

Oversight / NHS

FHWA REGION VIII OVERSIGHT?

☐ NO ☐ YES

NATIONAL HIGHWAY SYSTEM?

☒ NO ☐ YES

DEPARTMENT OF TRANSPORTATION

STATE OF COLORADO

HIGHWAY CONSTRUCTION BID PLANS OF PROPOSED

FEDERAL AID PROJECT NO. FBR 1604-010, FBR 1604-011

STATE HIGHWAY NO. 160C

BACA COUNTY

CONSTRUCTION PROJECT CODE NO. 18321

Related Projects:

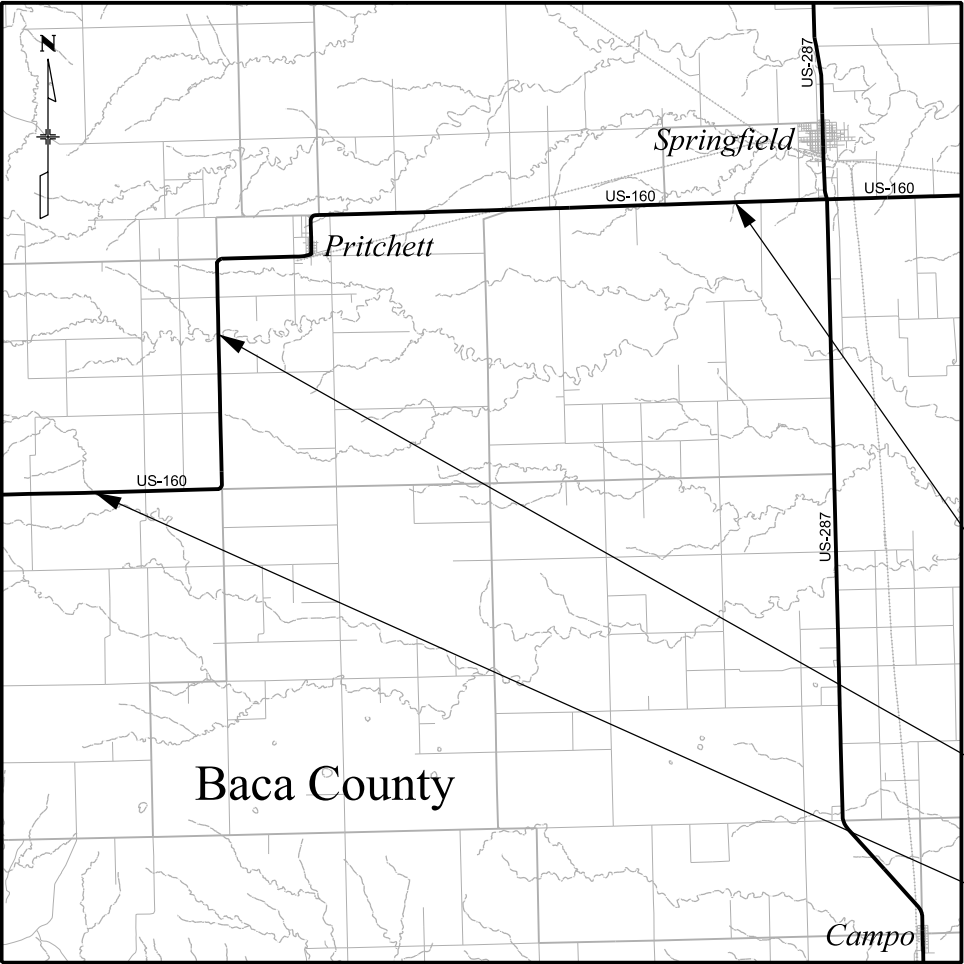
P. E. UNDER PROJECT:  
Project NumberFBR 1604-010, FBR 1604-011  
Project Code:18321

R.O.W. Projects:

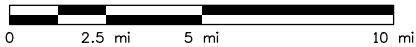
R.O.W. Project Description  
XXXXXXXXXXXXXXXXXX

TABULATION OF LENGTH AND DESIGN DATA		
LOCATION	FEET	
	ROADWAY	MAJOR
	SH 160C	STRUCTURE
BEGIN ROADWAY, R.P. 438.10	480	40
BEGIN STRUCTURE NO. O-25-AA, R.P. 438.19		
END STRUCTURE NO. O-25-AA, R.P. 438.20	520	
END ROADWAY, R.P. 438.30		
BEGIN ROADWAY, R.P. 445.39	380	130
BEGIN STRUCTURE NO. O-25-AB, R.P. 445.46		
END STRUCTURE NO. O-25-AB, R.P. 445.48	380	
END ROADWAY, R.P. 445.55		
BEGIN ROADWAY, R.P. 461.79	250	27
BEGIN STRUCTURE NO. O-26-R, R.P. 461.84		
END STRUCTURE NO. O-26-R, R.P. 461.85	250	
END ROADWAY, R.P. 461.90		
TOTAL	2260	197
SUMMARY OF PROJECT LENGTH	FEET	MILES
ROADWAY (NET LENGTH)	2260	0.43
MAJOR STRUCTURE	197	0.04
PROJECT GROSS LENGTH	2457	0.47

DESIGN DATA	SH 160C		
	STR O-25-AA	STR O-25-AB	STR O-26-R
	R.P. 438.1	R.P. 445.4	R.P. 461.7
MINIMUM RADIUS OF CURVE	1660'		
MAXIMUM GRADE	3%		
MINIMUM S.S.D. VERTICAL	645'		
MAXIMUM DESIGN SPEED	65 MPH		
2010 DESIGN TRAFFIC	ADT = 130	ADT = 410	ADT = 770
	DHV = 17	DHV = 49	DHV = 92
2030 DESIGN TRAFFIC	ADT = 198	ADT = 625	ADT = 1019
	DHV = 26	DHV = 75	DHV = 122
DHV TRUCK %	19.40%	28.70%	14.50%
CLEAR ZONE DISTANCE (TANGENT)	20'		28'
CLEAR ZONE DISTANCE (1660' MIN. RADIUS)	28'		39'
CONSTRUCTION CLEAR ZONE (MIN 18')	18'		



PROJECT LOCATION MAP



SHEET NO.	INDEX OF SHEETS
1	TITLE SHEET
2	STANDARD PLANS LIST SHEET
3	TYPICAL SECTION SHEET
4	GENERAL NOTES
5	SUMMARY OF APPROXIMATE QUANTITIES
6-9	PLAN SHEET - STRUCTURE O-25-AA
10-12	PLAN SHEET - STRUCTURE O-25-AB
13-15	PLAN SHEET - STRUCTURE O-26-L / O-26-R
16	SURVEY TABULATION
17-19	STORMWATER MANAGEMENT PLAN

STRUCTURE O-26-L OR O-26-R  
STRUCTURE O-26-L (OLD)  
M.P. 461.74

STRUCTURE O-25-AB  
STRUCTURE O-25-I (OLD)  
M.P. 445.41

STRUCTURE O-25-AA  
STRUCTURE O-25-H (OLD)  
M.P. 438.16



Know what's below.  
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Print Date: 11/8/2011

File Name: 18321DES\_TitleSht.dgn

Horiz. Scale: 1:1      Vert. Scale: As Noted

Unit Information      Unit Leader Initials

ATKINS

R-X

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Sheet Revisions

Date:	Comments	Init.

Colorado Department of Transportation

2402 South Main  
Lamar, CO 81052  
Phone: 719-336-3228    FAX: 719-336-4101

Region 2      PAW

As Constructed

No Revisions:

Revised:

Void:

Contract Information

Contractor:	Resident Engineer:	Project Engineer:	PROJECT STARTED:    /    /    ACCEPTED:    /    /
Comments:			

Project No./Code

FBR 1604-010,  
FBR 1604-011

18321

Sheet Number

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PLAN NUMBER	NEW OR REVISED	M STANDARD TITLE	PAGE NUMBER
<input type="checkbox"/> M-100-1		STANDARD SYMBOLS (3 SHEETS).....	1-3
<input type="checkbox"/> M-203-1		APPROACH ROADS.....	4
<input type="checkbox"/> M-203-2		DITCH TYPES.....	5
<input type="checkbox"/> M-203-11		SUPERELEVATION CROWNED AND DIVIDED HIGHWAYS (3 SHEETS)	6-8
<input type="checkbox"/> M-203-12		SUPERELEVATION STREETS (2 SHEETS).....	9-10
<input type="checkbox"/> M-206-1		EXCAVATION AND BACKFILL FOR STRUCTURES (2 SHEETS)	11-12
<input type="checkbox"/> M-206-2		EXCAVATION AND BACKFILL FOR BRIDGES (2 SHEETS) ....	13-14
M-208-1	<input type="checkbox"/>	TEMPORARY EROSION CONTROL (12 SHEETS) <small>(REVISED ON JULY 29, 2011)</small> ...	<del>15-21</del>
<input type="checkbox"/> M-210-1		MAILBOX SUPPORTS (2 SHEETS).....	22-23
<input type="checkbox"/> M-214-1		PLANTING DETAILS.....	24
M-412-1	<input type="checkbox"/>	CONCRETE PAVEMENT JOINTS (5 SHEETS) <small>(REVISED ON JULY 29, 2011)</small> .....	<del>25-29</del>
<input type="checkbox"/> M-510-1		STRUCTURAL PLATE PIPE H-20 LOADING .....	30
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<input type="checkbox"/> M-601-2		DOUBLE CONCRETE BOX CULVERT (2 SHEETS).....	33-34
<input type="checkbox"/> M-601-3		TRIPLE CONCRETE BOX CULVERT (2 SHEETS).....	35-36
<input type="checkbox"/> M-601-10		HEADWALL FOR PIPES .....	37
<input type="checkbox"/> M-601-11		TYPE "S" SADDLE HEADWALLS FOR PIPE.....	38
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<input type="checkbox"/> M-601-20		WINGWALLS FOR PIPE OR BOX CULVERTS.....	40
M-603-1	<input type="checkbox"/>	METAL PIPE (4 SHEETS) <small>(REVISED ON FEBRUARY 25, 2010)</small> .....	<del>41-42</del>
<input type="checkbox"/> M-603-2		REINFORCED CONCRETE PIPE .....	43
M-603-3	<input type="checkbox"/>	PRECAST CONCRETE BOX CULVERT <small>(REVISED ON JULY 29, 2011)</small> .....	<del>44</del>
M-603-4	<input type="checkbox"/>	CORRUGATED POLYETHYLENE PIPE (AASHTO M294) <small>(REV. ON FEB. 25, 2010)</small>	
M-603-5	<input type="checkbox"/>	POLYVINYL CHLORIDE (PVC) PIPE (AASHTO M304) <small>(NEW ON FEB. 25, 2010)</small>	
<input type="checkbox"/> M-603-10		CONCRETE AND METAL END SECTIONS (2 SHEETS).....	45-46
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<input type="checkbox"/> M-604-11		INLET, TYPE D.....	48
<input type="checkbox"/> M-604-12		CURB INLET TYPE R (2 SHEETS).....	49-50
<input type="checkbox"/> M-604-13		CONCRETE INLET TYPE 13.....	51
<input type="checkbox"/> M-604-20		MANHOLES (3 SHEETS).....	52-54
<input type="checkbox"/> M-604-25		VANE GRATE INLET (5 SHEETS).....	55-59
M-605-1	<input type="checkbox"/>	SUBSURFACE DRAINS <small>(REVISED ON JULY 09, 2009)</small> .....	<del>60</del>
M-606-1	<input type="checkbox"/>	GUARDRAIL TYPE 3 W-BEAM (18 SHEETS) <small>(REVISED ON MAY 05, 2011)</small> .....	<del>61-76</del>
<input type="checkbox"/> M-606-13		GUARDRAIL TYPE 7 F-SHAPE BARRIER (4 SHEETS) .....	77-80
<input type="checkbox"/> M-606-14		PRECAST TYPE 7 CONCRETE BARRIER (3 SHEETS).....	81-83

<u>PLAN NUMBER</u>	<u>NEW OR REVISED</u>	<u>M STANDARD TITLE</u>	<u>PAGE NUMBER</u>
<input type="checkbox"/> M-607-1		WIRE FENCES AND GATES (3 SHEETS) .....	84-86
<input type="checkbox"/> M-607-2		CHAIN LINK FENCE (3 SHEETS) .....	87-89
<input type="checkbox"/> M-607-3		BARRIER FENCE .....	90
<input type="checkbox"/> M-607-4		DEER FENCE AND GATES (2 SHEETS) .....	91-92
<input type="checkbox"/> M-607-10		PICKET SNOW FENCE .....	93
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M-609-1	<input type="checkbox"/>	CURBS, GUTTERS, AND SIDEWALKS (4 SHEETS) (REVISED ON JULY 09, 2009) .....	<del>107-109</del>
<input type="checkbox"/> M-611-1		CATTLE GUARD (2 SHEETS) .....	110-111
<input type="checkbox"/> M-613-1		ROADWAY LIGHTING (4 SHEETS) .....	112-115
<input type="checkbox"/> M-614-1		RUMBLE STRIPS (3 SHEETS) .....	116-118
<input type="checkbox"/> M-614-2		SAND BARREL ARRAYS (2 SHEETS) .....	119-120
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<input type="checkbox"/> M-615-2		EMBANKMENT PROTECTOR TYPE 5 .....	122
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<input type="checkbox"/> M-629-1		SURVEY MONUMENTS (2 SHEETS) .....	128-129

PLAN NUMBER	NEW OR REVISED	S STANDARD TITLE	PAGE NUMBER
S-612-1	<input type="checkbox"/>	DELINEATOR INSTALLATIONS (6 SHEETS) (REVISED, JULY 01, 2010) . . .	<del>131-136</del>
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<input type="checkbox"/> S-614-2		CLASS I SIGNS . . . . .	138
<input type="checkbox"/> S-614-3		CLASS II SIGNS . . . . .	139
S-614-4	<input type="checkbox"/>	CLASS III SIGNS (3 SHEETS) (REVISED, DECEMBER 29, 2009) . . . . .	<del>140-142</del>
<input type="checkbox"/> S-614-5		BREAK-AWAY SIGN SUPPORT DETAILS . . . . . FOR GROUND SIGNS (2 SHEETS)	143-144
<input type="checkbox"/> S-614-6		CONCRETE FOOTINGS AND SIGN ISLANDS . . . . . FOR CLASS III SIGNS (2 SHEETS)	145-146
S-614-8	<input type="checkbox"/>	TUBULAR STEEL SIGN SUPPORT DETAILS (5 SHEETS) . . . . . (REVISED ON SEPT. 01, 2010)	<del>147-151</del>
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<input type="checkbox"/> S-614-20		TYPICAL POLE MOUNT SIGN INSTALLATIONS . . . . .	157
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S-627-1	<input type="checkbox"/>	PAVEMENT MARKINGS (5 SHEETS) (REVISED ON OCTOBER 01, 2010) . . .	<del>186-190</del>
S-630-1	<input type="checkbox"/>	TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION (REVISED ON FEB. 24, 2011) (42-19 SHEETS)	<del>191-202</del>
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S-630-3	<input type="checkbox"/>	FLASHING BEACON (PORTABLE) DETAILS (REVISED ON JUNE 27, 2011) . . . .	<del>204</del>
S-630-4	<input type="checkbox"/>	STEEL SIGN SUPPORT (TEMPORARY) INSTALLATION DETAILS . . . . . (NEW, MARCH 22, 2010)	
S-630-5	<input type="checkbox"/>	PORTABLE RUMBLE STRIPS (TEMPORARY) . . . . . (NEW, MAY 05, 2011)	
S-630-6	<input type="checkbox"/>	EMERGENCY PULL-OFF AREA (TEMPORARY) . . . . . (NEW, MAY 05, 2011)	
S-630-7	<input type="checkbox"/>	ROLLING ROADBLOCKS FOR TRAFFIC CONTROL . . . . . (NEW, MAY 05, 2011)	

ALL OF THE M&S STANDARD PLANS, AS SUPPLEMENTED  
AND REVISED, APPLY TO THIS PROJECT WHEN USED  
BY DESIGNATED PAY ITEM OR SUBSIDIARY ITEM.

COLORADO  
DEPARTMENT OF TRANSPORTATION  
STANDARD PLANS LIST  
M&S STANDARDS  
July 04, 2006  
Revised on July 29, 2011

Print Date: 11/8/2011		<div><div>R-X</div><div>000</div><div>000</div><div>000</div></div>	Sheet Revisions			<div><div><div><div>Colorado Department of Transportation</div><div><div>2402 South Main Lamar, CO 81052 Phone: 719-336-3228   FAX: 719-336-4101</div></div><div><div>Region 2</div><div>PAW</div></div></div></div></div>	As Constructed		STANDARD PLAN LIST			Project No./Code	
File Name: 18321DES_StdPlanList.dgn			Date:	Comments	Init.		No Revisions:					FBR 1604-010, FBR 1604-011	
Horiz. Scale: 1:1      Vert. Scale: As Noted							Revised:		Designer:	SLZ	Structure		18321
Unit Information      Unit Leader Initials							Void:		Detailer:	SLZ	Numbers		Sheet Number      2
<div><div><div>Stolfus</div><div>associates</div></div><div>5690 DTC BOULEVARD, SUITE 101W GREENWOOD VILLAGE, CO 80111 PHONE: 303-221-2330 FAX: 303-221-2331 WWW.STOLFUSANDASSOCIATES.COM</div></div>									Sheet Subset: STANDARD		Subset Sheets:      1 of 1		

\* SLOPE SELECTION

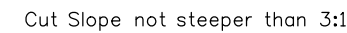
Structure 0-25-AA, MP 438.16 = 4:1, MAX.  
 Structure 0-25-AB, MP 445.41 = 3:1, MAX.  
 Structure 0-26-L OR 0-26-R, MP 461.74 = 4:1, MAX.

## \*\* PAVEMENT DESIGN

Structure 0-25-AA, MP 438.16 =  
 4.5" HMA - TOP LAYER 2" SX(75)(PG 64-22)  
 BOTTOM LAYER 2.5" S(75)(PG 64-22)  
 8" ABC (CLASS 6)

Structure 0-25-AB, MP 445.41 =  
 5.5" HMA - TOP LAYER 2.5" SX(75)(PG 64-22)  
 BOTTOM LAYER 3" S(75)(PG 64-22)  
 11" ABC (CLASS 6)

Structure 0-26-L OR 0-26-R, MP 461.74 =  
 5" HMA - TOP LAYER 2.5" SX(75)(PG 64-22)  
 BOTTOM LAYER 2.5" S(75)(PG 64-22)  
 9" ABC (CLASS 6)



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GENERAL NOTES:

DEPTH OF MOISTURE – DENSITY CONTROL FOR THIS PROJECT SHALL BE AS FOLLOWS:  
FULL DEPTH OF ALL EMBANKMENTS,  
BASES OF CUTS AND FILLS 6 INCHES,  
FULL DEPTH OF EMBANKMENT SECTIONS USED FOR DITCHES AND CHANNEL CHANGES

EXCAVATION REQUIRED FOR COMPACTION OF BASES OF CUTS AND FILLS WILL BE CONSIDERED AS SUBSIDIARY TO THAT OPERATION AND WILL NOT BE PAID FOR SEPARATELY.

TYPE OF COMPACTION FOR THIS PROJECT WILL BE AS FOLLOWS UNLESS OTHERWISE SPECIFIED IN THE PLANS.  
ITEM 203 - AASHTO T-99  
ITEM 206 & 304 ABC (CLASS 6) – AASHTO T-180.

THE CONTRACTOR SHALL NOT PARK ANY VEHICLES OR EQUIPMENT IN, OR DISTURB ANY AREAS NOT APPROVED BY THE ENGINEER.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CONSTRUCTION STAGING AREA.

PUBLIC APPROACHES AND ENTRANCES TO BUILDING OR RESIDENCES SHALL BE PAVED 50 FEET OUT FROM THE EDGE OF SHOULDER OR TO THE RIGHT-OF-WAY LINE, WHICHEVER IS LESS. FIELD ENTRANCES SHALL BE PAVED 4 FEET OUT FROM THE EDGE OF SHOULDER.

PAVEMENT SMOOTHNESS CATEGORY SHALL BE HRI CATEGORY II.

WHERE NEW PAVEMENT IS TO ABUT EXISTING PAVEMENT, THE EXISTING PAVEMENT SHALL BE REMOVED TO A NEAT VERTICAL LINE USING A CUTTING SAW OR OTHER METHOD AS APPROVED BY THE ENGINEER. SAW CUTTING ASPHALT WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF REMOVAL OF THE WORK.

THE CONTRACTOR SHALL PROVIDE A CERTIFIED SCALE AND CERTIFIED WEIGHER AT THE POINT OF LOADING FOR ALL AGGREGATES, CEMENT, FLY ASH, AND WATER DELIVERED TO THE PROJECT. A CERTIFIED TICKET SHALL BE PROVIDED FOR EACH LOAD OF MATERIAL DELIVERED TO THE PROJECT. THE TICKET SHALL SHOW GROSS, TARE, AND NET WEIGHTS. THE CONTRACTOR SHALL NOT DELIVER ANY LOAD EXCEEDING THE LEGAL WEIGHT LIMIT. DELIVERY OF ANY OVERWEIGHT LOADS MAY RESULT IN WITHHOLDING OF MONTHLY PAYMENT FOR THE RELATED ITEM.

BASED ON SIGHT DISTANCE AND OTHER CONSIDERATIONS, ADDITIONAL TRAFFIC CONTROL DEVICES MAY BE REQUIRED AND LOCATION IS SUBJECT TO THE APPROVAL OF THE ENGINEER.

THE CONTRACTOR SHALL KEEP THE WORK AREA FREE OF STANDING WATER AND SHALL KEEP THE EXCAVATION AREAS FREE FROM STORMWATER RUNOFF. THE CONTRACTOR SHALL BEAR ALL COSTS FOR REPAIR DUE TO NOT MEETING THESE REQUIREMENTS.

THE MINIMUM THICKNESS OF TOPSOIL SHALL BE 4 INCHES. TOPSOIL SHALL BE PLACED PER SECTION 207. WATER SHALL BE USED TO PROVIDE CONSOLIDATION OF THE TOPSOIL.

ALL DRAINAGE STRUCTURES SHALL BE FREE OF DEBRIS AND SILT PRIOR TO PROJECT COMPLETION. THE STRUCTURE INLETS AND OUTLETS SHALL BE GRADED TO A NEAT APPEARANCE. THE CONTRACTOR SHALL ROUND ALL BREAKPOINTS AND DITCH BOTTOMS AND ENSURE DRAINAGE ON ALL DITCHES. THIS WORK SHALL BE INCLUDED IN THE COST OF THE PROJECT.

SEVERITY OF POTENTIAL SULFATE EXPOSURE SHALL BE CLASS 0 FOR THIS PROJECT. THE CONTRACTOR MAY, AT ITS OWN EXPENSE, HAVE A CERTIFIED LABORATORY TEST THE SUBGRADE PER THE FIELD MATERIAL MANUAL. TESTING SHALL BE AT THE SAME SCHEDULE AND FREQUENCY AS REQUIRED FOR A PRELIMINARY SOIL SURVEY. THE CONTRACTOR MAY PROPOSE A DIFFERENT CLASS OF SULFATE EXPOSURE FOR THE PROJECT BASED ON THOSE TEST RESULTS.

WATER SHALL BE USED AS A DUST PALLIATIVE WHERE REQUIRED. LOCATIONS SHALL BE DIRECTED BY THE ENGINEER. COST SHALL BE INCLUDED IN THE WORK.

THE CONTRACTOR SHALL CALL THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC) AT 811 FOR UTILITY LOCATIONS AT LEAST 3 WORKING DAYS, NOT INCLUDING THE DAY OF INITIAL CONTACT, PRIOR TO ANY DIGGING.

THE UTILITY LOCATIONS SHOWN IN THE PLANS WERE OBTAINED FROM THE BEST AVAILABLE DATA AT THE TIME OF THE SURVEY. THE CONTRACTOR SHALL POTHOLE TO VERIFY LOCATIONS OF UTILITIES PRIOR TO EXCAVATION ACTIVITIES.

ALL SURVEYING NECESSARY TO COMPLETE THE PROJECT WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE WORK.

THE CONTRACTOR SHALL PROTECT ALL EXISTING SURVEY MONUMENTATION DESIGNATED TO REMAIN FROM DAMAGE DURING CONSTRUCTION OPERATIONS. ANY MONUMENTS DISTURBED BY THE CONTRACTOR THAT ARE NOT DESIGNATED FOR RELOCATION, SHALL BE RESET AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR AND ENGINEER SHALL NOTE THOSE MONUMENTS IN THE FIELD PRIOR TO CONSTRUCTION. SEE TABULATION OF SURVEY.

IT IS ESTIMATED THAT 1 FIELD OFFICE (CLASS 2), 1 FIELD LABORATORY (CLASS 2), AND 2 SANITARY FACILITIES WILL BE REQUIRED ON THIS PROJECT.

THIS PROJECT IS CLASSIFIED AS NON-SIGNIFICANT. THE TRANSPORTATION MANAGEMENT PLAN (TMP) SHALL CONSIST OF A TRAFFIC CONTROL PLAN (TCP) AND PUBLIC INFORMATION (PI) REQUIREMENTS.

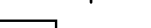
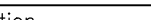
UTILITY CONTACT LIST:

UTILITY	CONTACT	NUMBER
GAS (ATMOS ENERGY)	TOM FLESHNER	620-353-0127
ELECTRIC (SOUTH EAST COLORADO POWER)	ERIC LESH	719-336-3236
TELEPHONE (CENTURY LINK)	ART ROYBALL	719-336-0029



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Print Date: 9/22/2011		<div>Sheet Revisions</div> <div><div>R-X</div><div></div><div></div><div></div></div>	Colorado Department of Transportation			As Constructed		GENERAL NOTES			Project No./Code	
File Name: 18321DES_GenlNote.dgn			<div><div>2402 South Main Lamar, CO 81052 Phone: 719-336-3228    FAX: 719-336-4101</div><div>Region 2PAW</div></div>			No Revisions:					FBR 1604-010, FBR 1604-011	
Horiz. Scale: 1:1                      Vert. Scale: As Noted						Revised:		Designer:            SLZ    Structure		18321		
Unit Information                      Unit Leader Initials						Void:		Detailer:            SLZ    Numbers				
<div><div>5690 DTC BOULEVARD, SUITE 101W GREENWOOD VILLAGE, CO 80111 PHONE: 303-221-2330 FAX: 303-221-2331 WWW.STOLFUSANDASSOCIATES.COM</div></div>								Sheet Subset: GEN NOTE		Subset Sheets:                      1 of 1		Sheet Number                      4


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INDEX			CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	ROADWAY								STRUCTURES						PROJECT TOTALS	
BOOK	PAGE	SHEET				PLAN	AS CONST.							PLAN	AS CONST.					PLAN	AS CONST.
			620-00002	Field Office (Class 2)	EACH	1														1	
			620-00012	Field Laboratory (Class 2)	EACH	1														1	
			620-00020	Sanitary Facility	EACH	3														3	
			626-00000	Mobilization	L S	1														1	
			631-00100	Highway Design & Construction 0-25-H	L S	1														1	
			631-00100	Highway Design & Construction 0-25-I	L S	1														1	
			631-00100	Highway Design & Construction 0-26-L	L S	1														1	
			631-10002	Bridge Design and Construction 0-25-H	L S									1						1	
			631-10002	Bridge Design and Construction 0-25-I	L S									1						1	
			631-10002	Bridge Design and Construction 0-26-L	L S									1						1	
			700-70010	FORCE ACCOUNT ===== F/A Minor Contract Revisions	F A	1														1	
			700-70011	F/A Partnering	F A	1														1	
			700-70012	F/A Asphalt Pavement Incentive	F A	1														1	
			700-70016	F/A Fuel Cost Adjustment	F A	1														1	
			700-70018	F/A Roadway Smoothness Incentive	F A	1														1	
			700-70019	F/A Asphalt Cement Cost Adjustment	F A	1														1	
			700-70021	F/A On-The-Job Trainee	HOUR	640														640	

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Unit Information PAW	

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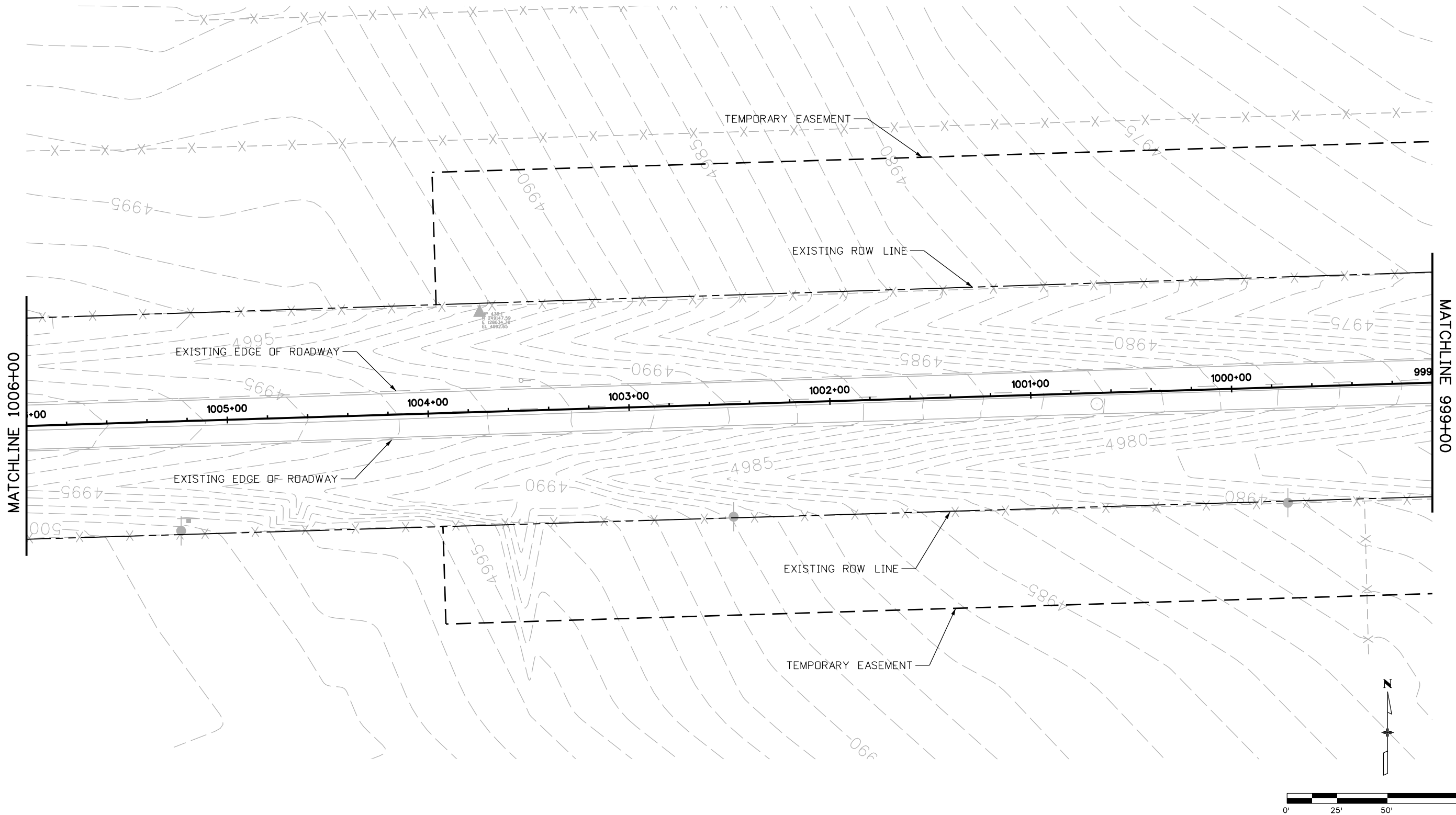
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Region 2PAW

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Print Date: 9/22/2011

File Name: 18321DES\_Plan01.dgn

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Unit Information      Unit Leader Initials

Stolfus

associates

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Region 2      PAW

As Constructed

No Revisions:

Revised:

Void:

PLAN SHEET

Designer: SLZ

Detailer: SLZ

Sheet Subset: 0-25-AA

Structure Numbers

0-25-AA

Subset Sheets: 1 of 4

Project No./Code

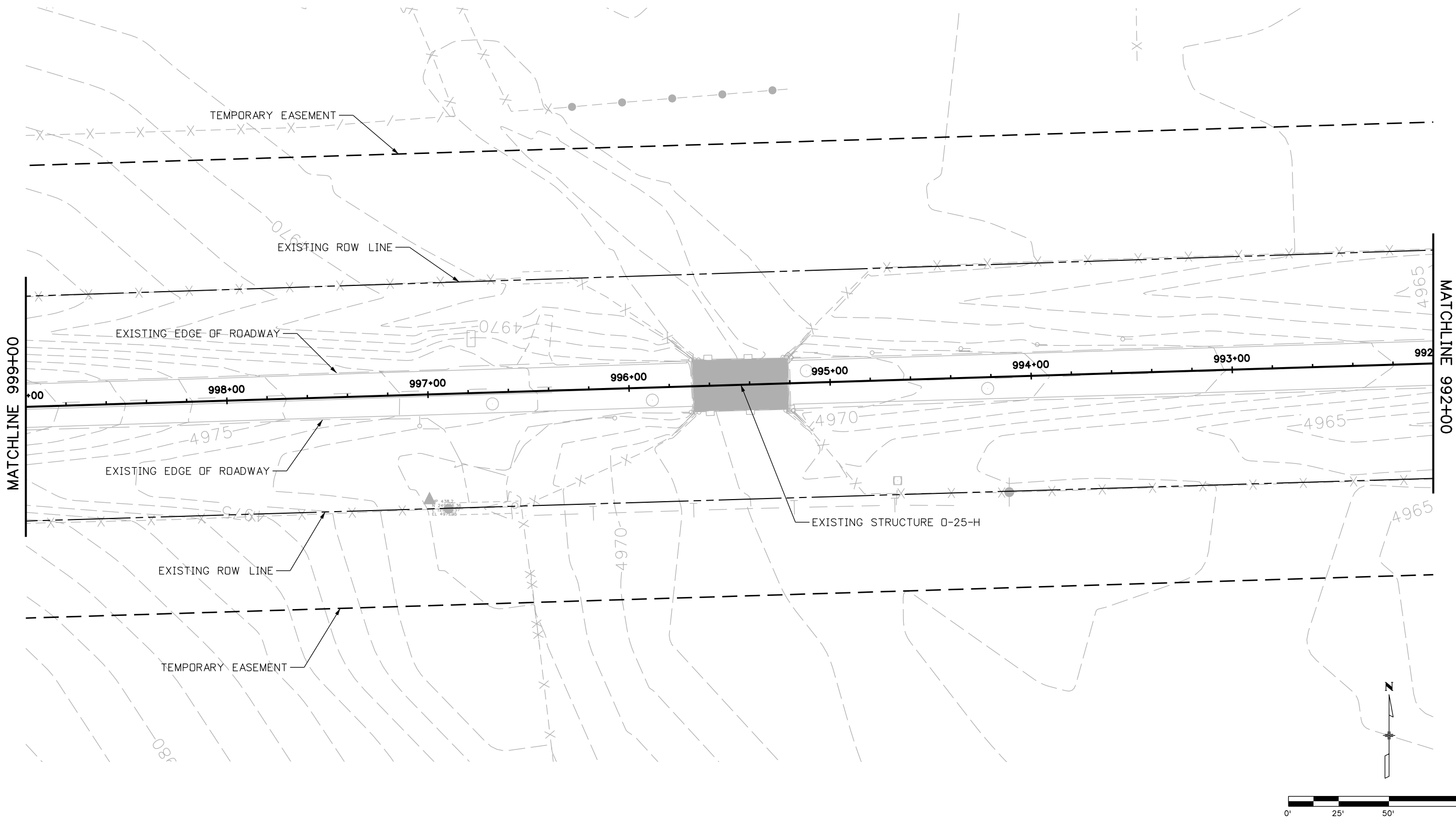
FBR 1604-010,  
FBR 1604-011

18321

Sheet Number

6

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Unit Information	Unit Leader Initials
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R-X 0000	Sheet Revisions		
	Date:	Comments	Init.



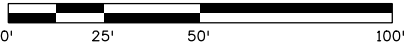
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Region 2

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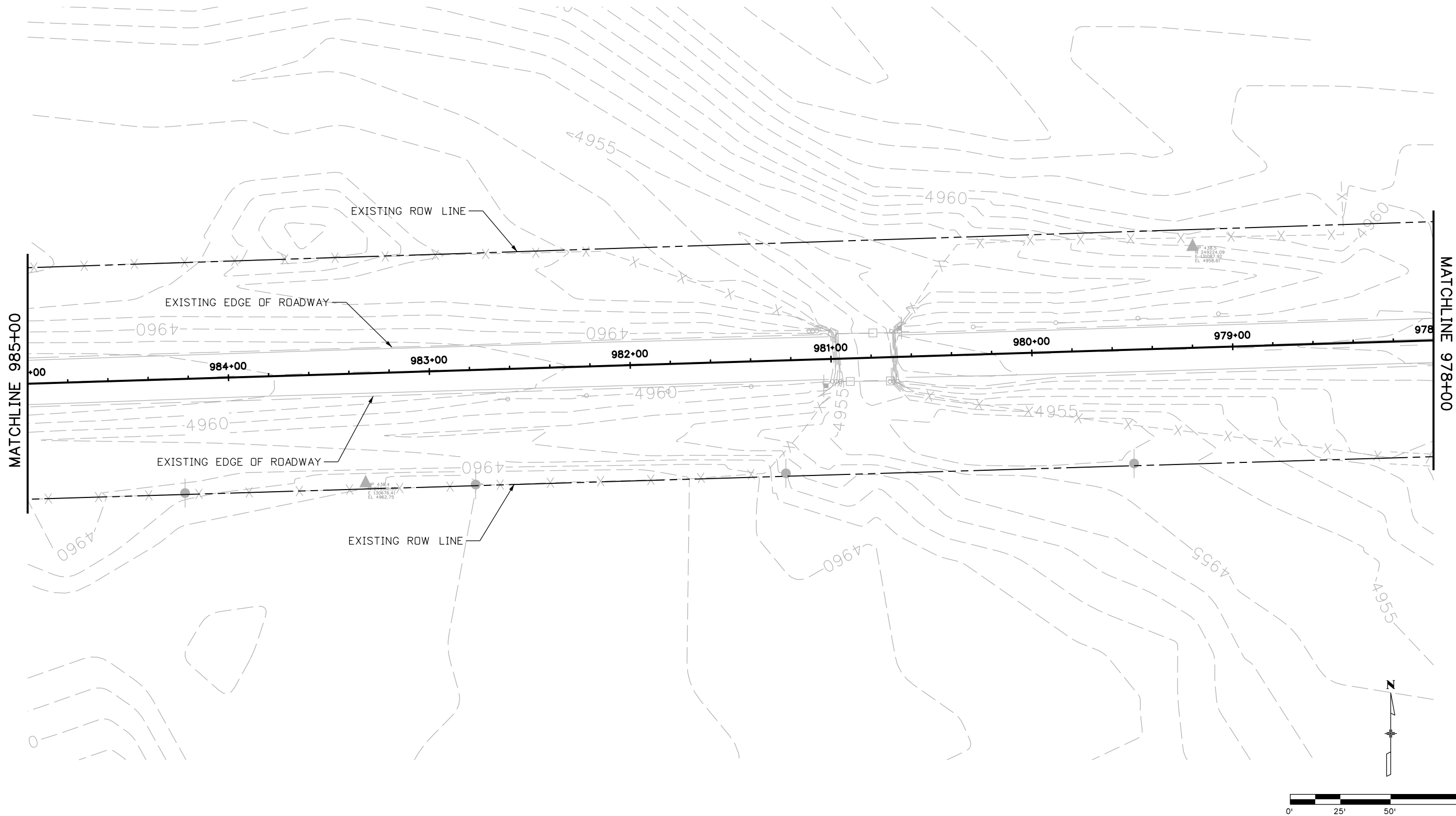
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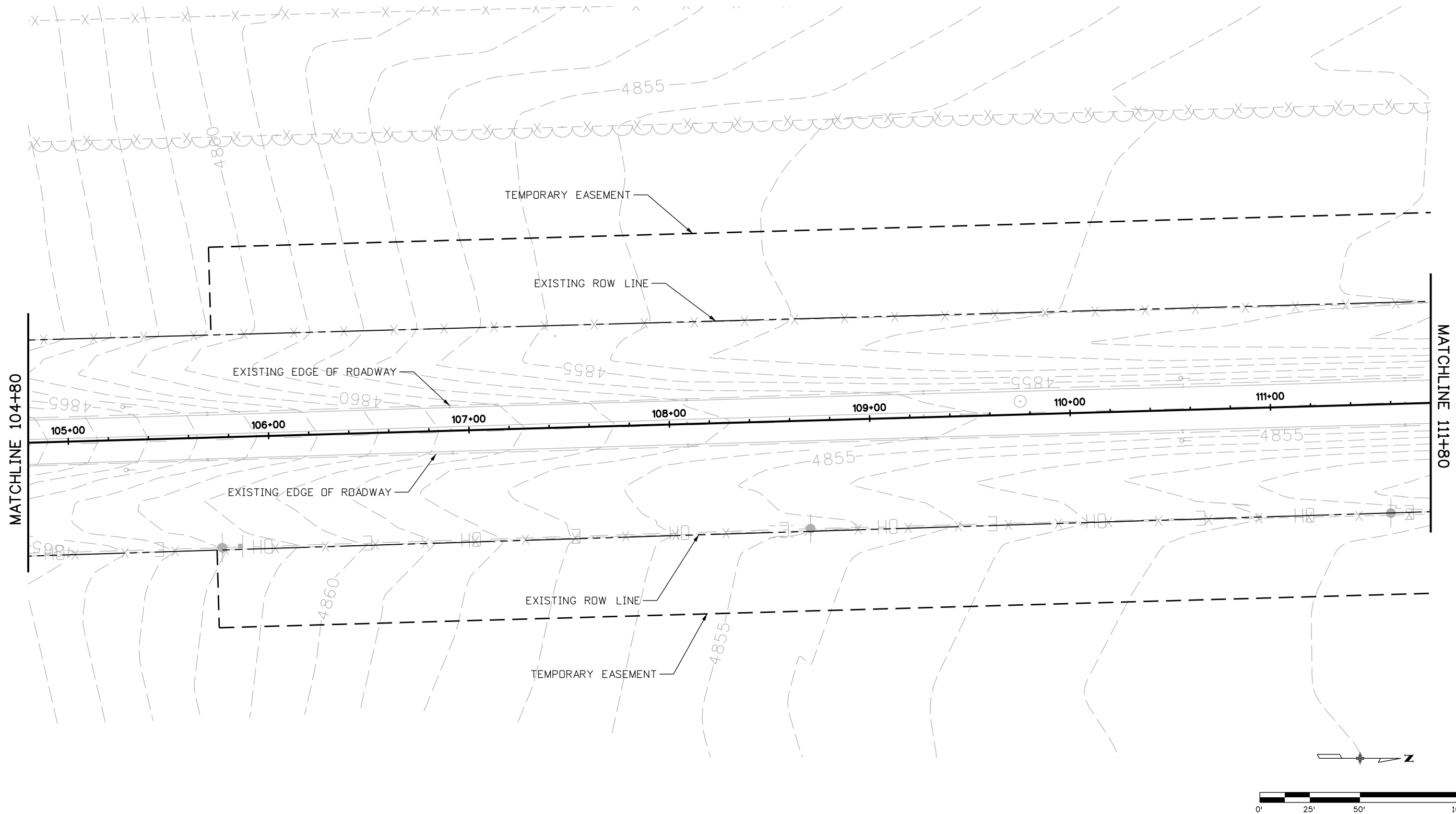
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	Detailer: SLZ			
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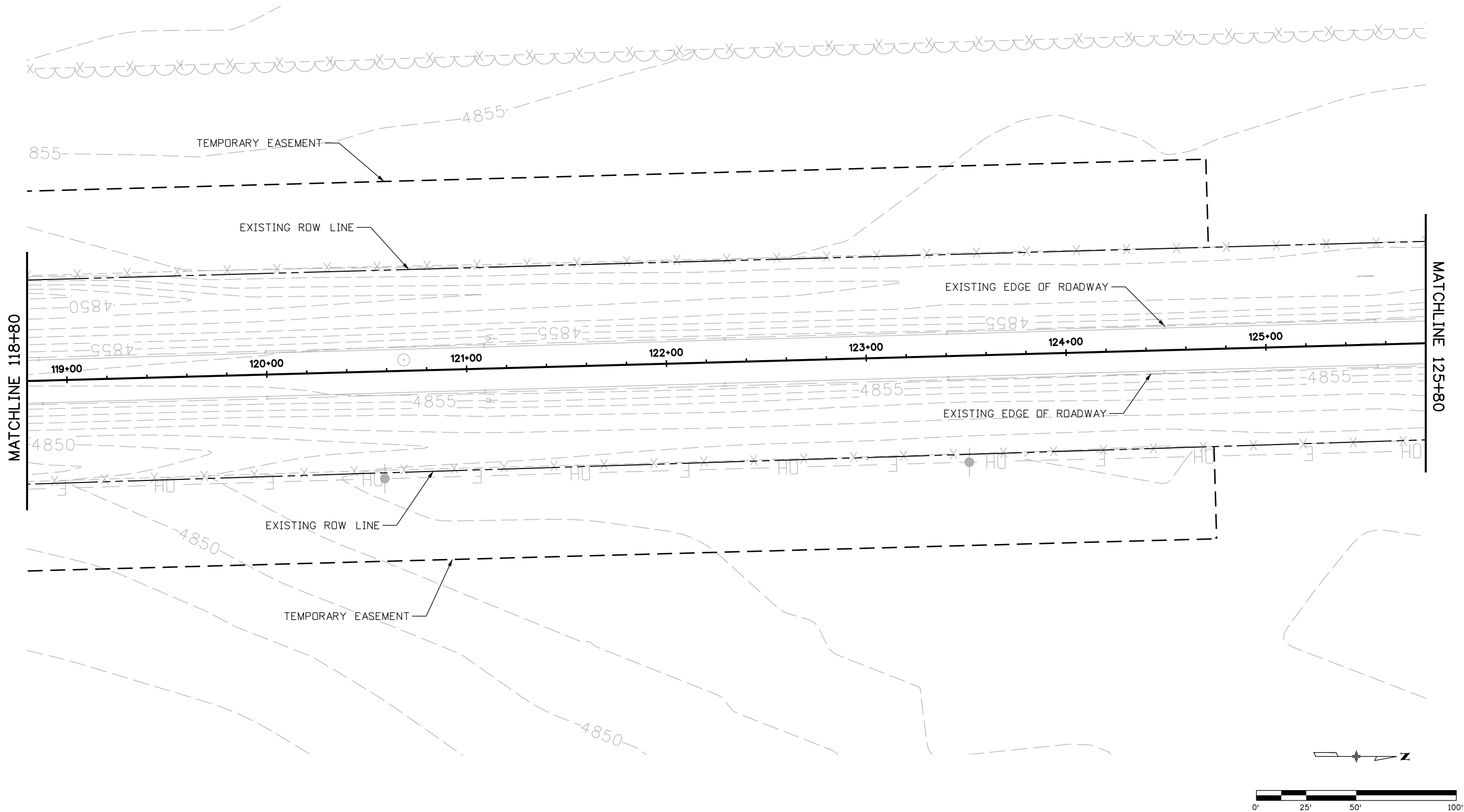
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PAW

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Revised:		Detailer: SLZ		18321
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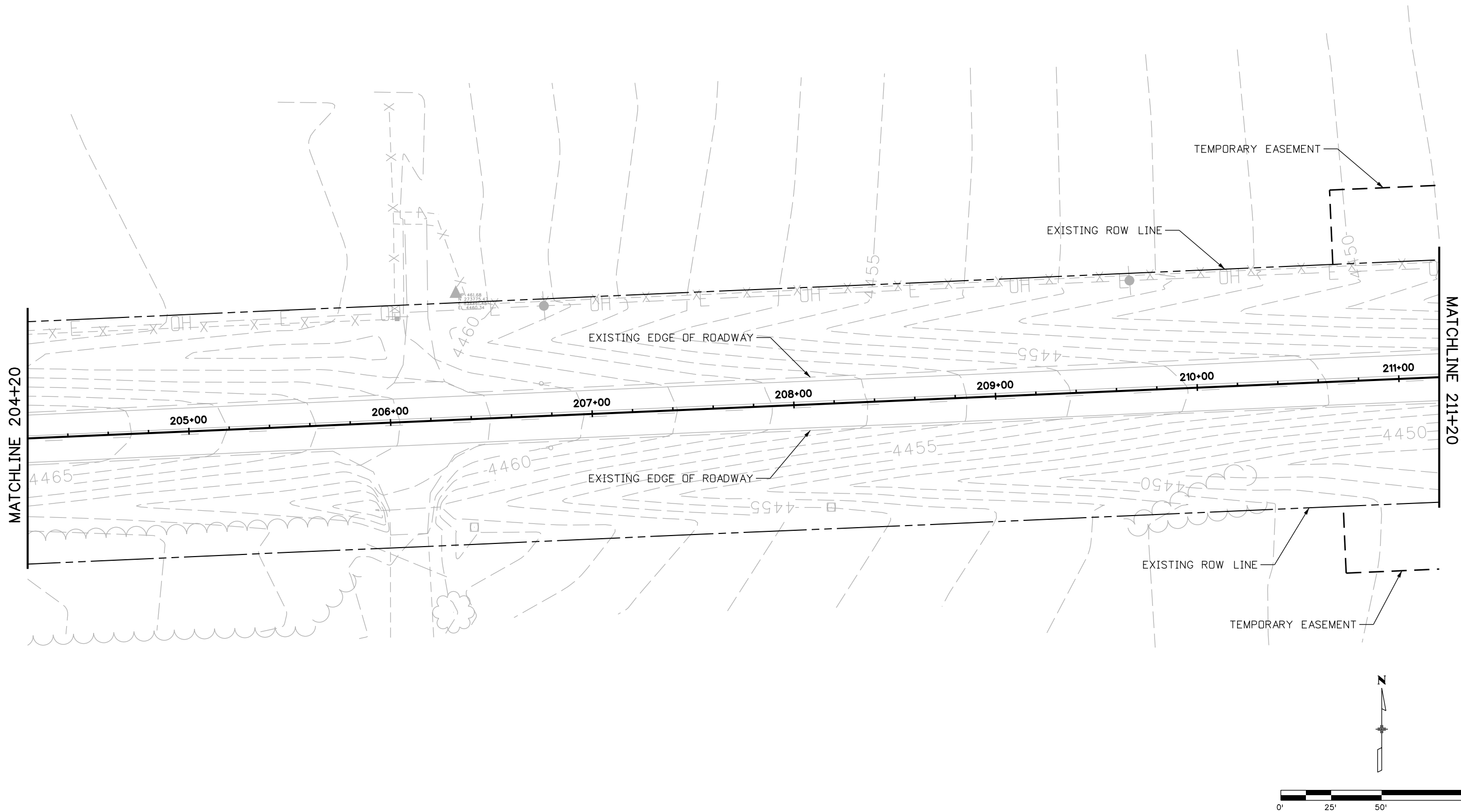
Region 2

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As Constructed		PLAN SHEET			Project No./Code
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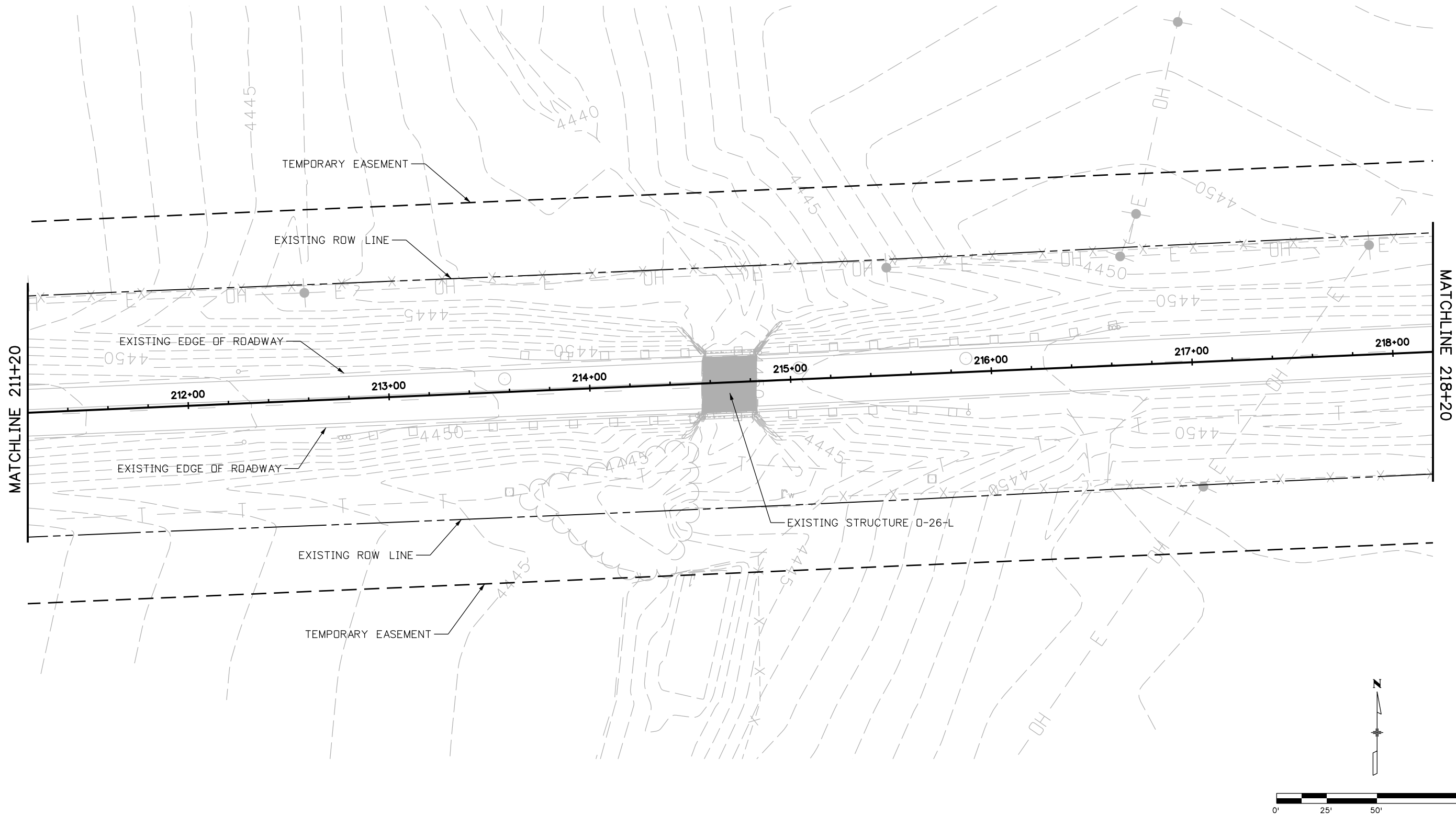
Region 2

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Unit Information	Unit Leader Initials
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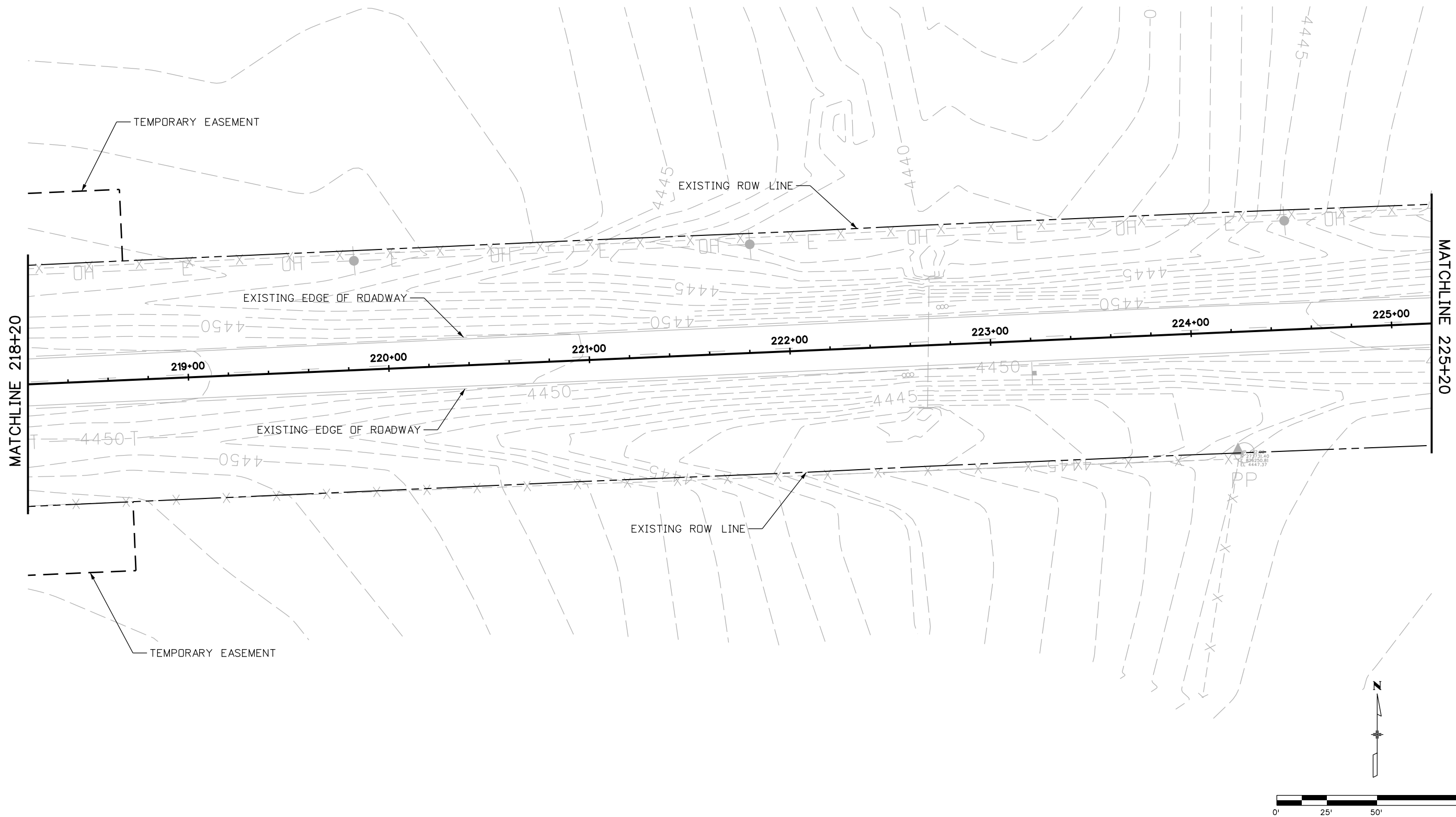
Region 2



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File Name: 18321DES_Plan10.dgn		 2402 South Main Lamar, CO 81052 Phone: 719-336-3228 FAX: 719-336-4101 Region 2 PAW		No Revisions:		FBR 1604-010, FBR 1604-011																					
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Unit Information Unit Leader Initials							Detailer: SLZ	Numbers	0-26-R	Sheet Number 15																	
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TO ESTABLISH GEOMETRIC CONTROL FOR THE CONSTRUCTION OF THIS PROJECT, THE DEPARTMENT HAS PROVIDED THE FOLLOWING INFORMATION:

Format \*  
☐ Horizontal Control  
☐ Vertical Control  
☐ Roadway Alignment  
☐ Original Terrain Data  
☐ Other: \_\_\_\_\_

\* Specify the information format, ie., plan sheet, computer disk, computer printout, or other. The information marked is either contained on the plans or is available from the Engineer.

TYPE OF PROJECT

<input type="checkbox"/> Landscaping	<input type="checkbox"/> Major Reconstruction
<input type="checkbox"/> Signalization	<input type="checkbox"/> New Roadway Construction
<input type="checkbox"/> Safety Improvement	<input type="checkbox"/> Bridge Replacement
<input type="checkbox"/> Asphalt Overlay	<input type="checkbox"/> Bridge Widening
<input type="checkbox"/> Concrete Overlay	<input type="checkbox"/> New Bridge
<input type="checkbox"/> Minor Widening	<input type="checkbox"/> Other: _____

SURVEY WORK TO BE PERFORMED BY OTHERS:\_\_\_\_\_

WORK PERFORMED BY THE CONTRACTOR'S SURVEYOR UNDER SECTION 625:

- ☐ Establish and Maintain Project Centerline or Engineer Approved Offset Line(s)  
☐ Verification and Maintenance of Horizontal and Vertical Control  
☐ Verify or Determine existing grades and alignments  
☐ Verify or Determine existing topography  
☐ Clearing and Grubbing Limits (Section 201)  
☐ Removal Limits (Section 202)  
☐ Reset Items (Section 210)  
☐ Excavation and Embankment (Section 203)

- ☐ Excavation  
☐ Unclassified  
☐ Stripping  
☐ Muck  
☐ Rock  
☐ Borrow  
☐ Other: \_\_\_\_\_  
☐ Potholing

- ☐ Embankment  
☐ Site Grading  
☐ Erosion Control (Perm)  
☐ Other: \_\_\_\_\_  
☐ As Staked Earthwork Quantities (See General Notes)

- ☐ Landscaping  
☐ Top Soil (Section 207)  
☐ Seeding (Section 212)  
☐ Mulching (Section 213)  
☐ Planting (Section 214)  
☐ Herbicide (Section 217)  
☐ Other: \_\_\_\_\_

- ☐ Erosion Control (Section 208)  
☐ Seeding (Temp)  
☐ Silt Fence  
☐ Erosion Bales  
☐ Erosion Logs  
☐ Riprap (Temp)  
☐ Other: \_\_\_\_\_

- ☐ Roadway Bases  
☐ Untreated Subgrade  
☐ Treated Subgrade  
☐ Aggregate Base Course (Section 304)  
☐ Reconditioning  
☐ PMBB - Plant Mix Bituminous Base  
☐ Other: \_\_\_\_\_

Excavation	Slope Staking (Y/N)	Grid (Y/N)	Grade Stakes	Special Interval
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-

Embankment	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-

Roadway Bases	Grid (Y/N)	Grade (Y/N)	Special Interval	Special Offset
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-

- ☐ Pavements  
☐ HMA - Hot Mix Asphalt (Section 403)  
☐ Concrete (Section 412)  
☐ Heating & Scarifying Treatment  
☐ Prime Coat, Tack Coat & Rejuvenating Agent (Section 407)  
☐ Seal Coat or Chip Seal (Section 409)  
☐ Other: \_\_\_\_\_

- ☐ Roadway Elements  
☐ Curb and Gutter (Section 609)  
☐ Drop inlets - alignment and grades (Section 604)  
☐ Retaining Walls  
☐ Guard Rail (Section 606)  
☐ Sidewalk (Section 608)  
☐ Overlay Stationing  
☐ Other: \_\_\_\_\_

- ☐ Riprap (Perm) (Section 506)  
☐ Slope and Ditch Paving (Section 507)

- ☐ Minor Structures  
☐ Structure Excavation limits (Section 206)  
☐ Culverts (Section 603)  
☐ Culverts w/ Headwalls and Wingwalls (Section 601)  
☐ Concrete Box Culverts w/ Headwalls and Wingwalls  
☐ Pipes (Section 603)  
☐ Sanitary Sewer  
☐ Storm Sewer  
☐ Water  
☐ Irrigation  
☐ Miscellaneous  
☐ Manholes (Section 604)  
☐ Inlets (Section 604)  
☐ Other: \_\_\_\_\_

- ☐ Major Structures - Overhead Signs (Section 614), Concrete Box Culverts, Bridges - and all other structures assigned a structure number  
☐ Structure Excavation limits (Section 206)  
☐ Concrete Box Culverts (Section 603) w/ Headwalls and Wingwalls (Section 601)  
☐ Piling locations and cut off elevations (Section 502)  
☐ Caisson locations and elevations (Section 503)  
☐ Footing locations, alignment, and elevations  
☐ Abutment/Pier locations, alignment, and elevations  
☐ Wingwall skew angles/offsets  
☐ Structural concrete form locations  
☐ Substructure As-constructed survey required for Bridges (Subsection 601 .12) and Overhead signs (S-614-50)  
☐ Bridge expansion joint(s) alignment and grade (longitudinal and transverse)  
☐ Deck grades at Girder 10th or "n" th point locations and elevations  
☐ Slope and Ditch Paving (Section 507)  
☐ Other: \_\_\_\_\_

- ☐ Fencing (Section 607)  
☐ Temporary  
☐ Permanent  
☐ Sound Barrier  
☐ Other: \_\_\_\_\_

- ☐ Delineators (Section 612)  
☐ Temporary  
☐ Permanent

- ☐ Lighting (Section 613) and Traffic Control Devices (Permanent) (Section 614)  
☐ Signal pole locations and elevations  
☐ Light pole locations and elevations  
☐ Sign locations  
☐ Field verify sign post locations, elevations, and lengths before fabrication.  
☐ Other: \_\_\_\_\_

Pavements	Grid (Y/N)	Special Interval	Special Offset
	-	-	-
	-	-	-
	-	-	-
	-	-	-

Curb & Gutter	Tangent Interval	Curve Interval	Special Offset
	-	-	-

Stationing	Left Interval	Center Interval	Right Interval
	-	-	-

- ☐ Pavement Marking (Section 627)  
☐ Striping (Temp)  
☐ Striping (Perm)  
☐ Symbols  
☐ Other: \_\_\_\_\_

- ☐ Temporary Lighting and Construction Traffic Control Devices (Section 630)  
☐ Signal pole locations and elevations (Temp)  
☐ Light pole locations and elevations (Temp)  
☐ Sign Locations (Temp)  
☐ Other: \_\_\_\_\_

- ☐ Easements (Temp Staking by P.L.S. Only)  
☐ Right of Way (Temp Staking by P.L.S. Only)

WORK PERFORMED BY THE CONTRACTOR'S SURVEYOR UNDER SECTION 629:

- ☐ Monumentation (Section 629)  
☐ Control  
☐ Right of Way  
☐ Land corners, Aliquot corners  
☐ Easements  
☐ Reference the specified existing monuments: \*\* \_\_\_\_\_  
☐ Replace the specified existing monuments: \*\* \_\_\_\_\_  
☐ Locate monuments. It is estimated \_\_\_\_ hours are required.

NOTE: All 629 items shall include adequate research, calculations, and evaluations of evidence for monuments to be set.

\*\* A Tabulation of Survey Monuments may be provided on the plans.

GENERAL NOTES:

- Unless indicated otherwise on this Survey Tabulation Sheet, all survey work and staking intervals shall be done in accordance with the latest edition of the CDDT Survey Manual.
- Adequate information for establishing lines, grades, and locations for all work items have been specified on the plans. Any additional information required to stake the item or element shall be generated by the Contractor's surveyor.
- The Contractor's surveyor shall provide an estimate of the man-hours necessary to complete the work items indicated on this sheet. A copy of this sheet, with the estimated man-hours written on the blank line to the left of the specified items, shall be submitted with the Survey Schedule to the Engineer \_\_\_\_\_ days prior to the Presurvey Conference - Construction Survey.
- Stakes and Monuments which are damaged or destroyed by the progress of construction shall be replaced by the Contractor at no additional cost to the Department.
- The Contractor shall furnish an As Staked earthwork quantity to the Engineer prior to completion of twenty percent (20%) of the planned earthwork in any phase as per the CDDT Survey Manual. A printed copy of the As Staked earthwork data and a computer disk in the specified format shall be submitted to the Engineer. The Contractor shall field verify original ground cross sections at a maximum 500 feet intervals.
- Prior to beginning work on any subsequent operation, such as placing base course or paving, the Contractor shall certify in writing to the Engineer that the final grade is within specified tolerance.
- The Contractor's surveyor shall perform all field surveying and calculations necessary to tie plan grades into field grades.
- The Contractor shall coordinate construction staking on the project with any utility work.
- Fieldbooks shall contain daily records of points set and or measurements observed. The information recorded shall contain: date, crew members' names, point no., description, staking information, and sketches. If the survey information is collected electronically, information recorded shall be provided to the Project Engineer in a hard copy format that is intuitive, clear and related to the supplemental information recorded in the field books. All linear surveys, such as slope stakes and blue tops, shall have the station and offset information related to the measured information. Non-linear surveys such as structures staking shall have sketches relating electronic information, such as point numbers, to the sketch.
- The Contractor's surveyor shall submit the following fieldbooks to the Engineer:
  - ☐ Horizontal Control (Primary & Secondary)
  - ☐ Vertical Control (i.e. Benchmarks)
  - ☐ Property Pin Ties
  - ☐ Horizontal Alignment
  - ☐ Grading
  - ☐ Slope Staking
  - ☐ Minor Structures
  - ☐ Major Structures
  - ☐ One fieldbook for each work category shown on this sheet
  - ☐ Other Fieldbook(s): \_\_\_\_\_

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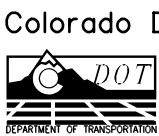


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Region 2

PAW

As Constructed

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SURVEY TABULATION SHEET

Designer:	SLZ	Structure	
Detailer:	SLZ	Numbers	
Sheet Subset:	SURVEY	Subset Sheets:	1 of 1

Project No./Code

FBR 1604-010,  
FBR 1604-011

18321

Sheet Number

16

[Notes within [ ] are designer directions – delete all directions prior to final plan submittal. All XXX shall be filled in by the designer during design phase. Template includes narratives in matrix]

1. SITE DESCRIPTION

For Information Only to fulfill the CDPS-SCP (Colorado Discharge Permit System - Stormwater Construction Permit) Update to reflect current project site conditions.

A. PROJECT SITE DESCRIPTION: [include description and nature of the construction activities at the site; type of project, summary of grading activities, installation of utilities, paving, excavation, landscape, etc. and the final disposition of the property. Also see the project 463 Form description]

B. PROPOSED SEQUENCING FOR MAJOR ACTIVITIES: [describe the sequence of events involved in the project, such as clearing and grubbing, grading, excavation, structures removal and construction that may impact water quality etc.]

C. ACRES OF DISTURBANCE: [includes clearing, grading, excavation, stockpiling of fill materials, demolition, areas with heavy equipment/vehicle traffic, installation of new or improved haul roads and access roads, staging areas, dedicated borrow/fill areas and storage that will disturb existing vegetative cover. Round area to the nearest 10th of acre]

1. Total area of construction site: [xxx] acres

2. Total area of disturbance: [xxx] acres

3. Acreage of seeding: [xxx] acres

D. EXISTING SOIL DATA: [includes describing list of USDA soil texture classification(s) or existing potential for soil erosion.]

E. EXISTING VEGETATION, INCLUDING PERCENT COVER: [description of the existing vegetation at the site and an estimate of the percent vegetative ground cover. Plant count in accordance with chapter 4 of the CDOT erosion control and stormwater quality guide]

F. POTENTIAL POLLUTANTS SOURCES: See First Construction Activities under Potential Pollutant Sources. The ECS shall prepare a list of all potential pollutants and their locations in accordance with subsection 107.25.

G. RECEIVING WATER:

1. Outfall locations: [show on plans or table: size, type location of pipes; ditch outfall locations; if the discharge is to a municipal separate storm sewer (MS4), the name of that system, the location/owner of the storm sewer discharge and the ultimate receiving water]

2. Names of receiving water(s) on site and the ultimate receiving water: [xxx]

3. Distance ultimate receiving water is from project: [xxx]

H. ALLOWABLE NON-STORMWATER DISCHARGES: [The location and description of any anticipated allowable sources of non-stormwater components of the discharge, such as uncontaminated springs and landscape irrigation return flow. How will it be handled?]

1. Groundwater and stormwater dewatering: Discharges to the ground of water from construction dewatering activities may be authorized provided that:

a. the source is groundwater and/or groundwater combined with stormwater that does not contain pollutants

b. the source and BMPs are identified in the SWMP

c. discharges do not leave the site as surface runoff or to surface waters.

2. If discharges do not meet the above criteria a separate permit from the Department of Health will be required. Contaminated groundwater requiring coverage under a separate permit may include groundwater contaminated with pollutants from a landfill, mining activities, industrial pollutant plumes, underground storage tank, etc.

I. ENVIRONMENTAL IMPACTS:

1. Wetland Impacts: YES NO [Underline or circle which applies]

2. Stream Impacts: YES NO [Underline or circle which applies]

3. Threatened and Endangered Species: [List the sensitive species]

2. SITE MAP COMPONENTS:

Pre-construction [The following items need to be shown on the SWMP site map. If they are not shown on the site map, reference the plan sheets or other location where they are shown and can be readily accessed.]

A. PROJECT CONSTRUCTION POTENTIAL SITE BOUNDARIES [Label temporary and permanent easement lines as "construction boundaries"]

B. ALL AREAS OF GROUND SURFACE DISTURBANCE [Label the line used to calculate acres of disturbance as "disturbance limit"]

C. AREAS OF CUT AND FILL [Label cut/fill lines]

D. LOCATION OF ALL STRUCTURAL BMPs IDENTIFIED IN THE SWMP [Label BMPs]

E. LOCATION OF NON-STRUCTURAL BMPs AS APPLICABLE IN THE SWMP [Label known non-structural BMPs]

F. SPRINGS, STREAMS, WETLANDS AND OTHER SURFACE WATER [Label locations]

G. PROTECTION OF TREES, SHRUBS, CULTURAL RESOURCES AND MATURE VEGETATION [Label locations]

H. AREAS USED FOR STORING AND STOCKPILING OF MATERIALS, STAGING AREAS (field trailer,fueling,etc) and BATCH PLANTS

Revise site maps in accordance to 208.03

3. SWMP ADMINSTRATOR FOR DESIGN: [List the individual(s) position or title who is responsible for developing SWMP sheets during design phase]

4. STORMWATER MANAGEMENT CONTROLS FIRST CONSTRUCTION ACTIVITIES

THE CONTRACTOR SHALL PERFORM THE FOLLOWING:

A. DESIGNATE A SWMP ADMINISTRATOR/EROSION CONTROL SUPERVISOR (To be filled out at time of construction; designate the individual(s) responsible for implementing, maintaining and revising the SWMP, including the title and contact information. The activities and responsibilities of the administrator shall address all aspects of the projects SWMP.)

Name/Title: Contact information:

B. POTENTIAL POLLUTANT SOURCES

Evaluate, identify and describe all potential sources of pollutants at the site in accordance with subsection 107.25 and place in the SWMP notebook. All BMPs related to potential pollutants shall be shown on the SWMP site map by the contractor's ECS.

C. BEST MANAGEMENT PRACTICES (BMPs) FOR STORMWATER POLLUTION PREVENTION

PHASED BMP IMPLEMENTATION, APPLICATION AND NARRATIVE:

During Design: "BMP as Designed" boxes are marked when used in the SWMP. During construction: the ECS shall update the narratives, include new narratives and update the "In use on site" boxes to match which BMPs are currently in use on site. Clearly describe the relationship between the phases of construction and the implementation of BMP controls. The narrative should explain what, when, where, how and why the BMP is being used.]

[If BMPs are proposed in design and marked in the 'BMP as Designed' column and/or listed in the tabulation of quantities, those BMPs must be described in this section and they shall be located on the site map. Clearly describe the relationship between the phases of construction and the implementation of each used BMP.

STRUCTURAL and NONSTRUCTURAL BMPs that may be potentially used on the project for erosion and sediment control; practices may include, but are not limited to:

Structural BMPs and Application	Narrative	BMP as Designed	In use on site	FIRST CONSTRUCTION ACTIVITIES	DURING CONSTRUCTION	INTERIM/FINAL STABILIZATION
Earth Berm/Stockpile	Placed around toe to contain sediment around stockpile	X			X	
Earth Berm/Toe of fill	Placed prior to earthwork within specified distance of toe to capture sediment and protect undisturbed areas	X		X	X	
Earthberm/Diversion	Placed to divert drainage and subdivide runoff volume from less than 10 acre sub basins. Temp feature to be removed upon final stabilization	X		X	X	
*Rock Check Dams/Ditch	Velocity checks in ditches placed immediately after ditch grading	X		X	X	
Silt Fence/Sediment Control	Placed on contour to contain construction runoff	X		X	X	
Silt Fence/Protection of Vegetation	Placed to protect undisturbed area and delineate boundary of protected area	X		X	X	
Erosion Logs, Silt Berms or Silt Dikes/Ditch Checks	Erosion Control checks in ditches placed immediately after ditch grading to reduce flow velocity of runoff in ditch	X		X	X	X
Erosion Logs/ Existing Inlet	Placed prior to disturbance at existing inlets where disturbance maybe occurring to cause sediment laden water to enter pipe	X		X	X	
Erosion Logs/culvert inlet or outlet	Placed on culvert to filter or prevent sediment from entering pipe. If disturbance occurs above pipe then erosion logs are placed above pipe	X		X	X	X
Erosion Logs/Sediment Control	Placed to protect undisturbed area and delineate boundary of protected area	X		X	X	
Storm Drain Inlet Protection/Sediment Control	Placed to protect storm drain inlets to filter or prevent sediment from entering drainage system.	X		X	X	X
Temporary Sediment Trap/Basin	Contain and filter sediment laden water from < 5 acre sub basins within construction disturbance	X		X	X	
Permanent Sediment Trap/Basin	Utilized during construction to act as temporary sediment containment. Outlet structure shall be modified for construction runoff	X		X	X	
Embankment Protection or Temp Slope Drain	Placed as a conduit or chute to drain runoff down slope and prevent erosion of slope	X			X	X
Outlet Protection	Material placed as energy dissipation device to prevent erosion at outlet structure	X			X	X
Concrete Washouts/Construction Control	Construction waste management of concrete washout material	X			X	
Vehicle tracking Pad/ Construction Control	Placed to prevent tracking of sediment from disturbance to offsite surface	X		X	X	
Sweeping/Construction or Source Control	Utilized to remove sediment on pavement surface and to prevent sediment from entering drainage system					
Dewatering/ Construction Control	Sediment control to remove or filter sediment from construction dewatering	X				
Temporary Stream Crossing/ Construction Control	Constructed over stream or drainage to prevent discharge of pollutants from construction equipment into stream.	X				

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Unit Information			Unit Leader Initials					Detailer: SLZ	Numbers					
<div><div><div>Stolfus</div><div>associates</div></div><div>5690 DTC BOULEVARD, SUITE 101W GREENWOOD VILLAGE, CO 80111 PHONE: 303-221-2330 FAX: 303-221-2331 WWW.STOLFUSANDASSOCIATES.COM</div></div>								Sheet Subset: SWMP	Subset Sheets:	1 of 3	Sheet Number 17			
<div><div><div><div><div></div><div></div></div><div>DOT</div><div>DEPARTMENT OF TRANSPORTATION</div></div><div>2402 South Main Lamar, CO 81052 Phone: 719-336-3228 FAX: 719-336-4101</div></div><div>Region 2PAW</div></div>														



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Clean water diversion	Placed to divert clean surface or ground water from mixing with construction runoff or activity	x					
Other							
Surface Roughening/Grading Techniques	Interim and temp stabilization of disturbance and to minimize wind and erosion	X			X		X
Seeding Permanent/Final Stabilization	Reduce runoff and control erosion on disturbed areas	X			X		X
Seeding Temporary	Over wintering of disturbance or used to control erosion for areas scheduled for future construction	X			X		
Mulch/Mulch Tackifier/Temp or Final Stabilization	Placed as a surface cover for erosion control and or seeding establishment	X			X		X
Soil Retention Blanket /Temp or Final Stabilization	Placed as surface cover for erosion control and seeding establishment	x			x		x
Turf Reinforcement Mat/Final Stabilization	Placed in channels or on slopes for erosion control, channel liner and seeding establishment						
Soil Binder/Temp Stabilization	Placed as surface treatment to provide temp erosion control	X			X		x
Spray on mulch blanket/Temp or Final Stabilization	Placed cover on slopes to control erosion and seeding establishment	X			X		X
Vegetative Buffer Strips	Filter sediment laden runoff from disturbance area	X		X	X		X
Protection Of Trees/Protected Resources -Fence Plastic	Placed prior to construction to protect existing vegetation to remain	x		X	X		
Preservation Of Mature Vegetation/Work access and grading plans	Used to protect existing stable cover and minimize impact to vegetation	X		X	X		X

\*Check dams may be rock, erosion logs, silt dike, silt berm, etc. as indicated in the narratives and SWMP site map. Erosion control devices are used to limit the amount of soil loss on site. Sediment control devices are designed to capture sediment on the project site. Construction control are BMPs related to construction access and staging. BMP locations are indicated on the SWMP site map. BMP details and narratives not covered by the SWMP or Standard Plan M-208-1 shall be added to the SWMP notebook by the ECS.

D. OFFSITE DRAINAGE (RUN ON WATER)

1. Describe and record BMPs on the SWMP site map that has been implemented to address off site run-on water in accordance with subsection 208.03.

E. VEHICLE TRACKING PAD

1. BMPs shall be implemented in accordance with subsection 208.04.

F. PERIMETER CONTROL

1. Perimeter control shall be established as the first item on the SWMP to prevent the potential for pollutants leaving the construction site boundaries, entering the stormwater drainage system, or discharging to state waters.  
2. Perimeter control may consist of vegetation buffers, berms, silt fence, erosion logs, existing landforms, or other BMPs as approved.  
3. Perimeter control shall be in accordance with subsection 208.04.

5. DURING CONSTRUCTION

RESPONSIBILITIES OF THE SWMP ADMINISTRATOR/EROSION CONTROL SUPERVISOR DURING CONSTRUCTION  
The SWMP should be considered a "living document" that is continuously reviewed and modified. During construction, the following items shall be added, updated, or amended as needed by the SWMP Administrator/Erosion Control Supervisor (ECS) in accordance with Section 208.

During construction, indicate how items that have not been addressed during design are being handled in construction. If items are covered in the template or other sections of the SWMP notebook indicate below what section the discussion takes place.

- A. STOCKPILE MANAGEMENT - shall be done in accordance with subsection 101.95 and 208.07
- B. CONCRETE WASHOUT - Concrete wash out water or waste from field laboratories and paving equipment shall be contained in accordance with subsection 208.05.
- C. SAW CUTTING - shall be done in accordance with subsection 101.95, 208.04, 208.05
- D. STREET CLEANING - shall be done in accordance with subsection 208.04

6. INSPECTIONS

- A. Inspections shall be in accordance with subsection 208.03 (c).

7. BMP MAINTENANCE

- A. Maintenance shall be in accordance with subsection 208.04 (f).

8. RECORD KEEPING

- A. Records shall be kept in accordance with subsection 208.03 (c).

9. INTERIM AND FINAL STABILIZATON

A. SEEDING PLAN

Soil preparation, soil conditioning or topsoil, seeding (native), mulching (weed free) and mulch tackifier will be required for an estimated **xxx** acres of disturbed area within the right-of-way limits which are not surfaced. The following types and rates shall be used:

COMMON NAME	BOTANICAL NAME	LBS. PLS PER ACRE
Blue grama	Bouteloua grailis v. Hachita	2
Western wheatgrass	Pascopyrum smithii v. rosana	6
Sideoats grama	Bouteloua curtispendula v. Vaugh	3
Canada bluegrass	Poa compressa	3
Slender wheatgrass	Elyumus trachycaulus v. primar	3
Switchgrass	Panicum vigatum v. "Dacotah"	4
Mountain brome	Bromus marginatus	3
Rocky mountain penstemon	Penstemon strictus	0.5
Blue flax	Linum lewisii v. appar	0.5
<b>TOTAL</b>		<b>25</b>

- B. SEEDING APPLICATION: Drill seed 0.25 inch to 0.5 inch into the soil. In small areas not accessible to a drill, hand broadcast at double the rate and rake 0.25 inch to 0.5 inch into the soil.

- C. MULCHING APPLICATION: Apply a minimum of 1 ½ tons of certified weed free native hay per acre and in accordance with Section 213, and mechanically crimp it into the soil in combination with an organic mulch tackifier.

- D. SPECIAL REQUIREMENTS: Due to high failure rates, hydromulching and/or hydroseeding will not be allowed

- E. Soil conditioning and fertilizer requirements:

[Minimum requirements for all disturbances to receive seeding (native). Compost is optional within areas above 8000 ft in elevation]

Soil conditioner paid for as Item 212- Soil Conditioning (Acre)		
Biological nutrient organic based fertilizer (lbs/acre)*	Humate (lbs/acre)	Compost (cys/acre) (1/2 inch depth)
600	200	65

\*Biological nutrient shall not exceed 8-8-8 (N-P-K). Humate based material shall be in accordance to Section 212 and compost shall be in accordance to Special Provision 212. Refer to Project Special- Topsoil for additional topsoil amendments.[Include topsoil project special provision] Placing compost when required to amend embankment and as soil conditioner may be combined as a single application.

- F. BLANKET APPLICATION: On slopes and ditches requiring a blanket, the blanket shall be placed in lieu of mulch and mulch tackifier. See SWMP for blanket locations.

- G. RESEEDING OPERATIONS/CORRECTIVE STABILIZATION  
Prior to final acceptance.

- [Select item(s) that apply, delete references to all others]  
1. Seeded areas shall be reviewed during the 14 day inspections by the Erosion Control Supervisor for bare soils caused by surface or wind erosion. Bare areas caused by surface or gully erosion, blown away mulch, etc. shall be regraded, seeded, mulched and have mulch tackifier (or blanket) applied as necessary, at no additional cost to the project.  
2. Areas where seed has not germinated after one season shall be evaluated by the Engineer and CDOT Landscape Architect. Areas that have not germinated shall have seed, mulch and mulch tackifier (or blanket) reapplied. Work shall be paid for by the appropriate bid item.  
3. The Contractor shall maintain seeding/mulch/tackifier, mow to control weeds or apply herbicide to control weeds in the seeded areas until Final Acceptance.

10. PRIOR TO FINAL ACCEPTANCE

- A. Final Acceptance shall be in accordance with subsection 208.10.

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Unit Information

Unit Leader Initials



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Comments

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Region 2

PAW

As Constructed

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STORMWATER MANAGEMENT PLAN

Designer:

SLZ

Detailer:

SLZ

Sheet Subset:

SWMP

Structure  
Numbers

Subset Sheets:

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11. TABULATION OF STORMWATER QUANTITIES

Pay Item	Description	Pay Unit	*Quantity
203	Backhoe	Hour	
203	Combination Loader	Hour	
203	Dozing	Hour	
207	Topsoil	CY	
207	Stockpile Topsoil	CY	
208	Sweeping (Sediment Removal)	Hour	
208	Removal of Trash	Hour	
208	Silt Dike	LF	
208	Erosion Log (12 Inch)	LF	
208	Erosion Log (20 Inch)	LF	
208	Erosion Bales (Weed Free)	Each	
208	Sand Bag	Each	
208	Silt Fence	LF	
208	Silt Fence (Reinforced)	LF	
208	Sediment Basin	Each	
208	Sediment Trap	Each	
208	Check Dam	Each	
208	Concrete Washout Structure	Each	
208	Storm Drain Inlet Protection (Type_)	LF	
208	Rigid Inlet Protection Device	Each	
208	Temporary Slope Drain	LF	
208	Vehicle Tracking Pad	Each	
208	Removal and Disposal of Sediment (Equipment)	Hour	
208	Removal and Disposal of Sediment (Labor)	Hour	
208	Erosion Control Supervisor	Hour	
208	Erosion Control Supervisor	Day	
208	Temporary Berm	LF	
208	Gravel Bag	LF	
208	Silt Berm	LF	
212	Seeding (Native)	Acre	
212	Seeding (Temporary)	Acre	
212	Soil Conditioning	Acre	
213	Mulching (Weed Free Hay)	Acre	
213	Mulching (Weed Free)	Acre	
213	Mulching (Weed Free Straw)	Acre	
213	Mulch Tackifier	LB	
213	Soil Binder	Acre	
213	Spray-on Mulch Blanket	Acre	
216	Soil Retention Blanket (Straw/Coconut) (Biodegradable Class 1)	SY	
216	Soil Retention Blanket (Straw/Coconut) (Photodegradable Class 1)	SY	
216	Soil Retention Blanket (Excelsior) (Biodegradable Class 1)	SY	
216	Soil Retention Blanket (Excelsior) (Photodegradable Class 1)	SY	
216	Soil Retention Blanket (Coconut) (Biodegradable Class 2)	SY	
216	Soil Retention Blanket (Coconut) (Photodegradable Class 2)	SY	
216	Turf Reinforcement Mat (Class_1)	SY	
216	Turf Reinforcement Mat (Class_2)	SY	
216	Turf Reinforcement Mat (Class_3)	SY	
217	Herbicide Treatment	Hour	
217	Herbicide Treatment	SY	
700	Erosion Control	FA	

\*It is anticipated that additional BMPs and BMP quantities not shown on the SWMP Site Maps shall be required on the project for unforeseen conditions and replacement of items that are beyond their useful service life, see subsection 208.03 and 208.04 (e). Quantities for all BMPs shown above are estimated, and have been increased for unforeseen Project conditions.

- A. BMP sediment removal and disposal shall be paid for as: 208 Removal and Disposal of Sediment (Equipment) and 208 Removal and Disposal of Sediment (Labor). All other BMP maintenance shall be included in the cost of the BMP Device.
- B. It is estimated that **XXX** hours of labor, blading (**X** horsepower), dozing (**X** horsepower), combination loader (**X** horsepower) and/or backhoe (**X** horsepower) may be required for miscellaneous erosion control work as directed by the Engineer. Work shall be paid for as: **[Select appropriate pay item, delete references to others]** 203 Labor, 203 Blading, 203 Dozing, 203 Combination Loader or 203 Backhoe.
- C. Maintenance of seeded areas shall be paid for as: **[FA Erosion Control, 212 Seeding (native),213 Mulching, 216 Soil Retention Covering, 214 Landscape Maintenance Lump Sum, 203 Labor Hours, or included in the price of the work]**

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