

CONSTRUCTION PLANS FOR

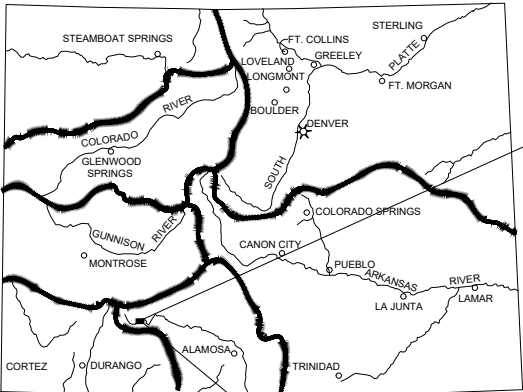
# COMMODORE 5 TUNNEL REHABILITATION

## SEGMENTS 5B AND 6

MINERAL COUNTY, COLORADO

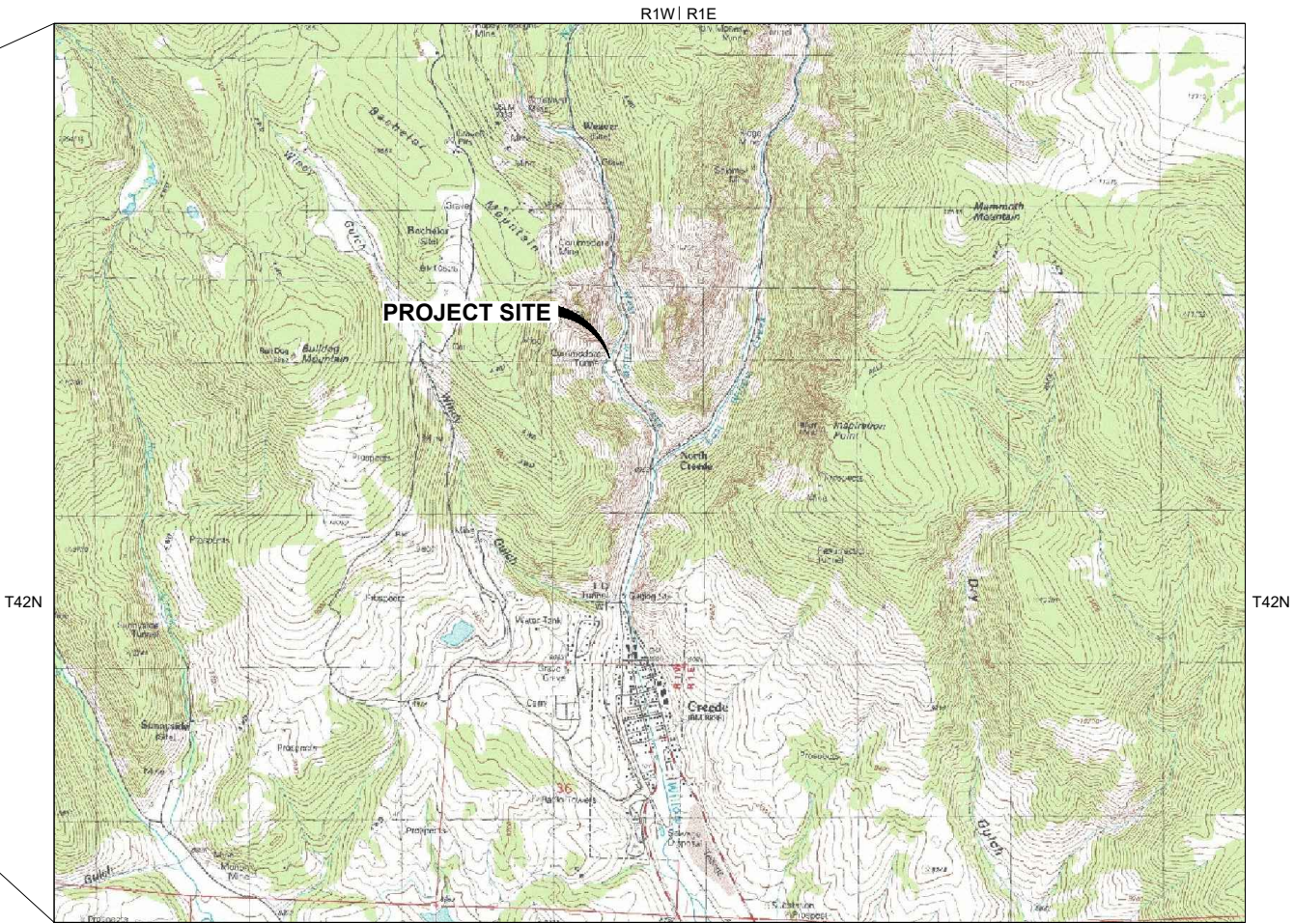
PREPARED FOR:

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

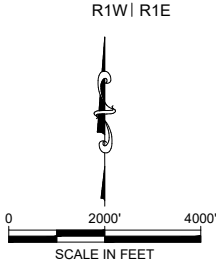


STATE OF COLORADO  
PROJECT LOCATION MAP

SCALE: NONE



PROJECT SITE



SCALE IN FEET



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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- 9 SEGMENT 5B STA 42+50 TO 44+00
- 10 SEGMENT 5B STA 44+500 TO 45+50
- 11 SEGMENT 5B STA 45+50 TO 47+00
- 12 SEGMENT 5B STA 47+00 TO 48+50
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- 27 HISTORICAL PROFILE
- 28 GENERAL DETAILS
- 29 NO NAME - YO2 WINZE COVER
- 30 STEEL SET DETAILS
- 31 SHOTCRETE SUPPORT

NOTE:

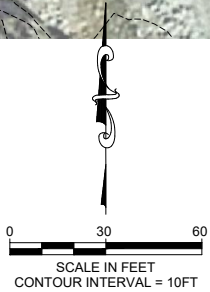
TOWNSHIP & RANGE BASED ON 6TH PRINCIPAL MERIDIAN

REVISIONS				COMMODORE 5 TUNNEL REHABILITATION			
NO	DESCRIPTION	DATE	BY	COVER & VICINITY MAP			
1	70%	3/8/19	CMG	DEERE & AULT			
2	90% FOR HQ REVIEW	5/31/19	CMG	CONSULTANTS, INC.			
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG	DESIGNED BY: CMG APPROVED BY: CMG			
				DRAWN BY: HOG DATE: ---			
				CHECKED BY: EMB SCALE: AS NOTED			
				JOB NO.		SHEET:	
				0628.002.00		1 of 31	





- 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.

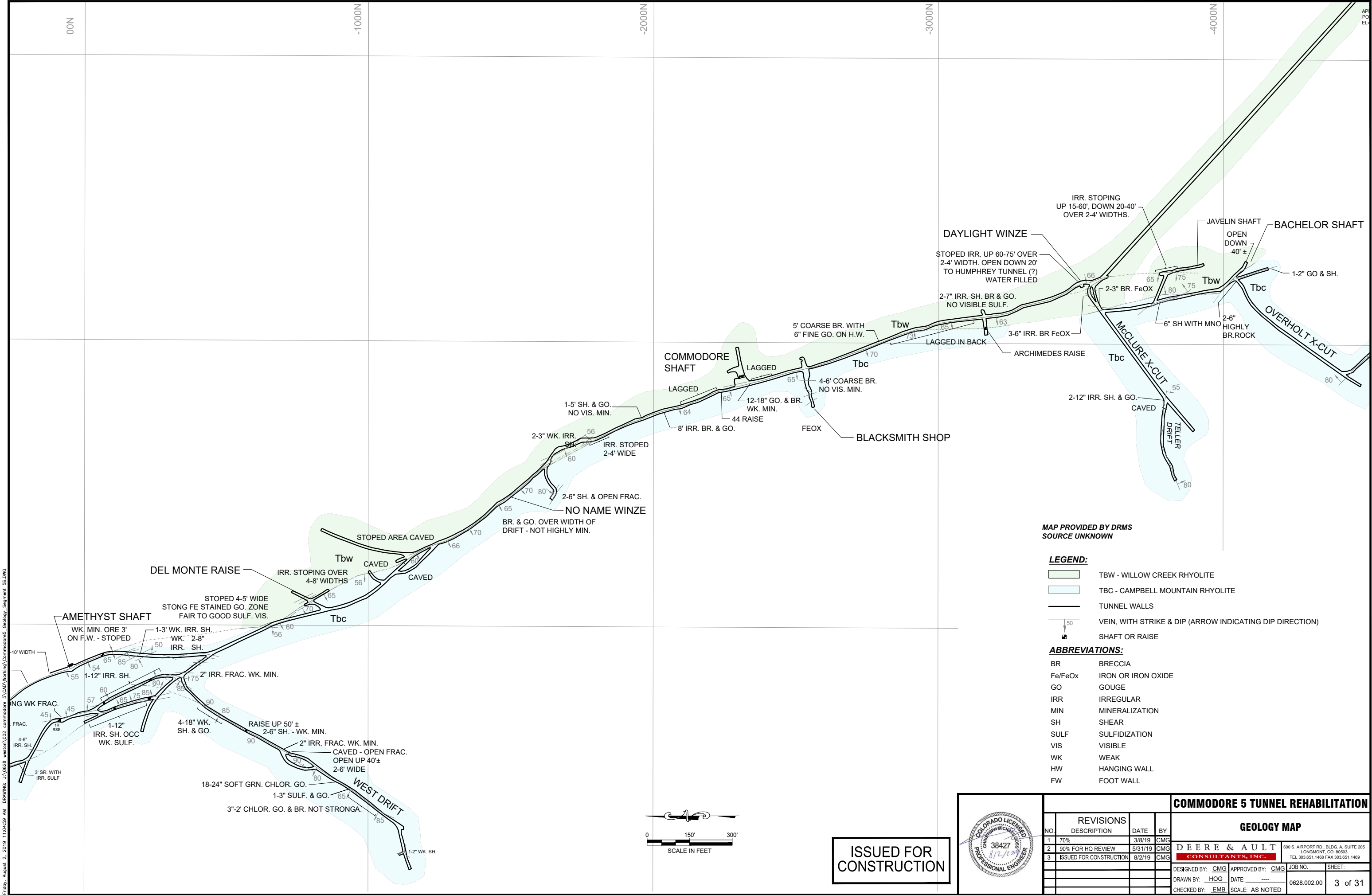


ISSUED FOR  
CONSTRUCTION



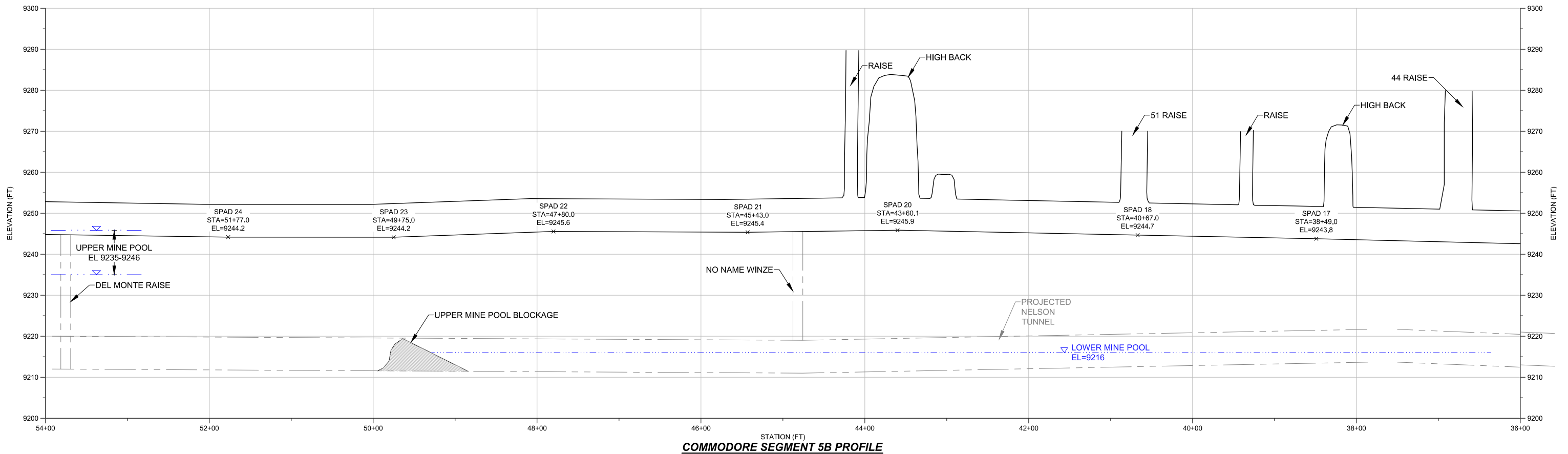
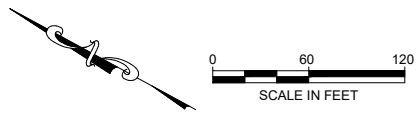
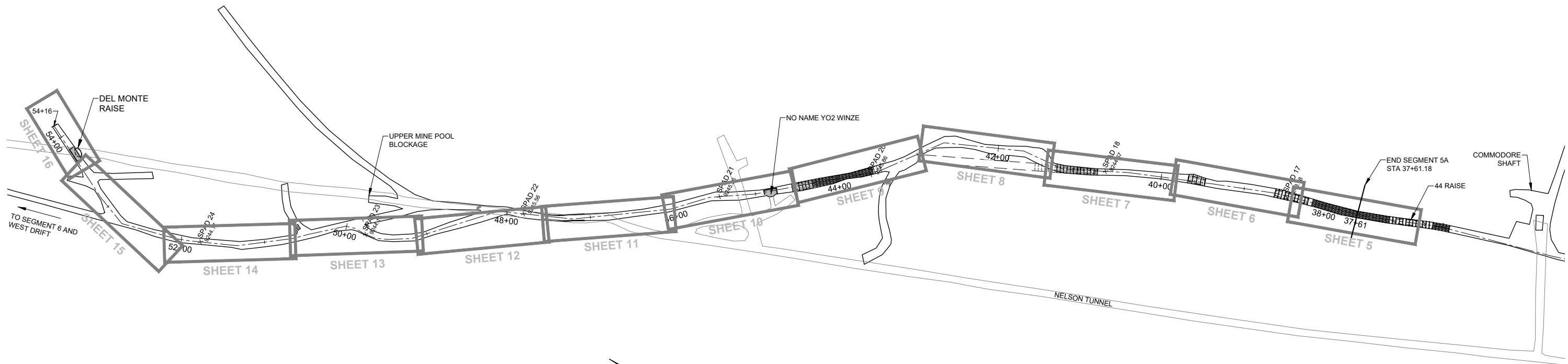
REVISIONS				COMMODORE 5 TUNNEL REHABILITATION			
NO.	DESCRIPTION	DATE	BY	PORTAL AREA, EXISTING CONDITIONS AND SURVEY CONTROL			
1	70%	3/8/19	CMG	<b>DEERE &amp; AULT</b> CONSULTANTS, INC. <small>600 S. AIRPORT RD., BLDG. A, SUITE 205 LONGMONT, CO 80503 TEL 303.651.1468 FAX 303.651.1469</small>			
2	90%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



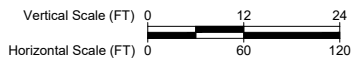


Friday, August 2, 2019 11:04:59 AM DRAWING: U:\0628\_watson\002\_commodore 5\000 Working\Commodore5\_Geology\_Segment 5B.DWG

Friday, August 2, 2019 11:05:09 AM DRAWING: U:\0628\_weston\002\_commodore 5\000\_Working\Commodore5\_Plan\_Segment 5B.DWG



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 HQ REVIEW	5/31/19	CMG
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG

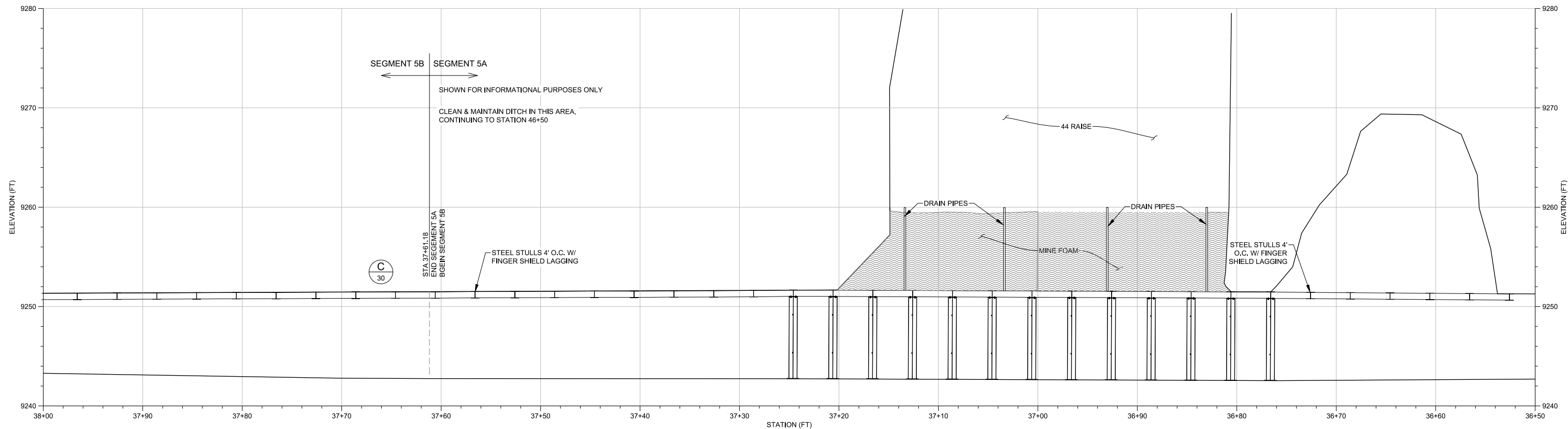
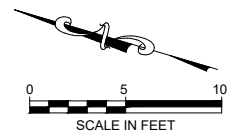
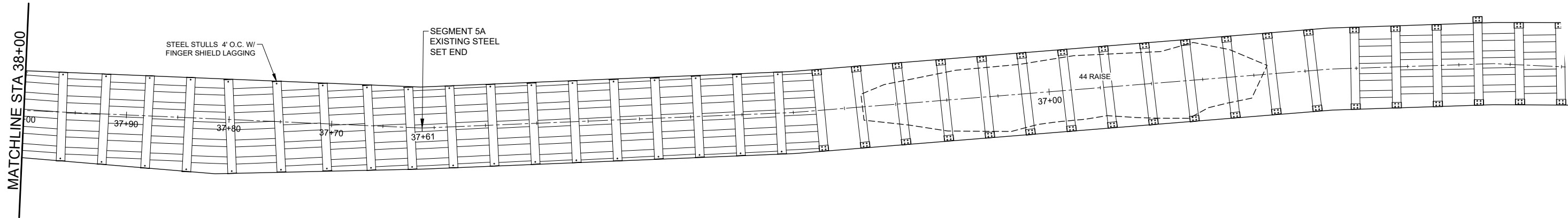
COMMODORE 5 TUNNEL REHABILITATION

SEGMENT 5B PLAN & PROFILE

<b>DEERE &amp; AULT</b> 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	4 of 31
CHECKED BY: EMB	SCALE: AS NOTED		



Friday, August 2, 2019 11:05:15 AM DRAWING: U:\0628 weston\002 commodore 5\000 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

**DEERE & AULT**  
CONSULTANTS, INC.

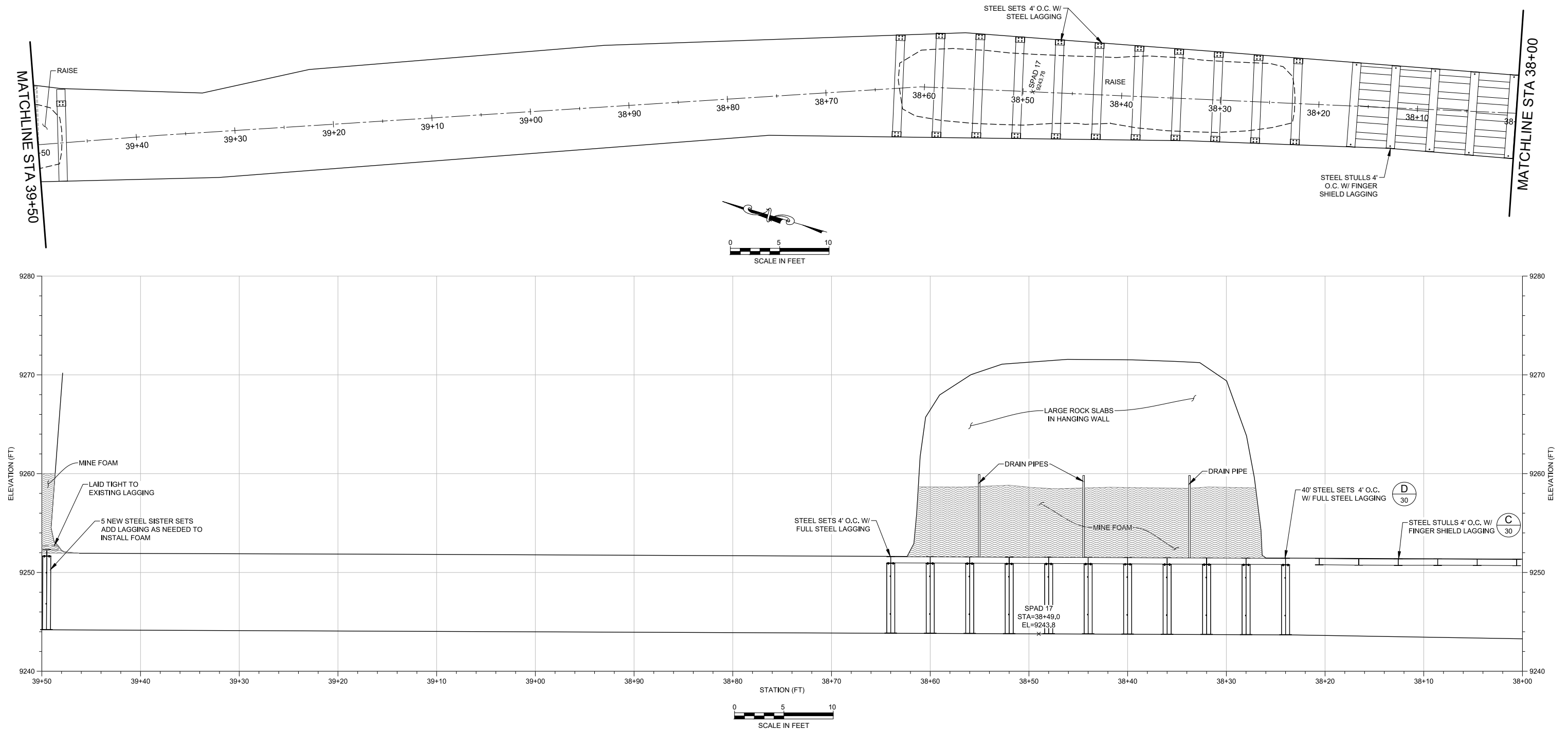
600 S. AIRPORT RD., BLDG. A, SUITE 205  
LONGMONT, CO 80503  
TEL 303.651.1468 FAX 303.651.1469

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

JOB NO. 0628.002.00  
SHEET: 5 of 31



Friday, August 2, 2019 11:05:20 AM DRAWING: U:\0628 weston\002 commodore 5\000 Working\Commodore5\_Plan\_Segment 5B.DWG



- NOTE:**
- SIGNIFICANT TIMBER AND DEBRIS REMOVAL IN THE AREA APPROXIMATELY STATION 38+20 TO 38+70.

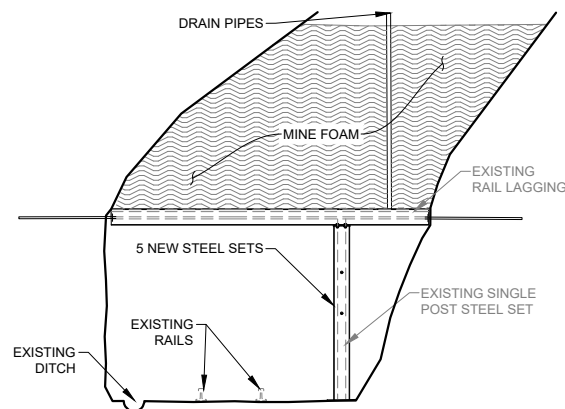
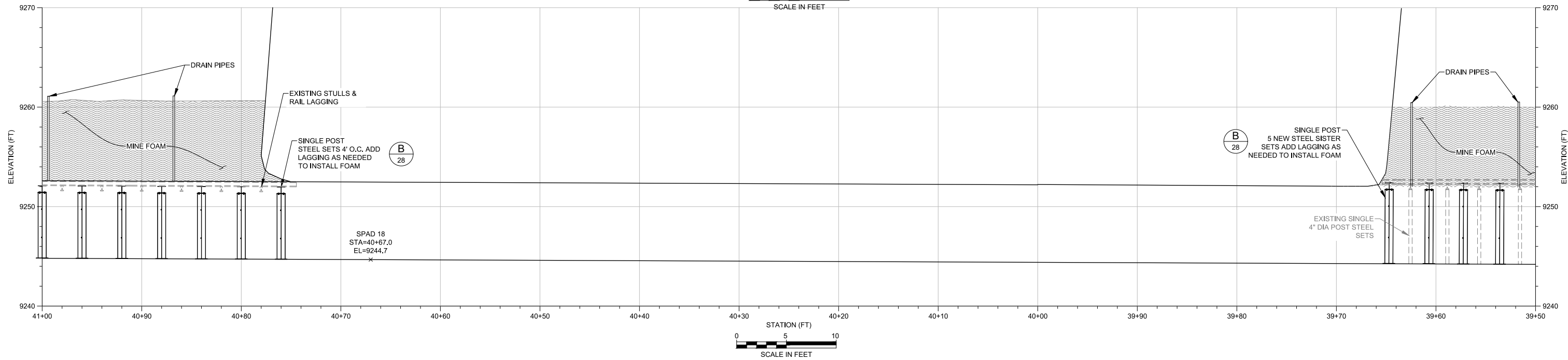
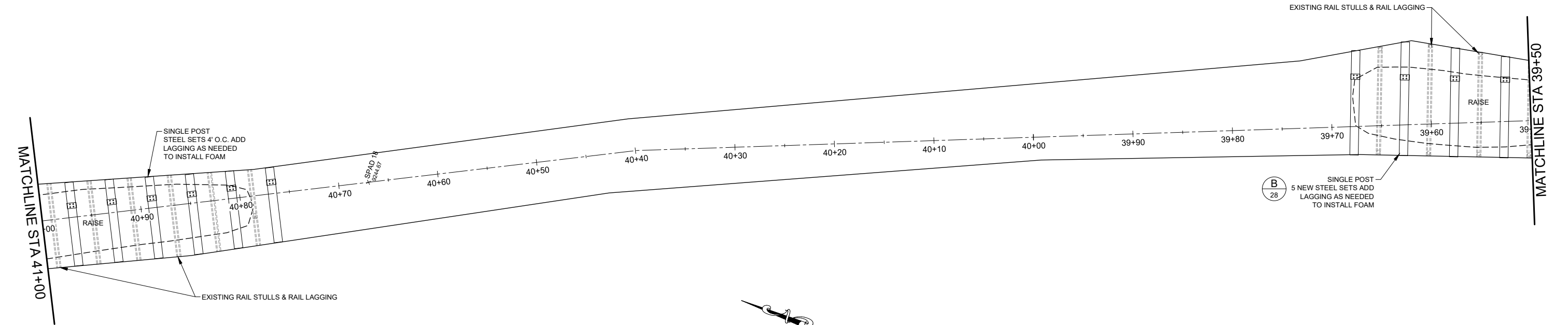
ISSUED FOR  
CONSTRUCTION



				COMMODORE 5 TUNNEL REHABILITATION			
NO.	REVISIONS DESCRIPTION	DATE	BY	SEGMENT 5B STA 38+00 TO 39+50			
1	70%	3/8/19	CMG	DEERE & AULT CONSULTANTS, INC.		600 S. AIRPORT RD., BLDG. A, SUITE 205 LONGMONT, CO 80503 TEL: 303.661.1468 FAX: 303.661.1469	
2	90% FOR HQ REVIEW	5/31/19	CMG				
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG				
				DESIGNED BY: CMG	APPROVED BY: CMG	JOB NO.	SHEET:
				DRAWN BY: HOG	DATE: ----	0628.002.00	6 of 31
				CHECKED BY: EMB	SCALE: AS NOTED		



Friday, August 2, 2019 11:05:30 AM DRAWING: U:\0628 weston\002 commodore 5\CAD 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

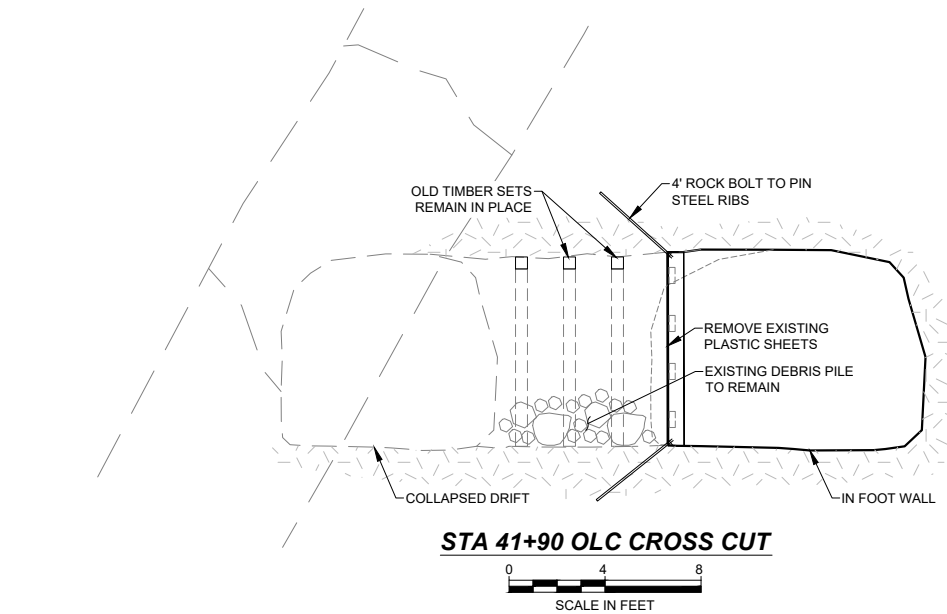
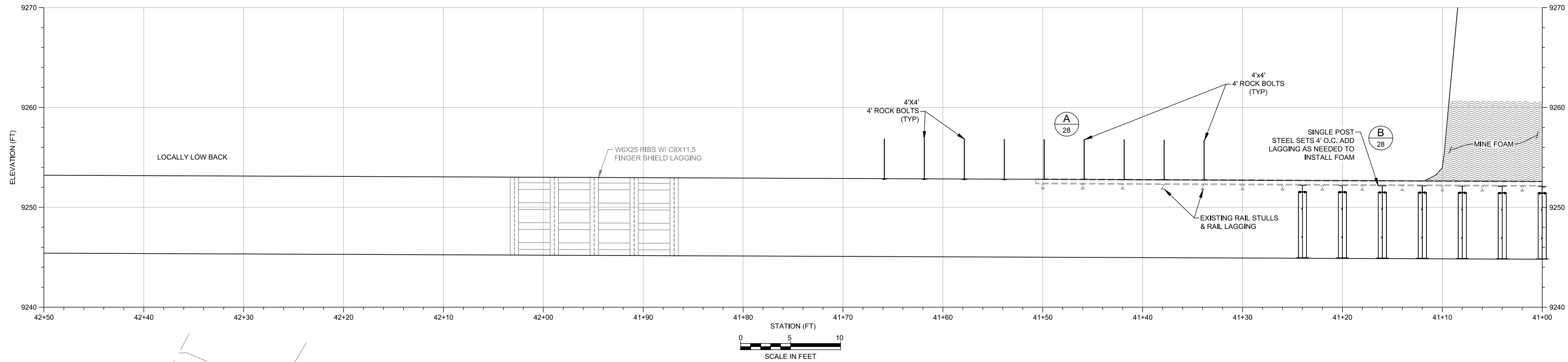
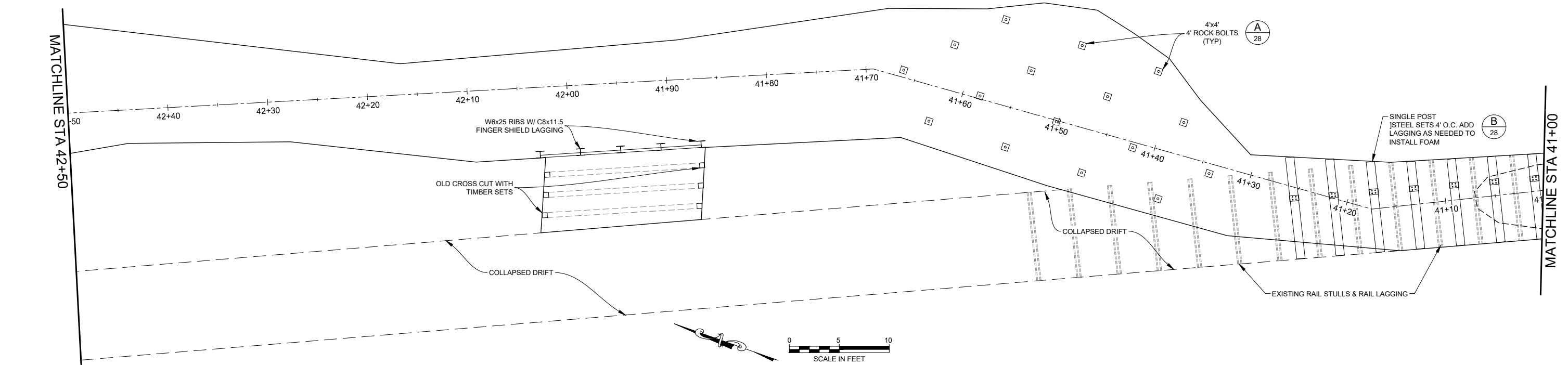
DEERE & AULT  
CONSULTANTS, INC.

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	7 of 31
CHECKED BY: EMB	SCALE: AS NOTED		



Friday, August 2, 2019 11:05:39 AM DRAWING: U:\0628 weston\002 commodore 5\000 Working\Commodore5\_Plan\_Segment 5B.DWG



ISSUED FOR  
CONSTRUCTION

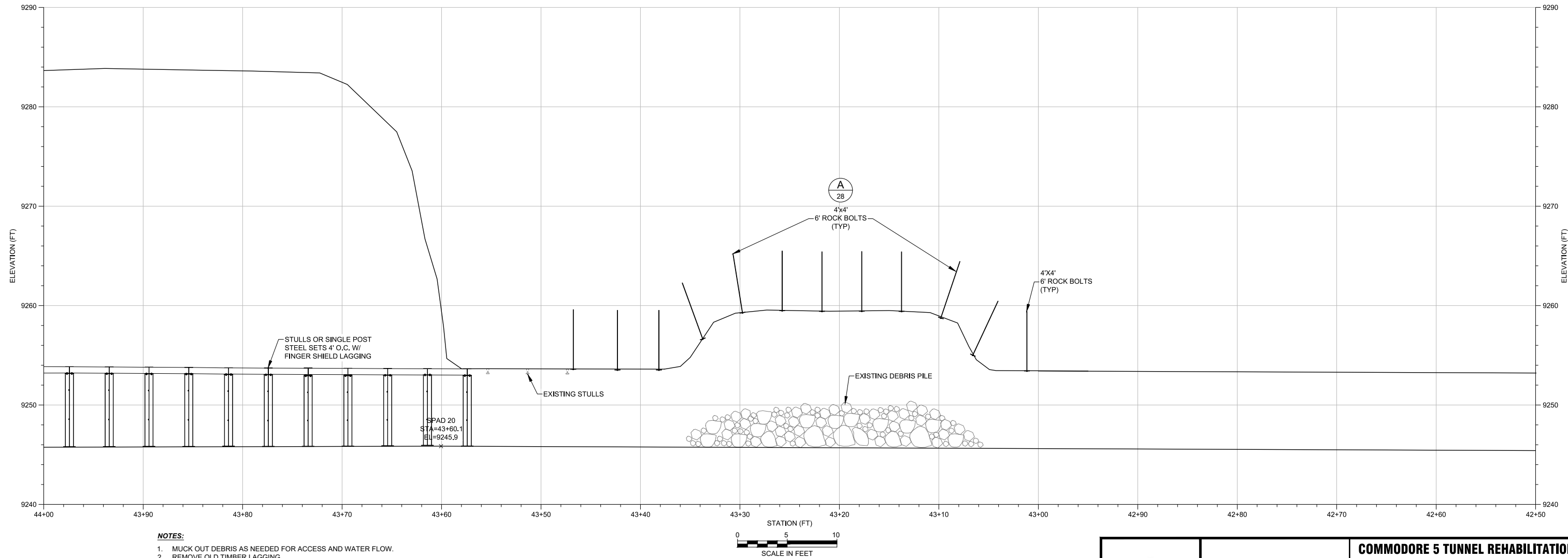
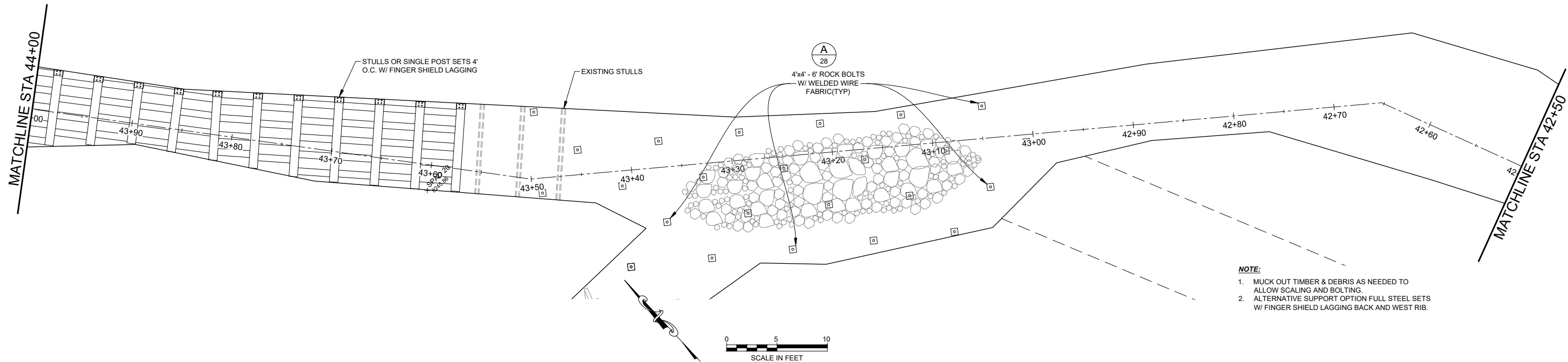


REVISIONS				COMMODORE 5 TUNNEL REHABILITATION			
NO.	DESCRIPTION	DATE	BY	SEGMENT 5B STA 41+00 TO 42+50			
1	70%	3/8/19	CMG	<b>DEERE &amp; AULT</b> CONSULTANTS, INC.			
2	90% FOR HQ REVIEW	5/31/19	CMG				
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG				
DESIGNED BY: CMG				APPROVED BY: CMG		JOB NO.	
DRAWN BY: HOG				DATE: ---		SHEET:	
CHECKED BY: EMB				SCALE: AS NOTED		0628.002.00	

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



Friday, August 2, 2019 11:05:40 AM DRAWING: U:\0628 weston\002 commodore 5\002 Working\Commodore5\_Plan\_Segment 5B.DWG



- NOTES:**
1. MUCK OUT DEBRIS AS NEEDED FOR ACCESS AND WATER FLOW.
  2. 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

**DEERE & AULT**  
CONSULTANTS, INC.

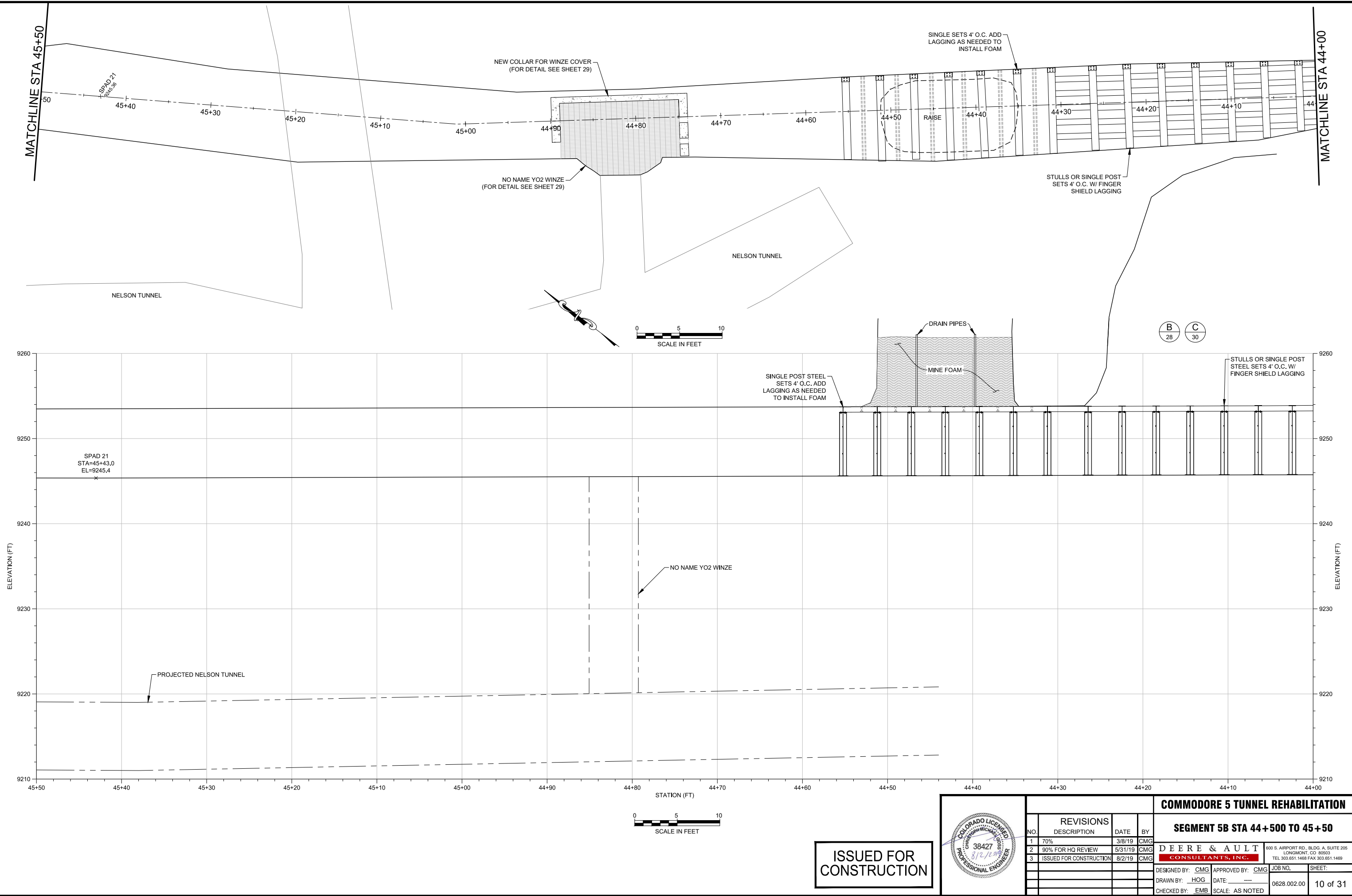
600 S. AIRPORT RD., BLDG. A, SUITE 205  
LONGMONT, CO 80503  
TEL 303.651.1468 FAX 303.651.1469

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

JOB NO. SHEET:  
0628.002.00 9 of 31



Friday, August 2, 2019 11:05:45 AM DRAWING: U:\0628 weston\002 commodore 5\000 Working\Commodore5\_Plan\_Segment 5B.DWG



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CONSTRUCTION

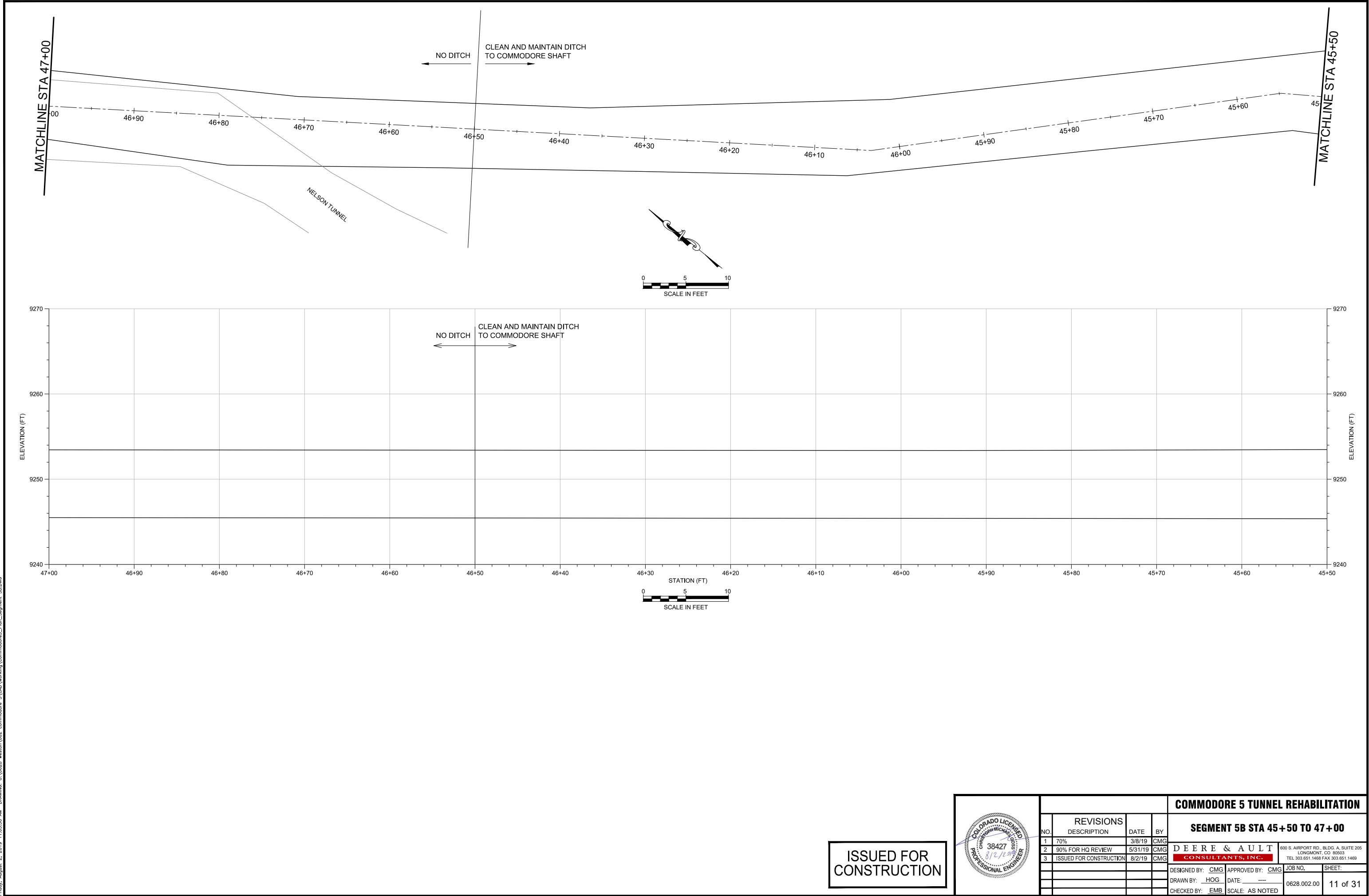


REVISIONS			
NO.	DESCRIPTION	DATE	BY
1	70%	3/8/19	CMG
2	90% FOR HQ REVIEW	5/31/19	CMG
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG

COMMODORE 5 TUNNEL REHABILITATION			
SEGMENT 5B STA 44+500 TO 45+50			
DESIGNED BY: CMG		APPROVED BY: CMG	JOB NO.
DRAWN BY: HOG		DATE: ---	SHEET:
CHECKED BY: EMB		SCALE: AS NOTED	0628.002.00
DEERE & AULT CONSULTANTS, INC.		600 S. AIRPORT RD., BLDG. A, SUITE 205 LONGMONT, CO 80503 TEL 303.651.1468 FAX 303.651.1469	10 of 31



Friday, August 2, 2019 11:05:50 AM DRAWING: U:\0628 weston\002 commodore 5\002 Working\Commodore5\_Plan\_Segment 5B.DWG



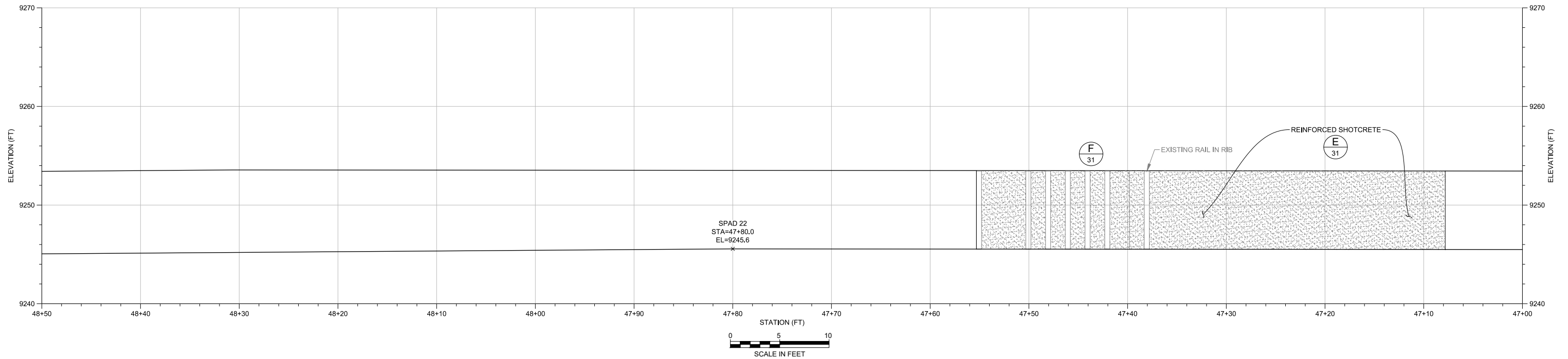
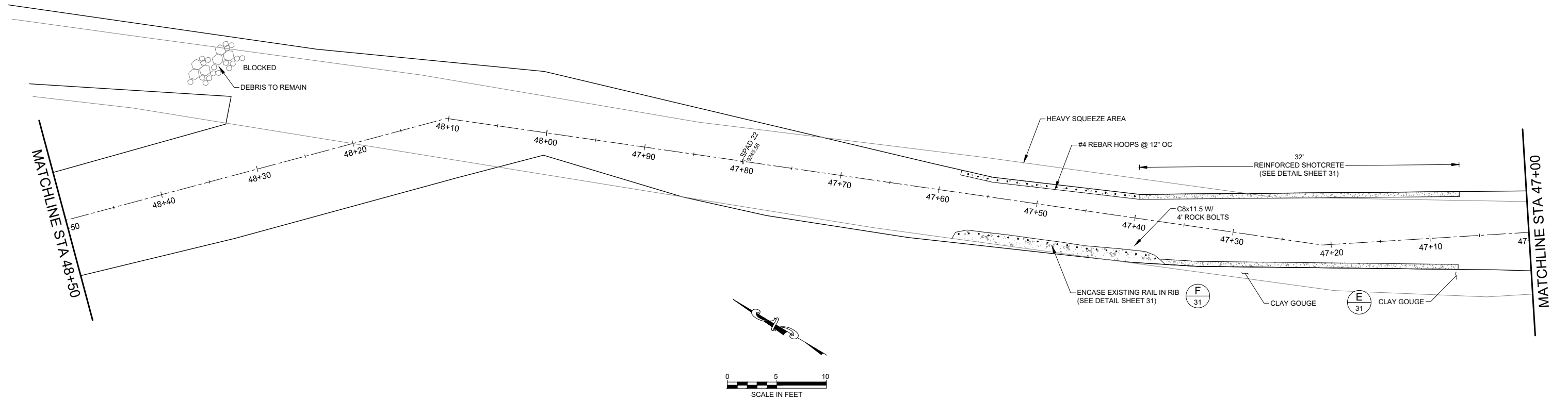
ISSUED FOR  
CONSTRUCTION



REVISIONS				COMMODORE 5 TUNNEL REHABILITATION			
NO.	DESCRIPTION	DATE	BY	SEGMENT 5B STA 45 + 50 TO 47 + 00			
1	70%	3/8/19	CMG	<b>DEERE &amp; AULT</b> <b>CONSULTANTS, INC.</b>			
2	90% FOR HQ REVIEW	5/31/19	CMG				
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG				
				DESIGNED BY: CMG	APPROVED BY: CMG	JOB NO.	SHEET:
				DRAWN BY: HOG	DATE: ---	0628.002.00	11 of 31
				CHECKED BY: EMB	SCALE: AS NOTED		



Friday, August 2, 2019 11:05:55 AM DRAWING: U:\0628 weston\002 commodore 5\0628 Working\Commodore5\_Plan\_Segment 5B.DWG

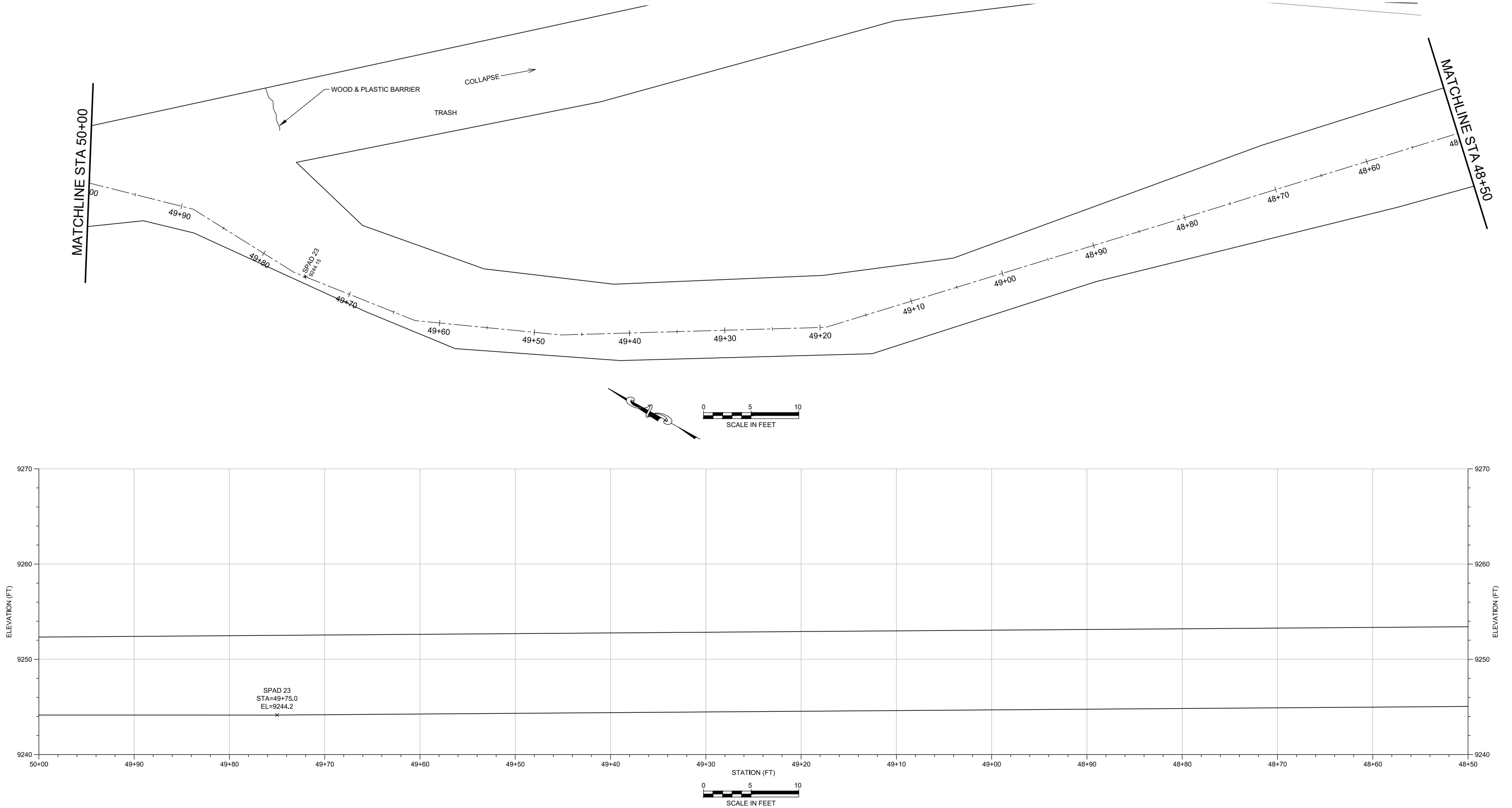


ISSUED FOR  
CONSTRUCTION



REVISIONS				COMMODORE 5 TUNNEL REHABILITATION			
NO.	DESCRIPTION	DATE	BY	SEGMENT 5B STA 47+00 TO 48+50			
1	70%	3/8/19	CMG	<b>DEERE &amp; AULT</b> CONSULTANTS, INC.			
2	90% FOR HQ REVIEW	5/31/19	CMG				
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG				
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			

Friday, August 2, 2019 11:06:00 AM DRAWING: U:\0628 weston\002 commodore 5\000 Working\Commodore5\_Plan\_Segment 5B.DWG



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CONSTRUCTION

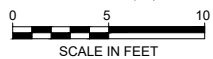
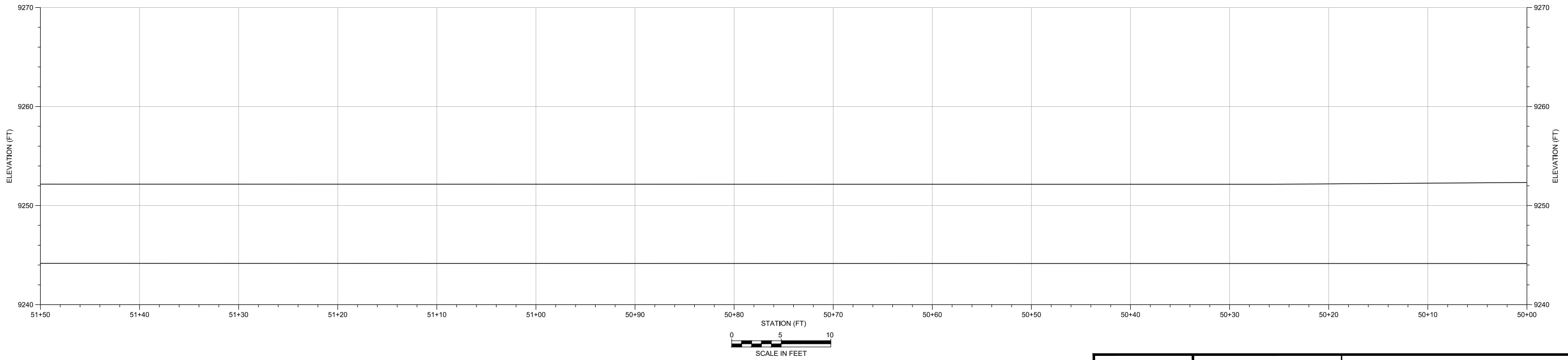
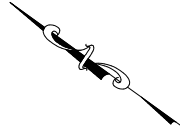
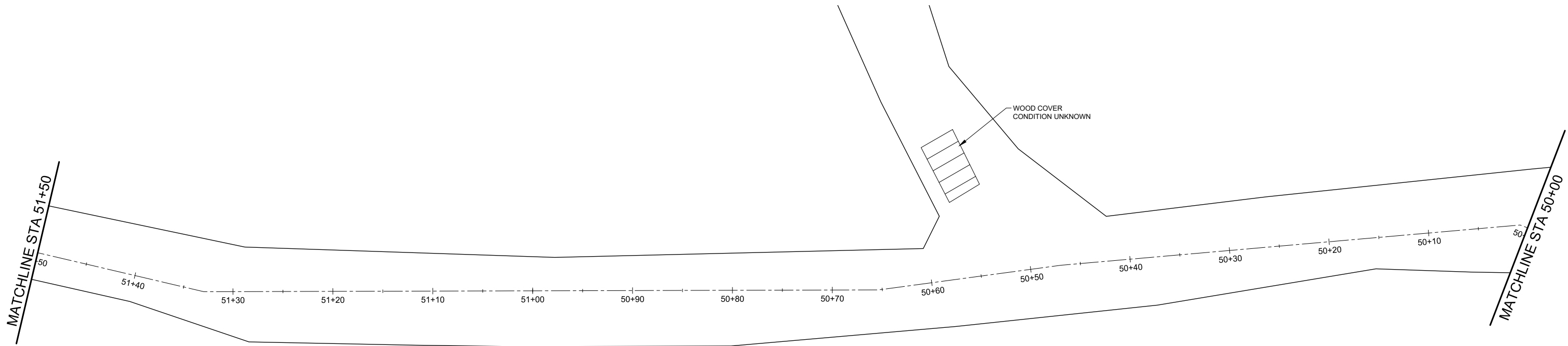


				COMMODORE 5 TUNNEL REHABILITATION			
				SEGMENT 5B STA 48+50 TO 50+00			
NO.	REVISIONS	DATE	BY				
1	70%	3/8/19	CMG				
2	90% FOR HQ REVIEW	5/31/19	CMG				
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG				
				DESIGNED BY: CMG	APPROVED BY: CMG	JOB NO.	SHEET:
				DRAWN BY: HOG	DATE: ---	0628.002.00	13 of 31
				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



Friday, August 2, 2019 11:06:05 AM DRAWING: U:\0628\_weston\002\_commodore 5\002\Working\Commodore5\_Plan\_Segment 5B.DWG

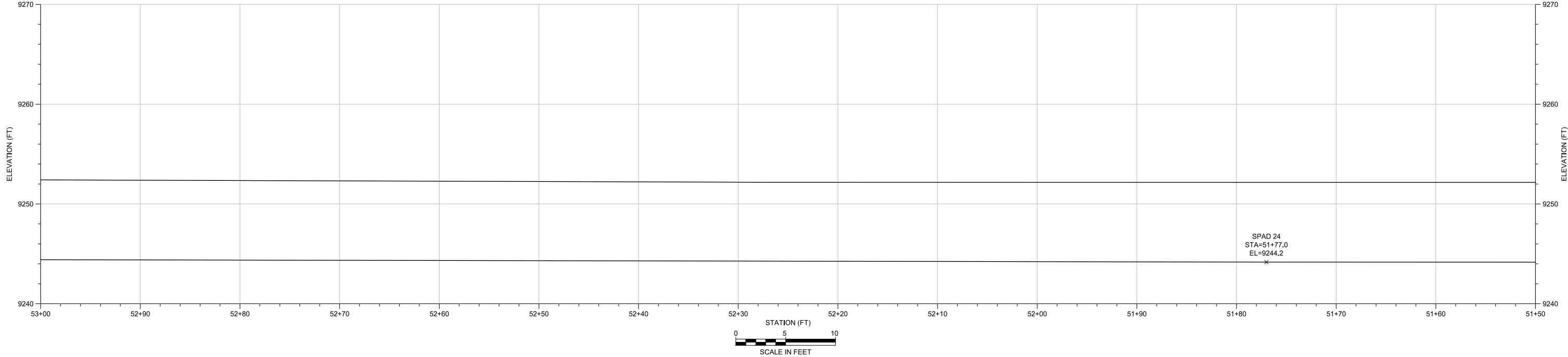
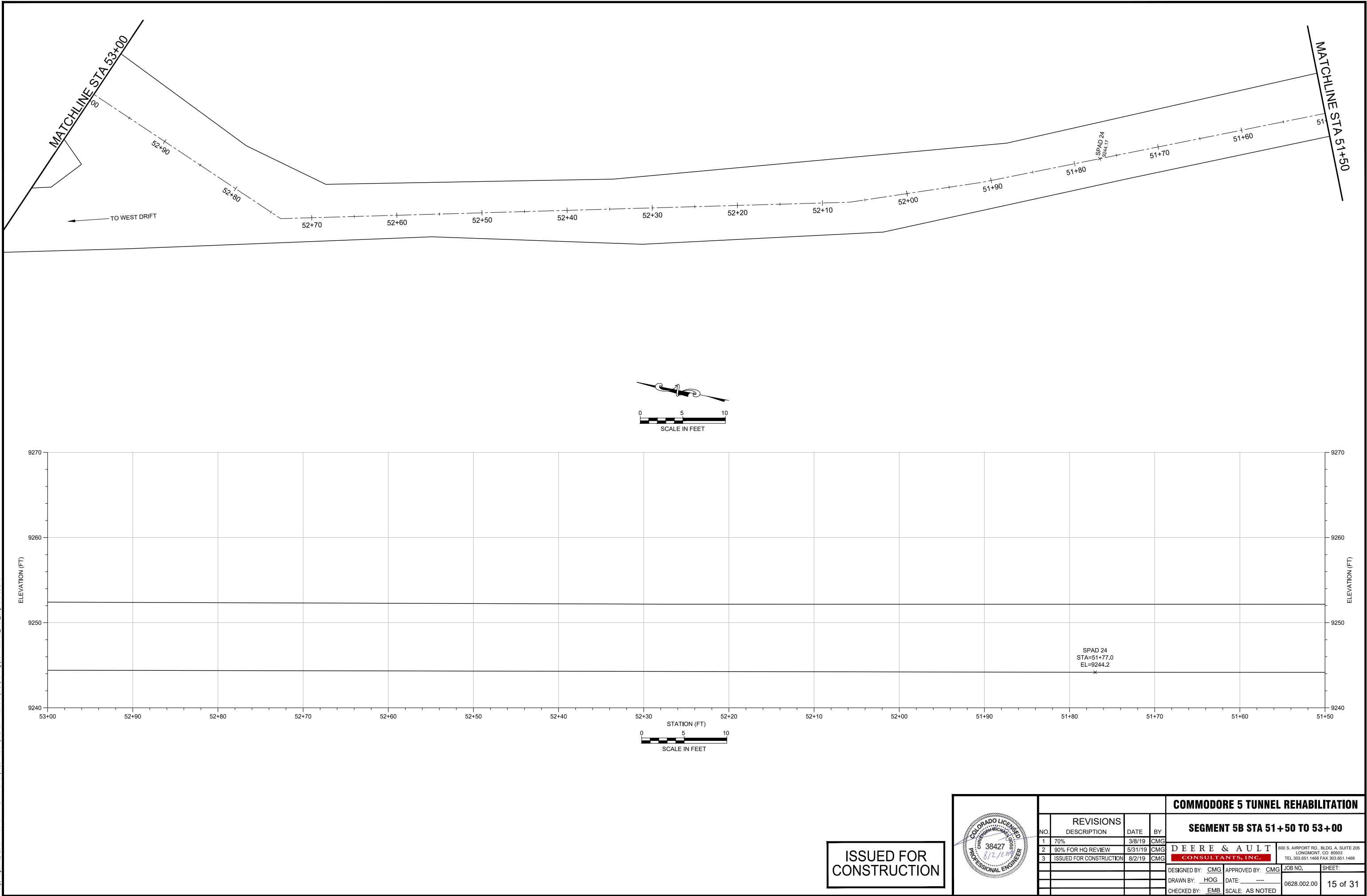


ISSUED FOR  
CONSTRUCTION



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				
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			

Friday, August 2, 2019 11:06:10 AM DRAWING: U:\0628 weston\002 commodore 5\000 Working\Commodore5\_Plan\_Segment 5B.DWG

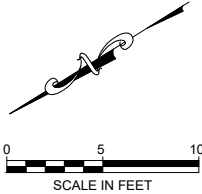


ISSUED FOR  
CONSTRUCTION



REVISIONS				COMMODORE 5 TUNNEL REHABILITATION			
NO.	DESCRIPTION	DATE	BY	SEGMENT 5B STA 51 + 50 TO 53 + 00			
1	70%	3/8/19	CMG	<b>DEERE &amp; AULT</b> <b>CONSULTANTS, INC.</b>			
2	90% FOR HQ REVIEW	5/31/19	CMG				
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG				
				DESIGNED BY: CMG	APPROVED BY: CMG	JOB NO.	SHEET:
				DRAWN BY: HOG	DATE: ---	0628.002.00	15 of 31
				CHECKED BY: EMB	SCALE: AS NOTED		





DETAIL 1

4'-4 $\frac{1}{2}$ " (TYP)

18'

7'

L4x4x $\frac{3}{8}$

W6x3.4

FRP GRATING

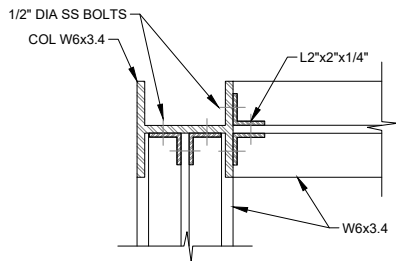
**PLAN**

## PROFILE

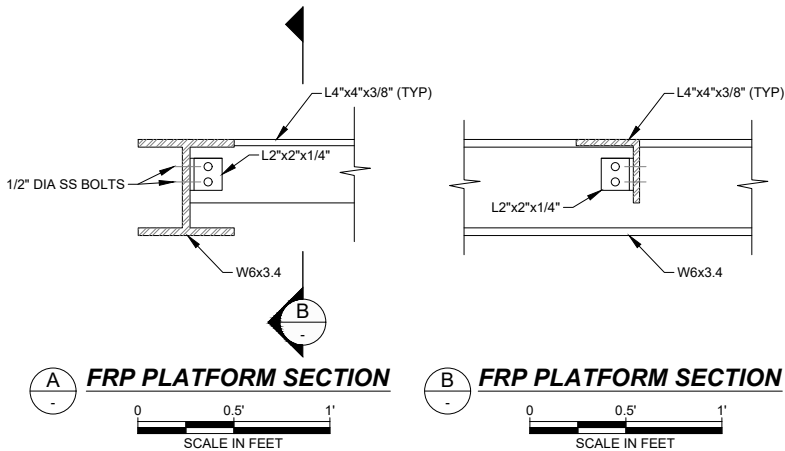
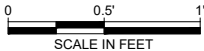
**NOTE:**

1. STRUCTURAL MEMBERS ARE FIBER REINFORCED POLYMER (FRP)

## FRP PLATFORM DETAIL



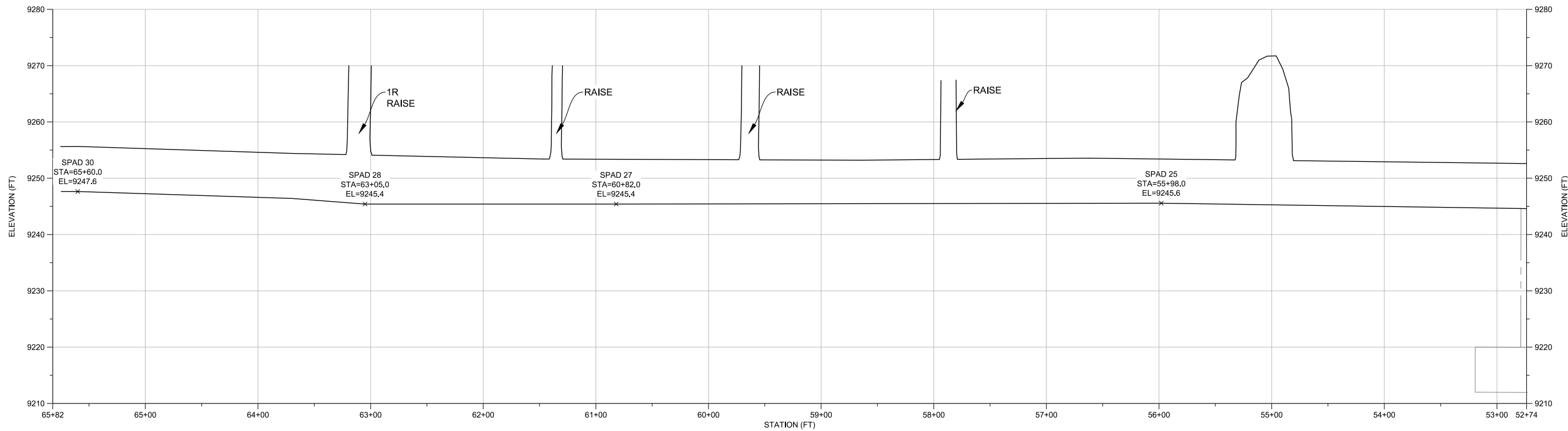
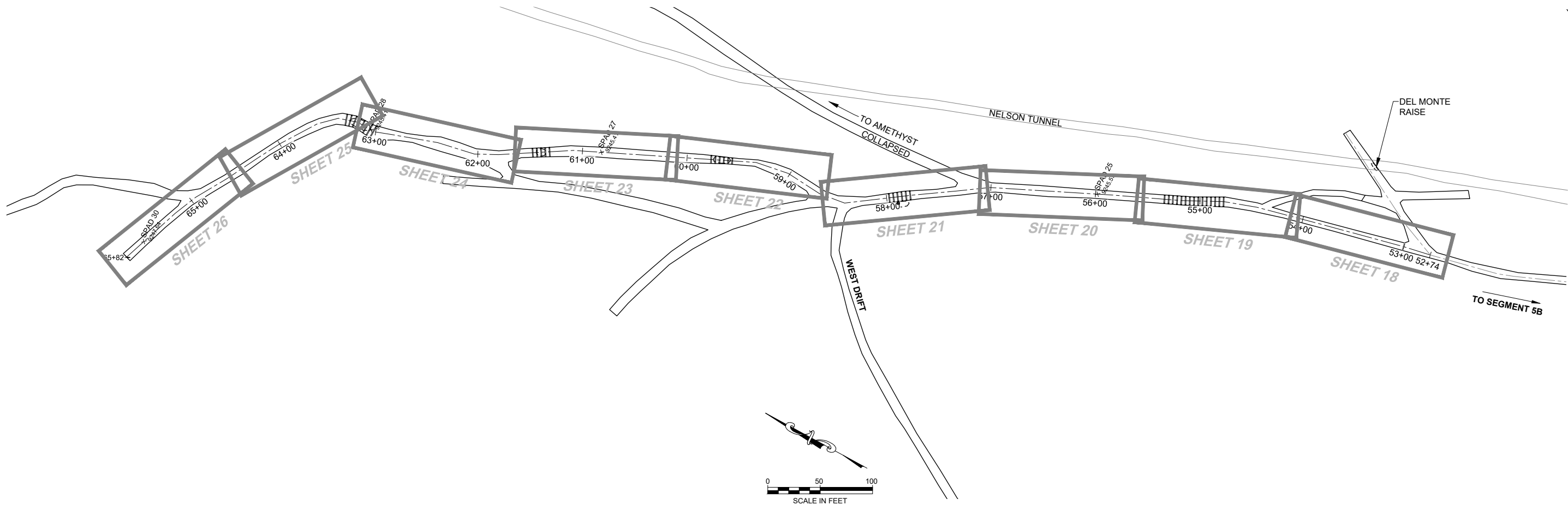
### **DETAIL 1**



				<b>COMMODORE 5 TUNNEL REHABILITATION</b>																																																															
<table><tr><th colspan="2">REVISIONS</th><th></th><th></th></tr><tr><th>NO.</th><th>DESCRIPTION</th><th>DATE</th><th>BY</th></tr><tr><td>1</td><td>70%</td><td>3/8/19</td><td>CMG</td></tr><tr><td>2</td><td>90% FOR HQ REVIEW</td><td>5/31/19</td><td>CMG</td></tr><tr><td>3</td><td>ISSUED FOR CONSTRUCTION</td><td>8/2/19</td><td>CMG</td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table>				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																	<table><tr><td colspan="4"><b>SEGMENT 5B STA 53+00 TO END</b></td></tr><tr><td colspan="2"><b>DEERE &amp; AULT</b></td><td colspan="2">600 S. AIRPORT RD., BLDG. A, SUITE 205 LONGMONT, CO 80503 TEL. 303.651.1468 FAX 303.651.1469</td></tr><tr><td colspan="2"><b>CONSULTANTS, INC.</b></td><td colspan="2"></td></tr><tr><td>DESIGNED BY: <b>CMG</b></td><td>APPROVED BY: <b>CMG</b></td><td>JOB NO.</td><td>SHEET:</td></tr><tr><td>DRAWN BY: <b>HOG</b></td><td>DATE: <b>----</b></td><td>0628.002.00</td><td>16 of 31</td></tr><tr><td>CHECKED BY: <b>EMB</b></td><td>SCALE: <b>AS NOTED</b></td><td colspan="2"></td></tr></table>				<b>SEGMENT 5B STA 53+00 TO END</b>				<b>DEERE &amp; AULT</b>		600 S. AIRPORT RD., BLDG. A, SUITE 205 LONGMONT, CO 80503 TEL. 303.651.1468 FAX 303.651.1469		<b>CONSULTANTS, INC.</b>				DESIGNED BY: <b>CMG</b>	APPROVED BY: <b>CMG</b>	JOB NO.	SHEET:	DRAWN BY: <b>HOG</b>	DATE: <b>----</b>	0628.002.00	16 of 31	CHECKED BY: <b>EMB</b>	SCALE: <b>AS NOTED</b>		
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CHECKED BY: <b>EMB</b>	SCALE: <b>AS NOTED</b>																																																																		



Friday, August 2, 2019 11:06:22 AM DRAWING: U:\0628 weston\002 commodore 5\000 Working\Commodore5\_Plan\_Segment 6.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

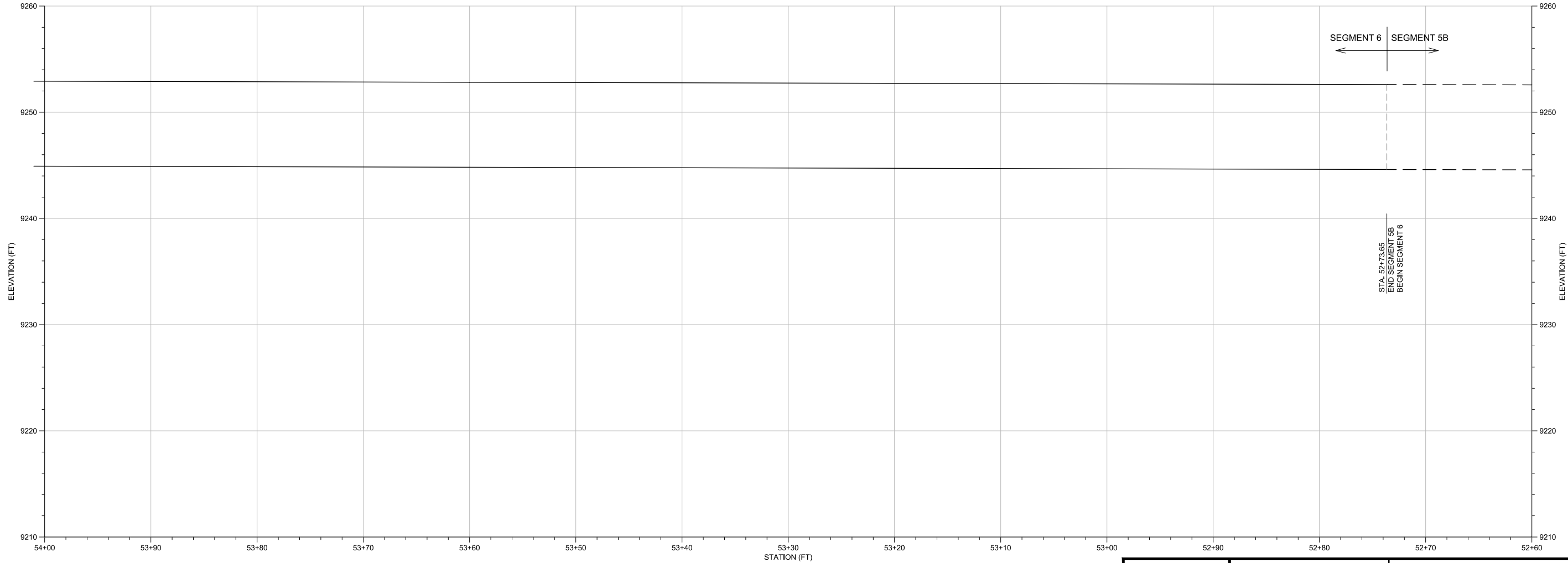
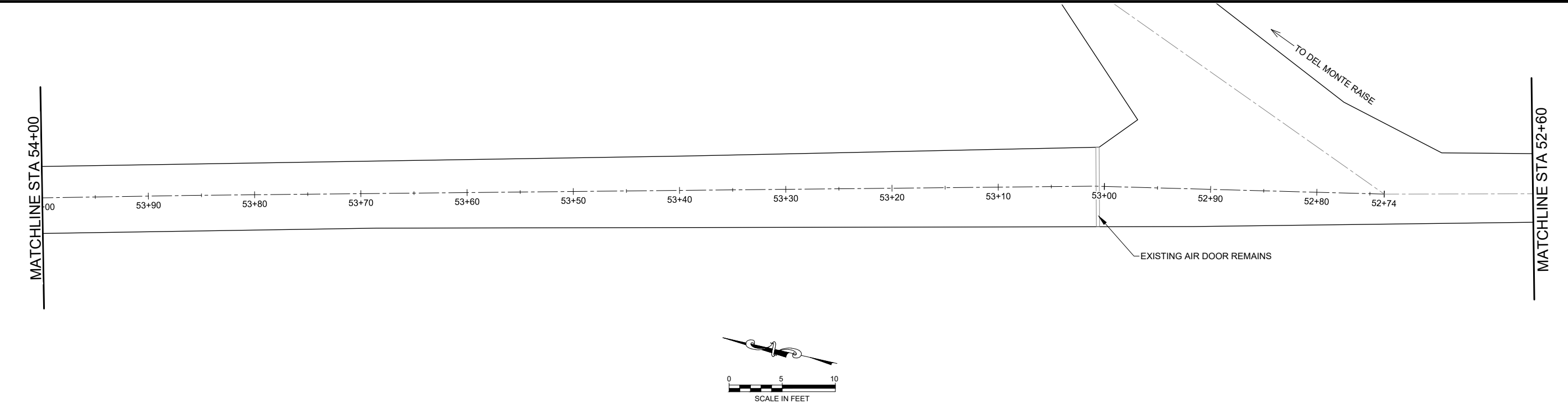


REVISIONS				COMMODORE 5 TUNNEL REHABILITATION			
NO.	DESCRIPTION	DATE	BY	SEGMENT 6 PLAN & PROFILE			
1	70%	3/8/19	CMG	<b>DEERE &amp; AULT</b> CONSULTANTS, INC.			
2	90% FOR HQ REVIEW	5/31/19	CMG				
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG				
DESIGNED BY: CMG				APPROVED BY: CMG		JOB NO.	
DRAWN BY: HOG				DATE: ---		SHEET:	
CHECKED BY: EMB				SCALE: AS NOTED		0628.002.00	

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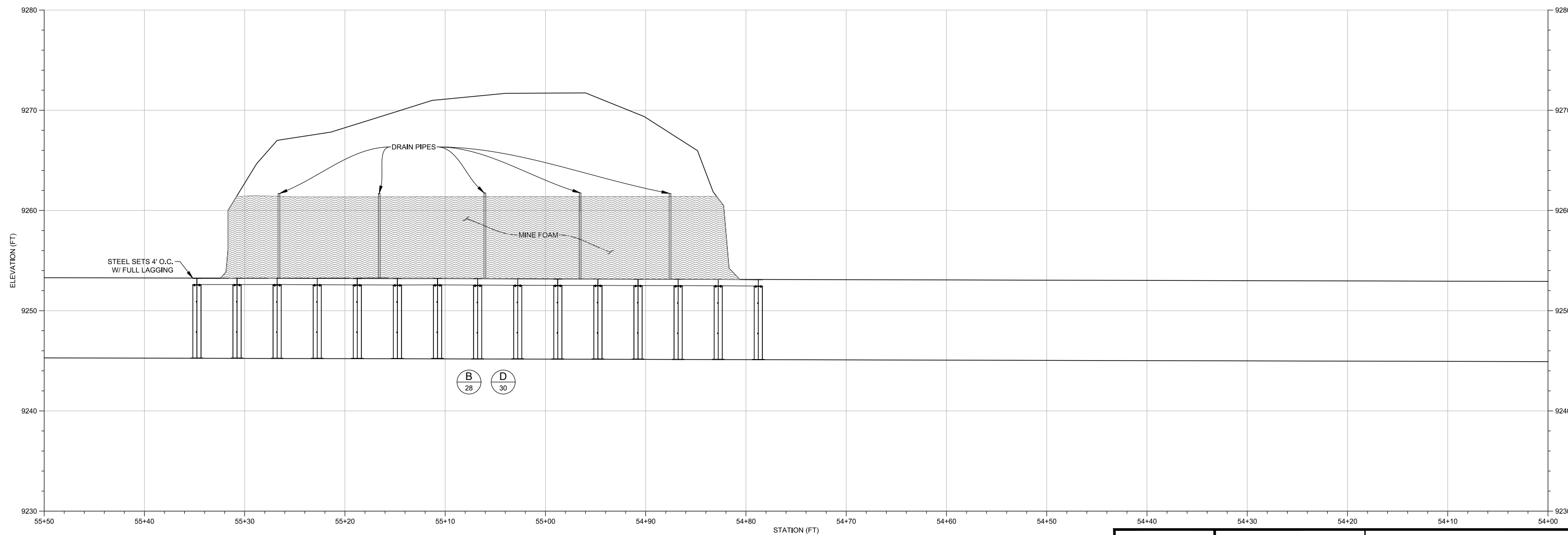
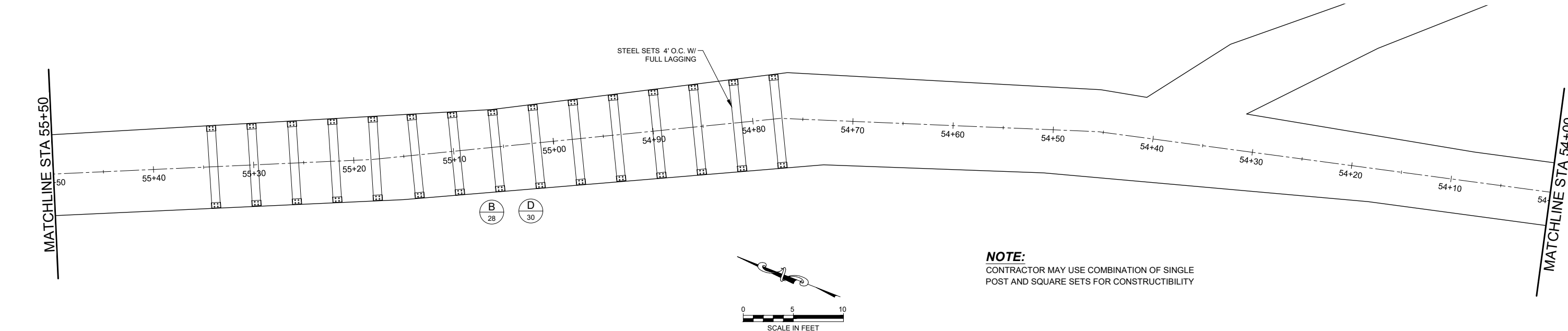


REVISIONS				COMMODORE 5 TUNNEL REHABILITATION			
NO.	DESCRIPTION	DATE	BY	SEGMENT 6 STA 52+60 TO 54+00			
1	70%	3/8/19	CMG	<b>DEERE &amp; AULT</b> <b>CONSULTANTS, INC.</b>			
2	90% FOR HQ REVIEW	5/31/19	CMG				
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG				
DESIGNED BY: CMG				APPROVED BY: CMG		JOB NO.	
DRAWN BY: HOG				DATE: ---		SHEET:	
CHECKED BY: EMB				SCALE: AS NOTED		0628.002.00	

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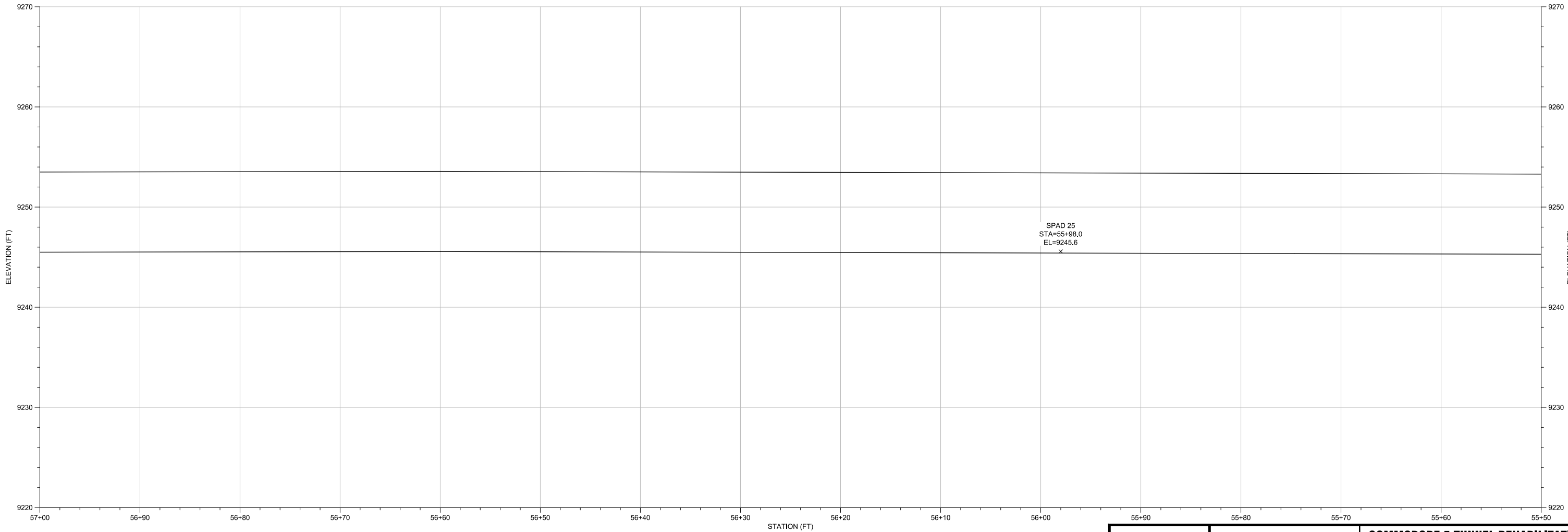
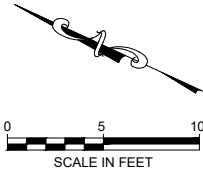
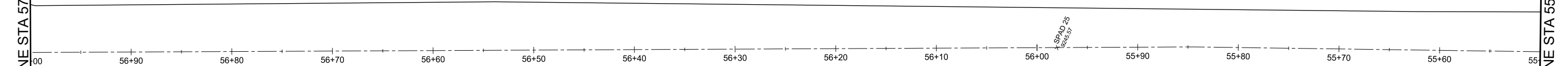
REVISIONS				COMMODORE 5 TUNNEL REHABILITATION			
NO.	DESCRIPTION	DATE	BY	SEGMENT 6 STA 54+00 TO 55+50			
1	70%	3/8/19	CMG	<b>DEERE &amp; AULT</b> CONSULTANTS, INC. <small>600 S. AIRPORT RD., BLDG. A, SUITE 205 LONGMONT, CO 80503 TEL 303.651.1468 FAX 303.651.1469</small>			
2	90% FOR HQ REVIEW	5/31/19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



Friday, August 2, 2019 11:06:34 AM DRAWING: U:\0628 weston\002 commodore 5\0628 Working\Commodore5\_Plan\_Segment 6.DWG

MATCHLINE STA 57+00

MATCHLINE STA 55+50

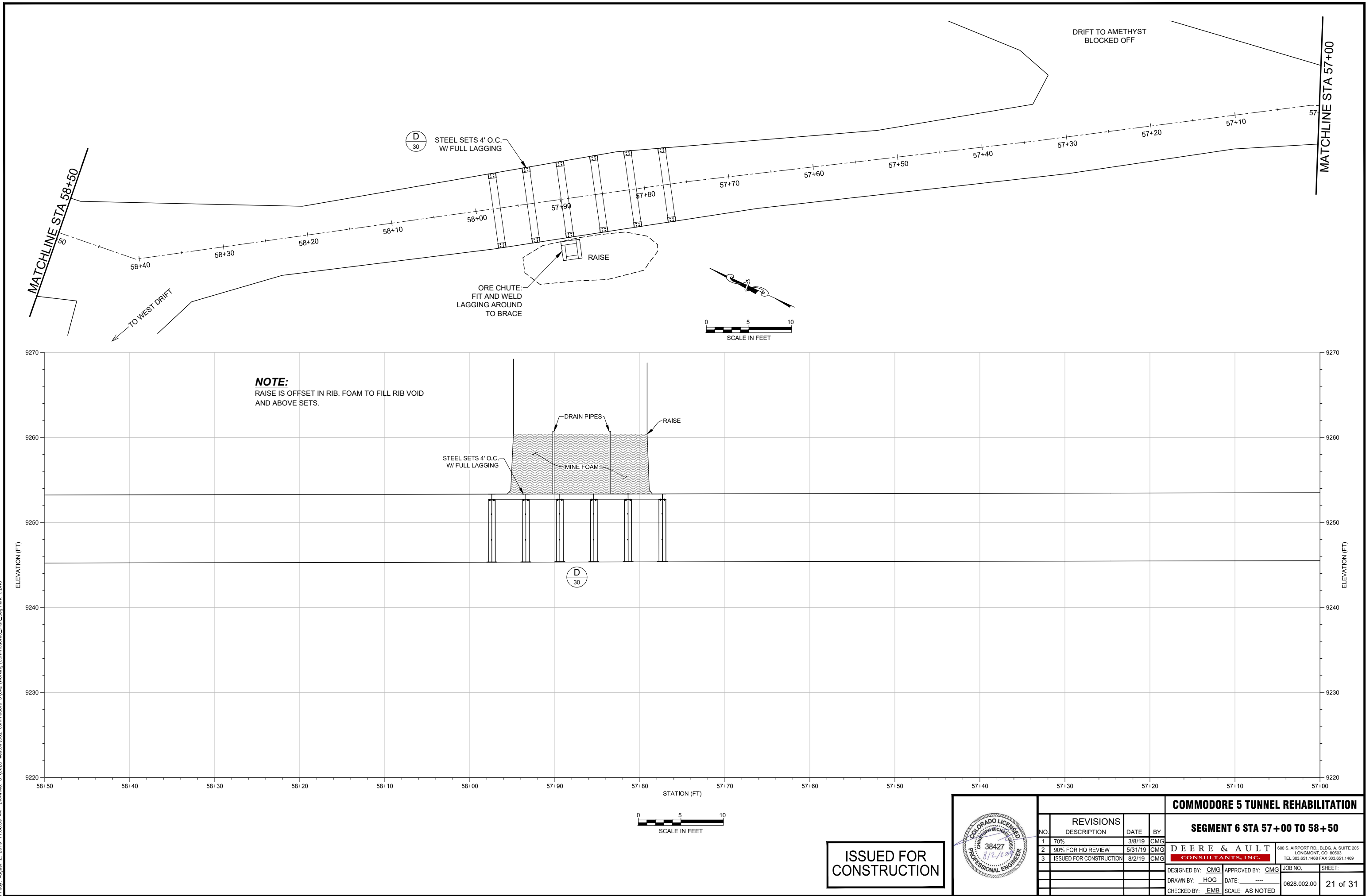


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CONSTRUCTION



REVISIONS				COMMODORE 5 TUNNEL REHABILITATION			
NO.	DESCRIPTION	DATE	BY	SEGMENT 6 STA 55+50 TO 57+00			
1	70%	3/8/19	CMG	<b>DEERE &amp; AULT</b> <b>CONSULTANTS, INC.</b>			
2	90% FOR HQ REVIEW	5/31/19	CMG				
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG				
				DESIGNED BY: CMG	APPROVED BY: CMG	JOB NO.	SHEET:
				DRAWN BY: HOG	DATE: ---	0628.002.00	20 of 31
				CHECKED BY: EMB	SCALE: AS NOTED		

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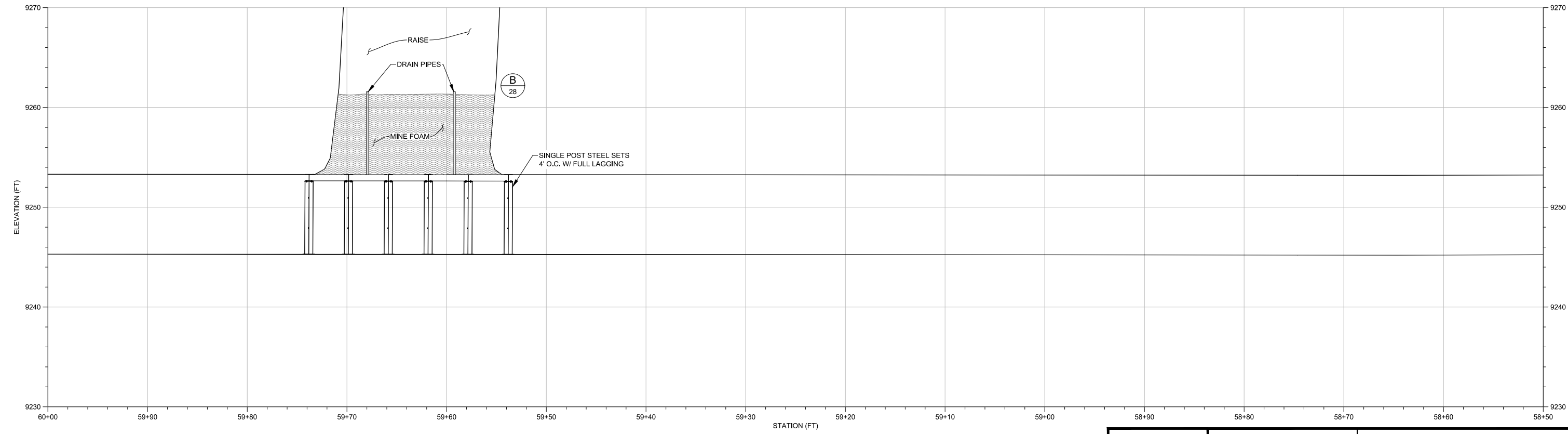
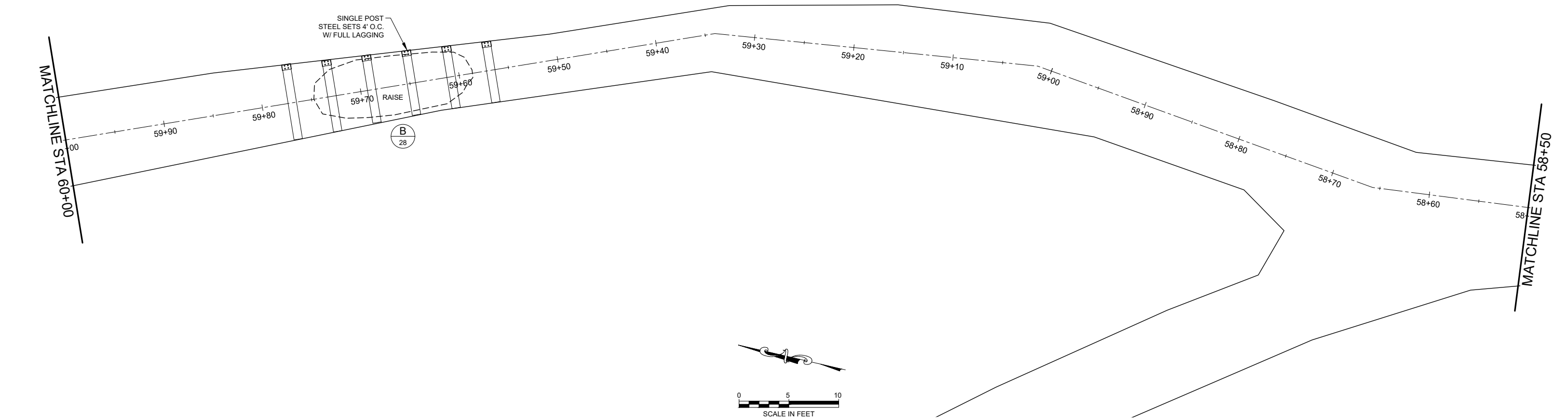


REVISIONS			
NO.	DESCRIPTION	DATE	BY
1	70%	3/8/19	CMG
2	90% FOR HQ REVIEW	5/31/19	CMG
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG

COMMODORE 5 TUNNEL REHABILITATION			
SEGMENT 6 STA 57+00 TO 58+50			
DESIGNED BY: CMG		APPROVED BY: CMG	
DRAWN BY: HOG		DATE: ---	
CHECKED BY: EMB		SCALE: AS NOTED	
JOB NO.		SHEET:	
0628.002.00		21 of 31	

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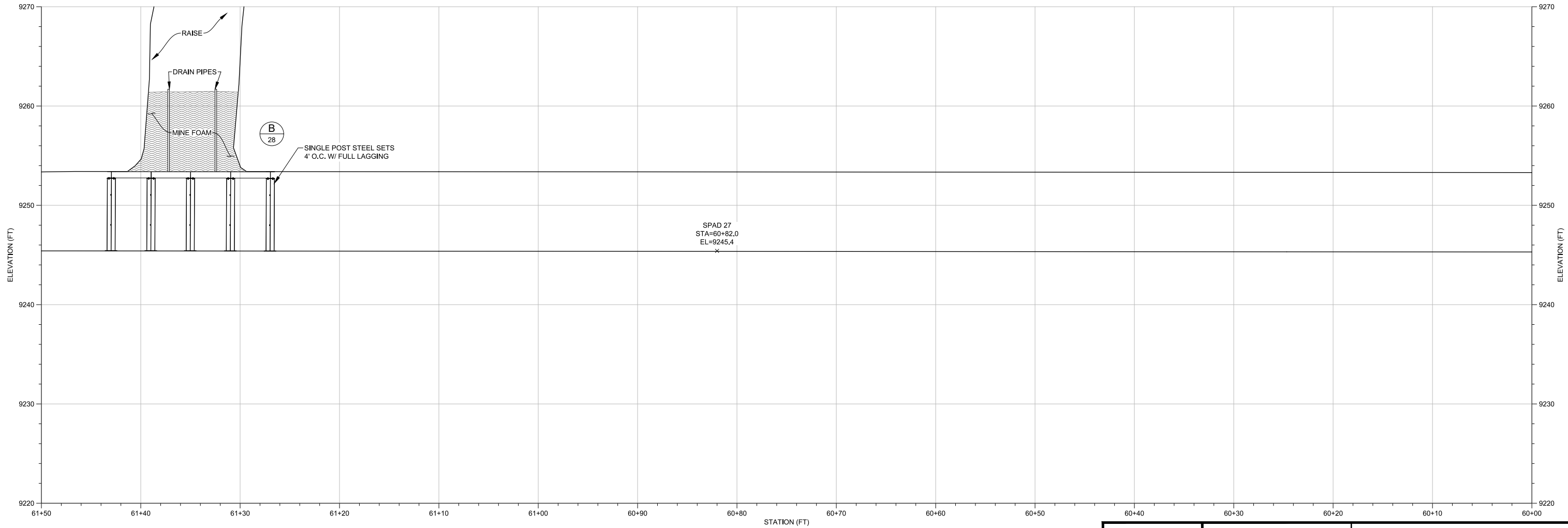
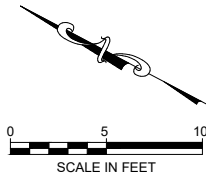
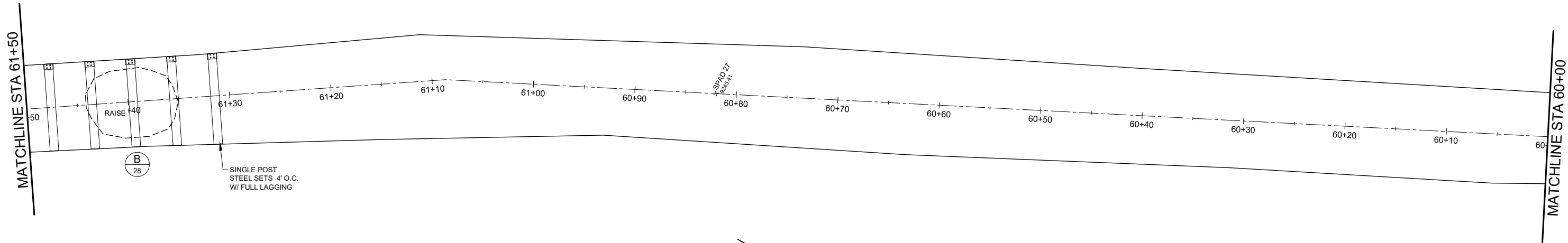
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CONSTRUCTION



REVISIONS				COMMODORE 5 TUNNEL REHABILITATION			
NO.	DESCRIPTION	DATE	BY	SEGMENT 6 STA 58+50 TO 60+00			
1	70%	3/8/19	CMG	<b>DEERE &amp; AULT</b> CONSULTANTS, INC. <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: CMG				APPROVED BY: CMG		JOB NO.	SHEET:
DRAWN BY: HOG				DATE: ---		0628.002.00	22 of 31
CHECKED BY: EMB				SCALE: AS NOTED			



Friday, August 2, 2019 11:06:49 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

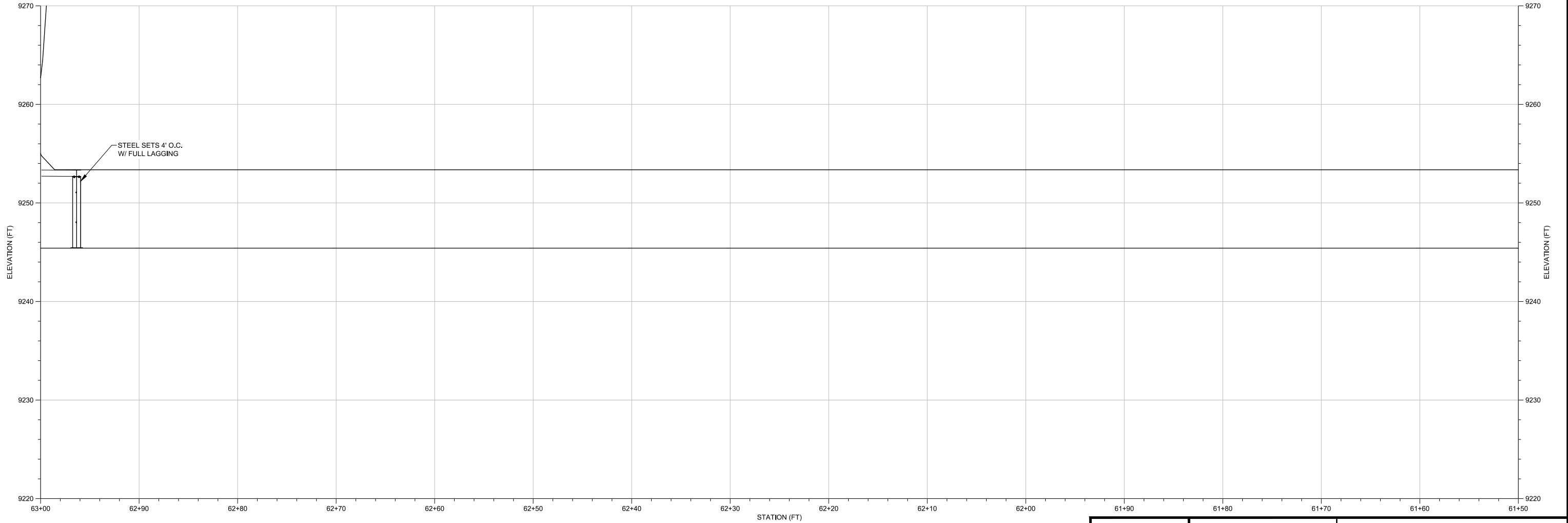
SEGMENT 6 STA 60+00 TO 61+50

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

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DEERE & AULT  
CONSULTANTS, INC.

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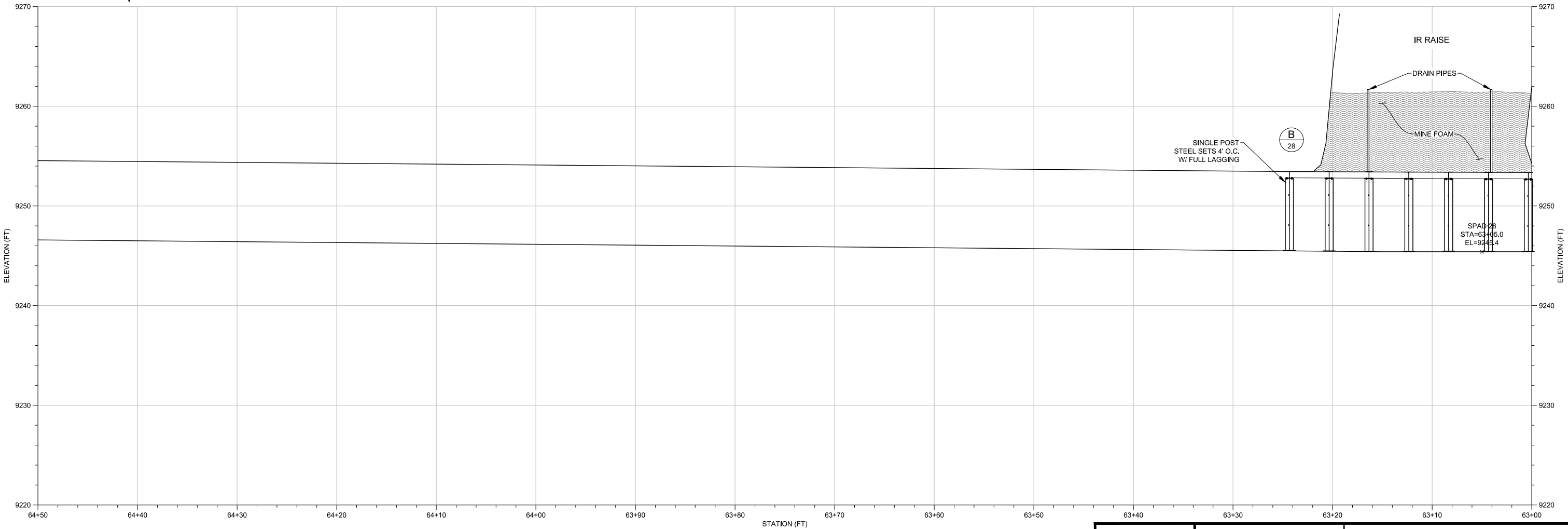


REVISIONS				COMMODORE 5 TUNNEL REHABILITATION			
NO.	DESCRIPTION	DATE	BY	SEGMENT 6 STA 61+50 TO 63+00			
1	70%	3/8/19	CMG	<b>DEERE &amp; AULT</b> <b>CONSULTANTS, INC.</b>			
2	90% FOR HQ REVIEW	5/31/19	CMG				
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG				
				DESIGNED BY: CMG	APPROVED BY: CMG	JOB NO.	SHEET:
				DRAWN BY: HOG	DATE: ---	0628.002.00	24 of 31
				CHECKED BY: EMB	SCALE: AS NOTED		

Friday, August 2, 2019 11:06:59 AM DRAWING: U:\0628 weston\002 commodore 5\CAD\Working\Commodore5\_Plan\_Segment 6.DWG

MATCHLINE STA 64+50

MATCHLINE STA 63+00



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

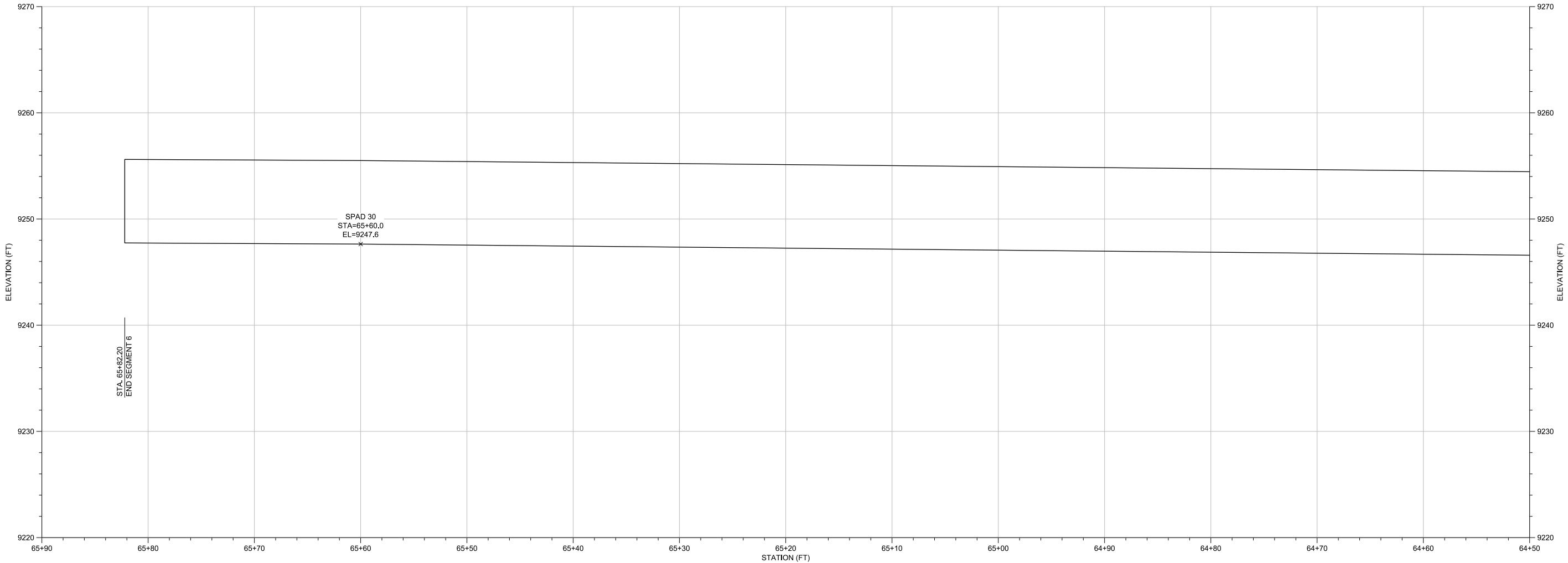
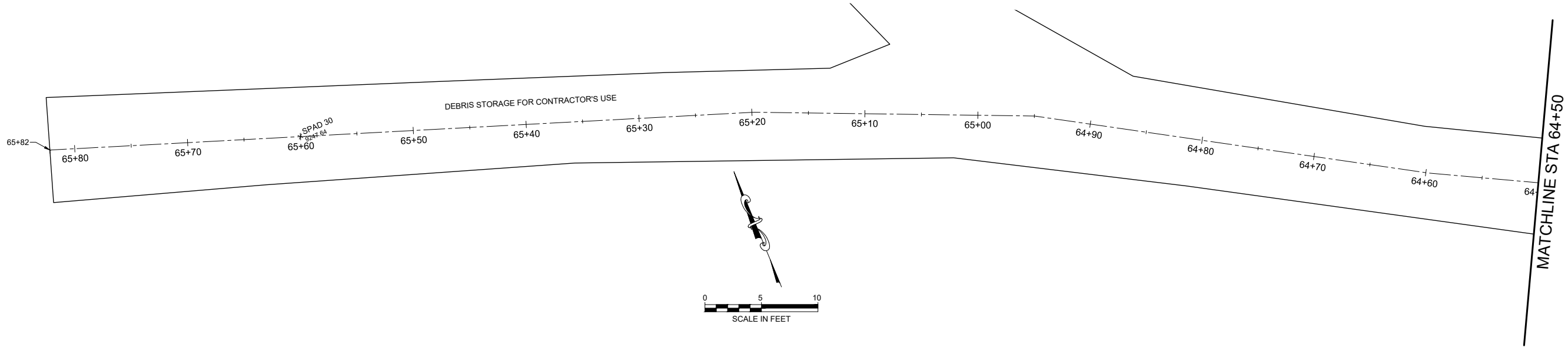
SEGMENT 6 STA 63+00 TO 64+50

**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.	SHEET:
DRAWN BY: HOG	DATE: ---	0628.002.00	25 of 31
CHECKED BY: EMB	SCALE: AS NOTED		



Friday, August 2, 2019 11:07:04 AM DRAWING: U:\0628\_weston\002\_commodore 5\000\_Working\Commodore5\_Plan\_Segment 6.DWG



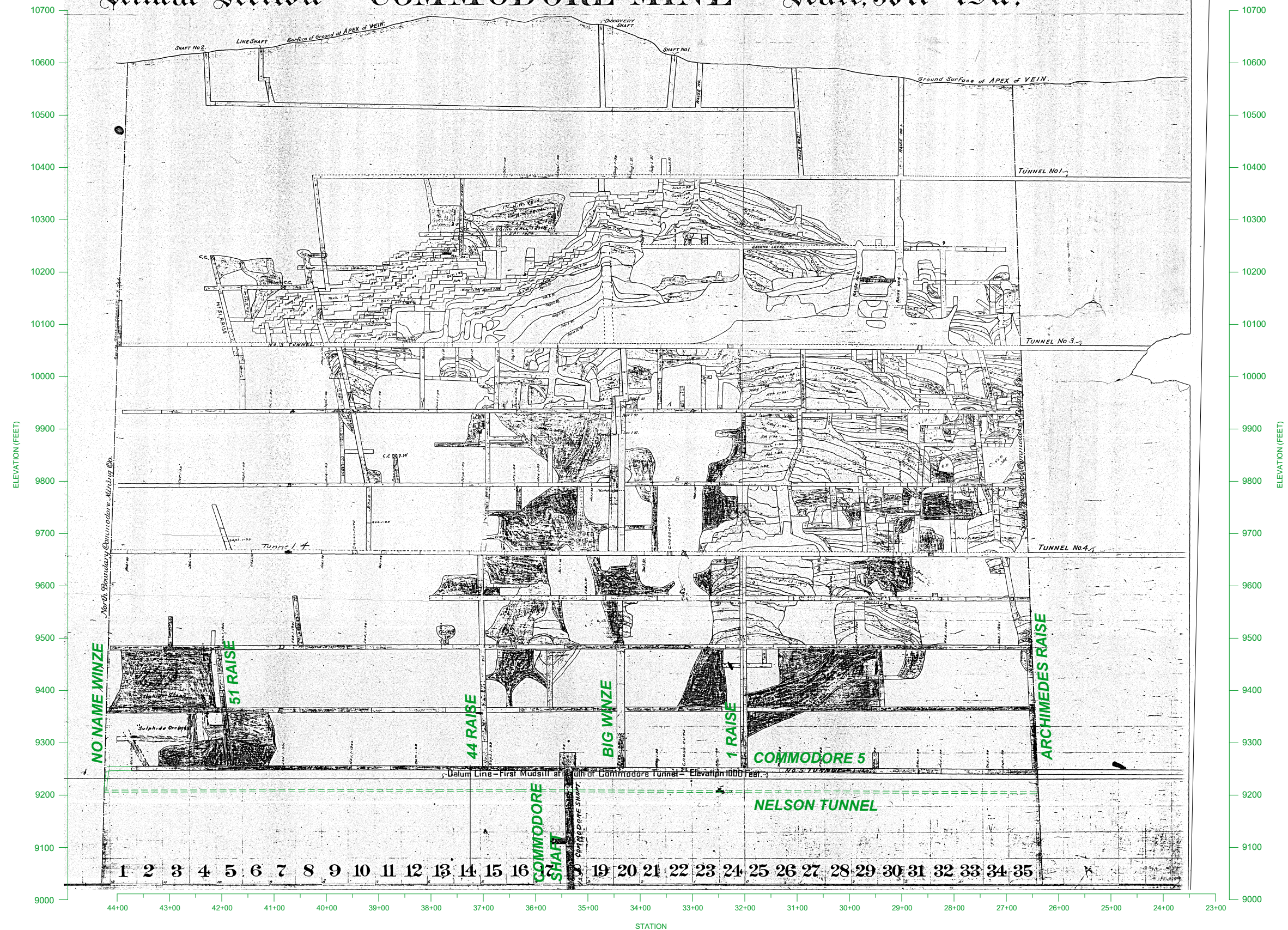
ISSUED FOR  
CONSTRUCTION



REVISIONS				COMMODORE 5 TUNNEL REHABILITATION			
NO.	DESCRIPTION	DATE	BY	SEGMENT 6 STA 64+50 TO END			
1	70%	3/8/19	CMG	<b>DEERE &amp; AULT</b> <b>CONSULTANTS, INC.</b> <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: CMG	APPROVED BY: CMG	JOB NO.	SHEET:
				DRAWN BY: HOG	DATE: ---	0628.002.00	26 of 31
				CHECKED BY: EMB	SCALE: AS NOTED		



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



0 100 200  
SCALE IN FEET

SOURCE UNKNOWN

ISSUED FOR  
CONSTRUCTION

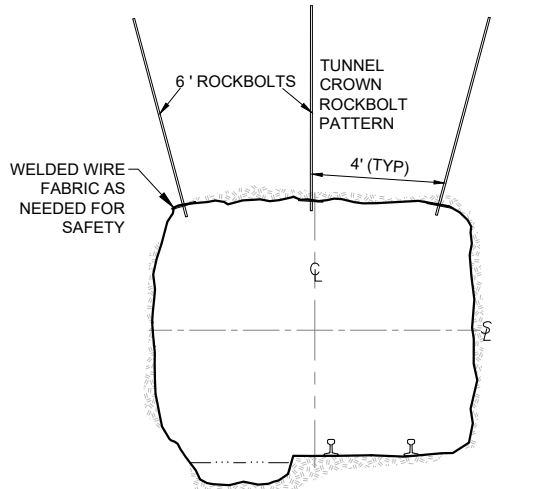


REVISIONS			
NO.	DESCRIPTION	DATE	BY
1	70%	3/8/19	CMG
2	90% FOR HQ REVIEW	5/31/19	CMG
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG

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



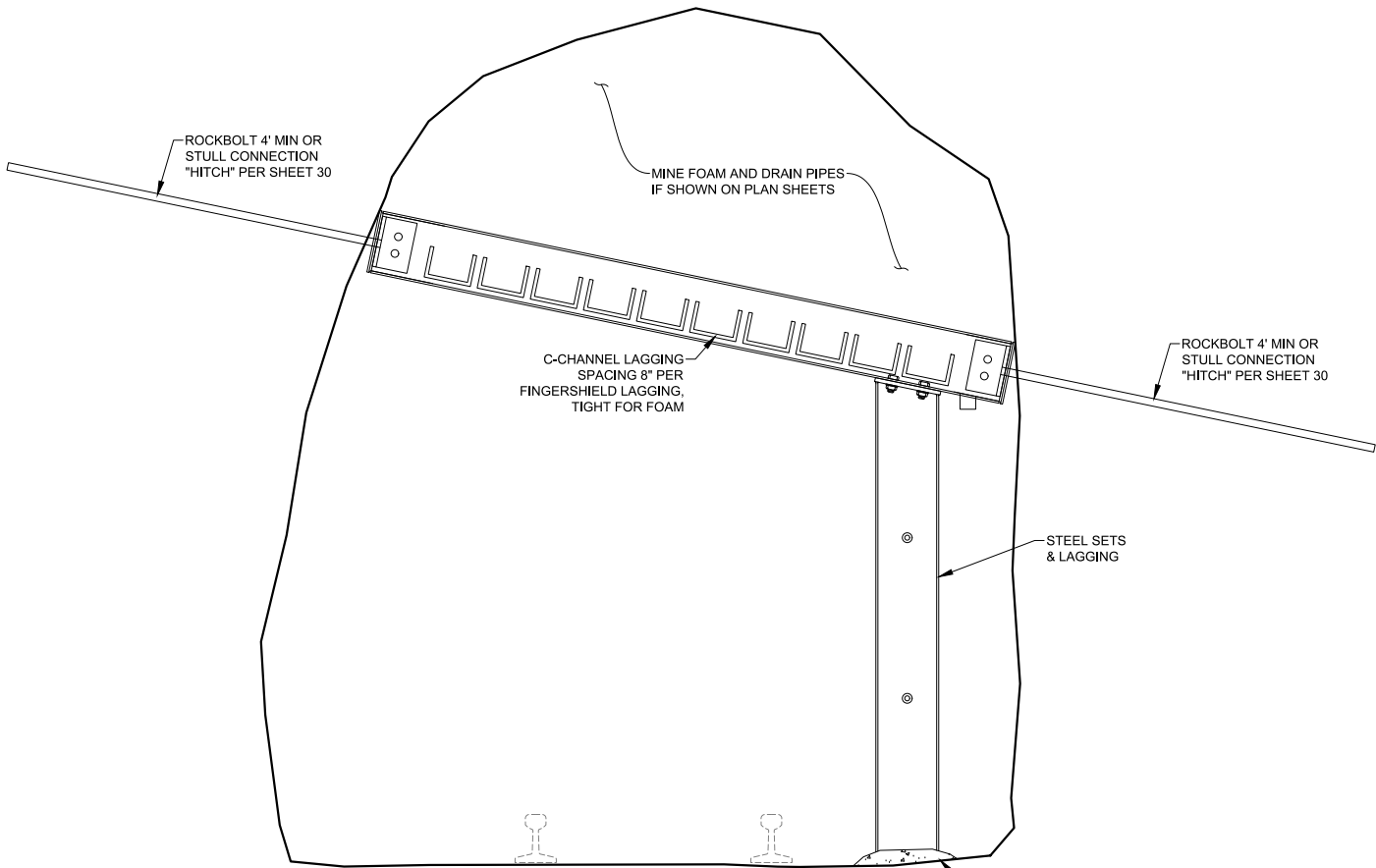
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PATTERN ROCKBOLTS AT STA 43+00 TO 43+50

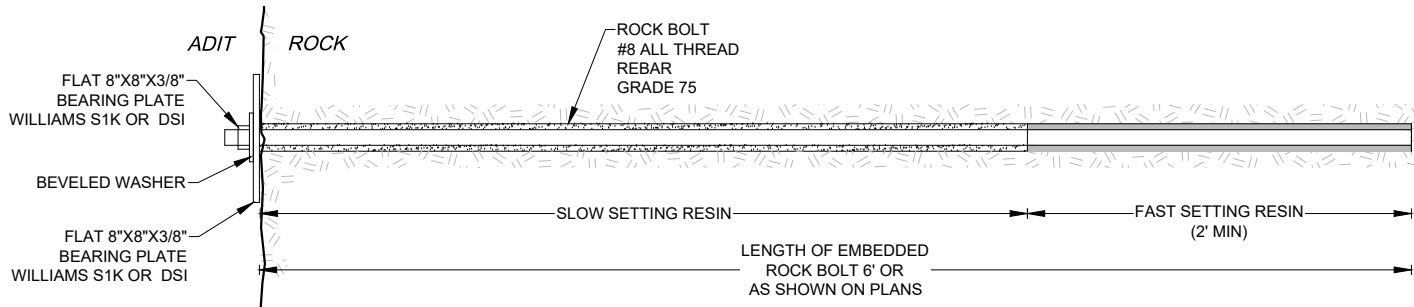
NOTES:

- 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.



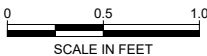
SINGLE POST SET DETAIL

B



ROCK BOLT DETAIL

A

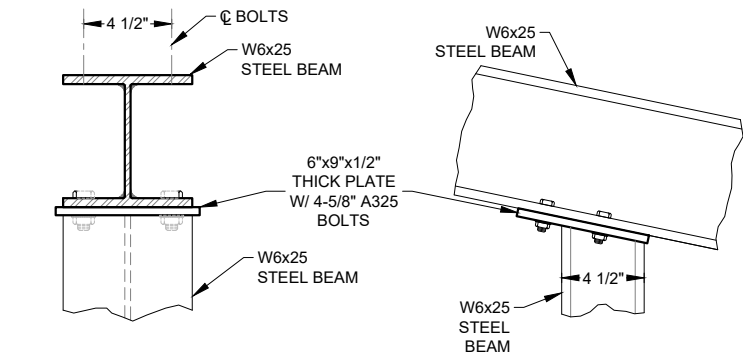
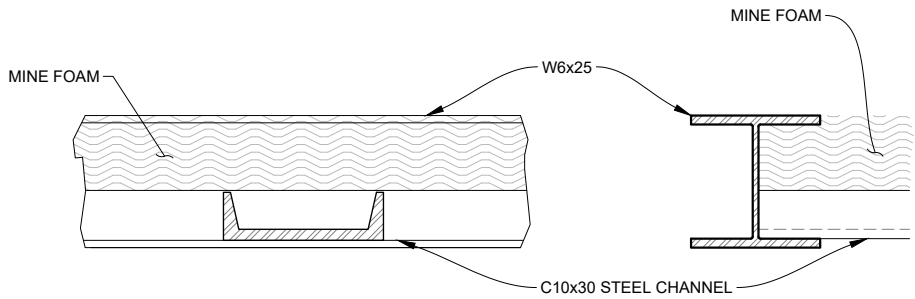


NOTES:

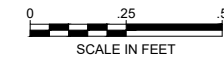
- BOREHOLE DIAMETERS FOR BOLT INSTALLATION SHALL BE PER MANUFACTURER'S RECOMMENDATIONS.
- IN LIEU OF RESIN GROUTED BOLTS, CEMENT GROUTED BOLTS WITH ANCHORS MAY BE USED.
- LENGTHS OF ROCK BOLTS INDICATED ON THE DRAWINGS ARE EMBEDDED LENGTHS IN THE ROCK. CONTRACTOR SHALL PROVIDE SUFFICIENT LENGTHS OF BAR 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:

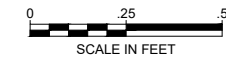
THE EXISTING TIMBER SUPPORT, COVERS, LADDERS, AND LANDINGS ARE ROTTEN AND UNSAFE TO USE. PRIOR TO BEGINNING WORK IN THE DAYLIGHT CORNER AREA, CONTRACTOR SHALL DESIGN AND INSTALL A TEMPORARY COVER OVER THE DAYLIGHT WINZE TO PREVENT PERSONNEL AND EQUIPMENT FROM FALLING INTO THE OPENING. PRIOR TO BEGINNING 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.



POST CONNECTION

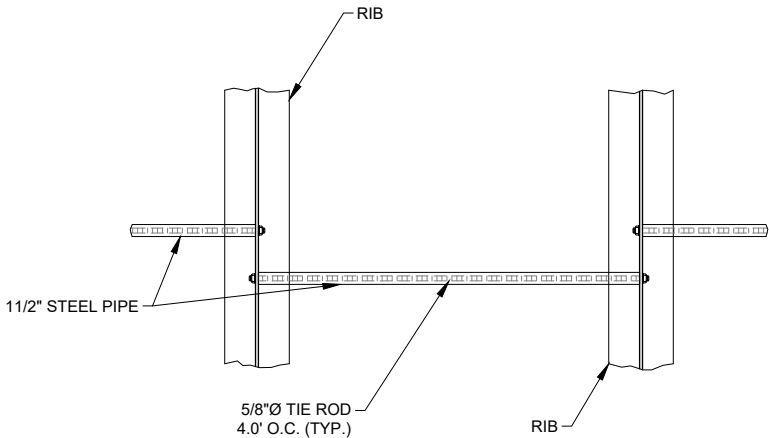


POST CONNECTION



NOTES:

FIELD DIMENSIONS VARY.  
CUSTOM FITTING WILL BE REQUIRED.



TIE ROD DETAIL



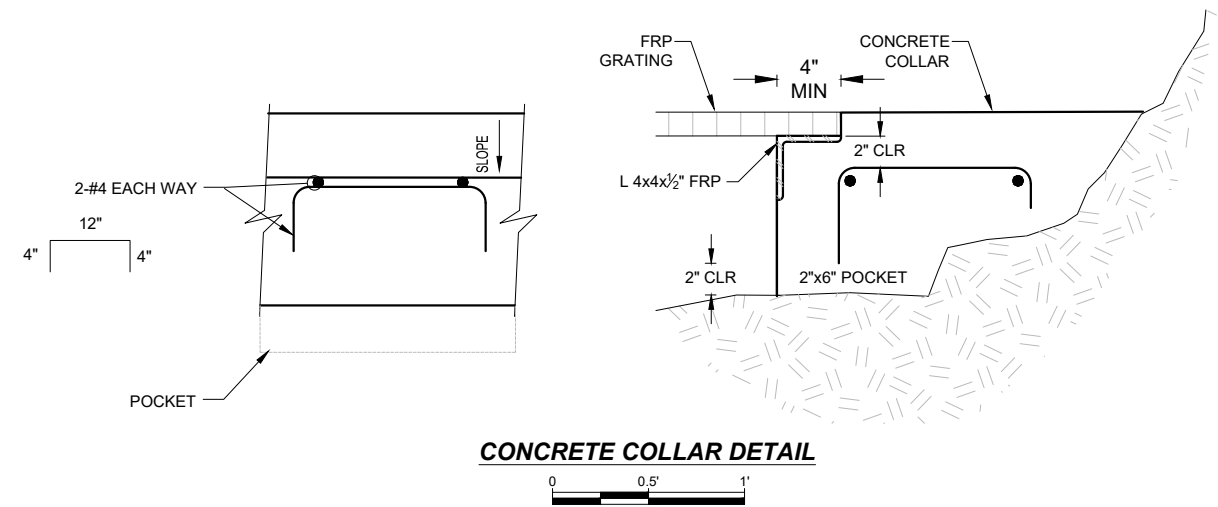
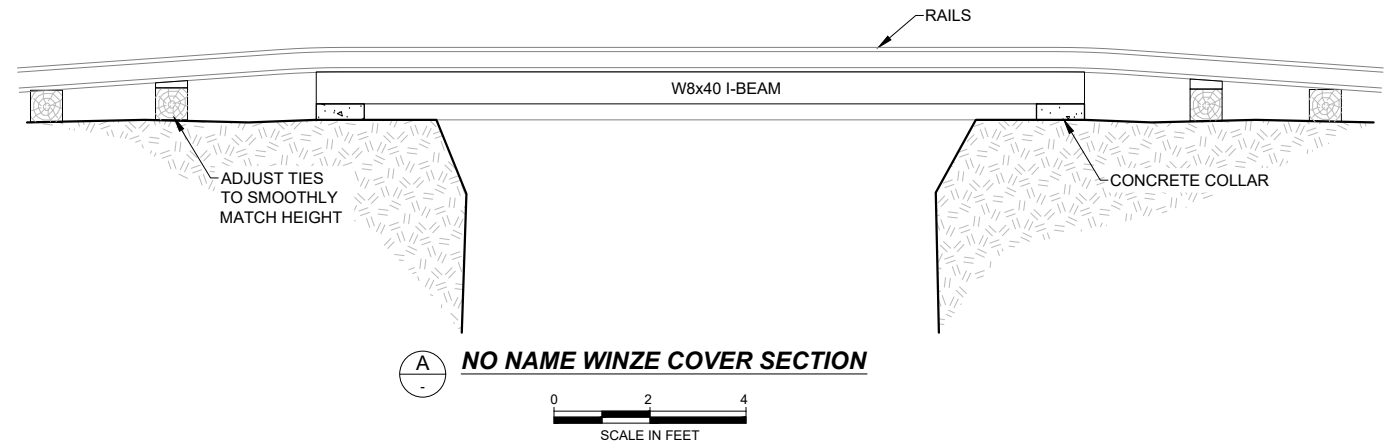
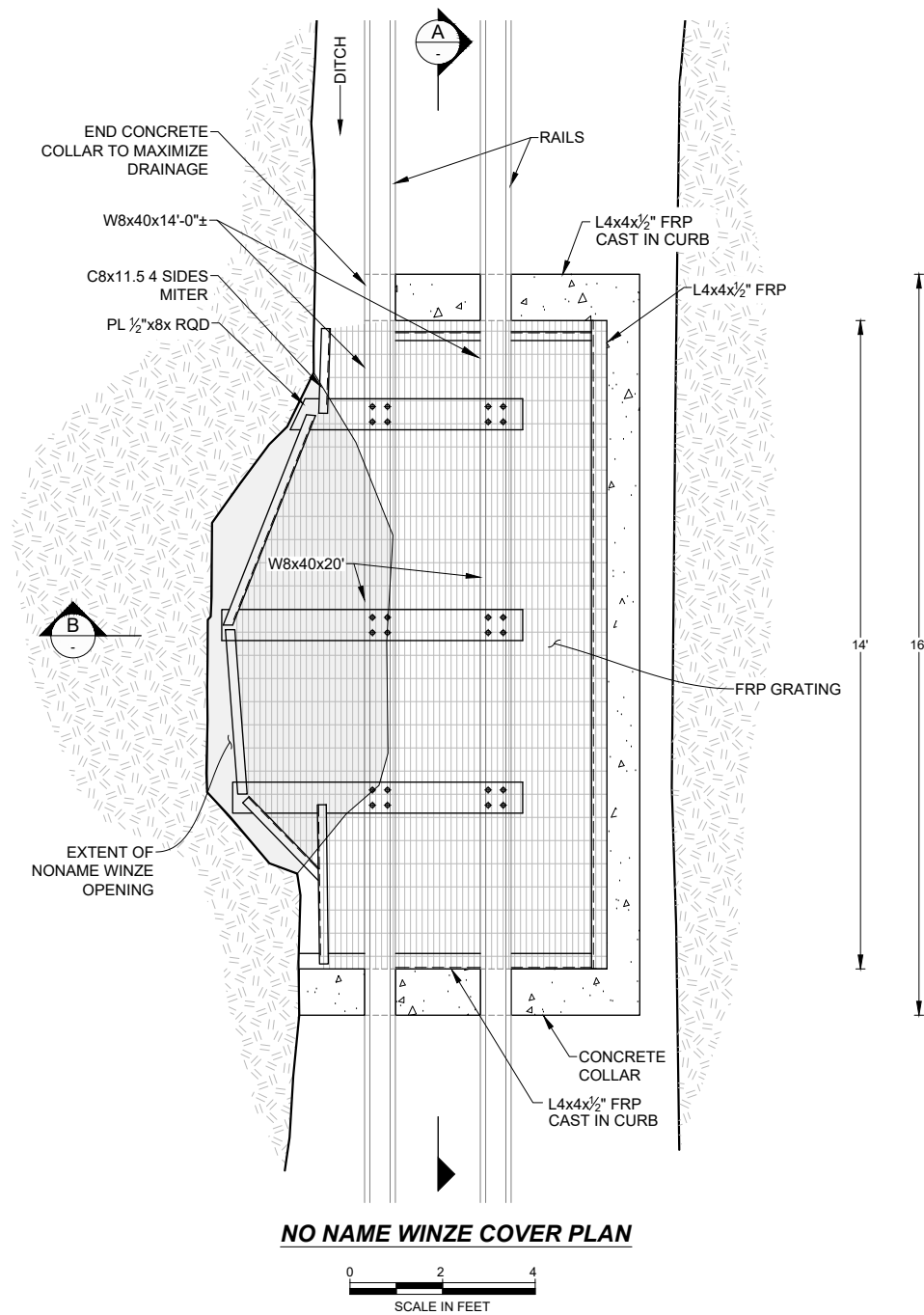
ISSUED FOR  
CONSTRUCTION



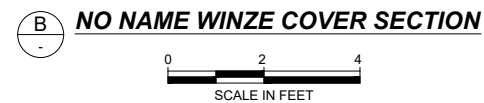
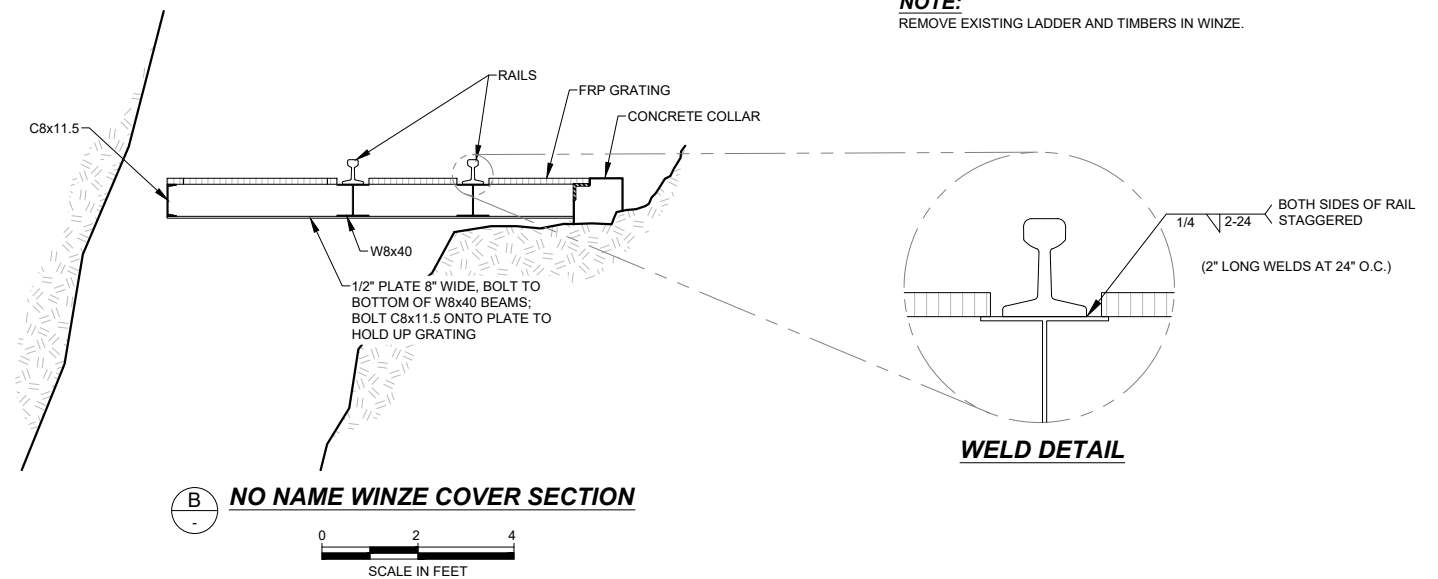
REVISIONS				COMMODORE 5 TUNNEL REHABILITATION			
NO.	DESCRIPTION	DATE	BY	GENERAL DETAILS			
1	70%	3/8/19	CMG	<b>DEERE &amp; AULT</b> CONSULTANTS, INC.			
2	90% FOR HQ REVIEW	5/31/19	CMG				
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG				
				DESIGNED BY: CMG	APPROVED BY: CMG	JOB NO.	SHEET:
				DRAWN BY: HOG	DATE: ---	0628.002.00	28 of 31
				CHECKED BY: EMB	SCALE: AS NOTED		



Friday, August 2, 2019 11:07:31 AM DRAWING: U:\0628 weston\002 commodore 5\0628 Working\Commodore5\_Plan\_Segment 5B.DWG



**NOTE:**  
REMOVE EXISTING LADDER AND TIMBERS IN WINZE.

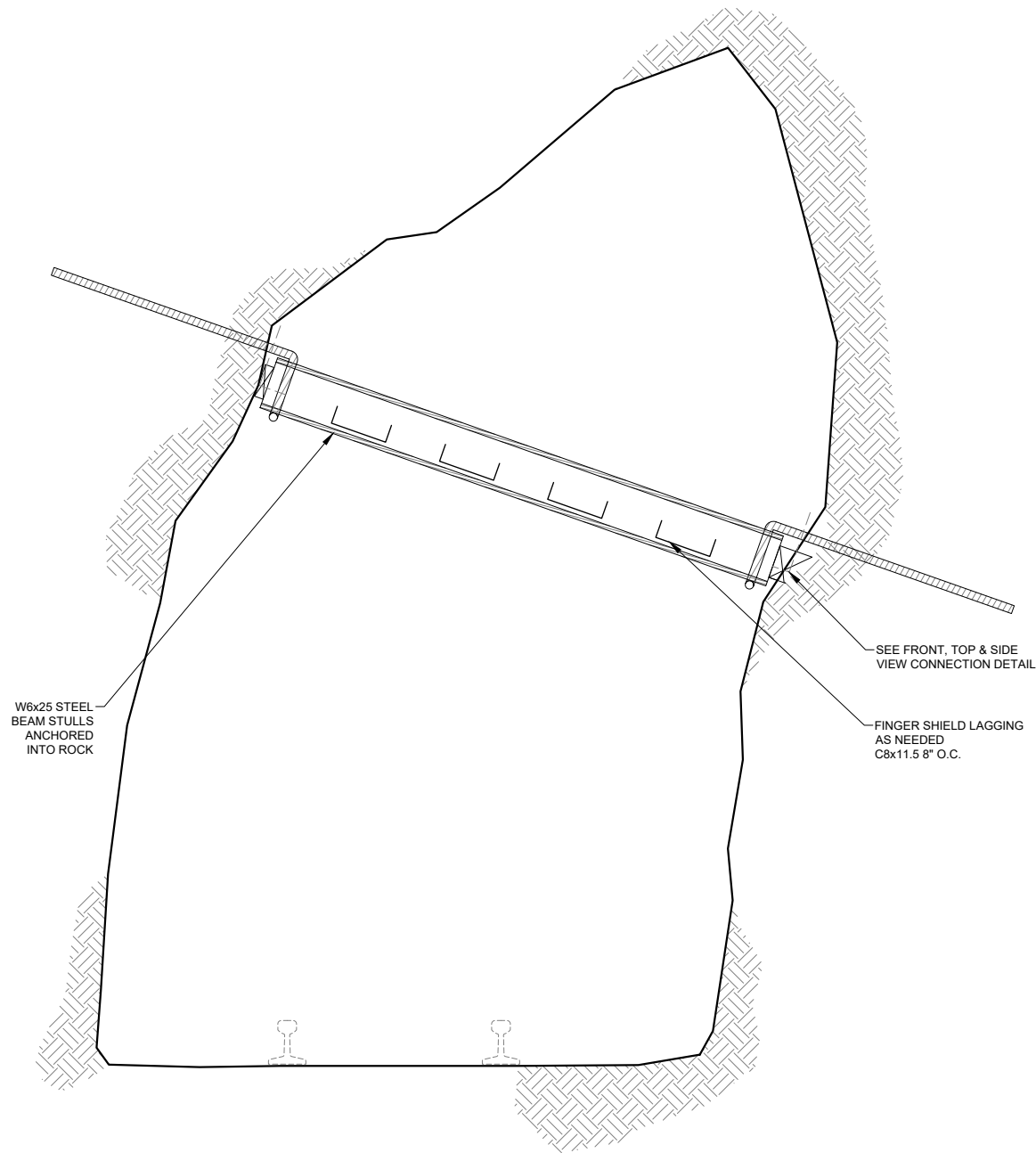


ISSUED FOR  
CONSTRUCTION



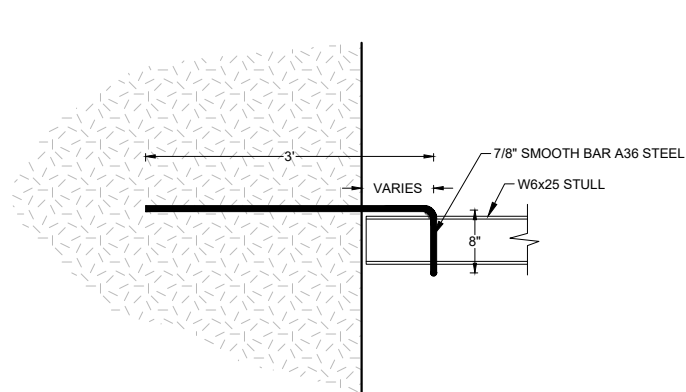
REVISIONS				COMMODORE 5 TUNNEL REHABILITATION			
NO.	DESCRIPTION	DATE	BY	NO NAME - Y02 WINZE COVER			
1	70%	3/8/19	CMG	<b>DEERE &amp; AULT</b> CONSULTANTS, INC.			
2	90% FOR HQ REVIEW	5/31/19	CMG				
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG				
DESIGNED BY: CMG				APPROVED BY: CMG		JOB NO.	SHEET:
DRAWN BY: HOG				DATE: ---		0628.002.00	29 of 31
CHECKED BY: EMB				SCALE: AS NOTED			

Friday, August 2, 2019 11:07:39 AM DRAWING: U:\0628 weston\002 commodore 5\000 Working\Commodore5\_Plan\_Segment 5B.DWG



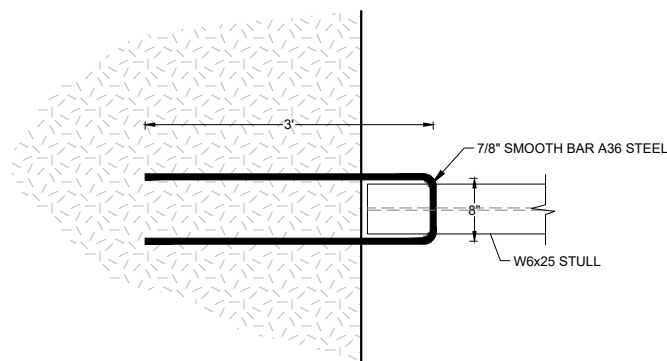
TYPICAL STEEL STULL SECTION C

0 1' 2'  
SCALE IN FEET



STULL CONNECTION SIDE VIEW

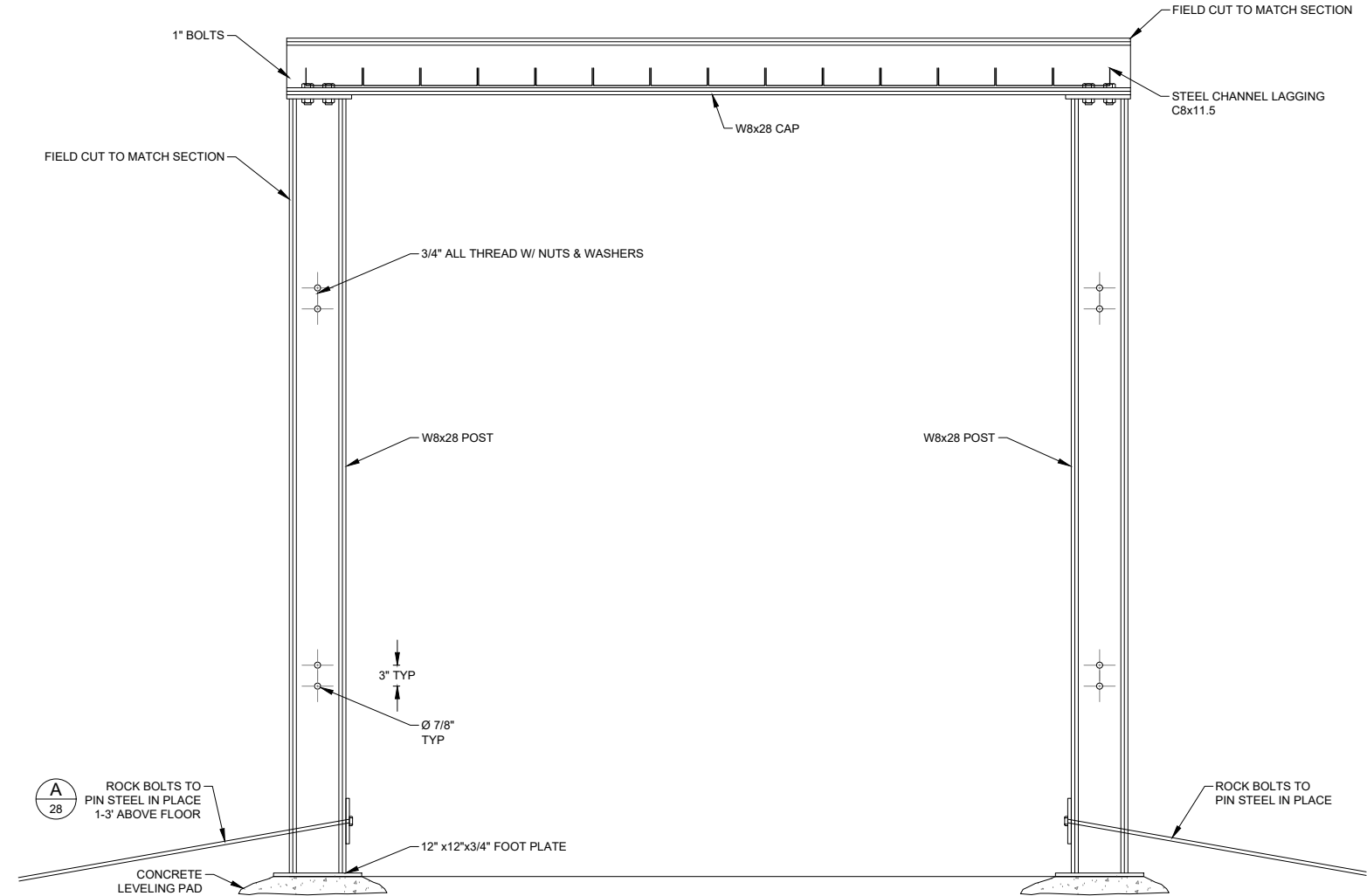
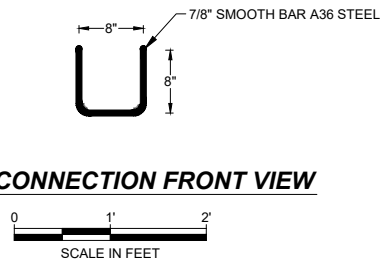
0 1' 2'  
SCALE IN FEET



STULL CONNECTION TOP VIEW

0 1' 2'  
SCALE IN FEET

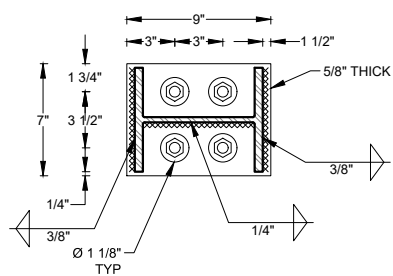
STULL CONNECTION FRONT VIEW



3 PIECE SQUARE SET OF W8x28 D

0 1' 2'  
SCALE IN FEET

NOTE:  
FIELD DIMENSIONS VERY  
CUSTOM FITTING WILL BE REQUIRED.



BUTT PLATE DETAIL

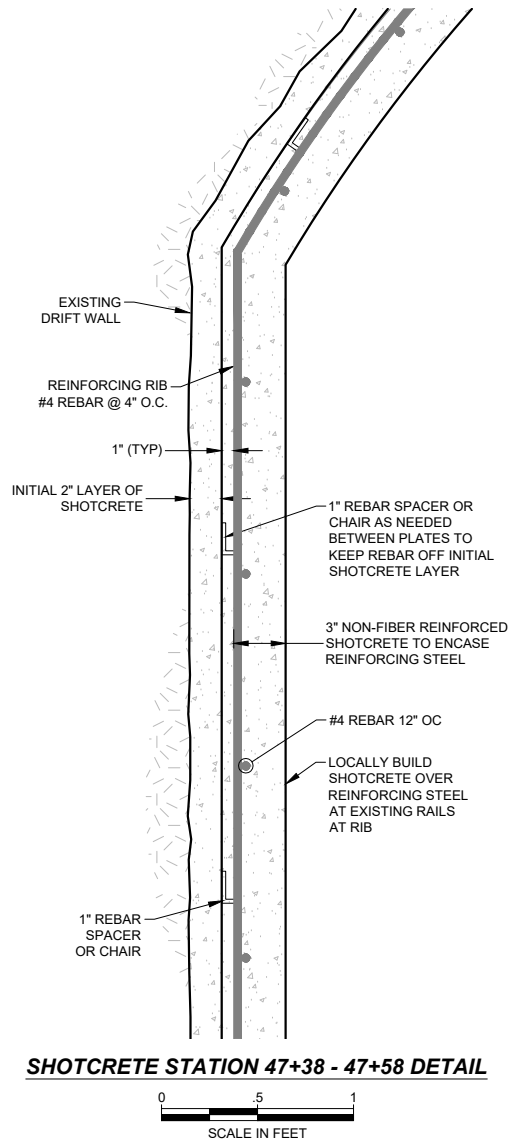
0 .5 1'  
SCALE IN FEET

ISSUED FOR  
CONSTRUCTION

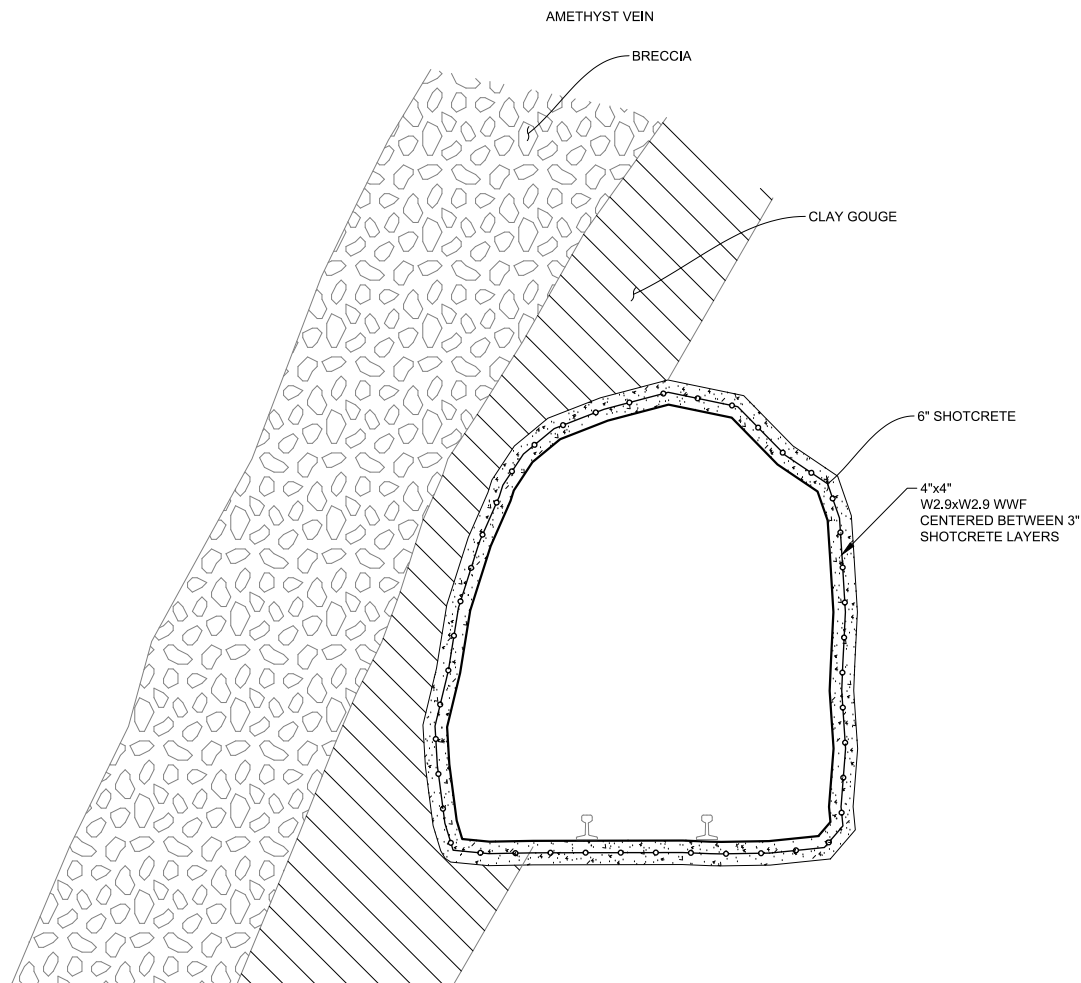


REVISIONS				COMMODORE 5 TUNNEL REHABILITATION			
NO.	DESCRIPTION	DATE	BY	STEEL SET DETAILS			
1	70%	3/8/19	CMG	<b>DEERE &amp; AULT</b> CONSULTANTS, INC.			
2	90% FOR HQ REVIEW	5/31/19	CMG				
3	ISSUED FOR CONSTRUCTION	8/2/19	CMG				
DESIGNED BY: CMG				APPROVED BY: CMG		JOB NO.	SHEET:
DRAWN BY: HOG				DATE: ---		0628.002.00	30 of 31
CHECKED BY: EMB				SCALE: AS NOTED			

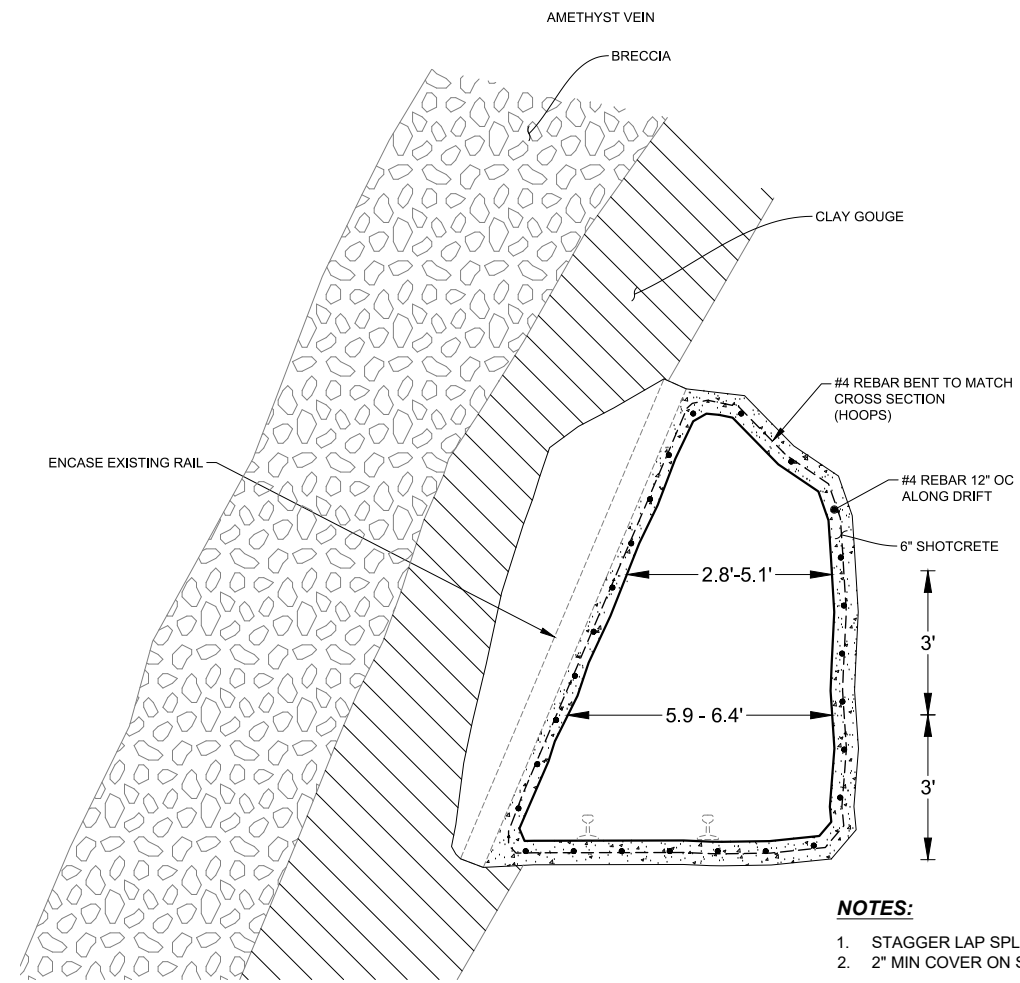
Friday, August 2, 2019 11:07:46 AM DRAWING: U:\0628 weston\002 commodore 5\002 Working\Commodore5\_Plan\_Segment 5B.DWG



SHOTCRETE STATION 47+38 - 47+58 DETAIL



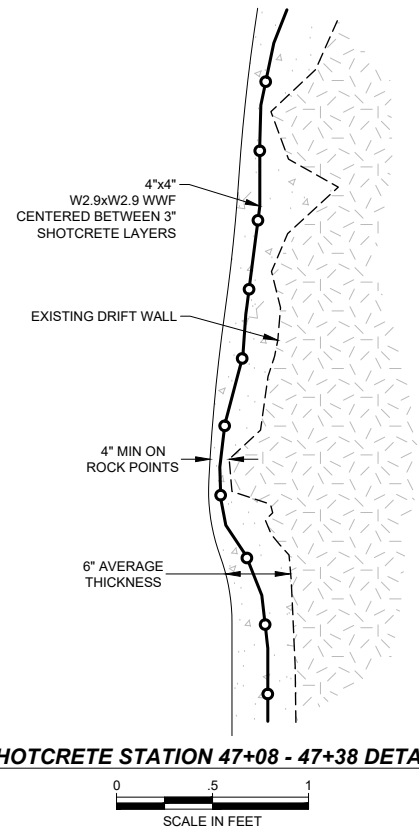
TYPICAL CROSS SECTION STA 47+08 - 47+38



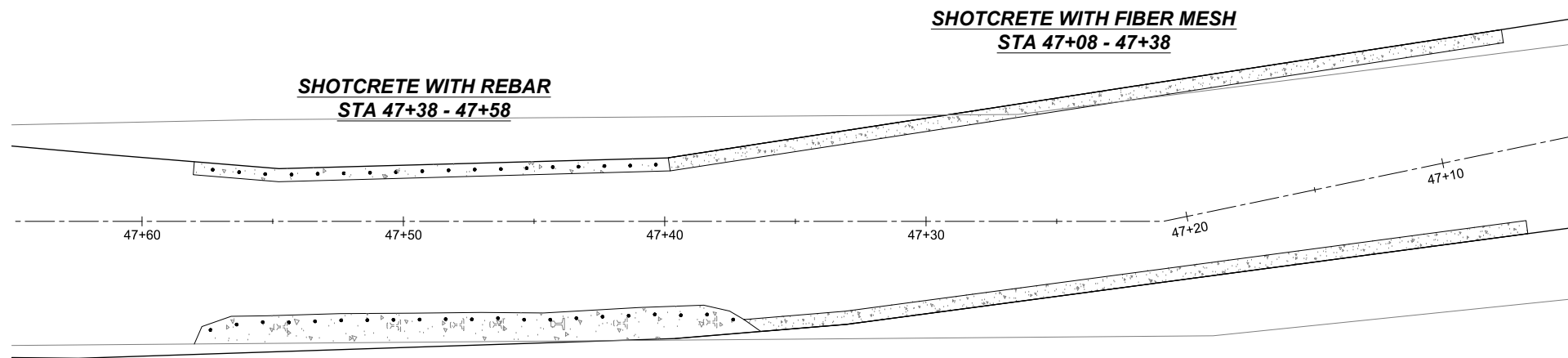
TYPICAL CROSS SECTION STA 47+38 - 47+58

NOTES:

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



SHOTCRETE STATION 47+08 - 47+38 DETAIL



SHOTCRETE WITH REBAR  
STA 47+38 - 47+58

SHOTCRETE WITH FIBER MESH  
STA 47+08 - 47+38

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