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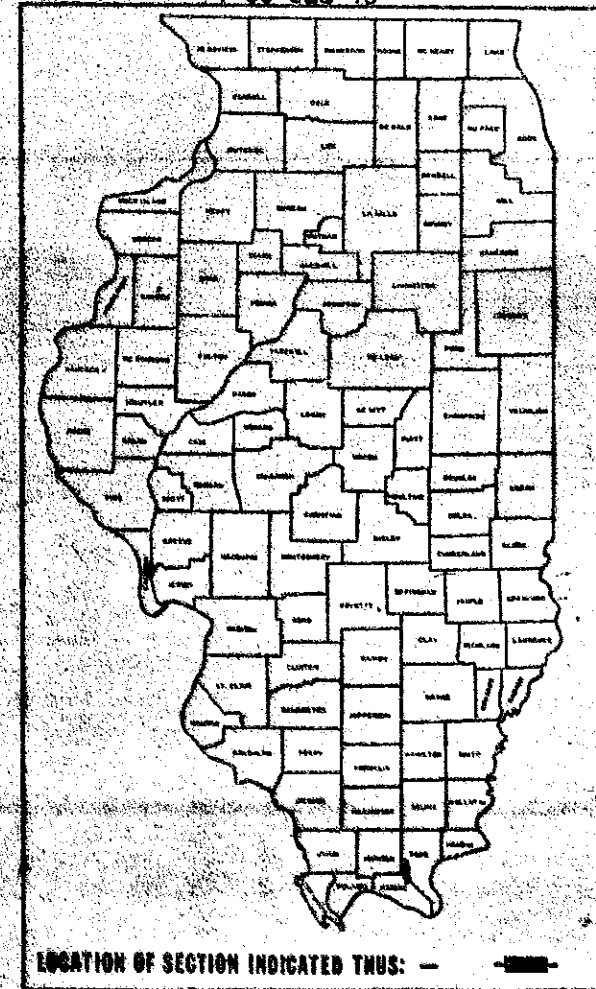
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

PLANS FOR PROPOSED  
FEDERAL AID HIGHWAY

F.A. ROUTE 132 (ILL. ROUTE 145)  
PROJECT BR-F-132(49)  
SECTION 103A-B  
POPE COUNTY

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
132	103A-B	POPE	29	1

F-99-025-79



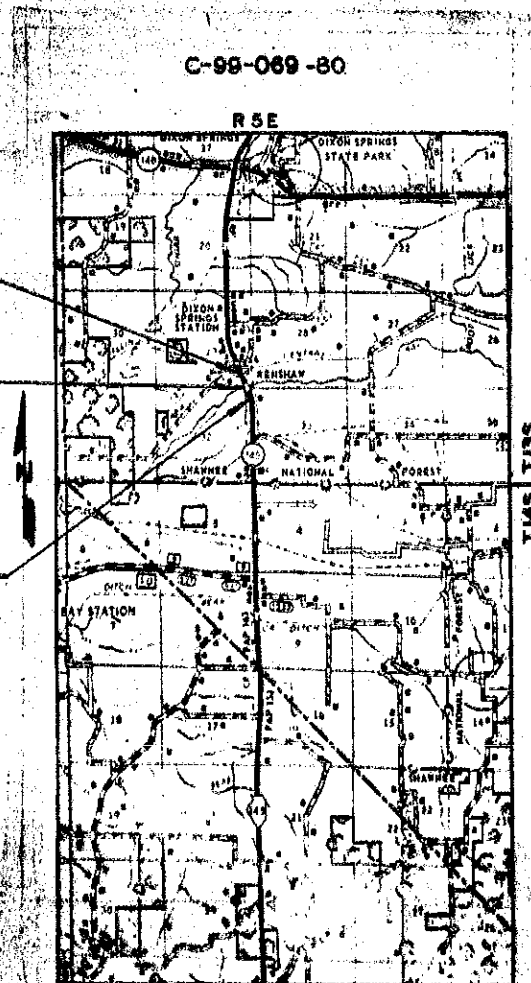
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INDEX OF SHEETS - SHEET NO. 2  
SUMMARY OF QUANTITIES - SHEET NO. 2

PROP. IMPROVEMENT ENDS  
STATION 893+75

PROP. STRUCTURE - STA. 896+49  
OPEN ABUTMENT DECK BEAM BRIDGE  
SPANS: 3 AT 64'-4", 2 AT 65'-0 1/2"  
LENGTH (BK.-BK. OF ABUTMENTS) = 324'-7"

PROP. IMPROVEMENT BEGINS  
STATION 894+25



NET LENGTH STRUCTURE = 32456 FT = 0.081 MI.  
NET LENGTH ROADWAY = 12542 FT = 0.024 MI.  
NET LENGTH PROJECT = 45000 FT = 0.085 MI.

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

DESIGNED BY: March 20, 1981  
[Signature] DISTRICT ENGINEER

DESIGNED BY: April 6, 1981  
[Signature] DISTRICT ENGINEER

DRAWN BY: April 6, 1981  
[Signature] ENGINEER OF PLANS AND CONTRACTS

APPROVED BY: April 6, 1981  
[Signature] DIVISION ENGINEER

U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION

APPROVED \_\_\_\_\_  
DIVISION ADMINISTRATOR DATE

CONTRACT NO. 34993 BAY CREEK

POPE COUNTY SECTION 103A-B F. A. ROUTE 132

SUMMARY OF QUANTITIES

LOCATION OF WORK				ROAD	BRIDGE
				CONSTRUCTION TYPE CODE	
CODE NO.	ITEM	UNIT	QUANTITY	6706	X081
202001	EARTH EXCAVATION	CU.YD.	4341	337	4004
215001	AGGREGATE SHOULDERS, TYPE A	TON	164	164	
201005	TREE REMOVAL, ACRES	ACRE	09	09	
408013	BITUMINOUS CONCRETE SURFACE COURSE, MIXTURE D: CLASS I	TON	165	31	134
408015	P.C. CONCRETE BRIDGE APPROACH SHOULDER PAVEMENT	SQ.YD.	22	22	
501001	REMOVAL OF EXISTING STRUCTURES	EACH	1		1
502001	STRUCTURE EXCAVATION	CU.YD.	195		195
503003	PROTECTIVE COAT	SQ.YD.	132	22	110
504003	CLASS X CONCRETE	CU.YD.	199.2		199.2
505005	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SQ.FT.	10923		10923
508009	STEEL RAILING, TYPE T	LIN. FT.	644		644
510002	UNTREATED TIMBER	F.B.M.	624		624
510003	HARDWARE	POUND	105		105
512001	REINFORCEMENT BARS	POUND	26620	6790	19830
513007	FURNISHING PRECAST CONCRETE PILES 14"	LIN. FT.	2357		2357
513022	FURNISHING CONCRETE PILES	LIN. FT.	1078		1078
513024	DRIVING PRECAST CONCRETE PILES	LIN. FT.	2357		2357
513026	DRIVING CONCRETE PILES	LIN. FT.	1078		1078
513030	TEST PILES PRECAST CONCRETE	EACH	2		2
513052	TEMPORARY SHEET PILING	SQ. FT.	4750		4750
514001	NAME PLATES	EACH	1		1
601001	STONE RIPRAP	SQ.YD.	390	* 60	330
617001	PAVEMENT REMOVAL	SQ.YD.	579	579	
620016	PAVEMENT REMOVAL AND BITUMINOUS REPLACEMENT, TYPE I, 9 INCH	SQ.YD.	18	18	
628031	TRAFFIC BARRIER TERMINAL, TYPE 1	EACH	4	4	
633003	STEEL PLATE BEAM GUARD RAIL REMOVAL	LIN. FT.	250	250	
642002	SEEDING, CLASS II	ACRE	2.1	* 2.1	
642004	NITROGEN FERTILIZER NUTRIENT	POUND	168	* 168	
642005	PHOSPHORUS FERTILIZER NUTRIENT	POUND	672	* 672	
642006	POTASSIUM FERTILIZER NUTRIENT	POUND	336	* 336	
642007	AGRICULTURAL GROUND LIMESTONE	TON	9	* 9	
648004	ENGINEER'S FIELD OFFICE, TYPE A	CAL. MO.	20	3	17
647001	PAVEMENT MARKING TAPE	LIN. FT.	48	16	32
648009	TRAFFIC CONTROL AND PROTECTION, STANDARD 2309 (SPECIAL)	EACH	1		1
X04748	MOBILIZATION	L. SUM	1		1
X05728	TEMPORARY BRIDGE RAIL	LIN. FT.	365		365
X40812	BRIDGE APPROACH PAVEMENT (STANDARD 2382)	SQ.YD.	116	116	
X81640	TEMPORARY CONCRETE BARRIER	LIN. FT.	370		370
X81641	TEMPORARY CONCRETE BARRIER, TERMINAL SECTION	EACH	2		2
X81642	RELOCATE TEMPORARY CONCRETE BARRIER	LIN. FT.	264		264
X82837	STEEL PLATE BEAM GUARD RAIL, TYPE A	LIN. FT.	3875	387.5	
X82843	TRAFFIC BARRIER TERMINAL, TYPE 5A	EACH	4	4	
X82875	TRAFFIC BARRIER TERMINAL, TYPE 11	EACH	2		2
X84309	MULCH, METHOD 3	TON	7	* 7	
Z10279	NEOPRENE EXPANSION JOINT 2"	LIN. FT.	64		64
Z10527	TRAINEES	HOUR	** 1000		
Z10317	PORTLAND CEMENT MORTAR FAIRING COURSE	LIN. FT.	2890		2890
Z10530	WATERPROOFING MEMBRANE SYSTEM	SQ.YD.	1145		1145
502003	COFFERDAM EXCAVATION	CU.YD.	105		105
502007	COFFERDAM (PIER 2)	EACH	1		1
502008	COFFERDAM (PIER 3)	EACH	1		1

\* TYPE CODE Y005  
\*\* TYPE CODE Y080

GENERAL NOTES

ANY REFERENCE TO A STANDARD IN THESE PLANS SHALL BE INTERPRETED TO MEAN THE EDITION AS INDICATED BY THE SUB-NUMBER LISTED IN THE INDEX OF SHEETS OR THE COPY OF THE STANDARD INCLUDED IN THESE PLANS.

IF SO DIRECTED BY THE ENGINEER, DITCHES ADJACENT TO EMBANKMENTS SHALL BE CONSTRUCTED PRIOR TO STARTING CONSTRUCTION OF EMBANKMENT FILL.

THE THICKNESS OF BITUMINOUS MIXTURES SHOWN ON THE PLANS IS THE NOMINAL THICKNESS. DEVIATIONS FROM THE NOMINAL THICKNESS WILL BE PERMITTED WHEN SUCH DEVIATIONS OCCUR DUE TO IRREGULARITIES IN THE EXISTING SURFACE OR BASE ON WHICH THE BITUMINOUS MIXTURE IS PLACED.

THE QUANTITY OF PAVEMENT MARKING TAPE SHOWN IN THE SUMMARY OF QUANTITIES WAS COMPUTED BASED ON ONE APPLICATION FOR THE SURFACE COURSE AT THE RATE OF 4 LIN. FT. EVERY 40'.

THE QUANTITY OF PATCHING SHOWN IN THE PLANS IS FOR TRANSITIONING FROM THE EXISTING PAVEMENT TO THE PROPOSED BRIDGE APPROACH PAVEMENT, AS SHOWN ON STANDARD 2382. ADDITIONAL PATCHING MAY BE REQUIRED IF SO DETERMINED BY THE ENGINEER.

FACTORS USED FOR QUANTITY CALCULATIONS ARE AS FOLLOWS:

- ALL BITUMINOUS MIXTURES = 2.018 TONS/CU. YD.
- ALL AGGREGATE = 2.05 TONS/CU. YD.
- BIT. MATLS. (PRIME COAT) = 0.09 GAL./SQ. YD.
- AGGREGATE (PRIME COAT) = 0.0015 TONS/SQ. YD.

THE J.U.L.I.E. (JOINT UTILITY LOCATING INFORMATION FOR EXCAVATORS) TELEPHONE NUMBER IS 800-892-0123.

TREES SHALL BE PRESERVED THROUGHOUT THIS SECTION AS DIRECTED BY THE ENGINEER.

COMPACTION OF PROPOSED EARTH EMBANKMENT SHALL BE TO THE SATISFACTION OF THE ENGINEER.

PRIME COAT WILL BE REQUIRED ON THE BRIDGE APPROACH PAVEMENTS AND ON ANY EXPOSED CONCRETE PAVEMENT UPON WHICH BITUMINOUS CONCRETE IS TO BE PLACED. THIS WORK WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE BITUMINOUS CONCRETE. APPROXIMATE QUANTITIES ARE AS FOLLOWS:  
BITUMINOUS MATERIALS (PRIME COAT) = 10 GALLONS  
AGGREGATE (PRIME COAT) = 0.2 TONS

THE TREE REMOVAL, ACRES LIMITS FOR THIS PROJECT ARE FROM LEFT STATION 898+75 TO STATION 900+50 (0.7 ACRES), AND FROM LEFT STATION 902+90 TO STATION 904+10 (0.2 ACRES).

ALL OBSTRUCTIONS WHICH ARE WITHIN THE CLEAR ZONE SHOWN ON THE TYPICAL SECTION, AND ARE NOT SHIELDED BY THE PROPOSED GUARDRAIL, SHALL BE REMOVED BETWEEN STA. 892+12 AND STA. 907+25

TYPICAL OBSTRUCTIONS ARE HEADWALLS, FOUNDATIONS, ETC. WHICH PROJECT 4" OR MORE ABOVE THE GROUNDLINE; AND TREES WHICH WILL MATURE TO A DIAMETER OF 4" OR GREATER. TREES ON BACKSLOPES WHICH ARE NOT LIKELY TO BE IMPACTED BY VEHICLES MAY GENERALLY REMAIN IN PLACE.

THE TEMPORARY BRIDGE RAIL SHALL EXTEND FROM END TO END OF THE PROPOSED BRIDGE APPROACH PAVEMENTS. THE RAIL AND ANCHORAGE DEVICES SHALL BE AS SHOWN ON SHEET 14 OF THE PLANS FOR THE STAGE I RAIL. THE THREADED RODS SHALL EXTEND AT LEAST 6" INTO THE EXISTING AND PROPOSED CONCRETE PAVEMENT. THE POST SPACING OFF THE BRIDGE SHALL BE DETERMINED BY THE ENGINEER (7'-9" MAXIMUM).

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
FA. 132	103 A-B	POPE	25	2
FED. ROAD DIST. NO. 1	ILLINOIS	PROJECT		

INDEX OF SHEETS

- 1 TITLE SHEET
- 2 SUMMARY OF QUANTITIES INDEX OF SHEETS GENERAL NOTES
- 3 TYPICAL SECTION SCHEDULE OF QUANTITIES APPROACH DETAILS
- 4-5 PLAN - PROFILE (FA. RTE. 132)
- 6 BUTT JOINT DETAIL BRIDGE APPROACH PAVEMENT TEMP. BIT. CONC. TRANSITION STEP CONST. ON EXIST. FILLS
- 7 STANDARD 2309 (SPECIAL)
- 8-12 CROSS-SECTIONS
- 13-25 STRUCTURE PLANS

STANDARDS:

1686-4	2307-4
2113-2	2323-5
2117-1	2324-5
2230-13	2336-2
2296-5	2340-3
2299-8	2381
2300-2	2382-1
2302-4	2383-1
2303-5	2388-1
2305-4	
2308-4	

PREPARED BY: Harry W. Day  
District Design Engineer

EXAMINED BY: Roy Harris  
District Construction Engineer

EXAMINED BY: Carl R. DeWitt  
District Maintenance Engineer

EXAMINED BY: A. E. Zedler  
District Traffic Engineer

EXAMINED BY: FD McMinn  
District Materials Engineer

EXAMINED BY: J. J. Marston  
District Land Acquisition Engineer

APPROVED: March 20 1981  
Date  
Joe J. Newton  
District Engineer

### STEEL PLATE BEAM GUARD RAIL

LOCATION	S.P.B.G.R. TYPE A LIN. FT.	TRAF. BAR TERM.	
		TYPE I EACH	TYPE 5A EACH
RT. 892+2492 TO 892+4992		1	
RT. 892+4992 TO 894+7492	2250		
LT. 894+4992 TO 894+7492		1	
LT. & RT. 894+7492 TO 894+8817			2
LT. & RT. 898+0983 TO 898+2308			2
RT. 898+2308 TO 898+4808		1	
LT. 898+2308 TO 899+8558	1625		
LT. 899+8558 TO 900+1058		1	
<b>TOTALS</b>	<b>3875</b>	<b>4</b>	<b>4</b>

### SPBGR. REMOVAL

LOCATION	LIN. FT.
LT. 895+1985 TO 895+8235	625
RT. 895+1985 TO 895+8235	625
LT. 897+2965 TO 897+9215	625
RT. 897+2965 TO 897+9215	625
<b>TOTAL</b>	<b>2500</b>

### PAVEMENT REMOVAL

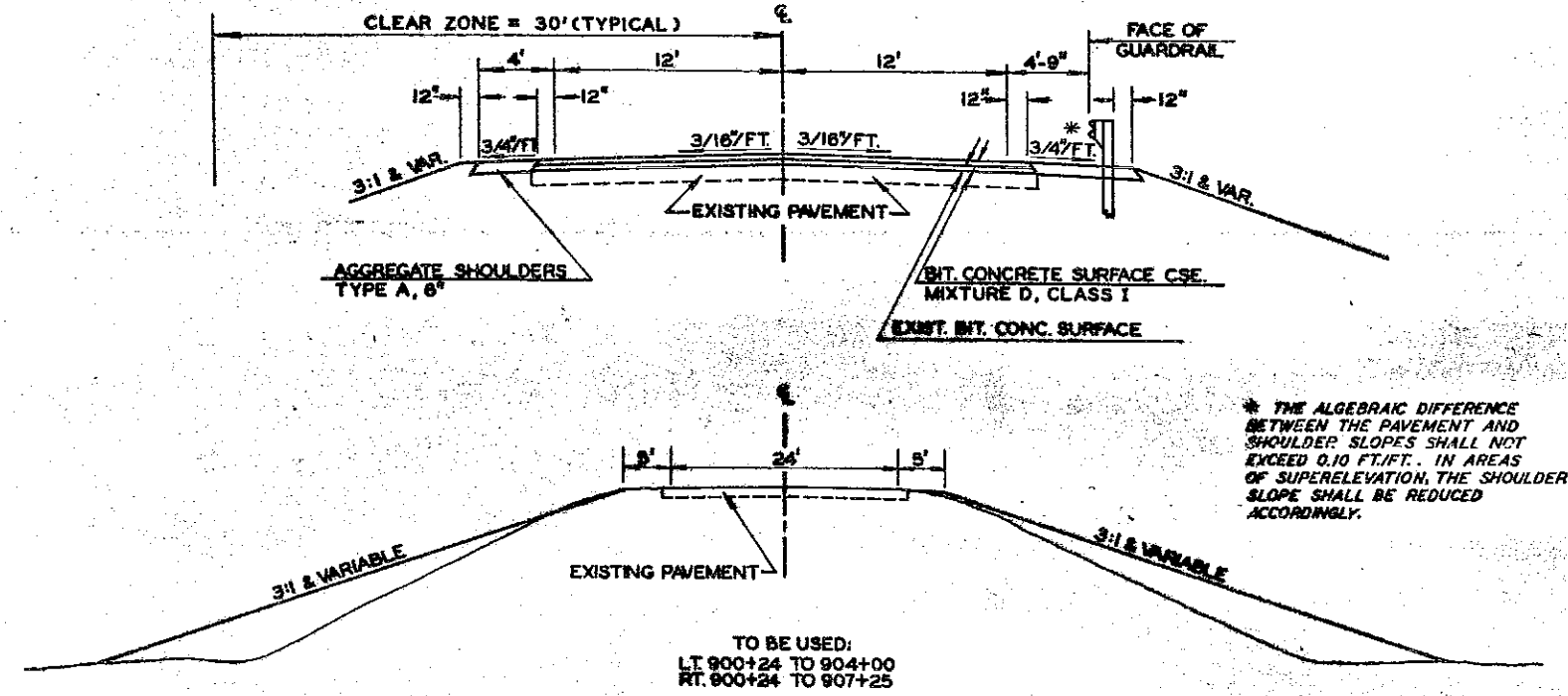
LOCATION	SQ. YD.
894+67.21 TO 895+82.35	317
897+2965 TO 898+30.79	262
<b>TOTAL</b>	<b>579</b>

### EARTHWORK SUMMARY

BAL. NO.	LOCATION	STAGE	EARTH EXCAV. CU. YDS.	EARTH EMBANK. CU. YDS.	EXCESS EXCAV. CU. YDS.	EXCAV. REQ. TO COMPLETE CU. YDS.	REMARKS
1	LT. 892+00 TO 894+86.71		44	17	19		WASTE 19 CU.YDS.
2	RT. 892+00 TO 894+86.71		65	33	15		WASTE 15 CU.YDS.
3	LT. 894+86.71 TO 896+10	I	958		958		178 CU.YDS. TO BAL. 7 778 CU.YDS. TO BAL. 8
4	RT. 894+86.71 TO 895+94	II	1061		1061		1061 CU.YDS. TO BAL. 8
5	LT. 896+78 TO 898+11.29	I	989	11	974		974 CU.YDS. TO BAL. 7
6	RT. 897+01 TO 898+11.29	II	998		998		998 CU.YDS. TO BAL. 8
7	LT. 898+11.29 TO 904+00		150	1060		1152	178 CU.YDS. FROM BAL. 3 974 CU.YDS. FROM BAL. 5
8	RT. 898+11.29 TO 907+25		78	2428		2837	*
<b>TOTALS</b>			<b>4341</b>	<b>3549</b>	<b>4023</b>	<b>3989</b>	

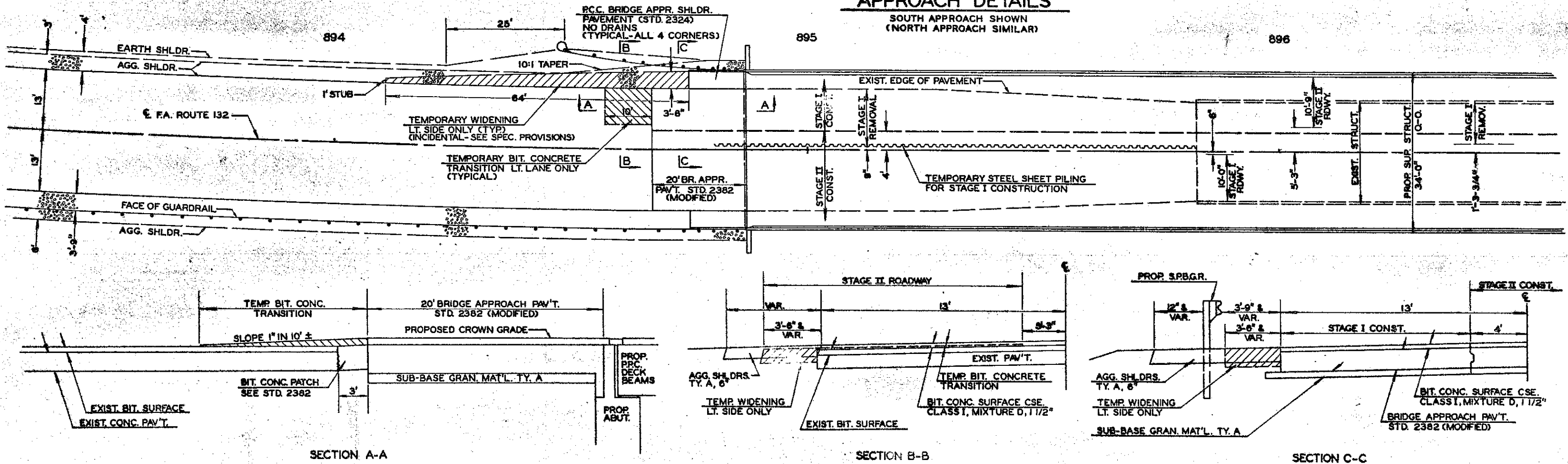
\* 778 CU.YDS. FROM 3  
1061 CU.YDS. FROM 5  
998 CU.YDS. FROM 6

### TYPICAL SECTIONS



### APPROACH DETAILS

SOUTH APPROACH SHOWN  
(NORTH APPROACH SIMILAR)

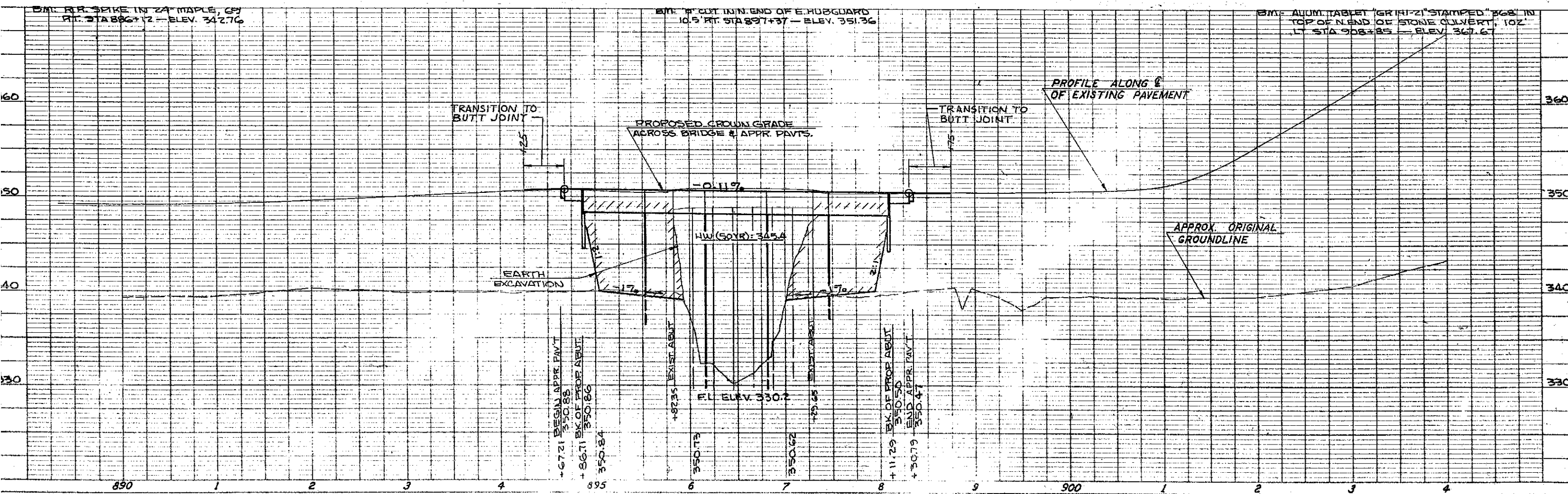
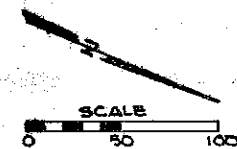
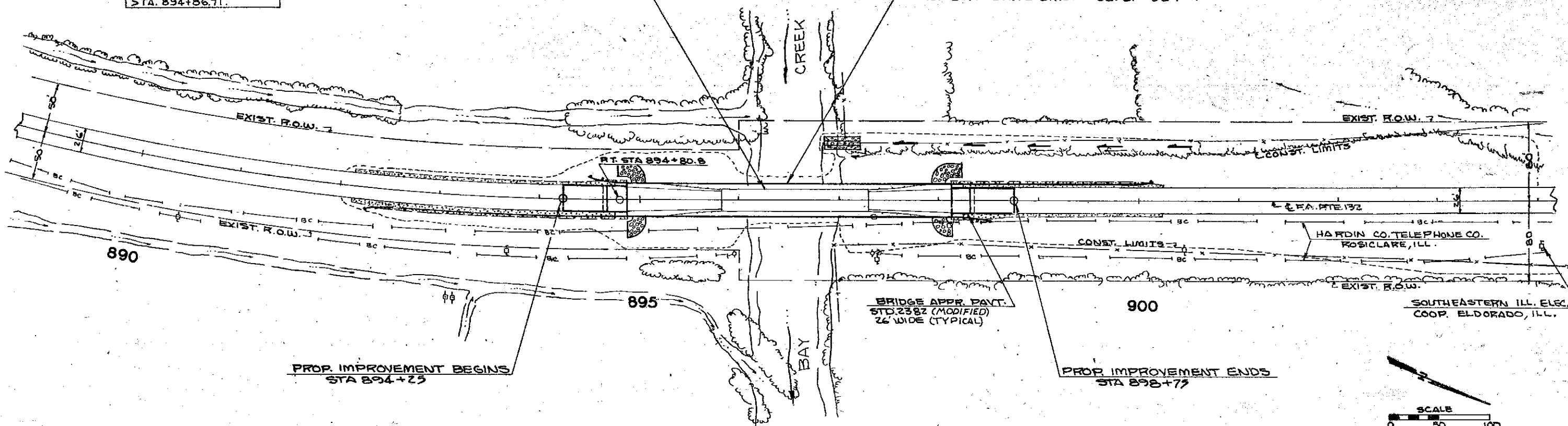


ROUTE NO.	SEC	COUNTY	TOTAL SHEETS	SHEET NO.
FA. 132	103A-B	POPE	25	4
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

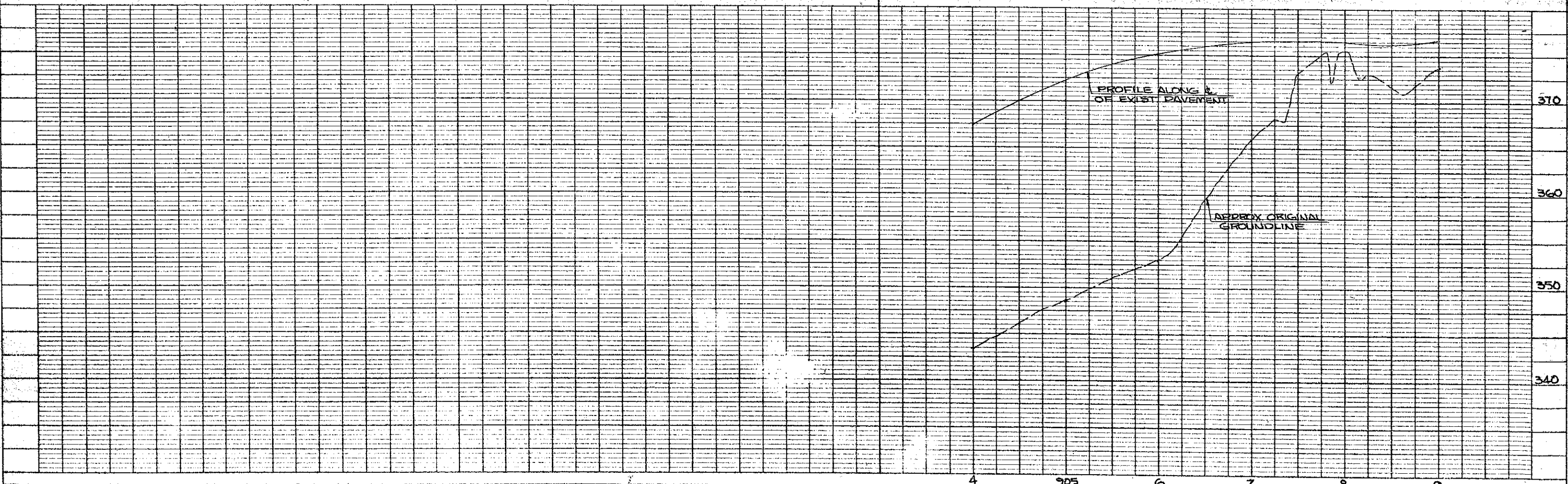
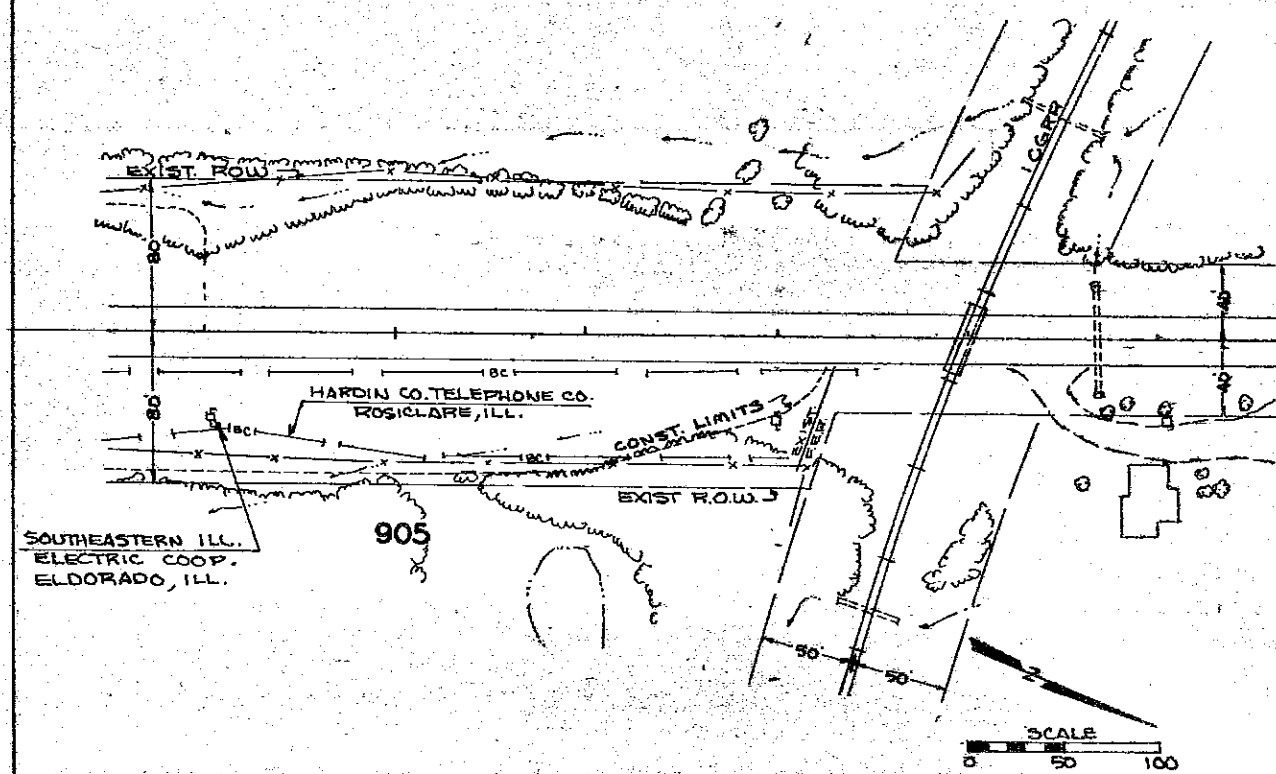
**EXISTING CURVE DATA**  
 $\Delta = 23^{\circ}18'$   $L = 1013.00'$   
 $D = 2^{\circ}18'$   $T = 513.60'$   
 $R = 2491.25'$   $E = 52.40'$   
 $SE = 0.0575$  FT/FT  
 TRANSITION FROM EXIST. SE AT STA. 894+25 TO STANDARD CROWN AT STA. 894+86.71.

**REMOVAL OF EXIST. STRUCTURE**  
 (INCLUDED IN SECTION 103A-B)  
 147.3' LONG BY 22' WIDE BRIDGE.  
 7-I-BEAM SPANS ON TIMBER BENTS.

**PROP. STRUCTURE - STA 896+49.00**  
 OPEN ABUT. P.P.C. DECK BEAM BRIDGE  
 SPANS: 3 @ 64'-4", 2 @ 65'-9 1/2"  
 LENGTH: BK. TO BK. OF ABUTS. = 324'-7"



ROUTE NO.	SEC	COUNTY	TOTAL SHEETS	SHEET NO.
FDL 132	103 A-B	POPE	25	5
FED. ROAD DIST. NO. 7		KENTUCKY	PROJECT	



ROADWAY FEDERAL AID SHEET  
 PLATE 1-SINGLE PLAN AND PROFILE-FULL LINE  
 PRINTED IN U.S.A.

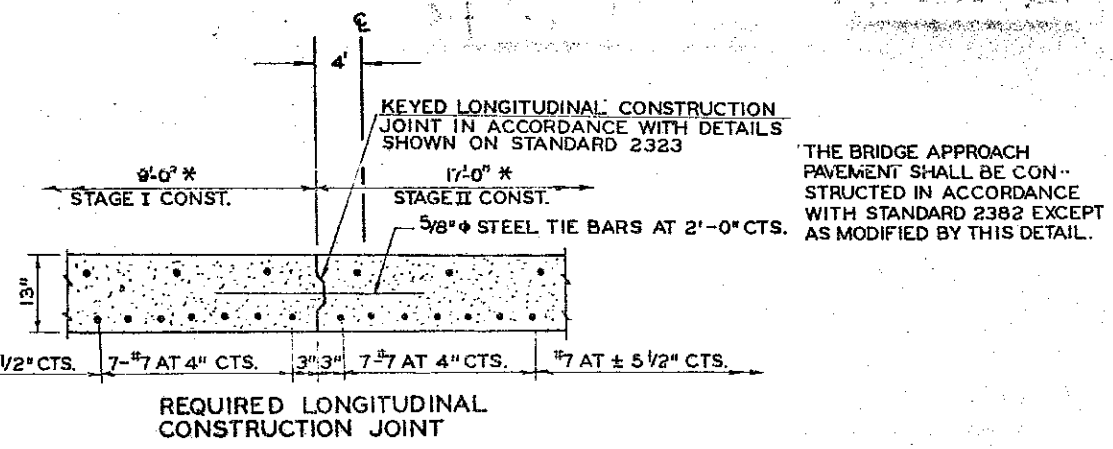
F.A. ROUTE 132 SECTION 103A-B POPE COUNTY

PLAN - PROFILE SHEET (BAY CREEK)

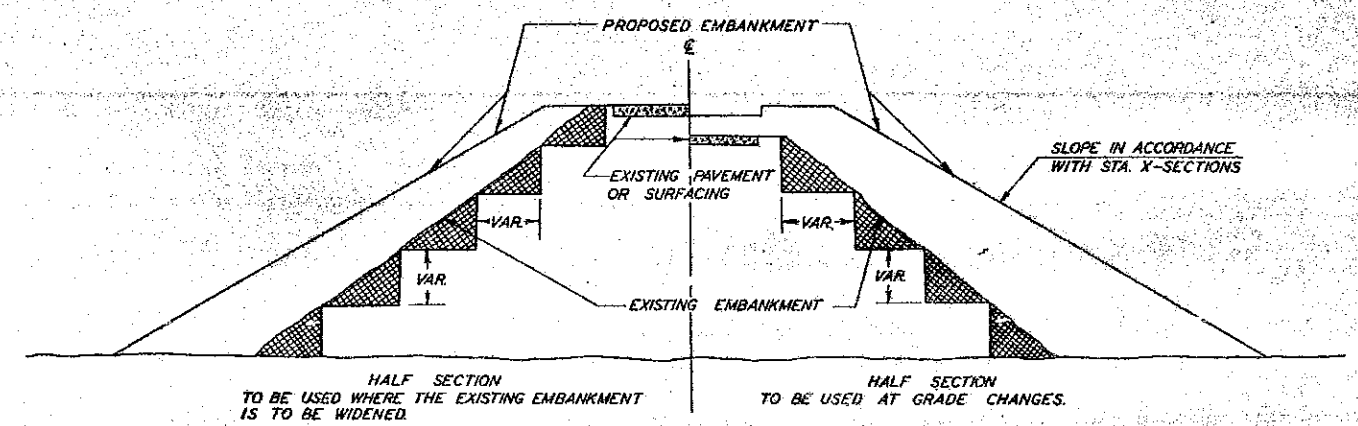
**BRIDGE APPROACH PAVEMENT  
MODIFICATIONS TO STANDARD 2382**

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
EA. 132	103 A-B	POPE	25	6
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

CONST. STAGE	SKEW ANGLE DEGREES	BOTTOM REINFORCEMENT			TOP REINFORCEMENT		REINFORCEMENT (TOTAL WEIGHT) (POUNDS)	SLAB AREA SQ. YDS.	
		TRANSVERSE #5 NO.	LONGITUDINAL #7 LENGTH	LONGITUDINAL #7 NO. REQUIRED	TRANSVERSE #4 NO.	LONGITUDINAL #4 LENGTH			
<b>26' WIDE PAVEMENT</b>									
I (LT.)	0°	20	8'-6"	28 (7EA. EDGE BEAM) 38 (SLAB @ 5 1/2" CTS)	6	8'-6"	22 AT 19'-6" LONG WEIGHT = 287 LBS.	3395	578
II (RT.)	0°	20	16'-6"	64 AT 19'-0" LONG WEIGHT = 2486 LBS.	6	16'-6"			



**TYPICAL CROSS SECTION SHOWING STEP CONSTRUCTION ON EXISTING FILL**

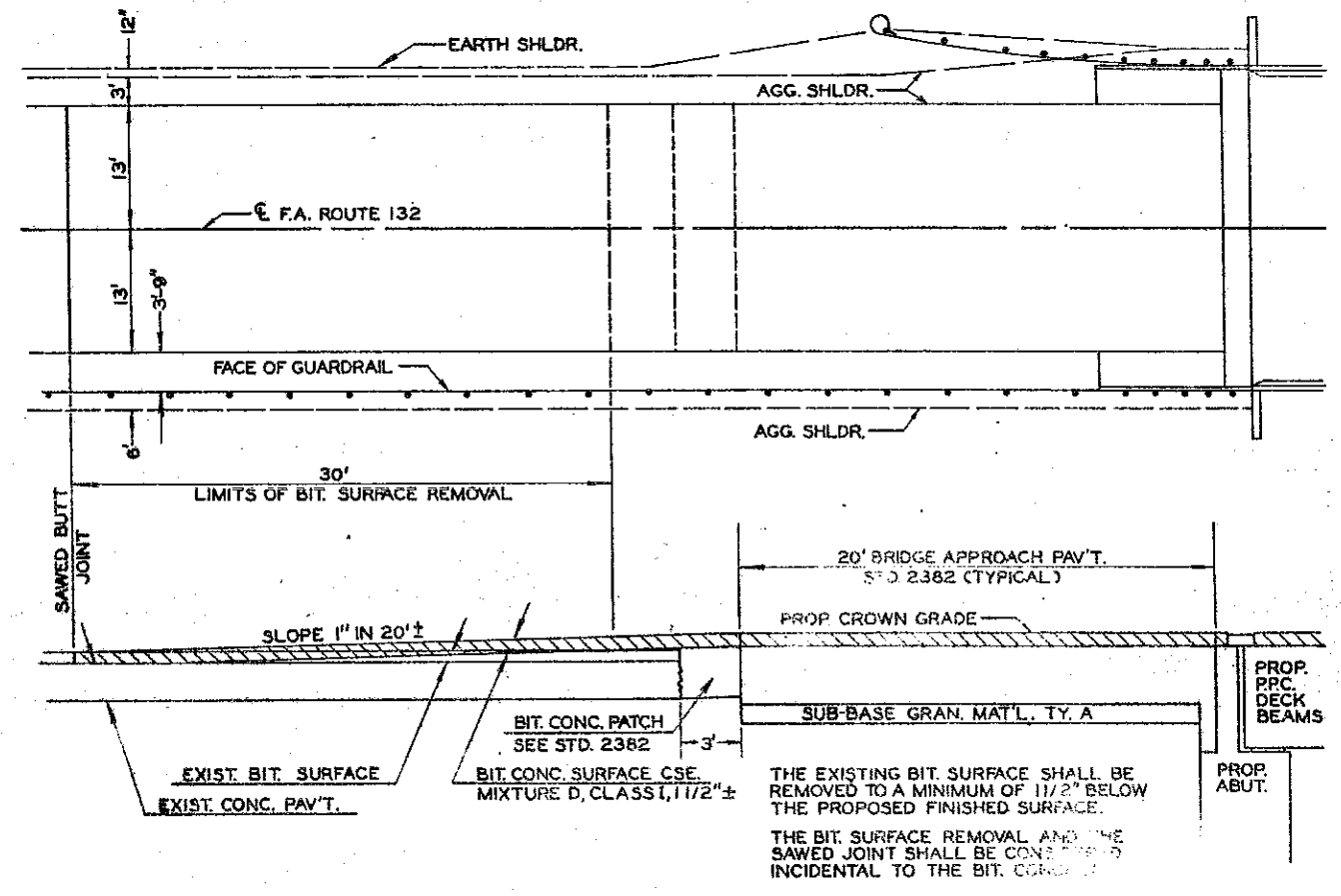


MATERIAL TO BE REMOVED AND REPLACED IN THE EMBANKMENT IN ACCORDANCE WITH ART. 20703 OF THE STANDARD SPECIFICATION COST TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED BECAUSE OF THIS WORK.

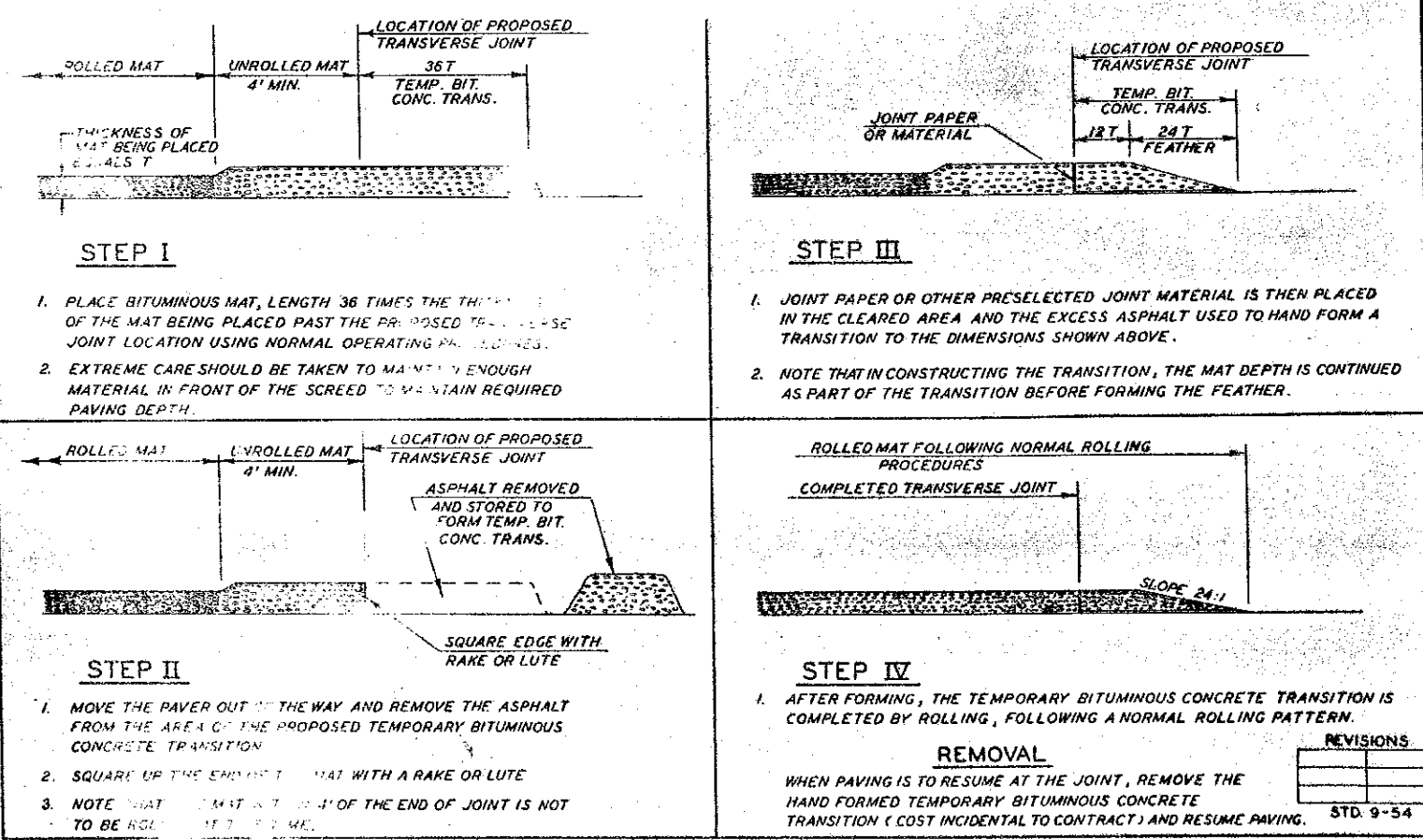
REVISIONS


STD. 9-35

**BUTT JOINT DETAILS  
STA. 894+25 AND STA. 898+75**



**TEMPORARY BITUMINOUS CONCRETE TRANSITIONS**

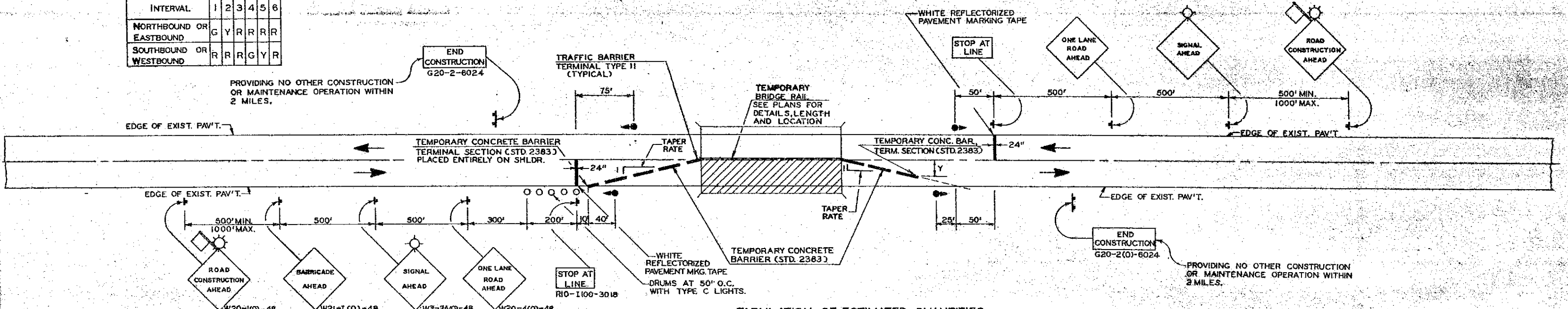


## TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES TO BE USED WITH TEMPORARY BARRIER

**TRAFFIC SIGNALS**

SEQUENCE OF OPERATIONS						
PHASE	A			B		
INTERVAL	1	2	3	4	5	6
NORTHBOUND OR EASTBOUND	G	Y	R	R	R	R
SOUTHBOUND OR WESTBOUND	R	R	R	G	Y	R

POSTED SPEED M.P.H.	TAPER RATE FT./FT.	OFFSET DIST. " FT.
40 AND ABOVE	12:1	8



TABULATION OF ESTIMATED QUANTITIES

ITEM	STAGE 1	STAGE 2	PAYMENT QUANTITY
TRAF. CONT. & PROTECTION, STD. 2309 (SPECIAL)	-	-	1 EACH
TEMPORARY BRIDGE RAIL	365	365	LIN. FT.
TEMPORARY CONCRETE BARRIER	250	120	370 LIN. FT.
TEMP. CONC. BARRIER, TERMINAL SECTION	2	2	2 EACH
RELOCATE TEMPORARY CONC. BARRIER	-	264	264 LIN. FT.
TRAFFIC BARRIER TERMINAL, TYPE II	2	2	2 EACH

**TEMPORARY CONCRETE BARRIER SCHEDULE**

STAGE	LOCATION	LIN. FT.
I	SOUTH	90
I	NORTH	160
II	SOUTH	220
II	NORTH	150

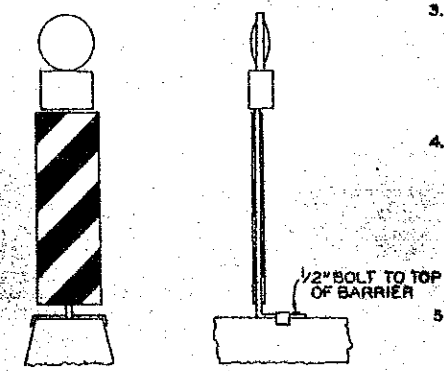
**SYMBOLS**

- WORK AREA
- SIGN WITH 18 IN. BY 18 IN. (MINIMUM) ORANGE FLAG ATTACHED.
- SIGN ON PORTABLE OR PERMANENT SUPPORT.
- DRUM WITH STEADY BURNING LIGHTS.
- TEMPORARY CONCRETE BARRIER (STD. 2383)
- TRAFFIC SIGNAL.
- FLASHING BEACON (A.C. POWERED)
- HIGH INTENSITY FLASHING BEACON (TYPE B) (SEE ARTICLE 718.14 OF THE STD. SPECIFICATIONS)

**TYPICAL APPLICATION**  
BRIDGE DECK REPAIR/REPLACEMENT USING STAGE CONSTRUCTION.

REFER TO SPECIAL PROVISIONS:

1. TRAFFIC CONTROL AND PROTECTION STANDARD 2309 (SPECIAL)
2. TRAFFIC CONTROL PLAN
3. KEEPING THE ROAD OPEN TO TRAFFIC
4. TEMPORARY CONCRETE BARRIER
5. TEMPORARY BRIDGE RAIL



DETAIL A.  
SUGGESTED MOUNTING DETAILS ON TEMPORARY CONCRETE BARRIER.

- GENERAL NOTES**
1. THE ENGINEER MUST BE NOTIFIED AT LEAST 72 HOURS PRIOR TO PLACING THE TEMPORARY SIGNALS IN OPERATION SO THAT ARRANGEMENTS CAN BE MADE TO INSPECT THE INSTALLATION AND SET THE TIMING OF THE SIGNALS. THE CONTRACTOR MUST FURNISH TIMING CYCLE GEARS OF 60, 65, 70, 80, 90, 100 AND 110 SECONDS FOR THE CONTROLLER.
  2. AT ANY TIME THAT THE SIGNALS ARE NOT OPERATING THE SIGNAL HEAD SHALL BE HOODED AND THE SIGNAL AHEAD SIGN COVERED OR REMOVED.
  3. THE LEFT SIGNAL HEAD SHALL NORMALLY BE MOUNTED AT A HEIGHT OF 10 FEET ABOVE THE ROAD SURFACE, MEASURED TO THE BOTTOM OF THE SIGNAL HEAD. THE RIGHT HEAD SHALL NORMALLY BE MOUNTED AT HEIGHT OF 14 FEET ABOVE THE ROAD SURFACE. BAFFLE PLATES WILL BE REQUIRED ON ALL SIGNALS.
  4. ALL RED LENSES SHALL NORMALLY BE 12 INCH NOMINAL DIAMETER. THE RIGHT SIGNAL HEAD SHALL BE AIMED SO THE CENTERS OF THE LIGHT BEAMS OF THE INDICATIONS ARE DIRECTED TOWARD A POINT IN THE CENTER OF THE APPROACH LANE 500 FEET IN ADVANCE OF THE SIGNAL. THE LEFT INDICATION SHALL BE AIMED AT 10 FEET IN THE CENTER OF THE APPROACH LANE 100 FEET IN ADVANCE OF THE STOP LINE.
  5. BIDIRECTIONAL STEADY BURNING AMBER LIGHTS AND DOUBLE VERTICAL PANELS SHALL BE MOUNTED ON THE BARRIER AT 20 FOOT CENTERS. DETAIL A SHOWS A SUGGESTED MOUNTING. OTHER METHODS OF MOUNTING MAY BE USED UPON THE APPROVAL OF THE ENGINEER. THE LIGHTS SHALL ALSO BE ATTACHED TO THE TEMPORARY BRIDGE RAIL AT 20 FOOT CENTERS AND KEPT BURNING FROM DUSK UNTIL DAWN EACH NIGHT THE TEMPORARY CONCRETE BARRIER AND TEMPORARY BRIDGE RAIL IS IN USE.
  6. ALL SIGNS SHALL BE POST MOUNTED IF THE CLOSURE TIME EXCEEDS FOUR DAYS.
  7. HIGH INTENSITY FLASHING BEACONS SHALL BE USED ON EACH APPROACH IN ADVANCE OF THE WORK AREA DURING HOURS OF DARKNESS AND INSTALLED ABOVE THE ROAD CONSTRUCTION AHEAD SIGNS.
  8. LONGITUDINAL DIMENSIONS MAY BE ADJUSTED SLIGHTLY TO FIT FIELD CONDITIONS.
  9. ALL WARNING SIGNS SHALL HAVE MINIMUM DIMENSIONS OF 48 IN. BY 48 IN. AND HAVE BLACK LEGEND AND BORDER ON AN ORANGE REFLECTORIZED BACKGROUND. ALL SIGNS OTHER THAN WARNING SIGNS SHALL HAVE AS A MINIMUM THE DIMENSIONS SHOWN AND SHALL HAVE A BLACK LEGEND AND BORDER ON A WHITE REFLECTORIZED BACKGROUND.
  10. ALL VEHICLES, EQUIPMENT, MEN AND THEIR ACTIVITIES ARE RESTRICTED AT ALL TIMES TO ONE SIDE OF THE PAVEMENT UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER.
  11. FORM BT 725 IS REQUIRED.
  12. FLASHING BEACONS SHALL BE USED ON EACH APPROACH IN ADVANCE OF THE WORK AREA AND INSTALLED ABOVE THE SIGNAL AHEAD SIGNS. EACH OF THESE BEACONS SHALL HAVE A YELLOW LENS WITH A NOMINAL SIZE OF 8 INCHES, A PARABOLIC REFLECTOR, AND A CLEAR LAMP WITH A MINIMUM RATING OF 64 WATTS. THE FLASHING CONTROLLER SHALL BE SET FOR NOT LESS THAN FIFTY NOR MORE THAN 100 FLASHES PER MINUTE WITH EQUAL ON AND OFF INTERVALS.

**TWO-LANE, TWO WAY TRAFFIC, RURAL ONE LANE CLOSURE ON A BRIDGE DECK DAY OR NIGHT OPERATIONS**

WHERE, AT ANY TIME, ANY VEHICLE, EQUIPMENT, MEN OR THEIR ACTIVITIES WILL ENCRUCH ON ONE LANE OF A BRIDGE DECK AND TRAFFIC SIGNALS ARE REQUIRED.

ROUTE NO.	SEC	COUNTY	TOTAL SHEETS	SHEET NO.
FA. 132	103A-B	POPE	25	8
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

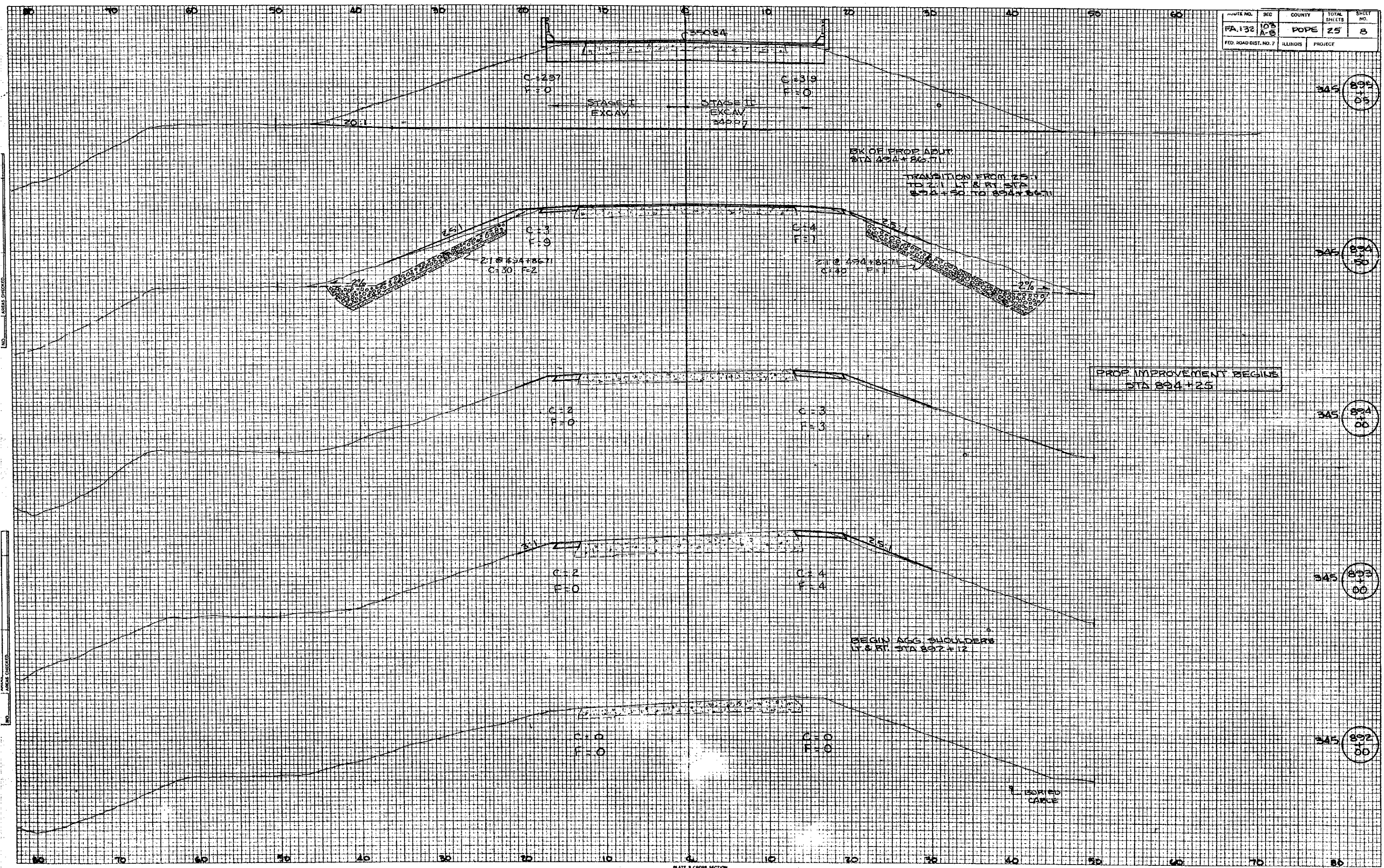
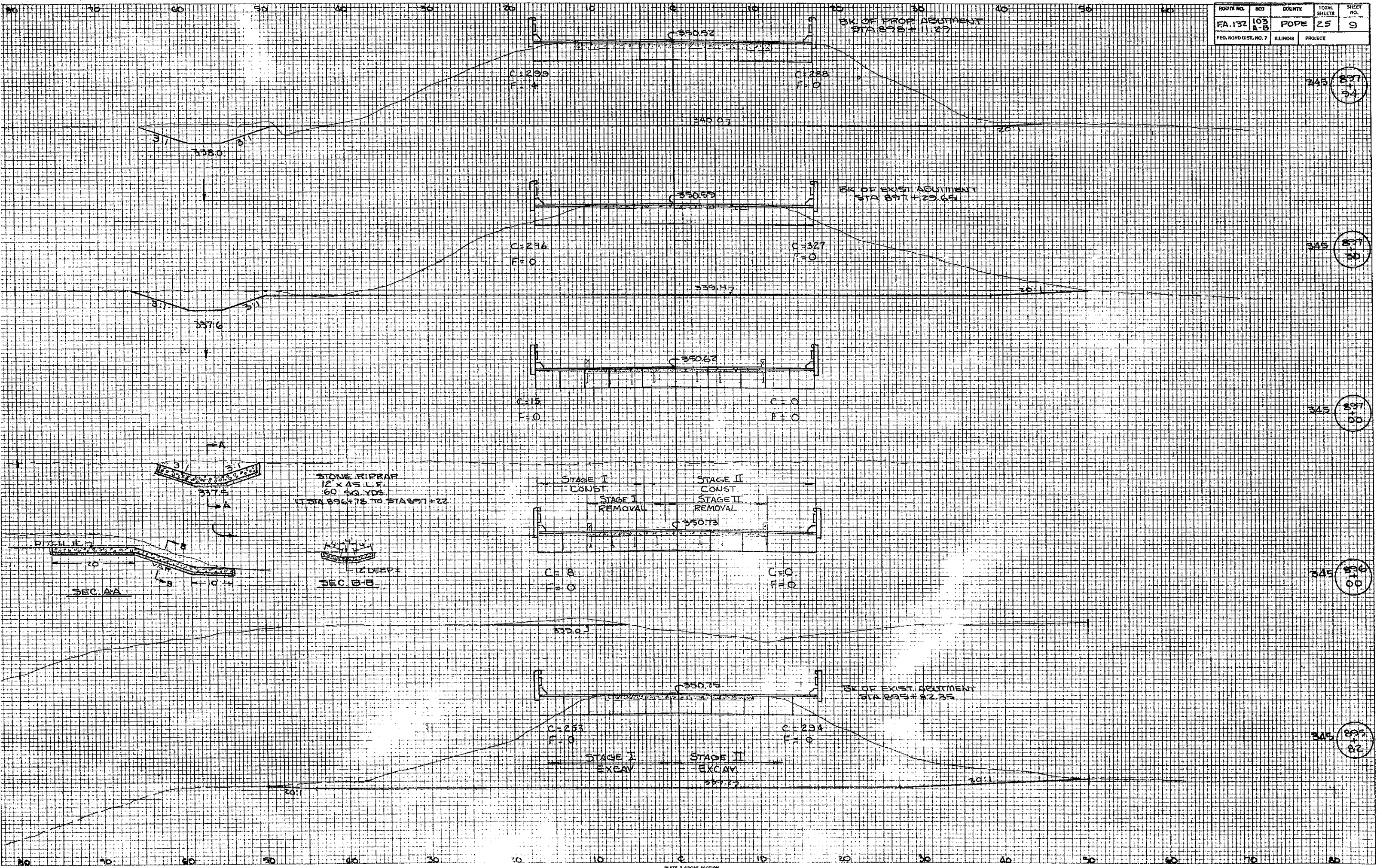


PLATE 3 CROSS SECTION

FA. ROUTE 132 SECTION 103A-B POPE COUNTY CROSS-SECTIONS 892+00 TO 895+05



ROUTE NO.	SEG	COUNTY	TOTAL SHEETS	SHEET NO.
FA. 132	103 A-B	POPE	25	9
FED. ROAD DIST. NO. 7		ILLINOIS	PROJECT	



345 897  
54

345 897  
50

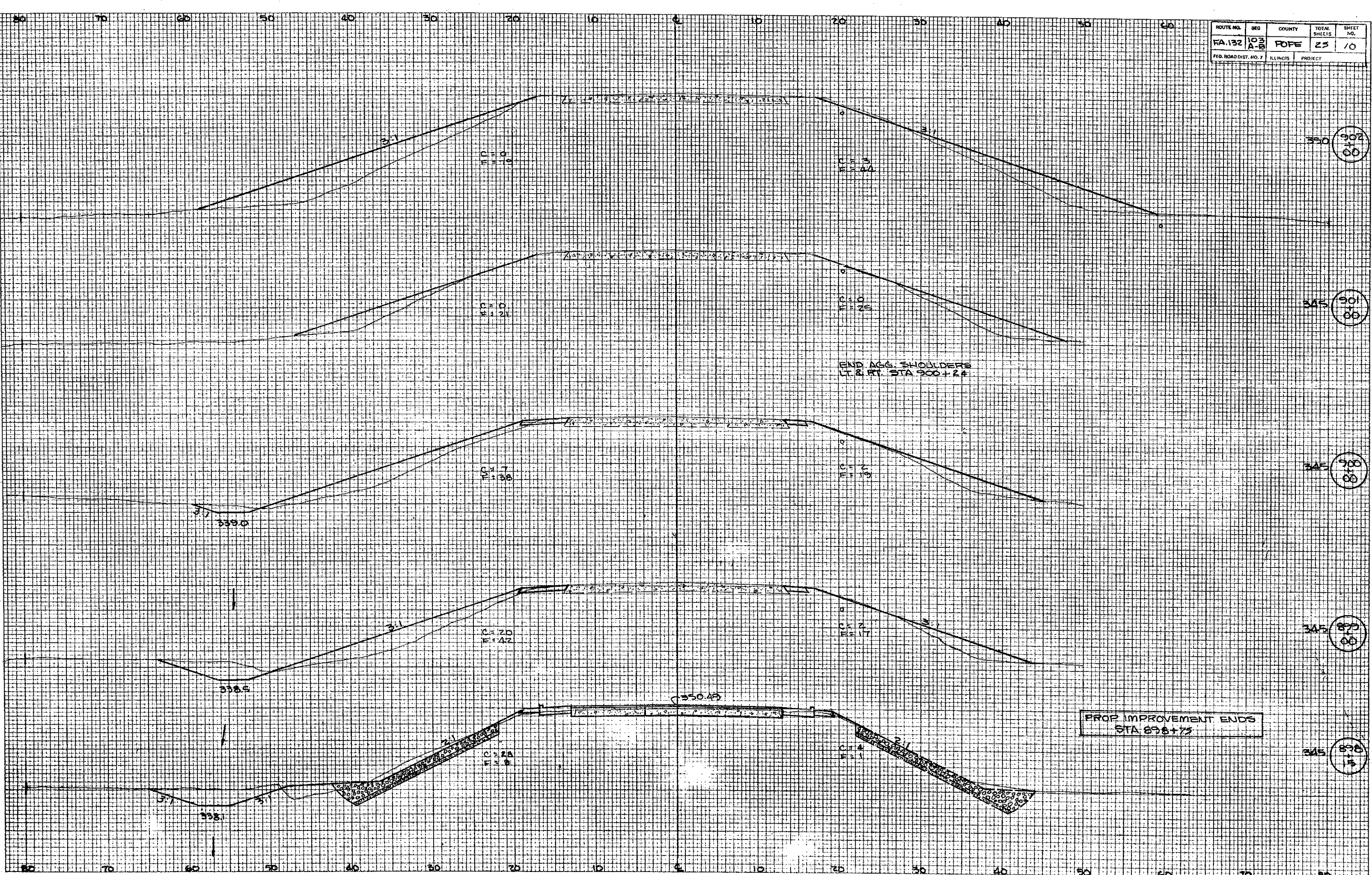
345 897  
00

345 896  
00

345 895  
82

PLATE 3 CROSS SECTION

ROUTE NO.	SEC	COUNTY	TOTAL SHEETS	SHEET NO.
FA. 132	103 A-B	POPE	25	10
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		



END AGG. SHOULDERS  
LT & RT STA 900+24

PROP IMPROVEMENT ENDS  
STA 898+75

PLATE 3 CROSS SECTION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FA. 132	103 A-B	POPE	25	11
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

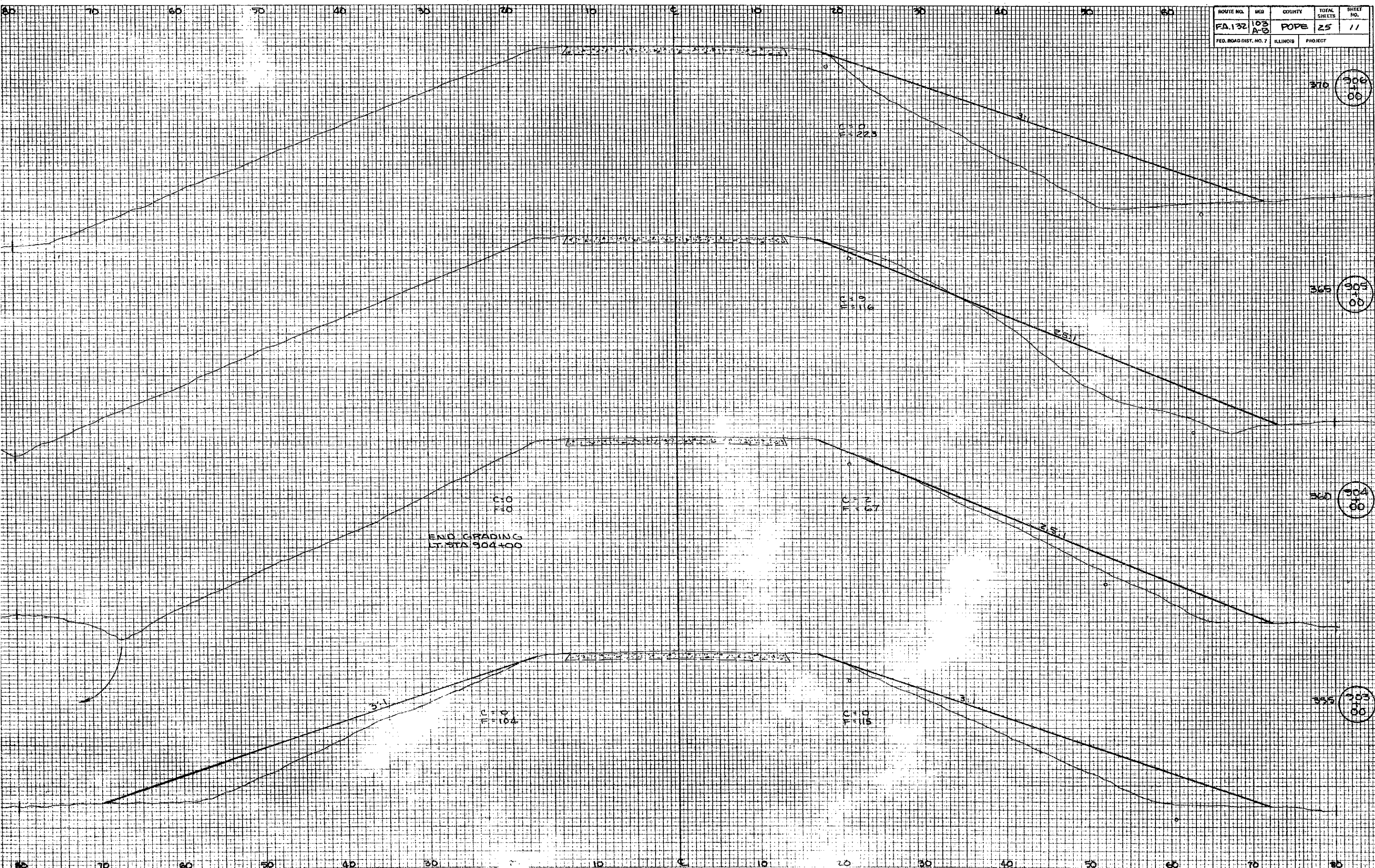


PLATE 5 CROSS SECTION

FA. ROUTE 132 SECTION 103A-B POPE COUNTY CROSS-SECTIONS 903+00 TO 906+00

ROUTE NO.	SEC	COUNTY	TOTAL SHEETS	SHEET NO.
FA. 132	103 A-B	POPE	25	12
FED. ROAD DIST. NO. 7		ILLINOIS	PROJECT	

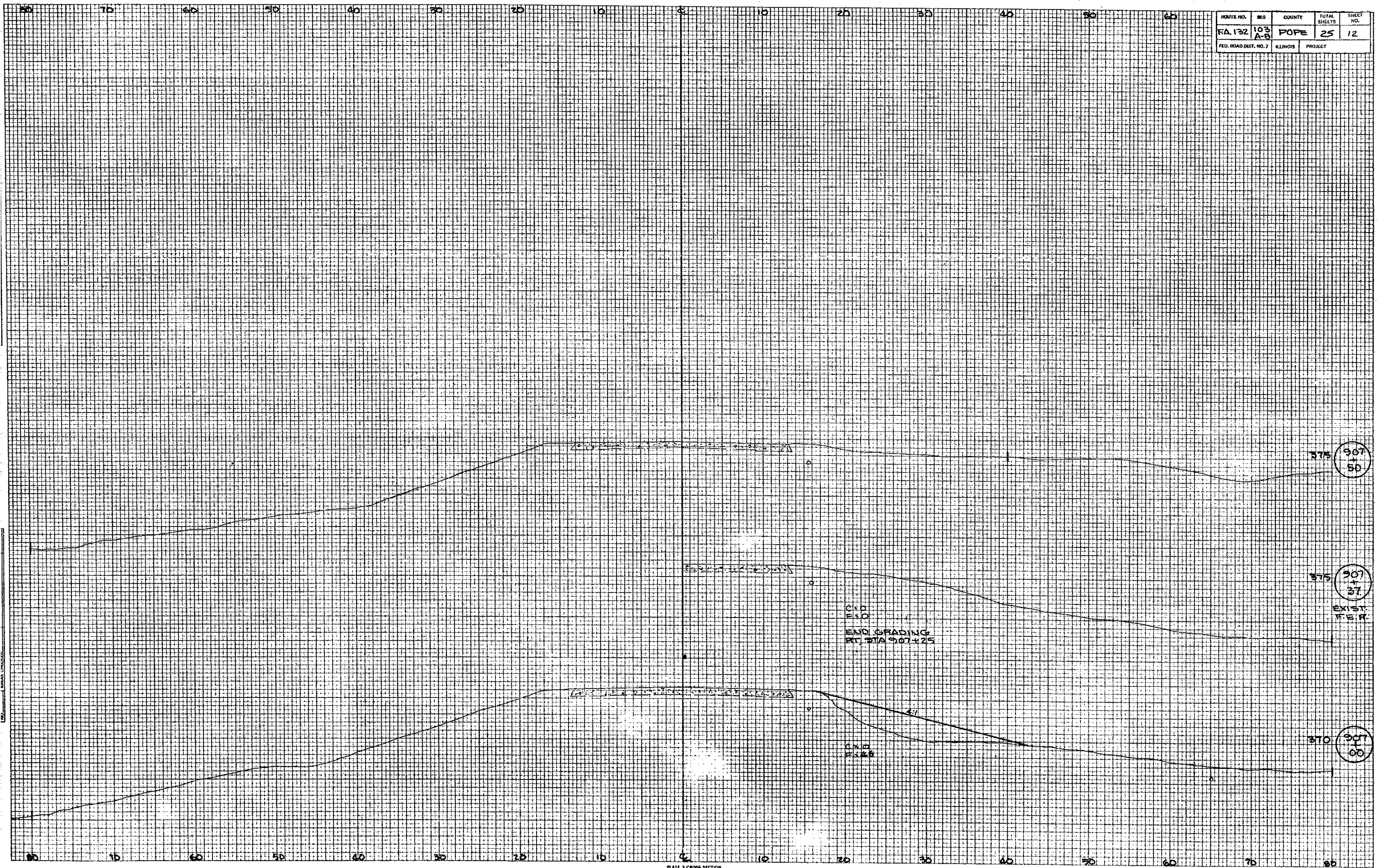


PLATE 3 CROSS SECTION

B.M. "C" Cut in N end of East hubguard 10'-6" Rt Sta. 897+37  
Elev. 351.36

Existing Structure: #076-0017 Built 1934 at Sta. 896+56 Section 103A on S. B. I. Rte. 145 Seven I-beam spans with 4" Timber planks superstructure and timber pile bents substructure. Timber planks replaced with 6" concrete slab in 1959. Existing structure is 147'-3 1/2" long by 22'-0" wide Stage Construction shall be utilized so as to maintain one way traffic during reconstruction.

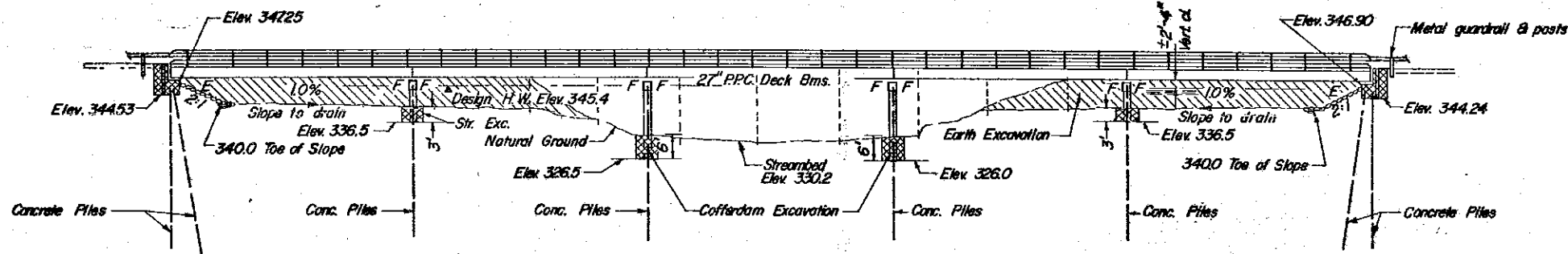
No Salvage

ROUTE	SECTION	COUNTY	TOTAL	SHEET
FA 132	103A-B	POPE	25	13
STA. TO STA.			1 of 13	
S.N.V.A. DIV. NO. 4 ILLINOIS FED. AID PROJECT				

**GENERAL NOTES**

See Proposal for Boring Data.

The top surface of the beams shall be finished in accordance with Article 505.06 of the Standard Specification except that the surface shall not be roughened by brooming. The finished surface shall be free of depressions or high spots with sharp corners.  
Protective Coat shall not be applied to surfaces to which Waterproofing Membrane System is applied.  
Reinforcement bars shall conform to the requirements of AASHTO M-31 or M-53 Grade 60, unless otherwise indicated.  
The Contractor shall drive one precast concrete test pile in a permanent location at Pier 2 and at Pier 4 as directed by the Engineer.  
Bars designated "Grade 40" shall have a minimum yield strength of 33,000 psi and maximum yield strength of 45,000 psi.

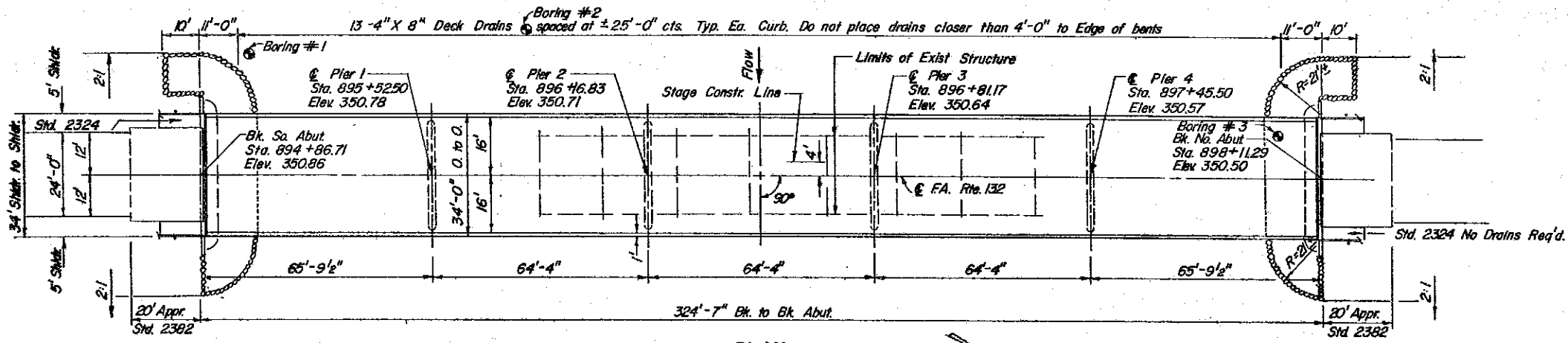


**ELEVATION**

NOTE: Hatched Area shows Earth Excavation which is included in the Earth work balances in the road plans.

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Structure Excavation	Cu. Yd.		195	195
Portland Cement Mortar Fairing Course	Lin. Ft.	2890		2890
Waterproofing Membrane System	Sq. Yd.	1145		1145
Protective Coat	Sq. Yd.	110		110
Bituminous Conc. Surf. Crse. Mixture D Class I	Ton	134		134
Concrete Piles	Lin. Ft.	1078		1078
Precast Concrete Piles, 14"	Lin. Ft.		2357	2357
Test Pile, Precast Concrete	Ea.		2	2
Neoprene Expansion Jt. 2"	Lin. Ft.	64		64
Precast Prestressed Concrete Deck Beams (27" Depth)	Sq. Ft.	10,923		10,923
Steel Rolling, Type T	Lin. Ft.	644		644
Untreated Timber	FBM		624	624
Hardware	Pound		105	105
Name Plates	Ea.	1		1
Stone Riprap	Sq. Yd.		330	330
Removal of Existing Structures	Ea.		1	1
Class X Concrete	Cu. Yd.	18.2	181.0	199.2
Reinforcement Bars	Pound	1250	18,580	19,830
Temporary Bridge Rail	Lin. Ft.	365		365
Steel Sheet Piling, Temporary	Sq. Ft.		4750	4750
Cofferdam (Pier 2)	Ea.		1	1
Cofferdam (Pier 3)	Ea.		1	1
Cofferdam Excavation	Cu. Yds.		105	105



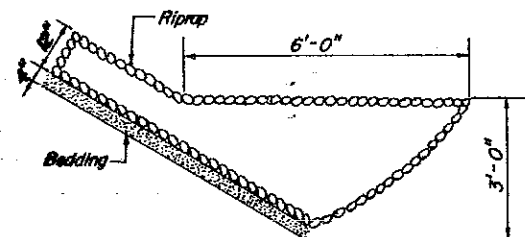
**PLAN**

STATION 896+49  
BUILT 198 BY  
STATE OF ILLINOIS  
FA. RT. 132 SEC. 103A-B  
FA. PROJECT BR-F-132(49)  
LOADING HS20  
\*STR. NO.

**NAME PLATE**

See Std. 213  
\*Structure Number to be supplied by District.

**APPROVED**  
FOR STRUCTURAL ADEQUACY ONLY  
*Robert Bradford*  
Engineer of Bridge & Traffic Structures



**RIPRAP ANCHOR DETAIL**

**WATERWAY INFORMATION**

Drainage Area 16466<sup>sq</sup> mi. Low Grade Elev. 349.16' at Sta. 890+00

Flood	Freq. Yr.	Q. C.F.S.	Opening Sq. Ft.		Not. H.W.E.	Head - Ft.		Headwater
			Exist.	Prop.		Exist.	Prop.	
Design	50	9900	1398	2360	345.4	2.0	0.47	347.4
Base	100	11700	1478	2528	346.0	2.5	0.60	348.5
Overlapping								
Max. Calc.	500	15515	1627	2842	347.12	3.0	0.75	350.1

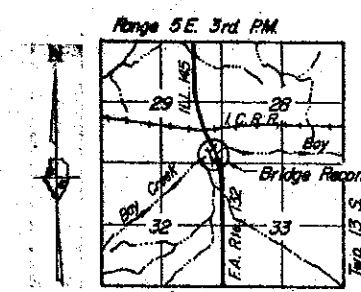
**FIELD UNITS**  
f<sub>c</sub> = 3,500 psi  
f<sub>y</sub> = 60,000 psi  
Reinforcement

**PRECAST PRESTRESSED UNITS**  
f<sub>c</sub> = 5,000 psi  
f<sub>y</sub> = 4,000 psi  
f<sub>s</sub> = 270,000 psi (1/2" # Strands)  
f<sub>s</sub> = 189,000 psi (1/2" # Strands)

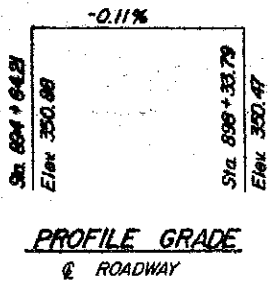
Design Specifications 1977 AASHTO & 1978, 1979 & 1980 Interims as applicable

Allow for 25 #/sq.ft. Future Wearing Surface

**LOADING HS20-44**



**LOCATION SKETCH**



**PROFILE GRADE**  
ROADWAY

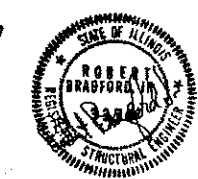
**GENERAL PLAN AND ELEVATION**

FA. Rte. 132 (ILL. 145) Over BAY CREEK  
FA. Rte. 132 SECTION 103A-B  
POPE COUNTY Sta. 896+49.00

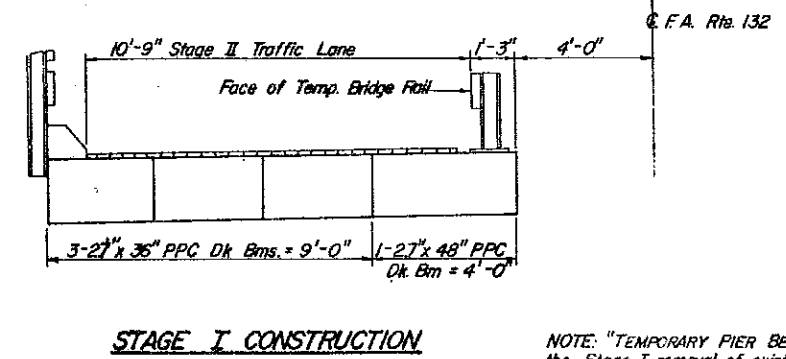
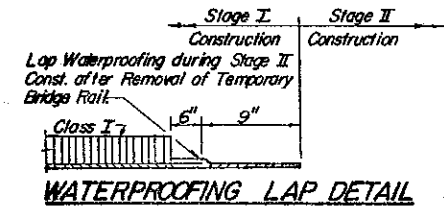
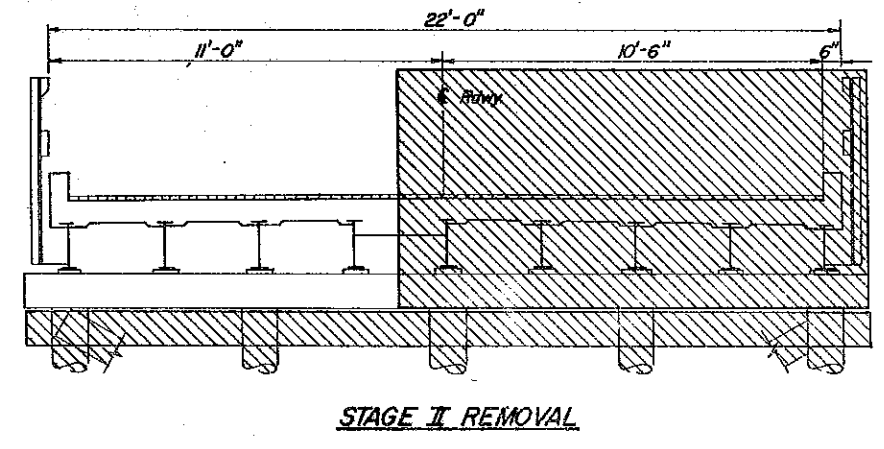
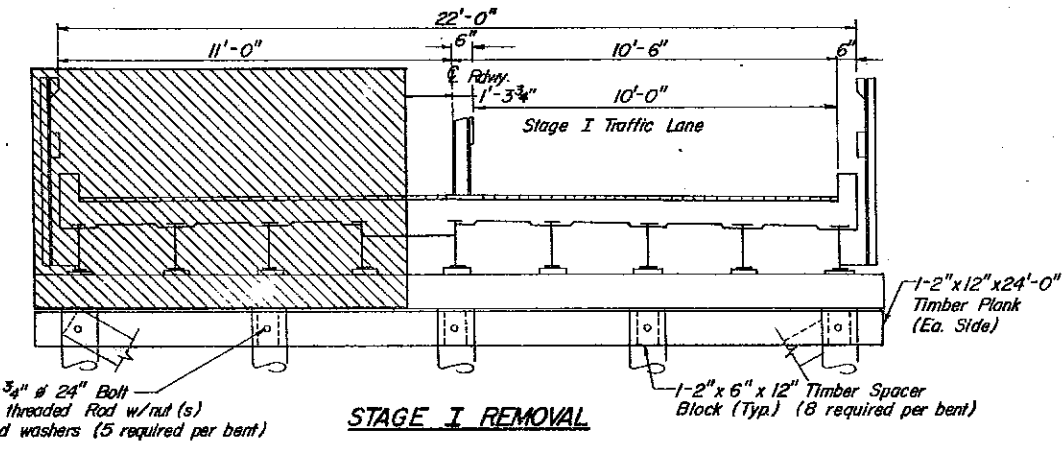
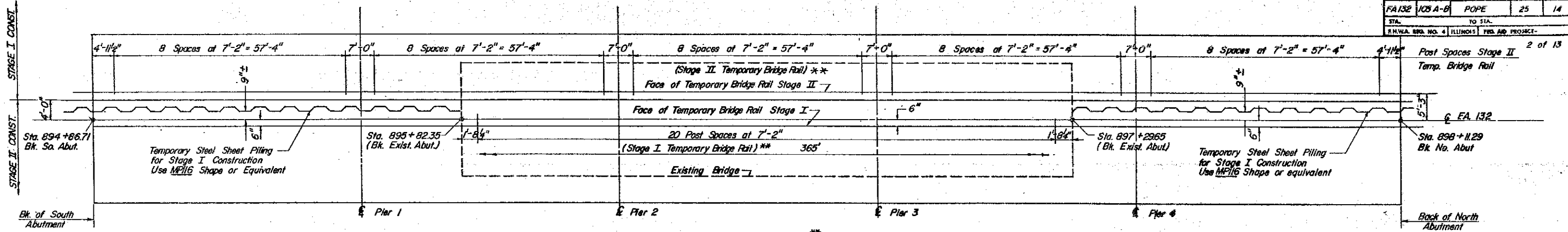
**GREENE & ELLIOTT, Ltd.**

CONSULTING ENGINEERS  
1819 STEVENSON DR. 217/529-6681 - SPRINGFIELD, ILL.

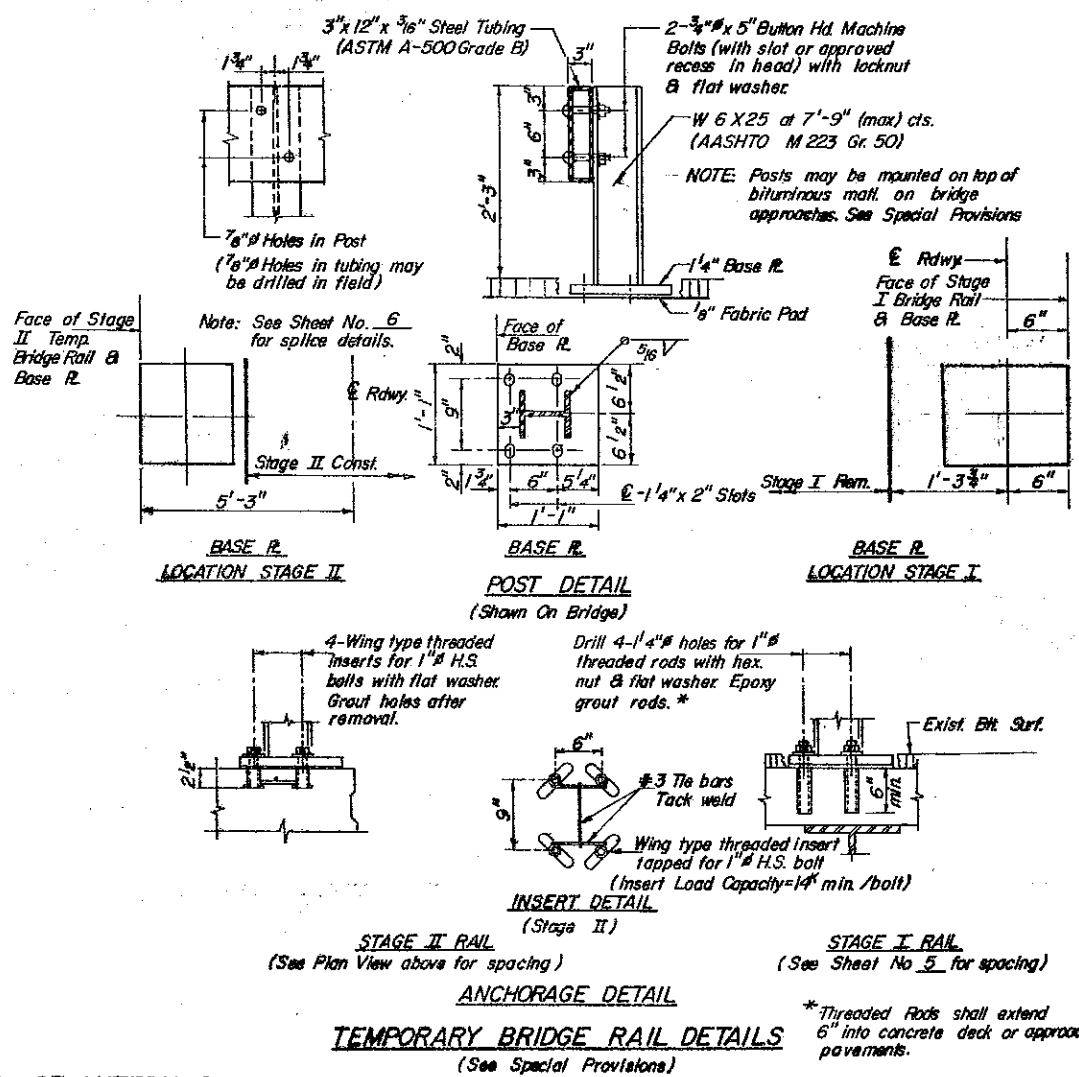
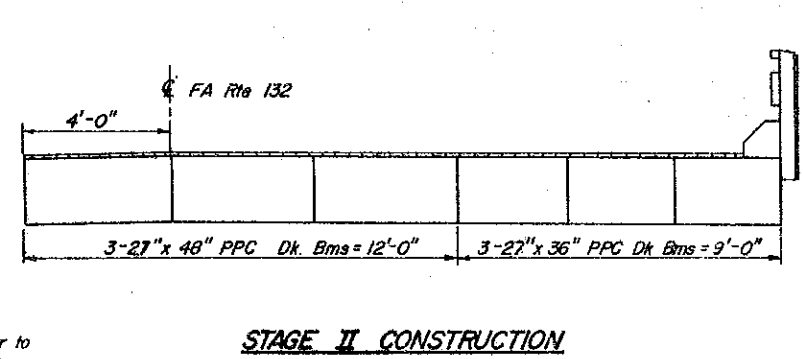
DRAWN LVR	REVISION	DATE	PROJECT
CHECKED R.B.J.		OCT. 1980	



ROUTE	SECTION	COUNTY	SHEET
FA 132	103A-B	POPE	25
STA.	TO STA.		14
I.H.W.A. BRIDGE NO. 4 ILLINOIS FEDERAL PROJECT			



NOTE: "TEMPORARY PIER BENT SUPPORTS." Prior to the Stage I removal of existing timber pile cap, as shown, the Contractor shall fasten one (1) 2" x 12" timber plank alongside each side of existing piles. Work shall be in accordance with the applicable portions of Sec. 510 of the Standard Specifications.



BILL OF MATERIALS

TEMPORARY PIER BENT SUPPORTS

ITEM	UNIT	QTY.
Untreated Timber	FBM	624
Hardware	Pound	105

STAGING DETAILS

FA. RTE. 132 SEC. 103A-B

POPE COUNTY

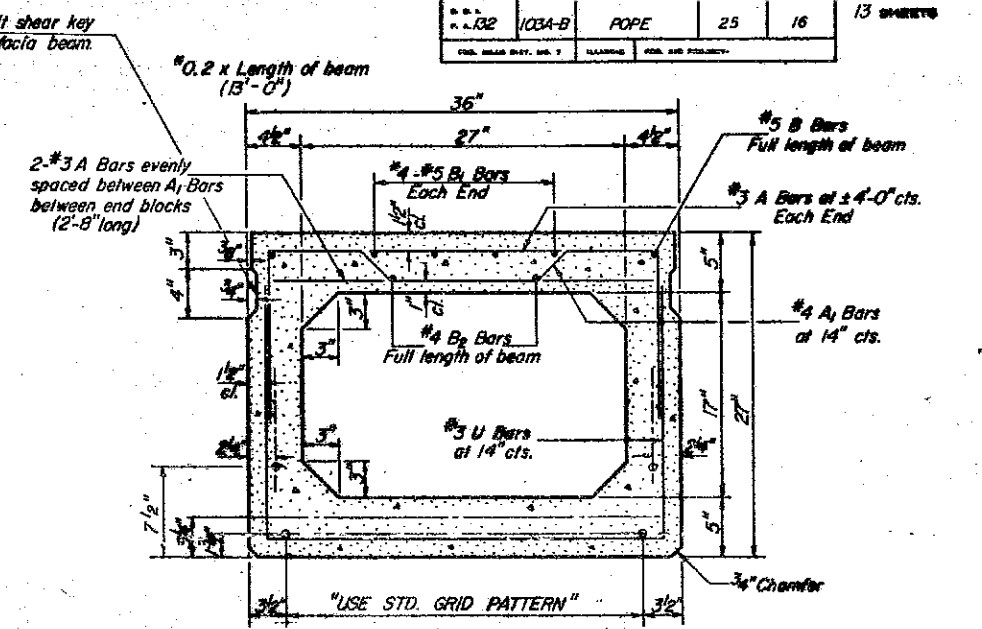
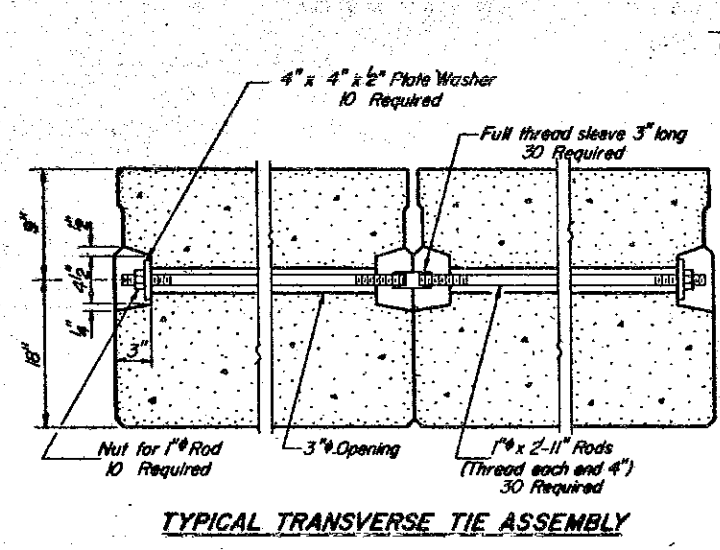
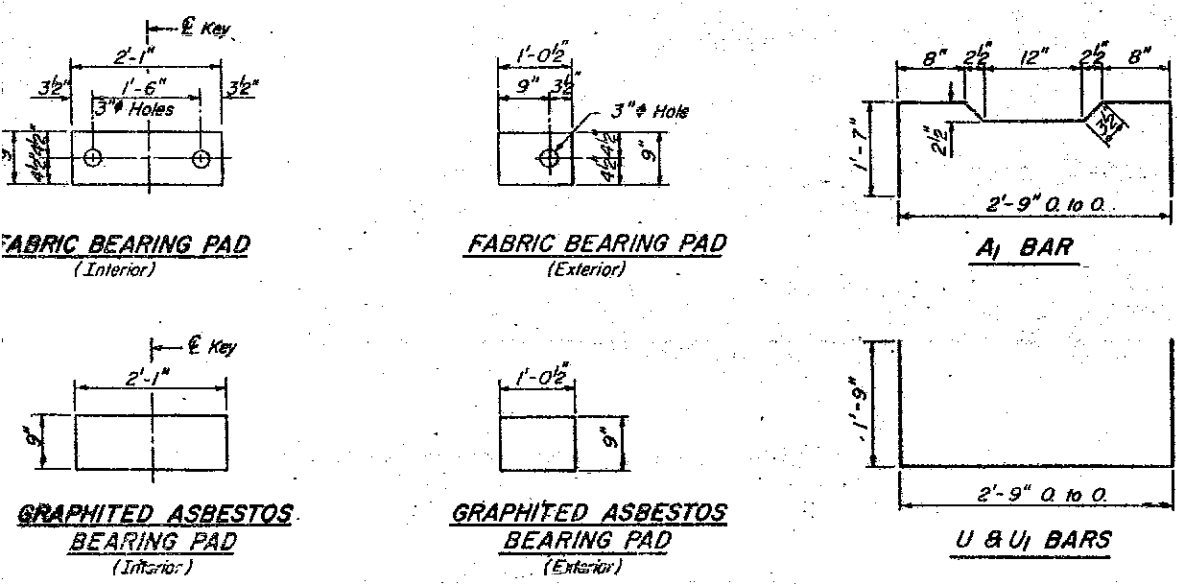
STATION 896+49

GREENE & ELLIOTT, Ltd.

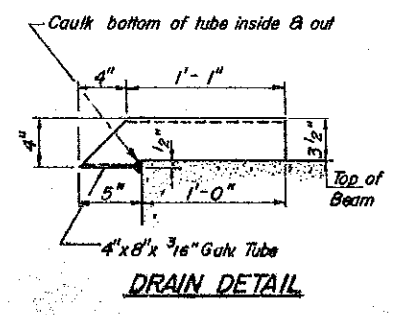
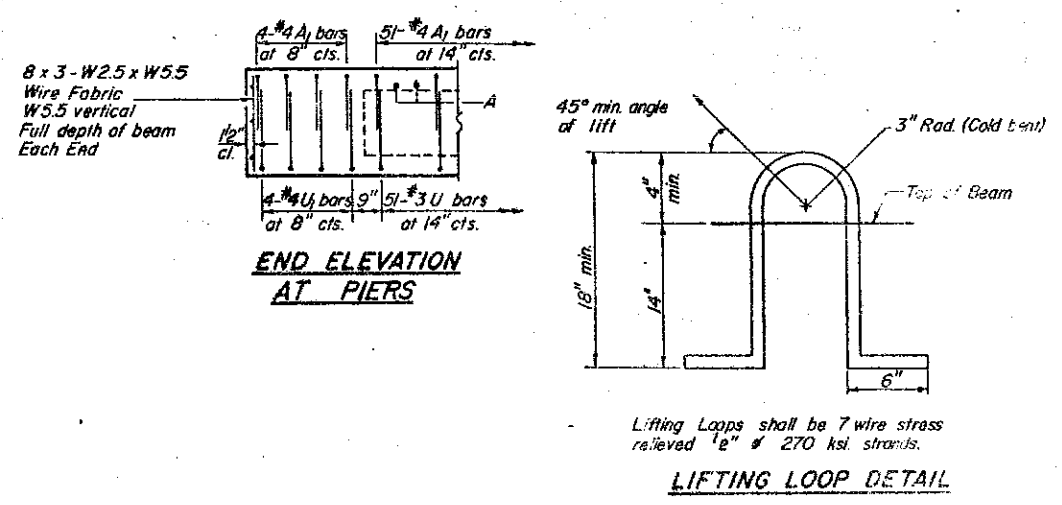
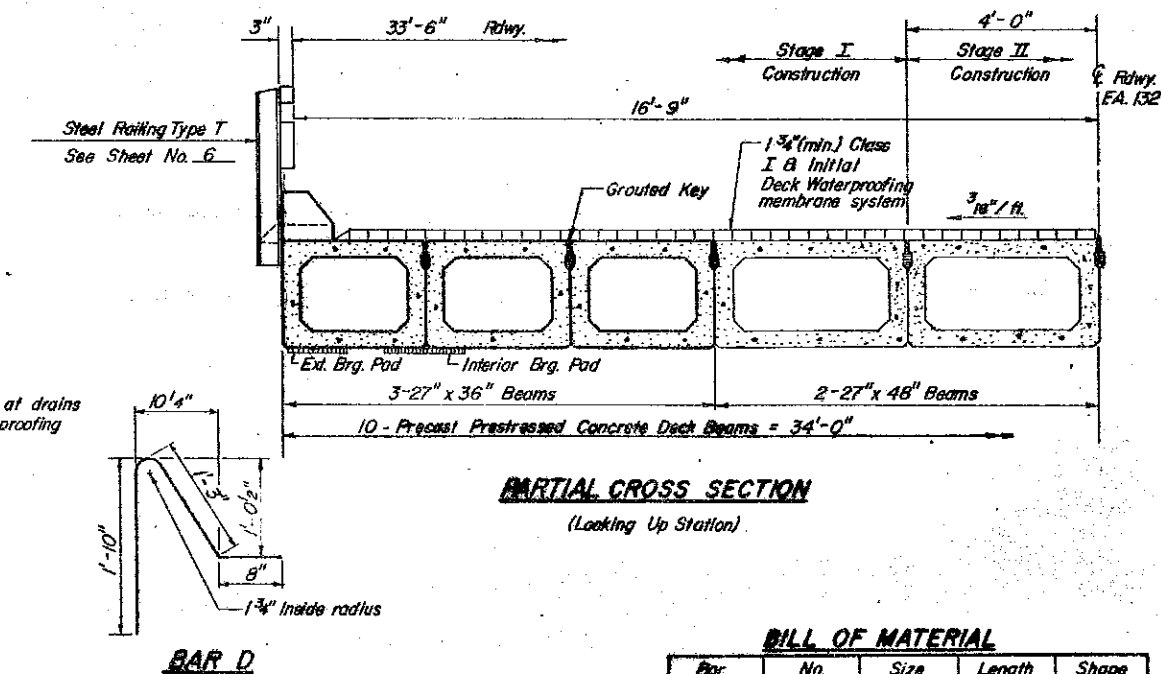
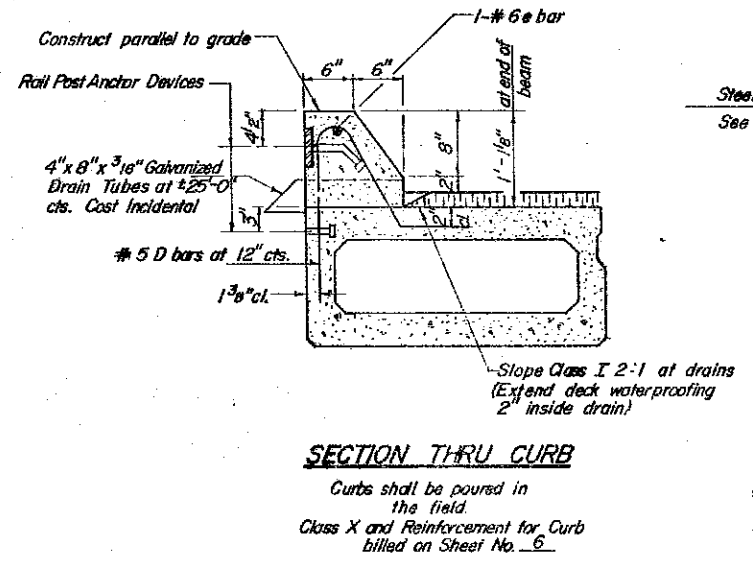
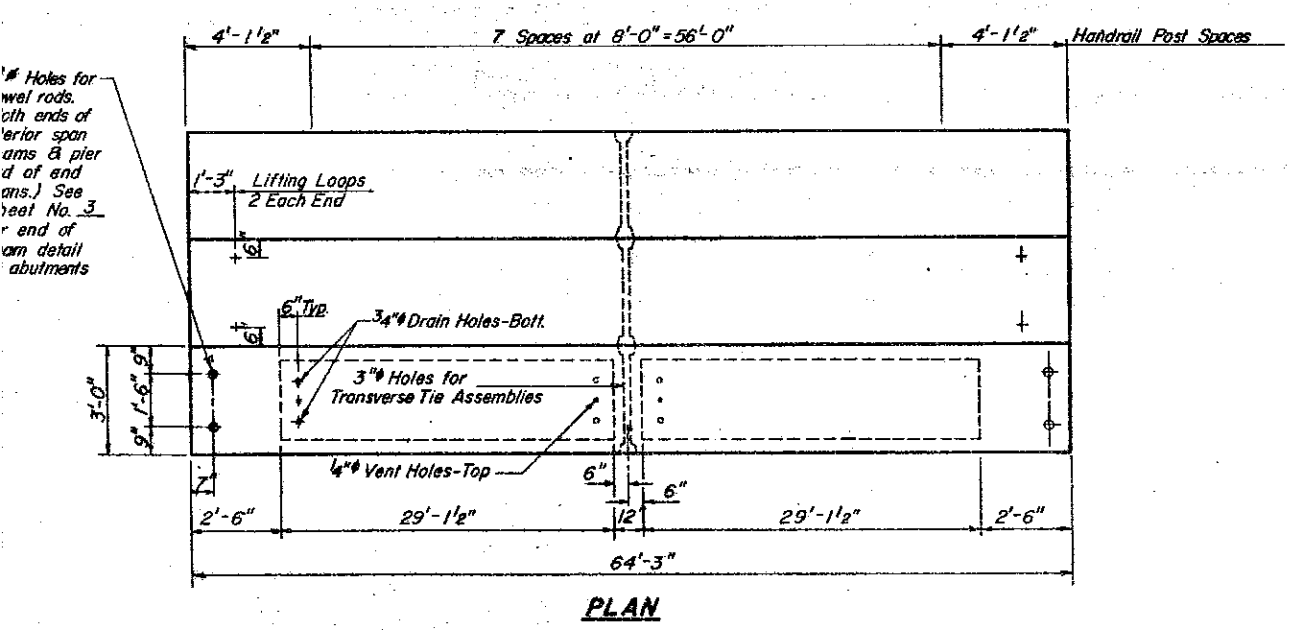
CONSULTING ENGINEERS

1200 STEVENSON DR. #1700-8488 SPRINGFIELD, ILL.





NOTE: Use combination bearing pads between 36" & 48" beams. See sheet #5 for details.



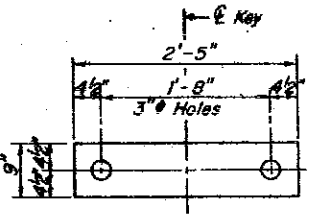
**NOTES**  
Prestressing steel shall be non-galvanized high strength, stress-relieved 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq in. Lifting loops shall be 5/8" diameter, 6 x 25 class wire rope with fiber core and shall have a minimum ultimate tensile strength of 33,000 lbs. or 2-1/2" - 270 ksi strands. The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bar on outside shall be filled with grout after transverse tie assembly is in place. Reinforcement bars shall conform to AASHTO: M-31 or M-53, Grade 60. The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing.

**BILL OF MATERIAL**

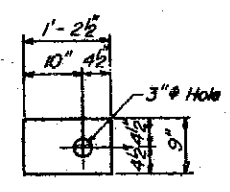
Bar	No.	Size	Length	Shape	
a	6	#5	12'-9"	—	
a	6	#5	20'-9"	—	
a2	6	#5	3'-5"	—	
Precast Prestressed Concrete Deck Beams (27" Depth)				Sq. Ft.	5783
Reinforcement Bars				Lbs.	230
Class X Concrete				Cu Yd.	15

**SUPERSTRUCTURE (3'-0" BMS)**  
FA. RTE. 132 SEC. 103A-B  
POPE COUNTY  
STATION 896+49

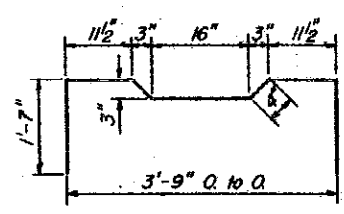




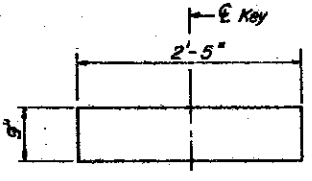
**FABRIC BEARING PAD**  
(Interior)



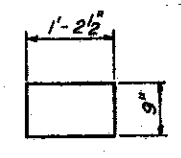
**FABRIC BEARING PAD\*\***  
(Exterior)



**A1 BAR**

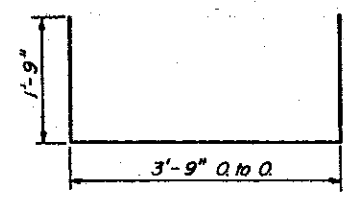


**GRAPHITED ASBESTOS BEARING PAD**  
(Interior)

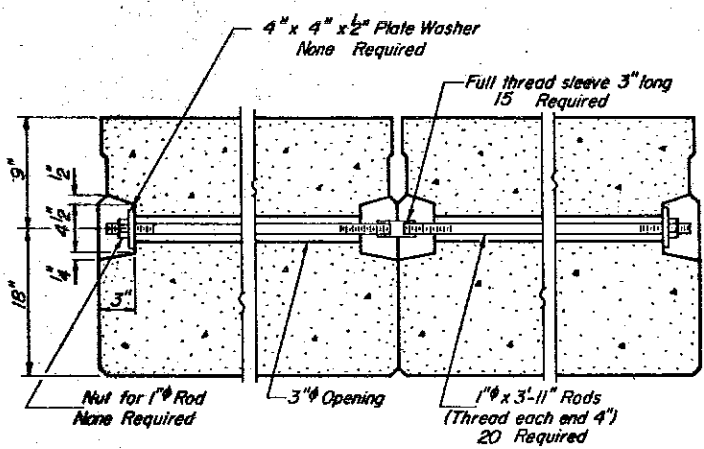


**GRAPHITED ASBESTOS BEARING PAD\*\***  
(Exterior)

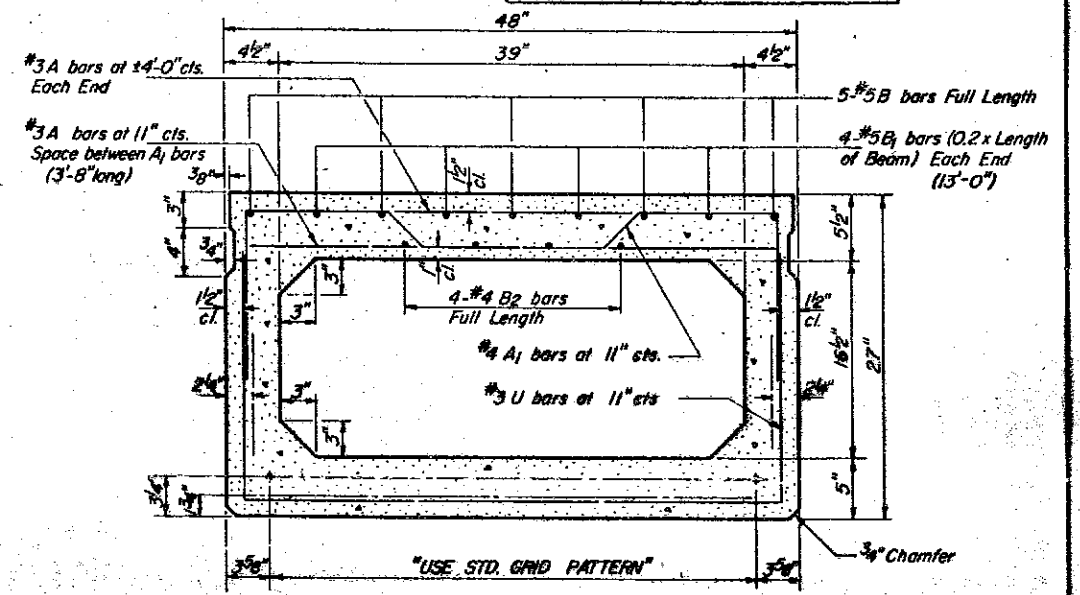
\*\* FOR STAGE CONSTRUCTION



**U & U1 BARS**

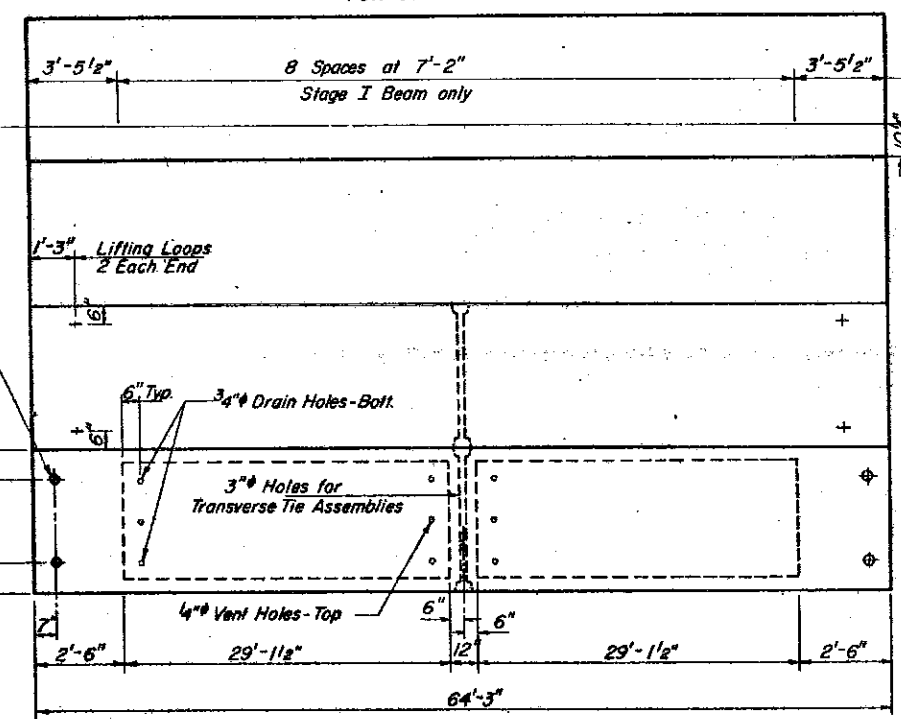


**TYPICAL TRANSVERSE TIE ASSEMBLY**

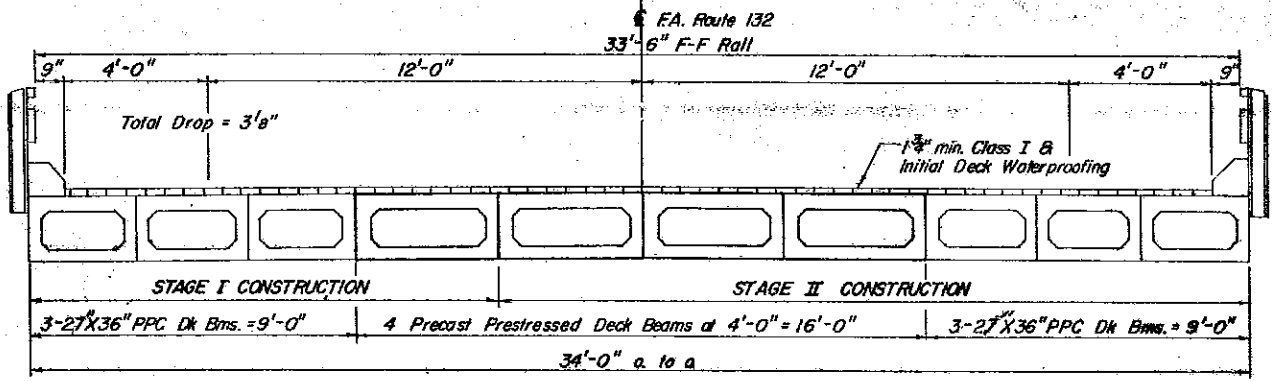


**TYPICAL SECTION**  
10-#2 Strands Each Strand Stressed to 28,900 Lbs.  
14-Strands 1 3/4" up, 4-Strands 3/4" up.

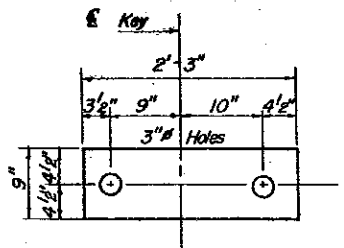
Note: Place strands symmetrically about center beam.



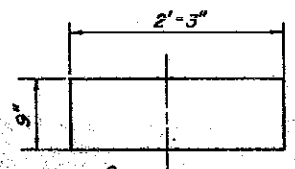
**PLAN**



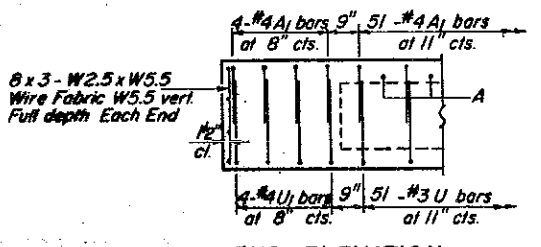
**CROSS SECTION**  
(Looking Up Station)



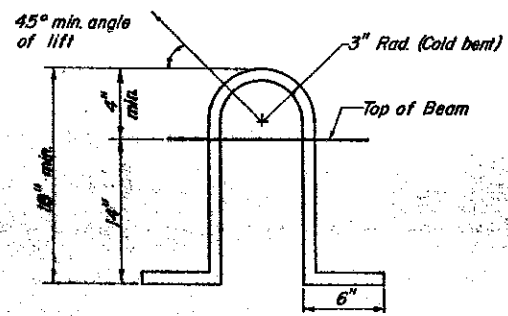
**FABRIC BEARING PAD**  
(Interior Combination)\*



**GRAPHITED ASBESTOS BEARING PAD**  
(Interior Combination)\*



**END ELEVATION**  
AT PIERS



**LIFTING LOOP DETAIL**  
Lifting Loops shall be 7 wire stress relieved 1/2" #270 ksi strands.

\* Use between 36" & 48" beams.

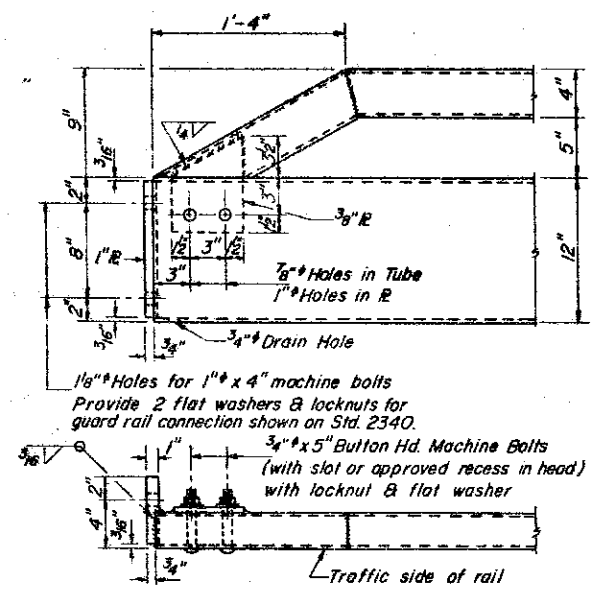
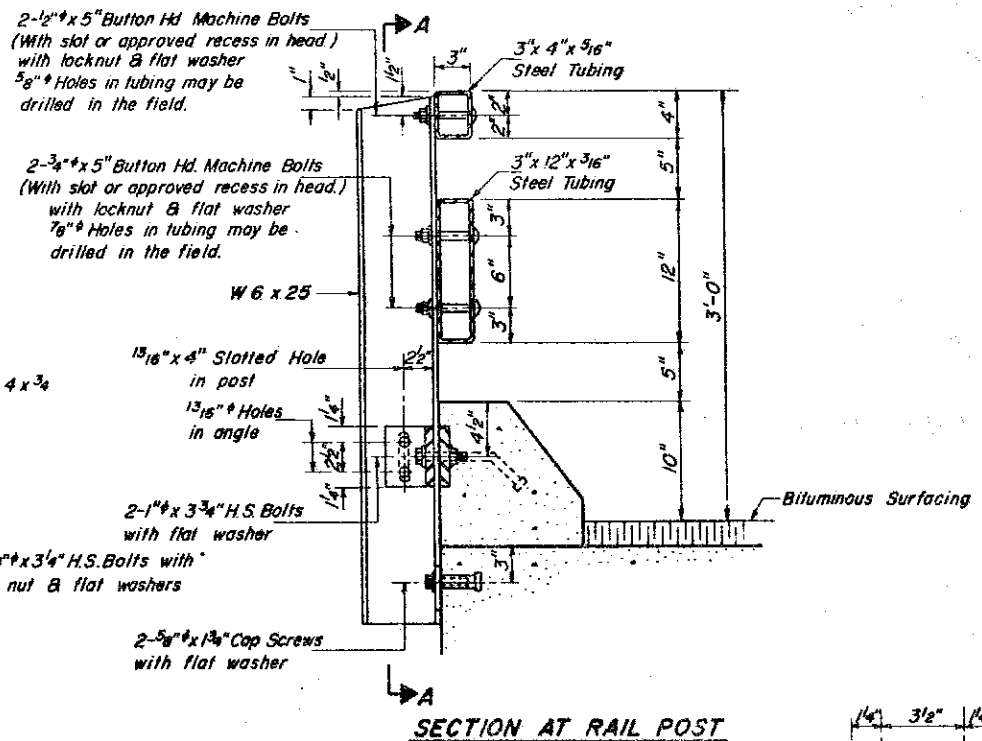
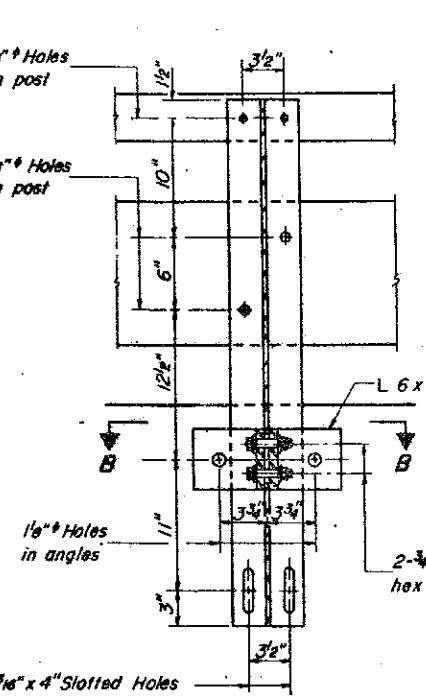
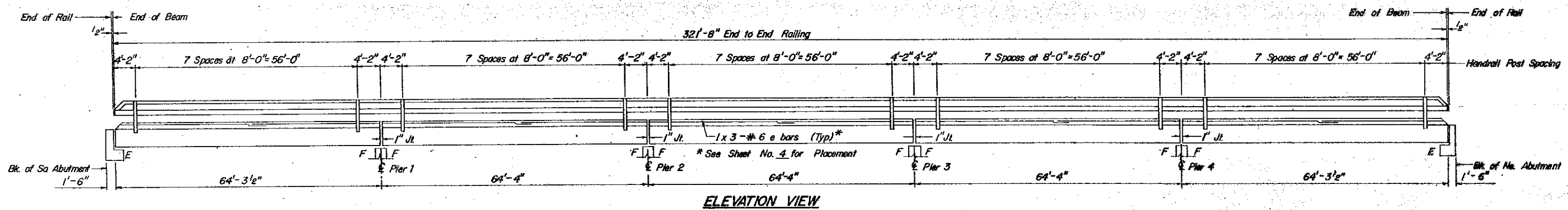
**NOTES**

Prestressing steel shall be non-galvanized high strength, stress-relieved 7-wire strand; Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. Lifting loops shall be 3/4" diameter, 6x25 class wire rope with fiber core and shall have a minimum ultimate tensile strength of 46,000 lbs. or 3-1/2" #270 ksi strands. The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bar on outside shall be filled with grout after transverse tie assembly is in place. Reinforcement bars shall conform to AASHTO M-31 or M-53, Grade 60. The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two 1/8" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing.

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
Precast Prestressed Concrete Deck Beams (27" Depth)		Sq. Ft.	5140	

**SUPERSTRUCTURE (4'-0" BMS.)**  
FA. RTE. 132 SEC. 103A-B  
POPE COUNTY  
STATION 896 + 49



**NOTES**

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

All other steel shapes and plates shall conform to the requirements of A.A.S.H.T.O. M-163 except posts and angles shall conform to A.A.S.H.T.O. M-223, Grade 50. Bolts, cap screws, and nuts shall conform to the requirement of A.S.T.M. designation A-307 except for high strength bolts, nuts and washers noted which shall conform to A.A.S.H.T.O. M-164.

All bolts, nuts, cap screws, washers and lock washers shall be galvanized in accordance with A.A.S.H.T.O. M-232.

All posts, railing, rail splices, anchor devices and angles shall be galvanized after shop fabrication in accordance with A.A.S.H.T.O. M-111 and A.S.T.M. A-385. Galvanized rail shall not be painted.

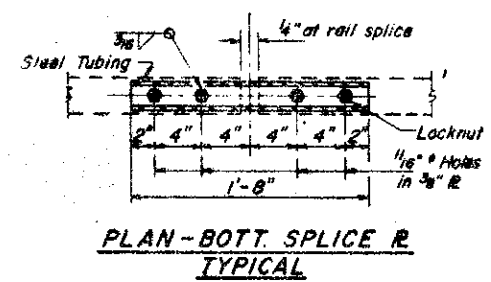
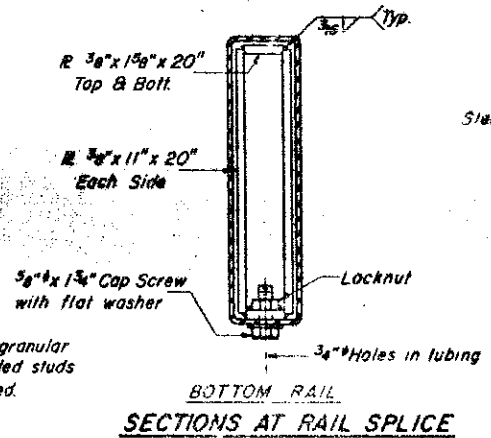
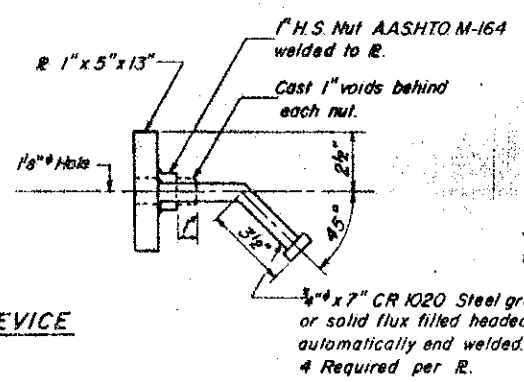
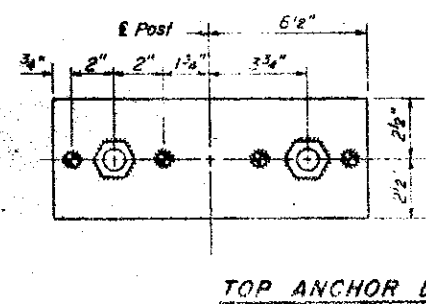
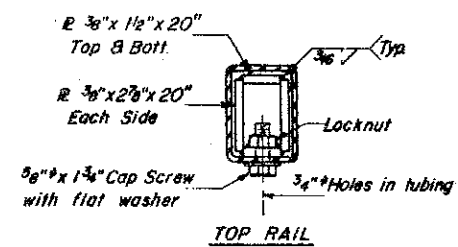
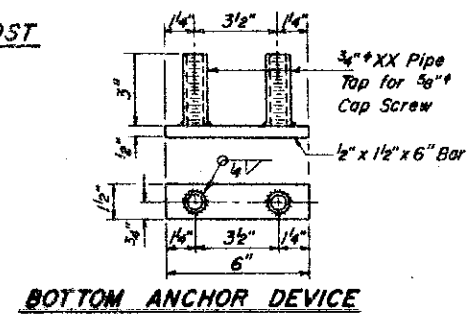
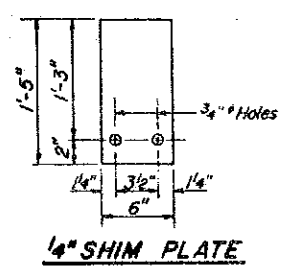
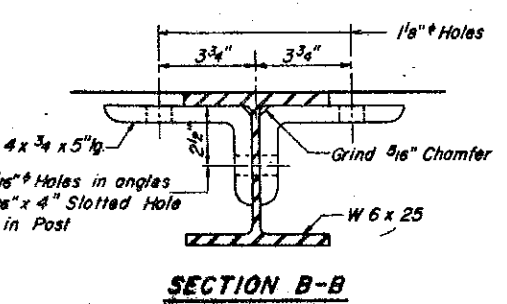
Railing shall be in accordance with Section 508 of the Standard Specifications, except as noted, and shall be paid for at the contract unit price per linear foot for STEEL RAILING, TYPE T.

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

The lower portion of the post flange in contact with concrete shall receive two coats of asphalt paint conforming to Section 714.08 Type B or place 1/2" fabric bearing pad between the post and concrete.

The 3/4" high strength bolts used to connect the 6 x 4 x 3/4 angles to the post shall be tightened in accordance with Article 507.04(g)(3) of the Standard Specifications. The 1" high strength bolts connecting the angles to the concrete shall be tightened to a snug fit and given an additional 1/2 turn. The 5/8" cap screws in bottom of posts shall be tightened to a snug fit only.

For multi-span bridges, sufficient 1/4" x 6" x 1-5/8" galvanized steel shims shall be provided to align rail between adjacent spans. Cost incidental to Steel Railing.

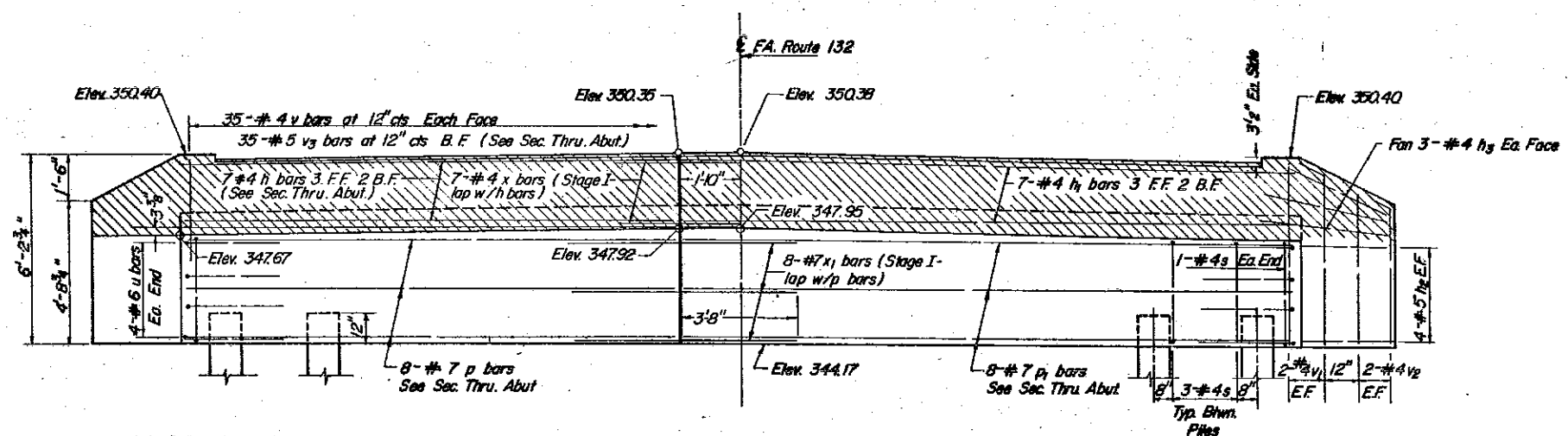


**CURB & RAIL**  
**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
#	30	#6	22'-6"	
Reinforcement Bars			Lbs.	1020
Class X Concrete			Cu. Yds.	167
Steel Railing, Type T			Lin. Ft.	644

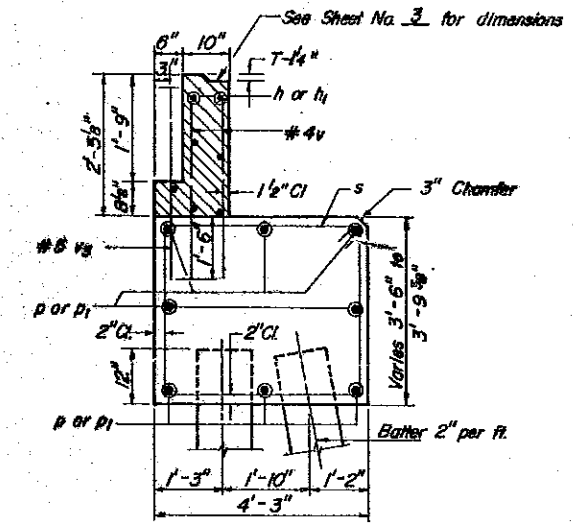
**TYPE T**  
**STEEL RAILING**  
FA. RTE. 132 SEC. 103A-B  
POPE COUNTY  
STATION 896+49



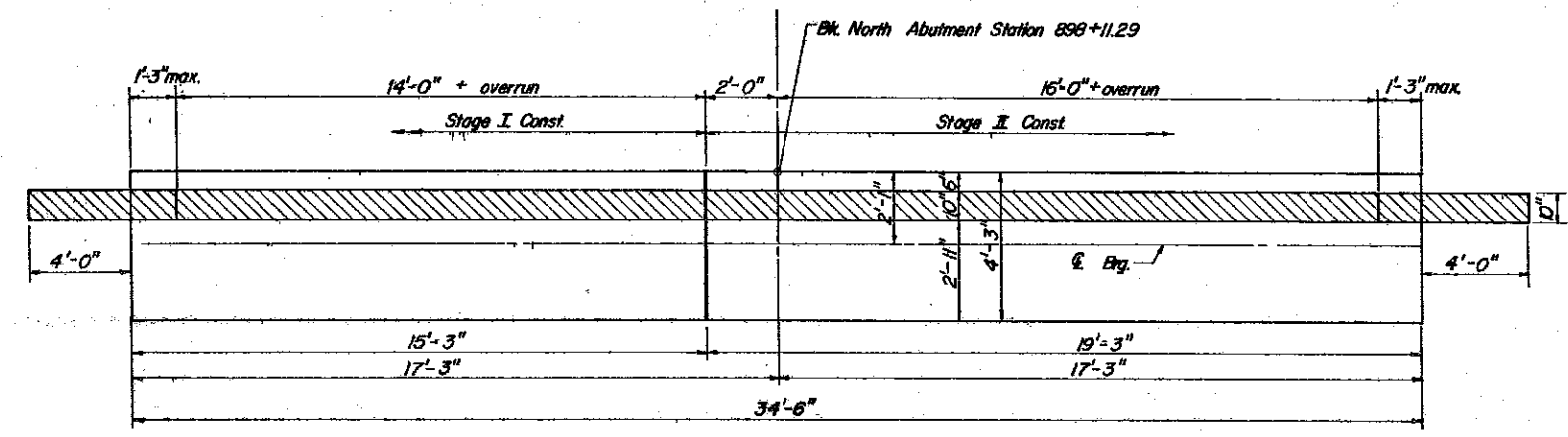


NOTE: Pour hatched portion of wing walls and abutment backwall after beams are in place.

**ELEVATION**



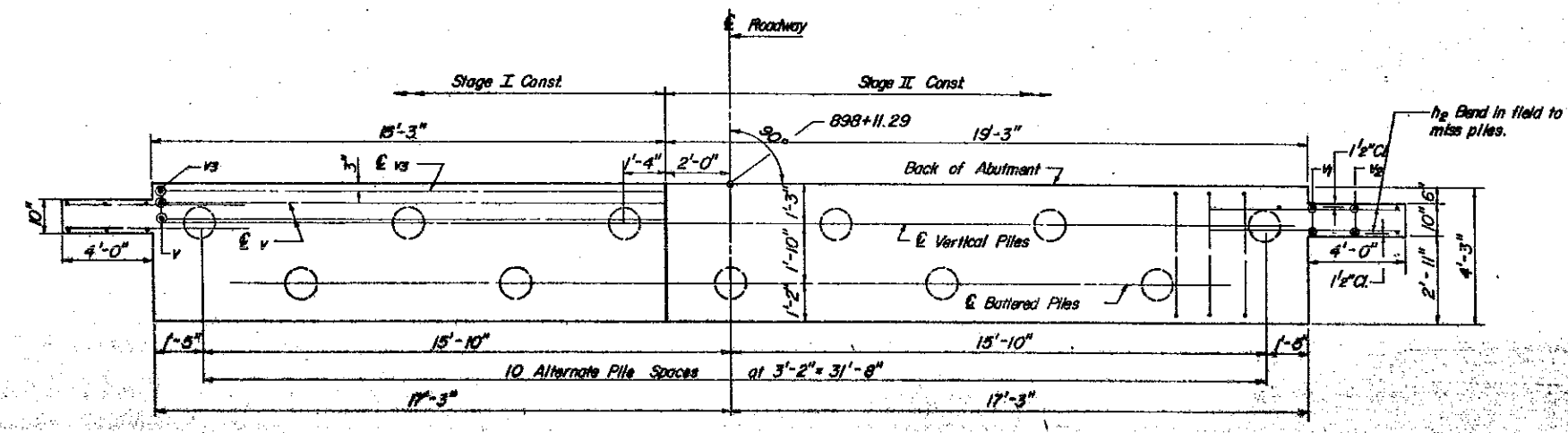
**SEC. THRU ABUT**



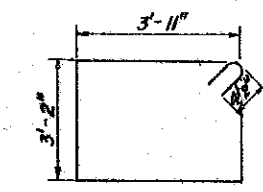
**TOP VIEW**

**PILE DATA**

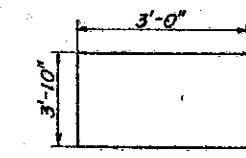
Type: Concrete  
Capacity: 35 T  
Est. Length: 44'  
No. Required: 11



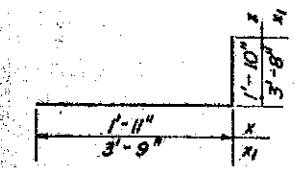
**PLAN-PILE CAP**



**BAR s**



**BAR u**



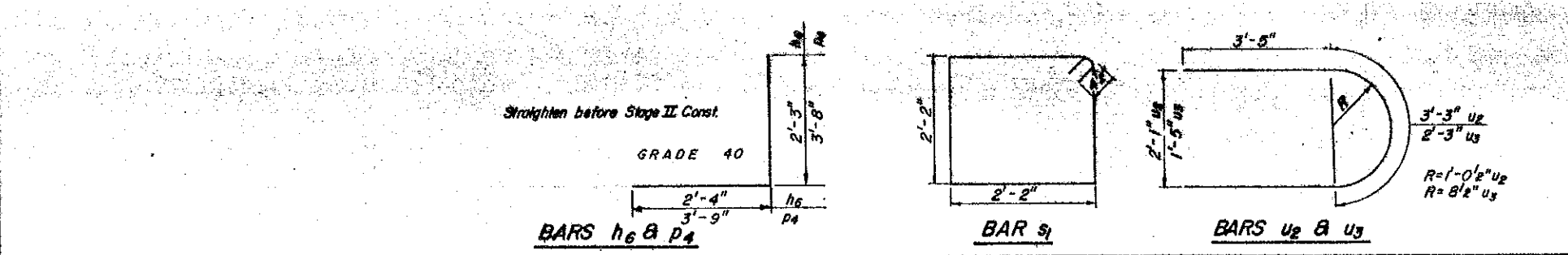
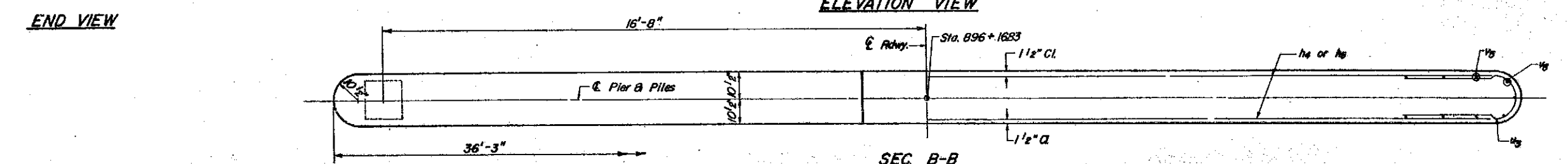
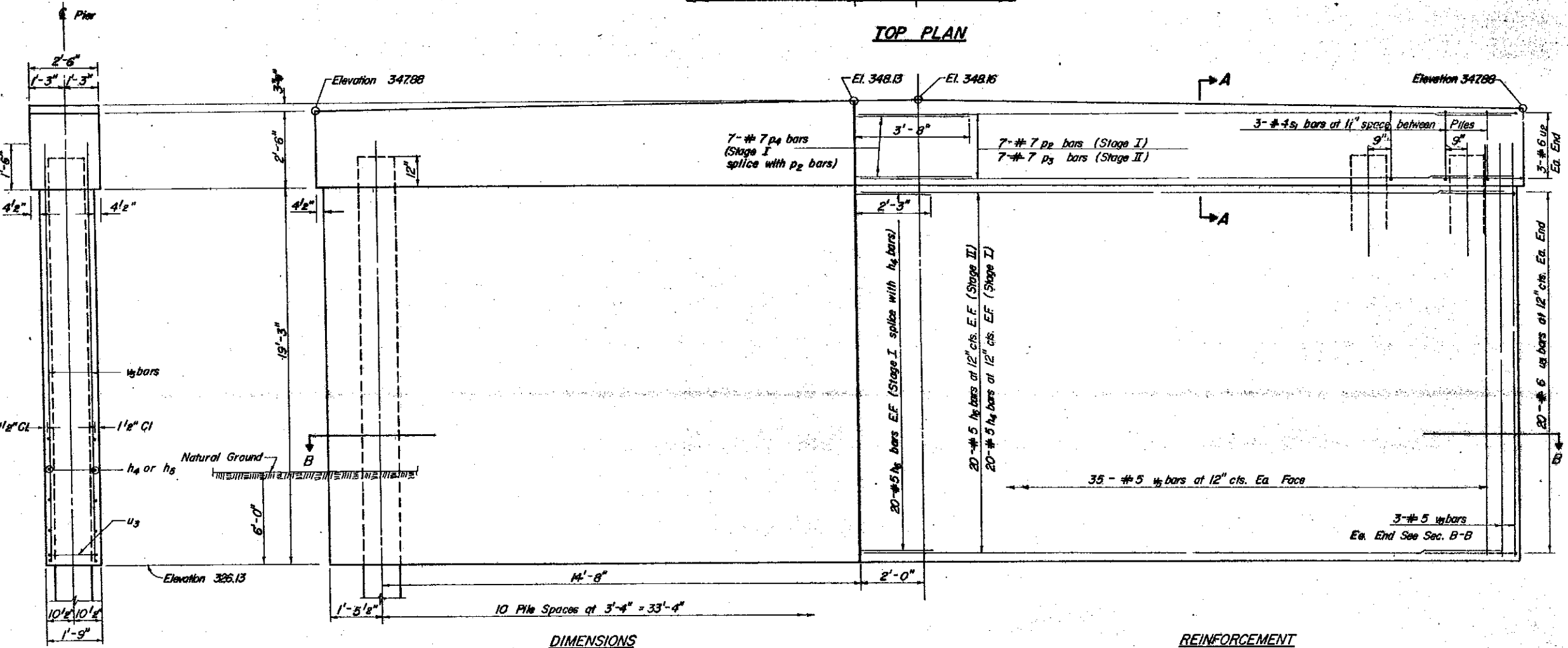
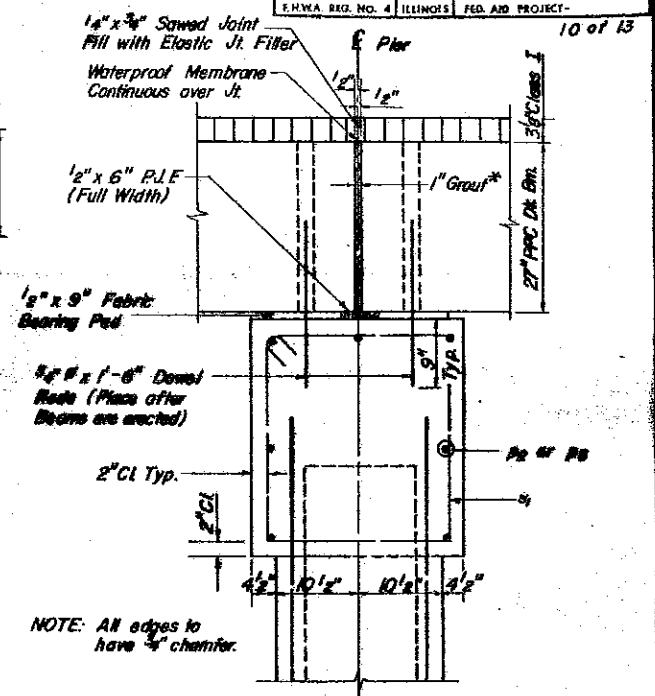
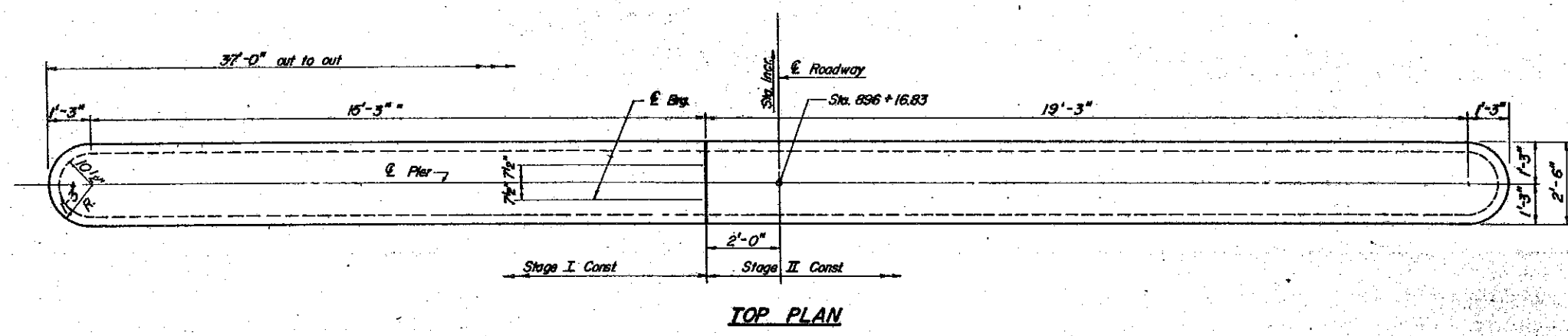
**BARS x & x1**  
(Grade 40)

**ONE ABUTMENT  
BILL OF MATERIALS**

Bar	No	Size	Length	Shape
h	7	#4	17'-6"	—
h1	7	#4	19'-10"	—
h2	16	#5	7'-0"	—
h3	12	#4	5'-0"	—
p	8	#7	15'-3"	—
p1	8	#7	19'-1"	—
s	32	#4	14'-11"	□
u	8	#6	9'-10"	□
v	70	#4	3'-9"	—
v1	8	#4	5'-9"	—
v2	8	#4	5'-0"	—
v3	35	#5	3'-9"	—
x	8	#4	3'-9"	—
x1	8	#7	7'-5"	—
Reinforcement Bars		Lbs.	1940	
Concrete Piles		Lm. Ft.	484	
Class X Concrete		Cu. Yd.	23.8	

**NORTH ABUTMENT**  
FA. RTE. 132 SEC. 103 A-B  
POPE COUNTY  
STATION 896+49



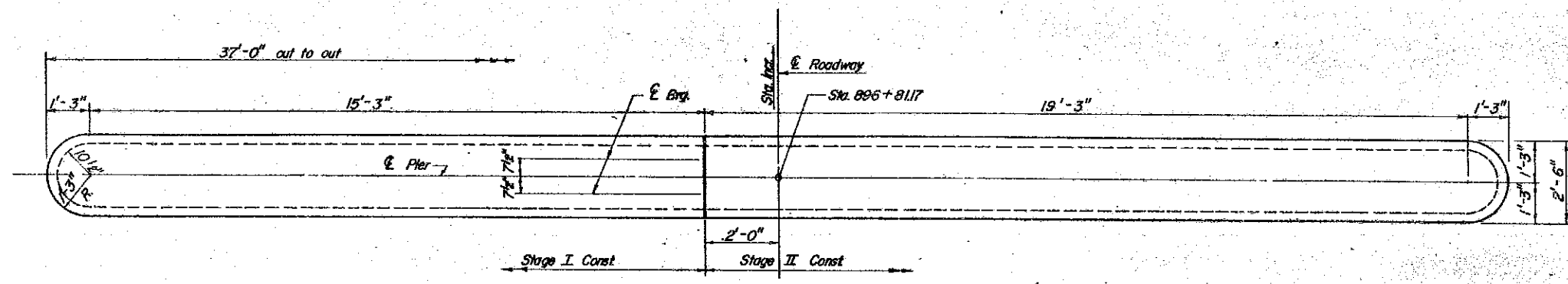


**PILE DATA**  
 Type Precast Concrete, 14"  
 Capacity 40 Ton  
 Est. Length 59'  
 No. Required 10+1 Test Pile

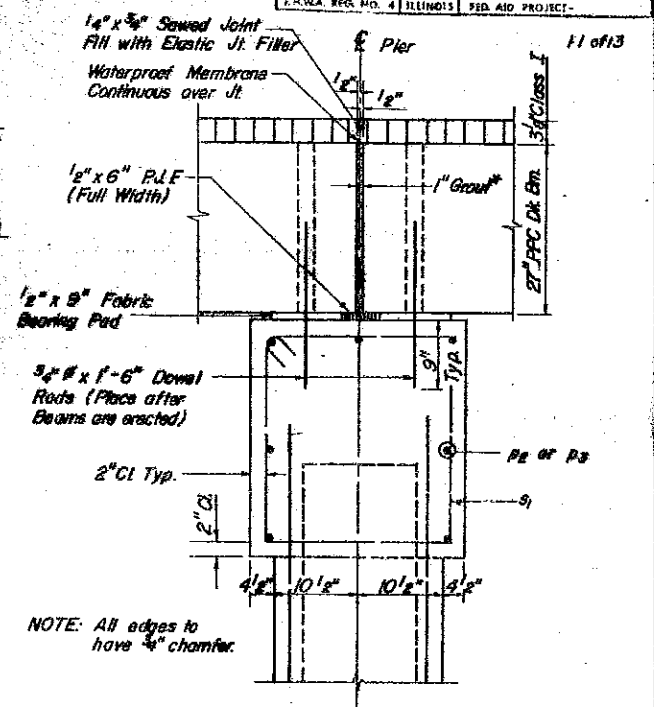
**BILL OF MATERIAL  
PIER NO. 2**

BAR	NO.	SIZE	LENGTH	SHAPE
h4	40	#5	15'-0"	—
h5	40	#5	19'-0"	—
h6	40	#5	4'-7"	—
p2	7	#7	15'-0"	—
p3	7	#7	19'-0"	—
p4	7	#7	7'-5"	—
s1	30	#4	9'-5"	□
u2	6	#6	10'-1"	—
u3	40	#6	9'-1"	—
u5	76	#5	20'-9"	—
Class X Concrete			Cu. Yds.	42.4
Reinforcement Bars			Lbs.	4670
Precast Conc. Pile, 14"			Lin. Ft.	590
Test Pile, Precast Conc.			Ea.	1

**PIER NO. 2**  
 FA RTE 132 SEC. 103A-B  
 POPE COUNTY  
 STATION 896+49

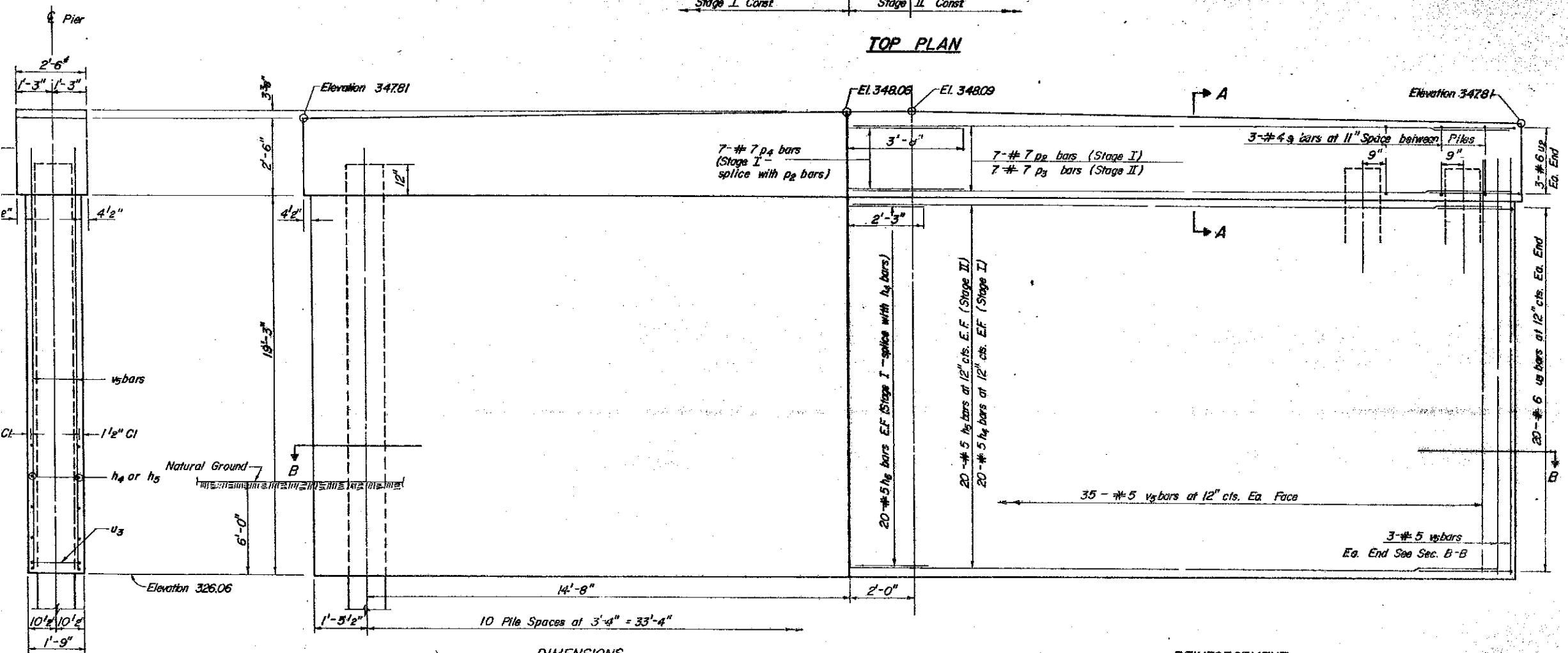


TOP PLAN



SEC. A-A

\* 1" joint shall be packed with a very dry mix of 2:1 sand & P.C. Mortar. 1" dimension may vary plus or minus to accommodate tolerance in beam lengths.

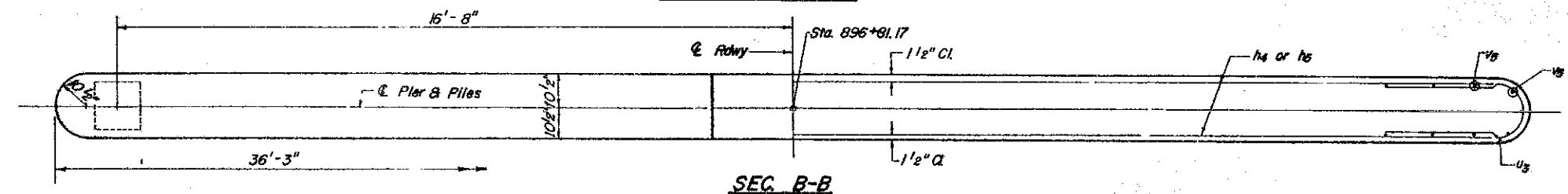


DIMENSIONS

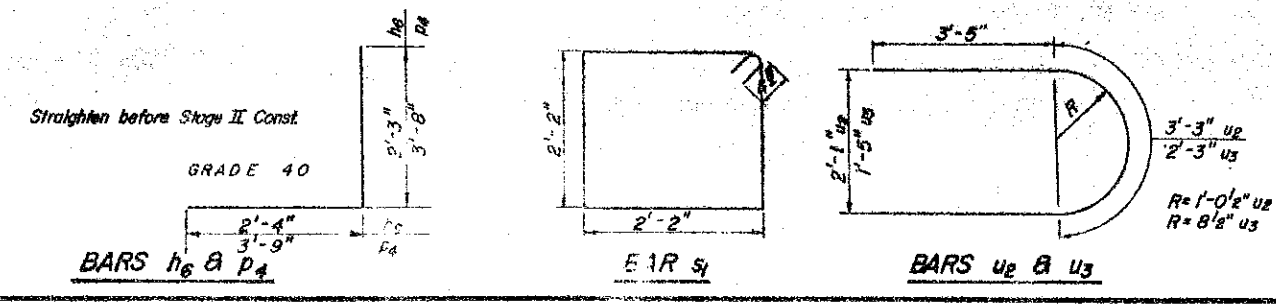
ELEVATION VIEW

REINFORCEMENT

END VIEW



SEC. B-B



PILE DATA

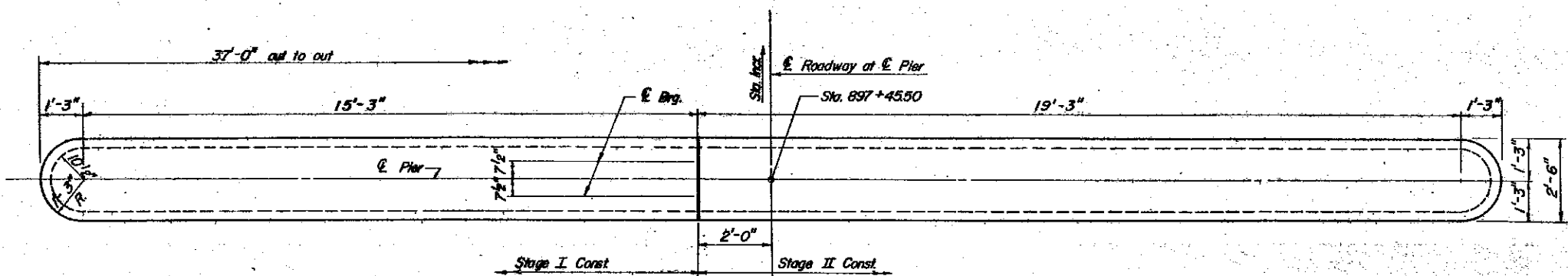
Type Precast Concrete, 14"  
Capacity 40 Ton  
Est. Length 59'  
No. Required 11

**BILL OF MATERIAL  
PIER NO. 3**

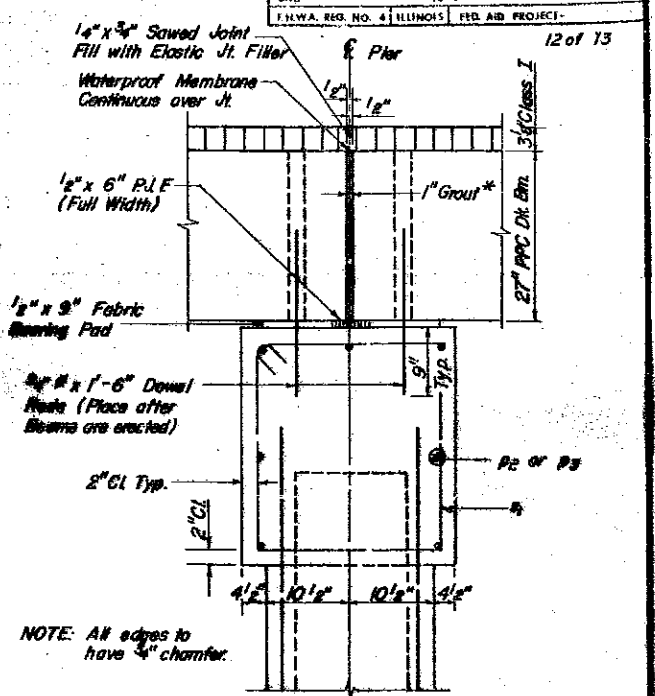
BAR	NO.	SIZE	LENGTH	SHAPE
h <sub>6</sub>	40	#5	15'-0"	—
h <sub>5</sub>	40	#5	19'-0"	—
h <sub>6</sub>	40	#5	4'-7"	┌
p <sub>2</sub>	7	#7	15'-0"	—
p <sub>3</sub>	7	#7	19'-0"	—
p <sub>4</sub>	7	#7	7'-5"	┌
s <sub>1</sub>	30	#4	9'-5"	□
u <sub>2</sub>	6	#6	10'-1"	┌
u <sub>3</sub>	40	#6	9'-1"	┌
v <sub>6</sub>	76	#5	20'-9"	—
Class X Concrete		Cu. Yds.	42.4	
Reinforcement Bars		Lbs.	4670	
Precast Conc. Pile, 14"		Lin. Ft.	649	

**PIER NO. 3**  
EA. RTE. 132 SEC. 103A-B  
POPE COUNTY  
STATION 896+49

ROUTE	SECTION	COUNTY	DATE	NO.
FA 132	103A-B	POPE	25	24
STA.		10 STA.		
I.N.W.A. REG. NO. 4 ILLINOIS (FD. AID PROJECT)				

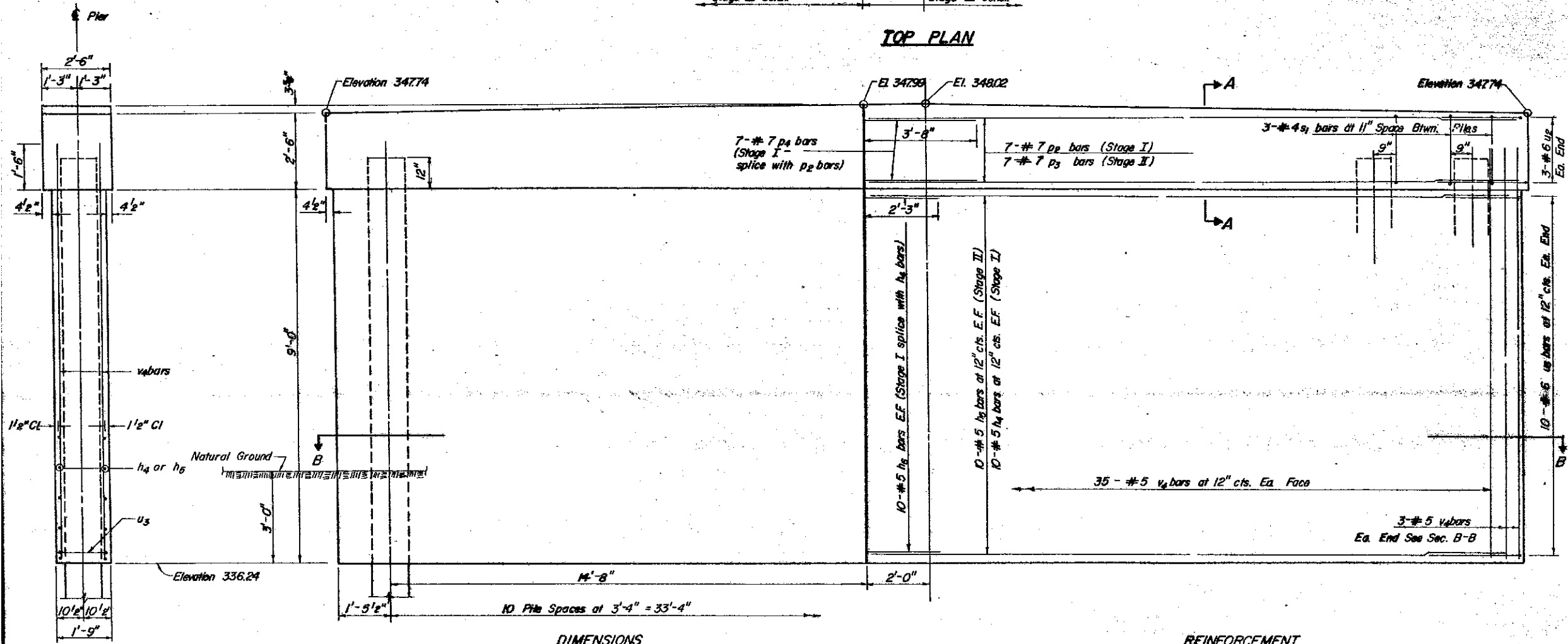


**TOP PLAN**



**SEC A-A**

\* 1" joint shall be packed with a very dry mix of 2:1 sand & P.C. Mortar. 1" dimension may vary plus or minus to accommodate tolerance in beam lengths.



**DIMENSIONS**

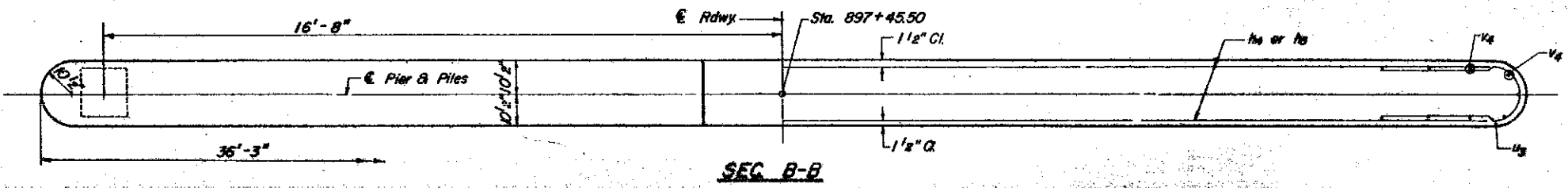
**ELEVATION VIEW**

**REINFORCEMENT**

**END VIEW**

**BILL OF MATERIAL  
PIER NO. 4**

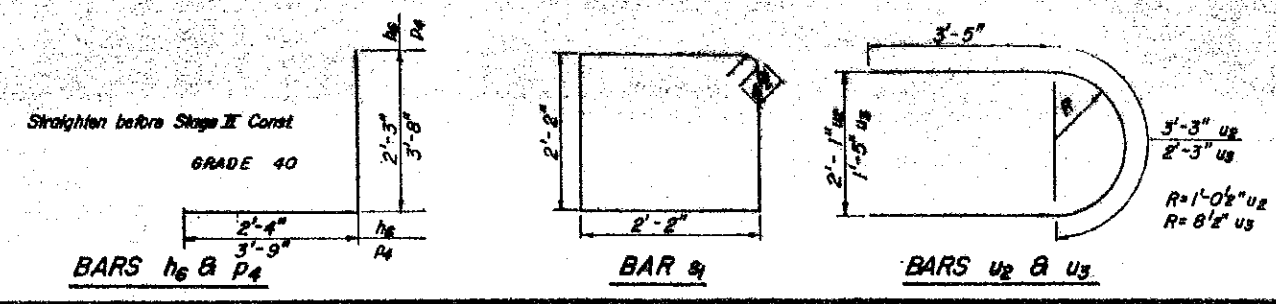
BAR	NO.	SIZE	LENGTH	SHAPE
h4	20	#5	15'-0"	—
h5	20	#5	19'-0"	—
h6	20	#5	4'-7"	—
p2	7	#7	15'-0"	—
p3	7	#7	19'-0"	—
p4	7	#7	7'-5"	—
s1	30	#4	9'-5"	□
u2	6	#6	10'-1"	—
u3	20	#6	9'-1"	—
v4	76	#5	10'-6"	—
Class X Concrete			Cu. Yds.	24.3
Reinforcement Bars			Lbs.	2790
Precast Conc. Pile, 14"			Lin. Ft.	480
Test Pile, Precast Conc.			Ea.	1



**SEC B-B**

**PILE DATA**

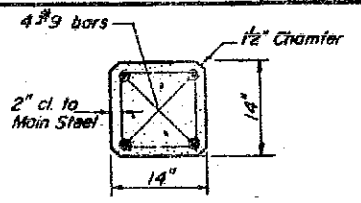
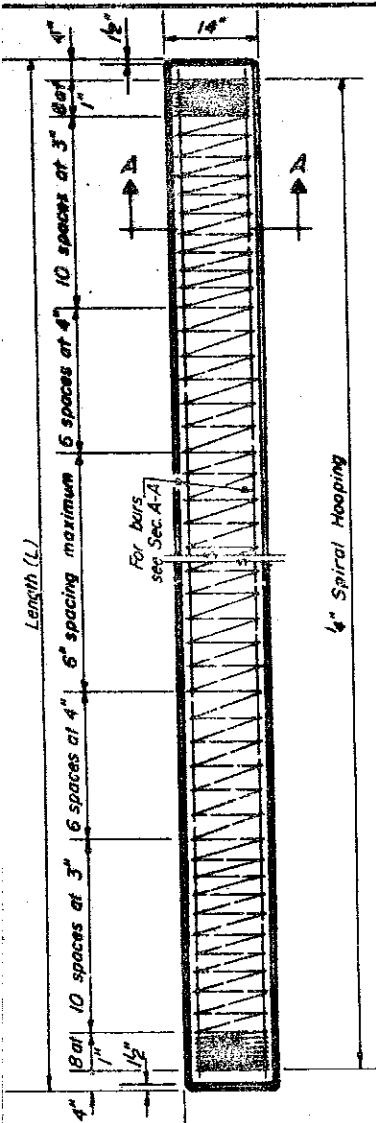
Type Precast Concrete, 14"  
Capacity 40 Ton  
Ext. Length 48'  
No. Required 10+1 Test Pile



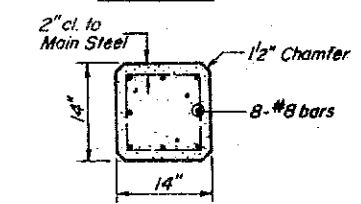
**PIER NO. 4**  
FA. RTE. 132 SEC. 103A-B  
POPE COUNTY  
STATION 896+40

**GREENE & ELLIOTT, Ltd.**  
CONSULTING ENGINEERS  
106 STEVENSON DR. PLAZA Bldg. SPRINGFIELD, ILL.





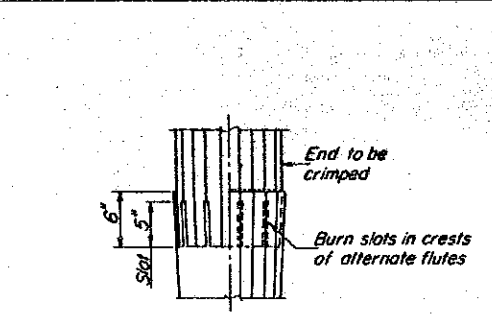
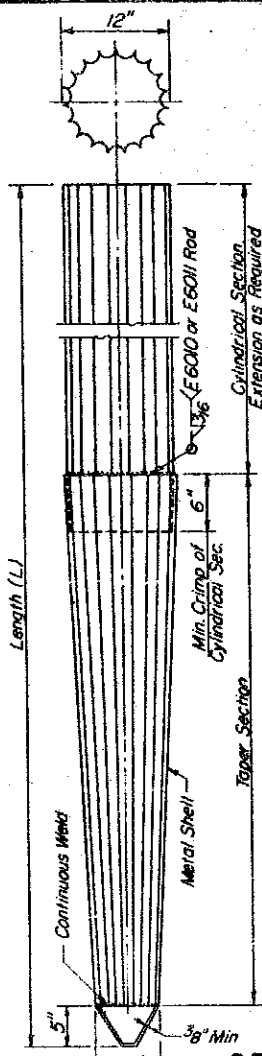
**SECTION A-A FOR PILES UNDER 45' LONG**



**SECTION A-A FOR PILES 45' OR MORE**

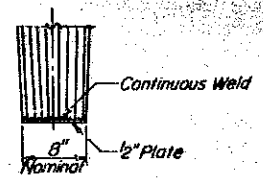
Handling: For Pile lengths up to 45', use two slings placed at a distance of 0.21L from each end. For Piles longer than 45', use three slings placed at a distance of 0.12L from each end and at mid point of pile.

**DETAIL OF PRECAST CONCRETE PILES**



**FIELD CRIMP DETAIL**

Note: 6" Crimp shall either be supplied on the cylindrical section or made in the field as detailed.



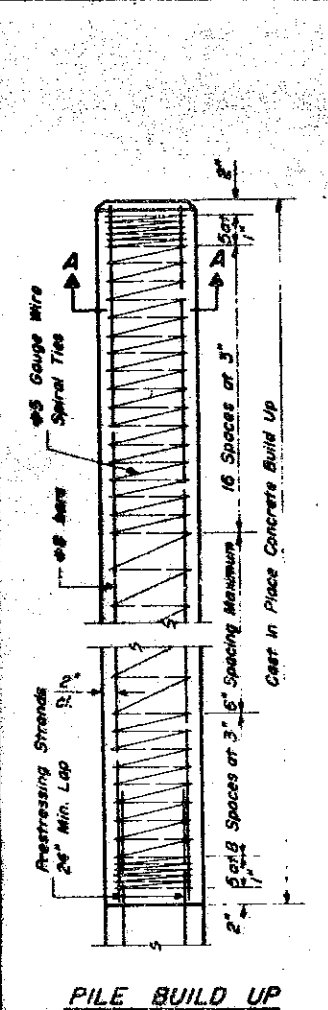
**OPTIONAL FLAT END**

**ALLOWABLE TAPER SECTIONS**

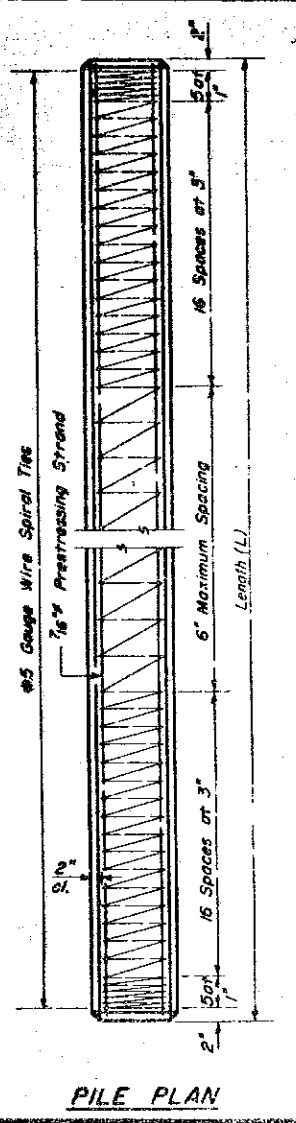
- 10' Length - Taper 1" in 2'-6"
- 17' Length - Taper 1" in 4'-0"
- 25' Length - Taper 1" in 7'-0"
- 30' Length - Taper 1" in 7'-0"

NOTE: The thickness of the shell shall be 0.1495 inches with a tolerance of 5%. The shell shall be in accordance with Article 710.05 (a) of the Standard Specification except that minimum yield strength for the steel after cold working shall be 50,000 psi.

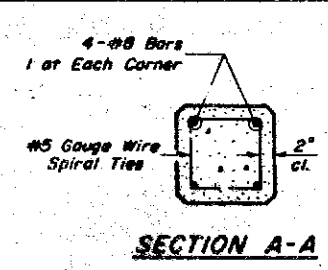
**DETAIL OF TAPERED METAL SHELLS FOR CAST IN PLACE CONCRETE PILES**



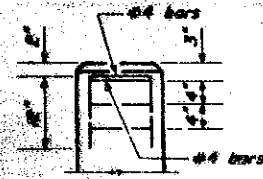
**PILE BUILD UP**



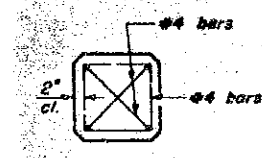
**PILE PLAN**



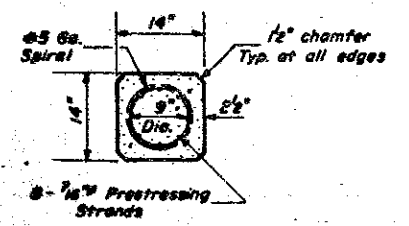
**SECTION A-A**



**ELEVATION (End Reinforcement)**



**PLAN (End Reinforcement)**



**SECTION THRU PILE**

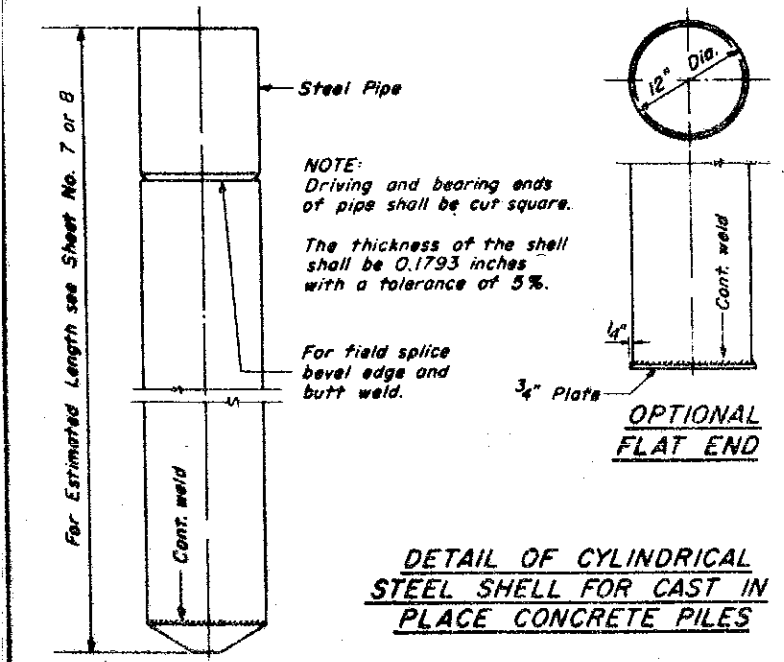
**DESIGN STRESSES**

- $f'_c = 5,000$  psi.
- $f'_c = 4,000$  psi.
- $f'_s = 270,000$  psi. (31,000 lbs.)
- $f'_s = 183,000$  psi. (21,700 lbs. - 7/16" or 28,900 lbs. - 1/2")

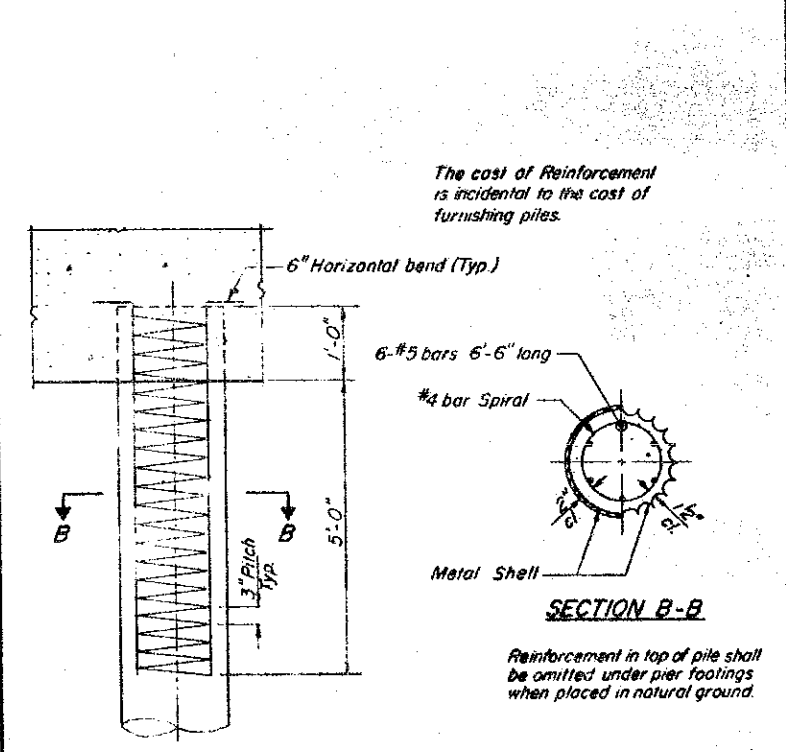
**NOTES**

Prestressing steel shall be non-galvanized extra high strength stress-relieved 7-wire strand. The nominal diameter shall be 7/16" and the minimum nominal cross-sectional area shall be 0.115 sq.in. and the equivalent 6-2 strands with a cross-sectional area of 0.153 sq.in. may be used. For Pile lengths up to 65', use two slings placed at a distance of 0.21L from each end. For Piles longer than 65', use three slings placed at a distance of 0.12L from each end and at mid-point of pile. \* L = Over all length of pile to be handled.

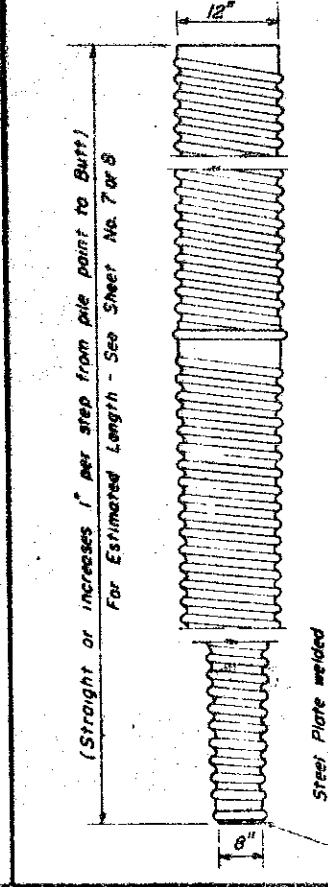
**PRECAST PRESTRESSED CONCRETE PILE**



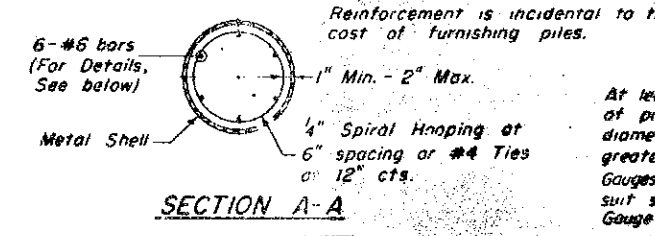
**DETAIL OF CYLINDRICAL STEEL SHELL FOR CAST IN PLACE CONCRETE PILES**



**DETAIL OF REINFORCEMENT FOR METAL SHELLS**

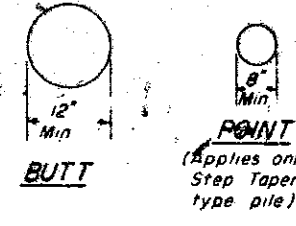


**PILE REINFORCEMENT**



**SECTION A-A**

At least 10% of the length of pile shall have a Butt diameter equal to or greater than 12". Gauges are furnished to suit soil conditions (1/8 Gauge avg. min.)



**BUTT**  
**POINT**  
(Applies only to Step Taper type pile)

**DETAIL OF MANDREL DRIVEN STRAIGHT OR STEP-TAPER PILES FOR CAST IN PLACE CONCRETE PILES**

**CONCRETE PILES**  
FA. RTE. 132 SEC. 103A-B  
POPE COUNTY  
STATION 896+49

**STANDARD SYMBOLS AND ABBREVIATIONS**  
**THESE SYMBOLS AND ABBREVIATIONS ARE USED THROUGHOUT THESE PLANS UNLESS OTHERWISE NOTED**

<p>North Arrow</p> <p>State Line</p> <p>County Line</p> <p>Township Line</p> <p>City, Village or Town Limits</p> <p>Section or Grant Line</p> <p>Section Corner</p> <p>Quarter Corner</p> <p>Same Ownership</p> <p>Unfenced Property Line</p> <p>Fenced Property Line</p> <p>Fence Line</p> <p>Construction Identification Sign</p> <p>Right of Way Marker</p> <p>Existing Right of Way Line</p> <p>Proposed Right of Way Line</p> <p>Proposed Right of Way Line coincident with access control line</p> <p>Access Control Line (Not coincident with Right of Way Line)</p> <p>Proposed Right of Way Dimension</p> <p>Construction Limits</p> <p>Base or Survey Line</p> <p>Channel Change Easement</p> <p>Temporary Easement (Detour, Grading etc.)</p> <p>Stream</p> <p>Lake or Pond</p> <p>Marsh</p> <p>Levee</p> <p>Summit</p> <p>Deciduous Trees</p> <p>Evergreen Trees</p> <p>Hedge</p> <p>Centerline</p>	<p>S.S. or SANS Existing Storm or Sanitary Sewer</p> <p>Railroad or Utility Tracks</p> <p>Curb Wall</p> <p>Retaining Wall</p> <p>Existing Drive or Traveled Way</p> <p>Pipe Lines</p> <p>Gas</p> <p>Water</p> <p>Oil</p> <p>Longitudinal Joint with Tie Bars (Sawed or Poly.)</p> <p>Longitudinal Joint with Tie Bars and Keyway</p> <p>Longitudinal Joint with Keyway only</p> <p>Contraction Joint with Dowels</p> <p>Contraction Joint without Dowels</p> <p>Expansion Joint with capped Dowels</p> <p>Expansion Joint without Dowels</p> <p>Wide Flange Beam Terminal Joint</p> <p>Guard Rail</p> <p>Existing Pavement, Curb &amp; Gutter, Driveway Pavement &amp; Sidewalk to be removed</p> <p>Existing Culvert</p> <p>Culvert to be Constructed</p> <p>Culvert with Drop Inlet</p> <p>Elevation of Surface of Finished Pavement at Point Indicated</p> <p>Elevation of Top of Curb at Point Indicated</p> <p>Elevation of Flow Line of Gutter at Point Indicated</p> <p>Storm Sewer (Direction of Flow &amp; Invert Elevation Indicated)</p> <p>Tile Drain (Direction of Flow &amp; Invert Elevation Indicated)</p> <p>Existing Inlet, Inlet to be Adjusted, or Inlet to be Reconstructed</p> <p>Inlet to be Constructed</p> <p>Inlet to be filled with Sand &amp; Connection Sealed</p> <p>Existing Catch Basin, Catch Basin to be Adjusted, or Catch Basin to be Reconstructed</p> <p>Catch Basin to be Constructed</p> <p>Underground Electric Cable</p> <p>Underground Telephone Cable</p>	<p>Catch Basin to be filled with Sand &amp; Connection Sealed</p> <p>Existing Manhole, Manhole to be Adjusted, or Manhole to be Reconstructed</p> <p>Manhole to be Constructed</p> <p>Manhole to be filled with Sand &amp; Connection Sealed</p> <p>Existing Valve Vault, Valve Vault to be Adjusted, or Valve Vault to be Reconstructed</p> <p>Valve Vault to be Constructed</p> <p>Valve Vault to be filled with Sand &amp; Connection Sealed</p> <p>Existing Fire Hydrant, or Fire Hydrant to be Adjusted</p> <p>Fire Hydrant &amp; Auxiliary Valve to be Moved (Symbol with Letter Indicates New Location)</p> <p>Existing Light Standard, or Light Standard to be Adjusted</p> <p>Light Standard to be Moved (Symbol with Letter Indicates New Location)</p> <p>Existing Traffic Signal, or Traffic Signal to be Adjusted</p> <p>Traffic Signal to be Moved (Symbol with Letter Indicates New Location)</p> <p>Existing Traffic Sign, or Traffic Sign to be Adjusted</p> <p>Traffic Sign to be Moved (Symbol with Letter Indicates New Location)</p> <p>Existing House Service Box or House Meter Vault, or House Service Box or House Meter Vault to be Adjusted</p> <p>House Service Box or House Meter Vault to be Moved (Symbol with Letter Indicates New Location)</p> <p>Existing Main Service Box or Main Meter Vault, or Main Service Box or Main Meter Vault to be Adjusted</p> <p>Main Service Box or Main Meter Vault to be Moved (Symbol with Letter Indicates New Location)</p> <p>Trolley Pole</p> <p>Telephone or Telegraph Pole</p> <p>Power Line Pole</p> <p>House</p> <p>Church</p> <p>Shed</p> <p>Commercial Building</p> <p>Barn</p> <p>School</p> <p>Town Hall</p> <p>Roadway</p> <p>Traffic Direction Arrow</p>
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**ABBREVIATIONS**

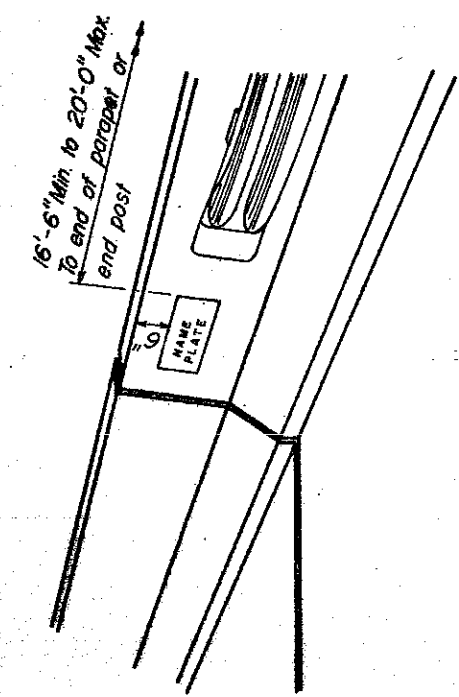
<p>T.D. Tile Drain</p> <p>S.S. Storm Sewer (Existing)</p> <p>S.S. Storm Sewer 18"x24" (Size, Length and Type) TYPE I</p> <p>S.S. Storm Sewer 18"x24" (Size, Length, Type and Material) TYPE IA</p> <p>RCP</p> <p>C.M.P. Corrugated Metal Pipe</p> <p>C.I.P. Cast Iron Pipe</p> <p>P.C. Pipe Culvert (Existing)</p> <p>P. Pipe Culvert 18"x24" (Size, Length and Type) TYPE I</p> <p>P. Pipe Culvert 18"x24" (Size, Length, Type and Material) TYPE IA</p> <p>C.M.C.P. Portland Cement Concrete</p> <p>F-F. Face to Face of Curb</p> <p>B-B. Back to Back of Curb</p> <p>Centerline to Face of Curb</p>	<p>Centerline to Back of Curb</p> <p>Central Angle</p> <p>Degree of Curve</p> <p>Tangent Length</p> <p>Curve Length</p> <p>Radius of Curve</p> <p>External Distance</p> <p>Super-elevation (ft. per ft. of width)</p> <p>Point of Curvature</p> <p>Point of Intersection</p> <p>Point of Tangency</p> <p>Point on Tangent</p> <p>Point of Compound Curvature</p> <p>Point of Reverse Curvature</p> <p>Vertical Curve</p> <p>External Distance of Vertical Curve</p> <p>Sanitary Sewer</p>	<p>R.P.S. Reference Point Stake</p> <p>I.P. Iron Pipe</p> <p>N&amp;W Nail &amp; Washer</p> <p>T.P. Telephone Pole</p> <p>P.P. Power Pole</p> <p>F.P. Fence Post</p> <p>F.H. Fire Hydrant</p> <p>B.M. Bench Mark</p> <p>R.R.S. Railroad Spike</p> <p>R.O.W. Right of Way</p> <p>Inv. Invert</p> <p>F.L. Flow Line</p> <p>S.M. State of Illinois Survey Marker</p> <p>U.S.C.&amp;G.S. U.S. Coast &amp; Geodetic Survey</p> <p>U.S.G.S. U.S. Geological Survey</p> <p>Elev. Elevation</p> <p>Rt. Route</p>	<p>Sec. Section</p> <p>Sta. Station</p> <p>P.L. Property Line</p> <p>F.E. Field Entrance</p> <p>P.E. Private Entrance</p> <p>F.A.I. Federal-aid Interstate</p> <p>F.A. Federal-aid</p> <p>F.A.S. Federal-aid Secondary</p> <p>S.B.I. State Bond Issue</p> <p>M.F.T. Motor Fuel Tax</p> <p>S.R. State-Route</p> <p>C.H. County Highway</p> <p>T.R. Township Road</p> <p>C.S. City Street</p> <p>Proj. Project</p> <p>A.C. Access Control</p> <p>FAU.S. Federal-aid Urban System</p>
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<p>REVISIONS</p>	
BY	DATE
J.F.L.	11-18-58
W.F.	9-9-59
W.F.	11-19-62
W.F.	5-12-66
D.W.W.	7-15-77

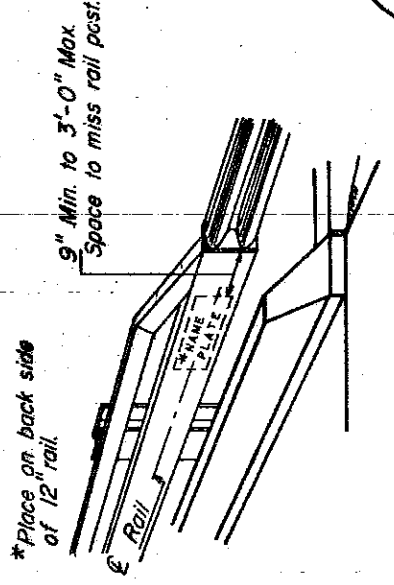
PASSED: July 15, 1977  
 Engineer of Design Operations  
 APPROVED: July 15, 1977  
 Engineer of Design

Illinois Department of Transportation  
 If it is definitely known that adjustment or reconstruction is required, place A or R inside the symbol. If a new casting is required, show the casting number. Use P for open, C for closed lid. Example—Catch Basin to be reconstructed with new type 5 frame, open lid = (R) 5P.  
 First character denotes type of structure. Use Sp. for special design. Second character denotes number of frame or grate. Example - Type A manhole with type I frame and closed lid = (A)-1C

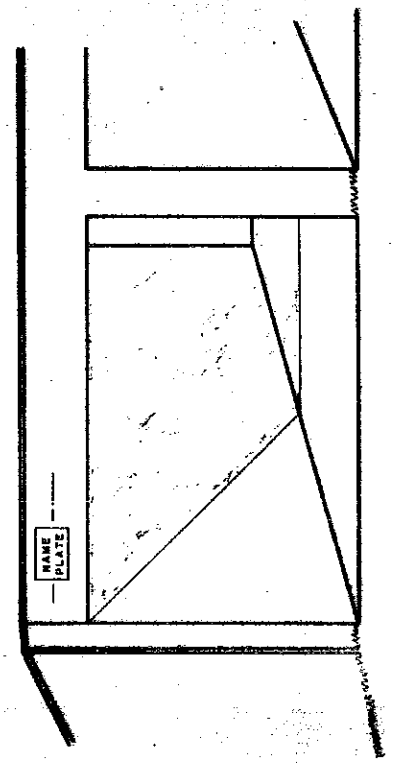
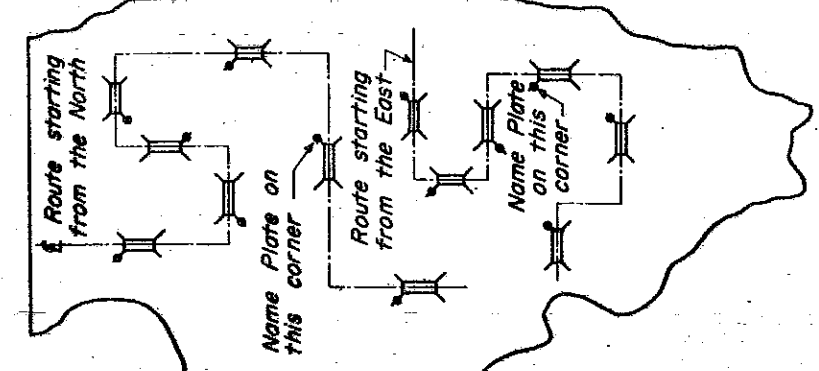
H-4.00 a



**FOR PARAPET AND END POST MOUNTED**

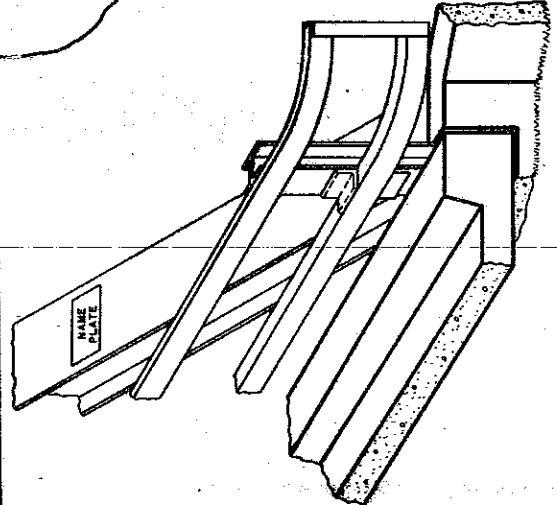


**FOR STEEL RAILS**

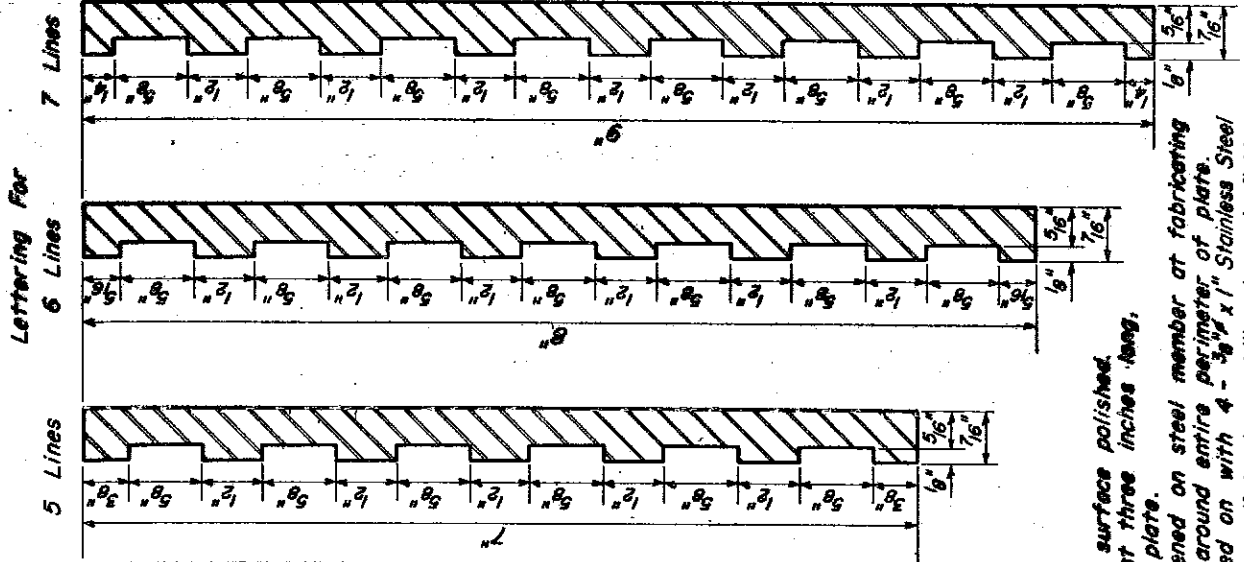
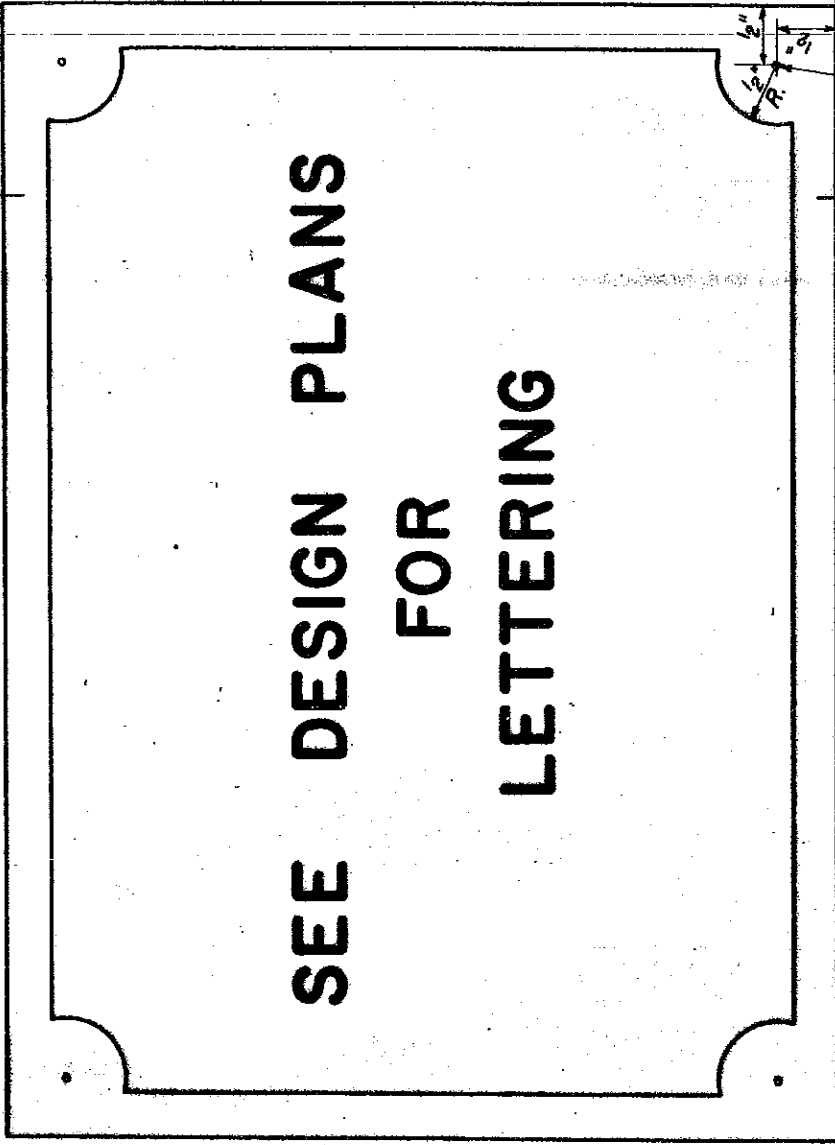


**FOR MULTI-SPAN CULVERTS**

Note: Unless otherwise noted on the plans, Name Plates are not required for single box culverts.



**FOR TRUSSES**



- Material:** Best quality brass or bronze.
- Border & Lettering:** Raised  $\frac{1}{16}$  inch. Square cut and not tapered. Top surface polished.
- For Concrete Parapets, Culverts - Four lugs at least three inches long.
  - For Headwalls & Subways - Plate to be fastened on steel member at fabricating shop by brazing around entire perimeter of plate.
  - For Steel Truss Span - Plate to be bolted on with 4 -  $\frac{3}{8}$ " x 1" Stainless Steel or Brass Cap Screws, self tapping or drill and tap in field.
  - For Steel Rails - Plate to be placed 16'-6" min. to 20'-0" max. to end of parapet.
  - For Concrete Parapets - Braze to end post about five feet above roadway.
  - For Steel Truss Span - Braze to end post about five feet above roadway.
  - For Steel Rails - Place on back side of 12" rail.
  - For Subways - See design plans for location.

Illinois Department of Transportation

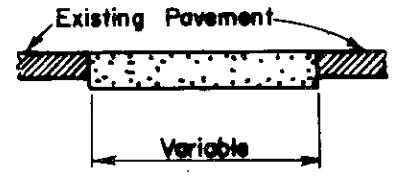
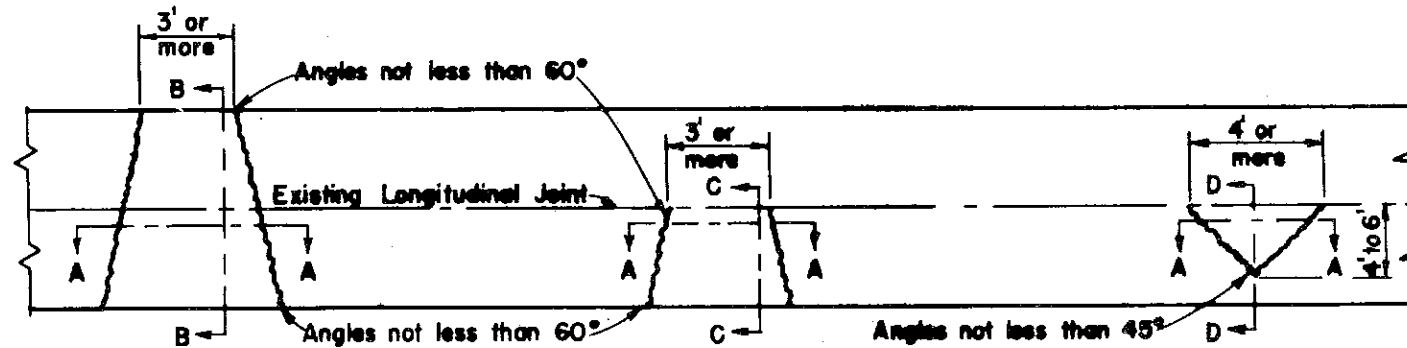
PASSED FEBRUARY 15, 1980  
 Approved by [Signature]  
 Engineer of Bridge & Traffic Structures  
 APPROVED FEBRUARY 15, 1980  
 Approved by [Signature]  
 Engineer of Design

ISSUED II-15-63

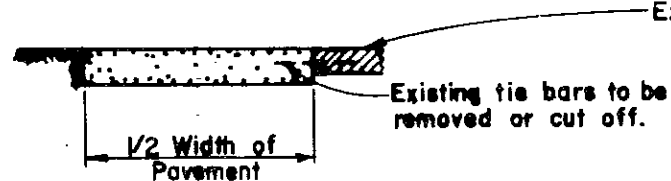
# STANDARD DESIGN

## BITUMINOUS PATCHING DETAILS

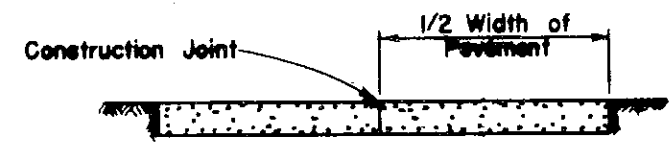
**NOTE**  
For thickness of patches see special provisions or the summary of quantities.



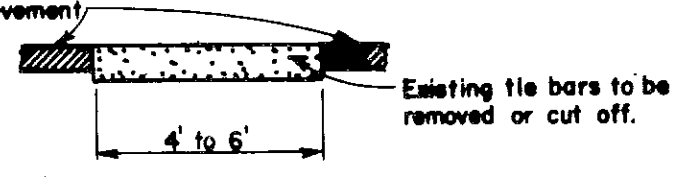
SECTION A-A



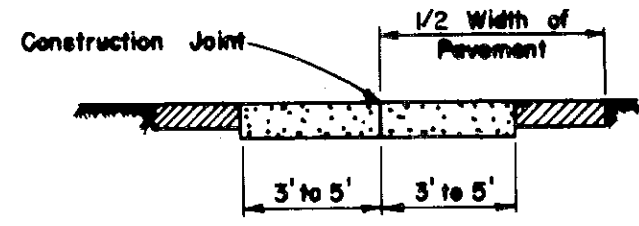
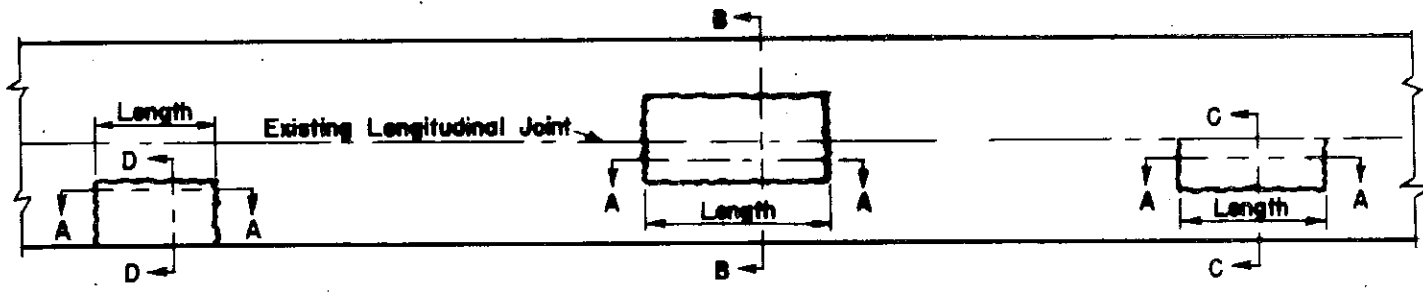
SECTION C-C



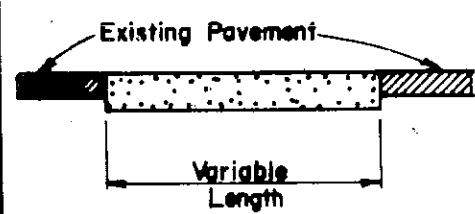
SECTION B-B  
(Built in two operations)



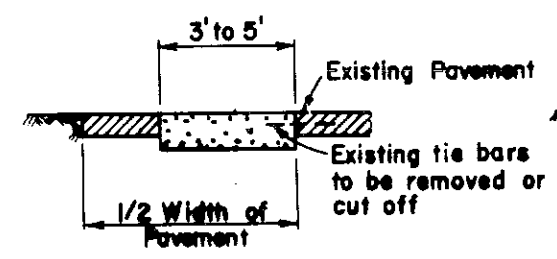
SECTION D-D



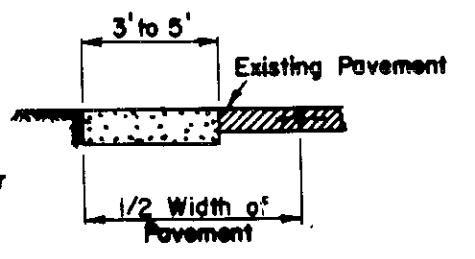
SECTION B-B  
(Built in two operations)



SECTION A-A



SECTION C-C



SECTION D-D

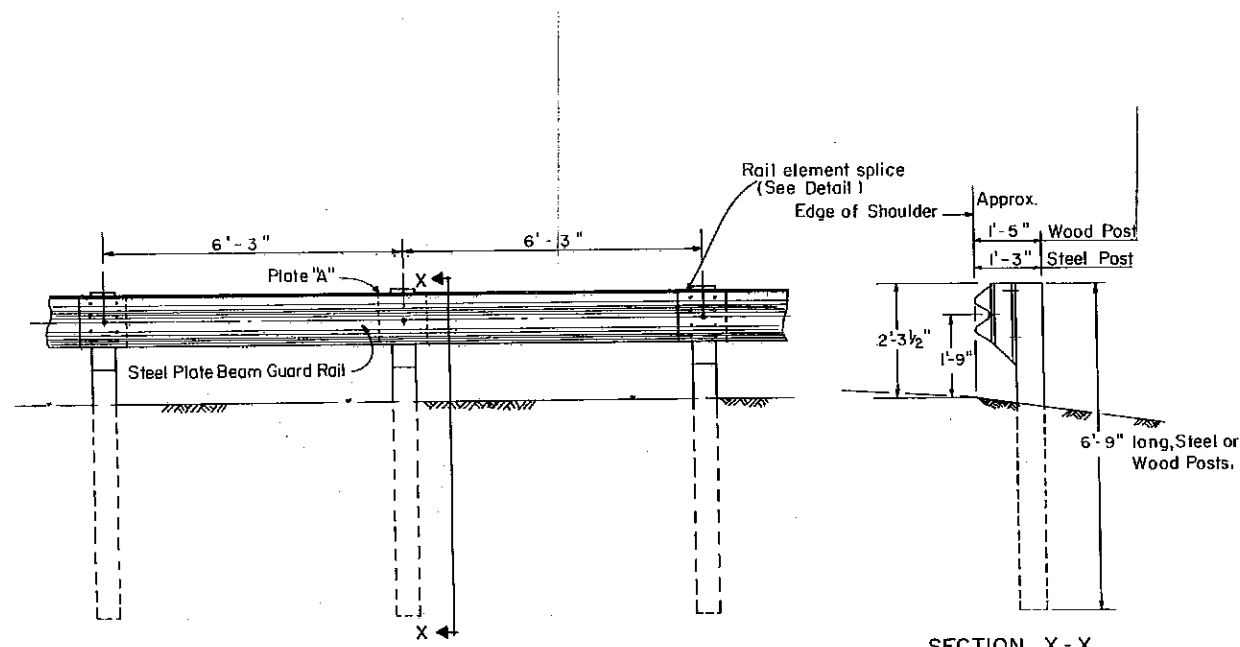
STATE OF ILLINOIS  
DEPARTMENT OF PUBLIC WORKS AND BUILDINGS  
DIVISION OF HIGHWAYS

PASSED Dec. 9 1966  
*A. V. Vandusall*  
ENGINEER OF ROAD PLANS AND CONTRACTS

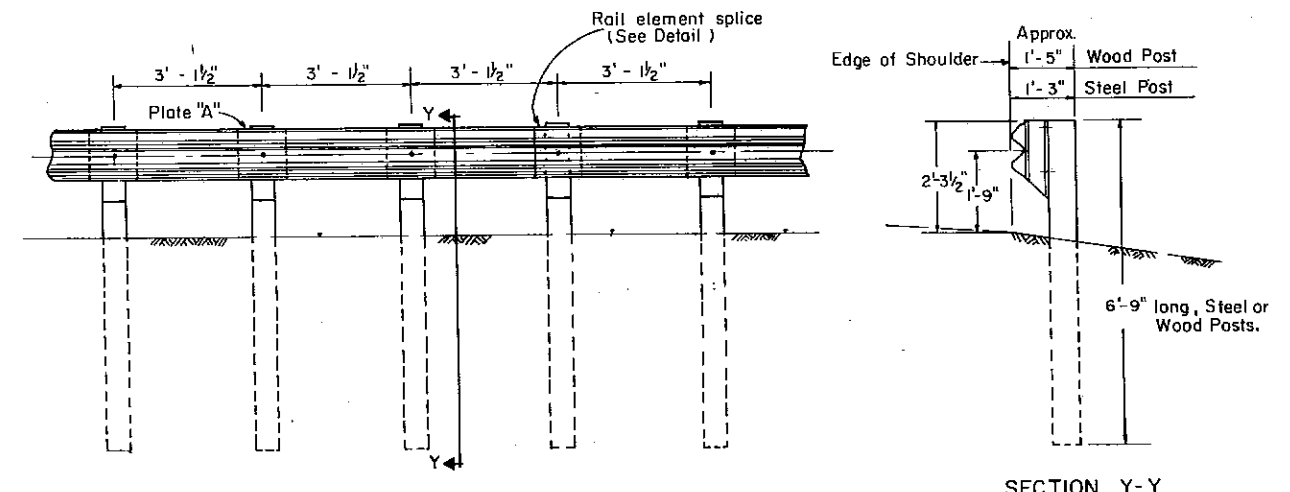
APPROVED Dec. 9 1966  
*W. E. Baumann*  
ENGINEER OF DESIGN

ISSUED 10-29-54	
REVISIONS	
WF	12-9-66

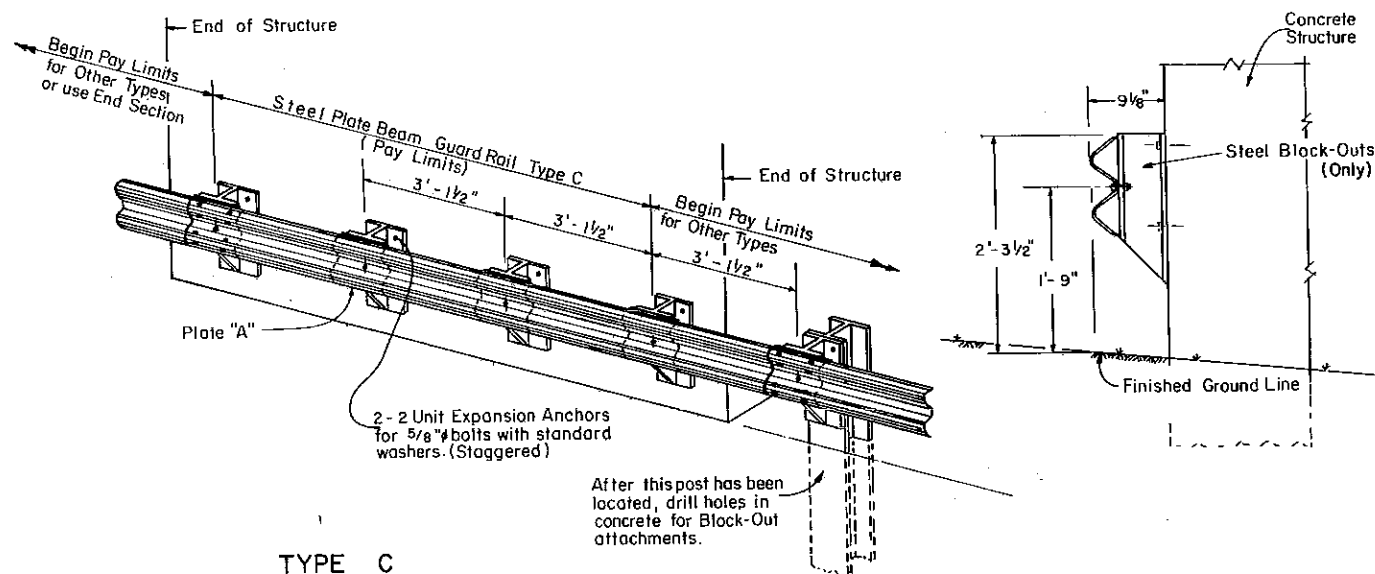
STANDARD 2117-1



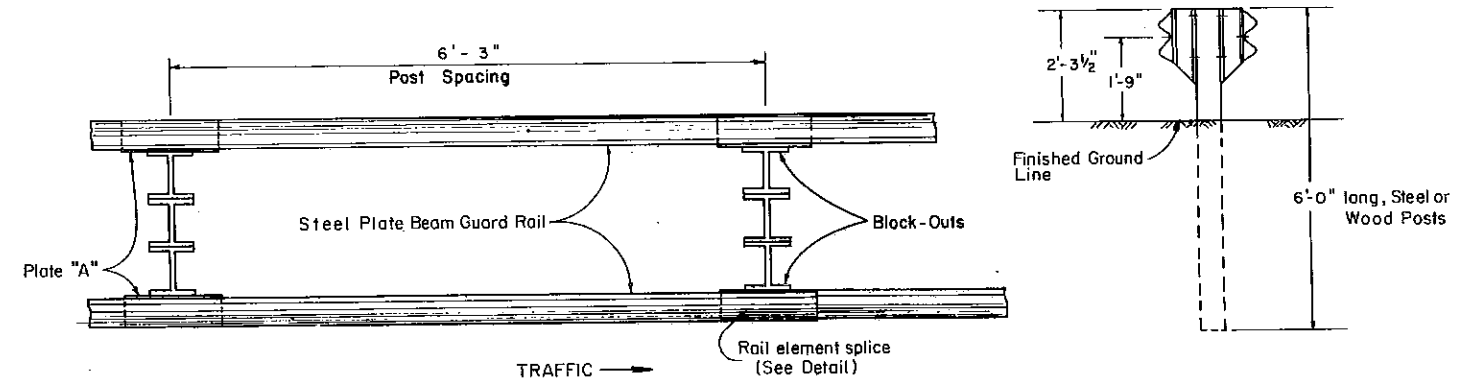
**TYPE A**  
(6'-3" Typical Post Spacing)



**TYPE B**  
(3'-1 1/2" Closed Post Spacing)



**TYPE C**  
(3'-1 1/2" Block-Out Spacing)



**TYPE D**  
(Double Steel Plate Beam Guard Rail,  
with 6'-3" Typical Post Spacing)

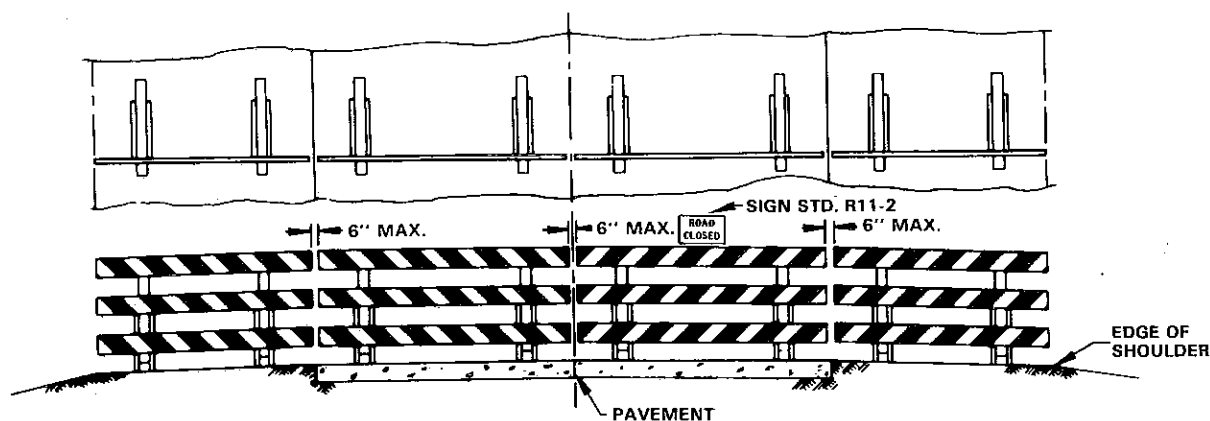
Illinois Department of Transportation  
 PASSED July 25 1979  
 D. S. Hanning  
 Engineer of Design Operations  
 APPROVED July 25 1979  
 Thomas B. Knight  
 Engineer of Design  
 ISSUED 2-11-66

STEEL PLATE BEAM GUARD RAIL  
 TYPES A, B, C & D  
 Sheet 1 of 2 Sheets  
 STANDARD 2230-13  
 Full Size DWG. Sr.

F-31K

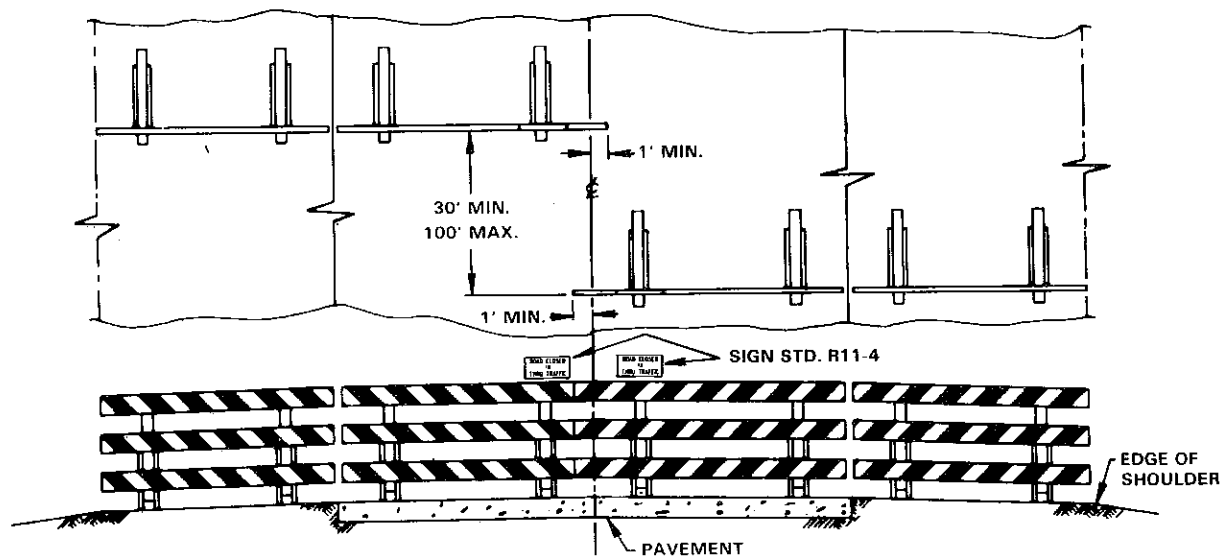


TYPICAL APPLICATIONS OF TYPE III BARRICADES CLOSING A ROAD



ROAD CLOSED TO ALL TRAFFIC

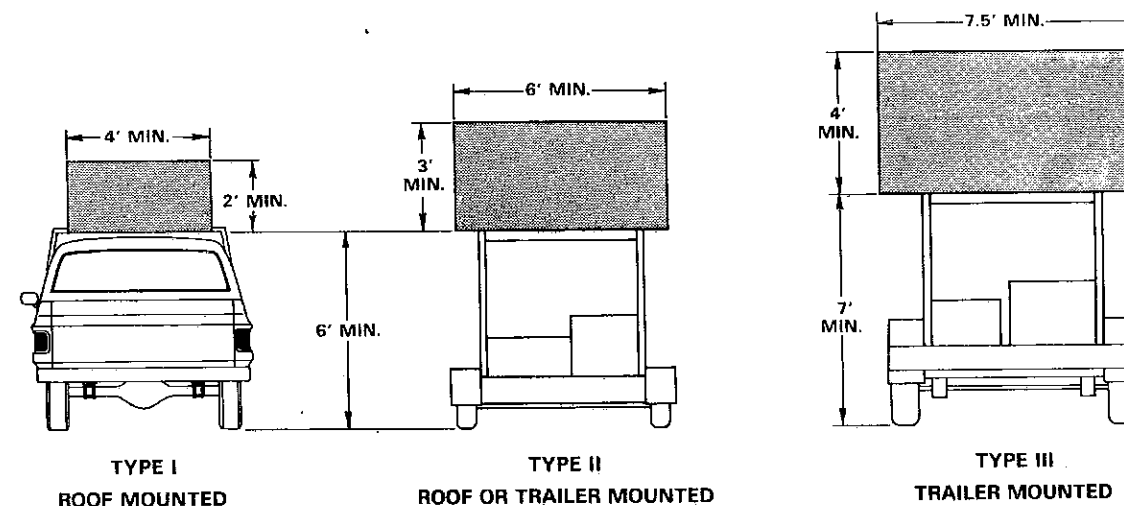
Reflectorized striping may be omitted on the back side of the barricades. The barricades shall be to the edge of the shoulders except when otherwise directed by the Engineer or shown on the detailed construction plans.



ROAD CLOSED TO ALL THRU TRAFFIC

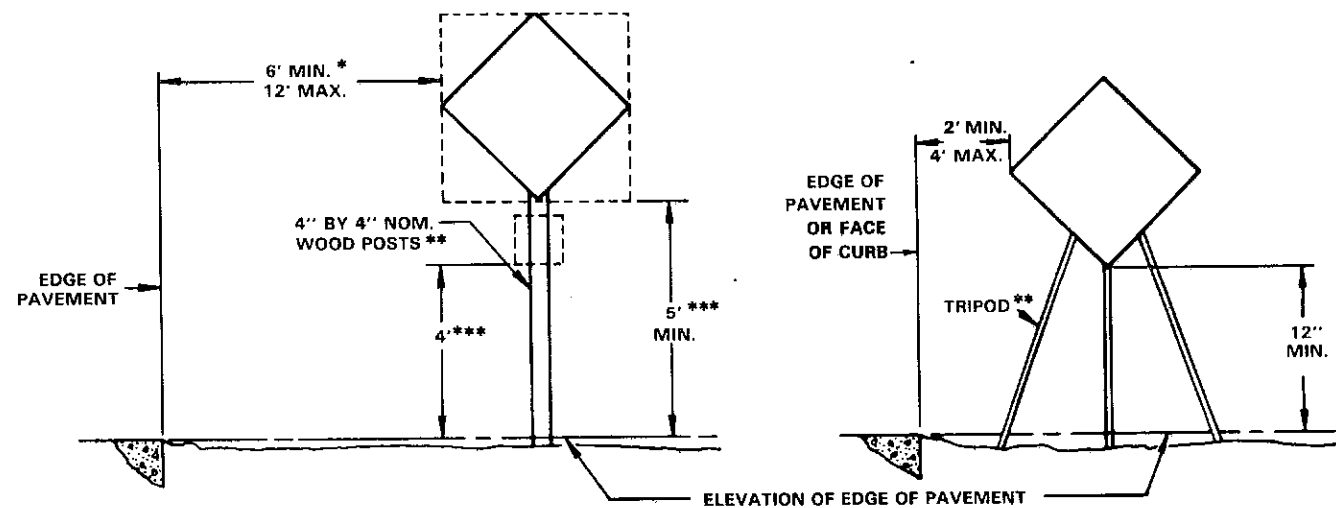
Reflectorized striping shall appear on both sides of barricades. The barricades shall be to the edge of the shoulders, except when otherwise directed by the Engineer or shown on the detailed construction plans.

ARROW BOARDS



Arrow boards shall conform to Article 718.22 of the Standard Specifications. On roads with speeds of 45 miles per hour and above, Type III units are to be used for all operations 24 hours or more in duration and Type II units may be used for operations less than 24 hours in duration. Type I, II or III units may be used for all operations on roads with speeds less than 45 miles per hour. Arrow boards shall not be used to direct passing moves into lanes used by opposing traffic.

TYPICAL SIGN INSTALLATIONS



\* 2 ft. minimum to face of curb.

\*\* Alternate designs and or materials may be permitted when authorized by the Engineer. All materials shall be substantial and durable.

\*\*\* Add 2 ft. if parking exists within 200 ft. in advance of the sign location at any time during the project.

Signs on temporary supports shall be within 20° of a vertical position.

Weights of concrete, stone, or brick will not be allowed and all weights used to stabilize signs other than sandbags must be rigidly attached to the sign support as close to the ground as possible.

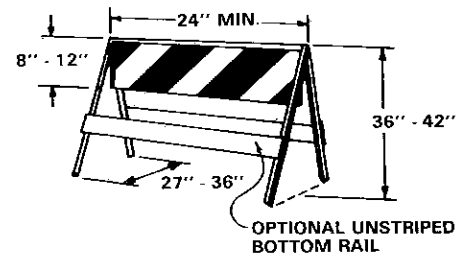
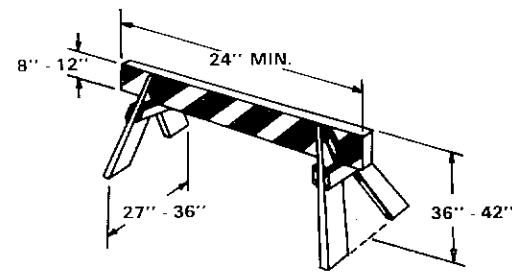
Illinois Department of Transportation  
 Approved MAY 1 1980  
 [Signature]  
 Engineer of Traffic  
 Issued 4-3-69

TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES  
 HIGHWAY CONSTRUCTION AND MAINTENANCE  
**STANDARD 2298-5**

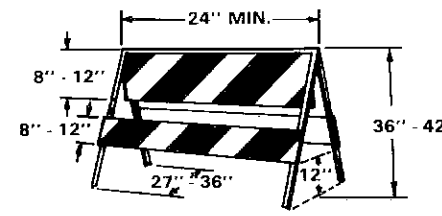
F-601d

GENERAL NOTES

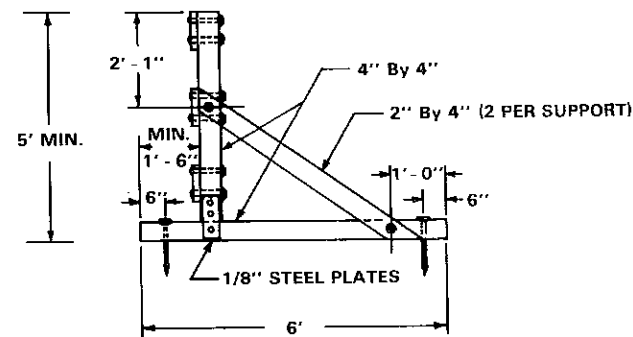
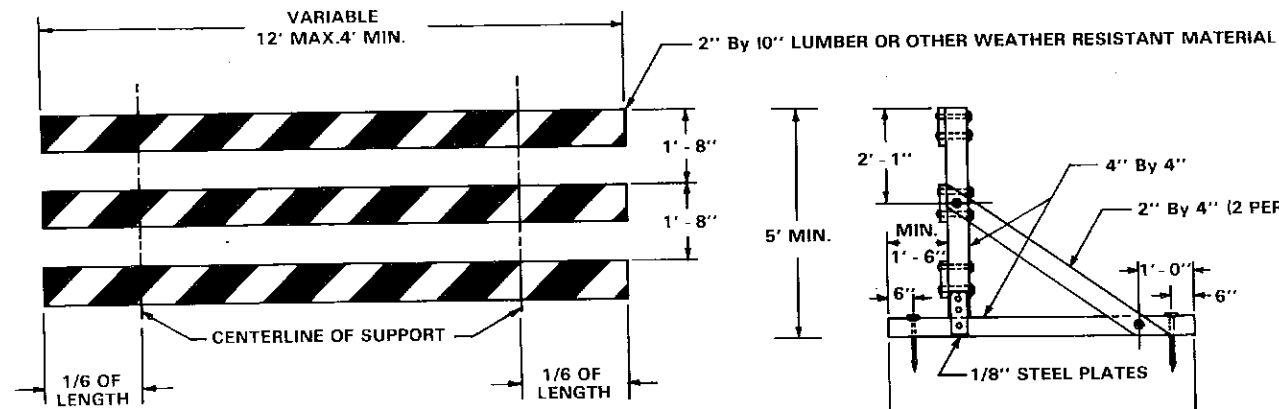
TYPE I BARRICADES



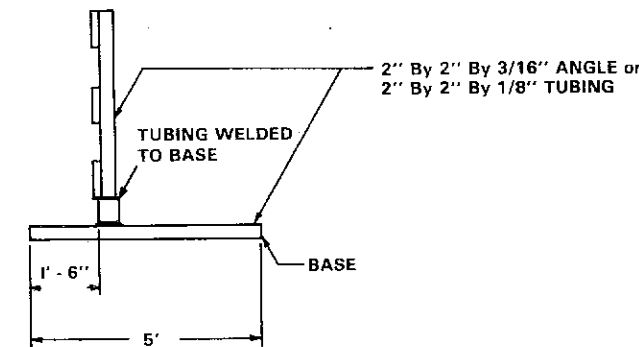
TYPE II BARRICADES



TYPE III BARRICADES

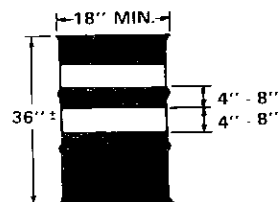


TYPICAL WOOD SUPPORT

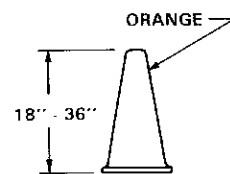


TYPICAL STEEL SUPPORT

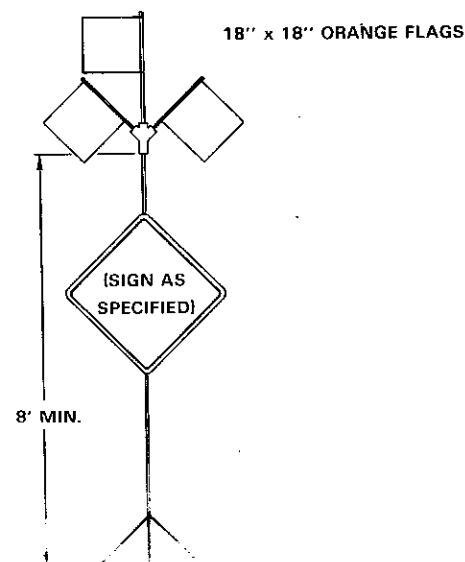
DRUMS



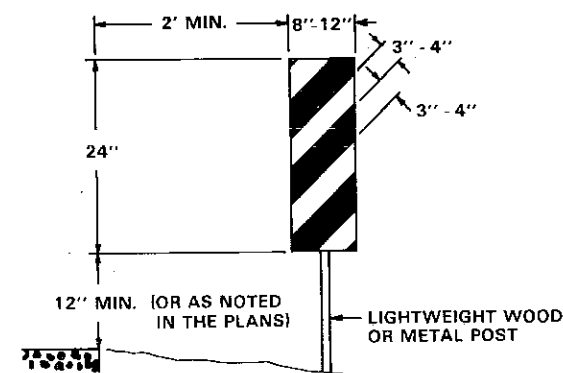
CONES



HIGH LEVEL WARNING DEVICE



VERTICAL PANELS



1. Type I Barricades are intended for use on lower speed road ways and shall not be used where normal posted speeds are greater than 40 MPH unless the upper rail is at least 12 inches deep.
2. Type I and Type II Barricades shall not be intermixed within an individual string of barricades.
3. Type III Barricades are intended for road and lane closures and shall not be used for channelization or delineation.
4. All heights shown shall be measured above the pavement surface.
5. The reflective sheeting used for barricades, drums, and vertical panels shall meet the requirements of Article 718.17 and 718.18 of the Standard Specifications for Road and Bridge Construction.
6. All barricades and vertical panels shall have alternating reflectorized white and reflectorized orange stripes sloping downward at 45° toward the side on which traffic will pass. Barricade stripes shall be 6 inches in width on barricades 36 inches or greater in width and 4 inches in width on barricades less than 36 inches in length. Barricade rails may be sloping or vertical.
7. Type I and Type II Barricades shall be striped on both sides. Type III Barricades shall be striped on both sides where traffic approaches from either direction. Vertical panels placed on the outside of curves shall be striped on both sides.
8. Drums shall have alternating reflectorized orange and reflectorized white horizontal, circumferential stripes 4 inches to 8 inches in width. There shall be at least two orange and at least two white stripes on each drum. If nonreflective spaces are left between the orange and white stripes, they shall be no more than 2 inches in width. All nonreflective portions of the drums shall be painted orange or white. Drums may be slightly conical in shape and may have one or more flat surfaces to minimize rolling when hit.
9. Frames for Type I and Type II Barricades shall be designed so as to provide a stable support and should be constructed of light weight steel or aluminum angles or tubing, wood, plastic, or rubber and have no rigid stay bracing for "A" frame designs. As Type III Barricades are only used at closures, they may be constructed of heavier materials than Type I or Type II Barricades. However, they should not have any vertical or sloping supports heavier than 4-inch by 4-inch lumber, 2-inch by 2-inch by 1/8-inch steel tubing, or 2-inch by 2-inch by 3-1/16-inch steel angles or rails heavier than 2-inch by 12-inch lumber. Nominal lumber sizes are acceptable to satisfy dimensions.
10. The name of the agency, contractor, or supplier shall not be shown on the face parts of any barricades, whether such parts are striped or not. Identification markings may be placed only on the back side of the barricade rails.
11. When used, warning lights on barricades, drums, or vertical panels shall be mounted above the top of the device to the side on which traffic will pass and shall not obscure any reflectorized portion of the device.
12. Weights of concrete, stone, or brick will not be allowed and all weights used to stabilize barricades other than sandbags must be rigidly attached to the legs of the barricades as close to the ground as possible. No sandbags will be allowed on the top rail of barricades. Sandbags may be placed on barricade legs, over striped bottom rails not facing traffic, over unstriped bottom rails, or suspended from the barricade rail or frame in such a manner so that the bulk of the sand is at least 18 inches below the top of the barricade. Drums may be weighted internally with just enough sand, water, or other material to provide stability.

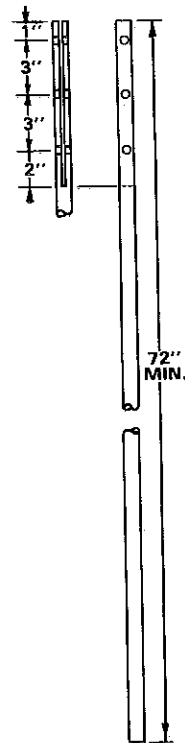
Illinois Department of Transportation  
 Approved January 23 1980  
 [Signature]  
 Engineer of Traffic

DESIGN OF TRAFFIC CONTROL DEVICES FOR  
 HIGHWAY CONSTRUCTION AND MAINTENANCE

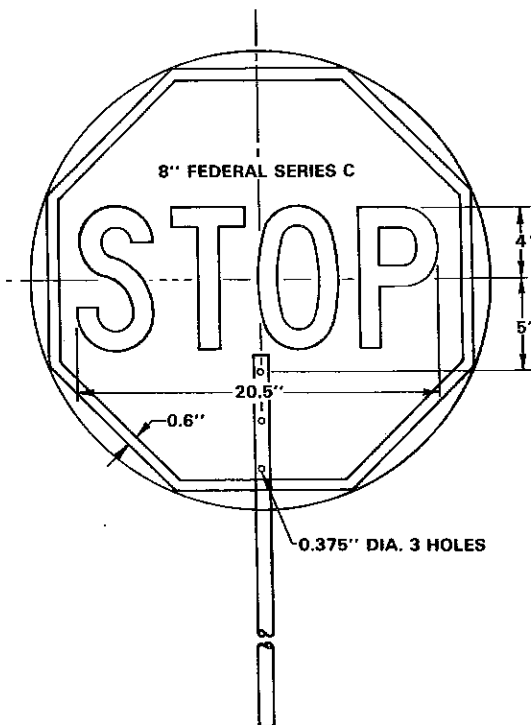
STANDARD 2299-8

F-602e

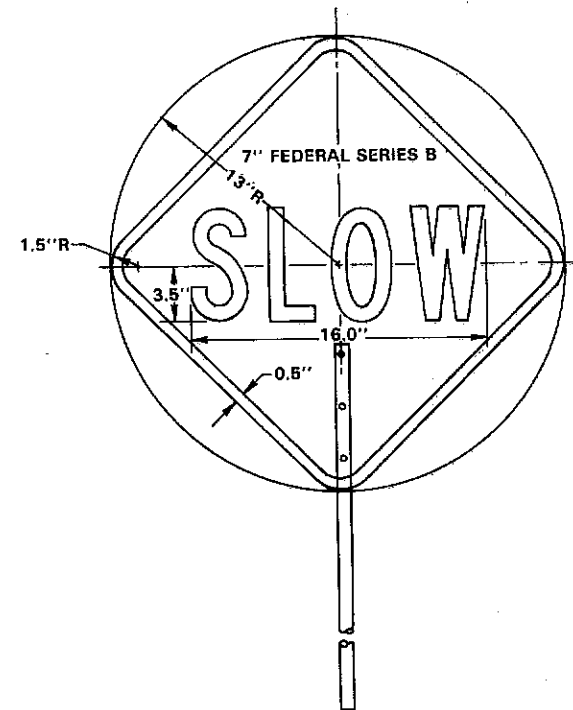




STAFF



FRONT SIDE



REVERSE SIDE

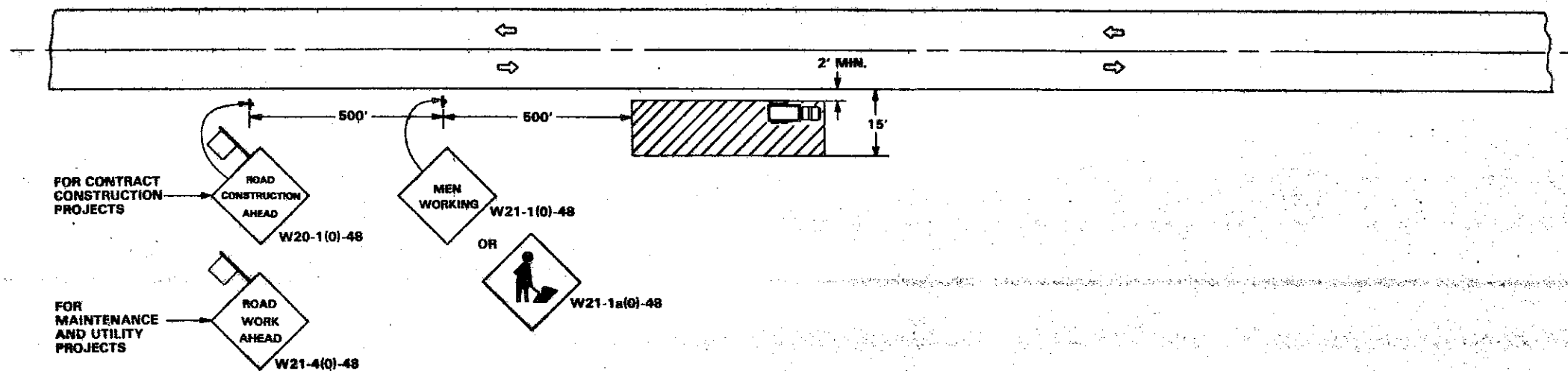
**GENERAL NOTES**

1. The "STOP" face shall consist of white letters and border on a red reflectorized background.
2. The "SLOW" face shall consist of black letters and border on an orange reflectorized background.
3. Areas outside sign borders shall be light blue or black.
4. The sign blank may be octagonal in shape in lieu of circular.
5. The portion of the staff within the sign face shall match the sign colors.
6. All colors and letters shall meet applicable federal standards.
7. The staff shall consist of two sections joined by a coupling located 60 in. from the bottom of the staff. Alternate designs may be used when approved by the Engineer. All materials shall be substantial and durable.
8. This sign shall be furnished by the contractor and shall be used by the flagger in lieu of flags or other signaling devices. The cost of furnishing and maintaining the sign shall be considered incidental to the contract and no additional compensation will be allowed.

Illinois Department of Transportation  
 Approved MAY 1 1980  
*F. C. H. [Signature]*  
 Engineer of Traffic  
 Issued 4-3-69

FLAGGER TRAFFIC CONTROL SIGN  
**STANDARD 2300-2**

F-603b



**GENERAL NOTES**

1. If the work operation does not exceed 60 minutes, traffic control may be in conformance with STANDARD 2307.
2. Worker signs are to be removed when no work is being performed. Any unattended obstacle or excavation in the work area which in the opinion of the Engineer constitutes a hazard shall be protected by barricades at 50 ft. centers, with flashing lights at night. If the hazard exceeds 100 ft. in length, steady burning lights shall be substituted for flashing lights. When the distance is greater than 250 ft., barricade spacing may be increased to 100 ft.
3. If the work operation requires that four or more work vehicles enter through traffic lanes in a one hour period, a flagger shall be provided and a Flagger sign shall be substituted for the Worker sign.
4. Longitudinal dimensions may be adjusted to fit field conditions.
5. All vehicles, equipment, workers and their activities are restricted at all times to one side of the pavement unless otherwise authorized by the Engineer.

**SYMBOLS**

- Work Area
- 18 in. X 18 in. (minimum) Orange Flag
- Sign on Portable or Permanent Support

**TYPICAL APPLICATIONS**

- Utility Operations
- Culvert Extensions
- Side Slope Changes
- Guard Rail Installation and Maintenance
- delineator Installation and Maintenance
- Landscaping Operations
- Cleaning Ditches and Drainage Structures
- Sign Installation and Maintenance
- Shoulder Repair

**TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES  
HIGHWAY CONSTRUCTION AND MAINTENANCE**

**TWO-LANE, TWO-WAY TRAFFIC,  
RURAL DAY OR NIGHT OPERATIONS**

Where at any time, any vehicle, equipment, workers or their activities will encroach in the area closer than 15 ft. but not closer than 2 ft. to the edge of pavement.

**STANDARD 2302-4**

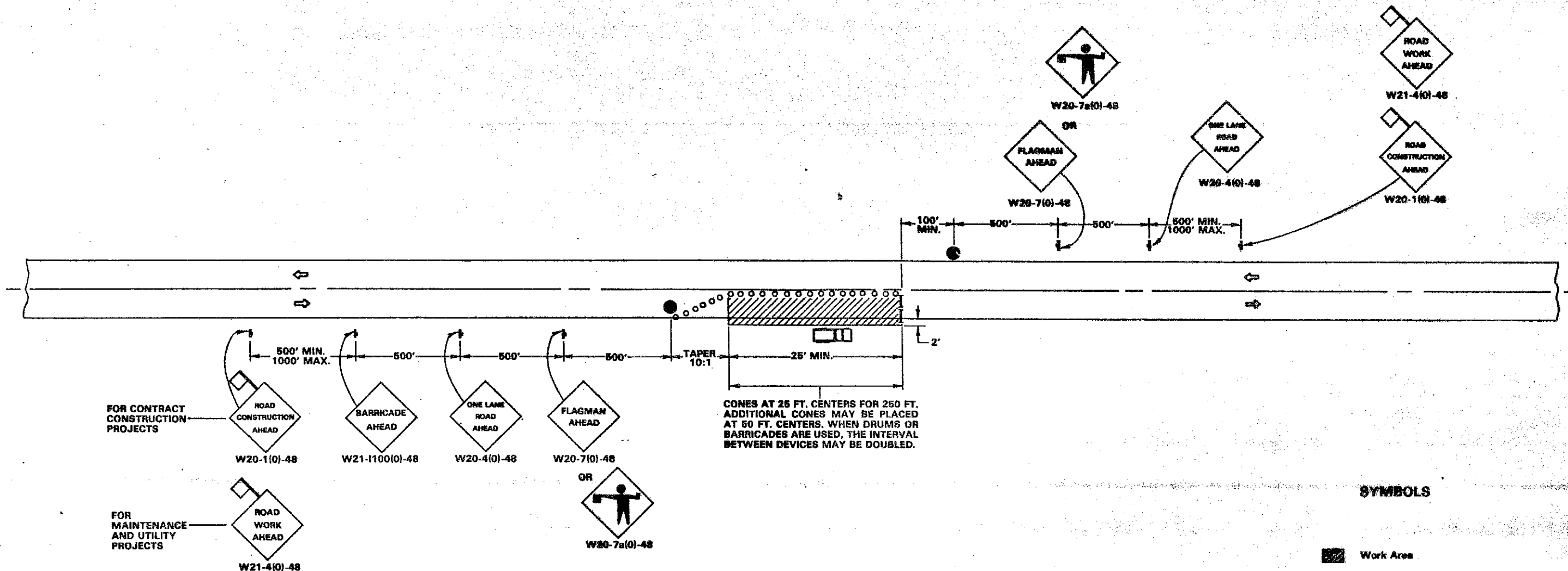
Illinois Department of Transportation

Approved MAY 1 1980

*G. E. Moberly*  
Engineer of Traffic

Issued 4-3-69

F-607c



**GENERAL NOTES**

1. The taper shall be formed by placing one cone for each foot of lane width or a drum or barricade for each two foot of lane width.
2. Construction operations shall be confined to one traffic lane, leaving the opposite lane open to traffic. At least 500 ft. of both traffic lanes shall be available for traffic movement at intervals not greater than 1,000 ft.
3. If the work operation does not exceed 60 minutes, traffic control may be in conformance with STANDARD 2307.
4. The flaggers shall be in sight of each other or in direct communication at all times.
5. When no work is being performed, the flaggers will not be required. If the flaggers are not present, the Flagger signs shall be removed or covered.
6. All signs, cones, barricades and drums are to be removed at completion of the day's operations and the work area opened to traffic.
7. Longitudinal dimensions may be adjusted to fit field conditions. The lateral placement of the flagger may be varied from that shown.
8. All vehicles, equipment, workers (except flaggers) and their activities are restricted at all times to one side of the pavement unless otherwise authorized by the Engineer.

**SYMBOLS**

- Work Area
- 18 in. X 18 in. (minimum) Orange Flag
- Cone, Drum or Barricade
- Sign on Portable or Permanent Support
- Flagger with Traffic Control Sign
- Barricade or Drum

**TYPICAL APPLICATION**

- Pavement Patch
- Utility Operations

**TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES  
HIGHWAY CONSTRUCTION AND CONTRACT MAINTENANCE**

**TWO-LANE, TWO-WAY TRAFFIC  
RURAL DAY OPERATIONS ONLY**

Where, at any time, any vehicle, equipment, workers or their activities will encroach in the area between the center line and a line 2 ft. outside the edge of pavement

**STANDARD 2303-5**

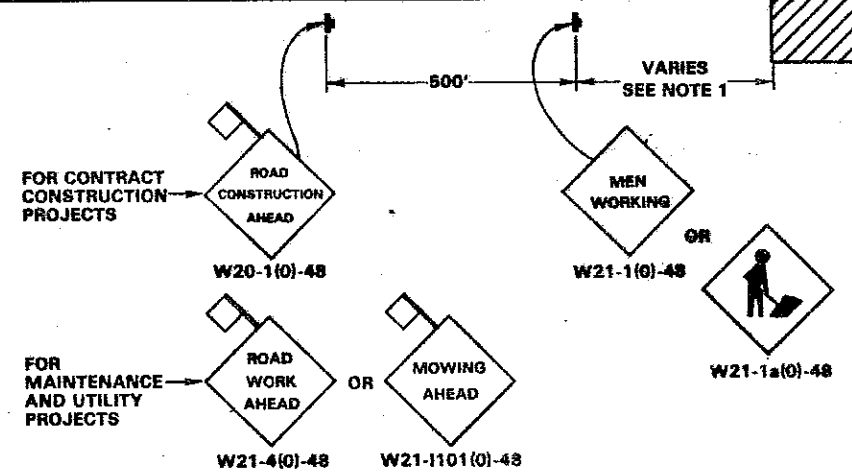
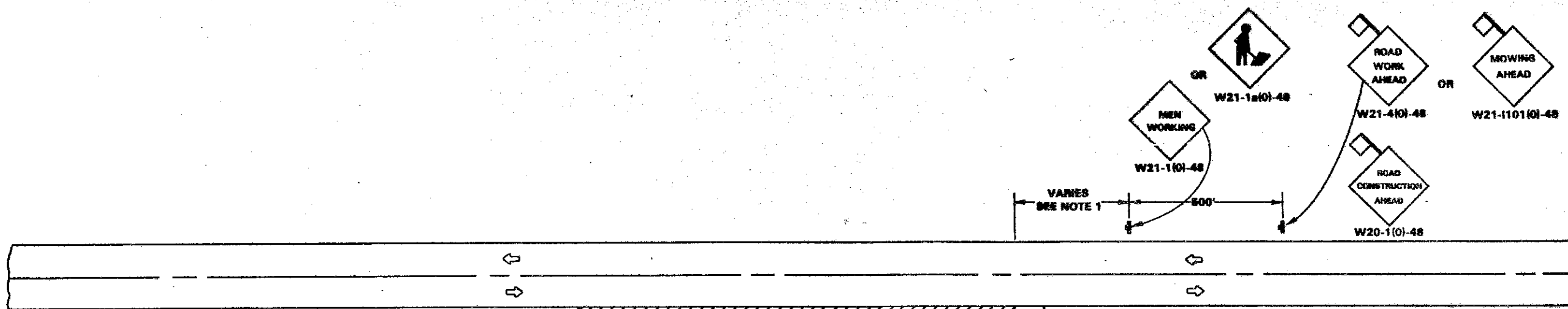
Illinois Department of Transportation

Approved MAY 1 1980

*J. E. Moberly*  
Engineer of Traffic

ISSUED 4-3-69

F-608c



**TYPICAL APPLICATIONS**

- Shoulder Work
- Mowing
- Utility Operations

**GENERAL NOTES**

1. Minimum distance is 200 ft. Maximum distance to be determined by the Engineer but should not exceed 1/2 the length required for one normal working day's operation.
2. If the work operation does not exceed 60 minutes, traffic control may be in conformance with STANDARD 2307.
3. All signs are to be removed at completion of the day's operations.
4. For divided roadways the required advance warning signs shall be posted on both the right and left side of the roadway.
5. Signs mounted in the median may be omitted when the median is less than 10 ft. wide.
6. For multilane roadways the advance warning signs for traffic approaching from the opposite direction will be omitted.
7. Worker signs are to be removed when no work is being performed. Any unattended obstacle or excavation in the work area, which in the opinion of the Engineer constitutes a hazard, shall be protected by barricades at 50-foot centers, with flashing lights at night. If the hazard exceeds 100 ft. in length, steady burning lights shall be substituted for flashing lights. When the distance is greater than 250 ft., barricade spacing may be increased to 100 ft.
8. If the work operation requires that four or more work vehicles enter the through traffic lanes in a one hour period, a flagger shall be provided and the Flagger sign shall be substituted for the Worker sign.
9. Longitudinal dimensions may be adjusted to fit field conditions.
10. All vehicles, equipment, workers and their activities are restricted at all times to one side of the pavement unless otherwise authorized by the Engineer.

**SYMBOLS**

- Work Area
- 18 in. X 18 in. (minimum) Orange Flag
- Sign on Portable or Permanent Support

**TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES  
HIGHWAY CONSTRUCTION AND MAINTENANCE**

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**RURAL MOVING OPERATIONS  
DAY OPERATIONS ONLY**

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Where, at any time, any vehicle, equipment, workers or their activities require an intermittent or continuous moving operation on the shoulder.

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**STANDARD 2305-4**

Illinois Department of Transportation

Approved   MAY 1   1960

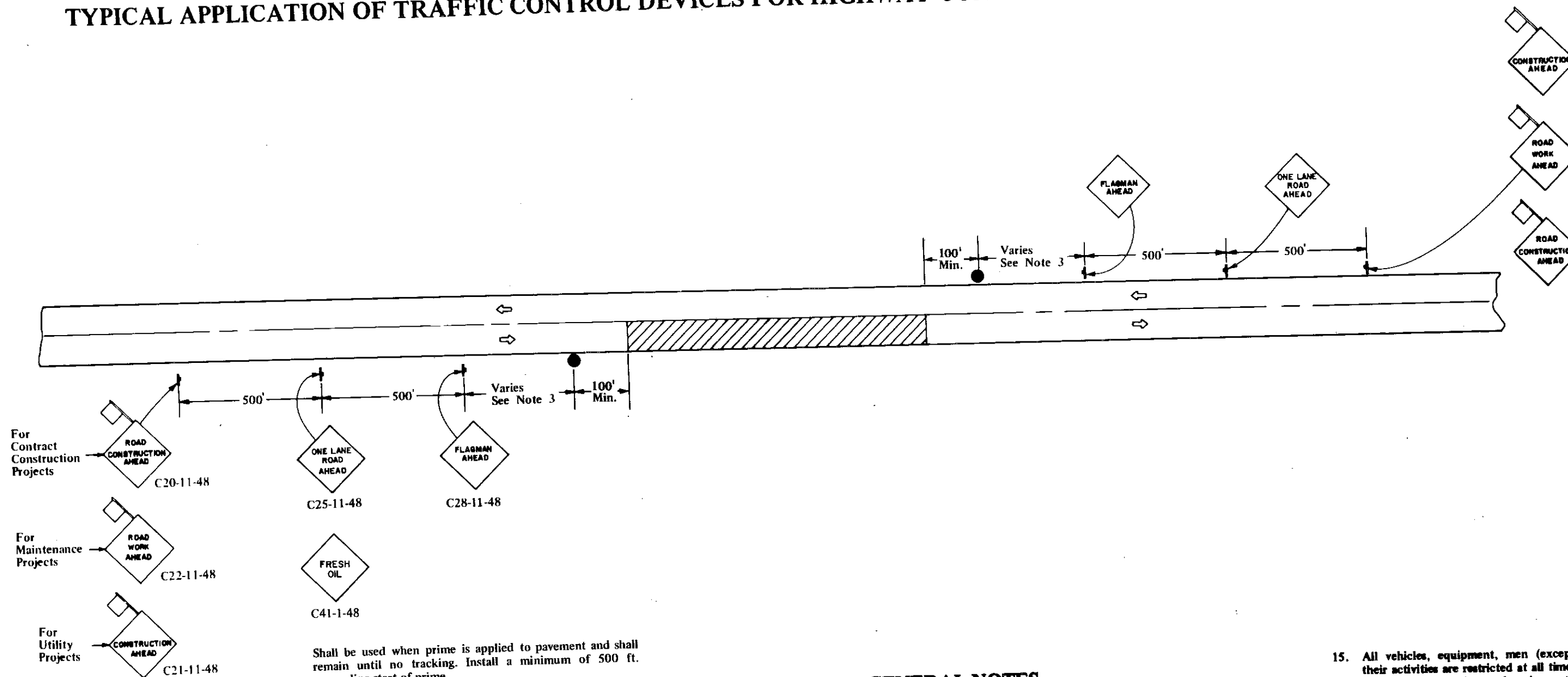
*G. E. T. [Signature]*  
Engineer of Traffic

S-9-C-10 (REVISED)

F-6.10c

# STANDARD DESIGN

## TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR HIGHWAY CONSTRUCTION AND CONTRACT MAINTENANCE



Shall be used when prime is applied to pavement and shall remain until no tracking. Install a minimum of 500 ft. preceeding start of prime.

### GENERAL NOTES

1. Construction operations shall be confined to one traffic lane. On two-lane roads, at least 500 ft. of both traffic lanes shall be available for traffic movement at intervals not greater than 1,000 ft. and a complete traffic control plan must be approved for any project expected to exceed 1,000 ft. in length.
2. The flagmen shall be in sight of each other or in direct communication at all times.
3. Minimum distance is 200 ft. Maximum distance to be determined by the Engineer but in no case to exceed the length of 1/2 day's operation or four miles, whichever is less.
4. If the work operation does not exceed 60 minutes, traffic control will be in conformance with Case VII.
5. All signs are to be removed at completion of the day's operations.
6. For divided roadways the required advance warning signs shall be posted on both the right and left side of the roadway.
7. Signs mounted in the median may be omitted when the median is less than 10 feet wide.
8. For multilane roadways the flagman shown for traffic approaching from the opposite direction will be positioned as directed by the Engineer and the advance warning signs for traffic approaching from the opposite direction omitted.
9. For multilane roadways the advance warning signs for traffic approaching from the opposite direction will be omitted and RIGHT LANE CLOSED AHEAD signs shall be substituted for the ONE LANE ROAD AHEAD signs.
10. This case also applies when work is being performed in lanes adjacent to the centerline of an undivided multilane highway or adjacent to the median on a divided highway. Under these conditions, LEFT LANE CLOSED AHEAD signs shall be substituted for RIGHT LANE CLOSED AHEAD signs.
11. This case does not apply when work is being performed in the middle lane(s) of a six or more lane highway. Special plans approved by the Engineer will be required.
12. ONE LANE ROAD AHEAD and FLAGMAN AHEAD signs are to be removed or covered when no work is being performed.
13. Longitudinal dimensions may be adjusted slightly to fit field conditions. The lateral placement of the flagmen may be varied from that shown.
14. All warning signs shall have minimum dimensions of 48 in. by 48 in. and have black legend and border on an orange reflectorized background.
15. All vehicles, equipment, men (except flagmen) and their activities are restricted at all times to one side of the pavement unless otherwise authorized by the Engineer.

### TYPICAL APPLICATIONS

Bituminous Resurfacing  
Crack Pouring  
Utility Operations

### SYMBOLS

- Work Area.
- Sign with 18 in. by 18 in. (minimum) orange flag attached.
- Sign on portable or permanent support.
- Flagman with Traffic Control sign.

### CASE VI

#### RURAL MOVING OPERATIONS DAY OPERATIONS ONLY

Where, at any time, any vehicle, equipment, men or their activities require an intermittent or continuous moving operation on the pavement where the average speed of movement is less than four miles per hour.

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ISSUED 4-3-69
APPROVED <i>S. E. Moberly</i> Engineer of Traffic	REVISOR BY DATE
6-12 1973	

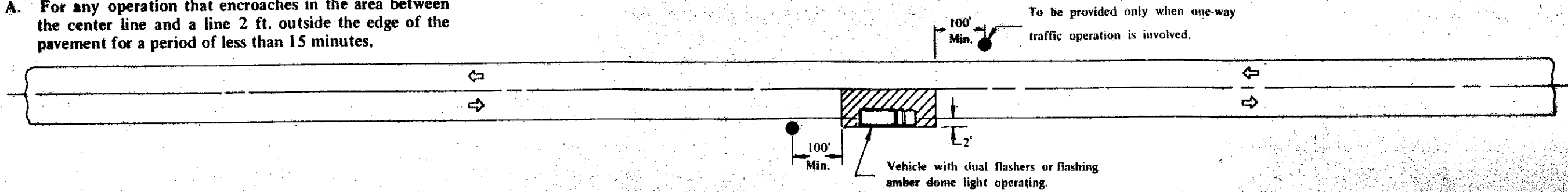
STANDARD **2306-4**

F-611B

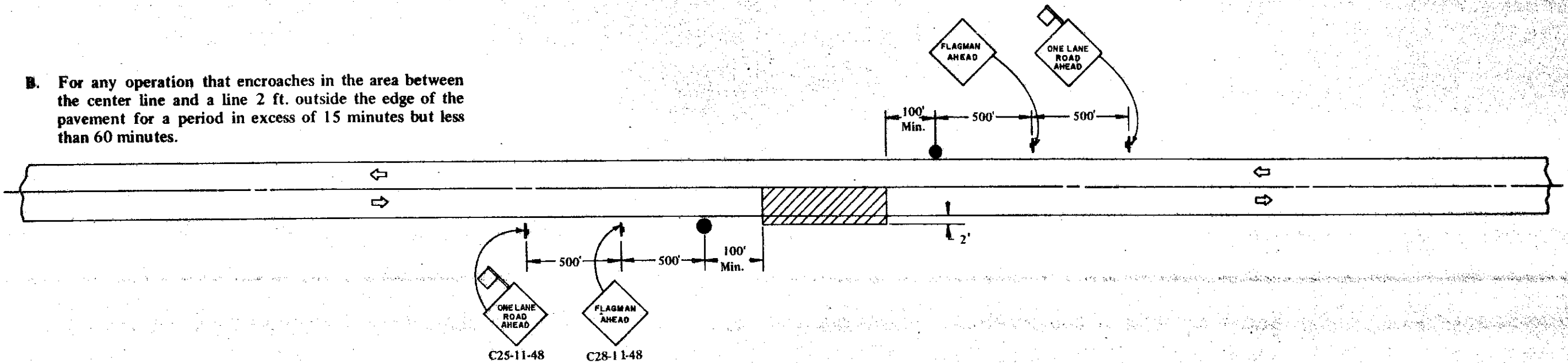
# STANDARD DESIGN

## TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR HIGHWAY CONSTRUCTION AND CONTRACT MAINTENANCE

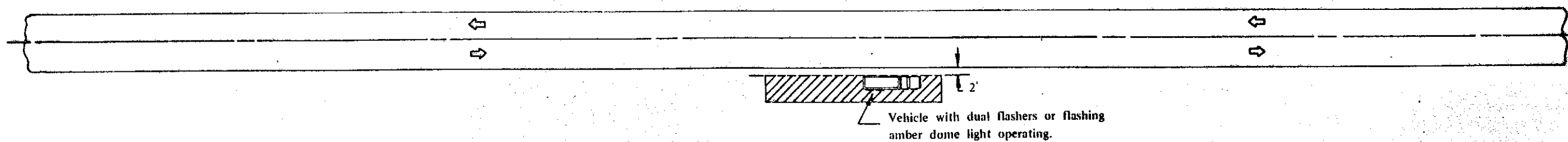
A. For any operation that encroaches in the area between the center line and a line 2 ft. outside the edge of the pavement for a period of less than 15 minutes,



B. For any operation that encroaches in the area between the center line and a line 2 ft. outside the edge of the pavement for a period in excess of 15 minutes but less than 60 minutes.



C. For any operation that is more than 2 ft. outside the edge of the pavement for a period of less than 60 minutes.



### TYPICAL APPLICATIONS

Marking Patches  
Field Survey  
String Line  
Utility Operation  
Cleaning Up Debris on Pavement

### SYMBOLS

- Work Area.
- Sign with 18 in. by 18 in. (minimum) orange flag attached.
- Sign on portable or permanent support.
- Flagman with Traffic Control sign.

### GENERAL NOTES

1. Construction operations shall be confined to one traffic lane. On two-lane roads, at least 500 ft. of both traffic lanes shall be available for traffic movement at intervals not greater than 1,000 ft. and a complete traffic control plan must be approved for any project expected to exceed 1,000 ft. in length.
2. The flagmen shall be in sight of each other or in direct communication at all times.
3. All signs are to be removed at completion of each operation.
4. For multilane roadways the flagman shown for traffic approaching from the opposite direction will be positioned as directed by the Engineer and the advance warning signs for traffic approaching from the opposite direction omitted.
5. Longitudinal dimensions may be adjusted slightly to fit field conditions. The lateral placement of the flagmen may be varied from that shown.
6. All warning signs shall have minimum dimensions of 48 in. by 48 in. and have black legend and border on an orange reflectorized background.
7. All vehicles, equipment, men (except flagmen) and their activities are restricted at all times to one side of the pavement unless otherwise authorized by the Engineer.

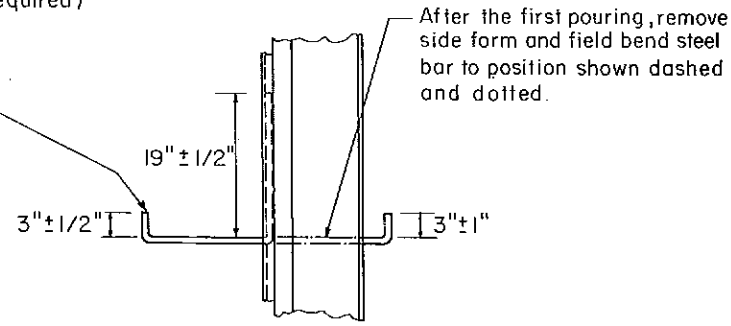
### CASE VII

SHORTTIME OPERATIONS  
DAY OR NIGHT OPERATIONS

STANDARD 2307-4

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ISSUED 4-3-69 REVISED BY DATE
APPROVED <i>L. E. Moberly</i> Engineer of Traffic	1973

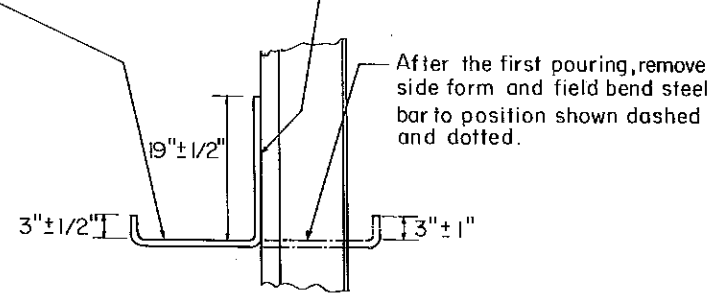
1/2" or 5/8"  $\phi$  x 3'-0" long bent steel bar.  
(Refer to the plans for size of tie bar required)



PLAN

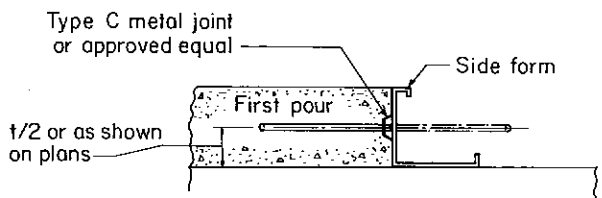
1/2" or 5/8"  $\phi$  x 3'-0" long bent steel bar.  
(Refer to the plans for size of tie bar required)

Wrap this leg of bent bar in heavy paper or similar material and place in position to the satisfaction of the Engineer.

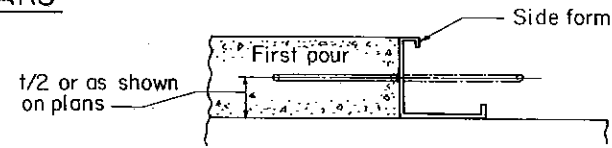


PLAN

**SMOOTH HOOKED TIE BARS**

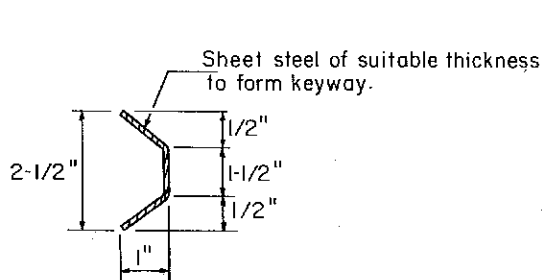
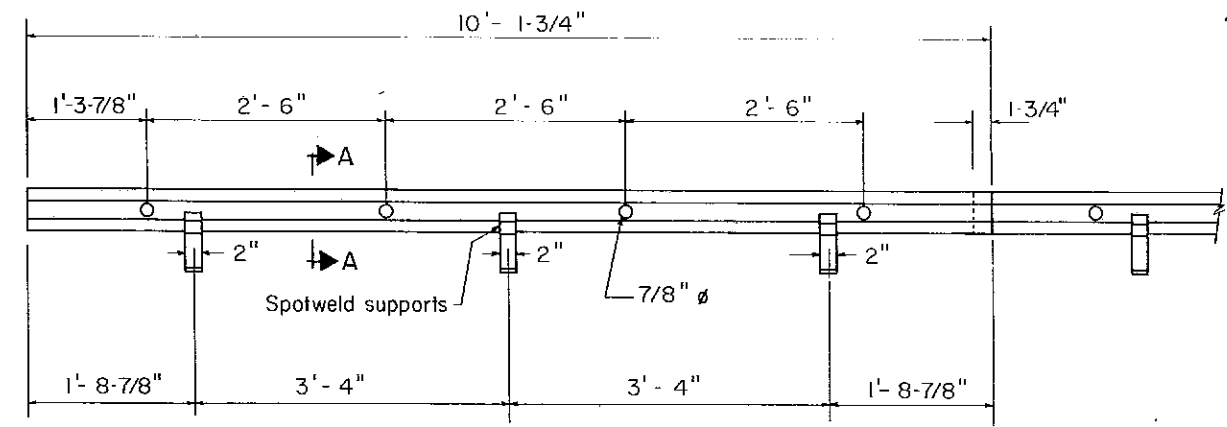


ELEVATION SECTION  
KEYED LONGITUDINAL CONSTRUCTION JOINT  
(WITH SMOOTH HOOKED TIE BAR)

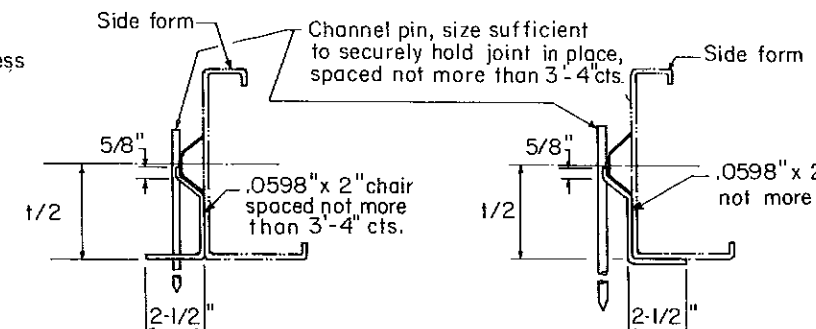


ELEVATION SECTION  
BULKHEAD LONGITUDINAL CONSTRUCTION JOINT  
(WITH SMOOTH HOOKED TIE BAR)

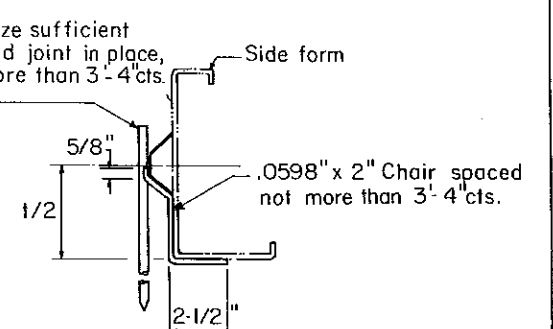
**LONGITUDINAL METAL JOINT TYPE C**



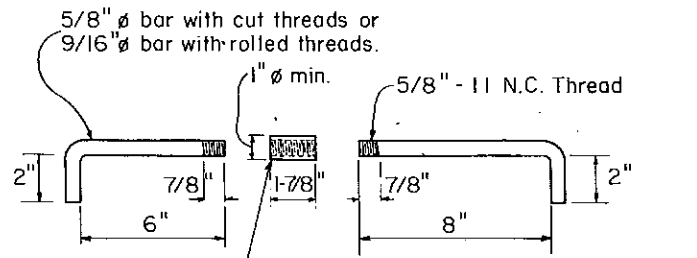
SECTION A-A



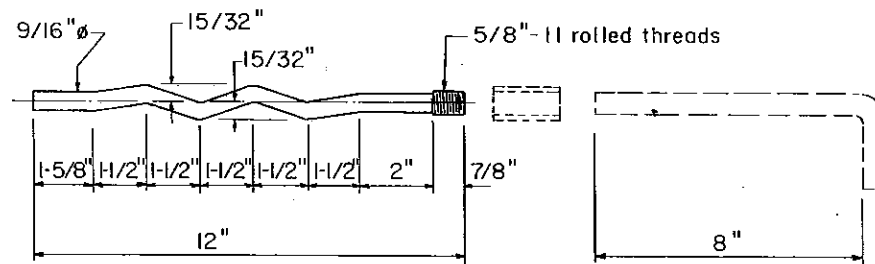
SUPPORTING CHAIR ALTERNATE



SUPPORTING CHAIR ALTERNATE



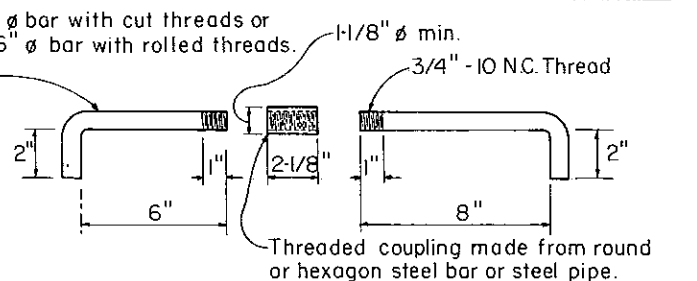
DETAIL OF HOOKED BAR WITH 5/8" THREAD



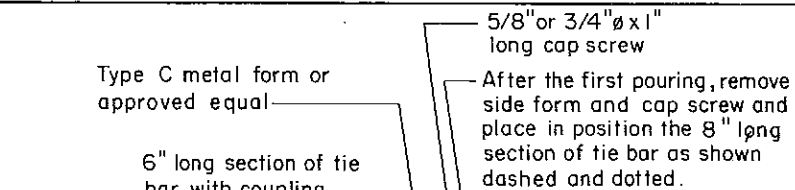
DETAIL OF OPTIONAL "W" BAR

**THREADED HOOKED TIE BARS**

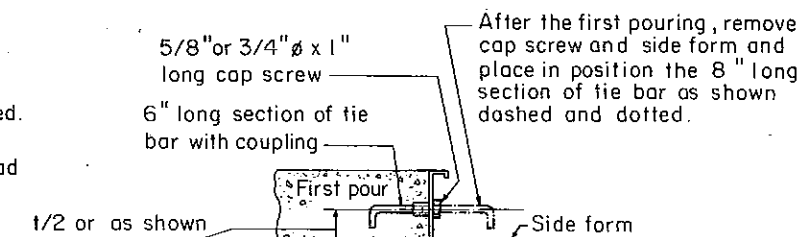
NOTE:  
Refer to the plans for size of tie bar required.  
Use the hooked bars with 5/8" thread when 1/2"  $\phi$  tie bars are specified and with 3/4" thread when 5/8"  $\phi$  tie bars are specified.



DETAIL OF HOOKED BAR WITH 3/4" THREAD



ELEVATION SECTION  
KEYED LONGITUDINAL CONSTRUCTION JOINT  
(WITH THREADED HOOKED TIE BAR)



ELEVATION SECTION  
BULKHEAD LONGITUDINAL CONSTRUCTION JOINT  
(WITH THREADED HOOKED TIE BAR)

**GENERAL NOTES**

The bent steel bars shall be plain, round bars conforming to the requirements of AASHTO M-31 or M-53 grade 40.

Hex head bolts meeting the requirements of Article 710.10 of the Standard Specifications may be used in lieu of the hooked tie bar. Minimum embedment shall be 4" for 5/8" bolts and 6" for 3/4" bolts.

The steel pipe for the threaded coupling shall be ASTM A-53, Types E or S, Grade A or equivalent.

The Contractor may use at his option for form paving or slip form paving, either the smooth hooked tie bars or the threaded hooked tie bars, as detailed, or deformed tie bars as noted below.

Deformed bar conforming to the requirements of AASHTO M-31 or M-53 may be used for tie bars in lieu of smooth or threaded hooked tie bars, except that the elongation shall not be less than 20%. Deformed tie bars shall be comparable in size to the smooth bar, 2'-6" long, without hooks at the ends.

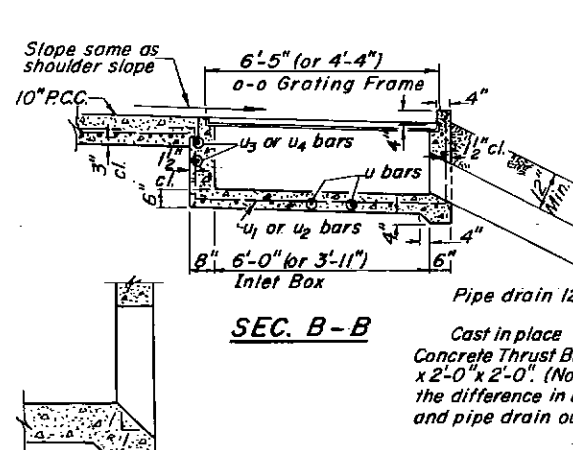
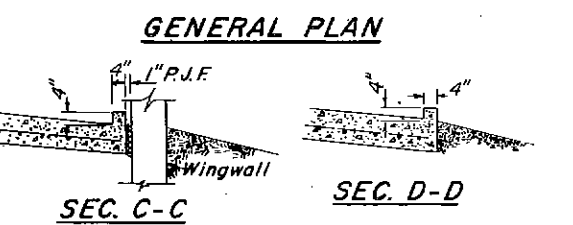
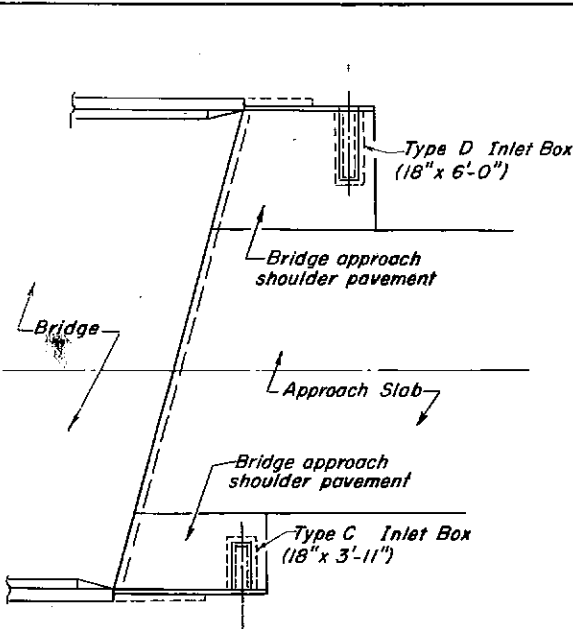
Support pins for tie bars, when required, shall be of a size and strength sufficient to firmly hold the bar in place.

t = pavement thickness.

Illinois Department of Transportation  
 Dec 18 1979  
 ED *[Signature]*  
 Engineer of Design Operations  
 Dec 18 1979  
 TH *[Signature]*  
 Engineer of Design

PAVEMENT JOINTS  
 STANDARD 2323 - 5

C-23.40 e



**BOX OUTLET WHEN PRECAST**

**GENERAL NOTES**

When Inlet Box or Boxes are not required, surface of the shoulder pavement shall be finished to provide a smooth transition from back of the abutment to normal approach roadway shoulder.

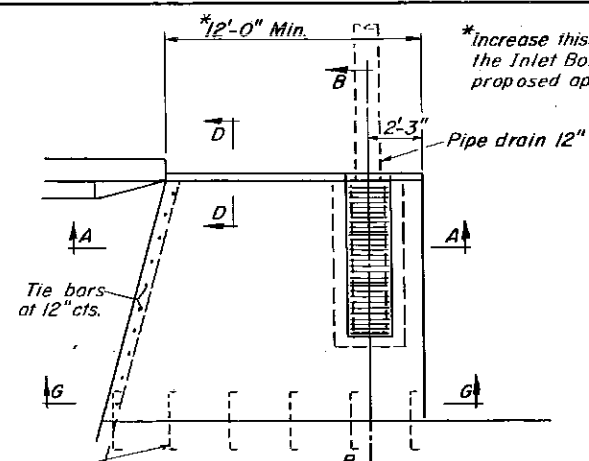
See plans for location of bridge approach shoulder pavement.

Use Type C Inlet Box for 4' thru 6' shoulder widths; use Type D Inlet Box for 7' and wider shoulder widths.

For placement of approach shoulder pavement on existing construction substitute expansion anchor ties for tie bars. For non-rigid approaches, shoulder pavement will be as shown except omit tie bars in approach pavement.

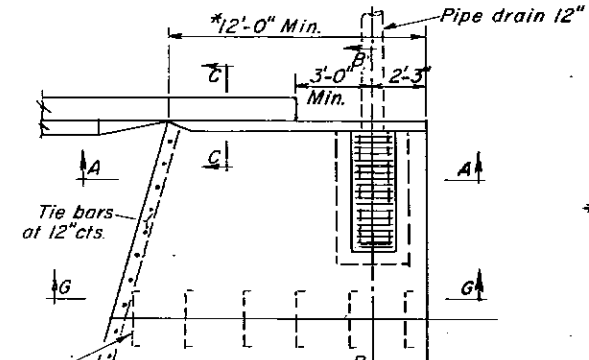
The material for Pipe Drains 12" shall be either corrugated steel or aluminum alloy pipe.

The P.C. Concrete used in the shoulder slab shall meet the requirements of Section 408 of the Standard Specifications.



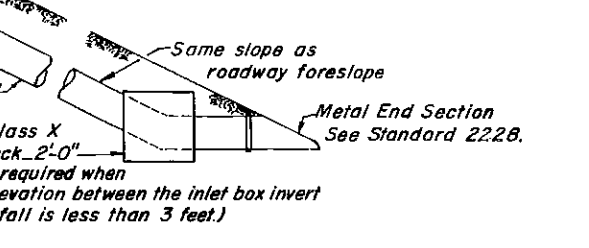
**TYPICAL DETAIL PLAN (w/o Wingwall)**

5/8" steel tie bars at 2'-6" cts. shall be in accordance with details for Bulkhead Construction Joint shown on Standard 2323.



**TYPICAL DETAIL PLAN (with Wingwall)**

5/8" steel tie bars at 2'-6" cts. shall be in accordance with details for Bulkhead Construction Joint shown on Standard 2323.



**GENERAL NOTES**

The lengths of #4 bars used in the approach shoulder pavement shall be as required to accommodate the length, width and skew of the slab.

Class X concrete or precast concrete shall be used for the inlet. Precast concrete shall be in accordance with Sections 505.01 thru 505.05 of the Standard Specifications except that the concrete strength shall be 4000 p.s.i. after 28 days.

All exposed edges of the inlet, except the upper perimeter, shall be beveled 3/4".

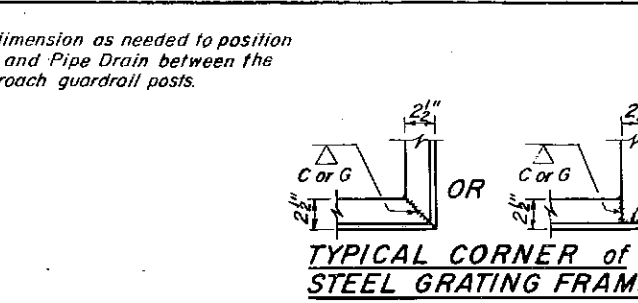
Shop drawings will not be required for precast Inlet Boxes.

A 3" deep sand bedding conforming to Article 703.01 (FA 1 or FA 2) shall be provided under full length and width of precast units, and all voids around the pipe drain entrance, both inside and outside, shall be sealed with mortar.

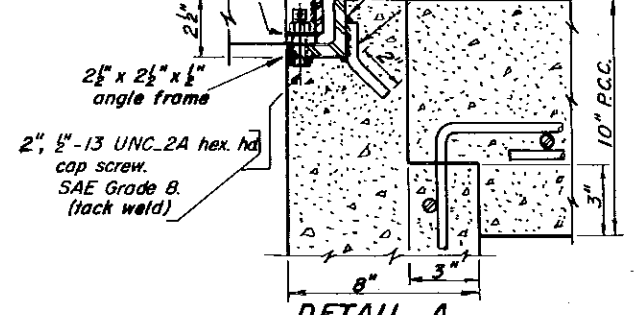
The grating shall seat firmly in the frame and steel grates shall be secured to the frame with a locking device as shown. Cast grates will not require the locking device.

Steel grating and frames shall conform to Article 710.04 of the Standard Specifications and shall be galvanized to AASHTO Specification M III after fabrication.

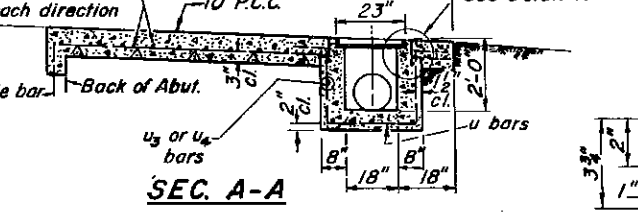
Cast grating and frames shall conform to Article 710.17 of the Standard Specifications. Cast grating and frames shall not be galvanized.



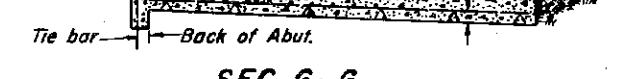
**TYPICAL CORNER OF STEEL GRATING FRAME**



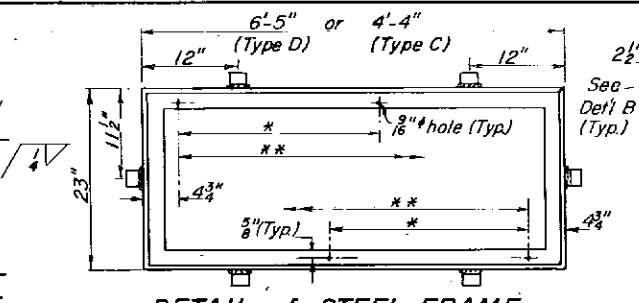
**DETAIL A**



**SEC. A-A**

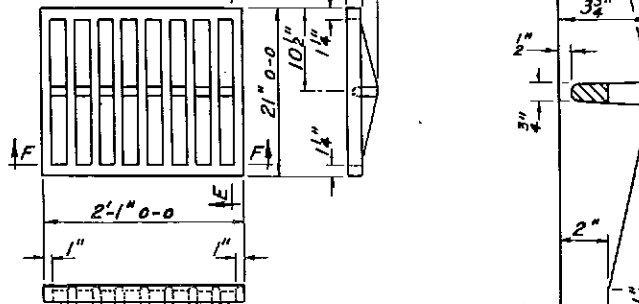


**SEC. G-G**



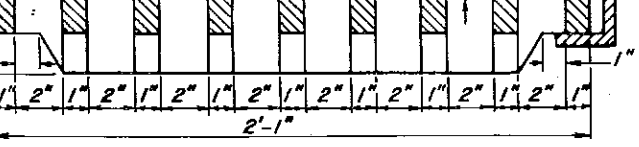
**DETAIL of STEEL FRAME**

Cast frame to have same basic dimensions.  
\* 1 space at 2'-1" for Type C  
\*\* 2 spaces at 2'-1" for Type D

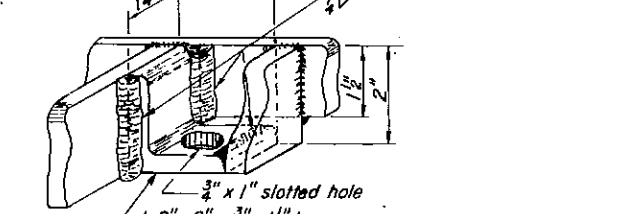


**DETAIL of CAST GRATING**

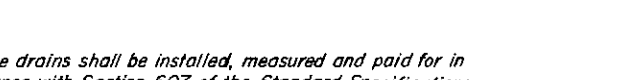
Type C requires 2 grates  
Type D requires 3 grates



**SEC. E-E**



**SEC. F-F**



**DETAIL B**

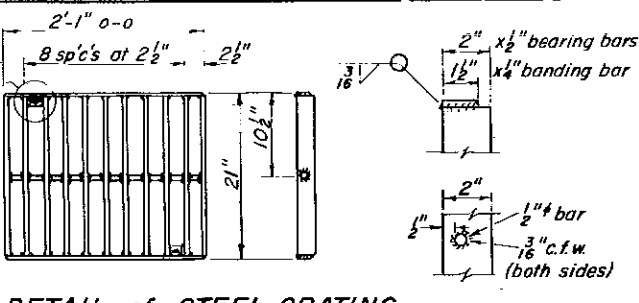
Pipe drains shall be installed, measured and paid for in accordance with Section 607 of the Standard Specifications.

Metal End Sections shall be installed, measured and paid for in accordance with Section 511 of the Standard Specifications.

Bridge approach shoulder pavement will be measured in place and paid for in square yards as P.C. CONCRETE BRIDGE APPROACH SHOULDER PAVEMENT which shall include the cost of subgrade preparation, expansion anchor ties, reinforcement and joint fillers. In computing the area for payment, a deduction will be made for the area displaced by the inlet. (1.2 Sq. Yds. Type C; 1.7 Sq. Yds. Type D)

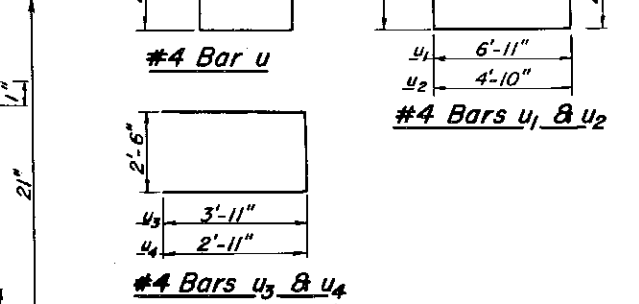
The contract unit price "Each" for TYPE D INLET BOX STANDARD 2324 or TYPE C INLET BOX STANDARD 2324, in place, shall include the frames and grating, class X or precast concrete, reinforcement bars, excavation, bedding when required, and compacted backfilling.

The contract unit price "Each" for CONCRETE THRUST BLOCKS, in place, shall include excavation and compacted backfilling.



**DETAIL of STEEL GRATING**

Type C requires 2 grates  
Type D requires 3 grates



**DETAIL of STEEL GRATING**

**Material Required for One Type D Inlet Box**

Bar	No.	Size	Length
u	8	#4	8'-5"
u1	3	#4	12'-2"
u3	4	#4	10'-4"
Concrete - Class X or Precast	Cu. Yds.		1.2
Reinf. Bars	Lbs.		100
Grating	Sq. Ft.		11.0

**Material Required for One Type C Inlet Box**

Bar	No.	Size	Length
u	6	#4	8'-5"
u2	3	#4	10'-1"
u4	4	#4	8'-4"
Concrete - Class X or Precast	Cu. Yds.		0.9
Reinf. Bars	Lbs.		80
Grating	Sq. Ft.		7.3

Illinois Department of Transportation

PASSED June 18, 1980

APPROVED June 18, 1980

ISSUED 12-1-69

**BRIDGE APPROACH SHOULDER PAVEMENT**

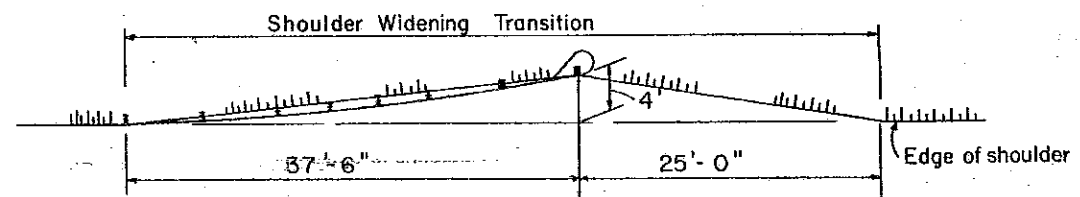
**STANDARD 2324 - 5**

(Full Size)

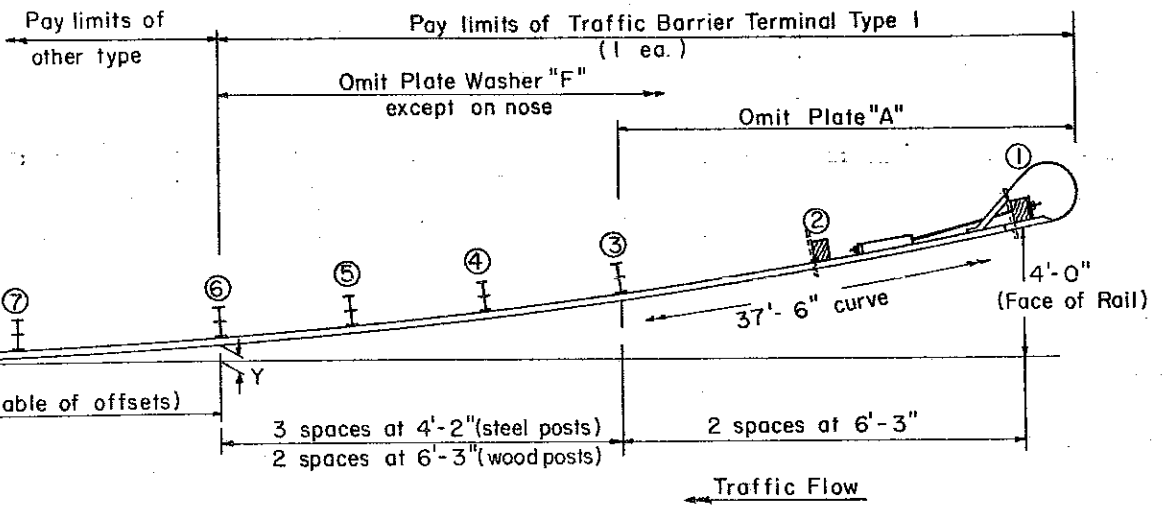
H-125e



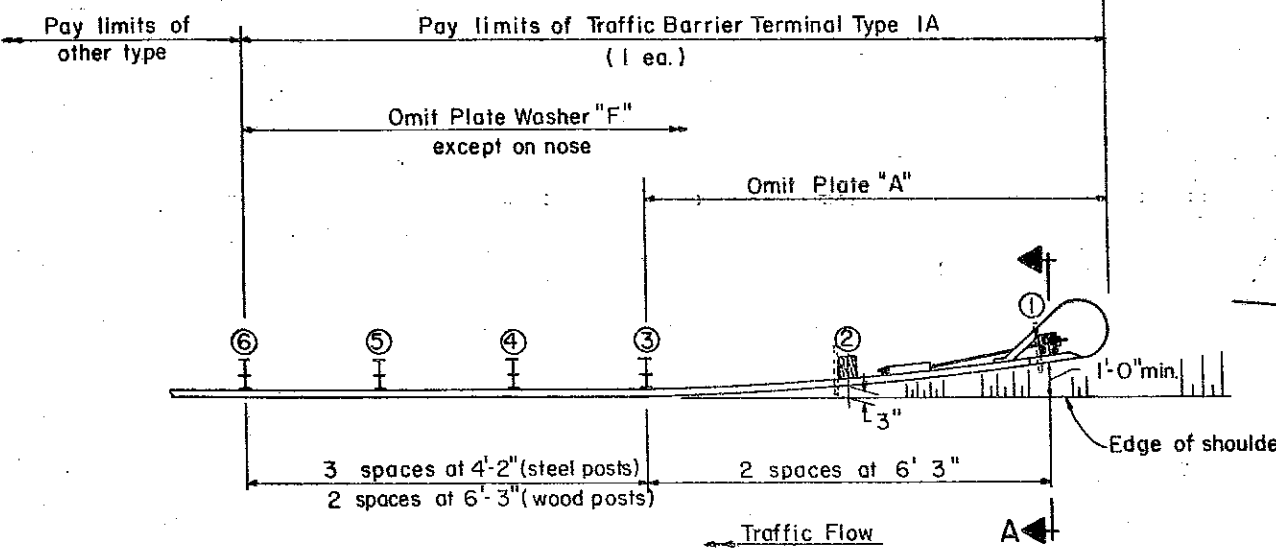
Post	X	Y
1	37.22	4.00
2	31.09	2.79
3	24.92	1.79
4	20.79	1.25
5	16.64	0.80
6	12.49	0.45
7	6.25	0.11
8	0.00	0.00



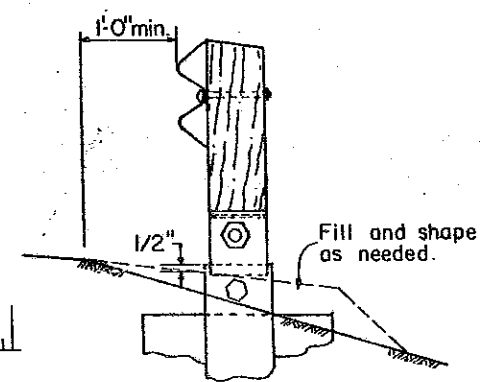
**NOTE**  
If the surface upon which the barrier is to be set is 10:1 or flatter, the Type 1A Terminal should be flared as much as possible, but should not exceed the offsets provided for the Type 1 Terminal.



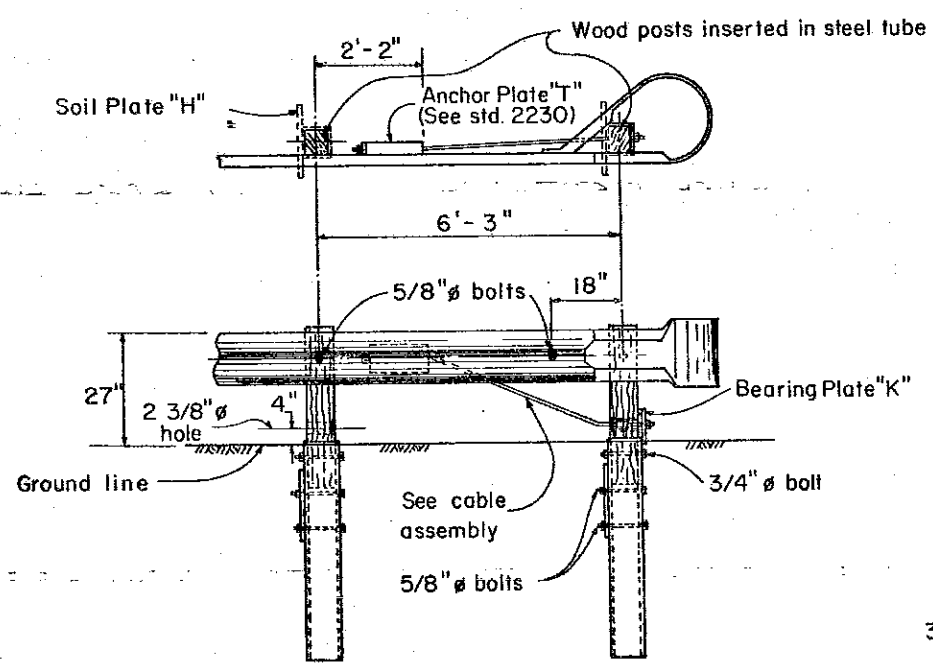
**PLAN TYPE I**



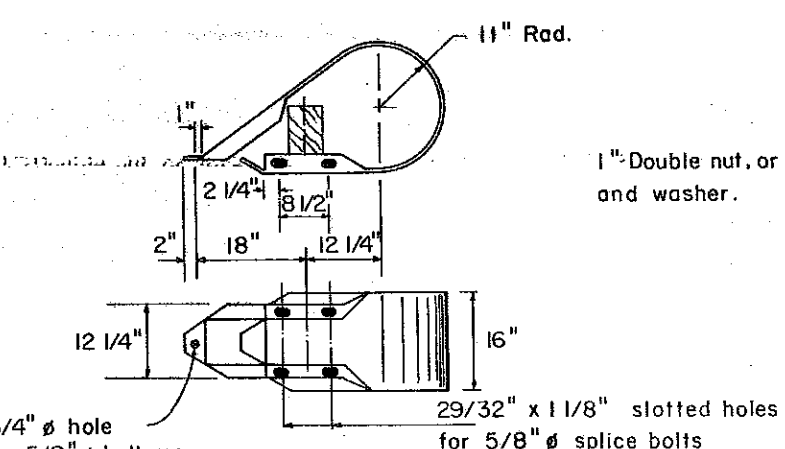
**PLAN TYPE 1A**



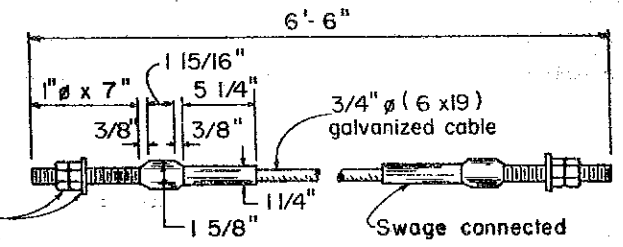
**SECTION A - A**



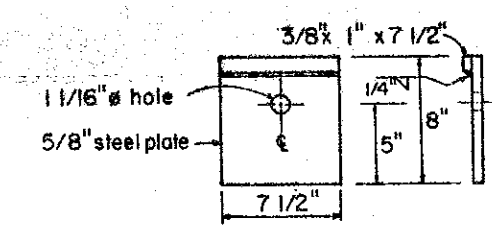
**WOOD BREAKAWAY POSTS TUBULAR STEEL FOUNDATIONS**



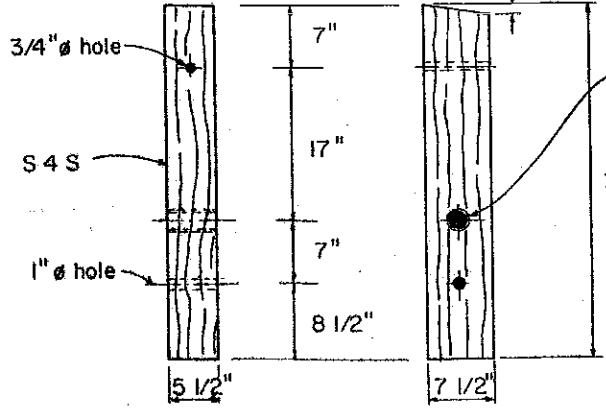
**NOSE (1 ea.)**



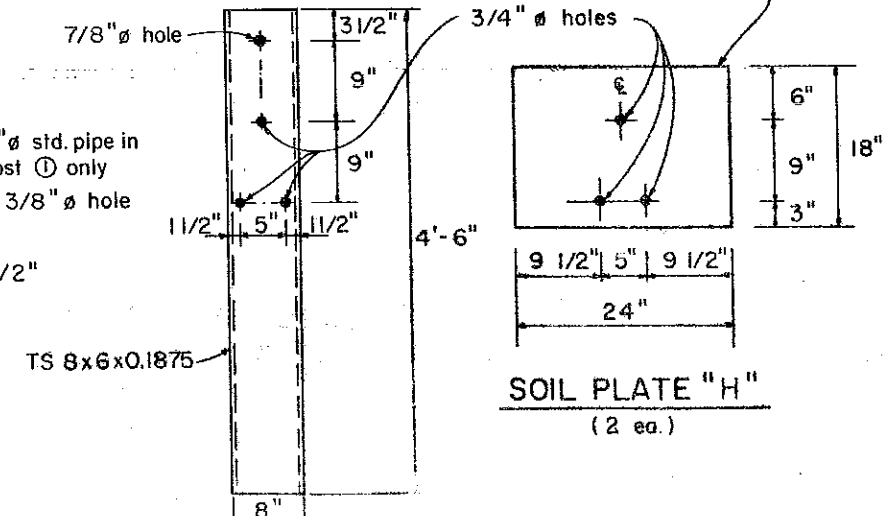
**CABLE ASSEMBLY (1 ea.)**  
(40,000 lbs. min. breaking strength)  
Tighten cable to taut tension.



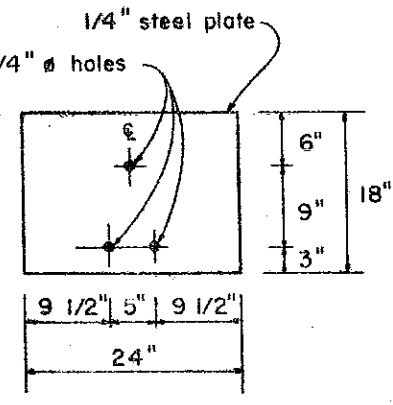
**BEARING PLATE "K" (1 ea.)**



**WOOD BREAKAWAY POST (2 ea.)**



**STEEL TUBE (2 ea.)**



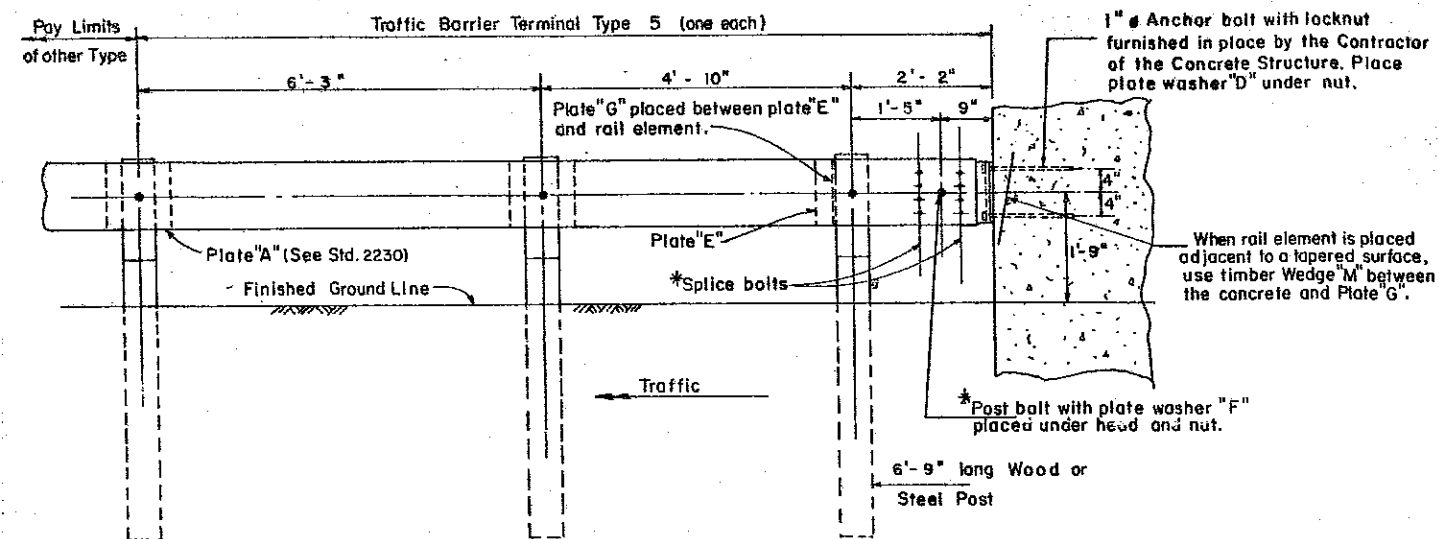
**SOIL PLATE "H" (2 ea.)**

**GENERAL NOTES:**

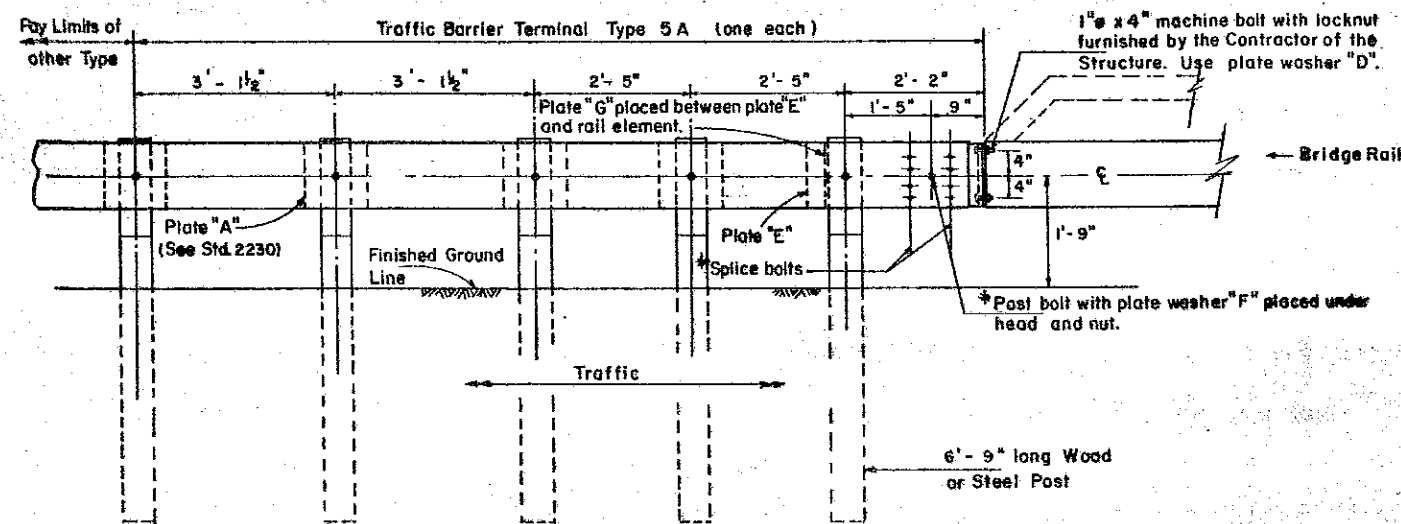
See Standard 2230 for details of guard rail not shown.  
All steel parts shall be galvanized after fabrication.  
Posts at locations 1 & 2 shall be wood breakaway posts. Posts other than 1 & 2 may be either standard wood posts or steel posts, at the option of the Contractor. If standard wood posts are used, one post shall be located midway between and in lieu of posts 4 & 5. For Terminal Type 1, the offset (Y) for this post shall be 1.00 foot.  
The wood breakaway posts shall be treated and conform to the requirements of Art. 711.06 of the Standard Specifications.  
A two-piece assembly may be substituted for the one-piece nose shown above.  
Hollow structural tubing shall conform to the requirements of ASTM A-500 grade B or A-501.

**TRAFFIC BARRIER  
TERMINAL TYPE I & 1A  
STANDARD 2336 - 2**

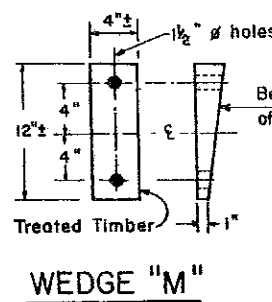
Illinois Department of Transportation  
DESIGNED JULY 17 1980  
PROVED JULY 17 1980  
D.S. Hamming  
Engineer of Design Operations  
D. Moore  
Engineer of Design



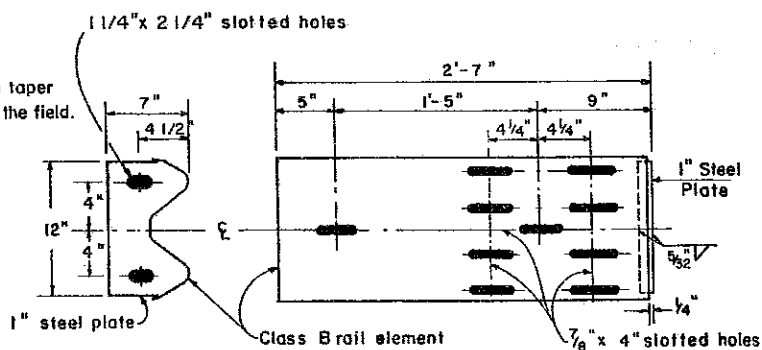
**TRAFFIC BARRIER TERMINAL TYPE 5**  
ANCHORING RAIL ELEMENT TO CONCRETE BRIDGE PARAPET



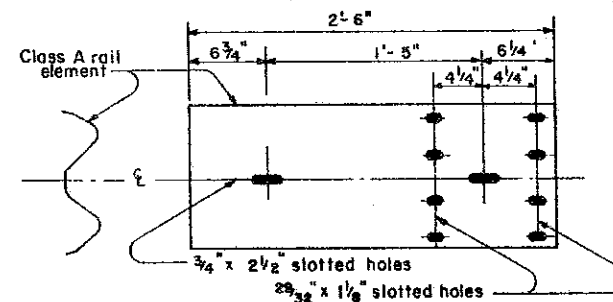
**TRAFFIC BARRIER TERMINAL TYPE 5A**  
ANCHORING RAIL ELEMENT TO TYPE "S", "S-I", "T" or "T-I" BRIDGE RAIL



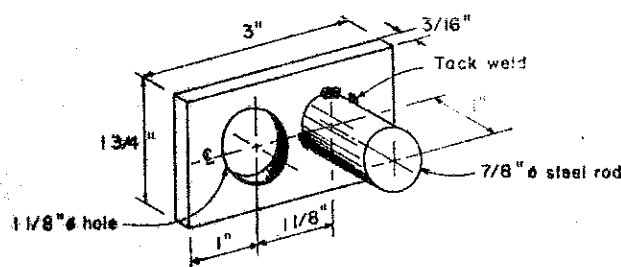
**WEDGE "M"**



**PLATE "G"**



**PLATE "E"**



**PLATE WASHER "D"**

**NOTES:**

Install the face of the guardrail flush with the face of the bridge rail or parapet. Install plate washer "D" so that the 1" projection fills the remainder of the slotted holes in the 1" end plate on plate "G" after the 1"  $\varnothing$  bolts are in place.

\*Bolt shall be provided with lock nut or double nut and shall be tightened only to a point that will allow plate "G" to be free to move when an expansion joint exists below the connector.

See Standard 2230 for details of guardrail not shown.

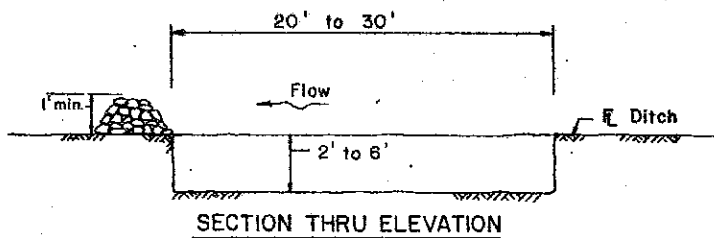
Illinois Department of Transportation  
 SED Aug. 11 1980  
 Engineer of Design Operations  
 APPROVED Aug. 11 1980  
 Engineer of Design

**TRAFFIC BARRIER TERMINAL**  
**TYPE 5 & 5A**  
**STANDARD 2340 - 3**

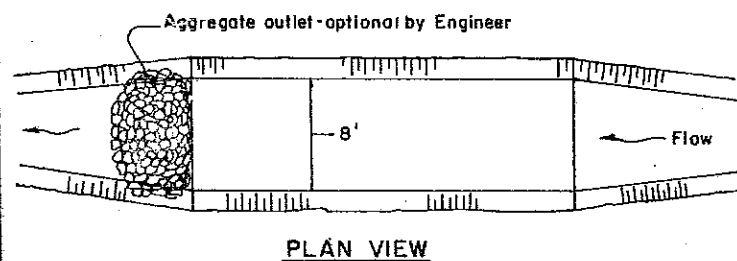
(Full Size) D.W.W. Sr.

F-3.29 c

### SEDIMENT BASIN

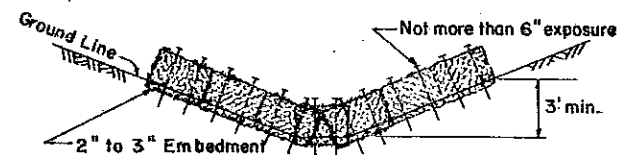
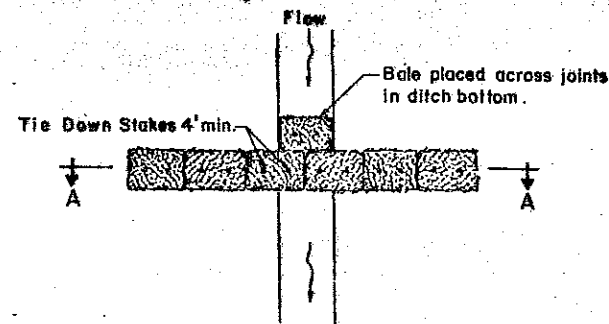


The performance of the basin will improve if put into a series.



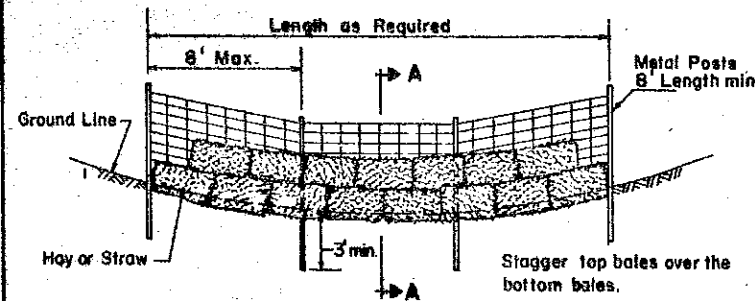
The long dimension should be parallel with the direction of the flow. Accumulated silt shall be removed anytime the basins become 75% filled.

### HAY OR STRAW DITCH CHECK

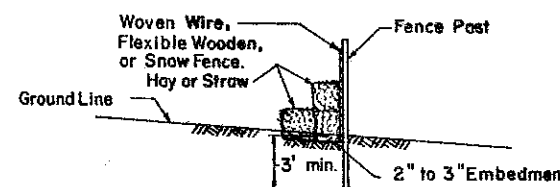


SECTION A-A

### HAY OR STRAW DITCH CHECK - TWO BALES HIGH

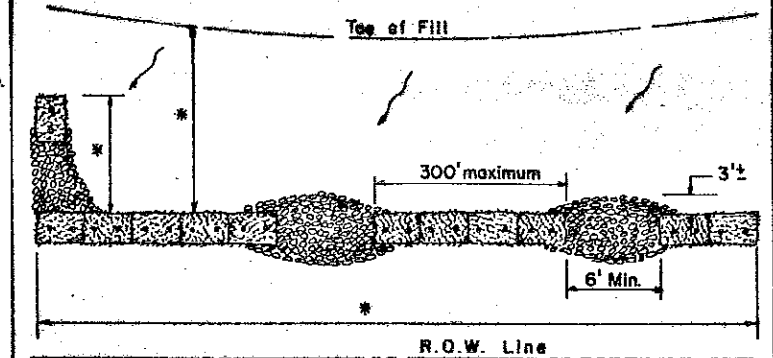


ELEVATION VIEW



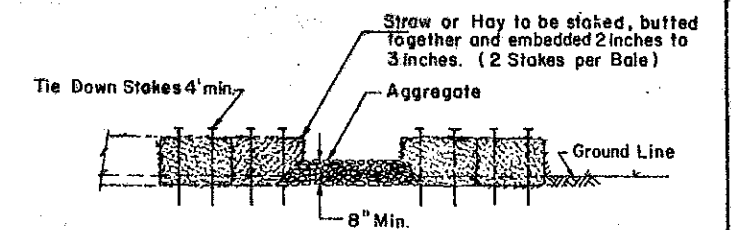
SECTION A-A

### HAY OR STRAW EROSION CHECK STONE OUTLETS



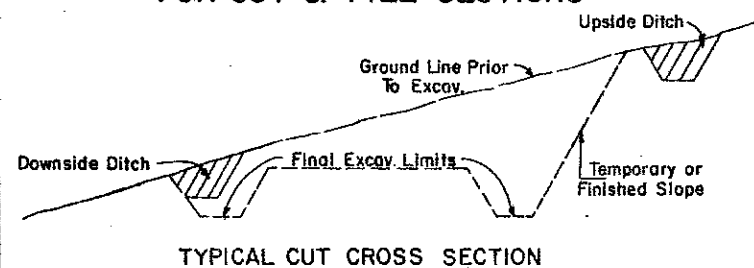
\* To be constructed as required

PLAN VIEW

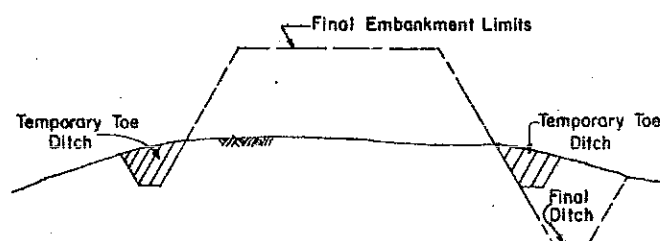


ELEVATION

### TEMPORARY DITCHES FOR CUT & FILL SECTIONS



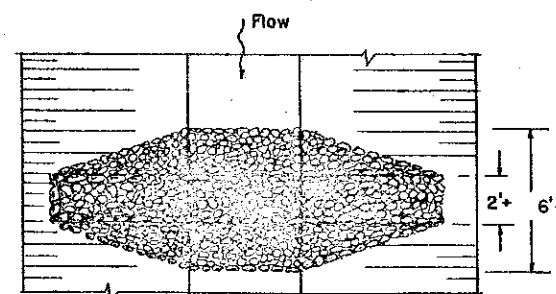
TYPICAL CUT CROSS SECTION



TYPICAL FILL CROSS SECTION

Temporary Ditches or the final ditch grades included in the plans shall be excavated at the earliest opportunity during construction in order to control runoff from the embankment or cut section per Art. 202.06 of the Standard Specifications. Some means of trapping siltation should be provided at the outflow of these ditch systems.

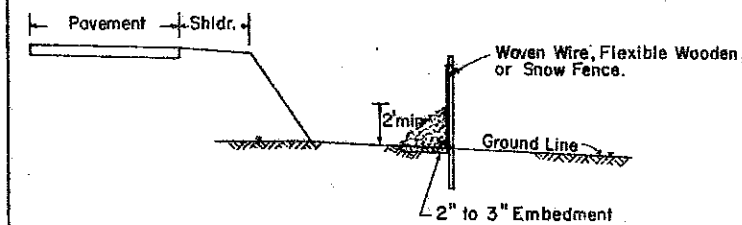
### AGGREGATE DITCH CHECK



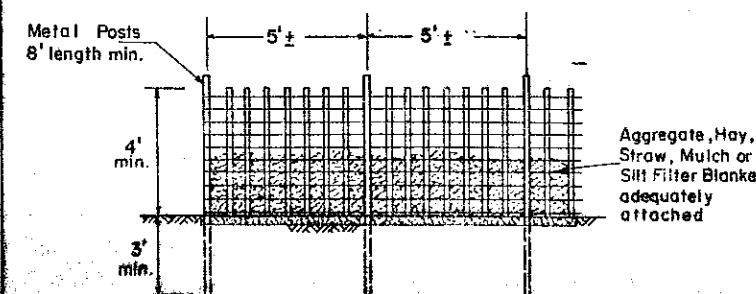
To be constructed by depositing material and shaping in a manner approved by the Engineer.

If the ditch check is within the clear zone and the road is open to traffic, the traffic approach slope of the aggregate shall be graded to 4:1.

### MULCH BARRIER



SIDE ELEVATION VIEW



FRONT ELEVATION VIEW

### GENERAL NOTES

Actual configuration and location of Temporary Erosion Control Systems shall be as shown on the plans or as directed by the Engineer.

Ditch Checks and Sediment Basins should be constructed at appropriate intervals along the waterway to be effective.

Where more than one row of bales are used, stagger bales to cover joints.

Where bales are shown staked, a minimum of two stakes per bale shall be used.

The Temporary Erosion Control Systems installed by the Contractor shall be properly maintained as directed by the Engineer to control siltation at all times during the life of the contract.

All salvageable temporary erosion control items shall be removed and become the property of the Contractor at the completion of the contract.

Existing R.O.W. fence may be utilized if such location is desired with use of Mulch Barrier or Hay or Straw Ditch Check - Two Bales High.

## TEMPORARY EROSION CONTROL SYSTEMS

STANDARD 2381

Full Size D.W. Sr.

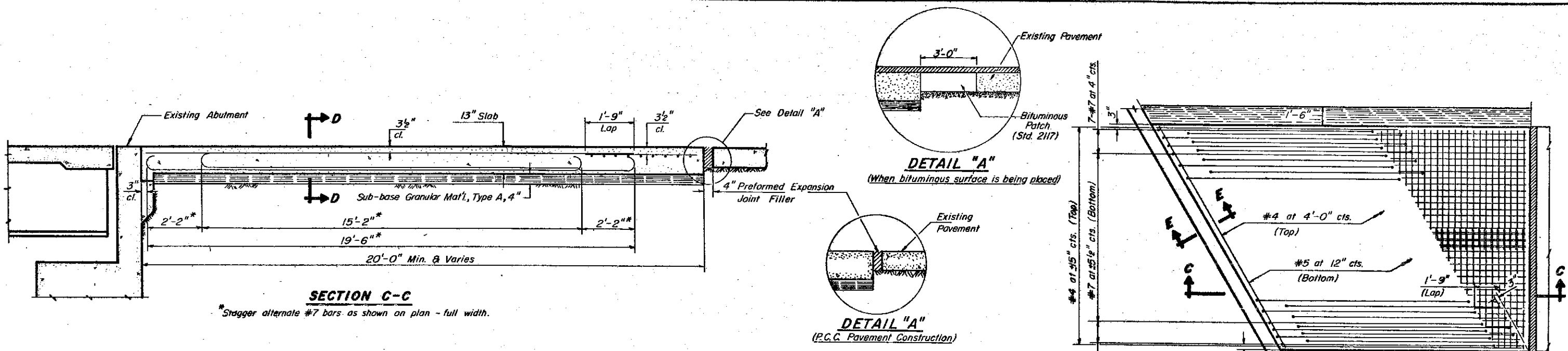
Illinois Department of Transportation

PASSED *[Signature]* 1979  
 Engineer of Design Operations

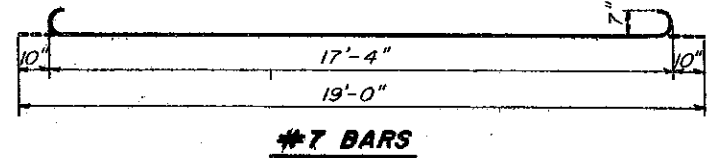
APPROVED *[Signature]* 1979  
 Engineer of Design

ISSUED 1-6-79

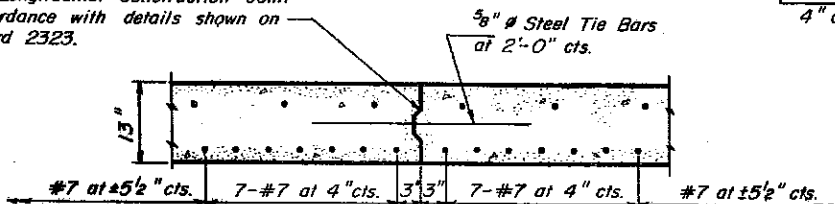
A-12.25



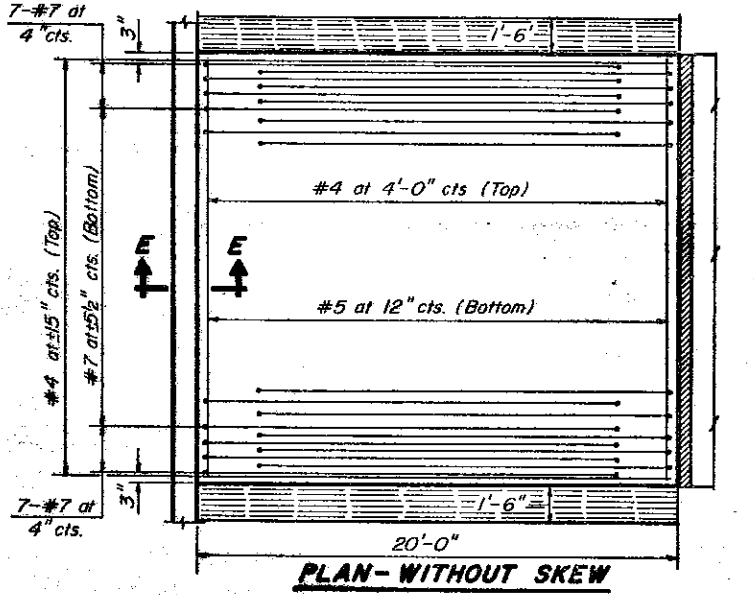
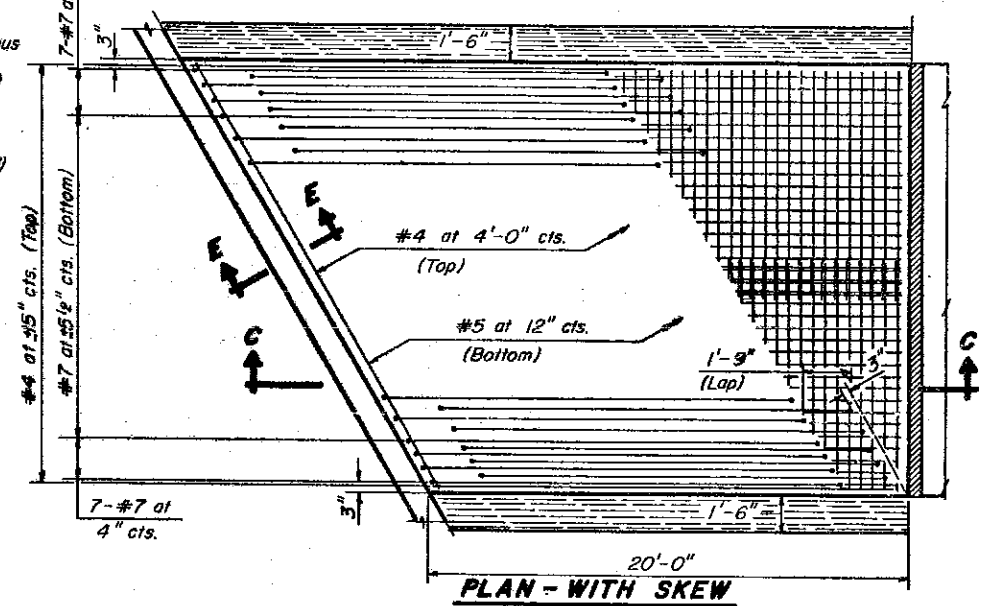
\*Stagger alternate #7 bars as shown on plan - full width.



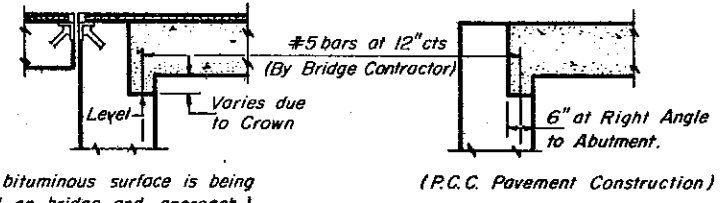
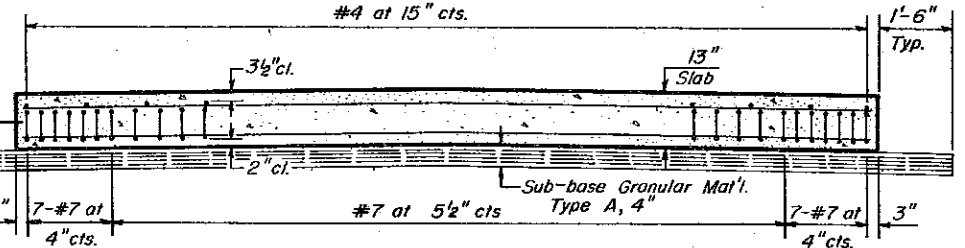
Keyed Longitudinal Construction Joint in accordance with details shown on Standard 2323.



As approved by the Engineer, the Contractor may elect to reduce the widths of pour by use of the Optional Longitudinal Construction Joint shown. Joints shall be located at the edge of a traffic lane.



When the road plans show curb and gutter, gutter, or bridge approach shoulder pavement adjacent to approach slabs, place 1/2" ø steel tie bars at 2'-6" centers in accordance with the detail for Bulkhead Longitudinal Construction Joint shown on Standard 2323. Cost of the tie bars will be included in the contract unit price for the adjacent item. Transitions for curb and gutter or gutter shall be as shown on the plans.



(When bituminous surface is being placed on bridge and approach.)

(P.C.C. Pavement Construction)

**Notes:**  
 For skews of less than 10° omit wire fabric. For skews of 10° or more use Welded Wire Fabric, 6"x6"-W5.5 x W5.5, placed 3 1/2" below top of slab. Expanded Metal weighing not less than 78 Pounds per 100 Sq. Ft. or a welded bar mat weighing not less than 78 Pounds per 100 Sq. Ft. having members of equal size in both directions and spaced not over 8" apart may be used instead of the Welded Wire Fabric, 6"x6"-W5.5 x W5.5, provided the expanded metal or bar mat is furnished at no additional cost to the State. Reinforcement bars shall conform to the requirements of A.A.S.H.T.O. M 31 or M 53, Grade 60.

**DESIGN STRESSES**

$f_y = 60,000$  p.s.i.  
 $f'_c = 3500$  psi  
 $n = 8.5$

**GENERAL NOTES**

The cost of tie bars, expansion joint filler, sub-base, welded wire fabric and bituminous prime when required shall be considered as included in the unit cost of the Bridge Approach Pavement.  
 Preformed Expansion Joint Filler shall conform to Section 715 of the Standard Specifications. Width of Bridge Approach Slab shall be determined before the reinforcement bars are fabricated.  
 The bituminous patch, when required, will be paid for in accordance with Section 620 of the Standard Specifications.

Illinois Department of Transportation

PASSED Sept 4, 1979  
*Carl E. Thurman*  
 Engineer of Bridge and Traffic Structures

APPROVED Sept 4, 1979  
*Thomas A. Bryant*  
 Engineer of Design

ISSUED 3-9-79

**BRIDGE APPROACH PAVEMENT**

Sheet 1 of 2

**STANDARD 2382-1**

H-5.30a

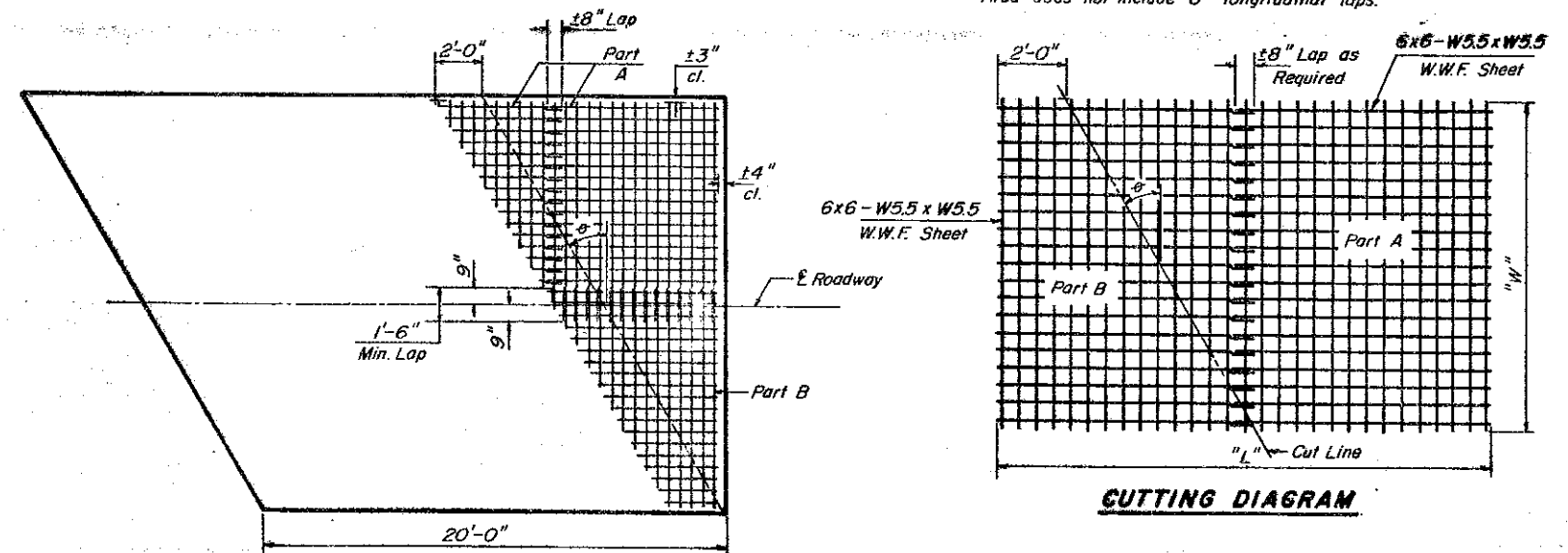
Note: The notation for the number of bars given as "4x2" indicates 4 lines of bars with 2 lengths per line. Min. bar lap = 1'-3"

Skew Angle Degrees	Bottom Reinforcement			Top Reinforcement			Reinforcement (Total Weight) (Pounds)	Slab Area (Sq.Yds.)	6x6-W5.5xW5.5 W.W.F.	
	Transverse #5	Longitudinal #7	No. Required	Transverse #4	Longitudinal #4	No. Required			Dimensions L(11)xW(11)	Area* (Sq.Yds.)
<b>18'-0" PAVEMENT</b>										
0	20	17'-6"		6	17'-6"		2300	40.0		
5	20	17'-7"		6	17'-7"		2302	41.6		
10	20	17'-9"		6	17'-9"		2306	43.2	7'-0" x 9'-6"	7.4
15	20	18'-1"		5	18'-1"		2303	44.8	8'-6" x 9'-6"	9.0
20	19	18'-8"		5	18'-8"		2297	46.6	10'-6" x 9'-6"	11.1
25	18	19'-4"		5	19'-4"		2292	48.4	12'-3" x 9'-6"	12.9
30	18	20'-3"		5	20'-3"		2313	50.4	14'-3" x 9'-6"	15.0
35	17	21'-4"		5	21'-4"		2315	52.6	16'-6" x 9'-6"	17.4
40	16	22'-10"		4	22'-10"		2307	55.1	19'-0" x 9'-6"	20.1
45	14	24'-9"		4	24'-9"		2293	58.0	21'-9" x 9'-6"	23.0
50	13	27'-3"		4	27'-3"		2308	61.5	25'-6" x 9'-6"	26.9
55	12x2	15'-9"		3x2	15'-9"		2322	65.7	29'-9" x 9'-6"	31.4
60	10x2	18'-0"		3x2	18'-0"		2313	71.2	35'-3" x 9'-6"	37.2
<b>24'-0" PAVEMENT</b>										
0	20	23'-6"		6	23'-6"		3019	53.3		
5	20	23'-7"		6	23'-7"		3021	56.1		
10	20	23'-10"		6	23'-10"		3028	58.9	8'-0" x 12'-6"	11.1
15	20	24'-4"		5	24'-4"		3024	61.9	10'-3" x 12'-6"	14.2
20	19	25'-0"		5	25'-0"		3014	64.9	12'-6" x 12'-6"	17.4
25	18	25'-11"		5	25'-11"		3008	68.2	15'-0" x 12'-6"	20.8
30	18	27'-2"		5	27'-2"		3036	71.8	17'-9" x 12'-6"	24.7
35	17	28'-8"		5	28'-8"		3039	75.7	20'-9" x 12'-6"	28.8
40	16x2	16'-0"		4x2	16'-0"		3055	80.2	24'-0" x 12'-6"	33.3
45	14x2	17'-3"		4x2	17'-3"		3031	85.3	27'-6" x 12'-6"	38.2
50	13x2	18'-10"		4x2	18'-10"		3046	91.4	32'-9" x 12'-6"	45.5
55	12x2	21'-1"		3x2	21'-1"		3047	99.0	38'-3" x 12'-6"	53.1
60	10x2	24'-0"		3x2	24'-0"		3032	108.7	45'-6" x 12'-6"	63.2

\*Area does not include 8" longitudinal laps.  
W.W.F.=Welded Wire Fabric

Skew Angle Degrees	Bottom Reinforcement			Top Reinforcement			Reinforcement (Total Weight) (Pounds)	Slab Area (Sq.Yds.)	6x6-W5.5xW5.5 W.W.F.	
	Transverse #5	Longitudinal #7	No. Required	Transverse #4	Longitudinal #4	No. Required			Dimensions L(11)xW(11)	Area* (Sq.Yds.)
<b>26'-0" PAVEMENT</b>										
0	20	25'-6"		6	25'-6"		3238	57.8		
5	20	25'-7"		6	25'-7"		3240	61.1		
10	20	25'-11"		6	25'-11"		3249	64.4	8'-6" x 13'-6"	12.8
15	20	26'-5"		5	26'-5"		3243	67.8	11'-0" x 13'-6"	16.5
20	19	27'-2"		5	27'-2"		3233	71.4	13'-6" x 13'-6"	20.3
25	18	28'-2"		5	28'-2"		3227	75.3	16'-3" x 13'-6"	24.4
30	18x2	15'-3"		5x2	15'-3"		3278	79.5	19'-0" x 13'-6"	28.5
35	17x2	16'-1"		5x2	16'-1"		3282	84.1	22'-3" x 13'-6"	33.4
40	16x2	17'-2"		4x2	17'-2"		3269	89.3	25'-9" x 13'-6"	38.6
45	14x2	18'-6"		4x2	18'-6"		3243	95.3	30'-0" x 13'-6"	45.0
50	13x2	20'-4"		4x2	20'-4"		3264	102.5	35'-0" x 13'-6"	52.5
55	12x2	22'-9"		3x2	22'-9"		3265	111.4	41'-3" x 13'-6"	61.9
60	10x2	26'-0"		3x2	26'-0"		3251	122.8	49'-0" x 13'-6"	73.5
<b>36'-0" PAVEMENT</b>										
0	20x2	18'-3"		6x2	18'-3"		4471	80.0		
5	20x2	18'-4"		6x2	18'-4"		4475	86.3		
10	20x2	18'-6"		6x2	18'-6"		4483	92.7	10'-0" x 18'-6"	20.6
15	20x2	18'-10"		5x2	18'-10"		4475	99.3	13'-6" x 18'-6"	27.7
20	19x2	19'-5"		5x2	19'-5"		4462	106.2	17'-0" x 18'-6"	34.9
25	18x2	20'-2"		5x2	20'-2"		4455	113.6	20'-6" x 18'-6"	42.1
30	18x2	21'-0"		5x2	21'-0"		4492	121.6	24'-9" x 18'-6"	50.8
35	17x2	22'-3"		5x2	22'-3"		4501	130.4	29'-0" x 18'-6"	59.6
40	16x2	23'-9"		4x2	23'-9"		4483	140.4	33'-9" x 18'-6"	69.4
45	14x2	25'-8"		4x2	25'-8"		4450	152.0	39'-6" x 18'-6"	81.2
50	13x2	28'-2"		4x2	28'-2"		4477	165.8	46'-6" x 18'-6"	95.6
55	12x3	21'-4"		3x3	21'-4"		4492	182.8	55'-0" x 18'-6"	113.0
60	10x3	24'-4"		3x3	24'-4"		4471	204.7	65'-9" x 18'-6"	135.1

\*Area does not include 8" longitudinal laps.



**PLACEMENT OF 6x6-W5.5xW5.5**  
W.W.F. only required on skews  $\geq 10^\circ$

**BRIDGE APPROACH PAVEMENT**

Sheet 2 of 2

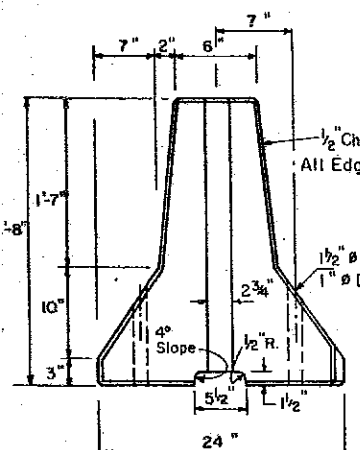
**STANDARD 2382-1**

Illinois Department of Transportation

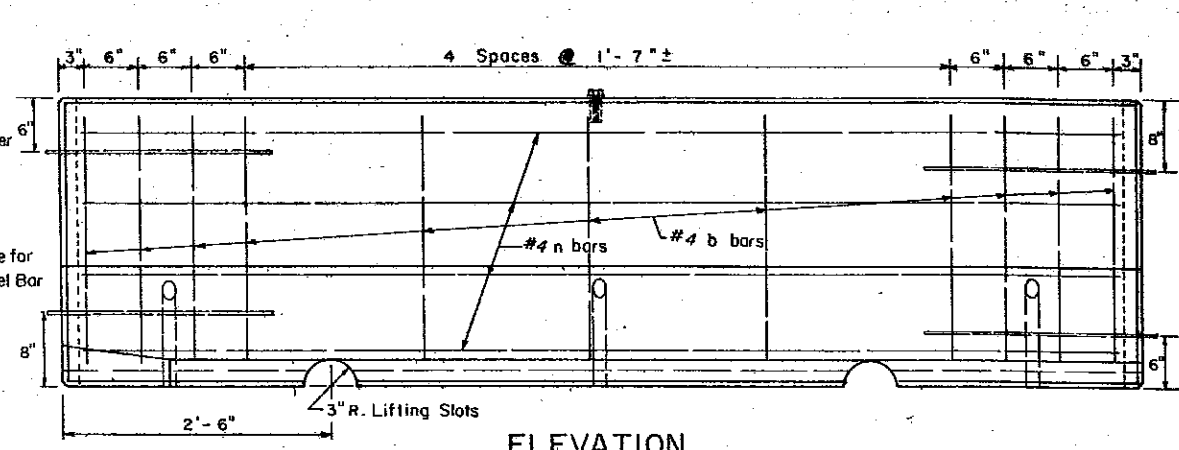
PASSED Sept 4 1979  
*John J. Thompson*  
Engineer of Bridge and Traffic Structures

APPROVED Sept 4 1979  
*Thomas A. Smith*  
Engineer of Design

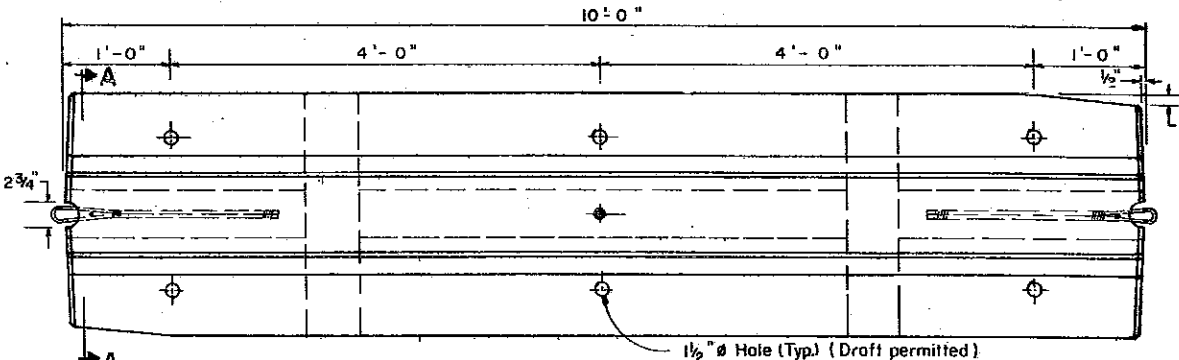
H-5-31a



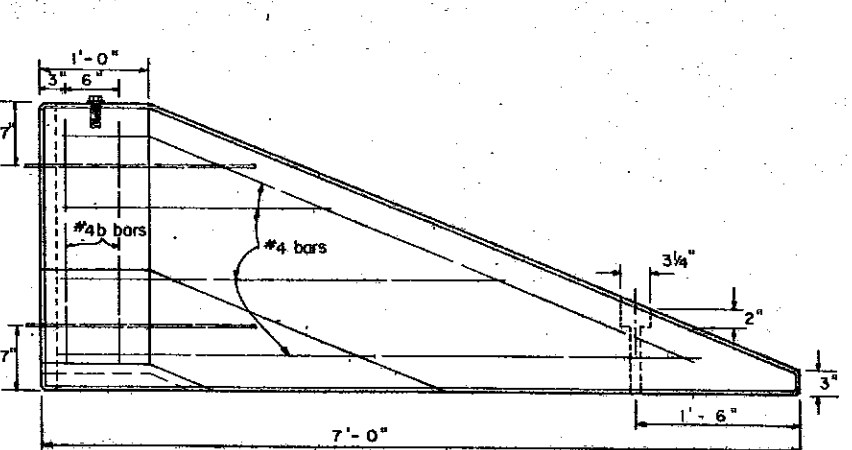
**END VIEW**



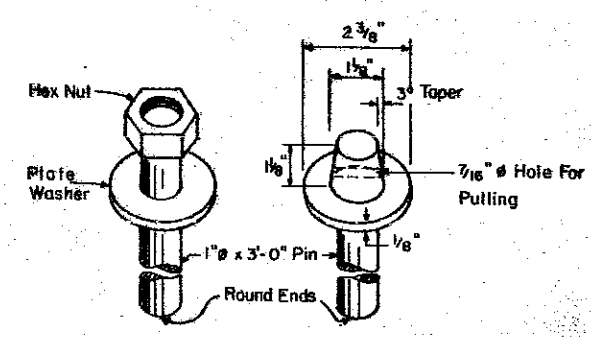
**ELEVATION**



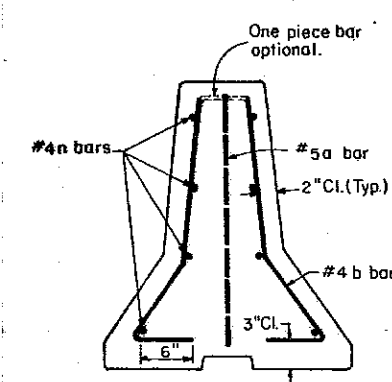
**PLAN**



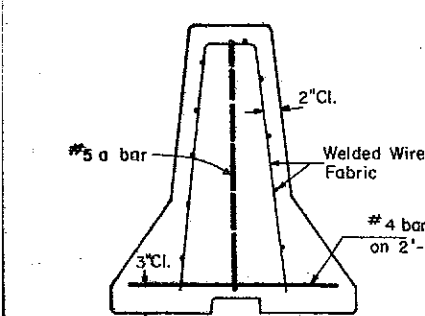
**TERMINAL SECTION**



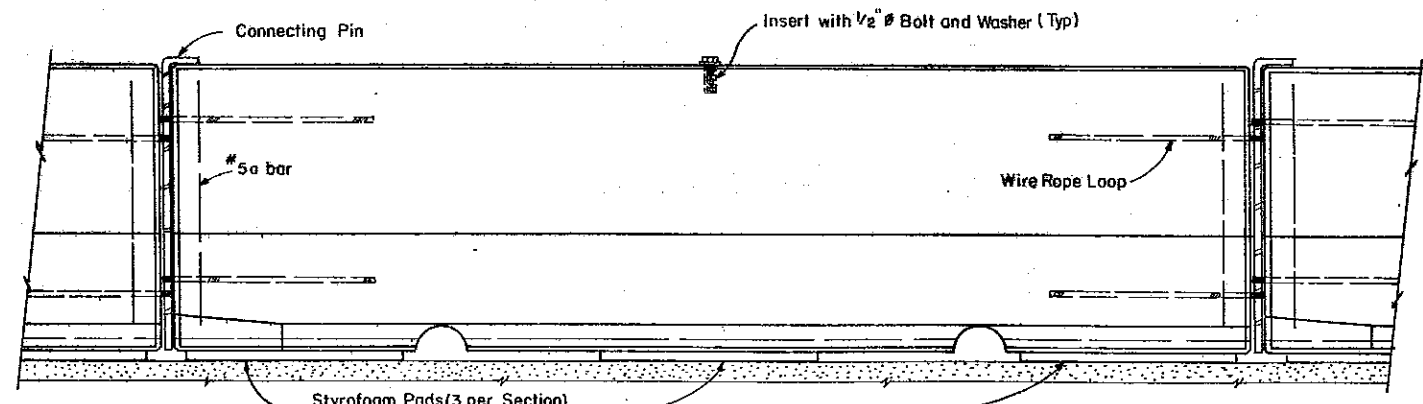
**ALTERNATE DRIFT PINS**



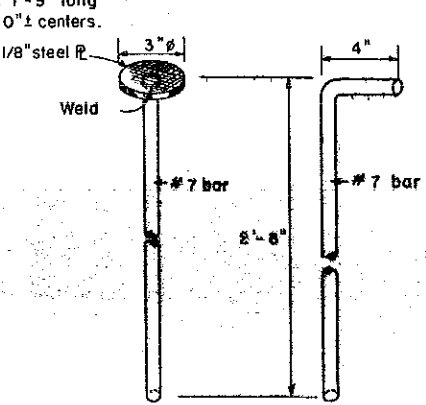
**SECTION A-A (Showing Bar Reinforcement)**



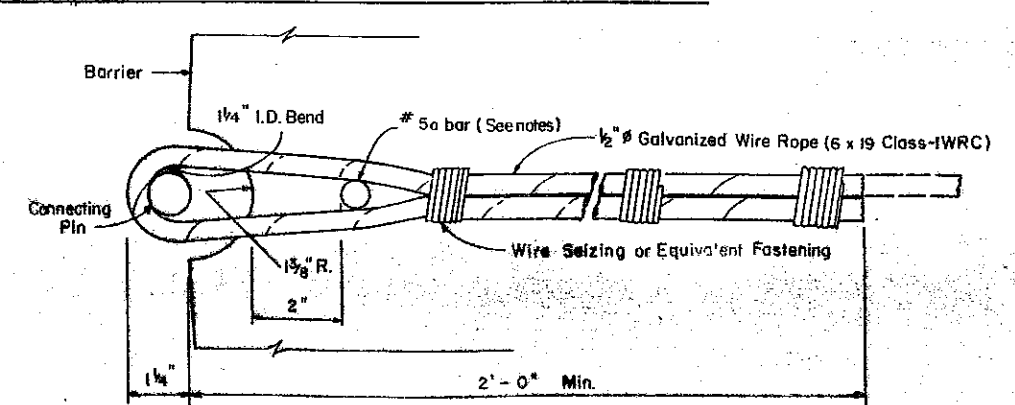
**SECTION A-A (Showing Alternate Welded Wire Reinforcement)**



**TYPICAL INSTALLATION WITH STYROFOAM PADS**



**ALTERNATE CONNECTING PINS**



**WIRE ROPE LOOP DETAIL (20,000 lbs. min. breaking strength)**

**GENERAL NOTES**

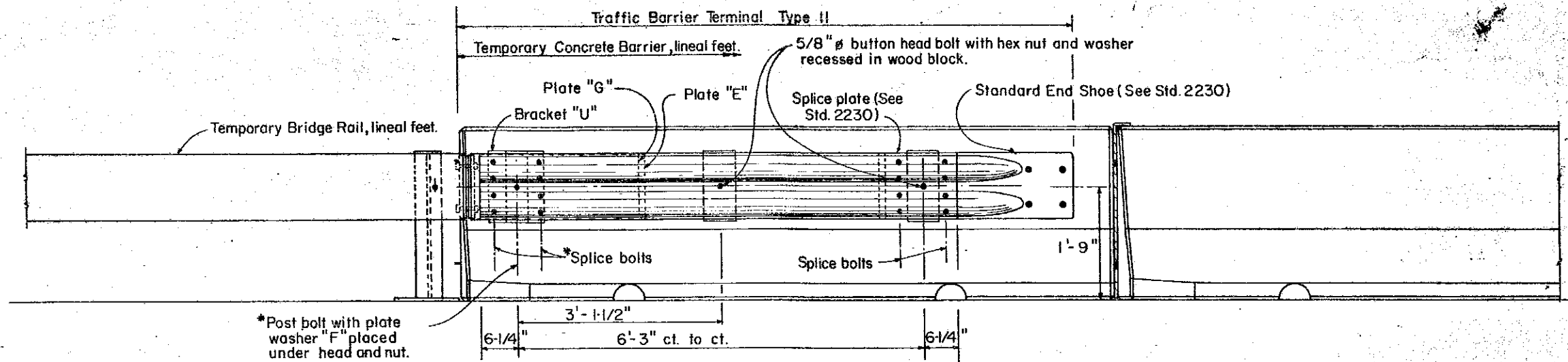
- Barrier units shall be pinned one to another in continuous smooth line at the exact locations provided by the Engineer.
- The wall units shall be reinforced with either bar reinforcement or welded wire fabric. Welded Wire Fabric shall be 6x6-W4xW4, weighing approximately 58lbs. per 100 sq. ft., conforming to the requirements of AASHTO M-55.
- Barrier units placed on rigid pavement or median surfaces shall be seated with styrofoam pads. Units placed on flexible pavement or shoulders shall be secured with dowel bars. Dowel bars shall be one inch in diameter, at least 12 inches long, shall be embedded at least 8 inches into base material, and shall not project above the outer surface of the barrier. After pin removal all holes in the base shall be grout filled.
- Alternate lifting devices meeting the approval of the Engineer may be substituted for the lifting slots shown.
- When the Terminal Section is used, the hex nut on the drift pin shall be threaded half way onto the pin and tack welded, or a coupling nut tightened sufficiently to prevent loosening may be used. Fill nut with grease to exclude contaminants.
- Inserts for 1/2 inch bolts shall be capable of 3000 lbs. pull out strength and shall be furnished with a galvanized bolt and washer.
- The #5 bar may be omitted if 2 continuous wire ropes are substituted for the 4 wire rope loops shown. The continuous ropes shall be looped and fastened on each end as shown in the wire rope loop detail.

Illinois Department of Transportation  
 PASSED Feb. 5, 1980  
 APPROVED Feb. 5, 1980  
 ISSUED 6-18-79

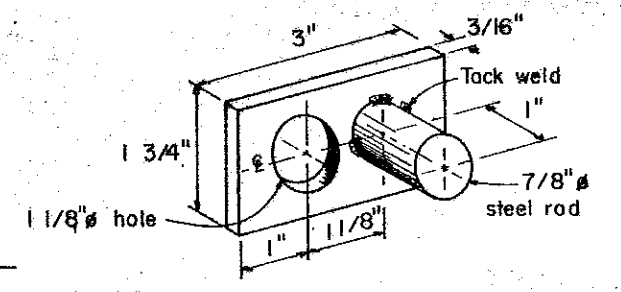
**TEMPORARY CONCRETE BARRIER**  
**STANDARD 2383 - 1**  
 (Full Size) D.W.W. Sr.

Not to scale

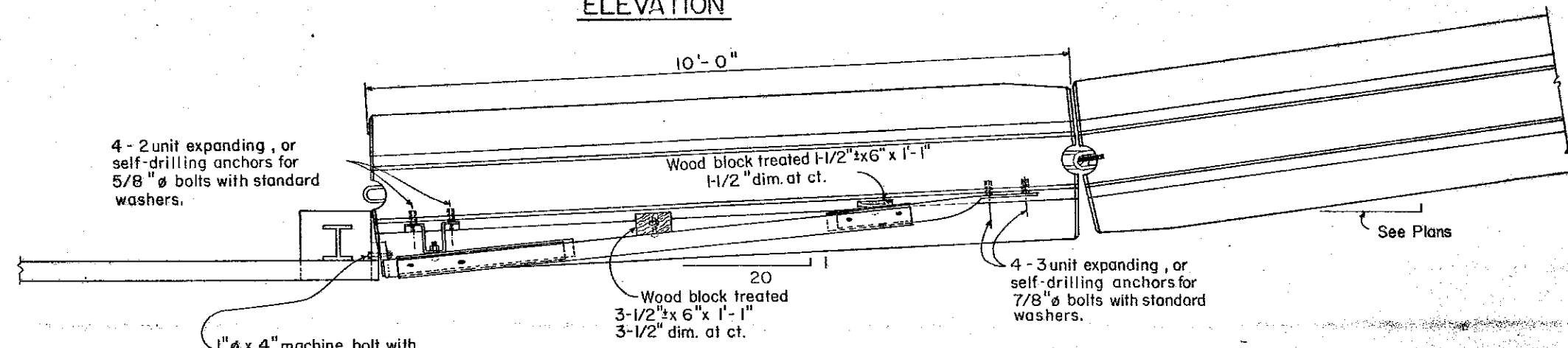
F-7.05 D



**ELEVATION**



**PLATE WASHER "D"**



**PLAN**

**GENERAL NOTES:**

For details of guardrail not shown, see Standard 2230.

Install the face of the guardrail flush with the face of the temporary bridge rail. Install plate washer "D" so that the 1" projection fills the remainder of the slotted holes in the 1" end plate on plate "G" after the 1" diameter bolts are in place.

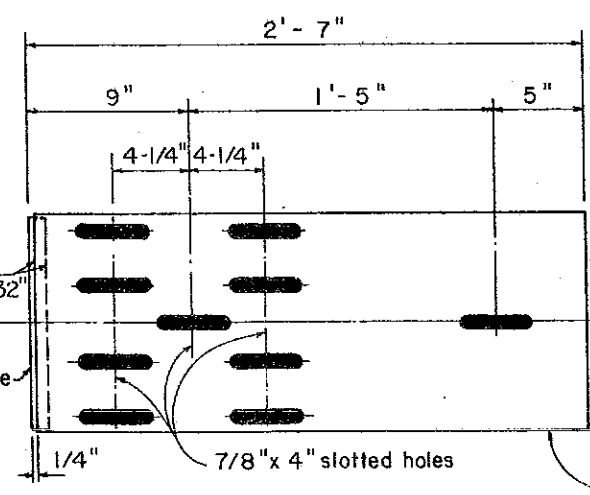
The Contractor shall be required to load test 10% of the expansion anchor bolts in place in the presence of the Engineer. The minimum test load shall be 8000 pounds for 7/8" diameter bolts and 3000 pounds for 5/8" diameter bolts in direct pull. For each anchor that fails to pass the minimum test load requirements, two (2) more anchor bolts, picked by the Engineer shall be tested. Each anchor bolt tested that fails to meet the test load requirement shall be reset or removed and the hole drilled deeper. After the anchor bolt is reset, the new setting shall be retested.

Follow structural tubing for brackets shall conform to the requirements of ASTM A-500 Grade B or A-501 Structural Steel Tubing.

\*Bolts shall be provided with a lock nut or double nut and shall be tightened only to a point that will allow plate "G" to be free to move.

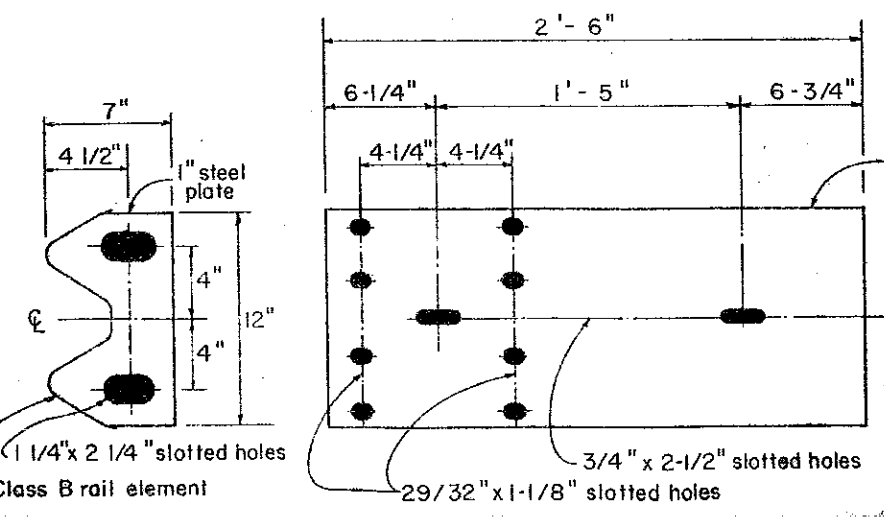
The contract unit price bid for TRAFFIC BARRIER TERMINAL TYPE 11 will not include the Temporary Concrete Barrier.

The cost of any relocation of the Traffic Barrier Terminal Type 11 required in conjunction with relocation of Temporary Bridge Rail shall be included in the contract unit price bid for TRAFFIC BARRIER TERMINAL TYPE 11.

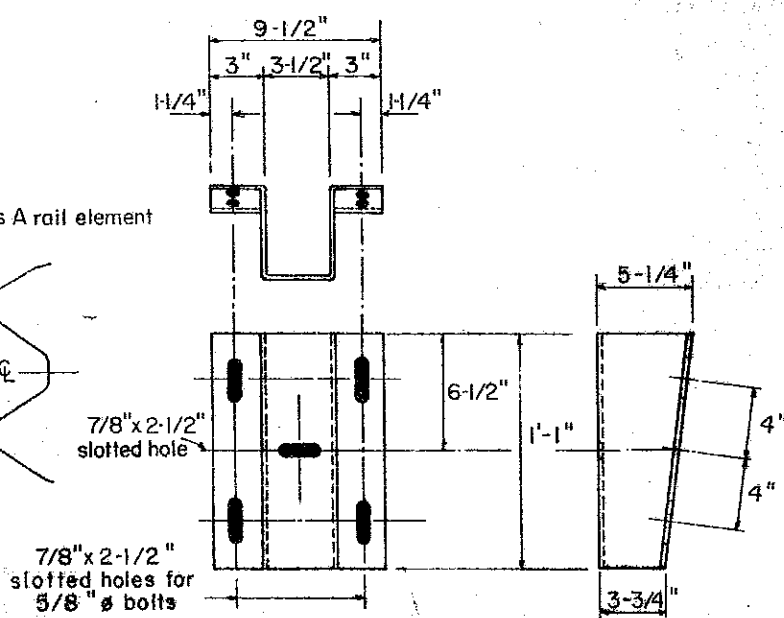


**PLATE "G"**

(Place between the rail element and Plate "E")



**PLATE "E"**



**BRACKET "U"**

(1/4" thick steel plate or rectangular tubing with flange welded on.)

Illinois Department of Transportation  
 D. E. Hummer, Aug. 11, 1980  
 Engineer of Design Operations  
 ISSUED 12-4-79  
 D. E. Hummer, Aug. 11, 1980  
 Engineer of Design

**TRAFFIC BARRIER TERMINAL  
 TYPE II**  
 STANDARD 2388 - I

F-337d