

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	1
		ILLINOIS	CONTRACT NO. 68804	

09-22-2023 LETTING ITEM 031

FOR INDEX OF SHEETS, SEE SHEET NO. 2

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

**PROPOSED
HIGHWAY PLANS**

FAP ROUTE 310 (US 67)
SECTION (103)BR-1
PROJECT NHPP-U6W7(150)
BRIDGE REPLACEMENT
MERCER COUNTY

C-94-061-08

D-94-042-08



PROJECT DESCRIPTION:
THIS PROJECT CONSIST OF A BRIDGE REPLACEMENT OF SN 066-0003 (EXIST)/ SN 066-0019 (PROP) CARRYING US 67 OVER POPE CREEK, PROFILE BUILDUP, GUARDRAIL REPLACEMENT, SLOPE IMPROVEMENTS, AND ANY OTHER COLLATERAL WORK NECESSARY TO COMPLETE THE PROJECT.

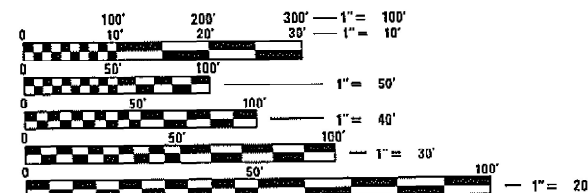
HIGHWAY STANDARDS

280001-07	701006-05	782006-01
420401-13	701201-05	
420701-03	701301-04	
515001-04	701306-04	
601101-02	701311-03	
630001-12	701321-18	
630301-09	701901-08	
631031-18	704001-08	
667101-02	780001-05	
701001-02	781001-04	

DESIGN DESIGNATION

OTHER PRINCIPAL ARTERIAL

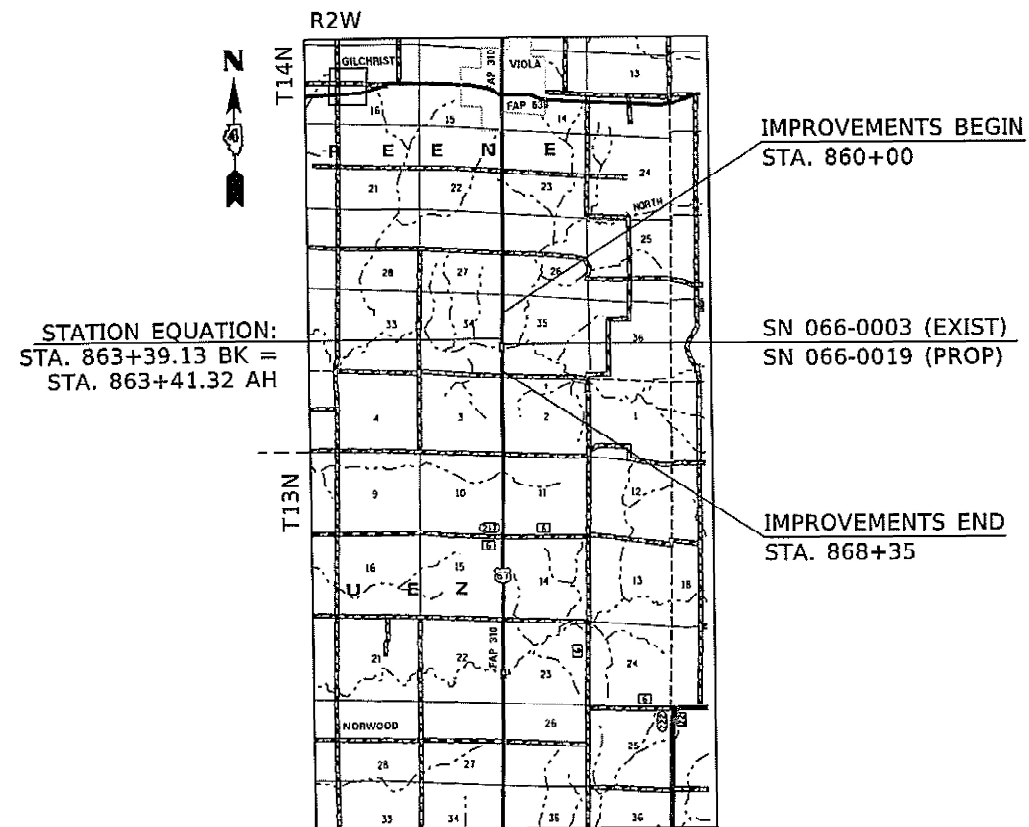
ADT (2021) = 2350
MU (2021) = 11.7%
SU (2021) = 8.3%



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 EXCAVATORS
1-800-892-0123
OR 811

PROJECT ENGINEER NICOLE FAYANT (309) 671-3454
PROJECT MANAGER ANNA DEVINE (309) 671-3475
CATALOG NO. 033806-00D
CONTRACT NO. 68804



GROSS LENGTH = 832.81 FT. = 0.158 MILE
NET LENGTH = 832.81 FT. = 0.158 MILE

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED June 30 2023
Kensil A. Burnett RSO
REGIONAL ENGINEER

August 18, 2023 [Signature]
ENGINEER OF DESIGN AND ENVIRONMENT

August 18, 2023 [Signature]
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

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

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE	
				RURAL 80/20 ROADWAY 0004	RURAL 80/20 BRIDGE 0010
				S.N. 066-0019	
20200100	EARTH EXCAVATION	CU YD	765	765	
20400800	FURNISHED EXCAVATION	CU YD	315	315	
21101615	TOPSOIL FURNISH AND PLACE, 4"	SQ YD	5820	5820	
25000210	SEEDING, CLASS 2A	ACRE	1.25	1.25	
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	112.5	112.5	
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	112.5	112.5	
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	112.5	112.5	
25100630	EROSION CONTROL BLANKET	SQ YD	5815	5815	
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	120	120	
28000305	TEMPORARY DITCH CHECKS	FOOT	96	96	
28000400	PERIMETER EROSION BARRIER	FOOT	155	155	
28001100	TEMPORARY EROSION CONTROL BLANKET	SQ YD	5815	5815	
28100107	STONE RIPRAP, CLASS A4	SQ YD	1584		1584
28200200	FILTER FABRIC	SQ YD	1584		1584

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PLOT DATE = 6/29/2023	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

SUMMARY OF QUANTITIES

SCALE: SHEET 1 OF 7 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	3
				CONTRACT NO. 68804
ILLINOIS FED. AID PROJECT				

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE	
				RURAL 80/20 ROADWAY 0004	RURAL 80/20 BRIDGE 0010
				S.N. 066-0019	
31100100	SUBBASE GRANULAR MATERIAL, TYPE A	TON	76	76	
40200100	AGGREGATE SURFACE COURSE, TYPE A	TON	5	5	
40600295	POLYMERIZED BITUMINOUS MATERIALS (TACK COAT)	POUND	4843	4843	
40600982	HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT	SQ YD	2359	2359	
40600990	TEMPORARY RAMP	SQ YD	72	72	
40603080	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50	TON	306	306	
40603205	POLYMERIZED HOT-MIX ASPHALT BINDER COURSE, IL-9.5, N50	TON	80	80	
40604060	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "D", N50	TON	144	144	
42000060	WELDED WIRE REINFORCEMENT	SQ YD	80	80	
42000080	PAVEMENT CONNECTOR (PCC) FOR BRIDGE APPROACH SLAB	SQ YD	107	107	
44000100	PAVEMENT REMOVAL	SQ YD	237	237	
44000157	HOT-MIX ASPHALT SURFACE REMOVAL, 2"	SQ YD	360	360	
44004250	PAVED SHOULDER REMOVAL	SQ YD	79	79	
48101200	AGGREGATE SHOULDERS, TYPE B	TON	70	70	

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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

SUMMARY OF QUANTITIES

SCALE: SHEET 2 OF 7 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	4
CONTRACT NO. 68804				
ILLINOIS FED. AID PROJECT				

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE	
				RURAL 80/20 ROADWAY 0004	RURAL 80/20 BRIDGE 0010
				S.N. 066-0019	
48203100	HOT-MIX ASPHALT SHOULDERS	TON	284	284	
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1		1
50200100	STRUCTURE EXCAVATION	CU YD	170		170
50300225	CONCRETE STRUCTURES	CU YD	103.8		103.8
50300255	CONCRETE SUPERSTRUCTURE	CU YD	203.4		203.4
50300260	BRIDGE DECK GROOVING	SQ YD	663		663
50300280	CONCRETE ENCASEMENT	CU YD	4.2		4.2
50300300	PROTECTIVE COAT	SQ YD	868		868
50301350	CONCRETE SUPERSTRUCTURE (APPROACH SLAB)	CU YD	94.6		94.6
50500105	FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	1		1
50500505	STUD SHEAR CONNECTORS	EACH	3006		3006
50800105	REINFORCEMENT BARS	POUND	14250		14250
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	102940		102940
50800515	BAR SPLICERS	EACH	873		873

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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

SUMMARY OF QUANTITIES

SCALE: SHEET 3 OF 7 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	5
CONTRACT NO. 68804				
ILLINOIS FED. AID PROJECT				

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE	
				RURAL 80/20 ROADWAY 0004	RURAL 80/20 BRIDGE 0010
				S.N. 066-0019	
51201600	FURNISHING STEEL PILES HP12X53	FOOT	560		560
51202305	DRIVING PILES	FOOT	560		560
51203600	TEST PILE STEEL HP12X53	EACH	2		2
51500100	NAME PLATES	EACH	1		1
51603000	DRILLED SHAFT IN SOIL	CU YD	46		46
51604000	DRILLED SHAFT IN ROCK	CU YD	16		16
52100520	ANCHOR BOLTS, 1"	EACH	24		24
52100530	ANCHOR BOLTS, 1 1/4"	EACH	12		12
52200020	TEMPORARY SOIL RETENTION SYSTEM	SQ FT	485		485
58600101	GRANULAR BACKFILL FOR STRUCTURES	CU YD	88		88
59100100	GEOCOMPOSITE WALL DRAIN	SQ YD	48		48
60100060	CONCRETE HEADWALLS FOR PIPE DRAINS	EACH	4		4
60146304	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	130		130
63000001	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS	FOOT	362.5	362.5	

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PLOT DATE = 6/29/2023	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

SUMMARY OF QUANTITIES

SCALE: SHEET 4 OF 7 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	6
CONTRACT NO. 68804				
ILLINOIS FED. AID PROJECT				

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE	
				RURAL 80/20 ROADWAY 0004	RURAL 80/20 BRIDGE 0010
					S.N. 066-0019
* 63100085	TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	4	4	
* 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	3	3	
* 63100169	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) FLARED	EACH	1	1	
63200310	GUARDRAIL REMOVAL	FOOT	891	891	
* 66700205	PERMANENT SURVEY MARKERS, TYPE I	EACH	1		1
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	9	9	
67000600	ENGINEER'S FIELD LABORATORY	CAL MO	9	9	
67100100	MOBILIZATION	L SUM	1	1	
70100405	TRAFFIC CONTROL AND PROTECTION, STANDARD 701321	EACH	1	1	
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1	1	
70100460	TRAFFIC CONTROL AND PROTECTION, STANDARD 701306	L SUM	1	1	
70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	1	1	
70106700	TEMPORARY RUMBLE STRIPS	EACH	6	6	
70107005	PAVEMENT MARKING BLACKOUT TAPE, 5"	FOOT	191	191	

*= SPECIALTY ITEM

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PLOT SCALE = 1:100	DRAWN -	REVISED -						310	(103)BR-1	MERCER	73	7
PLOT DATE = 6/29/2023	CHECKED -	REVISED -		SCALE: SHEET 5 OF 7 SHEETS STA. TO STA.				CONTRACT NO. 68804				
	DATE -	REVISED -		ILLINOIS FED. AID PROJECT								

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE	
				RURAL 80/20 ROADWAY 0004	RURAL 80/20 BRIDGE 0010
				S.N. 066-0019	
70107025	CHANGEABLE MESSAGE SIGN	CAL DA	28	28	
70300100	SHORT TERM PAVEMENT MARKING	FOOT	256	256	
70300150	SHORT TERM PAVEMENT MARKING REMOVAL	SQ FT	165	165	
70400100	TEMPORARY CONCRETE BARRIER	FOOT	825	825	
70400125	PINNING TEMPORARY CONCRETE BARRIER	EACH	60	60	
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	825	825	
70600250	IMPACT ATTENUATORS, TEMPORARY (NON- REDIRECTIVE), TEST LEVEL 3	EACH	2	2	
70600350	IMPACT ATTENUATORS, RELOCATE (NON- REDIRECTIVE), TEST LEVEL 3	EACH	2	2	
* 72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4	4	
* 78009006	MODIFIED URETHANE PAVEMENT MARKING - LINE 6"	FOOT	1906	1906	
* 78011035	GROOVING FOR RECESSED PAVEMENT MARKING 7"	FOOT	1906	1906	
* 78100100	RAISED REFLECTIVE PAVEMENT MARKER	EACH	10	10	
78300200	RAISED REFLECTIVE PAVEMENT MARKER REMOVAL	EACH	10	10	
78300202	PAVEMENT MARKING REMOVAL - WATER BLASTING	SQ FT	258	258	

*= SPECIALTY ITEM

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PLOT DATE = 6/29/2023	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

SUMMARY OF QUANTITIES

SCALE: SHEET 6 OF 7 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	8
			CONTRACT NO. 68804	
		ILLINOIS	FED. AID PROJECT	

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE	
				RURAL 80/20	RURAL 80/20
				ROADWAY	BRIDGE
				0004	0010
				S.N. 066-0019	
X0320051	CROSSHOLE SONIC LOGGING ACCESS DUCTS	FOOT	187		187
X0320052	CROSSHOLE SONIC LOGGING TESTING	EACH	4		4
X4400196	HOT-MIX ASPHALT SURFACE REMOVAL (SPECIAL)	SQ YD	101	101	
X6350204	LINEAR DELINEATOR PANELS, 4 INCH	EACH	11	11	
Z0001002	GUARDRAIL AGGREGATE EROSION CONTROL	TON	232	232	
Z0001900	ASBESTOS BEARING PAD REMOVAL	EACH	22		22
Z0004552	APPROACH SLAB REMOVAL	SQ YD	142	142	
Ø Z0076600	TRAINEES	HOUR	1,000	1,000	
Z0013798	CONSTRUCTION LAYOUT	L SUM	1	1	
Ø Z0076604	TRAINEES - TRAINING PROGRAM GRADUATE	HOUR	1,000	1,000	
Z0034105	MATERIAL TRANSFER DEVICE	TON	522	522	

Ø 0042

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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

SUMMARY OF QUANTITIES

SCALE: SHEET 7 OF 7 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	9
			CONTRACT NO. 68804	
		ILLINOIS FED. AID PROJECT		

LOCATION	MOBILIZATION	ENGINEER'S FIELD OFFICE, TYPE A	ENGINEER'S FIELD LABORATORY	CHANGEABLE MESSAGE SIGN	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	TRAFFIC CONTROL AND PROTECTION, STANDARD 701306	TRAFFIC CONTROL AND PROTECTION, STANDARD 701321	CONSTRUCTION LAYOUT	PERMANENT SURVEY MARKERS, TYPE I	CONCRETE HEADWALLS FOR PIPE DRAINS
	LSUM	CAL MO	CAL MO	CAL DAY	LSUM	LSUM	EACH	LSUM	EACH	EACH
JOBSITE	1.0	9.0	9.0	28.0	1.0	1.0	1.0	1.0	1.0	4.0
TOTAL	1.0	9.0	9.0	28.0	1.0	1.0	1.0	1.0	1.0	4.0

LOCATION	INFORMATION ONLY				
	EARTH EXCAVATION	FURNISHED EXCAVATION	EARTH EXCAVATION ADJUST FOR SHRINKAGE	EMBANKMENT	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)
	CU YD	CU YD	CU YD	CU YD	CU YD
RT Side					
STA. 860+75.0 TO 863+25.0	120.0	198.0	90.0	288.0	-198.0
STA. 865+25.0 TO 867+25.0	366.0	-107.5	274.5	167.0	107.5
LT Side					
STA. 860+00.0 TO 863+25.0	102.0	183.5	76.5	260.0	-183.5
STA. 865+25.0 TO 867+50.0	176.0	40.0	132.0	172.0	-40.0
SUB-TOTAL	764.0	314.0	573.0	887.0	-314.0
TOTAL	765.0	315.0			

LOCATION	PAVEMENT REMOVAL	PAVED SHOULDER REMOVAL	APPROACH SLAB REMOVAL
	SQ YD	SQ YD	SQ YD
US 67			
STA. 862+97.9 TO 863+38.9	109.4	36.5	
STA. 863+38.9 TO 863+39.1			0.7
STA. EQUATION 863+39.13BK = 863+41.32 AH			
STA. 863+41.3 TO 863+61.1			70.4
SN 066-0019			
STA. 864+61.1 TO 864+81.1			71.1
STA. 864+81.1 TO 865+28.8	127.3	42.4	
SUBTOTAL	236.7	78.9	142.2
TOTAL	237.0	79.0	142.0

LOCATION	TOPSOIL FURNISH AND PLACE 4"	SEEDING, CLASS 2A	NITROGEN FERTILIZER NUTRIENT	PHOSPHORUS FERTILIZER NUTRIENT	POTASSIUM FERTILIZER NUTRIENT	EROSION CONTROL BLANKET	TEMPORARY DITCH CHECKS	PERIMETER EROSION BARRIER*
			90 lb/acre	90 lb/acre	90 lb/acre			
			SQ YD	ACRE	POUND			
RT Side								
STA. 860+50.0 TO 863+34.0	1291.0	0.27	24.30	24.30	24.30	1291.00	24.0	30.0
STA. 864+95.0 TO 867+75.0	1571.0	0.32	28.80	28.80	28.80	1571.00	24.0	40.0
LT Side								
STA. 860+00.0 TO 863+34.0	1535.0	0.32	28.80	28.80	28.80	1535.00	24.0	35.0
STA. 864+95.0 TO 867+75.0	1423.0	0.29	26.10	26.10	26.10	1423.00	24.0	50.0
SUB-TOTAL	5820.0	1.20	108.00	108.00	108.00	5820.00	96.0	155.0
TOTAL	5820.0	1.25	112.5	112.5	112.5	5820.0	96.0	155.0

* Erosion barrier along slopes @ Sta. 863+50 and Sta. 864+75

LOCATION	AREA	TEMPORARY EROSION CONTROL SEEDING	TEMPORARY EROSION CONTROL BLANKET
		POUND	SQ YD
		SQ YD	POUND
RT Side			
STA. 860+50.0 TO 863+34.0	1291.0	26.7	1291.0
STA. 864+95.0 TO 867+75.0	1566.0	32.4	1566.0
LT Side			
STA. 860+00.0 TO 863+34.0	1535.0	31.7	1535.0
STA. 864+95.0 TO 867+75.0	1423.0	29.4	1423.0
SUB-TOTAL		120.2	5815.0
TOTAL		120.0	5815.0

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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

SCHEDULE OF QUANTITIES

SCALE: SHEET 1 OF 3 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	10
CONTRACT NO. 68804				
ILLINOIS FED. AID PROJECT				

LOCATION	HMA SURFACE REMOVAL, 2"	HMA SHOULDERS	POLYMERIZED BITUMINOUS MATERIALS (TACK COAT)	TEMPORARY CONCRETE BARRIER	RELOCATE TEMPORARY CONCRETE BARRIER	PINNING TEMPORARY CONCRETE BARRIER	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3	IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 3	TEMPORARY BRIDGE TRAFFIC SIGNALS	TEMPORARY RUMBLE STRIPS			
	SQ YD	TON	POUND	FOOT	FOOT	EACH	EACH	EACH	EACH	EACH			
US 67													
PRE-STAGE													
LT STA.	860+30.9	TO	863+59.0	156.5	17.5	112.7							
LT STA.	864+61.3	TO	868+24.4	203.6	22.8	146.6							
STAGE I													
STA.	860+07.5	TO	868+33.8			825.0		2.0		1.0 3.0			
STAGE II													
STA.	860+07.5	TO	861+19.7				112.5		1.0				
STA.	861+19.7	TO	862+94.7				175.0	30.0					
STA.	862+94.7	TO	863+39.1										
STA. EQ.	863+39.1	=	863+41.3				237.5	*		3.0			
STA.	863+41.3	TO	865+21.9										
STA.	865+21.9	TO	867+21.9				187.5	30.0					
STA.	867+21.9	TO	868+34.0				112.5		1.0				
SUBTOTAL				360.1	40.3	259.3	825.0	825.0	60.0	2.0	2.0	1.0	6.0
TOTAL				360.0	SEE PVT TABLE	SEE PVT TABLE	825.0	825.0	60.0	2.0	2.0	1.0	6.0

*INCLUDED IN THE COST OF TEMP. CONCRETE BARRIER WALL (SEE STRUCTURE PLANS)

LOCATION	PAVEMENT MARKING REMOVAL - WATER BLASTING	PAVEMENT MARKING BLACKOUT TAPE, 5"	SHORT TERM PAVEMENT MARKING			SHORT TERM PAVEMENT MARKING REMOVAL		
			# OF APPLICATIONS	CENTERLINE	SHOULDER			
				FOOT	FOOT			
US 67								
STAGE I								
LT. STA.	860+35.0	TO	868+08.0	257.7				
STAGE II								
RT. STA.	860+31.0	TO	861+30.0		99.0	41.3		
RT. STA.	867+20.0	TO	868+12.2		92.2	38.4		
STAGE III (FINAL PAVING)								
STA.	860+00.0	TO	863+39.1	2.0	64.0	24.0 29.3		
STA. EQ. 863+39.1 BK = 863+41.3 AH								
STA.	863+41.3	TO	865+28.8	1.0	16.0	5.3		
STA.	865+28.8	TO	867+20.1	2.0	80.0	24.0 34.7		
STA.	867+20.1	TO	868+35.0	2.0	48.0	16.0		
SUBTOTAL				257.7	191.2	208.0	48.0	165.0
TOTAL				258.0	191.0	256.0	165.0	

LOCATION	MODIFIED URETHANE PAVEMENT MARKING - LINE 6"		GROOVING FOR RECESSED PAVEMENT MARKING 7"	RAISED REFLECTIVE PAVEMENT MARKER	RAISED REFLECTIVE PAVEMENT MARKER REMOVAL			
	WHITE	YELLOW						
	FOOT	FOOT						
US 67								
STA.	860+00.0	TO	863+39.1	678.2	80.0	758.2	4.0	4.0
STA. EQU	863+39.1	=	863+41.3					
STA.	863+41.3	TO	868+50.0	1017.4	130.0	1147.4	6.0	6.0
SUBTOTAL				1695.6	210.0	1905.6	10.0	10.0
TOTAL				1906.0		1906.0	10.0	10.0

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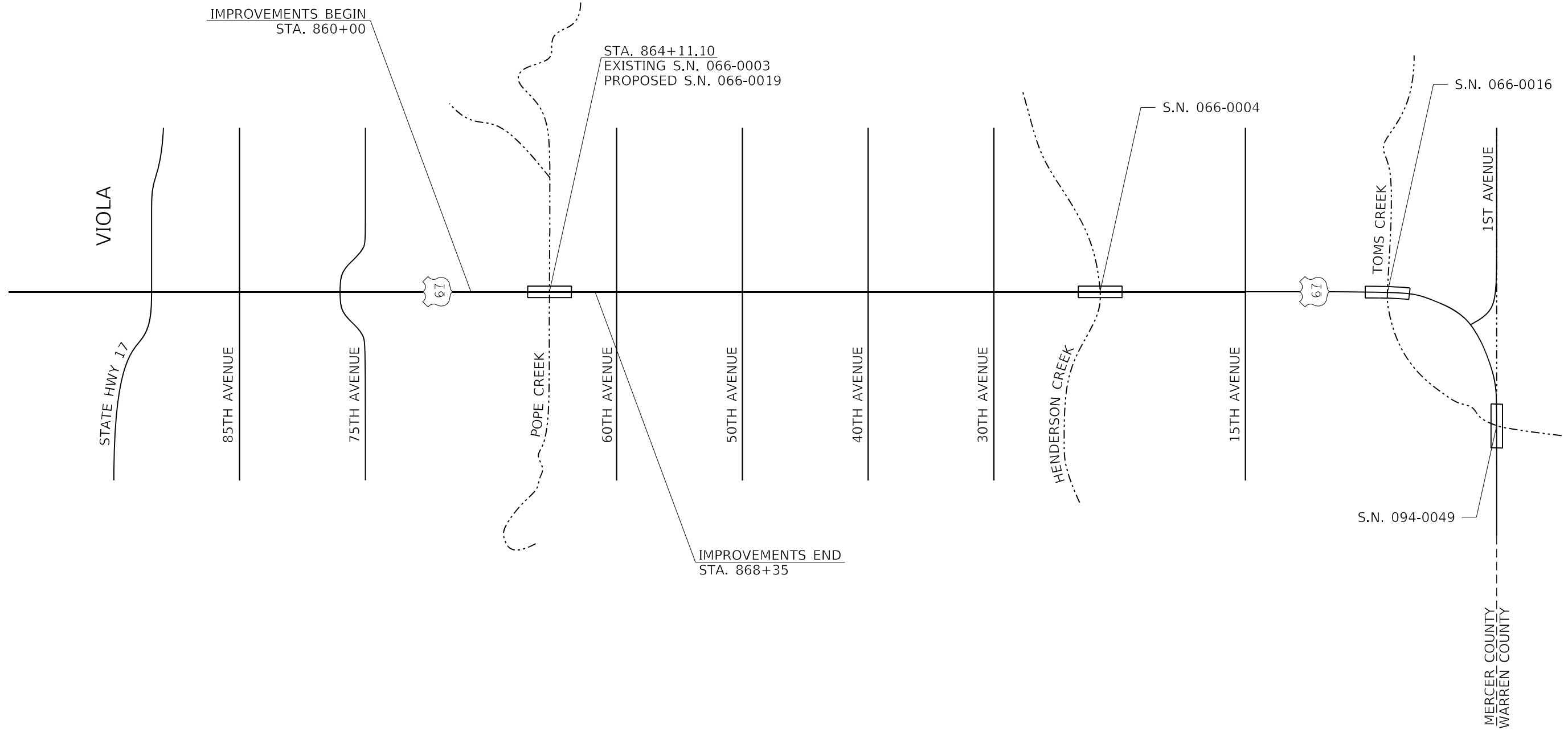
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

SCHEDULE OF QUANTITIES

SCALE: SHEET 3 OF 3 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	12
CONTRACT NO. 68804				
ILLINOIS FED. AID PROJECT				



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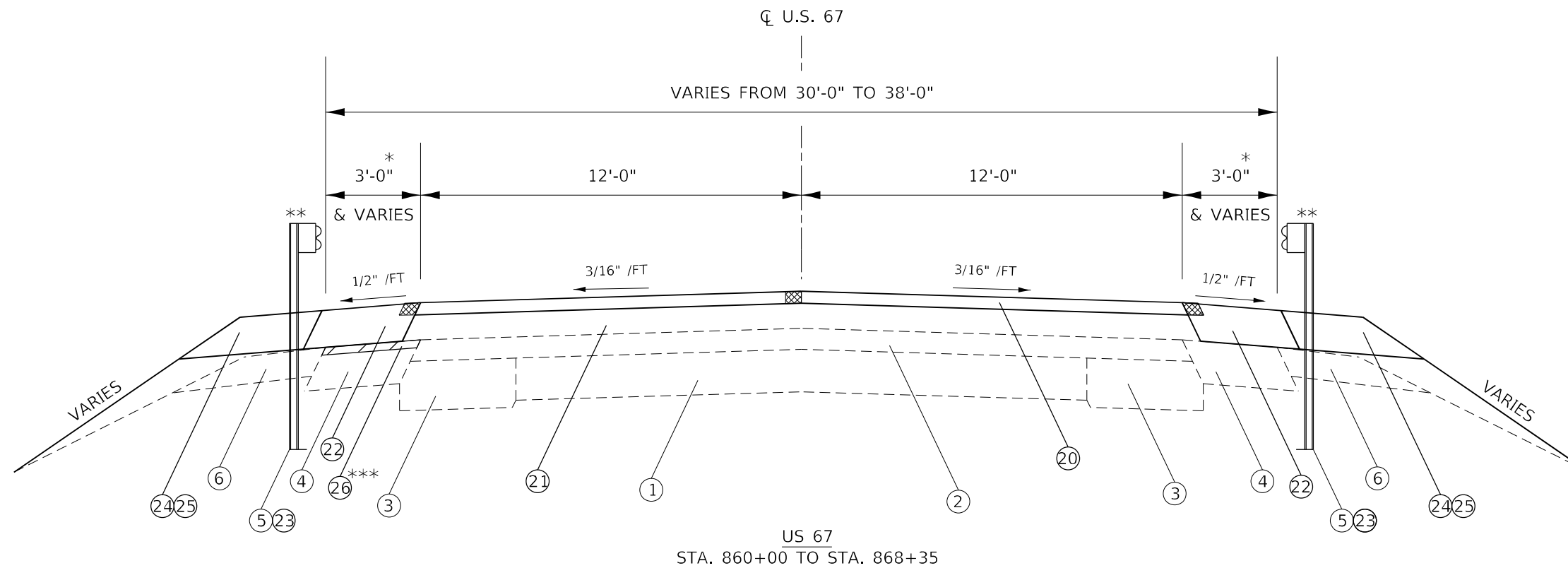
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

LINE DIAGRAM

SCALE: SHEET 1 OF 1 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	13
CONTRACT NO. 68804				
ILLINOIS FED. AID PROJECT				



US 67
STA. 860+00 TO STA. 868+35

(EXIST.) STRUCTURE OMISSION
STA. 863+61.1 TO STA. 864+61.1

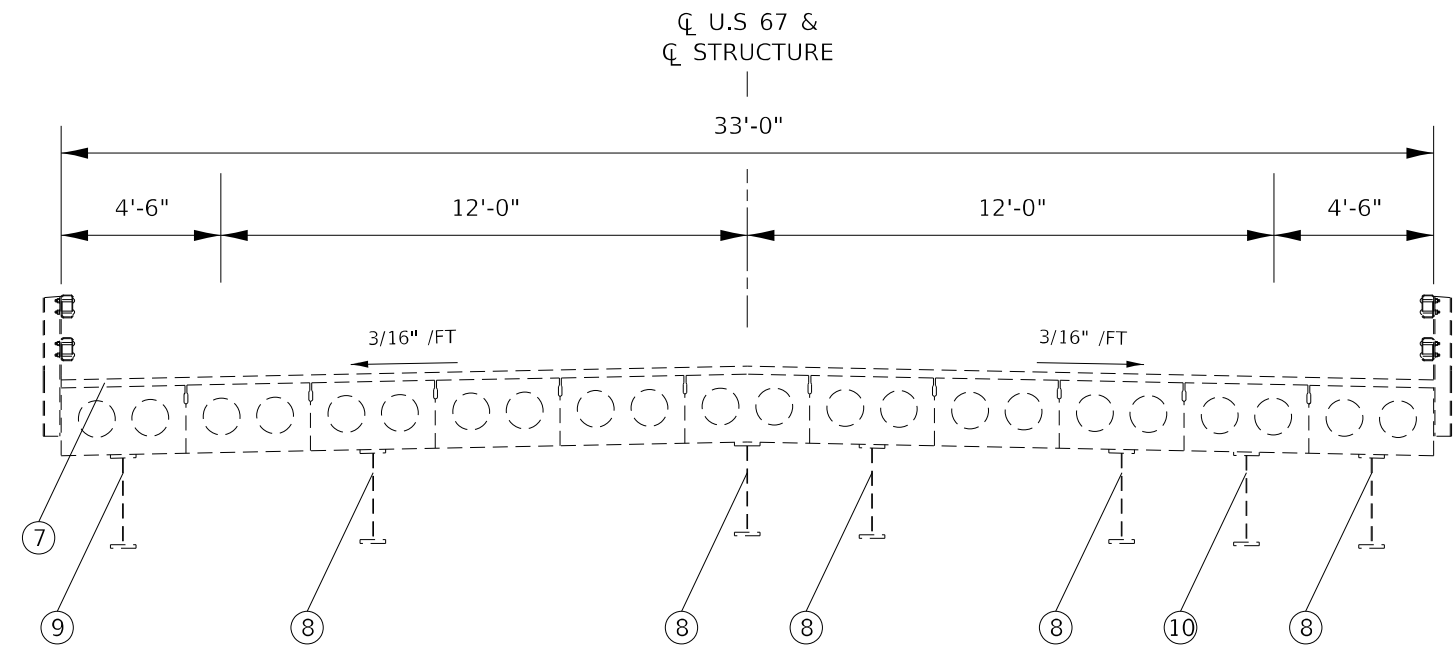
**EXISTING GUARDRAIL
RT. STA. 860+94 TO STA. 863+60
RT. STA. 864+60 TO STA. 866+36
LT. STA. 861+84 TO STA. 863+60
LT. STA. 864+60 TO STA. 867+26

*VARIABLE WIDTH SHOULDER FROM 3' TO 8'
RT. STA. 860+80 TO STA. 863+60
RT. STA. 864+60 TO STA. 866+50
LT. STA. 861+70 TO STA. 863+60
LT. STA. 864+60 TO STA. 867+40

▨ JOINT TRIMMING - 6" WIDE
(SEE SCHEDULES AND SPECIAL PROVISION)

*** MILL AND RESURFACE SHOULDER
LT. STA. 862+98 TO STA. 863+39
LT. STA. 864+81 TO STA. 865+29

(SEE SCHEDULES FOR PROPOSED GUARDRAIL)



EXISTING SN 066-0003
STA. 863+61.1 TO STA. 864+61.1
(SEE STRUCTURE PLANS FOR PROPOSED BRIDGE)

NOT DRAWN TO SCALE

LEGEND	
EXISTING ITEMS	PROPOSED ITEMS
① EXIST. PCC PAVEMENT, 8 7/8"	⑳ HMA SURFACE, 1.5"
② EXIST. HMA OVERLAY, ± 9 3/4"	㉑ HMA BINDER (VARIABLE DEPTH)
③ EXIST. HMA WIDENING, 10"	㉒ HMA SHOULDERS (VARIABLE DETPH)
④ EXIST. HMA SHOULDERS, 8"	㉓ GUARDRAIL
⑤ EXIST. GUARDRAIL	㉔ GUARDRAIL AGGREGATE EROSION CONTROL
⑥ EXIST. AGGREGATE SHOULDER	㉕ AGGREGATE SHOULDERS, TYPE B
⑦ EXIST. CONCRETE OVERLAY, 5" MIN.	㉖ MILL AND RESURFACE SHOULDER, 2"
⑧ EXIST. STEEL BEAM, SPAN 1 ONLY	
⑨ EXIST. STEEL BEAM, SPAN 2 ONLY	
⑩ EXIST. STEEL BEAM, SPANS 1 AND 2	

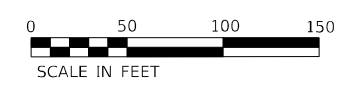
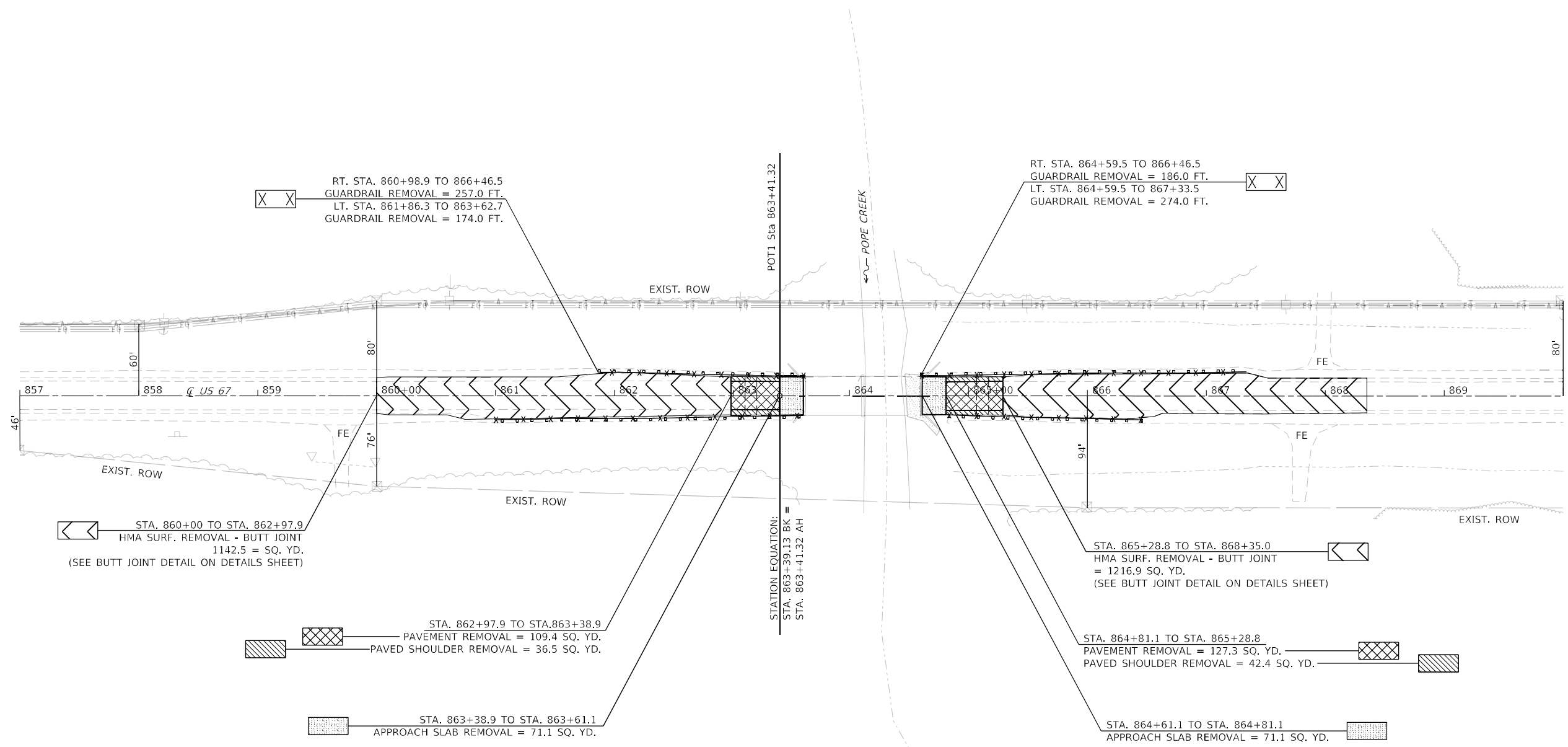
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	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS			
SCALE:	SHEET 1	OF 1 SHEETS	STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	14
CONTRACT NO. 68804				
ILLINOIS FED. AID PROJECT				



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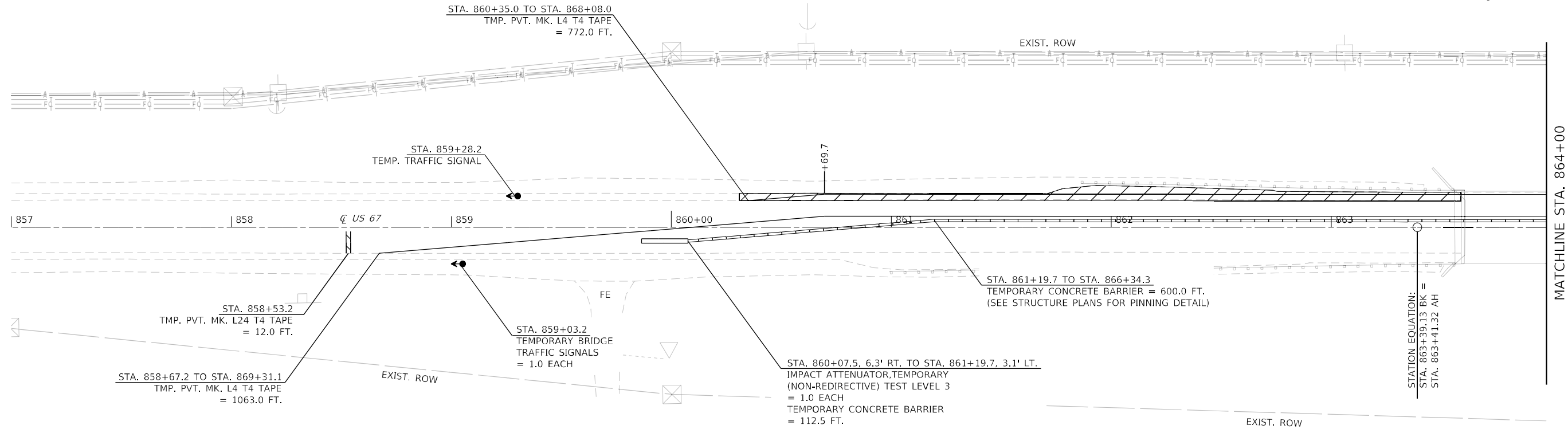
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	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

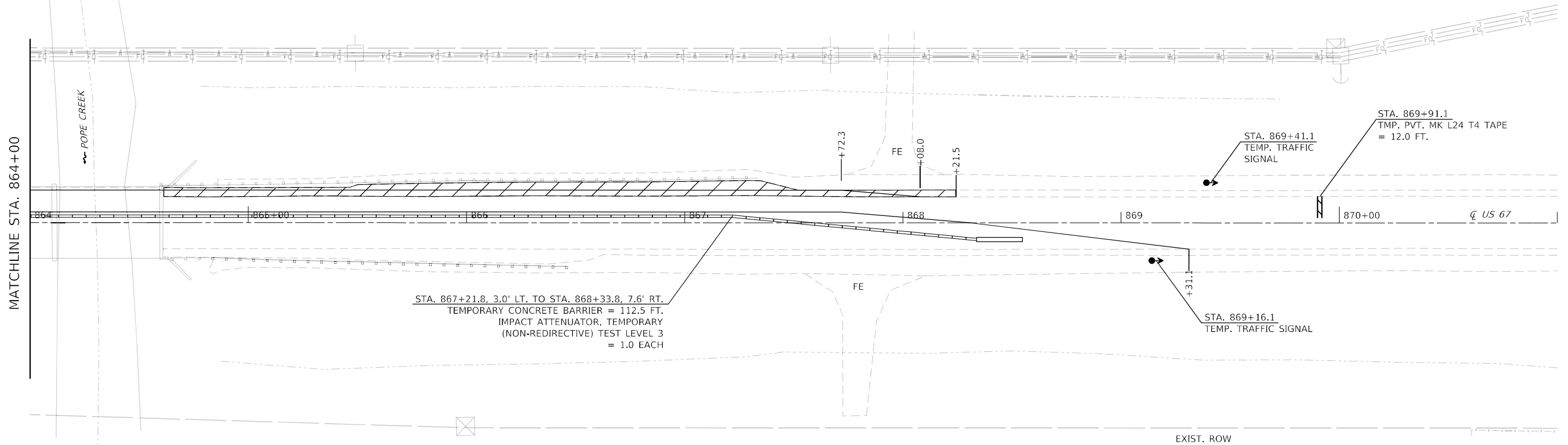
REMOVAL PLAN			
SCALE:	SHEET 1	OF 1	SHEETS
	STA.	TO STA.	

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	16
CONTRACT NO. 68804				
ILLINOIS FED. AID PROJECT				

HMA SURFACE REMOVAL, 2" = 156.5 SQ. YD.
HMA SHOULDERS = 17.5 TON



HMA SURFACE REMOVAL, 2" = 203.6 SQ. YD.
HMA SHOULDERS = 22.8 TON



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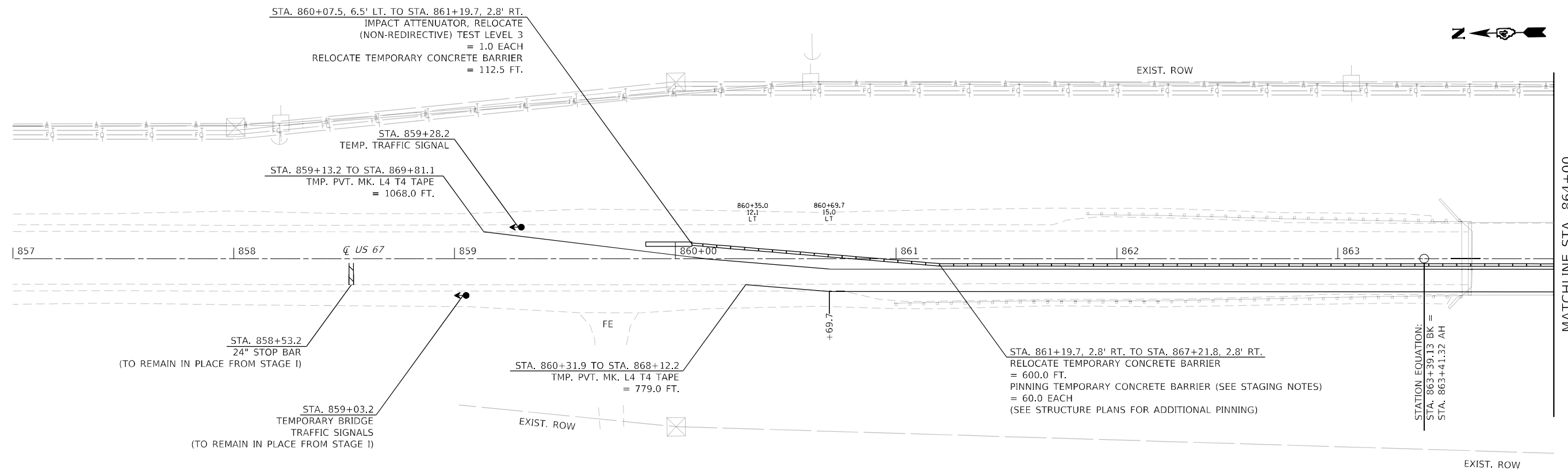
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

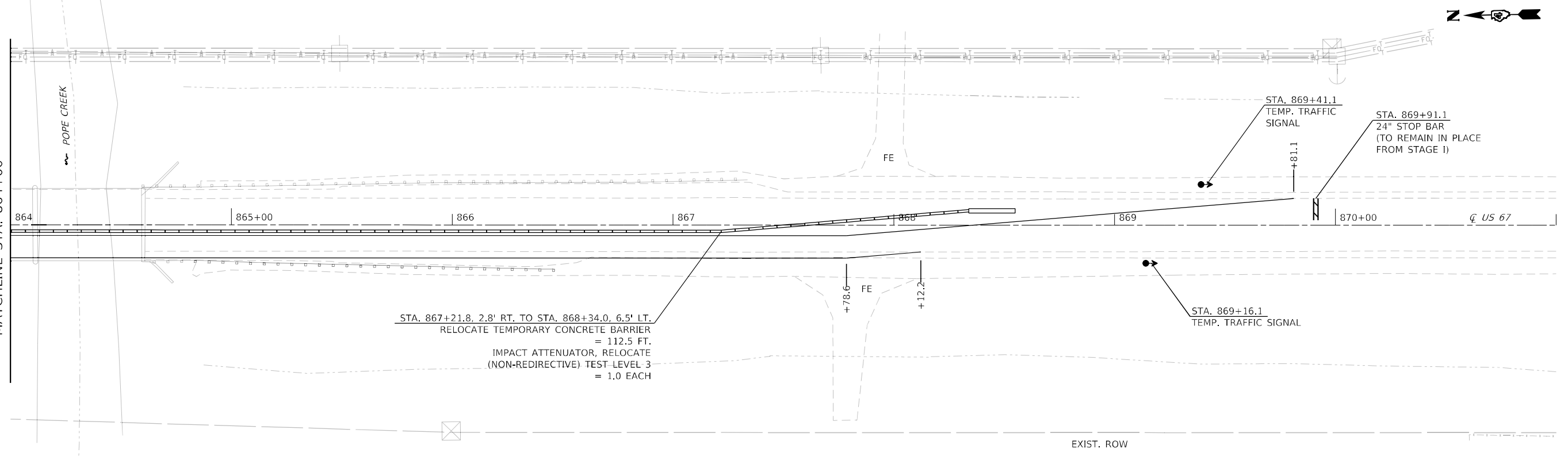
**TRAFFIC CONTROL
STAGE I**

SCALE: SHEET 2 OF 3 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	19
CONTRACT NO. 68804				
ILLINOIS FED. AID PROJECT				



MATCHLINE STA. 864+00



MATCHLINE STA. 864+00

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	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL
STAGE II

SCALE: SHEET 3 OF 3 SHEETS STA. TO STA.

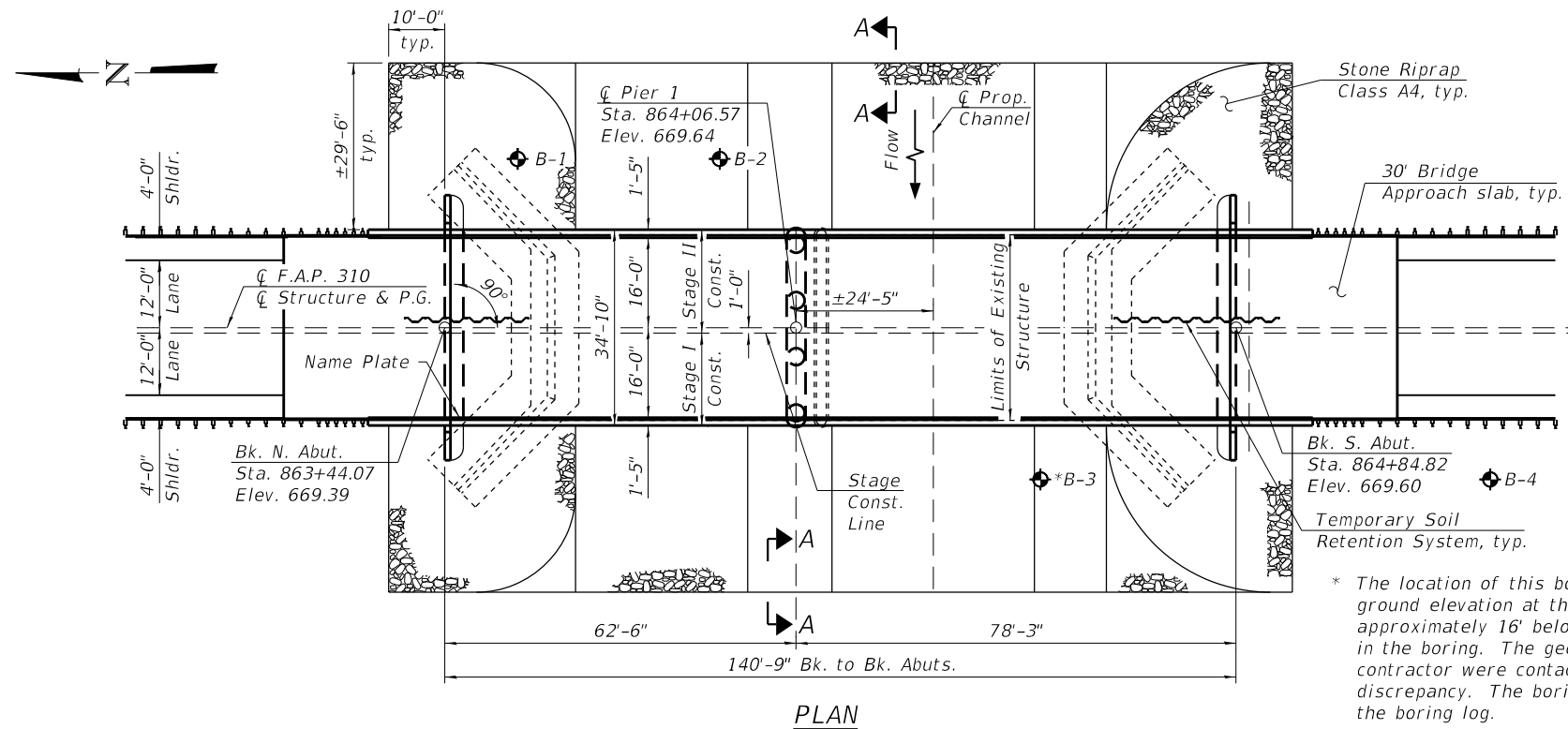
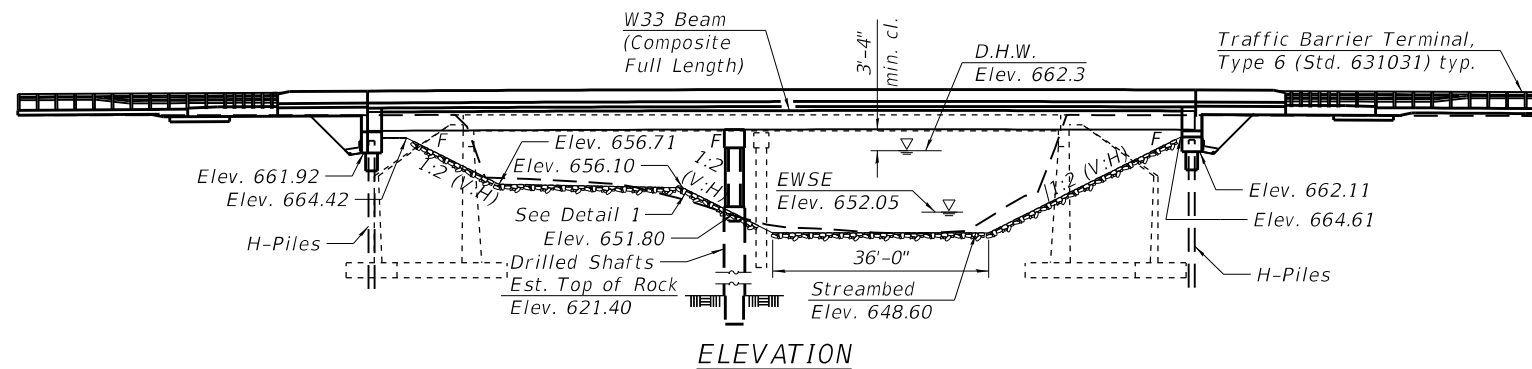
F.A.P. RTE. 310	SECTION (103)BR-1	COUNTY MERCER	TOTAL SHEETS 73	SHEET NO. 20
CONTRACT NO. 68804				
ILLINOIS FED. AID PROJECT				

Bench Mark: Railroad Spike in first utility pole north of Structure No. 066-0003, East side of roadway. Elev. 659.74 (NAVD 88).

Existing Structure: S.N. 066-0003, built in 1931, under construction Route SBI-85, US Rt. 67, Sec. 103-BR. The structure is a two span precast prestressed concrete structure that replaced the original steel truss. The total length of the structure is 103'-4" from back to back of abutments, and it has a width of 33'-0". In 1971, the original superstructure was removed, the abutments were modified and a center pier was added to support the PPC deck beams. In 2001, the deck beams and substructures were repaired and 7" reinforced concrete overlay was placed over the deck beams. In 2008, temporary support beams were installed in both spans. Existing temporary steel beams and supports to be delivered to the E. Peoria Yard. Existing structure to be removed. Traffic to be maintained using staged construction.

INDEX OF SHEETS

1. General Plan & Elevation
2. General Notes and Details
3. Temporary Soil Retention System
4. Typical Sections
5. Temporary Concrete Barrier
- 6.-8. Top of Slab Elevations
- 9.-10. Top of Approach Slab Elevations
- 11.-12. Superstructure Details
13. Diaphragm Details
14. Concrete Parapet Slipforming Option
- 15.-16. Approach Slab Details
17. Structural Steel
18. Structural Steel Details
19. Bearing Details
20. North Abutment
21. South Abutment
22. Pier 1
23. Steel H-Pile Details
24. Bar Splicer Assembly Details
- 25.-28. Boring Logs



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

DESIGN SPECIFICATIONS
2020 AASHTO LRFD Bridge Design Specifications, 9th Edition

DESIGN STRESSES

FIELD UNITS
 $f'_c = 4,000$ psi (Superstructure)
 $f'_c = 3,500$ psi (Substructure)
 $f_y = 60,000$ psi (Reinforcement)
 $f_y = 50,000$ psi (M270 Grade 50)

SEISMIC DATA

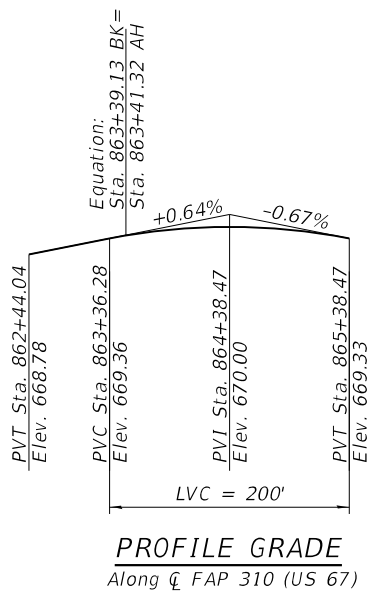
Seismic Performance Zone (SPZ) = 1
 Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.094g
 Design Spectral Acceleration at 0.2 sec. (S_{D5}) = 0.137g
 Soil Site Class = D

STATION 864+14.45
 BUILT 202_ BY
 STATE OF ILLINOIS
 F.A.P. RT 310 - SEC (103)BR-1
 LOADING HL-93
 STRUCTURE NO. 066-0019

NAME PLATE
See Std. 515001

DESIGN SCOUR ELEVATION TABLE

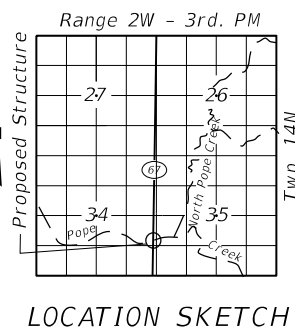
Event / Limit	Design Scour Elevations (ft.)				Item 113
	State	N. Abut.	Pier	S. Abut.	
Q100	661.92	620.59	662.11		5
Q200	661.92	620.02	662.11		
Design	661.92	620.59	662.11		
Check	661.92	620.02	662.11		



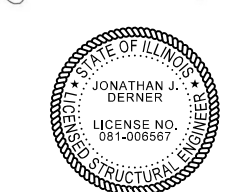
WATERWAY INFORMATION

Drainage Area = 88.8 Sq. Mi. Low Grade Elev. 668.0 @ Sta. 867+00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.		Head - Ft.		Headwater El	
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	Exist.	Prop.
Design	10	4670	816	892	661.3	662.3	1.3	1.2	662.6	662.5
Base	50	6940	914	1007	662.3	664.3	2.2	2.0	664.5	664.3
Scour Design Check	100	7960	944	1042	662.6	665.1	2.5	2.3	665.1	664.9
Overtop Existing	200	8980	983	1090	663.0	665.9	2.9	2.7	665.9	665.7
Overtop Proposed	NA									
Max. Calc.	500	10300	1022	1138	663.4	666.9	3.5	3.2	666.9	666.6



APPROVED
For Structural Adequacy Only
Jonathan J. Derner
Engineer of Bridges & Structures



Jon Derner 2023.06.23
Expires 11/30/2024

GENERAL PLAN & ELEVATION
US 67 OVER POPE CREEK
 F.A.P. RTE 310 - SECTION (103)BR-1
 MERCER COUNTY
 STATION 864+14.45
 STRUCTURE NO. 066-0019

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
STRUCTURE NO. 066-0019

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	21
CONTRACT NO. 68804				

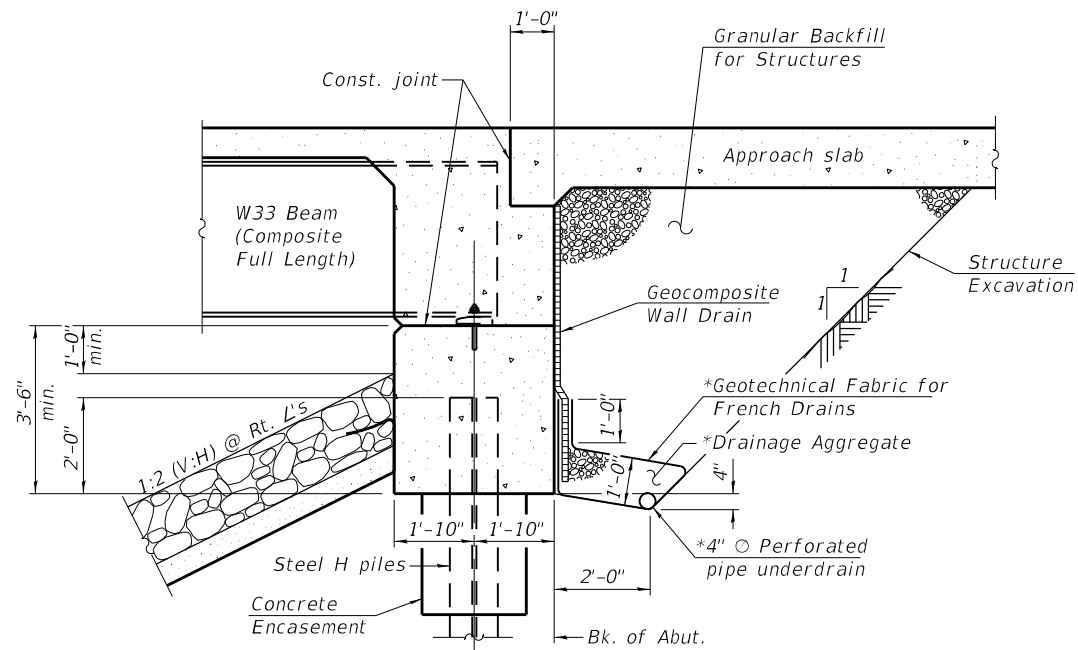
SHEET 1 OF 28 SHEETS

ILLINOIS FED. AID PROJECT

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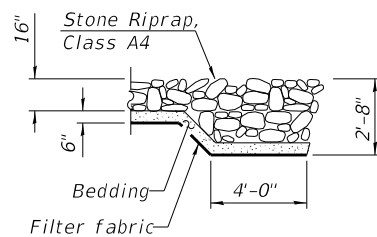
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JJD	JJD	JJD
CAB	CAB	CAB
JJD	JJD	JJD



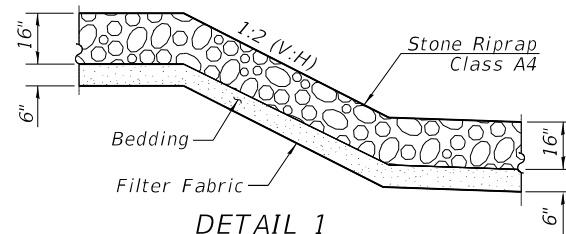
SECTION THRU INTEGRAL ABUTMENT
(Horiz. dim. @ Rt. L's)

*Included in the cost of Pipe Underdrains for Structures.

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



SECTION A-A



DETAIL 1
N.T.S.

GENERAL NOTES

Fasteners shall be ASTM F 3125 Grade A325 Type 1. Fasteners shall be hot dip galvanized. See Special Provisions for "Hot Dip Galvanizing for Structural Steel". Bolts 7/8 in. diameter, holes 15/16 in. diameter, unless otherwise noted.

Calculated weight of Structural Steel = 167,180 lbs.

All structural steel shall be AASHTO M 270 Grade 50 and shall be galvanized. See Special Provisions for "Hot Dip Galvanizing for Structural Steel".

No field welding is permitted except as specified in the contract documents.

Reinforcement bars designated (E) shall be epoxy coated.

Load carrying components designated "CVN" shall conform to the Charpy-V-Notch Impact Testing Requirement, Zone 2.

Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8 in. (0.01ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.

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

The Contractor is advised that the existing Precast Prestressed Concrete Deck Beams are in a deteriorated condition with reduced load carrying capacity. It is the Contractor's responsibility to account for the condition of the beams when developing construction procedures for removal of the superstructure.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Stone Riprap, Class A4	Sq. Yd.		1,584	1,584
Filter Fabric	Sq. Yd.		1,584	1,584
Removal of Existing Structures	Each			1
Structure Excavation	Cu. Yd.		170	170
Concrete Structures	Cu. Yd.		103.8	103.8
Concrete Superstructure	Cu. Yd.	203.4		203.4
Bridge Deck Grooving	Sq. Yd.	663		663
Concrete Encasement	Cu. Yd.		4.2	4.2
Protective Coat	Sq. Yd.	868		868
Concrete Superstructure (Approach Slab)	Cu. Yd.	94.6		94.6
Furnishing and Erecting Structural Steel	L. Sum	1		1
Stud Shear Connectors	Each	3,006		3,006
Reinforcement Bars	Pound		14,250	14,250
Reinforcement Bars, Epoxy Coated	Pound	80,820	22,120	102,940
Bar Splicers	Each	649	224	873
Furnishing Steel Piles HP12x53	Foot		560	560
Driving Piles	Foot		560	560
Test Pile Steel HP12x53	Each		2	2
Name Plates	Each	1		1
Drilled Shaft in Soil	Cu. Yd.		46	46
Drilled Shaft in Rock	Cu. Yd.		16	16
Anchor Bolts, 1"	Each	24		24
Anchor Bolts, 1 1/4"	Each	12		12
Temporary Soil Retention System	Sq. Ft.		485	485
Granular Backfill for Structures	Cu. Yd.		88	88
Geocomposite Wall Drain	Sq. Yd.		48	48
Pipe Underdrains for Structures, 4"	Foot		130	130
Asbestos Bearing Pad Removal	Each	22		22
Crosshole Sonic Logging Access Ducts	Foot		187	187
Crosshole Sonic Logging Testing	Each		4	4

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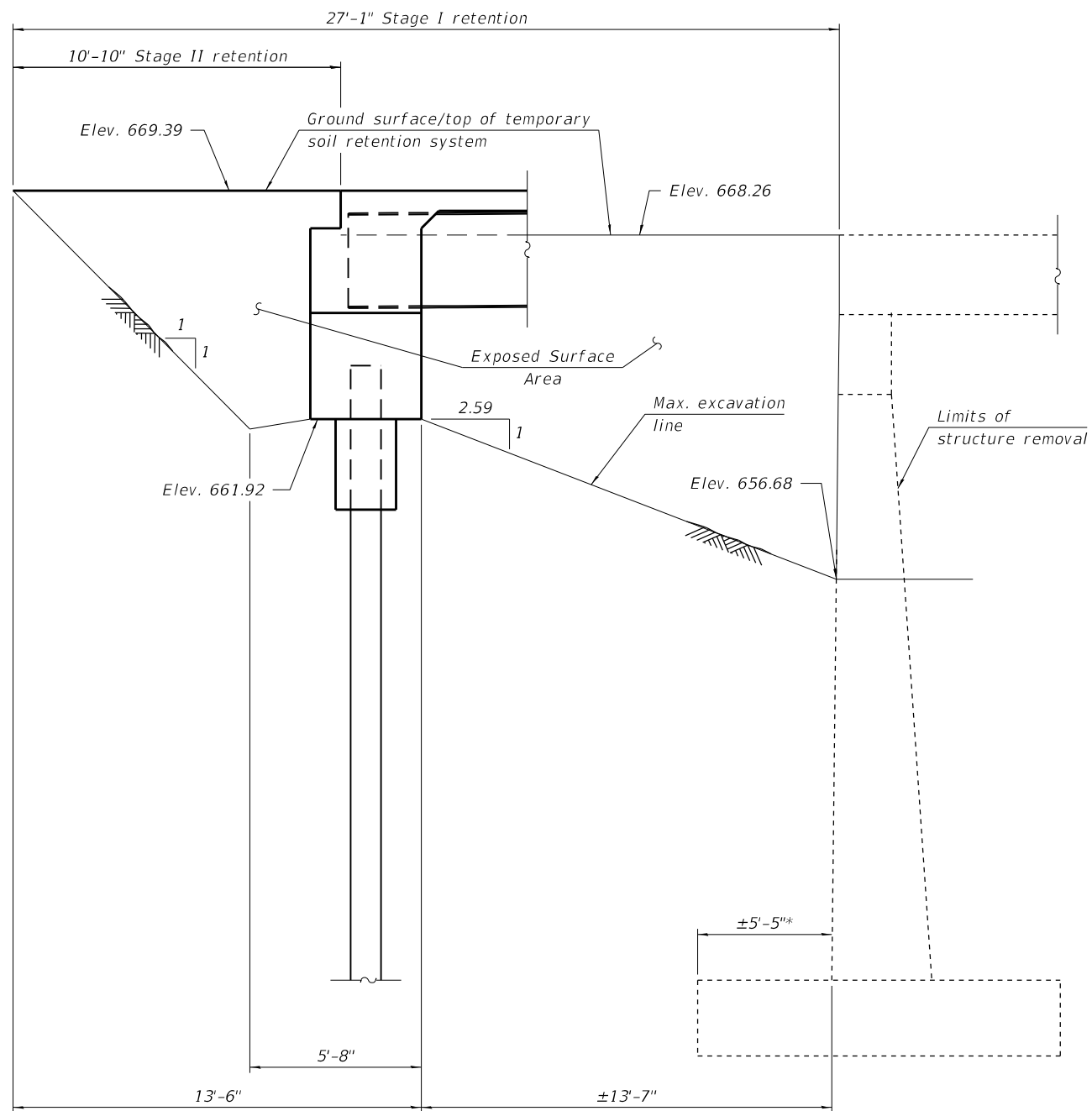
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

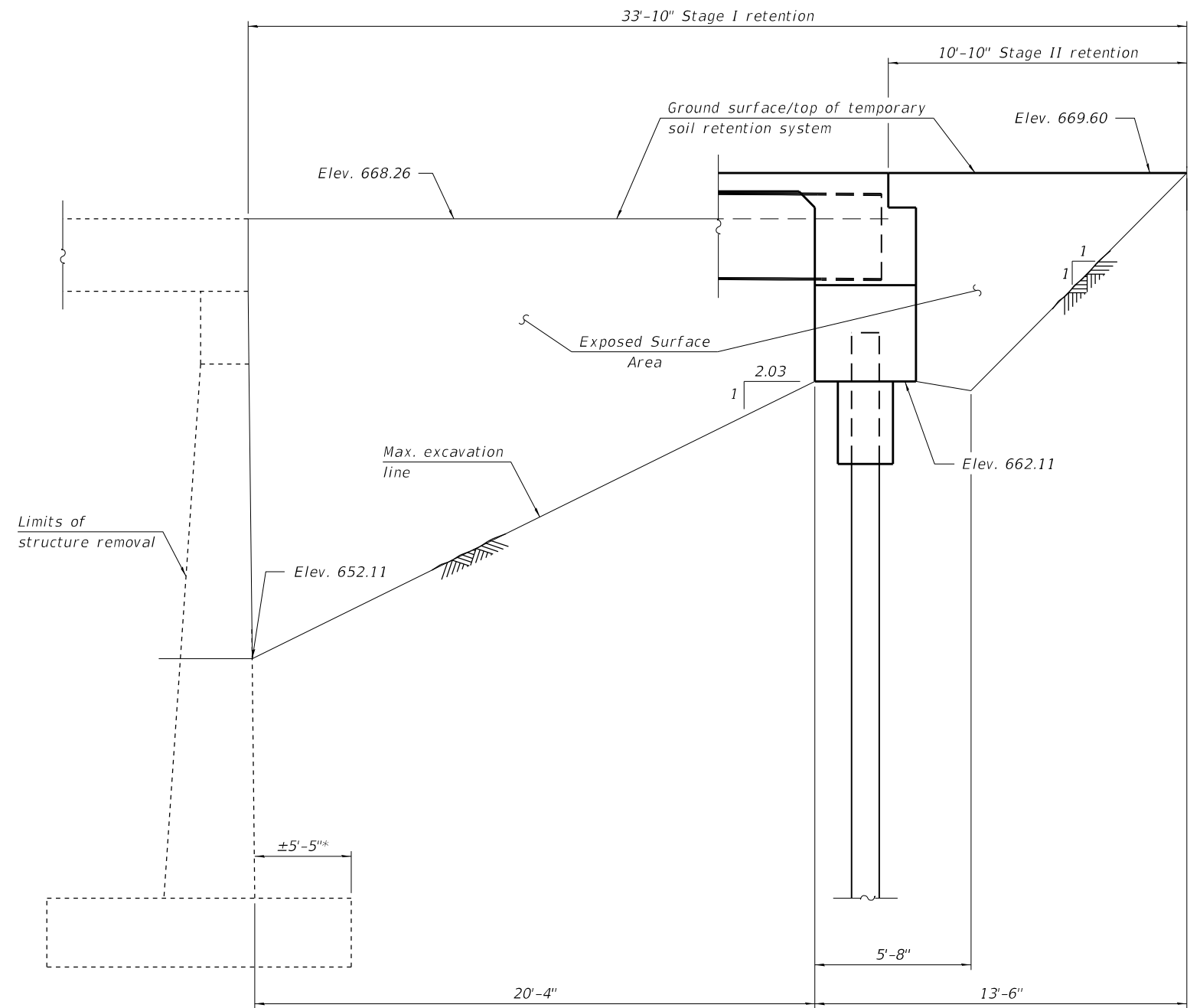
GENERAL NOTES AND DETAILS
STRUCTURE NO. 066-0019

SHEET 2 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	22
			CONTRACT NO. 68804	
ILLINOIS FED. AID PROJECT				



**TEMPORARY SOIL RETENTION SYSTEM
AT NORTH ABUTMENT**



**TEMPORARY SOIL RETENTION SYSTEM
AT SOUTH ABUTMENT**

* Determined from existing plans and survey data.
It is the Contractor's responsibility to verify existing footing dimensions and elevations.

Note:
A cantilevered sheet piling design does not appear feasible and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan details and calculations for review and acceptance by the Engineer.

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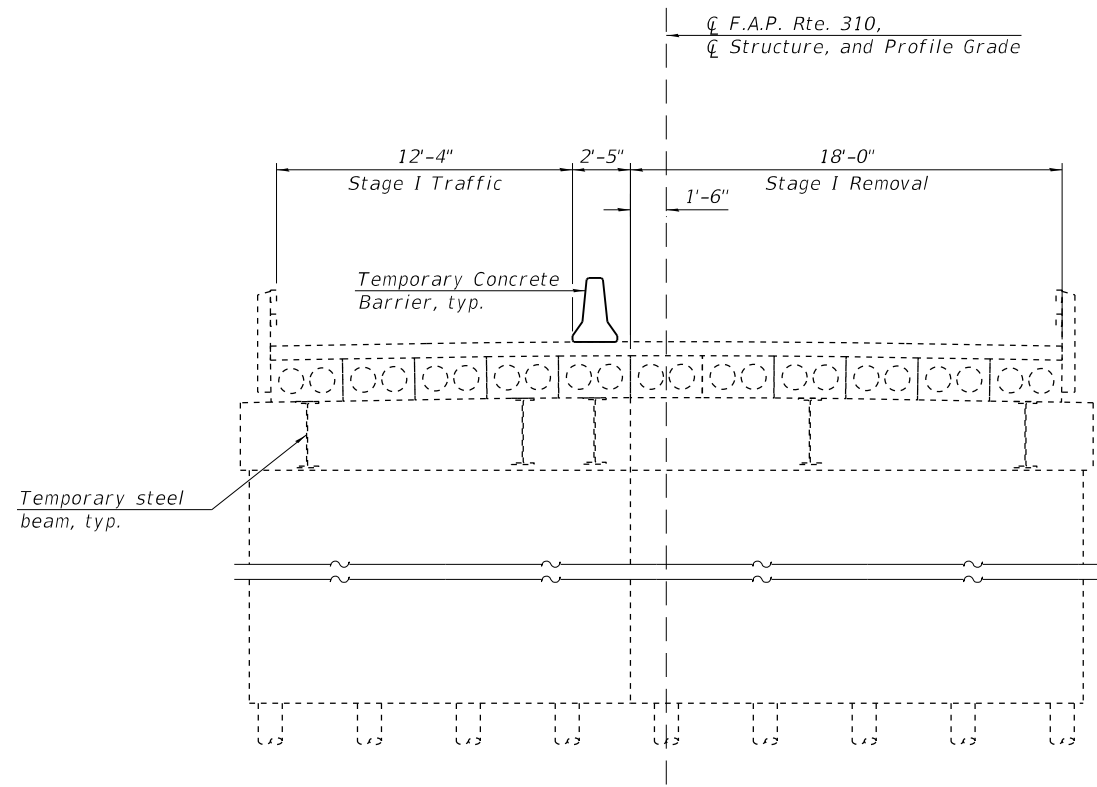
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

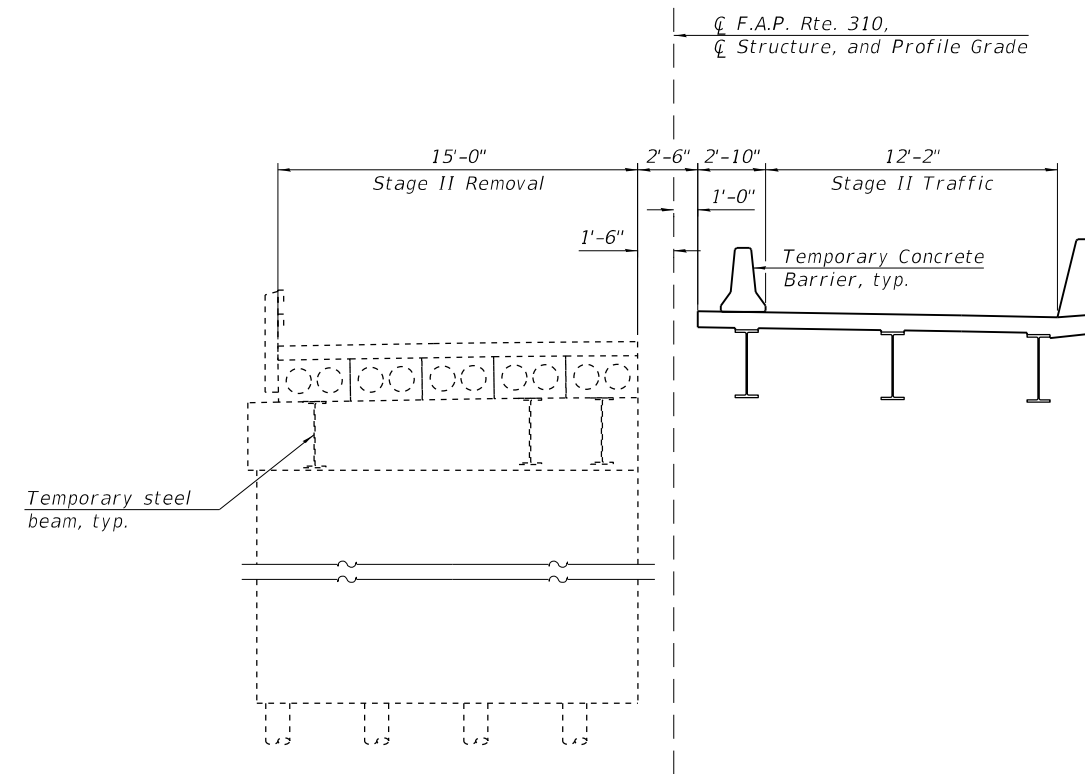
**TEMPORARY SOIL RETENTION SYSTEM
STRUCTURE NO. 066-0019**

SHEET 3 OF 28 SHEETS

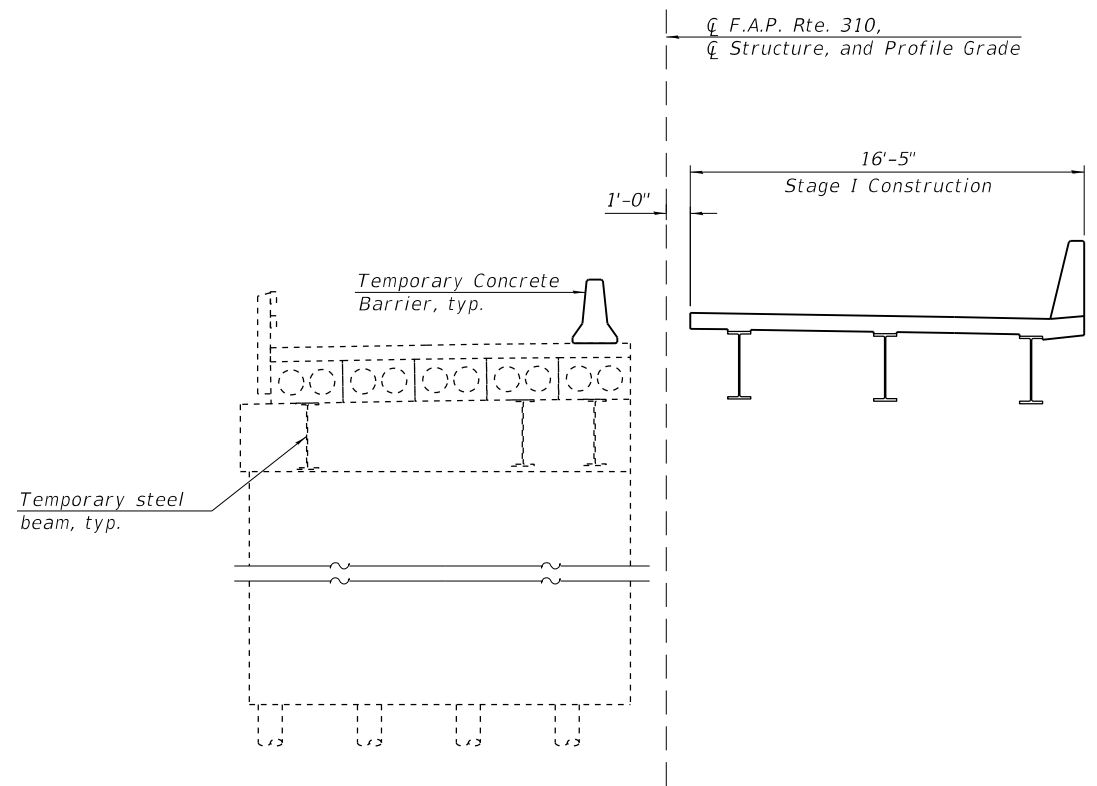
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310	(103)BR-1	MERCER	73	23
CONTRACT NO. 68804				
ILLINOIS FED. AID PROJECT				



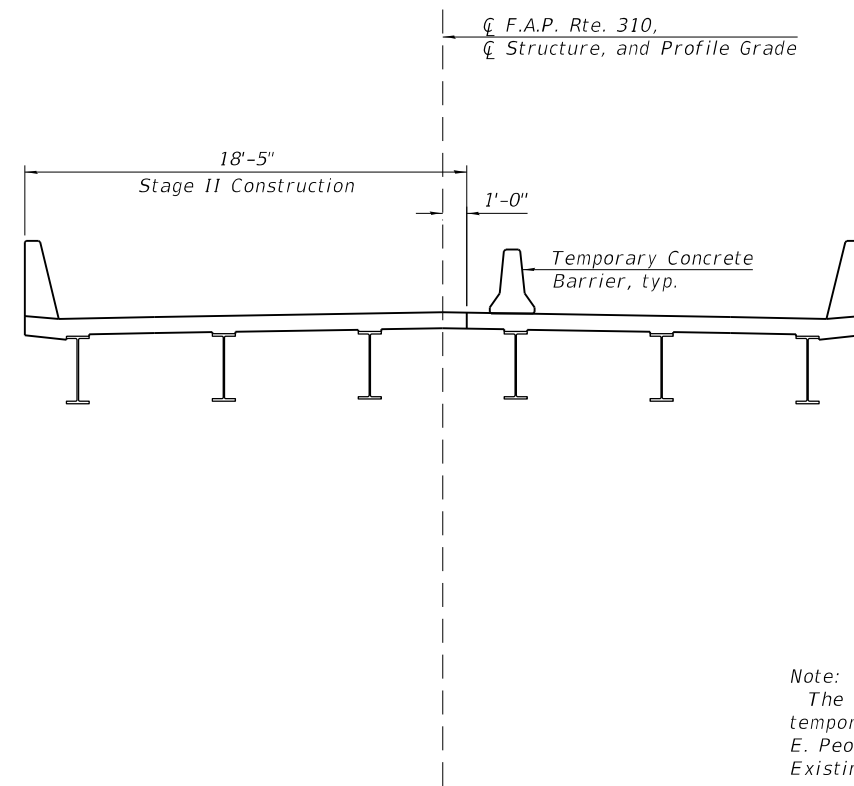
STAGE I REMOVAL
(Looking South)



STAGE II REMOVAL
(Looking South)



STAGE I CONSTRUCTION
(Looking South)



STAGE II CONSTRUCTION
(Looking South)

Note:
The cost of salvage and delivery of the temporary steel beams and supports to the E. Peoria Yard is included with Removal of Existing Structures.

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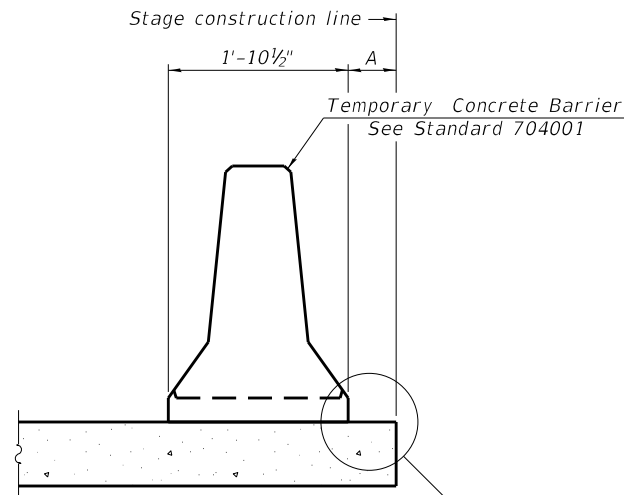
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS
STRUCTURE NO. 066-0019

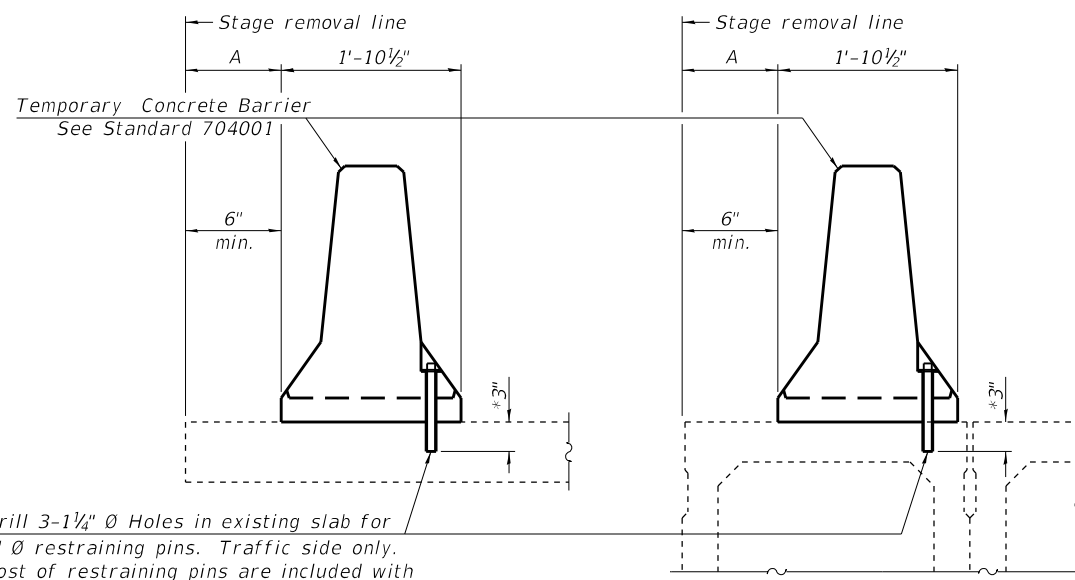
SHEET 4 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	24
ILLINOIS FED. AID PROJECT			CONTRACT NO. 68804	



When "A" is 3'-1" or less, the temporary concrete barrier shall be restrained to the new slab according to Detail I, II or III. No restraint is required when "A" is greater than 3'-1".

NEW SLAB OR NEW DECK BEAM

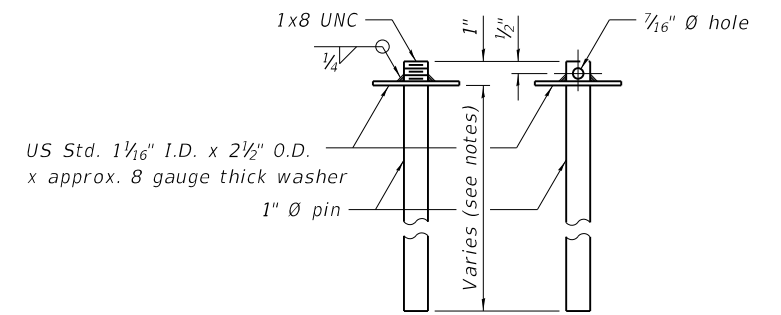


Drill 3-1/4" Ø Holes in existing slab for 1" Ø restraining pins. Traffic side only. Cost of restraining pins are included with Temporary Concrete Barrier. No restraint is required when "A" is greater than 3'-1".

EXISTING SLAB

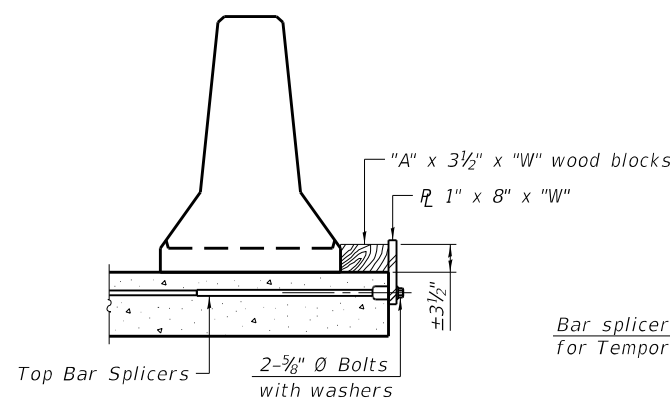
* When hot-mix asphalt wearing surface is present, embedment shall be 3" plus the wearing surface depth.

EXISTING DECK BEAM

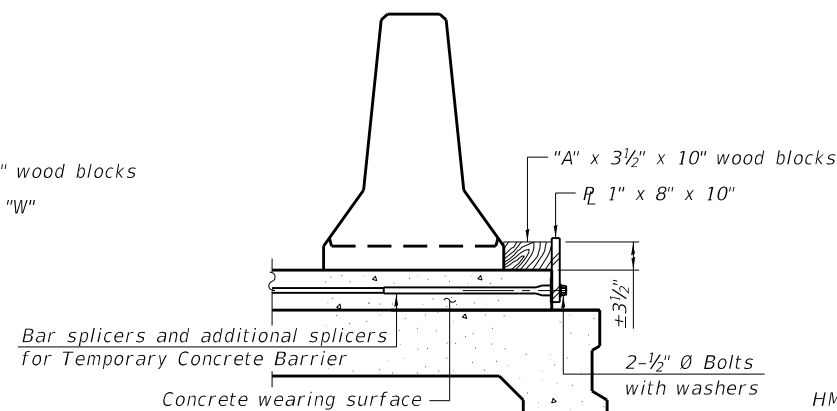


RESTRAINING PIN

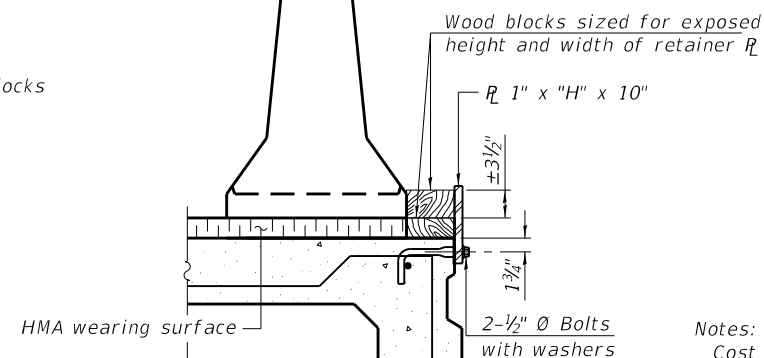
SECTIONS THRU SLAB OR DECK BEAM



DETAIL I

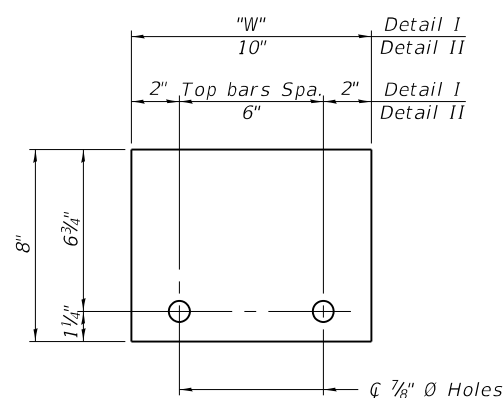


DETAIL II

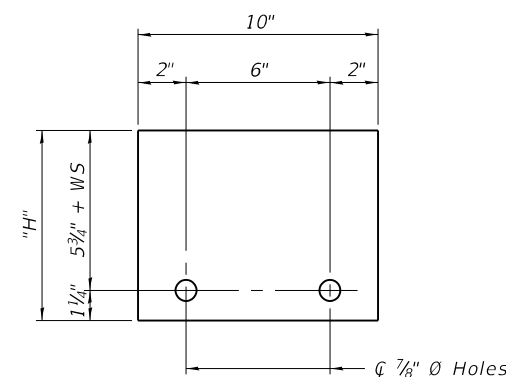


DETAIL III

BAR SPLICER FOR #4 BAR - DETAIL III



STEEL RETAINER R 1" x 8" x "W" (Detail I and II)



STEEL RETAINER R 1" x "H" x 10" (Detail III)

Notes:
 Cost of retainer assembly is included with Temporary Concrete Barrier.
 A retainer assembly shall be located at the approximate \bar{C} of each temporary concrete barrier.
 The retainer plate shall not be removed until the concrete on the adjacent stage is ready to be poured. For Detail III applications the retainer plate shall not be removed until just prior to placing the adjacent beam.
 When the 'A' dimension is less than 1 1/2", the wood block shall be omitted and the barrier shall be placed in direct contact with the steel retainer plate. For deck beam applications the minimum required 'A' distance is 6" to accommodate the shear key clamping device.

- Detail I - Installation for a new bridge deck or bridge slab.
- Detail II - Installation for a new deck beam with an initial concrete wearing surface. Additional bar splicers shall be provided at 6'-0" centers and paired with the bar splicers of the concrete wearing surface reinforcement to accommodate the installation of the retainer assemblies. The cost of the additional bar splicers is included with the concrete wearing surface.
- Detail III - Installation for a new deck beam with no initial wearing surface or with an initial hot-mix asphalt (HMA) wearing surface present. The deck beam directly beneath the temporary concrete barrier shall be fabricated with bar splicer inserts in the side of the beam, as detailed, to accommodate the installation of the retainer assemblies. A pair of bar splicers, 6" apart, shall be placed at 6'-0" centers along the length of the beam. The cost of the bar splicers is included with the deck beam.

RAILING CRITERIA

NCHRP 350 Test Level	3
Railing Weight (plf)	440

R-27 10-12-2021



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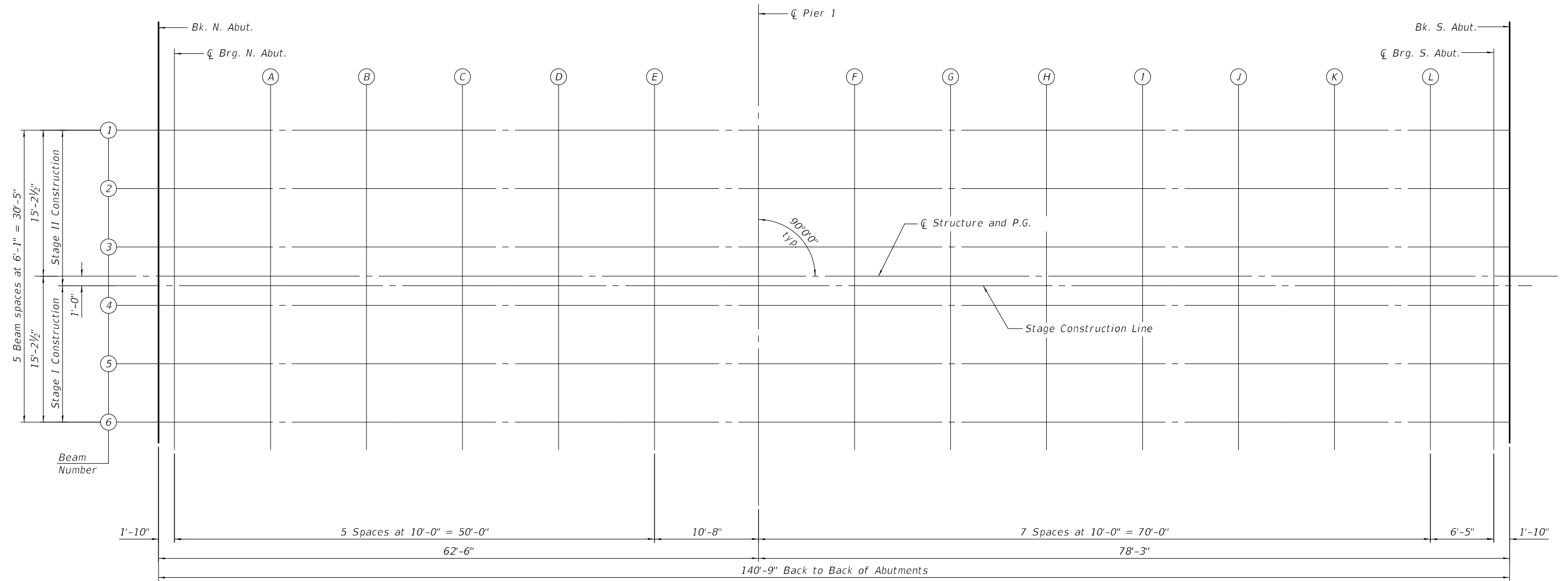
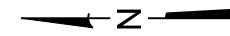
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE BARRIER
STRUCTURE NO. 066-0019

SHEET 5 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	25
CONTRACT NO. 68804				
ILLINOIS FED. AID PROJECT				

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**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**TOP OF SLAB ELEVATIONS
 STRUCTURE NO. 066-0019**

SHEET 6 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	26
CONTRACT NO. 68804			ILLINOIS FED. AID PROJECT	

BEAM 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	863+44.07	-15.21	669.15	669.15
☐ Brg. N. Abut.	863+45.90	-15.21	669.16	669.16
A	863+55.90	-15.21	669.22	669.23
B	863+65.90	-15.21	669.27	669.28
C	863+75.90	-15.21	669.31	669.32
D	863+85.90	-15.21	669.35	669.35
E	863+95.90	-15.21	669.38	669.37
☐ Pier 1	864+06.57	-15.21	669.40	669.40
F	864+16.57	-15.21	669.42	669.43
G	864+26.57	-15.21	669.43	669.47
H	864+36.57	-15.21	669.43	669.49
I	864+46.57	-15.21	669.42	669.50
J	864+56.57	-15.21	669.41	669.49
K	864+66.57	-15.21	669.40	669.45
L	864+76.57	-15.21	669.38	669.40
☐ Brg. S. Abut.	864+82.99	-15.21	669.36	669.36
Bk. S. Abut.	864+84.82	-15.21	669.35	669.35

BEAM 2

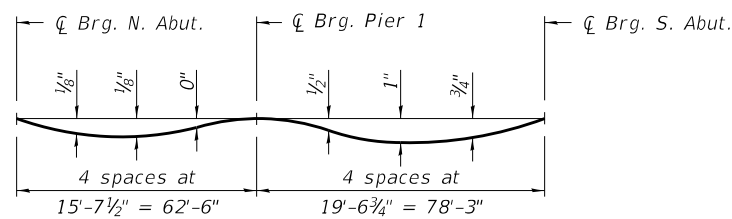
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	863+44.07	-9.13	669.26	669.26
☐ Brg. N. Abut.	863+45.90	-9.13	669.27	669.27
A	863+55.90	-9.13	669.32	669.34
B	863+65.90	-9.13	669.37	669.39
C	863+75.90	-9.13	669.42	669.43
D	863+85.90	-9.13	669.45	669.46
E	863+95.90	-9.13	669.48	669.48
☐ Pier 1	864+06.57	-9.13	669.51	669.51
F	864+16.57	-9.13	669.52	669.54
G	864+26.57	-9.13	669.53	669.58
H	864+36.57	-9.13	669.54	669.61
I	864+46.57	-9.13	669.53	669.62
J	864+56.57	-9.13	669.52	669.60
K	864+66.57	-9.13	669.51	669.56
L	864+76.57	-9.13	669.48	669.51
☐ Brg. S. Abut.	864+82.99	-9.13	669.46	669.46
Bk. S. Abut.	864+84.82	-9.13	669.46	669.46

BEAM 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	863+44.07	-3.04	669.35	669.35
☐ Brg. N. Abut.	863+45.90	-3.04	669.36	669.36
A	863+55.90	-3.04	669.42	669.43
B	863+65.90	-3.04	669.47	669.48
C	863+75.90	-3.04	669.51	669.52
D	863+85.90	-3.04	669.54	669.55
E	863+95.90	-3.04	669.57	669.57
☐ Pier 1	864+06.57	-3.04	669.60	669.60
F	864+16.57	-3.04	669.61	669.64
G	864+26.57	-3.04	669.62	669.67
H	864+36.57	-3.04	669.63	669.70
I	864+46.57	-3.04	669.62	669.71
J	864+56.57	-3.04	669.61	669.69
K	864+66.57	-3.04	669.60	669.66
L	864+76.57	-3.04	669.57	669.60
☐ Brg. S. Abut.	864+82.99	-3.04	669.56	669.56
Bk. S. Abut.	864+84.82	-3.04	669.55	669.55

☐ STRUCTURE AND P.G.

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	863+44.07	0.00	669.39	669.39
☐ Brg. N. Abut.	863+45.90	0.00	669.41	669.41
A	863+55.90	0.00	669.46	669.47
B	863+65.90	0.00	669.51	669.53
C	863+75.90	0.00	669.55	669.57
D	863+85.90	0.00	669.59	669.60
E	863+95.90	0.00	669.62	669.62
☐ Pier 1	864+06.57	0.00	669.64	669.64
F	864+16.57	0.00	669.66	669.68
G	864+26.57	0.00	669.67	669.72
H	864+36.57	0.00	669.67	669.74
I	864+46.57	0.00	669.67	669.75
J	864+56.57	0.00	669.66	669.74
K	864+66.57	0.00	669.64	669.70
L	864+76.57	0.00	669.62	669.64
☐ Brg. S. Abut.	864+82.99	0.00	669.60	669.60
Bk. S. Abut.	864+84.82	0.00	669.60	669.60

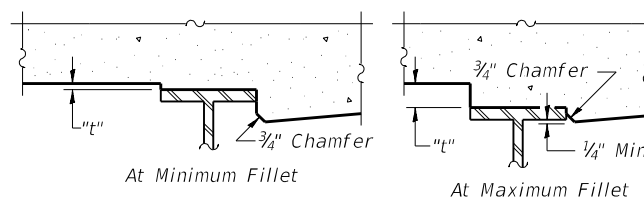


DEAD LOAD DEFLECTION DIAGRAM

(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 on sheets 7 and 8 of 28.



To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown on Sheet 6 of 28. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on sheets 7 and 8 of 28, minus slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS

Note:

All offsets are based off ☐ Structure and P.G. Negative offsets denote left of ☐ Structure and P.G. and positive offsets denote right of ☐ Structure and P.G.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS
STRUCTURE NO. 066-0019

SHEET 7 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	27
CONTRACT NO. 68804				
ILLINOIS FED. AID PROJECT				

STAGE CONSTRUCTION LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	863+44.07	1.00	669.38	669.38
☐ Brg. N. Abut.	863+45.90	1.00	669.39	669.39
A	863+55.90	1.00	669.45	669.46
B	863+65.90	1.00	669.50	669.51
C	863+75.90	1.00	669.54	669.55
D	863+85.90	1.00	669.57	669.58
E	863+95.90	1.00	669.60	669.60
☐ Pier 1	864+06.57	1.00	669.63	669.63
F	864+16.57	1.00	669.65	669.67
G	864+26.57	1.00	669.65	669.70
H	864+36.57	1.00	669.66	669.73
I	864+46.57	1.00	669.65	669.74
J	864+56.57	1.00	669.64	669.72
K	864+66.57	1.00	669.63	669.69
L	864+76.57	1.00	669.60	669.63
☐ Brg. S. Abut.	864+82.99	1.00	669.59	669.59
Bk. S. Abut.	864+84.82	1.00	669.58	669.58

BEAM 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	863+44.07	3.04	669.35	669.35
☐ Brg. N. Abut.	863+45.90	3.04	669.36	669.36
A	863+55.90	3.04	669.42	669.43
B	863+65.90	3.04	669.47	669.48
C	863+75.90	3.04	669.51	669.52
D	863+85.90	3.04	669.54	669.55
E	863+95.90	3.04	669.57	669.57
☐ Pier 1	864+06.57	3.04	669.60	669.60
F	864+16.57	3.04	669.61	669.64
G	864+26.57	3.04	669.62	669.67
H	864+36.57	3.04	669.63	669.70
I	864+46.57	3.04	669.62	669.71
J	864+56.57	3.04	669.61	669.69
K	864+66.57	3.04	669.60	669.66
L	864+76.57	3.04	669.57	669.60
☐ Brg. S. Abut.	864+82.99	3.04	669.56	669.56
Bk. S. Abut.	864+84.82	3.04	669.55	669.55

BEAM 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	863+44.07	9.13	669.26	669.26
☐ Brg. N. Abut.	863+45.90	9.13	669.27	669.27
A	863+55.90	9.13	669.32	669.34
B	863+65.90	9.13	669.37	669.39
C	863+75.90	9.13	669.42	669.43
D	863+85.90	9.13	669.45	669.46
E	863+95.90	9.13	669.48	669.48
☐ Pier 1	864+06.57	9.13	669.51	669.51
F	864+16.57	9.13	669.52	669.54
G	864+26.57	9.13	669.53	669.58
H	864+36.57	9.13	669.54	669.61
I	864+46.57	9.13	669.53	669.62
J	864+56.57	9.13	669.52	669.60
K	864+66.57	9.13	669.51	669.56
L	864+76.57	9.13	669.48	669.51
☐ Brg. S. Abut.	864+82.99	9.13	669.46	669.46
Bk. S. Abut.	864+84.82	9.13	669.46	669.46


BEAM 6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	863+44.07	15.21	669.15	669.15
☐ Brg. N. Abut.	863+45.90	15.21	669.16	669.16
A	863+55.90	15.21	669.22	669.23
B	863+65.90	15.21	669.27	669.28
C	863+75.90	15.21	669.31	669.32
D	863+85.90	15.21	669.35	669.35
E	863+95.90	15.21	669.38	669.37
☐ Pier 1	864+06.57	15.21	669.40	669.40
F	864+16.57	15.21	669.42	669.43
G	864+26.57	15.21	669.43	669.47
H	864+36.57	15.21	669.43	669.49
I	864+46.57	15.21	669.42	669.50
J	864+56.57	15.21	669.41	669.49
K	864+66.57	15.21	669.40	669.45
L	864+76.57	15.21	669.38	669.40
☐ Brg. S. Abut.	864+82.99	15.21	669.36	669.36
Bk. S. Abut.	864+84.82	15.21	669.35	669.35

Note:
 All offsets are based off ☐ Structure and P.G.
 Negative offsets denote left of ☐ Structure and P.G.
 and positive offsets denote right of ☐ Structure and P.G.

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 DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS
 STRUCTURE NO. 066-0019

SHEET 8 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	28
ILLINOIS FED. AID PROJECT			CONTRACT NO. 68804	

EAST EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
N. End of N. Appr. Slab	863+12.88	-16.00	668.95
A1	863+22.88	-16.00	669.01
A2	863+32.88	-16.00	669.08
S. End of N. Appr. Slab	863+45.07	-16.00	669.14

EAST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
N. End of N. Appr. Slab	863+12.88	-12.00	669.03
A1	863+22.88	-12.00	669.09
A2	863+32.88	-12.00	669.16
S. End of N. Appr. Slab	863+45.07	-12.00	669.22

☉ STRUCTURE AND P.G.

Location	Station	Offset	Theoretical Grade Elevations
N. End of N. Appr. Slab	863+12.88	0.00	669.21
A1	863+22.88	0.00	669.27
A2	863+32.88	0.00	669.34
S. End of N. Appr. Slab	863+45.07	0.00	669.40

STAGE CONSTRUCTION LINE

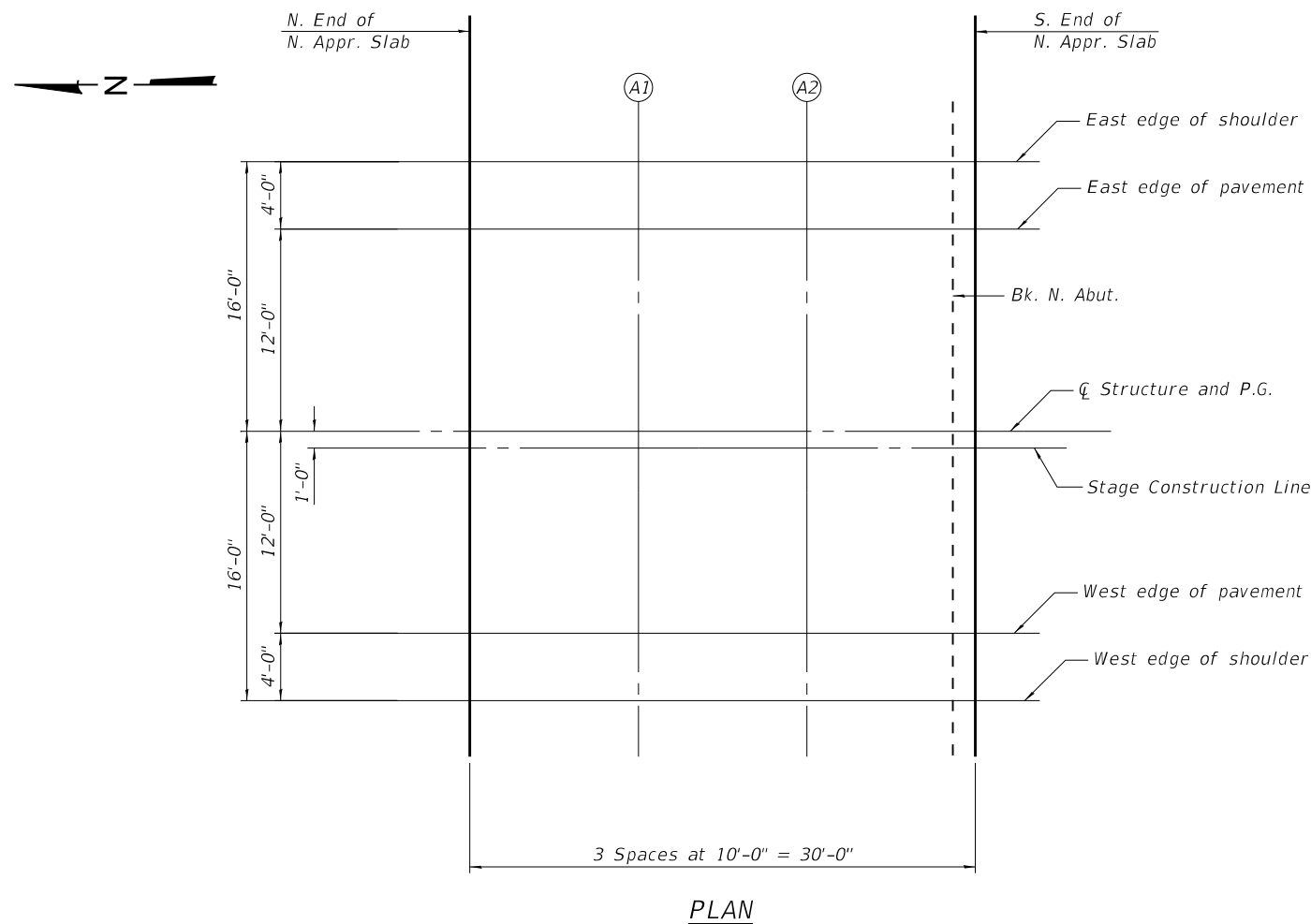
Location	Station	Offset	Theoretical Grade Elevations
N. End of N. Appr. Slab	863+12.88	1.00	669.20
A1	863+22.88	1.00	669.26
A2	863+32.88	1.00	669.32
S. End of N. Appr. Slab	863+45.07	1.00	669.39

WEST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
N. End of N. Appr. Slab	863+12.88	12.00	669.03
A1	863+22.88	12.00	669.09
A2	863+32.88	12.00	669.16
S. End of N. Appr. Slab	863+45.07	12.00	669.22

WEST EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
N. End of N. Appr. Slab	863+12.88	16.00	668.95
A1	863+22.88	16.00	669.01
A2	863+32.88	16.00	669.08
S. End of N. Appr. Slab	863+45.07	16.00	669.14



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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF NORTH APPROACH SLAB ELEVATIONS
STRUCTURE NO. 066-0019

SHEET 9 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	29
CONTRACT NO. 68804				
ILLINOIS FED. AID PROJECT				

EAST EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
N. End of S. Appr. Slab	864+83.82	-16.00	669.34
A3	864+93.82	-16.00	669.30
A4	865+03.82	-16.00	669.26
S. End of S. Appr. Slab	865+13.82	-16.00	669.22

EAST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
N. End of S. Appr. Slab	864+83.82	-12.00	669.42
A3	864+93.82	-12.00	669.38
A4	865+03.82	-12.00	669.34
S. End of S. Appr. Slab	865+13.82	-12.00	669.30

CL STRUCTURE AND P.G.

Location	Station	Offset	Theoretical Grade Elevations
N. End of S. Appr. Slab	864+83.82	0.00	669.60
A3	864+93.82	0.00	669.56
A4	865+03.82	0.00	669.52
S. End of S. Appr. Slab	865+13.82	0.00	669.48

STAGE CONSTRUCTION LINE

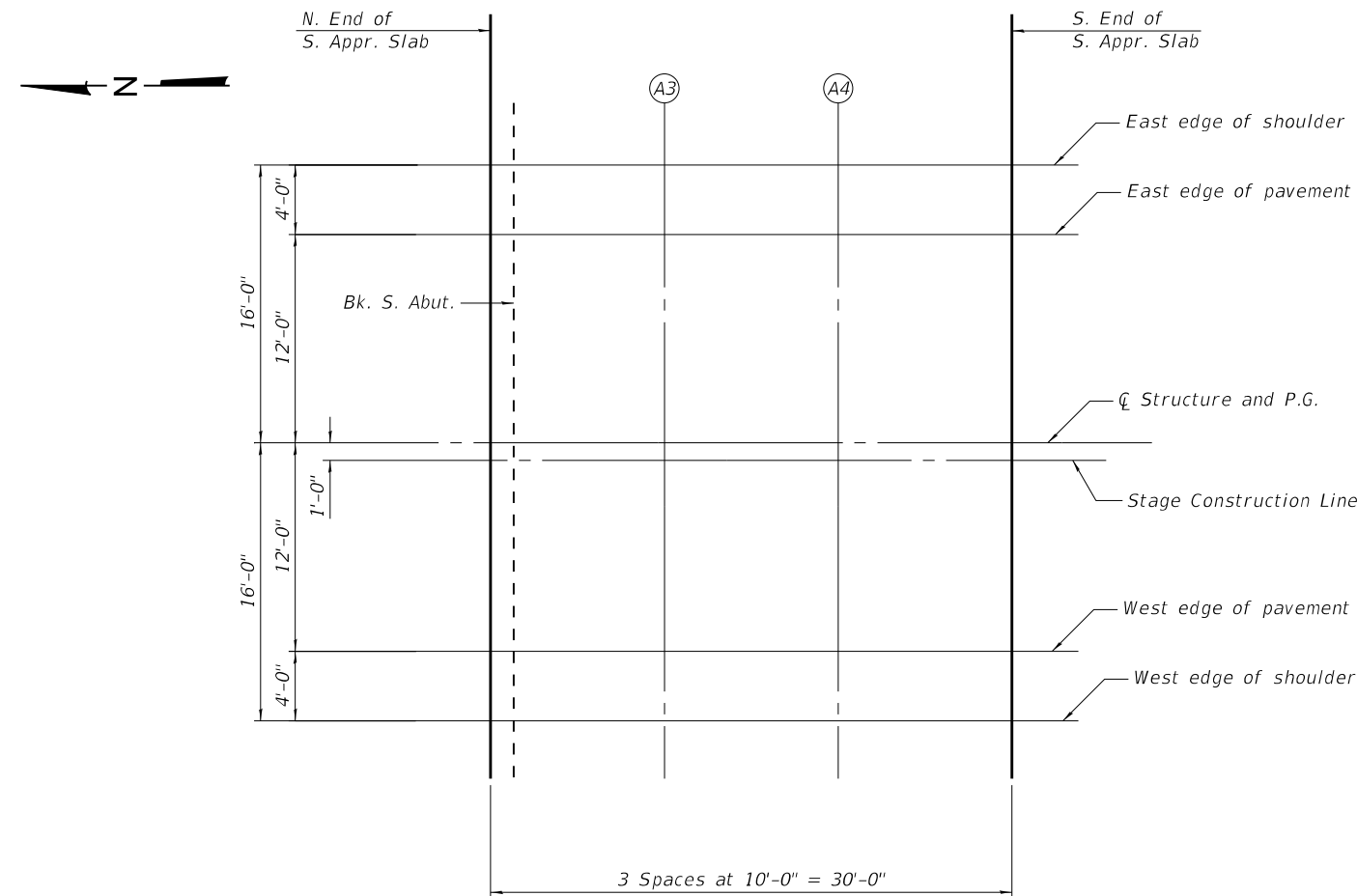
Location	Station	Offset	Theoretical Grade Elevations
N. End of S. Appr. Slab	864+83.82	1.00	669.58
A3	864+93.82	1.00	669.55
A4	865+03.82	1.00	669.51
S. End of S. Appr. Slab	865+13.82	1.00	669.46

WEST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
N. End of S. Appr. Slab	864+83.82	12.00	669.42
A3	864+93.82	12.00	669.38
A4	865+03.82	12.00	669.34
S. End of S. Appr. Slab	865+13.82	12.00	669.30

WEST EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
N. End of S. Appr. Slab	864+83.82	16.00	669.34
A3	864+93.82	16.00	669.30
A4	865+03.82	16.00	669.26
S. End of S. Appr. Slab	865+13.82	16.00	669.22



PLAN

E-AS

2-17-2017

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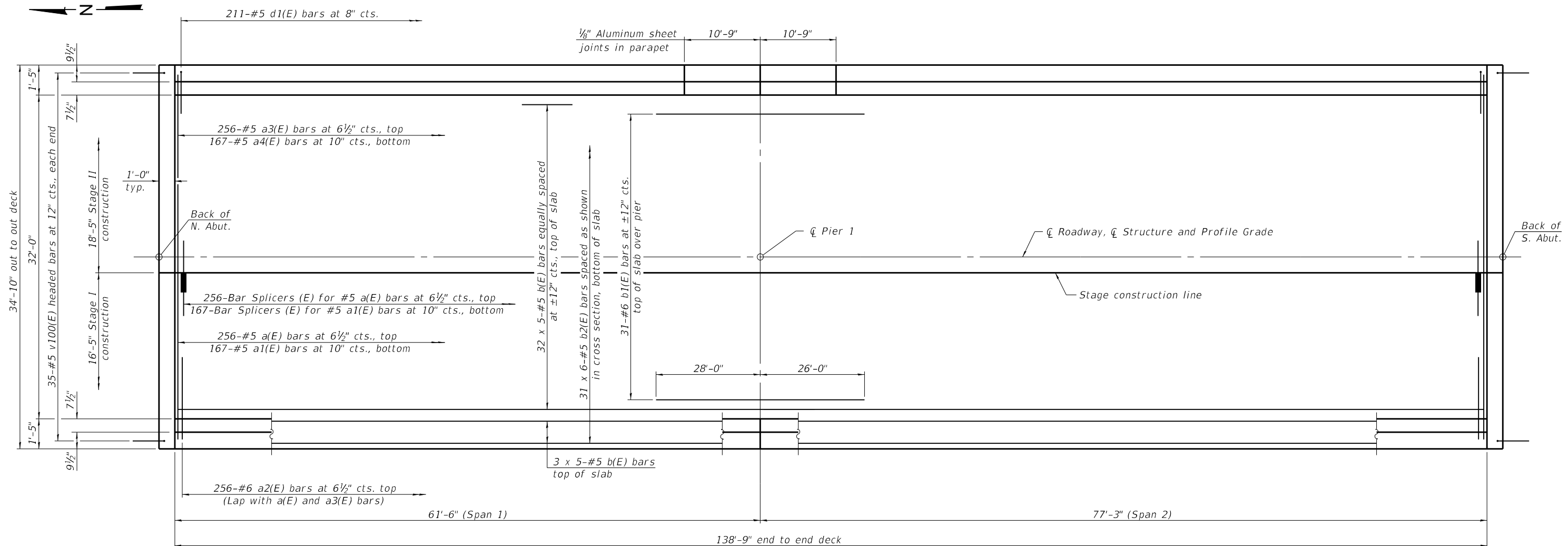
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	CHECKED - JJD	REVISED -
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PLOT DATE =	CHECKED - NHP	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SOUTH APPROACH SLAB ELEVATIONS
STRUCTURE NO. 066-0019

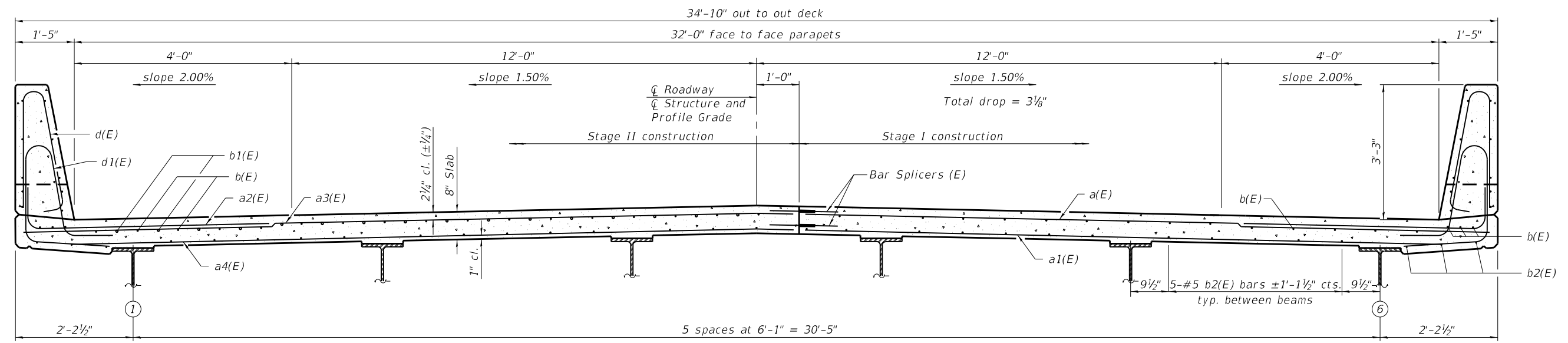
SHEET 10 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	30
CONTRACT NO. 68804				
ILLINOIS FED. AID PROJECT				



MINIMUM BAR LAP
#5 bar = 3'-6"

PLAN



CROSS SECTION
(Looking South)

Notes:
See sheet 12 of 28 for superstructure details and Bill of Material.
Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.

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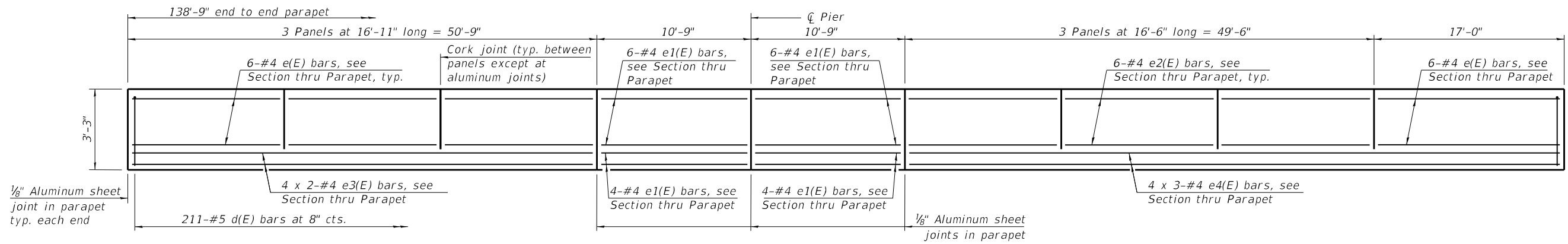
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

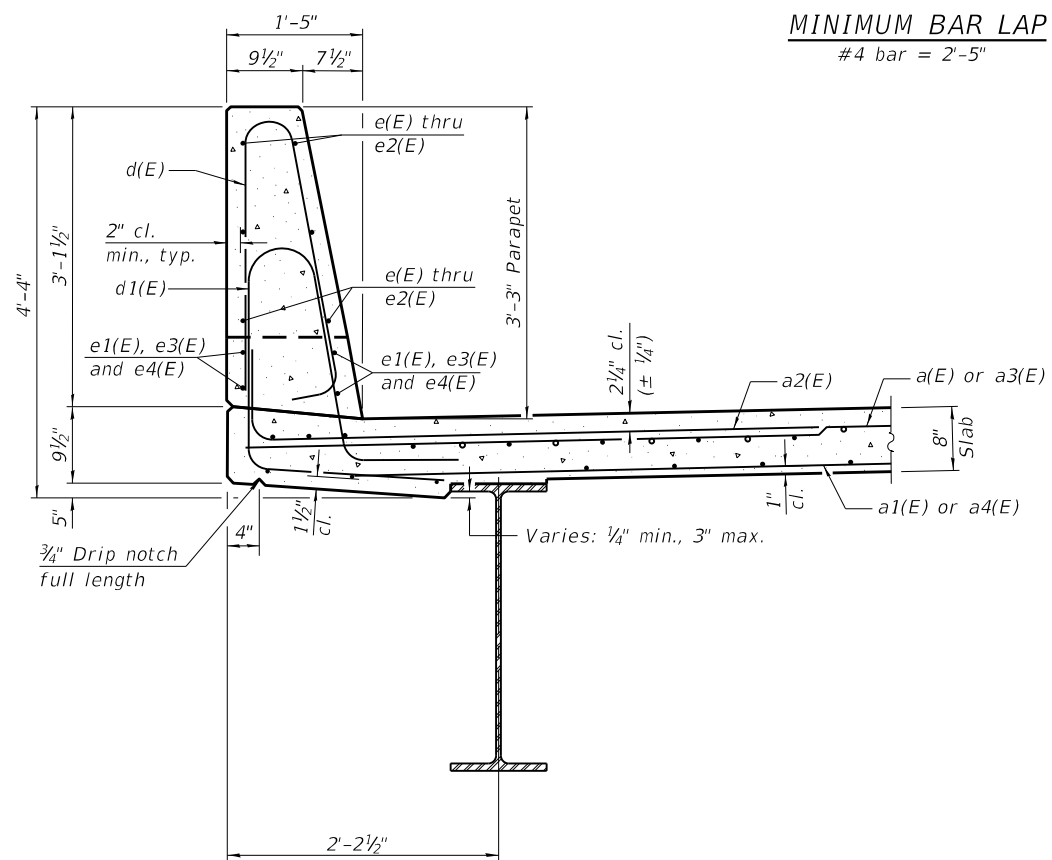
SUPERSTRUCTURE DETAILS
STRUCTURE NO. 066-0019

SHEET 11 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	31
CONTRACT NO. 68804				
ILLINOIS FED. AID PROJECT				

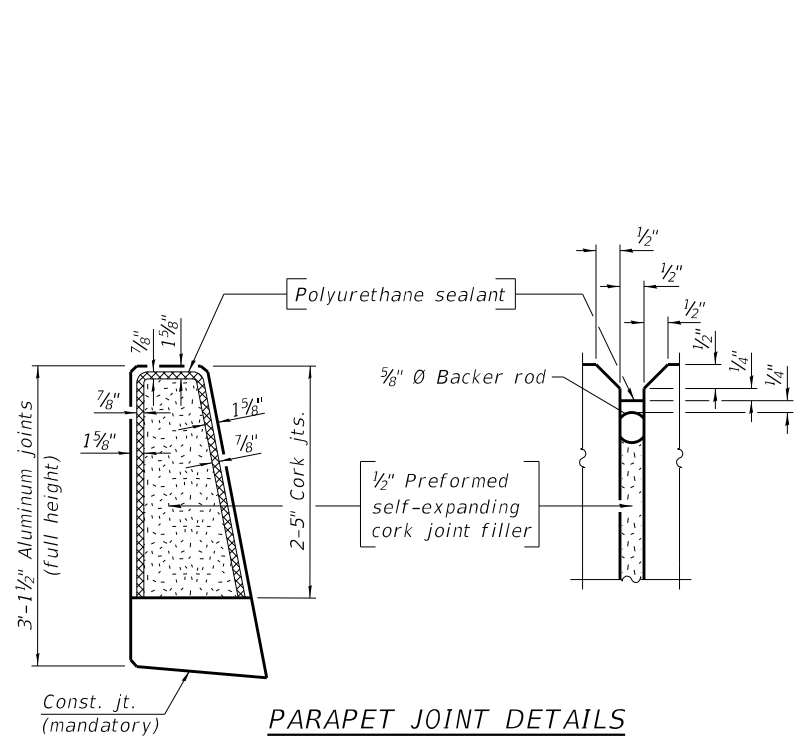


INSIDE ELEVATION OF PARAPET
(North parapet shown, South parapet similar.)

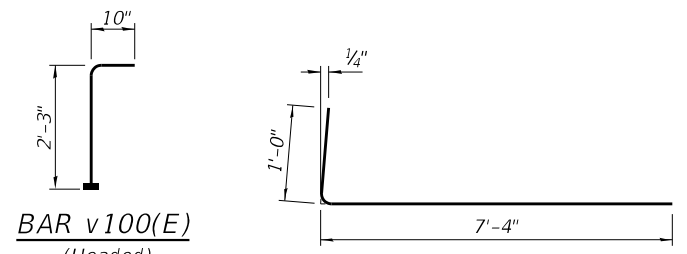


SECTION THRU PARAPET

MINIMUM BAR LAP
#4 bar = 2'-5"

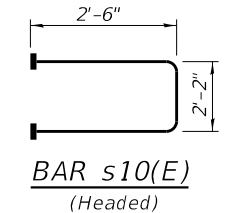


PARAPET JOINT DETAILS

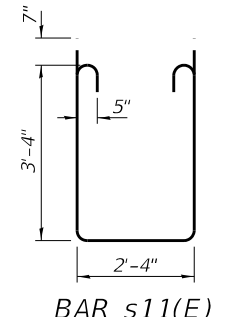


BAR v100(E)
(Headed)

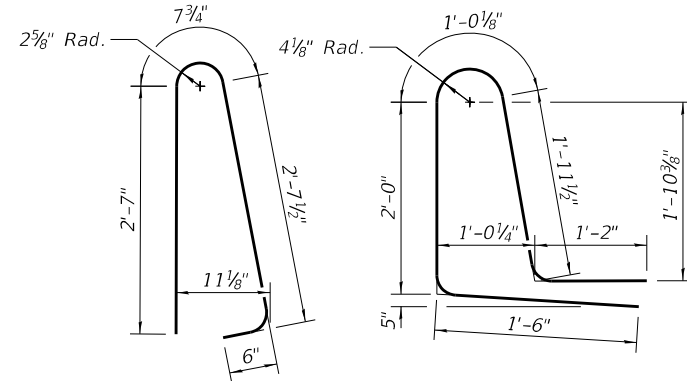
BAR a2(E)



BAR s10(E)
(Headed)



BAR s11(E)



BAR d(E)

BAR d1(E)

SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	256	#5	16'-2"	—
a1(E)	167	#5	16'-2"	—
a2(E)	512	#6	8'-4"	└
a3(E)	256	#5	18'-2"	—
a4(E)	167	#5	18'-2"	—
b(E)	190	#5	30'-6"	—
b1(E)	31	#6	54'-0"	—
b2(E)	186	#5	26'-0"	—
d(E)	422	#5	6'-5"	└
d1(E)	422	#5	7'-8"	└
e(E)	48	#4	16'-8"	—
e1(E)	40	#4	10'-6"	—
e2(E)	36	#4	16'-3"	—
e3(E)	16	#4	26'-6"	—
e4(E)	24	#4	23'-9"	—
m10(E)	8	#6	16'-2"	—
m11(E)	24	#6	5'-10"	—
m12(E)	12	#6	1'-11"	—
m13(E)	8	#6	18'-2"	—
s10(E)	62	#5	7'-2"	└
s11(E)	62	#5	10'-2"	└
v100(E)	70	#5	3'-1"	└
Concrete Superstructure			Cu. Yd.	193.4
Reinforcement Bars, Epoxy Coated			Pound	45,230
Bar Splicers			Each	437

Bars indicated thus 1 x 2-#4 etc. indicates 1 line of bars with 2 lengths per line.

Notes:
The 1/8" aluminum sheet shall be ASTM B 209 alloy 3003-H14 and coated to minimize reaction with wet concrete. Cost included with Concrete Superstructure.
The polyurethane sealant shall be according to Article 1050.04 of the Std. Spec. and the color shall be gray.
Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.

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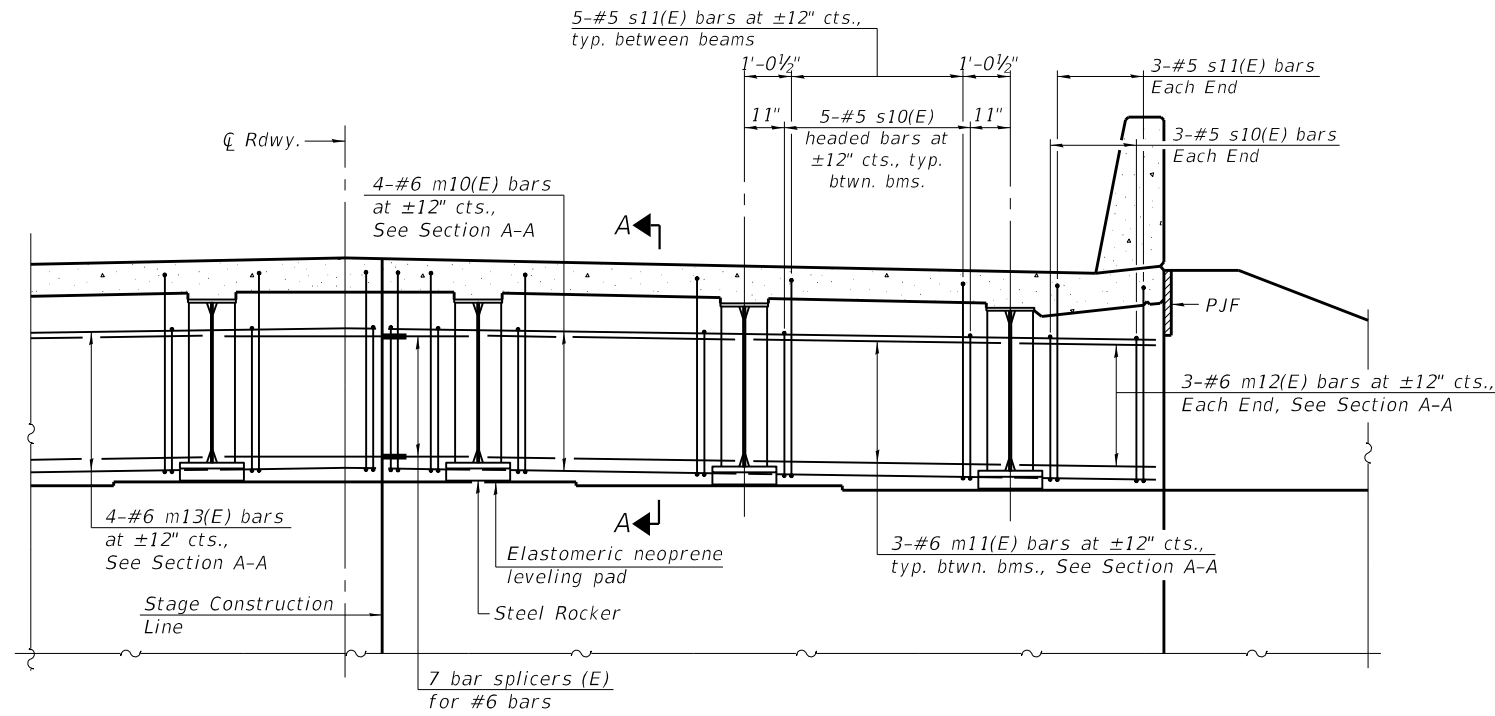
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

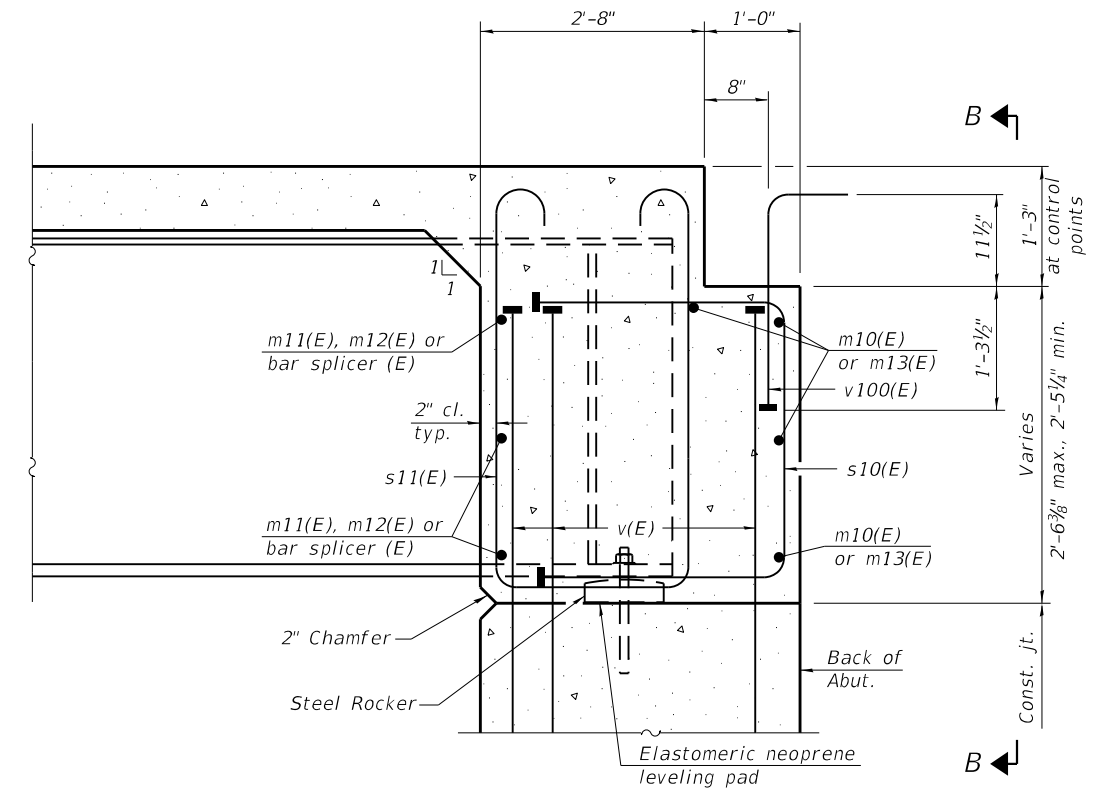
**SUPERSTRUCTURE DETAILS
STRUCTURE NO. 066-0019**

SHEET 12 OF 28 SHEETS

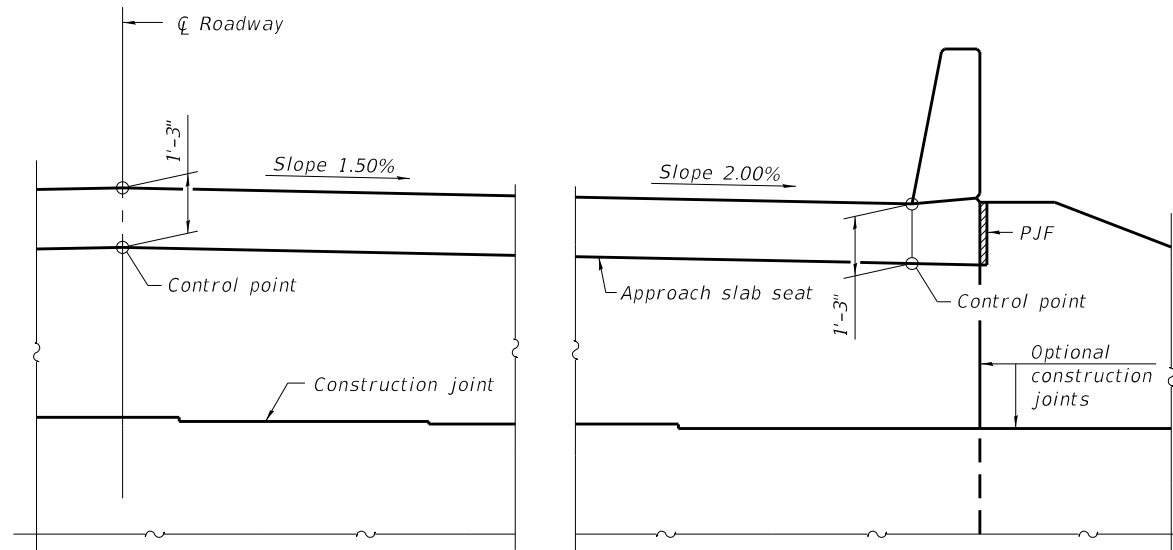
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	32
CONTRACT NO. 68804			ILLINOIS FED. AID PROJECT	



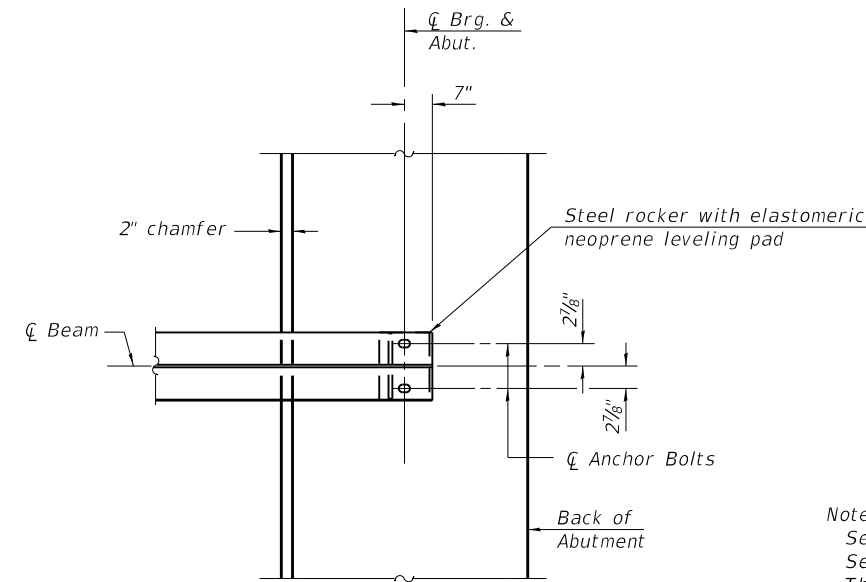
DIAPHRAGM AT ABUTMENT



SECTION A-A



VIEW B-B



PLAN AT ABUTMENT
(Showing bottom flange of beam)

Notes:
 See sheet 12 of 28 for superstructure details and Bill of Material.
 See sheet 15 of 28 for P.J.F. details.
 The approach slab seat shall have a constant slope determined from the control points shown.
 Field cut bar splicers to fit on front face of stage construction joint.

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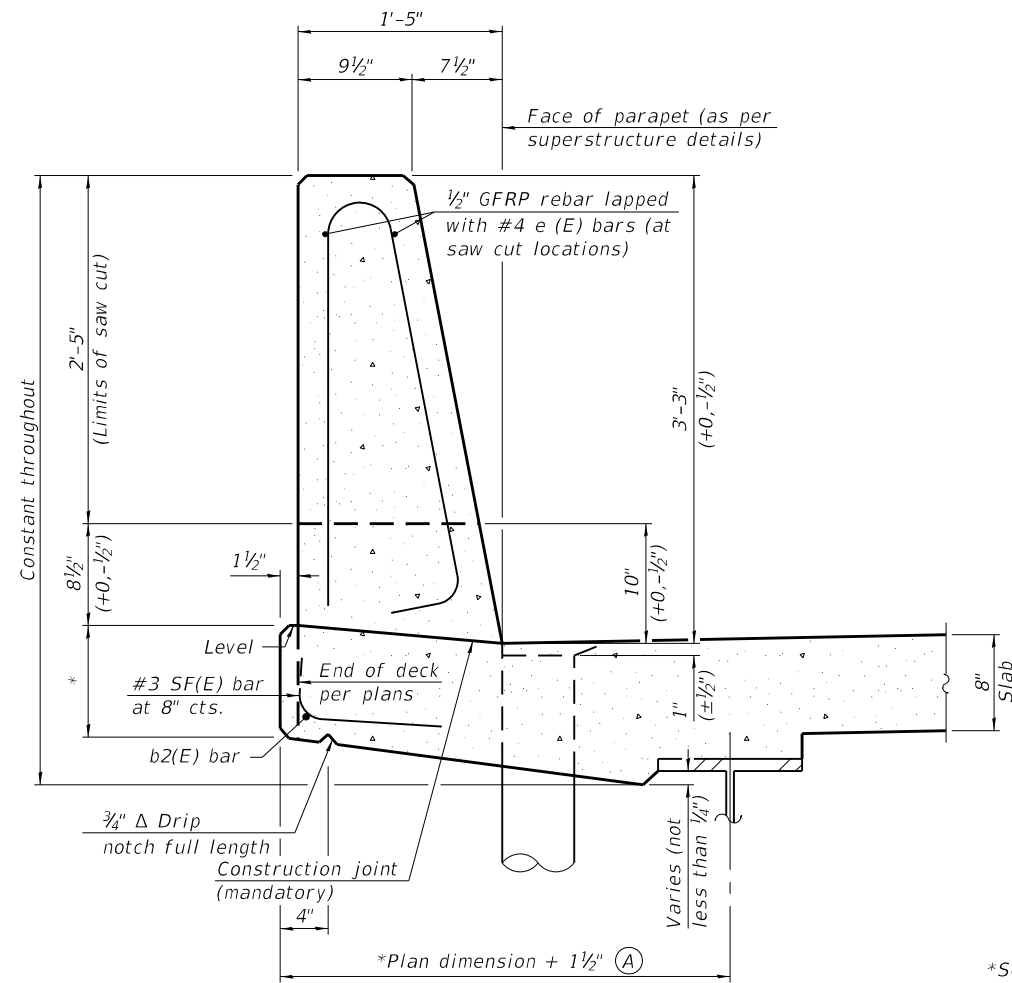
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**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**DIAPHRAGM DETAILS
 STRUCTURE NO. 066-0019**

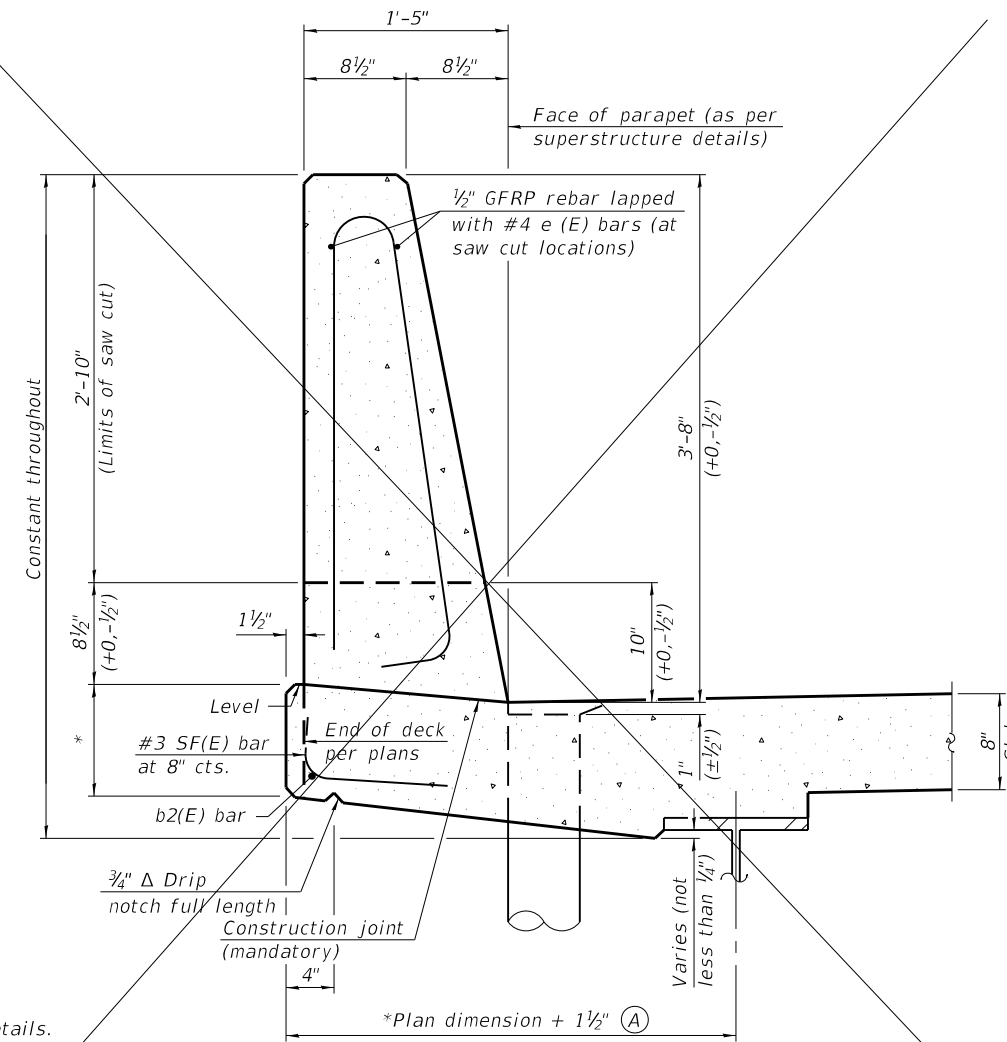
SHEET 13 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	33
CONTRACT NO. 68804				
ILLINOIS FED. AID PROJECT				



**39" CONSTANT-SLOPE
PARAPET SECTION**

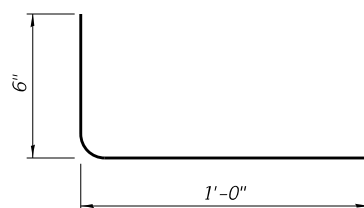
(Showing dimensions, d(E), and 1/2" Ø GFRP rebar)



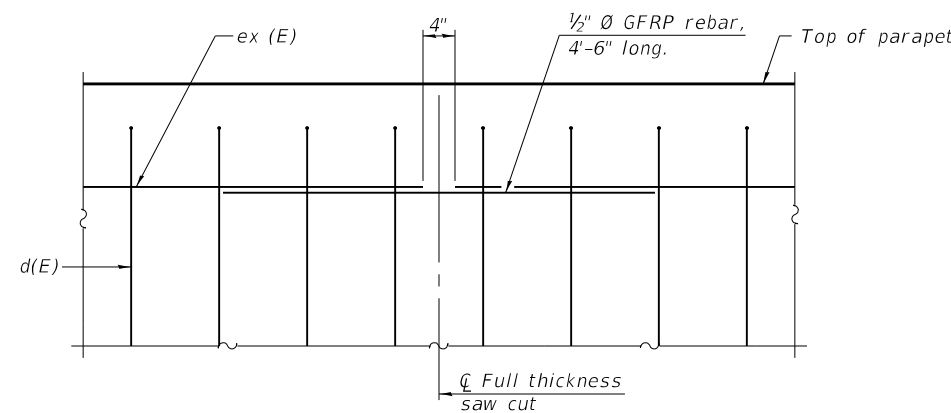
**44" CONSTANT-SLOPE
PARAPET SECTION**

(Showing dimensions, d(E), and 1/2" Ø GFRP rebar)

*See Superstructure Details.



SF(E) BAR



GFRP REBAR STIFFENING DETAIL

(Place as shown in parapet section at each parapet joint location.)

Notes:
All dimensions shall remain the same as shown on superstructure details, except dimension A which is to be revised as shown. Additional concrete needed to revise dimension A = 0.00348 cu. yds./ft. for 39" and 44" parapets.
Place full depth aluminum sheets as shown on superstructure details.
Replace all cork joint filler locations with a full thickness saw cut.
Steel superstructure shown. Other superstructure types similar.

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SFP 39-44

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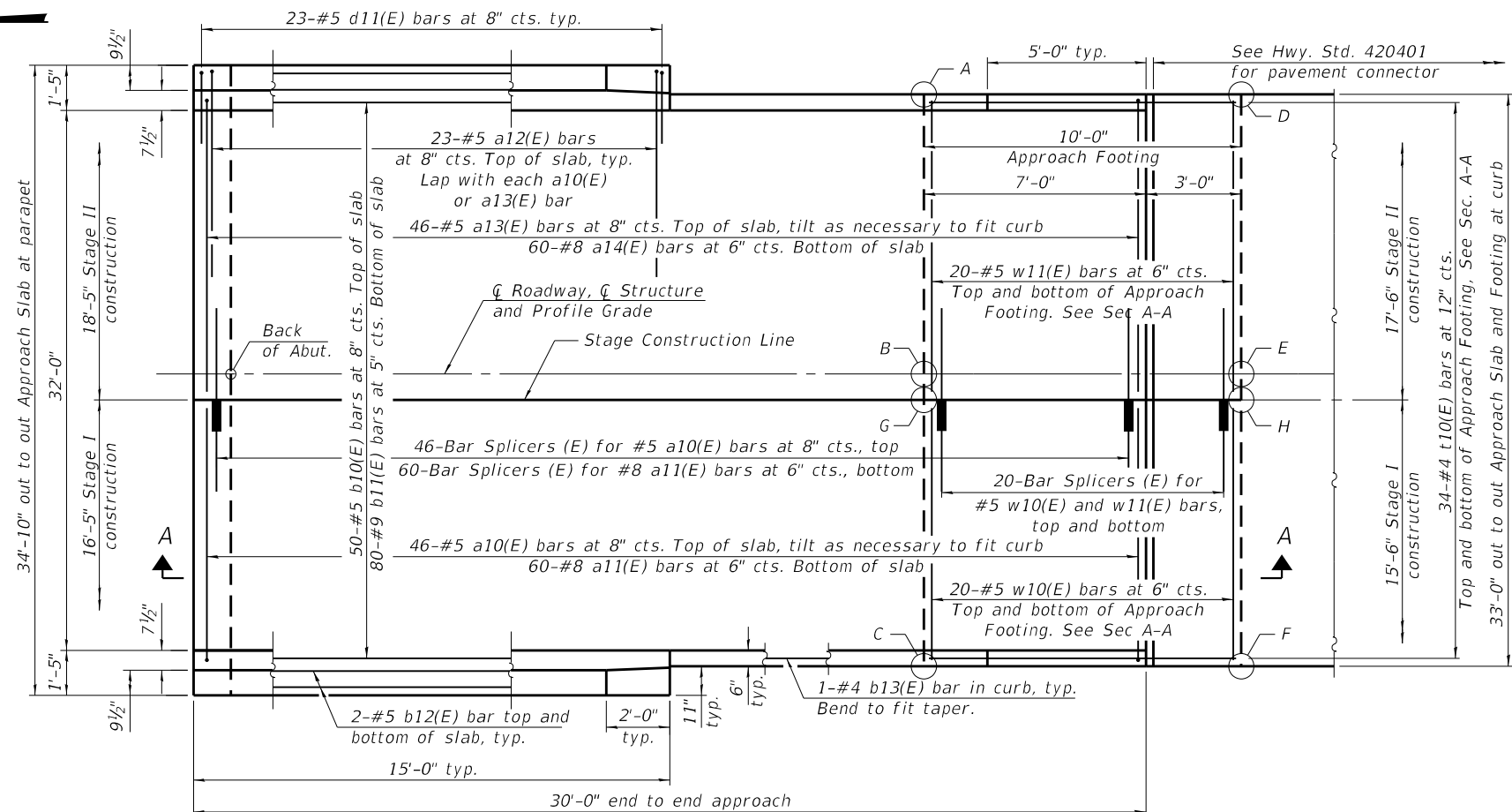
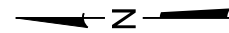
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PLOT DATE =	CHECKED - CBW	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**CONCRETE PARAPET SLIPFORMING OPTION
STRUCTURE NO. 066-0019**

SHEET 14 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	34
CONTRACT NO. 68804				
ILLINOIS FED. AID PROJECT				

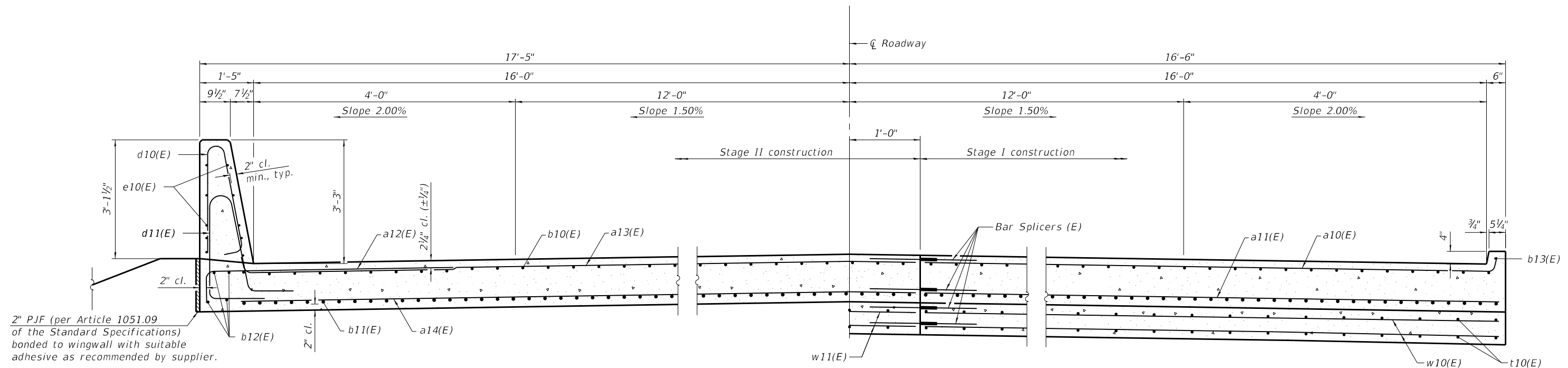


PLAN

(S. approach slab shown; N. approach slab similar by mirroring about \bar{C} Abut.)

TOP AND BOTTOM ELEVATIONS FOR APPROACH FOOTING

Point/Location	North Approach		South Approach		
	Top	Bottom	Top	Bottom	
A - SE	667.74	666.91	A - NE	667.99	667.16
B - S	668.01	667.18	B - N	668.26	667.43
C - SW	667.74	666.91	C - NW	667.99	667.16
D - NE	667.67	666.84	D - SE	667.94	667.11
E - N	667.94	667.11	E - S	668.21	667.38
F - NW	667.67	666.84	F - SW	667.94	667.11
G - S	667.99	667.16	G - N	668.24	667.41
H - N	667.93	667.10	H - S	668.19	667.36



CROSS SECTION

(Looking South)

(Sheet 1 of 2)

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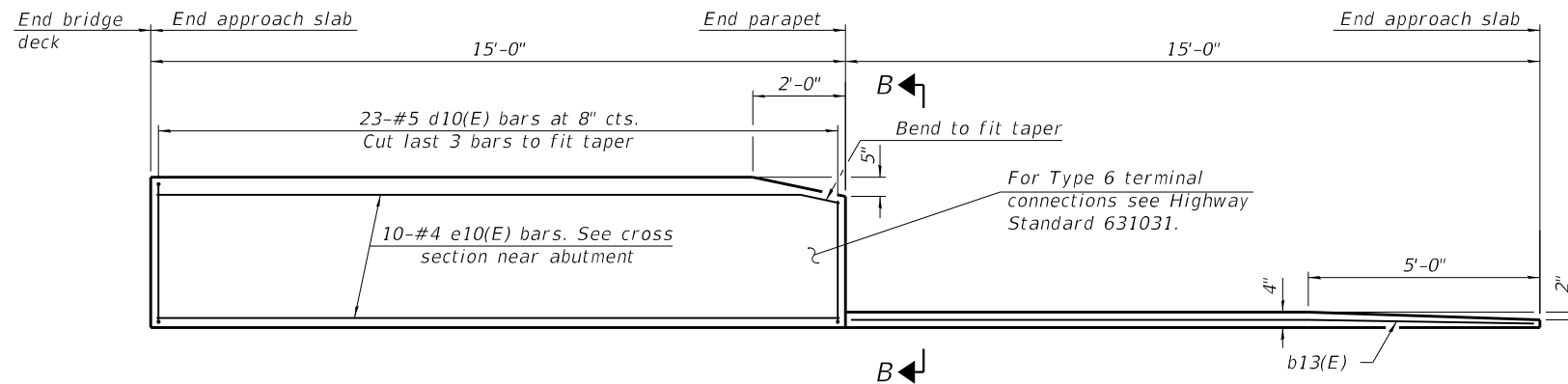
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**APPROACH SLAB DETAILS
STRUCTURE NO. 066-0019**

SHEET 15 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	35
CONTRACT NO. 68804				

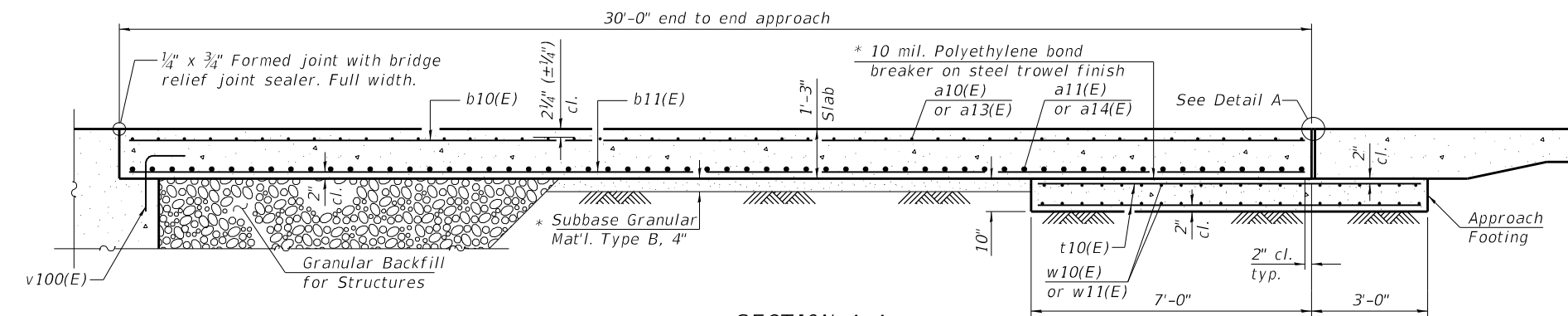
ILLINOIS FED. AID PROJECT



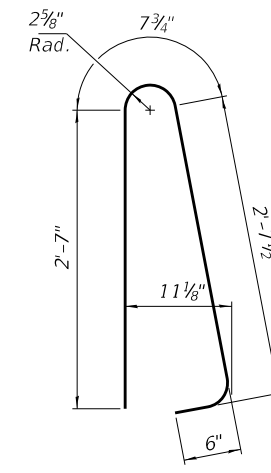
INSIDE ELEVATION OF PARAPET AND CURB

Notes:

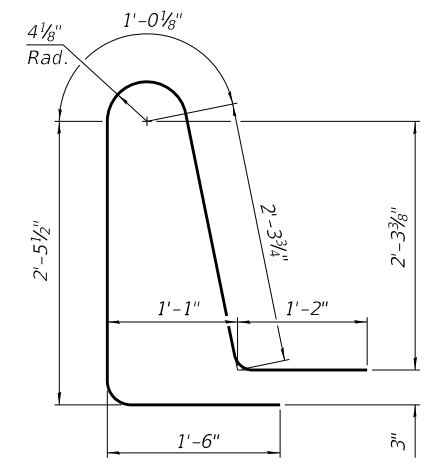
The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach slab.
 Parapet concrete shall be paid for as Concrete Superstructure.
 Approach slab shall be paid for as Concrete Superstructure (Approach Slab).
 Approach footing concrete shall be paid for as Concrete Structures.
 The approach footing maximum applied service bearing pressure (Q_{max}) = 2.0 ksf.
 Cost of excavation for approach footing included with Concrete Structures.
 For Granular Backfill for Structures and drainage treatment details, see sheet 2 of 28.



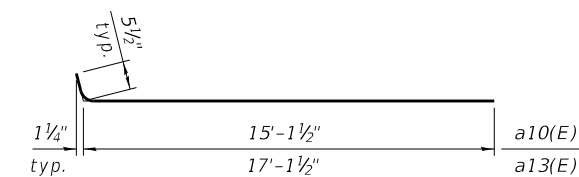
SECTION A-A



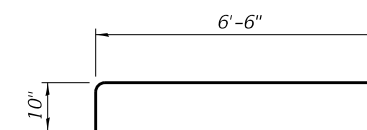
BAR d10(E)



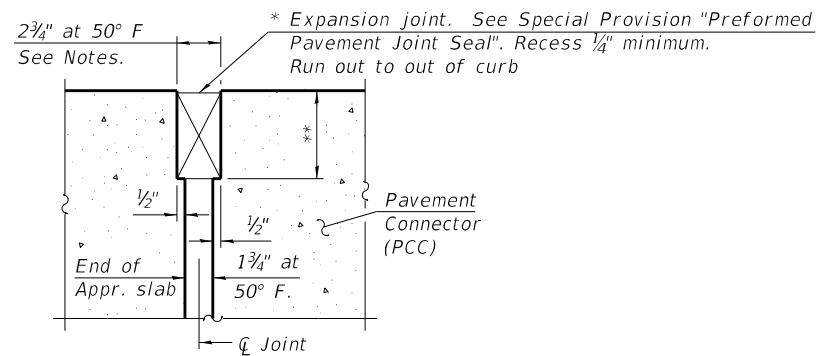
BAR d11(E)



BAR a10(E) AND a13(E)



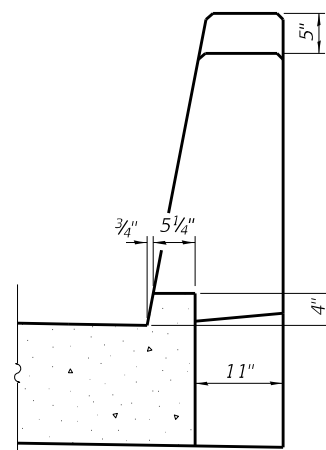
BAR a12(E)



DETAIL A

* Cost included with Concrete Superstructure (Approach Slab).

** Per manufacturer recommendations



VIEW B-B

TWO APPROACHES
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a10(E)	92	#5	15'-7"	—
a11(E)	120	#8	15'-2"	—
a12(E)	92	#5	7'-4"	—
a13(E)	92	#5	17'-7"	—
a14(E)	120	#8	17'-2"	—
b10(E)	100	#5	29'-8"	—
b11(E)	160	#9	29'-8"	—
b12(E)	16	#5	14'-8"	—
b13(E)	4	#4	14'-8"	—
d10(E)	92	#5	6'-5"	U
d11(E)	92	#5	8'-6"	U
e10(E)	40	#4	14'-8"	—
t10(E)	136	#4	9'-8"	—
w10(E)	80	#5	15'-2"	—
w11(E)	80	#5	17'-2"	—
Concrete Structures		Cu. Yd.	20.4	
Concrete Superstructure		Cu. Yd.	10.0	
Concrete Superstructure (Approach Slab)		Cu. Yd.	94.6	
Reinforcement Bars, Epoxy Coated		Pound	39,170	
Bar Splicers		Each	292	

(Sheet 2 of 2)

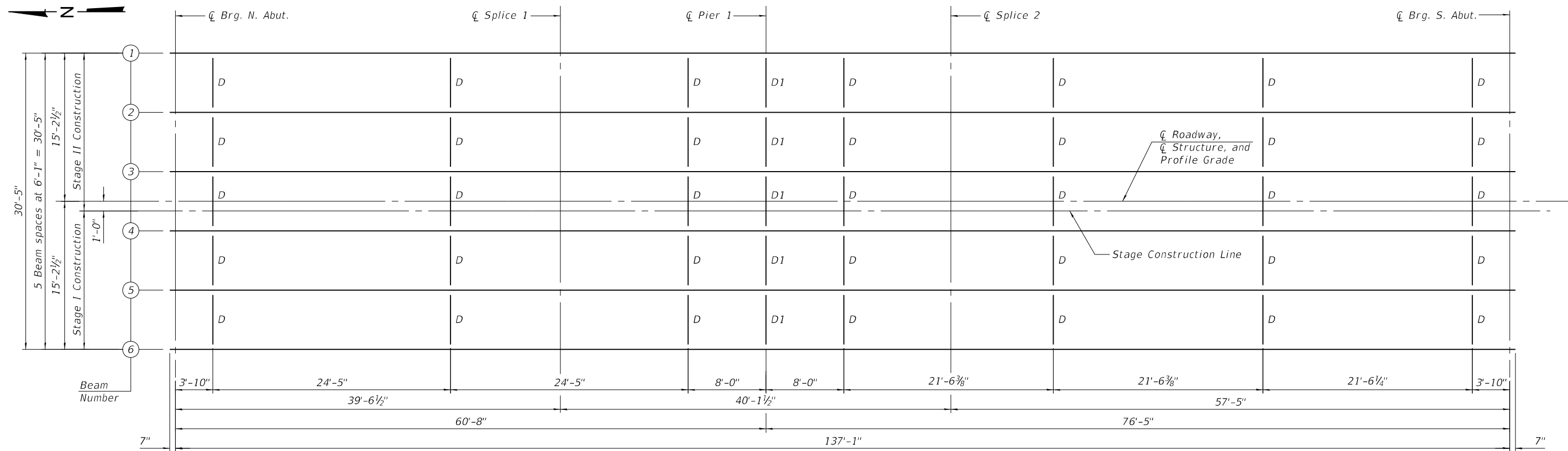
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

APPROACH SLAB DETAILS
STRUCTURE NO. 066-0019

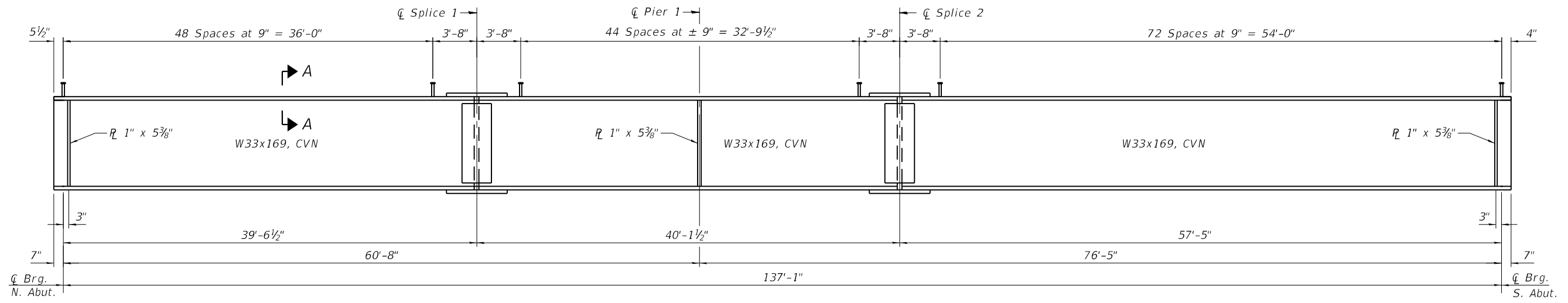
SHEET 16 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	36
CONTRACT NO. 68804				
ILLINOIS FED. AID PROJECT				

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	DRAWN	CAB	REVISED
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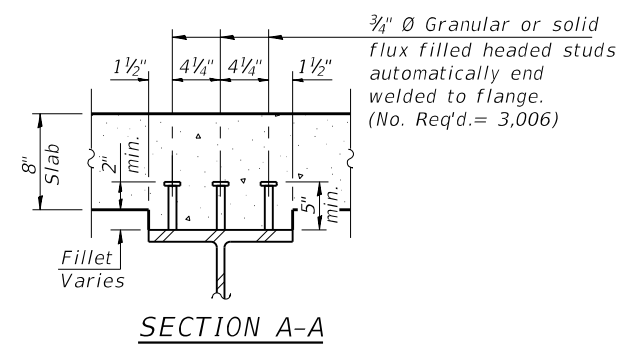


FRAMING PLAN

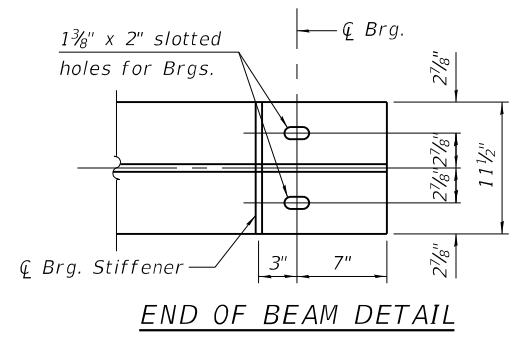


GIRDER ELEVATION

"CVN" denotes Charpy-V-Notch impact energy requirements, zone 2.



SECTION A-A



END OF BEAM DETAIL

Notes:
 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.
 All beams, channels, bearing stiffeners, connection plates, and splice plates shall be AASHTO M 270 Grade 50.

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**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**STRUCTURAL STEEL
 STRUCTURE NO. 066-0019**

SHEET 17 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	37
CONTRACT NO. 68804				
ILLINOIS FED. AID PROJECT				

INTERIOR GIRDER MOMENT TABLE				
		0.4 Sp. 1	Pier 1	0.6 Sp. 2
<i>I_s</i>	(in ⁴)	9,290	9,290	9,290
<i>I_c(n)</i>	(in ⁴)	23,431	23,431	23,431
<i>I_c(3n)</i>	(in ⁴)	17,176	---	17,176
<i>I_c(cr)</i>	(in ⁴)	---	11,836	---
<i>S_s</i>	(in ³)	550	550	550
<i>S_c(n)</i>	(in ³)	782	---	782
<i>S_c(3n)</i>	(in ³)	708	---	708
<i>S_c(cr)</i>	(in ³)	---	612	---
<i>DC1</i>	(k/ft)	0.831	0.831	0.831
<i>MDC1</i>	(k)	164	508	380
<i>DC2</i>	(k/ft)	0.175	0.175	0.175
<i>MDC2</i>	(k)	35	107	80
<i>DW</i>	(k/ft)	0.267	0.267	0.267
<i>MDW</i>	(k)	53	165	123
<i>LLDF</i>	(k)	0.535	0.520	0.504
<i>M_κ + IM</i>	(k)	602	712	753
<i>Mu (Strength I)</i>	(k)	1,381	---	2,077
<i>∅f Mn</i>	(k)	3,845	---	3,845
<i>f_s DC1</i>	(ksi)	3.58	11.07	8.28
<i>f_s DC2</i>	(ksi)	0.59	2.09	1.35
<i>f_s DW</i>	(ksi)	0.90	3.23	2.09
<i>f_s (κ+IM)</i>	(ksi)	10.20	13.95	12.76
<i>f_s (Service II)</i>	(ksi)	18.32	34.54	28.31
<i>0.95Rh Fyf</i>	(ksi)	47.50	47.50	47.50
<i>f_s (Total)(Strength I)</i>	(ksi)	---	45.72	---
<i>∅f Fn</i>	(ksi)	---	50.00	---
<i>Vf</i>	(k)	35.7	59.7	36.8

I_s, S_s: Non-composite moment of inertia and section modulus of the steel section used for computing *f_s*(Total-Strength I, and Service II) due to non-composite dead loads (in.⁴ and in.³).

I_c(n), S_c(n): Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing *f_s*(Total-Strength I, and Service II) due to short-term composite live loads (in.⁴ and in.³).

I_c(3n), S_c(3n): Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing *f_s*(Total-Strength I, and Service II) due to long-term composite (superimposed) dead loads (in.⁴ and in.³).

DC1: Un-factored non-composite dead load (kips/ft.).

MDC1: Un-factored moment due to non-composite dead load (kip-ft.).

DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).

MDC2: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).

DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).

MDW: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).

LLDF: Live Load Distribution Factor

M_κ + IM: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).

Mu (Strength I): Factored design moment (kip-ft.).
1.25 (MDC1 + MDC2) + 1.5 MDW + 1.75 M_κ + IM

∅f Mn: Compact composite positive moment capacity computed according to Article 6.10.7.1 or non-slender negative moment capacity according to Article A6.1.1 or A6.1.2 (kip-ft.).

f_s DC1: Un-factored stress at edge of flange for controlling steel flange due to vertical non-composite dead loads as calculated below (ksi).
MDC1 / S_{nc}

f_s DC2: Un-factored stress at edge of flange for controlling steel flange due to vertical composite dead loads as calculated below (ksi).
MDC2 / S_c(3n).

f_s DW: Un-factored stress at edge of flange for controlling steel flange due to vertical composite future wearing surface loads as calculated below (ksi).
MDW / S_c(3n).

f_s (κ+IM): Un-factored stress at edge of flange for controlling steel flange due to vertical composite live plus impact loads as calculated below (ksi).
M_κ + IM / S_c(n).

f_s (Service II): Sum of stresses as computed below (ksi).
f_sDC1 + *f_sDC2* + *f_sDW* + 1.3 *f_sκ + IM*

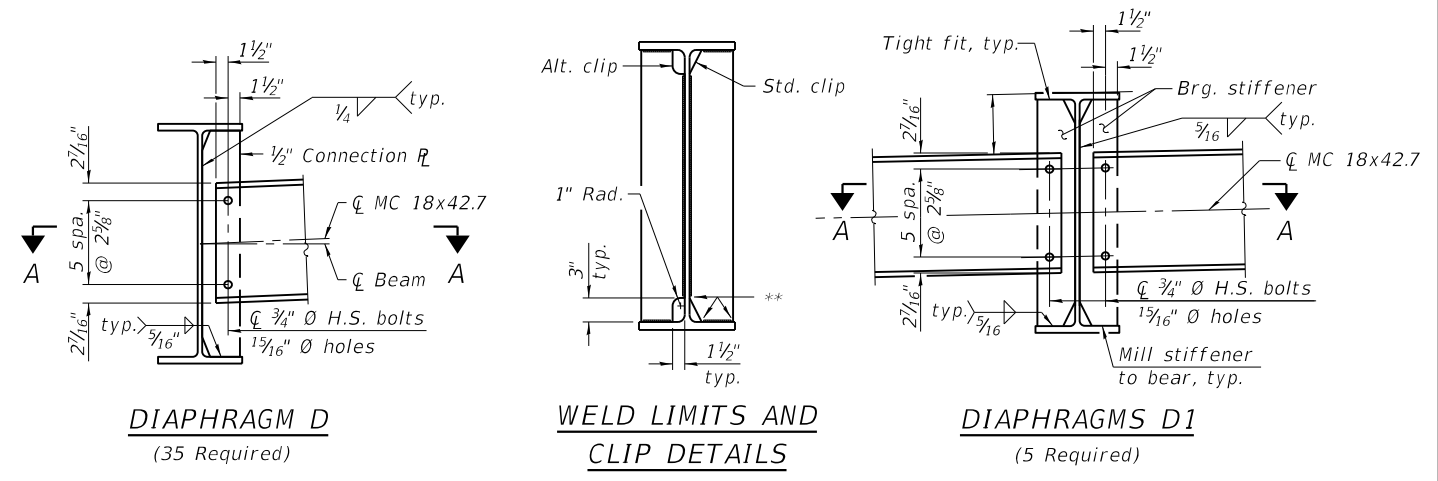
0.95RhFyf: Composite stress capacity for Service II loading according to Article 6.10.4.2 (ksi).

f_s (Total)(Strength I): Sum of stresses as computed below on non-compact section (ksi).
1.25 (*f_sDC1* + *f_sDC2*) + 1.5 *f_sDW* + 1.75 *f_sκ + IM*

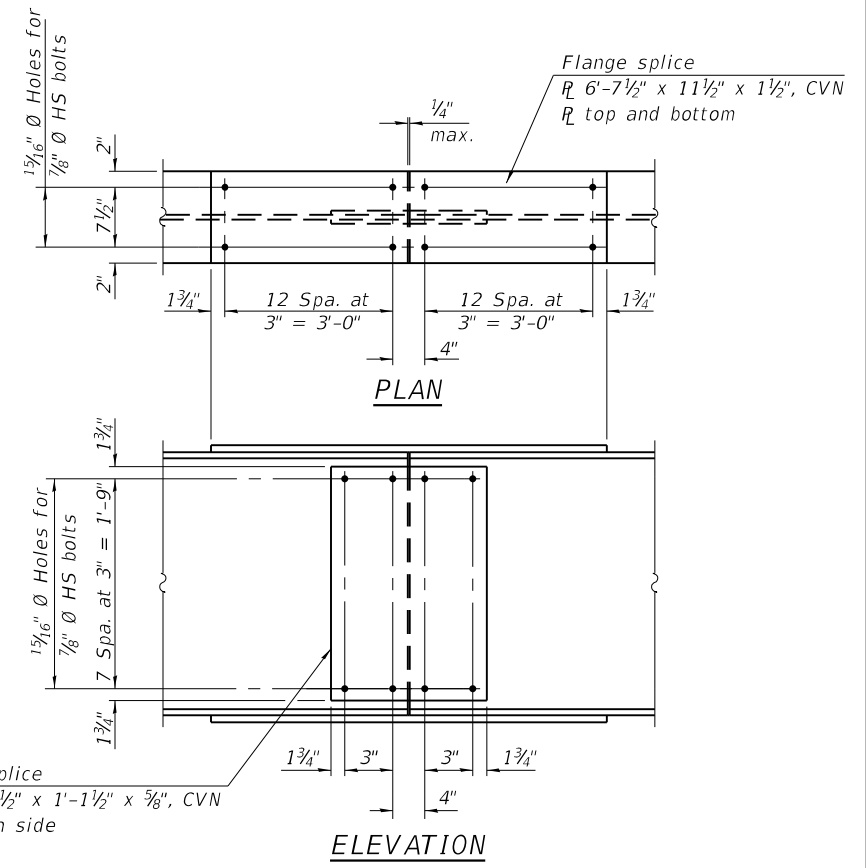
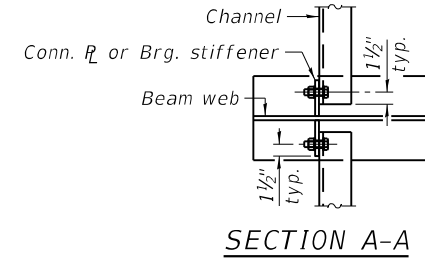
∅f Fn: Non-Compact composite positive or negative stress capacity for Strength I loading according to Article 6.10.7 or 6.10.8 (ksi).

Vf: Maximum factored shear range in composite portion of span computed according to Article 6.10.10.

OCF: Obtuse Correction Factor



Notes:
Two hardened washers required for each set of oversized holes.
Alternate channels of equal depth and larger weight are permitted to facilitate material acquisition. Calculated weight of structural steel is based on the lighter section. The alternate, if utilized, shall be provided at no additional cost to the Department.



Notes:
All beams, channels, bearing stiffeners, connection plate, and splice plates shall be AASHTO M270 Grade 50.
"CVN" denotes Charpy-V-Notch impact energy requirements, zone 2.

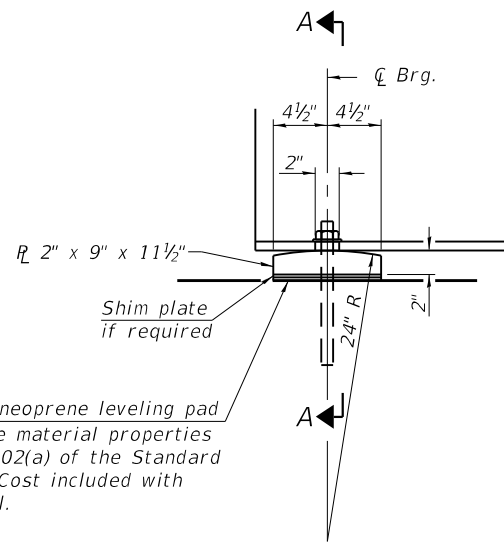
GIRDER REACTION TABLE						
	N. Abut.		Pier 1		S. Abut.	
	Interior	Exterior	Interior	Exterior	Interior	Exterior
<i>LLDF</i>	0.677	0.568	0.677	0.568	0.677	0.568
<i>OCF</i>	---	---	---	---	---	---
<i>RDC1</i>	(k) 16.9	17.2	72.1	73.3	25.1	25.6
<i>RDC2</i>	(k) 3.5	3.5	15.2	15.2	5.3	5.3
<i>RDW</i>	(k) 5.5	5.5	23.4	23.4	8.2	8.2
<i>R_κ</i>	(k) 51.4	43.2	100.6	84.4	55.5	46.6
<i>R_{IM}</i>	(k) 13.1	11.0	20.8	17.5	13.6	11.4
<i>RTotal</i>	(k) 90.4	80.4	232.1	213.8	107.7	97.1

*** TOP OF BEAM ELEVATIONS

Location	∅ Brg. N. Abut.	∅ Splice 1	∅ Pier 1	∅ Splice 2	∅ Brg. S. Abut.
Beam 1	668.41	668.48	668.54	668.60	668.61
Beam 2	668.52	668.58	668.65	668.71	668.71
Beam 3	668.61	668.68	668.74	668.81	668.81
Beam 4	668.61	668.68	668.74	668.81	668.81
Beam 5	668.52	668.58	668.65	668.71	668.71
Beam 6	668.41	668.48	668.54	668.60	668.61

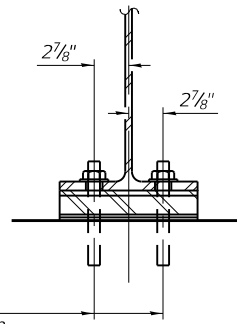
*** For fabrication only

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1/8" elastomeric neoprene leveling pad according to the material properties of Article 1052.02(a) of the Standard Specifications. Cost included with Structural Steel.

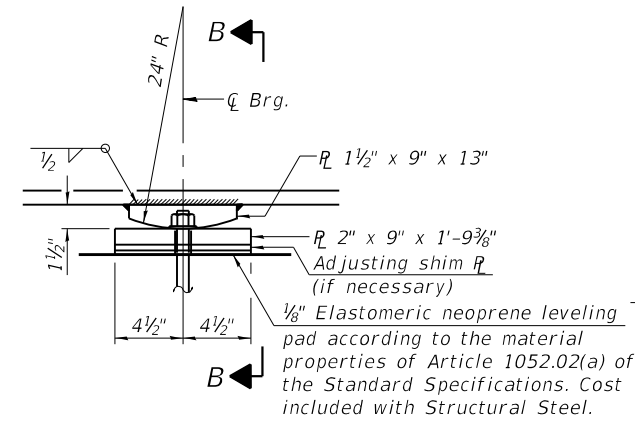
ELEVATION AT ABUTMENT



1" \varnothing x 12" All-thread anchor bolts (Grade 55) with 2 1/4" x 2 1/4" x 5/16" R washer under nut. 1 3/8" x 2" slotted hole in flange. 1 1/2" \varnothing holes in bearing plate.

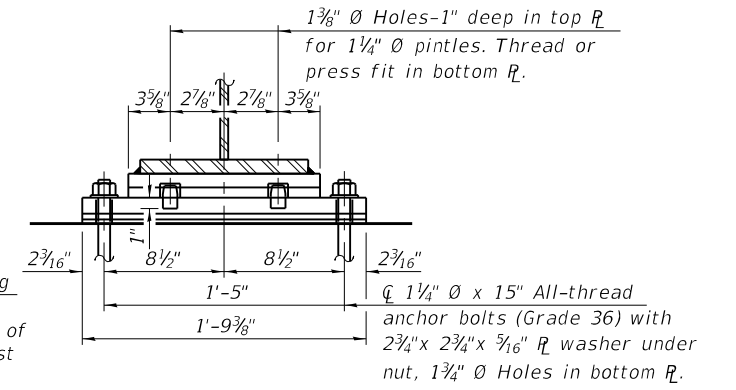
SECTION A-A

FIXED BEARING
12 required

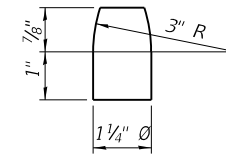


ELEVATION AT PIER

FIXED BEARING
6 required



SECTION B-B



PINTLE

Notes:
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 M270 Grade 50.
All (embedded and separate) bearing plates, side retainers, anchor bolts, nuts, washers and pintles shall be galvanized according to AASHTO M111 or M232 as applicable.
Anchor bolts shall be according to Article 521.06 of the Standard Specifications.
Beams shall be braced for stability during erection and remain braced until deck is poured and cured.
Anchor bolts at all supports shall be installed as each member is erected unless an equivalent temporary means of lateral restraint is used.

BILL OF MATERIAL

Item	Unit	Total
Anchor Bolts, 1"	Each	24
Anchor Bolts, 1 1/4"	Each	12

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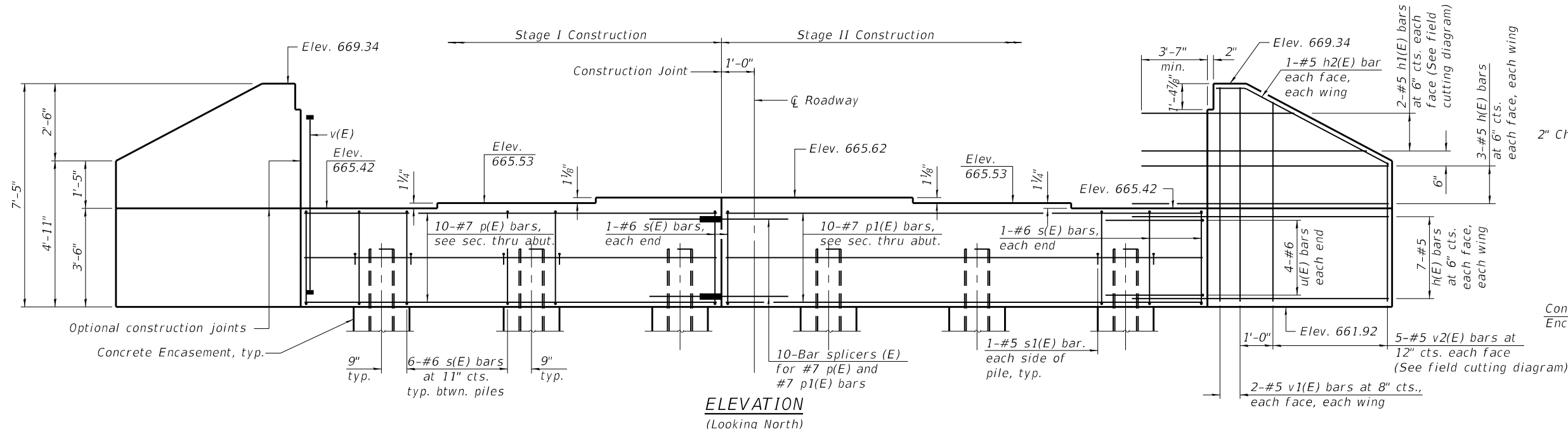
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

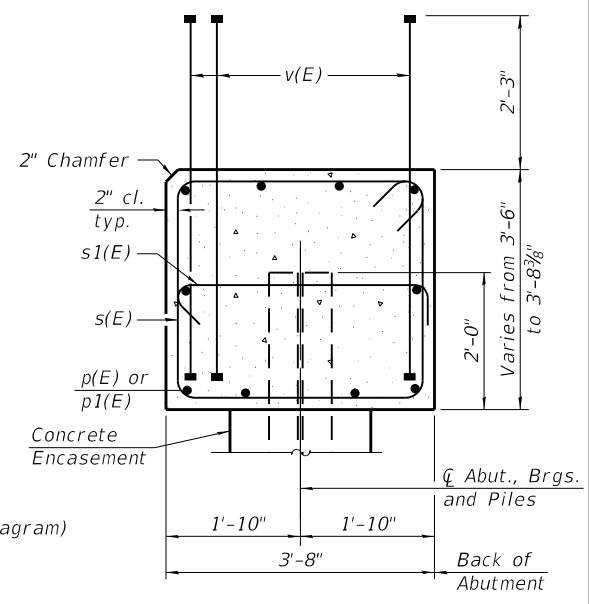
BEARING DETAILS
STRUCTURE NO. 066-0019

SHEET 19 OF 28 SHEETS

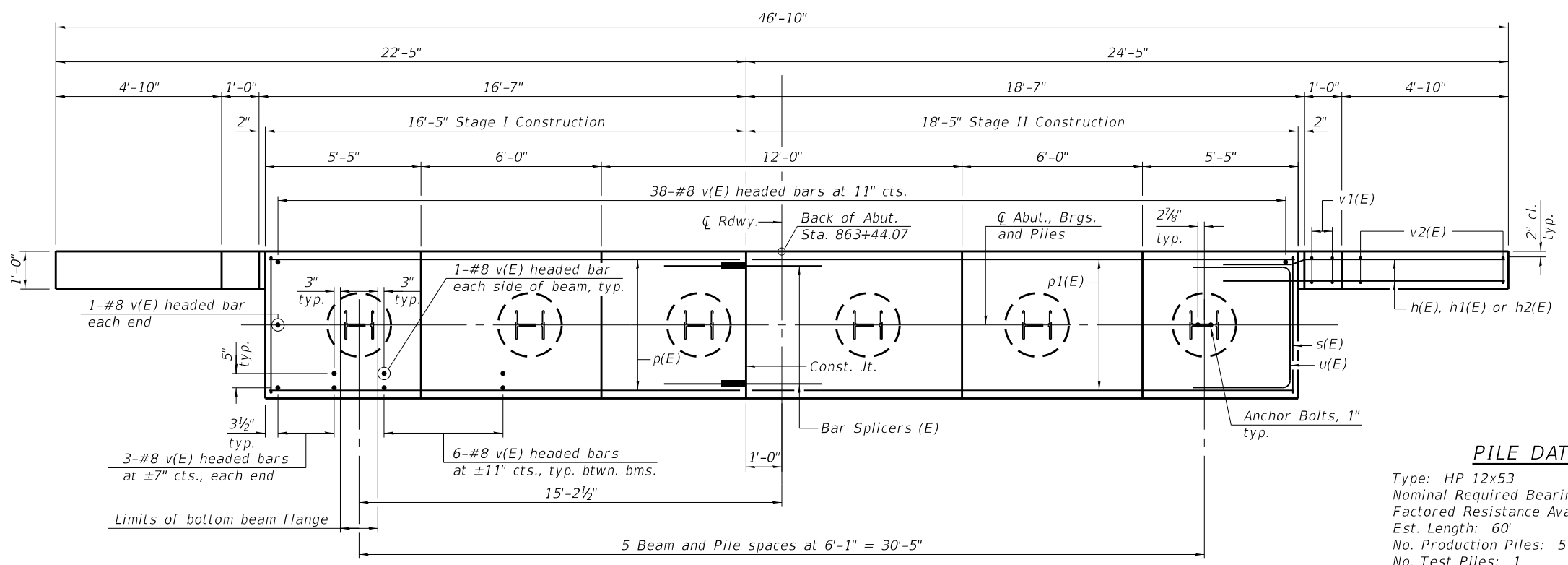
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	39
CONTRACT NO. 68804				
ILLINOIS FED. AID PROJECT				



ELEVATION
(Looking North)



SEC. THRU ABUT.



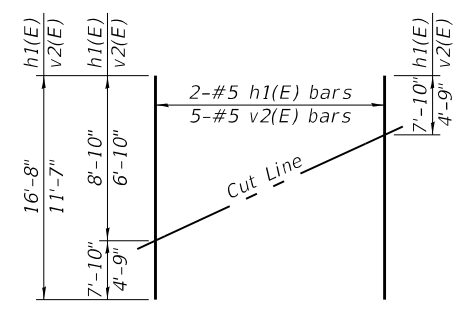
PLAN

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	40	#5	9'-6"	—
h1(E)	4	#5	16'-8"	—
h2(E)	4	#5	6'-2"	—
p(E)	10	#7	16'-2"	—
p1(E)	10	#7	18'-2"	—
s(E)	36	#6	14'-4"	⌞
s1(E)	12	#5	4'-4"	⌞
u(E)	8	#6	11'-10"	⌞
v(E)	88	#8	5'-5"	—
v1(E)	8	#5	7'-2"	—
v2(E)	10	#5	11'-7"	—
Structure Excavation		Cu. Yd.	80	
Concrete Structures		Cu. Yd.	19.7	
Concrete Encasement		Cu. Yd.	2.1	
Reinforcement Bars, Epoxy Coated		Pound	3,620	
Bar Splicers		Each	10	
Furnishing Steel Piles HP12x53		Foot	300	
Driving Piles		Foot	300	
Test Pile Steel HP12x53		Each	1	

PILE DATA

Type: HP 12x53
 Nominal Required Bearing: 418 kips
 Factored Resistance Available: 193 kips
 Est. Length: 60'
 No. Production Piles: 5
 No. Test Piles: 1



FIELD CUTTING DIAGRAM

Order h1(E) and v2(E) full length. Cut as shown and use remainder of bars in opposite wing.

BAR v(E)
(Headed)

BAR h2(E)

BAR s(E)

BAR s1(E)

BAR u(E)

Notes:
 Pour steps monolithically with cap.
 Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.
 For details of piles and Concrete Encasement, see sheet 23 of 28.
 For details of Bar Splicers, see sheet 24 of 28.

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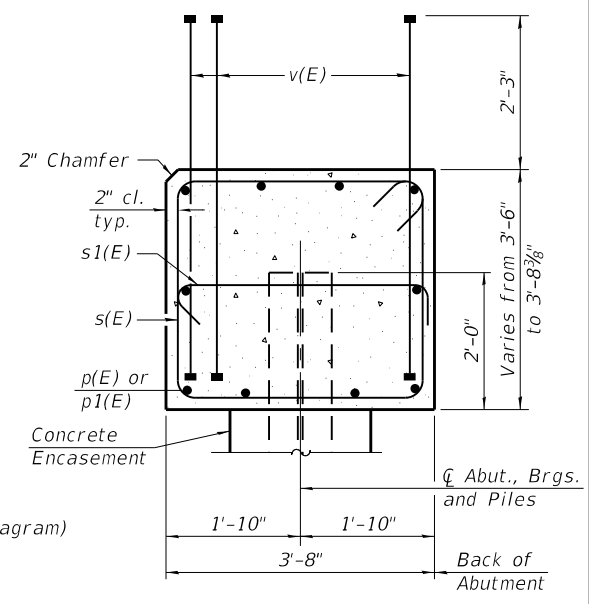
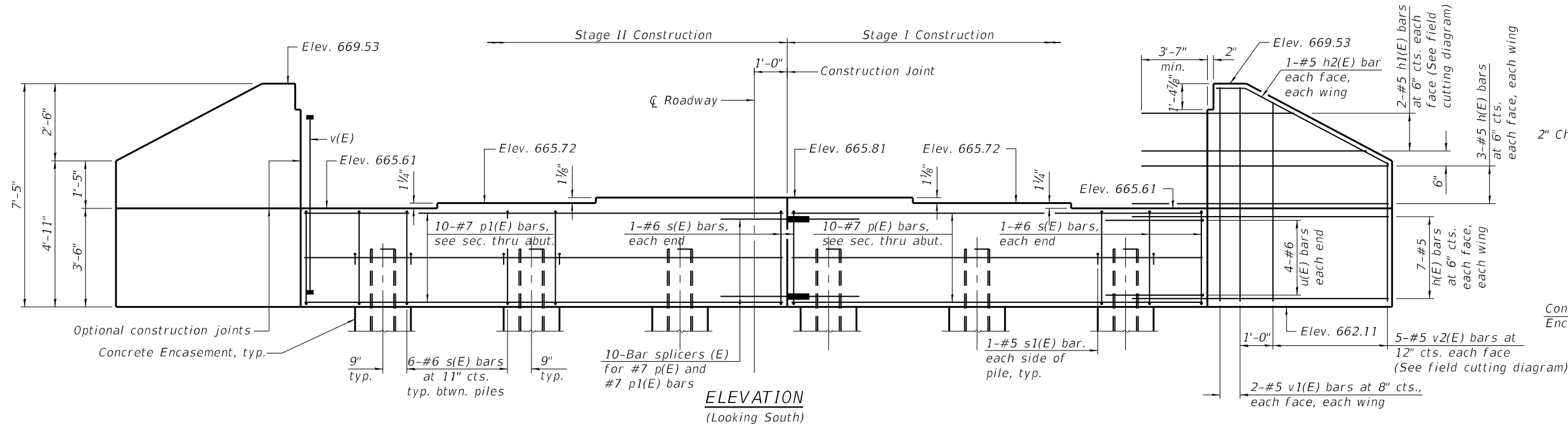
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NORTH ABUTMENT DETAILS
STRUCTURE NO. 066-0019

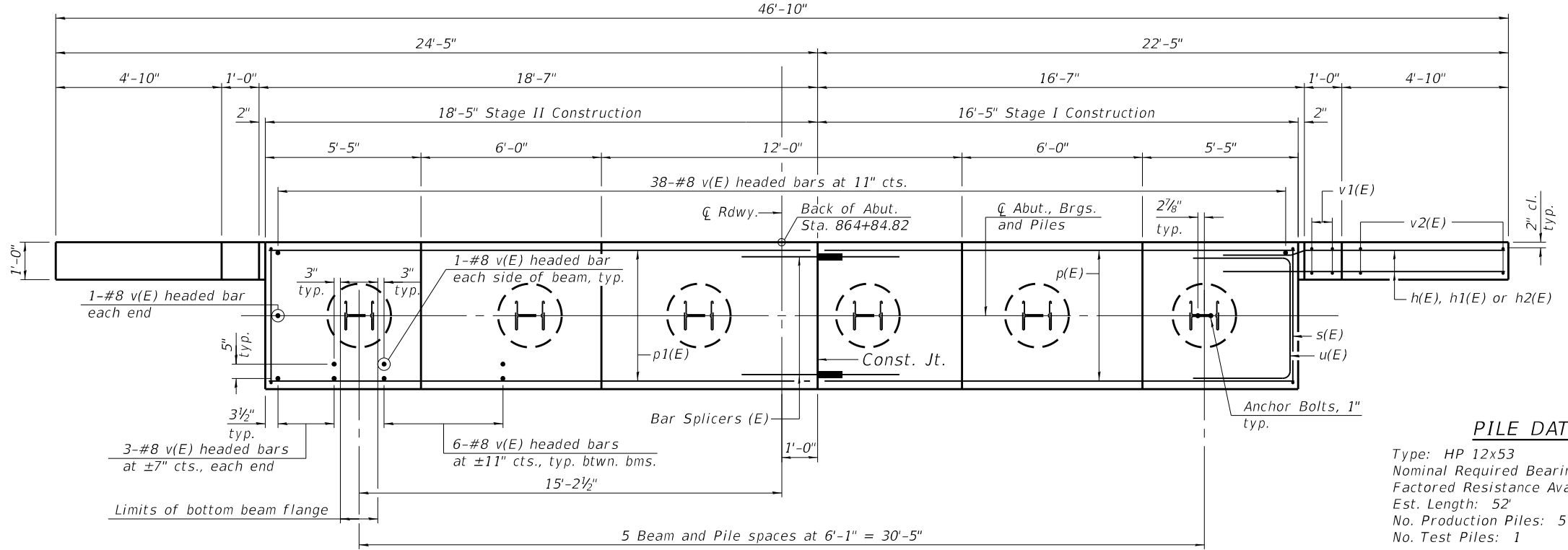
SHEET 20 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	40
				CONTRACT NO. 68804
ILLINOIS FED. AID PROJECT				



ELEVATION
(Looking South)

SEC. THRU ABUT.



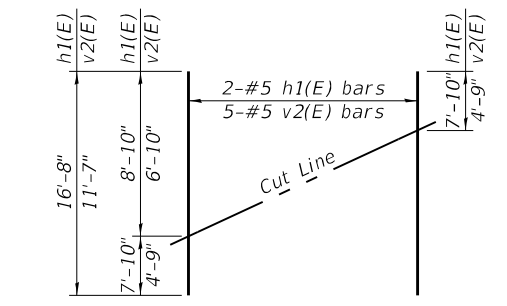
PLAN

BILL OF MATERIAL

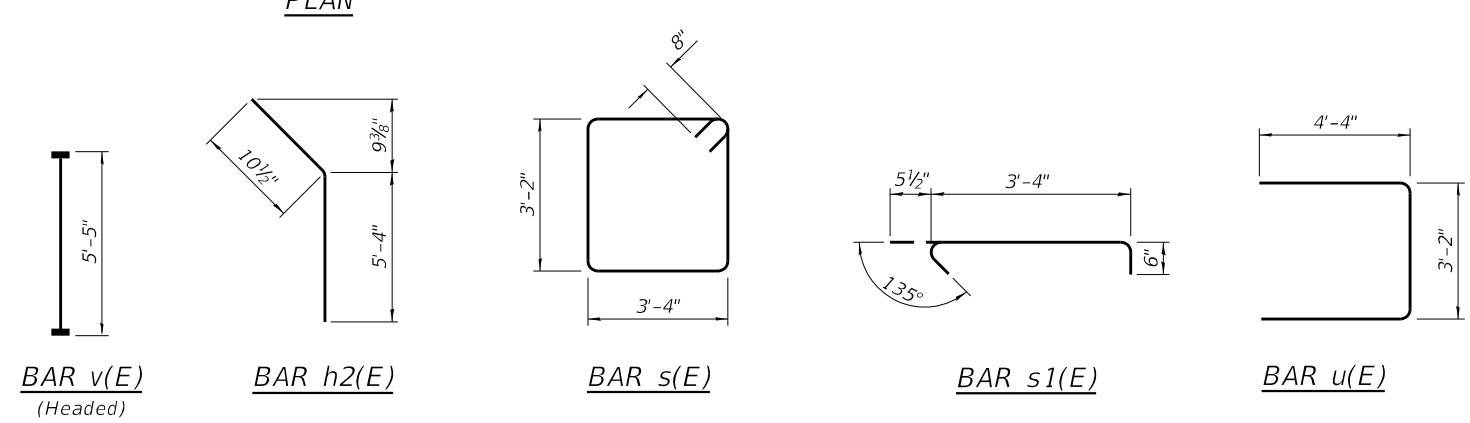
Bar	No.	Size	Length	Shape
h(E)	40	#5	9'-6"	—
h1(E)	4	#5	16'-8"	—
h2(E)	4	#5	6'-2"	—
p(E)	10	#7	16'-2"	—
p1(E)	10	#7	18'-2"	—
s(E)	36	#6	14'-4"	⊞
s1(E)	12	#5	4'-4"	⊞
u(E)	8	#6	11'-10"	⊞
v(E)	88	#8	5'-5"	—
v1(E)	8	#5	7'-2"	—
v2(E)	10	#5	11'-7"	—
Structure Excavation		Cu. Yd.	80	
Concrete Structures		Cu. Yd.	19.7	
Concrete Encasement		Cu. Yd.	2.1	
Reinforcement Bars, Epoxy Coated		Pound	3,620	
Bar Splicers		Each	10	
Furnishing Steel Piles HP12x53		Foot	260	
Driving Piles		Foot	260	
Test Pile Steel HP12x53		Each	1	

PILE DATA

Type: HP 12x53
 Nominal Required Bearing: 418 kips
 Factored Resistance Available: 177 kips
 Est. Length: 52'
 No. Production Piles: 5
 No. Test Piles: 1



FIELD CUTTING DIAGRAM
 Order h1(E) and v2(E) full length. Cut as shown and use remainder of bars in opposite wing.



Notes:
 Pour steps monolithically with cap.
 Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.
 For details of piles and Concrete Encasement, see sheet 23 of 28.
 For details of Bar Splicers, see sheet 24 of 28.

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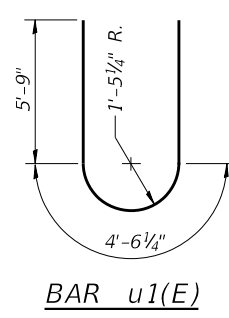
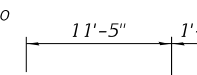
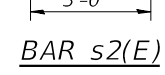
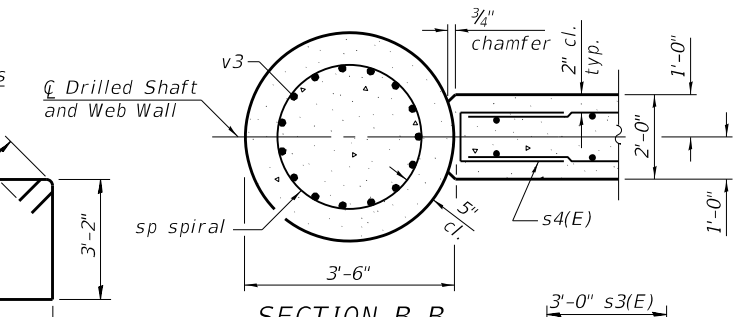
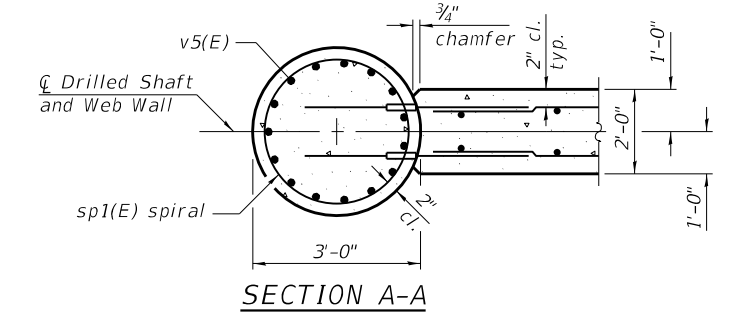
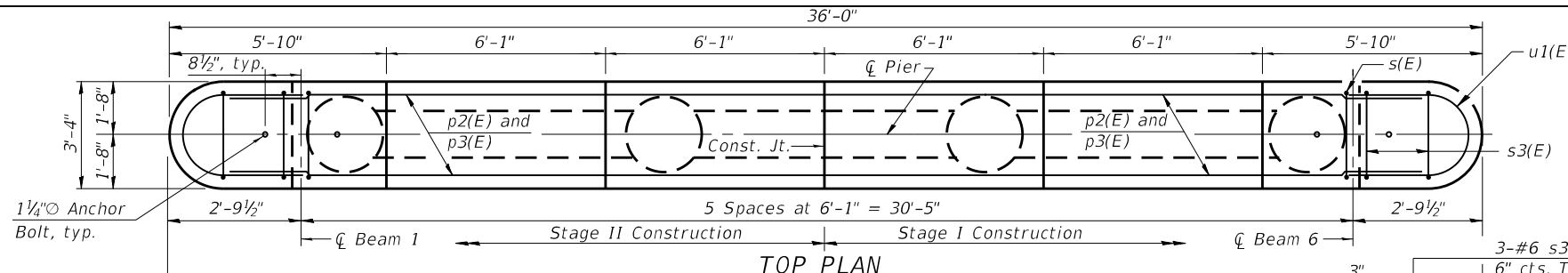
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SOUTH ABUTMENT DETAILS
STRUCTURE NO. 066-0019

SHEET 21 OF 28 SHEETS

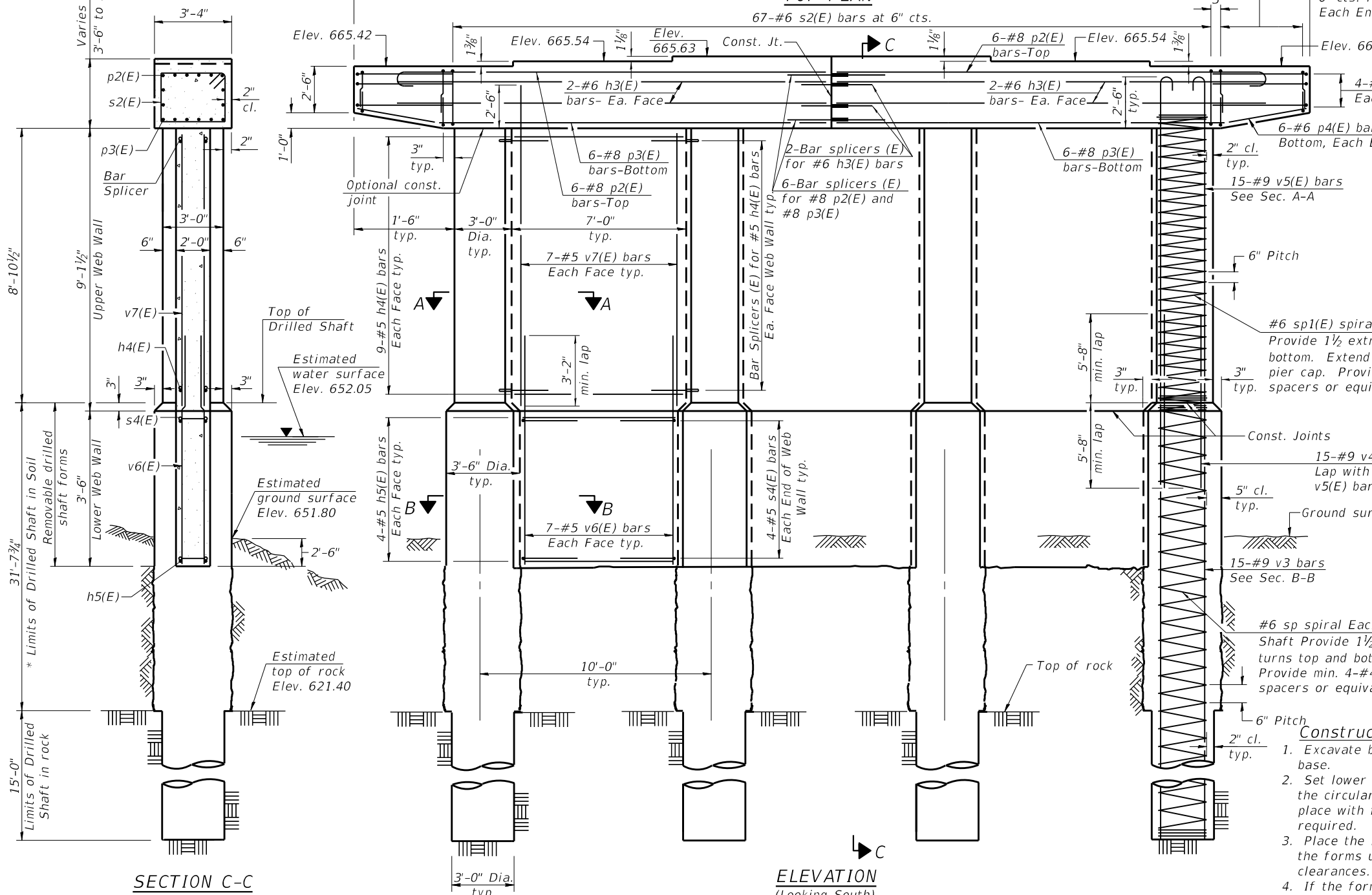
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	41
CONTRACT NO. 68804			ILLINOIS FED. AID PROJECT	



BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h3(E)	8	#6	16'-1"	—
h4(E)	54	#5	6'-9"	—
h5(E)	24	#5	6'-3"	—
p2(E)	12	#8	17'-0"	U
p3(E)	12	#8	16'-6"	—
p4(E)	12	#6	1'-5"	—
s2(E)	67	#6	13'-8"	□
s3(E)	12	#6	7'-4"	—
s4(E)	24	#5	7'-2"	U
sp	4	#6	46'-3"	~
sp1(E)	4	#6	9'-1"	~
u1(E)	8	#6	16'-0"	—
v3	60	#9	46'-6"	—
v4(E)	60	#9	11'-4"	—
v5(E)	60	#9	12'-8"	U
v6(E)	42	#5	6'-9"	—
v7(E)	42	#5	11'-6"	—
Structure Excavation			Cu. Yd.	10
Concrete Structures			Cu. Yd.	44.0
Reinforcement Bars			Pound	14,250
Reinforcement Bars, Epoxy Coated			Pound	11,300
Bar Splicers			Each	124
Drilled Shaft in Soil			Cu. Yd.	46
Drilled Shaft in Rock			Cu. Yd.	16
Crosshole Sonic Logging Access Ducts			Foot	187
Crosshole Sonic Logging Testing			Each	4

** Length is height of spiral.



Notes:
 Space reinforcement in cap to miss anchor bolts.
 Pour steps monolithically with cap.
 Minimum lap for spirals = 4'-4".
 If a portion of the drilled shaft web walls 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.

* If the prevailing water surface elevation during construction is consistently different than estimated on the plans, the contractor may propose an adjustment to the top of the drilled shaft elevation as part of their installation procedure. The top of all drilled shafts within a substructure unit shall be constructed to the same elevation and extend above the prevailing water surface. The quantities and reinforcement detailing are based on the top of shaft and the estimated elevations shown and may change based on the actual elevations encountered at each shaft and the final top of shaft elevation.

Construction Sequence for Web Wall:

- Excavate between shafts to elevation of web wall base.
- Set lower web wall forms through water to bear on the circular edge of drilled shafts and secure in place with fill, struts or tie forms together as required.
- Place the lower web wall reinforcement cage into the forms using spacers to maintain proper clearances.
- If the forms can be sealed against the shafts and streambed to allow dewatering, the reinforcement and the concrete placement may be completed in the dry. Alternatively, the rebar cage can be lowered into position through water and the concrete discharged at the base of the excavation through a tremie pipe or pump hose, displacing water, sediment, and tainted concrete out the top of the forms.
- Construct Columns.
- Construct upper web walls.

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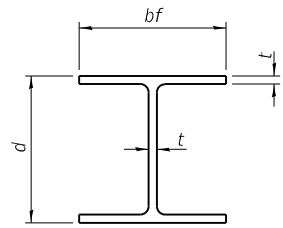


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STATE OF ILLINOIS
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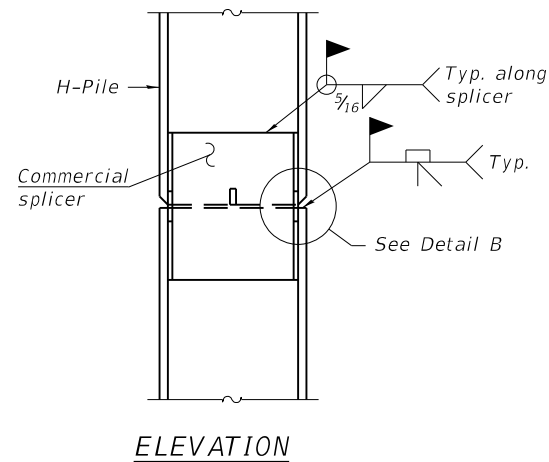
PIER 1 DETAILS
 STRUCTURE NO. 066-0019
 SHEET 22 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	42
CONTRACT NO. 68804			ILLINOIS FED. AID PROJECT	

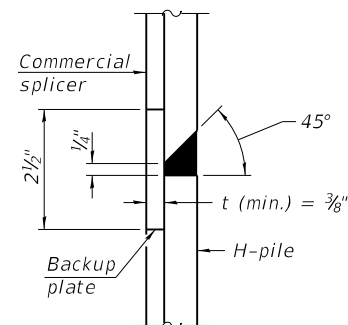


STEEL PILE TABLE

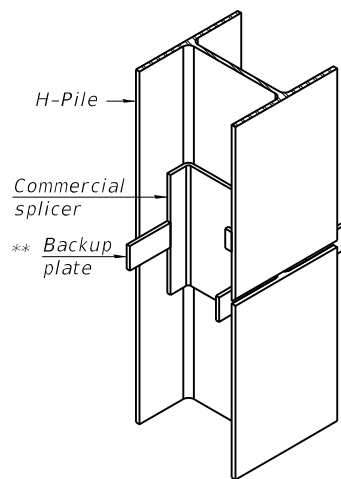
Designation	Depth d	Flange width bf	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	1 3/16"	30"
x102	14"	14 3/4"	1 1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 3/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1 1/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"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

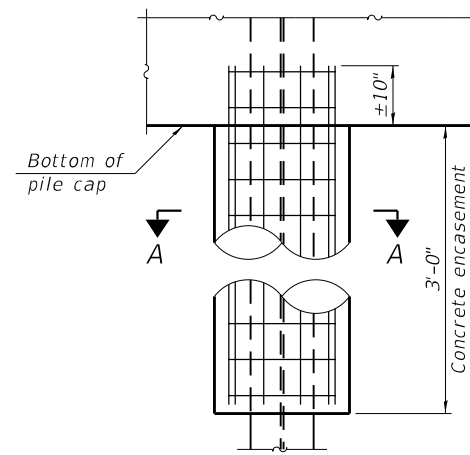


DETAIL "B"

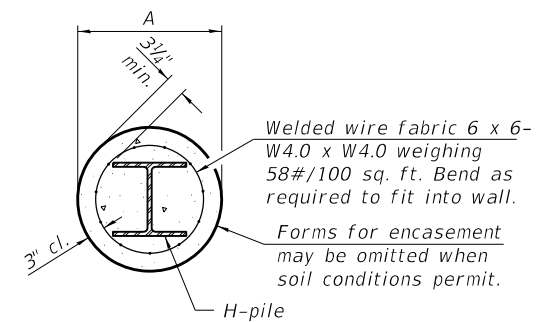


ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE

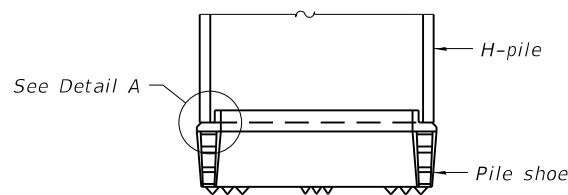


ELEVATION

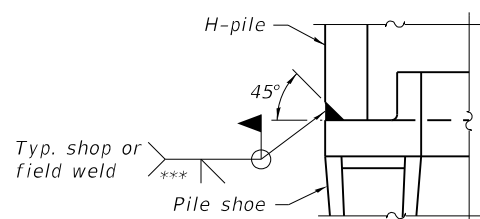


SECTION A-A

INDIVIDUAL PILE CONCRETE ENCASUREMENT (when specified)

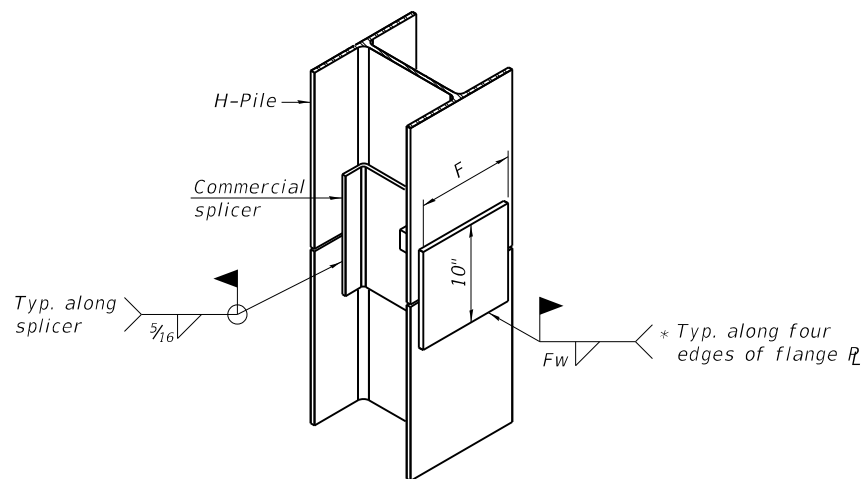


ELEVATION



DETAIL A

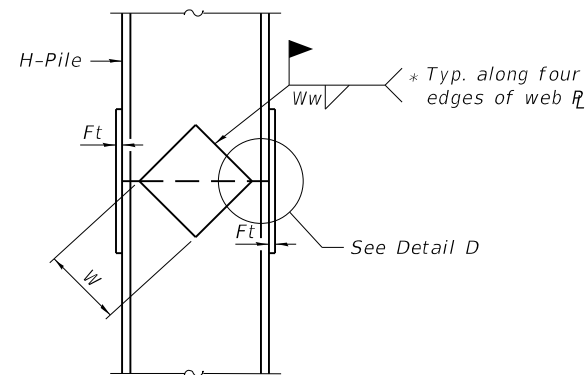
SHOE ATTACHMENT



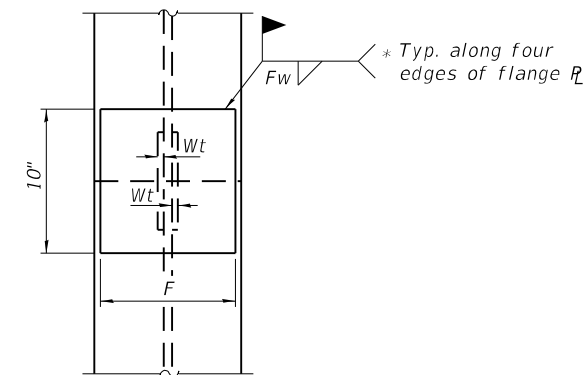
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

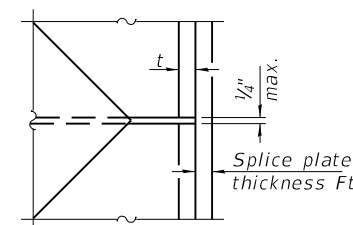
- * Interrupt welds 1/4" from end of web and/or each flange.
- ** Remove portions of backup plates that extend outside the flanges.
- *** Weld size per pile shoe manufacturer (5/16" min.).



ELEVATION



END VIEW



DETAIL D

WELDED PLATE FIELD SPLICE

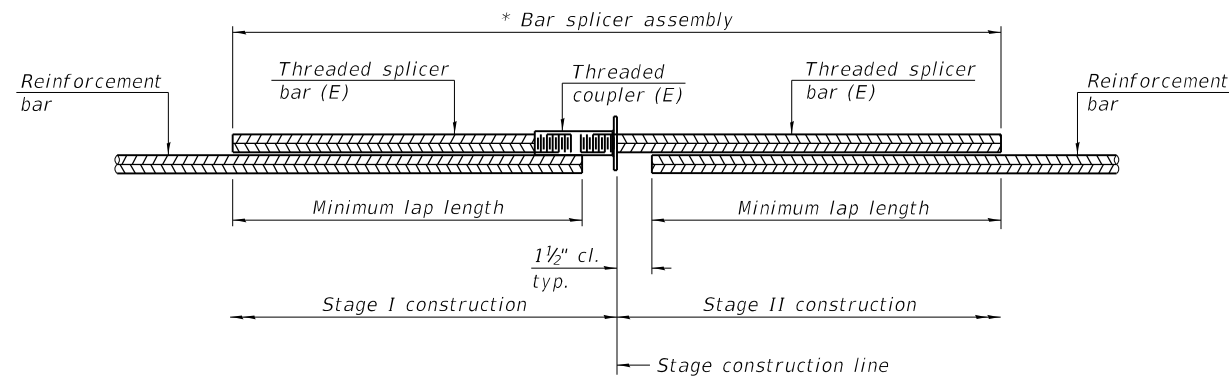
Designation	F	Ft	Fw	W	Wt	Ww
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	1 1/16"	7 3/4"	5/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5/8"	1/2"
HP 12x84	10"	7/8"	1 1/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	1 1/16"	6 1/2"	5/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	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"

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

MODEL: Default
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6/22/2023 10:58:18 AM

F-HP	2-1-2023	DESIGNED - JJD	REvised -
		CHECKED - CBW	REvised -
		DRAWN - CAB	REvised -
		CHECKED - CBW	REvised -

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	43
CONTRACT NO. 68804			ILLINOIS FED. AID PROJECT	



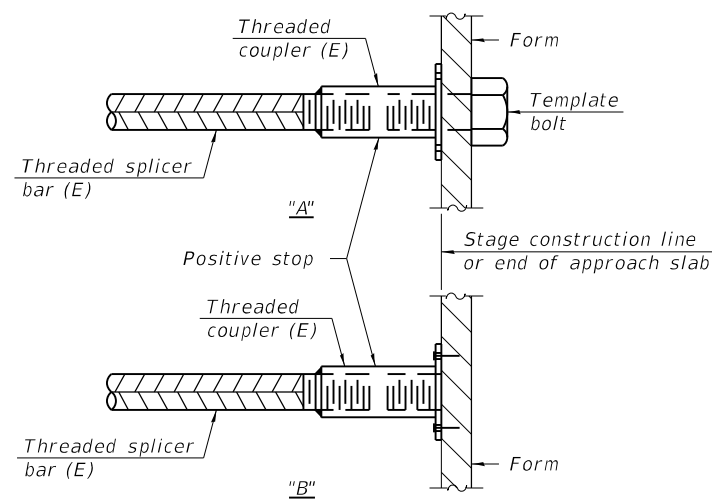
STANDARD BAR SPLICER ASSEMBLY PLAN

Only bar splicer assemblies as presented on the approved QPL list may be used.

Threaded splicer bar length = min. lap length + 1 1/2" + thread length

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

Location	Bar size	No. assemblies required	Minimum lap length
Slab	#5	423	3'-7"
Diaphragm	#6	14	4'-4"
Abutment	#7	20	5'-0"
Approach Slab	#5	172	3'-7"
Approach Slab	#8	120	4'-9"
Pier 1	#5	108	3'-7"
Pier 1	#6	4	4'-4"
Pier 1	#8	12	8'-2"

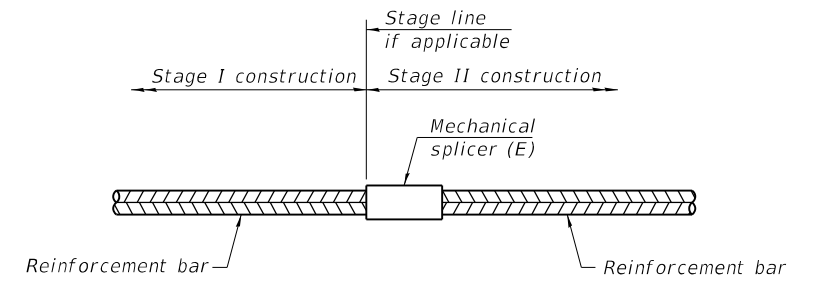


INSTALLATION AND SETTING METHODS

"A" : Set bar splicer assembly by means of a template bolt.

"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.

(E) : Indicates epoxy coating.



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required

Notes:

Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.

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

Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.

See approved list of bar splicer assemblies and mechanical splicers for alternatives.

MODEL: Default
FILE NAME: C:\CS4PDF\17258113123_22\0660019-D468804-024-BSA.dgn

BSD-1

2-1-2023



USER NAME =	DESIGNED - BTF	REVISED -
	CHECKED - JJD	REVISED -
PLOT SCALE =	DRAWN - CAB	REVISED -
PLOT DATE =	CHECKED - JJD	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 066-0019

SHEET 24 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	44
CONTRACT NO. 68804			ILLINOIS FED. AID PROJECT	



SOIL BORING LOG

Page 1 of 2

Date 3/31/11

ROUTE FAP 310 (US87) DESCRIPTION Bridge over Pope Creek LOGGED BYB, Williamson

SECTION 103-BR LOCATION US 67 over Pope Cr. 3mi S of Viola, SEC. 34 TWP. 14N, RNG. 2W, 4th PM, Latitude 41°09'29.04" N, Longitude 90°35'15.96" W

COUNTY Mercer DRILLING METHOD HSA & Core Barrel HAMMER TYPE AUTO

STRUCT. NO. 066-0003(exist) 066-0019(prop)	DEPT H S	BL O S	UC S Qu	MO I S	Surface Water Elev. 650.10 ft	DEPT H S	BL O S	UC S Qu	MO I S		
BORING NO. B-2 Pier 1	Station 863+92	Offset 30.0 ft LT	Ground Surface Elev. 658.40 ft	Groundwater Elev.: First Encounter 647.4 ft Upon Completion After Hrs. Not taken	Stream Bed Elev. ft	First Encounter Upon Completion After Hrs. Not taken	ft	(ft)	(/6")	(tsf)	(%)

Medium-stiff, dk brown SILTY CLAY LOAM, v. moist	2	1.0	30	655.40	2	0.5	24	3	B		
V. Stiff, dk brown-brown SILTY CLAY LOAM, moist	4	2.5	18	652.40	3	0.6	23	5	17	4.5	16
Soft, dk brown SILTY CLAY LOAM, v. moist	1	0.5	31	647.40	3	0.3	26	2	3	B	
Very loose, brown-gray SANDY LOAM, wet	0	0	30	642.40	3	0.9	31	1	0.5	31	
Medium-dense, brown Cse SAND and small GRAVEL, saturated	8	4	22	621.40	9	26	4.5	11	26	4.5	11

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, form 137 (Rev. 8-99)



SOIL BORING LOG

Page 2 of 2

Date 3/31/11

ROUTE FAP 310 (US87) DESCRIPTION Bridge over Pope Creek LOGGED BYB, Williamson

SECTION 103-BR LOCATION US 67 over Pope Cr. 3mi S of Viola, SEC. 34 TWP. 14N, RNG. 2W, 4th PM, Latitude 41°09'29.04" N, Longitude 90°35'15.96" W

COUNTY Mercer DRILLING METHOD HSA & Core Barrel HAMMER TYPE AUTO

STRUCT. NO. 066-0003(exist) 066-0019(prop)	DEPT H S	BL O S	UC S Qu	MO I S	Surface Water Elev. 650.10 ft	DEPT H S	BL O S	UC S Qu	MO I S		
BORING NO. B-2 Pier 1	Station 863+92	Offset 30.0 ft LT	Ground Surface Elev. 658.40 ft	Groundwater Elev.: First Encounter 647.4 ft Upon Completion After Hrs. Not taken	Stream Bed Elev. ft	First Encounter Upon Completion After Hrs. Not taken	ft	(ft)	(/6")	(tsf)	(%)

Hard, lt gray to dk gray SILTY CLAY LOAM/WEATHERED SHALE (continued)	14	4.5	15	603.40	14	4.5	13	41	73	100/4'
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, form 137 (Rev. 8-99)



ROCK CORE LOG

Page 2 of 2

Date 3/31/11

ROUTE FAP 310 (US87) DESCRIPTION Bridge over Pope Creek LOGGED BYB, Williamson

SECTION 103-BR LOCATION US 67 over Pope Cr. 3mi S of Viola, SEC. 34 TWP. 14N, RNG. 2W, 4th PM, Latitude 41°09'29.04" N, Longitude 90°35'15.96" W

COUNTY Mercer CORING METHOD 10', Dual Barrel

STRUCT. NO. 066-0003(exist) 066-0019(prop)	DEPT H S	BL O S	UC S Qu	MO I S	Surface Water Elev. 650.10 ft	DEPT H S	BL O S	UC S Qu	MO I S		
BORING NO. B-2 Pier 1	Station 863+92	Offset 30.0 ft LT	Ground Surface Elev. 658.40 ft	Groundwater Elev.: First Encounter 647.4 ft Upon Completion After Hrs. Not taken	Stream Bed Elev. ft	First Encounter Upon Completion After Hrs. Not taken	ft	(ft)	(/6")	(tsf)	(%)

Hard, gray to dk gray SHALE	1	75	51	603.40	2	97	83	121.7	1
End of Boring				587.40				192.2	1

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. 8-99)

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USER NAME =	DESIGNED -	REVISED -
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	CHECKED - CBW	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS - PIER 1
STRUCTURE NO. 066-0019
SHEET 26 OF 28 SHEETS

F.A.P. RTE. 310	SECTION (103)BR-1	COUNTY MERCER	TOTAL SHEETS 73	SHEET NO. 46
			CONTRACT NO. 68804	
ILLINOIS FED. AID PROJECT				



SOIL BORING LOG

Date 3/30/11

ROUTE FAP 310 (US67) DESCRIPTION Bridge over Pope Creek LOGGED BYB. Williamson

SECTION 103-BR LOCATION US 67 over Pope Cr. 3mi S of Viola, SEC. 34 TWP. 14N, RNG. 2W, 4th PM, Latitude 41°09'29.04" N, Longitude 90°35'15.96" W

COUNTY Mercer DRILLING METHOD HSA HAMMER TYPE AUTO

STRUCT. NO. 066-0003(exist) 066-0019(prop)	D E P T H	B L O W S	U C S	M O I S T	Surface Water Elev. 650.10 ft	D E P T H	B L O W S	U C S	M O I S T
BORING NO. B-4 S. Abut	T W S	Qu	T	Groundwater Elev.: First Encounter 645.0 ft	ft	(ft)	(/ft)	(tsf)	(%)
Station 865+30	H S			Upon Completion	ft	(ft)	(/ft)	(tsf)	(%)
Offset 27.0 ft RT				After Hrs. Not taken	ft	(ft)	(/ft)	(tsf)	(%)
Ground Surface Elev. 667.00	ft	(ft)	(/ft)	(tsf)	(%)				

Stiff, brown SILTY CLAY LOAM, moist	2				Soft, brown-gray SILTY CLAY LOAM, v. moist (continued)				
	3	1.1	19						
		B							
664.00					644.00				
Stiff, brown SILTY LOAM, moist	1				V. Loose, brown-gray SILT, wet				
	3	1.2	21						
	5	B							
661.00					641.00				
Stiff, dk brown SILTY CLAY LOAM, moist	2				V. Loose, brown SANDY LOAM, saturated				
	3	2.0	23						
	5	P							
659.00					639.00				
Stiff, brown SILTY CLAY LOAM, moist	1				V. loose, brown, fine to med. SAND, saturated				
	3	1.5	25						
	4	P			V. Loose, brown-gray SANDY LOAM, saturated				
657.00									
V. Stiff to stiff, brown-gray SILTY CLAY LOAM, moist	2				635.00				
	5	2.5	23						
	6	B							
	2				Stiff, gray SILTY LOAM, moist				
	5	2.7	24						
	5	B							
	1								
	3	1.0	27						
	4	B							
649.00					629.00				
Soft, brown-gray SILTY CLAY LOAM, v. moist	1				V. Stiff to stiff gray SILTY LOAM, moist				
	3	0.5	28						
	3	B							
	3								

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, form 137 (Rev. 8-99)



SOIL BORING LOG

Date 3/30/11

ROUTE FAP 310 (US67) DESCRIPTION Bridge over Pope Creek LOGGED BYB. Williamson

SECTION 103-BR LOCATION US 67 over Pope Cr. 3mi S of Viola, SEC. 34 TWP. 14N, RNG. 2W, 4th PM, Latitude 41°09'29.04" N, Longitude 90°35'15.96" W

COUNTY Mercer DRILLING METHOD HSA HAMMER TYPE AUTO

STRUCT. NO. 066-0003(exist) 066-0019(prop)	D E P T H	B L O W S	U C S	M O I S T	Surface Water Elev. 650.10 ft	D E P T H	B L O W S	U C S	M O I S T
BORING NO. B-4 S. Abut	T W S	Qu	T	Groundwater Elev.: First Encounter 645.0 ft	ft	(ft)	(/ft)	(tsf)	(%)
Station 865+30	H S			Upon Completion	ft	(ft)	(/ft)	(tsf)	(%)
Offset 27.0 ft RT				After Hrs. Not taken	ft	(ft)	(/ft)	(tsf)	(%)
Ground Surface Elev. 667.00	ft	(ft)	(/ft)	(tsf)	(%)				

V. Stiff to stiff gray SILTY LOAM, moist (continued)					Auger refusal at 60' End of Boring				
	3								
	4	1.5	21						
	9	P							
622.00					622.00				
Hard, gray SILTY CLAY LOAM-WEATHERED SHALE									
	6								
	23	4.5	10						
	90	P							
	20								
	100/5	4.5	9						
	5	P							
	60								
	100/3	4.5	9						
	5	P							
	6								
607.00					607.00				

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, form 137 (Rev. 8-99)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS - S. ABUT.
STRUCTURE NO. 066-0019

SHEET 28 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	48
CONTRACT NO. 68804			ILLINOIS FED. AID PROJECT	

Built as Section 103 BR, S.B.I. RT. 85 1931
 Existing Structure:
 Cast Reinforced Conc. Abutments to
 remain in place and 120' span steel
 truss (21'0" roadway) Superstructure
 to be removed.

STATE OF ILLINOIS
 DEPARTMENT OF PUBLIC WORKS & BUILDINGS
 DIVISION OF HIGHWAYS

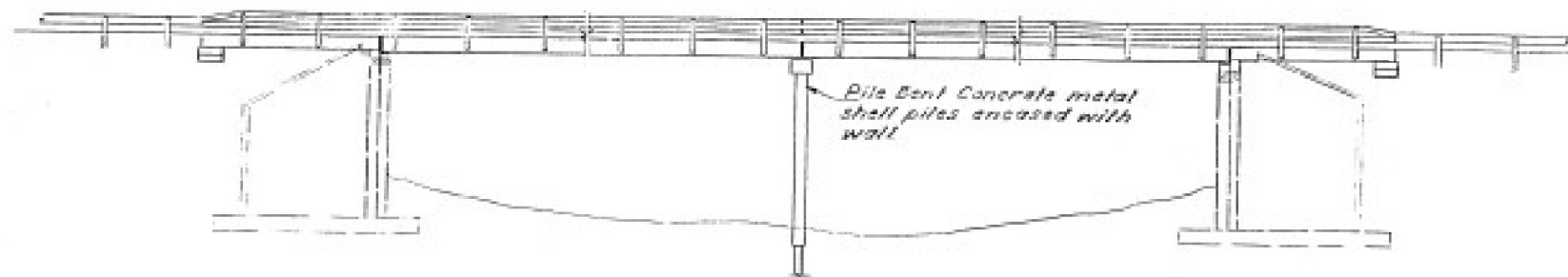
PROJECT NO.	SECTION	COUNTY	STATION	SHEET NO.	TOTAL SHEETS
65	103BR	MERCER	31	14	6 SHEETS

FOR INFORMATION ONLY

GENERAL NOTES

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

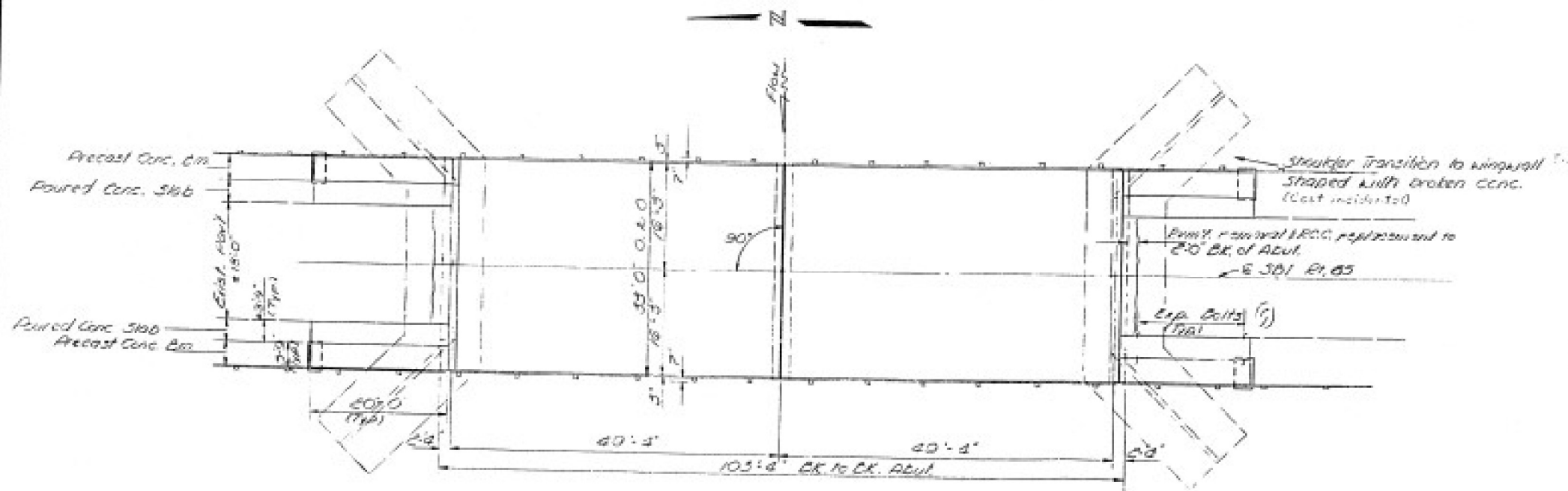
It shall be the responsibility of the Contractor to verify all dimensions and conditions existing in the field prior to construction and ordering of materials.
 An alternate strand pattern using Extra High Strength Prestressing strand (270 K.S.F.) is permitted.
 The Contractor shall drive one Metal Shell test pile in a permanent location at the pier bent as directed by the Engineer before ordering the remainder of piles. Reference grade line is profile of existing roadway, 21'0" L.S.T. P. 15 (Top of P.C.C. Pavement).



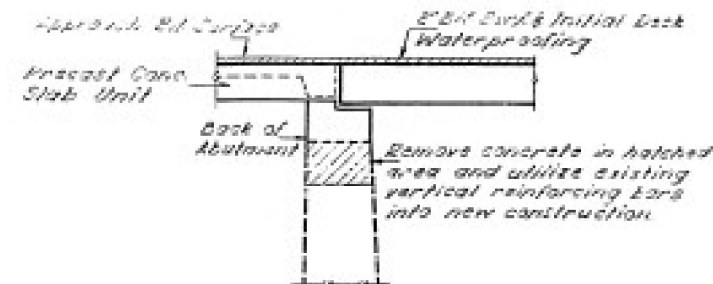
ELEVATION

TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub	Total
Portland Cement Conc. P.C.T.	Sq. Yds	34		34
Pavement Fabric	Sq. Yds	34		34
Removal of Existing Superstructure	Ea.			1
Concrete Removal	Cu. Yds.		15.0	15.0
Expansion Bolts (1/2" dia)	Ea.	50		50
Class II Concrete	Cu. Yds.		74.2	74.2
Precast Concrete Bridge Slab	Sq. Ft.	292		292
Precast Prestressed Concrete Deck Beams (21' Depth)	Sq. Ft.	3192		3192
Steel Reinforcing, Type II	Lins. Ft.	280		280
Reinforcement Bars	Lbs.		8150	8150
Metal Shell Piles (12" dia)	Lins. Ft.			480
Test Piles Metal Shell (12" dia)	Ea.			1
Final Panel P.C.C. Repair Type II (12")	Sq. Yds			8
Coal Tar Interlayer Protective Coat	Sq. Yds			365



PLAN



SECTION THRU NEW ABUTMENT CAP

DESIGNED	<i>[Signature]</i>
CHECKED	<i>[Signature]</i>
DRAWN	<i>[Signature]</i>
CHECKED	<i>[Signature]</i>

EXAMINED *[Signature]*
 PASSED
 APPROVED

PRECAST PRESTRESSED UNITS

- $f_c = 5000$
- $f_t = 4000$
- $f_s = 610,000$ (Strands)
- $f_a = 173,600$ (Strands)

FIELD UNITS

- $f_c = 1000$ psi Abut (Existing)
- $f_c = 1400$ psi (New)
- $f_s = 60000$ psi
- $v_c = 25$ psi
- $n = 10$

LOADING HS 20-44

GENERAL PLAN & ELEVATION
S.B.I. RT. 85 OVER POPE CR.
S.B.I. RT. 85 SEC 103 BR.
MERCER COUNTY
STATION 864 + 11.10

MODEL: Default
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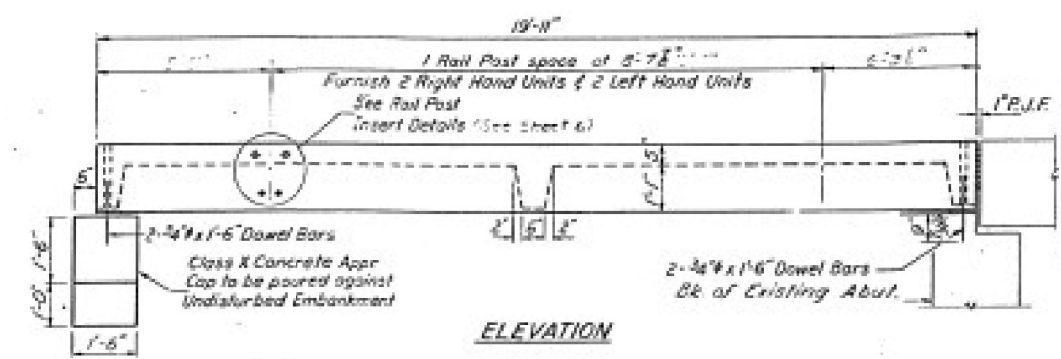
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

FOR INFORMATION ONLY

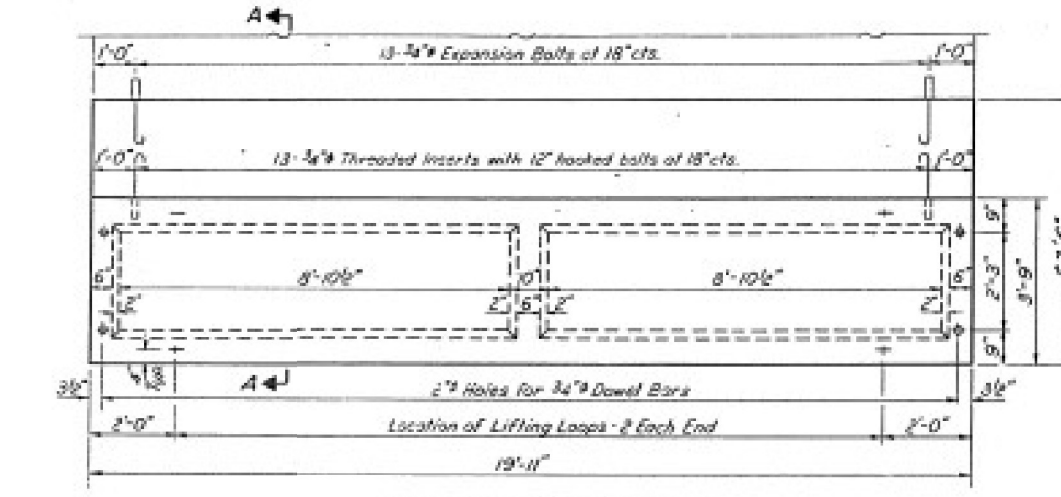
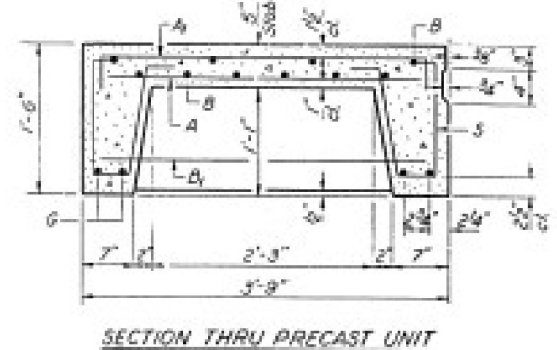
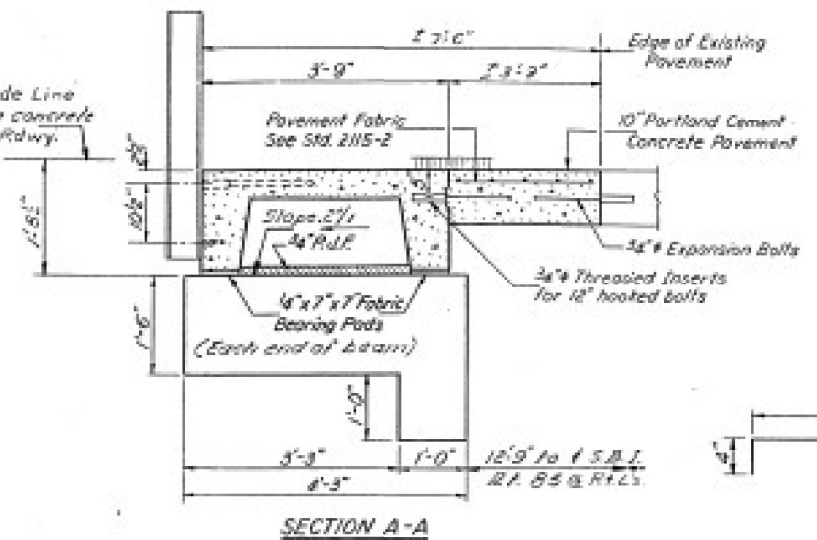
SCALE: SHEET 1 OF 2 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	49
ILLINOIS FED. AID PROJECT			CONTRACT NO. 68804	

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

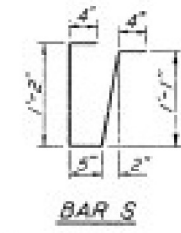
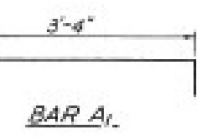


Reference Grade Line
Top of existing concrete
pavement @ E. Rdwy.



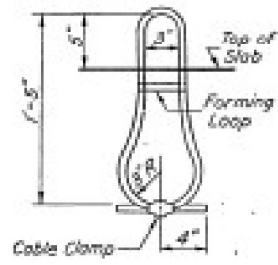
Edge of Existing
Pavement

SECTION A-A



BAR LIST-ONE UNIT
Reinforcement to be cast into slab

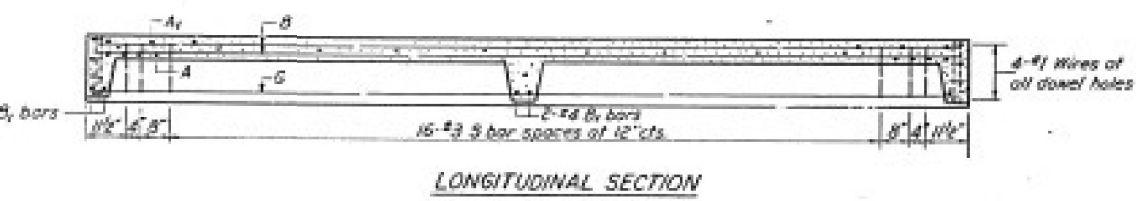
Bar	No	Size	Length	Shape
A	52	#4	3'-3"	—
A ₁	27	#4	4'-0"	—
B	10	#4	19'-6"	—
B ₁	6	#4	3'-6"	—
G	4	#10	15'-6"	—
S	42	#3	3'-4"	U



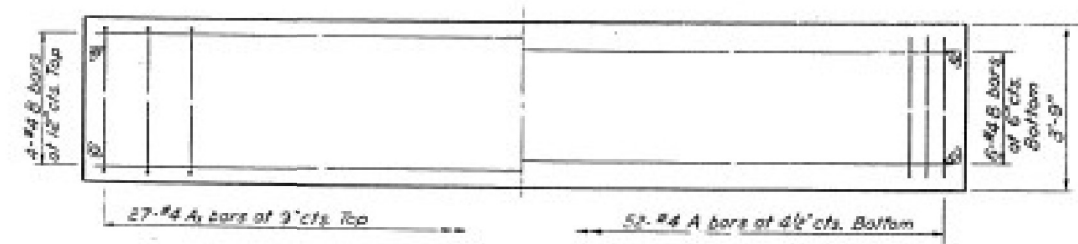
LIFTING LOOP DETAIL

GENERAL NOTES

Unless otherwise approved by the Engineer, lifting loops shall be 1/2", 6x19 class wire rope with filler core and shall have a minimum ultimate strength of 18,700 lbs. Loops shall be burned off after slab has been erected. Holes shall be drilled and anchor dowels grouted in place. Cost of reinforcement and accessories cast into the slab unit, bearing pads, formwork, drilling for, placing and grouting anchor dowels and 3/4" hooked bolts is included in unit bid price for "Precast Concrete Bridge Slab." The precast concrete bridge slab shall be erected and aligned with the exterior face of the exterior deck beams after deck beams are in final position.



LONGITUDINAL SECTION



REINFORCEMENT PLAN

BILL OF MATERIAL

Item	Unit	Quantity
Precast Concrete Bridge Slab	Sq. Ft.	299
Portland Cement Concrete Pavement (10)	Sq. Yds.	34
Pavement Fabric	Sq. Yds.	24
Expansion Bolts 3/4"	Each	52
Class X Concrete	Cu. Yds.	1.6

* Expansion bolts shall consist of self-drilling expansion bolts with 3/4" hooked bolts. Hooked bolts shall extend a min. of 3" into new concrete.

STRESSES
f_s = 4,500 psi
f_c = 1,800 psi
f_s = 20,000 psi
n = 8
LOADING HS-20

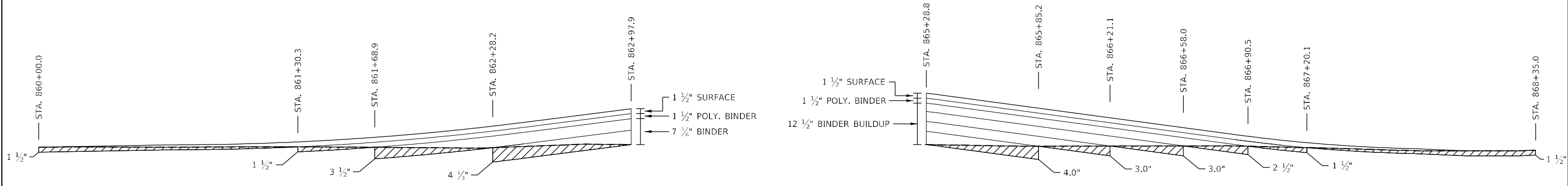
APPROACH DETAILS
S&I RT 85 SEC. 103BR
MERCER COUNTY
STATION 864+16.10

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CHECKED: J. L. Armstrong
DRAWN: J. L. Armstrong
CHECKED: J. L. Armstrong

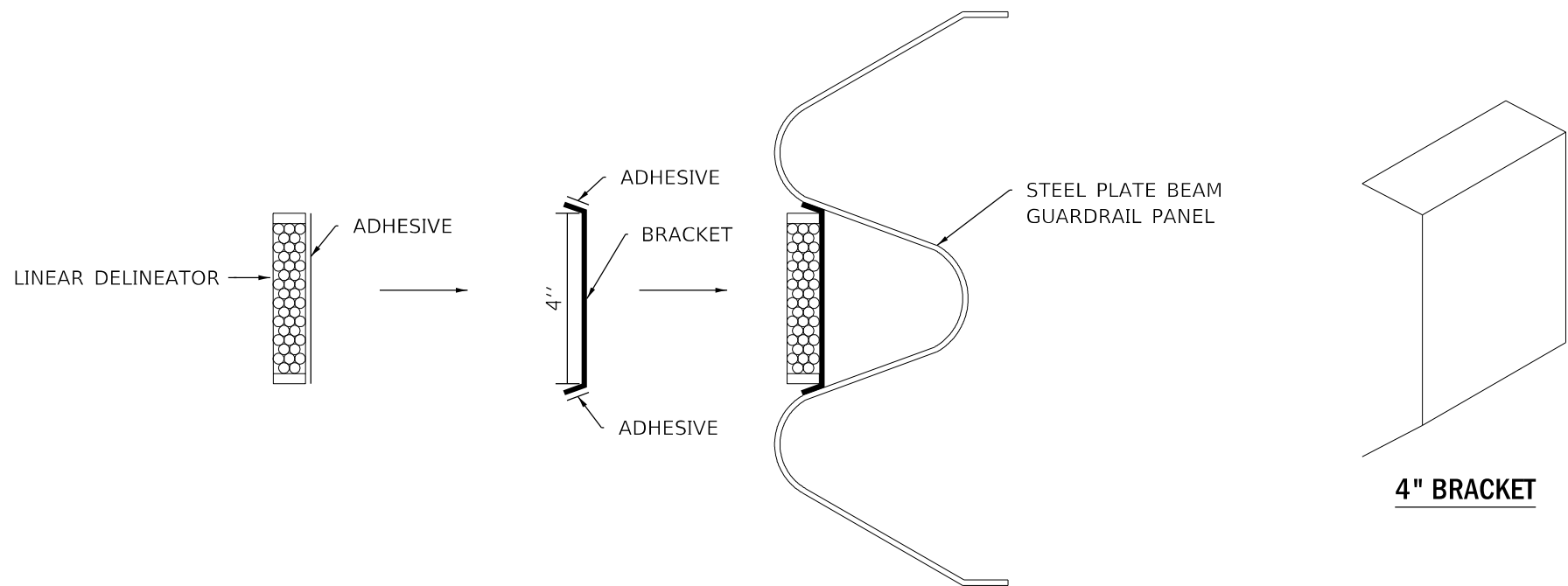
EXAMINED: [Signature]
PASSED: [Signature]
APPROVED: [Signature]

FOR INFORMATION ONLY

 HMA SURF. REMOVAL - BUTT JOINT



BUTT JOINT DETAIL



LINEAR DELINEATOR APPLICATION TO STANDARD GALVANIZED GUARDRAIL

SEE LINEAR DELINEATOR PANELS, 4 INCH
SPECIAL PROVISION FOR ADDITIONAL DETAILS

LINEAR DELINEATOR SHALL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS

MODEL: Default
FILE: Mainfile.pia
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

DETAILS

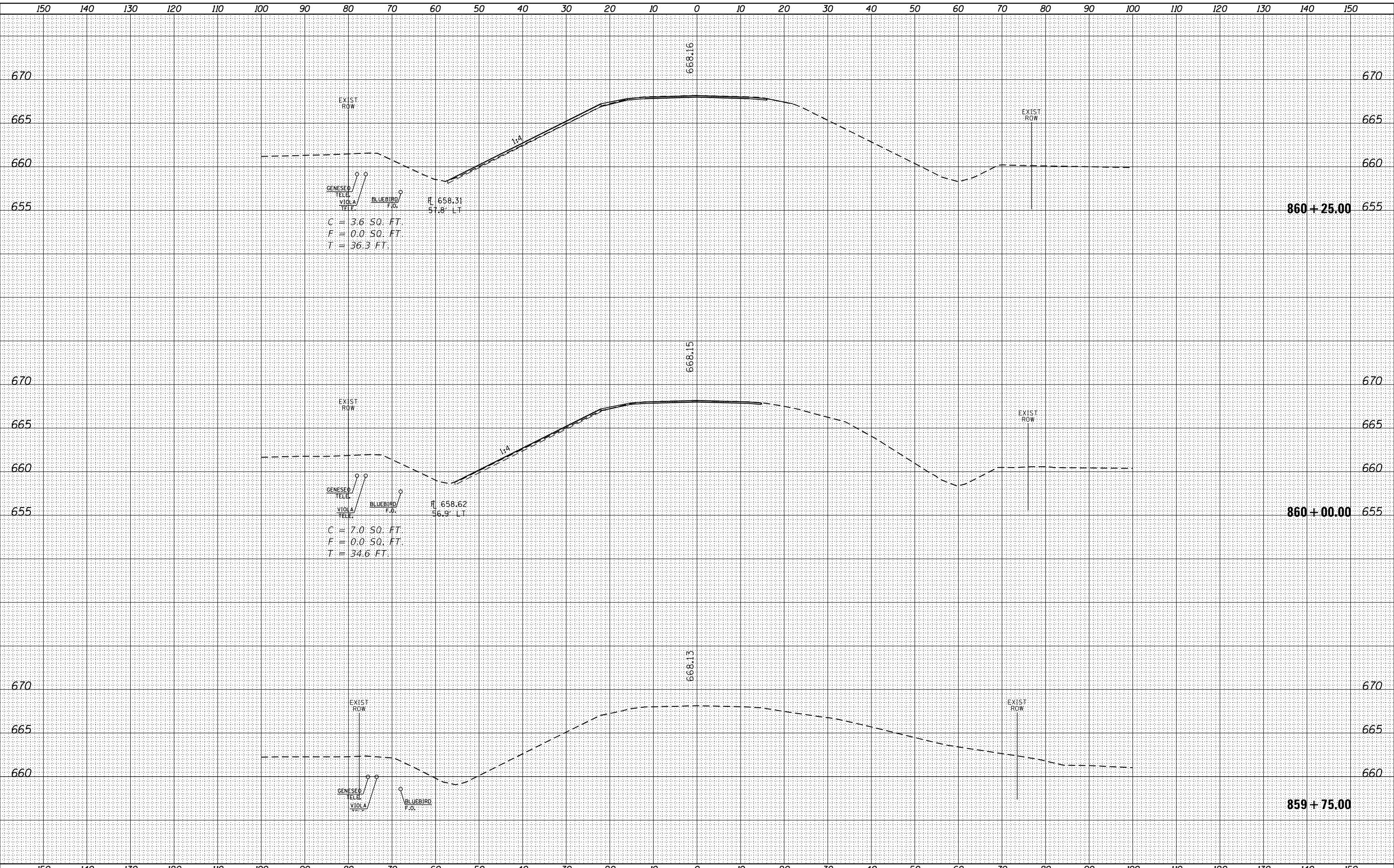
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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	51
CONTRACT NO. 68804				
ILLINOIS FED. AID PROJECT				

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

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

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	DRAWN -	REVISED -
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PLOT DATE = 6/29/2023	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**US 67
CROSS-SECTIONS**

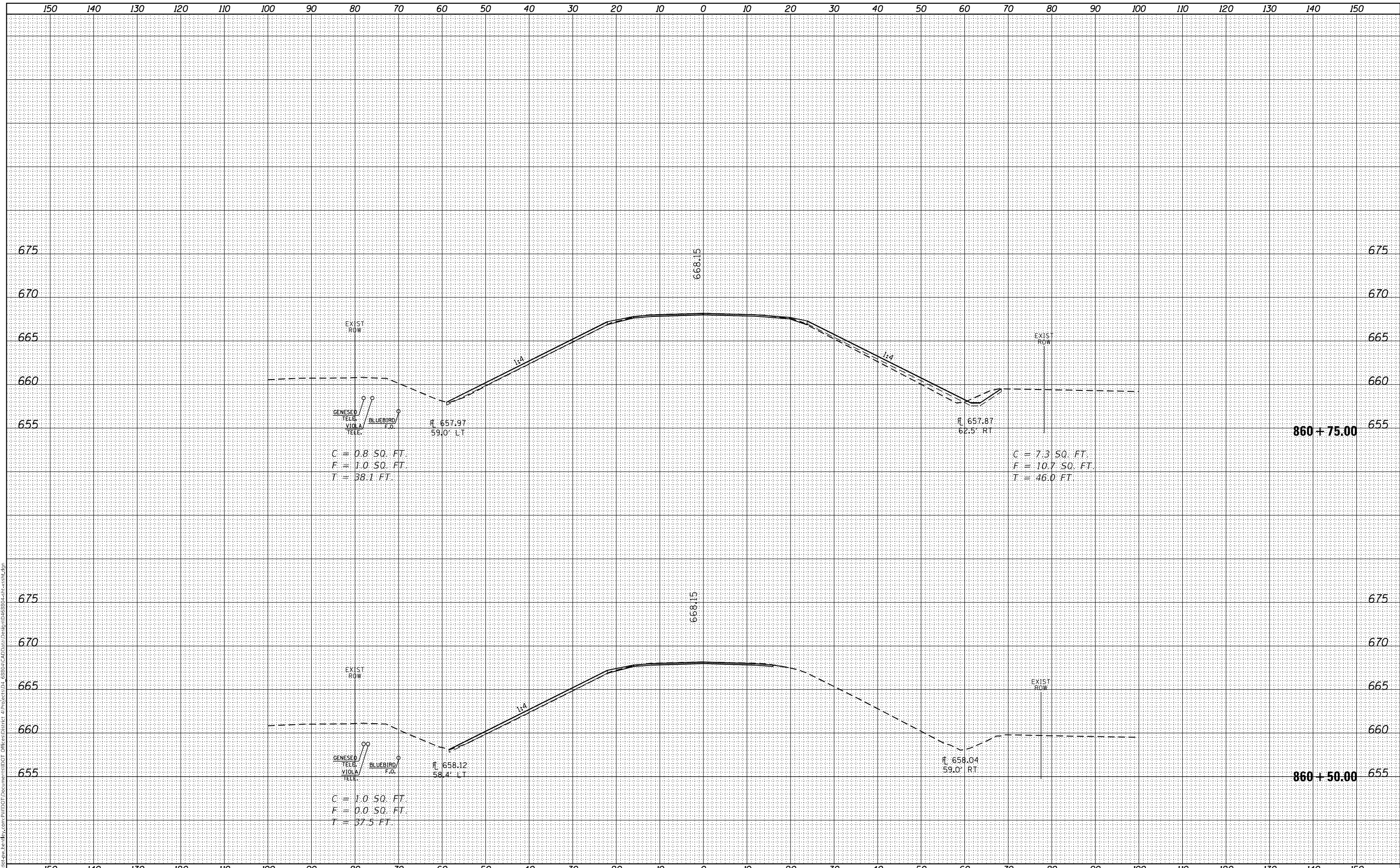
SCALE: SHEET 1 OF 14 SHEETS STA. 859+75.00 TO STA. 860+25.00

F.A.P. RTE. 310	SECTION (103)BR-1	COUNTY MERCER	TOTAL SHEETS 73	SHEET NO. 52
			CONTRACT NO. 68804	
		ILLINOIS FED. AID PROJECT		

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

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

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	DRAWN -	REVISED -
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PLOT DATE = 6/29/2023	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**US 67
CROSS-SECTIONS**

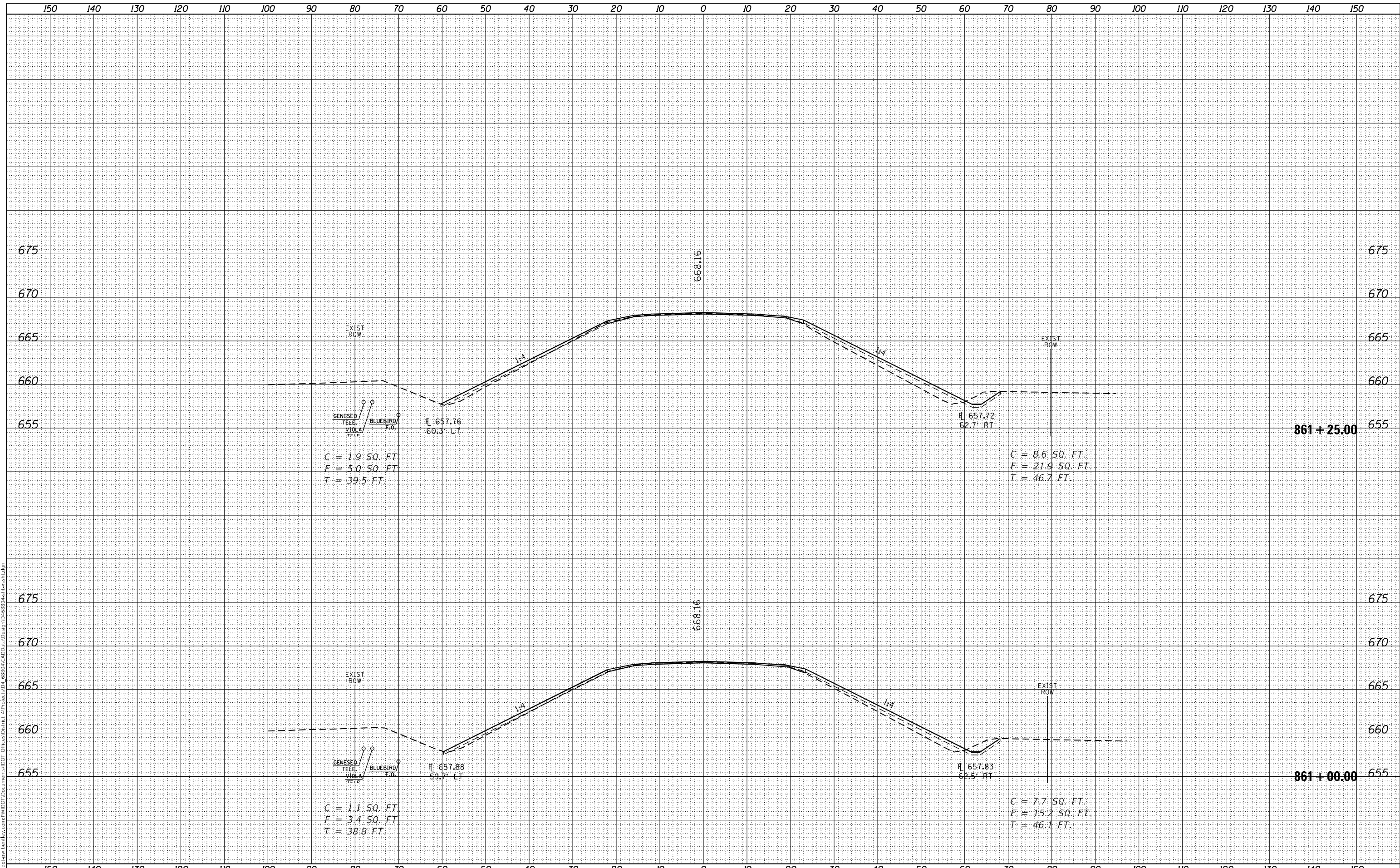
SCALE: SHEET 2 OF 14 SHEETS STA. 860+50.00 TO STA. 860+75.00

F.A.P. RTE. 310	SECTION (103)BR-1	COUNTY MERCER	TOTAL SHEETS 73	SHEET NO. 53
			CONTRACT NO. 68804	
ILLINOIS FED. AID PROJECT				

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

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

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

**US 67
 CROSS-SECTIONS**

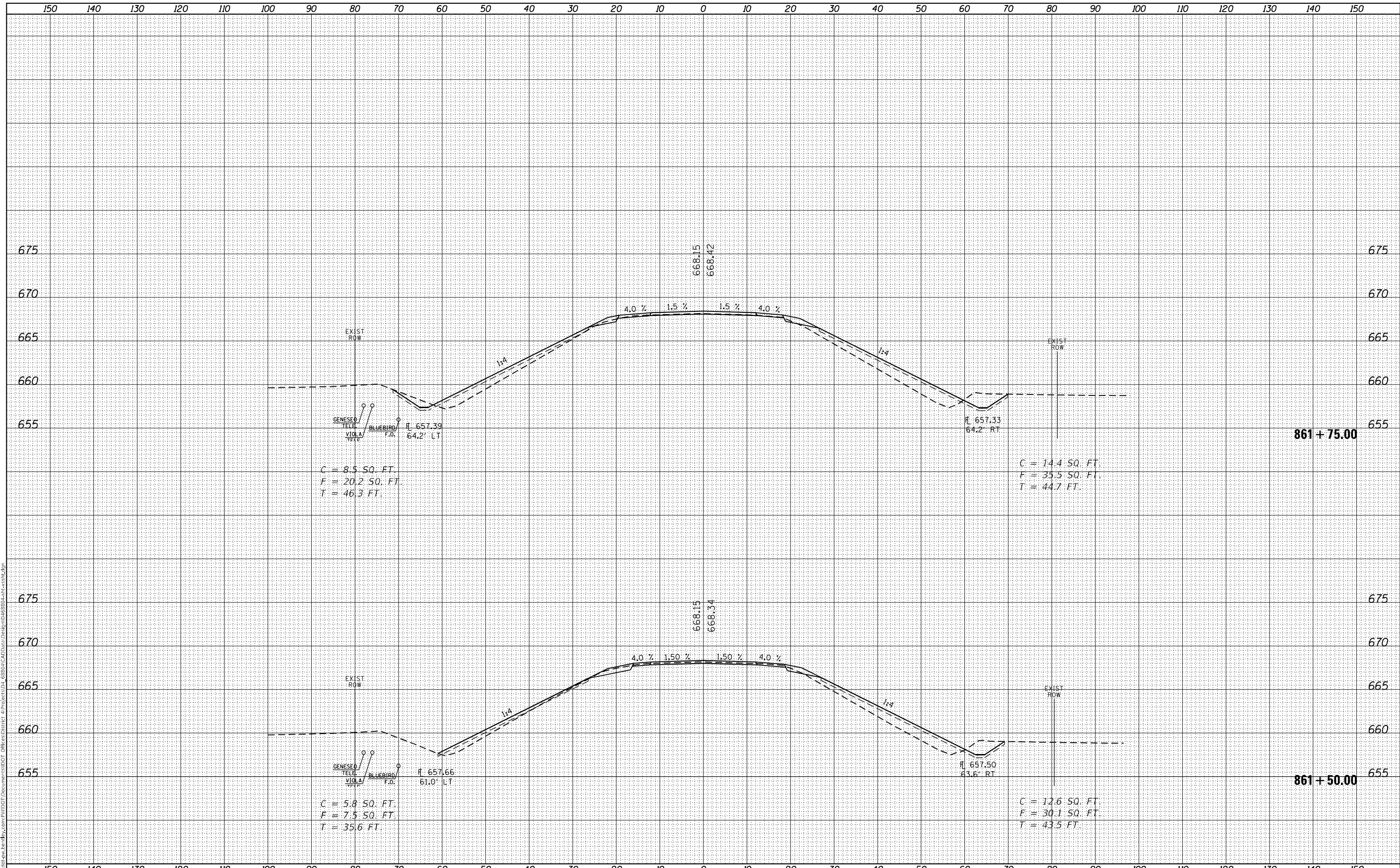
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F.A.P. RTE. 310	SECTION (103)BR-1	COUNTY MERCER	TOTAL SHEETS 73	SHEET NO. 54
			CONTRACT NO. 68804	
		ILLINOIS FED. AID PROJECT		

FINAL SURVEY NO.	SURVEYED	DATE
NOTE BOOK	PLOTTED	
AREAS CHECKED	TEMPLATE	
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AREAS CHECKED	TEMPLATE	
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**US 67
CROSS-SECTIONS**

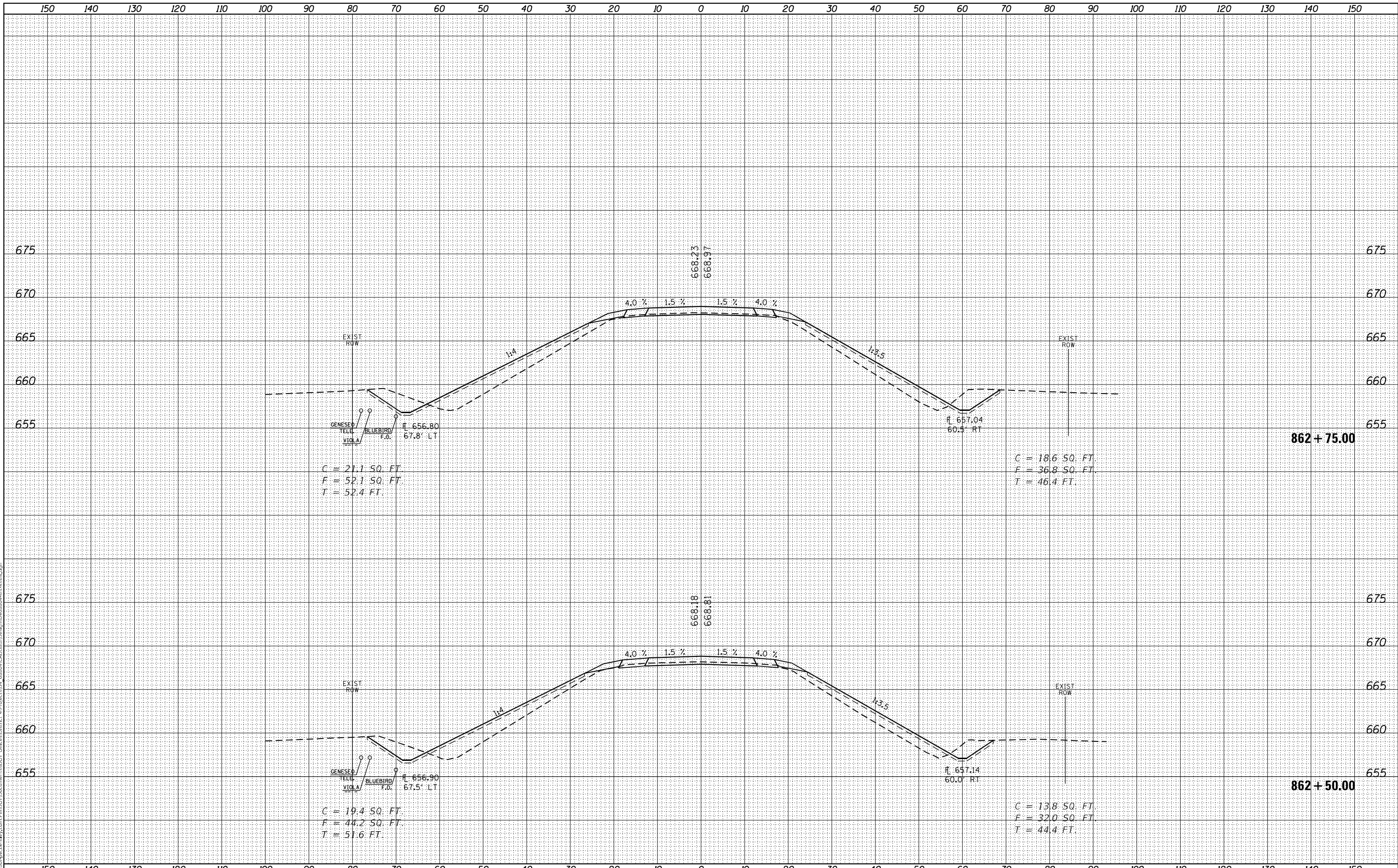
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F.A.P. RTE. 310	SECTION (103)BR-1	COUNTY MERCER	TOTAL SHEETS 73	SHEET NO. 55
			CONTRACT NO. 68804	
		ILLINOIS FED. AID PROJECT		

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

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

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PLOT SCALE = 1:20	CHECKED -	REVISED -
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**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**US 67
 CROSS-SECTIONS**

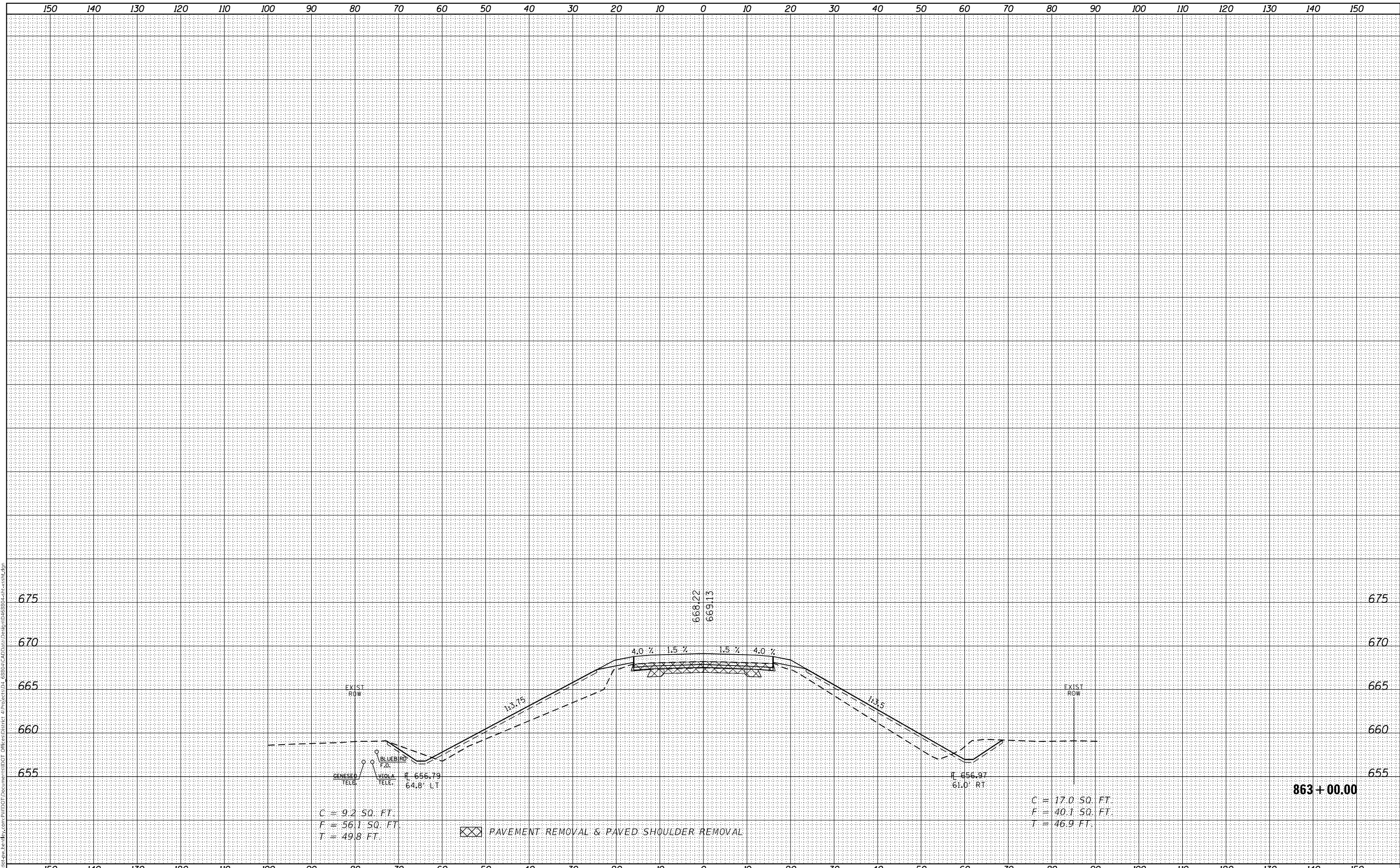
SCALE: SHEET 6 OF 14 SHEETS STA. 862+50.00 TO STA. 862+75.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	57
				CONTRACT NO. 68804
ILLINOIS				FED. AID PROJECT

FINAL SURVEY NO.	SURVEYED	DATE
NOTE BOOK	PLOTTED	
AREAS CHECKED	TEMPLATE	
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ORIGINAL SURVEY NO.	SURVEYED	DATE
NOTE BOOK	PLOTTED	
AREAS CHECKED	TEMPLATE	
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 $F = 56.1 \text{ SQ. FT.}$
 $T = 49.8 \text{ FT.}$

$C = 17.0 \text{ SQ. FT.}$
 $F = 40.1 \text{ SQ. FT.}$
 $T = 46.9 \text{ FT.}$

⊗ PAVEMENT REMOVAL & PAVED SHOULDER REMOVAL

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PLOT SCALE = 1:20	CHECKED -	REVISED -
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**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**US 67
 CROSS-SECTIONS**

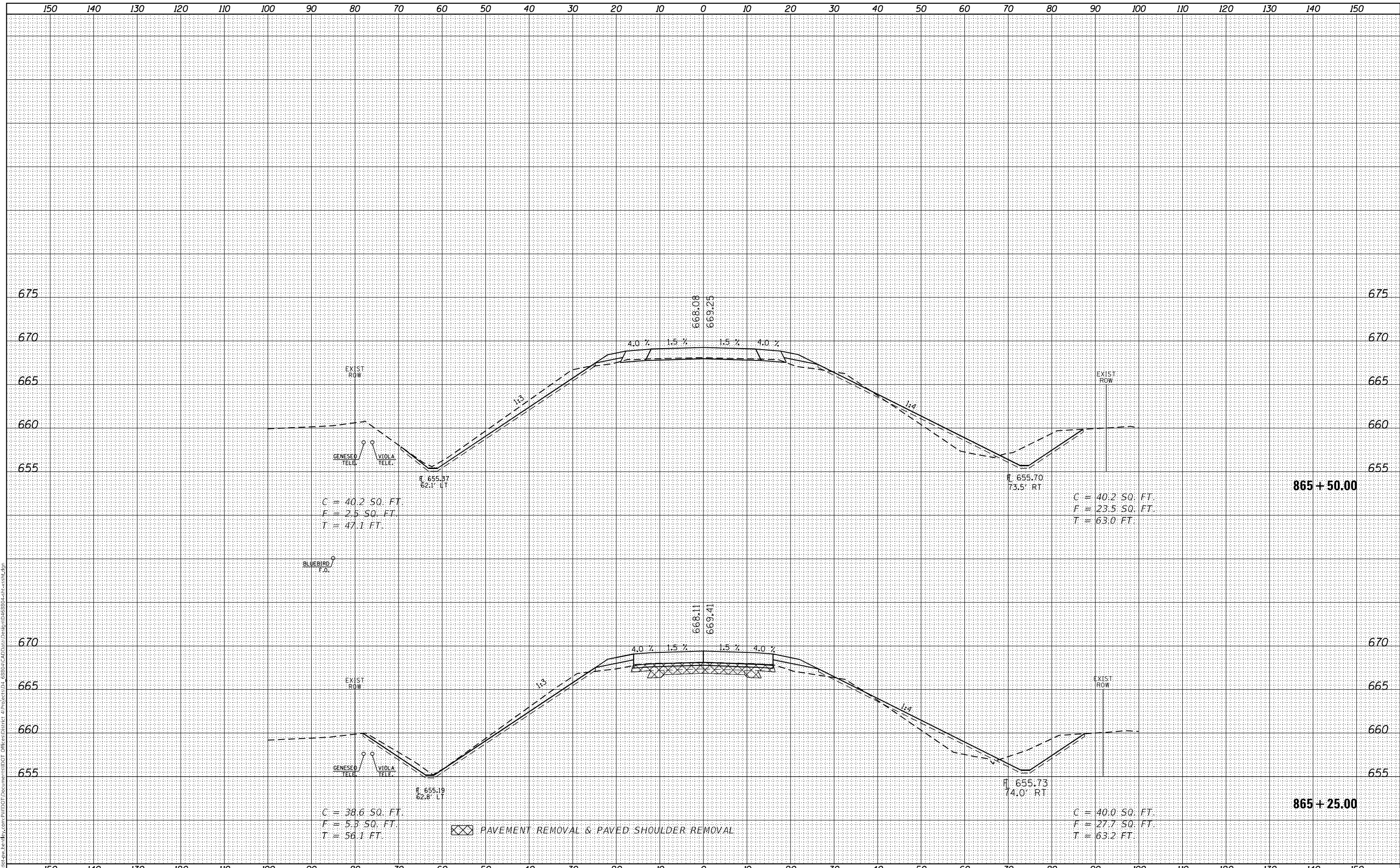
SCALE: SHEET 7 OF 14 SHEETS STA. 863+00.00 TO STA. 863+00.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	58
			CONTRACT NO. 68804	
ILLINOIS			FED. AID PROJECT	

FINAL SURVEY NO.	SURVEYED	DATE
NOTE BOOK NO.	PLOTTED	
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	TEMPLATE	
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PLOT DATE = 6/29/2023	DATE -	REVISED -

DESIGNED -	REVISED -
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DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

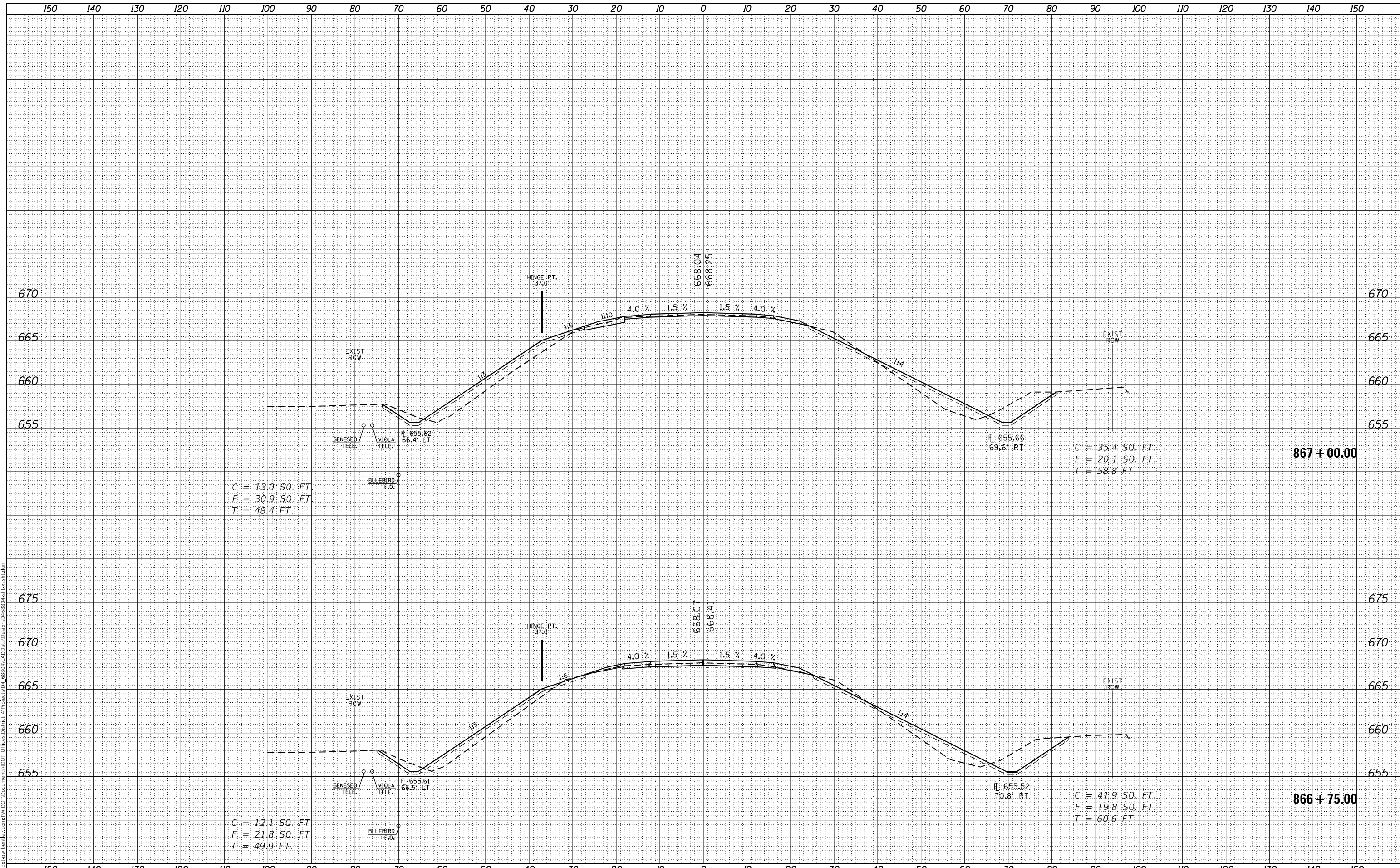
US 67 CROSS-SECTIONS			
SCALE:	SHEET 8	OF 14 SHEETS	STA. 865+25.00 TO STA. 865+50.00

F.A.P. RTE. 310	SECTION (103)BR-1	COUNTY MERCER	TOTAL SHEETS 73	SHEET NO. 59
			CONTRACT NO. 68804	
		ILLINOIS FED. AID PROJECT		

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

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

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PLOT DATE = 6/29/2023	CHECKED -	REVISED -
	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**US 67
CROSS-SECTIONS**

SCALE: SHEET 11 OF 14 SHEETS STA. 866+75.00 TO STA. 867+00.00

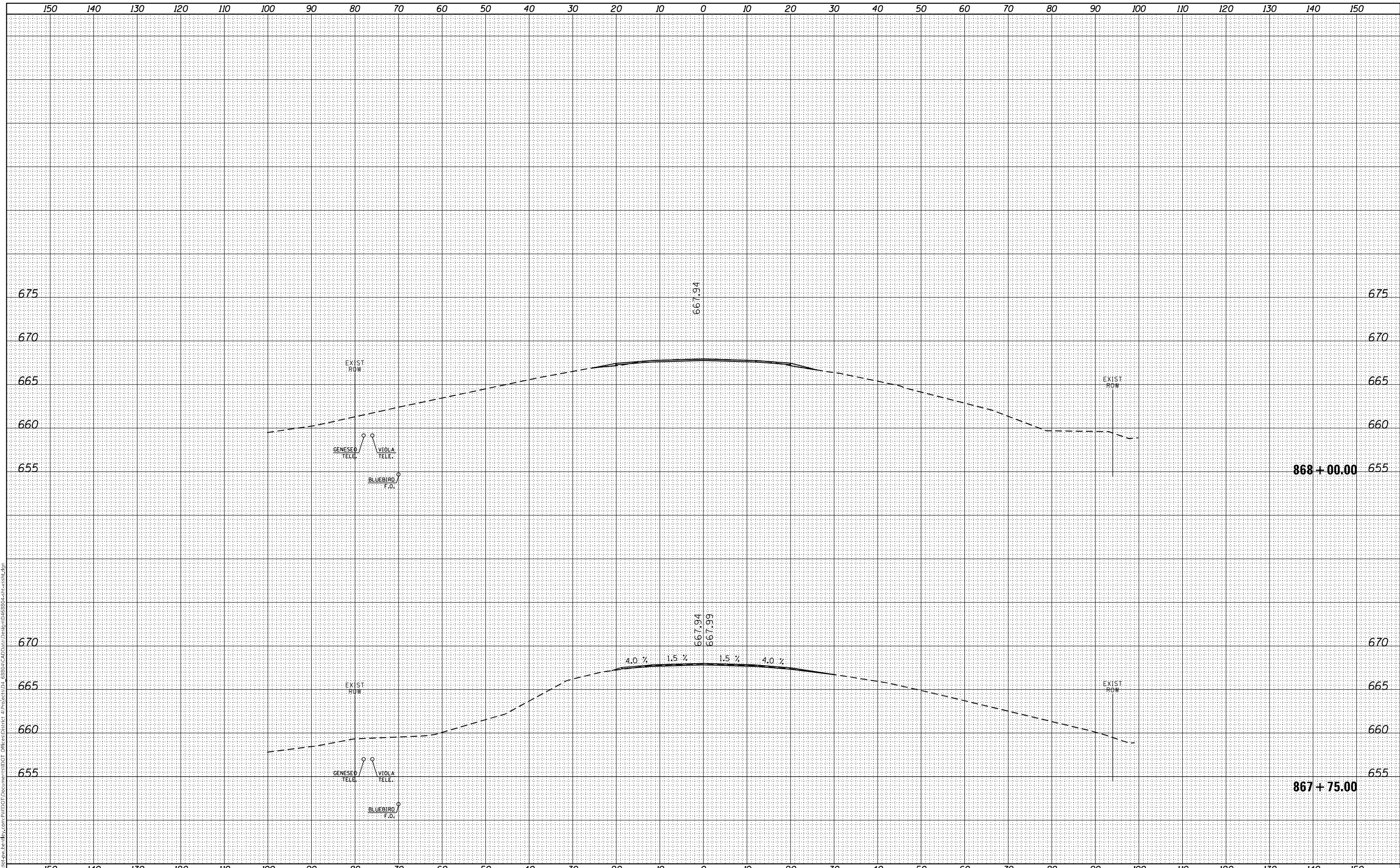
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310	(103)BR-1	MERCER	73	62
			CONTRACT NO. 68804	

ILLINOIS FED. AID PROJECT

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

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

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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**US 67
CROSS-SECTIONS**

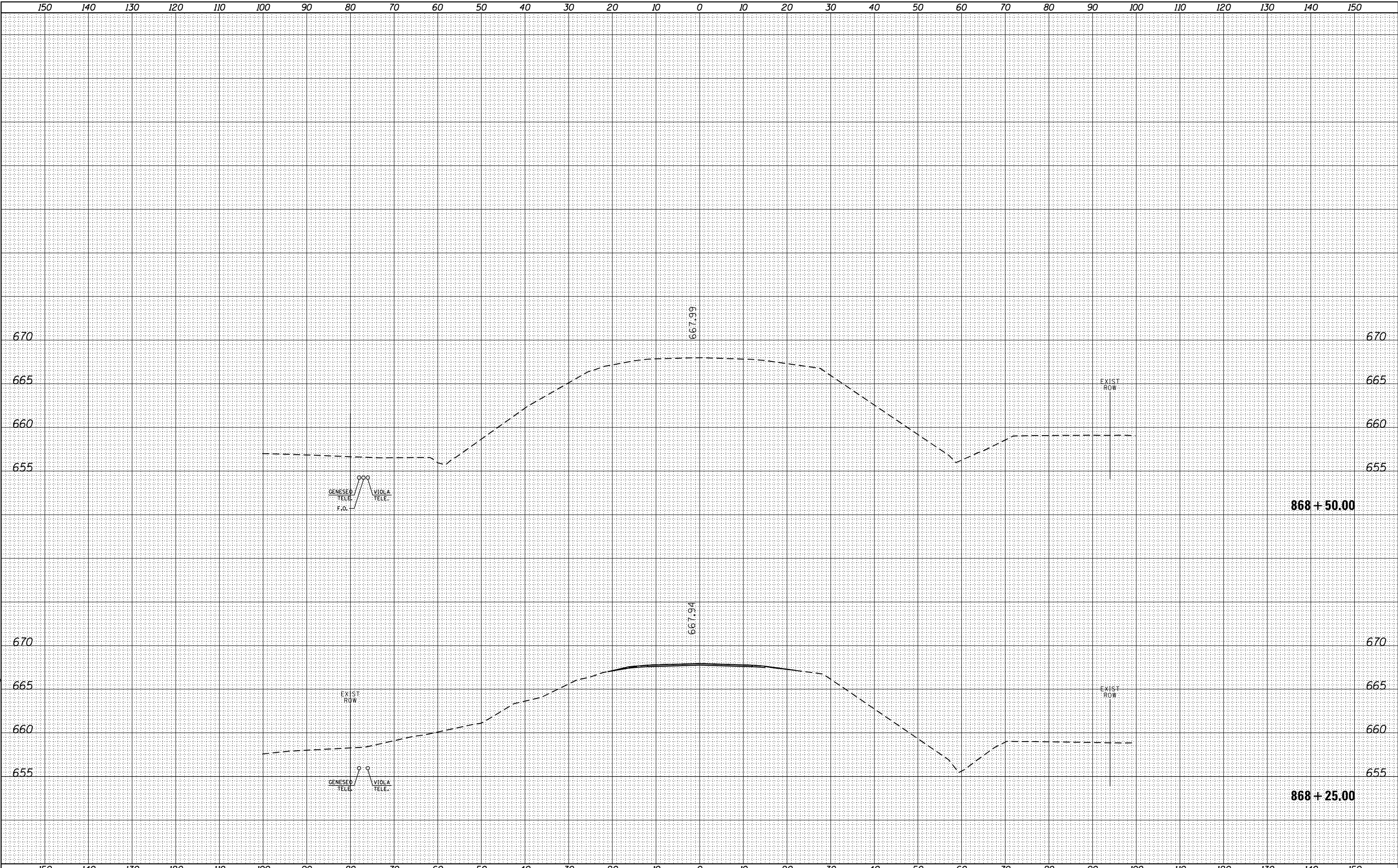
SCALE: SHEET 13 OF 14 SHEETS STA. 867+75.00 TO STA. 868+00.00

F.A.P. RTE. 310	SECTION (103)BR-1	COUNTY MERCER	TOTAL SHEETS 73	SHEET NO. 64
			CONTRACT NO. 68804	
ILLINOIS FED. AID PROJECT				

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

ORIGINAL SURVEY NO.	SURVEYED	BY	DATE
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	TEMPLATE		
	AREAS CHECKED		

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PLOT DATE = 6/29/2023	DATE -	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

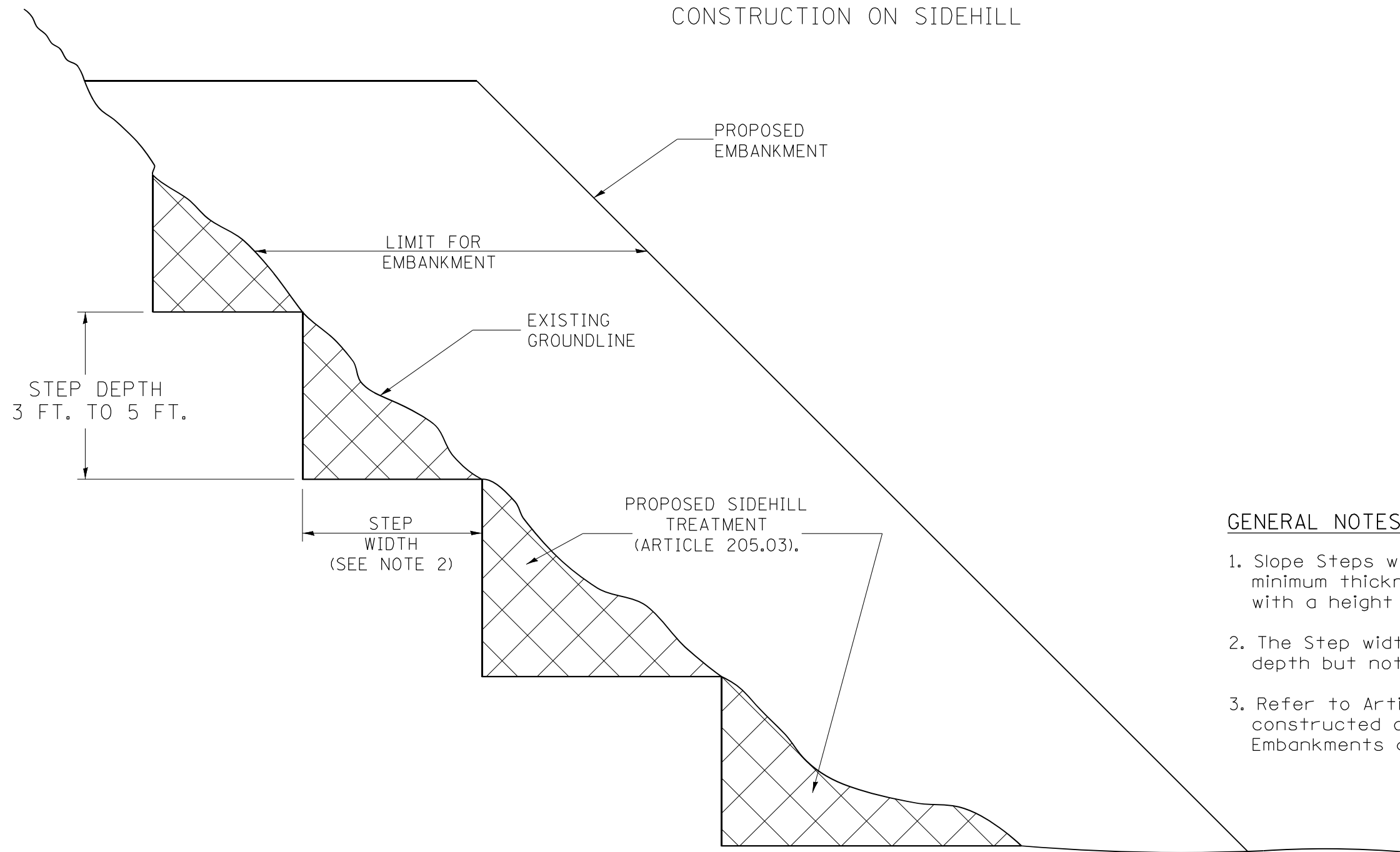
**US 67
 CROSS-SECTIONS**

SCALE: SHEET 14 OF 14 SHEETS STA. 868+25.00 TO STA. 868+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	65
			CONTRACT NO. 68804	
ILLINOIS			FED. AID PROJECT	

SLOPE STEPS DETAIL

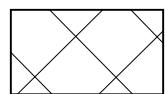
TYPICAL CROSS-SECTION EMBANKMENT CONSTRUCTION ON SIDEHILL



GENERAL NOTES:

1. Slope Steps will be required for all 12(300) minimum thickness "sliver fills" and on all fills with a height of 10 feet or greater.
2. The Step width shall be twice the Step depth but not less than 6 feet.
3. Refer to Article 205.03 for Embankment to be constructed on Hillside or Slopes, or if existing Embankments are to be widened.

REPLACEMENT MATERIAL:



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

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

1-1-97	RENUM. L-5.03, NEW REVISION BOX, REVISED TITLE BOX, REVISED GENERAL NOTES.	T.P.
10-16-06	REVISED TO 2007 SPEC.	M.A.
5-30-18	MINOR CORRECTION	R.D.

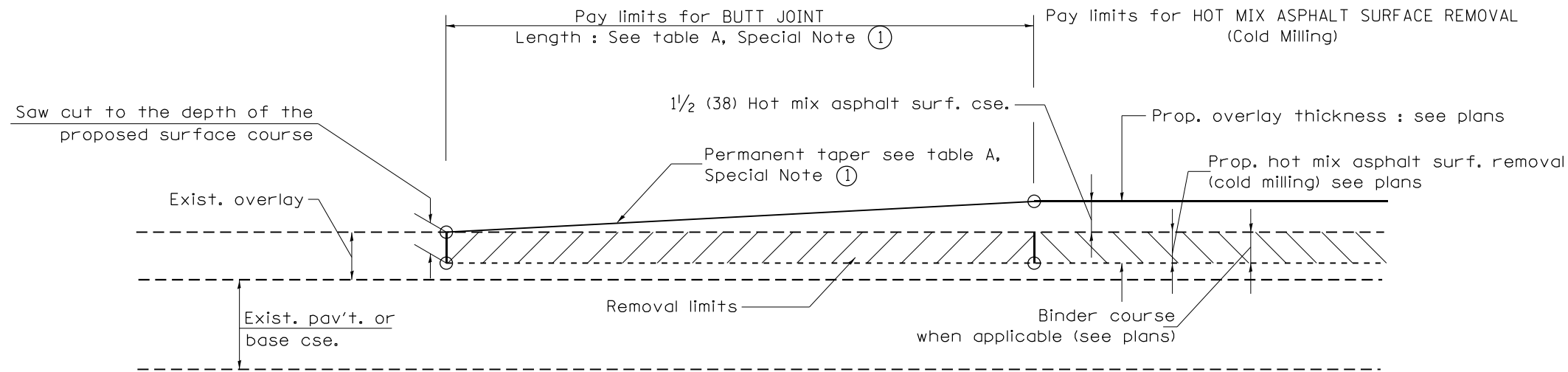
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

SLOPE STEPS DETAIL

NOT TO SCALE

CADD STD. 205001-D4

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	66
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 68804	



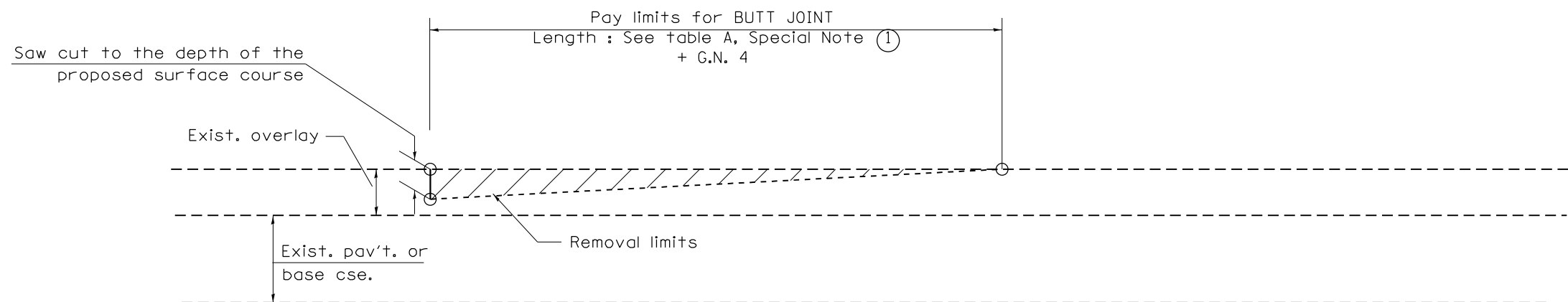
CASE 1 : WITH HOT MIX ASPHALT SURFACE REMOVAL (COLD MILLING)

**TABLE A
TAPER RATES**

SPECIAL NOTE NUMBER	ELEMENT	MAINLINE INTERSTATES & 4-LANE EXPRESSWAYS	ALL OTHERS
①	BUTT JOINT TAPER RATE	1:480	1:240
②	TEMPORARY RAMP TAPER RATE	1:80	1:40

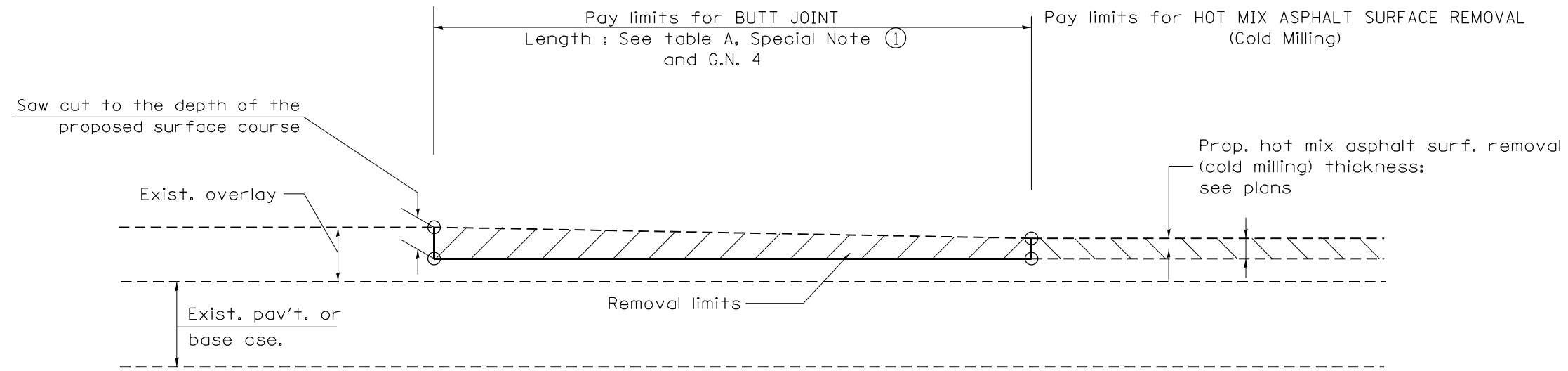
GENERAL NOTES

1. The work shall be done in accordance with Article 406.08 and the Special Provision for Butt Joints.
2. The pavement surface to be removed may be either bituminous or P.C. concrete. The work shall be performed in accordance with Article 440.04 and the Special Provisions for Butt Joints.
3. The saw cut joints shall be primed just prior to the placing of bituminous material. The work will be in accordance with the applicable portions of Article 406.05.
4. The length of butt joint is based on the taper rate times change in cold milling depth within the butt joint pay limits, unless otherwise indicated.
5. Temporary ramps are paid for separately and not included in the cost of the butt joints.

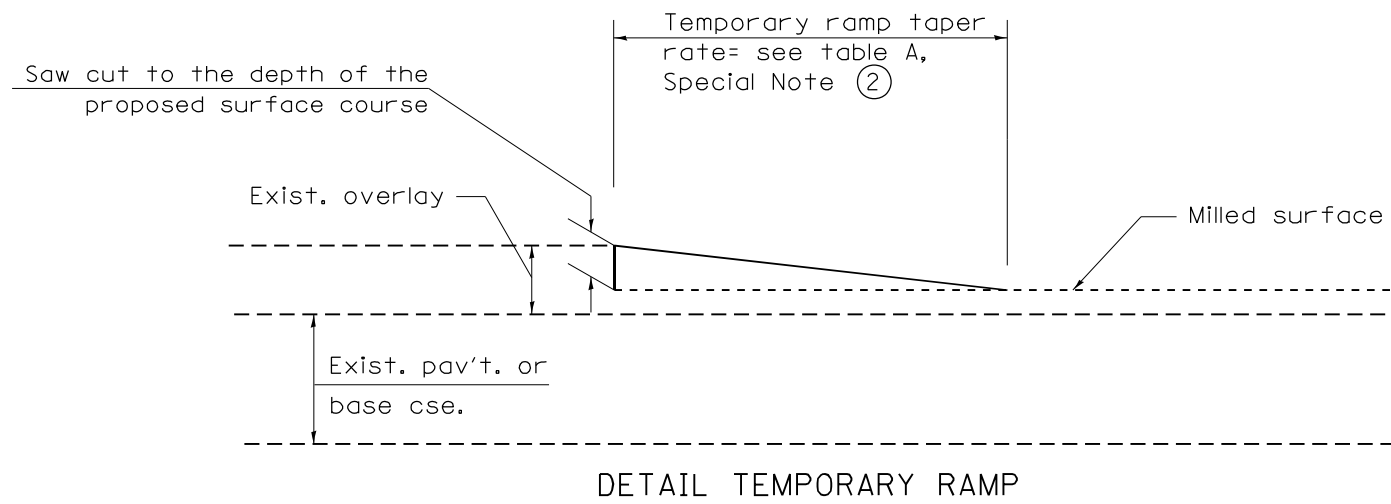


CASE 2 : NO HOT MIX ASPHALT SURFACE REMOVAL (COLD MILLING)

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

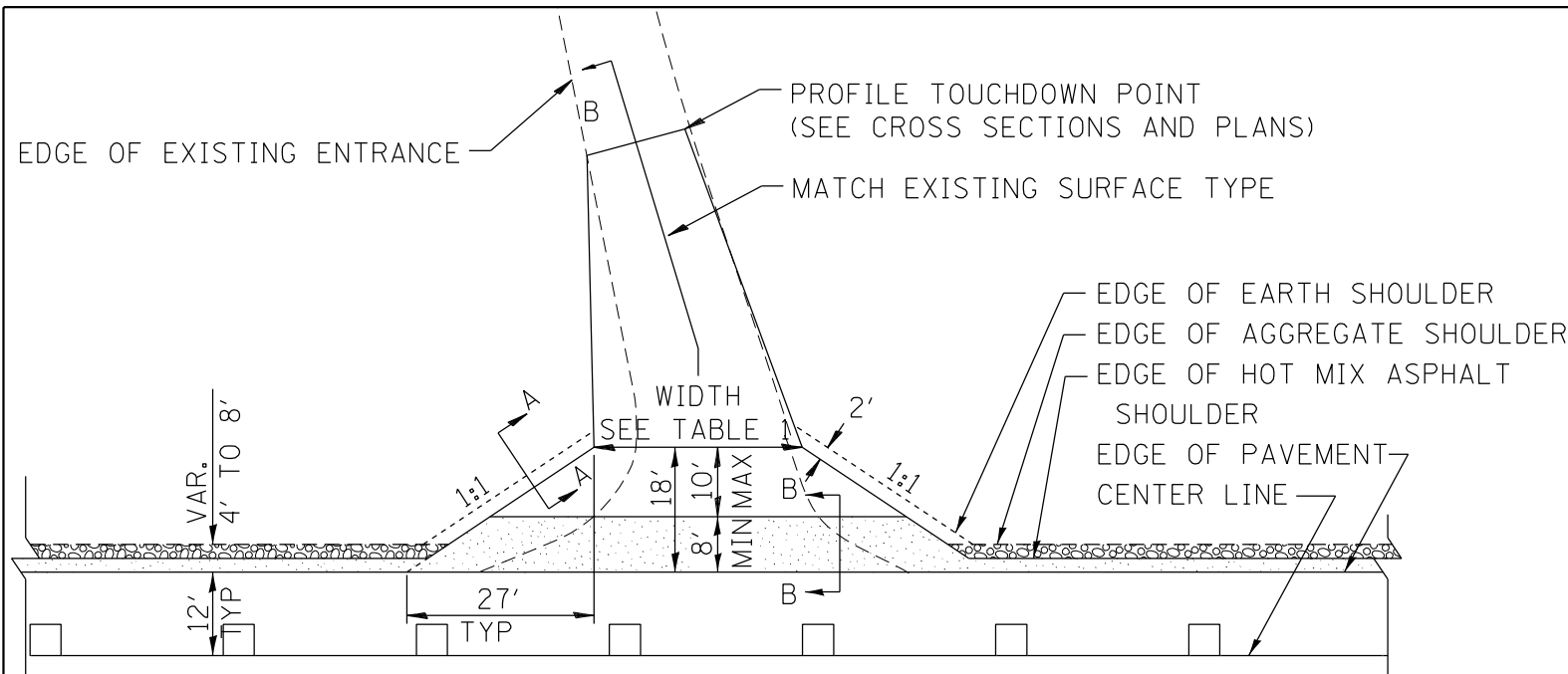


**CASE 3 : HOT MIX ASPHALT SURFACE REMOVAL (COLD MILLING)
TIE-IN TO EXISTING BITUMINOUS TAPER**



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

				STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION		BUTT JOINTS		SHT. 2 OF 3 CADD STD. 406101-D4	
				NOT TO SCALE				CONTRACT NO. 68804	
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.					
310	(103)BR-1	MERCER	73	68					
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT							



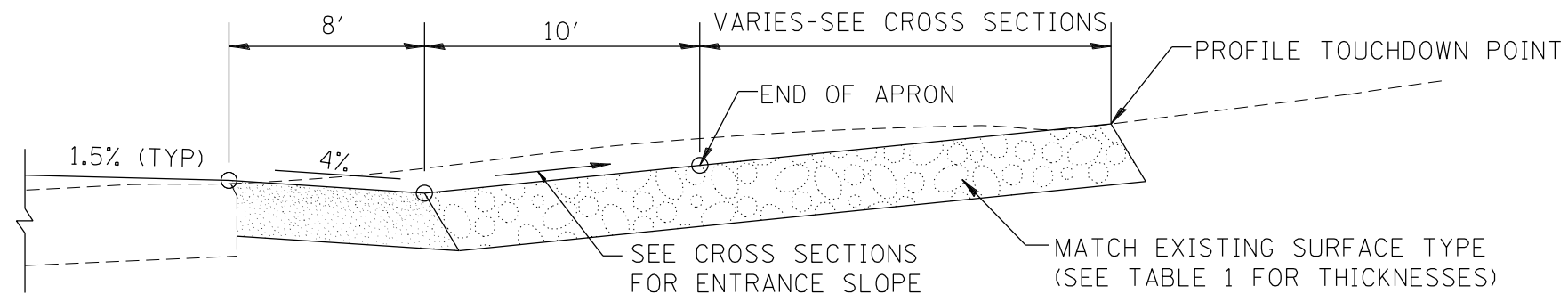
HOT MIX ASPHALT SHOULDER, 8"
 AGGREGATE SHOULDER, TYPE B, 6"

PLAN

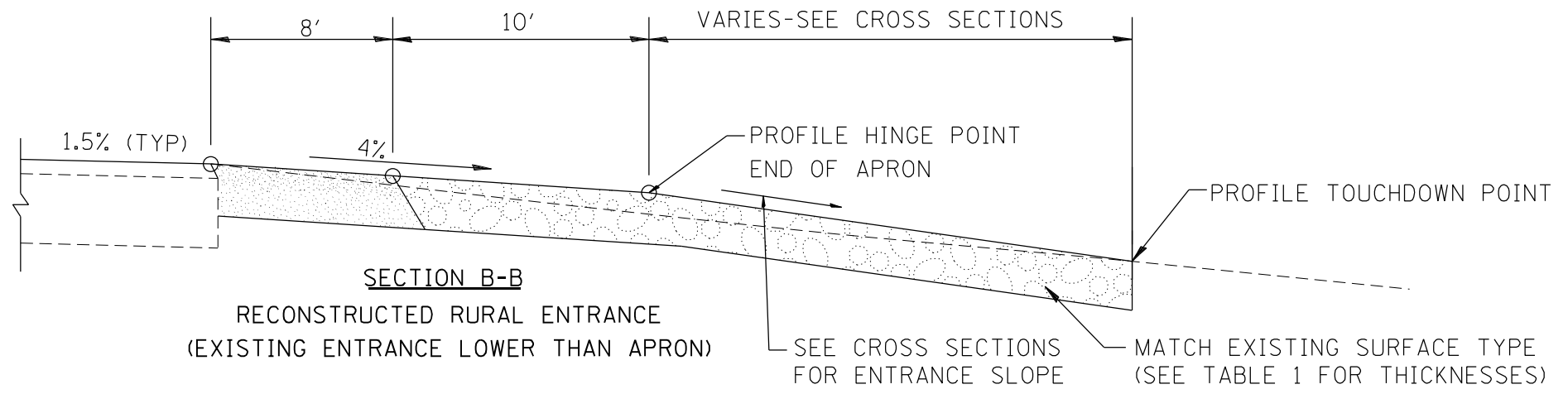
COMMERCIAL / FARM-RELATED ENTRANCE

TABLE 1					
RURAL ENTRANCE DESIGN					
ELEMENT	NON-COMMERCIAL		NON-COMMERCIAL W/ LARGE FARM EQUIPMENT	COMMERCIAL	
	12'(3.6m) Min.	24'(7.2m) Max.	20' (6.1m)Min.	30'(9.0m)Max.	
WIDTH (W)	12'(3.6m) Min.	24'(7.2m) Max.	20' (6.1m)Min.	30'(9.0m)Max.	14'(4.3m) Min., 24'(7.2m) Max., 24'(7.2m) Min., 35'(10.7m) Max.
FLARE	1:1.5				
MAX. GRADE (G)	12%		12%		10%

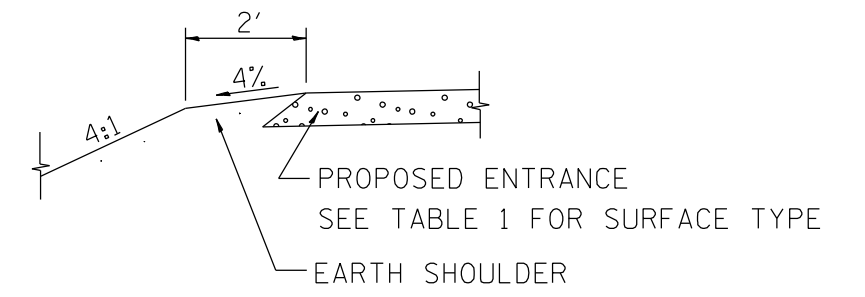
SURFACE TYPE			
INCIDENTAL HOT MIX ASPHALT SURFACING	6"	—	8"
AGGREGATE SURFACE COURSE	6"	8"	—
PCC DRIVEWAY PAVEMENT	6"	—	7"



SECTION B-B
RECONSTRUCTED RURAL ENTRANCE
(EXISTING ENTRANCE HIGHER THAN APRON)



SECTION B-B
RECONSTRUCTED RURAL ENTRANCE
(EXISTING ENTRANCE LOWER THAN APRON)



SECTION A-A
SHOULDER TREATMENT FOR RURAL ENTRANCES

GENERAL NOTES

- ENTRANCES SHALL SLOPE AWAY FROM THE PAVEMENT AT A RATE EQUAL TO THE SHOULDER SLOPE FOR A MINIMUM DISTANCE OF 8'.
- A MINIMUM 8' PAVED SHOULDER SHALL BE CONSTRUCTED BETWEEN LOCATIONS WHERE THE RURAL ENTRANCE IS LESS THAN 50' FROM AN ADJACENT SIDEROAD, ENTRANCE OR MAILBOX TURNOUT.
- A TAPER RATE OF 5:1 IS DESIRABLE WHEN TRANSITING FROM THE RURAL ENTRANCE WIDTH SHOWN IN TABLE 1, TO THE EXISTING ENTRANCE WIDTH.

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

01-01-97	RENUM. C-103.06, NEW REVISION BOX	T.P.	10-16-06	REVISED TO 2007 SPEC.	M.A.
07-01-97	REVISE DESIGNER NOTES	J.A.	9-15-15	UPDATED TABLE 1	R.D.
01-17-03	ADJUST DESIGN, CHANGE ENTRANCE	JATR	2-29-16	MINOR CORRECTIONS	R.D.
09-15-05	RADIUS FOR FLARE	M.M.A.	5-9-17	CHANGED TAPER RATE	R.D.

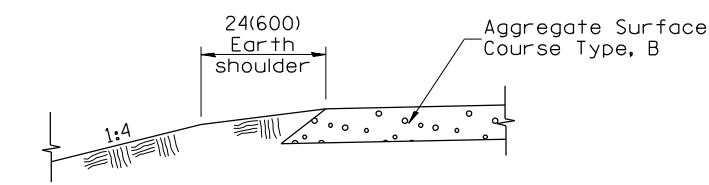
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NOT TO SCALE

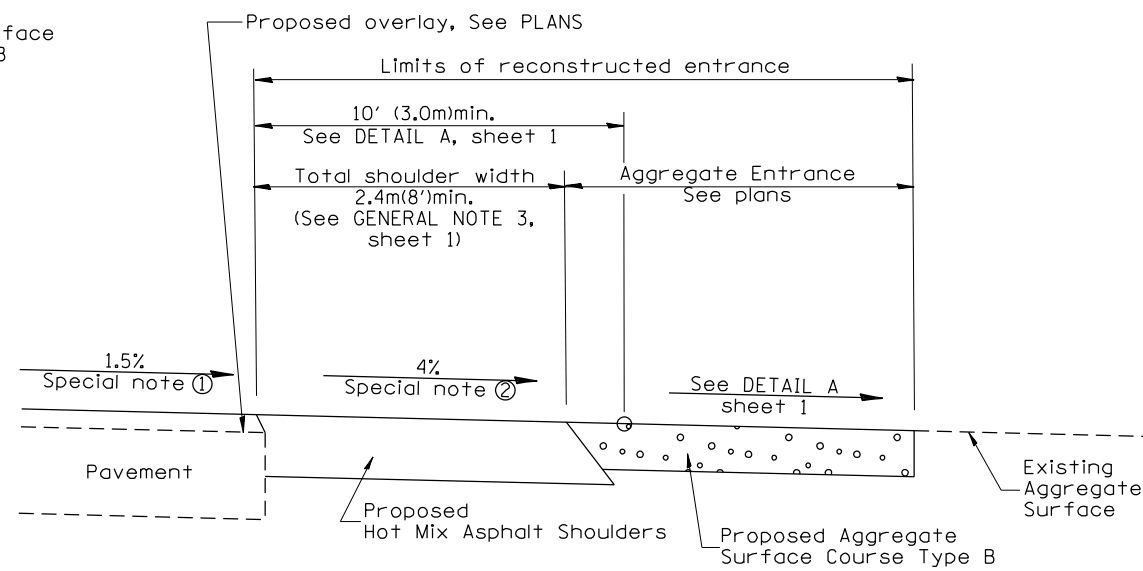
RURAL ENTRANCES FOR "3R" PROJECTS

SHT. 1 OF 2
CADD STD. 406301-D4

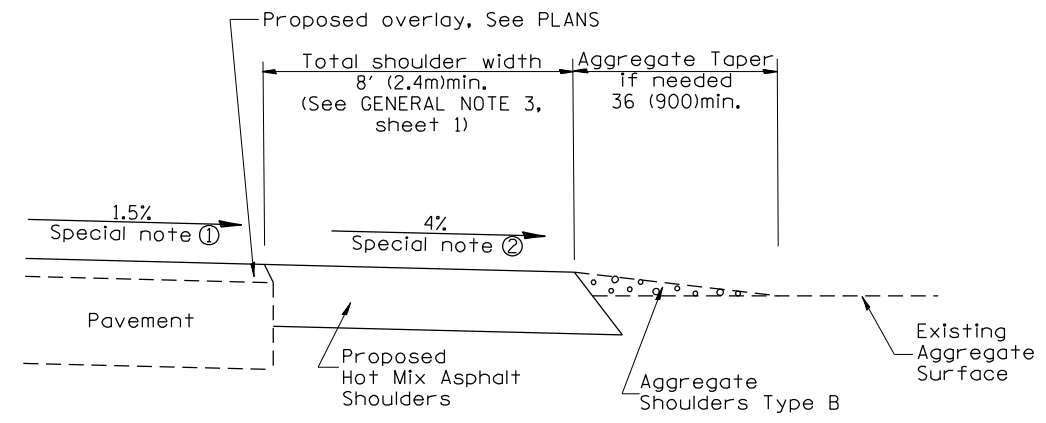
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	70
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	
			CONTRACT NO. 68804	



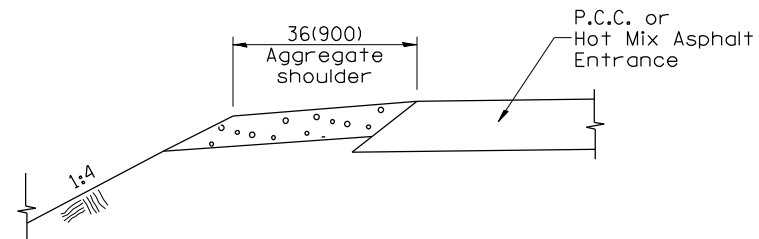
SECTION A-A
SHOULDER TREATMENT FOR AGGREGATE ENTRANCES



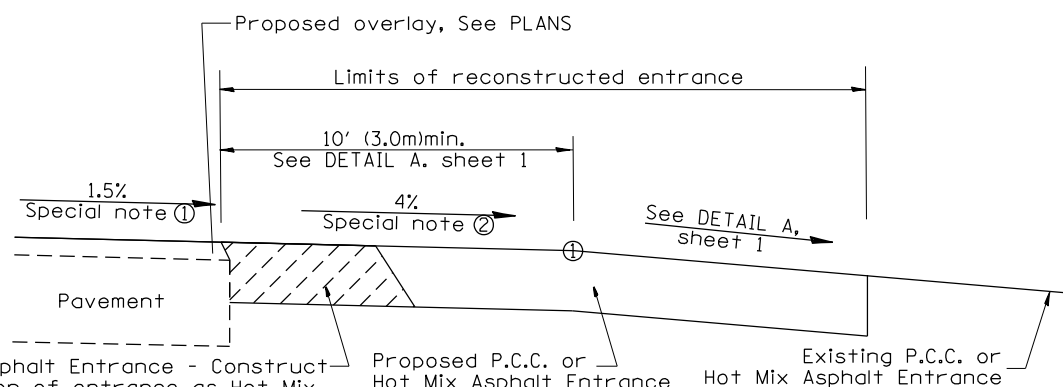
SECTION B-B
RECONSTRUCTED AGGREGATE ENTRANCE



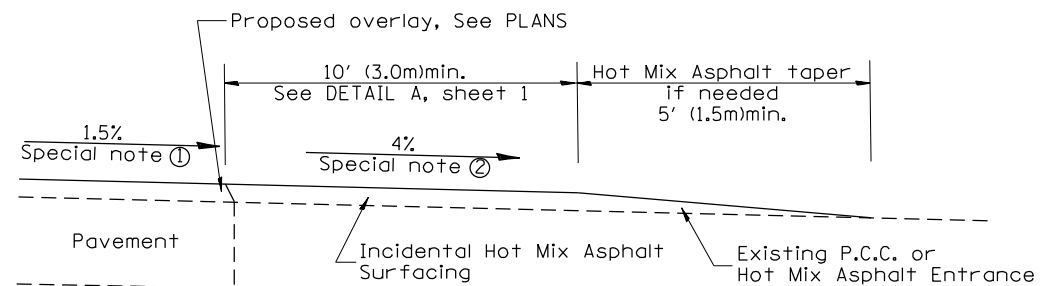
SECTION B-B
EXISTING AGGREGATE ENTRANCE



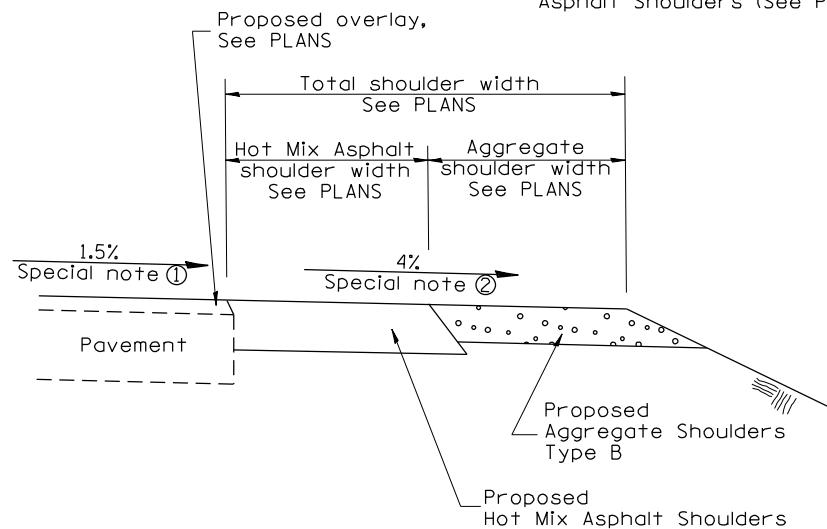
SECTION C-C
SHOULDER TREATMENT FOR P.C.C. OR HOT MIX ASPHALT ENTRANCES



SECTION D-D
RECONSTRUCTED P.C.C. OR HOT MIX ASPHALT ENTRANCE



SECTION D-D
EXISTING P.C.C. OR HOT MIX ASPHALT ENTRANCE



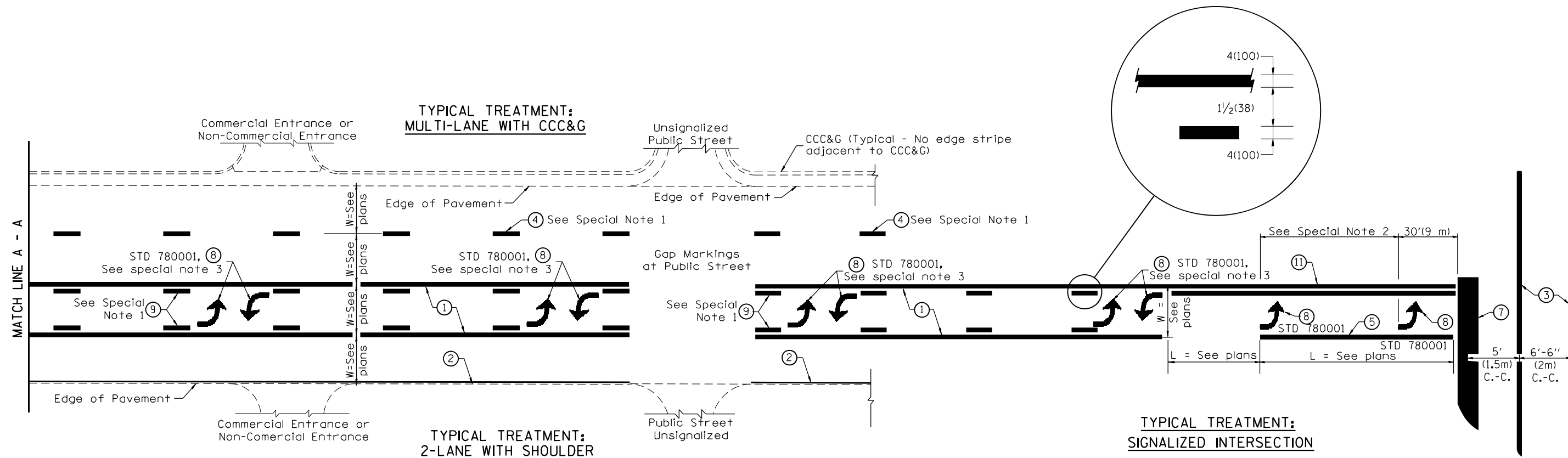
SECTION E-E
MAINLINE SHOULDER TREATMENT

SPECIAL NOTES

- ① The mainline pavement cross-slope is 1.5% for tangent alignment. See PLANS for cross-slope on superelevated horizontal curves.
- ② The shoulder slope shall control the entrance profile for a distance of 10' (3.0m) minimum from the pavement edge. The shoulder cross-slope is 4% for tangent alignment. Through superelevated curves, the maximum pavement-shoulder breakover should not be greater than 10% for shoulders 6' (1.8m) and wider and 12% for shoulders 4' (1.2m) and less. Where 12' (366cm) paved shoulders are provided, the breakover should be at the edge of the paved shoulder rather than at the pavement edge.

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

		STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION		RURAL ENTRANCES FOR "3R" PROJECTS		F.A.P. RTE. SECTION COUNTY TOTAL SHEETS SHEET NO. 310 (103)BR-1 MERCER 73 71	
				NOT TO SCALE		SHT. 2 OF 2 CADD STD. 406301-D4 FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT CONTRACT NO. 68804	



FLUSH PAVED MEDIAN: TWO-WAY LEFT TURN LANE WITH ONE-WAY LEFT TURN LANE AT SIGNALIZED INTERSECTION

TYPICAL PAVEMENT MARKING LEGEND

(Note: This is a District Standard Legend. Some elements may not apply to specific project.)

- ① 4(100) Solid (Yellow)
- ② 4(100) Solid (White)
- ③ 2-6(150) Crosswalk @ 6'-6" (2m)min C.-C. (White)
2-8(200) Crosswalk @ 6'-6" (2m)min C.-C. (White) (When traffic signals are present.)
- ④ 6(150) Skip-Dash (White) (See Special Note 1)
- ⑤ 8(200) Solid (White)
- ⑥ 12(300) Diagonal (White) (Item ⑥ is shown on Std. 780001)
- ⑦ 24(600) Stop Bar (White)
- ⑧ Letters & Arrows (See Std. 780001 and Special Notes 2 & 3)
- ⑨ 4(100) Skip-Dash (Yellow) (See Special Note 1)
- ⑩ 12(300) Diagonal (Yellow) (See Table A) (See Table A)
- ⑪ 4(100) Double Solid (Yellow) (See Table A)

SPECIAL NOTES

1. Skip-Dash markings will be centered between both ends of city blocks and shall be placed in alignment transversely across the pavement.
2. The following shall apply to arrows located in one-way left turn lanes:
 - A. A minimum of two (2) arrows is required.
 - B. The maximum spacing between arrows is 80' (24 m).
 - C. Arrows shall be evenly spaced if three (3) or more are required.
3. The following shall apply to arrow pairs located in two-way left turn lanes:
 - A. A minimum of two (2) arrow pairs is required.
 - B. The maximum spacing between arrow pairs is 200' (61 m).
 - C. Arrow pairs shall be evenly spaced if three (3) or more are required.
 - D. The spacing between Bi Directional Left Turn Arrows is 33' (10 m).

GENERAL NOTES

1. Refer to State Standard 780001 for additional Pavement Markings including letters & arrows.
2. See Plans for Pavement Markings adjacent to curbed islands and medians, and through lane reductions.
3. Refer to Article 780.13 for letter, number and symbol areas (sq. ft.)
4. Areas are grooved 1" beyond each edge for the following symbols:
Through Arrow= 14.8 sq. ft.
Large Left or Right Arrow= 21.9 sq. ft.
2 Arrow Combination Left (or Right) and Through= 34.9 sq. ft.
Wrong Way Arrow= 29.5 sq. ft.
Railroad Crossing Symbol= 69.8 sq. ft.
(For further information, refer to BDE Special Provision: Grooving for Recessed Pavement Markings)

01-01-97	RENUM. F-8.03, NEW REVISION BOX	T.P.	10-16-06	REVISED TO 2007 SPEC.	
02-07-97	ADD BI DIRECTIONAL DIMENSION	J.A.	2/29/16	ADDED GROOVING AREAS	R.D.
10-97	CORRECT BI DIRECTIONAL DIMENSION	J.A.	07-16-19	SPELLING CORRECTIONS	R.D.
08-02	ADD CROSSWALK DMNS. WITH T.S.	M.A.			

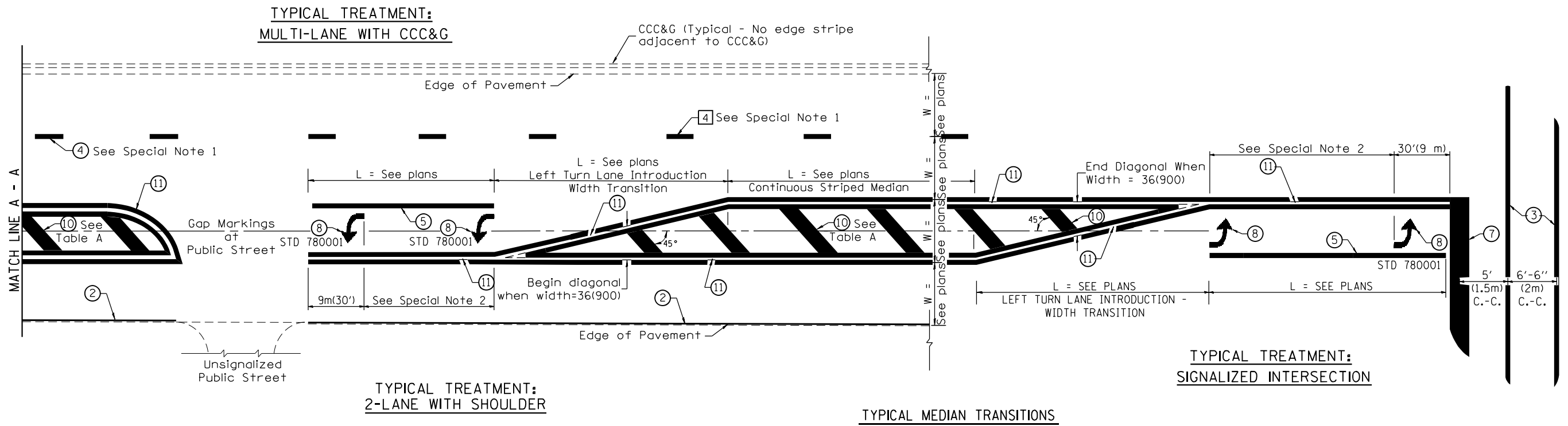
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

NOT TO SCALE

TYPICAL PAVEMENT MARKINGS

SHT. 1 OF 2
CADD STD. 780001-D4

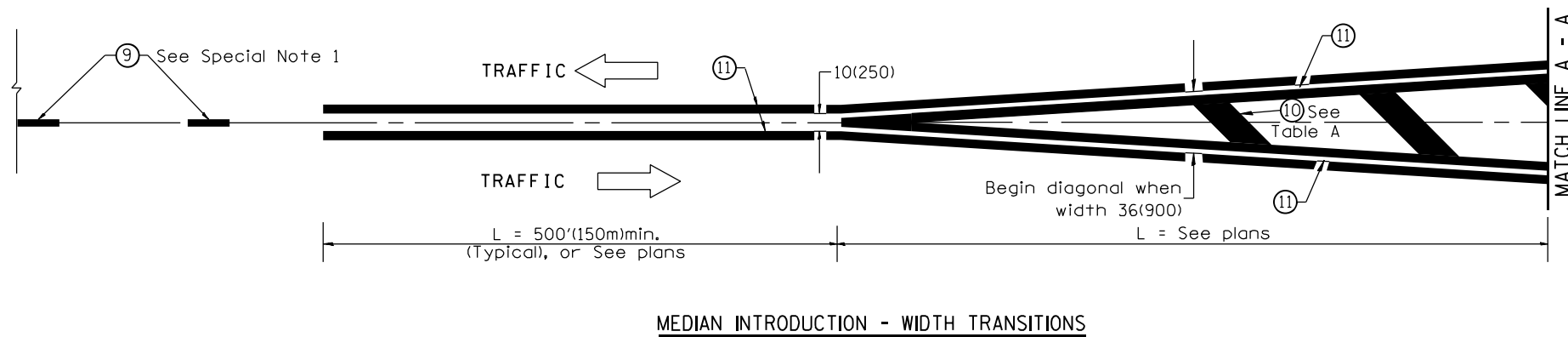
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103)BR-1	MERCER	73	72
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 68804	



FLUSH PAVED MEDIAN: RESTRICTED LEFT TURN LANE

TABLE A
RECOMMENDED SPACING BETWEEN DIAGONAL LINES

SPEED LIMIT RANGE	INTERSECTION CHANNELIZATION (Includes Width Transitions for Median and Left Turn Lane Introductions)	
	CONTINUOUS	
Less Than 30 mph (50 km/h)	50' (15m)	15' (5m)
30 - 45 mph (50 - 70 km/h)	75' (23m)	20' (6m)
Over 45 mph (70 km/h)	150' (46m)	30' (9m)



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