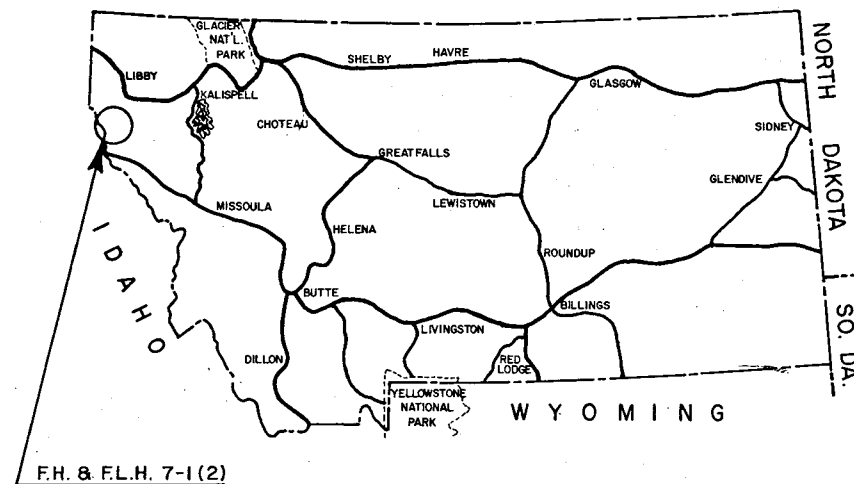


REG.	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
8	MONT.	F.H. & F.L.H. 7-1(2)	1	73

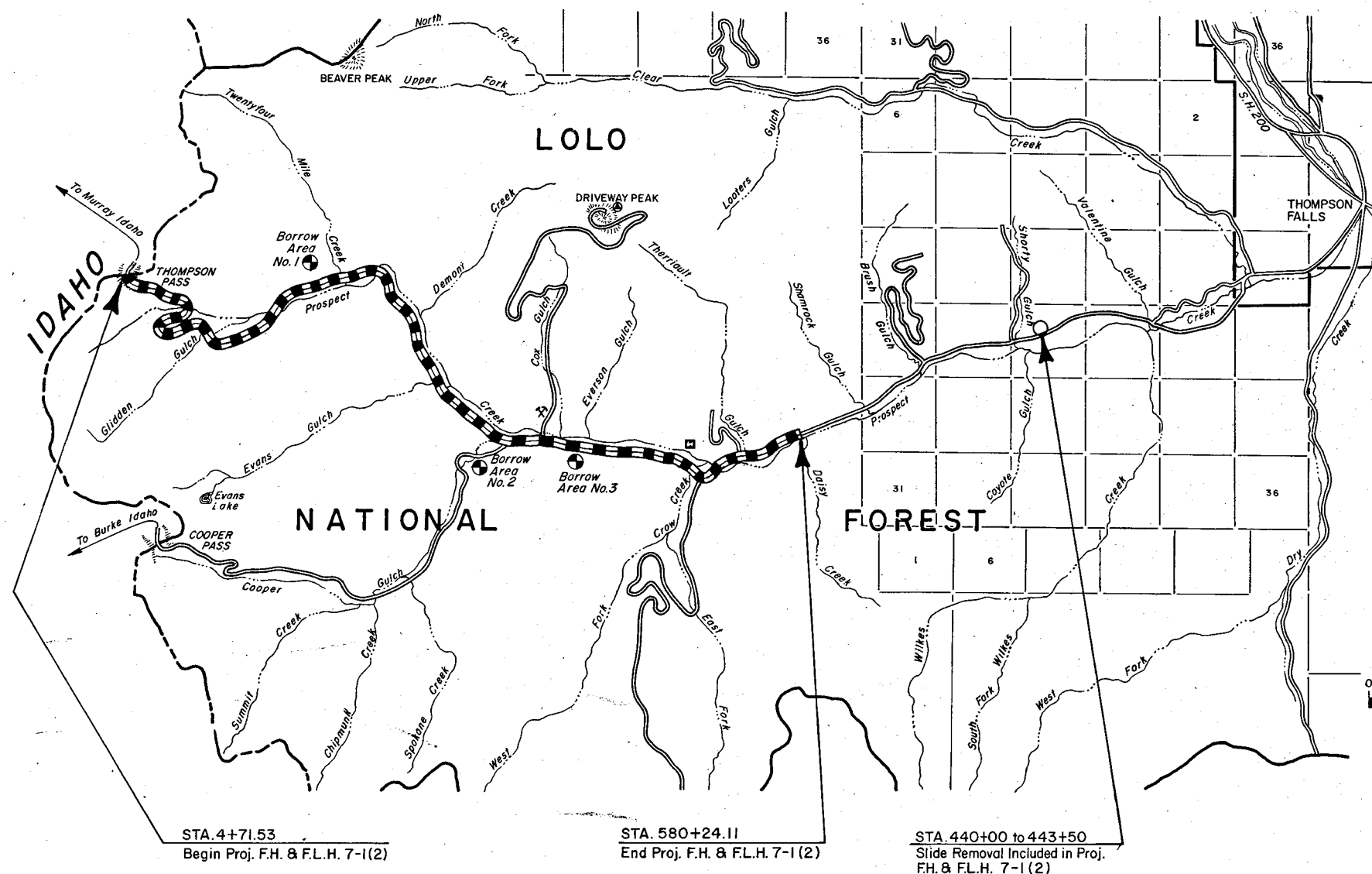
INDEX TO SHEETS	
SHEET NO.	DESCRIPTION
1	Title Sheet
2-3	Typical Sections
4-13	Summary
14-15	Mass Diagrams
16-31	Plan & Profile
32	Spec.-1, Borrow Area Details
33	Spec.-2, Metal Bin Wall Details
34-38	Spec.-3, Culvert Details
39	Spec.-4, Riprap Details
40	Spec.-5, Bituminous Curbs & Paved Waterways
41	Spec.-6, Slotted Drain Embankment Protector
42-59	Bridge Plans, Dwg. No. 11846 - 11862
60-62	Bridge Standard Drawings
63-73	Signing & Delineation Drawings



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

AS - CONSTRUCTED
MONTANA FOREST HIGHWAY & FEDERAL LANDS HIGHWAY PROJ. 7-1(2)
THOMPSON PASS
CLASS-2
LOLO NATIONAL FOREST
SANDERS COUNTY
LENGTH 12.069 MILES

CONVENTIONAL SYMBOLS	
PROJECTED CENTERLINE	STAKED CENTERLINE
REVISED CENTERLINE	PRESENT ROAD
STATE BOUNDARY	COUNTY LINE
FOREST BOUNDARY	PARK BOUNDARY
TOWNSHIP OR RANGE LINE	SECTION LINE
1/4 SECTION LINE	1/16 SECTION LINE
OWNERSHIP BOUNDARY	PARCEL NUMBER
SECTION CORNERS	1/4 CORNERS
1/16 CORNERS	PROPOSED R/W LINE & CALCULATIONS
FENCE	GATE
CATTLE GUARD	SLOPE LIMITS
CONSTRUCTION PERMIT	EXISTING POLES
UNDER GROUND LINES	EXISTING CULVERTS
NEW CULVERTS	PIPE LINE (WATER, GAS, ETC.)
DROP INLETS & MANHOLE	TRAIL
RAILROAD	IRRIGATION OR FURROW DITCH
INTERMITTENT STREAM	RIVER WITH BRIDGE
CHANNEL CHANGE	DIKE
ROCK OUTCROP	MARSH OR SWAMP
TREES	GUARD RAIL
CONTROL POINTS	



COMPLETED 5-31-80

LENGTH OF PROJECT		Roadway Feet	Roadway Miles	Bridge Feet	Bridge Miles
Station to	Station				
4+71.53	to 180+96.90 Bk.	17,625.37	3.338		
144+17.80 Ah.	to 192+53.29 Bk.	4,835.49	0.916		
192+62.24 Ah.	to 211+69.44 Bk.	1,907.20	0.361		
211+70.08 Ah.	to 222+91.79 Bk.	1,121.71	0.212		
222+94.05 Ah.	to 236+87.50	1,393.45	0.264		
236+87.50	to 237+82.50			95.00	0.018
237+82.50	to 242+33.99 Bk.	451.49	0.086		
217+77.34 Ah.	to 232+87.87 Bk.	1,510.53	0.286		
232+82.85 Ah.	to 243+26.58 Bk.	1,043.73	0.198		
243+26.74 Ah.	to 294+37.32 Bk.	5,110.58	0.968		
294+34.30 Ah.	to 313+40.61 Bk.	1,906.31	0.361		
313+36.83 Ah.	to 357+37.50	4,400.67	0.833		
357+37.50	to 358+32.50			95.00	0.018
358+32.50	to 511+70.50	15,338.00	2.905		
511+70.50	to 512+70.50			100.00	0.019
512+70.50	to 541+53.73 Bk.	2,883.23	0.546		
541+66.85 Ah.	to 556+66.97 Bk.	1,500.12	0.284		
556+16.16 Ah.	to 580+24.11	2,407.95	0.456		
TOTALS		63,435.83	12.014	290.00	0.055

TYPE OF CONSTRUCTION:
Grading, Drainage, Bridges, and Surfacing

TYPE CODE: 4251 & X080

DESIGN DESIGNATION	
ADT (1974)	52
ADT (1994)	130
DHV	20
D	55-45
T	15.1%
V	40 M.P.H.

PLANS PREPARED BY
MONTANA DEPARTMENT OF HIGHWAYS
AND
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
REGION NO. 8 DENVER, COLORADO

APPROVED: _____ DATE _____ 19____
DIRECTOR, OFFICE OF FEDERAL HIGHWAY PROJECTS

LEGEND	
EXISTING ROAD	UNIMPROVED
GRADED	REINFORCED SUBGRADE
BASE COURSE	SURFACE TREATMENT
ROAD PLANT	CONCRETE

TABLE OF TYPICAL SECTIONS

STATION TO STATION		TYPICAL SECTION
FROM	TO	
4+71.53	13+82.0	1
13+82.0	15+82.0	Transition 1 to 2
15+82.0	20+57.0	2
20+57.0	22+57.0	Transition 2 to 1
22+57.0	30+26.2	1
30+26.2	52+26.2	Transition 1 to 2
52+26.2	59+85.6	2
59+85.6	61+85.6	Transition 2 to 1
61+85.6	70+77.1	1
70+77.1	72+77.1	Transition 1 to 2
72+77.1	85+39.9	2
85+39.9	87+39.9	Transition 2 to 1
87+39.9	88+02.0	1
88+02.0	90+02.0	Transition 1 to 2
90+02.0	121+02.6	2
121+02.6	122+77.6	Transition 2 to 1
122+77.6	123+53.0	1
123+53.0	125+53.0	Transition 1 to 2
125+53.0	138+83.1	2
138+83.1	140+58.1	Transition 2 to 1
140+58.1	142+65.1	1
142+65.1	144+40.1	Transition 1 to 2
144+40.1	146+96.1	2
146+96.1	148+71.1	Transition 2 to 1
148+71.1	149+37.1	1
149+37.1	151+12.1	Transition 1 to 2
151+12.1	152+10.7	2
152+10.7	153+85.7	Transition 2 to 1
153+85.7	157+38.1	1
157+38.1	159+13.1	Transition 1 to 2
159+13.1	180+96.90 Bk.	2
144+17.80 Ah.	151+80.2	2

0.50' Crushed Base Course - Existing
Constructed Under State Project S-221 (5)

STATION TO STATION		TYPICAL SECTION
FROM	TO	
151+80.2	158+24.2	2
158+24.2	160+74.2	Transition 2 to 1
160+74.2	161+34.4	1
161+34.4	163+34.4	Transition 1 to 2
163+34.4	165+34.4	2
165+34.4	167+34.4	Transition 2 to 1
167+34.4	169+68.7	1
169+68.7	171+18.7	Transition 1 to 2
171+18.7	178+85.1	2
178+85.1	180+35.1	Transition 2 to 1
180+35.1	183+32.9	1
183+32.9	184+82.9	Transition 1 to 2
184+82.9	192+53.29 Bk.	2
192+53.29 Ah.	194+12.2	Transition 2 to 1
194+12.2	198+10.6	1
198+10.6	199+60.6	Transition 1 to 2
199+60.6	202+72.0	2
202+72.0	204+22.0	Transition 2 to 1
204+22.0	205+94.4	1
205+94.4	207+44.4	Transition 1 to 2
207+44.4	210+19.4	2
210+19.4	211+69.44 Bk.	Transition 2 to 1
211+70.08 Ah.	215+66.8	1
215+66.8	217+16.8	Transition 1 to 2
217+16.8	221+41.8	2
221+41.8	222+91.79 Bk.	Transition 2 to 1
222+94.05 Ah.	226+11.0	1
226+11.0	227+61.0	Transition 1 to 2
227+61.0	240+84.0	2
240+84.0	242+33.99 Bk.	Transition 2 to 3

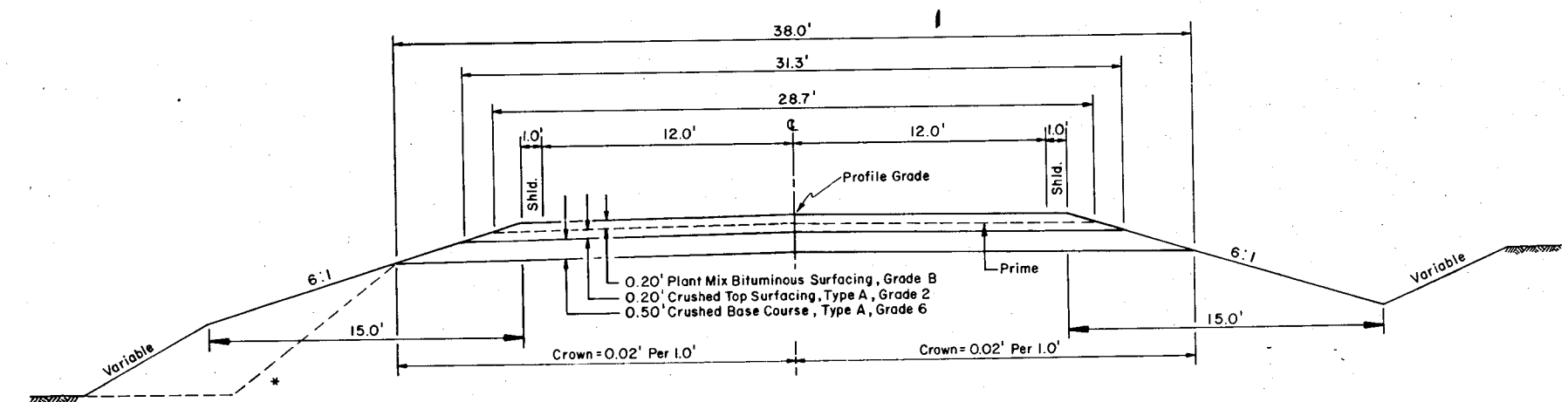
(As Constructed)

U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
REGION - 8 DENVER, COLORADO

TYPICAL SECTIONS

SHEET 1 OF 2

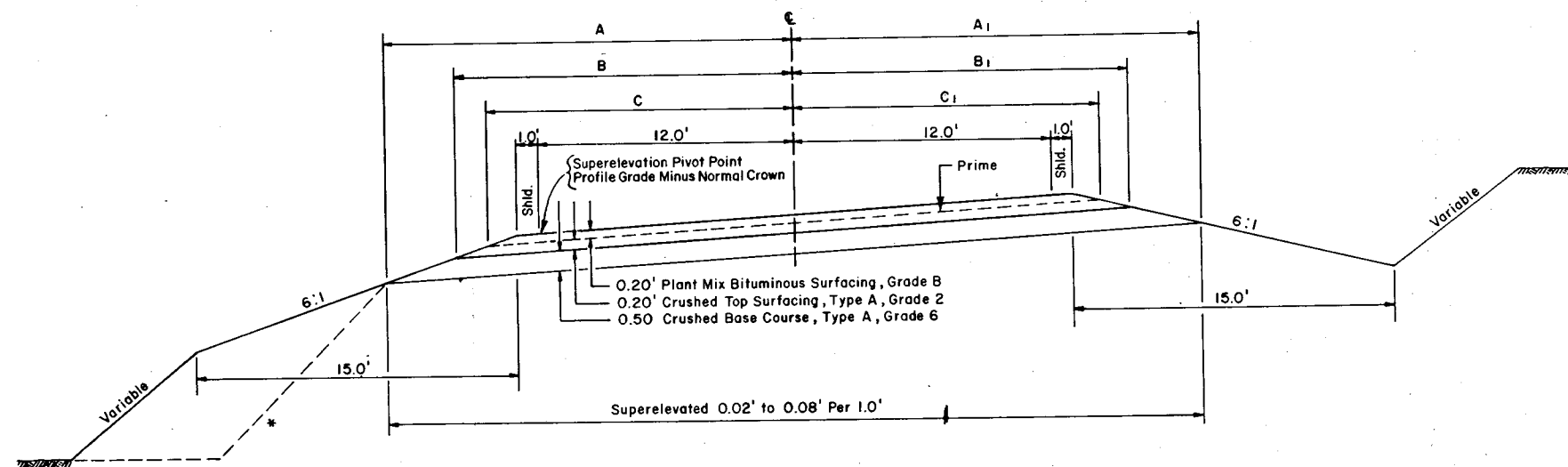
Mont. Proj. F.H. & F.L.H. 7-1(2), Thompson Pass



TYPICAL SECTION 1

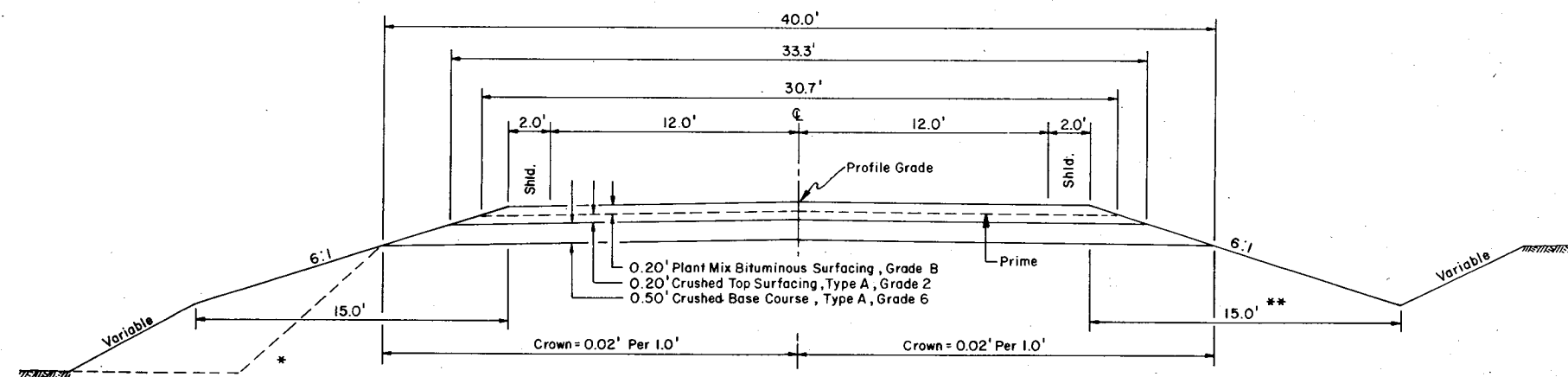
* To be used on Fill Sections
From Sta. 174+25 to Sta. 179+25 Rt.

DEGREE OF CURVATURE	SUP. / FT.	DISTANCES					
		A	A ₁	B	B ₁	C	C ₁
0°30' to 1°45'	.02	19.0	18.0	15.7	15.2	14.3	14.1
2°00' to 2°45'	.03	20.0	18.0	16.1	15.2	14.6	14.1
3°00' to 3°45'	.04	20.0	18.0	16.2	15.0	14.7	14.0
4°00' to 4°45'	.05	21.0	17.0	16.6	14.8	14.8	13.9
5°00' to 5°45'	.06	21.0	17.0	16.6	14.8	14.8	13.9
6°00' to 6°45'	.07	22.0	17.0	17.1	14.8	15.0	13.9
7°00' to 18°00'	.08	23.0	17.0	17.6	14.6	15.3	13.8



TYPICAL SECTION 2

DESIGNED
DRAWN

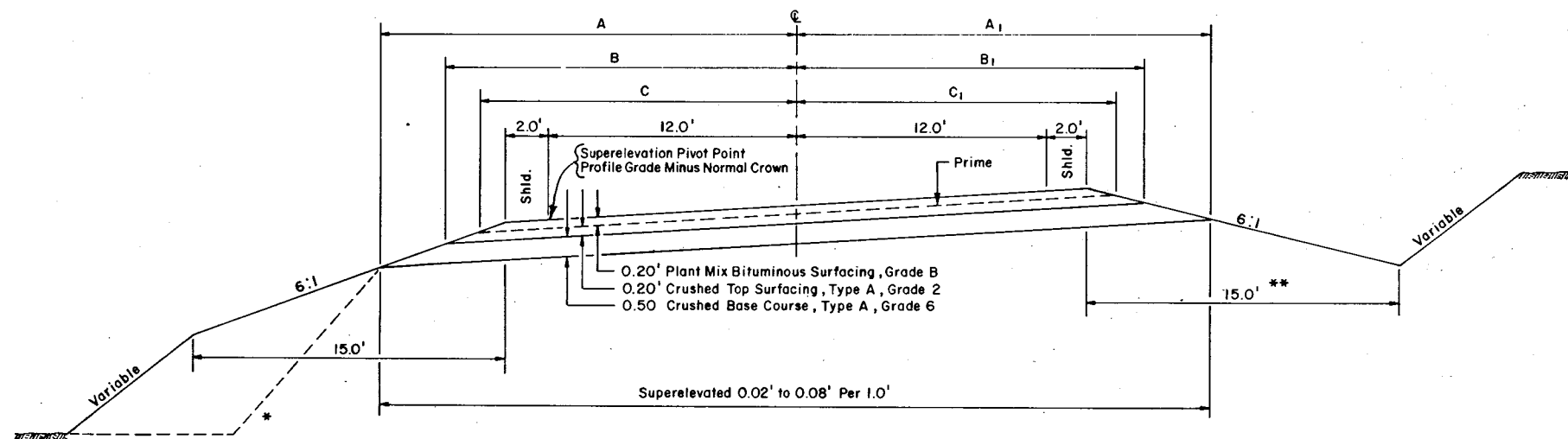


TYPICAL SECTION 3

* To be used on Fill Sections
From Sta. 539+00 to Sta. 553+17.50 Rt.

** 25.0' From Sta. 401+00 to Sta. 431+00,
Cut Sections Lt. and Rt.

DEGREE OF CURVATURE	SUP. / FT.	DISTANCES					
		A	A ₁	B	B ₁	C	C ₁
0°30' to 1°45'	.02	20.0	19.0	16.7	16.2	15.3	15.1
2°00' to 2°45'	.03	21.0	19.0	17.1	16.2	15.6	15.1
3°00' to 3°45'	.04	21.0	19.0	17.2	16.0	15.7	15.0
4°00' to 4°45'	.05	22.0	18.0	17.6	15.8	15.8	14.9
5°00' to 5°45'	.06	22.0	18.0	17.6	15.8	15.8	14.9
6°00' to 6°45'	.07	23.0	18.0	18.1	15.8	16.0	14.9
7°00' to 18°00'	.08	24.0	18.0	18.6	15.6	16.3	14.8



TYPICAL SECTION 4

TABLE OF TYPICAL SECTIONS

STATION TO STATION		TYPICAL SECTION
FROM	TO	
217+77.34 Ah.	229+54.8	3
221+54.8	223+04.8	Transition 3 to 4
223+04.8	231+37.8	4
231+37.8	232+87.87 Bk.	Transition 4 to 3
232+82.85 Ah.	234+66.0	3
234+66.0	236+16.0	Transition 3 to 4
236+16.0	241+76.6	4
241+76.6	243+26.58 Bk.	Transition 4 to 3
243+26.74 Ah.	277+58.0	3
277+58.0	279+08.0	Transition 3 to 4
279+08.0	294+37.32 Bk.	4
294+34.30 Ah.	295+84.0	Transition 4 to 3
295+84.0	298+46.0	3
298+46.0	299+96.0	Transition 3 to 4
299+96.0	313+40.61 Bk.	4
313+36.83 Ah.	314+86.8	Transition 4 to 3
314+86.8	316+73.2	3
316+73.2	318+23.2	Transition 3 to 4
318+23.2	326+62.1	4
326+62.1	328+12.1	Transition 4 to 3
328+12.1	357+57.9	3
357+57.9	359+07.9	Transition 3 to 4
359+07.9	393+65.6	4
393+65.6	395+15.6	Transition 4 to 3
395+15.6	428+03.5	3
428+03.5	429+53.5	Transition 3 to 4
429+53.5	442+13.5	4
442+13.5	443+63.5	Transition 4 to 3
443+63.5	445+34.1	3
445+34.1	446+84.1	Transition 3 to 4
446+84.1	458+61.4	4
458+61.4	460+11.4	Transition 4 to 3
460+11.4	497+76.8	3
497+76.8	499+26.8	Transition 3 to 4
499+26.8	506+35.6	4
506+35.6	507+85.6	Transition 4 to 3
507+85.6	513+13.0	3
513+13.0	514+63.0	Transition 3 to 4
514+63.0	522+28.3	4
522+28.3	523+78.3	Transition 4 to 3
523+78.3	528+81.6	3
528+81.6	530+81.6	Transition 3 to 4
530+81.6	553+17.5	4
553+17.5	555+17.5	Transition 4 to 3
555+17.5	567+99.3	3
567+99.3	569+99.3	Transition 3 to 4
569+99.3	575+49.1	4
575+49.1	577+49.1	Transition 4 to 3
577+49.1	580+24.11	3

U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
REGION - 8 DENVER, COLORADO

TYPICAL SECTIONS

SHEET 2 OF 2

(As Constructed)

Mont. Proj. F.H. & F.L.H. 7-1(2), Thompson Pass

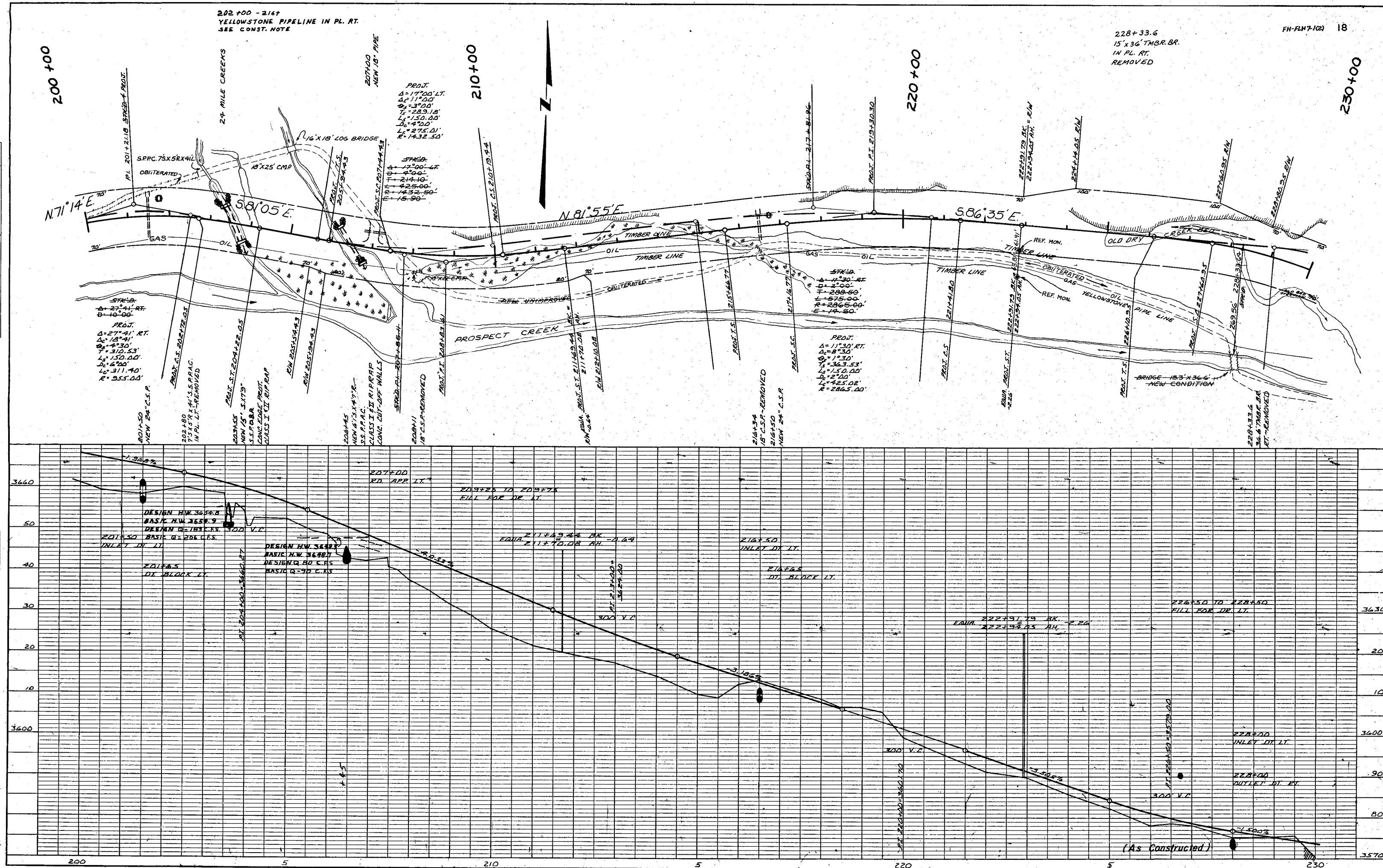
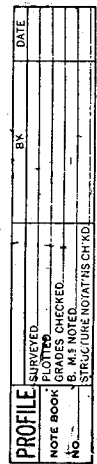
FED. ROAD DIST. NO.	STATE	FISCAL YEAR	SALT NO.	FISCAL SECT.
	MONT.	FH-ELN7-1(2)	14	4



(As Constructed)

PROFILE	SURVEYED	BY	DATE
NOTE BOOK	PLUTED		
NO.	GRADES CHECKED		
	B. M.'S NOTED		
	STRUCTURE NOTATIONS CHECKED		

202+00 - 216+
YELLOWSTONE PIPELINE IN PL. RT.
SEE CONST. NOTE



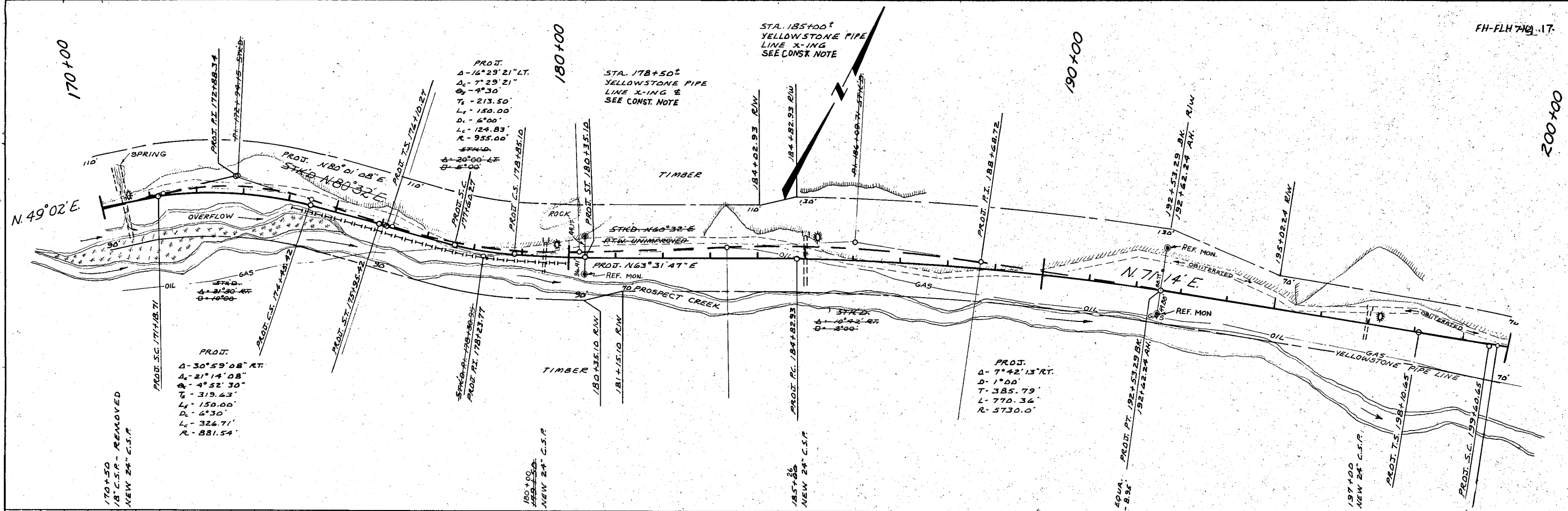
200+00

190+00

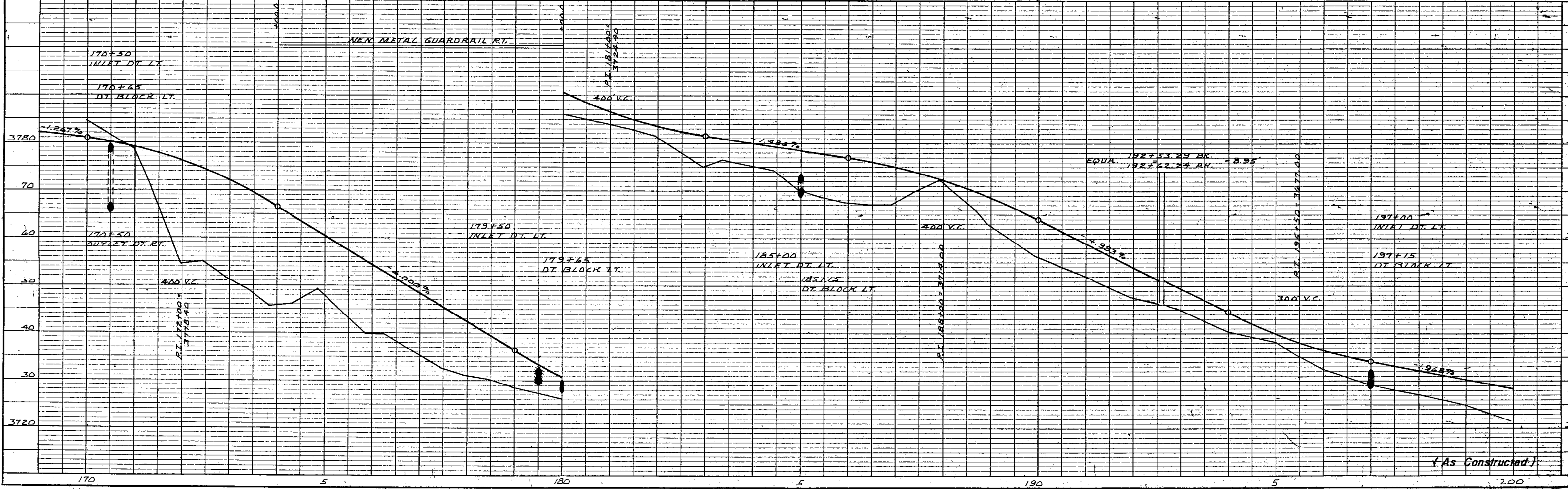
180+00

170+00

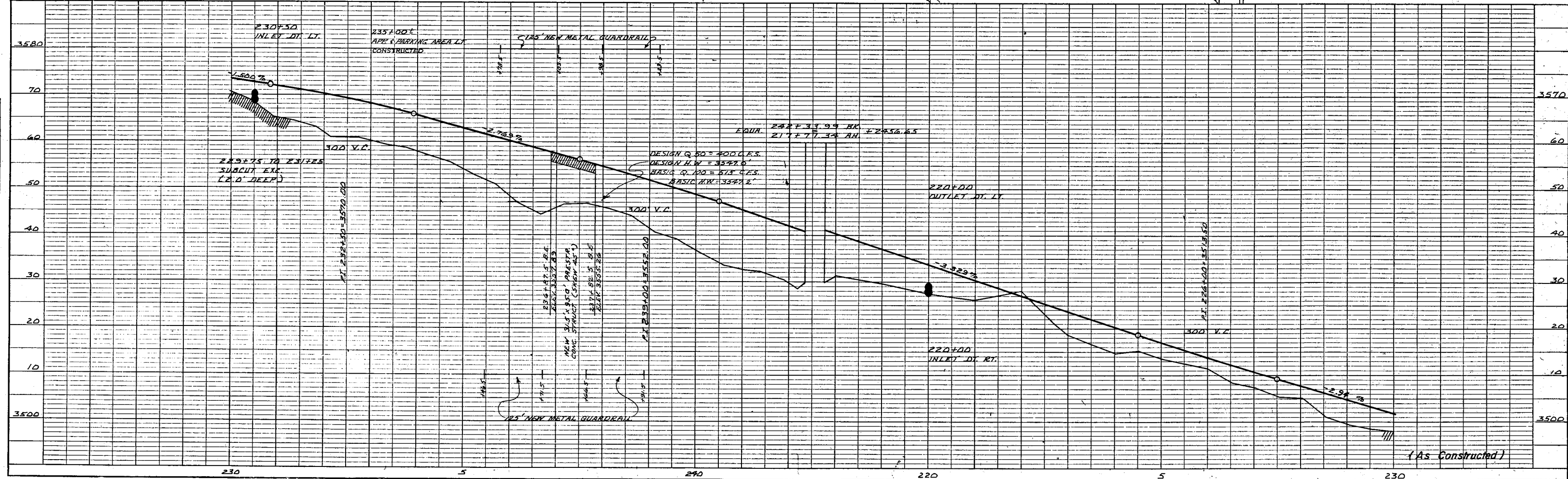
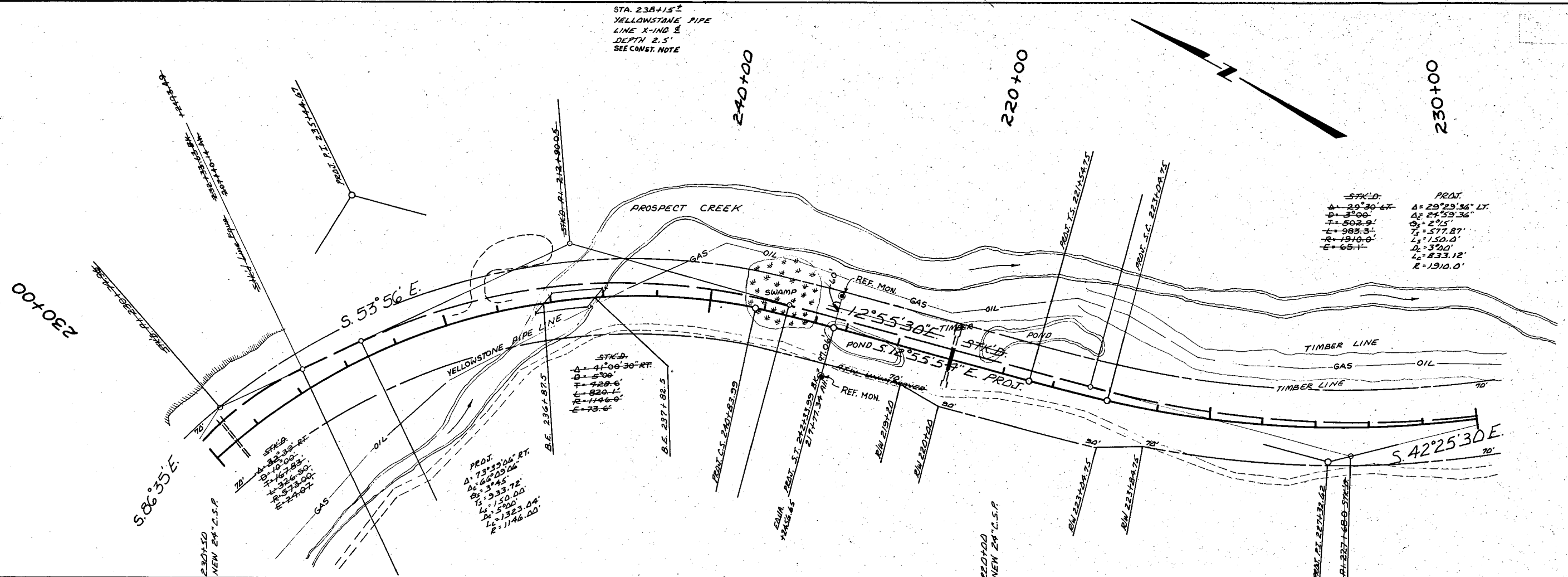
PLAN	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
ALIGNMENT CHECKED			
RT. OF WAY CHECKED			



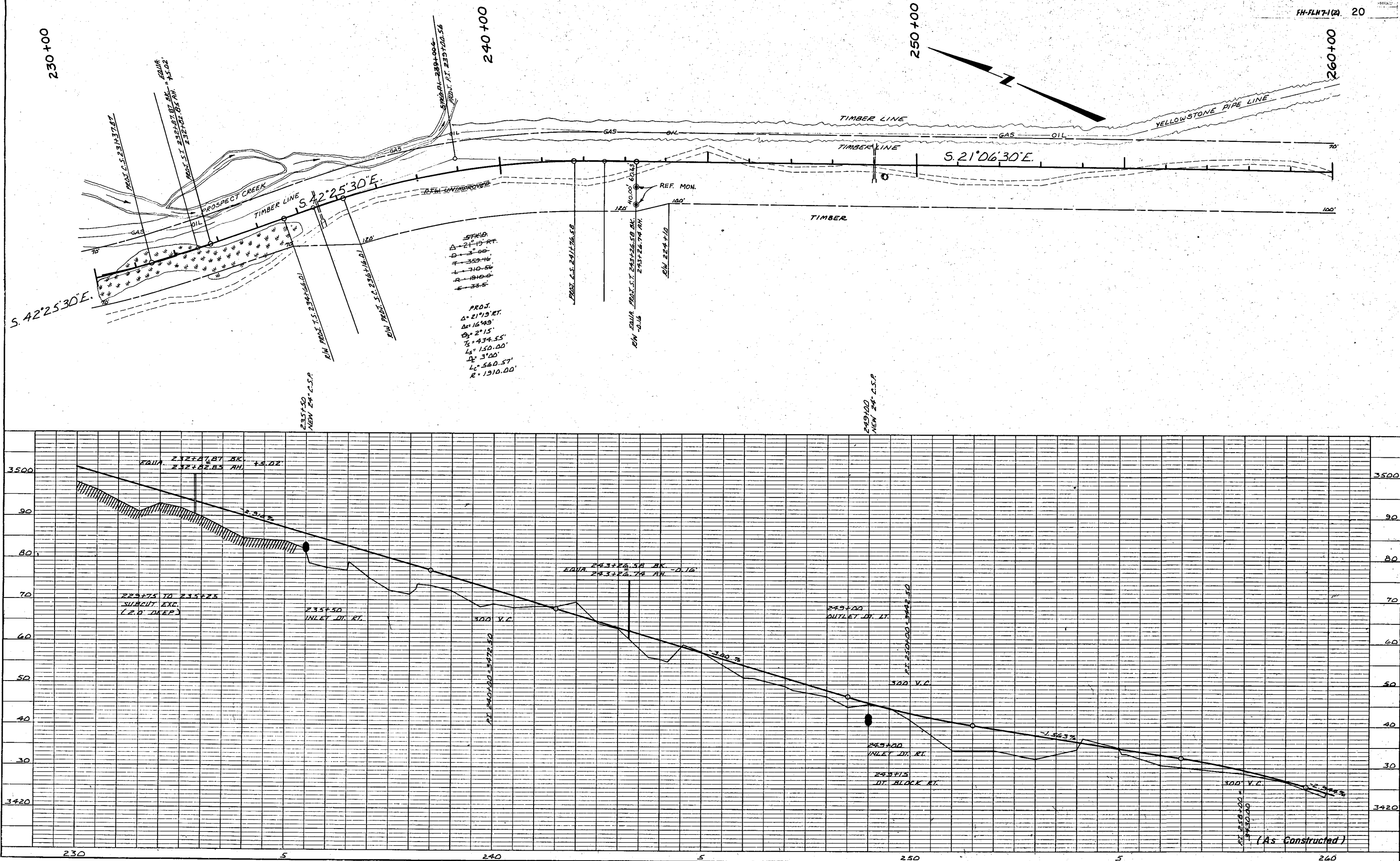
PROFILE	SURVEYED		BY	DATE
	PLOTTED			
	GRADES CHECKED			
	B. M.'S NOTED			
	STRUCTURE NOTATIONS CHECKED			



PLAN	SURVISED	BY	DATE
NOTE BOOK	NO.		
ALIGNMENT CHECKED _____ RT. OF WAY CHECKED _____			

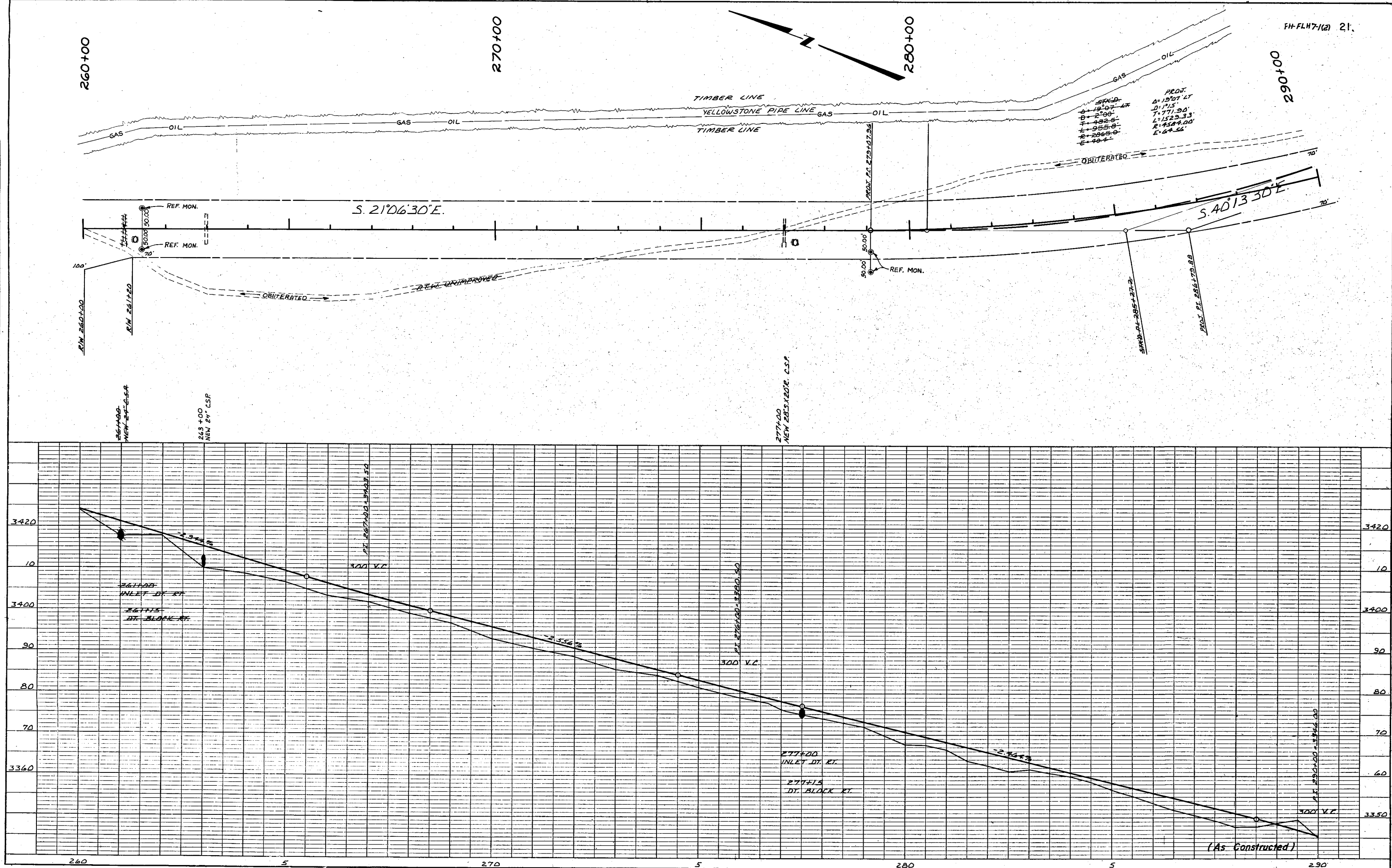


PROFILE SURVEYED _____ PLOTTED <u>✓</u> GRADES CHECKED _____ U.S. M.S. NOTED _____ STRUCTURE, NOTATIONS CHK'D _____	HY _____ DATE _____
---	------------------------



PLAN	SURVEYED	BY	DATE
	PLOTTED		
	NOTE BOOK		
	RT. OF WAY CHECKED		

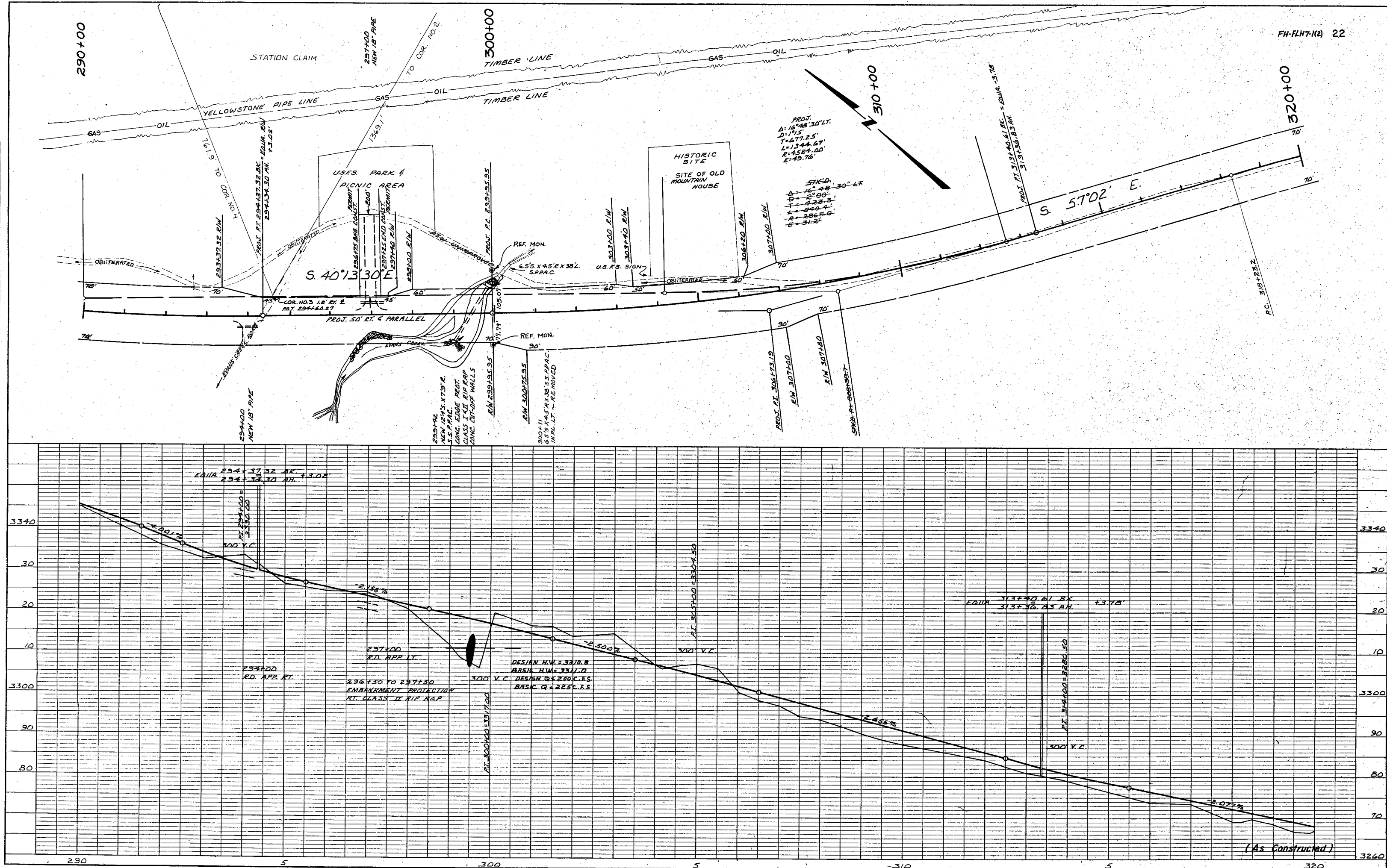
PROFILE	SURVEYED	BY	DATE
	PLOTTED		
	NOTE BOOK		
	STRUCTURE NOTATIONS		



FH-FLH7-1(2) 21.

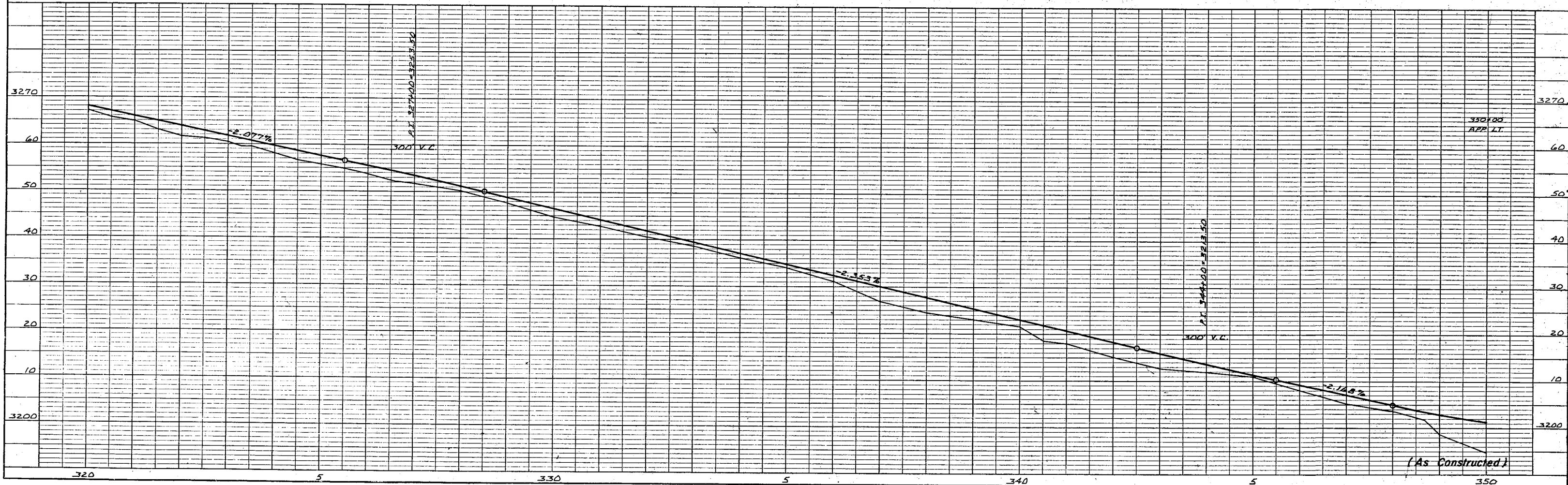
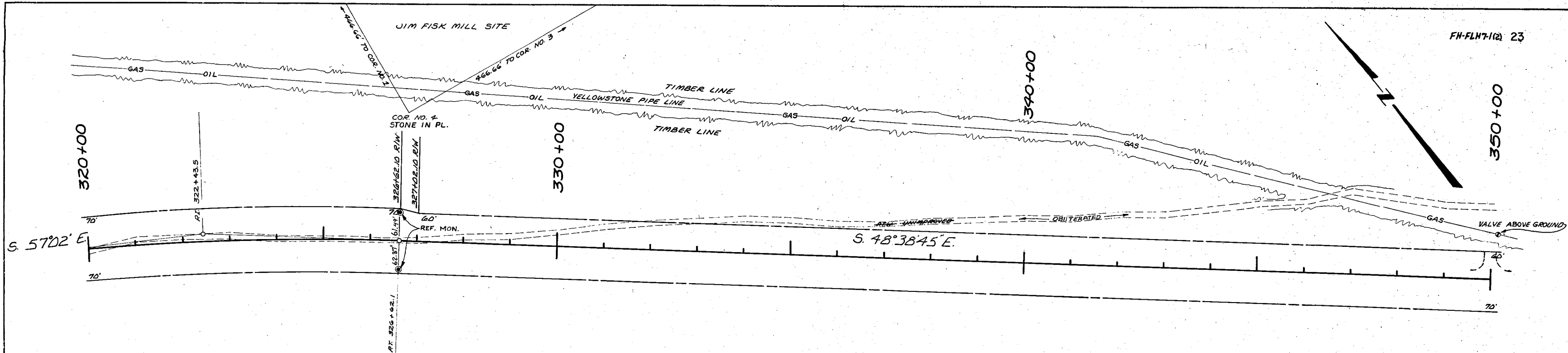
PLAN	DATE	
	BY	
	CHECKED	
	NO.	

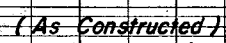
PROFILE	DATE	
	BY	
	CHECKED	
	NO.	



PLAN	SURVEYED	DATE
	NOTED	BY
	NOTE BOOK	ALIGNED CHECKED
	NO.	RT. OF WAY CHECKED

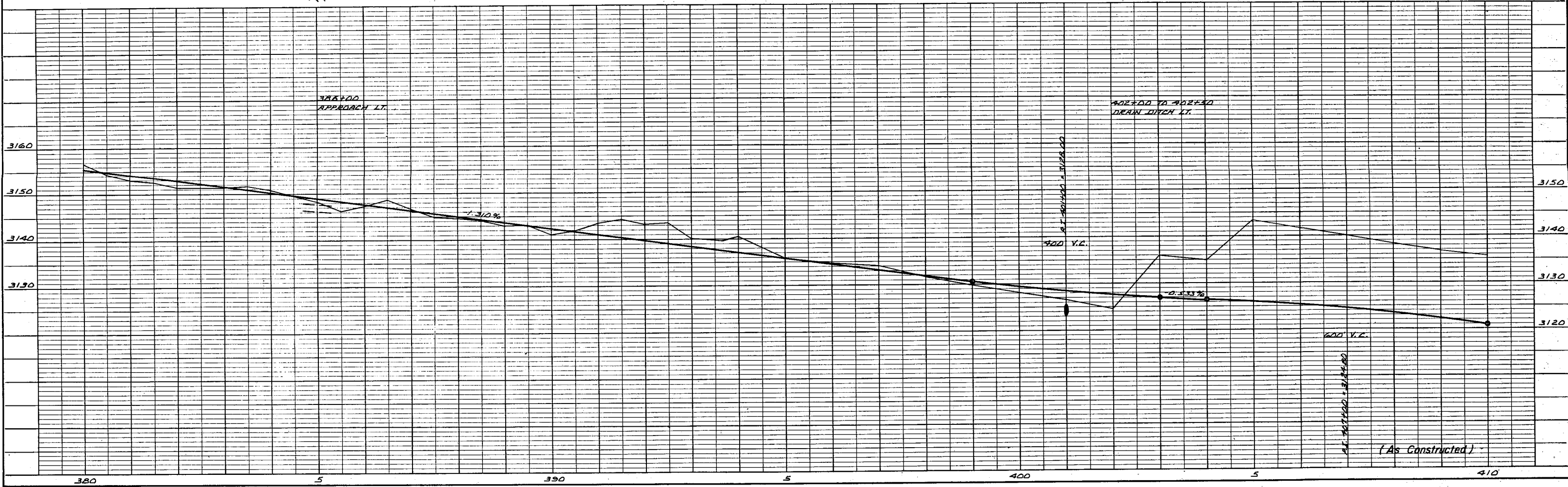
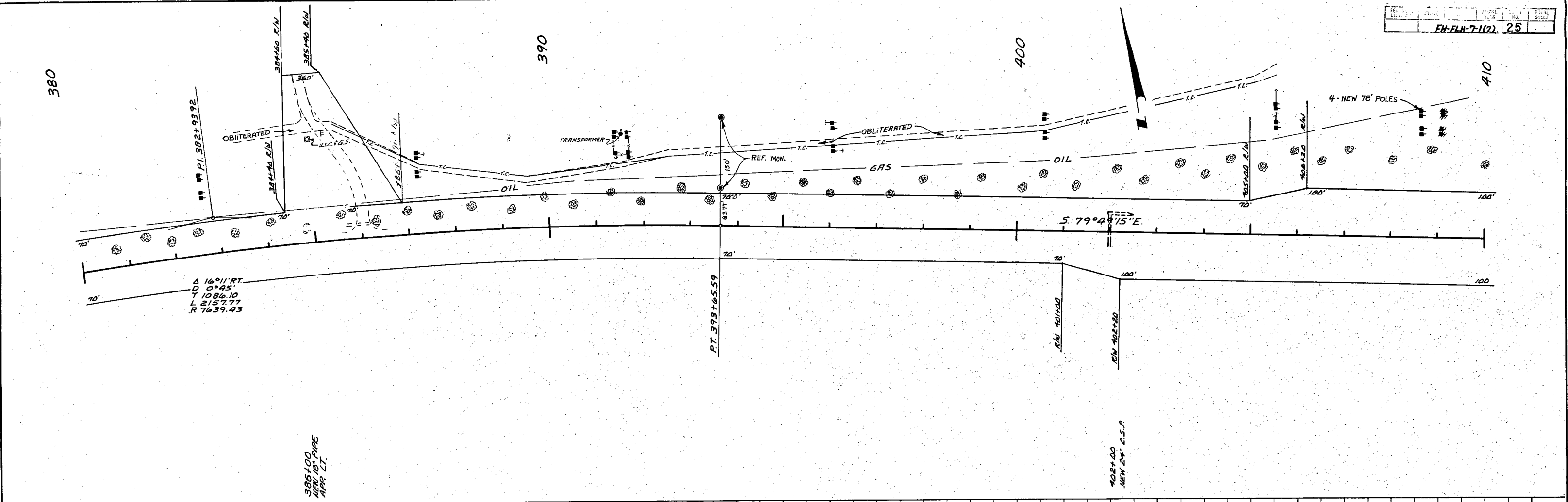
PROFILE	SURVEYED	DATE
	NOTED	BY
	NOTE BOOK	GRADES CHECKED
	NO.	STRUCTURE LOCATIONS CHECKED





PLAN	
SURVEYED	DATE
PLOTTED	BY
NOTE BOOK	NO.
ALIGNMENT CHECKED	
RT. OF WAY CHECKED	

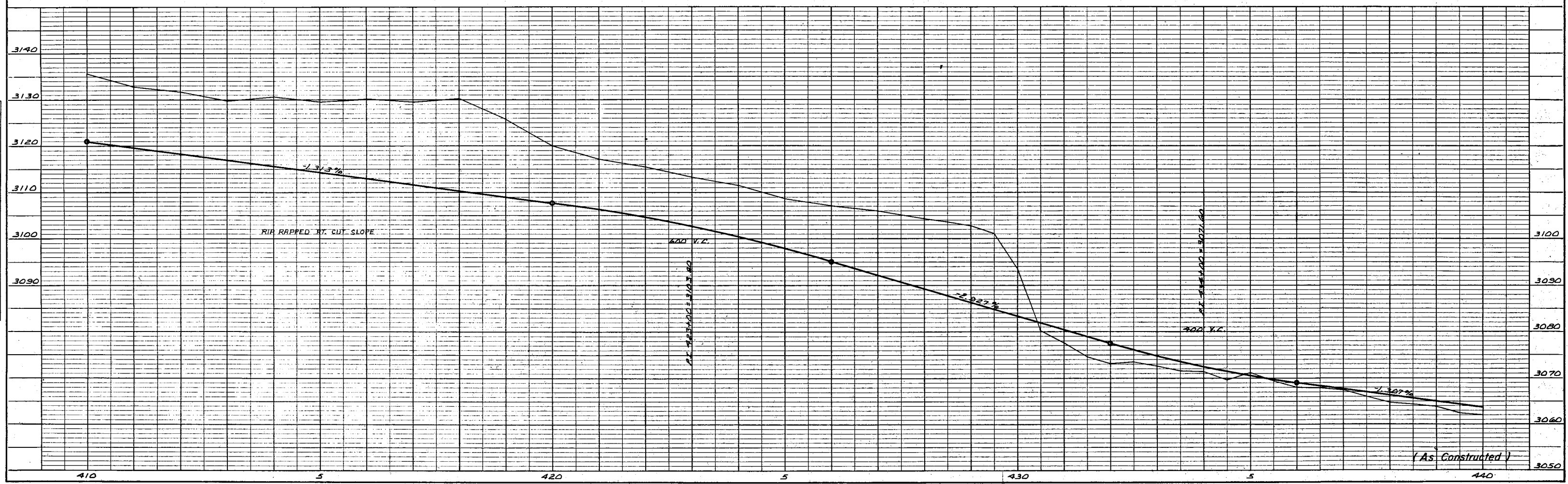
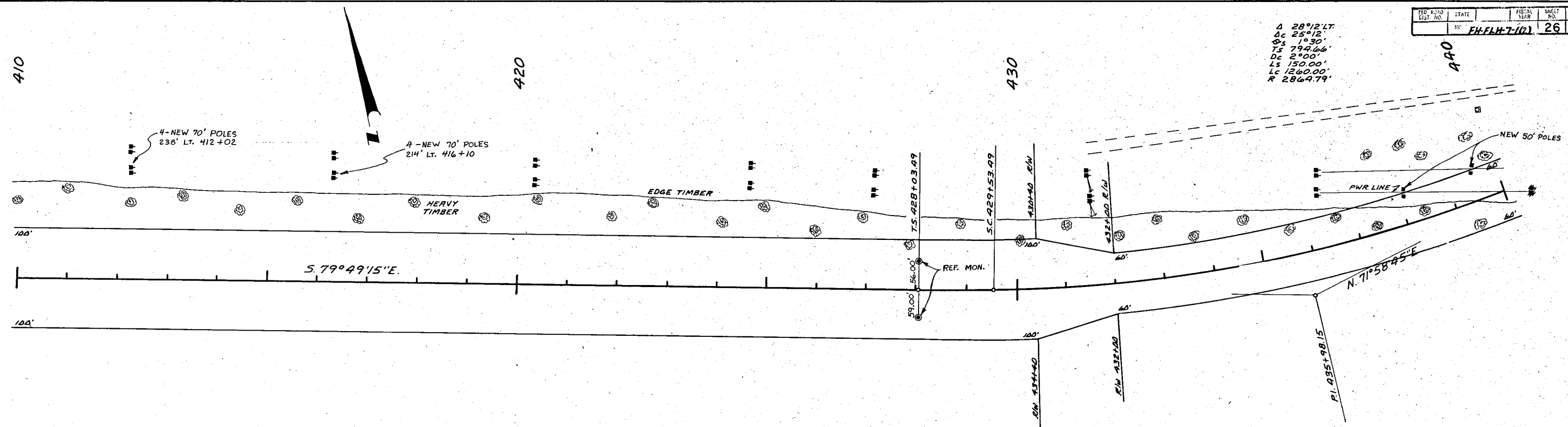
PROFILE	
SURVEYED	DATE
PLOTTED	BY
NOTE BOOK	NO.
GRADES CHECKED	
B. M. NOTED	
STANDARD NOTATIONS CHD.	



PLAN	SURVEYED	DATE
	PLOTTED	BY
	CHECKED	
	RT. OF WAY CHECKED	
NO.		

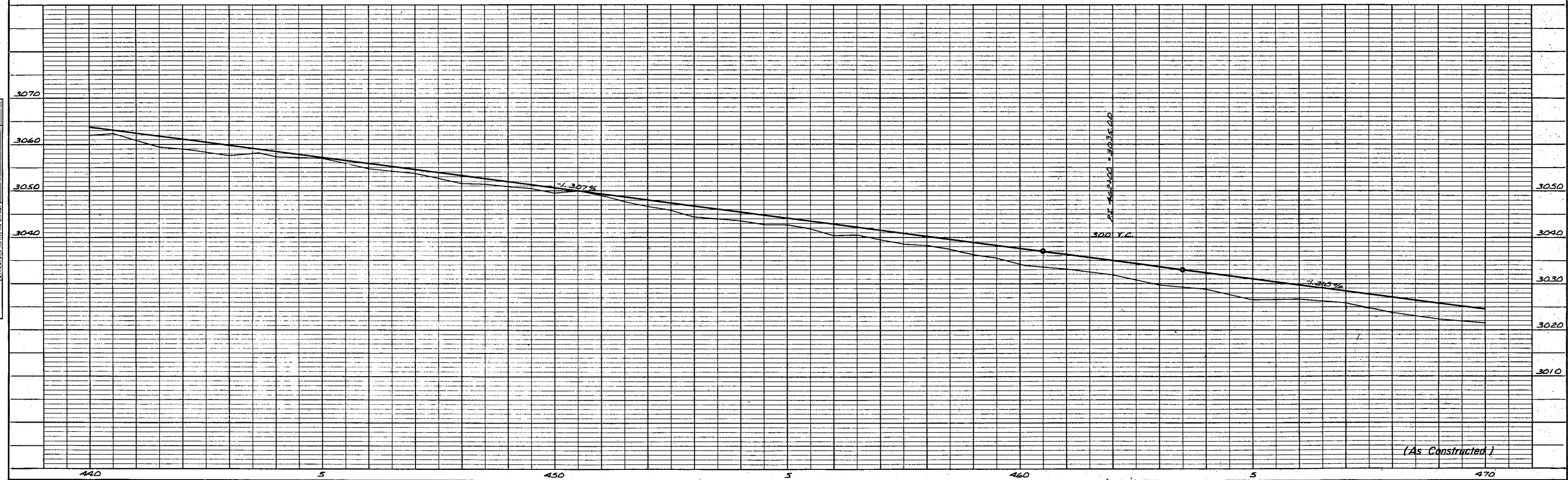
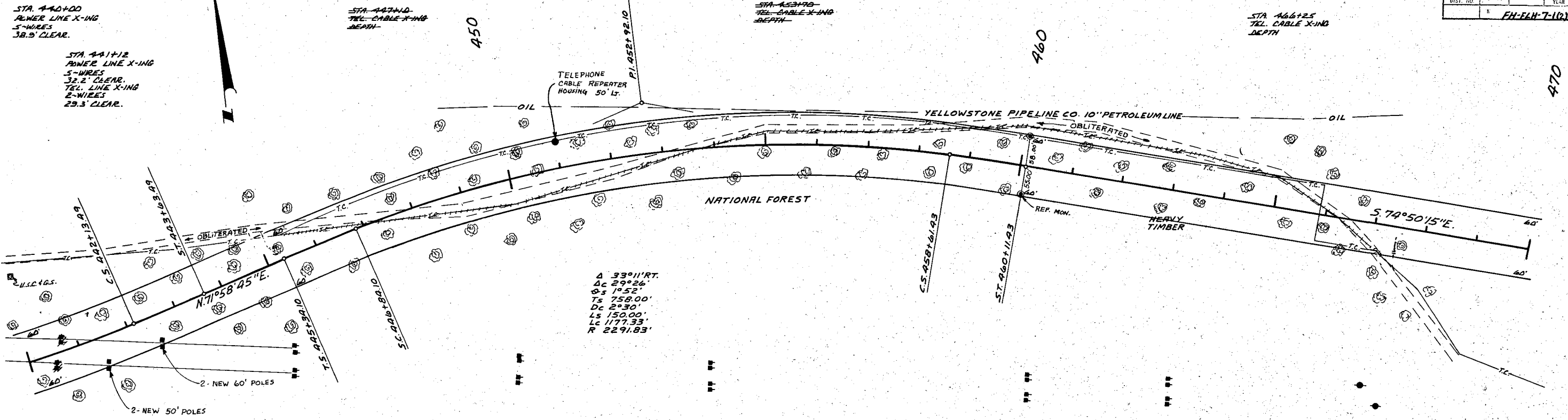
PROFILE	SURVEYED	DATE
	PLOTTED	BY
	CHECKED	
	STRUCTURE NOTATIONS CHVD.	
NO.		

Δ 28°12' LT.
 Δc 25°12'
 Δs 1°30'
 TS 794.66'
 Dc 2°00'
 Ls 150.00'
 Lc 1260.00'
 R 2869.79'



PLAN	DATE	
	BY	
	SURVEYED	
	NOTE BOOK	

PROFILE	DATE	
	BY	
	SURVEYED	
	NOTE BOOK	

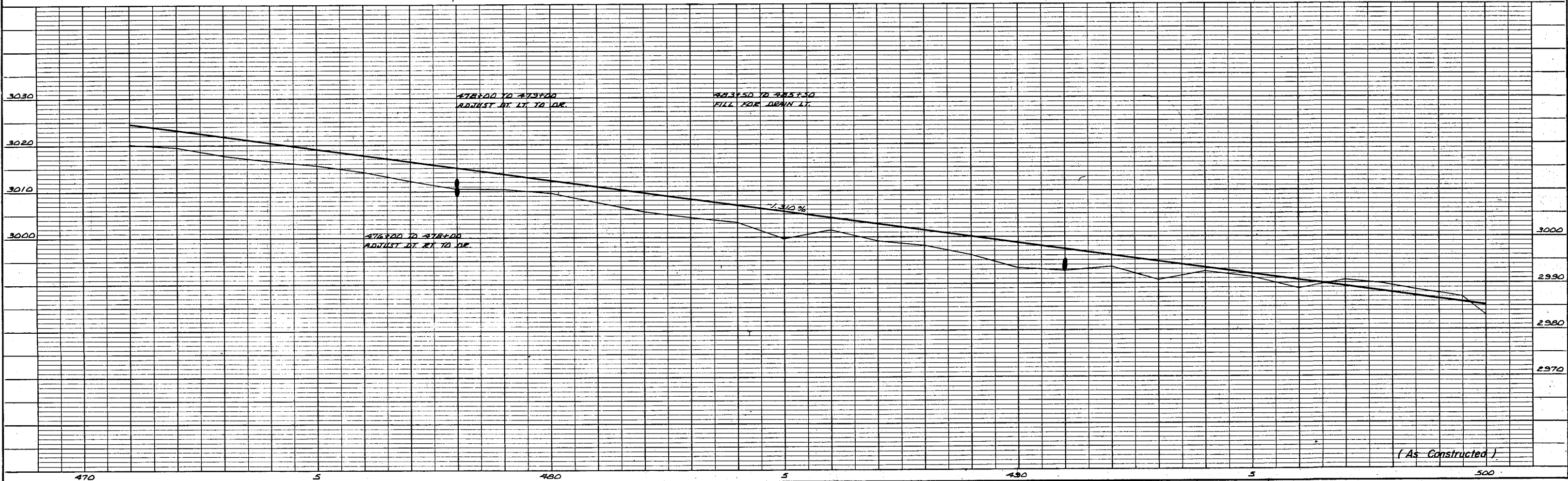
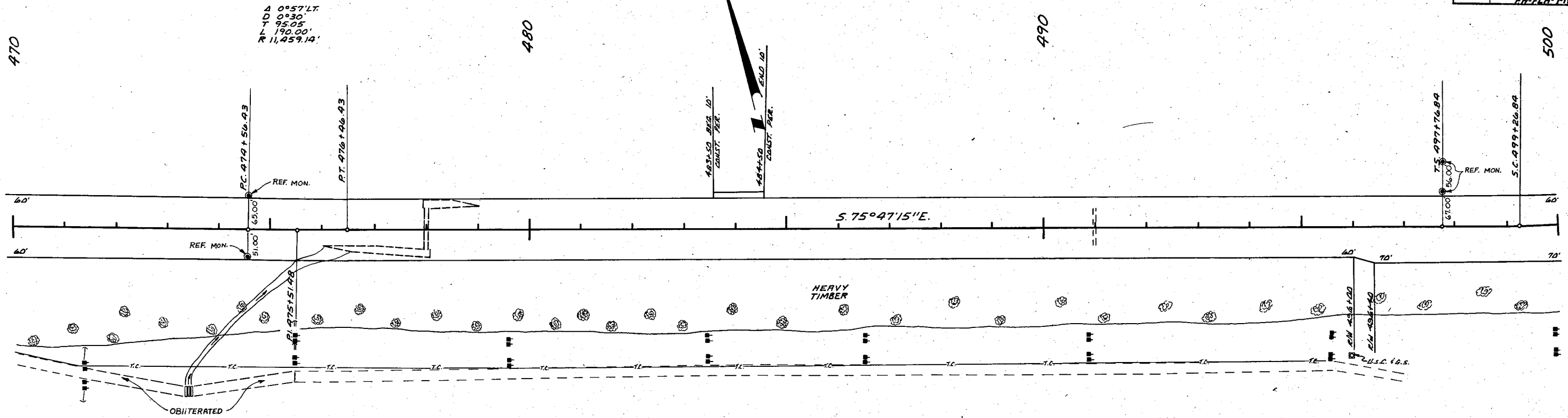


(As Constructed)

PLAN	SURVEYED	DATE
	PLOTTED	BY
	NOTE BOOK	NO.
	NO. OF WAY CHECKED	

PROFILE	SURVEYED	DATE
	PLOTTED	BY
	NOTE BOOK	NO.
	STRUCTURE NOTATIONS CHKD.	

FED. RD. NO.	STATE	FISCAL YEAR	SHEET NO.	TOTAL SHEET
	NC	1971-72	28	

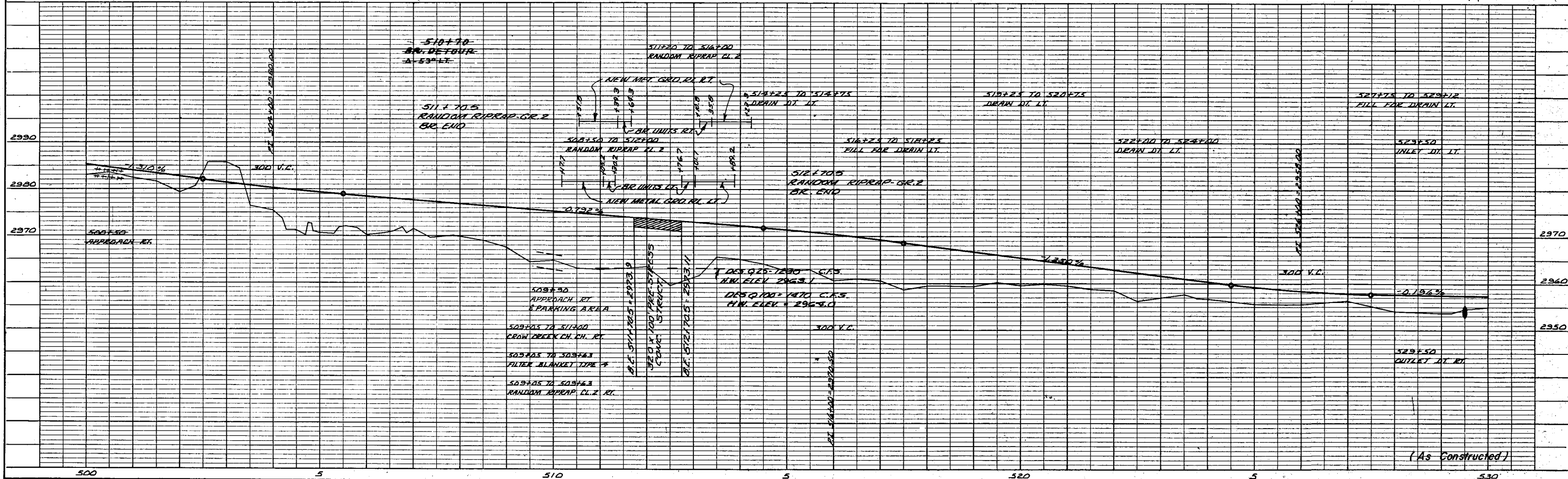
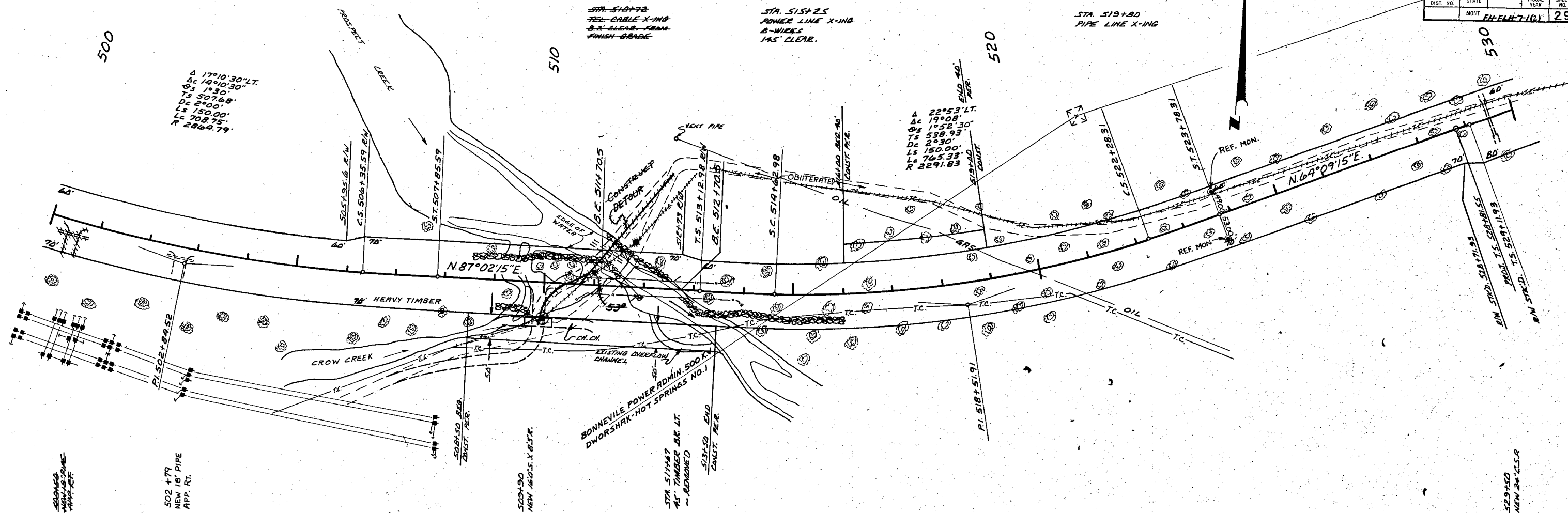


(As Constructed)

PLAN	DATE	BY
SURVEYED		
NOTE BOOK		
ALIGNED CHECKED		
RT. OF WAY CHECKED		
NO.		

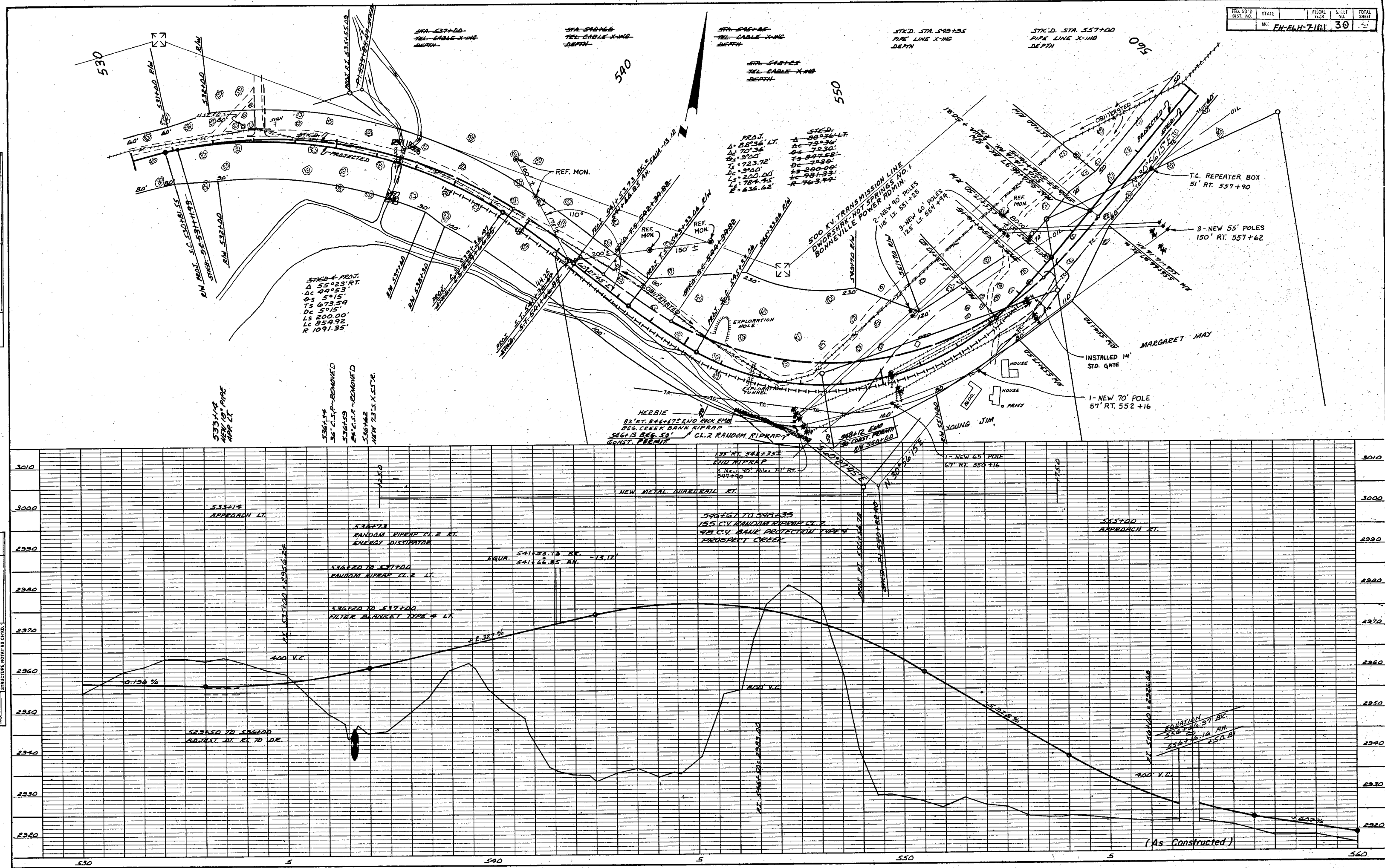
PROFILE	DATE	BY
SURVEYED		
NOTE BOOK		
GRADES CHECKED		
B. & M. NOTED		
STRUCTURE NOTATIONS CHG.		
NO.		

PED. NO. 10	STATE	FISCAL YEAR	SHEET NO.	TOTAL SHEET
DIST. NO.	MO. 17	1964-7-10	29	---



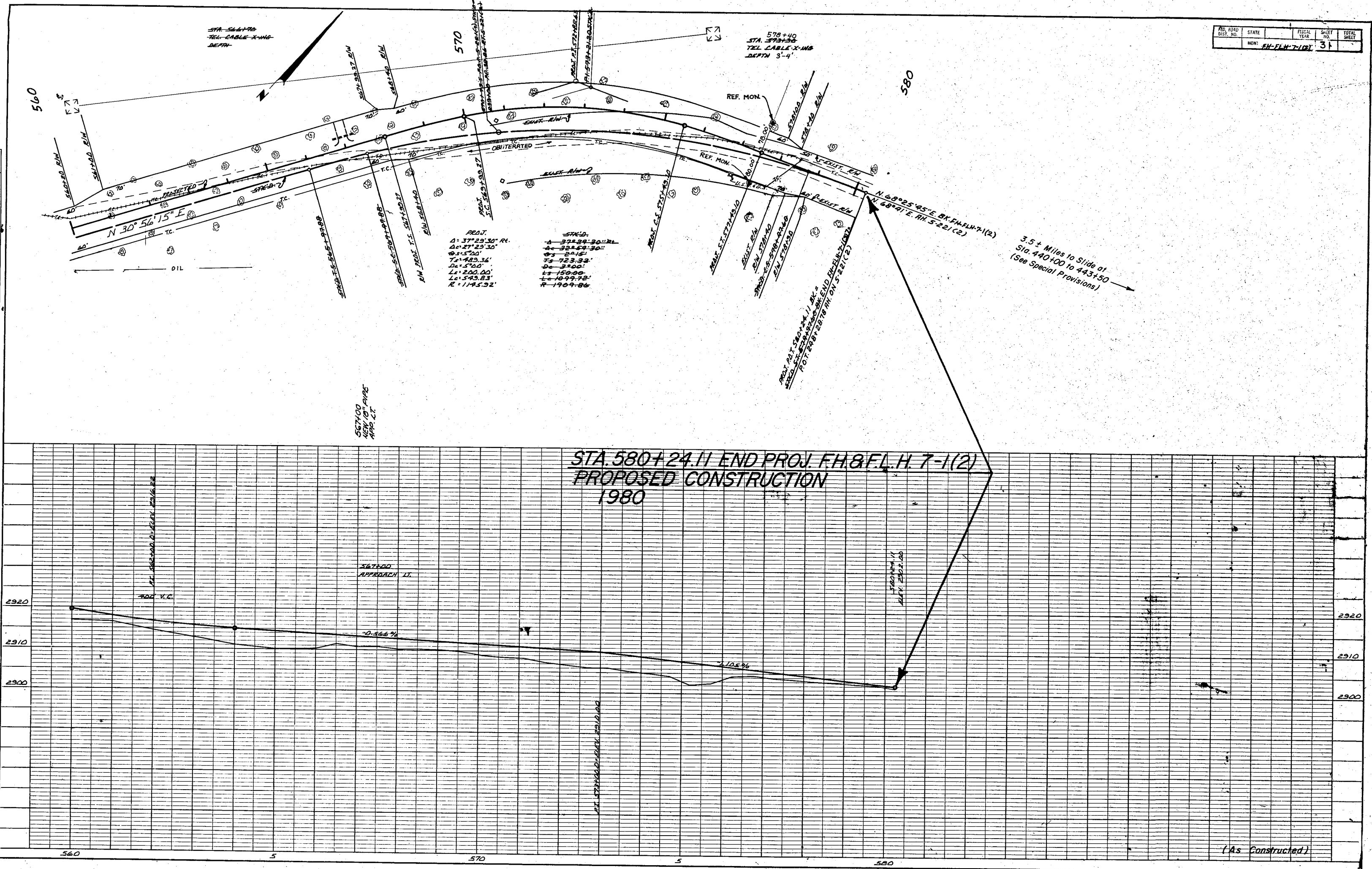
PLAN
SURVEYED
FLOTTED
ALIGNMENT CHECKED
NOTE BOOK
RT. OF WAY CHECKED
NO.

PROFILE
SURVEYED
FLOTTED
GRADES CHECKED
NOTE BOOK
B. & M. NOTED
STRUCTURE NOTATIONS CHD.
NO.



PLAN	SURVEYED	DATE
	PLOTTED	
	NOTE BOOK	
	NO.	

PROFILE	SURVEYED	DATE
	PLOTTED	
	NOTE BOOK	
	NO.	



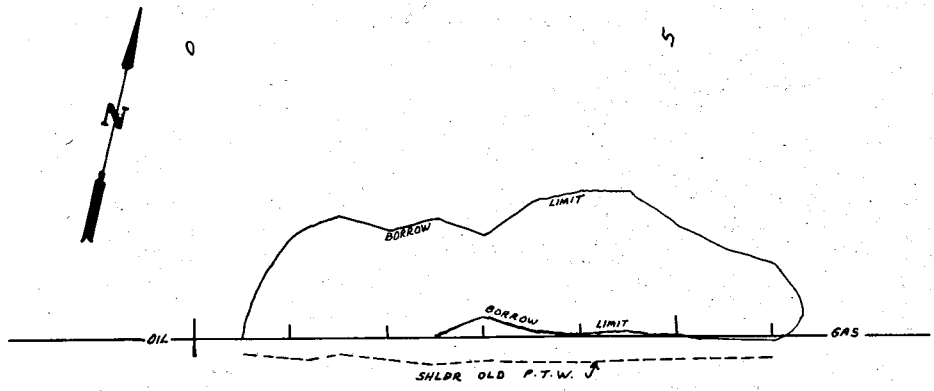
(As Constructed)

BORROW AREA DETAILS

STATE	PROJECT NUMBER	SHEET NO.
MONTANA	FH-FLH-7-1(2)	32

PROPOSED BORROW AREA NO. 1
(FHWA OPTIONED)

500' LT. STA. 172+00
FH-FLH-7-1 (2) 13
BORROW PIT #1



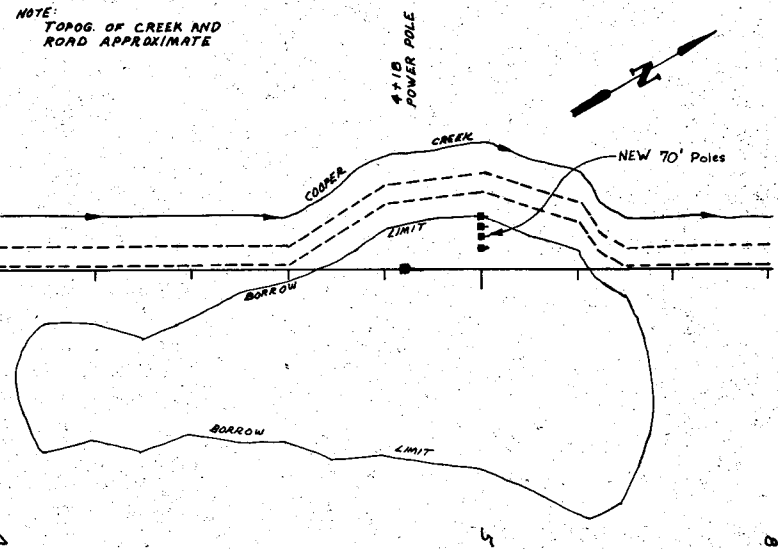
NOTE:
ON YELLOWSTONE
PIPE LINE

NOTES

UNLESS OTHERWISE APPROVED BY THE ENGINEER,
BORROW SOURCES NO. 1 & 2 SHALL BE DEPLETED BEFORE ACQUIRING MATERIAL FROM BORROW SOURCE NO. 3.
AT BORROW SOURCE NO. 3 BEGIN REMOVAL AT WEST END AND EXTEND EAST AS NECESSARY TO OBTAIN
REQUIRED MATERIAL. WHEN ALL NECESSARY MATERIAL HAS BEEN REMOVED THE EAST END SHALL
BE LEFT ON A 2:1 OR FLATTER SLOPE AND BLENDED INTO EXISTING SLOPES.
ALL BORROW SOURCES SHALL BE TOPSOILED WITH AVAILABLE MAT'L. AND SEEDED.
LIMITS OF BORROW MATERIAL REMOVAL ARE SHOWN ON CROSS-SECTIONS. CROSS-SECTIONS ARE AVAILABLE
FOR EXAMINATION AT THE MONTANA DEPT. OF HIGHWAYS, MISSOULA OFFICE.

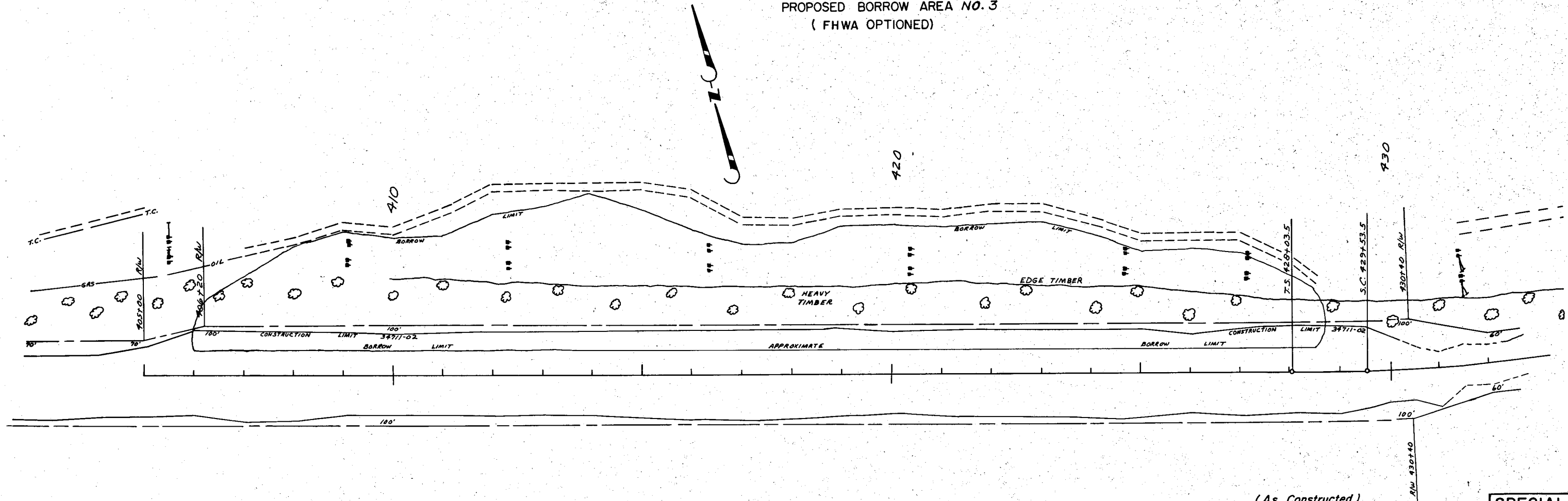
PROPOSED BORROW AREA NO. 2
(FHWA OPTIONED)

0.6 MI. UP COOPER CREEK
FH-FLH 7-1 (2) 13
BORROW PIT #2



NOTE:
TOPOG. OF CREEK AND
ROAD APPROXIMATE

PROPOSED BORROW AREA NO. 3
(FHWA OPTIONED)

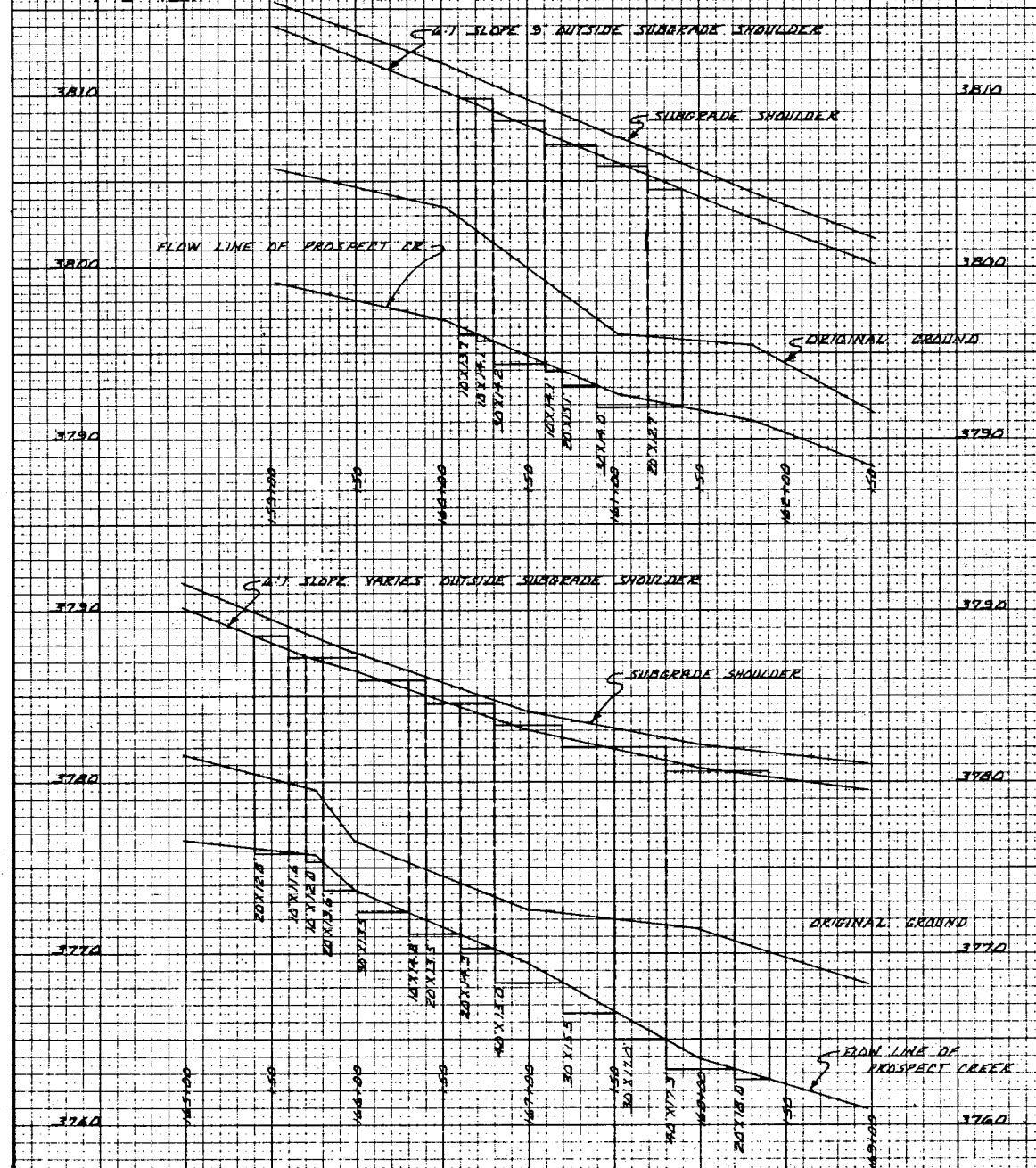


(As Constructed)

SPECIAL - I

METAL BIN-TYPE RETAINING WALL DETAIL

STD. DWG. NO. 51-01

SCALE 1"=30' HORIZ.
1"=3' VERT.

METAL BIN-TYPE RETAINING WALL

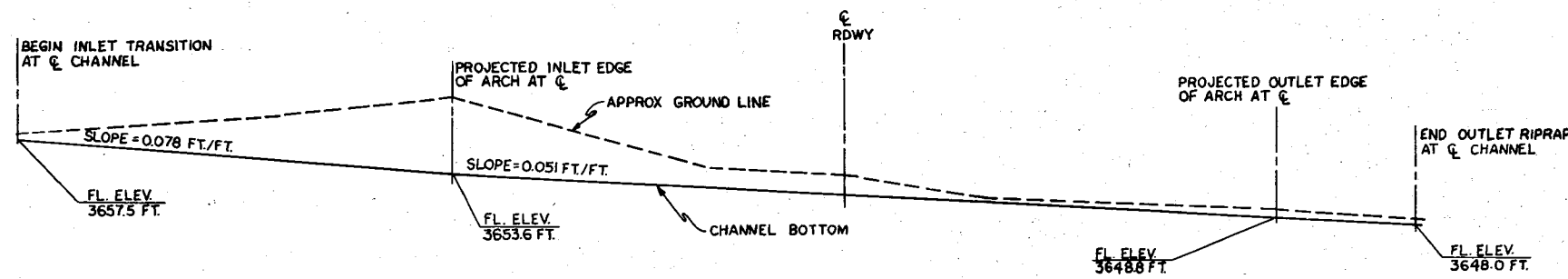
STATION		SQUARE FEET	REMARKS
FROM	TO		
160+10	165+40	1221.0	FT. DESIGN 15" VERTICAL
165+40	168+40	4500.0	FT. DESIGN 15" VERTICAL
TOTAL		4321.0	FT. DESIGN 15" VERTICAL

PROVIDE TYPE "D" BITUMI. COATING IN UNIT PRICE BID
PER 50 FT. OF METAL BIN-TYPE RETAINING WALL

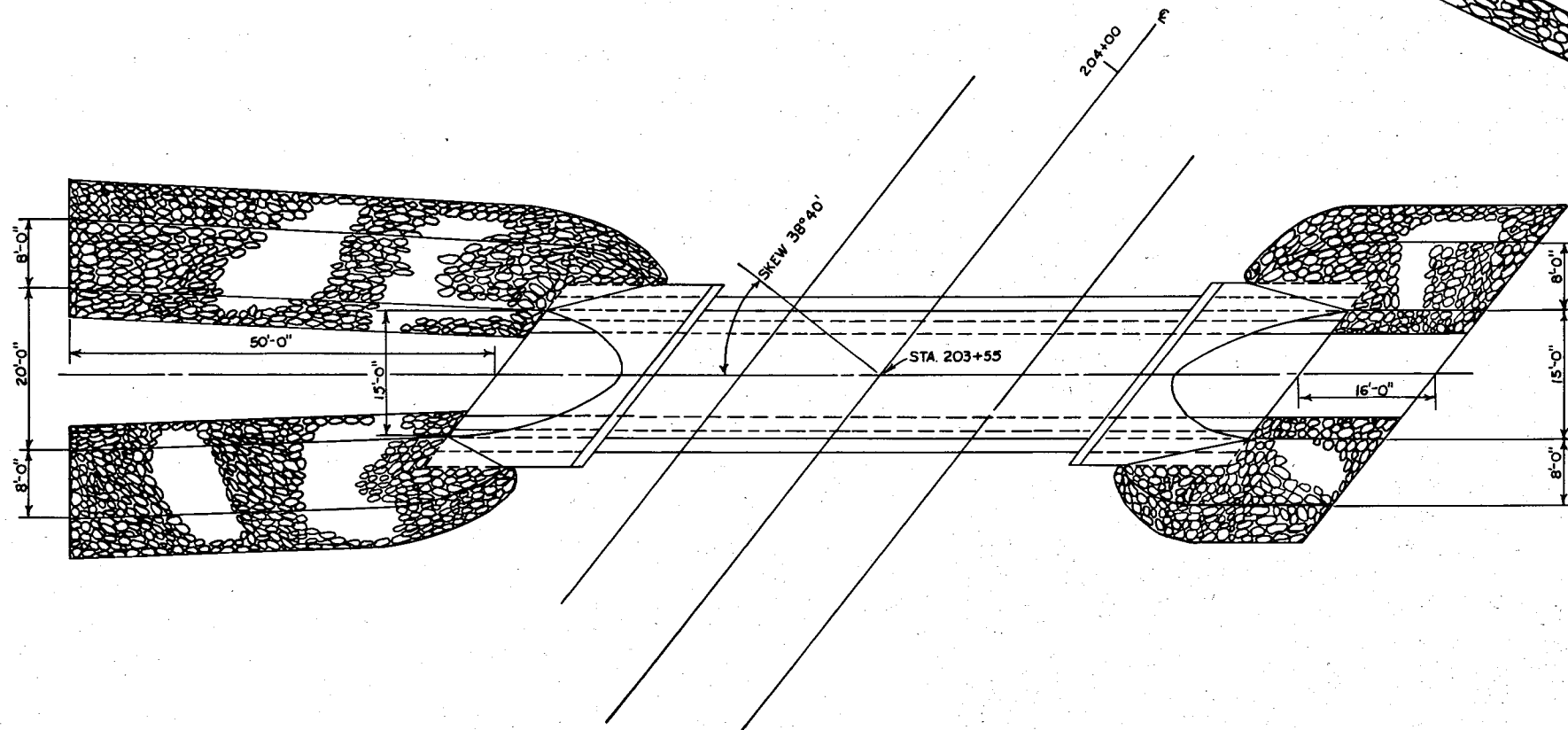
METAL BIN-TYPE
RETAINING WALL
DETAILS

(As Constructed)

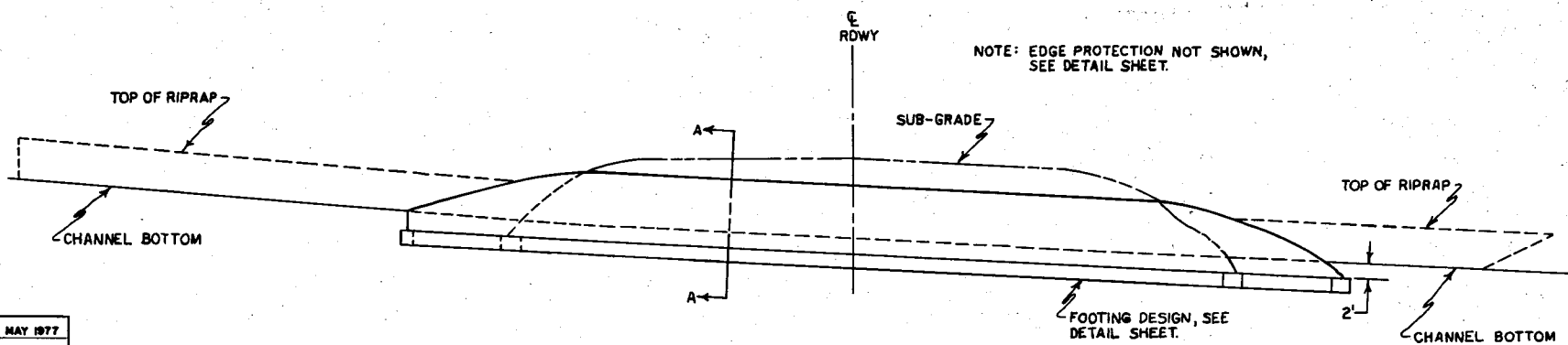
SPECIAL-2



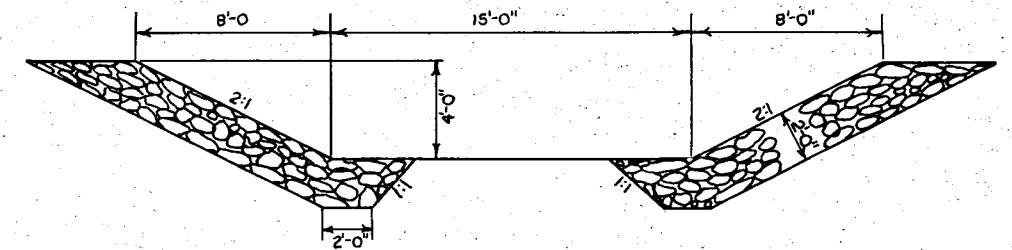
PROPOSED
PROFILE CONTROL
SCALE: 1"=10'



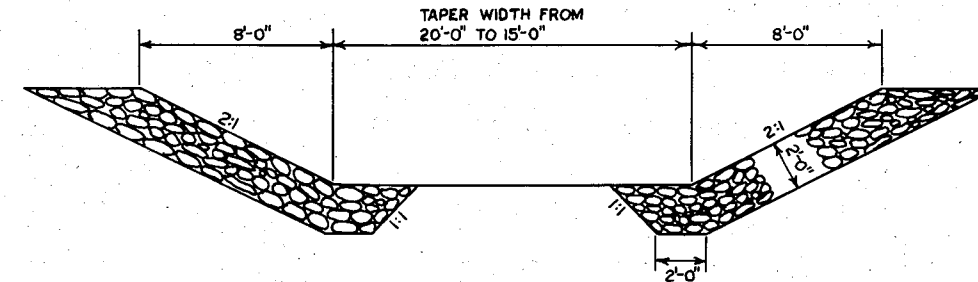
PLAN VIEW
SCALE: 1"=10'



ELEVATION VIEW
SCALE: 1"=10'



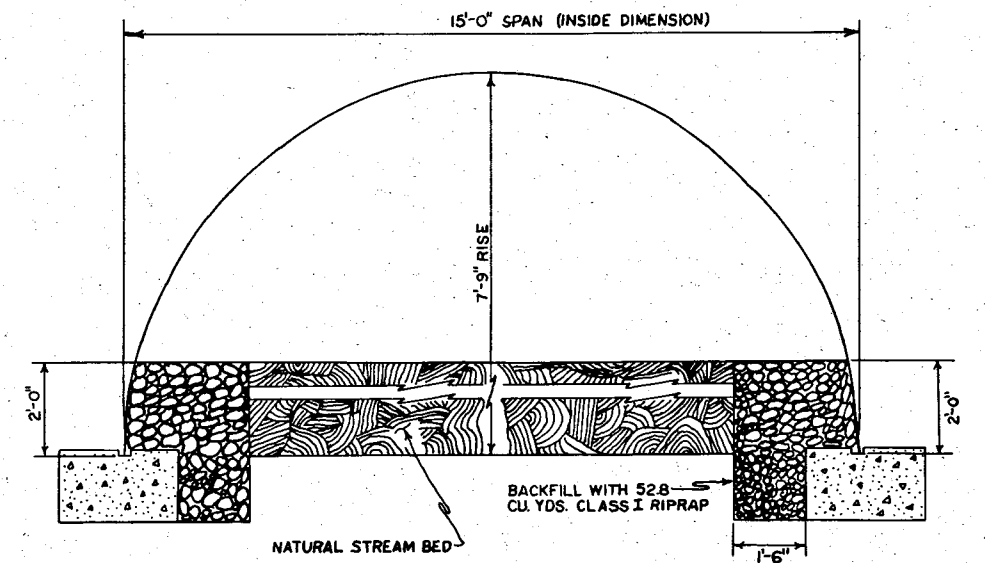
OUTLET CHANNEL
TYPICAL SECTION
44.5 CU. YDS. CLASS II RIPRAP



INLET CHANNEL
TYPICAL SECTION
117 CU. YDS. CLASS II RIPRAP

* BID QUANTITIES	
CLASS "AD" CONCRETE	26.1 CU. YDS.
CLASS "DD" CONCRETE	16.3 CU. YDS.
CLASS I RIPRAP	52.8 CU. YDS.
CLASS II RIPRAP	161.5 CU. YDS.
STRUCTURE EXCAVATION	138 CU. YDS.
CHANNEL EXCAVATION	436 CU. YDS.
15' SPAN BY 7'-9" RISE SSPOBA	94 FEET

* THESE QUANT. ARE SHOWN ON SUMMARY SHEETS



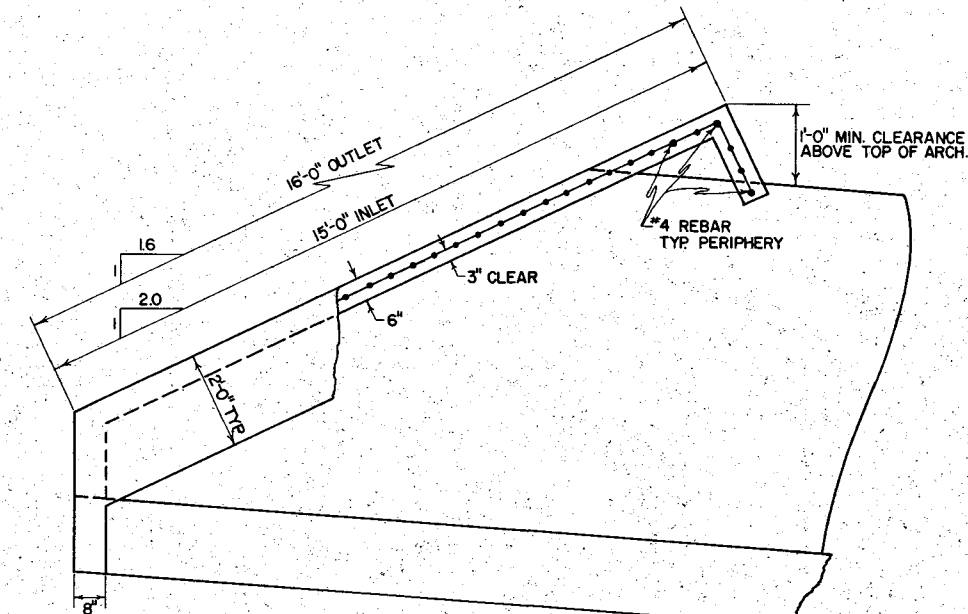
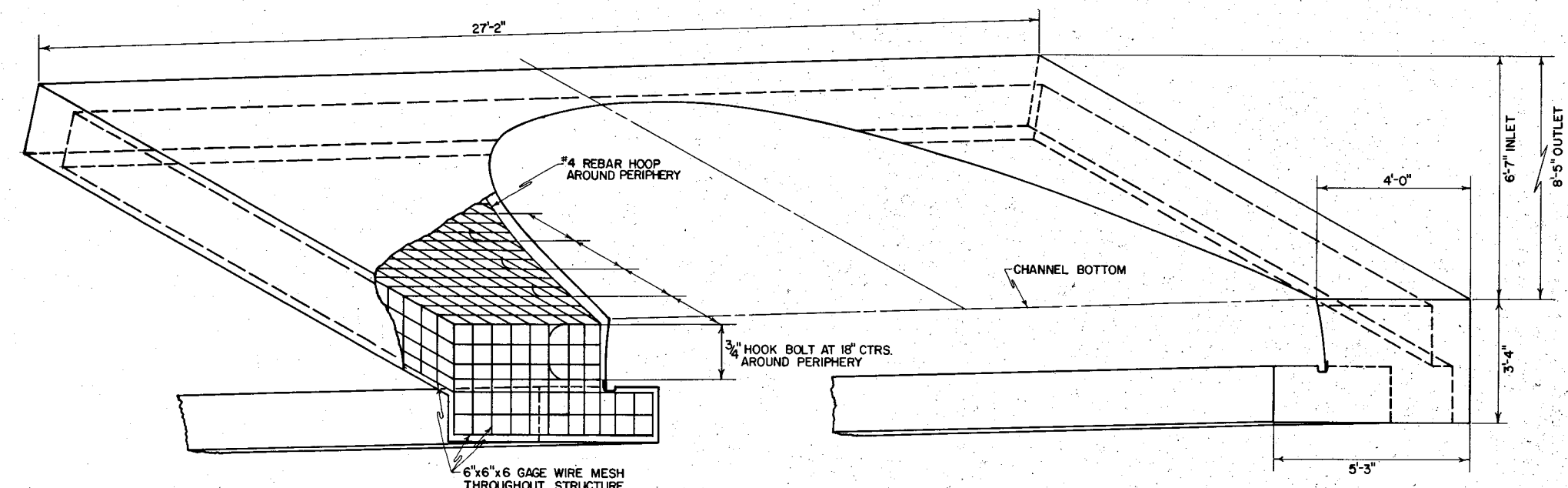
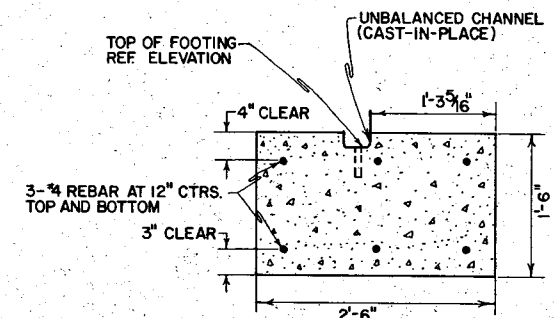
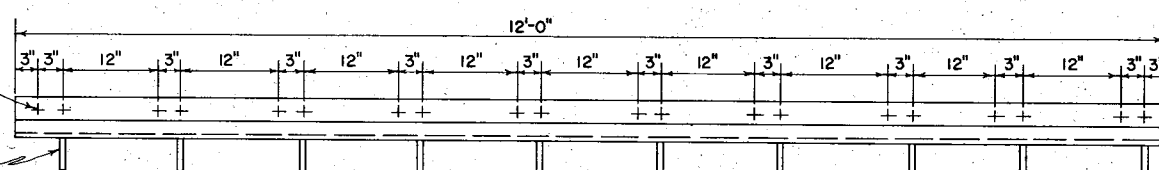
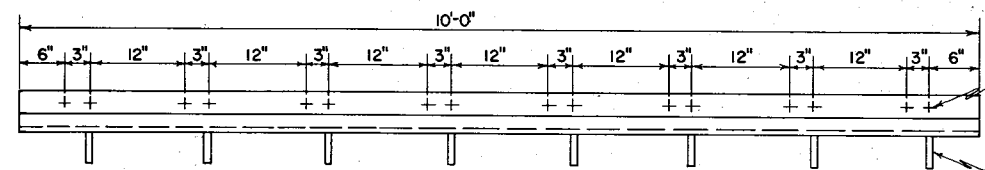
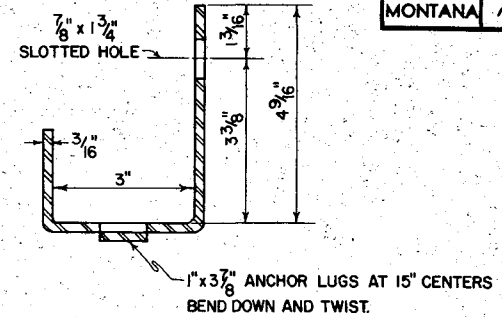
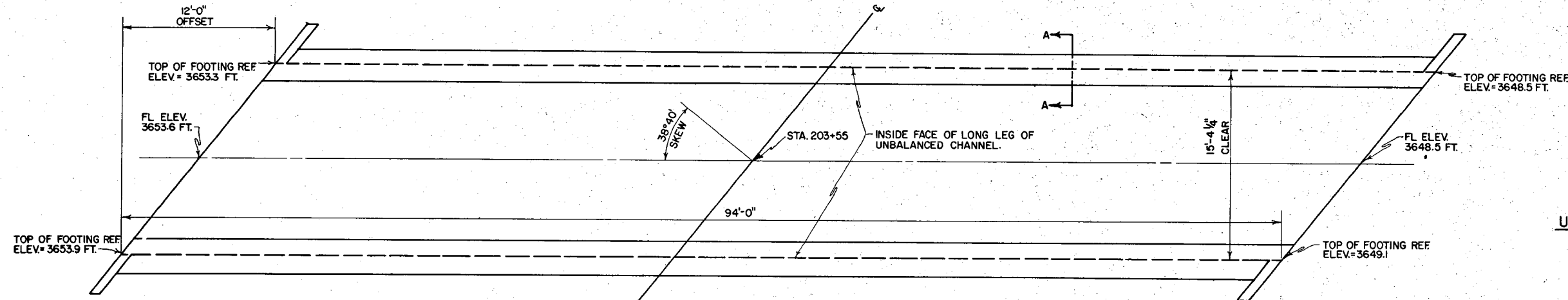
SECTION A-A
SCALE: 1"=2'-0"

CULVERT DETAILS
STA. 203+55
SHEET 1 OF 5

(As Constructed)

SPECIAL - 3

DESIGNED	S.H.M.	MAY 1977
DRAWN	F.T.T.	MAY 1977
CHECKED		
REVISED		
REVISED		
REVISED		



FOOTING		
CLASS "AD" CONCRETE CU. YDS.	UNBALANCED ^① CHANNEL-LBS.	NO. 4 REBAR LBS. ^②
26.1	400	790

- ① FOR ESTIMATING PURPOSE ONLY, TO BE INCLUDED IN UNIT PRICE BID FOR 15' SPAN x 7'-9" RISE SSPP OPEN BOTTOM ARCH.
- ② FOR ESTIMATING ONLY, TO BE INCLUDED IN UNIT PRICE BID FOR CLASS "AD" CONCRETE.

EDGE PROTECTION (INLET & OUTLET COMBINED)		
CLASS "DD" CONCRETE CU. YDS.	6"x6"x6" GAGE ^③ WIRE MESH-LBS.	NO. 4 REBAR LBS. ^③
16.3	404	347

- ③ FOR ESTIMATING PURPOSE ONLY, TO BE INCLUDED IN UNIT PRICE BID FOR CLASS "DD" CONCRETE.

DESIGNED	S.H.M.	JUNE 1977
DRAWN	F.T.T.	JUNE 1977
CHECKED		
REVISD		
REVISD		
REVISD		

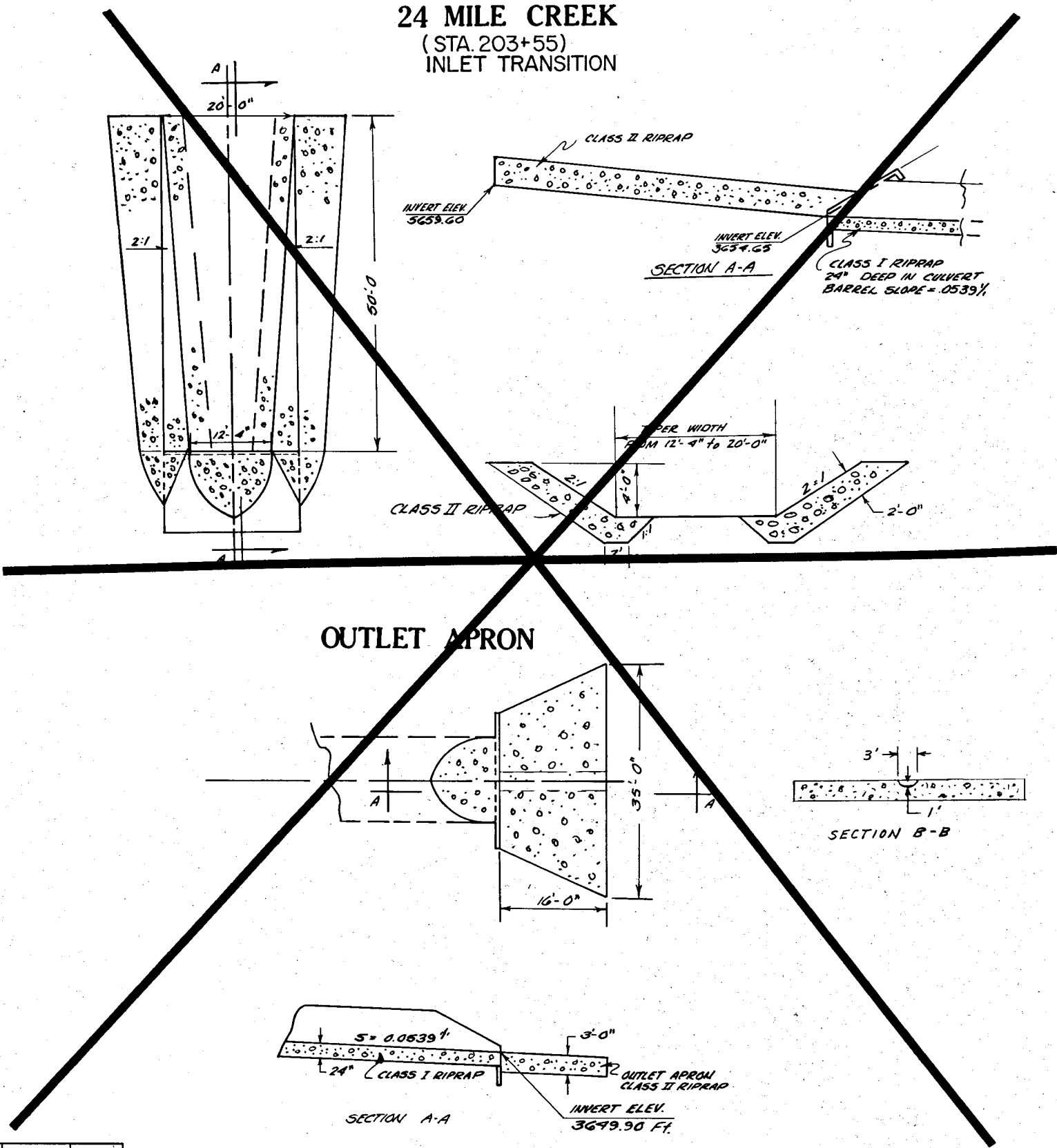
CULVERT DETAILS
STA. 203+55
 SHEET 2 OF 5

(As Constructed)

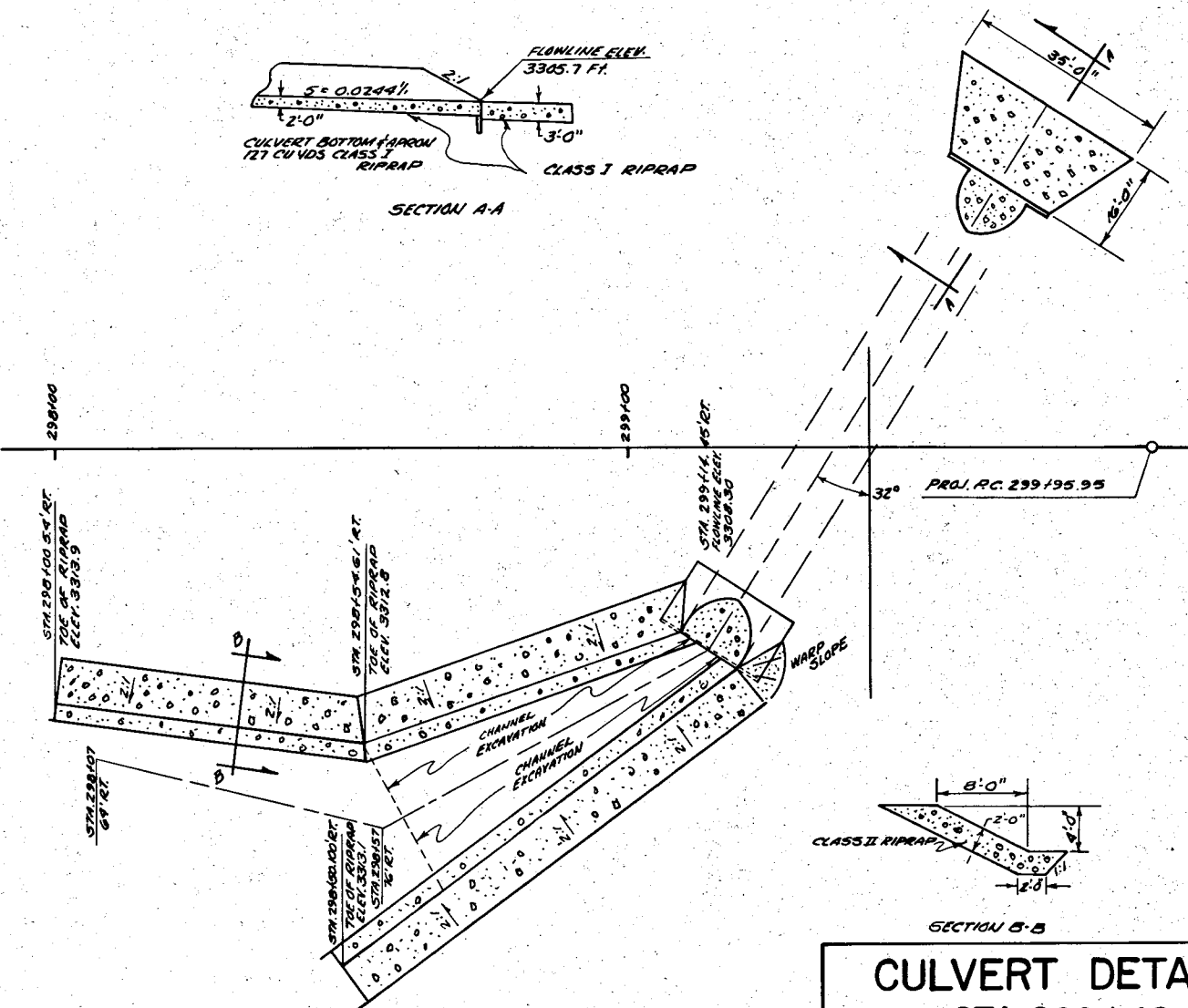
SPECIAL - 3

DETAIL

24 MILE CREEK
(STA. 203+55)
INLET TRANSITION



EVANS CREEK
(STA. 299+42)



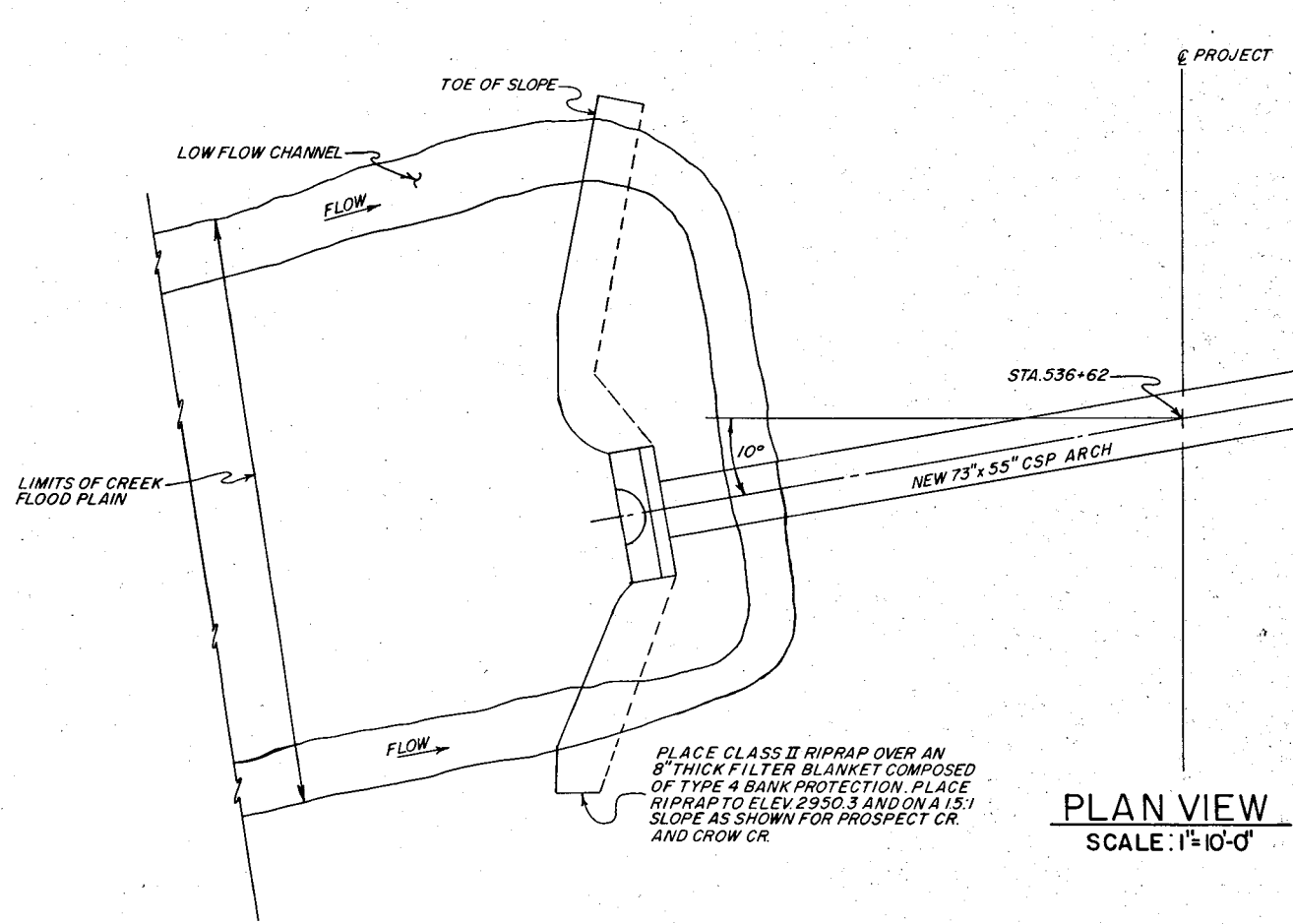
DESIGNED		
DRAWN		
CHECKED		
REVIEWED		
REVISION		
REVISION		

CULVERT DETAILS
STA. 299+42
SHEET 3 OF 5

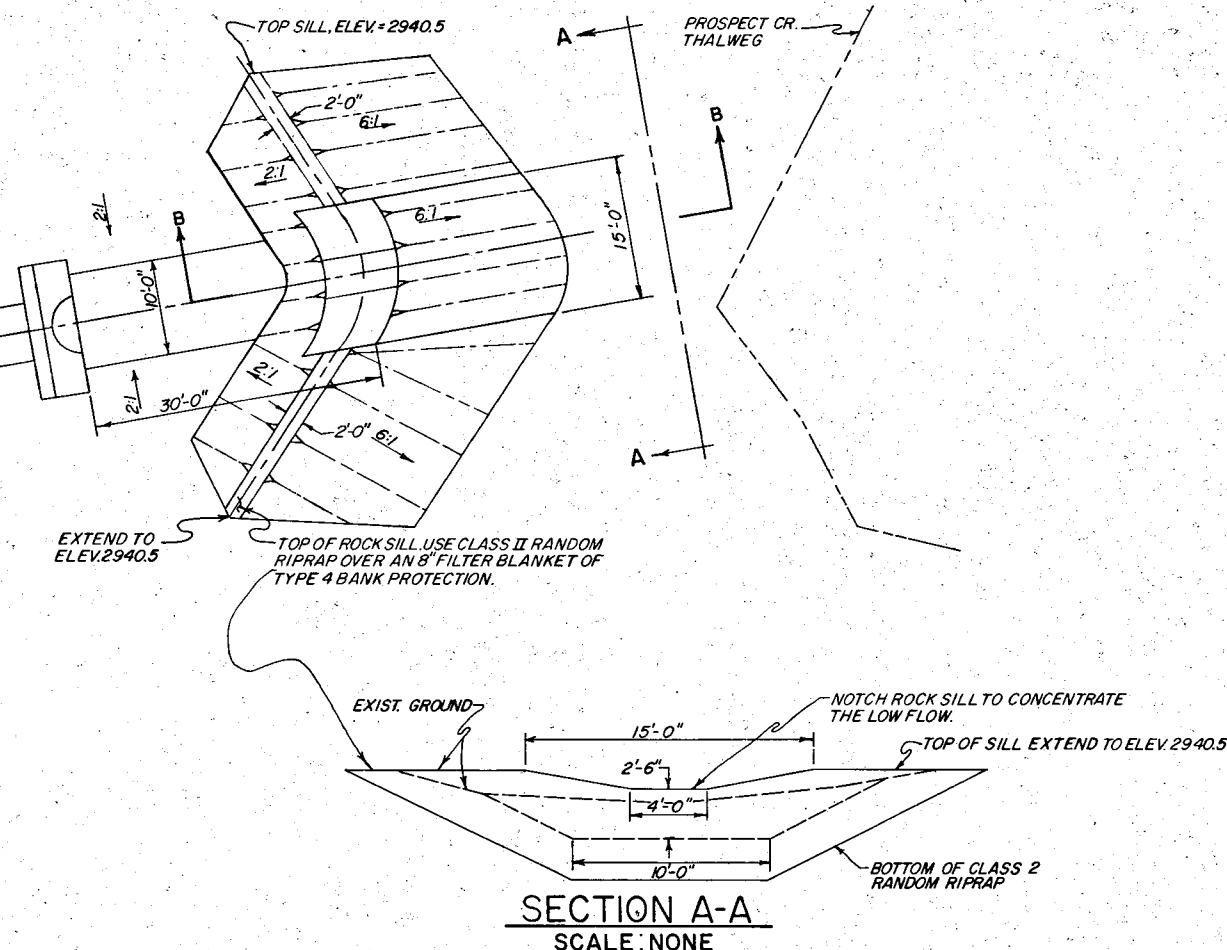
(As Constructed)

SPECIAL - 3

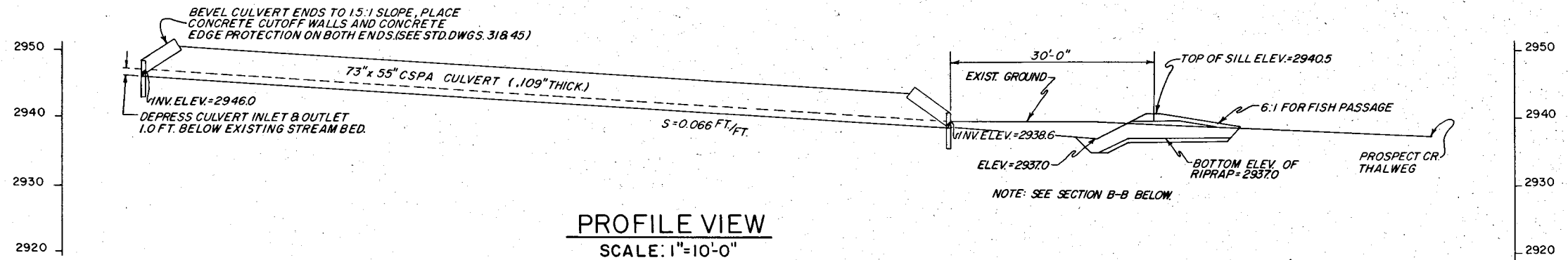
NOTE: EXTEND SILL ENDS IN AN ARC TOWARD ROAD, AS SHOWN, TO MEET SILL TOP (ELEV.=2940.5). KEY ENDS 3'-0" INTO HILLSIDE.



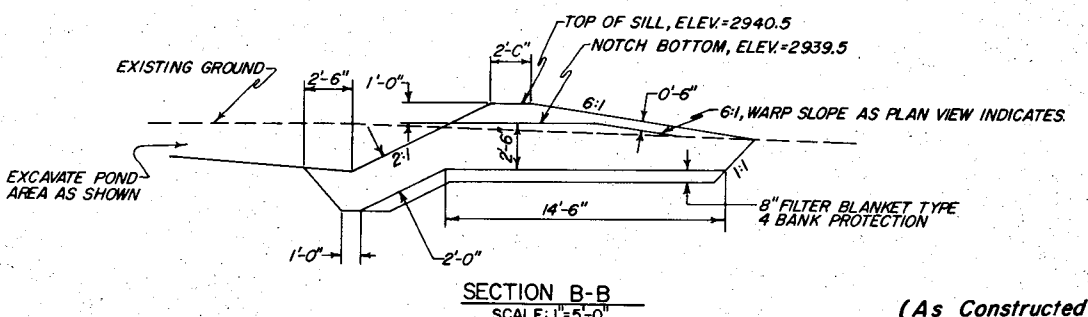
PLAN VIEW
SCALE: 1"=10'-0"



SECTION A-A
SCALE: NONE



PROFILE VIEW
SCALE: 1"=10'-0"



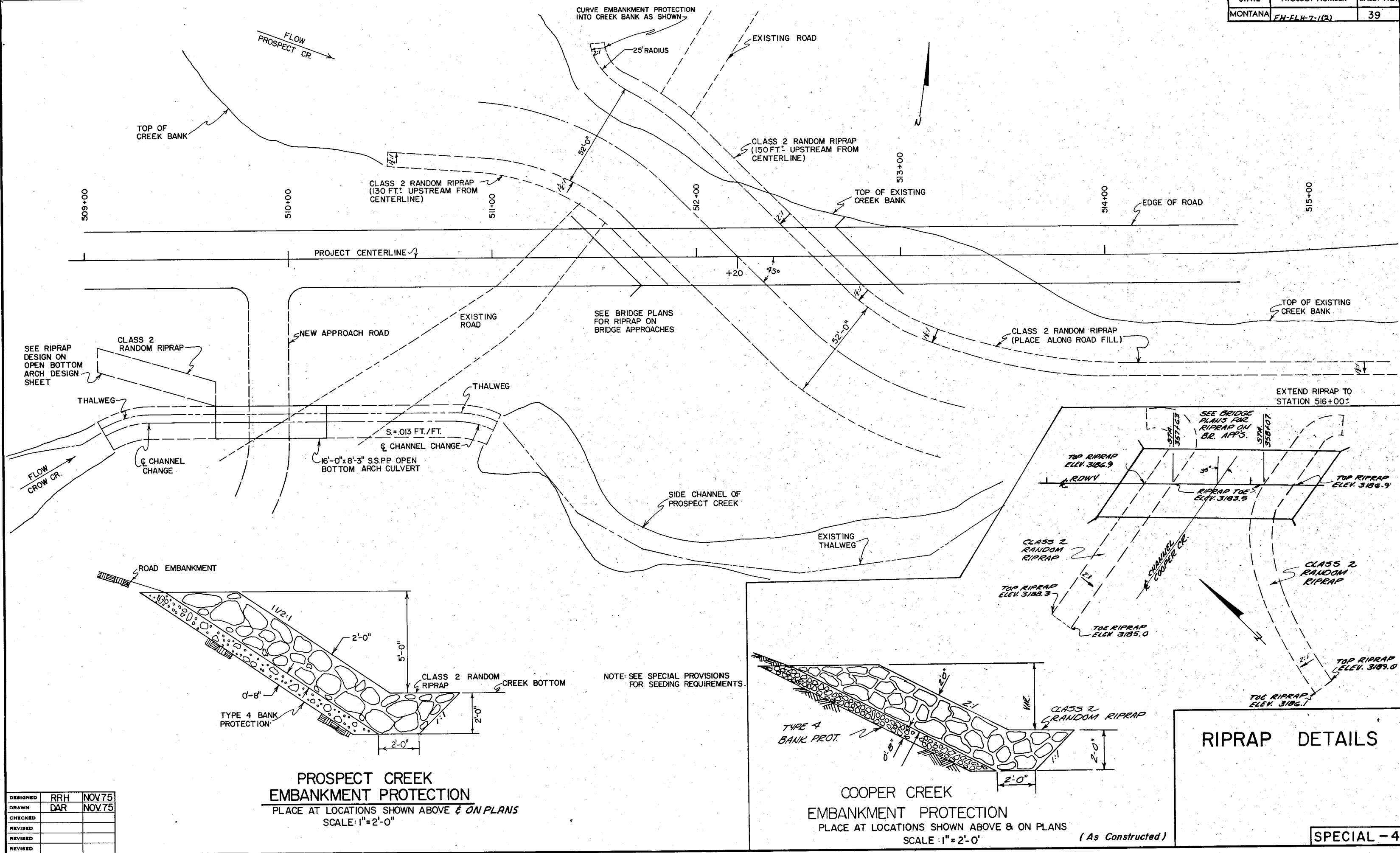
SECTION B-B
SCALE: 1"=5'-0"

CULVERT DETAILS
STA. 536+62
SHEET 5 OF 5

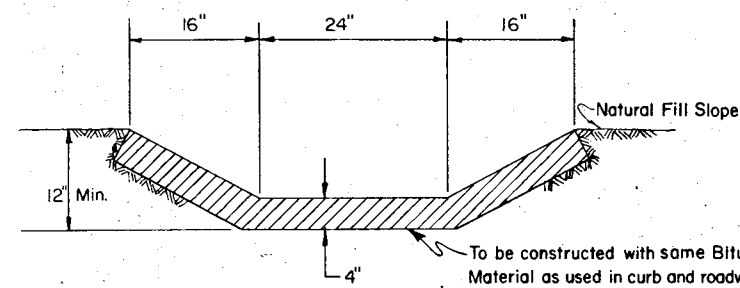
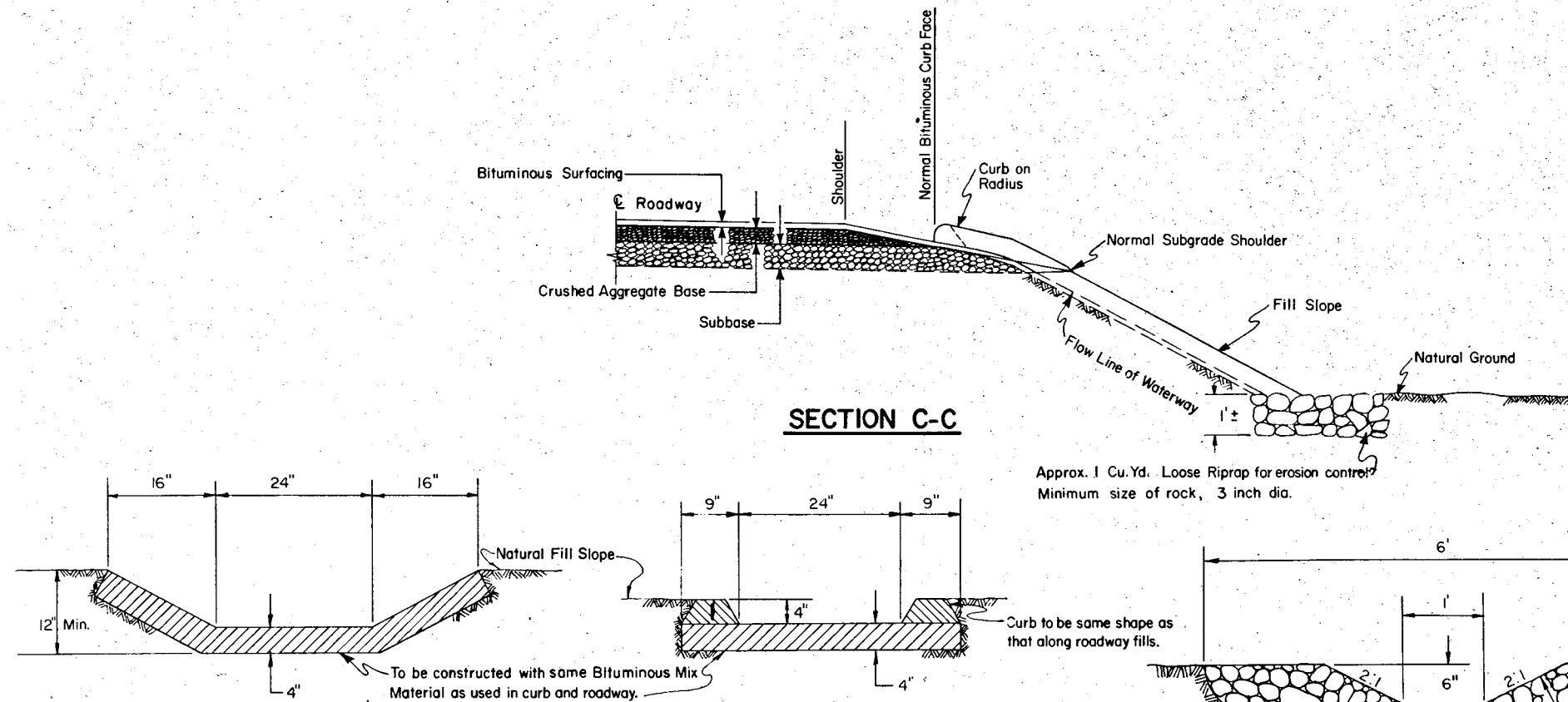
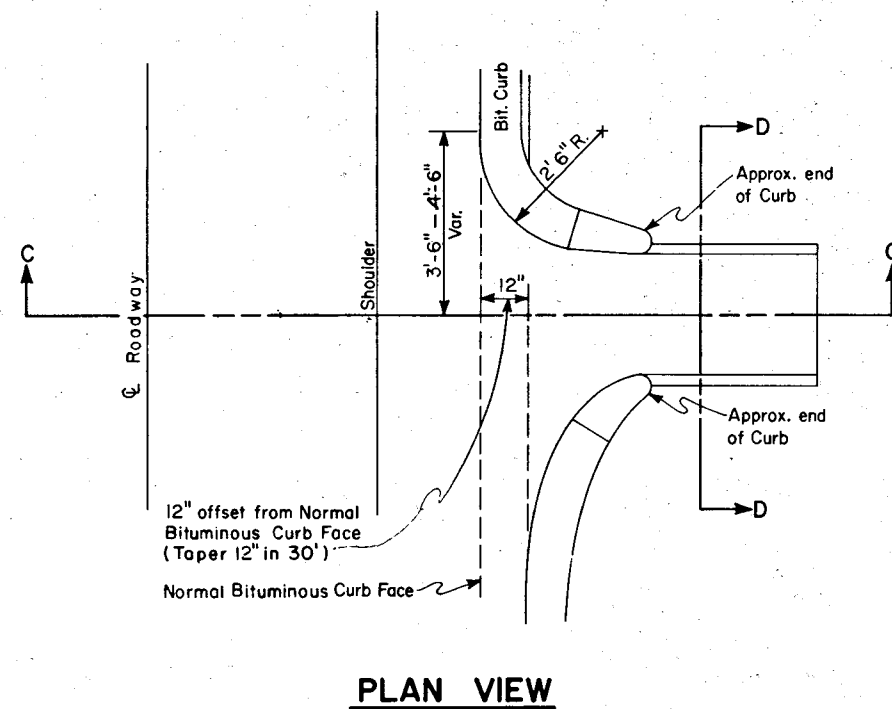
(As Constructed)

SPECIAL - 3

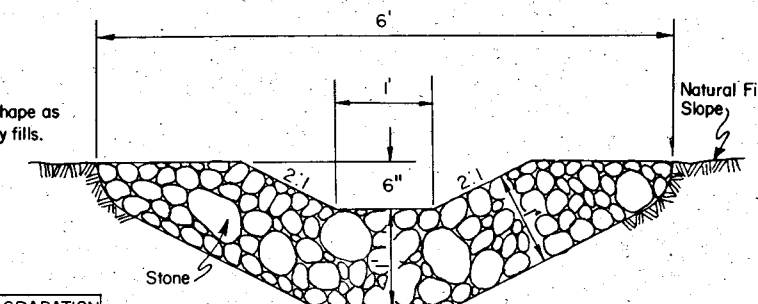
DESIGNED	R.R.H.	MAR. 76
DRAWN	R.L.K.	MAR. 76
CHECKED		
REVISD		
REVISD		
REVISD		



DESIGNED	RRH	NOV 75
DRAWN	DAR	NOV 75
CHECKED		
REVISION		
REVISION		
REVISION		

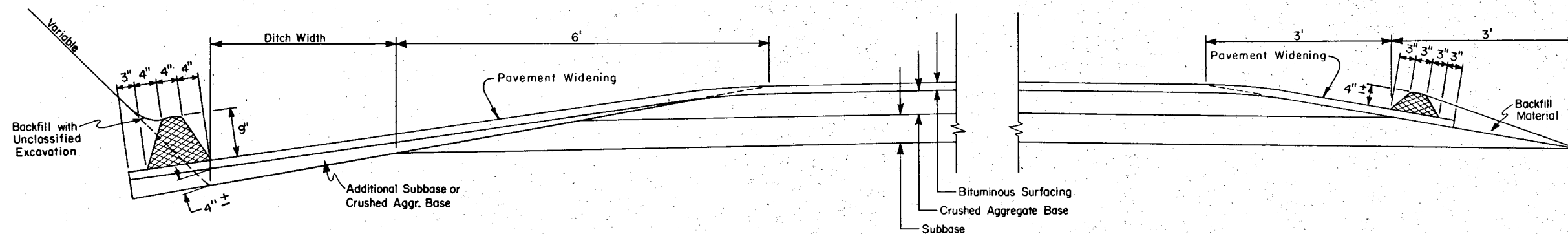


ALTERNATE SECTION D-D



STONE Diameter	GRADATION
	Percent Passing
8"	100
4"	50-80
2"	0-10

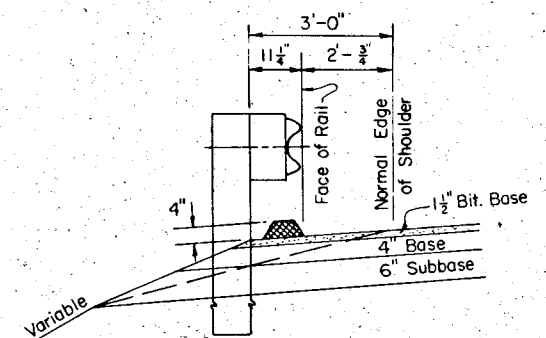
BITUMINOUS PAVED WATERWAYS



Bituminous curb shape may vary slightly as approved by the engineer.
Excavation and backfill subsidiary to placing curb.
Backfill material will be as directed by the Engineer.

BITUMINOUS CURB

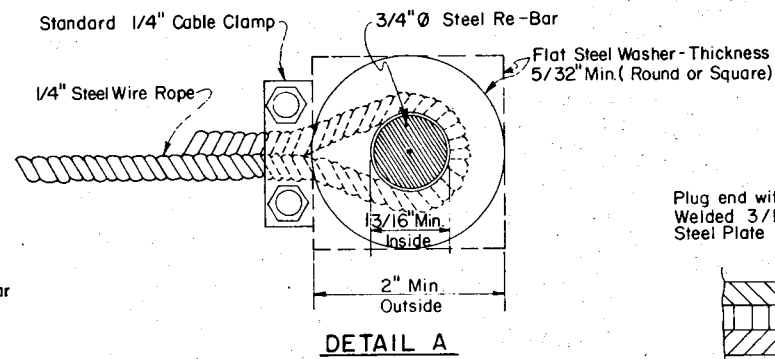
(As Constructed)



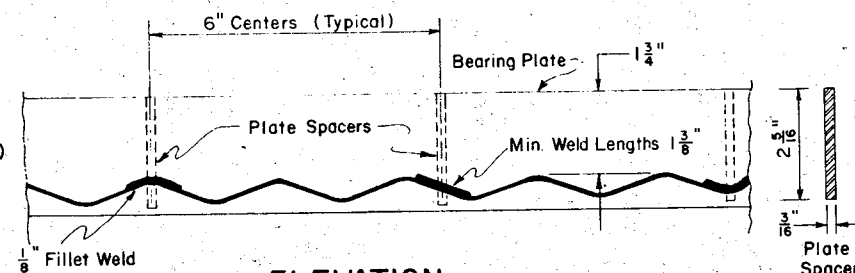
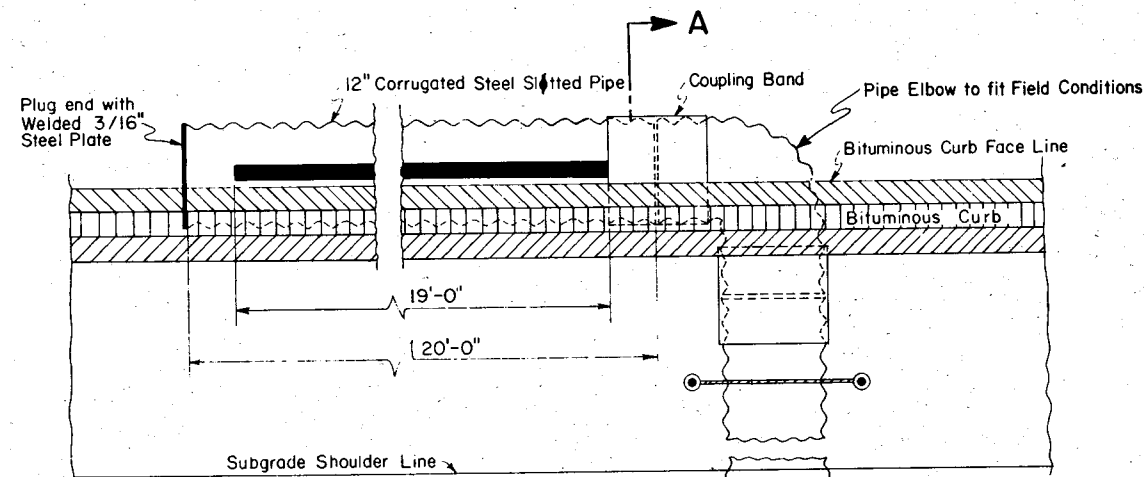
U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
REGION 8 DENVER, COLORADO

BITUMINOUS CURBS AND PAVED WATERWAYS

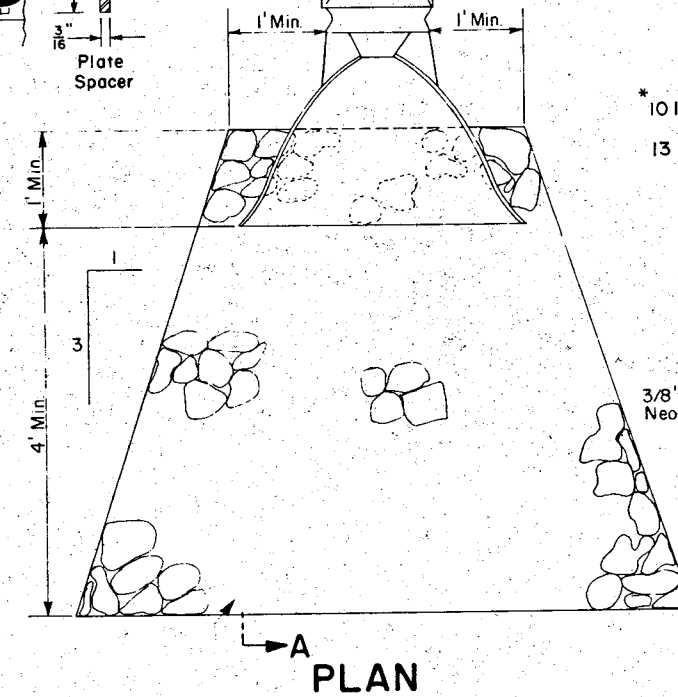
SPECIAL - 5



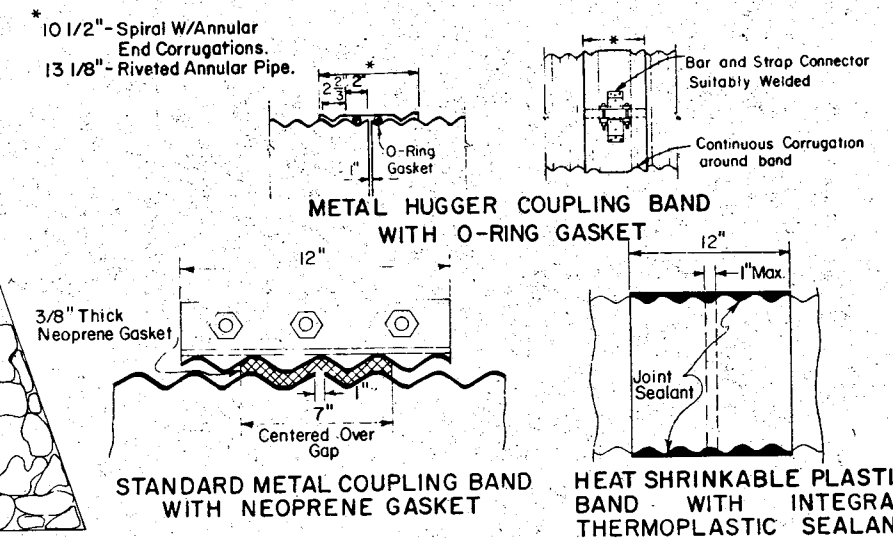
DETAIL A



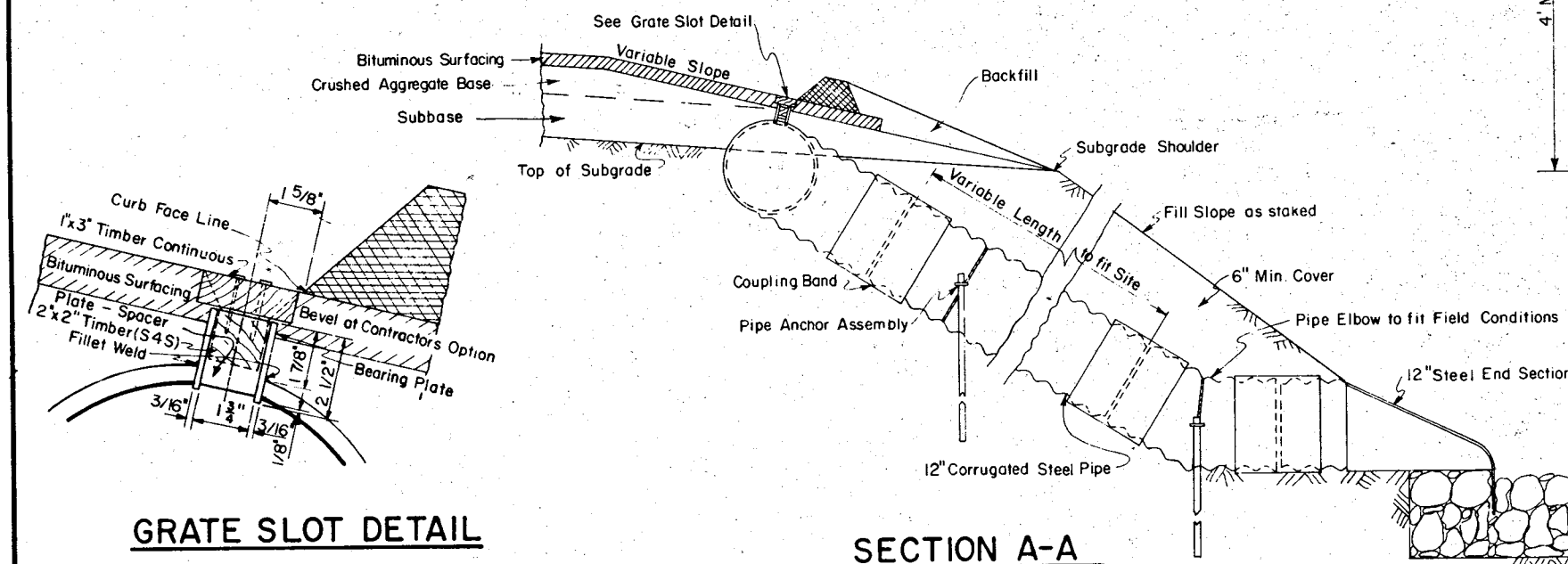
GRATE SLOT WELDING DETAIL



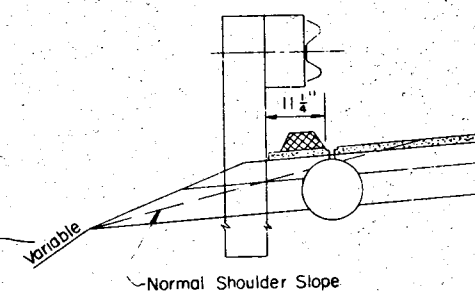
PLAN



ALTERNATE WATERTIGHT COUPLING BANDS



SECTION A-A



(As Constructed)

1. Corrugated Steel Slotted Pipe and Corrugated Steel Pipe, Elbows, End Section , and Steel Coupling Bands shall have a thickness of 0.064 inches, and shall be in accordance with Section 56.
2. Grate Slot Assembly and Plate End Plug shall be in accordance with AASHTO M183
3. Grate Slot Assembly, Plate End Plug, and all hardware shall be galvanized in accordance with AASHTO M111.
4. Other suitable pipe anchor assemblies may be used upon approval in writing by the Engineer.
5. Heat shrinkable plastic coupling band, if used, shall be Raychem Corp. or approved equal.
6. Rock for protective apron shall be clean, hard, durable stone with a minimum 3-inch diameter size.
7. Maximum size of wire rope and cable clamp shall be 3/8 inches.
8. Restrict use of the Hugger Band to welded spiral pipe with annular end corrugations or riveted annularly corrugated pipe.
9. Pipe Anchor Assemblies shall be placed approximately at 20-foot intervals along corrugated steel pipe
10. Placement at sag vertical curve shall include a tee connection instead of an elbow and have two 20-foot slotted sections.
11. A minimum earth cover, as shown, shall be placed and compacted over entire pipe, and shall blend with existing embankment slope
12. Before placing bituminous surfacing adjacent to the slotted pipe, the 1-inch by 3-inch and the 2-inch by 2-inch timbers, securely fastened together, shall be placed in the slot as shown. Gaps shall be provided in the 2-inch by 2-inch timber corresponding to the spacing of the plate spacers so that the timber can be properly inserted into the slot. The contractor shall prevent bonding of the bituminous surfacing to the timbers by any method acceptable to the Engineer. The timbers shall be removed after paving.
13. The slotted pipe is covered by US patent # 3,714,786 issued to ARMCO.
14. The slotted pipe shall be fabricated only from welded spiral pipe with annular corrugations rolled into the end. The Hugger Band connection system for this pipe is covered by US patent # 3,501,179 issued to ARMCO.

SLOTTED DRAIN
EMBANKMENT PROTECTOR

STATE OF MONTANA
DEPARTMENT OF HIGHWAYS

BRIDGE PLANS & QUANTITIES
FEDERAL AID PROJECT NO. S 471-1(1)0 & S471-1(2)7 P.E.
FH-FLH-7-1(2) CONST.

SANDERS COUNTY

LIST OF DRAWINGS

DWG. NO.	TITLE
11857 - 11862	BRIDGE AT STA. 237+35.00
11846 - 11850	BRIDGE AT STA. 357+85.00
11851 - 11856	BRIDGE AT STA. 512+20.50

B-4 (Rev. 3-31-72)	STANDARD PRESTRESSED CONCRETE BEAMS - TYPE IV
SL-1 (Rev. 12-29-72)	STANDARD SLAB, CURB, DIAPHRAGM & END POST DETAILS
SBR-T5 (Rev. 8-18-76)	STANDARD STEEL BRIDGE RAIL - TYPE NO. 5

ESTIMATED BRIDGE PLAN QUANTITIES											
	LOCATION	LENGTH IN FEET	REINFORCING STEEL LBS.	CLASS "BD" CONCRETE CU. YDS.	CLASS "AD" CONCRETE CU. YDS.	STEEL BRIDGE RAIL TYPE NO. 5 LIN. FT.	STRUCTURE EXCAVATION TYPE I CU. YDS.	PRESTRESSED BEAMS TYPE IV EACH		STRUCTURAL STEEL LUMP SUM	PROTECTIVE COATING SQ. YDS.
								95-0	100-0		
BRIDGE AT STA. 237+35.00	BENT NO. 1		4335	19.7	37.7		120			AS SPECIFIED	395
	BENT NO. 2		3843	17.5	34.8		110				
	SUPERSTRUCTURE	95.0	21182	93.9		187.17		5			
	SUB-TOTAL	95.0	29360	131.1	72.5	187.17	230	5		395	
BRIDGE AT STA. 357+85.00	BENT NO. 1		3604	16.8	35.6		150			AS SPECIFIED	391
	BENT NO. 2		3555	16.8	35.0		130				
	SUPERSTRUCTURE	95.0	20699	90.5		183.71		5			
	SUB-TOTAL	95.0	27858	124.1	70.6	183.71	280	5		391	
BRIDGE AT STA. 512+20.50	ABUT. NO. 1		10536	15.1	124.4		280			AS SPECIFIED	437
	ABUT. NO. 2		10536	15.1	124.4		415				
	SUPERSTRUCTURE	100.0	21801	97.2		281.33			5		
	SUB-TOTAL	100.0	42873	127.4	248.8	281.33	695		5	437	
TOTAL		290.0	100091	382.6	391.9	652.21	1205	10	5		1223

(As Constructed)

PREPARED BY JFB 3-8-77 CHECKED BY JCH 4-5-77

NOTES

FINISH GRADE: FINISH PLAN GRADE OF BRIDGE @ ROADWAY IS .48' ABOVE PROFILE GRADE SHOWN ON ROAD PLANS DUE TO .06 FT/FT. SUPER ELEVATION.

LIVE LOAD: STANDARD HS20-44 LOADING.

SPECIFICATIONS: MONTANA DEPARTMENT OF HIGHWAYS AND THE MONTANA HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 1976 EDITION, AND ANY AMENDMENTS THERETO, AND SPECIAL PROVISIONS SHALL GOVERN UNLESS OTHERWISE NOTED. DESIGN PREPARED IN ACCORDANCE WITH A.A.S.H.T.O. SPECIFICATIONS, 1973 EDITION, AND ANY AMENDMENTS THERETO.

APPROVAL: SHOP PLANS SHALL BE APPROVED BY THE STATE OF MONTANA, DEPARTMENT OF HIGHWAYS BEFORE FABRICATION IS BEGUN.

* CAST IN PLACE CONCRETE: EXCEPT AS OTHERWISE NOTED ALL CONCRETE SHALL BE CLASS "AD." AN "AIR ENTRAINING AGENT" SHALL BE ADDED TO ALL CONCRETE EXCEPT CLASS "AS." CHAMFER ALL EXPOSED EDGES OF CONCRETE WITH ENCLOSED ANGLE LESS THAN 120°, 3/4" AND FILLET ENTRANT ANGLES 3/4" UNLESS OTHERWISE NOTED. ALL FORMS FOR DECK SLAB SHALL BE REMOVED.

STRUCTURAL STEEL: ALL STRUCTURAL STEEL SHALL BE MEASURED AND PAID FOR ON THE LUMP SUM BASIS AS SET FORTH IN THE STANDARD SPECIFICATIONS. ESTIMATED WEIGHT = 663 POUNDS.

FOR REQUIREMENTS GOVERNING THE FABRICATION OF "STRUCTURAL STEEL" SEE THE STANDARD SPECIFICATIONS. TO AVOID OVERSIGHTS THESE REQUIREMENTS SHALL BE CLEARLY NOTED ON THE SHOP DRAWINGS.

ALL STRUCTURAL STEEL AND BRIDGE RAIL SHALL RECEIVE ONE (1) SHOP COAT OF RED LEAD OR BASIC LEAD SILICO 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 OR AS OTHERWISE SPECIFIED IN THE "SPECIAL PROVISIONS."

FOOTINGS: ELEVATIONS SHOWN FOR BOTTOM OF FOOTINGS ARE APPROXIMATE ONLY. FINAL ELEVATIONS TO BE DETERMINED BY THE ENGINEER.

PROTECTIVE COATING: DECK, CURBS AND CONCRETE END POSTS SHALL BE GIVEN A PROTECTIVE COATING OF BOILED LINSEED OIL. "SEE STANDARD SPECIFICATIONS"

UTILITIES: FOR LOCATION OF UTILITIES, SEE APPROPRIATE ROAD PLANS SHEET.

COVERING: THE MINIMUM COVERING, MEASURED FROM THE SURFACE OF THE CONCRETE TO THE FACE OF ANY REINFORCEMENT BAR, SHALL BE NOT LESS THAN 2 INCHES EXCEPT AS FOLLOWS OR OTHERWISE NOTED.

BOTTOM OF SLAB	1 INCH
STIRRUPS AND TIES	1 1/2 INCHES
FOOTINGS AND PIER SHAFTS	3 INCHES

SETTING OF MASONRY PLATES: CARE SHALL BE TAKEN IN PLACING REINFORCING STEEL SO AS TO CLEAR ANCHOR BOLTS. MASONRY PLATES SHALL BE PLACED ON THREE LAYERS OF CANVAS THOROUGHLY SWABBED WITH RED LEAD AS CALLED FOR IN THE STANDARD SPECIFICATIONS. THE CONTRACTOR SHALL FINISH CONCRETE UNDER MASONRY PLATES TO THE EXACT ELEVATION SHOWN. BUSH HAMMERING WILL BE PERMITTED AND USED ONLY AS A MEANS OF LEVELING THE CONCRETE SURFACE TO ASSURE FULL AND LEVEL BEARING AND TO REMOVE LAITANCE, LOOSE AND FOREIGN MATERIAL. STEEL SHIMS SHALL BE USED TO BRING THE MASONRY PLATES UP TO GRADE IF NECESSARY. STEEL SHIMS SHALL BE THE SAME SIZE EXCEPT FOR THICKNESS AS THE MASONRY PLATE. MINIMUM THICKNESS OF ANY SHIMS SHALL BE 1/8". THE COST OF BUSH HAMMERING AND SHIMS, IF ANY, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CLASS "AD" CONCRETE.

BACKFILL: THE BACKFILL AT 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.

REINFORCING STEEL: ALL REINFORCEMENT STEEL SHALL BE OF THE DEFORMED TYPE AND SHALL MEET THE REQUIREMENTS OF ASTM SPECIFICATIONS A615, GRADE 60 (AASHTO M-31) EXCEPT FOR THE REBAR IN THE PRESTRESSED CONCRETE BEAMS WHICH MAY BE GRADE 40.

EXCAVATION: Structure excavation shall be calculated from natural ground lines as they exist in the vicinity of the structure prior to the beginning of construction.

* "BD" CONCRETE: Superstructure shall be class "BD" Concrete. See special provisions.

STATE OF MONTANA DEPARTMENT OF HIGHWAYS

BRIDGE OVER PROSPECT CREEK

AT STA. 237+35.00

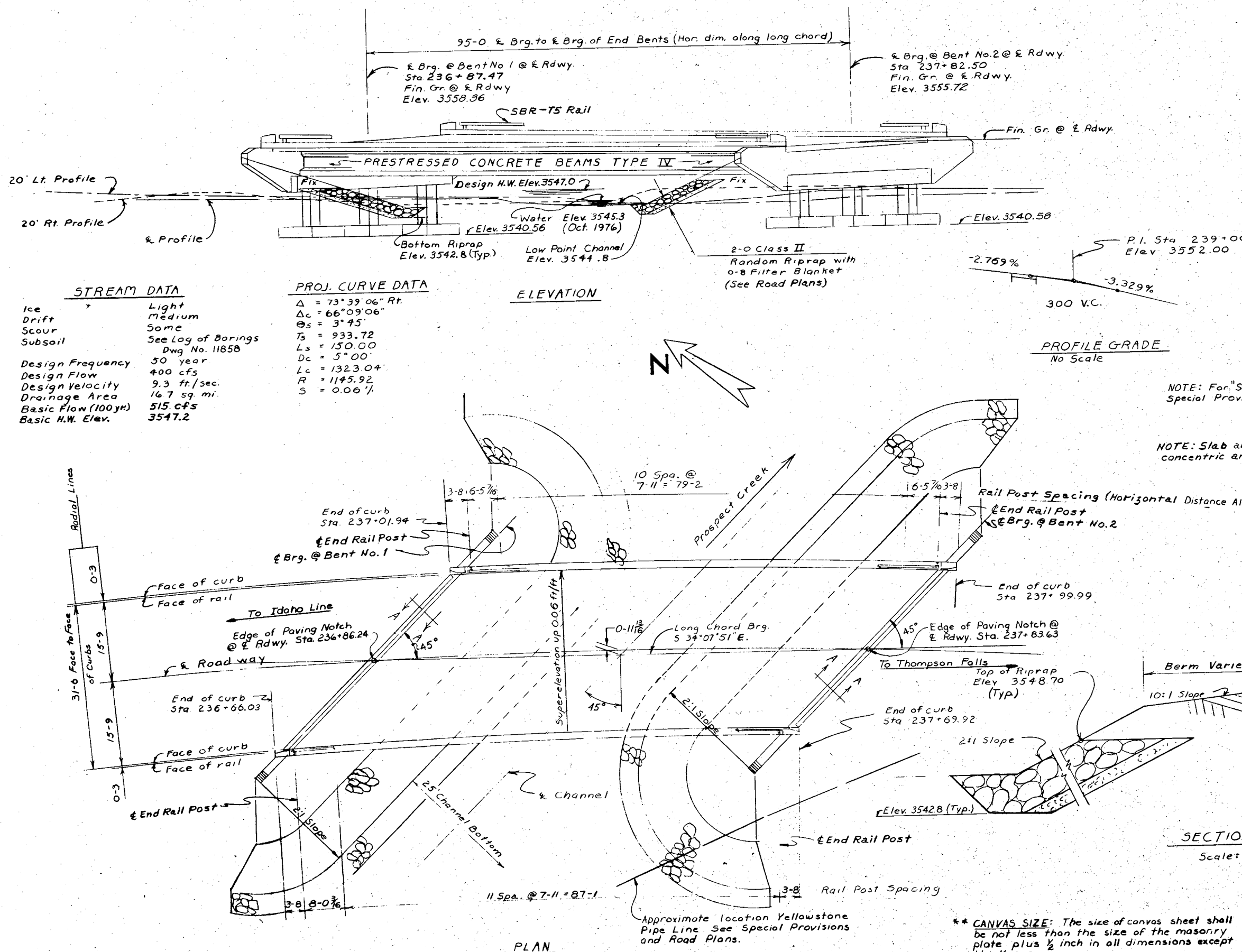
FEDERAL AID PROJECT NO. FH FLH 7-1(2)

SANDERS COUNTY

GENERAL LAYOUT

Scale: 1"=10'-0" Except as noted

(As Constructed) DRAWING NO. 11857

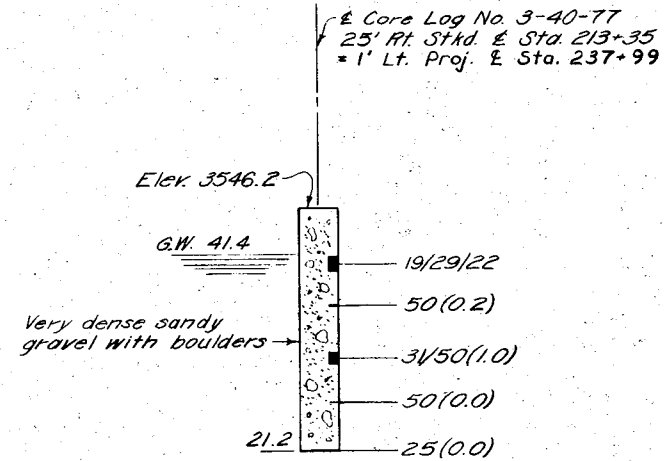
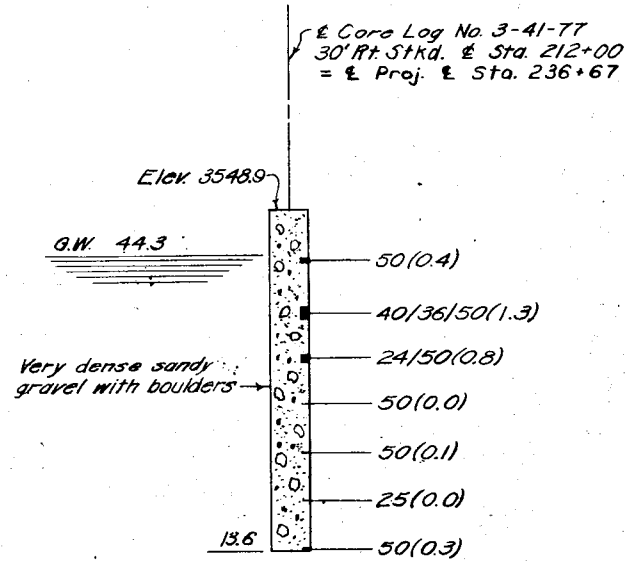


NOTE: For "Sequence of Work," see Special Provisions.

NOTE: Slab and curbs to be built on concentric arcs parallel to the & Rdwy.

** CANVAS SIZE: The size of canvas sheet shall be not less than the size of the masonry plate plus 1/2 inch in all dimensions except thickness.

DESIGNED	MLR	2-77
DRAWN	JJF	2-77
CHECKED	J.C.H.	4-5-77
APPROVED	HES.	6-13-77
REVISED		
REVISED		



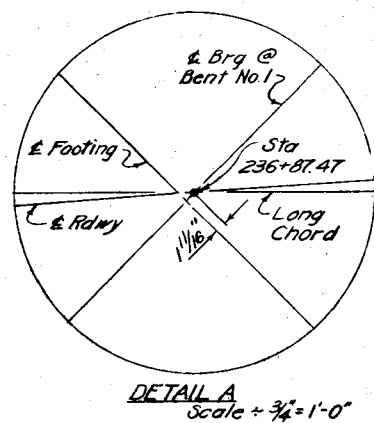
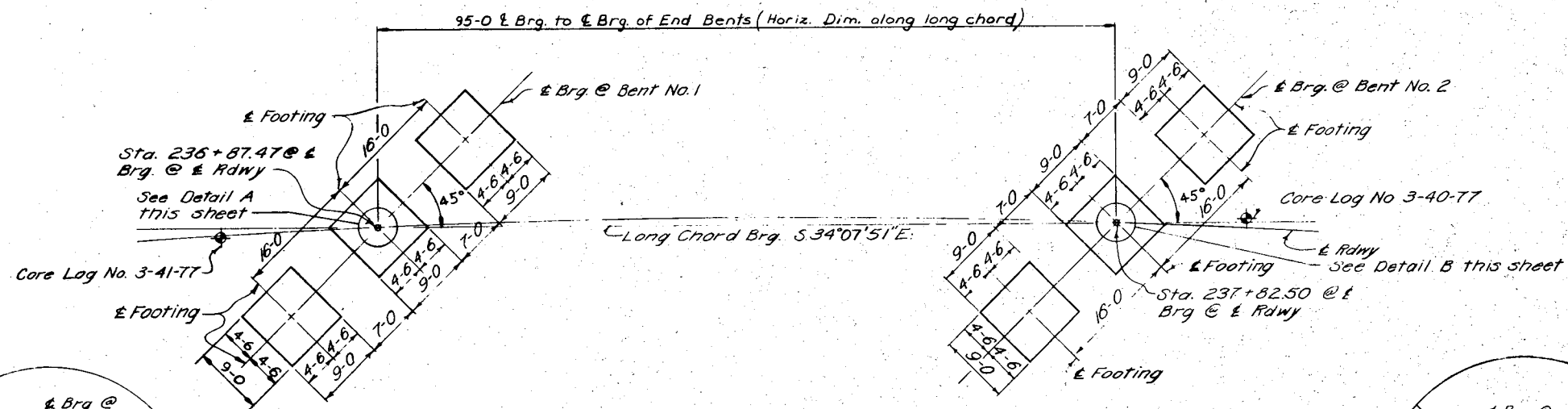
LOG OF BORINGS

NOTES

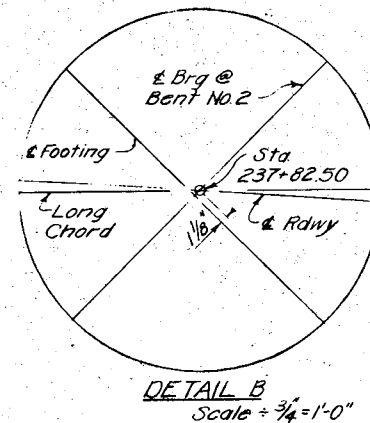
SOILS AND FOUNDATION MATERIALS: BORINGS WERE TAKEN BY THE STATE OF MONTANA, DEPARTMENT OF HIGHWAYS AT THE POINTS SHOWN ON THE GENERAL LAYOUT OR FOOTING PLAN.

THE SERIES OF NUMBERS SHOWN ON THE LOG OF BORINGS INDICATES THE NUMBER OF BLOWS PER 6" 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 POUND HAMMER HAVING A 30" DROP. THE TOTAL PENETRATION OF THE SAMPLER TUBE IS INDICATED ON THE CORE LOGS AFTER EACH SERIES IF 6" PENETRATION WAS NOT ACHIEVED IN 50 BLOWS.

THE STATE OF MONTANA, DEPARTMENT OF HIGHWAYS, 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.



FOOTING PLAN



STATE OF MONTANA
DEPARTMENT OF HIGHWAYS

BRIDGE OVER PROSPECT CREEK
AT STA. 237 + 3500

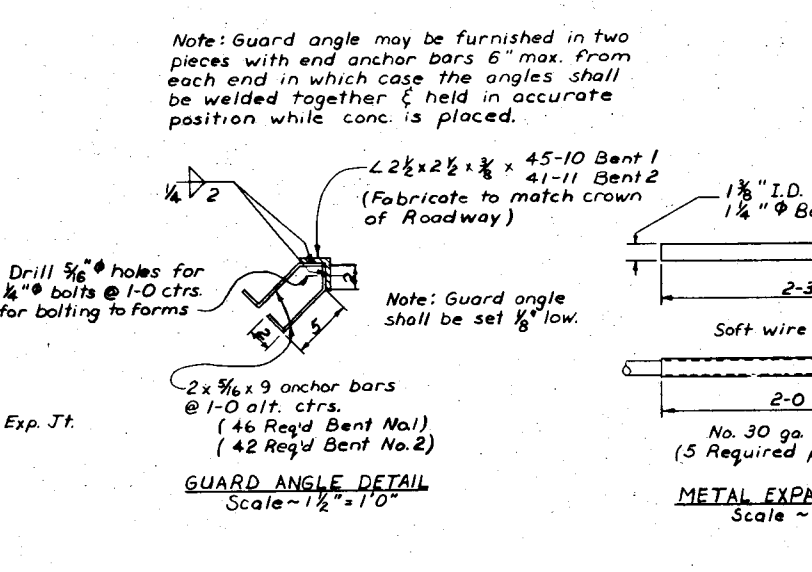
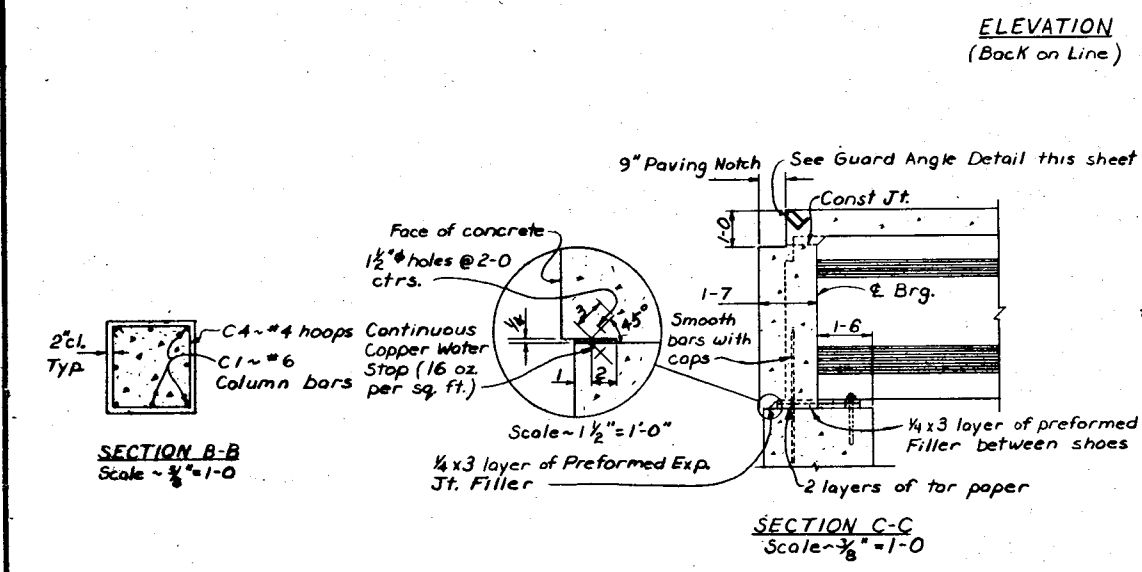
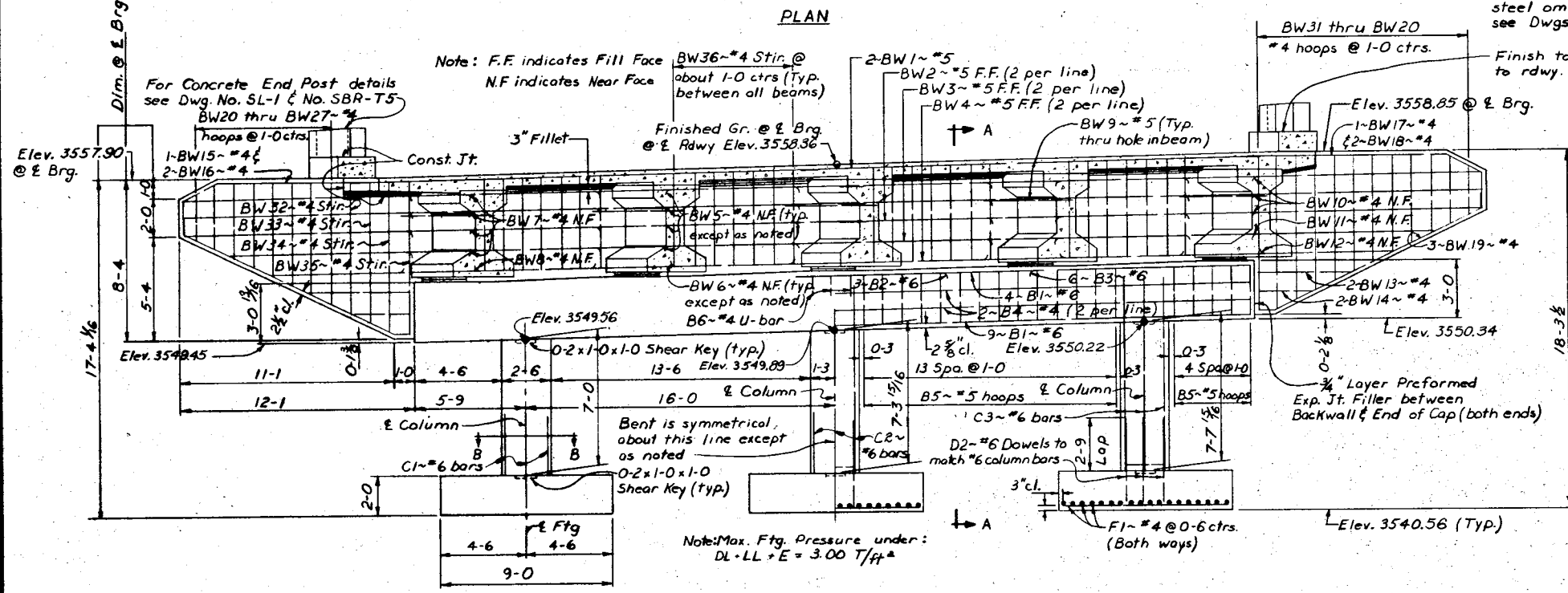
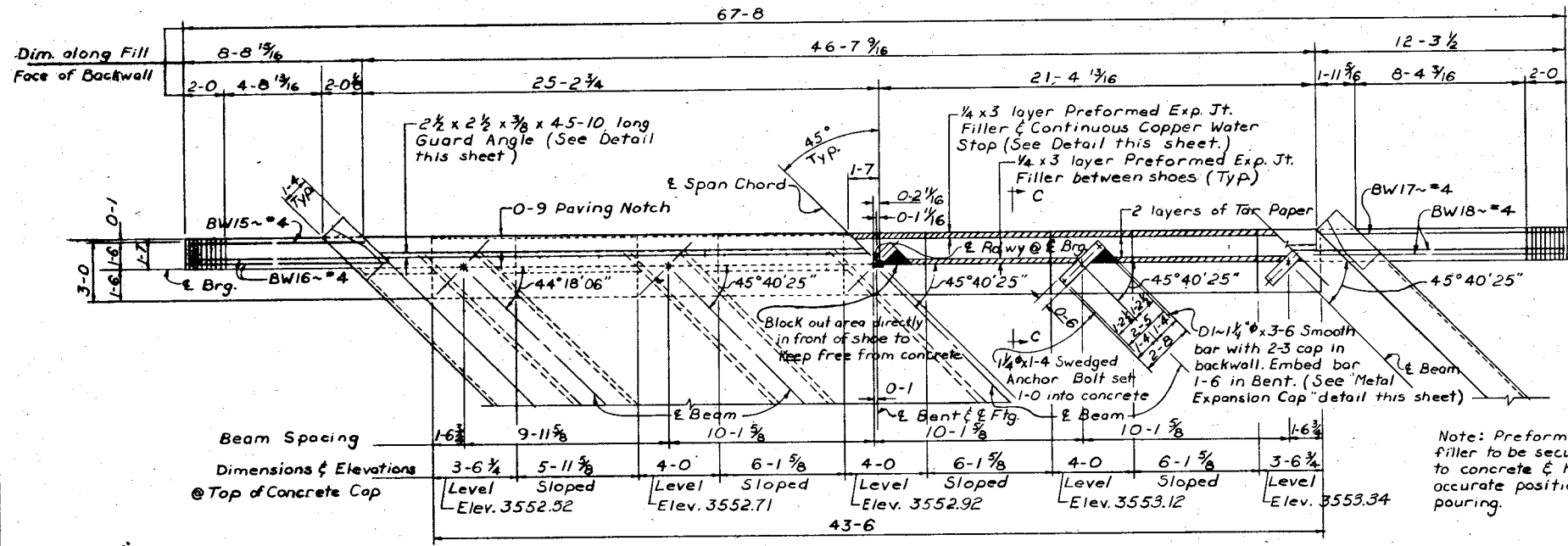
FEDERAL AID PROJECT NO. FH FLH 7-12

SANDERS COUNTY

FOOTING PLAN

DESIGNED	3-2-77	M.L.P.
DRAWN	3-30-77	G.E.C.
CHECKED	4-5-77	J.C.H.
REVISD		
REVISD		
REVISD		

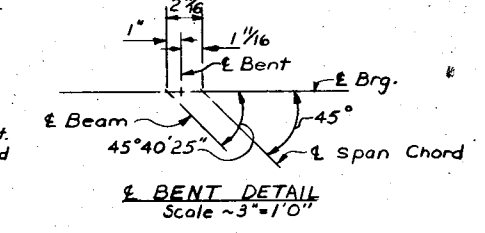
Scale = 1" = 10'-0" (Except as noted)
(As Constructed) DRAWING NO. 11858



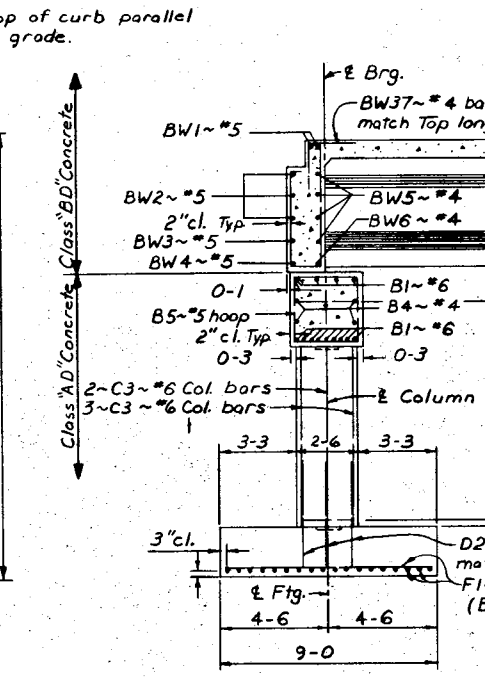
Note: For Rail Connections & Details see Dwg. No. SBR-T5. For Rail Post spacing & location see 'General Layout'.

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

Note: Cost of furnishing and placing expansion joint filler, tar paper, copper water stop & 'Metal Expansion Cap' to be included in the unit price bid for Class 'AD' concrete.



Note: Slab, beam, & curb reinforcing steel omitted for clarity. For details see Dwg. No. SL-1, No. B-4 & No. 11B61.



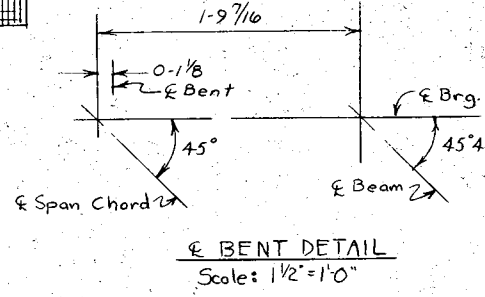
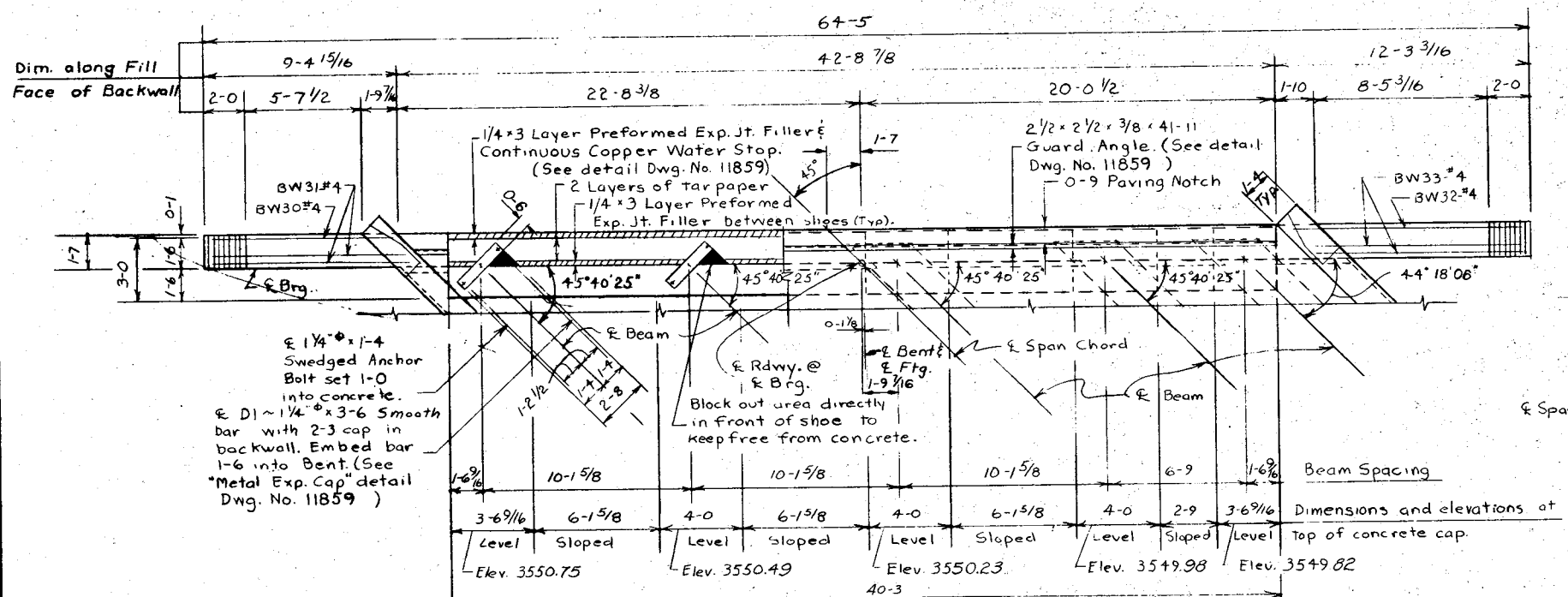
BILL OF REINFORCING STEEL									
TYPE 1 TYPE 2 TYPE 3 TYPE 4 TYPE 5									
BENT BARS (All dimensions out to out)									
Mark	Size	No.	Type	Length	A	B	C	D	E
BW15	#4	1	3	10'-7"	1'-9"	2'-1"	6'-9"	1'-7"	3'-0"
BW16	#4	2	3	11'-8"	1'-9"	2'-1"	7'-10"	1'-7"	3'-6"
BW17	#4	1	3	13'-11"	1'-9"	2'-1"	10'-1"	1'-7"	4'-6"
BW18	#4	2	3	14'-2"	1'-9"	2'-1"	10'-4"	1'-7"	4'-7"
BW19	#4	6	3	13'-10"	1'-0"	12'-1"	0'-9"	0'-11"	0'-4"
BW20	#4	2	1	8'-3"	2'-6"	1'-3"	0'-4 1/2"		
BW21	#4			10'-3"	3'-6"				
BW22	#4			11'-5"	4'-1"				
BW23	#4			12'-3"	4'-6"				
BW24	#4			13'-3"	5'-0"				
BW25	#4			14'-3"	5'-6"				
BW26	#4			15'-3"	6'-0"				
BW27	#4	2		16'-1"	6'-5"				
BW28	#4	1		17'-1"	6'-11"				
BW29	#4			18'-1"	7'-5"				
BW30	#4			19'-1"	7'-11"				
BW31	#4	1		19'-3"	8'-0"	1'-3"	0'-4 1/2"		
BW32	#4	2		14'-8"	6'-11"	5'-11"	1'-3"	0'-3 1/2"	
BW33	#4			15'-8"	7'-5"	6'-5"			
BW34	#4			16'-8"	7'-11"	6'-11"			
BW35	#4	1		16'-10"	8'-0"	7'-0"			
BW36	#4	28	2	10'-10"	5'-0"	4'-0"	1'-3"	0'-3 1/2"	
BW37	#4	24	4	4'-0"	2'-0"	2'-0"			
B5	#5	38	1	11'-7"	2'-8"	2'-8"	0'-5 1/2"		
B6	#4	3	5	4'-8"	2'-8"	1'-0"			
C4	#4	30	1	9'-5"	2'-2"	2'-2"	0'-4 1/2"		

STRAIGHT BARS									
Mark	Size	No.	Length	Mark	Size	No.	Length		
BW1	#5	2	49'-11"	B1	#6	13	43'-2"		
BW2	#5	6	34'-5"	B2	#6	3	11'-8"		
BW3	#5	2	32'-4"	B3	#6	12	11'-5"		
BW4	#5	2	30'-3"	B4	#4	8	22'-3"		
BW5	#4	12	7'-4"	F1	#4	108	8'-6"		
BW6	#4	3	6'-8"	C1	#6	8	9'-6"		
BW7	#4	3	7'-2"	C2	#6	8	9'-9"		
BW8	#4	1	6'-6"	C3	#6	8	10'-0"		
BW9	#5	5	5'-4"	D1	#6	5	3'-6"		
BW10	#4	6	11'-10"	D2	#6	24	4'-5"		
BW11	#4	2	9'-7"						
BW12	#4	2	6'-10"						
BW13	#4	4	5'-0"						
BW14	#4	4	2'-11"						

* D1-1 1/4" smooth bars shall conform to ASTM designation A36

STATE OF MONTANA
DEPARTMENT OF HIGHWAYS
BRIDGE OVER PROSPECT CREEK
AT STA. 237+35.00
FEDERAL AID PROJECT NO. FH FLH 7-1(2)
SANDERS COUNTY
BENT NO. 1
Scale - 1/4" = 1'-0" Except As Noted
(As Constructed) DRAWING NO. 11B59

DESIGNED	M. Rutherford	2-22-77
DRAWN	M. Rutherford	3-18-77
CHECKED	J. Hill	4-5-77
REVIS		
REVIS		



NOTE: For slab, curb and beam reinforcing steel see Std. Dwg. B-4, No. SL-1 and No. 11861.
For concrete end post details see Std. Dwg. No. SL-1 & SBRTS. See Dwg. No. SBR-T5 for rail connections and details. For rail post spacing see "General Layout".

NOTE: Cost of furnishing and placing expansion joint filler, tarpaper, copper water stop and metal expansion caps to be included in the unit price bid for class "AD" concrete.
NOTE: Expansion joint filler to be securely nailed to concrete and held in accurate position while pouring.

NOTE: Beam seat areas shall be finished level to the elevations shown and the areas between beam seats shall be sloped uniformly as required.

NOTE: F.F. indicates fill face. N.F. indicates near face.

BILL OF REINFORCING STEEL

MARK	SIZE	NO.	TYPE	LENGTH	A	B	C	D	E
BW15	#4	2	1	8'-3"	1'-3"	2'-6"	0'-4 1/2"		
BW16	#4	1	1	10'-3"		3'-6"			
BW17	#4	1	1	11'-5"		4'-1"			
BW18	#4	1	1	12'-3"		4'-6"			
BW19	#4	1	1	13'-3"		5'-0"			
BW20	#4	1	1	14'-3"		5'-6"			
BW21	#4	1	1	15'-3"		6'-0"			
BW22	#4	1	1	16'-1"		6'-5"			
BW23	#4	2	1	17'-1"		6'-11"	0'-4 1/2"		
BW24	#4	1	1	18'-1"		7'-5"	0'-4 1/2"		
BW25	#4	1	1	19'-1"		7'-11"	0'-4 1/2"		
BW26	#4	1	1	19'-3"		8'-0"	0'-4 1/2"		
BW27	#4	2	1	15'-8"		7'-5"	6'-5"	0'-3 1/2"	
BW28	#4	2	1	16'-8"		7'-11"	6'-11"	0'-3 1/2"	
BW29	#4	2	1	16'-10"	1'-3"	8'-0"	7'-0"	0'-3 1/2"	
BW30	#4	1	3	11'-3"	1'-9"	2'-1"	7'-5"	1'-7"	3'-4"
BW31	#4	2	1	12'-4"	1'-9"	2'-1"	8'-6"	1'-7"	3'-10"
BW32	#4	1	1	13'-11"	1'-9"	2'-1"	10'-1"	1'-7"	4'-6"
BW33	#4	2	1	14'-2"	1'-9"	2'-1"	10'-4"	1'-7"	4'-7"
BW34	#4	6	3	13'-10"	1'-0"	12'-1"	0'-9"	0'-4"	0'-4"
BW35	#4	25	2	10'-10"	1'-3"	5'-0"	4'-0"	0'-3 1/2"	
BW36	#4	24	4	4'-0"	2'-0"	2'-0"			
B5	#5	34	1	11'-7"	2'-8"	2'-8"	0'-5 1/2"		
B6	#4	3	5	4'-8"	2'-8"	1'-0"			
C4	#4	22	1	9'-5"	2'-2"	2'-2"	0'-4 1/2"		

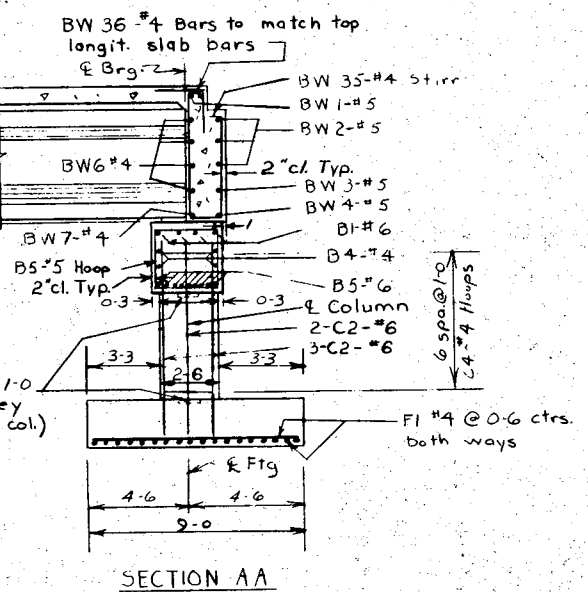
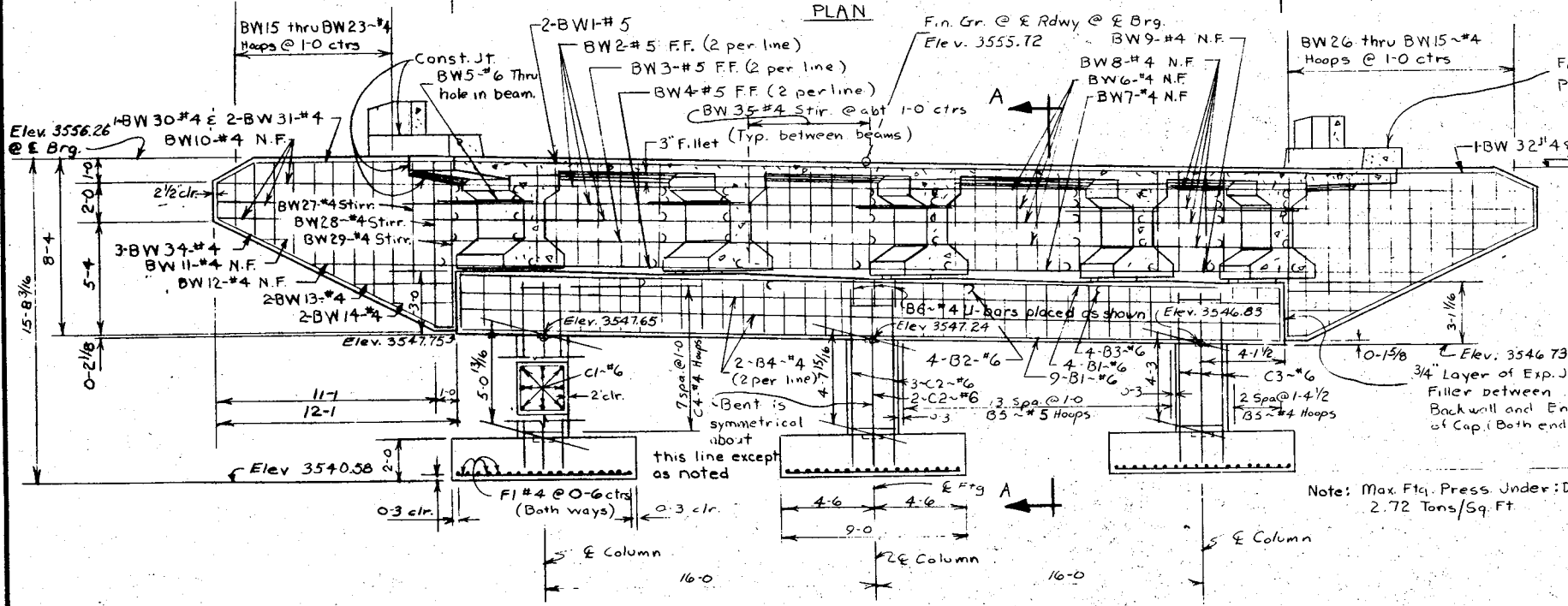
BENT BARS (All dimensions are out to out)

MARK	SIZE	NO.	TYPE	LENGTH	A	B	C	D	E
BW15	#4	2	1	8'-3"	1'-3"	2'-6"	0'-4 1/2"		
BW16	#4	1	1	10'-3"		3'-6"			
BW17	#4	1	1	11'-5"		4'-1"			
BW18	#4	1	1	12'-3"		4'-6"			
BW19	#4	1	1	13'-3"		5'-0"			
BW20	#4	1	1	14'-3"		5'-6"			
BW21	#4	1	1	15'-3"		6'-0"			
BW22	#4	1	1	16'-1"		6'-5"			
BW23	#4	2	1	17'-1"		6'-11"	0'-4 1/2"		
BW24	#4	1	1	18'-1"		7'-5"	0'-4 1/2"		
BW25	#4	1	1	19'-1"		7'-11"	0'-4 1/2"		
BW26	#4	1	1	19'-3"		8'-0"	0'-4 1/2"		
BW27	#4	2	1	15'-8"		7'-5"	6'-5"	0'-3 1/2"	
BW28	#4	2	1	16'-8"		7'-11"	6'-11"	0'-3 1/2"	
BW29	#4	2	1	16'-10"	1'-3"	8'-0"	7'-0"	0'-3 1/2"	
BW30	#4	1	3	11'-3"	1'-9"	2'-1"	7'-5"	1'-7"	3'-4"
BW31	#4	2	1	12'-4"	1'-9"	2'-1"	8'-6"	1'-7"	3'-10"
BW32	#4	1	1	13'-11"	1'-9"	2'-1"	10'-1"	1'-7"	4'-6"
BW33	#4	2	1	14'-2"	1'-9"	2'-1"	10'-4"	1'-7"	4'-7"
BW34	#4	6	3	13'-10"	1'-0"	12'-1"	0'-9"	0'-4"	0'-4"
BW35	#4	25	2	10'-10"	1'-3"	5'-0"	4'-0"	0'-3 1/2"	
BW36	#4	24	4	4'-0"	2'-0"	2'-0"			
B5	#5	34	1	11'-7"	2'-8"	2'-8"	0'-5 1/2"		
B6	#4	3	5	4'-8"	2'-8"	1'-0"			
C4	#4	22	1	9'-5"	2'-2"	2'-2"	0'-4 1/2"		

STRAIGHT BARS

MARK	SIZE	NO.	LENGTH	MARK	SIZE	NO.	LENGTH
BW1	#5	2	45'-10"	B1	#6	13	39'-11"
BW2	#5	6	32'-10"	B2	#6	4	10'-0"
BW3	#5	2	30'-9"	B3	#6	8	9'-0"
BW4	#5	2	28'-8"	B4	#6	8	20'-8"
BW5	#6	5	5'-4"				
BW6	#4	12	7'-4"				
BW7	#4	3	6'-8"	C1	#6	8	9'-3"
BW8	#4	4	4'-1"	C2	#6	8	8'-8"
BW9	#4	1	3'-5"	C3	#6	8	8'-5"
BW10	#4	6	11'-10"				
BW11	#4	2	9'-7"				
BW12	#4	2	6'-10"				
BW13	#4	4	5'-0"	*D1	1/4"	5	3'-6"
BW14	#4	4	2'-11"				
				F1	#4	108	8'-6"

* D1 1/4" Smooth bars shall conform to ASTM designation A36.



Note: Max. Ftg. Press Under: DL + LL + E = 2.72 Tons/Sq. Ft.

STATE OF MONTANA
DEPARTMENT OF HIGHWAYS

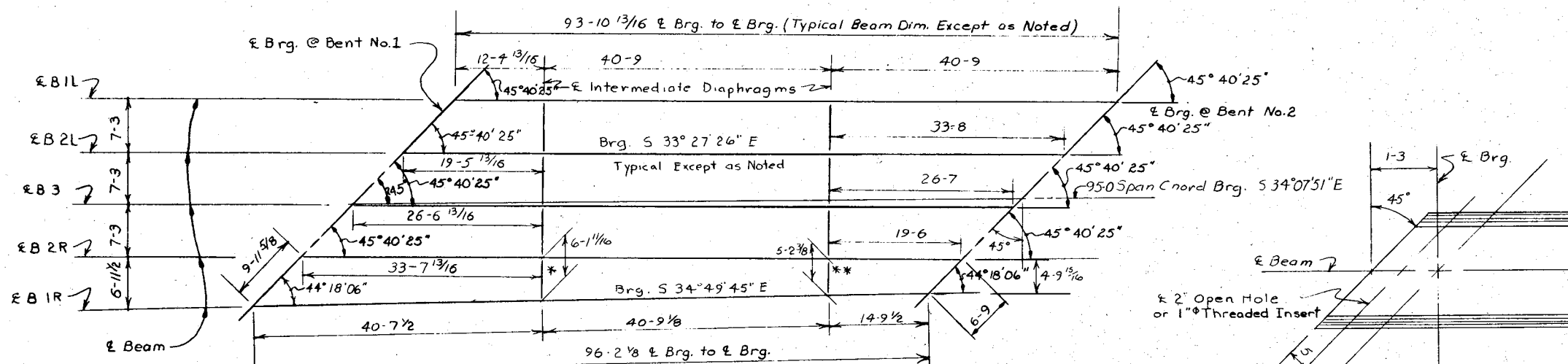
BRIDGE OVER PROSPECT CREEK
AT STA. 237+35.00
FEDERAL AID PROJECT NO. FH FLH 7-1(2)

SANDERS COUNTY

BENT NO. 2

Scale: 1/4" = 1'-0" Except as Noted
(As Constructed) DRAWING NO. 11860

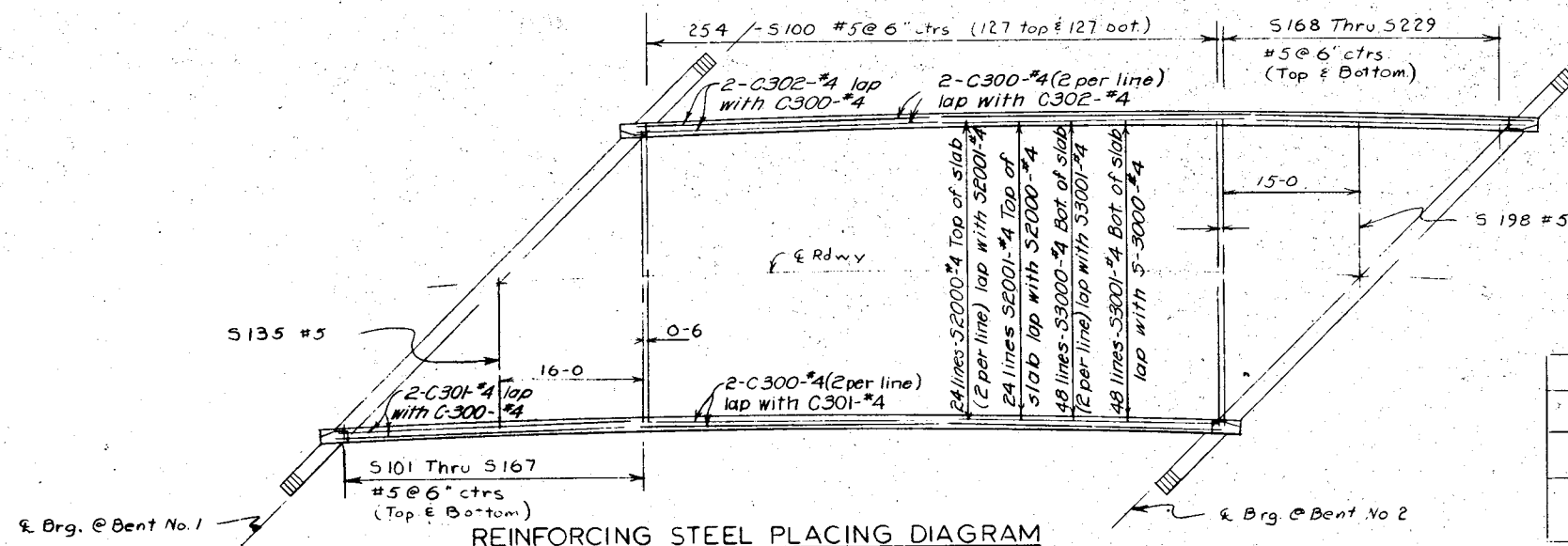
DESIGNED	MLR	2/23/77
DRAWN	JJF	3/23/77
CHECKED	J.C.H.	4/5/77
REVIEWED		
REVIEWED		



ERECTION PLAN
Scale: 1" = 10'-0"

Note: As noted above, the length of the prestressed concrete beams varies, however all beams will be bid as 95'-0" beams.

MODIFIED BEAM END DETAIL
Scale: 3/4" = 1'-0"



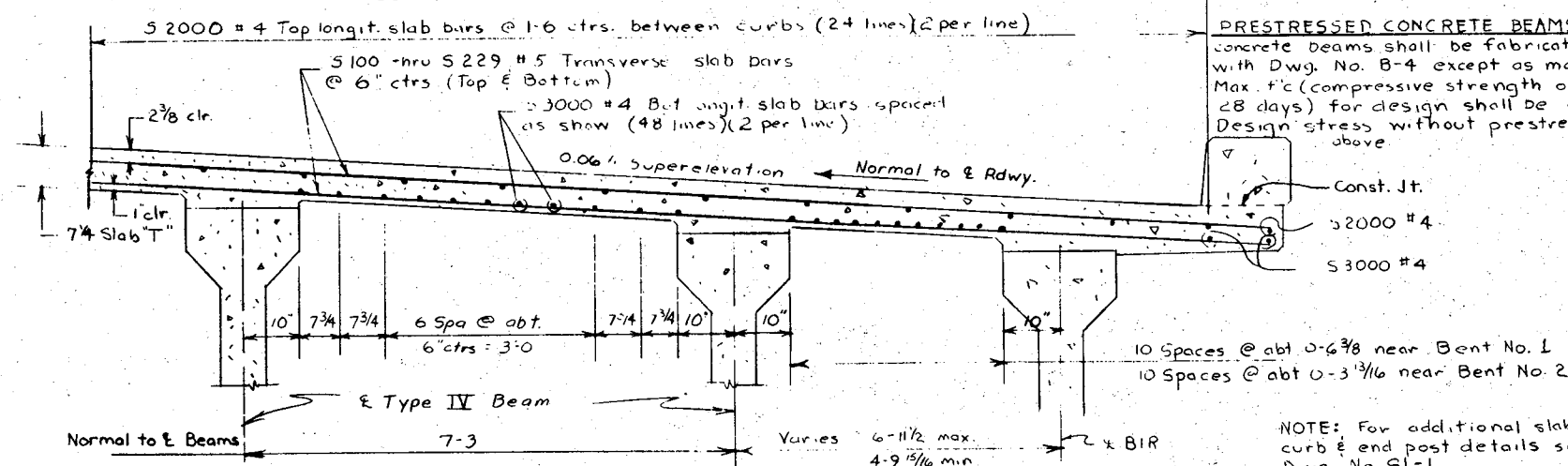
REINFORCING STEEL PLACING DIAGRAM
Scale: 1" = 10'-0"

DEAD LOAD DEFLECTION TABLE							
TOTAL DEFLECTION		POINT					
		0.1	0.2	0.3	0.4	0.5	
93-10 13/16 SPAN	7/16	13/16	1 1/16	1 1/4	1 5/16		
96-2 1/8 SPAN	7/16	13/16	1 1/8	1 7/16	1 7/8		

NOTE: Maximum stress for design in prestressing steel before transfer shall be 0.70 f's.

NOTE: DL Deflections are symm. abt. .5 point.

SPAN LENGTH		93-10 ^{3/16}	96-2
BEAM D.L. STRESSES (P.S.I.)	FB	-1031	-1082
	FT	1220	1280
TOTAL D.L.+L.L. DESIGN STRESSES (P.S.I.)	FB	-2986	-2961
	FT	2817	2822
REQUIRED ULTIMATE MOMENT CAPACITY (FT.-KIPS)		M	5536

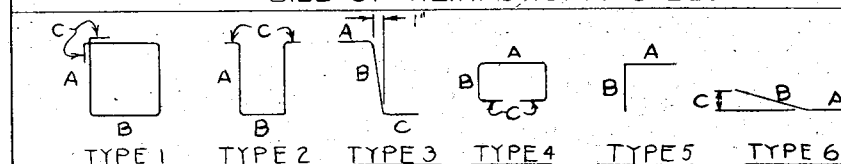


TRANSVERSE SECTION
Scale: 3/4" = 1'-0"

NOTE: For additional slab, curb & end post details see Dwg. No. SL-1.

NOTE: Lap all longitudinal slab and curb bars 1-4 minimum.

BILL OF REINFORCING STEEL



BENT BARS(All dimensions are out to out)								STRAIGHT BARS				STRAIGHT BARS			
MARK	SIZE	NO.	TYPE	LENGTH	A	B	C	MARK	SIZE	NO.	LENGTH	MARK	SIZE	NO.	LENGTH
C1	# 4	270	4	3'-4"	1'-0"	0'-9"	0'-5"	S157	#5	2	28'-5"	S206	#5	2	13'-8"
C2	4	254	3	2'-6"	0'-6"	1'-0"	1'-0"	S158	↑	↑	28'-11"	S207	↑	↑	13'-2"
C3	4	52	1	3'-7"	0'-10"	0'-8"	0-3½	S159			29'-5"	S208			12'-8"
C4	5	68	3	4'-9"	0'-6"	1'-0"	3'-3"	S160			29'-11"	S209			12'-1"
C5	4	4	5	2'-0"	1'-0"	1'-0"		S161			30'-4"	S210			11'-7"
								S162			30'-10"	S211			11'-1"
P2	5	16	6	2'-9"	1-1½	1-7½	0'-6"	S163			31'-4"	S212			10'-6"
P3	4	12	1	6'-3"	0'-10"	2'-0"	0-3½	S164			31'-10"	S213			10'-0"
P4	↑	4	↑	6'-1"	0'-9"	↑	↑	S165			32'-4"	S214			9'-6"
P5	↑	↑	↑	5'-11"	0'-8"	↑	↑	S166			32'-10"	S215			9'-0"
P6				5'-9"	0'-7"			S167			33'-3"	S216			8'-5"
P7				5'-7"	0'-6"			S168			33'-4"	S217			7'-11"
P8	↓	↓	↓	5'-5"	0'-5"	↓	↓	S169			32'-10"	S218			7'-5"
P9	4	4	1	5'-3"	0'-4"	2'-0"	0-3½	S170			32'-4"	S219			6'-10"
								S171			31'-10"	S220			6'-4"
D7	#4	45	2	8'-0"	3'-5"	0'-7"	0-3½	S172			31'-4"	S221			5'-10"
								S173			30'-9"	S222			5'-4"
								S174			30'-3"	S223			4'-9"
								S175			29'-9"	S224			4'-3"
								S176			29'-3"	S225			3'-9"
								S177			28'-9"	S226			3'-2"
								S178			28'-3"	S227			2'-8"
								S179			27'-8"	S228	↓	↓	2'-2"
								S180			27'-2"	S229	#5	2	1'-7"
								S181			26'-8"				
								S182			26'-2"				
								S183			25'-8"	S2000	#4	48	40'-0"
								S184			25'-1"	S2001	#4	24	19'-9"
								S185			24'-7"	S3000	#4	96	40'-0"
								S186			24'-1"	S3001	#4	48	19'-9"
								S187			23'-7"	C300	#4	16	40'-0"
								S188			23'-0"	C301	#4	4	24'-9"
								S189			22'-6"	C302	#4	4	21'-9"
								S190			22'-0"	D5	#4	12	5'-5"
								S191			21'-6"	D50	#4	2	4'-4"
								S192			21'-0"	D500	#4	2	3'-5"
								S193			20'-5"				
								S194			19'-11"	D6	#6	12	5'-5"
								S195			19'-5"	D60	#6	2	4'-4"
								S196			18'-11"	D600	#6	2	3'-5"
								S197			18'-4"				
								S198			17'-10"	D8	#6	6	5'-4"
								S199			17'-4"				
								S200			16'-10"	P1	#5	24	2'-9"
								S201			16'-3"				
								S202			15'-9"				
								S203			15'-3"				
								S204	↓	↓	14'-9"				
								S205	#5	2	14'-2"				

* D50 & D60 Bars are for the diaph. marked *

** D500 & D600 Bars are for the diaph. marked **

STATE OF MONTANA DEPARTMENT OF HIGHWAYS

BRIDGE OVER PROSPECT CREEK
AT STA. 237+35.00

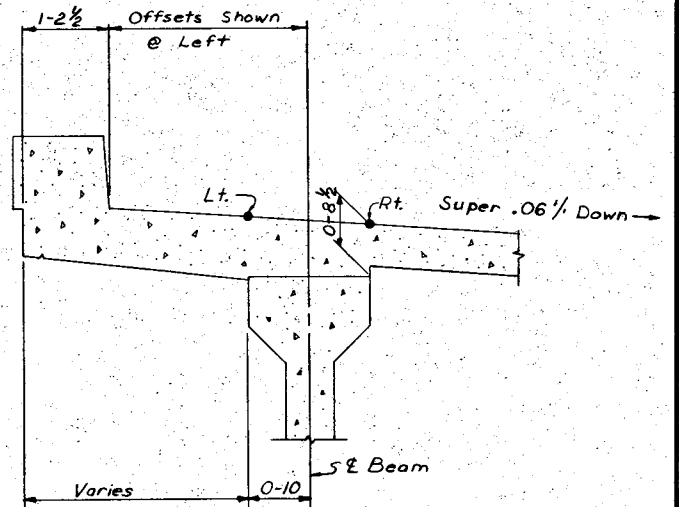
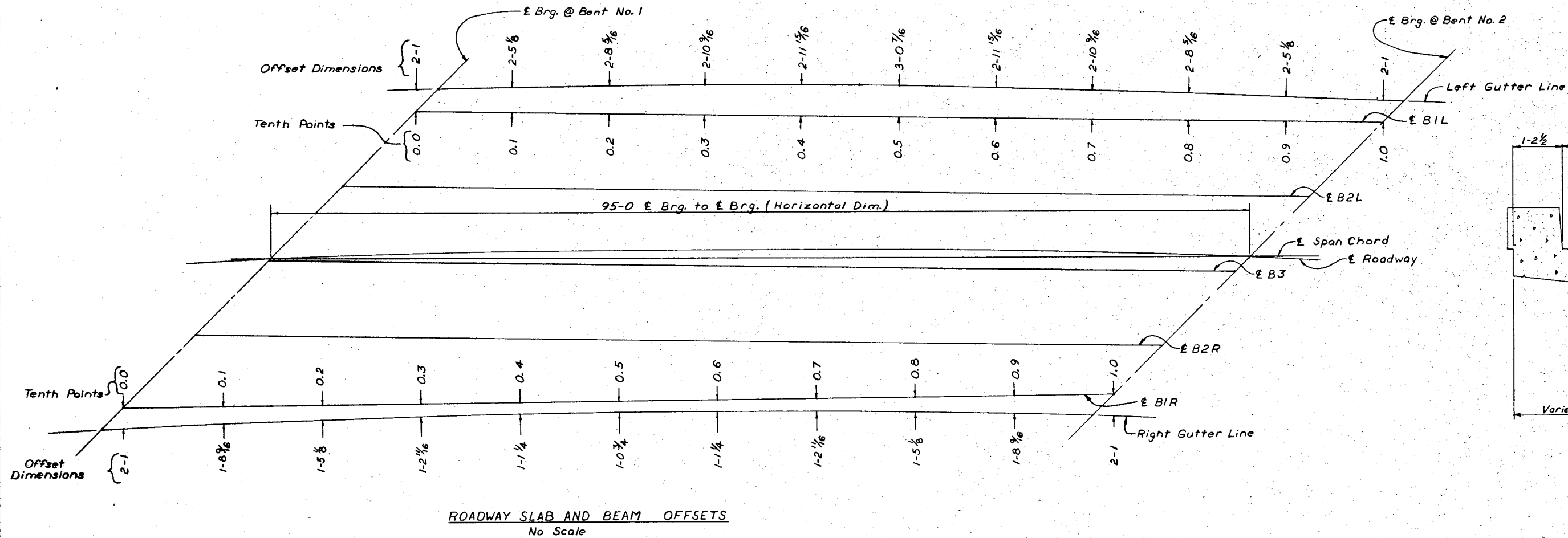
FEDERAL AID PROJECT NO. FH FLH 7-1(2)

SANDERS COUNTY ERECTION PLAN & SLAB DETAILS

Scale: As Noted

(As Constructed) DRAWING NO. 11861

DESIGNED	MLR	2-77
DRAWN	JJF	3-77
CHECKED	J.C.H.	4-5-77
REVIEWED		
REVIEWED		



LOCATION OF ELEVATIONS
(Ahead on Line)
Scale: 3/4" = 1'0"

TOP OF SLAB ELEVATIONS												
LOCATION		0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Lt. Gutter Line		3558.91	3558.65	3558.39	3558.14	3557.88	3557.62	3557.36	3557.10	3556.84	3556.58	3556.32
B1L	Lt.	3558.83	3558.55	3558.28	3558.01	3557.75	3557.49	3557.23	3556.98	3556.73	3556.49	3556.24
	Rt.	3558.73	3558.46	3558.18	3557.91	3557.65	3557.39	3557.13	3556.88	3556.63	3556.39	3556.14
B2L	Lt.	3558.62	3558.34	3558.06	3557.78	3557.52	3557.25	3556.99	3556.74	3556.48	3556.23	3555.99
	Rt.	3558.52	3558.24	3557.96	3557.69	3557.42	3557.15	3556.89	3556.63	3556.38	3556.13	3555.88
B3	Lt.	3558.41	3558.12	3557.84	3557.56	3557.29	3557.02	3556.75	3556.49	3556.24	3555.98	3555.73
	Rt.	3558.31	3558.02	3557.74	3557.46	3557.19	3556.92	3556.65	3556.39	3556.13	3555.88	3555.63
B2R	Lt.	3558.21	3557.91	3557.63	3557.34	3557.06	3556.79	3556.52	3556.25	3555.99	3555.73	3555.48
	Rt.	3558.11	3557.82	3557.53	3557.24	3556.96	3556.69	3556.42	3556.15	3555.89	3555.63	3555.38
B1R	Lt.	3558.01	3557.72	3557.44	3557.15	3556.88	3556.61	3556.34	3556.08	3555.82	3555.57	3555.32
	Rt.	3557.91	3557.62	3557.34	3557.05	3556.78	3556.51	3556.24	3555.98	3555.72	3555.46	3555.21
Rt. Gutter Line		3557.84	3557.57	3557.30	3557.03	3556.76	3556.49	3556.22	3555.95	3555.68	3555.41	3555.14

Note: Gutter line elevations are directly opposite from the 10th. points of the beams.

STATE OF MONTANA
DEPARTMENT OF HIGHWAYS
BRIDGE OVER PROSPECT CREEK

AT STA. 237+35.00

FEDERAL AID PROJECT NO. FH FLH 7-1(2)

SANDERS COUNTY

SLAB OFFSETS & ELEVATIONS

Scale: As Noted

(As Constructed) DRAWING NO. 11862

DESIGNED	M. Rutherford	2-14-77
DRAWN	M. Rutherford	3-7-77
CHECKED	J. Hill	4-5-77
REVISION		
REVISION		

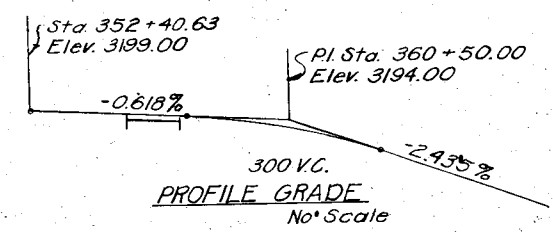
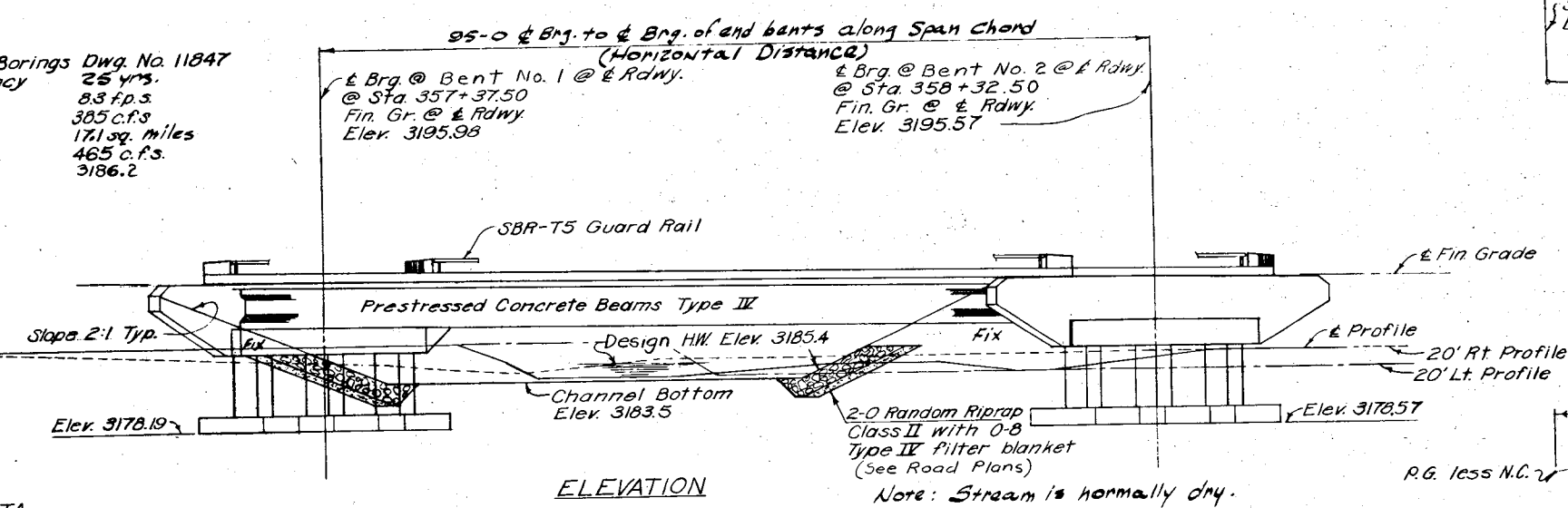
STREAM DATA

Ice Light
 Drift Severe
 Scour Some
 Subsoil See Log of Borings Dwg. No. 11847
 Design Flood Frequency 25 yrs.
 Design Velocity 8.3 ft./s.
 Design Flow 385 c.f.s.
 Drainage Area 171 sq. miles
 Basic Flood (100-yr.) 465 c.f.s.
 Basic H.W. Elev. 3186.2

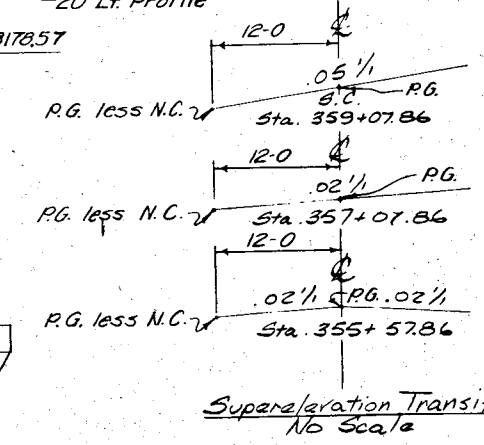
CURVE DATA

$\Delta = 47^\circ 28' \text{ L.T.}$
 $\Delta c = 41' 28''$
 $\Theta s = 3' 00''$
 $Ts = 705.04'$
 $Dc = 4' 00''$
 $Ls = 150.00'$
 $Lc = 1036.67'$
 $R = 1432.39'$
 $e = .05\%$

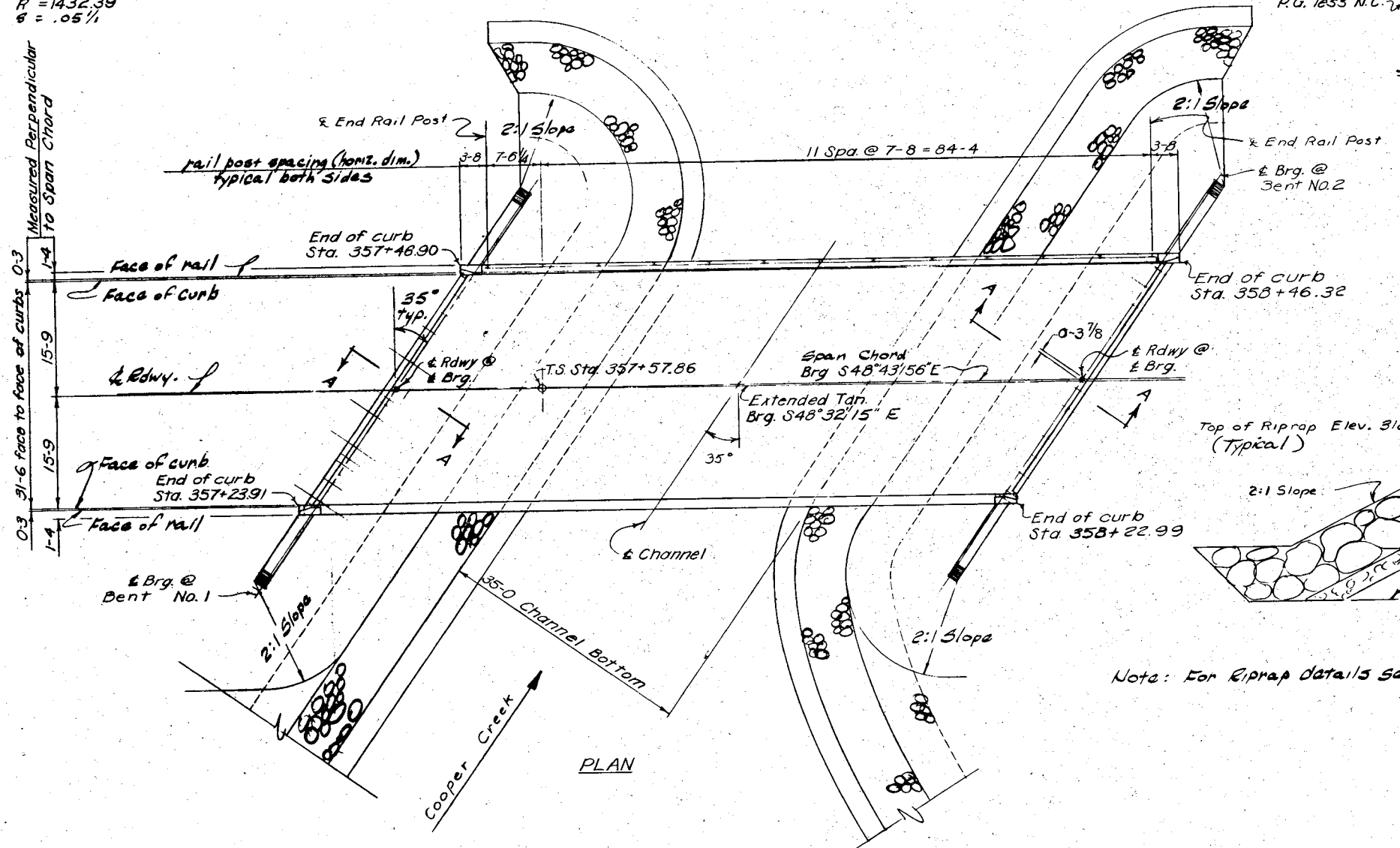
Measured Perpendicular
 0-3 31-6 Face to face of curbs
 1-4 15-9
 1-4 15-9
 1-4 15-9



* NOTE: Superstructure concrete to be Class "BD". See special provisions.
 NOTE: Structure excavation shall be calculated from the natural ground lines as they exist in the vicinity of the bridge prior to the beginning of construction.



Note: Slab and curbs are to be built parallel to the span chord on the structure.
 Note: Skew Angles are measured from the span chord of the structure.



Note: For Riprap details see road plans.

SECTION A-A

Scale: 3/8" = 1'-0"

NOTES
 FINISHED GRADE: FINISHED PLAN GRADE OF BRIDGE AT ROADWAY VARIES FROM PROFILE GRADE SHOWN ON ROAD PLANS. SEE SUPER-ELEVATION TRANSITION THIS SHEET.

LIVE LOAD: STANDARD HS20-44 LOADING.

SPECIFICATIONS: MONTANA DEPARTMENT OF HIGHWAYS AND THE MONTANA HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 1976 EDITION, AND ANY AMENDMENTS THERETO, AND SPECIAL PROVISIONS SHALL GOVERN UNLESS OTHERWISE NOTED. DESIGN PREPARED IN ACCORDANCE WITH A.A.S.H.T.O. SPECIFICATIONS, 1971 EDITION, AND ANY AMENDMENTS THERETO.

APPROVAL: SHOP PLANS SHALL BE APPROVED BY THE STATE OF MONTANA, DEPARTMENT OF HIGHWAYS BEFORE FABRICATION IS BEGUN.

* CAST IN PLACE CONCRETE: EXCEPT OTHERWISE NOTED, ALL CONCRETE SHALL BE CLASS "AD". AN "AIR ENTRAINING AGENT" SHALL BE ADDED TO ALL CONCRETE EXCEPT CLASS "AS". CHAMFER ALL EXPOSED EDGES OF CONCRETE WITH ENCLOSED ANGLE LESS THAN 120°. 3/4" AND FILLET ENTRANT ANGLES 3/4" UNLESS OTHERWISE NOTED. ALL FORMS FOR DECK SLAB SHALL BE REMOVED.

STRUCTURAL STEEL: ALL STRUCTURAL STEEL SHALL BE MEASURED AND PAID FOR ON THE LUMP SUM BASIS AS SET FORTH IN THE STANDARD SPECIFICATIONS. ESTIMATED WEIGHT = 576 POUNDS.

FOR REQUIREMENTS GOVERNING THE FABRICATION OF "STRUCTURAL STEEL" SEE THE STANDARD SPECIFICATIONS. TO AVOID OVERSIGHTS THESE REQUIREMENTS SHALL BE CLEARLY NOTED ON THE SHOP DRAWINGS.

ALL STRUCTURAL STEEL AND BRIDGE RAIL SHALL RECEIVE ONE (1) SHOP COAT OF RED LEAD OR BASIC LEAD SILICO 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 OR AS OTHERWISE SPECIFIED IN THE "SPECIAL PROVISIONS".

FOOTINGS: ELEVATIONS SHOWN FOR BOTTOM OF FOOTINGS ARE APPROXIMATE ONLY. FINAL ELEVATIONS TO BE DETERMINED BY THE ENGINEER.

PROTECTIVE COATING: DECK, CURBS AND CONCRETE END POSTS SHALL BE GIVEN A PROTECTIVE COATING OF BOILED LINSEED OIL. "SEE STANDARD SPECIFICATIONS".

UTILITIES: FOR LOCATION OF UTILITIES, SEE APPROPRIATE ROAD PLANS SHEET.

COVERING: THE MINIMUM COVERING, MEASURED FROM THE SURFACE OF THE CONCRETE TO THE FACE OF ANY REINFORCEMENT BAR, SHALL BE NOT LESS THAN 2 INCHES EXCEPT AS FOLLOWS OR OTHERWISE NOTED.

BOTTOM OF SLAB	1 INCH
STIRRUPS AND TIES	1 1/2 INCHES
FOOTINGS AND PIER SHAFTS	3 INCHES

REINFORCING STEEL: ALL REINFORCEMENT STEEL SHALL BE OF THE DEFORMED TYPE AND SHALL MEET THE REQUIREMENTS OF ASTM SPECIFICATIONS A615, GRADE 60 (AASHTO M 31) EXCEPT FOR THE REBAR IN THE PRESTRESSED CONCRETE BEAMS WHICH MAY BE GRADE 40.

SETTING OF MASONRY PLATES: CARE SHALL BE TAKEN IN PLACING REINFORCING STEEL SO AS TO CLEAR ANCHOR BOLTS. MASONRY PLATES SHALL BE PLACED ON THREE LAYERS OF CANVAS THOROUGHLY SWABBED WITH RED LEAD AS CALLED FOR IN THE STANDARD SPECIFICATIONS. THE CONTRACTOR SHALL FINISH CONCRETE UNDER MASONRY PLATES TO THE EXACT ELEVATION SHOWN. BUSH HAMMERING WILL BE PERMITTED AND USED ONLY AS A MEANS OF LEVELING THE CONCRETE SURFACE TO ASSURE FULL AND LEVEL BEARING AND TO REMOVE LAITANCE, LOOSE AND FOREIGN MATERIAL. STEEL SHIMS SHALL BE USED TO BRING THE MASONRY PLATES UP TO GRADE IF NECESSARY. STEEL SHIMS SHALL BE THE SAME SIZE EXCEPT FOR THICKNESS AS THE MASONRY PLATE. MINIMUM THICKNESS OF ANY SHIMS SHALL BE 1/8". THE COST OF BUSH HAMMERING AND SHIMS, IF ANY, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CLASS "AD" CONCRETE.

BACKFILL: THE BACKFILL AT 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.

* SIZE OF CANVAS: THE SIZE OF CANVAS SHEET SHALL BE NOT LESS THAN THE SIZE OF THE MASONRY PLATE PLUS 1/2 INCH IN ALL DIMENSIONS EXCEPT THICKNESS. SEQUENCE OF WORK: FOR SEQUENCE OF WORK SEE SPECIAL PROVISIONS. MAINTENANCE OF TRAFFIC: FOR MAINTENANCE OF TRAFFIC SEE SPECIAL PROVISIONS.

STATE OF MONTANA DEPARTMENT OF HIGHWAYS

BRIDGE OVER COOPER CREEK

AT STA. 357+85.00

FEDERAL AID PROJECT NO. FH-FLH 7-1(2)

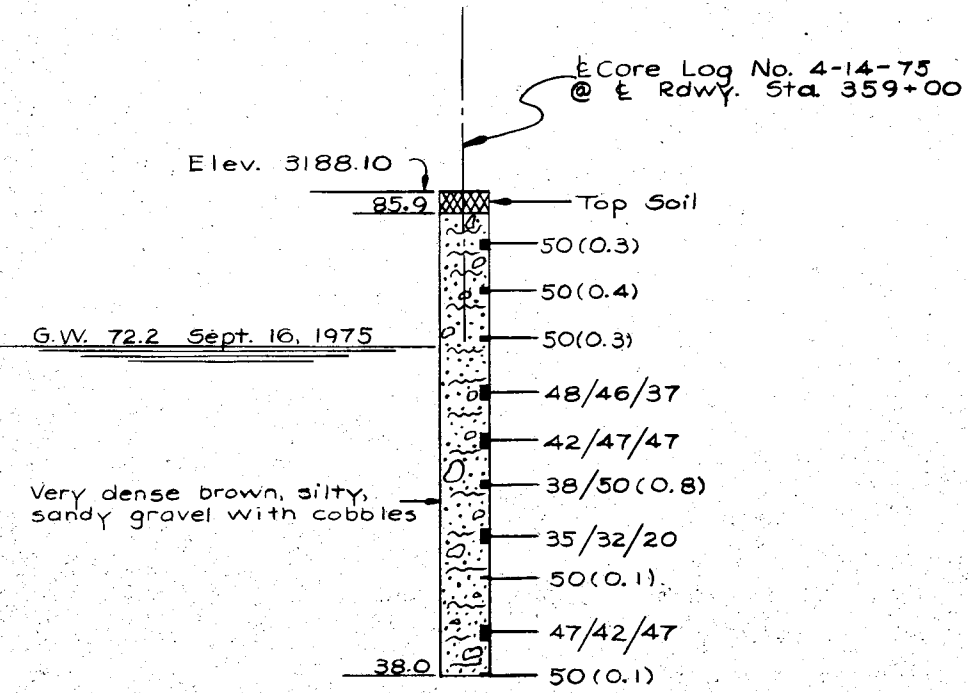
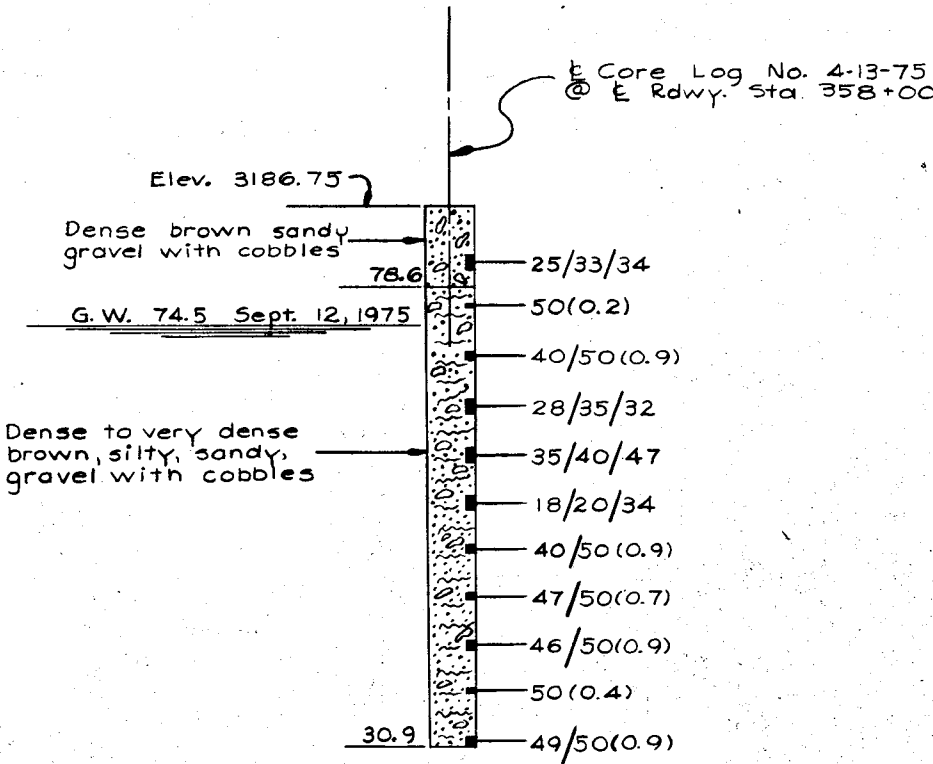
SANDERS COUNTY

GENERAL LAYOUT

Scale: 1" = 10'-0" Except as noted
 DRAWING NO. 11846

DESIGNED	2-77	LFB
DRAWN	2-77	GEC
CHECKED	4-22-77	J.C.H.
APPROVED	6-15-77	Hes.
REVISED		
REVISED		

(As Constructed)



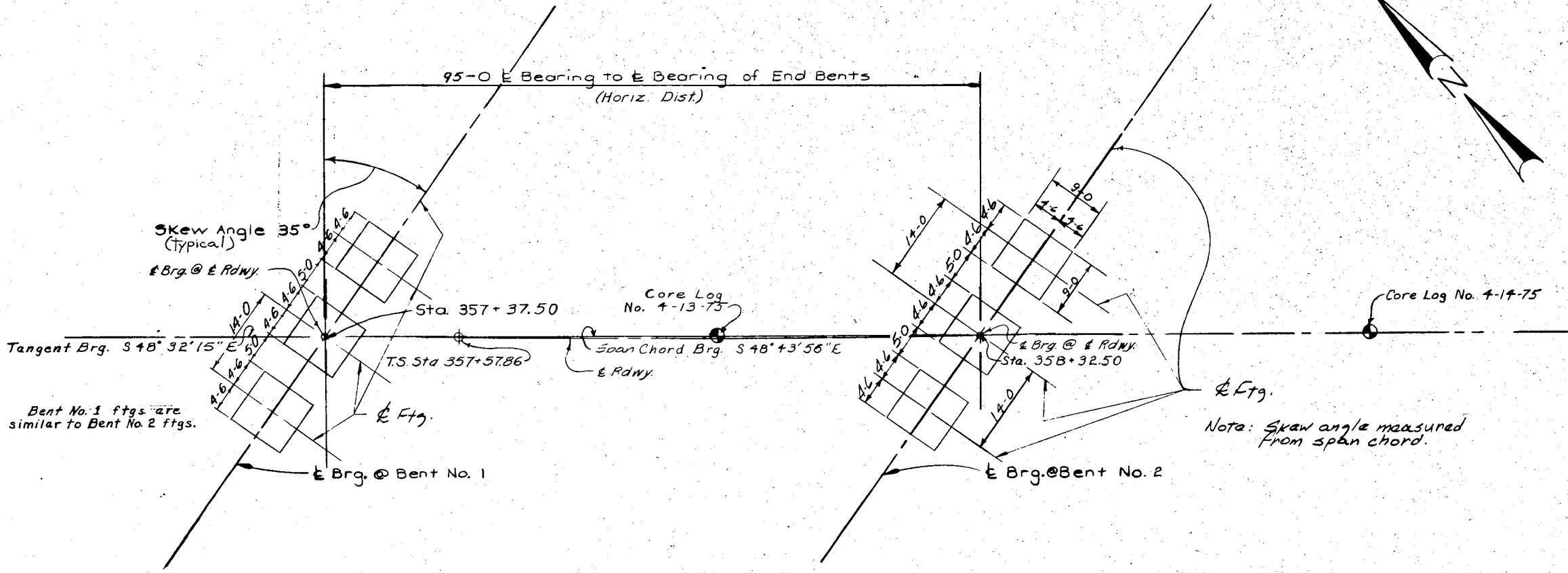
NOTES

SOILS AND FOUNDATION MATERIALS: BORINGS WERE TAKEN BY THE STATE OF MONTANA, DEPARTMENT OF HIGHWAYS AT THE POINTS SHOWN ON THE GENERAL LAYOUT OR FOOTING PLAN.

THE SERIES OF NUMBERS SHOWN ON THE LOG OF BORINGS INDICATES THE NUMBER OF BLOWS PER 6" 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 POUND HAMMER HAVING A 30" DROP. THE TOTAL PENETRATION OF THE SAMPLER TUBE IS INDICATED ON THE CORE LOGS AFTER EACH SERIES IF 6" PENETRATION WAS NOT ACHIEVED IN 50 BLOWS.

THE STATE OF MONTANA, DEPARTMENT OF HIGHWAYS, 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.

LOG OF BORINGS
Scale: Horizontal - No Scale
Vertical - 1" = 10'-0"



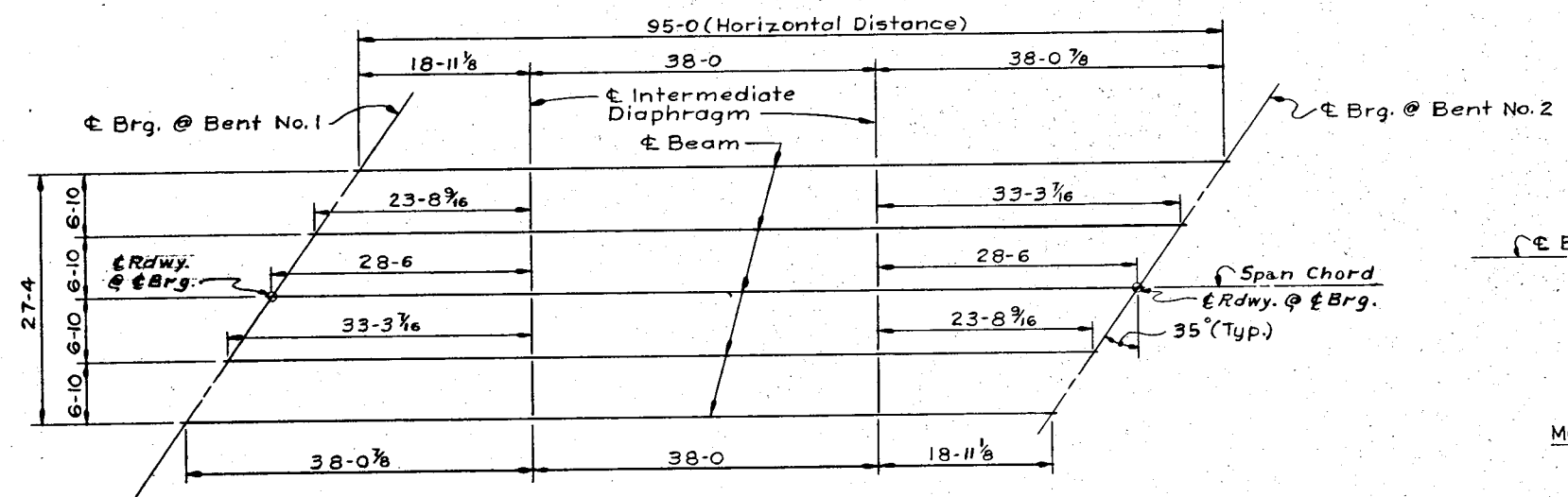
FOOTING PLAN
Scale: 1" = 10'-0"

STATE OF MONTANA
DEPARTMENT OF HIGHWAYS
BRIDGE OVER COOPER CREEK
AT STA. 357+85.00
FEDERAL AID PROJECT NO. FH-FLH 7-1(2)
SANDERS COUNTY
FOOTING PLAN

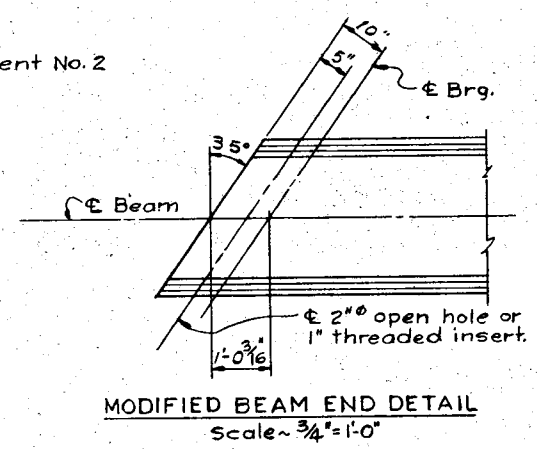
DESIGNED		
DRAWN	10-24-75	G.J.M.
CHECKED	4-22-77	J.C.H.
REVISED		
REVISED		
REVISED		

(As Constructed)

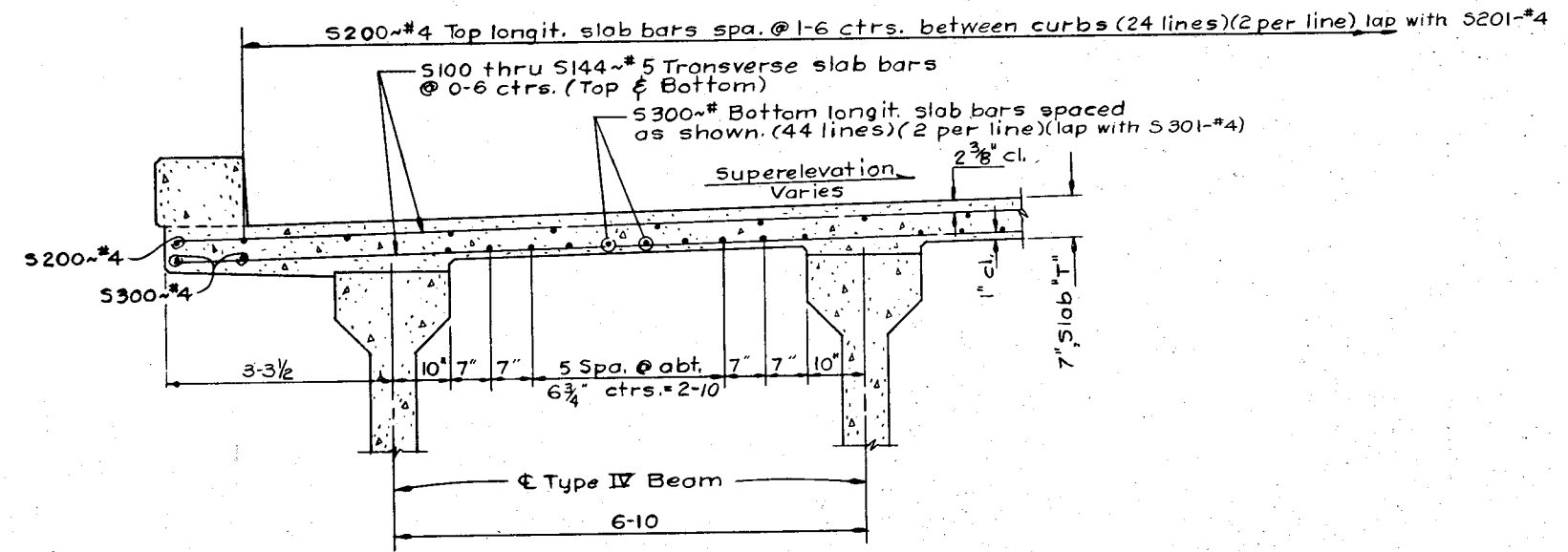
Scale: As Noted
DRAWING NO. 11547



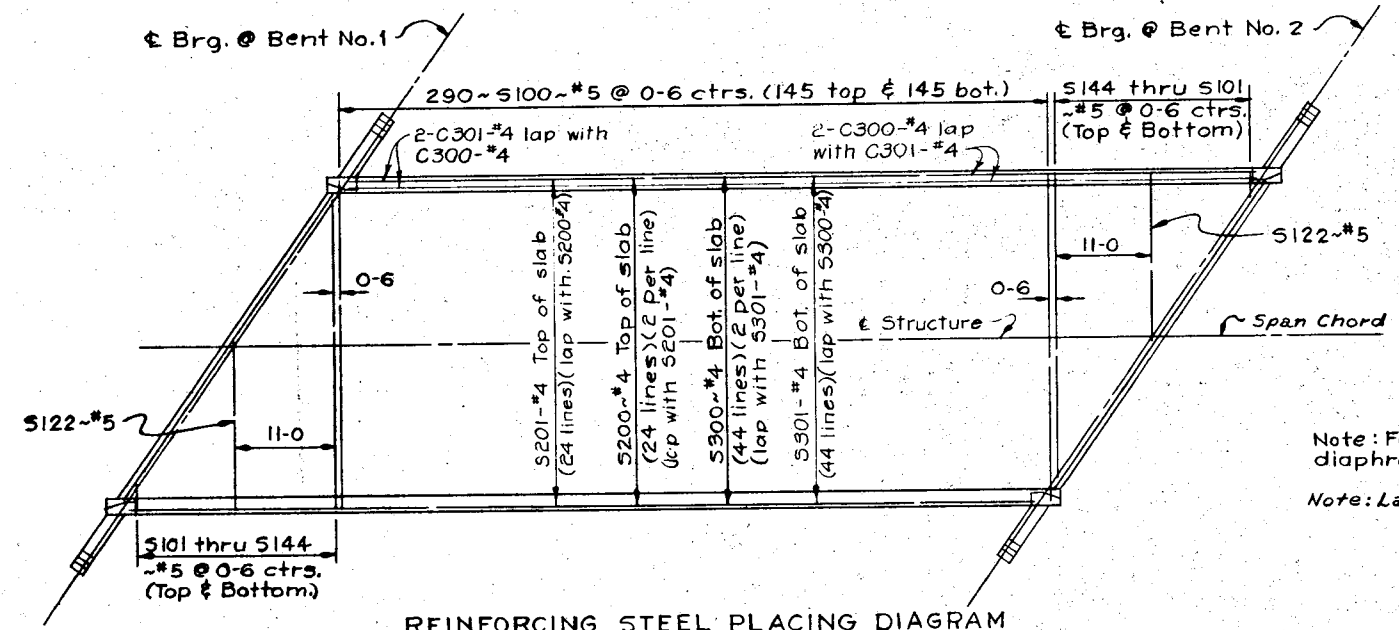
ERECTOR PLAN
Scale ~ 1" = 10'-0"



MODIFIED BEAM END DETAIL
Scale ~ 3/4" = 1'-0"



TRANSVERSE SECTION
Scale ~ 3/4" = 1'-0"



REINFORCING STEEL PLACING DIAGRAM
Scale ~ 1" = 10'-0"

BILL OF REINFORCING STEEL											
TYPE 1 TYPE 2 TYPE 3 TYPE 4 TYPE 5 TYPE 6											
BENT BARS (All dimensions are out to out)											
MARK	SIZE	No.	TYPE	LENGTH	A	B	C	MARK	SIZE	No.	LENGTH
C1	#4	266	4	3'-4"	1'-0"	0'-9"	0'-5"	S100	#5	290	33'-7"
C2	4	250	3	2'-6"	0'-6"	1'-0"	1'-0"	101	4	2	2'-6"
C3	4	52	1	3'-7"	0'-10"	0'-8"	0'-3 1/2"	102	4	4	3'-3"
C4	5	68	3	4'-9"	0'-6"	1'-0"	3'-3"	103	4	4	3'-11"
C5	4	4	5	2'-0"	1'-0"	1'-0"		104	4	4	4'-8"
								105	4	4	5'-4"
								106	4	4	6'-1"
D7	4	48	2	8'-0"	3'-5"	0'-7"	0'-3 1/2"	107	4	4	6'-10"
								108	4	4	7'-6"
								109	4	4	8'-3"
P2	5	16	6	2'-9"	1'-1 1/2"	1'-7 1/2"	0'-6"	110	4	4	8'-11"
3	4	12	1	6'-3"	0'-10"	2'-0"	0'-3 1/2"	111	4	4	9'-8"
4	4	4	1	6'-1"	0'-9"			112	4	4	10'-4"
5	4	4	1	5'-11"	0'-8"			113	4	4	11'-1"
6	4	4	1	5'-9"	0'-7"			114	4	4	11'-10"
7	4	4	1	5'-7"	0'-6"			115	4	4	12'-6"
8	4	4	1	5'-5"	0'-5"			116	4	4	13'-3"
P9	#4	4	1	5'-3"	0'-4"	2'-0"	0'-3 1/2"	117	4	4	13'-11"
								118	4	4	14'-8"
								119	4	4	15'-4"
								120	4	4	16'-1"
								121	4	4	16'-10"
								122	4	4	17'-6"
								123	4	4	18'-3"
								124	4	4	18'-11"
								125	4	4	19'-8"
								126	4	4	20'-4"
								127	4	4	21'-1"
								128	4	4	21'-10"
								129	4	4	22'-6"
								130	4	4	23'-3"
								131	4	4	23'-11"
S132	#5	4	1	24'-8"							

PRESTRESSED CONCRETE BEAMS: Prestressed concrete beams shall be fabricated in accordance with Dwg. No. B-4 except as modified hereon. Maximum f_c (Compressive strength of concrete at 28 days) for design shall be 6000 p.s.i. Design stresses (before prestress) are as follows:

Span Length		95'-0
Beam D.L. Stresses (p.s.i.)	Ft	1249
	Fb	-1055
Total D.L.+L.L. Design Stresses (p.s.i.)	Ft	2787
	Fb	-2929
Ultimate Design Moment		
$\frac{1.3}{9} [D.L. + \frac{5}{3} (L.L. + I)]$ (ft. kips)		M 5379

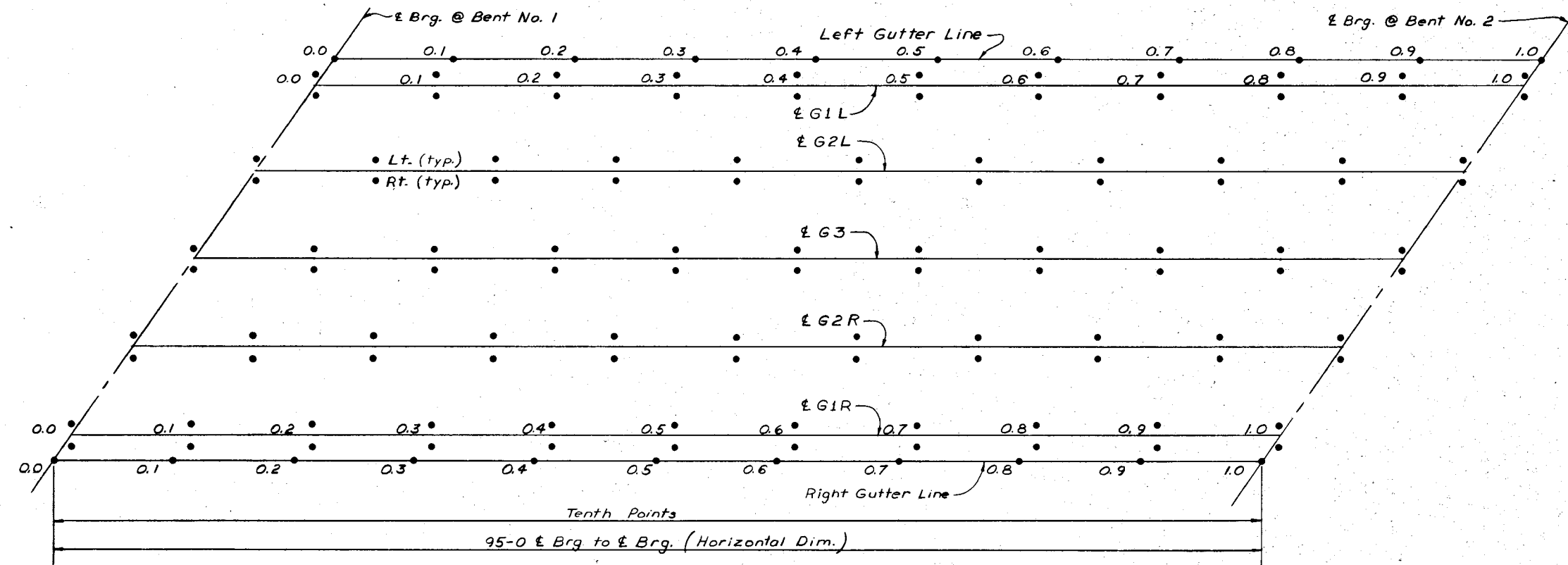
Dead Load Deflection Table					
Total Deflection	Point				
	0.1	0.2	0.3	0.4	0.5
95'-0 Span	3/8	3/4	1 1/16	1 1/4	1 5/16

Note: Deflections are symm. about .5 pt.
Note: Maximum stress for design in prestressing steel before transfer shall be 0.70 f_s .

Note: For additional slab, curb, intermediate diaphragm & end post details see Dwg. No. SL-1.
Note: Lap all longitudinal slab and curb bars 1'-4 Min.

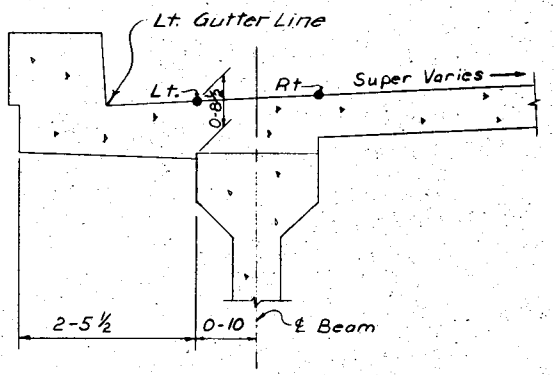
STATE OF MONTANA
DEPARTMENT OF HIGHWAYS
BRIDGE OVER COOPER CREEK
AT STA. 357+85.00
FEDERAL AID PROJECT NO. FH-FLH 7-1(2)
SANDERS COUNTY
ERECTION PLAN
& SLAB DETAILS
Scale ~ As Noted
(As Constructed) DRAWING NO. 11849

DESIGNED		
DRAWN	FLS	2-4-77
CHECKED	J.C.H.	4-22-77
REVIEWED		
REVIEWED		
REVIEWED		



TENTH POINTS LOCATION
No Scale

TOP OF SLAB ELEVATIONS												
LOCATION		0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Lt. Gutter Line		3195.52	3195.46	3195.39	3195.33	3195.26	3195.20	3195.13	3195.07	3195.01	3194.95	3194.89
G1L	Lt.	3195.57	3195.50	3195.44	3195.38	3195.31	3195.25	3195.19	3195.13	3195.06	3195.00	3194.95
	Rt.	3195.61	3195.55	3195.49	3195.43	3195.36	3195.30	3195.24	3195.19	3195.13	3195.07	3195.01
G2L	Lt.	3195.77	3195.71	3195.66	3195.61	3195.56	3195.50	3195.45	3195.40	3195.34	3195.29	3195.25
	Rt.	3195.81	3195.76	3195.71	3195.66	3195.61	3195.56	3195.51	3195.46	3195.41	3195.36	3195.31
G3	Lt.	3195.96	3195.92	3195.87	3195.83	3195.79	3195.74	3195.70	3195.66	3195.62	3195.57	3195.53
	Rt.	3196.00	3195.96	3195.92	3195.88	3195.84	3195.80	3195.76	3195.72	3195.68	3195.64	3195.60
G2R	Lt.	3196.14	3196.11	3196.08	3196.05	3196.01	3195.98	3195.94	3195.91	3195.88	3195.85	3195.81
	Rt.	3196.18	3196.15	3196.12	3196.09	3196.06	3196.03	3196.00	3195.97	3195.94	3195.91	3195.88
G1R	Lt.	3196.32	3196.29	3196.27	3196.25	3196.22	3196.20	3196.18	3196.15	3196.13	3196.11	3196.08
	Rt.	3196.36	3196.34	3196.32	3196.29	3196.27	3196.25	3196.23	3196.21	3196.19	3196.17	3196.15
Rt. Gutter Line		3196.39	3196.37	3196.35	3196.33	3196.31	3196.29	3196.27	3196.25	3196.23	3196.21	3196.20



LOCATION OF ELEVATIONS
(Ahead on Line)
Scale: 3/4" = 1'-0"

STATE OF MONTANA
DEPARTMENT OF HIGHWAYS

BRIDGE OVER COOPER CREEK

AT STA. 357+85.00

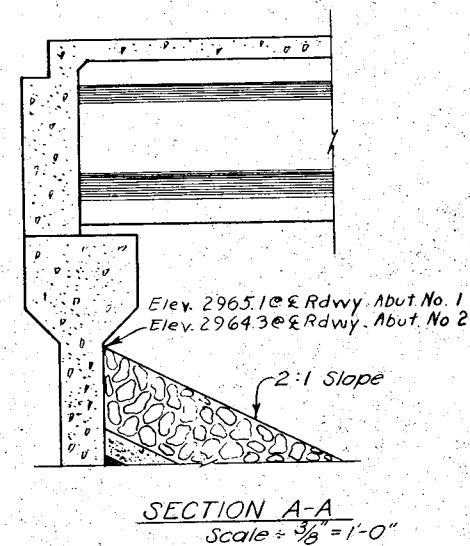
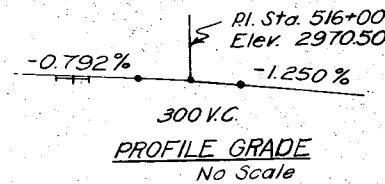
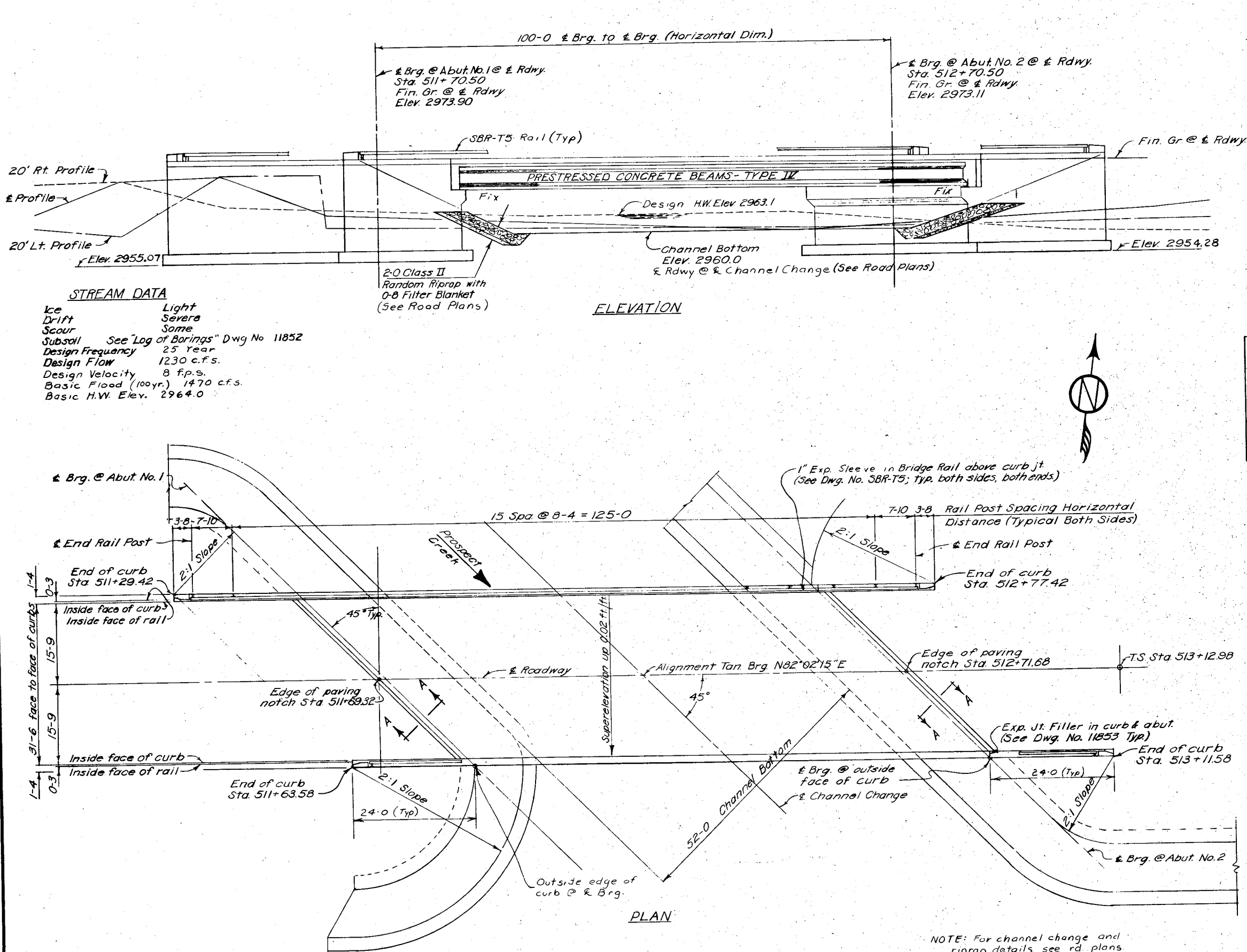
FEDERAL AID PROJECT NO. FH-FLH 7-1(2)

SANDERS COUNTY

TOP OF SLAB ELEVATIONS

Scale: As Noted
(As Constructed) DRAWING NO. 11850

DESIGNED	L. Brozda	2-18-77
DRAWN	M. Rutherford	3-1-77
CHECKED	J.C.H.	4-22-77
REVISION		
REVISION		
REVISION		



NOTES
FINISHED GRADE: FINISHED PLAN GRADE OF BRIDGE AT ROADWAY IS THE SAME AS PROFILE GRADE SHOWN ON ROAD PLANS.

LIVE LOAD: STANDARD HS20-44 LOADING.

SPECIFICATIONS: MONTANA DEPARTMENT OF HIGHWAYS AND THE MONTANA HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 1976 EDITION, AND ANY AMENDMENTS THERETO, AND SPECIAL PROVISIONS SHALL GOVERN UNLESS OTHERWISE NOTED. DESIGN PREPARED IN ACCORDANCE WITH A.A.S.H.T.O. SPECIFICATIONS, 1973 EDITION, AND ANY AMENDMENTS THERETO.

APPROVAL: SHOP PLANS SHALL BE APPROVED BY THE STATE OF MONTANA, DEPARTMENT OF HIGHWAYS BEFORE FABRICATION IS BEGUN.

*CAST IN PLACE CONCRETE: EXCEPT AS OTHERWISE NOTED, ALL CONCRETE SHALL BE CLASS "AD" AN AIR ENTRAINING AGENT SHALL BE ADDED TO ALL CONCRETE EXCEPT CLASS "AS". CHAMFER ALL EXPOSED EDGES OF CONCRETE WITH ENCLOSED ANGLE LESS THAN 120°, 3/4" AND FILLET ENTRANT ANGLES 3/4" UNLESS OTHERWISE NOTED. ALL FORMS FOR DECK SLAB SHALL BE REMOVED.

STRUCTURAL STEEL: ALL STRUCTURAL STEEL SHALL BE MEASURED AND PAID FOR ON THE LUMP SUM BASIS AS SET FORTH IN THE STANDARD SPECIFICATIONS. ESTIMATED WEIGHT = 666 POUNDS.

FOR REQUIREMENTS GOVERNING THE FABRICATION OF "STRUCTURAL STEEL" SEE THE STANDARD SPECIFICATIONS. TO AVOID OVERSIGHTS THESE REQUIREMENTS SHALL BE CLEARLY NOTED ON THE SHOP DRAWINGS.

ALL STRUCTURAL STEEL AND BRIDGE RAIL SHALL RECEIVE ONE (1) SHOP COAT OF RED LEAD OR BASIC LEAD SILICO 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 OR AS OTHERWISE SPECIFIED IN THE "SPECIAL PROVISIONS."

FOOTINGS: ELEVATIONS SHOWN FOR BOTTOM OF FOOTINGS ARE APPROXIMATE ONLY. FINAL ELEVATIONS TO BE DETERMINED BY THE ENGINEER.

PROTECTIVE COATING: DECK, CURBS AND CONCRETE END POSTS SHALL BE GIVEN A PROTECTIVE COATING OF BOILED LINSEED OIL. "SEE STANDARD SPECIFICATIONS."

UTILITIES: FOR LOCATION OF UTILITIES, SEE APPROPRIATE ROAD PLANS SHEET.

COVERING: THE MINIMUM COVERING, MEASURED FROM THE SURFACE OF THE CONCRETE TO THE FACE OF ANY REINFORCEMENT BAR, SHALL BE NOT LESS THAN 2 INCHES EXCEPT AS FOLLOWS OR OTHERWISE NOTED.

BOTTOM OF SLAB 1 INCH
STIRRUPS AND TIES 1 1/2 INCHES
FOOTINGS AND PIER SHAFTS 3 INCHES

SETTING OF MASONRY PLATES: CARE SHALL BE TAKEN IN PLACING REINFORCING STEEL SO AS TO CLEAR ANCHOR BOLTS. MASONRY PLATES SHALL BE PLACED ON THREE LAYERS OF CANVAS THOROUGHLY SWABBED WITH RED LEAD AS CALLED FOR IN THE STANDARD SPECIFICATIONS. THE CONTRACTOR SHALL FINISH CONCRETE UNDER MASONRY PLATES TO THE EXACT ELEVATION SHOWN. BUSH HAMMERING WILL BE PERMITTED AND USED ONLY AS A MEANS OF LEVELING THE CONCRETE SURFACE TO ASSURE FULL AND LEVEL BEARING AND TO REMOVE LAITANCE, LOOSE AND FOREIGN MATERIAL. STEEL SHIMS SHALL BE USED TO BRING THE MASONRY PLATES UP TO GRADE IF NECESSARY. STEEL SHIMS SHALL BE THE SAME SIZE EXCEPT FOR THICKNESS AS THE MASONRY PLATE. MINIMUM THICKNESS OF ANY SHIMS SHALL BE 1/8". THE COST OF BUSH HAMMERING AND SHIMS, IF ANY, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CLASS "AD" CONCRETE.

BACKFILL AT ABUTMENTS: SUPERSTRUCTURE SHALL BE IN PLACE BEFORE ANY BACKFILL IS PLACED AGAINST THE ABUTMENTS. FILLS AT THE TWO ENDS OF THE STRUCTURE SHALL BE KEPT AT ABOUT THE SAME ELEVATION DURING THE PROCESS OF BACKFILLING. SEE ARTICLE 4573(C) OF THE STANDARD SPECIFICATIONS.

REINFORCING STEEL: ALL REINFORCEMENT STEEL SHALL BE OF THE DEFORMED TYPE AND SHALL MEET THE REQUIREMENTS OF ASTM SPECIFICATIONS A615, GRADE 60 (AASHTO M-31) EXCEPT FOR THE REBAR IN THE PRESTRESSED CONCRETE BEAMS WHICH MAY BE GRADE 40.

*CONCRETE: Super structure concrete to be Class "BD". See Special Provisions.

STRUCTURE EXCAVATION: Structure excavation shall be calculated from the natural ground lines as they exist prior to the beginning of construction in the vicinity of the bridge.

SEQUENCE OF WORK: For Sequence of work see Special Provisions.

MAINTENANCE OF TRAFFIC: For Maintenance of Traffic see Special Provisions.

STATE OF MONTANA
DEPARTMENT OF HIGHWAYS

BRIDGE OVER PROSPECT CREEK
AT STA 512+20.50
FEDERAL AID PROJECT NO FH-FLH 7-1(2)
SANDERS COUNTY

GENERAL LAYOUT

Scale = 1" = 10'-0" Except as noted
(As Constructed) DRAWING NO. 11851

DESIGNED	2/7/77	J.J.F.
DRAWN	2/15/77	G.E.C.
CHECKED	5/2/77	J.C.H.
APPROVED	6-16-77	H.S.
REVISED		
REVISED		

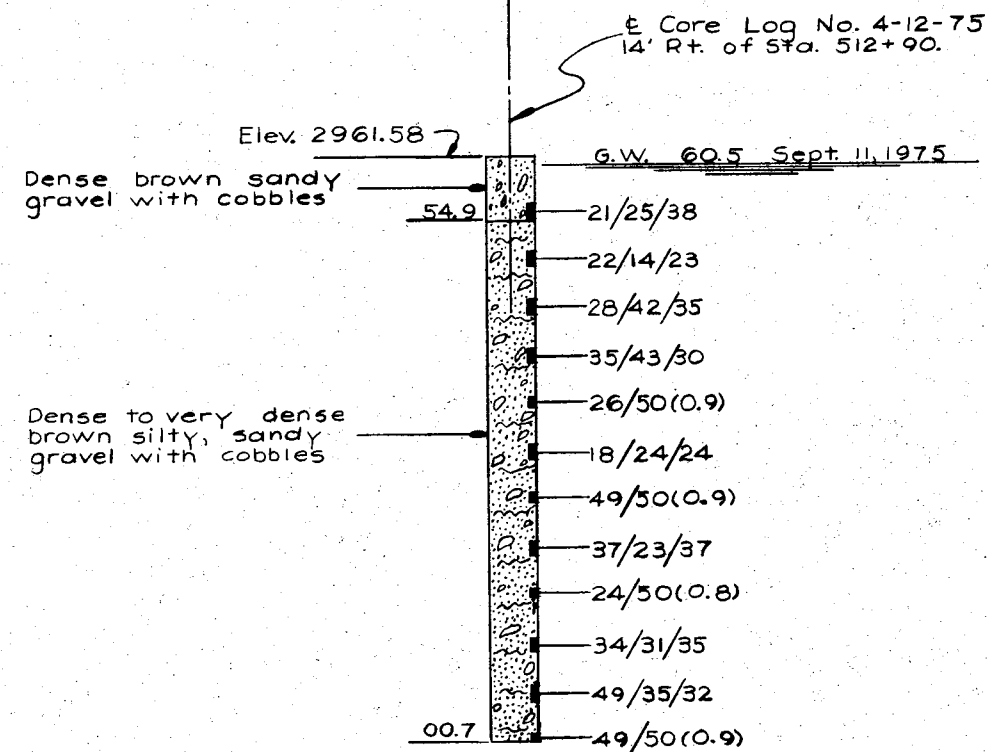
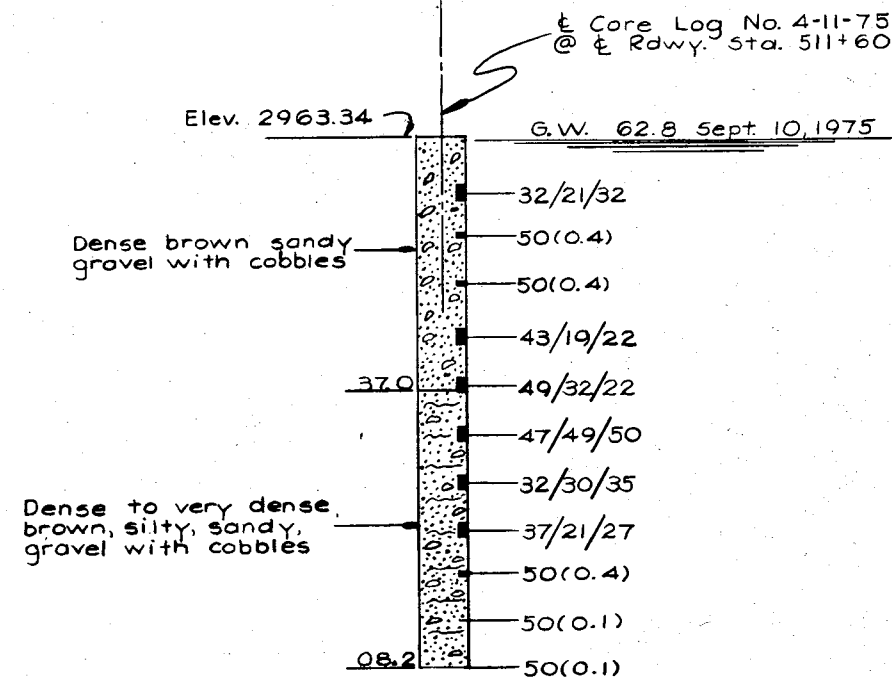
NOTE: For channel change and riprap details see rd plans

NOTES

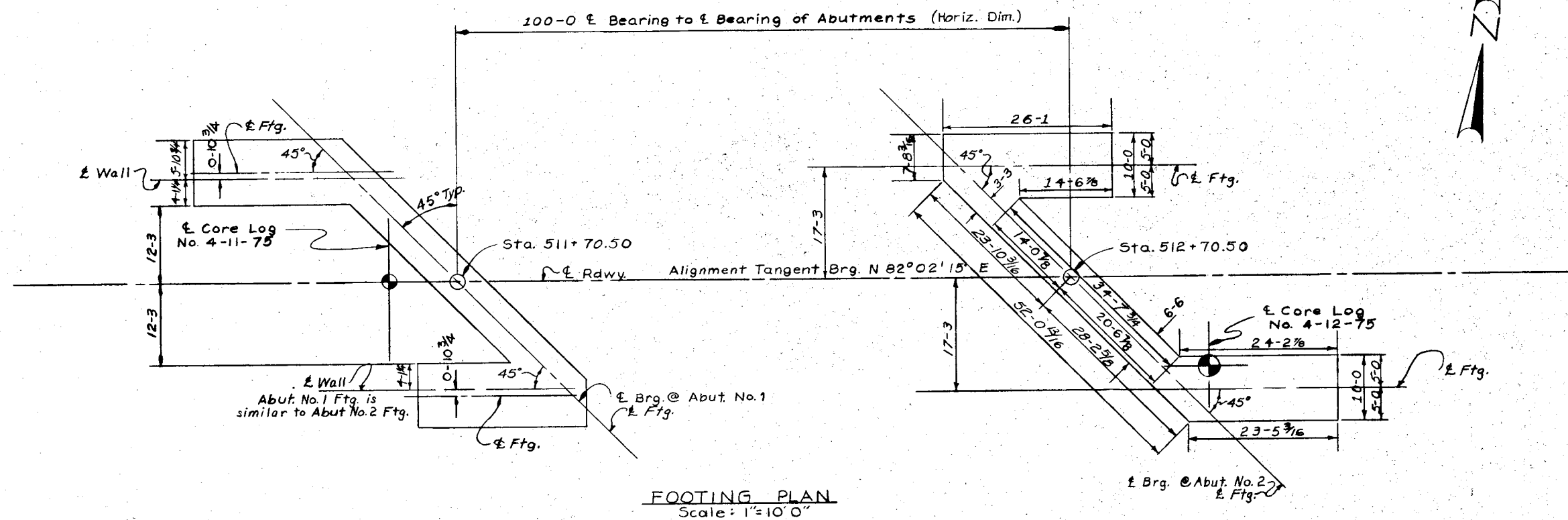
SOILS AND FOUNDATION MATERIALS: BORINGS WERE TAKEN BY THE STATE OF MONTANA, DEPARTMENT OF HIGHWAYS AT THE POINTS SHOWN ON THE GENERAL LAYOUT OR FOOTING PLAN.

THE SERIES OF NUMBERS SHOWN ON THE LOG OF BORINGS INDICATES THE NUMBER OF BLOWS PER 6" 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 POUND HAMMER HAVING A 30" DROP. THE TOTAL PENETRATION OF THE SAMPLER TUBE IS INDICATED ON THE CORE LOGS AFTER EACH SERIES IF 6" PENETRATION WAS NOT ACHIEVED IN 50 BLOWS.

THE STATE OF MONTANA, DEPARTMENT OF HIGHWAYS, 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.



LOG OF BORINGS
Scale: Horizontal - No Scale
Vertical - 1" = 10' - 0"



STATE OF MONTANA
DEPARTMENT OF HIGHWAYS
BRIDGE OVER PROSPECT CREEK
AT STA. 512-20.50
FEDERAL AID PROJECT NO FH-FLH 7-1(2)
SANDERS COUNTY
FOOTING PLAN

DESIGNED		
DRAWN	10-28-75	GJM
CHECKED	4-22-77	J.C.H.
REVISED		
REVISED		
REVISED		

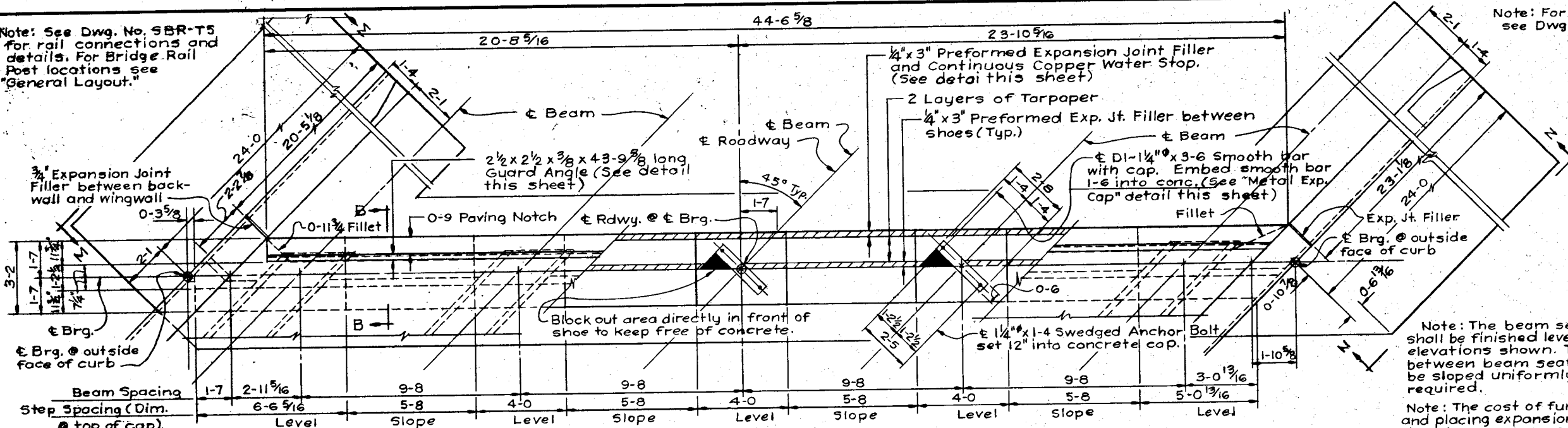
Scale: As Noted

DRAWING NO. 11852

Note: See Dwg. No. SBR-T5 for rail connections and details. For Bridge Rail Post locations see "General Layout."

Note: For View M-M and View N-N see Dwg. No. 11854.

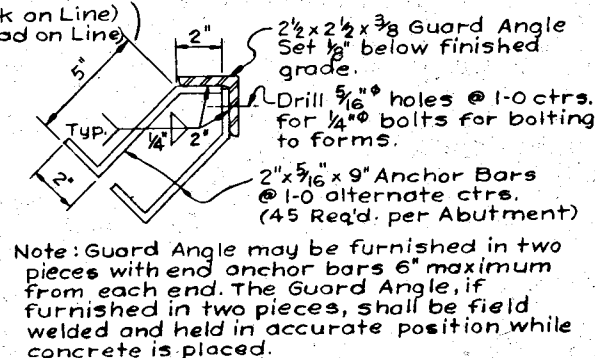
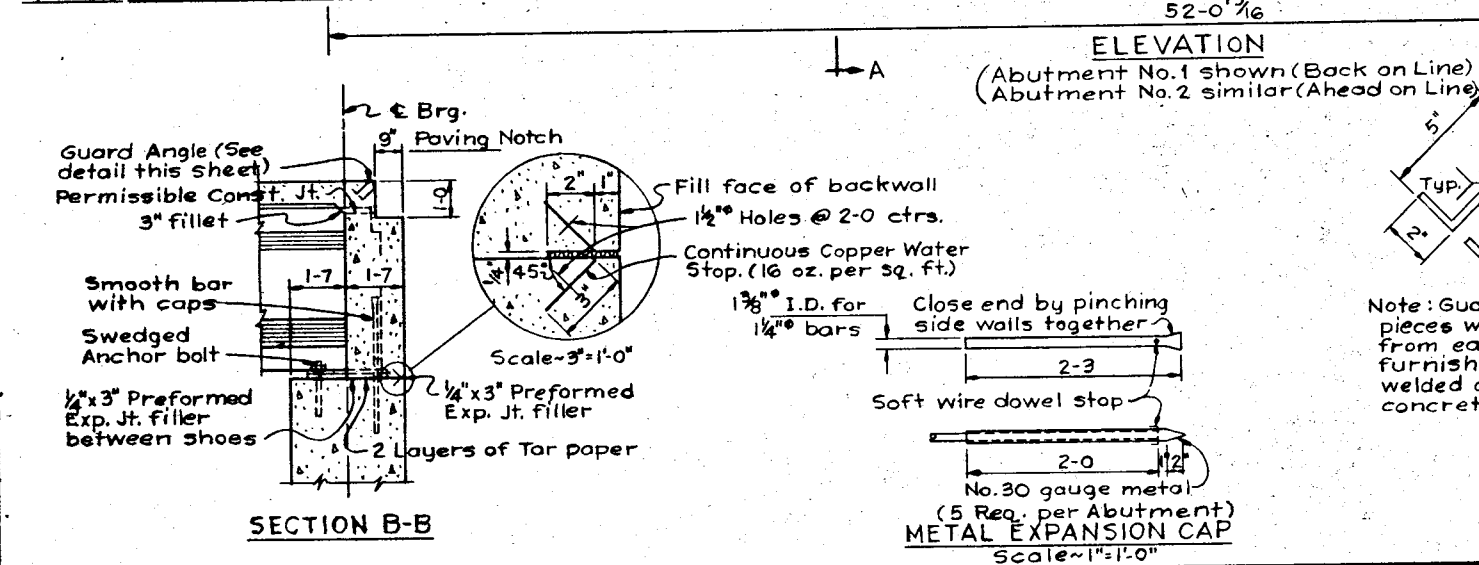
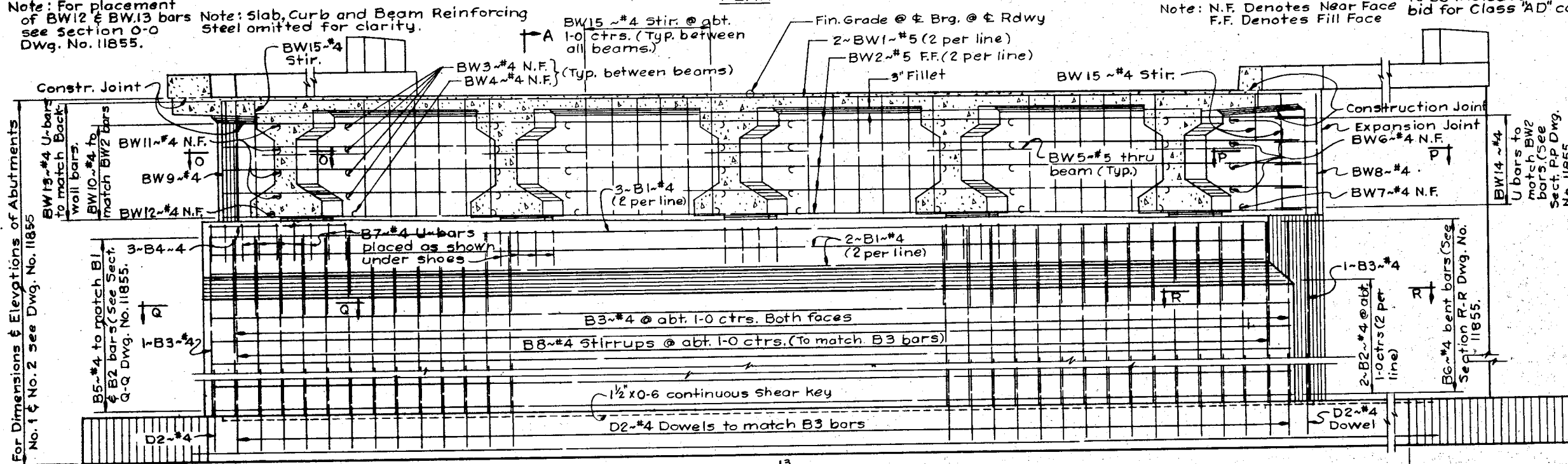
FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	MONT.	FH-FLH-7-1(2)	56	



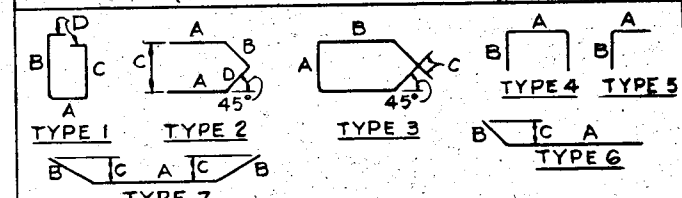
Note: For placement of BW12 & BW13 bars see Section O-O Dwg. No. 11855.

Note: Slab, Curb and Beam Reinforcing Steel omitted for clarity.

Note: N.F. Denotes Near Face F.F. Denotes Fill Face



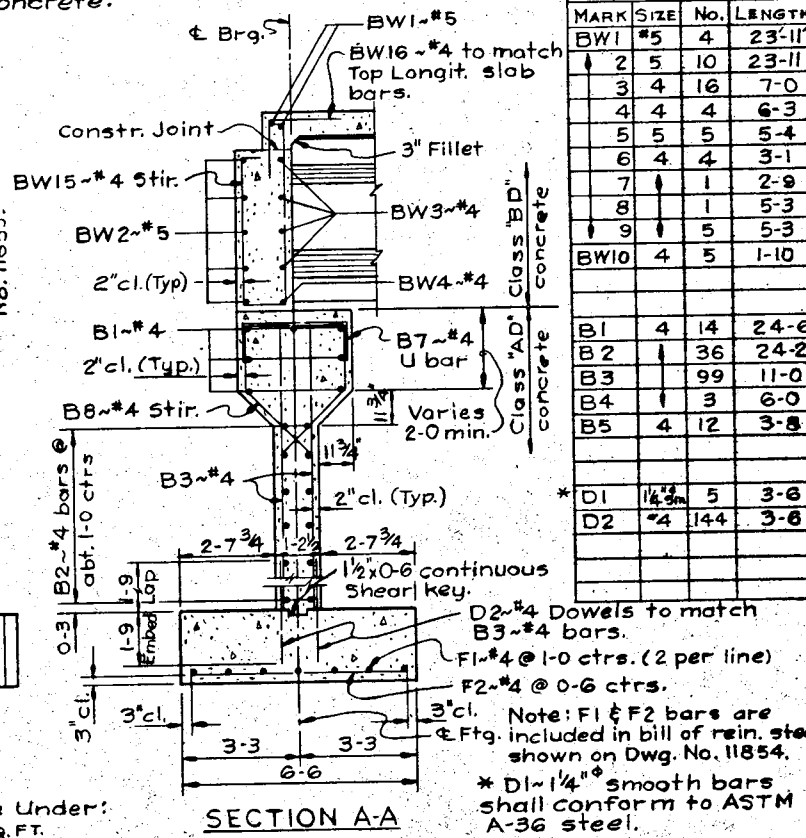
BILL OF REINFORCING STEEL (For One Abutment Only)



BENT BARS (All dimensions are out to out)										
MARK	SIZE	No.	TYPE	LENGTH	A	B	C	D	E	
BW11	#4	4	6	2'-9"	1'-9"	1'-0"	0'-8"			
BW12	#4	1	6	2'-4"	1'-4"	1'-0"	0'-8"			
BW13	#4	6	4	3'-11"	1'-11"	1'-0"				
BW14	#4	5	2	4'-4"	1'-4"	0'-11"	1'-2"	0'-9"		
BW15	#4	27	1	10'-10"	1'-3"	5'-0"	4'-0"	0'-3 1/2"		
BW16	#4	24	5	4'-0"	2'-0"	2'-0"				
B6	#4	12	7	8'-11"	6'-3"	1'-4"	0'-6 1/2"			
B7	#4	21	4	5'-10"	2'-10"	1'-6"				
B8	#4	47	3	11'-6"	2'-10"	1'-9"	2'-7"			

STRAIGHT BARS

MARK	SIZE	No.	LENGTH
BW1	#5	4	23'-11"
B2	#5	10	23'-11"
B3	#4	16	7'-0"
B4	#4	4	6'-3"
B5	#5	5	5'-4"
B6	#4	4	3'-1"
B7	#4	1	2'-9"
B8	#4	1	5'-3"
BW10	#4	5	1'-10"
B1	#4	14	24'-6"
B2	#4	36	24'-2"
B3	#4	99	11'-0"
B4	#4	3	6'-0"
B5	#4	12	3'-8"
D1	#4	5	3'-6"
D2	#4	144	3'-6"



Note: Maximum Footing Pressure Under: D.L. + L.L. + H.E. + V.E. = 3.02 TON/SQ. FT.

Note: For footing details and reinforcing steel see Dwg. No. 11854.

Note: For elevations see Dwg. No. 11855

Note: For dimensions of ftg. see Dwg. No. 11852 & No. 11854.

STATE OF MONTANA DEPARTMENT OF HIGHWAYS

BRIDGE OVER PROSPECT CREEK
AT STA. 512+20.50
FEDERAL AID PROJECT NO FH-FLH 7-1(2)
SANDERS COUNTY
ABUTMENTS NO.1 & NO.2

Scale = 3/8" = 1'-0" Except As Noted

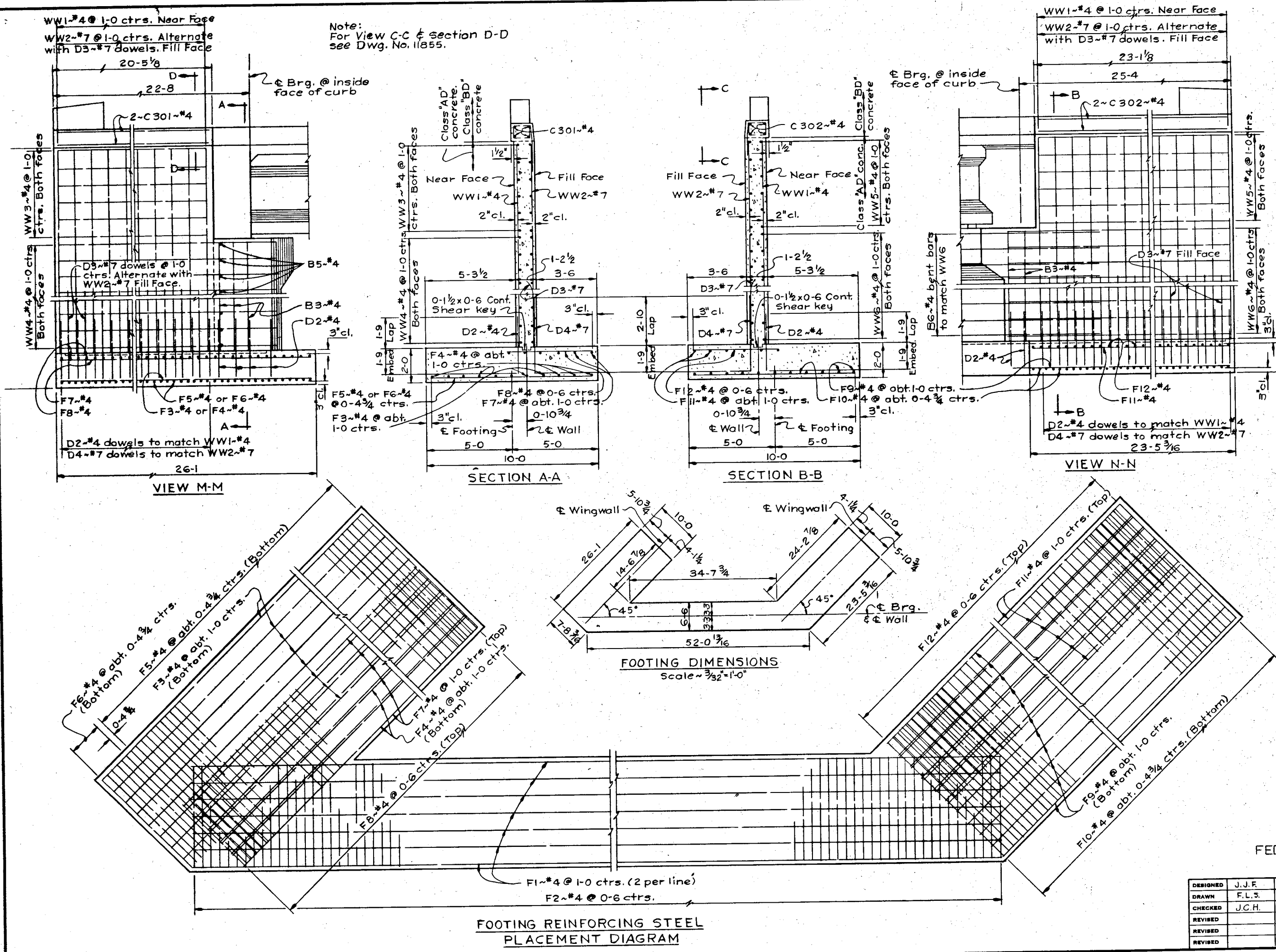
(As Constructed) DRAWING NO. 11855

DESIGNED	J.J.F.	2-25-77
DRAWN	FLS	3-30-77
CHECKED	J.C.H.	5-5-77
REVISED		
REVISED		

BILL OF REINFORCING STEEL (For One Abutment Only)												
			TYPE 1 TYPE 2 TYPE 3 TYPE 4 TYPE 5									
BENT BARS (All dimensions are out to out)												
MARK	SIZE	NO.	TYPE	LENGTH	A	B	C	D				
C1	#4	59	4	3'-4"	1'-0"	0'-9"	0'-5"					
C2	#4	12	1	3'-7"	0'-10"	0'-8"	0'-3 1/2"					
C3	#4	2	3	2'-0"	1'-0"	1'-0"	1'-6"					
C4	#4	51	5	3'-0"	0'-6"	1'-0"	1'-6"					
C5	#5	20	5	4'-0"	0'-6"	1'-0"	2'-6"					
P2	#5	8	2	2'-9"	1'-1 1/2"	1'-7 1/2"	0'-6"					
P3	#4	6	1	6'-3"	0'-10"	2'-0"	0'-3 1/2"					
P4	#4	2	1	6'-1"	0'-9"							
P5	#4	1	1	5'-11"	0'-8"							
P6	#4	1	1	5'-9"	0'-7"							
P7	#4	1	1	5'-7"	0'-6"							
P8	#4	1	1	5'-5"	0'-5"							
P9	#4	2	1	5'-3"	0'-4"	2'-0"	0'-3 1/2"					
D3	#7	43	3	7'-11"	6'-9"	1'-2"						
D4	#7	45	3	5'-9"	4'-7"	1'-2"						
				STRAIGHT BARS					STRAIGHT BARS			
MARK	SIZE	NO.	LENGTH	MARK	SIZE	NO.	LENGTH					
WW1	#4	45	16'-4"	F1	#4	14	26'-7"					
WW2	#7	45	16'-4"	F2	#4	105	6'-0"					
WW3	#4	12	20'-1"	F3	#4	8	25'-7"					
WW4	#4	24	23'-3"	F4	#4	3	23'-3"					
WW5	#4	12	22'-10"	F5	#4	60	9'-6"					
WW6	#4	24	24'-6"	F6	#4	6	7'-3"					
				F7	#4	6	23'-3"					
				F8	#4	48	5'-0"					
C301	#4	4	20'-1"	F9	#4	11	22'-11"					
C302	#4	4	22'-10"	F10	#4	59	9'-6"					
				F11	#4	6	23'-0"					
				F12	#4	47	5'-0"					
				P1	#5	12	2'-9"					

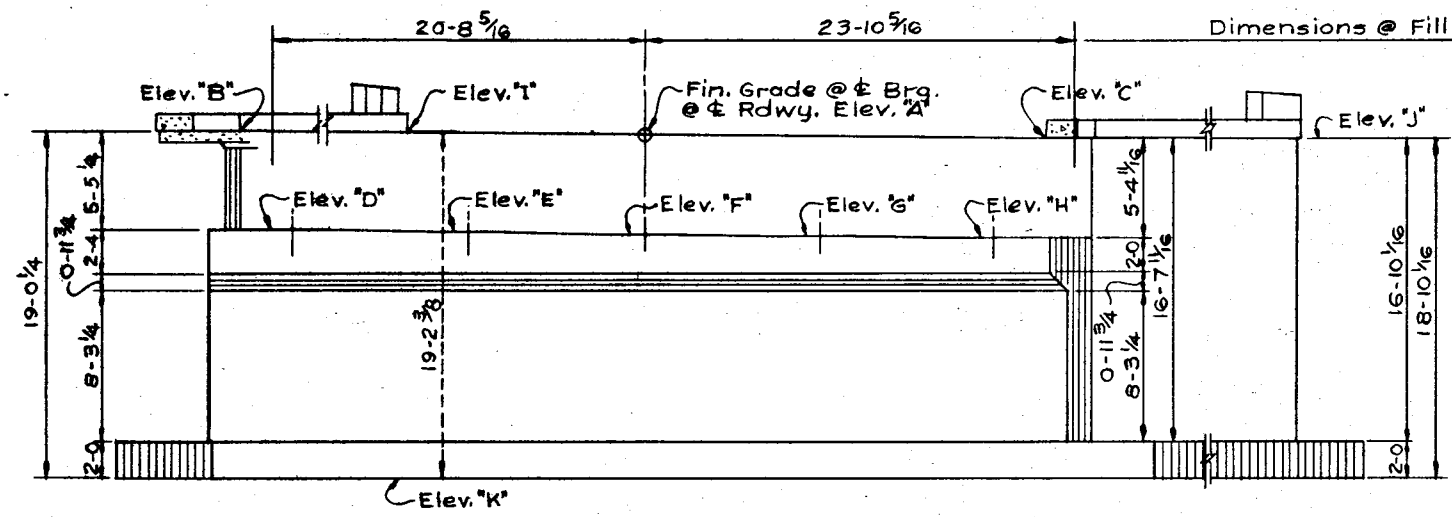
Note: D2-#4 dowels, B3-#4 & B5-#4 are included in Bill of Reinforcing shown on Dwg. No. 11853.

Note: For elevations see Dwg. No. 11855

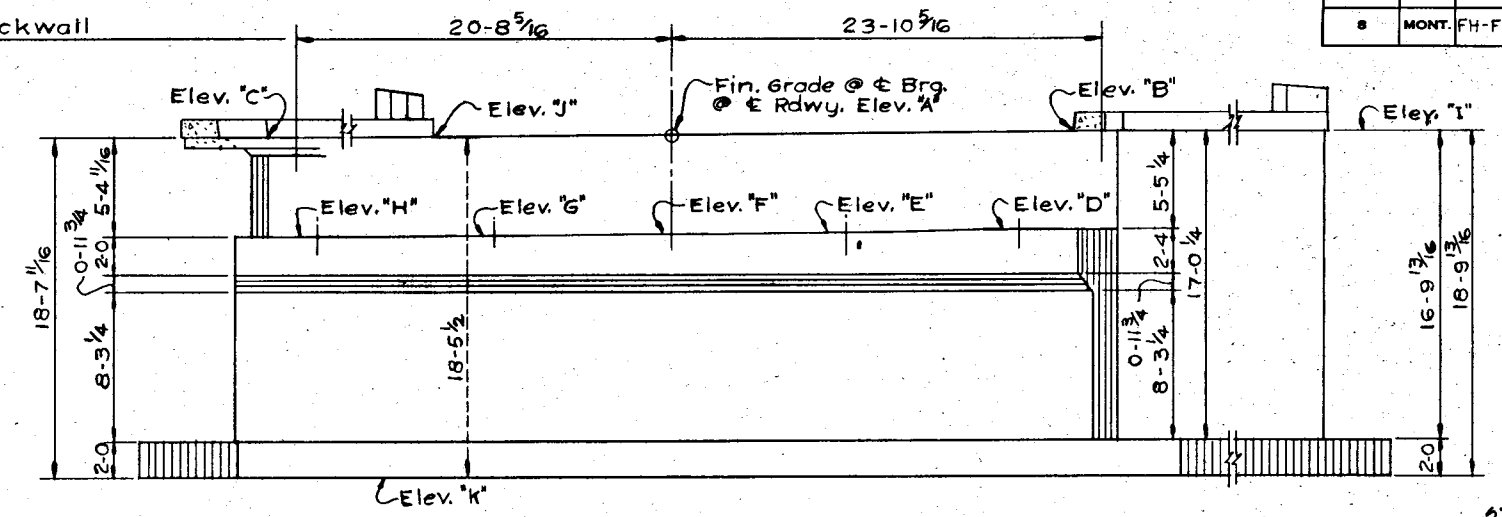


STATE OF MONTANA
DEPARTMENT OF HIGHWAYS
 BRIDGE OVER PROSPECT CREEK
 AT STA. 512+20.50
 FEDERAL AID PROJECT NO. FH-FLH 7-1(2)
 SANDERS COUNTY
FOOTING & WINGWALL DETAILS
ABUTMENTS NO. 1 & NO. 2
 Scale = 3/8" = 1'-0" Except as noted
 (As Constructed) **DRAWING NO. 11854**

DESIGNED	J.J.F.	2-25-77
DRAWN	F.L.S.	4-18-77
CHECKED	J.C.H.	5-5-77
REVISED		
REVISED		
REVISED		



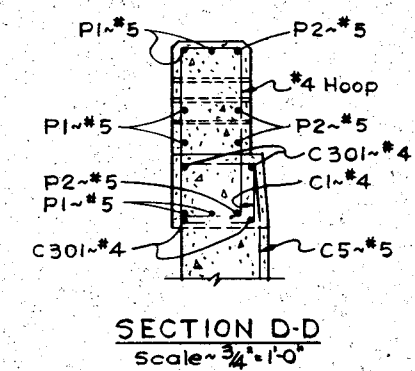
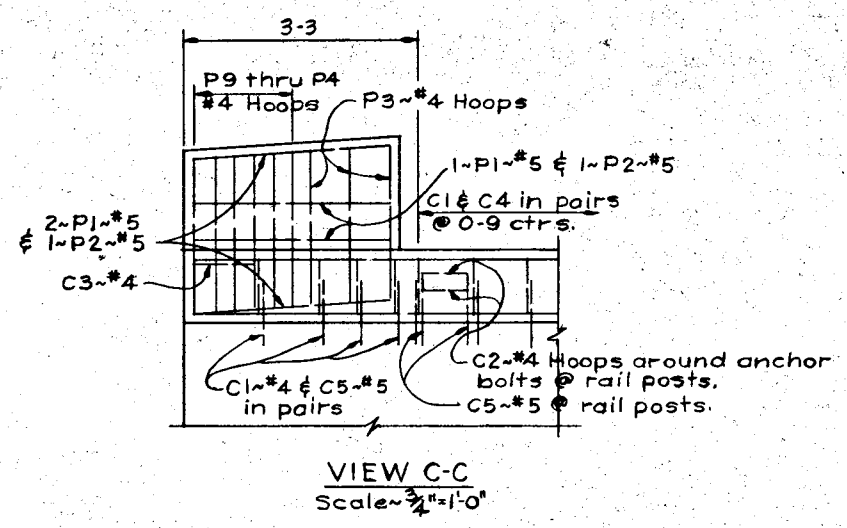
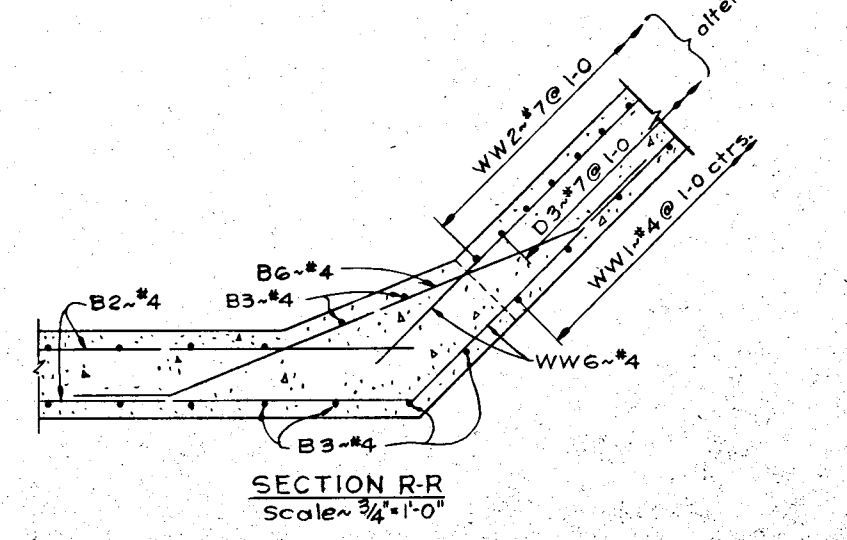
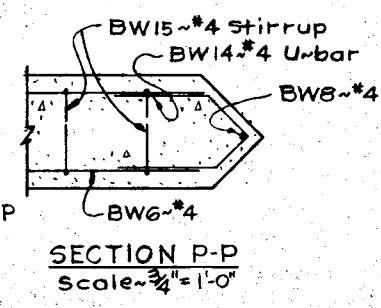
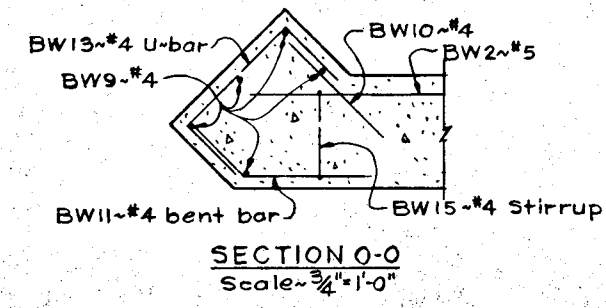
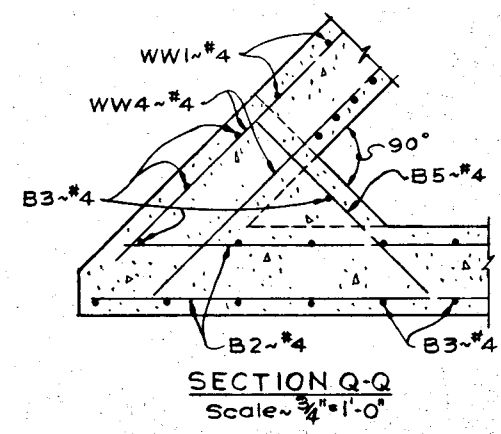
ABUTMENT NO. 1
(Back on Line)



ABUTMENT NO. 2
(Ahead on Line)

ELEVATION AND DIMENSION DETAILS
Scale $\frac{3}{16}'' = 1'-0''$

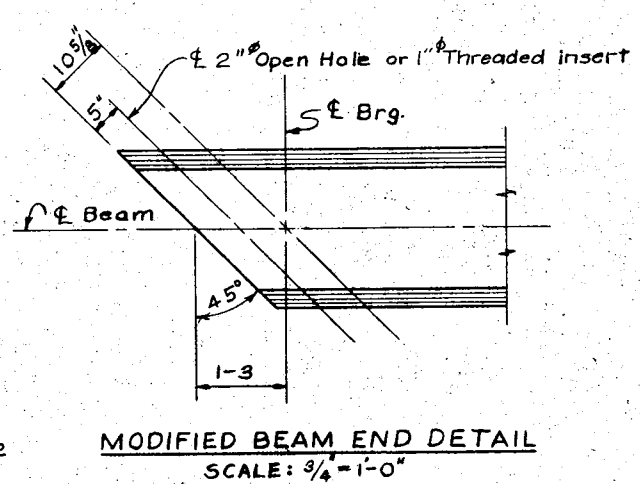
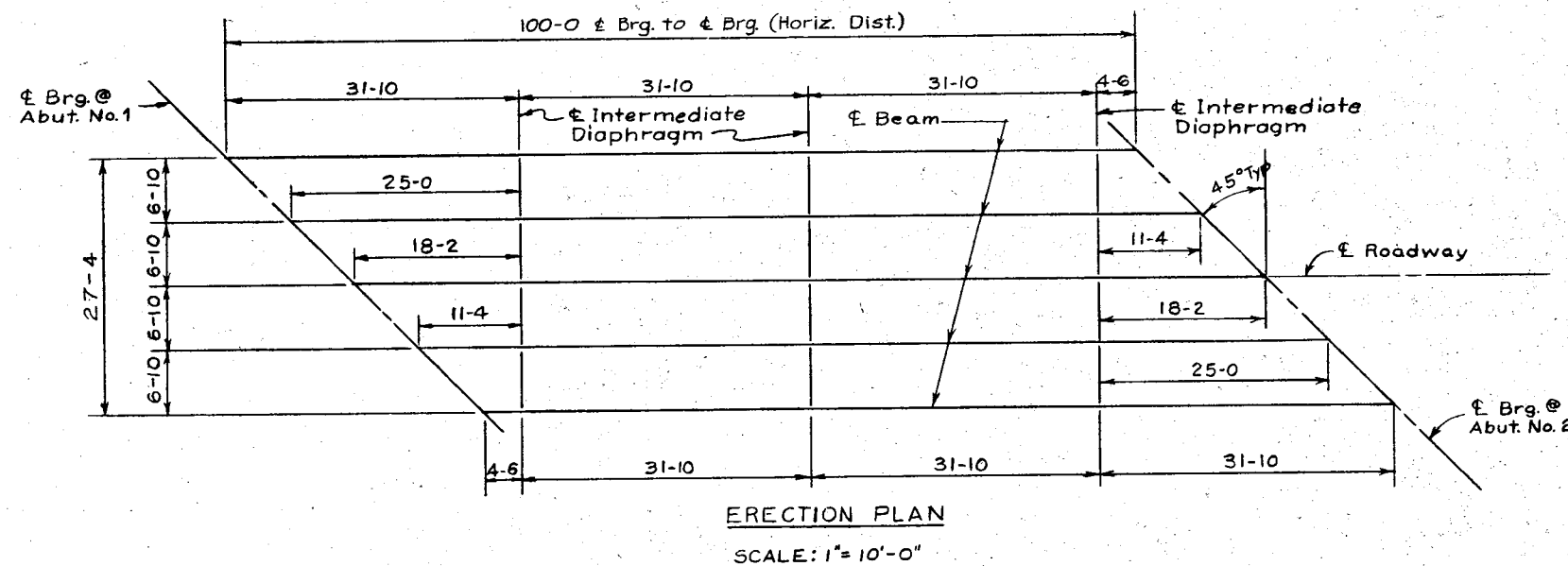
TABLE OF ELEVATIONS		
LOCATION	ABUTMENT NO. 1	ABUTMENT NO. 2
A	2973.90	2973.11
B	2974.09	2973.30
C	2973.71	2972.92
D	2968.65	2967.86
E	2968.57	2967.78
F	2968.49	2967.70
G	2968.41	2967.61
H	2968.32	2967.53
I	2974.27	2973.10
J	2973.91	2972.74
K	2955.07	2954.28



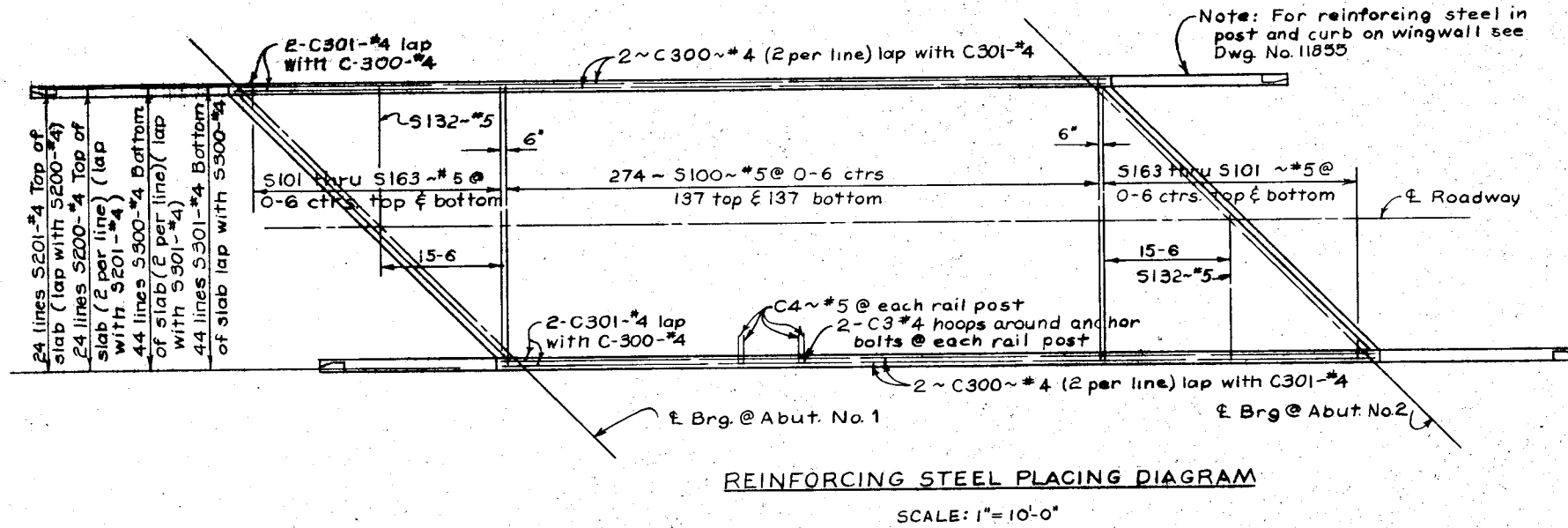
STATE OF MONTANA
DEPARTMENT OF HIGHWAYS

BRIDGE OVER PROSPECT CREEK
AT STA. 512+20.50
FEDERAL AID PROJECT NO. FH-FLH 7-1(2)
SANDERS COUNTY
MISCELLANEOUS
ABUTMENT DETAILS.
Scale As Noted
(As Constructed) DRAWING NO. 11855

DESIGNED	JJF	2-25-77
DRAWN	FLS	4-26-77
CHECKED	J.C.H.	5-5-77
REVISD		
REVISD		

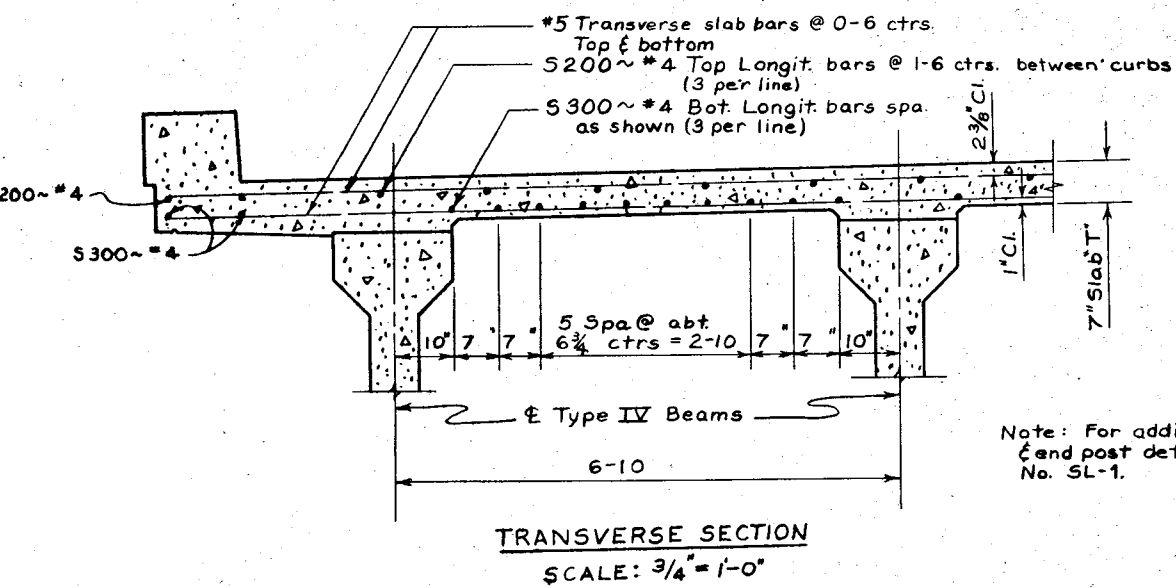


BILL OF REINFORCING STEEL									
BENT BARS (All dimensions are out to out)									
Mark	Size	No.	Type	Length	A	B	C		
C1	#4	280	2	3'-4"	1'-0"	0'-9"	0'-5"		
C2	#4	280	3	2'-6"	0'-6"	1'-0"	1'-0"		
C3	#4	48	1	3'-7"	0'-10"	0'-8"	0'-3"		
C4	#5	48	3	4'-9"	0'-6"	1'-0"	3'-3"		
D7	#4	72	4	8'-0"	3'-5"	0'-7"	0'-3"		



Point	.1	.2	.3	.4	.5
100' Span	1/2	15/16	1 1/8	1 3/8	1 5/8

Note: Deflections are symmetrical about 0.5 point.
Note: Maximum stress for design in prestressing steel before transfer shall be 0.70 f's



PRESTRESSED CONCRETE BEAM: Prestressed concrete beams shall be fabricated in accordance with Dwg. No. B-4 except as modified hereon. Max. f'c (compressive strength of concrete at 28 days) for design shall be 6000 psi. Design stress without prestress are as follows:

SPAN LENGTH		100-0
Beam D.L. Stresses (p.s.i.)	fb	-1169
	ft	1384
Total D.L. + L.L. Design Stresses (p.s.i.)	fb	-3243
	ft	3118
Required Ultimate moment capacity (ft kips)	M	5866

STRAIGHT BARS									
Mark	Size	No.	Length	Mark	Size	No.	Length		
S100	#5	274	33'-8"	S146	#5	4	24'-10"		
S101	#5	4	2'-4"	S147	#5	1	25'-4"		
S102	#5	1	2'-10"	S148	#5	1	25'-10"		
S103	#5	1	3'-4"	S149	#5	1	26'-4"		
S104	#5	1	3'-10"	S150	#5	1	26'-10"		
S105	#5	1	4'-4"	S151	#5	1	27'-4"		
S106	#5	1	4'-10"	S152	#5	1	27'-10"		
S107	#5	1	5'-4"	S153	#5	1	28'-4"		
S108	#5	1	5'-10"	S154	#5	1	28'-10"		
S109	#5	1	6'-4"	S155	#5	1	29'-4"		
S110	#5	1	6'-10"	S156	#5	1	29'-10"		
S111	#5	1	7'-4"	S157	#5	1	30'-4"		
S112	#5	1	7'-10"	S158	#5	1	30'-10"		
S113	#5	1	8'-4"	S159	#5	1	31'-4"		
S114	#5	1	8'-10"	S160	#5	1	31'-10"		
S115	#5	1	9'-4"	S161	#5	1	32'-4"		
S116	#5	1	9'-10"	S162	#5	1	32'-10"		
S117	#5	1	10'-4"	S163	#5	1	33'-4"		
S118	#5	1	10'-10"						
S119	#5	1	11'-4"						
S120	#5	1	11'-10"						
S121	#5	1	12'-4"						
S122	#5	1	12'-10"						
S123	#5	1	13'-4"						
S124	#5	1	13'-10"						
S125	#5	1	14'-4"						
S126	#5	1	14'-10"						
S127	#5	1	15'-4"						
S128	#5	1	15'-10"	S200	#4	48	40'-0"		
S129	#5	1	16'-4"	S201	#4	24	24'-9"		
S130	#5	1	16'-10"	S300	#4	88	40'-0"		
S131	#5	1	17'-4"	S301	#4	44	24'-9"		
S132	#5	1	17'-10"						
S133	#5	1	18'-4"	C300	#4	16	40'-0"		
S134	#5	1	18'-10"	C301	#4	8	27'-3"		
S135	#5	1	19'-4"						
S136	#5	1	19'-10"	D5	#4	24	5'-0"		
S137	#5	1	20'-4"	D6	#4	24	5'-0"		
S138	#5	1	20'-10"	D8	#6	9	5'-4"		
S139	#5	1	21'-4"						
S140	#5	1	21'-10"						
S141	#5	1	22'-4"						
S142	#5	1	22'-10"						
S143	#5	1	23'-4"						
S144	#5	1	23'-10"						
S145	#5	4	24'-4"						

STATE OF MONTANA
DEPARTMENT OF HIGHWAYS
BRIDGE OVER PROSPECT CREEK
AT STA. 512+20.50
FEDERAL AID PROJECT NO. FH-FLH 7-1(2)
SANDERS COUNTY
ERECTION PLAN & SLAB DETAILS
SCALE AS SHOWN
(As Constructed) DRAWING NO. 11856

DESIGNED		
DRAWN	1-24-77	WLT
CHECKED	4-22-77	JCH
REVISED		
REVISED		
REVISED		

PLACING STEEL: Steel clearance from side forms shall be maintained by stays, ties, hangers or approved metal chairs. Steel clearance at the bottom of beam shall be maintained with the use of continuous steel chairs with stainless steel legs.

CONCRETE: All concrete shall have a min. compressive strength of 5000 p.s.i. at the age of 28 days & a min. compressive strength at the transfer of prestress of 4000 p.s.i. except as otherwise noted on the fabrication drawings.

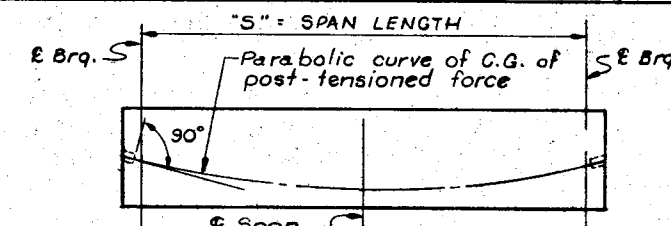
END BLOCK: Beams with post-tensioned tendons shall have end blocks as detailed hereon. Where all tendons are pre-tensioned wire strand, the use of end blocks will not be required.

PRESTRESSING REINFORCEMENT: All beams shall be prestressed so they can safely withstand the effect of dead loads and working live loads as shown on the "General Layout" or "Erection Plan". Post-tensioned prestressing reinforcement shall conform to Section 42 of the Standard Specifications or the Supplemental Specifications. Prestensioned prestressing steel shall be $\frac{7}{16}$ " or $\frac{1}{2}$ " seven wire bright prestressing strand conforming to the requirements of A.S.T.M. Specification A 416 with the exceptions shown in "Table I" below. Either of the above mentioned types of prestressing reinforcement may be used; however, design calculations substantiating the type of prestressing system selected shall be submitted to and approved by the engineer before fabrication is begun. Design calculations shall show stresses in the beam under each loading condition that is anticipated in the manufacture, handling and service life of the beam. All design shall be in accordance with A.A.S.H.O. Standard Specifications for Highway Bridges, 1969 Edition, and any Amendments thereto.

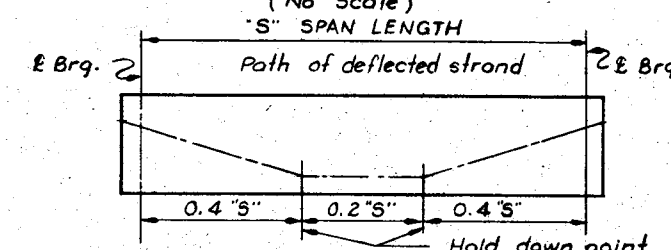
FINISH OF BEAMS: Beams & beam ends, unless embedded in concrete, shall be given an ordinary finish as specified in Art. 41.04 (L)(1) of the Std. Specs. Prior to finishing, strands shall be cut back $\frac{1}{2}$ " min. and the depression filled with an approved epoxy. When beams are embedded in concrete, ends may be left rough and strands may be cut to project 1" max. from concrete.

FINISH OF TOPS: Tops of beams shall be left rough. At approximately the time of initial set all laitance shall be removed with a coarse wire brush. Grade strips or other approved methods shall be used at the top edges to establish the nominal depth of the beam.

NOMINAL DIA. OF STRAND INCHES	BREAKING STRENGTH MIN. LBS.	NOMINAL STEEL AREA OF STRAND SQ. INCHES	NOMINAL WT. LBS. PER 1000'	YIELD STRENGTH REQUIREMENTS	
				INITIAL LOAD LBS.	MIN. LOAD @ 1% EXTENSION LBS.
$\frac{7}{16}$	31,000	.117	400	3,100	26,350
$\frac{1}{2}$	41,300	.153	525	4,130	35,100



TYPICAL TENDON LAYOUT FOR POST-TENSIONING SYSTEM (No Scale)



TYPICAL DEFLECTED STRAND FOR PRE-TENSIONING SYSTEM (No Scale)

STATE OF MONTANA
DEPARTMENT OF HIGHWAYS

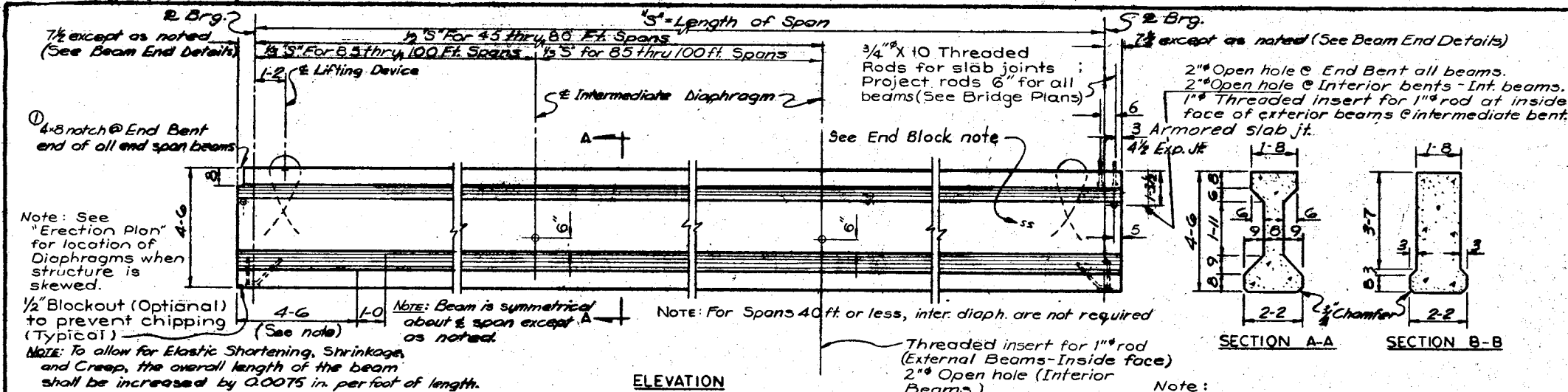
STANDARD PRESTRESSED CONCRETE BEAMS

TYPE IV

DESIGNED	D.N.	R-F-61
DRAWN	D.M.B.	R-F-63
TRACED		
CHECKED	E.D.K.	R-F-63
REVIEWED	K.G.R.	R-F-63
REVIEWED	N.H.L.	R-F-63

APPROVED BY: *[Signature]*
(As Constructed)

DRAWING NO. B-8

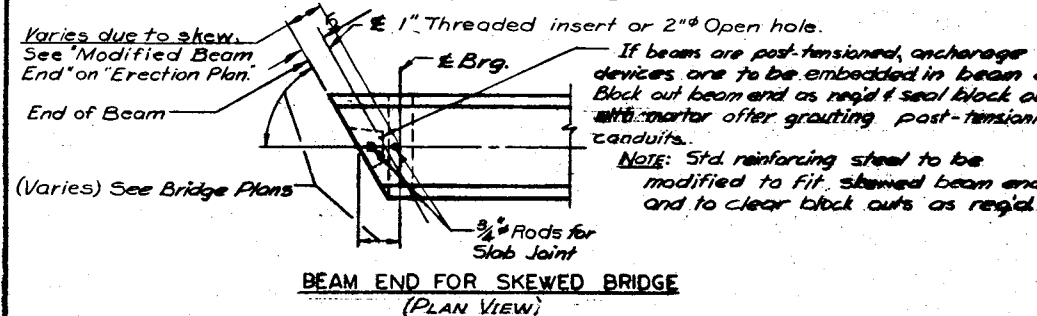


SECTION A-A SECTION B-B

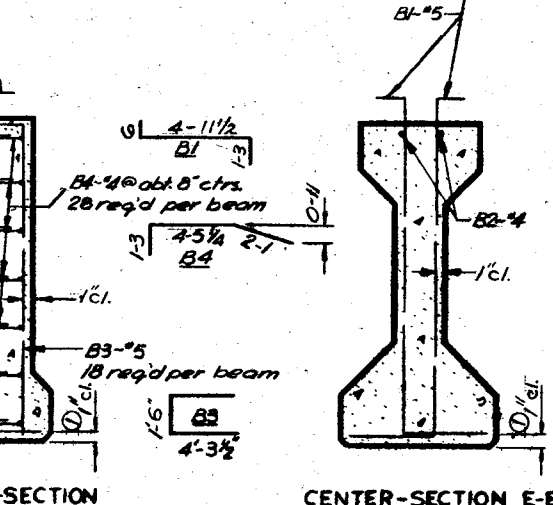
Note: Threaded inserts, hold down devices, lifting devices, any other hardware which is to be incorporated in the beam shall be approved by the Engineer before fabrication is begun.

Span	No.	Span	No.	Span	No.
30	40	55	72	80	106
35	46	60	80	85	112
40	52	65	86	90	120
45	60	70	92	95	126
50	66	75	100	100	132
				105	138

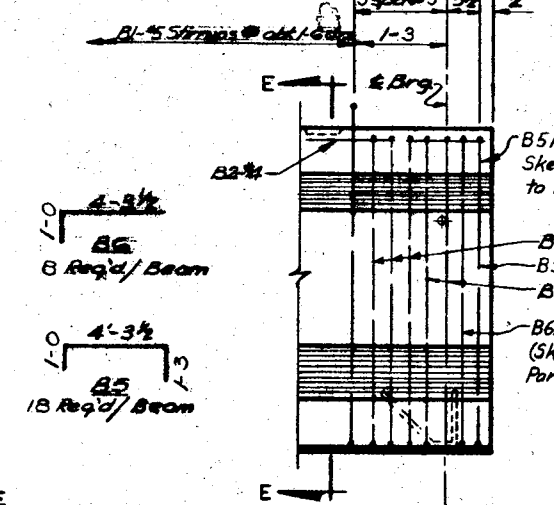
BEAM END FOR SQUARE BRIDGE (PLAN VIEW)



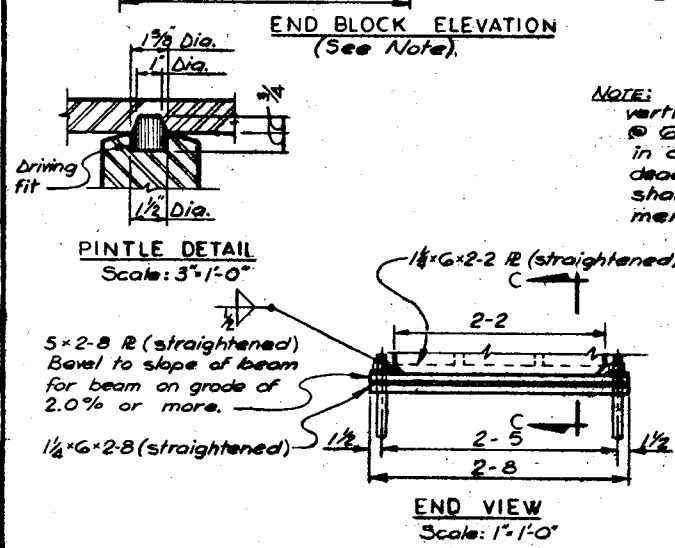
BEAM END FOR SKEWED BRIDGE (PLAN VIEW)



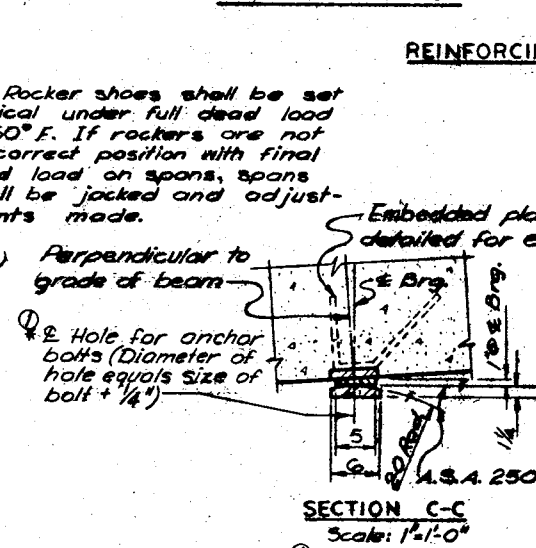
REINFORCING STEEL DETAILS Scale: 1/4" = 1'-0"



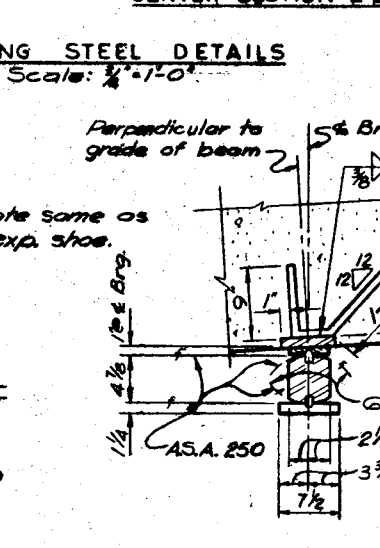
ELEVATION - BEAM WITHOUT END BLOCK (See Note)



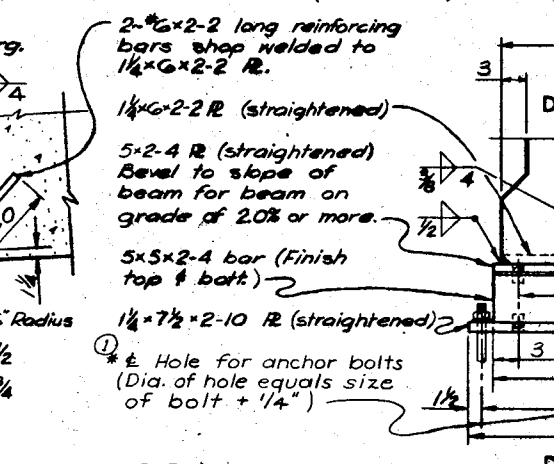
END VIEW Scale: 1" = 1'-0"



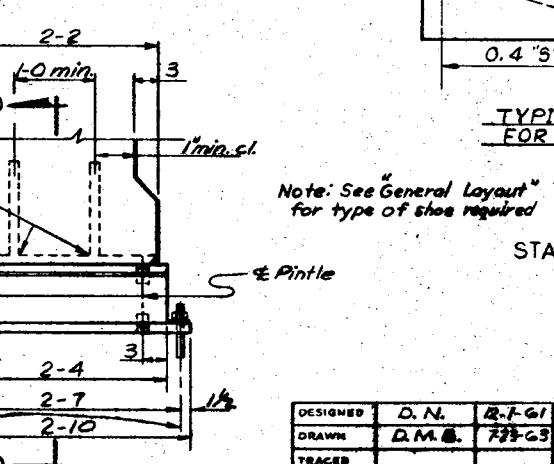
SECTION C-C Scale: 1" = 1'-0"



SECTION D-D



EXTR. SHOE DETAILS Scale: 1/2" = 1'-0"



END VIEW

FIXED SIDE DETAILS

*NOTE: See substructure details for length and size of anchor bolts.

LC. used 5-4-76
D.S. 12-13-74

SUMMARY
SIGNING & DELINEATION QUANTITIES

ITEM NUMBER	MATERIAL	SHEET 64	SHEET 65					TOTAL	UNIT
	SIGNS - SHEET ALUMINUM - REFLECTIVE SHEETING(A)								SQ. FOOT
	SIGNS - SHEET ALUMINUM - REFLECTIVE SHEETING(B)	2 2.4	39.6					62	SQ. FOOT
	SIGNS - ALUMINUM SHEET INCREMENT	10.6	19.6					30.2	SQ. FOOT
	OVERLAY - SHEET ALUMINUM								SQ. FOOT
	POSTS - STEEL U	64	128					192	POUNDS
	POSTS - METAL U DELINEATOR	28	266					294	LINEAL FT.
	POLES - TREATED TIMBER - BARN -3" TOP Ø	48	84					132	LINEAL FT.
	POLES - TREATED TIMBER - BARN -4" TOP Ø								LINEAL FT.
	POLES - TREATED TIMBER - BARN -5" TOP Ø								LINEAL FT.
	POLES - TREATED TIMBER - BARN -6" TOP Ø								LINEAL FT.
	POLES - TREATED TIMBER - CLASS 4								LINEAL FT.
	POLES - TREATED TIMBER - CLASS 3								LINEAL FT.
	POSTS - TUBULAR STEEL								POUNDS
	POSTS - STRUCTURAL STEEL								POUNDS
	OVERHEAD STRUCTURE - METAL - CANTILEVER								LUMP SUM
	OVERHEAD STRUCTURE - METAL - BRIDGE								LUMP SUM
	OVERHEAD MOUNTING BRACKETS - METAL								LUMP SUM
	GUIDE POSTS -								EACH
	HIGHWAY TRAFFIC STRIPING - WHITE								GAL. (S)
	HIGHWAY TRAFFIC STRIPING - YELLOW								GAL. (S)
	WORDS & SYMBOLS -								
	DELINEATOR REFLECTORS DESIGN A		3					3	EACH
	DELINEATOR REFLECTORS DESIGN B								EACH
	DELINEATOR REFLECTORS DESIGN C		17					17	EACH
	DELINEATOR REFLECTORS DESIGN D	4	6					10	EACH
	DELINEATOR REFLECTORS DESIGN E								EACH
	DELINEATOR REFLECTORS DESIGN F		12					12	EACH
	DELINEATOR REFLECTORS DESIGN G								EACH
	DELINEATOR REFLECTORS DESIGN H								EACH
	REMOVE SIGNS - GUIDE								EACH
	RESET SIGNS - GUIDE								EACH
	MISCELLANEOUS WORK								LUMP SUM
	BARRICADE - TYPE I A								LINEAL FT.
	REMOVE SIGNS								EACH
	RESET SIGNS								EACH

PREPARED BY:	TRAFFIC UNIT
DRAWN BY:	3-23-77 <i>SP</i>
CHECKED BY:	3-24-77 <i>ULD</i>

(As Constructed)

SIGN LOCATION AND SPECIFICATIONS

STATION	RAMP NO.	SIGN NO.	PANEL SIZE	PANEL MATERIAL	CLEARANCE	POST SPACING	TYPE OF POST	POST LENGTH (ESTIMATED)	POST LENGTH (INSTALLED)	MOUNTING HEIGHT	FOUNDATION	REFLECTIVE SHEETING		ALUMINUM SHIELDING (sq. ft.)	ALUMINUM SHIELDING (sq. ft.)	STEEL SHIELDING (sq. ft.)	NET WT. (LBS.)	POLES (Lin. Ft.)						TUBULAR	STEEL POST (Lbs.)	TYPE BARRIAGE (Lin. Ft.)	RESET	REMOVE	RESET	REMOVE	REMARKS						
												(A)	(B)					3" TOP	4" TOP	5" TOP	6" TOP	CLASS 4	CLASS 3														
236+70 R.T.		N6-2	36x126	Sht. Alum. Enc.	10	3"Ø T.T.	11'-6"		5'-0"	3'-0"				5.3			12																				
236+80 R.T.		X1-1	12x36	Sht. Alum.		5"Ø "U"	8'-0"	2'-0"	3'-0"			3.0				16																					
236+80 L.T.		X1-1	12x36	Sht. Alum.		5"Ø "U"	8'-0"	2'-0"	3'-0"			3.0				16																					
238+00 R.T.		X1-1	12x36	Sht. Alum.		5"Ø "U"	8'-0"	2'-0"	3'-0"			3.0				16																					
238+00 L.T.		X1-1	12x36	Sht. Alum.		5"Ø "U"	8'-0"	2'-0"	3'-0"			3.0				16																					
238+10 N6-2		N6-2	36x126	Sht. Alum. Enc.	10	3"Ø T.T.	11'-6"		5'-0"	3'-0"				5.3			12																				
294+40 R.T.		R1-1	30x30	Sht. Alum.	6	3"Ø T.T.	12'-0"		5'-0"	3'-0"		5.2					12																				
296+80 L.T.		R1-1	30x30	Sht. Alum.	6	3"Ø T.T.	12'-0"		5'-0"	3'-0"		5.2					12																				
Delineator Posts:															28																						
Total:												22.4	10.6			64	28	48																			

(4) DESIGN 'D' DELINEATOR REFLECTORS

SIGN LOCATION AND SPECIFICATIONS

STATION	RAMP NO.	SIGN NO.	PANEL SIZE	PANEL MATERIAL	CLEARANCE	POST SPACING	TYPE OF POST	POST LENGTH (ESTIMATED)	POST LENGTH (INSTALLED)	MOUNTING HEIGHT	FOUNDATION	REFLECTIVE SHEETING (A)	REFLECTIVE SHEETING (B)	ALUMINUM SHEETING (Sq. Ft.)	ALUMINUM SHT. INC. (Sq. Ft.)	ALUMINUM SHT. OVERLAY (Sq. Ft.)	STEEL (Lbs.)	METAL (Lbs.)	TUBULAR	STRUCTURAL	TYPE BARRICADE (Lbs.)	Signs		Guide		REMARKS
																						REMOVE	RESET	REMOVE	RESET	
357+20	RT	X1-1	12X36	SHT ALUM		57L	UT	8-0	2-0	3-0		32					16									
357+20	RT	N6-2	3-0X1-6	SHT ALUM		POLE		12-0	7-0	3-0			45					12								
357+40	LT	X1-1	12X36	SHT ALUM		57L	UT	8-0	2-0	3-0		32					16									
358+70	RT	X1-1	12X36	SHT ALUM		57L	UT	8-0	2-0	3-0		32					16									
358+90	LT	X1-1	12X36	SHT ALUM		57L	UT	8-0	2-0	3-0		32					16									
358+90	LT	N6-2	3-0X1-6	SHT ALUM		POLE		12-0	7-0	3-0			45					12								
359+25	RT	R1-1	30X30	SHT ALUM	6	3"Ø	POLE	12-0	5-0	3-0			52					12								
388+80	LT	R1-1	30X30	SHT ALUM	6	3"Ø	POLE	12-0	5-0	3-0			52					12								
510+05	RT	R1-1	30X30	SHT ALUM	6	3"Ø	POLE	12-0	5-0	3-0			52					12								
511+40	LT	X1-1	12X36	SHT ALUM		57L	UT	8-0	2-0	3-0		32					16									
511+80	RT	X1-1	12X36	SHT ALUM		57L	UT	8-0	2-0	3-0		32					16									
511+80	RT	N6-2	3-6X1-6	SHT ALUM		POLE		12-0	7-0	3-0			52					12								
512+60	LT	N6-2	3-6X1-6	SHT ALUM		POLE		12-0	7-0	3-0			52					12								
512+60	LT	X1-1	12X36	SHT ALUM		57L	UT	8-0	2-0	3-0		32					16									
513+00	RT	X1-1	12X36	SHT ALUM		57L	UT	8-0	2-0	3-0		32					16									
DELINATOR POST																		264								
TOTALS								5-221(7)				242	156	196			128266	54								

STATE	PROJECT	NUMBER	SHEET NO.
MONTANA	FH-FLH 7-1(2)		65

COOPER CREEK

PROSPECT CREEK

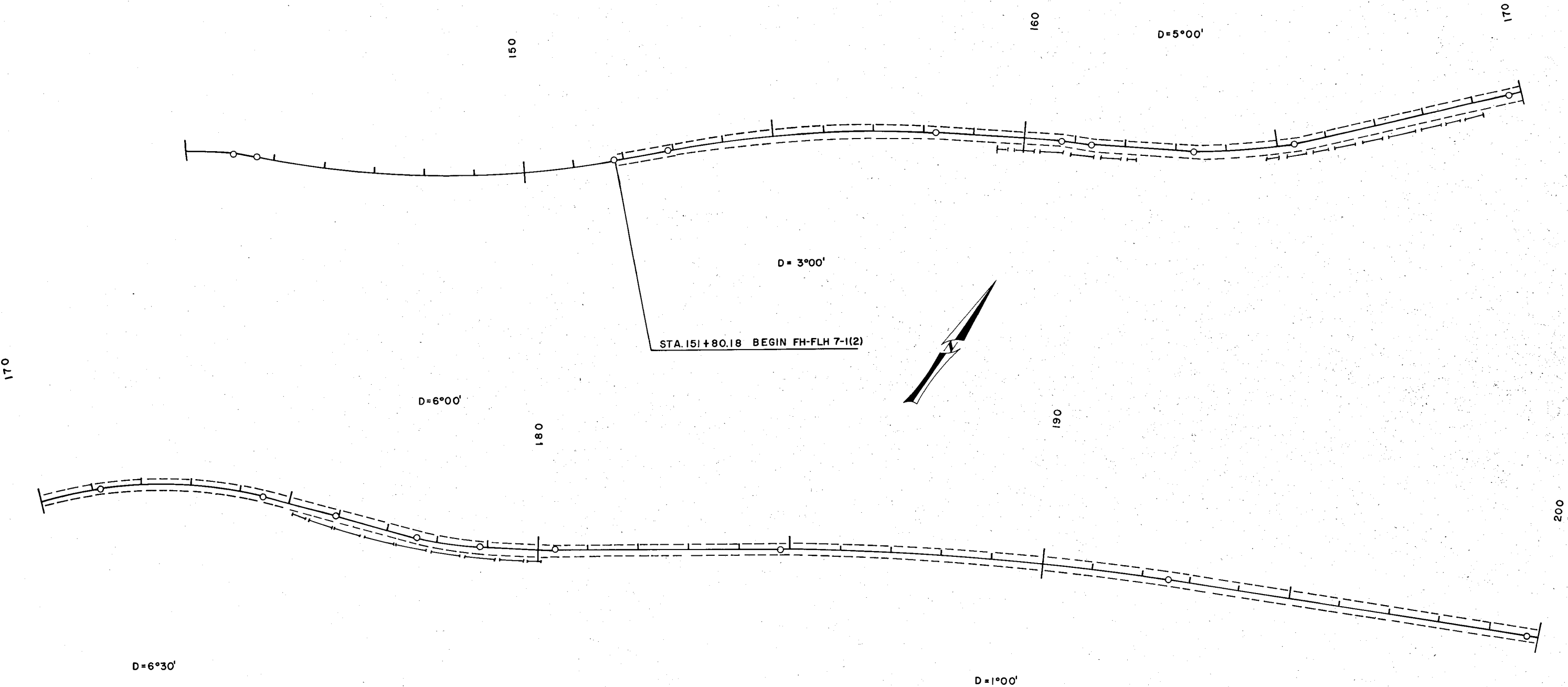
N6-2
3'-0"x1'-6"
2 Req'd.

N6-2
3'-6"x1'-6"
2 Req'd.

(As Constructed)

DRAWN BY:		
CHECKED BY:		

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	MONT.	FH-FLH-1(2)	66	



STATE OF MONTANA
STATE HIGHWAY COMMISSION

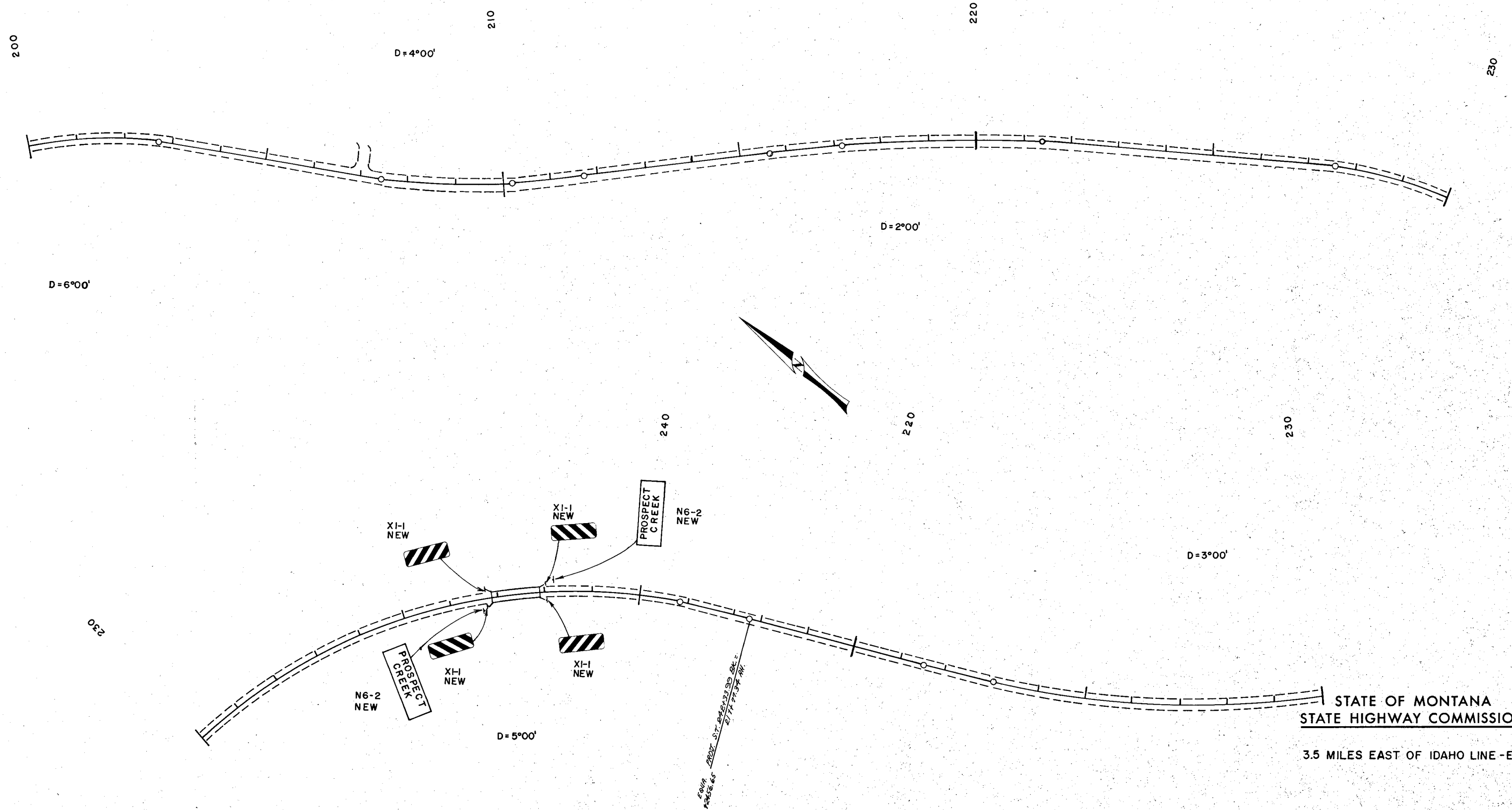
3.5 MILES EAST OF IDAHO LINE-E.

DESIGNED		
DRAWN	3-21-77	JF3
TRACED		
CHECKED	3-24-77	WLD
REVISED		
REVISED		

(As Constructed)

DRAWING NO.

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	MONT.	FH-FLH 7-1(2)	67	

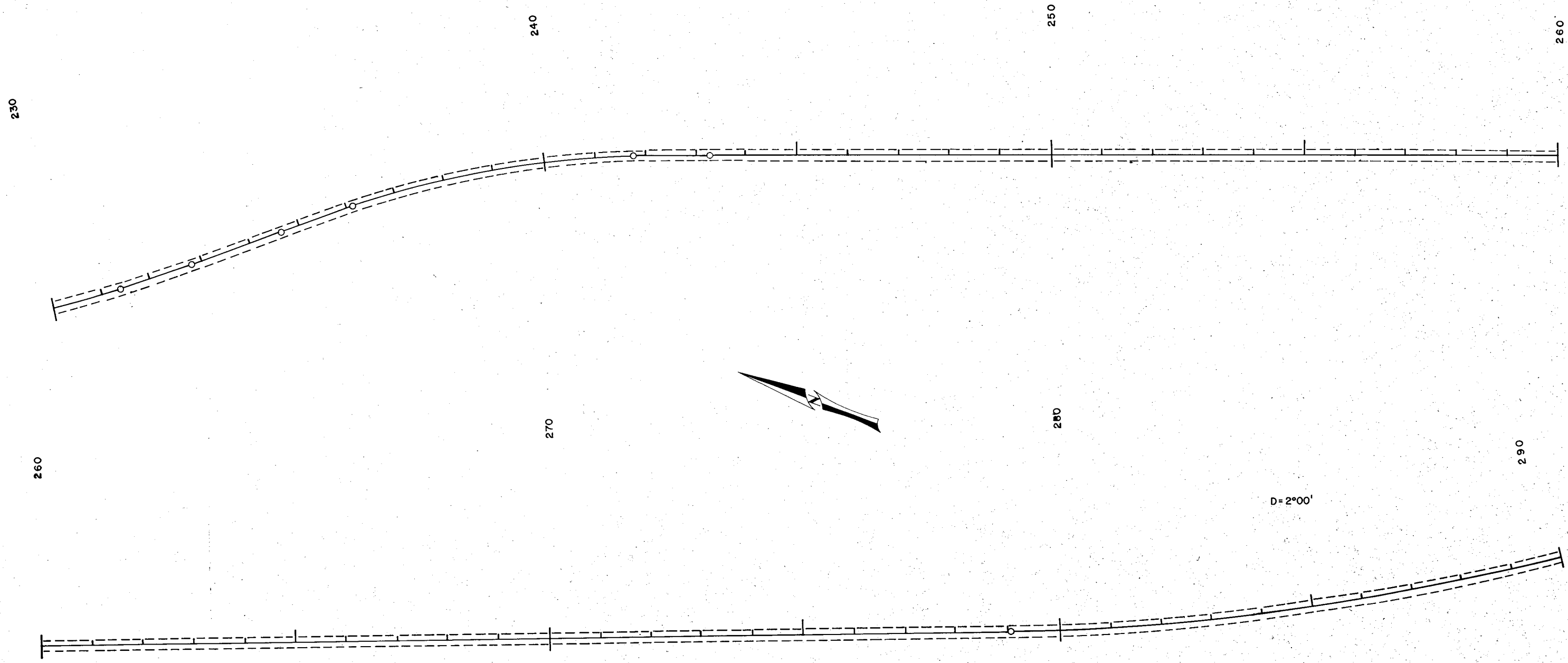


DESIGNED		
DRAWN	3-21-77	EB
TRACED		
CHECKED	3-24-77	ILD
REVISED		
REVISED		

(As Constructed)

DRAWING NO.

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	MONT.		68	



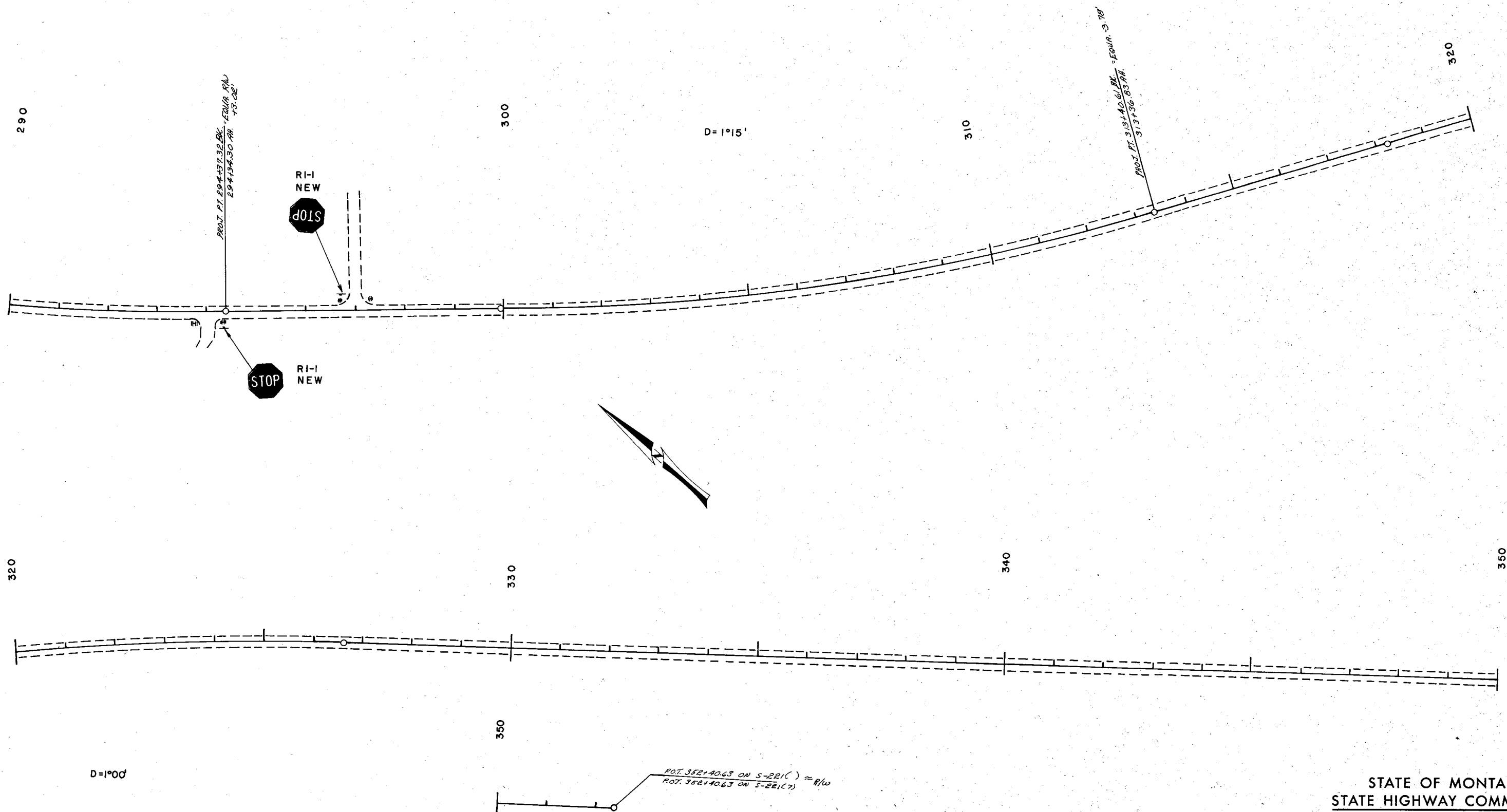
STATE OF MONTANA
STATE HIGHWAY COMMISSION

3.5 MILES EAST OF IDAHO LINE - E

DESIGNED		
DRAWN	3-22-77	JE
TRACED		
CHECKED	3-24-77	JLD
REVISED		
REVISED		

(As Constructed)

DRAWING NO.

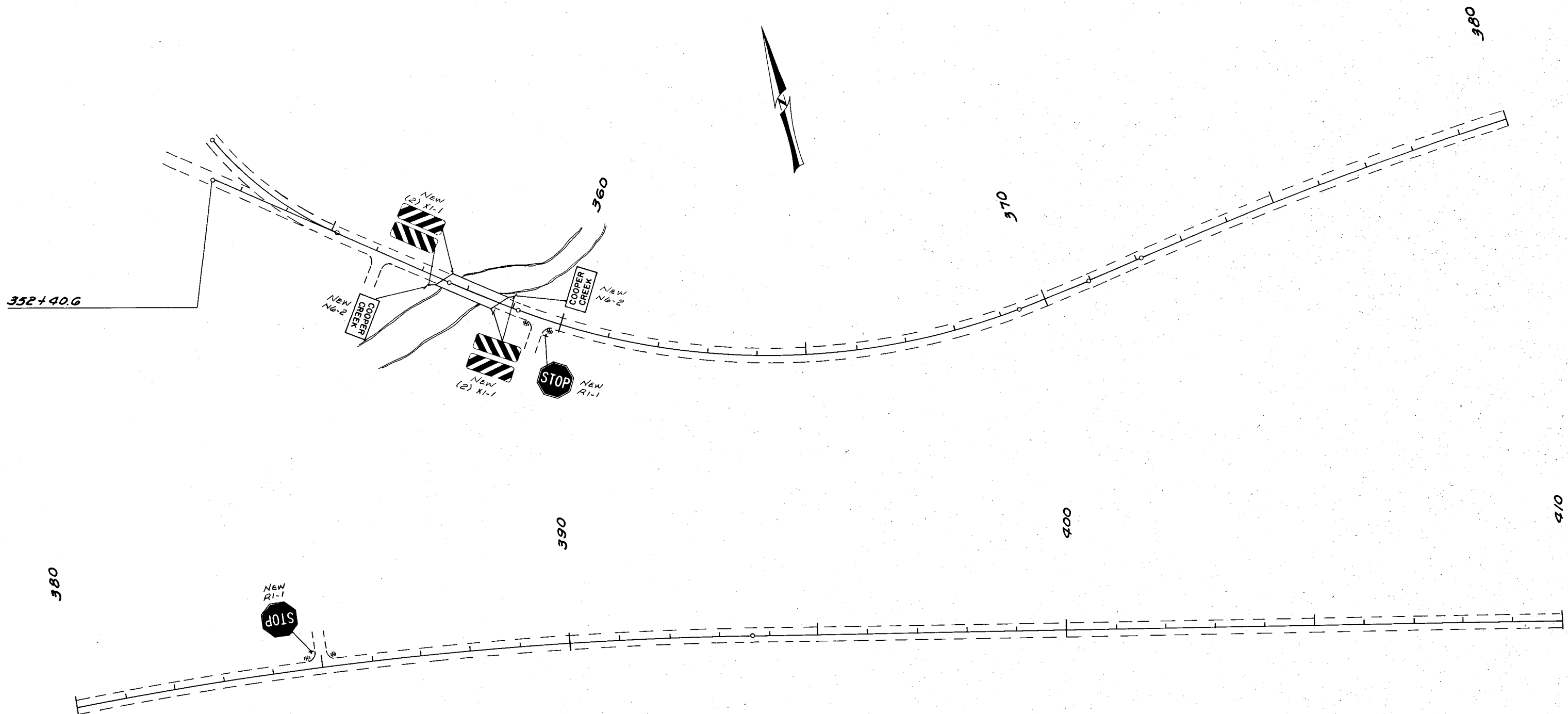


STATE OF MONTANA
STATE HIGHWAY COMMISSION
3.5 MILES EAST OF IDAHO LINE-E.

DESIGNED		
DRAWN	3-22-77	EB
TRACED		
CHECKED	3-29-77	JLD
REVISED		
REVISOR		

(As Constructed)

DRAWING NO.

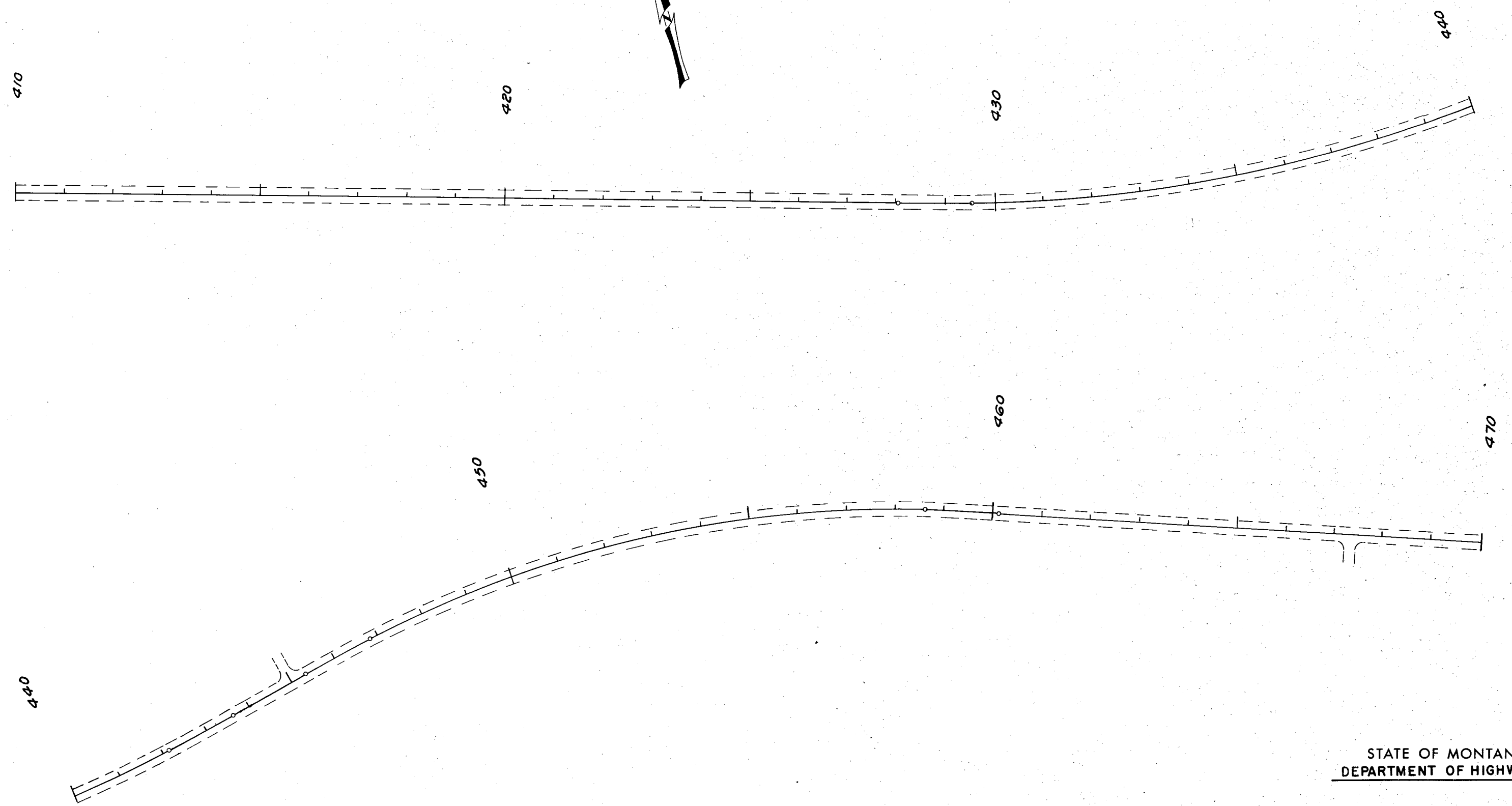


STATE OF MONTANA
DEPARTMENT OF HIGHWAYS

DESIGNED		
DRAWN		
CHECKED		
REVISED		
REVISED		
REVISED		

(As Constructed)

DRAWING NO.

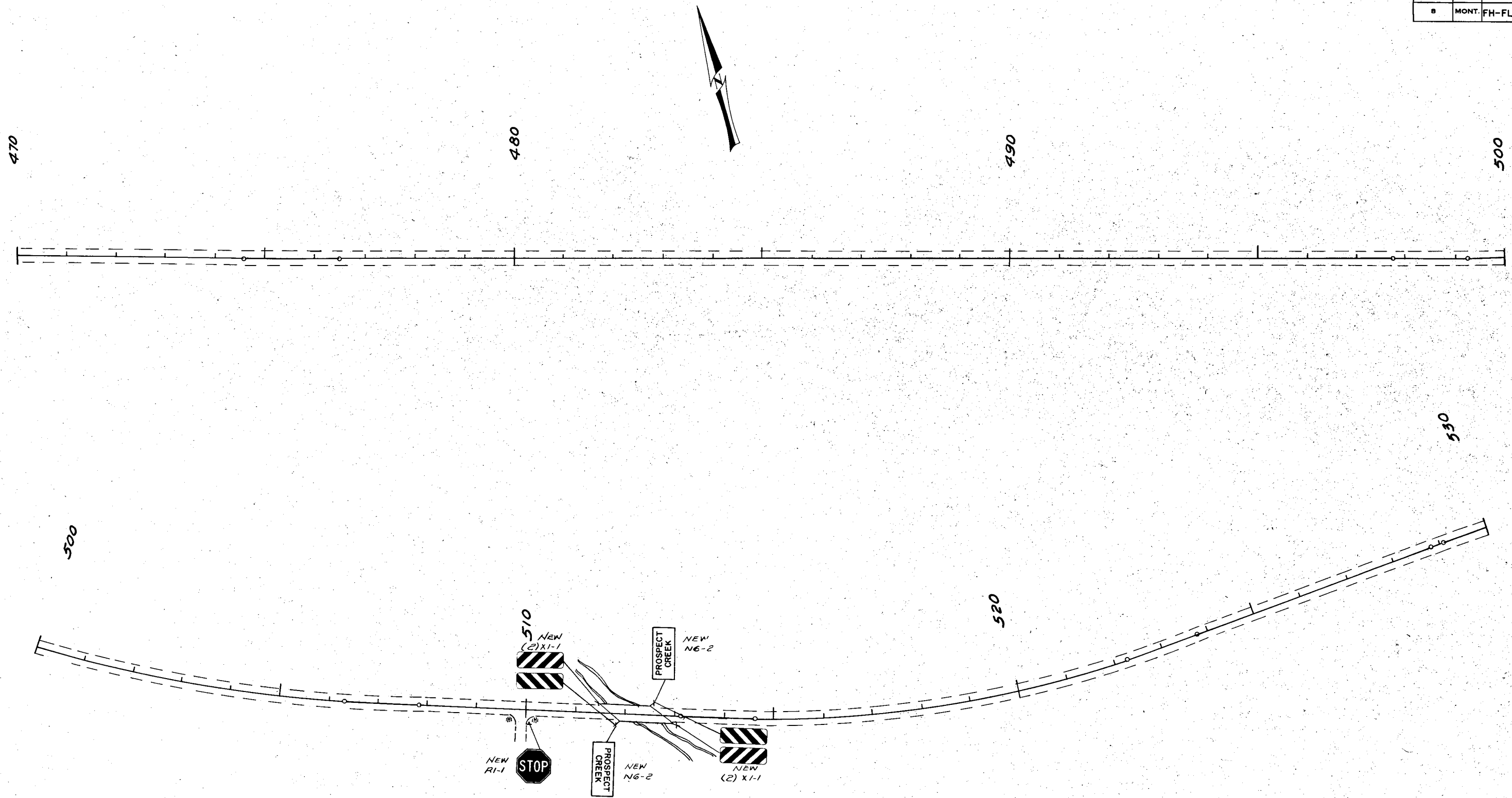


STATE OF MONTANA
DEPARTMENT OF HIGHWAYS

DESIGNED		
DRAWN		
CHECKED		
REVISED		
REVISED		
REVISED		

(As Constructed)

DRAWING NO.

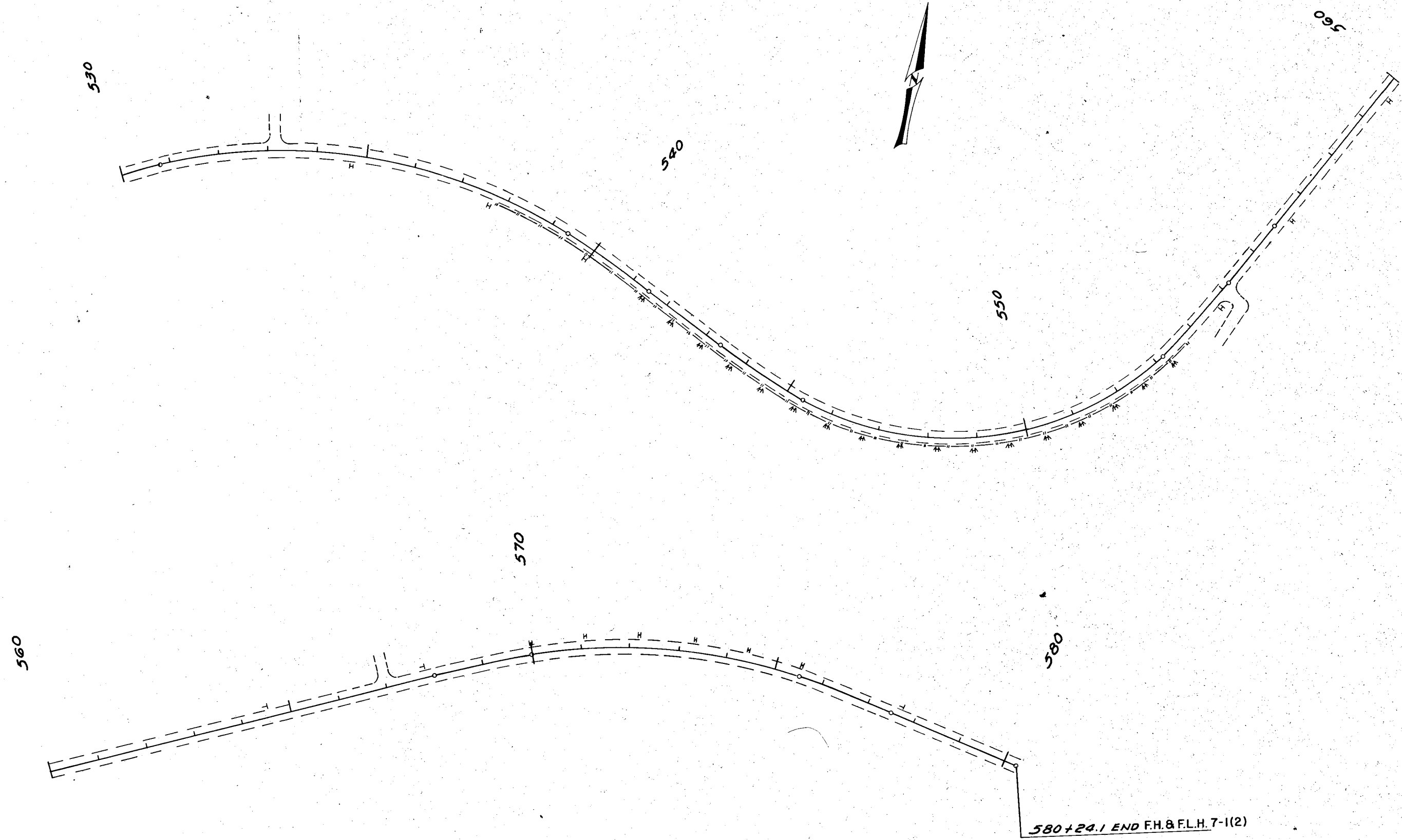


STATE OF MONTANA
DEPARTMENT OF HIGHWAYS

DESIGNED		
DRAWN		
CHECKED		
REVISED		
REVISED		
REVISED		

(As Constructed)

DRAWING NO.



STATE OF MONTANA
DEPARTMENT OF HIGHWAYS

(As Constructed)

DESIGNED		
DRAWN		
CHECKED		
REVIEWED		
REVIEWED		
REVIEWED		

DRAWING NO.