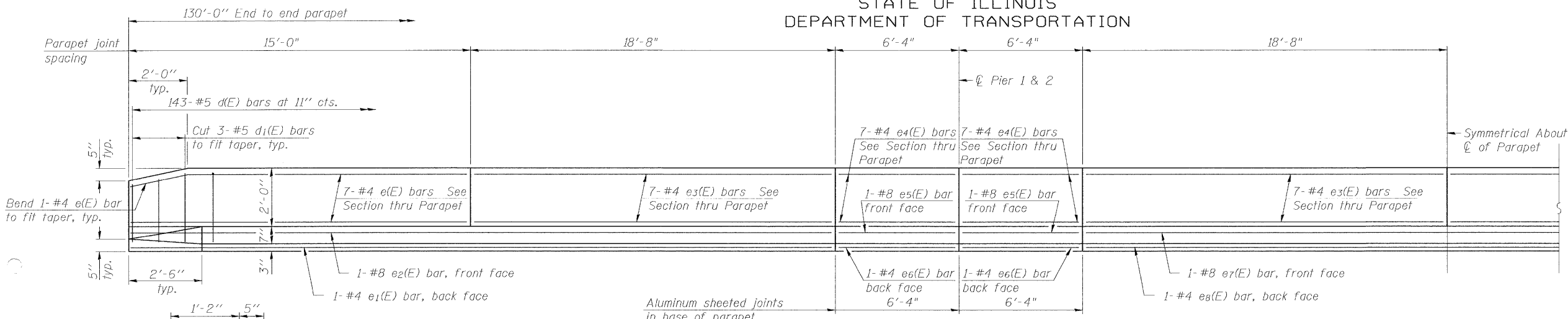
11-1-06

SUPERSTRUCTURE  
US 51 / RICHLAND CREEK  
F.A.P. RT. 322  
FAYETTE COUNTY  
SN. 026-0104

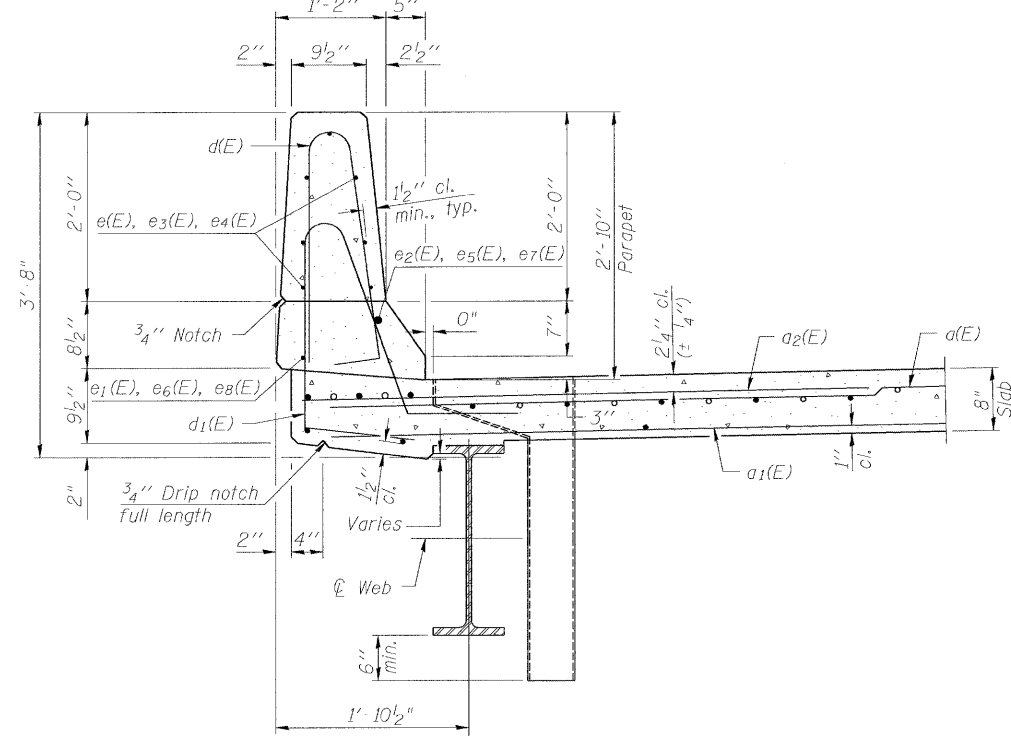
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO. FAP 322	SECTION 24BR-1	COUNTY FAYETTE	TOTAL SHEETS 57	SHEET NO. 31	SHEET NO. 11 22 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT	

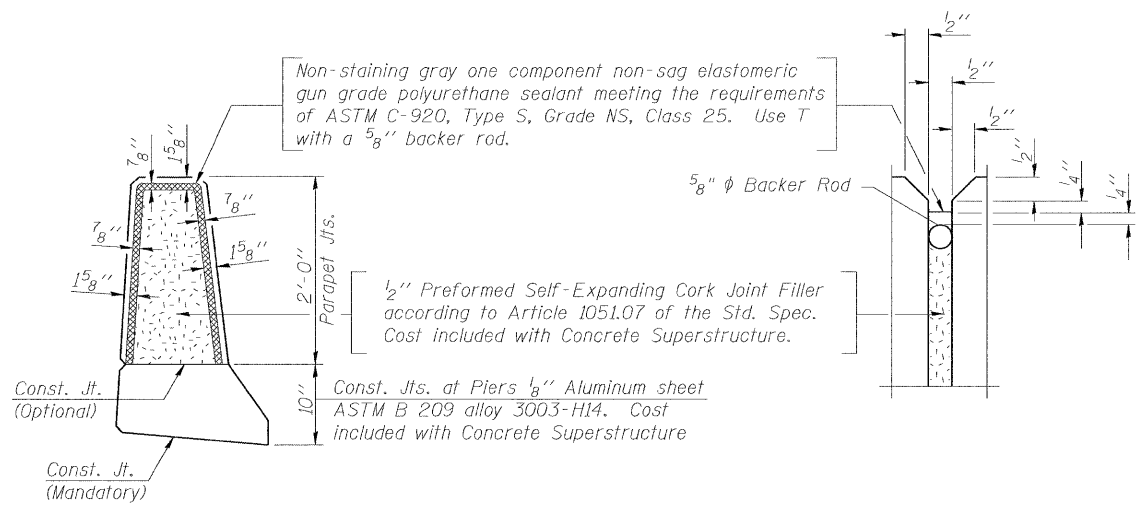
Contract # 94770



INSIDE ELEVATION OF PARAPET



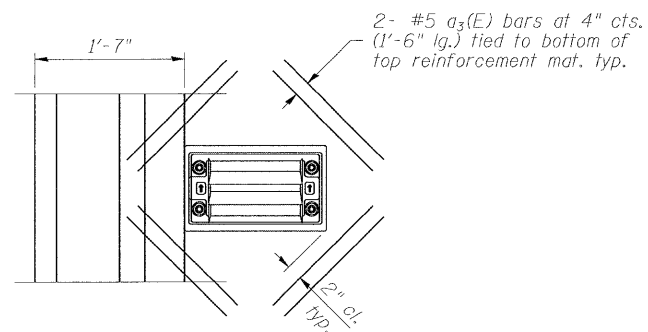
SECTION THRU PARAPET



PARAPET JOINT DETAILS

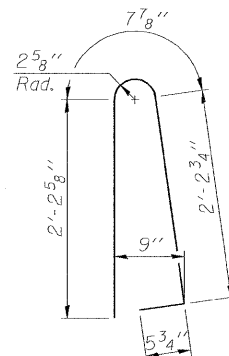
Notes:

The exterior surfaces of the floor drains shall be painted with the finish coat as specified in the special provisions for Cleaning and Painting New Metal Structures. The exterior surfaces of the drains shall be cleaned according to Steel Structures Painting Council's Spec. SSPC-SPI prior to painting. Fiberglass pipe shall conform to ASTM D 2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum.

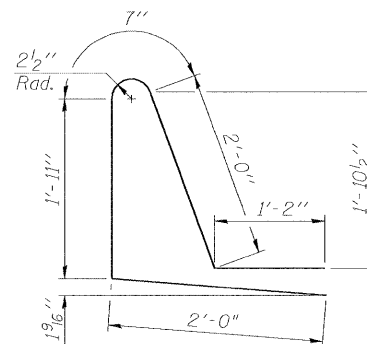


PLAN

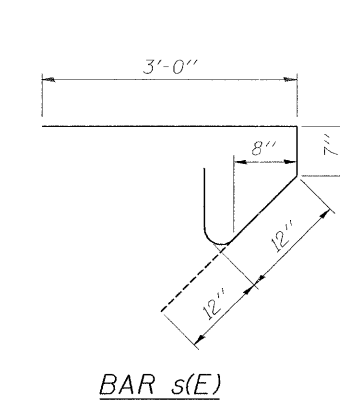
Note:  
Cut longitudinal reinforcement to clear drainage scuppers.  
Drains shall be located clear of all diaphragms.



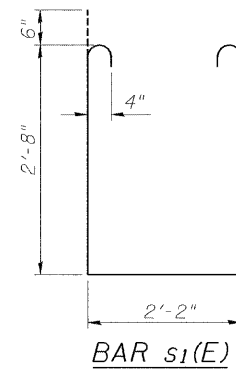
BAR d(E)



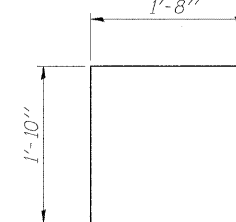
BAR d<sub>1</sub>(E)



BAR s(E)



BAR s<sub>1</sub>(E)



BAR v(E)

SUPERSTRUCTURE  
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	418	#5	19'-3"	—
a <sub>1</sub> (E)	314	#5	19'-3"	—
a <sub>2</sub> (E)	210	#6	6'-0"	—
a <sub>3</sub> (E)	144	#5	1'-6"	—
b(E)	168	#5	34'-3"	—
b <sub>1</sub> (E)	80	#6	36'-0"	—
b <sub>2</sub> (E)	160	#5	34'-3"	—
c(E)	286	#5	5'-7"	—
c <sub>1</sub> (E)	286	#5	7'-8"	—
d(E)	28	#4	14'-8"	—
d <sub>1</sub> (E)	4	#4	33'-8"	—
e(E)	4	#8	33'-8"	—
e <sub>1</sub> (E)	56	#4	18'-4"	—
e <sub>2</sub> (E)	8	#8	6'-0"	—
e <sub>3</sub> (E)	8	#4	6'-0"	—
e <sub>4</sub> (E)	2	#8	37'-0"	—
e <sub>5</sub> (E)	2	#4	37'-0"	—
e <sub>6</sub> (E)	8	#6	18'-6"	—
e <sub>7</sub> (E)	12	#6	19'-5"	—
e <sub>8</sub> (E)	24	#6	8'-7"	—
m(E)	8	#6	6'-1"	—
m <sub>1</sub> (E)	4	#6	1'-3"	—
m <sub>2</sub> (E)	4	#6	3'-0"	—
m <sub>3</sub> (E)	8	#6	6'-1"	—
m <sub>4</sub> (E)	4	#6	1'-3"	—
m <sub>5</sub> (E)	4	#6	3'-0"	—
s(E)	92	#5	5'-7"	—
s <sub>1</sub> (E)	80	#4	8'-6"	—
v(E)	76	#5	3'-6"	—
Reinforcement Bars, Epoxy Coated	Pound		41110	
Concrete Superstructure	Cu. Yds.		178	
Drainage Scuppers, DS-11	Each		2	

Bars indicated thus 1 x 3 - #5 etc. indicates 1 line of bars with 3 lengths per line.

SUPERSTRUCTURE DETAILS  
US 51 / RICHLAND CREEK  
F.A.P. RT. 322  
FAYETTE COUNTY  
SN. 026-0104

BENTON & ASSOCIATES, INC.

DESIGNED	MBH
CHECKED	NRF
DRAWN	JLL
CHECKED	NRF

S-I-D

11-1-06





STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 13 22 SHEETS
FAP 322	24BR-1	FAYETTE	57	33	
FED. ROAD DIST. NO. 7	ILLINOIS		FED. AID PROJECT-		

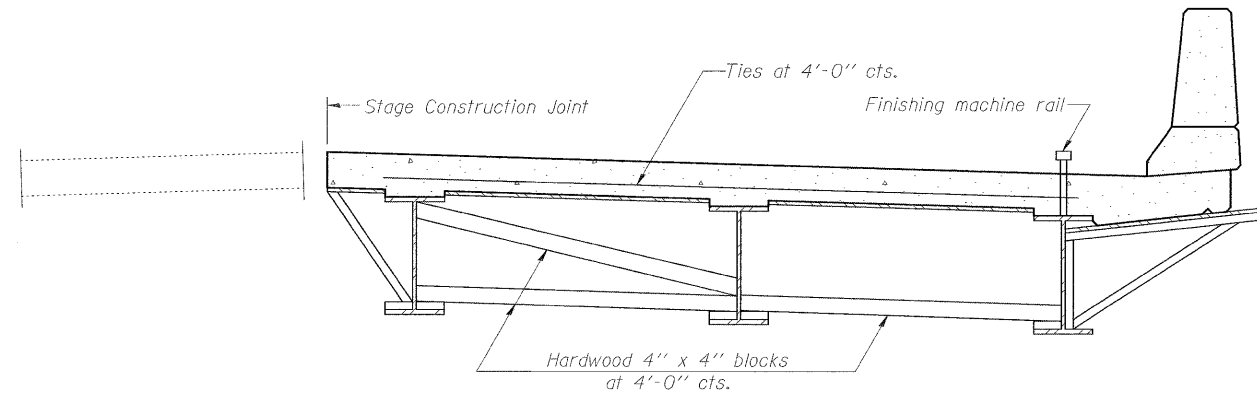
Contract # 94770

When cantilever forming brackets are used, the work shall be done according to Article 503.06(b) of the Standard Specifications, except as modified below and in the details shown on this sheet.

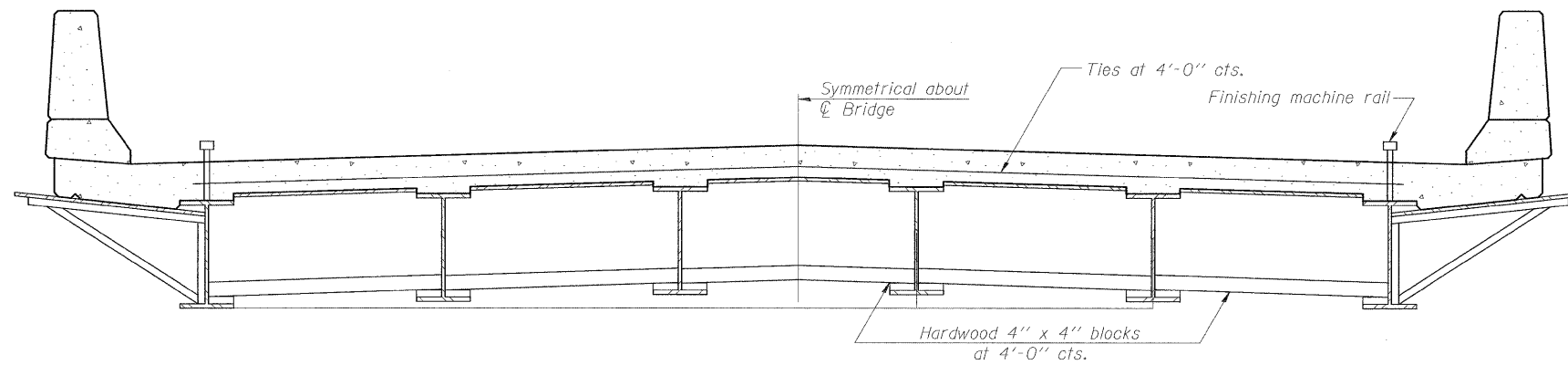
The finishing machine rails shall be placed on the top flange of the exterior beams.

The beams or girders, supporting cantilever forming brackets, shall be tied together at 4 foot intervals.

For Standard construction, or Stage Construction the Hardwood bracing materials shall be placed as shown between webs of beams in each bay.



FORM BRACES FOR  
STAGE CONSTRUCTION



FORM BRACES FOR  
STANDARD CONSTRUCTION

BENTON & ASSOCIATES, INC.

DESIGNED	MBH
CHECKED	NRF
DRAWN	MBH
CHECKED	NRF

SB-1

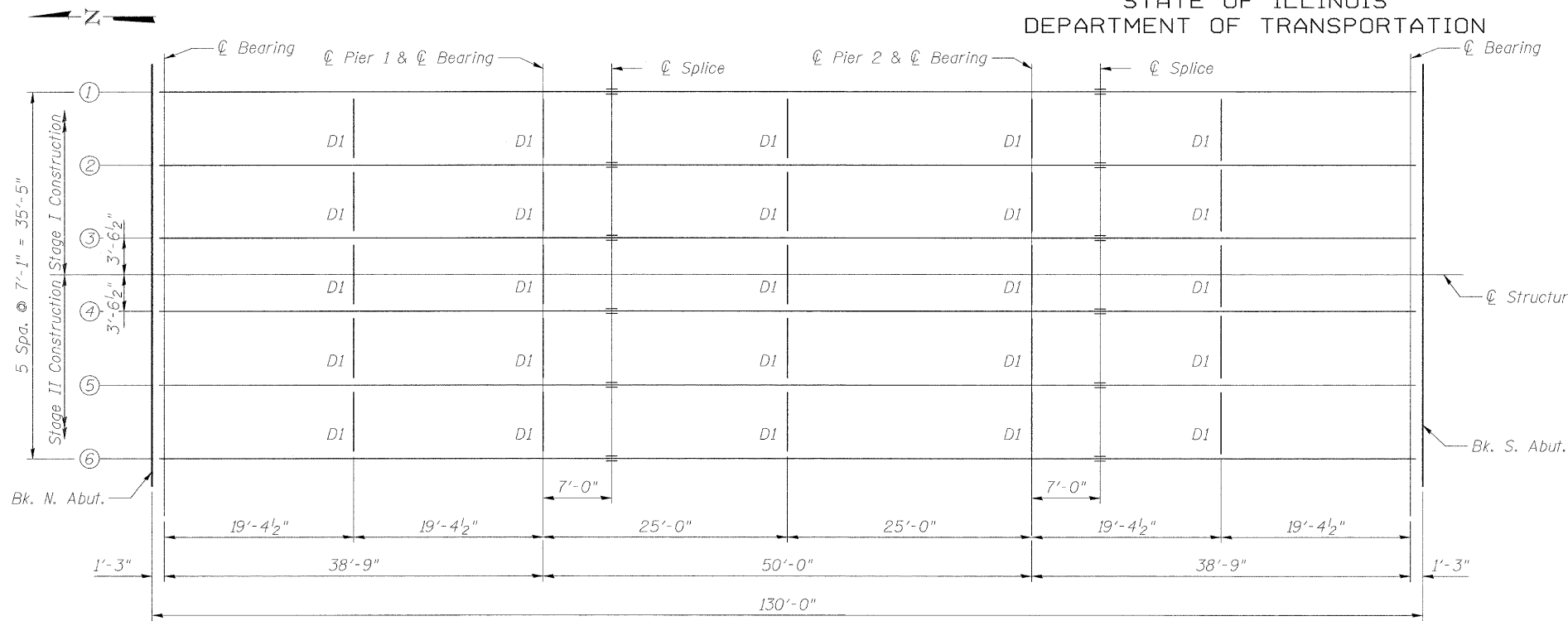
11-1-06

CANTILEVER FORMING BRACKETS  
US 51 / RICHLAND CREEK  
F.A.P. RT. 322  
FAYETTE COUNTY  
SN. 026-0104

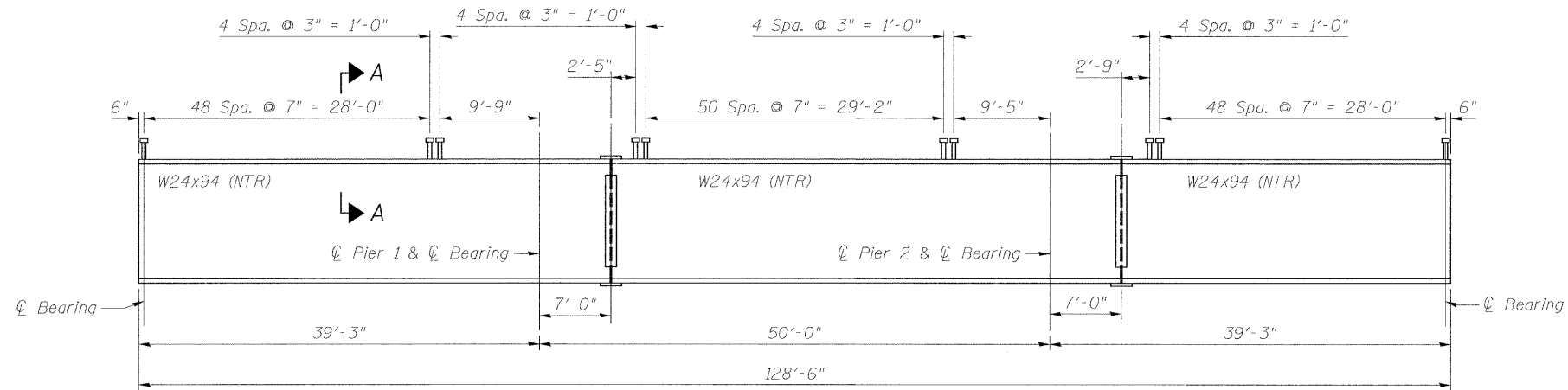
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 14 22 SHEETS
FAP 322	24BR-1	FAYETTE	57	34	
FED. ROAD DIST. NO. 7		ILLINOIS	FEE-AID PROJECT		

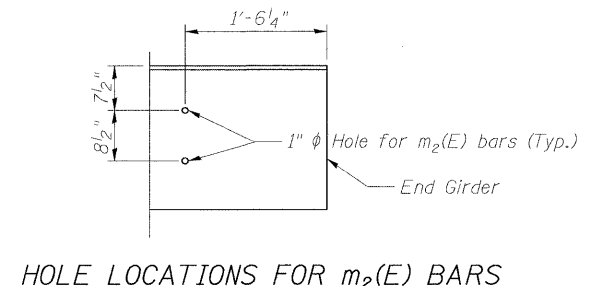
Contract # 94770



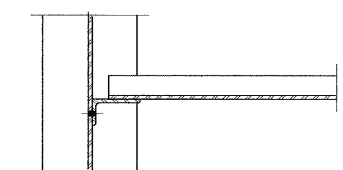
FRAMING PLAN



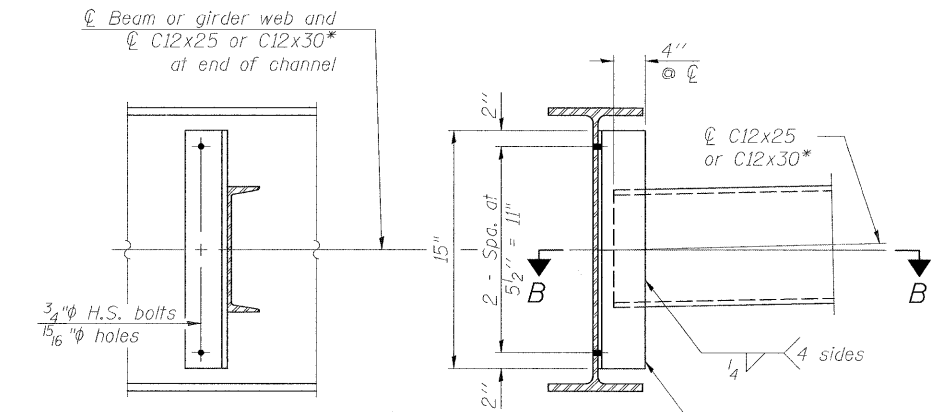
ELEVATION



HOLE LOCATIONS FOR m<sub>2</sub>(E) BARS



SECTION B-B

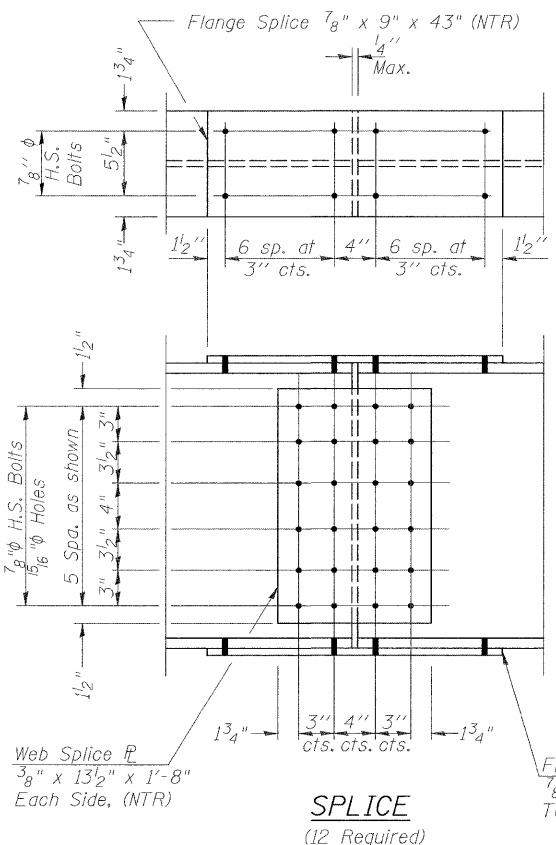


INTERIOR DIAPHRAGM (D1)  
(25 Required)

Note:  
Two hardened washers required for each set of oversized holes.

\* Alternate channels are permitted to facilitate material acquisition. Calculated weight of structural steel is based on the lighter section.

All cross frames or diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.

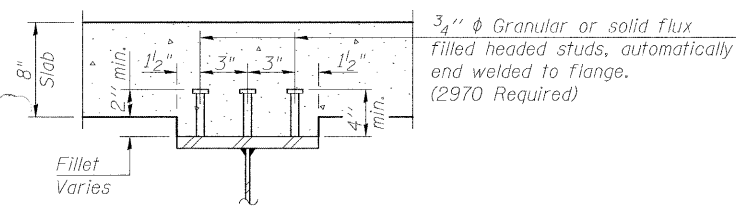


TOP OF BEAM ELEVATIONS

(For Fabrication Only)

Location	Beam 1&6	Beam 2&5	Beam 3&4
Br. S. Abut.	479.63	479.77	479.88
Pier 1	479.48	479.62	479.73
Splice 1	479.46	479.60	479.71
Pier 2	479.29	479.43	479.54
Splice 2	479.27	479.41	479.52
Br. N. Abut.	479.15	479.29	479.40

- Notes:
- All structural steel for girders and splice plates shall conform to the requirements of AASHTO M270, Grade 50. All other structural steel, except bearings, shall conform to the requirements of AASHTO M270, Grade 36.
  - Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.



SECTION A-A

	Abut.	Pier
R <sub>L</sub> (K)	20.4	63.6
R <sub>R</sub> (K)	38.6	41.1
Imp. (K)	11.6	12.3
R (Total) (K)	70.6	117.0

	.4 Sp. 1 & .6 Sp. 3	Pier	.5 Sp. 2
I <sub>s</sub> (in <sup>4</sup> )	2700	2700	2700
I <sub>c</sub> (n)	8405	-	8405
I <sub>c</sub> (3n)	6475	-	6475
S <sub>s</sub> (in <sup>3</sup> )	222	222	222
S <sub>c</sub> (n)	349.3	-	349.3
S <sub>c</sub> (3n)	318.1	-	318.1
Z (in <sup>3</sup> )	-	254	-
φ (K/ft.)	.812	1.317	.812
M <sub>L</sub> (K)	81.6	239.7	90.3
s <sub>L</sub> (K/ft.)	.505	-	.505
M <sub>sL</sub> (K)	60.5	-	81.5
M <sub>t</sub> (K)	235.7	132.3	287.5
M (Imp) (K)	70.7	39.7	86.2
5 <sub>3</sub> (M <sub>t</sub> +I) (K)	510.7	286.7	622.9
M <sub>a</sub> (K)	848.6	684.3	1033.1
M <sub>u</sub> (K)	1455.4	-	1455.4
f <sub>sL</sub> non-comp (k.s.i.)	5.7	16.8	6.4
f <sub>sL</sub> comp (k.s.i.)	2.7	-	3.6
f <sub>s</sub> 5 <sub>3</sub> (L+I) (k.s.i.)	17.5	15.5	21.4
f <sub>s</sub> (Overload) (k.s.i.)	26.0	32.3	31.4
f <sub>s</sub> (Total) (k.s.i.)	-	42.0	-
VR (K)	46.1	-	51.7

I<sub>s</sub> and S<sub>s</sub> are the moment of inertia and section modulus of the steel section used in computing f<sub>s</sub> (Total & Overload).  
I<sub>c</sub> and S<sub>c</sub> are the moment of inertia and section modulus of the composite section used in computing f<sub>s</sub> (Total & Overload).  
VR is the maximum Live Load + Impact shear range in span.  
Z is the plastic section modulus used to determine the fully plastic moments in the non-composite areas.  
M<sub>a</sub> (Applied Moment) = 1.3M<sub>L</sub> + M<sub>sL</sub> + 5<sub>3</sub>(M<sub>t</sub> + I).  
M<sub>u</sub> is the Full Plastic Moment Capacity for Compact, Braced section.  
f<sub>s</sub> (Overload) is the sum of the stresses due to M<sub>L</sub> + M<sub>sL</sub> + 5<sub>3</sub>(M<sub>t</sub> + I).  
f<sub>s</sub> (Total) (Non-compact section) is the sum of the stresses due to 1.3M<sub>L</sub> + M<sub>sL</sub> + 5<sub>3</sub>(M<sub>t</sub> + I).

**BENTON & ASSOCIATES, INC.**

DESIGNED	MBH
CHECKED	NRF
DRAWN	MBH
CHECKED	NRF

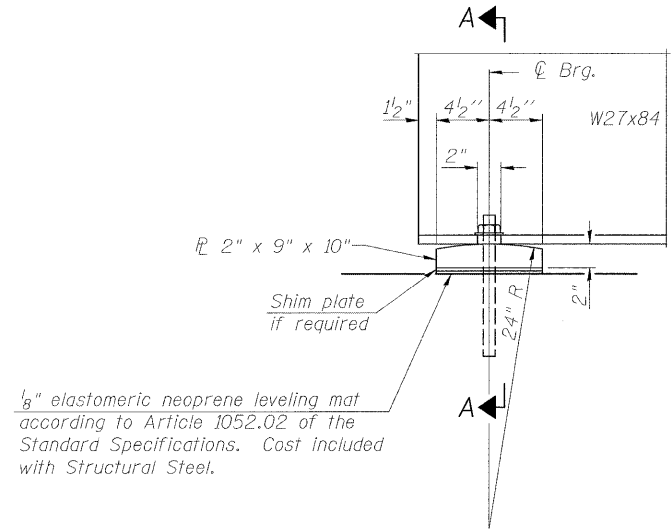
FRAMING & BEAM DETAILS  
US 51 / RICHLAND CREEK  
F.A.P. RT. 322  
FAYETTE COUNTY  
SN. 026-0104

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 322	24BR-1	FAYETTE	57	35
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

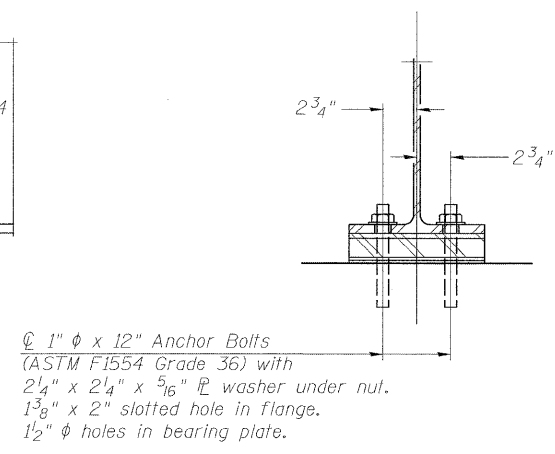
Contract # 94770

SHEET NO. 15  
22 SHEETS

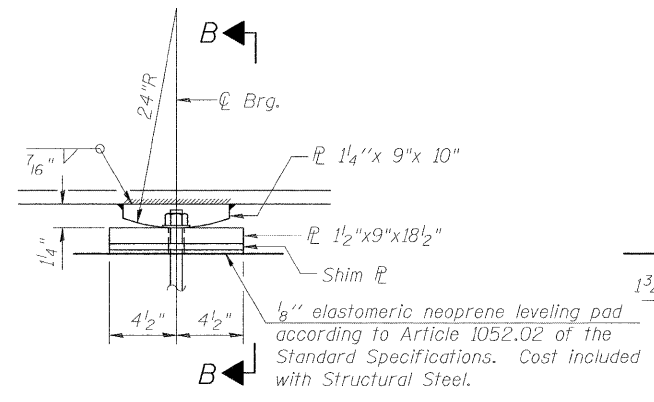


ELEVATION AT ABUTMENT

FIXED BEARING

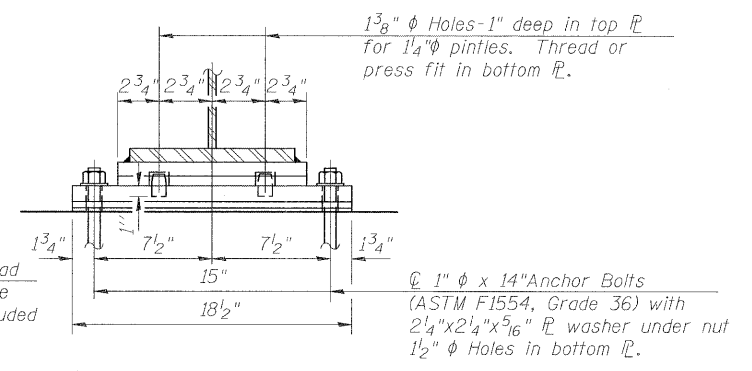


SECTION A-A

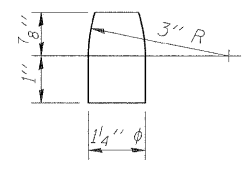


ELEVATION AT PIER

FIXED BEARING



SECTION B-B



PINTLE

Notes:

- Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
- Anchor bolts at fixed bearings may be either cast in place or installed in holes drilled after the supported member is in place.
- Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
- Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.
- The structural steel plates of the bearing assembly shall conform to the requirements of AASHTO M70, Grade 50.

BILL OF MATERIAL

Item	Unit	Total
Anchor Bolts, 1"	Each	48

BENTON & ASSOCIATES, INC.

DESIGNED	MBH
CHECKED	NRF
DRAWN	MBH
CHECKED	NRF

I-2-E1

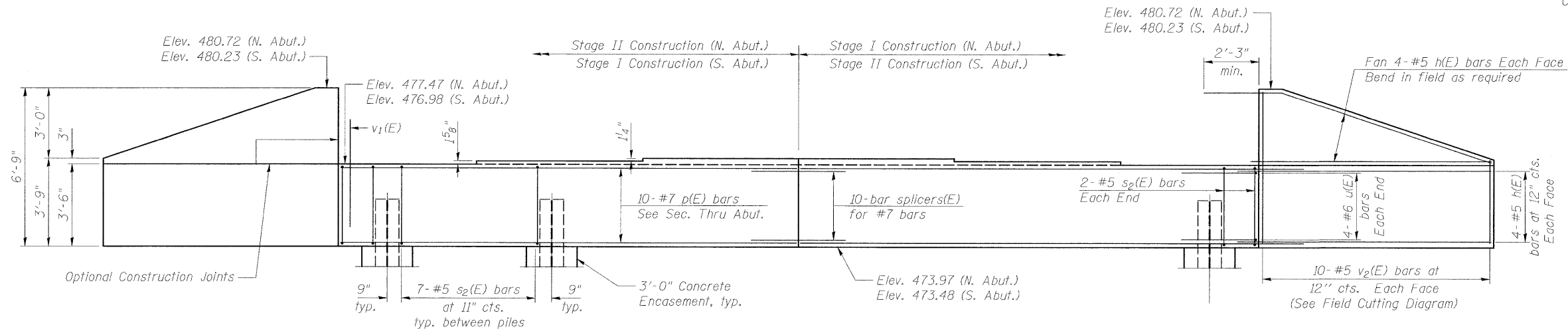
11-1-06

BEARINGS  
US 51 / RICHLAND CREEK  
F.A.P. RT. 322  
FAYETTE COUNTY  
SN. 026-0104

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

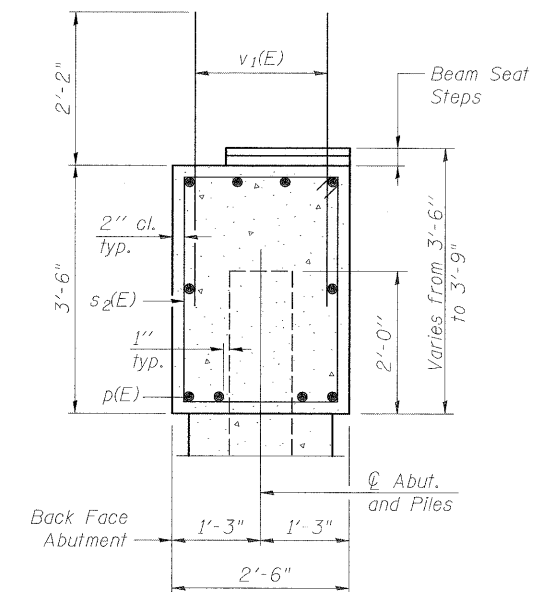
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 16 22 SHEETS
FAP 322	248R-1	FAYETTE	57	36	
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT		

Contract # 94770



**ELEVATION**

(Looking North - N. Abut.)  
(Looking South - S. Abut.)

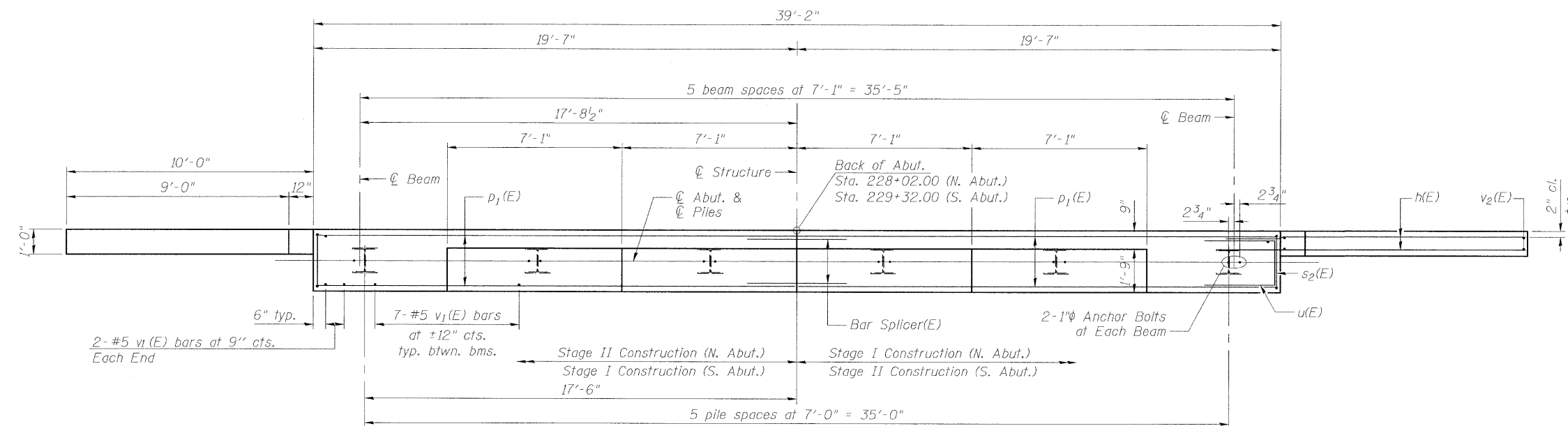


**SEC. THRU ABUT.**

**BILL OF MATERIAL**

(2 Abutments)

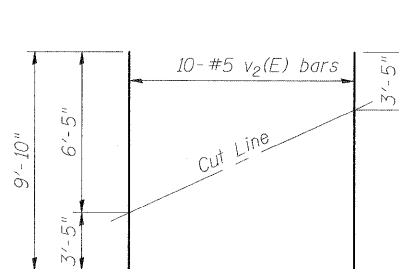
Bar	No.	Size	Length	Shape
h(E)	64	#5	10'-5"	
p(E)	40	#7	19'-5"	
s <sub>2</sub> (E)	78	#5	11'-7"	□
u(E)	16	#6	7'-5"	□
v <sub>1</sub> (E)	156	#5	4'-4"	
v <sub>2</sub> (E)	80	#5	9'-10"	
Structure Excavation		Cu. Yd.	84	
Concrete Structures		Cu. Yd.	34.1	
Reinforcement Bars, Epoxy Coated		Pound	4930	
Furnishing Steel Piles, HP 12x53		Foot	272.5	
Driving Piles		Foot	272.5	
Test Pile Steel HP 12x53		Each	2	
Pipe Underdrains for Structures, 4"		Foot	127	
Porous Granular Embankment (Special)		Cu. Yd.	128	
Pipe Drains, 4"		Foot	40	
Pile Shoes		Each	12	
Concrete Encasement		Cu. Yd.	4.2	
Geocomposite Wall Drain		Sq. Yd.	79	



**PLAN**

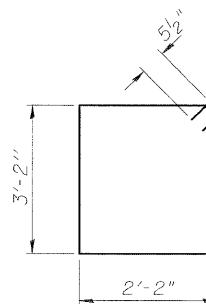
**PILE DATA**

	N. Abut.	S. Abut.
Type:	HP12x53	HP12x53
Nominal Required Bearing:	258 kip	258 kip
Allowable Resistance Available:	86 kip	86 kip
Est. Length:	26'-0"	28'-6"
No. Production Piles:	5	5
No. Test Piles:	1	1

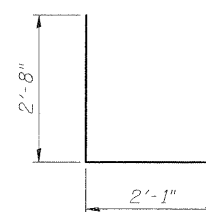


**FIELD CUTTING DIAGRAM**

Order v<sub>2</sub>(E) full length. Cut as shown and use remainder of bars in opposite face.



**BAR s<sub>2</sub>(E)**



**BAR u(E)**

**Notes:**

1. Pour steps monolithically with cap.
2. See sheet 12 of 22 for backfill required for abutment construction.
3. For pile details and concrete encasement details see sheet 18 of 22.
4. Space reinforcement in cap to miss anchor bolts.
5. For details of Bar Splicers, see sheet 19 of 22.

**BENTON & ASSOCIATES, INC.**

DESIGNED MBH
CHECKED NRF
DRAWN MBH
CHECKED NRF

AI-0

11-1-06

**ABUTMENTS**  
**US 51 / RICHLAND CREEK**  
**F.A.P. RT. 322**  
**FAYETTE COUNTY**  
**SN. 026-0104**

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 322	24BR-1	FAYETTE	57	37
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 17  
22 SHEETS

Contract # 94770

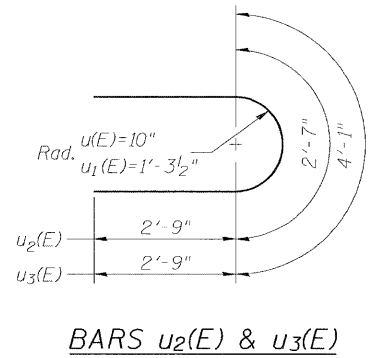
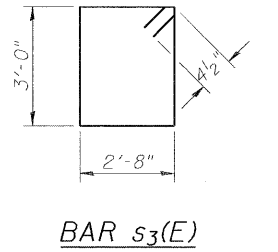
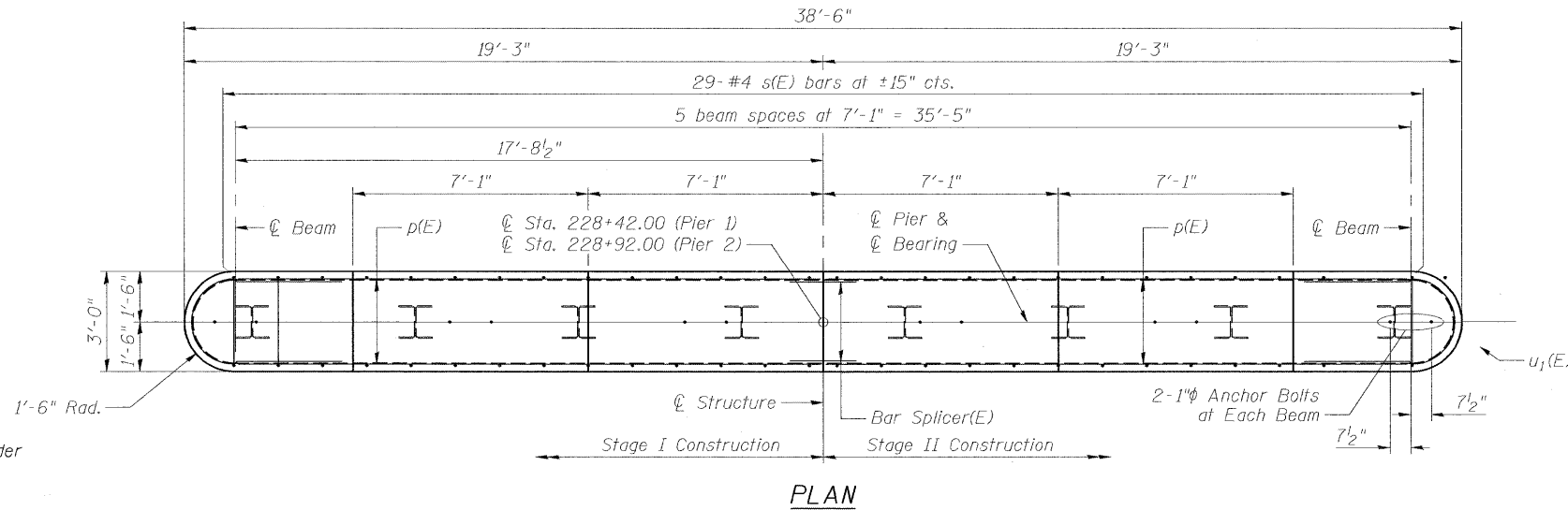
Notes:

1. Space reinforcement in cap to miss anchor bolts.
2. Pour steps monolithically with cap.
3. For details of piles, see sheet 18 of 22.

PILE DATA

	Pier 1	Pier 2
Type:	HP12x53	HP12x53
Nominal Required Bearing:	419 kip	385 kip
Allowable Resistance Available:	109 kip	109 kip
Est. Length:	29'-0"	31'-0"
No. Production Piles:	7	7
No. Test Piles:	1	1

If a portion of the pier wall or concrete encasement is under water, reinforcement may be placed underwater into forms. Concrete shall be tremied according to Article 503.08 of the Standard Specifications to an elevation of 1'-0" above the water line at the time of construction.

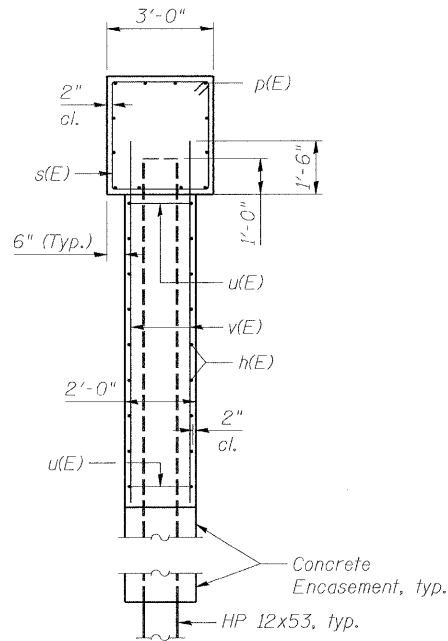


BILL OF MATERIAL  
(2 Piers)

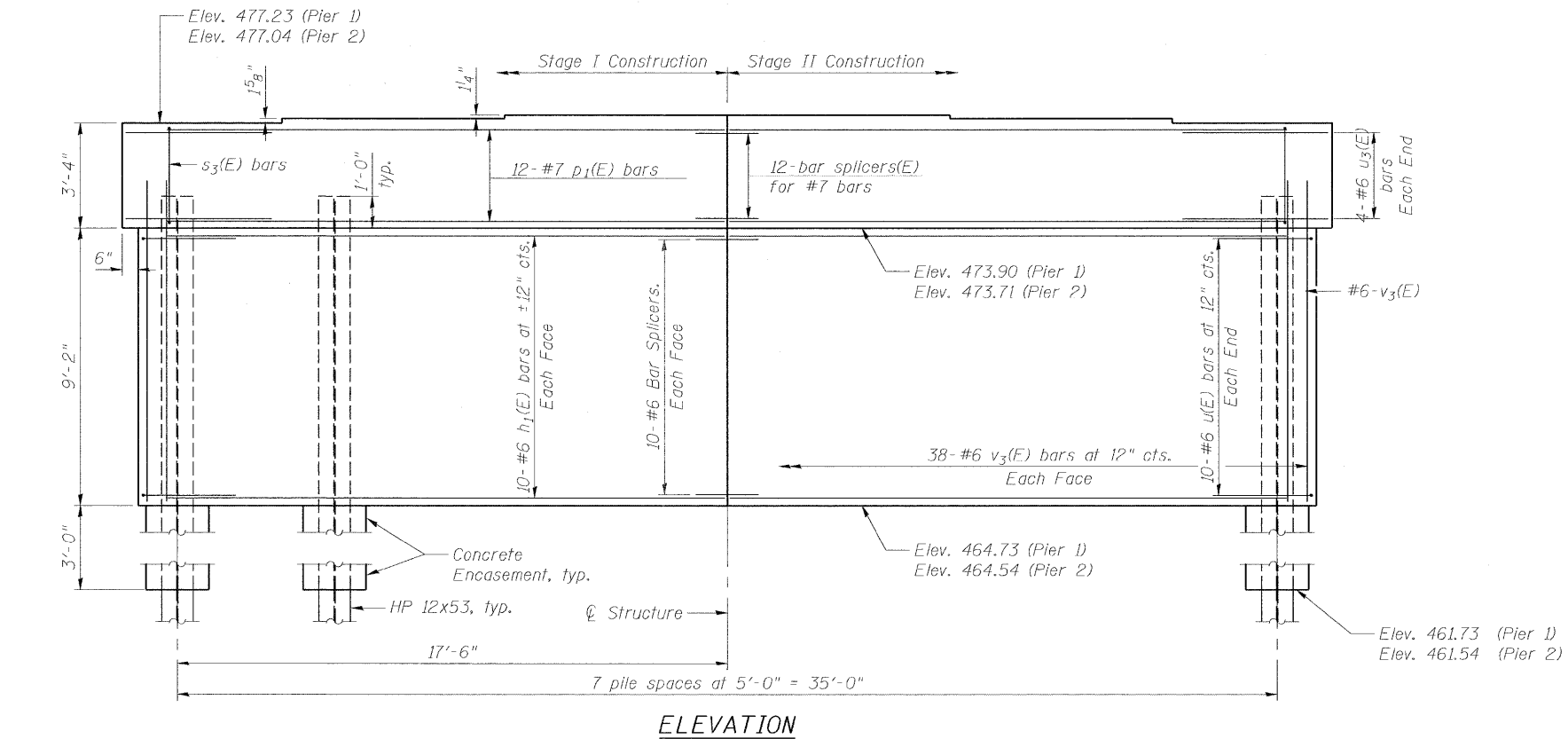
Bar	No.	Size	Length	Shape
h1(E)	80	#6	18'-3"	—
p1(E)	48	#7	18'-6"	—
s3(E)	48	#4	12'-1"	□
u2(E)	40	#6	8'-1"	U
u3(E)	16	#6	9'-7"	U
v3(E)	152	#6	10'-10"	—
Structure Excavation		Cu. Yd.	95	
Concrete Structures		Cu. Yd.	79.7	
Reinforcement Bars, Epoxy Coated		Pound	7590	
Furnishing Steel Piles, HP 12x53		Foot	420	
Driving Piles		Foot	420	
Test Pile Steel HP 12x53		Each	2	
Pile Shoes		Each	16	
Concrete Encasement		Cu. Yd.	5.6	
Underwater Structure Excavation Protection-Location 1		Each	1	
Underwater Structure Excavation Protection-Location 2		Each	1	

(Location 1 = Pier 1)  
(Location 2 = Pier 2)

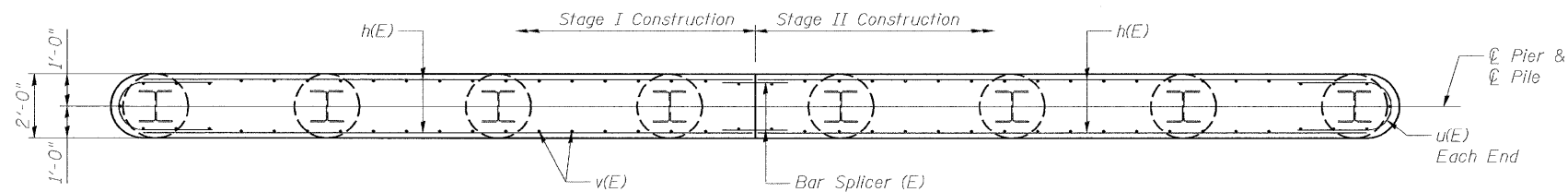
PIER 1 & 2  
US 51 / RICHLAND CREEK  
F.A.P. RT. 322  
FAYETTE COUNTY  
SN. 026-0104



END VIEW



ELEVATION



SECTION THRU STEM

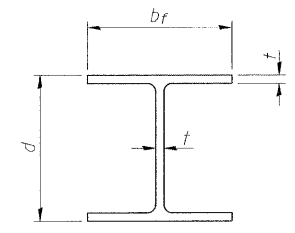
BENTON & ASSOCIATES, INC.

DESIGNED	MBH
CHECKED	NRF
DRAWN	MBH
CHECKED	NRF

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

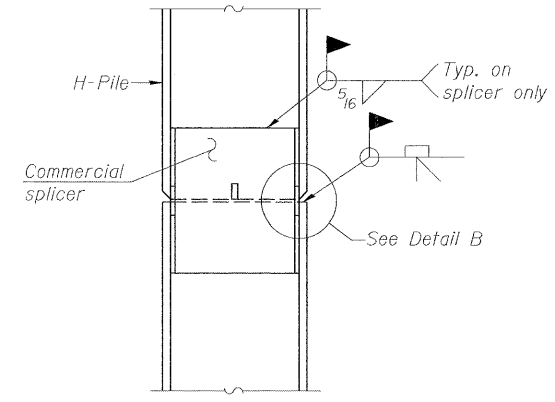
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 322	24BR-1	FAYETTE	57	38
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

Contract # 94770

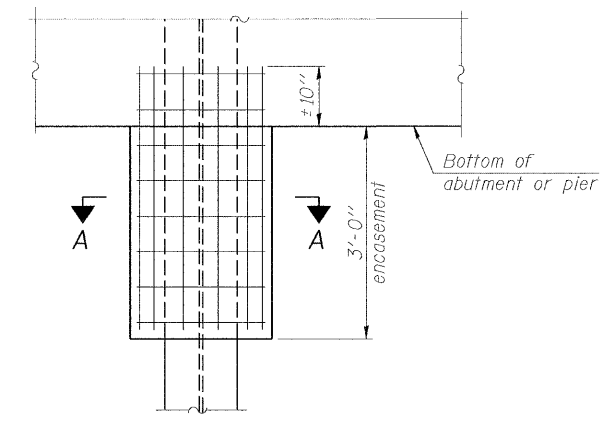


STEEL PILE TABLE

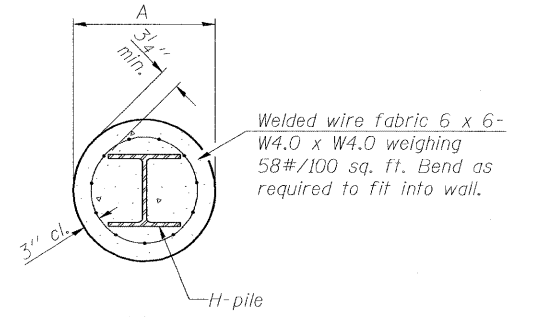
Designation	Depth d	Flange width b <sub>f</sub>	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	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



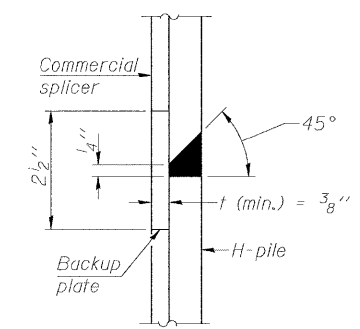
ELEVATION



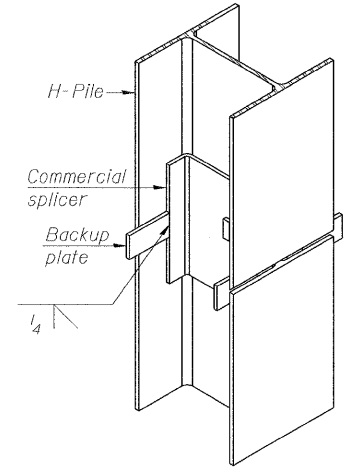
SECTION A-A

Note:  
Forms for encasement may be omitted when soil conditions permit.

PILE ENCASEMENT

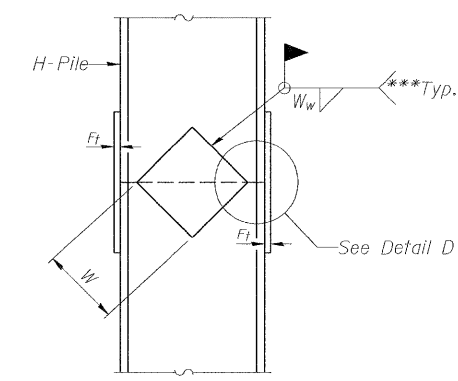


DETAIL "B"

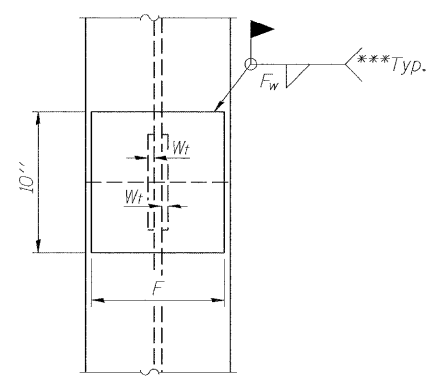


ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE

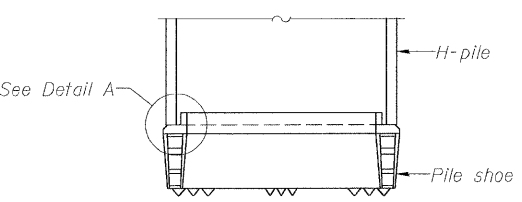


ELEVATION

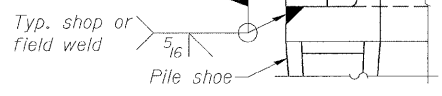


END VIEW

WELDED PLATE FIELD SPLICE

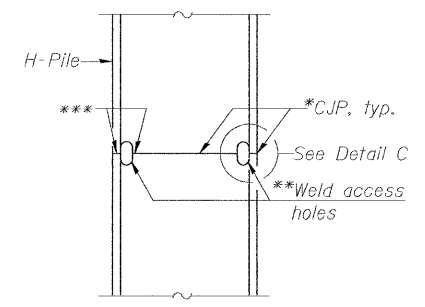


ELEVATION

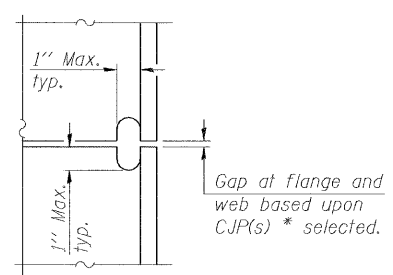


DETAIL A

H-PILE SHOE ATTACHMENT

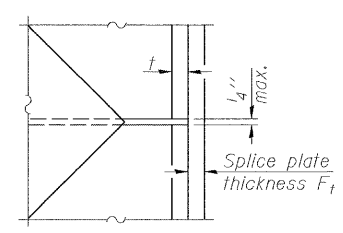


ELEVATION



DETAIL C

COMPLETE PENETRATION WELD SPLICE



DETAIL D

Designation	F	F <sub>t</sub>	F <sub>w</sub>	W	W <sub>t</sub>	W <sub>w</sub>
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"

BENTON & ASSOCIATES, INC.

DESIGNED	MBH
CHECKED	NRF
DRAWN	MBH
CHECKED	NRF

F-HP 9-3-07

\*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.

STEEL H-PILE DETAILS  
US 51 / RICHLAND CREEK  
F.A.P. RT. 322  
FAYETTE COUNTY  
SN. 026-0104

Contract # 94770

**NOTES**

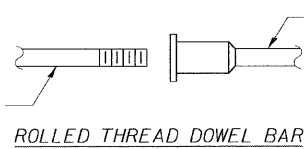
Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.  
Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.  
All reinforcement bars shall be lapped and tied to 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 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

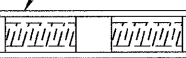
The diameter of this part is the same as the diameter of the bar spliced.

The diameter of this part is equal or larger than the diameter of bar spliced.



\*\* ONE PIECE

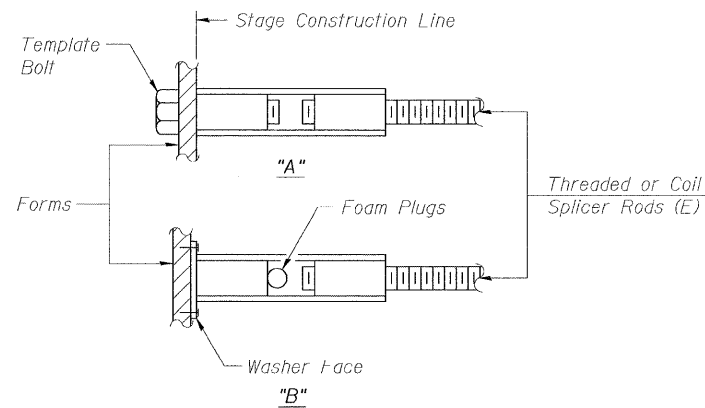
Wire Connector



WELDED SECTIONS

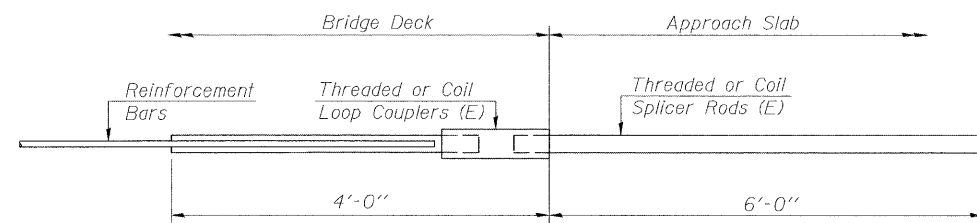
**BAR SPLICER ASSEMBLY ALTERNATIVES**

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



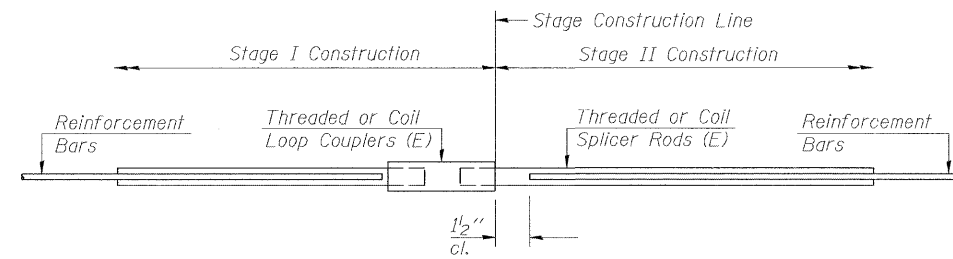
**INSTALLATION AND SETTING METHODS**

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



**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 = 72



**STANDARD**

Bar Size	No. Assemblies Required	Location
#5	366	Superstructure
#6	16	Superstructure
#6	40	Substructure
#7	44	Substructure

BENTON & ASSOCIATES, INC.

DESIGNED	MBH
CHECKED	NRF
DRAWN	MBH
CHECKED	NRF

BSD-1

11-1-06

BAR SPLICER DETAILS  
US 51 / RICHLAND CREEK  
F.A.P. RT. 322  
FAYETTE COUNTY  
SN. 026-0104





STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 322	24BR-1	FAYETTE	57	41
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

Contract # 94770



SOIL BORING LOG

Page 1 of 4

ROUTE FAP 322 (US 51) DESCRIPTION Richland Creek LOGGED BY E. Sandschafer  
SECTION 24BR-1 LOCATION Sec 3 - SW 1/4, Sec 4 - SE 1/4, SEC. TWP. 5 N. RNG. 1 E. 3 PM  
COUNTY Fayette DRILLING METHOD Hollow stem auger & split spoon HAMMER TYPE Auto 140#

STRUCT. NO.	STATION	BORING NO.	DEPTH (ft)	DESCRIPTION	UCS (psi)	Failure Mode	SPT (blows)
026-0038	228+67.4	2		Surface Water Elev. Dry ft			
				Stream Bed Elev. 488.72 ft			
				Groundwater Elev. First Encounter 465.7 ft			
				Upon Completion Washed ft			
				After 24 Hrs. 465.5 ft			
				Ground Surface Elev. 477.67 ft			
				3 3/4" asphalt on 3 1/4" concrete pavement			
			478.57	Very stiff, damp, gray, SANDY CLAY.			
			473.17	Soft, very damp, gray, SANDY CLAY LOAM.			
			473.67	Soft, damp, gray, SANDY LOAM w/ trace fine gravel.			
			468.17	Very soft, damp, gray, SILTY LOAM.			
			466.17	Very loose, wet, gray, fine grained, SAND. 7% passing #200 sieve.			
			460.67	Medium, damp, brown marbled gray, SANDY CLAY LOAM.			
			458.17	Stiff, damp, gray, SANDY 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)



SOIL BORING LOG

Page 2 of 4

ROUTE FAP 322 (US 51) DESCRIPTION Richland Creek LOGGED BY E. Sandschafer  
SECTION 24BR-1 LOCATION Sec 3 - SW 1/4, Sec 4 - SE 1/4, SEC. TWP. 5 N. RNG. 1 E. 3 PM  
COUNTY Fayette DRILLING METHOD Hollow stem auger & split spoon HAMMER TYPE Auto 140#

STRUCT. NO.	STATION	BORING NO.	DEPTH (ft)	DESCRIPTION	UCS (psi)	Failure Mode	SPT (blows)
026-0038	228+67.4	2		Surface Water Elev. Dry ft			
				Stream Bed Elev. 488.72 ft			
				Groundwater Elev. First Encounter 465.7 ft			
				Upon Completion Washed ft			
				After 24 Hrs. 465.5 ft			
				Ground Surface Elev. 477.67 ft			
				Very dense, very moist, gray, CLAY TILL. (continued)			
			433.17	Very soft, damp, gray, SANDY LOAM.			
			428.17	Hard, very moist, gray, CLAY TILL.			
			423.17	Loose to medium, wet, gray, fine grained, SAND.			
			403.17	Medium, wet, gray, GRAVELY SAND. 12% passing #200 sieve.			
			401.67	Augered through.			
			397.67	Estimated SAND & GRAVEL.			

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)



SOIL BORING LOG

Page 3 of 4

ROUTE FAP 322 (US 51) DESCRIPTION Richland Creek LOGGED BY E. Sandschafer  
SECTION 24BR-1 LOCATION Sec 3 - SW 1/4, Sec 4 - SE 1/4, SEC. TWP. 5 N. RNG. 1 E. 3 PM  
COUNTY Fayette DRILLING METHOD Hollow stem auger & split spoon HAMMER TYPE Auto 140#

STRUCT. NO.	STATION	BORING NO.	DEPTH (ft)	DESCRIPTION	UCS (psi)	Failure Mode	SPT (blows)
026-0038	228+67.4	2		Surface Water Elev. Dry ft			
				Stream Bed Elev. 488.72 ft			
				Groundwater Elev. First Encounter 465.7 ft			
				Upon Completion Washed ft			
				After 24 Hrs. 465.5 ft			
				Ground Surface Elev. 477.67 ft			
				Augered through.			
				Estimated SAND & GRAVEL.			
				Attempted to sample, failed to wash through sampler due to sand & large gravel.			
			380.17	End drilling 09/20/06.			
			379.57	Start drilling 09/21/06.			
			379.57	Very dense, moist, gray, SANDY CLAY SHALE. Broke 2 teeth on lead auger.			
			379.57	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)

BENTON & ASSOCIATES, INC.

DESIGNED	MBH
CHECKED	NRF
DRAWN	MBH
CHECKED	NRF

SOIL BORINGS  
US 51 / RICHLAND CREEK  
F.A.P. RT. 322  
FAYETTE COUNTY  
SN. 026-0104

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 22 22 SHEETS
FAP 322	24BR-1	FAYETTE	57	42	
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT-	

Contract # 94770

Page 4 of 4

**Illinois Department of Transportation**  
Division of Highways  
600 North First Street  
Springfield, IL 62761

### ROCK CORE LOG

Date 9/20/06

ROUTE FAP 322 (US 51) DESCRIPTION Richland Creek LOGGED BY E. Sandschafer

SECTION 24BR-1 LOCATION Sec 3 - SW 1/4, Sec 4 - SE 1/4, SEC., TWP. 5 N, RNG. 1 E, 3 PM

COUNTY Fayette CORING METHOD Rotary, surf set diamond bit

STRUCT. NO. 026-0038 CORING BARREL TYPE & SIZE NW, corv dot bbl, scull liner

Station 228+67.4 Core Diameter 2.06 in

BORING NO. 2 Top of Rock Elev. 380.17 ft

Station 228+35 Begin Core Elev. 379.37 ft

Offset 14.508 ft

Ground Surface Elev. 477.87 ft

DEPTH (ft)	CORRECTION (ft)	CORRECTION (%)	CORRECTION (min/ft)	CORRECTION (tsf)	REMARKS
0					Gray, slightly weathered, SANDY CLAY SHALE.
1		90	82	0.7	
100					Rock core unconfined compressive strength from 100.0' to 100.4' = 97 tsf
2		87	87	0.7	
108					Rock core unconfined compressive strength from 107.9' to 108.3' = 150 tsf
389.37					Extent of exploration.
478.21					Benchmark: BM 203 Chiseled square on SE corner of existing bridge, Sta 228+67 = 478.21'. Provided by Program Development.

Color pictures of the cores \_\_\_\_\_  
Cores will be stored for examination until \_\_\_\_\_  
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)  
BBS, form 138 (Rev. 8-89)

**BENTON & ASSOCIATES, INC.**

DESIGNED	MBH
CHECKED	NRF
DRAWN	MBH
CHECKED	NRF

SOIL BORINGS  
US 51 / RICHLAND CREEK  
F.A.P. RT. 322  
FAYETTE COUNTY  
SN. 026-0104

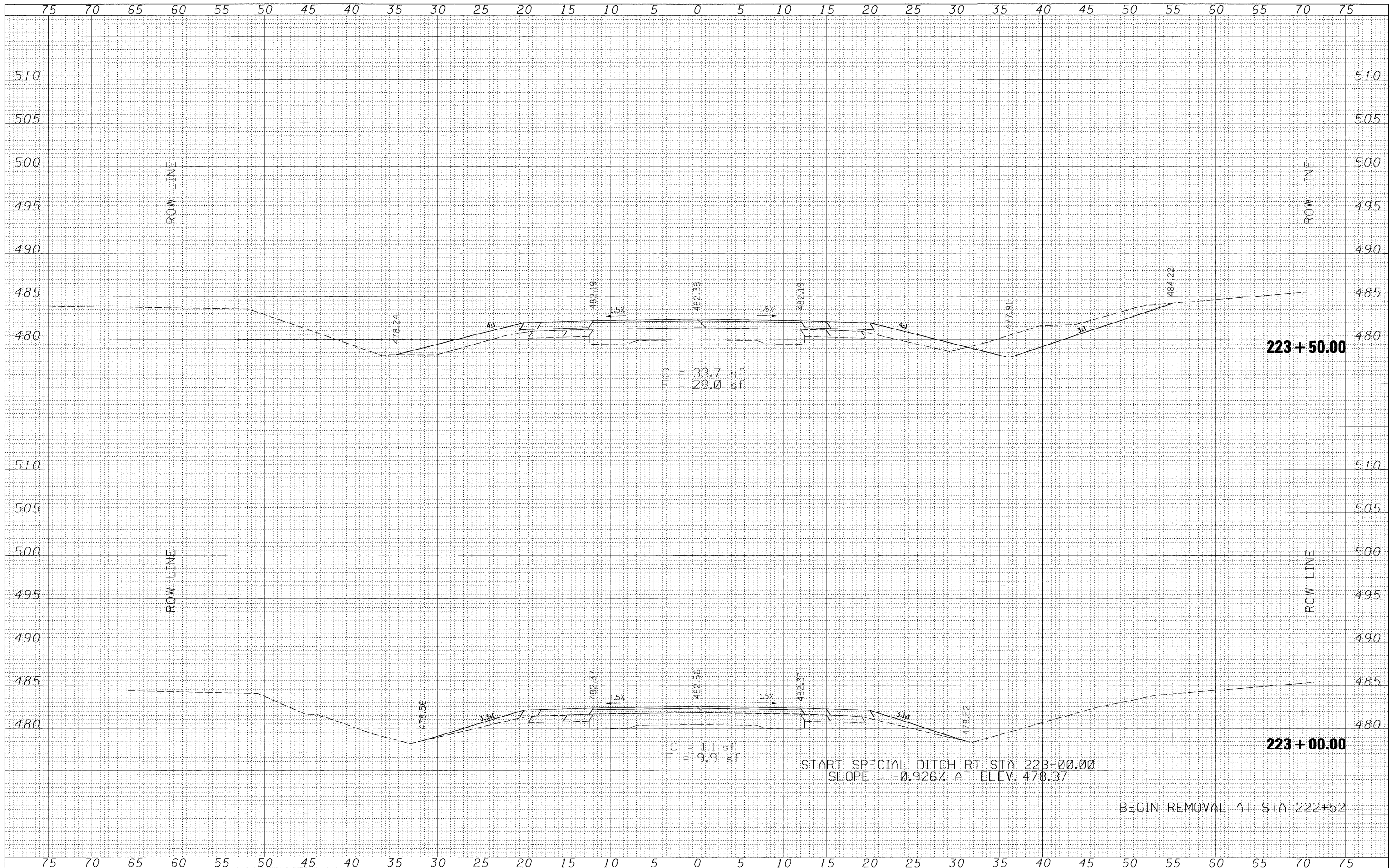






FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS CHECKED		

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



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USER NAME = \*USER\*

DESIGNED -

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**STATE OF ILLINOIS**

**DEPARTMENT OF TRANSPORTATION**

**CROSS SECTION SHEETS**

SCALE: SHEET NO. OF SHEETS STA. 223+00.00 TO STA. 223+50.00

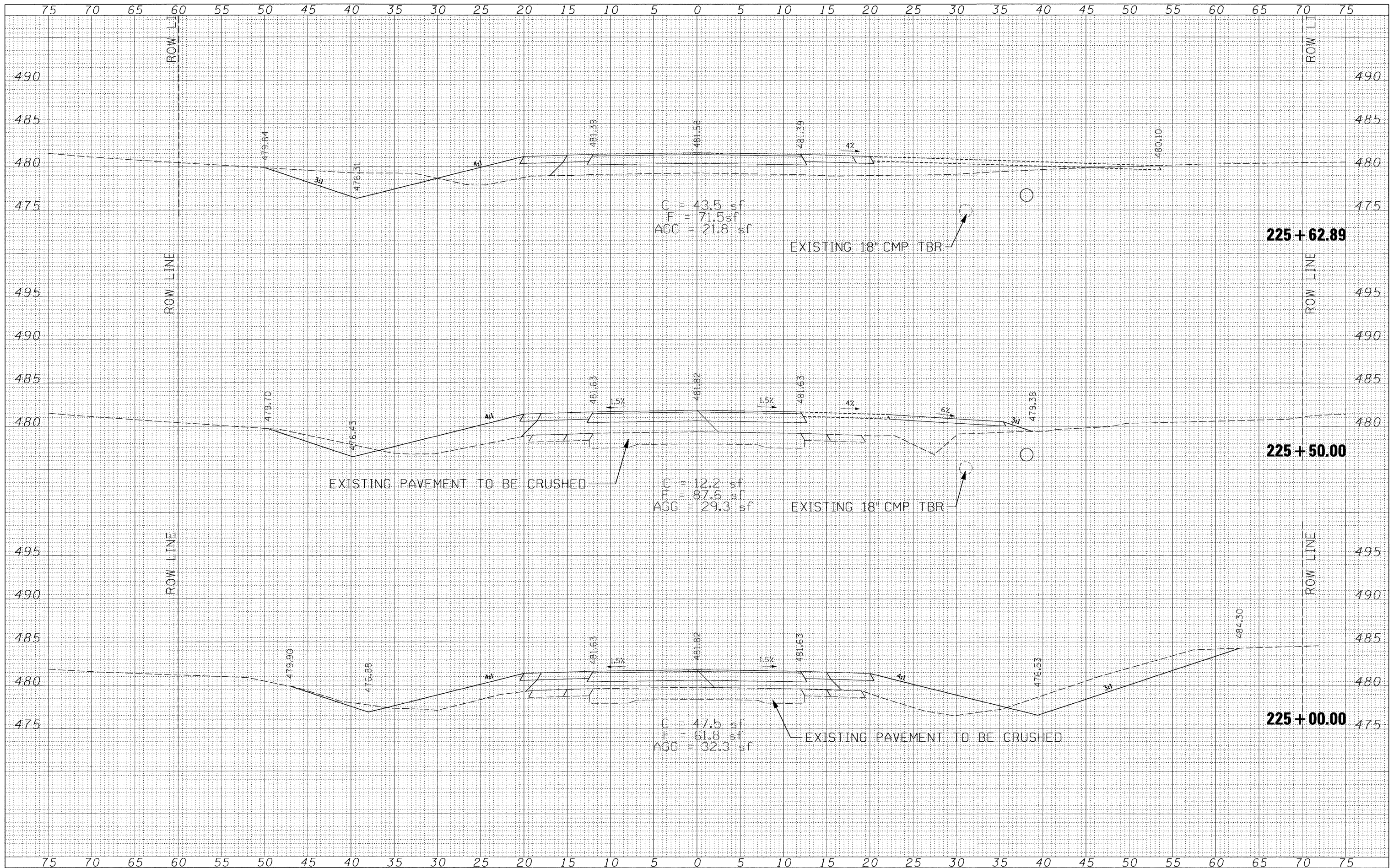
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
322	24BR-1	FAYETTE	57	45
CONTRACT NO. 94770				
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		





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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**CROSS SECTION SHEETS**

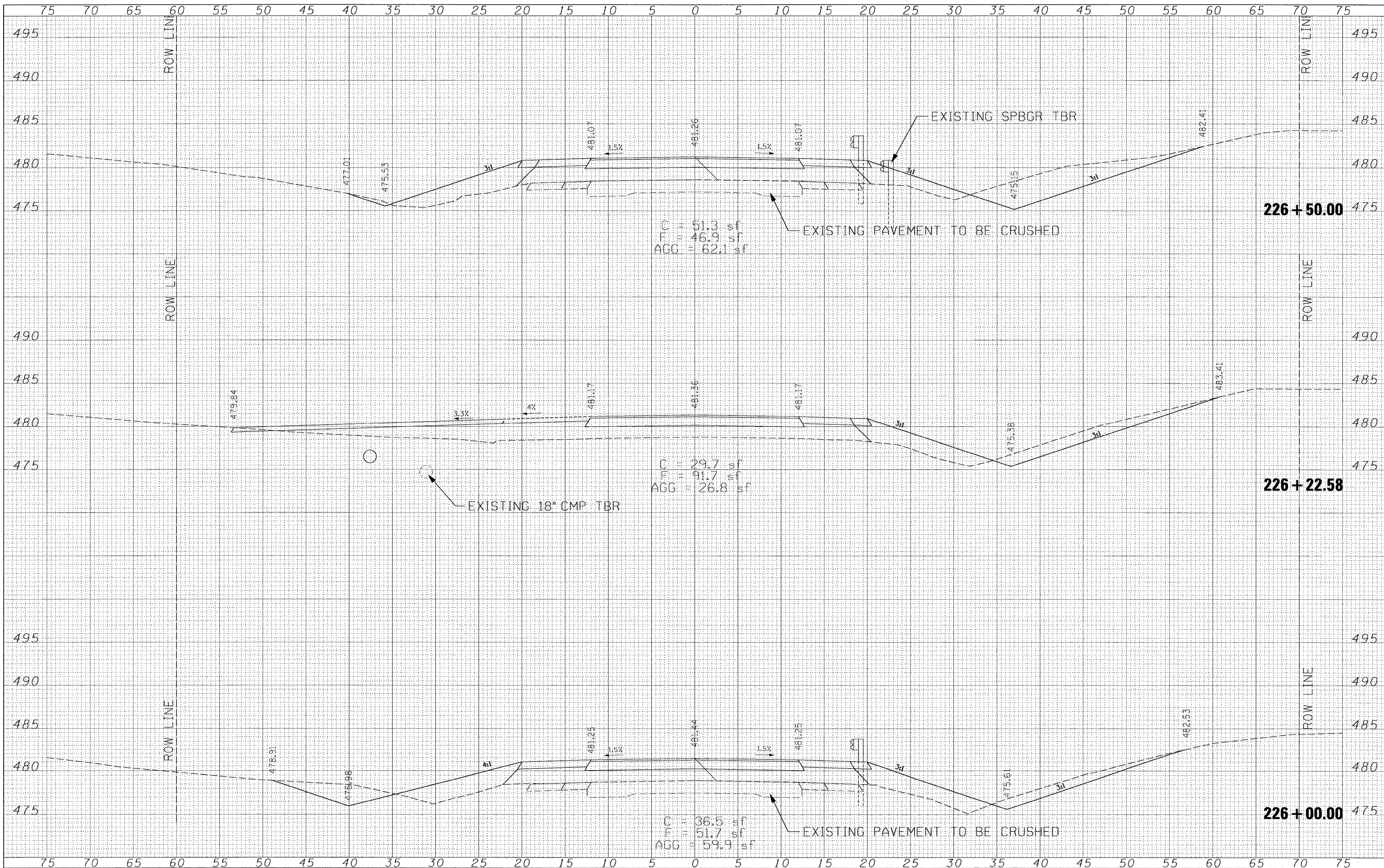
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F.A.P. R.T.E. 322	SECTION 24BR-1	COUNTY FAYETTE	TOTAL SHEETS 57	SHEET NO. 47
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 94770	



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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**CROSS SECTION SHEETS**

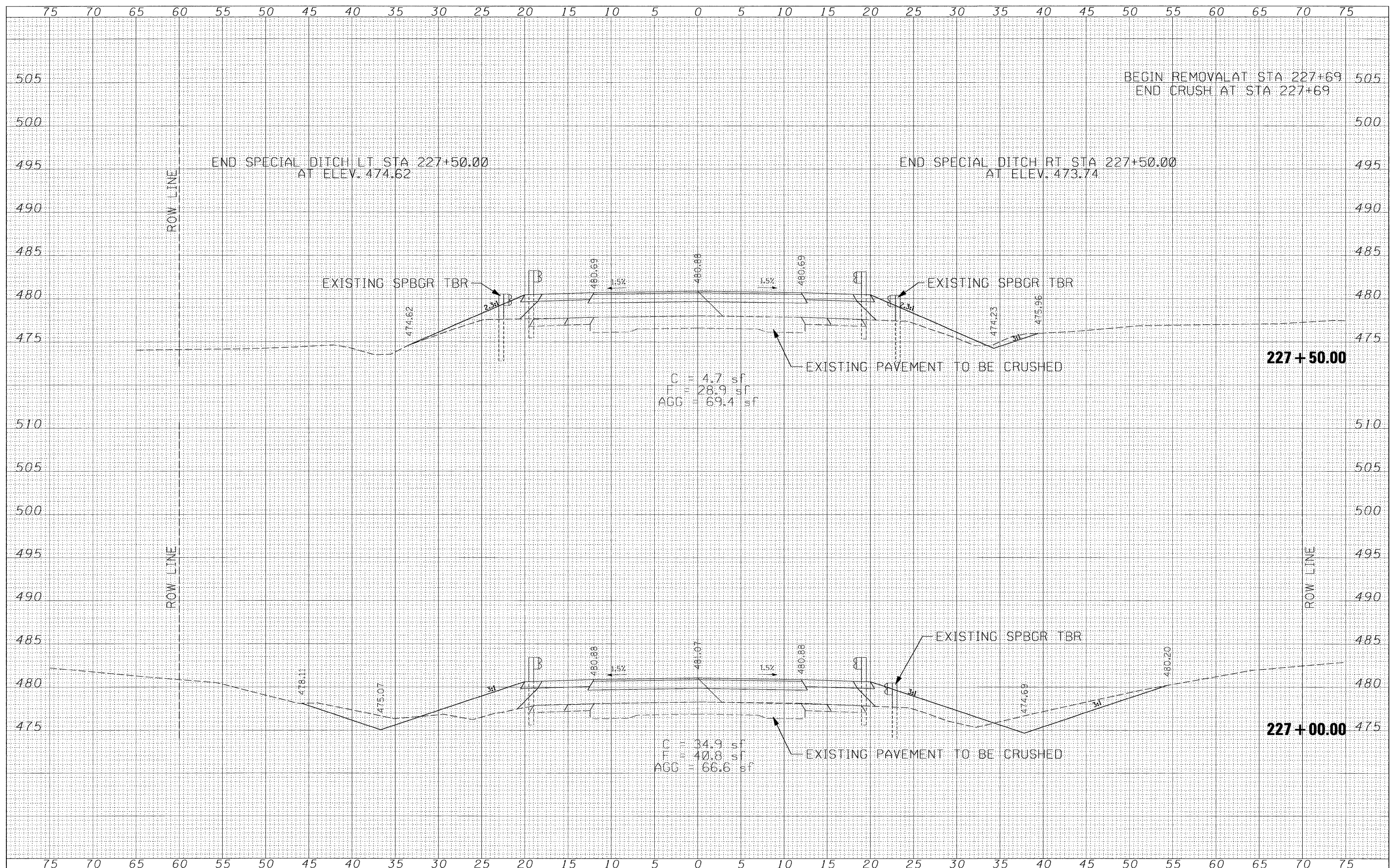
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F.A.P. RTE. 322	SECTION 24BR-1	COUNTY FAYETTE	TOTAL SHEETS 57	SHEET NO. 48
FED. ROAD DIST. NO. ILLINOIS		FED. AID PROJECT CONTRACT NO. 94770		



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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

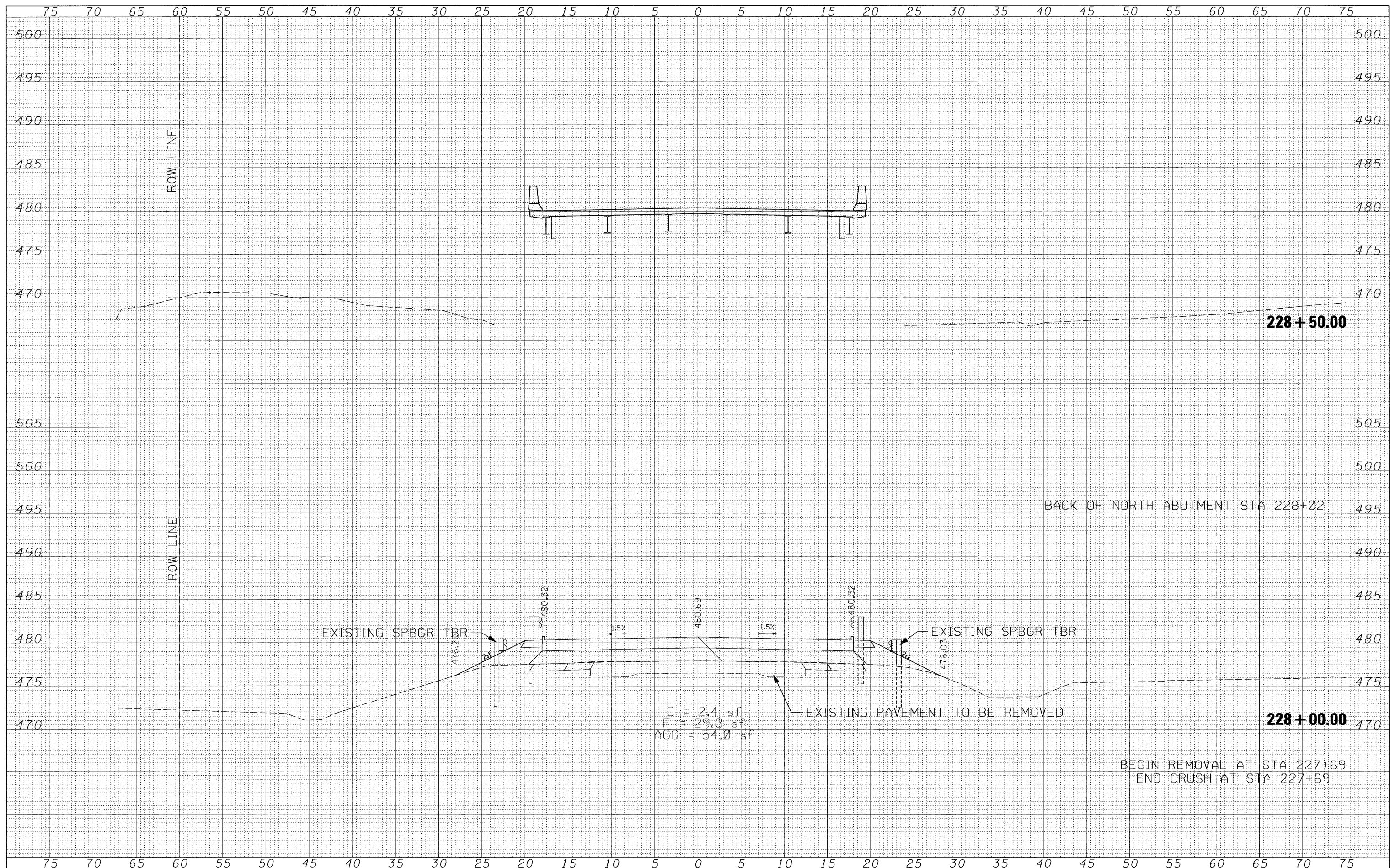
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SCALE: SHEET NO. OF SHEETS STA. 227+00.00 TO STA. 227+50.00

F.A.P. RTE. 322	SECTION 24BR-1	COUNTY FAYETTE	TOTAL SHEETS 57	SHEET NO. 49
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 94770	

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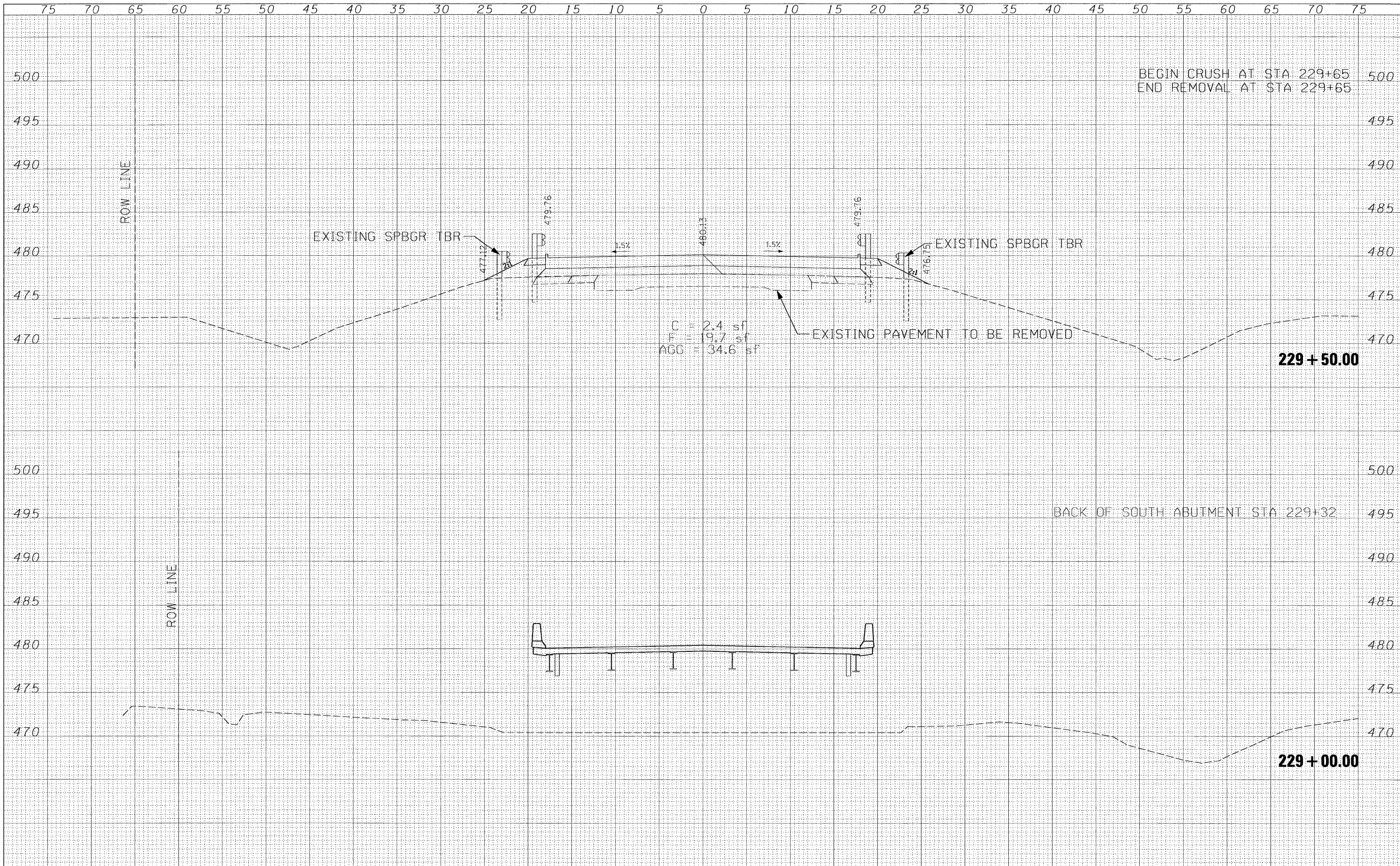
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**CROSS SECTION SHEETS**

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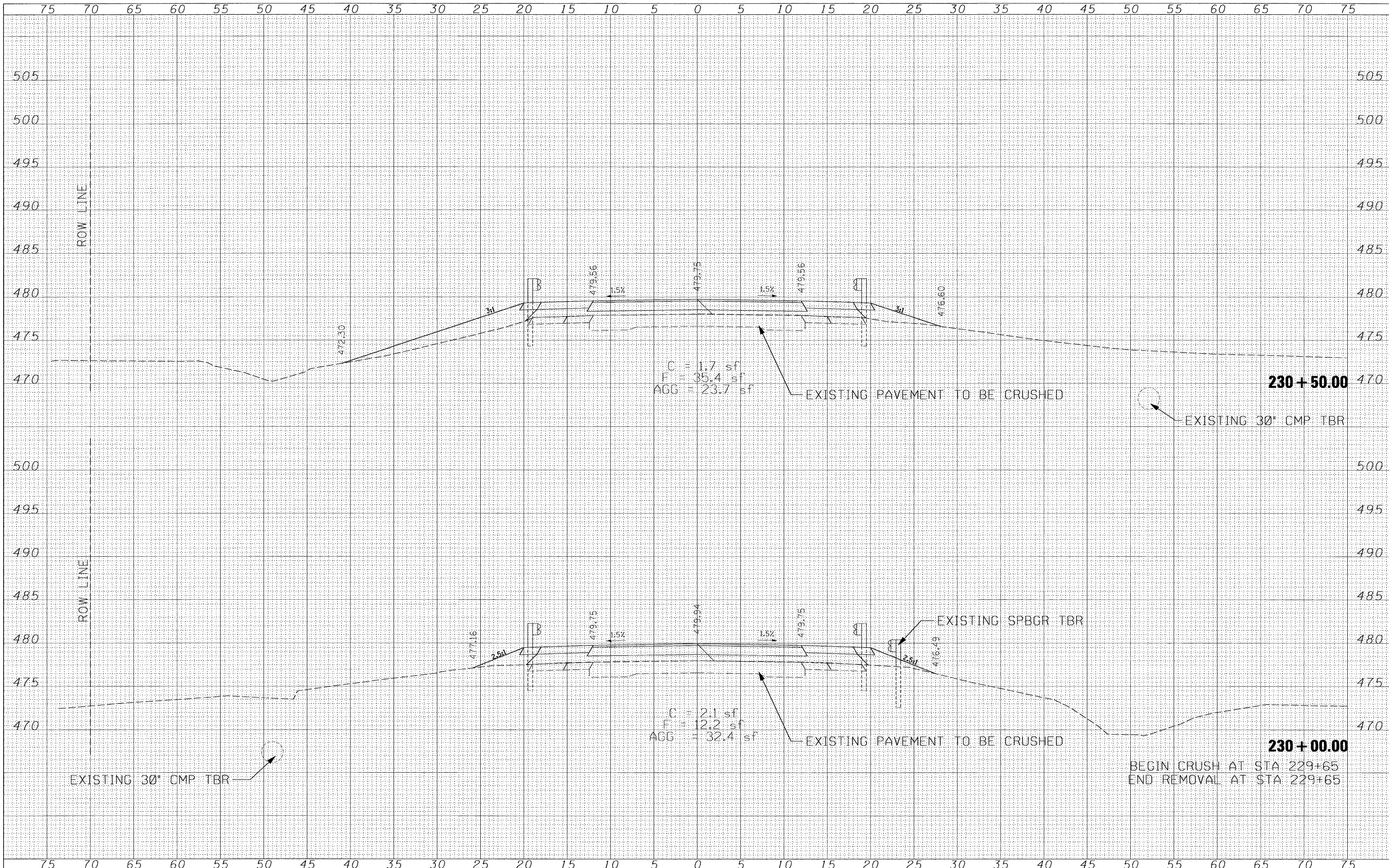
F.A.P. RTE. 322	SECTION 24BR-1	COUNTY FAYETTE	TOTAL SHEETS 57	SHEET NO. 50
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 94770	





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**DEPARTMENT OF TRANSPORTATION**

**CROSS SECTION SHEETS**

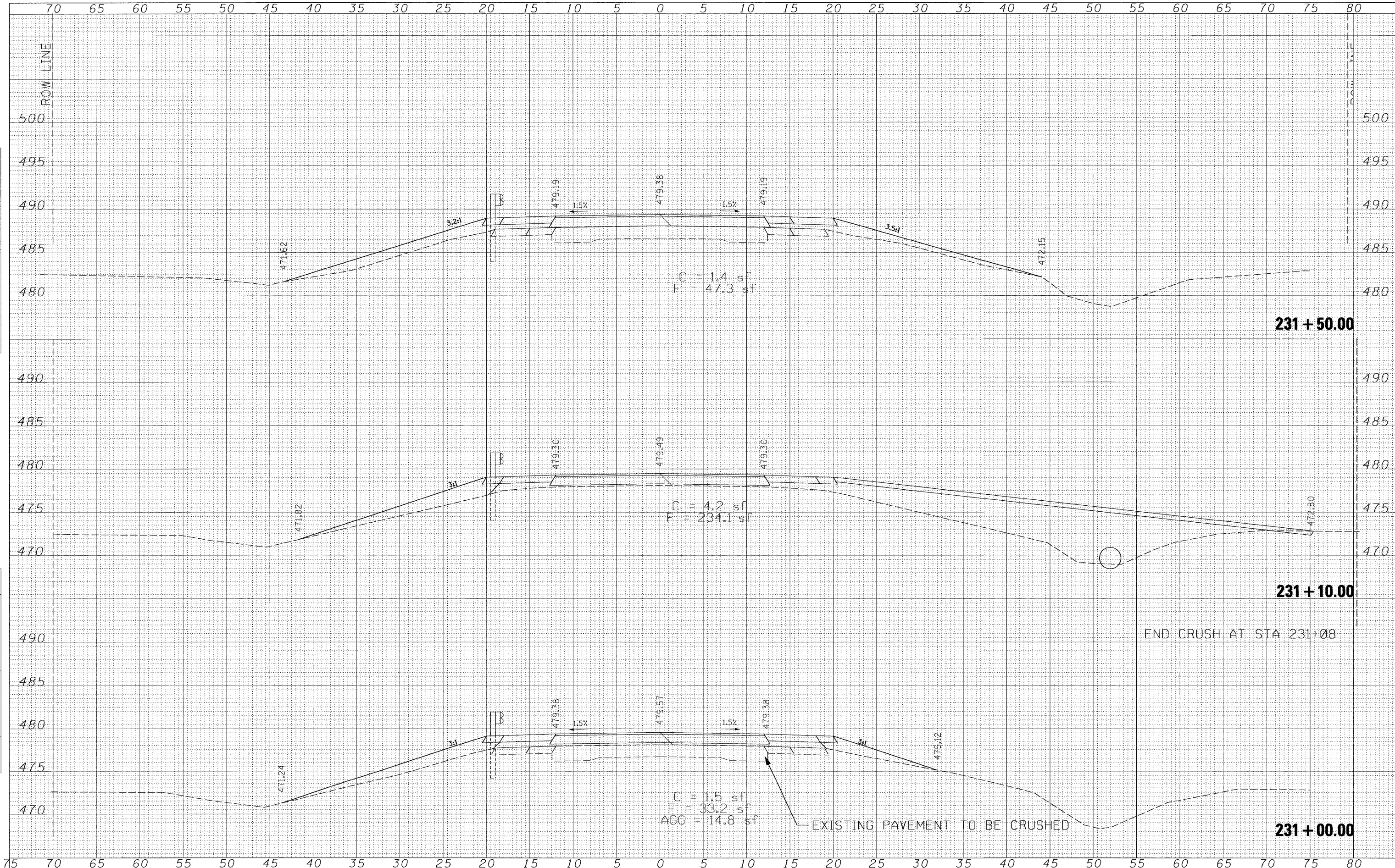
SCALE: SHEET NO. OF SHEETS STA. 230+00.00 TO STA. 230+50.00

F.A.P. RTE. 322	SECTION 24BR-1	COUNTY FAYETTE	TOTAL SHEETS 57	SHEET NO. 52
CONTRACT NO. 94770				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				



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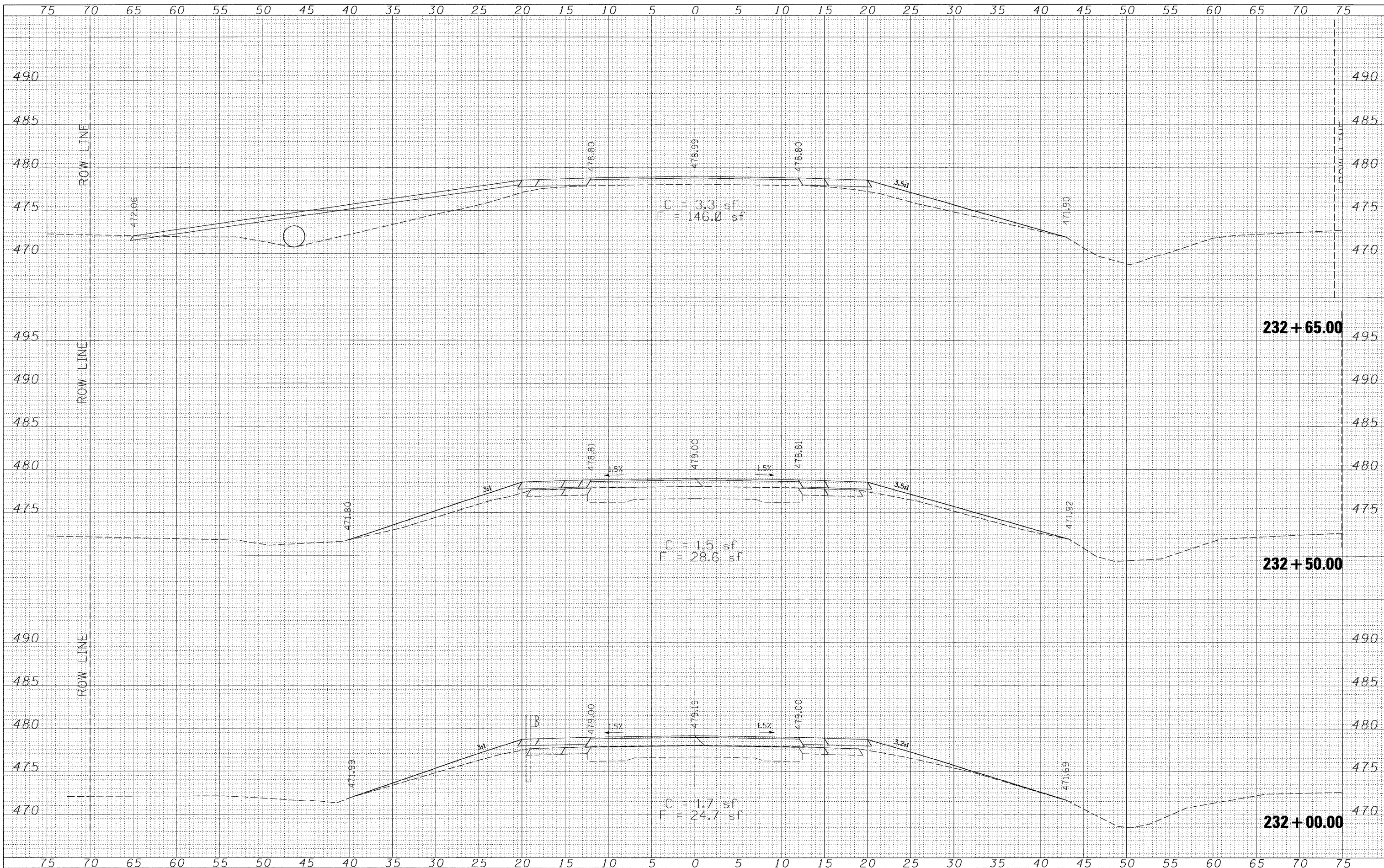
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F.A.P. RTE. 322	SECTION 24BR-1	COUNTY FAYETTE	TOTAL SHEETS 57	SHEET NO. 53
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 94770	

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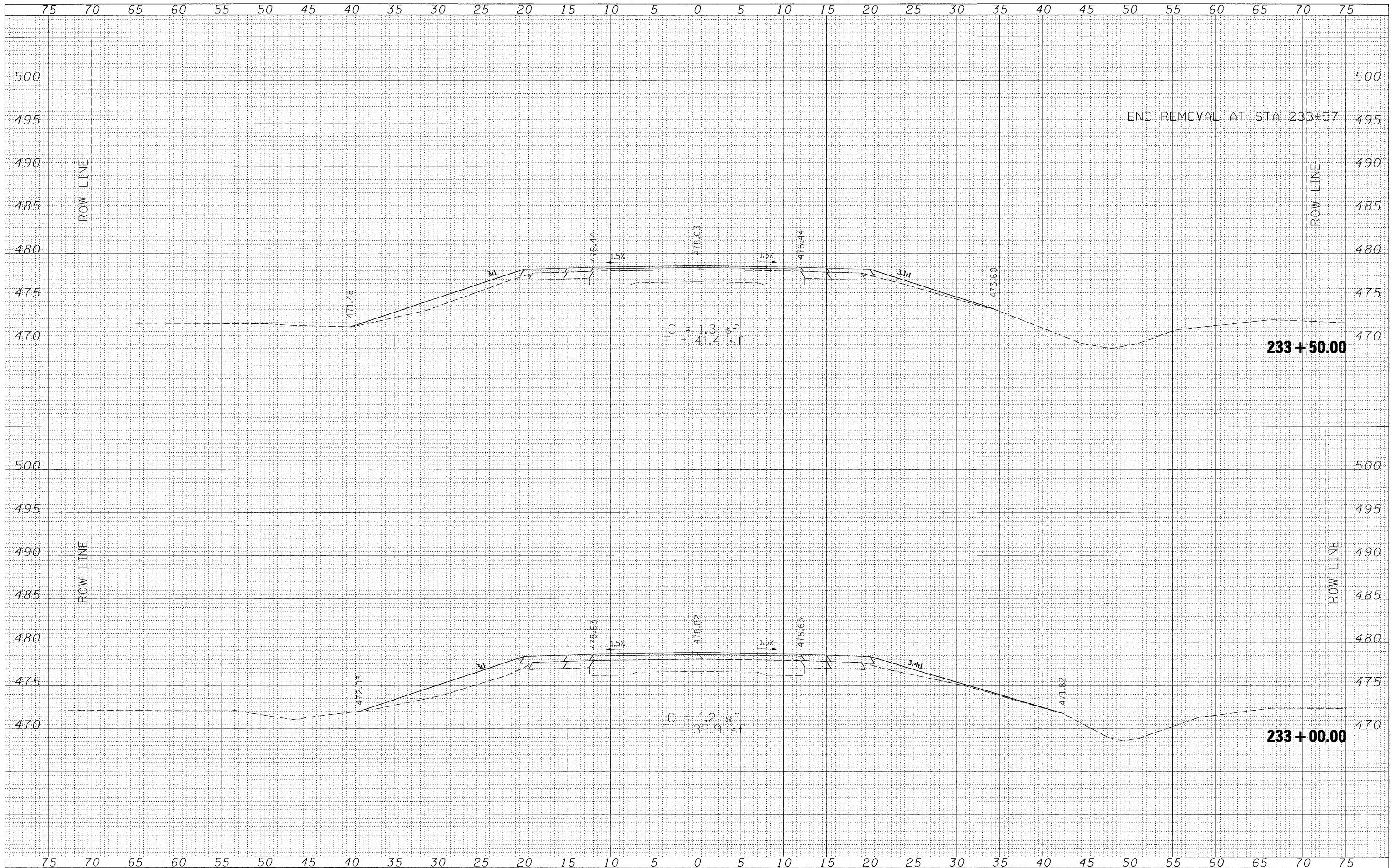
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F.A.P. RTE. 322	SECTION 24BR-1	COUNTY FAYETTE	TOTAL SHEETS 57	SHEET NO. 54
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 94770	



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**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**CROSS SECTION SHEETS**

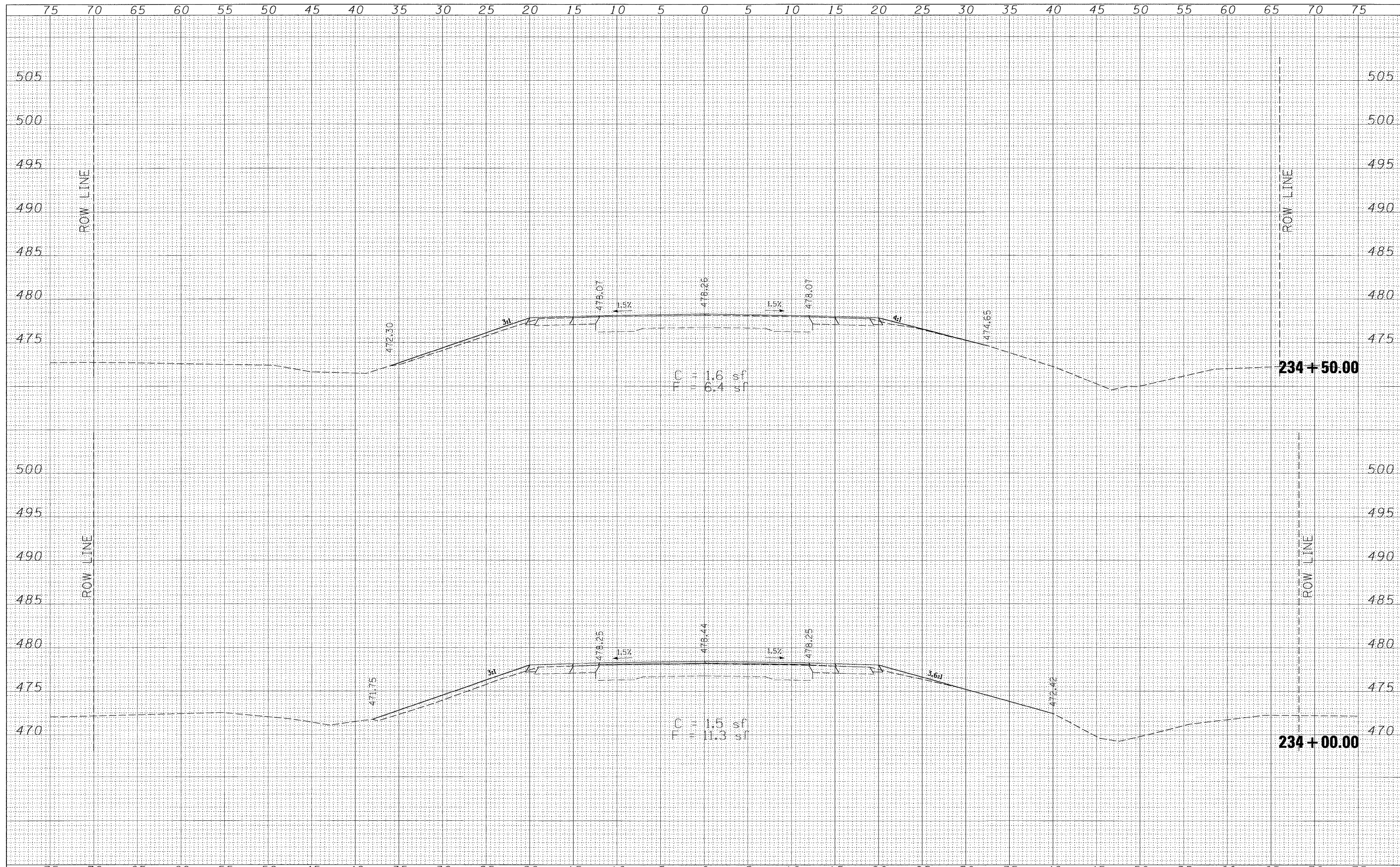
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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
322	24BR-1	FAYETTE	57	55
CONTRACT NO. 94770				

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

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FINAL SURVEY	SURVEYED
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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**CROSS SECTION SHEETS**

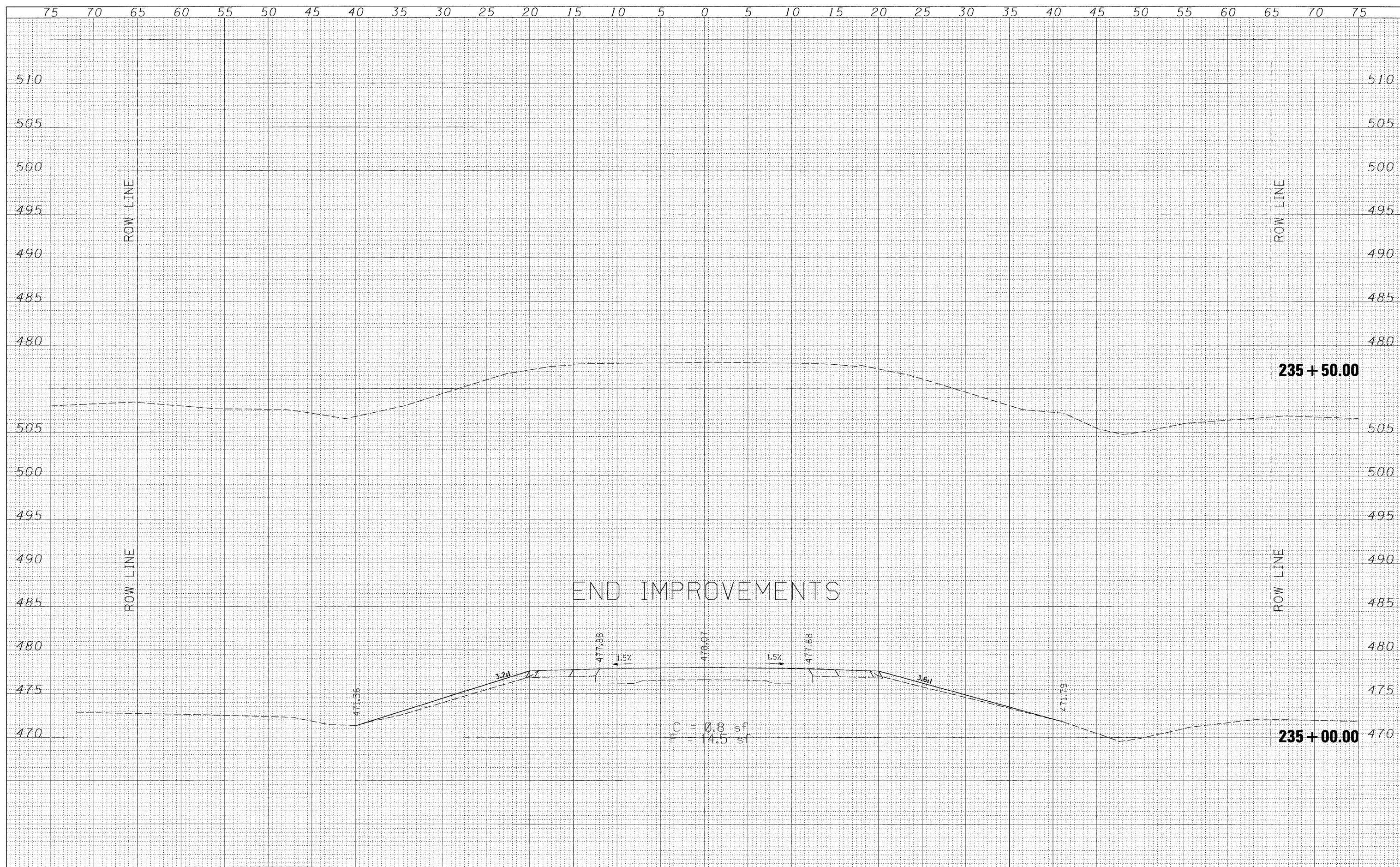
SCALE:	SHEET NO.	OF	SHEETS	STA. 234+00.00	TO STA. 234+50.00
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F.A.P. RTE. 322	SECTION 24BR-1	COUNTY FAYETTE	TOTAL SHEETS 57	SHEET NO. 56
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 94770	



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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

<b>CROSS SECTION SHEETS</b>			
SCALE:	SHEET NO.	OF	SHEETS
			STA. 235+00.00 TO STA. 235+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
322	24BR-1	FAYETTE	57	57
CONTRACT NO. 94770				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				