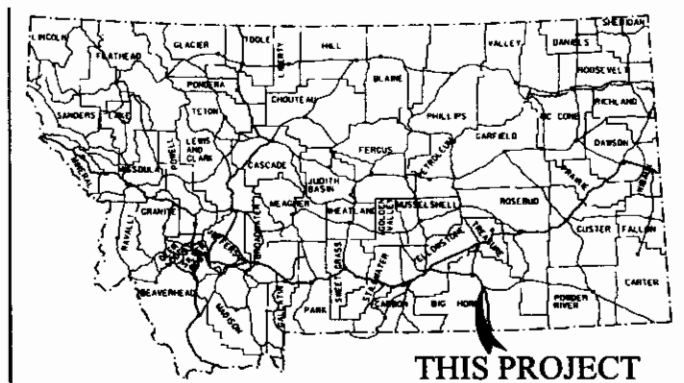




MONTANA DEPARTMENT OF TRANSPORTATION

FEDERAL AID PROJECT STPS-HSIP 384-1(18)0

MILL & FILL, SEAL & COVER, & FENCING

HARDIN-EAST

BIG HORN COUNTY

LENGTH 11.7 MILES

SCALES

VERTICAL: 1" = 10'
HORIZONTAL: 1" = 100'

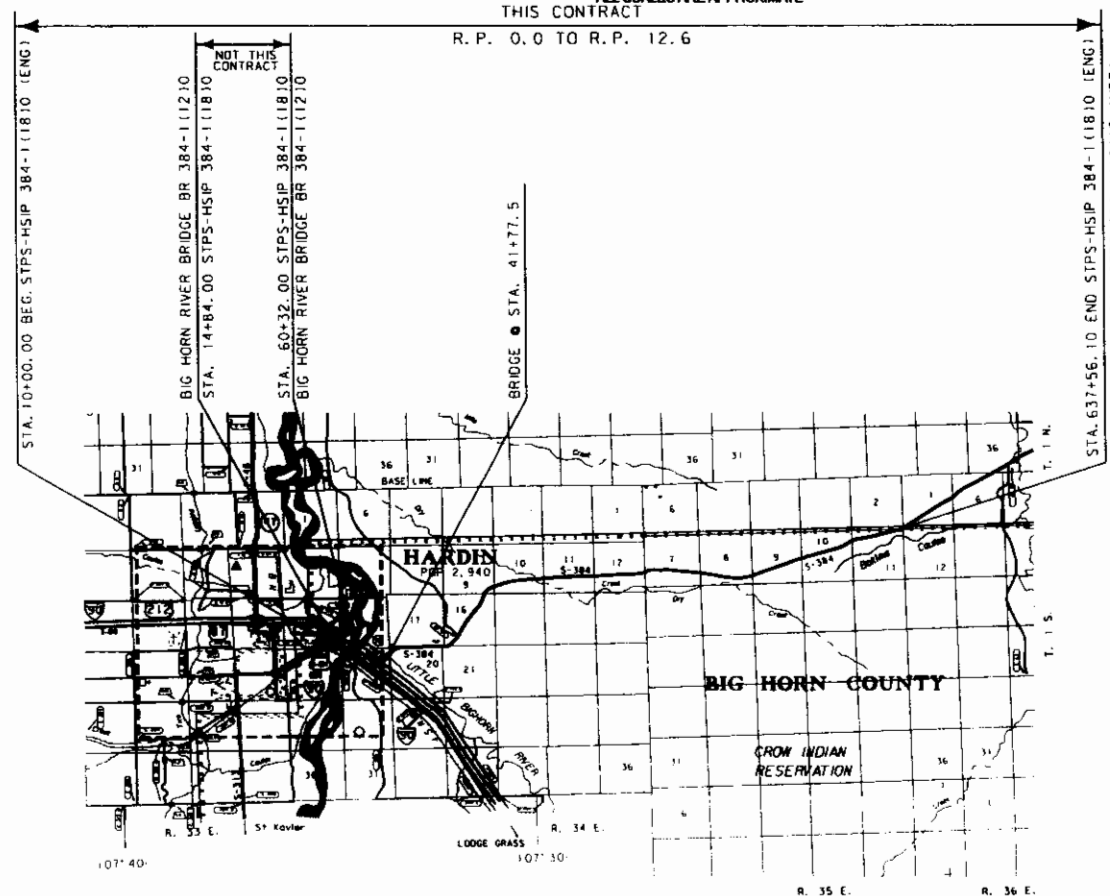
CROSS SECTION - HORIZONTAL & VERTICAL: 1" = 10'

REDUCED PRINTS ONE-HALF ORIGINAL SCALE

ALL SCALES ARE APPROXIMATE

THIS CONTRACT

R.P. 0.0 TO R.P. 12.6



PRESENT 2002 A.D.T. = 280
LETTING 2004 A.D.T. = 280
DESIGN 2024 A.D.T. = 420
D.H.V. = 60
TRUCKS = 11.1 %
V. = 60 mph
18 KIP ESAL'S = 17 DAILY
GROWTH RATE = 2.0 % ANNUALLY
RP 1.185 - RP 12.800

LETTING DATE -

PRESENT 2002 A.D.T. = 1570
LETTING 2004 A.D.T. = 1600
DESIGN 2024 A.D.T. = 2380
D.H.V. = 240
TRUCKS = 3.6 %
V. = 60 mph
18 KIP ESAL'S = 34 DAILY
GROWTH RATE = 2.0 % ANNUALLY
RP 0.000 - RP 1.185

SURFACING SOURCES -
CONTRACTOR FURNISHED

RELATED PROJECTS

--

ASSOCIATED PROJECT AGREEMENT NUMBERS

R/W & I.C. STPS 384-1(120)10

P.E. STPS 384-1(114)10

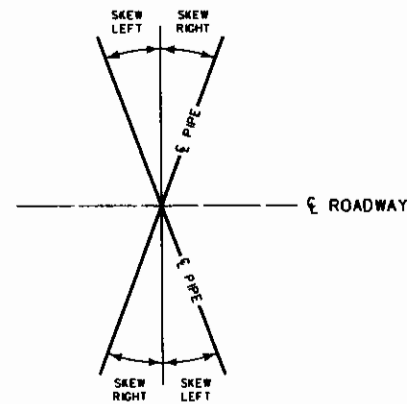
3	MONTANA DEPARTMENT OF TRANSPORTATION	crldgm5204d0002.dgn	DESIGNED BY J. MILLER	11/14/2007
2		24/2008	REVIEWED BY A. ESCHER	11/14/2007
		11:08:05 AM	CPS: URB16	
				UPN 5204

MONTANA DEPARTMENT OF TRANSPORTATION	
APPROVED Feb 4, 2008 JIM LYNCH DIRECTOR OF TRANSPORTATION	
BY [Signature] HIGHWAYS ENGINEER	
U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION	
APPROVED 	DATE

TABLE OF CONTENTS

ROAD PLANS	SHEET NO.
TITLE SHEET	1
TABLE OF CONTENTS	2
NOTES	2
LINEAR DATA	2
TYPICAL SECTIONS	3
SUMMARIES	4-5
SURFACING	4
ADDITIONAL SURFACING	4
GUARDRAIL	4
PAVEMENT MARKINGS	4
COLD MILLING	4
CRACK SEALING	4
EQUIPMENT	4
FENCING - LEFT SIDE	5
FENCING - RIGHT SIDE OF ROAD	5
STOCKPASS	5
CATTLEGUARD	5
DETAILS	6-9
OVERLAY CONNECTION	6
COLD MILLING TAPER	7
COLD MILLING DETAIL	7
CRACK SEALING DETAILS	8
PIPE DETAILS	9
FENCING PLANS	1-21
BRIDGE PLANS	B1-B2
CROSS SECTIONS	1-2

SKEW DIAGRAM



NOTES

BASIS OF PLAN QUANTITIES

(QUANTITIES FOR ESTIMATING PURPOSES ONLY)

COMP. AGGREGATE WEIGHT = 3700 LBS. PER CUBIC YARD
 COMP. WEIGHT OF PL. MIX BIT. SURF. = 3855 LBS. PER CUBIC YARD
 ASPHALT CEMENT = 5.4% OF PL. MIX BIT. SURF.
 HYDRATED LIME = 1.4% OF PL. MIX BIT. SURF.
 BITUMINOUS MATERIAL = 8.5% LBS. PER GALLON
 TACK = 0.025 GAL. PER SQUARE YARD (UNDILUTED)
 SEAL = 0.40 GAL. PER SQUARE YARD
 COVER = 25 LBS. PER SQUARE YARD
 LEVELING = 266 TONS PER SQUARE MILE

APPROACHES

PROVIDE THE FOLLOWING SURFACING:
 PLACE 3 FT. WIDE PLANT MIX STRIP ADJACENT AND PARALLEL TO ROADWAY
 ON ALL APPROACHES & TURNOUTS

AVERAGE PLANT MIX SURFACE FOR ALL EXISTING APPROACHES
 QUANTITIES FOR ONE PRIVATE/EARLY FIELD APPROACH

AVERAGE LENGTH = 3.0 feet
 PLANT MIX BITUMINOUS SURF. = 2.3 tons
 ASPHALT CEMENT = 0.12 tons

AVERAGE PLANT MIX SURFACE FOR APPROACHES TO R/W
 QUANTITIES FOR ONE PUBLIC APPROACH

AVERAGE LENGTH = 60.0 feet
 PLANT MIX BITUMINOUS SURF. = 19.0 tons
 ASPHALT CEMENT = 1.0 tons

TEMPORARY EROSION AND SEDIMENT CONTROL

IF SITUATIONS ARE OBSERVED DURING CONSTRUCTION THAT MAY POTENTIALLY IMPACT
 WATER QUALITY, INCLUDING WETLAND AREAS, UTILIZE BEST MANAGEMENT PRACTICES
 (BMP) AND/OR TEMPORARY EROSION CONTROL MEASURES AS NECESSARY TO PROTECT
 THE RESOURCE.

REFER TO SECTION 208 OF THE MDT DETAILED DRAWINGS FOR EROSION AND SEDIMENT
 CONTROL BEST MANAGEMENT PRACTICES.

INSTALL TEMPORARY EROSION CONTROL MEASURES AS DEEMED NECESSARY BY THE ENGINEER.
 PAYMENT TO BE DETERMINED USING THE EROSION AND SEDIMENT CONTROL RATE SCHEDULE
 AND PAID UNDER MISCELLANEOUS WORK.

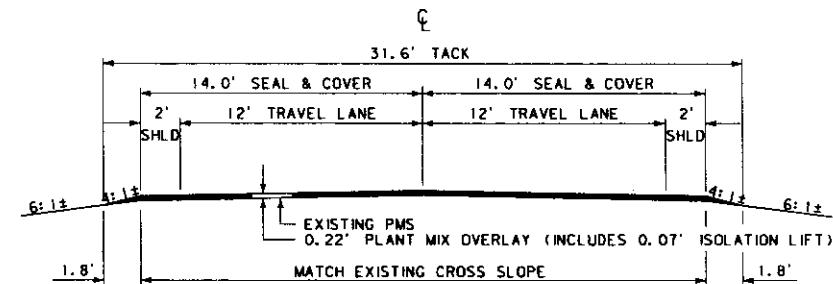
LINEAR DATA

LENGTH OF ROADWAY IN BIG HORN COUNTY	2 LANE RURAL	61 742.70 ft
LENGTH OF ROADWAY IN BIG HORN COUNTY (NOT THIS CONTRACT)	2 LANE RURAL	4 548.00 ft
LENGTH OF BRIDGE IN BIG HORN COUNTY	2 LANE RURAL	183.00 ft
TOTAL LENGTH OF STPS-HSIP 384-1(18)0	2 LANE RURAL	66 473.70 ft

TYPICAL SECTION NO. 1

S 384

STA. 17+55.00 TO STA. 637+56.10

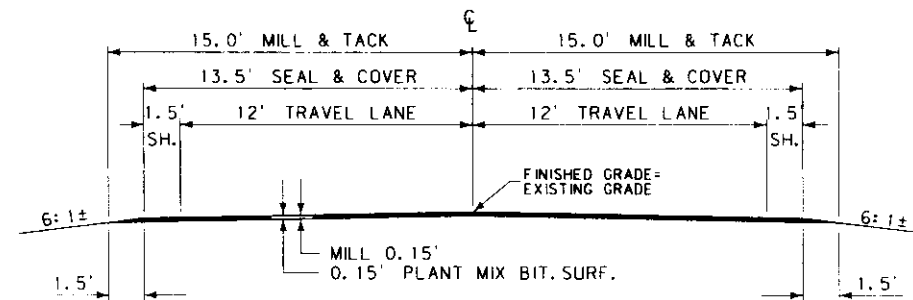


QUANTITIES					
UNIT	AGGREGATE		UNIT	BITUMINOUS MATERIAL	
	COVER	PLANT MIX		ASPHALT CEMENT	TACK
AREA square feet		6.56	square yards PER STATION		311
cubic yards PER STATION		24.3	tons PER STATION	2.53	0.53
tons PER STATION		46.8	gallons PER STATION		9
square yards PER STATION	311				

TYPICAL SECTION NO. 2

NORTH FRONTAGE ROAD (S 384)

STA. 10+00.00 TO STA. 14+84.00
STA. 60+32.00 TO STA. 71+85.00



QUANTITIES					
UNIT	AGGREGATE		UNIT	BITUMINOUS MATERIAL	
	COVER	PLANT MIX		ASPHALT CEMENT	TACK
AREA square feet		4.28	square yards PER STATION		333
cubic yards PER STATION		15.9	tons PER STATION	1.65	0.51
tons PER STATION		30.6	gallons PER STATION		8
square yards PER STATION	300				

SUMMARY

SURFACING														
STATION		linear feet				FOR	tons	AGGREGATE			BITUMINOUS MATERIAL			REMARKS
		GROSS	NET	+	-		HYDRATED LIME	square yards	tons	cubic yards	tons	gals		
FROM	TO						COVER TYPE 1	PLANT MIX BIT. SURF. GRADE IS 3/4"	CRUSHED AGG. COURSE	ASPHALT CEMENT PG 64-28	SEAL CRS- 2P	*TACK SS-1		
10+00.00	14+84.00	484.00	484.00				1 452	146		8.0	2.5	39	TYPICAL NO. 2	
60+32.00	71+85.00	1 153.00	1 153.00				3 459	353		19.0	5.9	92	TYPICAL NO. 2	
17+55.00	42+86.00				183.00	BRIDGE IN PLACE								
40+86.00	299+88.20				1 712.40	EQUATION								
273+55.80	637+56.10	92 001.10	80 105.70				186 929	28 129		1520.7	318.6	5 410	TYPICAL NO. 1	
17+55.00	637+56.10					LEVELING		3 028		163.5				
						ADDITIONAL SURFACING	42	142	40	7.5	0.1	1		

* FOR INFORMATION ONLY - BASED ON ONE APPLICATION

EQUIPMENT			
STATION		hours	REMARKS
		MOTOR GRADER	
FROM	TO		
17+55.00	637+56.10	40	
TOTAL		40	

ADDITIONAL SURFACING (INCLUDED IN SURFACING FRAME)														
STATION		linear feet				FOR	tons	AGGREGATE			BITUMINOUS MATERIAL			REMARKS
		GROSS	NET	+	-		HYDRATED LIME	square yards	tons	cubic yards	tons	gals		
FROM	TO						COVER TYPE	PLANT MIX BIT. SURF. GRADE 5 3/4"	CRUSHED AGG. COURSE	ASPHALT CEMENT PG 70-28	SEAL CRS- 2P	*TACK SS-1		
						2 PUBLIC APPROACHES		38		2.0				
						35 PRIVATE APP. & FARM APP.		81		4.2				
						2 CATTLEGUARD FILL IN AREAS	42	14	36	0.8	0.1	1		
						STOCKPASS SURFACING		9	4	0.5				

* FOR INFORMATION ONLY - BASED ON ONE APPLICATION

COLD MILLING			
STATION		square yards	REMARKS
		COLD MILLING	
FROM	TO	15 FT	
38+58.00	40+86.00	716	BRIDGE END TAPER
42+86.00	44+59.00	716	BRIDGE END TAPER
635+56.10	637+56.10	822	OVERLAY CONNECTION
17+55.00	23+55.00	1 867	OVERLAY CONNECTION
10+00.00	14+84.00	1 613	NORTH FRONTAGE ROAD (S 384)
80+32.00	71+85.00	3 843	NORTH FRONTAGE ROAD (S 384)
TOTAL		9 377	

GUARDRAIL										
STATION		linear feet				each				REMARKS
		REMOVE GUARDRAIL		METAL GUARDRAIL		OPTIONAL TERMINAL SECTION		BRIDGE APPROACH SECTION TYPE 3		
FROM	TO	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	
39+72.50	40+85.00			37.5	37.5	1	1	1	1	
39+86.00	40+86.00	100.0	100.0							
42+70.00	43+82.50			37.5	37.5	1	1	1	1	
42+70.00	43+70.00	100.0	100.0							
SUBTOTAL		200.0	200.0	75.0	75.0	2	2	2	2	
TOTAL		400.0		150.0		4		4		

CRACK SEALING		
REFERENCE POST		LIN. FEET
FROM	TO	CRACK SEALING
17+55.00	637+56.10	22 530
TOTAL		22 530

PAVEMENT MARKINGS				
ITEM	UNIT	*INTERM APPLICATION	FINAL APPLICATION	TOTAL
STRIPING - YELLOW PAINT	GALLON	432		432
STRIPING - WHITE PAINT	GALLON	1 046		1 046
STRIPING - YELLOW EPOXY	GALLON		271	271
STRIPING - WHITE EPOXY	GALLON		657	657
TEMPORARY PAVEMENT MARKINGS	MILES			12.0

*BASED ON TWO APPLICATIONS

SUMMARY

FENCING - LEFT SIDE OF ROADWAY (HSIP FUNDING)										
STATION		linear feet		each		DEADMAN	linear feet	REMARKS		
		FARM FENCE		FARM FENCE PANEL			FARM GATE			
		FROM	TO	TYPE F4M	TYPE FSM		SINGLE		DOUBLE	TYPE G2
42+70.00	49+92.00		723.0			2	2			
49+92.00	50+08.00								16	
50+08.00	52+42.00		234.0			3				TIE TO EXISTING FENCE & CATTLE GUARD
52+42.00	75+82.00		20.0			2				
75+82.00	75+98.00								16	
75+98.00	123+03.00		4 711.8			6	6			
123+03.00	123+27.00									24" CATTLE GUARD*
123+27.00	163+87.00		4 042.4			6	4			
163+87.00	163+83.00									16" CATTLE GUARD*
163+83.00	195+42.00			3 161.4		5	2			
195+42.00	195+58.00								16	
195+58.00	269+42.00			7 286.9		11	6			
269+42.00	269+58.00								16	
269+58.00	320+98.00			3 525.6		6	1			
320+98.00	321+12.00								16	
321+12.00	340+45.00		1 940.0			4	1			WING TO PIPE
340+45.00	344+87.00		419.0			2	1			WING TO PIPE
344+87.00	344+83.00								16	
344+83.00	375+85.00		3 086.6			5	2			
375+85.00	375+81.00									16" CATTLE GUARD*
375+81.00	399+14.00		2 342.1			3	3			
399+14.00	399+30.00									16" CATTLE GUARD*
399+30.00	415+05.00		1 576.2			3	2			
415+05.00	415+21.00									16" CATTLE GUARD*
415+21.00	428+17.00		1 098.0			3				
428+17.00	428+33.00									16" CATTLE GUARD*
428+33.00	457+92.00		3 259.0			6				
457+92.00	458+08.00								16	
458+08.00	473+93.00		1 005.2			2	2			WING TO PIPE
473+93.00	509+92.00		3 905.4			7	1			WING TO PIPE
509+92.00	510+08.00									16" CATTLE GUARD*
510+08.00	515+92.00		564.0			2				
515+92.00	516+08.00								16	
516+08.00	521+88.00		580.0			2				TIE INTO EXISTING
521+88.00	574+00.00		654.0			3				TIE INTO EXISTING
574+00.00	574+16.00								16	
574+16.00	635+02.00		6 087.2			9	3			
635+02.00	635+18.00								16	
635+18.00	637+56.10		238.1			2				TIE INTO EXISTING
TOTAL			36 801.0	13 973.9		96	36	19	180	

* SEE CATTLE GUARD SUMMARY

FENCING - RIGHT SIDE OF ROADWAY (HSIP FUNDING)										
STATION		linear feet		each		DEADMAN	linear feet	REMARKS		
		FARM FENCE		FARM FENCE PANEL			FARM GATE			
FROM	TO	TYPE F4M	TYPE FSM	SINGLE	DOUBLE		TYPE G2			
52+98.00	53+30.00						30	TIE TO 16" CATTLE GUARD*		
53+30.00	75+82.00		2 255.0	4	3					
75+82.00	76+06.00						16	TIE TO 16" CATTLE GUARD*		
76+06.00	107+19.00		3 119.0	5	4					
107+19.00	107+35.00						16			
107+35.00	123+03.00		1 569.2	2	3					
123+03.00	123+27.00							24" CATTLE GUARD*		
123+27.00	128+82.00	365.0		2						
128+82.00	127+08.00						16			
127+08.00	157+87.00	3 088.0		6						
157+87.00	158+13.00						16			
158+13.00	167+92.00	979.0		3						
167+92.00	188+08.00						16			
188+08.00	182+36.00		1 431.0	3						
182+36.00	182+55.00						16			
182+55.00	195+42.00		1 287.0	3						
195+42.00	195+58.00						16			
195+58.00	234+02.00		3 847.6	5	4					
234+02.00	234+18.00							16" CATTLE GUARD*		
234+18.00	320+98.00		8 679.6	11	2					
320+98.00	321+12.00						16			
321+12.00	339+87.00	1 802.8		4	3			WING TO PIPE		
339+87.00	345+15.00	511.6		2	1			WING TO PIPE		
345+15.00	345+31.00						16			
345+31.00	364+59.00		1 932.0	3	4					
364+59.00	364+75.00						16			
364+75.00	412+92.00		4 811.2	9	1					
412+92.00	413+08.00							16" CATTLE GUARD*		
413+08.00	434+77.00	2 174.8		4	5					
434+77.00	434+93.00							16" CATTLE GUARD*		
434+93.00	458+12.00	2 124.2		4	2					
458+12.00	458+28.00						16			
458+28.00	473+93.00	1 785.4		4	1			WING TO PIPE		
473+93.00	509+92.00	3 620.8		7	3			WING TO PIPE		
509+92.00	510+08.00						16			
510+08.00	580+10.00		7 004.4	12	4					
580+10.00	580+26.00							16" CATTLE GUARD*		
580+26.00	635+02.00	5 477.2		9	2					
635+02.00	635+18.00						16			
635+18.00	637+56.10	238.1		2				TIE INTO EXISTING		
TOTAL		35 787.2	22 188.4	104	42	22	238			

* SEE CATTLE GUARD SUMMARY

STOCKPASS										
STATION	linear feet	cubic yards			tons	cubic yards	linear feet	linear feet	COATING	REMARKS
	CSP - 3 x 1" CORR. 0.079" THK. 84"	CULVERT EXC. **	BEDDING MATERIAL	CLASS "D" CONC.	PLANT MIX BIT. SURF. INCL. IN SURF. FRAME	CR. AGG. COURSE	HEIGHT OF COVER	END SECTIONS		
340+12.0	114	415	117	6.2	5	2	3.5	1.5-1.6	145	YES
474+00.0	96	485	93	6.2	4	2	7.1	1.5-1.6	106	YES
TOTAL		210	210	12.4					251	

* SEE STANDARD SPEC. 709.05
 ** FOR INFORMATION ONLY
 @ STEP BEVEL

CATTLE GUARD						
STATION		each		REMOVE CATTLE GUARD	REMARKS	
		16.0 feet	24.0 feet			
123+03.00	123+27.00		1		LEFT	
163+87.00	163+83.00	1			LEFT	
375+85.00	375+81.00	1			LEFT	
399+14.00	399+30.00	1			LEFT	
415+05.00	415+21.00	1			LEFT	
428+17.00	428+33.00	1			LEFT	
509+92.00	510+08.00	1			RIGHT	
52+98.00	53+30.00	1			RIGHT	
75+82.00	75+82.00	1			RIGHT	
123+03.00	123+27.00		1		RIGHT	
234+02.00	234+18.00	1			RIGHT	
412+92.00	413+08.00	1			RIGHT	
434+77.00	434+93.00	1			RIGHT	
580+10.00	580+26.00	1			RIGHT	
179+84.00				1	IN MAINLINE	
637+56.10				1	IN MAINLINE	
TOTAL		12	2	2		

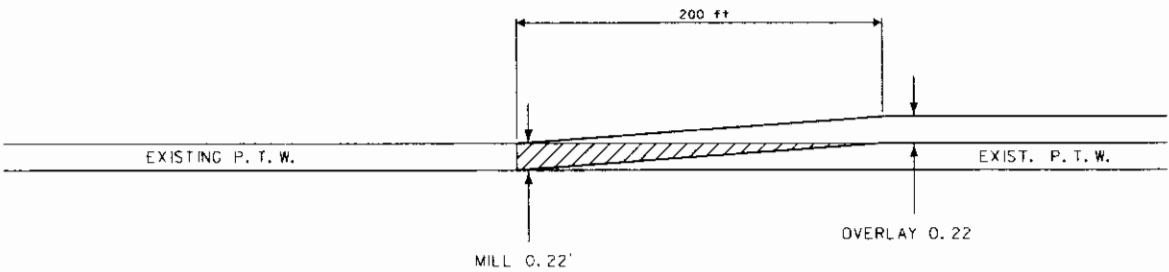
DETAIL

OVERLAY CONNECTION
NO SCALE



COLD MILLING

STA. 637+56.10 TO STA. 635+56.10

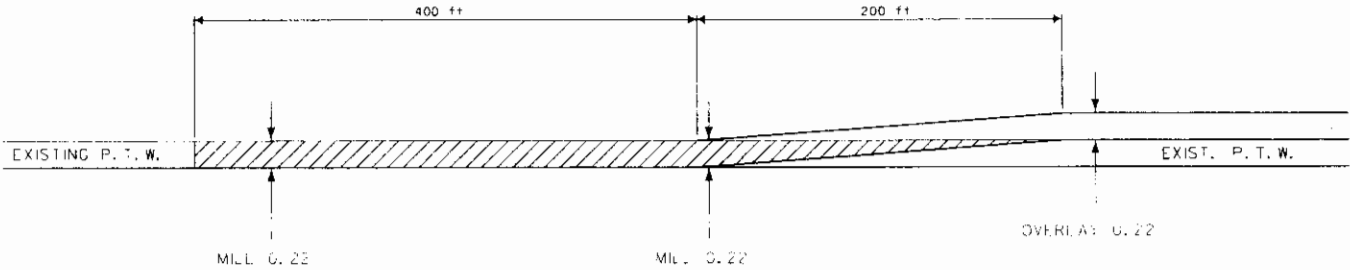


OVERLAY CONNECTION
NO SCALE



COLD MILLING

STA. 17+55.00 TO STA. 23+55.00

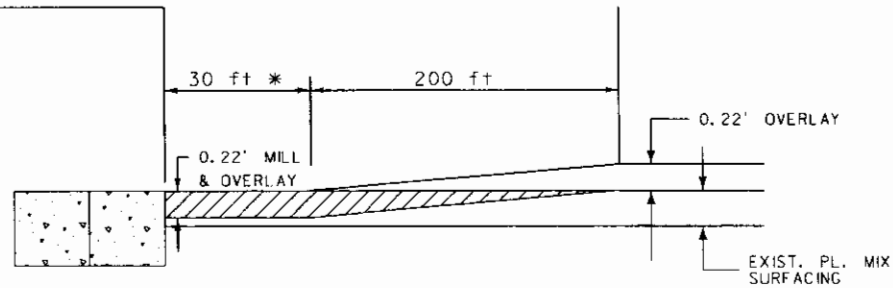


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2		2/26/2008	REVIEWED BY J. L. SCHLIER	12/12/2007			
1		12:10:48 PM	CHECKED BY S. FANNY		BIG HORN COUNTY	UPN 5204	SHEET 6 OF 9
		CPS - U0277					

DETAIL

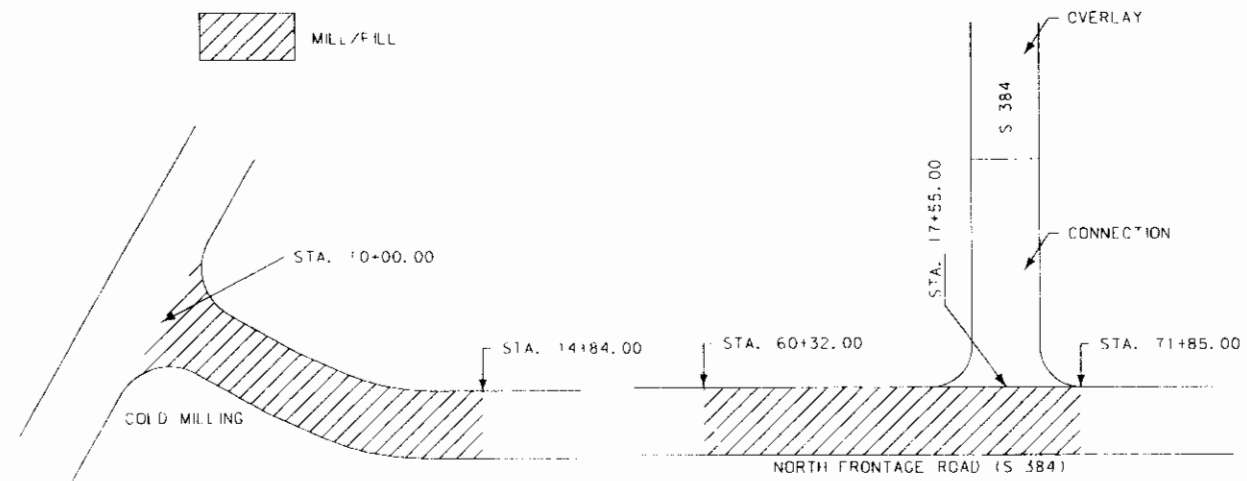
COLD MILLING TAPER NO SCALE

40+86.00 - BRIDGE END
42+69.00 - BRIDGE END



* NOTE: ACTUAL REMOVAL DISTANCES TO BE DETERMINED DURING CONSTRUCTION BY THE ENGINEER

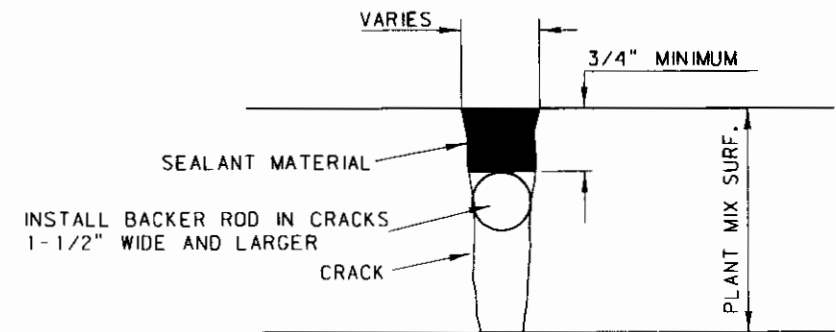
COLD MILLING DETAIL NO SCALE



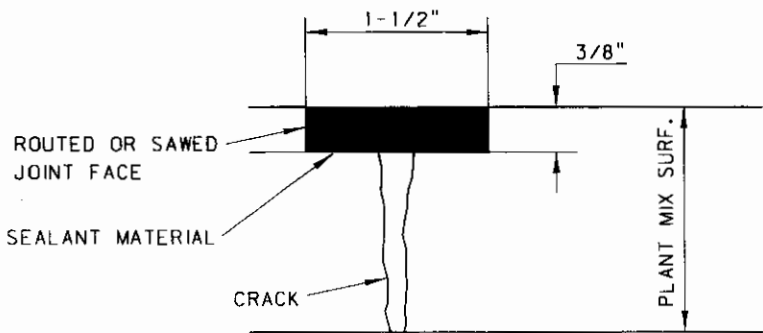
3	MONTANA DEPARTMENT OF TRANSPORTATION	c:\pnt\204\road\002.dgn	DESIGNED BY J. MILLER	02/12/2007		HARDW-EAST	STPS-HSP 384-1(1810)
1	working you with pride	2/28/2006	REVIEWED BY A. ESCHLER	02/12/2007		UPW 5204	SHEET 7 OF 9
		12:10:48 PM	CPS - U0275		BIG HORN COUNTY		

CRACK SEALING DETAILS

NO SCALE



USE FLUSH-FILL METHOD
FOR CRACKS WIDER THAN 1"

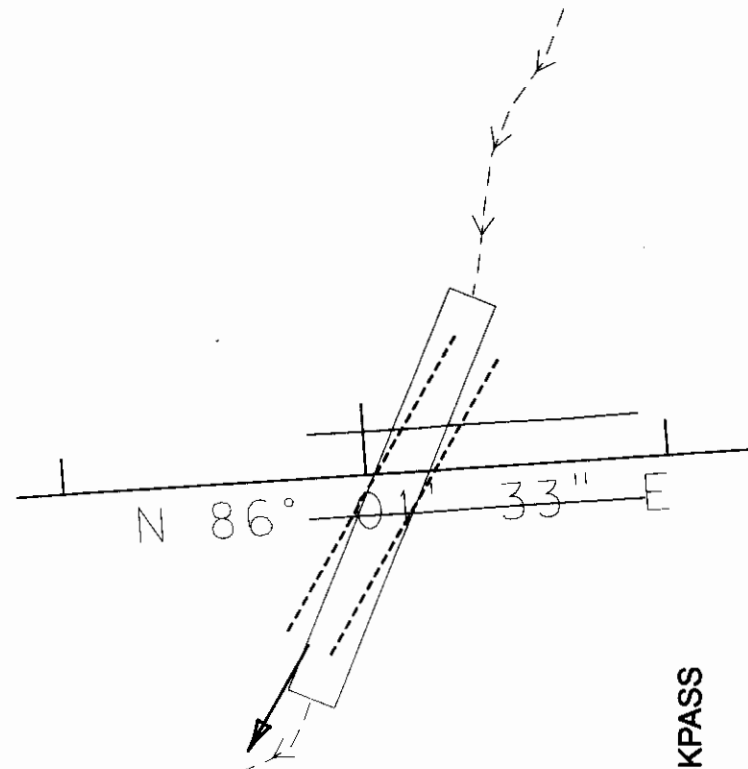


USE RESERVOIR FLUSH FILL METHOD FOR
CRACKS 1/8" TO 1" WIDE

1	MONTANA DEPARTMENT OF TRANSPORTATION	c:\dgm5204\down002.dgn	DESIGNED BY: J. MILLER	12/12/2007			HARDIN-EAST	STPS-HSP 384-111810
2		3/8/2008	REVIEWED BY: A. SCHLER	12/12/2007				
3		8:46:50 AM	CPS - U0277		BIG HORN COUNTY		UPN 5204	SHEET 8 OF 9

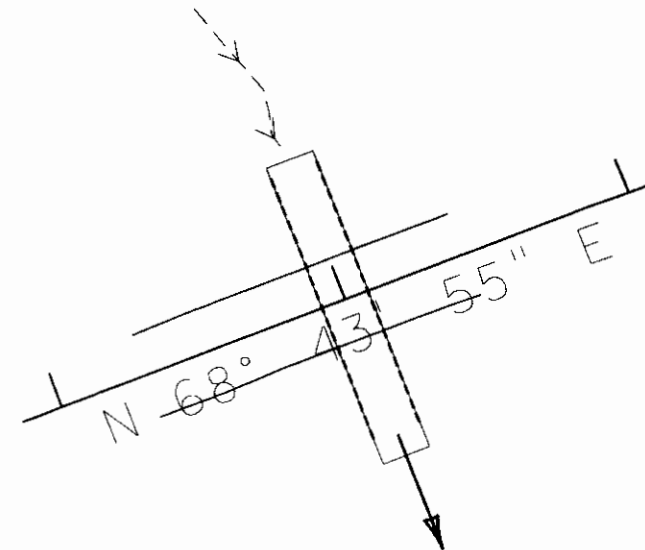
DETAIL

STOCKPASS STA. 340+12.00
NO SCALE



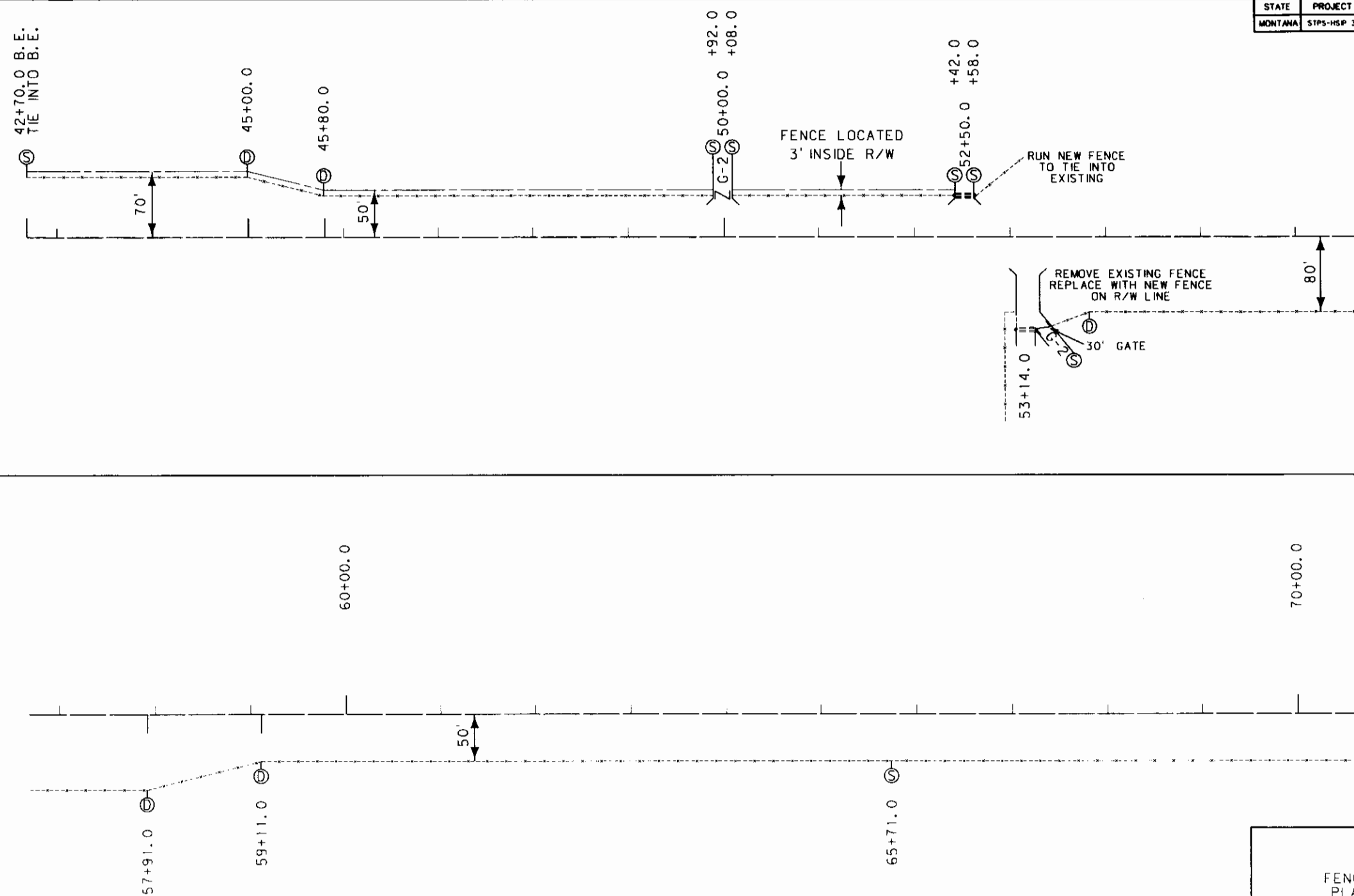
340+12
30" RCP IN PL.
REMOVE
NEW 84" STOCKPASS

STOCKPASS STA. 474+00.00
NO SCALE



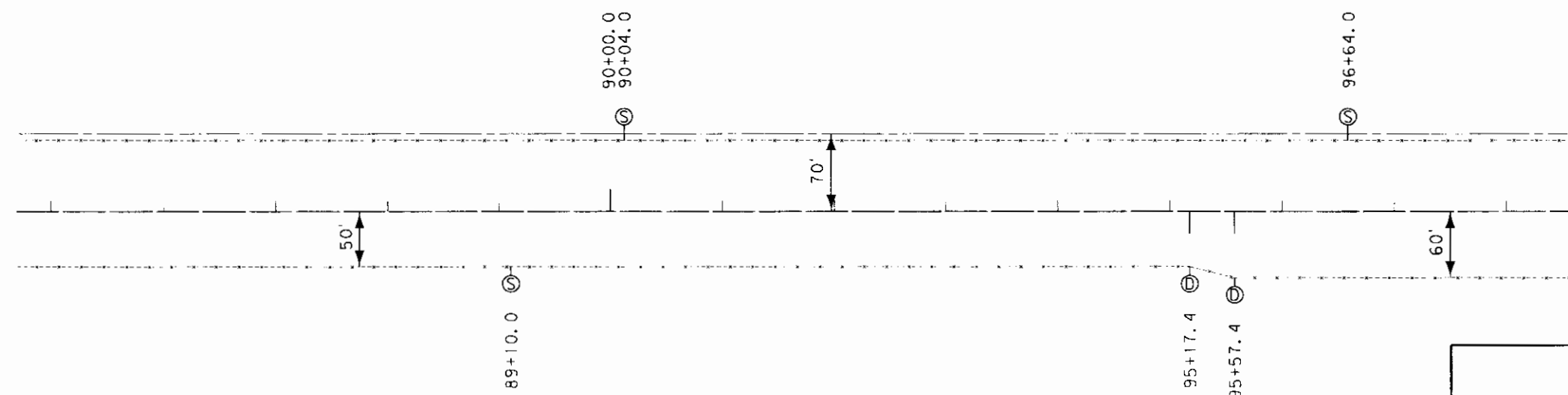
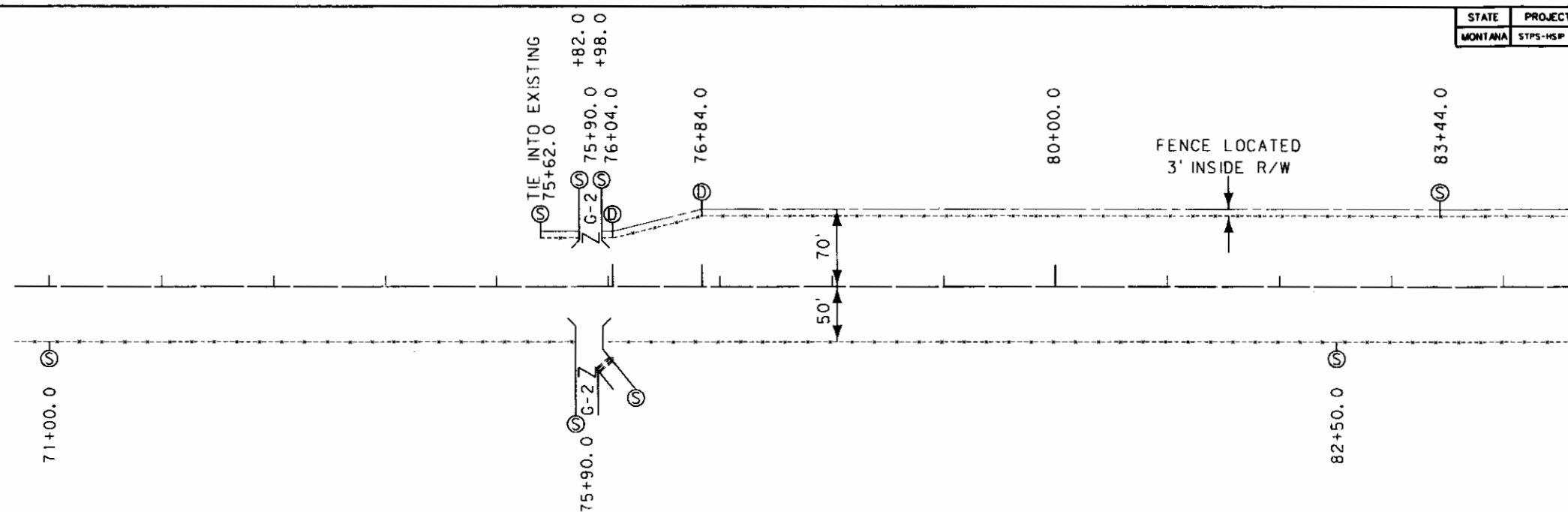
474+00
24" CSP IN PL.
REMOVE
NEW 84" STOCKPASS

STATE	PROJECT NUMBER	SHEET NO.
MONTANA	STPS-HSP 304-1(18)0	1



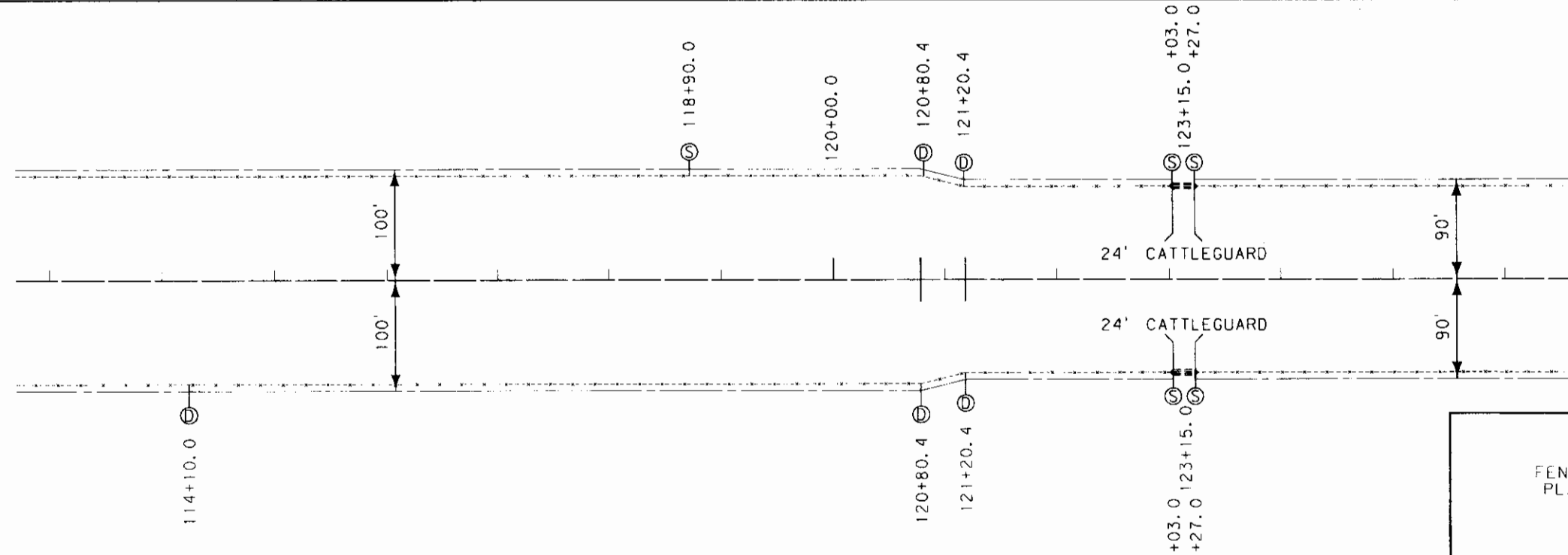
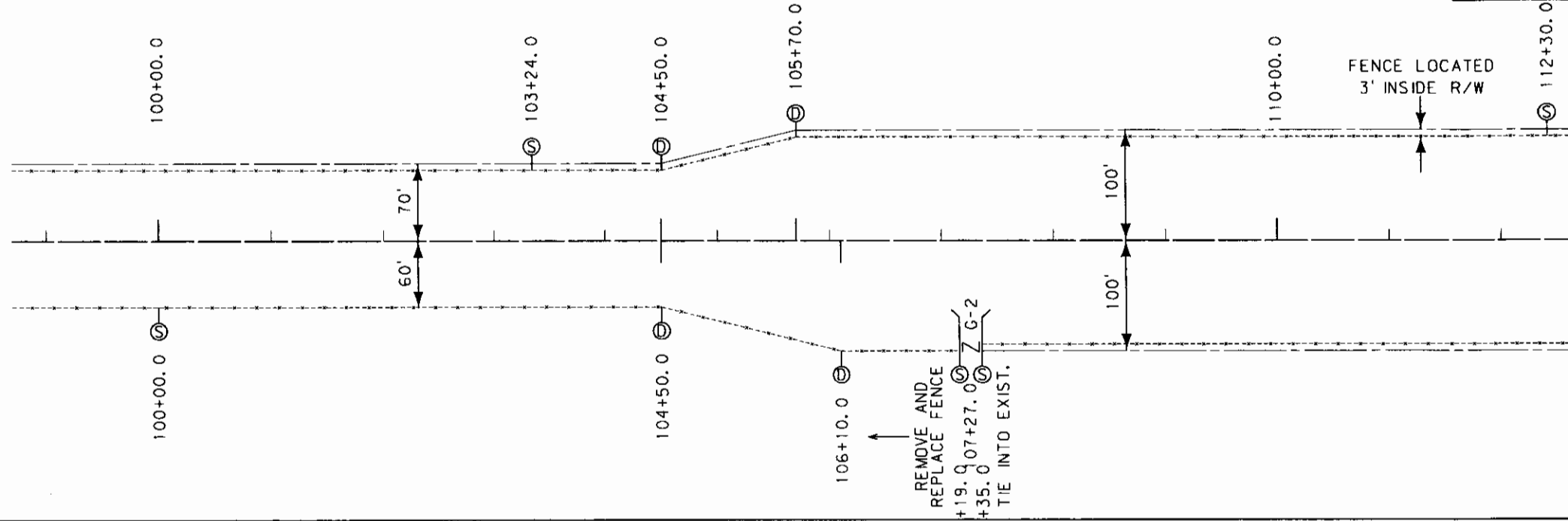
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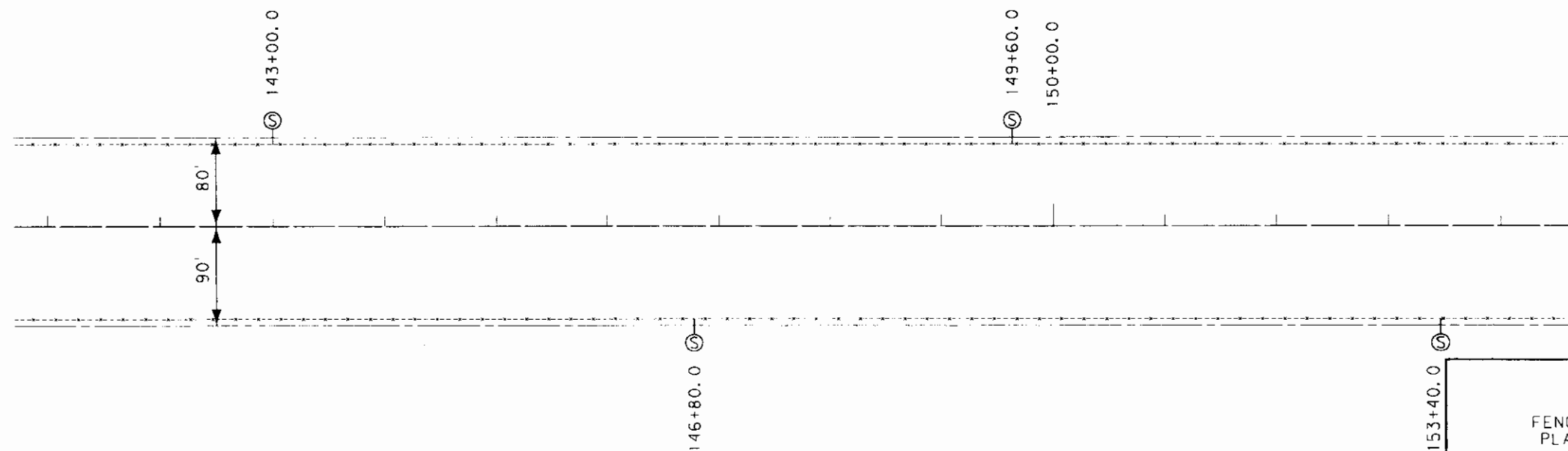
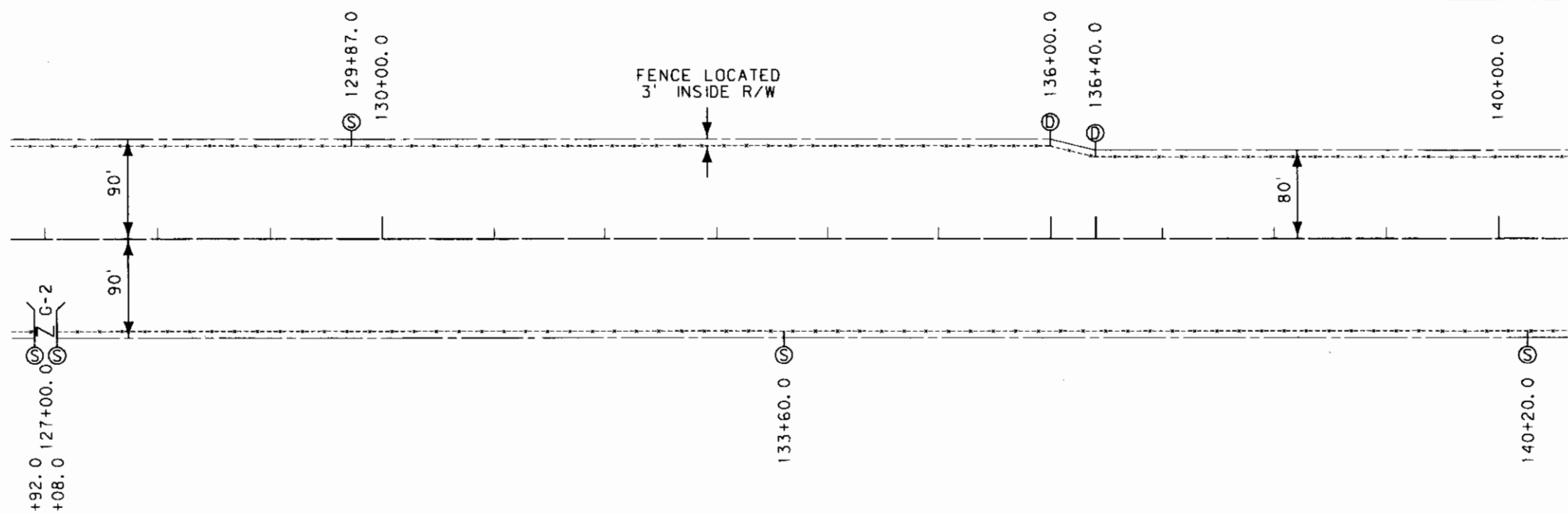
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MONTANA	STPS-HSP 384-111810	3



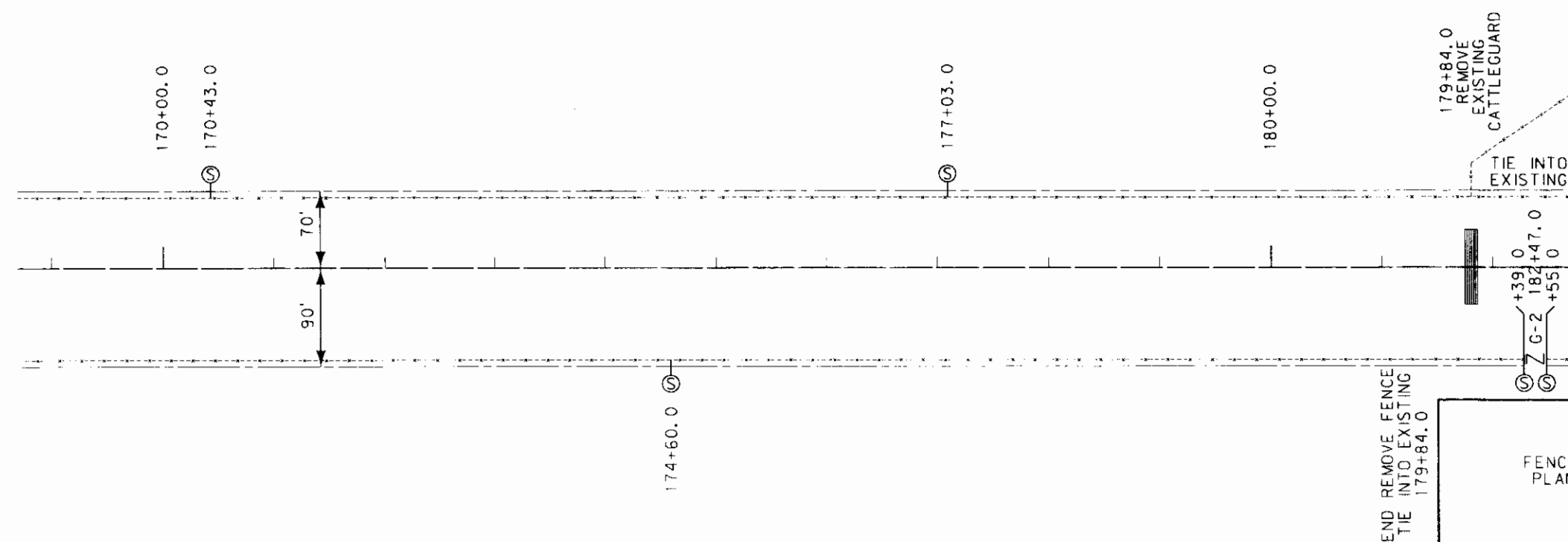
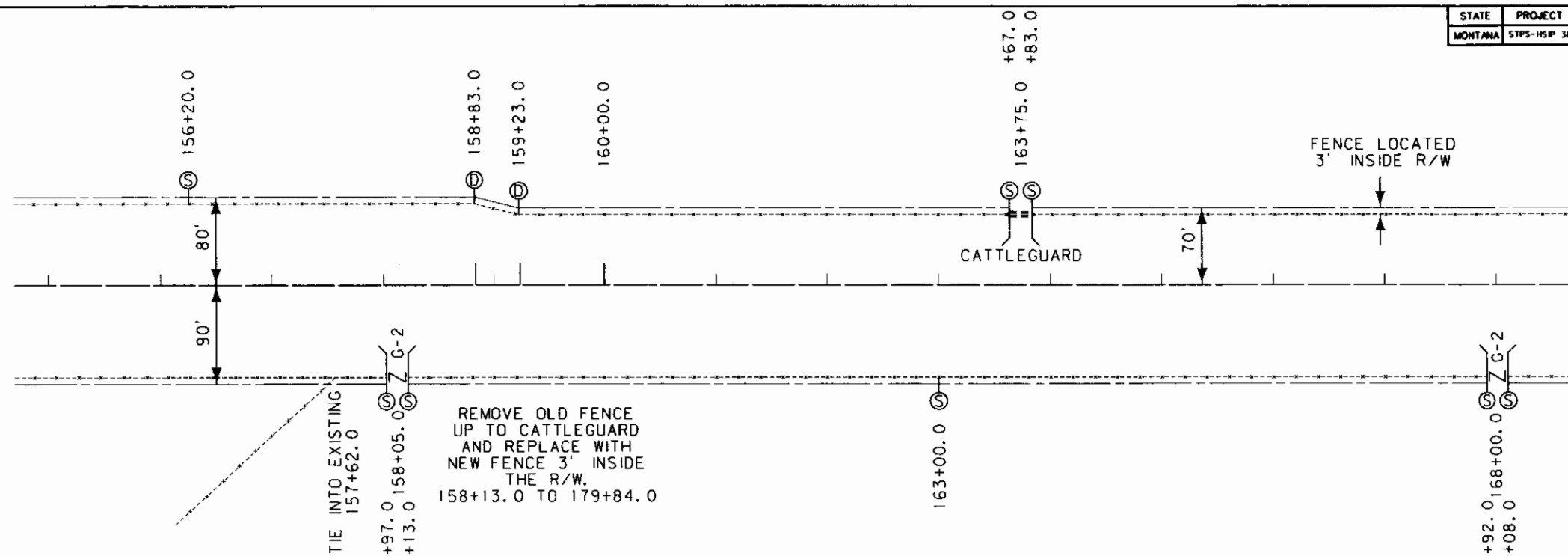
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PLANS

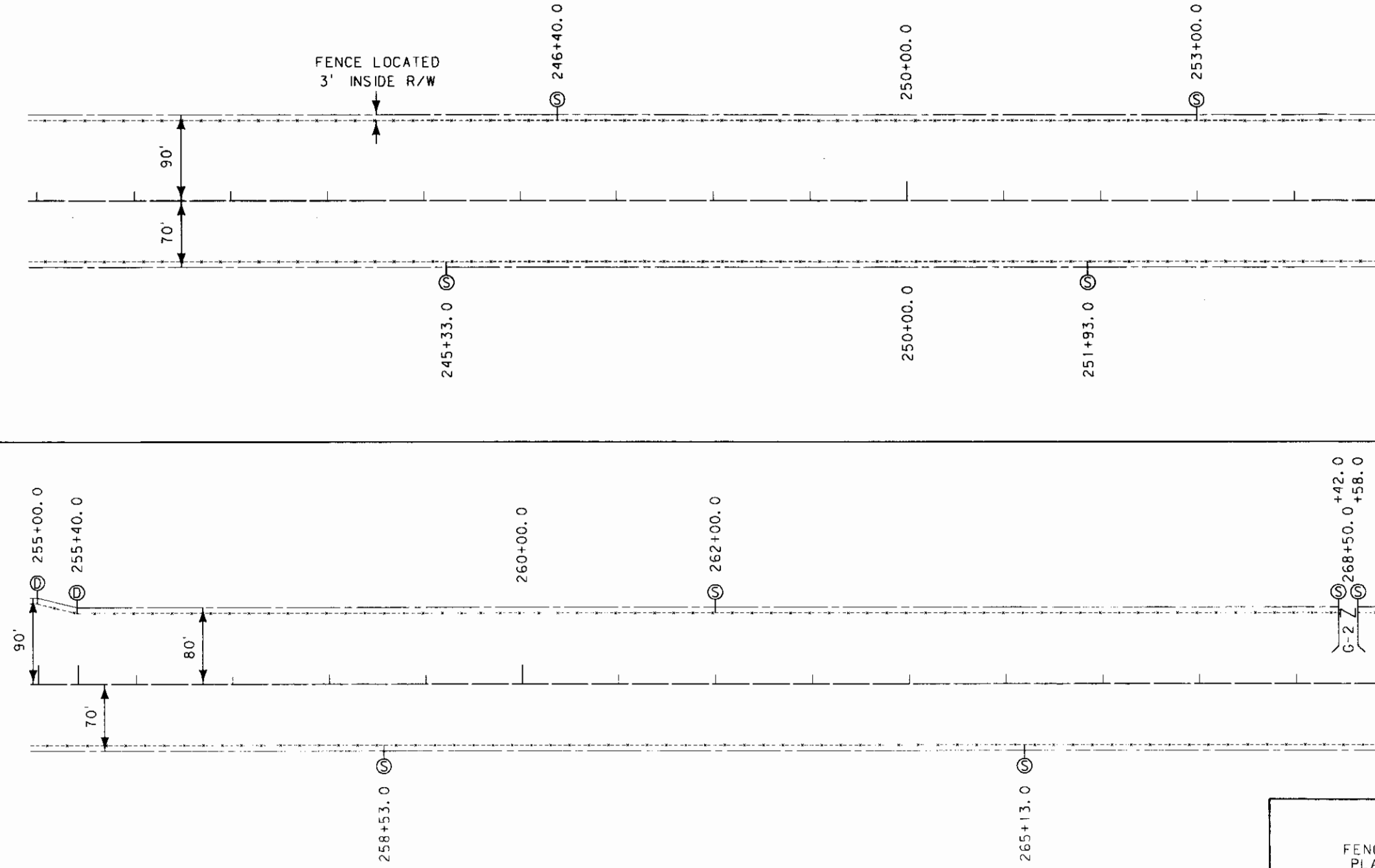
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MONTANA DEPARTMENT
OF TRANSPORTATION

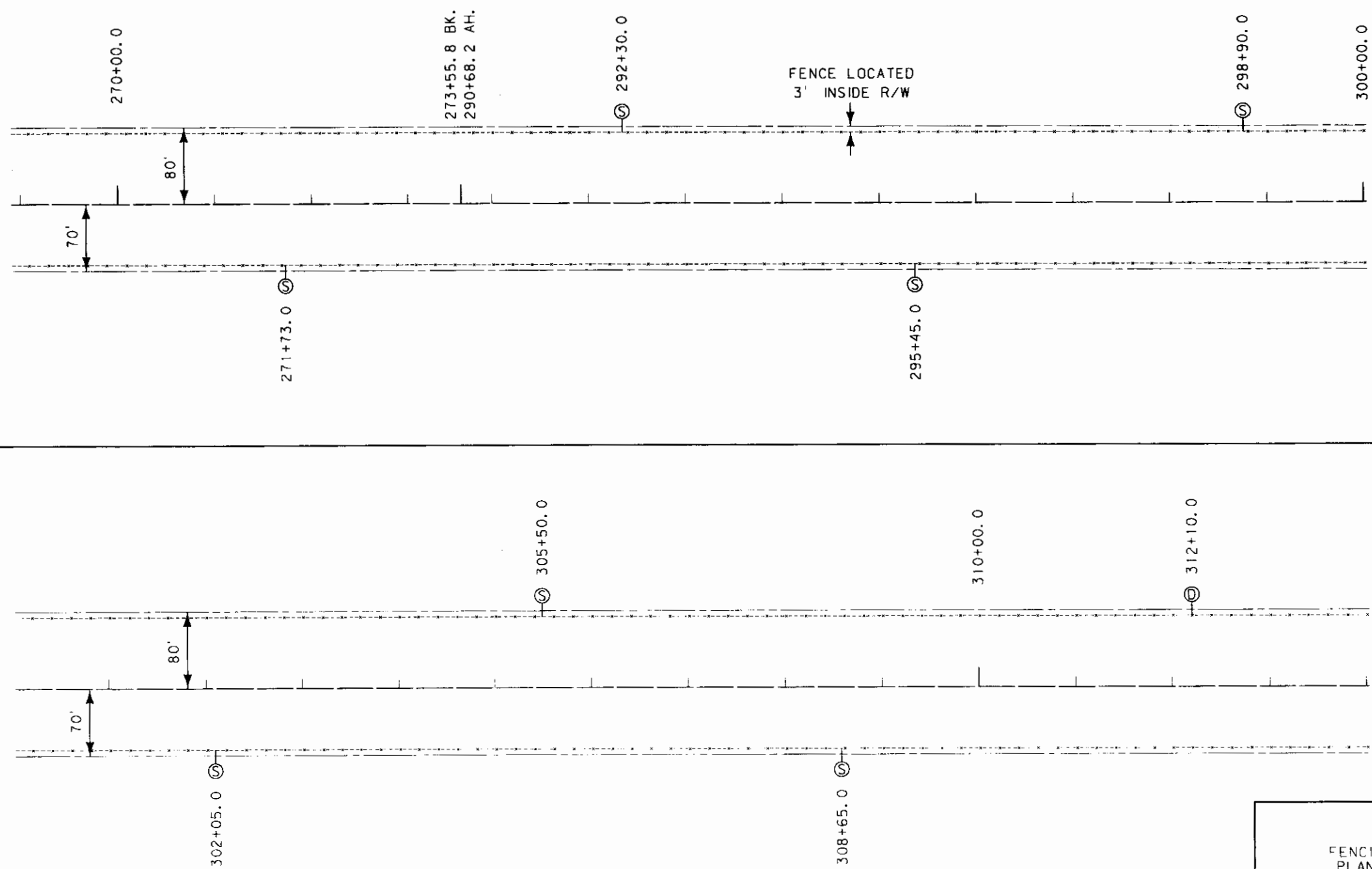
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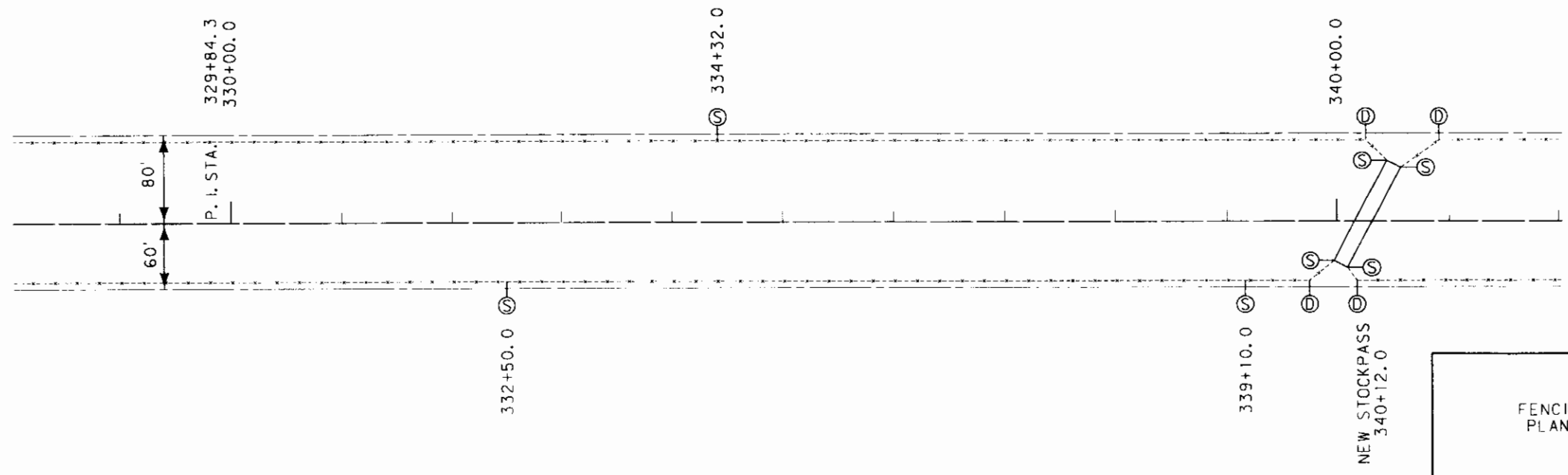
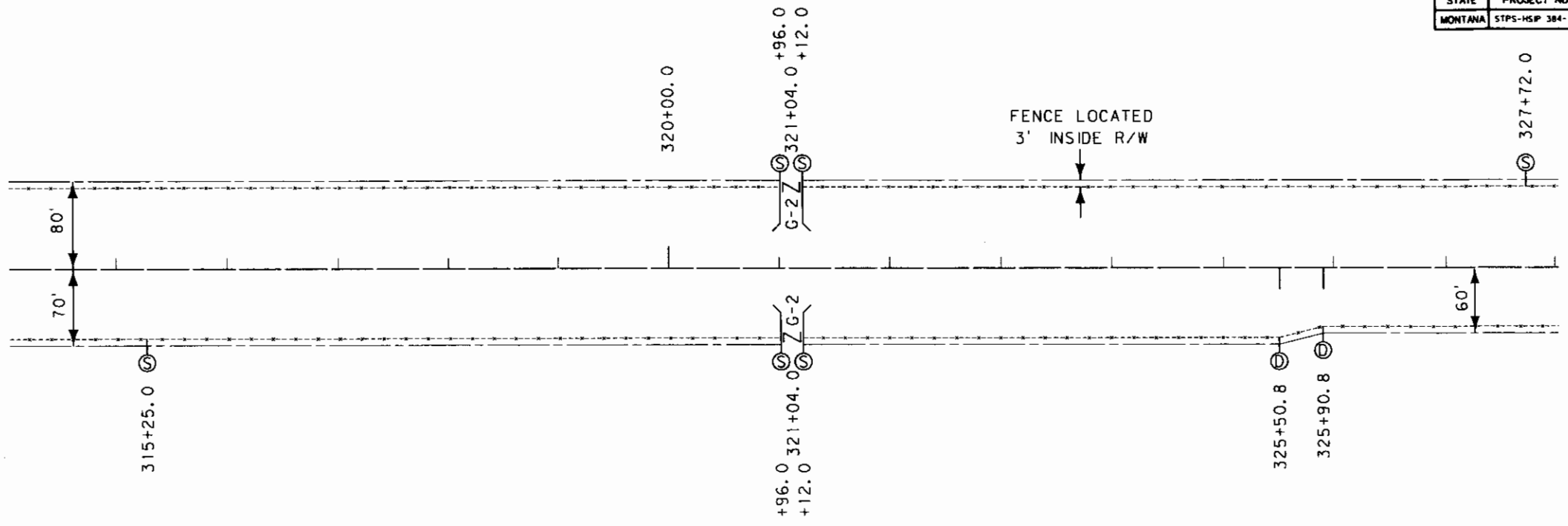
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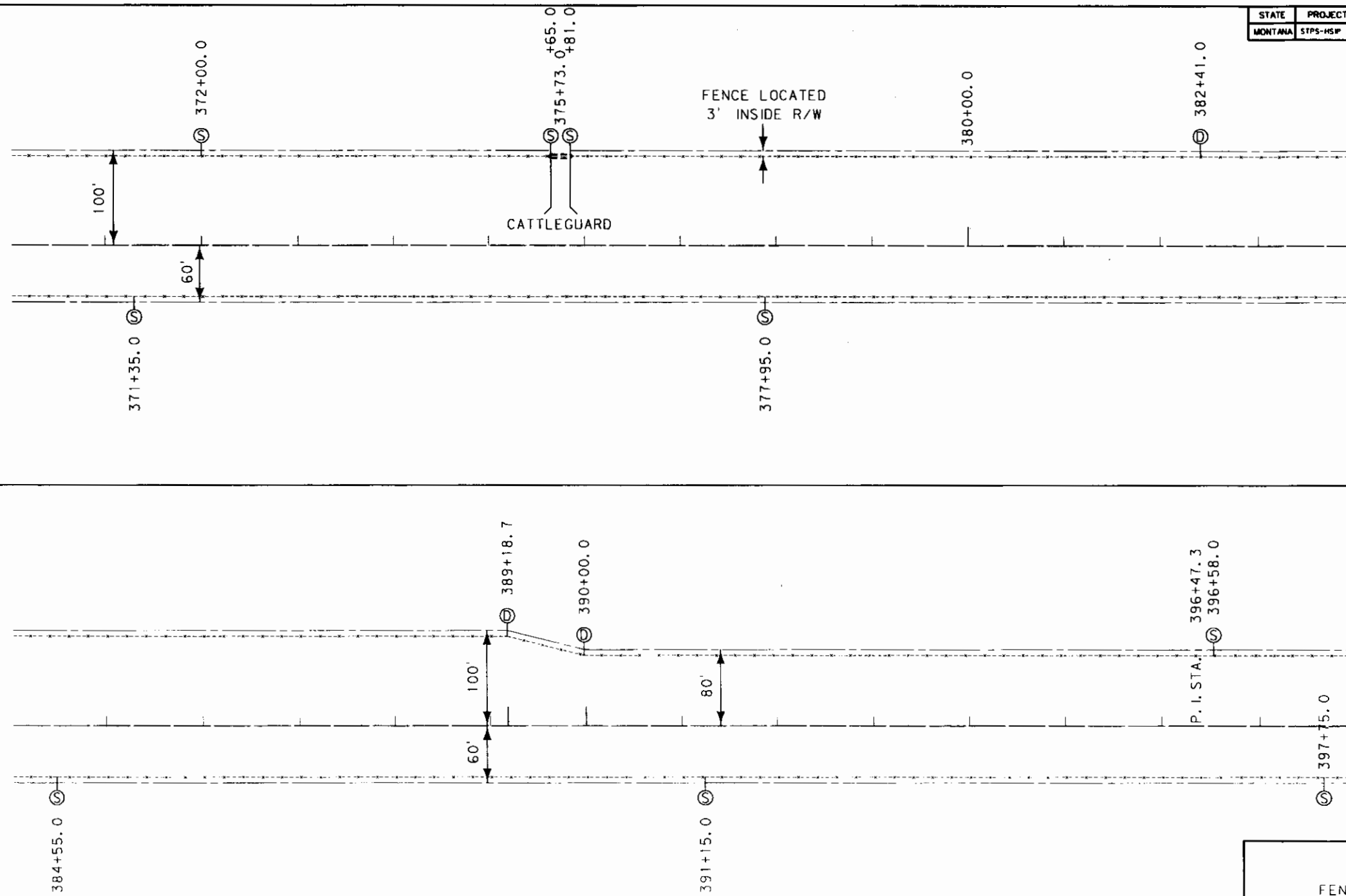


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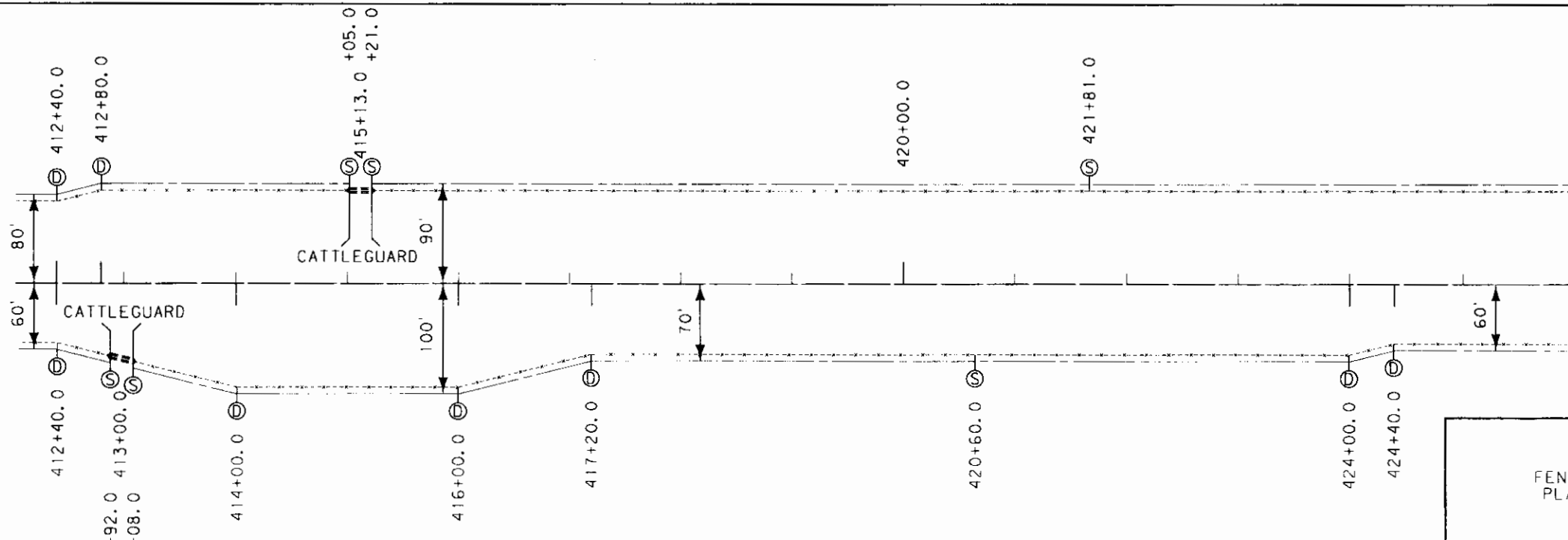
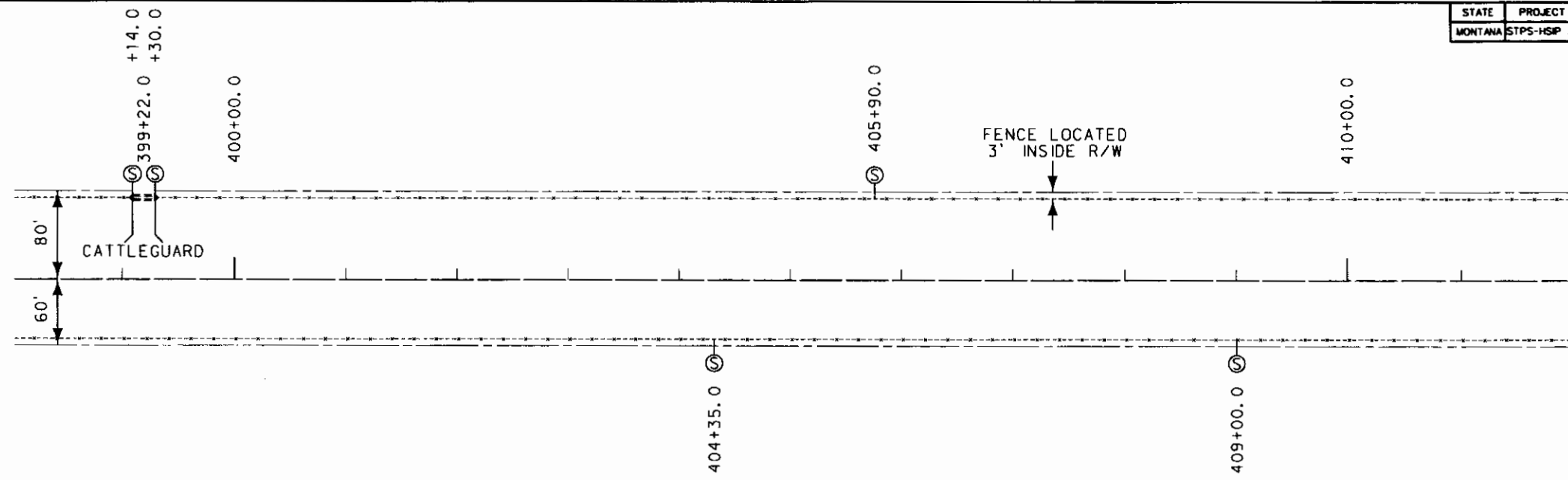


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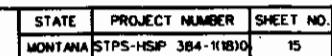
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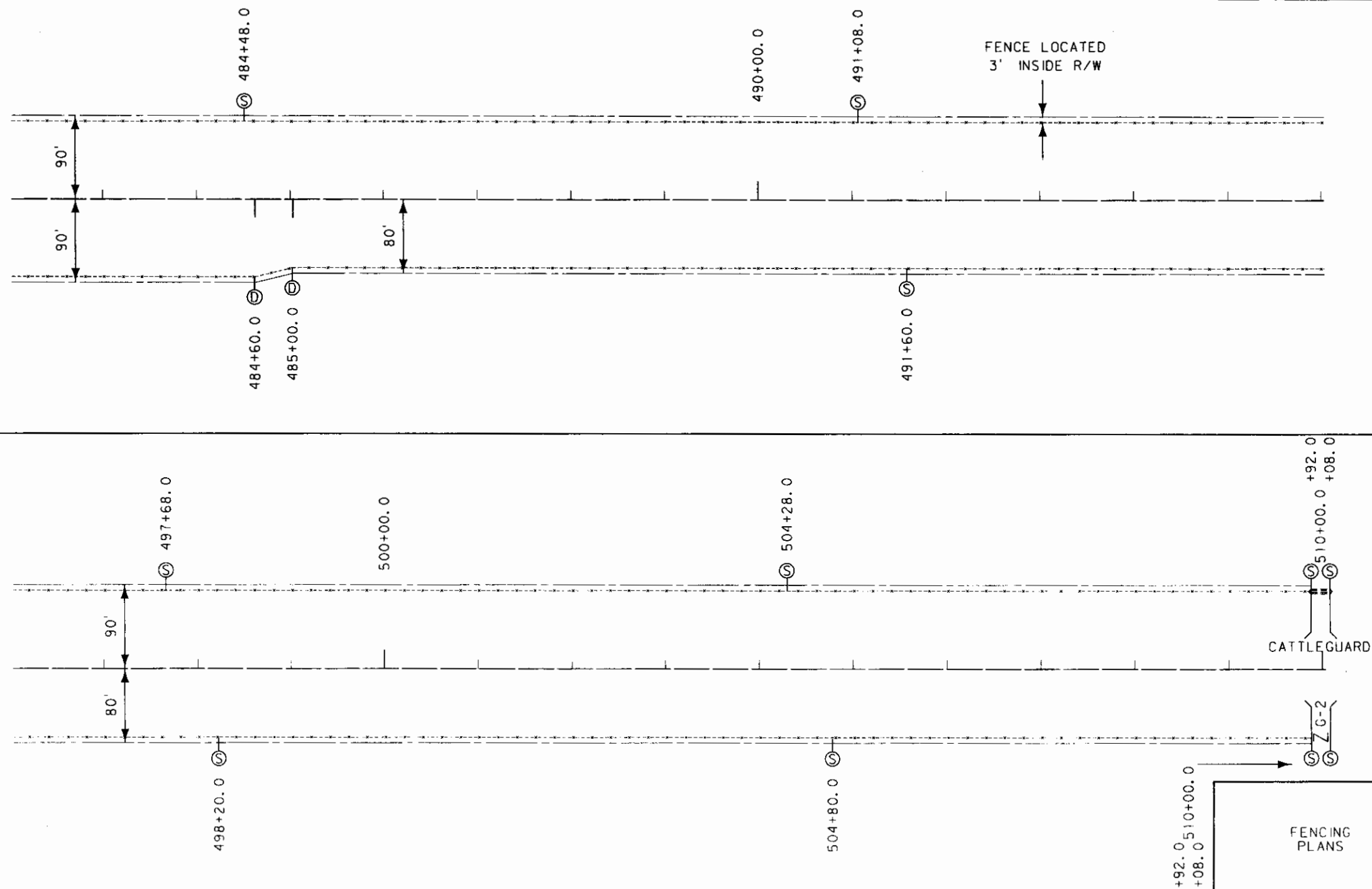


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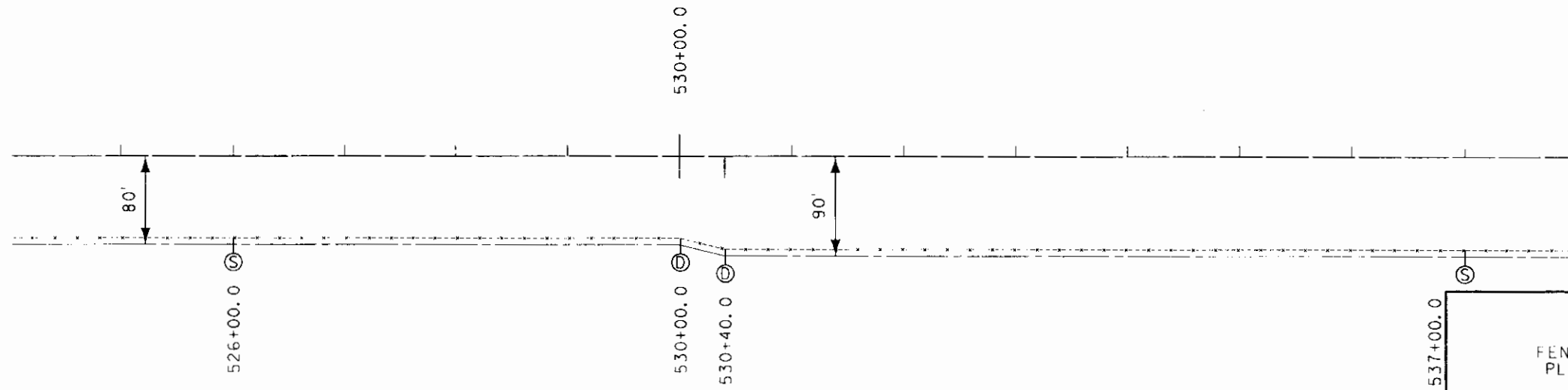
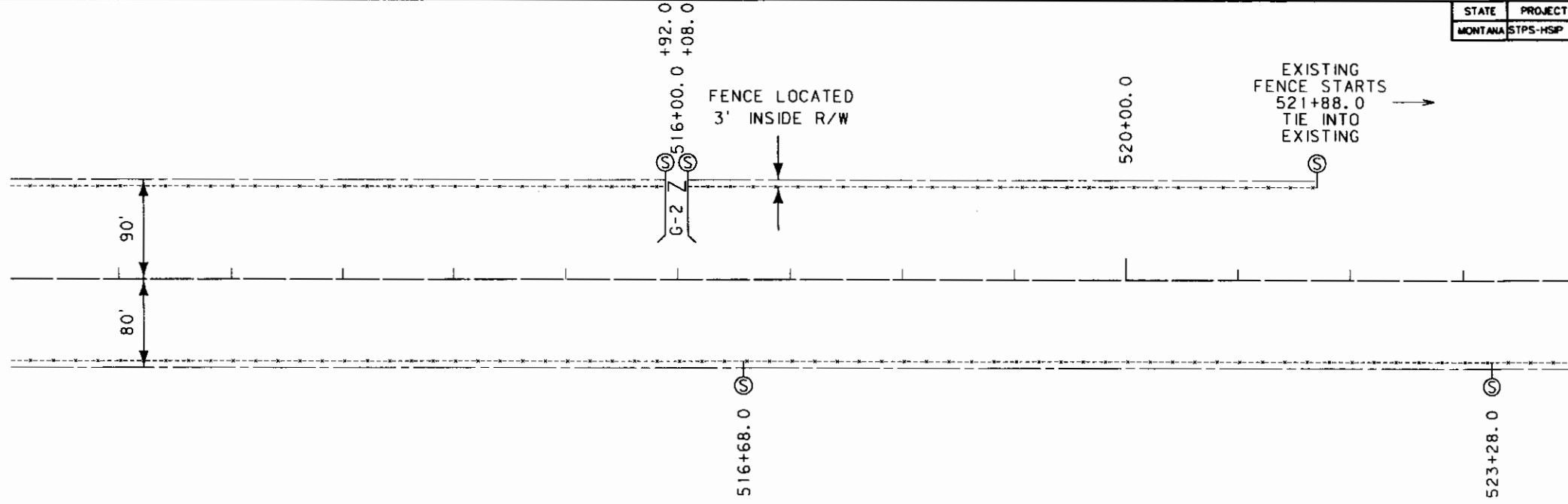


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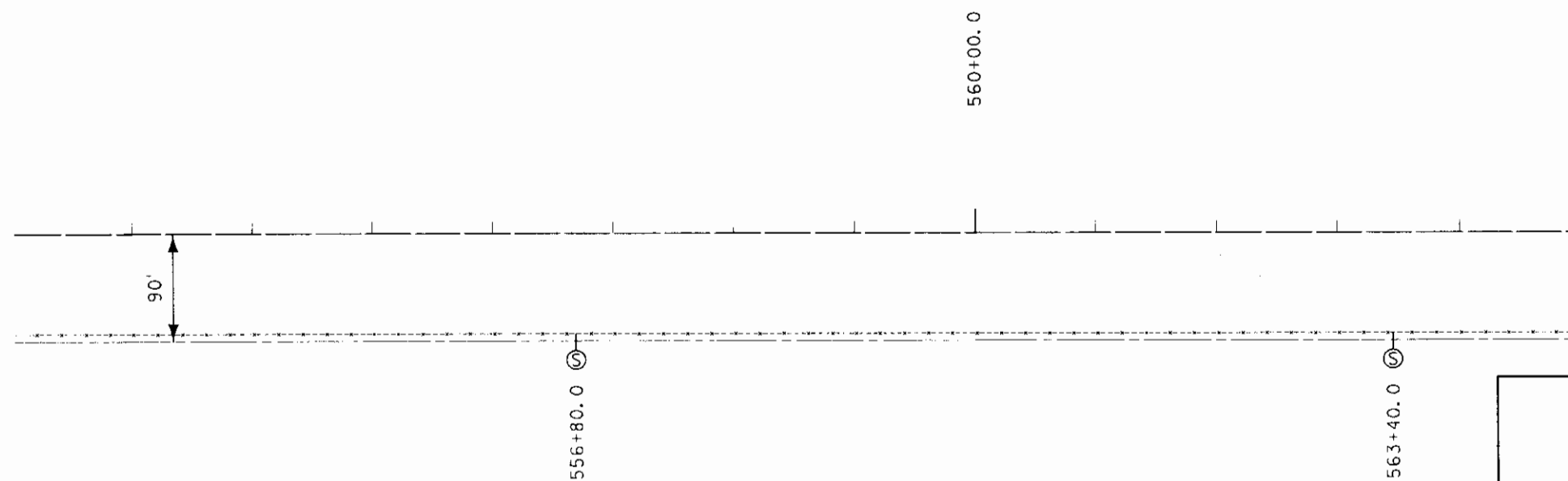
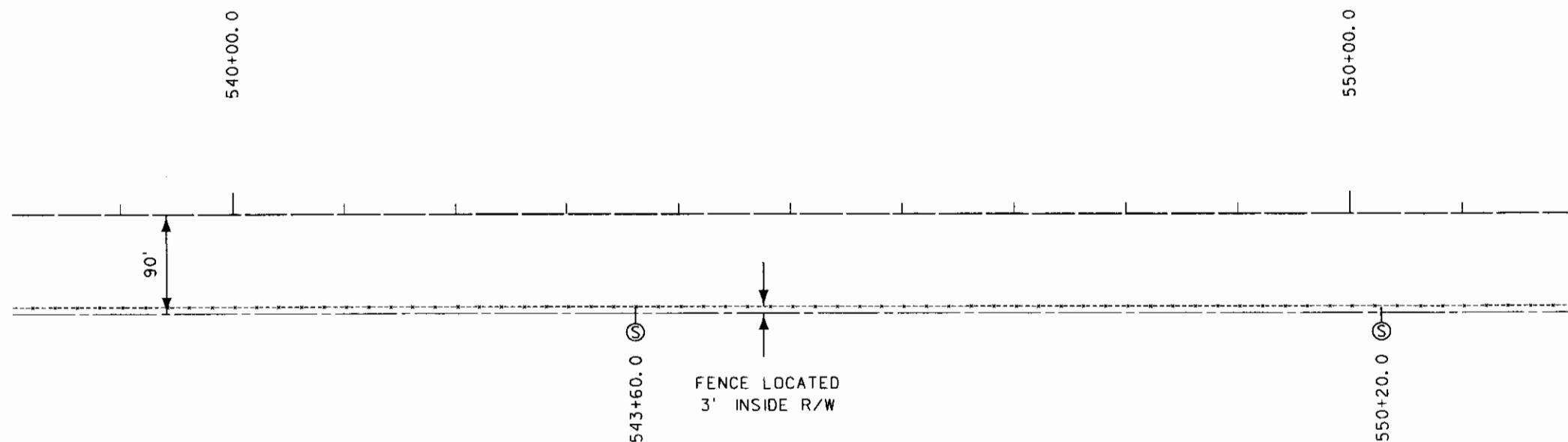




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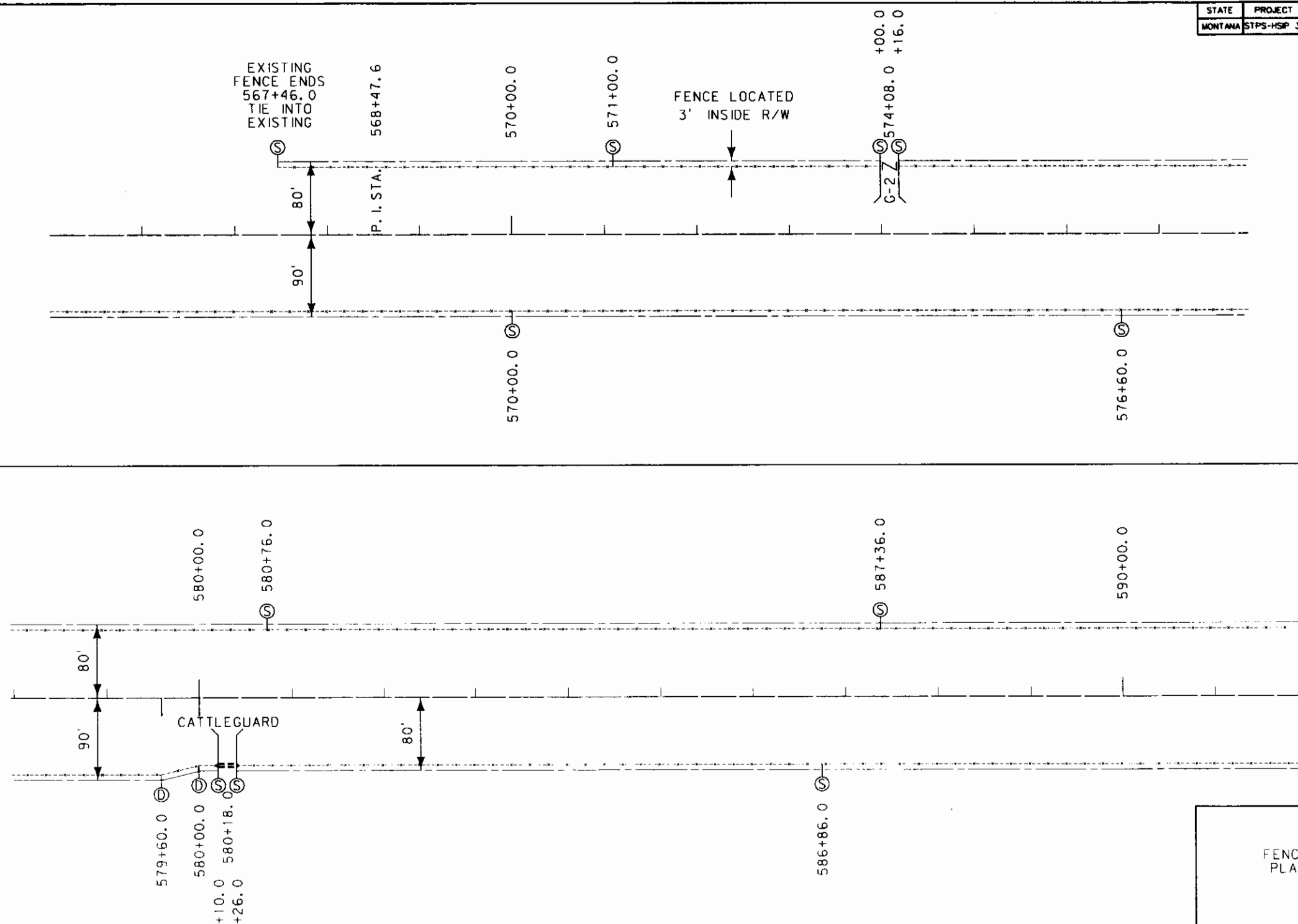


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MONTANA	STPS-HSP 384-1(18)0	18



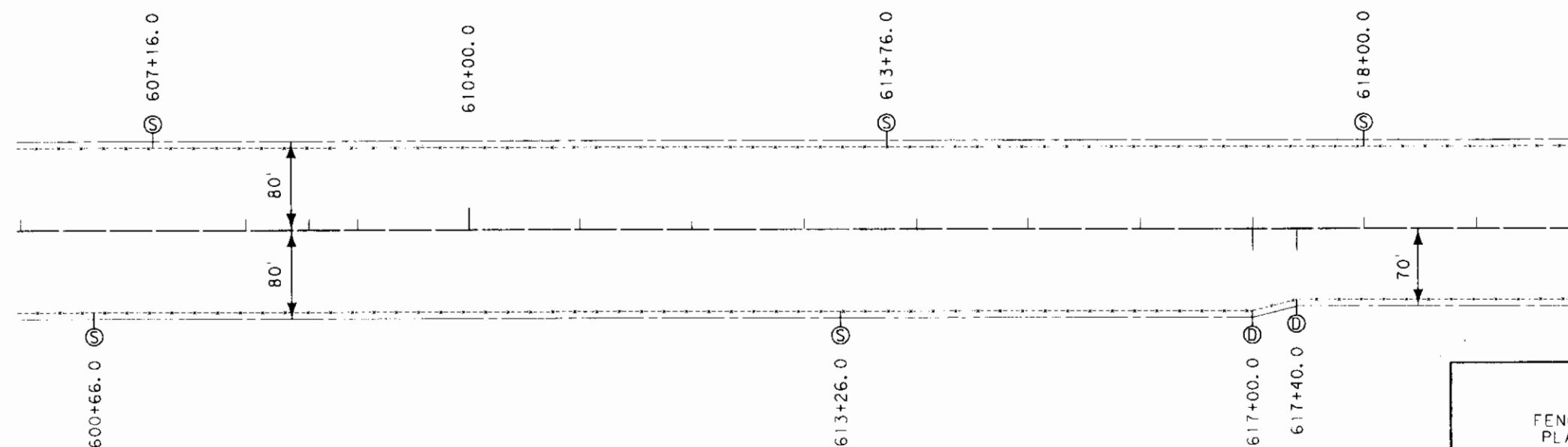
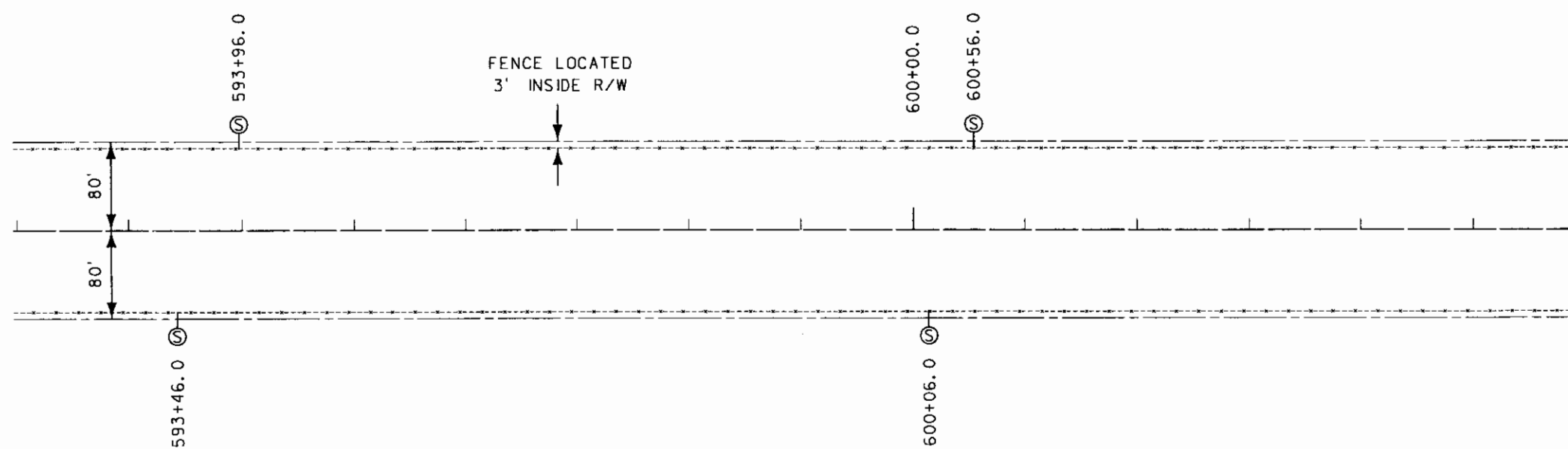
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PLANS

STATE	PROJECT NUMBER	SHEET NO.
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FENCING PLANS

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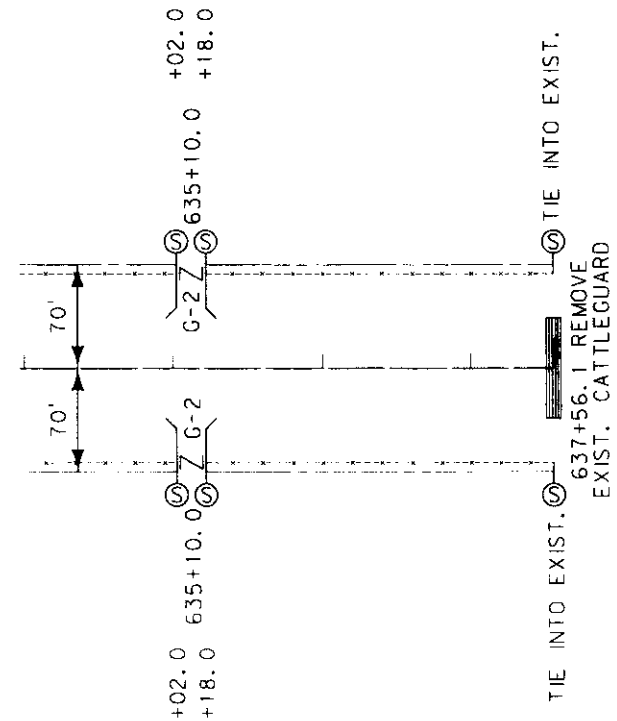
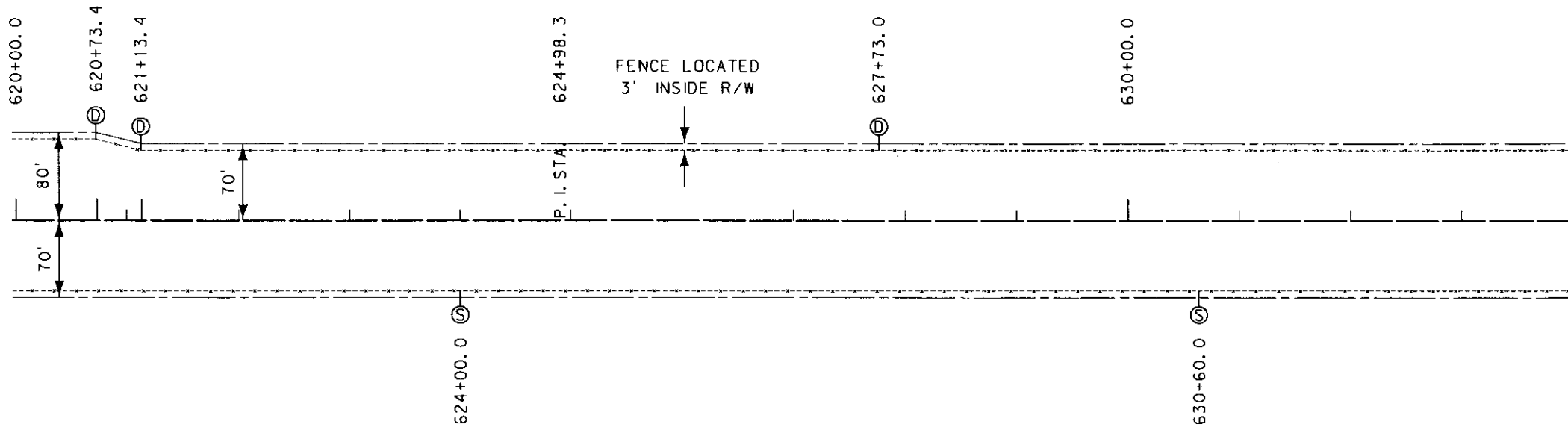


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2/6/2008	REVIEWED BY	
8:47:52 AM	CHECKED BY	
10/2/2008		

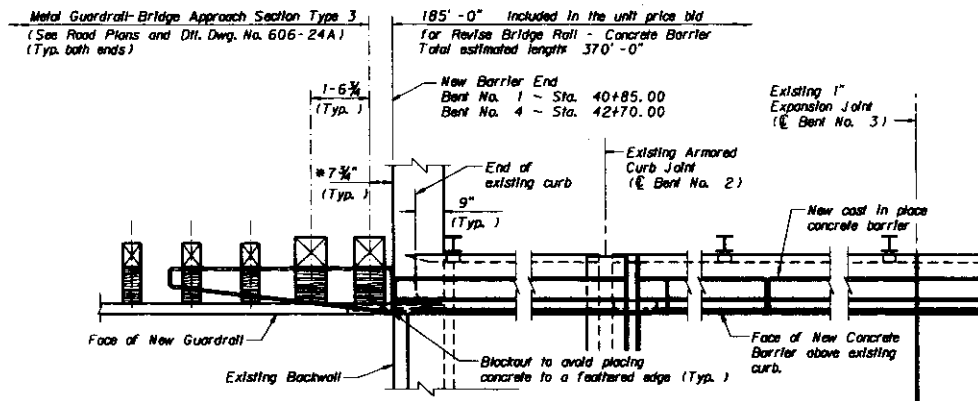


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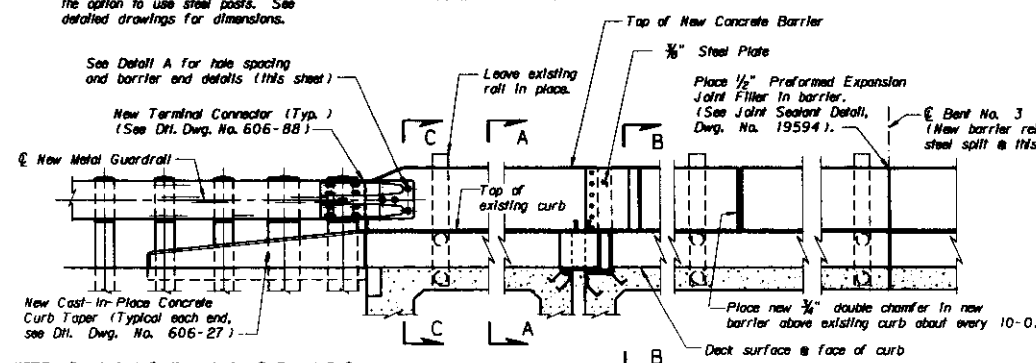
FENCING
PLANS

STATE	PROJECT NUMBER	SHEET NO.
MONTANA	STPS-HSIP 384-1(18)0	81



* NOTE: The 7- $\frac{3}{4}$ " dimension is required with wood post. The Contractor has the option to use steel posts. See detailed drawings for dimensions.

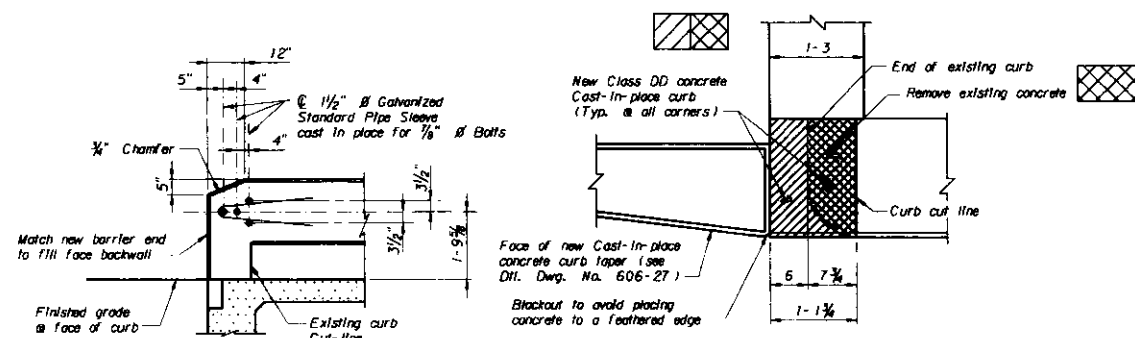
PARTIAL PLAN VIEW



NOTE: For typical Sections A-A, B-B and C-C, see Dwg. No. 19594.

PARTIAL ELEVATION VIEW

(For reference, see General Layout Dwg. No. 4827)

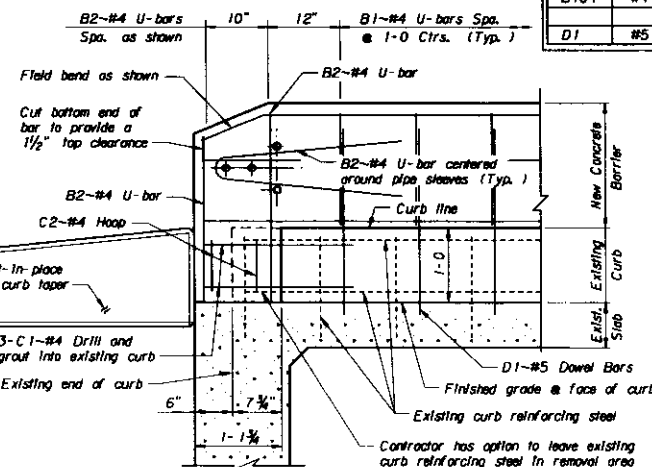


DETAIL A

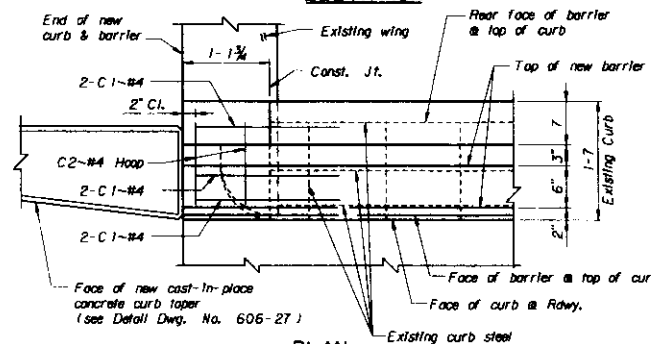
CURB REMOVAL AND REPLACEMENT DETAIL

Scale = 1" = 1' - 0"

(Typ. all locations receiving new curb tapers)



ELEVATION



PLAN

TYPICAL BARRIER END

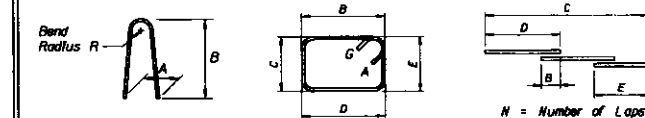
Scale - 1" = 1'-0"

SUMMARY TABLE

SUMMARY TABLE						
FEATURE CROSSED	BRIDGE IDENTIFICATION NO.	STATION	GENERAL LAYOUT DWG. NO.	REV. BRIDGE RAIL -	CONC. BARRIER	RESEAL EXISTING JOINT (LN FT)
				LENGTH OF BARRIER (ONE SIDE ONLY) (LN FT)	TOTAL LENGTH FOR PAYMENT (LN FT)	
LITTLE BIG HORN RIVER	500384 001+0.6281	41+77.50	4827	185.00	370.00	52.00
TOTAL				185.00	370.00	52.00

BILL OF REINFORCING STEEL

(Quantity for entire structure - For information Only)



TYPE BA1				TYPE T1				TYPE 27			
Mort	Size	No.	Type	Length	B	C	D	E	AorG	N	R
B1	#4	12	BA1	3-1	1-5				7		2
B2	#4	12	BA1	5-1	2-5				8		2
C1	#4	24	STR	2-0							
C2	#4	8	T1	5-10	1-5	1-1	1-5	1-1	5		
B100	#4	20	27	63-B	20	61-0	40-0	22-8		1	
B101	#4	10	27	62-5	20	60-9	40-0	22-5		1	
D1	#5	380	STR	2-5							

NOTES:

Barrier height is based on an assumed finished pavement thickness at the face of rail. Verify pavement thickness and adjust barrier height as required.
Lap #4 bars 20".

REINFORCING STEEL: Use new deformed type reinforcing steel meeting the requirements of AASHTO M 31M Grade 420. Include all costs associated with furnishing and placing new reinforcing steel in the unit price bid for Revised Bridge Rati ~ Concrete Barrier.

Replace existing reinforcing steel damaged during construction that is called out to remain in place at no additional cost to the State.

Include cleaning exposed existing reinforcing steel in other items of work.

EPOXY RESIN BONDING AGENT: Thoroughly coat all existing concrete in contact with new concrete with an epoxy bonding agent (AASHTO M 235 Type V) immediately prior to placing new concrete. Include all costs associated with providing and applying the epoxy bonding agent in the unit price bid for **Revised Bridge Rail - Concrete Barrier.**

GALVANIZING: Galvanize all bolts, nuts, washers and pipe sleeves in accordance with AASHTO M 232M.

TRAFFIC CONTROL PLAN AND SEQUENCE OF OPERATION: See Special Provisions.

PAYMENT: Revise Bridge Roll - Concrete Barrier is paid for by the linear foot which is full compensation for all resources necessary to complete the item. The number of linear feet of Revise Bridge Roll - Concrete Barrier for payment is the distance between the first post stations as shown on this sheet. (See Summary Table)
Use Class Special Deck concrete for barrier concrete.

JOINT SEAL: Include all costs associated with repair of joint seal in the unit price bid for Reseal Existing Joint.

DIMENSIONS: All dimensions are in feet except as noted. Verify all necessary dimensions of the existing structures in the field before ordering materials. Obtain approval of shop plans from the State of Montana, Department of Transportation before beginning fabrication. If the dimensions and details of the existing structure are not as shown on the plans, vary construction as necessary to best suit existing conditions and the nature of the intended work.



Montana Department
of Transportation

HARDIN - EAST

BRIDGE OVER LITTLE BIG HORN RIVER

FEDERAL AID PROJECT NO. STPS-HSIP 384-1(18)0

BIG HORN COUNTY

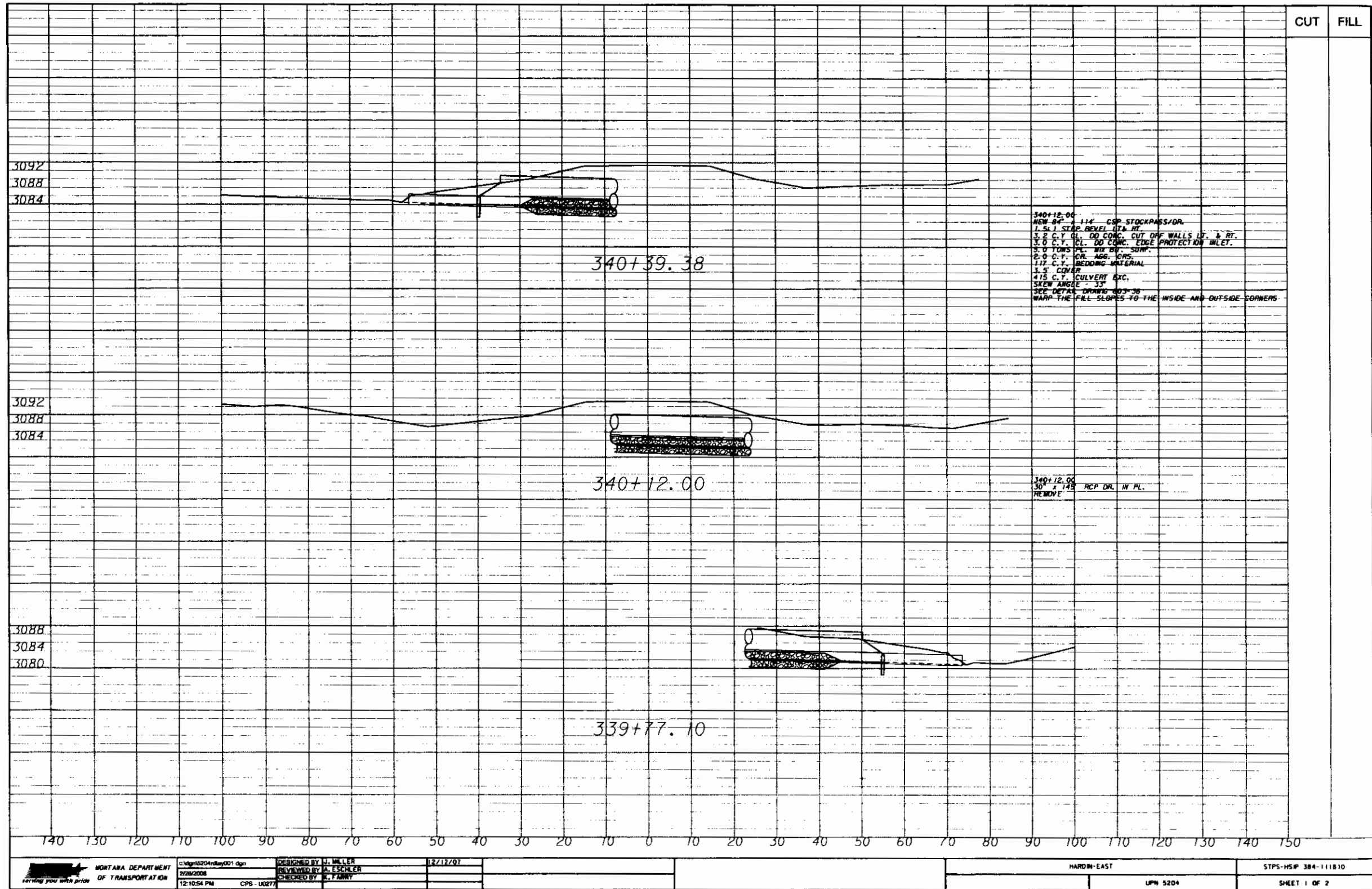
BRIDGE RAIL REVISION

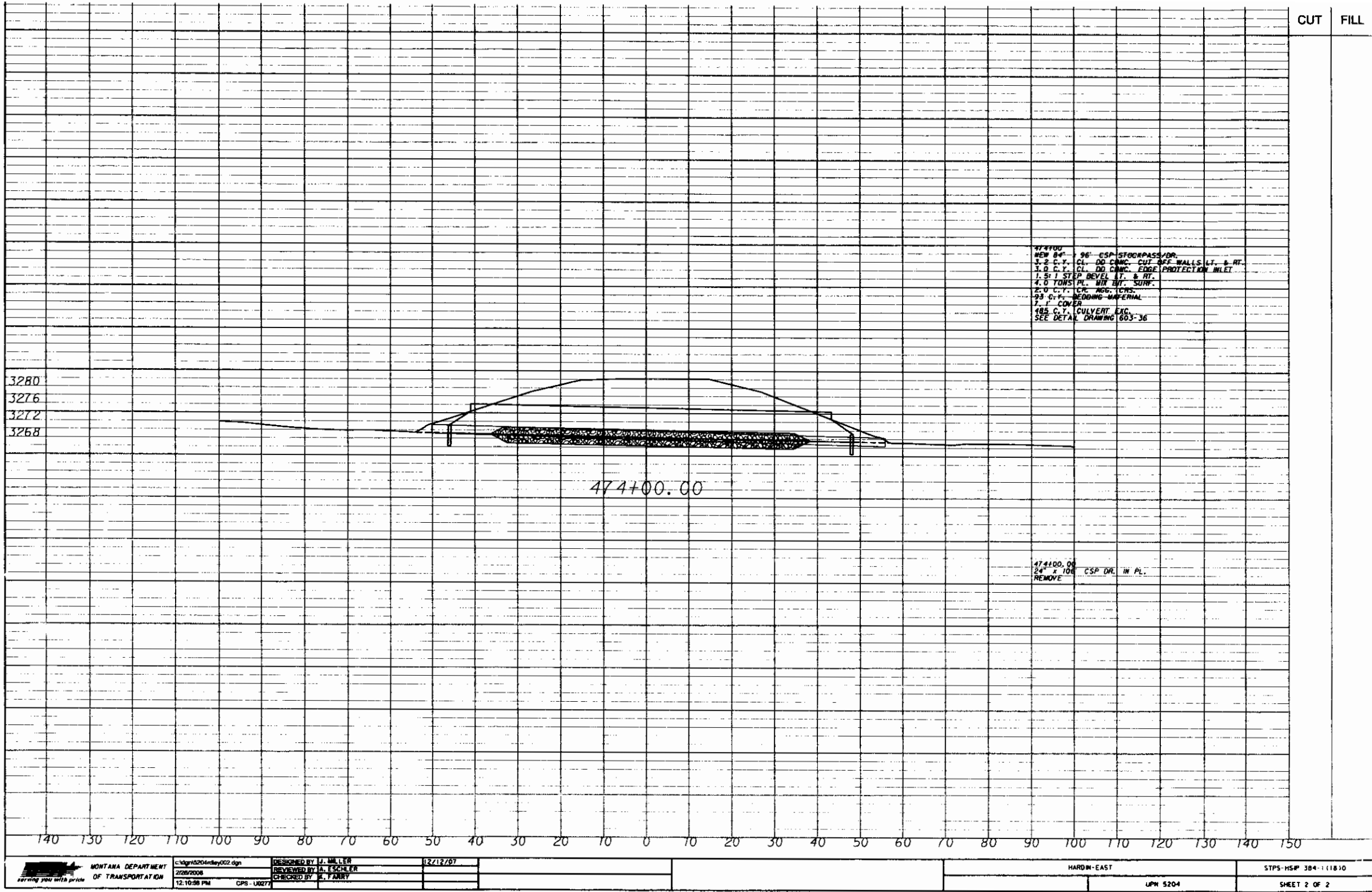
SCALE ~ 1/2" = 1' - 0" (EXCEPT AS NOTED)

DESIGNED	4-14-04	D. W. C.
DRAWN	12-16-07	D. W. C.
CHECKED	12-27-07	T. A. T.
REVISED		
REVISED		
REVISED		

UPN NUMBER 5204

DRAWING NO. 19593





MONTANA DEPARTMENT
OF TRANSPORTATION

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2/28/2008
12:10:58 PM

DESIGNED BY J. MILLER
REVIEWED BY J. SCHUEER
CHECKED BY M. FARRIS

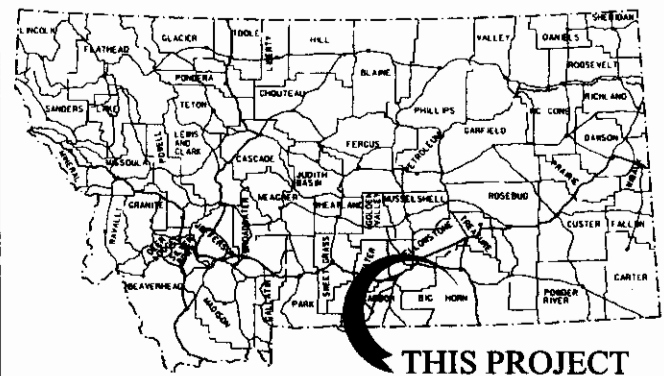
12/12/07
CPS - U0277

HARDIN-EAST

UPN 5204

STPS-HSP 384-1 (1810)

SHEET 2 OF 2



MONTANA DEPARTMENT OF TRANSPORTATION

STATE PROJECT SFCS 313-1(18)22 OVERLAY, SEAL & COVER, REPLACE CULVERTS, PAVEMENT MARKINGS ST. XAVIER-N. & S. BIG HORN COUNTY

LENGTH 7.0 MILES

SCALES

VERTICAL: 1" = 10'
HORIZONTAL: 1" = 100'

CROSS SECTION - HORIZONTAL & VERTICAL: 1" = 10'
REDUCED PRINTS ONE-HALF ORIGINAL SCALE
ALL SCALES ARE APPROXIMATE

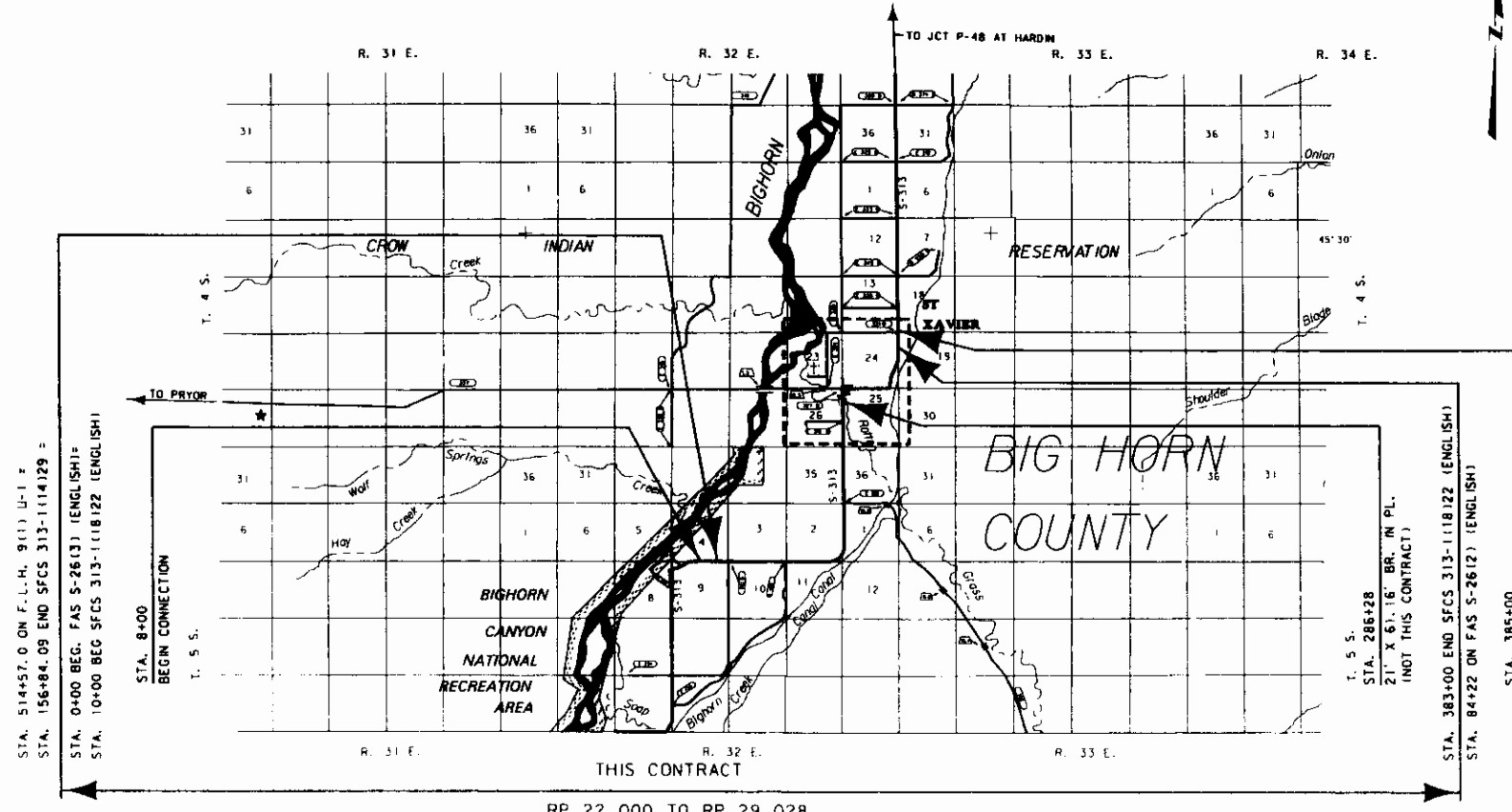
DESIGN DATA	
RP 22.000 TO 23.595	
PRESENT 2005 A.D.T. = 760	
LETTING 2006 A.D.T. = 770	
DESIGN 2026 A.D.T. = 930	
D.H.V. = 120	
TRUCKS = 5.5 %	
V. = 60 Mph	
80 KIP ESAL'S = 18 DAILY	
GROWTH RATE = 1.0 % ANNUALLY	

DESIGN DATA	
RP 23.595 TO 29.028	
PRESENT 2005 A.D.T. = 660	
LETTING 2006 A.D.T. = 660	
DESIGN 2026 A.D.T. = 810	
D.H.V. = 110	
TRUCKS = 1.1 %	
V. = 60 Mph	
80 KIP ESAL'S = 5 DAILY	
GROWTH RATE = 1.0 % ANNUALLY	

LETTING DATE -

CSF = 0.99961885

SURFACING SOURCES -
CONTRACTOR FURNISHED



ASSOCIATED PROJECT AGREEMENT NUMBERS	
R/W & C	
P.E	SFCS 313-1(18)22

STA. 514+57.0 ON F.L.L.H. 9(1) U-1 P
STA. 156+84.09 END SFCS 313-1(18)29 =
STA. 0+00 BEG. FAS S-26(3) (ENGLISH)=
STA. 10+00 BEG SFCS 313-1(18)22 (ENGLISH)

STA. 286+28
21' X 61.16' BR. IN PL.
(NOT THIS CONTRACT)
STA. 383+00 END SFCS 313-1(18)22 (ENGLISH)
STA. 84+22 ON FAS S-26(2) (ENGLISH)

THIS CONTRACT
RP 22.000 TO RP 29.028

MONTANA DEPARTMENT OF TRANSPORTATION	
APPROVED <i>Feb 4, 2009</i> JIM LYNCH DIRECTOR OF TRANSPORTATION	
BY <i>[Signature]</i> HIGHWAYS ENGINEER	
U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION	
APPROVED	DATE
DIVISION ADMINISTRATOR	DATE

3	MONTANA DEPARTMENT OF TRANSPORTATION	C:\pgh\5894000\08001.dgn	WHITE	2/7/2009	ROAD PLANS
2	2/4/2009				
1	11:09:53 AM	CPS: 10810			UPN NUMBER 5894000

TABLE OF CONTENTS

ROAD PLANS	SHEET NO.	BRIDGE PLANS	SHEET NO.
TITLE SHEET	1	BRIDGE APPROACH SECTIONS	B1
TABLE OF CONTENTS	2		
NOTES	2		
LINEAR & LEVEL DATA	3		
CENTERLINE COORDINATE TABLE	3	CROSS SECTIONS	
CONTROL DIAGRAM	4-5	MAINLINE CULVERTS	1-4
TYPICAL SECTIONS	6		
SUMMARIES	7-8		
SURFACING	7		
ADDITIONAL SURFACING	7		
CULVERTS	7		
PAVEMENT MARKINGS	8		
GUARDRAIL	8		
COLD MILLING	8		
DETAILS			
CULVERT REPLACEMENT	9		
COLD MILLING DETAIL	9		
PLAN & PROFILE	10-23		

NOTES

BASIS OF PLAN QUANTITIES

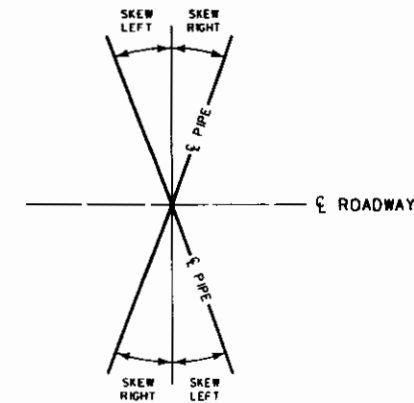
(QUANTITIES FOR ESTIMATING PURPOSES ONLY)

COMP. AGGREGATE WEIGHT =	3700 LBS. PER CUBIC YARD
COMP. WEIGHT OF PL. MIX BIT. SURF. =	3855 LBS. PER CUBIC YARD
ASPHALT CEMENT =	5.4 % OF PL. MIX BIT. SURF.
HYDRATED LIME =	1.4 % OF PL. MIX BIT. SURF.
BITUMINOUS MATERIAL =	8.5 LBS. PER GAL.

AGGREGATE TREATMENT

AGG TACK =	0.05 GAL. PER SQ. YARD (UNDILUTED)
TACK =	0.025 GAL. PER SQ. YARD (UNDILUTED)
SEAL =	0.40 GAL. PER SQ. YARD
COVER =	25 LBS. PER SQ. YARD

SKEW DIAGRAM



APPROACHES

OVERLAY ALL PUBLIC APPROACHES TO R/W.

QUANTITIES FOR ONE EXISTING PUBLIC APPROACH:

AVERAGE LENGTH	= 50 feet
PLANT MIX BITUMINOUS SURF.	= 30 tons
ASPHALT CEMENT	= 1.6 tons
TACK	= 2 gallons

PLACE A 3' WIDE PLANT MIX STRIP ADJACENT AND PARALLEL TO ROADWAY ON ALL PRIVATE AND FARM FIELD APPROACHES.

QUANTITIES FOR ONE EXISTING PRIVATE OR FARM FIELD APPROACH:

PLANT MIX BITUMINOUS SURF.	= 2.9 tons
ASPHALT CEMENT	= 0.16 tons
TACK	= 1 gallon

UTILITIES NOTE

CALL THE UTILITIES UNDERGROUND LOCATIONS CENTER (1-800-424-5555) OR OTHER NOTIFICATION SYSTEM FOR MARKING AND LOCATION OF ALL LINES AND SERVICES BEFORE EXCAVATING. ALL CLEARANCES OR DEPTHS PROVIDED FOR UTILITIES ARE FROM THE EXISTING GROUND LINE.

TEMPORARY EROSION AND SEDIMENT CONTROL

IF SITUATIONS ARE OBSERVED DURING CONSTRUCTION THAT MAY POTENTIALLY IMPACT WATER QUALITY, INCLUDING WETLAND AREAS, UTILIZE BEST MANAGEMENT PRACTICES (BMP) AND/OR TEMPORARY EROSION CONTROL MEASURES AS NECESSARY TO PROTECT THE RESOURCE.

REFER TO SECTION 208 OF THE NOT DETAILED DRAWINGS FOR EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES.

INSTALL TEMPORARY EROSION CONTROL MEASURES AS DEEMED NECESSARY BY THE ENGINEER. PAYMENT TO BE DETERMINED USING THE EROSION AND SEDIMENT CONTROL RATE SCHEDULE AND PAID UNDER MISCELLANEOUS WORK.

COMBINATION SCALE FACTOR

ALL COORDINATES ARE STATE PLANE U.S. CUSTOMARY (SEE CONTROL DIAGRAM). CSF FROM THE BEGINNING OF PROJECT TO THE END OF PROJECT IS 0.99961885.

LINEAR AND LEVEL DATA

BEARING SOURCE
THIS PROJECT WAS SURVEYED UTILIZING THE GLOBAL POSITIONING SYSTEM (GPS).
ALL COORDINATES ARE ENGLISH STATE PLANE NAD 83/1999

LEVEL DATUM SOURCE
THIS PROJECT WAS SURVEYED UTILIZING THE GLOBAL POSITIONING SYSTEM (GPS).
LEVEL DATUM SOURCE IS NAVD 88

LENGTH OF ROADWAY IN BIG HORN COUNTY 2 LANE RURAL 37,238.84 ft
LENGTH OF BRIDGE IN BIG HORN COUNTY(NOT THIS CONTRACT)2 LANE RURAL 61.16 ft
TOTAL LENGTH OF SFCs 313-1(18)22 2 LANE RURAL 37 300.00 ft

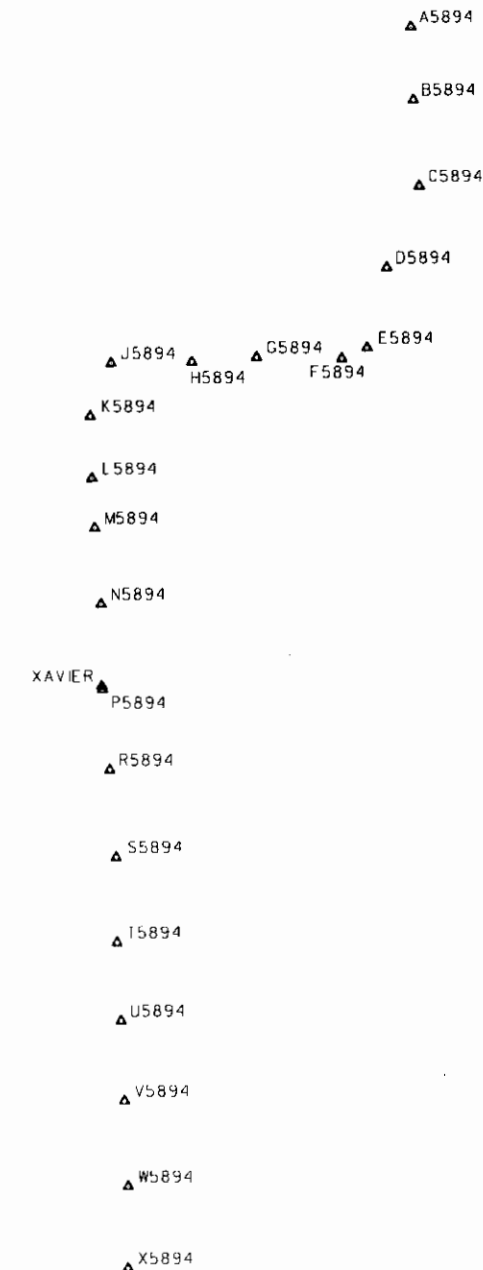
CENTERLINE COORDINATE TABLE				
STATION	DESCRIPTION	N OR Y COORDINATE	E OR X COORDINATE	REMARKS
10+00.00	POT	430,477.2061	2,412,029.5718	BEGIN PROJECT
36+32.54	PI	430,565.4451	2,414,660.6326	ANGLE POINT
69+27.40	PI	430,759.9559	2,419,951.9186	ANGLE POINT
132+03.45	PC	430,899.7192	2,424,225.6819	
143+06.58	PI	430,935.7752	2,425,328.2245	
149+29.48	PT	432,037.8674	2,425,280.3845	
191+10.54	PI	436,214.9938	2,425,099.0623	ANGLE POINT
209+62.34	PI	438,065.2346	2,425,023.0857	ANGLE POINT
228+81.74	PI	439,983.2461	2,424,950.0932	ANGLE POINT
277+31.29	PI	444,827.9992	2,424,734.4484	ANGLE POINT
297+32.95	PI	446,828.6470	2,424,670.9670	CENTER POINT OF INTERSECTION
297+62.95	POT	446,828.8382	2,424,700.9664	
336+72.30	PC	446,904.9300	2,428,609.5800	
341+35.66	PI	446,913.9488	2,429,072.8480	
344+51.58	PT	447,368.8479	2,429,160.9694	
349+32.40	PC	447,840.8989	2,429,232.4133	
350+92.23	PI	447,997.8096	2,429,282.8095	
352+51.31	PT	448,147.4864	2,429,338.8607	
366+15.13	PC	449,424.6817	2,429,817.1468	
368+01.66	PI	449,599.3645	2,429,882.5623	
369+83.55	PT	449,785.8236	2,429,877.4400	
383+00.00	POT	452,205.2114	2,429,810.9755	END PROJECT

NOTE: COORDINATE DATA IS BASED ON A STRAIGHT LINE DIAGRAM. RE-ESTABLISH CENTERLINE BY SPLITTING WIDTH OF EXISTING TRAVEL WAY FROM EDGE OF DRL TO EDGE OF DRL.

CONTROL DIAGRAM

CONTROL POINTS				
POINT NAME/NUMBER	N OR Y COORDINATE	E OR X COORDINATE	ELEVATION	DESCRIPTION
21JR	430655.143	2417966.389	3100.14	FOUND USGS BENCH MARK. FROM HARDIN, MP 28.0 SOUTH ON US HIGHWAY 313 32.4 FT SOUTH OF CENTERLINE OF HIGHWAY, 86.0 FT WEST OF CENTERLINE OF FIELD APPROACH & 2.0 FT SOUTH OF WITNESS POST IN OLD EASTWEST FENCE.
A5894	452210.596	2429781.842	3085.40	SET 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR FLUSH WITH GROUND STAMPED A5894 2008. FROM HARDIN, MP 21.9 SOUTH ON US HIGHWAY 313 TO MISSION LP ROAD, 29.3 FT WEST OF CENTERLINE OF HIGHWAY, 35.1 FT SOUTH OF CENTERLINE OF MISSION LP ROAD, 13.3 FT WEST OF MAILBOX, & 11.4 FT WEST OF WITNESS POST.
AA5894U	430666.536	2422614.510	3117.11	SET 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR FLUSH WITH GROUND STAMPED AA5894 2008. FROM HARDIN, MP 27.2 SOUTH ON US HIGHWAY 313, 38.0 FT NORTH OF CENTERLINE OF HIGHWAY, & 3.1 FT SOUTH OF WITNESS POST.
AB5894	430766.752	2421349.594	3106.47	SET 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR FLUSH WITH GROUND STAMPED AB5894 2008. FROM HARDIN, MP 27.4 SOUTH ON US HIGHWAY 313, 37.5 FT SOUTH OF CENTERLINE OF HIGHWAY, 19.5 FT WEST OF CENTERLINE OF FIELD APPROACH, & 4.0 FT NORTH OF WITNESS POST.
AC5894	430727.202	2420045.080	3103.51	SET 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR FLUSH WITH GROUND STAMPED AC5894 2008. FROM HARDIN, MP 27.6 SOUTH ON US HIGHWAY 313, 35.0 FT SOUTH OF CENTERLINE OF HIGHWAY, 12.3 FT EAST OF CENTERLINE OF FIELD APPROACH & 2.7 FT NORTH OF WITNESS POST.
AD5894	430784.750	2419356.810	3100.82	SET 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR FLUSH WITH GROUND STAMPED AD5894 2008. FROM HARDIN, MP 27.6 SOUTH ON US HIGHWAY 313, 41.1 FT NORTH OF CENTERLINE OF HIGHWAY, 28.1 FT EAST OF CENTERLINE OF FIELD APPROACH, & 4.1 FT SOUTH OF WITNESS POST.
AE5894	430722.513	2418065.845	3101.13	SET 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR FLUSH WITH GROUND STAMPED AE5894 2008. FROM HARDIN, MP 28.0 SOUTH ON US HIGHWAY 313, 39.4 FT NORTH OF CENTERLINE OF HIGHWAY, 18.3 FT SOUTHEAST OF SCREW GATE ON EASTWEST IRRIGATION DITCH, & 4.8 FT SOUTH OF WITNESS POST.
AF5894	430626.723	2417021.688	3099.84	SET 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR FLUSH WITH GROUND STAMPED AF5894 2008. FROM HARDIN, MP 28.2 SOUTH ON US HIGHWAY 313, 27.0 FT SOUTH OF CENTERLINE OF HIGHWAY, & 7.3 FT NORTH OF WITNESS POST IN EASTWEST FENCE.
AG5894	430608.533	2414757.082	3097.10	SET 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR FLUSH WITH GROUND STAMPED AG5894 2008. FROM HARDIN, MP 28.0 SOUTH ON US HIGHWAY 313, 38.0 FT NORTH OF CENTERLINE OF HIGHWAY, 16.8 FT EAST OF CENTERLINE OF FIELD APPROACH, & 3.8 FT SOUTH OF WITNESS POST.
AH5894	430645.019	2418048.408	3101.74	SET 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR FLUSH WITH GROUND STAMPED AH5894 2008. FROM HARDIN, MP 28.4 SOUTH ON US HIGHWAY 313, 28.0 FT NORTH OF CENTERLINE OF HIGHWAY, 12.0 FT WEST OF CENTERLINE OF FIELD APPROACH, & 4.5 FT SOUTH OF WITNESS POST.
AJ5894	430483.314	2413403.297	3100.31	SET 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR FLUSH WITH GROUND STAMPED AJ5894 2008. FROM HARDIN, MP 29.3 SOUTH ON US HIGHWAY 313, 28.3 FT SOUTH OF CENTERLINE OF HIGHWAY, 42.8 FT WEST OF PIPE BETWEEN TWO FIELD APPROACHES, & 2.6 FT NORTH OF WITNESS POST.
BA5894	451041.324	2429616.512	3094.67	SET 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR FLUSH WITH GROUND STAMPED BA5894 2008. FROM HARDIN, MP 22.1 SOUTH ON US HIGHWAY 313 28.0 FT WEST OF CENTERLINE OF HIGHWAY, 5.3 FT EAST OF WITNESS POST.
CB5894	449654.596	2429908.795	3106.80	SET 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR FLUSH WITH GROUND STAMPED CB5894 2008. FROM HARDIN, MP 22.4 SOUTH ON US HIGHWAY 313, 34.0 FT EAST OF CENTERLINE OF HIGHWAY, 11.3 FT SOUTH OF CENTERLINE OF FIELD APPROACH & 8.0 FT WEST OF WITNESS POST IN NORTHSOUTH FENCE.
DB5894	448348.455	2429388.029	3111.33	SET 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR FLUSH WITH GROUND STAMPED DB5894 2008. FROM HARDIN, MP 22.6 SOUTH ON US HIGHWAY 313, 23.4 FT WEST OF CENTERLINE OF HIGHWAY, 15.0 FT NORTH OF CENTERLINE OF FIELD APPROACH 4.1 FT EAST OF WITNESS POST.
EB5894	447056.208	2429068.637	3110.71	SET 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR FLUSH WITH GROUND STAMPED EB5894 2008. FROM HARDIN, MP 22.8 SOUTH ON US HIGHWAY 313, 58.0 FT EAST OF CENTERLINE OF HIGHWAY, & 7.2 FT WEST OF WITNESS POST.
FB5894	446885.176	2428662.752	3109.51	SET 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR FLUSH WITH GROUND STAMPED FB5894 2008. FROM HARDIN, MP 23.0 SOUTH ON US HIGHWAY 313, 24.5 FT SOUTH OF CENTERLINE OF HIGHWAY, & 6.7 FT NORTH OF WITNESS POST.
GB5894	446902.656	2427324.648	3094.47	SET 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR FLUSH WITH GROUND STAMPED GB5894 2008. FROM HARDIN, MP 23.2 SOUTH ON US HIGHWAY 313, 23.0 FT NORTH OF CENTERLINE OF HIGHWAY, 3.6 FT SOUTH OF WITNESS POST IN EASTWEST FENCE.

NOTE:
THIS PROJECT WAS SURVEYED UTILIZING THE GLOBAL POSITIONING SYSTEM (GPS).
ALL COORDINATES ARE METRIC STATE PLANE NAD 83-1999. ALL SURVEY AND STAKING WILL REQUIRE THE USE OF A CORRECTION SCALE FACTOR (CSF).
THE CSF FOR THIS PROJECT IS 0.99961885. ALL DIMENSIONS ON THE PLANS ARE GRID DIMENSIONS AND MUST BE DIVIDED BY THE CSF TO ARRIVE AT GROUND DIMENSIONS.

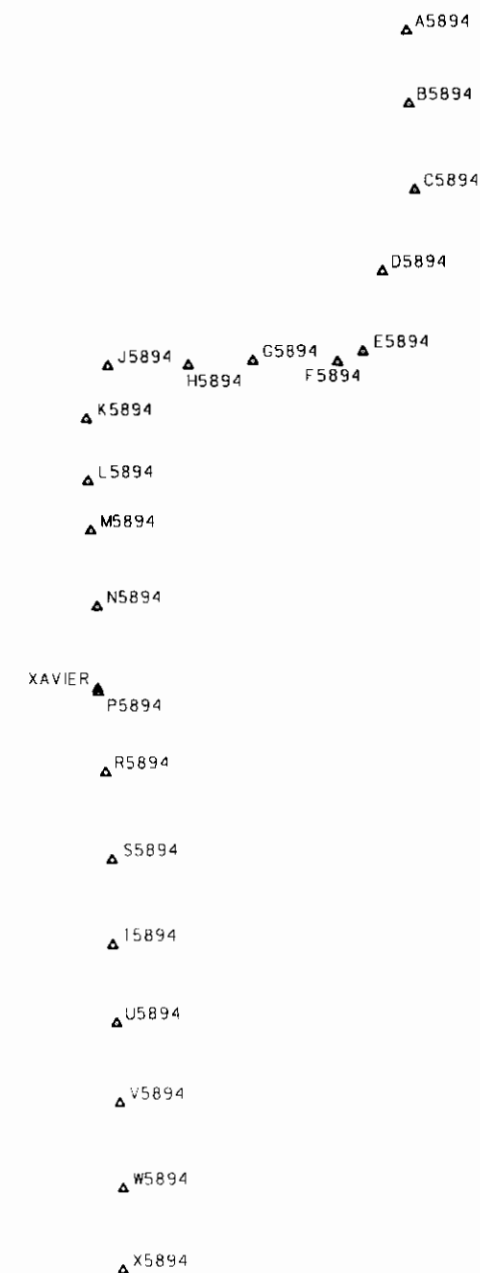


AJ5894 AH5894 AI5894 AC5894 AA5894 Y5894
AC5894 AI5894 AD5894 AB5894 Z5894

CONTROL POINTS				
POINT NAME/NUMBER	N OR Y COORDINATE	E OR X COORDINATE	ELEVATION	DESCRIPTION
H5894	446829.770	2426301.875	3086.31	SET 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR FLUSH WITH GROUND STAMPED H5894 2006. FROM HARDIN, MP 23.4 SOUTH ON US HIGHWAY 313, 30.4 FT SOUTH OF CENTERLINE OF HIGHWAY, 24.0 FT EAST OF CENTERLINE OF FIELD APPROACH 3.0 FT NORTH OF WITNESS POST.
J5894	446808.760	2425015.483	3078.16	SET 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR FLUSH WITH GROUND STAMPED J5894 2006. FROM HARDIN, MP 23.7 SOUTH ON US HIGHWAY 313 TO TOWN OF ST. XAVIER, 25.0 FT SOUTH OF CENTERLINE OF HIGHWAY, 17.0 FT WEST OF CENTERLINE OF APPROACH (SOUTH OF POST OFFICE), 6.8 FT NORTH OF WITNESS POST.
K5894	446853.865	2424675.292	3078.12	SET 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR FLUSH WITH GROUND STAMPED K5894 2006. FROM HARDIN, MP 23.9 SOUTH ON US HIGHWAY 313, 24.2 FT WEST OF CENTERLINE OF HIGHWAY, 15.0 FT NORTHWEST OF FENCE CORNER, & 4.5 FT EAST OF WITNESS POST.
L5894	444892.903	2424897.936	3061.75	SET 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR FLUSH WITH GROUND STAMPED L5894 2006. FROM HARDIN, MP 24.1 SOUTH ON US HIGHWAY 313, 33.6 FT WEST OF CENTERLINE OF HIGHWAY, 29.5 FT EAST OF WITNESS POST IN NORTHSOUTH FENCE.
M5894	444155.550	2424740.908	3084.79	SET 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR FLUSH WITH GROUND STAMPED M5894 2006. FROM HARDIN, MP 24.2 SOUTH ON US HIGHWAY 313, 23.0 FT WEST OF CENTERLINE OF HIGHWAY, 28.0 FT NORTH OF CENTERLINE OF CARL LIND RD 22.2 FT EAST OF WITNESS POST IN NORTHSOUTH FENCE.
N5894	442831.936	2424837.877	3086.61	SET 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR FLUSH WITH GROUND STAMPED N5894 2006. FROM HARDIN, MP 24.5 SOUTH ON US HIGHWAY 313, 19.5 FT EAST OF CENTERLINE OF HIGHWAY, 20.4 FT SOUTH OF CENTERLINE OF HOUSE APPROACH 17.7 FT WEST OF WITNESS POST IN NORTHSOUTH FENCE.
P5894	441562.722	2424854.891	3084.98	SET 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR FLUSH WITH GROUND STAMPED P5894 2006. FROM HARDIN, MP 24.7 SOUTH ON US HIGHWAY 313, 25.0 FT WEST OF CENTERLINE OF HIGHWAY, 48.0 FT NORTH OF CENTERLINE OF FIELD APPROACH 5.8 FT EAST OF WITNESS POST.
R5894	440270.530	2424870.540	3067.33	SET 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR FLUSH WITH GROUND STAMPED R5894 2006. FROM HARDIN, MP 24.9 SOUTH ON US HIGHWAY 313, 32.7 FT EAST OF CENTERLINE OF HIGHWAY, 42.5 FT NORTH OF CENTERLINE OF FARM APPROACH, 5.6 FT WEST OF WITNESS POST.
S5894	438870.927	2425068.769	3096.48	SET 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR FLUSH WITH GROUND STAMPED S5894 2006. FROM HARDIN, MP 25.2 SOUTH ON US HIGHWAY 313, 76.5 FT EAST OF CENTERLINE OF HIGHWAY, 15.8 FT NORTH OF CENTERLINE OF FARM APPROACH 8.2 FT WEST OF WITNESS POST.
T5894	437505.484	2425080.424	3100.76	SET 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR FLUSH WITH GROUND STAMPED T5894 2006. FROM HARDIN, MP 25.5 SOUTH ON US HIGHWAY 313, 34.8 FT EAST OF CENTERLINE OF HIGHWAY, 48.0 FT SOUTH OF CENTERLINE OF FIELD APPROACH 3.3 FT WEST OF WITNESS POST.
U5894	436252.509	2425141.739	3103.94	SET 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR FLUSH WITH GROUND STAMPED U5894 2006. FROM HARDIN, MP 25.7 SOUTH ON US HIGHWAY 313, AT ROAD EAST TO LODGE GRASS, 45.0 FT EAST OF CENTERLINE OF HIGHWAY, 32.0 FT NORTHWEST OF STOP SIGN, & 5.6 FT SOUTH OF WITNESS POST IN EASTWEST FENCE.
V5894	434870.420	2425192.003	3102.61	SET 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR FLUSH WITH GROUND STAMPED V5894 2006. FROM HARDIN, MP 25.9 SOUTH ON US HIGHWAY 313, 38.6 FT EAST OF CENTERLINE OF HIGHWAY, 14.5 FT NORTH OF CENTERLINE OF FIELD APPROACH, & 5.5 FT EAST OF WITNESS POST.
W5894	433589.537	2425248.056	3110.29	SET 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR FLUSH WITH GROUND STAMPED W5894 2006. FROM HARDIN, MP 26.2 SOUTH ON US HIGHWAY 313, 35.3 FT EAST OF CENTERLINE OF HIGHWAY, 8.7 FT EAST OF POWER POLE, 9.0 FT SOUTH OF CENTERLINE OF FIELD APPROACH & 2.7 FT WEST OF WITNESS POST.
X5894	432287.648	2425343.382	3123.75	SET 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR FLUSH WITH GROUND STAMPED X5894 2006. FROM HARDIN, MP 26.5 SOUTH ON US HIGHWAY 313, 28.7 FT WEST OF CENTERLINE OF HIGHWAY, & 4.3 FT EAST OF WITNESS POST.
XAVIER	441613.695	2424844.541	3094.12	FOUND, FROM HARDIN, MP 24.7 SOUTH ON US HIGHWAY 313, 32.8 FT WEST OF CENTERLINE OF HIGHWAY, 17.0 FT SOUTH OF CENTERLINE OF FIELD APPROACH, 17.5 FT EAST OF SCREW GATE ON IRRIGATION DITCH, & 2.2 FT EAST OF WITNESS POST.
Y5894	430880.594	2424772.398	3142.86	SET 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR FLUSH WITH GROUND STAMPED Y5894 2006. FROM HARDIN, MP 26.8 SOUTH ON US HIGHWAY 313, 88.0 FT SOUTH OF CENTERLINE OF HIGHWAY, 54.7 FT SOUTHEAST OF SCREW GATE ON IRRIGATION DITCH & 3.3 FT NORTH OF WITNESS POST.
Z5894	430620.514	2423756.145	3128.09	SET 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR FLUSH WITH GROUND STAMPED Z5894 2006. FROM HARDIN, MP 26.98 SOUTH ON US HIGHWAY 313, 36.2 FT NORTH OF CENTERLINE OF HIGHWAY, & 3.7 FT SOUTH OF WITNESS POST.

NOTE:
THIS PROJECT WAS SURVEYED UTILIZING THE GLOBAL POSITIONING SYSTEM (GPS).
ALL COORDINATES ARE METRIC STATE PLANE NAD 83-1999. ALL SURVEY AND
STAKING WILL REQUIRE THE USE OF A COMBINATION SCALE FACTOR (CSF).
THE CSF FOR THIS PROJECT IS 0.99961885. ALL DIMENSIONS ON THE PLANS
ARE GRID DIMENSIONS AND MUST BE DIVIDED BY THE CSF TO ARRIVE AT GROUND
DIMENSIONS.

CONTROL DIAGRAM

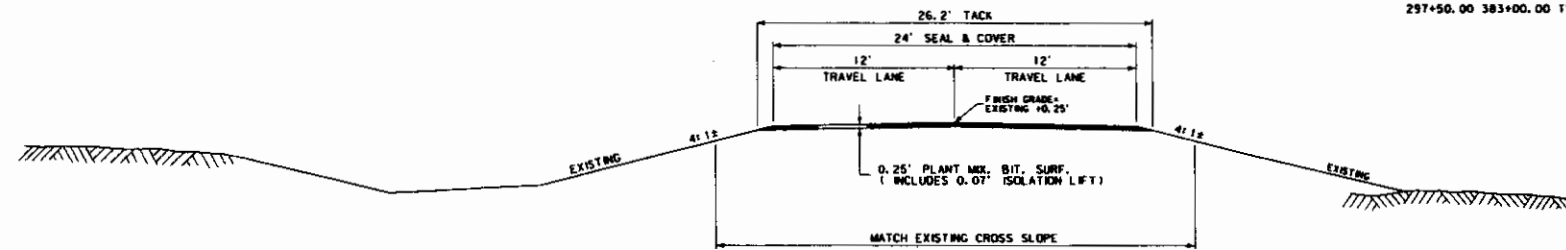


AJ5894 A5894 AE5894 AC5894 AA5894 AY5894
AC5894 AI5894 AJ5894 AD5894 AB5894 AZ5894

3	MONTANA DEPARTMENT OF TRANSPORTATION	c:\dgn\5894000\dev001.dgn	DESIGNED BY: M. WHITE	7/7/2007	ROAD PLANS	ST. XAVIER - N. & S.	SFCS 313-1118122
2		2/8/2008	REVIEWED BY:				
1		8:48:27 AM	CPS - U027	CHECKED BY:		CSF = 0.99961885	UPN 5894000
					BIG HORN COUNTY		SHEET 5 OF 23

TYPICAL SECTION NO. 1

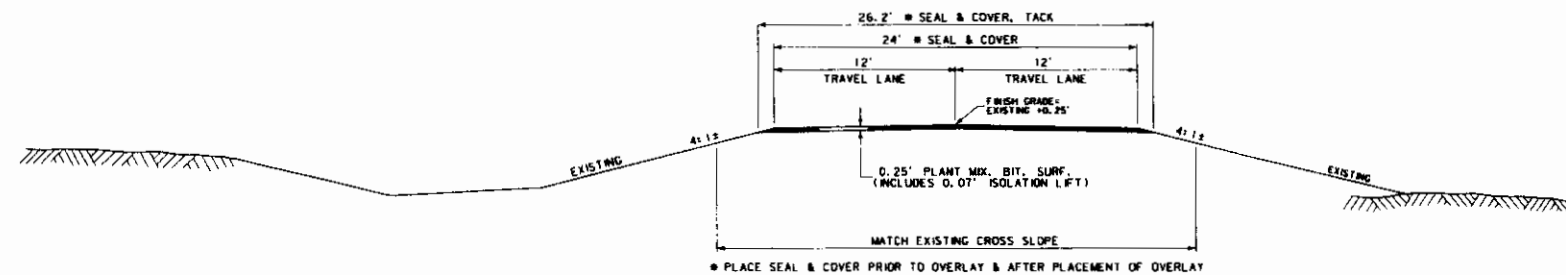
10+00.00 TO 29+00.00 TYPICAL SEC. NO. 1
100+00.00 TO 110+00.00 TYPICAL SECTION NO. 1 (MDT RESEARCH SECTION)
150+00.00 TO 285+98.10 B.E. TYPICAL SEC. NO. 1
286+59.26 B.E. TO 297+23.00 TYPICAL SEC. NO. 1
297+50.00 383+00.00 TYPICAL SEC. NO. 1



QUANTITIES						
UNIT	AGGREGATE		UNIT	BITUMINOUS MATERIAL		
	COVER	PLANT MIX		ASPHALT CEMENT	SEAL	TACK
AREA square feet		6.28	square yards PER STATION tons PER STATION gallons PER STATION		267	29
curb yards PER STATION		23.3			0.45	
tons PER STATION	267	44.8		2.42		
hours PER STATION						

TYPICAL SECTION NO. 2

29+00.00 TO 100+00.00 TYPICAL SECTION NO. 2
110+00.00 TO 120+00.00 TYPICAL SECTION NO. 2 (MDT RESEARCH SECTION)
120+00.00 TO 150+00.00 TYPICAL SECTION NO. 2



QUANTITIES						
UNIT	AGGREGATE		UNIT	BITUMINOUS MATERIAL		
	COVER	PLANT MIX		ASPHALT CEMENT	SEAL	TACK
AREA square feet		6.78	square yards PER STATION		\$58	29
cubic yards PER STATION		23.3	tons PER STATION	2.42	0.95	
tons PER STATION		44.9	gallons PER STATION			
square yards PER STATION	\$58					

SUMMARY

STATION		linear foot				FOR	tons	AGGREGATE			BITUMINOUS MATERIAL				REMARKS
		GROSS	NET	+	-		HYDRATED LIME	square yards	tons	cubic yards	tons	gals			
								COVER TYPE 1	PLANT MAX. BIT. SURF. GRADE S **	CRUSHED AGG. COURSE	ASPHALT CEMENT PG 64-28	SEAL CRS- 2P	TACK SS-1	AGG. TACK SS-1	
FROM	TO														
10+00.00	29+00.00	1,900.00	1,900.00					5,073	853		46.0	8.6	133	TYPICAL SECTION NO. 1	
29+00.00	100+00.00	7,100.00	7,100.00					36,618	3,188		171.8	67.5	497	TYPICAL SECTION NO. 2	
100+00.00	110+00.00	1,000.00	1,000.00			MDT RESEARCH SECTION		2,670	448		24.2	4.5	70	TYPICAL SECTION NO. 1	
110+00.00	120+00.00	1,000.00	1,000.00			MDT RESEARCH SECTION		5,580	446		24.2	9.5	70	TYPICAL SECTION NO. 2	
120+00.00	150+00.00	3,000.00	3,000.00					16,740	1,347		72.6	28.5	210	TYPICAL SECTION NO. 2	
285+98.10	286+59.28				61.18	BRIDGE									
297+23.00	297+23.00	14,723.00	14,661.84			INTERSECTION IN ST. XAVIER		30,147	6,563		354.8	66.0	1,026	TYPICAL SECTION NO. 1	
297+23.00	297+50.00	27.00	27.00					167	27		1.5	0.3	4	BASED ON 1,500 SQ. FT.	
297+50.00	383+00.00	8,550.00	8,550.00					22,829	3,836		206.9	36.5	599	TYPICAL SECTION NO. 1	
ADDITIONAL SURFACING															
8+00.00	10+00.00					CONNECTION TO P.T.W.		533	90		4.8	0.9	14		
383+00.00	385+00.00					CONNECTION TO P.T.W.		533	90		4.8	0.9	14		
						26 - FARM FIELD APPROACHES			84		4.8		29		
						31 - PRIVATE APPROACHES			90		5.0		31	INCLUDES 185' WIDE APP. @ 200+77	
						13 - PUBLIC APPROACHES			390		20.8		26		
38+84.00								4	13		0.2			1 CULVERT REPLACEMENT	
42+70.00								4	13		0.4			1 CULVERT REPLACEMENT	
53+58.00								5	14		0.3			1 CULVERT REPLACEMENT	
196+26.00								4	12		0.2			1 CULVERT REPLACEMENT	
204+74.00								5	14		0.3			1 CULVERT REPLACEMENT	
224+10.00								5	14		0.3			1 CULVERT REPLACEMENT	
231+44.00								4	13		0.2			1 CULVERT REMOVAL	
231+67.00								4	13		0.2			1 NEW CULVERT LOCATION	
245+04.00								5	13		0.3			2 CULVERT REPLACEMENT	
250+73.00								4	13		0.2			1 CULVERT REPLACEMENT	
340+11.00								5	16		0.3			2 CULVERT REPLACEMENT	
354+20.00								6	13		0.3			1 CULVERT REPLACEMENT	
191+00.00						REPLACEMENT MATERIAL		151	24		1.3	0.2	4	PUBLIC APP. CONN. TO CATTLE GUARD RT.	
297+33.00						REPLACEMENT MATERIAL		533	89		4.8	0.9	14	PUBLIC APP. CONN. TO PRYOR LT. (WEST)	
						EXISTING PAVEMENT REPAIR			1,000		54.0				
						ISOLATION LIFT			5,000		270.0				
TOTAL		37,300.00	37,238.84		61.18		331	133,574	23,647	161	1,275.1	226.3	* 2,741	14	

* FOR INFORMATION ONLY - BASED ON ONE APPLICATION
** 3/4"

CULVERTS														
STATION	linear feet				END SECTIONS		linear feet			cubic yards		SKEW ANGLE	CULVERT IN PL. in x ft	REMARKS
	RCP IRRIGATION						RELAY CULVERT	REMOVE CULVERT	HEIGHT OF COVER	BEDDING MATERIAL	FLOWABLE FILL			
	CLASS 2													
	18"	24"	30"	36"	LEFT	RIGHT								
38+64.00		66			SO	SO		66	6.8	9	85		24 X 86 C.S.P. IRR	
42+70.00		66			SO	SO		66	5.9	9	75		24 X 86 C.S.P. IRR	
83+56.00			66		F.E.T.S	F.E.T.S.		90	7.1	11	100	10 ⁰ LT.	30 X 80 C.S.P. IRR	
135+52.00							8	6				70 ⁰ LT.	36 X 182 R.C.P. IRR	RESET LEFT F.E.T.S.
196+28.00	80				SO	SO		60	3.1	9	37	22 ⁰ LT.	16 X 80 C.S.P. IRR	
204+74.00			49		F.E.T.S	F.E.T.S.		49	2.2	7	20		30 X 49 C.S.P. IRR	
224+10.00			66		F.E.T.S	F.E.T.S.		66	6.6	16	126		30 X 86 C.S.P. IRR	
231+44.00								90					24 X 90 C.S.P. IRR	
231+67.00		70			SO	SO			2.6	10	31	35 ⁰ RT.		
245+04.00				59	F.E.T.S	F.E.T.S.		59	4.6	11	63		36 X 59 C.S.P. IRR	
260+73.00		50			SO	SO		50	2.1	6	16	5 ⁰ RT.	24 X 50 C.S.P. IRR	
297+06.00		16			F.E.T.S	F.E.T.S.		50	1.2				24 X 60 R.C.P. DR.	LENGTHEN 6' LT. & RT.
340+11.00				58	F.E.T.S	F.E.T.S.		58	3.5	11	46	17 ⁰ LT.	36 X 58 C.S.P. IRR	
354+20.00				94	F.E.T.S	F.E.T.S.		94	2.4	21	55	44 ⁰ RT.	36 X 94 C.S.P. IRR	
TOTAL	80	268	201	211	~	~	8	736	~		120	652	~	

SUMMARY

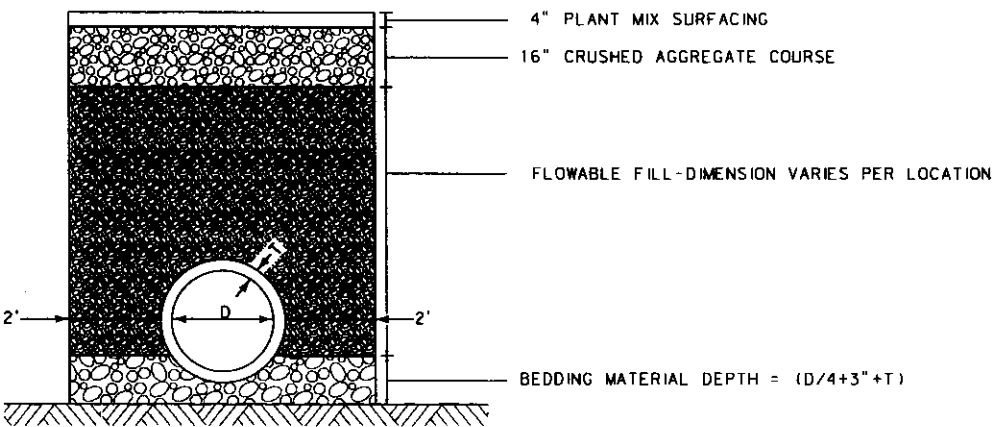
STATION		GUARDRAIL										REMARKS
		linear feet						each				
		REMOVE GUARDRAIL		METAL GUARDRAIL		INTERSECTING ROADWAY TERMINAL SECTION		OPTIONAL TERMINAL SECTION		BRIDGE APPROACH SECTION TYPE 1		
FROM	TO	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	
294+84.11	295+84.11	100.0	100.0	25.0	25.0			1	1	1	1	24.0 ft. RADIUS
295+83.25	297+83.25	100.0	137.5	25.0	50.0		62.5	1		1	1	
SUBTOTAL		200.0	237.5	50.0	75.0		62.5	2	1	2	2	
TOTAL		437.5		125.0		62.5		3		4		

PAVEMENT MARKINGS				
ITEM	UNIT	* INTERIM APPLICATION	FINAL APPLICATION	TOTAL
STRIPING YELLOW PAINT	GALLON	336		336
STRIPING WHITE PAINT	GALLON	516		516
WORDS & SYMBOLS - WHITE PAINT	GALLON	2		2
STRIPING YELLOW EPOXY	GALLON		224	224
STRIPING WHITE EPOXY	GALLON		344	344
WORDS & SYMBOLS - WHITE EPOXY			1	1
TEMPORARY PAVEMENT MARKINGS	MILE			7.1

* QUANTITIES BASED ON TWO APPLICATIONS

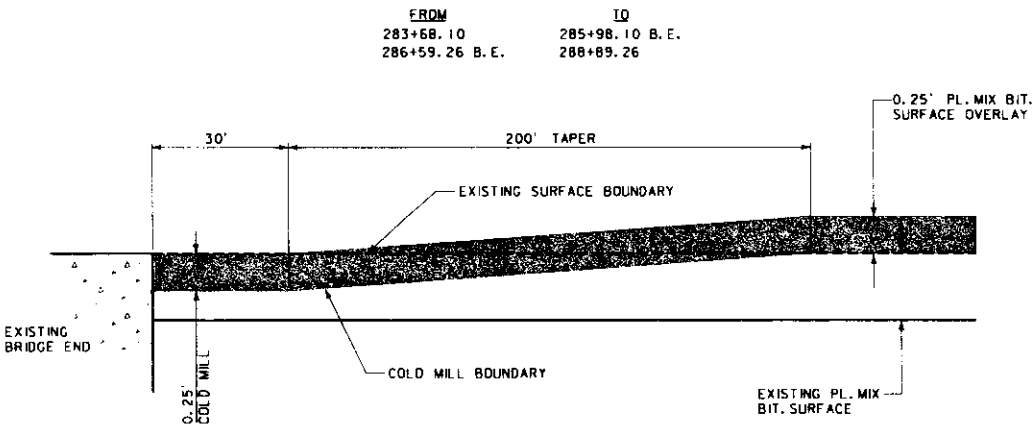
COLD MILLING				
STATION		square yards	REMARKS	
		COLD MILLING		
FROM	TO			
8+00.00	10+00.00	582		BEGIN PROJECT CONNECTION
191+00.00		151	MILL 0.25' TO CATTLE GUARD ON PUBLIC APP. RT.	
283+08.10	285+08.10	570	BRIDGE END CONNECTION	
286+09.26	288+09.26	670	BRIDGE END CONNECTION	
297+33.00		556	PUBLIC APPROACH CONN. TO PRYOR LT. (WEST)	
383+00.00	385+00.00	582	END PROJECT CONNECTION	
</				

CULVERT REPLACEMENT

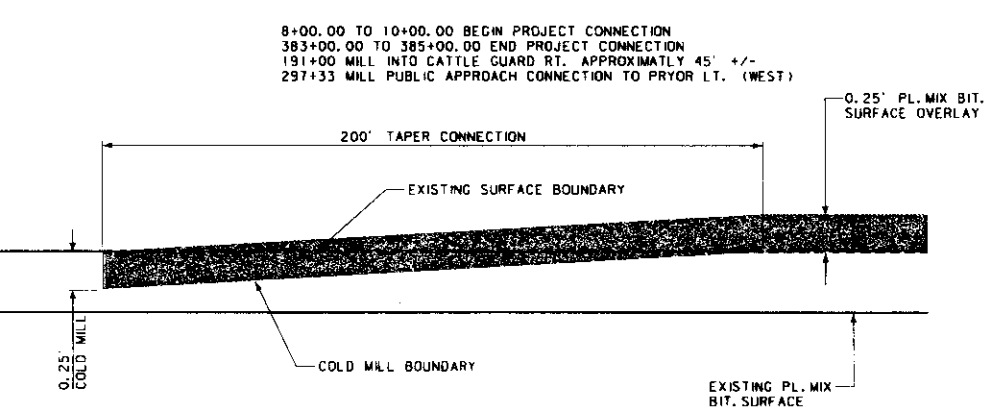


NOTE: ACTUAL REMOVAL DISTANCES TO BE DETERMINED
DURING CONSTRUCTION BY THE ENGINEER

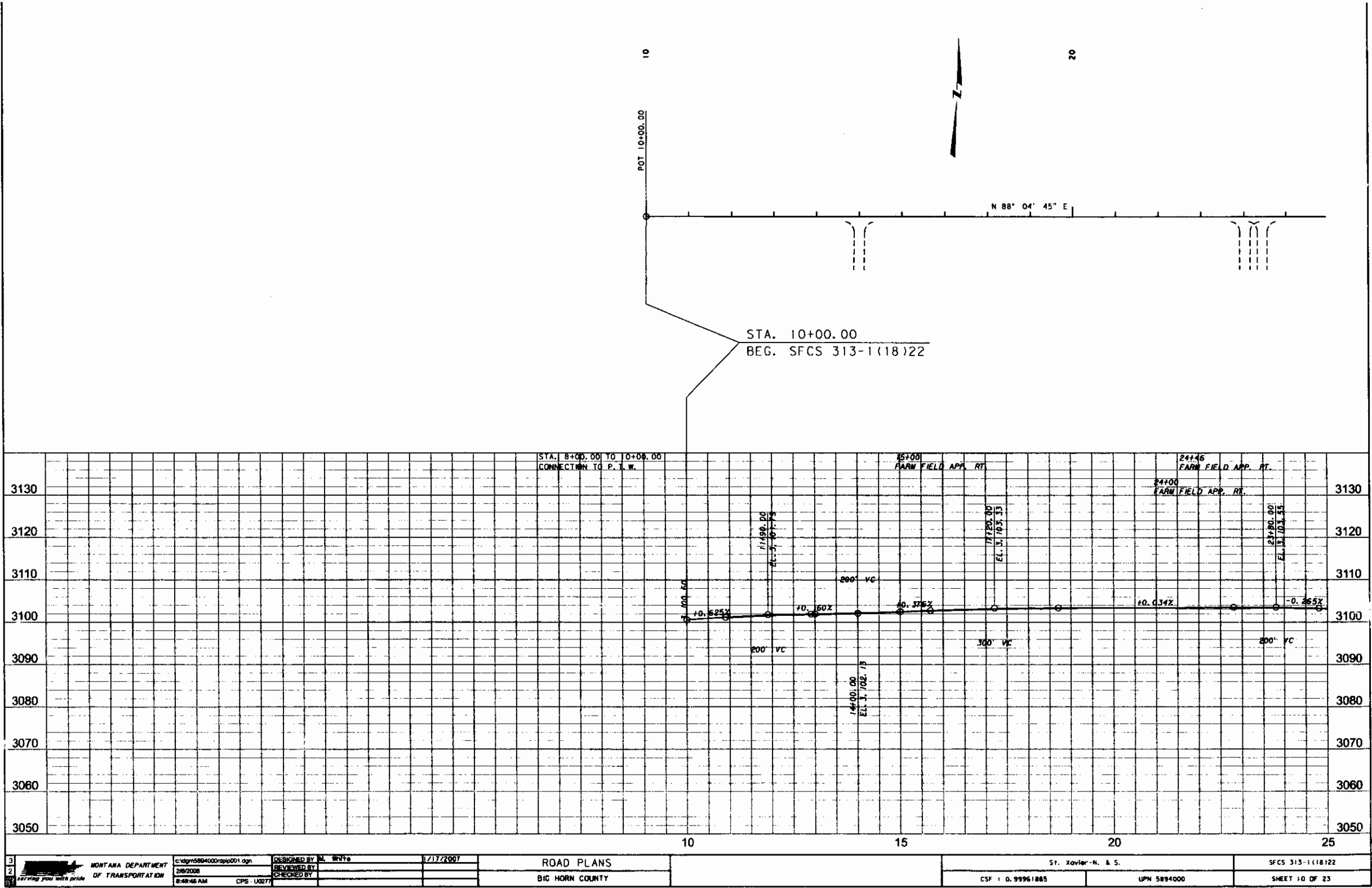
BRIDGE ENDS



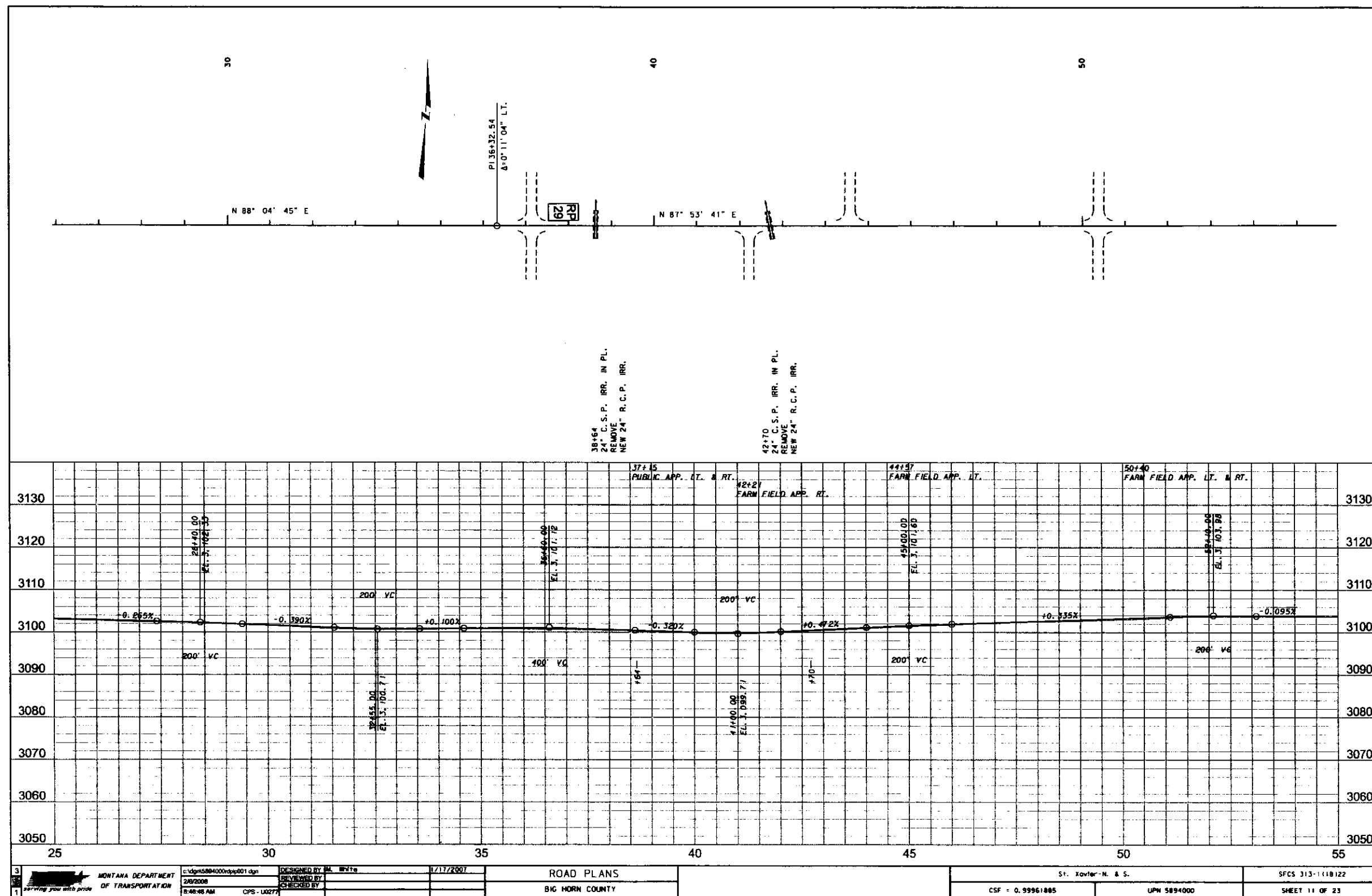
CONNECTIONS

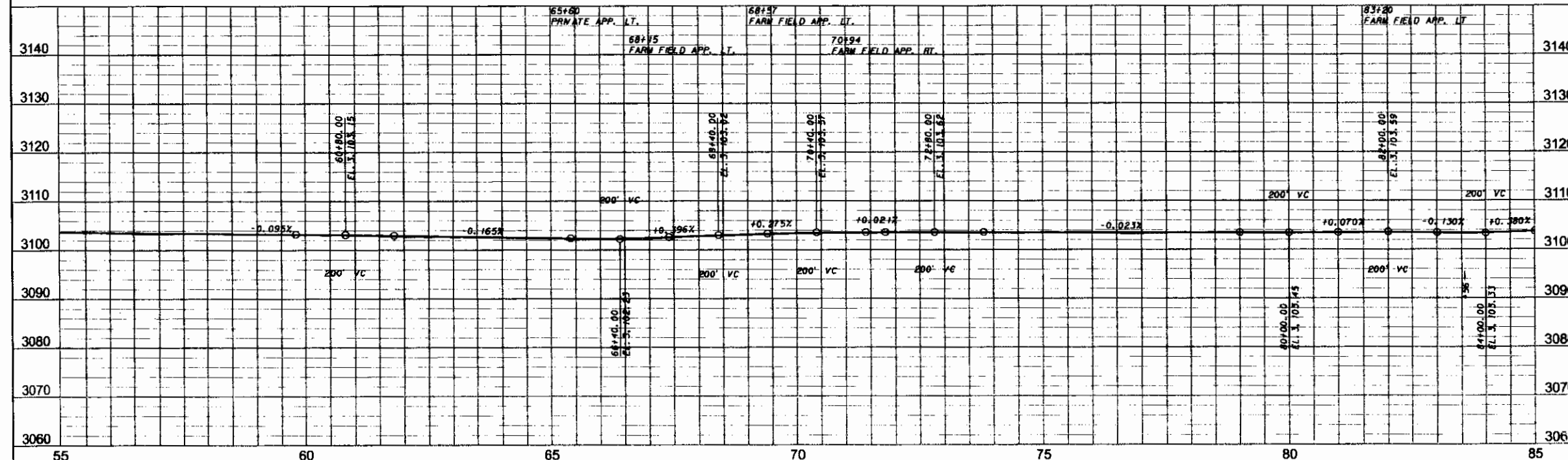
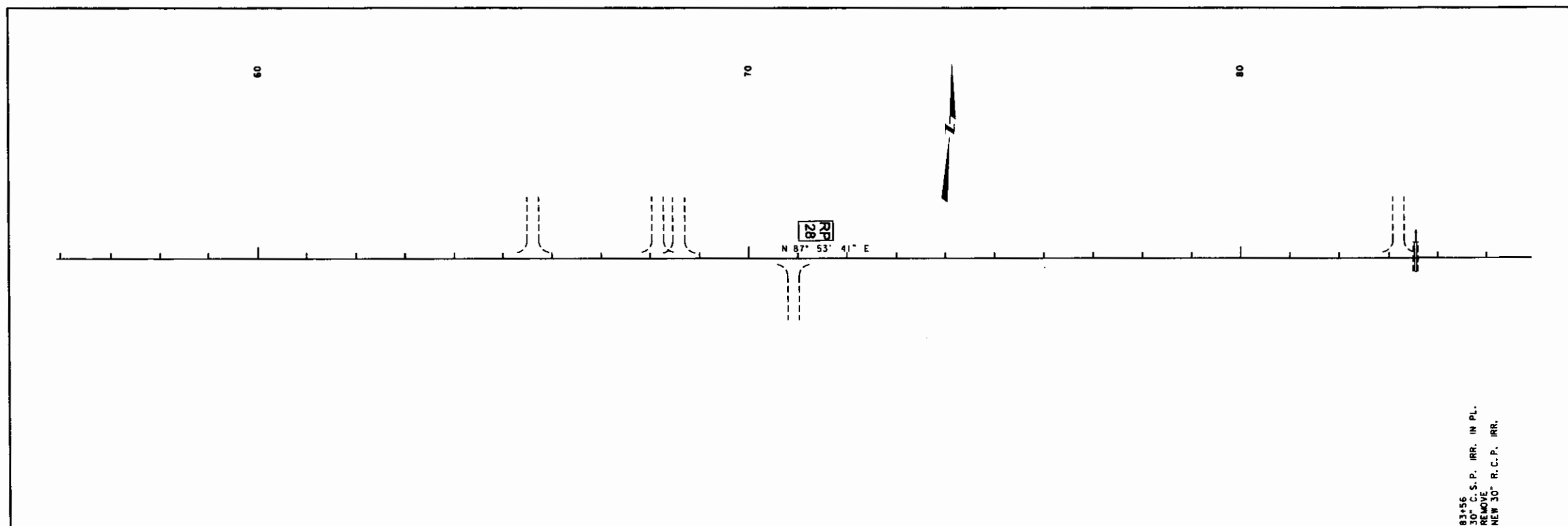


CULVERT
REPLACEMENT
COLD MILLING
DETAILS
NO SCALE



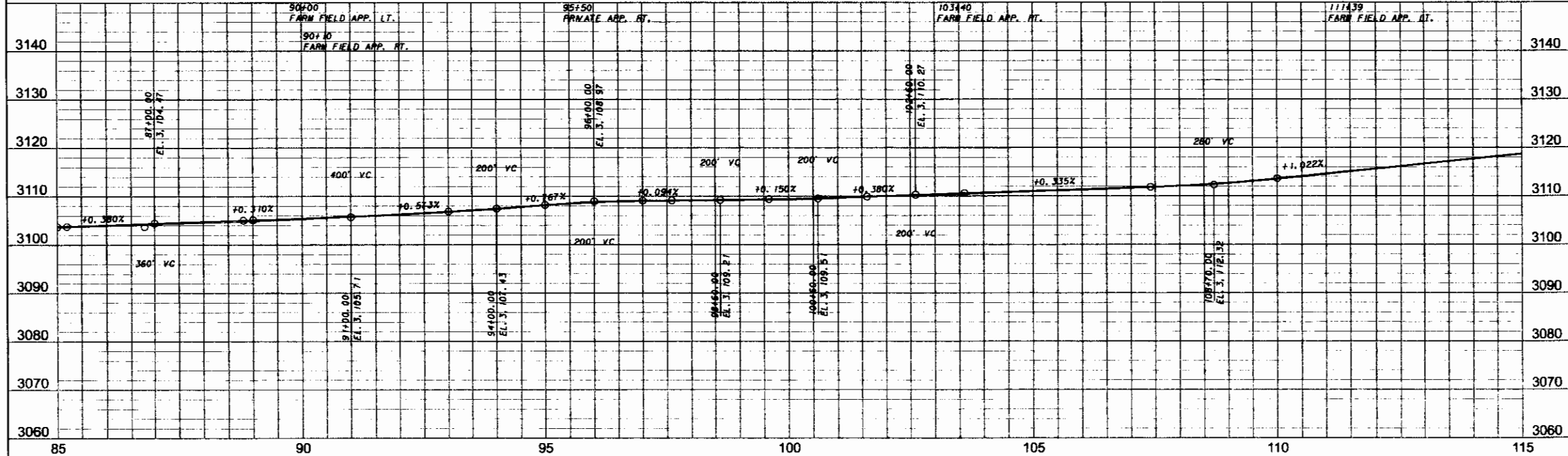
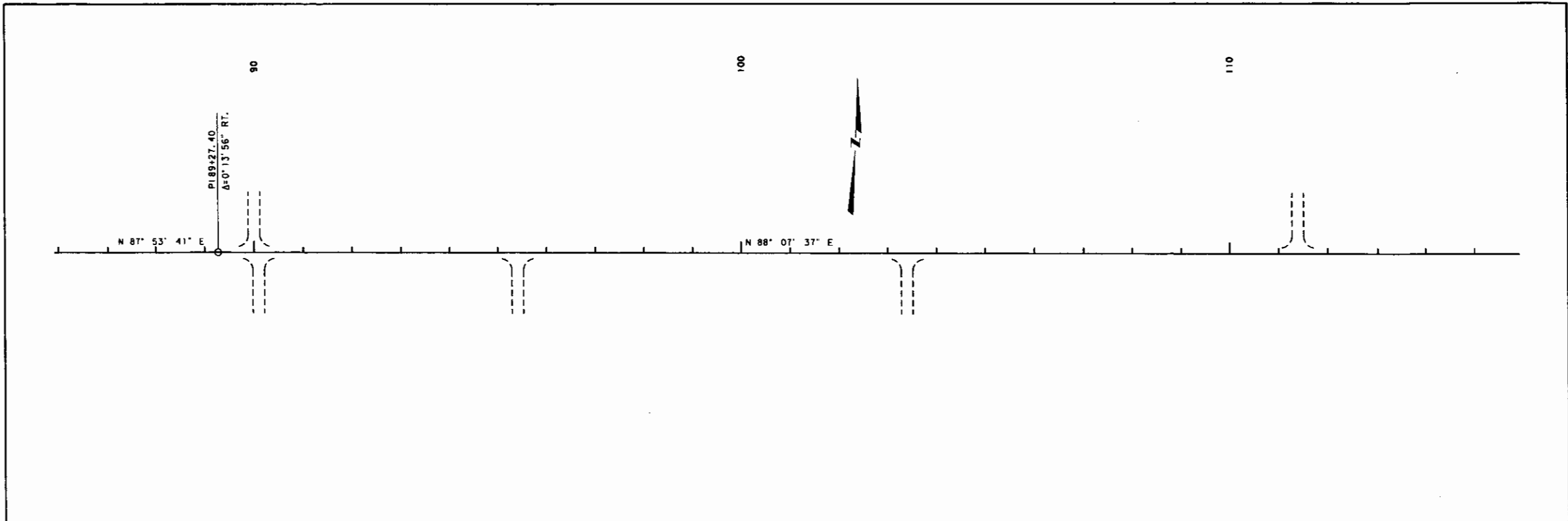
3	MONTANA DEPARTMENT OF TRANSPORTATION	c:\dgn\5894000\spc001.dgn	DESIGNED BY AL White	1/17/2007	ROAD PLANS	St. Xavier-N. & S.	SFCS 313-1(18)22
2	8:48:46 AM	CPS - U0277	CHECKED BY		BIG HORN COUNTY	CSF = 0.99961885	UPN 5894000
1							SHEET 10 OF 23



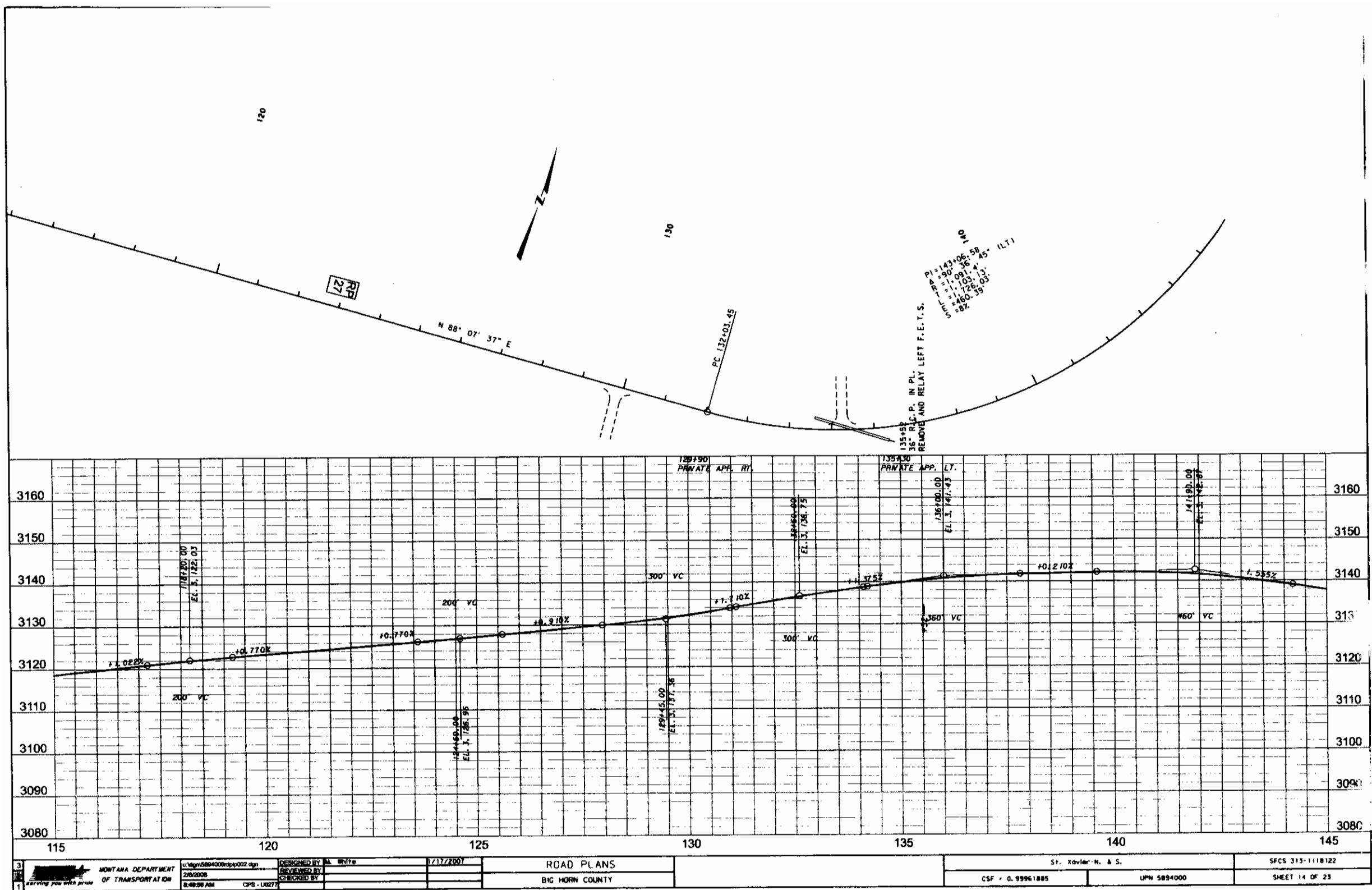


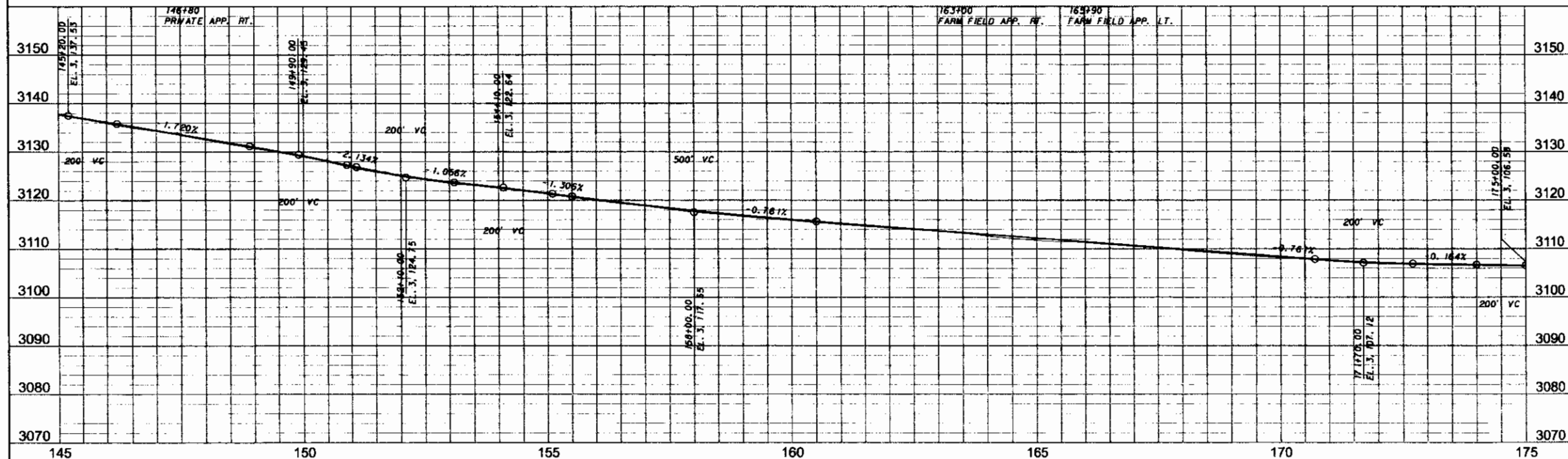
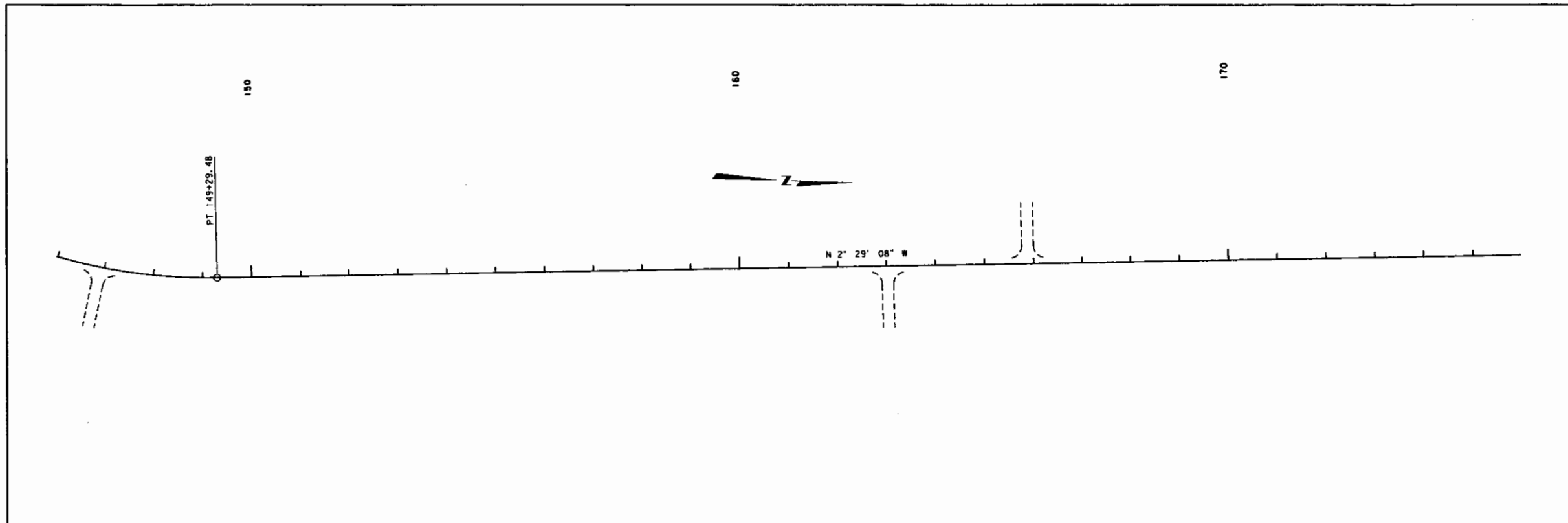
83+56
30" C.S.P. IRR. IN PL.
REMOVE
NEW 30" R.C.P. IRR.

MONTANA DEPARTMENT OF TRANSPORTATION starting you with pride	c:\pdm\080400\mtp001.dgn 2/6/2008 8:48:50 AM CPS - LKZT	DESIGNED BY: M. B. H. 10 REVIEWED BY: CHECKED BY: DATE: 1/17/2007	ROAD PLANS BIG HORN COUNTY	St. Xavier - N. & S. CSF - 0.99961885 LPM 5894000	SFCS 313-1118122 SHEET 12 OF 23
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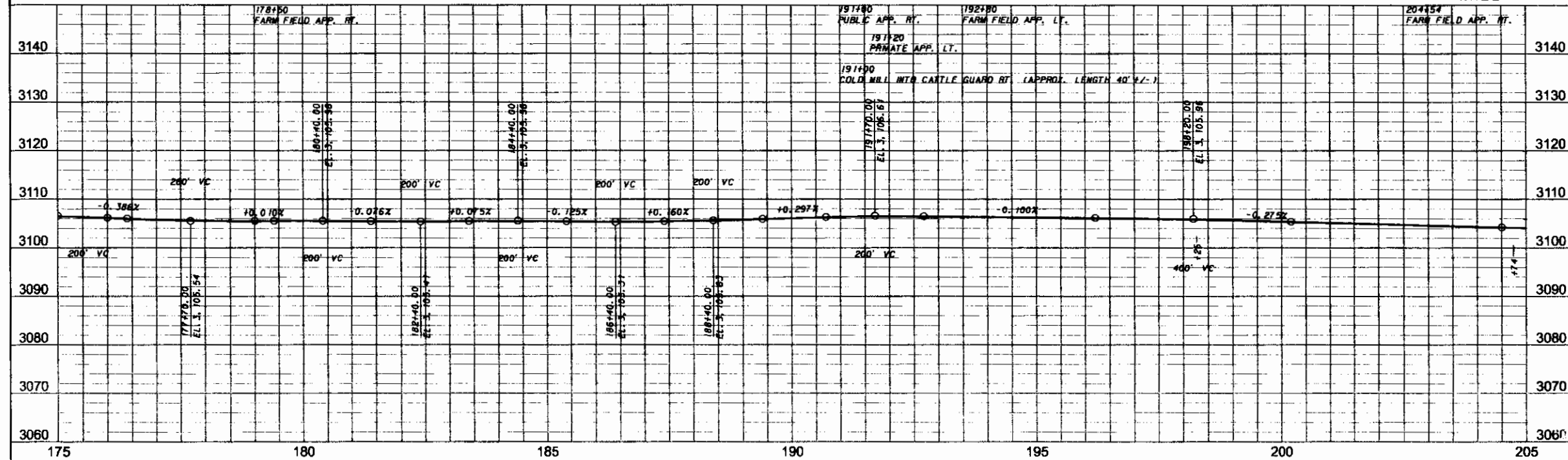
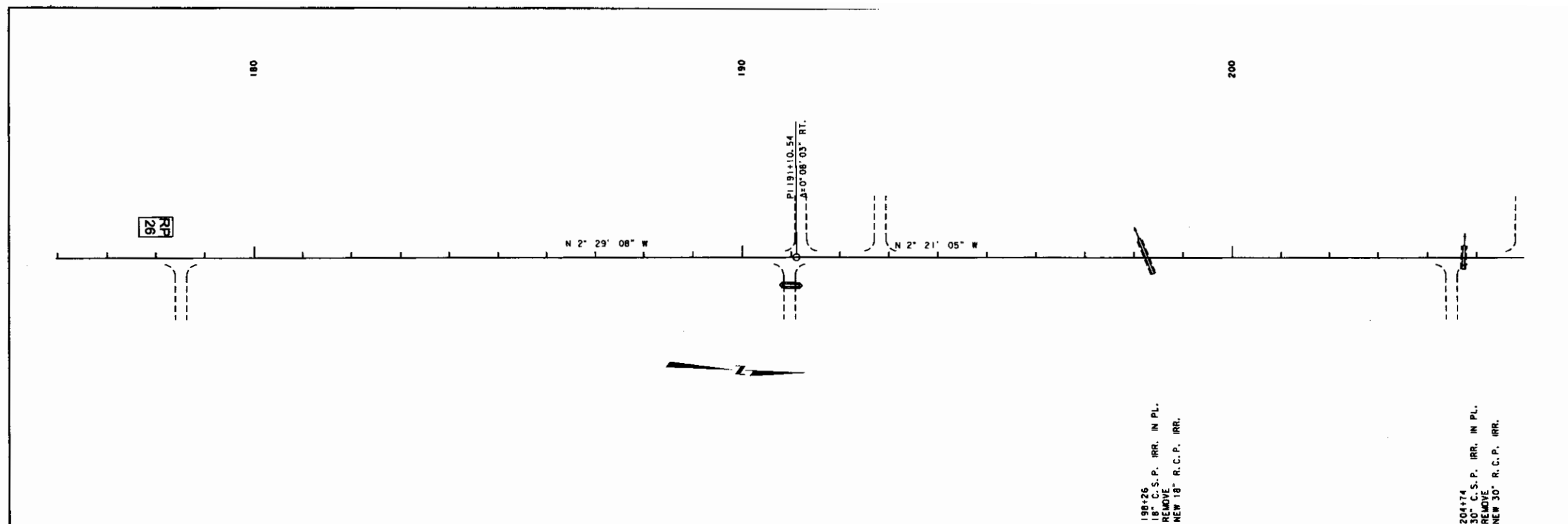


3 2 1 MONTANA DEPARTMENT OF TRANSPORTATION serving you with pride	c:\mgt\0894000\rdp\002.dgn 2/8/2008 8:48:33 AM CPS - US277	DESIGNED BY: M. White REVIEWED BY: CHECKED BY: ROAD PLANS BIG HORN COUNTY	St. Xavier-M. & S. CSF = 0.99961885	SFCS 313-1118122 UPN 5894000 SHEET 13 OF 23
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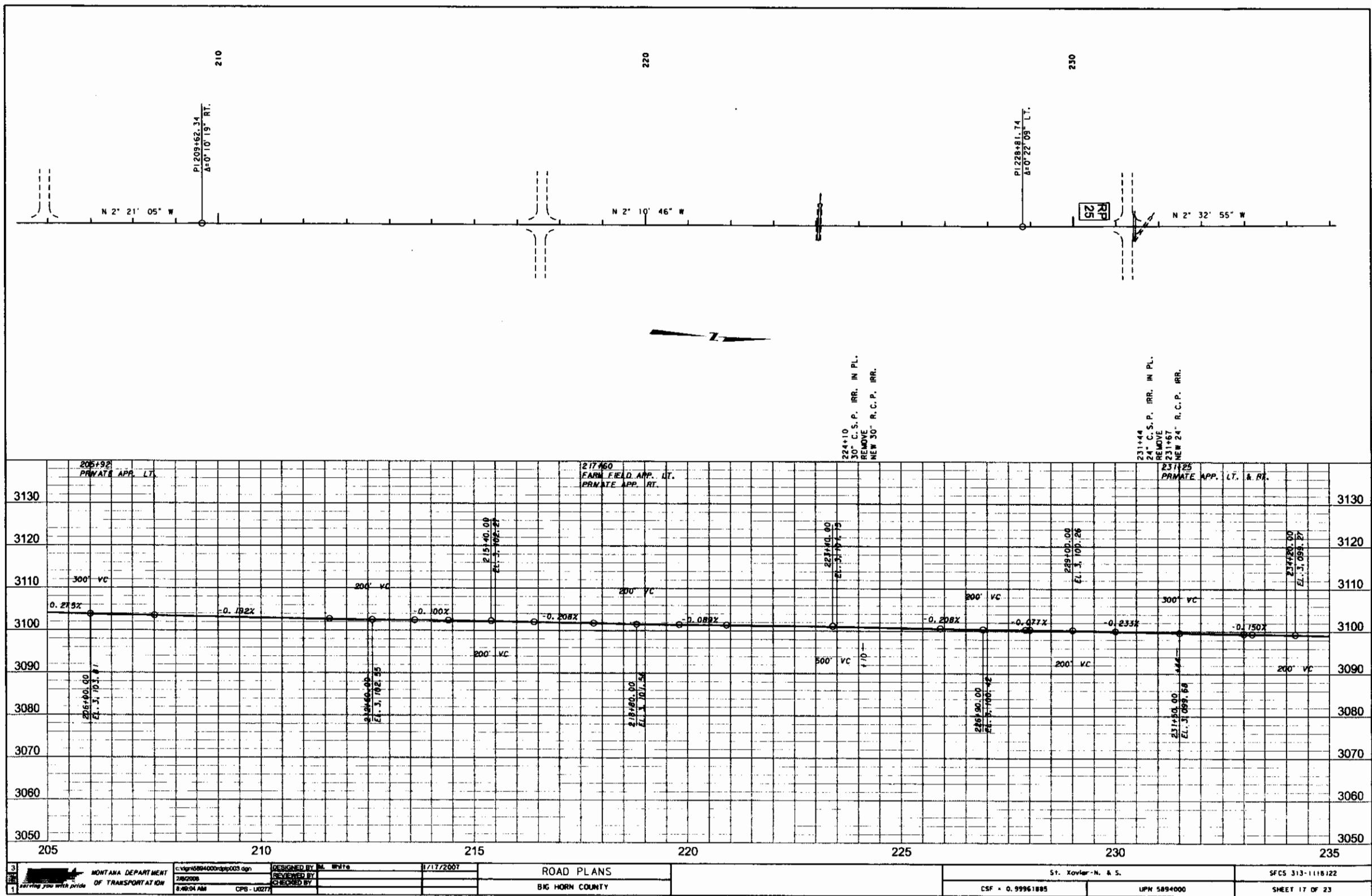


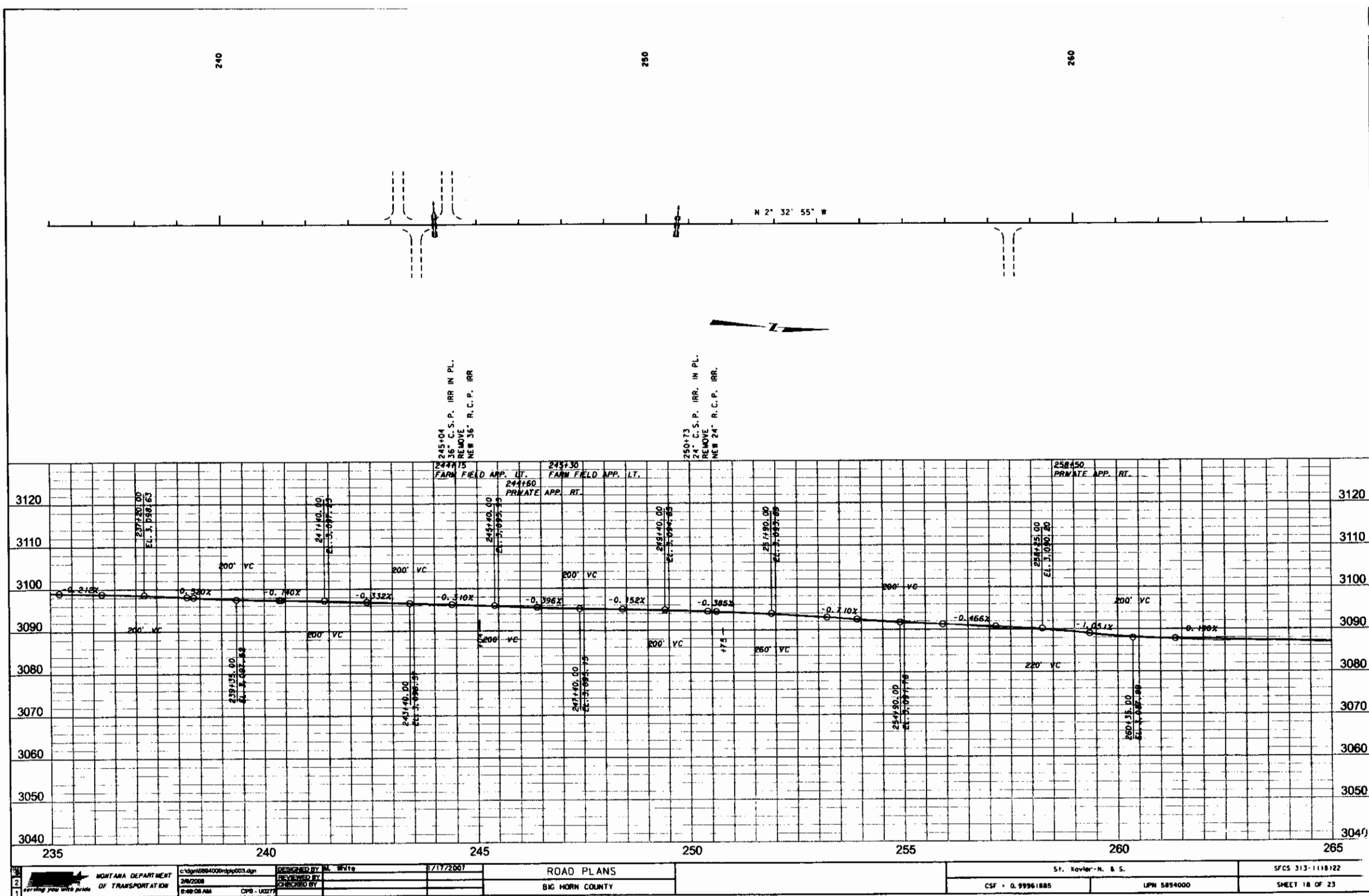


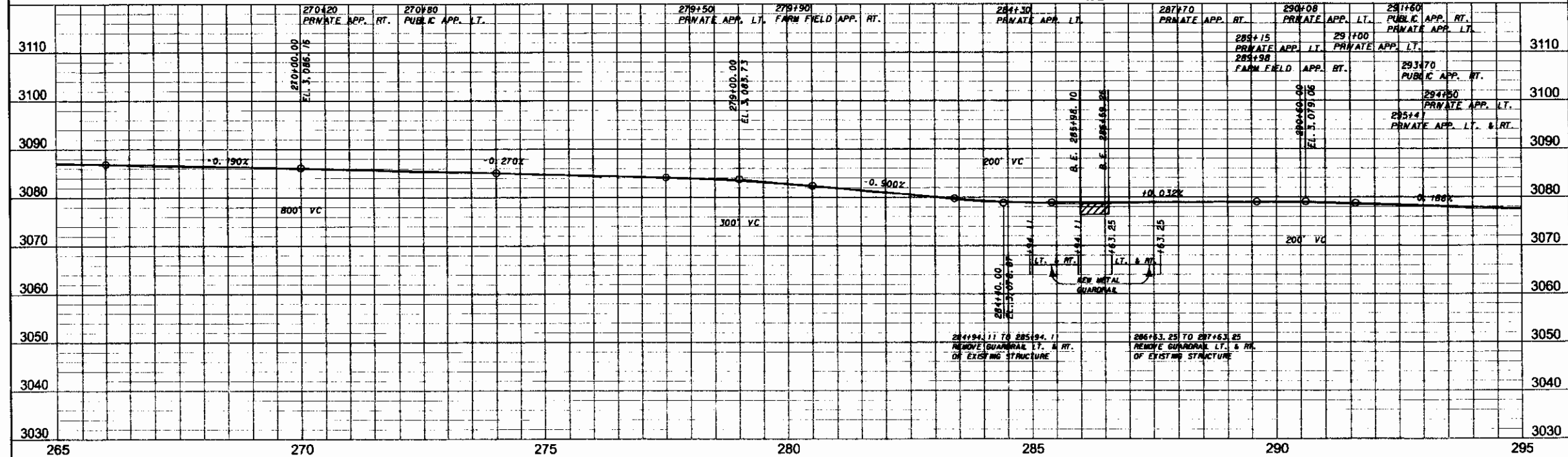
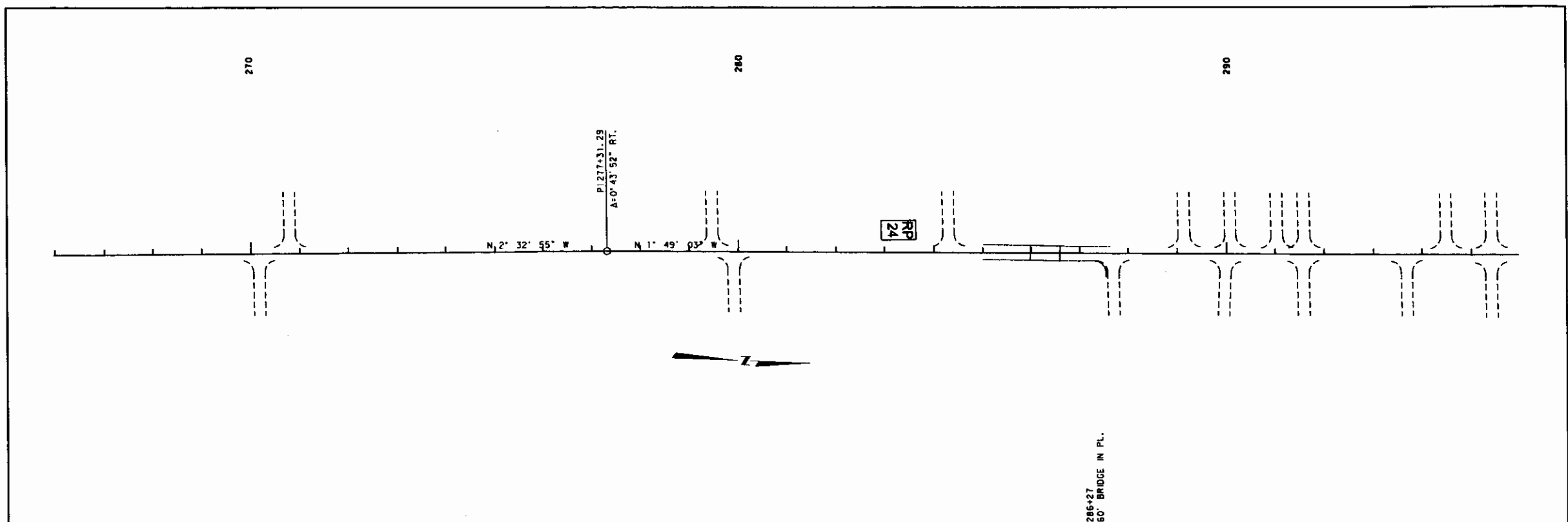
MONTANA DEPARTMENT OF TRANSPORTATION	DESIGNED BY: M. WNT REVIEWED BY: CHECKED BY:	ROAD PLANS BIG HORN COUNTY	St. Xavier N. & S.	SFCS 313-1118122 CSF = 0.99961885 UPN 5894000 SHEET 15 OF 23
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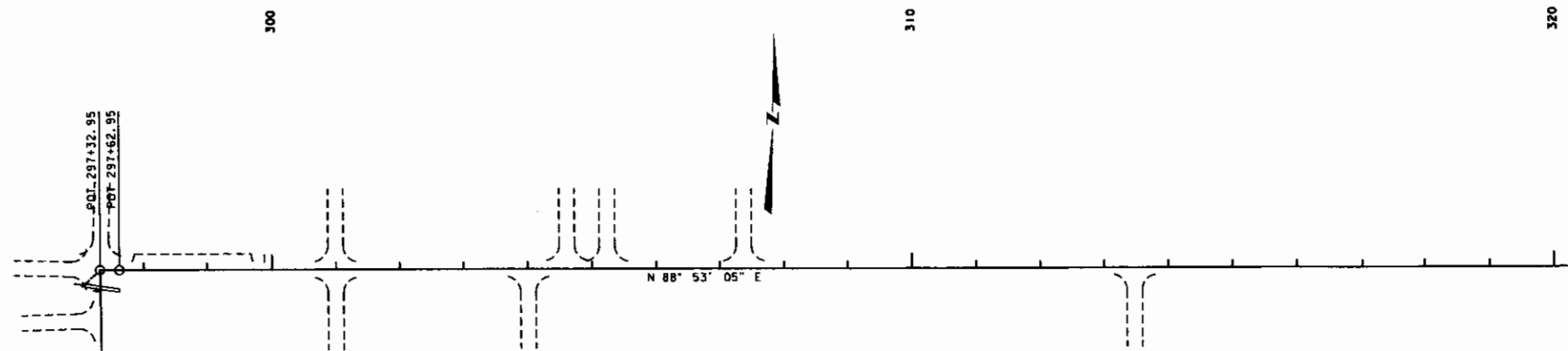
3	MONTANA DEPARTMENT OF TRANSPORTATION	c:\dgn\5894000\dsp003.dgn	DESIGNED BY: RA	7/17/2007	ROAD PLANS	St. Xavier - N. & S.	SFCS 313-1118122
2		28/2/2006	REVIEWED BY:		BIG HORN COUNTY	CSF = 0.99961885	
1		8:49:01 AM	CPS - U0271			UPN 5894000	SHEET 16 OF 23



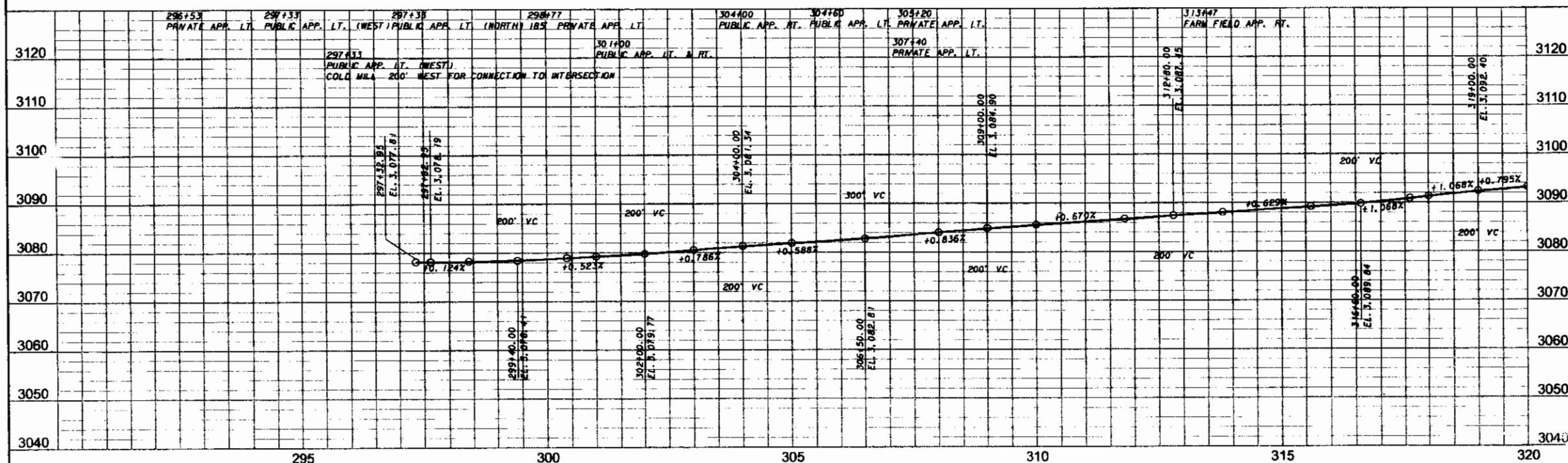




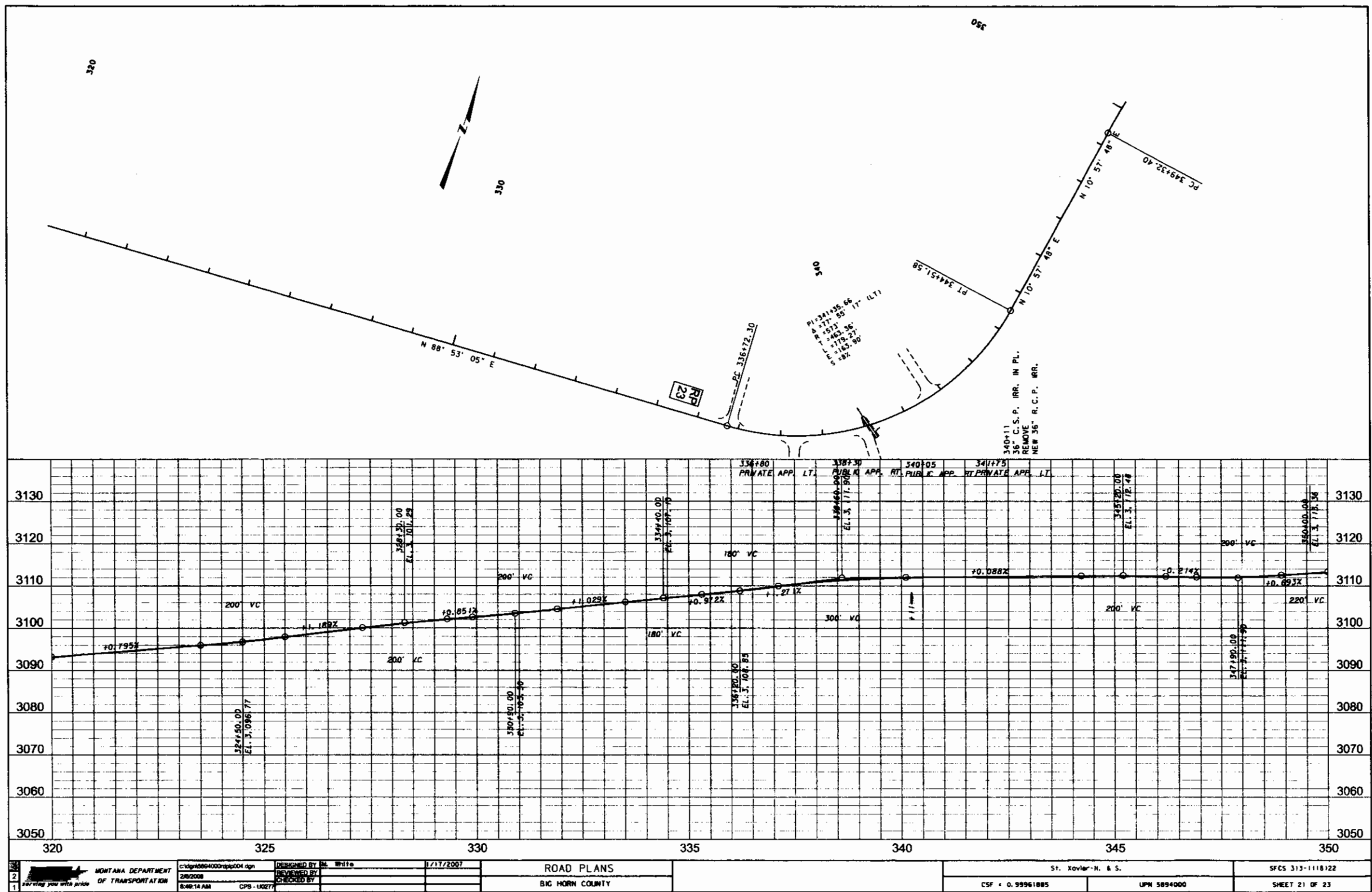
3	MONTANA DEPARTMENT OF TRANSPORTATION	c:\p\15894000\rdp\004.dgn	DESIGNED BY	White	1/17/2007	ROAD PLANS	St. Xavier-N. & S.	SFCS 313-1(18)22
2	OF TRANSPORTATION	2/8/2008	REVIEWED BY			BIG HORN COUNTY	CSF = 0.99961885	UPN 5894000
1	Preparing you with pride	8:48:38 AM	CPS - 10077	CHECKED BY				SHEET 19 OF 23

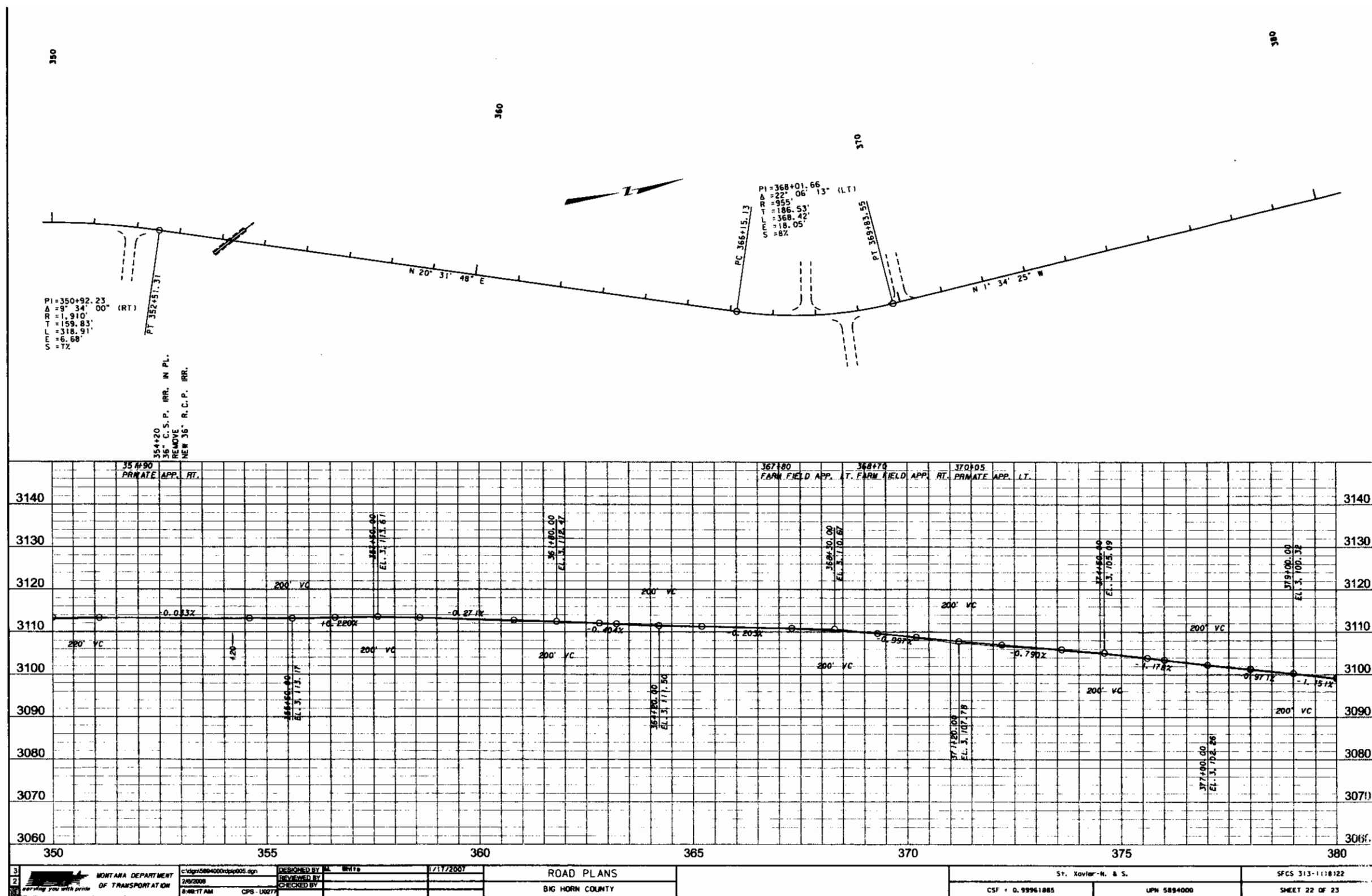


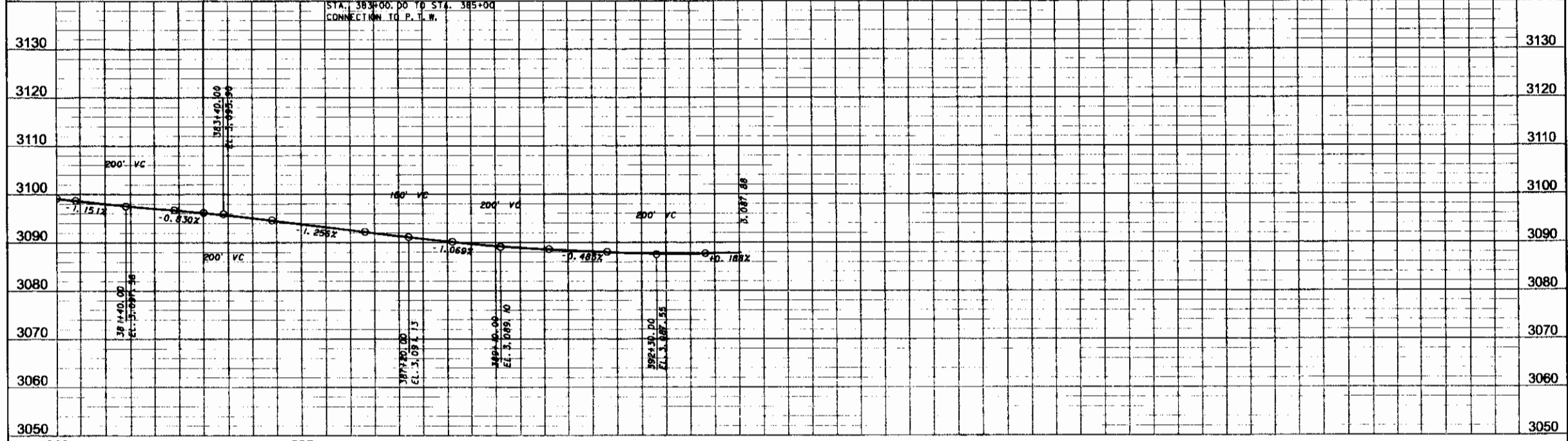
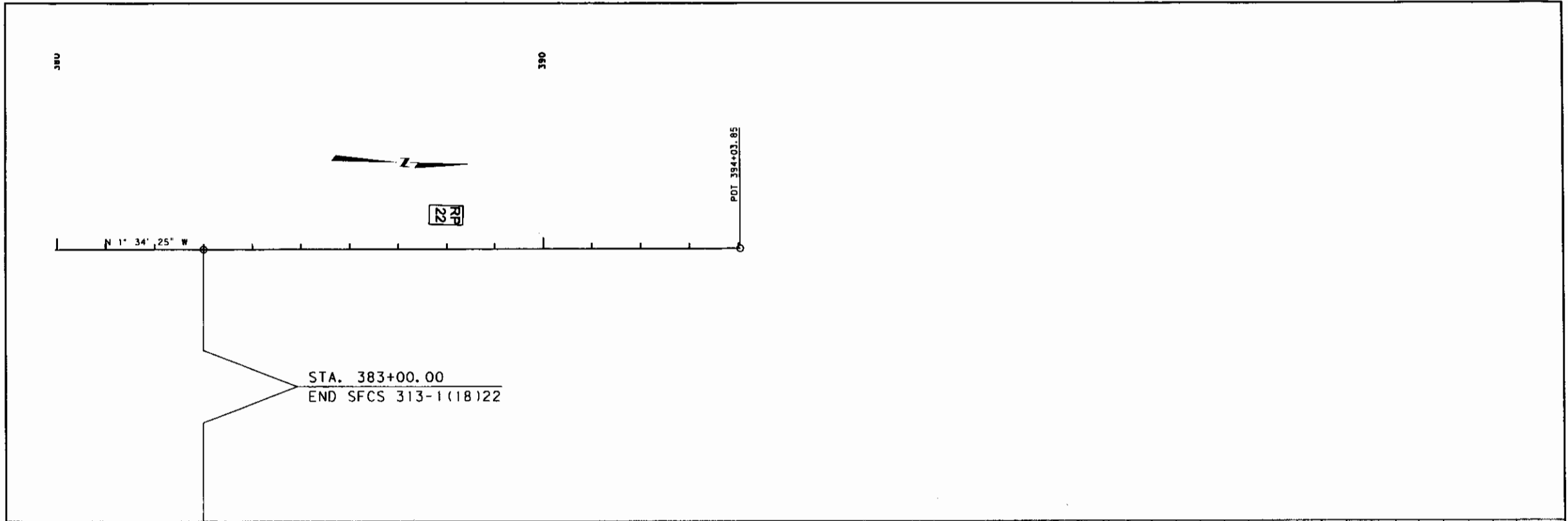
297+05
24" R.C.P. DR. IN PL.
LENGTHEN LT. & RT.



3	MONTANA DEPARTMENT OF TRANSPORTATION	DESIGNED BY M. White	1/17/2007	ROAD PLANS	St. Xavier-N. & S.	SFCS 313-1118122
2	2/8/2008	REVIEWED BY		BIG HORN COUNTY	CSF = 0.99961885	UPN 5894000
1	8:49:12 AM	CPS - 08277				SHEET 20 OF 23







3	MONTANA DEPARTMENT OF TRANSPORTATION	C:\p015894000\p015894000.dgn	DESIGNED BY: ML W21a	8/17/2007	ROAD PLANS	St. Xavier-N. & S.	SFCS 313-1(18)22
2		3/8/2008	REVIEWED BY:			CSF = 0.99961885	UPN 5894000
1		8:42:19 AM	CPS-10277		BIG HORN COUNTY		SHEET 23 OF 23

[illegible]

Diagram illustrating a wire soldering or equivalent fastening joint. The diagram shows a horizontal wire (labeled "Wire Rope") being joined to a vertical wire (labeled "Pin (By Others)"). The horizontal wire has a diameter of $\frac{1}{2}$ " and is shown with a "Barrier End" and a "1/2" inside Dia." section. The vertical wire has a diameter of $\frac{1}{2}$ ". A dimension of "2-0" is indicated for the length of the horizontal wire section.

NOTE: include galvanized pipe sleeves and wire rope in the unit price bid for Posttension Bridge Rail - Concrete Barrier.

NOTE: Use a connecting link meeting the requirements of AASHTO M 221M Grade 310.

NOTE: Use zinc-coated steel wire (7) strand (all other grades) wire rope with minimum breaking strength of 25,000 lbs. corresponding to ASTM A 475.

REPECTORS: Place a width of rebar on top of the concrete barrier at 10' - 0" spacing between ends of the barrier. Mount reflectors with reflectors face toward incoming traffic. See details. Dwg. No. 606-60.

REMARKS: Plans were prepared from original drawings and as-built drawings. Survey from these shown on the drawings. Verify all dimensions necessary to complete the work.

SPECIFICATIONS: Minnesota Department of Transportation and the Minnesota Transportation Commission Standard Specifications for Road and Bridge Construction, 1995 edition, and any amendments thereto, and special provisions govern unless otherwise noted. Design was prepared in accordance with AASHTO Standard Specifications for Highway Bridges, 17th edition - 2002, and any amendments thereto.

DETAILS SHOWN: As shown in this drawing apply to both ends and on both sides of the structure.

REINFORCING STEEL: Use new deformed type reinforcing steel meeting the requirements of AASHTO M 31 Grade 60.

REPLACE EXISTING REINFORCING STEEL DAMAGED DURING CONSTRUCTION THAT IS COLLAPSED TO REMAIN IN PLACE OF AN ADDITIONAL COAT TO THE SLAB.

EPOXY RESIN BONDING AGENT: Thoroughly coat all existing concrete in contact with new concrete with an epoxy bonding agent (AASHTO M 225 Type V) immediately prior to placing new concrete.

DIMENSIONS: All dimensions are in feet. Verify all dimensions in the field before ordering any materials and before fabrication is begun.

PAVEMENT: Include all resources necessary to revise barrier ends in the unit price bid for Guardrail-Steel/Bridge Approach Type 1.

USE CLASS 50 CONCRETE FOR BARRIER CONCRETE. CONCRETE ALL NEW HARDWARE.

PLACING PRECASTED TIE IN ROLL WITH STANDARD SPlice bolts. See Detailed Dwg. No. 606-82.

For additional information, General Layout Drawing Bureau.

13264 is

BENT BARS				(All dimensions are out to out)			
Work	Size	No.	Length	A	B	C	D
B1	#4	16	J3	4'-11"	2'-5"	0'-5"	0'-9"

Diagram of a bent bar with dimensions A, B, C, D and a 11 1/4 inch radius. The bar is bent at a 90-degree angle. A is the horizontal length, B is the vertical length, C is the diagonal length, and D is the total length. The radius is 11 1/4 inches.

STRAIGHT BARS			
Work	Size	No.	Length
B100	#4	32	2'-0"
D1	#5	8	2'-5"

BILL OF REINFORCING STEEL			
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STATE	PROJECT NUMBER	SHEET NO.
MONTANA	SFCS 313-1118122	B1

