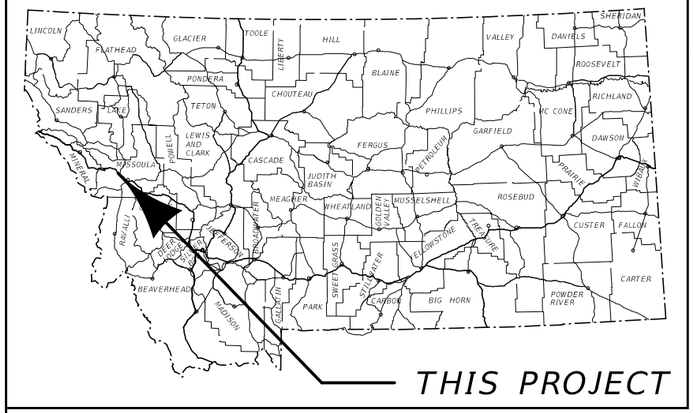
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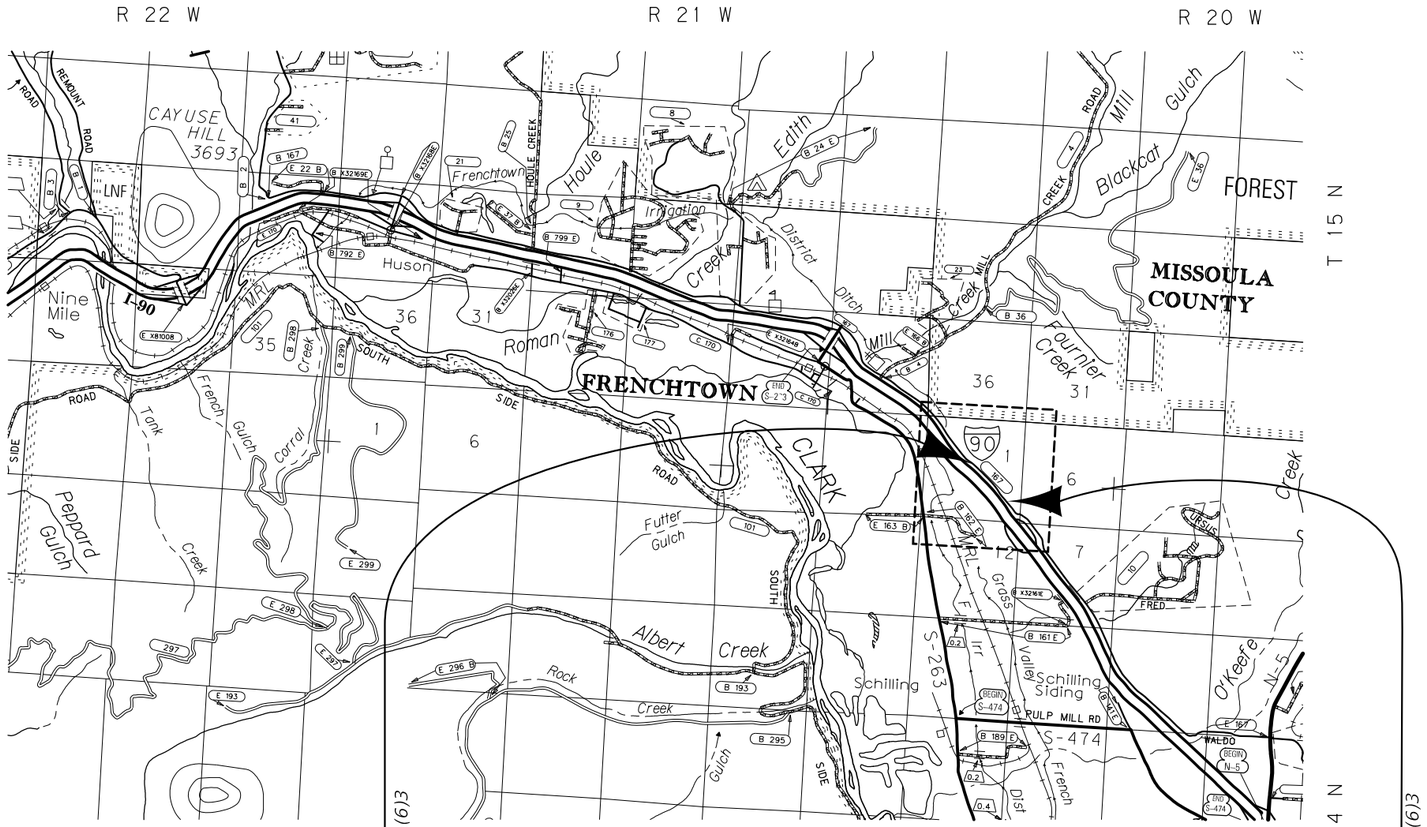
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MONTANA DEPARTMENT OF TRANSPORTATION

FEDERAL AID PROJECT STPS 574-1(6)3
SHARED-USE PATH & STORMWATER MIT.
HUSON EAST - PONDING MITIGATION
MISSOULA COUNTY



LENGTH 0.14 MILES



SURFACING SOURCES - CONTRACTOR FURNISHED

PLANS PREPARED BY
HDR
HDR
700 SW HIGGINS AVE
SUITE 200
MISSOULA, MT 59803
PHONE (406) 532-2200

MONTANA
DEPARTMENT OF TRANSPORTATION

APPROVED BY:
HIGHWAYS
DESIGN ENGINEER
Signed by:
54B7CB8717154A3...
MONTANA
MEGAN CAIL
29099PE
LICENSED PROFESSIONAL ENGINEER
4/4/2025
DATE

ASSOCIATED PROJECT AGREEMENT NUMBERS	
R / W	
I.C.	
P. E.	STPS 574-1(5)3

3	MONTANA Department of Transportation	...\6.2_WIP\RD\6137001RDTT_P65	DESIGNED BY	LAS	12/2024	ROAD PLANS
2		1/28/2025	REVIEWED BY	BLM	12/2024	
		2:38:40 PM LSANDE	CHECKED BY	RCL	12/2024	UPN 6137001

Docusign Envelope ID: 39C3CEB7-DF71-4428-96D2-88E9DA8A48B1

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NOTES

BASIS OF PLAN QUANTITIES

(QUANTITIES FOR ESTIMATING PURPOSES ONLY)

COMP. AGGREGATE WEIGHT	= 3700 LBS. PER CUBIC YARD
COMP. WEIGHT OF PL. MIX BIT. SURF.	= 3855 LBS. PER CUBIC YARD
ASPHALT CEMENT - GRADE S - 3/8" AGG.	= 6.2% 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)
EMULSIFIED ASPHALT - FOG SEAL (S.U.P.)	= 0.05 GAL. PER SQ. YARD (UNDILUTED)

SOILS INFORMATION

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

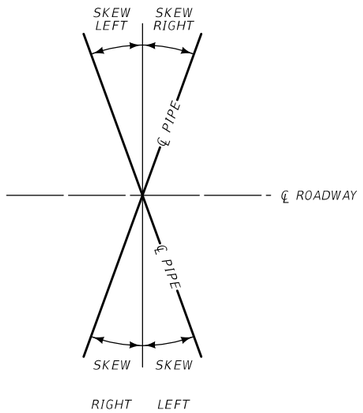
BORING NUMBER

(GEOTECHNICAL BORING)

STATIONING - REFERENCE POSTS

STATIONING ON THIS PROJECT INCREASES FROM WEST TO EAST. REFERENCE POSTS INCREASE FROM EAST TO WEST.

SKEW DIAGRAM



APPROACHES

PROVIDE THE FOLLOWING SURFACING SECTIONS TO APPROACHES (UNLESS NOTED OTHERWISE IN THE PLANS OR TYPICAL SECTIONS):

0.20' PLANT MIX BITUMINOUS SURF.
0.60' CRUSHED AGGREGATE COURSE.

CLEARING AND GRUBBING

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

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.

PUBLIC LAND SURVEY MONUMENTS

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

CONSTRUCTION NOTES

USE EXTREME CAUTION WHEN WORKING AROUND TRANSMISSION LINE POLES LOCATED LEFT.

COORDINATE WITH MISSOULA ELECTRIC COOPERATIVE FOR RELOCATING EXISTING GUY WIRES WHICH ARE IMPACTED BY CONSTRUCTION OF THE NEW UNDERGROUND RETENTION AND STORM DRAIN SYSTEM.

USE EXTREME CAUTION WHEN EXCAVATING NEAR THE UNDERGROUND COMMUNICATION LINES LOCATED WITHIN THE CONSTRUCTION LIMITS.

DO NOT DISTURB THE EXISTING DRAIN FIELD AND WELL LOCATED LEFT (NORTHEAST) OUTSIDE OF MDT'S EXISTING R/W.

DO NOT DISTURB FRENCHTOWN FRONTAGE ROAD AND AREAS OF THE SHARED-USE PATH OUTSIDE THE CONSTRUCTION LIMITS UNLESS APPROVED BY THE EPM.

DO NOT DISTURB

DO NOT DISTURB EXISTING STRUCTURES, ROADWAYS, LANDSCAPING, DRAINAGE FEATURES, AND UTILITIES OUTSIDE OF THE PROPOSED CONSTRUCTION LIMITS OR AS SHOWN IN THE PLANS UNLESS DIRECTED BY THE MDT PROJECT MANAGER.

WETLANDS

WETLANDS MAY EXIST ADJACENT TO THE ROADWAY AND BEYOND THE PROJECT LIMITS. A WETLAND DELINEATION HAS NOT BEEN COMPLETED FOR THIS PROJECT. IMPACTS TO WETLAND AREAS ARE NOT ANTICIPATED IN ASSOCIATION WITH THE PROPOSED WORK. NO PERMITS HAVE BEEN OBTAINED. ANY ACTION IMPACTING WETLAND AREAS WITHOUT THE APPROPRIATE PERMITTING IS THE RESPONSIBILITY OF THE CONTRACTOR.

AS-BUILTS

STPS 574-1(2)0

PATH CENTERLINE ALIGNMENT COORDINATE TABLE

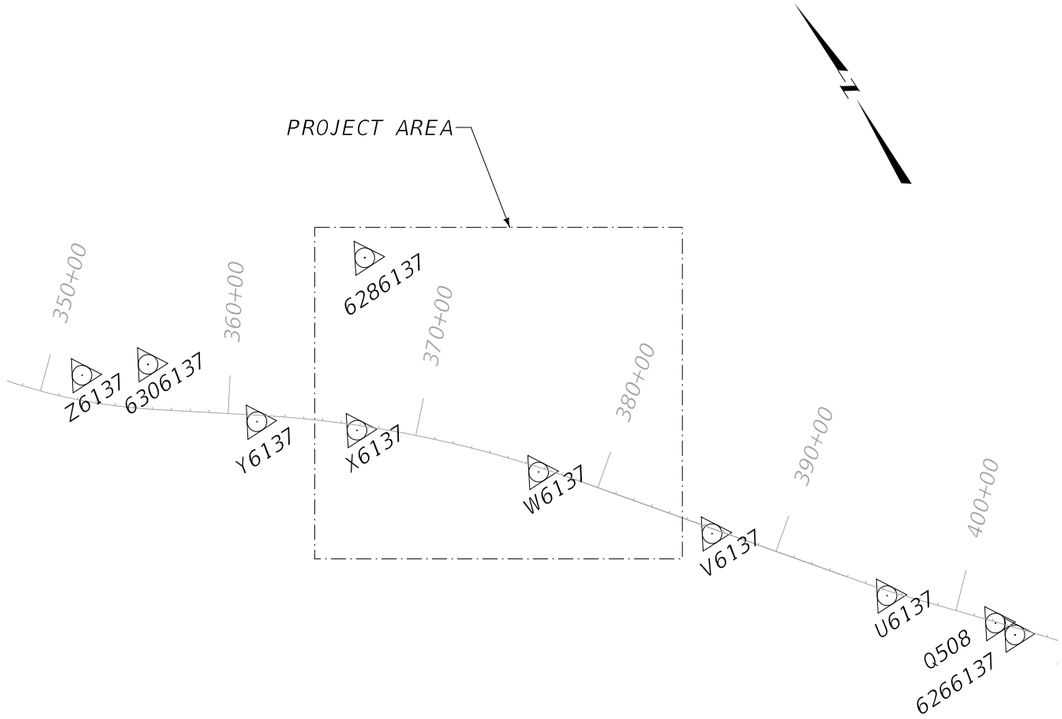
STATION	DESCRIPTION	N OR Y COORDINATE	E OR X COORDINATE	REMARKS
1589+58.37	POB	1,037,066.552	798,155.684	
1589+62.75	PC	1,037,065.004	798,159.782	
1589+84.27	PI	1,037,057.397	798,179.916	
1590+05.15	PT	1,037,042.181	798,195.137	
1590+13.23	PC	1,037,036.472	798,200.848	
1590+30.00	POC	1,037,024.592	798,212.692	BEGIN DITCH GRADING
1593+38.66	PI	1,036,806.398	798,431.002	
1595+40.00	POC	1,036,645.132	798,553.110	BEGIN PATH RECONSTRUCTION
1596+63.17	PT	1,036,548.431	798,629.392	
1597+66.00	POT	1,036,466.918	798,692.080	END PATH RECONSTRUCTION
1597+79.06	POT	1,036,456.566	798,700.041	END DITCH GRADING
1599+75.87	POE	1,036,300.558	798,820.019	

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CONTROL DIAGRAM

SCALE: N/A



LEVEL DATA

BEARING SOURCE

GRID -- MONTANA COORDINATE SYSTEM NAD 83-2007

LEVEL DATUM SOURCE

NAVD 88 (GNSS DERIVED ELEVATIONS USING GEOID 03 AND HOLDING BMS D509, J56, MSLGPS)

CONTROL ABSTRACT

POINT NAME/NUMBER	N OR Y COORDINATE	E OR X COORDINATE	POINT ELEVATION	LOCATION AND DESCRIPTION
6266137	1,034,496.622	800,168.115	3178.12	SET MDT 2" ALUMINUM CAP STAMPED 6266137. MARK IS BETWEEN THE FRONTAGE ROAD AND THE INTERSTATE, APPROXIMATELY 450' NORTHWESTERLY OF THE WEST BOUND SCALE, 50' WEST OF THE FRONTAGE ROAD.
6286137	1,038,036.877	798,373.008	3211.53	SET MDT 2" ALUMINUM CAP STAMPED 6286137. TO REACH FROM 6276137, TURN NORTHEASTERLY ON AN ACCESS ROAD WHICH IS APPROXIMATELY 120' NORTHWESTERLY OF 6276137, GO NORTHEASTERLY APPROXIMATELY 200' TO AN INTERSECTION, TURN LEFT AND CONTINUE APPROXIMATELY 850' TO AN EAST\WEST FENCE, MARK IS 10' NORTH OF THE FENCE. MDT WITNESS POST IS 4' SOUTH.
6306137	1,038,188.065	797,106.435	3166.25	SET MDT 2" ALUMINUM CAP STAMPED 6306137. TO REACH FROM 6276137, GO NORTHWESTERLY ON THE FRONTAGE ROAD FOR APPROXIMATELY 1320' TO A DOUBLE APPROACH ON THE RIGHT, TURN RIGHT ON THE NORTHERLY APPROACH ROAD AND CONTINUE APPROXIMATELY 780' TO THE MARK WHICH IS APPROXIMATELY 40' ON THE LEFT. MDT WITNESS POST 5' SOUTH.
U6137	1,035,038.211	799,714.162	3170.04	SET MDT 2" ALUMINUM CAP STAMPED U6137. ON US HIGHWAY 93 NORTH OF MISSOULA GO 0.24 MILES FROM MP 1 AND TURN WEST ONTO WALDO ROAD, HEAD WEST 3.67 MILES, MARK IS 17' SOUTH OF CENTERLINE. MDT WITNESS POST IS 3' SOUTH ON FENCE LINE.
V6137	1,035,816.270	799,117.701	3164.50	SET MDT 2" ALUMINUM CAP STAMPED V6137. ON US HIGHWAY 93 NORTH OF MISSOULA GO 0.24 MILES FROM MP 1 AND TURN WEST ONTO WALDO ROAD, HEAD WEST 3.86 MILES, MARK IS 19' SOUTH OF CENTERLINE. MDT WITNESS POST IS 3' SOUTH ON FENCE LINE.
W6137	1,036,587.795	798,526.381	3162.50	SET MDT 2" ALUMINUM CAP STAMPED W6137. ON US HIGHWAY 93 NORTH OF MISSOULA GO 0.24 MILES FROM MP 1 AND TURN WEST ONTO WALDO ROAD, HEAD WEST 4.04 MILES, MARK IS 18' SOUTH OF CENTERLINE. MDT WITNESS POST IS 3' SOUTH ON FENCE LINE.
X6137	1,037,295.362	797,842.387	3160.26	SET MDT 2" ALUMINUM CAP STAMPED X6137. ON US HIGHWAY 93 NORTH OF MISSOULA GO 0.24 MILES FROM MP 1 AND TURN WEST ONTO WALDO ROAD, HEAD WEST 4.23 MILES, MARK IS 19' SOUTH OF CENTERLINE. MDT WITNESS POST IS 3' SOUTH ON FENCE LINE.
Y6137	1,037,621.022	797,423.844	3147.63	SET MDT 2" ALUMINUM CAP STAMPED Y6137. ON US HIGHWAY 93 NORTH OF MISSOULA GO 0.24 MILES FROM MP 1 AND TURN WEST ONTO WALDO ROAD, HEAD WEST 4.29 MILES, MARK IS 25' SOUTH OF CENTERLINE. MDT WITNESS POST IS 5' SOUTH ON FENCE LINE.
Z6137	1,038,329.945	796,782.786	3155.16	SET MDT 2" ALUMINUM CAP STAMPED Z6137. ON US HIGHWAY 93 NORTH OF MISSOULA GO 0.24 MILES FROM MP 1 AND TURN WEST ONTO WALDO ROAD, HEAD WEST 4.51 MILES, MARK IS 145' NORTH OF CENTERLINE, ON TOP OF A HILL, 5' SOUTHWEST FROM POWER POLE. MDT WITNESS POST IS 5' NORTH.
Q508	1,034,604.569	800,115.530	3175.11	FOUND NGS BENCH MARK. ON INTERSTATE 90, WEST OF DESMET INTERCHANGE AT MP 92.42, 116' NORTHEAST OF THE CENTERLINE OF THE WEST BOUND LANE, 23' SOUTHWEST FROM THE CENTERLINE OF THE FRONTAGE ROAD, 2.5' SOUTH OF R/W FENCE, AT THE EXTENDED CENTERLINE OF A FIELD APPROACH ON THE NORTH SIDE OF THE FRONTAGE ROAD, 0.1 MILES WEST OF THE WEST BOUND WEIGH STATION, NO WITNESS POST FOUND.

NOTE:

THIS PROJECT IS ON THE MONTANA COORDINATE SYSTEM NAD83-2007. 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 0.99924706.

HDR

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TYPICAL SECTION NO. 1

SHARED-USE PATH

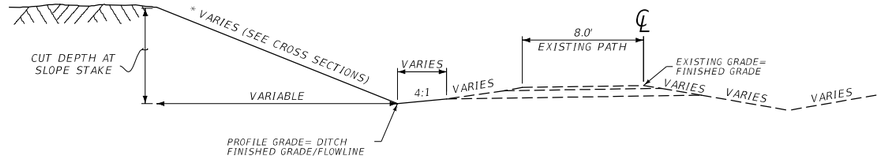
1590+30.00		BEGIN PROJECT – MATCH EXISTING
1590+30.00	TO 1595+40.00	TYP. NO. 1, THEN TYP. NO. 2 #
1597+66.00	TO 1597+79.06	TYP. NO. 1
1597+79.06		END PROJECT – MATCH EXISTING

* DITCH BACKSLOPE:

2.5:1 FROM STA. 1590+30.00 TO 1595+40.00
4:1 FROM STA. 1597+66.00 TO 1597+79.06

\# PATH PAVEMENT REPLACEMENT:

REPLACE EXISTING PATH PAVEMENT FROM STA. 1592+24.00 TO 1595+40.00. SEE CONSTRUCTION STAGING DETAIL SHEET 12 FOR DETAILS.



TYPICAL SECTION NO. 2

SHARED-USE PATH - RECONSTRUCTION

1595+40.00	TO 1597+66.00	TYP. NO. 2, THEN TYP. NO. 1

* DITCH BACKSLOPE:

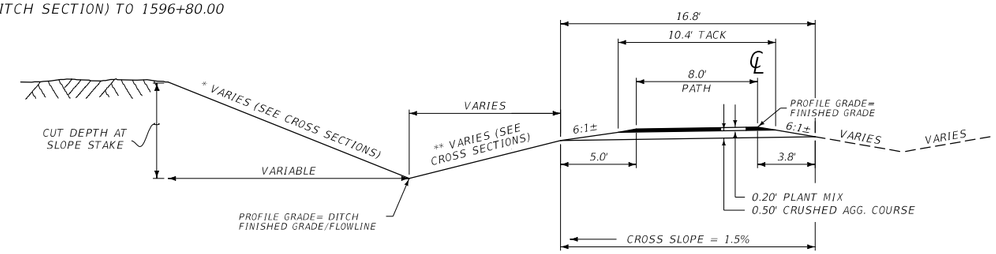
2.5:1 FROM STA. 1595+40.00 TO 1596+30.00
TRANS. 2.5:1 TO 4:1 FROM STA. 1596+30.00 TO 1596+80.00
4:1 FROM STA. 1596+80.00 TO 1597+66.00

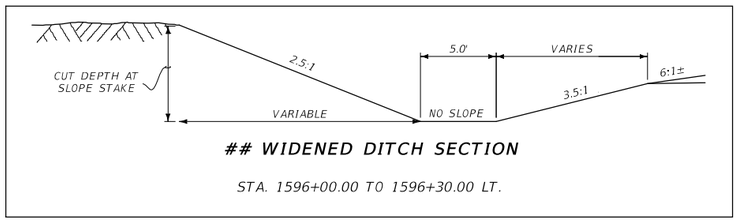
** DITCH FORESLOPE:

4:1 FROM STA. 1595+40.00 TO 1595+50.00
TRANS. 4:1 TO 3.5:1 FROM STA. 1595+50.00 TO 1596+00.00 (WIDENED DITCH SECTION)
3.5:1 FROM STA. 1596+00.00 TO 1596+30.00
TRANS. 3.5:1 TO 4:1 FROM STA. 1596+30.00 (WIDENED DITCH SECTION) TO 1596+80.00
4:1 FROM STA. 1596+80.00 TO 1597+66.00

\## WIDENED DITCH SECTION:

TRANS. FROM V-DITCH TO WIDENED DITCH SECTION FROM STA. 1595+50.00 TO 1596+00.00
TRANS. FROM WIDENED DITCH SECTION TO V-DITCH FROM STA. 1596+30.00 TO 1596+80.00





WIDENED DITCH SECTION

STA. 1596+00.00 TO 1596+30.00 LT.

QUANTITIES

UNIT	AGGREGATE		UNIT	BITUMINOUS MATERIAL
	PLANT MIX	CR. AGG. COURSE		EMULSIFIED ASPHALT TACK #
AREA square feet	1.84	6.80	square yards PER STATION	116
cubic yards PER STATION	6.8	25.2	gal PER STATION	6
tons PER STATION	13.1			

BASED ON 1 APPLICATION

3	MONTANA Department of Transportation	...\6.2_WIP\RD\6137001RDTY02.dgn	DESIGNED BY LAS	12/2024	ROAD PLANS	HUSON EAST – PONDING MITIGATION	STPS 574-1(6)3
2		1/28/2025	REVIEWED BY BLM	12/2024			
		2:38:58 PM LSANDE	CHECKED BY RCL	12/2024	MISSOULA COUNTY	UPN 6137001	SHEET 4

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SUMMARY

SURFACING

STATION		linear feet				FOR	AGGREGATE		BITUMINOUS MATERIAL	REMARKS
							tons	cu. yards	gals.	
FROM	TO	GROSS	NET	+	-		COMM. MIX 3/8" PG 58-28	CRUSHED AGG. COURSE	EMULSIFIED ASPHALT TACK	
1595+40.00	1597+66.00	226.00	226.00				30	57	14	TYP. NO. 2
						ADDITIONAL SURFACING	44	5	20	
TOTAL		226.00	226.00	0.00	0.00		74	62	34	

PERMANENT EROSION CONTROL *

STATION		sq. yards	cu. yards	REMARKS
		EROSION CONTROL BLANKET	TOPSOIL **	
		LONG TERM		
FROM	TO			
1593+30.00	1597+79.06	1,355	76	LT.
TOTAL		1,355	76	

* SEE DETAIL SHEETS AND MDT DETAILED DRAWINGS FOR INSTALLATION DETAILS.
** PLACE 2" OF NEW TOPSOIL WITH EROSION CONTROL BLANKET TO SUPPLEMENT EXISTING TOPSOIL AND 6" OF NEW TOPSOIL OVER STORM DRAIN PIPE AGGREGATE BACKFILL (SEE DETAIL SHEETS FOR EXTENTS AND DETAILS).

ADDITIONAL SURFACING (INCLUDED IN SURFACING FRAME)

STATION		linear feet				FOR	AGGREGATE		BITUMINOUS MATERIALS	REMARKS
							tons	cu. yards	gals.	
FROM	TO	GROSS	NET	+	-		COMM. MIX 3/8" PG 58-28	CRUSHED AGG. COURSE	EMULSIFIED ASPHALT TACK	
1591+98.51	1592+23.91						3	5	1	PRIVATE APPROACH LT.
1592+24.00	1595+40.00	316.00	316.00				41		19	PATH PAVEMENT REPLACEMENT
SUBTOTAL		~	~	~	~		44	5	20	

BITUMINOUS PAVEMENT REMOVAL

STATION		sq. yards	REMARKS
		REMOVE BITUMINOUS PAVEMENT	
FROM	TO		
1592+24.00	1595+40.00	293	PATH PAVEMENT REPLACEMENT
TOTAL		293	

GRADING

STATION		cu. yards			REMARKS
		UNCL. EXC.	EXCESS EXC.	EMB.+	
FROM	TO				
1590+30.00	1595+60.07	612	609	3	SHARED-USE PATH DITCH GRADING *
1595+60.07	1597+45.84	3,601	1,648	1,953	UNDERGROUND RETENTION SYSTEM **
1597+45.84	1597+79.06	67	39	28	SHARED-USE PATH DITCH GRADING ***
TOTAL		4,280	# 2,296	# 1,984	

FOR INFORMATION ONLY.
* GRADING INCLUDES SHARED-USE PATH RECONSTRUCTION FROM STATION 1595+40.00 TO 1595+60.07. SEE DETAIL SHEETS.
** GRADING INCLUDES SHARED-USE PATH RECONSTRUCTION AND DITCH GRADING. SEE DETAIL SHEETS.
*** GRADING INCLUDES SHARED-USE PATH RECONSTRUCTION FROM STATION 1597+45.84 TO 1597+66.00. SEE DETAIL SHEETS.

REVEGETATION

STATION		lump sum	cu. yards	acres				REMARKS
		REVEGETATION	TOPSOIL SALVAGING & PLACING	SEED	FERTILIZER	CONDITION SEEDBED	HYDRO MULCH	
FROM	TO							
1590+30.00	1597+79.06	1	238	0.5	0.5	0.5	0.2	LT. ##
TOTAL		1	# 238	# 0.5	# 0.5	# 0.5	# 0.2	

FOR INFORMATION ONLY.
DO NOT APPLY HYDRAULIC MULCH FROM STATION 1593+30.00 TO 1597+79.06 WHERE EROSION CONTROL BLANKET IS INSTALLED (SEE PERMANENT EROSION CONTROL SUMMARY FRAME FOR DETAILS).

HDR

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SUMMARY

STORM DRAIN STRUCTURE SCHEDULE

NAME	STATION	each						vertical feet		REMARKS
		STORM DRAIN STRUCTURE		MANHOLE LID & FRAME	DROP INLET FRAME & GRATE	CONCRETE APRON *	INLET HOOD **	ADDITIONAL BARREL		
		INLET BASE	MANHOLE BASE							
		30"	48"		BEEHIVE *			30"	48"	
DI-01	1596+08.00	1			1			1		LT.
DI-02	1596+22.00		1		1		1		5	LT.
R-01	1595+99.58			1		1				LT., INSTALL FOR RISER R-01
R-02	1596+27.00			1		1				LT., INSTALL FOR RISER R-02
R-03	1596+49.32			1		1				LT., INSTALL FOR RISER R-03
R-04	1596+49.35			1		1				LT., INSTALL FOR RISER R-04
TOTAL		1	1	4	2	4	~	1	5	

* MANHOLE CAP (PROTECTION SLAB) - SEE DETAILS SHEETS.
** FOR INFORMATION ONLY - INCLUDED IN THE COST OF STORM DRAIN STRUCTURE. SEE DETAIL SHEETS.

STORM DRAIN PIPE

PIPE SECTION			ALLOWABLE PIPE MATERIALS			linear feet		each	REMARKS
						STORM DRAIN PIPE #		PVC/RCP TO CSP ADAPTER ^	
FROM	TO	NAME	RCP	PVC	HDPE ##	12"	24"		
DI-01	DI-02	CO-01			X	14.1			LT.
DI-02	S-01	CO-02	X	X			5.0	1	LT., CONNECT TO STUB S-01
TOTAL			~	~	~	14.1	5.0	~	

\# GRANULAR BEDDING MATERIAL INCIDENTAL TO STORM DRAIN PIPE, SEE MDT STANDARD DETAILED DRAWINGS FOR BEDDING QUANTITIES AND DETAILS.
HDPE TO BE PERFORATED CORRUGATED POLYETHYLENE PIPE WITH A SMOOTH INTERIOR WALL. SEE DETAIL SHEETS FOR PIPE AND BACKFILL DETAILS.
^ FOR INFORMATION ONLY - INCLUDED IN THE COST OF PIPE. SEE DETAIL SHEETS.

APPROACH PIPE (INCLUDED IN CULVERT SUMMARY RECAP)

STATION	BASIC BID ITEMS			PIPE OPTIONS in	END SECTIONS		linear feet	SKEW ANGLE	CULVERT IN PL. in x ft	REMARKS
	CULVERT PIPE in	linear feet		CONCRETE - CLASS 4			HEIGHT OF COVER			
		LENGTH OF PIPE	REMOVE PIPE CULVERT		LEFT	RIGHT				
1592+12	18" EQ. DIA. RCPA	46	46.0	18" EQ. DIA	FETS	FETS	0.5		18" X 46' CMP	LT.
1592+12									18" x 54' RCP	RT., USE AS IS.
1597+95									12" x 40' CMP	LT., USE AS IS.
TOTAL	~	~	46.0	~	~	~	~	~	~	

CULVERT SUMMARY RECAP

BASIC BID	linear feet		cu. yards	sq. yards
	NEW PIPE (TOTAL)	REMOVE PIPE CULVERT	WASHED ROCK	CLASS B SUBSURFACE DRAINAGE GEOTEXTILE - HIGH SURV.
18" EQ. DIA. RCPA	46			
84" CSP	367			
TOTAL	~	46.0	707	1,280

CULVERTS (INCLUDED IN CULVERT SUMMARY RECAP)

STATION		linear feet	CLASS OR THK.	COATING *	END SECTIONS		cu. yards	sq. yards	each				linear feet	SKEW ANGLE	CULVERT IN PL. in x ft	REMARKS
		CSP - 5" x 1" CORR.					WASHED ROCK	CLASS B SUBSURFACE DRAINAGE GEOTEXTILE - HIGH SURV.	36" Ø RISER ^	24" Ø STUB ^^	MANIFOLD ^^	WATER QUALITY WEIR ^^	HEIGHT OF COVER			
FROM	TO	84"			LEFT	RIGHT										
1595+60.07 LT	1597+45.84 LT	367	0.079	YES	SQ	SQ	707	1,280	4	1	1	2	2.5			UNDERGROUND RETENTION SYSTEM, CONNECT TO STORM DRAIN (SEE STORM DRAIN SUMMARY FRAMES)
TOTAL		367	~	~	~	~	707	1,280	~	~	~	~	~	~	~	

* TYPE II ALUMINIZED - SEE STANDARD SPEC. SEC. 709.12.
^ FOR INFORMATION ONLY - INCLUDED IN THE COST OF PIPE. MANHOLE CAPS (PROTECTION SLABS) AND ACCESS CASTINGS (MANHOLE LIDS AND FRAMES) FOR RISERS PAID FOR SEPARATELY (SEE STORM DRAIN STRUCTURE SUMMARY FRAME FOR DETAILS). SEE DETAIL SHEETS.
^^ FOR INFORMATION ONLY - INCLUDED IN THE COST OF PIPE. SEE DETAIL SHEETS.

TEMPORARY CONCRETE BARRIER RAIL

STATION		linear feet	each	linear feet	each	REMARKS
		TEMPORARY CONCRETE BARRIER	TEMPORARY IMPACT ATTENUATOR	RESET TEMPORARY CONCRETE BARRIER	RESET TEMPORARY IMPACT ATTENUATOR	
FROM	TO	SHLD	SHLD	SHLD	SHLD	
1592+34.47	1597+70.80	510	2			SHARED-USE PATH LT.
TOTAL		510	2	~	~	

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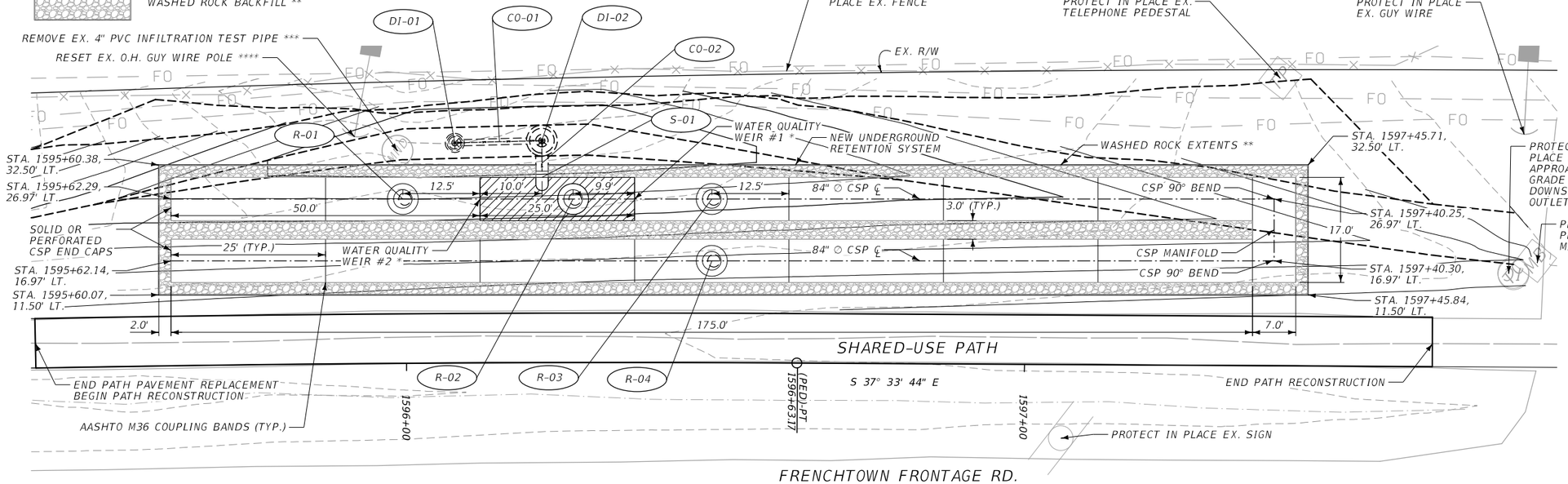
DETAIL

KEY

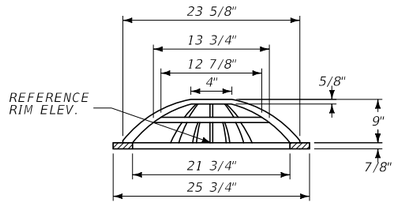
PERFORATED CSP PIPE

SOLID CSP PIPE

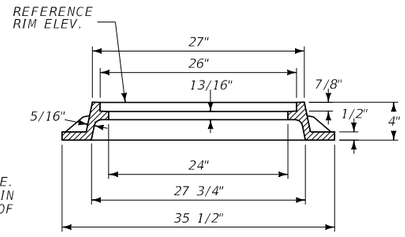
WASHED ROCK BACKFILL **



UNDERGROUND RETENTION SYSTEM PLAN VIEW



GRATE SECTION VIEW



FRAME SECTION VIEW

BEEHIVE GRATE DETAIL

BEEHIVE GRATE NOTES:

BEEHIVE FRAME AND GRATE TO BE EJIW 1205 03 GRATE AND 120521 FRAME OR APPROVED EQUIVALENT.

UNDERGROUND RETENTION SYSTEM NOTES:

* SEE WATER QUALITY WEIR DETAIL SHEET FOR DETAILS.

** SEE UNDERGROUND RETENTION SYSTEM ISOMETRIC VIEW AND BACKFILL DETAILS SHEET FOR BACKFILL DETAILS.

*** INCLUDE THE COST FOR REMOVAL OF EX. 4" PVC INFILTRATION TEST PIPE IN THE COST FOR UNCLASSIFIED EXCAVATION.

**** RESET EX. O.H. GUY WIRE POLE TO BE COMPLETED BY OTHERS. SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.

THE UNDERGROUND RETENTION SYSTEM SHALL MEET HS-25 LOADING AND PROVIDE THE FOLLOWING MINIMUM STORAGE VOLUMES:

PIPE STORAGE: 14,124 CF
WASHED ROCK STORAGE: 7,631 CF
TOTAL STORAGE: 21,755 CF

PROVIDE PERFORATED AND SOLID CSP MAINLINE PIPE AT THE LOCATIONS INDICATED IN THE PLANS. PERFORATED CSP TO HAVE FULL-CIRCUMFERENCE PERFORATIONS.

ALL CSP AND COUPLING BANDS FOR MAINLINE PIPE, RISERS, AND STUBS TO BE 14 GAGE WITH AN APPROVED TYPE II ALUMINIZED COATING IN ACCORDANCE WITH MDT STANDARD SPEC SEC. 709.02 AND 709.12. MAINLINE PIPE TO HAVE 5" X 1" CORRUGATIONS AND RISERS AND STUBS TO HAVE 2 2/3" X 1/2" CORRUGATIONS. ALL CSP FITTINGS AND REINFORCEMENT TO COMPLY WITH ASTM A998.

ACCESS LADDERS TO BE PROVIDED FOR RISERS PER THE RISER INFORMATION TABLE. STEPS TO HAVE A MINIMUM 12" WIDTH, MAXIMUM 16" VERTICAL SPACING, AND PROVIDE ACCESS TO THE INVERT OF THE 84" CSP. ALL METAL PARTS FOR LADDERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M 111. PAINT ALL WELDS AND OTHER NON-GALVANIZED PARTS WITH ONE COAT OF ZINC RICH PAINT AND TWO COATS OF ALUMINUM PAINT PER MDT STANDARD SPEC SEC. 710.

UNDERGROUND RETENTION SYSTEM AND WATER QUALITY WEIRS TO BE MANUFACTURED AND FABRICATED BY CONTECH ENGINEERED SOLUTIONS OR APPROVED EQUIVALENT. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR THE UNDERGROUND RETENTION SYSTEM AND WATER QUALITY WEIRS TO MDT PROJECT MANAGER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.

INCLUDE THE COST FOR PERFORATED AND SOLID MAINLINE PIPE, MANIFOLDS, RISERS, LADDERS, STUBS, AND END CAPS IN THE COST FOR 84" CSP.

STORM DRAIN NOTES:

STORM DRAIN INLET HOOD TO BE ADVANCED DRAINAGE SYSTEMS (ADS) ENVIROHOOD MODEL 5824AGR OR APPROVED EQUIVALENT. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

INCLUDE THE COST FOR STORM DRAIN INLET HOOD IN THE COST FOR 48" MANHOLE BASE STORM DRAIN STRUCTURE.

CONSTRUCT ONE (1) - 2" WEEP HOLE THROUGH THE STORM DRAIN STRUCTURE CONCRETE BASE.

^ GRATE SET 0.5' ABOVE DITCH INVERT ELEVATION OF 3157.00'.

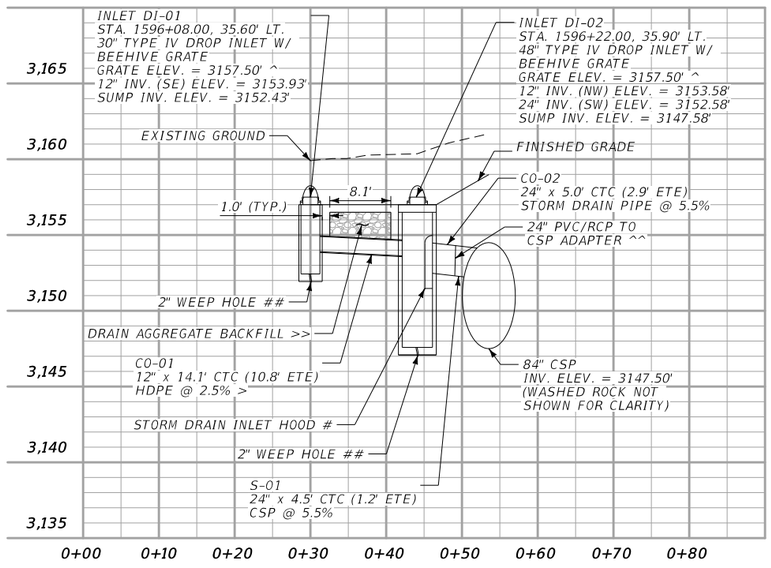
^^ PVC/RCP TO CSP ADAPTER TO BE MARMAC DISSIMILAR PIPE COUPLER OR APPROVED EQUIVALENT. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

INCLUDE THE COST FOR PVC/RCP TO CSP ADAPTER IN THE COST FOR 24" STORM DRAIN PIPE.

> 12" HDPE STORM DRAIN PIPE TO BE PERFORATED CORRUGATED POLYETHYLENE PIPE WITH A SMOOTH INTERIOR WALL PER AASHTO M 294 TYPE SP WITH PERFORATIONS.

>> SEE UNDERGROUND RETENTION SYSTEM ISOMETRIC VIEW AND BACKFILL DETAILS SHEET FOR DRAIN AGGREGATE BACKFILL DETAILS.

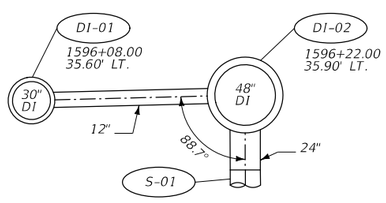
REFERENCE STATIONS, OFFSETS, AND ELEVATIONS ARE TO THE CENTER OF STRUCTURES UNLESS OTHERWISE INDICATED.



STUB INFORMATION			
DESCRIPTION	STUB INVERT	LOCATION	SYSTEM PIPE INVERT
24" ∅ STUB S-01	3152.24'	STA. 1596+22.00, 29.73' LT.	3147.50'

RISER INFORMATION +				
DESCRIPTION	RIM ELEV.	LOCATION	SYSTEM PIPE INVERT	ACCESS LADDER
36" ∅ RISER R-01	3158.81'	STA. 1595+99.58, 26.57' LT.	3147.50'	YES
36" ∅ RISER R-02	3159.02'	STA. 1596+27.00, 26.45' LT.	3147.50'	YES
36" ∅ RISER R-03	3159.35'	STA. 1596+49.32, 26.47' LT.	3147.50'	YES
36" ∅ RISER R-04	3162.07'	STA. 1596+49.35, 16.47' LT.	3147.50'	YES

+ ALL RISERS TO INCLUDE MANHOLE CAPS (PROTECTION SLABS) AND ACCESS CASTINGS (MANHOLE LIDS AND FRAMES) - SEE MANHOLE CAP AND EROSION CONTROL DETAILS SHEET FOR DETAILS.



STORM DRAIN SYSTEM OVERVIEW DETAIL

KEY

XX" DI — NEW DROP INLET - INSIDE DIAMETER NOTED

DI-XX — DROP INLET ID

S-XX — STUB ID

R-XX — RISER ID

1596+08.00 TO 1596+22.00 LT. STORM DRAIN SYSTEM

UNDERGROUND RETENTION SYSTEM PLAN AND PROFILE DETAILS

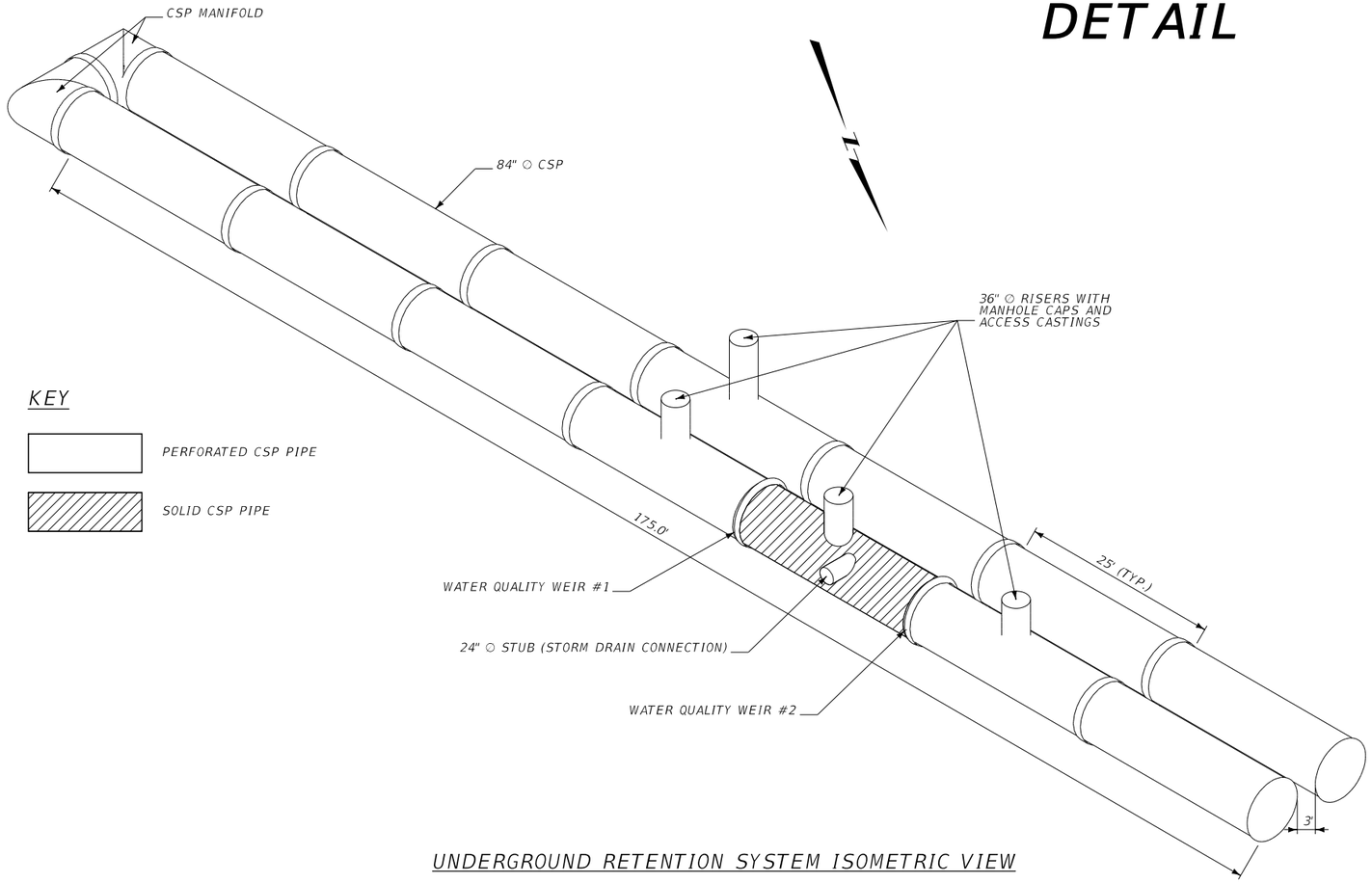
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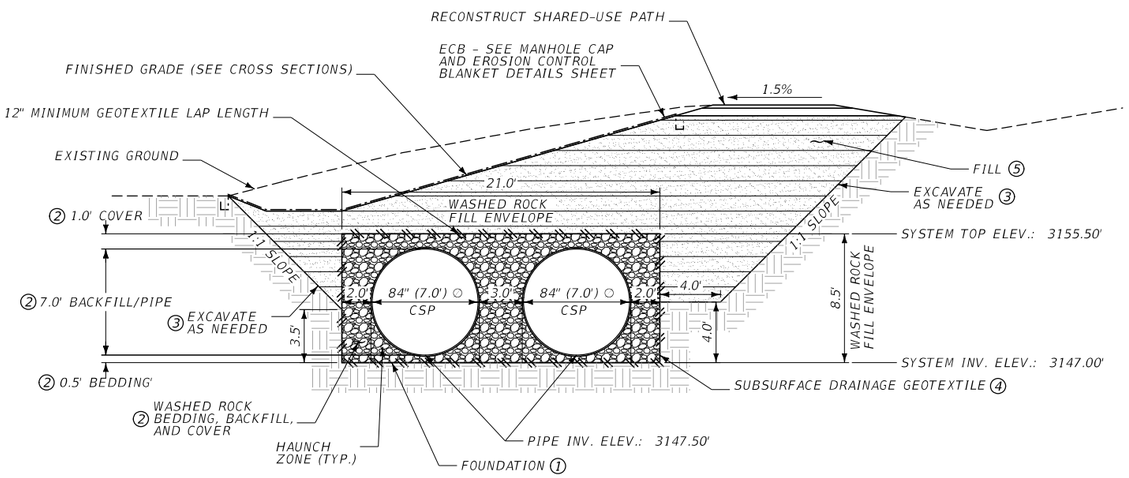
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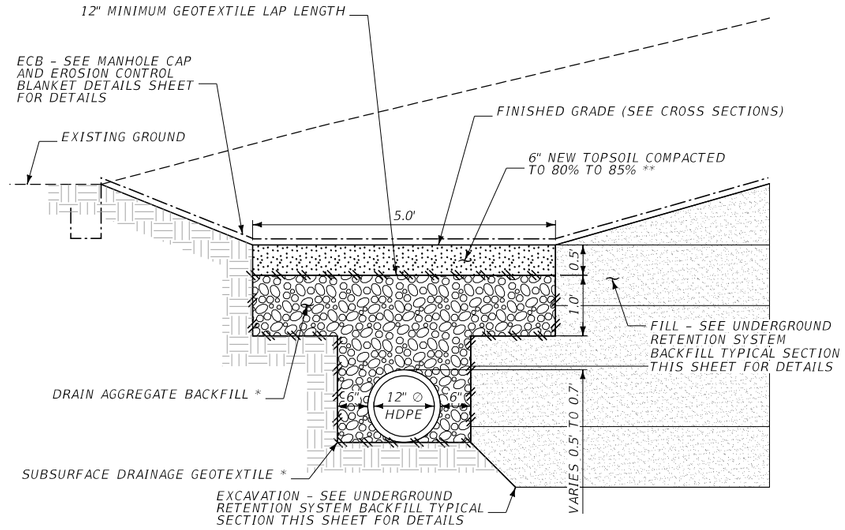
DETAIL



UNDERGROUND RETENTION SYSTEM ISOMETRIC VIEW



UNDERGROUND RETENTION SYSTEM BACKFILL TYPICAL SECTION



STORM DRAIN PIPE CO-01 DRAINAGE AGGREGATE BACKFILL TYPICAL SECTION

STORM DRAIN PIPE DRAINAGE AGGREGATE BACKFILL NOTES:

* DRAIN AGGREGATE AND SUBSURFACE DRAINAGE GEOTEXTILE MATERIAL AND PLACEMENT TO BE THE SAME AS GEOTEXTILE AND WASHED STONE FOR THE UNDERGROUND RETENTION SYSTEM. THE ESTIMATED QUANTITIES FOR ESTIMATING PURPOSES ARE AS FOLLOWS:

DRAIN AGGEGATE: 2.3 CY
SUBSURFACE DRAINAGE GEOTEXTILE: 17 SY

INCLUDE THE COST FOR DRAIN AGGREGATE BACKFILL AND SUBSURFACE DRAINAGE GEOTEXTILE IN THE COST FOR 12" STORM DRAIN PIPE.

** FOLLOWING TOPSOIL PLACEMENT, THE CONTRACTOR SHALL NOT DIRECTLY COMPACT, DRIVE HEAVY EQUIPMENT, STAGE EQUIPMENT OR MATERIALS, OR PLACE STOCKPILED MATERIAL OVER THE INFILTRATION ZONE. ANY UNAVOIDABLE COMPACTION SHALL BE SCARIFIED PRIOR TO SEEDING AND ECB PLACEMENT.

UNDERGROUND RETENTION SYSTEM BACKFILL NOTES:

CONSTRUCTION: THE SYSTEM IS DESIGNED TO INFILTRATE STORMWATER VIA THE EXISTING IN-SITU SOIL COMPRISING THE BOTTOM 4' ± OF THE SYSTEM. THE CONTRACTOR SHALL TAKE EXTREME CARE TO PREVENT CONTAMINATING THE EXISTING IN-SITU SOIL AND THE WASHED ROCK WITH ANY MATERIAL WHICH MAY NEGATIVELY IMPACT INFILTRATION CHARACTERISTICS THROUGHOUT CONSTRUCTION. IF CONTAMINATION OF THE EXISTING IN-SITU SOIL OR WASHED ROCK OCCURS DURING CONSTRUCTION, THE CONTRACTOR SHALL RE-EXCAVATE TO EXISTING IN-SITU SOIL AND REMOVE AND REPLACE ALL WASHED ROCK AT THE CONTRACTOR'S EXPENSE. MAINTAIN A MINIMUM OF 4.0' OF TEMPORARY COVER OVER THE 84" CSP PIPES FOR TEMPORARY CONSTRUCTION VEHICLE LOADING.

1. PRIOR TO PLACING GEOTEXTILE AND WASHED ROCK, THE FOUNDATION MUST BE CONSTRUCTED TO A UNIFORM AND STABLE GRADE. IN THE EVENT THAT UNSTABLE OR UNSUITABLE FOUNDATION MATERIALS ARE ENCOUNTERED, REMOVE UNSUITABLE MATERIAL AND RECONSTRUCT THE FOUNDATION BACK TO GRADE WITH FILL MATERIAL APPROVED BY THE MDT PROJECT MANAGER. DO NOT DIRECTLY COMPACT THE SUBGRADE OR USE AS A STAGING AREA FOR STOCKPILED MATERIAL. SCARIFY THE ENTIRE SUBGRADE SURFACE PRIOR TO PLACING GEOTEXTILE AND WASHED ROCK.

2. WASHED ROCK BEDDING, BACKFILL, AND COVER TO BE IN ACCORDANCE WITH THE SPECIAL PROVISIONS. WASHED ROCK BACKFILL TO BE PLACED IN 8" ± LOOSE LIFTS AND COMPACTED TO 90% STANDARD PROCTOR PER AASHTO T 99. BACKFILL TO BE PLACED SUCH THAT THERE IS NO MORE THAN A TWO LIFT (16") DIFFERENTIAL BETWEEN THE PIPES AT ANY TIME DURING THE BACKFILL PROCESS. ADVANCE THE BACKFILL ALONG THE LENGTH OF THE SYSTEM TO AVOID DIFFERENTIAL LOADING. WHEN PLACING THE FIRST LIFT OF BACKFILL, MAKE SURE THAT THE BACKFILL IS PROPERLY COMPACTED UNDER AND AROUND THE PIPE HAUNCHES. HAUNCH ZONE MATERIAL TO BE HAND-SHOVELED OR SHOVEL SLICED INTO PLACE TO ALLOW FOR PROPER COMPACTION WITHOUT SOFT SPOTS. WHERE CONVENTIONAL COMPACTION TESTING IS NOT PRACTICAL, THE MATERIAL IS TO BE MECHANICALLY COMPACTED UNTIL NO FURTHER YIELDING OF MATERIAL IS OBSERVED UNDER THE COMPACTOR. SEE THE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION ON WASHED ROCK.

3. THE EXCAVATION LIMITS SHOWN WERE DEVELOPED SOLELY FOR THE PURPOSE OF CALCULATING GRADING QUANTITIES FOR MEASUREMENT AND PAYMENT PURPOSES. EXCAVATION QUANTITY FOR THE UNDERGROUND RETENTION SYSTEM IS INCLUDED AS UNCLASSIFIED EXCAVATION IN THE GRADING FRAME. EXCAVATE A SUFFICIENT AMOUNT TO PROVIDE A SAFE WORKING ENVIRONMENT AND TO ALLOW ACHIEVEMENT OF ALL CULVERT INSTALLATION AND COMPACTION REQUIREMENTS. SLOPE, BENCH, OR PROVIDE SHORING FOR ALL EXCAVATIONS IN ACCORDANCE WITH THE U.S. DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION.

4. COMPLETELY WRAP WASHED ROCK WITH SUBSURFACE DRAINAGE GEOTEXTILE.

5. FOLLOWING EXCAVATION AND INSTALLATION OF THE UNDERGROUND RETENTION SYSTEM, PLACE AND COMPACT FILL PER MDT STANDARD SPEC SEC. 603 AND 203. FILL QUANTITY IS INCLUDED AS EMBANKMENT + IN THE GRADING FRAME.

UNDERGROUND RETENTION SYSTEM ISOMETRIC VIEW AND BACKFILL DETAILS

NO SCALE

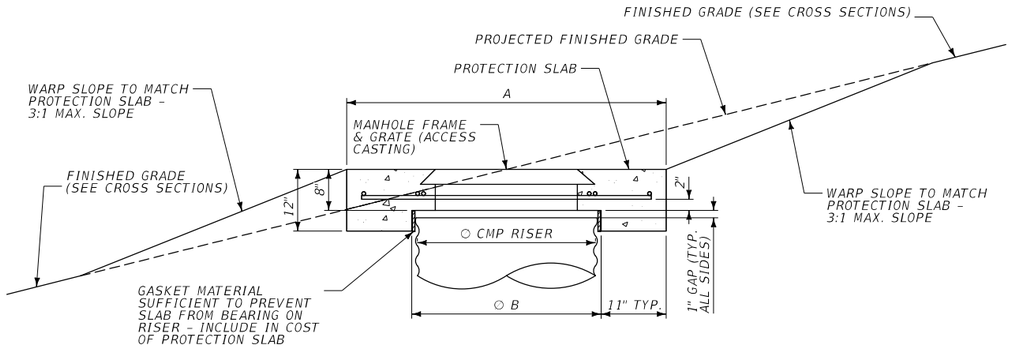
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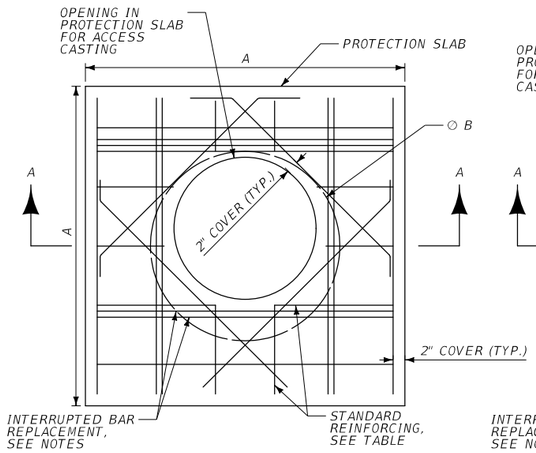
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DETAIL

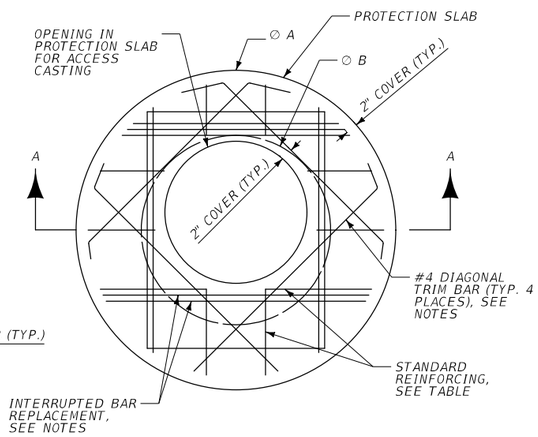
MANHOLE CAP DETAIL



SECTION A-A



SQUARE OPTION PLAN VIEW



ROUND OPTION PLAN VIEW

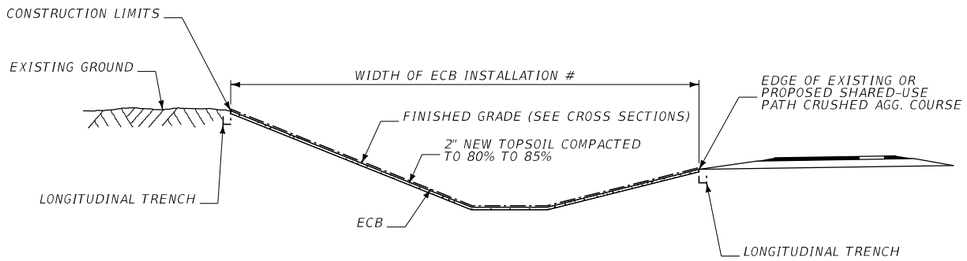
MANHOLE CAP (PROTECTION SLAB) FOR RISERS DETAIL

REINFORCING TABLE			
∅ CMP RISER	A	○ B	REINFORCING
36"	∅ 5' 5' X 5'	38"	#5 @ 10" O.C. EACH WAY #5 @ 10" O.C. EACH WAY

MANHOLE CAP (PROTECTION SLAB) NOTES:

1. DESIGN IN ACCORDANCE WITH AASHTO, 17TH EDITION BASED ON HS25 LOADING.
2. FIELD TRIM RISERS TO GRADE AS REQUIRED.
3. USE CLASS GENERAL CONCRETE.
4. PROVIDE ADDITIONAL REINFORCING AROUND OPENINGS EQUAL TO THE BARS INTERRUPTED, HALF EACH SIDE. ADDITIONAL BARS TO BE IN THE SAME PLANE.
5. TRIM OPENING WITH DIAGONAL #4 BARS, EXTEND BARS A MINIMUM OF 12" BEYOND OPENING, AND BEND BARS AS REQUIRED TO MAINTAIN BAR COVER.
6. CONTRACTOR HAS THE OPTION OF CONSTRUCTING EITHER THE ROUND OR SQUARE OPTION. THE SAME OPTION SHALL BE CONSTRUCTED FOR ALL RISERS.
7. MANHOLE CAPS (PROTECTION SLABS) AND ACCESS CASTINGS (MANHOLE LIDS AND FRAMES) FOR RISERS WILL BE PAID FOR AS CONCRETE APRONS.

EROSION CONTROL BLANKET DETAIL



EROSION CONTROL BLANKET (ECB) INSTALLATION

ECB NOTES:

INSTALL ECB FOR ENTIRE DISTURBED AREA WITHIN THE STATION LIMITS IDENTIFIED IN THE PLANS.

1. ECB TO BE LONG TERM EROSION CONTROL BLANKET. FURNISH AND INSTALL ECB PER MDT STANDARD SPEC SEC. 610, DETAILED DRAWING 610-05, AND THE MANUFACTURER'S INSTRUCTIONS.
2. PLACE 2" OF NEW TOPSOIL WITH ECB TO SUPPLEMENT EXISTING TOPSOIL.

MANHOLE CAP AND EROSION CONTROL BLANKET DETAILS

NO SCALE

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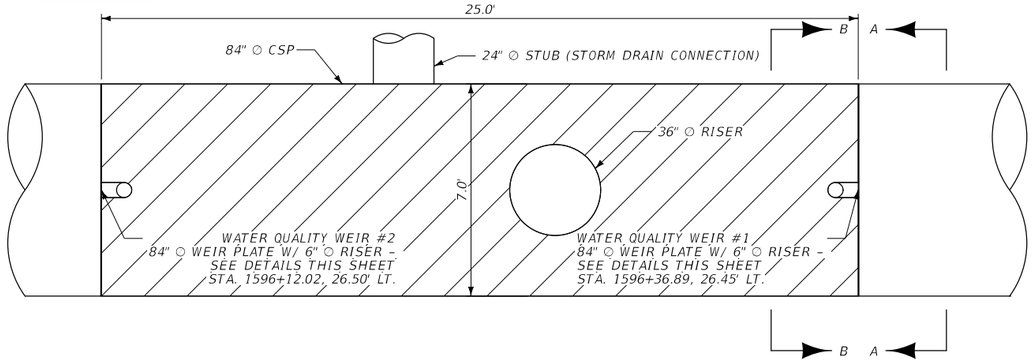
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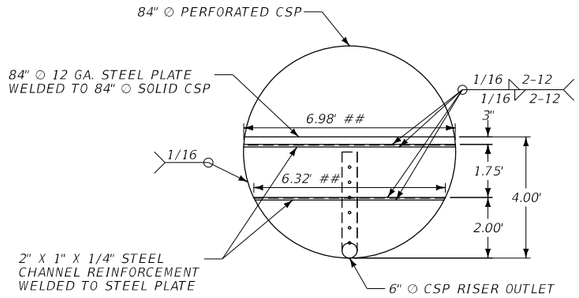
KEY

PERFORATED CSP PIPE

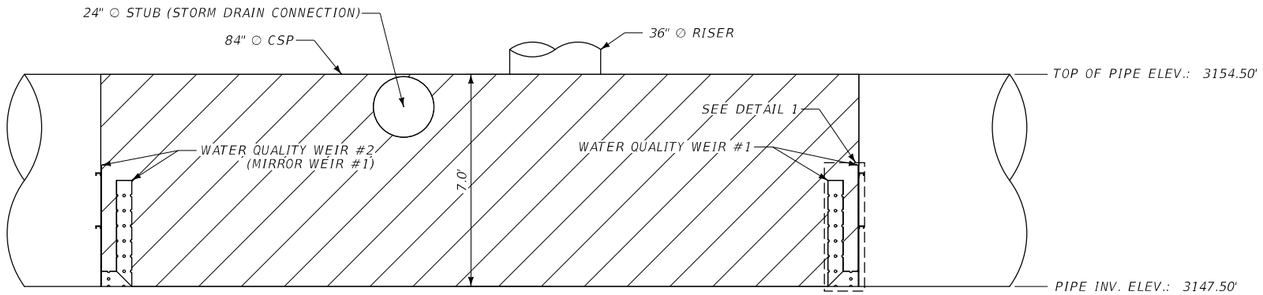
SOLID CSP PIPE



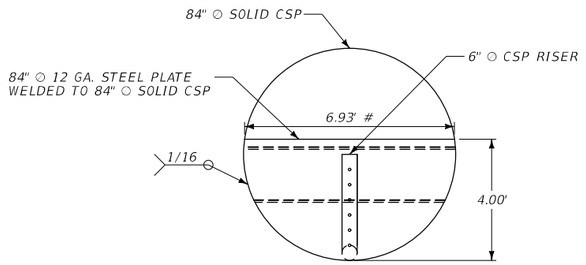
WATER QUALITY WEIR PLAN VIEW



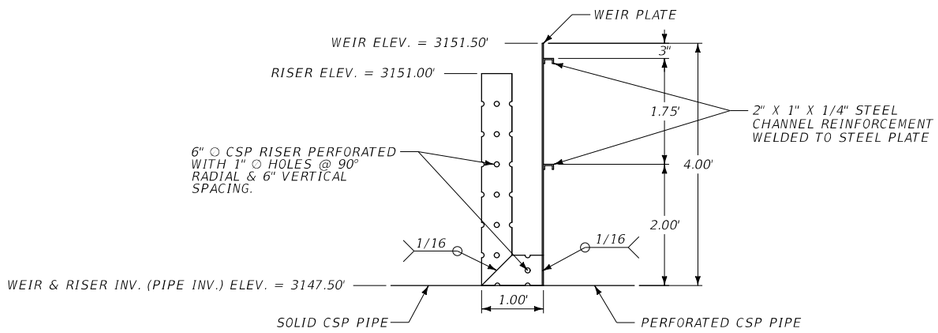
SECTION A-A - WEIR PLATE REINFORCEMENT DETAIL



WATER QUALITY WEIR ELEVATION VIEW



SECTION B-B - WEIR PLATE REINFORCEMENT DETAIL



DETAIL 1 - RISER PIPE DETAIL

NOTES:

DIMENSION IS AT THE TOP OF THE WEIR PLATE.

DIMENSIONS ARE AT THE TOP OF THE CHANNEL REINFORCEMENT.

WATER QUALITY WEIR #2 TO BE A MIRROR OF WATER QUALITY WEIR #1.

STEEL PLATE AND CHANNEL TO BE IN ACCORDANCE WITH ASTM A36 AND GALVANIZED IN ACCORDANCE WITH AASHTO M 111.

6" ∅ CSP RISER TO BE OF THE SAME MATERIAL, THICKNESS, AND COATING AS THE STUBS AND RISERS.

ALL METAL PARTS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M 111. PAINT ALL WELDS AND OTHER NON-GALVANIZED PARTS WITH ONE COAT OF ZINC RICH PAINT AND TWO COATS OF ALUMINUM PAINT PER MDT STANDARD SPEC SEC. 710.

CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR THE UNDERGROUND RETENTION SYSTEM AND WATER QUALITY WEIRS TO MDT PROJECT MANAGER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.

INCLUDE THE COST FOR WATER QUALITY WEIR PLATES & RISERS (2 TOTAL), INCLUDING MATERIALS, FABRICATION, AND INSTALLATION, IN THE COST FOR 84" CSP.

UNDERGROUND RETENTION SYSTEM WATER QUALITY WEIR DETAILS

NO SCALE

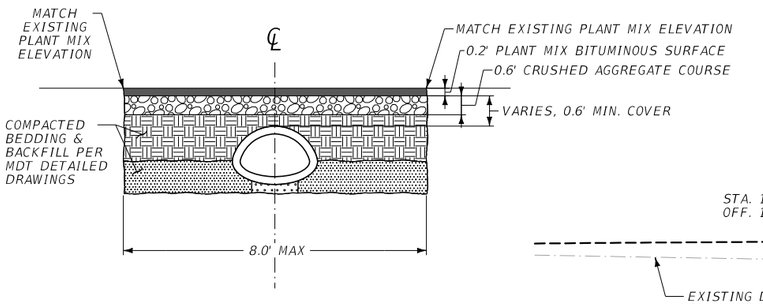
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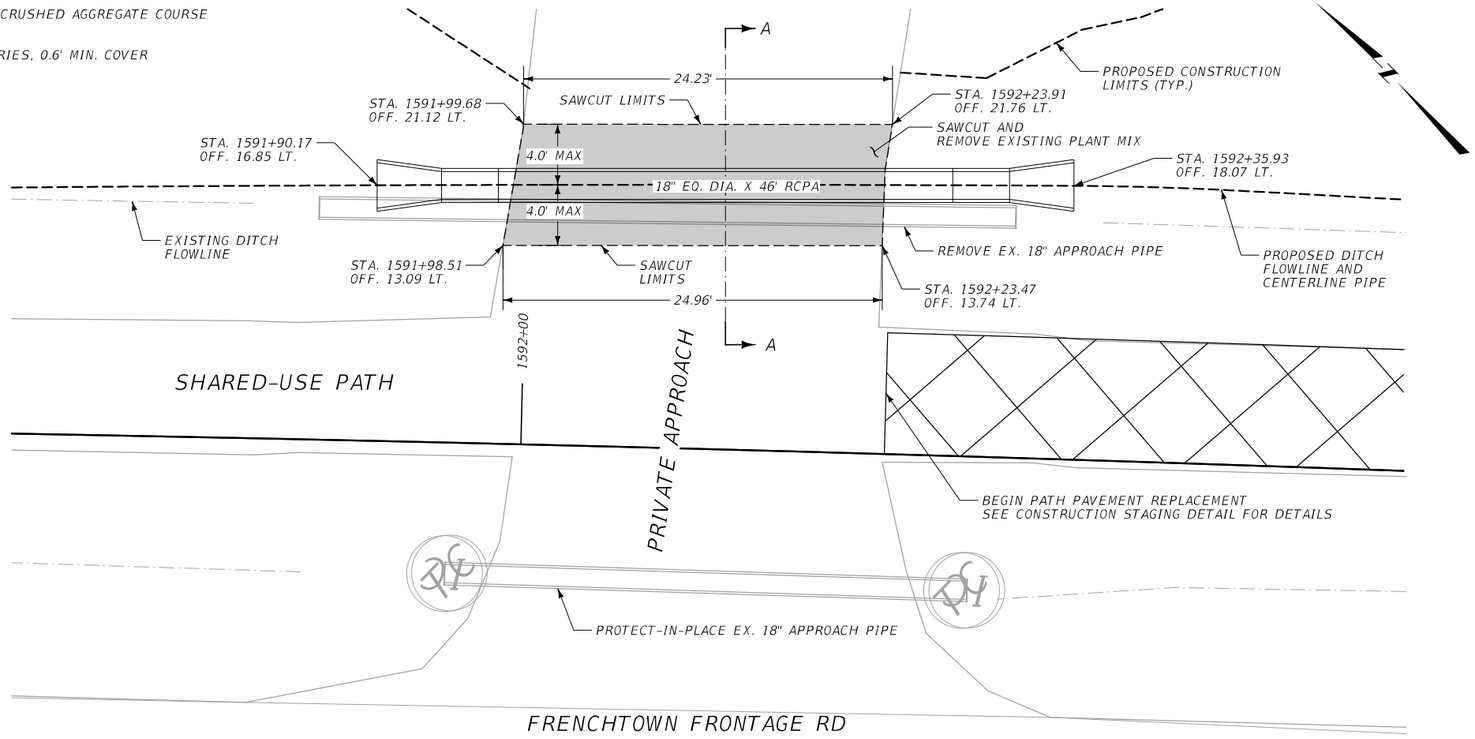
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DETAIL



SECTION A-A



NOTES:

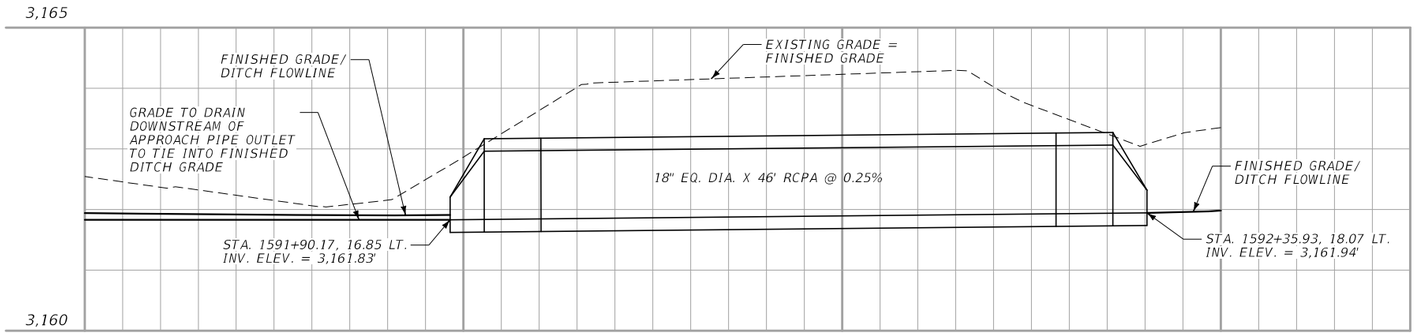
USE CAUTION WHEN REPLACING THE EXISTING APPROACH PIPE TO MINIMIZE DAMAGE TO THE EXISTING SHARED-USE PATH AND PRIVATE APPROACH. DAMAGE TO THE SHARED-USE PATH AND/OR PRIVATE APPROACH OUTSIDE OF THE PROPOSED CONSTRUCTION LIMITS SHOWN IN THE PLANS IS TO BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

COMPACT BEDDING AND BACKFILL MATERIAL PER MDT DETAILED DRAWINGS.

ESTIMATED QUANTITIES:

PLANT MIX SURFACING: 3 TON
CRUSHED AGGREGATE COURSE: 5 CY
EXCAVATION: 18 CY

EXCAVATION (INCLUDING EXISTING BITUMINOUS PAVEMENT REMOVAL), BEDDING, AND BACKFILL FOR APPROACH PIPE ARE INCIDENTAL TO THE LINEAR FOOT COST OF APPROACH PIPE.



APPROACH PIPE DETAIL STA. 1592+12

NO SCALE

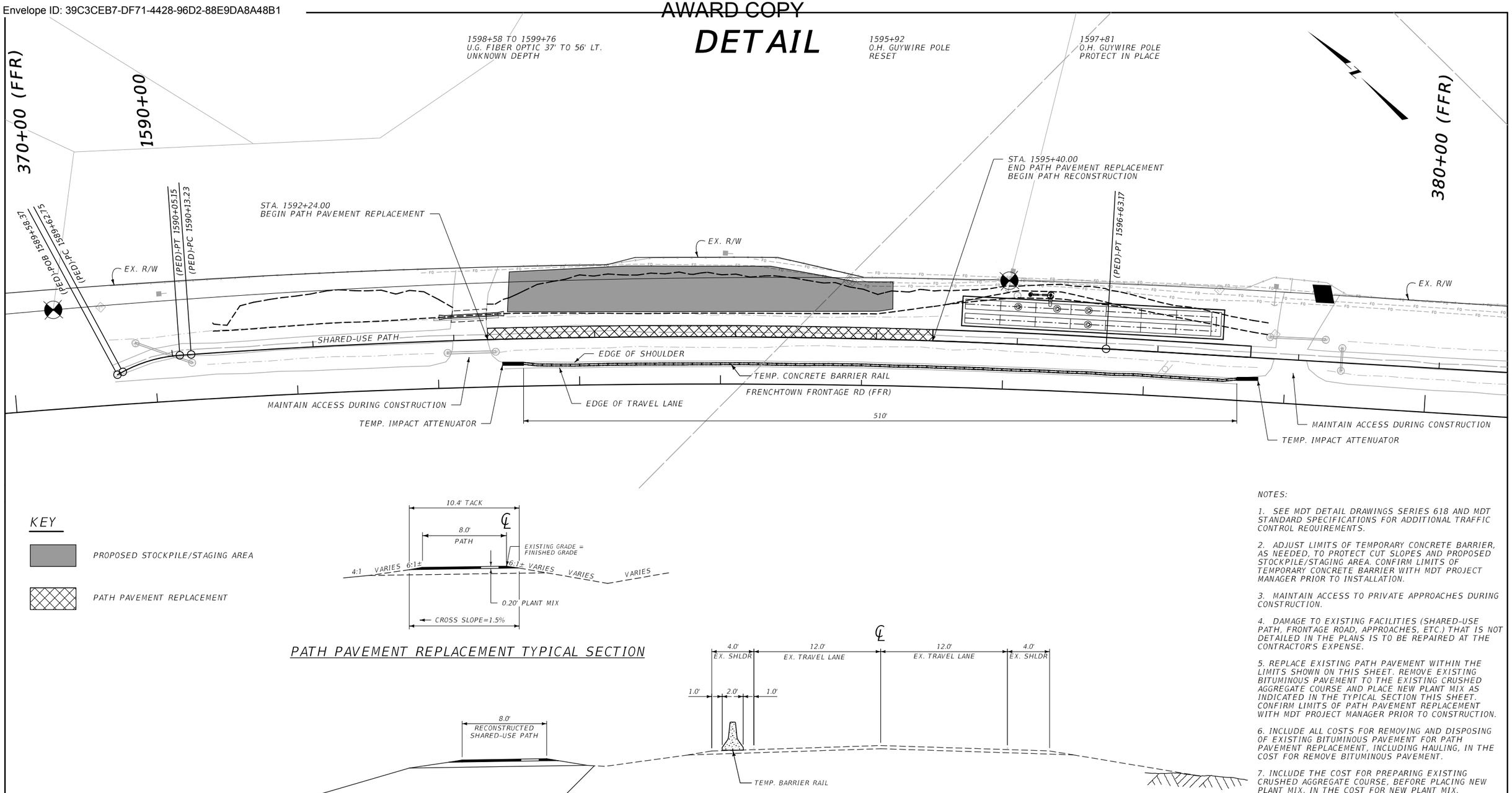
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3	MONTANA Department of Transportation	...\6.2_WIP\RD\6137001RDDE1.dgn	DESIGNED BY LAS	12/2024	ROAD PLANS	HUSON EAST - PONDING MITIGATION	STPS 574-1(6)3
2		1/28/2025	REVIEWED BY BLM	12/2024			
		2:39:34 PM LSANDE	CHECKED BY RCL	12/2024	MISSOULA COUNTY	UPN 6137001	SHEET 11

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DETAIL



KEY

PROPOSED STOCKPILE/STAGING AREA

PATH PAVEMENT REPLACEMENT

PATH PAVEMENT REPLACEMENT TYPICAL SECTION

PROPOSED WORK ZONE TYPICAL SECTION

NOTES:

1. SEE MDT DETAIL DRAWINGS SERIES 618 AND MDT STANDARD SPECIFICATIONS FOR ADDITIONAL TRAFFIC CONTROL REQUIREMENTS.

2. ADJUST LIMITS OF TEMPORARY CONCRETE BARRIER, AS NEEDED, TO PROTECT CUT SLOPES AND PROPOSED STOCKPILE/STAGING AREA. CONFIRM LIMITS OF TEMPORARY CONCRETE BARRIER WITH MDT PROJECT MANAGER PRIOR TO INSTALLATION.

3. MAINTAIN ACCESS TO PRIVATE APPROACHES DURING CONSTRUCTION.

4. DAMAGE TO EXISTING FACILITIES (SHARED-USE PATH, FRONTAGE ROAD, APPROACHES, ETC.) THAT IS NOT DETAILED IN THE PLANS IS TO BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

5. REPLACE EXISTING PATH PAVEMENT WITHIN THE LIMITS SHOWN ON THIS SHEET. REMOVE EXISTING BITUMINOUS PAVEMENT TO THE EXISTING CRUSHED AGGREGATE COURSE AND PLACE NEW PLANT MIX AS INDICATED IN THE TYPICAL SECTION THIS SHEET. CONFIRM LIMITS OF PATH PAVEMENT REPLACEMENT WITH MDT PROJECT MANAGER PRIOR TO CONSTRUCTION.

6. INCLUDE ALL COSTS FOR REMOVING AND DISPOSING OF EXISTING BITUMINOUS PAVEMENT FOR PATH PAVEMENT REPLACEMENT, INCLUDING HAULING, IN THE COST FOR REMOVE BITUMINOUS PAVEMENT.

7. INCLUDE THE COST FOR PREPARING EXISTING CRUSHED AGGREGATE COURSE, BEFORE PLACING NEW PLANT MIX, IN THE COST FOR NEW PLANT MIX.

8. NEW PLANT MIX FOR PATH PAVEMENT REPLACEMENT AS DESCRIBED ON THIS SHEET IS INCLUDED IN THE ADDITIONAL SURFACING SUMMARY FRAME.

CONSTRUCTION STAGING DETAIL

NO SCALE

3	MONTANA Department of Transportation	...\6.2_WIP\RD\6137001RDDE01.dgn	DESIGNED BY LAS	12/2024	ROAD PLANS	HUSON EAST - PONDING MITIGATION	STPS 574-1(6)3
2		1/28/2025	REVIEWED BY BLM	12/2024			
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1598+58 TO 1599+76
U.G. FIBER OPTIC 37' TO 56' LT.
UNKNOWN DEPTH

1595+92
O.H. GUY WIRE POLE
RESET

1597+81
O.H. GUYWIRE POLE
PROTECT IN PLACE

T14N R21W
SEC. 1

370+00 (FFR)

1590+00

380+00 (FFR)

(PED)POB 1589+62.75

(PED)PC 1589+58.13

(PED)-PT 1590+05.15

(PED)-PC 1590+13.23

(PED)POE 1599+75.87

STA. 1591+90.13
OFF. 16.87' LT.

STA. 1590+30.00
OFF. 15.46' LT.

STA. 1592+35.96
OFF. 18.07' LT.

STA. 1593+30.79
OFF. 16.51' LT.

STA. 1595+00.06
OFF. 17.86' LT.

STA. 1595+50.00
OFF. 26.27' LT.

DITCH BOTTOM

STA. 1595+99.52
OFF. 37.92' LT.

STA. 1595+99.52
OFF. 32.92' LT.

STA. 1596+29.43
OFF. 38.57' LT.

STA. 1596+29.43
OFF. 33.57' LT.

TEMPORARY CONSTRUCTION LIMITS FOR
UNDERGROUND RETENTION SYSTEM EXCAVATION

STA. 1596+80.00
OFF. 29.69' LT.

STA. 1597+79.06
OFF. 16.61' LT.

EX. R/W

EX. R/W

EX. R/W

SHARED-USE PATH

FRENCHTOWN FRONTAGE RD (FFR)

S 45° 00' 36" E

S 69° 18' 09" E

S 37° 33' 44" E

S 37° 20' 16" E

PI (FFR) =370+08.96
Δ =16° 33' 07" (RT)
R =6,000'
T =872.74'
L =1,733.32'
E =63.14'

PI =1589+84.27
Δ =24° 17' 33" (RT)
R =100'
T =21.52'
L =42.40'
E =2.29'

PI =1593+38.66
Δ =7° 26' 52" (RT)
R =5,000'
T =325.43'
L =649.94'
E =10.58'

1592+12
18" CMP IN PL. LT.
REMOVE

1592+12
18" RCP IN PL. RT.
PROTECT-IN-PLACE

1592+12
NEW 18" EQ. DIA. RCPA
APPROACH PIPE LT.

(PED)-PT 1596+63.17

PT (FFR) 378+69.54

1597+95
12" CMP IN PL LT.
PROTECT-IN-PLACE

STA. 1592+12
PRIVATE APP. LT.

1595+60.07

NEW UNDERGROUND
RETENTION SYSTEM LT.

1597+45.84

STA. 1597+95
PRIVATE APP. LT.
PROTECT-IN-PLACE

1593+30.00

EROSION CONTROL BLANKET LT.

1597+79.06

1590+30.00

SPECIAL DITCH SECTION LT.

1590+30.00

1597+79.06

END STPS 574-1(6)3

1590+30.00

BEG. STPS 574-1(6)3

1592+24.00

BITUMINOUS PAVEMENT REMOVAL
SEE CONSTRUCTION STAGING DETAIL

1595+40.00

PATH EXISTING GROUND

1595+40.00
(BEGIN PATH
RECONSTRUCTION)
EL. 3,163.31

PATH FINISHED GRADE

1597+66.00
(END PATH
RECONSTRUCTION)
EL. 3,164.75

+0.066%

+0.502%

-4.173%

+0.000%

+0.636%

+4.030%

1590+30.00
EL. 3,161.80

1593+30.79
EL. 3,162.00

1595+00.06
EL. 3,161.15

1595+99.52
EL. 3,157.00

1596+29.43
EL. 3,157.00

1597+79.06
EL. 3,163.03

SPECIAL DITCH
FINISHED GRADE/
FLOWLINE

3,185 3,180 3,175 3,170 3,165 3,160 3,155 3,150 3,145

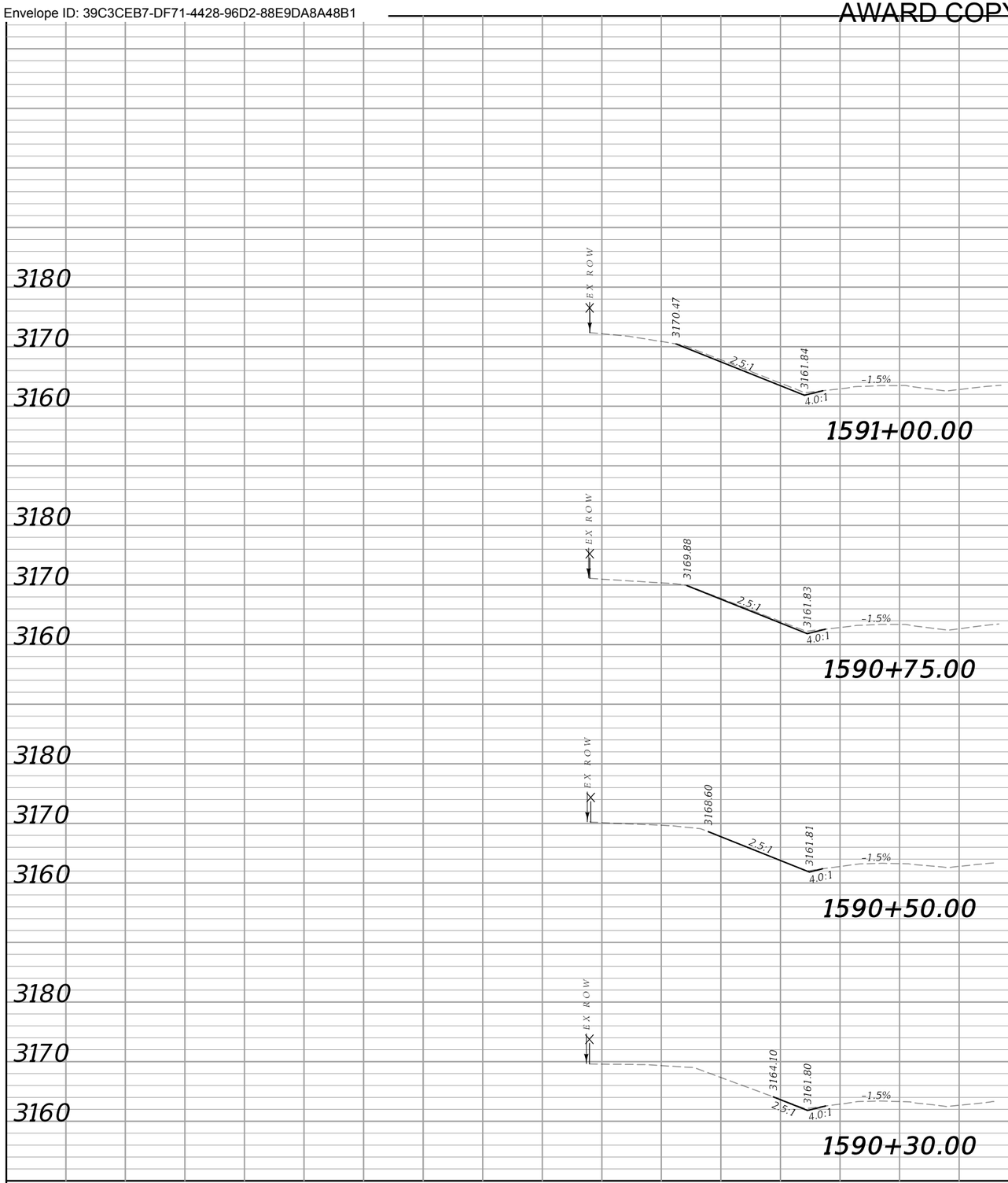
1587+00 1588+00 1589+00 1590+00 1591+00 1592+00 1593+00 1594+00 1595+00 1596+00 1597+00 1598+00 1599+00 1600+00 1601+00 1602+00

3	MONTANA Department of Transportation	...\6.2_WIP\RD\6137001RDPLN06.dgn	DESIGNED BY LAS	12/2024	ROAD PLANS	HUSON EAST - PONDING MITIGATION	STPS 574-1(6)3
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		2:39:49 PM LSANDE	CHECKED BY RCL	12/2024	MISSOULA COUNTY	UPN 6137001	SHEET 13

HDR

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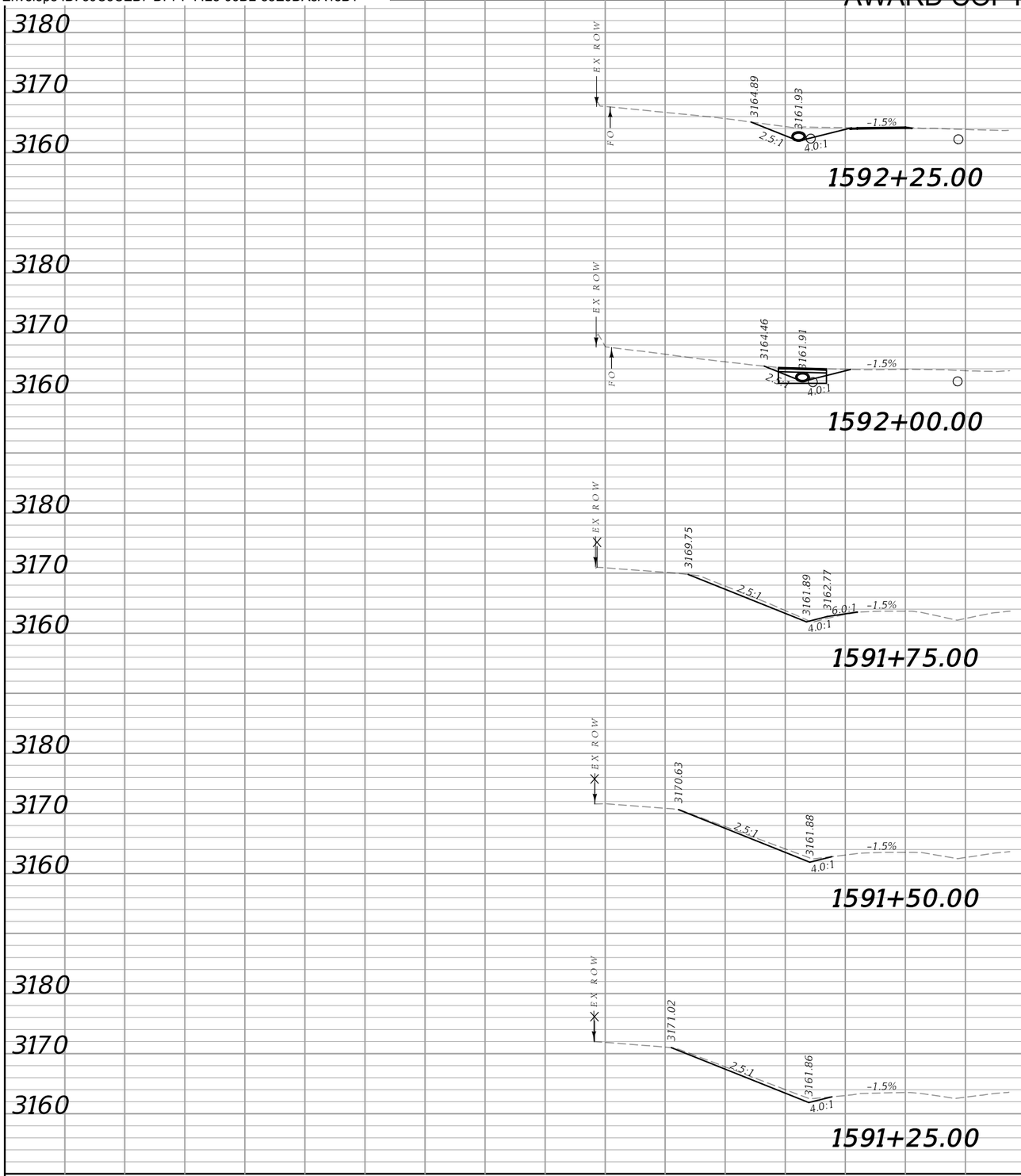


CUT	FILL
6	0
2	0
1	0
0	0

MONTANA Department of Transportation	...\6.2_WIP\RD\6137001RDLA01.PRS	DESIGNED BY LAS	12/2024	PATH CROSS SECTIONS	HUSON EAST - PONDING MITIGATION	STPS 574-1(6)3
	12/3/2024	REVIEWED BY BLM	12/2024			
	10:14:31 AM LSANDE	CHECKED BY RCL	12/2024	MISSOULA COUNTY	UPN 6137001	SHEET 1

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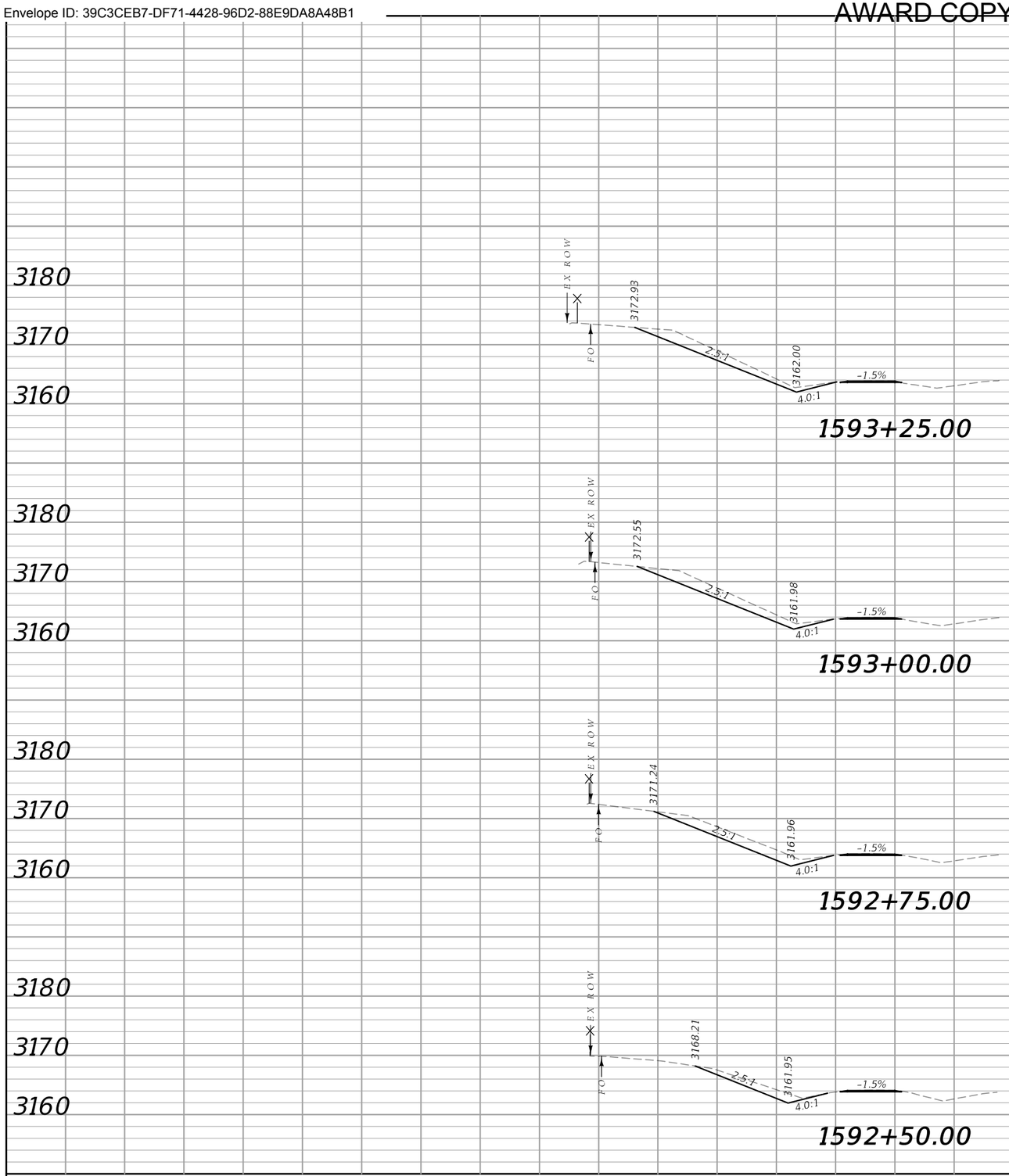
CUT	FILL
17	0
12	1
9	1
10	1
9	0

130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

MONTANA Department of Transportation	...\6.2_WIP\RD\6137001RDLA01.dgn	DESIGNED BY	PATH CROSS SECTIONS	HUSON EAST - PONDING MITIGATION	STPS 574-1(6)3
	12/3/2024	REVIEWED BY			
	10:14:32 AM LSANDE	CHECKED BY	MISSOULA COUNTY	UPN 6137001	SHEET 2

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1593+30.00 TO 1597+79.06
1,355 S.Y. LONG-TERM EROSION CONTROL BLANKET LT.

CUT	FILL
37	0
37	0
27	0
18	0

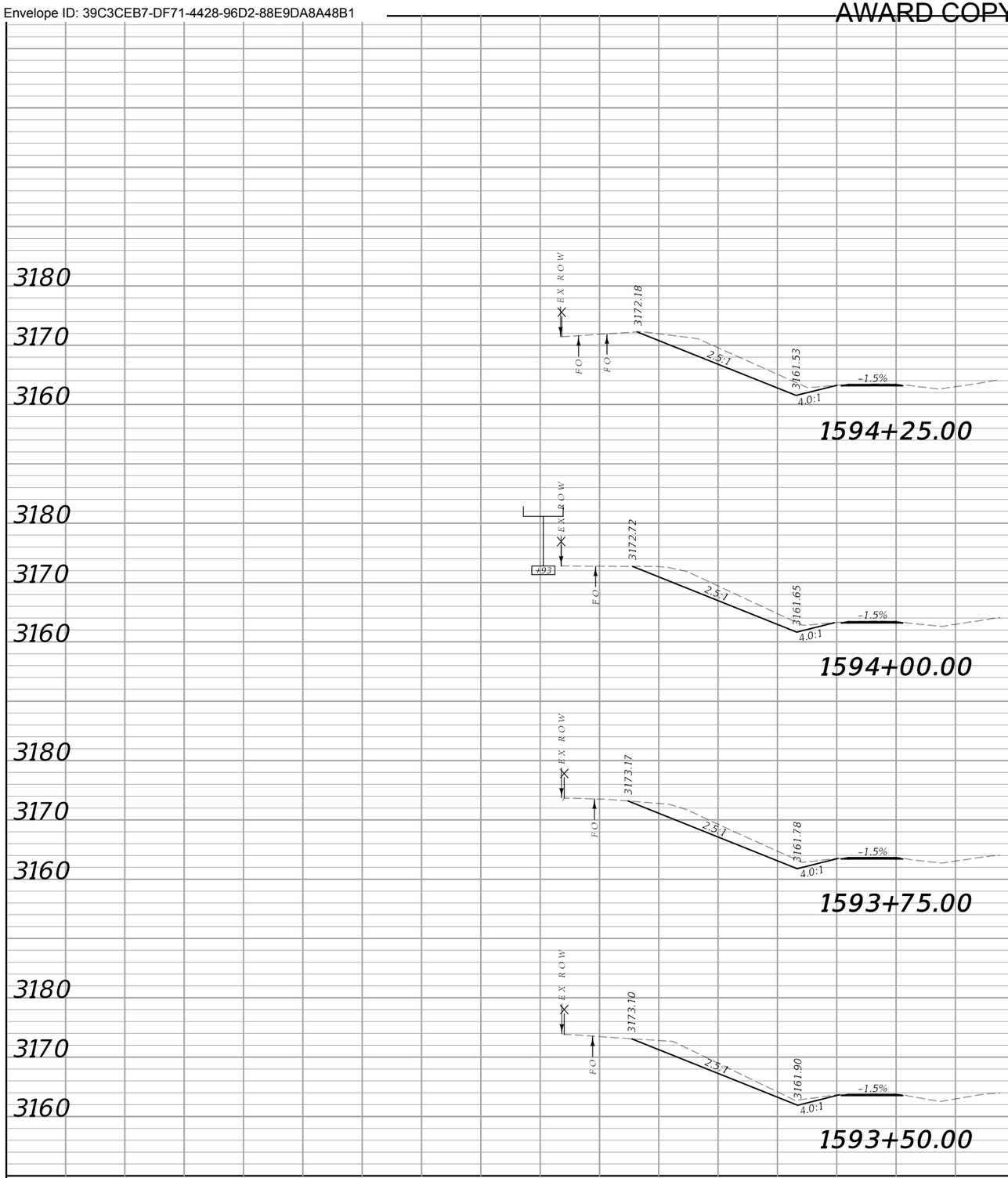
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MONTANA
Department of Transportation

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12/3/2024	REVIEWED BY		
10:14:33 AM LSANDE	CHECKED BY	MISSOULA COUNTY	UPN 6137001 / SHEET 3

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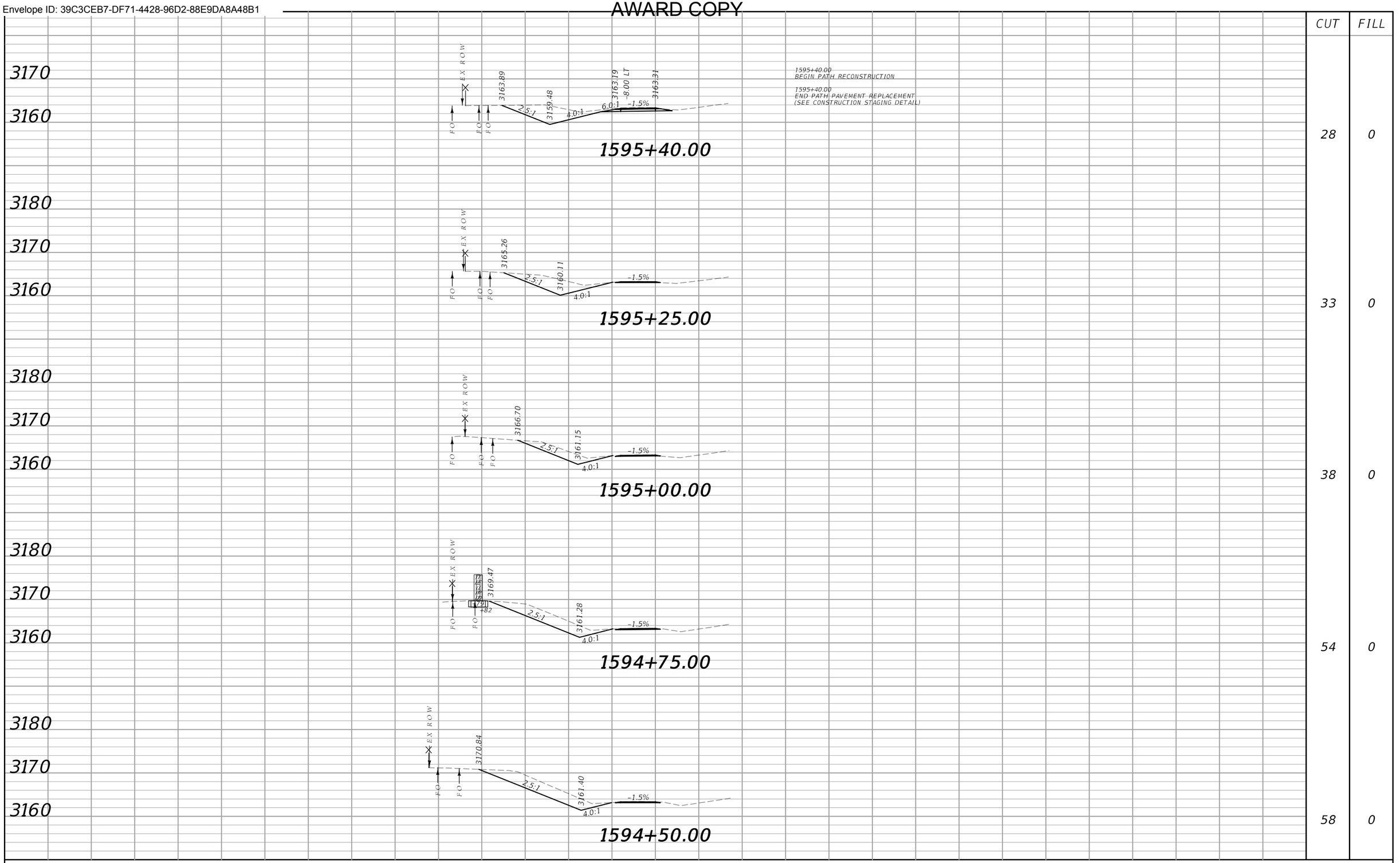
CUT	FILL
57	0
53	0
46	0
38	0

130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

MONTANA Department of Transportation	...\6.2_WIP\RD\6137001RDLA.dgn	DESIGNED BY		PATH CROSS SECTIONS	HUSON EAST - PONDING MITIGATION / STPS 574-1(6)3
	12/3/2024	REVIEWED BY			
	10:14:34 AM LSANDE	CHECKED BY		MISSOULA COUNTY	UPN 6137001 / SHEET 4

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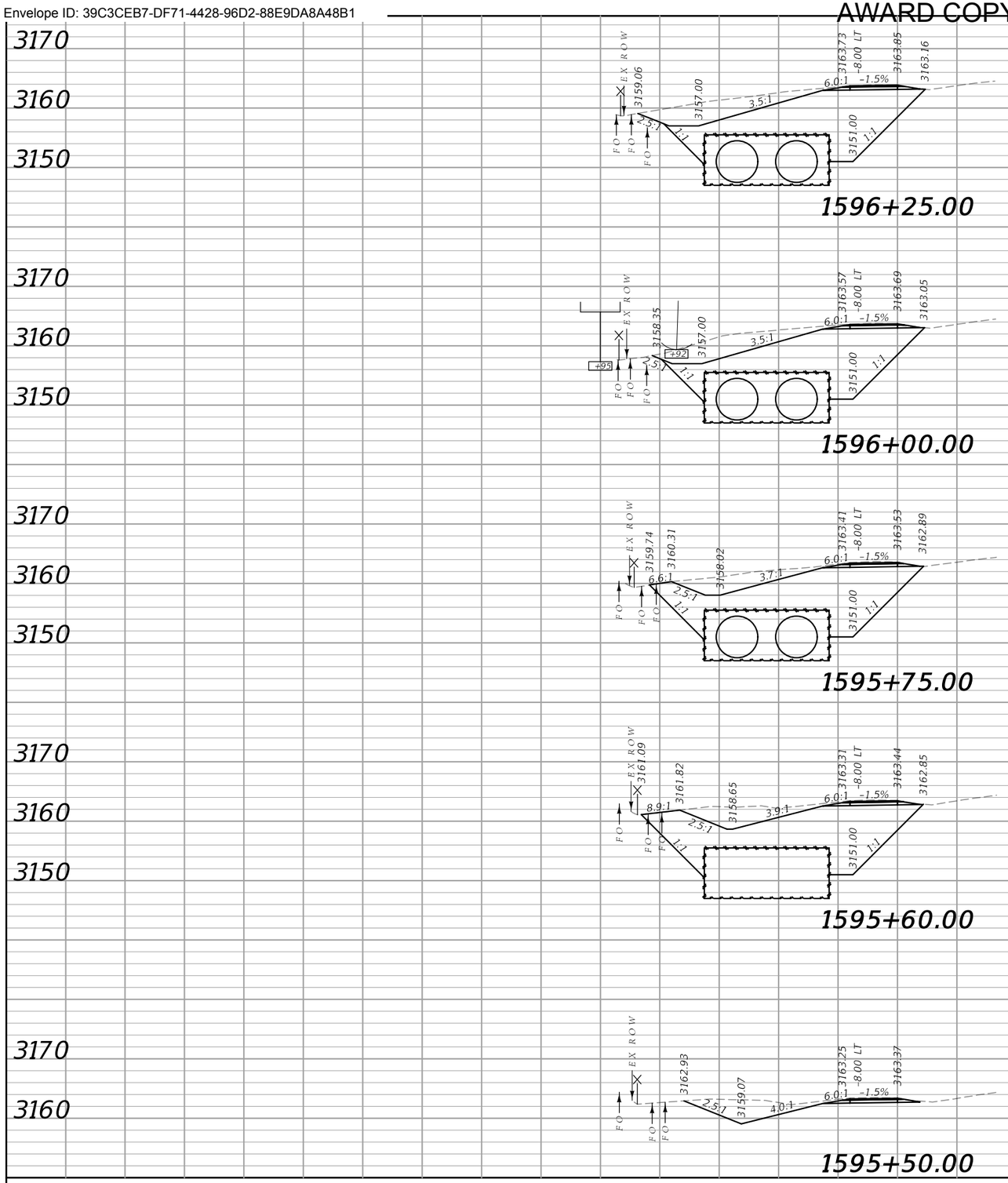
CUT	FILL
28	0
33	0
38	0
54	0
58	0

130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

MONTANA Department of Transportation	...\6.2_WIP\RD\6137001RDLA_265	DESIGNED BY			PATH CROSS SECTIONS	HUSON EAST - PONDING MITIGATION	STPS 574-1(6)3
	12/3/2024	REVIEWED BY					
	10:14:35 AM LSANDE	CHECKED BY			MISSOULA COUNTY	UPN 6137001	SHEET 5

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1595+99
REMOVE EX. 4" PVC INFILTRATION TEST PIPE 34' LT.

1595+92
RESET EX. O.H. GUY WIRE POLE 37' LT.

1595+60.07
BEGIN UNDERGROUND RETENTION SYSTEM LT.

CUT	FILL
451	216
446	221
270	141
97	51
22	0

130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

MONTANA
Department of Transportation

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12/3/2024
10:14:35 AM LSANDE

DESIGNED BY
REVIEWED BY
CHECKED BY

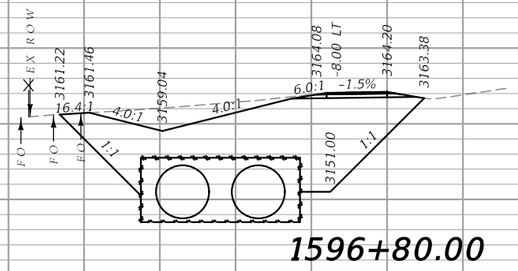
PATH CROSS SECTIONS
MISSOULA COUNTY

HUSON EAST - PONDING MITIGATION
UPN 6137001

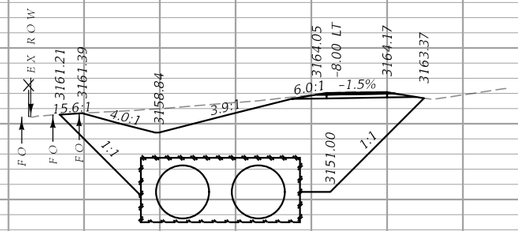
STPS 574-1(6)3
SHEET 6

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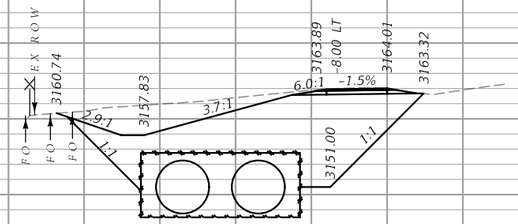
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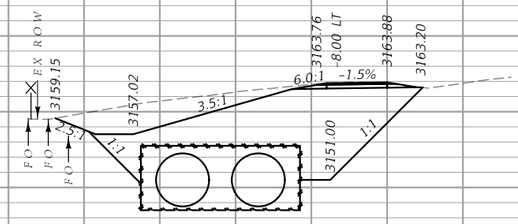
1596+80.00



1596+75.00



1596+50.00



1596+30.00

CUT	FILL
88	50
475	251
370	182
84	39

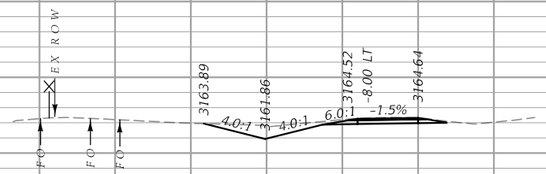
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MONTANA
Department of Transportation

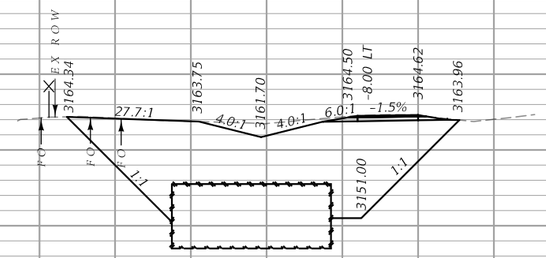
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12/3/2024	REVIEWED BY	MISSOULA COUNTY	UPN 6137001 / SHEET 7
10:14:36 AM LSANDE	CHECKED BY		

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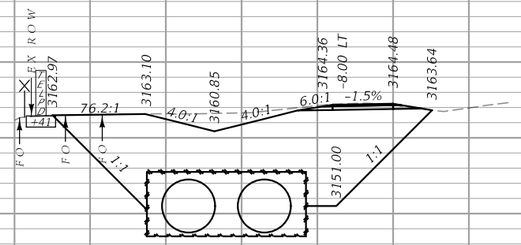


1597+50.00

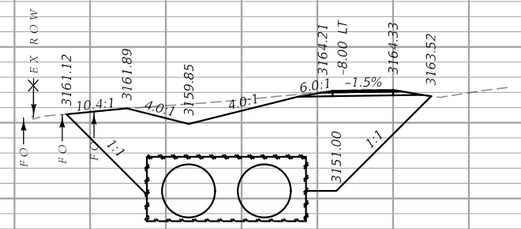


1597+46.00

1597+45.84
END UNDERGROUND RETENTION SYSTEM LT.



1597+25.00



1597+00.00

CUT	FILL
46	28
437	279
499	302
384	221

130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

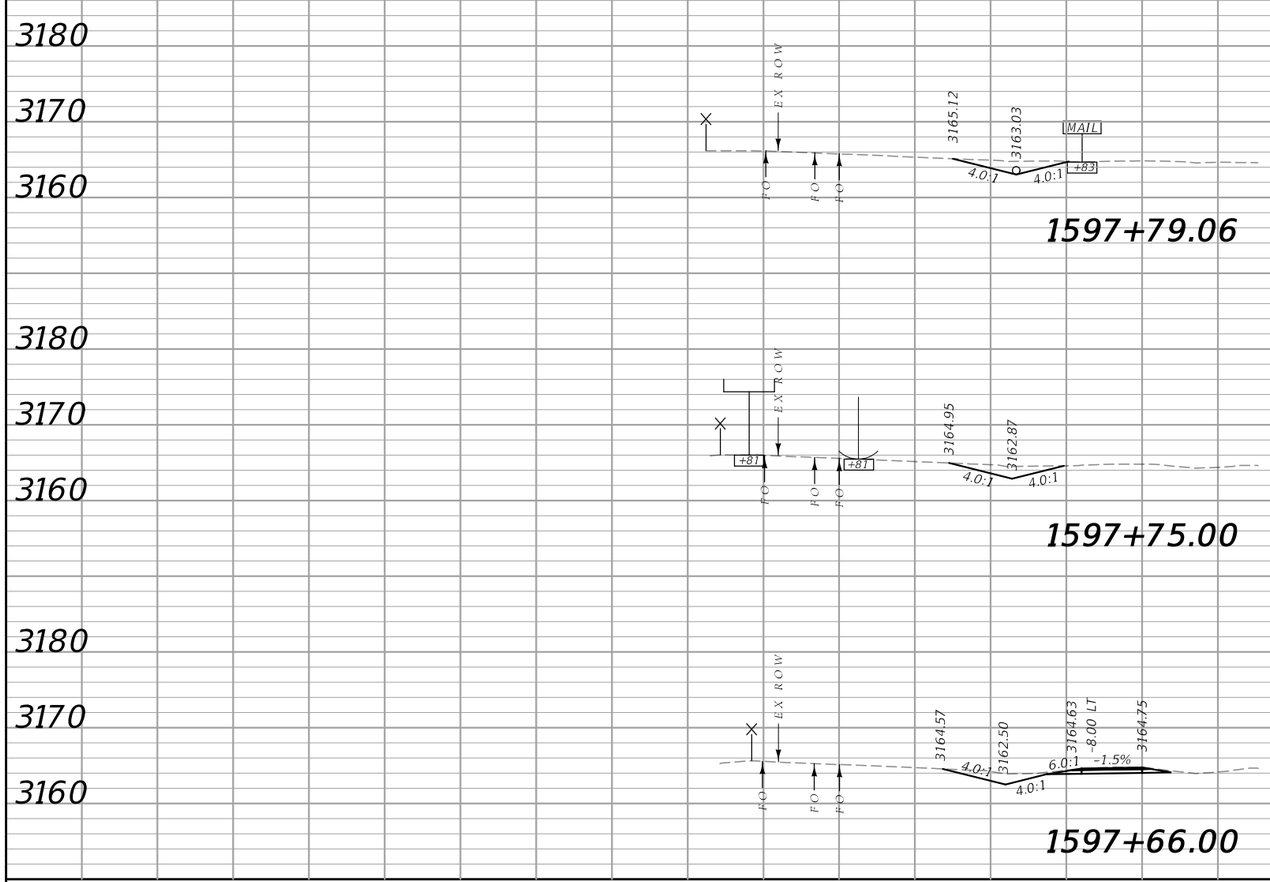
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Department of Transportation

...\6.2_WIP\RD\6137001RDLA01.dgn	DESIGNED BY	PATH CROSS SECTIONS	HUSON EAST - PONDING MITIGATION / STPS 574-1(6)3
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CUT	FILL
1	0
6	0
14	0



1597+95
PRIVATE APP. LT.
PROTECT-IN-PLACE

1597+95
12" X 40' CMP APP. PIPE IN PL. LT.
PROTECT-IN-PLACE

1597+79.06
END DITCH GRADING LT.

1597+66.00
END PATH RECONSTRUCTION

130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

MONTANA Department of Transportation	...\6.2_WIP\RD\6137001RDLA01.dgn	DESIGNED BY		PATH CROSS SECTIONS	HUSON EAST - PONDING MITIGATION / STPS 574-1(6)3
	12/3/2024	REVIEWED BY			
	10:14:38 AM LSANDE	CHECKED BY		MISSOULA COUNTY	UPN 6137001 / SHEET 9