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MONTANA DEPARTMENT OF TRANSPORTATION

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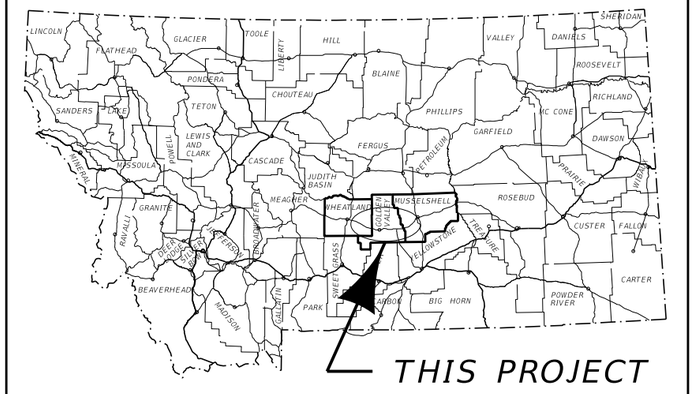
FEDERAL AID PROJECT STPP-NH 14-5(41)159

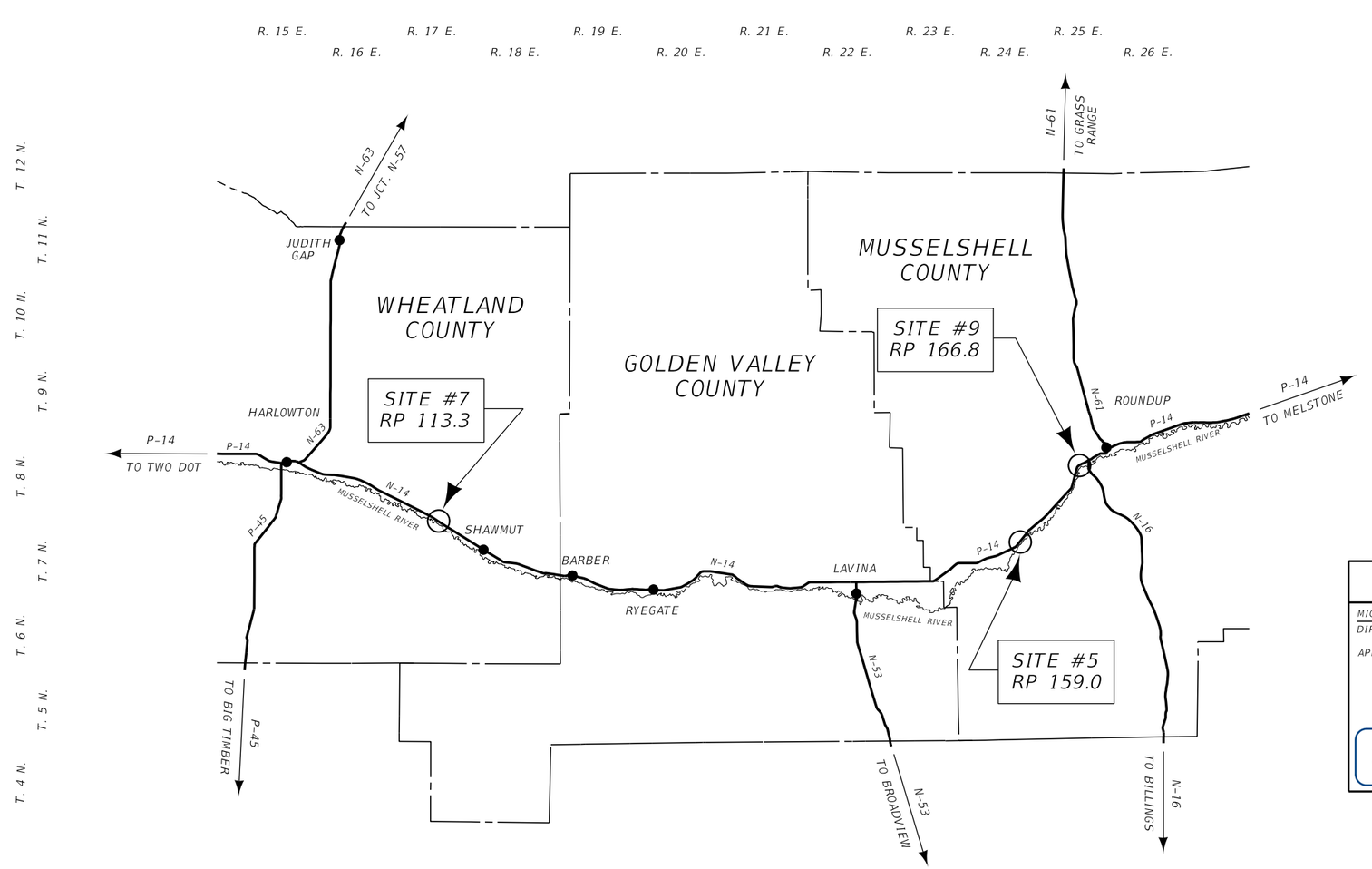
BANK STABILIZATION, PERM. EROSION CONTROL

US-12 BANK STABILIZATION-PH 2

WHEATLAND AND MUSSELSHELL COUNTIES

LENGTH N/A **MILES**





MONTANA
DEPARTMENT OF TRANSPORTATION

MICHAEL T. TOOLEY
DIRECTOR OF TRANSPORTATION

APPROVED BY:

HIGHWAYS ENGINEER

MONTANA
DAMIAN KRINGS
12113PE
LICENSED PROFESSIONAL ENGINEER

DocuSigned by:
Damian Krings
1C71361CE866454...

12/22/2020
DATE

ASSOCIATED PROJECT AGREEMENT NUMBERS	
R / W	STPP 14-3(38)113
I.C.	
P. E.	STPP-NH 14-3(34)122

3	MDT	MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9059001rdtl001.dgn	DESIGNED BY	K. SHUCK	8/4/2020	ROAD PLANS
2			11/5/2020	REVIEWED BY			
			10:26:38 AM CPS - U2160	CHECKED BY			UPN 9059001

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NOTES

UTILITIES

CALL THE UTILITIES UNDERGROUND LOCATION CENTER (811) OR OTHER NOTIFICATION SYSTEM FOR THE MARKING AND LOCATION OF ALL LINES AND SERVICE BEFORE EXCAVATING.

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.	= 5.4% OF PL.MIX BIT.SURF.
HYDRATED LIME	= 1.4% 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)

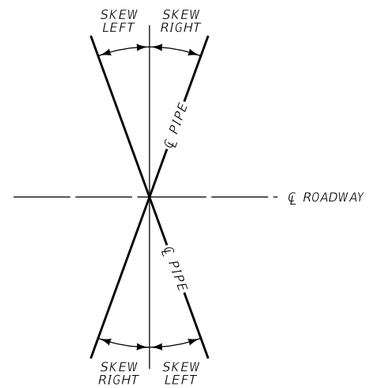
PUBLIC LAND SURVEY MONUMENTS

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

AS - BUILTS

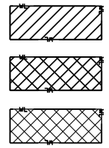
F - 268 (6) SITE 5
NH 14-3(14)108 SITE 7
FAP 268D SITE 9

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

TEMPORARY WETLAND IMPACT AREAS

WETLAND DELINEATION TABLE

WETLAND DESIGNATION	REFERENCE POST		WETLAND AREA (ACRES)			REMARKS
	FROM	TO	* DELINEATED AREA	** IMPACTED AREA (TEMP.)	IMPACTED AREA (PERM.)	
* WL-1	158.918	158.963	0.620	0.000	0.000	SITE 5 - MUSSELSHELL RIVER
TOTAL			0.62	0.00	0.00	

* AREA OF EXISTING WETLAND EXTENDS BEYOND PLAN LIMITS
** TEMPORARY IMPACT AREAS ARE ESTIMATED AND PROVIDED FOR INFORMATIONAL PURPOSES ONLY. TEMPORARY WETLAND IMPACTS SHOWN IN THE TABLE AND ANY OTHER IMPACTS ASSOCIATED WITH CONTRACTOR OPERATIONS ARE TO BE PERMITTED BY CONTRACTOR.

LINEAR AND LEVEL DATA

LENGTH OF ROADWAY	SITE 9	2 LANE RURAL	25.53 ft
TOTAL LENGTH OF	STPP-NH 14-5(41)159	2 LANE RURAL	25.53 ft

BEARING SOURCE

GRID -- MONTANA COORDINATE SYSTEM NAD 83-2011 FOR SITES 5 AND 9
GRID -- MONTANA COORDINATE SYSTEM NAD 83-1992 FOR SITE 7

LEVEL DATUM SOURCE

NAVD 88 (GNSS DERIVED ELEVATIONS USING GEOID 12A AND HOLDING BMS 3260TBM2 FOR SITE 5 AND A8724 AND G8724 FOR SITE 9)

NAVD 88 (GNSS DERIVED ELEVATIONS USING GEOID 96 AND HOLDING BMS 112F AND 618 FOR SITE 7)

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CONTROL DIAGRAM

NO SCALE



CONTROL ABSTRACT

POINT NAME/NUMBER	N OR Y COORDINATE	E OR X COORDINATE	POINT ELEVATION	LOCATION AND DESCRIPTION
3260TBM2	772,791.900	2,182,424.394	3262.194	SET A 2" ALUMINUM CAP ON A 5/8" BY 30" REBAR FLUSH WITH THE GROUND STAMPED 3206TBM2 2016 WEST OF ROUNDUP, MP 161.16 ON US HWY 12 APPROX 150' NORTH ON NGS BM 3260, 51.0' NORTH OF CENTERLINE OF HWY, 14.0' EAST OF CENTERLINE OF CLINIC ROAD, 7.1' SOUTH OF TELEPHONE PEDESTAL, 9.1' SOUTH OF WITNESS POST IN EAST/WEST FENCE.
R9095	763,743.964	2,174,144.486	3279.458	SET 2" MDT ALUMINUM CONTROL CAP STAMPED "R9059 2017" ON A 5/8" X 30" REBAR, 158' SOUTHEAST OF PTW OF U.S. 12 AT MILEPOST 158.8, 6.9' NORTHWEST OF BRACE POST, 4.2' NORTH OF WITNESS POST.
S9095	764,184.578	2,174,582.011	3279.669	SET 2" MDT ALUMINUM CONTROL CAP STAMPED "S9059 2017" ON A 5/8" X 30" REBAR, 125' SOUTHWEST OF PTW OF U.S. 12 AT MILEPOST 158.8, 3' NORTHWEST OF WITNESS POST BY CENTER OF "H" BRACE IN FENCE, 10.3' SOUTH OF RAILROAD BED.

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 SITE 5 IS 0.999304663.

SITE 5
RP 159.0

N

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CONTROL DIAGRAM

NO SCALE



CONTROL ABSTRACT

POINT NAME/NUMBER	N OR Y COORDINATE	E OR X COORDINATE	POINT ELEVATION	LOCATION AND DESCRIPTION
112F	773,014.136	1,946,346.143	3925.22	
113A	772,449.730	1,947,268.290	3921.32	
618	771,942.765	1,948,084.371	3915.24	
P293	772,362.575	1,947,797.855	3917.53	
T9059	771,984.092	1,948,389.155	3912.09	SET MDT 2" CONTROL CAP ON 5/8" X 30" REBAR STAMPED "T8801" FLUSH WITH THE GROUND. THE MONUMENT IS ON US-12 HIGHWAY NORTH SIDE 9' SOUTH OF THE EXISTING R/W FENCE. 81' NORTH OF EDGE OF PAVEMENT. 12' EAST OF APPROACH AT MM 113.2 SET A WITNESS POST 9' NORTH OF CAP.
U9059	772,335.752	1,947,791.362	3917.12	SET MDT 2" CONTROL CAP ON 5/8" X 30" REBAR STAMPED "U8801" FLUSH WITH THE GROUND. THE MONUMENT IS ON US-12 HIGHWAY NORTH SIDE 27' SOUTH OF THE EXISTING R/W FENCE. 63' NORTH OF EDGE OF PAVEMENT. 18' EAST OF APPROACH AT MM 113.8 SET A WITNESS POST 3' EAST OF CAP.
V9059	771,878.985	1,948,287.205	3915.33	SET MDT 2" CONTROL CAP ON 5/8" X 30" REBAR STAMPED "V9059" FLUSH WITH THE GROUND. THE MONUMENT IS ON US-12 HIGHWAY SOUTH SIDE 43' NORTH OF THE EXISTING R/W FENCE. 16' SOUTH OF EDGE OF PAVEMENT. 24' WEST OF APPROACH. AT MM 113.2 SET A WITNESS POST 6' SOUTH OF CAP.

NOTE:
THIS PROJECT IS ON THE MONTANA COORDINATE SYSTEM NAD83-1992.
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 SITE 7 IS 0.999270215.

SITE 7
RP 113.3

N

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CONTROL DIAGRAM

NO SCALE



CONTROL ABSTRACT

POINT NAME/NUMBER	N OR Y COORDINATE	E OR X COORDINATE	POINT ELEVATION	LOCATION AND DESCRIPTION
A8724	791,911.953	2,197,687.840	3219.43	SET A 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR FLUSH WITH THE GROUND STAMBED A8724 2016 WEST OF ROUNDUP, MP 165.9 ON THE EAST SIDE OF US HWY 12 4 FT WEST OF FENCE LINE 5 FT NORTH OF GATE SET JAN 2016.
B8724	792,769.439	2,197,759.334	3210.55	SET A 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR FLUSH WITH THE GROUND STAMBED B8724 2016 WEST OF ROUNDUP, MP 166 ON THE WEST SIDE OF US HWY 12 3 FT EAST OF FENCE LINE 5 FT NORTH OF GATE SET JAN 2016.
C8724	793,807.024	2,198,028.043	3207.38	SET A 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR FLUSH WITH THE GROUND STAMBED C8724 2016 WEST OF ROUNDUP, MP 166.2 ON THE WEST SIDE OF US HWY 12 4 FT WEST OF FENCE LINE SOUTH SIDE OF GATE SET JAN 2016.
D8724	795,205.499	2,198,517.690	3206.57	SET A 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR FLUSH WITH THE GROUND STAMBED D8724 2016 WEST OF ROUNDUP, MP 166.5 ON THE WEST SIDE OF US HWY 12 4 FT EAST OF FENCE LINE 5 FT SOUTH OF GATE SET JAN 2016.
E8724	796,071.183	2,199,654.348	3212.11	SET A 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR FLUSH WITH THE GROUND STAMBED E8724 2016 WEST OF ROUNDUP, MP 166.8 ON THE EAST SIDE OF US HWY 12 ON THE RAIL ROAD BED ACROSS FROM APPROACH AND GATE 3 FT NORTH OF WITNESS POST SET JAN 2016.
F8724	796,496.283	2,200,702.365	3210.10	SET A 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR FLUSH WITH THE GROUND STAMBED F8724 2016 WEST OF ROUNDUP, MP 167 ON THE EAST SIDE OF US HWY 12 ON THE EAST SIDE RAIL ROAD BED 3 FT WEST OF WITNESS POST SET JAN 2016.
G8724	797,012.412	2,201,586.050	3217.02	SET A 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR FLUSH WITH THE GROUND STAMBED G8724 2016 WEST OF ROUNDUP, MP 167.2 ON THE WEST SIDE OF US HWY 12 3 FT EAST OF FENCE LINE 5 FT NORTH OF GATE SET JAN 2016.

NOTE:
THIS PROJECT IS ON THE MONTANA COORDINATE SYSTEM NAD83-2011.
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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 SITE 9 IS 0.99929361.

SITE 9
RP 166.8

N

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SUMMARY

RIPRAP REVETMENT

REFERENCE POST	STATION		cubic yards					REMARKS
	FROM	TO	UNCLASSIFIED EXCAVATION	EMBANKMENT MATERIAL #	RANDOM RIPRAP CLASS III	GRANULAR BEDDING	GEOTEXTILE PERM. EROS. CNTRL. HIGH SURVIVABILITY CLASS B	
RP 113.3	1+70	6+90	3,798	1,820	1,938	221	1,872	SITE 7
SUBTOTAL			3,798	1,820	1,938	221	1,872	NH FUNDING
RP 159.0	162+40	171+30	8,294	4,190	4,432	346	2,769	SITE 5
RP 166.8	71+30	76+80	4,749	5,606	2,060	221	1,872	SITE 9
SUBTOTAL			13,043	9,796	6,492	567	4,641	STPP FUNDING
TOTAL			16,841	~	8,430	788	6,513	

FOR INFORMATION ONLY - INCLUDE IN THE COST OF UNCLASSIFIED EXCAVATION

FENCING

REFERENCE POST	linear feet			each					REMARKS
	REMOVE FENCE	TYPE F3M 32WW	WILDLIFE FRIENDLY FM - TYPE 1	FARM FENCE PANEL SINGLE FW	FARM FENCE PANEL SINGLE FM	FARM FENCE PANEL DOUBLE FW	FARM FENCE PANEL DOUBLE FM	DEADMAN	
RP 159.0	455.0		901.0				5	2	SITE 5
RP 166.8	580.0		580.0				2		SITE 9
SUBTOTAL	1,035.0		1,481.0				7	2	STPP FUNDING
TOTAL	# 1,035.0	~	1,481.0	~	~	~	7	2	

FOR INFORMATION ONLY

SURFACING

STATION		linear feet				FOR	AGGREGATE		BITUMINOUS MATERIAL	REMARKS
							cubic yards	tons	gals	
FROM	TO	GROSS	NET	+	-		CRUSHED AGG. COURSE	COMMERCIAL PL. MIX PG 64-28	EMULISFIED ASPHALT TACK	
75+58.26	75+83.79	25.53	25.53			PROPOSED CULVERT DIGOUT	36	15	8	SITE 9 - STPP FUNDING
TOTAL		25.53	25.53	~	~		36	15	8	

REVEGETATION

REFERENCE POST	square yards		cubic yards	acres	REMARKS
	REVEGETATION	EROSION CONTROL BLANKET - LONG TERM	TOPSOIL SALVAGING & PLACING	SEED	
RP 113.3	3,616		503	0.7	SITE 7
SUBTOTAL	3,616	~	603	0.7	NH FUNDING
RP 159.0	4,200	32	700	0.9	SITE 5
RP 166.8	3,922		554	0.8	SITE 9
SUBTOTAL	8,122	32	1,354	1.7	STPP FUNDING
TOTAL	11,738	# 32	# 1,957	# 2.4	

FOR INFORMATION ONLY

CULVERTS

REFERENCE POST	STATION	lump sum MISC. ITEMS	RCP in	linear feet LENGTH OF PIPE	linear feet REMOVE CULVERT	CLASS OR THK.	COATING	END SECTIONS LEFT	END SECTIONS RIGHT	linear feet HEIGHT OF COVER	SKEW ANGLE	CULVERT IN PL. in x ft	linear feet RELAY CULVERT	cubic yards FILL & ABANDON PIPE	REMARKS
113.3	6+19.04				28	0.109	NONE	FETS	FETS	7.5	2° LT	24"x115'	28		SITE 7 - NH FUNDING; RELAY 28' OF 24"x115' CSP
159.0		1				0.064	NONE	FETS	FETS						SITE 5 - STPP FUNDING; STOCKPILE 72"x340' CSP AT SITE, 3"x1" CORR.
166.8	75+32.80		30	52		CL. 3	NONE	SQ FETS	FETS	10.3	23° RT				SITE 9 - STPP FUNDING
166.8	75+62.54		30	100		CL. 3	NONE	FETS	SQ FETS	4.5	23° RT				SITE 9 - STPP FUNDING
166.8	76+22.18				12							48"x68'		26	SITE 9 - STPP FUNDING; REMOVE 12' OF 48"x68' RCP; FILL & ABANDON
166.8	76+24.33											24"x58'		7	SITE 9 - STPP FUNDING; 24"x58' CMP; FILL & ABANDON
166.8	76+27.17				12							48"x68'		26	SITE 9 - STPP FUNDING; REMOVE 12' OF 48"x68' RCP; FILL & ABANDON
TOTAL		1	~	~	52	~	~	~	~	~	~	~	28	59	

TEMPORARY SHORING

REFERENCE POST	STATION		linear feet	REMARKS
	FROM	TO	TEMPORARY SHORING	
113.3	35+00	40+20	520	SITE 7
SUBTOTAL			520	NH FUNDING
159.0	162+30	171+40	910	SITE 5
166.8	71+20	76+60	540	SITE 9
SUBTOTAL			1,450	STPP FUNDING
TOTAL			1,970	

MEDIAN INLET

REFERENCE POST	STATION	each MEDIAN INLET TYPE 3	REMARKS
RP 166.8	75+42.98	1	SITE 9
SUBTOTAL		1	STPP FUNDING
TOTAL		1	

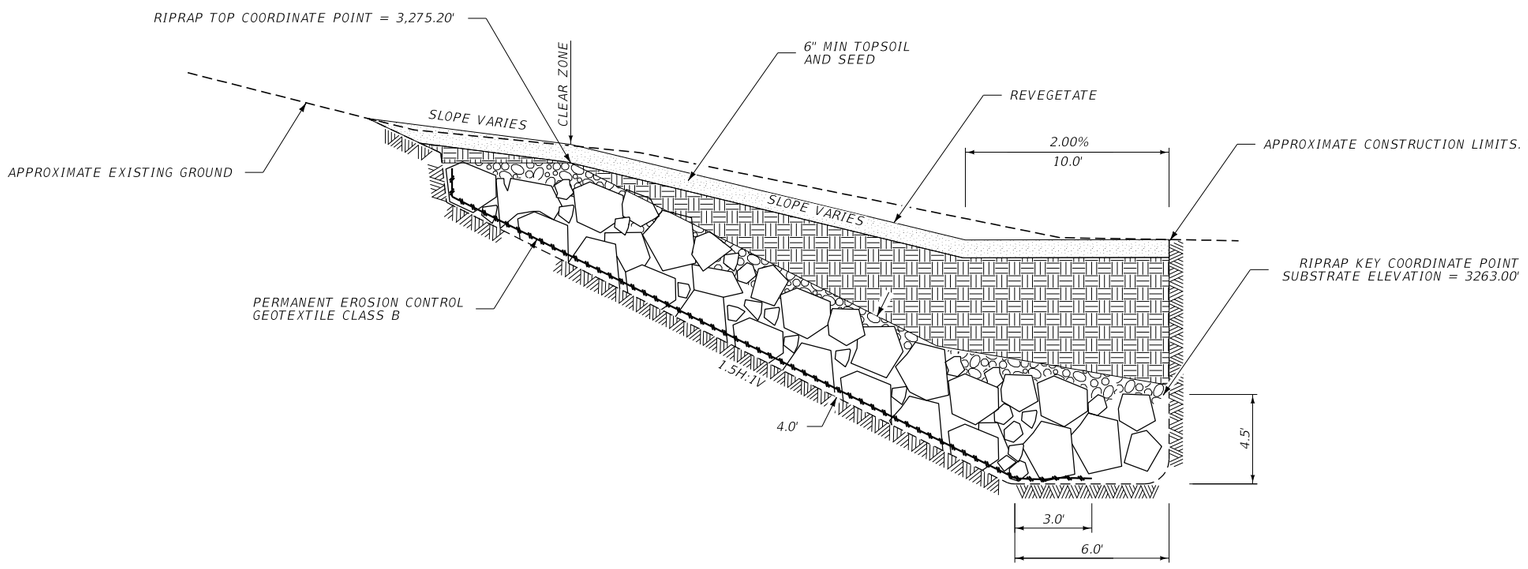
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DETAIL

STA. 162+20 TO STA. 162+40 TRANS. EXISTING TO TYP. A AT 10:1
STA. 162+40 TO STA. 171+23.73 TYP. A
STA. 171+23.73 TO STA. 171+43.73 TRANS. TYP. A TO EXISTING AT 10:1

TYPICAL A

* NOTE: TEMPORARY SHORING REQUIRED LOCATE SHEET PILING TO LIMIT IMPACTS TO RAILROAD EMBANKMENT AS DIRECTED BY THE PROJECT MANAGER



LEGEND

CLASS III RIPRAP

EXISTING GROUND

PERMANENT EROSION CONTROL GEOTEXTILE - CLASS B

EMBANKMENT MATERIAL

GRANULAR BEDDING

EXCAVATION

TOPSOIL AND SEEDING

SITE 5 BURIED RIPRAP DETAIL

NO SCALE

3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9059001rddet001.dgn	DESIGNED BY K. SHUCK	8/4/2020	ROAD PLANS	US-12 BANK STABILIZATION-PH 2	STPP-NH 14-5(41)159
2		11/5/2020	REVIEWED BY				
		10:37:44 AM CPS - U2160	CHECKED BY		MUSSELSHELL COUNTY	UPN 9059001	07

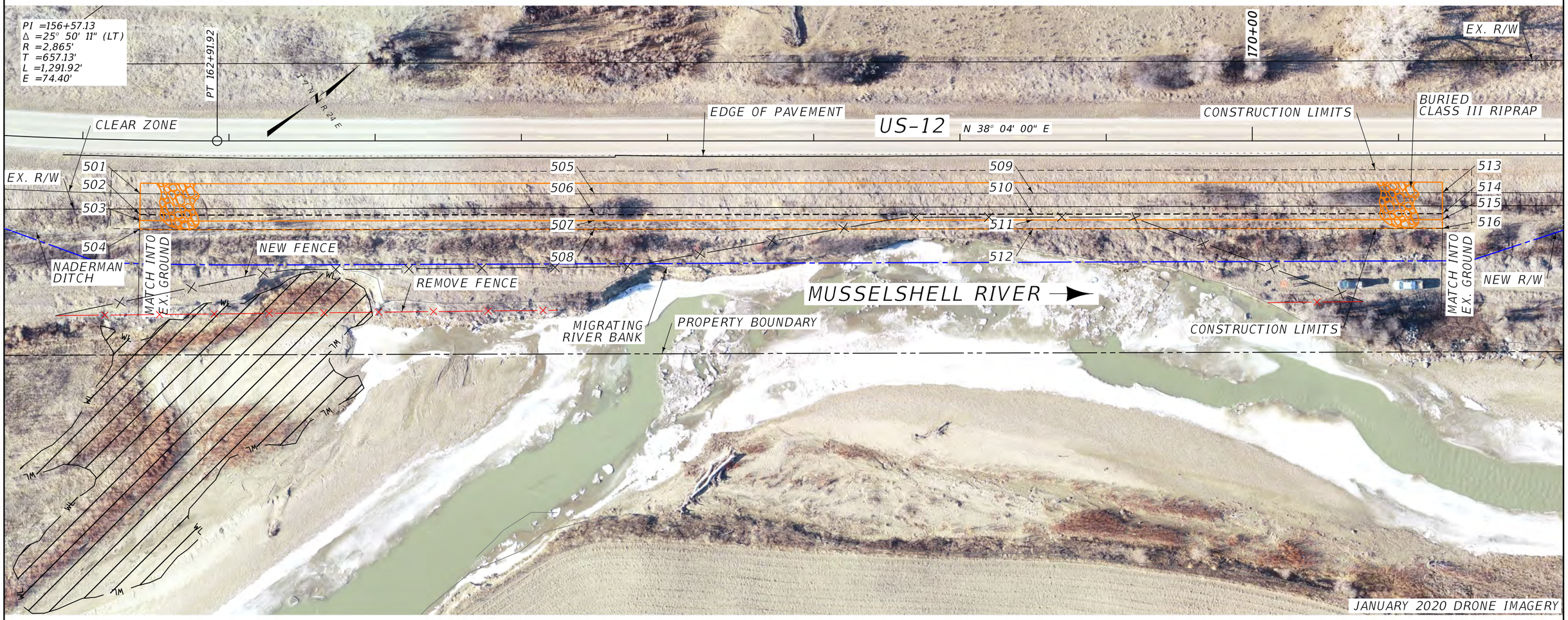
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WL-1
DEL 0.62 AC
IMP 0.00 AC

DETAIL

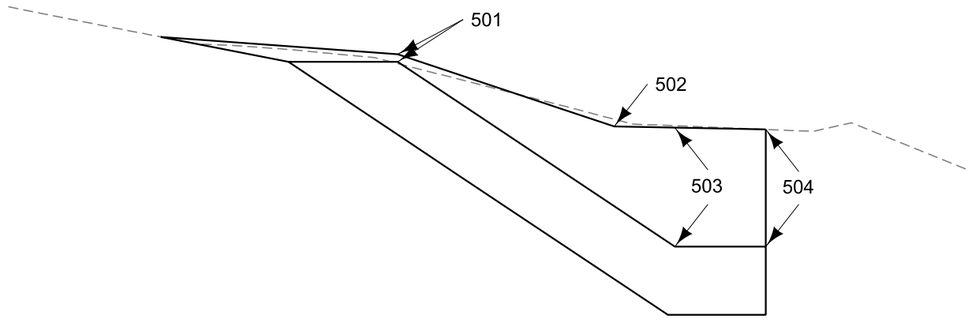
NOTE: CONSTRUCTION CENTERLINE SHOWN.
CONSTRUCTION AND R/W CENTERLINES DIFFER.
REFER TO R/W PLANS FOR R/W CENTERLINE.



RIPRAP COORDINATE TABLE

POINT	N OR Y COORDINATE	E OR X COORDINATE	RIPRAP TOP ELEVATION	RIPRAP KEY ELEVATION	FINISHED GROUND ELEVATION	STATION	DESCRIPTION
501	764,373.3098	2,174,636.0340	3,275.20		3,275.70	162+40	RIPRAP TOP
502	764,364.3039	2,174,647.1420			3,271.42	162+40	BEGIN DITCH BOTTOM
503	764,361.7847	2,174,650.2490		3,263.00	3,271.34	162+40	RIPRAP KEY
504	764,358.0059	2,174,654.9100		3,263.00	3,271.22	162+40	RIPRAP KEY
505	764,617.7894	2,174,827.6360	3,275.20		3,275.70	165+50	RIPRAP TOP
506	764,608.9723	2,174,838.8940			3,271.00	165+50	BEGIN DITCH BOTTOM
507	764,606.5060	2,174,842.0440		3,263.00	3,270.92	165+50	RIPRAP KEY
508	764,602.8066	2,174,846.7670		3,263.00	3,270.80	165+50	RIPRAP KEY
509	764,854.1985	2,175,012.3270	3,275.20		3,275.70	168+50	RIPRAP TOP
510	764,845.3814	2,175,023.5860			3,271.06	168+50	BEGIN DITCH BOTTOM
511	764,842.9151	2,175,026.7350		3,263.00	3,270.93	168+50	RIPRAP KEY
512	764,839.2157	2,175,031.4590		3,263.00	3,270.81	168+50	RIPRAP KEY
513	765,074.8470	2,175,184.7060	3,275.20		3,275.70	171+30	RIPRAP TOP
514	765,066.0299	2,175,195.9640			3,270.62	171+30	BEGIN DITCH BOTTOM
515	765,063.5636	2,175,199.1130		3,263.00	3,270.54	171+30	RIPRAP KEY
516	765,059.8641	2,175,203.8370		3,263.00	3,270.42	171+30	RIPRAP KEY

TYPICAL A POINT CALLOUT



SITE 5 REPAIR DETAIL

NO SCALE

3 / 1	MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9059001rddet001.dgn 11/5/2020 10:37:49 AM CPS - U2160	DESIGNED BY K. SHUCK REVIEWED BY CHECKED BY	8/4/2020	ROAD PLANS MUSSELSHELL COUNTY	US-12 BANK STABILIZATION-PH 2 UPN 9059001	STPP-NH 14-5(41)159 08

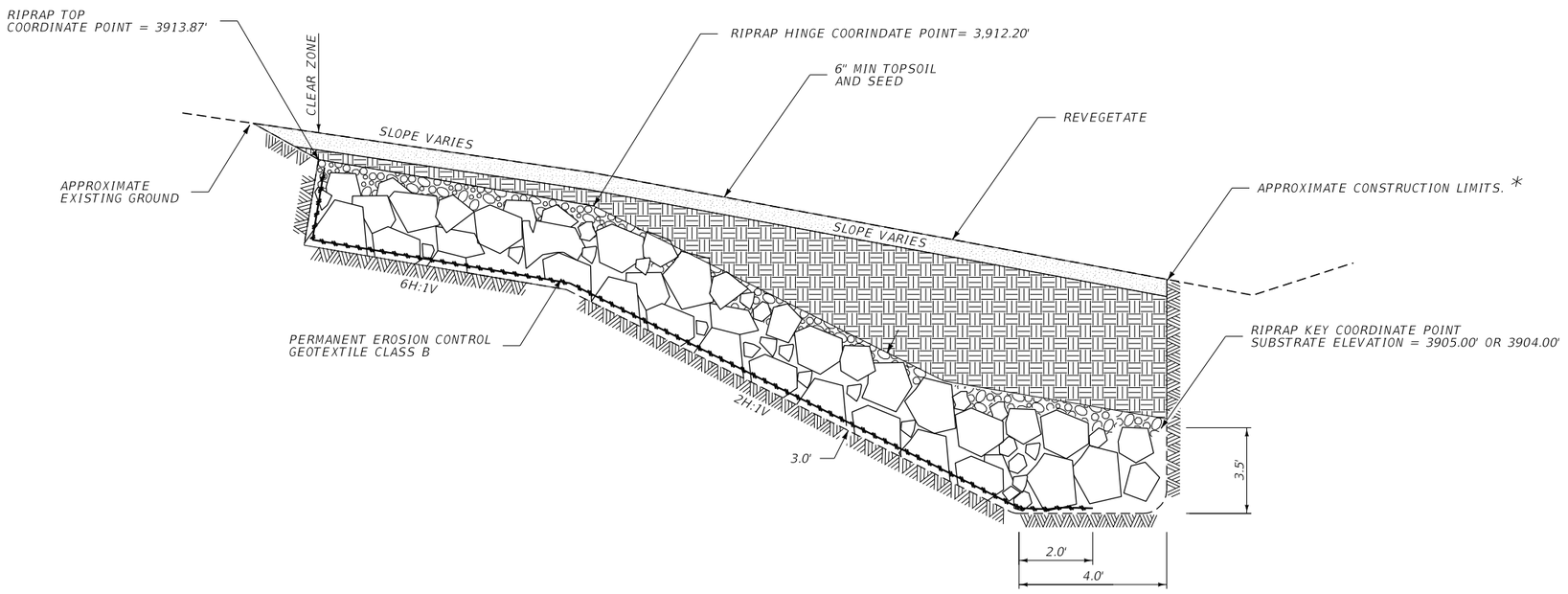
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DETAIL

STA. 1+70.00 TO STA. 6+90.00 TYP. B

TYPICAL B

* NOTE: TEMPORARY SHORING REQUIRED
LOCATE SHEET PILING TO LIMIT IMPACTS
TO RAILROAD EMBANKMENT AS DIRECTED BY
THE PROJECT MANAGER



LEGEND

CLASS III RIPRAP

EXISTING GROUND

PERMANENT EROSION CONTROL
GEOTEXTILE - CLASS B

EMBANKMENT MATERIAL

GRANULAR BEDDING

EXCAVATION

TOPSOIL AND SEEDING

SITE 7
BURIED RIPRAP
DETAIL

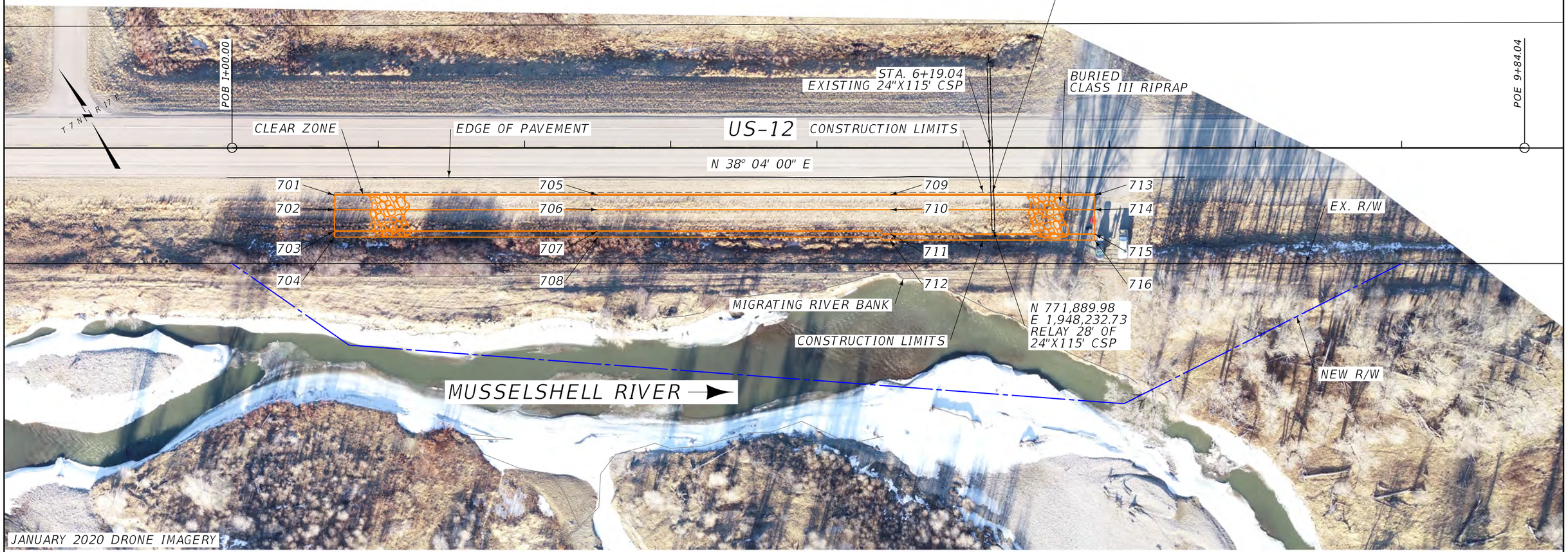
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2		11/5/2020	REVIEWED BY		WHEATLAND COUNTY	UPN 9059001	09
		10:38:13 AM CPS - U216C	CHECKED BY				

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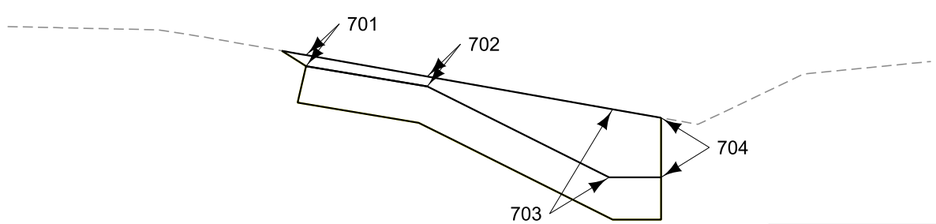
DETAIL



RIPRAP COORDINATE TABLE

POINT	N OR Y COORDINATE	E OR X COORDINATE	RIPRAP TOP ELEVATION	RIPRAP HINGE ELEVATION	RIPRAP KEY ELEVATION	FINISHED GROUND ELEVATION	STATION	DESCRIPTION
701	772,148.4035	1,947,862.6362	3,913.87			3,916.38	1+70	RIPRAP TOP
702	772,139.9091	1,947,857.3592		3,912.20		3,914.74	1+70	RIPRAP HINGE
703	772,127.6773	1,947,849.7603			3,905.00	3,912.07	1+70	RIPRAP KEY
704	772,124.0309	1,947,847.4950			3,905.00	3,911.27	1+70	RIPRAP KEY
705	772,124.0309	1,947,847.4950	3,913.87			3,915.02	3+50	RIPRAP TOP
706	772,044.9232	1,948,010.2566		3,912.20		3,913.34	3+50	RIPRAP HINGE
707	772,032.6914	1,948,002.6578			3,905.00	3,910.91	3+50	RIPRAP KEY
708	772,029.0449	1,948,000.3925			3,905.00	3,910.19	3+50	RIPRAP KEY
709	771,947.8774	1,948,185.4198	3,913.87			3,914.42	5+50	RIPRAP TOP
710	771,939.3831	1,948,180.1428		3,912.20		3,912.70	5+50	RIPRAP HINGE
711	771,925.4525	1,948,171.4885			3,904.00	3,909.80	5+50	RIPRAP KEY
712	771,921.8061	1,948,169.2232			3,904.00	3,909.03	5+50	RIPRAP KEY
713	771,874.0006	1,948,304.3381	3,913.87			3,915.72	6+90	RIPRAP TOP
714	771,865.5063	1,948,299.0611		3,912.20		3,915.34	6+90	RIPRAP HINGE
715	771,851.5757	1,948,290.4068			3,904.00	3,914.89	6+90	RIPRAP KEY
716	771,847.9289	1,948,288.1413			3,904.00	3,914.77	6+90	RIPRAP KEY

TYPICAL B POINT CALLOUT



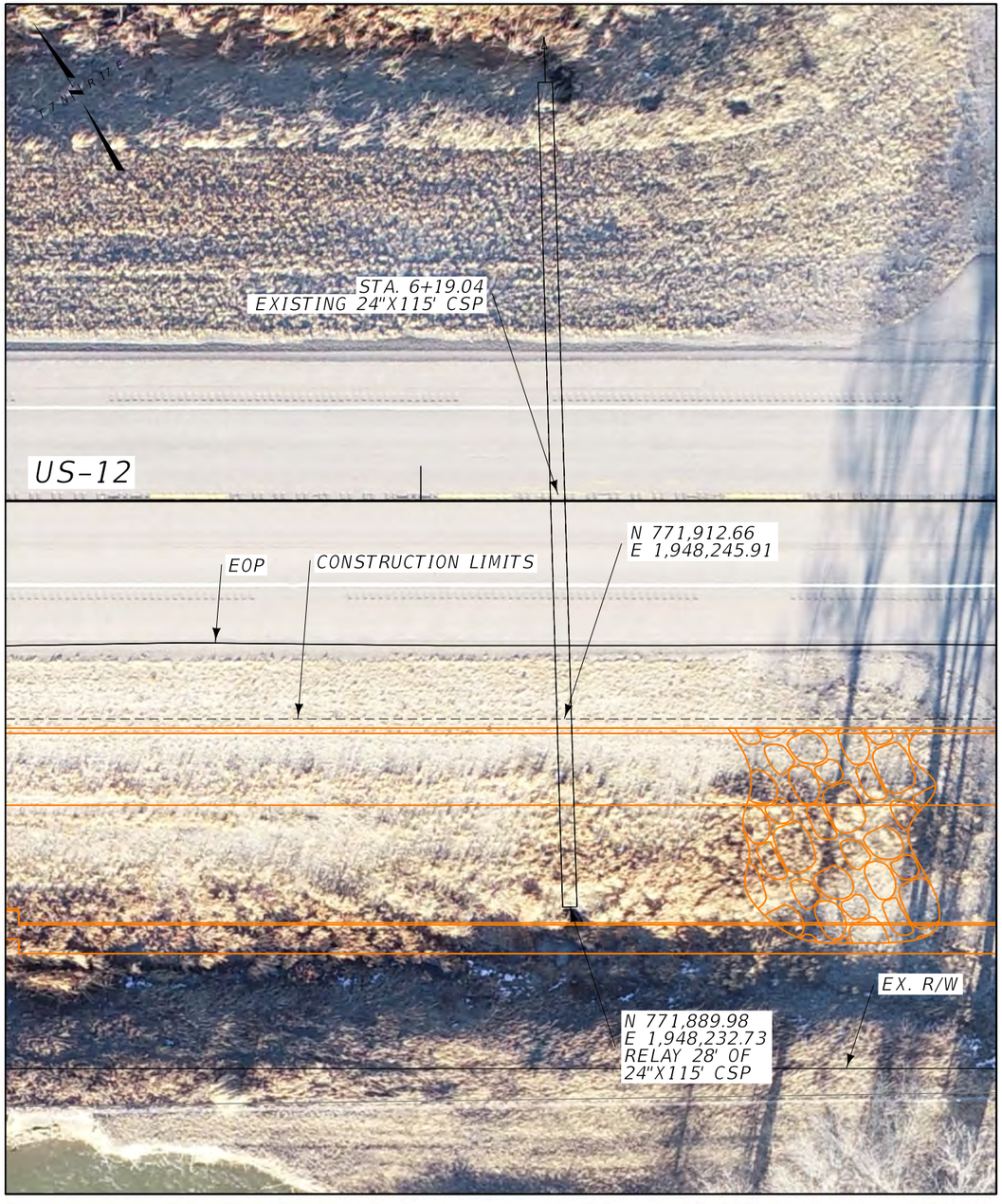
SITE 7 REPAIR DETAIL

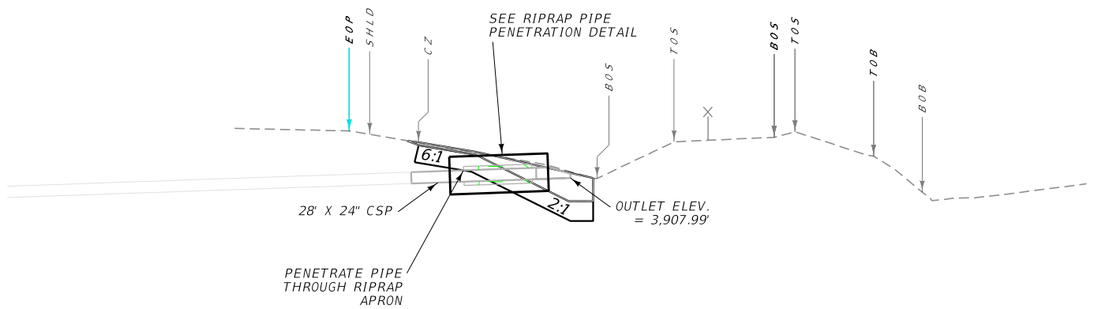
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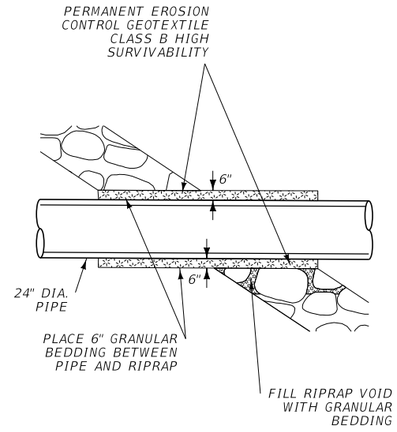
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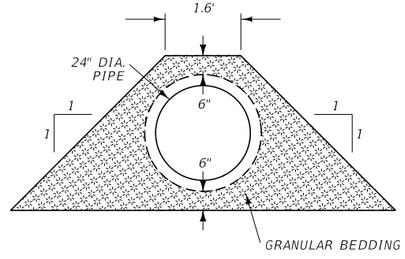
DETAIL







RIPRAP PIPE PENETRATION DETAIL *



PENETRATION SECTION

* NOTE: INCLUDE GRANULAR BEDDING AND GEOTEXTILE IN COST OF PIPE

SITE 7
CULVERT DETAIL

NO SCALE

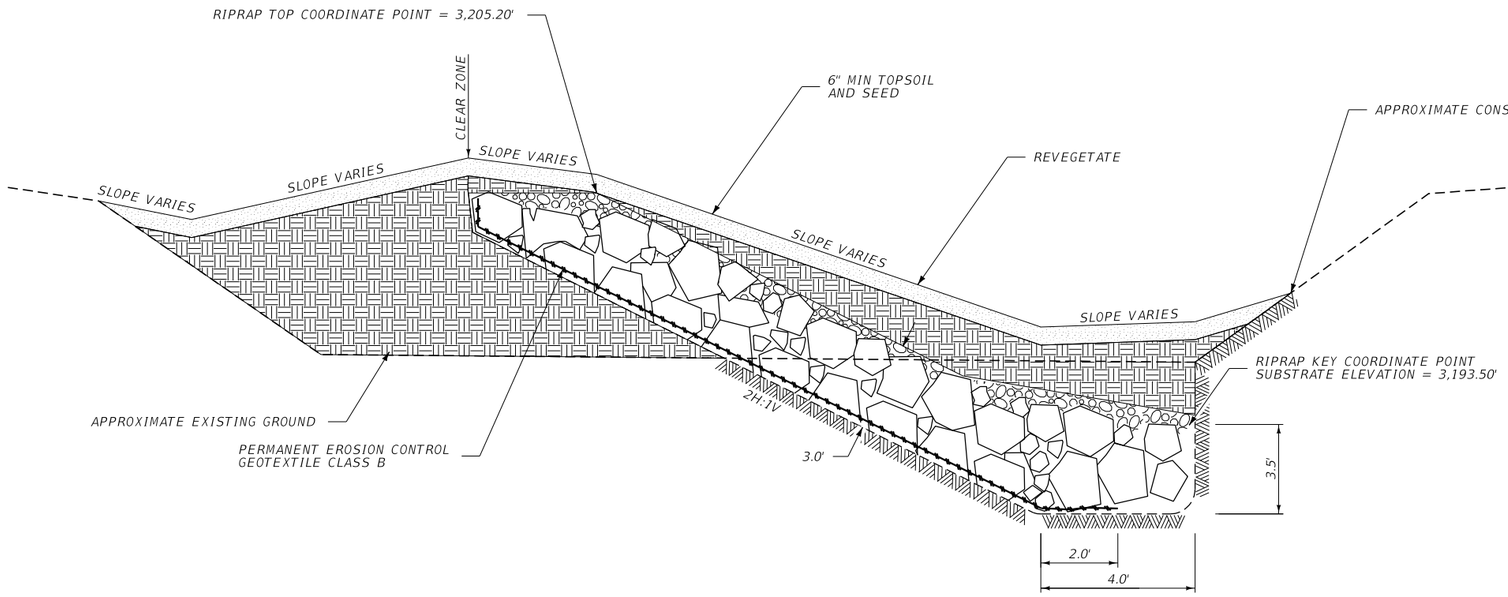
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DETAIL

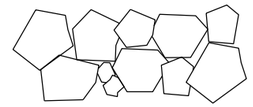
STA. 71+00.00 TO STA. 71+30.00 TRANS. EXISTING TO TYP. C AT 10:1
STA. 71+30.00 TO STA. 76+50.00 TYP. C
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TYPICAL C



* NOTE: TEMPORARY SHORING REQUIRED LOCATE SHEET PILING TO LIMIT IMPACTS TO RAILROAD EMBANKMENT AS DIRECTED BY THE PROJECT MANAGER

LEGEND



CLASS III RIPRAP

EXISTING GROUND

PERMANENT EROSION CONTROL GEOTEXTILE - CLASS B

EMBANKMENT MATERIAL

GRANULAR BEDDING

EXCAVATION

TOPSOIL AND SEEDING

SITE 9 BURIED RIPRAP DETAIL

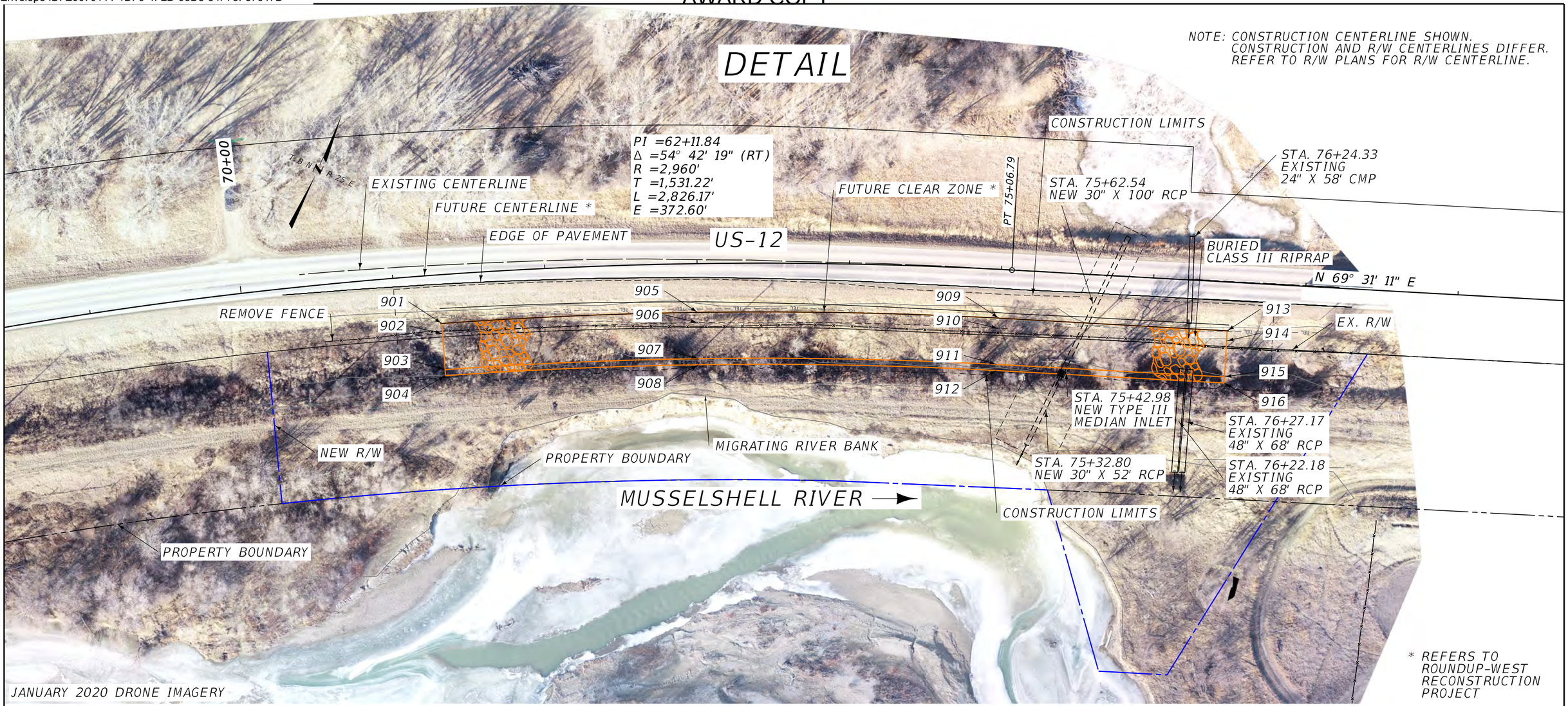
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AWARD COPY

DETAIL

NOTE: CONSTRUCTION CENTERLINE SHOWN.
CONSTRUCTION AND R/W CENTERLINES DIFFER.
REFER TO R/W PLANS FOR R/W CENTERLINE.

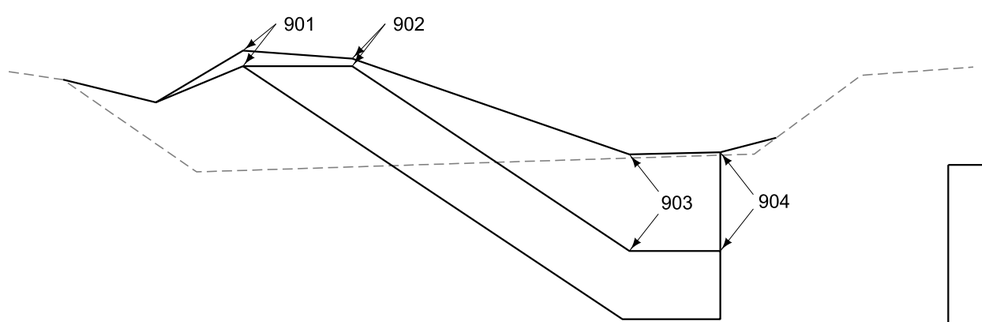


* REFERS TO ROUNDUP-WEST RECONSTRUCTION PROJECT

RIPRAP COORDINATE TABLE

POINT	N OR Y COORDINATE	E OR X COORDINATE	RIPRAP TOP ELEVATION	RIPRAP KEY ELEVATION	FINISHED GROUND ELEVATION	STATION	DESCRIPTION
901	796,183.9820	2,199,743.4767	3,205.20		3,205.95	71+30	RIPRAP TOP
902	796,178.0468	2,199,746.6025	3,205.20		3,205.70	71+30	RIPRAP TOP
903	796,157.0836	2,199,757.6429		3,193.50	3,205.07	71+30	RIPRAP KEY
904	796,153.5444	2,199,759.5068		3,193.50	3,206.20	71+30	RIPRAP KEY
905	796,258.0279	2,199,894.4335	3,205.20		3,205.95	73+00	RIPRAP TOP
906	796,251.9230	2,199,897.2134	3,205.20		3,205.70	73+00	RIPRAP TOP
907	796,230.3711	2,199,907.0276		3,193.50	3,204.50	73+00	RIPRAP KEY
908	796,226.7203	2,199,908.6900		3,193.50	3,205.87	73+00	RIPRAP KEY
909	796,333.8740	2,200,077.1143	3,205.20		3,205.95	75+00	RIPRAP TOP
910	796,327.5954	2,200,079.4758	3,205.20		3,205.70	75+00	RIPRAP TOP
911	796,305.4702	2,200,087.7972		3,193.50	3,203.81	75+00	RIPRAP KEY
912	796,301.7263	2,200,089.2054		3,193.50	3,204.14	75+00	RIPRAP KEY
913	796,386.3383	2,200,217.5617	3,205.20		3,205.95	76+50	RIPRAP TOP
914	796,380.0543	2,200,219.9087	3,205.20		3,205.70	76+50	RIPRAP TOP
915	796,357.9121	2,200,228.1787		3,193.50	3,204.00	76+50	RIPRAP KEY
916	796,354.1712	2,200,229.5759		3,193.50	3,204.19	76+50	RIPRAP KEY

TYPICAL C POINT CALLOUT

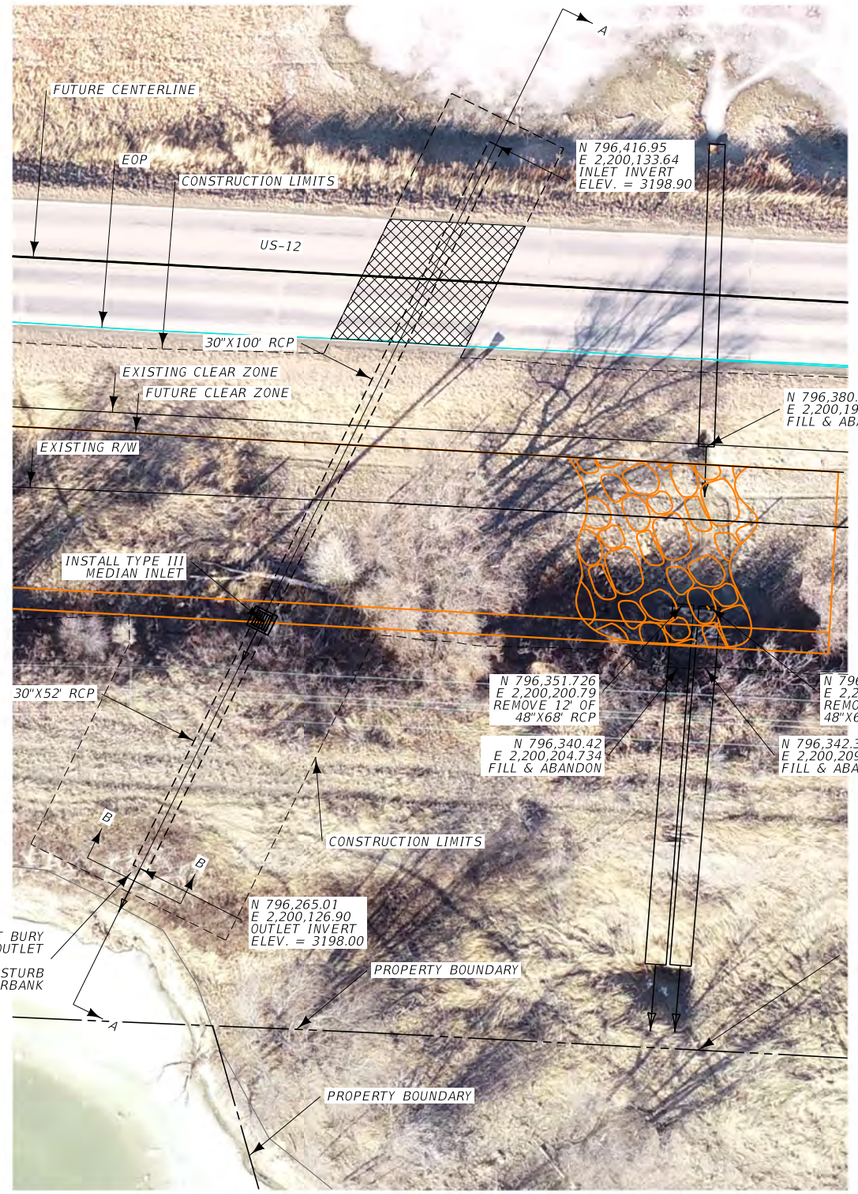


SITE 9 REPAIR DETAIL

NO SCALE

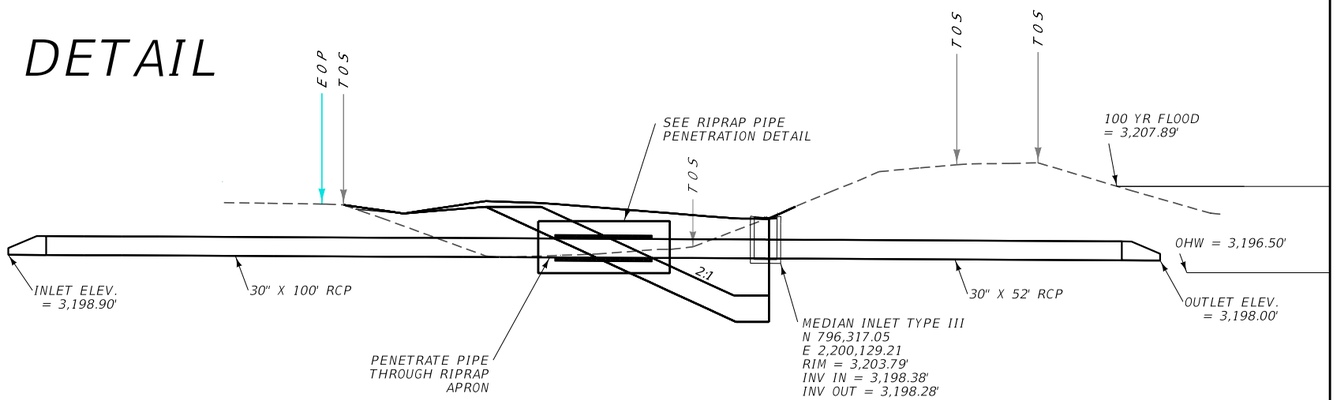
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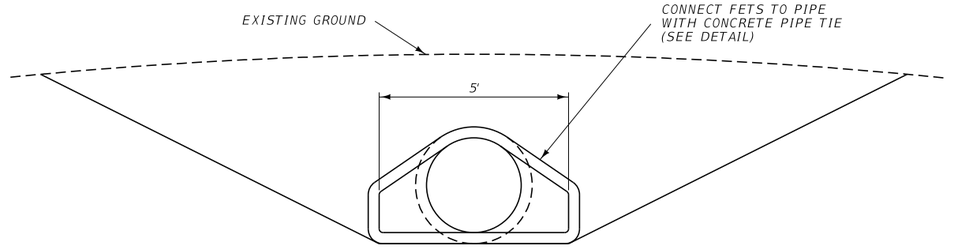


PAVEMENT REPLACEMENT AREA, SEE CULVERT DIGOUT DETAIL

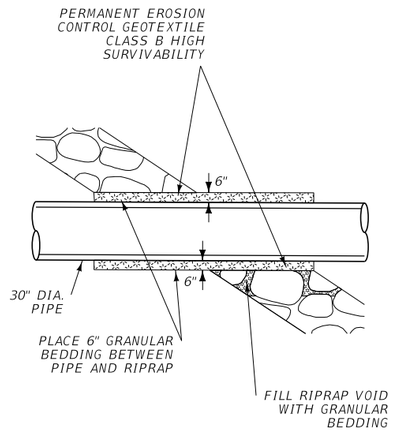
DETAIL



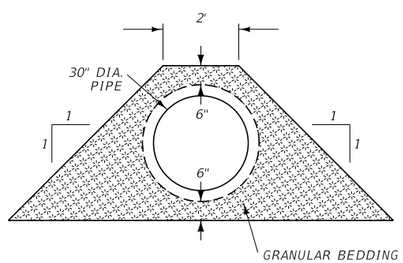
SECTION A-A



SECTION B-B



RIPRAP PIPE PENETRATION DETAIL *



PENETRATION SECTION

* NOTE: INCLUDE GRANULAR BEDDING AND GEOTEXTILE IN COST OF PIPE

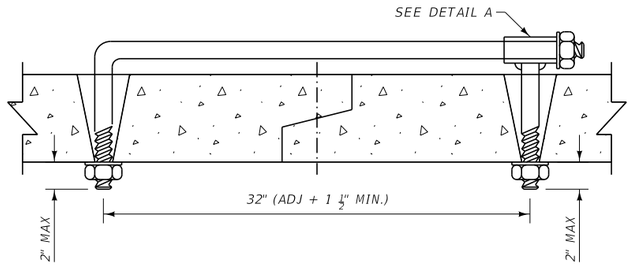
SITE 9
CULVERT DETAIL

NO SCALE

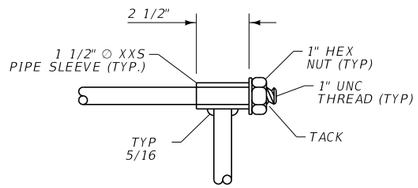
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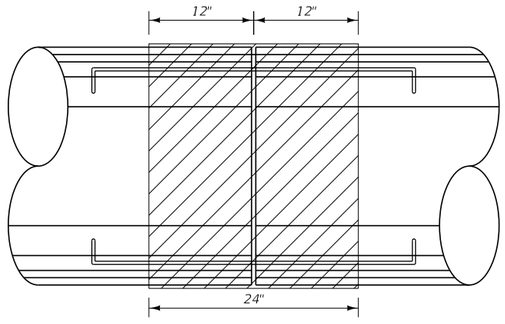


CONCRETE PIPE TIE

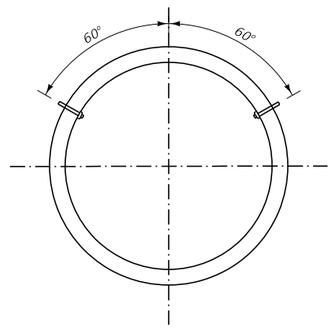


DETAIL A

REQUIRED SIZE OF TIE BOLTS		
PIPE SIZE	THREAD Ø	XXS PIPE SLEEVE INNER ∅
18" - 24"	5/8"	3/4"
30" - 66"	3/4"	1"
72" - 78"	1"	1 1/4"
RCB/ CATTLE PASS		



PLAN VIEW



END VIEW

NOTES:

1. THE PIPE SIZE LISTED IS THE INSIDE DIAMETER OF ROUND PIPE OR THE EQUIVALENT DIAMETER OF PIPE ARCH
2. TIE BOLT ASSEMBLY IS HOT DIP GALVANIZED IN ACCORDANCE WITH AASHTO M232.
3. HOLES IN PIPES TO ACCOMMODATE TIE BOLTS CAN BE PRECAST OR DRILLED. TAPERED HOLES ARE PERMITTED WHEN PRECAST.
4. TIE BOLTS WILL CONFORM TO ASTM A 36. NUTS WILL BE HEAVY HEX AND CONFORM TO ASTM A 563. WASHERS WILL CONFORM TO ASTM F 436, TYPE 1. WELDED PIPE SLEEVES AND CAST-IN BOLT SLEEVES WILL CONFORM TO ASTM A 53, GRADE B.
5. INSTALL TIE BOLTS BETWEEN FETS AND FIRST SECTION OF PIPE ON BOTH ENDS OF CULVERT. AT OUTLET END OF CULVERT, ALSO INSTALL TIE BOLTS BETWEEN THE FIRST TWO SECTION OF PIPE.
6. INCLUDED IN THE COST OF THE PIPE

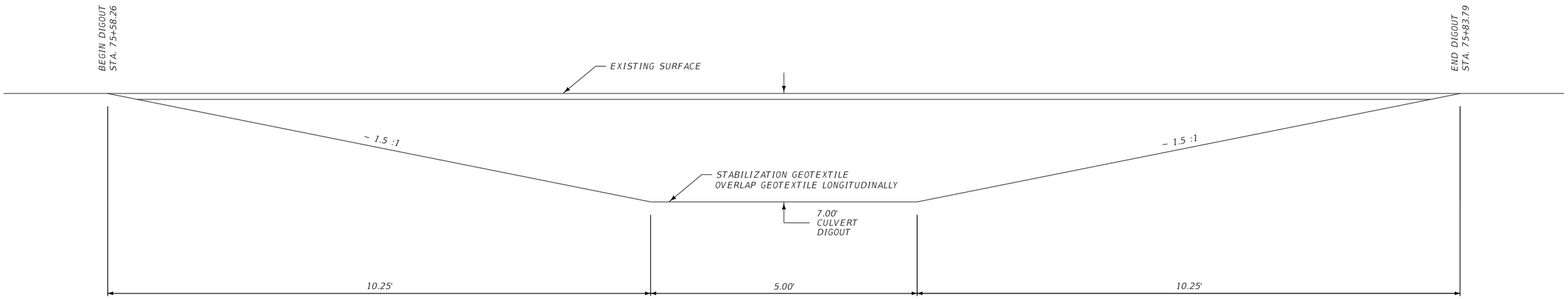
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CONCRETE PIPE TIE DETAIL

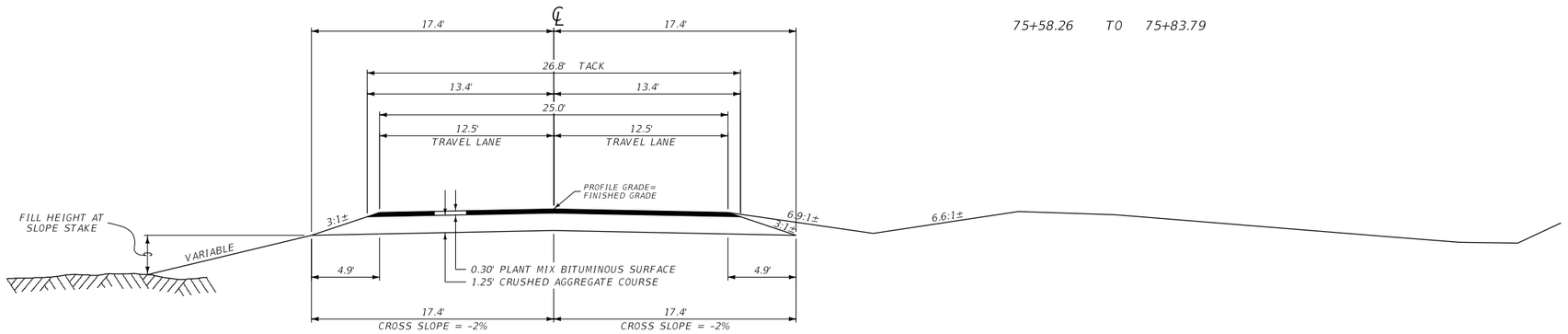
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DETAIL





75+58.26 TO 75+83.79

QUANTITIES

UNIT	AGGREGATE						UNIT	BITUMINOUS MATERIAL				
		COMMERCIAL PLANT MIX	CR. AGG. COURSE								EMULSIFIED ASPHALT TACK*	
AREA square feet		7.77	38.50				square yards PER STATION				596	
cubic yards PER STATION		28.8	142.6				tons PER STATION					
tons PER STATION		60.0					gals. PER STATION				30	
square yards PER STATION												

*BASED ON 2 APPLICATIONS

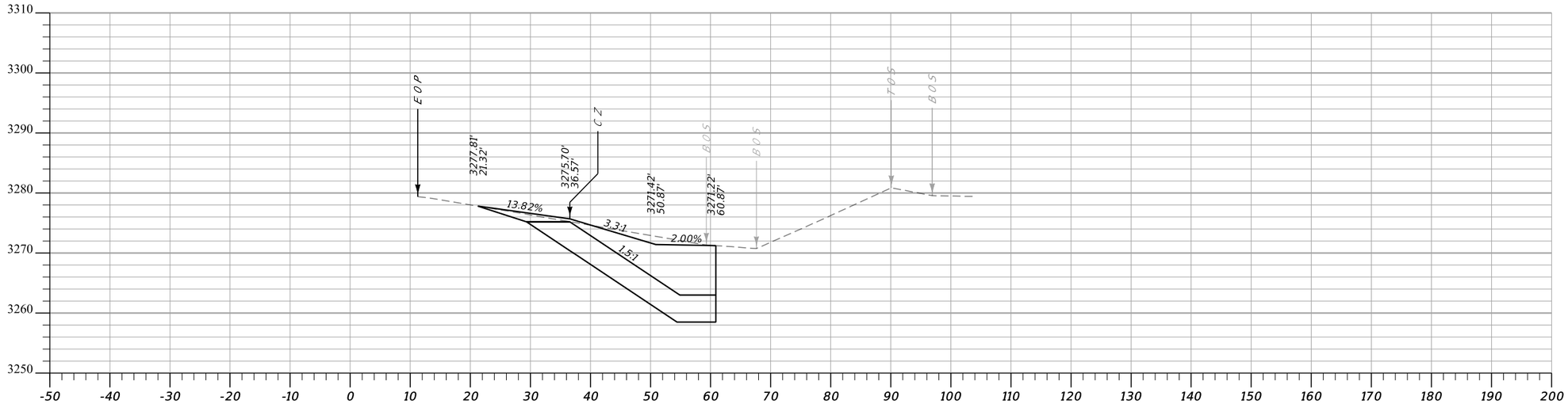
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PROPOSED CULVERT
DIGOUT DETAIL

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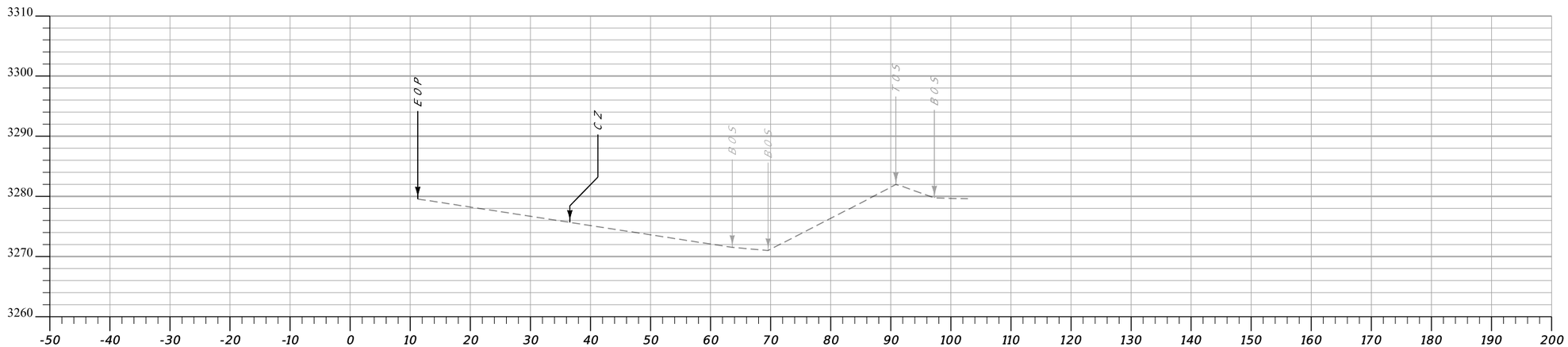
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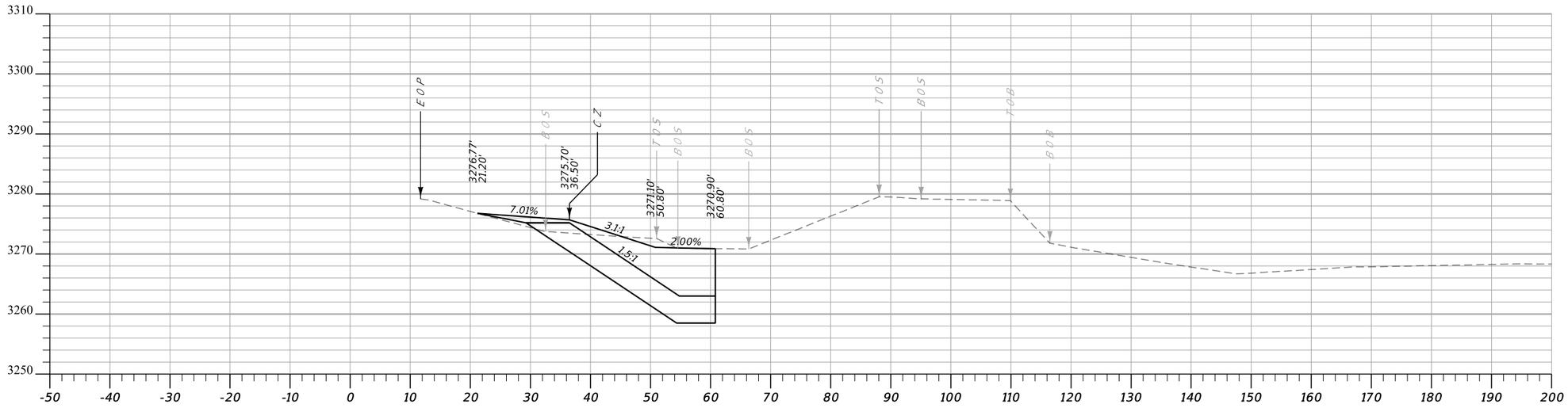
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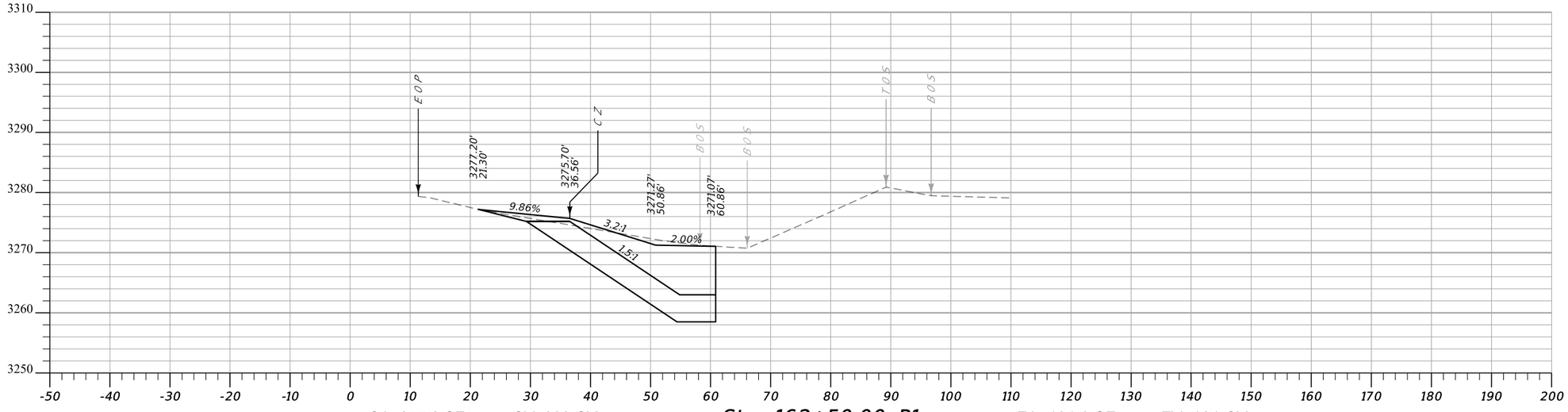
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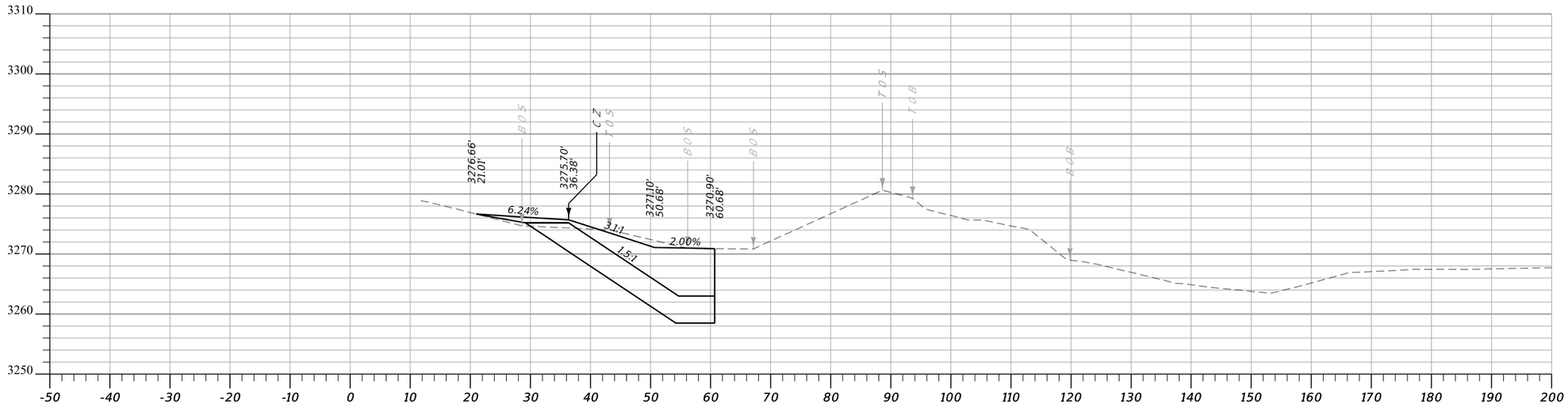
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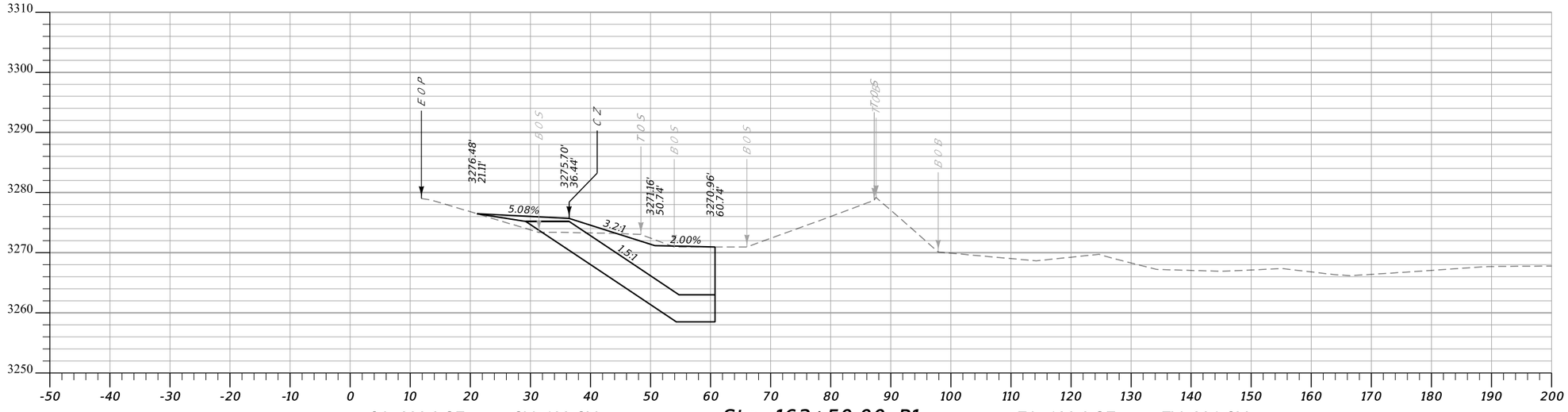
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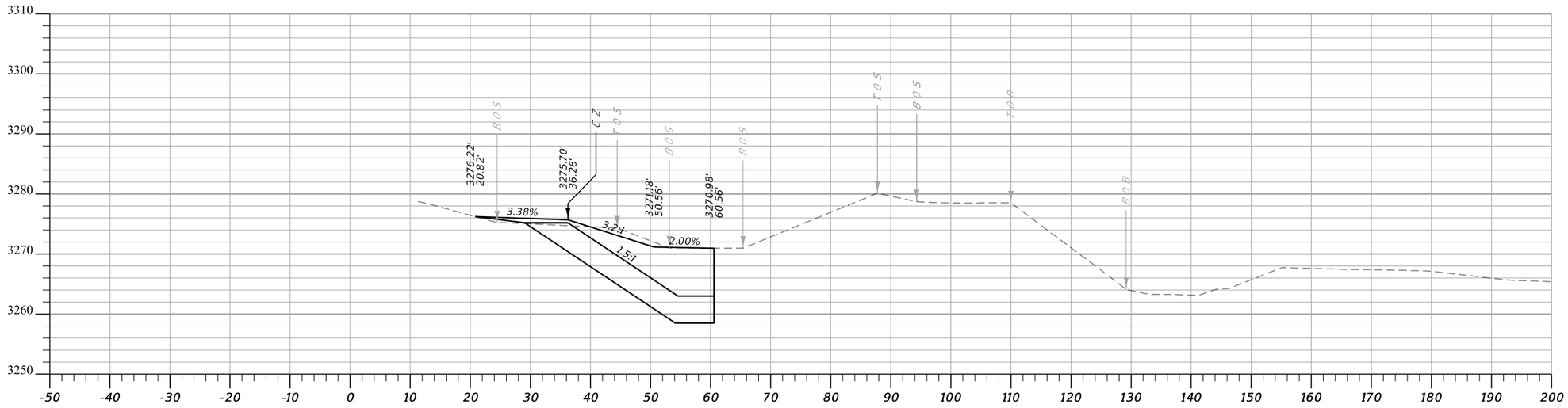
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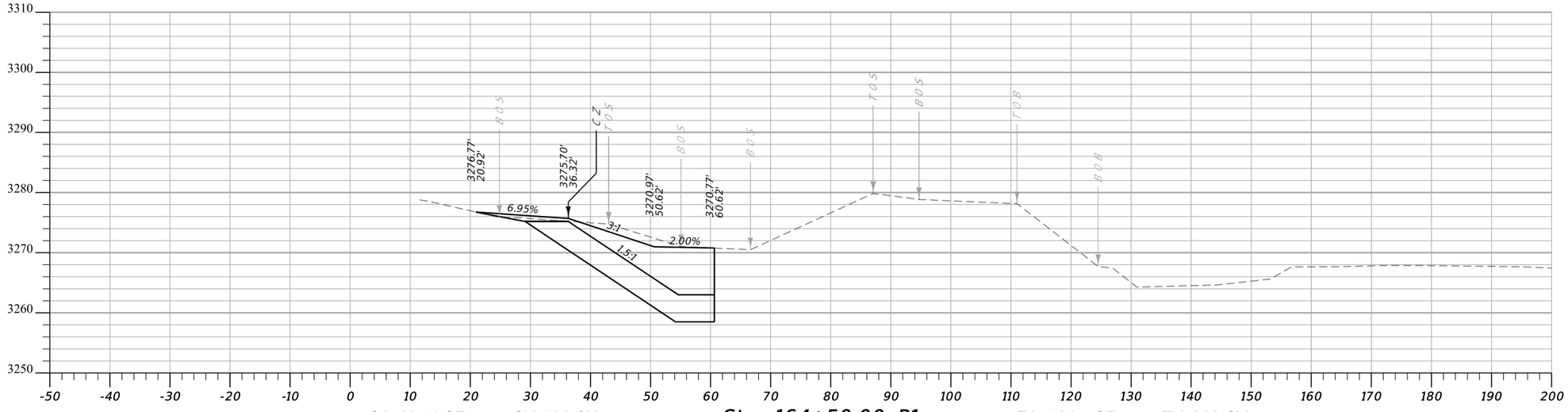
CA: 236.2 SF CV: 438 CY **Sta. 163+50.00 R1** FA: 126.6 SF FV: 234 CY

MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9059001rdlay050.dgn	DESIGNED BY K. SHUCK	3/19/2020	SITE 5 CROSS SECTIONS		US-12 BANK STABILIZATION-PH 2	STPP-NH 14-5(41)159
	11/5/2020	REVIEWED BY					
	10:19:57 AM CPS - U2164	CHECKED BY		MUSSELSHELL COUNTY		UPN 9059001	SHEET 3

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CA: 256.3 SF CV: 485 CY ***Sta. 165+00.00 R1*** FA: 126.0 SF FV: 232 CY

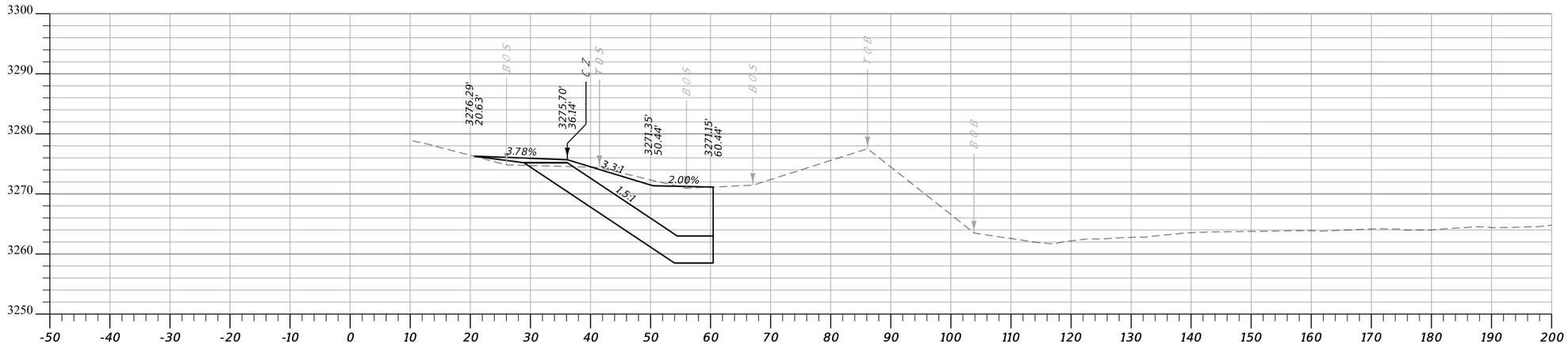


CA: 267.1 SF CV: 480 CY ***Sta. 164+50.00 R1*** FA: 124.5 SF FV: 232 CY

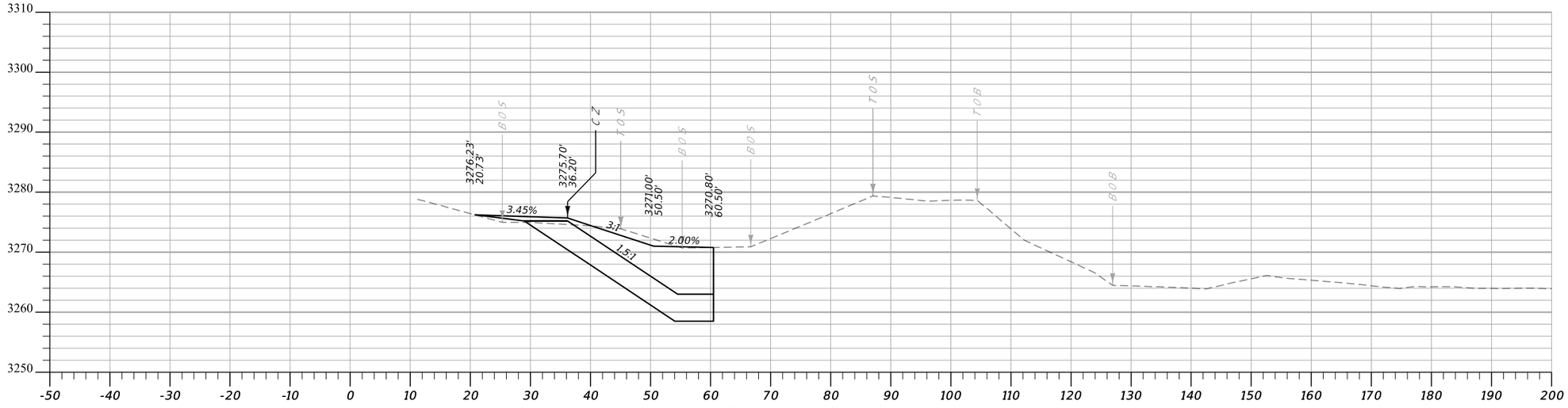
MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9059001rdlay050.dgn	DESIGNED BY K. SHUCK	3/19/2020	SITE 5 CROSS SECTIONS		US-12 BANK STABILIZATION-PH 2	STPP-NH 14-5(41)159
	11/5/2020	REVIEWED BY					
	10:20:02 AM CPS - U2164	CHECKED BY		MUSSELSHELL COUNTY		UPN 9059001	SHEET 4

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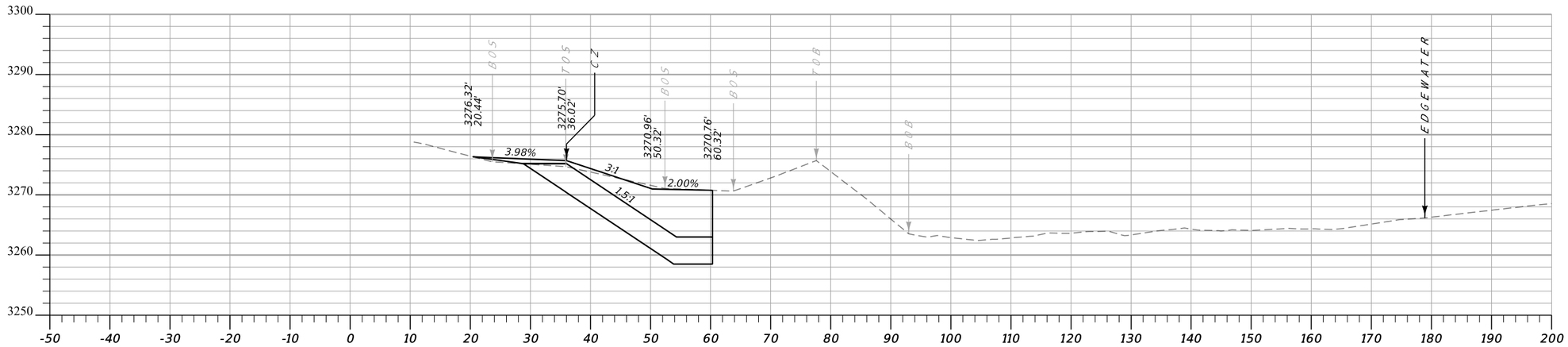
CA: 254.1 SF CV: 470 CY ***Sta. 166+00.00 R1*** FA: 129.2 SF FV: 233 CY



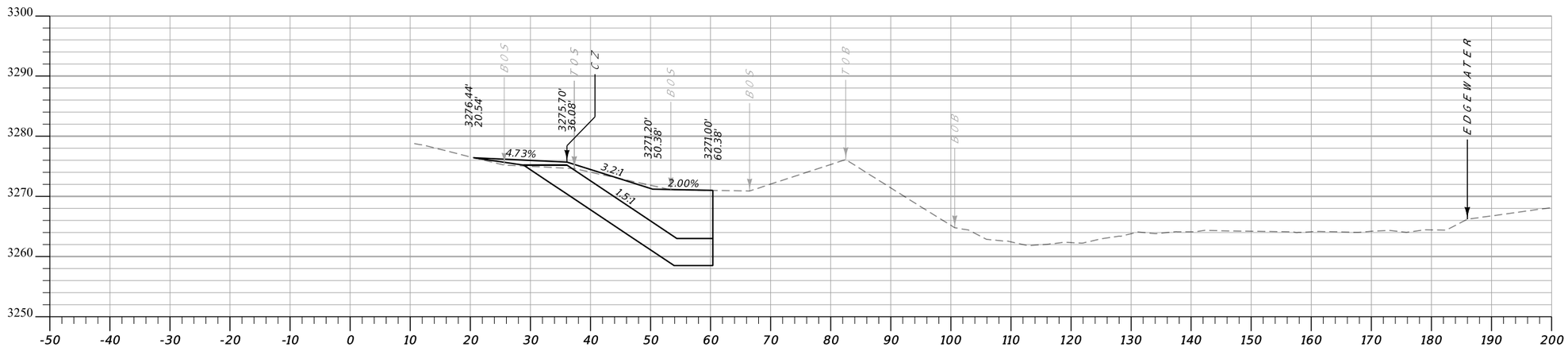
CA: 253.5 SF CV: 472 CY ***Sta. 165+50.00 R1*** FA: 122.9 SF FV: 230 CY

MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9059001rdlay050.dgn	DESIGNED BY K. SHUCK	3/19/2020	SITE 5 CROSS SECTIONS		US-12 BANK STABILIZATION-PH 2	STPP-NH 14-5(41)159
	11/5/2020	REVIEWED BY					
	10:20:06 AM CPS - U216C	CHECKED BY		MUSSELSHELL COUNTY		UPN 9059001	SHEET 5

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CA: 242.8 SF CV: 454 CY **Sta. 167+00.00 R1** FA: 122.6 SF FV: 231 CY

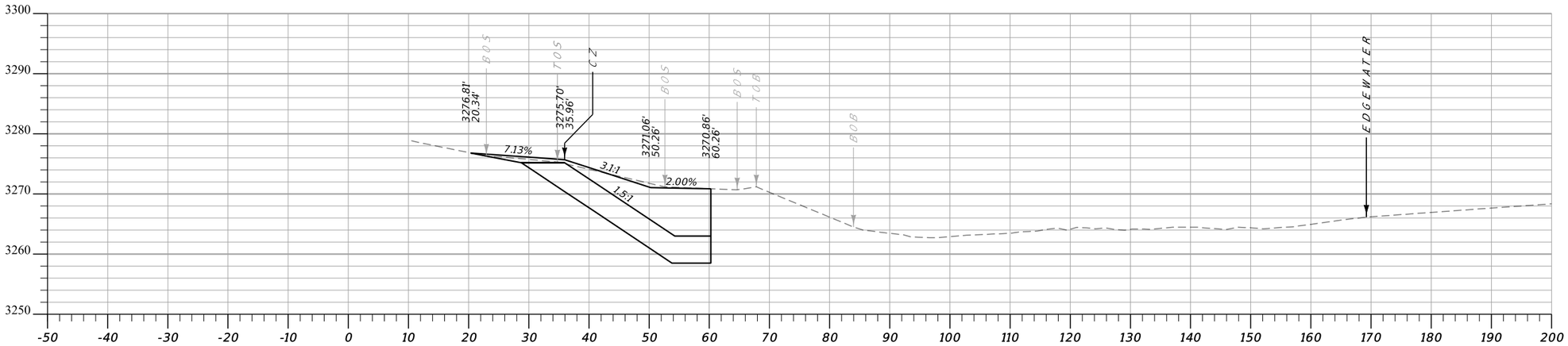


CA: 247.5 SF CV: 464 CY **Sta. 166+50.00 R1** FA: 127.2 SF FV: 237 CY

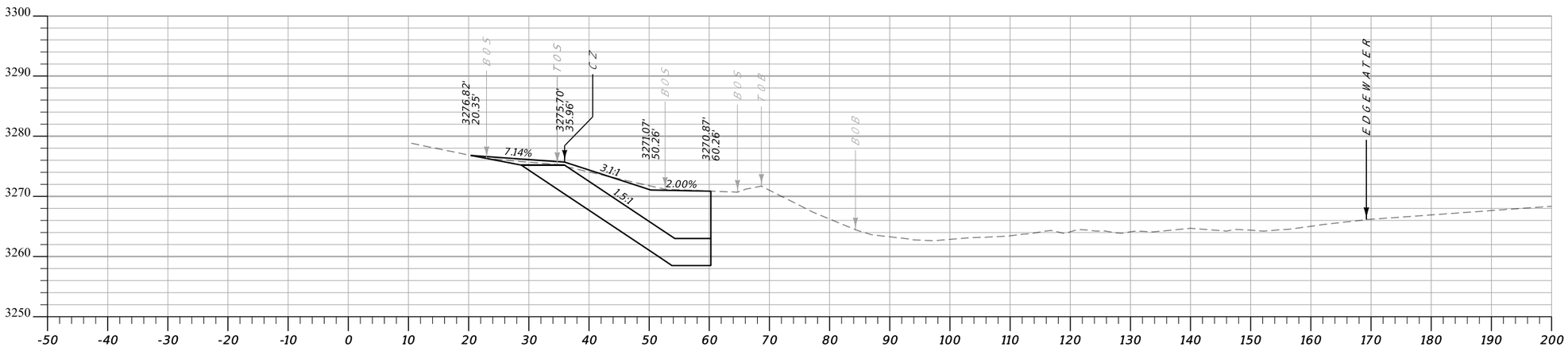
MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9059001rdlay050.dgn	DESIGNED BY	K. SHUCK	3/19/2020	SITE 5 CROSS SECTIONS	US-12 BANK STABILIZATION-PH 2	STPP-NH 14-5(41)159
	11/5/2020	REVIEWED BY					
	10:20:10 AM CPS - U216C	CHECKED BY			MUSSELSHELL COUNTY	UPN 9059001	SHEET 6

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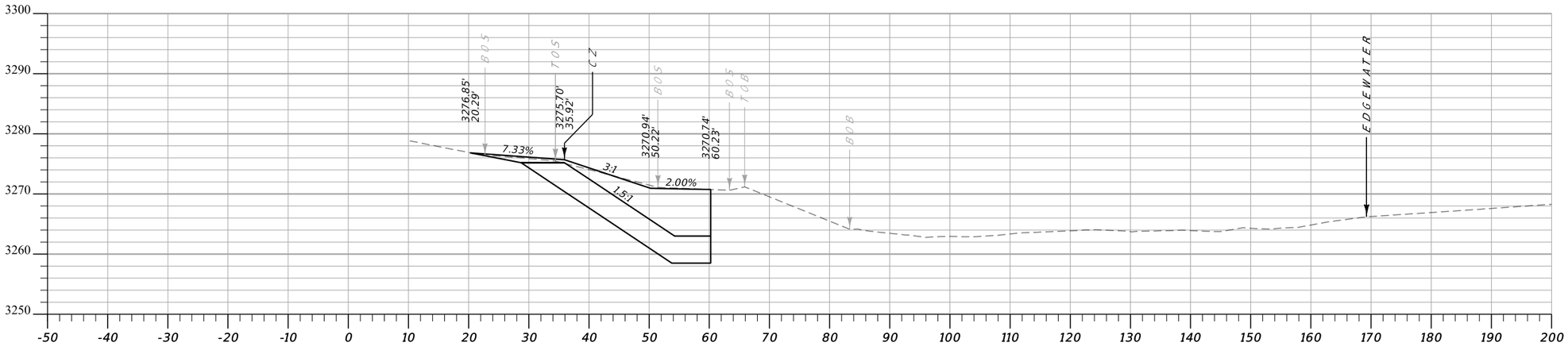
CA: 254.6 SF CV: 28 CY **Sta. 167+52.99 R1** FA: 126.1 SF FV: 14 CY



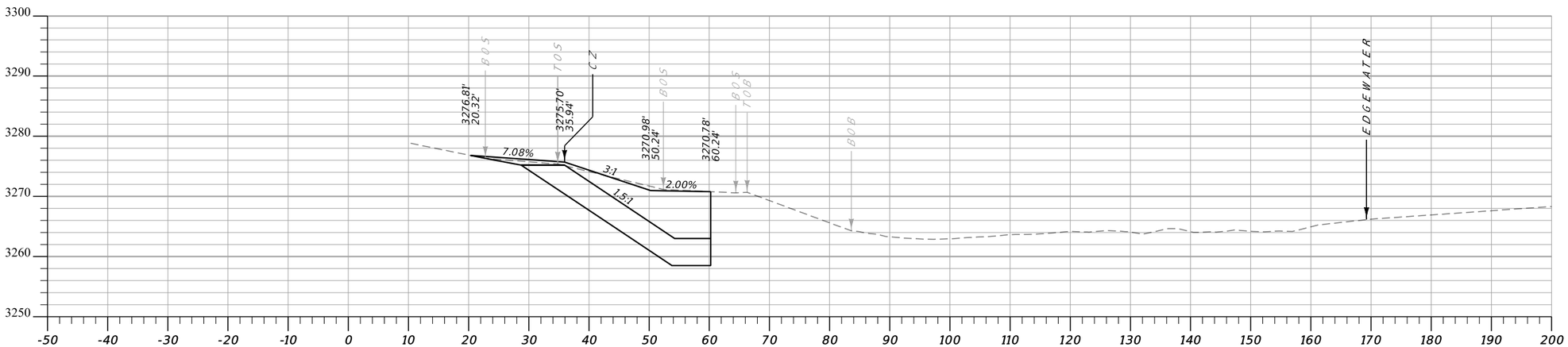
CA: 253.8 SF CV: 460 CY **Sta. 167+50.00 R1** FA: 126.3 SF FV: 230 CY

MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9059001rdlay050.dgn	DESIGNED BY K. SHUCK	3/19/2020	SITE 5 CROSS SECTIONS		US-12 BANK STABILIZATION-PH 2	STPP-NH 14-5(41)159
	11/5/2020	REVIEWED BY					
	10:20:14 AM CPS - U2160	CHECKED BY		MUSSELSHELL COUNTY		UPN 9059001	SHEET 7

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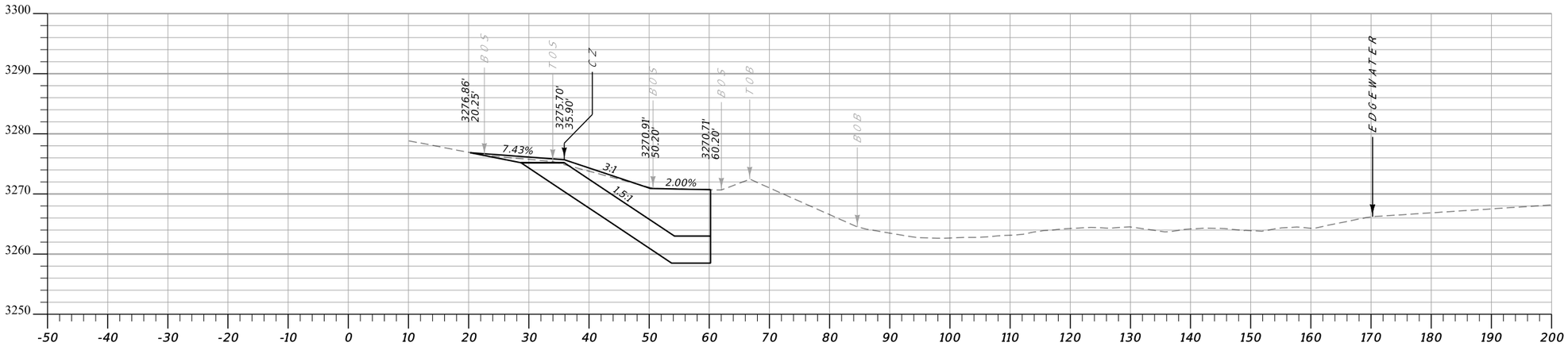
CA: 252.7 SF CV: 139 CY **Sta. 167+80.40 R1** FA: 124.1 SF FV: 68 CY



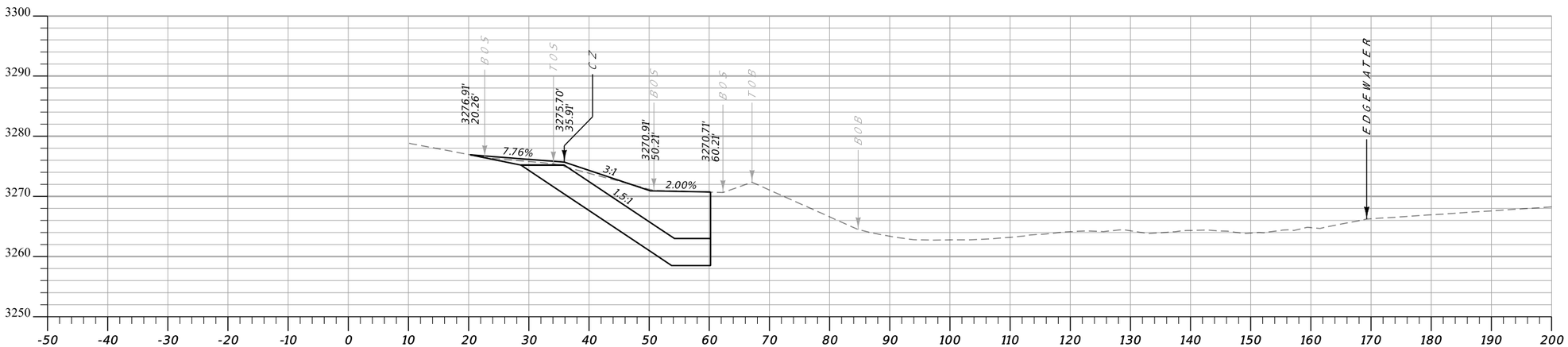
CA: 254.2 SF CV: 119 CY **Sta. 167+65.60 R1** FA: 124.8 SF FV: 59 CY

MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9059001rdlay050.dgn	DESIGNED BY K. SHUCK	3/19/2020	SITE 5 CROSS SECTIONS		US-12 BANK STABILIZATION-PH 2	STPP-NH 14-5(41)159
	11/5/2020	REVIEWED BY					
	10:20:19 AM CPS - U216C	CHECKED BY		MUSSELSHELL COUNTY		UPN 9059001	SHEET 8

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CA: 245.9 SF CV: 49 CY **Sta. 168+00.00 R1** FA: 123.7 SF FV: 24 CY

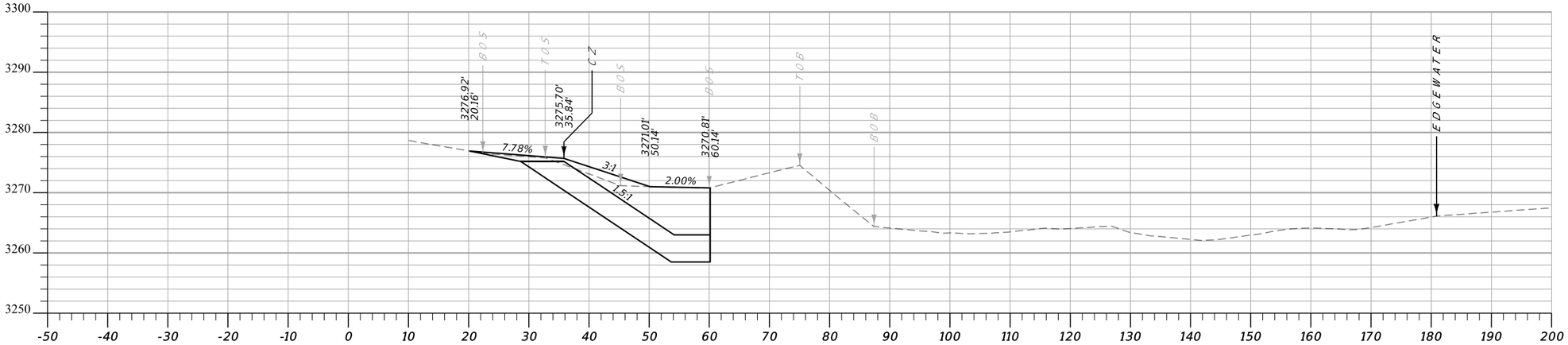


CA: 247.7 SF CV: 132 CY **Sta. 167+94.67 R1** FA: 124.0 SF FV: 66 CY

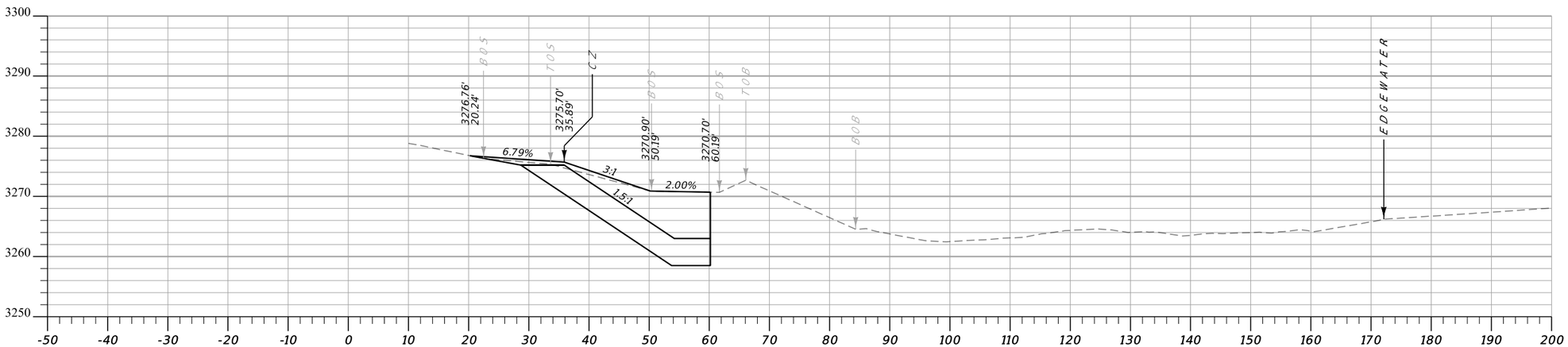
MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9059001rdlay050.dgn	DESIGNED BY K. SHUCK	3/19/2020	SITE 5 CROSS SECTIONS		US-12 BANK STABILIZATION-PH 2	STPP-NH 14-5(41)159
	11/5/2020	REVIEWED BY					
	10:20:23 AM CPS - U2160	CHECKED BY		MUSSELSHELL COUNTY		UPN 9059001	SHEET 9

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CA: 238.2 SF CV: 366 CY **Sta. 168+50.00 R1** FA: 125.7 SF FV: 190 CY

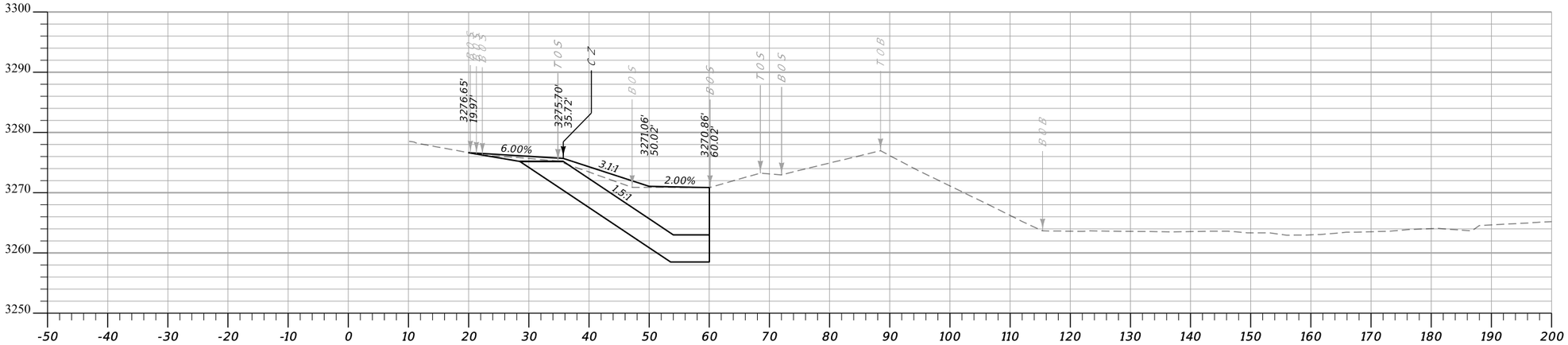


CA: 242.0 SF CV: 79 CY **Sta. 168+08.79 R1** FA: 123.2 SF FV: 40 CY

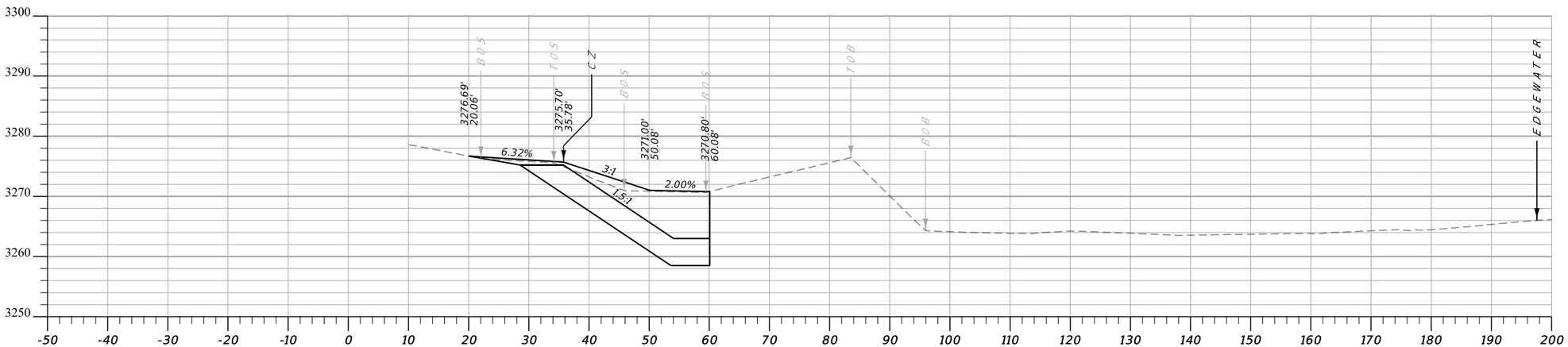
MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9059001rdlay050.dgn	DESIGNED BY K. SHUCK	3/19/2020	SITE 5 CROSS SECTIONS		US-12 BANK STABILIZATION-PH 2	STPP-NH 14-5(41)159
	11/5/2020	REVIEWED BY					
	10:20:27 AM CPS - U216C	CHECKED BY		MUSSELSHELL COUNTY		UPN 9059001	SHEET 10

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CA: 239.1 SF CV: 441 CY **Sta. 169+50.00 R1** FA: 125.5 SF FV: 232 CY

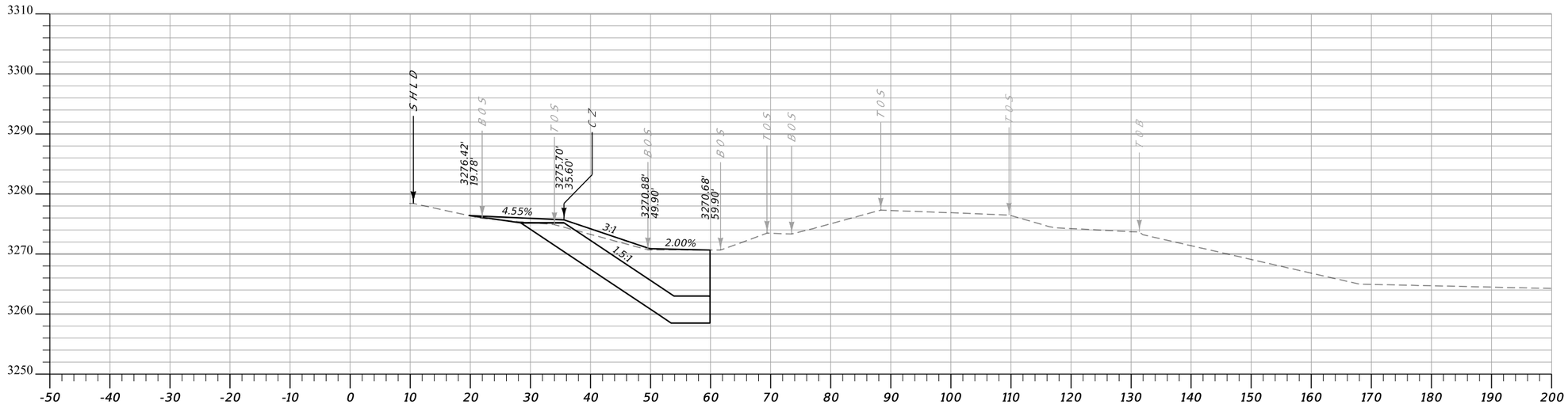


CA: 236.9 SF CV: 440 CY **Sta. 169+00.00 R1** FA: 124.7 SF FV: 232 CY

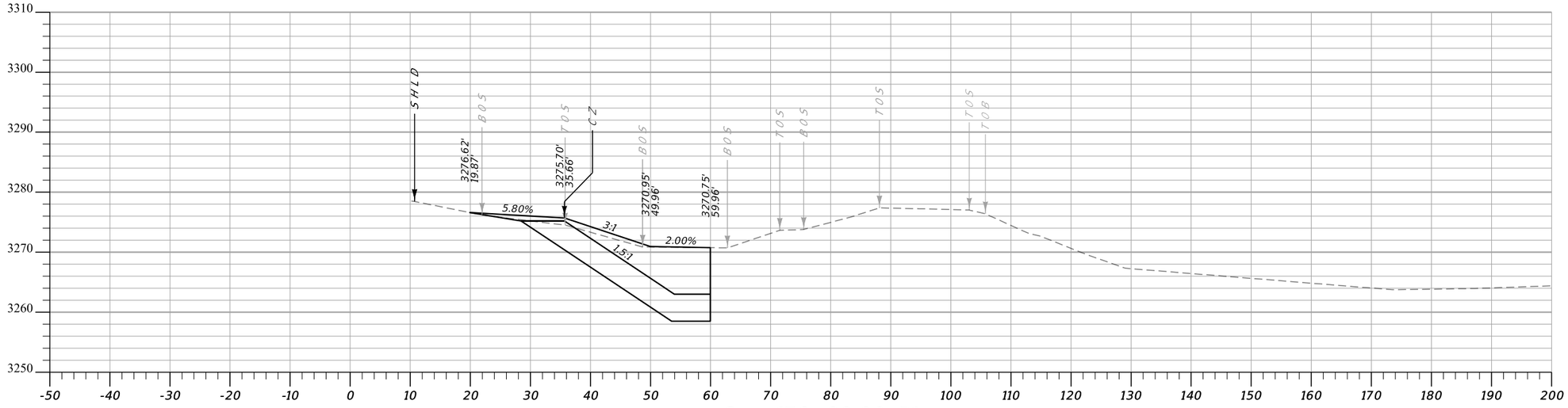
MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9059001rdlay050.dgn	DESIGNED BY K. SHUCK	3/19/2020	SITE 5 CROSS SECTIONS		US-12 BANK STABILIZATION-PH 2	STPP-NH 14-5(41)159
	11/5/2020	REVIEWED BY					
	10:20:32 AM CPS - U2160	CHECKED BY		MUSSELSHELL COUNTY		UPN 9059001	SHEET 11

DocuSign Envelope ID: E9079111-1DF9-4F2D-95D8-54F73F57647D

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CA: 233.1 SF CV: 432 CY **Sta. 170+50.00 R1** FA: 121.7 SF FV: 227 CY

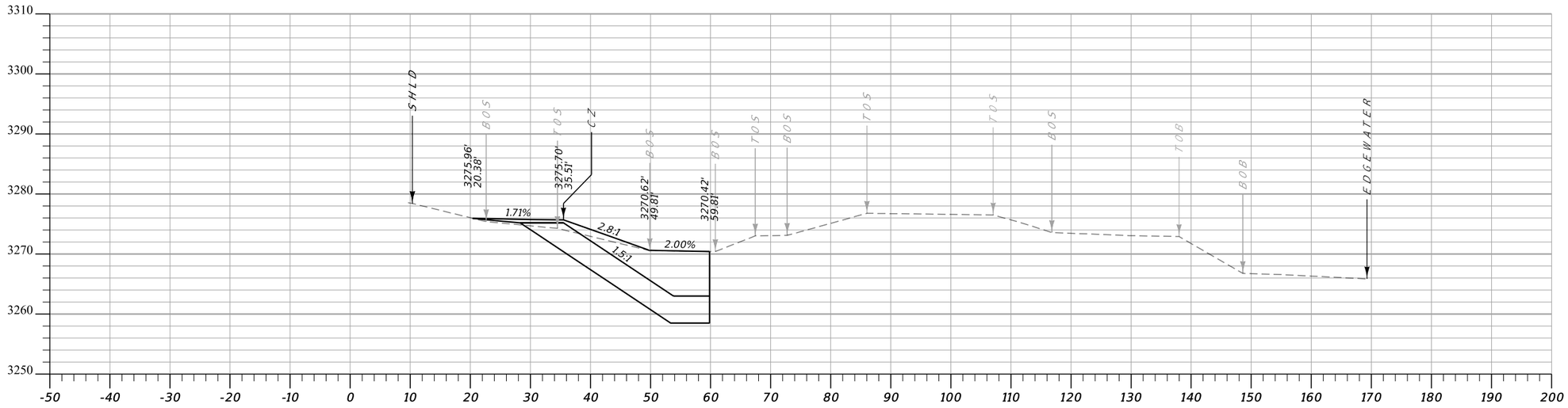


CA: 233.8 SF CV: 438 CY **Sta. 170+00.00 R1** FA: 123.6 SF FV: 231 CY

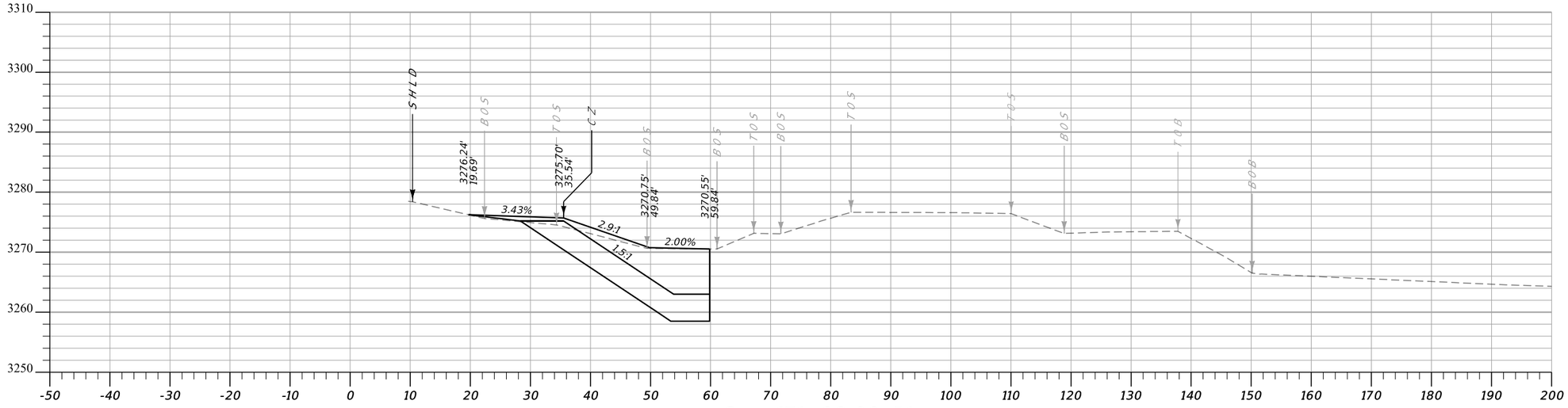
MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9059001rdlay050.dgn	DESIGNED BY K. SHUCK	3/19/2020	SITE 5 CROSS SECTIONS		US-12 BANK STABILIZATION-PH 2	STPP-NH 14-5(41)159
	11/5/2020	REVIEWED BY					
	10:20:36 AM CPS - U2164	CHECKED BY		MUSSELSHELL COUNTY		UPN 9059001	SHEET 12

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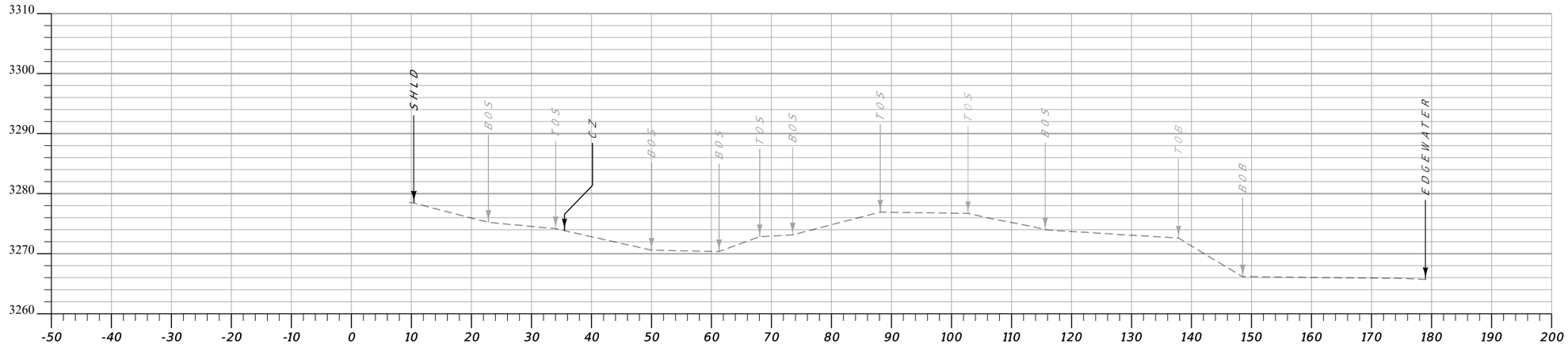


CA: 223.7 SF CV: 251 CY **Sta. 171+30.00 R1** FA: 115.3 SF FV: 130 CY



CA: 227.5 SF CV: 426 CY **Sta. 171+00.00 R1** FA: 118.8 SF FV: 223 CY

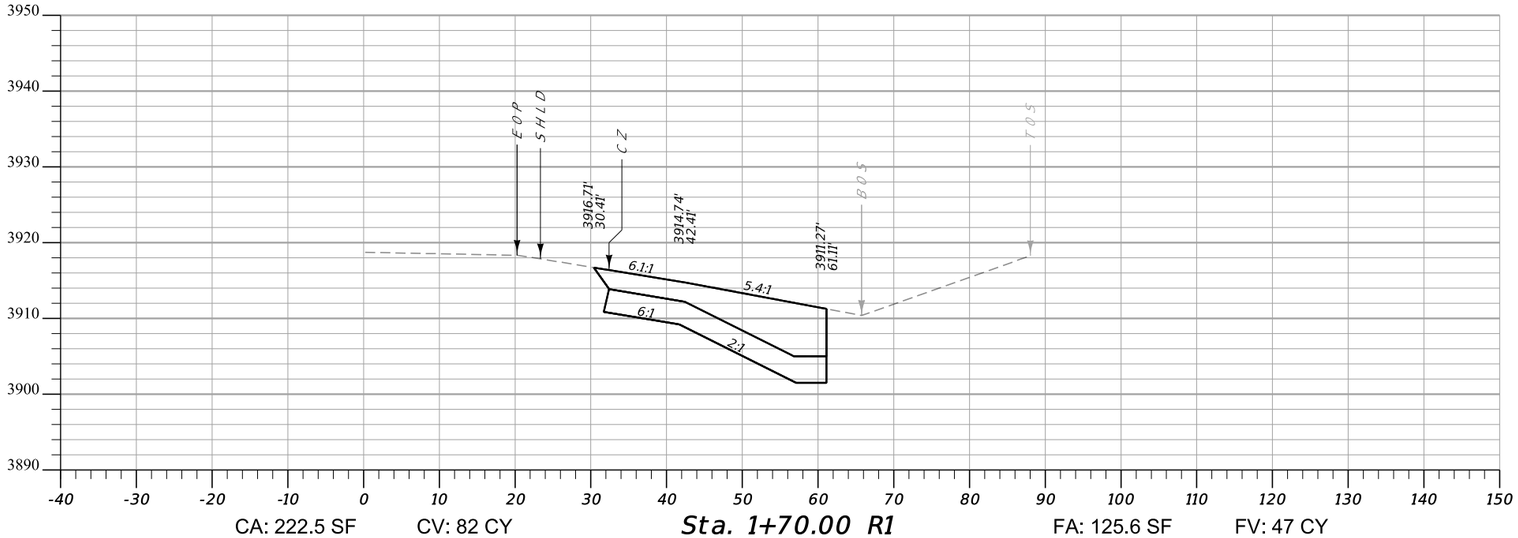
MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9059001rdlay050.dgn 11/5/2020 10:20:41 AM CPS - U2164	DESIGNED BY K. SHUCK	3/19/2020	SITE 5 CROSS SECTIONS		US-12 BANK STABILIZATION-PH 2	STPP-NH 14-5(41)159
		REVIEWED BY					
		CHECKED BY		MUSSELSHELL COUNTY		UPN 9059001	SHEET 13



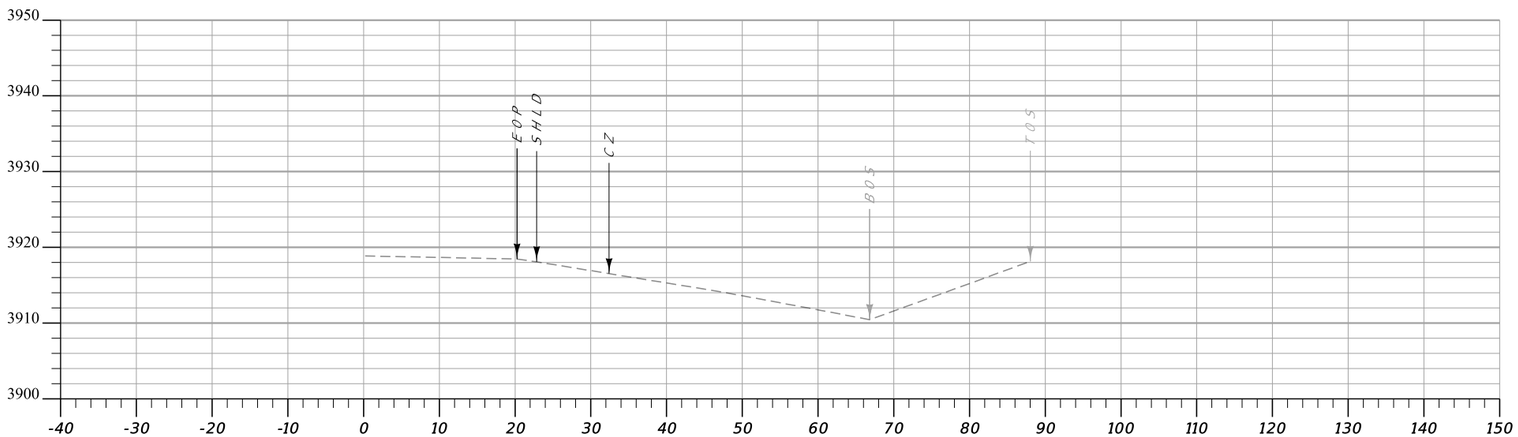
CA: 0.0 SF CV: 83 CY ***Sta. 171+50.00 R1*** FA: 0.0 SF FV: 1 CY

MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9059001rdlay050.dgn 11/5/2020 10:20:45 AM CPS - U216C	DESIGNED BY K. SHUCK	3/19/2020	SITE 5 CROSS SECTIONS		US-12 BANK STABILIZATION-PH 2	STPP-NH 14-5(41)159
		REVIEWED BY					
		CHECKED BY		MUSSELSHELL COUNTY		UPN 9059001	SHEET 14

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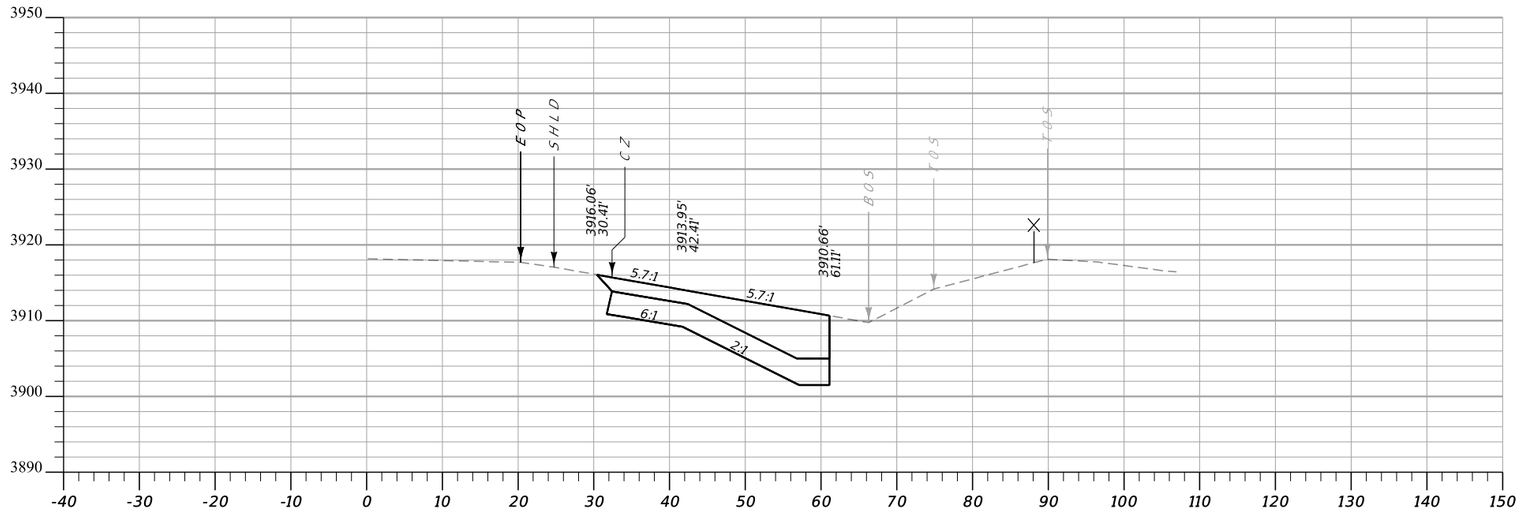
CA: 222.5 SF CV: 82 CY **Sta. 1+70.00 R1** FA: 125.6 SF FV: 47 CY



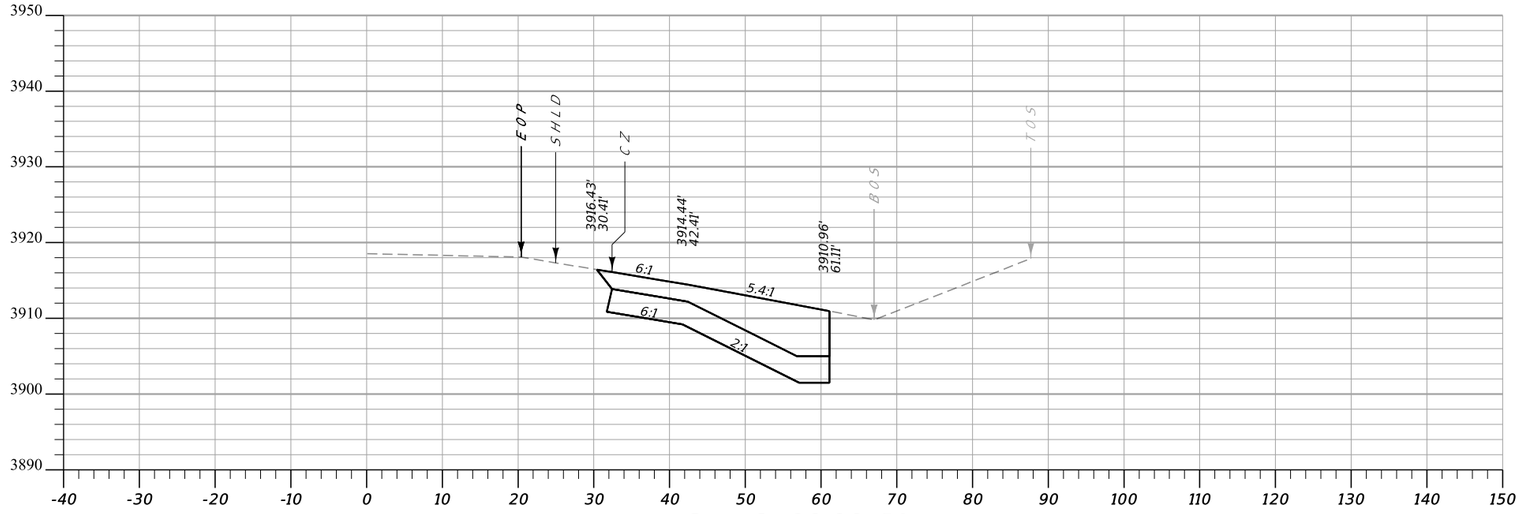
CA: 0.0 SF CV: 0 CY **Sta. 1+50.00 R1** FA: 0.0 SF FV: 0 CY

MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9059001rdlay070.dgn 11/5/2020 10:20:57 AM CPS - U216C	DESIGNED BY REVIEWED BY CHECKED BY	K. SHUCK	8/3/2020	SITE 7 CROSS SECTIONS WHEATLAND COUNTY		US-12 BANK STABILIZATION-PH 2 UPN 9059001	STPP-NH 14-5(41)159 SHEET 1

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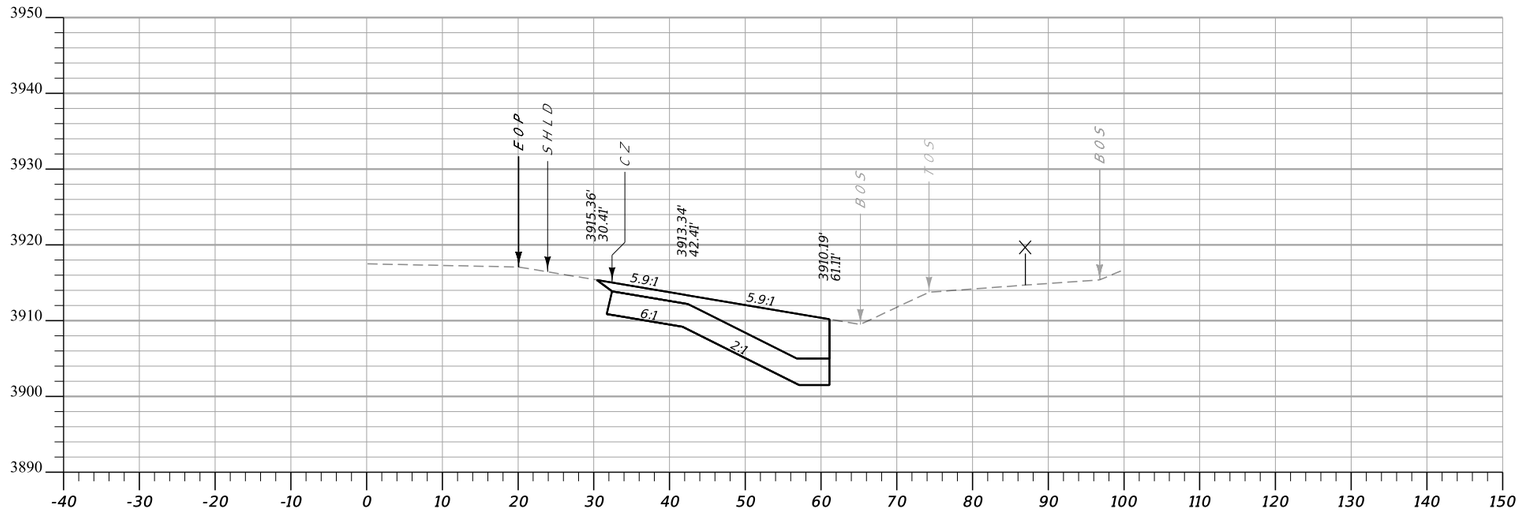
CA: 200.7 SF CV: 384 CY **Sta. 2+50.00 R1** FA: 104.4 SF FV: 205 CY



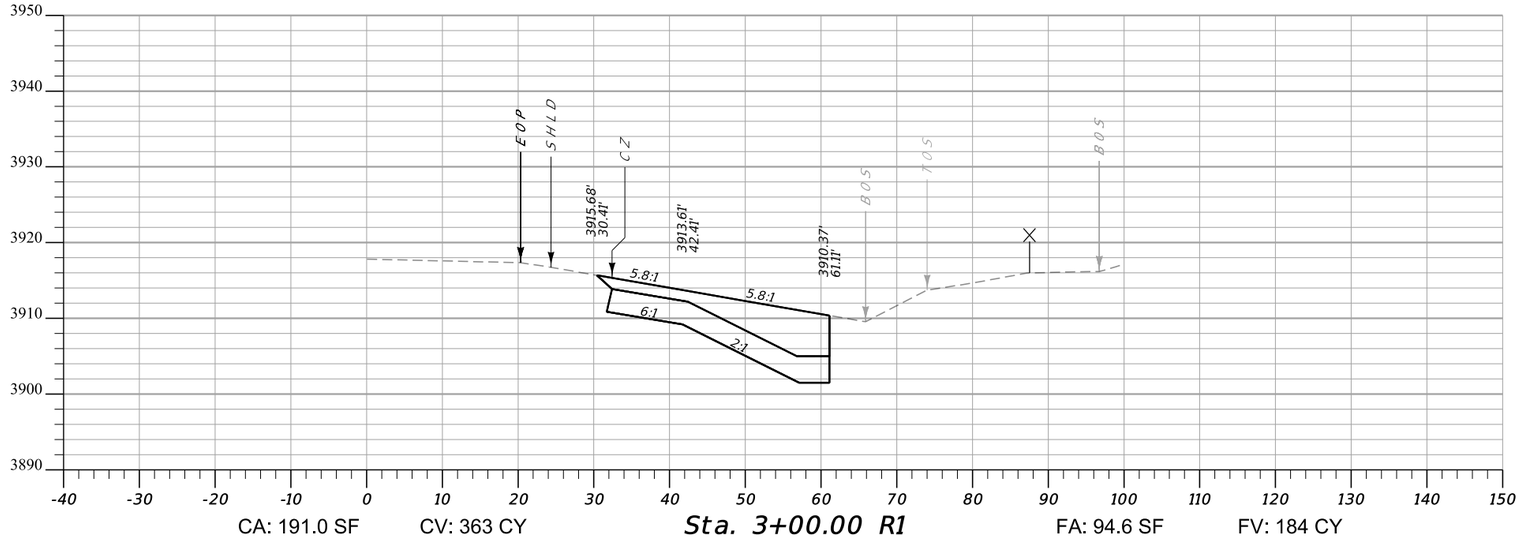
CA: 213.7 SF CV: 242 CY **Sta. 2+00.00 R1** FA: 116.8 SF FV: 135 CY

MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9059001rdlay070.dgn	DESIGNED BY K. SHUCK	8/3/2020	SITE 7 CROSS SECTIONS	US-12 BANK STABILIZATION-PH 2	STPP-NH 14-5(41)159
	11/5/2020	REVIEWED BY				
	10:21:01 AM CPS - U216G	CHECKED BY		WHEATLAND COUNTY	UPN 9059001	SHEET 2

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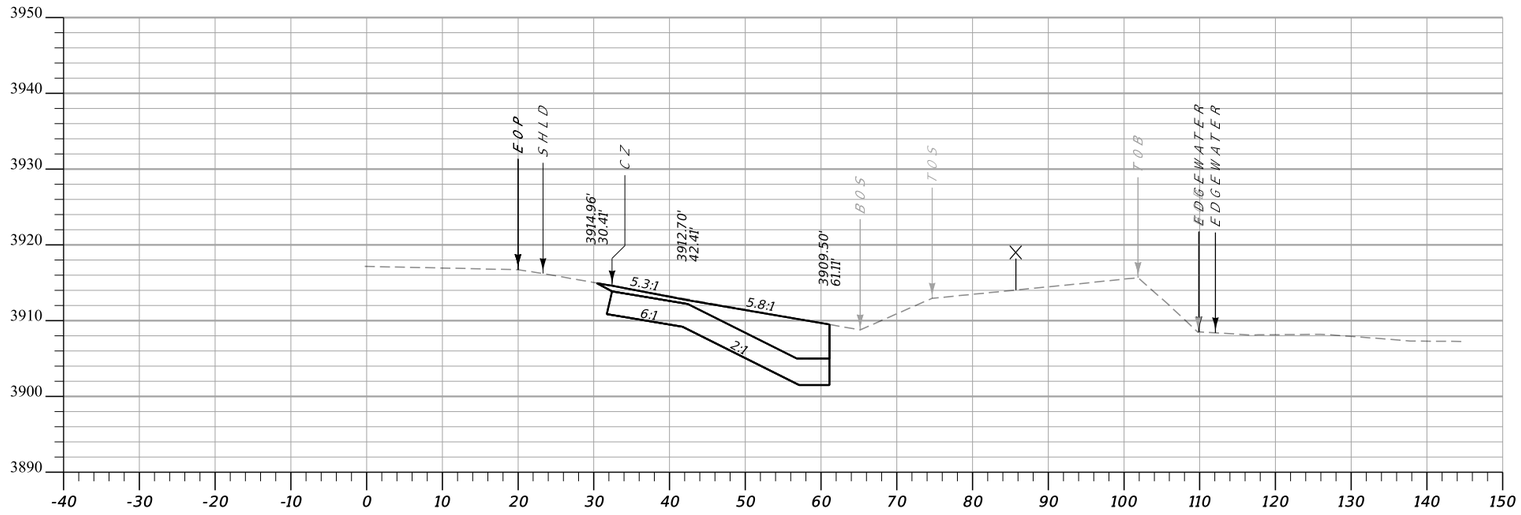
CA: 183.6 SF CV: 347 CY **Sta. 3+50.00 R1** FA: 87.2 SF FV: 168 CY



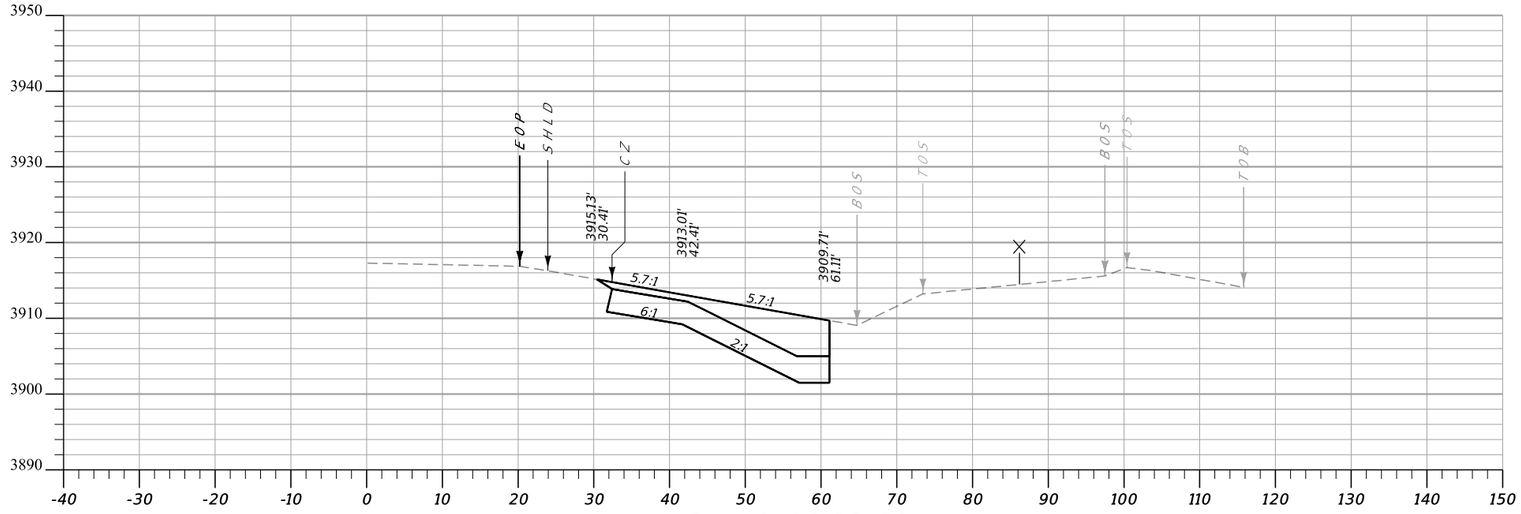
CA: 191.0 SF CV: 363 CY **Sta. 3+00.00 R1** FA: 94.6 SF FV: 184 CY

MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9059001rdlay070.dgn	DESIGNED BY K. SHUCK	8/3/2020	SITE 7 CROSS SECTIONS	US-12 BANK STABILIZATION-PH 2	STPP-NH 14-5(41)159
	11/5/2020	REVIEWED BY				
	10:21:05 AM CPS - U2160	CHECKED BY		WHEATLAND COUNTY	UPN 9059001	SHEET 3

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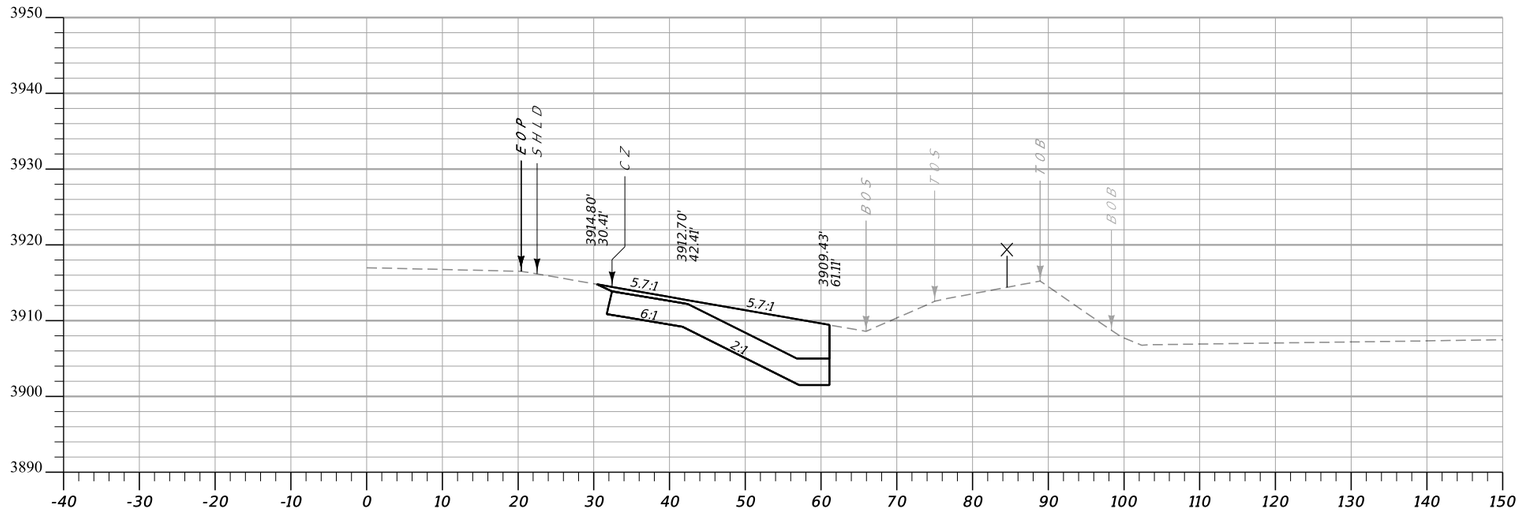
CA: 167.5 SF CV: 315 CY **Sta. 4+50.00 R1** FA: 69.0 SF FV: 135 CY



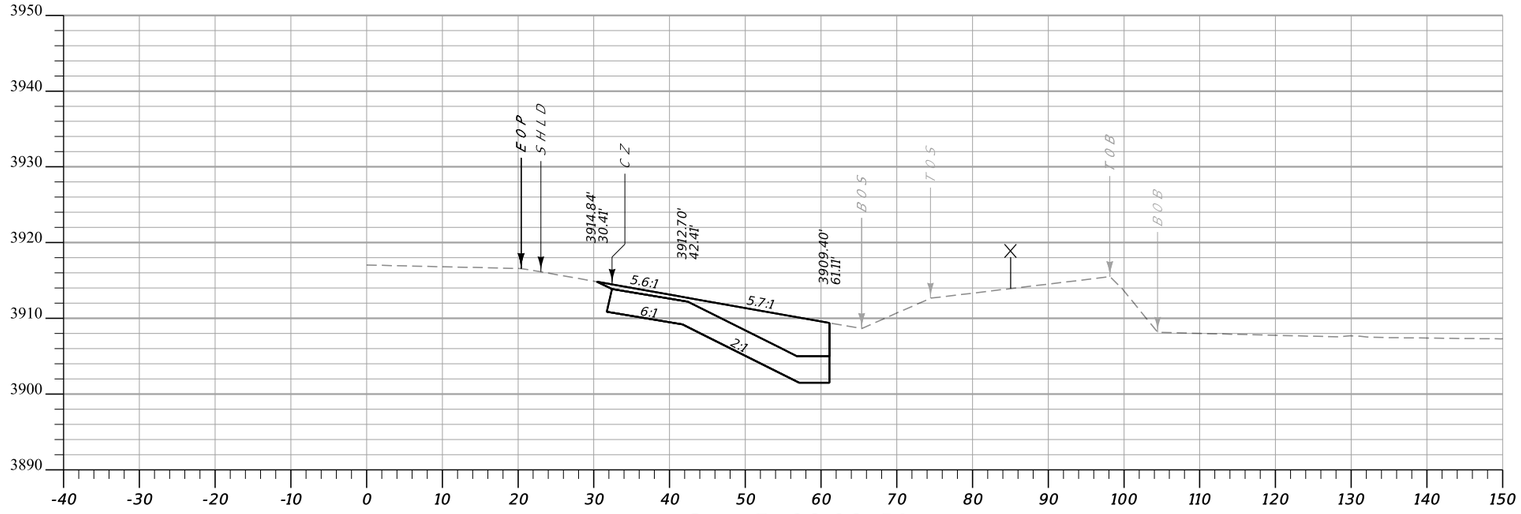
CA: 173.2 SF CV: 330 CY **Sta. 4+00.00 R1** FA: 76.7 SF FV: 152 CY

MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9059001rdlay070.dgn	DESIGNED BY K. SHUCK	8/3/2020	SITE 7 CROSS SECTIONS		US-12 BANK STABILIZATION-PH 2	STPP-NH 14-5(41)159
	11/5/2020	REVIEWED BY					
	10:21:09 AM CPS - U216G	CHECKED BY		WHEATLAND COUNTY		UPN 9059001	SHEET 4

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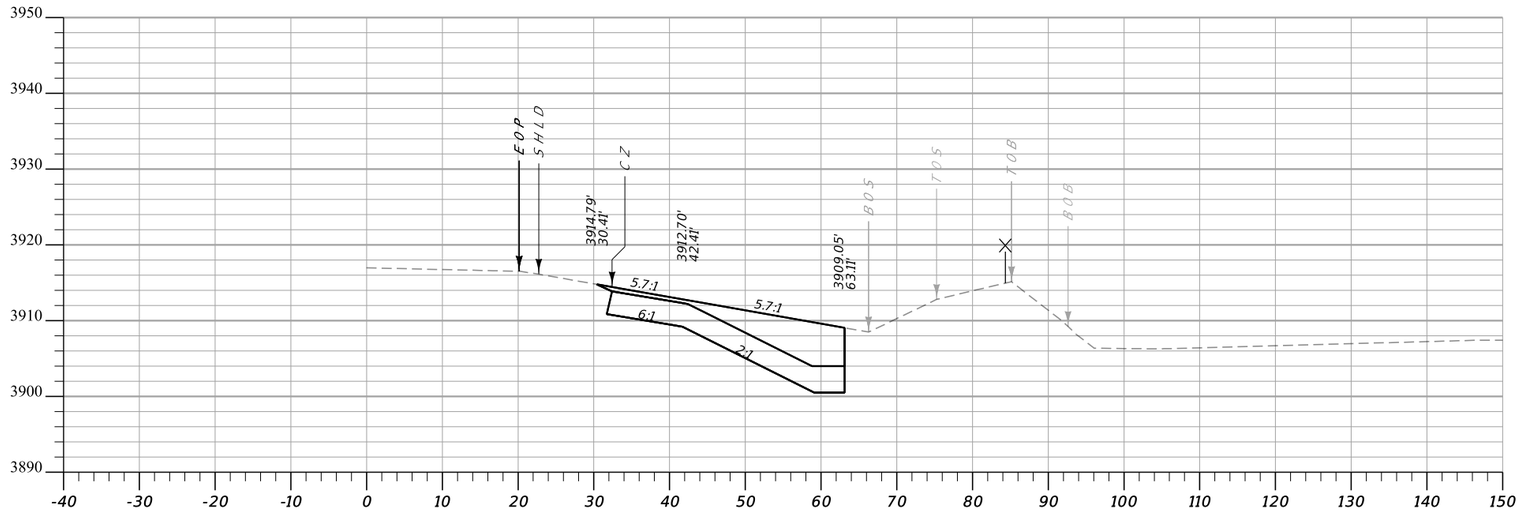
CA: 164.2 SF CV: 192 CY **Sta. 5+31.64 R1** FA: 67.5 SF FV: 79 CY



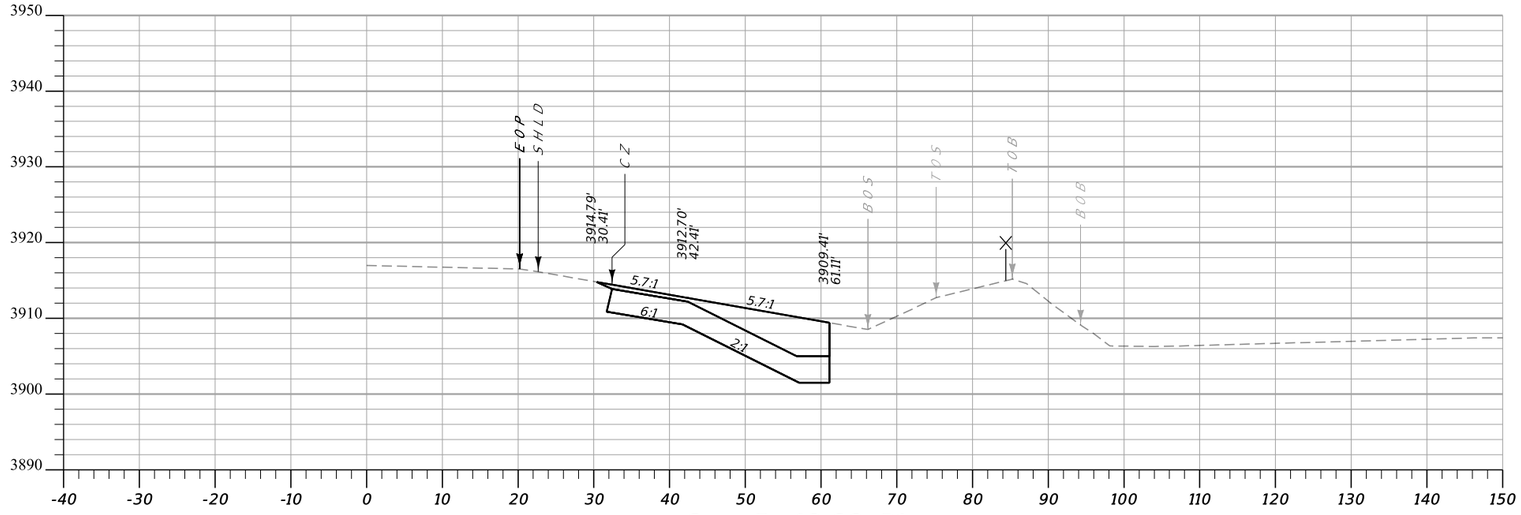
CA: 164.2 SF CV: 307 CY **Sta. 5+00.00 R1** FA: 67.5 SF FV: 126 CY

MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9059001rdlay070.dgn	DESIGNED BY K. SHUCK	8/3/2020	SITE 7 CROSS SECTIONS	US-12 BANK STABILIZATION-PH 2	STPP-NH 14-5(41)159
	11/5/2020	REVIEWED BY		WHEATLAND COUNTY		UPN 9059001
	10:21:14 AM CPS - U2160	CHECKED BY				SHEET 5

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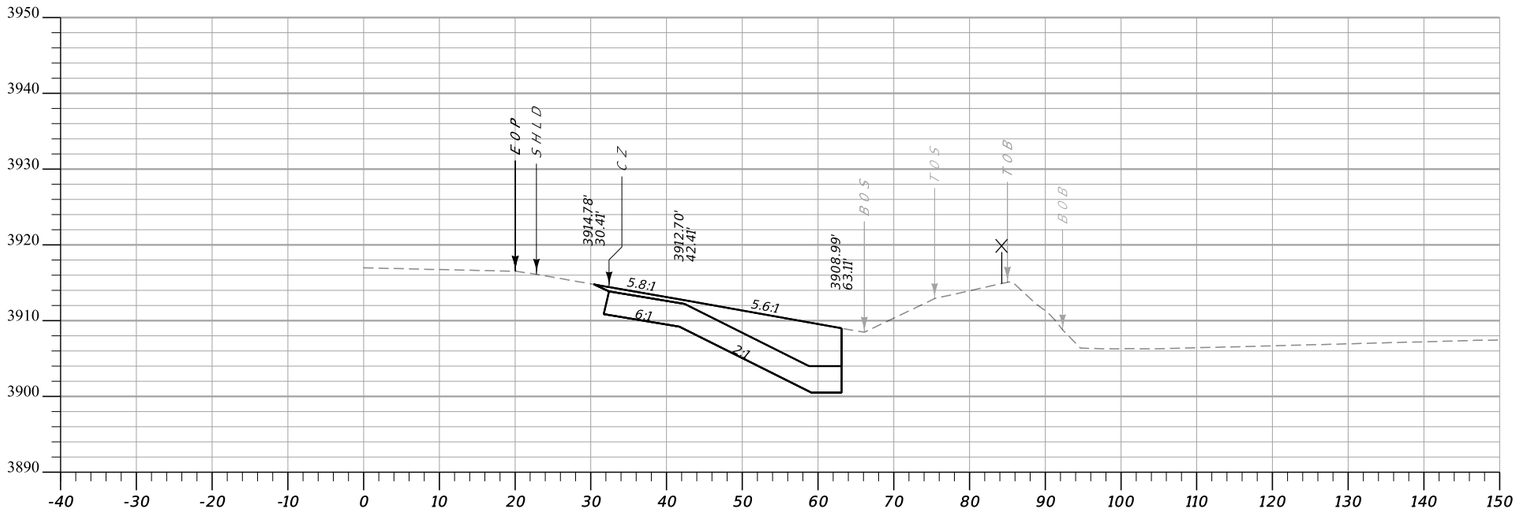
CA: 184.1 SF CV: 28 CY **Sta. 5+47.00 R1** FA: 81.0 SF FV: 12 CY



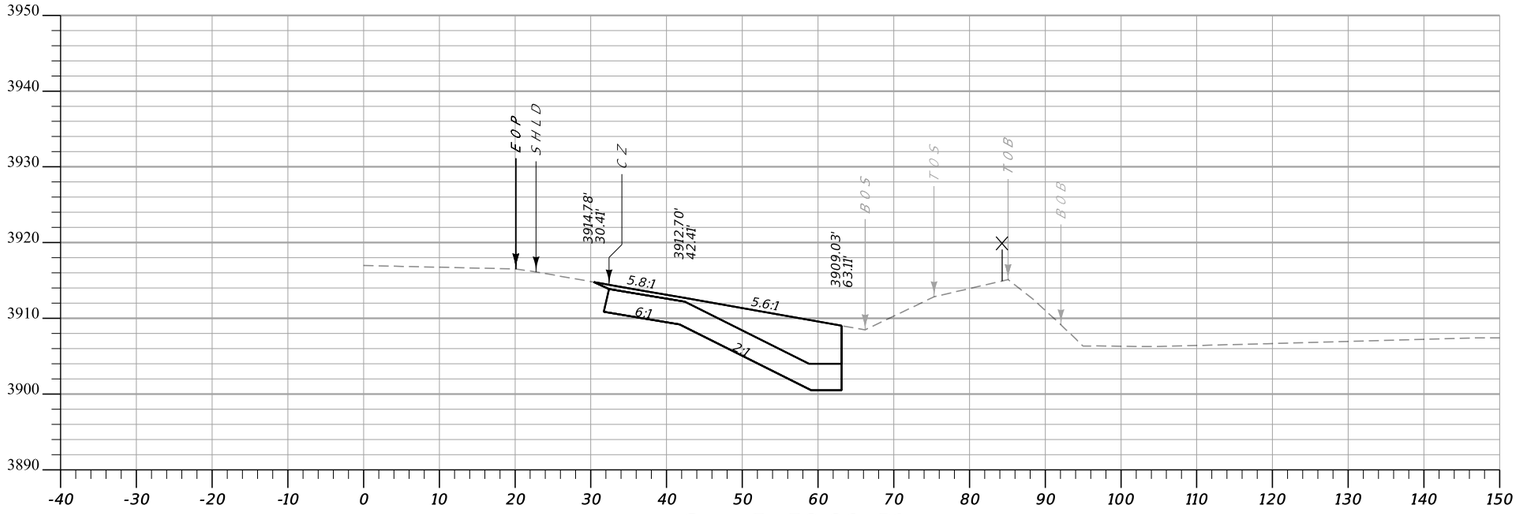
CA: 163.8 SF CV: 67 CY **Sta. 5+42.68 R1** FA: 67.3 SF FV: 28 CY

MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9059001rdlay070.dgn	DESIGNED BY K. SHUCK	8/3/2020	SITE 7 CROSS SECTIONS		US-12 BANK STABILIZATION-PH 2	STPP-NH 14-5(41)159
	11/5/2020	REVIEWED BY					
	10:21:18 AM CPS - U216G	CHECKED BY		WHEATLAND COUNTY		UPN 9059001	SHEET 6

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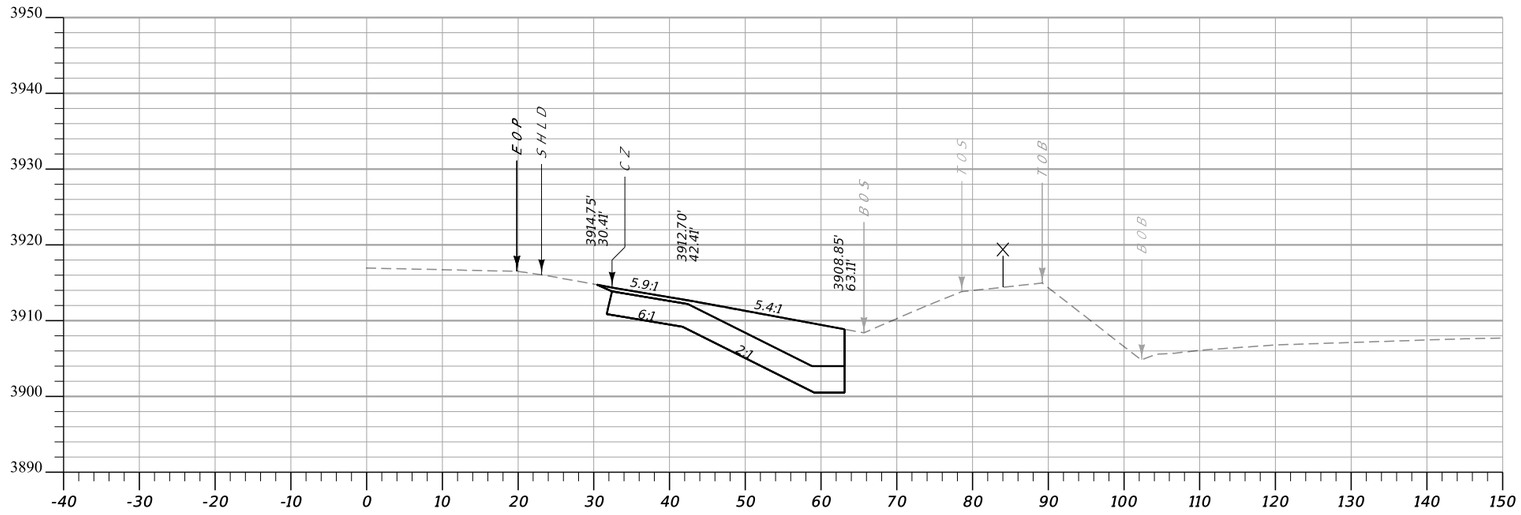
CA: 182.7 SF CV: 27 CY **Sta. 5+54.02 R1** FA: 80.3 SF FV: 12 CY



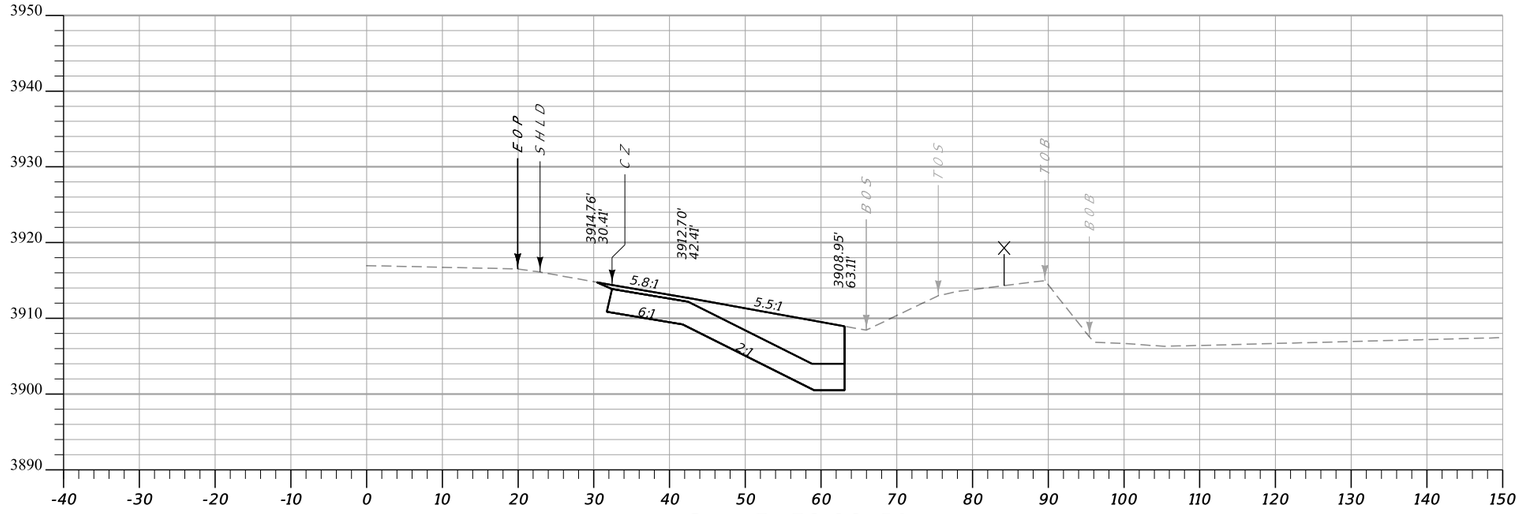
CA: 183.3 SF CV: 20 CY **Sta. 5+50.00 R1** FA: 80.6 SF FV: 9 CY

MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9059001rdlay070.dgn	DESIGNED BY K. SHUCK	8/3/2020	SITE 7 CROSS SECTIONS	US-12 BANK STABILIZATION-PH 2	STPP-NH 14-5(41)159
	11/5/2020	REVIEWED BY		WHEATLAND COUNTY	UPN 9059001	SHEET 7
	10:21:22 AM CPS - U2160	CHECKED BY				

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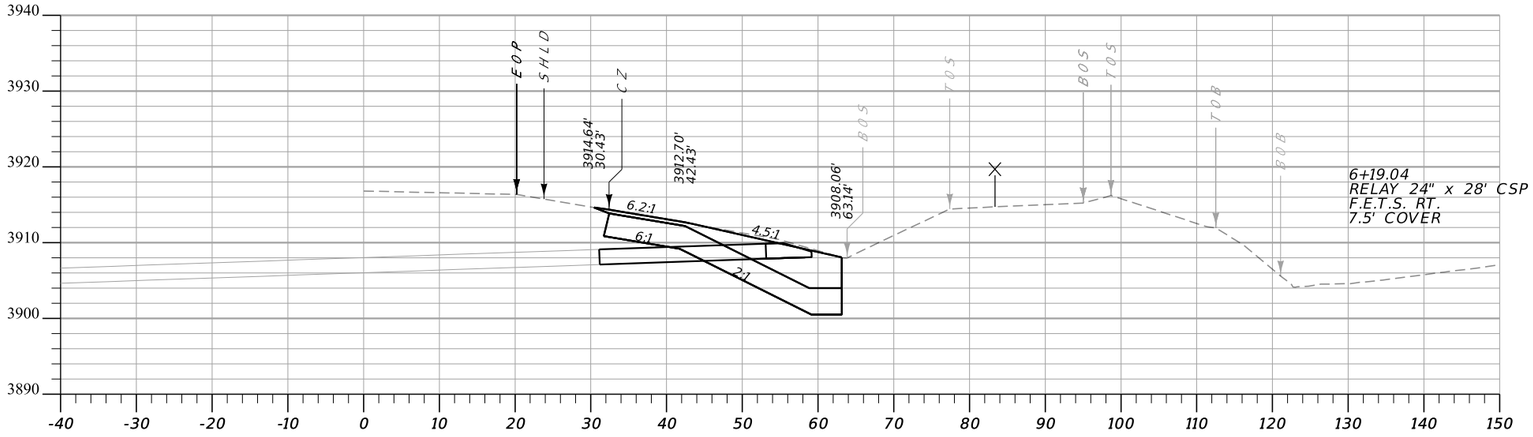
CA: 180.3 SF CV: 77 CY **Sta. 5+70.47 R1** FA: 78.5 SF FV: 34 CY



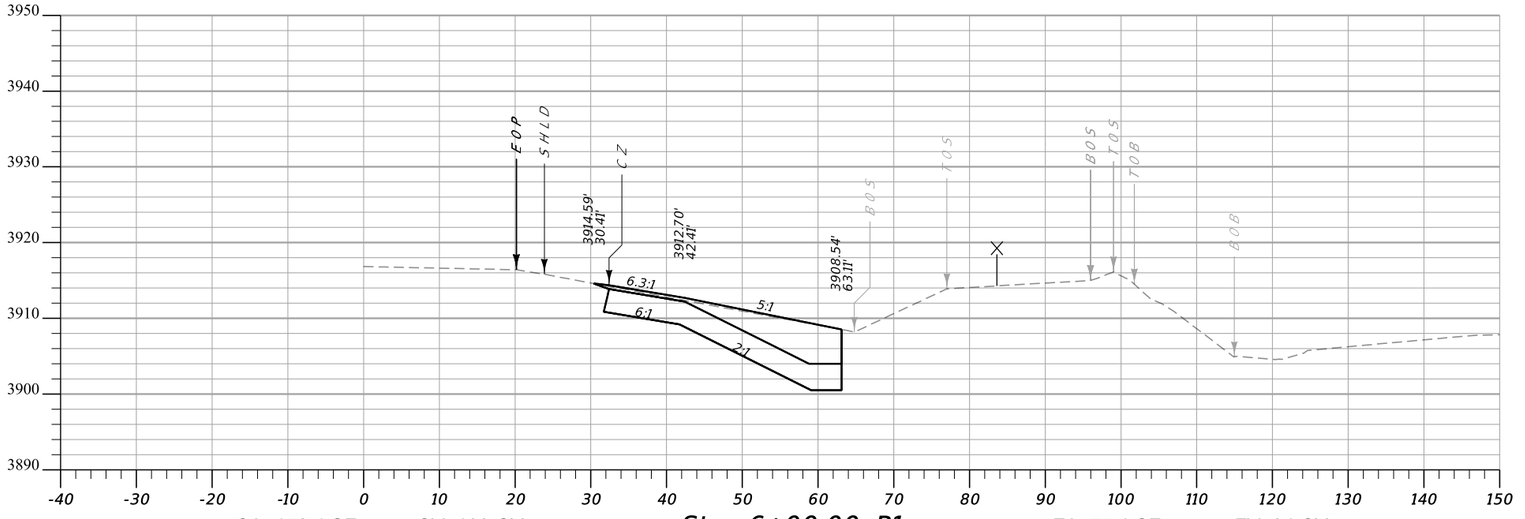
CA: 181.9 SF CV: 34 CY **Sta. 5+59.00 R1** FA: 79.7 SF FV: 15 CY

MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9059001rdlay070.dgn	DESIGNED BY K. SHUCK	8/3/2020	SITE 7 CROSS SECTIONS	US-12 BANK STABILIZATION-PH 2	STPP-NH 14-5(41)159
	11/5/2020	REVIEWED BY				
	10:21:27 AM CPS - U2160	CHECKED BY		WHEATLAND COUNTY	UPN 9059001	SHEET 8

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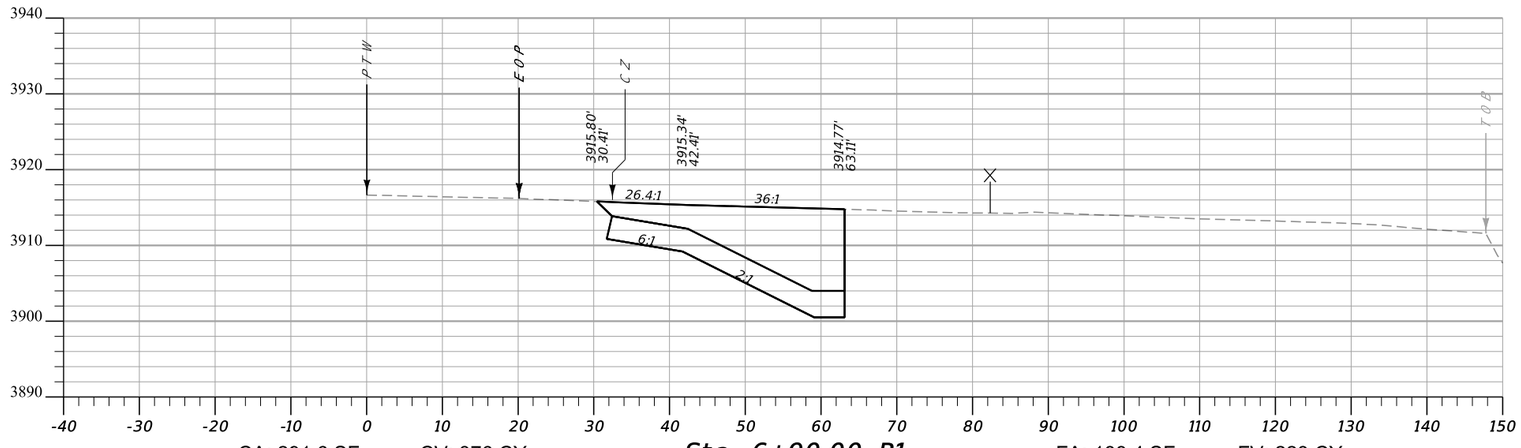
CA: 177.3 SF **Sta. 6+19.06 R1** FA: 70.0 SF



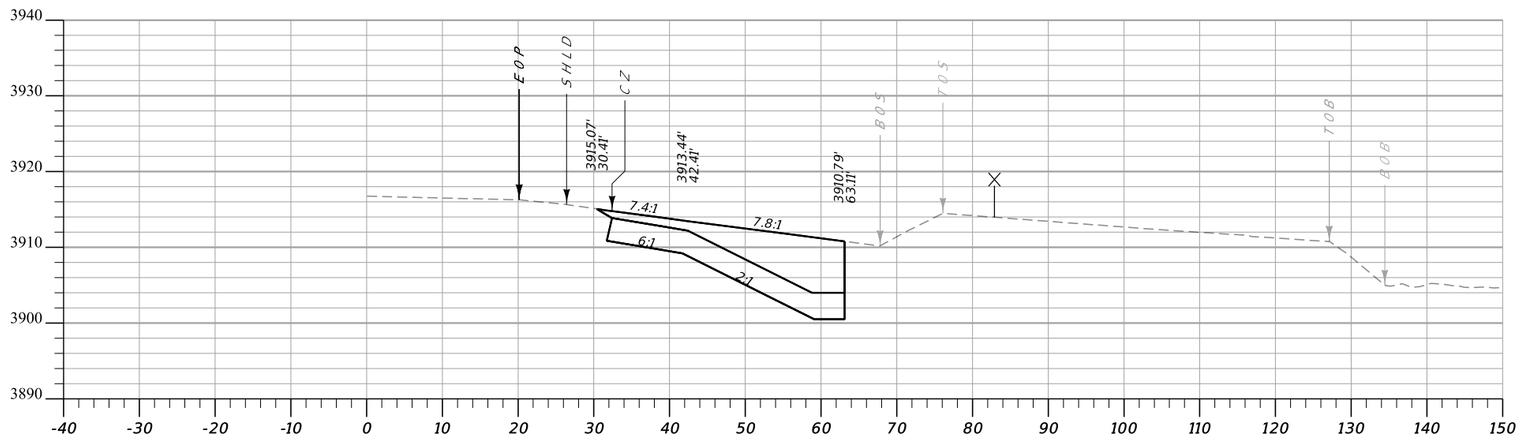
CA: 172.4 SF CV: 193 CY **Sta. 6+00.00 R1** FA: 75.1 SF FV: 84 CY

MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9059001rdlay070.dgn	DESIGNED BY K. SHUCK	8/3/2020	SITE 7 CROSS SECTIONS		US-12 BANK STABILIZATION-PH 2	STPP-NH 14-5(41)159
	11/5/2020	REVIEWED BY					
	10:21:31 AM CPS - U2160	CHECKED BY		WHEATLAND COUNTY		UPN 9059001	SHEET 9

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CA: 291.6 SF CV: 376 CY **Sta. 6+90.00 R1** FA: 188.4 SF FV: 223 CY

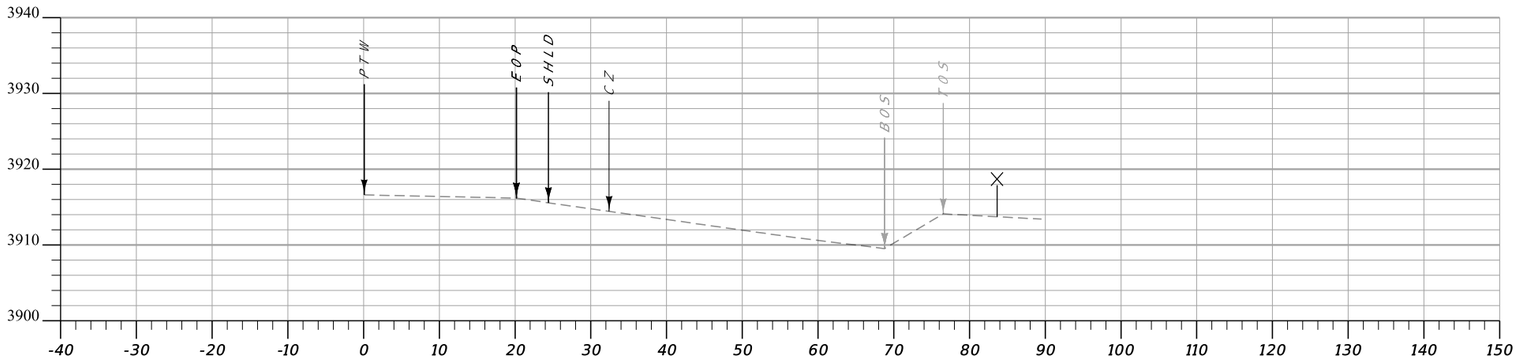


CA: 215.4 SF CV: 359 CY **Sta. 6+50.00 R1** FA: 112.3 SF FV: 174 CY

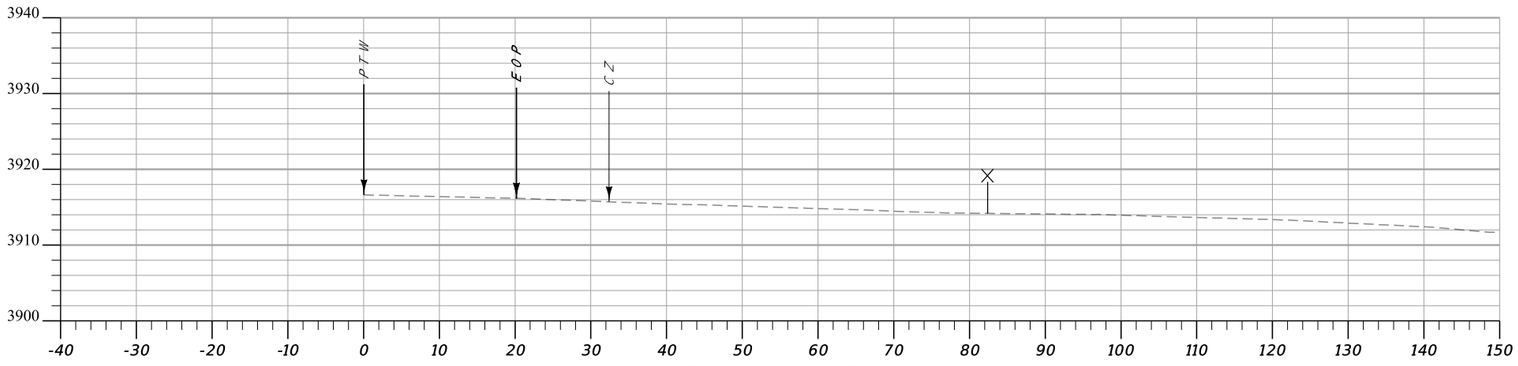
MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9059001rdlay070.dgn	DESIGNED BY	K. SHUCK	8/3/2020	SITE 7 CROSS SECTIONS	US-12 BANK STABILIZATION-PH 2	STPP-NH 14-5(41)159
	11/5/2020	REVIEWED BY					
	10:21:35 AM CPS - U216C	CHECKED BY			WHEATLAND COUNTY	UPN 9059001	SHEET 10

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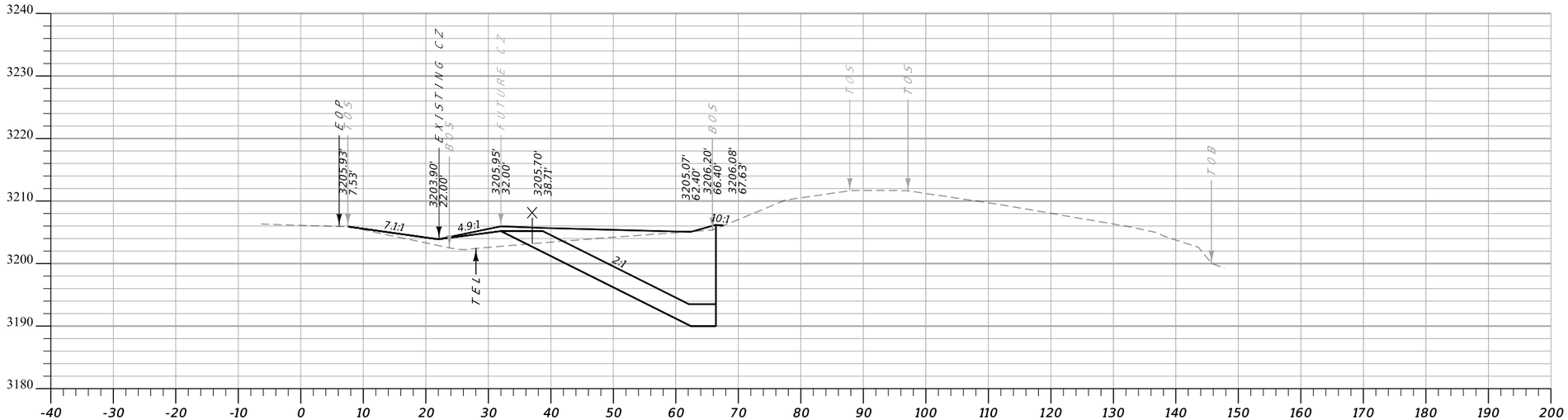
CA: 0.0 SF CV: 0 CY **Sta. 7+50.00 R1** FA: 0.0 SF FV: 0 CY



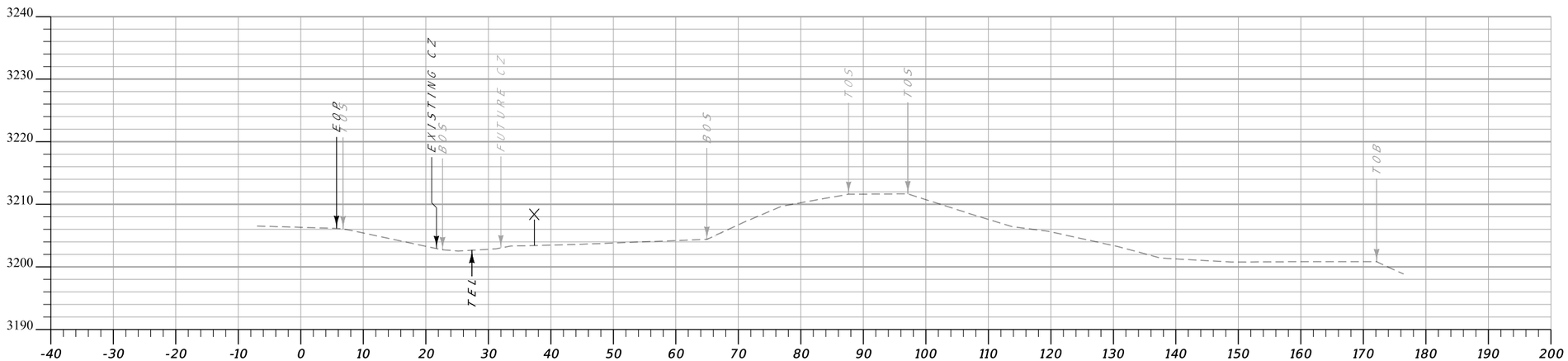
CA: 0.0 SF CV: 54 CY **Sta. 7+00.00 R1** FA: 0.0 SF FV: 0 CY

MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9059001rdlay070.dgn	DESIGNED BY K. SHUCK	8/3/2020	SITE 7 CROSS SECTIONS	US-12 BANK STABILIZATION-PH 2	STPP-NH 14-5(41)159
	11/5/2020	REVIEWED BY				
	10:21:39 AM CPS - U2160	CHECKED BY		WHEATLAND COUNTY	UPN 9059001	SHEET 11

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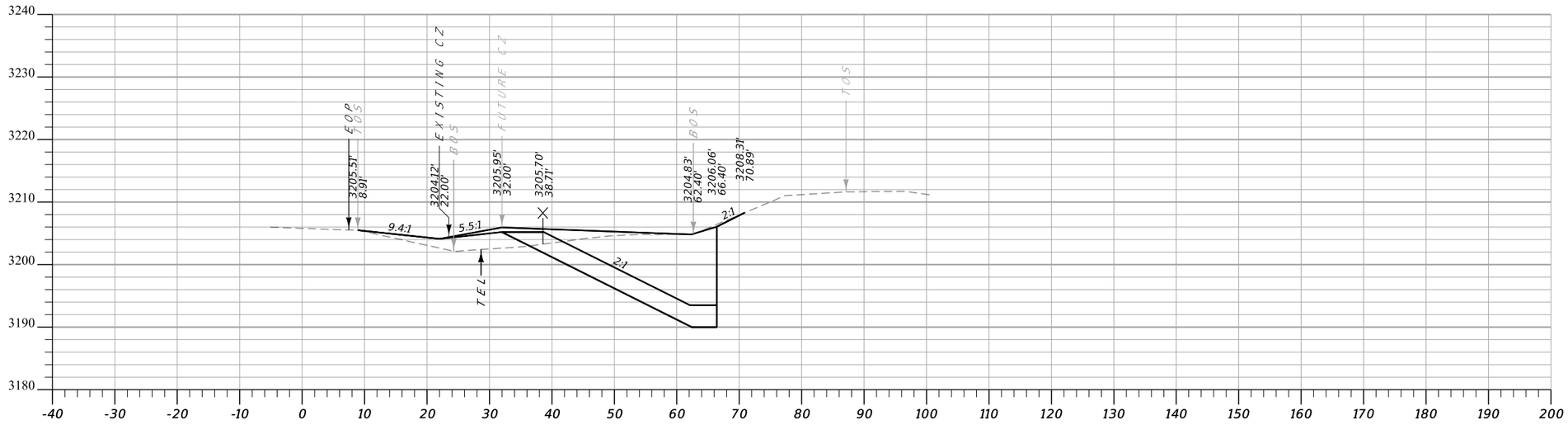
CA: 259.9 SF CV: 144 CY **Sta. 71+30.00 R1** FA: 189.1 SF FV: 105 CY



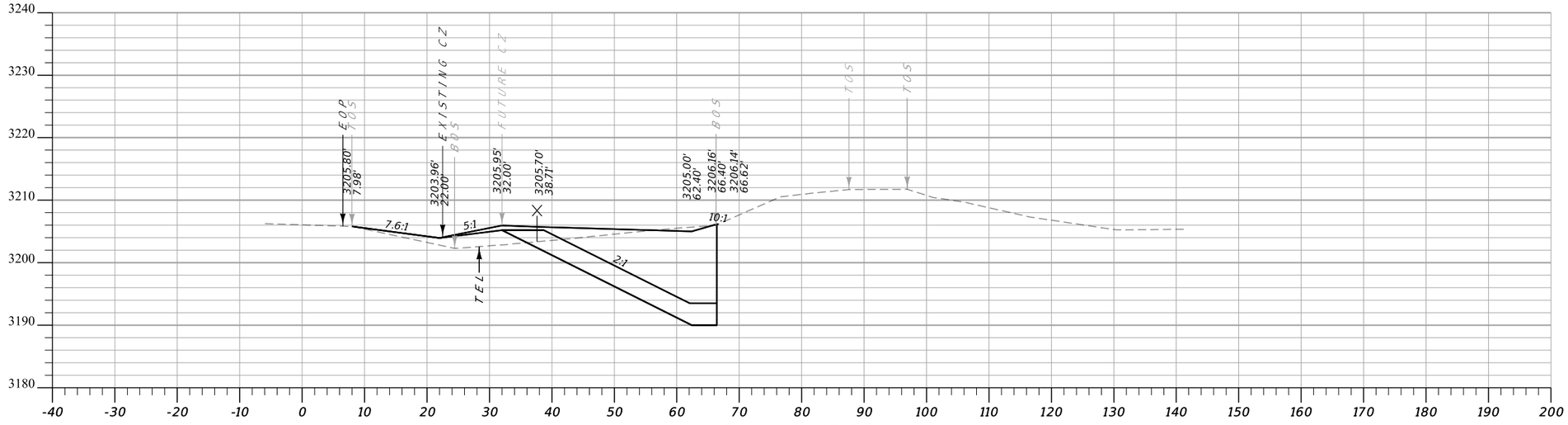
CA: 0.0 SF CV: 0 CY **Sta. 71+00.00 R1** FA: 0.0 SF FV: 0 CY

MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9059001rdlay090.dgn	DESIGNED BY	K. SHUCK	7/15/2020	SITE 9 CROSS SECTIONS	US-12 BANK STABILIZATION-PH 2	STPP-NH 14-5(41)159
	11/5/2020	REVIEWED BY					
	10:21:51 AM CPS - U2160	CHECKED BY			MUSSELSHELL COUNTY	UPN 9059001	SHEET 1

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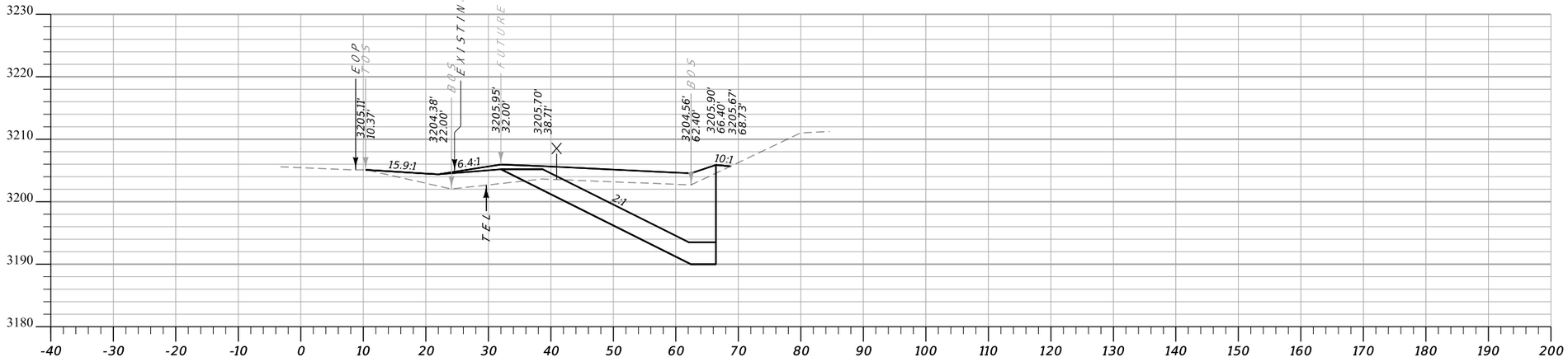
CA: 266.0 SF CV: 498 CY **Sta. 72+00.00 R1** FA: 235.4 SF FV: 434 CY



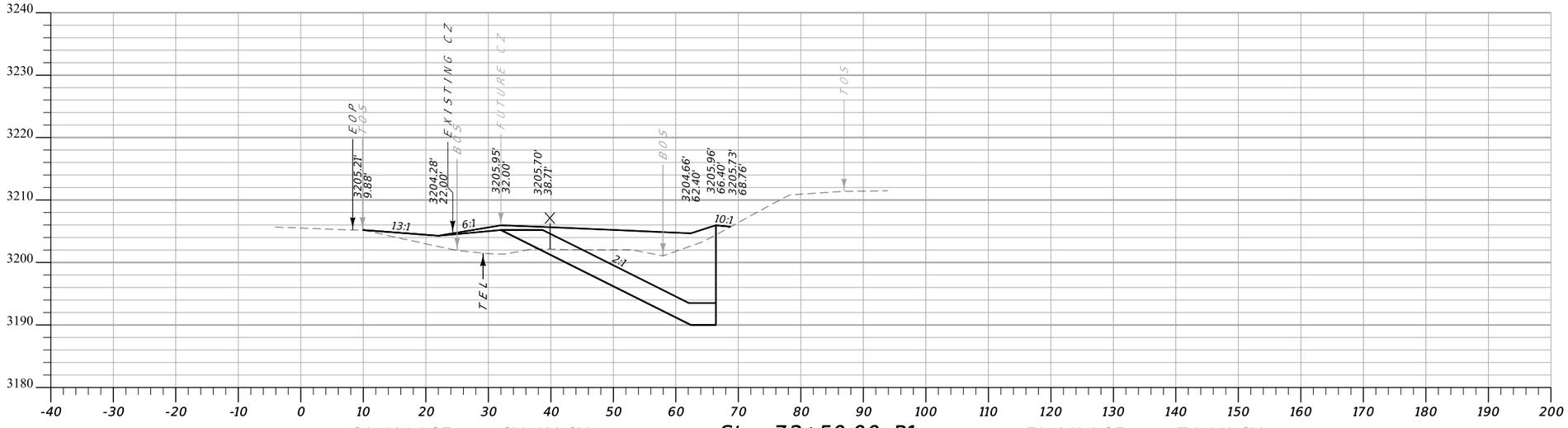
CA: 271.4 SF CV: 197 CY **Sta. 71+50.00 R1** FA: 233.2 SF FV: 157 CY

MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9059001rdlay090.dgn	DESIGNED BY K. SHUCK	7/15/2020	SITE 9 CROSS SECTIONS	US-12 BANK STABILIZATION-PH 2	STPP-NH 14-5(41)159
	11/5/2020	REVIEWED BY		MUSSELSHELL COUNTY	UPN 9059001	SHEET 2
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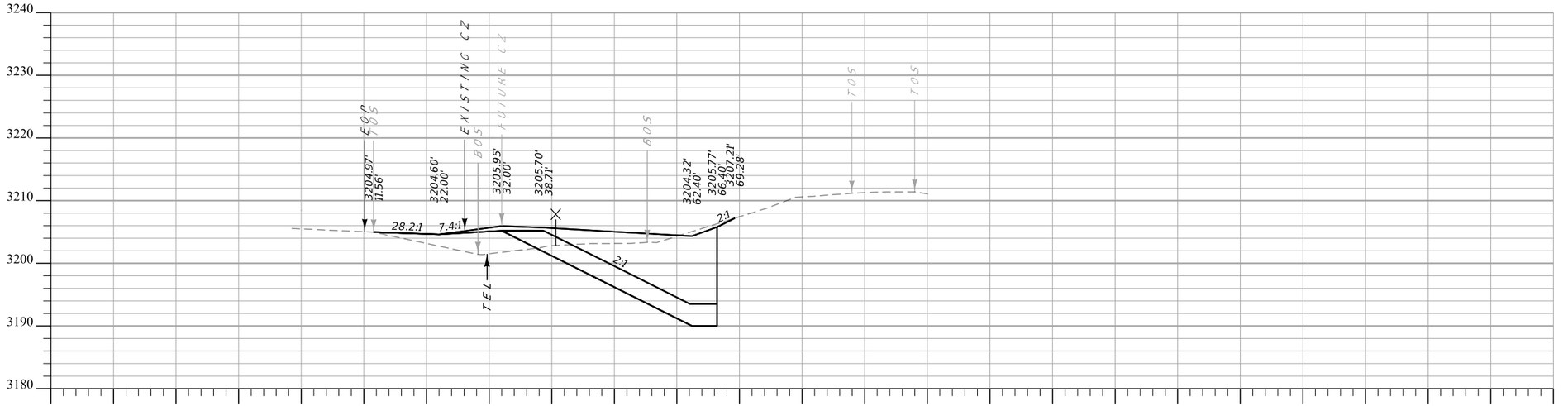
CA: 228.7 SF CV: 244 CY **Sta. 72+81.20 R1** FA: 235.4 SF FV: 279 CY



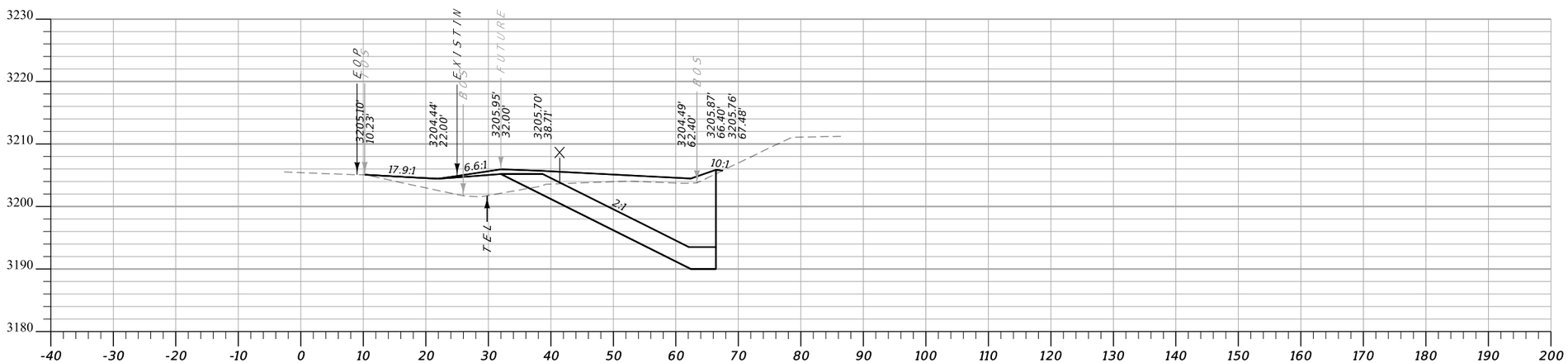
CA: 194.4 SF CV: 426 CY **Sta. 72+50.00 R1** FA: 249.3 SF FV: 449 CY

MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9059001rdlay090.dgn	DESIGNED BY K. SHUCK	7/15/2020	SITE 9 CROSS SECTIONS	US-12 BANK STABILIZATION-PH 2	STPP-NH 14-5(41)159
	11/5/2020	REVIEWED BY		MUSSELSHELL COUNTY	UPN 9059001	SHEET 3
	10:22:00 AM CPS - U2160	CHECKED BY				

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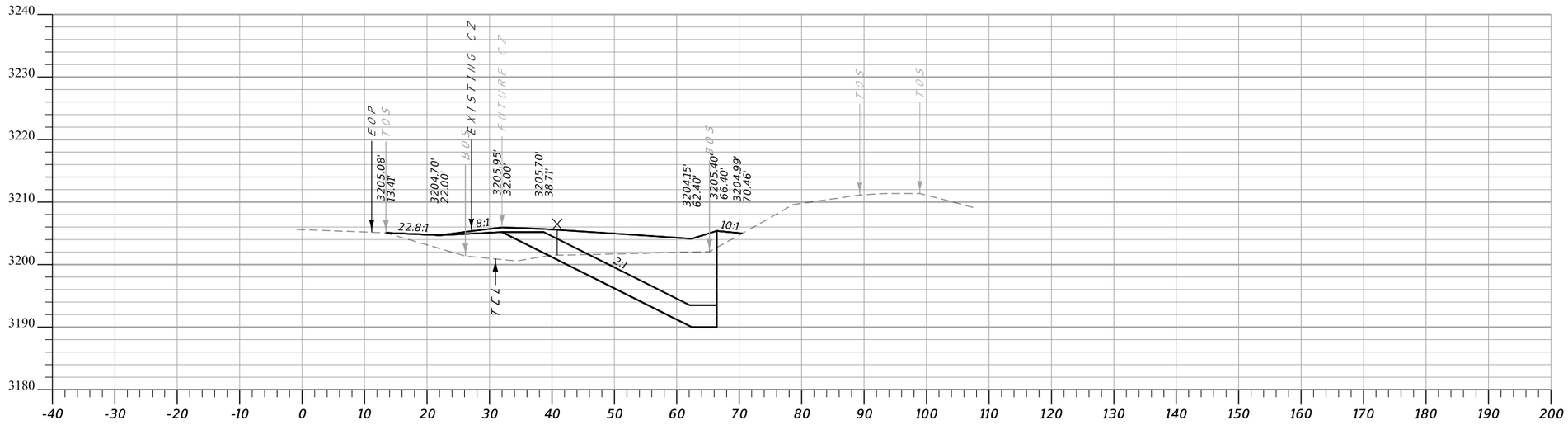
CA: 239.9 SF CV: 450 CY **Sta. 73+50.00 R1** FA: 242.6 SF FV: 449 CY



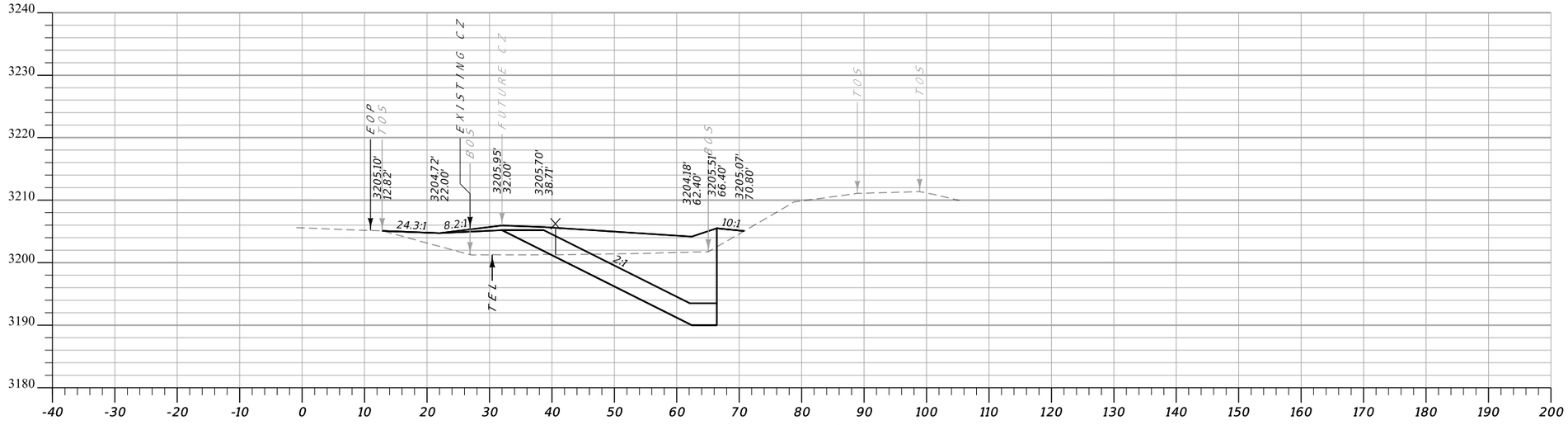
CA: 246.4 SF CV: 165 CY **Sta. 73+00.00 R1** FA: 242.0 SF FV: 166 CY

MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9059001rdlay090.dgn 11/5/2020 10:22:04 AM CPS - U216C	DESIGNED BY REVIEWED BY CHECKED BY	K. SHUCK	7/15/2020	SITE 9 CROSS SECTIONS MUSSELSHELL COUNTY		US-12 BANK STABILIZATION-PH 2 UPN 9059001	STPP-NH 14-5(41)159 SHEET 4

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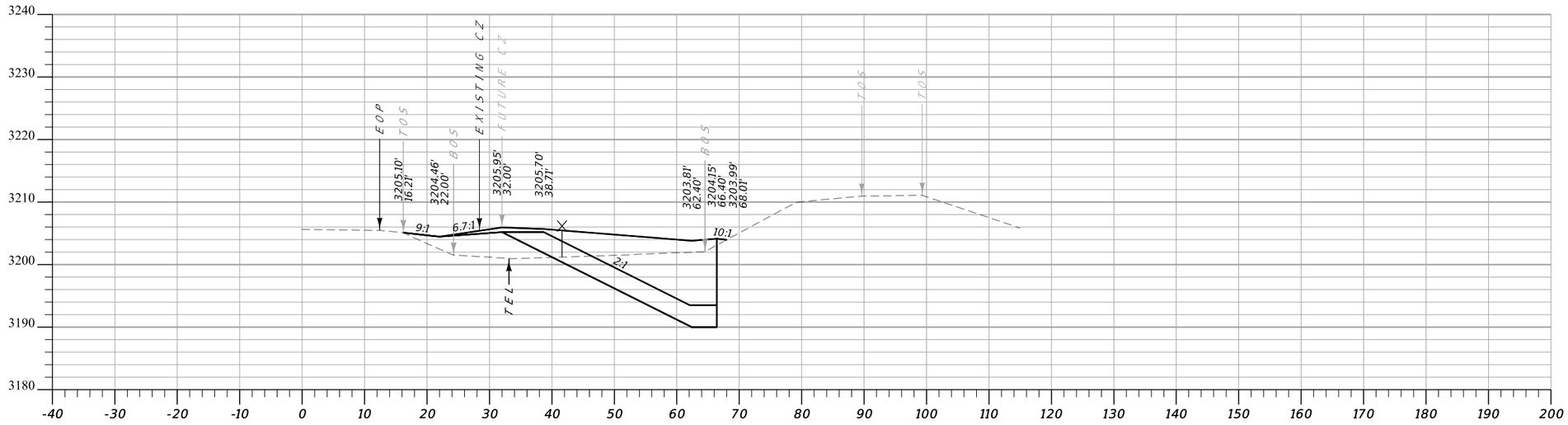
CA: 185.9 SF CV: 63 CY **Sta. 74+00.00 R1** FA: 257.2 SF FV: 89 CY



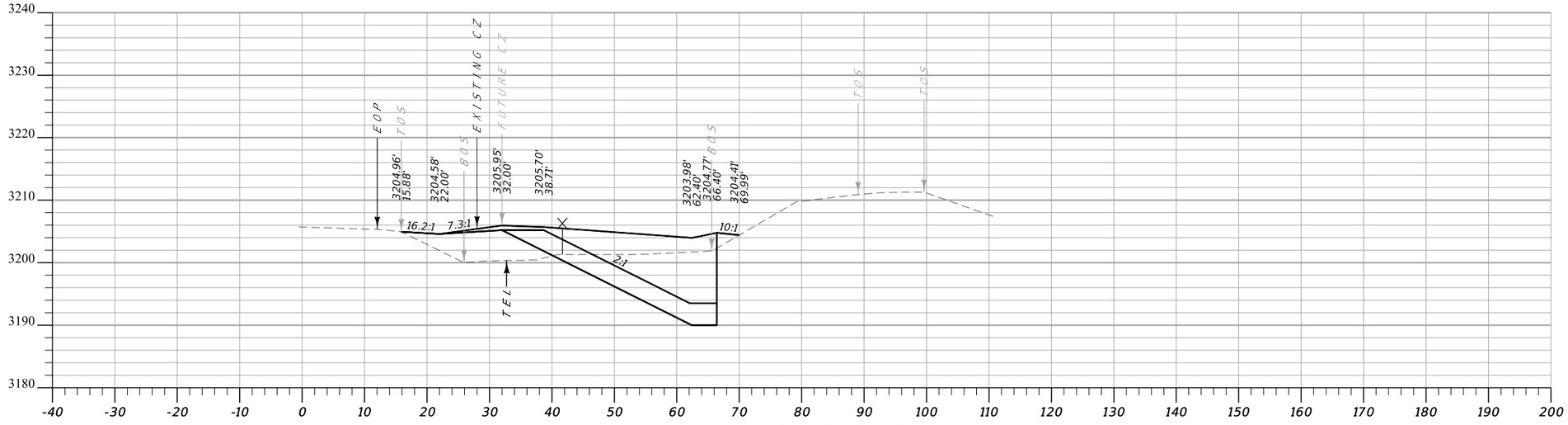
CA: 178.4 SF CV: 315 CY **Sta. 73+90.65 R1** FA: 255.9 SF FV: 375 CY

MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9059001rdlay090.dgn	DESIGNED BY K. SHUCK	7/15/2020	SITE 9 CROSS SECTIONS		US-12 BANK STABILIZATION-PH 2	STPP-NH 14-5(41)159
	11/5/2020	REVIEWED BY					
	10:22:09 AM CPS - U216C	CHECKED BY		MUSSELSHELL COUNTY		UPN 9059001	SHEET 5

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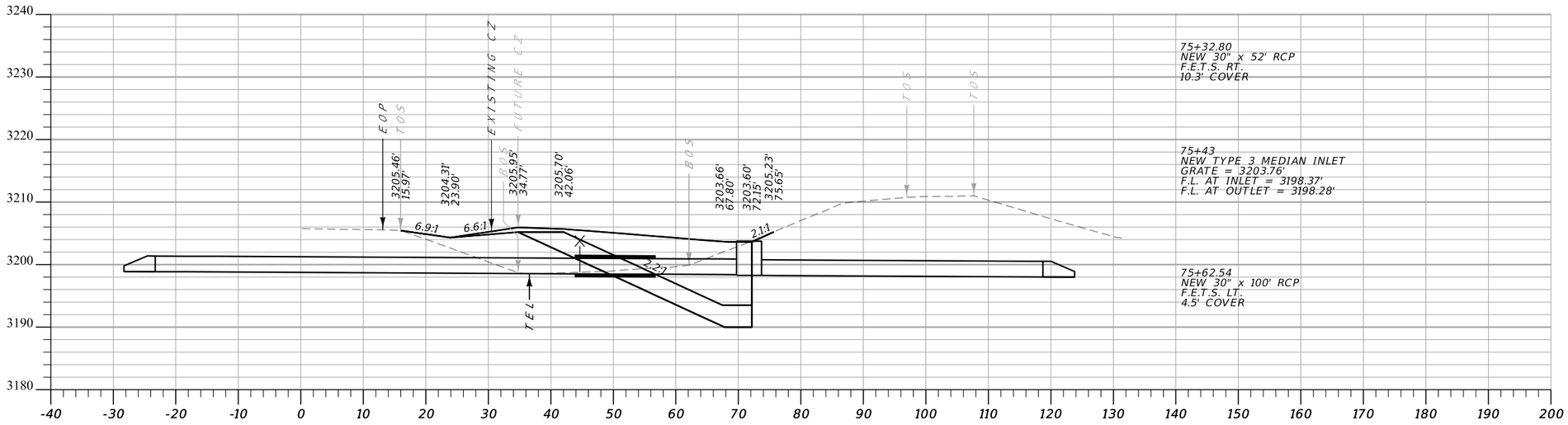


CA: 182.5 SF CV: 333 CY **Sta. 75+00.00 R1** FA: 237.1 SF FV: 463 CY

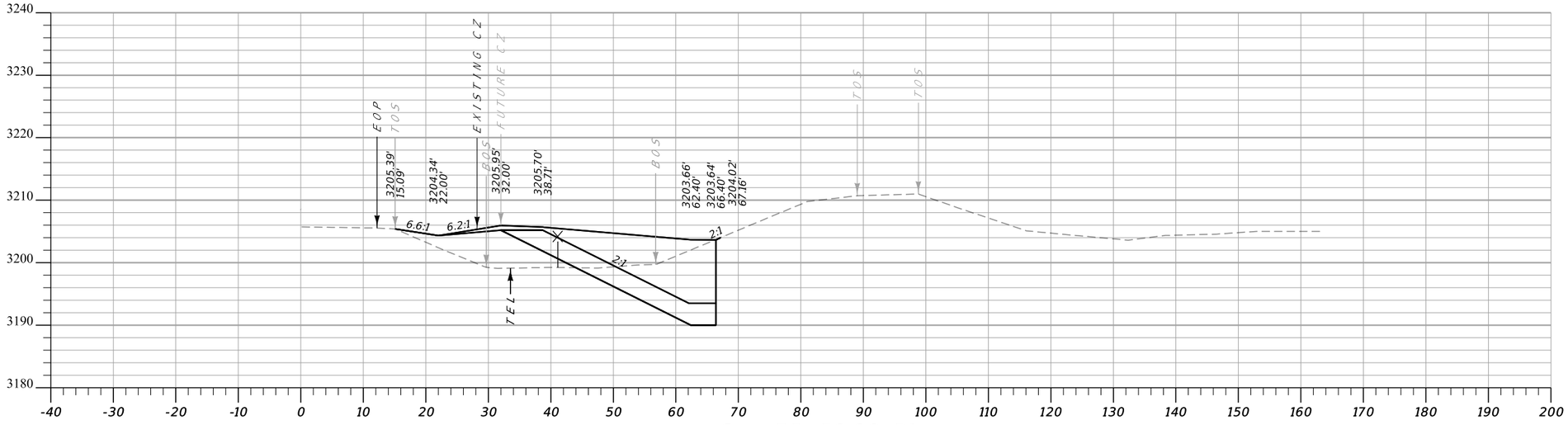


CA: 176.9 SF CV: 336 CY **Sta. 74+50.00 R1** FA: 262.8 SF FV: 482 CY

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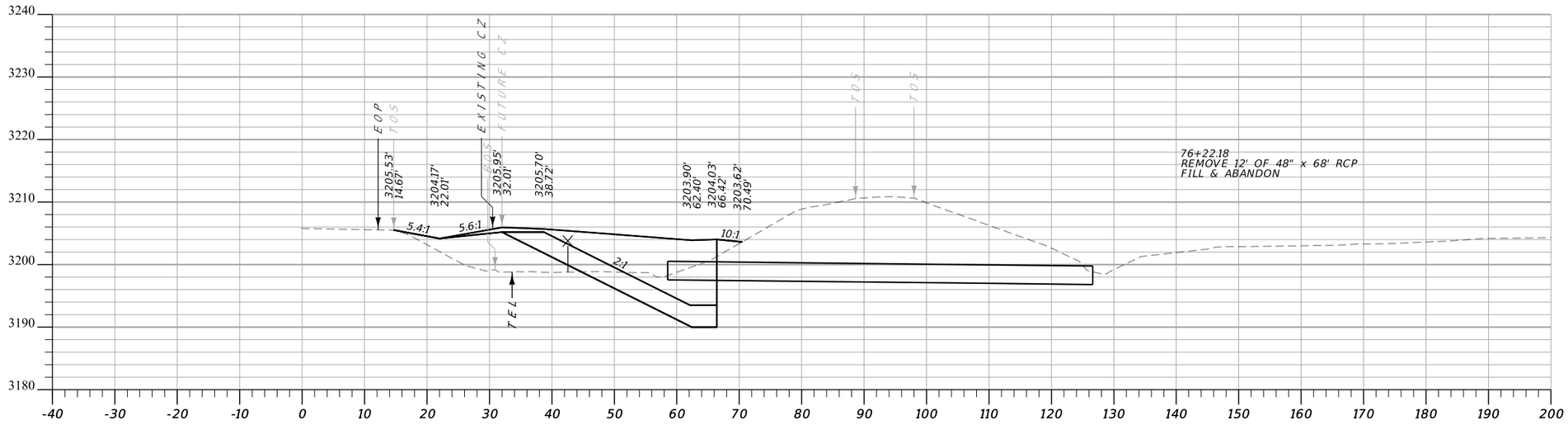
CA: 161.1 SF **Sta. 75+71.02 R1** FA: 287.0 SF



CA: 141.0 SF CV: 299 CY **Sta. 75+50.00 R1** FA: 261.8 SF FV: 462 CY

MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9059001rdlay090.dgn	DESIGNED BY	K. SHUCK	7/15/2020	SITE 9 CROSS SECTIONS	US-12 BANK STABILIZATION-PH 2	STPP-NH 14-5(41)159
	11/5/2020	REVIEWED BY					
	10:22:18 AM CPS - U2160	CHECKED BY			MUSSELSHELL COUNTY	UPN 9059001	SHEET 7

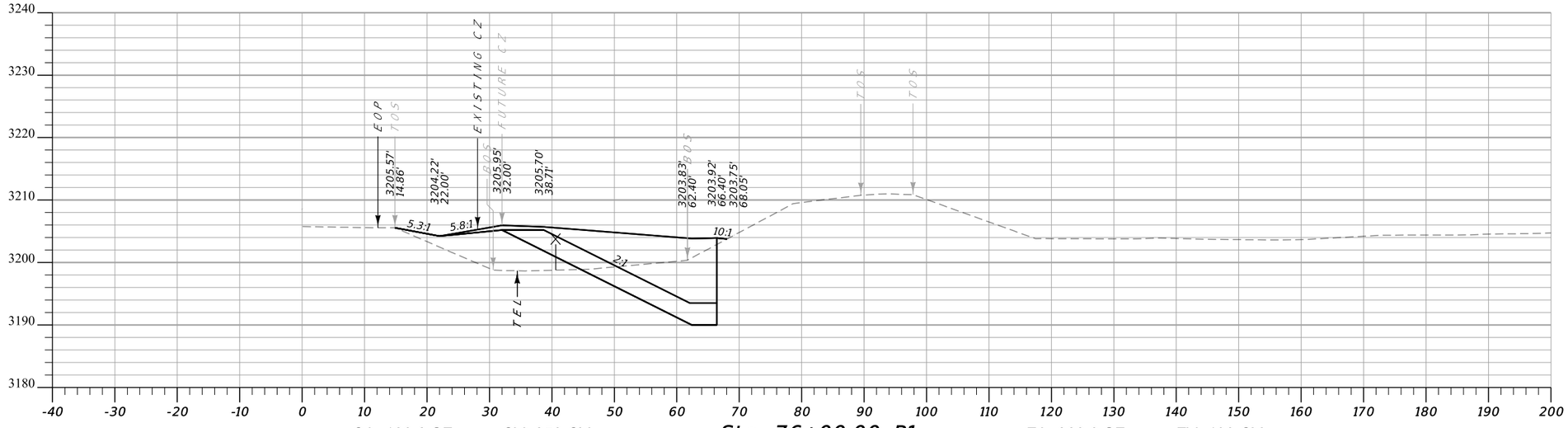
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CA: 117.7 SF

Sta. 76+22.18 R1

FA: 279.4 SF



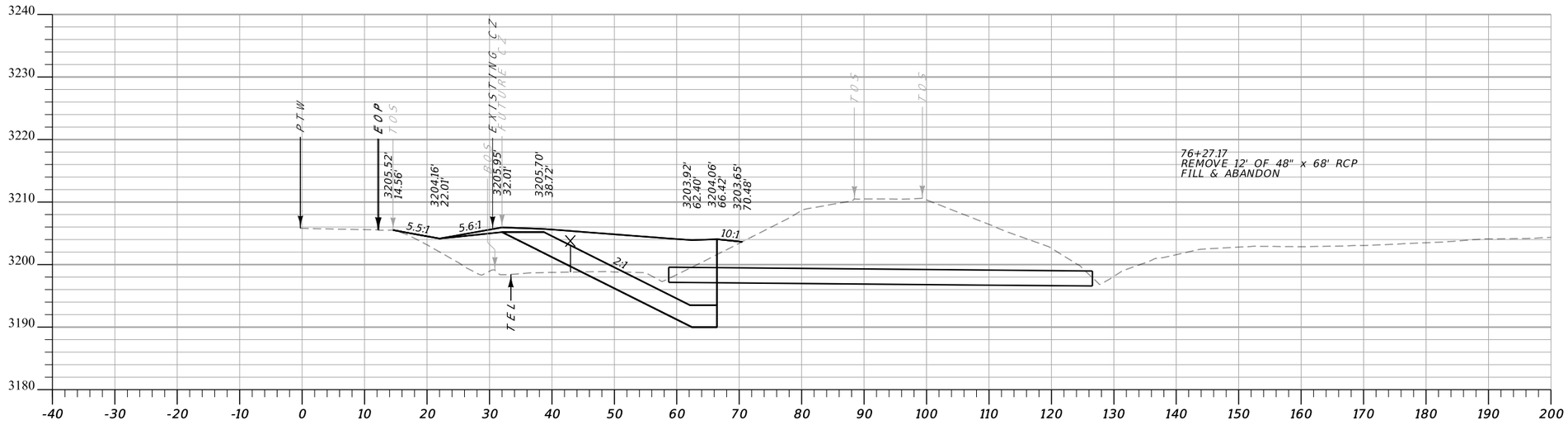
CA: 139.2 SF CV: 259 CY

Sta. 76+00.00 R1

FA: 269.9 SF FV: 493 CY

MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9059001rdlay090.dgn	DESIGNED BY K. SHUCK	7/15/2020	SITE 9 CROSS SECTIONS	US-12 BANK STABILIZATION-PH 2	STPP-NH 14-5(41)159
	11/5/2020	REVIEWED BY		MUSSELSHELL COUNTY	UPN 9059001	SHEET 8
	10:22:22 AM CPS - U2160	CHECKED BY				

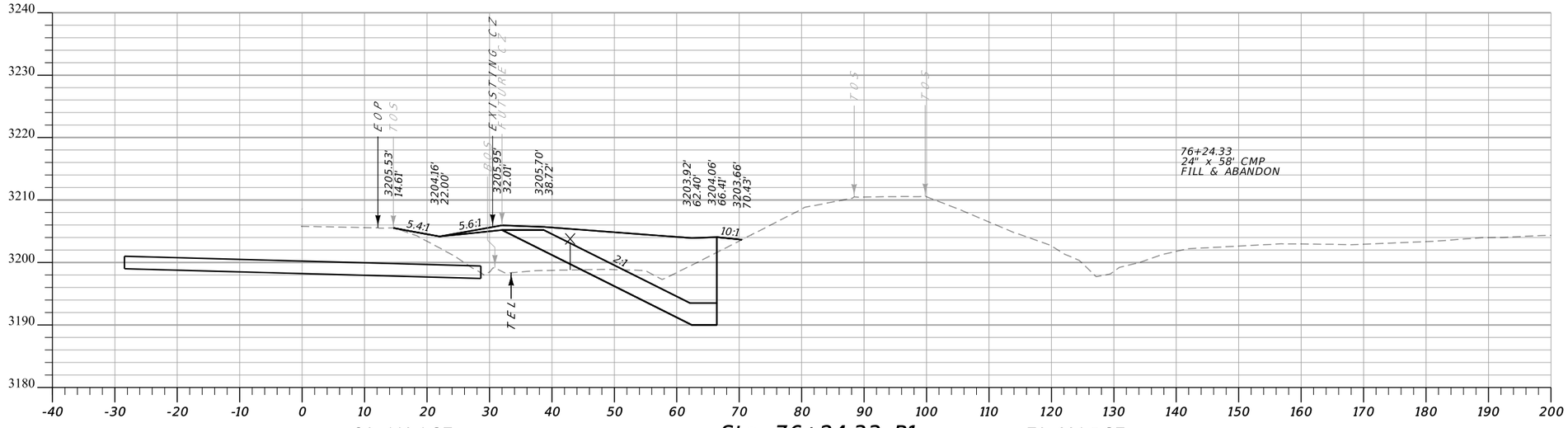
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CA: 116.1 SF

Sta. 76+27.17 R1

FA: 283.8 SF



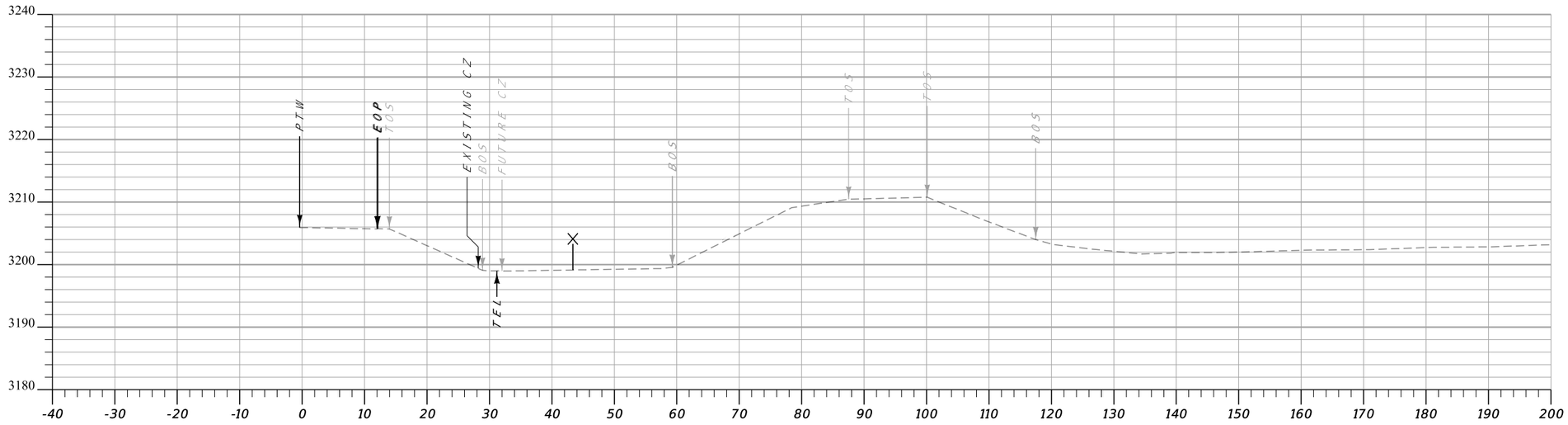
CA: 116.1 SF

Sta. 76+24.33 R1

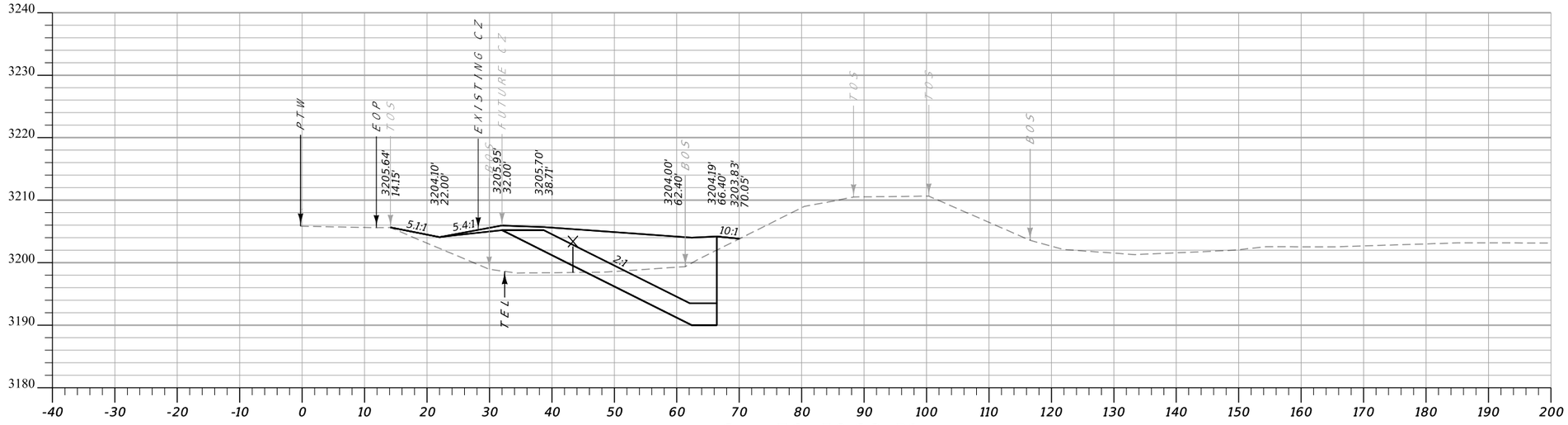
FA: 281.5 SF

MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9059001rdlay090.dgn	DESIGNED BY K. SHUCK	7/15/2020	SITE 9 CROSS SECTIONS	US-12 BANK STABILIZATION-PH 2	STPP-NH 14-5(41)159
	11/5/2020	REVIEWED BY		MUSSELSHELL COUNTY	UPN 9059001	SHEET 9
	10:22:27 AM CPS - U2160	CHECKED BY				

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CA: 0.0 SF CV: 68 CY **Sta. 76+80.00 R1** FA: 0.0 SF FV: 55 CY



CA: 123.0 SF CV: 243 CY **Sta. 76+50.00 R1** FA: 281.4 SF FV: 511 CY

MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9059001rdlay090.dgn	DESIGNED BY K. SHUCK	7/15/2020	SITE 9 CROSS SECTIONS	US-12 BANK STABILIZATION-PH 2	STPP-NH 14-5(41)159
	11/5/2020	REVIEWED BY		MUSSELSHELL COUNTY	UPN 9059001	SHEET 10
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