

# MONTANA DEPARTMENT OF TRANSPORTATION

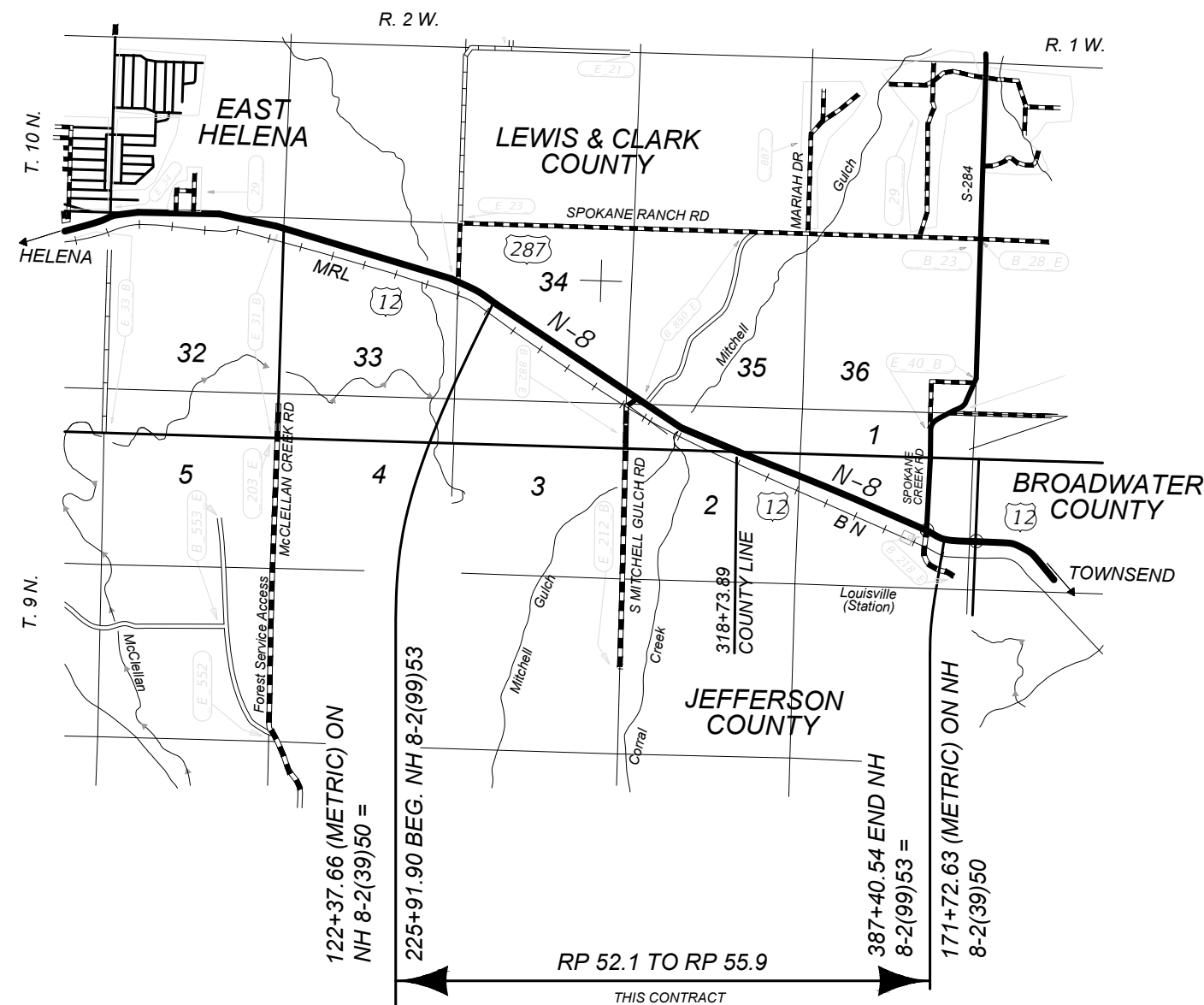
## FEDERAL AID PROJECT NH 8-2(99)53 GRADE, GRAVEL, PL. MIX SURF., S&C EAST OF EAST HELENA - EAST LEWIS & CLARK AND JEFFERSON COUNTY

LENGTH 3.1 MILES



### PROJECT DESIGN DATA

PRESENT	2014	A.D.T. = 6,320
LETTING	2018	A.D.T. = 7,010
DESIGN	2038	A.D.T. = 11,760
		D.H.V. = 1,380
		TRUCKS = 5.7%
		V. = 70 MPH
		18 KIP ESAL'S = 284 DAILY
		GROWTH RATE = 2.6%



ASSOCIATED PROJECT AGREEMENT NUMBERS	
R/W	XXXX
I.C.	XXXX
P.E.	XXXX

MONTANA DEPARTMENT OF TRANSPORTATION

MALCOLM "MACK" LONG  
DIRECTOR OF TRANSPORTATION

APPROVED BY:

PRECONSTRUCTION ENGINEER

DATE

TITLE

PROJECT NAME  
EAST OF EAST HELENA-EAST  
COUNTY  
LEWIS & CLARK & JEFFERSON  
PROJECT ID  
NH 8-2(99)53  
UPN  
8684000

CHECKED BY  
REVIEWED BY  
DESIGNED BY L. ZEIGLER

MONTANA Department of Transportation  
ROAD PLANS  
9/9/2022 1:01 PM

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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 - 3/4" AGG. = 5.9% 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 - TACK (CONCRETE SURFACES) = 0.10 GAL. PER SQ. YARD (UNDILUTED)  
 EMULSIFIED ASPHALT - FOG SEAL (S & C) = 0.075 GAL. PER SQ. YARD (UNDILUTED)  
 EMULSIFIED ASPHALT - FOG SEAL (RUMBLE STRIPS) = 0.10 GAL. PER SQ. YARD (UNDILUTED)  
 SEAL = 0.42 GAL. PER SQ. YARD  
 COVER = 25 LBS. PER SQ. YARD

## 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)

## 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.

## 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

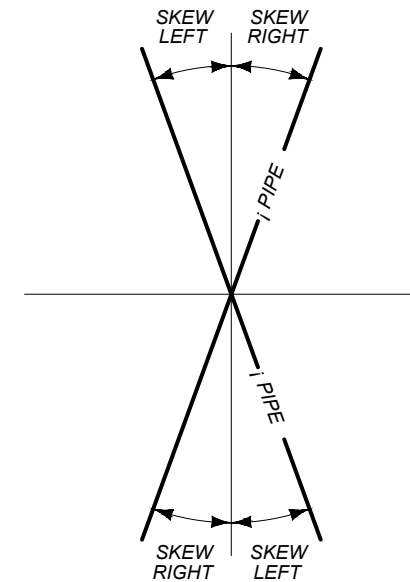


PERMANENT WETLAND IMPACTED AREAS



TEMPORARY WETLAND IMPACT AREAS

## SKEW DIAGRAM



SHEET NO.

2

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PROJECT NAME  
EAST OF EAST HELENA-EAST

COUNTY  
LEWIS & CLARK & JEFFERSON

PROJECT ID  
NH 8-2(99)53

UPN  
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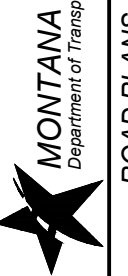
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ROAD PLANS

# LINEAR AND LEVEL DATA

LENGTH OF ROADWAY LEWIS & CLARK COUNTY

LENGTH OF ROADWAY JEFFERSON COUNTY

TOTAL LENGTH OF NH 8-2(99)52 16,148.64 ft

### BEARING SOURCE

GRID -- MONTANA COORDINATE SYSTEM NAD 83-2011.

### LEVEL DATUM SOURCE

NAVD88 DERIVED ELEVATIONS USING GEOID 12A AND HOLDING PROJECT CONTROL VALUES AT MARKS 50D, 51D, 52B, 612964, 6188684, 6248684, B8684, C8684, 28684, AND D8684.

LINEAR AND LEVEL DATA

PROJECT NAME EAST OF EAST HELENA-EAST

COUNTY LEWIS & CLARK & JEFFERSON

PROJECT ID NH 8-2(99)53

UPN 8684000

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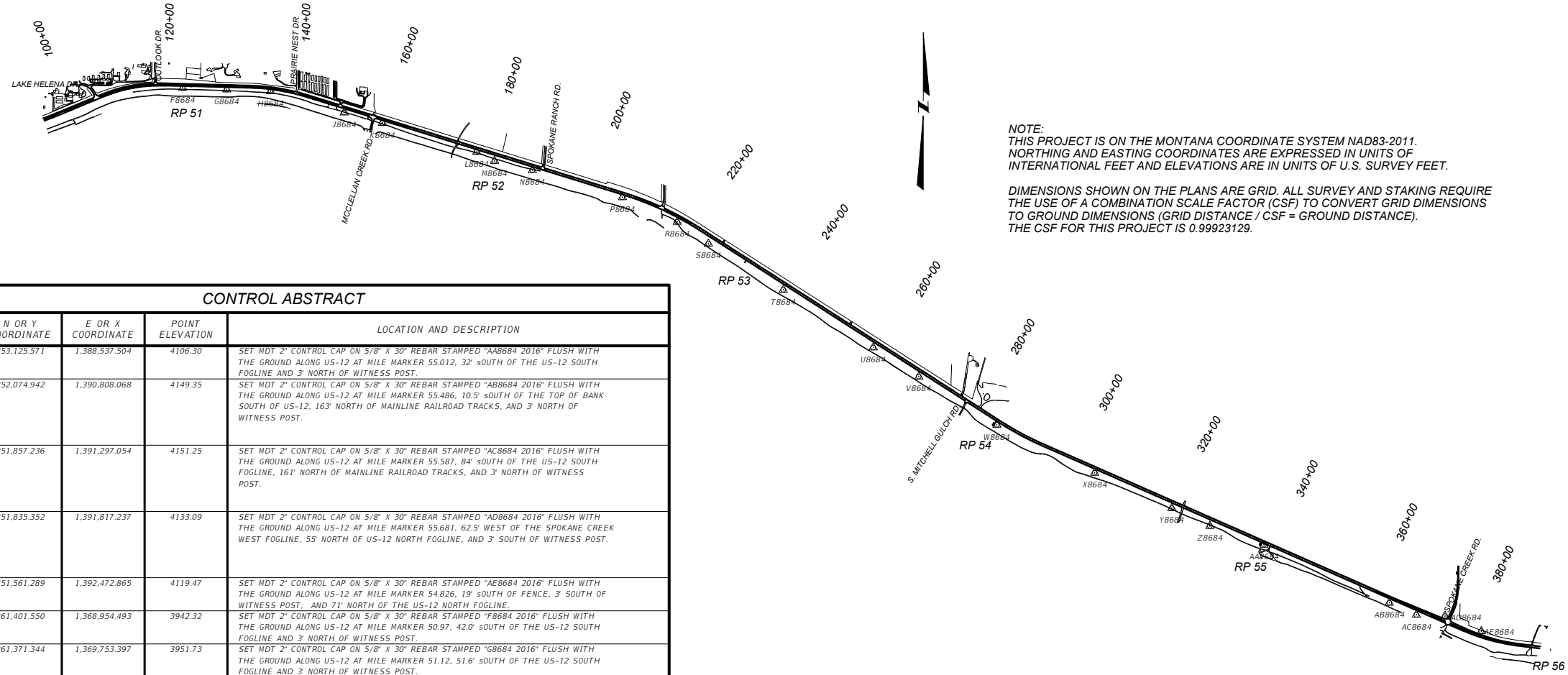
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ROAD PLANS

# CONTROL DIAGRAM

SCALE: N/A



NOTE:  
 THIS PROJECT IS ON THE MONTANA COORDINATE SYSTEM NAD83-2011. NORTHING AND EASTING COORDINATES ARE EXPRESSED IN UNITS OF INTERNATIONAL FEET AND ELEVATIONS ARE IN UNITS OF U.S. SURVEY FEET.  
 DIMENSIONS SHOWN ON THE PLANS ARE GRID. ALL SURVEY AND STAKING REQUIRE THE USE OF A COMBINATION SCALE FACTOR (CSF) TO CONVERT GRID DIMENSIONS TO GROUND DIMENSIONS (GRID DISTANCE / CSF = GROUND DISTANCE). THE CSF FOR THIS PROJECT IS 0.99923129.

CONTROL ABSTRACT				
POINT NAME/NUMBER	N OR Y COORDINATE	E OR X COORDINATE	POINT ELEVATION	LOCATION AND DESCRIPTION
AA8684	853,125.571	1,388,537.504	4106.30	SET MDT 2" CONTROL CAP ON 5/8" X 30" REBAR STAMPED "AA8684 2016" FLUSH WITH THE GROUND ALONG US-12 AT MILE MARKER 55.012, 32' SOUTH OF THE US-12 SOUTH FOGLINE AND 3' NORTH OF WITNESS POST.
AB8684	852,074.942	1,390,808.068	4149.35	SET MDT 2" CONTROL CAP ON 5/8" X 30" REBAR STAMPED "AB8684 2016" FLUSH WITH THE GROUND ALONG US-12 AT MILE MARKER 55.486, 10.5' SOUTH OF THE TOP OF BANK SOUTH OF US-12, 163' NORTH OF MAINLINE RAILROAD TRACKS, AND 3' NORTH OF WITNESS POST.
AC8684	851,857.236	1,391,297.054	4151.25	SET MDT 2" CONTROL CAP ON 5/8" X 30" REBAR STAMPED "AC8684 2016" FLUSH WITH THE GROUND ALONG US-12 AT MILE MARKER 55.587, 84' SOUTH OF THE US-12 SOUTH FOGLINE, 161' NORTH OF MAINLINE RAILROAD TRACKS, AND 3' NORTH OF WITNESS POST.
AD8684	851,835.352	1,391,817.237	4133.09	SET MDT 2" CONTROL CAP ON 5/8" X 30" REBAR STAMPED "AD8684 2016" FLUSH WITH THE GROUND ALONG US-12 AT MILE MARKER 55.681, 62.5' WEST OF THE SPOKANE CREEK WEST FOGLINE, 55' NORTH OF US-12 NORTH FOGLINE, AND 3' SOUTH OF WITNESS POST.
AE8684	851,561.289	1,392,472.865	4119.47	SET MDT 2" CONTROL CAP ON 5/8" X 30" REBAR STAMPED "AE8684 2016" FLUSH WITH THE GROUND ALONG US-12 AT MILE MARKER 54.826, 19' SOUTH OF FENCE, 3' SOUTH OF WITNESS POST, AND 71' NORTH OF THE US-12 NORTH FOGLINE.
F8684	861,401.550	1,368,954.493	3942.32	SET MDT 2" CONTROL CAP ON 5/8" X 30" REBAR STAMPED "F8684 2016" FLUSH WITH THE GROUND ALONG US-12 AT MILE MARKER 50.97, 42.0' SOUTH OF THE US-12 SOUTH FOGLINE AND 3' NORTH OF WITNESS POST.
G8684	861,371.344	1,369,753.397	3951.73	SET MDT 2" CONTROL CAP ON 5/8" X 30" REBAR STAMPED "G8684 2016" FLUSH WITH THE GROUND ALONG US-12 AT MILE MARKER 51.12, 51.6' SOUTH OF THE US-12 SOUTH FOGLINE AND 3' NORTH OF WITNESS POST.
H8684	861,338.348	1,370,547.047	3951.79	SET MDT 2" CONTROL CAP ON 5/8" X 30" REBAR STAMPED "H8684 2016" FLUSH WITH THE GROUND ALONG US-12 AT MILE MARKER 51.274, 45' SOUTH OF SOUTH FOG LINE, AND 3' NORTH OF WITNESS POST.
J8684	860,954.026	1,371,880.867	3958.84	SET MDT 2" CONTROL CAP ON 5/8" X 30" REBAR STAMPED "J8684 2016" FLUSH WITH THE GROUND ALONG US-12 AT MILE MARKER 51.539, 77' SOUTH OF SOUTH FOG LINE, AND 3' NORTH OF WITNESS POST.
K8684	860,764.632	1,372,571.790	3968.98	SET MDT 2" CONTROL CAP ON 5/8" X 30" REBAR STAMPED "K8684 2016" FLUSH WITH THE GROUND ALONG US-12 AT MILE MARKER 51.902, 54' SOUTH OF SOUTH FOG LINE, AND 3' NORTH OF WITNESS POST.
L8684	860,240.749	1,374,279.415	3984.63	SET MDT 2" CONTROL CAP ON 5/8" X 30" REBAR STAMPED "L8684 2016" FLUSH WITH THE GROUND ALONG US-12 AT MILE MARKER 52.241, 51' SOUTH OF SOUTH FOG LINE, AND 3' NORTH OF WITNESS POST.
M8684	860,076.448	1,374,603.494	3985.48	SET MDT 2" CONTROL CAP ON 5/8" X 30" REBAR STAMPED "M8684 2016" FLUSH WITH THE GROUND ALONG US-12 AT MILE MARKER 52.310, 113' SOUTH OF SOUTH FOG LINE, AND 3' NORTH OF WITNESS POST.
N8684	859,910.905	1,375,288.228	3986.49	SET MDT 2" CONTROL CAP ON 5/8" X 30" REBAR STAMPED "N8684 2016" FLUSH WITH THE GROUND ALONG US-12 AT MILE MARKER 52.443, 68.3' SOUTH OF SOUTH FOG LINE, AND 3' NORTH OF WITNESS POST.
P8684	859,419.655	1,376,920.066	4011.70	SET MDT 2" CONTROL CAP ON 5/8" X 30" REBAR STAMPED "P8684 2016" FLUSH WITH THE GROUND ALONG US-12 AT MILE MARKER 52.771, 56' SOUTH OF SOUTH FOG LINE, AND 3' NORTH OF WITNESS POST.
R8684	858,974.311	1,377,911.368	4019.67	SET MDT 2" CONTROL CAP ON 5/8" X 30" REBAR STAMPED "R8684 2016" FLUSH WITH THE GROUND ALONG US-12 AT MILE MARKER 52.748, 83.3' SOUTH OF SOUTH FOG LINE, AND 3' NORTH OF WITNESS POST.
S8684	858,579.390	1,378,474.711	4021.26	SET MDT 2" CONTROL CAP ON 5/8" X 30" REBAR STAMPED "S8684 2016" FLUSH WITH THE GROUND ALONG US-12 AT MILE MARKER 52.878, 126.6' SOUTH OF THE US-12 SOUTH FOGLINE AND 3' NORTH OF WITNESS POST.

CONTROL ABSTRACT				
POINT NAME/NUMBER	N OR Y COORDINATE	E OR X COORDINATE	POINT ELEVATION	LOCATION AND DESCRIPTION
T8684	857,743.631	1,379,831.926	4040.29	SET MDT 2" CONTROL CAP ON 5/8" X 30" REBAR STAMPED "T8684 2016" FLUSH WITH THE GROUND ALONG US-12 AT MILE MARKER 53.141, 96.6' SOUTH OF THE US-12 SOUTH FOGLINE AND 3' NORTH OF WITNESS POST.
U8684	856,697.955	1,381,461.717	4055.04	SET MDT 2" CONTROL CAP ON 5/8" X 30" REBAR STAMPED "U8684 2016" FLUSH WITH THE GROUND ALONG US-12 AT MILE MARKER 53.508, 95.0' SOUTH OF THE US-12 SOUTH FOGLINE AND 3' NORTH OF WITNESS POST.
V8684	856,171.246	1,382,285.335	4064.51	SET MDT 2" CONTROL CAP ON 5/8" X 30" REBAR STAMPED "V8684 2016" FLUSH WITH THE GROUND ALONG US-12 AT MILE MARKER 53.694, 93.0' SOUTH OF THE US-12 SOUTH FOGLINE AND 3' NORTH OF WITNESS POST.
W8684	855,297.940	1,383,699.873	4062.39	SET MDT 2" CONTROL CAP ON 5/8" X 30" REBAR STAMPED "W8684 2016" FLUSH WITH THE GROUND ALONG US-12 AT MILE MARKER 54.009, 63.0' SOUTH OF THE US-12 SOUTH FOGLINE AND 3' NORTH OF WITNESS POST.
X8684	854,428.776	1,385,471.606	4074.04	SET MDT 2" CONTROL CAP ON 5/8" X 30" REBAR STAMPED "X8684 2016" FLUSH WITH THE GROUND ALONG US-12 AT MILE MARKER 54.382, 73.0' SOUTH OF THE US-12 SOUTH FOGLINE AND 3' NORTH OF WITNESS POST.
Y8684	853,789.055	1,386,869.978	4096.18	SET MDT 2" CONTROL CAP ON 5/8" X 30" REBAR STAMPED "Y8684 2016" FLUSH WITH THE GROUND ALONG US-12 AT MILE MARKER 54.674, 96.0' SOUTH OF THE US-12 SOUTH FOGLINE AND 3' NORTH OF WITNESS POST.
Z8684	853,465.855	1,387,559.376	4085.03	SET MDT 2" CONTROL CAP ON 5/8" X 30" REBAR STAMPED "Z8684 2016" FLUSH WITH THE GROUND ALONG US-12 AT MILE MARKER 54.818, 114.5' SOUTH OF THE US-12 SOUTH FOGLINE AND 3' NORTH OF WITNESS POST.

CONTROL

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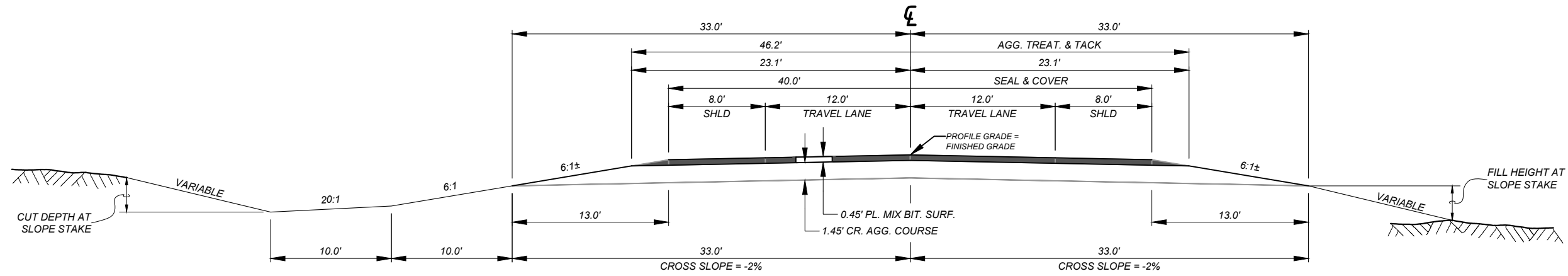
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MONTANA  
 Department of Transportation  
 ROAD PLANS  
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# TYPICAL SECTION NO. 1

MAINLINE

225+91.90 TO 228+58.00 BEGIN PROJECT  
 225+91.90 TO 231+58.00 TRANS. TYP. SECT. NO. 1 TO NO. 2  
 228+58.00



QUANTITIES									
UNIT	AGGREGATE			UNIT	BITUMINOUS MATERIAL				
	COVER	PLANT MIX	CR. AGG. COURSE		ASPHALT CEMENT	SEAL	AGG. TREATMENT	EMULSIFIED ASPHALT TACK*	EMULSIFIED ASPHALT FOG SEAL
AREA square feet		19.40	81.4	square yards PER STATION	8.18	444	513	1,540	
cubic yards PER STATION		71.9	301.3	tons PER STATION		0.79		77	
tons PER STATION		138.6		gals. PER STATION					
square yards PER STATION	444								

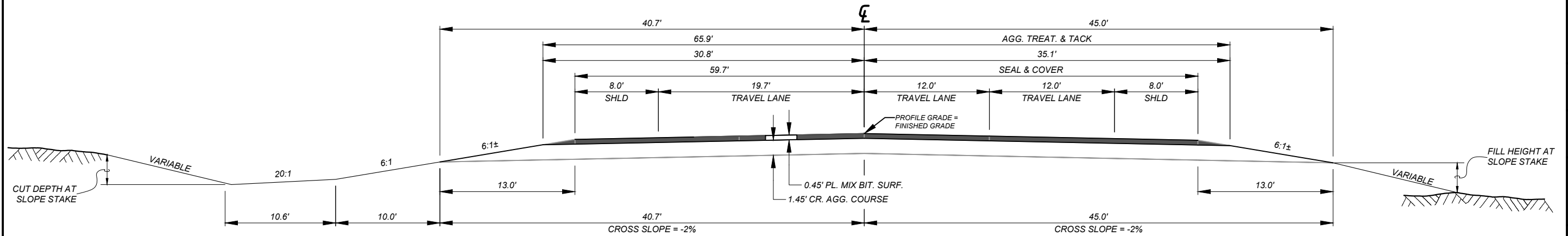
*FILL SLOPES		*BACK SLOPES	
0' - 10'	6:1	0' - 5'	5:1
10' - 20'	4:1	5' - 10'	4:1
20' - 30'	3:1	10' - 15'	3:1
OVER 30'	2:1	OVER 20'	2:1

\*SEE CROSS SECTIONS FOR DEVIATIONS

# TYPICAL SECTION NO. 2

MAINLINE

231+58.00 TO 236+98.00 TRANS. TYP. SECT. NO. 2 TO NO. 3



QUANTITIES									
UNIT	AGGREGATE			UNIT	BITUMINOUS MATERIAL				
	COVER	PLANT MIX	CR. AGG. COURSE		ASPHALT CEMENT	SEAL	AGG. TREATMENT	EMULSIFIED ASPHALT TACK*	EMULSIFIED ASPHALT FOG SEAL
AREA square feet		26.73	105.0	square yards PER STATION	11.26	626	694	2,083	
cubic yards PER STATION		99.0	388.8	tons PER STATION		1.12		104	
tons PER STATION		190.8		gals. PER STATION					
square yards PER STATION	626								

\*BASED ON 3 APPLICATIONS

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EAST OF EAST HELENA-EAST

COUNTY  
LEWIS & CLARK & JEFFERSON

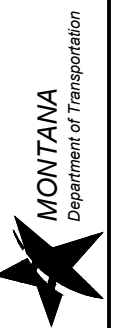
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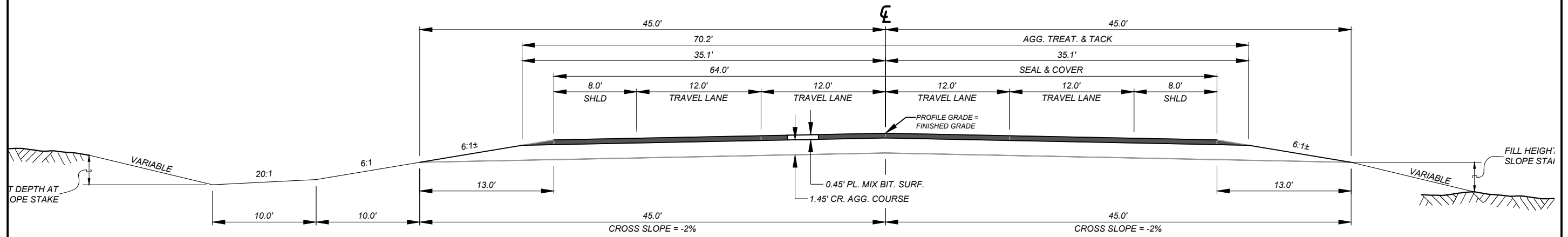


ROAD PLANS

# TYPICAL SECTION NO. 3

MAINLINE

26+98.00 TO 263+91.0 TYP. SECT. NO. 3  
 263+91.00 TO 268+81.00 TRANS. TYP. SECT. NO. 3 TO NO. 4



QUANTITIES									
UNIT	AGGREGATE			UNIT	BITUMINOUS MATERIAL				
	COVER	PLANT MIX	CR. AGG. COURSE		ASPHALT CEMENT	SEAL	AGG. TREATMENT	EMULSIFIED ASPHALT TACK*	EMULSIFIED ASPHALT FOG SEAL
AREA square feet		30.20	116.2	square yards PER STATION					
cubic yards PER STATION		111.9	430.2	tons PER STATION	12.73	1.27	780	2,340	
tons PER STATION		215.7		gals. PER STATION				117	
square yards PER STATION	711								

\* BASED ON 3 APPLICATIONS

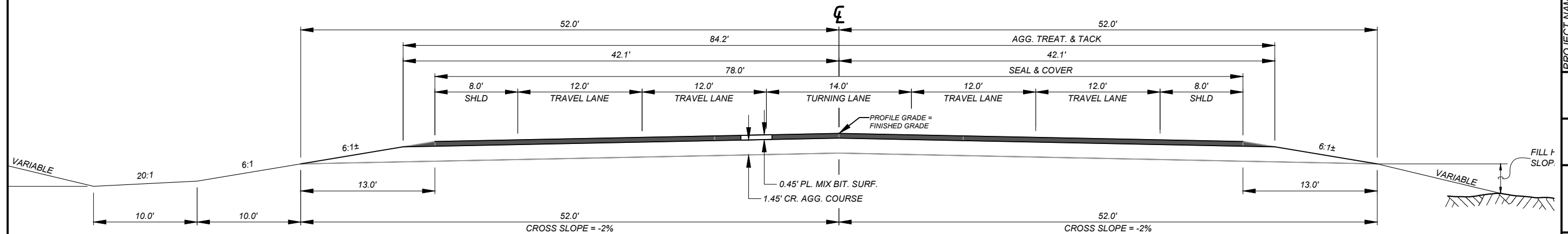
*FILL SLOPES		*BACK SLOPES	
0' - 10'	6:1	0' - 5'	5:1
10' - 20'	4:1	5' - 10'	4:1
20' - 30'	3:1	10' - 15'	3:1
OVER 30'	2:1	OVER 20'	2:1

\*SEE CROSS SECTIONS FOR DEVIATIONS

# TYPICAL SECTION NO. 4

MAINLINE

268+81.00 TO 282+29.88 TYP. SECT. NO. 4  
 282+29.88 TO 284+99.88 TRANS. TYP. SECT. NO. 4 TO NO. 5  
 23+75.33 TO 348+98.00 TYP. SECT. NO. 4  
 348+98.00 TO 353+88.00 TRANS. TYP. SECT. NO. 4 TO NO. 6



QUANTITIES									
UNIT	AGGREGATE			UNIT	BITUMINOUS MATERIAL				
	COVER	PLANT MIX	CR. AGG. COURSE		ASPHALT CEMENT	SEAL	AGG. TREATMENT	EMULSIFIED ASPHALT TACK*	EMULSIFIED ASPHALT FOG SEAL
AREA square feet		36.50	136.5	square yards PER STATION					
cubic yards PER STATION		135.2	505.4	tons PER STATION	15.38	1.55	936	2,807	
tons PER STATION		260.6		gals. PER STATION				140	
square yards PER STATION	867								

\* BASED ON 3 APPLICATIONS

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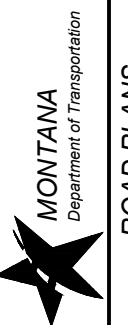
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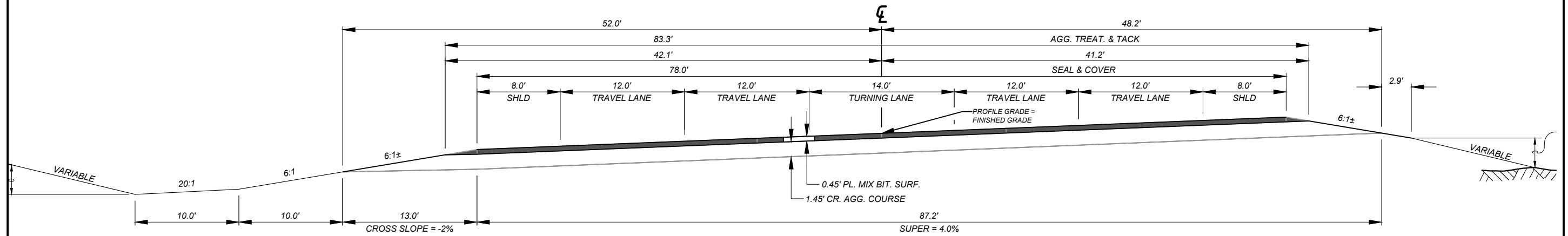


ROAD PLANS

# TYPICAL SECTION NO. 5

MAINLINE

284+99.88 TO 292+85.33 TYP. SECT. NO. 5  
 292+85.33 TO 292+75.33 TRANS. TYP. SECT. NO. 5 TO NO. 4



QUANTITIES									
UNIT	AGGREGATE			UNIT	BITUMINOUS MATERIAL				
	COVER	PLANT MIX	CR. AGG. COURSE		ASPHALT CEMENT	SEAL	AGG. TREATMENT	EMULSIFIED ASPHALT TACK*	EMULSIFIED ASPHALT FOG SEAL
AREA square feet		30.20	116.2	square yards PER STATION	12.73	711	780	2,340	
cubic yards PER STATION		111.9	430.2	tons PER STATION		1.27		117	
tons PER STATION		215.7		gals. PER STATION					
square yards PER STATION	711								

\* BASED ON 3 APPLICATIONS

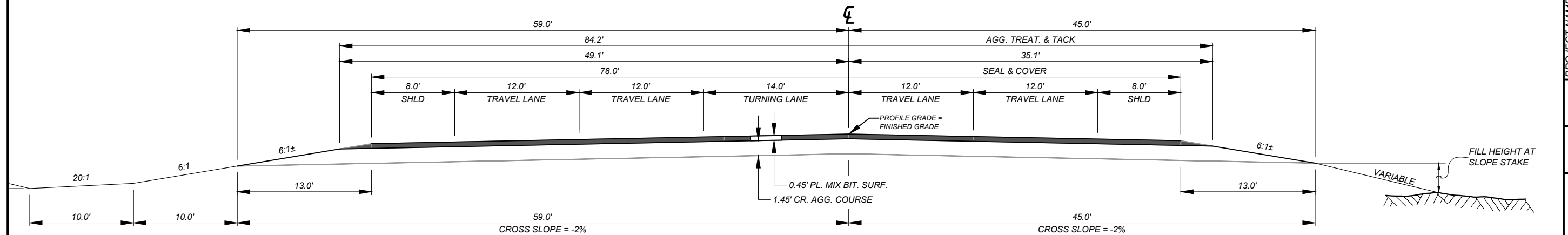
*FILL SLOPES		*BACK SLOPES	
0' - 10'	6:1	0' - 5'	5:1
10' - 20'	4:1	5' - 10'	4:1
20' - 30'	3:1	10' - 15'	3:1
OVER 30'	2:1	OVER 20'	2:1

\*SEE CROSS SECTIONS FOR DEVIATIONS

# TYPICAL SECTION NO. 6

MAINLINE

353+88.00 TO 356+88.00 TYP. SECT. NO. 6  
 356+88.00 TO 361+78.00 TRANS. TYP. SECT. NO. 6 TO NO. 7



QUANTITIES									
UNIT	AGGREGATE			UNIT	BITUMINOUS MATERIAL				
	COVER	PLANT MIX	CR. AGG. COURSE		ASPHALT CEMENT	SEAL	AGG. TREATMENT	EMULSIFIED ASPHALT TACK*	EMULSIFIED ASPHALT FOG SEAL
AREA square feet		36.50	136.5	square yards PER STATION	15.38	867	936	2,807	
cubic yards PER STATION		135.2	505.4	tons PER STATION		1.55		140	
tons PER STATION		260.6		gals. PER STATION					
square yards PER STATION	867								

\* BASED ON 3 APPLICATIONS

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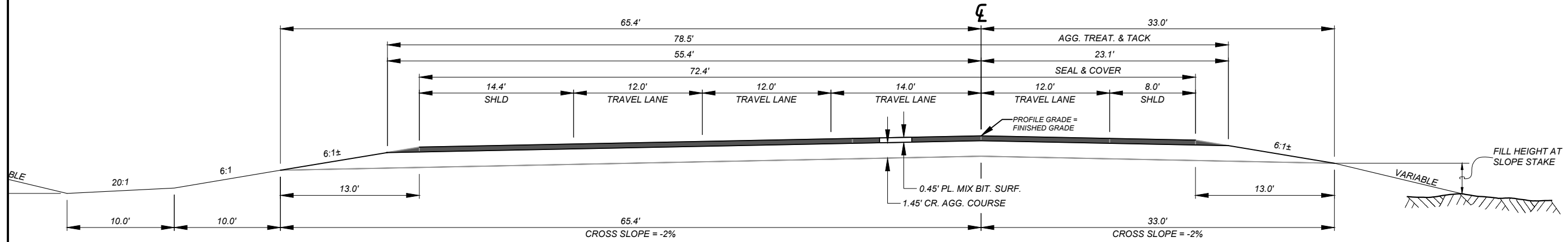


ROAD PLANS

# TYPICAL SECTION NO. 7

MAINLINE

361+78.00 TO 366+69.80 TYP. SECT. NO. 7  
 225+91.90 TO 228+58.00 TRANS. TYP. SECT. NO 7 TO NO. 8



QUANTITIES									
UNIT	AGGREGATE			UNIT	BITUMINOUS MATERIAL				
	COVER	PLANT MIX	CR. AGG. COURSE		ASPHALT CEMENT	SEAL	AGG. TREATMENT	EMULSIFIED ASPHALT TACK*	EMULSIFIED ASPHALT FOG SEAL
AREA square feet		31.10	119.1	square yards PER STATION					
cubic yards PER STATION		115.2	440.9	tons PER STATION	13.10	733	802	2,407	
tons PER STATION		222.0		gals. PER STATION				120	
square yards PER STATION	733								

\* BASED ON 3 APPLICATIONS

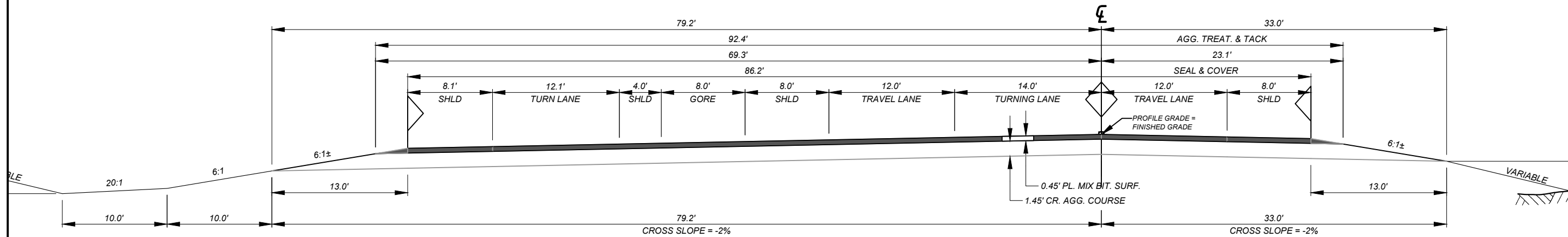
*FILL SLOPES		*BACK SLOPES	
0' - 10'	6:1	0' - 5'	5:1
10' - 20'	4:1	5' - 10'	4:1
20' - 30'	3:1	10' - 15'	3:1
OVER 30'	2:1	OVER 20'	2:1

\*SEE CROSS SECTIONS FOR DEVIATIONS

# TYPICAL SECTION NO. 8

MAINLINE

369+86.66 ONLY - THEN TO TYP. SECT. NO. 9



QUANTITIES									
UNIT	AGGREGATE			UNIT	BITUMINOUS MATERIAL				
	COVER	PLANT MIX	CR. AGG. COURSE		ASPHALT CEMENT	SEAL	AGG. TREATMENT	EMULSIFIED ASPHALT TACK*	EMULSIFIED ASPHALT FOG SEAL
AREA square feet		40.19	148.3	square yards PER STATION					
cubic yards PER STATION		148.9	549.4	tons PER STATION	16.93	958	1,027	3,080	
tons PER STATION		287.0		gals. PER STATION				154	
square yards PER STATION	958								

\* BASED ON 3 APPLICATIONS

PROJECT NAME  
EAST OF EAST HELENA-EAST

COUNTY  
LEWIS & CLARK & JEFFERSON

PROJECT ID  
NH 8-2(99)53

UPN  
8684000

CHECKED BY

REVIEWED BY

DESIGNED BY L. ZEIGLER

MONTANA  
Department of Transportation



ROAD PLANS

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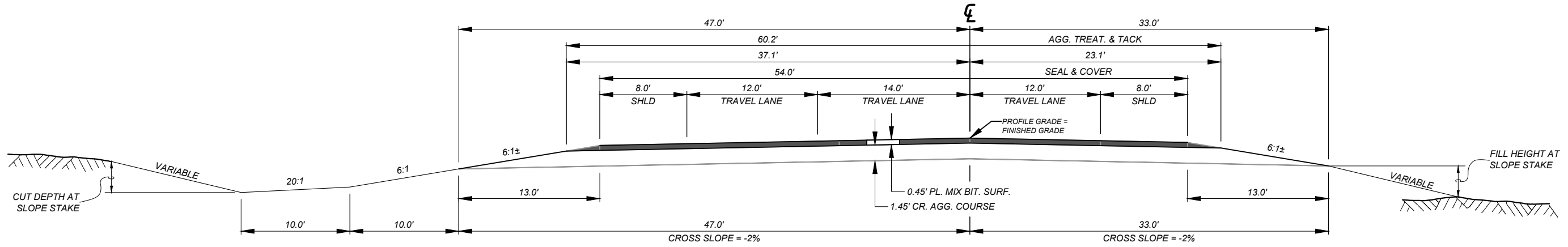
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# TYPICAL SECTION NO. 9

MAINLINE

369+86.66 TO 375+01.56 TYP. SECT. NO. 9  
 375+01.56 TO 376+36.56 TRANS. TYP. SECT. NO 9 TO NO. 10



QUANTITIES									
UNIT	AGGREGATE			UNIT	BITUMINOUS MATERIAL				
	COVER	PLANT MIX	CR. AGG. COURSE		ASPHALT CEMENT	SEAL	AGG. TREATMENT	EMULSIFIED ASPHALT TACK*	EMULSIFIED ASPHALT FOG SEAL
AREA square feet		25.70	101.7	square yards PER STATION	10.83	600	669	2,007	
cubic yards PER STATION		95.2	376.5	tons PER STATION		1.07			
tons PER STATION		183.5		gals. PER STATION				100	
square yards PER STATION	600								

\* BASED ON 3 APPLICATIONS

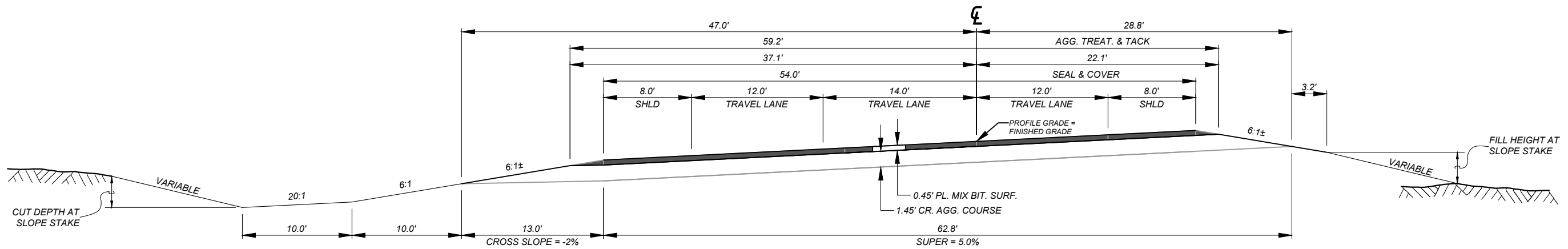
*FILL SLOPES		*BACK SLOPES	
0' - 10'	6:1	0' - 5'	5:1
10' - 20'	4:1	5' - 10'	4:1
20' - 30'	3:1	10' - 15'	3:1
OVER 30'	2:1	OVER 20'	2:1

\*SEE CROSS SECTIONS FOR DEVIATIONS

# TYPICAL SECTION NO. 10

MAINLINE

376+36.56 TO 376+40.00 TYP. SECT. NO. 10  
 376+40.00 TO 384+70.00 TRANS. TYP. SECT. NO 10 TO NO. 11



QUANTITIES									
UNIT	AGGREGATE			UNIT	BITUMINOUS MATERIAL				
	COVER	PLANT MIX	CR. AGG. COURSE		ASPHALT CEMENT	SEAL	AGG. TREATMENT	EMULSIFIED ASPHALT TACK*	EMULSIFIED ASPHALT FOG SEAL
AREA square feet		30.20	116.2	square yards PER STATION	12.73	711	780	2,340	
cubic yards PER STATION		111.9	430.2	tons PER STATION		1.27			
tons PER STATION		215.7		gals. PER STATION				117	
square yards PER STATION	711								

\* BASED ON 3 APPLICATIONS

PROJECT NAME EAST OF EAST HELENA-EAST

COUNTY LEWIS & CLARK & JEFFERSON

PROJECT ID NH 8-2(99)53

UPN 8684000

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DESIGNED BY L. ZEIGLER

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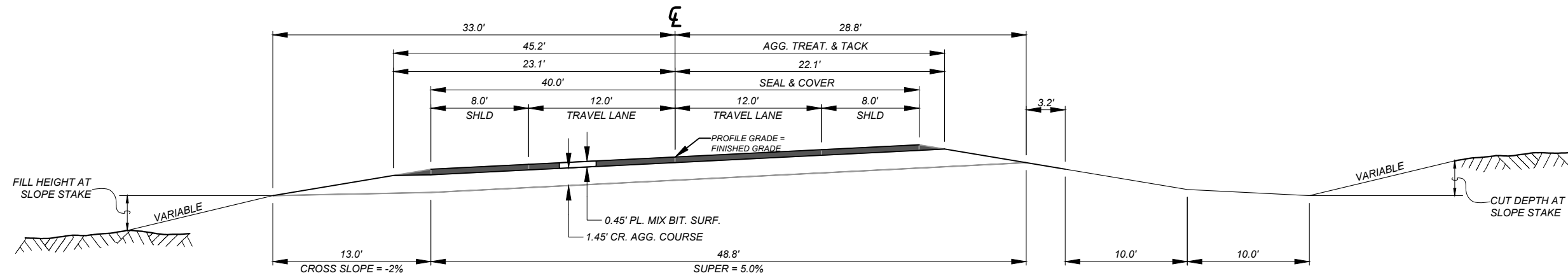


ROAD PLANS

384+70.00 TO 386+73.04 TYP. SECT. NO. 11  
 386+73.04 TO 387+40.54 TRANS. TYP. SECT. NO 11 TO NO. 12

# TYPICAL SECTION NO. 11

MAINLINE



QUANTITIES									
UNIT	AGGREGATE			UNIT	BITUMINOUS MATERIAL				
	COVER	PLANT MIX	CR. AGG. COURSE		ASPHALT CEMENT	SEAL	AGG. TREATMENT	EMULSIFIED ASPHALT TACK*	EMULSIFIED ASPHALT FOG SEAL
AREA square feet		30.20	116.2	square yards PER STATION					
cubic yards PER STATION		111.9	430.2	tons PER STATION	12.73	1.27	780	2,340	
tons PER STATION		215.7		gals. PER STATION			117		
square yards PER STATION	711								

\* BASED ON 3 APPLICATIONS

*FILL SLOPES		*BACK SLOPES	
0' - 10'	6:1	0' - 5'	5:1
10' - 20'	4:1	5' - 10'	4:1
20' - 30'	3:1	10' - 15'	3:1
OVER 30'	2:1	OVER 20'	2:1

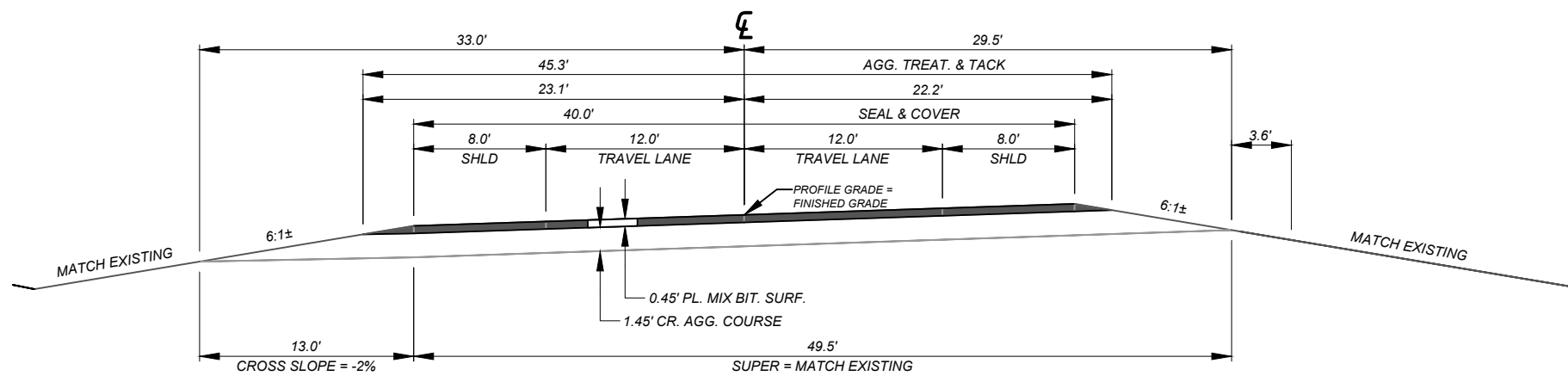
\*SEE CROSS SECTIONS FOR DEVIATIONS

387+40.54

ONLY - END PROJECT

# TYPICAL SECTION NO. 12

MAINLINE



QUANTITIES									
UNIT	AGGREGATE			UNIT	BITUMINOUS MATERIAL				
	COVER	PLANT MIX	CR. AGG. COURSE		ASPHALT CEMENT	SEAL	AGG. TREATMENT	EMULSIFIED ASPHALT TACK*	EMULSIFIED ASPHALT FOG SEAL
AREA square feet		30.20	116.2	square yards PER STATION					
cubic yards PER STATION		111.9	430.2	tons PER STATION	12.73	1.27	780	2,340	
tons PER STATION		215.7		gals. PER STATION			117		
square yards PER STATION	711								

\* BASED ON 3 APPLICATIONS

PROJECT NAME EAST OF EAST HELENA-EAST

COUNTY LEWIS & CLARK & JEFFERSON

PROJECT ID NH 8-2(99)53

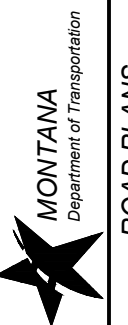
UPN 8684000

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REVIEWED BY

DESIGNED BY L. ZEIGLER

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ROAD PLANS

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# SUMMARY

SUMMARY

GRADING ##				REMARKS
STATION	cu. yards			
	UNCL. EXC.	EXCESS EXC.	EMB.+	
225+91.90	186,358	59,455	126,903	
<b>TOTAL</b>	<b># 186,358</b>	<b># 59,455</b>	<b># 126,903</b>	

# FOR INFORMATION ONLY  
## ROADWAY QUANTITIES MEASURED TO BOTTOM OF SPECIAL BORROW CAP, NOT SUBGRADE ELEVATION SHOWN ON CROSS SECTIONS.

SPECIAL BORROW *				REMARKS
STATION		cubic yards		
FROM	TO	SPECIAL BORROW NEAT LINE		
225+91.90	387+40.54	90,739		SPECIAL BORROW CAP
<b>TOTAL</b>		<b>90,739</b>		

\* SEE CROSS SECTIONS, DETAILS, AND SPECIALS.

GEOTEXTILE				REMARKS
STATION		sq. yards		
FROM	TO	GEOTEXT. STAB.		
MAINLINE				
225+91.90	228+58.00	2,294		77.6' WIDTH
228+58.00	231+58.00	2,860		85.8' AVERAGE WIDTH
231+58.00	236+98.00	5,868		97.8' AVERAGE WIDTH
236+98.00	263+91.00	30,401		101.6' WMDTH
263+91.00	268+81.00	5,913		108.6' AVERAGE WMDTH
268+81.00	348+98.00	102,974		115.6' WMDTH
348+98.00	353+88.00	6,294		115.6' WMDTH
353+88.00	356+88.00	3,853		115.6' WMDTH
356+88.00	361+78.00	5,967		109.6' AVERAGE WMDTH
361+78.00	366+69.80	5,661		103.6' WMDTH
366+69.80	369+86.66	4,007		113.8' AVERAGE WMDTH
369+86.66	376+40.00	6,650		91.6' WIDTH
376+40.00	384+70.00	7,802		84.6' AVERAGE WIDTH
384+70.00	387+40.54	2,333		77.6' AVERAGE WIDTH
SPOKANE CR. RD. TURN LANE				
69+14.07	70+58.80	630		39.2' WIDTH
70+58.80	75+30.00	1,990		38' AVERAGE WMDTH
75+30.00	75+85.88	179		28.9' AVERAGE WMDTH
75+85.88	76+50.00	178		25' WMDTH
76+50.00	77+65.91	219		17' WMDTH
<b>TOTAL</b>		<b>196,073</b>		

ADDITIONAL GRADING					REMARKS
STATION		cu. yards			
		UNCL. EXC.	EMB.+	ADD UNCL. EXC.	
FROM	TO				
			25,300		TOPSOIL REPLACEMENT
230+40.00		5	130		FARM FIELD APP. RT.
245+00.00			5		DITCH BLOCK RT.
248+26.00		5			INLET DITCH RT.
248+26.00		35			OUTLET CHANNEL LT.
252+61.00		20	190		FARM FIELD APP. LT.
271+50.00			35		DITCH BLOCK RT.
276+53.00		375	175		OBLITERATE ROADWAY LT.
276+75.00			5		DITCH BLOCK RT.
277+07.00		10			INLET DITCH RT.
278+09.00		625	3,420		PUBLIC APP. LT. W/ TRUCK TURNING R. & SIDE RDS.
278+09.00		5	525		PUBLIC APP. RT. W/ TRUCK TURNING RADII
280+54.00		10			REMOVE PRIVATE APP. LT.
294+56.00		45			OUTLET CHANNEL LT.
294+56.00		185			INLET CHANNEL RT.
321+60.00		25	160		FARM FIELD APP. LT.
321+74.00		45	315		PRIVATE APP. RT. W/ TRUCK TURNING RADII
338+92.00		5	175		PRIVATE APP. RT.
369+15.24		13,135	215		SPOKANE CR. RD. TURN LANE & PLOW TURN AROUND
373+86.00		1,085	100		PUBLIC APP. LT. - SPOK. CR. RD. W/ TRUCK TURN R.
373+86.00		120	660		PUBLIC APP. RT. W/ BUS TURNAROUND
382+04.00		5			OUTLET CHANNEL LT.
382+04.00		80			INLET CHANNEL RT.
<b>SUBTOTAL</b>		~	~	~	

# EXCAVATION QUANTITIES-MATERIAL UNSUITABLE FOR ROADWAY EMBANKMENTS

TOPSOIL & SEEDING									
STATION		cu. yards	acres					REMARKS	
			TOPSOIL SALVAGING & PLACING	SEED			FERTILIZER		CONDITION SEEDBED
FROM	TO		NO. 1	NO. 2	NO.3	NO. 1	NO. 2		
225+91.90	255+00.00	2,903	6.3		2.0			8.3	
255+00.00	285+00.00	3,838	8.0		2.0			10.0	
285+00.00	315+00.00	3,308	7.0		2.0			9.0	
315+00.00	345+00.00	4,324	8.9		2.0			10.9	
345+00.00	375+00.00	4,899	7.9	2.1	2.0		2.1	9.9	2.1
375+00.00	387+40.54	1,810	4.0		0.8			4.8	
<b>TOTAL</b>		<b>21,082</b>	<b>42.1</b>	<b>2.1</b>	<b>10.8</b>	<b>0.0</b>	<b>2.1</b>	<b>52.9</b>	<b>2.1</b>

PROJECT NAME: EAST OF EAST HELENA-EAST  
 COUNTY: LEWIS & CLARK & JEFFERSON  
 PROJECT ID: NH 8-2(99)53  
 UPN: 8684000  
 CHECKED BY: L. ZEIGLER  
 REVIEWED BY:  
 DESIGNED BY:  
 MONTANA Department of Transportation  
 ROAD PLANS  
 9/9/2022 2:44 PM

# SUMMARY

SUMMARY

RUMBLE STRIPS					
STATION		miles		gals	REMARKS
		RUMBLE STRIPS			
FROM	TO	CONTINUOUS	CENTERLINE TYPE 3		
225+91.90	387+40.54	3.0		353	LT
225+91.90	387+40.54	3.0		353	RT
225+91.90	387+40.54		4.6	548	
69+14.07	77+65.91	0.2			LT. - SPOKANE CREEK ROAD TURN LANE
69+14.07	74+93.64	0.1			RT. - SPOKANE CREEK ROAD TURN LANE
TOTAL		6.3	4.6	~	

# FOR INFORMATION ONLY, INCLUDE IN THE COST OF RUMBLE STRIPS

PAVEMENT MARKINGS				
ITEM	UNIT	INTERIM APPLICATION #	FINAL APPLICATION	TOTAL
STRIPING - WHITE PAINT	gallon	426		426
STRIPING - YELLOW PAINT	gallon	220		220
WORDS & SYMBOLS - WHITE PAINT	gallon	20		20
STRIPING - WHITE EPOXY	gallon		283	283
STRIPING - YELLOW EPOXY	gallon		147	147
WORDS & SYMBOLS - WHITE EPOXY	gallon		12	12
TEMPORARY STRIPING	linear feet			30,396
FINAL SWEEP AND BROOM	course mile			6.6

# BASED ON 2 APPLICATIONS.

COLD MILLING *			
STATION		sq. yards	REMARKS
		COLD MILLING	
FROM	TO	0.2 ft	
102+80.00	106+49.31	1,756	SPOKANE CREEK ROAD - 42.8' WIDTH
106+49.31	108+08.21	1,046	PLOW TURN AROUND - M.O.C.
TOTAL		2,802	

\* SEE DETAILS

STORM DRAIN STRUCTURE SCHEDULE #				
NAME	STATION	each		REMARKS
		STORM DRAIN STRUCTURE	TOP IRON	
		ROUND 60"	MEDIAN INLET Ø	
MH-1	72+73	1		
MI-1	72+73		1	ON CENTERLINE - MEDIAN INLET
TOTAL		1	1	

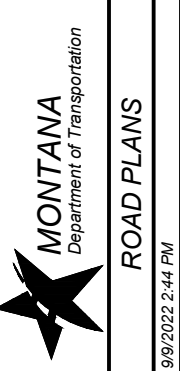
# SEE DETAILS

Ø DROP INLET FRAME & GRATE

PROJECT NAME: EAST OF EAST HELENA-EAST  
 COUNTY: LEWIS & CLARK & JEFFERSON  
 PROJECT ID: NH 8-2(99)53  
 UPN: 8684000

CHECKED BY: [ ]  
 REVIEWED BY: [ ]  
 DESIGNED BY: L. ZEIGLER

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# SUMMARY

SHEET NO.

14

SUMMARY

STATION	CULVERTS																	REMARKS		
	linear feet								END SECTIONS		linear feet				cu. yards				linear feet	CULVERT IN PL. in x ft
	RCP Δ	RCPA Δ			CSP - 3" x 1" CORR.						RELAY PIPE CULVERT	CLEAN CULVERT PIPE	REMOVE PIPE CULVERT	FOUND-ATION MATERIAL	GRANULAR BEDDING MATERIAL	SPECIAL BACKFILL	CONCRETE - CLASS GENERAL		HEIGHT OF COVER	
	CLASS 3	CLASS 3	CLASS 4	CLASS 3	0.064 THK.	0.064 THK.	0.079 THK.	0.079 THK.	LEFT	RIGHT										
24"	28.5" X 18"	28.5" X 18"	73" X 45"	24"	48"	72"	84"													
230+68	12							-	-	6		6.0					2.4	24 X 89.3 RCP	RELAY FETS RT., LENGTHEN RT.	
248+26				32				-	-	16		8.0		22	84	3.2	5.8	73 X 45 X 126.8 RCPA	RELAY FETS LT. & RT., LENGTHEN RT. SINGLE JOINT REPAIR. SEE SPECIALS. CUTOFF WALL LT. & RT.	
271+80		44						-	-	6		6.0					2.5	28.5 X 18 X 81.6 RCPA	RELAY FETS RT., LENGTHEN RT.	
271+82												25.2						24 X 25.2 CSP	REMOVE DR. 66' RT.	
277+05												24.0						4' X 2' X 24.0 RCB	REMOVE DR. 66' RT.	
277+07	42							-	-	6		6.0					2.7	24 X 85.4 RCP	RELAY FETS RT., LENGTHEN RT.	
294+56								2:1 ##	2:1 ##			20.0		89	327	10.4	5.2 LT & 13.1 RT	84 X 153.0 CSP	LENGTHEN LT. & RT., CUTOFF WALLS LT. & RT. CONC. EDGE PROT. LT. & RT.	
333+03					102			FETS	FETS			8.0			219		9.5 LT & 18.5 RT	48 X 138.9 CSP (ELONGATED)	LENGTHEN LT. & RT. SEE SPECIALS	
350+89	54							FETS	FETS								6.6	19° LT. 24 X 182.8 RCP	LENGTH LT. & RT.	
382+04							74	2:1 ##	2:1 ##			14.0		51	621	9.4	3.8 LT & 8.4 RT	72 X 150.8 CSP (ELONGATED)	LENGTHEN LT. & RT., CUTOFF WALLS LT. & RT. SEE SPECIALS.	
72+69					106			FETS									3.5	4° LT.	CONNECT TO MH RT. TURN LANE (SPOKANE CREEK ROAD)	
76+85										6		6.0					1.2	28.5 X 18 X 75.8 RCPA	LENGTHEN LT. - RELAY FETS LT. TURN LANE (SPOKANE CREEK ROAD)	
<b>TOTAL</b>	<b>108</b>	<b>44</b>	<b>0</b>	<b>32</b>	<b>106</b>	<b>102</b>		<b>~</b>	<b>~</b>	<b>40</b>		<b>0</b>	<b>123.2</b>	<b>0</b>	<b>162</b>	<b>1,251</b>	<b>23.0</b>	<b>~</b>	<b>~</b>	<b>~</b>

\* SEE STANDARD SPEC. SEC. 709.04

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		STEEL - 2 2/3 x 1/2 CORR. 0.064 THK.	CONCRETE - CLASS 3	ALUMINUM - 2 2/3 x 1/2 CORR. 0.060 THK.	CORRU-GATED POLY-ETHYLENE PIPE	LEFT	RIGHT	HEIGHT OF COVER			
		LENGTH OF PIPE	REMOVE PIPE CULVERT										
252+61	24	48	47.2	24	24	24		FETS	FETS	1.6		24" X 47.2' RCP	FARM FIELD APP. LT.
277+93			52.1									18" X 52.1' CSP	PUBLIC APP. RT.
278+09	24	64		24	24	24		FETS	FETS	1.8			PUBLIC APP. LT.
278+09	24	68		24	24	24		FETS	FETS	1.8			PUBLIC APP. RT.
280+54			46.7									18" X 46.7' CSP	PRIVATE APP. LT.
321+60	19	48	57.2	18	18	18		FETS	FETS	1.9		12" X 57.2' CSP	FARM FIELD APP. LT.
321+74	19	72	56.0	18	18	18	18	FETS	FETS	3.3		18" X 56.0' CSP	PRIVATE APP. RT.
338+92	19	46	22.4	18	# 18	18		FETS	FETS	1.1		12" X 22.4' CSP	PRIVATE APP. RT.
373+86	24	180		24	24	24			FETS	6.0	4° RT		PUBLIC APP. LT. - 101+21 SPOKANE CREEK RD - SEE DETAIL
12+76	18	126		18	18	18		FETS	FETS	1.5	11° RT		ACCESS RD. RT. (278+09 LT. MAINLINE)
<b>TOTAL</b>	<b>~</b>	<b>~</b>	<b>281.6</b>	<b>~</b>	<b>~</b>	<b>~</b>	<b>~</b>	<b>~</b>	<b>~</b>	<b>~</b>	<b>~</b>	<b>~</b>	

# CL.4

PROJECT NAME: EAST OF EAST HELENA-EAST  
 COUNTY: LEWIS & CLARK & JEFFERSON  
 PROJECT ID: NH 8-2(99)53  
 UPN: 8684000

CHECKED BY: L. ZEIGLER  
 REVIEWED BY: L. ZEIGLER  
 DESIGNED BY: L. ZEIGLER

MONTANA Department of Transportation  
 ROAD PLANS  
 9/9/2022 2:44 PM

# SUMMARY

SUMMARY

PERMANENT EROSION CONTROL *								
STATION		cu. yards			sq. yards		REMARKS	
		STREAMBED MATERIAL	RANDOM RIPRAP		RIPRAP REVEGETATION	GEOTEXTILE		EROSION CONTROL BLANKET
FROM	TO		CL. 1	CL. 2		PERM. EROS. CNTRL.		HIGH SURV. CLASS A
248+26.00								39
248+26.00			43.7		57	57		OUTLET CHANNEL LT. - SEE DETAIL
271+91.00				48.6		70		RIPRAP DRAIN CHUTE RT. - TYPE 3
277+07.00							30	INLET DITCH RT.
294+56.00		61					26	OUTLET CHANNEL LT. - SEE DETAIL
294+56.00		8		137.1	214	214		INLET CHANNEL RT. - SEE DETAIL
333+03.00			20.5		31	31		OUTLET RIPRAP APRON LT. - SEE DETAIL
382+04.00				28.9	35	35		OUTLET CHANNEL LT.
382+04.00				115.6	180	180		INLET CHANNEL RT. - SEE DETAIL
TOTAL		69	64.2	330.2	517	587	95	

CULVERT SUMMARY RECAP						
BASIC BID	linear feet			cu. yards		
	NEW PIPE (TOTAL)	RELAY PIPE CULVERT	REMOVE PIPE CULVERT	GRANULAR BEDDING MATERIAL	SPECIAL BACKFILL	CONCRETE - CLASS GENERAL
18" DR	292					
24" DR	360					
24" RCP	108					
24" CSP	106					
RCPA 24 IN EQ. DIA.	50					
RCPA 60 IN EQ. DIA.	32					
48" CSP X 0.064" THK.	102					
72" CSP X 0.079" THK.	74					
84" CSP X 0.079" THK.	100					
TOTAL	~	40	404.8	162	1,251	23.0

\* SEE DETAILS

FENCING												
STATION		linear feet				TEMP. FENCE	each		linear feet		REMARKS	
		FARM FENCE					FARM FENCE PANEL	DEADMAN	FARM GATE			
		TYPE F4M	TYPE F4W	TYPE F5W **	WILDLIFE FRIENDLY FW **				SINGLE	DOUBLE		TYPE G2
225+91.90	252+53.00			2,661				6			LT.	
252+53.00	252+69.00									16	LT.	
252+69.00	273+99.19			2,130				5			LT.	
273+99.19	276+27.88		229					4			LT.	
275+12.00								2		16	LT. - 440' LT. - NW CORNER PROPERTY	
276+27.88	276+97.85		70					4			LT.	
276+97.85	277+70.00				719			10		16	LT. - PLACE FENCE ALONG EASEMENT WEST SIDE OF COUNTY ROAD	
375+47.20	387+40.54	1,213						16			LT.	
TOTAL		1,213	299	4,791	719	909		47	~	4	32	16

\*\* TYPE 1 - WOOD POSTS (WF4-SBBS-16)

MAILBOXES		
STATION	each	REMARKS
	MAILBOXES	
377+32.00	3	RT.
321+74.00	1	RT.
373+46.00	1	RT.
TOTAL	5	

PROJECT NAME EAST OF EAST HELENA-EAST

COUNTY LEWIS & CLARK & JEFFERSON

PROJECT ID NH 8-2(99)53

UPN 8684000

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REVIEWED BY

DESIGNED BY L. ZEIGLER

MONTANA Department of Transportation

ROAD PLANS



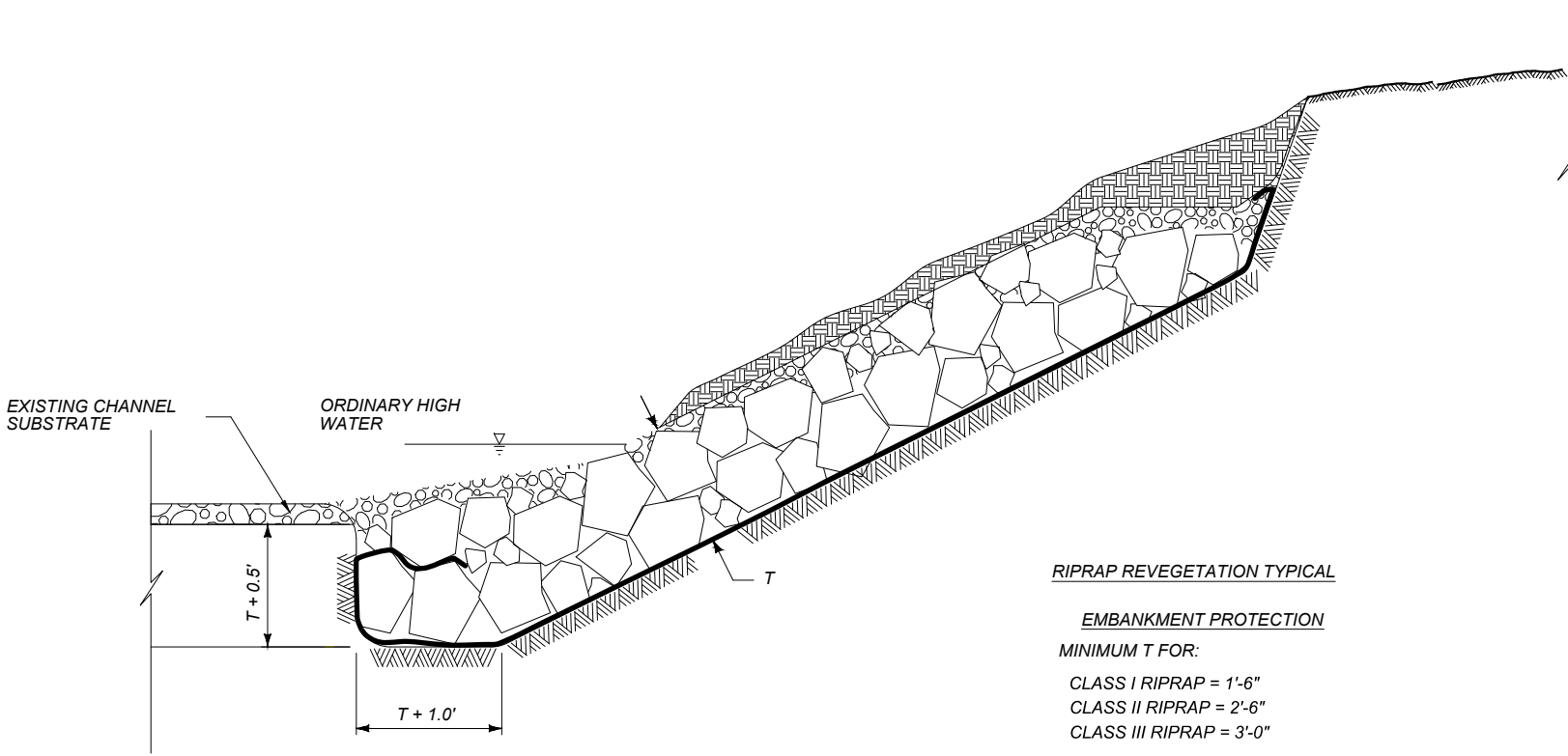


# DETAIL

SHEET NO.

17

RIPRAP VEGETATION  
DETAIL  
(NO SCALE)



**RIPRAP REVEGETATION TYPICAL**

**EMBANKMENT PROTECTION**

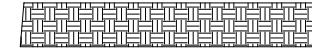
MINIMUM T FOR:

CLASS I RIPRAP = 1'-6"

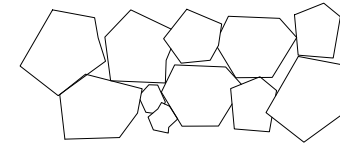
CLASS II RIPRAP = 2'-6"

CLASS III RIPRAP = 3'-0"

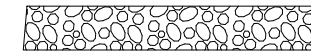
**LEGEND**



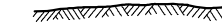
TOPSOIL WITH EROSION CONTROL BLANKET/MULCH COVER



RANDOM RIPRAP



GRANULAR BEDDING



EXISTING GROUND



PERMANENT EROSION CONTROL GEOTEXTILE



EXCAVATION

**NOTES:**

FILL RIPRAP VOIDS WITH GRANULAR BEDDING OR A MATERIAL OF SIMILAR GRADATION OBTAINED ON SITE TO PROVIDE A UNIFORM SURFACE FOR THE PLACEMENT OF TOPSOIL, AS APPROVED BY THE PROJECT MANAGER.

PLACE TOPSOIL WITH A MINIMUM THICKNESS OF 6".

THIS DETAIL IS TO BE USED AS A VISUAL GUIDE FOR RIPRAP REVEGETATION. REFER TO THE PLAN SHEETS AND CROSS SECTIONS FOR SPECIFIC ELEVATIONS AND GEOMETRIC CONFIGURATION OF THE RIPRAP LAYOUT.

REFER TO THE SPECIAL PROVISIONS FOR PLANTING AND SEEDING SPECIFICATIONS.

CULVERT OUTLET RIPRAP  
FOR CULVERTS WITH  
FETS (48" EQUIVALENT  
AND SMALLER)  
NOT TO SCALE

PROJECT NAME  
EAST OF EAST HELENA-EAST

COUNTY  
LEWIS & CLARK & JEFFERSON

PROJECT ID  
NH 8-2(99)53

UPN  
8684000

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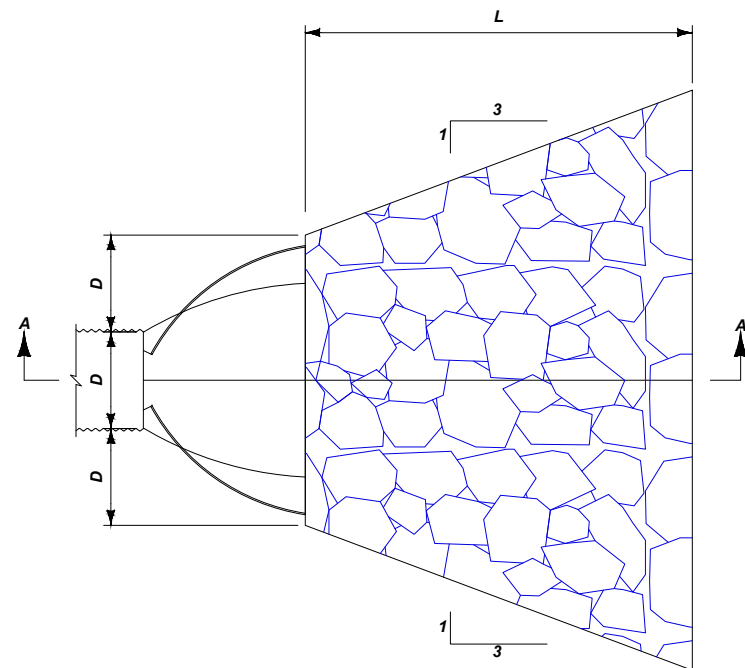
8684000HYDE7002.DWG



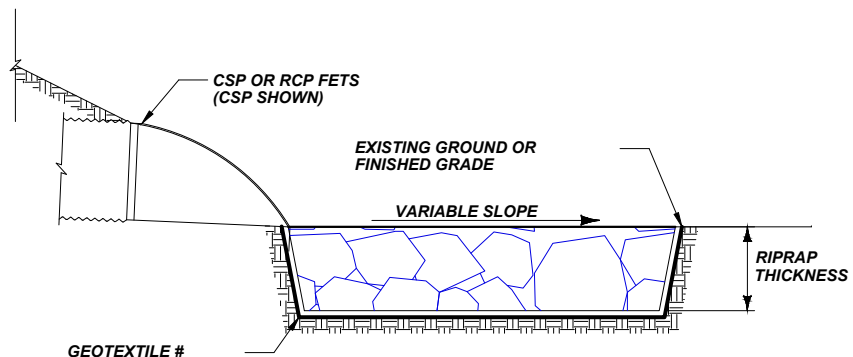
ROAD PLANS

9/9/2022 1:18 PM

# DETAIL



PLAN VIEW  
NO SCALE



SECTION A-A  
NO SCALE

CULVERT OUTLET RIPRAP WITHOUT DITCH

CULVERT OUTLET RIPRAP						
CULVERT STATION	CULVERT DIAMETER D (in.)	LENGTH L (ft)	RIPRAP THICKNESS T (ft)	CLASS 1 RIPRAP (cu. yd)	GEOTEXTILE* (sq. yd.)	REMARKS
333+03	48	16	2	20.5	31	LT

# PERMANENT EROSION CONTROL GEOTEXTILE - HIGH SURVIVABILITY - CLASS A

CULVERT OUTLET RIPRAP FOR CULVERTS WITH FETS (48" EQUIVALENT AND SMALLER)  
NOT TO SCALE

CULVERT OUTLET  
RIPRAP  
(NO SCALE)

PROJECT NAME  
EAST OF EAST HELENA-EAST  
COUNTY  
LEWIS & CLARK & JEFFERSON  
PROJECT ID  
NH 8-2(99)53  
UPN  
8684000

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OUTLET DITCH DETAIL

PROJECT NAME  
EAST OF EAST HELENA-EAST

COUNTY  
LEWIS & CLARK & JEFFERSON

PROJECT ID  
NH 8-2(99)53

UPN  
8684000

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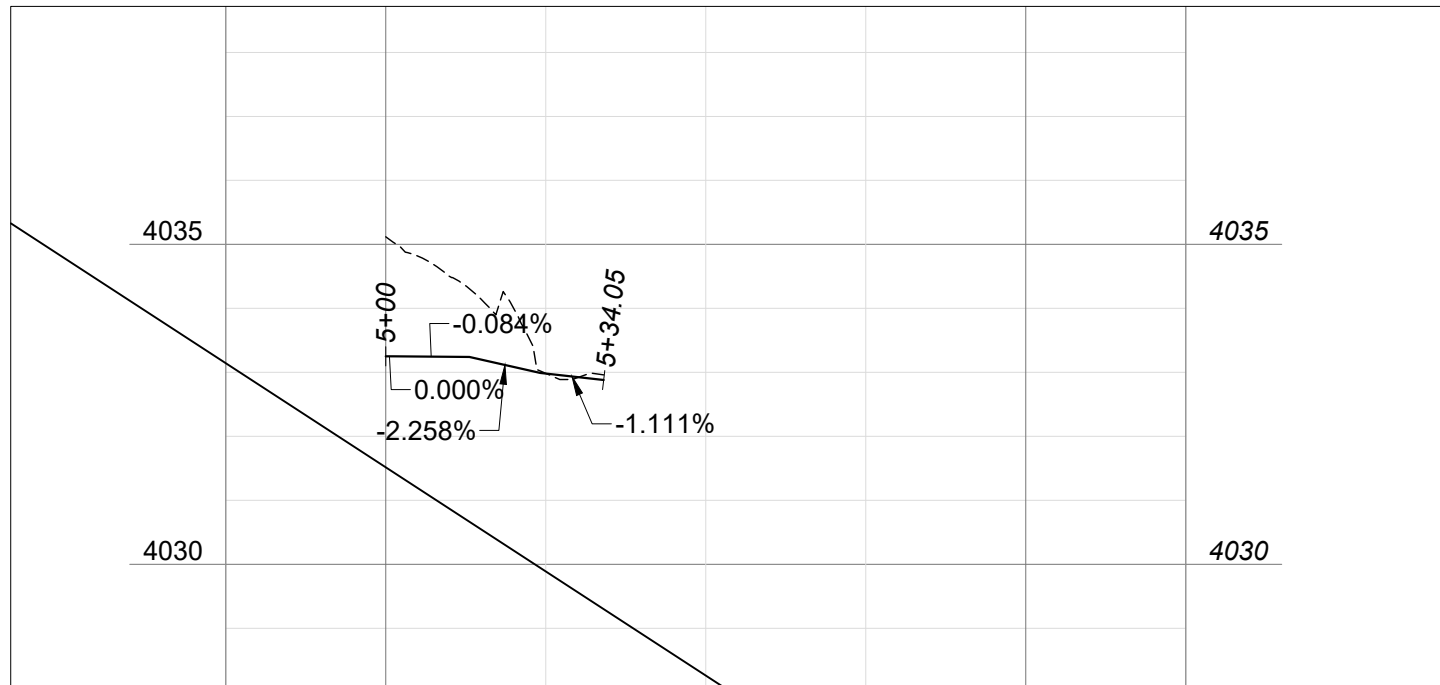
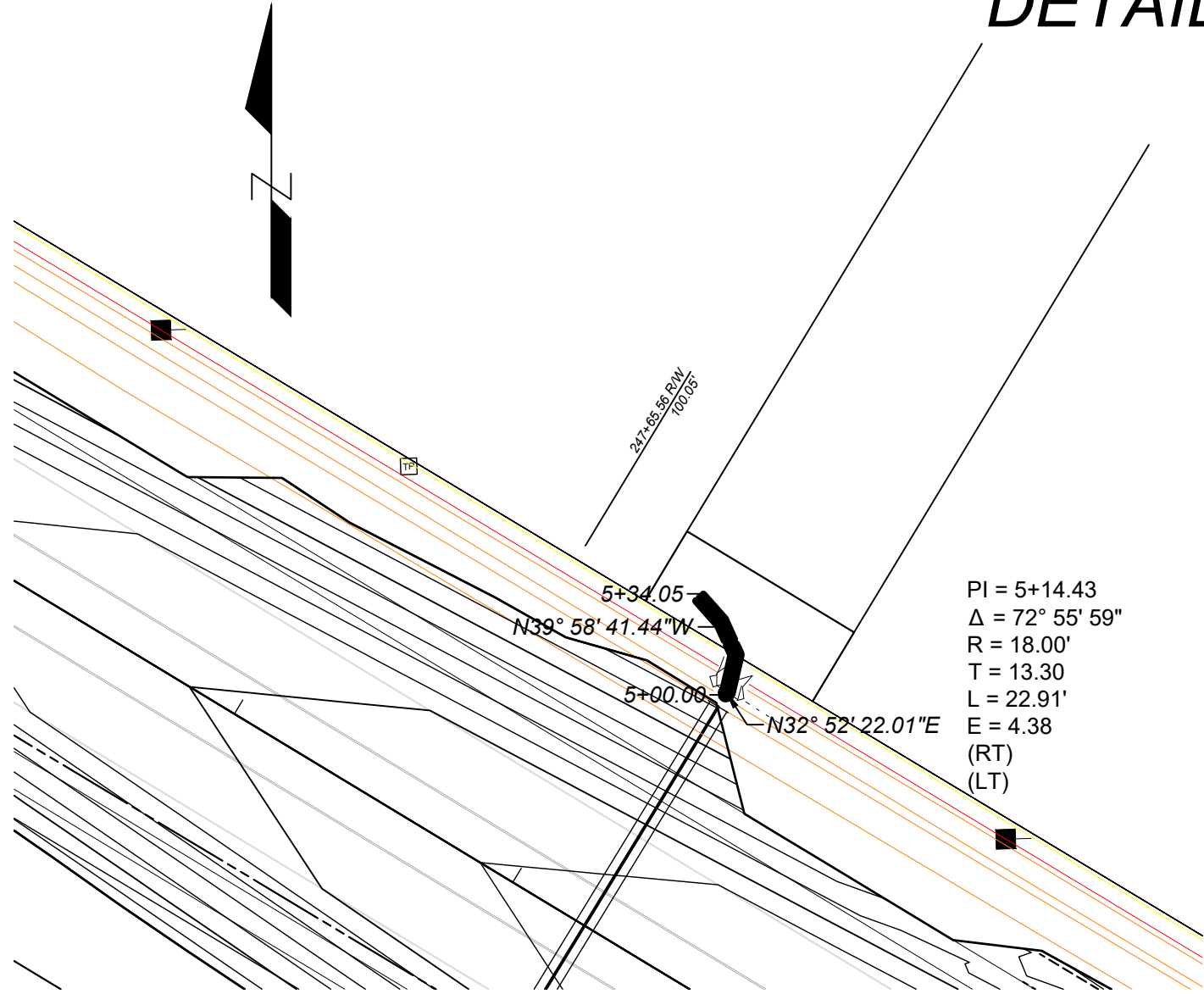
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ROAD PLANS

# DETAIL



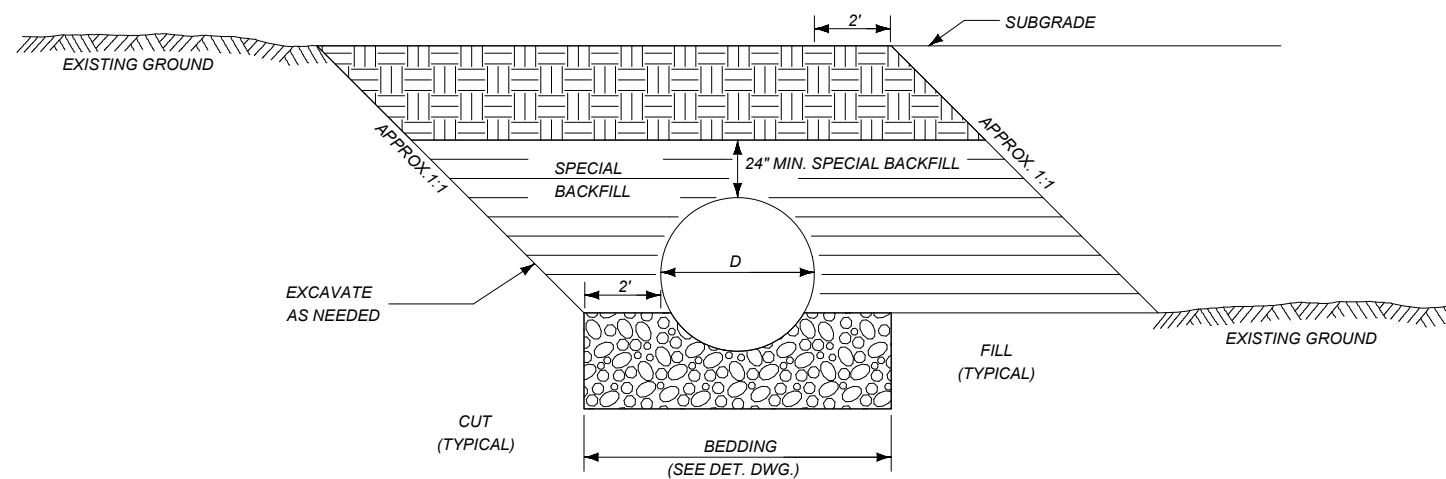
# DETAIL

SHEET NO.

20

SPECIAL BACKFILL AND  
SPECIAL BORROW  
DETAILS

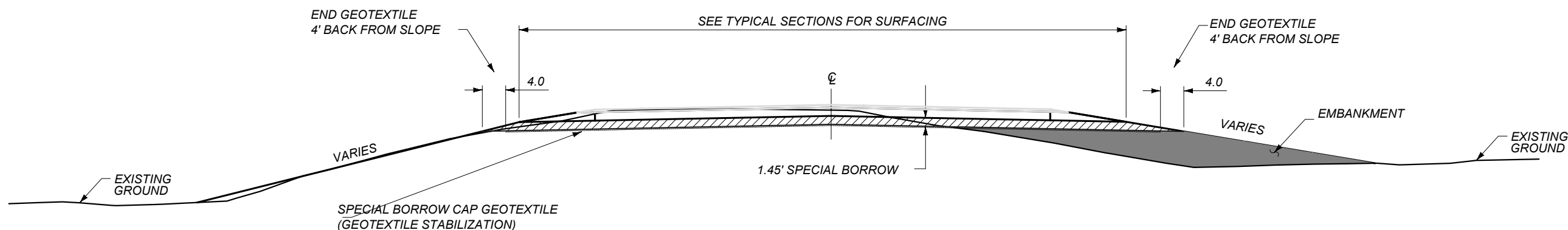
## SPECIAL BACKFILL



CULVERT STATION	PIPE DIAMETER	SPECIAL BACKFILL (C.Y.)
248+26 RT.	73" X 45" RCPA	84
294+56 RT.	84" CSP	327
333+03 RT.	48" CSP	219
382+04 RT.	72" CSP	621

## SPECIAL BORROW

225+91.90 TO 387+40.54



PROJECT NAME  
EAST OF EAST HELENA-EAST  
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LEWIS & CLARK & JEFFERSON  
PROJECT ID  
NH 8-2(99)53  
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Department of Transportation  
ROAD PLANS  
9/9/2022 1:29 PM

MITCHELL GULCH  
RD. - S  
(NO SCALE)

PROJECT NAME  
EAST OF EAST HELENA-EAST

COUNTY  
LEWIS & CLARK & JEFFERSON

PROJECT ID  
NH 8-2(99)53

UPN  
8684000

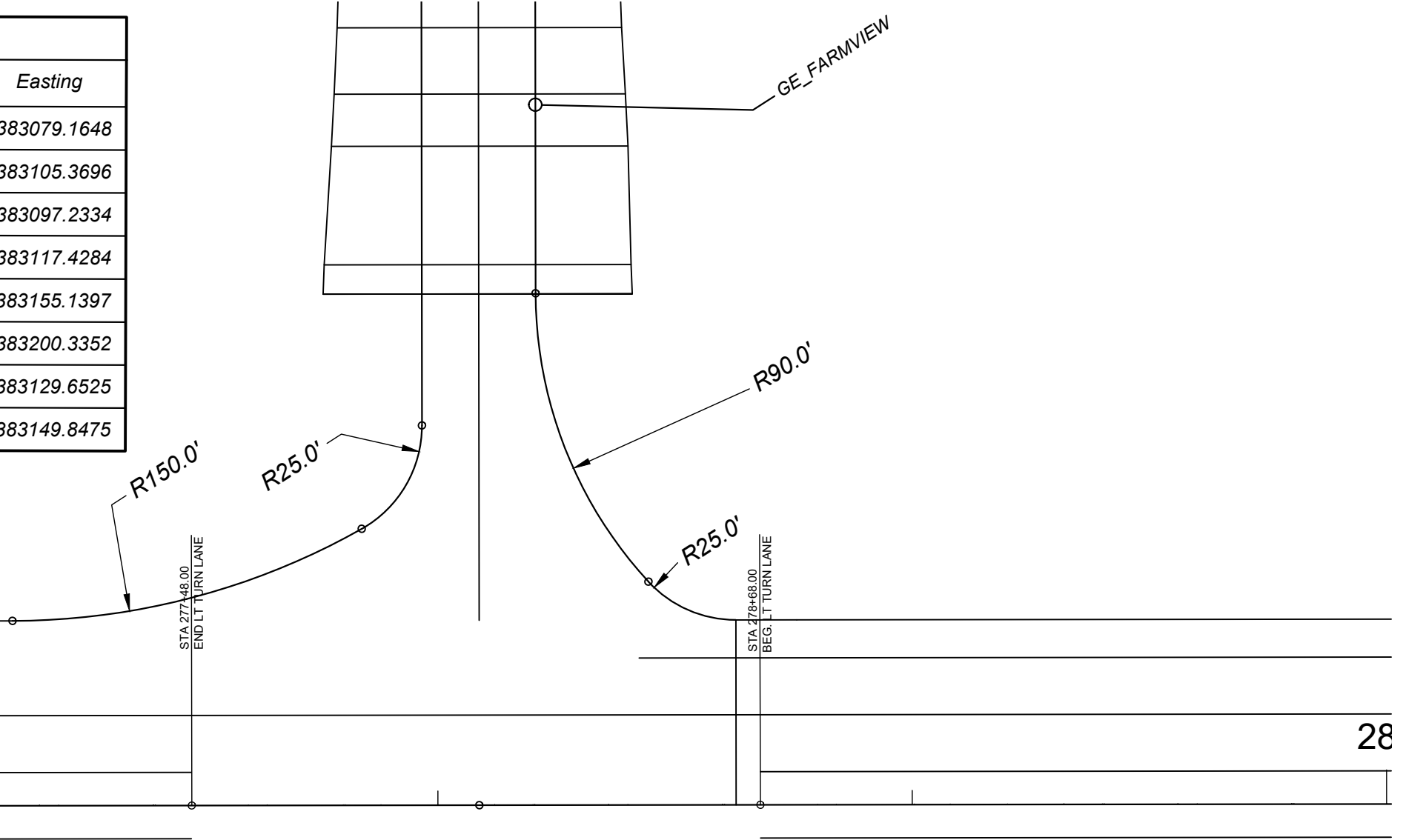
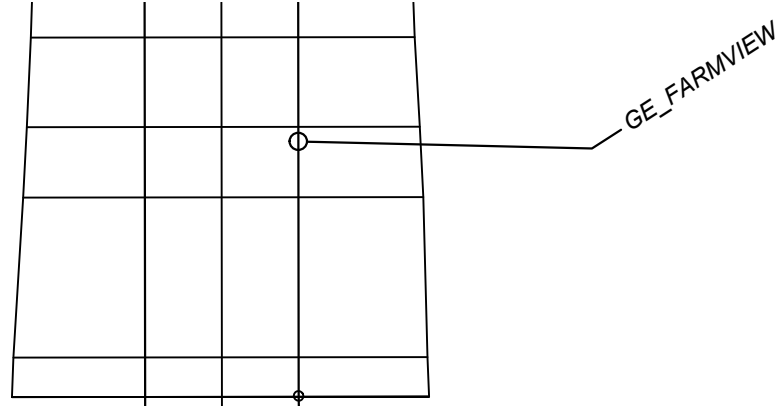
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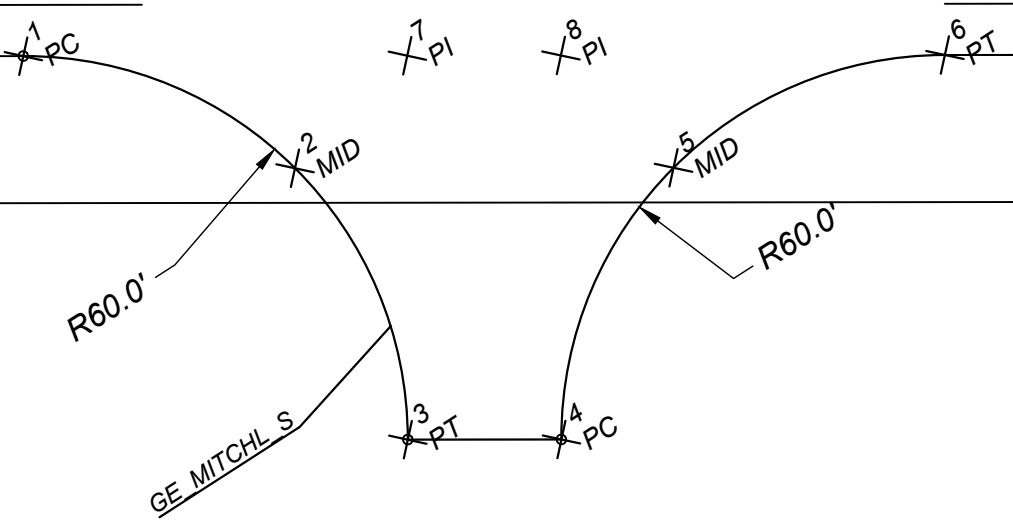
ROAD PLANS

# DETAIL

Point Table			
Point #	Raw Description	Northing	Easting
1	PC	855714.8735	1383079.1648
2	MID	855677.1622	1383105.3696
3	PT	855631.9667	1383097.2334
4	PC	855618.9991	1383117.4284
5	MID	855645.2040	1383155.1397
6	PT	855637.0677	1383200.3352
7	PI	855682.4544	1383129.6525
8	PI	855669.4868	1383149.8475




28



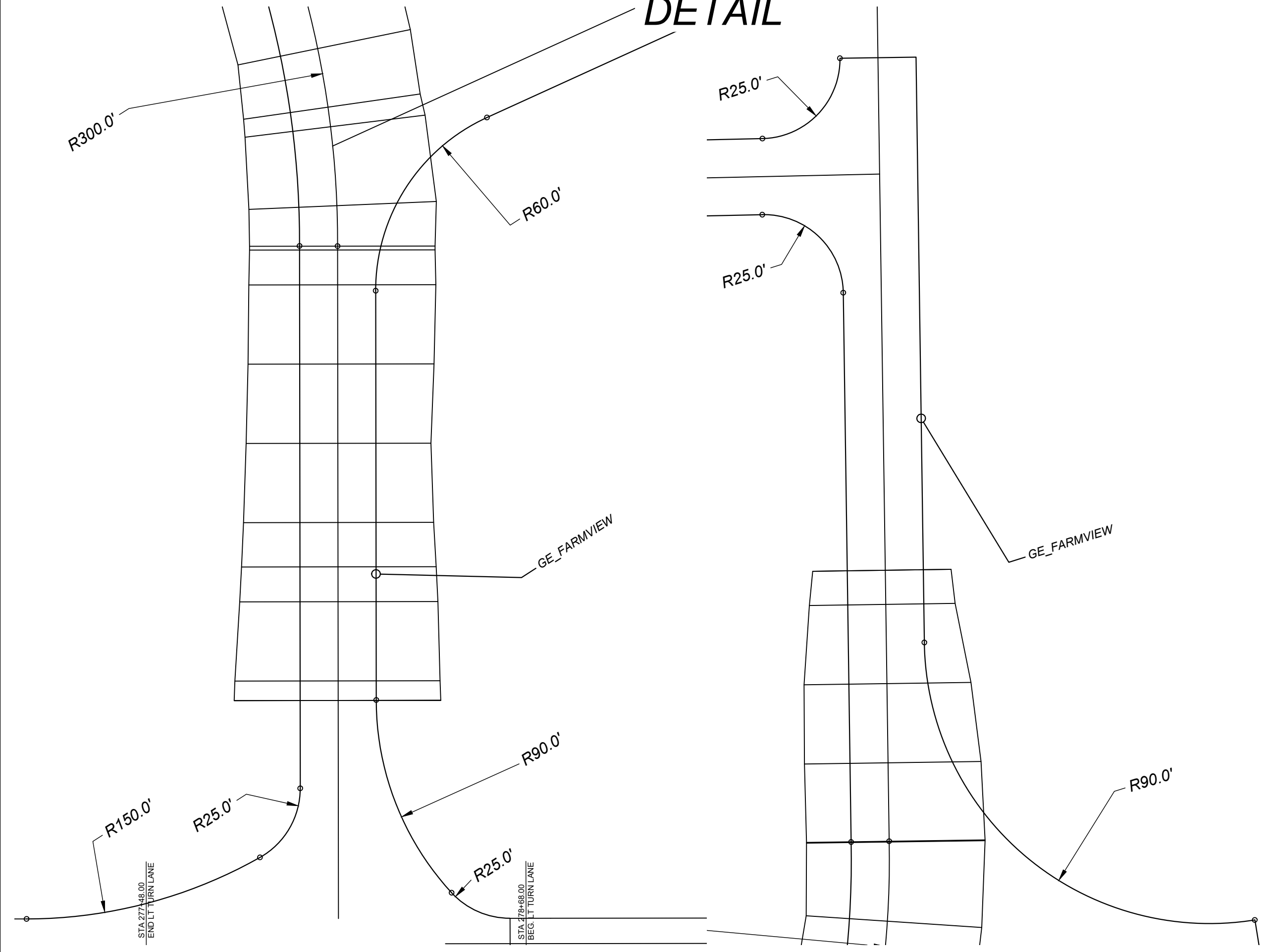
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PROJECT NAME	EAST OF EAST HELENA-EAST
COUNTY	LEWIS & CLARK & JEFFERSON
PROJECT ID	NH 8-2(99)53
UPN	8684000

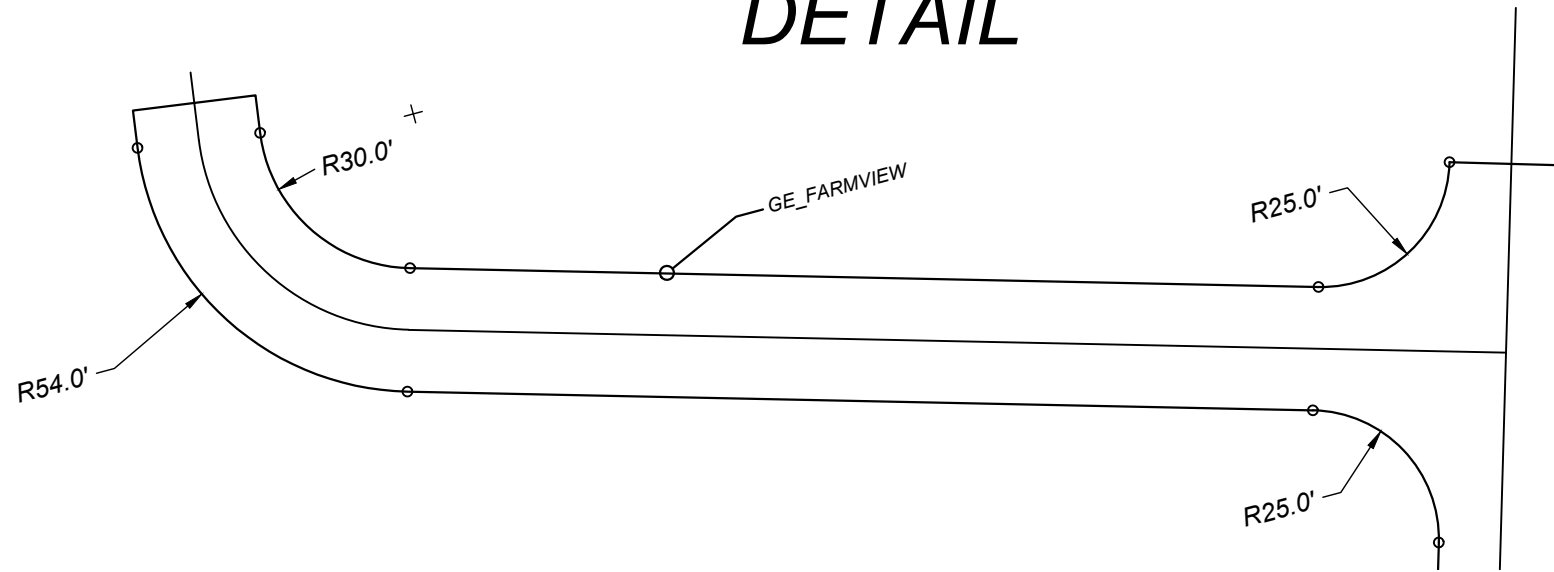
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REVIEWED BY	
DESIGNED BY	T. PIERCE


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 Department of Transportation  
**ROAD PLANS**  
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# DETAIL



# DETAIL




Point Table			
Point #	Raw Description	Northing	Easting
17	MID	855963.7080	1383306.8579
9	PC	855794.7565	1383099.1189
10	MID	855778.3196	1383133.8065
11	O	855796.1830	1383172.9695
12	POT	855771.2245	1383171.5301
13	MID	855773.9073	1383184.3181
14	PT	855782.6751	1383194.0060
15	O	856083.7080	1383045.0488
16	PC	855926.7238	1383286.5026
18	PT	856003.2706	1383321.5878
19	O	856176.6063	1383346.9965
20	PC	856169.4876	1383370.9616
21	MID	856188.6033	1383368.9299
22	PT	856200.6256	1383353.9298
23	O	856301.3598	1383199.6636
24	PC	856249.4772	1383184.6904
25	MID	856271.9369	1383154.3834
26	PT	856308.7544	1383146.1723
27		856316.0373	1383147.1784
28		856312.7528	1383170.9526

Point Table			
Point #	Raw Description	Northing	Easting
29	PC	856305.4679	1383169.9462
30	MID	856285.0138	1383174.5079
31	PT	856272.5362	1383191.3451
32	O	856247.5450	1383368.0686
33	PC	856223.5256	1383361.1353
34	MID	856225.6116	1383380.0656
35	PT	856240.4263	1383392.0336
36		856233.5964	1383415.0413
37	O	856030.8571	1383448.7052
38	PC	856056.4845	1383362.4310
39	MID	855982.3727	1383372.8814
40	PT	855941.7916	1383435.7698
41		855918.0351	1383432.3590
42	O	855869.4336	1383349.5417
43	PC	855928.8107	1383358.1653
44	MID	855924.0245	1383324.6453
45	PT	855901.8527	1383299.0540
46	O	855744.5235	1383304.9869
47	PC	855793.1522	1383229.2554
48	MID	855762.3502	1383216.7700

Point Table			
Point #	Raw Description	Northing	Easting
49	O	855733.3967	1383240.9463
50	POT	855729.1171	1383216.3153
51	MID	855719.5708	1383220.1174
52	PT	855712.3602	1383227.4384
53	PI	855773.4906	1383132.2372
54	PI	855770.3835	1383186.1133
55	PI	855962.4048	1383309.7011
56	PI	856193.6386	1383378.1355
57	PI	856262.4412	1383139.7700
58	PI	856279.7383	1383166.3894
59	PI	856216.6457	1383384.9697
60	PI	855956.7458	1383332.8041
61	PI	855934.3638	1383319.9300
62	PI	855763.6547	1383210.3145
63	PI	855718.2951	1383218.1956

FARM VIEW DR.  
(NO SCALE)

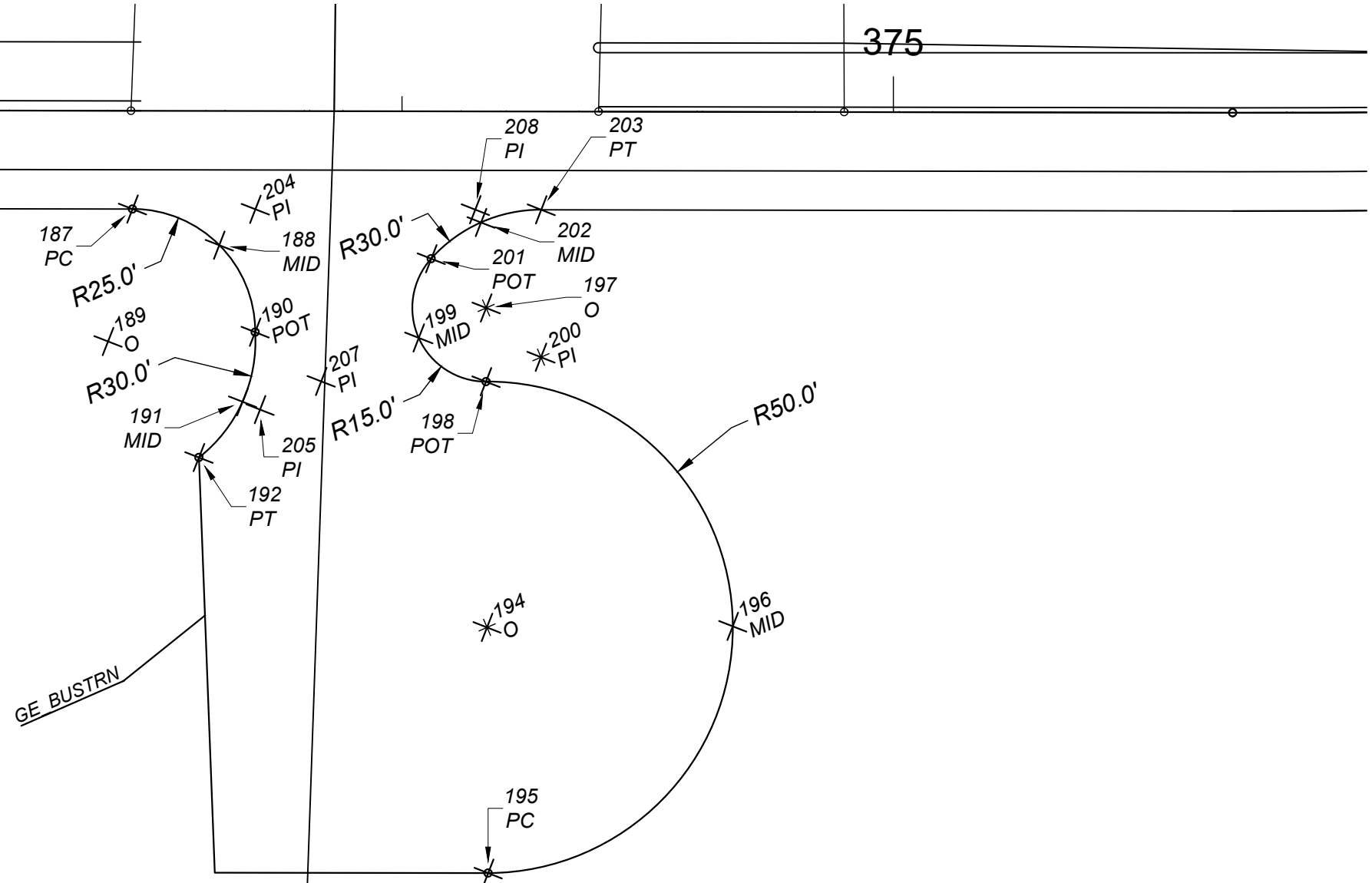
PROJECT NAME	EAST OF EAST HELENA-EAST
COUNTY	LEWIS & CLARK & JEFFERSON
PROJECT ID	NH 8-2(99)53
UPN	8684000
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REVIEWED BY	T. PIERCE
DESIGNED BY	T. PIERCE


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 Department of Transportation  
**ROAD PLANS**  
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# DETAIL

BUS TURNAROUND  
(NO SCALE)

Point Table			
Point #	Raw Description	Northing	Easting
187	PC	851696.8541	1391801.8704
195	PC	851544.0392	1391813.9033
188	MID	851683.0274	1391815.0968
189	O	851674.1815	1391786.4898
190	POT	851663.8979	1391814.6722
191	MID	851651.9518	1391806.6353
192	PT	851645.1259	1391793.9581
193		851634.9945	1391448.1634
194	O	851589.9201	1391833.7786
196	MID	851570.0448	1391879.6596
197	O	851649.5284	1391859.7006
198	POT	851635.8011	1391853.6539
199	MID	851649.4439	1391844.7008
200	PI	851635.8701	1391865.9015
201	POT	851663.1867	1391853.4996
202	MID	851665.8697	1391865.7318
203	PT	851663.3252	1391877.9935
204	PI	851686.7769	1391824.7494
205	PI	851649.0584	1391809.2574



Point Table			
Point #	Raw Description	Northing	Easting
207	PI	851649.3214	1391822.9597
208	PI	851668.7328	1391865.7156

PROJECT NAME  
EAST OF EAST HELENA-EAST

COUNTY  
LEWIS & CLARK & JEFFERSON

PROJECT ID  
NH 8-2(99)53

UPN  
8684000

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ROAD PLANS



# DETAIL

SLIP MEDIAN  
(NO SCALE)

PROJECT NAME  
EAST OF EAST HELENA-EAST

COUNTY  
LEWIS & CLARK & JEFFERSON

PROJECT ID  
NH 8-2(99)53

UPN  
8684000

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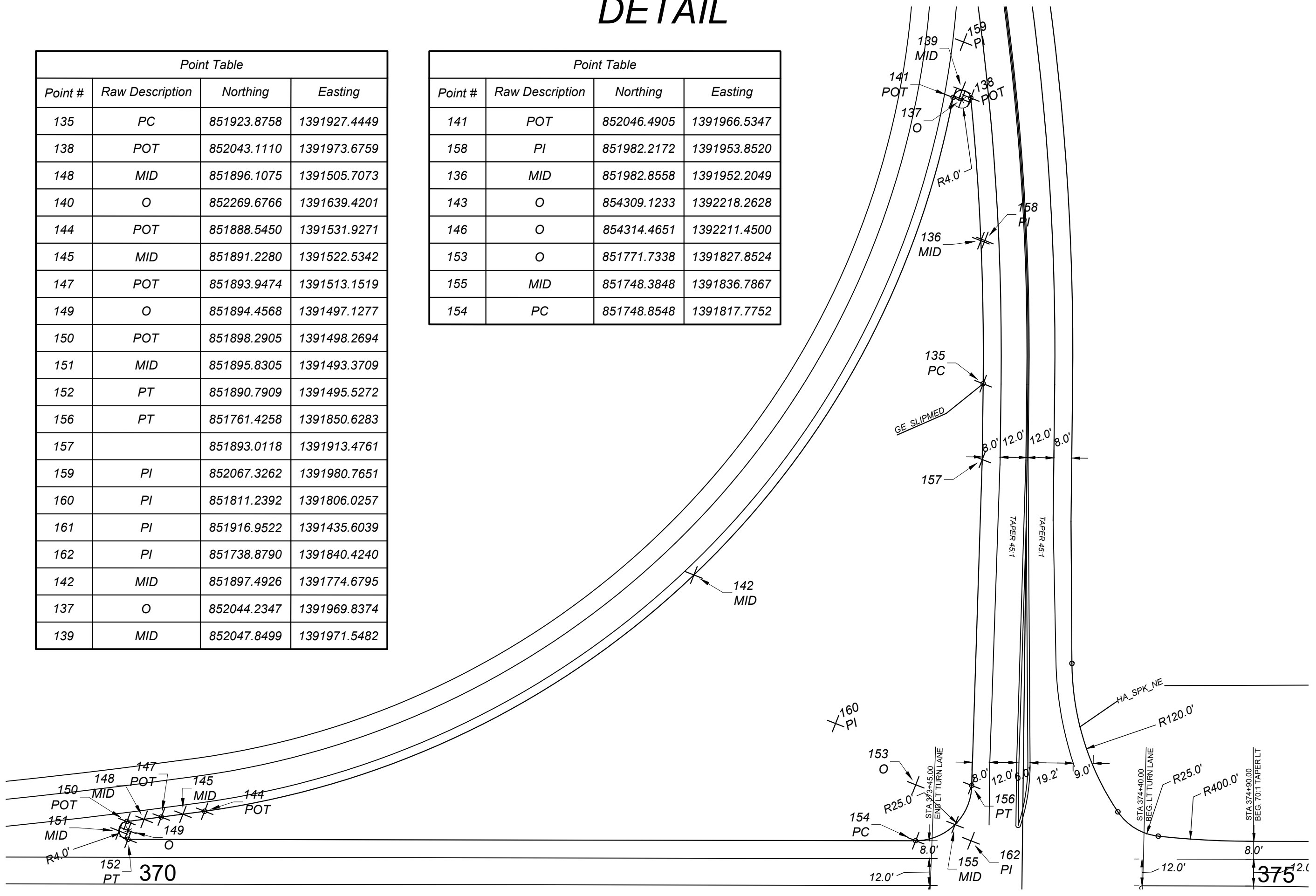
MONTANA  
Department of Transportation



ROAD PLANS

Point Table			
Point #	Raw Description	Northing	Easting
135	PC	851923.8758	1391927.4449
138	POT	852043.1110	1391973.6759
148	MID	851896.1075	1391505.7073
140	O	852269.6766	1391639.4201
144	POT	851888.5450	1391531.9271
145	MID	851891.2280	1391522.5342
147	POT	851893.9474	1391513.1519
149	O	851894.4568	1391497.1277
150	POT	851898.2905	1391498.2694
151	MID	851895.8305	1391493.3709
152	PT	851890.7909	1391495.5272
156	PT	851761.4258	1391850.6283
157		851893.0118	1391913.4761
159	PI	852067.3262	1391980.7651
160	PI	851811.2392	1391806.0257
161	PI	851916.9522	1391435.6039
162	PI	851738.8790	1391840.4240
142	MID	851897.4926	1391774.6795
137	O	852044.2347	1391969.8374
139	MID	852047.8499	1391971.5482

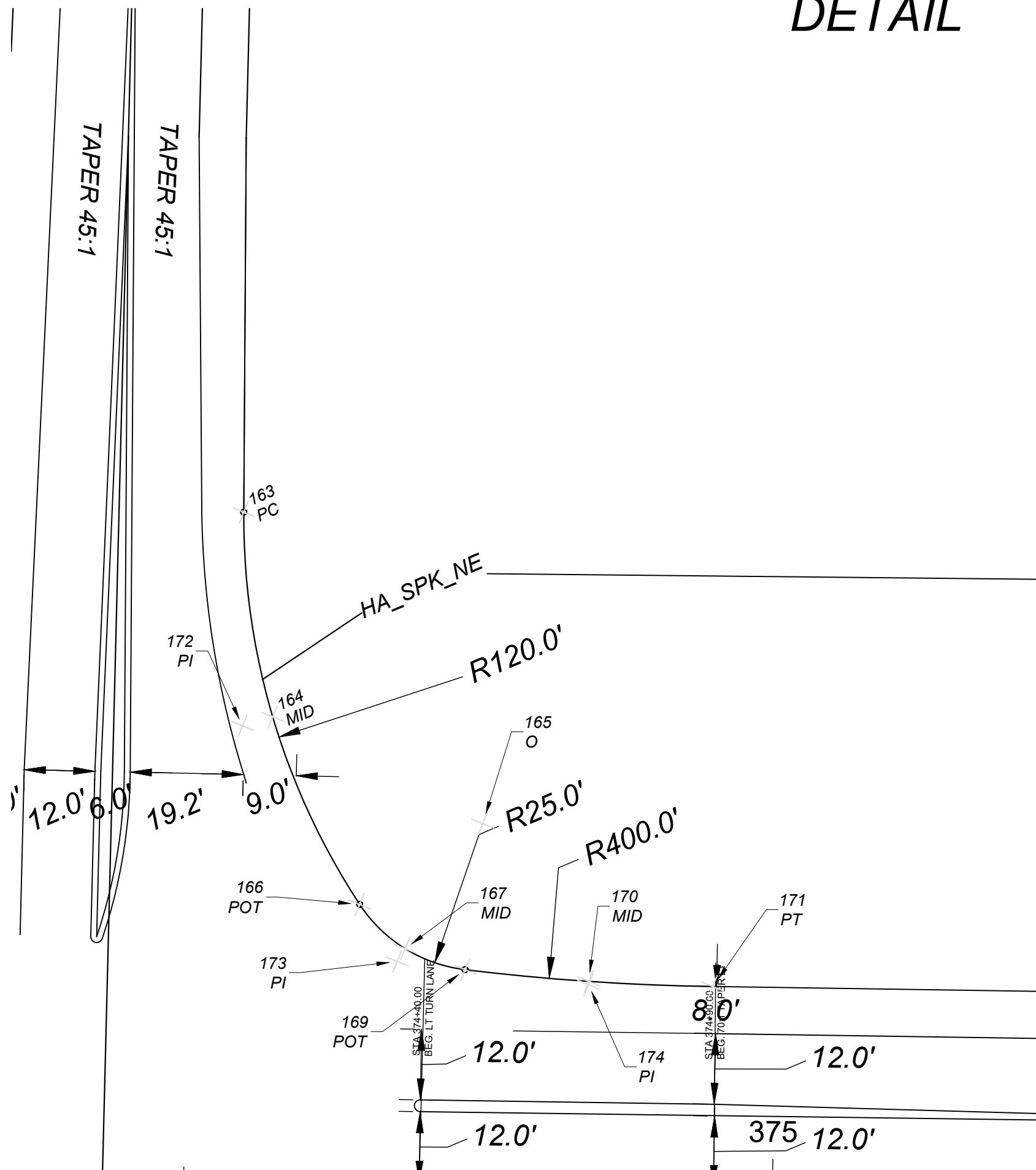
Point Table			
Point #	Raw Description	Northing	Easting
141	POT	852046.4905	1391966.5347
158	PI	851982.2172	1391953.8520
136	MID	851982.8558	1391952.2049
143	O	854309.1233	1392218.2628
146	O	854314.4651	1392211.4500
153	O	851771.7338	1391827.8524
155	MID	851748.3848	1391836.7867
154	PC	851748.8548	1391817.7752



370

375

# DETAIL



Point Table			
Point #	Raw Description	Northing	Easting
171	PT	851688.1608	1391955.5731
163	PC	851793.3998	1391913.5904
164	MID	851759.4589	1391904.5744
165	O	851728.8595	1391930.3624
166	POT	851724.3613	1391905.7704
167	MID	851714.4217	1391909.9528
168	O	852054.2253	1392116.8084
169	POT	851707.1685	1391917.9326
170	MID	851697.1683	1391936.5022
172	PI	851760.0631	1391899.2400
173	PI	851712.9408	1391907.8594
174	PI	851696.6713	1391936.2512

SHEET NO.  
26

SPOKANE CR. RD. - NE  
(NO SCALE)

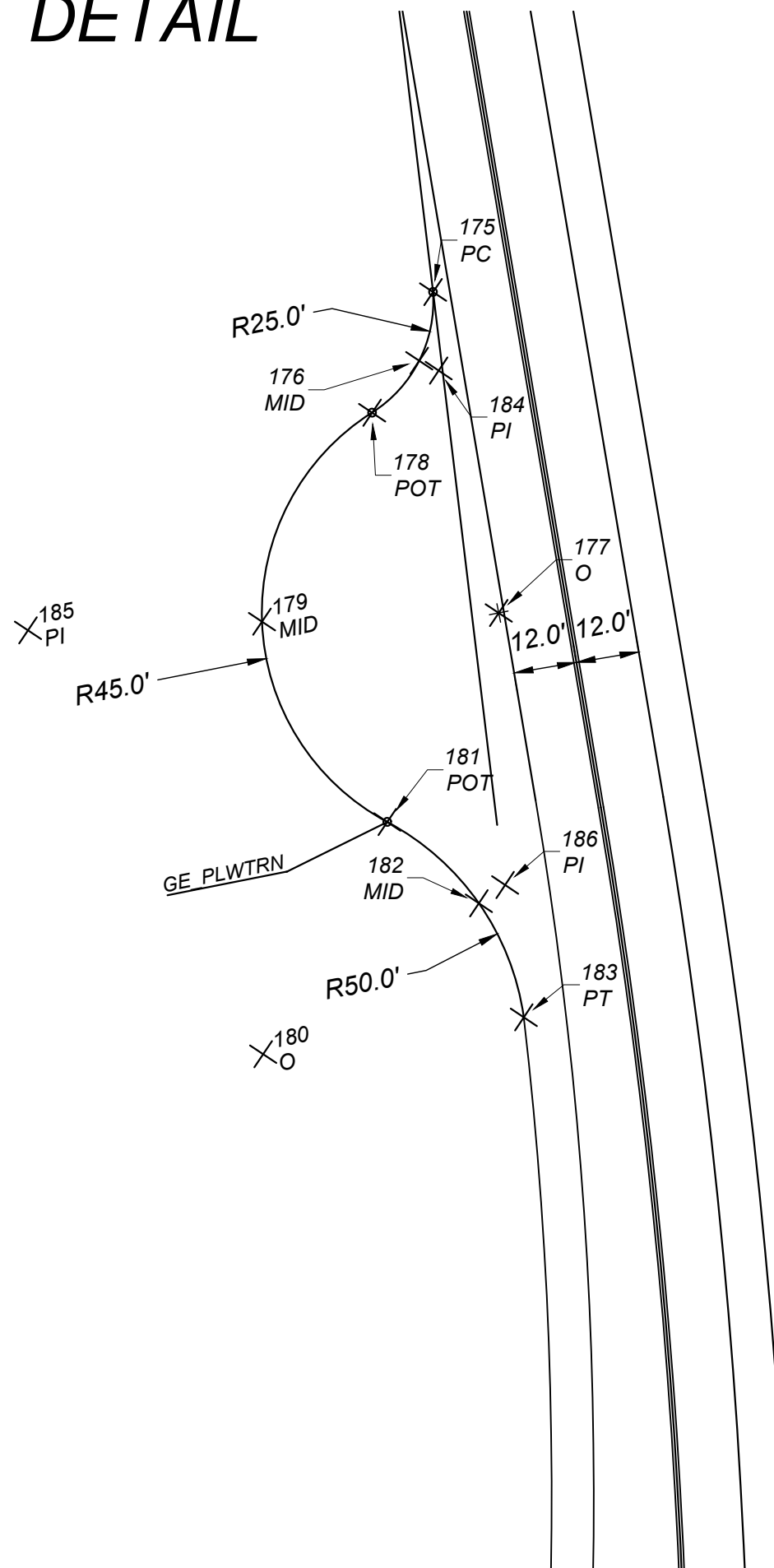
PROJECT NAME	EAST OF EAST HELENA-EAST		
COUNTY	LEWIS & CLARK & JEFFERSON		
PROJECT ID	NH 8-2(99)53		
UPN	8684000		
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ROAD PLANS


# DETAIL

Point Table			
Point #	Raw Description	Northing	Easting
175	PC	852470.9330	1392037.9170
183	PT	852332.4580	1392028.0602
176	MID	852458.6340	1392032.8086
177	O	852408.7208	1392038.3117
178	POT	852450.7030	1392022.1100
179	MID	852415.8284	1391993.8766
180	O	852335.2097	1391978.1360
181	POT	852373.8870	1392009.8230
182	MID	852355.3545	1392023.8983
184	PI	852456.0888	1392036.0660
185	PI	852422.8547	1391949.9490
186	PI	852357.8014	1392029.4571

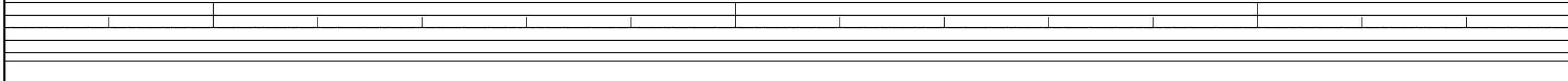
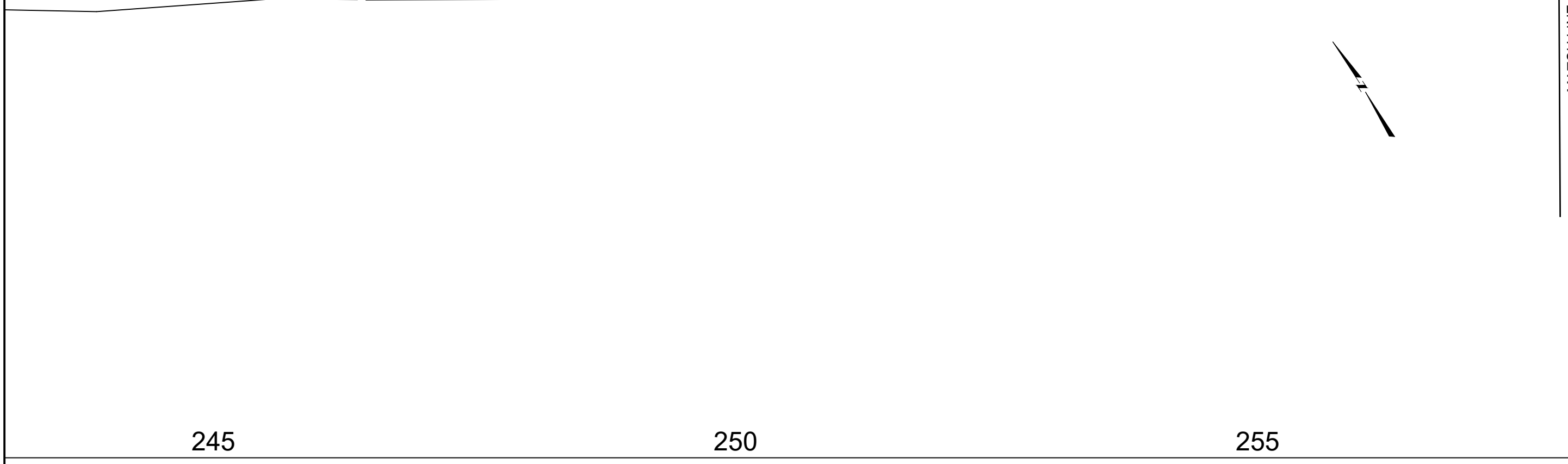
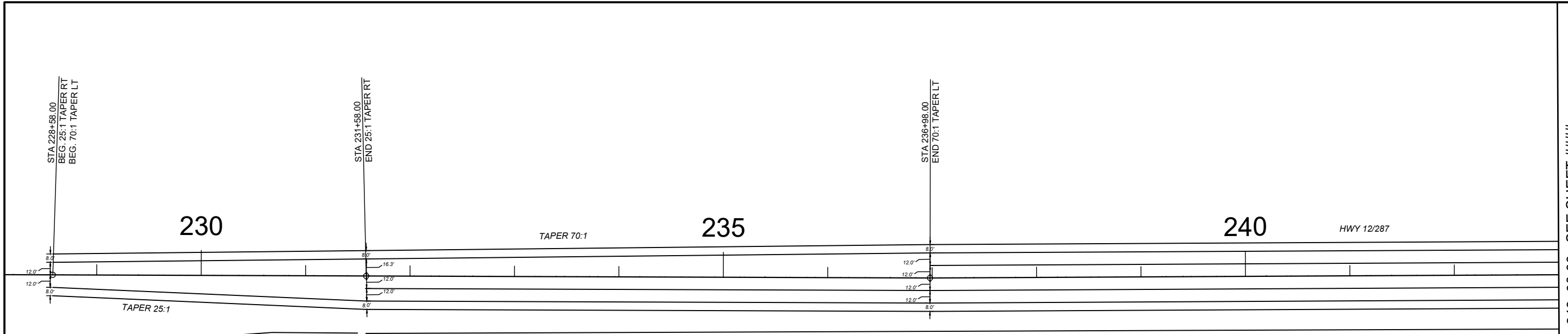


PROJECT NAME	EAST OF EAST HELENA-EAST
COUNTY	LEWIS & CLARK & JEFFERSON
PROJECT ID	NH 8-2(99)53
UPN	8684000

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 Department of Transportation  
**ROAD PLANS**

GEOMETRIC PLANS



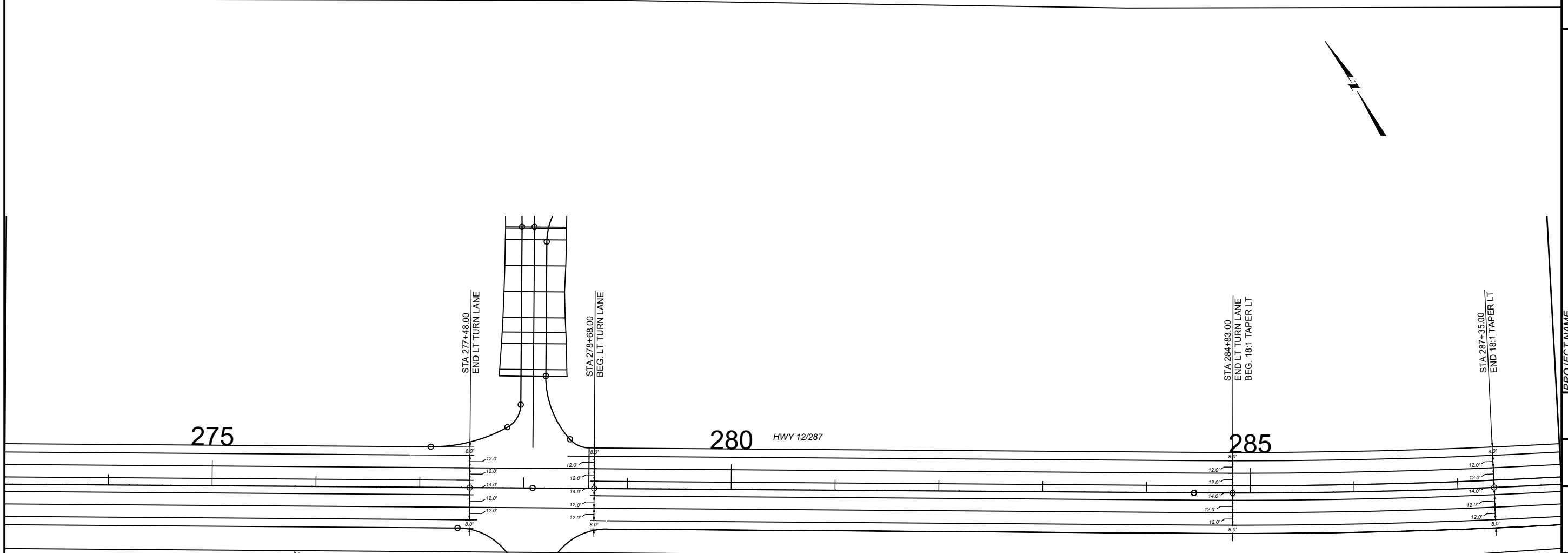
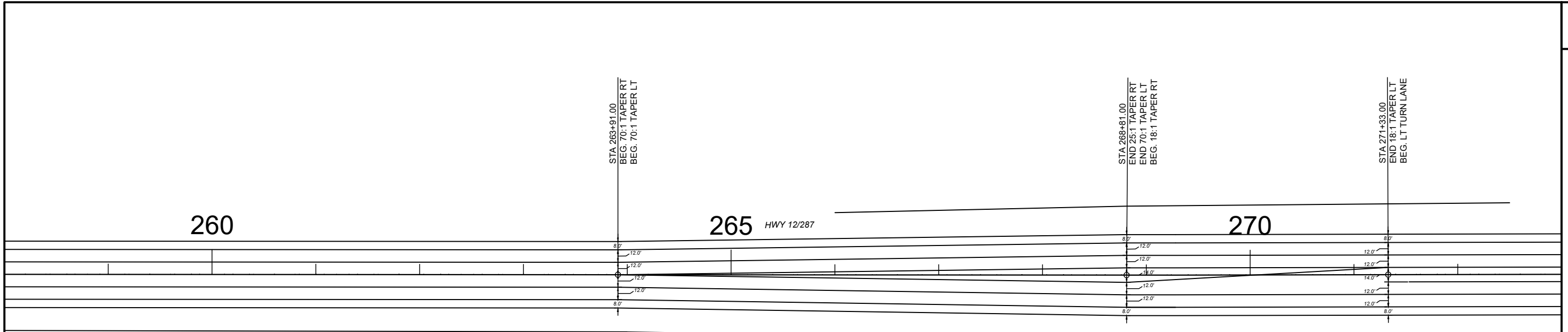
PROJECT NAME	EAST OF EAST HELENA-EAST
COUNTY	LEWIS & CLARK & JEFFERSON
PROJECT ID	NH 8-2(99)53
UPN	8684000

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GEOMETRIC PLANS



PROJECT NAME	EAST OF EAST HELENA-EAST
COUNTY	LEWIS & CLARK & JEFFERSON
PROJECT ID	NH 8-2(99)53
UPN	8684000

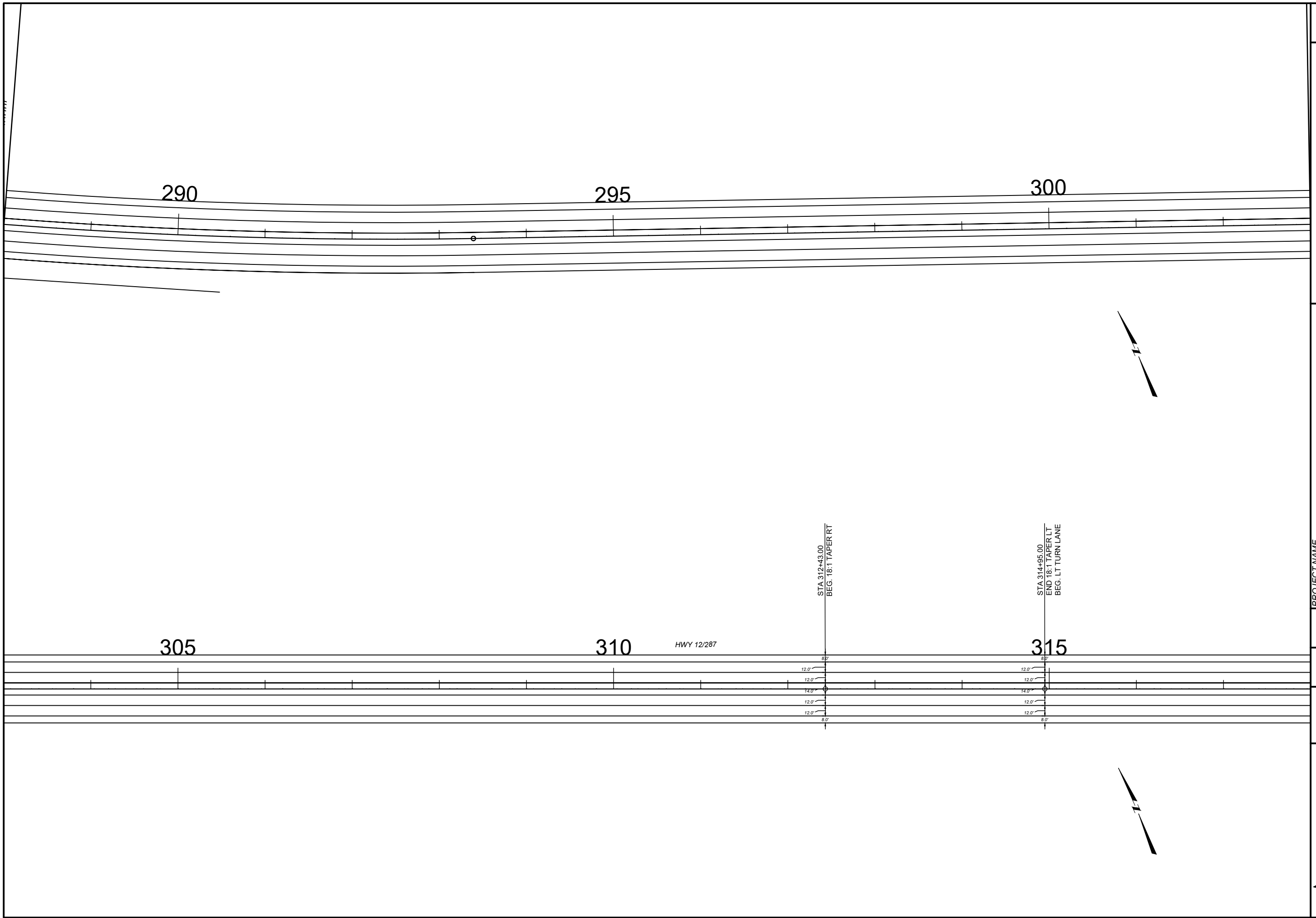
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GEOMETRIC PLANS



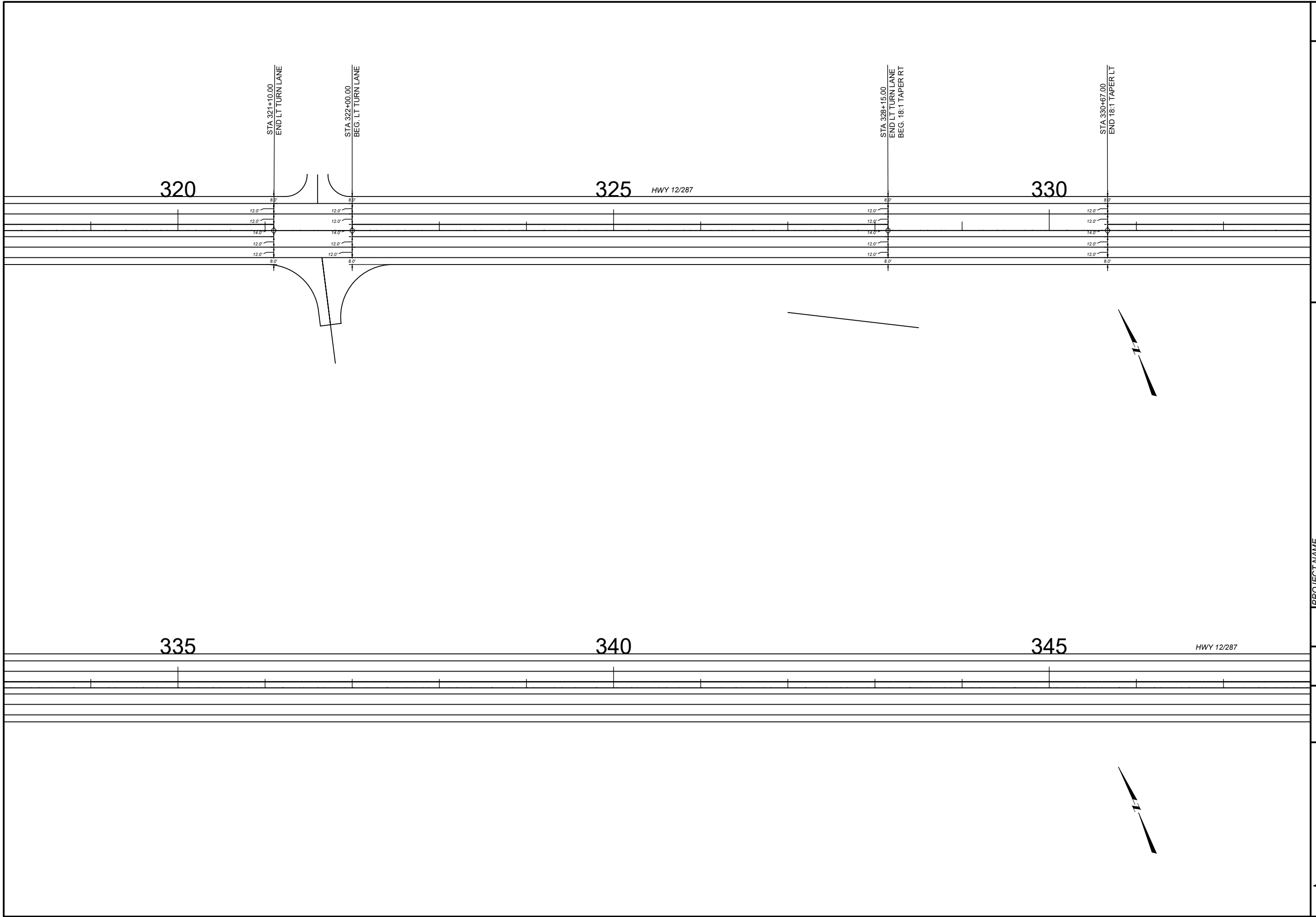
PROJECT NAME	EAST OF EAST HELENA-EAST
COUNTY	LEWIS & CLARK & JEFFERSON
PROJECT ID	NH 8-2(99)53
UPN	8684000

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GEOMETRIC PLANS



PROJECT NAME	EAST OF EAST HELENA-EAST
COUNTY	LEWIS & CLARK & JEFFERSON
PROJECT ID	NH 8-2(99)53
UPN	8684000

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GEOMETRIC PLANS

MATCH LINE - 378+00.00 - SEE SHEET #####

380

385

390

391

STA 384+70.00  
END 70:1 TAPER CL


HWY 12/287

8.0'  
12.0'  
12.0'  
8.0'



PROJECT NAME	EAST OF EAST HELENA-EAST
COUNTY	LEWIS & CLARK & JEFFERSON
PROJECT ID	NH 8-2(99)53
UPN	8684000

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GEOMETRIC PLANS

PROJECT NAME  
EAST OF EAST HELENA-EAST

COUNTY  
LEWIS & CLARK & JEFFERSON

PROJECT ID  
NH 8-2(99)53

UPN  
8684000

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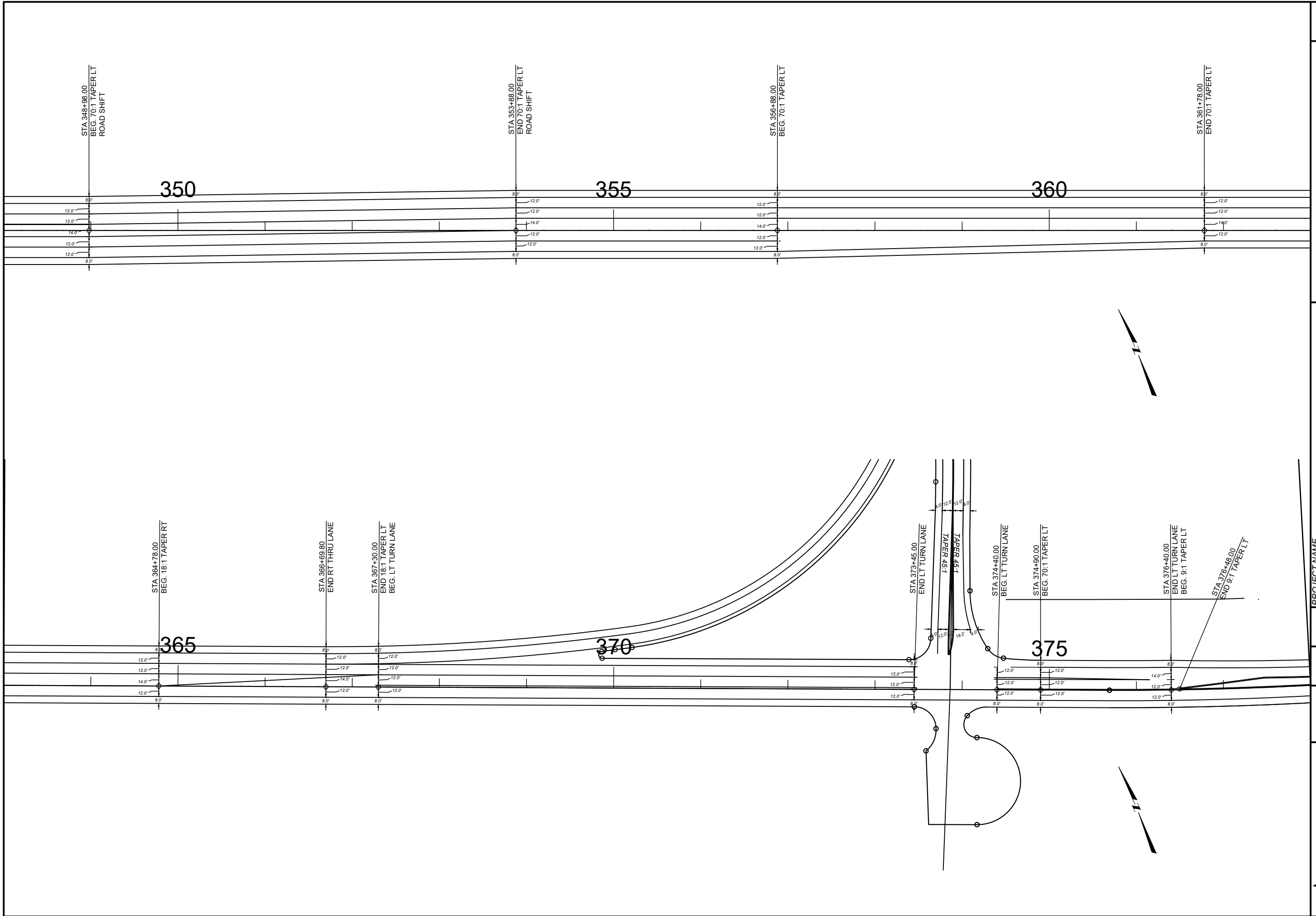
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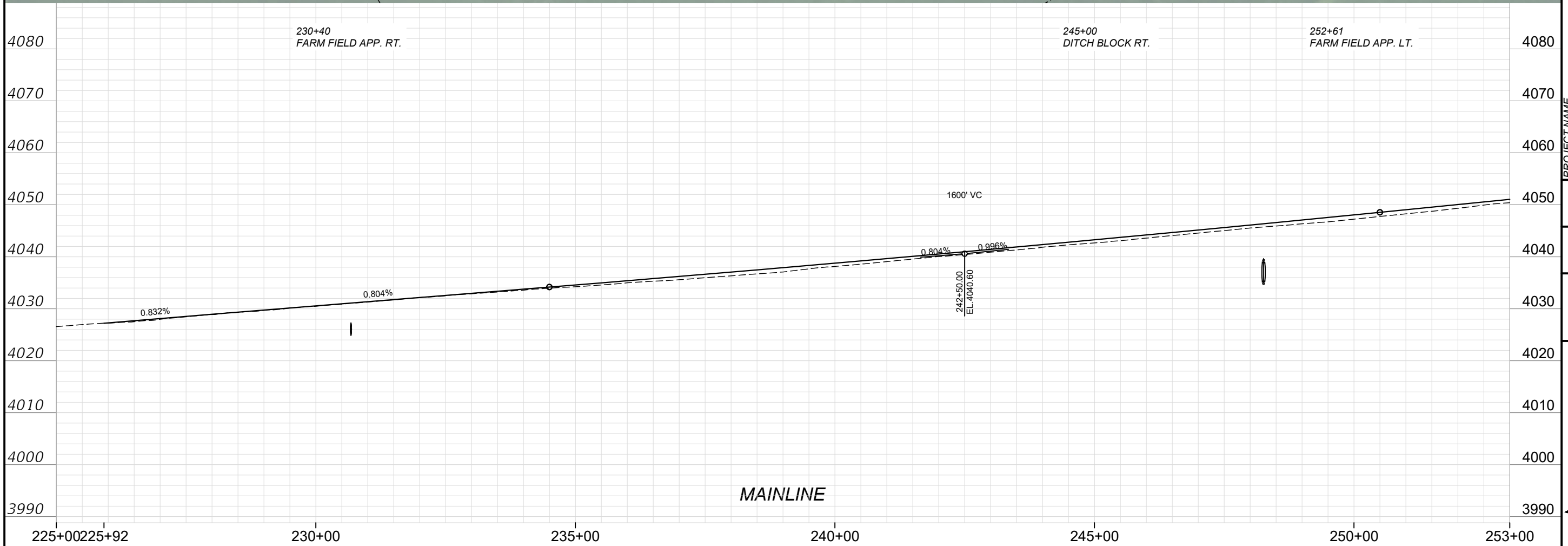
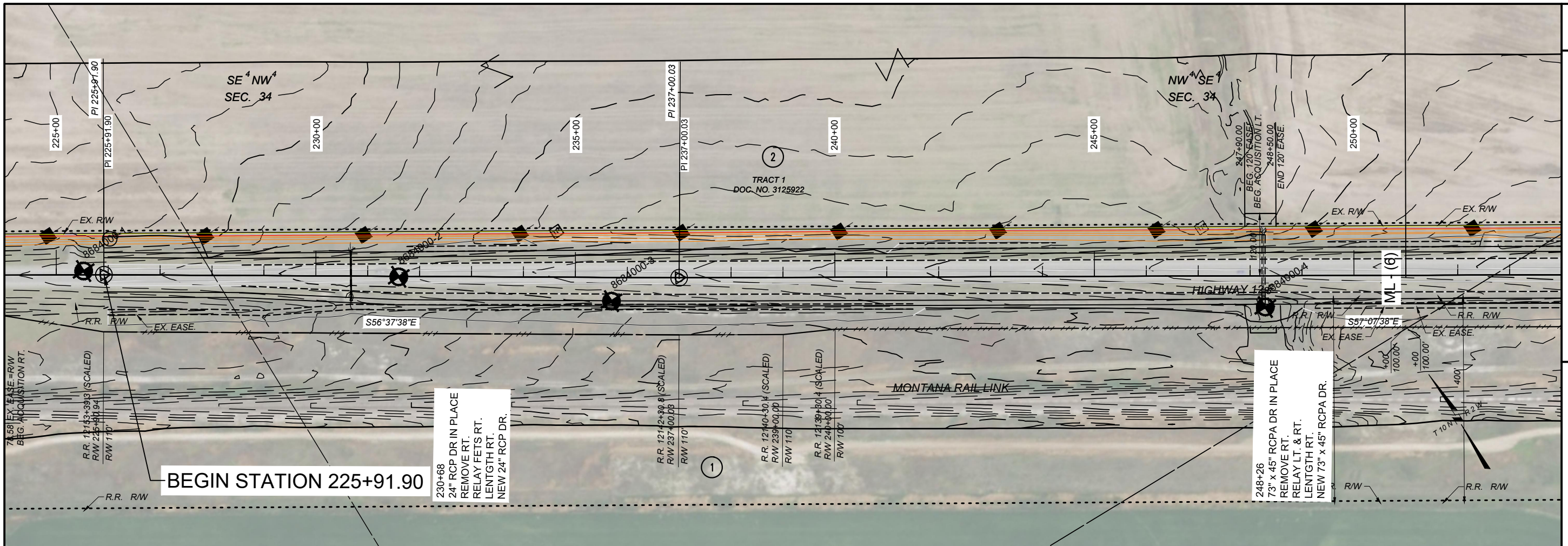
DESIGNED BY T. PIERCE

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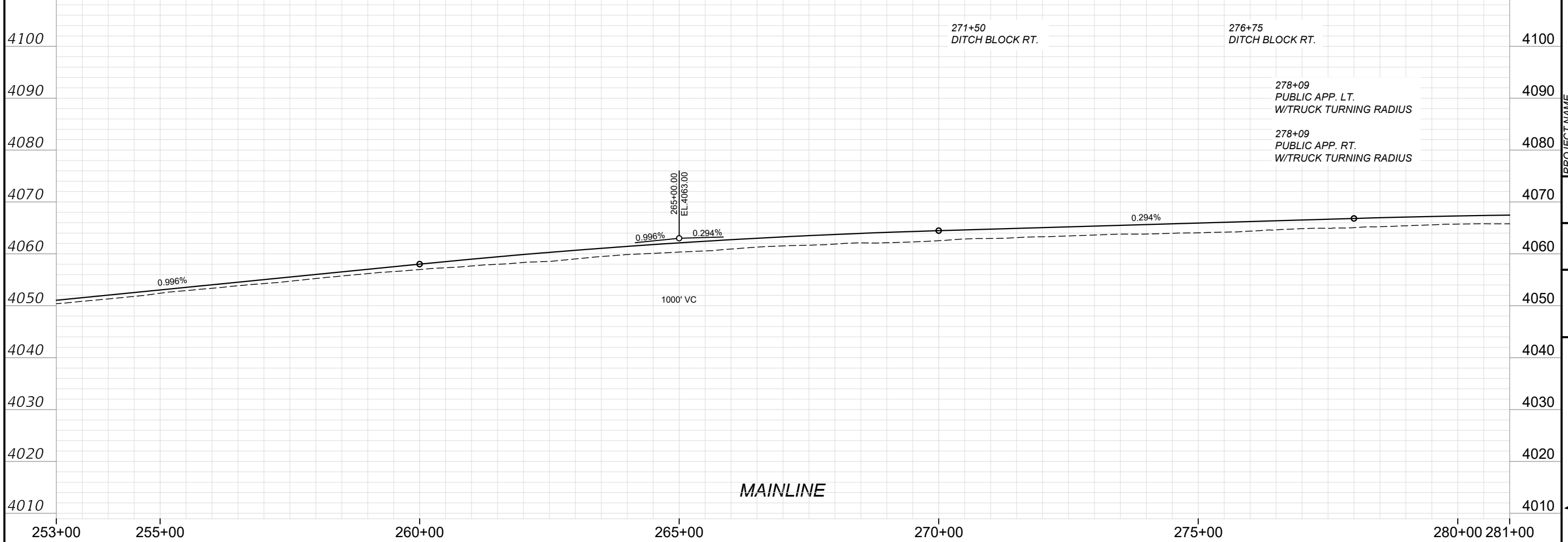
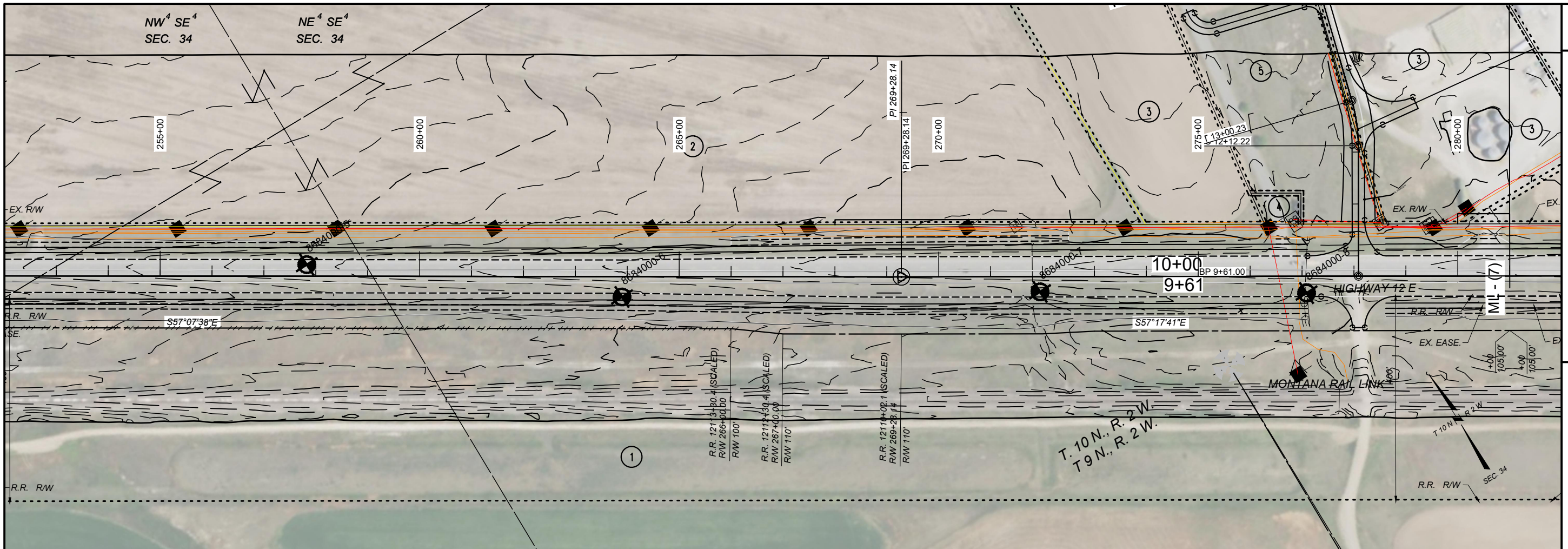
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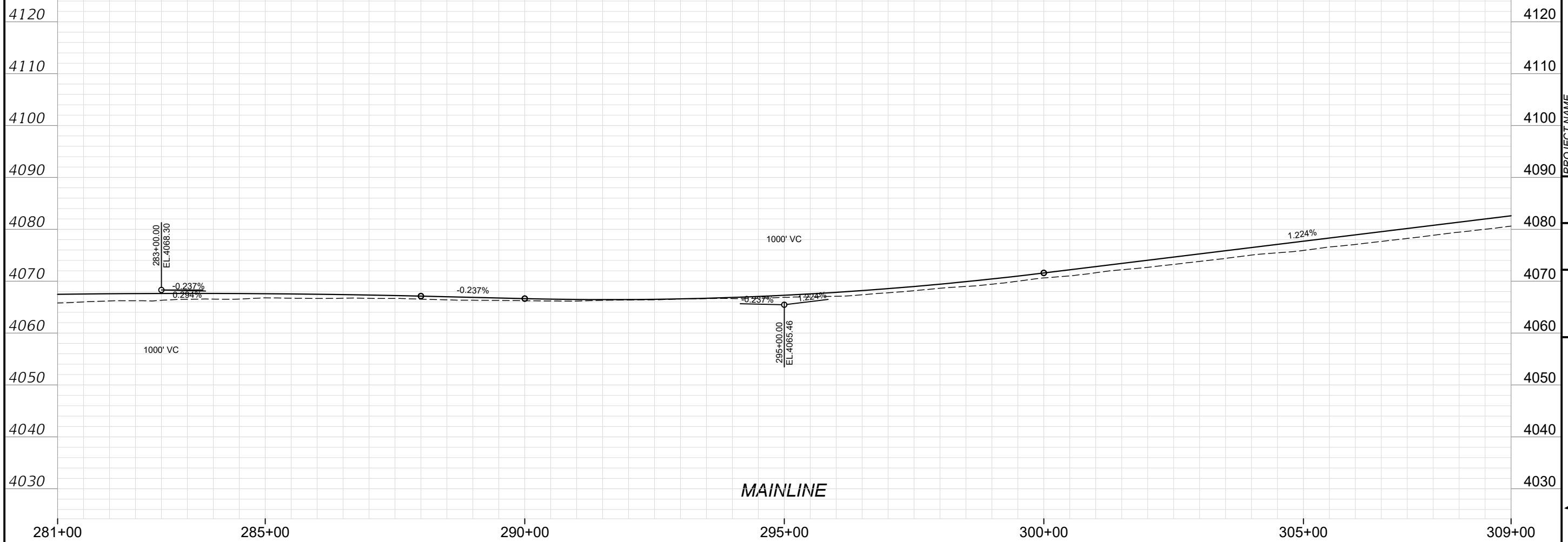
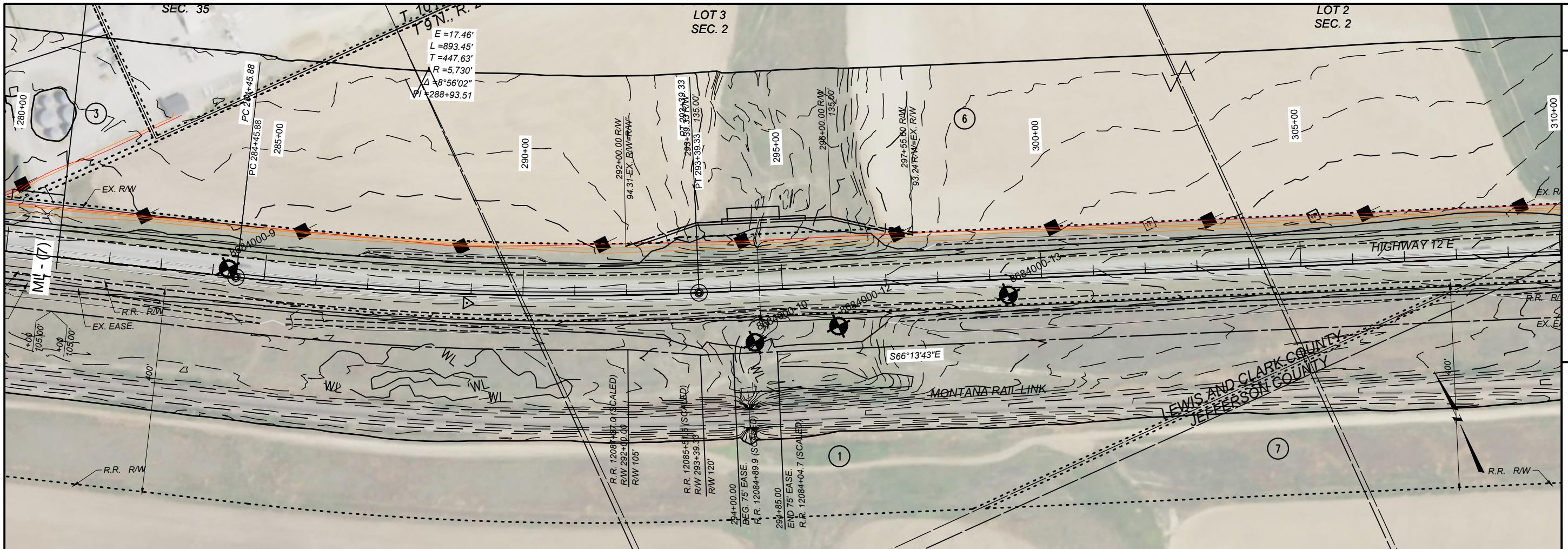
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COUNTY	LEWIS & CLARK & JEFFERSON
PROJECT ID	NH 8-2(99)53
UPN	8684000
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REVIEWED BY	L. ZEIGLER
DESIGNED BY	L. ZEIGLER
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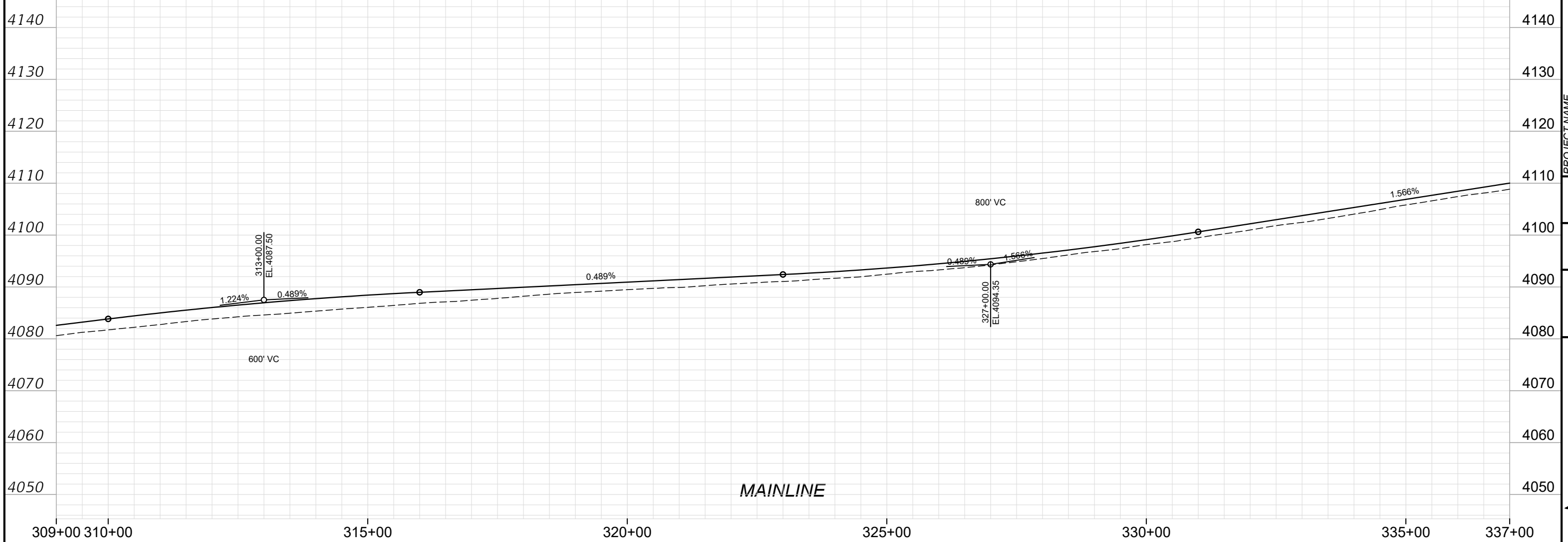
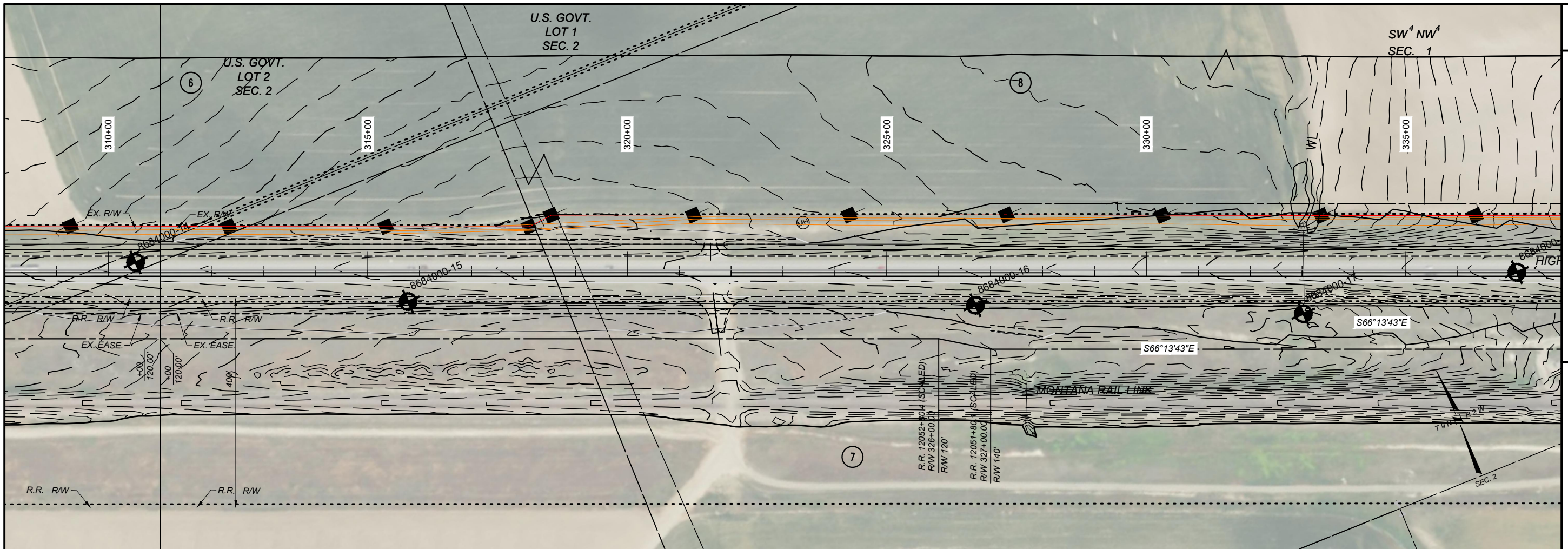
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COUNTY	LEWIS & CLARK & JEFFERSON
PROJECT ID	NH 8-2(99)53
UPN	8684000
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REVIEWED BY	L. ZEIGLER
DESIGNED BY	
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PROJECT NAME	EAST OF EAST HELENA-EAST
COUNTY	LEWIS & CLARK & JEFFERSON
PROJECT ID	NH 8-2(99)53
UPN	8684000
CHECKED BY	
REVIEWED BY	L. ZEIGLER
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PLAN AND PROFILE



PROJECT NAME  
EAST OF EAST HELENA-EAST

COUNTY  
LEWIS & CLARK & JEFFERSON

PROJECT ID  
NH 8-2(99)53

UPN  
8684000

CHECKED BY

REVIEWED BY

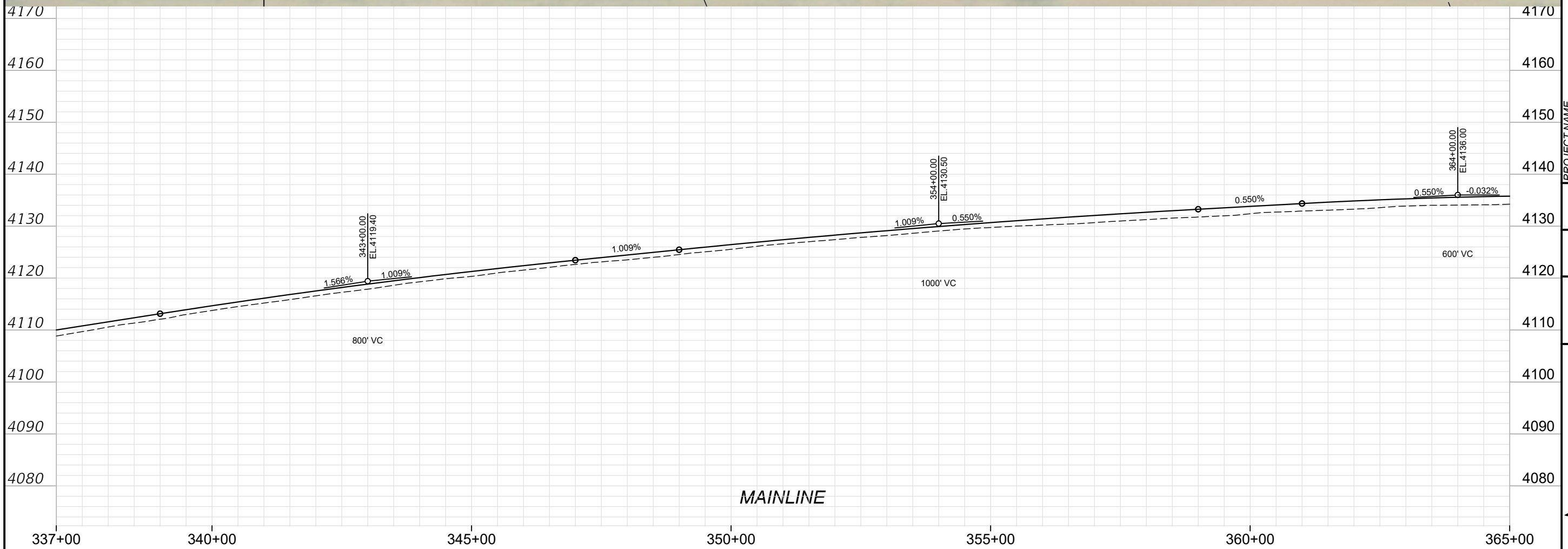
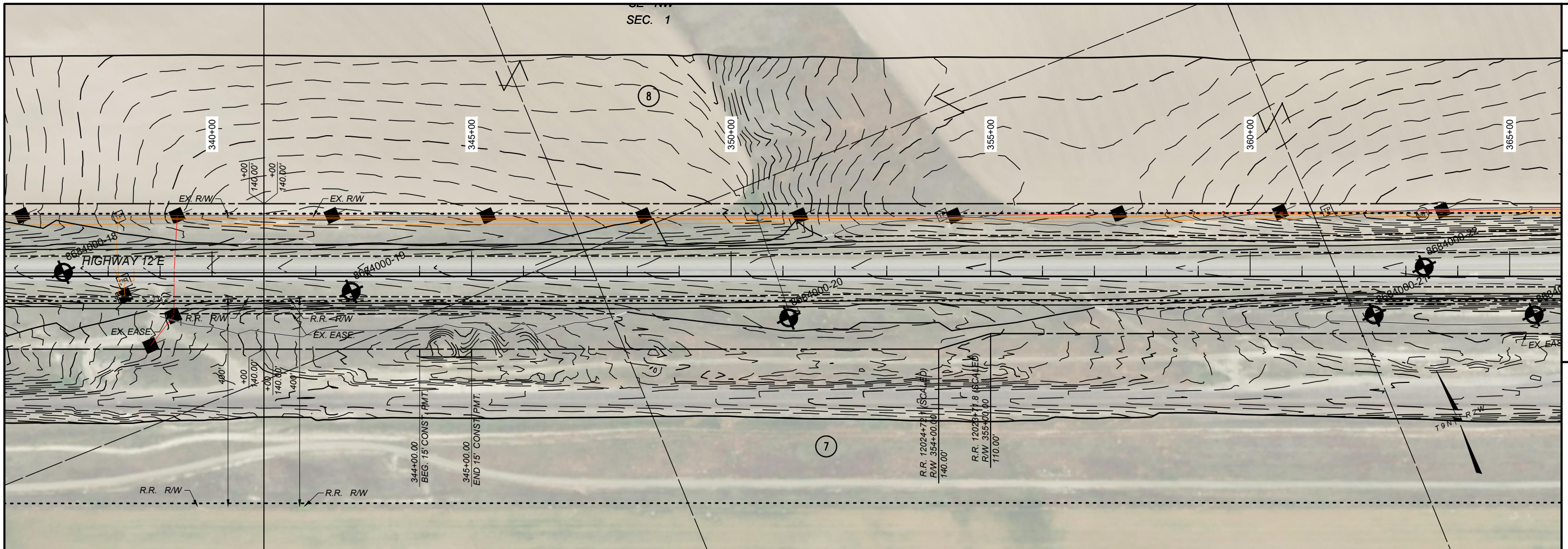
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PROJECT NAME	EAST OF EAST HELENA-EAST
COUNTY	LEWIS & CLARK & JEFFERSON
PROJECT ID	NH 8-2(99)53
UPN	8684000
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REVIEWED BY	L. ZEIGLER
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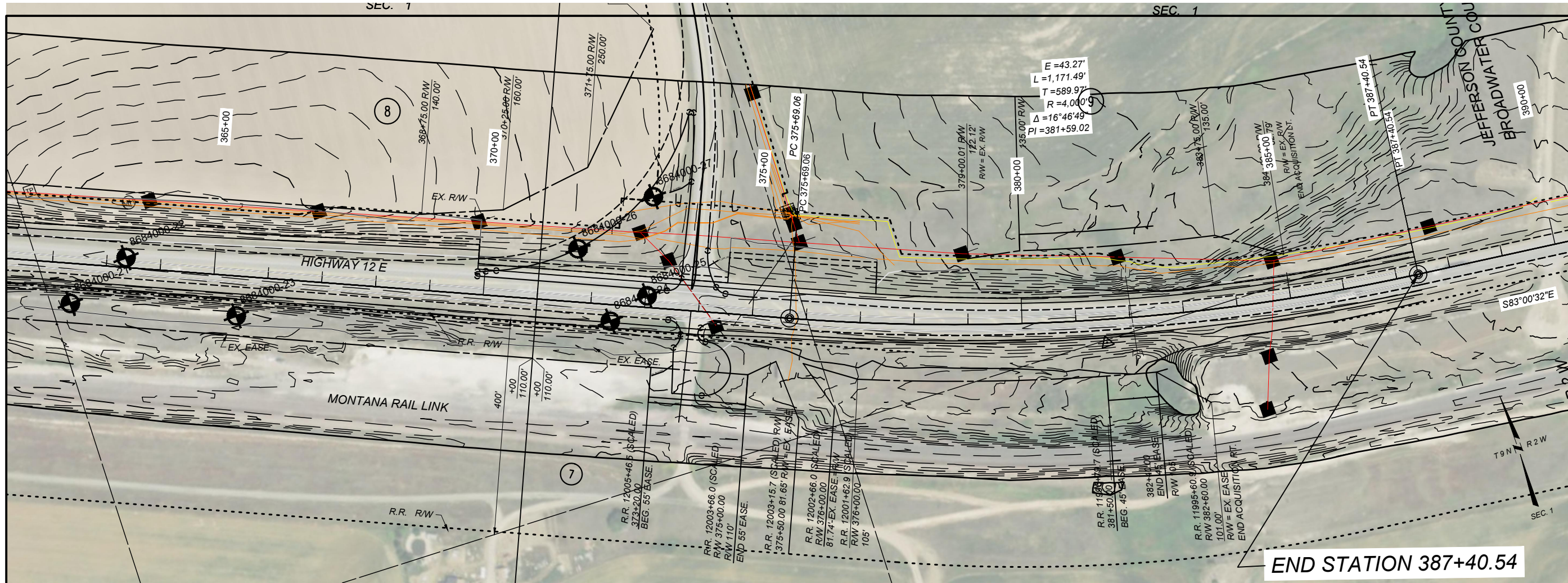

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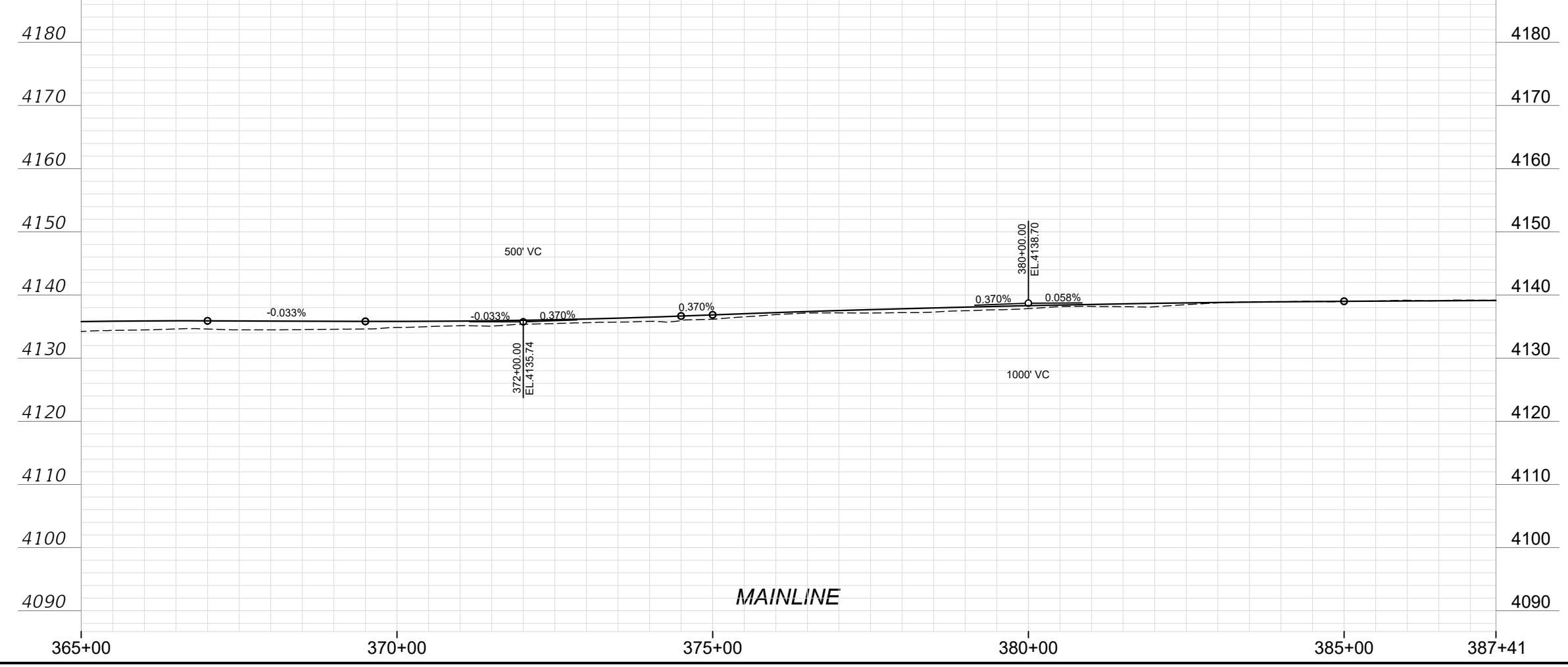
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MAINLINE



END STATION 387+40.54



MAINLINE

SHEET NO. 39	
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CHECKED BY LEWIS & CLARK & JEFFERSON	PROJECT ID NH 8-2(99)53
REVIEWED BY L. ZEIGLER	UPN 8684000
DESIGNED BY L. ZEIGLER	8684000RDLPLP001.DWG
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