

STATE OF MONTANA
STATE HIGHWAY COMMISSION

BRIDGE PLANS & QUANTITIES

FEDERAL AID PROJECT NO. I-16-90-8(5)433 P. E.
I-90-8(26)451 CONSTRUCTION

LOCKWOOD TO PINEHILL
YELLOWSTONE COUNTY

LIST OF DRAWINGS

SHEET NO.	DWG. NO.	TITLE	SHEET NO.	DWG. NO.	TITLE
1	7715	GENERAL LAYOUT - STA. 1107+87.30	14	7728	BENT NO. 4
2	7716	FOOTING PLAN	15	7729	BENT NO. 5
3	7717	BENTS NO.1 & NO.4 - E.B. & W.B. RDWYS. BACKWALL DETAILS	16	7730	ERECTION PLAN
4	7718	BENTS NO.1 & NO.4 - E.B. & W.B. RDWYS. BEAM DETAILS	17	7731	SLAB DETAILS - SPANS NO.1 & NO.2
5	7719	BENTS NO.1 & NO.4 - E.B. & W.B. RDWYS. COLUMN & FOOTING DETAILS	18	7732	SLAB DETAILS - SPANS NO.3 & NO.3
6	7720	BENTS NO.2 & NO.3 - E.B. RDWY.	19	7733	MODIFIED CURB, FLOOR DRAINS & MEDIAN EXPANSION DETAILS
7	7721	BENTS NO.2 & NO.3 - W.B. RDWY.	20	SL-1 (Rev. 8-18-64)	STANDARD SLAB, CURB, SAFETY WALK & DIAPHRAGM DETAILS
8	7722	ERECTION PLAN & SLAB DETAILS - E.B. & W.B. RDWYS.	21	J-1 (Rev. 7-20-64)	STANDARD SLAB & CURB JOINTS
9	7723	GENERAL LAYOUT - STA. 1177+71.54	22	B-A	STANDARD PRESTRESSED CONCRETE BEAM - TYPE A
10	7724	FOOTING PLAN	23	B-4	STANDARD PRESTRESSED CONCRETE BEAM - TYPE IV
11	7725	BENT NO. 1	24	SBR-T5	STANDARD STEEL BRIDGE RAIL - TYPE NO. 5
12	7726	BENT NO. 2	25	SBR-T6	STANDARD STEEL BRIDGE RAIL - TYPE NO. 6
13	7727	BENT NO. 3	26	D-1	STANDARD BRIDGE DRAIN DETAILS

ESTIMATED BRIDGE PLAN QUANTITIES										5% Swell In Class "A" Concrete				15% Swell In Structure Excavation							
STRUCTURE AT STA. 1107+87.30 EASTBOUND RDWY.	LOCATION	LENGTH IN FEET	REINFORCING STEEL LBS.	CLASS "A" CONCRETE CU. YDS.	CLASS "AD" CONCRETE CU. YDS.	STEEL BRIDGE RAIL-TYPE 5 LIN. FT.	STEEL BRIDGE RAIL-TYPE 6 LIN. FT.	STRUCTURE EXCAVATION CU. YDS.	PRESTRESSED BEAMS				TREATED TIMBER TEST PILES LUMP SUM	TREATED TIMBER PILES		FLOOR DRAINS EACH	DRAINAGE SYSTEM LUMP SUM	PREBORE HOLES FOR PILES LIN. FT.			
														FURNISHING LIN. FT.	DRIVING LIN. FT.						
									TYPE "A" EACH		TYPE "4" EACH										
									45'	55'	60'	80'									
STRUCTURE AT STA. 1177+71.54 WESTBOUND RDWY.	BENT NO. 1		5,388	5,385	39.01	4.1	12.73	12.8						0.22 LUMP SUM	874	1,020	863	1,011.5			
	BENT NO. 2			5,903	51.31	5.4			21.4	25					1074	1,050	863	1,039.5			
	BENT NO. 3			5,903	51.46	5.4			89.0	105					1074	1,050	863	1,039.5			
	BENT NO. 4			5,355	5,351	37.96	4.0		16.4	20					1074	900	863	892.5			
	SUPERSTRUCTURE	149.5	37,657	37,655				166.4	167.2			10	5						2		
	SUB-TOTAL	149.5	60,206	60,197	179.74	1.99			113.8	255			10	5		0.22 LUMP SUM	4,020	3,983.0	2		
	BENT NO. 1			5,401	5,396	39.63	4.2	12.71	12.9						0.22 LUMP SUM	918	1,020	863	1,011.5		
	BENT NO. 2			5,893	51.98	5.5			69.7	90						1059	1,050	863	1,039.5		
	BENT NO. 3			5,863	51.81	5.4			70.8	90						1059	1,050	863	1,039.5		
	BENT NO. 4			5,368	5,363	38.55	4.0	12.70	12.9							1059	900	863	892.5		
SUPERSTRUCTURE	149.5	37,657	37,655				166.4	167.2			10	5							2		
SUB-TOTAL	149.5	60,182	60,170	181.97	1.91			163.8	210			10	5		0.22 LUMP SUM	4,020	3,983.0	2			
STRUCTURE AT STA. 1177+71.54 EASTBOUND RDWY.	BENT NO. 1		4,001	4,002	19.09	2.0	15.56	14.7						0.56 LUMP SUM	672	840	650	826.0			
	BENT NO. 2			15,160	102.08	10.7			5.3	15					1049	1,840	650	1,817.0			
	BENT NO. 3			16,432	103.12	10.8			102.9	240					2160	2,160	650	2,133.0			
	BENT NO. 4			14,805	99.87	10.5			91.5	190						1,840	1,817.0				
	BENT NO. 5			3,629	17.42	1.8	14.04	14.2							650	780	650	767.0			
	SUPERSTRUCTURE	283.0	120,144	119,923	341.53	34.5		566.54				7	7	12							
	SUB-TOTAL	283.0	173,199	173,851	358	524.3		566.54	216.1	610			7	7	12	0.56 LUMP SUM	7,460	7,360.0		10 LUMP SUM	
	GRAND TOTAL	582.0		294,218	738	910.2	608.34	566.54	493.7	1,075	20	17	7	12	1.0 LUMP SUM	15,500	15,326.0	4	10 LUMP SUM	582	592

Made By L.E.P. 4-14-65 Checked By J.D.S. 4-29-65

DESIGNED	
DRAWN	
CHECKED	
REVIEWED	
APPROVED	

NOTES

LIVE LOAD - Standard HS20-44 loading or Alternate Loading. Alternate loading for bridges and floor systems with spans under 40 feet consists of two axles four feet apart with each axle weighing 24,000 lbs.

FINISHED GRADE - Finished plan grade of bridges at $\frac{1}{2}$ of Roadway as shown on "Elevation" is 0.32 ft. above profile grade shown on Road Plans due to 0.02% crown.

SPECIFICATIONS : Montana State Highway Commission Standard Specifications for Road and Bridge Construction, 1962 Edition, and any amendments thereto, and Special Provisions shall govern unless otherwise noted. Design prepared in accordance with A.A.S.H.O. Specifications, 1961 Edition, and any amendments thereto.

CAST IN PLACE CONCRETE : Unless otherwise noted, all concrete in superstructure shall be Class "A" and all concrete in substructure shall be Class "A". An "Air Entraining Agent" shall be added to all concrete except Class "S". Chamfer all exposed edges of concrete with enclosed angle less than 120°, $\frac{3}{4}$ " and fillet entrant angles $\frac{3}{4}$ " unless otherwise noted.

REINFORCING STEEL : Bends in reinforcing steel shall be made to a radius of not less than four (4) diameters of the bar except for stirrups and tie bars, which shall be bent around a pin having a diameter of not less than two (2) bar diameters. Hooks shall conform to the dimensions shown in the following sketches, except as otherwise noted.

APPROVAL : Shop plans shall be approved by the Montana State Highway Department before fabrication is begun.

SETTING OF MASONRY PLATES : Care shall be taken in placing reinforcing steel so as to clear anchor bolts.

Contractor shall finish concrete under beam or girder masonry plate slightly high and bush-hammer to exact elevation shown. Masonry plates shall be placed on three (3) layers of canvas thoroughly swabbed with red lead, as called for in the Standard Specifications.

BACKFILL : The backfill of end bents may be complete up to the bottoms of the backwalls before superstructure is in place. The backfill against the backwalls shall not be placed until after the concrete roadway slab has been placed.

STRUCTURAL STEEL : Unless otherwise noted, structural steel shall be paid for of the unit price bid for reinforcing steel and the weight paid for shall be the computed weight as obtained in accordance with the Standard Specifications.

For requirements governing the fabrication of "Structural Steel" see the Standard Specifications. To avoid oversight these requirements shall be clearly noted on the shop drawings.

Structural steel shall receive one (1) shop coat of red lead or zinc chromate primer and two (2) field coats consisting of first field or primer coat and one (1) coat of aluminum paint as specified in the Standard Specifications.

FOOTINGS : Elevations shown for bottom of footings are approximate only. Final elevations to be determined by the engineer.

STRUCTURE EXCAVATION : Only the excavation below natural ground, as it exists before construction is started, will be paid for as Structure Excavation.

OTHER NOTES : For Other Notes see Dwg. No. 7716.

REFERENCES

DRAWING NO.	DESCRIPTION
7716	FOOTING PLAN
7717	BENTS No. 1 & No. 4 - E.B. & W.B. RDWS. - BACKWALL DETAILS
7718	BENTS No. 1 & No. 4 - E.B. & W.B. RDWS. - BEAM DETAILS
7719	BENTS No. 1 & No. 4 - E.B. & W.B. RDWS. - COLUMN & FOOTING DETAILS
7720	BENTS No. 2 & No. 3 - E.B. RDW.
7721	BENTS No. 2 & No. 3 - W.B. RDW.
7722	ERECTION PLAN & SLAB DETAILS - E.B. & W.B. RDWS.
B-A	STANDARD PRESTRESSED CONCRETE BEAM - TYPE A
SL-1 (B-12-64)	STANDARD SLAB, CURB, SAFETY WALK & DIAPHRAGM DETAILS
SBR-15	STANDARD STEEL BRIDGE RAIL TYPE No. 5
D-1	STANDARD BRIDGE DRAIN DETAILS

STATE OF MONTANA STATE HIGHWAY COMMISSION

JOHNSON LANE SEPARATION
AT STA. 1107+87.30
FEDERAL AID PROJECT NO. I90-8(26)451
YELLOWSTONE COUNTY
GENERAL LAYOUT

Scale = 1" = 15'-0" except as Noted

APPROVED BY: *[Signature]*
CIVIL ENGINEER

DRAWING NO. 7715

Note -
For location of utilities, see
appropriate Road Plans Sheet.

Note: For Subsoil see "Log of Borings"
Dwg. No. 7716.

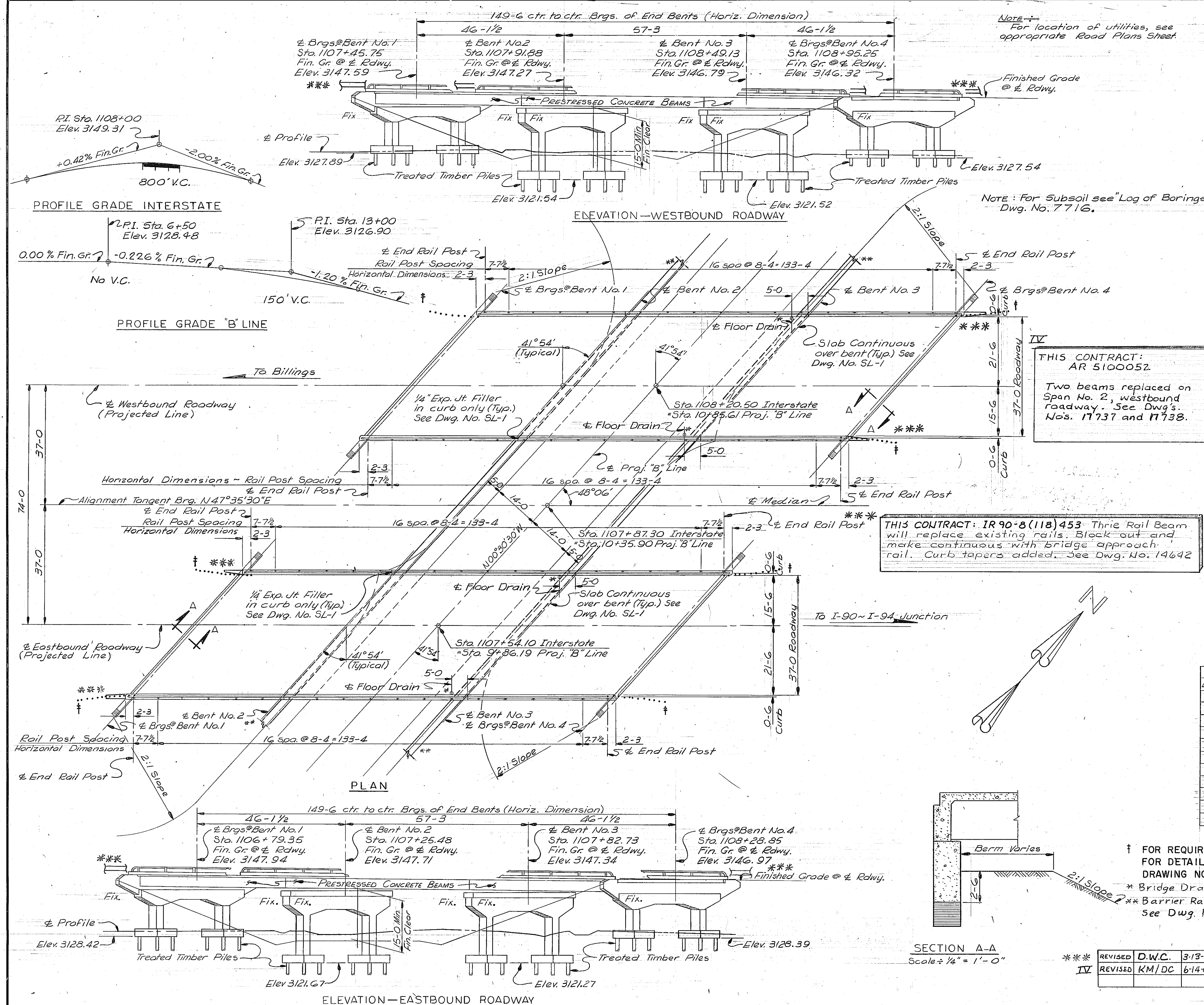
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AR 5100052

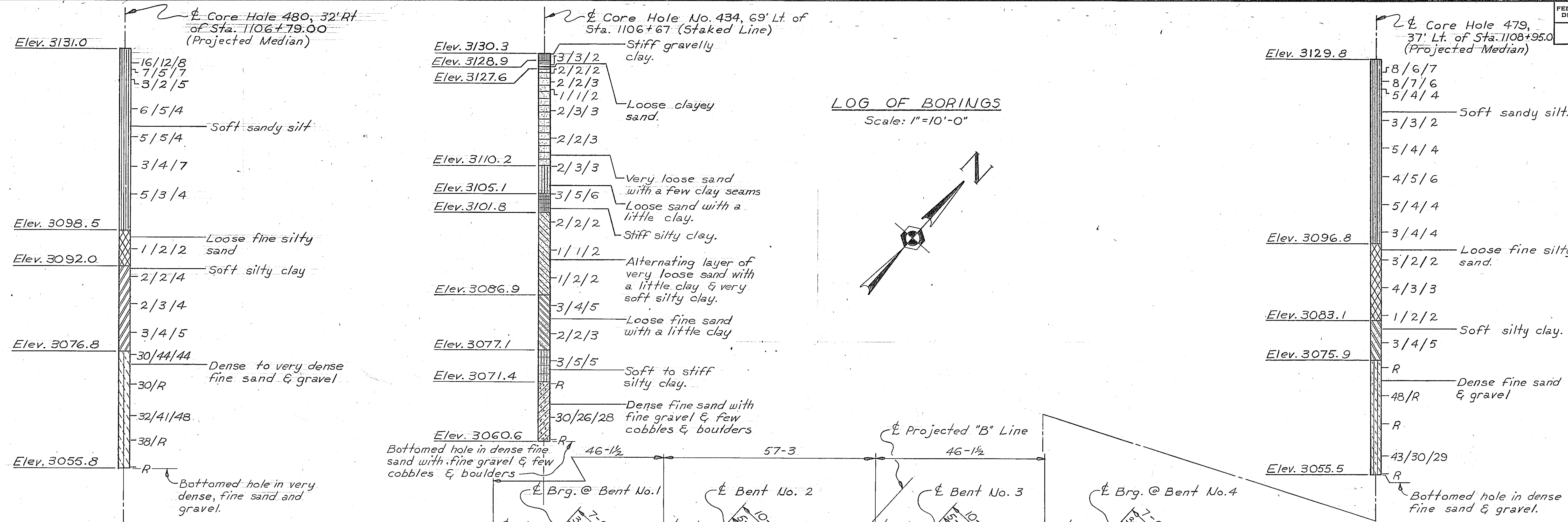
Two beams replaced on
Span No. 2, westbound
roadway. See Dwg's.
Nos. 17737 and 17738.

THIS CONTRACT: IR 90-8(118)453 - Three Rail Beam
will replace existing rails. Block out and
make continuous with bridge approach
rail. Curb tapered added. See Dwg. No. 14642

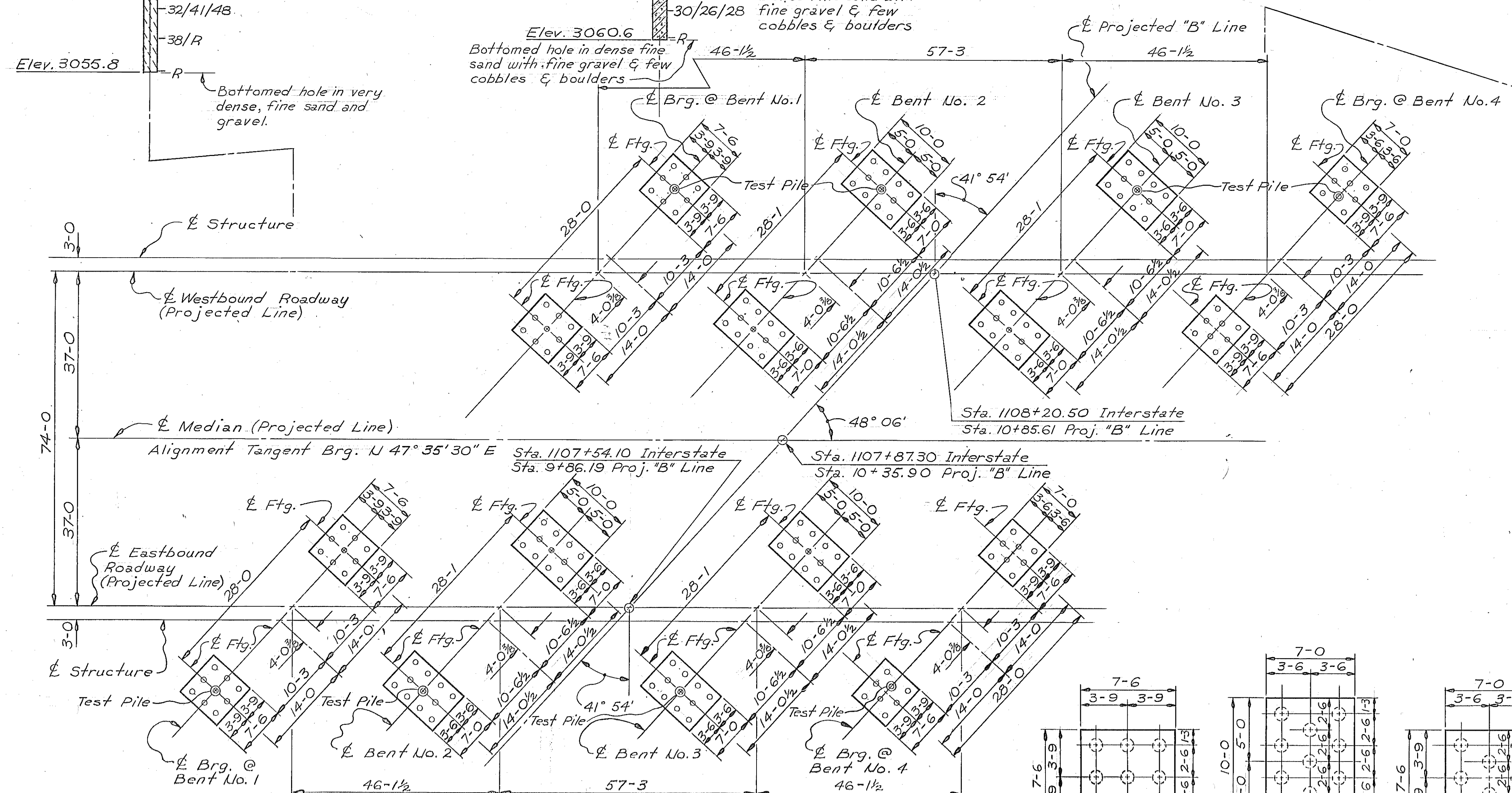
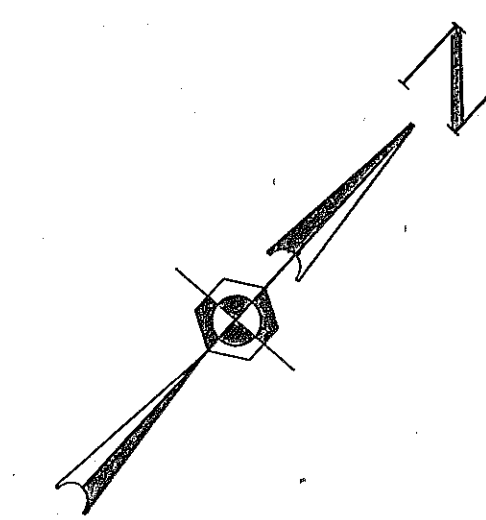
SECTION A-A
Scale = 1/4" = 1'-0"

REVISED	D.W.C.	3-13-90	DESIGNED		
REVISED	KM/DC	6-14-00	DRAWN	D.M.B.	12-28-64
			TRACED		
			CHECKED	C.W.R.	3-25-66
			REVISOR	Zuck Eng.	Mar '73
			REVISOR	K.E.M.	9-17-84
			REVISOR	S.D.K.	11-14-84

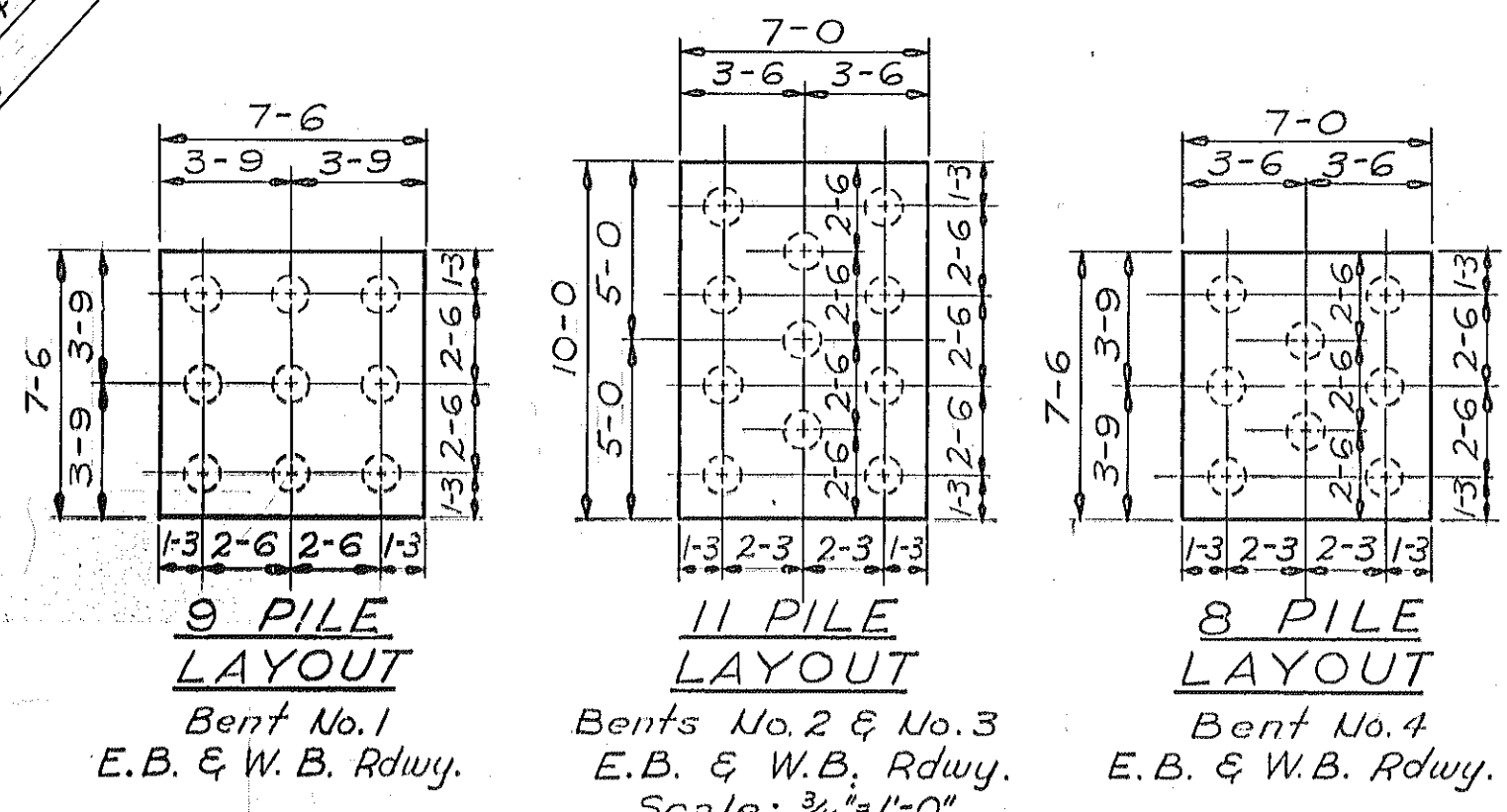




LOG OF BORINGS
Scale: 1"=10'-0"



FOOTING PLAN
Scale: Stationing 1"=15'-0"
Footings 1"=10'-0"



NOTES

SOILS AND FOUNDATION MATERIALS: Borings were taken by the Montana State Highway Department at the points shown on the General Layout or Footing Plan.

The series of three numbers shown on the log of borings indicates the number of blows per G penetration for each number of the series of a 2" sample tube which was driven in accordance with the Standard Penetration Test made with a 2" split tube sampler using a 140" hammer having a 30" drop. "R" indicates refusal of the sample tube to penetrate G after 50 blows.

The State Highway Department does not assume any responsibility for any variation or misinterpretation of the classes of materials and adjustment in bid prices will not be made if the materials found do not agree with those shown in the log of borings.

FOUNDATION PILES: For bidding purposes only, pile lengths have been estimated as noted on the details. See the Special Provisions for Test Pile and Service Pile requirements.

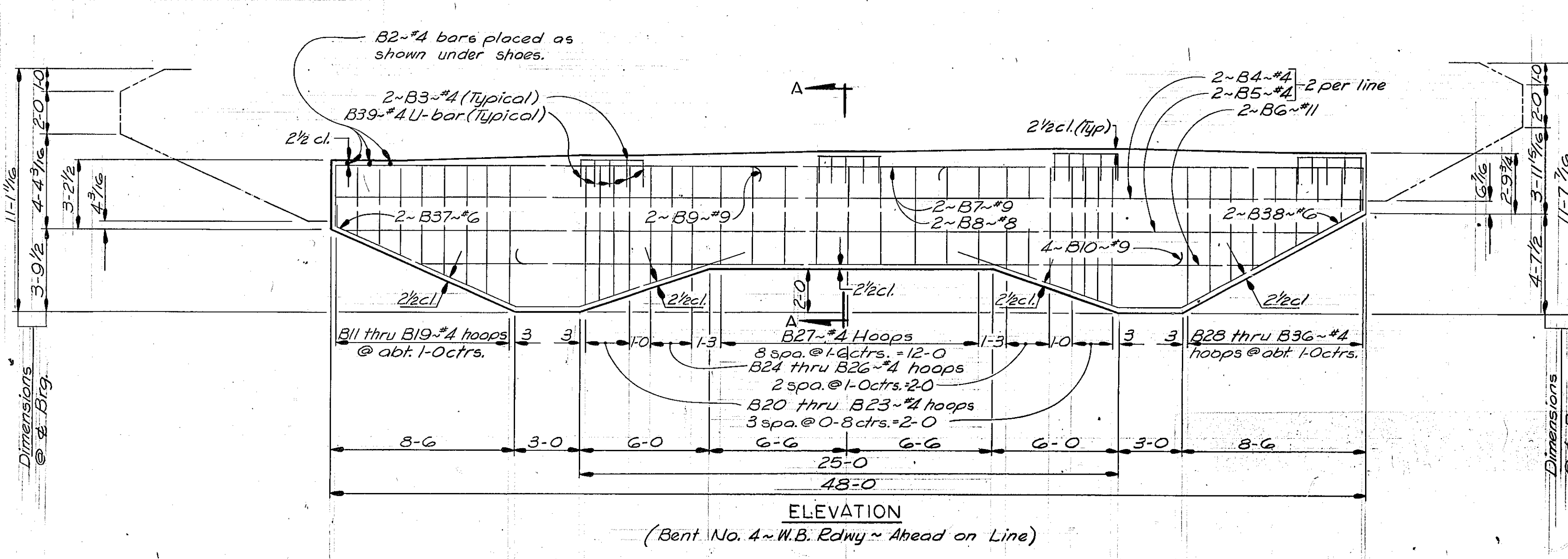
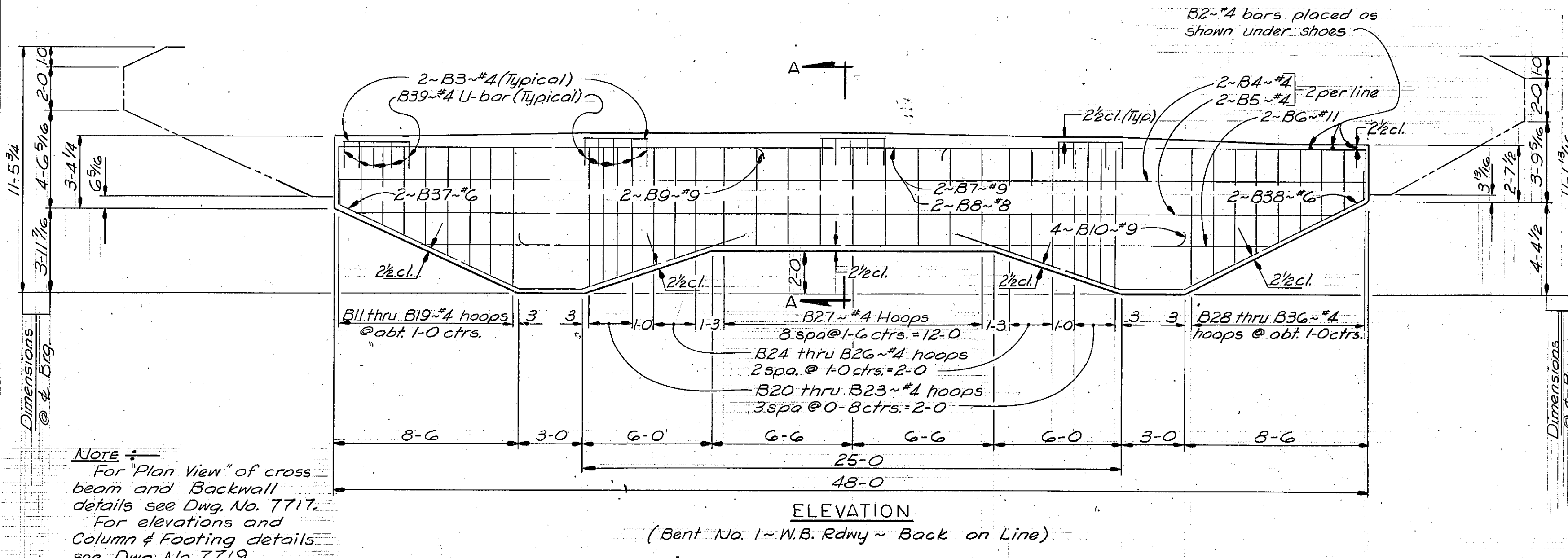
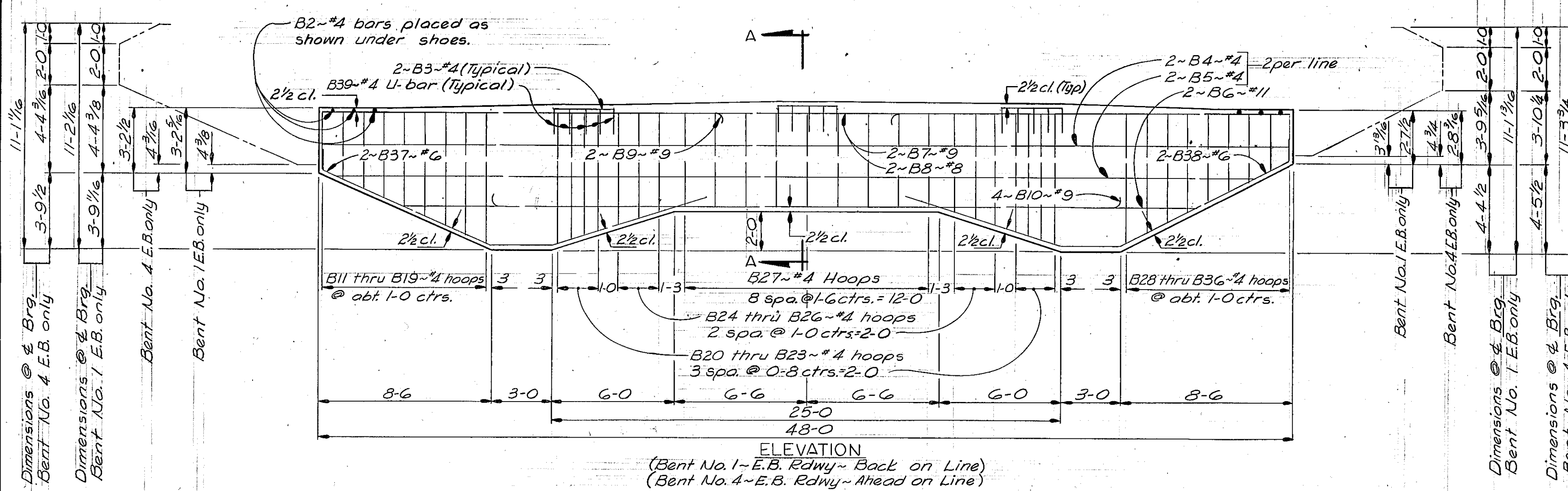
OTHER NOTES: For other notes see Dwg. No. 7715.

STATE OF MONTANA
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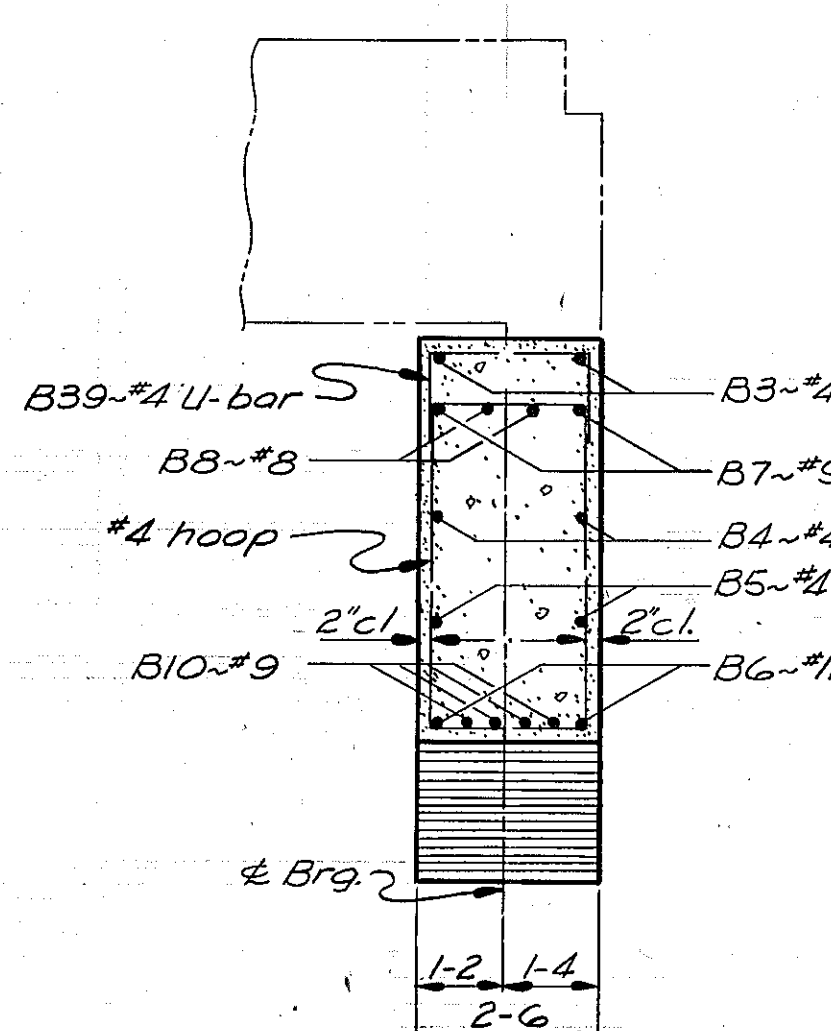
FOOTING PLAN
Scale: As Noted

DESIGNED		
DRAWN	J. J. Z.	1-6-65
TRACED		
CHECKED	C. W. R.	4-1-65
REVISED		
REVISED		



BILL OF REINFORCING STEEL									
BENT BARS (All dimensions are out to out)									
BENT No. 1 & BENT No. 4 ~ E.B. Rdwy. (One Bent Only)									
MARK	SIZE	NO.	TYPE	LENGTH	A	B	C	D	E
B11	#4	1	1	11'-0"	2'-11"	2'-2"	0'-5"		
B12	#4	1	1	11'-11"	3'-4 1/2"				
B13	#4	1	1	12'-10"	3'-10"				
B14	#4	1	1	13'-9"	4'-3 1/2"				
B15	#4	1	1	14'-8"	4'-9"				
B16	#4	1	1	15'-6"	5'-2"				
B17	#4	1	1	16'-5"	5'-7 1/2"				
B18	#4	1	1	17'-4"	6'-1"				
B19	#4	1	1	18'-3"	6'-6 1/2"				
B20	#4	2	2	18'-3"	6'-6 1/2"				
B21	#4	1	1	17'-10"	6'-4"				
B22	#4	1	1	17'-4"	6'-1"				
B23	#4	1	1	16'-11"	5'-10 1/2"				
B24	#4	1	1	16'-3"	5'-6 1/2"				
B25	#4	1	1	15'-8"	5'-3"				
B26	#4	2	2	15'-0"	4'-11"				
B27	#4	9	9	14'-6"	4'-8"				
B28	#4	1	1	18'-2"	6'-6"				
B29	#4	1	1	17'-2"	6'-0"				
B30	#4	1	1	16'-1"	5'-5 1/2"				
B31	#4	1	1	15'-1"	4'-11 1/2"				
B32	#4	1	1	14'-1"	4'-5 1/2"				
B33	#4	1	1	13'-1"	3'-11 1/2"				
B34	#4	1	1	12'-0"	3'-5"				
B35	#4	1	1	11'-0"	2'-11"				
B36	#4	1	1	10'-0"	2'-5"	2'-2"	0'-5"		
B37	#4	2	3	21'-1"	7'-11"	3'-0"	9'-2"	2'-6"	3'-9"
B38	#4	2	3	21'-2"	7'-11"	3'-0"	9'-3"	2'-6"	4'-4"
B39	#4	15	2	4'-8"	1'-3"	2'-2"			
BENT No. 1 ~ W.B. Rdwy.									
MARK	SIZE	NO.	TYPE	LENGTH	A	B	C	D	E
B11	#4	1	1	11'-0"	2'-11"	2'-2"	0'-5"		
B12	#4	1	1	11'-11"	3'-4 1/2"				
B13	#4	1	1	12'-10"	3'-10"				
B14	#4	1	1	13'-9"	4'-3 1/2"				
B15	#4	1	1	14'-8"	4'-9"				
B16	#4	1	1	15'-6"	5'-2"				
B17	#4	1	1	16'-5"	5'-7 1/2"				
B18	#4	1	1	17'-4"	6'-1"				
B19	#4	1	1	18'-3"	6'-6 1/2"				
B20	#4	2	2	18'-3"	6'-6 1/2"				
B21	#4	1	1	17'-10"	6'-4"				
B22	#4	1	1	17'-4"	6'-1"				
B23	#4	1	1	16'-11"	5'-10 1/2"				
B24	#4	1	1	16'-3"	5'-6 1/2"				
B25	#4	1	1	15'-8"	5'-3"				
B26	#4	2	2	15'-0"	4'-11"				
B27	#4	9	9	14'-6"	4'-8"				
B28	#4	1	1	18'-2"	6'-6"				
B29	#4	1	1	17'-2"	6'-0"				
B30	#4	1	1	16'-1"	5'-5 1/2"				
B31	#4	1	1	15'-0"	4'-11"				
B32	#4	1	1	13'-11"	4'-4 1/2"				
B33	#4	1	1	12'-10"	3'-10"				
B34	#4	1	1	11'-9"	3'-3 1/2"				
B35	#4	1	1	10'-8"	2'-9"				
B36	#4	1	1	9'-7"	2'-2 1/2"	2'-2"	0'-5"		
B37	#4	2	3	21'-1"	7'-11"	3'-0"	9'-2"	2'-6"	3'-9"
B38	#4	2	3	21'-4"	7'-11"	3'-0"	9'-5"	2'-6"	4'-6"
B39	#4	20	2	4'-8"	1'-3"	2'-2"			
BENT No. 4 ~ W.B. Rdwy.									
MARK	SIZE	NO.	TYPE	LENGTH	A	B	C	D	E
B11	#4	1	1	11'-0"	2'-11"	2'-2"	0'-5"		
B12	#4	1	1	11'-11"	3'-4 1/2"				
B13	#4	1	1	12'-10"	3'-10"				
B14	#4	1	1	13'-9"	4'-3 1/2"				
B15	#4	1	1	14'-8"	4'-9"				
B16	#4	1	1	15'-6"	5'-2"				
B17	#4	1	1	16'-5"	5'-7 1/2"				
B18	#4	1	1	17'-4"	6'-1"				
B19	#4	1	1	18'-3"	6'-6 1/2"				
B20	#4	2	2	18'-3"	6'-6 1/2"				
B21	#4	1	1	17'-10"	6'-4"				
B22	#4	1	1	17'-4"	6'-1"				
B23	#4	1	1	16'-11"	5'-10 1/2"				
B24	#4	1	1	16'-3"	5'-6 1/2"				
B25	#4	1	1	15'-8"	5'-3"				
B26	#4	2	2	15'-0"	4'-11"				
B27	#4	9	9	14'-6"	4'-8"				
B28	#4	1	1	18'-2"	6'-6"				
B29	#4	1	1	17'-2"	6'-0"				
B30	#4	1	1	16'-1"	5'-5 1/2"				
B31	#4	1	1	15'-0"	4'-11"				
B32	#4	1	1	13'-11"	4'-4 1/2"				
B33	#4	1	1	12'-10"	3'-10"				
B34	#4	1	1	11'-9"	3'-3 1/2"				
B35	#4	1	1	10'-8"	2'-9"				
B36	#4	1	1	9'-7"	2'-2 1/2"	2'-2"	0'-5"		
B37	#4	2	3	21'-1"	7'-11"	3'-0"	9'-2"	2'-6"	3'-9"
B38	#4	2	3	21'-4"	7'-11"	3'-0"	9'-5"	2'-6"	4'-6"
B39	#4	20	2	4'-8"	1'-3"	2'-2"			

* NOTE: For location of B1 straight bars see Dwg. No. 7717.



NOTES
OTHER NOTES: For other notes see Dwg. No. 7715 & 7716.

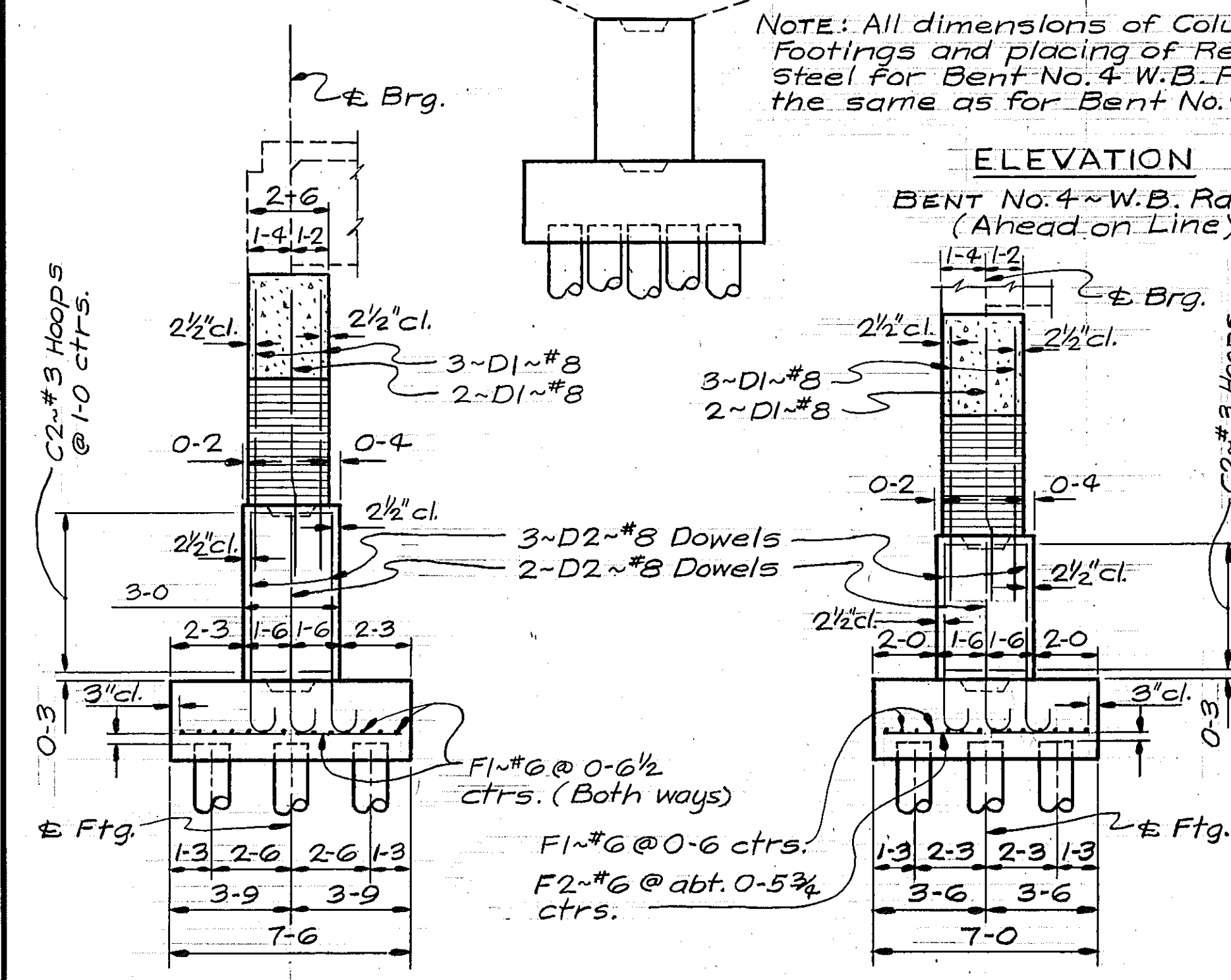
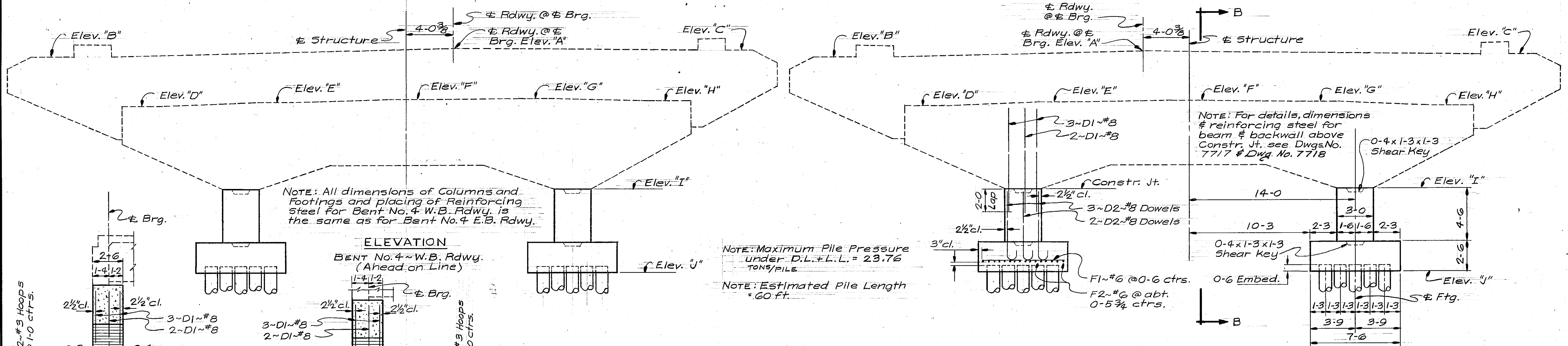
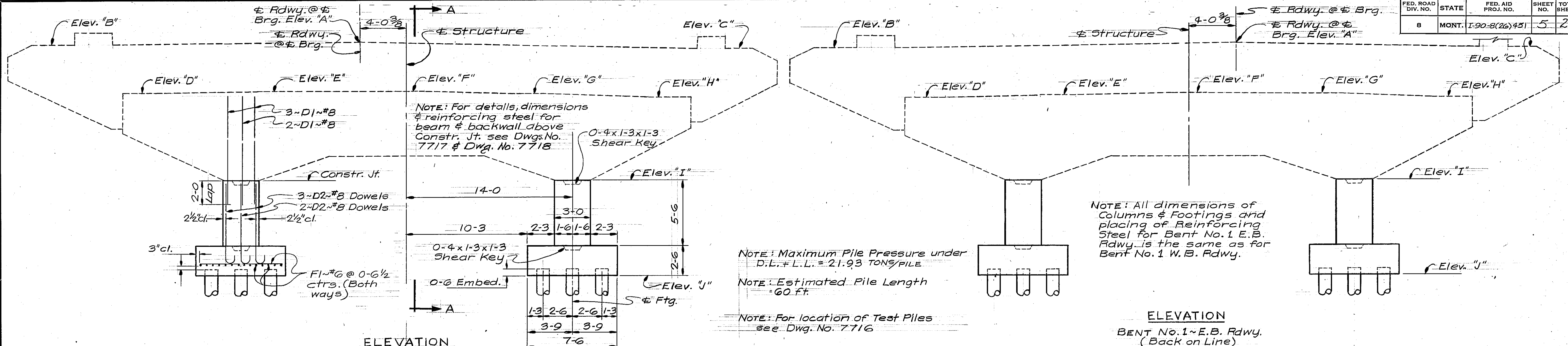
STATE OF MONTANA
STATE HIGHWAY COMMISSION

JOHNSON LANE SEPARATION
AT STA. 1107+87.30
FEDERAL AID PROJECT NO. I-90-8(26)451
YELLOWSTONE COUNTY

BENTS NO. 1 & NO. 4 E.B. & W.B. RDWYS.
BEAM DETAILS

Scale 1/4" = 1'-0" Except as Noted

DESIGNED	R.L.H.	3-3-65
DRAWN	D.M.B.	3-18-65
TRACED		
CHECKED	C.W.R.	3-30-65
REVISED		
REVISED		



BILL OF REINFORCING STEEL

STRAIGHT BARS | BENT BARS (All dimensions are out to out)

MARK	SIZE	NO.	LENGTH	MARK	SIZE	NO.	TYPE	LENGTH	A	B	C	D
------	------	-----	--------	------	------	-----	------	--------	---	---	---	---

Bents No. 1~E.B. & W.B. Rdwys.
(One Bent Only)

				D2	#8	16	2	8'-2"	7'-1"	1'-1"		
D1	#8	16	8'-10"	C2	3	12	1	11'-4"	2'-8"	2'-8"	0'-4"	
F1	6	56	7'-0"									

Bents No. 4~E.B. & W.B. Rdwys.
(One Bent Only)

				D2	8	16	2	7'-2"	6'-1"	1'-1"		
D1	8	16	8'-10"	C2	#3	10	1	11'-4"	2'-8"	2'-8"	0'-4"	
F1	6	28	7'-0"									
F2	#6	32	6'-6"									

TYPE 1

TYPE 2

TABLE OF ELEVATIONS				
ELEV.	BENT No. 1 W.B. Rdwy.	BENT No. 1 E.B. Rdwy.	BENT No. 4 W.B. Rdwy.	BENT No. 4 E.B. Rdwy.
"A"	3147.59	3147.94	3146.32	3146.97
"B"	3147.37	3147.59	3145.68	3146.53
"C"	3147.04	3147.57	3146.16	3146.70
"D"	3143.20	3143.42	3141.54	3142.39
"E"	3143.38	3143.62	3141.85	3142.69
"F"	3143.38	3143.76	3142.09	3142.80
"G"	3143.17	3143.68	3142.13	3142.69
"H"	3142.89	3143.42	3141.98	3142.53
"I"	3135.89	3136.42	3134.54	3135.39
"J"	3127.89	3128.42	3127.54	3128.39

NOTES

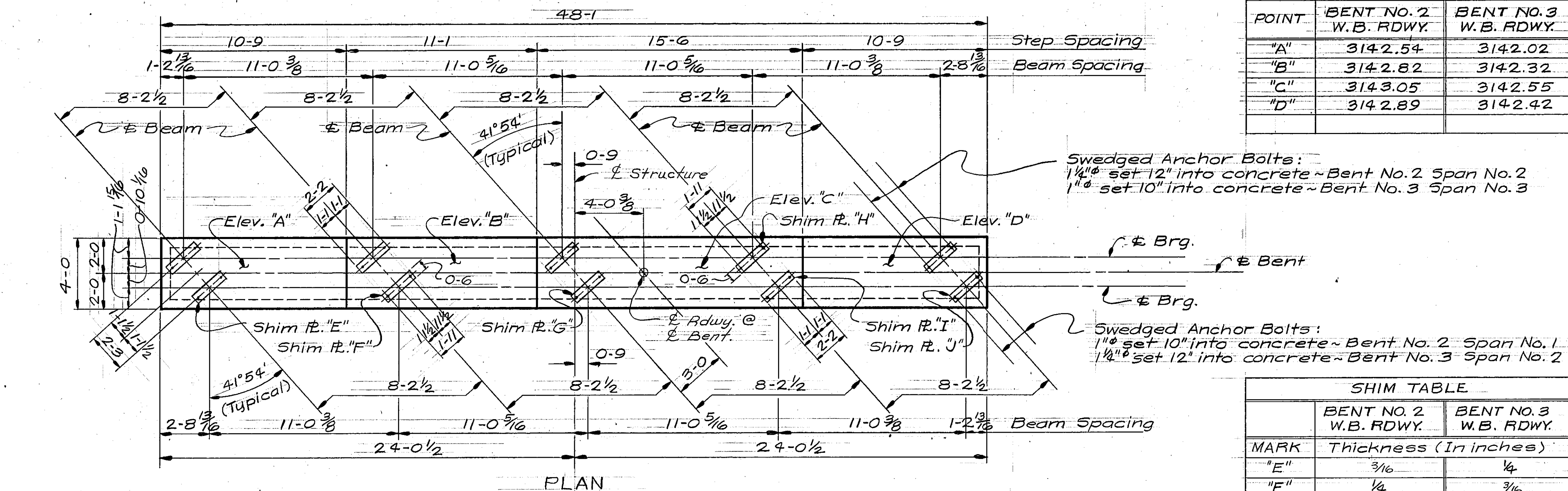
OTHER NOTES: For other notes see Dwg. No. 7715 & No. 7716.

STATE OF MONTANA
STATE HIGHWAY COMMISSION

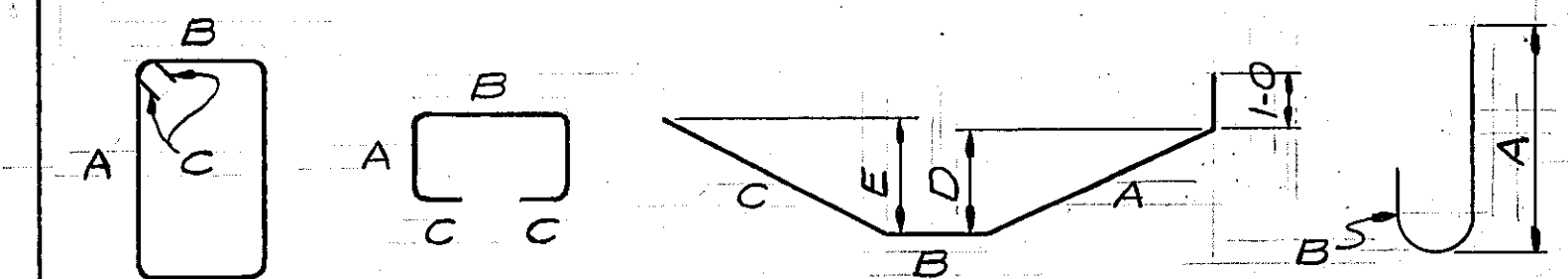
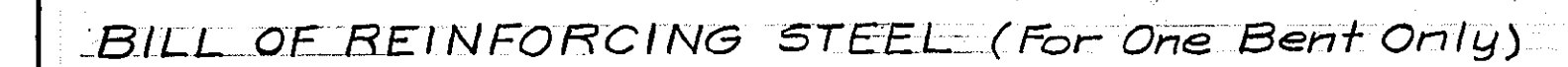
JOHNSON LANE SEPARATION
AT STA. 1107 + 87.30
FEDERAL AID PROJECT NO. I-90-8(26)451
YELLOWSTONE COUNTY
BENTS NO. 1 & NO. 4
E.B. & W.B. RDWYS.
COLUMN & FOOTING DETAILS
Scale 3/4" = 1'-0"

DESIGNED	R.L.H.	3-4-65
DRAWN	F.L.S.	3-19-65
TRACED		
CHECKED	C.W.R.	3-30-65
REVISED		
REVISED		

DRAWING NO. 7719



SHIM TABLE		
	BENT NO. 2 W.B. RDWY.	BENT NO. 3 W.B. RDWY.
MARK	Thickness (In inches)	
"E"	3/16	1/4
"F"	1/4	3/16
"G"	3/16	1/4
"H"	0	5/16
"I"	5/16	3/16
"J"	3/16	3/16

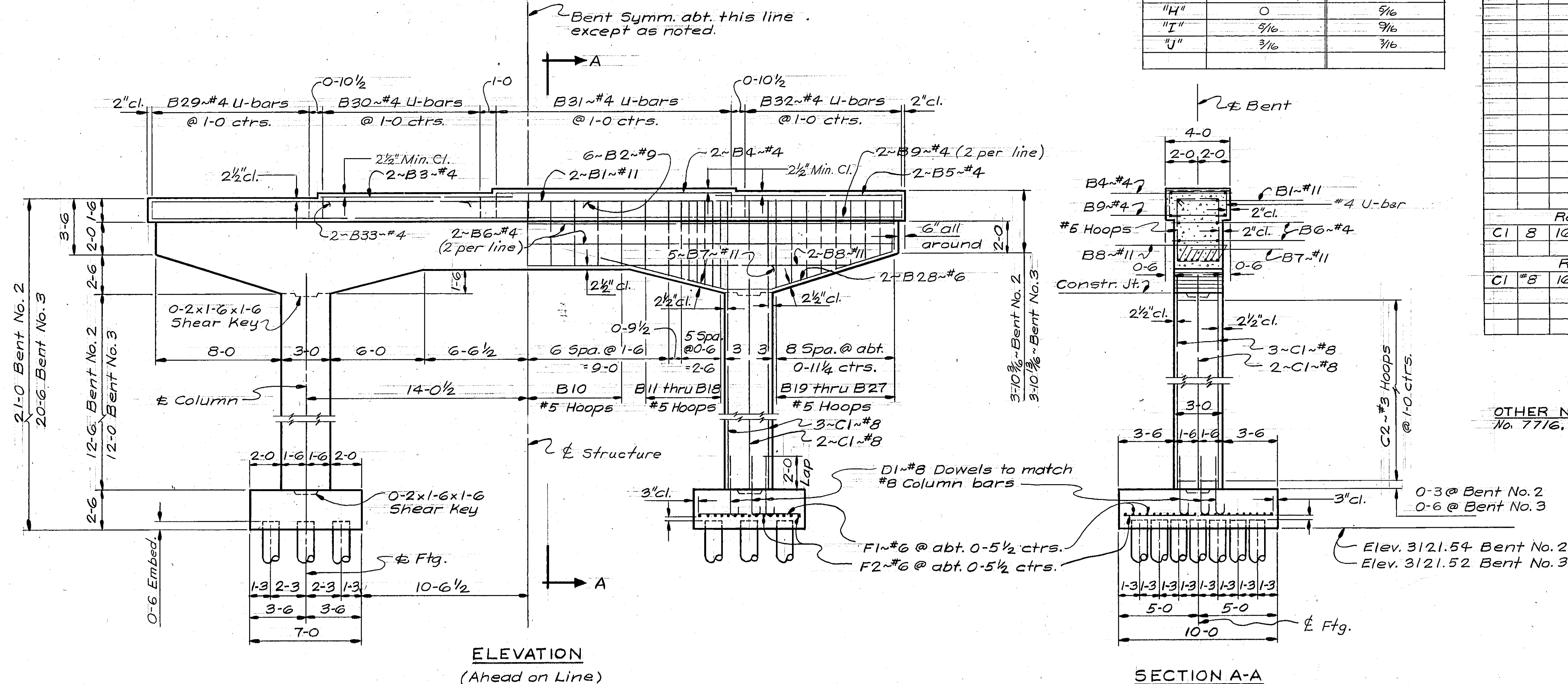


STRAIGHT BARS				BENT BARS (All dimensions are out to out)									
MARK	SIZE	No.	LENGTH	MARK	SIZE	No.	TYPE	LENGTH	A	B	C	D	E
BT	#11	2	47'-9"	B10	#5	9	1	14'-8"	4'-2"	2'-8"	0'-6"		
B2	9	12	20-4	B11		2		15-1	4-4½				
B3	4	2	11-3	B12				15-10	4-9				
B4	4	2	15-2	B13				16-3	4-11½				
B5	4	2	11-0	B14				16-6	5-1				
B6	4	8	24-0	B15				16-9	5-2½				
B7	11	5	31-1	B16				17-0	5-4				
B8	11	2	41-0	B17				17-3	5-5½				
B9	4	4	24-6	B18				17-6	5-7				
B33	4	2	11-0	B19				17-6	5-7				
				B20				16-11	5-3½				
F1	6	44	6-6	B21				16-4	5-0				
F2	6	30	9-6	B22				15-9	4-8½				
				B23				15-2	4-5				
				B24				14-7	4-1½				
				B25				14-0	3-10				
				B26				13-5	3-6½				
				B27	5	2	1	12-10	3-3	2-8	0-6		
				B28	6	4	3	20-0	8-2	3-0	7-10	2'-5"	1'-11"
				B29	4	11	2	7-4	1-2	3-8	0-8		
				B30	4	11	2	7-11	1-5½	3-8			
				B31	4	16	2	8-4	1-8	3-8			
				B32	4	11	2	8-0	1-6	3-8	0-8		
				D1	8	16	4	4-10	3-9	1-1			

Reinforcing Steel for Bent No. 2 W.B. only											
C1	8	16	18-4	C2	3	26	1	11-4	2-8	2-8	0-4
Reinforcing Steel for Bent No. 3 W.B. only											
C1	*8	16	17-10	C2	*3	24	1	11-4	2-8	2-8	0-4

NOTES

OTHER NOTES:- For other notes see Dwg. No. 7715 &
No. 7716.



NOTE: For location of Test Piles
see Dwg. No. 7716

NOTE : Maximum Pile Pressure Under :
D.L. + L.L. = 20.75 TONS/PILE

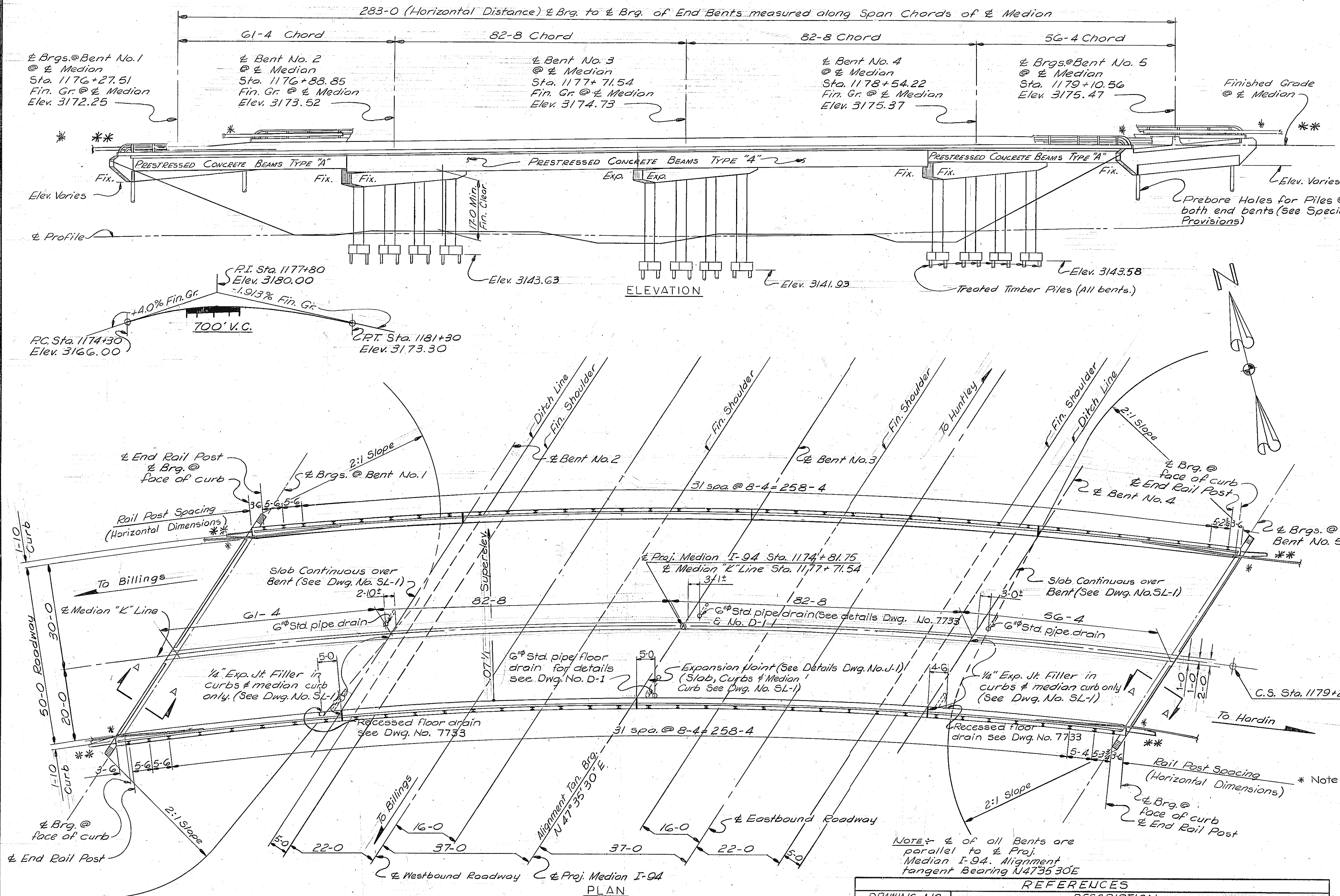
NOTE : Estimated Pile Length = 50 ft.

STATE OF MONTANA
STATE HIGHWAY COMMISSION

JOHNSON LANE SEPARATION
AT STA. 1107+87.30
FEDERAL AID PROJECT NO. I-90-8(26)451
YELLOWSTONE COUNTY
BENTS NO. 2 & NO. 3
W.B. RDWY.
Scale $\sim \frac{1}{4}" = 1' - 0"$

DESIGNED	R.L.H.	2-26-65
DRAWN	F.L.S.	3-15-65
TRACED		
CHECKED	C.W.R.	4-1-65
REVISED		
REVISED		

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	MONT.	190-8(26)451	9	26
IR 90-8(118)453			B4	
IM 002 (420)			B5	



NOTES

LIVE LOAD - Standard HS20-44 or Alternate Loading. Alternate loading for bridges and floor systems with spans under 40 feet consists of two axles four feet apart with each axle weighing 24,000 lbs.

FINISHED GRADE - Finished Plan grade of bridge is same as profile grade shown on Road Plans.

SPECIFICATIONS - Montana State Highway Commission Standard Specifications for Road and Bridge Construction, 1962 Edition, and any amendments thereto, and Special Provisions shall govern unless otherwise noted. Design prepared in accordance with A.A.S.H.O. Specifications, 1961 Edition, and any amendments thereto.

CAST-IN-PLACE CONCRETE - Unless otherwise noted, all concrete in superstructure shall be Class "AD" and all concrete in substructure shall be Class "A". An "Air Entraining Agent" shall be added to all concrete except Class "S". Chamber all exposed edges of concrete with enclosed angle less than 120°, 1/4" and fillet entrant angles 1/4" unless otherwise noted.

REINFORCING STEEL - Bends in reinforcing steel shall be made to a radius of not less than four (4) diameters of the bar except for stirrups and tie bars, which shall be bent around a pin having a diameter of not less than two (2) bar diameters. Hooks shall conform to the dimensions shown in the following sketches, except as otherwise noted.

APPROVAL - Shop plans shall be approved by the Montana State Highway Department before fabrication is begun.

SETTING OF MASONRY PLATES - Care shall be taken in placing reinforcing steel so as to clear anchor bolts.

Contractor shall finish concrete under beam or girder masonry plate slightly high and bush-hammer to exact elevation shown. Masonry plates shall be placed on three (3) layers of canvas thoroughly swabbed with red lead, as called for in the Standard Specifications.

SOILS AND FOUNDATION MATERIALS - Borings were taken by the Montana State Highway Department at the points shown on the General Layout or Footing Plan.

The series of three numbers shown on the log of borings indicates the number of blows per G-penetration for each number of the series of a 2" sample tube which was driven in accordance with the Standard Penetration Test made with a 2" split tube sampler, using a 140# hammer having a 30" drop. "R" indicates refusal of the sample tube to penetrate G after 50 blows.

The State Highway Department does not assume any responsibility for any variation or misinterpretation of the classes of materials and adjustment in bid prices will not be made if the materials found do not agree with those shown in the log of borings.

BACKFILL - The backfill of end bents may be complete up to the bottoms of the backwalls before superstructure is in place. The backfill against the backwalls shall not be placed until after the concrete roadway slab has been placed.

STRUCTURAL STEEL - Unless otherwise noted, structural steel shall be paid for at the unit price bid for reinforcing steel and the weight paid for shall be the computed weight as obtained in accordance with the Standard Specifications.

For requirements governing the fabrication of "Structural Steel" see the Standard Specifications. To avoid oversight these requirements shall be clearly noted on the shop drawings.

Structural steel shall receive one (1) shop coat of red lead or zinc chromate primer and two (2) field coats consisting of first field or primer coat and one (1) coat of aluminum paint as specified in the Standard Specifications.

FOOTINGS - Elevations shown for bottom of footings are approximate only. Final elevations to be determined by the engineer.

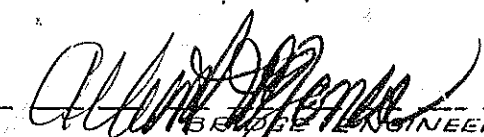
* Note: For Rdwy. approach guard rail connection see Alternate No. 2 on Dwg. No. 11409.

*** THIS CONTRACT IR 90-8(118)453 Thrie Rail Beam will replace existing rails. Block out and make continuous with bridge approach rail. Curb tapers added. See Dwg. No. 14643.

STATE OF MONTANA STATE HIGHWAY COMMISSION

PINEHILL INTERCHANGE
AT STA. 1177+71.54
FEDERAL AID PROJECT NO 190-8 (26) 451
YELLOWSTONE COUNTY
GENERAL LAYOUT

Scale 1" = 15'-0" Except as Noted

APPROVED BY:  ENGINEER

DRAWING NO. 7723

REFERENCES

DRAWING NO.	DESCRIPTION
7724	FOOTING PLAN & STAKING DIAGRAMS
7725	BENT No. 1
7726	BENT No. 2
7727	BENT No. 3
7728	BENT No. 4
7729	BENT No. 5
7730	ERECTION PLAN
7731	SLAB DETAILS - SPANS No. 1 & No. 2
7732	SLAB DETAILS - SPANS No. 3 & No. 4
7733	MODIFIED CURB, FLOOR DRAINS & MEDIAN EXPANSION JOINT DETAILS
SL-1 (REV. 8-18-64)	STANDARD SLAB, CURB, SAFETY WALK & DIAPHRAGM DETAILS
U-1 (REV. 7-20-64)	STANDARD SLAB & CURB JOINTS
B-4	STANDARD PRESTRESSED CONCRETE BEAM - TYPE A
B-4	STANDARD PRESTRESSED CONCRETE BEAM - TYPE II
D-1	STANDARD BRIDGE DRAIN DETAILS
SBRT-6	STANDARD STEEL BRIDGE RAIL - TYPE No. 6

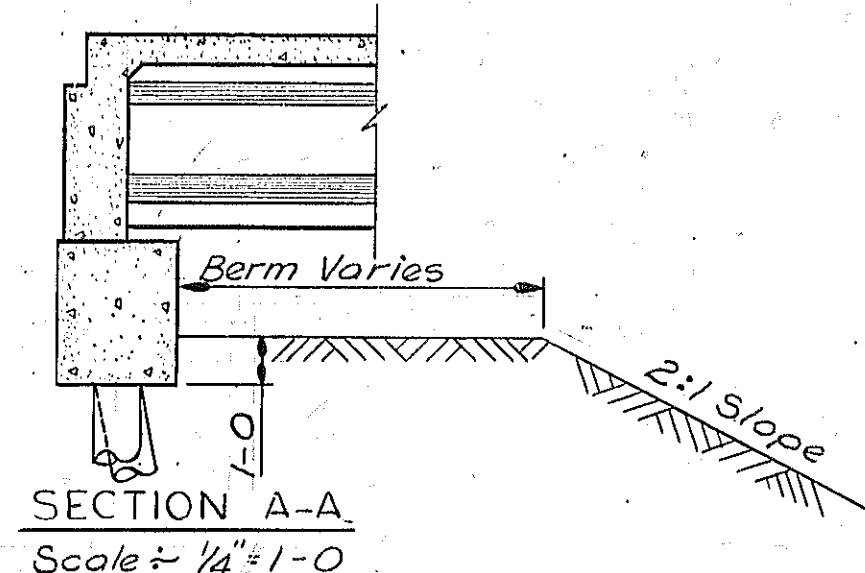
*** THIS CONTRACT IM 0002 (420)

Structure revised as shown in Bridge Work Summary Dwg. No. 17248

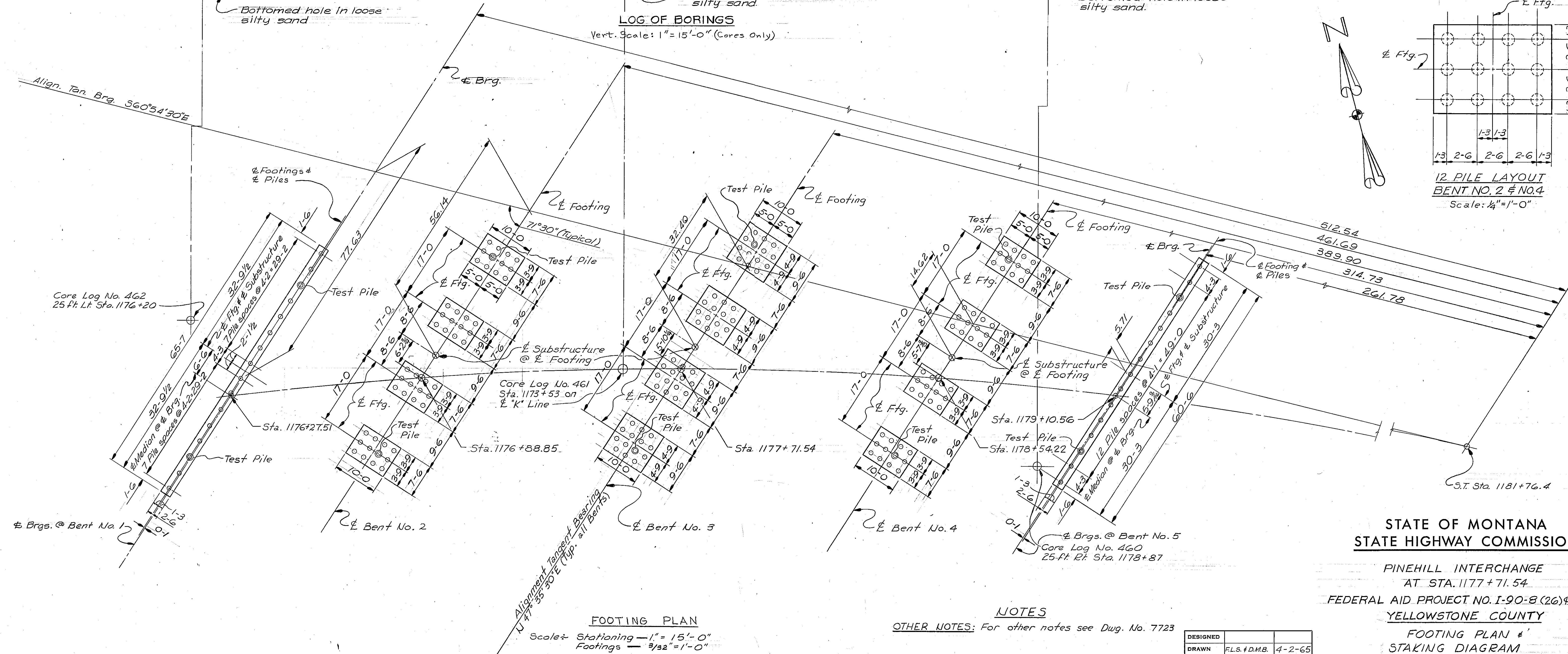
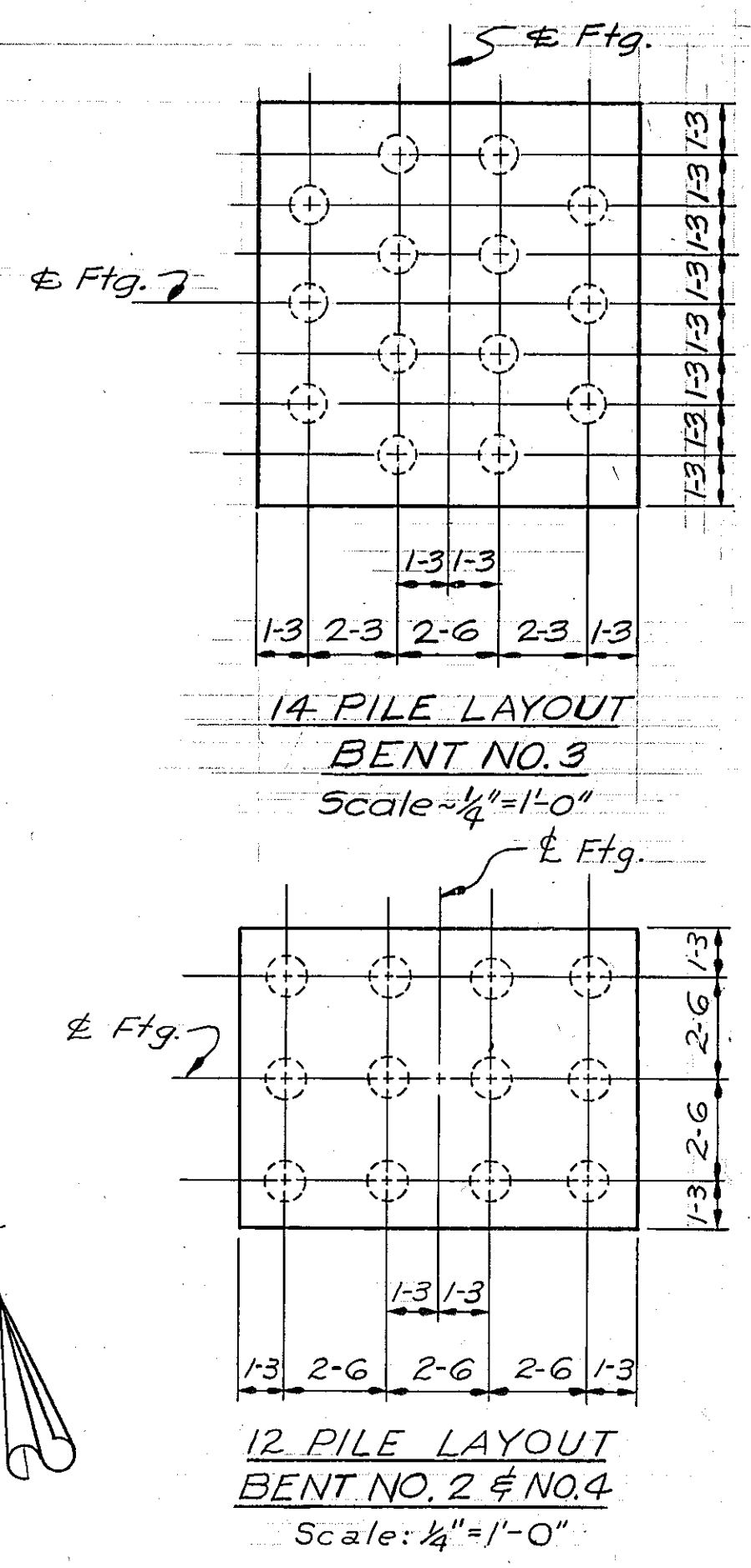
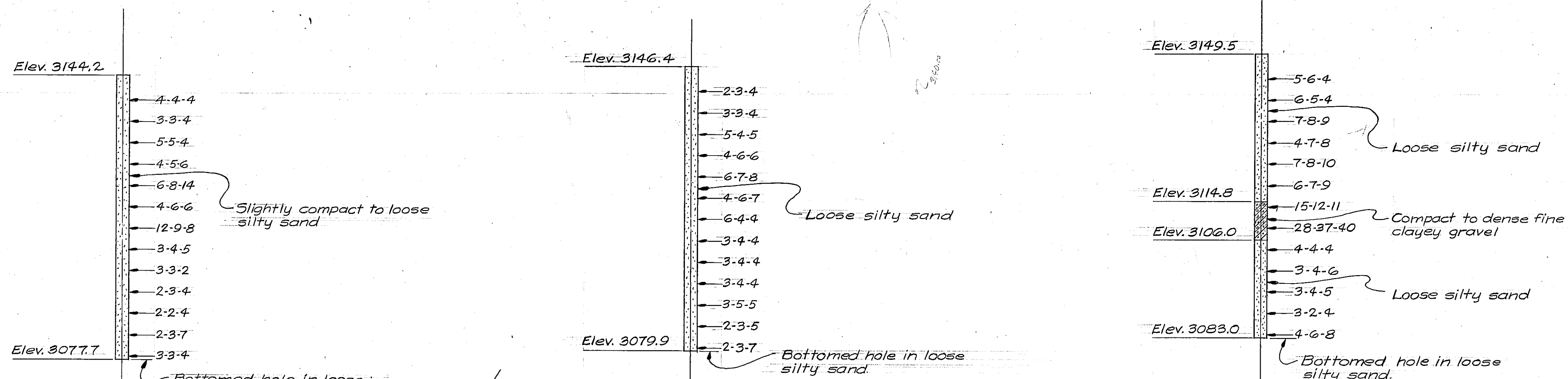
"K" LINE CURVE DATA

$\Delta = 60^{\circ} 30' RT$
 $\Delta_c = 54^{\circ} 15'$
 $D_c = 5^{\circ} 00'$
 $L_c = 1085.0$
 $\theta_s = 6^{\circ} 15'$
 $L_s = 250.0$
 $R = 1145.9$

NOTE: For further curve information see Road Plans.



SECTION A-A
Scale 1/4" = 1'-0"



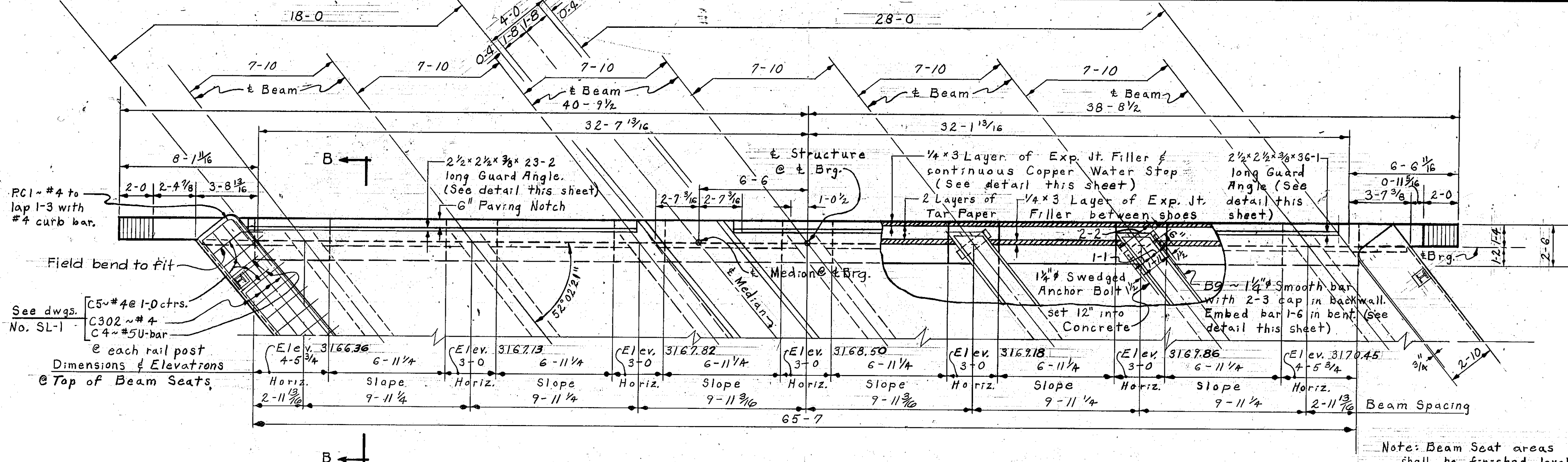
NOTES
OTHER NOTES: For other notes see Dwg. No. 7723

DESIGNED		
DRAWN	FLS. #D.M.B.	4-2-65
TRACED		
CHECKED	J.D.S.	4-26-65
REVISED		
REVISED		

**STATE OF MONTANA
STATE HIGHWAY COMMISSION**

PINEHILL INTERCHANGE
AT STA. 1177+71.54
FEDERAL AID PROJECT NO. I-90-8 (26)451
YELLOWSTONE COUNTY

FOOTING PLAN &
STAKING DIAGRAM
Scale: As Noted



BILL OF REINFORCING STEEL

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	MONT.	190-8(26)451	11	26

TYPE 1

TYPE 2

TYPE 3

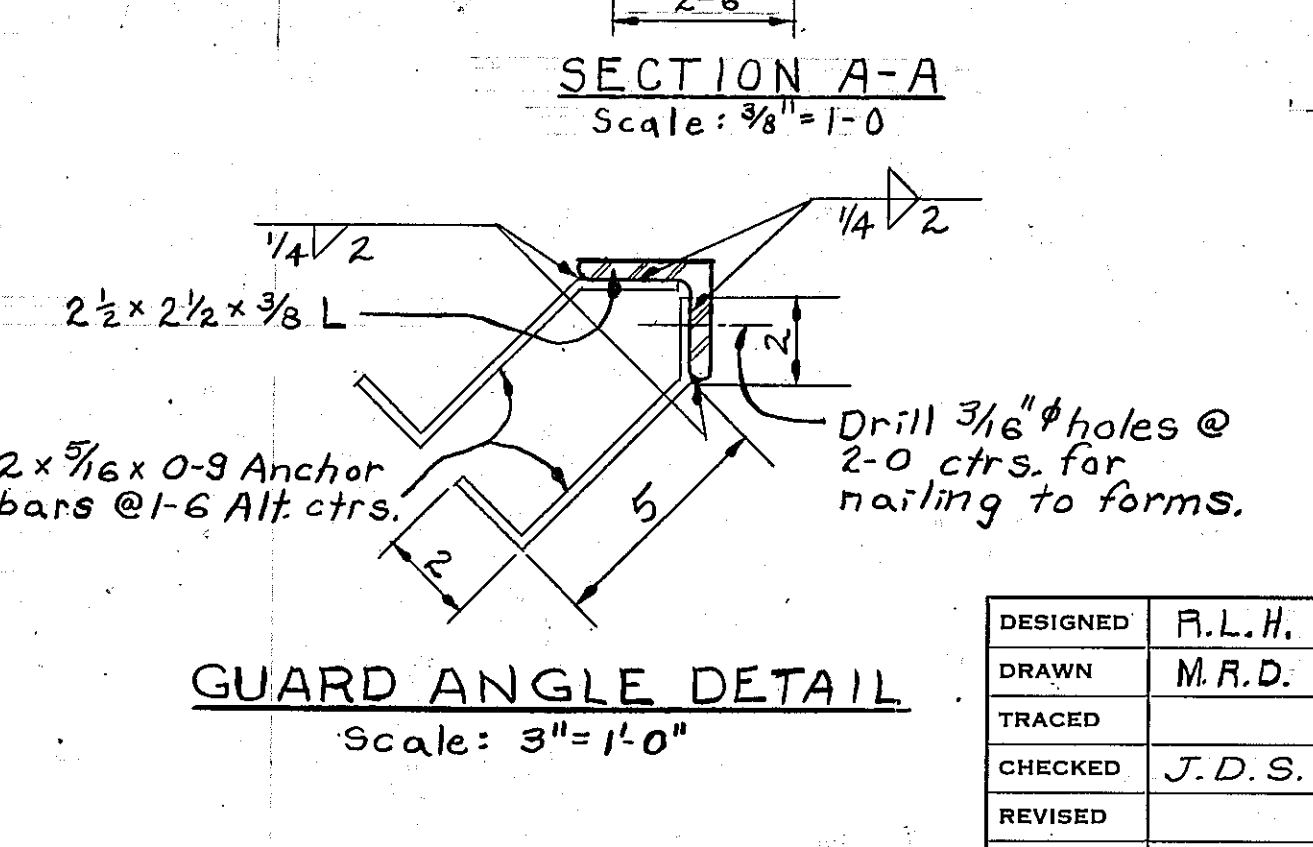
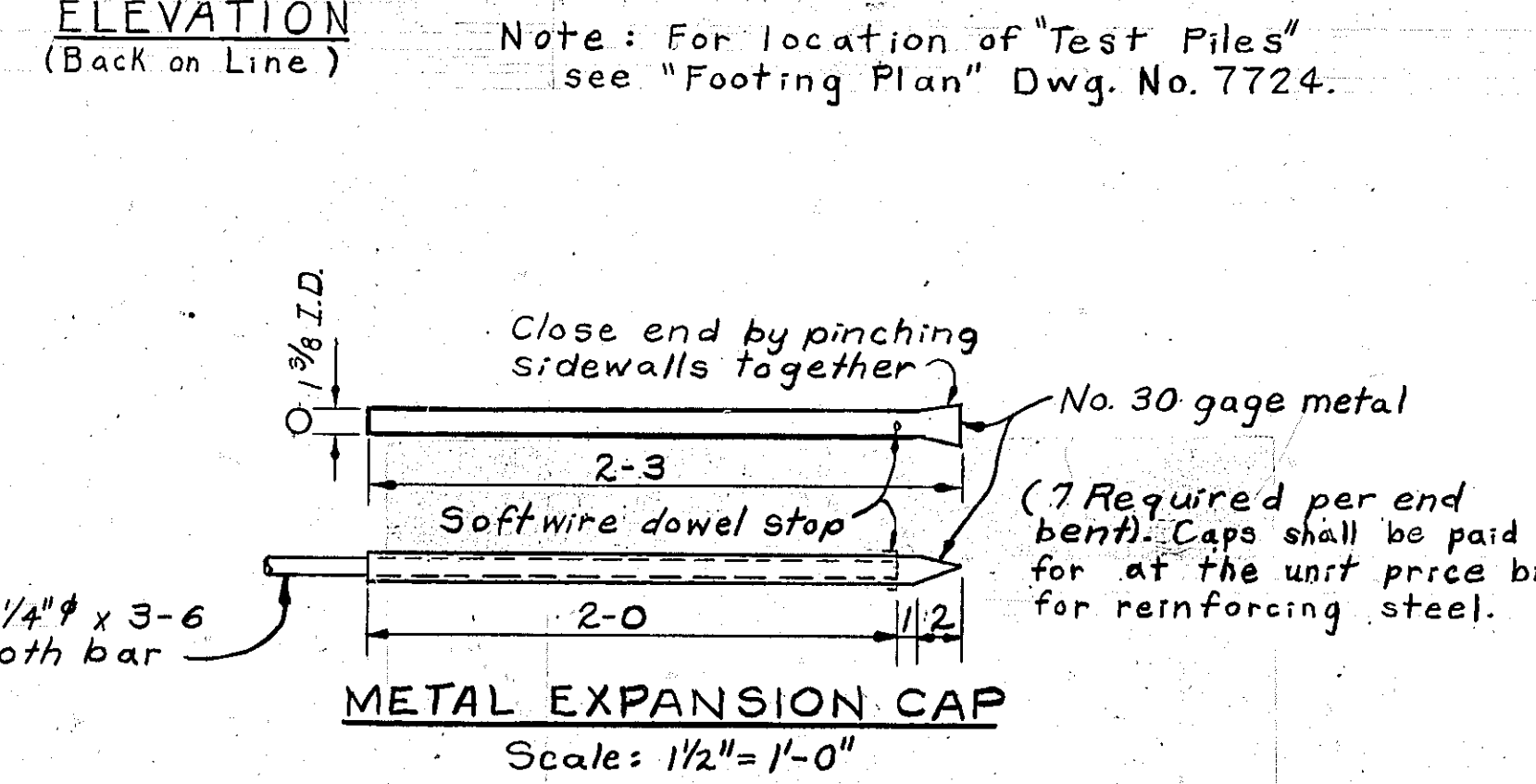
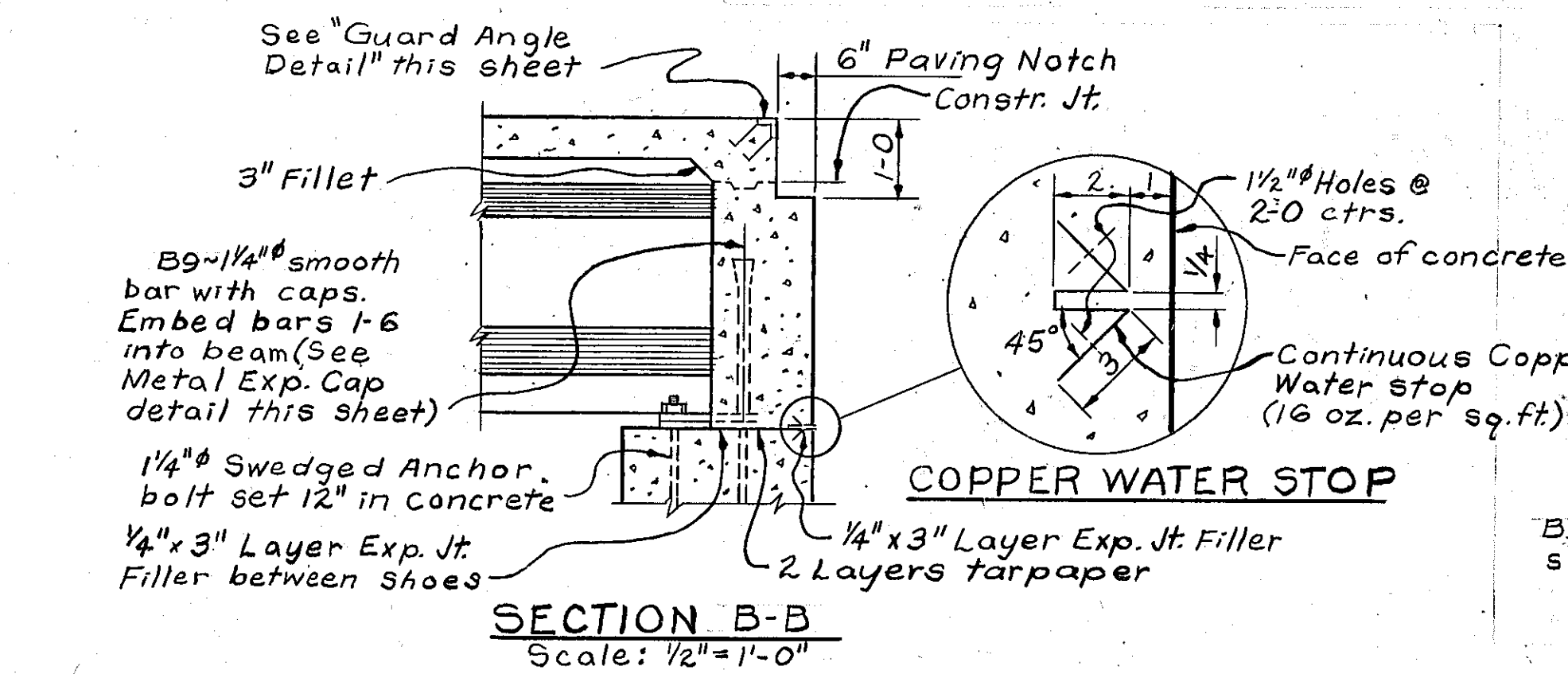
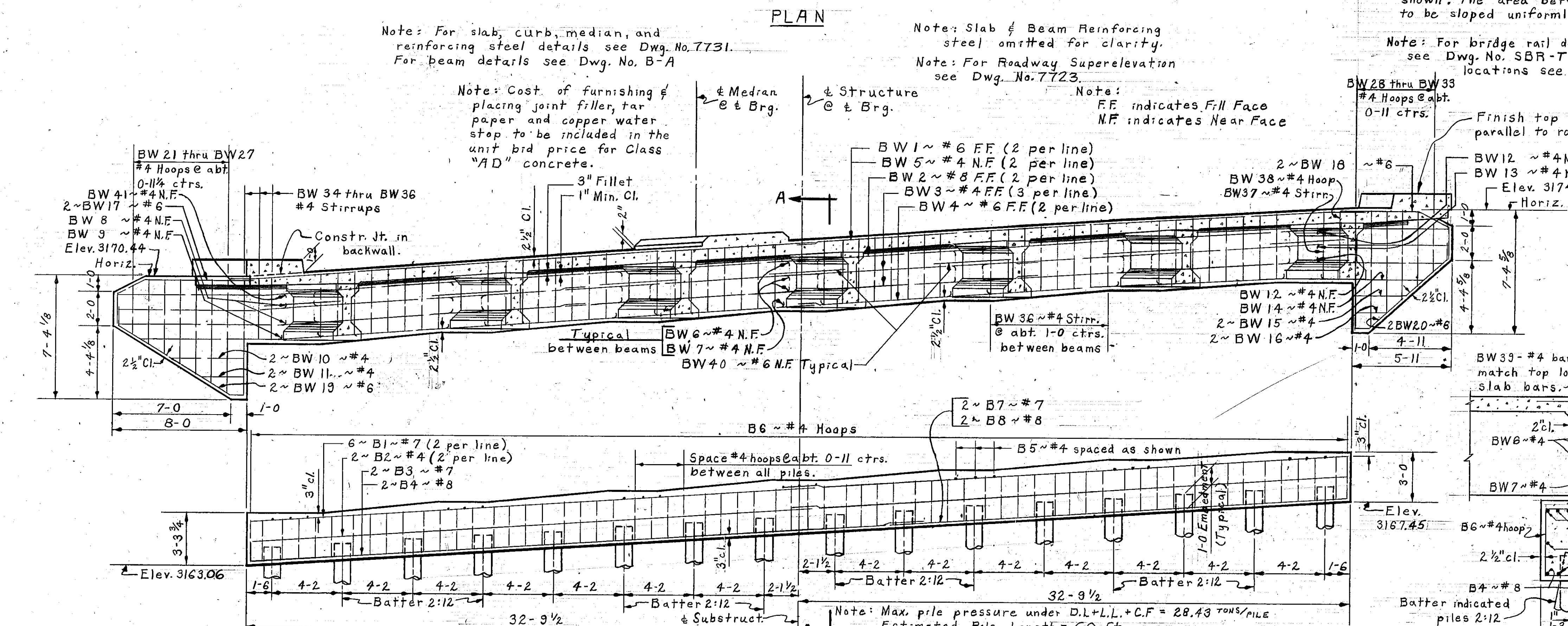
TYPE 4

TYPE 5

Straight Bars				Bent Bars (Dimensions are out to out)									
Mark	Size	No.	Length	Mark	Size	No.	Type	Length	A	B	C	D	E
BW1	#6	2	35-7	BW17	#6	2	5	9-2	5-5	2-0	1-9	2-5	1-7
BW2	#8	2	40-8	BW18	#6	2	5	9-0	1-10	2-1	5-1	1-10	2-4
BW3	#4	6	27-3	BW19	#6	2	5	9-9	1-0	8-0	0-9	0-10	0-5
BW4	#6	2	39-9	BW20	#6	2	5	8-1	0-9	6-4	1-0	0-6	0-3
BW5	#4	2	35-5	BW21	#4	1	1	8-8	2-11	1-0	0-5		
BW6	#4	18	8-1	BW22				10-8	3-11				
BW7	#4	6	7-7	BW23				11-10	4-6				
BW8	#4	2	10-3	BW24				13-0	5-1				
BW9	#4	1	8-1	BW25				14-2	5-8				
BW10	#4	2	4-3	BW26				15-4	6-3				
BW11	#4	2	2-7	BW27				16-8	6-11				
BW12	#4	2	7-9	BW28				17-0	7-1				
BW13	#4	1	8-1	BW29				16-6	6-10				
BW14	#4	1	6-2	BW30				15-0	6-1				
BW15	#4	2	2-11	BW31				13-4	5-3				
BW16	#4	2	7-10	BW32				11-8	4-5				
BW17	#6	7	4-6	BW33	#4	1	1	9-2	3-2	1-0	0-5		
BW18	#4	1	9-10	BW34	#4	1	2	14-7	7-0	6-0	1-0	0-3	
B1	#7	12	33-8	BW35		1		8-1	3-9	2-9			
B2	#4	4	33-4	BW36		4	9	8-3	3-10	2-10			
B3	#7	2	40-0	BW37		1	2	8-7	4-0	3-0	1-0	0-3	
B4	#8	2	40-0	BW38	#4	1	1	11-0	4-1	1-0	0-5		
B5	#4	21	2-2	BW39	#4	42	3	3-3	1-3	2-0			
B7	#7	2	27-4										
B8	#8	2	27-6	B6	#4	64	1	10-4	2-7	2-2	0-5		
B9	#4	7	3-6	PC1	#4	2	4	5-1	2-2	0-5	1-3	0-3	1-3

NOTES

OTHER NOTES: For other notes see Dwg. No. 7723.



STATE OF MONTANA
STATE HIGHWAY COMMISSION

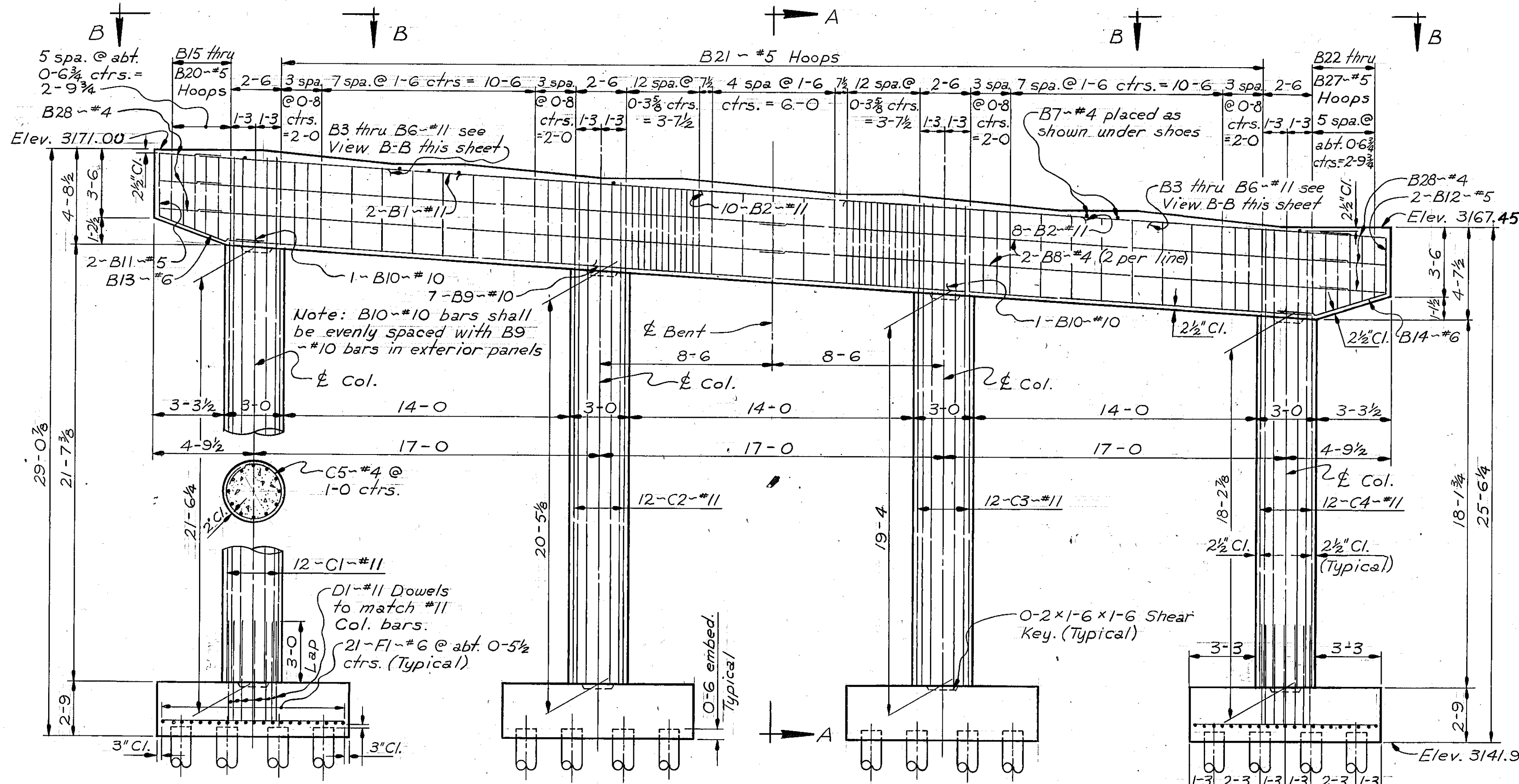
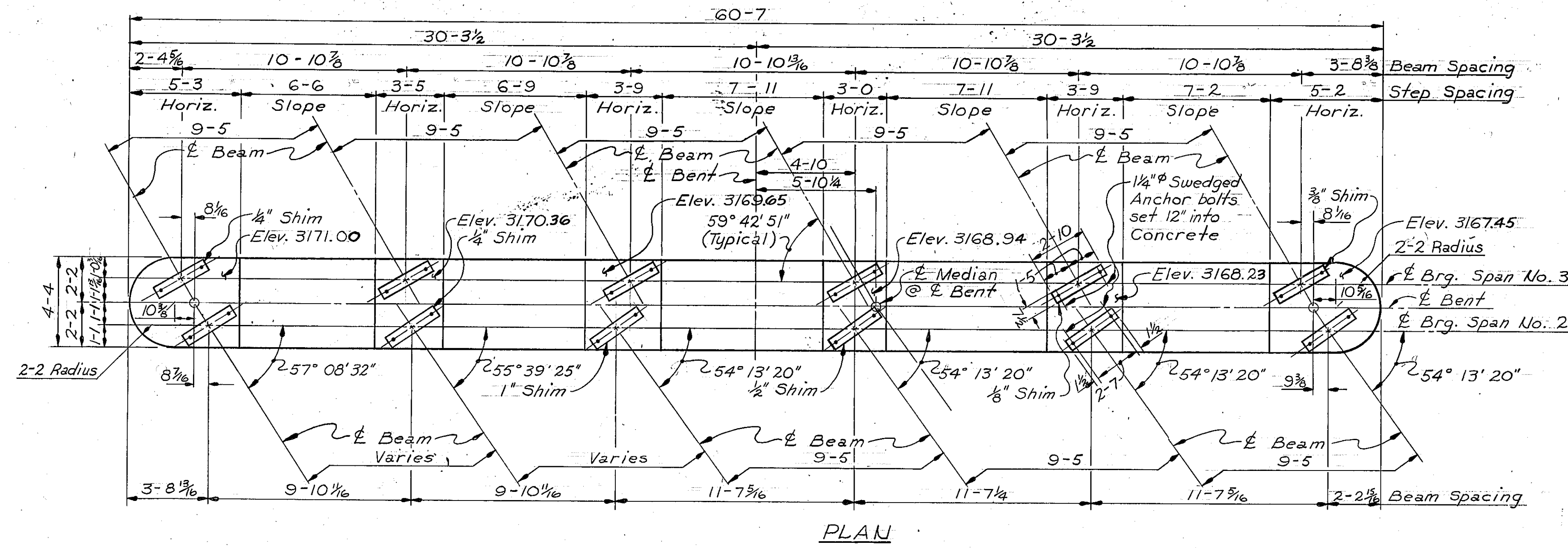
PINEHILL INTERCHANGE
AT STA 1177 + 71.54
FEDERAL AID PROJECT NO. I-90-8(26)451
YELLOWSTONE COUNTY

BENT NO. 1

Scale: 1/4" = 1'-0" except as noted.

DESIGNED	F.L.H.	3-11-65
DRAWN	M.R.D.	3-24-65
CHECKED	J.D.S.	4-26-65
REVISD		
REVISD		

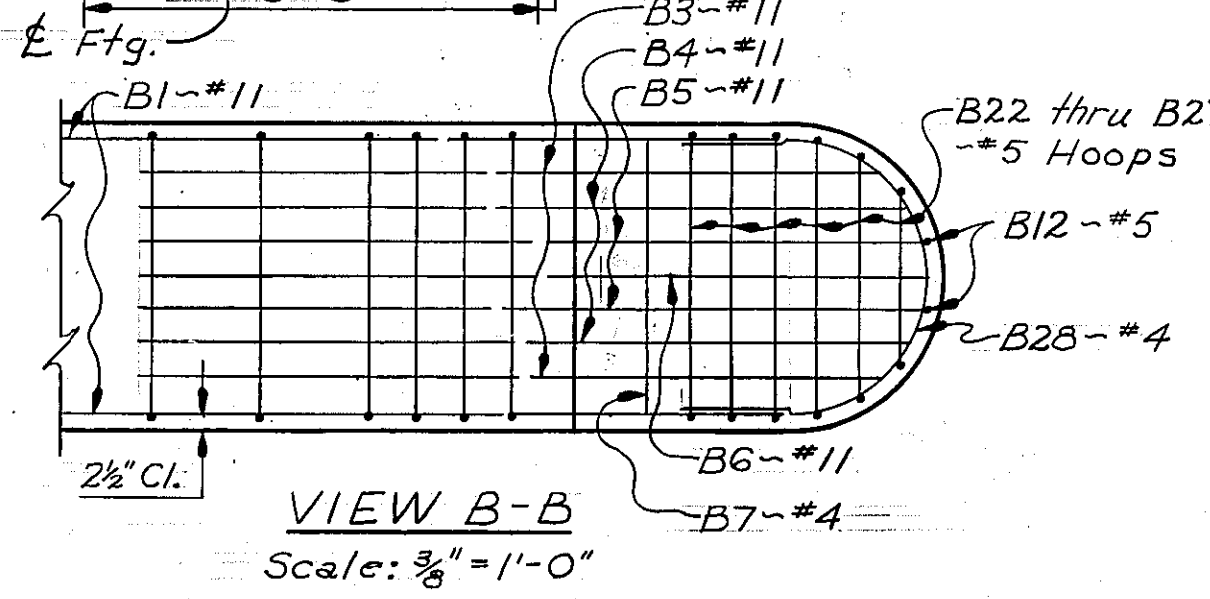
DRAWING NO. 7725



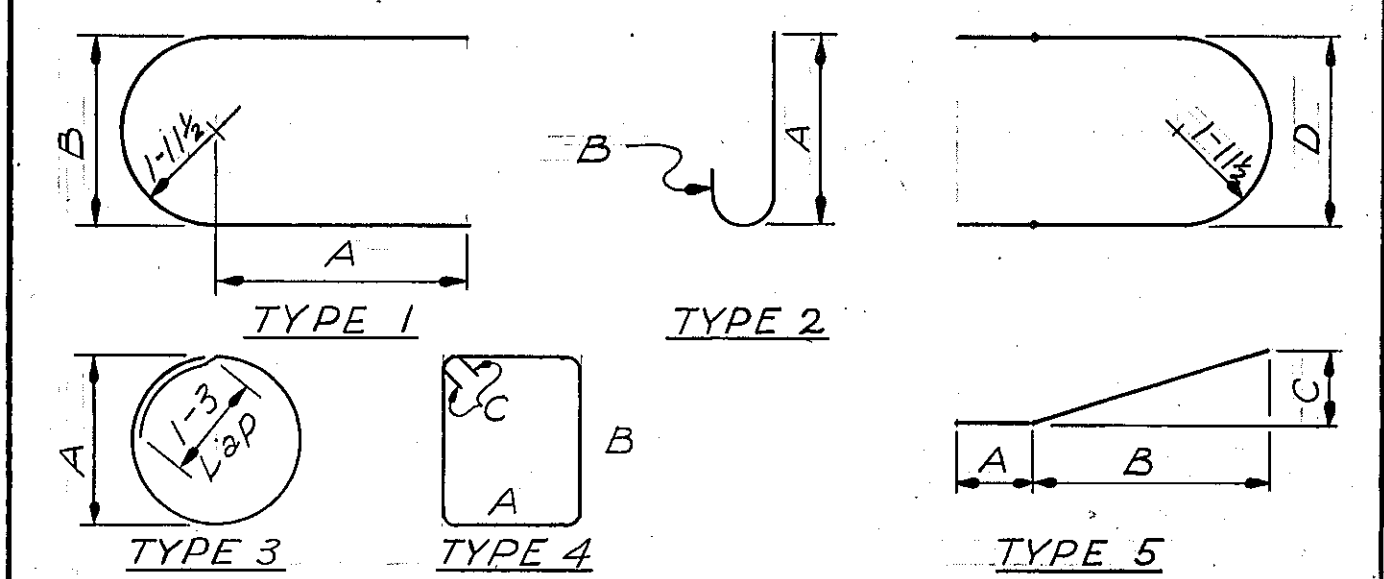
Note: Maximum Pile Pressure Under: D.L. + L.L. + C.F. = 2168 Tons / Pile.

Note: For location of Test Pile see "Footing Plan" Dwg. No. 7724

Note: Estimated Pile Length = 40 ft.

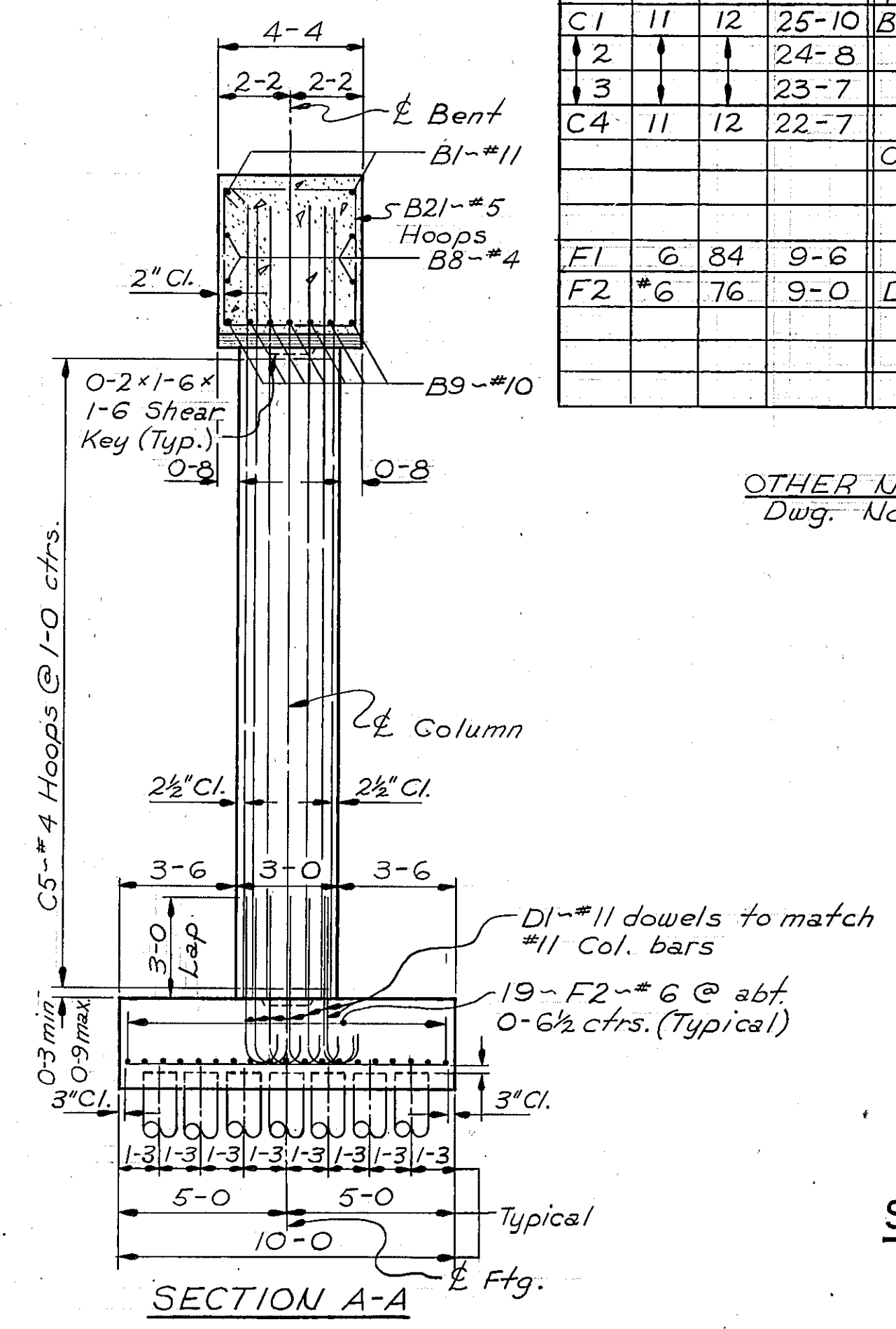


BILL OF REINFORCING STEEL



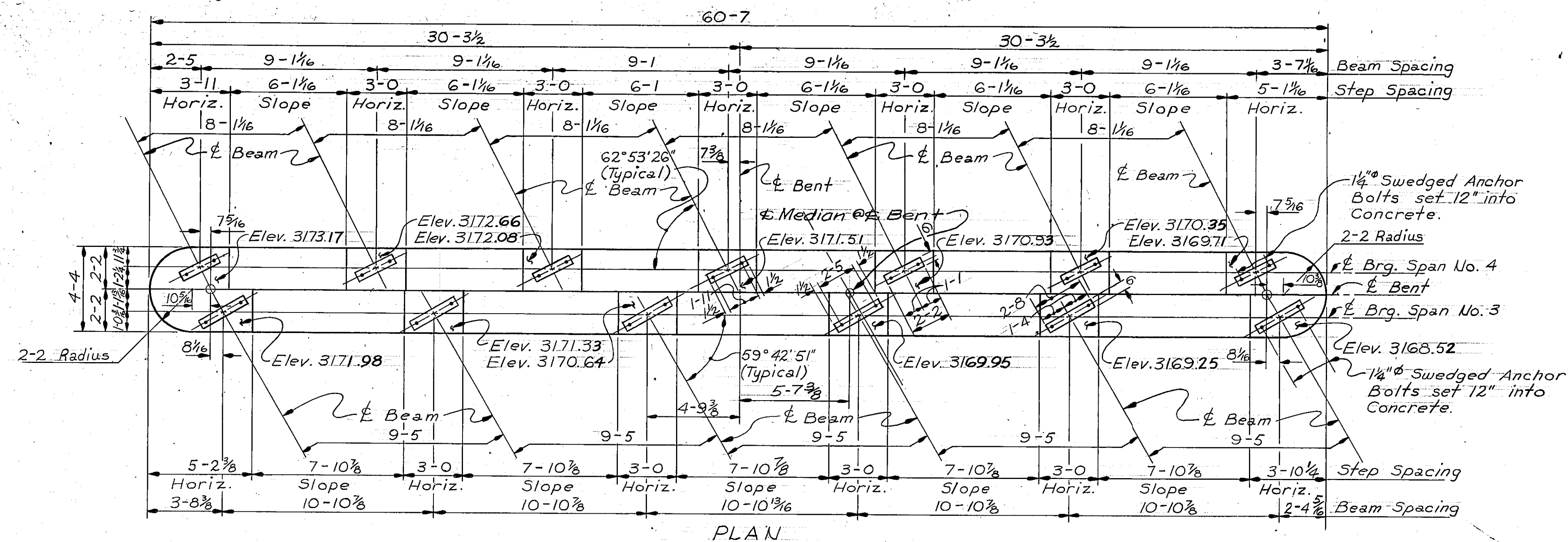
STRAIGHT BARS				BENT BARS (All dimensions are out to out)											
Mark	Size	No.	Length	Mark	Size	No.	Type	Length	A	B	C	D			
B1	#11	2	56'-4"	B13	#6	1	5	12'-1"	1'-8"	3'-3"	1'-2 1/2"	3'-11"			
2	11	18	12-0	14	6	5	12'-1	1'-8	3'-3	1'-1/2	3'-11				
3	4	4	10-4	15	5	4	15'-8	2-6	3'-4	0-6					
4	4	4	10-9	16			16-0	3-5	3-6						
5	4	4	11-0	17			16-4	3-11	3-8						
6	11	2	11-1	18			16-8	4-0	3-10						
7	4	8	4-0	19			17-0		4-0						
8	4	8	28-10	20		1	17-4		4-2						
9	10	7	54-1	21		59	17-4		4-2						
10	10	2	17-0	22		1	17-4		4-2						
11	5	2	3-2	23			17-1		4-0 1/2						
B12	5	2	2-11	24			16-8	4-0	3-10						
				25			16-2	3-11	3-7						
				26			15-8	3-5	3-4						
				27	5	1	4	15-2	2-6	3-1	0-6				
C1	11	12	25-10	B28	4	6	1	8-8	1-3	3-11					
2			24-8												
3			23-7												
C4	11	12	22-7												
				C5	4	79	3	9-8	2-8						
F1	6	84	9-6												
F2	#6	76	9-0	D1	#11	48	2	6-7	5-0	1-7					

NOTES
OTHER NOTES: For other notes, see Dwg. No. 7723

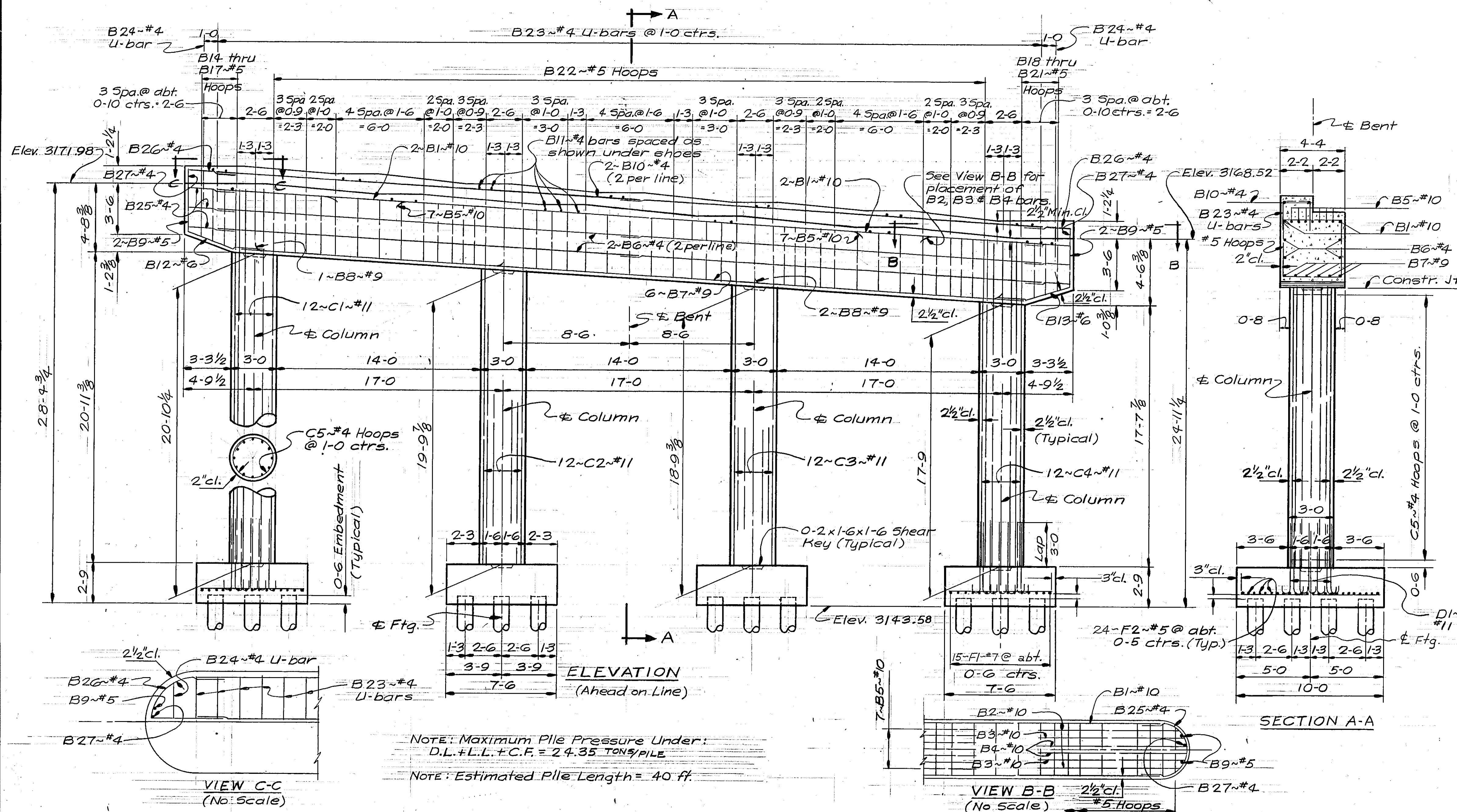


STATE OF MONTANA
STATE HIGHWAY COMMISSION
PINEHILL INTERCHANGE
AT STA. 1177+71.54
FEDERAL AID PROJECT NO. 1-90-8(26)451
YELLOWSTONE COUNTY
BENT NO. 3
Scale: 1/4" = 1'-0"

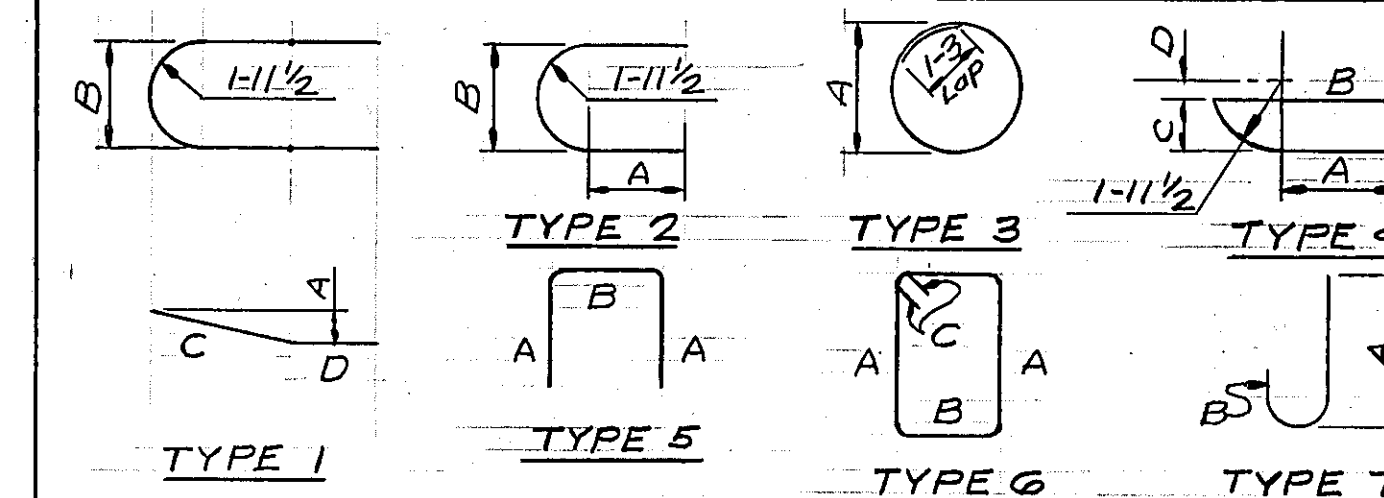
DESIGNED	T.G.S.	3-24-65
DRAWN	J.J.Z.	4-1-65
TRACED		
CHECKED	J.D.S.	4-26-65
REVISED		
REVISED		



PLAN



BILL OF REINFORCING STEEL

[illegible]

NOTES

OTHER NOTES :- For other notes see Dwg. No. 7723

STATE OF MONTANA
STATE HIGHWAY COMMISSION

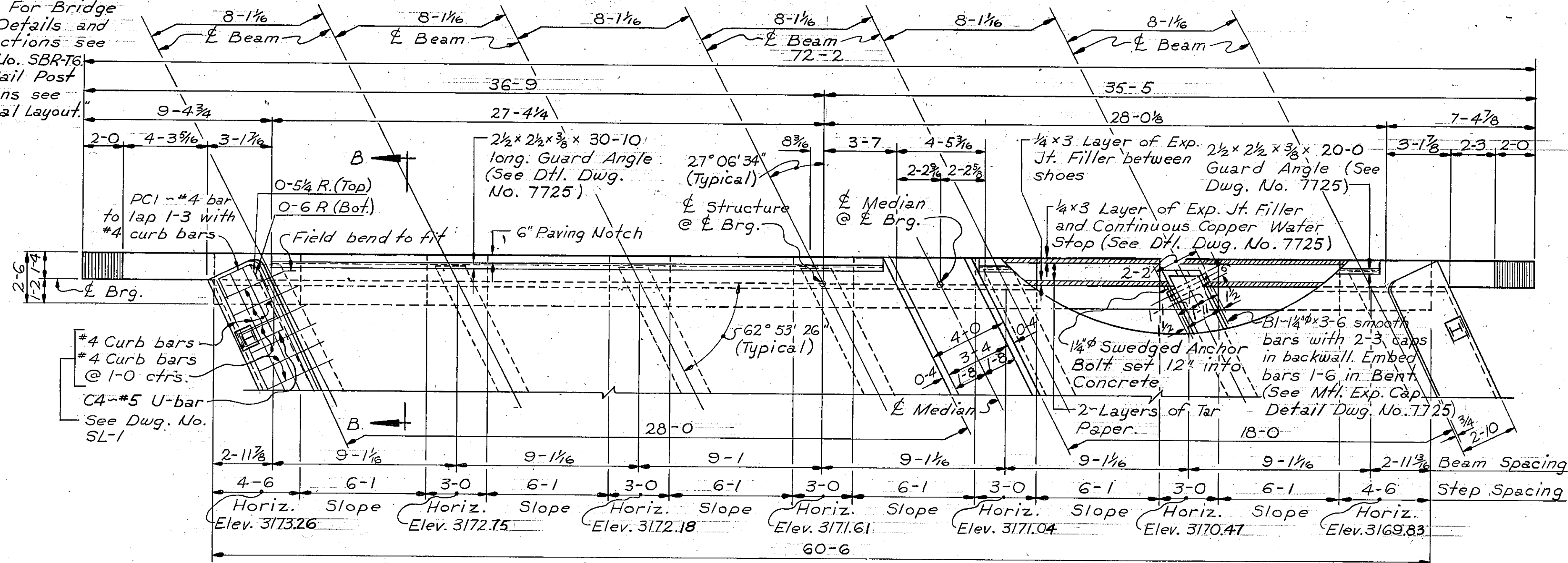
PINEHILL INTERCHANGE
AT STA. 1177+71.54
FEDERAL AID PROJECT NO. F-90-8(26)45
YELLOWSTONE COUNTY

BENT NO. 4

Scale: $\frac{1}{4}'' = 1' - 0''$

DESIGNED	R.L.H.	3-23
DRAWN	J.V.Z. & F.L.S.	4-2-
TRACED		
CHECKED	C.W. R.	4-19-
REVISED		
REVISED		

Note: For Bridge Rail Details and Connections see Dwg. No. SBR-76 For Rail Post locations see "General Layout."

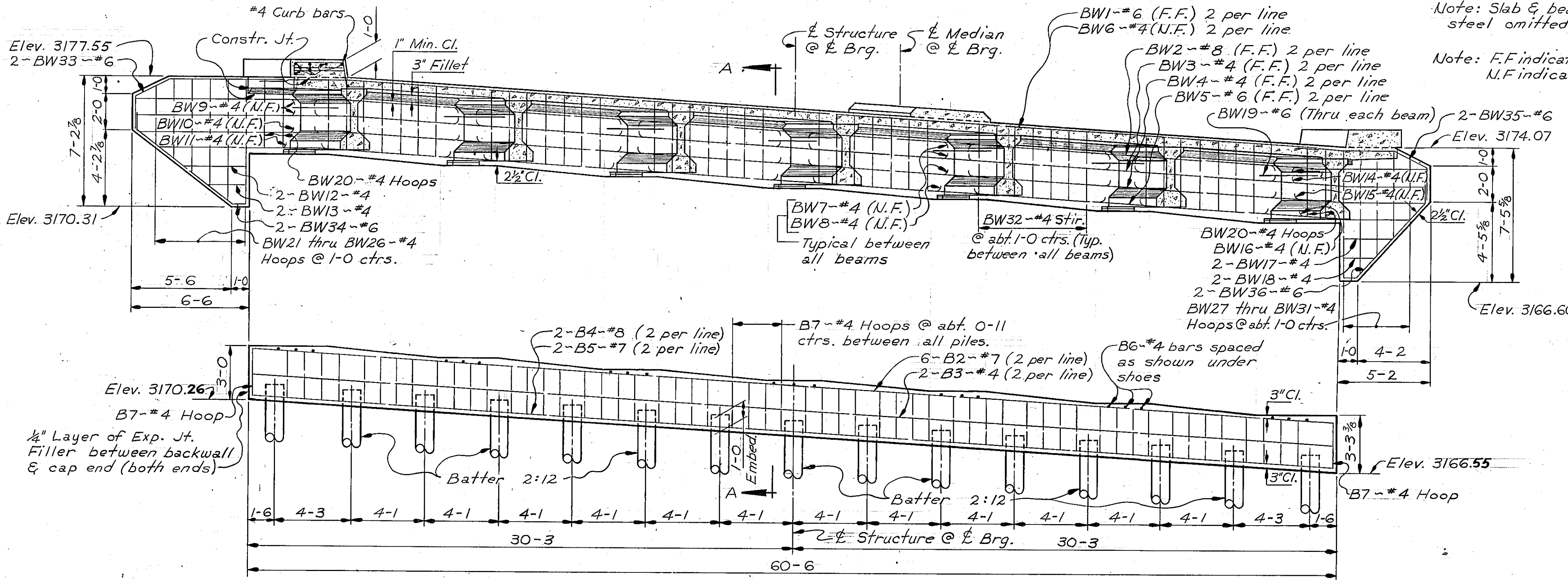


Note: For Section B-B see Dwg. No. 7725

PLAN

Note: Beam seat areas shown as horizontal shall be finished level to the elevations shown. The area between beams to be sloped uniformly as required.

Note: For slab, curb, median and reinforcing steel details see Dwg. No. SL-1 & No. 7732 For beam details see Dwg. No. B-A

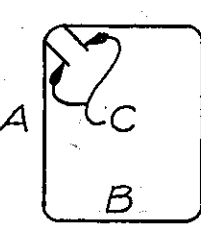
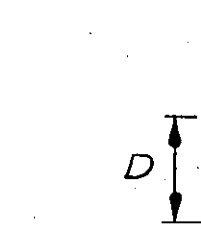
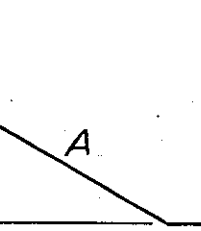
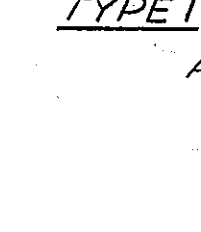
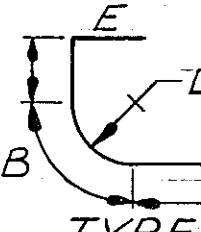
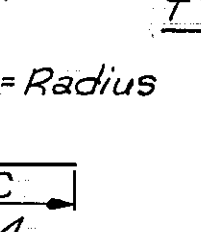


ELEVATION
(Ahead on line)

Note: Max. Pile Pressure under D.L.+L.L.+C.F. = 27.65 Tons/pile
Note: Estimated Pile Length = 60 ft.

Note: For location of "Test Piles" see "Footings Plan." Dwg. No. 7724

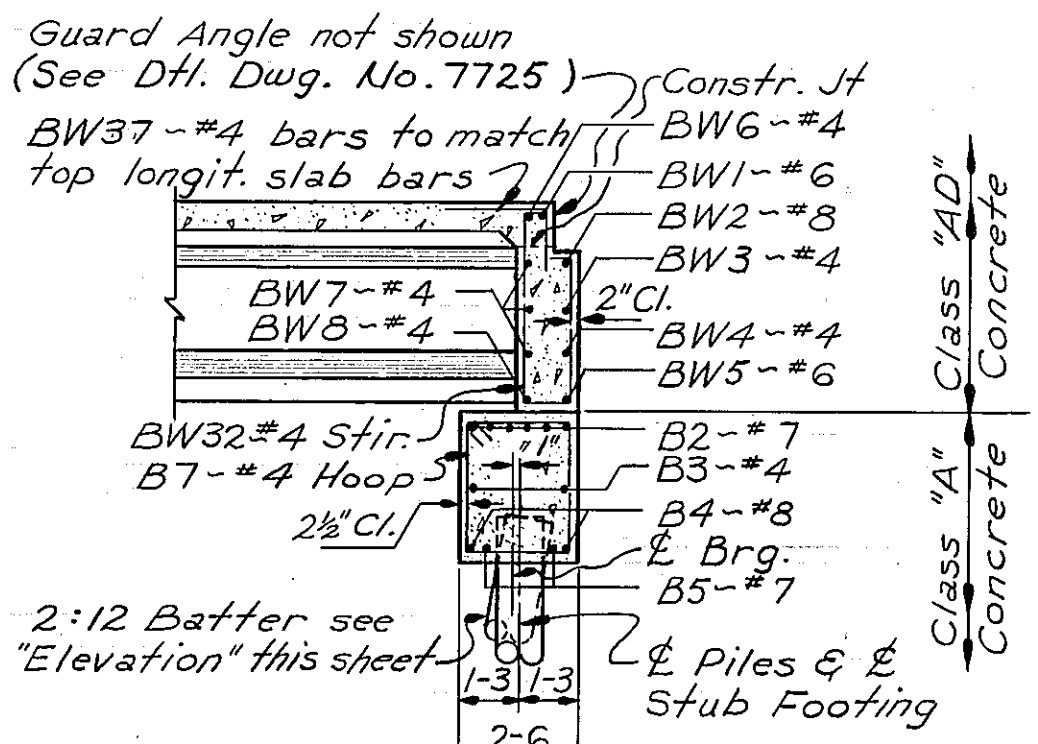
BILL OF REINFORCING STEEL

											
TYPE 1				TYPE 2				TYPE 3			
											
TYPE 4				TYPE 5							

STRAIGHT BARS				BENT BARS (All dimensions are out to out.)									
Mark	Size	No.	Length	Mark	Size	No.	Type	Length	A	B	C	D	E
BW1	#6	2	31'-6"	BW20	#4	4	1	10'-5"	3'-9 1/2"	1'-0"	0'-5"		
2	8	36	11	21		1		9'-4	3'-3				
3	4	36	6	22		1		11'-8	4'-5				
4	4	36	5	23		1		13'-2	5'-2				
5	6	35	8	24		1		14'-8	5'-11				
6	4	31	4	25		1		16'-3	6'-8 1/2				
7	18	7	3	26		1		16'-7	6'-10 1/2				
8	6	6	9	27		1		17'-1	7'-1 1/2				
9	2	8	6	28		1		16'-6	6'-10				
10	1	8	4	29		1		14'-6	5'-10				
11	1	6	9	30		1		12'-6	4'-10				
12	2	3	5	31		1	1	9'-7	3'-4 1/2	1'-0	0'-5		
13	2	2	0	32	4	42	3	8'-2	3'-9 1/2	1'-0	2'-9 1/2	0'-3 1/2	
14	2	7	2	33	6	2	2	9'-11	6'-1	2'-1	1'-9	2'-9	1'-7
15	1	7	1	34				8'-6	1'-0	6'-9	0'-9	0'-9	0'-6
16	1	5	9	35				8'-7	4'-9	2'-1	1'-9	2'-1	1'-7
17	2	2	9	36	6	2	2	7'-8	1'-0	5'-11	0'-9	0'-8	0'-6
18	4	2	1	37	4	40	5	3'-3	1'-3	2'-0			
BW19	6	7	4	38									
BW20	4	58	1	39									
BW21	4	58	1	40									
BW22	4	58	1	41									
BW23	4	58	1	42									
BW24	4	58	1	43									
BW25	4	58	1	44									
BW26	4	58	1	45									
BW27	4	58	1	46									
BW28	4	58	1	47									
BW29	4	58	1	48									
BW30	4	58	1	49									
BW31	4	58	1	50									
BW32	4	58	1	51									
BW33	4	58	1	52									
BW34	4	58	1	53									
BW35	4	58	1	54									
BW36	4	58	1	55									
BW37	4	58	1	56									
BW38	4	58	1	57									
BW39	4	58	1	58									
BW40	4	58	1	59									
BW41	4	58	1	60									
BW42	4	58	1	61									
BW43	4	58	1	62									
BW44	4	58	1	63									
BW45	4	58	1	64									
BW46	4	58	1	65									
BW47	4	58	1	66									
BW48	4	58	1	67									
BW49	4	58	1	68									
BW50	4	58	1	69									
BW51	4	58	1	70									
BW52	4	58	1	71									
BW53	4	58	1	72									
BW54	4	58	1	73									
BW55	4	58	1	74									
BW56	4	58	1	75									
BW57	4	58	1	76									
BW58	4	58	1	77									
BW59	4	58	1	78									
BW60	4	58	1	79									
BW61	4	58	1	80									
BW62	4	58	1	81									
BW63	4	58	1	82									
BW64	4	58	1	83									
BW65	4	58	1	84									
BW66	4	58	1	85									
BW67	4	58	1	86									
BW68	4	58	1	87									
BW69	4	58	1	88									
BW70	4	58	1	89									
BW71	4	58	1	90									
BW72	4	58	1	91									
BW73	4	58	1	92									
BW74	4	58	1	93									
BW75	4	58	1	94									
BW76	4	58	1	95									
BW77	4	58	1	96									
BW78	4	58	1	97									
BW79	4	58	1	98									
BW80	4	58	1	99									
BW81	4	58	1	100									

NOTES

OTHER NOTES: For other notes see Dwg. No. 7723



SECTION A-A

Note: Cost of furnishing and placing exp. jt. filler, tar paper and copper water stop to be included in the unit price bid for Class "AD" Concrete.

STATE OF MONTANA
STATE HIGHWAY COMMISSION

PINEHILL INTERCHANGE

AT STA. 1177+71.54

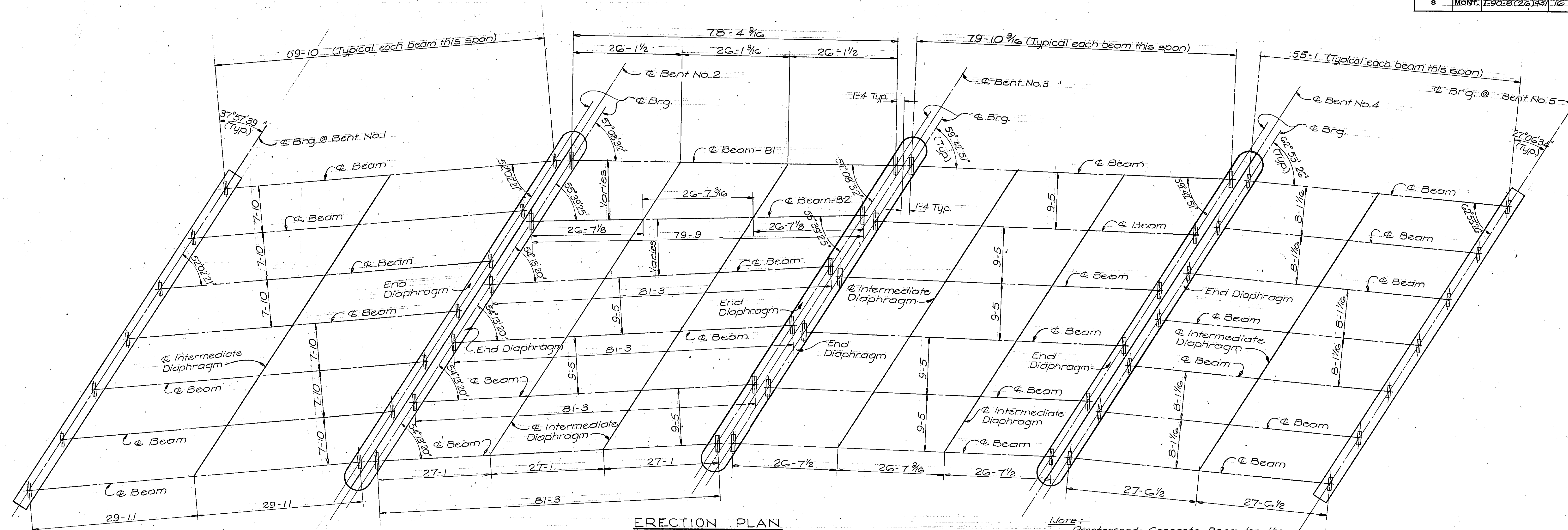
FEDERAL AID PROJECT NO. T-90-8(26)451

YELLOWSTONE COUNTY

BENT NO. 5

Scale: 1/4" = 1'-0"

DESIGNED	M. R. D.	3-9-65
DRAWN	J. J. Z.	3-29-65
TRACED		
CHECKED	C. W. R.	4-21-65
REVISED		
REVISED		



Note:-
Prestressed Concrete Beam lengths as shown on Dwg. No. 7723 Q represent beams in spans as shown below:
60' ~ Span No. 1
80' ~ Span No. 2 & No. 3
55' ~ Span No. 4

NOTES

PRESTRESSED CONCRETE BEAMS :- Prestressed Concrete Beams shall be fabricated in accordance with Dwg. No. B-A, No. B-4 and as modified in Dwg. No. 7732. Design stresses are as follows:

SPAN NO.	BEAM TYPE	BEAM LENGTH CTR. TO CTR. BRG.	D.L. BEAM STRESS		Σ D.L.+L.L. STRESS.		ULT. DESIGN MO. 1.5 D.L.+25(L.L.) FOOT KIPS
			f TOP COMP. PSI.	f BOTTOM TEN. PSI.	f TOP COMP. PSI.	f BOTTOM TEN. PSI.	
1	A	59'-10"	+ 684	-554	+2416	-2960	2841
* 2	IV	81'-3"	+ 886	-749	+2628	-2869	5798
3	IV	79'-10 ⁹ / ₁₆ "	+ 886	-749	+2593	-2859	5710
4	A	55'-1"	+ 577	-467	+2098	-2631	2577

* NOTE: B1 ~ Span No. 2 = 78-4 9/16 Ctr. to Ctr. Brgs.
B2 ~ Span No. 2 = 79-9 7/16 Ctr. to Ctr. Brgs.

OTHER NOTES:— For other notes see Dwg. No. 7723.

STATE OF MONTANA
STATE HIGHWAY COMMISSION

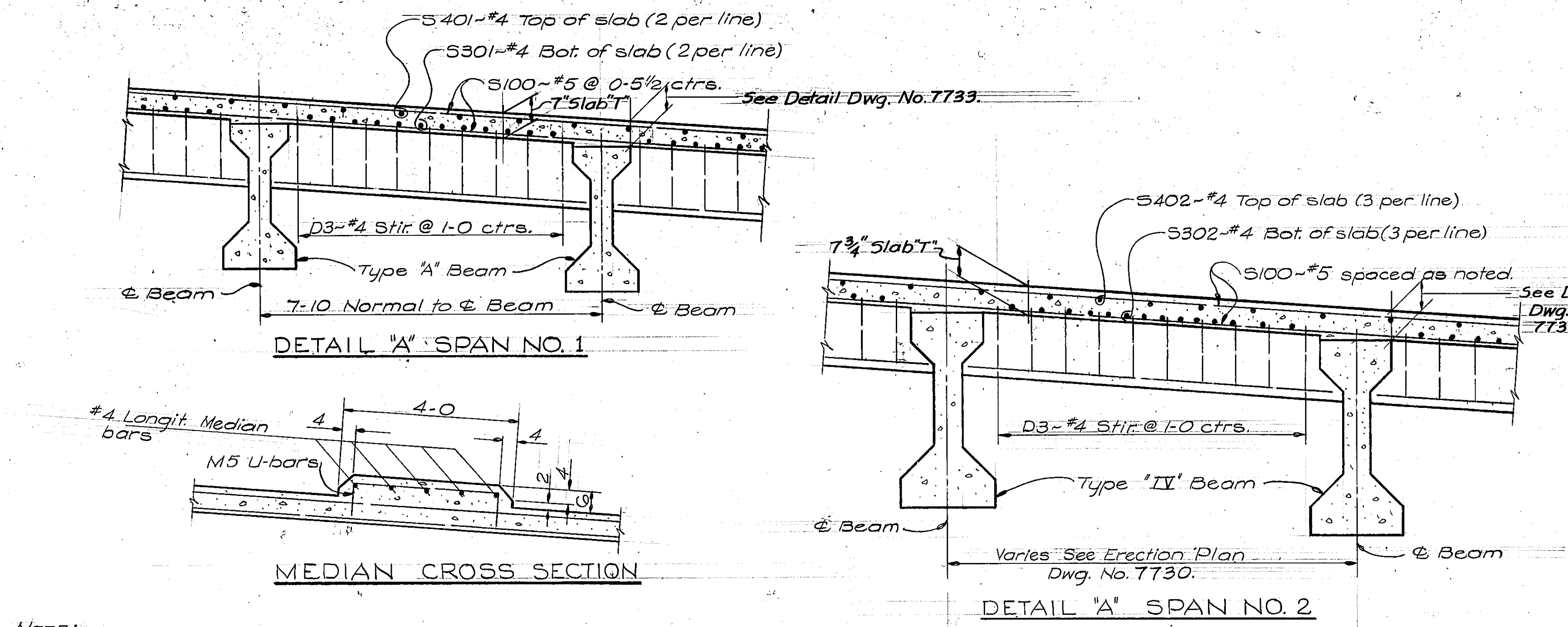
PINEHILL INTERCHANGE
AT STA. 1177+71.54
FEDERAL AID PROJECT NO. I-90-8(26)451
YELLOWSTONE COUNTY

ERECTION PLAN

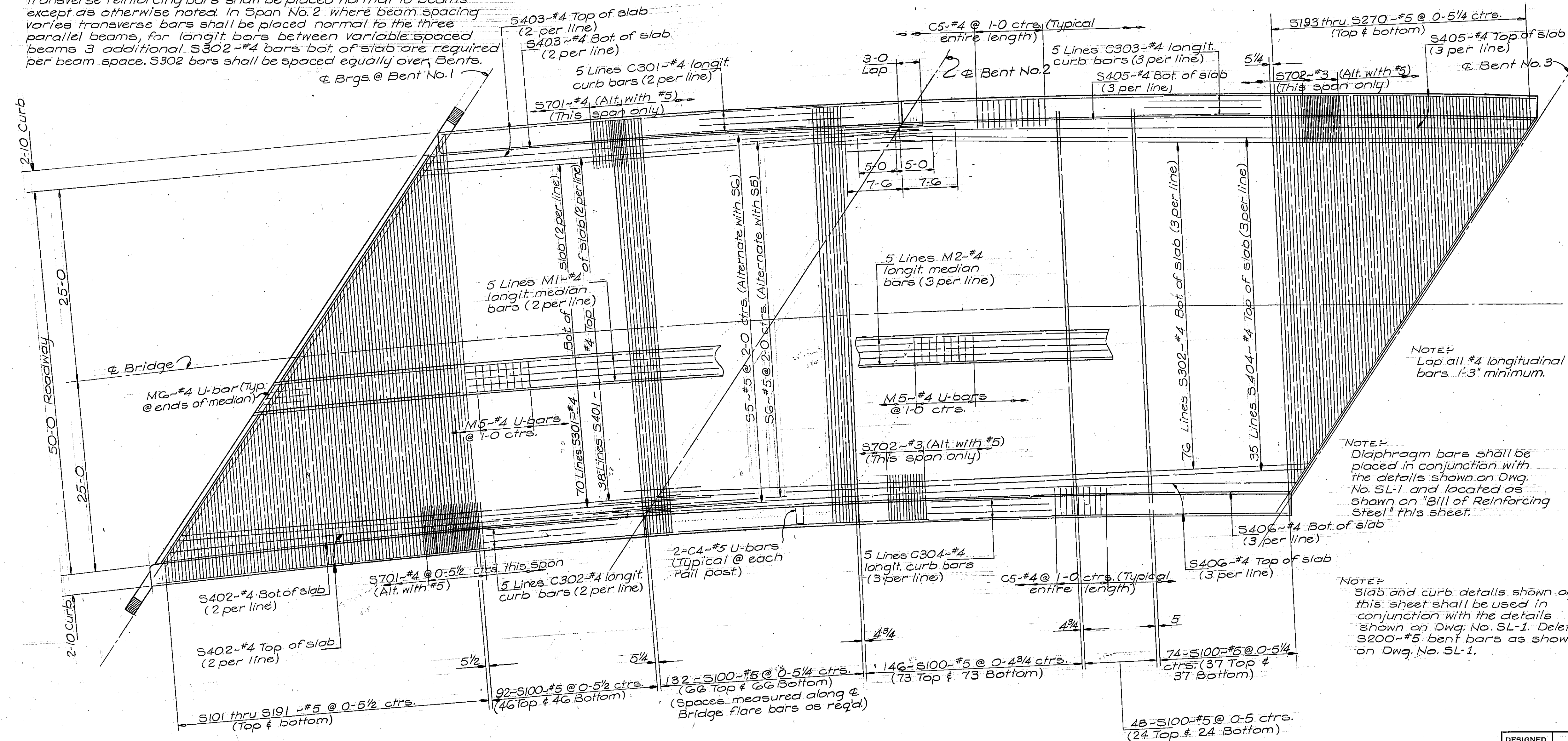
No Scale

DESIGNED	T.G.S.	2-17-
DRAWN	L.E.P	3-10-
TRACED		
CHECKED	J.D.S.	4-26-
REVISED		
REVISED		

DRAWING NO. 7730

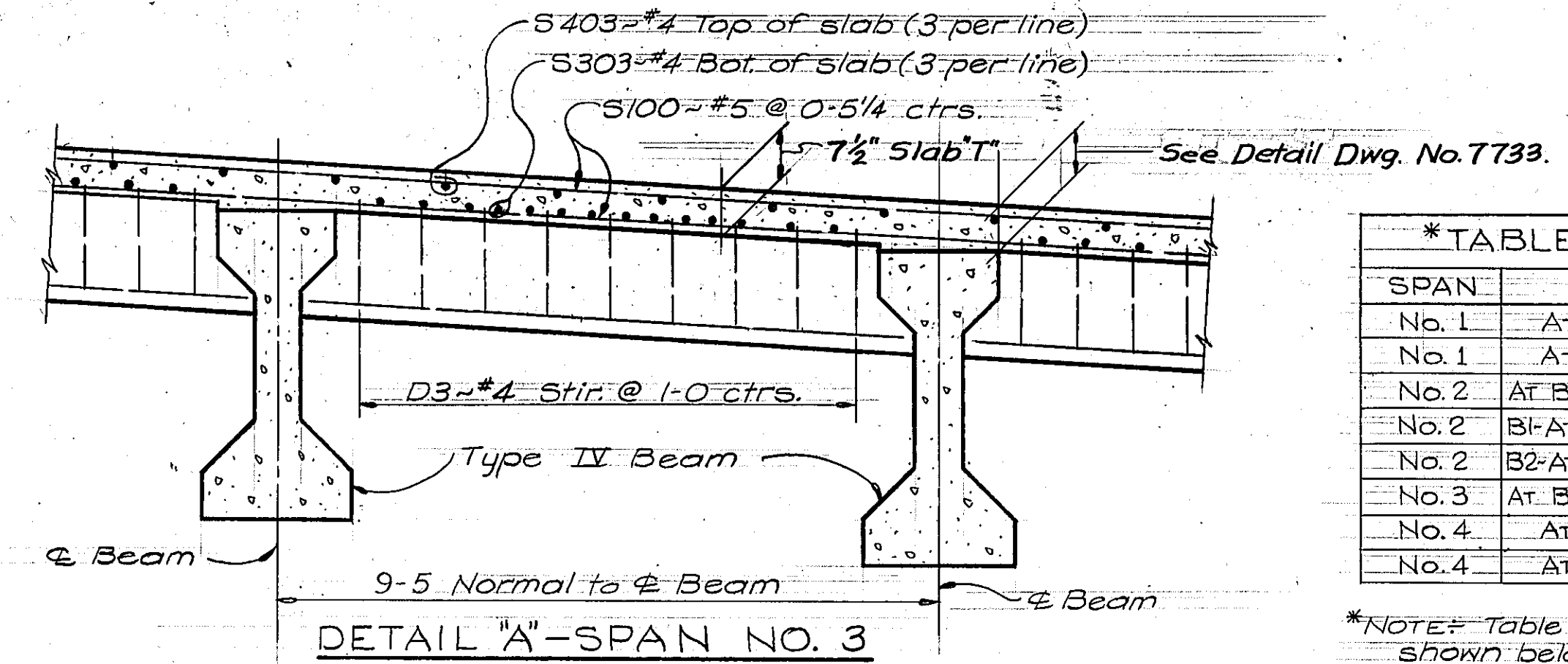


NOTE:
Transverse reinforcing bars shall be placed normal to beams except as otherwise noted. In Span No. 2 where beam spacing varies transverse bars shall be placed normal to the three parallel beams, for longit. bars between variable spaced beams 3 additional S302-#4 bars bot. of slab are required per beam space. S302 bars shall be spaced equally over Bents.



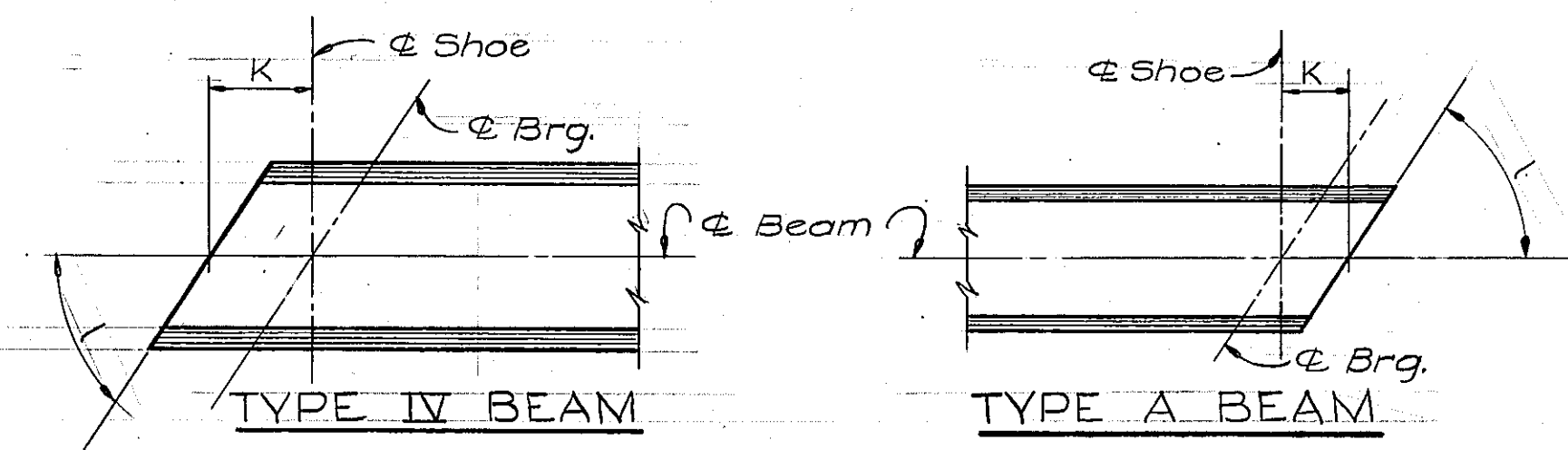
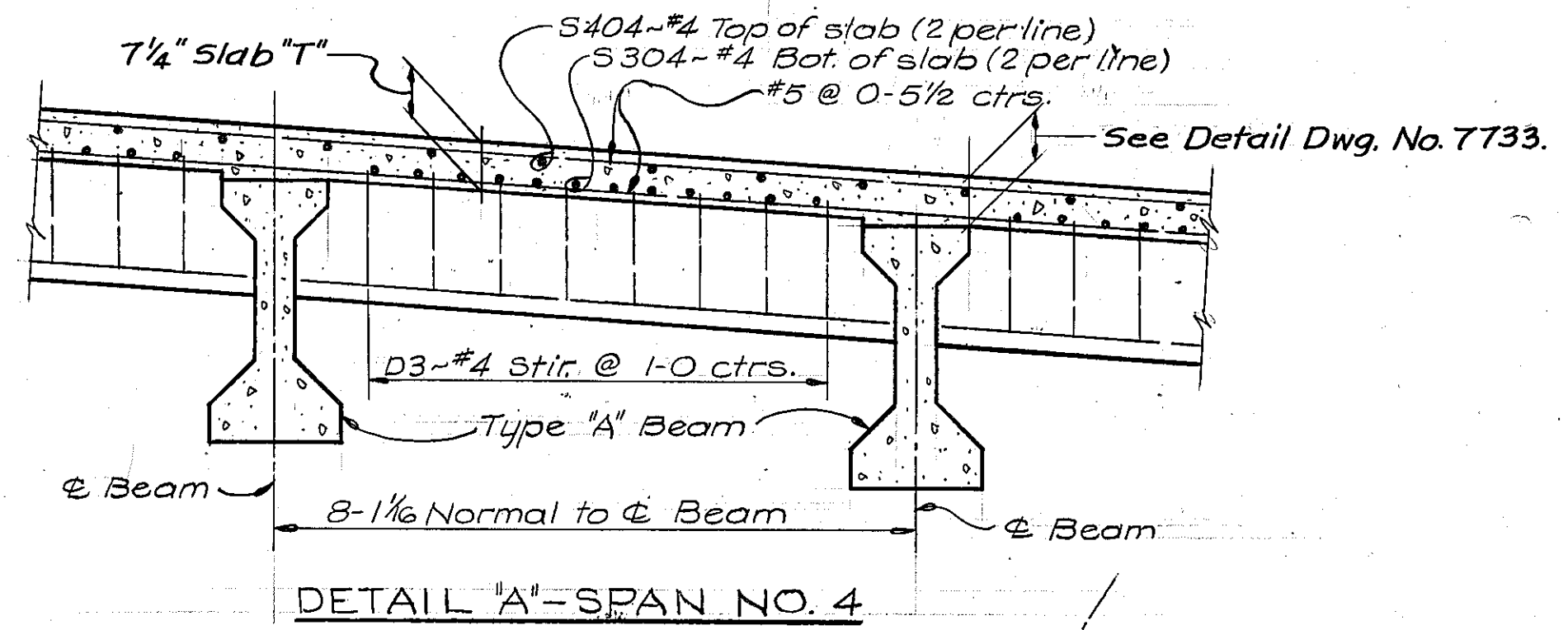
BILL OF REINFORCING STEEL									
BENT BARS (All dimensions are out to out)									
MARK	SIZE	NO.	TYPE	LENGTH	A	B	C	D	E
SPAN NO. 1									
C4	#5	32	3	6'-0"	1'-0"	2'-6"			
C5	4	126	4	6'-1"	0'-6"	0'-9"	2'-6"	1'-4"	1'-0"
D3	4	54	1	4'-8"	0'-8"	1'-8"	0'-4"		
D8	4	54	2	7'-0"	0'-6"	2'-11"	0'-4"		
M5	4	62	3	4'-9"	3'-3"	0'-9"			
MG	4	2	3	5'-8"	4'-2"	0'-9"			
SPAN NO. 2									
C4	5	40	3	6'-0"	1'-0"	2'-6"			
C5	4	166	4	6'-1"	0'-6"	0'-9"	2'-6"	1'-4"	1'-0"
D3	4	100	1	4'-8"	0'-8"	1'-8"	0'-4"		
D8	4	100	2	9'-0"	0'-6"	3'-11"	0'-4"		
M5	4	83	3	4'-9"	3'-3"	0'-9"			
MG	#4	2	3	5'-6"	4'-0"	0'-9"			
STRAIGHT BARS									
MARK	SIZE	NO.	LENGTH	MARK	SIZE	NO.	LENGTH	MARK	SIZE
SPAN NO. 1 (CONT.)									
S109	#5	2	7'-6"	S178			47'-0"	S232	
S110			8'-1"	S179			47'-7"	S233	
S111			8'-8"	S180			48'-2"	S234	
S112			9'-3"	S181			48'-9"	S235	
S113			9'-10"	S182			49'-4"	S236	
S114			10'-5"	S183			49'-11"	S237	
S115			10'-11"	S184			50'-6"	S238	
S116			11'-7"	S185			51'-1"	S239	
S117			12'-2"	S186			51'-8"	S240	
S118			12'-9"	S187			52'-3"	S241	
S119			13'-3"	S188			52'-10"	S242	
S120			13'-10"	S189			53'-6"	S243	
S121			14'-5"	S190			54'-1"	S244	
S122			14'-11"	S191			54'-8"	S245	
S123			15'-6"	S192			55'-2"	S246	
S124			16'-1"	S193			55'-9"	S247	
S125			16'-8"	S194			56'-3"	S248	
S126			17'-3"	S195			56'-10"	S249	
S127			17'-10"	S196			57'-4"	S250	
S128			18'-5"	S197			57'-11"	S251	
S129			19'-0"	S198			58'-6"	S252	
S130			19'-7"	S199			59'-1"	S253	
S131			20'-1"	S200			59'-8"	S254	
S132			20'-9"	S201			60'-2"	S255	
S133			21'-4"	S202			60'-9"	S256	
S134			21'-10"	S203			61'-3"	S257	
S135			22'-5"	S204			61'-10"	S258	
S136			23'-0"	S205			62'-4"	S259	
S137			23'-7"	S206			62'-11"	S260	
S138			24-1"	S207			63'-6"	S261	
S139			24-8"	S208			64'-1"	S262	
S140			25-3"	S209			64'-8"	S263	
S141			25-10"	S210			65'-2"	S264	
S142			26-5"	S211			65'-9"	S265	
S143			26-11"	S212			66'-3"	S266	
S144			27-7"	S213			66'-10"	S267	
S145			28-1"	S214			67'-4"	S268	
S146			28-8"	S215			67'-11"	S269	
S147			29-3"	S216			68'-6"	S270	
S148			29-10"	S217			69'-1"	S271	
S149			30-4"	S218			69'-8"	S272	
S150			30-11"	S219			70'-2"	S273	
S151			31-6"	S220			70'-9"	S274	
S152			32-1"	S221			71'-3"	S275	
S153			32-8"	S222			71'-10"	S276	
S154			33-3"	S223			72'-4"	S277	
S155			33-10"	S224			72'-11"	S278	
S156			34-4"	S225			73'-6"	S279	
S157			34-11"	S226			74'-1"	S280	
S158			35-6"	S227			74'-8"	S281	
S159			36-1"	S228			75'-2"	S282	
S160			36-7"	S229			75'-9"	S283	
S161			37-2"	S230			76'-3"	S284	
S162			37-9"	S231			76'-10"	S285	
S163			38-4"	S232			77'-4"	S286	
S164			38-11"	S233			77'-11"	S287	
S165			39-5"	S234			78'-5"	S288	
S166			40-0"	S235			78'-12"	S289	
S167			40-8"	S236			79'-6"	S290	
S168			41-3"	S237			79'-13"	S291	
S169			41-10"	S238			80'-7"	S292	
S170			42-4"	S239			80'-14"	S293	
S171			42-11"	S240			81'-8"	S294	
S172			43-6"	S241			81'-15"	S295	
S173	#5	2	44-2"	S242			82'-9"	S296	

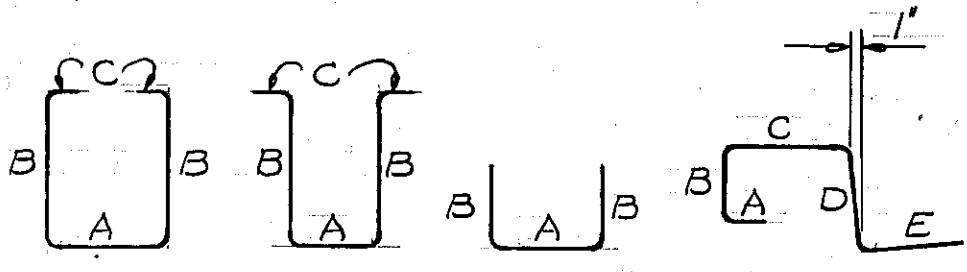
STRAIGHT BARS									
MARK	SIZE	NO.	LENGTH	MARK	SIZE	NO.	LENGTH	MARK	SIZE
S174	#5	2	44'-9"	S228	#5	2	30'-0"		
S175			45-4"	S229			29-5"		
S176			45-11"	S230			28-9"		
S177			46-5"	S231			28-2"		
S178			47-0"	S232			27-7"		
S179			47-7"	S233			26-10"		
S180			48-2"	S234			26-2"		
S181			48-9"	S235			25-6"		
S182			49-4"	S236			24-11"		
S183			49-11"	S237			24-3"		
S184			50-6"	S238			23-8"		
S185			51-1"	S239			23-1"		
S186			51-8"	S240			22-5"		
S187			52-3"	S241			21-9"		
S188			52-10"	S242			21-2"		
S189			53-6"	S243			20-6"		
S190			54-1"	S244			19-10"		
S191			54-8"	S245			19-2"		
S192			55-2"	S246			18-7"		
S193			55-9"	S247			18-0"		
S194			56-3"	S248			17-4"		
S195			56-10"	S249			16-8"		
S196			57-4"	S250			16-0"		
S197			57-11"	S251			15-5"		
S198			58-6"	S252			14-10"		
S199			59-1"	S253			14-2"		
S200			59-8"	S254			13-6"		
S201			60-2"	S255			12-11"		
S202			60-9"	S256			12-3"		
S203			61-3"	S257			11-7"		
S204			61-10"	S258			11-0"		
S205			62-4"	S259			10-4"		
S206			62-11"	S260			9-8"		
S207			63-6"	S261			9-1"		
S208			64-1"	S262			8-5"		
S209			64-8"	S263			7-10"		
S210			65-2"	S264			7-2"		
S211			65-9"	S265			6-7"		
S212			66-3"	S266			5-11"		
S213			66-10"	S267			5-3"		
S214			67-4"	S268			4-8"		
S215			67-11"	S269			4-0"		
S216			68-6"	S270			3-4"		
S217			69-1"	S271					
S218			69-8"	S272					
S219			70-2"	S273					
S220			70-9"	S274					
S221			71-3"	S275					
S222			71-10"	S276					
S223			72-4"	S277					
S224			72-11"	S278					
S225			73-6"	S279					
S226			74-1"	S280					
S227			74-8"	S281					
S228			75-2"	S282					
S229			75-9"	S283					</

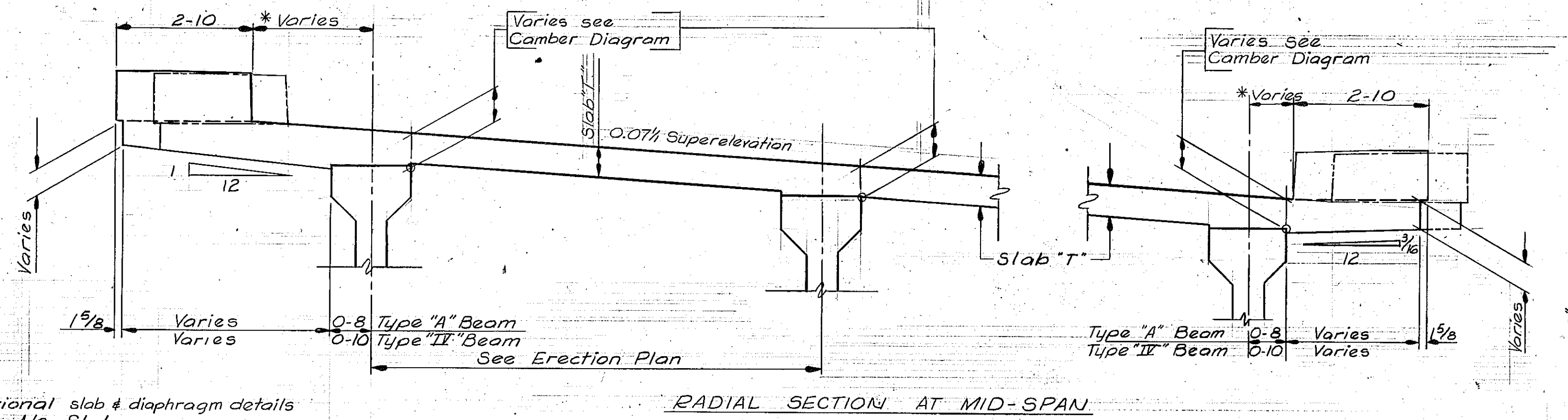
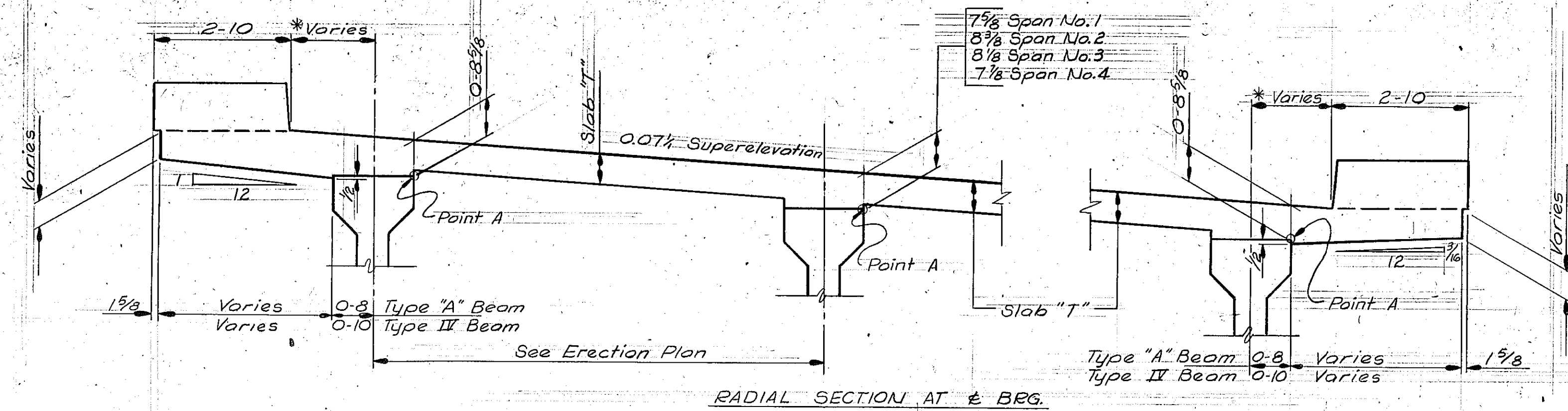


*TABLE OF MODIFIED BEAM ENDS				
SPAN	LOCATION	TYPE	K	L
No. 1	AT BENT No. 1	A	0'-11"	52'-02" 21"
No. 1	AT BENT No. 2	A	1'-2 1/8"	52'-02" 21"
No. 2	AT BENTS No. 2 & No. 3	IV	1'-2 1/8"	54'-13" 20"
No. 2	BT AT BENTS No. 2 & No. 3	IV	1'-2 1/8"	57'-08" 32"
No. 2	B2 AT BENTS No. 2 & No. 3	IV	1'-2 1/8"	55'-39" 25"
No. 3	AT BENTS No. 3 & No. 4	IV	1'-2 1/8"	59'-42" 51"
No. 4	AT BENT No. 4	A	1'-2 1/8"	62'-53" 26"
No. 4	AT BENT No. 5	A	0'-11"	62'-53" 26"

*NOTE: Table shall be used with Modified beam details shown below. Beams shall be located as shown on "Erection Diagram" Dwg. No. 7730



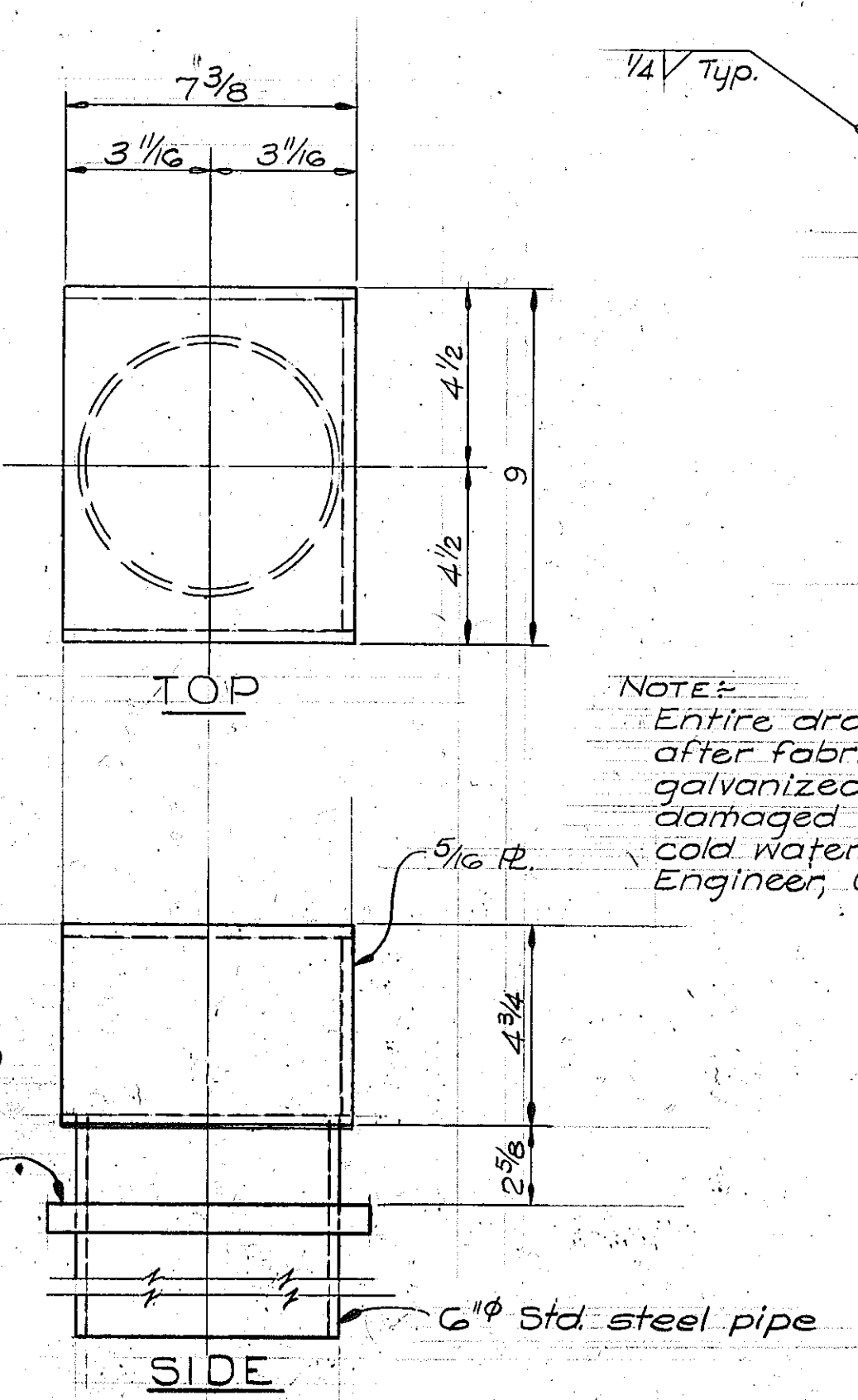
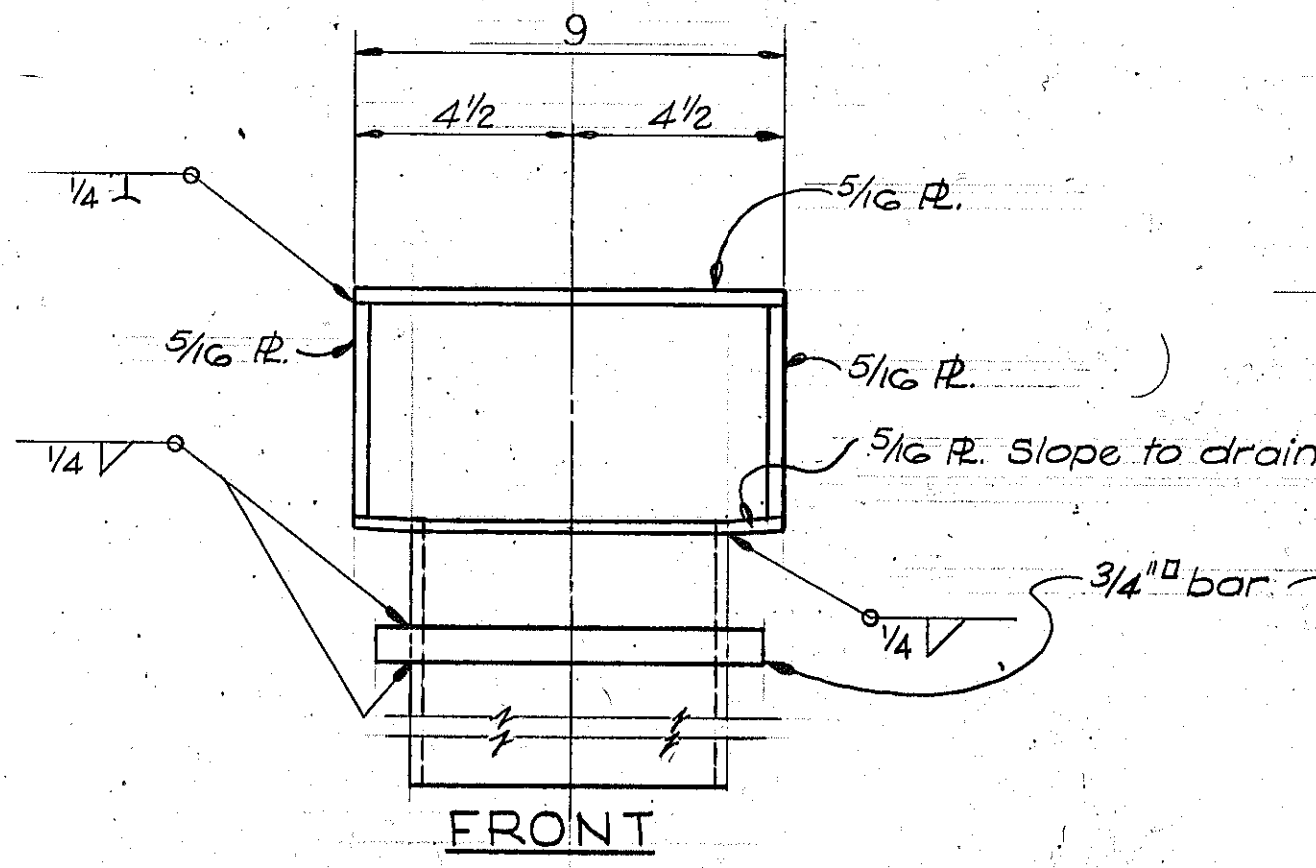
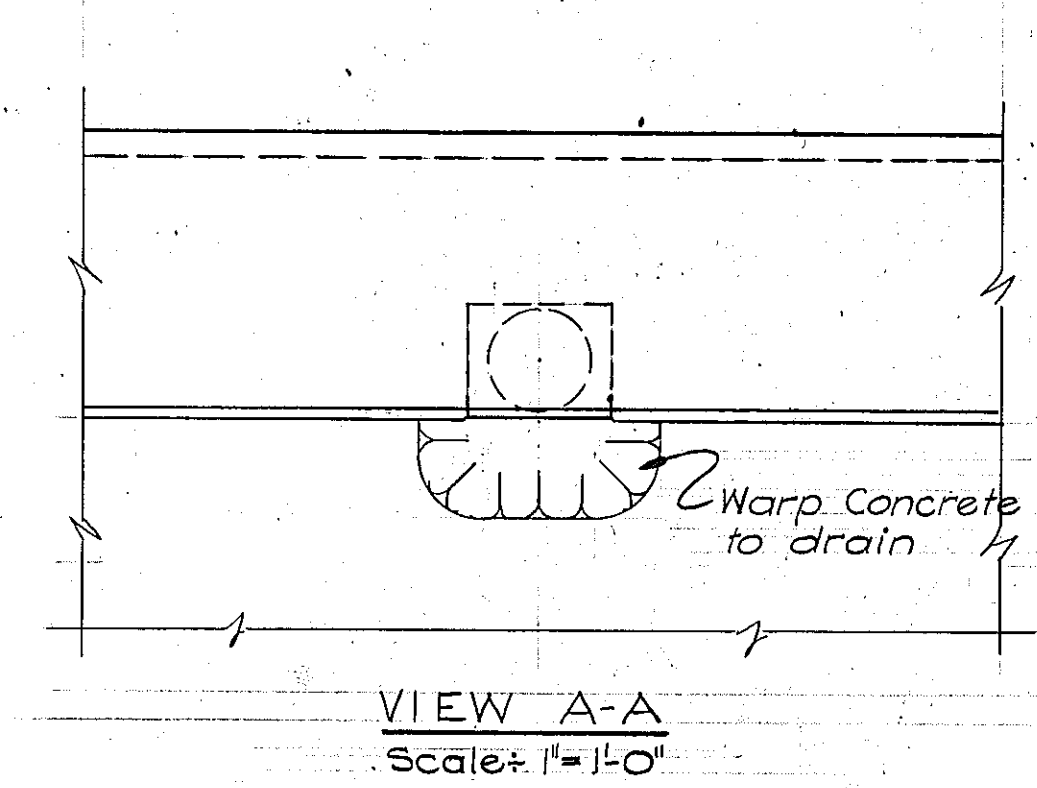
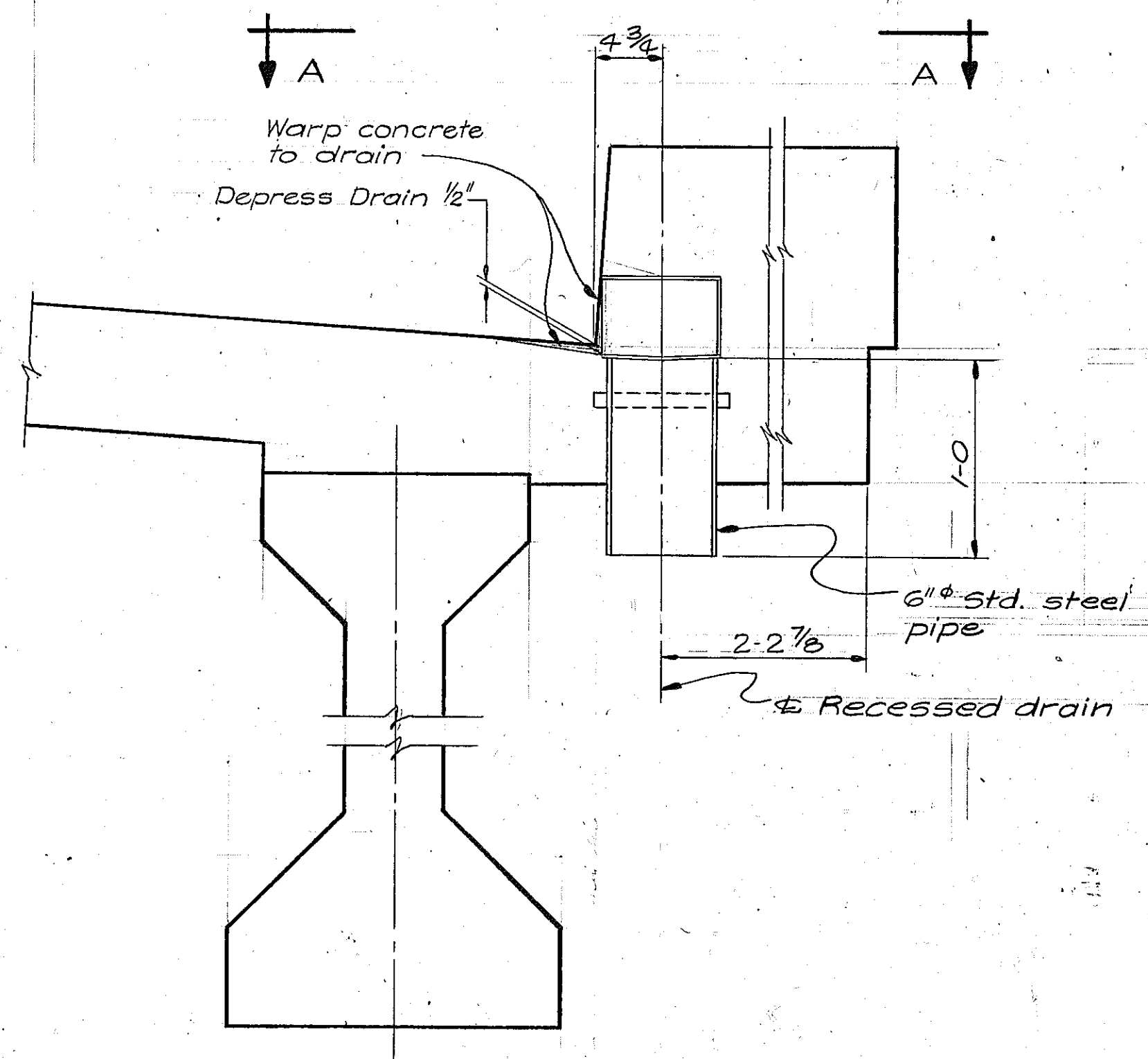
BILL OF REINFORCING STEEL															
								STRAIGHT BARS							
MARK	SIZE	No.	LENGTH	MARK	SIZE	No.	LENGTH	MARK	SIZE	No.	LENGTH	MARK	SIZE	No.	LENGTH
SPAN NO. 3								SPAN NO. 3							
S5	#5	26	15'-0"	S152	#5	2	41'-3"	S192	#5	2	32'-8"	S101	#5	2	3'-10"
S6	#5	25	10'-0"	S154	#5	2	42'-8"	S194	#5	2	30'-10"	S102	#5	2	4'-7"
S100	#5	136	55'-2"	S155	#5	2	43'-5"	S195	#5	2	29'-11"	S103	#5	2	5'-4"
				S156	#5	2	44'-2"	S196	#5	2	29'-0"	S104	#5	2	6'-1"
				S157	#5	2	44'-11"	S197	#5	2	28'-1"	S105	#5	2	6'-9"
				S158	#5	2	45'-8"	S198	#5	2	27'-2"	S106	#5	2	7'-6"
				S159	#5	2	46'-4"	S199	#5	2	26'-3"	S107	#5	2	8'-3"
				S160	#5	2	47'-1"	S200	#5	2	25'-4"	S108	#5	2	9'-0"
				S161	#5	2	47'-10"	S201	#5	2	24'-6"	S109	#5	2	9'-9"
				S162	#5	2	48'-7"	S202	#5	2	23'-7"	S110	#5	2	10'-5"
				S163	#5	2	49'-4"	S203	#5	2	22'-8"	S111	#5	2	11'-2"
				S164	#5	2	50'-1"	S204	#5	2	21'-9"	S112	#5	2	11'-10"
				S165	#5	2	50'-10"	S205	#5	2	20'-10"	S113	#5	2	12'-7"
				S166	#5	2	51'-6"	S206	#5	2	19'-11"	S114	#5	2	13'-4"
				S167	#5	2	52'-4"	S207	#5	2	19'-0"	S115	#5	2	14'-1"
				S168	#5	2	53'-1"	S208	#5	2	18'-11"	S116	#5	2	14'-9"
				S169	#5	2	54'-8"	S209	#5	2	17'-2"	S117	#5	2	15'-6"
				S170	#5	2	55'-5"	S210	#5	2	16'-3"	S118	#5	2	16'-3"
				S171	#5	2	56'-2"	S211	#5	2	15'-5"	S119	#5	2	17'-0"
				S172	#5	2	57'-0"	S212	#5	2	14'-6"	S120	#5	2	17'-8"
				S173	#5	2	57'-8"	S213	#5	2	13'-7"	S121	#5	2	18'-5"
				S174	#5	2	58'-5"	S214	#5	2	12'-8"	S122	#5	2	19'-2"
				S175	#5	2	59'-2"	S215	#5	2	11'-9"	S123	#5	2	19'-10"
				S176	#5	2	60'-0"	S216	#5	2	10'-11"	S124	#5	2	20'-7"
				S177	#5	2	60'-8"	S217	#5	2	10'-0"	S125	#5	2	21'-4"
				S178	#5	2	61'-5"	S218	#5	2	9'-1"	S126	#5	2	22'-1"
				S179	#5	2	62'-2"	S219	#5	2	8'-1"	S127	#5	2	22'-10"
				S180	#5	2	62'-9"	S220	#5	2	7'-2"	S128	#5	2	23'-6"
				S181	#5	2	63'-6"	S221	#5	2	6'-3"	S129	#5	2	24'-3"
				S182	#5	2	64'-3"	S222	#5	2	5'-4"	S130	#5	2	24'-11"
				S183	#5	2	65'-0"	S223	#5	2	4'-5"	S131	#5	2	25'-10"
				S184	#5	2	65'-8"	S224	#5	2	3'-7"	S132	#5	2	26'-5"
				S185	#5	2	66'-5"	S225	#5	2	2'-8"	S133	#5	2	27'-2"
				S186	#5	2	67'-2"	S226	#5	2	1'-9"	S134	#5	2	27'-11"
				S187	#5	2	67'-10"	S227	#5	2	1'-0"	S135	#5	2	28'-8"
				S188	#5	2	68'-7"	S228	#5	2	0'-11"	S136	#5	2	29'-4"
				S189	#5	2	69'-4"	S229	#5	2	0'-0"	S137	#5	2	30'-1"
				S190	#5	2	70'-1"	S230	#5	2	0'-0"	S138	#5	2	30'-10"
				S191	#5	2	70'-8"	S231	#5	2	0'-0"	S139	#5	2	31'-7"
				S192	#5	2	71'-5"	S232	#5	2	0'-0"	S140	#5	2	32'-4"
				S193	#5	2	72'-2"	S233	#5	2	0'-0"	S141	#5	2	33'-1"
				S194	#5	2	72'-9"	S234	#5	2	0'-0"	S142	#5	2	33'-10"
				S195	#5	2	73'-6"	S235	#5	2	0'-0"	S143	#5	2	34'-7"
				S196	#5	2	74'-3"	S236	#5	2	0'-0"	S144	#5	2	35'-4"
				S197	#5	2	75'-0"	S237	#5	2	0'-0"	S145	#5	2	36'-1"
				S198	#5	2	75'-7"	S238	#5	2	0'-0"	S146	#5	2	36'-10"
				S199	#5	2	76'-4"	S239	#5	2	0'-0"	S147	#5	2	37'-7"
				S200	#5	2	77'-1"	S240	#5	2	0'-0"	S148	#5	2	38'-4"
				S201	#5	2	77'-8"	S241	#5	2	0'-0"	S149	#5	2	39'-1"
				S202	#5	2	78'-5"	S242	#5	2	0'-0"	S150	#5	2	39'-10"
				S203	#5	2	79'-2"	S243	#5	2	0'-0"	S151	#5	2	40'-7"
				S204	#5	2	79'-9"	S244	#5	2	0'-0"				
				S205	#5	2	80'-6"								
				S206	#5	2	81'-3"								
				S207	#5	2	82'-0"								
				S208	#5	2	82'-7"								
				S209	#5	2	83'-4"								
				S210	#5	2	84'-1"								
				S211	#5	2	84'-8"								
				S212	#5	2	85'-5"								
				S213	#5	2	86'-2"								
				S214	#5	2	86'-9"								
				S215	#5	2	87'-6"								
				S216	#5	2	88'-3"								
				S217	#5	2	89'-0"								
				S218	#5	2	89'-7"								
				S219	#5	2	90'-4"								
				S220	#5	2	91'-1"								
				S221	#5	2	91'-8"								
				S222	#5	2	92'-5"								
				S223	#5	2	93'-2"								
				S224	#5	2	93'-9"								
				S225	#5	2	94'-6"								
				S226	#5	2	95'-3"								
				S227	#5	2	96'-0"								
				S228	#5	2	96'-7"								
				S229	#5	2	97'-4"								
				S230	#5	2	98'-1"								
				S231	#5	2	98'-8"								
				S232	#5	2	99'-5"								
				S233	#5	2	100'-2"								
				S234	#5	2	100'-9"								
				S235	#5	2	101'-6"								
				S236	#5	2	102'-3"								
				S237	#5	2	102'-10"								
				S238	#5	2	103'-7"								
				S239	#5	2	104'-4"								
				S240	#5	2	105'-1"								
				S241	#5	2	105'-8"								
				S242	#5	2	106'-5"								
				S243	#5	2	107'-2"								
				S244	#5	2	107'-9"								
				S245	#5	2	108'-6"								
				S246	#5	2	109'-3"								
				S247	#5	2	109'-10"								
				S248	#5	2	110'-7"								
				S249	#5	2	110'-4"								
				S250	#5	2	111'-1"								
				S251	#5	2	111'-8"								
				S252	#5	2	112'-5"								
				S253	#5	2	113'-2"								
				S254	#5	2	113'-9"								
				S255	#5	2	114'-6"								
				S256	#5	2	115'-3"								
				S257	#5	2	116'-0"								
				S258	#5	2	116'-7"								
				S259	#5	2	117'-4"								
				S260	#5	2	118'-1"								
				S261	#5	2	118'-8"								
				S262	#5	2	119'-5"								
				S263	#5	2	120'-2"								
				S264	#5	2	120'-9"								
				S265	#5	2	121'-6"								
				S266	#5	2	122'-3"								
				S267	#5	2	122'-10"								



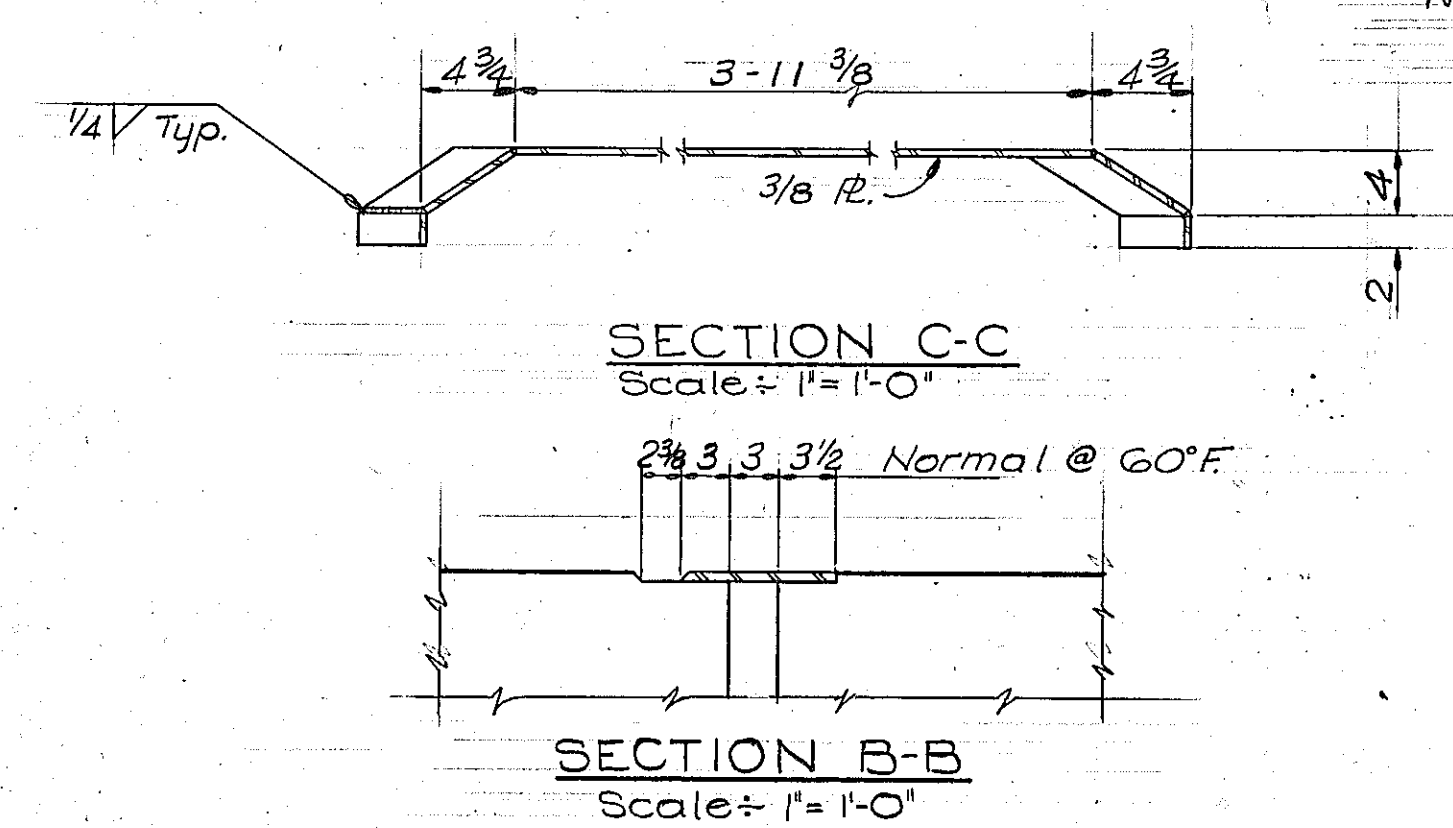
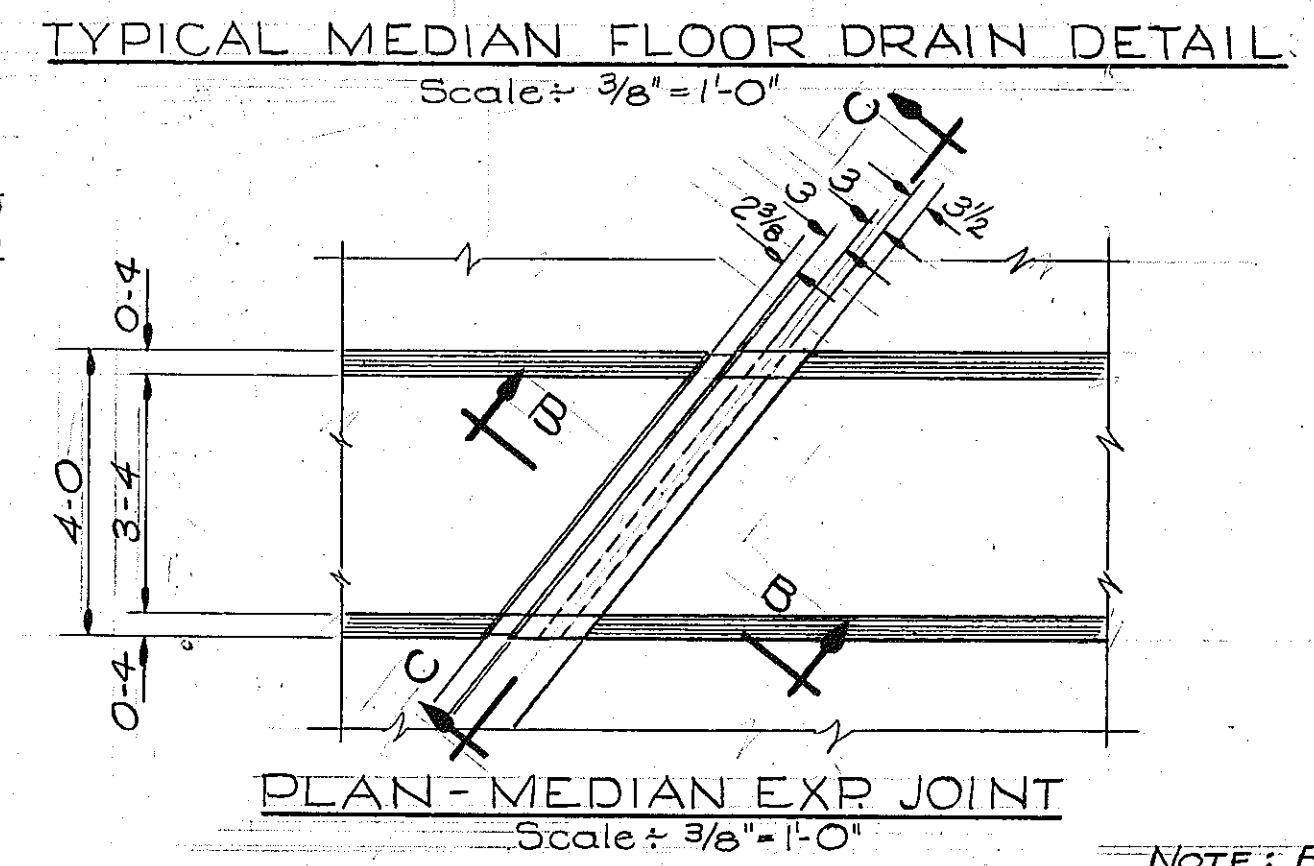
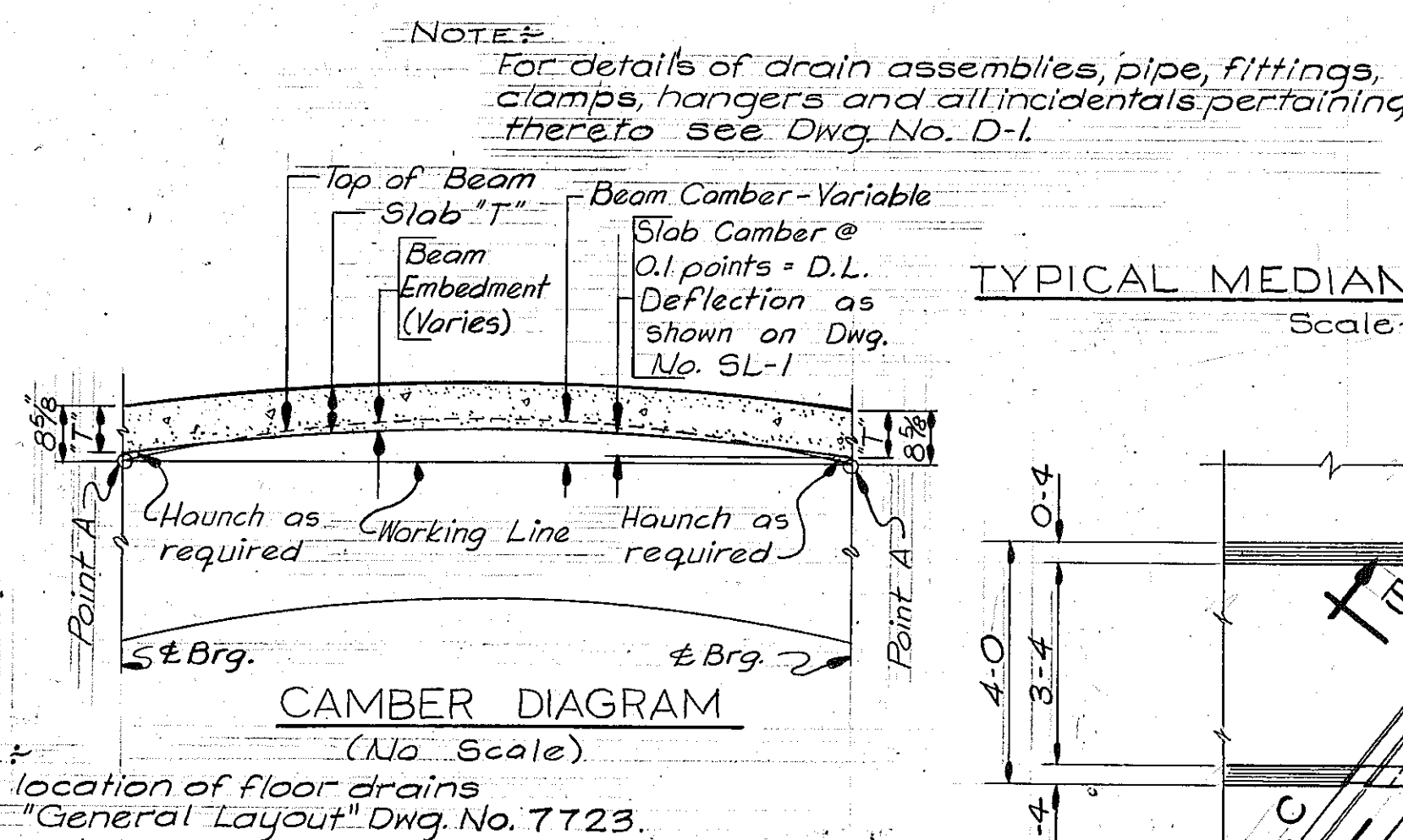
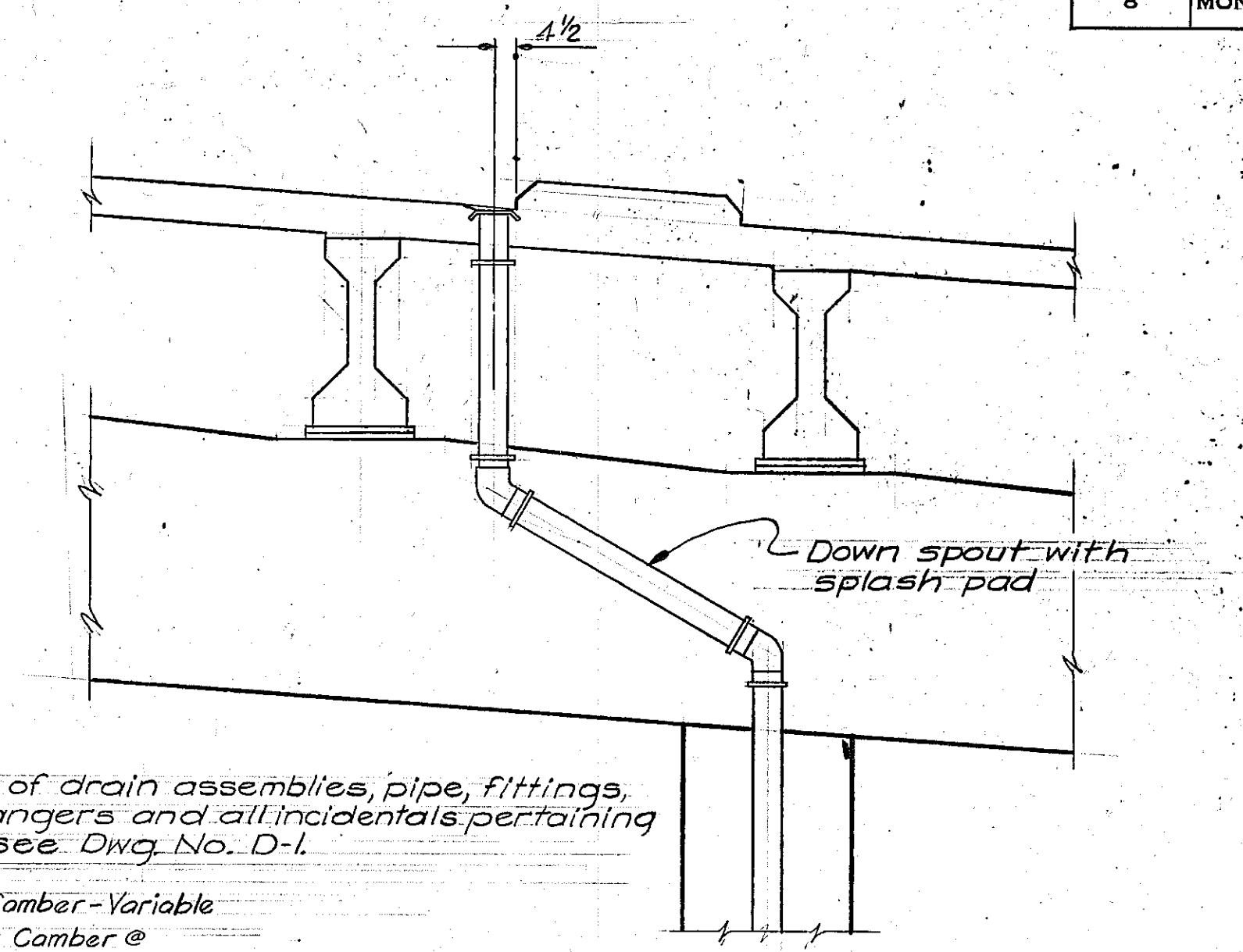
Note: For additional slab & diaphragm details see Dwg. No. SL-1

* Note: For these dimensions shown as varies see "Slab Overhang Detail" Dwg. No. 7730.

MODIFIED CURB & SLAB DETAILS
Scale: 1/2" = 1'-0"



RECESSED DRAIN DETAILS
Scale: 3" = 1'-0"



Note: Entire drain assembly shall be galvanized after fabrication. Any surface on which galvanized coating has been removed or damaged shall be field galvanized with a cold water process approved by the Engineer, Galvicon or equal.

STATE OF MONTANA
STATE HIGHWAY COMMISSION

PINEHILL INTERCHANGE
AT STA. 1177+71.54

FEDERAL AID PROJECT NO. I-90-8(26)451
YELLOWSTONE COUNTY

MODIFIED CURB, FLOOR DRAINS
& MEDIAN EXPANSION JOINT DETAILS
Scale: As Noted

DESIGNED		
DRAWN	L.E.P.	4-2-65
TRACED		
CHECKED	J.D.S.	4-26-65
REVISED		
REVISED		