

MONTANA DEPARTMENT OF TRANSPORTATION

FEDERAL AID PROJECT STPB 9005(55)

BRIDGE REPLACEMENT

CLARKS FORK - 9 M S BELFRY

CARBON COUNTY

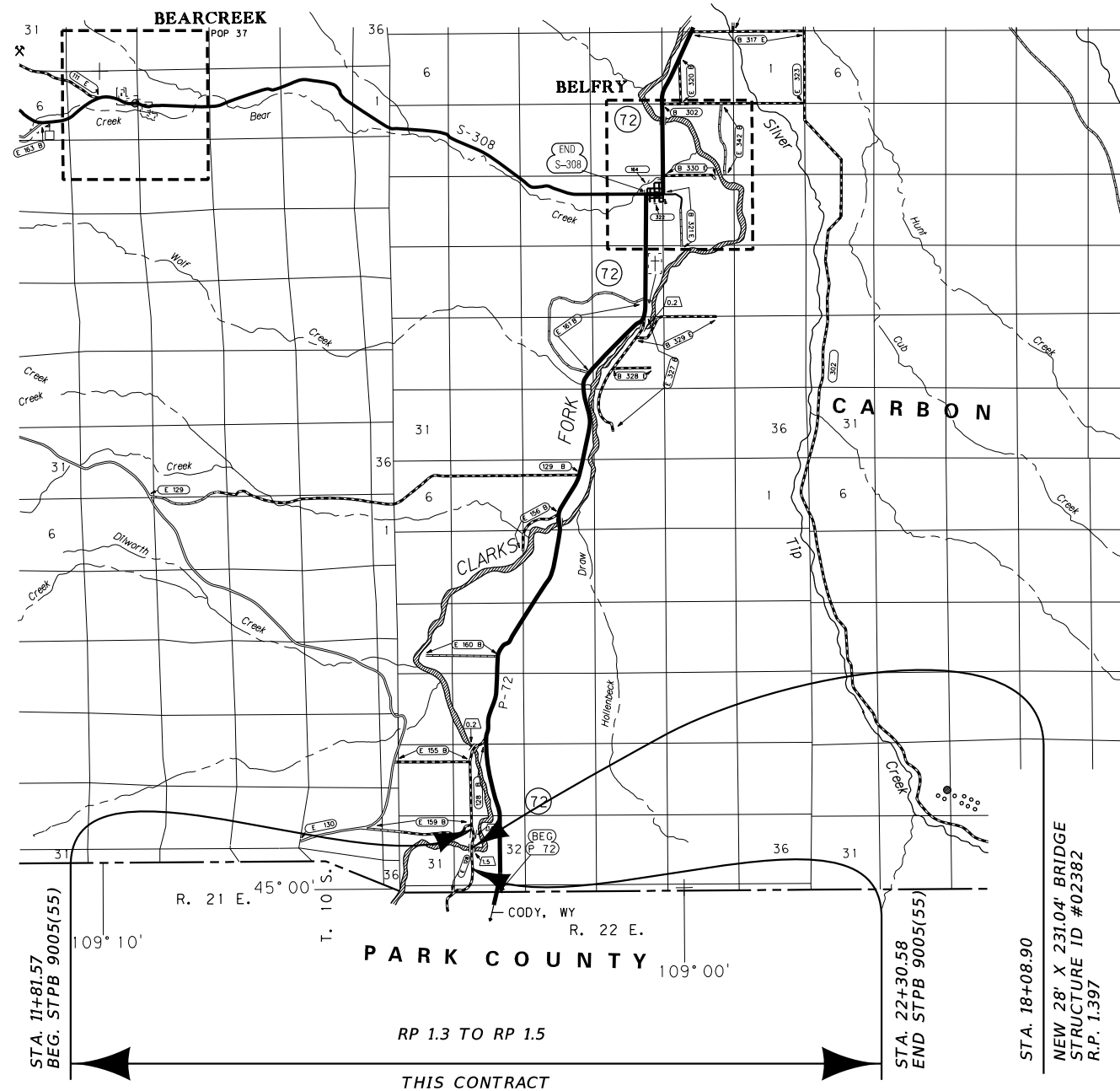
PROJECT DESIGN DATA

PRESENT 2019 A.D.T. = 60
 LETTING 2022 A.D.T. = 64
 DESIGN 2042 A.D.T. = 84
 D.H.V. =
 TRUCKS =
 V. =
 18 KIP ESAL'S = 10
 GROWTH RATE = 1.0%

LETTING DATE - _____
 CSF = 0.99980387

LENGTH 0.2 MILES

SURFACING SOURCES -
CONTRACTOR FURNISHED



PLANS PREPARED BY



RELATED PROJECTS

ASSOCIATED PROJECT AGREEMENT NUMBERS

R / W	
I.C.	
P. E.	STPB 9005(54)

APPROVED BY: GREAT WEST ENGINEERING



DATE

MONTANA DEPARTMENT OF TRANSPORTATION

RECEIVED BY: CONSULTANT DESIGN ENGINEER

DATE

PRELIMINARY FOR FINAL PLANS REVIEW ONLY

3 2		...9523000\RD\9523000.rdt	DESIGNED BY: R. HOLM, L. WILLIAMS	11/19/2021	ROAD PLANS UPN 9523000
		4/28/2022	REVIEWED BY: R. HOLM	11/19/2021	
		1:12:54 PM	CHECKED BY: K. YAKAWICH	11/19/2021	
		lwiliams			

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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 - GRADE S - 3/8" AGG. = 6.2% OF PL.MIX BIT.SURF.
 BITUMINOUS MATERIAL = 8.5 LBS. PER GAL.
 EMULSIFIED ASPHALT - TACK (ALL OTHER SURFACES) = 0.05 GAL. PER SQ.YARD (UNDILUTED)

MISC. TO BE MOVED OR REMOVED BY OTHERS

ALL PRIVATELY OWNED SIGNS TO BE REMOVED BY OWNER.

PUBLIC LAND SURVEY MONUMENTS

ALL MONUMENTS TO BE REMOVED AND RELOCATED OR RESET BY STATE FORCES.

CLEARING AND GRUBBING

CLEAR AND GRUB TO CONSTRUCTION LIMITS. INCLUDE THE COST OF CLEARING AND GRUBBING IN THE UNIT PRICE BID FOR UNCLASSIFIED EXCAVATION

APPROACHES

CONSTRUCT APPROACHES TO A 24' FINISHED TOP ON A 35' SUBGRADE UNLESS NOTED OTHERWISE IN THE PLANS.

PROVIDE THE FOLLOWING SURFACING ON PRIVATE APPROACHES:
 0.20' PLANT MIX BITUMINOUS SURF.
 0.60' CRUSHED AGGREGATE COURSE

PROVIDE THE FOLLOWING SURFACING ON FARM FIELD APPROACHES:
 0.20' CRUSHED TOP SURFACING
 0.40' CRUSHED AGGREGATE COURSE

SURFACE ALL APPROACHES TO R/W OR AS SHOWN ON PLANS.

DO NOT DISTURB

TELEPHONE PEDESTAL 55' LEFT OF STA. 16+18
 TELEPHONE PEDESTAL 35' LEFT OF STA. 21+76
 PROPERTY SOUTHEAST OF BRIDGE (PARCEL 3) INCLUDING TREES, FENCE,
 AND CATTLE GUARD 19+04 TO 22+31 LT
 TREES 14+50 TO 16+00 LT

UTILITIES

CALL THE UTILITIES UNDERGROUND LOCATION CENTER (811) OR OTHER NOTIFICATION SYSTEM FOR THE MARKING AND LOCATION OF ALL LINES AND SERVICES BEFORE EXCAVATING. ALL CLEARANCES OR DEPTHS PROVIDED FOR UTILITIES ARE FROM EXISTING GROUND LINE.

SOILS INFORMATION

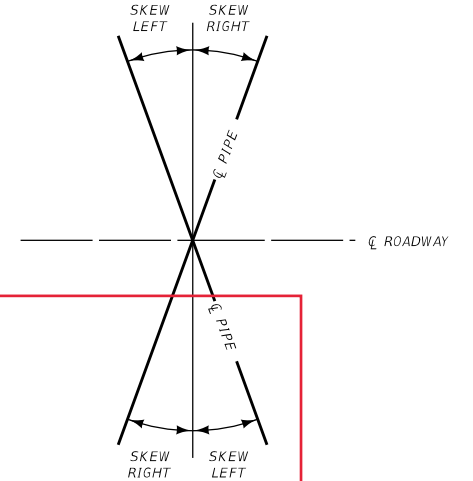
SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION. THE LOCATION OF GEOTECHNICAL BORINGS IS SHOWN ON THE PLAN VIEW WITH THE FOLLOWING SYMBOL:

BORING NUMBER



(GEOTECHNICAL BORING)

SKEW DIAGRAM



WETLANDS

WETLANDS EXIST ADJACENT TO THE ROADWAY AND MAY EXIST BEYOND THE PROJECT LIMITS. WETLAND AREAS AND PERMANENT WETLAND IMPACT AREAS WITHIN THE PROJECT LIMITS HAVE BEEN DELINEATED AND ARE SHOWN ON THE PLANS. ANY ACTION IMPACTING WETLAND AREAS OUTSIDE OF THE PERMANENT IMPACT AREAS SHOWN IS THE RESPONSIBILITY OF THE CONTRACTOR.



DELINEATED WETLAND AREAS



PERMANENT WETLAND IMPACTED AREAS

WETLAND DELINEATION TABLE

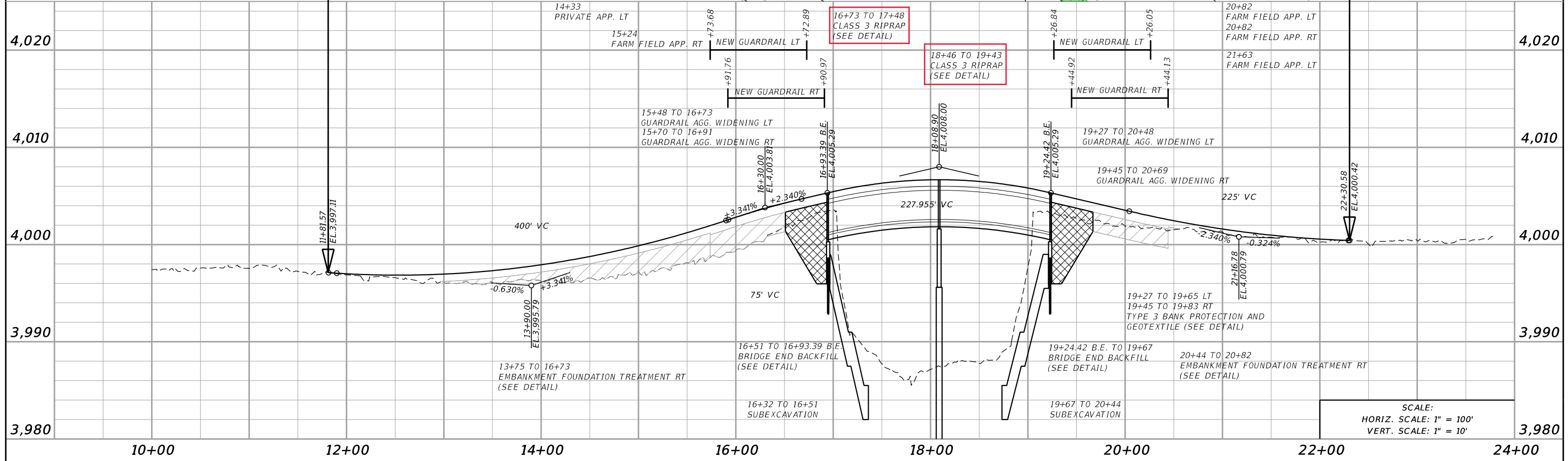
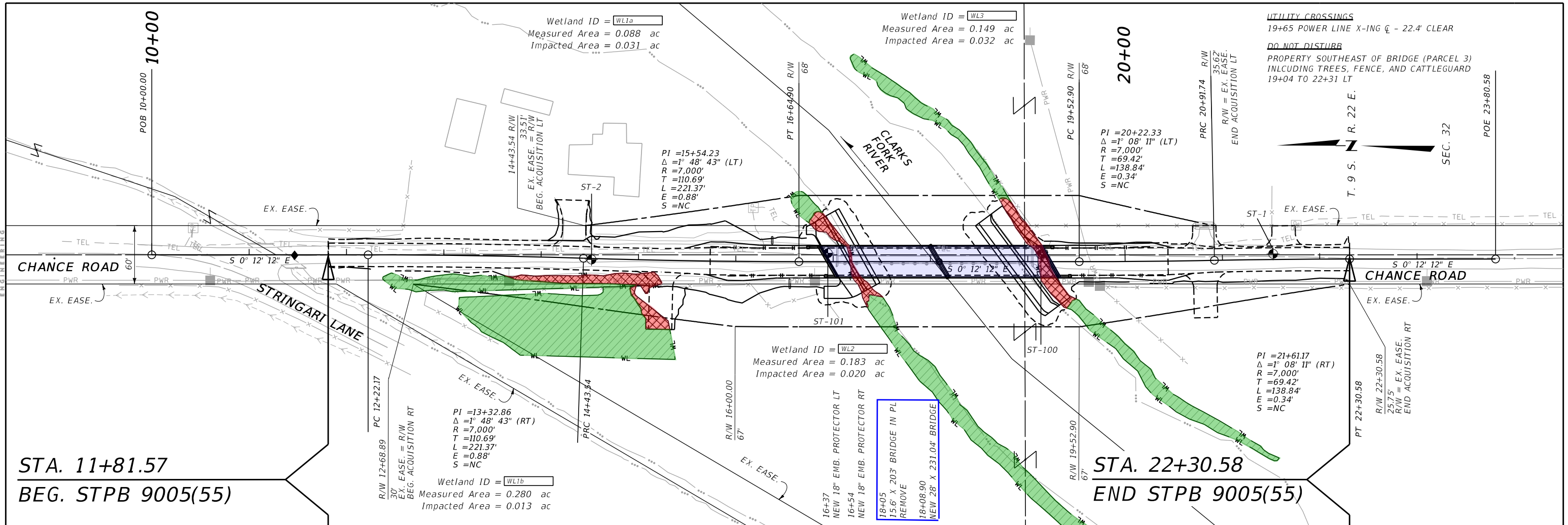
WETLAND DESIGNATION	STATION		WETLAND AREA (acres)		REMARKS
			DELINEATED AREA	PERMANENT IMPACTED AREA	
WL1a	12+37	15+24	0.088	0.031	RT, CLARKS FORK RIVER
WL1b	13+16	15+40	0.280	0.013	RT
WL2	16+56	20+28	0.183	0.020	LT & RT, CLARKS FORK RIVER
WL3	17+18	21+56	0.149	0.032	LT & RT, CLARKS FORK RIVER
TOTAL			0.70	0.10	

AREA OF EXISTING WETLAND EXTENDS BEYOND PLAN LIMITS

APPROACHES (FOR INFORMATION ONLY)

STATION	TYPE	linear feet				EXISTING SURFACING	feet			PROPOSED SURFACE	tons	cubic yards			sq. yards	REMARKS	
		WIDTH	RADIUS #		LENGTH		PMS THK.	CTS THK.	CAC THK.		PLANT MIX BIT. SURF. COMM. PG 58-28	CR. TOP SURF. TY.B GR.3	CRUSHED AGG. COURSE	SPECIAL BORROW NEATLINE	AGG. TREAT.		
			LEFT	RIGHT													
14+33	PRIVATE	24	15	15	52.3	ASPHALT	0.2		0.6	ASPHALT	19		32	20	146	PRIVATE APPROACH LT	
15+24	FARM FIELD	24	15	15	59.0	GRAVEL		0.2	0.4	GRAVEL			11	25	117	168	FARM FIELD APPROACH RT
20+82	FARM FIELD	24	15	15	23.4	GRAVEL		0.2	0.4	GRAVEL			5	11		74	FARM FIELD APPROACH LT
20+82	FARM FIELD	24	15	15	46.3	GRAVEL		0.2	0.4	GRAVEL			9	20	44	135	FARM FIELD APPROACH RT
21+63	FARM FIELD	24	15	15	22.6	GRAVEL		0.2	0.4	GRAVEL			5	10		71	FARM FIELD APPROACH LT
SUBTOTAL	PRIVATE										19	30	98	182	594		

ALL RADII MEASURED TO FRONT OF GUTTER OR EDGE OF SHOULDER

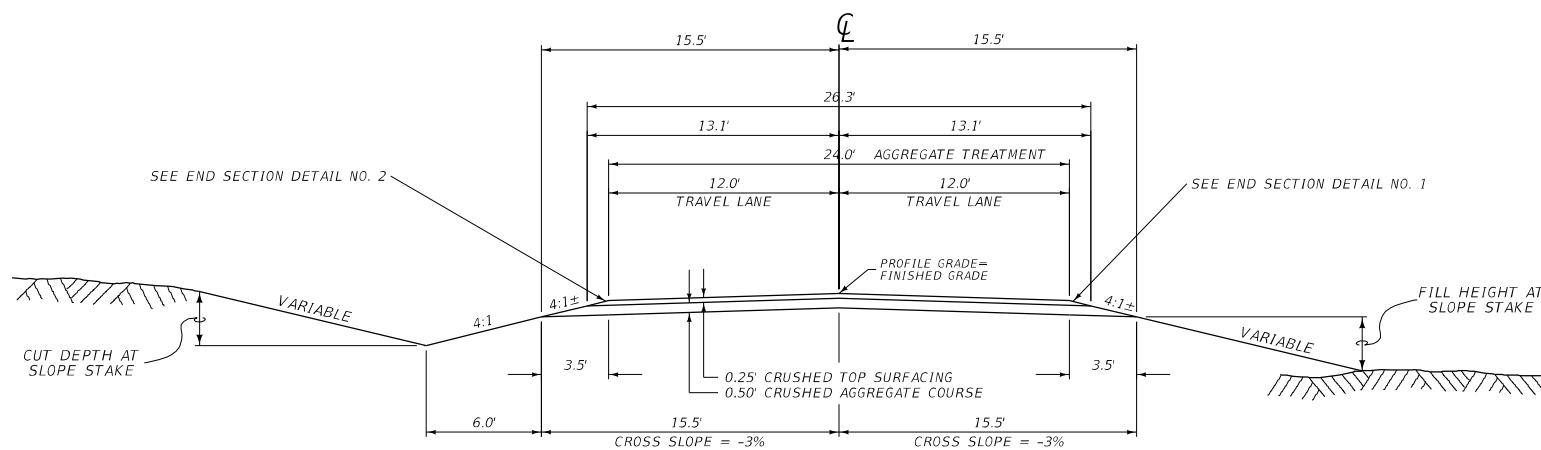


SCALE:
HORIZ. SCALE: 1" = 100'
VERT. SCALE: 1" = 10'

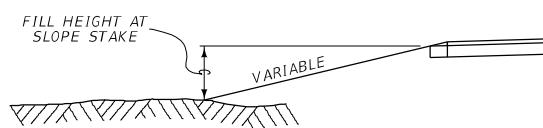
TYPICAL SECTION NO. 1 MAINLINE

11+81.57 TO 15+23.68
15+23.68 TO 15+73.68
20+94.13 TO 22+30.58

BEGIN PROJECT
TRANS TYP NO 1 TO TYP NO 2
END PROJECT

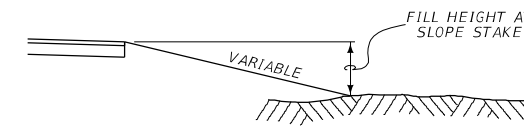


2. END SECTION DETAIL



STA. 20+69.36 TO STA. 22+30.58 LT

1. END SECTION DETAIL



STA. 11+81.57 TO STA. 12+20.00

TRANSITION FROM END SECTION DETAIL TO STD TYP NO 1
STA. 12+20.00 TO STA. 12+25.00

QUANTITIES				
UNIT	AGGREGATE		UNIT	AGG. TREATMENT
	CR. TOP SURFACING TY. B GR. 3	CR. AGG. COURSE		
AREA square feet	6.28	14.31	square yards PER STATION	267
cubic yards PER STATION	23.3	53.0		
tons PER STATION				
square yards PER STATION				

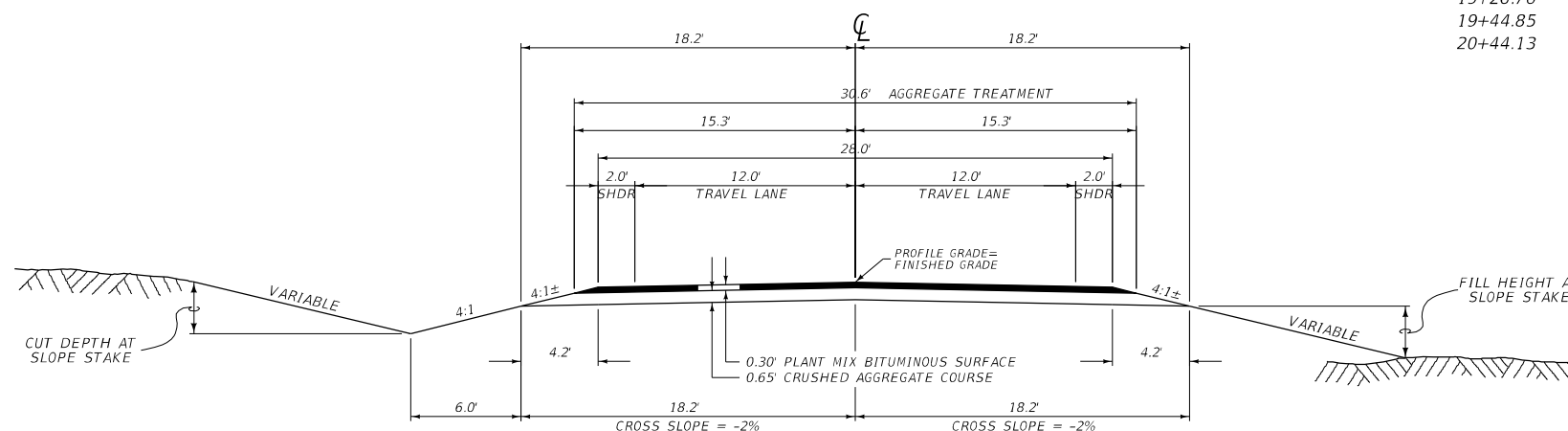
* FILL SLOPES		* BACK SLOPES	
0' - 10'	4:1	0' - 5'	4:1
10' - 20'	3:1	5' - 10'	3:1
20' - 30'	2:1	10' - 15'	2:1
OVER 30'	2:1	15' - 20'	1.5:1
		OVER 20'	1.5:1

* SEE CROSS SECTIONS FOR DEVIATIONS

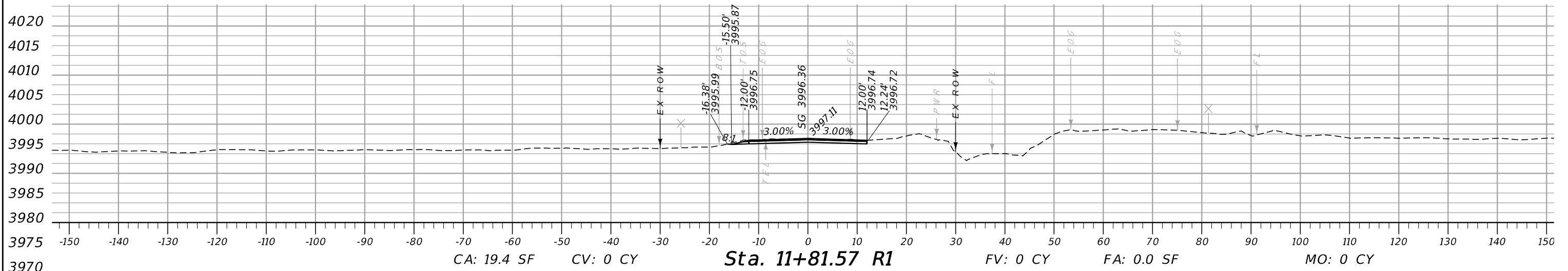
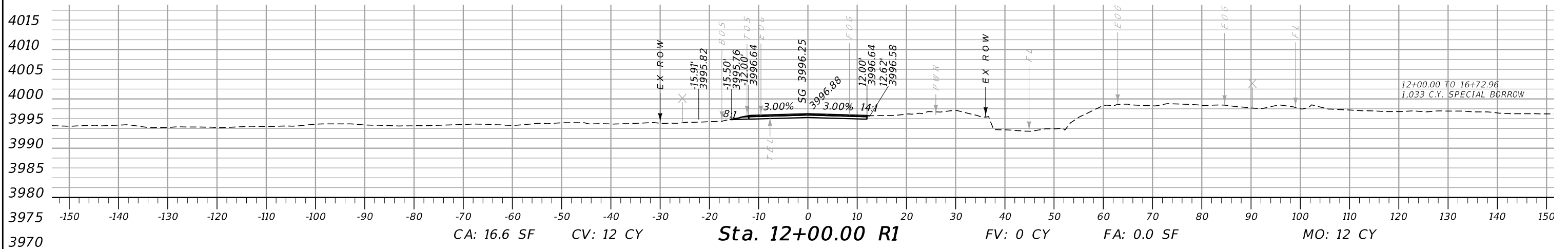
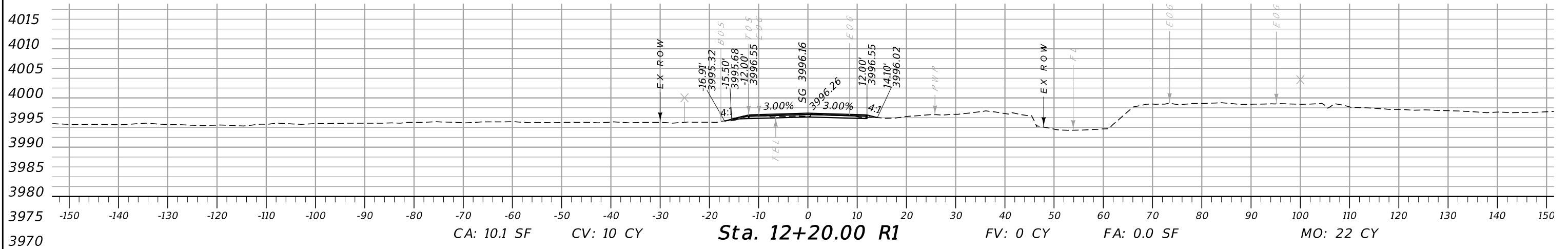
TYPICAL SECTION NO. 2 MAINLINE

15+73.68 TO 16+72.96
16+72.96 TO 16+91.05
16+91.05 TO 16+93.39 B.E.
19+24.42 B.E. TO 19+26.76
19+26.76 TO 19+44.85
19+44.85 TO 20+44.13
20+44.13 TO 20+94.13

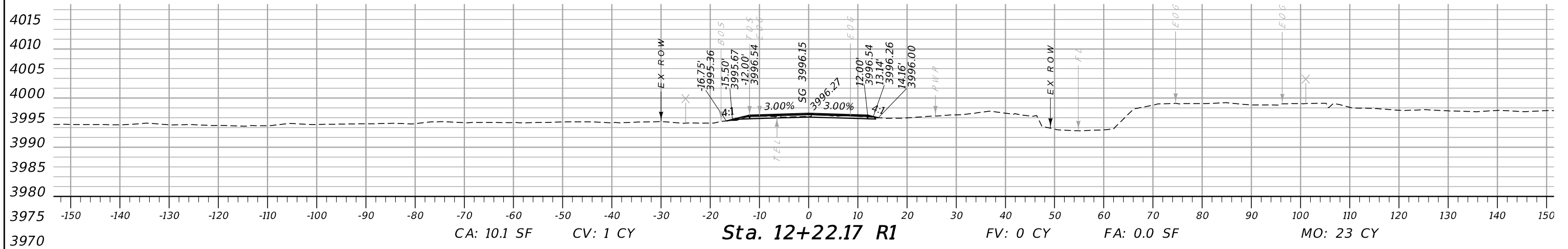
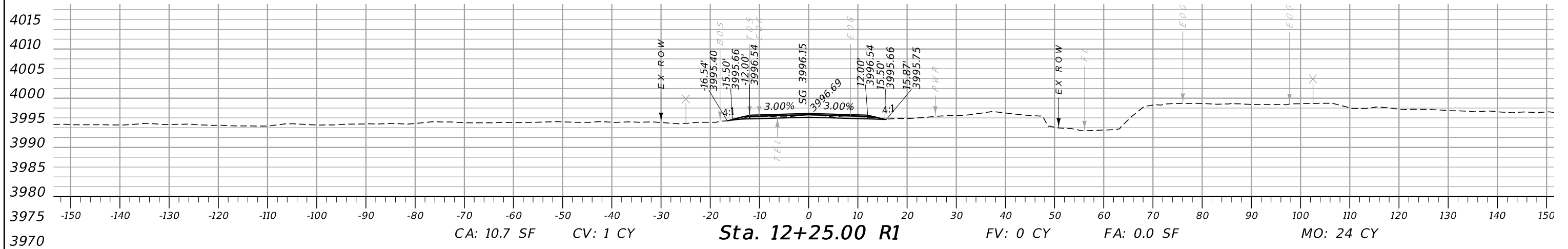
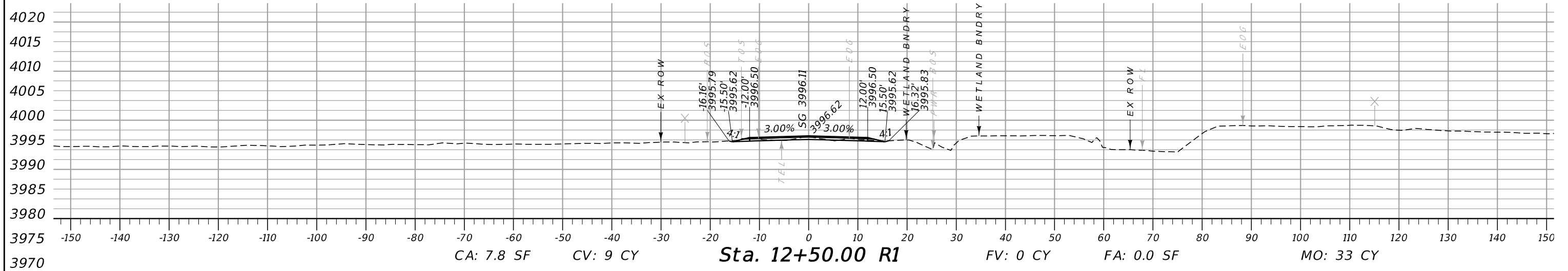
NO SURF INSLOPE LT
NO SURF INSLOPE LT & RT
NO SURF INSLOPE LT & RT
NO SURF INSLOPE LT & RT
NO SURF INSLOPE RT
TRANS TYP NO 2 TO TYP NO 1



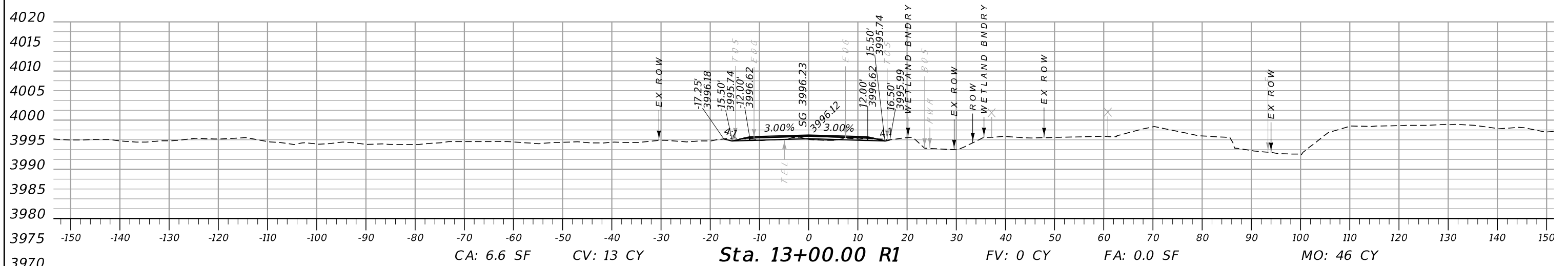
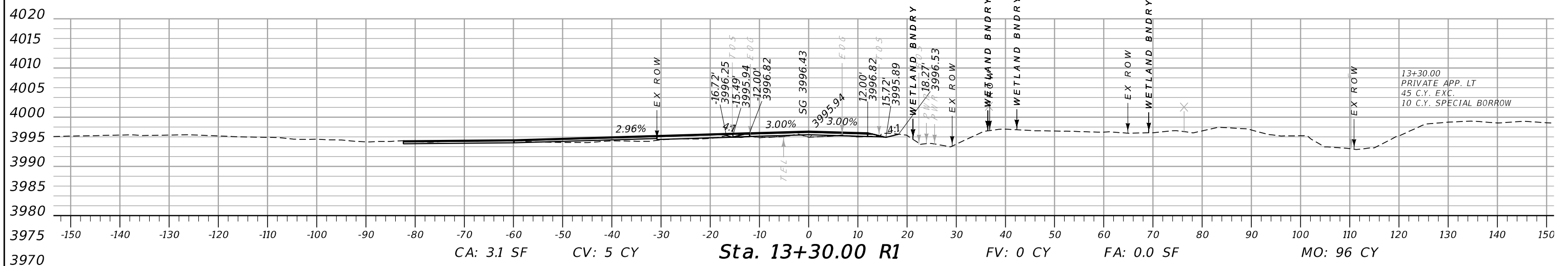
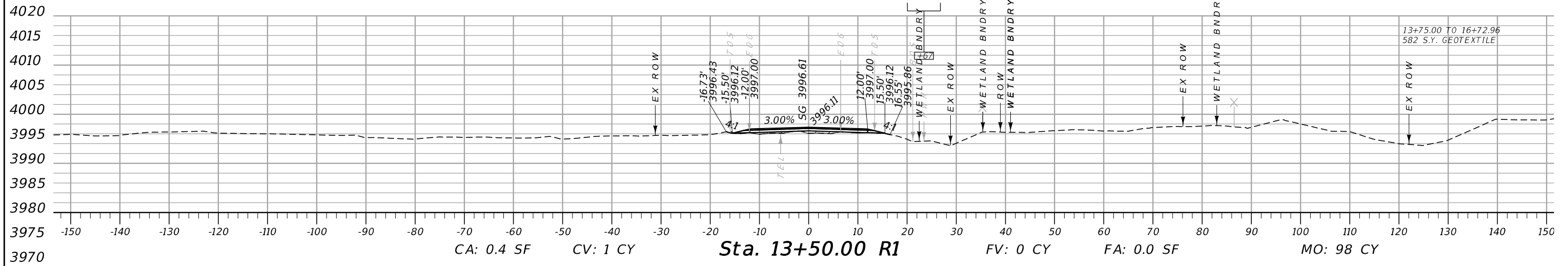
QUANTITIES						
UNIT	AGGREGATE			UNIT	BITUMINOUS MATERIAL	
	PLANT MIX	CR. AGG. COURSE			ASPHALT CEMENT	AGG. TREATMENT
AREA square feet	8.79	21.78		square yards PER STATION	3.89	340
cubic yards PER STATION	32.6	80.7		tons PER STATION		
tons PER STATION						
square yards PER STATION						



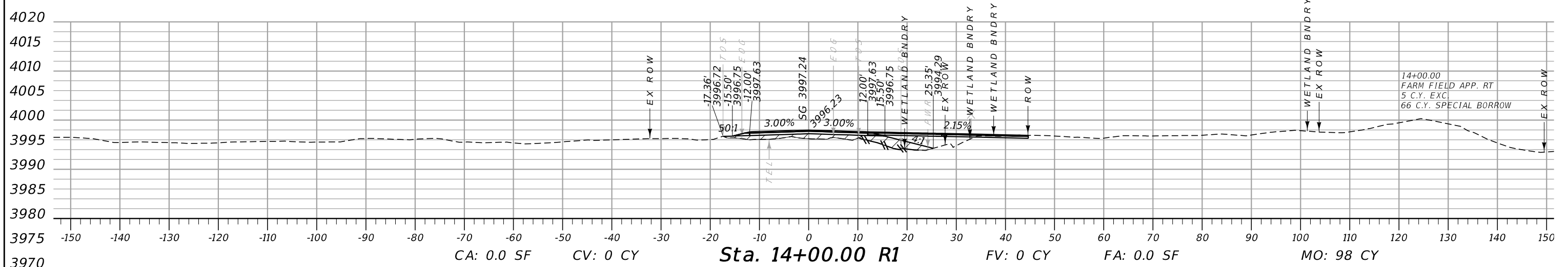
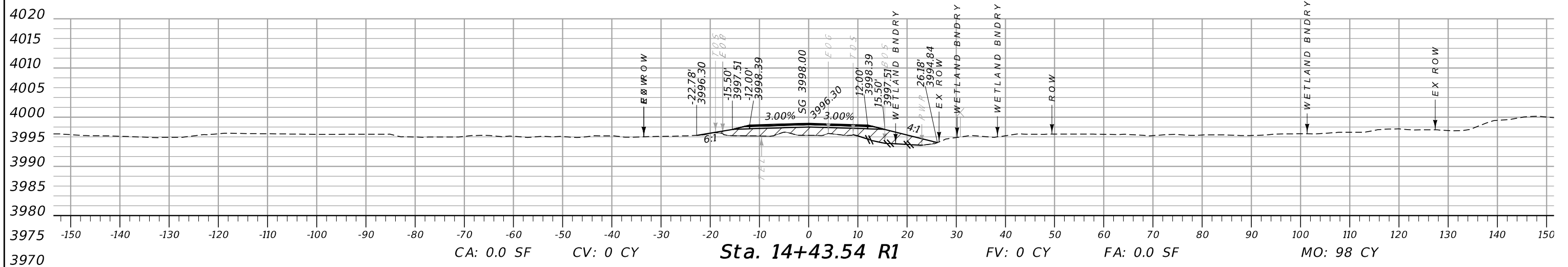
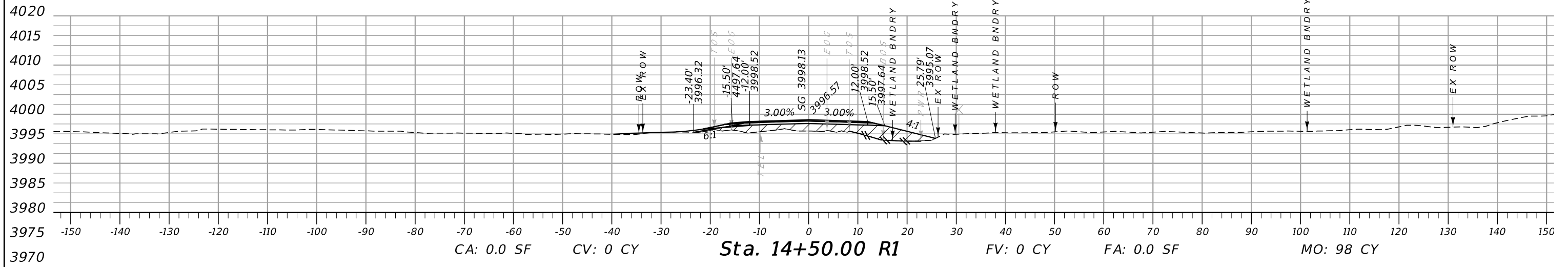
MONTANA DEPARTMENT OF TRANSPORTATION 8/24/2022 3:37:03 PM RHolm	DESIGNED BY: R. HOLM, L. WILLIAMS 8/26/2022	MAINLINE CROSS SECTIONS CARBON COUNTY	CLARKS FORK - 9 M S BELFRY UPN 9523000	STPB 9005(55) SHEET 1
	REVIEWED BY: R. HOLM 8/26/2022		CLARKS FORK - 9 M S BELFRY UPN 9523000	STPB 9005(55) SHEET 1
	CHECKED BY: K. YAKAWICH 8/26/2022		CLARKS FORK - 9 M S BELFRY UPN 9523000	STPB 9005(55) SHEET 1



MONTANA DEPARTMENT OF TRANSPORTATION	...\\9523000\RD\9523000rdLA...	DESIGNED BY: R. HOLM, L. WILLIAMS 8/26/2022	MAINLINE CROSS SECTIONS CARBON COUNTY	CLARKS FORK - 9 M S BELFRY		STPB 9005(55)
	8/24/2022	REVIEWED BY: R. HOLM 8/26/2022		UPN 9523000		SHEET 2
	3:37:04 PM RHolm	CHECKED BY: K. YAKAWICH 8/26/2022				

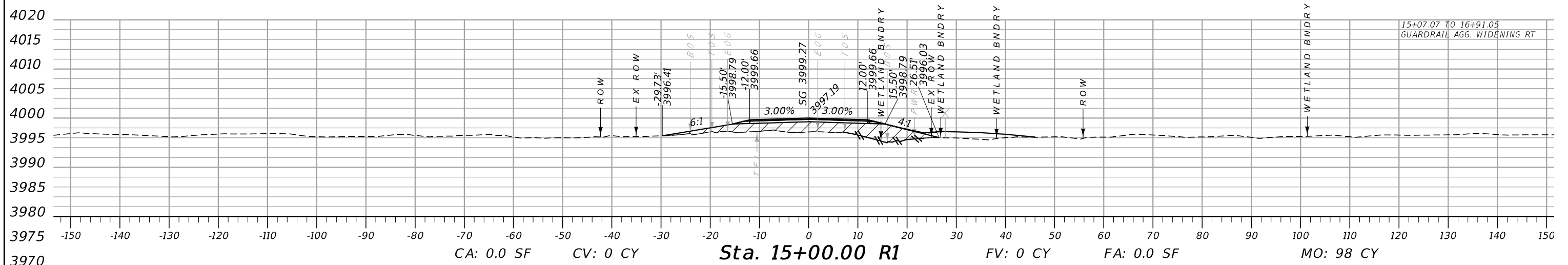
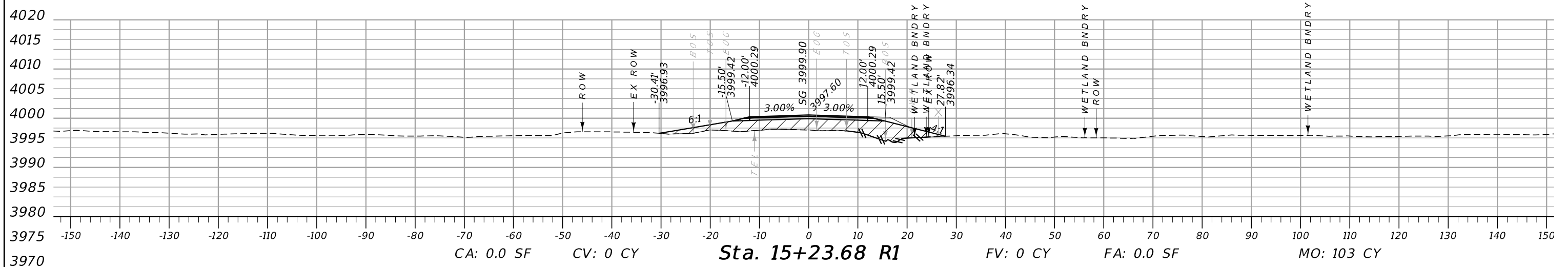
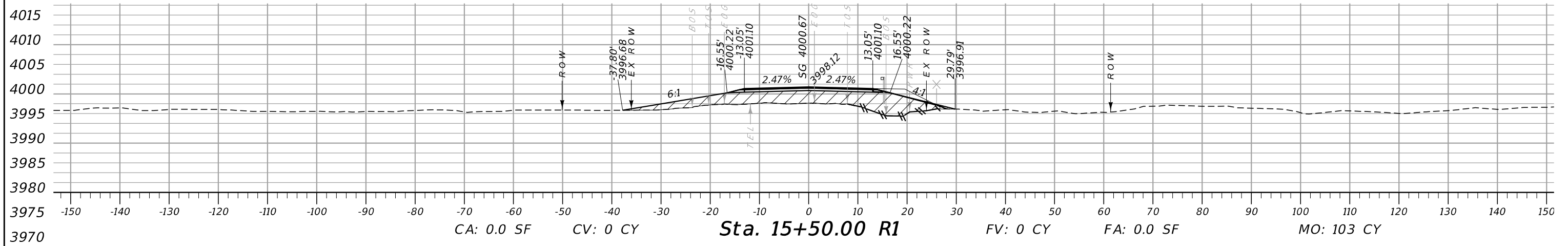


MONTANA DEPARTMENT OF TRANSPORTATION 8/24/2022 3:37:07 PM RHolm	...\\9523000\RD\9523000rdLA... 8/24/2022	DESIGNED BY: R. HOLM, L. WILLIAMS REVIEWED BY: R. HOLM CHECKED BY: K. YAKAWICH	8/26/2022 8/26/2022 8/26/2022	MAINLINE CROSS SECTIONS CARBON COUNTY	CLARKS FORK - 9 M S BELFRY UPN 9523000	STPB 9005(55) SHEET 3

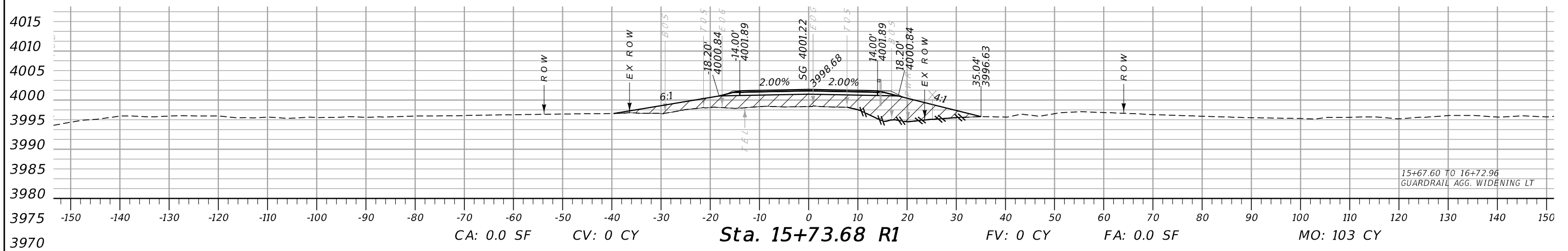
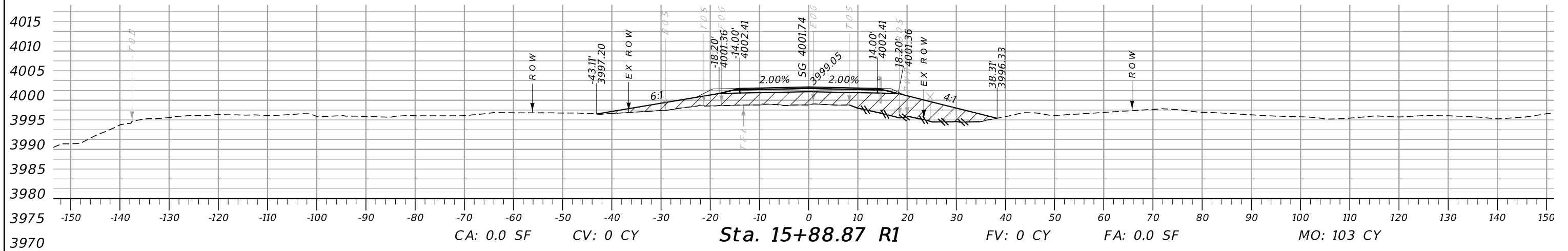
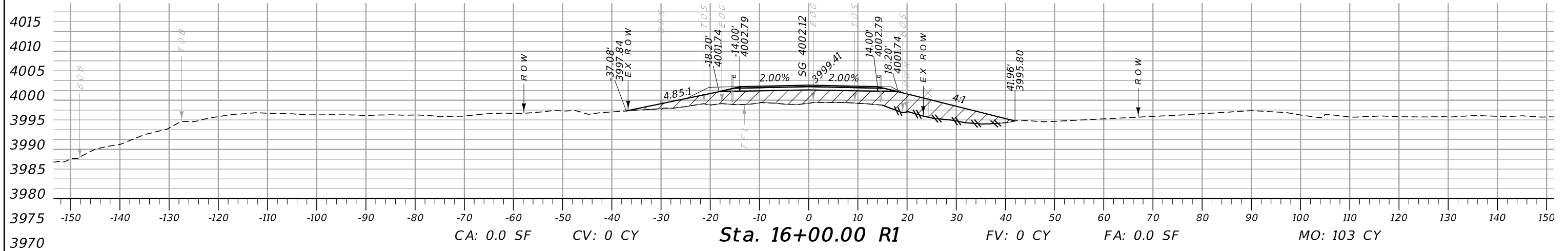


MONTANA DEPARTMENT OF TRANSPORTATION 8/24/2022 3:37:09 PM RHolm	DESIGNED BY: R. HOLM, L. WILLIAMS 8/26/2022	MAINLINE CROSS SECTIONS CARBON COUNTY	CLARKS FORK - 9 M S BELFRY		STPB 9005(55)
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	CHECKED BY: K. YAKAWICH 8/26/2022				

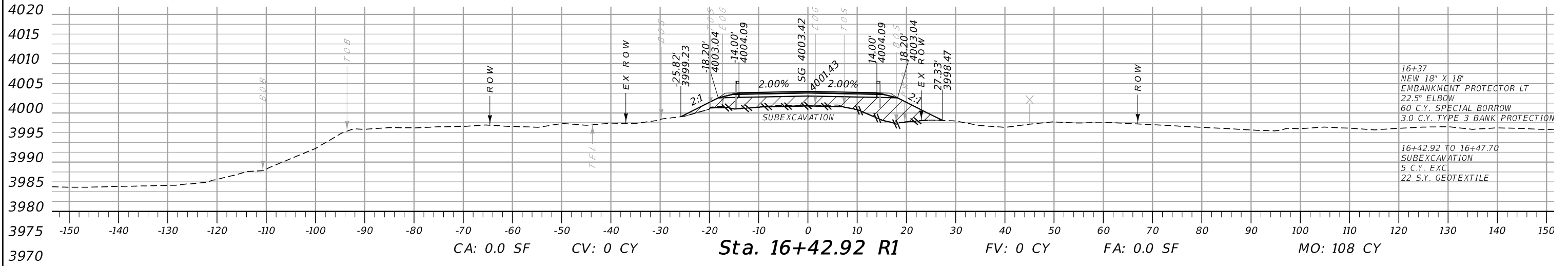
14+00.00
FARM FIELD APP. RT
5 C.Y. EXC
66 C.Y. SPECIAL BORROW



MONTANA DEPARTMENT OF TRANSPORTATION 8/24/2022 3:37:10 PM RHolm	DESIGNED BY: R. HOLM, L. WILLIAMS 8/26/2022	MAINLINE CROSS SECTIONS CARBON COUNTY	CLARKS FORK - 9 M S BELFRY		STPB 9005(55)
	REVIEWED BY: R. HOLM 8/26/2022		UPN 9523000		SHEET 5
	CHECKED BY: K. YAKAWICH 8/26/2022				

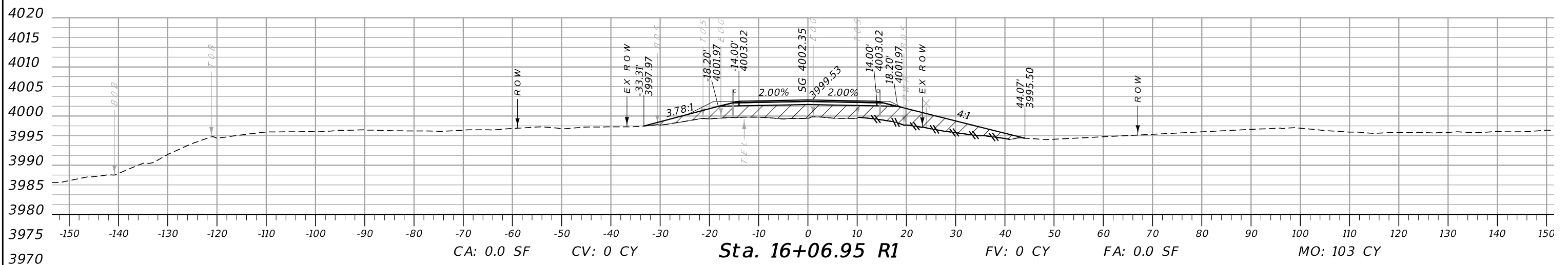
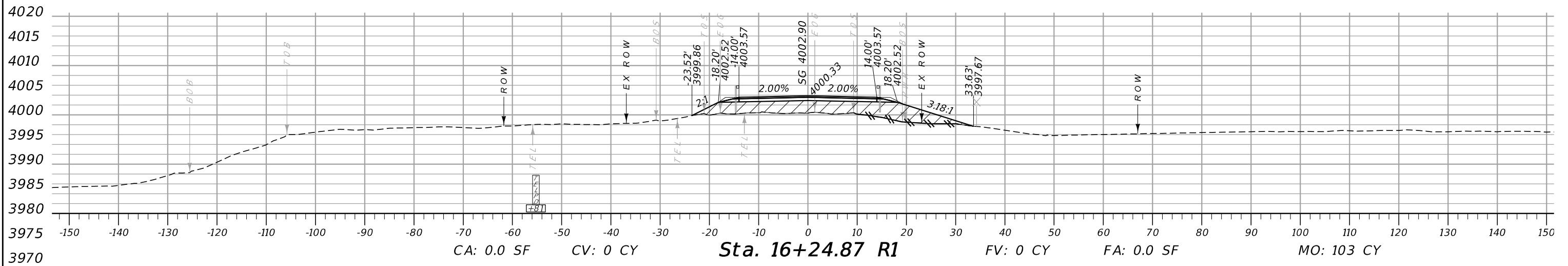


MONTANA DEPARTMENT OF TRANSPORTATION 8/24/2022 3:37:11 PM RHolm	DESIGNED BY: R. HOLM, L. WILLIAMS 8/26/2022	MAINLINE CROSS SECTIONS CARBON COUNTY	CLARKS FORK - 9 M S BELFRY		STPB 9005(55)
	REVIEWED BY: R. HOLM 8/26/2022		UPN 9523000		SHEET 6
	CHECKED BY: K. YAKAWICH 8/26/2022				

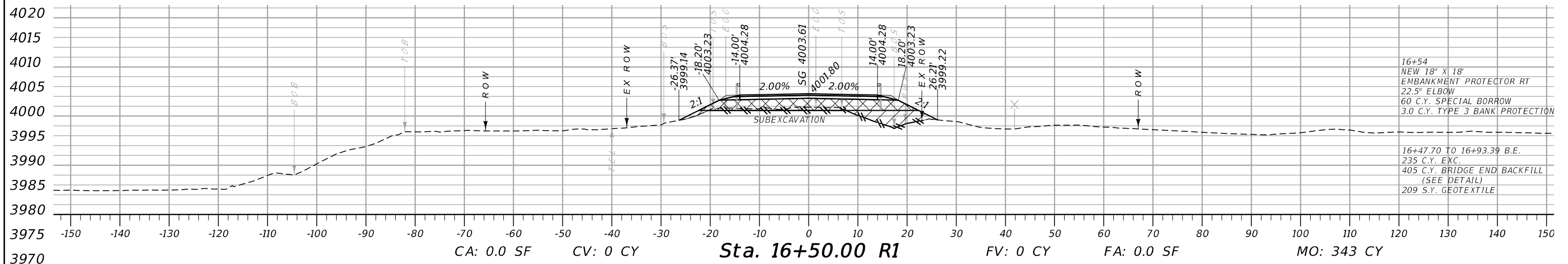
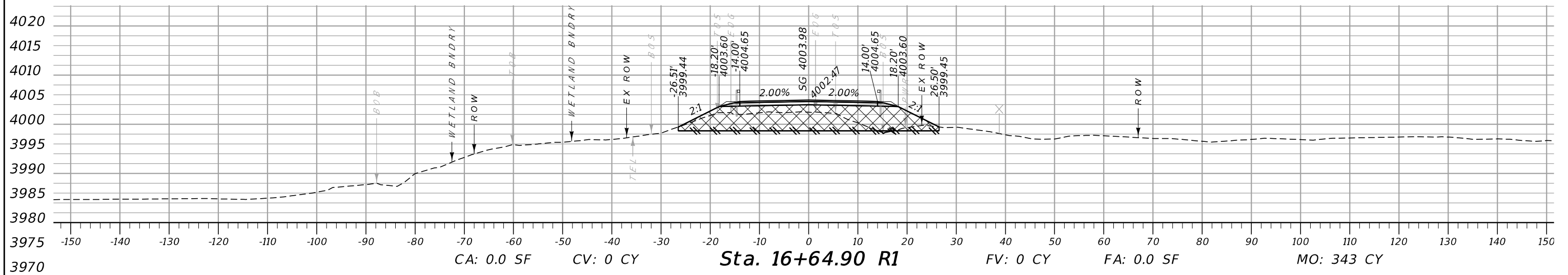
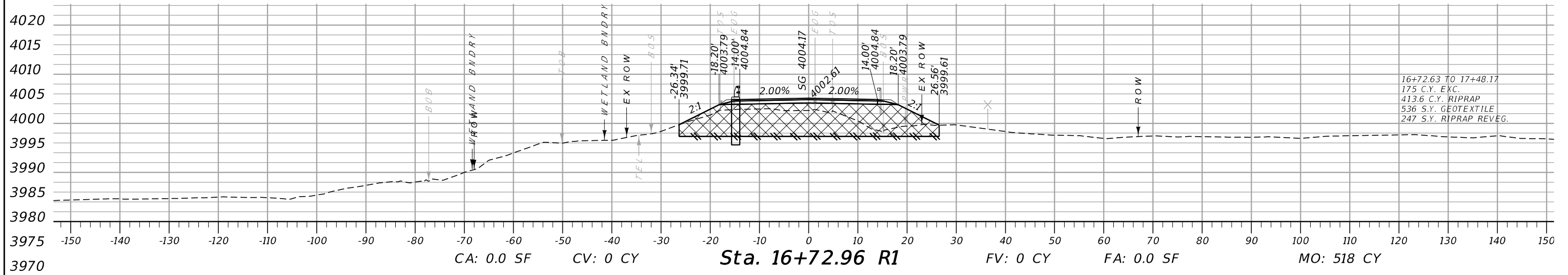


16+37
NEW 18" X 18"
EMBANKMENT PROTECTOR LT
22.5° ELBOW
60 C.Y. SPECIAL BORROW
3.0 C.Y. TYPE 3 BANK PROTECTION

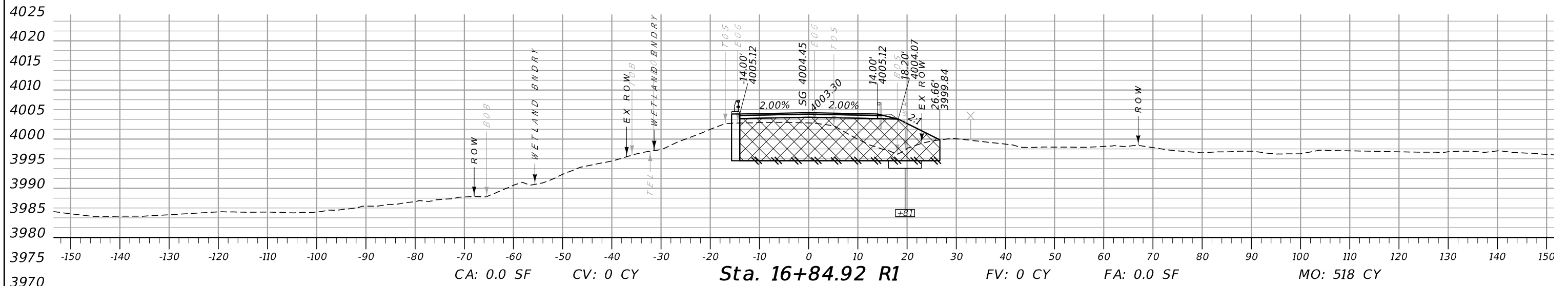
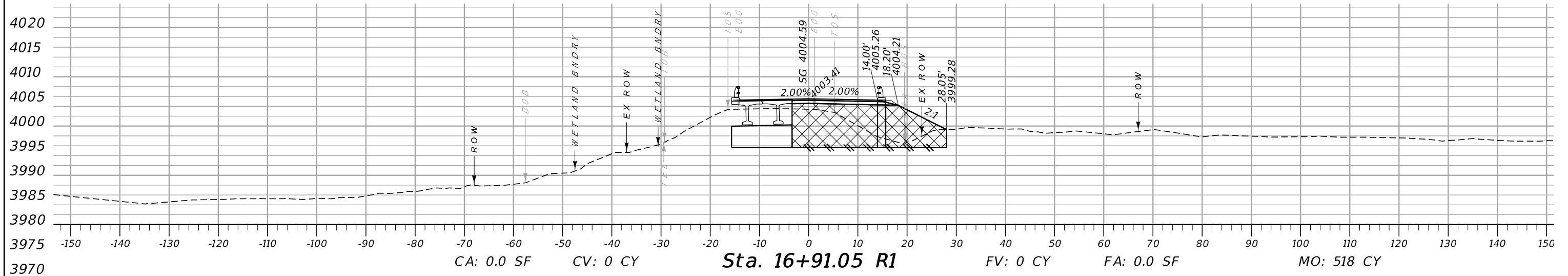
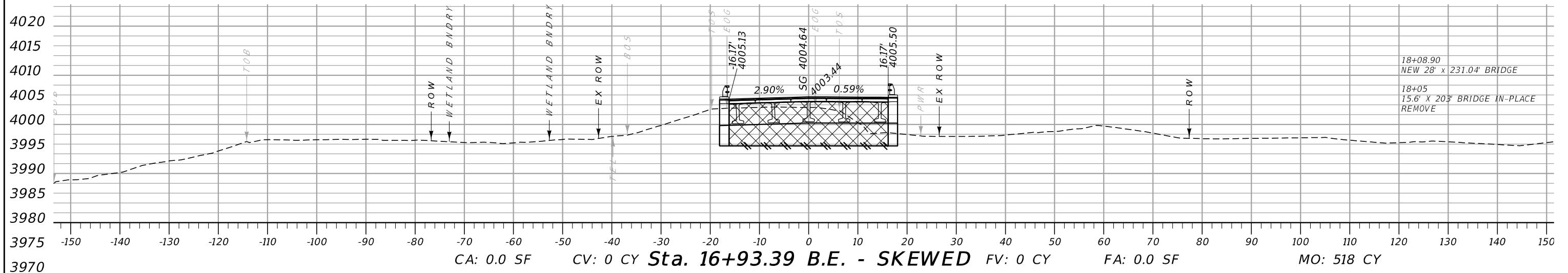
16+42.92 TO 16+47.70
SUBEXCAVATION
5 C.Y. EXC
22 S.Y. GEOTEXTILE



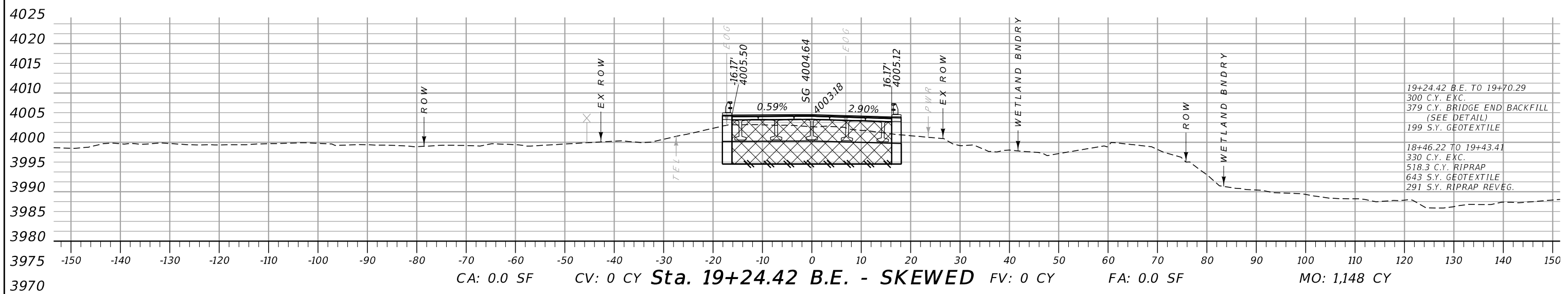
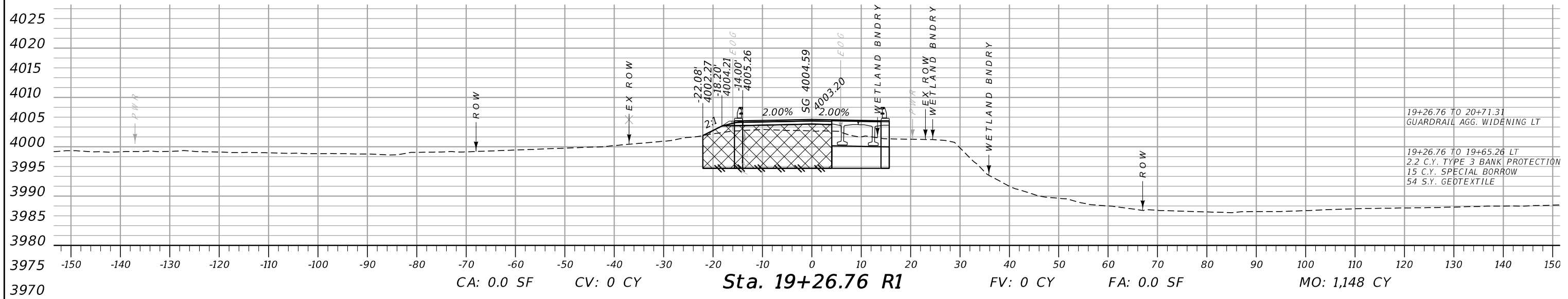
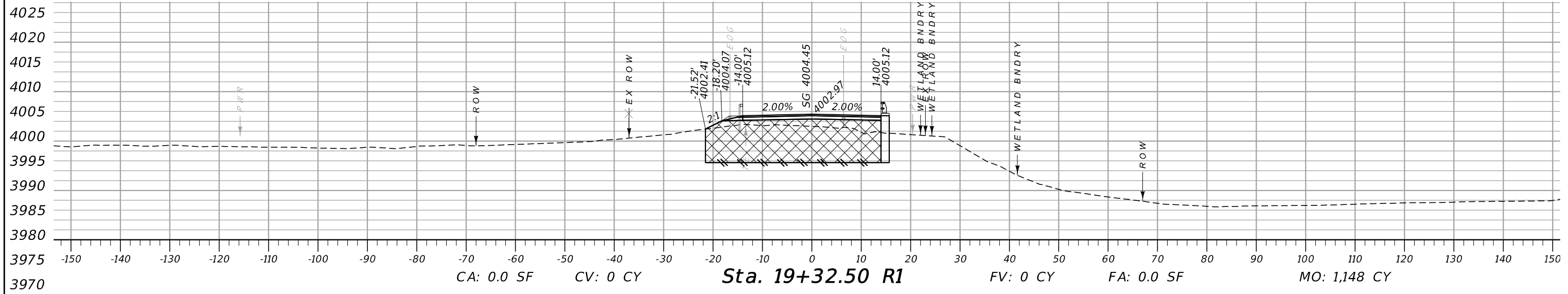
MONTANA DEPARTMENT OF TRANSPORTATION 8/24/2022 3:37:11 PM RHolm	DESIGNED BY: R. HOLM, L. WILLIAMS 8/26/2022	MAINLINE CROSS SECTIONS CARBON COUNTY	CLARKS FORK - 9 M S BELFRY		STPB 9005(55)
	REVIEWED BY: R. HOLM 8/26/2022		UPN 9523000		SHEET 7
	CHECKED BY: K. YAKAWICH 8/26/2022				



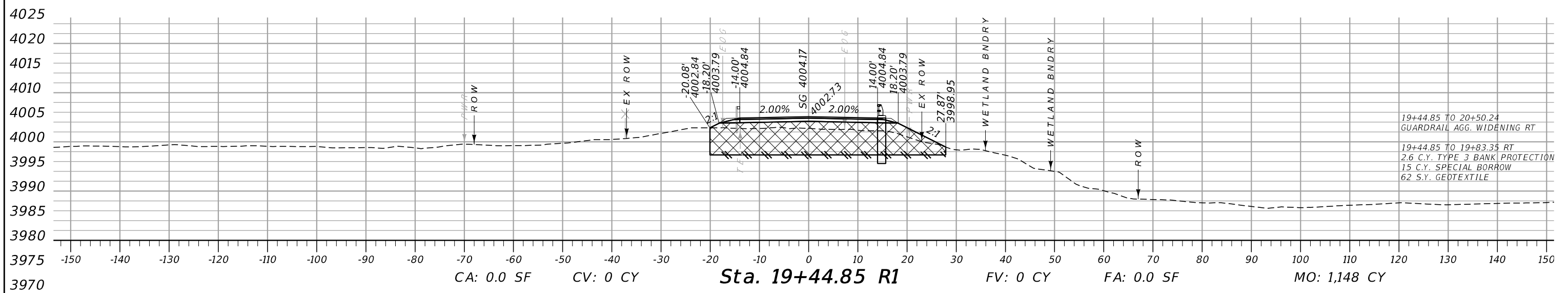
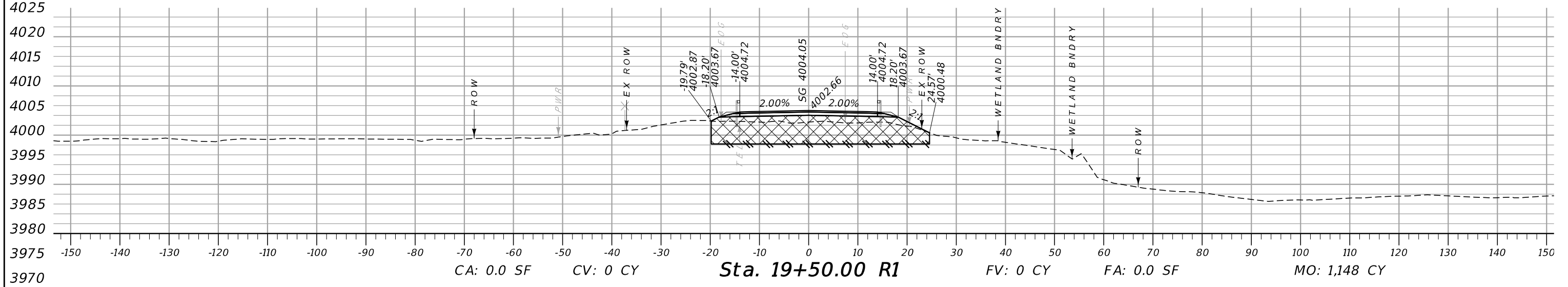
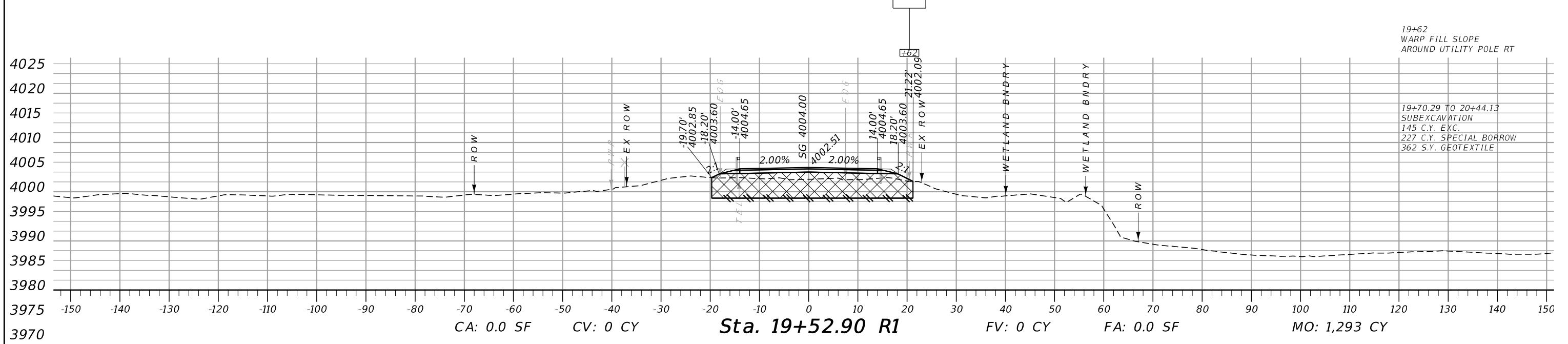
MDT MONTANA DEPARTMENT OF TRANSPORTATION	...9523000\RD\9523000rdLA	DESIGNED BY R. HOLM, L. WILLIAMS	8/26/2022	MAINLINE CROSS SECTIONS	CLARKS FORK - 9 M S BELFRY			STPB 9005(55)
	8/24/2022	REVIEWED BY R. HOLM	8/26/2022		UPN 9523000			SHEET 8
	3:37:12 PM RHolm	CHECKED BY K. YAKAWICH	8/26/2022					
				CARBON COUNTY				



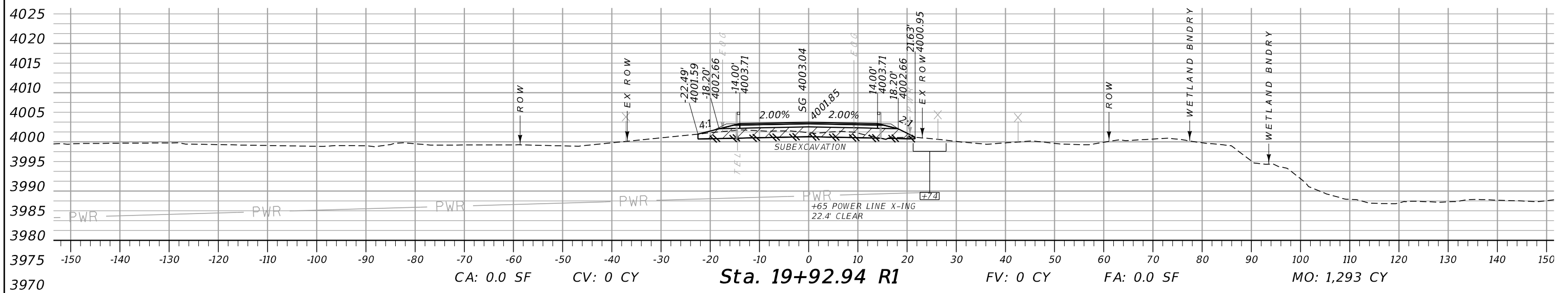
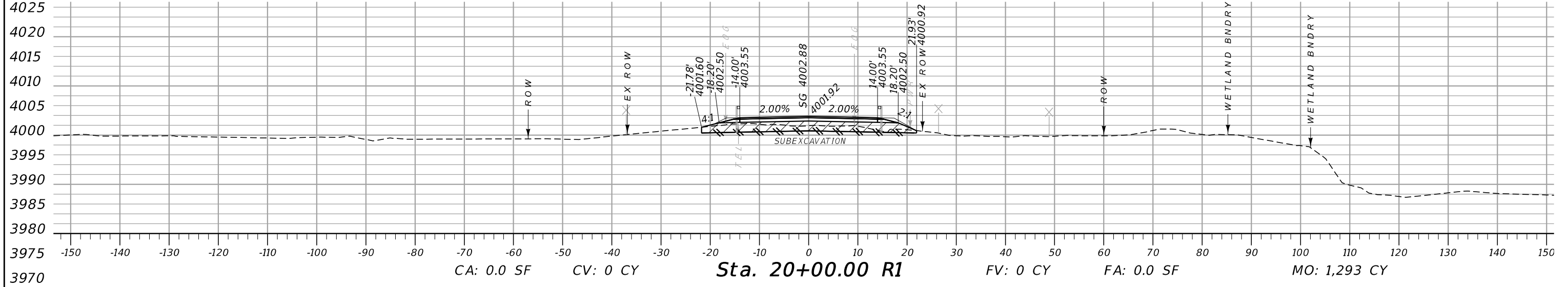
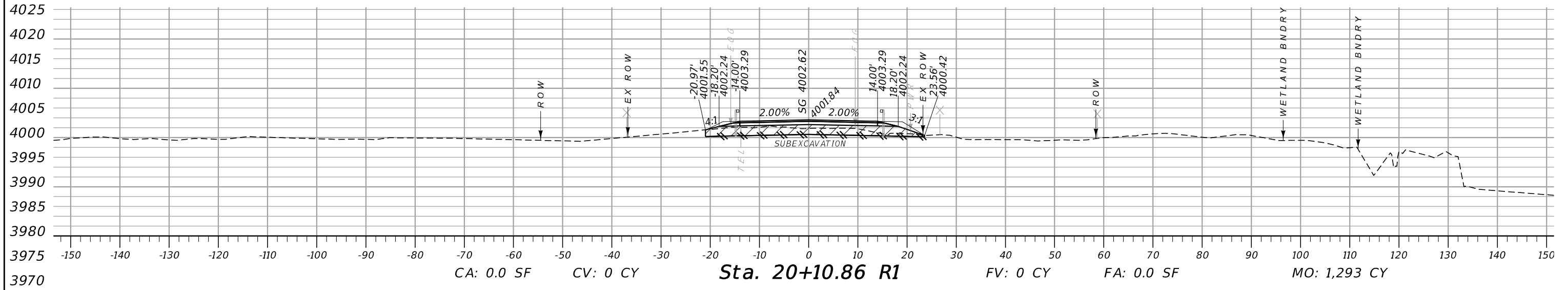
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	REVIEWED BY: R. HOLM 8/26/2022		UPN 9523000		SHEET 9
	CHECKED BY: K. YAKAWICH 8/26/2022				



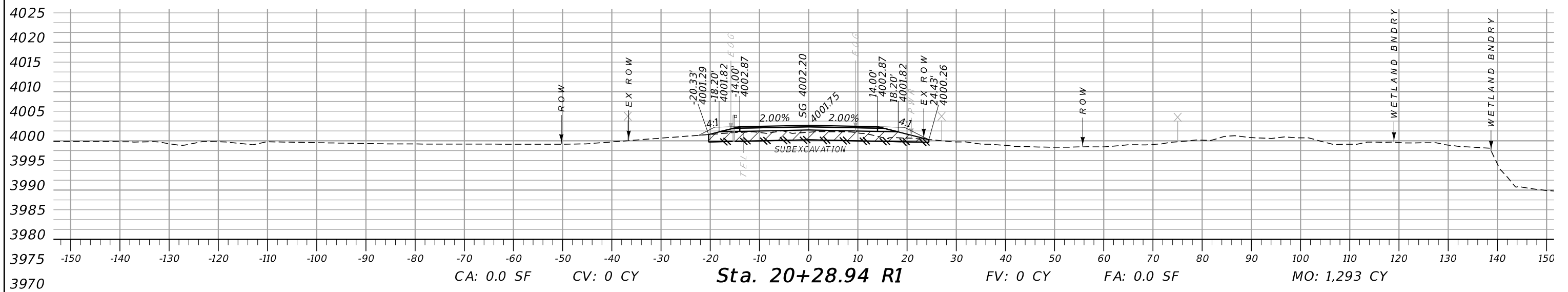
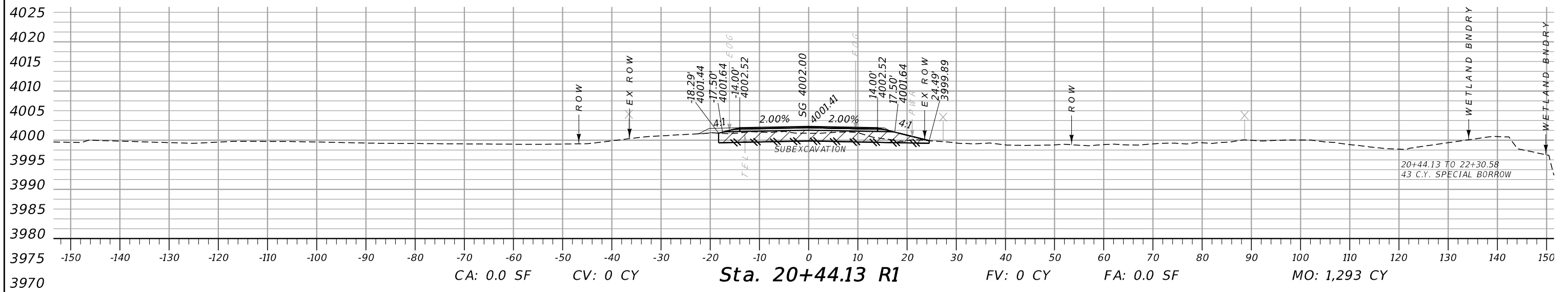
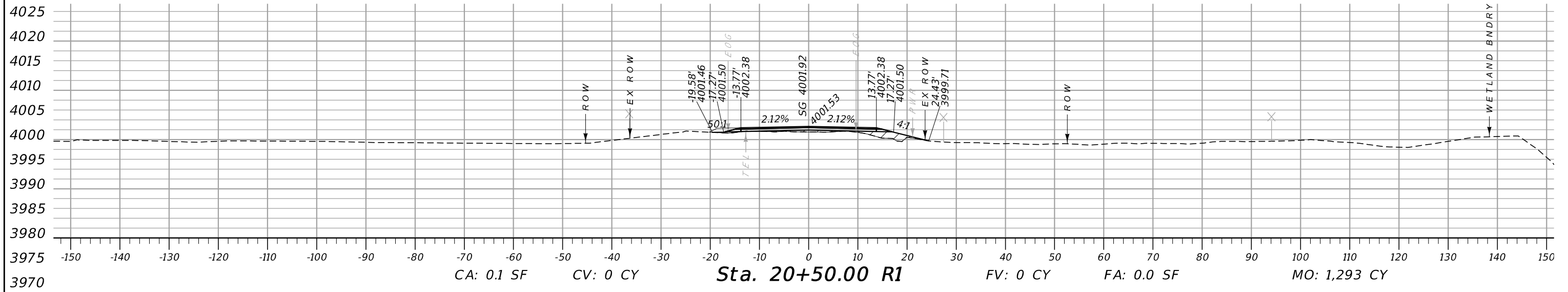
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	8/24/2022			CARBON COUNTY			SHEET 10
	3:37:14 PM RHolm				UPN 9523000		



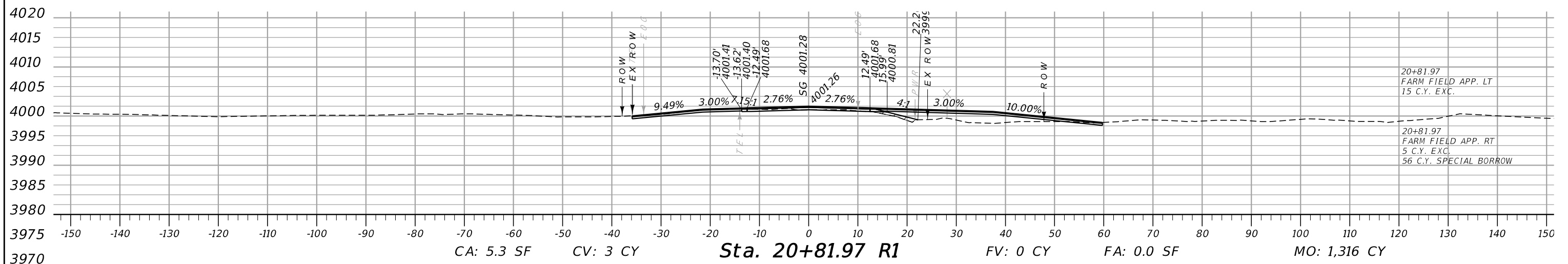
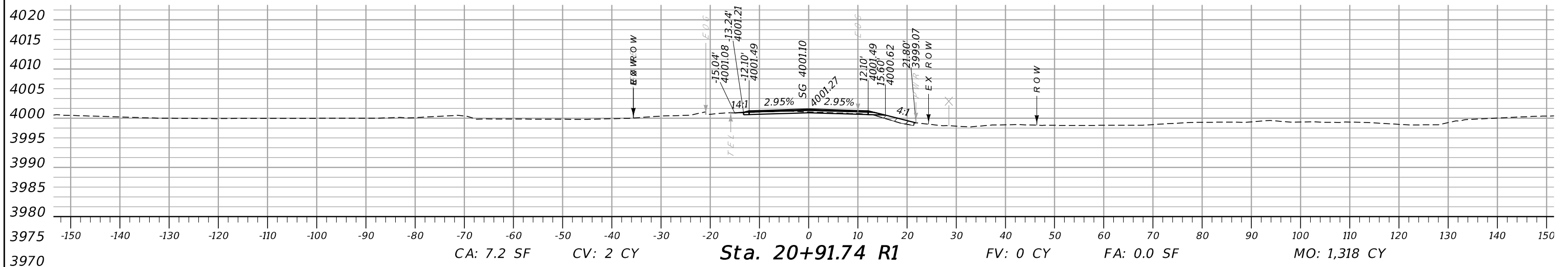
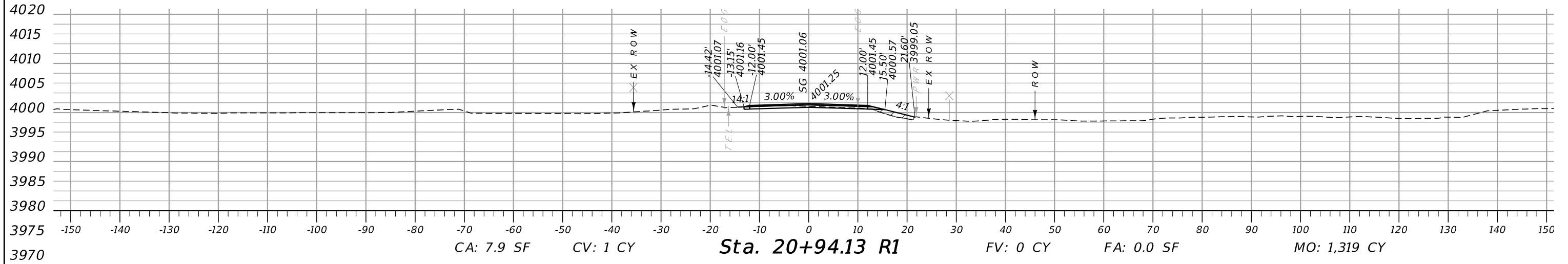
MONTANA DEPARTMENT OF TRANSPORTATION	...9523000\RD\9523000rdLA	DESIGNED BY: R. HOLM, L. WILLIAMS REVIEWED BY: R. HOLM CHECKED BY: K. YAKAWICH	8/26/2022 8/26/2022 8/26/2022	MAINLINE CROSS SECTIONS CARBON COUNTY	CLARKS FORK - 9 M S BELFRY		STPB 9005(55)
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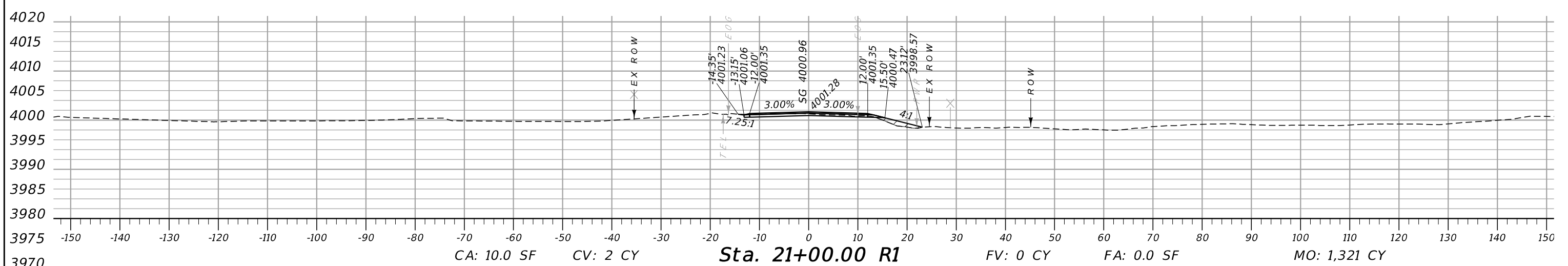
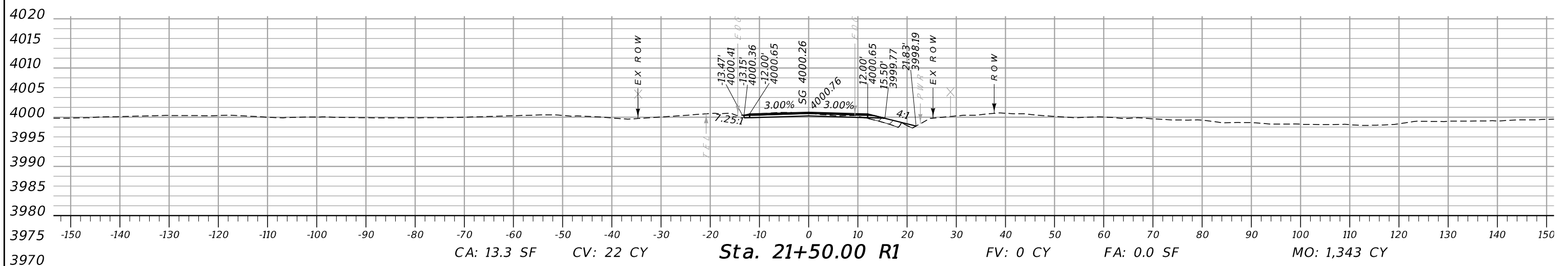
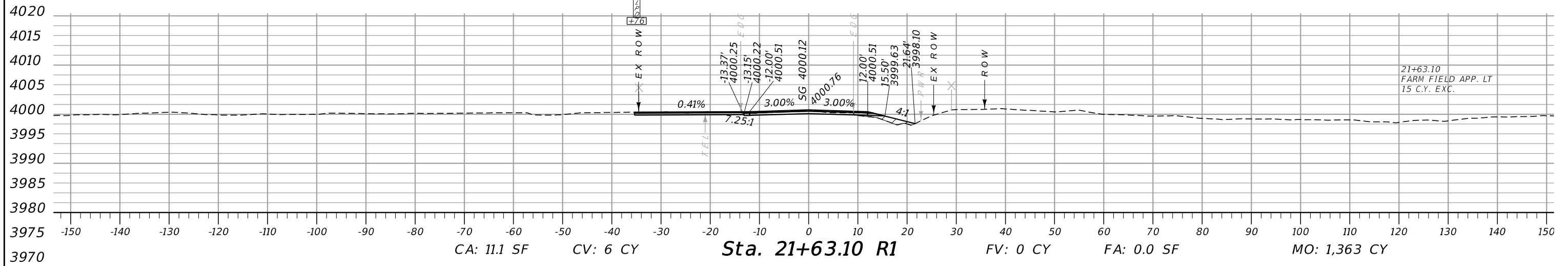
	...9523000\RD\9523000rdLA	DESIGNED BY: R. HOLM, L. WILLIAMS REVIEWED BY: R. HOLM CHECKED BY: K. YAKAWICH	8/26/2022 8/26/2022 8/26/2022	MAINLINE CROSS SECTIONS CARBON COUNTY	CLARKS FORK - 9 M S BELFRY	STPB 9005(55)	
	8/24/2022	R.Holm	8/26/2022				UPN 9523000
	3:37:16 PM	R.Holm	8/26/2022				SHEET 12



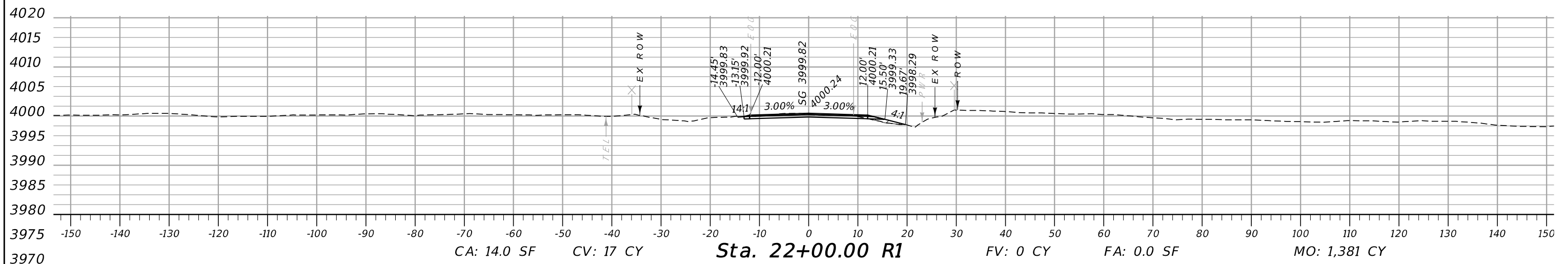
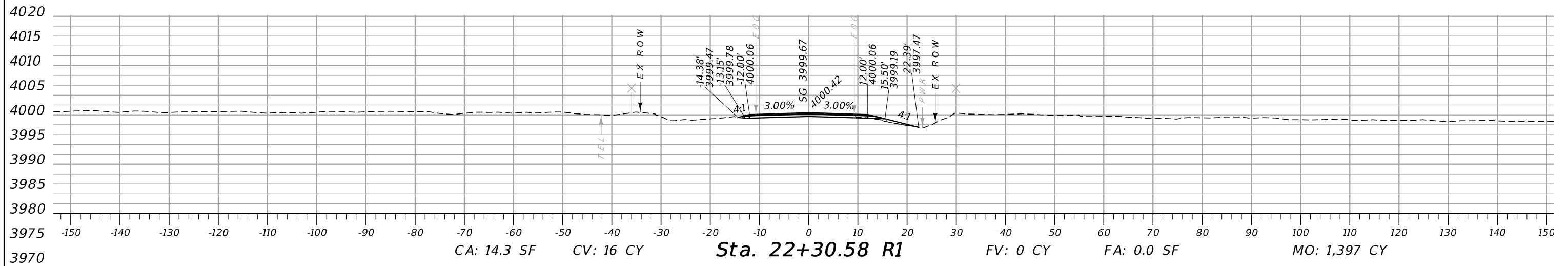
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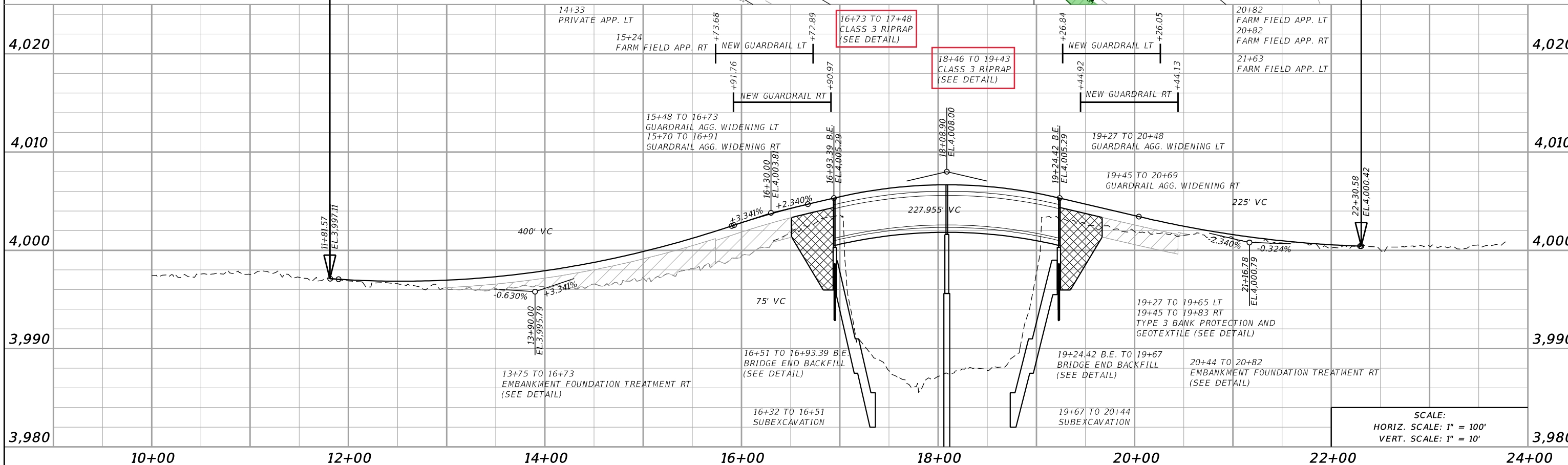
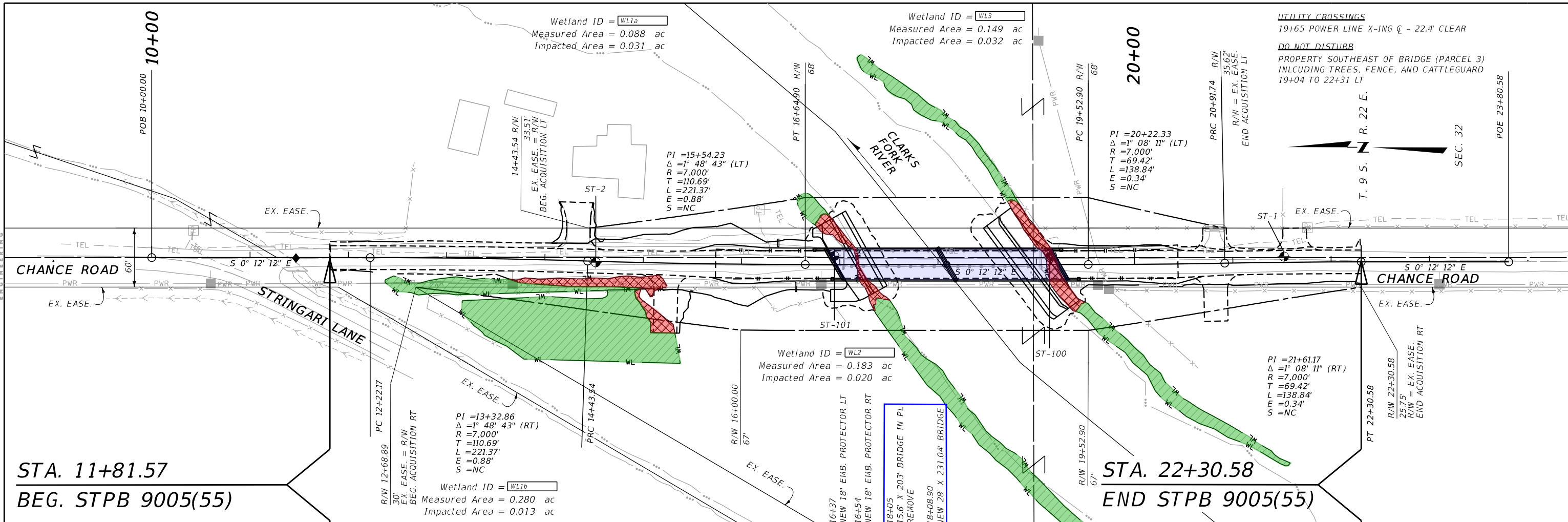
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MONTANA DEPARTMENT OF TRANSPORTATION 8/24/2022 3:37:19 PM RHolm	DESIGNED BY: R. HOLM, L. WILLIAMS 8/26/2022	MAINLINE CROSS SECTIONS CARBON COUNTY	CLARKS FORK - 9 M S BELFRY		STPB 9005(55)
	REVIEWED BY: R. HOLM 8/26/2022		UPN 9523000		SHEET 15
	CHECKED BY: K. YAKAWICH 8/26/2022				



MONTANA DEPARTMENT OF TRANSPORTATION 8/24/2022 3:37:20 PM RHolm	DESIGNED BY: R. HOLM, L. WILLIAMS 8/26/2022	MAINLINE CROSS SECTIONS CARBON COUNTY	CLARKS FORK - 9 M S BELFRY		STPB 9005(55)
	REVIEWED BY: R. HOLM 8/26/2022		UPN 9523000		SHEET 16
	CHECKED BY: K. YAKAWICH 8/26/2022				



SCALE:
HORIZ. SCALE: 1" = 100'
VERT. SCALE: 1" = 10'

SUMMARY

GRADING				
STATION	cubic yards			REMARKS
	UNCL. EXC.	EXCESS EXC.	EMB.+	
11+81.57				
	460	460		
16+93.39 B.E.				CHANCE ROAD BRIDGE
19+24.42 B.E.				
	886	886		
22+30.58				
TOTAL	1,346	# 1,346	# 0	

FOR INFORMATION ONLY

ADDITIONAL GRADING					
STATION		cubic yards			REMARKS
		INCL. IN ROADWAY		ADD. UNCL. EXC.	
FROM	TO	UNCL. EXC.	EMB.+		
14+33.19		10			PRIVATE APPROACH LT
15+23.68		5			FARM FIELD APPROACH RT
16+31.82	16+51.01	5			SUBEXCAVATION
16+51.01	16+93.39 B.E.	210			BRIDGE END BACKFILL
16+72.63	17+48.17	175			NORTH ABUTMENT EXC.
18+46.22	19+43.41	330			SOUTH ABUTMENT EXC.
19+24.42 B.E.	19+66.92	265			BRIDGE END BACKFILL
19+66.92	20+44.13	170			SUBEXCAVATION
20+81.97		15			FARM FIELD APPROACH LT
20+81.97		5			FARM FIELD APPROACH RT
21+63.10		20			FARM FIELD APPROACH LT
TOTAL		~	~	0	

SURFACING											
STATION		linear feet				FOR	AGGREGATE			BITUMINOUS MATERIAL	REMARKS
		GROSS	NET	+	-		tons	cubic yards		square yards	
							PLANT MIX BIT. SURF. COMM. PG 58-28	CR. TOP SURF. TY.B GR.3	CRUSHED AGG. COURSE	AGG. TREAT.	
FROM	TO										
11+81.57	12+20.00	38.43	38.43				9	19	103		TYPICAL SECTION NO 1 - END SECTION RT
12+20.00	12+25.00	5.00	5.00				1	3	13		TYPICAL SECTION NO 1 - TRANS. END SECTION RT
12+25.00	15+23.68	298.68	298.68				70	158	797		TYPICAL SECTION NO 1
15+23.68	15+73.68	50.00	50.00				13	28	145		TRANS TYP SEC NO 1 TO TYP SEC NO 2
15+73.68	16+72.96	99.28	99.28				32	80	338		TYPICAL SECTION NO 2
16+72.96	16+91.05	18.09	18.09				6	13	61		TYPICAL SECTION NO 2 - NO SURF INSLOPE LT
16+91.05	16+93.39 B.E.	2.34	2.34				1	2	8		TYPICAL SECTION NO 2 - NO SURF INSLOPE RT &
16+93.39 B.E.	19+24.42 B.E.	231.03		231.03	BRIDGE						
19+24.42 B.E.	19+26.76	2.34	2.34				1	2	8		TYPICAL SECTION NO 2 - NO SURF INSLOPE RT &
19+26.76	19+44.85	18.09	18.09				6	13	61		TYPICAL SECTION NO 2 - NO SURF INSLOPE RT
19+44.85	20+44.13	99.28	99.28				32	80	338		TYPICAL SECTION NO 2
20+44.13	20+94.13	50.00	50.00				13	27	145		TRANS TYP SEC NO 2 TO TYP SEC NO 1
20+94.13	22+30.58	136.45	136.45				32	68	364		TYPICAL SECTION NO 1 - END SECTION LT
					ADDITIONAL SURFACING		27	30	378	646	
TOTAL		1,049.01	817.98	0.00	231.03		105	168	871	3,027	

ADDITIONAL SURFACING (INCLUDED IN SURFACING FRAME)											
STATION		linear feet				FOR	AGGREGATE			BITUMINOUS MATERIAL	REMARKS
		GROSS	NET	+	-		tons	cubic yards		square yards	
							PLANT MIX BIT. SURF. COMM. PG 58-28	CR. TOP SURF. TY.B GR.3	CRUSHED AGG. COURSE	AGG. TREAT.	
FROM	TO										
15+48.45	16+72.96								70		GUARDRAIL AGG. WIDENING LT
16+32.96	16+72.96						2			13	EMBANKMENT PROTECTOR LT
15+69.70	16+91.05								70		GUARDRAIL AGG. WIDENING RT
16+51.05	16+91.05						2			13	EMBANKMENT PROTECTOR RT
19+26.76	19+65.26						2			13	TYPE 3 BANK PROTECTION LT
19+26.76	20+48.11								70		GUARDRAIL AGG. WIDENING LT
19+44.85	19+83.35						2			13	TYPE 3 BANK PROTECTION RT
19+44.85	20+69.36								70		GUARDRAIL AGG. WIDENING RT
					APPROACHES		19	30	98	594	
SUBTOTAL		~	~	~	~		27	30	378	646	



SUMMARY



REMOVE STRUCTURE		
STATION	lump sum	REMARKS
	REMOVE STRUCTURE	
18+05	1	TRUSS STRUCTURE 15.6' X 203', NBI NO. L05129001+05001
TOTAL	1	

GEOTEXTILE			
STATION		square yards	REMARKS
		GEOTEXTILE PERM. EROS. CONTROL HIGH SURV. CLASS B	
FROM	TO		
13+75.00	16+72.96	554	EMBANKMENT FOUNDATION TREATMENT RT
16+31.82	16+51.01	85	SUBEXCAVATION
19+66.92	20+44.13	346	SUBEXCAVATION
20+44.13	20+81.97	18	EMBANKMENT FOUNDATION TREATMENT RT
TOTAL		1,003	

BRIDGE END BACKFILL				
STATION		cubic yards	square yards	REMARKS
		BRIDGE END BACKFILL * TYPE 3	GEOTEXTILE PERM. EROS. CONTROL HIGH SURV. CLASS B	
FROM	TO			
16+51.01	16+93.39 B.E.	352	205	BENT-1
19+24.42 B.E.	19+66.92	322	176	BENT-3
TOTAL		674	381	

* MEASUREMENT FOR PAYMENT IS THE FINAL IN-PLACE VOLUME

RANDOM RIPRAP						
STATION		cubic yards		square yards		REMARKS
		RANDOM RIPRAP	GRANULAR BEDDING MATERIAL #	GEOTEXTILE PERM. EROS. CONTROL HIGH SURV. CLASS B	RIPRAP REVEGETATION	
FROM	TO	CL. 3				
16+72.63	17+48.17	413.6	75	536	247	NORTH BRIDGE END
18+46.22	19+43.41	518.3	88	643	291	SOUTH BRIDGE END
TOTAL		931.9	~	1,179	538	

FOR INFORMATION ONLY- INCLUDED IN RIPRAP REVEGETATION BID ITEM
* 16 OZ/SY GEOTEXTILE REQUIRED UNDER CLASS 3 RIPRAP. SEE SPECIAL PROVISIONS.

SPECIAL BORROW			
STATION		cubic yards	REMARKS
		SPECIAL BORROW NEATLINE	
FROM	TO		
12+20.00	16+72.96	1,015	USE SPECIAL BORROW IN PLACE OF EMB.+ FOR ALL ROADWORK
14+33.19		20	PRIVATE APPROACH LT
15+23.68		117	FARM FIELD APPROACH RT
16+32.96	16+72.96	60	EMBANKMENT PROTECTOR LT
16+51.05	16+91.05	60	EMBANKMENT PROTECTOR RT
19+26.76	19+65.26	15	TYPE 3 BANK PROTECTION LT
19+44.85	19+83.35	15	TYPE 3 BANK PROTECTION RT
19+66.92	20+44.13	221	MAINLINE SUBEXCAVATION
20+44.13	22+30.58	34	USE SPECIAL BORROW IN PLACE OF EMB.+ FOR ALL ROADWORK
20+81.97		1	FARM FIELD APPROACH LT
20+81.97		44	FARM FIELD APPROACH RT
TOTAL		1,602	

EMBANKMENT PROTECTORS								
STATION		linear feet				cubic yards	square yards	REMARKS
		EMBANKMENT PROTECTOR		CONCRETE CURB 4"		BANK PROTECTION	GEOTEXTILE PERM. EROS. CONTROL HIGH SURV. CLASS B	
FROM	TO	LEFT	RIGHT	LEFT	RIGHT	TYPE 3		
16+32.96	16+72.96	18		49.8		3.0		LT
16+51.05	16+91.05		18		49.8	3.0		RT
19+26.76	19+65.26				40.3	2.2	54	LT
19+44.85	19+83.35				40.3	2.6	62	RT
SUBTOTAL		18	18	90.1	90.1			
TOTAL		36		180.2		10.8	116	

SUMMARY



GUARDRAIL						
STATION		OPTIONAL BOX BEAM TERMINAL SECTION		BOX BEAM BRIDGE APPROACH SECTION TYPE 2		REMARKS
		FROM	TO	LEFT	RIGHT	
NEW RAIL						
15+73.68	16+72.89			1		
15+91.76	16+90.97				1	
19+26.84	20+26.05			1		
19+44.92	20+44.13				1	
REMOVE RAIL						
SUBTOTAL						2 2 2 2
TOTAL						4 4

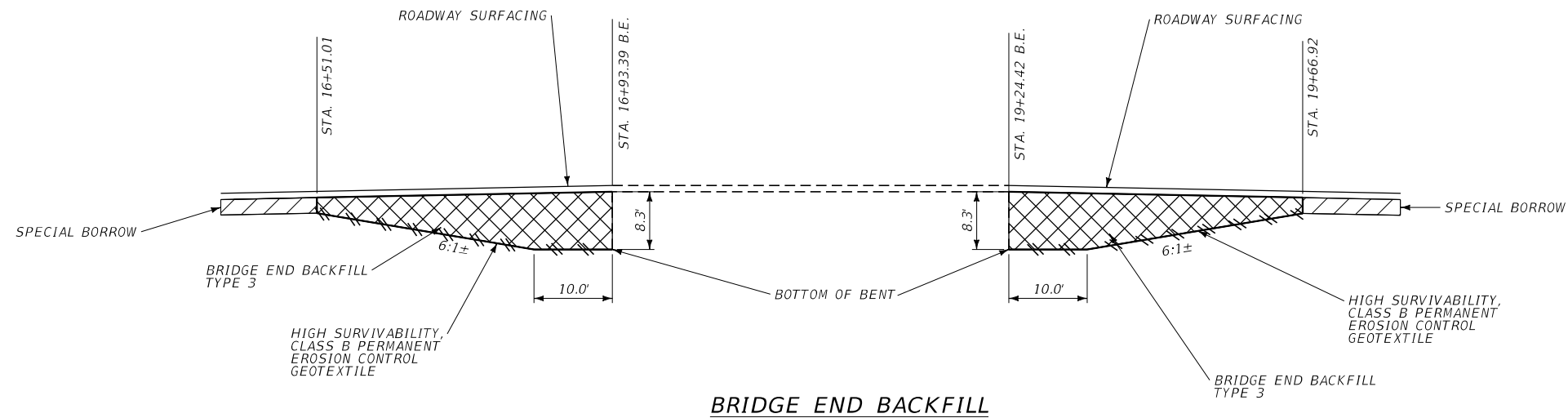
FENCING												
STATION		linear feet				TEMP. FENCE	each		PEDESTRIAN PASS	linear feet		REMARKS
		FARM FENCE					FARM FENCE PANEL	DEADMAN		FARM GATE		
		TYPE F2W-32WW	TYPE F3M-39WW	TYPE F4M	TYPE F5W					SINGLE	DOUBLE	
FROM	TO											
13+28.59	16+85.62				344	7				16	NEW FENCE AND GATE RT	
14+45.11	16+59.73				216	3					NEW FENCE LT	
18+81.24	21+06.08				125	4				32	NEW FENCE AND DOUBLE GATE LT	
20+10.56	22+04.32				181	5				16	NEW FENCE AND GATE RT	
16+59.73									1		NEW PEDESTRIAN PASS LT	
16+85.62									1		NEW PEDESTRIAN PASS RT	
20+10.56									1		NEW PEDESTRIAN PASS RT	
TOTAL		0	0	0	866	0	19	0	0	3	16	48

SIGNING				
SIGN NO.	ITEM	UNIT	QUANTITY	REMARKS
W5-1	REMOVE	EACH	1	NARROW BRIDGE SIGN
R12-1	REMOVE	EACH	1	WEIGHT LIMIT SIGN ON WOOD POLE
W8-1	REMOVE	EACH	1	BUMP SIGN ON WOOD POLE
W12-2	REMOVE	EACH	1	LOW CLEARANCE SIGN ON WOOD POLE
W13-1	REMOVE	EACH	1	MPH WARNING SIGN ON WOOD POLE
BRIDGE SIGNS	REMOVE	EACH	5	4 OBJECT MARKERS AND 1 BUMP SIGN WITH STEEL POSTS
W12-2	REMOVE	EACH	1	LOW CLEARANCE SIGN ON WOOD POLE
W13-1	REMOVE	EACH	1	MPH WARNING SIGN ON WOOD POLE
TOTAL			12	

REVEGETATION							
STATION		lump sum	cu. yards	acres			REMARKS
				REVEGETATION	TOPSOIL SALVAGING & PLACING	SEED	
FROM	TO						
11+81.57	16+93.39 B.E.	0.7	136	0.3	0.3	0.3	
19+24.42 B.E.	22+30.58	0.3	43	0.1	0.1	0.1	
TOTAL		1	~	~	~	~	

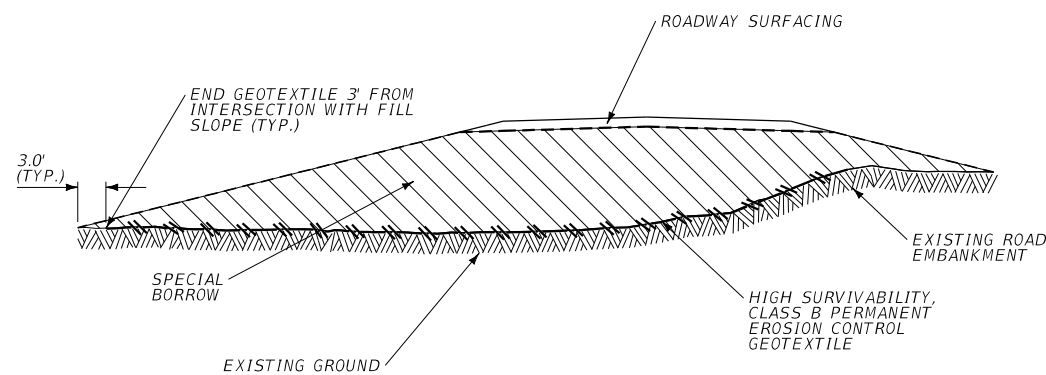
FOR INFORMATION ONLY

DETAIL



NOTES:

1. TYPE 3 BRIDGE END BACKFILL RECOMMENDED. TYPE 1 BRIDGE END BACKFILL OR TYPE 2 BRIDGE END BACKFILL CAN ALSO BE USED.

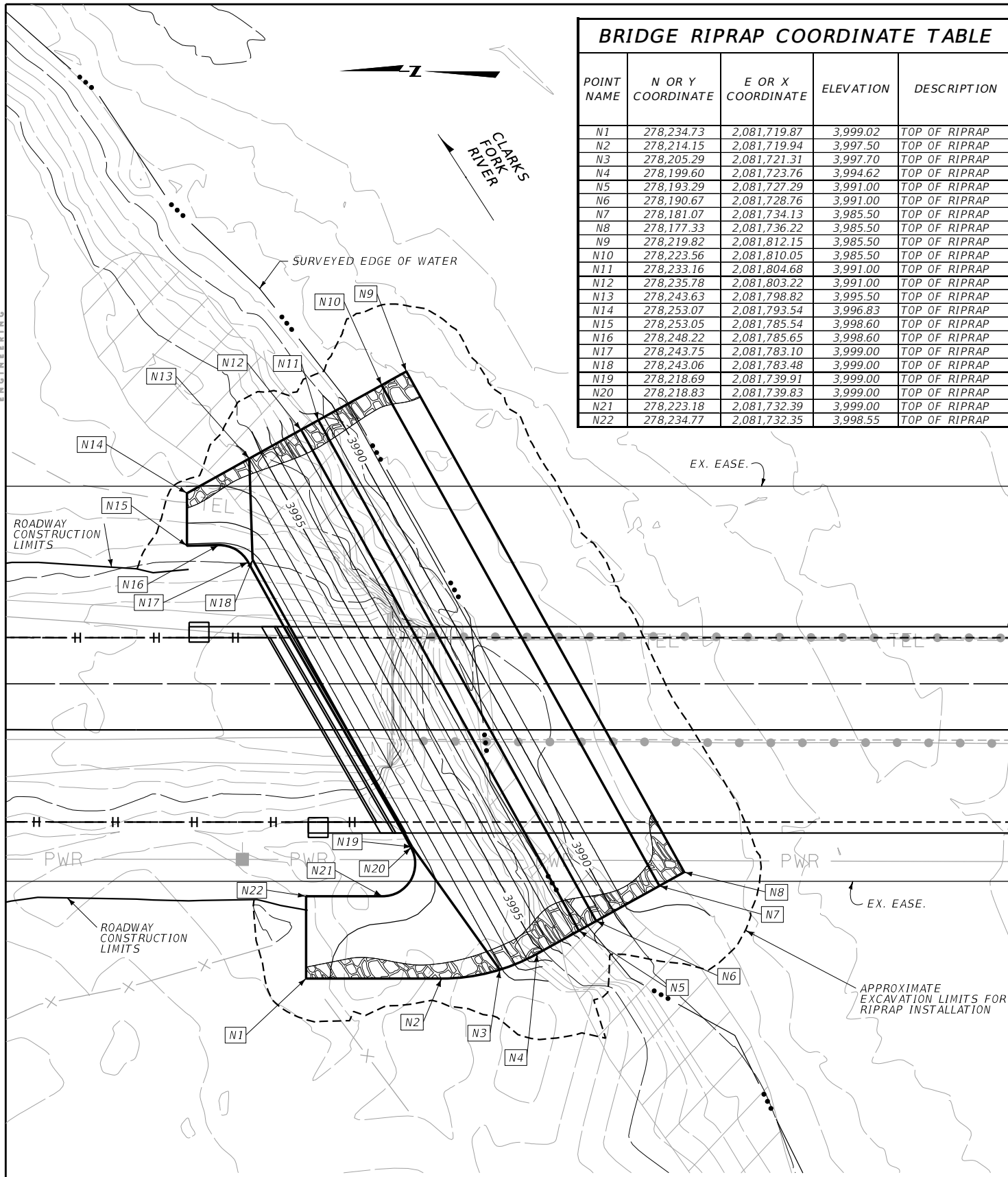


NOTES:

1. SPECIAL BORROW IS TO BE PLACED ON TOP OF HIGH SURVIVABILITY CLASS B PERMANENT EROSION CONTROL GEOTEXTILE.
2. SEE SPECIAL PROVISIONS.

**BRIDGE END BACKFILL
EMBANKMENT
FOUNDATION TREATMENT**

NO SCALE



BRIDGE RIPRAP COORDINATE TABLE

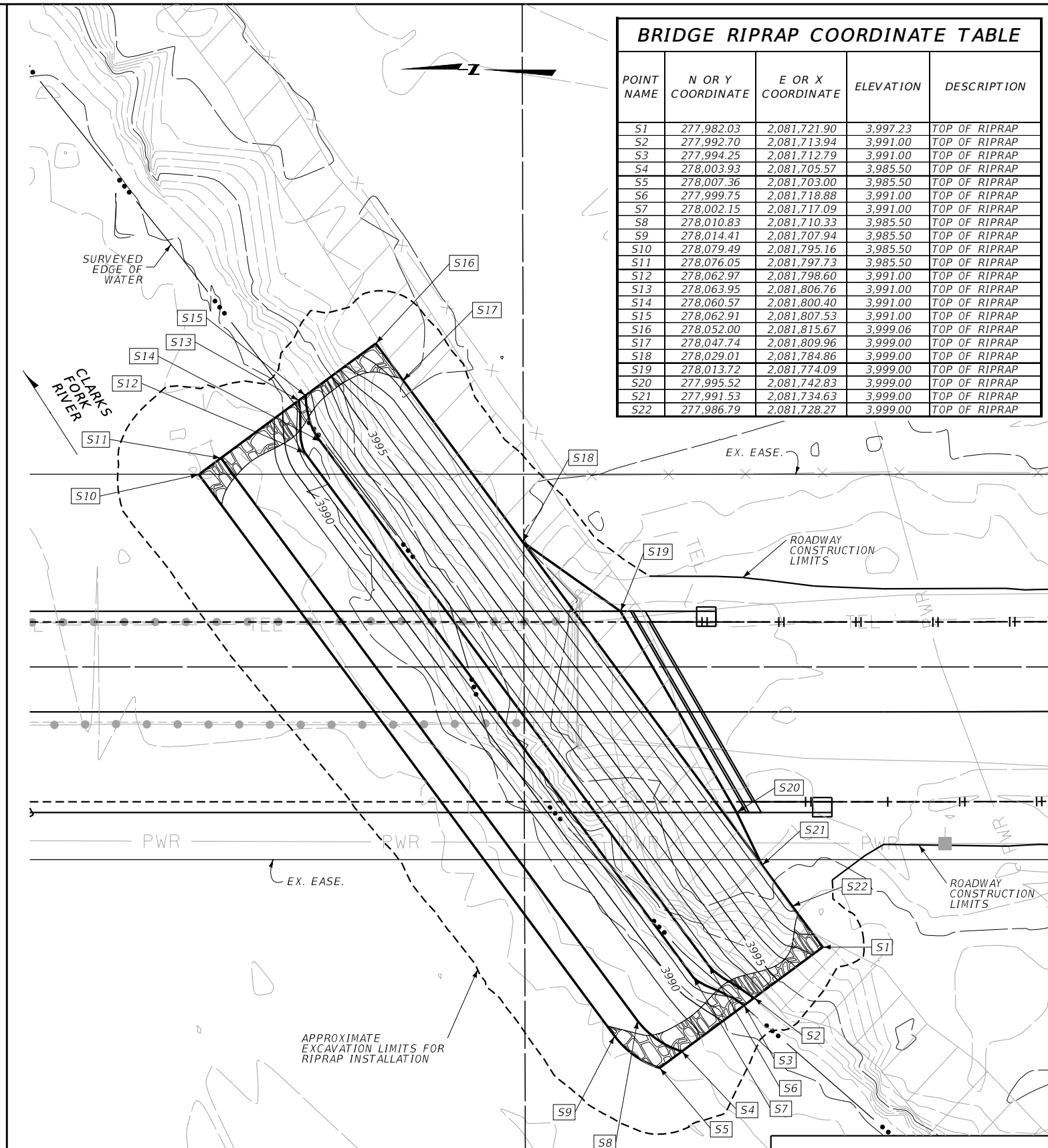
POINT NAME	N OR Y COORDINATE	E OR X COORDINATE	ELEVATION	DESCRIPTION
N1	278,234.73	2,081,719.87	3,999.02	TOP OF RIPRAP
N2	278,214.15	2,081,719.94	3,997.50	TOP OF RIPRAP
N3	278,205.29	2,081,721.31	3,997.70	TOP OF RIPRAP
N4	278,199.60	2,081,723.76	3,994.62	TOP OF RIPRAP
N5	278,193.29	2,081,727.29	3,991.00	TOP OF RIPRAP
N6	278,190.67	2,081,728.76	3,991.00	TOP OF RIPRAP
N7	278,181.07	2,081,734.13	3,985.50	TOP OF RIPRAP
N8	278,177.33	2,081,736.22	3,985.50	TOP OF RIPRAP
N9	278,219.82	2,081,812.15	3,985.50	TOP OF RIPRAP
N10	278,223.56	2,081,810.05	3,985.50	TOP OF RIPRAP
N11	278,233.16	2,081,804.68	3,991.00	TOP OF RIPRAP
N12	278,235.78	2,081,803.22	3,991.00	TOP OF RIPRAP
N13	278,243.63	2,081,798.82	3,995.50	TOP OF RIPRAP
N14	278,253.07	2,081,793.54	3,996.83	TOP OF RIPRAP
N15	278,253.05	2,081,785.54	3,998.60	TOP OF RIPRAP
N16	278,248.22	2,081,785.65	3,998.60	TOP OF RIPRAP
N17	278,243.75	2,081,783.10	3,999.00	TOP OF RIPRAP
N18	278,243.06	2,081,783.48	3,999.00	TOP OF RIPRAP
N19	278,218.69	2,081,739.91	3,999.00	TOP OF RIPRAP
N20	278,218.83	2,081,739.83	3,999.00	TOP OF RIPRAP
N21	278,223.18	2,081,732.39	3,999.00	TOP OF RIPRAP
N22	278,234.77	2,081,732.35	3,998.55	TOP OF RIPRAP

LEGEND

- RANDOM RIPRAP CLASS III, SEE TYPICAL SECTION A ON SHEET 12
- POINT NAME

NOTES

1. CONTOUR INTERVAL = 1'
2. DESIGN CONTOURS REPRESENT FINISH GRADE (I.E. TOP OF RIPRAP REVEGETATION).
3. COORDINATE TABLE ELEVATIONS REPRESENT TOP OF RIPRAP ELEVATIONS.



BRIDGE RIPRAP COORDINATE TABLE

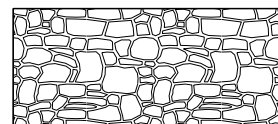
POINT NAME	N OR Y COORDINATE	E OR X COORDINATE	ELEVATION	DESCRIPTION
S1	277,982.03	2,081,721.90	3,997.23	TOP OF RIPRAP
S2	277,992.70	2,081,713.94	3,991.00	TOP OF RIPRAP
S3	277,994.25	2,081,712.79	3,991.00	TOP OF RIPRAP
S4	278,003.93	2,081,705.57	3,985.50	TOP OF RIPRAP
S5	278,007.36	2,081,703.00	3,985.50	TOP OF RIPRAP
S6	277,999.75	2,081,718.88	3,991.00	TOP OF RIPRAP
S7	278,002.15	2,081,717.09	3,991.00	TOP OF RIPRAP
S8	278,010.83	2,081,710.33	3,985.50	TOP OF RIPRAP
S9	278,014.41	2,081,707.94	3,985.50	TOP OF RIPRAP
S10	278,079.49	2,081,795.16	3,985.50	TOP OF RIPRAP
S11	278,076.05	2,081,797.73	3,985.50	TOP OF RIPRAP
S12	278,062.97	2,081,798.60	3,991.00	TOP OF RIPRAP
S13	278,063.95	2,081,806.76	3,991.00	TOP OF RIPRAP
S14	278,060.57	2,081,800.40	3,991.00	TOP OF RIPRAP
S15	278,062.91	2,081,807.53	3,991.00	TOP OF RIPRAP
S16	278,052.00	2,081,815.67	3,999.06	TOP OF RIPRAP
S17	278,047.74	2,081,809.96	3,999.00	TOP OF RIPRAP
S18	278,029.01	2,081,784.86	3,999.00	TOP OF RIPRAP
S19	278,013.72	2,081,774.09	3,999.00	TOP OF RIPRAP
S20	277,995.52	2,081,742.83	3,999.00	TOP OF RIPRAP
S21	277,991.53	2,081,734.63	3,999.00	TOP OF RIPRAP
S22	277,986.79	2,081,728.27	3,999.00	TOP OF RIPRAP

RIPRAP LAYOUT

SCALE: 1" = 20'

DETAIL

LEGEND



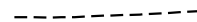
RANDOM RIPRAP



NATIVE MATERIAL



GRANULAR BEDDING MATERIAL



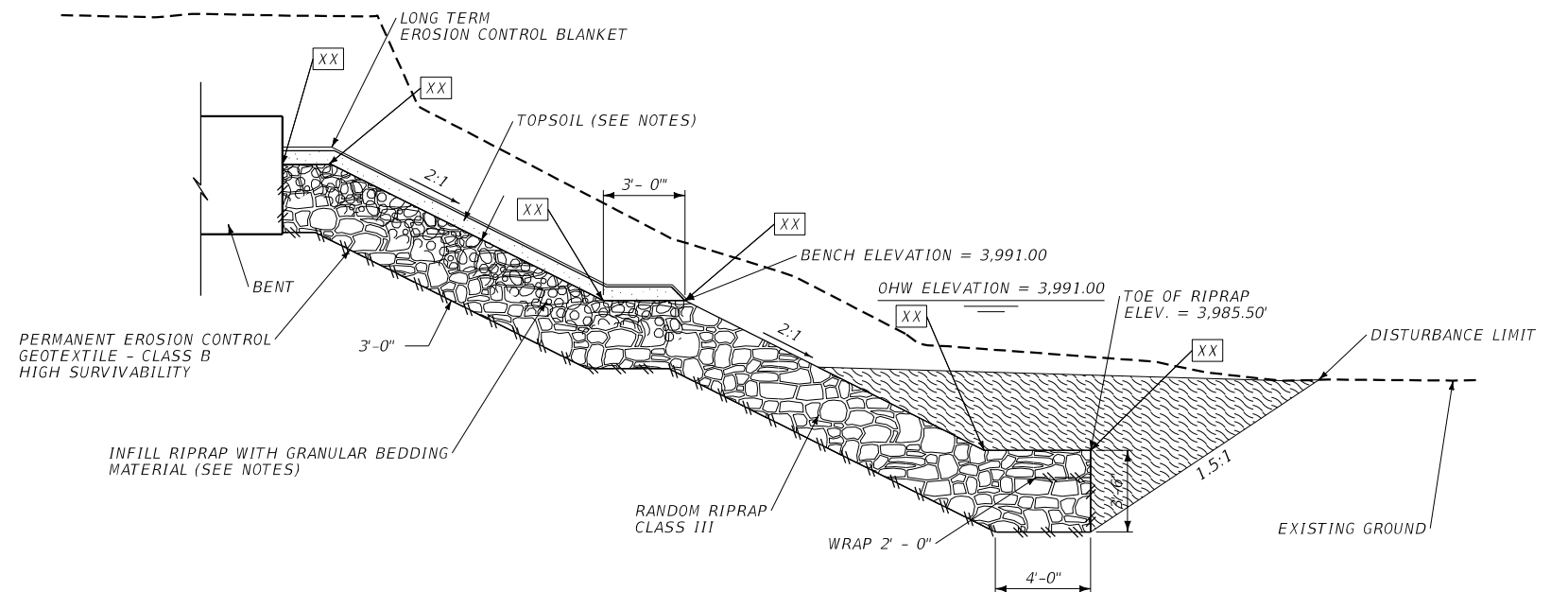
EXISTING GROUND

XX TYPICAL STAKING POINT LOCATION

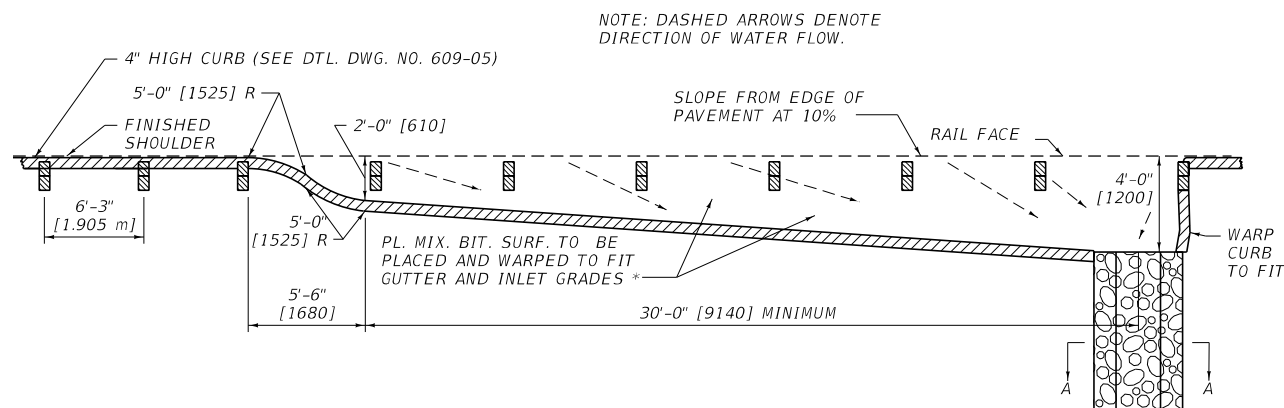
NOTES:

1. FILL RIPRAP VOIDS WITH GRANULAR BEDDING MATERIAL, OR A MATERIAL OF SIMILAR GRADATION OBTAINED ON SITE TO PROVIDE A UNIFORM SURFACE FOR THE PLACEMENT OF TOPSOIL, AS APPROVED BY THE ENGINEER. BEDDING MATERIAL UNDER RIPRAP REVEGETATION IS INCLUDED IN THE RIPRAP REVEGETATION BID ITEM.
2. PLACE TOPSOIL WITH A MINIMUM THICKNESS OF 6".
3. REFER TO THE SPECIAL PROVISIONS FOR PLANTING AND SEEDING SPECIFICATIONS.
4. MINIMIZE DISTURBANCE INSTALLING RIPRAP AND CONSTRUCTING BRIDGE.
5. RIPRAP REVEGETATION TYPICAL SECTION DRAWN ORTHOGONAL TO RIPRAP SLOPE.

RIPRAP REVEGETATION TYPICAL SECTION



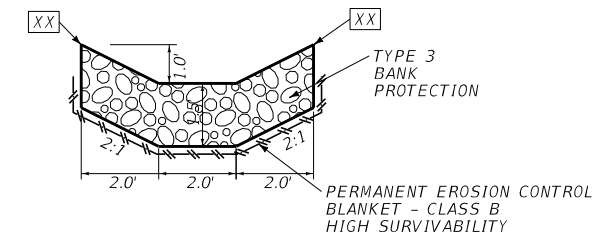
TYPE 3 BANK PROTECTION DETAIL



PLAN VIEW

NOTES:

1. UNITS SHOWN IN BRACKETS [] ARE METRIC AND ARE IN MILLIMETERS (mm) UNLESS OTHER UNITS ARE SHOWN.
 2. THE COST OF SS-1 FOG SEAL IS INCLUDED IN THE COST OF PLANT MIX SURFACING
- * INCLUDED WITH ROADWAY QUANTITIES



SECTION A-A

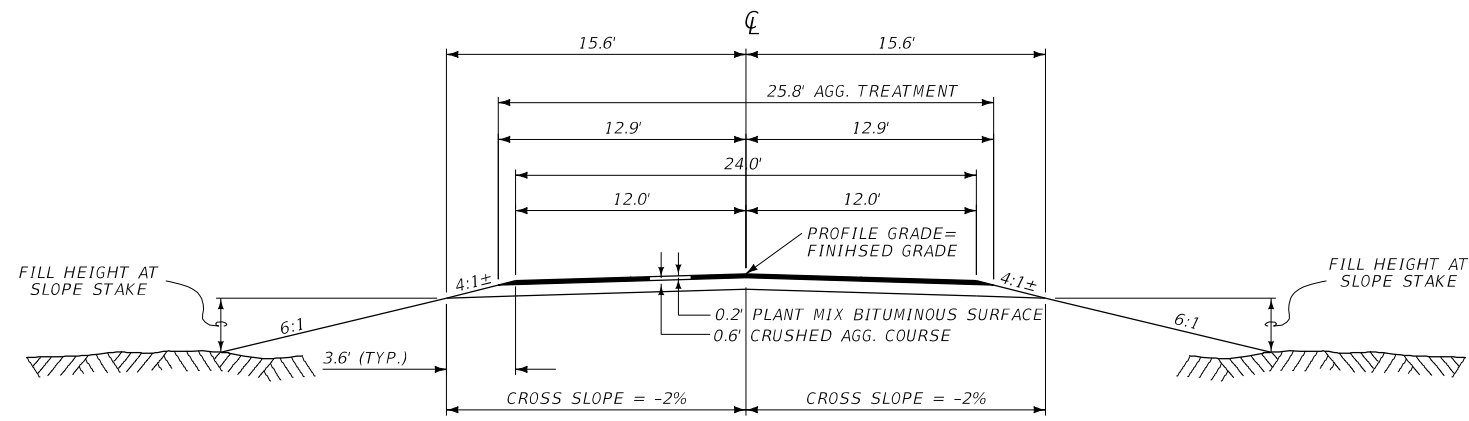
RIPRAP REVEGETATION TYPICAL SECTION

TYPE 3 BANK PROTECTION

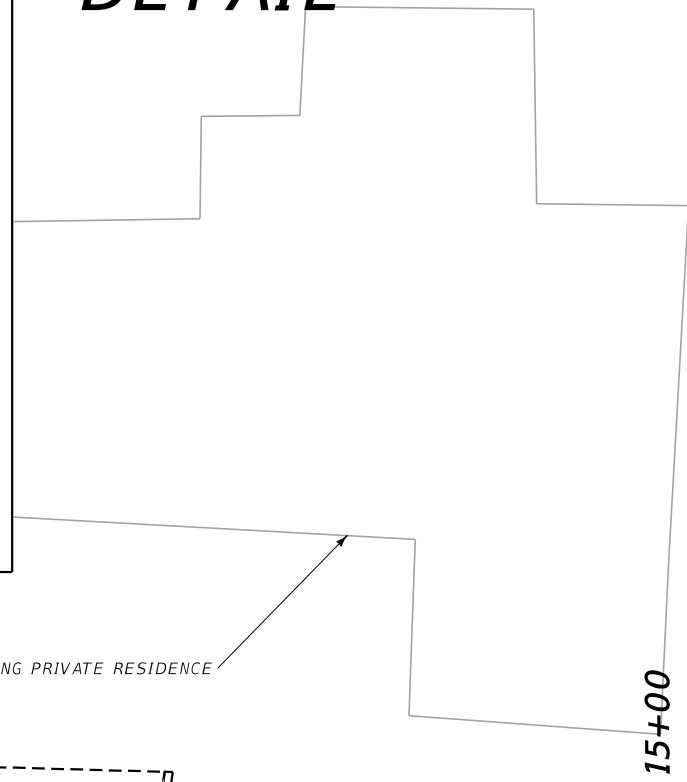
NO SCALE



TYPICAL PAVED APPROACH SECTION



DETAIL



POINTS	N OR Y COORDINATE	E OR X COORDINATE	ELEVATION	REMARKS
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				

LEGEND

--- EDGE OF PAVEMENT

XX POINT #



13+00

14+00

15+00

EXISTING PRIVATE RESIDENCE

CHANCE ROAD

**PRIVATE APPROACH
STA. 14+33.19 LT**

SCALE: 1" = 20'

3
2



...9523000\RD\9523000rdDE
4/28/2022
1:13:19 PM lwilliams

DESIGNED BY R. HOLM, L. WILLIAMS 11/19/2021
REVIEWED BY R. HOLM 11/19/2021
CHECKED BY K. YAKAWICH 11/19/2021

ROAD PLANS
CARBON COUNTY

PRELIMINARY FPR

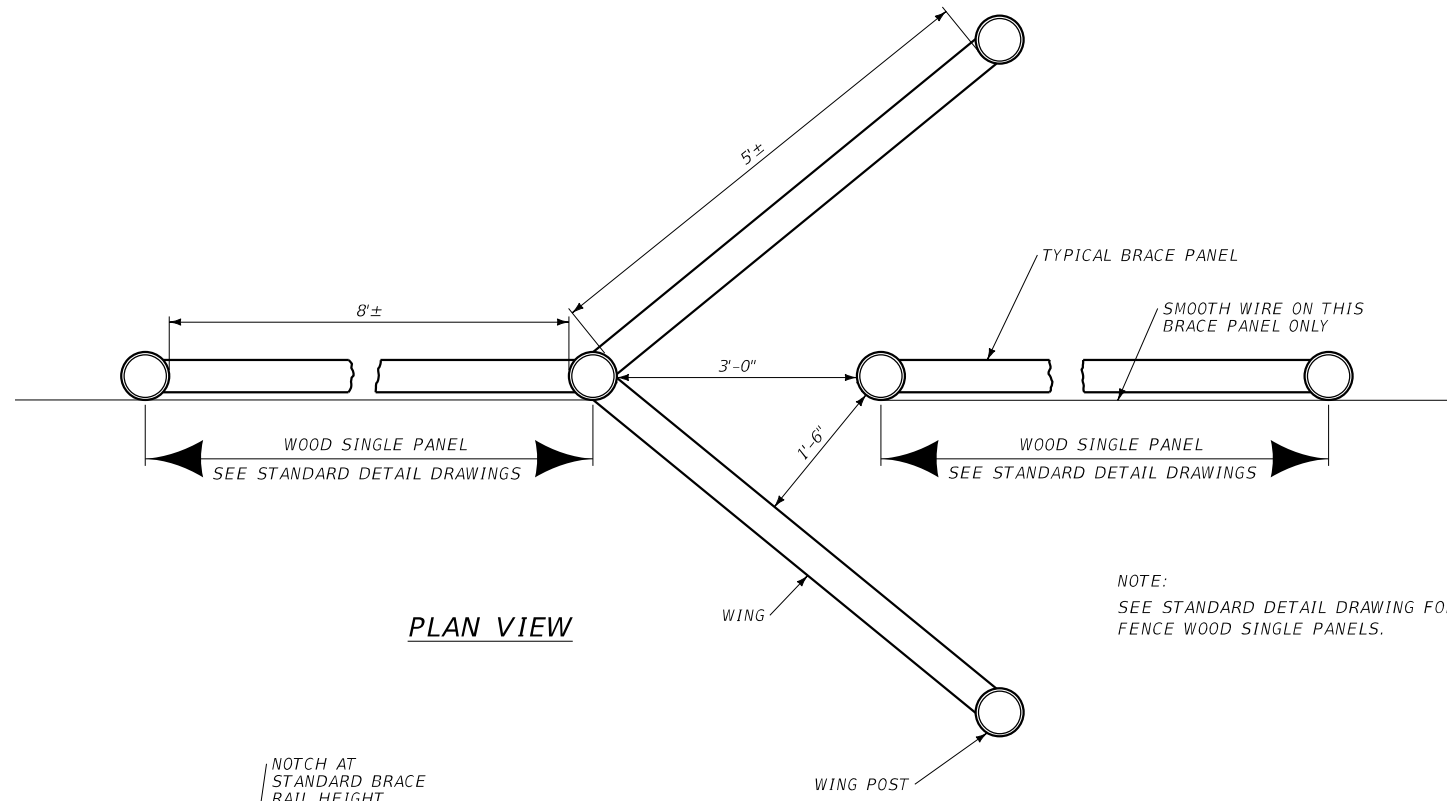
CLARKS FORK - 9 M S BELFRY

UPN 9523000

STPB 9005(55)

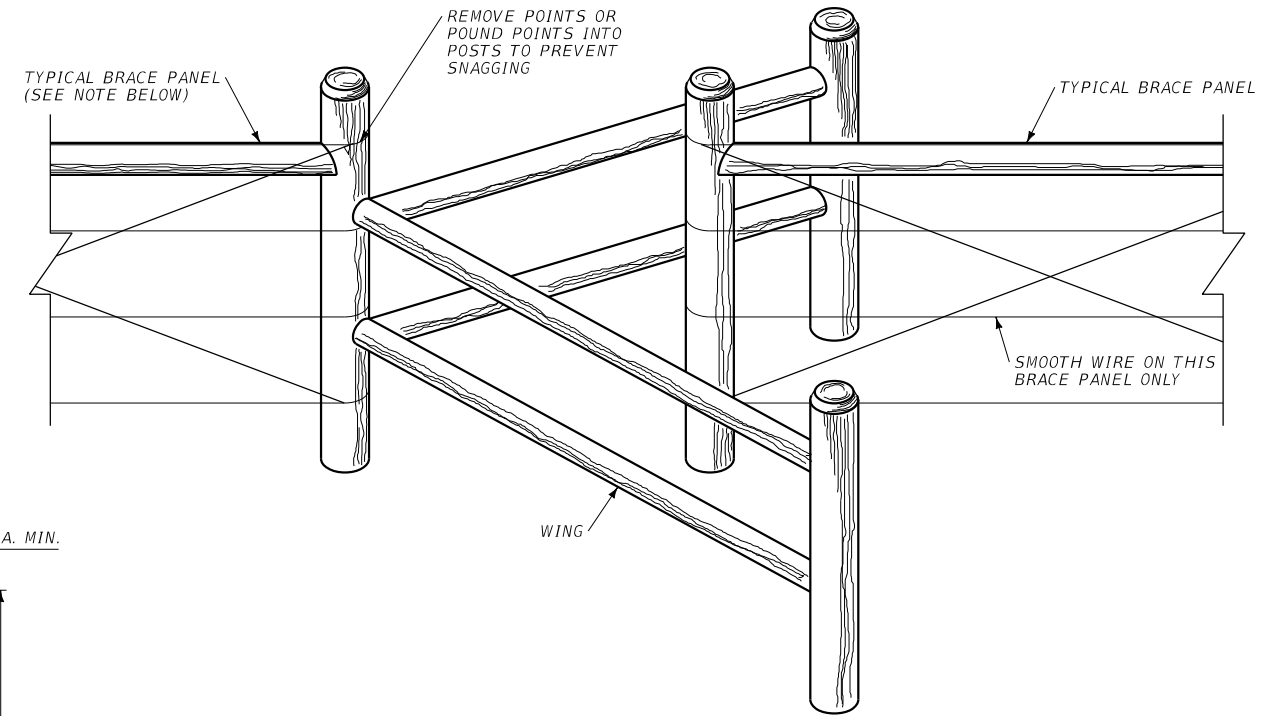
SHEET 13

DETAIL



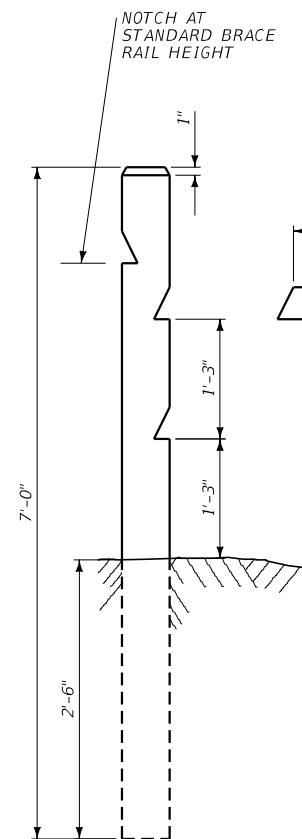
PLAN VIEW

NOTE:
SEE STANDARD DETAIL DRAWING FOR FARM FENCE WOOD SINGLE PANELS.

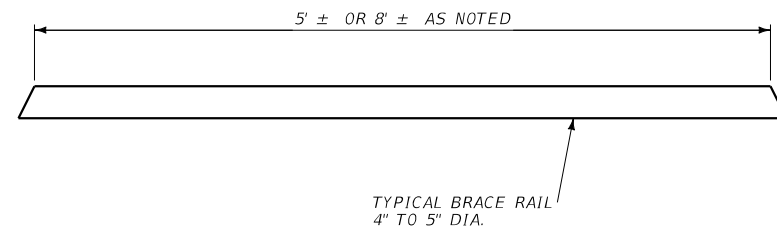


PERSPECTIVE

NOTE:
THE WOOD SINGLE PANEL (TYPICAL BRACE PANEL) WILL BE INSTALLED TO FIT FIELD CONDITIONS. SEE STANDARD DETAIL DRAWING FOR WIRE SPACING.



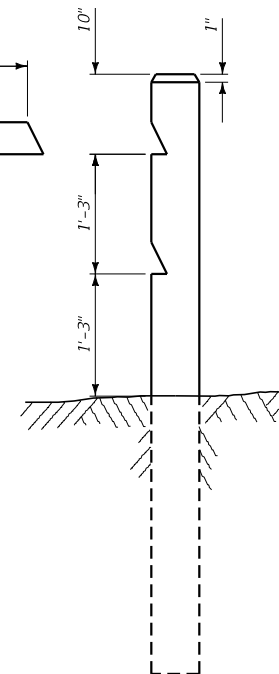
BRACE POST



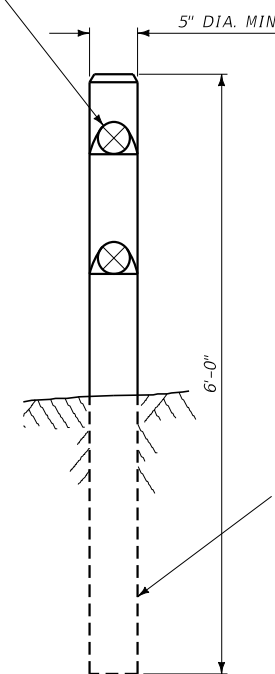
TYPICAL BRACE RAIL
4" TO 5" DIA.

NOTE:
BRACE AND POST SHALL FIT TOGETHER SNUGLY. A MINIMUM OF 60% OF THE END AREA OF THE POLE SHALL BEAR ON THE POST NOTCH. THERE SHALL BE NO GAP GREATER THAN 1/4". POSTS AND BRACES TO BE FULL LENGTH PRESSURE TREATED.

SEE STANDARD DETAIL DRAWING FOR BRACE RAIL CONNECTIONS.



WING POST



WING POST

SEE STANDARD DETAIL DRAWING FOR POST AND RAIL REQUIREMENTS (UNLESS OTHERWISE NOTED).

ELEVATION VIEW - FRONT

ELEVATION VIEW - SIDE

PEDESTRIAN PASS

NO SCALE



LINEAR AND LEVEL DATA

CENTERLINE ALIGNMENT COORDINATE TABLE				
STATION	DESCRIPTION	N OR Y COORDINATE	E OR X COORDINATE	REMARKS
10+00.00	POT	278,925.521	2,081,762.190	BEGIN ALIGNMENT
11+81.57	POT	278,743.950	2,081,732.834	BEGIN STPB 9005(55)
12+22.17	PC	278,703.356	2,081,762.978	
13+32.86	PI	278,592.663	2,081,763.371	
14+43.54	PT	278,482.013	2,081,760.264	
14+43.54	PC	278,482.013	2,081,760.264	
15+54.23	PI	278,371.363	2,081,757.157	
16+64.90	PT	278,260.670	2,081,757.550	
16+93.39	POT	278,232.187	2,081,757.651	BRIDGE END
19+24.42	POT	278,001.155	2,081,758.470	BRIDGE END
19+52.90	PC	277,972.672	2,081,758.572	
20+22.33	PI	277,903.250	2,081,758.819	
20+91.74	PT	277,833.847	2,081,760.442	
20+91.74	PC	277,833.847	2,081,760.442	
21+61.17	PI	277,764.444	2,081,762.065	
22+30.58	PT	277,695.022	2,081,762.311	END STPB 9005(55)
23+80.58	POT	277,545.023	2,081,762.844	END ALIGNMENT

GPK NAME: JOB952.GPK CHAIN NAME: DESIGN PROFILE NAME: DESIGN_P

LENGTH OF ROADWAY (CHANCE ROAD)	817.98 ft
LENGTH OF BRIDGE	231.03 ft
TOTAL LENGTH OF STPB 9005(55)	1049.01 ft

BEARING SOURCE
GRID -- MONTANA COORDINATE SYSTEM NAD 83-2011

LEVEL DATUM SOURCE
NAVD 88 (ELEVATIONS DERIVED FROM DIFFERENTIAL LEVELS HOLDING THE UPN 4065000 PROJECT ELEVATION AT MARK 604)

CONTROL DIAGRAM

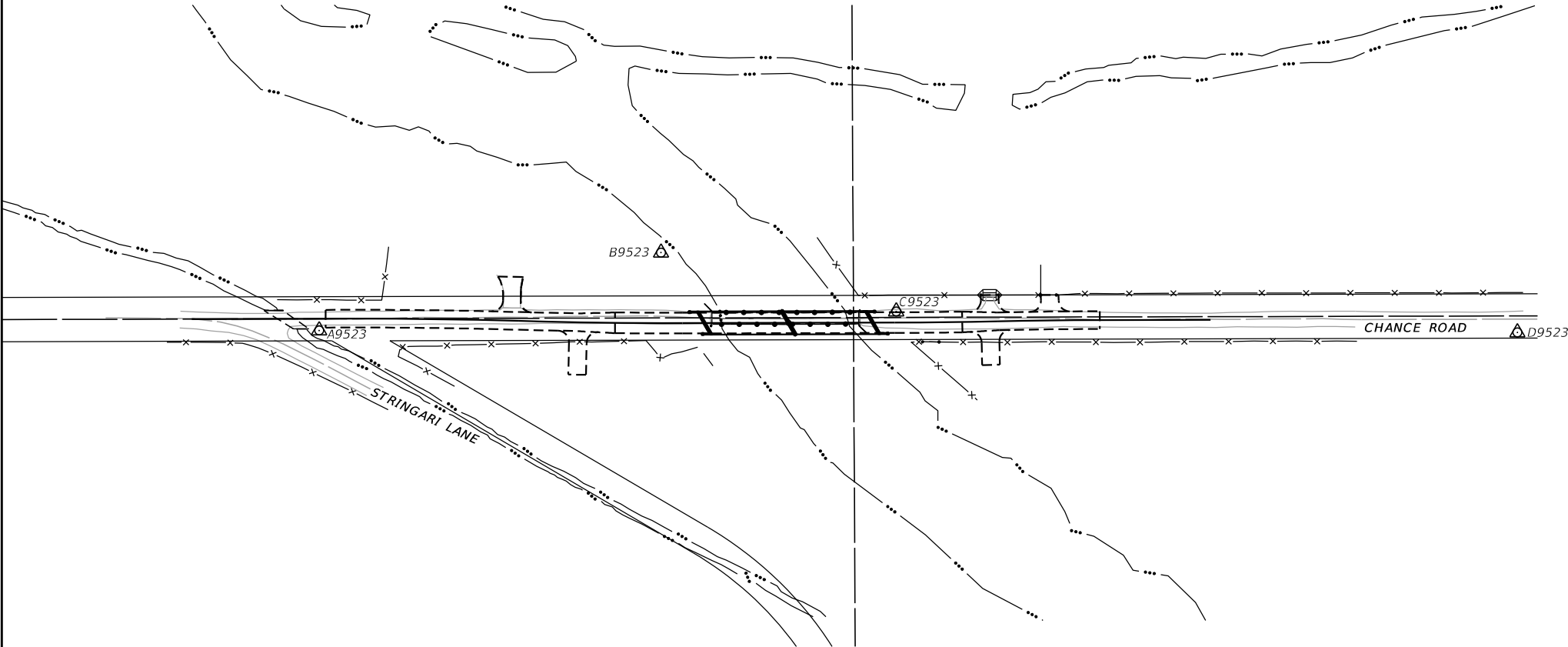
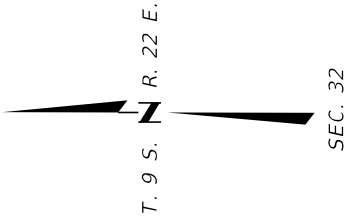
SCALE: 1"=1000'

NOTE:
THIS PROJECT IS ON THE MONTANA COORDINATE SYSTEM NAD83-2011.
NORTHING AND EASTING COORDINATES ARE EXPRESSED IN UNITS OF
INTERNATIONAL FEET AND ELEVATIONS ARE IN UNITS OF U.S. SURVEY FEET.

DIMENSIONS SHOWN ON THE PLANS ARE GRID. ALL SURVEY AND STAKING REQUIRE
THE USE OF A COMBINATION SCALE FACTOR (CSF) TO CONVERT GRID DIMENSIONS
TO GROUND DIMENSIONS (GRID DISTANCE / CSF = GROUND DISTANCE).
THE CSF FOR THIS PROJECT IS 0.99980387.

CONTROL ABSTRACT

POINT NAME/NUMBER	N OR Y COORDINATE	E OR X COORDINATE	POINT ELEVATION	LOCATION AND DESCRIPTION
A9523	278,752.787	2,081,746.915	3997.02	SET MDT 2" CONTROL CAP ON 5/8" X 30" REBAR STAMPED "A9523" FLUSH WITH THE GROUND. THE MONUMENT IS ON CHANCE ROAD 500' NORTH OF BRIDGE OVER CLARKS FORK RIVER, AND 15' WEST OF THE CENTERLINE OF CHANCE ROAD. 12' SOUTH OF THE SOUTHWEST CORNER OF A BRIDGE OVER AN IRRIGATION DITCH. SET A WITNESS POST 3' WEST OF THE CAP.
B9523	278,289.718	2,081,853.012	3997.01	SET MDT 2" CONTROL CAP ON 5/8" X 30" REBAR STAMPED "B9523" FLUSH WITH THE GROUND. THE MONUMENT IS ON CHANCE ROAD 50' NORTH OF BRIDGE OVER CLARKS FORK RIVER, AND 80' EAST OF THE ROAD CENTERLINE. 3.8' NORTH OF THE RIVER BANK. 12.5' NORTHEAST OF A WOODPOST. 16.5' SOUTH OF A LARGE ROCK.
C9523	277,970.923	2,081,773.691	4002.73	SET MDT 2" CONTROL CAP ON 5/8" X 30" REBAR STAMPED "C9523" FLUSH WITH THE GROUND. THE MONUMENT IS ON CHANCE ROAD EAST SIDE, 50' SOUTH OF THE BRIDGE OVER CLARKS FORK RIVER, 8.4' EAST OF CENTERLINE, AND 8.3' NORTHWEST OF SIGN.
D9523	277,129.102	2,081,746.238	4007.32	SET MDT 2" CONTROL CAP ON 5/8" X 30" REBAR STAMPED "D9523" FLUSH WITH THE GROUND. THE MONUMENT IS ON CHANCE ROAD WEST SIDE, 900' SOUTH OF THE BRIDGE OVER CLARKS FORK RIVER. 15' WEST OF CHANCE ROAD CENTERLINE, 11' EAST OF A GATE POST, 20' NORTH OF A FIELD APPROACH. SET WITNESS POST 3' WEST OF THE CAP.



HYDRAULIC DATA SUMMARY *

STATION	STREAM NAME (IF NAMED)	SIZE / TYPE STRUCTURE ① ①A	DESIGN FLOOD			BASE FLOOD (1%)		OVERTOPPING FLOOD ② ③			REMARKS (FLOOD OF RECORD, $Q_p(max)$, etc.) ⑤
			MAGNITUDE (cfs)	FREQUENCY (%)	H.W. ELEV. (ft)	MAGNITUDE (cfs)	H.W. ELEV. (ft)	MAGNITUDE (cfs)	APPROX. FREQUENCY (%)	H.W. ELEV. (ft)	
18+06.00	CLARKS FORK RIVER	184' - 2 SPAN BRIDGE	10,830	10	3,996.85	14,140	3,998.38	13,190	2.0	3,997.79	OVERTOPPING OCCURS ~440' NORTH OF NORTH BRIDGE END

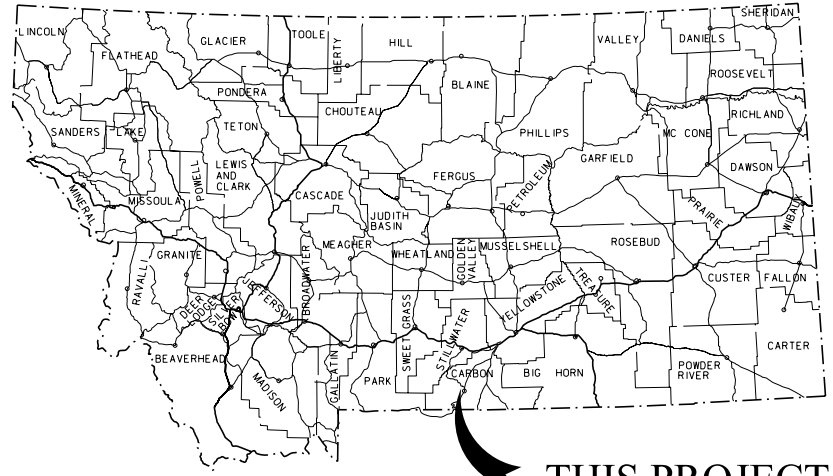


- NOTES : * H.W. ELEVATIONS SHOWN ARE BASED UPON PEAK FLOW ANALYSIS UNLESS NOTED IN REMARKS COLUMN.
- ① STRUCTURE SIZE OR TYPE AND RELATED HYDRAULIC DATA MAY NOT REFLECT CHANGES MADE DUE TO R/W OR OTHER CONSIDERATIONS (I.E., STOCKPASS ADDED, STRUCTURE SIZE OR TYPE CHANGED, ROAD GRADE CHANGED DURING CONSTRUCTION, ETC.)
 - ①A BRIDGE LENGTH SHOWN EQUALS THE WATER SURFACE WIDTH IN THE OPENING AT THE DESIGN H.W. ELEVATION MEASURED NORMAL TO FLOW.
 - ② OVERTOPPING IS DEFINED AS FLOW OVER THE ROAD, FLOW THROUGH A SIGNIFICANT RELIEF STRUCTURE OR FLOW OVER THE BASIN DIVIDE WHICHEVER IS LOWER.
 - ③ FOR THOSE CROSSINGS NOTED BY $Q_p(max)$ IN THE REMARKS COLUMN OVERTOPPING DOES NOT OCCUR AND THE FLOOD MAGNITUDE LISTED CORRESPONDS TO THE FLOOD OF SECTION 650.115 (a) (1) (ii) OF FEDERAL-AID POLICY GUIDE; SUBCHAPTER G, PART 650, SUBPART A (DEC. 1991)
THE FLOOD SPECIFIED IS SUBJECT TO STATE-OF-THE-ART CAPABILITY TO ESTIMATE THE EXCEEDANCE PROBABILITY. (PIPES 0.5%; BRIDGE 0.2%)
 - ④ HIGH WATER ELEVATIONS MAY VARY SLIGHTLY DEPENDING UPON THE PIPE OPTION SELECTED.
 - ⑤ PROCEDURE MEMORANDUM NO.10, HYDRAULICS MANUAL CHAPTER 9 APPENDIX H.

EXCEEDANCE	PROBABILITIES
10 YEAR	10% CHANCE
25 YEAR	4% CHANCE
50 YEAR	2% CHANCE
100 YEAR	1% CHANCE
200 YEAR	.5% CHANCE
500 YEAR	.2% CHANCE

FOR MDT INTERNAL DISTRIBUTION ONLY
MONTANA DEPARTMENT OF TRANSPORTATION

PRESENT 2010 A. D. T. = 1770
 LETTING 2012 A. D. T. = 1870
 DESIGN 2032 A. D. T. = 3290
 D. H. V. = 530
 TRUCKS = 2.8%
 V. = 55 MPH
 18 KIP ESAL'S = 25
 GROWTH RATE = 2.9%

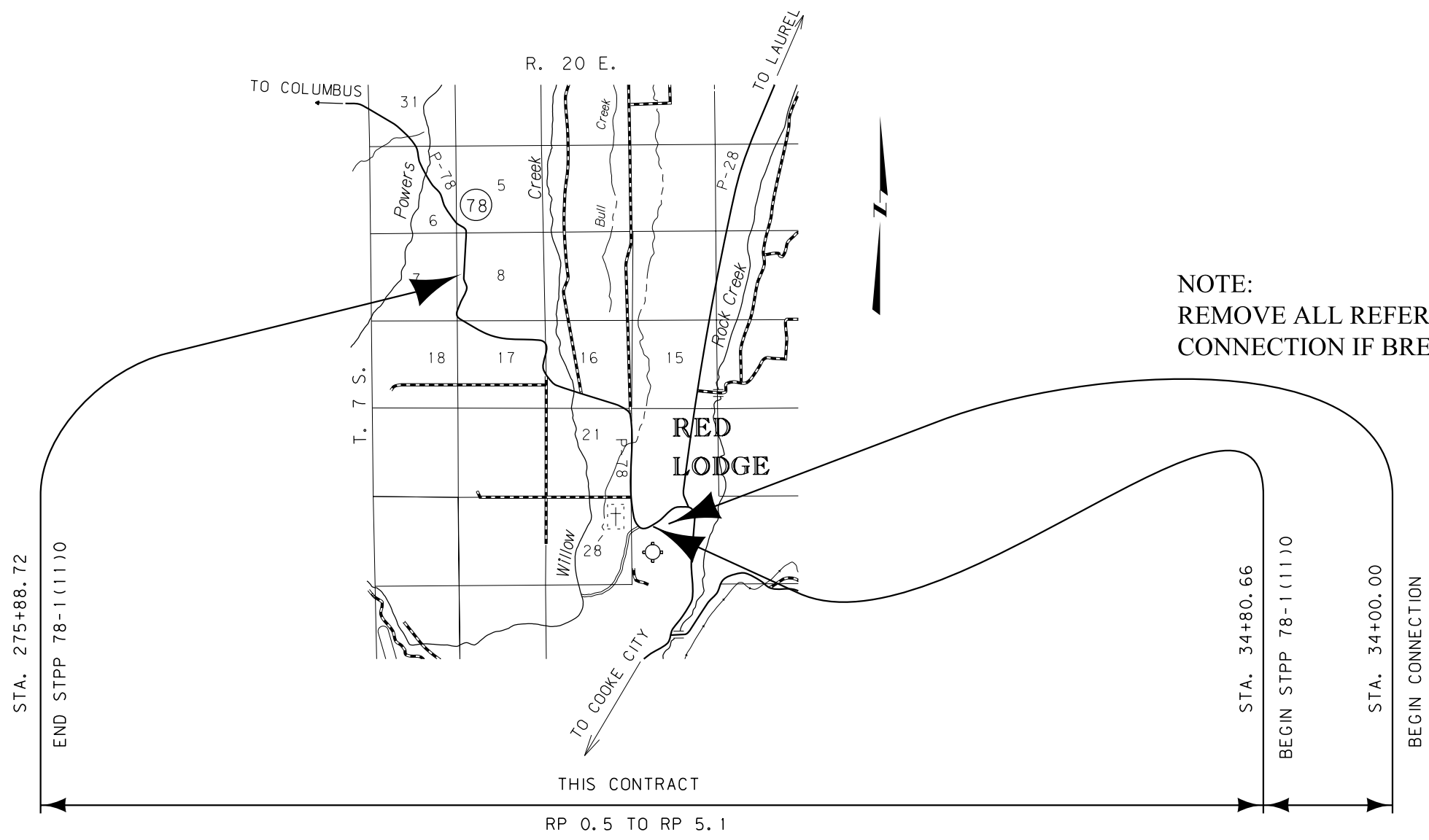


FEDERAL AID PROJECT STPP 78-1(11)0
GRADE, GRAVEL PL. MIX SURF.
RED LODGE - NW
CARBON COUNTY

CSF= 0.99961552

SURFACING SOURCES -
CONTRACTOR FURNISHED

LENGTH 4.6 MILES



NOTE:
REMOVE ALL REFERNCES IN THE PLANS TO THE
CONNECTION IF BREWERY HILL PROJECT IS LET FIRST

PLANS PREPARED BY

RELATED PROJECTS

ASSOCIATED PROJECT
AGREEMENT NUMBERS

R / W & I.C.	
P. E.	STPP 78-1(11)0

MONTANA DEPARTMENT OF TRANSPORTATION	
APPROVED : _____ 20	
MICHAEL T. TOOLEY DIRECTOR OF TRANSPORTATION	
BY : _____ HIGHWAYS ENGINEER	
U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION	
APPROVED : _____ DIVISION ADMINISTRATOR	_____ DATE

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BASIS OF PLAN QUANTITIES

(QUANTITIES FOR ESTIMATING PURPOSES ONLY)

COMP. AGGREGATE WEIGHT	= 3750 LBS. PER CUBIC YARD
COMP. WEIGHT OF PL. MIX BIT. SURF.	= 4167 LBS. PER CUBIC YARD
ASPHALT CEMENT - GRADE S - 3/4" AGG.	= 5.2% OF PL. MIX BIT. SURF.
ASPHALT CEMENT - GRADE S - 1/2" AGG.	= 5.8% OF PL. MIX BIT. SURF.
ASPHALT CEMENT - GRADE D	= 6.0% OF PL. MIX BIT. SURF.
HYDRATED LIME	= 1.4% OF PL. MIX BIT. SURF.
BITUMINOUS MATERIAL	= 8.5 LBS. PER GAL.
TACK (ASPHALT SURFACES)	= 0.025 GAL. PER SQ. YARD (UNDILUTED)
TACK (ALL OTHER SURFACES)	= 0.05 GAL. PER SQ. YARD (UNDILUTED)
SEAL	= 0.42 GAL. PER SQ. YARD
COVER	= 25 LBS. PER SQ. YARD

APPROACHES

CONSTRUCT APPROACHES TO A 24' FINISHED TOP ON A 34' SUBGRADE UNLESS NOTED OTHERWISE IN THE PLANS.

PROVIDE THE FOLLOWING SURFACING:
0.20' PLANT MIX BITUMINOUS SURF.
0.60' CRUSHED AGGREGATE COURSE

PLANT MIX SURFACE ALL PUBLIC APPROACHES TO R/W.

QUANTITIES FOR ONE PUBLIC APPROACH:

AVERAGE LENGTH	= 67	linear feet
PLANT MIX BITUMINOUS SURF.	= 25	tons
CRUSHED AGGREGATE COURSE	= 51	cubic yards
ASPHALT CEMENT	= 1.30	tons
PRIME	=	tons

PLANT MIX SURFACE ALL PRIVATE APPROACHES TO R/W.

QUANTITIES FOR ONE PRIVATE APPROACH:

AVERAGE LENGTH	= 99	linear feet
PLANT MIX BITUMINOUS SURF.	= 37	tons
CRUSHED AGGREGATE COURSE	= 75	cubic yards
ASPHALT CEMENT	= 1.92	tons
PRIME	=	tons

GRAVEL SURFACE ALL FARM FIELD APPROACHES TO R/W WITH A 12' WIDE PLANT MIX STRIP ADJACENT AND PARALLEL TO THE ROADWAY.

QUANTITIES FOR ONE FARM FIELD APPROACH:

AVERAGE LENGTH	= 55	linear feet
PLANT MIX BITUMINOUS SURF.	= 4	tons
CRUSHED AGGREGATE COURSE	= 42	cubic yards
ASPHALT CEMENT	= 0.2	tons
PRIME	=	tons

MAILBOXES & MAILBOX TURNOUTS

CONSTRUCT MAILBOX TURNOUTS AT LOCATIONS SHOWN IN THE PLANS OR AS STAKED BY THE ENGINEER.

PROVIDE THE FOLLOWING SURFACING:
MAINLINE linear feet PLANT MIX BITUMINOUS SURF.
MAINLINE linear feet CRUSHED AGGREGATE COURSE

QUANTITIES FOR ONE APPROACH MAILBOX TURNOUT (FOR ESTIMATING PURPOSES ONLY):

AVERAGE LENGTH	= 69	linear feet
PLANT MIX BITUMINOUS SURF.	= 11	tons
CRUSHED AGGREGATE COURSE	= 20	cubic yards
ASPHALT CEMENT	= 0.6	tons
PRIME	=	tons

NOTES

LIMITED ACCESS CONTROL

THIS PROJECT IS A LIMITED ACCESS CONTROL FACILITY. OBTAIN APPROVAL FROM THE CHIEF OF THE RIGHT-OF-WAY BUREAU PRIOR TO ADDING, DELETING OR RELOCATING ANY APPROACHES.

CLEARING AND GRUBBING

CLEAR AND GRUB TO CONSTRUCTION LIMITS. INCLUDE THE COST OF CLEARING AND GRUBBING IN THE UNIT PRICE BID FOR UNCLASSIFIED EXCAVATION

TEMPORARY EROSION AND SEDIMENT CONTROL

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

ALL INSTALLED TEMPORARY EROSION CONTROL MATERIALS IN OR ADJACENT TO WATERS OF THE U.S. MUST BE COMPOSED AND CONSTRUCTED OF 100% BIODEGRADABLE FIBERS, NETING AND STITCHING.

UTILITIES

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

PUBLIC LAND SURVEY MONUMENTS

ALL MONUMENTS TO BE REMOVED AND RELOCATED OR RESET BY STATE FORCES.

MISC. TO BE MOVED OR REMOVED BY OTHERS

ALL PRIVATELY OWNED SIGNS TO BE REMOVED BY OWNER.
ALL STATE-OWNED SIGNS TO BE MOVED BY STATE FORCES.

COMBINATION SCALE FACTOR

ALL COORDINATES ARE STATE PLANE (SEE CONTROL DIAGRAM).
CSF FROM THE BEGINNING OF PROJECT TO RP 5.1 IS 0.99961552.

WETLANDS

WETLANDS EXIST ADJACENT TO THE ROADWAY AND BEYOND THE PROJECT LIMITS. WETLAND AREAS AND PERMITTED WETLAND IMPACT AREAS WITHIN THE PROJECT LIMITS HAVE BEEN DELINEATED AND ARE SHOWN ON THE PLANS. ANY ACTION IMPACTING WETLAND AREAS WITHOUT THE APPROPRIATE PERMITTING IS THE RESPONSIBILITY OF THE CONTRACTOR.



DELINEATED WETLAND AREAS



PERMITTED WETLAND IMPACTED AREAS

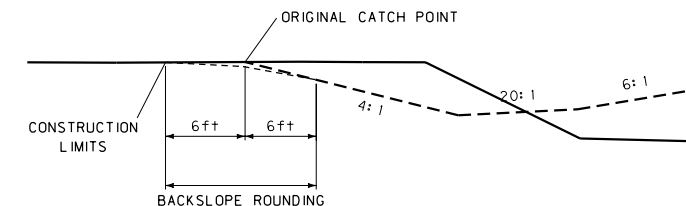
WETLAND NUMBER	acres		STATION
	DELINEATED WETLAND AREA	IMPACTED WETLAND AREA	
WL-2	0.07	0.05	64+71 - 66+20 LT
WL-3	0.02	0.0	70+43 - 70+97 RT
WL-4	2.05	0.14	72+59 - 82+34 LT
WL-5	0.58	0.09	87+47 - 90+44 LT
WL-6	0.03	0.0	113+78 - 115+00 RT
WL-7	0.78	0.18	112+80 RT - 121+82 LT
WL-8	1.63	0.11	144+85 LT - 149+75 RT
WL-9	1.69	0.47	161+70 LT - 168+65 RT
WL-10	0.33	0.14	199+78 RT - 201+36 LT
WL-11	0.78	0.13	219+90 RT - 222+97 LT
WL-12	0.76	0.11	229+31 RT - 235+00 LT
WL-13	1.40	0.30	250+52 LT - 253+93 RT
WL-14	0.29	0.08	266+95 LT - 269+09 RT
TOTAL	10.41	1.80	

SOILS INFORMATION

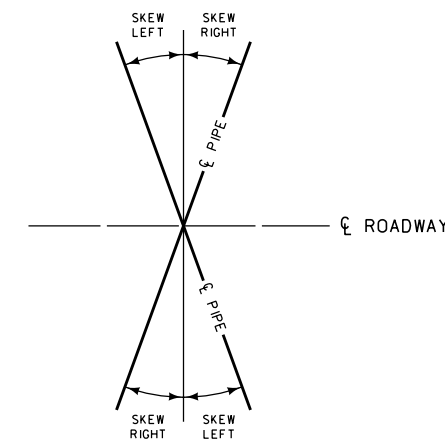
THE SOILS INFORMATION ON THE PLAN, PROFILE & CROSS SECTION SHEETS IS A BRIEF SUMMARY OF THE SOILS CLASSES. TO OBTAIN ANY ADDITIONAL AVAILABLE SOILS INFORMATION, CONTACT THE MDT GEOTECHNICAL SECTION AT (406) 444-6281.

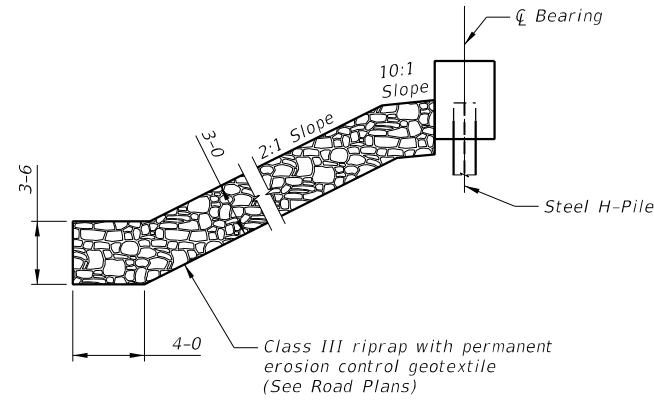
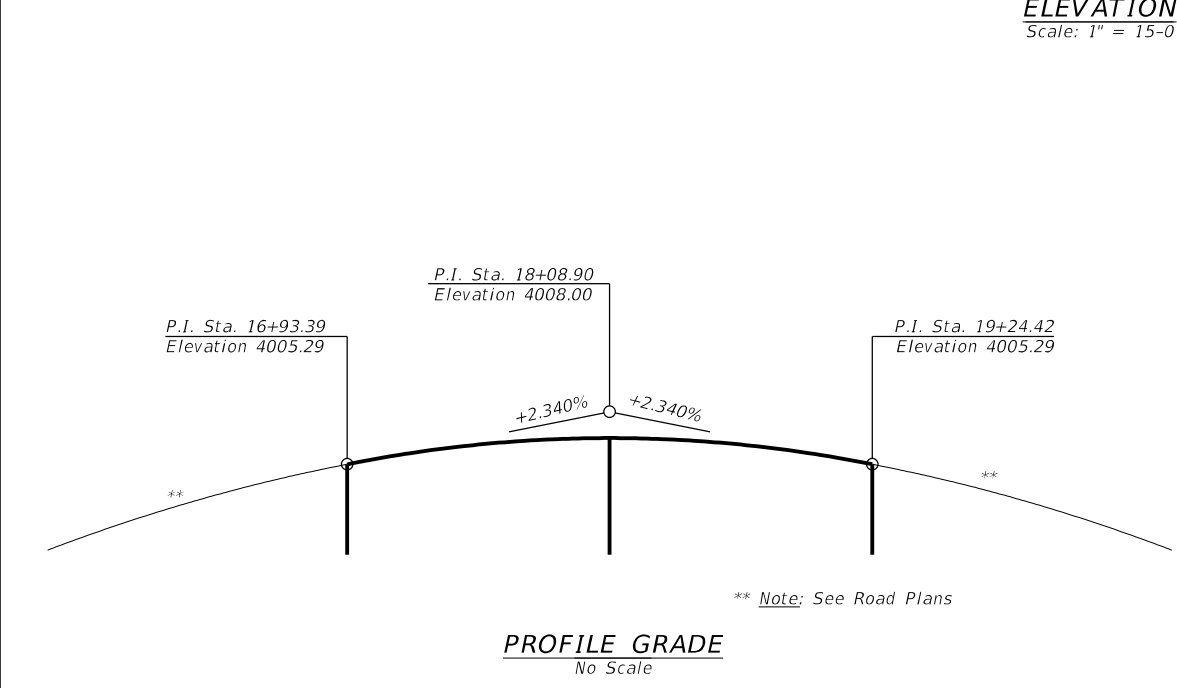
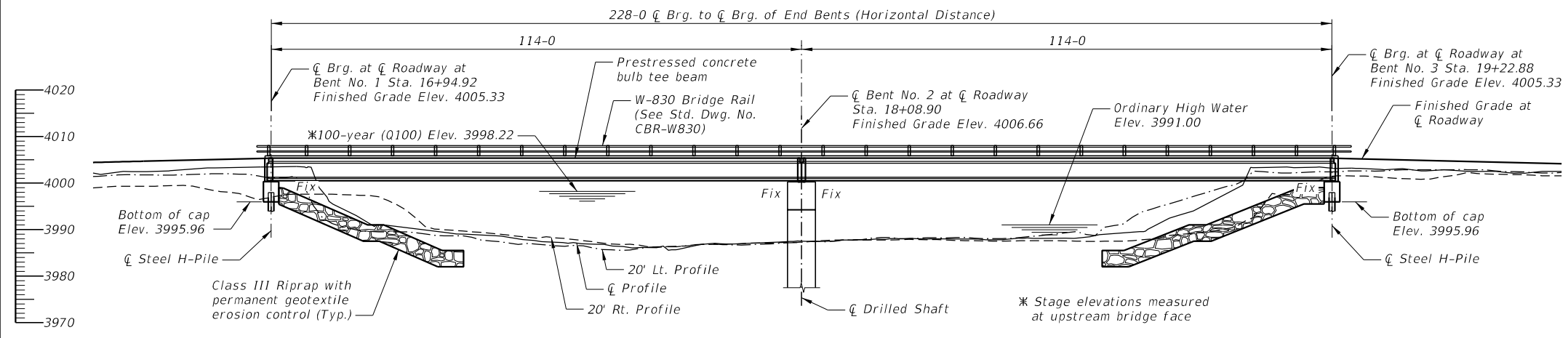
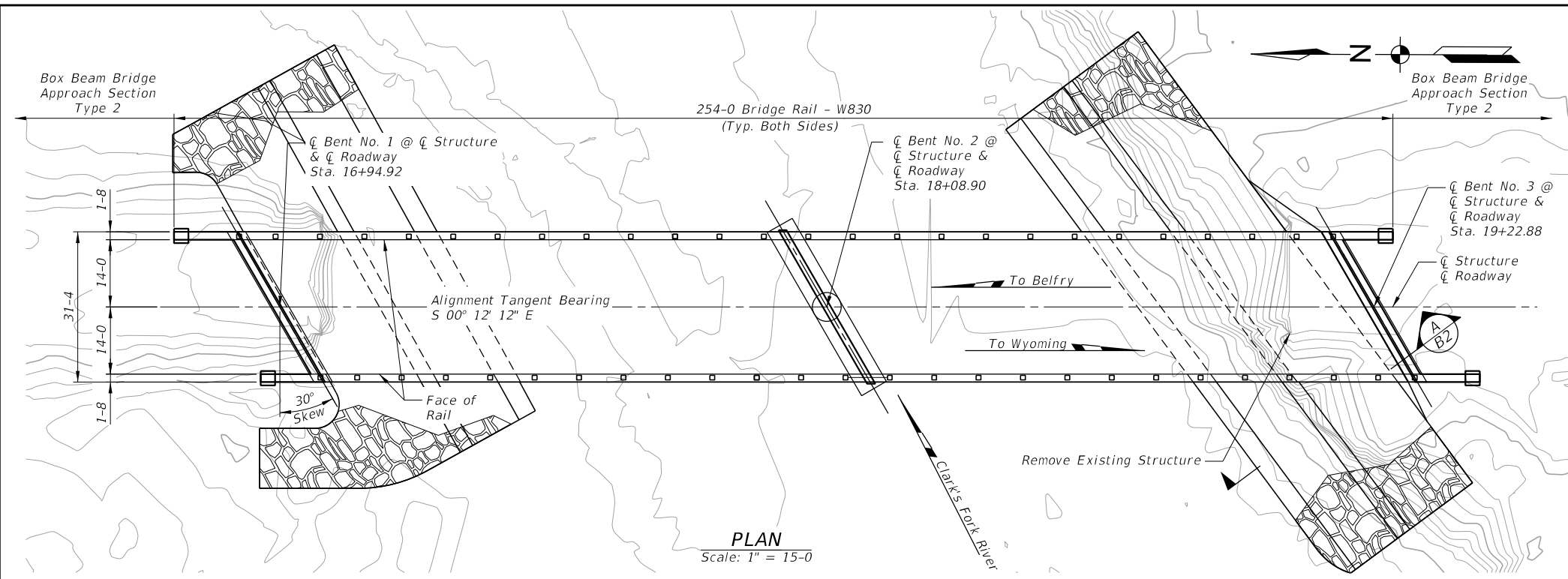
BACKSLOPE ROUNDING

BACKSLOPE ROUNDING IS NOT MEASURED FOR PAYMENT. INCLUDE THE COST OF BACKSLOPE ROUNDING IN THE UNIT PRICE BID FOR UNCLASSIFIED EXCAVATION.



SKREW DIAGRAM





NOTES

FINISHED GRADE: Finished grade of bridge at centerline roadway is the same as the Profile Grade shown on Road Plans.

LIVE LOAD: Standard HL-93 loading.

SPECIFICATIONS: Montana Department of Transportation Standard and Supplemental Specifications for Road and Bridge Construction; 2020 Edition; V1.2 and any amendments thereto, and the Special Provisions govern unless otherwise noted. The design was prepared in accordance with AASHTO LRFD Bridge Design Specifications, Eighth edition - with current Interim revisions.

REINFORCING STEEL: Use new deformed type reinforcing steel meeting the requirements of AASHTO M 31 Grade 60 or ASTM Specification A 706 Grade 60 as specified. Include all costs associated with furnishing and placing new reinforcing steel in the unit price bid for either Reinforcing Steel, Reinforcing Steel - Epoxy or Reinforcing Steel - Seismic.

REINFORCING STEEL SUFFIX: The suffix E denotes epoxy coated reinforcing steel. The suffix W denotes A706 reinforcing steel.

REINFORCING STEEL COVER: Unless specified otherwise on the drawings, the minimum concrete cover measured from the face of the concrete to the face of any reinforcing steel is 2" except as noted below:

Bottom of Slab	1"
Top of Slab	2 1/2"
Bottom of Abutment Caps	3"
Concrete Barriers & Curbs	1 1/2"

Concrete cover to any tie bar is 1/2" less than what is listed above.

CAST IN PLACE CONCRETE: Unless otherwise approved or specified, use Concrete Class Structure for all substructure concrete.

CONCRETE STRENGTH: For structural design purposes only, use $F'c = 4000$ p.s.i. for Concrete Class Structure.

PRESTRESSED CONCRETE BEAMS: Use Class Pre concrete that includes 4-6% entrained air. Maximum $F'c = 7.5$ ksi.

STRUCTURE EXCAVATION: Include structure excavation in the unit price bid for Concrete Class Structure.

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

EXISTING STRUCTURE: Remove the existing structure (see Road Plan sheets and Special Provisions).

STATE PLANE COORDINATES: Stations shown on the bridge plans are state plane grid stations based on (NAD83-1992). Dimensions shown on the bridge plans are horizontal ground distances and not state plane grid distances. The combination scale factor (CSF) at this location is 0.99980387.

Horizontal ground distance x CSF = Grid Distance
Grid Distance/CSF = Distance to stake.

STRUCTURAL STEEL: All structural steel will be measured and paid for on the lump sum basis as set forth in the Standard Specifications. Use structural steel meeting the requirements of AASHTO M 270 Grade 36. Estimated weight = XXX lbs.

HYDRAULIC DATA

Drift: LIGHT
 Low Scour Elevation: 3977.58'
 Ice: MODERATE
 Drainage Area: 1,286 sq. mi.
 * Ordinary High Water: 3991.00'
 10 yr. Flood Flow: 10,830 cfs
 * 10 yr. Flood Stage: 3996.85'
 100 yr. Flood Flow: 14,140 cfs
 * 100 yr. Flood Stage (Q100): 3998.38'
 100yr. Flood Velocity: 8.00 fps
 Actual Low Beam Elevation: 4000.23'
 Allowable Low Beam Elevation: 4000.22'
 Also see Hydraulic Data Summary sheet.
 * Stage elevations are measured approximately 250 feet upstream of the proposed bridge and include backwater.

SHEET NO. B2

GENERAL LAYOUT

BRIDGE OVER THE CLARK'S FORK OF THE YELLOWSTONE RIVER
 BRILLIANT STA. 18+08.90

FEDERAL AID PROJECT STPB 9005(55)
 COUNTY CARBON COUNTY

REVISED	REVISED	REVISED	CHECKED	DRAWN	DESIGNED
			XX-XX-XX	XX-XX-XX	XX-XX-XX
			K.F.Y.	P.K.S.	G.C.G.



ROUTE C005128A
 REF POINT 1+0.399
 MDT STR. ID 02382
 UPN NUMBER 9523000
 DRAWING NO. XXXXX