

CONSTRUCTION PLANS FOR COMMODORE 5 TUNNEL REHABILITATION SEGMENTS 5B AND 6

MINERAL COUNTY, COLORADO

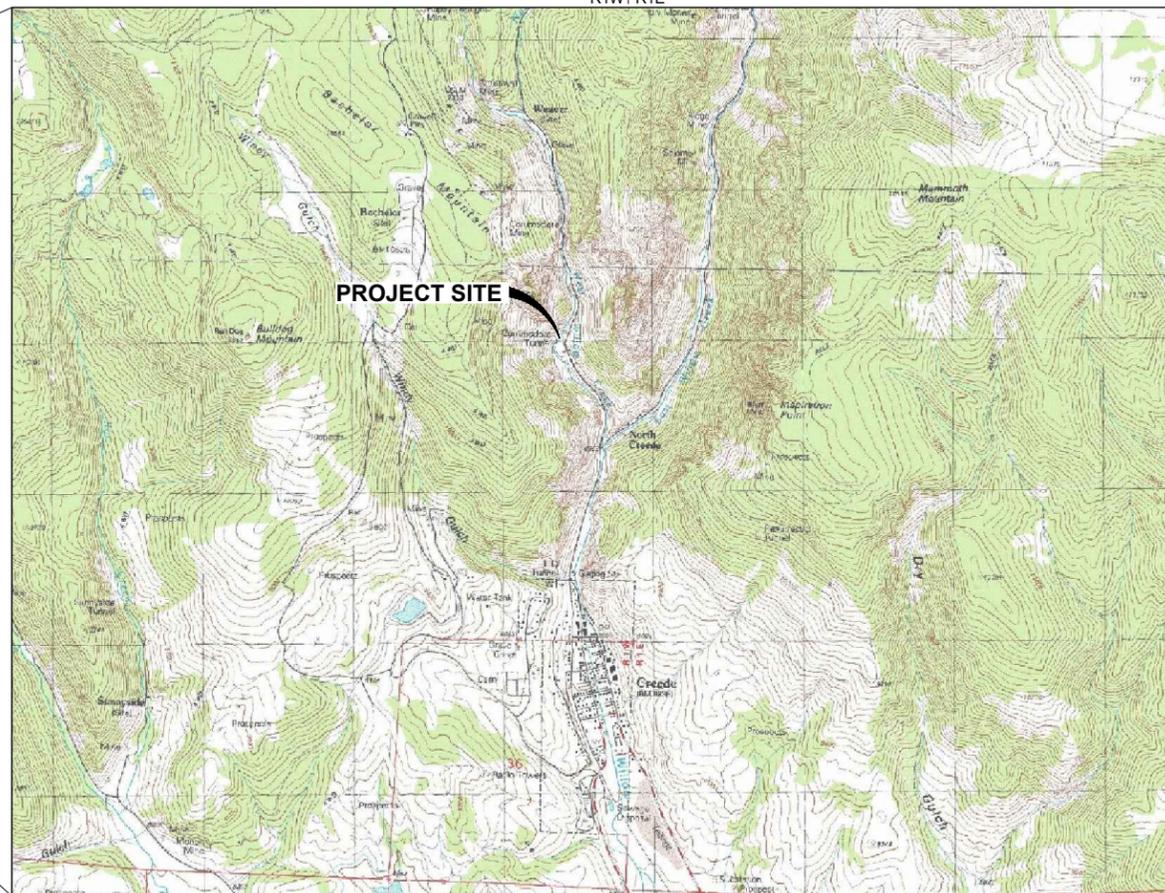
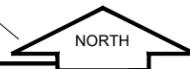
PREPARED FOR:

WESTON SOLUTIONS, INC.
1435 GARRISON ST, STE 100
LAKEWOOD, COLORADO 80215

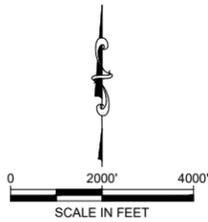


STATE OF COLORADO
PROJECT LOCATION MAP

SCALE: NONE



PROJECT SITE



CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

DEERE & AULT CONSULTANTS, INC. ASSUMES NO RESPONSIBILITY FOR EXISTING UTILITY LOCATIONS (HORIZONTAL AND VERTICAL). THE EXISTING UTILITIES SHOWN ON THIS DRAWING HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. IT IS, HOWEVER, THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES.

ISSUED FOR
CONSTRUCTION

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- 28 GENERAL DETAILS
- 29 NO NAME - YO2 WINZE COVER
- 30 STEEL SET DETAILS
- 31 SHOTCRETE SUPPORT

NOTES:

DEERE AND AULT CONSULTANTS, INC. IS NOT A GUARANTOR OF THE PERFORMANCE OF THE WORK.

DEERE AND AULT CONSULTANTS, INC. IS NOT RESPONSIBLE FOR SAFETY, IN, ON, OR ABOUT THE PROJECT SITE, NOR FOR COMPLIANCE BY THE APPROPRIATE PARTY WITH ANY REGULATIONS RELATED THERETO.

DEERE AND AULT CONSULTANTS, INC. EXERCISES NO CONTROL OVER THE SAFETY OR ADEQUACY OF ANY EQUIPMENT, BUILDING COMPONENTS, FORMS, OR OTHER WORK AIDS USED IN OR ABOUT THE PROJECT, OR OVER THE SUPERINTENDING OF THE SAME.

WRITTEN SCALES ON PLAN ARE FOR FULL SIZED 22" x 34" PLANS AND DO NOT APPLY TO REDUCED PLAN SETS.

NOTE:

TOWNSHIP & RANGE BASED ON 6TH PRINCIPAL MERIDIAN

REVISIONS				COMMODORE 5 TUNNEL REHABILITATION	
NO.	DESCRIPTION	DATE	BY	COVER & VICINITY MAP	
1	70%	3/8/19	CMG	DEERE & AULT <small>CONSULTANTS, INC.</small> 600 S. AIRPORT RD., BLDG. A, SUITE 205 LONGMONT, CO 80503 TEL. 303.651.1488 FAX 303.651.1469	
2	90% FOR HQ REVIEW	5/31/19	CMG		
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG		
				DESIGNED BY: <u>CMG</u>	APPROVED BY: <u>CMG</u>
				DRAWN BY: <u>HOG</u>	DATE: <u> </u>
				CHECKED BY: <u>EMB</u>	SCALE: AS NOTED
				JOB NO. <u>0628.002.00</u>	SHEET: <u>1 of 31</u>

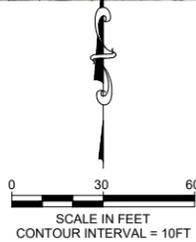


Friday, August 2, 2019 11:04:46 AM DRAWING: U:\0628_weston\002_commodore_5\CAD\Working\Commodore5_Cover_Segment_5B_and_6.DWG



NOTES:

1. COMMODORE 5 INVERT (TOP OF RAIL) ELEVATION BY ITC RESOURCES 5/9/2019.
2. NELSON TUNNEL INVERT ELEVATION BASED ON TOP OF FLUME SURVEYED BY ITC RESOURCES 5/9/2019.
3. SOURCE OF AERIAL PHOTO: GOOGLE EARTH PRO, IMAGERY DATE 10/13/15
4. TOPOGRAPHICAL SURVEY MAPPED BY ENVIRONMENTAL RESEARCH, INC. LINDEN, VIRGINIA. DATE OF PHOTOGRAPHY: 5-17-18.
5. TUNNEL SURVEY POINTS PROVIDED BY ITC RESOURCES, DATED 3-13-19.
6. HORIZONTAL DATUM IS COLORADO STATE PLANE SOUTH, MODIFIED TO GROUND BY A SCALE FACTOR OF 1.000487327.



**ISSUED FOR
CONSTRUCTION**



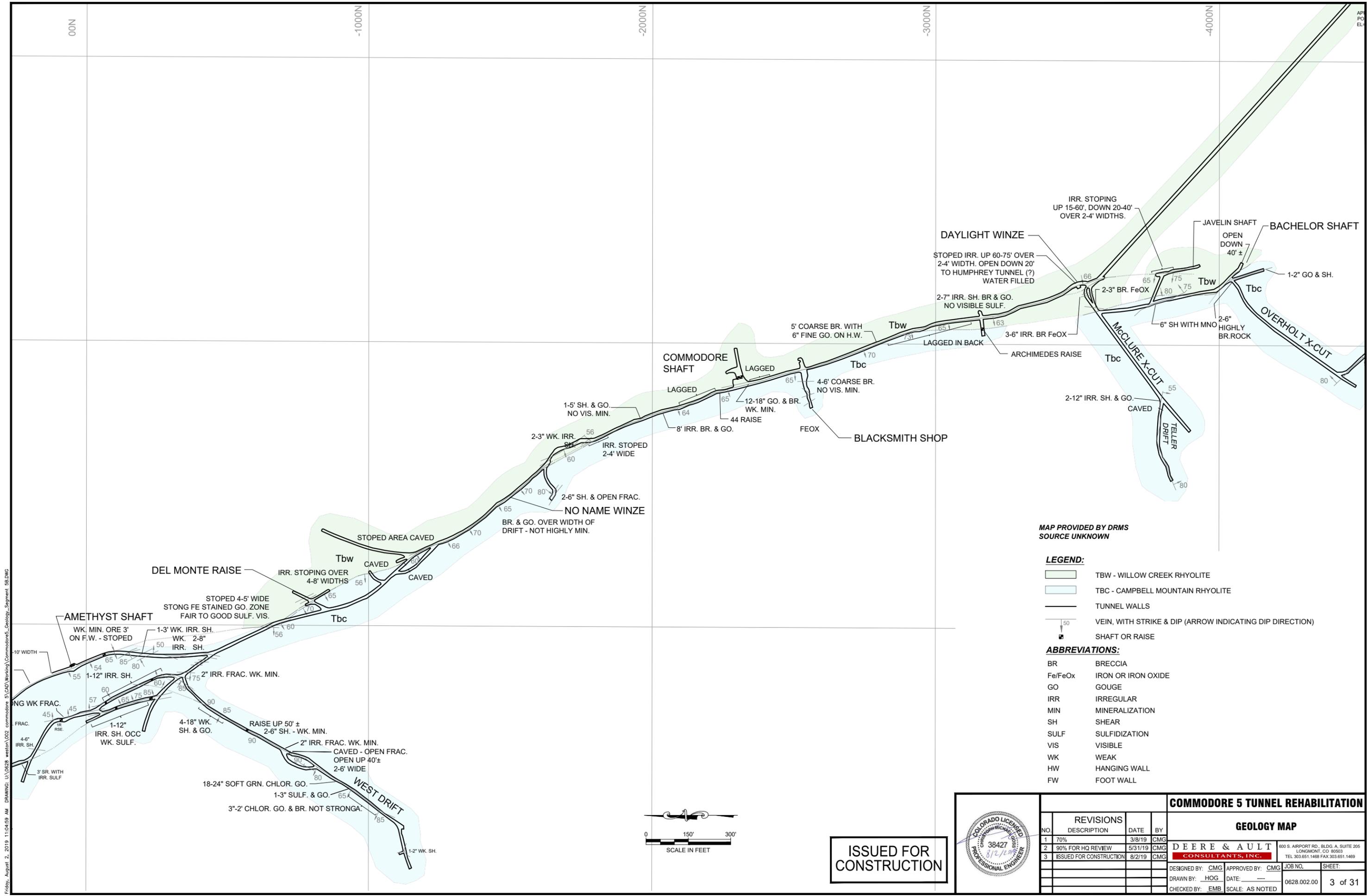
REVISIONS			
NO.	DESCRIPTION	DATE	BY
1	70%	3/8/19	CMG
2	90% FOR HQ REVIEW	5/31/19	CMG
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG

COMMODORE 5 TUNNEL REHABILITATION
PORTAL AREA, EXISTING CONDITIONS AND SURVEY CONTROL

DEERE & AULT CONSULTANTS, INC. 600 S. AIRPORT RD., BLDG. A, SUITE 205
LONGMONT, CO 80503
TEL. 303.651.1468 FAX 303.651.1469

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DRAWN BY: HOG DATE: _____ 0628.002.00 2 of 31
CHECKED BY: EMB SCALE: AS NOTED

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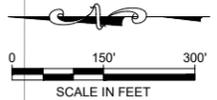
MAP PROVIDED BY DRMS
SOURCE UNKNOWN

LEGEND:

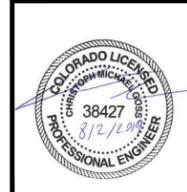
- TBW - WILLOW CREEK RHYOLITE
- TBC - CAMPBELL MOUNTAIN RHYOLITE
- TUNNEL WALLS
- VEIN, WITH STRIKE & DIP (ARROW INDICATING DIP DIRECTION)
- SHAFT OR RAISE

ABBREVIATIONS:

- BR BRECCIA
- Fe/FeOx IRON OR IRON OXIDE
- GO GOUGE
- IRR IRREGULAR
- MIN MINERALIZATION
- SH SHEAR
- SULF SULFIDIZATION
- VIS VISIBLE
- WK WEAK
- HW HANGING WALL
- FW FOOT WALL



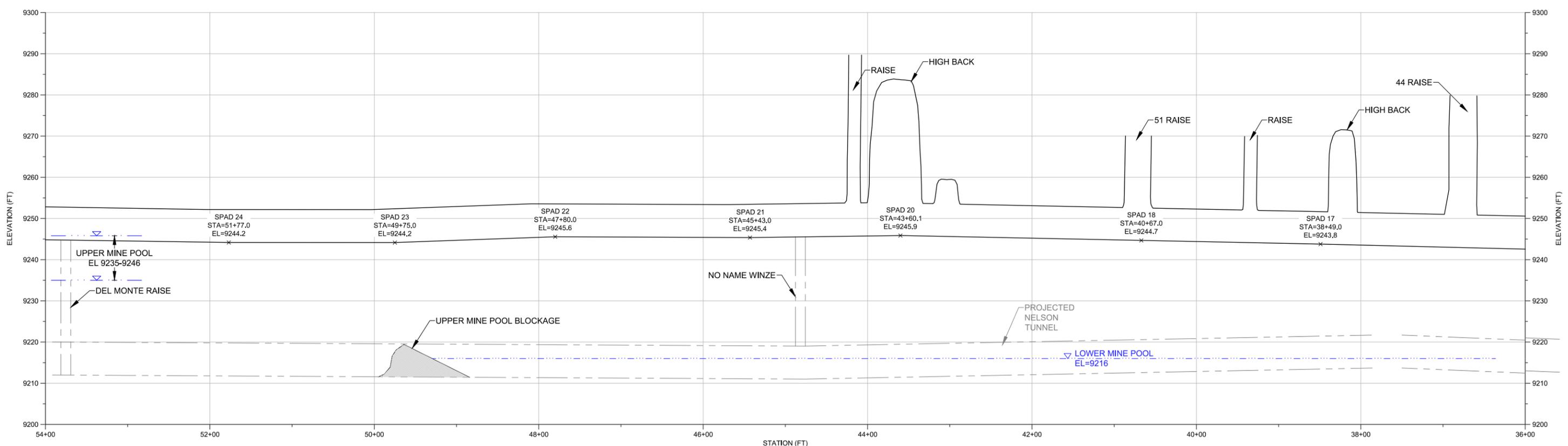
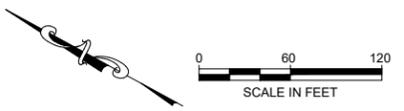
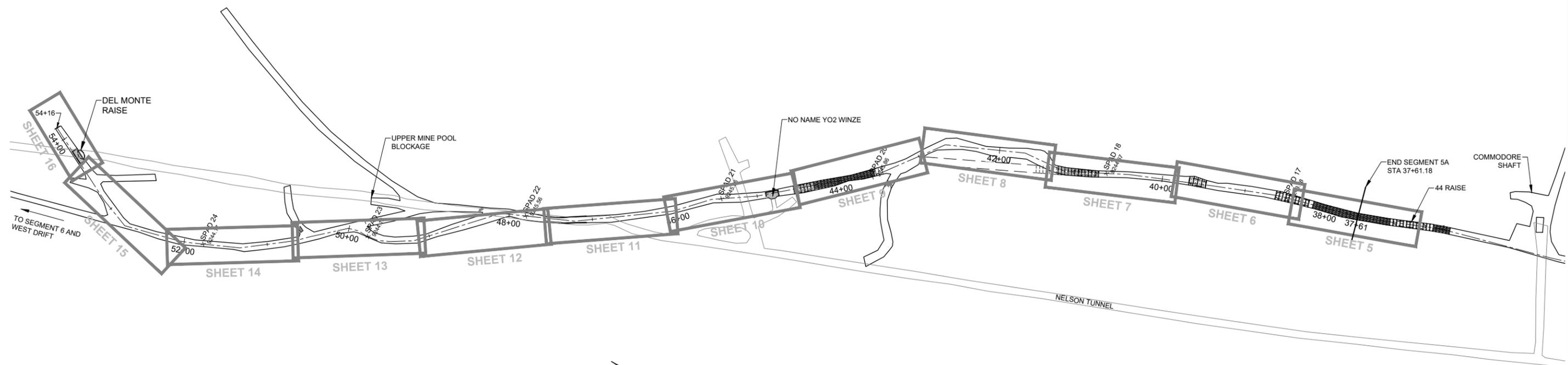
ISSUED FOR
CONSTRUCTION



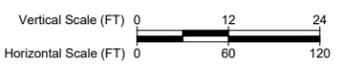
REVISIONS			
NO.	DESCRIPTION	DATE	BY
1	70%	3/8/19	CMG
2	90% FOR HQ REVIEW	5/31/19	CMG
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG

COMMODORE 5 TUNNEL REHABILITATION			
GEOLOGY MAP			
DESIGNED BY: CMG		APPROVED BY: CMG	
DRAWN BY: HOG		DATE: ---	
CHECKED BY: EMB		SCALE: AS NOTED	
DEERE & AULT		CONSULTANTS, INC.	
600 S. AIRPORT RD., BLDG. A, SUITE 205 LONGMONT, CO 80503 TEL. 303.651.1488 FAX 303.651.1469			
JOB NO. 0628.002.00		SHEET: 3 of 31	

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COMMODORE SEGMENT 5B PROFILE



- NOTES:**
1. TUNNEL SURVEY POINTS PROVIDED BY ITC RESOURCES, DATED 3-13-19 AND 5/9/2019.
 2. HORIZONTAL DATUM IS COLORADO STATE PLANE SOUTH, MODIFIED TO GROUND BY A SCALE FACTOR OF 1.000487327.
 3. SPAD ELEVATIONS: DAVIS ENGINEERING 2004 - STATIONS ARE APPROXIMATE.
 4. SCALE LOOSE BLOCKS AS NEEDED FOR CONTRACTOR SAFETY.
 5. NO BLASTING FOR ENTIRETY OF WORK.

ISSUED FOR CONSTRUCTION



REVISIONS			
NO.	DESCRIPTION	DATE	BY
1	70%	3/8/19	CMG
2	90% FOR HO REVIEW	5/31/19	CMG
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG

COMMODORE 5 TUNNEL REHABILITATION

SEGMENT 5B PLAN & PROFILE

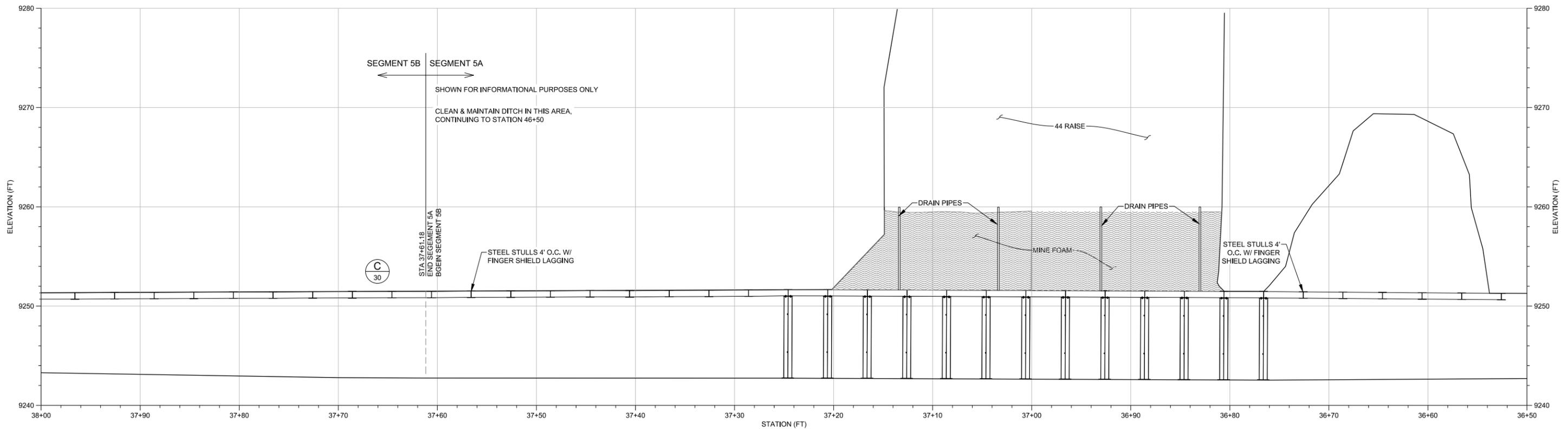
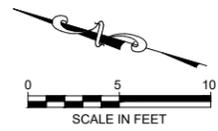
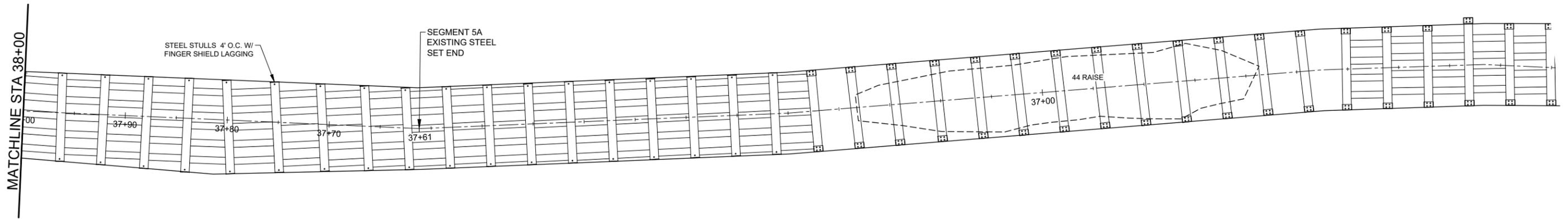
DESIGNED BY: CMG APPROVED BY: CMG JOB NO. 0628.002.00 SHEET: 4 of 31

DRAWN BY: HOG DATE: ---

CHECKED BY: EMB SCALE: AS NOTED

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 600 S. AIRPORT RD., BLDG. A, SUITE 205
 LONGMONT, CO 80503
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Friday, August 2, 2019 11:05:09 AM DRAWING: U:\0628\Commodore 5\CAD\Working\Commodore5_Plan_Segment 5B.DWG



DETAIL LETTER

C 30

SHEET WHERE DETAIL IS LOCATED

ISSUED FOR CONSTRUCTION



REVISIONS			
NO.	DESCRIPTION	DATE	BY
1	70%	3/8/19	CMG
2	90% FOR HQ REVIEW	5/31/19	CMG
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG

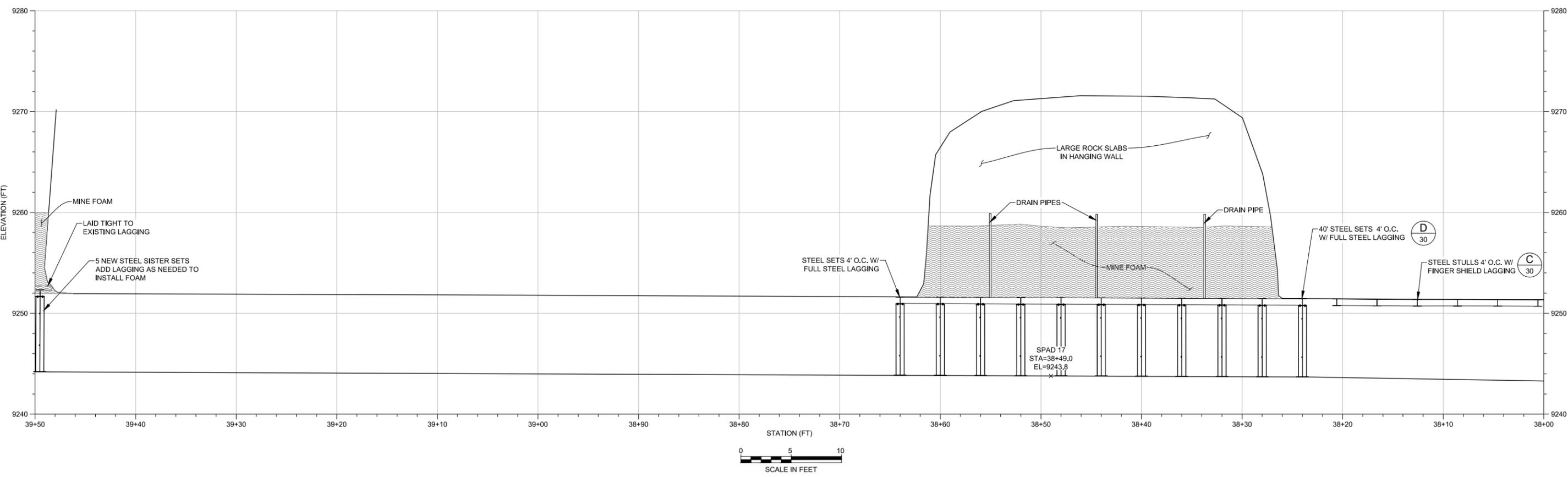
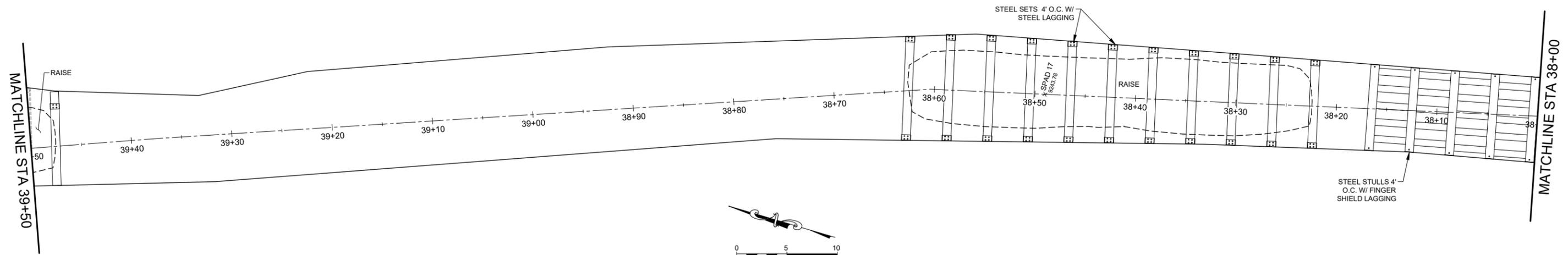
COMMODORE 5 TUNNEL REHABILITATION

SEGMENT 5B STA 36+50 TO 38+00

DESIGNED BY: CMG APPROVED BY: CMG JOB NO. SHEET:
 DRAWN BY: HOG DATE: 0628.002.00 5 of 31
 CHECKED BY: EMB SCALE: AS NOTED

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 600 S. AIRPORT RD., BLDG. A, SUITE 205
 LONGMONT, CO 80503
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NOTE:
 1. SIGNIFICANT TIMBER AND DEBRIS REMOVAL IN THE AREA APPROXIMATELY STATION 38+20 TO 38+70.

ISSUED FOR CONSTRUCTION



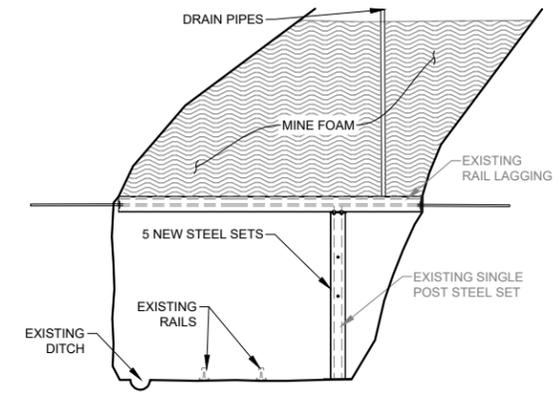
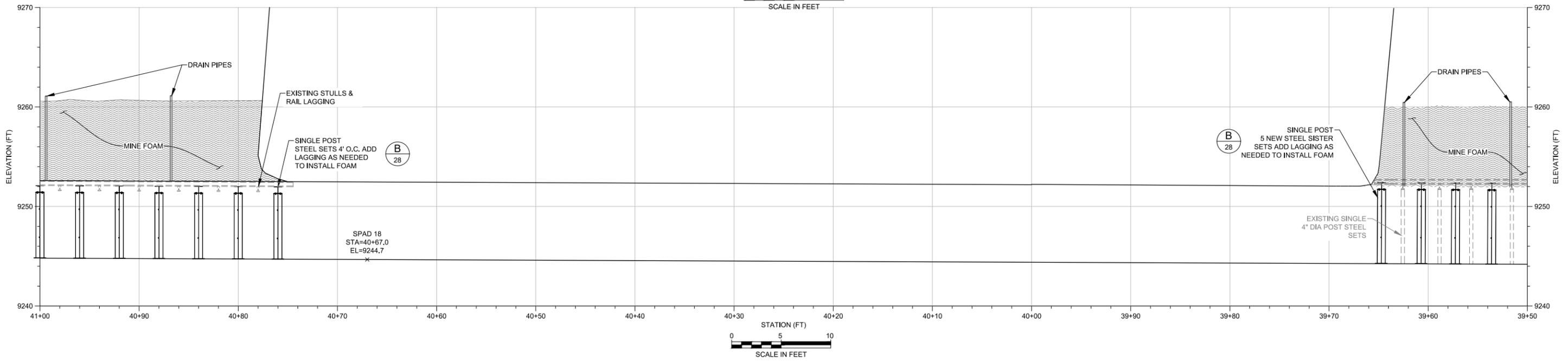
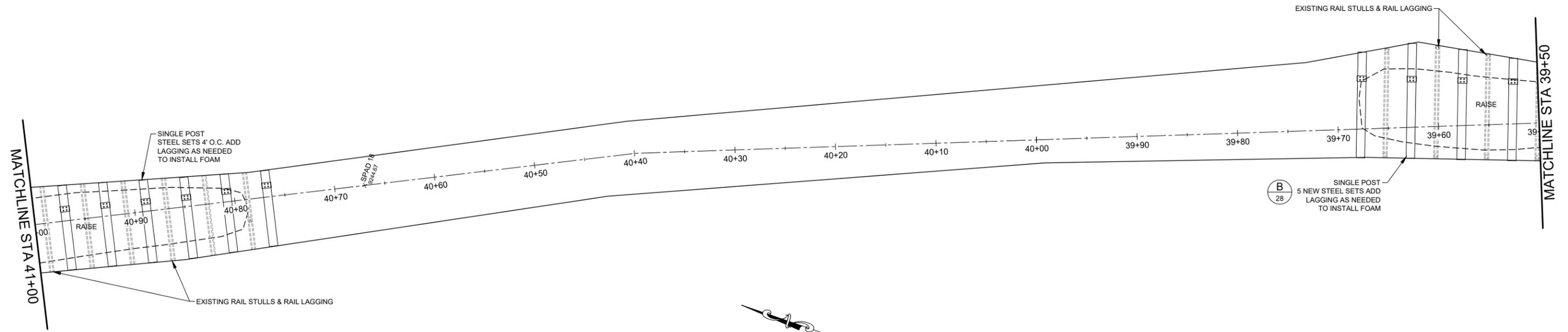
REVISIONS			
NO.	DESCRIPTION	DATE	BY
1	70%	3/8/19	CMG
2	90% FOR HQ REVIEW	5/31/19	CMG
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG

COMMODORE 5 TUNNEL REHABILITATION
SEGMENT 5B STA 38+00 TO 39+50

DEERE & AULT CONSULTANTS, INC.
 600 S. AIRPORT RD., BLDG. A, SUITE 205
 LONGMONT, CO 80503
 TEL. 303.651.1468 FAX 303.651.1469

DESIGNED BY: CMG APPROVED BY: CMG JOB NO. 0628.002.00 SHEET: 6 of 31
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 CHECKED BY: EMB SCALE: AS NOTED

Friday, August 2, 2019 11:05:20 AM DRAWING: U:\0628_weston\002_commodore 5\002_Working_Commodore5_Plan_Segment 5B.DWG



CROSS SECTION LOOKING UP STATION @ STA 39+50

NOTE:
REMOVE EXISTING DRIP PAN IN BACK WHERE PRESENT.

ISSUED FOR CONSTRUCTION



REVISIONS			
NO.	DESCRIPTION	DATE	BY
1	70%	3/8/19	CMG
2	90% FOR HQ REVIEW	5/31/19	CMG
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG

COMMODORE 5 TUNNEL REHABILITATION

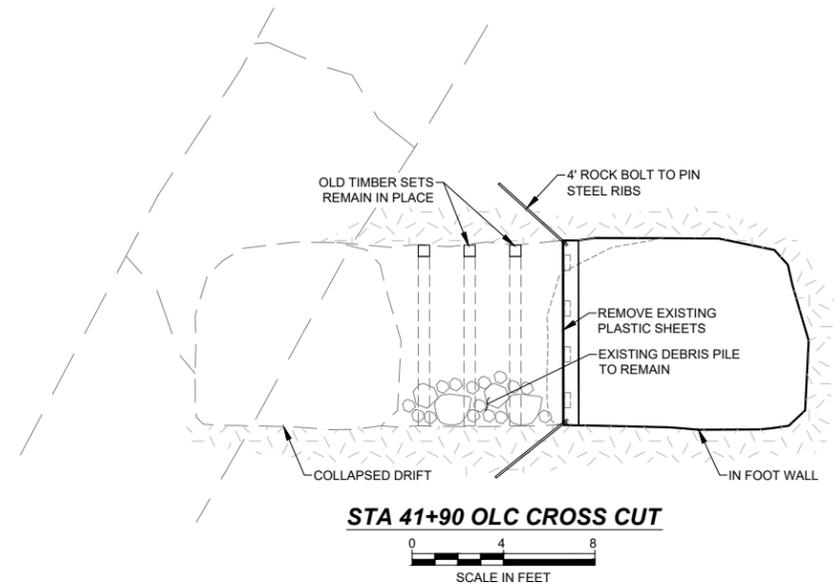
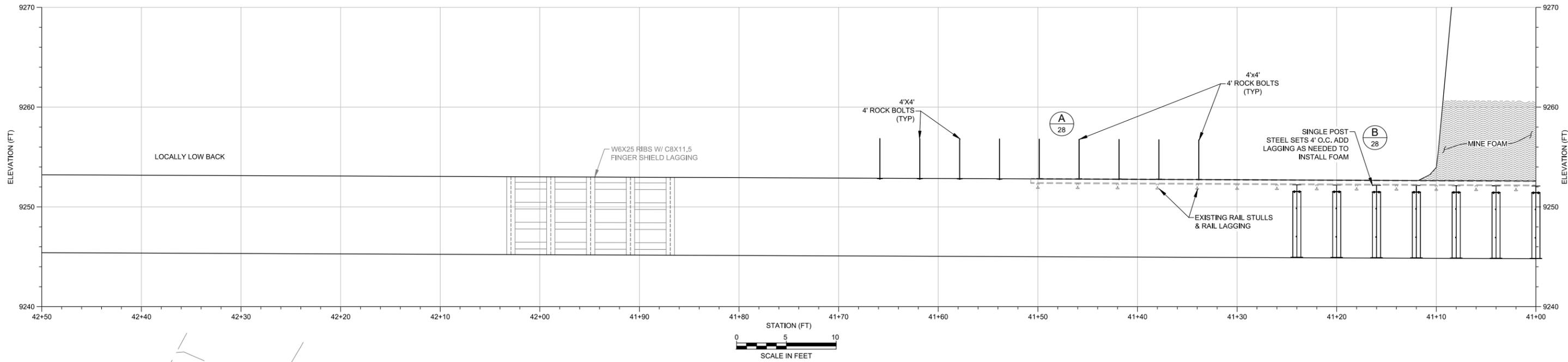
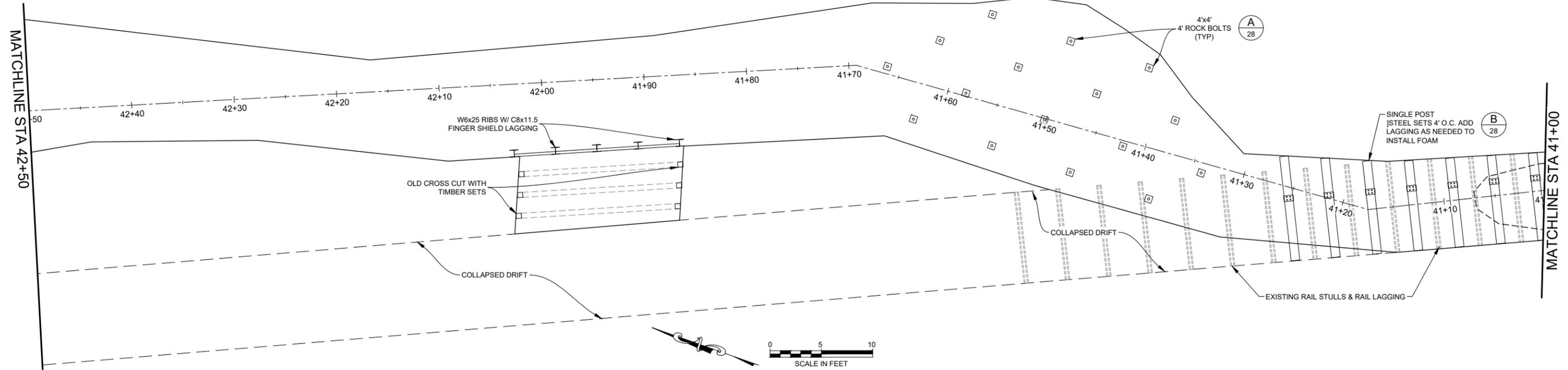
SEGMENT 5B STA 39+50 TO 41+00

DEERE & AULT CONSULTANTS, INC.

DESIGNED BY: CMG APPROVED BY: CMG JOB NO. SHEET:
 DRAWN BY: HOG DATE: 0628.002.00 7 of 31
 CHECKED BY: EMB SCALE: AS NOTED

600 S. AIRPORT RD., BLDG. A, SUITE 205
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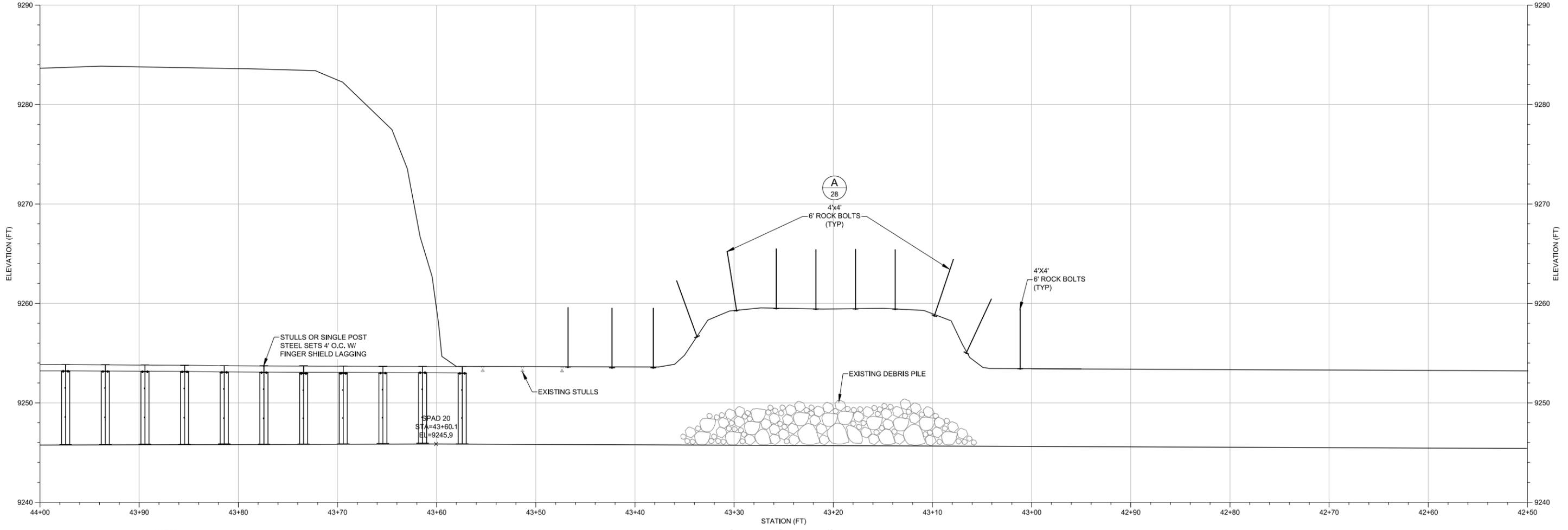
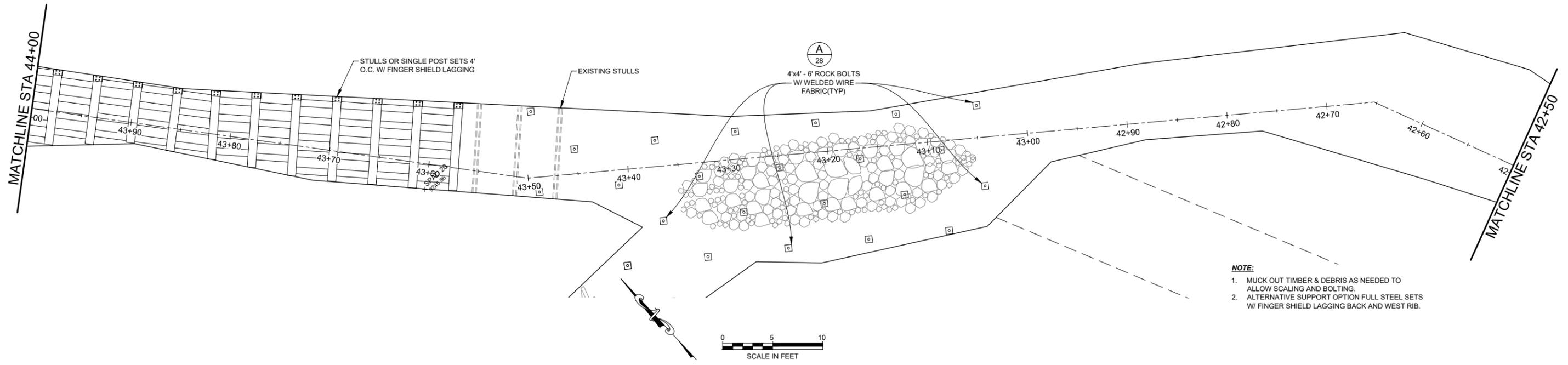


ISSUED FOR CONSTRUCTION



REVISIONS				COMMODORE 5 TUNNEL REHABILITATION	
NO.	DESCRIPTION	DATE	BY	SEGMENT 5B STA 41+00 TO 42+50	
1	70%	3/8/19	CMG	DEERE & AULT	
2	90% FOR HQ REVIEW	5/31/19	CMG	CONSULTANTS, INC.	
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG	600 S. AIRPORT RD., BLDG. A, SUITE 205 LONGMONT, CO 80503 TEL. 303.651.1468 FAX 303.651.1469	
DESIGNED BY: CMG			APPROVED BY: CMG	JOB NO.	SHEET:
DRAWN BY: HOG			DATE: ---	0628.002.00	8 of 31
CHECKED BY: EMB			SCALE: AS NOTED		

Friday, August 2, 2019 11:05:39 AM DRAWINGS: U:\0628_weston\002_commodore 5\000\Working\Commodore5_Plan_Segment 5B.DWG



- NOTES:
- MUCK OUT DEBRIS AS NEEDED FOR ACCESS AND WATER FLOW.
 - REMOVE OLD TIMBER LAGGING.

ISSUED FOR CONSTRUCTION



REVISIONS			
NO.	DESCRIPTION	DATE	BY
1	70%	3/8/19	CMG
2	90% FOR HQ REVIEW	5/31/19	CMG
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG

COMMODORE 5 TUNNEL REHABILITATION

SEGMENT 5B STA 42+50 TO 44+00

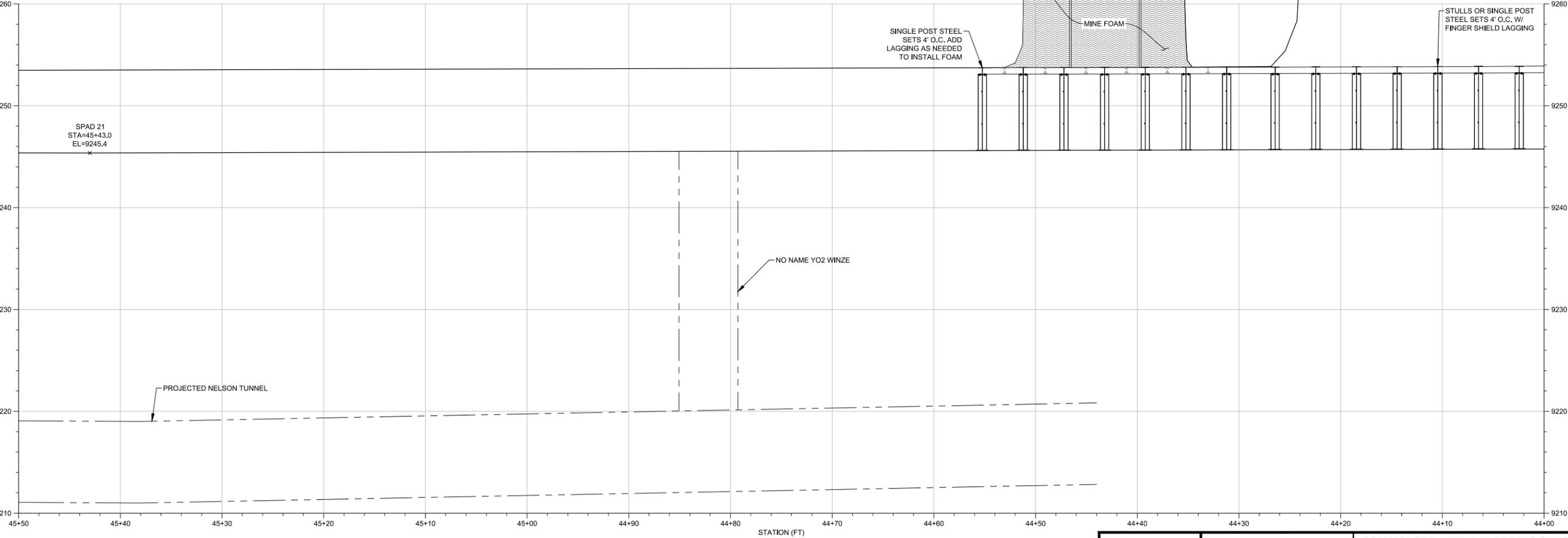
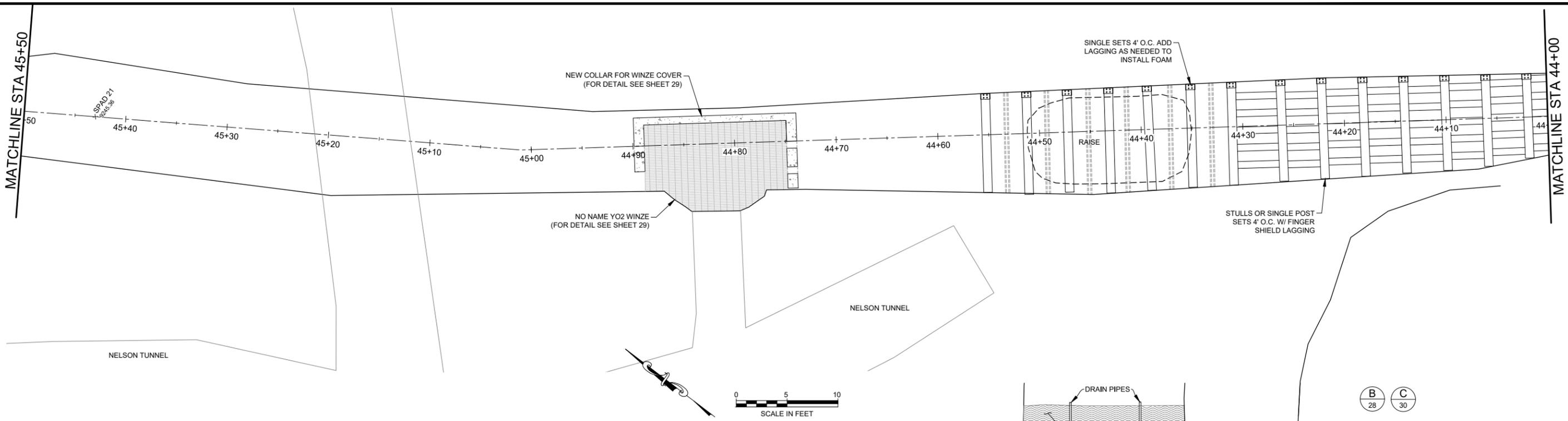
DESIGNED BY: CMG APPROVED BY: CMG JOB NO. SHEET:
 DRAWN BY: HOG DATE: 0628.002.00 9 of 31
 CHECKED BY: EMB SCALE: AS NOTED

DEERE & AULT CONSULTANTS, INC.
 600 S. AIRPORT RD., BLDG. A, SUITE 205
 LONGMONT, CO 80503
 TEL. 303.651.1468 FAX 303.651.1469

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MATCHLINE STA 45+50

MATCHLINE STA 44+00



Friday, August 2, 2019 11:05:45 AM DRAWING: U:\0628_weston\002_commodore 5\CAD\Working\Commodore5_Plan_Segment 5B.DWG

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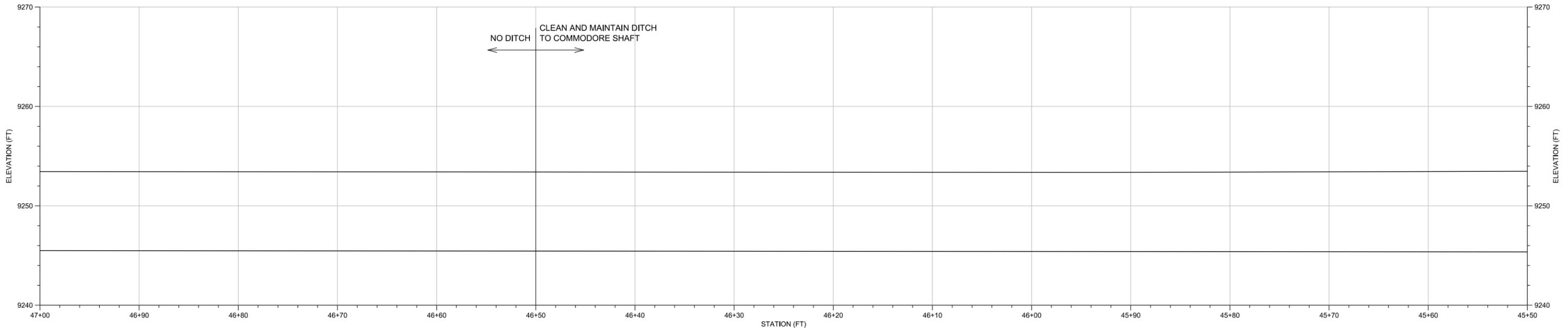
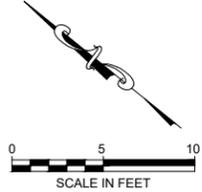
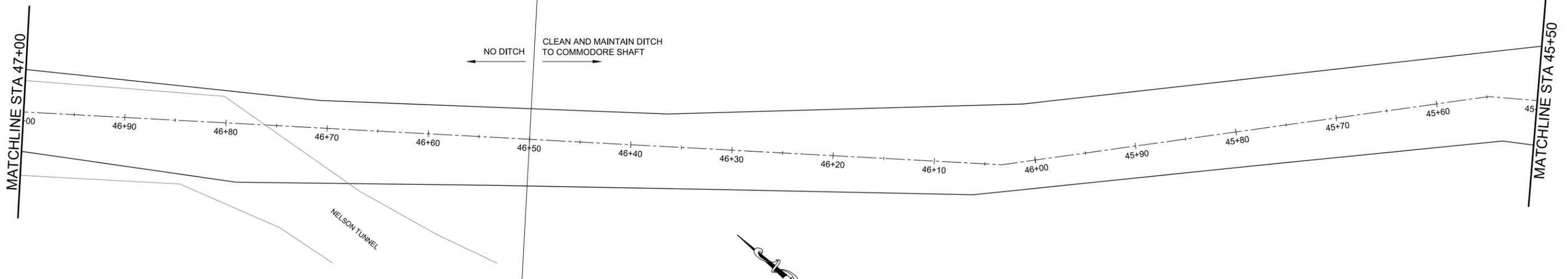
REVISIONS			
NO.	DESCRIPTION	DATE	BY
1	70%	3/8/19	CMG
2	90% FOR HQ REVIEW	5/31/19	CMG
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG

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DRAWN BY: HOG		DATE: ---		0628.002.00	10 of 31
CHECKED BY: EMB		SCALE: AS NOTED			

COMMODORE 5 TUNNEL REHABILITATION

SEGMENT 5B STA 44+500 TO 45+50

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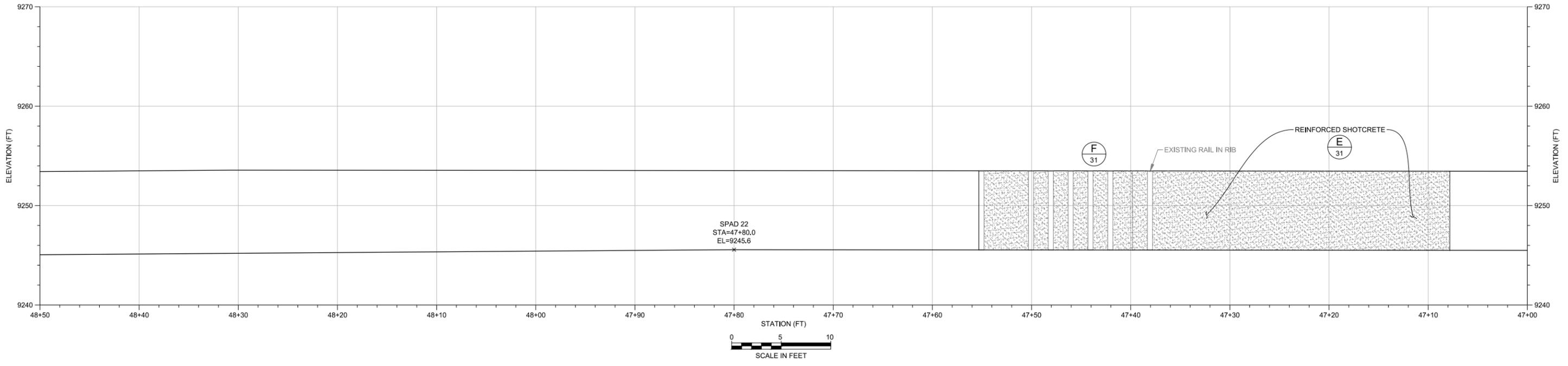
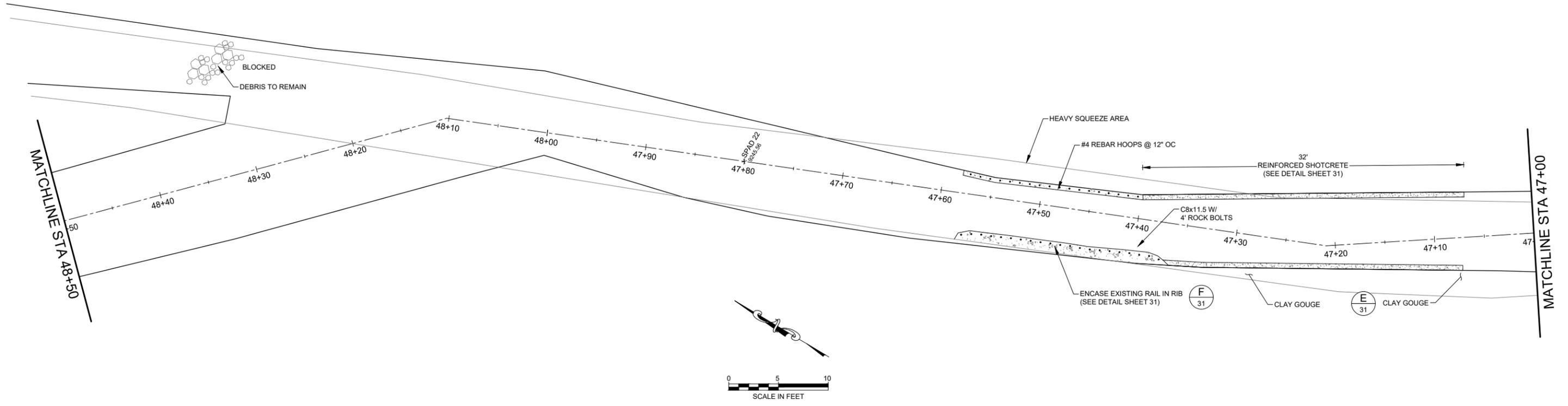


Friday, August 2, 2019 11:05:50 AM DRAWING: U:\0628_weston\002_commodore 5\000\Working\Commodore5_Plan_Segment 5B.DWG

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CONSTRUCTION



REVISIONS				COMMODORE 5 TUNNEL REHABILITATION			
NO.	DESCRIPTION	DATE	BY	SEGMENT 5B STA 45+50 TO 47+00			
1	70%	3/8/19	CMG	DEERE & AULT <small>CONSULTANTS, INC.</small> <small>600 S. AIRPORT RD., BLDG. A, SUITE 205 LONGMONT, CO 80503 TEL. 303.651.1468 FAX 303.651.1469</small>			
2	90% FOR HQ REVIEW	5/31/19	CMG				
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG				
				DESIGNED BY: <u>CMG</u>	APPROVED BY: <u>CMG</u>	JOB NO. <u>0628.002.00</u>	SHEET: <u>11 of 31</u>
				DRAWN BY: <u>HOG</u>	DATE: <u>---</u>		
				CHECKED BY: <u>EMB</u>	SCALE: <u>AS NOTED</u>		



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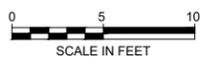
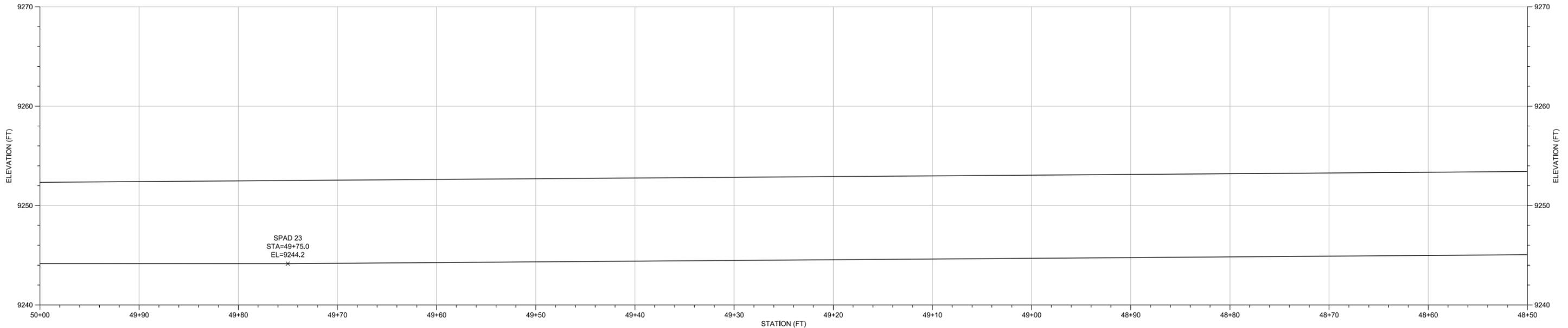
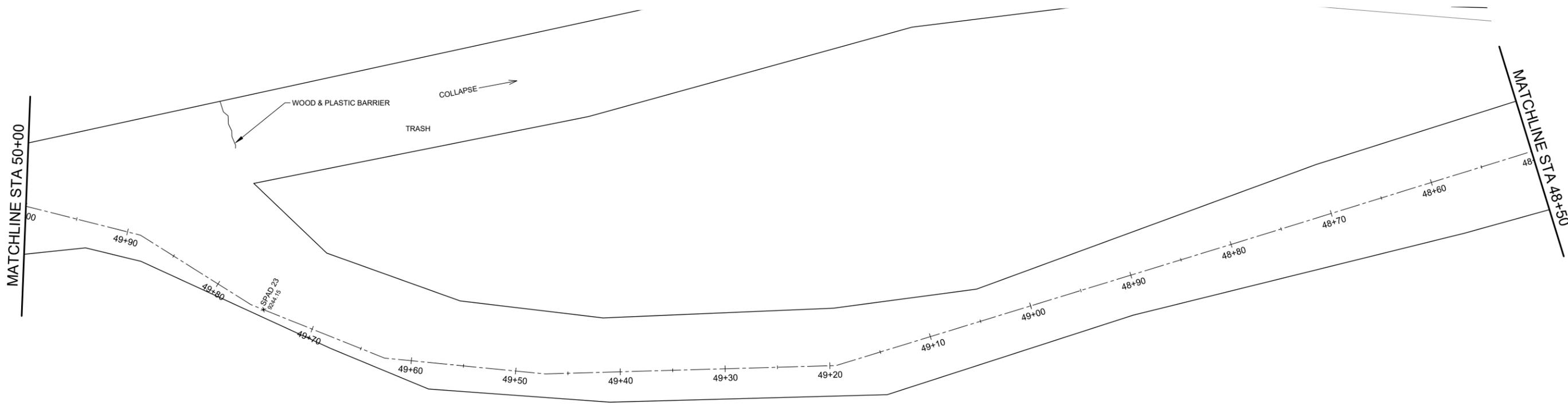


REVISIONS			
NO.	DESCRIPTION	DATE	BY
1	70%	3/8/19	CMG
2	90% FOR HQ REVIEW	5/31/19	CMG
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG

COMMODORE 5 TUNNEL REHABILITATION			
SEGMENT 5B STA 47+00 TO 48+50			
DEERE & AULT		600 S. AIRPORT RD., BLDG. A, SUITE 205 LONGMONT, CO 80503 TEL. 303.651.1468 FAX 303.651.1469	
DESIGNED BY: CMG	APPROVED BY: CMG	JOB NO.	SHEET:
DRAWN BY: HOG	DATE: ---	0628.002.00	12 of 31
CHECKED BY: EMB	SCALE: AS NOTED		

MATCHLINE STA 50+00

MATCHLINE STA 48+50



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ISSUED FOR CONSTRUCTION

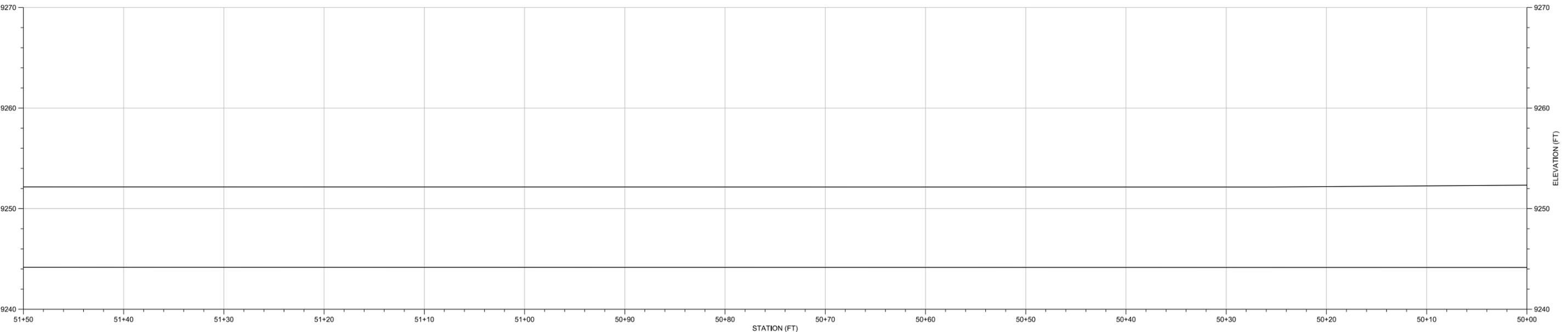


REVISIONS				COMMODORE 5 TUNNEL REHABILITATION	
NO.	DESCRIPTION	DATE	BY	SEGMENT 5B STA 48+50 TO 50+00	
1	70%	3/8/19	CMG	DEERE & AULT <small>CONSULTANTS, INC.</small> <small>600 S. AIRPORT RD., BLDG. A, SUITE 205 LONGMONT, CO 80503 TEL. 303.651.1468 FAX 303.651.1469</small>	
2	90% FOR HQ REVIEW	5/31/19	CMG		
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG		
DESIGNED BY: <u>CMG</u> APPROVED BY: <u>CMG</u> JOB NO. <u>0628.002.00</u> SHEET: <u>13 of 31</u>					
DRAWN BY: <u>HOG</u> DATE: <u>---</u>					
CHECKED BY: <u>EMB</u> SCALE: AS NOTED					

MATCHLINE STA 51+50

MATCHLINE STA 50+00

WOOD COVER
CONDITION UNKNOWN



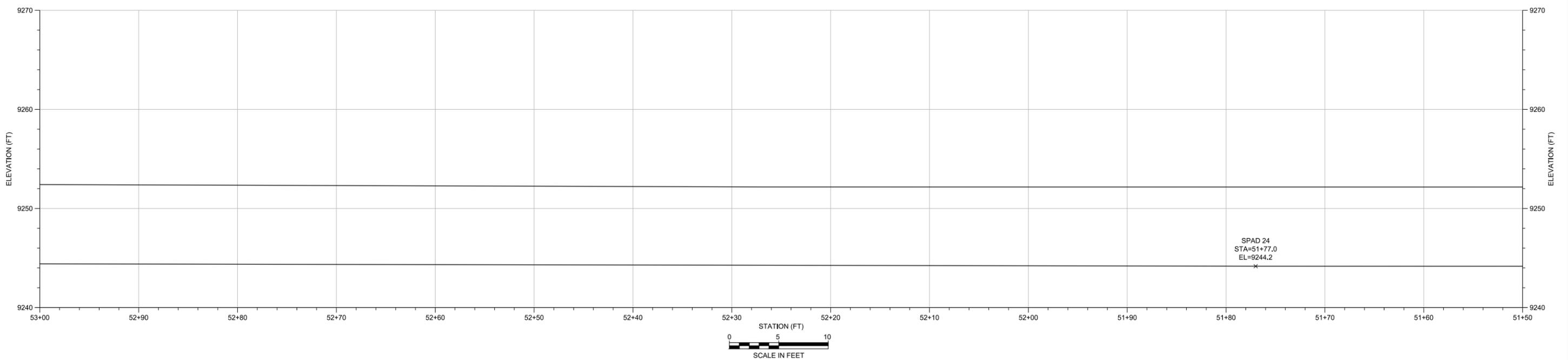
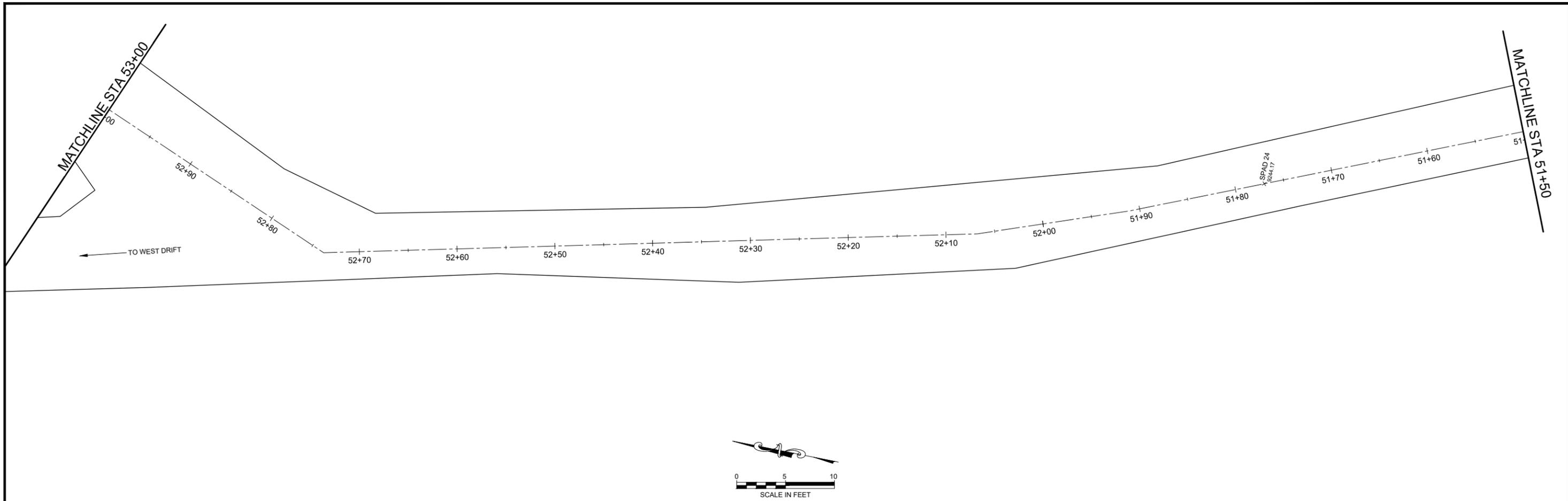
Friday, August 2, 2019 11:06:05 AM DRAWING: U:\0628_weston\002_commodore 5\CAD\Working\Commodore5_Plan_Segment 5B.DWG

**ISSUED FOR
CONSTRUCTION**



REVISIONS				COMMODORE 5 TUNNEL REHABILITATION		
NO.	DESCRIPTION	DATE	BY	SEGMENT 5B STA 50+00 TO 51+50		
1	70%	3/8/19	CMG	DEERE & AULT		
2	90% FOR HQ REVIEW	5/31/19	CMG	CONSULTANTS, INC.		
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG	600 S. AIRPORT RD., BLDG. A, SUITE 205 LONGMONT, CO 80503 TEL. 303.651.1468 FAX 303.651.1469		
DESIGNED BY: CMG				APPROVED BY: CMG	JOB NO.	SHEET:
DRAWN BY: HOG				DATE: ---	0628.002.00	14 of 31
CHECKED BY: EMB				SCALE: AS NOTED		

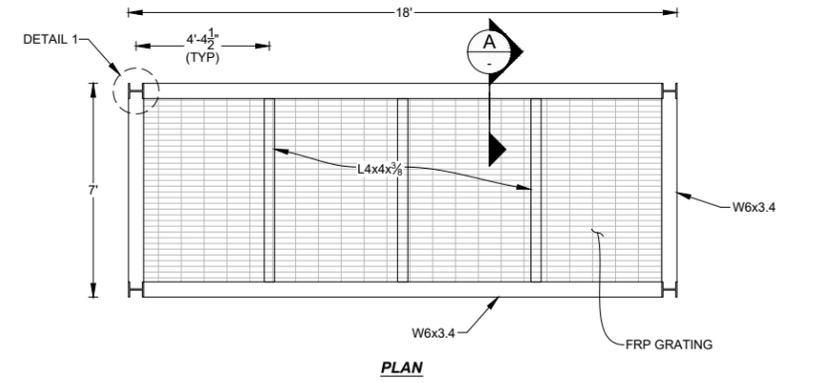
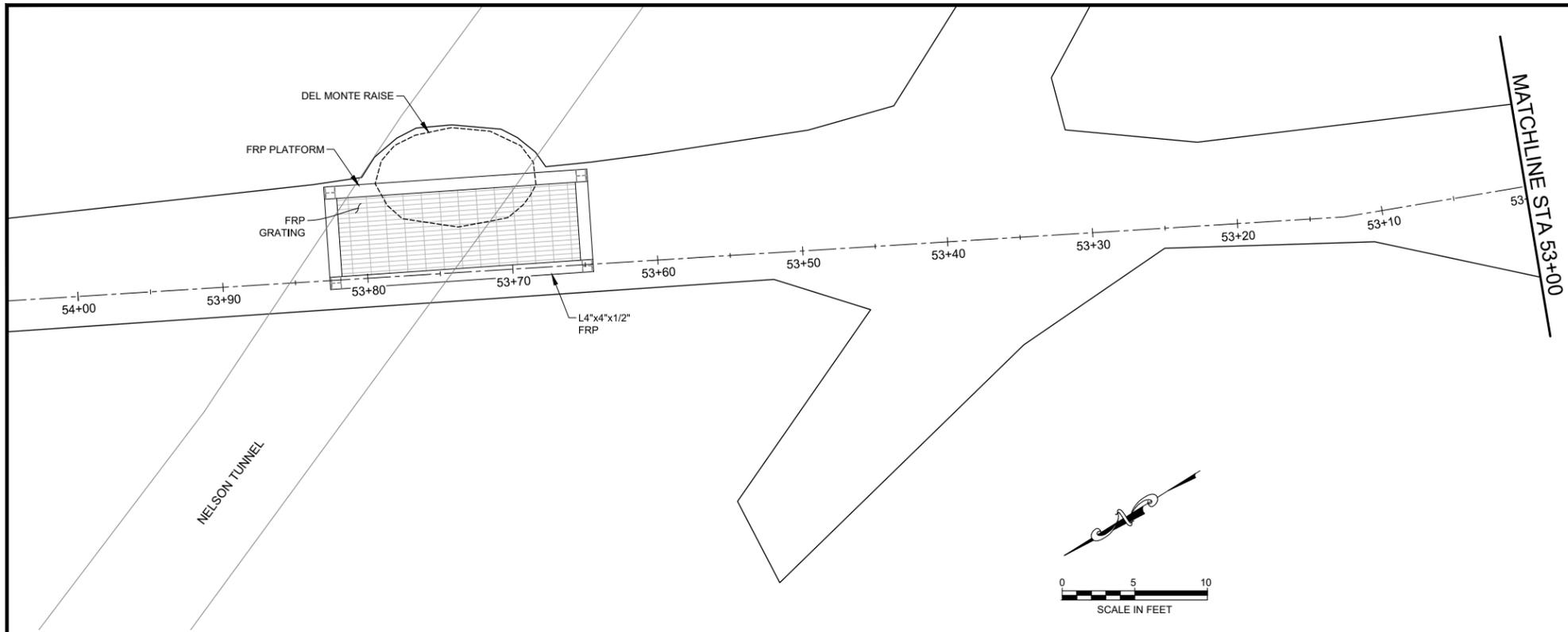
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ISSUED FOR
CONSTRUCTION

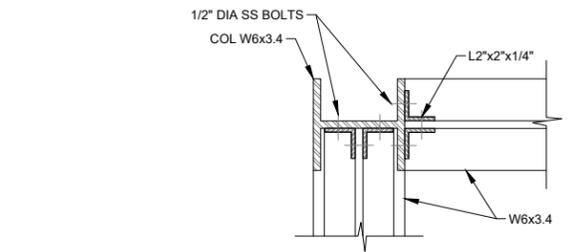
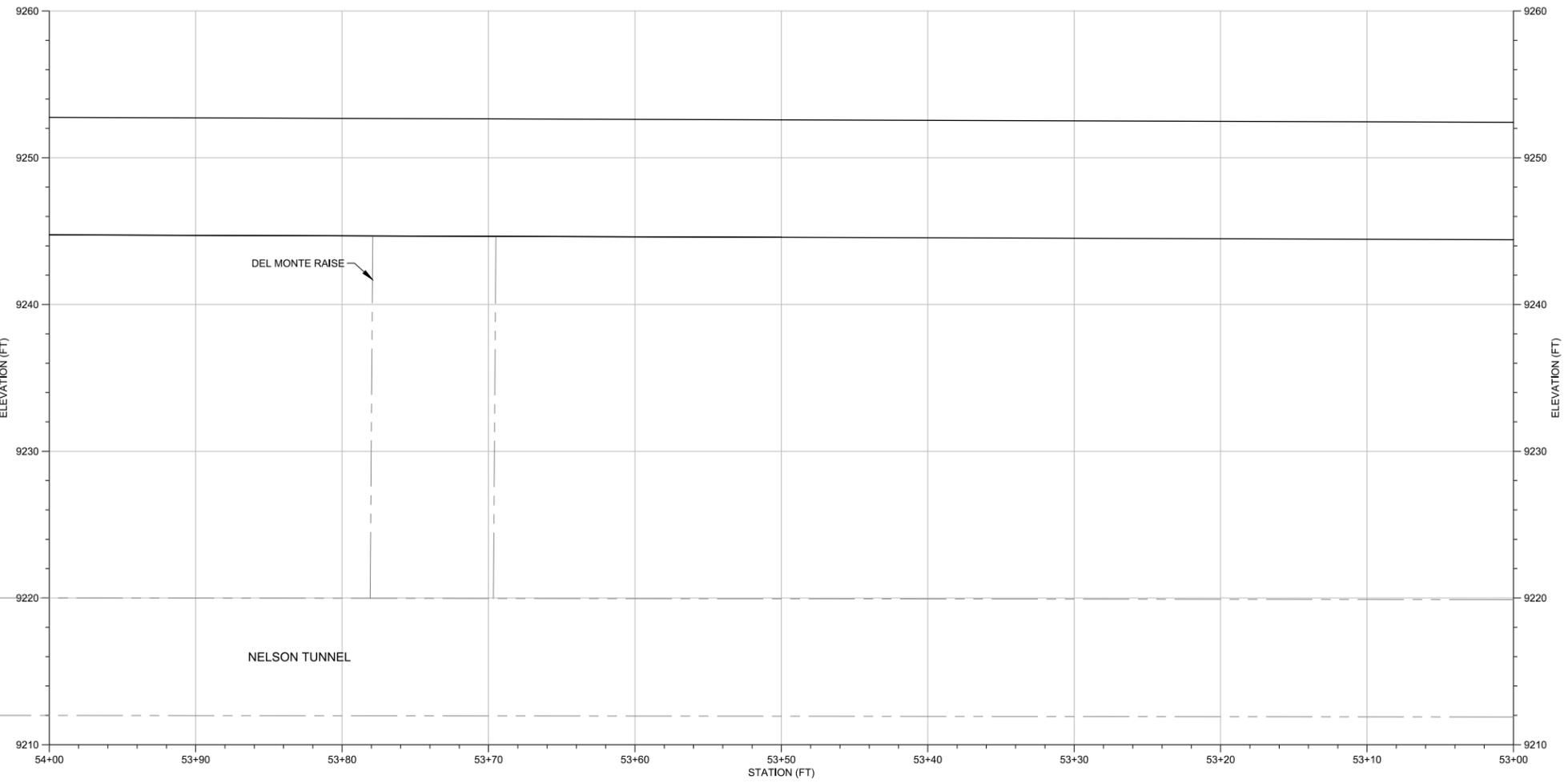
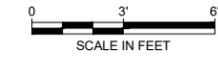


REVISIONS				COMMODORE 5 TUNNEL REHABILITATION	
NO.	DESCRIPTION	DATE	BY	SEGMENT 5B STA 51+50 TO 53+00	
1	70%	3/8/19	CMG	DEERE & AULT <small>CONSULTANTS, INC.</small> <small>600 S. AIRPORT RD., BLDG. A, SUITE 205 LONGMONT, CO 80503 TEL. 303.651.1468 FAX 303.651.1469</small>	
2	90% FOR HQ REVIEW	5/31/19	CMG		
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG		
DESIGNED BY: <u>CMG</u> APPROVED BY: <u>CMG</u> JOB NO.:				SHEET:	
DRAWN BY: <u>HOG</u> DATE: <u>---</u>				0628.002.00 15 of 31	
CHECKED BY: <u>EMB</u> SCALE: AS NOTED					

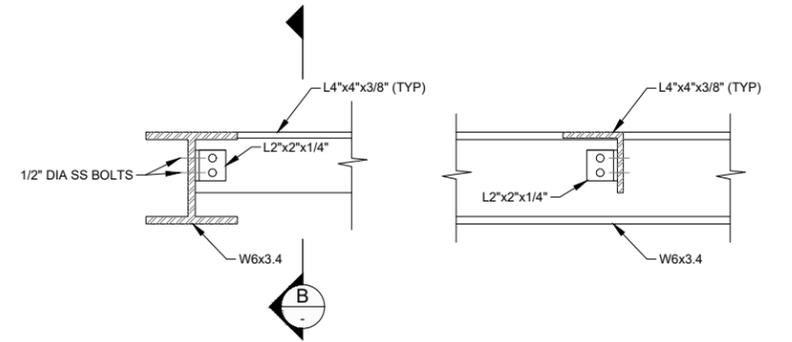


NOTE:
1. STRUCTURAL MEMBERS ARE FIBER REINFORCED POLYMER (FRP)

FRP PLATFORM DETAIL



DETAIL 1

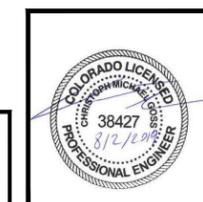


FRP PLATFORM SECTION A

FRP PLATFORM SECTION B



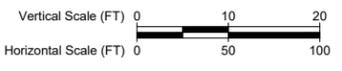
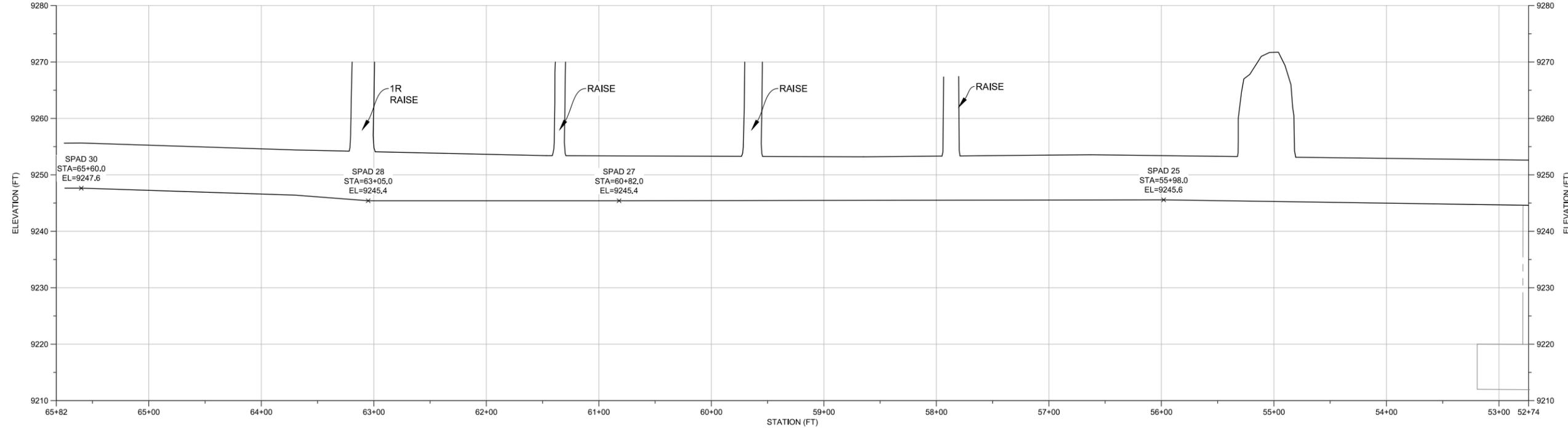
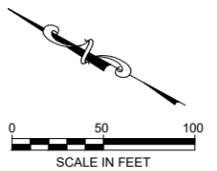
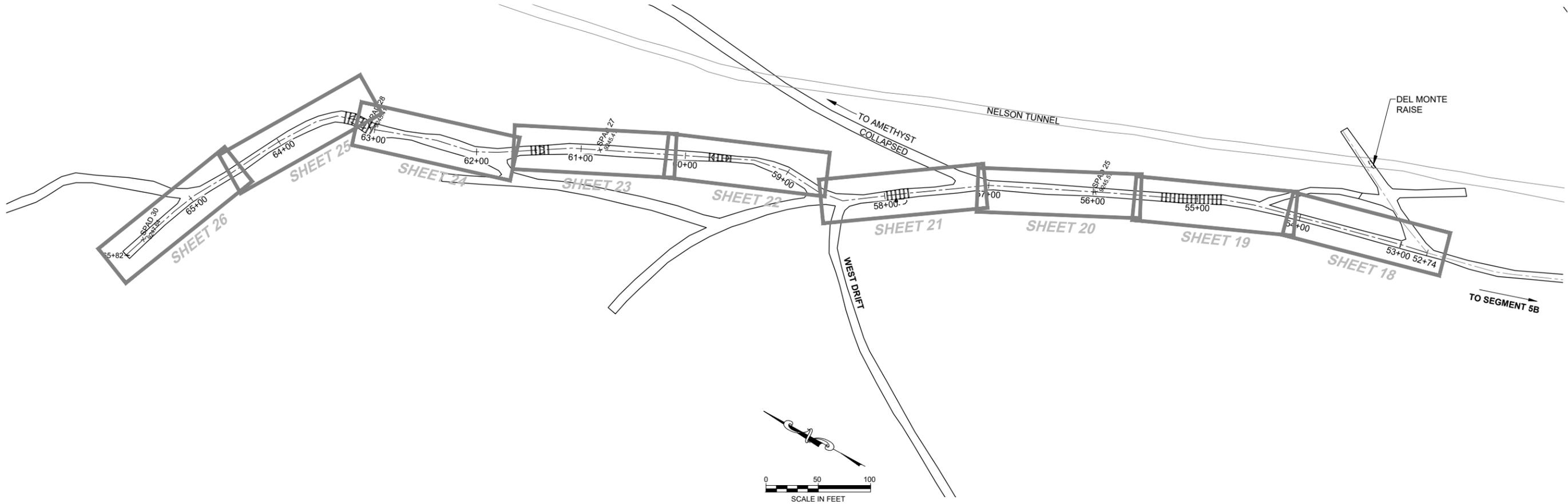
ISSUED FOR CONSTRUCTION



REVISIONS			
NO.	DESCRIPTION	DATE	BY
1	70%	3/8/19	CMG
2	90% FOR HQ REVIEW	5/31/19	CMG
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG

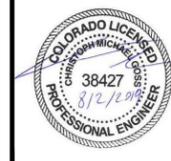
COMMODORE 5 TUNNEL REHABILITATION			
SEGMENT 5B STA 53+00 TO END			
DESIGNED BY:	CMG	APPROVED BY:	CMG
DRAWN BY:	HOG	DATE:	---
CHECKED BY:	EMB	SCALE:	AS NOTED
JOB NO. 0628.002.00		SHEET 16 of 31	

Friday, August 2, 2019 11:06:16 AM DRAWINGS: U:\0628_weston\002_commodore_5\000\Working\Commodore5_Plan_Segment_5B.DWG



- NOTES:**
- HORIZONTAL DATUM IS COLORADO STATE PLANE SOUTH, MODIFIED TO GROUND BY A SCALE FACTOR OF 1.000487327.
 - SPAD ELEVATIONS: DAVIS ENGINEERING 2004 - STATIONS ARE APPROXIMATE.
 - SCALE LOOSE BLOCKS AS NEEDED FOR CONTRACTOR SAFETY.
 - NO BLASTING FOR ENTIRETY OF WORK.

ISSUED FOR CONSTRUCTION



REVISIONS			
NO.	DESCRIPTION	DATE	BY
1	70%	3/8/19	CMG
2	90% FOR HQ REVIEW	5/31/19	CMG
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG

COMMODORE 5 TUNNEL REHABILITATION

SEGMENT 6 PLAN & PROFILE

DESIGNED BY: CMG APPROVED BY: CMG
 DRAWN BY: HOG DATE: ---
 CHECKED BY: EMB SCALE: AS NOTED

JOB NO. 0628.002.00 SHEET: 17 of 31

DEERE & AULT CONSULTANTS, INC.
 600 S. AIRPORT RD., BLDG. A, SUITE 205
 LONGMONT, CO 80503
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Friday, August 2, 2019 11:06:22 AM DRAWING: U:\0628 commadore 5\002 Working\Commadore5_Plan_Segment 6.DWG

MATCHLINE STA 54+00

54+00

53+90

53+80

53+70

53+60

53+50

53+40

53+30

53+20

53+10

53+00

52+90

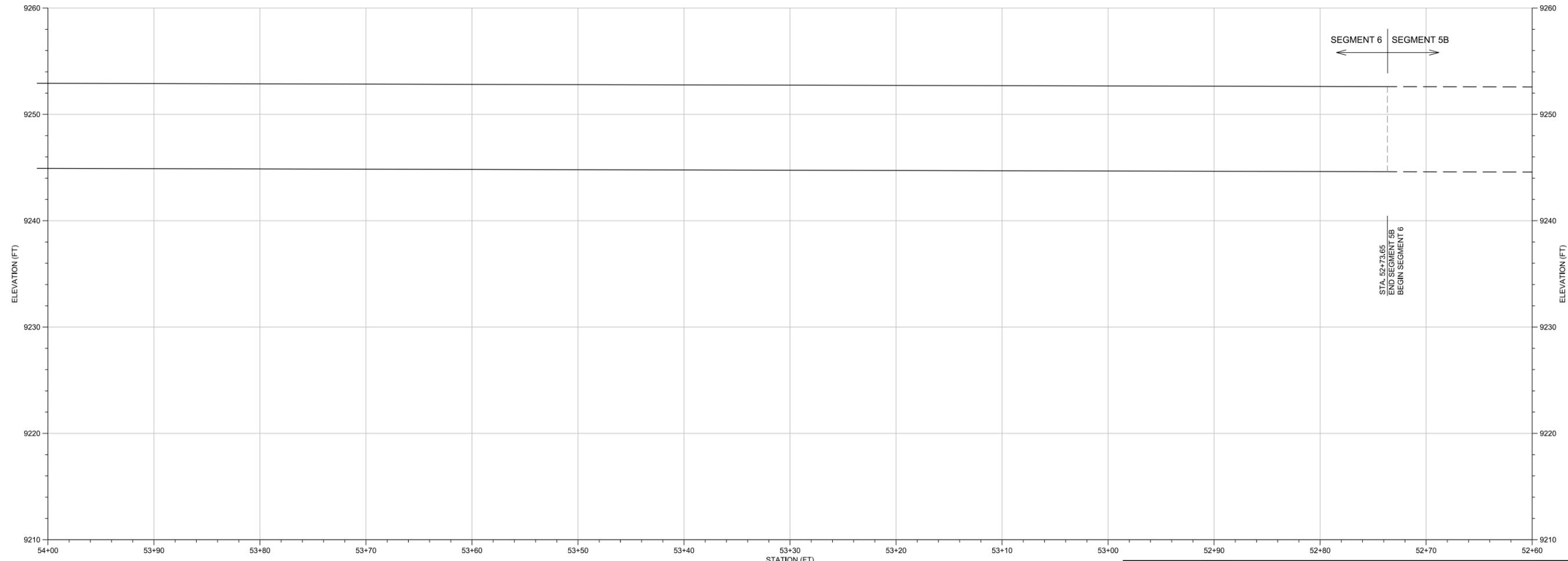
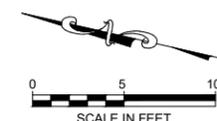
52+80

52+74

MATCHLINE STA 52+60

TO DEL MONTE RAISE

EXISTING AIR DOOR REMAINS



ISSUED FOR CONSTRUCTION



REVISIONS			
NO.	DESCRIPTION	DATE	BY
1	70%	3/8/19	CMG
2	90% FOR HQ REVIEW	5/31/19	CMG
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG

COMMODORE 5 TUNNEL REHABILITATION

SEGMENT 6 STA 52+60 TO 54+00

DESIGNED BY: CMG APPROVED BY: CMG JOB NO. 0628.002.00 SHEET: 18 of 31

DRAWN BY: HOG DATE: ---

CHECKED BY: EMB SCALE: AS NOTED

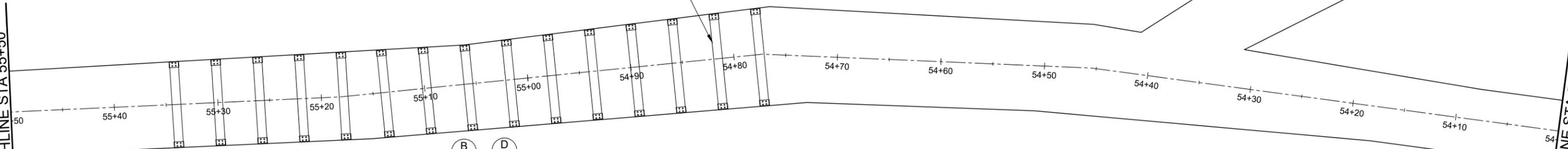
DEERE & AULT CONSULTANTS, INC.
 600 S. AIRPORT RD., BLDG. A, SUITE 205
 LONGMONT, CO 80503
 TEL. 303.651.1468 FAX 303.651.1469

Friday, August 2, 2019 11:06:24 AM DRAWING: U:\0628_weston\002_commodore 5\CAD\Working\Commodore5_Plan_Segment 6.DWG

MATCHLINE STA 55+50

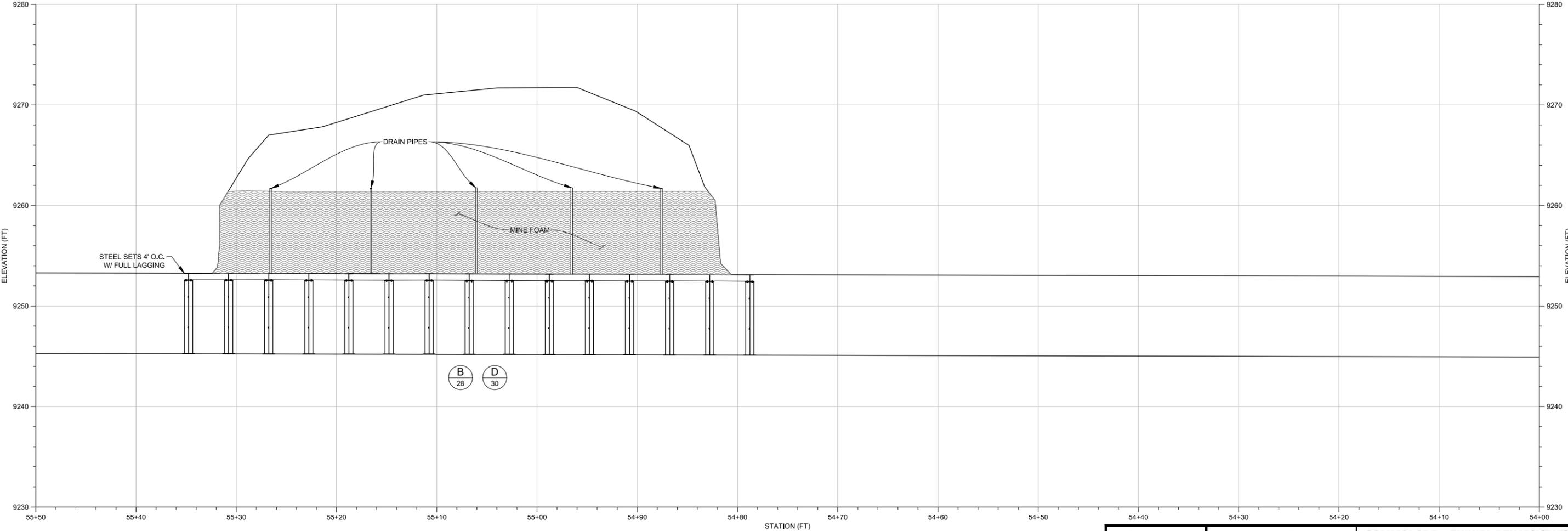
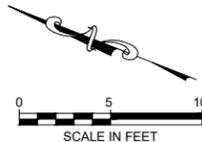
MATCHLINE STA 54+00

STEEL SETS 4' O.C. W/
FULL LAGGING

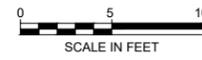


B
28 D
30

NOTE:
CONTRACTOR MAY USE COMBINATION OF SINGLE
POST AND SQUARE SETS FOR CONSTRUCTIBILITY



B
28 D
30



**ISSUED FOR
CONSTRUCTION**



REVISIONS				COMMODORE 5 TUNNEL REHABILITATION	
NO.	DESCRIPTION	DATE	BY	SEGMENT 6 STA 54+00 TO 55+50	
1	70%	3/8/19	CMG	DEERE & AULT	
2	90% FOR HQ REVIEW	5/31/19	CMG	CONSULTANTS, INC.	
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG	600 S. AIRPORT RD., BLDG. A, SUITE 205 LONGMONT, CO 80503 TEL. 303.651.1468 FAX 303.651.1469	
DESIGNED BY: CMG			APPROVED BY: CMG	JOB NO.	SHEET:
DRAWN BY: HOG			DATE: ---	0628.002.00	19 of 31
CHECKED BY: EMB			SCALE: AS NOTED		

Friday, August 2, 2019 11:06:30 AM DRAWING: U:\0628_weston\002_commodore 5\000\Working\Commodore5_Plan_Segment 6.DWG

MATCHLINE STA 57+00

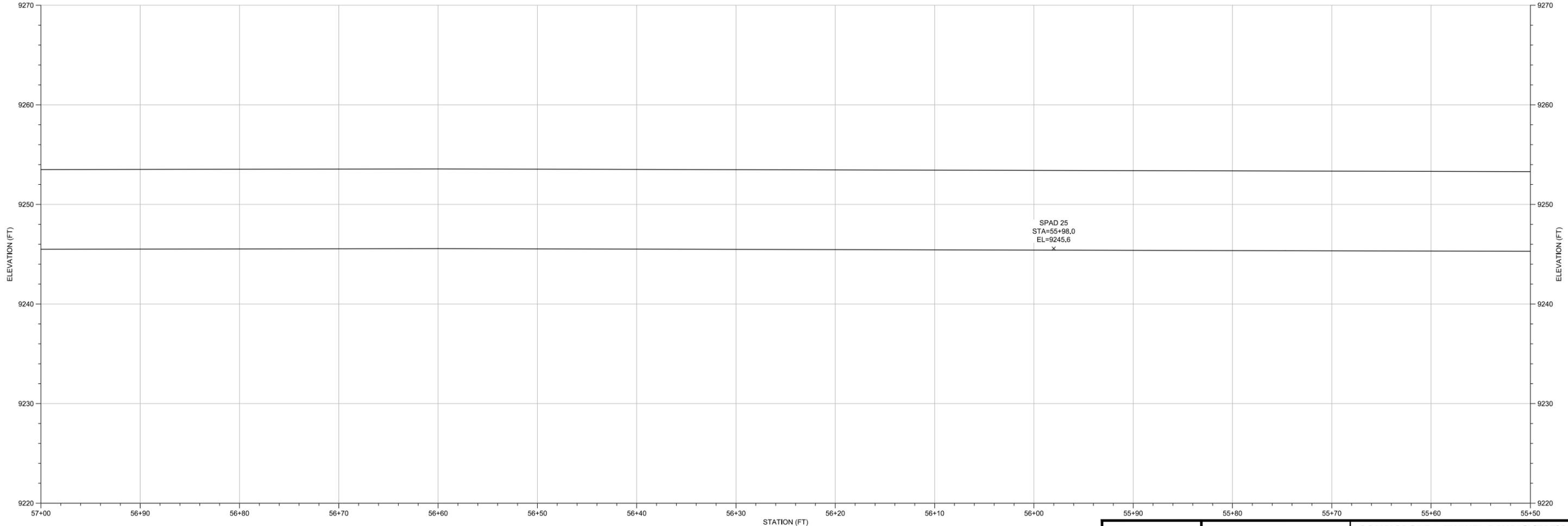
MATCHLINE STA 55+50

57+00 56+90 56+80 56+70 56+60 56+50 56+40 56+30 56+20 56+10 56+00 55+90 55+80 55+70 55+60 55+50

SPAD 25
STA=55+98.0
EL=9245.6



0 5 10
SCALE IN FEET



SPAD 25
STA=55+98.0
EL=9245.6

0 5 10
SCALE IN FEET

ISSUED FOR CONSTRUCTION



REVISIONS			
NO.	DESCRIPTION	DATE	BY
1	70%	3/8/19	CMG
2	90% FOR HQ REVIEW	5/31/19	CMG
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG

COMMODORE 5 TUNNEL REHABILITATION

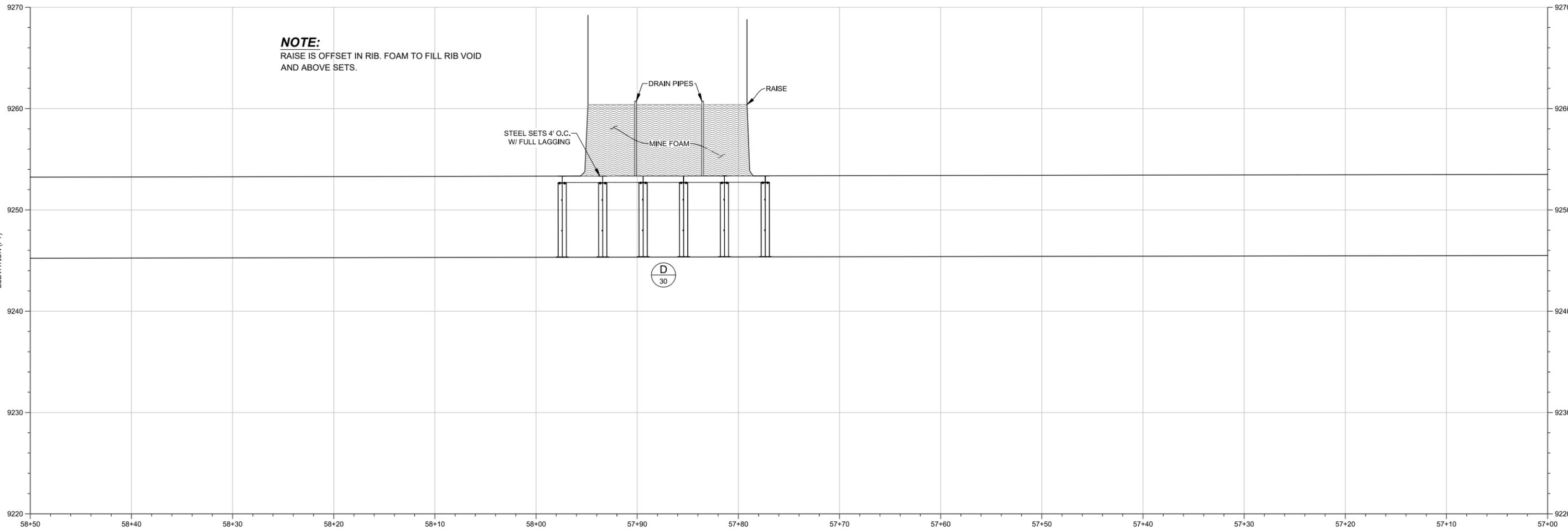
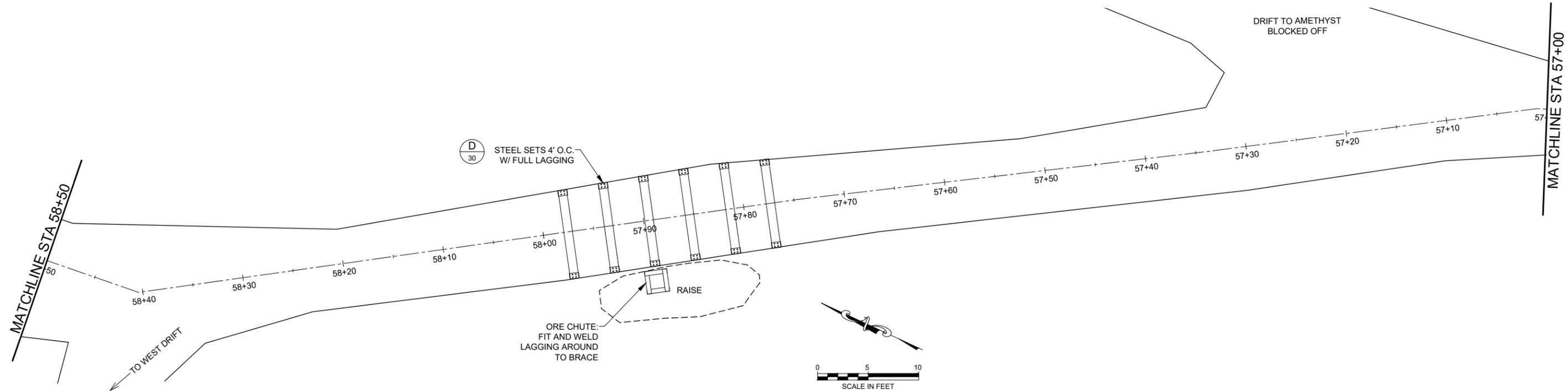
SEGMENT 6 STA 55+50 TO 57+00

DEERE & AULT
CONSULTANTS, INC.

600 S. AIRPORT RD., BLDG. A, SUITE 205
LONGMONT, CO 80503
TEL. 303.651.1468 FAX 303.651.1469

DESIGNED BY: <u>CMG</u>	APPROVED BY: <u>CMG</u>	JOB NO.:	SHEET:
DRAWN BY: <u>HOG</u>	DATE: <u>---</u>	0628.002.00	20 of 31
CHECKED BY: <u>EMB</u>	SCALE: AS NOTED		

Friday, August 2, 2019 11:06:39 AM DRAWING: U:\0628_weston\002_commodore 5\CAD\Working\Commodore5_Plan_Segment 6.DWG



ISSUED FOR CONSTRUCTION



REVISIONS			
NO.	DESCRIPTION	DATE	BY
1	70%	3/8/19	CMG
2	90% FOR HQ REVIEW	5/31/19	CMG
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG

COMMODORE 5 TUNNEL REHABILITATION

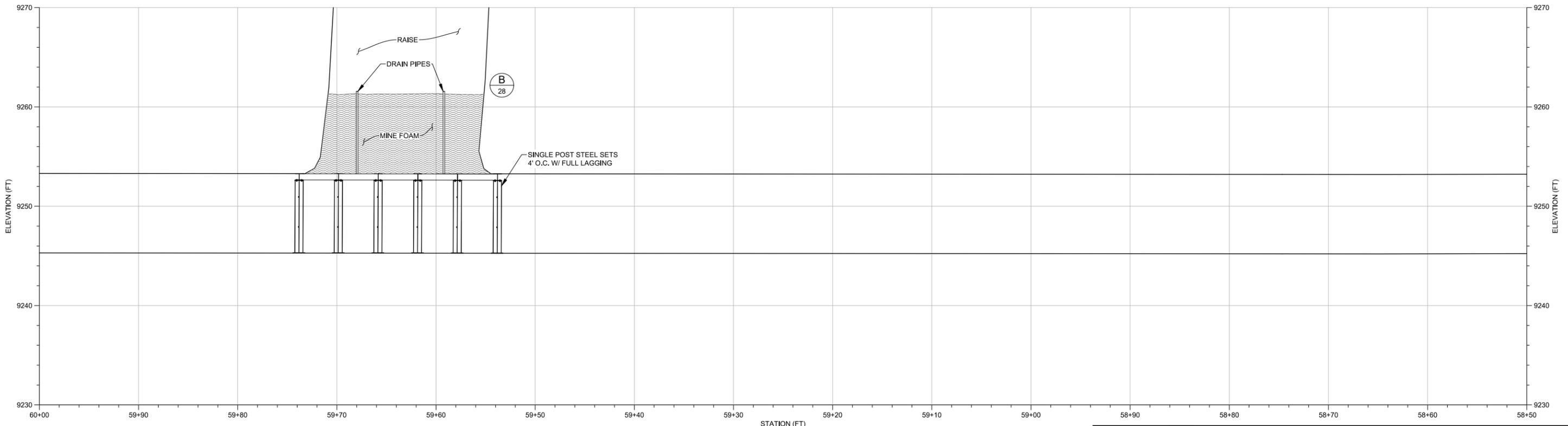
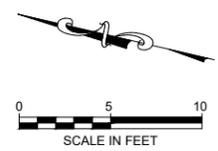
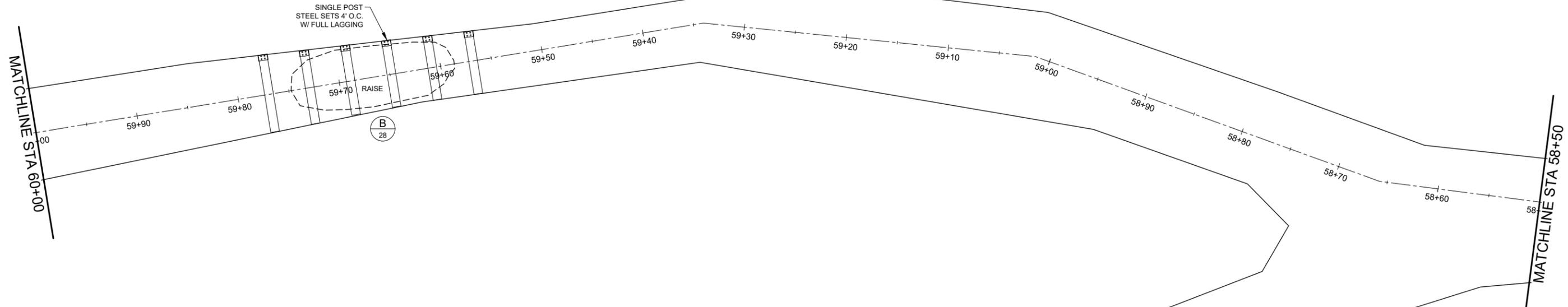
SEGMENT 6 STA 57+00 TO 58+50

DESIGNED BY: CMG APPROVED BY: CMG JOB NO. 0628.002.00 SHEET: 21 of 31

DRAWN BY: HOG DATE: ---

CHECKED BY: EMB SCALE: AS NOTED

DEERE & AULT CONSULTANTS, INC.
 600 S. AIRPORT RD., BLDG. A, SUITE 205
 LONGMONT, CO 80503
 TEL. 303.651.1468 FAX 303.651.1469



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REVISIONS			
NO.	DESCRIPTION	DATE	BY
1	70%	3/8/19	CMG
2	90% FOR HQ REVIEW	5/31/19	CMG
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG

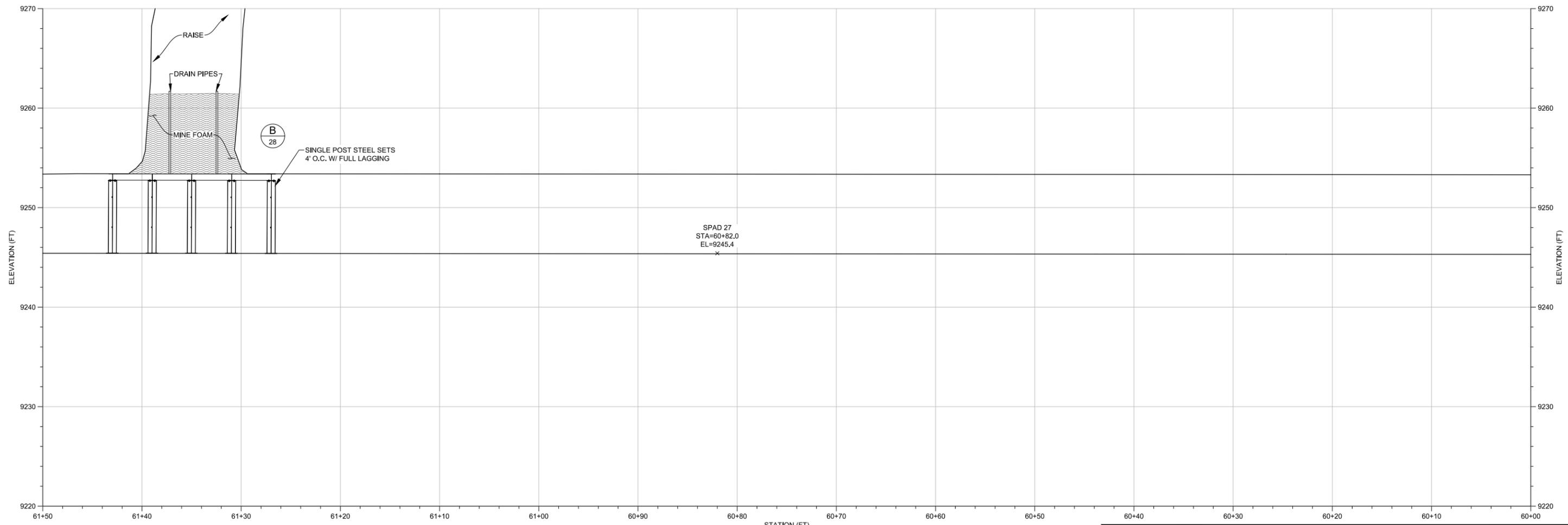
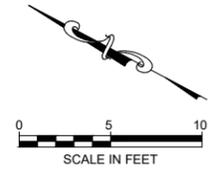
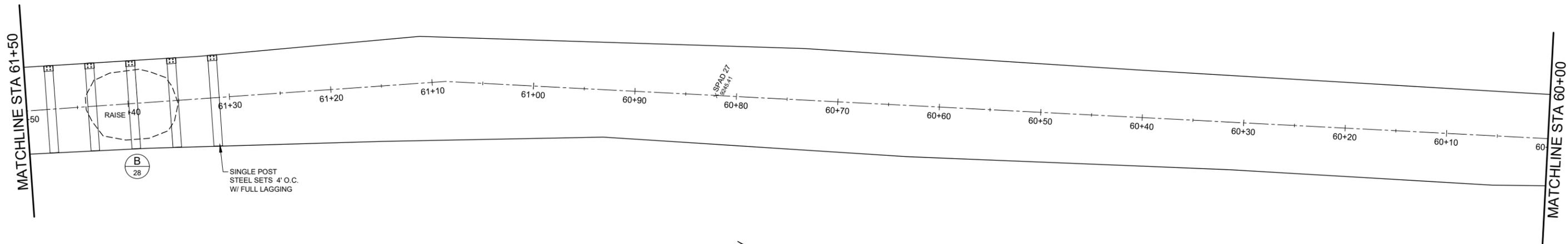
COMMODORE 5 TUNNEL REHABILITATION

SEGMENT 6 STA 58+50 TO 60+00

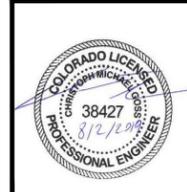
DEERE & AULT CONSULTANTS, INC.

DESIGNED BY: CMG APPROVED BY: CMG JOB NO. SHEET:
 DRAWN BY: HOG DATE: 0628.002.00 22 of 31
 CHECKED BY: EMB SCALE: AS NOTED

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ISSUED FOR CONSTRUCTION



REVISIONS			
NO.	DESCRIPTION	DATE	BY
1	70%	3/8/19	CMG
2	90% FOR HQ REVIEW	5/31/19	CMG
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG

DESIGNED BY: <u>CMG</u>		APPROVED BY: <u>CMG</u>		JOB NO.	SHEET
DRAWN BY: <u>HOG</u>		DATE: <u>---</u>		0628.002.00	23 of 31
CHECKED BY: <u>EMB</u>		SCALE: AS NOTED			

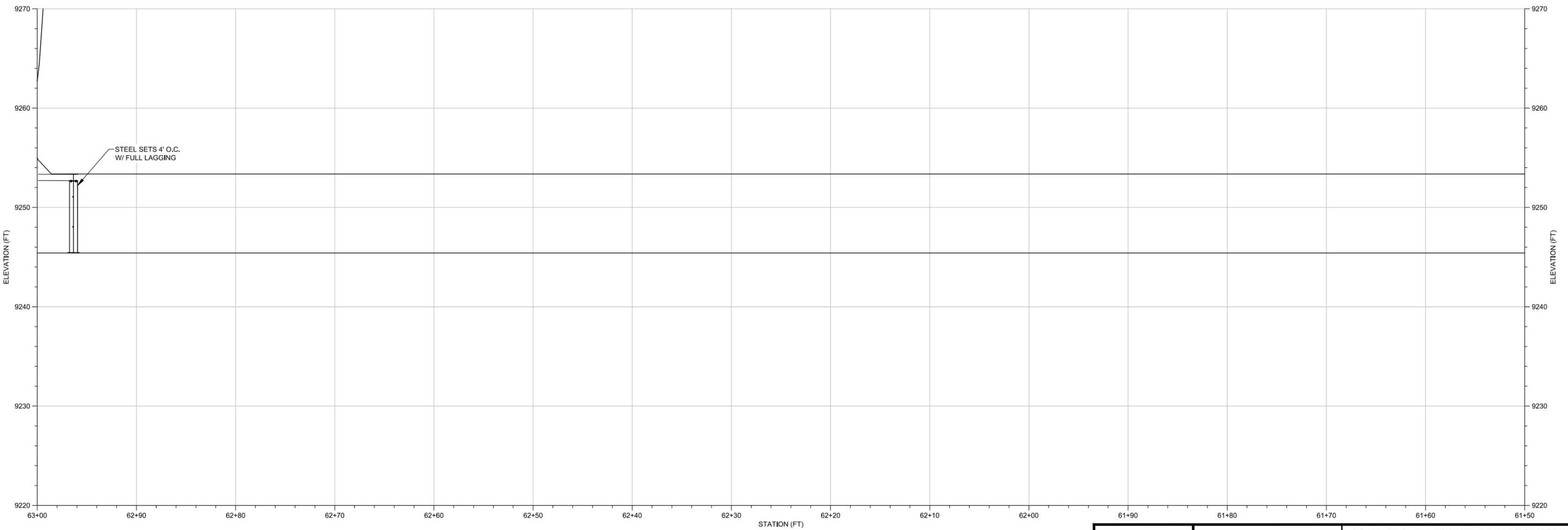
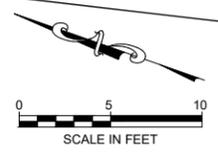
COMMODORE 5 TUNNEL REHABILITATION
SEGMENT 6 STA 60+00 TO 61+50

DEERE & AULT CONSULTANTS, INC.
 600 S. AIRPORT RD., BLDG. A, SUITE 205
 LONGMONT, CO 80503
 TEL. 303.651.1468 FAX 303.651.1469

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MATCHLINE STA 63+00

MATCHLINE STA 61+50



STEEL SETS 4' O.C.
W/ FULL LAGGING



ISSUED FOR CONSTRUCTION



REVISIONS			
NO.	DESCRIPTION	DATE	BY
1	70%	3/8/19	CMG
2	90% FOR HQ REVIEW	5/31/19	CMG
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG

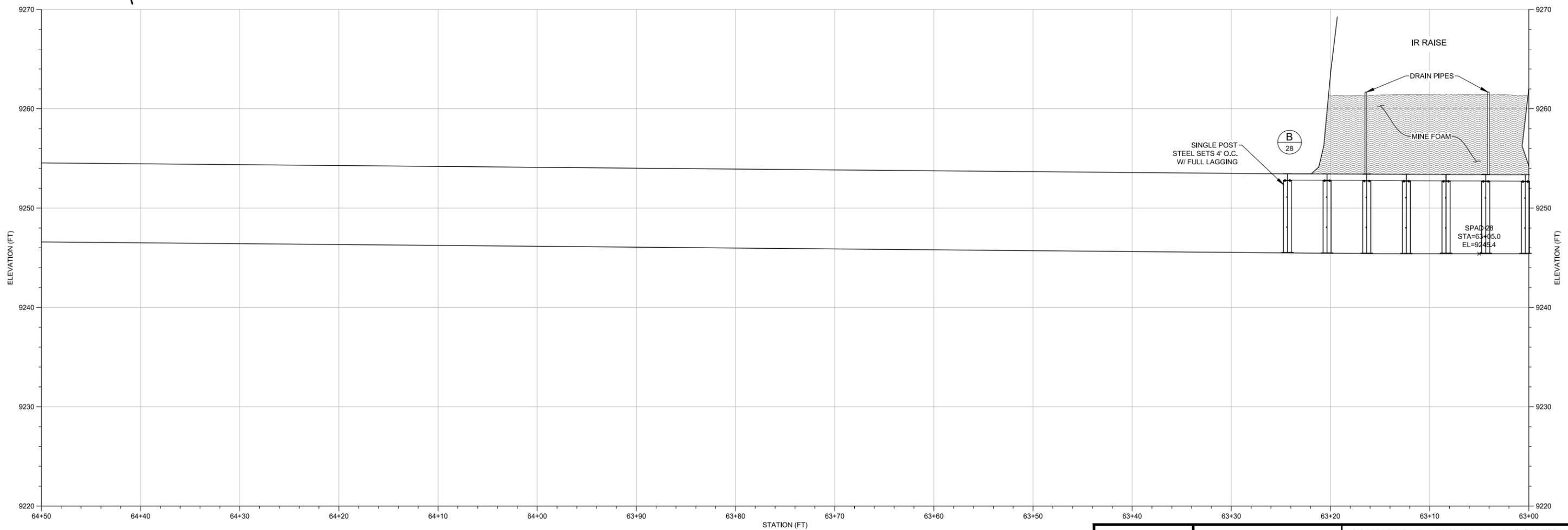
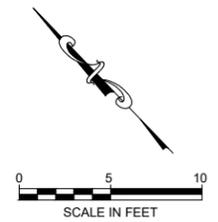
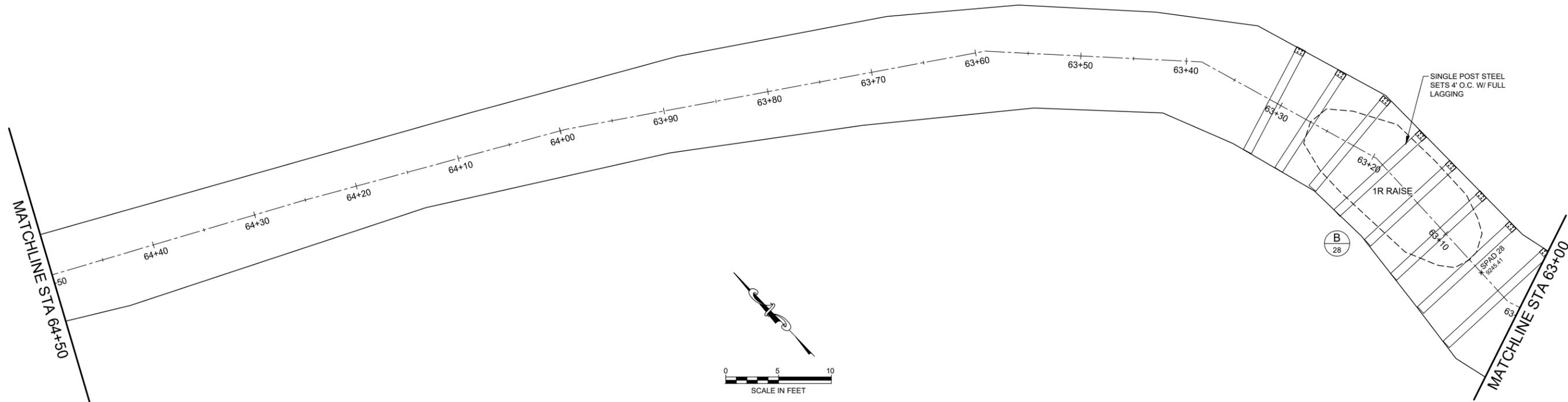
COMMODORE 5 TUNNEL REHABILITATION

SEGMENT 6 STA 61+50 TO 63+00

DEERE & AULT CONSULTANTS, INC.

DESIGNED BY: CMG APPROVED BY: CMG JOB NO. SHEET:
 DRAWN BY: HOG DATE: 0628.002.00 24 of 31
 CHECKED BY: EMB SCALE: AS NOTED

Friday, August 2, 2019 11:06:54 AM DRAWING: U:\0628_weston\002_commodore 5\CAD\Working\Commodore5_Plan_Segment 6.DWG



ISSUED FOR CONSTRUCTION



REVISIONS			
NO.	DESCRIPTION	DATE	BY
1	70%	3/8/19	CMG
2	90% FOR HQ REVIEW	5/31/19	CMG
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG

COMMODORE 5 TUNNEL REHABILITATION

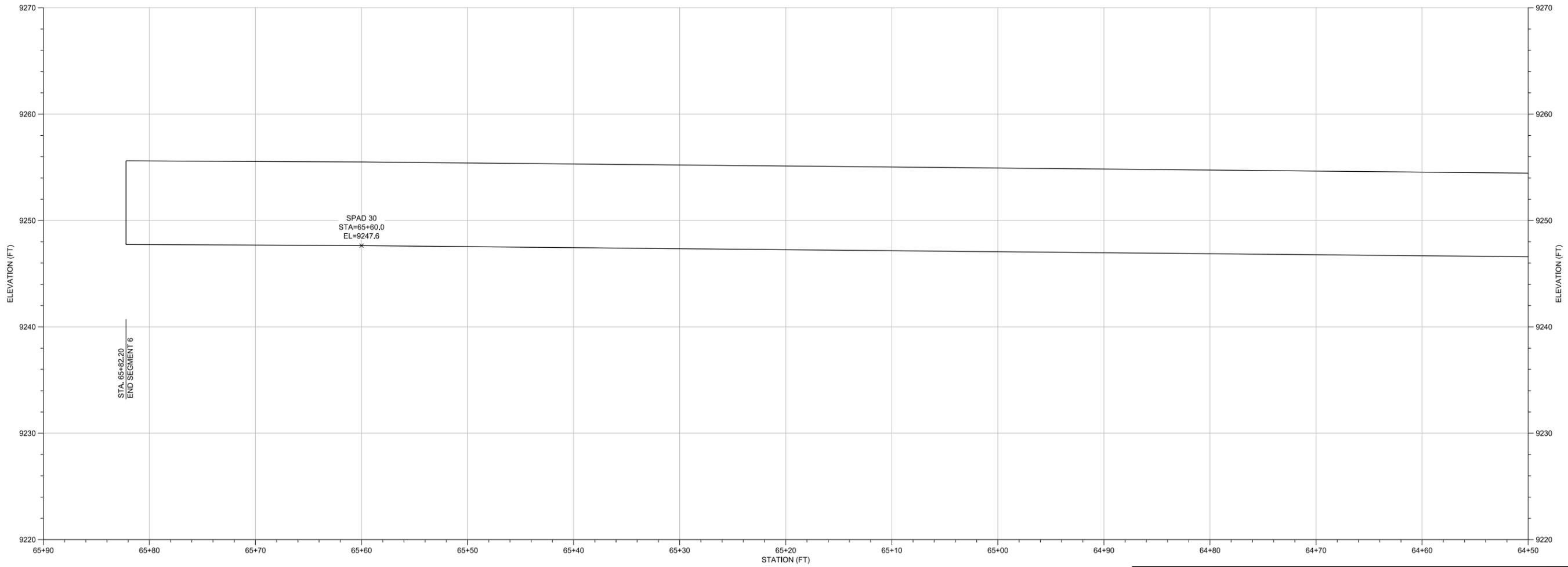
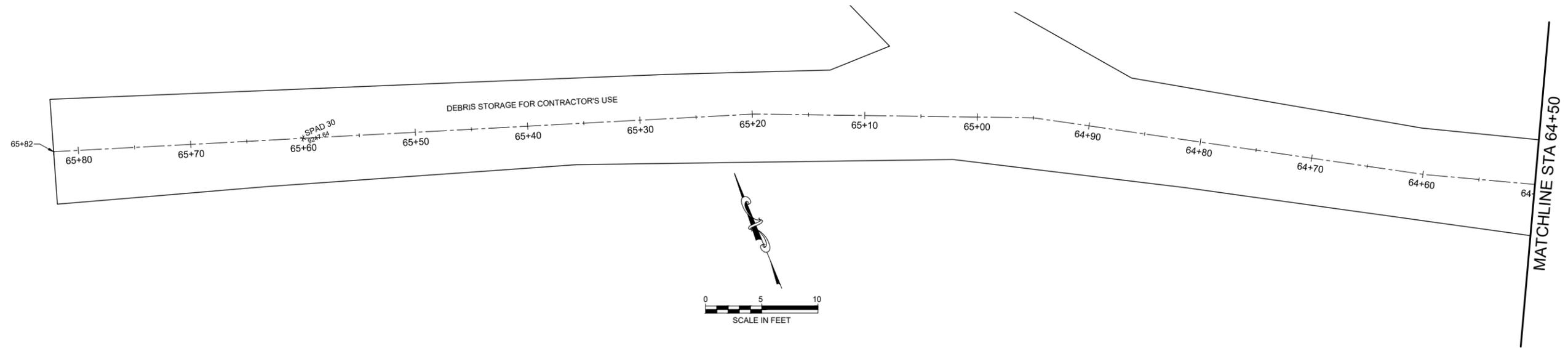
SEGMENT 6 STA 63+00 TO 64+50

DEERE & AULT CONSULTANTS, INC.

DESIGNED BY: CMG APPROVED BY: CMG JOB NO. SHEET:
 DRAWN BY: HOG DATE: 0628.002.00 25 of 31
 CHECKED BY: EMB SCALE: AS NOTED

600 S. AIRPORT RD., BLDG. A, SUITE 205
 LONGMONT, CO 80503
 TEL. 303.651.1468 FAX 303.651.1469

Friday, August 2, 2019 11:06:59 AM DRAWING: U:\0628_weston\002_commodore 5\CAD\Working\Commodore5_Plan_Segment 6.DWG



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REVISIONS			
NO.	DESCRIPTION	DATE	BY
1	70%	3/8/19	CMG
2	90% FOR HQ REVIEW	5/31/19	CMG
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG

COMMODORE 5 TUNNEL REHABILITATION

SEGMENT 6 STA 64+50 TO END

DEERE & AULT CONSULTANTS, INC.

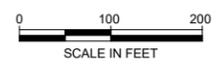
DESIGNED BY: CMG APPROVED BY: CMG JOB NO. 0628.002.00 SHEET: 26 of 31

DRAWN BY: HOG DATE:

CHECKED BY: EMB SCALE: AS NOTED

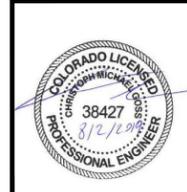
600 S. AIRPORT RD., BLDG. A, SUITE 205
LONGMONT, CO 80503
TEL. 303.651.1468 FAX 303.651.1469

Vertical Section ~ COMMODORE MINE ~ Scale, 50 ft = 1 In.



SOURCE UNKNOWN

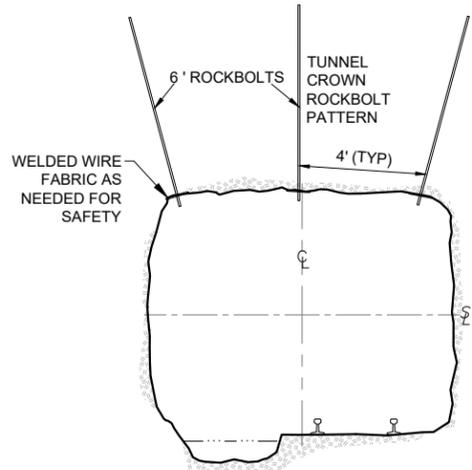
ISSUED FOR CONSTRUCTION



REVISIONS			
NO.	DESCRIPTION	DATE	BY
1	70%	3/8/19	CMG
2	90% FOR HQ REVIEW	5/31/19	CMG
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG

COMMODORE 5 TUNNEL REHABILITATION			
HISTORICAL PROFILE			
DESIGNED BY:	CMG	APPROVED BY:	CMG
DRAWN BY:	HOG	DATE:	
CHECKED BY:	EMB	SCALE:	AS NOTED
JOB NO.		SHEET:	
0628.002.00		27 of 31	

Friday, August 2, 2019 11:07:16 AM DRAWING: U:\0628_weston\002_commodore 5\000_Working\HISTORICAL_PROFILE.DWG

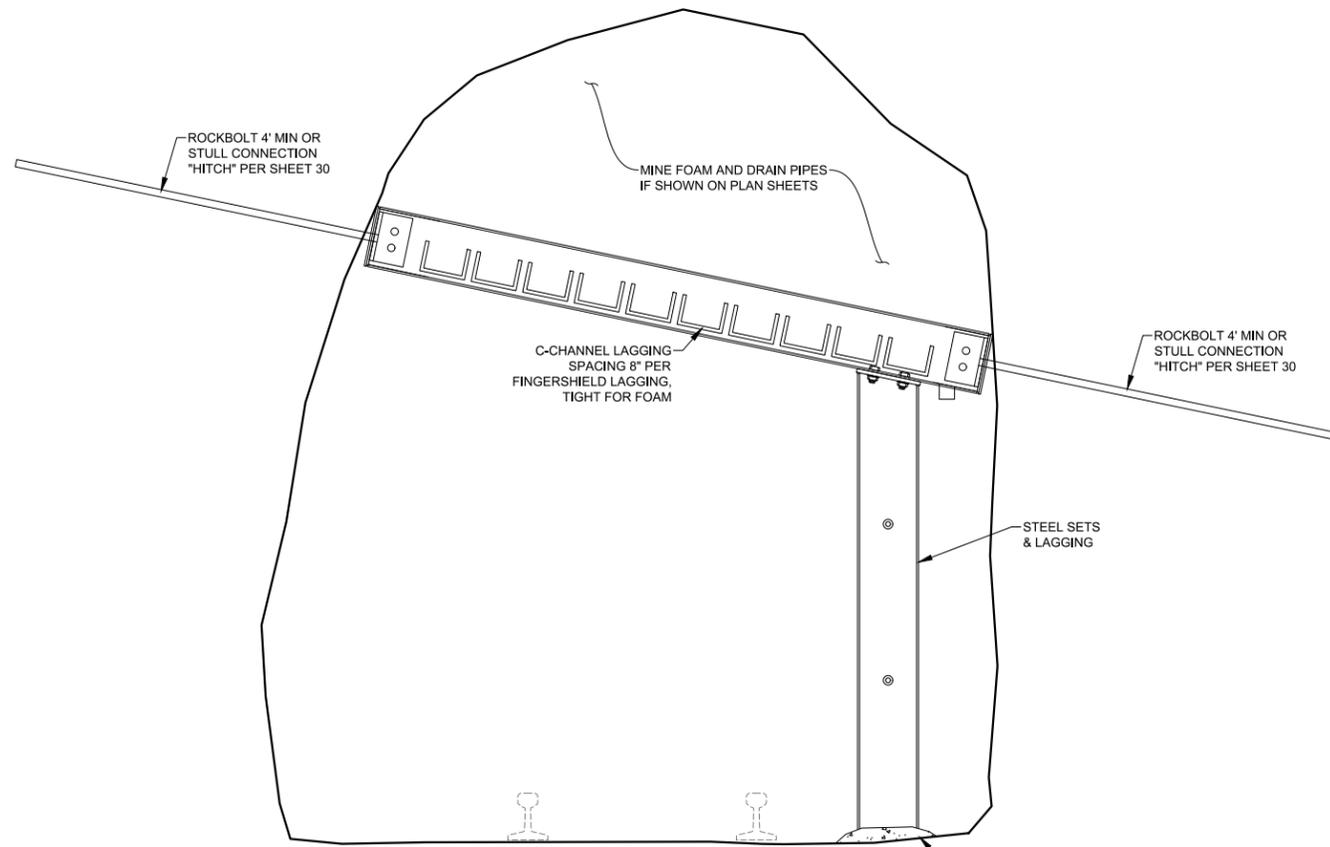


PATTERN ROCKBOLTS AT STA 43+00 TO 43+50

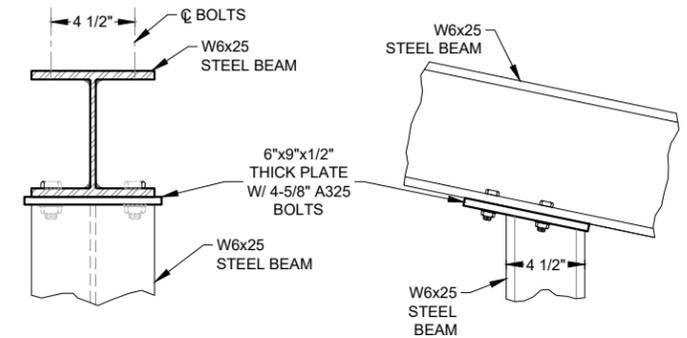
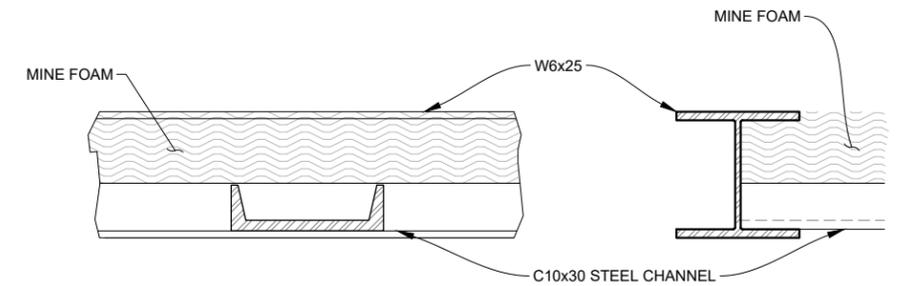


NOTES:

- ADIT WIDTH VARIES.
- SCALE LOOSE BLOCKS AS NEEDED FOR CONTRACTOR SAFETY.
- BOLT SPACING AND ORIENTATION TO BE DETERMINED IN THE FIELD BASED ON ROCK CONDITIONS.
- SPOT BOLTING OR SUPPLEMENTAL BOLTS ON WALLS AS NEEDED.
- WELDED WIRE FABRIC AS NEEDED BY CONTRACTOR FOR SAFETY.



SINGLE POST SET DETAIL



POST CONNECTION

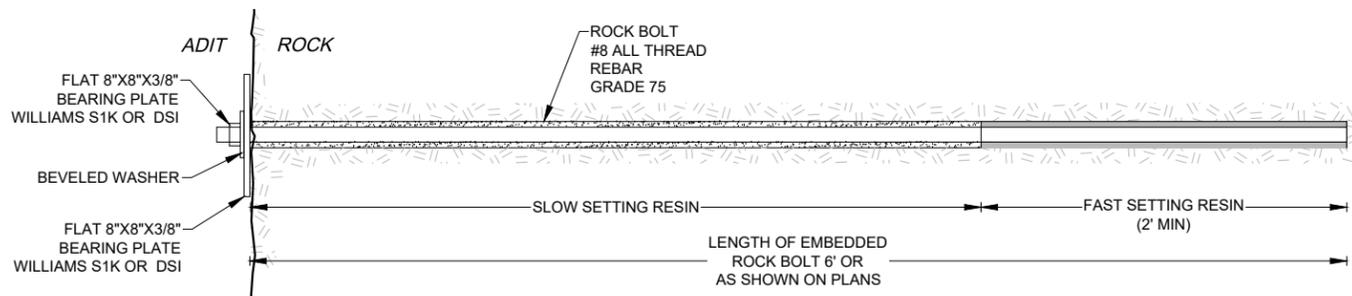


POST CONNECTION



NOTES:

- FIELD DIMENSIONS VARY.
CUSTOM FITTING WILL BE REQUIRED.



ROCK BOLT DETAIL

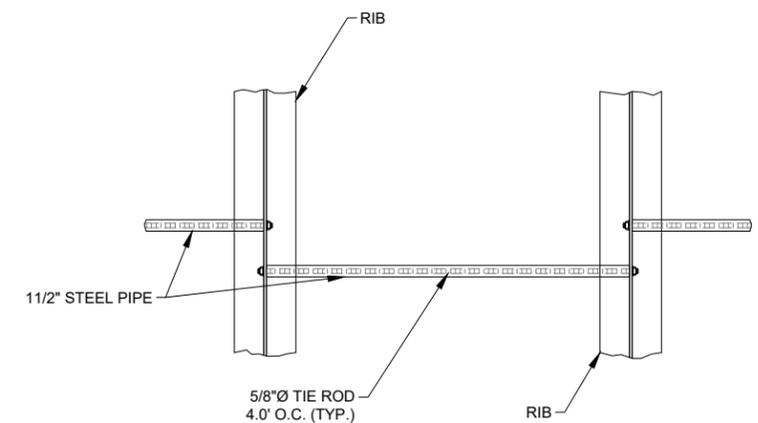


NOTES:

- BOREHOLE DIAMETERS FOR BOLT INSTALLATION SHALL BE PER MANUFACTURER'S RECOMMENDATIONS.
- IN LIEU OF RESIN GROUTED BOLTS, CEMENT GROUTED BOLTS WITH ANCHORS MAY BE USED.
- LENGTHS OF ROCK BOLTS INDICATED ON THE DRAWINGS ARE EMBEDDED LENGTHS IN THE ROCK. CONTRACTOR SHALL PROVIDE SUFFICIENT LENGTHS OF BAR TO ALLOW FOR INSTALLATION OF END HARDWARE.
- INSPECT AND SCALE AREA BEFORE BOLTING.
- ALL ROCK BOLTS TO BE FULLY RESIN OR GROUT ENCAPSULATED AND TENSIONED TO 2/3 YIELD STRENGTH.

SAFETY NOTE:

THE EXISTING TIMBER SUPPORT, COVERS, LADDERS, AND LANDINGS ARE ROTTEN AND UNSAFE TO USE. PRIOR TO BEGINNING WORK IN THE DAYLIGHT CORNER AREA, CONTRACTOR SHALL DESIGN AND INSTALL A TEMPORARY COVER OVER THE DAYLIGHT WINZE TO PREVENT PERSONNEL AND EQUIPMENT FROM FALLING INTO THE OPENING. PRIOR TO BEGINNING WORK IN WINZE, CONTRACTOR SHALL INSTALL A TEMPORARY MECHANISM THAT WILL PREVENT MATERIAL LARGER THAN 6 INCHES DIAMETER FROM FALLING INTO WATER AT THE BOTTOM OF THE WINZE. DURING WORK WITHIN THE DAYLIGHT WINZE, PERSONNEL SHALL BE FULLY TIED OFF ON NEW SUPPORT OR ANCHORS INSTALLED BY THE CONTRACTOR.



TIE ROD DETAIL



ISSUED FOR CONSTRUCTION



REVISIONS			
NO.	DESCRIPTION	DATE	BY
1	70%	3/8/19	CMG
2	90% FOR HQ REVIEW	5/31/19	CMG
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG

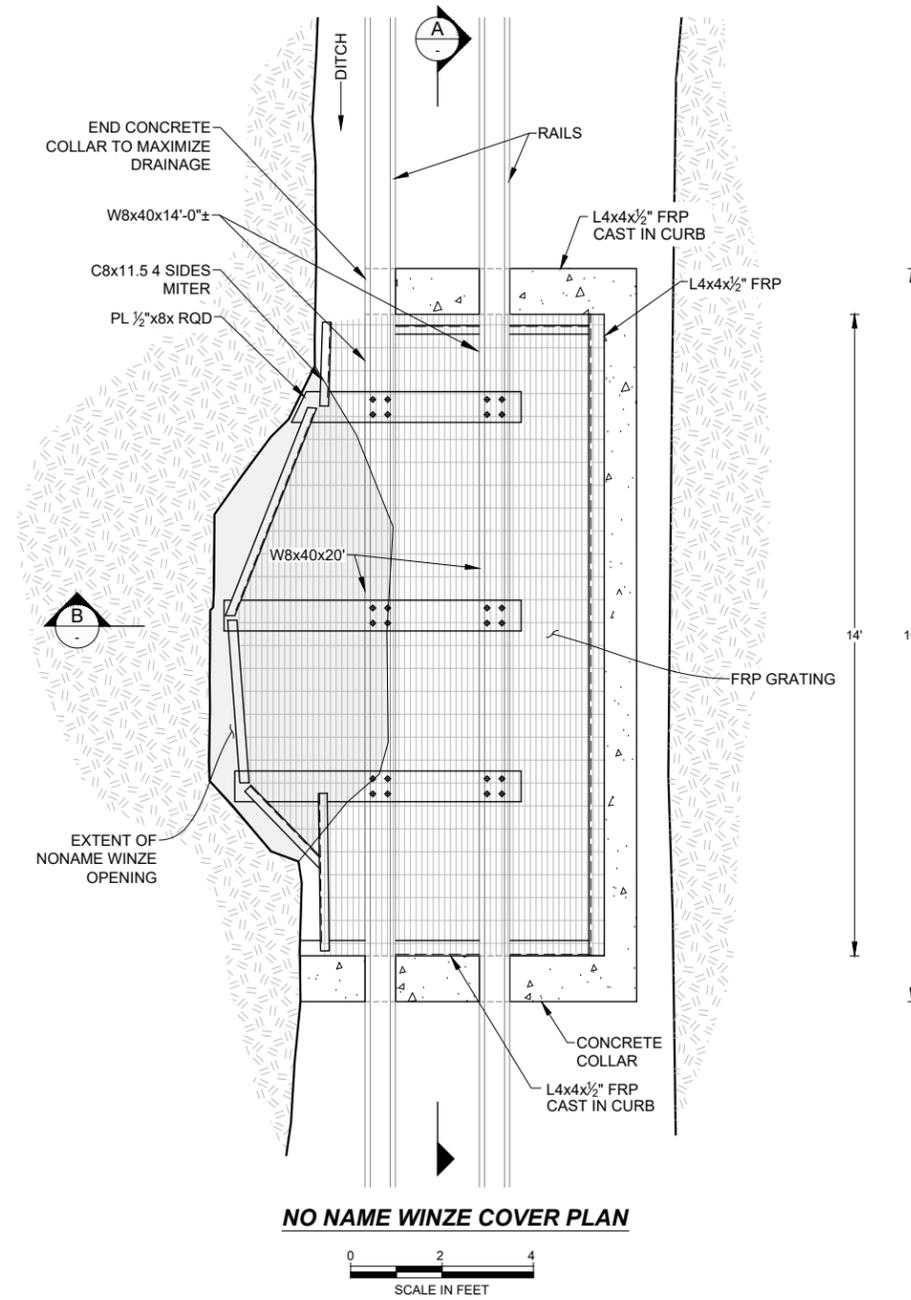
COMMODORE 5 TUNNEL REHABILITATION

GENERAL DETAILS

DEERE & AULT CONSULTANTS, INC.
600 S. AIRPORT RD., BLDG. A, SUITE 205
LONGMONT, CO 80503
TEL. 303.651.1468 FAX 303.651.1469

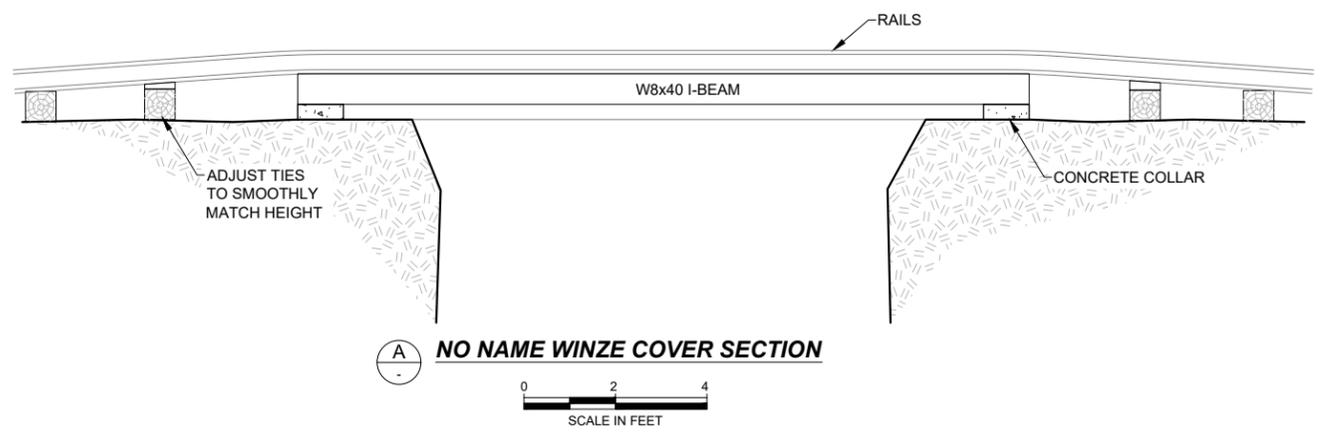
DESIGNED BY: CMG APPROVED BY: CMG JOB NO. SHEET:
DRAWN BY: HOG DATE: 0628.002.00 28 of 31
CHECKED BY: EMB SCALE: AS NOTED

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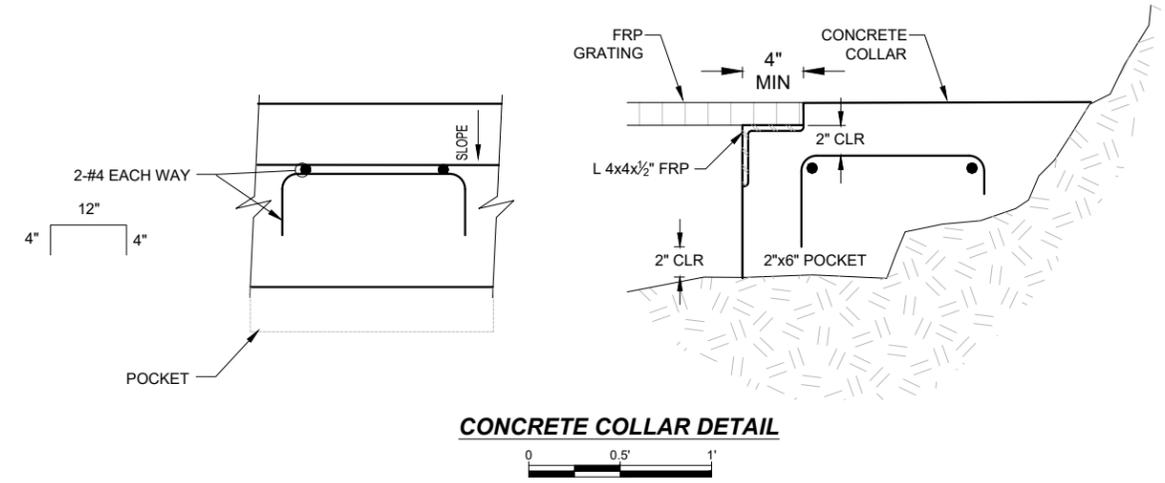
NO NAME WINZE COVER PLAN

0 2 4
SCALE IN FEET



NO NAME WINZE COVER SECTION

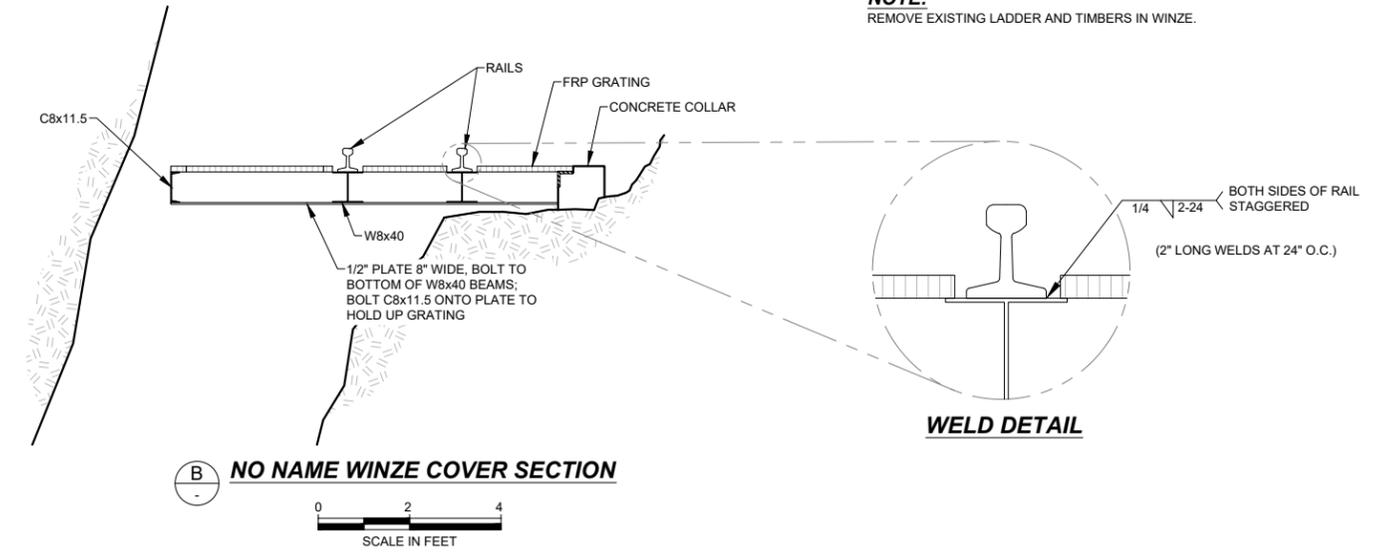
0 2 4
SCALE IN FEET



CONCRETE COLLAR DETAIL

0 0.5 1
SCALE IN FEET

NOTE:
REMOVE EXISTING LADDER AND TIMBERS IN WINZE.



NO NAME WINZE COVER SECTION

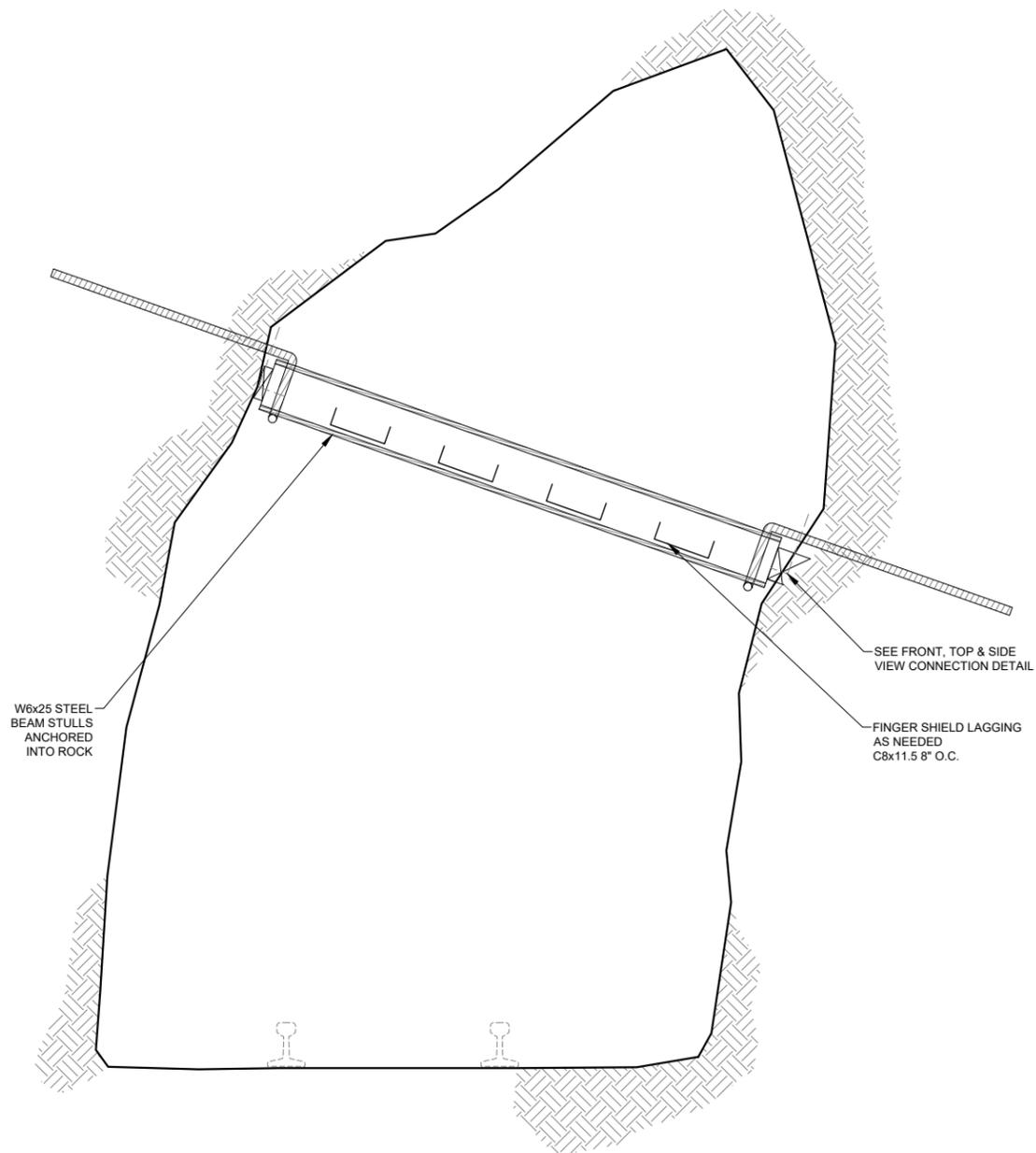
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WELD DETAIL

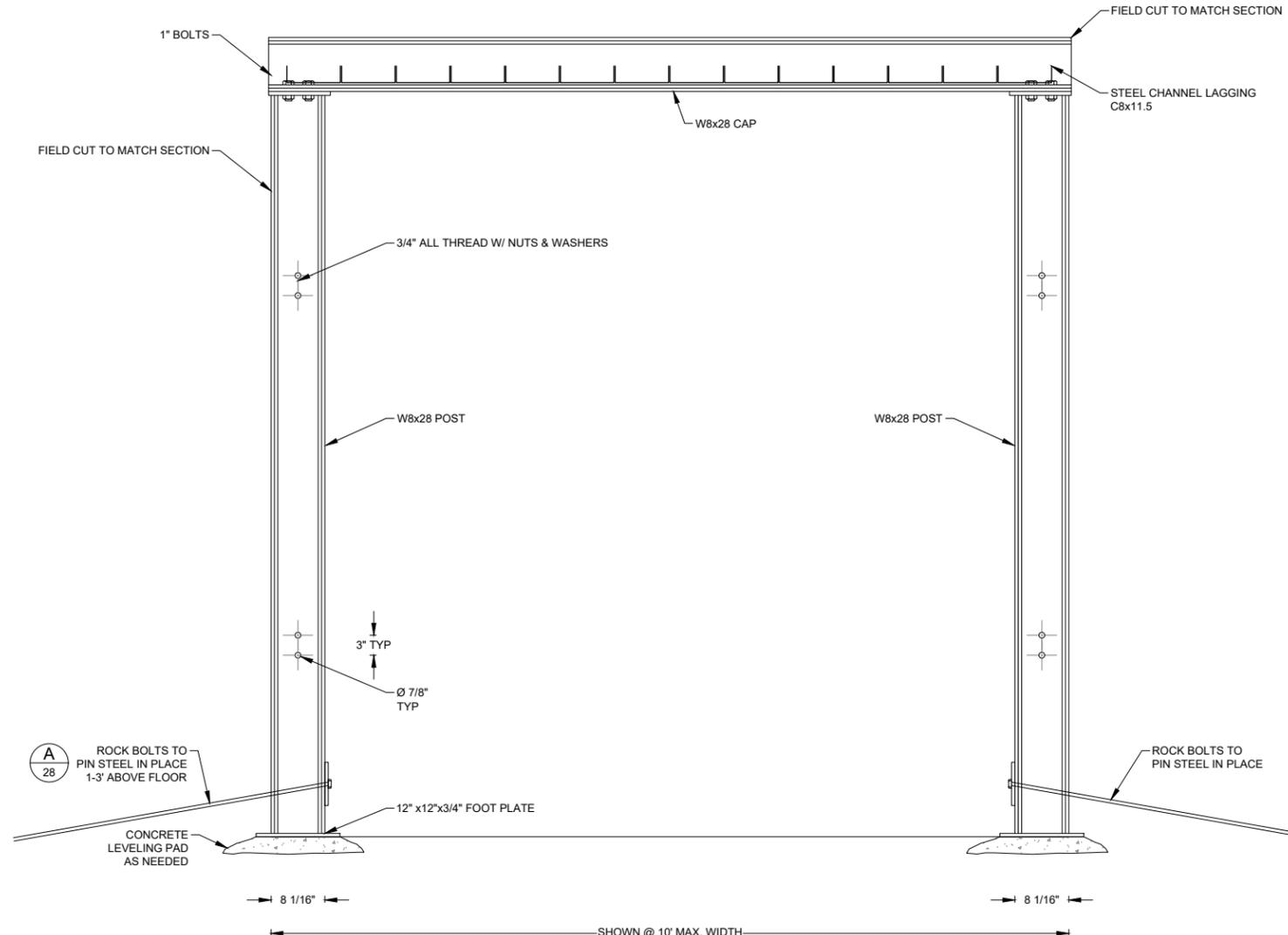
ISSUED FOR CONSTRUCTION



REVISIONS				COMMODORE 5 TUNNEL REHABILITATION		
NO.	DESCRIPTION	DATE	BY	NO NAME - Y02 WINZE COVER		
1	70%	3/8/19	CMG	DEERE & AULT		
2	90% FOR HQ REVIEW	5/31/19	CMG	CONSULTANTS, INC.		
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG	600 S. AIRPORT RD., BLDG. A, SUITE 205 LONGMONT, CO 80503 TEL. 303.651.1468 FAX 303.651.1469		
DESIGNED BY: CMG				APPROVED BY: CMG	JOB NO.	SHEET:
DRAWN BY: HOG				DATE: ---	0628.002.00	29 of 31
CHECKED BY: EMB				SCALE: AS NOTED		



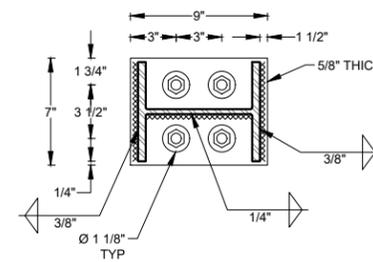
TYPICAL STEEL STULL SECTION (C)



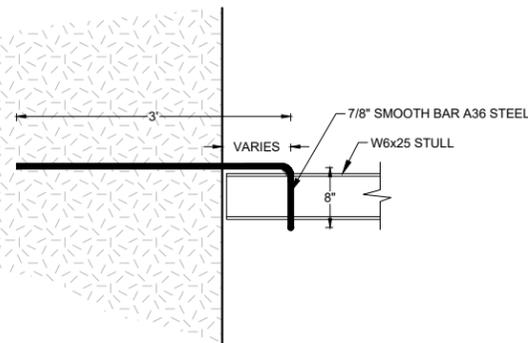
3 PIECE SQUARE SET OF W8x28 (D)



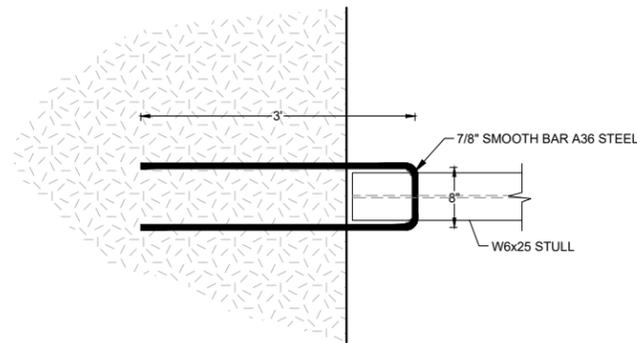
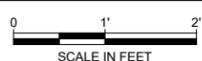
NOTE:
FIELD DIMENSIONS VARY
CUSTOM FITTING WILL BE REQUIRED.



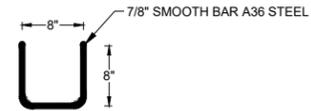
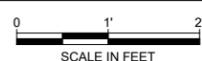
BUTT PLATE DETAIL



STULL CONNECTION SIDE VIEW



STULL CONNECTION TOP VIEW



STULL CONNECTION FRONT VIEW



ISSUED FOR CONSTRUCTION



REVISIONS			
NO.	DESCRIPTION	DATE	BY
1	70%	3/8/19	CMG
2	90% FOR HQ REVIEW	5/31/19	CMG
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG

COMMODORE 5 TUNNEL REHABILITATION

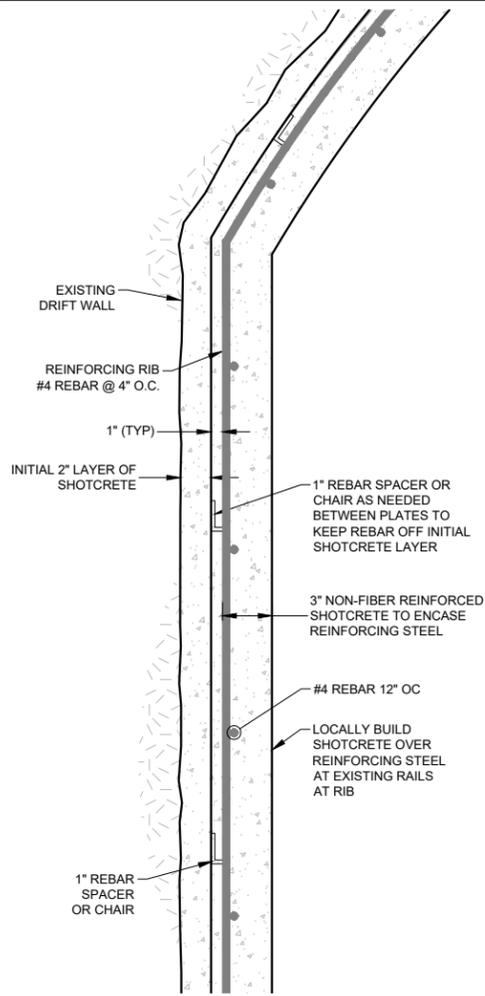
STEEL SET DETAILS

DESIGNED BY: CMG APPROVED BY: CMG
 DRAWN BY: HOG DATE: ---
 CHECKED BY: EMB SCALE: AS NOTED

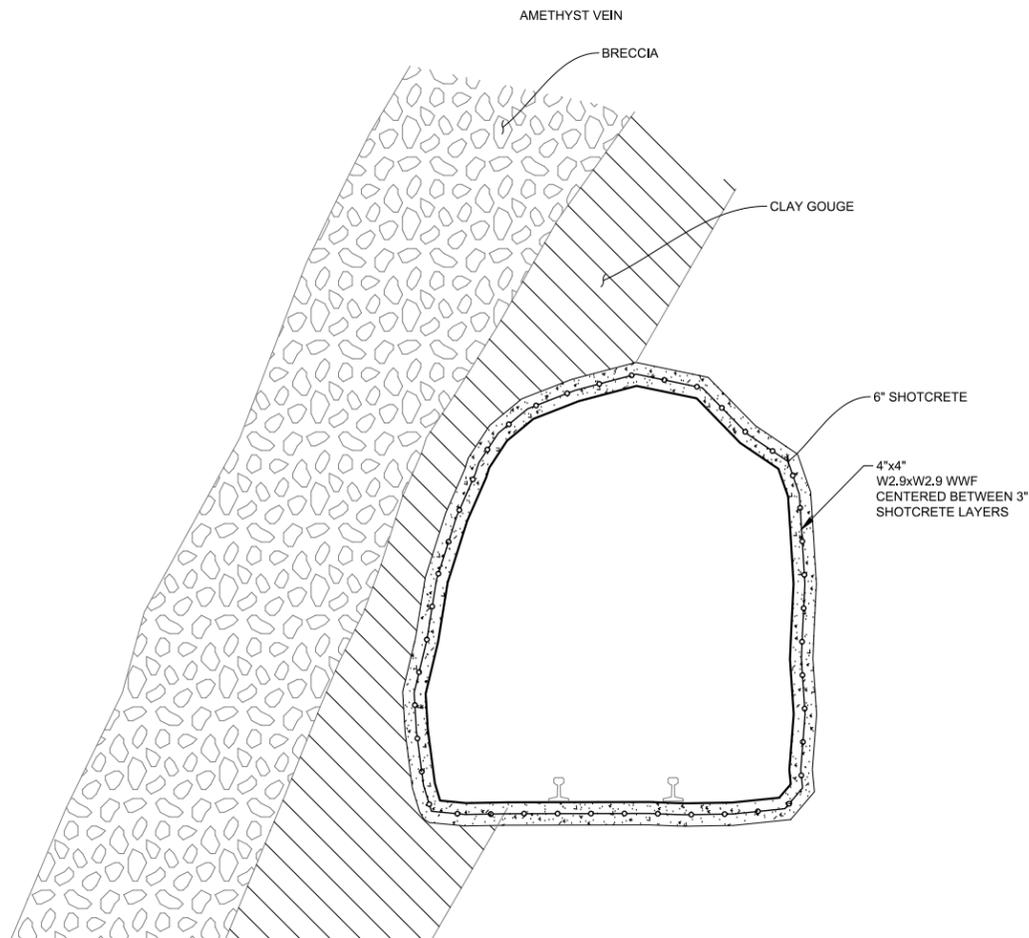
600 S. AIRPORT RD., BLDG. A, SUITE 205
 LONGMONT, CO 80503
 TEL. 303.651.1468 FAX 303.651.1469

JOB NO. 0628.002.00 SHEET: 30 of 31

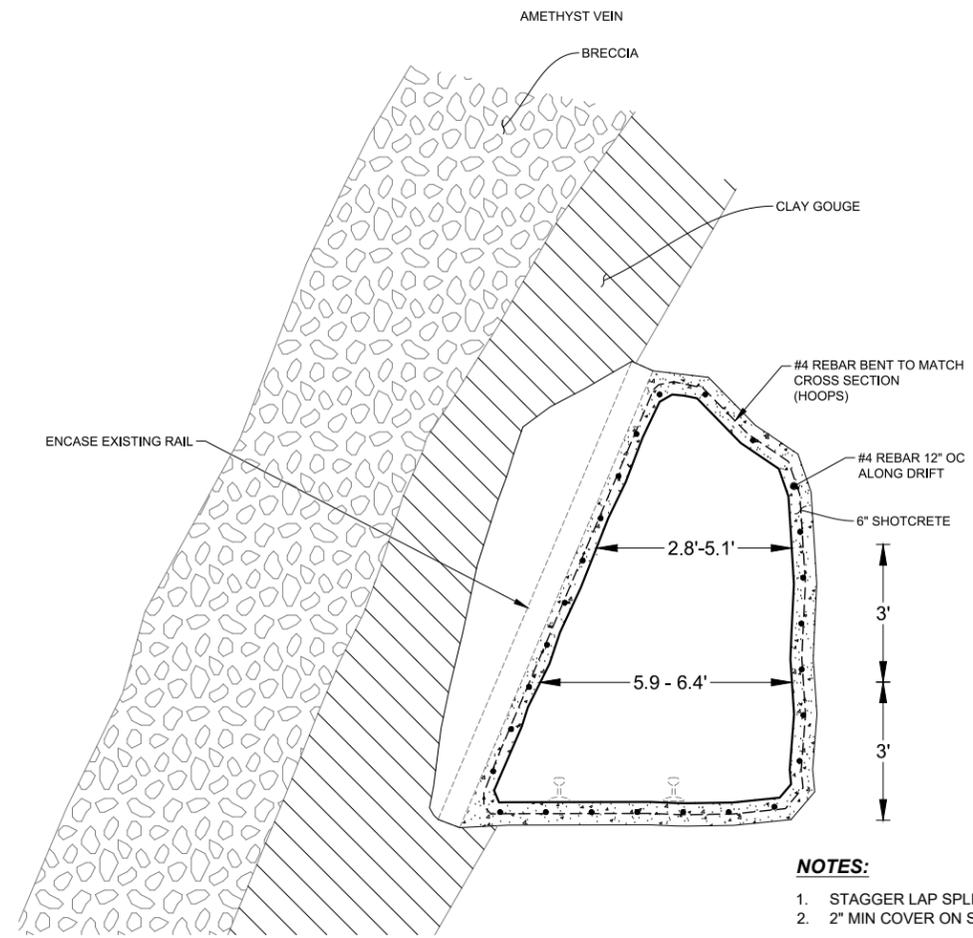
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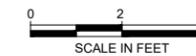
SHOTCRETE STATION 47+38 - 47+58 DETAIL



TYPICAL CROSS SECTION STA 47+08 - 47+38 (E)

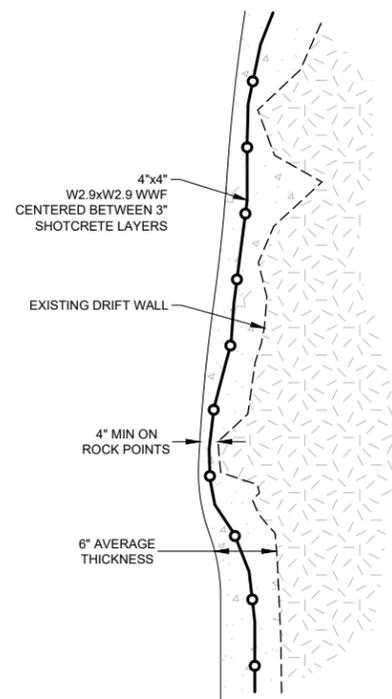


TYPICAL CROSS SECTION STA 47+38 - 47+58 (F)

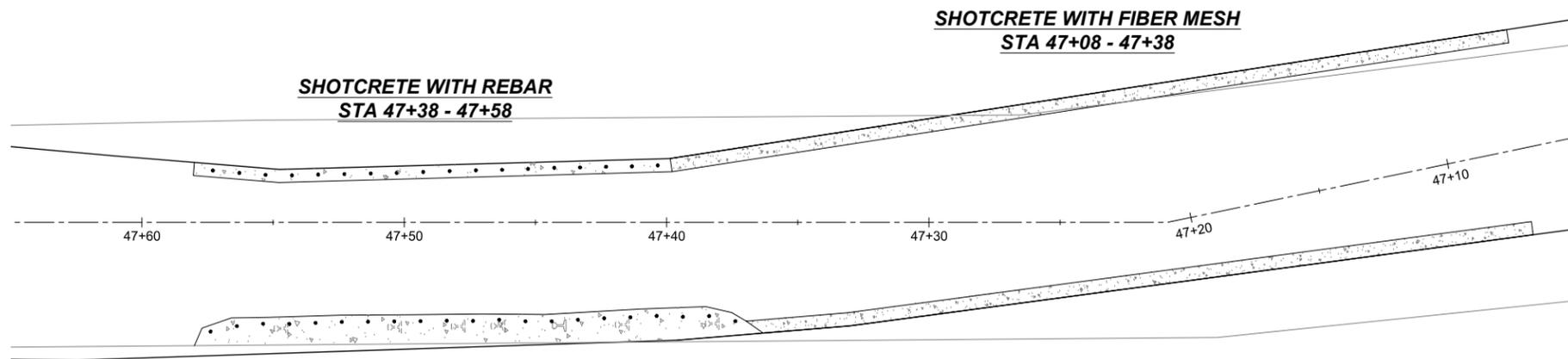


NOTES:

1. STAGGER LAP SPLICES 24" MIN.
2. 2" MIN COVER ON SHOTCRETE.



SHOTCRETE STATION 47+08 - 47+38 DETAIL



PLAN VIEW OF SHOTCRETE AREA



ISSUED FOR CONSTRUCTION



REVISIONS				COMMODORE 5 TUNNEL REHABILITATION		
NO.	DESCRIPTION	DATE	BY	SHOTCRETE SUPPORT		
1	70%	3/8/19	CMG	DEERE & AULT		
2	90% FOR HQ REVIEW	5/31/19	CMG	CONSULTANTS, INC.		
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG	600 S. AIRPORT RD., BLDG. A, SUITE 205 LONGMONT, CO 80503 TEL. 303.651.1468 FAX 303.651.1469		
DESIGNED BY: CMG				APPROVED BY: CMG	JOB NO.	SHEET:
DRAWN BY: HOG				DATE: ---	0628.002.00	31 of 31
CHECKED BY: EMB				SCALE: AS NOTED		