

BRIDGE

PROJECT NO. FM-24(20)--55-24

CRAWFORD COUNTY  
LETTING DATE: MAY 1, 1990

126531

STANDARD ROAD PLANS					
THE FOLLOWING STANDARD ROAD PLANS SHALL BE CONSIDERED APPLICABLE TO CONSTRUCTION WORK ON THIS PROJECT					
IDENT.	DATE	IDENT.	DATE	IDENT.	DATE
RE-2A	2-17-87	RE-65	1-9-90	RS-2	10-11-88
RE-2B	4-4-89	RE-68	8-8-89	RS-3	11-15-88
RE-7	5-13-86	RE-69	8-8-89	RS-12	11-5-85
RE-12A	10-11-88				
RE-12B	1-9-90	RL-1	4-23-82		
RE-47	11-10-87	RL-11	10-11-88		
RE-48A	8-20-85				
RE-52	8-8-89				

PROJECT TRAFFIC CONTROL PLAN  
 THIS ROAD WILL BE CLOSED TO THROUGH TRAFFIC DURING CONSTRUCTION. LOCAL TRAFFIC TO ADJACENT PROPERTIES WILL BE MAINTAINED AS PROVIDED FOR IN ARTICLE 1107.08, 1984 SPECIFICATIONS PLUS CURRENT SUPPLEMENTAL SPECIFICATIONS. TRAFFIC CONTROL DEVICES, PROCEDURES AND LAYOUTS SHALL BE AS PROVIDED FOR BY SUPPLEMENTAL SPECIFICATIONS FOR TRAFFIC CONTROLS FOR STREET AND HIGHWAY CONSTRUCTION AND MAINTENANCE OPERATIONS, SPECIFICATION 5001 AND THE IOWA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

IOWA  
 DEPARTMENT OF TRANSPORTATION

Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE  
 FARM TO MARKET SYSTEM  
**CRAWFORD COUNTY**  
 BRIDGE

THE STANDARD SPECIFICATIONS OF THE IOWA DEPARTMENT OF TRANSPORTATION, SERIES OF 1984, PLUS CURRENT SPECIAL PROVISIONS AND SUPPLEMENTAL SPECIFICATIONS, SHALL APPLY TO WORK ON THIS PROJECT.

PROJECT NO. FM-24(20)--55-24  
 FHWA NO. 126530

INDEX OF SHEETS

- TITLE SHEET
- SITUATION PLAN
- SOUNDING DATA AND GENERAL NOTES
- TOP OF SLAB ELEVATIONS AND MISC. DETAILS
- TABULATIONS
- CURVED GUARDRAIL INSTALLATION
- SPECIAL GUARDRAIL ANCHOR SECTION
- SPECIAL GUARDRAIL ANCHOR SECTION
- DETAIL SHEET 520-26

DRAWING APPROVAL  
 ALL SHOP DRAWINGS AND FALSEWORK DRAWINGS THAT REQUIRE APPROVAL SHALL BE APPROVED BY CALHOUN-BURNS AND ASSOCIATES, INC.  
 ADDRESS: 1801 FULLER ROAD, PO BOX 65859  
 WEST DES MOINES, IOWA 50265  
 Telephone: (515)224-4344  
 THESE SHOP DRAWINGS SHALL NOT BE SENT TO IOWA DOT OFFICE OF BRIDGE DESIGN.

IOWA DEPARTMENT OF TRANSPORTATION STANDARDS REQUIRED		
STANDARD	DATE ISSUED	LATEST REVISION
H30-87	JUNE, 1987	—
H30-1-87	JUNE, 1987	1-1-88
H30-9-87	JUNE, 1987	—
H30-10-87	JUNE, 1987	1-1-89
H30-14-87	JUNE, 1987	—
H30-17-87	JUNE, 1987	1-1-89
H30-19-87	JUNE, 1987	6-89
H30-22-87	JUNE, 1987	—
POA	AUGUST, 1988	—

THESE SHEETS MAY BE OBTAINED AT BRIDGE DESIGN SERVICES.

MILEAGE SUMMARY

BRIDGE AT STATION 6+62.00 ; 154.797' = 0.0293 MI.

U.S. DEPARTMENT OF TRANSPORTATION  
 FEDERAL HIGHWAY ADMINISTRATION  
 APPROVED:  
 DIVISION ADMINISTRATOR DATE

APPROVED  
 H. Dale Wight 12-19-89  
 COUNTY ENGINEER DATE

APPROVED  
 John P. Lawler  
 Le Roy A. Hansohn  
 Eugene Anderson  
 Edwin Heide  
 BOARD OF SUPERVISORS DATE

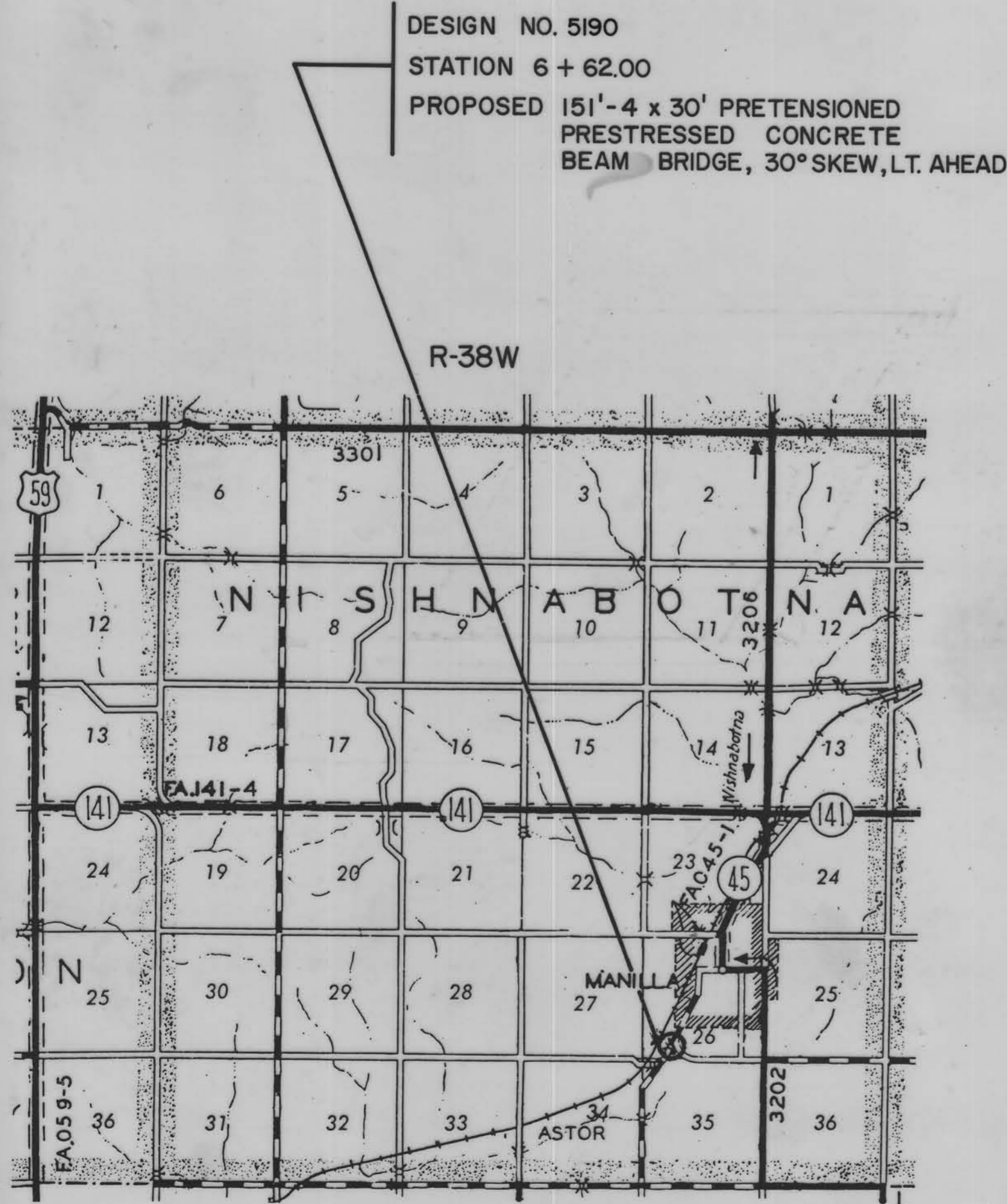
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY SUPERVISION AND THAT ENGINEERING DECISIONS WITH REGARD TO THE DESIGN WERE MADE BY ME OR BY OTHER DULY REGISTERED PROFESSIONAL ENGINEERS UNDER THE LAWS OF THE STATE OF IOWA.  
 David J. Jensen  
 IOWA REGISTRATION NUMBER 11230 DATE 12/13/89

DEPARTMENT OF TRANSPORTATION  
 IOWA  
**Highway Division**  
 AUTHORIZED FOR LETTING  
 David J. Jensen 2-28-90  
 DEPUTY CHIEF ENGINEER DATE

IOWA DEPARTMENT OF TRANSPORTATION  
 HIGHWAY DIVISION  
 AUTHORIZED FOR LETTING  
 DISTRICT LOCAL SYSTEMS ENGR. DATE

TOTAL ESTIMATED QUANTITIES						
ITEMNO.	ITEM	UNIT	2 ABUTS.	2 PIERS	SUPERST.	TOTAL
1.	CONCRETE, STRUCTURAL	C.Y.	39.0	27.6	167.2	233.8
2.	STEEL, REINFORCING, EPOXY COATED	LBS.	—	—	28,830	28,830
3.	STEEL, REINFORCING	LBS.	4,588	3,060	19,164	26,812
4.	BEAMS, PRETENSIONED	HP	—	—	10	10
5.	PRESTRESSED CONCRETE	A53R	—	—	5	5
6.	PLING, STEEL	FURNISH 12 @ 60'	L.F.	720	—	720
7.	BEARING HP 10x42	DRIVE 12 @ 60'	L.F.	720	—	720
8.	PLING, STEEL	FURNISH 14 @ 80'	L.F.	—	1120	1120
9.	BEARING	DRIVE 14 @ 80'	L.F.	—	1120	1120
10.	HP 12 x 53	ENCASE 14 @ 25'	L.F.	—	350	350
11.	STEEL, STRUCTURAL	LBS.	—	—	3,339	3,339
12.	EXCAVATION, CLASS 10, CHANNEL	C.Y.	—	—	—	2,040
13.	EXCAVATION, CLASS 10, ROADWAY & BORROW	C.Y.	—	—	—	640
14.	EXCAVATION, CLASS 2D	C.Y.	—	—	—	88
15.	RAIL, CONCRETE OPEN	L.F.	—	—	337.6	337.6
16.	REVTMENT, RIP-RAP, CLASS E	TONS	—	—	—	557
17.	FABRIC, ENGINEERING	S.Y.	—	—	—	768
18.	PREPARED HOLES, AS PER PLAN	L.F.	96	—	—	96
19.	TRAFFIC CONTROL	L.S.	—	—	—	LUMP SUM
20.	BARRICADES	ONLY	—	—	—	3
21.	GUARDRAIL, FORMED STEEL BEAM	L.F.	—	—	—	150
22.	GUARDRAIL, FORMED STEEL THRE BEAM	L.F.	—	—	—	125
23.	GUARDRAIL, POST, BEAM	ONLY	—	—	—	46
24.	GUARDRAIL, ANCHORAGES, BEAM, RE-52	ONLY	—	—	—	3
25.	GUARDRAIL, ANCHORAGES, BEAM, RE-69	ONLY	—	—	—	4
26.	GUARDRAIL, SPECIAL ANCHOR SECTION	ONLY	—	—	—	1
27.	OBJECT MARKERS TYPE 3	ONLY	—	—	—	4
28.	OBJECT MARKER TRIPLE YELLOW, AS PER PLAN	ONLY	—	—	—	10
29.	REMOVAL OF EXISTING STRUCTURES	L.S.	—	—	—	LUMP SUM
30.	MOBILIZATION	L.S.	—	—	—	LUMP SUM

ITEM NO.	ESTIMATE REFERENCE INFORMATION
1.	INCLUDES 175.4 CU. YDS. OF STRUCTURAL CONCRETE CLASS "D" AND 58.4 CU. YDS. OF CLASS "C".
3.	INCLUDES 3196 LIN. FT. #3 BAR; 7300 LIN. FT. #5 BAR; 8975 LIN. FT. #6 BAR; AND 3196 LIN. FT. #7 BAR.
4,5.	INCLUDES COST OF BEARING MATERIAL AND COIL RODS.
12.	CLEARING AND GRUBBING SHALL BE INCIDENTAL TO CLASS 10 CHANNEL EXCAVATION. (0.3 ACRES)
13.	INCLUDES 30% FOR SHRINKAGE. INCLUDES EARTHWORK FOR BLISTER CONSTRUCTION PRIOR TO ROADWAY APPROACH CONSTRUCTION.
19-28.	SEE NOTES AND TABULATIONS, SHEET 5.
29.	SEE GENERAL NOTES, SHEET 3.



PROJECT LOCATION  
 SCALE 1" = 1 MILE

1984 TRAFFIC COUNT = 250 V.P.D.

CALHOUN-BURNS & ASSOCIATES, INC. CONSULTING ENGINEERS  
 WEST DES MOINES, IOWA (515) 224-4344

JOB NO. 8589

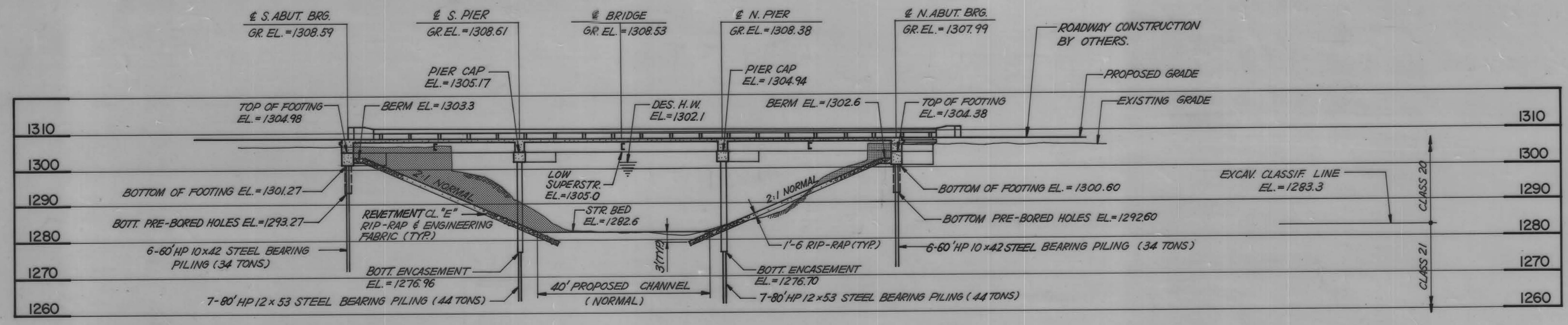
DESIGN NO. 5190

CRAWFORD COUNTY

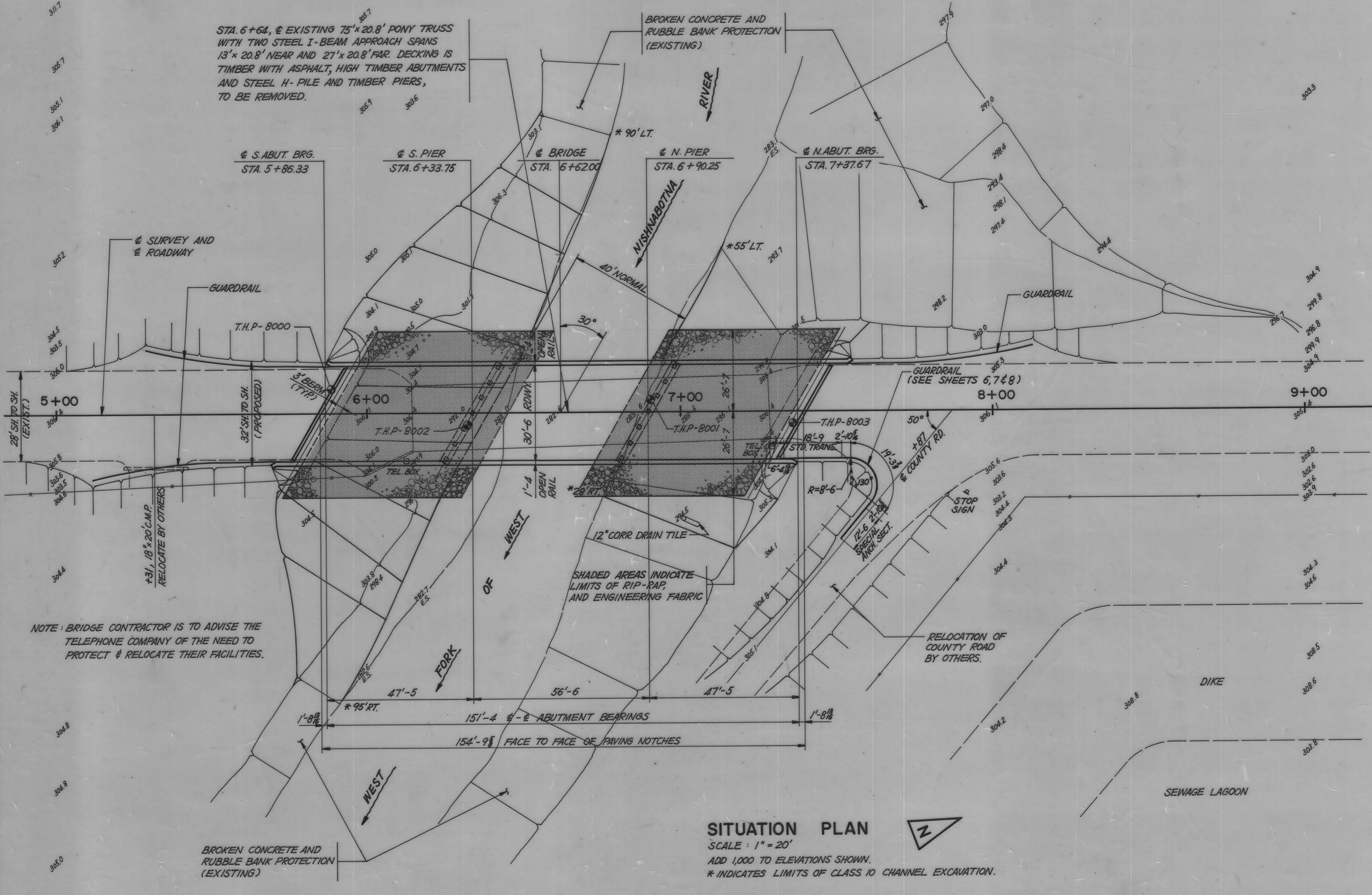
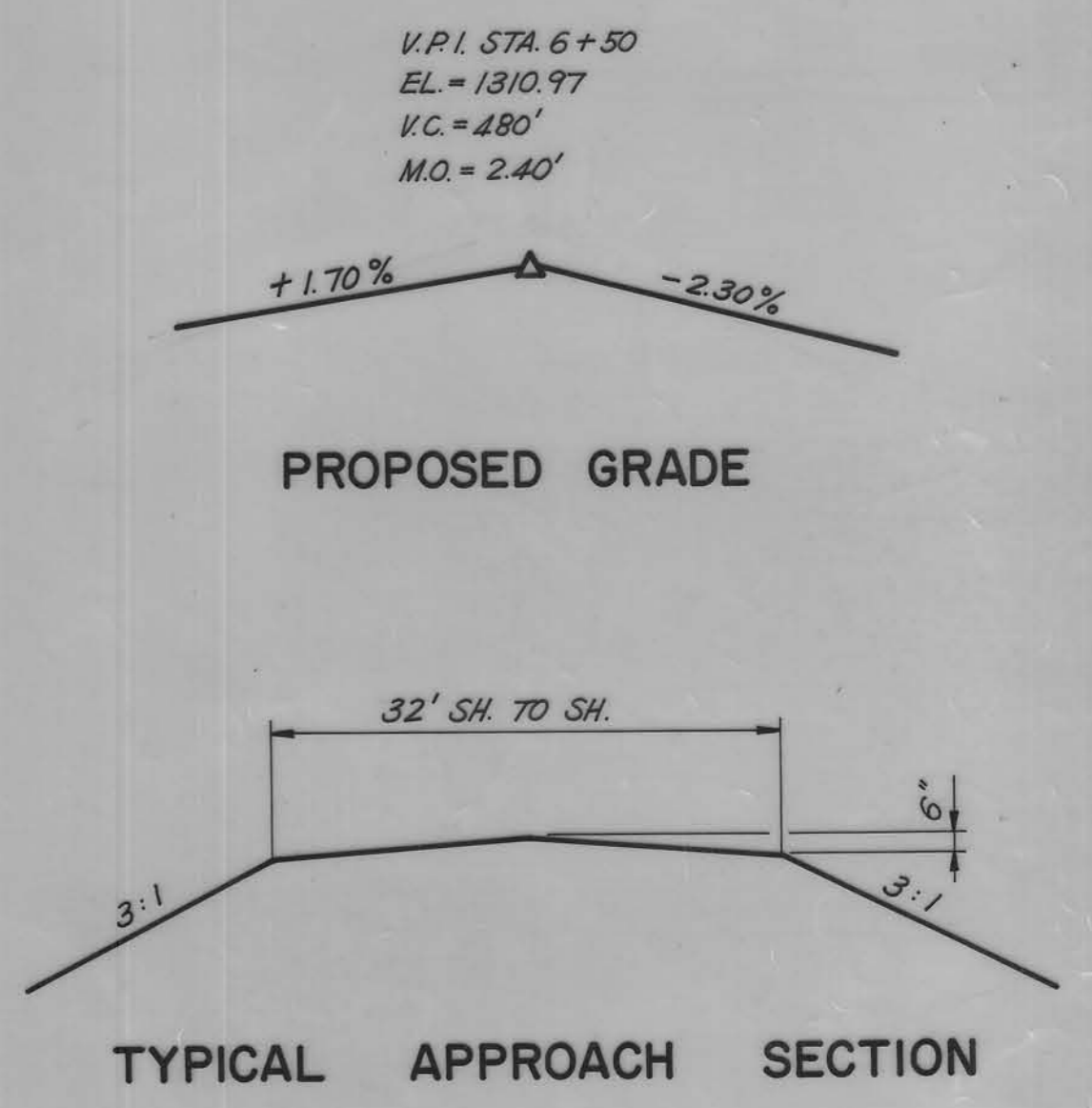
PROJECT NO. FM-24(20)--55-24

FILE NO. 54106





LONGITUDINAL SECTION ALONG ROADWAY



SITUATION PLAN  
SCALE: 1" = 20'  
ADD 1,000 TO ELEVATIONS SHOWN.  
\* INDICATES LIMITS OF CLASS 1 CHANNEL EXCAVATION.

LOCATION

CRAWFORD COUNTY  
T-82N, R-38W  
SECTION 26  
NISHNABOTNA TOWNSHIP  
OVER W. FORK W. NISHNABOTNA RIVER

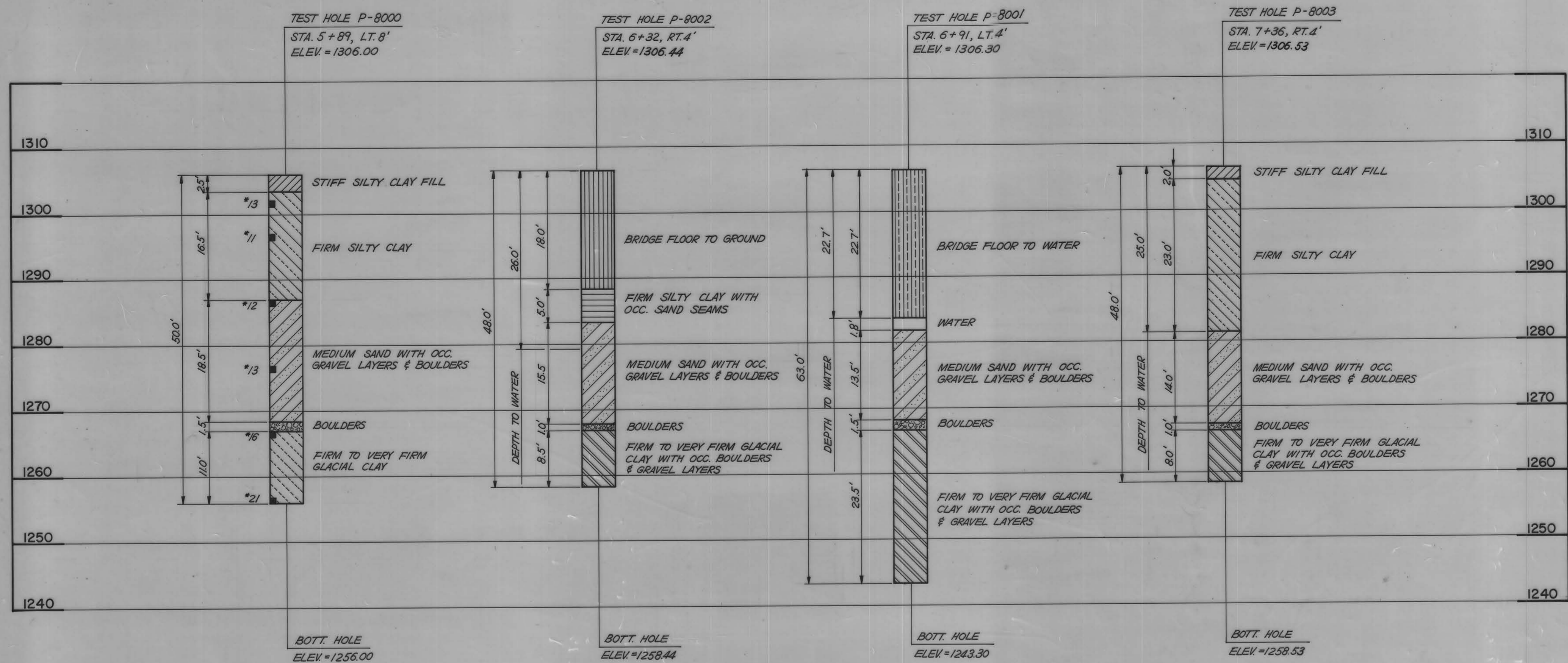
HYDRAULIC DATA

DRAINAGE AREA = 68 SQ. MI. (HILLY)  
DESIGN DISCHARGE = 8,200 C.F.S.  
DESIGN H.W. ELEV. = 1302.1  
SLOPE = 5.28 FT. / MILE  
BRIDGE WATERWAY AREA = 1540 SQ. FT.  
DESIGN VELOCITY = 5.3 F.P.S.  
NATURAL CHANNEL VELOCITY = 5.7 F.P.S.  
Q 25 = 6,800 C.F.S. STAGE 1300.6  
Q 50 = 8,200 C.F.S. STAGE 1302.1  
Q 100 = 9,800 C.F.S. STAGE 1303.4  
Q 500 = 17,500 C.F.S. STAGE 1306.9  
EXT. H.W. ELEV. (1958 & 1972) > 200 YEAR FREQ.

151'-4 x 30' PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

INTEGRAL ABUTMENTS P10A PIERS  
47'-5 END SPANS 56'-6 INTERIOR SPAN  
STATION 6+62.00 30° SKEW LT. AHEAD  
CRAWFORD COUNTY, IOWA  
SHEET 2 OF 9





**SOUNDING DATA**  
 SCALE 1" = 10'  
 DATED: 9-12-89  
 \*NUMBER OF BLOWS PER FOOT

**GENERAL NOTES (CONT.)**

CLEARING AND GRUBBING IS TO BE INCIDENTAL TO "CLASS 10 (CHANNEL) EXCAVATION" (0.3 ACRES). NO DIRECT PAYMENT WILL BE MADE.  
 SEEDING, FERTILIZING, AND MULCHING OF ALL DISTURBED AREAS FOLLOWING THE COMPLETION OF WORK ON THIS PROJECT SHALL BE DONE AS DIRECTED BY THE ENGINEER.  
 SEEDING MIXTURE: SEEDING RATE - PER ACRE - FESCUE, KENTUCKY 31.25 LBS., SWITCH GRASS (BLACKWELL) 8 LBS., ALFALFA (NORTHERN GROWN), 5 LBS., BIRDSFOOT TREFOLI (EMPIRE) 4 LBS., ALSIKE CLOVER, 4 LBS.  
 FERTILIZER: RATE 15 LBS. OF 15-15-15 OR EQUIVALENT COMBINED COMMERCIAL FERTILIZER PER 1000 SQ. FT. THE PREPARATION OF THE SEEDBED, FURNISHING AND APPLICATION OF SEED AND FERTILIZER TO ALL DISTURBED AREAS SHALL BE CONSIDERED INCIDENTAL TO WORK ON THIS PROJECT, AND NO EXTRA COMPENSATION WILL BE ALLOWED.

**SPECIFICATIONS**

DESIGN: AASHTO SERIES OF 1993.  
 CONSTRUCTION: STANDARD SPECIFICATIONS OF THE IOWA DEPARTMENT OF TRANSPORTATION, HIGHWAY DIVISION, SERIES OF 1984, PLUS CURRENT SPECIAL PROVISIONS AND SUPPLEMENTAL SPECIFICATIONS.

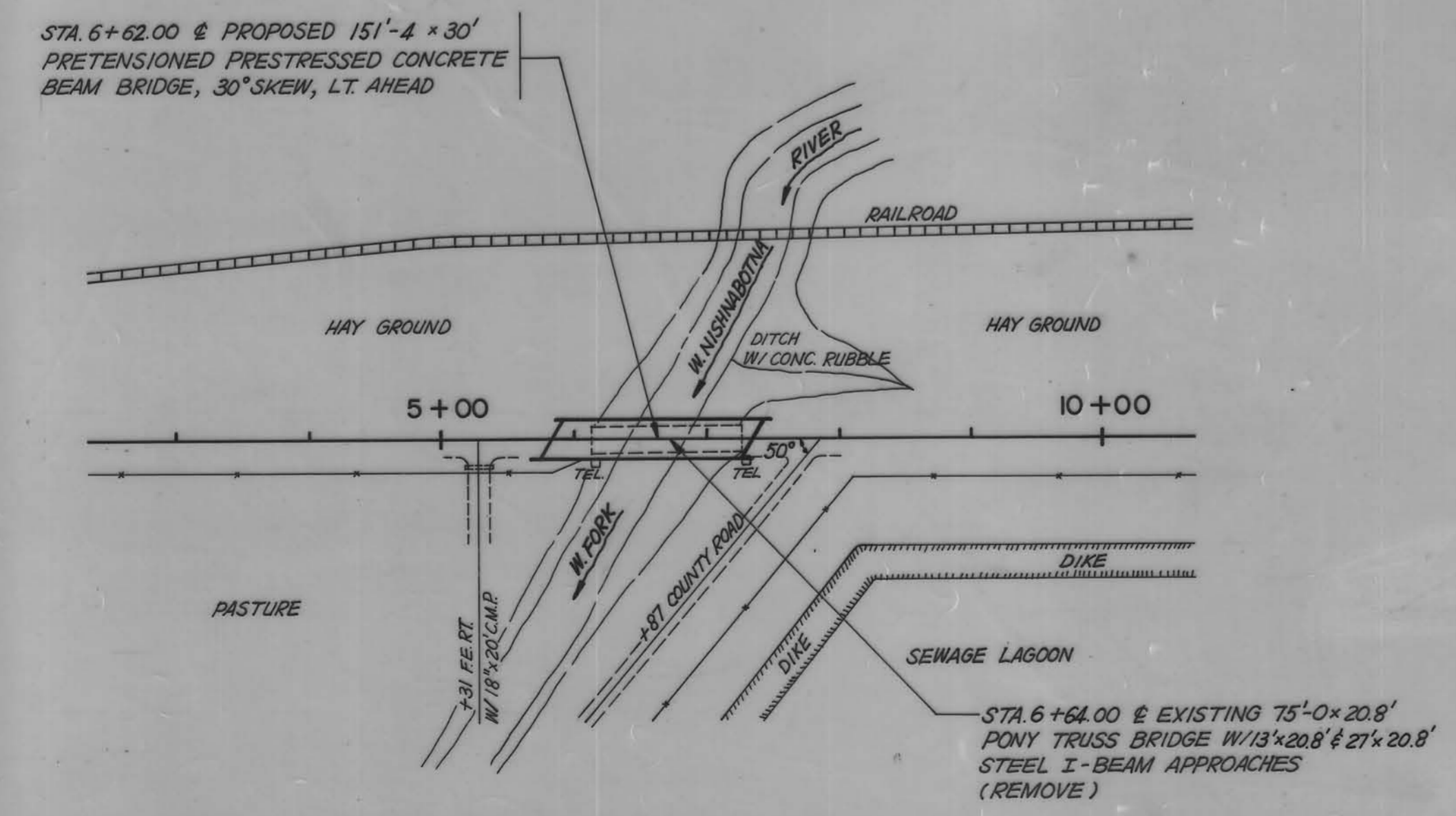
**DESIGN STRESSES**

DESIGN STRESSES FOR THE FOLLOWING MATERIAL ARE IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SERIES OF 1983.

CONCRETE	SECTION 8 F'c = 3,500 PSI
REINFORCING STEEL	SECTION 8
ASTM A615	GRADE 60, f <sub>s</sub> = 24,000 PSI
PRESTRESSING STEEL	SEE STANDARD BEAM SHEET H30-14
PRESTRESSED CONCRETE	SEE STANDARD BEAM SHEET H30-14
STRUCTURAL STEEL	SECTION 10
ASTM A36	f <sub>s</sub> = 20,000 PSI

**GENERAL NOTES**

THIS BRIDGE IS DESIGNED FOR HS20-44 LOADING PLUS 20 LBS. PER SQ. FT. OF ROADWAY FOR FUTURE WEARING SURFACE.  
 THE EXISTING BRIDGE IS A 75' X 20.8' RIVETED STEEL PONY TRUSS WITH TWO I-BEAM APPROACHES 13' X 20.8' AND 27' X 20.8'. THE STRUCTURE HAS A TIMBER DECK WITH ASPHALT, STEEL/TIMBER PILE BENT PIERS AND TIMBER ABUTMENTS.  
 THE LUMP SUM BID FOR "REMOVAL OF EXISTING STRUCTURES" SHALL INCLUDE REMOVAL AND DISPOSAL OF THE EXISTING STRUCTURE IN ACCORDANCE WITH SECTION 2401 OF THE STANDARD SPECIFICATIONS. ALL SALVAGEABLE MATERIAL EXCEPT THE STEEL APPROACH SPAN I-BEAMS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE BY HIM. THE STEEL I-BEAMS ARE TO BE STACKED NEATLY ON SKIDS WITHIN THE HIGHWAY R.O.W. OR PLACED ON A TRUCK PROVIDED BY CRAWFORD COUNTY FOR REMOVAL FROM THE SITE BY THEM.  
 THE EXISTING SUBSTRUCTURES SHALL BE REMOVED TO AN ELEVATION AT LEAST 1' BELOW THE FINISHED GROUNDLINE AND TO THE EXTENT THAT THEY WILL NOT INTERFERE WITH NEW CONSTRUCTION.  
 ALL UNSALVAGEABLE MATERIAL AND RUBBLE GENERATED DURING THIS PROJECT SHALL BE DISPOSED OF OFF THE HIGHWAY RIGHT-OF-WAY ON A WASTE AREA PROVIDED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. THE WASTED MATERIAL MUST NOT CREATE AN UNSIGHTLY CONDITION WHEN VIEWED FROM PUBLIC HIGHWAYS. THE COST OF WASTING CONCRETE AND RUBBLE IS TO BE INCLUDED IN THE BID ITEM "REMOVAL OF EXISTING STRUCTURES." NO PAYMENT WILL BE MADE FOR OVERHAUL.  
 THE PREBORED HOLES AS PER PLAN SHALL CONFORM TO SECTION 2501 OF THE STANDARD SPECIFICATIONS EXCEPT THE DIAMETER OF THE HOLE SHALL BE 18". THE PRICE BID FOR "PREBORED HOLES AS PER PLAN" SHALL INCLUDE ALL LABOR AND MATERIALS REQUIRED FOR CONSTRUCTION.  
 REINFORCING STEEL IS TO BE GRADE 60.  
 CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR IS TO BE 2" UNLESS NOTED OR SHOWN OTHERWISE.  
 THE CONTRACTOR MAY PLACE UP TO 200 CUBIC YARDS OF FILL MATERIAL BELOW ELEVATION 1283.3 IN ORDER TO CONSTRUCT A TEMPORARY STREAM CROSSING AND/OR ACCOMPLISH OTHER WORK NECESSARY TO COMPLETE CONSTRUCTION. ADDITIONAL FILL MATERIAL MAY BE PLACED ABOVE ELEVATION 1283.3 AS NECESSARY TO COMPLETE THE WORK. CULVERTS SHALL BE INSTALLED, AS REQUIRED, IN ANY TEMPORARY CROSSING TO CARRY LOW STREAM FLOWS. THE CONTRACTOR SHALL REMOVE ANY TEMPORARY CROSSINGS PRIOR TO COMPLETION OF THE PROJECT. THE COST OF INSTALLATION, MAINTENANCE, AND REMOVAL OF TEMPORARY CROSSINGS SHALL BE INCIDENTAL TO THE PROJECT.  
 CLASS 20 EXCAVATION FOR THE ABUTMENTS IS BASED ON THE ASSUMPTION THAT THE CHANNEL EXCAVATION HAS BEEN COMPLETED AND THAT THE APPROACH ROADWAY CONSTRUCTION HAS NOT BEEN STARTED.  
 UTILITY COMPANIES WHOSE FACILITIES ARE KNOWN TO BE WITHIN THE CONSTRUCTION LIMITS SHALL BE NOTIFIED BY THE CONTRACTOR OF THE CONSTRUCTION STARTING DATE.  
 THE CONTRACTOR SHALL VISIT THE CONSTRUCTION SITE TO ENSURE THAT HE IS FAMILIAR WITH THE EXISTING SITE CONDITIONS. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. SHOULD ANY UNDERGROUND UTILITIES BE FOUND, THEY SHALL BE PROTECTED IN PLACE AND THE ENGINEER SHALL BE IMMEDIATELY NOTIFIED. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.  
 IF ARCHAEOLOGICAL MATERIALS ARE ENCOUNTERED DURING THE CONSTRUCTION PHASE OF THIS PROJECT, THE OFFICE OF PROJECT PLANNING AND/OR PROPER AUTHORITIES SHALL BE NOTIFIED ACCORDING TO THE EXISTING FEDERAL REGULATIONS AND STATE PROCEDURES. ADDITIONALLY, IT SHOULD BE NOTED THAT FINDINGS AND RECOMMENDATIONS FOR CLEARANCE OR FURTHER TESTING CANNOT BE CONSIDERED FINAL UNTIL CONCURRENCE IS RECEIVED FROM THE STATE HISTORIC PRESERVATION OFFICER. PHONE: OFFICE OF PROJECT PLANNING-515/239-1225; OFFICE OF LOCAL SYSTEMS - 515/239-1528.  
 THE BRIDGE CONTRACTOR IS TO CLEAR THE CHANNEL TO THE SHAPE, DEPTH AND EXTENT NOTED OR SHOWN BY THE SHADED AREAS ON THE "LONGITUDINAL SECTION ALONG CENTERLINE ROADWAY" AND ON THE "SITUATION PLAN". THIS WORK SHALL BE PAID FOR AS "CLASS 10 (CHANNEL) EXCAVATION."  
 THE BRIDGE CONTRACTOR IS TO CONSTRUCT THE GUARDRAIL BLISTERS, AS SHOWN ON SHEET 2 AND ROADWAY STANDARD RL-11 AS "CLASS 10 (ROADWAY AND BORROW) EXCAVATION" IN ACCORDANCE WITH ARTICLE 2107 OF THE STANDARD SPECIFICATIONS. SUITABLE CLASS 10 (CHANNEL) EXCAVATION MAY BE USED IN THE FILL IN ACCORDANCE WITH I.D.O.T. ROAD STANDARD RL-1 OR WASTED AS DIRECTED BY THE ENGINEER. IF ADDITIONAL SUITABLE MATERIALS ARE REQUIRED, THE BRIDGE CONTRACTOR IS TO PROVIDE HIS OWN BORROW AREA. HE IS TO FAMILIARIZE HIMSELF WITH THE PROVISIONS OF THE IOWA LAW AS IT APPLIES TO REMOVAL AND REPLACEMENT OF TOPSOIL ON BORROW AREA. THE QUANTITY SHOWN FOR "CLASS 10 (ROADWAY AND BORROW) EXCAVATION" INCLUDES AN ADDITIONAL 30% TO COMPENSATE FOR SHRINKAGE AND ASSURES ROADWAY APPROACH FILL HAS NOT BEEN COMPLETED. EXCESS "CLASS 10 (CHANNEL) EXCAVATION" NOT REQUIRED IN CONSTRUCTION OF FILL OR WASTED IS TO BE STOCKPILED ON AN AREA AND IN A MANNER AS DIRECTED BY THE COUNTY ENGINEER. NO PAYMENT WILL BE MADE FOR OVERHAUL.  
 THE BRIDGE CONTRACTOR IS TO LEVEL OFF AND SHAPE THE BERMS TO THE ELEVATIONS AND DIMENSIONS SHOWN. DRESSING OF SLOPES OUTSIDE THE BRIDGE AREA NOT DISTURBED BY THE BRIDGE CONTRACTOR SHALL BE PAID FOR AS EXTRA WORK.  
 COMPLETION OF APPROACH GRADING, SURFACING, PERMANENT EROSION CONTROL AND ANY NECESSARY RELOCATION OF FIELD ENTRANCES AND SIDE ROADS SHALL BE BY OTHERS AND IS NOT A PART OF THIS CONTRACT. TRAFFIC CONTROL REQUIRED BY THIS CONTRACT SHALL REMAIN IN PLACE UNTIL APPROACH ROADWAY WORK IS COMPLETED AND THE BRIDGE IS OPEN TO TRAFFIC. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE GRADING CONTRACTOR.

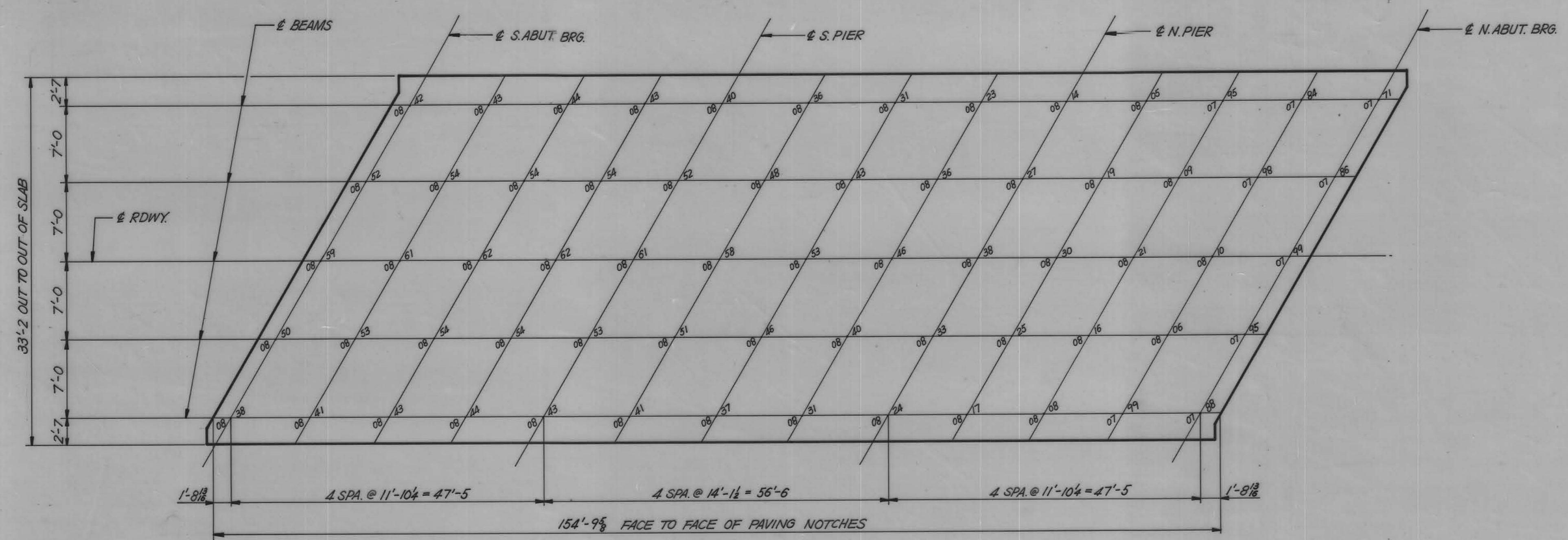


**GENERAL PLAN**  
 SCALE 1" = 100'

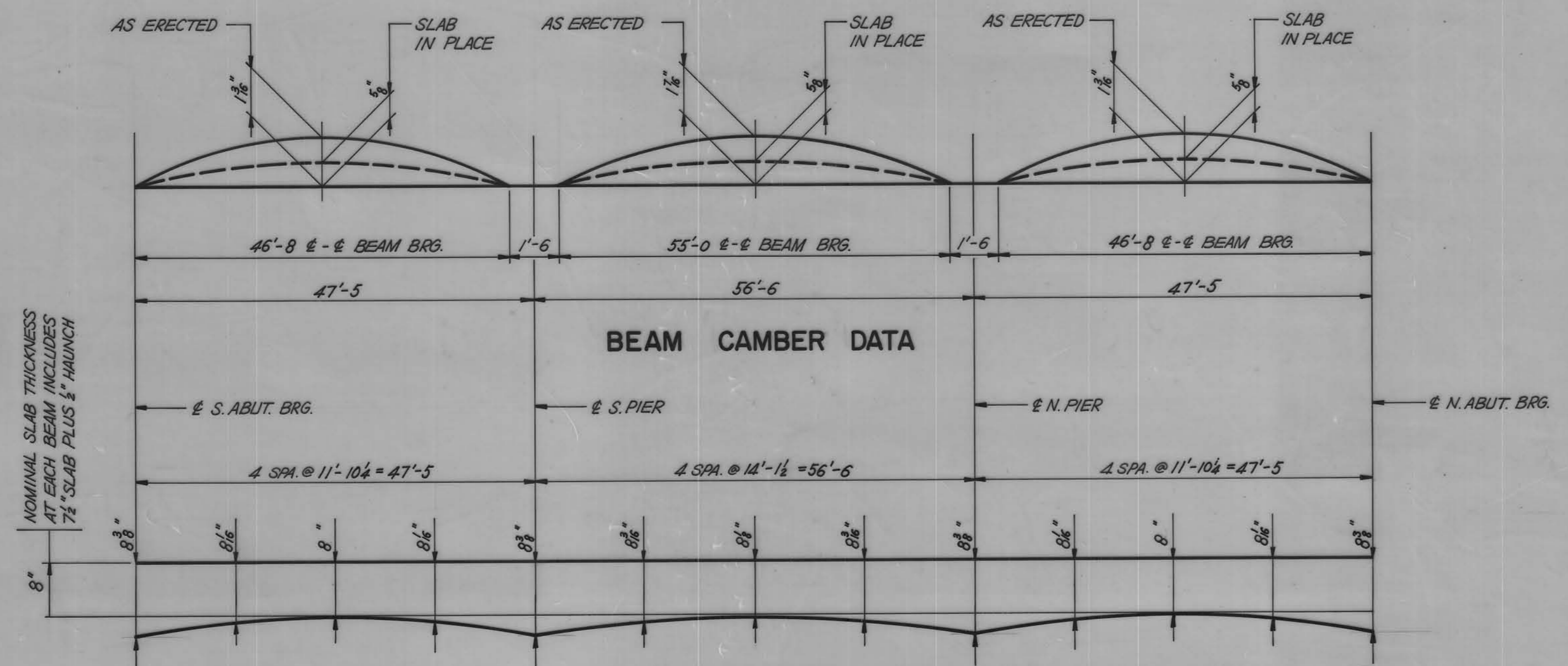
**151'-4 x 30' PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE**

INTEGRAL ABUTMENTS P10A PIERS  
 47'-5 END SPANS 56'-6 INTERIOR SPAN  
**SOUNDING DATA & GENERAL NOTES**  
 STATION 6+62.00 30° SKEW LT. AHEAD  
 CRAWFORD COUNTY, IOWA  
 SHEET 3 OF 9



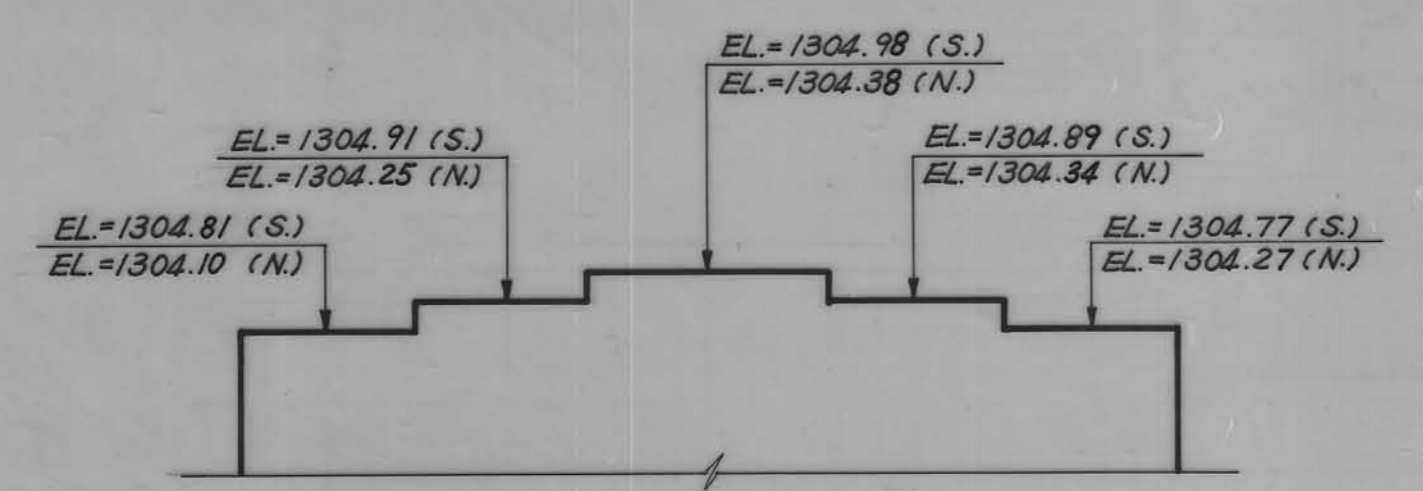


**TOP OF SLAB ELEVATIONS**  
(ADD 1,300 TO ABOVE ELEVATIONS.)

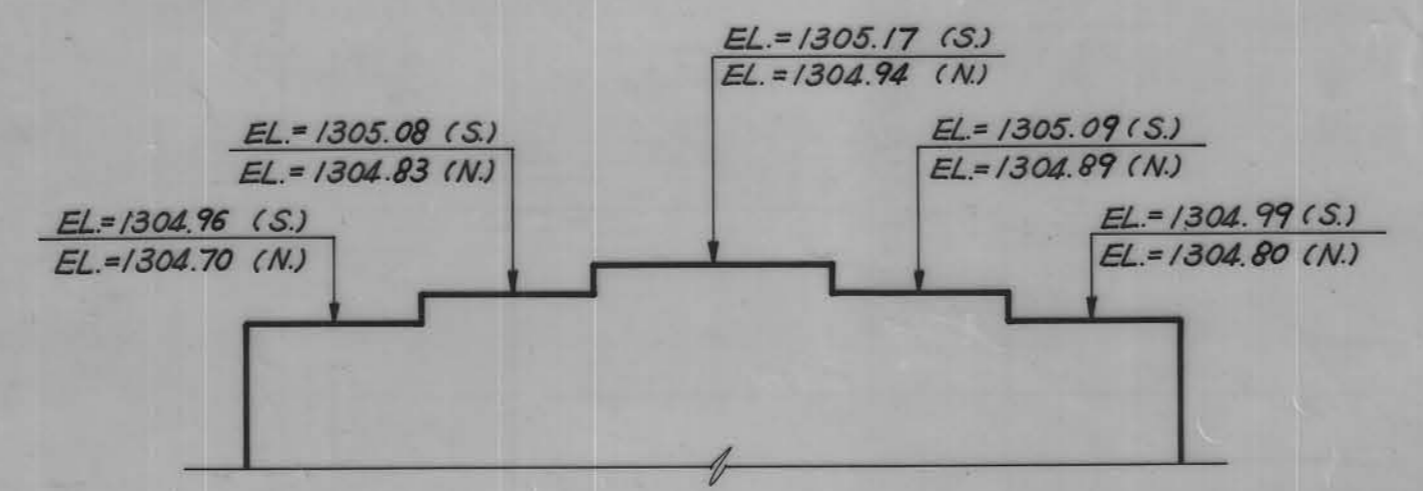


**SLAB THICKNESS AT BEAM (T)**

NOTE: HAUNCH THICKNESSES ARE SHOWN FOR ESTIMATING ONLY AND ARE NOT GUARANTEED FOR CONSTRUCTION.



**ABUTMENT STEP DIAGRAM**  
LOOKING UP STATION (NORTH)



**PIER STEP DIAGRAM**  
LOOKING UP STATION (NORTH)

**151'-4 x 30' PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE**

INTEGRAL ABUTMENTS  
47'-5" END SPANS  
TOP OF SLAB ELEV. & MISC. DETAILS  
STATION 6+62.00  
CRAWFORD COUNTY, IOWA

PIOA PIERS  
56'-6" INTERIOR SPAN  
30° SKEW LT. AHEAD  
SHEET 4 OF 9



TABULATION OF DELINEATORS AND OBJECT MARKERS							
Refer to Standard Road Plan RE-48A-B and RE-29C ** Not a Bid Item							
LOCATION		DELINEATOR	OBJECT MARKER				REMARKS
STATION	TYPE	SINGLE WHITE D-IW	TRIPLE YELLOW OM2-3YV	TYPE 3		OFFSET BRACKETS **	
				OM-3L	OM-3R		
		NO.	NO.	NO.	NO.	NO.	
6+62	/	—	4	/	/	—	S. END
6+62	/	—	Δ6	/	/	—	N. END

Δ AT THE NORTHEAST CORNER TWO TRIPLE YELLOW OBJECT MARKERS SHALL BE INSTALLED FACING NORTH AND TWO FACING EAST. PLACEMENT SHALL BE AS DIRECTED BY THE ENGINEER.

TRAFFIC CONTROL PLAN	
<p>THE PROJECT ROUTE WILL BE CLOSED TO TRAFFIC INCLUDING THE SIDE ROAD AT STATION 7+87. TRAFFIC CONTROL ON THIS PROJECT SHALL BE IN ACCORDANCE WITH DETAIL SHEET 520-26. FOR ADDITIONAL COMPLIMENTARY INFORMATION, REFER TO SUPPLEMENTAL SPECIFICATION 5001 AND THE IOWA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.</p> <p>ALL TRAFFIC CONTROL DEVICES SHALL BE FURNISHED, ERECTED, MAINTAINED AND REMOVED BY THE CONTRACTOR.</p> <p>SLAT FENCE BARRICADES OR PLASTIC SAFETY FENCE SHALL BE PLACED ON BOTH SIDES OF THE BRIDGE SITE AND THE SIDE ROAD AT STATION 7+87. IN ADDITION, A TYPE III BARRICADE SHALL BE PLACED IN ADVANCE OF THE SLAT FENCE OR PLASTIC SAFETY FENCE, A "ROAD CLOSED" SIGN (R-11-2, 48" X 30") SHALL BE PLACED ON EACH TYPE III BARRICADE ALONG WITH TWO TYPE "A" LOW INTENSITY FLASHING WARNING LIGHTS.</p> <p>CRAWFORD COUNTY MAINTENANCE SHALL SALVAGE ALL ROAD MARKERS AFTER ROAD IS CLOSED.</p> <p>THE BID ITEM "TRAFFIC CONTROL" SHALL INCLUDE THE COST FOR ALL TRAFFIC CONTROL MEASURES REQUIRED OF THE CONTRACTOR EXCEPT FOR THOSE WHICH ARE SEPARATE BID ITEMS OR ARE INCIDENTAL TO OTHER BID ITEMS.</p> <p>THE GUARDRAIL INSTALLATION MUST BE COMPLETED BEFORE THE ROAD IS OPENED TO TRAFFIC.</p>	

TABULATION OF GRADING FOR GUARDRAIL INSTALLATIONS											
* Refer to Standard Road Plan RL-11 or Typical 4303 and 4306											
LOCATION POINT		TYPE	DIMENSIONS*			CLASS 10 EXCAV. (row & borrow) Cu. Yds. Δ	EMBANK. IN PLACE Cu. Yds.	PIPE			REMARKS
No.	Station		(A) / (T)	(Y)	(Z)			SIZE	TYPE	LENGTH	
			Lin. Ft.	Lin. Ft.	Lin. Ft.			Inches	Lin. Ft.		
1	5+74.88	2	56.25	7.9	30'	200	—	—	—	S. END RT.	
2	5+82.49	2	56.25	7.9	30'	140	—	—	—	S. END LT.	
3	SEE PLAN	SPECIAL	56.25	7.9	30'	150	—	—	—	N. END RT.	
4	8+09.12	1	56.25	7.9	30'	150	—	—	—	N. END LT.	

Δ INCLUDES 30% FOR SHRINKAGE

TABULATION OF BARRICADES		108-13A
(Refer to Section 2518 of the St'd. Spec's.)		6-25-76
NO.	STATION	
1	4+50	S. END
1	7+87	RT. SIDE ROAD Δ
1	8+50	N. END

Δ 100' EAST ALONG E OF SIDE ROAD

TABULATION OF STEEL BEAM GUARDRAIL FOR STANDARD ROAD PLANS RE-63, 64 or 65																	
LOCATION		STANDARD ROAD PLAN	CASE	FORMED STEEL BEAM GUARDRAIL					BEAM GUARDRAIL POSTS				POST & ADAPTOR	ANCHOR SYSTEM	REMARKS		
NO.	STATION			(A)	(H)	(T)	TOTAL "W" BEAM	TOTAL THRIE BEAM	WITH 8" x 8" SPACER BLOCKS		WITHOUT SPACER BLOCKS						
				"W" BEAM	THRIE BEAM	THRIE BEAM			"W" BEAM	10" x 10" x 6'-0"	8" x 8" x 6'-0"	8" x 8" x 6'-0"				6" x 8" x 6'-0"	
				Lin. Ft.	Lin. Ft.	Lin. Ft.			Lin. Ft.	NO.	NO.	NO.				NO.	
1	5+71.13	RE-65	U	37.5	31.25	—	—	—	37.5	31.25	3	2	7	2	—	RE-52 / 1	S. END RT.
2	5+88.74	RE-65	U	—	—	—	31.25	37.5	37.5	31.25	3	2	7	2	—	RE-52 / 1	S. END LT.
3	7+35.26	SPECIAL	—	—	—	—	31.25	37.5	37.5	31.25	3	2	3	4	—	SPECIAL / 1	N. END RT.
4	7+52.87	RE-65	U	37.5	31.25	—	—	—	37.5	31.25	3	2	7	2	—	RE-52 / 1	N. END LT.

151'-4 x 30' PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

INTEGRAL ABUTMENTS 47'-5 END SPANS

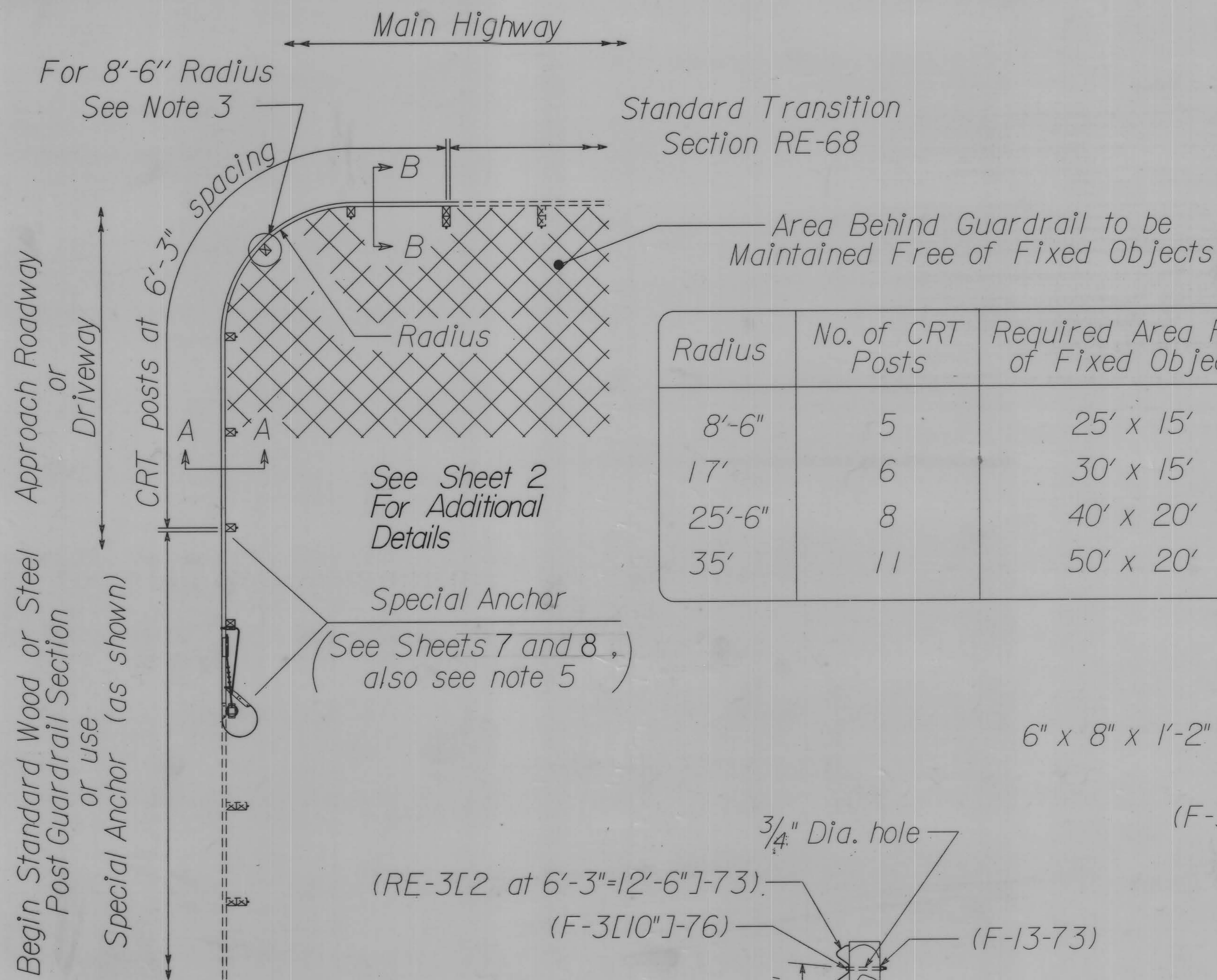
PIOA PIERS 56'-6 INTERIOR SPAN

TABULATIONS

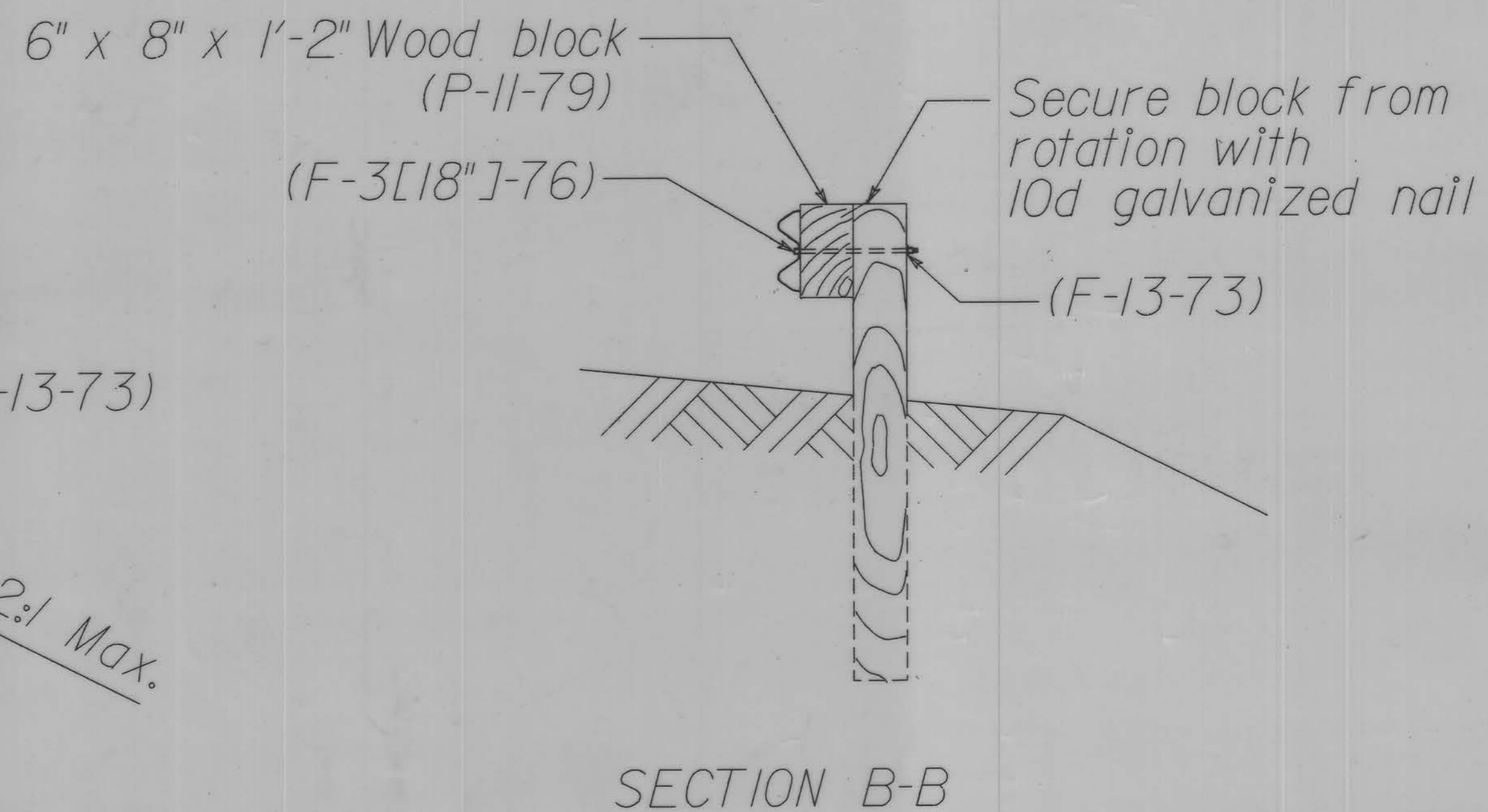
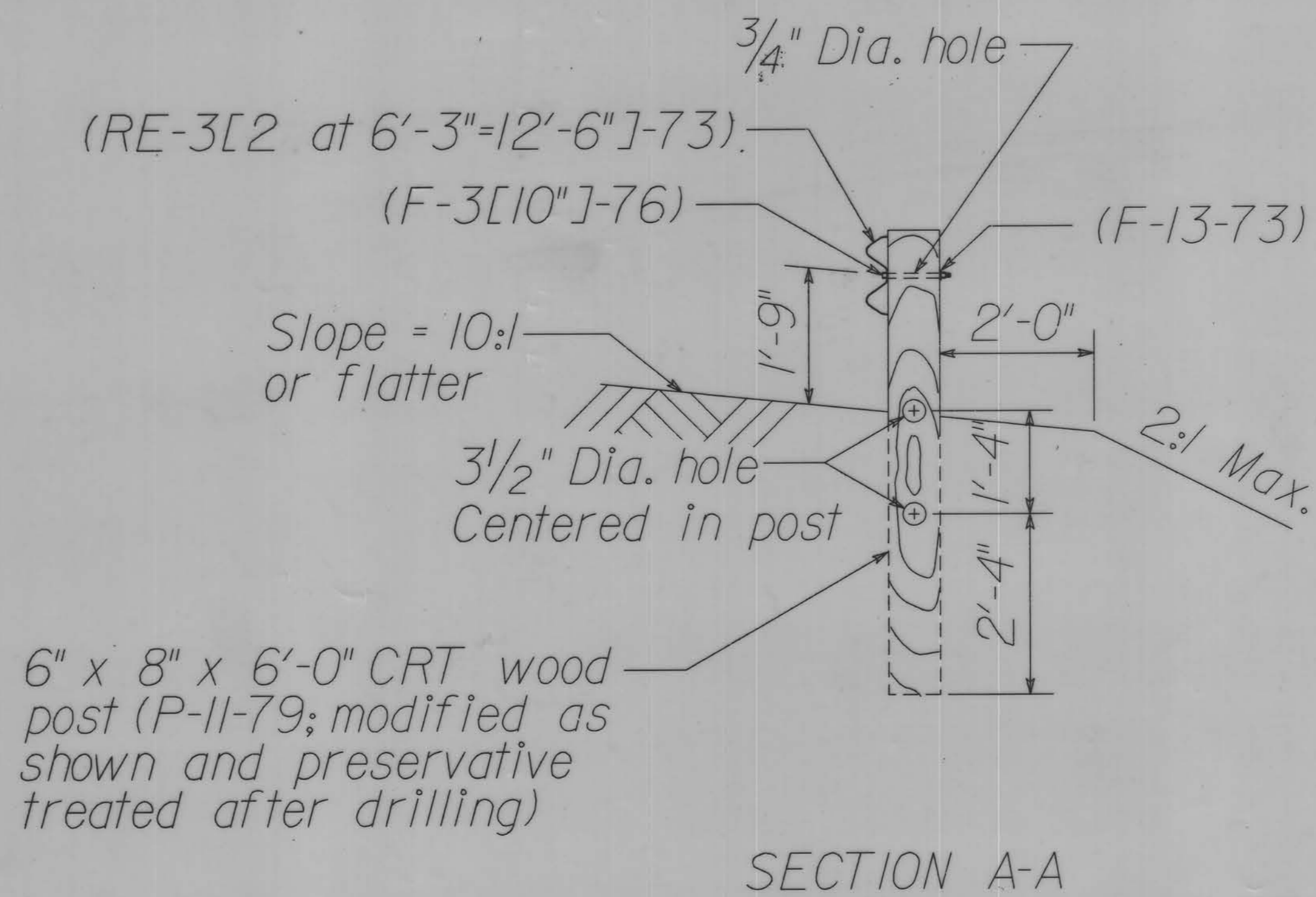
STATION 6+62.00 30° SKEW LT. AHEAD

CRAWFORD COUNTY, IOWA





Radius	No. of CRT Posts	Required Area Free of Fixed Objects
8'-6"	5	25' x 15'
17'	6	30' x 15'
25'-6"	8	40' x 20'
35'	11	50' x 20'



**GENERAL NOTES:**

Details indicated hereon are for installation of formed steel beam guardrail for locations where sideroads or driveways are close to the end of a bridge or other restrictive feature.

1. Designations provided in parenthesis reference standard elements detailed in "A Guide to Standardized Highway Barrier Rail Hardware," 1979, AASHTO-AGC-ARTBA joint co-operative committee.

2. No washers are used on the 5/8" button head bolts (F-3 [as required] -76) connecting the rail to the Cable Release Terminal (CRT) posts.

3. The rail is not bolted to the CRT post at the center of the nose as shown.

4. The curved guardrail section shall be shop bent.

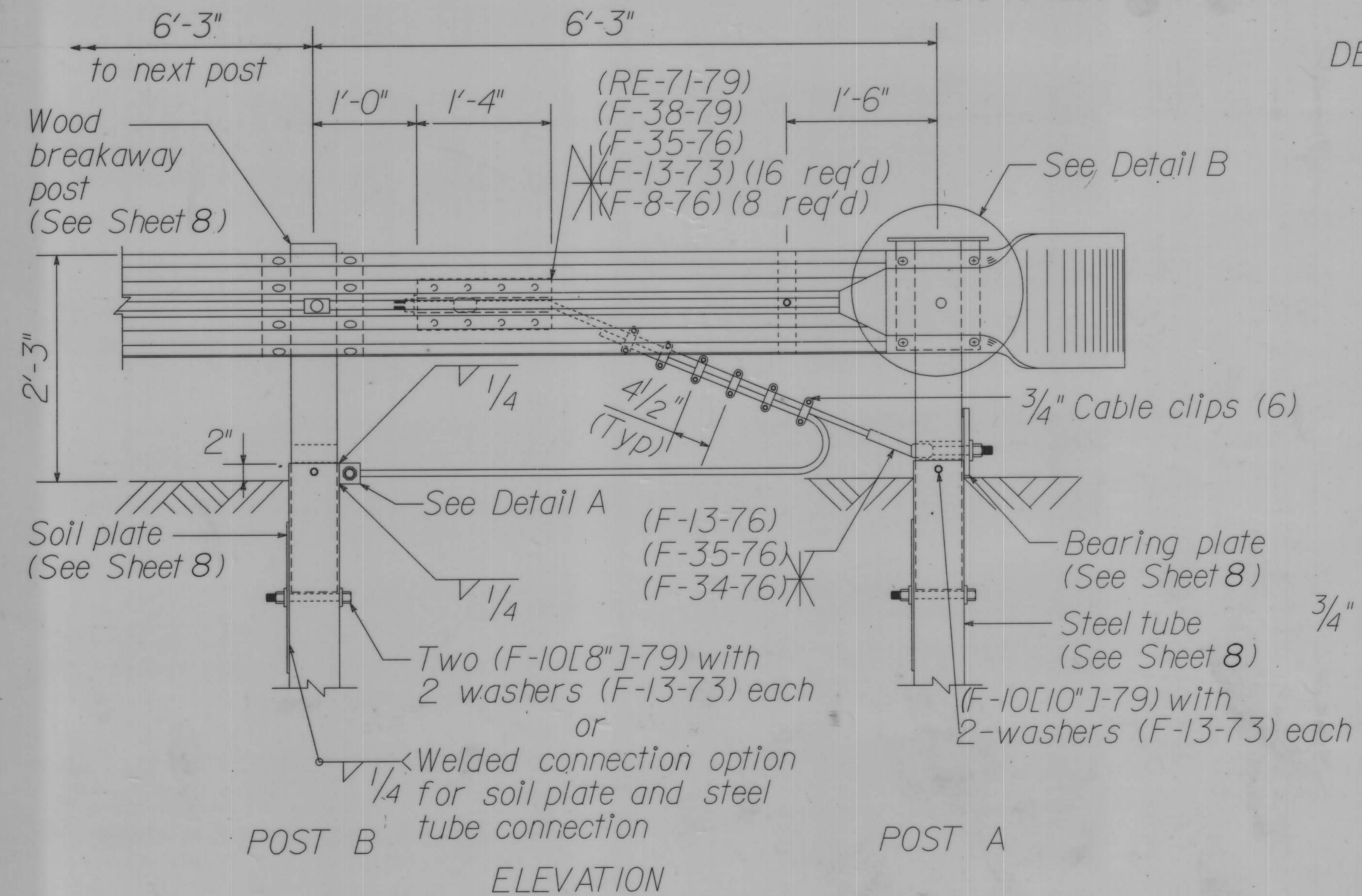
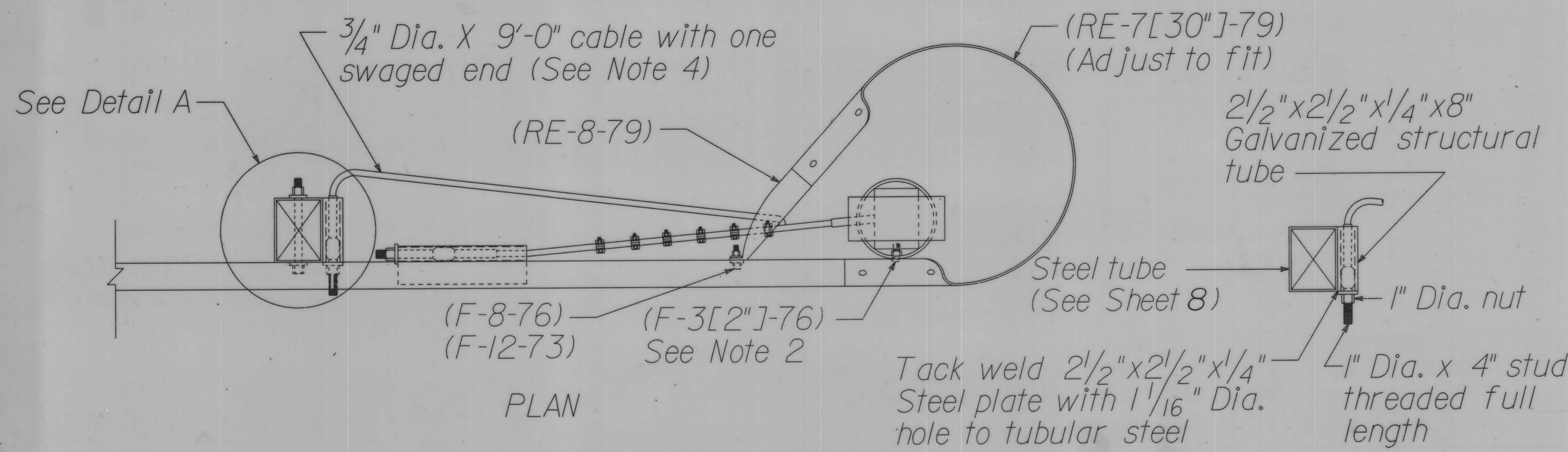
5. The Special Anchor has not been tested as a crashworthy end treatment for approaching traffic on the intersecting roadway. Therefore, its use shall be limited to driveways or service roadways paralleling drainage facilities.

Price bid for contract items shall be considered full compensation for furnishing all materials and constructing guardrail essentially as indicated hereon.

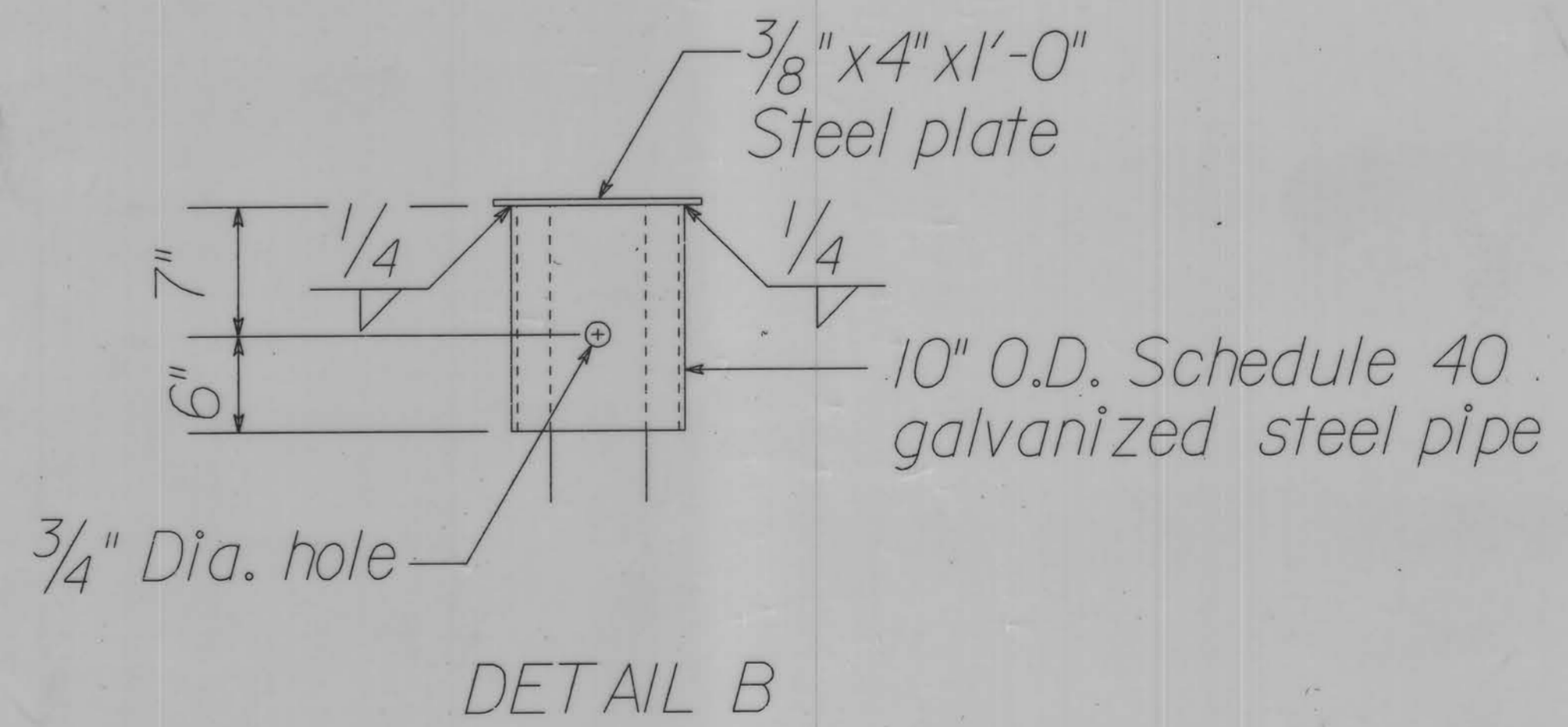
Contract items for guardrail construction are:  
 Formed Steel Beam Guardrail  
 Beam Guardrail Posts  
 Beam Guardrail End Anchorages (By Type)

CURVED GUARDRAIL  
 INSTALLATION





DETAIL A



**GENERAL NOTES:**

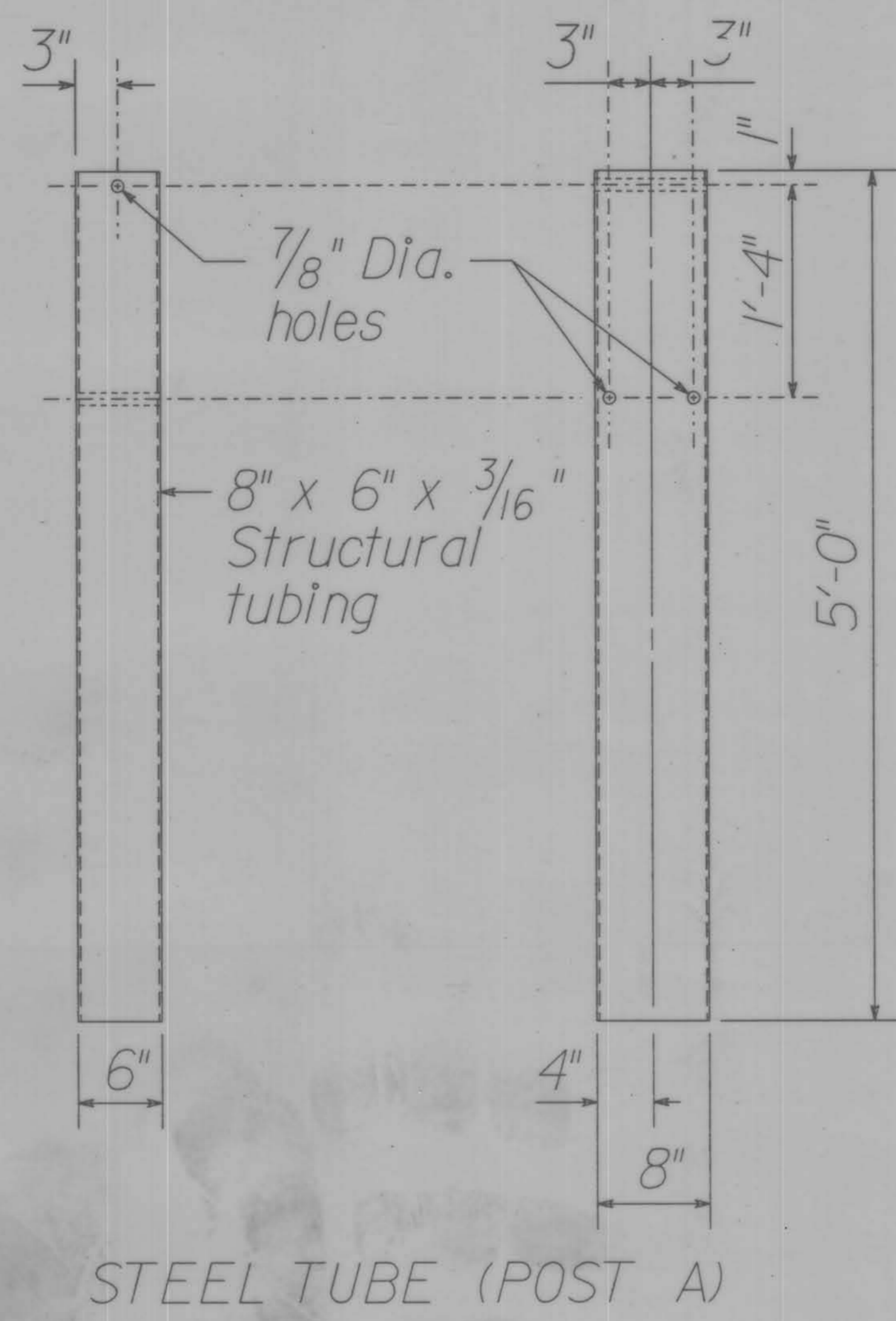
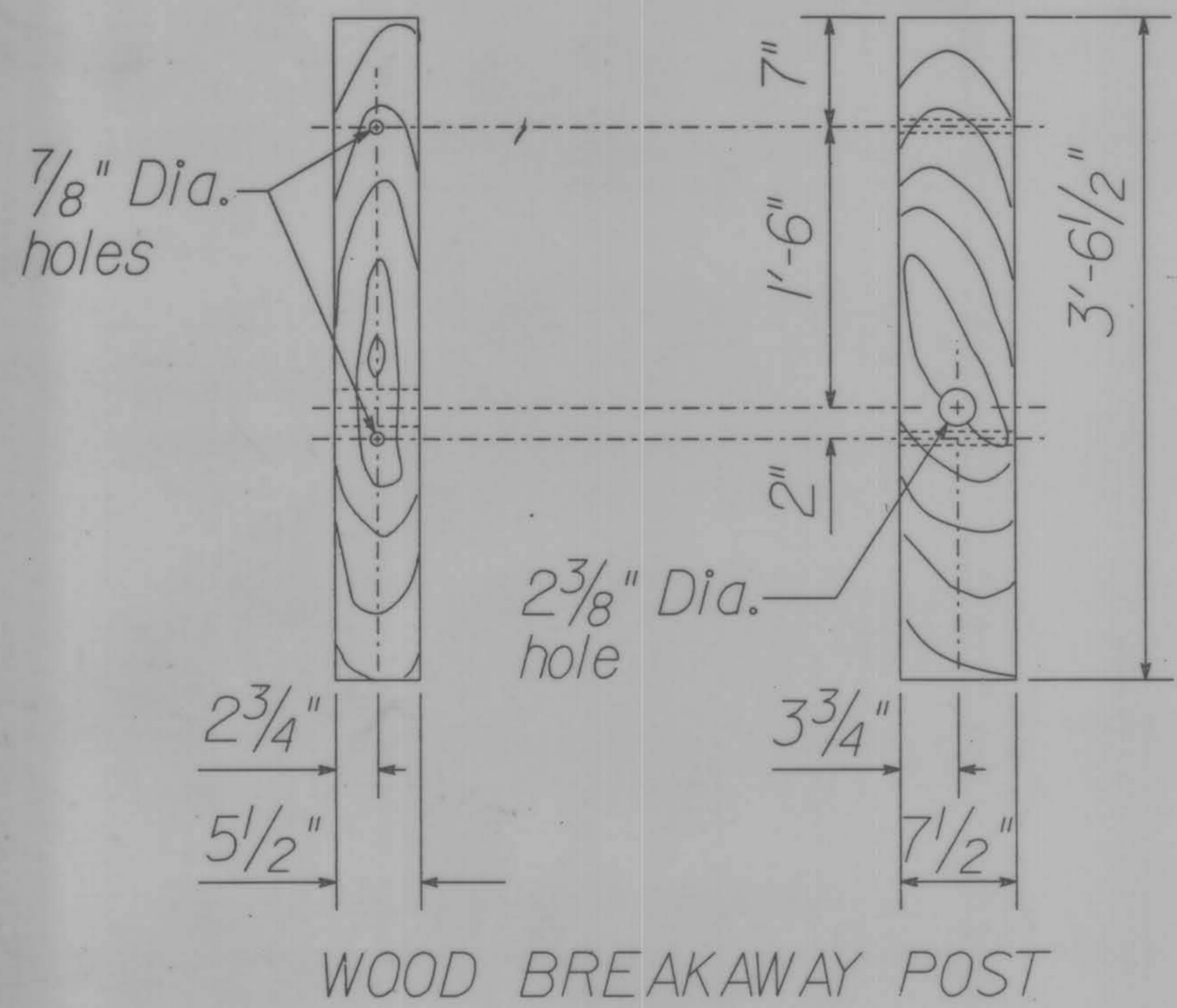
The details indicated hereon are for an end anchorage system for beam guardrail.

1. Designations provided in parenthesis reference standard elements detailed in "A Guide to Standardized Highway Barrier Rail Hardware," 1979, AASHTO-AGC-ARTBA Joint Cooperative Committee.
2. Attach W-beam to steel pipe with F-3 [2"]-76 button head bolt with no washer. No connection to post is required.
3. Bolts shall conform to the requirements of ASTM A 307 and nuts to the requirements of ASTM A 563, Grade A or better, and be galvanized in accordance with ASTM A 153.
4. Wire rope shall conform to the requirements of AASHTO M 30 and shall be 3/4" preformed, 6x19, wire strand core or independent wire rope core, galvanize, right regular lay, manufactured of improved plow steel with a minimum breaking strength of 42,800 pounds.
5. All angles, channels, and plates shall conform to the requirements of ASTM A 36 and structural tubing to ASTM A 500. Welding shall meet the current requirements of the American Welding Society Structural Welding Code ANSI/AWS D1.1. All structural steel shall be galvanized in accordance with ASTM A 123. No punching, drilling, cutting, or welding will be permitted after galvanizing.

Price bid for "Guardrail, Special Anchor Section each" shall be considered full compensation for furnishing all materials (exclusive of beam railing) and work necessary to construct the guardrail end anchorage as detailed hereon.

SPECIAL GUARDRAIL ANCHOR SECTION



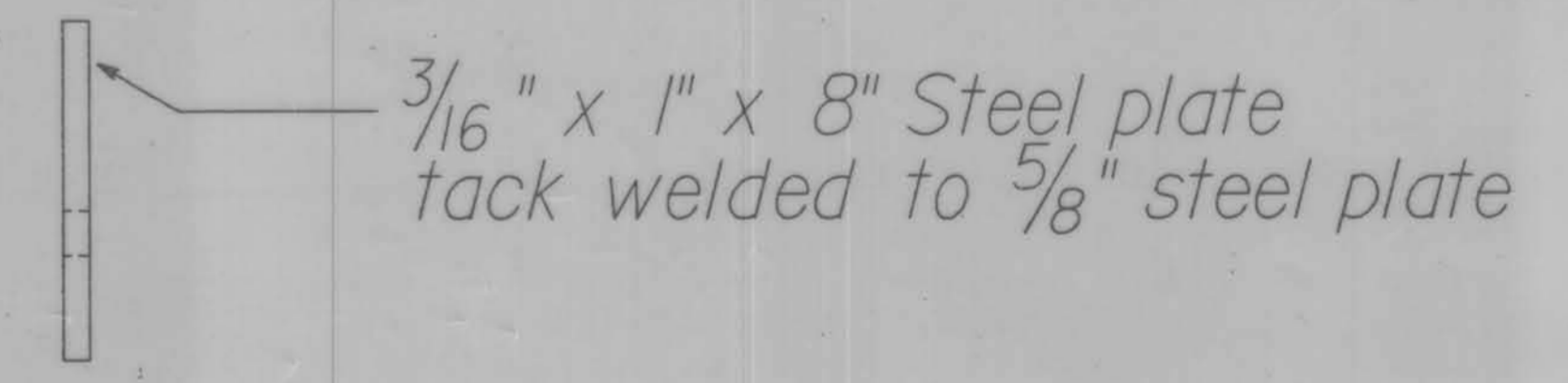
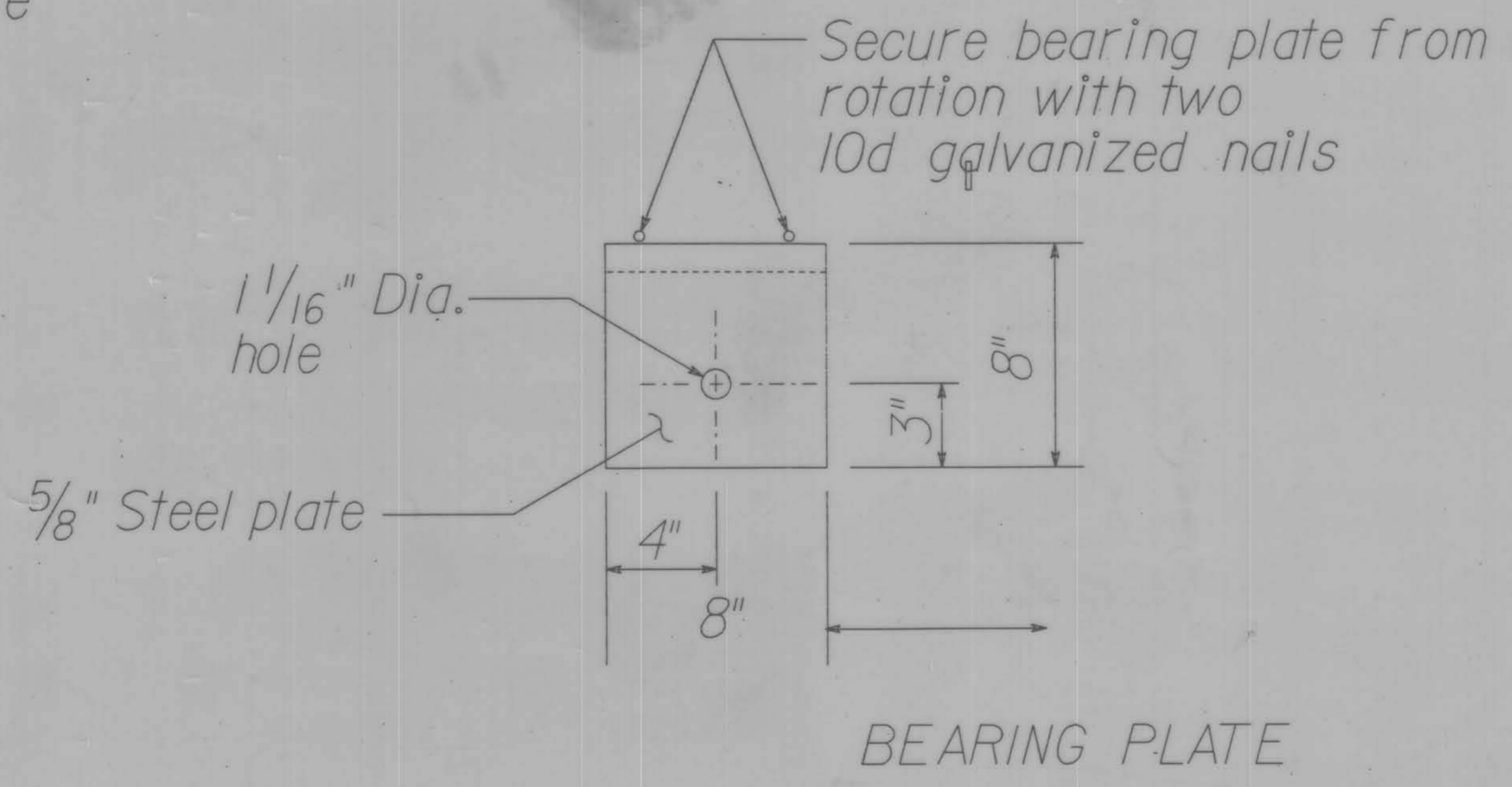
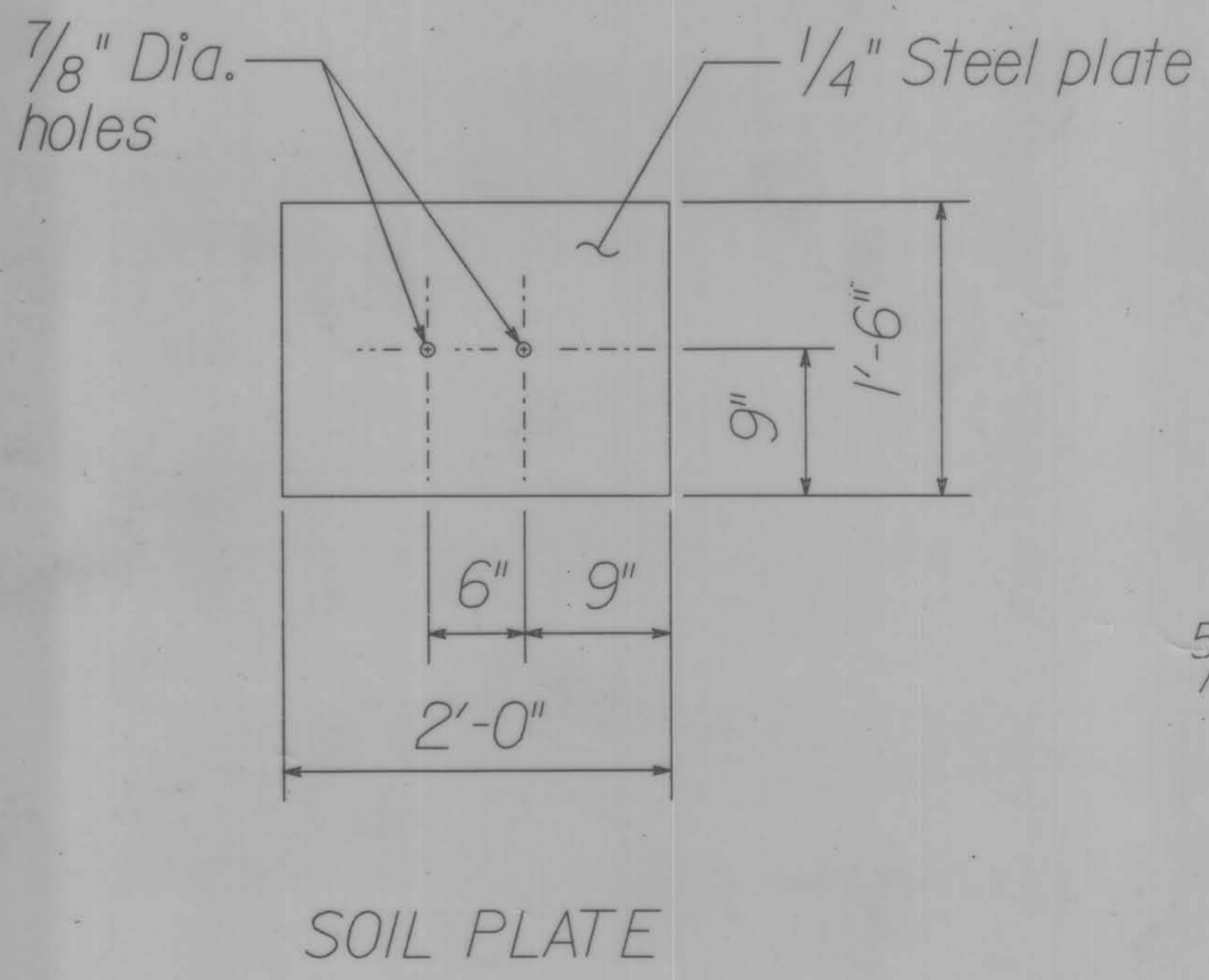


**GENERAL NOTES:**

The wood breakaway post shall be S4S timber with a stress grade of 1200 psi and shall be grade marked or certified by a recognized association or agency which is certified by the Board of Review, American Lumber Standards Committee, to grade the species. It shall receive a preservative treatment in accordance with AASHTO designation M 133.

All angles, channels, and plates shall conform to the requirements of ASTM A 36 and structural tubing to ASTM A 500. Welding shall meet the current requirements of the American Welding Society Structural Welding Code ANSI/AWS D1.1. All structural steel shall be galvanized in accordance with ASTM A 123. No punching, drilling, cutting, or welding will be permitted after galvanizing.

Post B is fabricated from Post A by adding the galvanized structural tube (See Sheet 7, Detail A) before galvanizing.

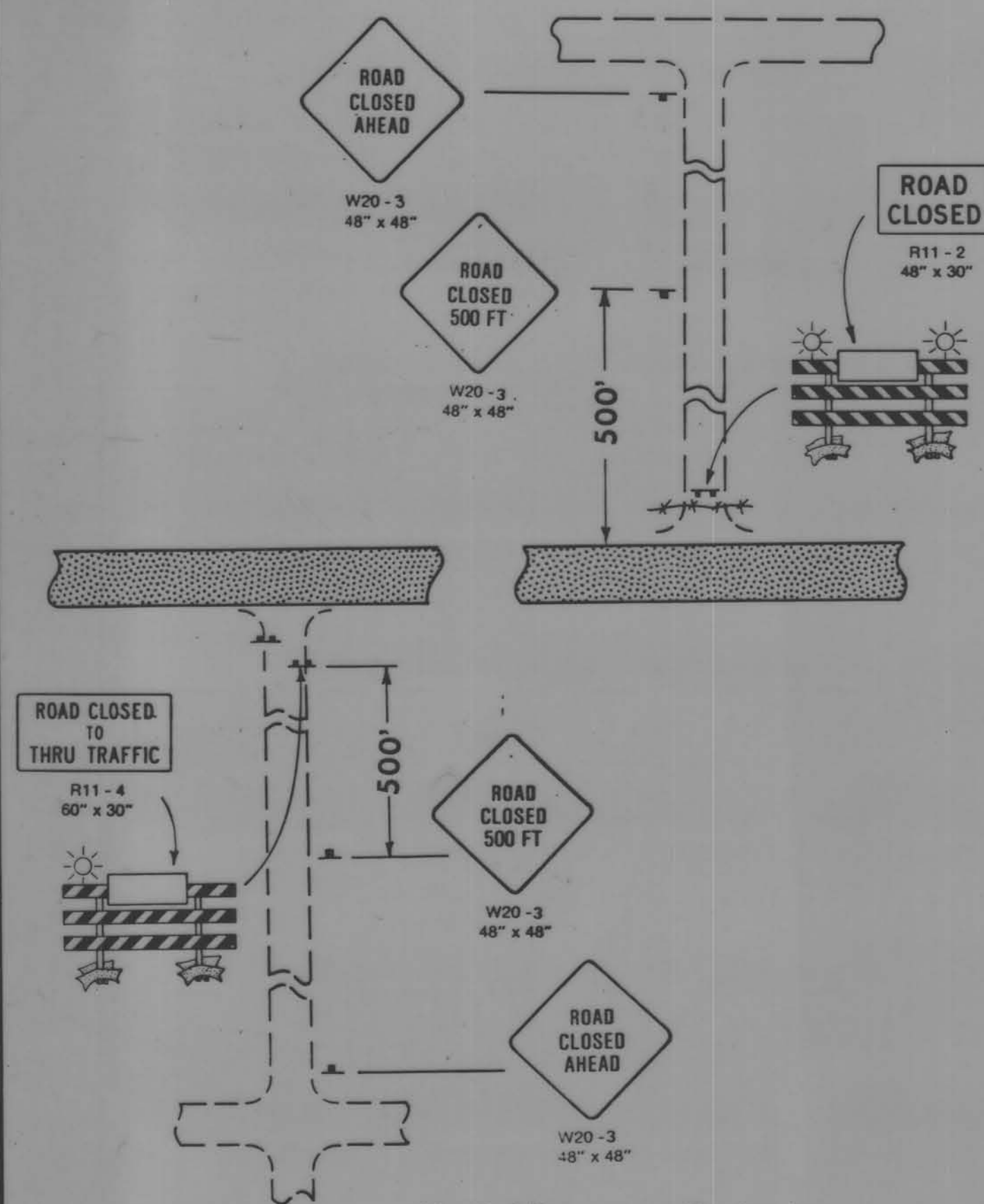


SPECIAL GUARDRAIL ANCHOR SECTION

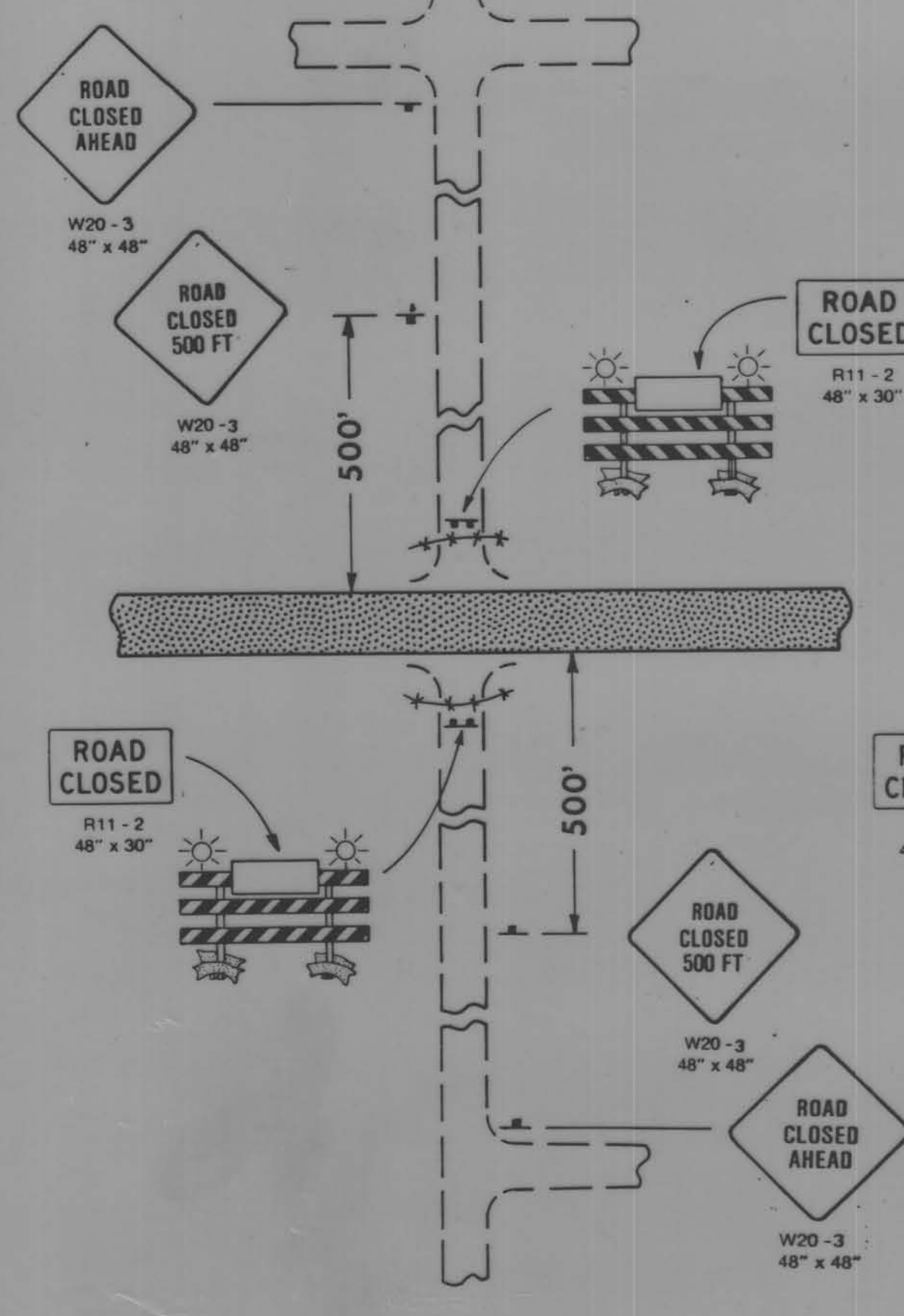


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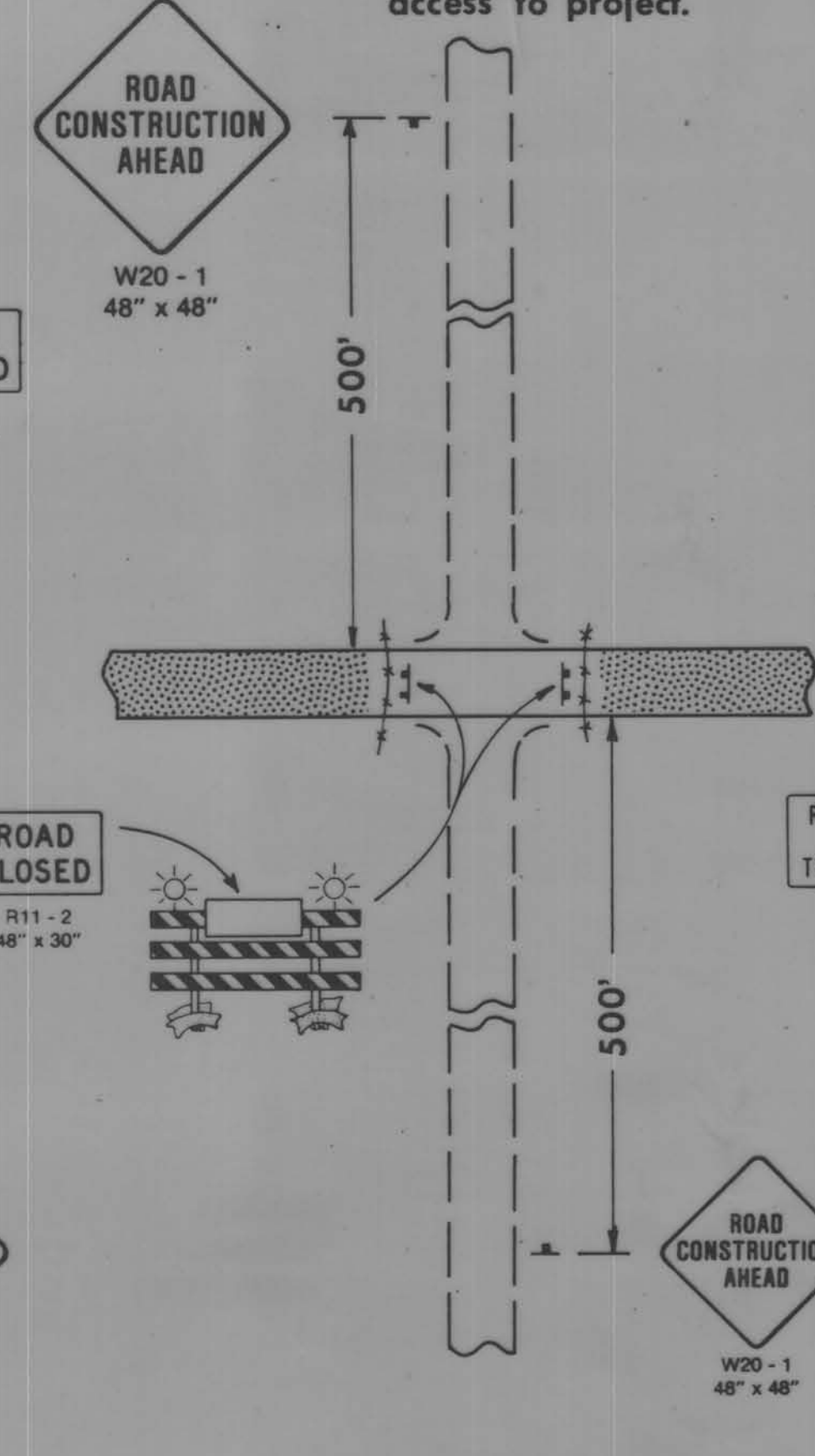
**SITUATION 2** No Access to project.



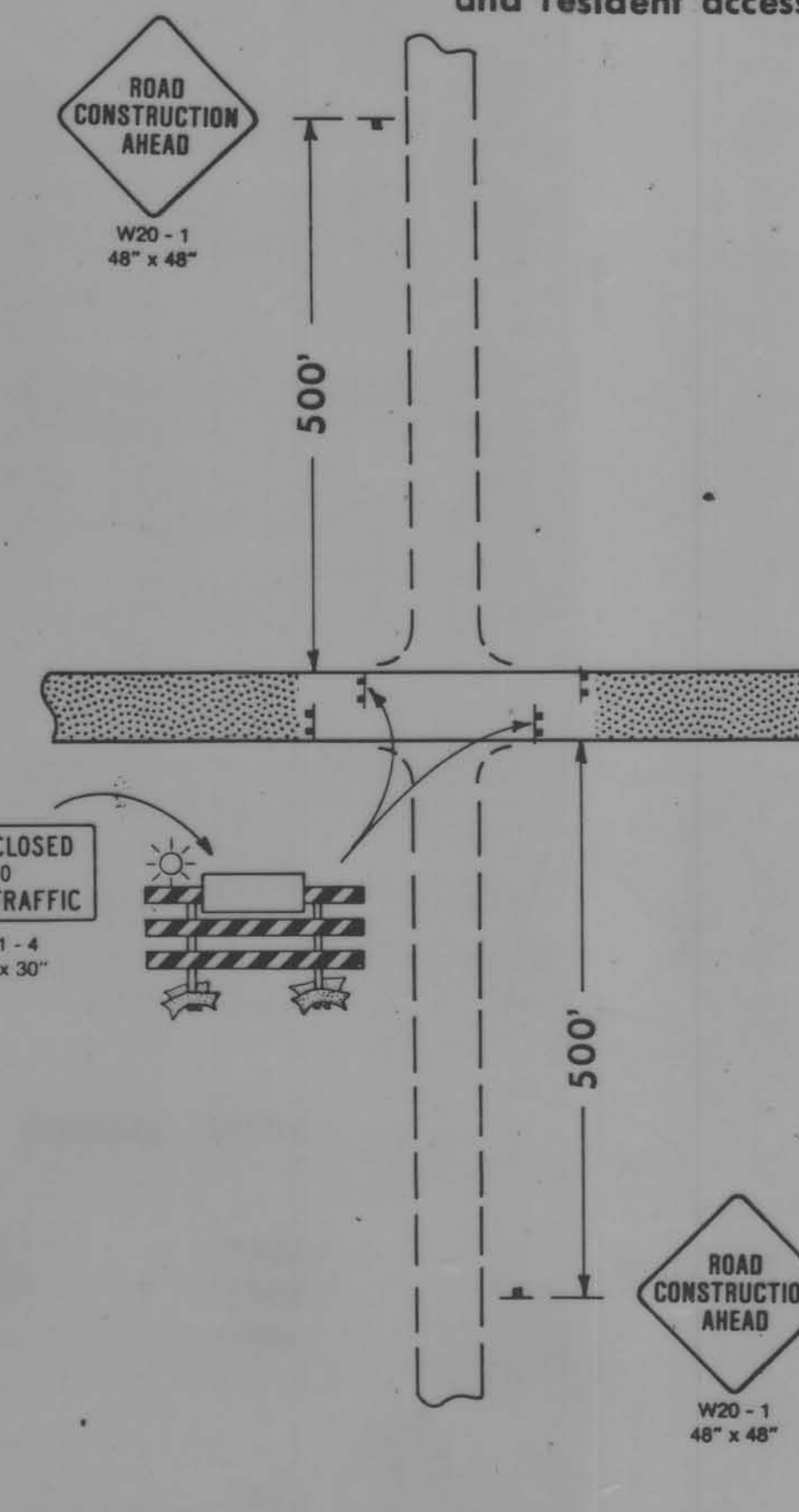
**SITUATION 4** No Access to project.



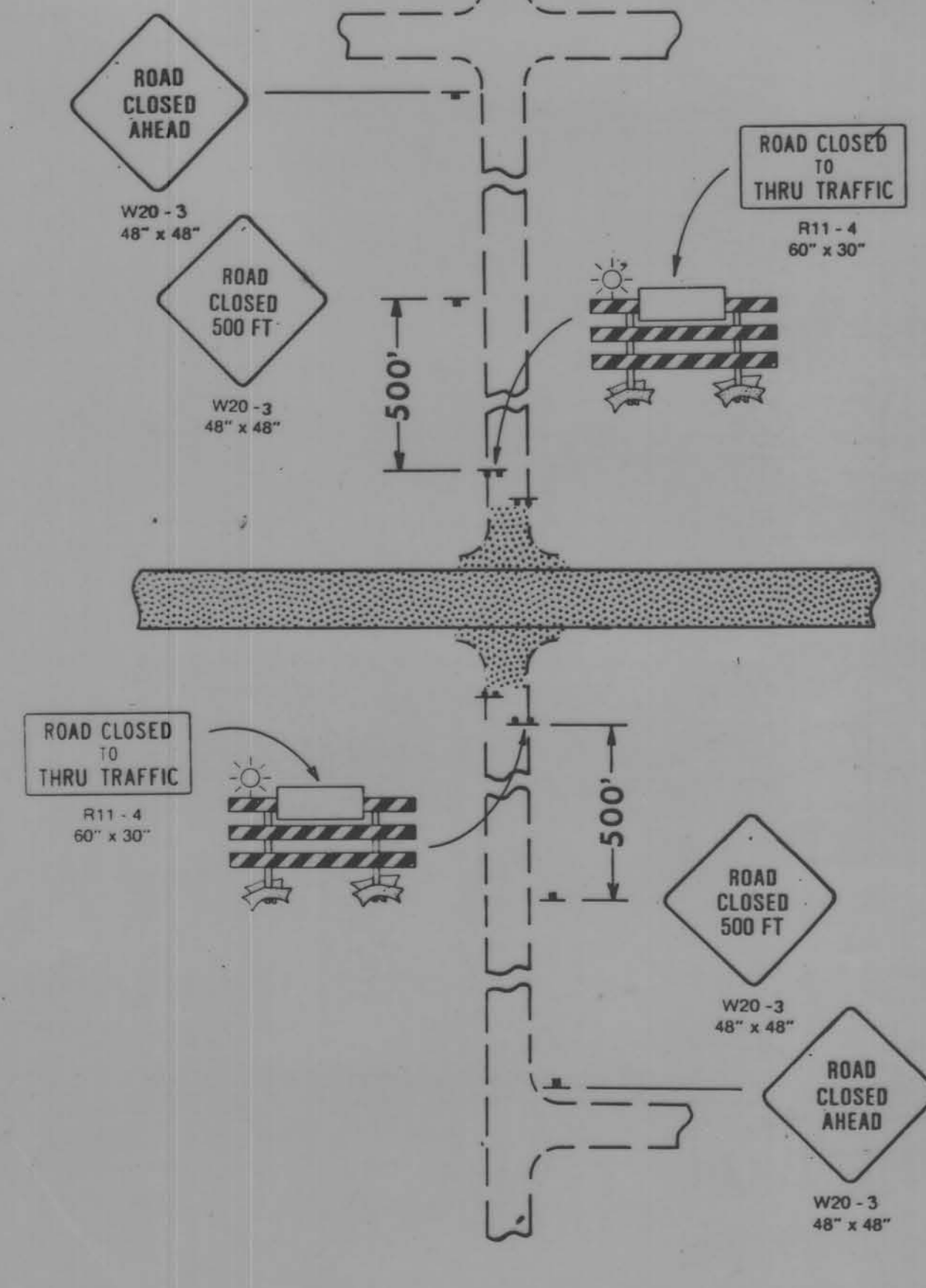
**SITUATION 5** Public cross-traffic maintained. No access to project.



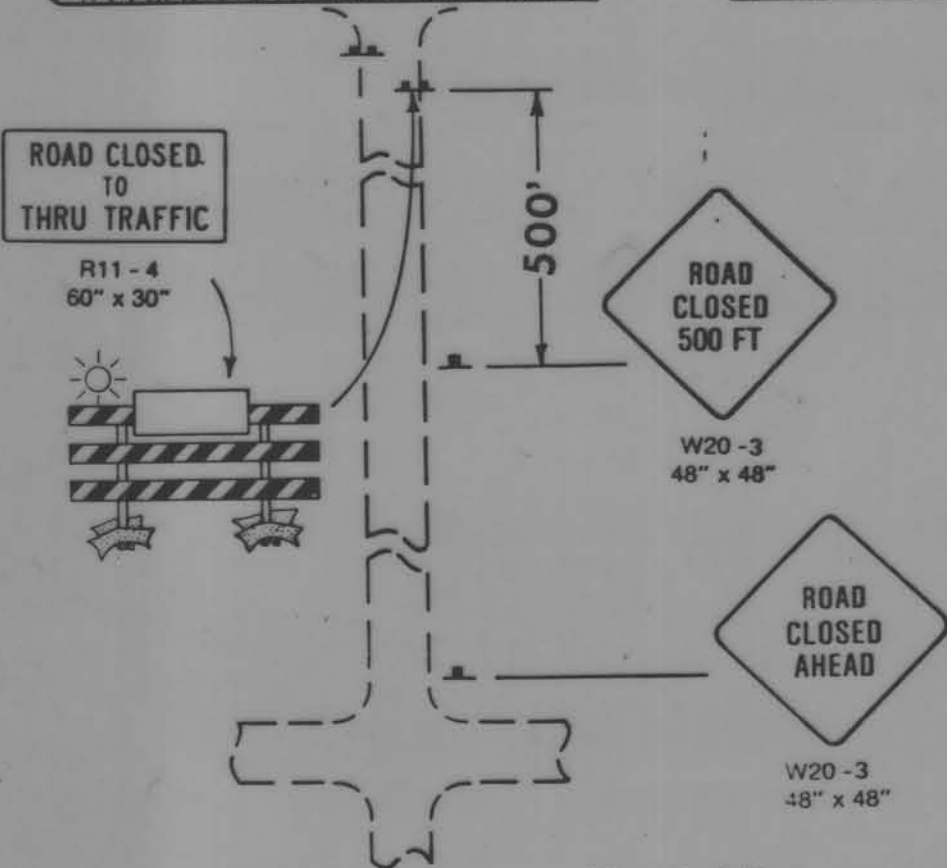
**SITUATION 6** Public cross-traffic maintained. Contractor and resident access.



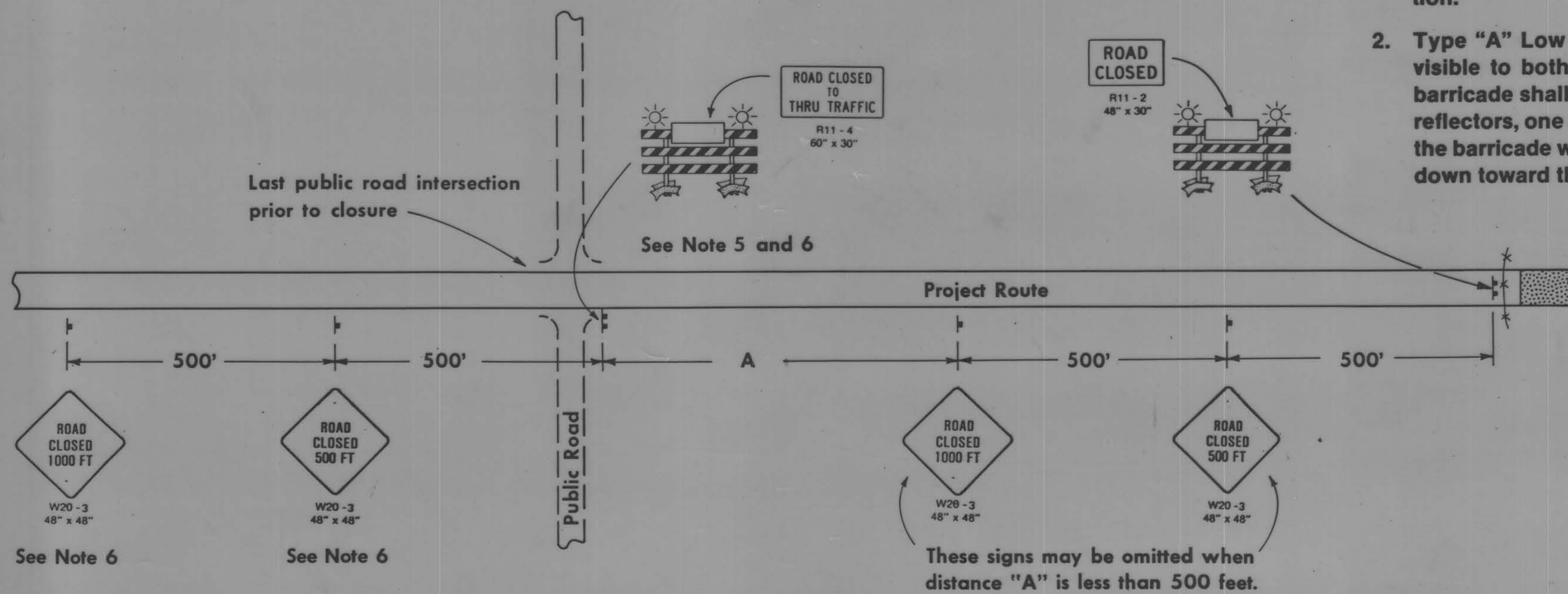
**SITUATION 7** No Public access. Contractor and resident access only.



**SITUATION 3** No Public access. Contractor and resident access only.



**SITUATION 1** Project Route closure.



**GENERAL NOTES**

- SITUATION 1 illustrates traffic control necessary to close the project route. SITUATIONS 2 through 7 are for signing of sideroads based on existing agreements and field conditions and will be selected by the engineer in charge of construction.
- Type "A" Low Intensity Flashing Warning Lights shall be visible to both directions of traffic. The back side of the barricade shall be reflectorized by a minimum of six yellow reflectors, one at each end of each rail, or at least one rail on the barricade will show reflectorized stripes properly sloped down toward the traffic side.

- All "Stop" and other regulatory signs on the sideroads are not to be disturbed. If a "Stop" or other regulatory sign must be removed, it will be relocated by the Contracting Authority.
- This layout does not include all barricades as may be required by Section 2518 of the Standard Specifications.
- In Situation 1, when distance "A" is less than 500 feet the barricade should be placed in the middle of the traffic lane approaching the work area. In this case, Note 2 shall apply. The barricade may be omitted if the distance to the work area is less than 400 feet.
- In Situation 1, if the intersection is the point of detour these two signs and barricade will become the responsibility of the contracting authority and may be modified by the contracting authority to fit detour signing.

**LEGEND**

- Traffic Sign
- Type III Barricade (Type "A" Low Intensity Flashing Warning Light Required for Nighttime Use)
- Type "A" Low Intensity Flashing Warning Light
- Work Area
- Slat Fence Barricade or Orange Plastic Safety Fence

**DETAIL SHEET**

**520-26**

Revision Date 1-23-85

**SIGNING FOR TEMPORARY ROAD CLOSURES IN RURAL AREAS (PROJECT ROUTE CLOSED TO TRAFFIC)**