SHEET NO.	TOTAL SHEETS
1	69

REGISTERED CIVIL ENGINEER

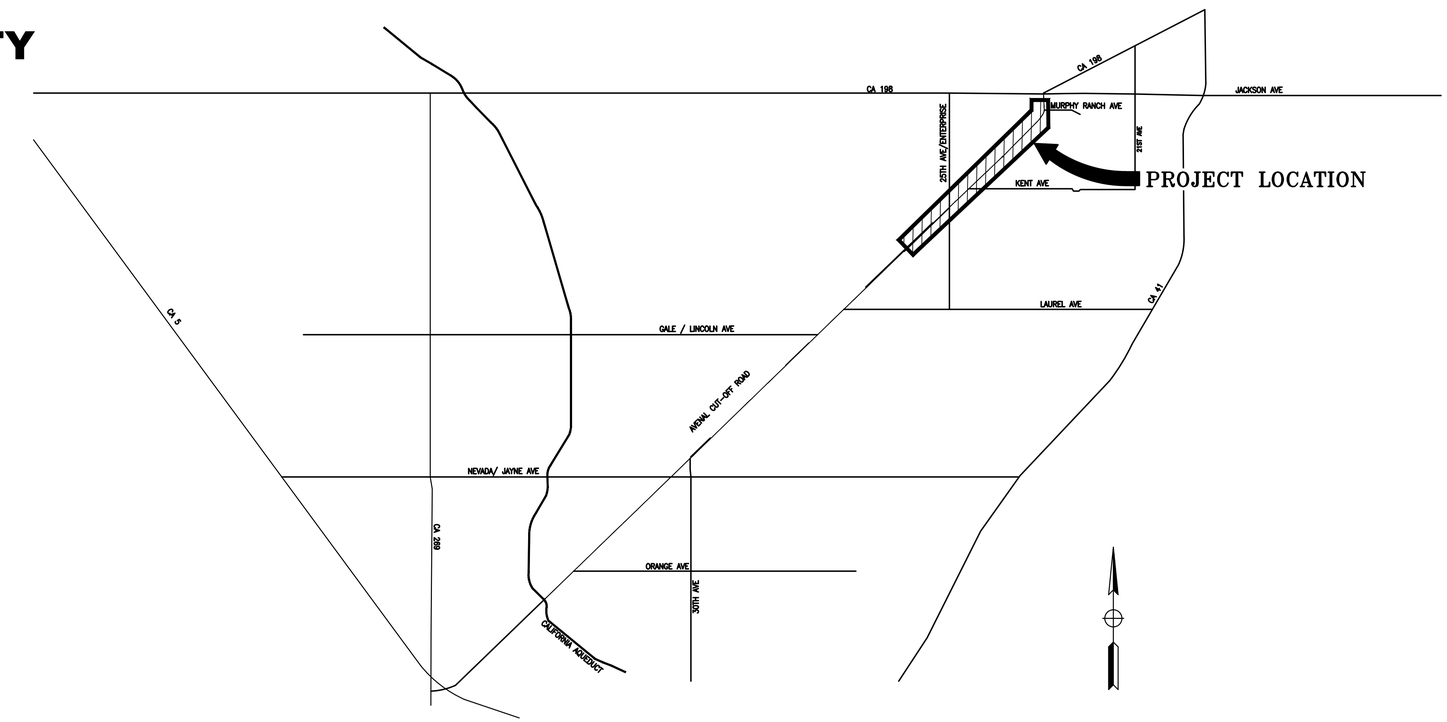
2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA

COUNTY OF KINGS

DEPARTMENT OF PUBLIC WORKS
PLANS FOR

AVENAL CUT-OFF ROAD
ROADWAY IMPROVMENTS
PHASE I



VICINITY MAP
NTS

UTILITIES

COUNTY OF KINGS, PUBLIC WORKS DEPARTMENT	PHONE PREFIX (559)
1400 W. LACEY BLVD. HANFORD, CA, 93230	852-2601
PACIFIC GAS AND ELECTRIC COMPANY	
1745 2ND STREET SELMA, CA 93662	891-2139
AT&T	
217 W. ACEQUIA AVENUE, 3RD FLOOR VISALIA, CA. 93278	739-6456
SOCAL GAS COMPANY	
404 N. TIPTON STREET VISALIA, CA, 93292	739-2331

NOTE: SOCAL GAS COMPANY SHALL BE CONTACTED PRIOR TO CONSTRUCTION. SEE SPECIFICATIONS FOR DETAILS.

Know what's **below.**
Call before you dig.

APPROVED
MITCHEL CABRERA, P.E.
CHIEF ENGINEER

2/26/24
DATE

T-1

PETERS ENGINEERING GROUP
862 Pollasky Avenue
Clovis, California 93612
Phone (559) 299-1544
www.peters-engineering.com

COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

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AVENAL CUTOFF ROAD PHASE 1
TITLE SHEET

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

DWG: S:\2022\22-007\Mxd\Planset\Avenal Cutoff Phase 1\22-007 T-1.dwg USER: Quinn Vosmero DATE: Feb 21, 2024 5:00pm

SHEET INDEX		
SHEET NUMBER	SHEET TITLE	SHEET DESCRIPTION
1	T-1	TITLE SHEET
2	T-2	SHEET INDEX
3	X-1	TYPICAL SECTIONS – 1
4	X-2	TYPICAL SECTIONS – 2
5	K-1	KEY MAP – 1
6	K-2	KEY MAP – 2
7	K-3	KEY MAP – 3
8	K-4	KEY MAP – 4
9	K-5	KEY MAP – 5
10	L-1	AVENAL CUTOFF RD STA 10+00 TO 16+50
11	L-2	AVENAL CUTOFF RD STA 16+50 to 23+00
12	L-3	AVENAL CUTOFF RD STA 23+00 TO 29+50
13	L-4	AVENAL CUTOFF RD STA 29+50 TO 36+00
14	L-5	AVENAL CUTOFF RD STA 36+00 TO 42+50
15	L-6	AVENAL CUTOFF RD STA 42+50 TO 49+00
16	L-7	AVENAL CUTOFF RD STA 49+00 TO 55+50
17	L-8	AVENAL CUTOFF RD STA 55+50 TO 62+00
18	L-9	AVENAL CUTOFF RD STA 62+00 TO 68+50
19	L-10	AVENAL CUTOFF RD STA 68+50 TO 75+00
20	L-11	AVENAL CUTOFF RD STA 75+00 TO 81+50
21	L-12	AVENAL CUTOFF RD STA 81+50 TO 88+00
22	L-13	AVENAL CUTOFF RD STA 88+00 TO 94+50
23	L-14	AVENAL CUTOFF RD STA 94+50 TO 101+00
24	L-15	AVENAL CUTOFF RD STA 101+00 TO 107+50
25	L-16	AVENAL CUTOFF RD STA 107+50 TO 114+00
26	L-17	AVENAL CUTOFF RD STA 114+00 TO 120+50
27	L-18	AVENAL CUTOFF RD STA 120+50 TO 127+00
28	L-19	AVENAL CUTOFF RD STA 127+00 TO 133+50
29	L-20	AVENAL CUTOFF RD 133+50 TO 140+00
30	L-21	AVENAL CUTOFF RD STA 140+00 TO 146+50
31	L-22	AVENAL CUTOFF RD STA 146+50 TO 153+00
32	L-23	AVENAL CUTOFF RD STA 153+00 TO 159+50
33	L-24	AVENAL CUTOFF RD STA 159+50 TO 166+00
34	L-25	AVENAL CUTOFF RD STA 166+00 TO 172+50

SHEET INDEX		
35	L-26	AVENAL CUTOFF RD STA 172+50 TO 179+00
36	L-27	AVENAL CUTOFF RD STA 179+00 TO 185+50
37	L-28	AVENAL CUTOFF RD STA 185+50 TO 192+00
38	L-29	AVENAL CUTOFF RD STA 192+00 TO 198+50
39	L-30	AVENAL CUTOFF RD STA 198+50 TO 205+00
40	L-31	AVENAL CUTOFF RD STA 205+00 TO 211+50
41	L-32	AVENAL CUTOFF RD STA 211+50 TO 218+00
42	L-33	AVENAL CUTOFF RD STA 218+00 TO 224+50
43	L-34	AVENAL CUTOFF RD STA 224+50 TO 231+00
44	L-35	AVENAL CUTOFF RD STA 231+00 TO 237+50
45	L-36	AVENAL CUTOFF RD STA 237+50 TO 244+00
46	L-37	AVENAL CUTOFF RD STA 244+00 TO 250+50
47	CD-1	CONSTRUCTION DETAIL – 1
48	CD-2	CONSTRUCTION DETAILS – 2
49	CD-3	CONSTRUCTION DETAILS – 3
50	PD-1	PAVEMENT DELINEATION – 1
51	PD-2	PAVEMENT DELINEATION – 2
52	PD-3	PAVEMENT DELINEATION – 3
53	PD-4	PAVEMENT DELINEATION – 4
54	PD-5	PAVEMENT DELINEATION – 5
55	PD-6	PAVEMENT DELINEATION – 6
56	PD-7	PAVEMENT DELINEATION – 7
57	PD-8	PAVEMENT DELINEATION – 8
58	PD-9	PAVEMENT DELINEATION – 9
59	PD-10	PAVEMENT DELINEATION – 10
60	PD-11	PAVEMENT DELINEATION – 11
61	PD-12	PAVEMENT DELINEATION – 12
62	PD-13	PAVEMENT DELINEATION – 13
63	PD-14	PAVEMENT DELINEATION – 14
64	PD-15	PAVEMENT DELINEATION – 15
65	PD-16	PAVEMENT DELINEATION – 16
66	PD-17	PAVEMENT DELINEATION – 17
67	PD-18	PAVEMENT DELINEATION – 18
68	PD-19	PAVEMENT DELINEATION – 19
69	TH-1	TRAFFIC HANDLING – 1

SHEET NO. 2 | TOTAL SHEETS 69

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA

GENERAL LEGEND

- W8 — EXIST WATER MAIN, SIZE & TYPE
- SS8 — EXIST SANITARY SEWER PIPE, SIZE & TYPE
- EXIST POWER POLE
- T — EXIST TELEPHONE LINE
- EC — EXIST ELECTRICAL LINE
- G — EXIST BURIED GAS PIPE
- TV — EXIST BURIED CABLE TV
- OH — EXIST OVERHEAD ELECT
- EXIST FIBER OPTIC
- TEL — EXIST TEL. CABLE PEDESTAL
- EXIST TELEPHONE POLE W/ GUY WIRE
- EXIST STREET LIGHT
- SSMH / SDMH — EXIST STORM DRAIN/ SEWER MANHOLE
- **W8** — PROPOSED WATER MAIN
- **SS8** — PROPOSED SEWER LINE
- **SD27** — PROPOSED STORM DRAIN
- X — EXIST CHAIN LINK FENCE
- SD — EXIST STORM DRAIN PIPELINE
- EXIST FIRE HYDRANT
- WV — EXIST VALVE BOX
- EXIST TOPO POINT
- WM — EXIST WATER METER
- GM — EXIST GAS METER
- EXIST CLEAN OUT
- EXIST EDGE OF PAVEMENT
- MINOR (1') AND MAJOR (5') EXISTING CONTOUR LINES
- PROPOSED DAYLIGHT
- PROPOSED EDGE OF PAVEMENT

ABBREVIATIONS

AC	ASPHALTIC CONCRETE	N	NORTH
BW	BACK OF WALK	NS	NATIVE SOIL
C	CONCRETE	NTS	NOT TO SCALE
℄ OR CL	CENTER LINE	OG	ORIGINAL GRADE
CONC	CONCRETE	P	PAVEMENT
EL	ELEVATION	PL	PROPERTY LINE
EP	EDGE OF PAVEMENT	PG	PROFILE GRADE
EXIST	EXISTING	PP	POWER POLE
FC	FACE OF CURB	PROP	PROPOSED
FDR	FULL DEPTH RECLAMATION	R/W	RIGHT OF WAY
FF	FINISHED FLOOR	RT	RIGHT
FG	FINISHED GRADE	RW	RETAINING WALL
FH	FIRE HYDRANT	STA	STATION
FL	FLOWLINE	SHLD	SHOULDER
FT	FEET, FOOT	SW	SIDEWALK
GR	GRADE	TC	TOP OF CURB, CONCRETE
IE/INV	INVERT ELEVATION	TF	TOP OF FOOTING
LOG	LIP OF GUTTER	TG	TOP OF GRATE
LT	LEFT	TP	TOP OF PAVEMENT
MAX	MAXIMUM	TYP	TYPICAL
ME	MATCH EXISTING	W	WEST, WIDTH
MH	MANHOLE	W/	WITH
MIN	MINIMUM	WM	WATER METER
		WV	WATER VALVE
		VG	VALLEY GUTTER

T-2

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COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
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	BY	DATE
DESIGN		
DRAWN		
CHECKED		

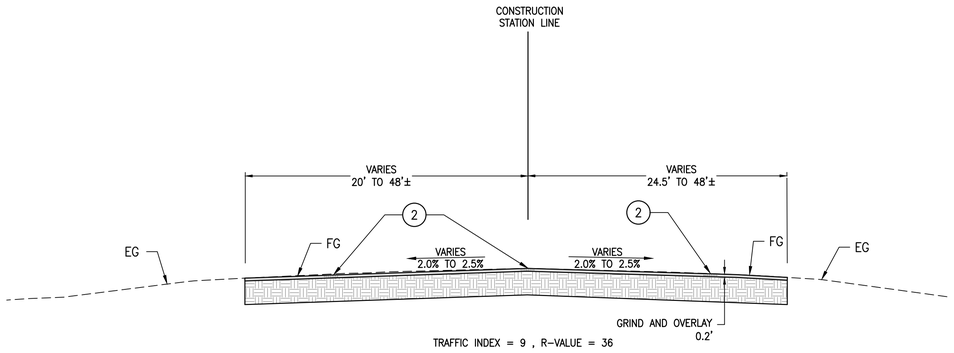
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

AVENAL CUTOFF ROAD PHASE 1
SHEET INDEX

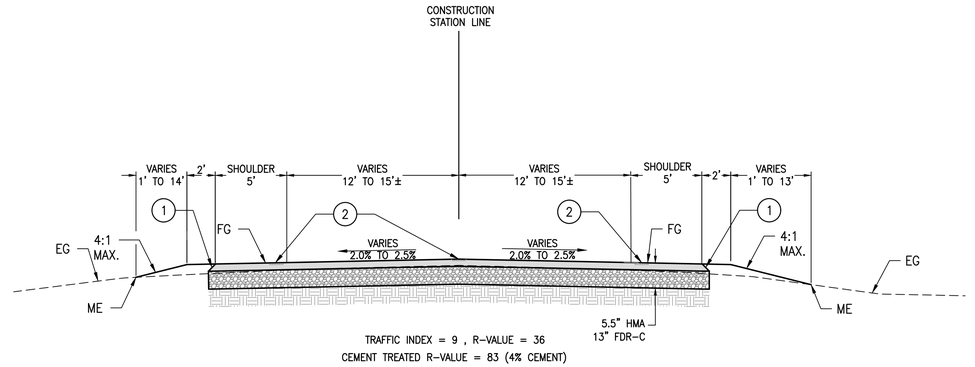
DWG: S:\2022\22-007\Vcad\Planset\Avenal Cutoff Phase 1\22-007 T-1.dwg USER: Quinn Voimero DATE: Feb 21, 2024 5:02pm

LEGEND: (APPLIES TO THIS SHEET ONLY)

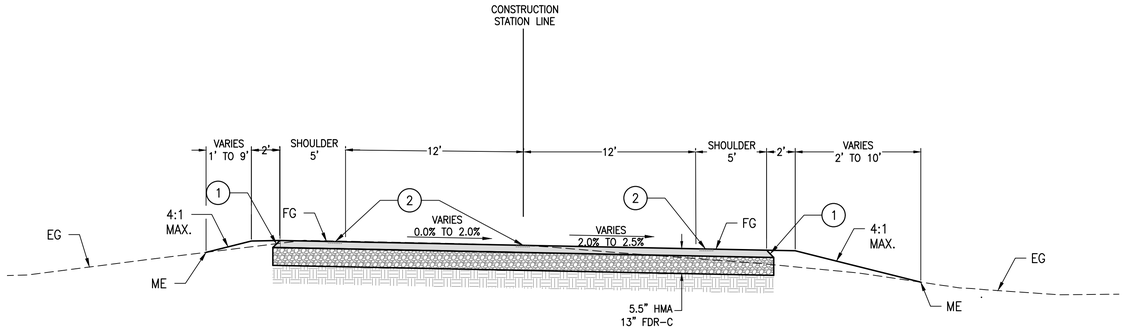
- FURNISH AND INSTALL HOT MIX ASPHALT
- FULL DEPTH RECLAMATION – CEMENT TREATED (95% RELATIVE COMPACTION). EXISTING AC PAVEMENT TO BE PULVERIZED AND MIXED WITH BASE MATERIAL AND SUBGRADE AS PART OF THE FDR–C PROCESS. MICROCRACKING SHALL BE APPLIED TO TOP OF FDR BETWEEN 46 AND 56 HOURS.
- NATURAL SOIL
- EG EXISTING GRADE
- FG FINISH GRADE
- ME MATCH EXISTING GRADE AT THIS LOCATION.
- (1) PAVEMENT EDGE TREATMENT PER STATE STD. P76 CASE K
- (2) RUMBLE STRIP 12" WIDE PER STATE STD A40B & A40D AND DETAIL CD–2



AVENAL CUTOFF
STA 11+78.92 TO 13+56.00
NOT TO SCALE



AVENAL CUTOFF
STA 15+56.00 TO 21+32.31
STA 35+53.92 TO 245+50
NOT TO SCALE



TRAFFIC INDEX = 9 , R–VALUE = 36
CEMENT TREATED R–VALUE = 83 (4% CEMENT)

AVENAL CUTOFF
STA 21+32.31 TO 35+53.92
NOT TO SCALE

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA

SHEET NO. 3 | TOTAL SHEETS 69

X–1

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DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
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ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

AVENAL CUTOFF ROAD PHASE 1
TYPICAL SECTIONS – 1

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA

LEGEND: (APPLIES TO THIS SHEET ONLY)

FURNISH AND INSTALL HOT MIX ASPHALT

FULL DEPTH RECLAMATION – CEMENT TREATED (95% RELATIVE COMPACTION). EXISTING AC PAVEMENT TO BE PULVERIZED AND MIXED WITH BASE MATERIAL AND SUBGRADE AS PART OF THE FDR-C PROCESS. MICROCRACKING SHALL BE APPLIED TO TOP OF FDR BETWEEN 46 AND 56 HOURS.

NATURAL SOIL

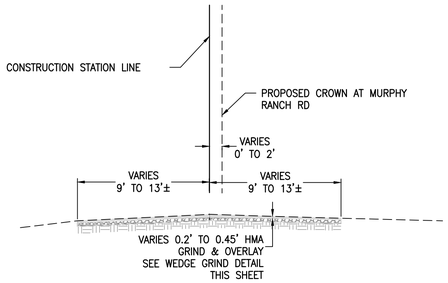
EG EXISTING GRADE

FG FINISH GRADE

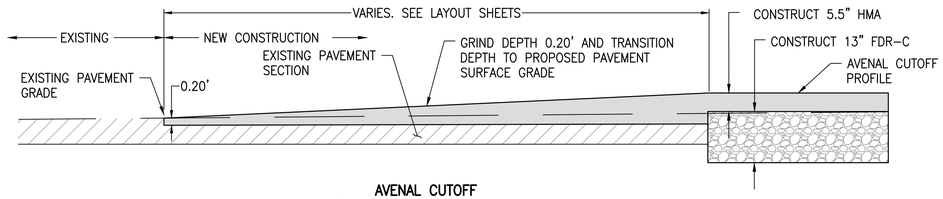
ME MATCH EXISTING GRADE AT THIS LOCATION.

(1) PAVEMENT EDGE TREATMENT PER STATE STD. P76 CASE K

(2) RUMBLE STRIP 12" WIDE PER STATE STD A40B & A40D AND DETAIL CD-2

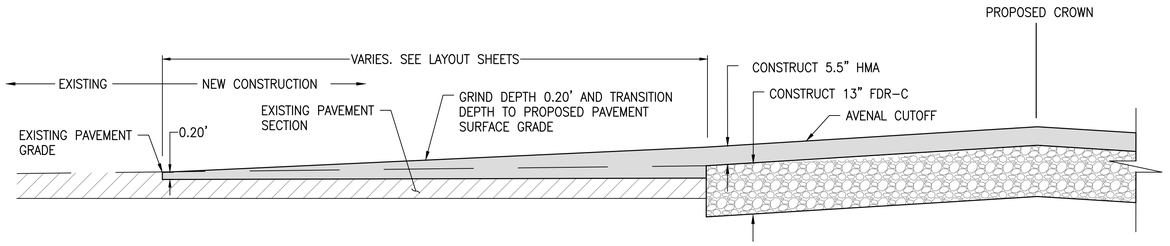


MURPHY RANCH ROAD
25TH AVENUE
–
NOT TO SCALE



AVENAL CUTOFF
STA 13+56.00 TO 15+56.00
STA 243+50.00 TO 245+50.00
NOT TO SCALE

WEDGE GRIND (1)
NOT TO SCALE



AVENAL CUTOFF
MURPHY RANCH (EAST)
25TH AVENUE
DRIVE APPROACH 56+20.30
DRIVE APPROACH 145+82.44
DRIVE APPROACH 146+38.08
DRIVE APPROACH 175+16.76
DRIVE APPROACH 185+48.85
NOT TO SCALE

WEDGE GRIND (2)
NOT TO SCALE

X-2

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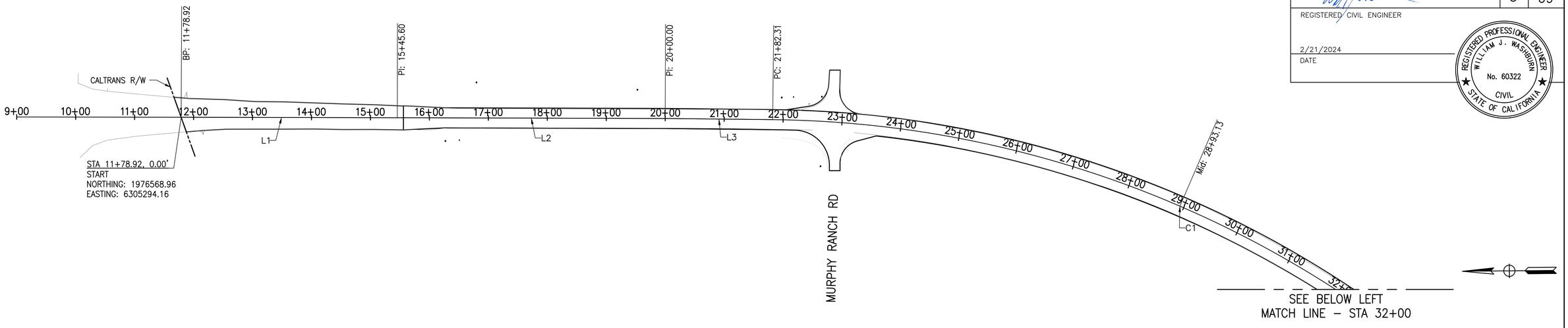
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

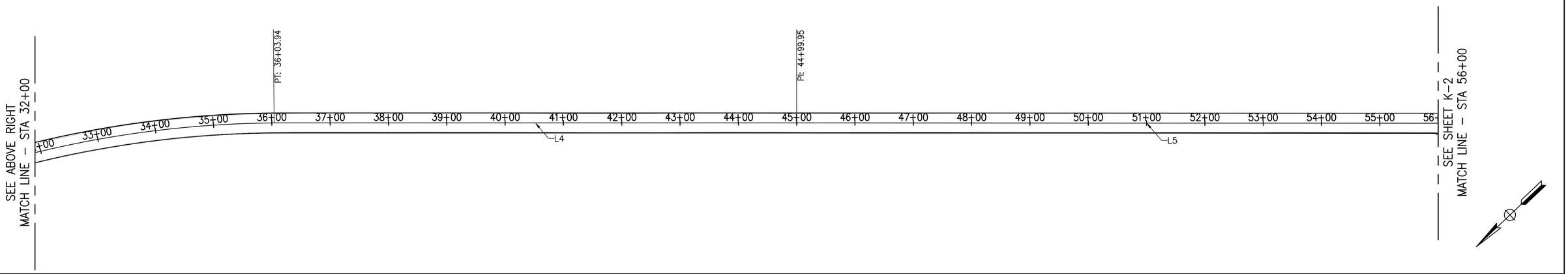
AVENAL CUTOFF ROAD PHASE 1
TYPICAL SECTIONS – 2

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA





HORIZONTAL CONTROL			
Line #/Curve #	Length	Bearing/Delta	Radius
L38	70.37	S46° 34' 08.98"W	
L1	366.67	S0° 06' 28.86"W	
L2	454.40	S0° 09' 51.11"W	
L3	182.32	S0° 37' 30.38"W	
C1	1421.62	45.50	1790.00
L4	896.02	S46° 35' 15.50"W	
L5	1200.00	S46° 36' 51.56"W	
L6	600.00	S46° 35' 02.80"W	
L7	600.00	S46° 36' 20.59"W	
L8	600.00	S46° 36' 46.26"W	
L9	600.00	S46° 34' 10.46"W	
L10	600.00	S46° 34' 31.87"W	
L11	599.99	S46° 34' 57.73"W	

HORIZONTAL CONTROL			
Line #/Curve #	Length	Bearing/Delta	Radius
L12	600.00	S46° 33' 07.77"W	
L13	600.00	S46° 36' 08.79"W	
L14	600.00	S46° 36' 28.46"W	
L15	600.00	S46° 32' 44.12"W	
L16	600.00	S46° 34' 19.57"W	
L17	600.00	S46° 36' 09.52"W	
L18	400.00	S46° 37' 13.30"W	
L19	600.00	S46° 34' 41.44"W	
L20	600.00	S46° 38' 38.22"W	
L21	600.00	S46° 35' 50.47"W	
L22	600.00	S46° 36' 23.88"W	
L23	600.00	S46° 31' 55.98"W	
L24	600.00	S46° 37' 25.40"W	

HORIZONTAL CONTROL			
Line #/Curve #	Length	Bearing/Delta	Radius
L25	600.00	S46° 35' 16.43"W	
L26	599.99	S46° 38' 14.77"W	
L27	599.99	S46° 33' 27.43"W	
L28	600.00	S46° 36' 46.67"W	
L29	600.00	S46° 34' 56.00"W	
L30	600.00	S46° 34' 48.40"W	
L31	600.00	S46° 37' 17.52"W	
L32	600.00	S46° 36' 31.05"W	
L33	600.00	S46° 35' 45.28"W	
L34	600.00	S46° 31' 33.22"W	
L35	600.00	S46° 29' 52.00"W	
L36	600.00	S46° 33' 55.24"W	
L37	600.00	S46° 39' 43.51"W	

K–1

HORIZONTAL SCALE: 1" = 80'
0 40 80 120 160

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HANFORD, CA 93230

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DESIGN		
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ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS 0 1 2 3

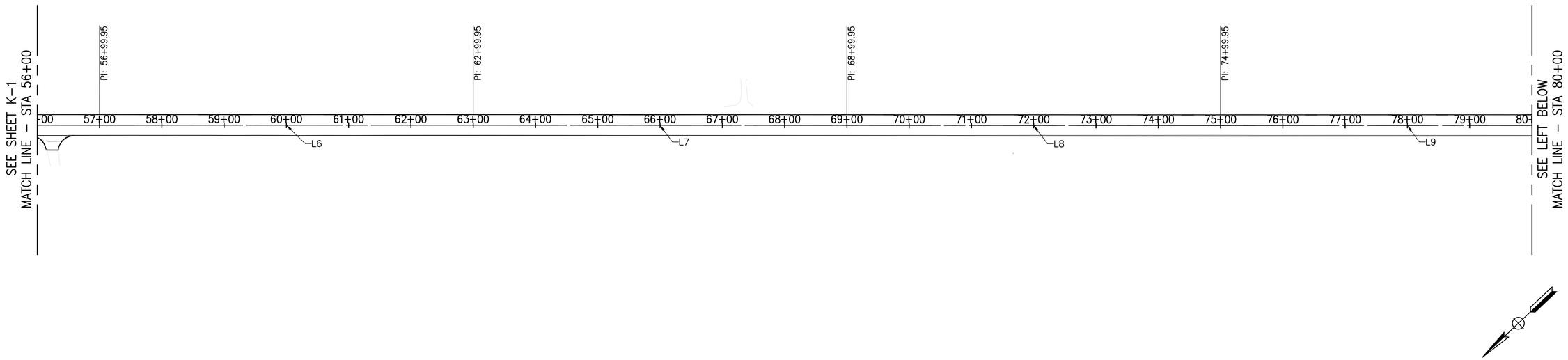
AVENAL CUTOFF ROAD PHASE 1
KEY MAP – 1

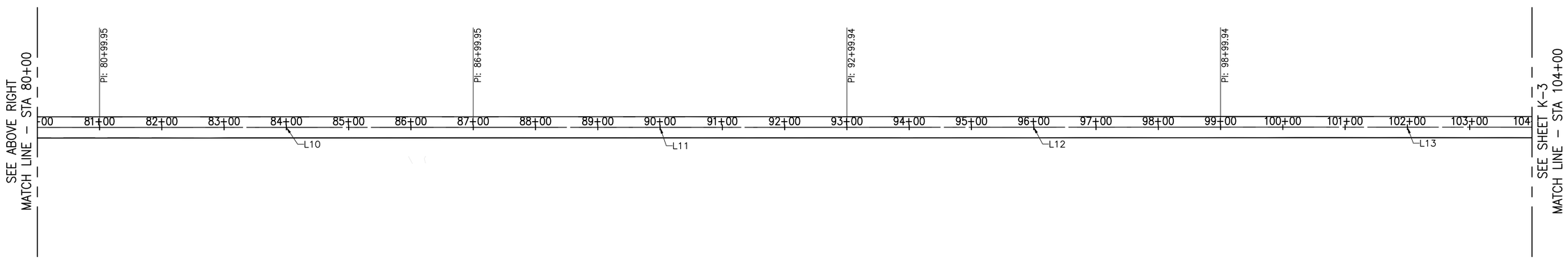
SHEET NO.	TOTAL SHEETS
6	69

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA





K-2

HORIZONTAL SCALE: 1" = 80'

0 40 80 120 160

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DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1
KEY MAP - 2

ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS 0 1 2 3

SHEET NO.	TOTAL SHEETS
7	69

REGISTERED CIVIL ENGINEER

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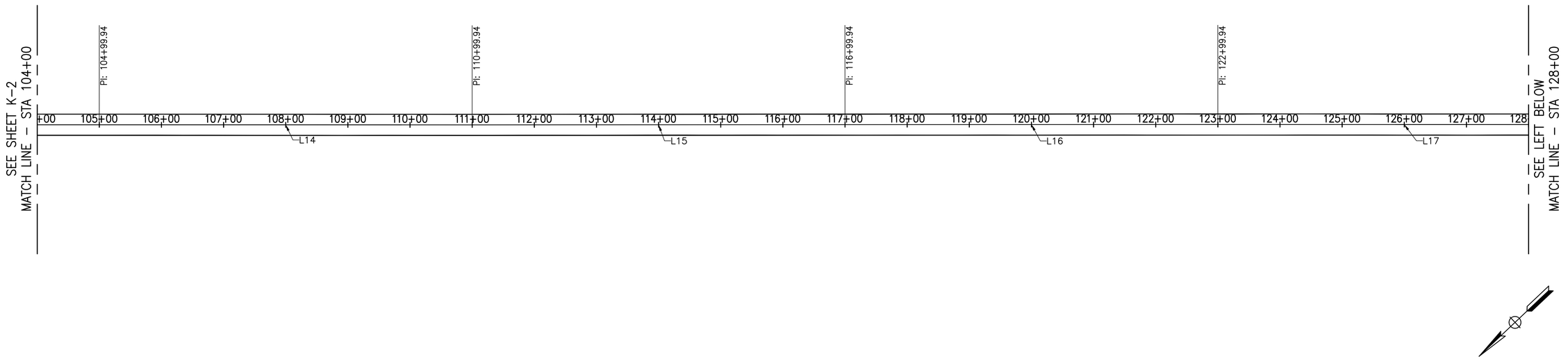

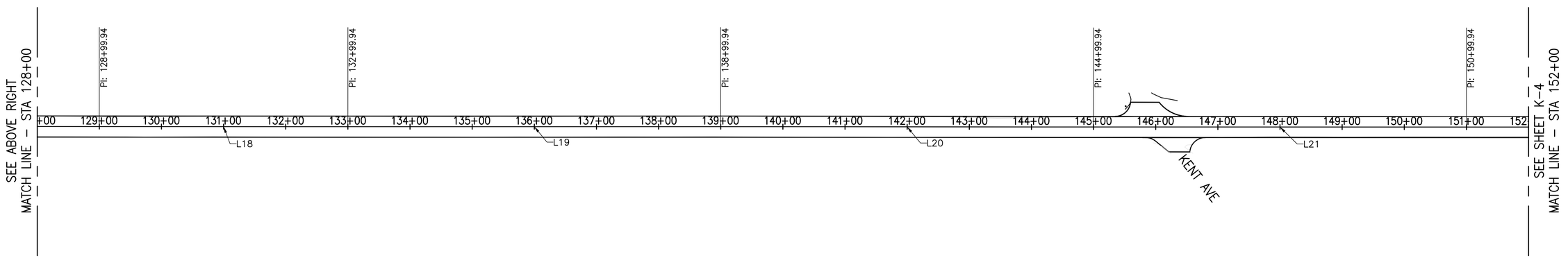

K-3

HORIZONTAL SCALE: 1" = 80'

0 40 80 120 160

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HANFORD, CA 93230

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1
KEY MAP - 3

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

DWG: S:\2022\22-007\Vcad\Planset\Avenal Cutoff Phase 1\22-007 K-1 ALT.dwg USER: Quinn Vosmera DATE: Feb 22, 2024 7:59am

SHEET NO.	TOTAL SHEETS
8	69

REGISTERED CIVIL ENGINEER

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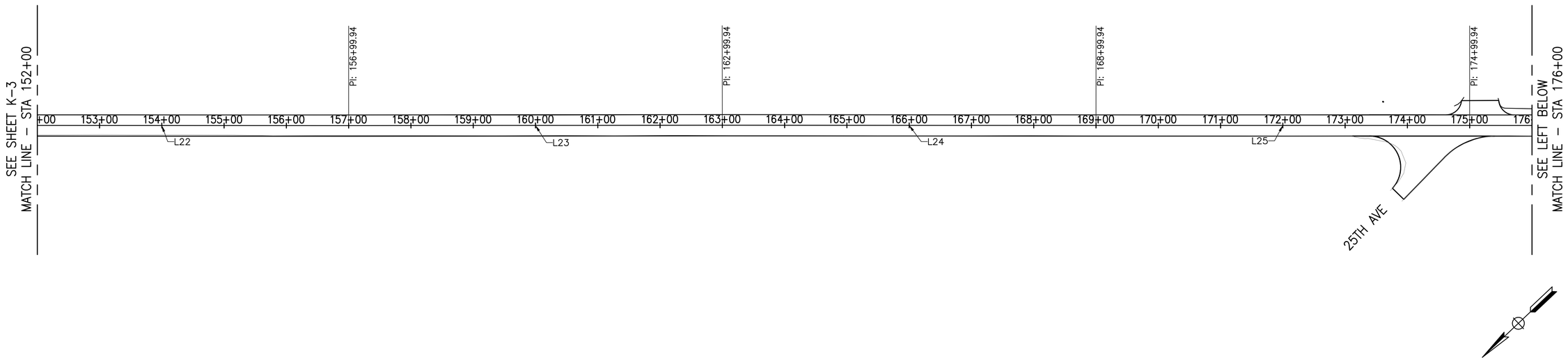

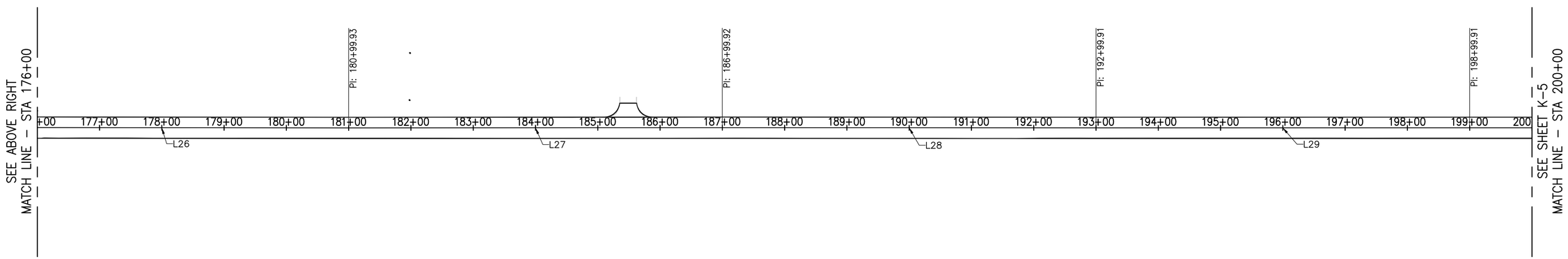

K-4

HORIZONTAL SCALE: 1" = 80'

0 40 80 120 160

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ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

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DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1
KEY MAP - 4

DWG: S:\2022\22-007\Vcad\Planset\Avenal Cutoff Phase 1\22-007 K-1 ALT.dwg USER: Quinn Vosmera DATE: Feb 22, 2024 8:00am

SHEET NO.	TOTAL SHEETS
9	69

REGISTERED CIVIL ENGINEER

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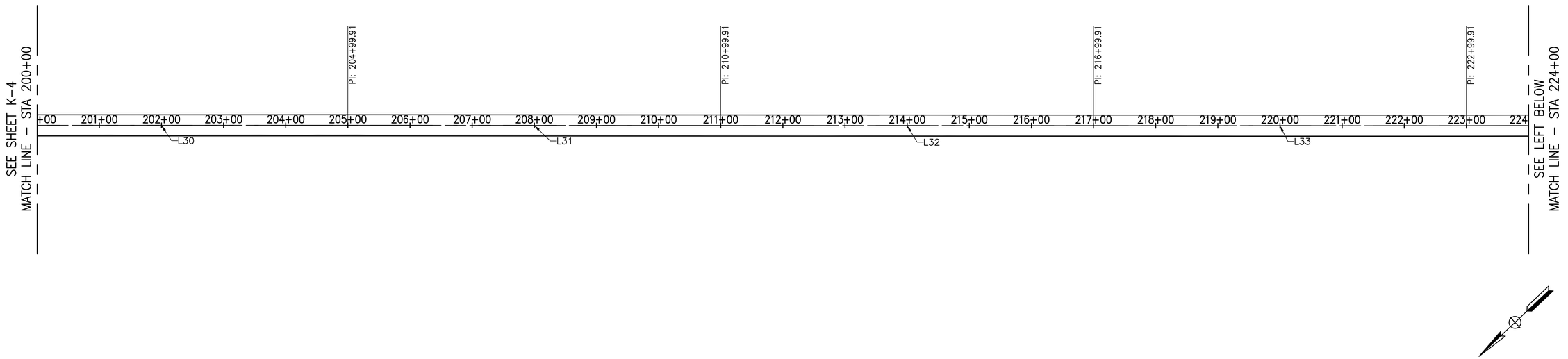
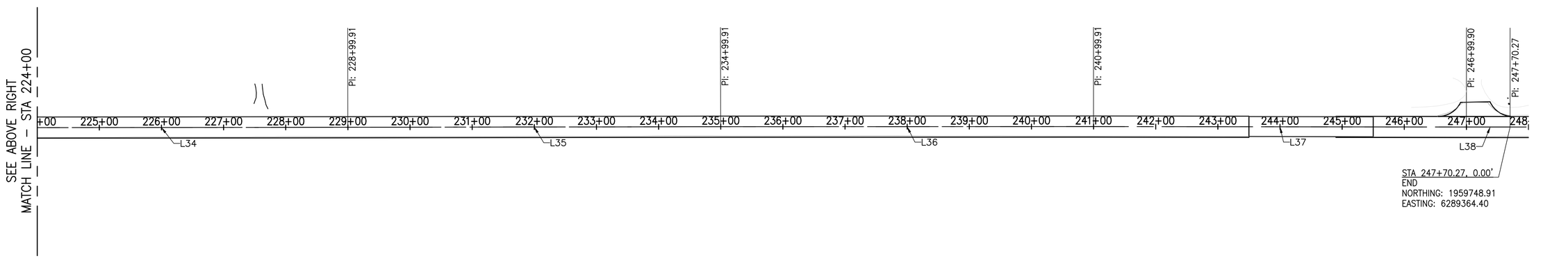
CIVIL
STATE OF CALIFORNIA





K-5

HORIZONTAL SCALE: 1" = 80'

0 40 80 120 160

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862 Pollasky Avenue
Clovis, California 93612
Phone (559) 299-1544
www.peters-engineering.com

COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1
KEY MAP - 5

LEGEND (APPLIES TO SHEETS L-1 TO L-37)

ME MATCH EXIST. GRADE

PROPOSED EDGE OF PAVEMENT

PROPOSED DAYLIGHT

MINOR (1') AND MAJOR (5') EXISTING CONTOUR LINES

EXISTING EDGE OF PAVEMENT

HOT MIX ASPHALT (FULL RECONSTRUCTION, SEE TYPICAL SECTIONS FOR PAVEMENT SECTION)

GRIND 0.2' AND OVERLAY HMA (SEE TYPICAL SECTIONS)

HMA WEDGE GRIND (SEE TYPICAL SECTIONS) 1-2 / X-2

(1) LIMITS OF FULL DEPTH PAVEMENT RECONSTRUCTION, TAPER, WEDGE GRIND, OR GRIND & OVERLAY

(2) PROTECT EXIST. STREETLIGHT/UTILITY POLE IN PLACE

(3) PROTECT EXIST. MISCELLANEOUS UTILITY

NOTES (APPLIES TO SHEETS L-1 TO L-37)

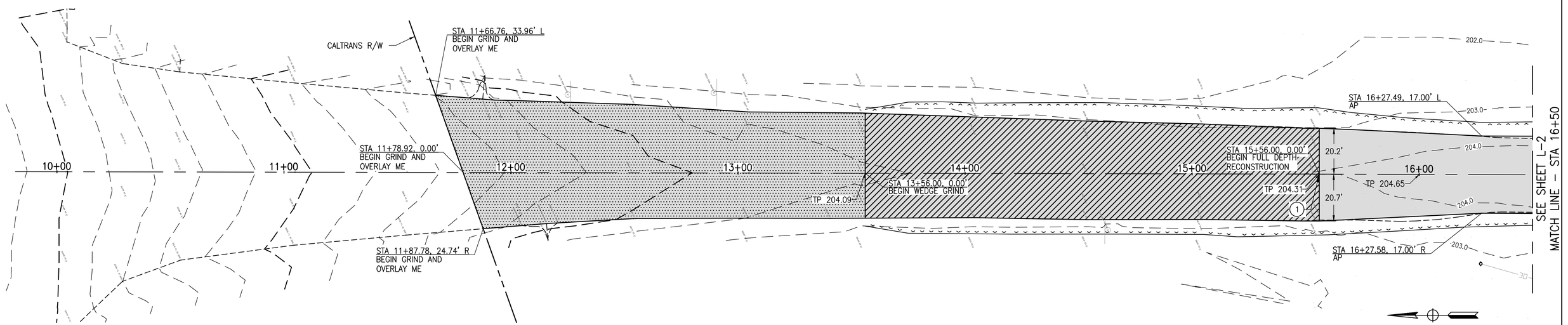
1. CONTRACTOR SHALL MAINTAIN ALL EXISTING IRRIGATION SYSTEMS DURING CONSTRUCTION, SHOULD EXISTING IRRIGATION SYSTEMS BE DAMAGED OR REQUIRED TO BE RELOCATED DURING CONSTRUCTION, THE CONTRACTOR SHALL MOVE & REPLACE DAMAGED IRRIGATION FACILITIES WITH EQUAL OR BETTER PARTS AND MATERIALS.
2. ALL SURVEY MONUMENTS WITHIN THE AREA OF CONSTRUCTION SHALL BE PRESERVED OR, IF DAMAGED, RESET BY A REGISTERED ENGINEER OR LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

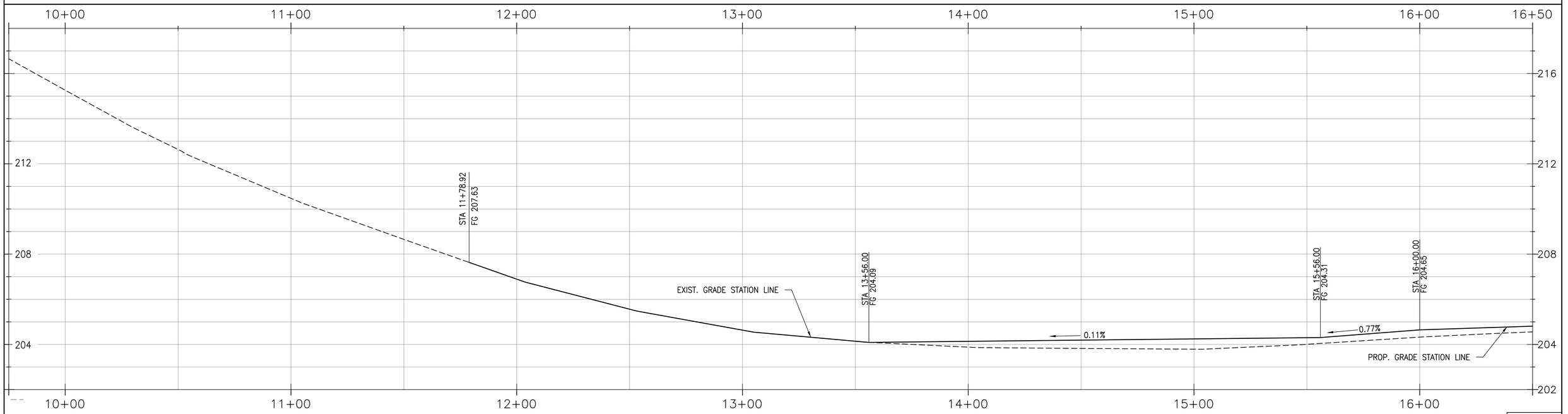
SHEET NO.	TOTAL SHEETS
10	69

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA





L-1

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
0 10 20 30 40

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HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1

AVENAL CUTOFF RD STA 10+00 TO 16+50

DWG: S:\2022\22-007\Acad\Planset\Avenal Cutoff Phase 1\22-007 L-1.dwg USER: Antonio Roma DATE: Feb 22, 2024 8:37am

LEGEND (APPLIES TO SHEETS L-1 TO L-37)

- ME — MATCH EXIST. GRADE
- PROPOSED EDGE OF PAVEMENT
- PROPOSED DAYLIGHT
- MINOR (1') AND MAJOR (5') EXISTING CONTOUR LINES
- EXISTING EDGE OF PAVEMENT
- HOT MIX ASPHALT (FULL RECONSTRUCTION, SEE TYPICAL SECTIONS FOR PAVEMENT SECTION)
- GRIND 0.2' AND OVERLAY HMA (SEE TYPICAL SECTIONS)
- HMA WEDGE GRIND (SEE TYPICAL SECTIONS) (1-2 / X-2)
- (1) LIMITS OF FULL DEPTH PAVEMENT RECONSTRUCTION, TAPER, WEDGE GRIND, OR GRIND & OVERLAY
- (2) PROTECT EXIST. STREETLIGHT/UTILITY POLE IN PLACE
- (3) PROTECT EXIST. MISCELLANEOUS UTILITY

NOTES (APPLIES TO SHEETS L-1 TO L-37)

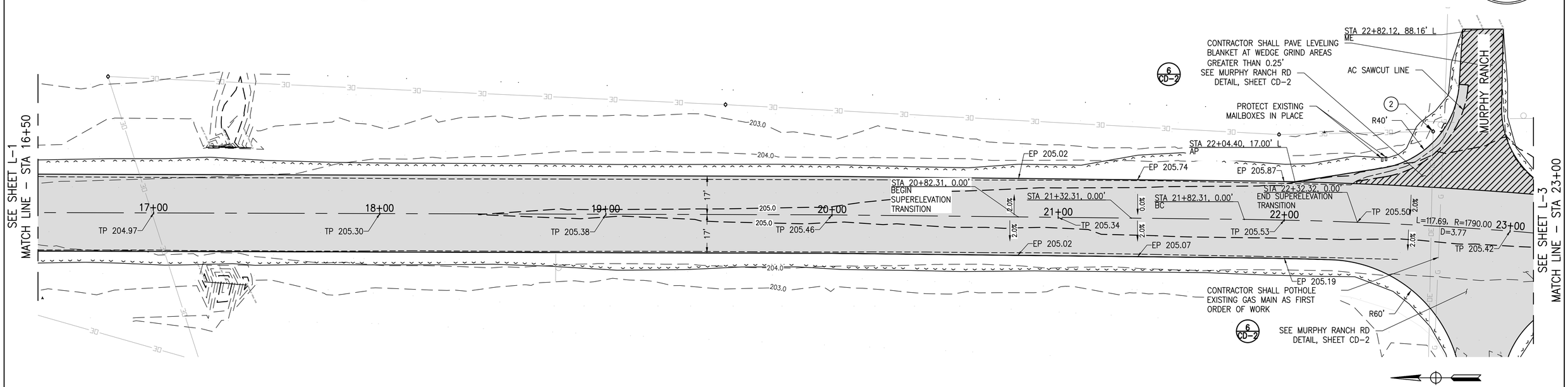
1. CONTRACTOR SHALL MAINTAIN ALL EXISTING IRRIGATION SYSTEMS DURING CONSTRUCTION, SHOULD EXISTING IRRIGATION SYSTEMS BE DAMAGED OR REQUIRED TO BE RELOCATED DURING CONSTRUCTION, THE CONTRACTOR SHALL MOVE & REPLACE DAMAGED IRRIGATION FACILITIES WITH EQUAL OR BETTER PARTS AND MATERIALS.
2. ALL SURVEY MONUMENTS WITHIN THE AREA OF CONSTRUCTION SHALL BE PRESERVED OR, IF DAMAGED, RESET BY A REGISTERED ENGINEER OR LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

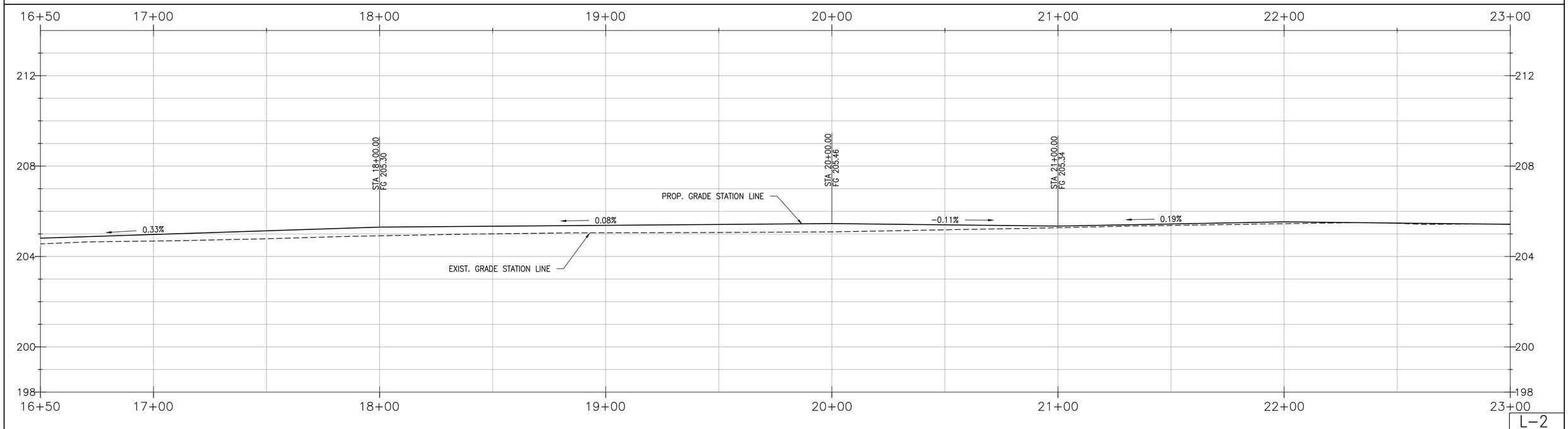
SHEET NO.	TOTAL SHEETS
11	69

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA





L-2

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
0 10 20 30 40

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DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1

AVENAL CUTOFF RD STA 16+50 TO 23+00

DWG: S:\2022\22-007\Mcd\Planset\Avenal Cutoff Phase 1\22-007 L-1.dwg USER: Antonio Romo DATE: Feb 22, 2024 8:40am

SHEET NO.	TOTAL SHEETS
12	69

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER WILLIAM J. WASHBURN No. 60322 CIVIL STATE OF CALIFORNIA

LEGEND (APPLIES TO SHEETS L-1 TO L-37)

- ME MATCH EXIST. GRADE
- PROPOSED EDGE OF PAVEMENT
- PROPOSED DAYLIGHT
- MINOR (1') AND MAJOR (5') EXISTING CONTOUR LINES
- EXISTING EDGE OF PAVEMENT
- HOT MIX ASPHALT (FULL RECONSTRUCTION, SEE TYPICAL SECTIONS FOR PAVEMENT SECTION)
- GRIND 0.2' AND OVERLAY HMA (SEE TYPICAL SECTIONS)
- HMA WEDGE GRIND (SEE TYPICAL SECTIONS) (1-2 / X-2)
- (1) LIMITS OF FULL DEPTH PAVEMENT RECONSTRUCTION, TAPER, WEDGE GRIND, OR GRIND & OVERLAY
- (2) PROTECT EXIST. STREETLIGHT/UTILITY POLE IN PLACE
- (3) PROTECT EXIST. MISCELLANEOUS UTILITY

NOTES (APPLIES TO SHEETS L-1 TO L-37)

1. CONTRACTOR SHALL MAINTAIN ALL EXISTING IRRIGATION SYSTEMS DURING CONSTRUCTION, SHOULD EXISTING IRRIGATION SYSTEMS BE DAMAGED OR REQUIRED TO BE RELOCATED DURING CONSTRUCTION, THE CONTRACTOR SHALL MOVE & REPLACE DAMAGED IRRIGATION FACILITIES WITH EQUAL OR BETTER PARTS AND MATERIALS.
2. ALL SURVEY MONUMENTS WITHIN THE AREA OF CONSTRUCTION SHALL BE PRESERVED OR, IF DAMAGED, RESET BY A REGISTERED ENGINEER OR LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

NOTE:
REMOVE DELINEATORS NEAR CURVE FROM STA 24+00 TO 34+00 AND INSTALL NEW DELINEATORS PER PD-SHEETS

L-3

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
0 10 20 30 40

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DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

DESIGN	BY	DATE
DRAWN	BY	DATE
CHECKED	BY	DATE

AVENAL CUTOFF ROAD PHASE 1
AVENAL CUTOFF RD STA 23+00 TO 29+50

DWG: S:\2022\22-007\Acad\Planset\Avenal Cutoff Phase 1\22-007 L-1.dwg USER: Antonio Romo DATE: Feb 22, 2024 8:43am

LEGEND (APPLIES TO SHEETS L-1 TO L-37)

ME MATCH EXIST. GRADE

PROPOSED EDGE OF PAVEMENT

PROPOSED DAYLIGHT

MINOR (1') AND MAJOR (5') EXISTING CONTOUR LINES

EXISTING EDGE OF PAVEMENT

HOT MIX ASPHALT (FULL RECONSTRUCTION, SEE TYPICAL SECTIONS FOR PAVEMENT SECTION)

GRIND 0.2' AND OVERLAY HMA (SEE TYPICAL SECTIONS)

HMA WEDGE GRIND (SEE TYPICAL SECTIONS) (1-2 / X-2)

(1) LIMITS OF FULL DEPTH PAVEMENT RECONSTRUCTION, TAPER, WEDGE GRIND, OR GRIND & OVERLAY

(2) PROTECT EXIST. STREETLIGHT/UTILITY POLE IN PLACE

(3) PROTECT EXIST. MISCELLANEOUS UTILITY

NOTES (APPLIES TO SHEETS L-1 TO L-37)

1. CONTRACTOR SHALL MAINTAIN ALL EXISTING IRRIGATION SYSTEMS DURING CONSTRUCTION, SHOULD EXISTING IRRIGATION SYSTEMS BE DAMAGED OR REQUIRED TO BE RELOCATED DURING CONSTRUCTION, THE CONTRACTOR SHALL MOVE & REPLACE DAMAGED IRRIGATION FACILITIES WITH EQUAL OR BETTER PARTS AND MATERIALS.
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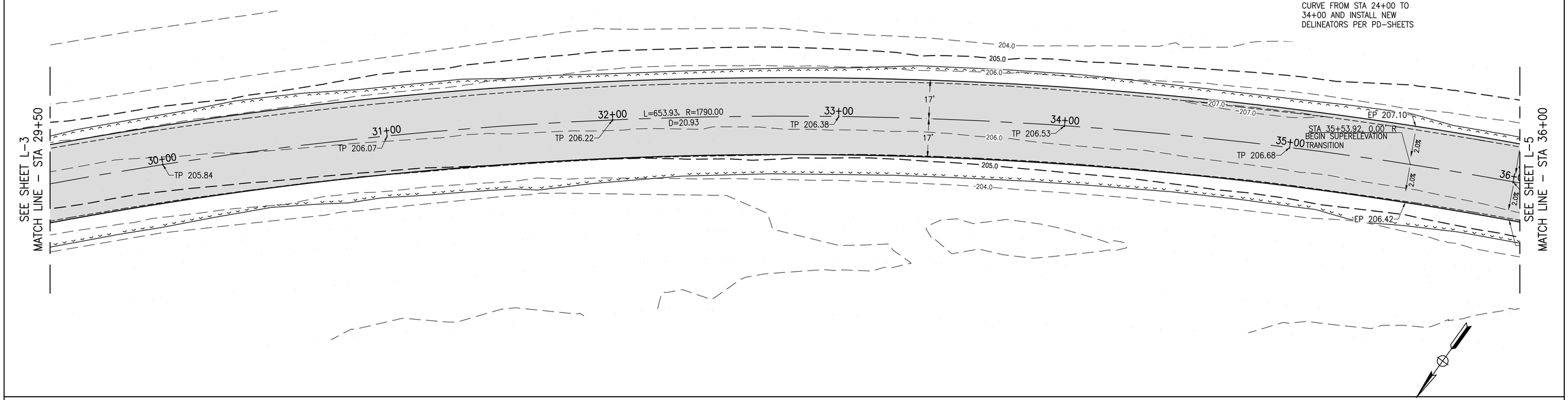
SHEET NO.	TOTAL SHEETS
13	69

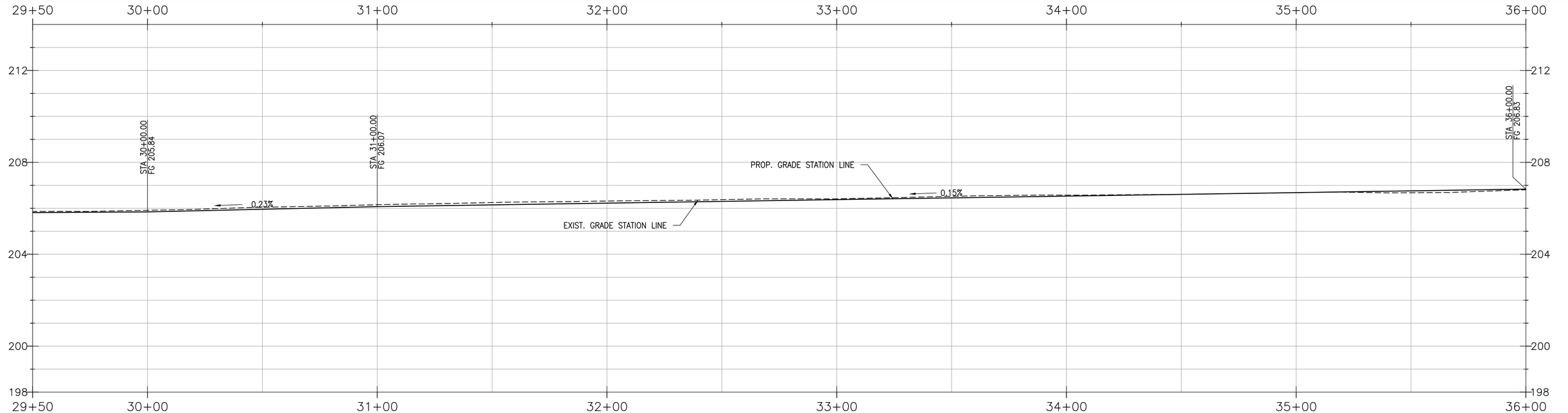
REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA

NOTE:
REMOVE DELINEATORS NEAR CURVE FROM STA 24+00 TO 34+00 AND INSTALL NEW DELINEATORS PER PD-SHEETS





L-4

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
0 10 20 30 40

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HANFORD, CA 93230

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1

AVENAL CUTOFF RD STA 29+50 TO 36+00

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

DWG: S:\2022\22-007\Acad\Phase1\Avenal Cutoff Phase 1\22-007 L-1.dwg USER: Antonio Romo DATE: Feb 22, 2024 8:46am

LEGEND (APPLIES TO SHEETS L-1 TO L-37)

ME MATCH EXIST. GRADE

PROPOSED EDGE OF PAVEMENT

PROPOSED DAYLIGHT

MINOR (1') AND MAJOR (5') EXISTING CONTOUR LINES

EXISTING EDGE OF PAVEMENT

HOT MIX ASPHALT (FULL RECONSTRUCTION, SEE TYPICAL SECTIONS FOR PAVEMENT SECTION)

GRIND 0.2' AND OVERLAY HMA (SEE TYPICAL SECTIONS)

HMA WEDGE GRIND (SEE TYPICAL SECTIONS) (1-2 / X-2)

(1) LIMITS OF FULL DEPTH PAVEMENT RECONSTRUCTION, TAPER, WEDGE GRIND, OR GRIND & OVERLAY

(2) PROTECT EXIST. STREETLIGHT/UTILITY POLE IN PLACE

(3) PROTECT EXIST. MISCELLANEOUS UTILITY

NOTES (APPLIES TO SHEETS L-1 TO L-37)

1. CONTRACTOR SHALL MAINTAIN ALL EXISTING IRRIGATION SYSTEMS DURING CONSTRUCTION, SHOULD EXISTING IRRIGATION SYSTEMS BE DAMAGED OR REQUIRED TO BE RELOCATED DURING CONSTRUCTION, THE CONTRACTOR SHALL MOVE & REPLACE DAMAGED IRRIGATION FACILITIES WITH EQUAL OR BETTER PARTS AND MATERIALS.
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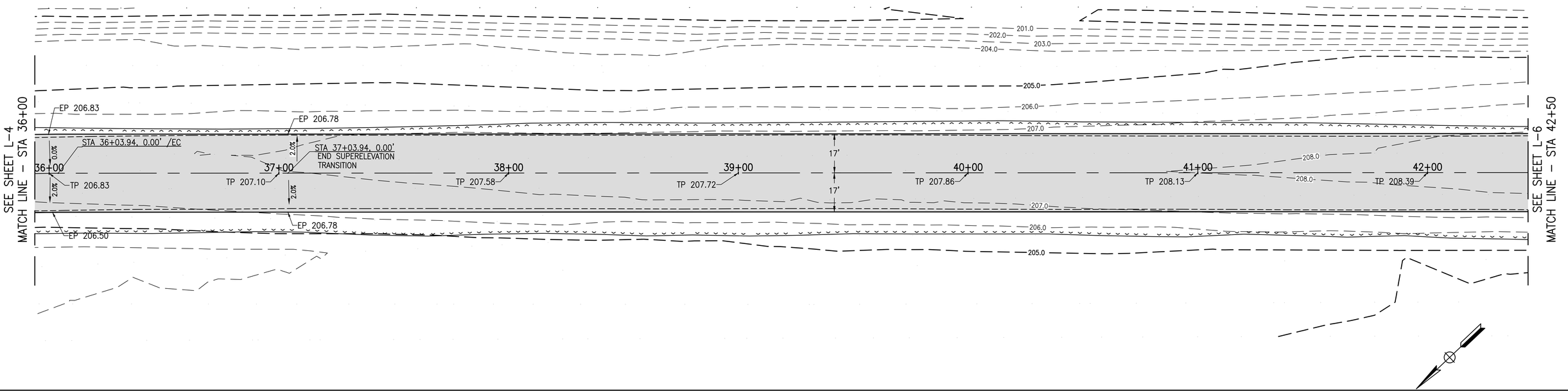
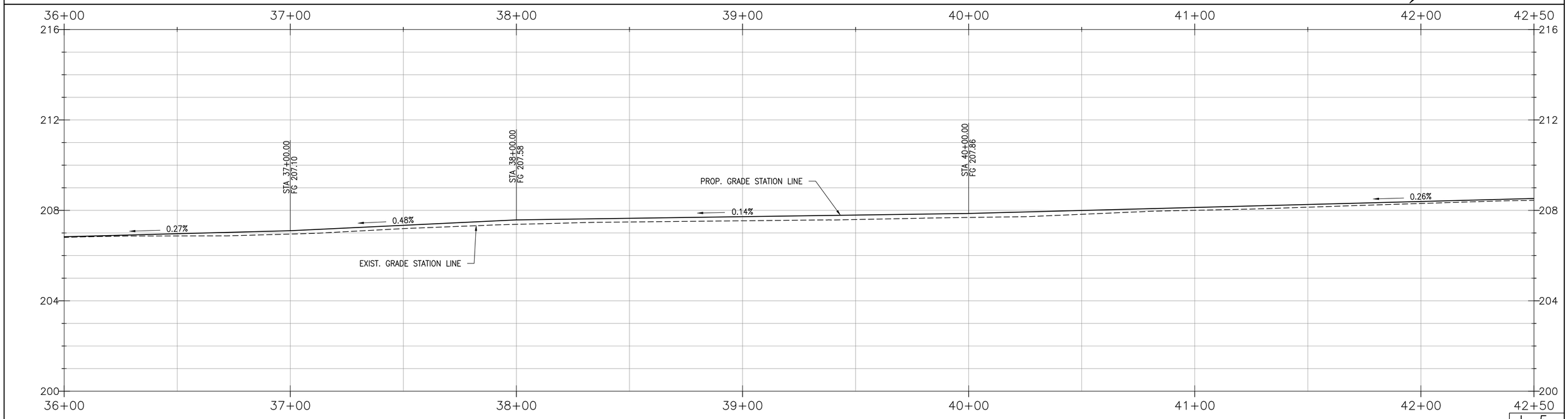
SHEET NO.	TOTAL SHEETS
14	69

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA





L-5

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
0 10 20 30 40

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www.peters-engineering.com

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DEPARTMENT OF PUBLIC WORKS
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HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1

AVENAL CUTOFF RD STA 36+00 TO 42+50

DWG: S:\2022\22-007\Mod\Planset\Avenal Cutoff Phase 1\22-007 L-1.dwg USER: Antonio Romo DATE: Feb 22, 2024 8:50am

LEGEND (APPLIES TO SHEETS L-1 TO L-37)

ME MATCH EXIST. GRADE
PROPOSED EDGE OF PAVEMENT
PROPOSED DAYLIGHT
MINOR (1') AND MAJOR (5') EXISTING CONTOUR LINES
EXISTING EDGE OF PAVEMENT
HOT MIX ASPHALT (FULL RECONSTRUCTION, SEE TYPICAL SECTIONS FOR PAVEMENT SECTION)

GRIND 0.2' AND OVERLAY HMA (SEE TYPICAL SECTIONS)
HMA WEDGE GRIND (SEE TYPICAL SECTIONS) (1-2 / X-2)
(1) LIMITS OF FULL DEPTH PAVEMENT RECONSTRUCTION, TAPER, WEDGE GRIND, OR GRIND & OVERLAY
(2) PROTECT EXIST. STREETLIGHT/UTILITY POLE IN PLACE

(3) PROTECT EXIST. MISCELLANEOUS UTILITY

NOTES (APPLIES TO SHEETS L-1 TO L-37)

1. CONTRACTOR SHALL MAINTAIN ALL EXISTING IRRIGATION SYSTEMS DURING CONSTRUCTION, SHOULD EXISTING IRRIGATION SYSTEMS BE DAMAGED OR REQUIRED TO BE RELOCATED DURING CONSTRUCTION, THE CONTRACTOR SHALL MOVE & REPLACE DAMAGED IRRIGATION FACILITIES WITH EQUAL OR BETTER PARTS AND MATERIALS.
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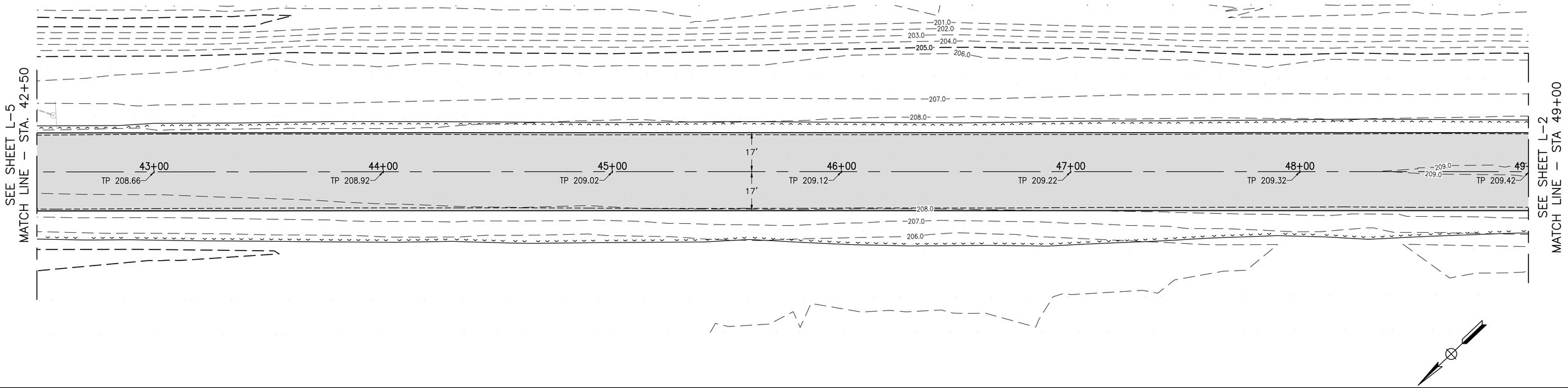
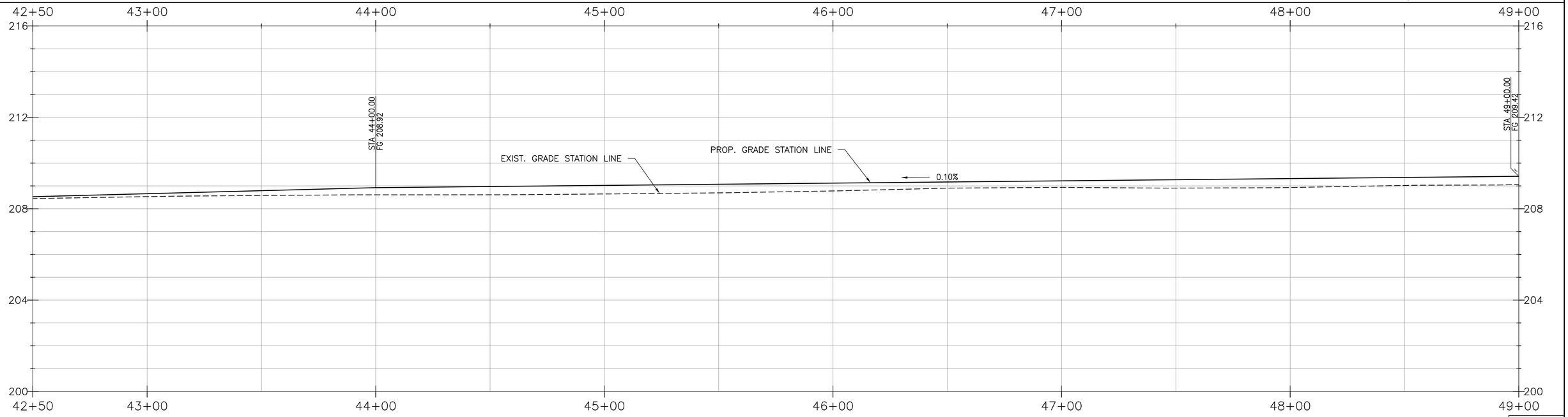
SHEET NO. 15 | TOTAL SHEETS 69

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA





L-6

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
0 10 20 30 40

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COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1

AVENAL CUTOFF RD STA 42+50 TO 49+00

DWG: S:\2022\22-007\Mcad\Planset\Avenal Cutoff Phase 1\22-007 L-6.dwg USER: Antonio Romo DATE: Feb 22, 2024 8:55am

LEGEND (APPLIES TO SHEETS L-1 TO L-37)

- ME — MATCH EXIST. GRADE
- PROPOSED EDGE OF PAVEMENT
- PROPOSED DAYLIGHT
- MINOR (1') AND MAJOR (5') EXISTING CONTOUR LINES
- EXISTING EDGE OF PAVEMENT
- HOT MIX ASPHALT (FULL RECONSTRUCTION, SEE TYPICAL SECTIONS FOR PAVEMENT SECTION)
- GRIND 0.2' AND OVERLAY HMA (SEE TYPICAL SECTIONS)
- HMA WEDGE GRIND (SEE TYPICAL SECTIONS) (1-2 / X-2)
- (1) LIMITS OF FULL DEPTH PAVEMENT RECONSTRUCTION, TAPER, WEDGE GRIND, OR GRIND & OVERLAY
- (2) PROTECT EXIST. STREETLIGHT/UTILITY POLE IN PLACE
- (3) PROTECT EXIST. MISCELLANEOUS UTILITY

NOTES (APPLIES TO SHEETS L-1 TO L-37)

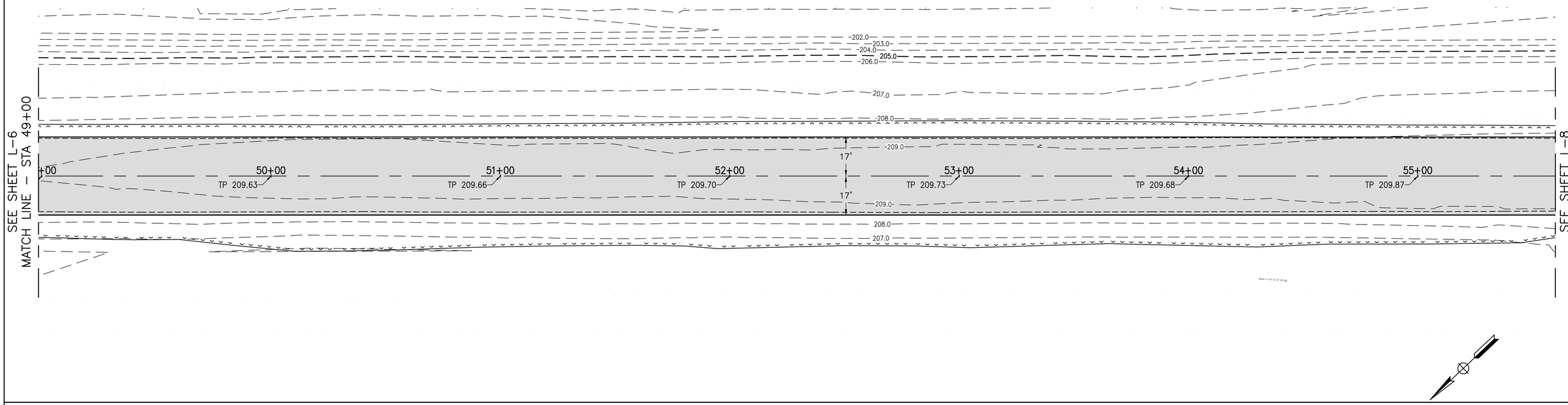
1. CONTRACTOR SHALL MAINTAIN ALL EXISTING IRRIGATION SYSTEMS DURING CONSTRUCTION, SHOULD EXISTING IRRIGATION SYSTEMS BE DAMAGED OR REQUIRED TO BE RELOCATED DURING CONSTRUCTION, THE CONTRACTOR SHALL MOVE & REPLACE DAMAGED IRRIGATION FACILITIES WITH EQUAL OR BETTER PARTS AND MATERIALS.
2. ALL SURVEY MONUMENTS WITHIN THE AREA OF CONSTRUCTION SHALL BE PRESERVED OR, IF DAMAGED, RESET BY A REGISTERED ENGINEER OR LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

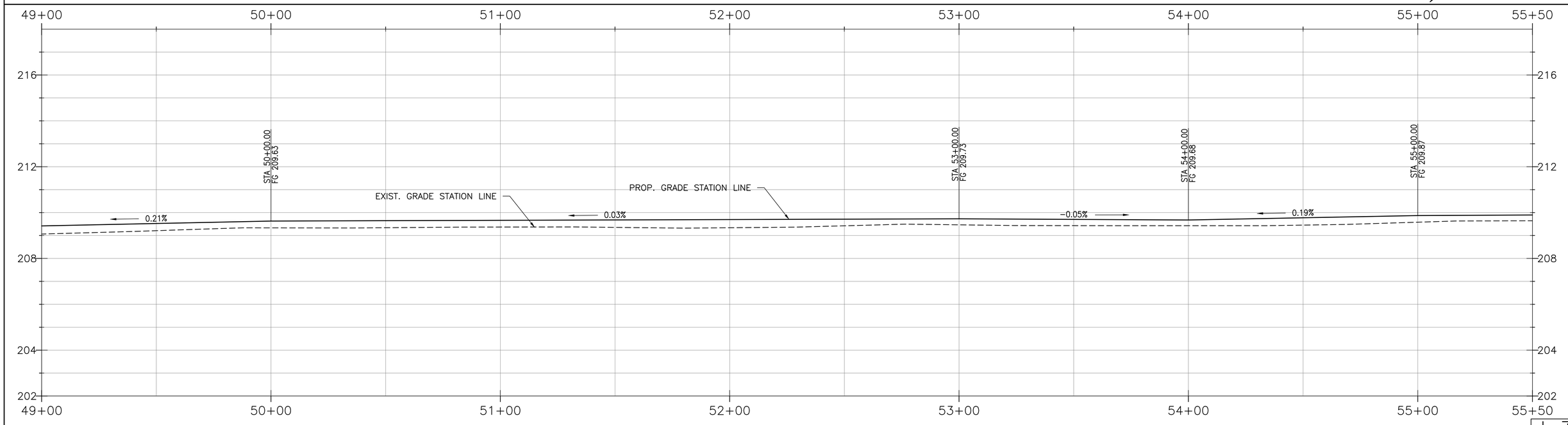
SHEET NO.	TOTAL SHEETS
16	69

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA





L-7

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
0 10 20 30 40

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COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1

AVENAL CUTOFF RD STA 49+00 TO 55+50

DWG: S:\2022\22-007\Mcad\Planset\Avenal Cutoff Phase 1\22-007 L-6.dwg USER: Antonio Romo DATE: Feb 22, 2024 8:58am

LEGEND (APPLIES TO SHEETS L-1 TO L-37)

- ME — MATCH EXIST. GRADE
- PROPOSED EDGE OF PAVEMENT
- PROPOSED DAYLIGHT
- MINOR (1') AND MAJOR (5') EXISTING CONTOUR LINES
- EXISTING EDGE OF PAVEMENT
- HOT MIX ASPHALT (FULL RECONSTRUCTION, SEE TYPICAL SECTIONS FOR PAVEMENT SECTION)
- GRIND 0.2' AND OVERLAY HMA (SEE TYPICAL SECTIONS)
- HMA WEDGE GRIND (SEE TYPICAL SECTIONS) (1-2 / X-2)
- (1) LIMITS OF FULL DEPTH PAVEMENT RECONSTRUCTION, TAPER, WEDGE GRIND, OR GRIND & OVERLAY
- (2) PROTECT EXIST. STREETLIGHT/UTILITY POLE IN PLACE
- (3) PROTECT EXIST. MISCELLANEOUS UTILITY

NOTES (APPLIES TO SHEETS L-1 TO L-37)

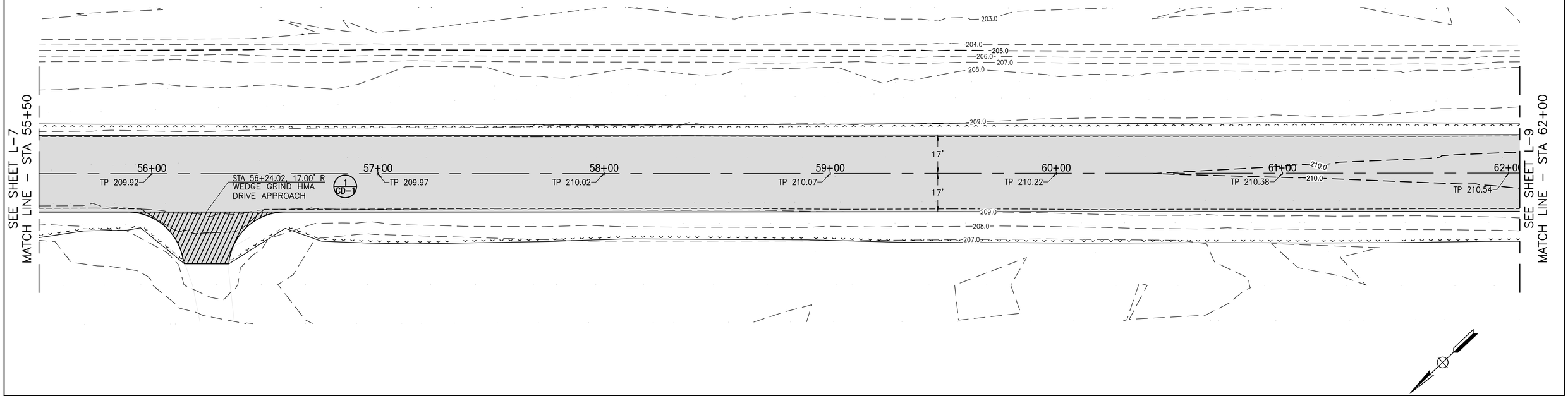
1. CONTRACTOR SHALL MAINTAIN ALL EXISTING IRRIGATION SYSTEMS DURING CONSTRUCTION, SHOULD EXISTING IRRIGATION SYSTEMS BE DAMAGED OR REQUIRED TO BE RELOCATED DURING CONSTRUCTION, THE CONTRACTOR SHALL MOVE & REPLACE DAMAGED IRRIGATION FACILITIES WITH EQUAL OR BETTER PARTS AND MATERIALS.
2. ALL SURVEY MONUMENTS WITHIN THE AREA OF CONSTRUCTION SHALL BE PRESERVED OR, IF DAMAGED, RESET BY A REGISTERED ENGINEER OR LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

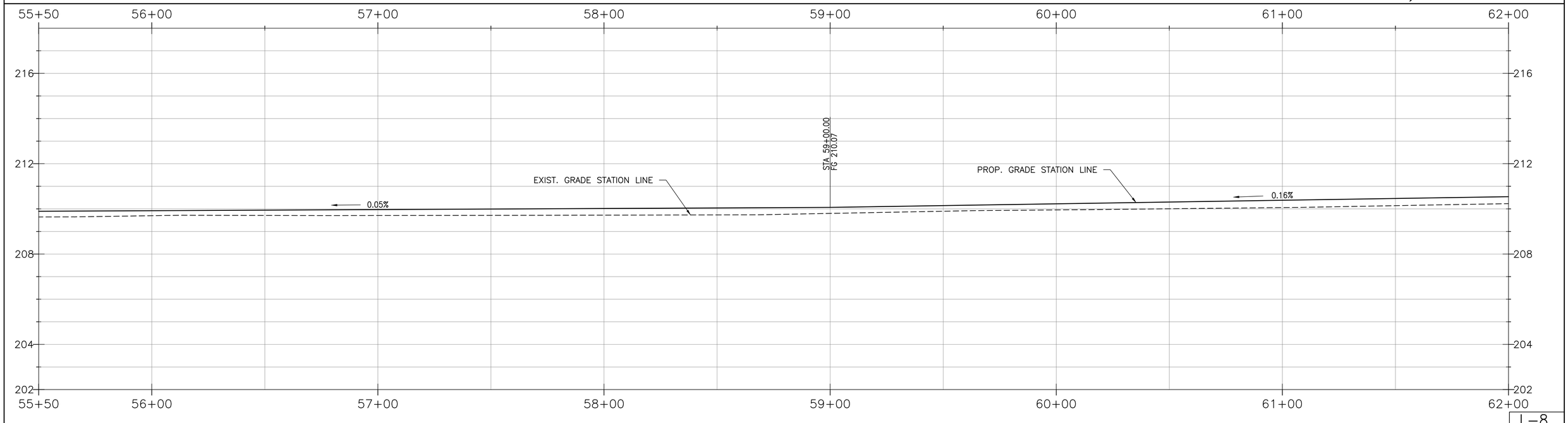
SHEET NO.	TOTAL SHEETS
17	69

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA





L-8

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
0 10 20 30 40

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1400 W. LACEY BOULEVARD
HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1

AVENAL CUTOFF RD STA 55+50 TO 62+00

DWG: S:\2022\22-007\Mod\Planset\Avenal Cutoff Phase 1\22-007 L-6.dwg USER: Antonio Romo DATE: Feb 22, 2024 9:01am

LEGEND (APPLIES TO SHEETS L-1 TO L-37)

ME MATCH EXIST. GRADE
PROPOSED EDGE OF PAVEMENT
PROPOSED DAYLIGHT
MINOR (1') AND MAJOR (5') EXISTING CONTOUR LINES
EXISTING EDGE OF PAVEMENT
HOT MIX ASPHALT (FULL RECONSTRUCTION, SEE TYPICAL SECTIONS FOR PAVEMENT SECTION)

GRIND 0.2' AND OVERLAY HMA (SEE TYPICAL SECTIONS)
HMA WEDGE GRIND (SEE TYPICAL SECTIONS) 1-2 / X-2
(1) LIMITS OF FULL DEPTH PAVEMENT RECONSTRUCTION, TAPER, WEDGE GRIND, OR GRIND & OVERLAY
(2) PROTECT EXIST. STREETLIGHT/UTILITY POLE IN PLACE
(3) PROTECT EXIST. MISCELLANEOUS UTILITY

NOTES (APPLIES TO SHEETS L-1 TO L-37)

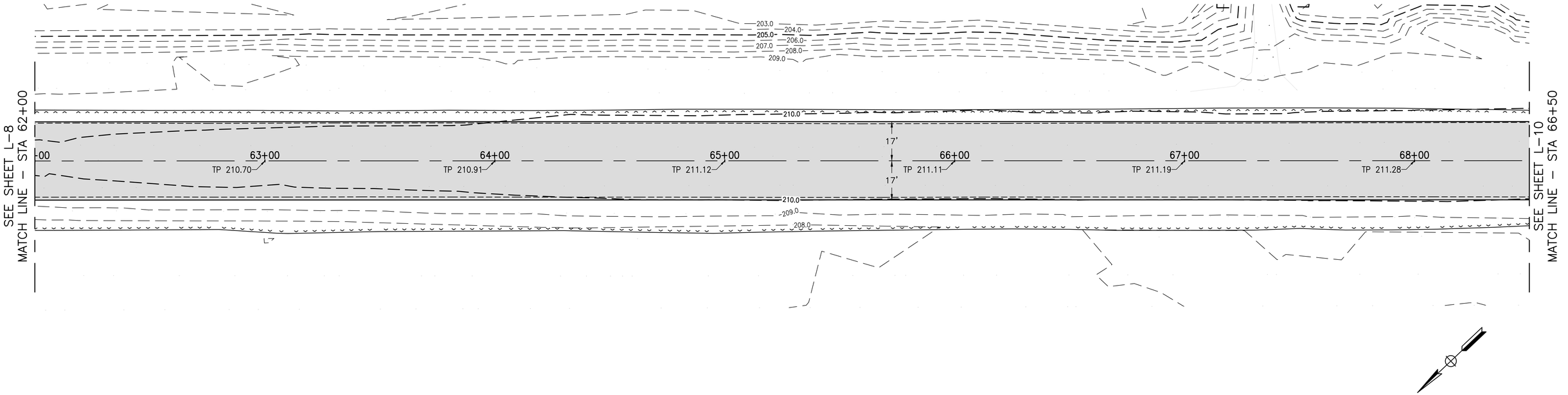
1. CONTRACTOR SHALL MAINTAIN ALL EXISTING IRRIGATION SYSTEMS DURING CONSTRUCTION, SHOULD EXISTING IRRIGATION SYSTEMS BE DAMAGED OR REQUIRED TO BE RELOCATED DURING CONSTRUCTION, THE CONTRACTOR SHALL MOVE & REPLACE DAMAGED IRRIGATION FACILITIES WITH EQUAL OR BETTER PARTS AND MATERIALS.
2. ALL SURVEY MONUMENTS WITHIN THE AREA OF CONSTRUCTION SHALL BE PRESERVED OR, IF DAMAGED, RESET BY A REGISTERED ENGINEER OR LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

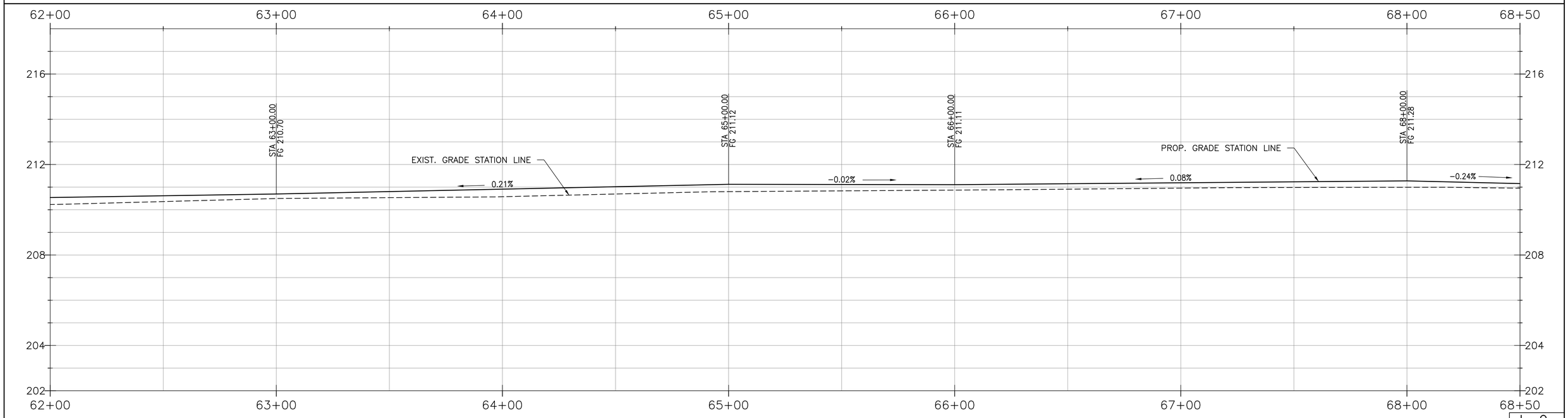
SHEET NO.	TOTAL SHEETS
18	69

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA





L-9

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
0 10 20 30 40

PETERS ENGINEERING GROUP
862 Pollasky Avenue
Clovis, California 93612
Phone (559) 299-1544
www.peters-engineering.com

COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1

AVENAL CUTOFF RD STA 62+00 TO 68+50

DWG: S:\2022\22-007\Acad\Planset\Overall Cutoff Phase 1\22-007 L-6.dwg USER: Antonio Romo DATE: Feb 22, 2024 9:04am

LEGEND (APPLIES TO SHEETS L–1 TO L–37)

ME MATCH EXIST. GRADE
PROPOSED EDGE OF PAVEMENT
PROPOSED DAYLIGHT
MINOR (1') AND MAJOR (5') EXISTING CONTOUR LINES
EXISTING EDGE OF PAVEMENT
HOT MIX ASPHALT (FULL RECONSTRUCTION, SEE TYPICAL SECTIONS FOR PAVEMENT SECTION)

GRIND 0.2' AND OVERLAY HMA (SEE TYPICAL SECTIONS)
HMA WEDGE GRIND (SEE TYPICAL SECTIONS) (1–2 / X–2)
(1) LIMITS OF FULL DEPTH PAVEMENT RECONSTRUCTION, TAPER, WEDGE GRIND, OR GRIND & OVERLAY
(2) PROTECT EXIST. STREETLIGHT/UTILITY POLE IN PLACE

(3) PROTECT EXIST. MISCELLANEOUS UTILITY

NOTES (APPLIES TO SHEETS L–1 TO L–37)

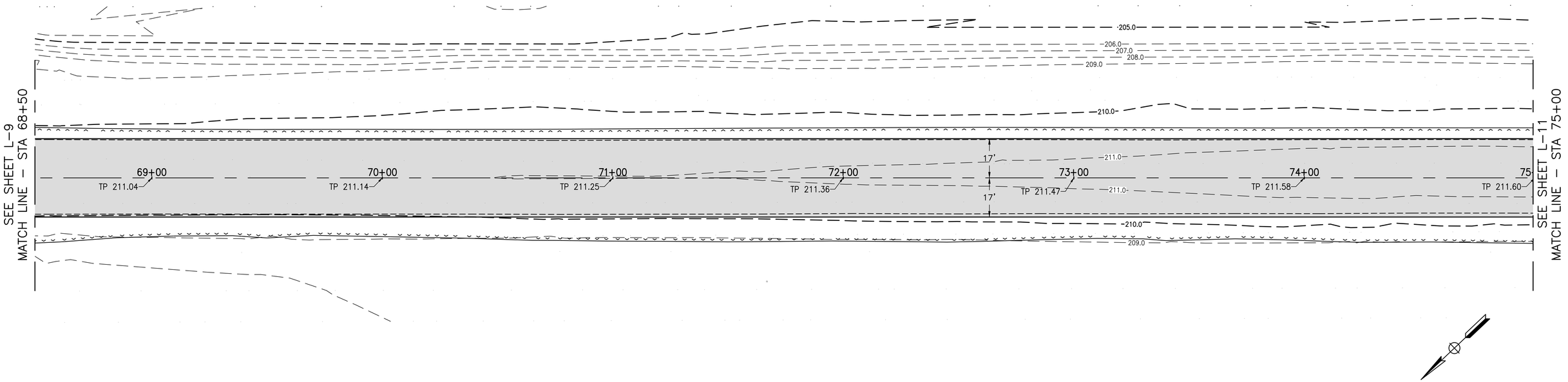
1. CONTRACTOR SHALL MAINTAIN ALL EXISTING IRRIGATION SYSTEMS DURING CONSTRUCTION, SHOULD EXISTING IRRIGATION SYSTEMS BE DAMAGED OR REQUIRED TO BE RELOCATED DURING CONSTRUCTION, THE CONTRACTOR SHALL MOVE & REPLACE DAMAGED IRRIGATION FACILITIES WITH EQUAL OR BETTER PARTS AND MATERIALS.
2. ALL SURVEY MONUMENTS WITHIN THE AREA OF CONSTRUCTION SHALL BE PRESERVED OR, IF DAMAGED, RESET BY A REGISTERED ENGINEER OR LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

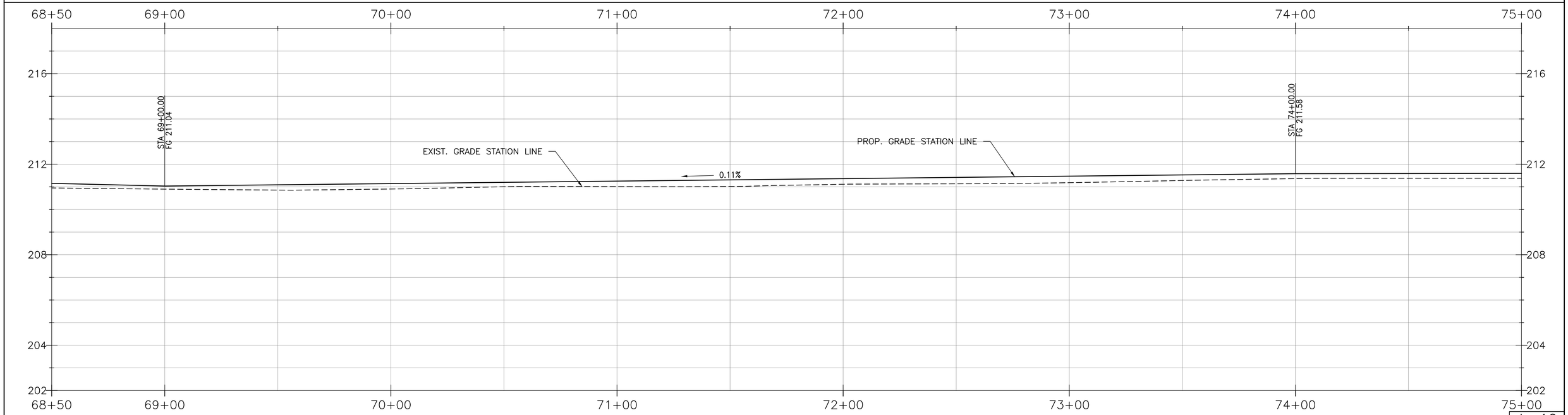
SHEET NO.	TOTAL SHEETS
19	69

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA





L–10

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
0 10 20 30 40

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DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1

AVENAL CUTOFF RD STA 68+50 TO 75+00

DWG: S:\2022\22-007\Acad\Planset\Avenal Cutoff Phase 1\22-007 L-5.dwg USER: Antonio Roma DATE: Feb 22, 2024 9:08am

LEGEND (APPLIES TO SHEETS L-1 TO L-37)

ME MATCH EXIST. GRADE

PROPOSED EDGE OF PAVEMENT

PROPOSED DAYLIGHT

MINOR (1') AND MAJOR (5') EXISTING CONTOUR LINES

EXISTING EDGE OF PAVEMENT

HOT MIX ASPHALT (FULL RECONSTRUCTION, SEE TYPICAL SECTIONS FOR PAVEMENT SECTION)

GRIND 0.2' AND OVERLAY HMA (SEE TYPICAL SECTIONS)

HMA WEDGE GRIND (SEE TYPICAL SECTIONS) (1-2 / X-2)

(1) LIMITS OF FULL DEPTH PAVEMENT RECONSTRUCTION, TAPER, WEDGE GRIND, OR GRIND & OVERLAY

(2) PROTECT EXIST. STREETLIGHT/UTILITY POLE IN PLACE

(3) PROTECT EXIST. MISCELLANEOUS UTILITY

NOTES (APPLIES TO SHEETS L-1 TO L-37)

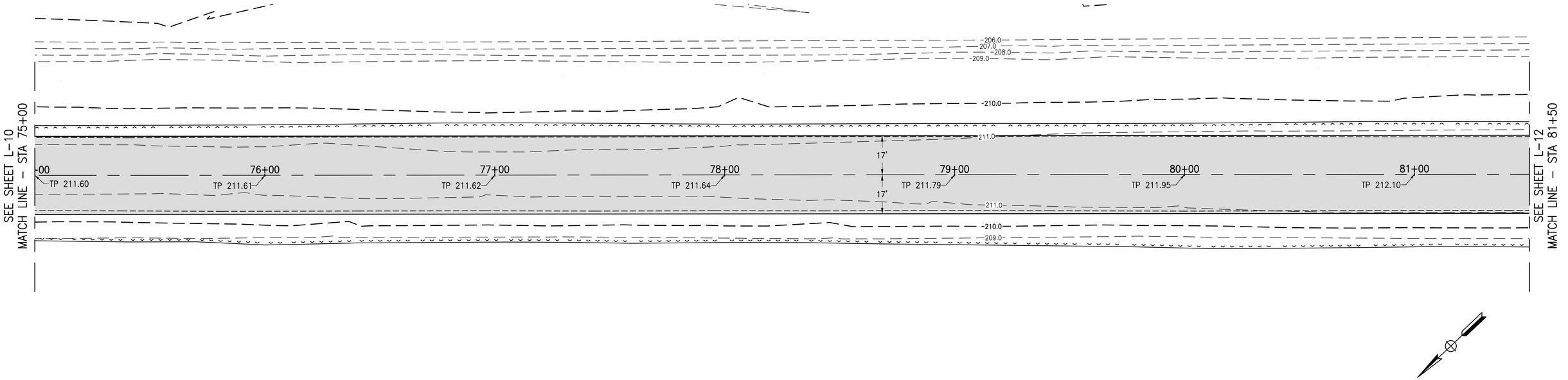
1. CONTRACTOR SHALL MAINTAIN ALL EXISTING IRRIGATION SYSTEMS DURING CONSTRUCTION, SHOULD EXISTING IRRIGATION SYSTEMS BE DAMAGED OR REQUIRED TO BE RELOCATED DURING CONSTRUCTION, THE CONTRACTOR SHALL MOVE & REPLACE DAMAGED IRRIGATION FACILITIES WITH EQUAL OR BETTER PARTS AND MATERIALS.
2. ALL SURVEY MONUMENTS WITHIN THE AREA OF CONSTRUCTION SHALL BE PRESERVED OR, IF DAMAGED, RESET BY A REGISTERED ENGINEER OR LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

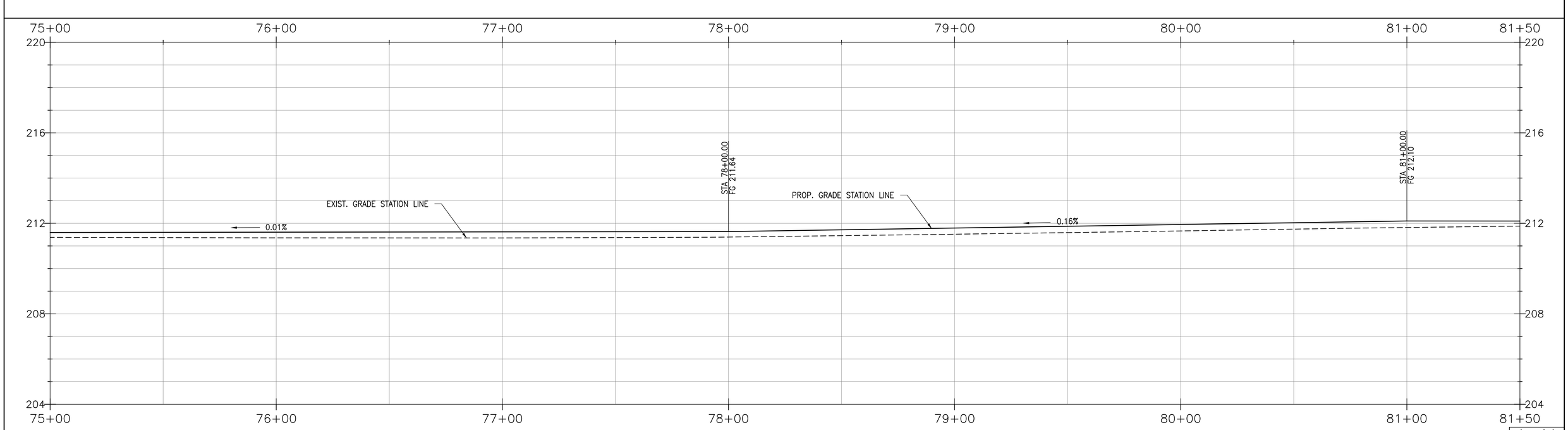
SHEET NO.	TOTAL SHEETS
20	69

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA





L-11

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
0 10 20 30 40

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Clovis, California 93612
Phone (559) 299-1544
www.peters-engineering.com

COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

AVENAL CUTOFF ROAD PHASE 1

AVENAL CUTOFF RD STA 75+00 TO 81+50

DWG: S:\2022\22-007\Mxd\Planset\Vwend Cutoff Phase 1\22-007 L-11.dwg USER: Antonio Romo DATE: Feb 22, 2024 9:13am

LEGEND (APPLIES TO SHEETS L-1 TO L-37)

ME MATCH EXIST. GRADE

PROPOSED EDGE OF PAVEMENT

PROPOSED DAYLIGHT

MINOR (1') AND MAJOR (5') EXISTING CONTOUR LINES

EXISTING EDGE OF PAVEMENT

HOT MIX ASPHALT (FULL RECONSTRUCTION, SEE TYPICAL SECTIONS FOR PAVEMENT SECTION)

GRIND 0.2' AND OVERLAY HMA (SEE TYPICAL SECTIONS)

HMA WEDGE GRIND (SEE TYPICAL SECTIONS) (1-2 / X-2)

(1) LIMITS OF FULL DEPTH PAVEMENT RECONSTRUCTION, TAPER, WEDGE GRIND, OR GRIND & OVERLAY

(2) PROTECT EXIST. STREETLIGHT/UTILITY POLE IN PLACE

(3) PROTECT EXIST. MISCELLANEOUS UTILITY

NOTES (APPLIES TO SHEETS L-1 TO L-37)

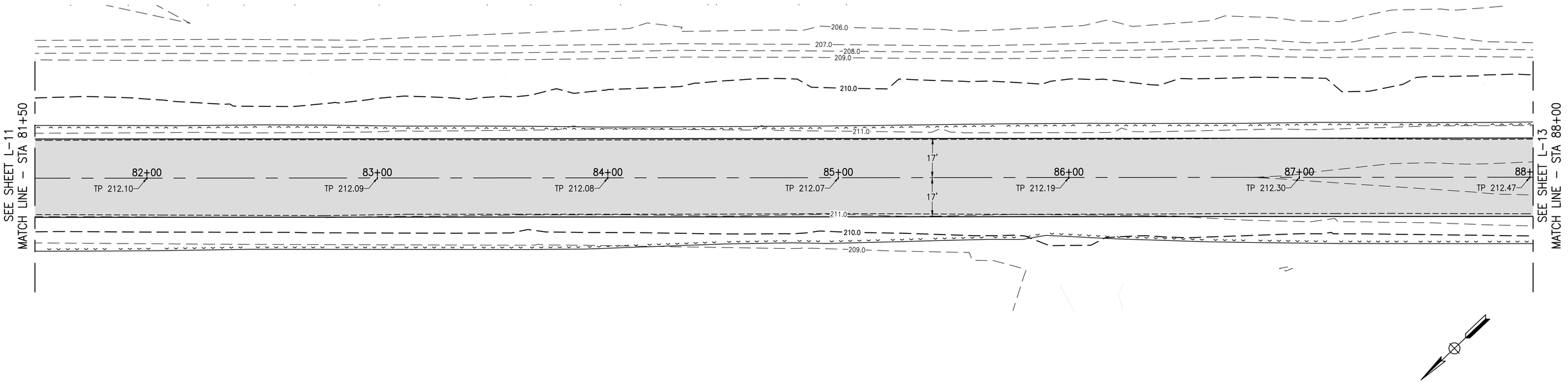
1. CONTRACTOR SHALL MAINTAIN ALL EXISTING IRRIGATION SYSTEMS DURING CONSTRUCTION, SHOULD EXISTING IRRIGATION SYSTEMS BE DAMAGED OR REQUIRED TO BE RELOCATED DURING CONSTRUCTION, THE CONTRACTOR SHALL MOVE & REPLACE DAMAGED IRRIGATION FACILITIES WITH EQUAL OR BETTER PARTS AND MATERIALS.
2. ALL SURVEY MONUMENTS WITHIN THE AREA OF CONSTRUCTION SHALL BE PRESERVED OR, IF DAMAGED, RESET BY A REGISTERED ENGINEER OR LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

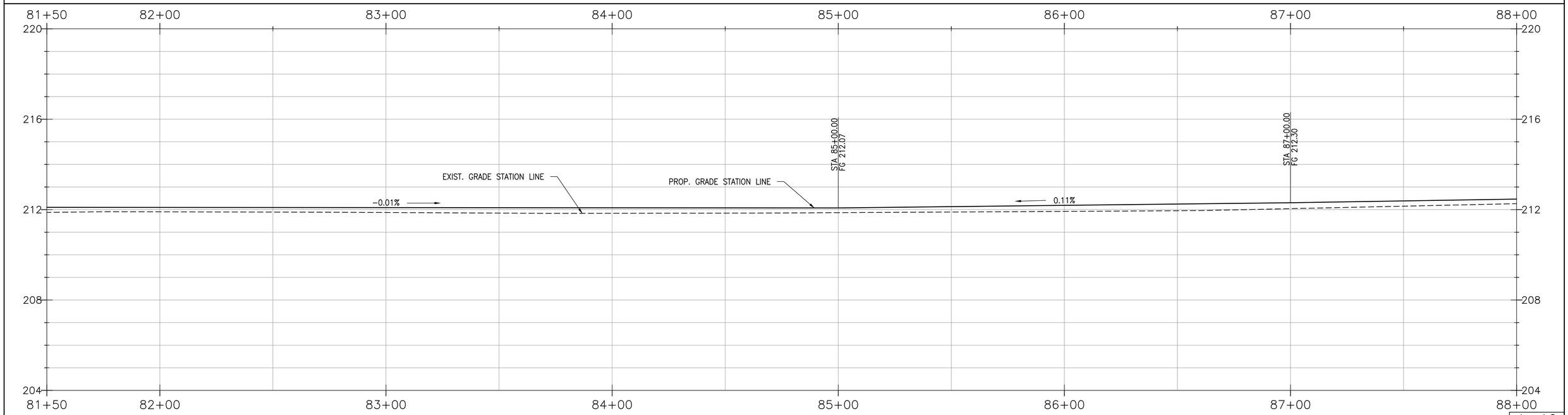
SHEET NO. 21 | TOTAL SHEETS 69

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA





L-12

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
0 10 20 30 40

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COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

AVENAL CUTOFF ROAD PHASE 1

AVENAL CUTOFF RD STA 81+50 TO 88+00

DWG: S:\2022\22-007\Acad\Pfaset\Avenal Cutoff Phase 1\22-007 L-11.dwg USER: Antonio Romo DATE: Feb 22, 2024 9:17am

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA

LEGEND (APPLIES TO SHEETS L-1 TO L-37)

- ME — MATCH EXIST. GRADE
- PROPOSED EDGE OF PAVEMENT
- PROPOSED DAYLIGHT
- MINOR (1') AND MAJOR (5') EXISTING CONTOUR LINES
- EXISTING EDGE OF PAVEMENT
- HOT MIX ASPHALT (FULL RECONSTRUCTION, SEE TYPICAL SECTIONS FOR PAVEMENT SECTION)
- GRIND 0.2' AND OVERLAY HMA (SEE TYPICAL SECTIONS)
- HMA WEDGE GRIND (SEE TYPICAL SECTIONS) (1-2 / X-2)
- (1) LIMITS OF FULL DEPTH PAVEMENT RECONSTRUCTION, TAPER, WEDGE GRIND, OR GRIND & OVERLAY
- (2) PROTECT EXIST. STREETLIGHT/UTILITY POLE IN PLACE
- (3) PROTECT EXIST. MISCELLANEOUS UTILITY

NOTES (APPLIES TO SHEETS L-1 TO L-37)

1. CONTRACTOR SHALL MAINTAIN ALL EXISTING IRRIGATION SYSTEMS DURING CONSTRUCTION, SHOULD EXISTING IRRIGATION SYSTEMS BE DAMAGED OR REQUIRED TO BE RELOCATED DURING CONSTRUCTION, THE CONTRACTOR SHALL MOVE & REPLACE DAMAGED IRRIGATION FACILITIES WITH EQUAL OR BETTER PARTS AND MATERIALS.
2. ALL SURVEY MONUMENTS WITHIN THE AREA OF CONSTRUCTION SHALL BE PRESERVED OR, IF DAMAGED, RESET BY A REGISTERED ENGINEER OR LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

L-13

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
0 10 20 30 40

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CLOVIS, CALIFORNIA 93612
PHONE (559) 299-1544
WWW.PETERS-ENGINEERING.COM

COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

DESIGN	BY	DATE
DRAWN	BY	DATE
CHECKED	BY	DATE

AVENAL CUTOFF ROAD PHASE 1

AVENAL CUTOFF RD STA 88+00 TO 94+50

DWG: S:\2022\22-007\Acad\Planset\Avenal Cutoff Phase 1\22-007 L-11.dwg USER: Antonio Romo DATE: Feb 22, 2024 9:19am

LEGEND (APPLIES TO SHEETS L-1 TO L-37)

ME MATCH EXIST. GRADE

PROPOSED EDGE OF PAVEMENT

PROPOSED DAYLIGHT

MINOR (1') AND MAJOR (5') EXISTING CONTOUR LINES

EXISTING EDGE OF PAVEMENT

HOT MIX ASPHALT (FULL RECONSTRUCTION, SEE TYPICAL SECTIONS FOR PAVEMENT SECTION)

GRIND 0.2' AND OVERLAY HMA (SEE TYPICAL SECTIONS)

HMA WEDGE GRIND (SEE TYPICAL SECTIONS) 1-2 / X-2

(1) LIMITS OF FULL DEPTH PAVEMENT RECONSTRUCTION, TAPER, WEDGE GRIND, OR GRIND & OVERLAY

(2) PROTECT EXIST. STREETLIGHT/UTILITY POLE IN PLACE

(3) PROTECT EXIST. MISCELLANEOUS UTILITY

NOTES (APPLIES TO SHEETS L-1 TO L-37)

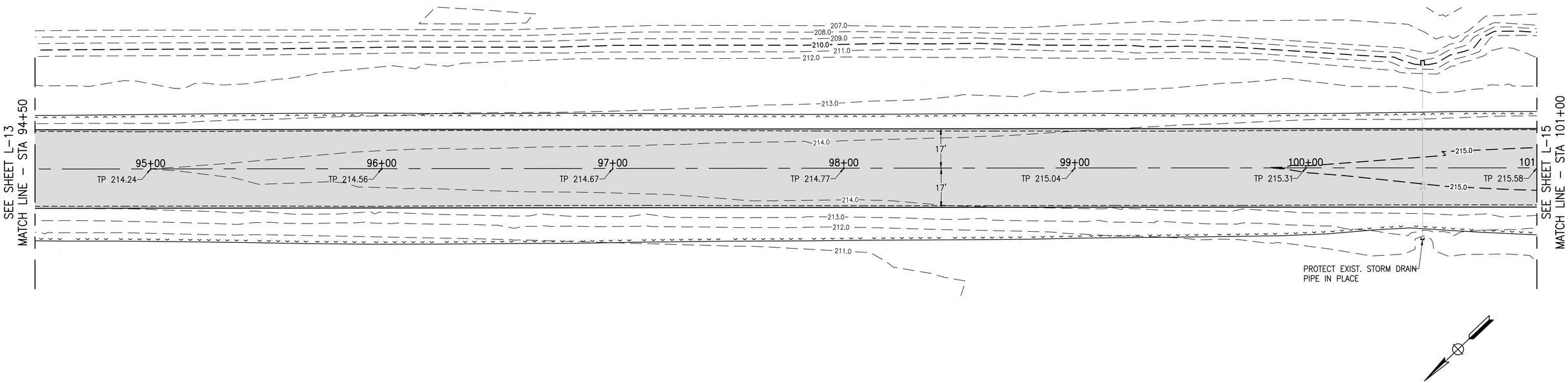
1. CONTRACTOR SHALL MAINTAIN ALL EXISTING IRRIGATION SYSTEMS DURING CONSTRUCTION, SHOULD EXISTING IRRIGATION SYSTEMS BE DAMAGED OR REQUIRED TO BE RELOCATED DURING CONSTRUCTION, THE CONTRACTOR SHALL MOVE & REPLACE DAMAGED IRRIGATION FACILITIES WITH EQUAL OR BETTER PARTS AND MATERIALS.
2. ALL SURVEY MONUMENTS WITHIN THE AREA OF CONSTRUCTION SHALL BE PRESERVED OR, IF DAMAGED, RESET BY A REGISTERED ENGINEER OR LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

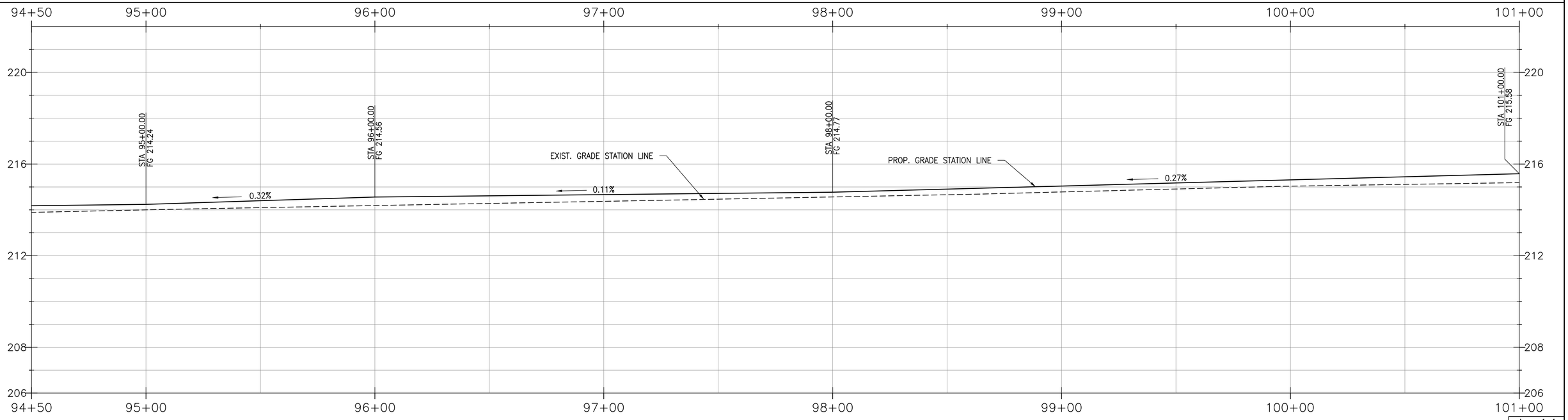
SHEET NO.	TOTAL SHEETS
23	69

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA





L-14

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
0 10 20 30 40

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COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1

AVENAL CUTOFF RD STA 94+50 TO 101+00

DWG: S:\2022\22-007\Acad\Planset\Avenal Cutoff Phase 1\22-007 L-11.dwg USER: Quinn Vosmera DATE: Feb 22, 2024 8:38am

LEGEND (APPLIES TO SHEETS L-1 TO L-37)

- ME — MATCH EXIST. GRADE
- PROPOSED EDGE OF PAVEMENT
- PROPOSED DAYLIGHT
- MINOR (1') AND MAJOR (5') EXISTING CONTOUR LINES
- EXISTING EDGE OF PAVEMENT
- HOT MIX ASPHALT (FULL RECONSTRUCTION, SEE TYPICAL SECTIONS FOR PAVEMENT SECTION)
- GRIND 0.2' AND OVERLAY HMA (SEE TYPICAL SECTIONS)
- HMA WEDGE GRIND (SEE TYPICAL SECTIONS) (1-2 / X-2)
- (1) LIMITS OF FULL DEPTH PAVEMENT RECONSTRUCTION, TAPER, WEDGE GRIND, OR GRIND & OVERLAY
- (2) PROTECT EXIST. STREETLIGHT/UTILITY POLE IN PLACE
- (3) PROTECT EXIST. MISCELLANEOUS UTILITY

NOTES (APPLIES TO SHEETS L-1 TO L-37)

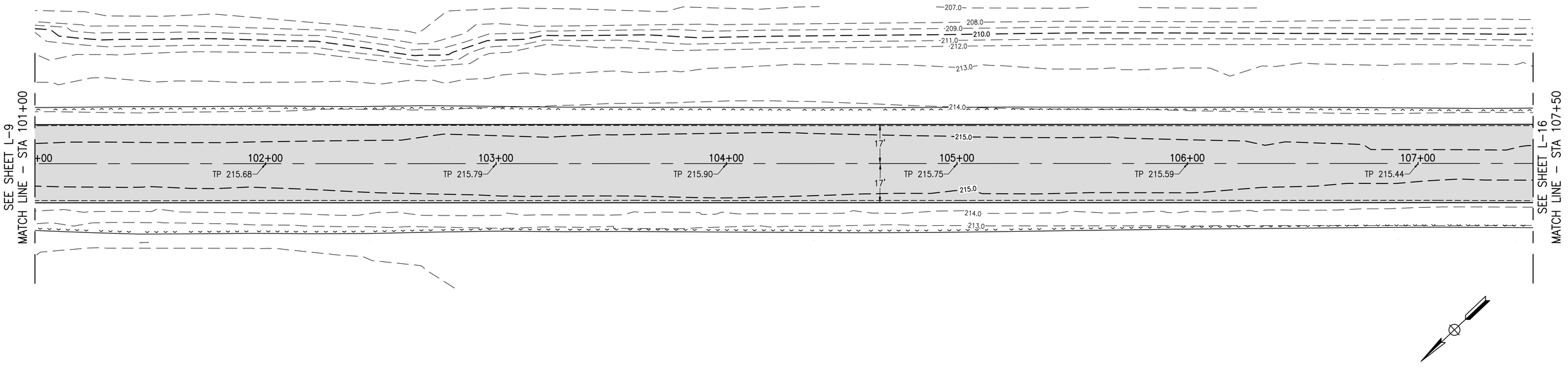
1. CONTRACTOR SHALL MAINTAIN ALL EXISTING IRRIGATION SYSTEMS DURING CONSTRUCTION, SHOULD EXISTING IRRIGATION SYSTEMS BE DAMAGED OR REQUIRED TO BE RELOCATED DURING CONSTRUCTION, THE CONTRACTOR SHALL MOVE & REPLACE DAMAGED IRRIGATION FACILITIES WITH EQUAL OR BETTER PARTS AND MATERIALS.
2. ALL SURVEY MONUMENTS WITHIN THE AREA OF CONSTRUCTION SHALL BE PRESERVED OR, IF DAMAGED, RESET BY A REGISTERED ENGINEER OR LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

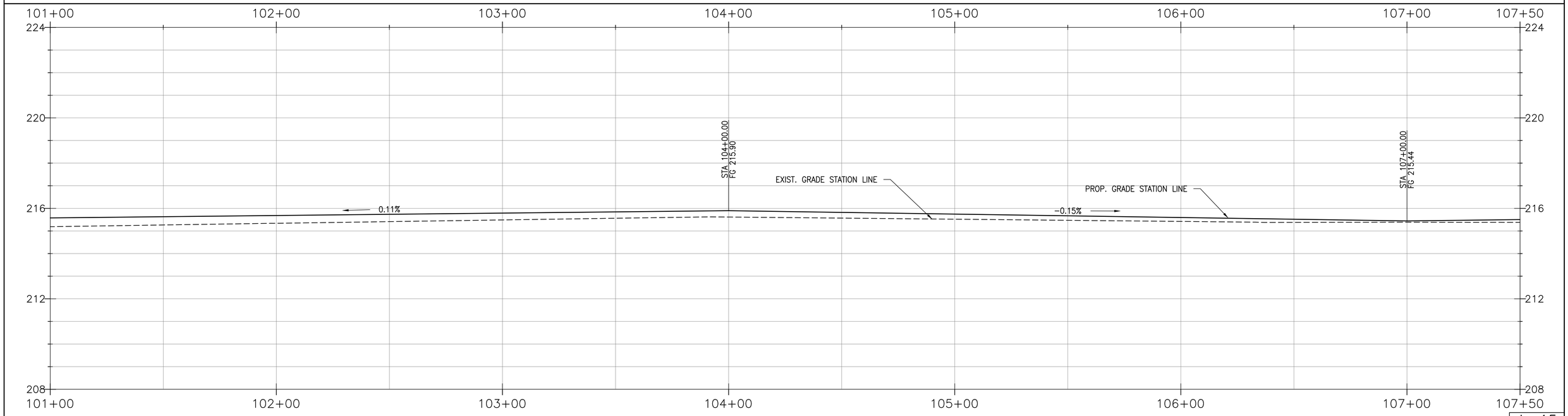
SHEET NO.	TOTAL SHEETS
24	69

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA





L-15

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
0 10 20 30 40

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COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1

AVENAL CUTOFF RD STA 101+00 TO 107+50

DWG: S:\2022\22-007\Acad\Planset\Avenal Cutoff Phase 1\22-007 L-11.dwg USER: Quinn Vosmero DATE: Feb 22, 2024 8:41am

LEGEND (APPLIES TO SHEETS L-1 TO L-37)

- ME — MATCH EXIST. GRADE
- PROPOSED EDGE OF PAVEMENT
- PROPOSED DAYLIGHT
- MINOR (1') AND MAJOR (5') EXISTING CONTOUR LINES
- EXISTING EDGE OF PAVEMENT
- HOT MIX ASPHALT (FULL RECONSTRUCTION, SEE TYPICAL SECTIONS FOR PAVEMENT SECTION)
- GRIND 0.2' AND OVERLAY HMA (SEE TYPICAL SECTIONS)
- HMA WEDGE GRIND (SEE TYPICAL SECTIONS) (1-2 / X-2)
- (1) LIMITS OF FULL DEPTH PAVEMENT RECONSTRUCTION, TAPER, WEDGE GRIND, OR GRIND & OVERLAY
- (2) PROTECT EXIST. STREETLIGHT/UTILITY POLE IN PLACE
- (3) PROTECT EXIST. MISCELLANEOUS UTILITY

NOTES (APPLIES TO SHEETS L-1 TO L-37)

1. CONTRACTOR SHALL MAINTAIN ALL EXISTING IRRIGATION SYSTEMS DURING CONSTRUCTION, SHOULD EXISTING IRRIGATION SYSTEMS BE DAMAGED OR REQUIRED TO BE RELOCATED DURING CONSTRUCTION, THE CONTRACTOR SHALL MOVE & REPLACE DAMAGED IRRIGATION FACILITIES WITH EQUAL OR BETTER PARTS AND MATERIALS.
2. ALL SURVEY MONUMENTS WITHIN THE AREA OF CONSTRUCTION SHALL BE PRESERVED OR, IF DAMAGED, RESET BY A REGISTERED ENGINEER OR LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

REGISTERED CIVIL ENGINEER
2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER — WILLIAM J. WASHBURN — No. 60322 — CIVIL — STATE OF CALIFORNIA

SHEET NO. 25 | TOTAL SHEETS 69

L-16

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
0 10 20 30 40

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862 POLLASKY AVENUE, CLOVIS, CALIFORNIA 93612
PHONE (559) 299-1544
WWW.PETERS-ENGINEERING.COM

COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1

AVENAL CUTOFF RD STA 107+50 TO 114+00

DWG: S:\2022\22-007\Acad\Planset\Avenal Cutoff Phase 1\22-007 L-16.dwg USER: Quinn Vosmera DATE: Feb 22, 2024 8:47am

LEGEND (APPLIES TO SHEETS L-1 TO L-37)

ME MATCH EXIST. GRADE

PROPOSED EDGE OF PAVEMENT

PROPOSED DAYLIGHT

MINOR (1') AND MAJOR (5') EXISTING CONTOUR LINES

EXISTING EDGE OF PAVEMENT

HOT MIX ASPHALT (FULL RECONSTRUCTION, SEE TYPICAL SECTIONS FOR PAVEMENT SECTION)

GRIND 0.2' AND OVERLAY HMA (SEE TYPICAL SECTIONS)

HMA WEDGE GRIND (SEE TYPICAL SECTIONS) (1-2 / X-2)

(1) LIMITS OF FULL DEPTH PAVEMENT RECONSTRUCTION, TAPER, WEDGE GRIND, OR GRIND & OVERLAY

(2) PROTECT EXIST. STREETLIGHT/UTILITY POLE IN PLACE

(3) PROTECT EXIST. MISCELLANEOUS UTILITY

NOTES (APPLIES TO SHEETS L-1 TO L-37)

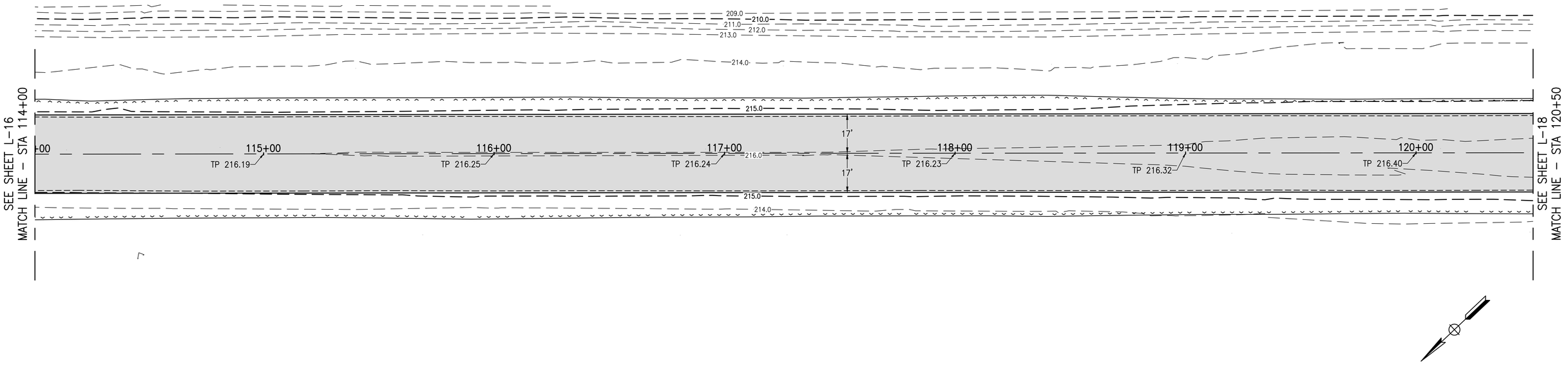
1. CONTRACTOR SHALL MAINTAIN ALL EXISTING IRRIGATION SYSTEMS DURING CONSTRUCTION, SHOULD EXISTING IRRIGATION SYSTEMS BE DAMAGED OR REQUIRED TO BE RELOCATED DURING CONSTRUCTION, THE CONTRACTOR SHALL MOVE & REPLACE DAMAGED IRRIGATION FACILITIES WITH EQUAL OR BETTER PARTS AND MATERIALS.
2. ALL SURVEY MONUMENTS WITHIN THE AREA OF CONSTRUCTION SHALL BE PRESERVED OR, IF DAMAGED, RESET BY A REGISTERED ENGINEER OR LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

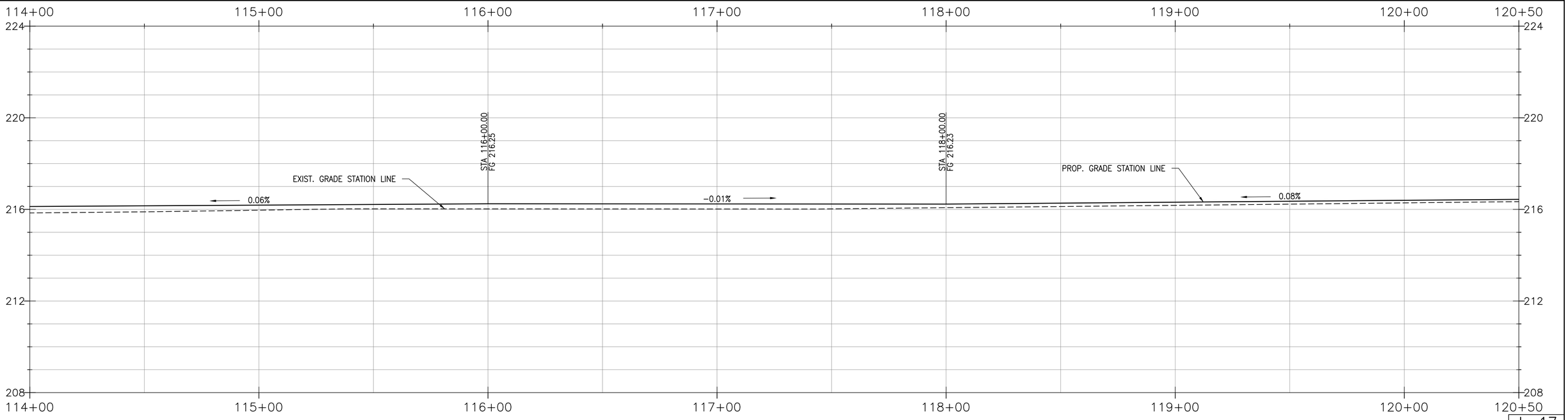
SHEET NO.	TOTAL SHEETS
26	69

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA





L-17

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
0 10 20 30 40

PETERS ENGINEERING GROUP
862 Pollasky Avenue
Clovis, California 93612
Phone (559) 299-1544
www.peters-engineering.com

COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1

AVENAL CUTOFF RD STA 114+00 TO 120+50

DWG: S:\2022\22-007\Mcad\Planset\Avenal Cutoff Phase 1\22-007 L-16.dwg USER: Quinn Vosmero DATE: Feb 22, 2024 8:50am

LEGEND (APPLIES TO SHEETS L-1 TO L-37)

ME MATCH EXIST. GRADE

PROPOSED EDGE OF PAVEMENT

PROPOSED DAYLIGHT

MINOR (1') AND MAJOR (5') EXISTING CONTOUR LINES

EXISTING EDGE OF PAVEMENT

HOT MIX ASPHALT (FULL RECONSTRUCTION, SEE TYPICAL SECTIONS FOR PAVEMENT SECTION)

GRIND 0.2' AND OVERLAY HMA (SEE TYPICAL SECTIONS)

HMA WEDGE GRIND (SEE TYPICAL SECTIONS) (1-2 / X-2)

(1) LIMITS OF FULL DEPTH PAVEMENT RECONSTRUCTION, TAPER, WEDGE GRIND, OR GRIND & OVERLAY

(2) PROTECT EXIST. STREETLIGHT/UTILITY POLE IN PLACE

(3) PROTECT EXIST. MISCELLANEOUS UTILITY

NOTES (APPLIES TO SHEETS L-1 TO L-37)

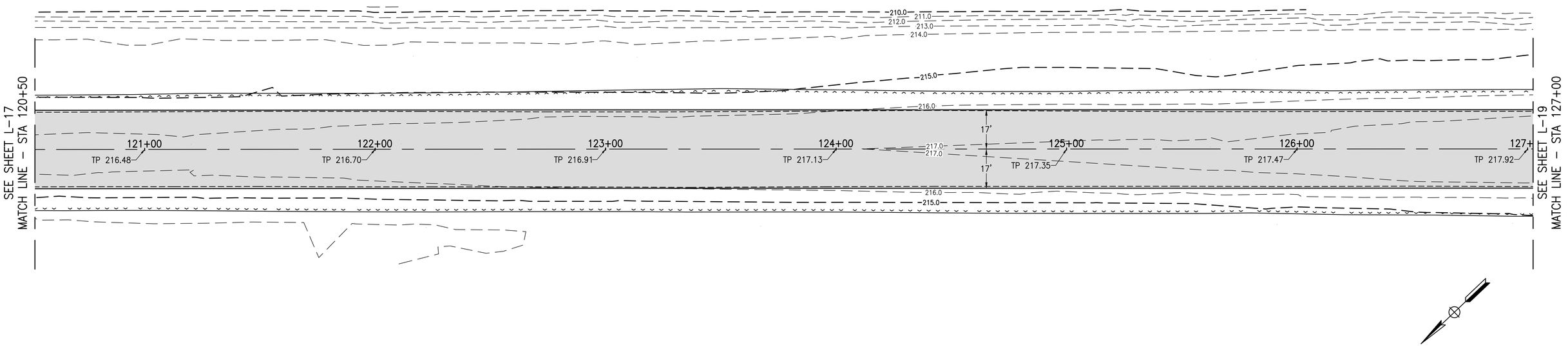
1. CONTRACTOR SHALL MAINTAIN ALL EXISTING IRRIGATION SYSTEMS DURING CONSTRUCTION, SHOULD EXISTING IRRIGATION SYSTEMS BE DAMAGED OR REQUIRED TO BE RELOCATED DURING CONSTRUCTION, THE CONTRACTOR SHALL MOVE & REPLACE DAMAGED IRRIGATION FACILITIES WITH EQUAL OR BETTER PARTS AND MATERIALS.
2. ALL SURVEY MONUMENTS WITHIN THE AREA OF CONSTRUCTION SHALL BE PRESERVED OR, IF DAMAGED, RESET BY A REGISTERED ENGINEER OR LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

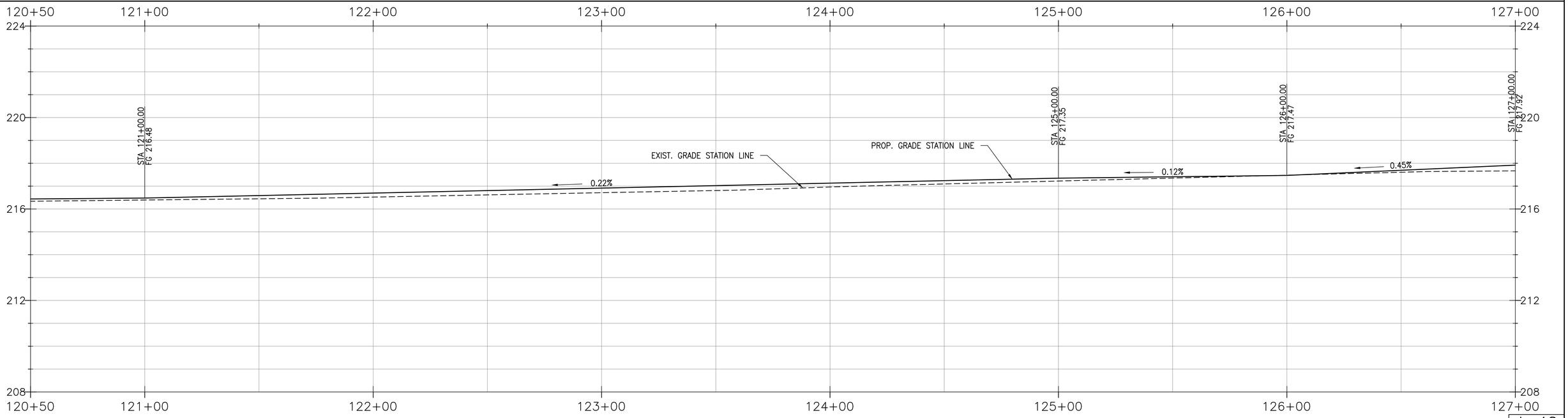
SHEET NO.	TOTAL SHEETS
27	69

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA





L-18

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
0 10 20 30 40

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www.peters-engineering.com

COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1

AVENAL CUTOFF RD STA 120+50 TO 127+00

DWG: S:\2022\22-007\Vcol\Planset\Vversti Cutoff Phase 1\22-007 L-16.dwg USER: Quinn Vosmero DATE: Feb 22, 2024 8:53am

LEGEND (APPLIES TO SHEETS L-1 TO L-37)

ME MATCH EXIST. GRADE

PROPOSED EDGE OF PAVEMENT

PROPOSED DAYLIGHT

MINOR (1') AND MAJOR (5') EXISTING CONTOUR LINES

EXISTING EDGE OF PAVEMENT

HOT MIX ASPHALT (FULL RECONSTRUCTION, SEE TYPICAL SECTIONS FOR PAVEMENT SECTION)

GRIND 0.2' AND OVERLAY HMA (SEE TYPICAL SECTIONS)

HMA WEDGE GRIND (SEE TYPICAL SECTIONS) (1-2 / X-2)

(1) LIMITS OF FULL DEPTH PAVEMENT RECONSTRUCTION, TAPER, WEDGE GRIND, OR GRIND & OVERLAY

(2) PROTECT EXIST. STREETLIGHT/UTILITY POLE IN PLACE

(3) PROTECT EXIST. MISCELLANEOUS UTILITY

NOTES (APPLIES TO SHEETS L-1 TO L-37)

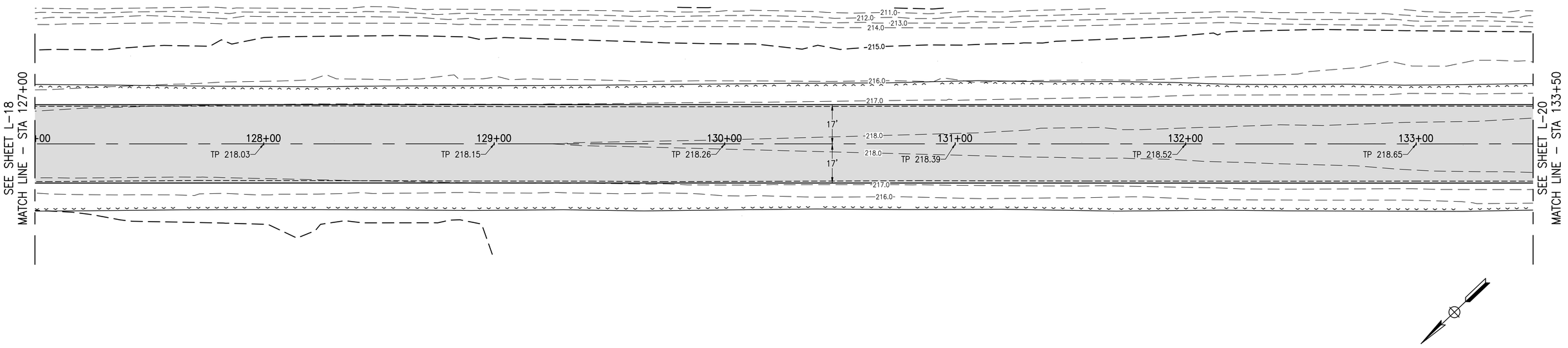
1. CONTRACTOR SHALL MAINTAIN ALL EXISTING IRRIGATION SYSTEMS DURING CONSTRUCTION, SHOULD EXISTING IRRIGATION SYSTEMS BE DAMAGED OR REQUIRED TO BE RELOCATED DURING CONSTRUCTION, THE CONTRACTOR SHALL MOVE & REPLACE DAMAGED IRRIGATION FACILITIES WITH EQUAL OR BETTER PARTS AND MATERIALS.
2. ALL SURVEY MONUMENTS WITHIN THE AREA OF CONSTRUCTION SHALL BE PRESERVED OR, IF DAMAGED, RESET BY A REGISTERED ENGINEER OR LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

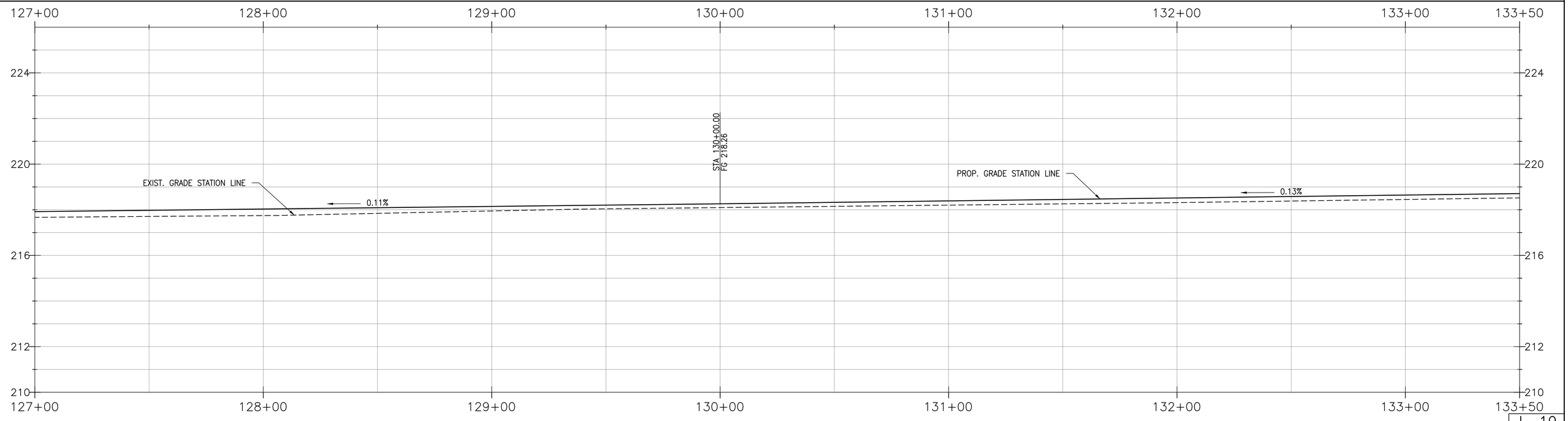
SHEET NO.	TOTAL SHEETS
28	69

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA





L-19

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
0 10 20 30 40

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COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1

AVENAL CUTOFF RD STA 127+00 TO 133+50

DWG: S:\2022\22-007\Acad\Plansets\Avenal Cutoff Phase 1\22-007 L-16.dwg USER: Quinn Vosmero DATE: Feb 22, 2024 8:57am

LEGEND (APPLIES TO SHEETS L-1 TO L-37)

ME MATCH EXIST. GRADE

PROPOSED EDGE OF PAVEMENT

PROPOSED DAYLIGHT

MINOR (1') AND MAJOR (5') EXISTING CONTOUR LINES

EXISTING EDGE OF PAVEMENT

HOT MIX ASPHALT (FULL RECONSTRUCTION, SEE TYPICAL SECTIONS FOR PAVEMENT SECTION)

GRIND 0.2' AND OVERLAY HMA (SEE TYPICAL SECTIONS)

HMA WEDGE GRIND (SEE TYPICAL SECTIONS) (1-2 / X-2)

(1) LIMITS OF FULL DEPTH PAVEMENT RECONSTRUCTION, TAPER, WEDGE GRIND, OR GRIND & OVERLAY

(2) PROTECT EXIST. STREETLIGHT/UTILITY POLE IN PLACE

(3) PROTECT EXIST. MISCELLANEOUS UTILITY

NOTES (APPLIES TO SHEETS L-1 TO L-37)

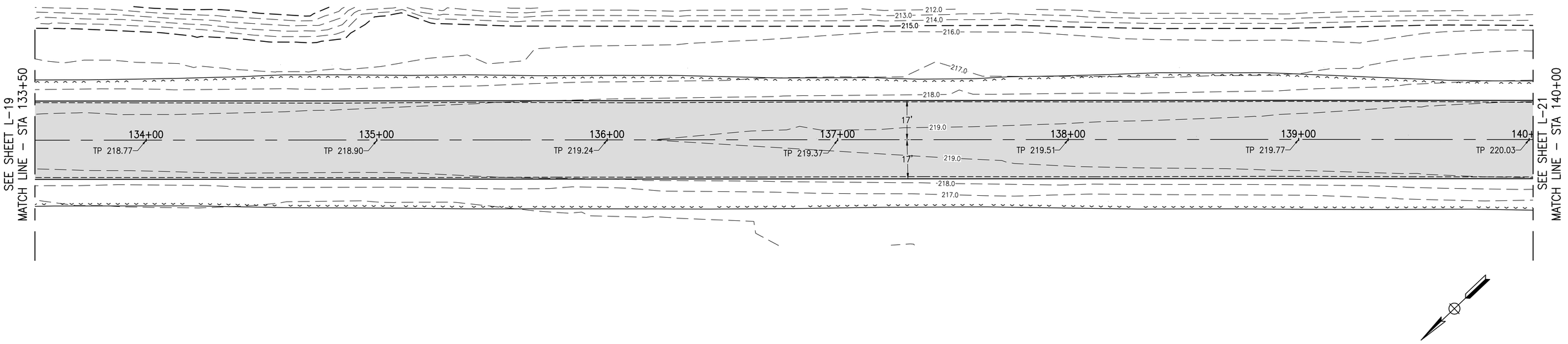
1. CONTRACTOR SHALL MAINTAIN ALL EXISTING IRRIGATION SYSTEMS DURING CONSTRUCTION, SHOULD EXISTING IRRIGATION SYSTEMS BE DAMAGED OR REQUIRED TO BE RELOCATED DURING CONSTRUCTION, THE CONTRACTOR SHALL MOVE & REPLACE DAMAGED IRRIGATION FACILITIES WITH EQUAL OR BETTER PARTS AND MATERIALS.
2. ALL SURVEY MONUMENTS WITHIN THE AREA OF CONSTRUCTION SHALL BE PRESERVED OR, IF DAMAGED, RESET BY A REGISTERED ENGINEER OR LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

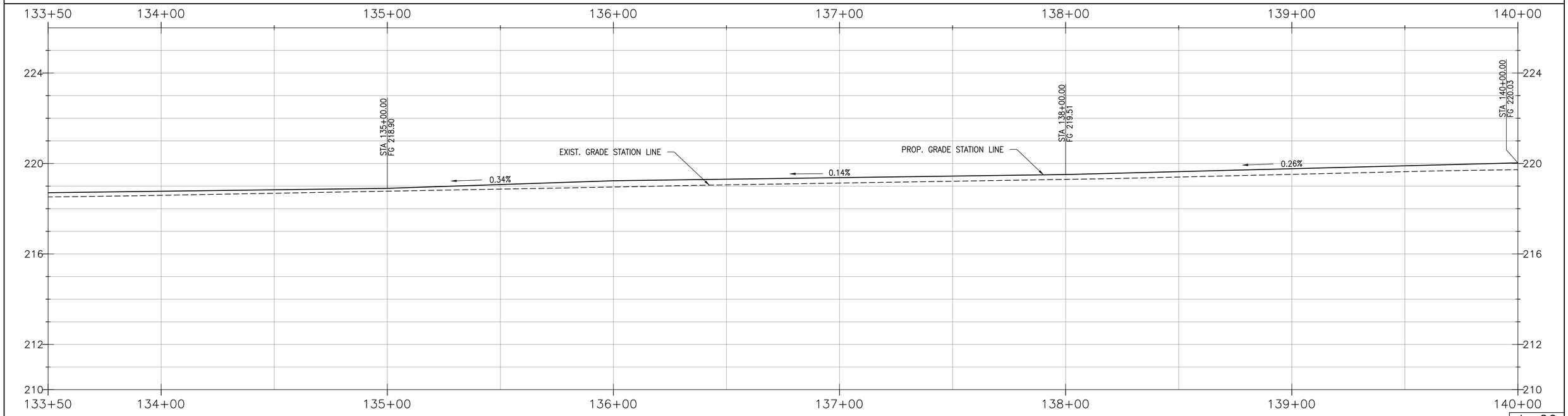
SHEET NO.	TOTAL SHEETS
29	69

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA





L-20

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
0 10 20 30 40

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www.peters-engineering.com

COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

AVENAL CUTOFF ROAD PHASE 1

AVENAL CUTOFF RD 133+50 TO 140+00

DWG: S:\2022\22-007\Acad\Planset\Avenal Cutoff Phase 1\22-007 L-16.dwg USER: Quinn Vosmero DATE: Feb 22, 2024 9:00am

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER WILLIAM J. WASHBURN No. 60322 CIVIL STATE OF CALIFORNIA

LEGEND (APPLIES TO SHEETS L-1 TO L-37)

- ME MATCH EXIST. GRADE
- PROPOSED EDGE OF PAVEMENT
- PROPOSED DAYLIGHT
- MINOR (1') AND MAJOR (5') EXISTING CONTOUR LINES
- EXISTING EDGE OF PAVEMENT
- HOT MIX ASPHALT (FULL RECONSTRUCTION, SEE TYPICAL SECTIONS FOR PAVEMENT SECTION)
- GRIND 0.2' AND OVERLAY HMA (SEE TYPICAL SECTIONS)
- HMA WEDGE GRIND (SEE TYPICAL SECTIONS) (1-2 / X-2)
- (1) LIMITS OF FULL DEPTH PAVEMENT RECONSTRUCTION, TAPER, WEDGE GRIND, OR GRIND & OVERLAY
- (2) PROTECT EXIST. STREETLIGHT/UTILITY POLE IN PLACE
- (3) PROTECT EXIST. MISCELLANEOUS UTILITY

NOTES (APPLIES TO SHEETS L-1 TO L-37)

1. CONTRACTOR SHALL MAINTAIN ALL EXISTING IRRIGATION SYSTEMS DURING CONSTRUCTION, SHOULD EXISTING IRRIGATION SYSTEMS BE DAMAGED OR REQUIRED TO BE RELOCATED DURING CONSTRUCTION, THE CONTRACTOR SHALL MOVE & REPLACE DAMAGED IRRIGATION FACILITIES WITH EQUAL OR BETTER PARTS AND MATERIALS.
2. ALL SURVEY MONUMENTS WITHIN THE AREA OF CONSTRUCTION SHALL BE PRESERVED OR, IF DAMAGED, RESET BY A REGISTERED ENGINEER OR LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

L-21

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
0 10 20 30 40

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WWW.PETERS-ENGINEERING.COM

COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1

AVENAL CUTOFF RD STA 140+00 TO 146+50

DWG: S:\2022\22-007\Acad\Planset\Avenal Cutoff Phase 1\22-007 L-21.dwg USER: Quinn Vosmero DATE: Feb 22, 2024 9:07am

LEGEND (APPLIES TO SHEETS L-1 TO L-37)

ME MATCH EXIST. GRADE

PROPOSED EDGE OF PAVEMENT

PROPOSED DAYLIGHT

MINOR (1') AND MAJOR (5') EXISTING CONTOUR LINES

EXISTING EDGE OF PAVEMENT

HOT MIX ASPHALT (FULL RECONSTRUCTION, SEE TYPICAL SECTIONS FOR PAVEMENT SECTION)

GRIND 0.2' AND OVERLAY HMA (SEE TYPICAL SECTIONS)

HMA WEDGE GRIND (SEE TYPICAL SECTIONS) (1-2 / X-2)

(1) LIMITS OF FULL DEPTH PAVEMENT RECONSTRUCTION, TAPER, WEDGE GRIND, OR GRIND & OVERLAY

(2) PROTECT EXIST. STREETLIGHT/UTILITY POLE IN PLACE

(3) PROTECT EXIST. MISCELLANEOUS UTILITY

NOTES (APPLIES TO SHEETS L-1 TO L-37)

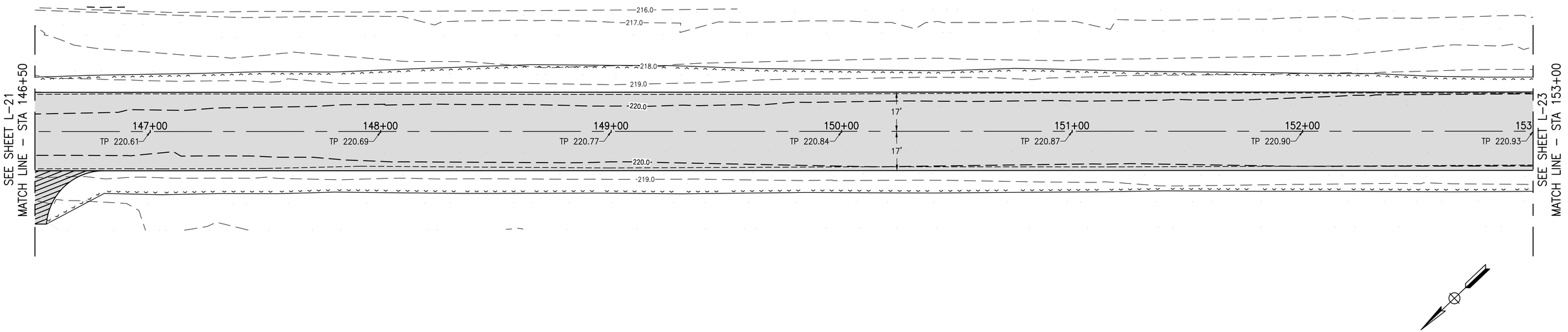
1. CONTRACTOR SHALL MAINTAIN ALL EXISTING IRRIGATION SYSTEMS DURING CONSTRUCTION, SHOULD EXISTING IRRIGATION SYSTEMS BE DAMAGED OR REQUIRED TO BE RELOCATED DURING CONSTRUCTION, THE CONTRACTOR SHALL MOVE & REPLACE DAMAGED IRRIGATION FACILITIES WITH EQUAL OR BETTER PARTS AND MATERIALS.
2. ALL SURVEY MONUMENTS WITHIN THE AREA OF CONSTRUCTION SHALL BE PRESERVED OR, IF DAMAGED, RESET BY A REGISTERED ENGINEER OR LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

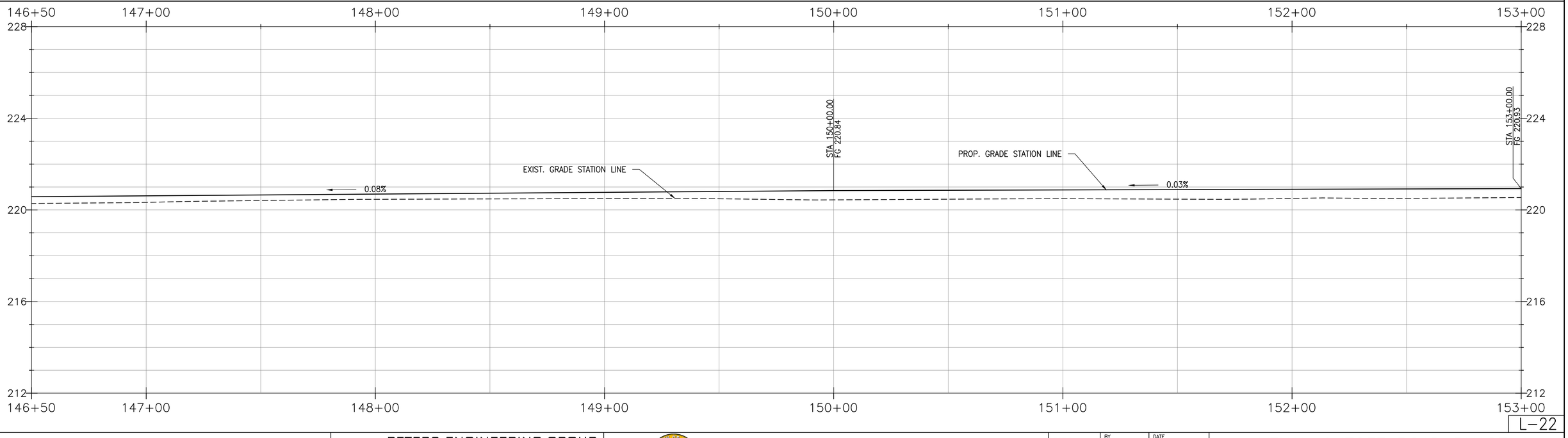
SHEET NO.	TOTAL SHEETS
31	69

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA





L-22

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
0 10 20 30 40

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Clovis, California 93612
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www.peters-engineering.com

COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

AVENAL CUTOFF ROAD PHASE 1

AVENAL CUTOFF RD STA 146+50 TO 153+00

DWG: S:\2022\22-007\Acad\Planset\Avenal Cutoff Phase 1\22-007 L-21.dwg USER: Quinn Vosmero DATE: Feb 22, 2024 9:11am

LEGEND (APPLIES TO SHEETS L-1 TO L-37)

ME MATCH EXIST. GRADE

PROPOSED EDGE OF PAVEMENT

PROPOSED DAYLIGHT

MINOR (1') AND MAJOR (5') EXISTING CONTOUR LINES

EXISTING EDGE OF PAVEMENT

HOT MIX ASPHALT (FULL RECONSTRUCTION, SEE TYPICAL SECTIONS FOR PAVEMENT SECTION)

GRIND 0.2' AND OVERLAY HMA (SEE TYPICAL SECTIONS)

HMA WEDGE GRIND (SEE TYPICAL SECTIONS) (1-2 / X-2)

(1) LIMITS OF FULL DEPTH PAVEMENT RECONSTRUCTION, TAPER, WEDGE GRIND, OR GRIND & OVERLAY

(2) PROTECT EXIST. STREETLIGHT/UTILITY POLE IN PLACE

(3) PROTECT EXIST. MISCELLANEOUS UTILITY

NOTES (APPLIES TO SHEETS L-1 TO L-37)

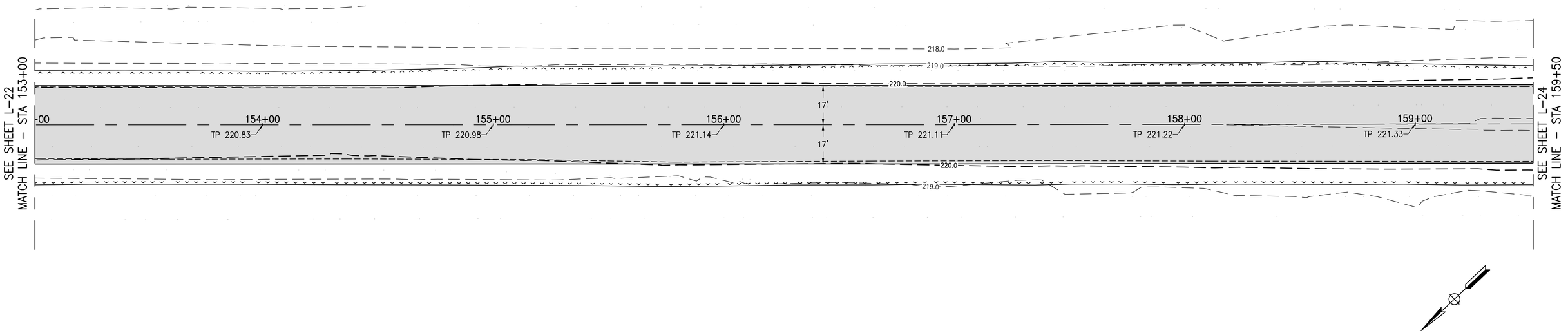
1. CONTRACTOR SHALL MAINTAIN ALL EXISTING IRRIGATION SYSTEMS DURING CONSTRUCTION, SHOULD EXISTING IRRIGATION SYSTEMS BE DAMAGED OR REQUIRED TO BE RELOCATED DURING CONSTRUCTION, THE CONTRACTOR SHALL MOVE & REPLACE DAMAGED IRRIGATION FACILITIES WITH EQUAL OR BETTER PARTS AND MATERIALS.
2. ALL SURVEY MONUMENTS WITHIN THE AREA OF CONSTRUCTION SHALL BE PRESERVED OR, IF DAMAGED, RESET BY A REGISTERED ENGINEER OR LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

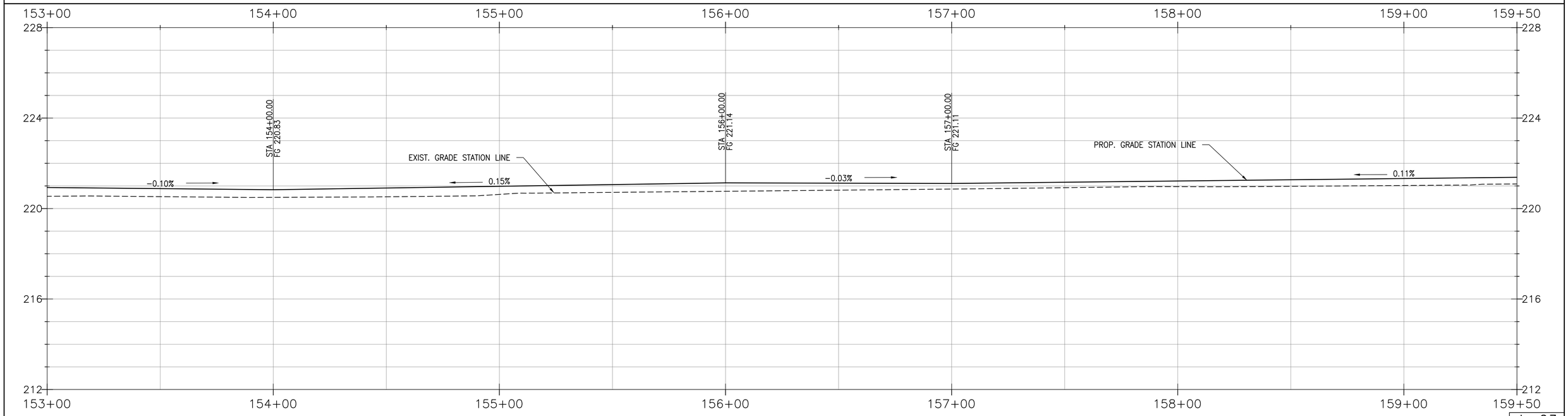
SHEET NO.	TOTAL SHEETS
32	69

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA





L-23

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
0 10 20 30 40

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COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1

AVENAL CUTOFF RD STA 153+00 TO 159+50

DWG: S:\2022\22-007\Acad\Planset\Avenal Cutoff Phase 1\22-007 L-21.dwg USER: Quinn Vosmero DATE: Feb 22, 2024 9:14am

LEGEND (APPLIES TO SHEETS L-1 TO L-37)

- ME — MATCH EXIST. GRADE
- PROPOSED EDGE OF PAVEMENT
- PROPOSED DAYLIGHT
- MINOR (1') AND MAJOR (5') EXISTING CONTOUR LINES
- EXISTING EDGE OF PAVEMENT
- HOT MIX ASPHALT (FULL RECONSTRUCTION, SEE TYPICAL SECTIONS FOR PAVEMENT SECTION)
- GRIND 0.2' AND OVERLAY HMA (SEE TYPICAL SECTIONS)
- HMA WEDGE GRIND (SEE TYPICAL SECTIONS) (1-2 / X-2)
- (1) LIMITS OF FULL DEPTH PAVEMENT RECONSTRUCTION, TAPER, WEDGE GRIND, OR GRIND & OVERLAY
- (2) PROTECT EXIST. STREETLIGHT/UTILITY POLE IN PLACE
- (3) PROTECT EXIST. MISCELLANEOUS UTILITY

NOTES (APPLIES TO SHEETS L-1 TO L-37)

1. CONTRACTOR SHALL MAINTAIN ALL EXISTING IRRIGATION SYSTEMS DURING CONSTRUCTION, SHOULD EXISTING IRRIGATION SYSTEMS BE DAMAGED OR REQUIRED TO BE RELOCATED DURING CONSTRUCTION, THE CONTRACTOR SHALL MOVE & REPLACE DAMAGED IRRIGATION FACILITIES WITH EQUAL OR BETTER PARTS AND MATERIALS.
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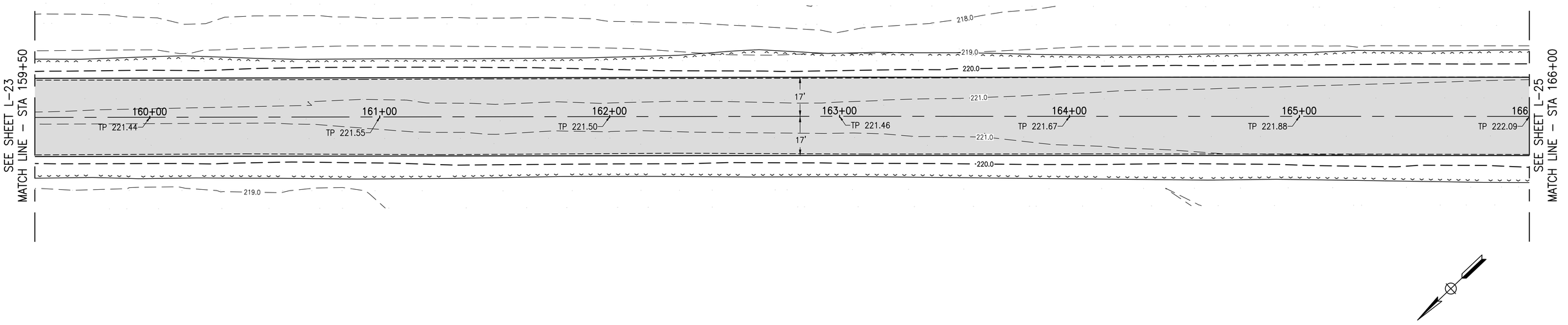
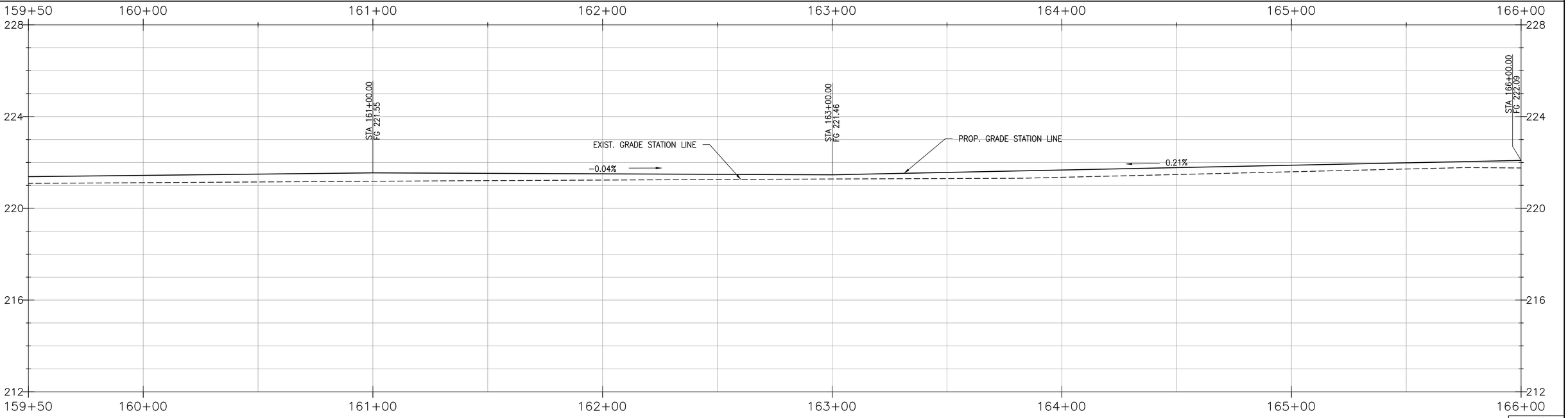
SHEET NO.	TOTAL SHEETS
33	69

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA





L-24

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
0 10 20 30 40

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COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1

AVENAL CUTOFF RD STA 159+50 TO 166+00

DWG: S:\2022\22-007\Vcad\Planset\Avenal Cutoff Phase 1\22-007 L-21.dwg USER: Quinn Vosmero DATE: Feb 22, 2024 9:18am

LEGEND (APPLIES TO SHEETS L-1 TO L-37)

ME MATCH EXIST. GRADE

PROPOSED EDGE OF PAVEMENT

PROPOSED DAYLIGHT

MINOR (1') AND MAJOR (5') EXISTING CONTOUR LINES

EXISTING EDGE OF PAVEMENT

HOT MIX ASPHALT (FULL RECONSTRUCTION, SEE TYPICAL SECTIONS FOR PAVEMENT SECTION)

GRIND 0.2' AND OVERLAY HMA (SEE TYPICAL SECTIONS)

HMA WEDGE GRIND (SEE TYPICAL SECTIONS) (1-2 / X-2)

(1) LIMITS OF FULL DEPTH PAVEMENT RECONSTRUCTION, TAPER, WEDGE GRIND, OR GRIND & OVERLAY

(2) PROTECT EXIST. STREETLIGHT/UTILITY POLE IN PLACE

(3) PROTECT EXIST. MISCELLANEOUS UTILITY

NOTES (APPLIES TO SHEETS L-1 TO L-37)

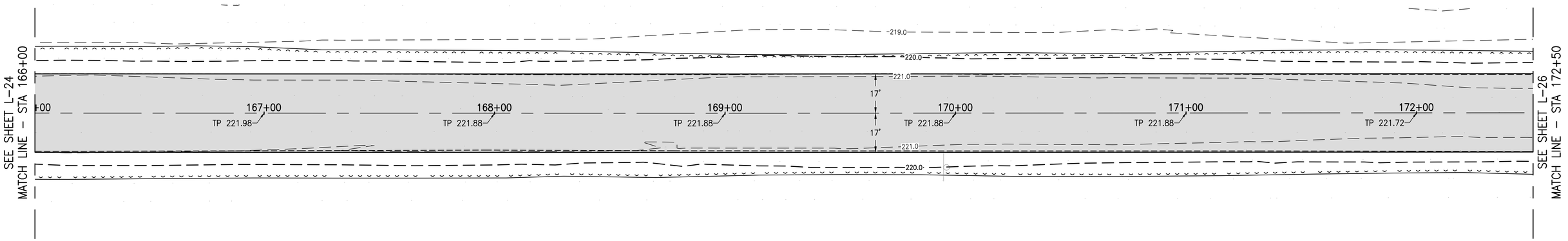
1. CONTRACTOR SHALL MAINTAIN ALL EXISTING IRRIGATION SYSTEMS DURING CONSTRUCTION, SHOULD EXISTING IRRIGATION SYSTEMS BE DAMAGED OR REQUIRED TO BE RELOCATED DURING CONSTRUCTION, THE CONTRACTOR SHALL MOVE & REPLACE DAMAGED IRRIGATION FACILITIES WITH EQUAL OR BETTER PARTS AND MATERIALS.
2. ALL SURVEY MONUMENTS WITHIN THE AREA OF CONSTRUCTION SHALL BE PRESERVED OR, IF DAMAGED, RESET BY A REGISTERED ENGINEER OR LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

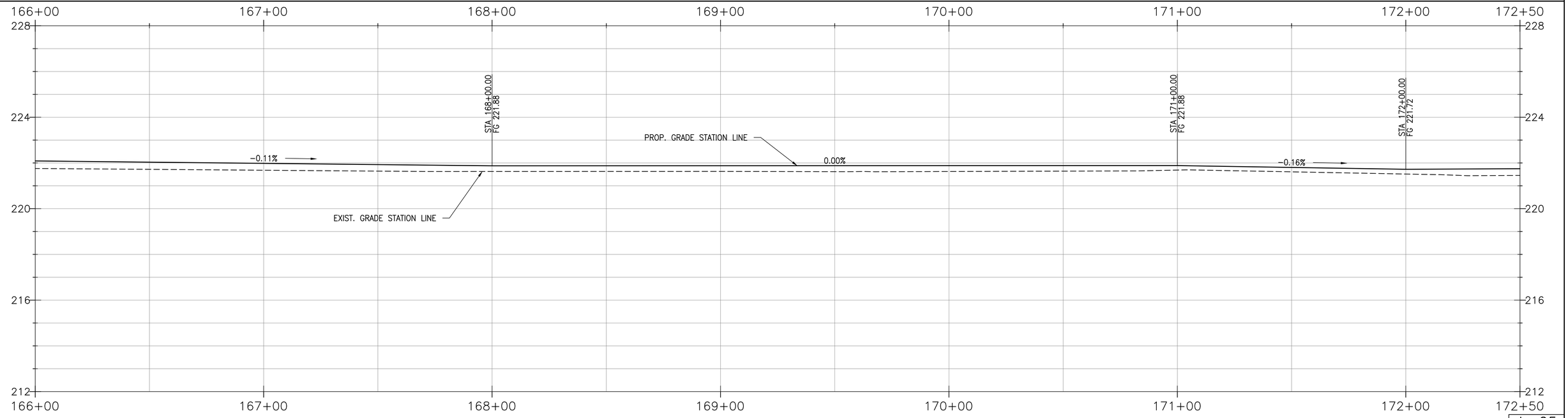
SHEET NO.	TOTAL SHEETS
34	69

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA





L-25

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
0 10 20 30 40

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COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1

AVENAL CUTOFF RD STA 166+00 TO 172+50

DWG: S:\2022\22-007\Vcad\Planset\Avenal Cutoff Phase 1\22-007 L-21.dwg USER: Quinn Vosmero DATE: Feb 22, 2024 9:21am

LEGEND (APPLIES TO SHEETS L-1 TO L-37)

ME MATCH EXIST. GRADE

PROPOSED EDGE OF PAVEMENT

PROPOSED DAYLIGHT

MINOR (1') AND MAJOR (5') EXISTING CONTOUR LINES

EXISTING EDGE OF PAVEMENT

HOT MIX ASPHALT (FULL RECONSTRUCTION, SEE TYPICAL SECTIONS FOR PAVEMENT SECTION)

GRIND 0.2' AND OVERLAY HMA (SEE TYPICAL SECTIONS)

HMA WEDGE GRIND (SEE TYPICAL SECTIONS) 1-2 / X-2

(1) LIMITS OF FULL DEPTH PAVEMENT RECONSTRUCTION, TAPER, WEDGE GRIND, OR GRIND & OVERLAY

(2) PROTECT EXIST. STREETLIGHT/UTILITY POLE IN PLACE

(3) PROTECT EXIST. MISCELLANEOUS UTILITY

NOTES (APPLIES TO SHEETS L-1 TO L-37)

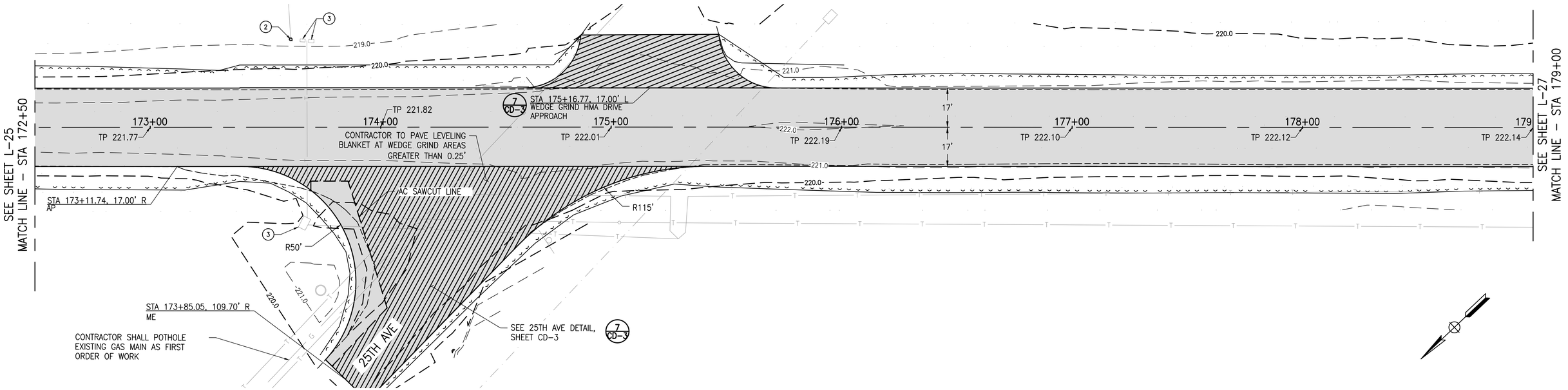
1. CONTRACTOR SHALL MAINTAIN ALL EXISTING IRRIGATION SYSTEMS DURING CONSTRUCTION, SHOULD EXISTING IRRIGATION SYSTEMS BE DAMAGED OR REQUIRED TO BE RELOCATED DURING CONSTRUCTION, THE CONTRACTOR SHALL MOVE & REPLACE DAMAGED IRRIGATION FACILITIES WITH EQUAL OR BETTER PARTS AND MATERIALS.
2. ALL SURVEY MONUMENTS WITHIN THE AREA OF CONSTRUCTION SHALL BE PRESERVED OR, IF DAMAGED, RESET BY A REGISTERED ENGINEER OR LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

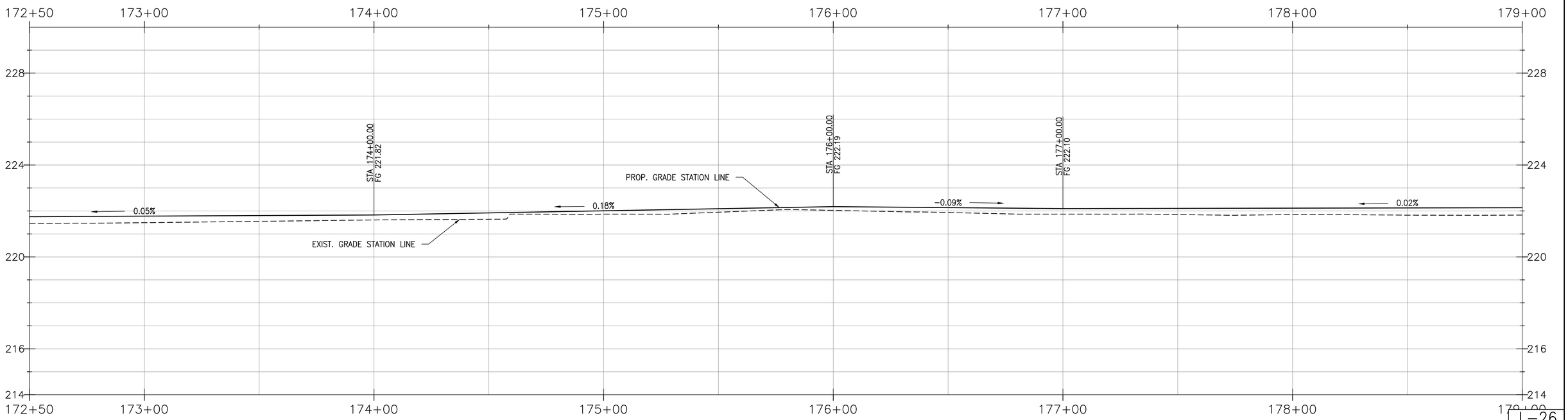
SHEET NO.	TOTAL SHEETS
35	69

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA





L-26

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
0 10 20 30 40

PETERS ENGINEERING GROUP
862 Pollasky Avenue
Clovis, California 93612
Phone (559) 299-1544
www.peters-engineering.com

COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

AVENAL CUTOFF ROAD PHASE 1

AVENAL CUTOFF RD STA 172+50 TO 179+00

DWG: S:\2022\22-007\Civil\Planset\Avenal Cutoff Phase 1\22-007 L-26.dwg USER: Quinn Vosmero DATE: Feb 22, 2024 9:28am

LEGEND (APPLIES TO SHEETS L-1 TO L-37)

ME MATCH EXIST. GRADE

PROPOSED EDGE OF PAVEMENT

PROPOSED DAYLIGHT

MINOR (1') AND MAJOR (5') EXISTING CONTOUR LINES

EXISTING EDGE OF PAVEMENT

HOT MIX ASPHALT (FULL RECONSTRUCTION, SEE TYPICAL SECTIONS FOR PAVEMENT SECTION)

GRIND 0.2' AND OVERLAY HMA (SEE TYPICAL SECTIONS)

HMA WEDGE GRIND (SEE TYPICAL SECTIONS) (1-2 / X-2)

(1) LIMITS OF FULL DEPTH PAVEMENT RECONSTRUCTION, TAPER, WEDGE GRIND, OR GRIND & OVERLAY

(2) PROTECT EXIST. STREETLIGHT/UTILITY POLE IN PLACE

(3) PROTECT EXIST. MISCELLANEOUS UTILITY

NOTES (APPLIES TO SHEETS L-1 TO L-37)

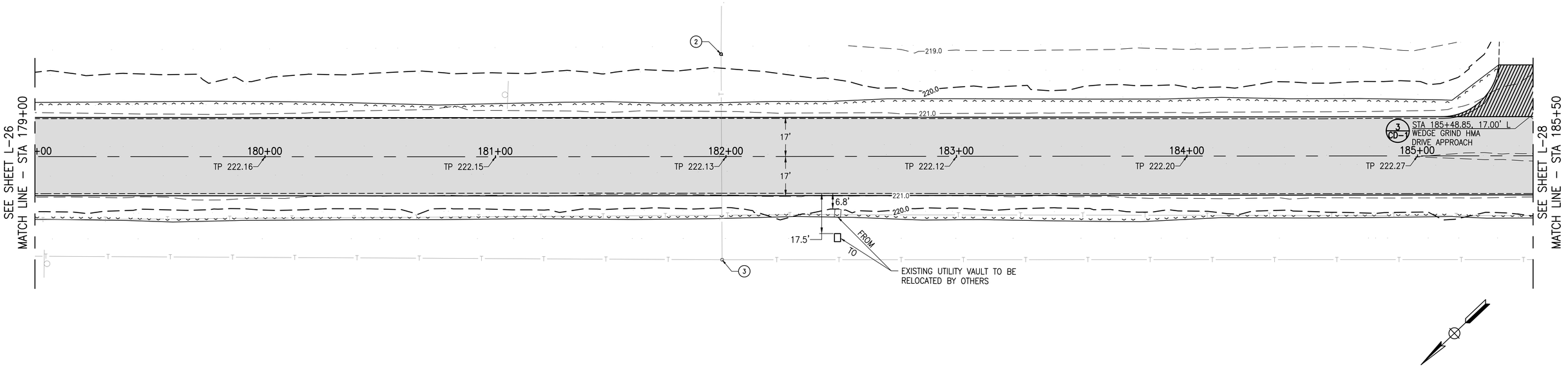
1. CONTRACTOR SHALL MAINTAIN ALL EXISTING IRRIGATION SYSTEMS DURING CONSTRUCTION, SHOULD EXISTING IRRIGATION SYSTEMS BE DAMAGED OR REQUIRED TO BE RELOCATED DURING CONSTRUCTION, THE CONTRACTOR SHALL MOVE & REPLACE DAMAGED IRRIGATION FACILITIES WITH EQUAL OR BETTER PARTS AND MATERIALS.
2. ALL SURVEY MONUMENTS WITHIN THE AREA OF CONSTRUCTION SHALL BE PRESERVED OR, IF DAMAGED, RESET BY A REGISTERED ENGINEER OR LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

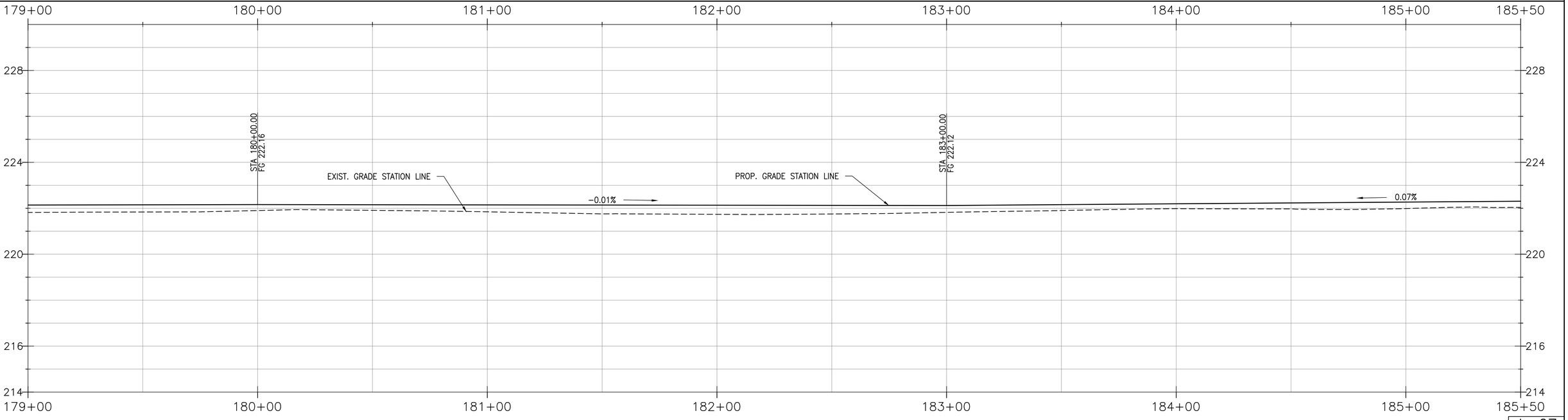
SHEET NO.	TOTAL SHEETS
36	69

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA





L-27

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
0 10 20 30 40

PETERS ENGINEERING GROUP
862 POLLASKY AVENUE
CLOVIS, CALIFORNIA 93612
PHONE (559) 299-1544
WWW.PETERS-ENGINEERING.COM

COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1

AVENAL CUTOFF RD STA 179+00 TO 185+50

DWG: S:\2022\22-007\Acad\Planset\Avenal Cutoff Phase 1\22-007 L-26.dwg USER: Antonio Romo DATE: Feb 21, 2024 3:49pm

LEGEND (APPLIES TO SHEETS L-1 TO L-37)

- ME — MATCH EXIST. GRADE
- PROPOSED EDGE OF PAVEMENT
- PROPOSED DAYLIGHT
- MINOR (1') AND MAJOR (5') EXISTING CONTOUR LINES
- EXISTING EDGE OF PAVEMENT
- HOT MIX ASPHALT (FULL RECONSTRUCTION, SEE TYPICAL SECTIONS FOR PAVEMENT SECTION)
- GRIND 0.2' AND OVERLAY HMA (SEE TYPICAL SECTIONS)
- HMA WEDGE GRIND (SEE TYPICAL SECTIONS) (1-2 / X-2)
- (1) LIMITS OF FULL DEPTH PAVEMENT RECONSTRUCTION, TAPER, WEDGE GRIND, OR GRIND & OVERLAY
- (2) PROTECT EXIST. STREETLIGHT/UTILITY POLE IN PLACE
- (3) PROTECT EXIST. MISCELLANEOUS UTILITY

NOTES (APPLIES TO SHEETS L-1 TO L-37)

1. CONTRACTOR SHALL MAINTAIN ALL EXISTING IRRIGATION SYSTEMS DURING CONSTRUCTION, SHOULD EXISTING IRRIGATION SYSTEMS BE DAMAGED OR REQUIRED TO BE RELOCATED DURING CONSTRUCTION, THE CONTRACTOR SHALL MOVE & REPLACE DAMAGED IRRIGATION FACILITIES WITH EQUAL OR BETTER PARTS AND MATERIALS.
2. ALL SURVEY MONUMENTS WITHIN THE AREA OF CONSTRUCTION SHALL BE PRESERVED OR, IF DAMAGED, RESET BY A REGISTERED ENGINEER OR LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER — WILLIAM J. WASHBURN — No. 60322 — CIVIL — STATE OF CALIFORNIA

SHEET NO. 37 — TOTAL SHEETS 69

L-28

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
0 10 20 30 40

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PHONE (559) 299-1544
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COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1

AVENAL CUTOFF RD STA 185+50 TO 192+00

LEGEND (APPLIES TO SHEETS L-1 TO L-37)

ME MATCH EXIST. GRADE

PROPOSED EDGE OF PAVEMENT

PROPOSED DAYLIGHT

MINOR (1') AND MAJOR (5') EXISTING CONTOUR LINES

EXISTING EDGE OF PAVEMENT

HOT MIX ASPHALT (FULL RECONSTRUCTION, SEE TYPICAL SECTIONS FOR PAVEMENT SECTION)

GRIND 0.2' AND OVERLAY HMA (SEE TYPICAL SECTIONS)

HMA WEDGE GRIND (SEE TYPICAL SECTIONS) (1-2 / X-2)

(1) LIMITS OF FULL DEPTH PAVEMENT RECONSTRUCTION, TAPER, WEDGE GRIND, OR GRIND & OVERLAY

(2) PROTECT EXIST. STREETLIGHT/UTILITY POLE IN PLACE

(3) PROTECT EXIST. MISCELLANEOUS UTILITY

NOTES (APPLIES TO SHEETS L-1 TO L-37)

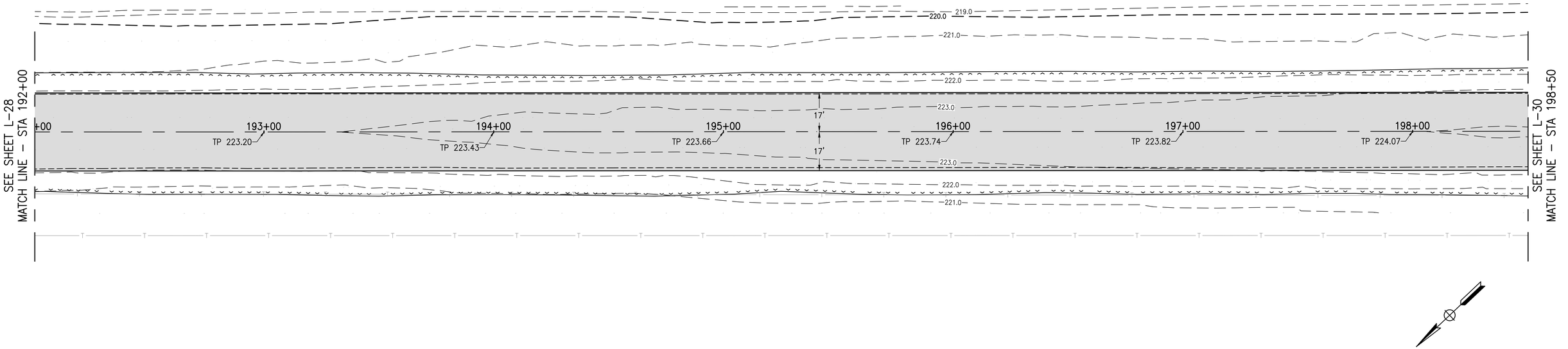
1. CONTRACTOR SHALL MAINTAIN ALL EXISTING IRRIGATION SYSTEMS DURING CONSTRUCTION, SHOULD EXISTING IRRIGATION SYSTEMS BE DAMAGED OR REQUIRED TO BE RELOCATED DURING CONSTRUCTION, THE CONTRACTOR SHALL MOVE & REPLACE DAMAGED IRRIGATION FACILITIES WITH EQUAL OR BETTER PARTS AND MATERIALS.
2. ALL SURVEY MONUMENTS WITHIN THE AREA OF CONSTRUCTION SHALL BE PRESERVED OR, IF DAMAGED, RESET BY A REGISTERED ENGINEER OR LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

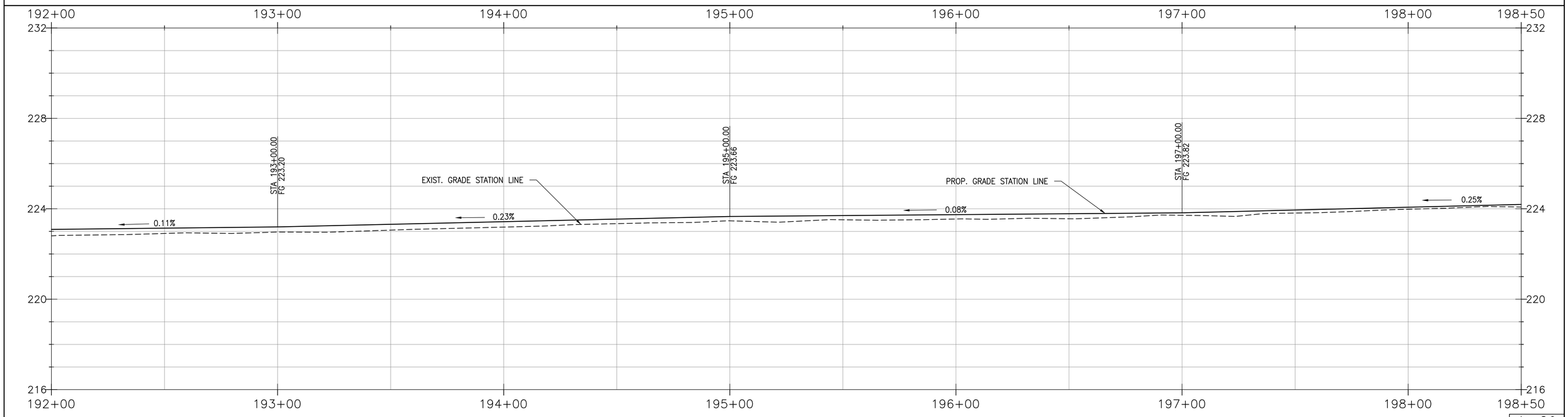
SHEET NO.	TOTAL SHEETS
38	69

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA





L-29

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
0 10 20 30 40

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DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1

AVENAL CUTOFF RD STA 192+00 TO 198+50

DWG: S:\2022\22-0071\Mod\Planset\Avenal Cutoff Phase 1\22-007 L-26.dwg USER: Antonio Roma DATE: Feb 21, 2024 3:55pm

LEGEND (APPLIES TO SHEETS L-1 TO L-37)

ME MATCH EXIST. GRADE

PROPOSED EDGE OF PAVEMENT

PROPOSED DAYLIGHT

MINOR (1') AND MAJOR (5') EXISTING CONTOUR LINES

EXISTING EDGE OF PAVEMENT

HOT MIX ASPHALT (FULL RECONSTRUCTION, SEE TYPICAL SECTIONS FOR PAVEMENT SECTION)

GRIND 0.2' AND OVERLAY HMA (SEE TYPICAL SECTIONS)

HMA WEDGE GRIND (SEE TYPICAL SECTIONS) (1-2 / X-2)

(1) LIMITS OF FULL DEPTH PAVEMENT RECONSTRUCTION, TAPER, WEDGE GRIND, OR GRIND & OVERLAY

(2) PROTECT EXIST. STREETLIGHT/UTILITY POLE IN PLACE

(3) PROTECT EXIST. MISCELLANEOUS UTILITY

NOTES (APPLIES TO SHEETS L-1 TO L-37)

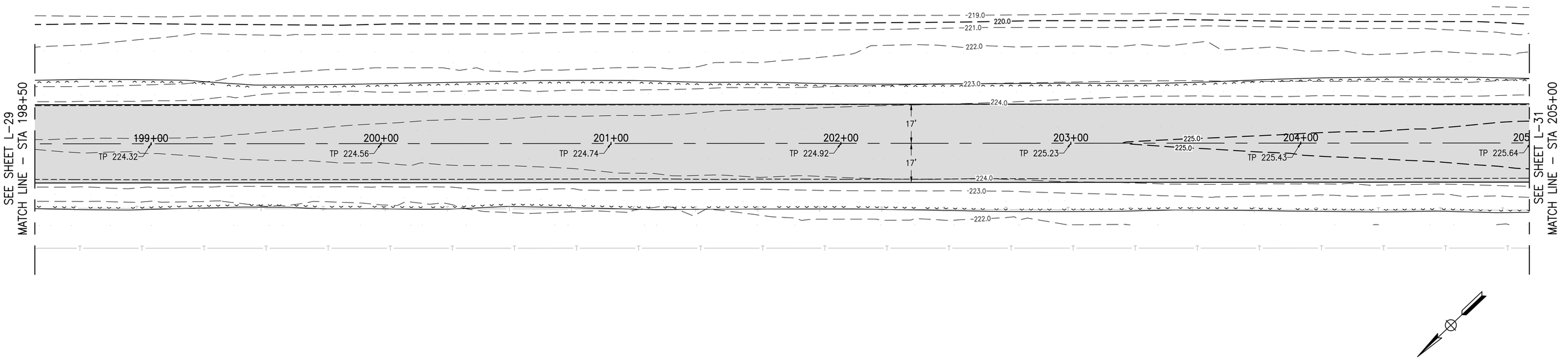
1. CONTRACTOR SHALL MAINTAIN ALL EXISTING IRRIGATION SYSTEMS DURING CONSTRUCTION, SHOULD EXISTING IRRIGATION SYSTEMS BE DAMAGED OR REQUIRED TO BE RELOCATED DURING CONSTRUCTION, THE CONTRACTOR SHALL MOVE & REPLACE DAMAGED IRRIGATION FACILITIES WITH EQUAL OR BETTER PARTS AND MATERIALS.
2. ALL SURVEY MONUMENTS WITHIN THE AREA OF CONSTRUCTION SHALL BE PRESERVED OR, IF DAMAGED, RESET BY A REGISTERED ENGINEER OR LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

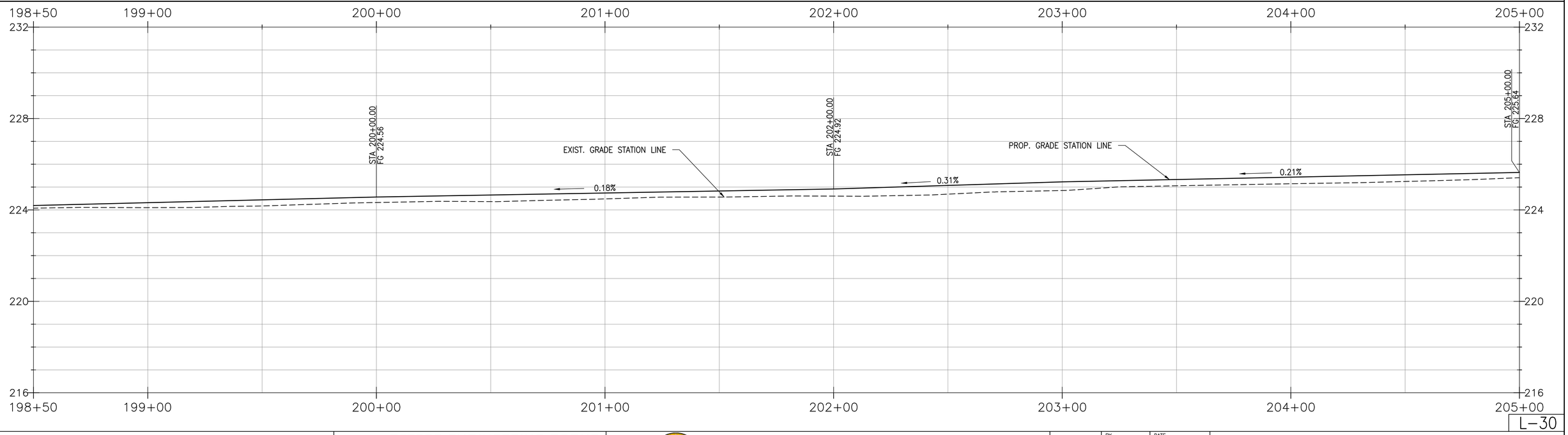
SHEET NO.	TOTAL SHEETS
39	69

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA





L-30

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
0 10 20 30 40

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www.peters-engineering.com

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DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

AVENAL CUTOFF ROAD PHASE 1

AVENAL CUTOFF RD STA 198+50 TO 205+00

DWG: S:\2022\22-007\Acad\Planset\Avenal Cutoff Phase 1\22-007 L-26.dwg USER: Antonio Romo DATE: Feb 21, 2024 3:58pm

LEGEND (APPLIES TO SHEETS L-1 TO L-37)

- ME — MATCH EXIST. GRADE
- PROPOSED EDGE OF PAVEMENT
- PROPOSED DAYLIGHT
- MINOR (1') AND MAJOR (5') EXISTING CONTOUR LINES
- EXISTING EDGE OF PAVEMENT
- HOT MIX ASPHALT (FULL RECONSTRUCTION, SEE TYPICAL SECTIONS FOR PAVEMENT SECTION)
- GRIND 0.2' AND OVERLAY HMA (SEE TYPICAL SECTIONS)
- HMA WEDGE GRIND (SEE TYPICAL SECTIONS) (1-2 / X-2)
- (1) LIMITS OF FULL DEPTH PAVEMENT RECONSTRUCTION, TAPER, WEDGE GRIND, OR GRIND & OVERLAY
- (2) PROTECT EXIST. STREETLIGHT/UTILITY POLE IN PLACE
- (3) PROTECT EXIST. MISCELLANEOUS UTILITY

NOTES (APPLIES TO SHEETS L-1 TO L-37)

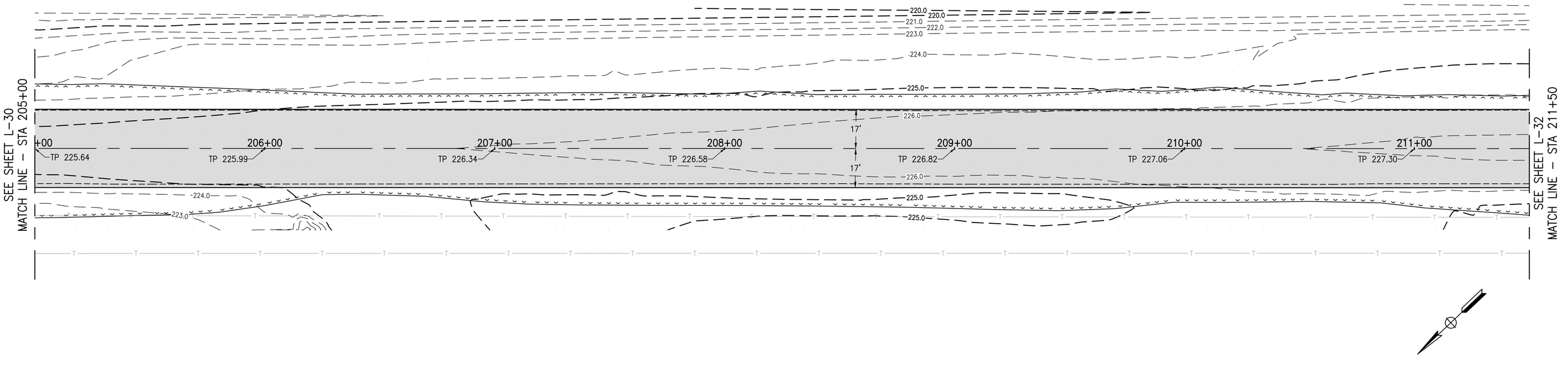
1. CONTRACTOR SHALL MAINTAIN ALL EXISTING IRRIGATION SYSTEMS DURING CONSTRUCTION, SHOULD EXISTING IRRIGATION SYSTEMS BE DAMAGED OR REQUIRED TO BE RELOCATED DURING CONSTRUCTION, THE CONTRACTOR SHALL MOVE & REPLACE DAMAGED IRRIGATION FACILITIES WITH EQUAL OR BETTER PARTS AND MATERIALS.
2. ALL SURVEY MONUMENTS WITHIN THE AREA OF CONSTRUCTION SHALL BE PRESERVED OR, IF DAMAGED, RESET BY A REGISTERED ENGINEER OR LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

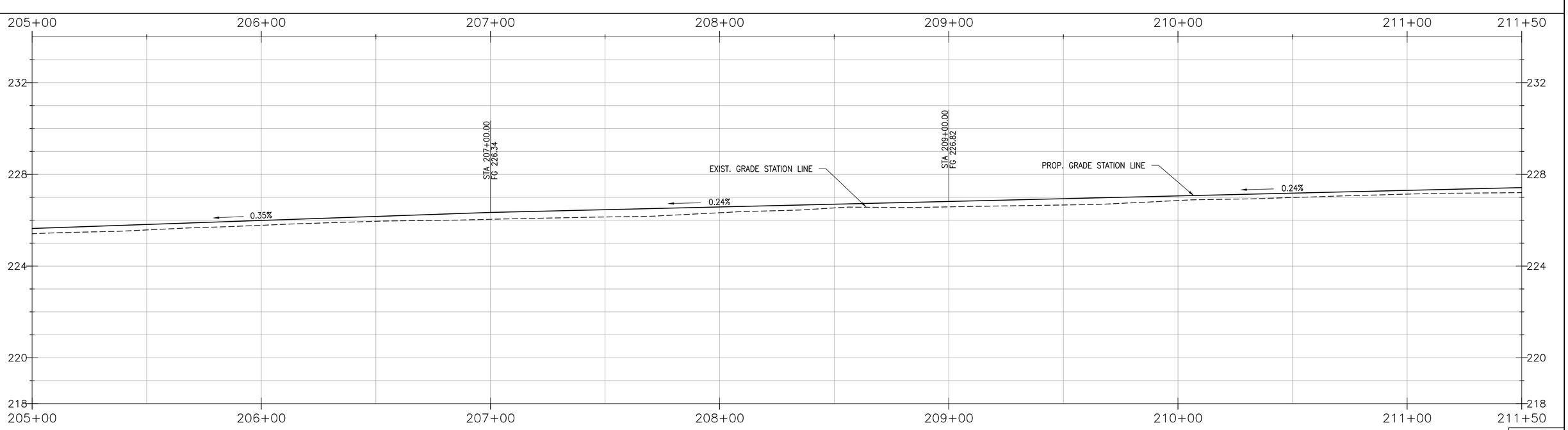
SHEET NO.	TOTAL SHEETS
40	69

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA





L-31

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
0 10 20 30 40

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COUNTY OF KINGS

DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1

AVENAL CUTOFF RD STA 205+00 TO 211+50

DWG: S:\2022\22-007\Acad\Planset\Avenal Cutoff Phase 1\22-007 L-31.dwg USER: Antonio Romo DATE: Feb 21, 2024 4:04pm

LEGEND (APPLIES TO SHEETS L-1 TO L-37)

ME MATCH EXIST. GRADE
PROPOSED EDGE OF PAVEMENT
PROPOSED DAYLIGHT
MINOR (1') AND MAJOR (5') EXISTING CONTOUR LINES
EXISTING EDGE OF PAVEMENT
HOT MIX ASPHALT (FULL RECONSTRUCTION, SEE TYPICAL SECTIONS FOR PAVEMENT SECTION)

GRIND 0.2' AND OVERLAY HMA (SEE TYPICAL SECTIONS)
HMA WEDGE GRIND (SEE TYPICAL SECTIONS) (1-2 / X-2)
(1) LIMITS OF FULL DEPTH PAVEMENT RECONSTRUCTION, TAPER, WEDGE GRIND, OR GRIND & OVERLAY
(2) PROTECT EXIST. STREETLIGHT/UTILITY POLE IN PLACE

(3) PROTECT EXIST. MISCELLANEOUS UTILITY

NOTES (APPLIES TO SHEETS L-1 TO L-37)

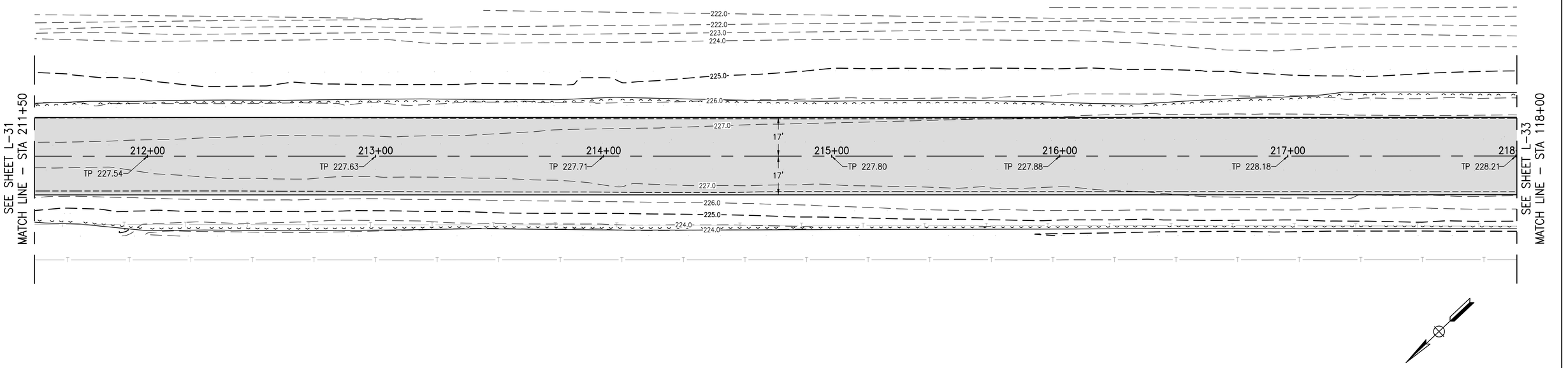
1. CONTRACTOR SHALL MAINTAIN ALL EXISTING IRRIGATION SYSTEMS DURING CONSTRUCTION, SHOULD EXISTING IRRIGATION SYSTEMS BE DAMAGED OR REQUIRED TO BE RELOCATED DURING CONSTRUCTION, THE CONTRACTOR SHALL MOVE & REPLACE DAMAGED IRRIGATION FACILITIES WITH EQUAL OR BETTER PARTS AND MATERIALS.
2. ALL SURVEY MONUMENTS WITHIN THE AREA OF CONSTRUCTION SHALL BE PRESERVED OR, IF DAMAGED, RESET BY A REGISTERED ENGINEER OR LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

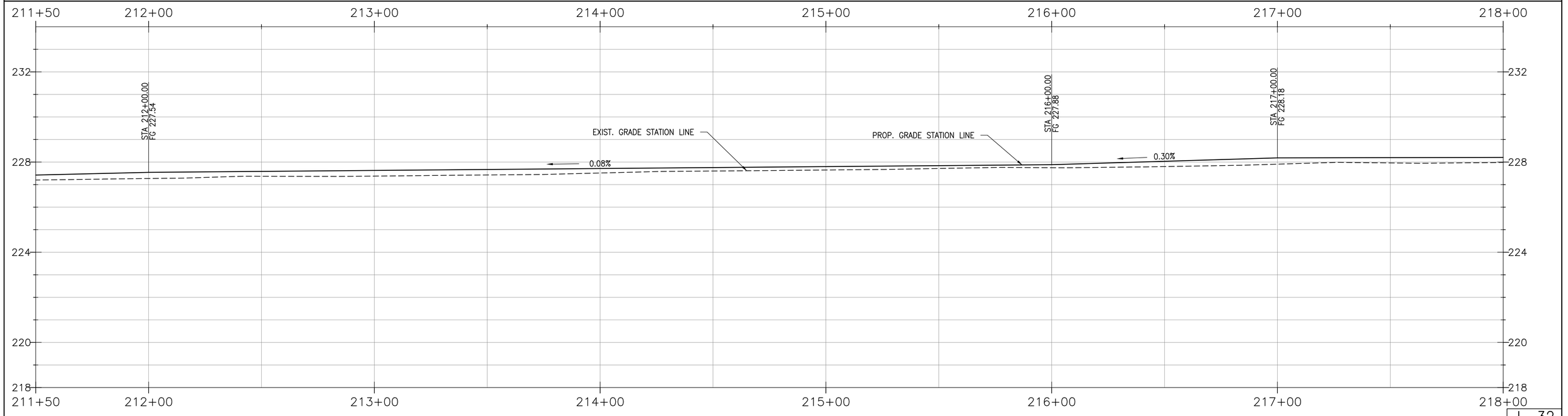
SHEET NO.	TOTAL SHEETS
41	69

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA





L-32

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
0 10 20 30 40

PETERS ENGINEERING GROUP
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COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1

AVENAL CUTOFF RD STA 211+50 TO 218+00

DWG: S:\2022\22-007\Acad\Planset\Avenal Cutoff Phase 1\22-007 L-31.dwg USER: Quinn Vosmero DATE: Feb 21, 2024 3:38pm

LEGEND (APPLIES TO SHEETS L-1 TO L-37)

ME MATCH EXIST. GRADE

PROPOSED EDGE OF PAVEMENT

PROPOSED DAYLIGHT

MINOR (1') AND MAJOR (5') EXISTING CONTOUR LINES

EXISTING EDGE OF PAVEMENT

HOT MIX ASPHALT (FULL RECONSTRUCTION, SEE TYPICAL SECTIONS FOR PAVEMENT SECTION)

GRIND 0.2' AND OVERLAY HMA (SEE TYPICAL SECTIONS)

HMA WEDGE GRIND (SEE TYPICAL SECTIONS) (1-2 / X-2)

(1) LIMITS OF FULL DEPTH PAVEMENT RECONSTRUCTION, TAPER, WEDGE GRIND, OR GRIND & OVERLAY

(2) PROTECT EXIST. STREETLIGHT/UTILITY POLE IN PLACE

(3) PROTECT EXIST. MISCELLANEOUS UTILITY

NOTES (APPLIES TO SHEETS L-1 TO L-37)

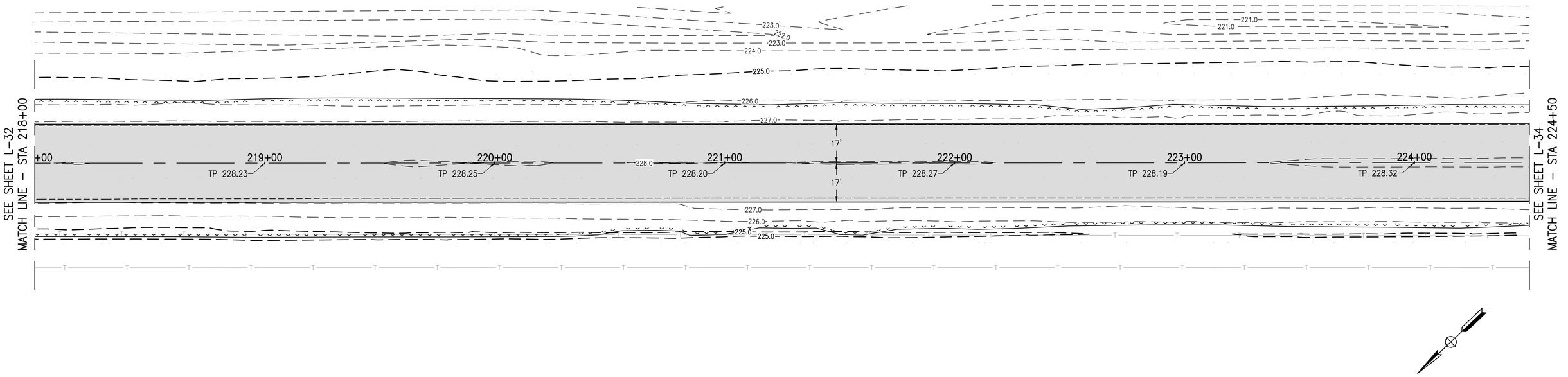
1. CONTRACTOR SHALL MAINTAIN ALL EXISTING IRRIGATION SYSTEMS DURING CONSTRUCTION, SHOULD EXISTING IRRIGATION SYSTEMS BE DAMAGED OR REQUIRED TO BE RELOCATED DURING CONSTRUCTION, THE CONTRACTOR SHALL MOVE & REPLACE DAMAGED IRRIGATION FACILITIES WITH EQUAL OR BETTER PARTS AND MATERIALS.
2. ALL SURVEY MONUMENTS WITHIN THE AREA OF CONSTRUCTION SHALL BE PRESERVED OR, IF DAMAGED, RESET BY A REGISTERED ENGINEER OR LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

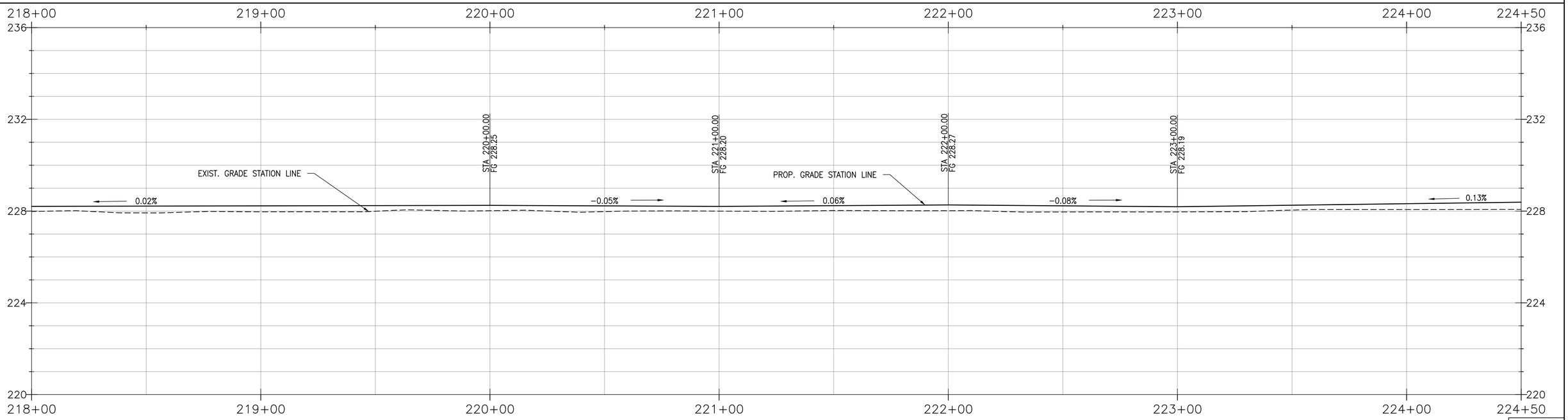
SHEET NO.	TOTAL SHEETS
42	69

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA





L-33

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
0 10 20 30 40

PETERS ENGINEERING GROUP
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COUNTY OF KINGS

DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1

AVENAL CUTOFF RD STA 218+00 TO 224+50

DWG: S:\2022\22-007\Acad\Plansets\Avenal Cutoff Phase 1\22-007 L-31.dwg USER: Quinn Vasmeris DATE: Feb 21, 2024 3:42pm

LEGEND (APPLIES TO SHEETS L-1 TO L-37)

ME MATCH EXIST. GRADE

PROPOSED EDGE OF PAVEMENT

PROPOSED DAYLIGHT

MINOR (1') AND MAJOR (5') EXISTING CONTOUR LINES

EXISTING EDGE OF PAVEMENT

HOT MIX ASPHALT (FULL RECONSTRUCTION, SEE TYPICAL SECTIONS FOR PAVEMENT SECTION)

GRIND 0.2' AND OVERLAY HMA (SEE TYPICAL SECTIONS)

HMA WEDGE GRIND (SEE TYPICAL SECTIONS) (1-2 / X-2)

(1) LIMITS OF FULL DEPTH PAVEMENT RECONSTRUCTION, TAPER, WEDGE GRIND, OR GRIND & OVERLAY

(2) PROTECT EXIST. STREETLIGHT/UTILITY POLE IN PLACE

(3) PROTECT EXIST. MISCELLANEOUS UTILITY

NOTES (APPLIES TO SHEETS L-1 TO L-37)

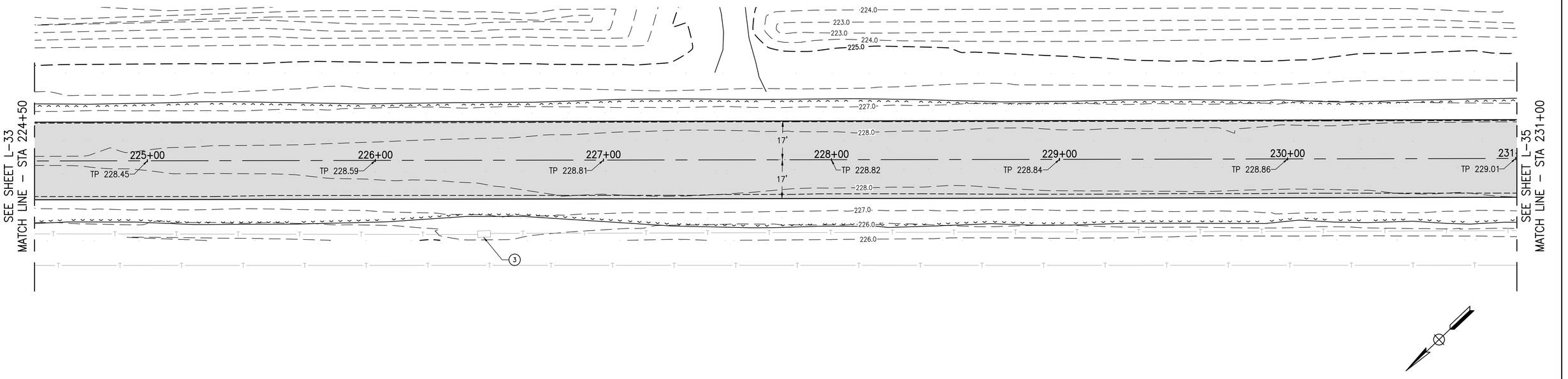
1. CONTRACTOR SHALL MAINTAIN ALL EXISTING IRRIGATION SYSTEMS DURING CONSTRUCTION, SHOULD EXISTING IRRIGATION SYSTEMS BE DAMAGED OR REQUIRED TO BE RELOCATED DURING CONSTRUCTION, THE CONTRACTOR SHALL MOVE & REPLACE DAMAGED IRRIGATION FACILITIES WITH EQUAL OR BETTER PARTS AND MATERIALS.
2. ALL SURVEY MONUMENTS WITHIN THE AREA OF CONSTRUCTION SHALL BE PRESERVED OR, IF DAMAGED, RESET BY A REGISTERED ENGINEER OR LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

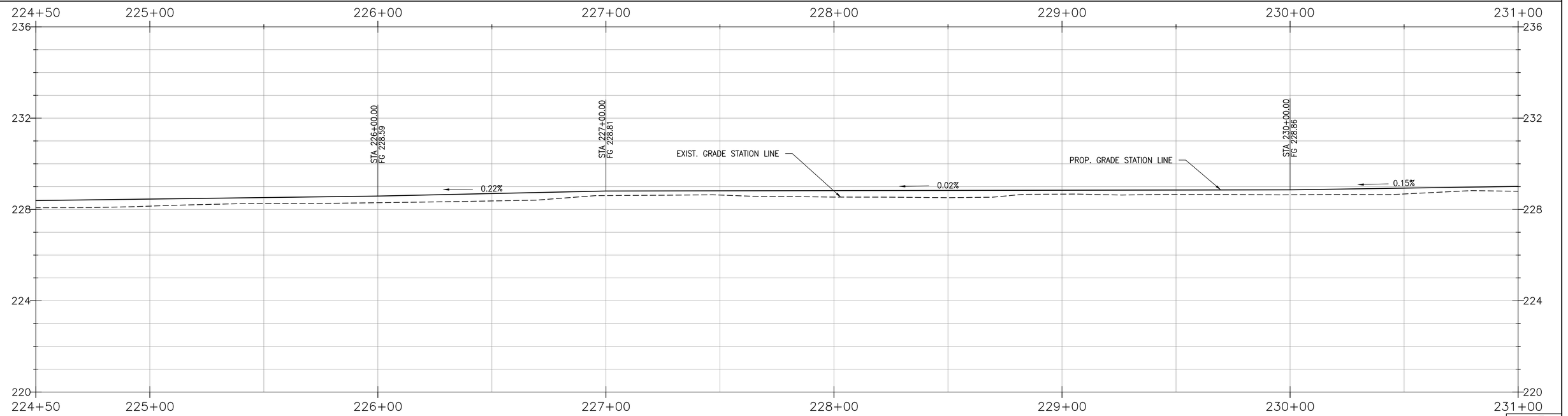
SHEET NO.	TOTAL SHEETS
43	69

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA





L-34

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
0 10 20 30 40

PETERS ENGINEERING GROUP
862 Pollasky Avenue
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Phone (559) 299-1544
www.peters-engineering.com

COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1

AVENAL CUTOFF RD STA 224+50 TO 231+00

DWG: S:\2022\22-007\Vcol\Planset\Avenal Cutoff Phase 1\22-007 L-31.dwg USER: Quinn Vosmero DATE: Feb 21, 2024 3:45pm

LEGEND (APPLIES TO SHEETS L-1 TO L-37)

ME MATCH EXIST. GRADE

PROPOSED EDGE OF PAVEMENT

PROPOSED DAYLIGHT

MINOR (1') AND MAJOR (5') EXISTING CONTOUR LINES

EXISTING EDGE OF PAVEMENT

HOT MIX ASPHALT (FULL RECONSTRUCTION, SEE TYPICAL SECTIONS FOR PAVEMENT SECTION)

GRIND 0.2' AND OVERLAY HMA (SEE TYPICAL SECTIONS)

HMA WEDGE GRIND (SEE TYPICAL SECTIONS) (1-2 / X-2)

(1) LIMITS OF FULL DEPTH PAVEMENT RECONSTRUCTION, TAPER, WEDGE GRIND, OR GRIND & OVERLAY

(2) PROTECT EXIST. STREETLIGHT/UTILITY POLE IN PLACE

(3) PROTECT EXIST. MISCELLANEOUS UTILITY

NOTES (APPLIES TO SHEETS L-1 TO L-37)

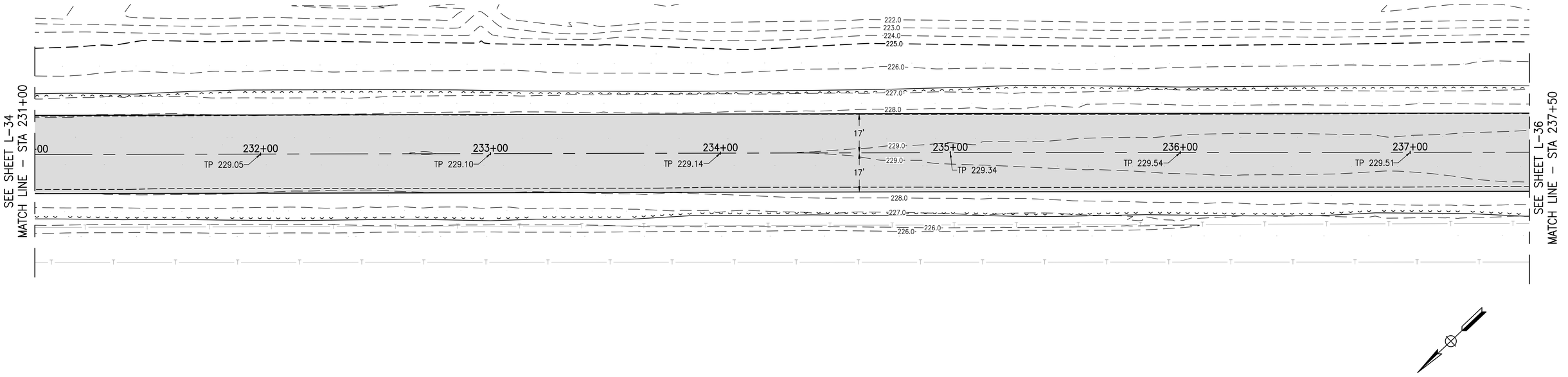
1. CONTRACTOR SHALL MAINTAIN ALL EXISTING IRRIGATION SYSTEMS DURING CONSTRUCTION, SHOULD EXISTING IRRIGATION SYSTEMS BE DAMAGED OR REQUIRED TO BE RELOCATED DURING CONSTRUCTION, THE CONTRACTOR SHALL MOVE & REPLACE DAMAGED IRRIGATION FACILITIES WITH EQUAL OR BETTER PARTS AND MATERIALS.
2. ALL SURVEY MONUMENTS WITHIN THE AREA OF CONSTRUCTION SHALL BE PRESERVED OR, IF DAMAGED, RESET BY A REGISTERED ENGINEER OR LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

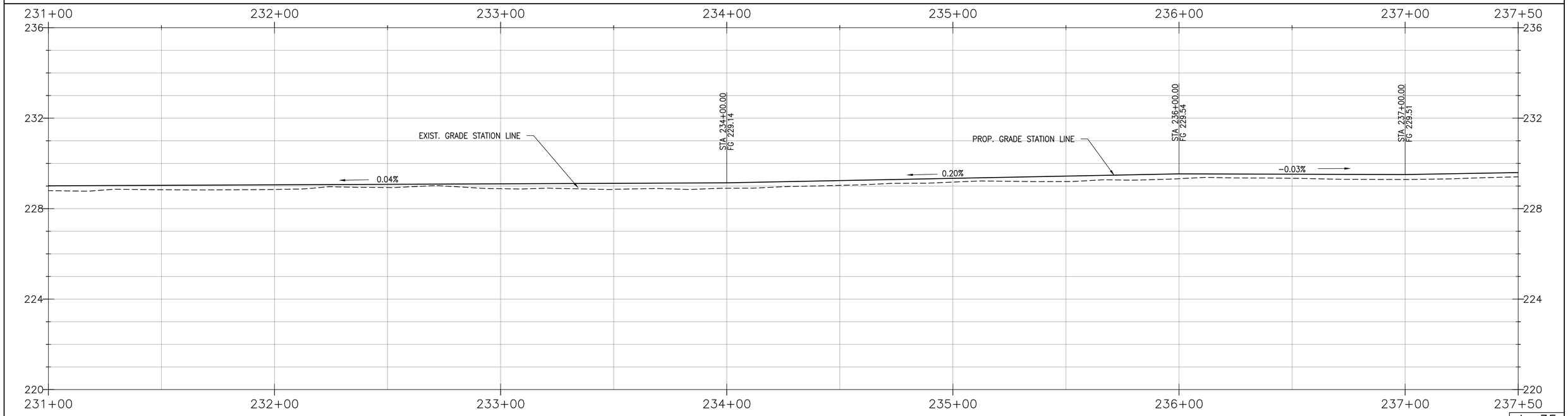
SHEET NO.	TOTAL SHEETS
44	69

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA





L-35

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
0 10 20 30 40

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Clovis, California 93612
Phone (559) 299-1544
www.peters-engineering.com

COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1

AVENAL CUTOFF RD STA 231+00 TO 237+50

DWG: S:\2022\22-007\Vcad\Planset\Avenal Cutoff Phase 1\22-007 L-31.dwg USER: Quinn Vosmero DATE: Feb 21, 2024 3:49pm

LEGEND (APPLIES TO SHEETS L-1 TO L-37)

- ME — MATCH EXIST. GRADE
- PROPOSED EDGE OF PAVEMENT
- PROPOSED DAYLIGHT
- MINOR (1') AND MAJOR (5') EXISTING CONTOUR LINES
- EXISTING EDGE OF PAVEMENT
- HOT MIX ASPHALT (FULL RECONSTRUCTION, SEE TYPICAL SECTIONS FOR PAVEMENT SECTION)
- GRIND 0.2' AND OVERLAY HMA (SEE TYPICAL SECTIONS)
- HMA WEDGE GRIND (SEE TYPICAL SECTIONS) (1-2 / X-2)
- (1) LIMITS OF FULL DEPTH PAVEMENT RECONSTRUCTION, TAPER, WEDGE GRIND, OR GRIND & OVERLAY
- (2) PROTECT EXIST. STREETLIGHT/UTILITY POLE IN PLACE
- (3) PROTECT EXIST. MISCELLANEOUS UTILITY

NOTES (APPLIES TO SHEETS L-1 TO L-37)

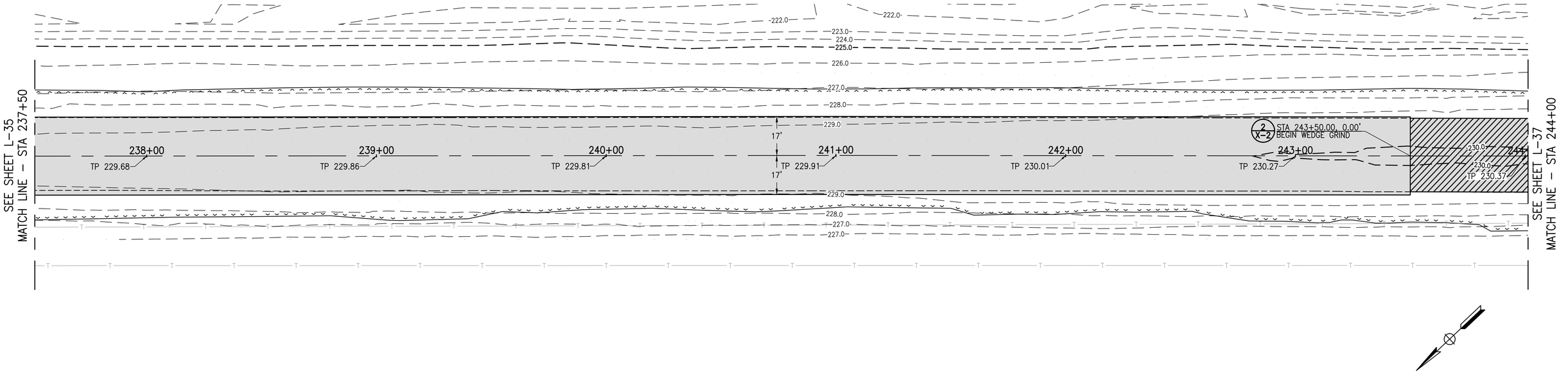
1. CONTRACTOR SHALL MAINTAIN ALL EXISTING IRRIGATION SYSTEMS DURING CONSTRUCTION, SHOULD EXISTING IRRIGATION SYSTEMS BE DAMAGED OR REQUIRED TO BE RELOCATED DURING CONSTRUCTION, THE CONTRACTOR SHALL MOVE & REPLACE DAMAGED IRRIGATION FACILITIES WITH EQUAL OR BETTER PARTS AND MATERIALS.
2. ALL SURVEY MONUMENTS WITHIN THE AREA OF CONSTRUCTION SHALL BE PRESERVED OR, IF DAMAGED, RESET BY A REGISTERED ENGINEER OR LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

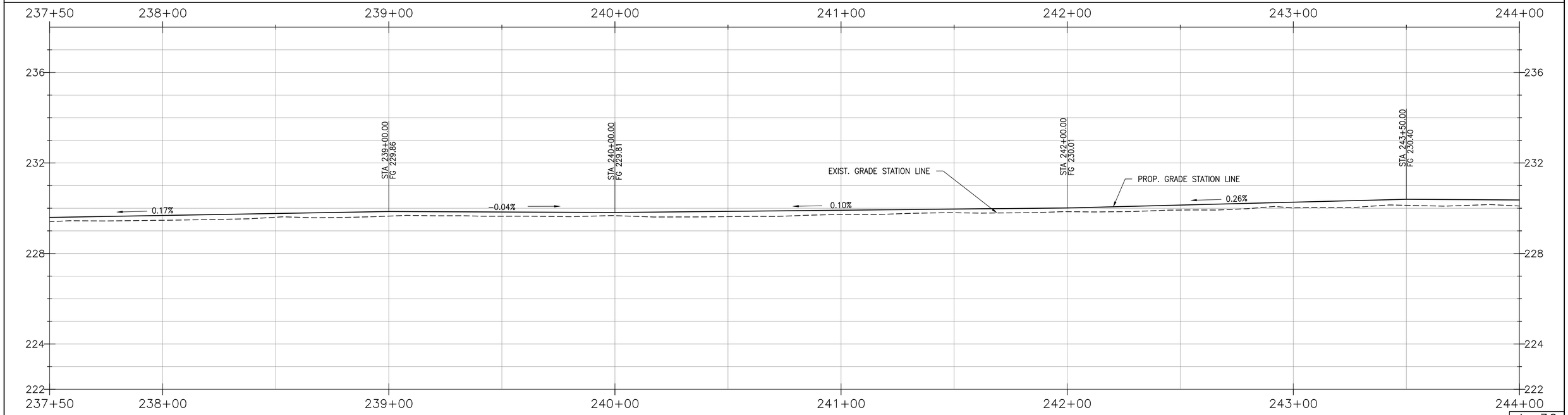
SHEET NO.	TOTAL SHEETS
45	69

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA





L-36

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
0 10 20 30 40

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Clovis, California 93612
Phone (559) 299-1544
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COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1

AVENAL CUTOFF RD STA 237+50 TO 244+00

DWG: S:\2022\22-007\Acad\Planset\Avenal Cutoff Phase 1\22-007 L-36.dwg USER: Quinn Vasmeris DATE: Feb 21, 2024 3:54pm

LEGEND (APPLIES TO SHEETS L-1 TO L-37)

ME MATCH EXIST. GRADE

PROPOSED EDGE OF PAVEMENT

PROPOSED DAYLIGHT

MINOR (1') AND MAJOR (5') EXISTING CONTOUR LINES

EXISTING EDGE OF PAVEMENT

HOT MIX ASPHALT (FULL RECONSTRUCTION, SEE TYPICAL SECTIONS FOR PAVEMENT SECTION)

GRIND 0.2' AND OVERLAY HMA (SEE TYPICAL SECTIONS)

HMA WEDGE GRIND (SEE TYPICAL SECTIONS) (1-2 / X-2)

(1) LIMITS OF FULL DEPTH PAVEMENT RECONSTRUCTION, TAPER, WEDGE GRIND, OR GRIND & OVERLAY

(2) PROTECT EXIST. STREETLIGHT/UTILITY POLE IN PLACE

(3) PROTECT EXIST. MISCELLANEOUS UTILITY

NOTES (APPLIES TO SHEETS L-1 TO L-37)

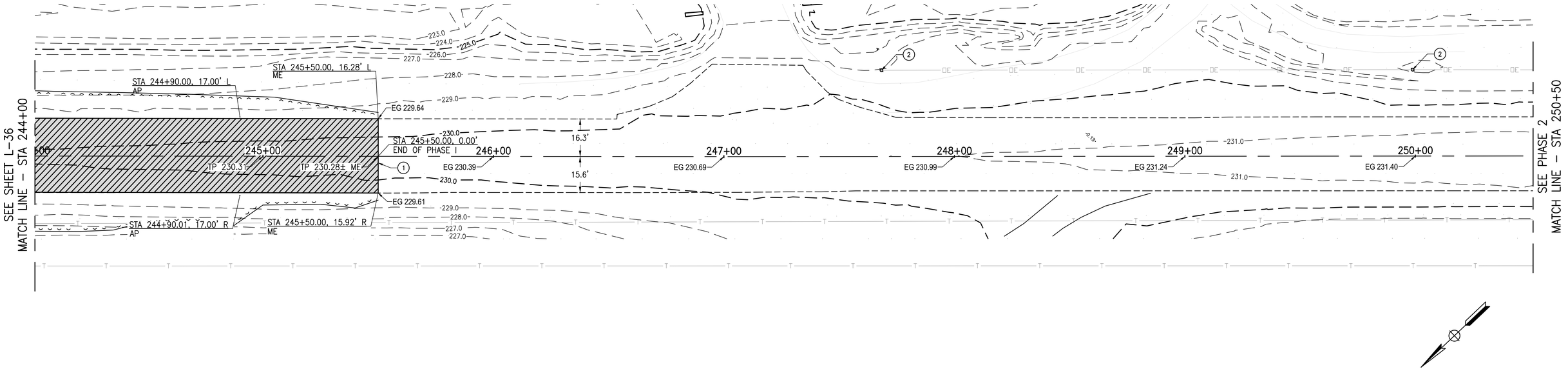
1. CONTRACTOR SHALL MAINTAIN ALL EXISTING IRRIGATION SYSTEMS DURING CONSTRUCTION, SHOULD EXISTING IRRIGATION SYSTEMS BE DAMAGED OR REQUIRED TO BE RELOCATED DURING CONSTRUCTION, THE CONTRACTOR SHALL MOVE & REPLACE DAMAGED IRRIGATION FACILITIES WITH EQUAL OR BETTER PARTS AND MATERIALS.
2. ALL SURVEY MONUMENTS WITHIN THE AREA OF CONSTRUCTION SHALL BE PRESERVED OR, IF DAMAGED, RESET BY A REGISTERED ENGINEER OR LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

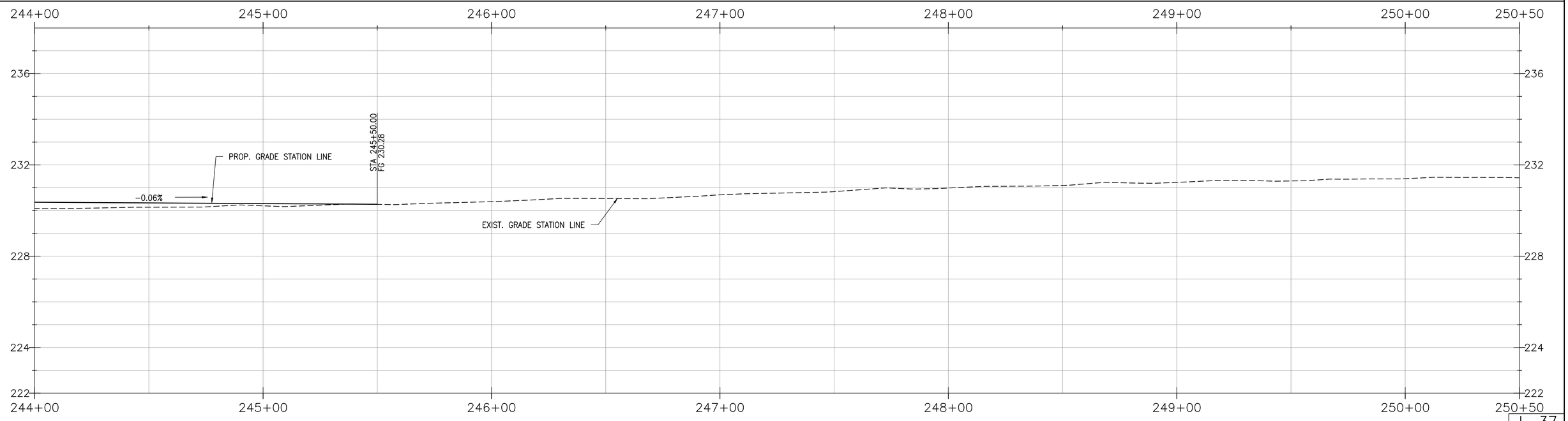
SHEET NO.	TOTAL SHEETS
46	69

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA





L-37

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
0 10 20 30 40

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DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1

AVENAL CUTOFF RD STA 244+00 TO 250+50

DWG: S:\2022\22-007\Acad\Planset\Avenal Cutoff Phase 1\22-007 L-36.dwg USER: Quinn Vasmeris DATE: Feb 21, 2024 3:58pm

LEGEND (APPLIES TO SHEETS CD-1 TO CD-3)

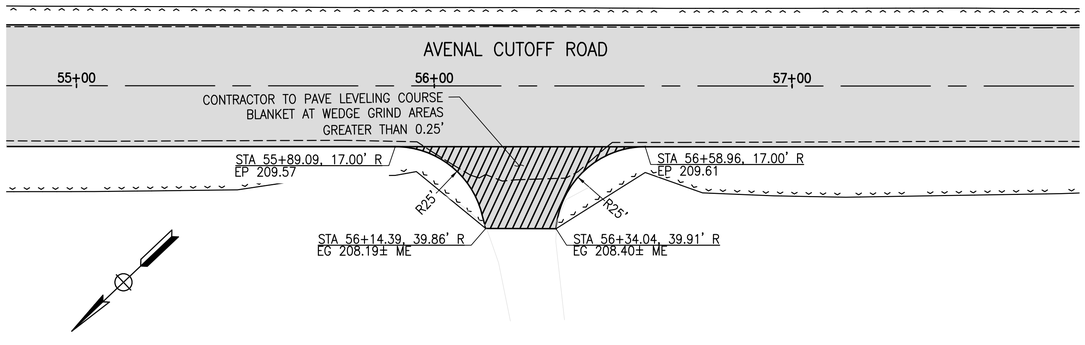
ME	MATCH EXIST. GRADE
EG	EXISTING GRADE
EP	EDGE OF PAVEMENT
	HOT MIX ASPHALT (FULL RECONSTRUCTION, SEE TYPICAL SECTIONS FOR PAVEMENT SECTION)
	HMA WEDGE GRIND (SEE TYPICAL SECTIONS)

SHEET NO.	TOTAL SHEETS
47	69

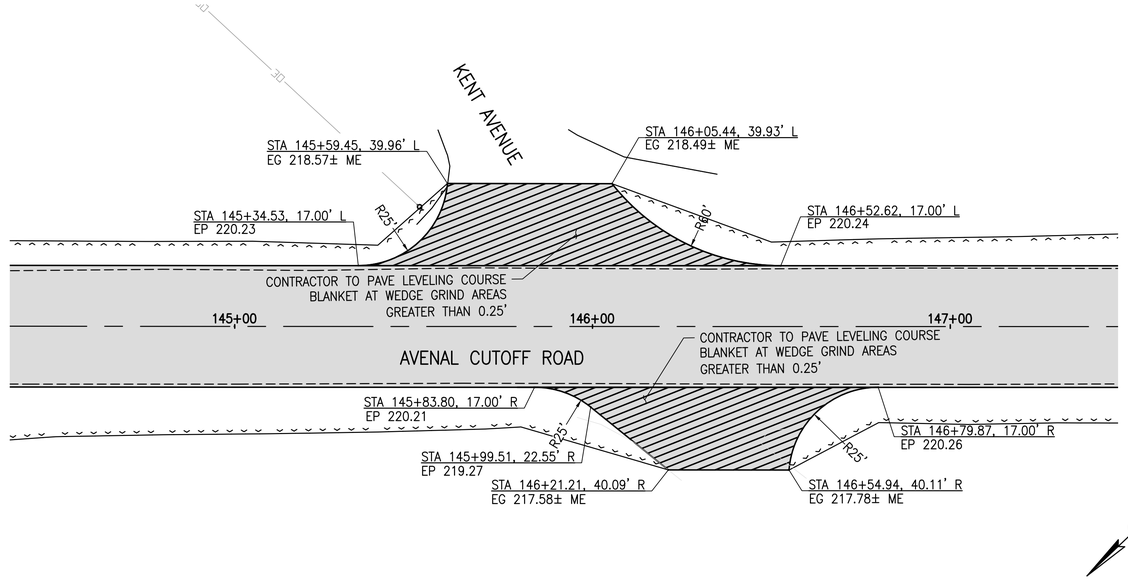
REGISTERED CIVIL ENGINEER

2/21/2024
DATE

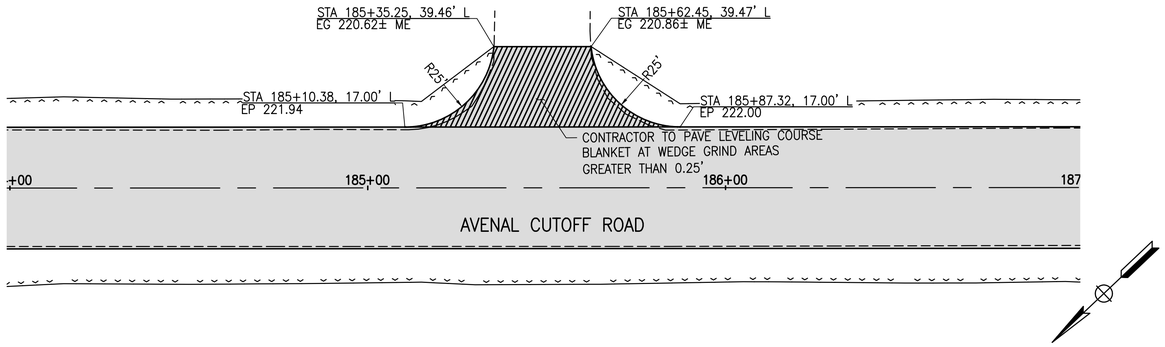
REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA



DRIVE APPROACH DETAIL
SCALE: 1" = 20'
1



KENT AVENUE DRIVE APPROACH DETAILS
SCALE: 1" = 20'
2



DRIVE APPROACH DETAIL
SCALE: 1" = 20'
3

CD-1

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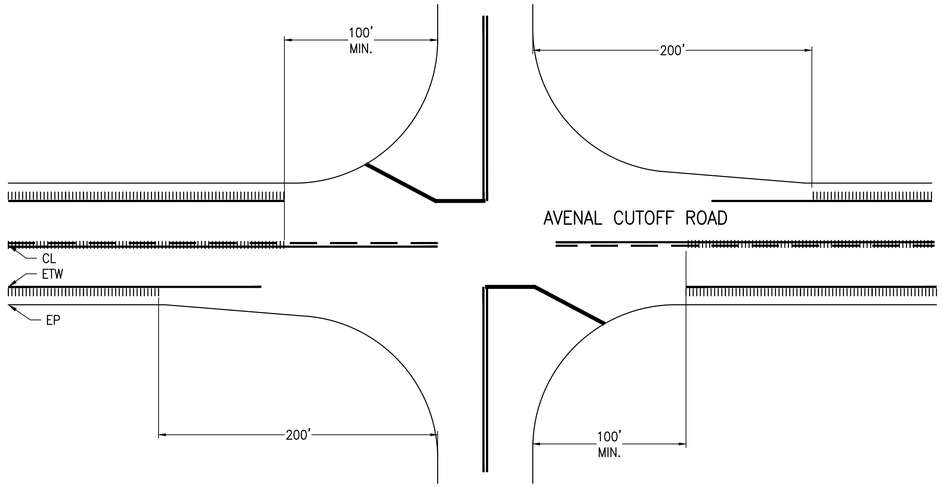
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

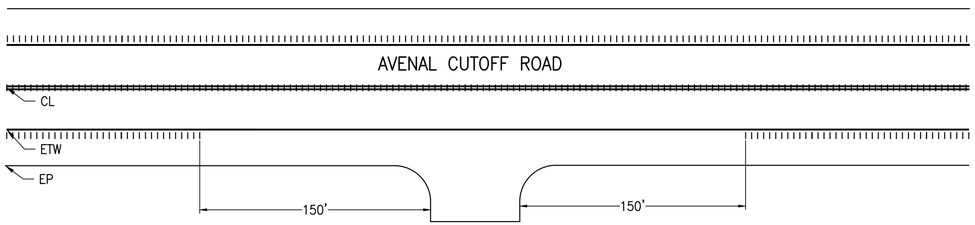
AVENAL CUTOFF ROAD PHASE 1
CONSTRUCTION DETAIL – 1

DWG: S:\2022\22-007\Acad\Planset\avenal cutoff phase 1\22-007 CD-1.dwg USER: Quinn Vosmero DATE: Feb 23, 2024 4:42pm



CENTERLINE AND SHOULDER RUMBLE STRIP AT INTERSECTION (4)

NOT TO SCALE



CENTERLINE AND SHOULDER RUMBLE STRIP AT DRIVEWAY (5)

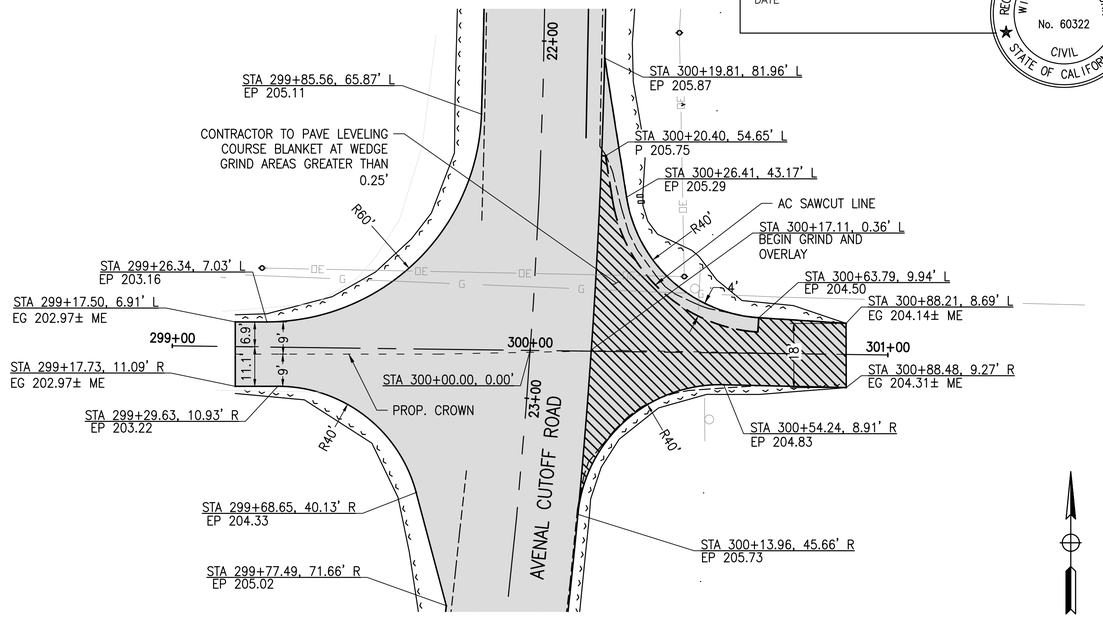
NOT TO SCALE

SHEET NO.	TOTAL SHEETS
48	69

REGISTERED CIVIL ENGINEER

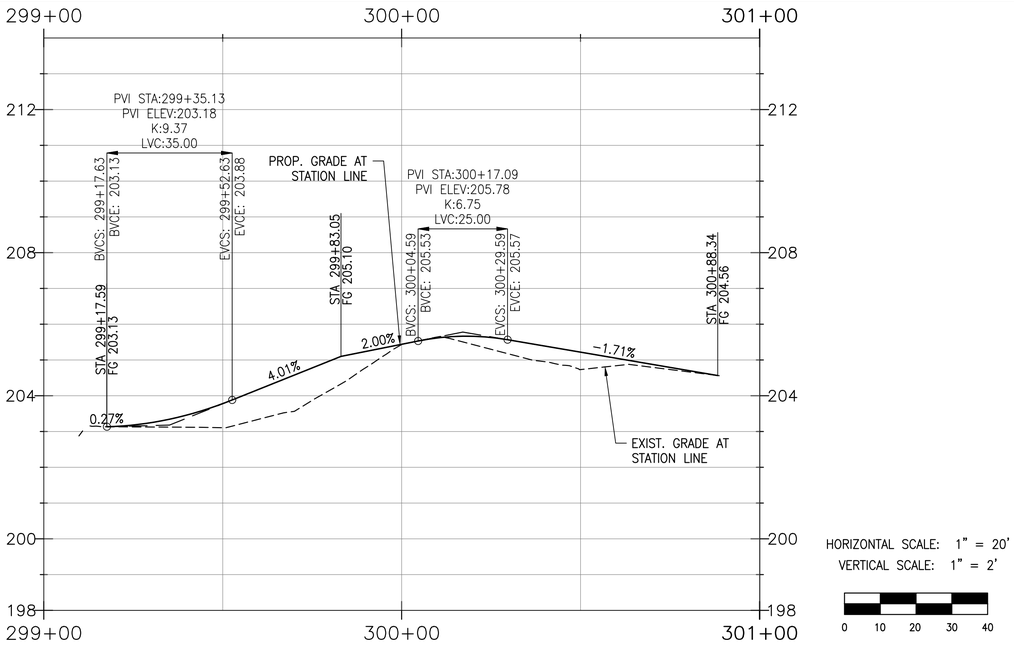
2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA



MURPHY RANCH WEST INTERSECTION DETAIL (6)

SCALE: 1" = 20'



CD-2

PETERS ENGINEERING GROUP
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Clovis, California 93612
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www.peters-engineering.com

COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

DESIGN	BY	DATE	
DRAWN	BY	DATE	
CHECKED	BY	DATE	

AVENAL CUTOFF ROAD PHASE 1

CONSTRUCTION DETAILS – 2

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

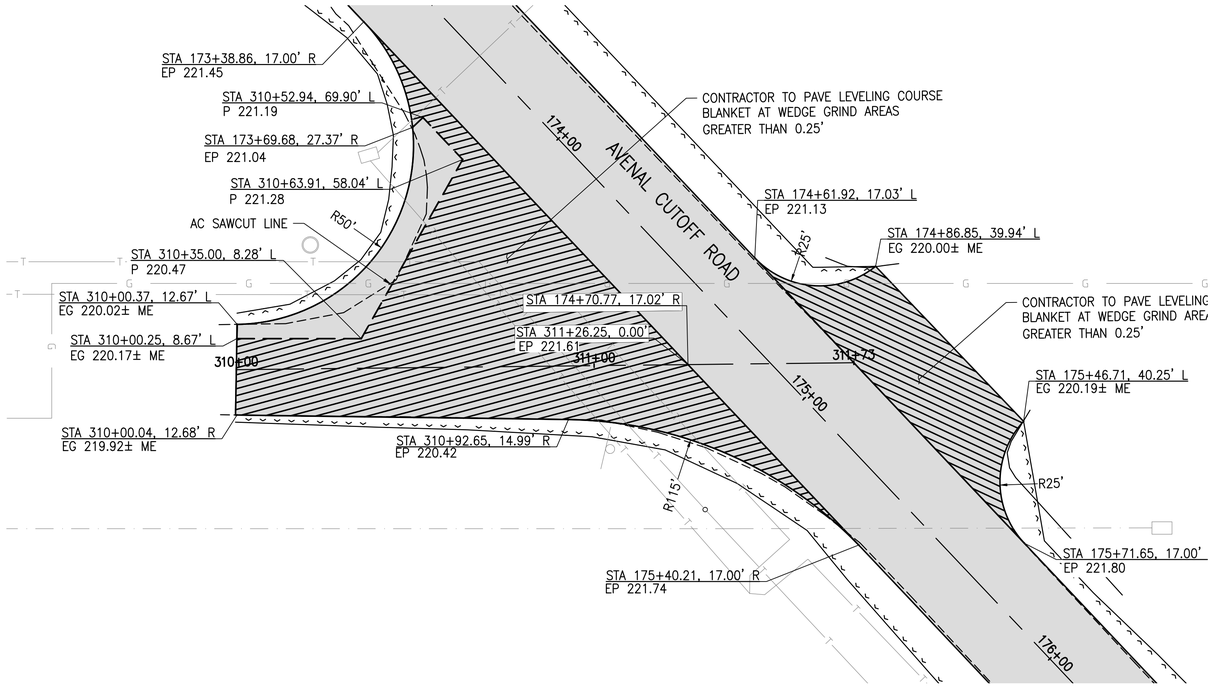
DWG: S:\2022\22-007\Acad\Phase1\Avenal Cutoff Phase 1\22-007 CD-1.dwg USER: Antonio Romo DATE: Feb 23, 2024 5:01pm

SHEET NO.	TOTAL SHEETS
49	69

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

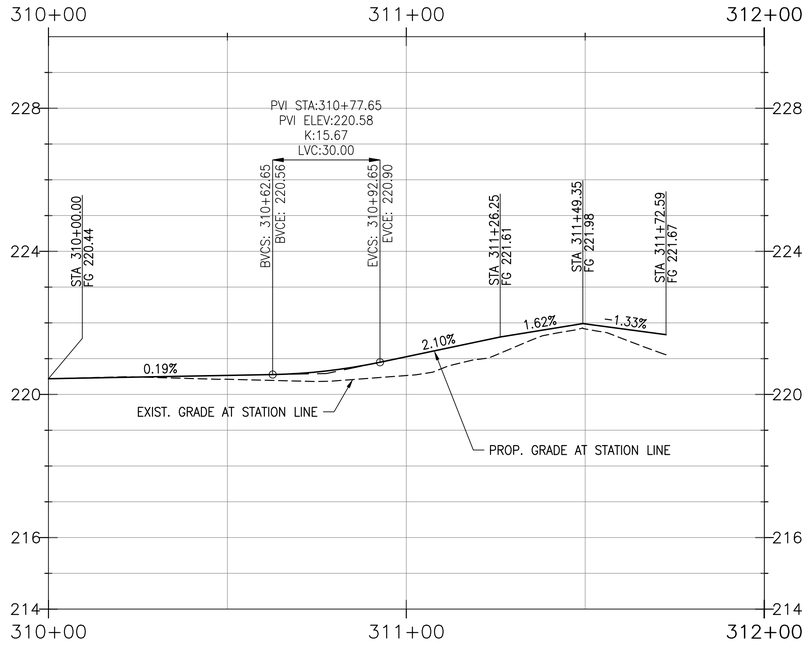
REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA



25TH AVENUE INTERSECTION DETAIL

SCALE: 1" = 20'

7



CD-3

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
0 10 20 30 40

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DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

DESIGN	BY	DATE
DRAWN	BY	DATE
CHECKED	BY	DATE

AVENAL CUTOFF ROAD PHASE 1

CONSTRUCTION DETAILS – 3

ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS
0 1 2 3

DWG: S:\2022\22-007\Acad\Phase1\Avenal Cutoff Phase 1\22-007 CD-1.dwg USER: Antonio Romo DATE: Feb 23, 2024 4:36pm

LEGEND & KEYNOTES (APPLIES TO SHEETS PD-1 TO PD-19)

- (#) PAVEMENT DELINEATION DETAIL TO BE INSTALLED PER STATE STD. PLANS
- (1) INSTALL 12" LIMIT LINE STRIPING (WHITE, UNLESS NOTED OTHERWISE ON PLANS)
- (2) PROTECT EXISTING SIGN AND POST IN PLACE
- AP ANGLE POINT
- INSTALL TYPE III (L) ARROW AS SHOWN ON PLAN PER STATE STD. PLAN A24B
- INSTALL SHOULDER RUMBLE STRIP PER CALTRANS STD. A40B & CENTERLINE RUMBLE STRIP PER CALTRANS STD. A40D. SEE DETAILS (4 CD-2) & (5 CD-2) FOR RUMBLE STRIP INSTALLATION AT INTERSECTIONS AND DRIVE APPROACHES.

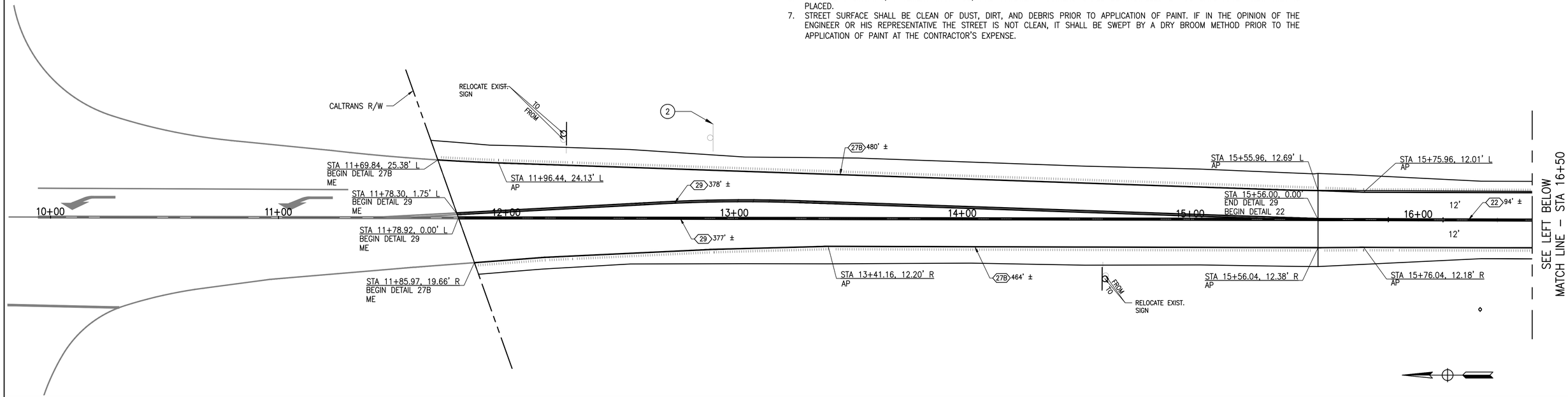
NOTES:
1. ALL EXIST. PAVEMENT DELINEATION IN CONFLICT WITH PROPOSED PAVEMENT DELINEATION SHALL BE REMOVED BY WET SANDBLASTING OR OTHER APPROVED METHODS WHICH WILL CAUSE THE LEAST POSSIBLE DAMAGE TO THE PAVEMENT.
2. ALL STRIPING AND SIGNING WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD PLANS AND SPECIFICATIONS, AND THE LATEST CALTRANS ADOPTED EDITION OF THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CA-MUTCD), UNLESS OTHERWISE DIRECTED BY THE COUNTY ENGINEER.
3. ALL PAVEMENT MARKINGS, CROSSWALKS, LIMIT LINES, AND TRAFFIC STRIPES SHALL BE PAINT (2 COATS) UNLESS OTHERWISE DIRECTED BY THE COUNTY.
4. THE CONTRACTOR IS RESPONSIBLE TO RECORD AND DOCUMENT AS NECESSARY EXISTING STRIPING, PAVEMENT MARKERS AND MARKINGS, BLUE DOT MARKERS FOR FIRE HYDRANTS IN ORDER TO REPLACE THE STRIPING, PAVEMENT MARKERS AND MARKINGS IN KIND.
5. THE PLANS ARE ACCURATE FOR STRIPING ONLY.
6. PERMANENT STRIPING, PAVEMENT MARKINGS, AND PAVEMENT MARKERS SHALL BE INSTALLED 21-30 DAYS AFTER NEW HMA IS PLACED.
7. STREET SURFACE SHALL BE CLEAN OF DUST, DIRT, AND DEBRIS PRIOR TO APPLICATION OF PAINT. IF IN THE OPINION OF THE ENGINEER OR HIS REPRESENTATIVE THE STREET IS NOT CLEAN, IT SHALL BE SWEPT BY A DRY BROOM METHOD PRIOR TO THE APPLICATION OF PAINT AT THE CONTRACTOR'S EXPENSE.

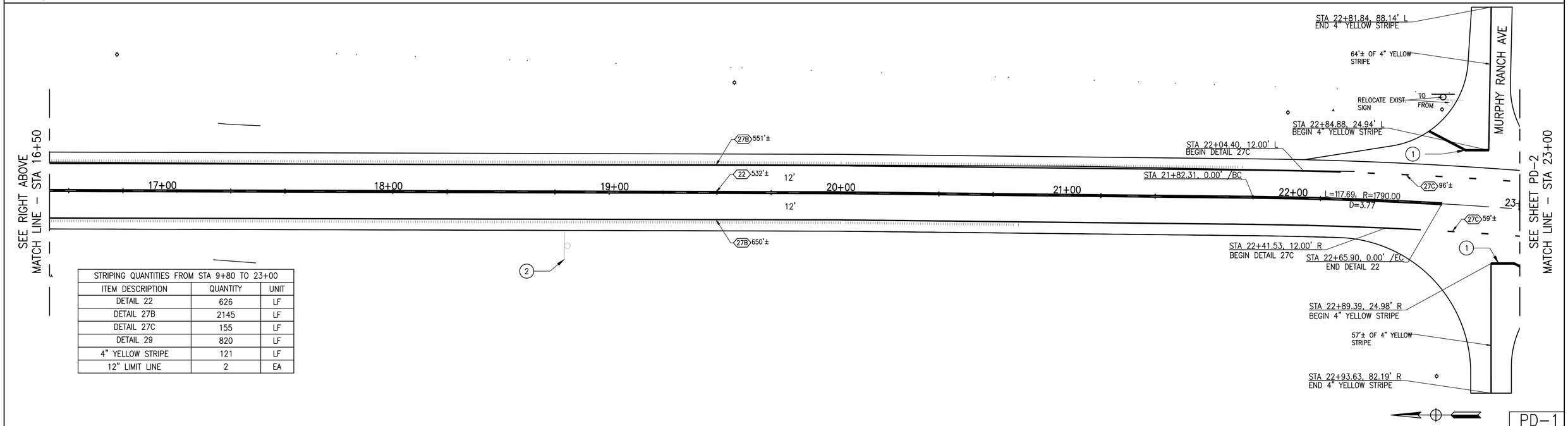
REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA

SHEET NO.	TOTAL SHEETS
50	69





STRIPING QUANTITIES FROM STA 9+80 TO 23+00		
ITEM DESCRIPTION	QUANTITY	UNIT
DETAIL 22	626	LF
DETAIL 27B	2145	LF
DETAIL 27C	155	LF
DETAIL 29	820	LF
4" YELLOW STRIPE	121	LF
12" LIMIT LINE	2	EA

HORIZONTAL SCALE: 1" = 20'
0 10 20 30 40

PETERS ENGINEERING GROUP
862 Pollasky Avenue
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www.peters-engineering.com

COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1
PAVEMENT DELINEATION - 1

PD-1

DWG: S:\2022\22-007\Acad\Plansets\Avenal Cutoff Phase 1\22-007 PD-1.dwg USER: Quinn Vasmeros DATE: Feb 21, 2024 4:08pm

LEGEND & KEYNOTES (APPLIES TO SHEETS PD-1 TO PD-19)

- (#) PAVEMENT DELINEATION DETAIL TO BE INSTALLED PER STATE STD. PLANS
- (1) INSTALL 12" LIMIT LINE STRIPING (WHITE, UNLESS NOTED OTHERWISE ON PLANS)
- (2) PROTECT EXISTING SIGN AND POST IN PLACE
- AP ANGLE POINT
- INSTALL TYPE III (L) ARROW AS SHOWN ON PLAN PER STATE STD. PLAN A24B
- INSTALL SHOULDER RUMBLE STRIP PER CALTRANS STD. A40B & CENTERLINE RUMBLE STRIP PER CALTRANS STD. A40D. SEE DETAILS (4 CD-2) & (5 CD-2) FOR RUMBLE STRIP INSTALLATION AT INTERSECTIONS AND DRIVE APPROACHES.

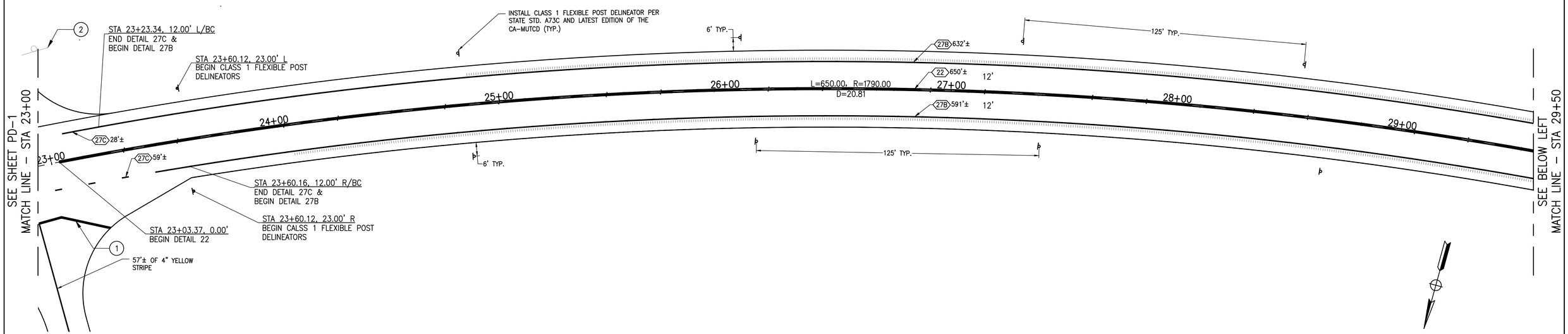
NOTES:
1. ALL EXIST. PAVEMENT DELINEATION IN CONFLICT WITH PROPOSED PAVEMENT DELINEATION SHALL BE REMOVED BY WET SANDBLASTING OR OTHER APPROVED METHODS WHICH WILL CAUSE THE LEAST POSSIBLE DAMAGE TO THE PAVEMENT.
2. ALL STRIPING AND SIGNING WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD PLANS AND SPECIFICATIONS, AND THE LATEST CALTRANS ADOPTED EDITION OF THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CA-MUTCD), UNLESS OTHERWISE DIRECTED BY THE COUNTY ENGINEER.
3. ALL PAVEMENT MARKINGS, CROSSWALKS, LIMIT LINES, AND TRAFFIC STRIPES SHALL BE PAINT (2 COATS) UNLESS OTHERWISE DIRECTED BY THE COUNTY.
4. THE CONTRACTOR IS RESPONSIBLE TO RECORD AND DOCUMENT AS NECESSARY EXISTING STRIPING, PAVEMENT MARKERS AND MARKINGS, BLUE DOT MARKERS FOR FIRE HYDRANTS IN ORDER TO REPLACE THE STRIPING, PAVEMENT MARKERS AND MARKINGS IN KIND.
5. THE PLANS ARE ACCURATE FOR STRIPING ONLY.
6. PERMANENT STRIPING, PAVEMENT MARKINGS, AND PAVEMENT MARKERS SHALL BE INSTALLED 21-30 DAYS AFTER NEW HMA IS PLACED.
7. STREET SURFACE SHALL BE CLEAN OF DUST, DIRT, AND DEBRIS PRIOR TO APPLICATION OF PAINT. IF IN THE OPINION OF THE ENGINEER OR HIS REPRESENTATIVE THE STREET IS NOT CLEAN, IT SHALL BE SWEPT BY A DRY BROOM METHOD PRIOR TO THE APPLICATION OF PAINT AT THE CONTRACTOR'S EXPENSE.

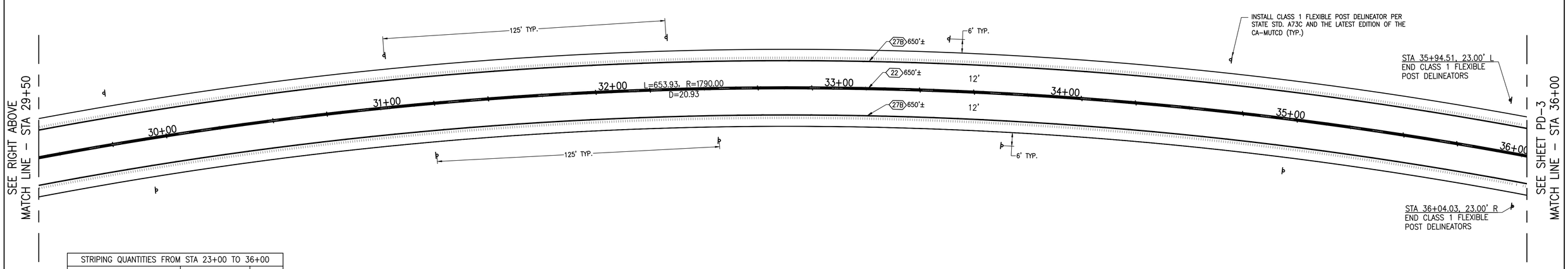
SHEET NO.	TOTAL SHEETS
51	69

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA





STRIPING QUANTITIES FROM STA 23+00 TO 36+00		
ITEM DESCRIPTION	QUANTITY	UNIT
DETAIL 22	1300	LF
DETAIL 27B	2523	LF
DETAIL 27C	87	LF

PD-2

SCALE: 1" = 20'

0 10 20 30 40

PETERS ENGINEERING GROUP
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Clovis, California 93612
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COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1
PAVEMENT DELINEATION - 2

LEGEND & KEYNOTES (APPLIES TO SHEETS PD–1 TO PD–19)

- (#) PAVEMENT DELINEATION DETAIL TO BE INSTALLED PER STATE STD. PLANS
- (1) INSTALL 12" LIMIT LINE STRIPING (WHITE, UNLESS NOTED OTHERWISE ON PLANS)
- (2) PROTECT EXISTING SIGN AND POST IN PLACE
- AP ANGLE POINT
- INSTALL TYPE III (L) ARROW AS SHOWN ON PLAN PER STATE STD. PLAN A24B
- INSTALL SHOULDER RUMBLE STRIP PER CALTRANS STD. A40B & CENTERLINE RUMBLE STRIP PER CALTRANS STD. A40D. SEE DETAILS (4 / CD–2) & (5 / CD–2) FOR RUMBLE STRIP INSTALLATION AT INTERSECTIONS AND DRIVE APPROACHES.

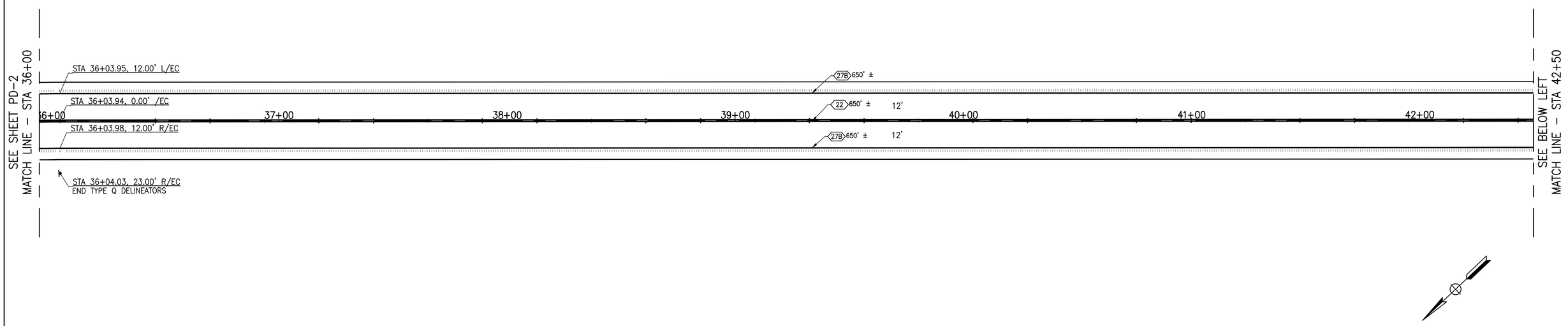
NOTES:
1. ALL EXIST. PAVEMENT DELINEATION IN CONFLICT WITH PROPOSED PAVEMENT DELINEATION SHALL BE REMOVED BY WET SANDBLASTING OR OTHER APPROVED METHODS WHICH WILL CAUSE THE LEAST POSSIBLE DAMAGE TO THE PAVEMENT.
2. ALL STRIPING AND SIGNING WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD PLANS AND SPECIFICATIONS, AND THE LATEST CALTRANS ADOPTED EDITION OF THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CA–MUTCD), UNLESS OTHERWISE DIRECTED BY THE COUNTY ENGINEER.
3. ALL PAVEMENT MARKINGS, CROSSWALKS, LIMIT LINES, AND TRAFFIC STRIPES SHALL BE PAINT (2 COATS) UNLESS OTHERWISE DIRECTED BY THE COUNTY.
4. THE CONTRACTOR IS RESPONSIBLE TO RECORD AND DOCUMENT AS NECESSARY EXISTING STRIPING, PAVEMENT MARKERS AND MARKINGS, BLUE DOT MARKERS FOR FIRE HYDRANTS IN ORDER TO REPLACE THE STRIPING, PAVEMENT MARKERS AND MARKINGS IN KIND.
5. THE PLANS ARE ACCURATE FOR STRIPING ONLY.
6. PERMANENT STRIPING, PAVEMENT MARKINGS, AND PAVEMENT MARKERS SHALL BE INSTALLED 21–30 DAYS AFTER NEW HMA IS PLACED.
7. STREET SURFACE SHALL BE CLEAN OF DUST, DIRT, AND DEBRIS PRIOR TO APPLICATION OF PAINT. IF IN THE OPINION OF THE ENGINEER OR HIS REPRESENTATIVE THE STREET IS NOT CLEAN, IT SHALL BE SWEPT BY A DRY BROOM METHOD PRIOR TO THE APPLICATION OF PAINT AT THE CONTRACTOR'S EXPENSE.

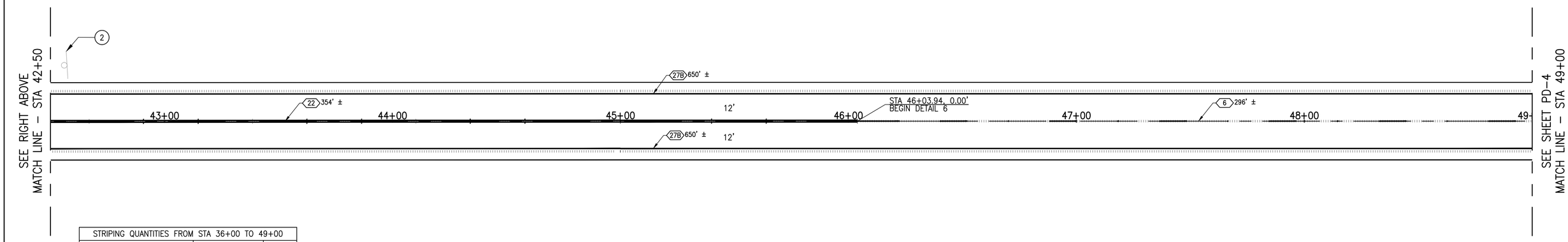
REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA

SHEET NO. 52 | TOTAL SHEETS 69





STRIPING QUANTITIES FROM STA 36+00 TO 49+00		
ITEM DESCRIPTION	QUANTITY	UNIT
DETAIL 6	296	LF
DETAIL 22	1004	LF
DETAIL 27B	2600	LF

PD–3

HORIZONTAL SCALE: 1" = 20'
0 10 20 30 40

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DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

AVENAL CUTOFF ROAD PHASE 1
PAVEMENT DELINEATION – 3

DWG: S:\2022\22-007\Acad\Planset\Avenal Cutoff Phase 1\22-007 PD-1.dwg USER: Quinn Vasmero DATE: Feb 21, 2024 4:11pm

LEGEND & KEYNOTES (APPLIES TO SHEETS PD–1 TO PD–19)

- ⟨#⟩ PAVEMENT DELINEATION DETAIL TO BE INSTALLED PER STATE STD. PLANS
- (1) INSTALL 12" LIMIT LINE STRIPING (WHITE, UNLESS NOTED OTHERWISE ON PLANS)
- (2) PROTECT EXISTING SIGN AND POST IN PLACE
- AP ANGLE POINT
- INSTALL TYPE III (L) ARROW AS SHOWN ON PLAN PER STATE STD. PLAN A24B
- INSTALL SHOULDER RUMBLE STRIP PER CALTRANS STD. A40B & CENTERLINE RUMBLE STRIP PER CALTRANS STD. A40D. SEE DETAILS (4 / CD–2) & (5 / CD–2) FOR RUMBLE STRIP INSTALLATION AT INTERSECTIONS AND DRIVE APPROACHES.

NOTES:

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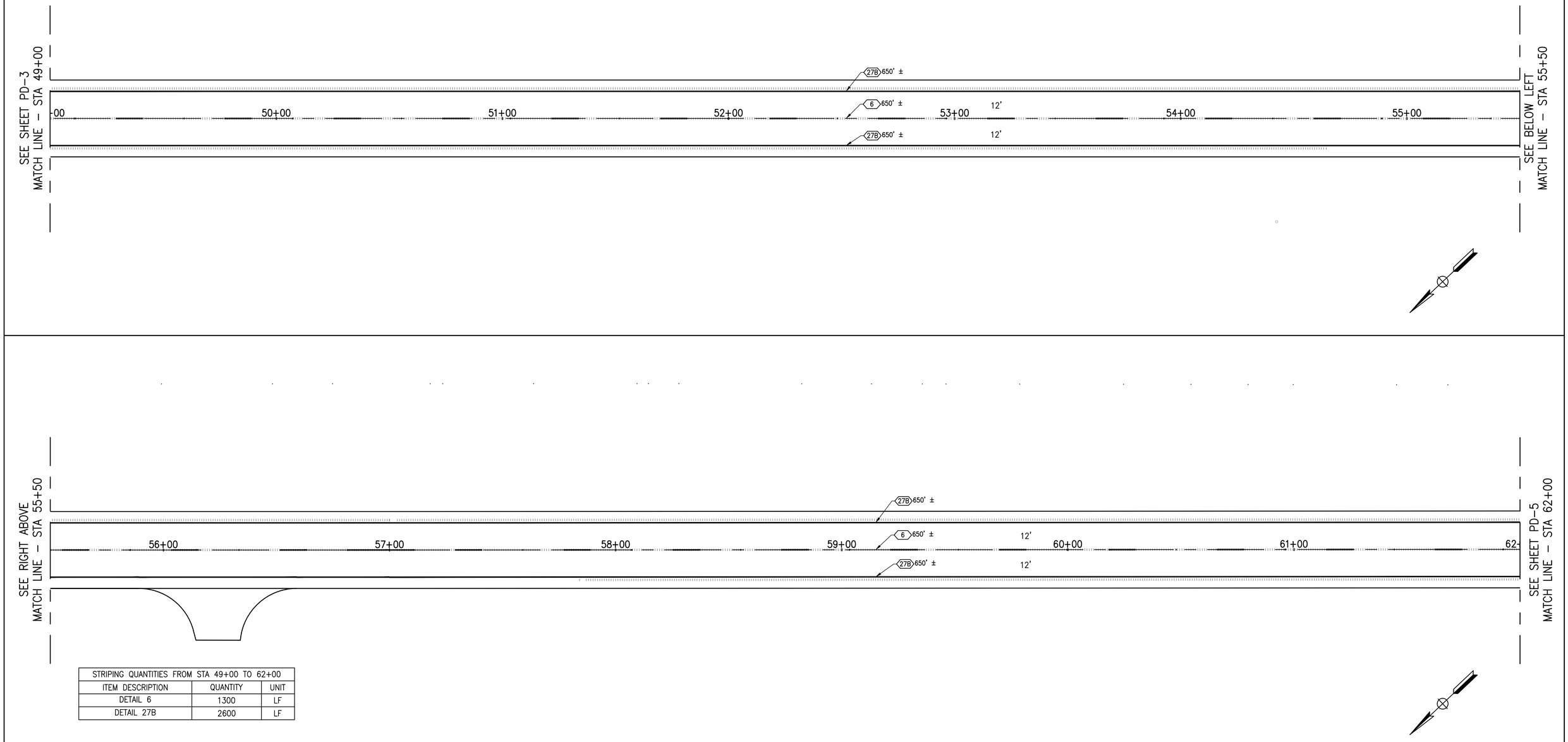
REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA

SHEET NO.	TOTAL SHEETS
53	69



STRIPING QUANTITIES FROM STA 49+00 TO 62+00		
ITEM DESCRIPTION	QUANTITY	UNIT
DETAIL 6	1300	LF
DETAIL 27B	2600	LF

PD–4

HORIZONTAL SCALE: 1" = 20'
0 10 20 30 40

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WWW.PETERS-ENGINEERING.COM

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DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

AVENAL CUTOFF ROAD PHASE 1
PAVEMENT DELINEATION – 4

DWG: S:\2022\22-007\Acad\Plansets\Avenal Cutoff Phase 1\22-007 PD-1.dwg USER: Quinn Vasmero DATE: Feb 21, 2024 4:13pm

LEGEND & KEYNOTES (APPLIES TO SHEETS PD–1 TO PD–19)

- ⟨#⟩ PAVEMENT DELINEATION DETAIL TO BE INSTALLED PER STATE STD. PLANS
- (1) INSTALL 12" LIMIT LINE STRIPING (WHITE, UNLESS NOTED OTHERWISE ON PLANS)
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- AP ANGLE POINT
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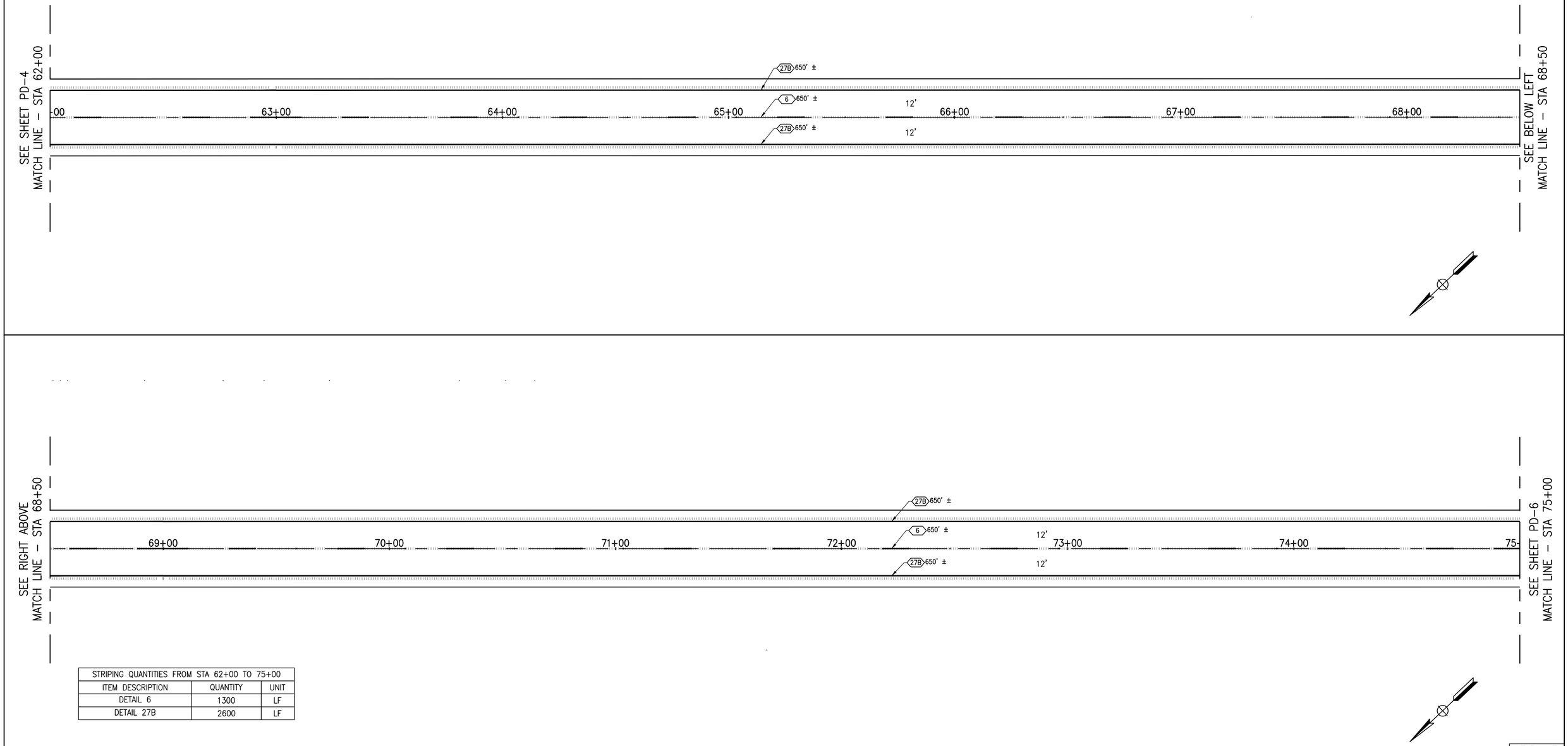
REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA

SHEET NO.	TOTAL SHEETS
54	69



STRIPING QUANTITIES FROM STA 62+00 TO 75+00		
ITEM DESCRIPTION	QUANTITY	UNIT
DETAIL 6	1300	LF
DETAIL 27B	2600	LF

PD–5

HORIZONTAL SCALE: 1" = 20'
0 10 20 30 40

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ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1
PAVEMENT DELINEATION – 5

DWG: S:\2022\22-0071\Mod\Planset\Avenal Cutoff Phase 1\22-007 PD-1.dwg USER: Quinn Vosmero DATE: Feb 21, 2024 4:15pm

LEGEND & KEYNOTES (APPLIES TO SHEETS PD–1 TO PD–19)

- ⟨#⟩ PAVEMENT DELINEATION DETAIL TO BE INSTALLED PER STATE STD. PLANS
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- AP ANGLE POINT
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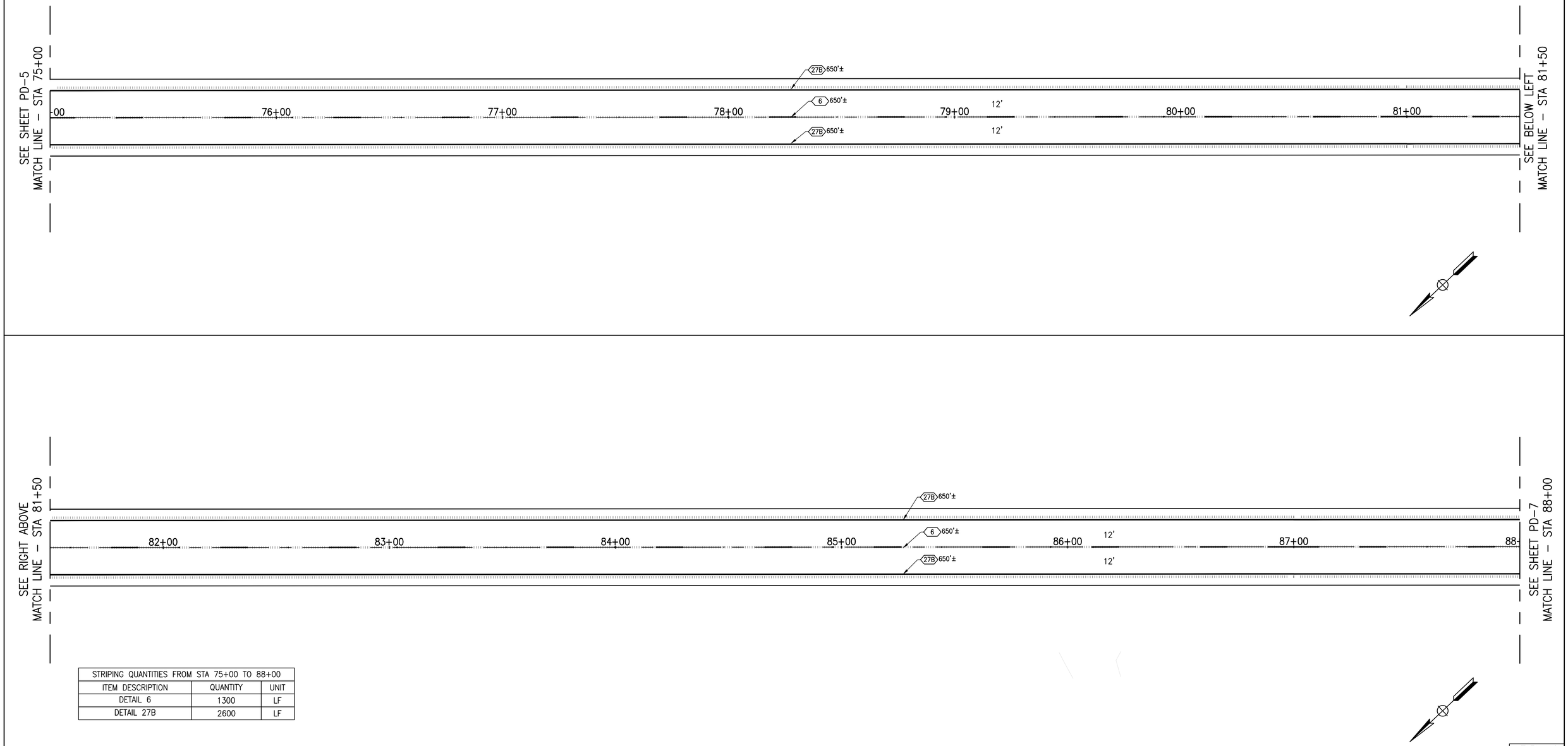
REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA

SHEET NO.	TOTAL SHEETS
55	69



STRIPING QUANTITIES FROM STA 75+00 TO 88+00		
ITEM DESCRIPTION	QUANTITY	UNIT
DETAIL 6	1300	LF
DETAIL 27B	2600	LF

HORIZONTAL SCALE: 1" = 20'
0 10 20 30 40

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DEPARTMENT OF PUBLIC WORKS
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HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

PD–6

AVENAL CUTOFF ROAD PHASE 1
PAVEMENT DELINEATION – 6

DWG: S:\2022\22-007\Mxd\Planset\Avenal Cutoff Phase 1\22-007 PD–6.dwg USER: Quinn Vosmero DATE: Feb 21, 2024 4:19pm

LEGEND & KEYNOTES (APPLIES TO SHEETS PD–1 TO PD–19)

- ⟨#⟩ PAVEMENT DELINEATION DETAIL TO BE INSTALLED PER STATE STD. PLANS
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- AP ANGLE POINT
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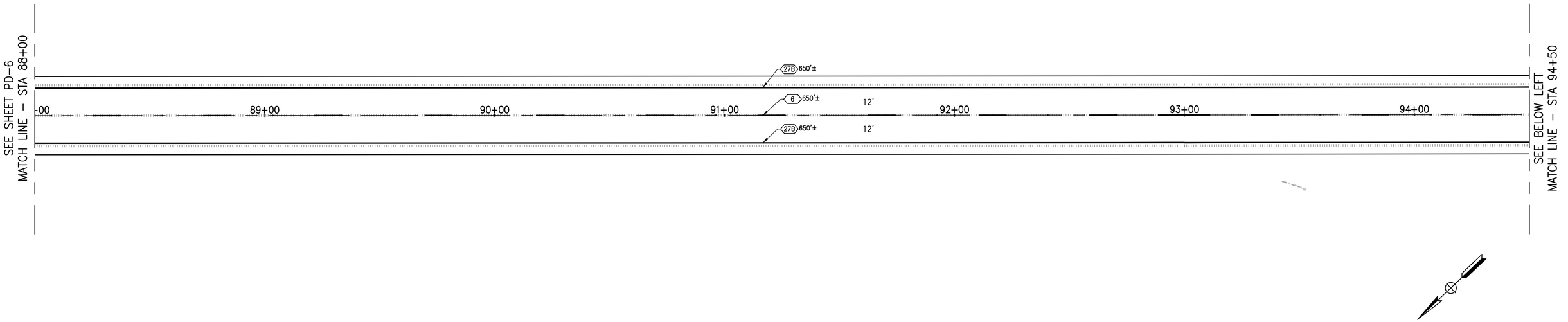
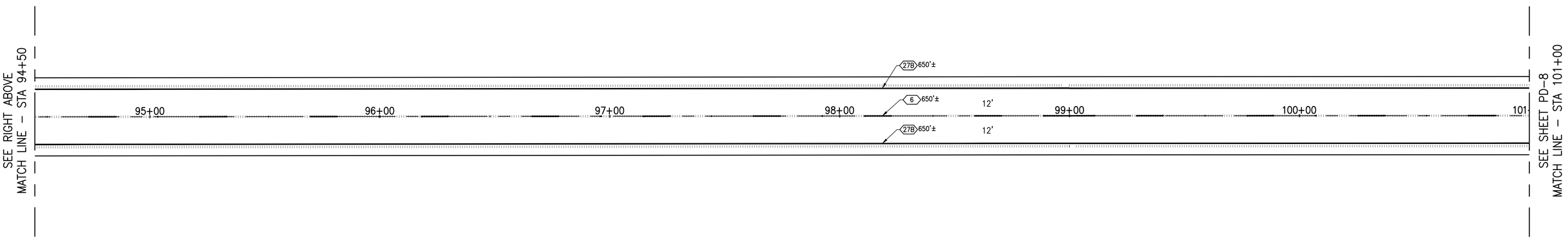
SHEET NO.	TOTAL SHEETS
56	69

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA





STRIPING QUANTITIES FROM STA 88+00 TO 101+00		
ITEM DESCRIPTION	QUANTITY	UNIT
DETAIL 6	1300	LF
DETAIL 27B	2600	LF

PD–7

HORIZONTAL SCALE: 1" = 20'
0 10 20 30 40

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HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1
PAVEMENT DELINEATION – 7

LEGEND & KEYNOTES (APPLIES TO SHEETS PD–1 TO PD–19)

- (#) PAVEMENT DELINEATION DETAIL TO BE INSTALLED PER STATE STD. PLANS
- (1) INSTALL 12" LIMIT LINE STRIPING (WHITE, UNLESS NOTED OTHERWISE ON PLANS)
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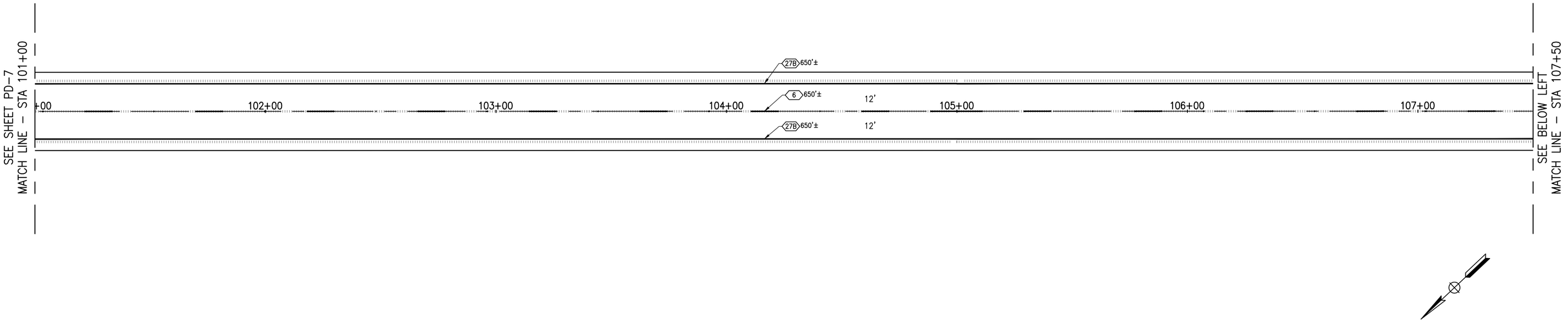
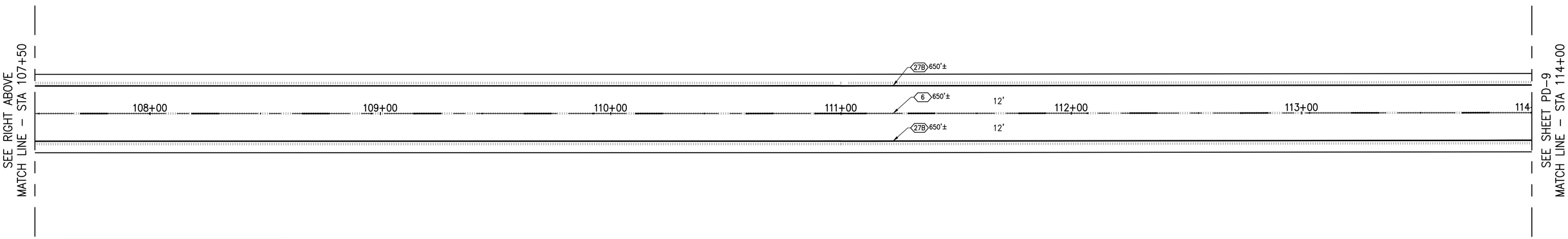
REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA

SHEET NO.	TOTAL SHEETS
57	69





STRIPING QUANTITIES FROM STA 101+00 TO 114+00		
ITEM DESCRIPTION	QUANTITY	UNIT
DETAIL 6	1300	LF
DETAIL 27B	2600	LF

PD–8

HORIZONTAL SCALE: 1" = 20'
0 10 20 30 40

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HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1
PAVEMENT DELINEATION – 8

LEGEND & KEYNOTES (APPLIES TO SHEETS PD–1 TO PD–19)

- ⟨#⟩ PAVEMENT DELINEATION DETAIL TO BE INSTALLED PER STATE STD. PLANS
- (1) INSTALL 12" LIMIT LINE STRIPING (WHITE, UNLESS NOTED OTHERWISE ON PLANS)
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3. ALL PAVEMENT MARKINGS, CROSSWALKS, LIMIT LINES, AND TRAFFIC STRIPES SHALL BE PAINT (2 COATS) UNLESS OTHERWISE DIRECTED BY THE COUNTY.
4. THE CONTRACTOR IS RESPONSIBLE TO RECORD AND DOCUMENT AS NECESSARY EXISTING STRIPING, PAVEMENT MARKERS AND MARKINGS, BLUE DOT MARKERS FOR FIRE HYDRANTS IN ORDER TO REPLACE THE STRIPING, PAVEMENT MARKERS AND MARKINGS IN KIND.
5. THE PLANS ARE ACCURATE FOR STRIPING ONLY.
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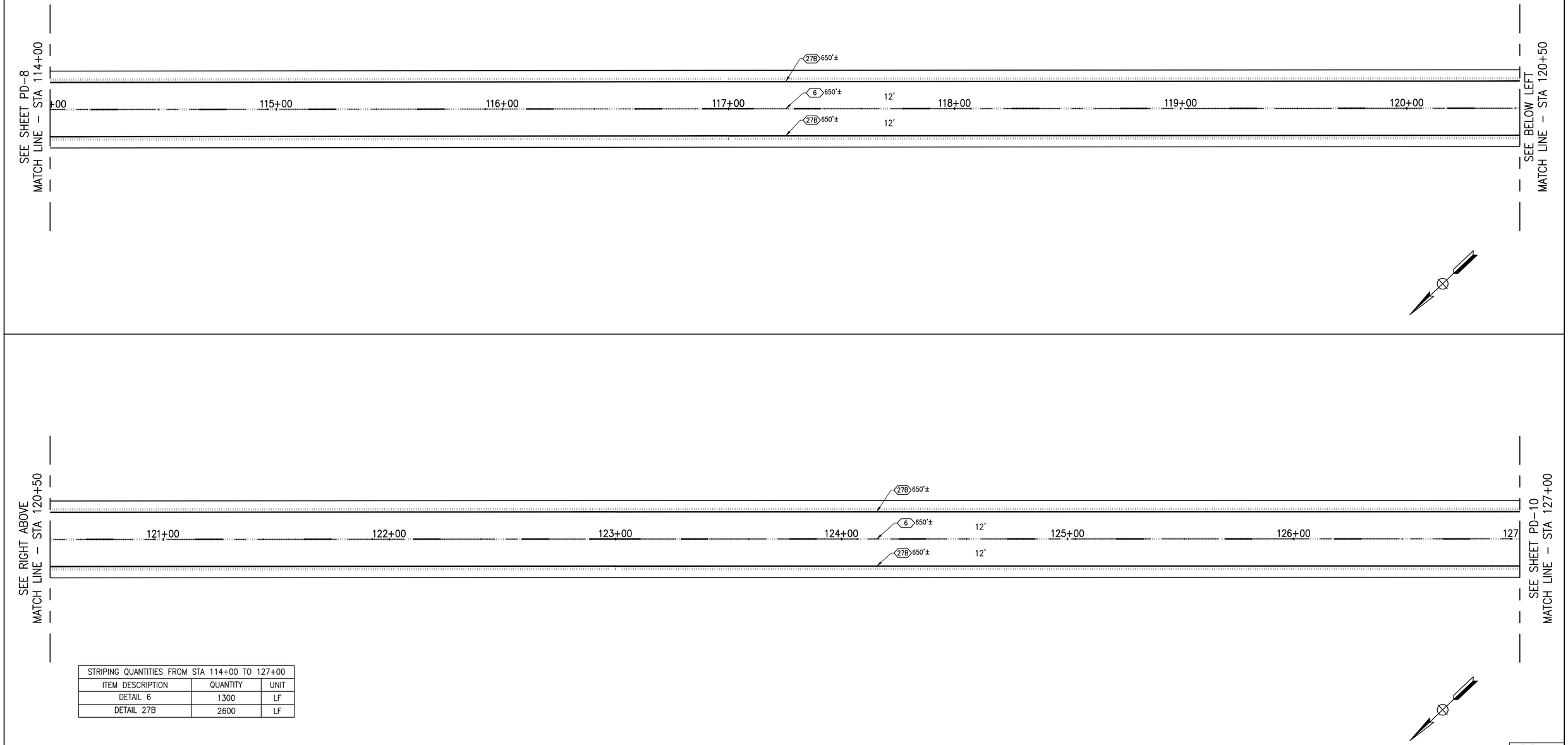
7. STREET SURFACE SHALL BE CLEAN OF DUST, DIRT, AND DEBRIS PRIOR TO APPLICATION OF PAINT. IF IN THE OPINION OF THE ENGINEER OR HIS REPRESENTATIVE THE STREET IS NOT CLEAN, IT SHALL BE SWEPT BY A DRY BROOM METHOD PRIOR TO THE APPLICATION OF PAINT AT THE CONTRACTOR'S EXPENSE.

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA

SHEET NO.	TOTAL SHEETS
58	69



STRIPING QUANTITIES FROM STA 114+00 TO 127+00		
ITEM DESCRIPTION	QUANTITY	UNIT
DETAIL 6	1300	LF
DETAIL 27B	2600	LF

PD–9

HORIZONTAL SCALE: 1" = 20'
0 10 20 30 40

PETERS ENGINEERING GROUP
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Phone (559) 299-1544
www.peters-engineering.com

COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1
PAVEMENT DELINEATION – 9

DWG: S:\2022\22-0071\Mod\Planset\Avenal Cutoff Phase 1\22-007 PD–5.dwg USER: Quinn Vosmero DATE: Feb 21, 2024 4:25pm

LEGEND & KEYNOTES (APPLIES TO SHEETS PD–1 TO PD–19)

- (#) PAVEMENT DELINEATION DETAIL TO BE INSTALLED PER STATE STD. PLANS
- (1) INSTALL 12" LIMIT LINE STRIPING (WHITE, UNLESS NOTED OTHERWISE ON PLANS)
- (2) PROTECT EXISTING SIGN AND POST IN PLACE
- AP ANGLE POINT
- INSTALL TYPE III (L) ARROW AS SHOWN ON PLAN PER STATE STD. PLAN A24B
- INSTALL SHOULDER RUMBLE STRIP PER CALTRANS STD. A40B & CENTERLINE RUMBLE STRIP PER CALTRANS STD. A40D. SEE DETAILS (4 CD–2) & (5 CD–2) FOR RUMBLE STRIP INSTALLATION AT INTERSECTIONS AND DRIVE APPROACHES.

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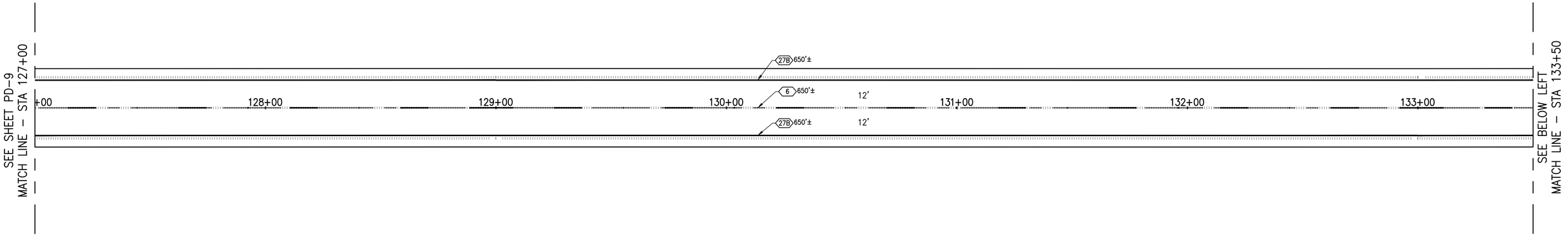
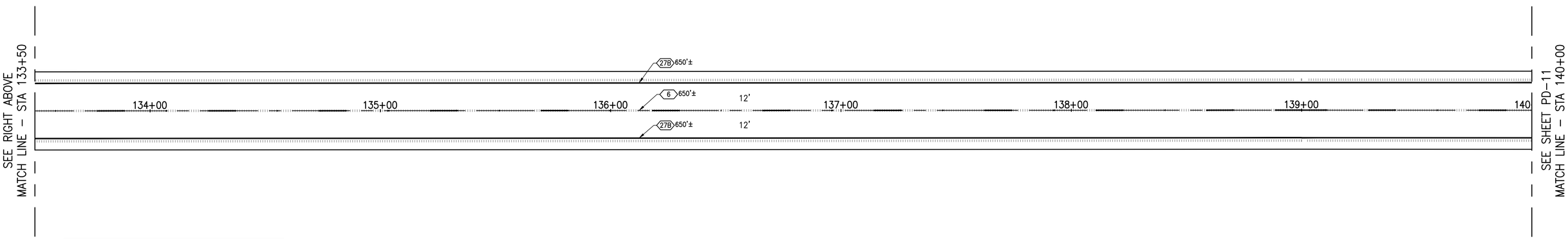
REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA

SHEET NO.	TOTAL SHEETS
59	69





STRIPING QUANTITIES FROM STA 127+00 TO 140+00		
ITEM DESCRIPTION	QUANTITY	UNIT
DETAIL 6	1300	LF
DETAIL 27B	2600	LF

PD–10

HORIZONTAL SCALE: 1" = 20'
0 10 20 30 40

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HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1
PAVEMENT DELINEATION – 10

LEGEND & KEYNOTES (APPLIES TO SHEETS PD–1 TO PD–19)

- ⟨#⟩ PAVEMENT DELINEATION DETAIL TO BE INSTALLED PER STATE STD. PLANS
- (1) INSTALL 12" LIMIT LINE STRIPING (WHITE, UNLESS NOTED OTHERWISE ON PLANS)
- (2) PROTECT EXISTING SIGN AND POST IN PLACE
- AP ANGLE POINT
- INSTALL TYPE III (L) ARROW AS SHOWN ON PLAN PER STATE STD. PLAN A24B
- INSTALL SHOULDER RUMBLE STRIP PER CALTRANS STD. A40B & CENTERLINE RUMBLE STRIP PER CALTRANS STD. A40D. SEE DETAILS (4 / CD–2) & (5 / CD–2) FOR RUMBLE STRIP INSTALLATION AT INTERSECTIONS AND DRIVE APPROACHES.

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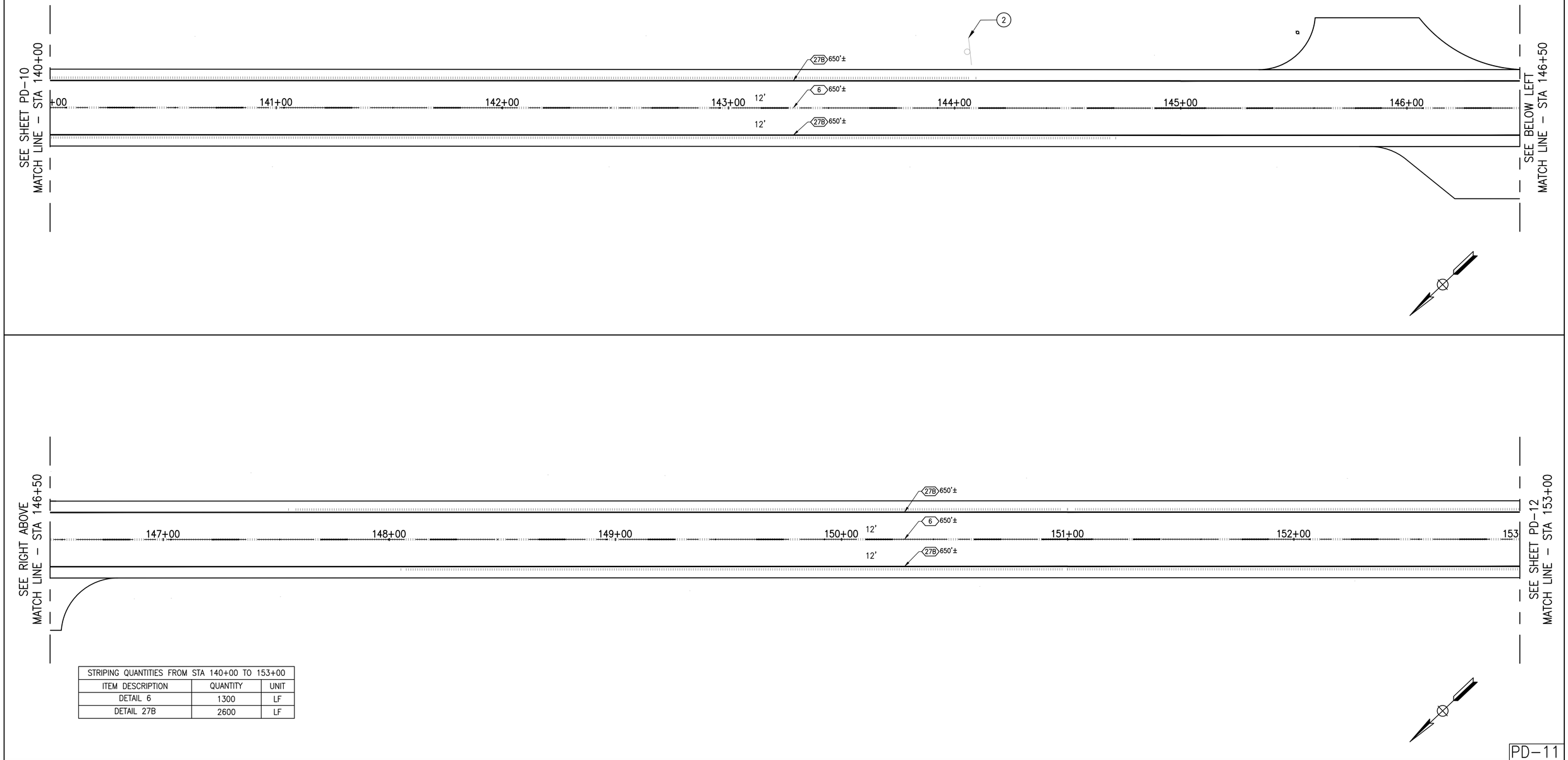
REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA

SHEET NO.	TOTAL SHEETS
60	69



STRIPING QUANTITIES FROM STA 140+00 TO 153+00		
ITEM DESCRIPTION	QUANTITY	UNIT
DETAIL 6	1300	LF
DETAIL 27B	2600	LF

PD–11

HORIZONTAL SCALE: 1" = 20'
0 10 20 30 40

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HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1
PAVEMENT DELINEATION – 11

DWG: S:\2022\22-007\Mcd\Planset\Avenal Cutoff Phase 1\22-007 PD-11.dwg USER: Quinn Voorhees DATE: Feb 21, 2024 4:31pm

LEGEND & KEYNOTES (APPLIES TO SHEETS PD–1 TO PD–19)

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- (1) INSTALL 12" LIMIT LINE STRIPING (WHITE, UNLESS NOTED OTHERWISE ON PLANS)
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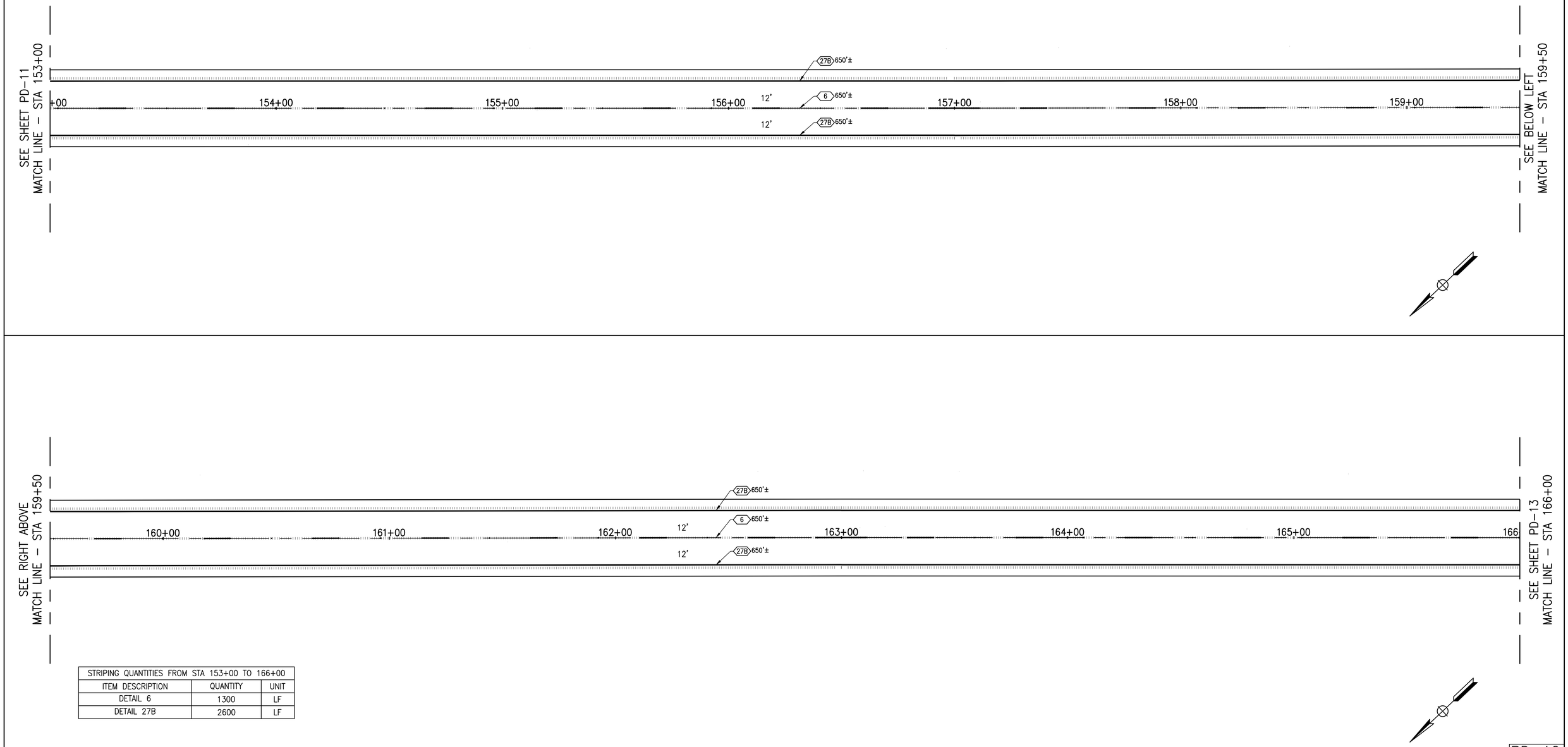
REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA

SHEET NO.	TOTAL SHEETS
61	69



STRIPING QUANTITIES FROM STA 153+00 TO 166+00		
ITEM DESCRIPTION	QUANTITY	UNIT
DETAIL 6	1300	LF
DETAIL 27B	2600	LF

PD–12

HORIZONTAL SCALE: 1" = 20'
0 10 20 30 40

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HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1
PAVEMENT DELINEATION – 12

DWG: S:\2022\22-007\Mxd\Planset\Avenal Cutoff Phase 1\22-007 PD-11.dwg USER: Antonio Romo DATE: Feb 21, 2024 4:24pm

LEGEND & KEYNOTES (APPLIES TO SHEETS PD–1 TO PD–19)

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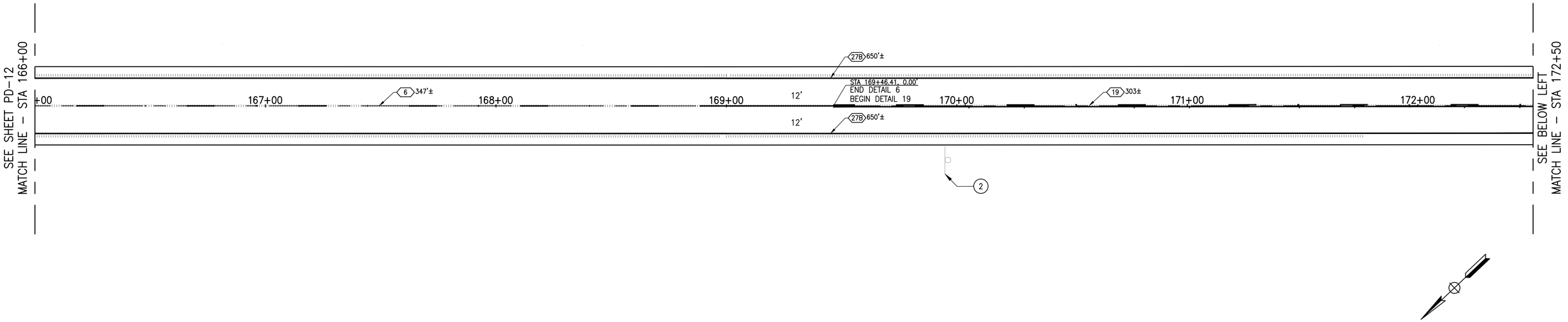
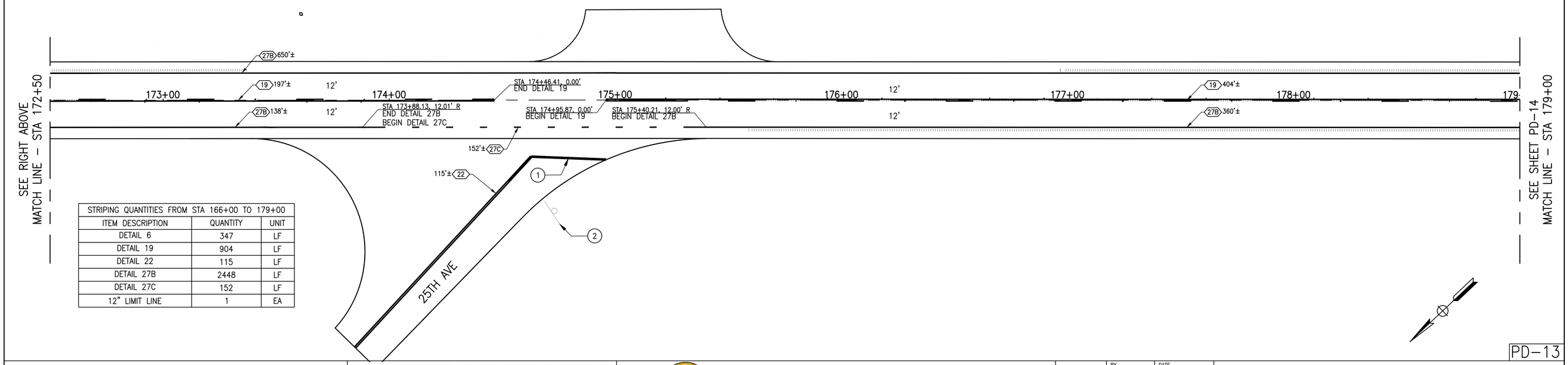
REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA

SHEET NO.	TOTAL SHEETS
62	69





STRIPING QUANTITIES FROM STA 166+00 TO 179+00		
ITEM DESCRIPTION	QUANTITY	UNIT
DETAIL 6	347	LF
DETAIL 19	904	LF
DETAIL 22	115	LF
DETAIL 27B	2448	LF
DETAIL 27C	152	LF
12" LIMIT LINE	1	EA

PD–13

HORIZONTAL SCALE: 1" = 20'
0 10 20 30 40

PETERS ENGINEERING GROUP
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COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1
PAVEMENT DELINEATION – 13

DWG: S:\2022\22-0071\Mxd\Planset\Avenal Cutoff Phase 1\22-007 PD-11.dwg USER: Antonio Romo DATE: Feb 21, 2024 4:26pm

LEGEND & KEYNOTES (APPLIES TO SHEETS PD–1 TO PD–19)

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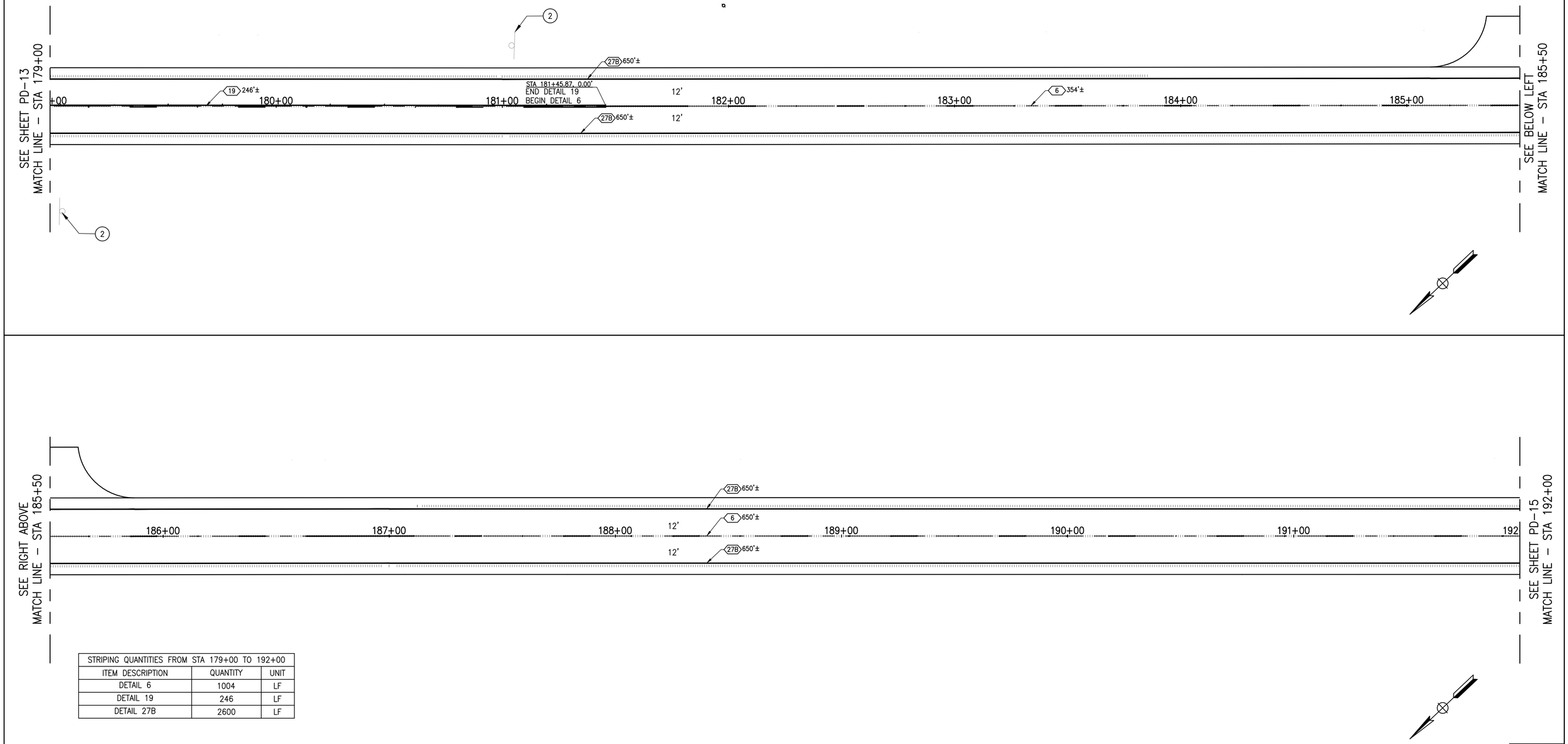
REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA

SHEET NO.	TOTAL SHEETS
63	69



STRIPING QUANTITIES FROM STA 179+00 TO 192+00		
ITEM DESCRIPTION	QUANTITY	UNIT
DETAIL 6	1004	LF
DETAIL 19	246	LF
DETAIL 27B	2600	LF

PD–14

HORIZONTAL SCALE: 1" = 20'
0 10 20 30 40

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WWW.PETERS-ENGINEERING.COM

COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1
PAVEMENT DELINEATION – 14

DWG: S:\2022\22-007\Acad\Plansets\Avenal Cutoff Phase 1\22-007 PD-11.dwg USER: Antonio Romo DATE: Feb 21, 2024 4:27pm

LEGEND & KEYNOTES (APPLIES TO SHEETS PD–1 TO PD–19)

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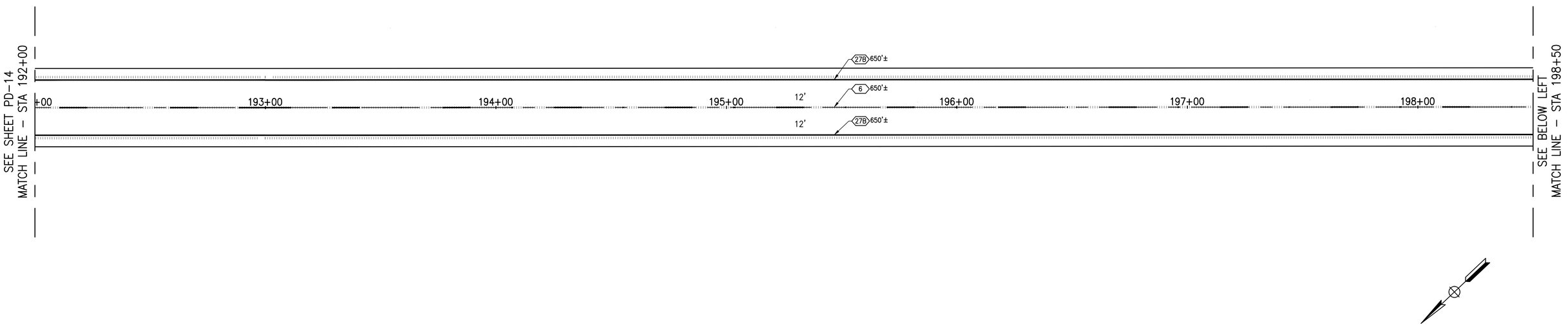

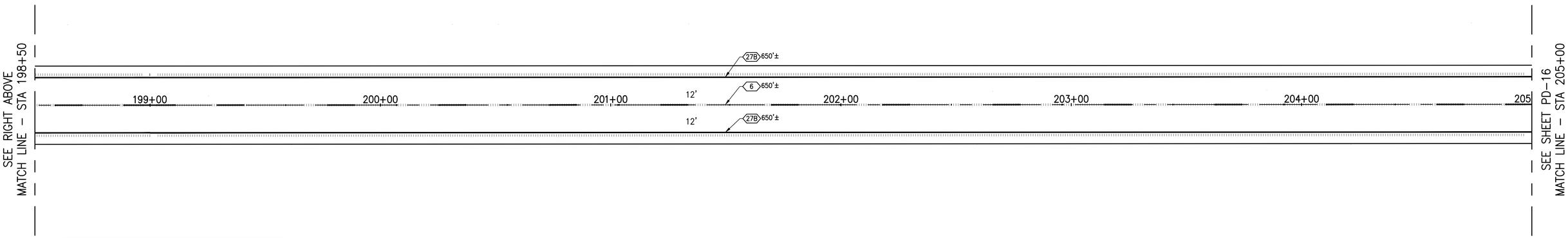

STRIPING QUANTITIES FROM STA 192+00 TO 205+00		
ITEM DESCRIPTION	QUANTITY	UNIT
DETAIL 6	1300	LF
DETAIL 27B	2600	LF

PD–15

HORIZONTAL SCALE: 1" = 20'
0 10 20 30 40

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COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1
PAVEMENT DELINEATION – 15

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

LEGEND & KEYNOTES (APPLIES TO SHEETS PD–1 TO PD–19)

- (#) PAVEMENT DELINEATION DETAIL TO BE INSTALLED PER STATE STD. PLANS
- (1) INSTALL 12" LIMIT LINE STRIPING (WHITE, UNLESS NOTED OTHERWISE ON PLANS)
- (2) PROTECT EXISTING SIGN AND POST IN PLACE
- AP ANGLE POINT
- INSTALL TYPE III (L) ARROW AS SHOWN ON PLAN PER STATE STD. PLAN A24B
- INSTALL SHOULDER RUMBLE STRIP PER CALTRANS STD. A40B & CENTERLINE RUMBLE STRIP PER CALTRANS STD. A40D. SEE DETAILS (4 CD–2) & (5 CD–2) FOR RUMBLE STRIP INSTALLATION AT INTERSECTIONS AND DRIVE APPROACHES.

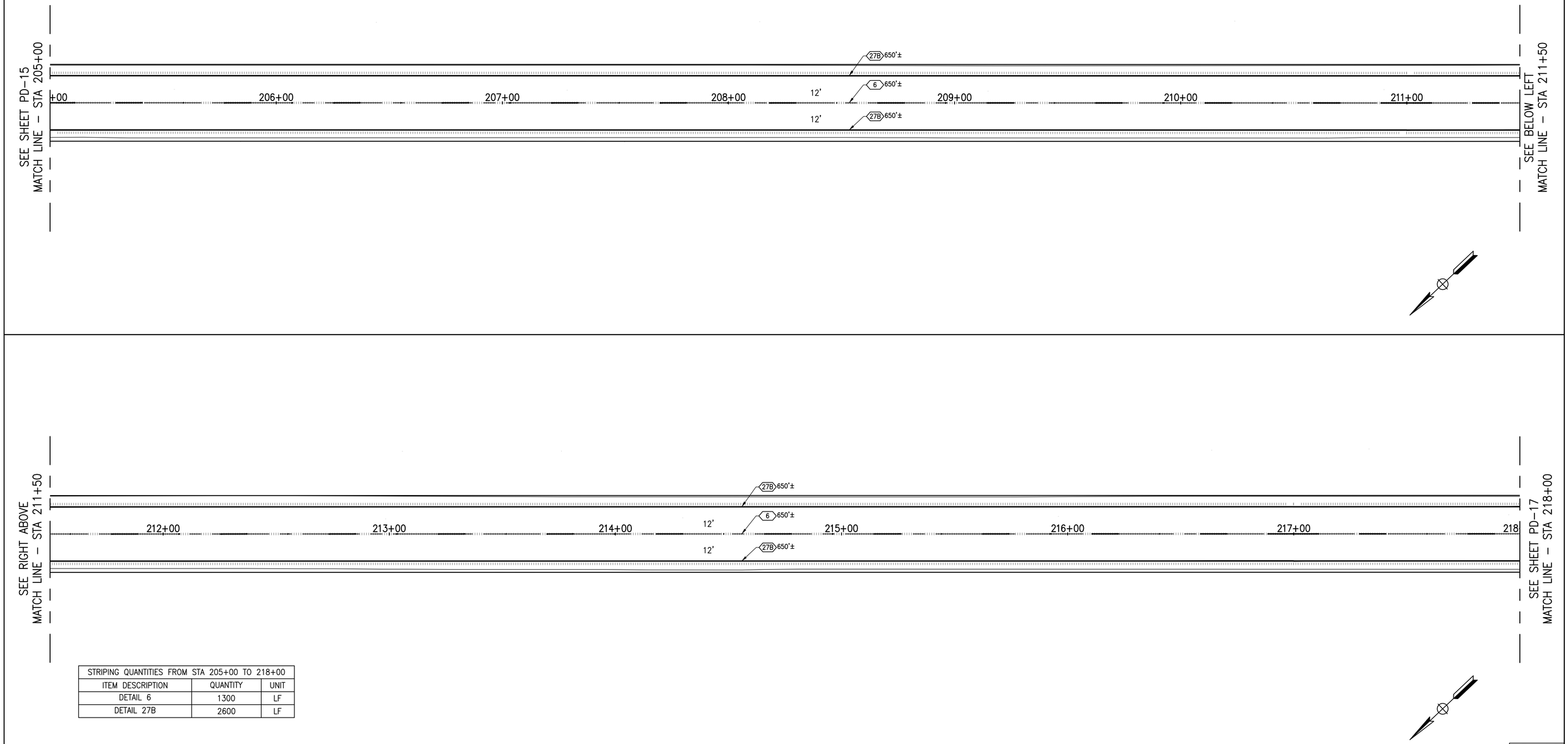
NOTES:
1. ALL EXIST. PAVEMENT DELINEATION IN CONFLICT WITH PROPOSED PAVEMENT DELINEATION SHALL BE REMOVED BY WET SANDBLASTING OR OTHER APPROVED METHODS WHICH WILL CAUSE THE LEAST POSSIBLE DAMAGE TO THE PAVEMENT.
2. ALL STRIPING AND SIGNING WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD PLANS AND SPECIFICATIONS, AND THE LATEST CALTRANS ADOPTED EDITION OF THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CA–MUTCD), UNLESS OTHERWISE DIRECTED BY THE COUNTY ENGINEER.
3. ALL PAVEMENT MARKINGS, CROSSWALKS, LIMIT LINES, AND TRAFFIC STRIPES SHALL BE PAINT (2 COATS) UNLESS OTHERWISE DIRECTED BY THE COUNTY.
4. THE CONTRACTOR IS RESPONSIBLE TO RECORD AND DOCUMENT AS NECESSARY EXISTING STRIPING, PAVEMENT MARKERS AND MARKINGS, BLUE DOT MARKERS FOR FIRE HYDRANTS IN ORDER TO REPLACE THE STRIPING, PAVEMENT MARKERS AND MARKINGS IN KIND.
5. THE PLANS ARE ACCURATE FOR STRIPING ONLY.
6. PERMANENT STRIPING, PAVEMENT MARKINGS, AND PAVEMENT MARKERS SHALL BE INSTALLED 21–30 DAYS AFTER NEW HMA IS PLACED.
7. STREET SURFACE SHALL BE CLEAN OF DUST, DIRT, AND DEBRIS PRIOR TO APPLICATION OF PAINT. IF IN THE OPINION OF THE ENGINEER OR HIS REPRESENTATIVE THE STREET IS NOT CLEAN, IT SHALL BE SWEPT BY A DRY BROOM METHOD PRIOR TO THE APPLICATION OF PAINT AT THE CONTRACTOR'S EXPENSE.

REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA

SHEET NO.	TOTAL SHEETS
65	69



STRIPING QUANTITIES FROM STA 205+00 TO 218+00		
ITEM DESCRIPTION	QUANTITY	UNIT
DETAIL 6	1300	LF
DETAIL 27B	2600	LF

PD–16

HORIZONTAL SCALE: 1" = 20'
0 10 20 30 40

PETERS ENGINEERING GROUP
862 Pollasky Avenue
Clovis, California 93612
Phone (559) 299-1544
www.peters-engineering.com

COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1
PAVEMENT DELINEATION – 16

DWG: S:\2022\22-007\Mxd\Planset\Avenal Cutoff Phase 1\22-007 PD-16.dwg USER: Antonio Romo DATE: Feb 21, 2024 4:33pm

LEGEND & KEYNOTES (APPLIES TO SHEETS PD–1 TO PD–19)

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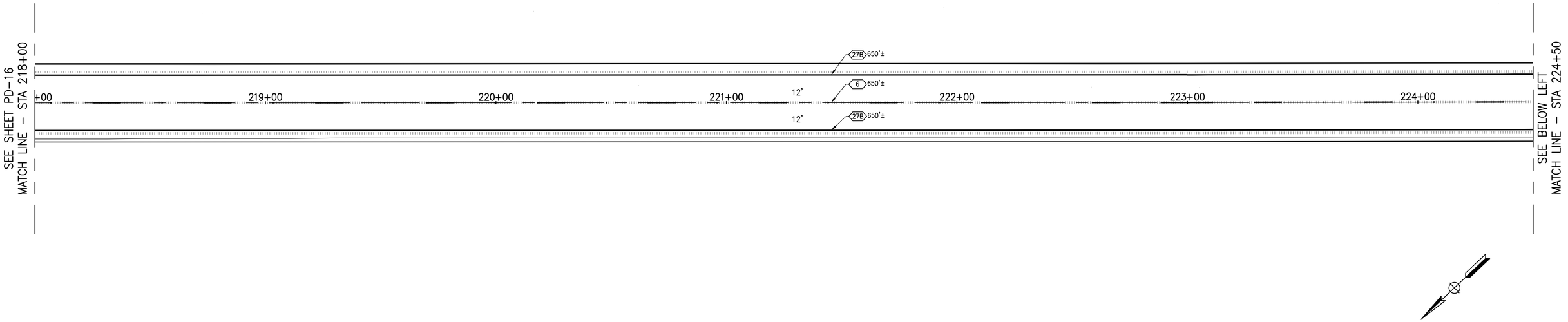
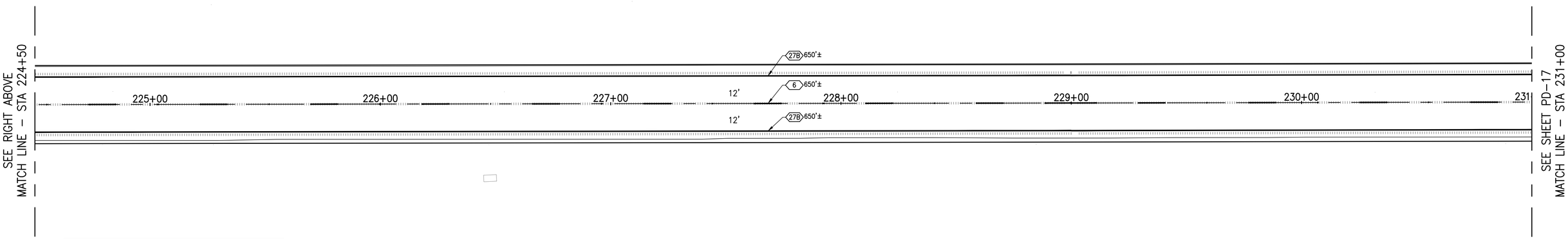
REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA

SHEET NO.	TOTAL SHEETS
66	69





STRIPING QUANTITIES FROM STA 218+00 TO 231+00		
ITEM DESCRIPTION	QUANTITY	UNIT
DETAIL 6	1300	LF
DETAIL 27B	2600	LF

PD–17

HORIZONTAL SCALE: 1" = 20'
0 10 20 30 40

PETERS ENGINEERING GROUP
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COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1
PAVEMENT DELINEATION – 17

DWG: S:\2022\22-0071\Mod\Planset\Avenal Cutoff Phase 1\22-007 PD-16.dwg USER: Antonio Romo DATE: Feb 21, 2024 4:35pm

LEGEND & KEYNOTES (APPLIES TO SHEETS PD–1 TO PD–19)

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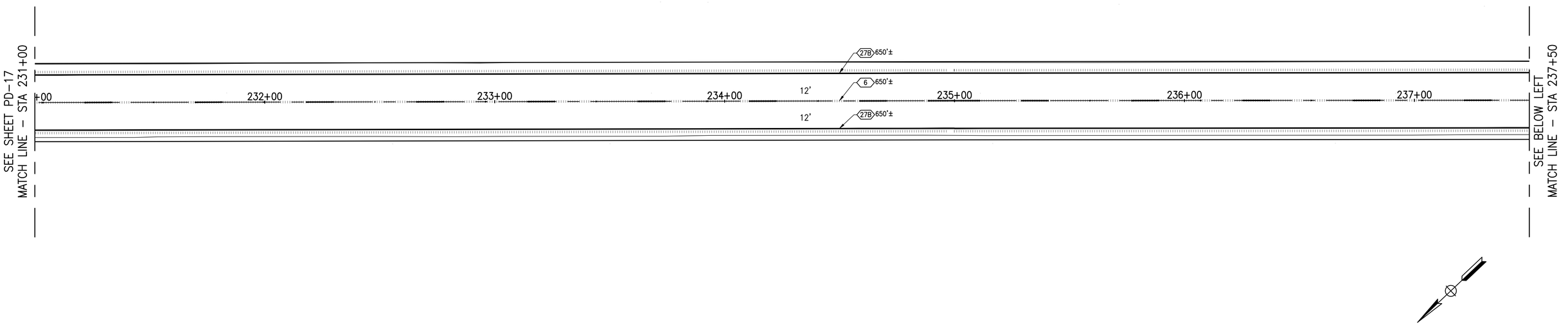
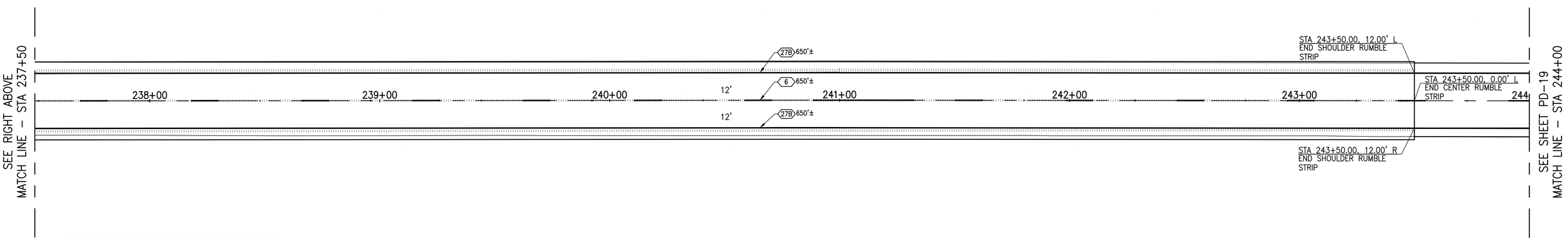
REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA

SHEET NO.	TOTAL SHEETS
67	69





STRIPING QUANTITIES FROM STA 231+00 TO 244+00		
ITEM DESCRIPTION	QUANTITY	UNIT
DETAIL 6	1300	LF
DETAIL 27B	2600	LF

PD–18

HORIZONTAL SCALE: 1" = 20'
0 10 20 30 40

PETERS ENGINEERING GROUP
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COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1
PAVEMENT DELINEATION – 18

DWG: S:\2022\22-0071\Acad\Planset\Avenal Cutoff Phase 1\22-007 PD-16.dwg USER: Antonio Romo DATE: Feb 21, 2024 4:36pm

LEGEND & KEYNOTES (APPLIES TO SHEETS PD–1 TO PD–19)

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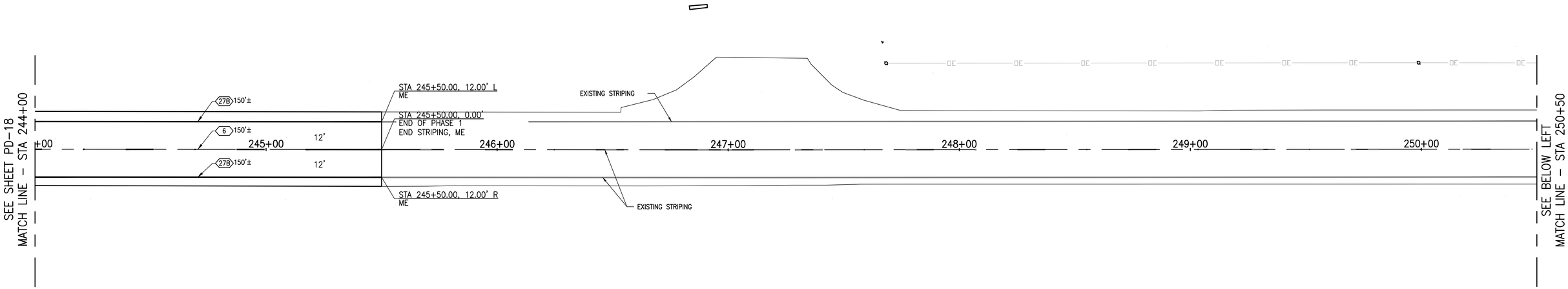
REGISTERED CIVIL ENGINEER

2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA

SHEET NO.	TOTAL SHEETS
68	69



STRIPING QUANTITIES FROM STA 244+00 TO 245+50		
ITEM DESCRIPTION	QUANTITY	UNIT
DETAIL 6	150	LF
DETAIL 27B	300	LF

PD–19

HORIZONTAL SCALE: 1" = 20'
0 10 20 30 40

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COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

AVENAL CUTOFF ROAD PHASE 1
PAVEMENT DELINEATION – 19

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

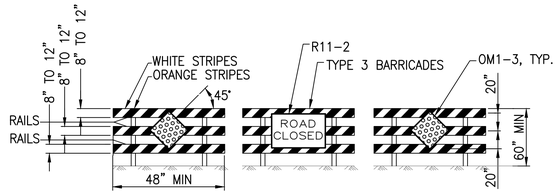
DWG: S:\2022\22-007\Acad\Phase1\Avenal Cutoff Phase 1\22-007 PD-16.dwg USER: Antonio Romo DATE: Feb 21, 2024 4:38pm

LEGEND (APPLIES TO THIS SHEET ONLY)

ROAD CLOSED

TEMPORARY TRAFFIC CONTROL SIGNS/
PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) — P

TYPE 3 BARRICADE (SEE DETAIL A) — T



DETAIL A
NTS

NOTE TO CONTRACTOR:

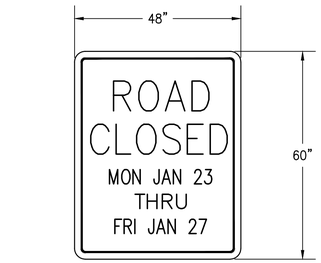
1. THIS PLAN ACCURATE FOR TRAFFIC HANDLING ONLY.
2. ALL TEMPORARY TRAFFIC CONTROL SIGNS SHALL BE PLACED AT THE TIME OF START OF CONSTRUCTION UNLESS OTHERWISE NOTED.
3. SEE PROJECT SPECIFICATIONS FOR PORTABLE CHANGEABLE MESSAGE SIGNS DETAILS.

SHEET NO.	TOTAL SHEETS
69	69

REGISTERED CIVIL ENGINEER

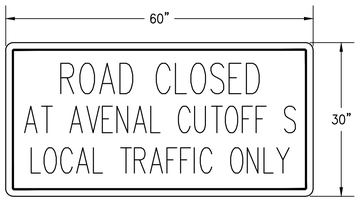
2/21/2024
DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. WASHBURN
No. 60322
CIVIL
STATE OF CALIFORNIA

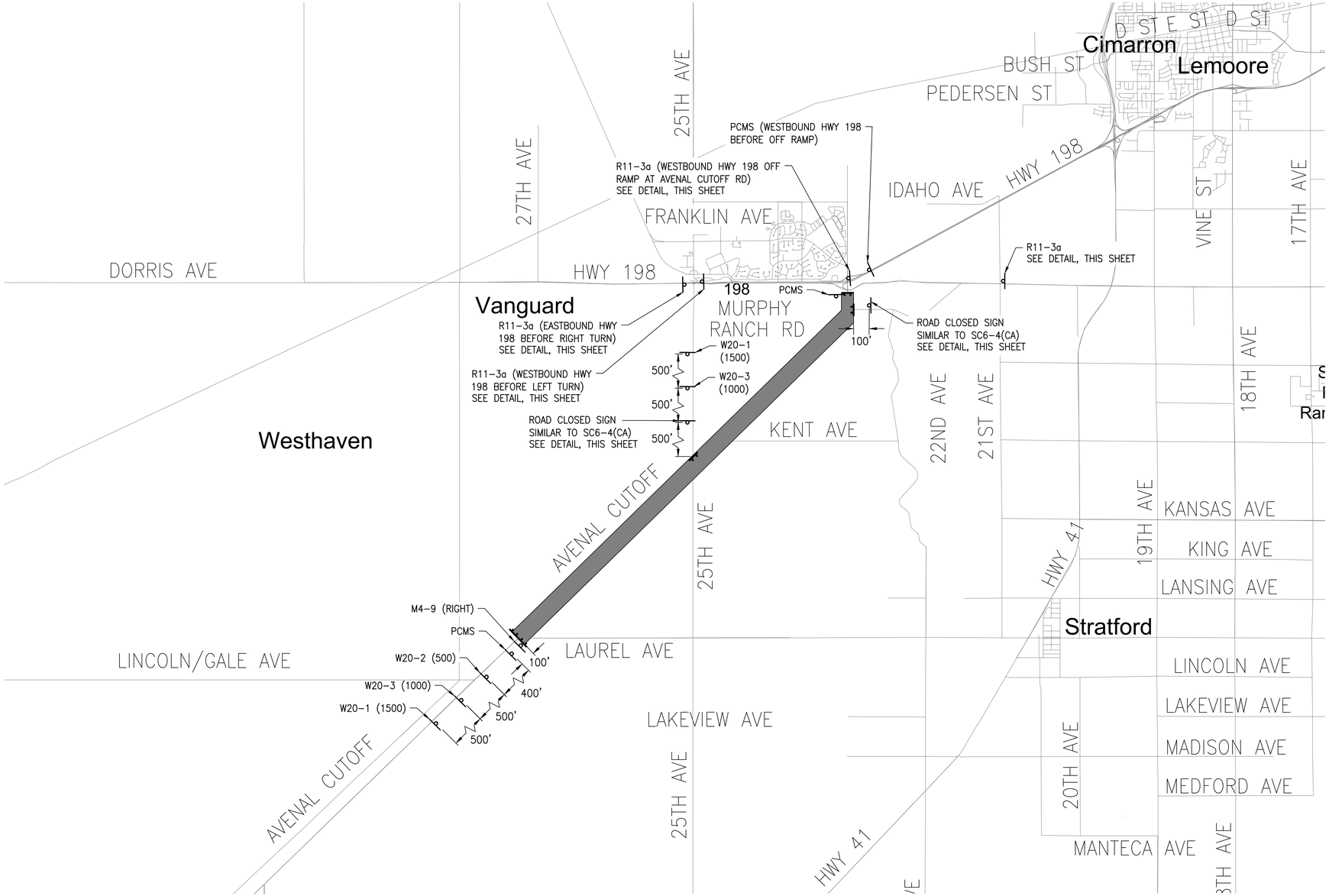


ROAD CLOSED SIGN
NTS

NOTES:
1. SIGN SIMILAR TO SC6-4(CA).
2. SIGN SHALL INDICATE START AND FINISH DATES OF CONSTRUCTION.
3. ROAD CLOSED SIGNS PER THIS DETAIL SHALL BE PLACED 3 WEEKS PRIOR TO START OF CONSTRUCTION.



R11-3a
NTS



NOT TO SCALE

TH-1

PETERS ENGINEERING GROUP
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COUNTY OF KINGS
DEPARTMENT OF PUBLIC WORKS
1400 W. LACEY BOULEVARD
HANFORD, CA 93230

	BY	DATE
DESIGN		
DRAWN		
CHECKED		

ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS 0 1 2 3

AVENAL CUTOFF ROAD PHASE 1
TRAFFIC HANDLING – 1

DWG: S:\2022\22-007\Acad\Plansets\Avenal Cutoff Phase 1\22-007 TH-1 (NEW).dwg USER: Antonio Romo DATE: Feb 23, 2024 4:18pm

COUNTY OF KINGS
CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

NOTICE TO CONTRACTORS
PROPOSAL, AGREEMENT
SPECIAL PROVISIONS

AVENAL CUTOFF ROADWAY IMPROVEMENTS
PHASE I

County Bid No. **2024-35**
County Project No. **133943**

Bid Opening Date: _____, **4:00 PM**

AVENAL CUTOFF ROADWAY IMPROVEMENTS
PHASE I

THE SPECIAL PROVISIONS
CONTAINED HEREIN HAVE BEEN
PREPARED BY OR UNDER THE
DIRECTION OF THE FOLLOWING
REGISTERED ENGINEER:

Registered Civil Engineer

TABLE OF CONTENTS

BID CONDITIONS

SECTION 00 10 00
NOTICE TO CONTRACTORS

NOTICE IS HEREBY GIVEN that the County of Kings ("County") will receive sealed bids from contractors licensed in accordance with the provisions of the Public Contract Code for the furnishing of all labor, materials, equipment, transportation, and services for the performance of the following work:

RFB: 2024-35 - AVENAL CUTOFF ROADWAY IMPROVEMENTS PHASE I

in accordance with the Plans and Specifications thereof on file in the office of the Department of Public Works, County of Kings, 1400 W. Lacey Blvd., Hanford, California.

SCOPE OF WORK

The work to be performed consists, in general, of grading existing shoulder, furnishing temporary pavement, full-depth reclamation (FDR) with cement and new asphalt concrete (AC) for the Avenal Cutoff Road in Kings County near State Route (SR) 198. In addition, the project will include asphalt concrete overlays at intersections and at a portion of Avenal Cutoff Road. Please see plans for more details.

PLANS AND SPECIFICATIONS AVAILABLE:

Plans and Specifications and addenda for the work may be obtained at the Purchasing Division page of the Kings County website, https://www.countyofkings.com/departments/administration/purchasing/requests-for-proposals

SEALED BIDS:

Bid Location: Sealed bids on the above project shall be filed with the **Purchasing Manager of the County of Kings at 1400 W. Lacey Blvd., Building No. 6, Hanford, California, 93230.**

Bid Date/Time: On or before 4:00 PM, local time, **on _____, 2024**. Said bids will be opened in public at or after 4:00 p.m. local time of said day in the office of the Purchasing Manager. Bids shall be submitted only on the forms provided thereof.

REQUEST FOR INFORMATION OR CLARIFICATIONS:

Questions: Proposers are responsible for submitting any and all questions concerning the work as set forth in the project documents. Questions must be presented in writing via email to Mitchel Cabrera at Mitchel.Cabrera@co.kings.ca.us prior to **4:00 PM, local time, on _____, 2024**. Questions received after the deadline will not be answered.

BIDDER'S BOND:

Bids must be accompanied by a bidder's bond approved by the County or a certified or cashier's check for at least 10 percent of the amount bid and made payable to the County of Kings, State of California. Said Bidder's Bond or certified or cashier's check shall be declared forfeited if the successful bidder refuses or neglects to enter into contract after being so requested by the County. Said Bond shall be obtained from an admitted surety company satisfactory to the County.

CONTRACTOR'S LICENSE REQUIRED:

The County will not consider or accept any bids from contractors who are not licensed to do business in the State of California and are in possession of a current Class A contractor's license.

If the license classification specified herein above is that of a "Specialty Contractor" as defined in Section 7058 of the Business and Professions Code, the specialty contractor awarded the Contract shall itself construct a majority of the Work in accordance with the provisions of the Business and Professions Code.

SUBCONTRACTOR'S LIST: Each bid filed shall set forth:

a. The work to be performed and the name and the location of the place of business of each subcontractor who will perform work or labor or render services to the general contractor in or about the construction of the work or improvement, or a subcontractor licensed by the state of California who, under contract with the general contractor, specifically fabricates and installs a portion of the work or improvement according to detailed drawings contained in the plans and specifications, in an amount in excess of 1/2 of 1 percent of the general contractor's total bid; and

b. The portion of the work which will be done by each subcontractor, as required by Section 4104 of the Public Contract Code; and

c. All bids shall be submitted subject to the terms, conditions, and penalties of Sections 4100 through 4113 inclusive of the Public Contract Code.

BONDS AND INSURANCE REQUIRED:

a. Performance and Maintenance Bond(s) - The successful bidder shall file with the County, at the time of execution of the Contract, a Performance Bond acceptable to the County in the full amount of the Contract Price, as security for the faithful performance of the Contract for the construction of the Work, and to cover all guarantees against defective workmanship or materials, or both, during the warranty period following the date of the final acceptance of the Work by the County.

b. Payment Bond - The successful bidder shall file with the County, at the time of execution of the Contract, a Payment Bond acceptable to the County in the full amount of the Contract Price, as security for the payment of all persons supplying labor and materials for the construction of the Work.

c. Form of Bonds - The Bonds shall be submitted on the bond forms contained in these Contract Documents or shall be in substantial compliance with same. Compliance shall be judged solely by the County of Kings.

d. All bonds required, whether Bid, Performance, Payment, or Maintenance shall be issued by an admitted surety insurer. The Bid Bond and Payment Bond must be issued by the same admitted surety insurer. The Bonds required by these specifications will neither be accepted nor approved by the County unless the Bonds are underwritten by an admitted surety, the requirements of California Code of Civil Procedure section 995.630(a) and (b) are met, and the Bond is accompanied by the County Clerk's certificate as provided for in Code of Civil Procedure section 995.640(b). The County further reserves the right to satisfy itself as to the acceptability of the surety and the form of each bond. The bidder must submit, together with the Bonds, the following documents:

1. The original, or certified copy, of the unrevoked appointment, power of attorney, bylaws, or other instrument authorizing the person who executed the bond to do so for and in behalf of the Owner.

2. A certified copy of the certificate of authority of the insurer issued by the California Insurance Commissioner.

3. A certificate from the County Clerk that the certificate of authority has not been surrendered, revoked, canceled, annulled, or suspended, or in the event that it has, that renewed authority has been granted.

4. A financial statement of the assets and liabilities of the insurer to the end of the quarter calendar year prior to 30 days next preceding the date of the execution of the bond, in the form of an officer's certificate as defined in Section 173 of the California Corporations Code.

If the surety insurer is found not to be an admitted surety insurer, the bid shall be determined to be non-responsive and shall be rejected. If the surety insurer's assets do not exceed its liabilities in an amount equal to or in excess of the amount of the bond as set forth in Section 12090 of the California Insurance Code, or if the bidder fails to provide the specified documents, the bid may be determined to be non-responsive and may be rejected.

e. Power-of-Attorney - The Attorney-in-Fact who executes this bond on behalf of the Surety must attach a notarized copy of his or her power-of-attorney as evidence of his authority to bind the Surety on the date of execution of the bond.

f. Surety - The Surety furnishing these bonds shall have a sound financial standing, a record of service satisfactory to the County of Kings, and be authorized to do business in the State.

The successful bidder shall be required to furnish certificates indicating that he or she carries adequate worker's compensation insurance and public liability and property damage insurance, which list the County as an additional insured.

SUBSTITUTION OF SECURITIES:

Bidders are hereby put on notice that the successful bidder may substitute securities for any monies withheld by County of Kings to insure performance of the Contract pursuant to Public Contracts Code Section 22300.

PREVAILING WAGE PROVISION:

a. Pursuant to Labor Code Section 1770 et seq., each laborer or mechanic of contractor or any subcontractor engaged in work on the project under this contract shall be paid not less than the hourly wage rate of per diem wages set forth in the prevailing wage rate schedule published by the Director of Industrial Relations, regardless of any contractual relationship which may be alleged to exist between the contractor or any subcontractor and such laborers and mechanics.

b. Any laborer or mechanic employed to perform work on the project under this contract, which work is not covered by any of the foregoing classifications, shall be paid not less than the prevailing rate of per diem wages specified herein for the classification which most nearly corresponds to the work to be performed by him.

c. The foregoing specified prevailing wage rates are minimum rates only, and the contractor may pay any wage rate in excess of the applicable rate as contained in this contract.

d. Pursuant to Labor Code Section 1775, the Contractor as a penalty to the Owner shall forfeit $200.00 for each calendar day, or portion thereof for each worker paid less than the prevailing rate established by the Department of Industrial Relations for such work or craft in which the worker is employed. The difference between the prevailing wage rates and the amount paid to each worker for each calendar day or portion thereof for which the worker was paid less than the prevailing wage rate shall be paid to each worker by the Contractor. NOTE: An error on the part of an awarding body does not relieve the Contractor from responsibility for payment of the prevailing rate of per diem wages or liability for any penalties pursuant to Labor Code Sections 1770, et seq..

e. Copies of the applicable prevailing wage rates are available at the website of the California Department of Industrial Relations, http://www.dir.ca.gov/OPRL/dprewagedetermination.htm.

f. Any or all portions of this Section shall not be applicable to the extent that Contractor is specifically exempted from said requirements by statute. However, in the event that Contractor is so exempted, Contractor shall provide the legal authority for the claimed exemption.

DEPARTMENT OF INDUSTRIAL RELATIONS REGISTRATION

No contractor or subcontractor may be listed on a bid proposal for a public works project (submitted on or after March 1, 2015) unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5 (with limited exceptions from this requirement for bid purposes only under Labor Code section 1771.1(a)). No contractor or subcontractor may be awarded a contract for public work on a public works project (awarded on or after April 1, 2015) unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5. This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

MISCELLANEOUS:

The County of Kings reserves the right to reject any or all bids or to waive any informality in any bid.

If this contract is awarded, then the Notice of Award shall be issued to the lowest responsible bidder within sixty (60) days following the bid opening.

Unless otherwise required by law, no bidder may withdraw his bid for a period of 60 days after the date the Board awards bid to the lowest responsible bidder. The Bid Bond shall be returned 60 days from the time the Award is made.

BY ORDER OF THE KINGS COUNTY BOARD OF SUPERVISORS, Hanford, California.

Date of Publication: & , 2024

SECTION 00 20 00
INSTRUCTIONS TO BIDDERS

PREPARATION OF PROPOSAL:

The outside of the envelope in which the bid is submitted shall include the bidders name and be plainly marked:

RFB: 2024-35 - AVENAL CUTOFF ROADWAY IMPROVEMENTS PHASE I

Bids shall be made upon the forms included in these specifications and available at the Purchasing Division page of the Kings County website, https://www.countyofkings.com/departments/administration/purchasing/requests-for-proposals. All items shall be filled in and the signatures of all persons signing shall be in longhand. Unless bids are submitted on these forms, they will not be considered by the Board. Each bidder shall write out the total amount of his or her bid in addition to inserting the same in figures.

Mistakes must be corrected, and the correction inserted. Corrections must be initialed in ink by the person presenting the proposal.

EXAMINATION OF CONTRACT DOCUMENTS:

The bidders shall carefully examine the Plans and Specifications, and satisfy themselves as to their sufficiency. The bidders shall not at any time after submission of the bids, dispute or complain of the Plans and Specifications, the directions explaining or interpreting them, or assert that there is any misunderstanding in regard to the location, extent, nature, or amount of work to be performed.

Should a bidder find discrepancies in, or omissions from, the Plans and Specifications, or should he or she be in doubt as to their meaning, he or she shall at once notify the Engineer, and should it be found that the point in question is not clearly and fully set forth, a written Addendum will be sent to all bidders and made a part of the contract. The Engineer will not be responsible for any oral instructions. No proposal will be considered which makes exceptions, changes, or reservations to the Plans or Specifications. Exceptions, explanations, or alternate proposals may be made on a separate sheet, attached to the proposal form. However, they will not be considered in determining the low bid.

EXAMINATION OF PROJECT SITE:

Bidders shall examine the site and have full knowledge of all facilities and difficulties affecting the work which may not be set forth herein. No allowance shall subsequently be made because of lack of such examination or knowledge.

Bidders are presumed to have visited and inspected the site and familiarized themselves with the conditions there existing. The submittal of a bid shall be considered an acknowledgment on the part of the bidder of familiarity with the conditions at the construction site.

SUBCONTRACTOR LIST:

Pursuant to the provisions of Section 4104 of the Public Contract Code of the State of California, every bidder shall set forth in his or her bid the following:

a. Subcontractor Information: The work performed, the name, and location of the place of business of each subcontractor who will perform work or labor or render services to the bidder in or about the construction of the work or improvement in an amount in excess of 1/2 of 1 percent of the bidder's total bid.

b. Work Conducted by Subcontractor: The portion of the work which will be done by each subcontractor. If the bidder fails to specify a subcontractor for any portion of the work to be performed under the contract in excess of 1/2 of 1 percent of the bidder's total bid, he agrees to perform that portion himself. The successful bidder shall not, without the consent of the Owner, either:

1. Substitute any person as subcontractor in place of the subcontractor designated in the original bid.

2. Permit any subcontract to be assigned or transferred or allow it to be performed by anyone other than the original subcontractor listed in the bid.

3. Other than in the performance of Change Orders, causing changes or deviations from the Contract, sublet, or subcontract any portion of the work in excess of 1/2 of 1 percent of the total bid as to which his original bid did not designate a subcontractor.

All bids shall be submitted subject to the terms, conditions, and penalties of Sections 4100 to 4113, inclusive, of said Public Contract Code, as AMENDED.

NON-COLLUSION AFFIDAVIT:

Bidders shall include with their bids a signed affidavit stating that their bid is not a sham or a collusive bid. The affidavit is to be signed exactly as worded, alternative wording will not be accepted. Notarization of signature is required. The affidavit is included with the Proposal.

BIDDER'S BOND:

Bids must be accompanied by a bidder's bond approved by the County of Kings or a certified or cashier's check for at least 10 percent of the amount bid and made payable to the County of Kings, State of California. Said bidder's bond shall be by an admitted surety insurer, cash, certified or cashier's check and shall be declared forfeited if the successful bidder refuses or neglects to enter into a contract after being requested to do so by the Kings County Board of Supervisors.

The Attorney-in-Fact who executes this bond in behalf of the Surety must attach a notarized copy of his power-of-attorney as evidence of his authority to bind the Surety on the date of execution of the bond. Where State Statute requires, certification by a resident agent shall also be provided.

If the Bidder elects to furnish a Bid Bond, he shall use the Bid Bond form contained in the Proposal, or one conforming substantially thereto in form and content, as determined by the County of Kings.

RETURN OF BID SECURITY:

Contractors submitting bids on this work agree that the Board may retain the bid security submitted with the bid for 60 days after the Board awards the bid to the lowest responsible bidder. Retained security will be returned 60 days after the bid is awarded or immediately in case all bids are rejected.

AWARD OF CONTRACT:

Within sixty (60) calendar days after opening of Proposals, the Board of Supervisors will accept one of the Proposals or will act in accordance with BASIS OF AWARD, below. The acceptance of the Proposal will be by written Notice of Award, mailed or emailed to the office designated in the Proposal, or delivered to the lowest responsible bidder's representative. In the event of failure of the lowest responsible bidder to sign the Construction Agreement and provide an acceptable Performance Bond, Payment Bond, and insurance certificates, the County of Kings may award the contract to the next lowest responsible bidder. Such award, if made, will be made within 90 days after opening of Proposals.

TYPE OF PROPOSAL:

The Proposal for the work is to be submitted on a Lump Sum basis. Lump Sum amounts shall be submitted on all items of work set forth in the Proposal. All items required to complete the work specified or shown on the Plans, but not included in the Proposal shall be considered incidental to those set forth in the Proposal.

BASIS OF AWARD:

The contract will be awarded to the lowest single responsible bidder. However, the County of Kings reserves the right to reject any and all bids if deemed excessive and re-advertise for bids, provide for the work to be done by alternative means, or not construct the project at all. The County of Kings also reserves the right to waive any informality or irregularity in any bid.

The lowest single responsible bidder will be determined on the following basis; the low bidder will be determined on the total of the Base Bid presented in the Bid Proposal.

EXECUTION OF CONTRACT:

The successful bidder shall execute the contract in accordance with the proposal as accepted within 10 working days of the date of mailing the Notice of Award to him or her at his or her address given below and secure workmen's compensation and any other required insurance and bonds within said time. If the bidder should fail to do so, the certified or cashier's check or surety bond and the money payable thereon accompanying the bid, shall become the property of, and be retained by, the County of Kings as liquidated damages for such failure, provided that if the successful bidder shall execute the contract, secure workmen's compensation, and any other required insurance and bonds, his or her check or bid bond shall be returned to him or her within 10 days thereafter.

CONTRACT BONDS:

a. Performance and Maintenance Bond(s) - The successful bidder shall file with the County, at the time of execution of the Contract, a Performance Bond acceptable to the County in the full amount of the Contract Price, as security for the faithful performance of the Contract for the construction of the Work, and to cover all guarantees against defective workmanship or materials, or both, during the warranty period following the date of the final acceptance of the Work by the County.

b. Payment Bond - The successful bidder shall file with the County, at the time of execution of the Contract, a Payment Bond acceptable to the County in the full amount of the Contract Price, as security for the payment of all persons supplying labor and materials for the construction of the Work.

c. Form of Bonds - The Payment Bond shall be submitted on the bond form contained in these Contract Documents or shall be in substantial compliance with same. Compliance shall be judged solely by the County of Kings.

d. All bonds required, whether Bid or Payment, shall be issued by an admitted surety insurer. The Bid Bond and Payment Bond must be issued by the same admitted surety insurer. The Payment Bond required by these specifications will neither be accepted or approved by the County unless the bond is underwritten by an admitted surety and unless the requirements of California Code of Civil Procedure section 995.630(a) and (b) are met and the bond is accompanied by the County Clerk's certificate as provided for in California Code of Civil Procedure section 995.640(b). The County further reserves the right to satisfy itself as to the acceptability of the surety and the form of each bond. The bidder must submit together with the Payment Bond, the following documents:

1. The original, or certified copy, of the unrevoked appointment, power of attorney, bylaws, or other instrument authorizing the person who executed the bond to do so for and on behalf of the bidder.

2. A certified copy of the certificate of authority of the insurer issued by the California Insurance Commissioner.

3. A certificate from the County Clerk that the certificate of authority has not been surrendered, revoked, canceled, annulled, or suspended, or in the event that it has, that renewed authority has been granted.

4. A financial statement of the assets and liabilities of the insurer to the end of the quarter calendar year prior to 30 days next preceding the date of the execution of the bond, in the form of an officer's certificate as defined in Corporations Code section 173.

If the surety insurer is found not to be an admitted surety insurer, the bid shall be determined to be non-responsive and shall be rejected. If the surety insurer's assets do not exceed its liabilities in an amount equal to or in excess of the amount of the bond, subject to Section 12090 of the Insurance Code, or if the bidder fails to provide the specified documents, the bid may be determined to be non-responsive and may be rejected.

e. Power-of-Attorney - The Attorney-in-Fact who executes this bond in behalf of the Surety must attach a notarized copy of his or her power-of-attorney as evidence of his or her authority to bind the Surety on the date of execution of the bond.

f. Surety - The Surety furnishing these bonds shall have sound financial standing, a record of service satisfactory to the County of Kings, and be authorized to do business in the State of California.

NOTICE TO PROCEED:

The successful bidder shall commence work within ten (10) calendar days after the receipt of the written Notice to Proceed or, if no such written Notice to Proceed is issued, within ten (10) calendar days from the date of execution of the Construction Agreement.

TIME FOR COMPLETION:

The successful bidder shall complete said work within the **_____ Working Days** from the date of commencement work as defined in the above paragraph "Notice to Proceed".

PERFORMANCE OF WORK:

The work shall be performed in a workmanlike, diligent, and expeditious manner with such force and materials as may be required, time being of the essence of the contract.

CONSTRUCTION AGREEMENT

CONSTRUCTION AGREEMENT

For

AVENAL CUTOFF ROADWAY IMPROVEMENTS PHASE I

THIS AGREEMENT, made and entered into this ____day of _____, 2024, by and between the County of Kings, hereinafter referred to as "Owner", and _____. hereinafter referred to as "Contractor"

That the parties hereto, for and in consideration of the covenants, promises and agreements to be made, kept and performed as hereinafter set forth, do agree as follows:

ARTICLE 1
THE CONTRACT DOCUMENTS

The complete Contract between the Owner and the Contractor shall consist of the following Contract Documents: The Notice to Contractors, the Bonds, the Instruction to Bidders, the Accepted Bid Proposal, all Addenda, this Construction Agreement, the General Conditions, Supplemental Conditions the Drawings and Specifications, Notice of Award, Notice to Proceed, Change Orders, Notice of Substantial Completion, Notice of Completion, and modifications incorporated in those documents. The Contract, Drawings, and Specifications are intended to supplement one another. A complete listing of the Contract Documents can be found in Article 9. In case of any conflict among the Contract Documents, this Agreement shall take precedence over the other listed documents, followed by any validly approved Change Orders. The Supplemental Conditions, the Drawings, the Specifications, and the Bonds (if in a form approved by the County), shall take next precedence, followed by the General Conditions, followed by the remaining documents listed above in the order presented.

ARTICLE 2
THE WORK

The Contractor agrees to furnish at his own cost and expense, all tools, equipment, apparatus, labor, materials, mechanical workmanship, transportation and services necessary to complete the construction of the **Avenal Cutoff Roadway Improvements Phase I** and in strict accordance with the Contract Documents. All such work shall be completed in a good and workmanlike manner.

ARTICLE 3
TIME FOR COMPLETION:

3.1 For the purpose of determining the contract completion date, the date of commencement shall be ten (10) calendar days after receipt of written Notice to Proceed, or if no such written Notice to Proceed is issued, it shall be 10 calendar days from the date of this Agreement.

3.2 The Base Bid Work shall be commenced on the date provided for in Paragraph 3.1, and shall be diligently pursued by the Contractor and completed not later than _____**Working Days** from the date of commencement for the base bid.

ARTICLE 4
THE CONTRACT PAYMENT

4.1 In consideration of the covenants, agreements, and promises on the part of the Contractor contained in the Contract Documents, and the strict and literal fulfillment of each and every such covenant, agreement, and promise, and as compensation agreed upon for the erection, construction, and completion of the said work as described in Article 1 hereof in strict accordance with the Plans and Specifications therefore, the Owner agrees to pay and cause to be paid to the Contractor the Contract Sum of **$**_____lawful money of the United States, subject to any additions or deductions as provided in the Contract Documents.

4.2 The Contract Sum is based upon the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:

_____

_____

ARTICLE 5
PROGRESS PAYMENTS

5.1 Applications for Payment shall be submitted monthly in a timely manner by the Contractor on or before the date mutually agreed upon by the Owner and Contractor. The form shall be approved by the Owner.

5.2 Progress Payments shall be made once each month, on or about a date to be determined by the Owner. The amount shall be based on the percent completion of each portion of work completed at the end of the month covered by the Application of Payment. Payment of undisputed contract amounts (progress payments) is contingent upon the Contractor furnishing the Owner with a release of all claims against the Owner arising by virtue of the work relating to the amount so paid. The release may be on the form used for computing monthly progress payment.

5.3 The progress payment amount shall be adjusted as set forth in Article 6 of the General Conditions.

ARTICLE 6
FINAL PAYMENT

6.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when 1) the Contract has been fully performed by the Contractor, and 2) a final Certificate for Payment has been issued by the Inspector. Such final payment shall be made by the Owner not more than 60 days after the recording of the Notice of Completion, subject to any retention on pending stop payment notices pursuant to Civil code Section 9350, et seq., and subject to the Contractor furnishing the Owner with a release of all claims against the Owner arising by virtue of the work relating to the amount so paid.

6.2 Pursuant to Public Contract Code Sections 7107 and 7201, in the event of a dispute between the Owner and Contractor, the Owner may withhold from the final payment an amount not to exceed 150 percent of the disputed amount. Except as so withheld, the Owner shall release the retention withheld within 60 days after the date of completion of the work of improvement, as "completion" is defined in Public Contract Code section 7107. In the event that retention payments are not made within the time periods required by Public Contract Code section 7107, the Owner shall be subject to the interest payment provisions of Public Contract Code section 7107.

ARTICLE 7
MISCELLANEOUS

7.1 Liquidated Damages shall be imposed upon the Contractor should the Contractor fail to complete this contract and the work provided herein within the time fixed for such completion. Subject to Public Contract Code section 7203, the Contractor shall also become liable to the Owner for all loss and damage which the latter may suffer on account thereof.

7.2 IT IS HEREBY FURTHER AGREED, that in case the Contractor does not complete the work within the days as herein provided, for reasons or causes other than those provided for in the Contract Documents hereof, the Owner will be damaged. After considering such a breach and all aspects of the work including, but not limited to, the type of installation, the current and future uses of facilities and premises, the disarrangement of the premises and facilities thereof during the work, and the additional cost and difficulty of using the disarranged facilities during the work, the parties agree that a reasonable daily damage for such a breach, if any, will be **$3,000.00** per calendar day and the payment of the same, if any, is payment of liquidating damages and not a penalty. It is understood that this agreement for liquidated damages is entered into because the amount is manifestly reasonable under the circumstances existing at the time of this agreement and it would be extremely difficult or impossible to determine with any degree of accuracy the actual damages in case of any

such breach. In case of such breach, it is agreed that the Owner may deduct the amount thereof from any money due or to become due said Contractor under this contract.

7.3 Terms used in the Agreement which are defined in the General Conditions of the Contract shall have the meanings designated in those Conditions.

ARTICLE 8
TERMINATION OR SUSPENSION

8.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 10 of the General Conditions.

8.2 The Work may be suspended by the Owner as provided in Article 10 of the General Conditions.

ARTICLE 9
ENUMERATION OF CONTRACT DOCUMENTS

9.1 The Contract Documents, except for Modifications issued after execution of this Agreement, are enumerated as follows:

9.1.1 The agreement is this executed standard form of Construction Agreement.

9.1.2 The General Conditions are the General Conditions dated August 2019.

9.1.3 The Supplementary Conditions, and any other Conditions of the Contract are those detailed below:

Document	Date	Pages

9.1.4 The Specifications contained in the contract documents approved by the Kings County Board of Supervisors, as amended by addendum.

9.1.5 The Drawings contained in the Contract Documents approved by the Kings County Board of Supervisors, as amended by Addenda.

9.1.6 The Addenda, if any, are as follows:

Number	Date

9.1.7 Other documents, if any, forming part of the Contract Documents are as follows: those documents listed in Article 1.

ARTICLE 10
MISCELLANEOUS PROVISIONS

10.1 Headings in any contract document may be useful in the construction of ambiguous language, but are for convenience only and shall not be construed to extend the scope, meaning, or intent of the document or to control in the event of a direct conflict with any express provision thereof. Wherever the context so requires, the neuter gender includes the feminine and masculine and vice versa, the singular includes the plural and vice versa, and the word “person” includes any jurisdictional person, including a corporation, partnership, firm, or association. “Shall,” “will,” and “agrees” are mandatory, and “may” is permissive. Any reference to term includes extensions of such term. Any word or phrase expressly defined by this Agreement shall carry the defined meaning unless the context unambiguously requires otherwise.

10.2 This Agreement, including each of the contract documents enumerated in Articles 1 and 9 and any exhibit thereto, shall constitute the entire Agreement between the parties, and shall not be modified, amended, altered,

or changed except as provided for therein or otherwise by a written document signed by both parties. No verbal agreements or conversations prior to execution of this Agreement or requested Amendment shall affect or modify any of the terms or conditions of this Agreement unless reduced to writing according to the applicable provisions of this Agreement. The parties agree to execute such additional documents as may be necessary to carry out the intent and provisions of this Agreement.

10.3 Contractor shall prevent unauthorized disclosure of any of Owner's confidential information, and shall not use any confidential information shared with it for any purpose other than carrying out Contractor's obligations under this Agreement.

10.4 Contractor shall comply with all federal, state, and local laws and regulations applicable to its performance, including but not limited to prevailing wage laws and other labor and employment laws affecting wages, hours, and conditions of employment, licensing laws, safety regulations, and purchasing practices. Without limiting the generality of the foregoing:

10.4.1 Contractor represents that it, its employees, officers, and directors, and the immediate family members of its employees, officers, and directors, have no direct or indirect conflict of interest, which conflicts with the rendering of services under this Agreement; neither shall any such interest be acquired, and Contractor shall disclose any conflict of interest that may arise in writing to Owner. A "conflict of interest" includes any circumstance or activity that is likely to cause or encourage any of Owner's officers, employees, or agents to violate Part IV of Owner's Purchasing Policy, last revised May 24, 2016.

10.4.2 Contractor is knowledgeable of Government Code section 8350, et seq., regarding a drug free workplace, and shall abide by and implement its statutory requirements.

10.4.3 In rendering services under this Agreement, Contractor shall comply with all applicable federal, state, and local laws, rules, and regulations regarding nondiscrimination, and shall not discriminate based on any basis forbidden by federal, state, or local law, including any classification identified in Government Code Section 12940. Contractor shall not discriminate against its employees, which includes, but is not limited to, employment upgrading, demotion, transfer, recruitment, recruitment advertising, layoff, termination, rates of pay, other forms of compensation, and selection for training including apprenticeship. Further, Contractor will include this provision in all of its subcontracts to perform work under this Agreement.

10.5 This Agreement, including any other contract documents enumerated herein in Articles 1 and 9 that must be executed by the Parties, may be executed simultaneously and in several counterparts, each of which shall be deemed an original, but which together shall constitute one and the same instrument. This Agreement may be executed electronically.

10.6 Any language in this Agreement found to be ambiguous shall be construed in the manner that best effectuates the objects and purposes of the Agreement. This Agreement represents the contributions of both parties, who each have the opportunity to be represented by competent counsel, and it is expressly agreed and understood that the rule stated in Civil Code section 1654, that ambiguities in a contract should be construed against the drafter, shall have no application to the construction of this Agreement.

10.7 Each signatory to this Agreement represents that it is authorized to enter into this Agreement and to bind the party to which its signature represents.

10.8 Nothing in this Agreement may be construed to create, and the parties do not intend to create, an independent right of action in any third party.

10.9 This Agreement shall be governed in all respects by the laws of the state of California, wherein the Agreement has been executed and delivered.

10.10 Whenever this Agreement requires notice of any kind but fails to indicate the manner in which notice should be given and the person to whom it should be delivered, notice shall be given in writing by personal service or by prepaid first-class mail addressed as follows:

OWNER:
COUNTY OF KINGS
CHAIR OF THE BOARD
KINGS COUNTY GOVERNMENT CENTER
1400 W. LACEY BLVD.
HANFORD, CA 93230

CONTRACTOR:
_____
_____
_____
_____
_____

If notice is given by personal delivery, notice is effective as of the date of personal delivery. If notice is given by mail, notice is effective as of three days following the date of mailing or the date of delivery reflected on a return receipt, whichever occurs first.

IN WITNESS WHEREOF, the Owner has caused this Agreement to be executed by the Chairman of the Board of Supervisors and the Contractor has executed this Agreement on the day and year first above written.

OWNER:

By: _____
DOUGH VERBOON, CHAIR OF THE BOARD

CONTRACTOR:

By:_____

APPROVED AS TO INSURANCE

BY: _____
SARAH POOTS, RISK MANAGER

APPROVED AS TO FORM

BY: _____
DIANE FREEMAN, COUNTY COUNSEL

NOTE: If the Contractor executing this contract is a corporation, a certified copy of the By-Laws, or of the Resolution of the Board of Directors, authorizing the officers of said corporation to execute the contract and the bonds required thereby must be annexed thereto.

BONDS

SECTION 00 43 13
BIDDER'S BOND

We,

_____ as Principal, and

as Surety, are bound unto _____

as Owner (Obligee), in the penal sum of ten percent (10%) of the total amount of the bid of the Principal submitted to the Obligee for the work described below, for the payment of which sum we bind ourselves, jointly and severally,

THE CONDITION OF THIS OBLIGATION IS SUCH, THAT:

Whereas, the Principal is submitting a bid to the Obligee, for

AVENAL CUTOFF ROADWAY IMPROVEMENTS PHASE I

for which bids are to be opened at the Office of the Purchasing Manager of the County of Kings, Kings County Government Center, 1400 West Lacey Boulevard, Building 6, Hanford, California, on or after **4:00 p.m., local time, on _____, 2024.**

NOW, THEREFORE, if Principal is awarded the contract and, within the time and manner required under the specifications, after the prescribed forms are presented to him or her for signature, enters into a written contract in the prescribed form and in accordance with the bid, and files three bonds with the Obligee, one to guarantee faithful performance, another to remedy without cost any defects during the guarantee period and the third to guarantee payment for labor and materials as provided by law, then this obligation shall be null and void; otherwise it shall remain in full force.

In the event suit is brought upon this bond by the Obligee and judgment is recovered, the Surety shall pay all costs incurred by the Obligee in such suit, including a reasonable attorney's fee to be fixed by the court.

Dated:_____, 20___

Principal

Surety

By:
Attorney-in-Fact

SECTION 00 45 00
CERTIFICATE OF ACKNOWLEDGMENT

State of California

County of Kings SS

On this _____ day of _____ in the year 20___ before me

_____, personally appeared

_____, personally known to me (or proved Attorney-in-Fact to me on the basis of satisfactory evidence) to be the person whose name is subscribed to this instrument as the Attorney-in-Fact of

_____, and acknowledged to me that he (she) subscribed the name of the said company thereto as surety, and his (her) own name as attorney-in-fact.

(SEAL)
Notary Public

SECTION 00 61 13
CALIFORNIA PERFORMANCE BOND

BOND NO.

AMOUNT: $

KNOW ALL MEN BY THESE PRESENTS, that

of

hereinafter called the CONTRACTOR (Principal), and

a corporation duly organized and existing under and by virtue of the laws of the State of _____, hereinafter called the SURETY, and authorized to transact business within the State of California, as SURETY, are held and firmly bound unto **COUNTY OF KINGS** as OWNER (Obligee), in the sum of:

_____DOLLARS ($_____),
lawful money of the United States of America, for the payment of which, well and truly be made to the OWNER, the CONTRACTOR and the SURETY bind themselves and each of their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents as follows:

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH THAT:

WHEREAS, the CONTRACTOR has executed and entered into a certain

Contract hereto attached, with the OWNER, dated _____, 20__, for:

AVENAL CUTOFF ROADWAY IMPROVEMENTS PHASE I

NOW, THEREFORE, if the CONTRACTOR shall well and truly perform and fulfill all the undertakings, covenants, terms, conditions and agreement of said Contract during the original term of said Contract and any extensions thereof that may be granted by the Owner, with or without notice to the Surety, and during the life of any guaranty required under the Contract, and shall also well and truly perform and fulfill all the undertakings, covenants, terms, conditions and agreements of any and all duly authorized modifications of said Contract that may thereafter be made, then this obligation shall be void, otherwise the same shall remain in full force and virtue.

Whenever the Contractor shall be, and declared in default under the contract, the Owner having performed Owner's obligation thereunder, the Surety may promptly remedy the default, or shall promptly:

(1) Complete the contract in accordance with its terms or conditions; or

(2) Obtain a bid or bids for submission to Owner for completing the contract in accordance with its terms or conditions, and upon determination by Owner and Surety of the lowest responsible bidder, arrange for a contract between such bidder and Owner, and make available as work progresses (even though there should be a default or a succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the contract price.

Any suit under this bond must be instituted before the expiration of two (2) years from the date on which the final payment under contract falls due.

No right or action shall accrue on this bond to or for the use of any person or corporation other than the Owner named herein or the heirs, executors, administrators or successors of Owner.
IN WITNESS WHEREOF, the above parties bounded together have executed

this instrument this ____day of _____, 20__, the name and corporate seal of each corporate party being hereto affixed and those presents duly signed by its undersigned representative, pursuant to authority of its governing body.

CONTRACTOR

By_____(Seal)

Attest

SURETY

By_____(Seal)

Attest

The rate of premium on this bond is _____ per thousand.

Total amount of premium charged $

* * * * * *

SECTION 00 61 16
CALIFORNIA PAYMENT BOND

BOND NO.

AMOUNT: $

KNOW ALL MEN BY THESE PRESENTS, that

of

hereinafter called the CONTRACTOR (Principal), and

a corporation duly organized and existing under and by virtue of the laws of the State of _____, hereinafter called the SURETY, and authorized to transact business within the State of California, as SURETY, are held and firmly bound unto **COUNTY OF KINGS** as OWNER (obligee), in the sum of:

_____ DOLLARS ($_____),
lawful money of the United States of America, for the payment of which, well and truly be made to the OWNER, the CONTRACTOR and the SURETY bind themselves and each of their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents as follows:

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH THAT:

WHEREAS, the CONTRACTOR has executed and entered into a certain Contract hereto attached, with the OWNER, dated _____, 20_, for:

AVENAL CUTOFF ROADWAY IMPROVEMENTS PHASE I

That, if said Contractor, his or its heir, executors, administrators, successors or assigns, or subcontractors, shall fail to pay any of the persons named in Civil Code Section 9100 or amounts due under the Unemployment Insurance Code with respect to work or labor performed by any such claimant, or for any amounts required to be deducted, withheld, and paid over to the Franchise Tax Board from the wages of employees of the Contractor and his subcontractors pursuant to Section 18664 of the Revenue and Taxation Code, with respect to such work and labor that the Surety or Sureties will pay for the same, in an amount not exceeding the sum specified in the bond, and also, in case suit is brought upon the bond, a reasonable attorney's fee, to be fixed by the court.

That, this bond shall inure to the benefit of any of the persons named in Civil Code Section 9100 as to give right of action to such persons or their assigns in any suit brought upon this bond.

Now, therefore, if the CONTRACTOR shall promptly make payment to all persons who supply labor and materials in the prosecution of work provided for in said Contract, and any and all duly authorized modifications of said Contract that may hereinafter be made, without notice to the Surety, then this obligation shall be void; otherwise the same shall remain in full force and virtue.

IN WITNESS WHEREOF, the above parties bounded together have executed this instrument this ___ day of _____, 20__, the name and corporate seal of each corporate party being hereto affixed and those presents duly signed by its undersigned representative, pursuant to authority of its governing body.

CONTRACTOR

By

Attest

SURETY

By_____(Seal)

Attest

The rate of premium on this bond is $_____per thousand.

Total amount of premium charged $_____.

* * * * *

SECTION 00 61 19
MAINTENANCE BOND

BOND NO.

AMOUNT: $

KNOW ALL MEN BY THESE PRESENTS, that

of

hereinafter called the CONTRACTOR (Principal), and

a corporation duly organized and existing under and by virtue of the laws of the State of_____, hereinafter called the SURETY, and authorized to transact business within the State of California, as SURETY, are held and firmly bound unto **COUNTY OF KINGS** as OWNER (Obligee), in the sum of:

_____DOLLARS ($_____),
lawful money of the United States of America, for the payment of which, well and truly be made to the OWNER, the CONTRACTOR and the SURETY bind themselves and each of their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents as follows:

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH THAT:

WHEREAS, the CONTRACTOR has executed and entered into a certain

Contract hereto attached, with the OWNER, dated _____, 20__, for:

AVENAL CUTOFF ROADWAY IMPROVEMENTS PHASE I

NOW, THEREFORE, the condition of this obligation is such that if above bonded CONTRACTOR shall remedy without cost to the said OWNER any defects which may develop during a period of one year from the date of completion and acceptance of the work performed under said contract provided such defects are caused by defective or inferior materials or workmanship, then this obligation shall be void; otherwise it shall remain in full force and effect.

IN WITNESS WHEREOF, the above parties bounded together have executed

this instrument this ____day of _____, 20__, the name and corporate seal of each corporate party being hereto affixed and those presents duly signed by its undersigned representative, pursuant to authority of its governing body.

CONTRACTOR

By_____(Seal)

Attest

SURETY

By_____(Seal)

Attest

The rate of premium on this bond is _____ per thousand.

Total amount of premium charged $

* * * * * *

BID PROPOSAL

SECTION 00 42 00
BID PROPOSAL

For

AVENAL CUTOFF ROADWAY IMPROVEMENTS PHASE I

TO: Purchasing Manager
County of Kings
Hanford, California

Gentlemen:

Having carefully examined the Notice to Contractors, Instruction to Bidders, General Conditions, Supplemental Conditions, Specifications, Plans and form of the Sample Construction Agreement for the **AVENAL CUTOFF ROADWAY IMPROVEMENTS PHASE I**, and having examined the site of the work and conditions affecting it, the undersigned proposes to execute the complete work in full accordance with the plans and specifications for the sum quoted below.

BIDDER'S DECLARATION AND UNDERSTANDING:

In submitting this proposal, the undersigned understands and agrees that the Kings County Board of Supervisors, Hanford, California, shall and does reserve the right to reject any and all proposals, to accept other than the lowest proposal, and to waive any informality in any proposal.

The undersigned also understands and agrees that said Board reserves the right to accept or reject his or her proposal at any time within 60 days following the date the Board executes the contract with the lowest responsible bidder. The undersigned further understands and agrees that this proposal shall be valid and effective until the expiration of said period and that the certified or cashier's check or bidder's bond accompanying this proposal shall be valid and effective for a period of 90 days following the date the Board executes the contract with the lowest responsible bidder.

The undersigned has carefully examined the sites where the work is to be done, and in addition has carefully examined and is thoroughly familiar with said Drawings and Specifications, and is familiar with local conditions affecting the cost of the construction herein bid upon, and further understands that the County will not be responsible for any errors or omissions on the part of the undersigned in making this proposal.

In submitting this Bid, Bidder represents that:

(a) Bidder has examined copies of all the Bidding Documents and the following Addenda (receipt of all which is hereby acknowledged):

Date	Number
_____	_____
_____	_____
_____	_____
_____	_____

(b) Bidder has familiarized itself with the nature and extent of the Contract Documents, Work, site, locality, availability of labor, all local conditions, laws, and regulations that in any manner may affect cost,

progress, performance or furnishing of the Work, and has thoroughly examined the plans and specifications.

(c) Bidder has reviewed and checked all information and data shown or indicated on the Contract Documents. No additional information or data will be required by Bidder in order to perform and furnish the Work at the contract Price, within the contract Time, and in accordance with the other terms and conditions of the Contract documents, including specifically the provisions of the General Conditions.

(d) Bidder has correlated the results of all such observations with the terms and conditions of the Contract Documents.

(e) Bidder has given Owner written notice of all conflicts, errors, or discrepancies that it has discovered in the Contract Documents and the written resolution thereof by Owner is acceptable to Bidder.

EXECUTION OF CONTRACT AND NOTICE TO PROCEED:

The successful bidder shall execute the contract in accordance with the proposal as accepted, within 10 working days of the date of mailing the Notice of Award to him or her at his or her address as given below and secure workmen's compensation and any other required insurance and bonds within said time. If the bidder fails to do so, the certified or cashier's check or surety bond and the money payable thereon accompanying the bid shall become the property of, and be retained by, the Kings County Board of Supervisors as liquidated damages for such failure, provided that if said undersigned shall execute the contract, secure workmen's compensation, and any other required insurance and bonds, his or her check or bid bond shall be returned to him or her within 10 days thereafter.

TIME FOR COMPLETION:

The successful bidder shall complete said Base Bid work within _____ working days from the date of commencement work as defined in the above paragraph "Notice to Proceed".

The undersigned understands and agrees that time of performance is of the essence of the contract.

The undersigned agrees, if awarded the contract for the work included in the Proposal as accepted, to commence work within 10 calendar days after the receipt of written Notice to Proceed or, if no such written Notice to Proceed is issued, within 10 calendar days from the date of execution of the Construction Agreement.

LIQUIDATED DAMAGES:

The undersigned further agrees that there may be deducted from this contract price the sum of **$3,000.00 per calendar day** for each workday beyond the original contract completion time, excepting any extension obtained for cause.

BID BOND:

The certified or cashier's check, or bidder's bond accompanying this proposal is equal to 10 percent or more of the total sum or sums bid under the several bid proposals.

Enclosed find (check one):

( ) Bidder's Bond
( ) Certified Check
( ) Cashier's Check No.___in the amount of for 10% of the bid amount

BID FORM

The undersigned agrees to perform all work within the time provided, assuming the obligation for the liquidated damages herein before specified, for the construction of the **AVENAL CUTOFF ROADWAY IMPROVEMENTS PHASE I**, as indicated in the Drawings and Specifications, for the lump sum price of:

Base Bid: Scope

Item No.	Quantity	Unit	Item Description	Unit Price (In Figures-$)	Total Amount (In Figures-$)
999990	1	LS	Mobilization, Demobilization, Bonds, and Insurance		
120100	1	LS	Traffic Control System		
180106	1	LS	Dust Palliative		
170103	1	LS	Clearing and Grubbing (LS)		
190101	15,455	CY	Roadway Excavation (F)		
198010	8,260	CY	Imported Borrow (F)		
304010	94,845	SY	Full Depth Recycling-Cement		
390132	30,160	TON	Hot Mix Asphalt (Type A)		
398200	4,205	SY	Cold Plane Asphalt Concrete		
810130A	1	LS	Remove Delineator		
810170	22	EA	Delineator (Class 1)		
820610	3	EA	Relocate Roadside Sign		
846051	664	STA	12” Rumble Strip (Asphalt Concrete Pavement)		
840656A	1	LS	Striping and Pavement Markers		

Base Bid:

$_____DOLLARS (Figures)

$_____
(Words)

SIGNATURE:

The names of all persons interested in the foregoing proposal as principals are as follows:

_____

_____

_____

The Contractor's license number of the undersigned is: _____

License Expires: _____

Department of Industrial Relations Registration Number: _____

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Company Name: _____

Business Address: _____

Mailing Address: _____

Telephone No.:(____)_____-_____

Signature of Bidder: _____

Date: _____, 20_____

No bid is valid unless signed by the person making the bid. If the party is an individual the same shall be signed by the individual; if the party is a partnership the name of the partnership shall be given and signed by one of the partners; if the same is a corporation the proposal bid must be signed for the corporation by its properly authorized officer or officers.

****

S U B C O N T R A C T O R L I S T CONTRACTOR NAME:

AVENAL CUTOFF ROADWAY IMPROVEMENTS PHASE I

The following listed subcontractors are proposed to perform the categories of work hereinafter referred to. All work not covered in the following list will be performed directly by the General Contractor. (Note: This list shall contain the name, address, and telephone number of each subcontractor and an enumeration of work to be performed by each in an amount in excess of one-half of 1 percent of the prime contractor's total bid or, in the case of bids or offers for the construction of streets or highways, including bridges, in excess of one-half of 1 percent of the prime contractor's total bid or ten thousand dollars ($10,000), whichever is greater.)

WORK TO BE PERFORMED	NAME OF SUB-CONTRACTOR	PERCENTAGE OF WORK BY SUB-CONTRACTOR	MAILING ADDRESS/PHONE NUM./CONTRACTOR LICENSE #

NONCOLLUSION DECLARATION TO BE EXECUTED BY
BIDDER AND SUBMITTED WITH BID

The undersigned declares:

I am the _____ of _____, the party making the foregoing bid.

The **bid is not made in** the **interest of**, **or on behalf of**, any undisclosed person, partnership, company, association, organization, or corporation. The bid is genuine and not collusive or sham . The bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid. The bidder has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or to refrain from bidding. The bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder. All statements contained in the bid are true. The bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof, to effectuate a collusive or sham bid, and has not paid, and will not pay, any person or entity for such purpose.

Any person executing this declaration on behalf of a bidder that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the bidder.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on _____[date], _____ [city], _____[state].

By: _____

The names of all persons interested in the foregoing proposal as principals are as follows:

_____

_____

_____

Contractor's license number of the undersigned is _____ License Expires: _____

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.
Company Name: _____

Business Address:_____

Mailing Address: _____

Telephone No.: _____

Signature of Bidder: _____

Date: _____, 20_____

No bid is valid unless signed by the person making the bid. If the party is an individual the same shall be signed by the individual; if the party is a partnership the name of the partnership shall be given and signed by one of the partners; if the same is a corporation the proposal bid must be signed for the corporation by its properly authorized officer or officers.

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)
County of)

On _____ before me
_____Notary Public
personally appeared _____
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.
I **certify** under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.
WITNESS my hand and official seal.

Signature
_____

(Seal)

SPECIAL PROVISIONS

COUNTY OF KINGS, CALIFORNIA

SPECIAL PROVISIONS

FOR CONSTRUCTION OF AVENAL CUTOFF ROAD – PHASE 1

***To accompany State of California Standard Specifications* dated 2018**

***State of California Standard Plans* dated 2018**

Identified by

Contract No._____

COUNTY OF KINGS DEPARTMENT OF PUBLIC WORKS

SPECIAL PROVISIONS

The work embraced herein shall be done in accordance with the Standard Specifications dated 2018 and the Standard Plans dated 2018, of the Department of Transportation insofar as the same may apply and these special provisions.

In case of conflict between the Standard Specifications and these special provisions, the special provisions shall take precedence over and be used in lieu of the conflicting portions.

Amendments to the Standard Specifications set forth in these special provisions shall be considered as part of the Standard Specifications for the purposes set forth in Section 5, "Coordination and Interpretation of Plans, Standard Specifications and Special Provisions," of the Standard Specifications. Whenever either the term "Standard Specifications is amended" or the term "Standard Specifications are amended" is used in the special provisions, the indented text or table following the term shall be considered an amendment to the Standard Specifications. In case of conflict between such amendments and the Standard Specifications, the amendments shall take precedence over and be used in lieu of the conflicting portions.

ORGANIZATION

Special provisions are under headings that correspond with the main-section headings of the Standard Specifications. A main-section heading is a heading shown in the table of contents of the Standard Specifications.

Each special provision begins with a revision clause that describes or introduces a revision to the Standard Specifications as revised by any revised standard specification.

Any paragraph added or deleted by a revision clause does not change the paragraph numbering of the Standard Specifications for any other reference to a paragraph of the Standard Specifications.

^^^

DIVISION I GENERAL PROVISIONS

1 GENERAL

Add to section 1-1.01:

Bid Items and Applicable Sections

Item code	Item description	Applicable section
810203A	REMOVE DELINEATOR	81
840656A	STRIPING AND PAVEMENT MARKERS	84

Wherever, in the special provisions and standard specifications, the words State of California, or State are used, they shall be understood to mean – The County of Kings, Located in Kings County, California; also sometimes referred to as “County”. Any reference therein to the State of California or a State agency, office or officer shall be interpreted to refer to the County or its corresponding agency, office or officer acting under this contract.
Wherever, in the special provisions and standard specifications, the words requirements, conditions, provisions and laws that are applicable to the State of California rather than the County of Kings – Said

references shall be construed as references to any corresponding requirements, conditions, provisions and laws which are applicable to the County of Kings.

Replace the 6th paragraph in Section 1-1.05 with:

A Department not specified as a federal or California department is a County department.

Add to Section 1-1.07B:

Advertisement: The published notice inviting sealed bids for the construction of the project.
Caltrans: The State of California, Department of Transportation.
County: The County of Kings, located in Kings County, California.
Board of Supervisors: The Board of Supervisors of the County of Kings, California.
Contract time: Number of original working days as adjusted by any time adjustment.

Replace the following definitions in Section 1-1.07B with:

Department: Department of Public Works, County of Kings
Labor Surcharge and Equipment Rental Rates: Caltrans publication listing labor surcharge and equipment rental rates.
State: The County of Kings, located in Kings County, California.
Structure Design: Caltrans Office of Structure Design.

Replace the 1st paragraph in Section 1-1.12 with:

Make checks and bonds payable to Kings County.

^^

2 BIDDING

Replace the 2nd paragraph in Section 2-1.06A with:

The Notice to Bidders and Special Provisions and project plans may be viewed at the location specified in the Notice to Bidders.

Replace the 3rd paragraph in Section 2-1.06A with:

The Bid books may be obtained at the location specified in the Notice to Bidders.

Replace Section 2-1.06B with:

2-1.06B Supplemental Project Information

Supplemental project information is not available for this project.

Delete Sections 2-1.12A-2-1.23

Delete Section 2-1.27

Add to Section 2-1.33A with:

On the Subcontractor's List, submit the percentage of each bid item subcontracted with your bid.

Replace the 3rd Paragraph in Section 2-1.33A with:

Do not fax forms, except for the copies of forms with the public works contractor registration number submitted after the time of bid. Fax these copies to 559-582-2506.

Add to Section 2-1.34:

Bidder's security shall be made payable to Kings County.

Replace the 1st paragraph in Section 2-1.47 with:

The Department may grant bid relief under Public Contract Code § 5100 et seq. Submit any request for bid relief to the County of Kings Public Works Department. Use the Relief of Bid Request form available at the Caltrans Web site.

^^

3 CONTRACT AWARD AND EXECUTION

Add to Section 3-1.01:

The bidder's attention is directed to the provisions in Section 3, "Award and Execution of Contract," of the Standard Specifications and these special provisions for the requirements and conditions concerning award and execution of contract.

Bid protests are to be delivered to the following address:

Kings County Government Center

Department of Public Works

1400 West Lacey Boulevard

Hanford, California 93230

The award of the contract, if it be awarded, will be to the lowest responsive and responsible bidder whose bid complies with all the requirements prescribed.

The contract shall be executed by the successful bidder and shall be returned, together with the contract bonds, to the Agency so that it is received within 10 days, not including Saturdays, Sundays and legal holidays, after the bidder has received the contract for execution. Failure to do so shall be just cause for forfeiture of the proposal guaranty. The executed contract documents shall be delivered to the following address:

Kings County Government Center

Department of Public Works

1400 West Lacey Boulevard

Hanford, California 93230

Replace the 1st paragraph in Section 3-1.04 with:

Submit any bid protest to the Department.

Replace the 1st paragraph in Section 3-1.05 with:

The successful bidder must furnish 3 bonds.

Replace the 3rd paragraph in Section 3-1.05 with:

2. Performance bond to guarantee the faithful performance of the contract. This bond must be at least equal to 100 percent of the total bid.

Add to Section 3-1.05

3. Maintenance bond to guarantee function and performance of installed equipment and workmanship. This bond must be equal to at least 100 percent of the total bid.

Delete Section 3-1.08

Replace Section 3-1.18 with:

3-1.18 CONTRACT EXECUTION

The successful bidder must sign the Contract form. Deliver to the Department:

1. Signed Contract form
2. Contract Bonds
3. Documents identified in section 3-1.07
4. Documents identified in the Notice of Award

The Department must receive these documents before the 10th business day after the bidder receives the contract or as otherwise specified in the project documents.

The bidders' security may be forfeited for failure to execute the contract within the time specified (Pub Cont. Code §§ 10181, 10182, and 10183).

Before the 10th business day after the Department receives acceptable Contract, Contract Bonds, insurance documents, and other documents required above, the Department shall sign the Contract and return an executed duplicate to the Bidder. Should the Department not execute the Contract within such period, the Bidder may by written notice withdraw his signed Contract. Such notice of withdrawal shall be effective upon receipt of the notice by the Department.

^^

5 CONTROL OF WORK

Add to Section 5-1.01 General with:

Contractor shall attend a mandatory preconstruction meeting and a field meeting to verify the project limits of each roadway segment with the Engineer.

Add to Section 5-1.13A

No subcontract releases the Contractor from the contract or relieves the Contractor of their responsibility for a subcontractor's work.

If the Contractor violates Pub. Cont. Code § 4100 et seq., the County of Kings may exercise the remedies provided under Pub Cont. Code § 4110. The County of Kings may refer the violation to the Contractors State License Board as provided under Pub Cont. Code § 4111.

The Contractor shall perform work equaling at least 30 percent of the value of the original total bid with the Contractor's own employees and equipment, owned or rented, with or without operators.
Each subcontract must comply with the contract.

Before subcontracted work starts, submit a Subcontracting Request form.

Do not use a debarred contractor; a current list of debarred contractors is available at the Department of Industrial Relations' Web site at: http://www.dir.ca.gov/dlse/debar.html.

Each subcontract and any lower tier subcontract that may in turn be made shall include the "Required Contract Provisions Federal-Aid Construction Contracts" in Section 5 of these special provisions. Noncompliance shall be corrected. Payment for subcontracted work involved will be withheld from progress payments due, or to become due, until correction is made. Failure to comply may result in termination of the contract.

Delete Section 5-1.13B, C, & D

Add to Section 5-1.20 B(1):

Contractor shall secure a no fee encroachment permit from Kings County Department of Public Works prior to commencement of work. Encroachment permit and accompanying documents shall require Public Works staff approval prior to commencement of work.

Payment for all work associated with obtaining the Kings County encroachment permit is included in the various items of work involved and no separate payment will be made.

Add Section 5-1.20B(5):

5-1.20B(5) CALTRANS ENCROACHMENT PERMIT FOR PLACEMENT OF TRAFFIC CONTROL

Contractor shall prepare and be responsible for implementation of a Caltrans Encroachment permit for permission to place temporary traffic control signage within Caltrans Right of Way. This work is included in the Traffic Control System bid item and shall include all costs for preparation, procurement, installation and coordination.

Section 5-1.25 is replaced with:

5-1.25 AS-BUILT DRAWINGS

Maintain a set of full-size drawings on the job site. On these drawings, mark all as-built conditions, locations, configurations, and provide all other supplemental details to accurately depict the as-built conditions.

Prior to final acceptance, submit the as-built drawings to the Engineer.

The Engineer will deduct the costs for collecting omitted as-built conditions.

Payment for preparing and submitting as-built drawings to the Engineer is included in the various items of work involved and no separate payment will be made.

Replace Section 5-1.27E with:

5-1.27E CHANGE ORDER BILLS

Maintain separate records for change order work costs.
Submit change order bills in hard copy to the Department.

Add to Section 5-1.27F:

5-1.27F DAILY REPORTS

Your jobsite superintendent or foreman, and subcontractor' foremen, must prepare daily reports for each work day on the project. Daily reports must include:

1. Date;
2. Weather;
3. Worker names;
4. Equipment used on the work;
5. Subcontractors working on-site;
6. Straight time and overtime hours of work for workers and equipment used. Hours of work must be categorized under Bid Items of work or change order work that workers and equipment worked on during that day;
7. Description of work progress, work completed, damage to work, delays to the work;
8. Quality control tests performed;
9. Worker injuries;

Daily reports for the previous workday must be submitted to the Engineer by 12:00 PM on the following work day.

Payment for preparing and submitting daily reports to the Engineer is included in the various items of work involved and no separate payment will be made.

^^

7 LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

Replace table in 5th paragraph of Section 7-1.02K(3) with:

Electronic Mailbox:
Patricio.Villegas@co.kings.ca.us

^^

8 PROSECUTION AND PROGRESS

Replace Section 8-1.02D(10) with:

8-1.02D(10) PAYMENT

Payment for progress schedule (critical path method) is included in the various items of work involved and no separate payment will be made.

Add to the end of Section 8-1.07C:

The Department does not make a payment adjustment for overhead incurred during nonworking days that extend the Contract into an additional construction season.

Replace Section 8-1.08 with:

8-1.08 WEEKLY PROGRESS MEETINGS

You must attend weekly progress meetings, if scheduled and determined by the Engineer to be necessary. The meeting must be attended by your job foreman, safety officer, and representative of the subcontractors actively working or beginning to work at the time of the meeting. Payment for attending weekly progress meetings, if scheduled, is considered included in the various items of work involved.

^^

9 PAYMENT

Add to Section 9-1.01

A prime contractor or subcontractor shall pay any subcontractor not later than 10 days of receipt of each progress payment in accordance with the provision in Section 7108.5 of the California Business and Professions Code concerning prompt payment to subcontractors. The 10 days is applicable unless a longer period is agreed to in writing. Any delay or postponement of payment over 30 days may take place only for good cause and with the agency's prior written approval. Any violation of Section 7108.5 shall subject the violating contractor or subcontractor to the penalties, sanction and other remedies of that section. This requirement shall not be construed to limit or impair any contractual, administrative, or judicial remedies otherwise available to the contractor or subcontractor in the event of a dispute involving late payment or nonpayment by the prime contractor, deficient subcontract performance, or noncompliance by a subcontractor.

The agency shall hold retainage from the prime contractor and shall make prompt and regular incremental acceptances of portions, as determined by the agency, of the contract work, and pay retainage to the prime contractor based on these acceptances. The prime contractor, or subcontractor, shall return all monies withheld in retention from a subcontractor within 30 days after receiving payment for work satisfactorily completed and accepted including incremental acceptances of portions of the contract work by the agency. Federal law (49CFR26.29) requires that any delay or postponement of payment over 30 days may take place only for good cause and with the agency's prior written approval. Any violation of this provision shall subject the violating prime contractor or subcontractor to the penalties, sanctions and other remedies

specified in Section 7108.5 of the Business and Professions Code. These requirements shall not be construed to limit or impair any contractual, administrative, or judicial remedies otherwise available to the prime contractor or subcontractor in the event of a dispute involving late payment or nonpayment by the prime contractor, deficient subcontract performance, or noncompliance by a subcontractor.

After acceptance of the contract pursuant to the provisions in Section 5 "Acceptance of Contract," of the Standard Specifications, the amount, if any, payable for a contract item of work in excess of the maximum value for progress payment purposes hereinabove listed for the item, will be included for payment in the first estimate made after acceptance of the contract.

No partial payment will be made for any materials on hand which are furnished but not incorporated in the work.

Replace the headings and paragraphs of Section 9-1.07 with:

The Department does not adjust payment of HMA due to crude oil price index fluctuations.

Delete Section 9-1.11

Replace Section 9-1.16F with:

The department shall withhold not more than 5 percent of the contract price until final completion and acceptance of the project.

^^

DIVISION II GENERAL CONSTRUCTION

10 GENERAL

Add to Section 10-1.02

10-1.02 WORK SEQUENCING

Before obliterating any traffic stripes, pavement markings, and pavement markers to be replaced at the same location, reference the stripes, markings, and markers. Include limits and transitions with control points to reestablish the new stripes, markings, and markers.

Immediately prior to work, the Contractor shall sweep the entire surface with vacuum-assisted power brooms. All manhole covers, drain inlet covers, monument covers, and all other utility covers shall be protected from the Contractor′s surfacing operations by applying a sheet of plastic, cut to fit, or placing a plastic bag over the exposed facilities or other methods approved by the Engineer. All traces of plastic and excess surfacing material shall be removed from all covers of facilities and other utility covers as quickly as possible after the surface application and prior to final acceptance.

All work shall be performed on the existing prepared roadway surface; work will not be required beyond the existing edge of pavement. Contractor to verify project limits on road segments with county engineer approval.

Replace Section 10-1.03 With:

Submit proposed product and manufacturer specifications to the Engineer within five (5) working days after issuance of the notice to proceed.

Replace Section 10-1.05 with:

Payment for work and requirements described in Section 10-1 is included in the various items of work involved and no separate payment will be made.

^^

12 TEMPORARY TRAFFIC CONTROL

Add to Section 12-1.01:

The bid item for Temporary Traffic Control includes all items required in Section 12 to perform traffic control for the project, including but not limited to placing temporary barricades and signage (stationary and changeable message signs) as directed by the engineer.

The lump sum price paid for temporary traffic control includes full compensation for furnishing all labor, materials, tools, equipment, incidentals, and for doing all the work involved in maintain traffic control, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Add to the beginning of section 12-3.32C:

Place PCMSs in accordance to the Standard Specifications, these special provisions, the project plans, and as directed by the Engineer.

At three weeks prior to the start of construction, place 1 PCMS before the Highway 198 westbound off ramp to Avenal Cutoff Road and display the following message in two phases in all caps: *Avenal Cutoff S Closed — MM/DD/YY to MM/DD/YY.* The second phase of the message shall display the start and finish date of construction. The message shall be displayed until the end of construction.

At three weeks prior to the start of construction, place 1 PCMS on Avenal Cutoff Road 100 feet south of Laurel Avenue for the northbound direction of travel and display the following message in three phases in all caps: *Avenal Cutoff Closed Ahead — MM/DD/YY to MM/DD/YY — Use Laurel Ave.* The second phase of the message shall display the start and finish date of construction. The message shall be displayed until the end of construction.

Add to Section 12-4.01:

The contractor shall conduct operations as to offer the least possible obstruction and inconvenience to the public. It shall also be the responsibility of the contractor to provide and maintain all facilities and means for public safety. Existing traffic patterns shall be maintained during construction.

Residents along the street shall be provided passage as far as practicable. Convenient access to driveways, houses, and buildings along the street shall be maintained and temporary crossings shall be provided and maintained in good condition.

The contractor shall furnish, erect, and maintain such fences, barriers, lights, and signs as are necessary to give adequate warning of any dangerous conditions to be encountered as a result thereof.

^^

13 WATER POLLUTION CONTROL

Replace the paragraph in Section 13-4.04 with:

Payment for job site management is included in the various items of work involved and no separate payment will be made.

^^

14 ENVIRONMENTAL STEWARDSHIP

Add to Section 14-8.02 with:

Permitted Working Hours

Activity	Hours		Days	
	From	To	From	Through
General Construction	7:00am	5:00pm	Monday	Friday
General Construction	No Work Allowed	No Work Allowed	Saturday	Saturday
General Construction	No Work Allowed	No Work Allowed	Sunday	Sunday
General Construction	No Work Allowed	No Work Allowed	Holidays	Holidays

Holiday	Date observed
Veterans Day	November 11th
Thanksgiving Day	November 26th
Day After Thanksgiving	November 27th
Holiday Closure	December 24th thru January 1st
President's Day	3rd Monday in February
Memorial Day	Last Monday in May
Independence Day	July 4th
Labor Day	1st Monday in September

Add to Section 14-11.04 with:

Payment for applications, permitting, coordination, watering, obtaining water, fees, and compliance with San Joaquin Valley Air Pollution Control District Standards is included in Dust Palliative

^^

DIVISION III EARTHWORK AND LANDSCAPE

17 GENERAL

Replace section 17-2.03D with:

You may place vegetation in embankment areas. Comply with section 19-6.

Place vegetation as specified for Method I below:

Method I:

1. Place vegetation outside of the 4:1 inclined plane sloping out and down from the outside edge of the shoulder of the planned roadbed. Do not place vegetation within 5 feet of the finished slope line measured normal to the slope.
2. Mix brush and debris with at least 50 percent earth. Place the mixture in uniform layers.
3. Do not use vegetation material where it will interfere with planned work.

19 EARTHWORK

Add to the end of section 19-6.03B:

A quantity of 1,890 cubic yards of embankment will be added to the computed imported borrow quantity for the anticipated effect of subsidence.

Add to the end of section 19-6.04:

The payment quantity for imported borrow includes the volume of anticipated subsidence as specified in section 19-6.03B. The payment quantity for embankment includes 1,890 cu yd for the anticipated effect of subsidence.

Add to section 19-7.02A:

Obtaining imported borrow includes the following:

1. Constructing an access road as shown.
2. Clearing and grubbing the material site.
3. Selecting material within the source.
4. Screening and wasting from 30 to 60 percent of the finer material.
5. Washing materials so that the imported borrow complies with the sand equivalent requirements.

Replace *Reserved* in section 19-7.02B with:

In addition to the locations described for excavation, obtain local borrow from:

1. To be determined by contractor

After you obtain local borrow, grade the borrow site such that it drains and blends in with the surrounding area.

Add to section 19-7.02C:

Imported borrow placed within 4 feet of the finished grade must have an R-value of at least 35

Process the imported borrow to comply with the grading requirements.

Strip materials that adversely affect the imported borrow properties.

After obtaining imported borrow, grade the borrow sites and associated haul roads such that sites drain and blend in with the surrounding area. Remove any equipment on the areas before grading.

20 LANDSCAPE

Add to section 20-1.03C(3):

In groundcover areas and within the area extending beyond the outer limits of the groundcover to the adjacent edges of shoulders, dikes, curbs, sidewalks, walls, existing planting, and fences, control weeds with pesticides or by hand pulling. Where groundcover areas are 12 feet or more from the adjacent edges of shoulders, dikes, curbs, sidewalks, walls, and fences, control weeds within the groundcover areas and 6 feet beyond the outer limits of the groundcover areas.

Within 2 feet of the edges of paved shoulders, dikes, curbs, and sidewalks, control weeds with pesticides or by hand pulling.

Replace the 2nd paragraph of section 20-1.03C(4) with:

Dispose of mowed material from initial and subsequent mowing during roadside clearing.

DIVISION IV SUBBASES AND BASES

24 STABILIZED SOILS

Add to the end of section 24-3.03B:

Apply cement to the material to be stabilized at a rate of 43 lb/sq yd. The Engineer may adjust the rate to achieve a minimum unconfined compressive strength in the CSS of 400 psi determined under ASTM D1633, Method A, except:

1. Test specimens must be compacted under ASTM D1557, Method A or B.
2. Test specimens must be cured by sealing each specimen with 2 layers of plastic at least 4-mil thick. The plastic must be tight around the specimen. Seal all seams with duct tape to prevent moisture loss. Sealed specimens must be placed in an oven for 7 days at 100 ± 5 degrees F. At the end of the curing period, specimens must be removed from the oven and air-cooled. Duct tape and plastic wrap must be removed before capping. Specimens must not be soaked before testing.

30 RECLAIMED PAVEMENTS

Add between the 2nd and 3rd paragraphs of section 30-2.01C:

The daily report specified in section 30-1.01C(3)(c) must include:

1. Ambient air temperature before starting daily pulverized roadbed activities including time of temperature reading
2. Calculated cement application rate in lb/sq yd and percent by dry weight of pulverized roadbed

Add to the table in the 2nd paragraph of section 30-2.01D(2)(a):

Cement spread rate (lb/sq yd)	Calibrated tray or equal	Test strip and 1 per lot	Roadbed
Cement mixing	Phenolphthalein pH indicator solution	Test strip and 1 per lot	Loose mix after pulverizing and mixing
Moisture content (%)	California Test 226 (Determine OMC under California Test 216)	Test strip and 2 per day	Loose mix after pulverizing and mixing

Add to the table in the 1st paragraph of section 30-2.02A:

Cement spread rate (lb/sq yd)	Calibrated tray or equal	Specified rate ± 5%
Cement mixing	Phenolphthalein pH indicator solution	Pink color
Moisture content Maximum Minimum	California Test 226 (Determine OMC under California Test 216)	 OMC + 3% OMC

Replace *Reserved* in section 30-2.03A with:

Do not start pulverized roadbed activities if the ambient air temperature is below 40 degrees F. If the ambient air temperature falls below 40 degrees F, you may only compact and finish the pulverized roadbed.

Replace item 3 in the list in the 1st paragraph of section 30-2.03B with:

3. Mix the pulverized pavement, underlying material, water, and cement into a homogeneous and uniform mixture

Replace *Reserved* in section 30-2.03C with:

Do not spread dry cement in windy conditions that will result in dust outside the pulverized roadbed area. The cement spread rate must be 43 lb/sq yd ± 5 percent.

Mix cement within 30 minutes of spreading. The mixture must not include streaks and pockets of cement. Remix these areas until uniform and homogeneous. Complete all mixing and compacting within 4 hours of mixing cement.

Add to section 30-2.03E:

On the same day the roadbed is pulverized, apply a coat of asphaltic emulsion to the finished surface. Apply asphaltic emulsion at a residual rate from 0.04 to 0.07 gal/sq yd binder content.

Replace *Not Used* in section 30-2.04:

The Department does not adjust the unit price for cement (pulverized roadbed).

Add to the beginning of section 30-4.01D(2):

Develop a mix design for each materials sampling location. The mix design must produce FDR–cement with an unconfined compressive strength from 400 psi to 600 psi, determined at 7 days under ASTM D1633, Method A, except:

1. Test specimens must be compacted under ASTM D1557, Method A or B.
2. Test specimens must be cured by sealing each specimen with 2 layers of plastic at least 4-mil thick. The plastic must be tight around the specimen. Seal all seams with duct tape to prevent moisture loss. Sealed specimens must be placed in an oven for 7 days at 100 ± 5 degrees F. At the end of the cure period, specimens must be removed from the oven and air-cooled. Duct tape and plastic wrap must be removed before capping. Specimens must not be soaked before testing.

Add between the 3rd and 4th paragraphs of section 30-4.01D(2):

See Appendix A per this document for sampling location recommendations.

Add to the beginning of section 30-4.03D:

The cement content must be 4 percent by dry weight of FDR–cement with a dry unit weight of 119 lb /cu ft, except an increase or decrease in the cement content may be ordered based on your mix design. During progress of the work, if you encounter an isolated area that requires more cement than described in the mix design for that area, notify the Engineer before applying the cement.

DIVISION V SURFACINGS AND PAVEMENTS

36 GENERAL

Replace *Reserved* in section 36-4 with:

36-4.01 GENERAL

Section 36-4 includes specifications for performing work involving residue from grinding and cold planing that contains lead from paint and thermoplastic.

36-4.02 MATERIALS

Not Used

36-4.03 CONSTRUCTION

The residue from grinding or cold planing contains lead from paint and thermoplastic. The average lead concentrations are less than 1,000 mg/kg total lead and 5 mg/L soluble lead. This residue:

1. Is a nonhazardous waste
2. Does not contain heavy metals in concentrations that exceed thresholds established by the Health and Safety Code and 22 CA Code of Regs
3. Is not regulated by the Federal Resource Conservation and Recovery Act, 42 USC § 6901 et seq.

Management of this material exposes workers to health hazards that must be addressed in your lead compliance plan.

36-4.04 PAYMENT

Not Used

39 ASPHALT CONCRETE

Replace section 39-1.03 CONSTRUCTION with:

Type A HMA pavement may only be constructed between April 1st and Thanksgiving during a given calendar year.

Add to the table in the 1st paragraph of section 39-2.01A(4)(h)(iii)(B):

Coarse durability index	AASHTO T 210	1 per 3,000 tons or 1 per paving day, whichever is greater
Fine durability index	AASHTO T 210	1 per 3,000 tons or 1 per paving day, whichever is greater

Add to the table in the 1st paragraph of section 39-2.02A(4)(b)(ii):

Coarse durability index, D_c	AASHTO T 210	1 per 3,000 tons or 1 per paving day, whichever is greater
Fine durability index, D_f	AASHTO T 210	1 per 3,000 tons or 1 per paving day, whichever is greater

Add to the table in item 1 in the list in the paragraph of section 39-2.02A(4)(e):

Coarse durability index, D_c (min)	AASHTO T 210	65
Fine durability index, D_f (min)	AASHTO T 210	50

Replace *Reserved* in section 39-2.02B(3) with:

The grade of asphalt binder for Type A HMA must be PG 64-10.

For Type A HMA using RAP substitution of greater than 15 percent of the aggregate blend, the virgin binder grade must comply with the PG binder grade specified above with 6 degrees C reduction in the upper and lower temperature classification.

For Type A HMA using RAP substitution of 15 percent or less of the aggregate blend, the grade of the virgin binder must comply with the PG binder grade specified above.

Add to the table in the 1st paragraph of section 39-2.02B(4)(a):

Coarse durability index, D_c (min)	AASHTO T 210	65
Fine durability index, D_f (min)	AASHTO T 210	50

Replace the 3rd paragraph of section 39-3.04A with:

At the locations listed below, schedule cold planing activities such that the pavement is cold planed, the HMA is placed, and the area is open to traffic during the same work shift:

1. Beginning of project
2. End of project

For locations not listed above, schedule cold planing activities such that not more than 7 days has elapsed between the time the pavement is cold planed and the time the HMA is placed. Items 2 and 3 of the last paragraph of section 39-3.04C(1) do not apply.

DIVISION VI STRUCTURES

56 OVERHEAD SIGN STRUCTURES, STANDARDS, AND POLES

Add to section 56-3.01C(1):

The sign mounting hardware must be installed at the locations shown.

DIVISION IX TRAFFIC CONTROL DEVICES

81 MISCELLANEOUS TRAFFIC CONTROL DEVICES

Add to section 81-8.03C:

Existing traffic delineators to be removed per plans and shall be bid per lump sum.

84 MARKINGS

Add to end of first paragraph in section 842.04

Pavement markers required for striping shall be bid together with striping and pavement markings per lump sum.

Add paragraph to end of section 842.04

A double painted traffic stripe consisting of two 6-inch-wide yellow stripes is measured as 1 traffic stripe.

Replace section 84-5 with:

84-5 WARRANTY FOR TRAFFIC STRIPES AND PAVEMENT MARKINGS

84-5.01 GENERAL

84-5.01A Summary

Section 84-5 includes specifications for the application and warranty on traffic stripes and pavement markings. The traffic stripe and pavement markings cannot be standard water-based traffic paint, high-build water-based paint, thermoplastic material less than 0.080 inch thick, or low durability material.

The warranty period:

1. For traffic stripes is 5 years
2. For pavement markings is 2 years
3. Starts the day after Contract acceptance

The Department's Division of Maintenance monitors the traffic stripes and pavement markings for compliance with performance requirements during the warranty period and coordinates any repair or replacement as needed under the manufacturer's warranty.

84-5.01B Definitions

Not Used

84-5.01C Submittals

84-5.01C(1) General

Before Contract acceptance, submit to the Engineer and the Division of Maintenance on a read-only CD, DVD, or other Engineer-authorized data-storage device the following information:

1. Project identification number
2. Project location information, including:
   2.1. District
   2.2. County
   2.3. Route
   2.4. Official route direction, N, S, E, W
   2.5. Start post mile prefix as single character text
   2.6. Start post mile number to 3 decimal place
   2.7. End post mile prefix as single character text
   2.8. End post mile number to 3 decimal places
3. Stripe information, including:
   3.1. Standard plan detail number
   3.2. Width in inches
   3.3. Color
   3.4. Material
   3.5. Contrast as *y* or *n*
   3.6. Standard plan contrast style
   3.7. Position, *median*; *center*; lane number; or *edge*
   3.8. Start latitude number to 6 decimal places
   3.9. End latitude number to 6 decimal places
   3.10. Start longitude number to 6 decimal places
   3.11. End longitude number to 6 decimal places
   3.12. Date installed as mm/dd/yyyy
   3.13. Initial retroreflectivity number to 1 decimal place
4. Paving marking information, including:
   4.1. Description
   4.2. Color
   4.3. Material
   4.4. Position, *median*; *center*; lane number; or *edge*
   4.5. Start latitude number to 6 decimal places
   4.6. End latitude number to 6 decimal places
   4.7. Start longitude number to 6 decimal places
   4.8. End longitude number to 6 decimal places
   4.9. Date installed as mm/dd/yyyy
   4.10. Initial retroreflectivity number to 1 decimal place
5. Manufacturer’s information, including:
   5.1. Material code
   5.2. Name and telephone number of the manufacturer’s representative designated to respond to the Department's warranty requests
   5.3. Address
6. Copy of the Contract

Submit the information to the Engineer and to the Division of Maintenance at maintenance.striping.warranty.contact@dot.ca.gov.

84-5.01C(2) Warranty Quality Work Plan

Twenty five days before placing the material, submit to the Engineer and the Division of Maintenance:

1. Manufacturer's warranty for the durability, color, and retroreflectivity of the traffic stripes and pavement markings
2. Completed Warranty Bond form to guarantee performance of the material during the warranty period
3. Material data sheet for the traffic stripes and pavement markings describing the manufacturer’s recommended installation procedure
4. SDS for traffic striping and pavement markings components and primers, if used
5. Name of the manufacturer's representative or the name and certificate for the manufacturer certified contractor, who will monitor the installation
6. Plan for measuring the color under ASTM D6628 and retroreflectivity under ASTM E1710 using the referee evaluation protocol specified in ASTM D7585

84-5.01D Quality Assurance

84-5.01D(1) General

Not Used

84-5.01D(2) Warranty

84-5.01D(2)(a) General

Traffic stripes and pavement markings must comply with the performance requirements for durability, color, and retroreflectivity throughout the warranty period.

84-5.01D(2)(b) Durability

Traffic stripes and pavement markings must adhere to the roadway for the warranty period. For traffic stripes, a rating of less than 80 percent of intact film in any 400-foot segment of traffic stripe when evaluated under ASTM D913 constitutes failure of the material in that segment. For pavement markings, a rating of less than 80 percent of intact film when evaluated under ASTM D913 in any individual marking constitutes failure of the material in that marking.

84-5.01D(2)(c) Color

Traffic stripes and pavement markings must maintain the daytime color under ASTM D6628 daytime chromaticity coordinates.

84-5.01D(2)(d) Minimum Retained Retroreflectivity

The retained retroreflectivity must be a minimum of 100 mcd·m-2·lx-1 for traffic stripes and pavement markings. The Department may perform a nighttime, drive-through, visual inspection of the traffic stripes and pavement markings and notify the manufacturer’s representative of areas that where retroreflectivity appears to be below the retained minimums. The manufacturer’s representative must measure the retroreflectivity of the deficient area under ASTM D7585, standard evaluation protocol to confirm that the striping meets the retained retroreflectivity.

84-5.01D(2)(e) Warranty Requirements

The warranty bond must be equal to 100 percent of the total payment for the bid items subject to the warranty. The bond must be in effect for the entire warranty period, including the time to perform corrective work. Each bond must be provided by a surety, licensed to do business in the State.

During the warranty period, the Division of Maintenance will notify the manufacturer and surety of any problems with the traffic stripes and pavement markings. Upon notification, the manufacturer's representative must respond within20 days with a replacement plan and schedule acceptable to the Division of Maintenance.

Failure to start the work within 72 hours of the time identified in the authorized replacement plan will result in a $1,000.00 per calendar day penalty, which will be imposed until start of the corrective work. If the manufacturer does not start work at the time identified in the authorized replacement plan, the Department may correct the deficiencies and bill the manufacturer and surety for the total cost of incurred penalties and repairs. If the Department determines temporary pavement marking is required to maintain traffic until repairs can be made, the Department bills the manufacturer and surety for the temporary pavement marking.

The manufacturer is responsible for the costs of removing and replacing traffic stripes and pavement markings that are unsatisfactory and noncompliant with the performance requirements during the

warranty period. These costs include, but are not limited to, surface preparation, material, equipment, labor, encroachment permit fees, and traffic control. All warranty work must be performed at no cost to the Department. The Replacement materials must comply with Section 84-5 and meet or exceed the performance of the original materials. If replacement of the original materials is needed, the replacement materials will only be covered by the remainder of the original warranty period.

The warranty does not cover damages due to acts of God.

The manufacturer must work with the Division of Maintenance to obtain approval for the traffic control before any work is performed.

84-5.01D(3) Quality Control

Test the traffic stripes and pavement markings under the test methods and frequencies shown in the following table:

Test Methods and Frequencies for Traffic Stripes and Pavement Markings

Quality characteristic	Test method	Minimum sampling and testing frequency	Requirement
Durability (min, %)	ASTM D913	Visual	100
Initial retroreflectivity (min, $mcd \cdot m^{-2} \cdot lx^{-1}$) White Yellow	ASTM E1710	ASTM D7585[1,2]	 500 300
Color ((x,y) chromaticity coordinates) Daytime Nighttime	ASTM D6628	Per lot number	 Table 1 Table 2

[1]Use the referee evaluation protocol for project length less than 10 miles. For project lengths greater than or equal to 10 miles, add one evaluation for every additional mile.
[2]Measure 84-5.01D(3) at least 48 hours after placement and within 30 days of applying the traffic stripes.

84-5.01D(4) Department Acceptance

The Engineer accepts the traffic stripes and pavement markings based on a visual inspection for retroreflectivity and durability.

The Engineer will perform a nighttime, drive-through, visual inspection of the retroreflectivity of the traffic stripes and pavement markings and notify you of any locations with deficient retroreflectivity. Measure the retroreflectivity of the traffic stripes and pavement markings using a retroreflectometer under ASTM E1710 and the night time visual inspection protocol specified in ASTM D7585.

84-5.02 MATERIALS

Retroreflectivity must be a minimum of 500 $mcd \cdot m^{-2} \cdot lx^{-1}$ for white traffic stripes and pavement markings and 300 $mcd \cdot m^{-2} \cdot lx^{-1}$ for yellow traffic stripes and pavement markings when measured under ASTM E1710.

Color must comply with ASTM D6628.

84-5.03 CONSTRUCTION

Apply the traffic stripes and pavement markings under the manufacturer's written instructions.

A manufacturer's representative must be present during the installation or a manufacturer-certified contractor must install the traffic stripes and pavement markings.

84-5.04 PAYMENT

A double traffic stripe consisting of two 6-inch-wide yellow stripes is measured as 2 traffic stripes.

Replace *Reserved* in section 84-9.03B of the RSS with:

Residue from the removal of painted or thermoplastic traffic stripes and pavement markings contains lead from the paint or thermoplastic. The average lead concentrations are less than 1,000 mg/kg total lead and 5 mg/L soluble lead. This residue:

1. Is a nonhazardous waste
2. Does not contain heavy metals in concentrations exceeding the thresholds established by the Health and Safety Code and 22 CA Code of Regs
3. Is not regulated under the Federal Resource Conservation and Recovery Act (RCRA), 42 USC § 6901 et seq.

Management of this material exposes workers to health hazards that must be addressed in your lead compliance plan.

GENERAL CONDITIONS

SECTION 00 72 00
GENERAL CONDITIONS
(August 2019)

ARTICLE 1
GENERAL PROVISIONS

1.1 BASIC DEFINITIONS

1.1.1 Owner: The County of Kings is Owner and is identified as Owner in the Contract Documents.

1.1.2 Owner's Representative: Owner's designated representative or to an officer of the County of Kings as may otherwise be designated in the Supplemental Conditions.

1.1.3 Contractor: The person or entity identified as such in the Construction Agreement and referred to throughout the Contract Documents as if singular in number. The term Contractor means Contractor or Contractor's authorized representative.

1.1.4 Inspector: Owner or its agent employed as the inspector of the Work.

1.1.5 Subcontractor: Those contractors, of whatever tier, including manufacturers, dealers, or suppliers, whether general or special, furnishing labor or material, or both, for the Work under contract with Contractor. The singular includes the plural.

1.1.6 Substantial Completion: The stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so Owner can occupy or utilize the Work for its intended use.

1.1.7 Final Payment: The Final Payment shall be the last progress payment made to Contractor and shall not be considered to be the payment of any or all of the five percent (5%) retention or any amount withheld in the event of a dispute as provided in Section 7107 of the Public Contract Code or pursuant to a valid stop notice.

1.1.8 Field Order: A written order of Inspector directing Contractor to conduct minor changes in the Work involving neither extra cost nor extra time and being consistent with the scope and functioning of the Work.

1.1.9 Change Directive: A written order prepared by Inspector and signed by Owner directing a change in the Work and stating a proposed basis for adjustment, if any, of the Contract Time or Contract Price. Owner may, by Change Directive, without invalidating the Contract and without Contractor's agreement, unilaterally order changes in the Work. This procedure will be used in the absence of an agreement between Owner and Contractor and shall take effect upon the date signed by Owner or the date stated in the Change Directive, if different.

1.1.10 Change Order: A written order prepared by Inspector and signed by Owner and Contractor stating their agreement upon all of the following: 1) a change in the Work; 2) the amount of the adjustment in the Contract Price, if any; and 3) the extent of the adjustment in the Contract Time, if any.

1.1.11 Contract Documents: The Contract Documents shall include those documents set forth in Article 1 of the Construction Agreement. The Contract and the Contract Documents may be used

interchangeably.

1.1.12 Work: The construction and services required by the Contract Documents, including all labor, materials, equipment, and services provided or to be provided by Contractor to fulfill Contractor's obligations.

1.1.13 Plans: The graphic and pictorial portions of the Contract Documents showing the design, location, and dimensions of the Work, generally including but not limited to plans, elevations, sections, details, schedules, and diagrams.

1.1.14 Specifications: That portion of the Contract Documents consisting of the written requirements for materials, equipment, construction systems, standards, and workmanship for the Work, and performance of related services. Manufacturer installation instructions and recommendations shall be followed in the event they are more explicit or stringent than the requirements set forth in the Specifications.

1.1.15 Claim: A demand or assertion by Contractor seeking, as a matter of right, adjustment, or interpretation of Contract terms, payment of money, extension of time, or other relief with respect to the Contract Documents. Claims must be made by written notice and shall include a demand for Owner's decision. The responsibility to substantiate claims and to resolve the claims of Subcontractors of whatever tier shall rest with Contractor.

1.1.16 Guarantee Period: Contractor shall guarantee all materials and equipment furnished and Work performed for a period of one (1) year from the date of Notice of Completion.

1.2 CONTRACT DOCUMENTS

1.2.1 One Document: The Contract Documents are one document executed in multiple parts. All Work shown or mentioned therein shall be performed or furnished. Contractor understands, admits, and agrees that the Specifications exhibit the intent and purpose of Owner in regard to the Work, may or may not be complete in every detail, and are to be considered as evidence of Owner's purpose and intent only. Contractor further agrees to furnish all labor or material for any detail that is necessary to carry out the intent and purpose of the Specifications without extra charge. This includes, but is not limited to, Work referenced as "by others," which remains the responsibility of Contractor.

1.2.2 Misuse of Words or Punctuation: The misplacement, addition, or omission of any word, letter, or punctuation mark will not in any way change the intent or meaning of the Contract Documents. Any part of the work, or any article pertaining thereto which is not specifically set forth in the Contract Documents, but which is necessary for the proper completion of the Work, is to be supplied and set in place at Contractor's expense, the same as if it had been mentioned in the Contract Documents. Contractor shall furnish all things necessary to make a good and workmanlike job in accordance with the intent and purpose of the Contract Documents.

1.2.3 Precedence, Discrepancies, and Omissions: In resolving inconsistencies that may exist between any of the Contract Documents, precedence shall be given in the following order: 1) Construction Agreement, 2) Bid Proposal, 3) Notice to Contractors, 4) Instruction to Bidders, 5) Supplementary Conditions, 6) General Conditions, 7) Specifications, and 8) Plans. Properly executed Addenda, Field Orders, Change Directives, and Change Orders shall take precedence over all Sections referenced therein. Figure dimensions on Plans shall take precedence over scale dimensions and detail Plans shall take precedence over general Plans.

1.3 ASSIGNMENT OF CONTRACT

1.3.1 Mutual Consent: Neither party to the Contract shall assign the Contract without the written consent of the other party, nor shall Contractor assign any monies due or to become due to him or her without the written consent of Owner.

1.3.2 Assignment Under Anti-Trust Claims: In accordance with Section 4552 of the California Government Code, Contractor and Subcontractors shall conform to the following requirements:

> In submitting a bid to Owner, the Bidder offers and agrees that if the bid is accepted, it will assign to Owner all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C Sec. 15) or under the Cartwright Act [Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code], arising from the purchases of goods, services, or materials by the Bidder for sale to Owner pursuant to the bid. Such assignment shall be made and become effective at the time Owner tenders Final Payment to the Bidder.

1.4 WAIVER OF "COMMON PRACTICE"

1.4.1 Contractor Waives Common Practice: Contractor waives "common practice" and "common usage" as construction criteria wherever the Contract Documents, statutes, or ordinances require greater quantity or better quality than common practice or common usage would require.

1.5 EXCESSIVE COSTS

1.5.1 Failure to comply with Contract: If Contractor fails to comply with any Contract requirement, including required coordination with other contractors or governmental agencies, and that failure results in additional work to Owner or Inspector, consultants, or other contractors, Contractor shall be liable for any additional costs incurred, directly or indirectly, by Owner from the resulting additional work. This section includes, but is not limited to, work related to failed inspections, Requests for Instructions (RFIs) for repairs, deviations from previously reviewed and accepted submittals, or deviations from the Contract Documents.

1.5.2 Construction Methods: If Contractor's construction methods and techniques result in additional costs to Owner, Contractor, upon written notice by Owner of unacceptable methods or techniques, shall be responsible for any and all costs attributable to said methods and techniques. This section includes, but is not limited to, Contractor's ability to coordinate or work with Owner or Inspector.

ARTICLE 2
OWNER

2.1 OWNER'S REPRESENTATIVE

2.1.1 Inspector is Owner's Representative: Owner will be represented by Inspector who shall see that the performance of the Work proceeds in strict accordance with the Contract Documents.

2.1.2 Owner May Appoint Another Inspector: Owner shall be entitled to appoint such other agent(s), as in Owner's opinion is duly qualified to carry out the duties of Inspector.

2.1.3 Communication through Inspector: In order that Owner may act upon expert advice and upon good procedure, all communications from Contractor will be through said Inspector and all communications and instructions from Owner to Contractor will be through said Inspector. All communications not in compliance herewith shall be considered non-binding on Owner. Owner reserves the right to alter this procedure without the consent of Contractor.

2.2 RIGHTS OF OWNER

2.2.1 Right to Clean Up: Subject to the strict prohibition against maintaining a nuisance, if a dispute arises between Contractor and Subcontractor as to responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, Owner may, but need not, clean up the premises and surrounding area and allocate the cost among those responsible as Owner determines to be just.

2.2.2 Right to Accept Imperfect Work: If any part or portion of the Work completed under this Contract is defective and not in accordance with the Contract Documents, and if the imperfection is judged by Owner to be not of sufficient magnitude or importance so as to make the Work unacceptable, Owner shall have the right and authority to retain such Work after making such deductions in the Contract Price as may be equitable and reasonable. Owner does not, however, waive any rights available under any other provision of the Contract Documents or otherwise available to Owner in law or equity.

2.2.3 Right to do Adjacent Work: Owner reserves the right to perform construction or operations on the site of the Work. In doing this, Owner may use its own forces or award separate contracts in connection with other construction or operations on the site but not covered by the Contract Documents. Contractor shall coordinate all activities on the site so as to avoid hindering, interfering with, or disturbing any other contractors or other workers performing Work on the site.

2.2.4 Right to Finish Contractor's Work: If Contractor defaults or neglects to carry out all or any part of the Work in accordance with the Contract Documents, Owner has the right, exercisable solely at Owner’s discretion, to commence and continue completion of the Work with diligence and promptness as set forth in the Contract Documents.

2.2.5 Right of Partial Use of Project: Owner may occupy or use any completed or partially completed portion of the Work at any stage, upon agreement of Owner and Contractor.

> **2.2.5.1** Such partial occupancy or use may commence whether or not the portion is substantially complete, provided Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work, and insurance, and have agreed in writing concerning the period for completion of the Work and commencement of warranties required by the Contract Documents.
>
> **2.2.5.2** Consent of Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between Owner and Contractor or, if no agreement is reached, by decision of Inspector.
>
> **2.2.5.3** Immediately prior to such partial occupancy or use, Owner, Contractor, and Inspector shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

2.2.5.4 Unless otherwise agreed upon in writing, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

2.2.5.5 No claim for acceleration, delay, or hindrance, may be made by Contractor on his or her own behalf or that of any of his or her Subcontractors, for any delays, accelerations, or hindrances that may arise out of Owner's partial occupancy of the Project.

2.2.6 Right to Audit: Contractor shall maintain and make available to Owner all books, papers, job cost records, detailed cost estimates, claims, and accounts, including payment, property, payroll, personnel, Subcontractors, and financial records related to or which arise out of the Work or under terms of the Contract Documents. The form of record keeping shall be subject to approval by Owner. These books, papers, records, claims, and accounts shall be made available for examination during normal business hours by Owner and Inspector and shall be retained at Contractor's principal place of business in California for audit during normal business hours at such place of business for four (4) years after recording of the Notice of Completion of the Work or longer if required by law. Contractor shall provide an office to enable Owner and Inspector to conduct such audit.

2.3 RESPONSIBILITIES OF OWNER

2.3.1 Removal, Relocation, or Protection of Existing Main or Trunkline Utility Facilities: In accordance with the provisions of Section 4215 of the Government Code, Owner shall be responsible for the timely removal, relocation, or protection of existing main or trunkline utility facilities which are located on the site of the Work and which are not identified in the Plans and Specifications. If the existing main or trunkline work is not completed due to the failure of Owner to exercise reasonable care, Contractor shall be compensated for the costs of locating, removing, relocating, or repairing damage to such existing main or trunkline utility facilities not indicated in the Plans and Specifications with reasonable accuracy. Such compensation shall include the costs for equipment necessarily idled during such main or trunkline work. Contractor shall not be assessed liquidated damages for any delays in completion of the Work if caused by the failure of Owner or the owner of the utility to timely provide for the removal or relocation of such existing main or trunkline utility facilities.

Nothing in this Section shall be deemed to require Owner to indicate in the Plans and Specifications the presence of other existing utility service laterals or appurtenances whenever the presence of such utilities on the site can be inferred from the presence of other visible facilities, such as buildings, meter and junction boxes, on or adjacent to the site. Contractor retains the responsibility to verify the presence or absence of utilities by potholing, reviewing as-builts, or excavating prior to commencing Work.

2.3.2 Furnish Plans and Specifications: Owner shall be responsible for furnishing Contractor with an electronic copy of the Plans, Specifications, and any Addenda that may have been issued.

ARTICLE 3
CONTRACTOR'S RESPONSIBILITIES

3.1 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS

3.1.1 Reporting Errors in Contract Documents: Contractor shall carefully study and compare the Contract Documents with each other and shall at once report to Inspector any errors,

inconsistencies, omissions, or ambiguities discovered. If Contractor performs any construction activity knowing it involves a recognized error, inconsistency, omission, or ambiguity in the Contract Documents without such notice to Inspector, Contractor shall assume responsibility for such performance and shall bear all costs for correction.

3.1.2 Reporting Errors in Field Conditions: Contractor shall take field measurements and verify field conditions and shall carefully compare such field measurements and conditions and other information known to Contractor with the Contract Documents before commencing Work. Any errors, inconsistencies, or omissions discovered shall be reported to Owner at once.

3.1.3 No Implied Warranty: No warranty is to be implied nor shall any warranty arise by operation of law, or by interpretation of the Contract Documents, that the Plans and Specifications are adequate and sufficient to construct the Work. Contractor understands and agrees that this section constitutes a waiver of the implied warranty of correctness in Plans and Specifications.

3.2 SUPERVISION AND CONSTRUCTION PROCEDURES

3.2.1 Supervision of Work: Contractor shall supervise and direct the Work using Contractor's best skill and attention. Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract Documents unless the Contract Documents give other specific instructions concerning these matters.

3.2.2 Acts of Employees and Agents: Contractor shall be responsible to Owner for acts and omissions of Contractor's employees, Subcontractor, their agents and employees, and any other persons performing portions of the Work under a contract with Contractor or under the direction of Contractor.

3.2.3 Inspector's Acts Do Not Waive Contractor's Obligation: Contractor shall not be relieved of any obligation to perform the Work in strict accordance with the Contract Documents either by activities or duties of Inspector in Inspector's administration of the Contract Documents, or by tests, inspections, or approvals required or performed by persons other than Contractor.

3.3 PROGRESSION OF WORK

3.3.1 Time of the Essence: It is expressly understood and agreed that the time of beginning, rate of progress, and time of completion of the Work are of the essence. The Work shall progress at such time and in or on such part or parts as may be required to complete the Work as set forth in the Contract Documents.

3.3.2 Construction Schedule: A construction schedule is required to be submitted as set forth in the Contract Documents. The schedule will be for Owner's information only. Silence or inaction with regard to Contractor's schedule shall not be construed as acquiescence or acceptance of the schedule as being binding on Owner. Unless specifically adopted by resolution or minute order of the Kings County Board of Supervisors, such schedule shall not be binding on Owner. Contractor's schedule shall provide for the completion date not to exceed the Contract Time and shall not provide for an earlier completion date unless otherwise agreed to in writing by Owner in accordance with the Contract Documents.

3.4 SUBMITTALS

3.4.1 Review of “or Equals:" In accordance with the provisions of Section 3400 of the Public Contract Code, Contractor shall, within thirty-five (35) calendar days after the Award of the Contract, submit all substitution requests and data substantiating any such requests for a substitution of an “or equal” item. Failure to submit substitution requests and substantiating data within thirty-five (35) days shall result in an automatic denial of the request for substitution.

3.4.2 Excessive Submittal Reviews: Owner shall be responsible for the costs associated with the first and second review of any submittals. Any and all costs incurred as a result of a submittal requiring more than two (2) reviews, including costs incurred by Owner’s consultants or contractors for the handling, processing, and review of excessive submittals, shall be borne by Contractor, whether the submittal is from Contractor, Subcontractor, or any other individual providing goods or services on the Work. Owner reserves the right to withhold monies due to cover the costs of excessive submittals from any payment due to Contractor.

3.5 STATE LABOR REQUIREMENTS

3.5.1 Hours of Work:

3.5.1.1 Eight (8) hours of labor shall constitute a legal day's work and it is expressly stipulated that no worker employed at any time by Contractor or Subcontractor shall be required or permitted to work thereon more than eight (8) hours in any one (1) calendar day and/or more than forty (40) hours in any one (1) calendar week except as provided in Section 1815 of the Labor Code. It is further expressly stipulated that for each and every violation, Contractor shall forfeit, as a penalty to Owner under Section 1813 of the Labor Code, twenty-five dollars ($25.00) for each worker employed in the execution of this Contract, or by any Subcontractor, for each calendar day during which said worker is required or permitted to labor more than eight (8) hours in any one (1) calendar day or more than forty (40) hours in any one (1) calendar week in violation of the provisions of the Labor Code.

3.5.1.2 In accordance with the provisions of the Labor Code, Contractor, and each Subcontractor, shall also keep an accurate record showing the names and actual hours worked for all workers employed by him or her in connection with the Work, which record shall be open at all reasonable hours to the inspection of Owner or its officers or agents, and to the Labor Commissioner, the Division of Labor Standards Enforcement or the Labor Commissioner’s deputies or agents.

3.5.2 Apprentice Employment: Contractor or Subcontractor employing tradesmen in any apprenticeable occupation shall comply with the provisions of Section 1777.5 and 1777.6 of the Labor Code in the employment of apprentices.

3.5.3 Wage Rates:

3.5.3.1 Pursuant to Article 2, Section 1770 et seq. of the Labor Code, each worker of Contractor or Subcontractor engaged in the Work shall be paid not less than the hourly wage rate of per diem wages set forth in the prevailing wage rate schedule published by the Director of the Department of Industrial Relations, regardless of any contractual relationship which may be alleged to exist between Contractor or Subcontractor and such workers.

3.5.3.2 Any worker employed to perform the Work, which work is not covered by the

prevailing wage rate schedule, shall be paid not less than the prevailing rate of per diem wages specified herein for the classification which most nearly corresponds to the work to be performed by him or her.

3.5.3.3 The foregoing specified prevailing wage rates are minimum rates only and Contractor may pay any wage rate in excess of the applicable rate.

3.5.3.4 Pursuant to Section 1775 of the Labor Code, Contractor as a penalty to Owner shall forfeit two hundred dollars ($200.00) for each calendar day, or portion thereof for each worker paid less than the prevailing rate established by the Department of Industrial Relations for such work or craft in which the worker is employed. The difference between the prevailing wage rates and the amount paid to each worker for each calendar day or portion thereof for which the worker was paid less than the prevailing wage rate shall be paid to each worker by Contractor.

3.5.3.5 An error on the part of Owner does not relieve Contractor from responsibility for payment of the prevailing rate of per diem wages or liability for any penalties pursuant to Sections 1770 to 1775 of the Labor Code, inclusive.

3.5.3.6 Copies of the applicable prevailing wage rates are on file with the Kings County Director of Public Works, 1400 West Lacey Boulevard, Hanford, California, and are available to any interested party on request.

3.5.3.7 Monitoring of compliance with prevailing wage requirements shall be done by the Department of Industrial Relations. Contractor and Subcontractor must be registered with the Department of Industrial Relations as required under Section 1725.5 of the Labor Code and maintain compliance with any and all statutory, regulatory, or departmental policies or procedures concerning said compliance.

3.5.4 Certified Payroll: As required under the provisions of Section 1776 of the Labor Code, Contractor and Subcontractor shall keep accurate payroll records:

3.5.4.1 The payroll records shall show the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee by him or her in connection with the Work.

3.5.4.2 A certified copy of all payroll records enumerated above shall be available for inspection at all reasonable hours at the principal office of Contractor as follows:

a. Made available or furnished to the employee or his or her authorized representative on request.

b. Made available for inspection or furnished upon request to Owner, Inspector, the Division of Labor Standards Enforcement, and the Department of Industrial Relations.

c. Made available upon request by the public for inspection or copies thereof made; provided, however, that a request by the public shall be made through either Owner, Inspector, the Division of Labor Standards Enforcement, or the Department of Industrial Relations. The requesting party shall, prior to being provided the

records, reimburse the costs of preparation by Contractor, Subcontractor, and the entity through which the request was made. The public shall not be given access to the records at the principal office of Contractor.

3.5.5 Discrimination in Employment: In accordance with the provisions of Section 12940 of the Government Code and Section 1735 of the Labor Code, neither Contractor nor Subcontractor shall be discriminate in their employment of persons.

3.5.6 Convict Made Materials: Except as may be provided by law, Contractor agrees that no materials manufactured or produced in a penal or correctional institution shall be incorporated in the Work.

3.5.7 Statutory Exemptions: Any or all portions of this Section shall not be applicable to the extent that Contractor is specifically exempted from said requirements by statute. However, in the event that Contractor is so exempted, Contractor shall provide the legal authority for the claimed exemption.

3.6 TAXES

3.6.1 Contractor Pays Taxes: Contractor and Subcontractor shall pay all local, state, and federal taxes upon labor or materials involved in their part of the Work, which shall be included in the Contract Price.

3.7 COMPLIANCE WITH LAW AND LOCAL REQUIREMENTS

3.7.1 Regulations: Contractor and Subcontractor shall conform to and abide by any and all city, county, and state laws, ordinances, rules, and regulations, applicable to the Work. The Work shall be constructed in accordance with the standards and policies relating to energy efficiency, which are contained in the state energy conservation plan as issued in compliance with the Energy Policy and Conservation Act (Pub.L. 94-163).

3.7.2 Permits, Licenses, and Fees: Contractor shall give all notices and shall procure and pay for all permits, licenses, and inspection fees that may be required to commence, carry on, and complete the Work.

3.7.3 Patent Rights, Copyrights, Trade Names, and Royalties: Contractor shall indemnify and hold harmless Owner and all persons acting under him or her for all liability on account of any patent rights, copyrights, or trade names which may affect the articles or materials or their application under the Contract Documents. Contractor shall pay all royalties, or other charges that may arise, due to methods, types of construction, processes, materials, or use of equipment, and shall hold Owner harmless from any charges whatsoever which may arise, and shall furnish written assurance, satisfactory to Owner, that such charges have been paid.

3.8 GUARANTEE

3.8.1 Final Guarantee: Contractor warrants and guarantees for the Guarantee Period that the Work is free from all defects due to faulty materials or workmanship and Contractor shall promptly make such corrections as may be necessary, including repairs of any damage to other parts of the Work or other parts of Owner's property, real or personal, resulting from such defects. Owner will give notice of observed defects with reasonable promptness. In the event that Contractor should fail to make such repairs, adjustments, or other Work that may be made necessary by

such defects, Owner may do so and charge Contractor the cost thereby incurred. The Maintenance Bond shall remain in full force and effect through the Guarantee Period.

3.8.2 Environmental and Toxics Warranty: The covenants, warranties, and representations contained in this Section will be effective on the date of recording of the Notice of Completion and will survive completion of the Work. Contractor covenants, warrants, and represents to Owner that:

3.8.2.1 No litigation is pending or, to Contractor's knowledge, proposed, threatened, or anticipated with respect to Contractor, or with respect to any other matter affecting the Work.

3.8.2.2 To Contractor's knowledge after due inquiry, no asbestos-containing materials were installed or were discovered in the Work at any time. If any such materials were discovered, Contractor made immediate disclosure to Owner.

3.8.2.3 To Contractor's knowledge after due inquiry, no electrical transformers, light fixtures with ballasts, or other equipment containing PCBs are or were located at the Work site at any time. If any such materials were discovered, Contractor made immediate disclosure to Owner.

3.8.2.4 To Contractor's knowledge after due inquiry, no storage tanks for gasoline or any other toxic substance are or were located at the Work site at any time. If any such materials were discovered, Contractor made immediate disclosure to Owner.

3.8.2.5 Contractor's operations concerning the Work were not and are not in violation of any applicable environmental federal, state, or local statute, law or regulation dealing with hazardous materials substances or toxic substances, and no notice from any governmental body has been served upon Contractor claiming any violation of any such law, ordinance, code, regulation, or order, or requiring or calling attention to the need for any work, repairs, construction, alteration, or installation on or in connection with the Work in order to comply with any such laws, ordinances, codes, regulations, or order with which Contractor has not complied. If there are any such notices with which Contractor has complied, Contractor shall provide Owner with copies thereof.

3.8.2.6 Contractor shall indemnify Owner as set forth in Section 3.10.

3.9 WARRANTY

3.9.1 Contract Warranty: Contractor warrants to Owner that materials and equipment furnished for the Work will be of good quality and new, unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects or flaws and is of the highest quality of workmanship, and that the Work will conform with the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, shall be considered defective.

3.10 INDEMNIFICATION

3.10.1 Owner Not Liable for Damages: Owner shall not in any way or manner be answerable or suffer loss, damage, expense, or liability for any loss or damage that may happen to the Work, or part thereof, or in or about the same during its construction and before acceptance and that

Contractor shall assume all liabilities of every kind or nature arising from the Work, either by accident, negligence, theft, vandalism, or any causes whatever. Contractor shall hold Owner, its officials, officers, employees, and agents harmless from all liability of every kind and nature arising from accident, negligence, or any cause whatever, except the active, sole negligence of Owner its officials, officers, employees, and agents.

3.10.2 Owner not Liable for Debts: Indebtedness incurred for any cause in connection with this Work must be paid by Contractor and Owner is hereby relieved at all times from any indebtedness or claim other than the Contract Price.

3.10.3 Contractor Responsible for Accident, Damage, etc.: To the fullest extent permitted by law, Contractor shall be responsible for any and all loss, accident, neglect, injury or damage to person, life, or property which may be the result of, caused by, or arise out of his performance of the Work.

3.10.4 Contractor Indemnifies Owner: Contractor shall indemnify Owner, Inspector, and their officials, officers, employees, and agents and hold them free, safe, and harmless of, from, and against any and all liability, claims, losses, damages, or expenses, including reasonable attorneys' fees, arising from all acts or omissions of Contractor or its officers, agents, employees, contractors, or Subcontractor in rendering services under the Contract Documents, except for any liability, claims, losses, damages, or expenses arising from the sole negligence or willful acts of Owner, its officials, officers, employees and agents.

> **3.10.4.1** Contractor shall defend or, at Owner's sole option, reimburse Owner upon demand for all reasonable costs and expenses, including attorneys' fees, which Owner may incur in resisting any claim which may be made against Owner for any injury or damage to any person or property.
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> **3.10.4.2** In any and all claims against Owner or Inspector or their officials, officers, employees and agents, by any employee of any Subcontractor, anyone directly or indirectly employed by any of them, or anyone for those acts any of them may be liable, the indemnification obligation shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts. Upon demand, Contractor shall defend any suits or actions arising from such claims.

3.10.5 Environmental Indemnification: From and after recording of Notice of Completion, Contractor shall indemnify, defend, and save harmless Owner, its officials, officers, employees and agents from all losses or damages resulting from injury to or death of any person and damage to property, and any fine, which is occasioned by or arises out of any breach of the Environmental and Toxics Warranty, representations, or covenants of Contractor under the Contract Documents. Contractor further agrees to indemnify and hold harmless Owner, its officials, officers, employees, and agents from and against any and all liability as follows:

> **3.10.5.1.** All foreseeable and unforeseeable incidental, consequential, or special damages, directly or indirectly arising out of the use, generation, storage, or disposal of hazardous materials by Contractor; and
>
> **3.10.5.2.** The cost, without limitation, of any required or necessary repair, cleanup, or detoxification and the preparation of any closure or other required Plans, whether such action is required or necessary prior to or following filing of the Notice of Completion to the

full extent that such action is attributable, directly or indirectly, to the presence or use, generation, storage, release, threatened release, or disposal of hazardous materials by any person regarding the Work prior to filing of the Notice of Completion. Contractor's obligations pursuant to the foregoing indemnity shall survive the filing of Notice of Completion.

3.10.5.3. This Section shall survive the termination of the Contract and shall remain in full force and effect notwithstanding completed performance by Contractor under the Contract Documents.

3.10.5.4. The foregoing duties of indemnity shall not apply to loss, damage, expense, or liability caused solely by the negligence, or willful misconduct of Owner or Owner's officials, officers, employees, or agents.

3.11 WORK REQUIREMENTS

3.11.1 Conduct of Work: Contractor shall confine the storage of his or her equipment and materials to limits as designated by Inspector. Contractor shall at all times exercise due caution and provide all necessary barricades and other safety equipment around the Work to protect the public from injury to person and property during the entire time of performance of the Work. Contractor shall not create excessive dust or noise.

3.11.2 Maintenance of Site: Strict prohibition against committing nuisances in or about the Work shall be maintained and Contractor shall not in any way obstruct or interfere with movements of traffic on any public highway or public right of way without first obtaining the necessary approval of the proper public agency.

3.11.3 Clean Up of Site: Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations in performance of the Work. At completion of the Work, Contractor shall remove from and about the Work site waste materials, rubbish, tools, construction equipment, machinery and surplus materials. If Contractor fails to clean up, Owner may do so and the cost thereof shall be charged to Contractor.

3.11.4 Cutting and Patching:

3.11.4.1. Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly.

3.11.4.2. Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of Owner or separate contractors by cutting, patching, or otherwise altering such construction or by excavation. Contractor shall not cut or otherwise alter such construction by Owner or a separate contractor except with written consent of Owner and of such separate contractor, which shall not be unreasonably withheld. Contractor shall not unreasonably withhold from Owner or a separate contractor Contractor's consent to cutting or otherwise altering the Work.

3.12 SUBCONTRACTORS

3.12.1 Contractor Responsible for Subcontractor's Acts: Contractor shall be fully responsible to Owner for the acts and omissions, including negligence, of his or her Subcontractor, and of persons either directly or indirectly employed by them, as he or she is for the acts, omissions, or

negligence of persons directly employed by Contractor.

3.12.2 Contractor's Subcontracts: Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the Work to pass through and bind Subcontractor to the terms of the Contract Documents.

3.13 SUPERINTENDENT

3.13.1 Superintendent: Contractor will employ and maintain on the Work site a qualified Superintendent who shall have been designated in writing by Contractor as Contractor's representative at the site. Superintendent shall have full authority to act on behalf of Contractor and all communications given to Superintendent shall be as binding as if given to Contractor. Superintendent shall be present on the site at all times as required to perform adequate supervision and coordination of the Work.

3.13.2 Right to Demand Removal and Substitution of Superintendent: Due to the importance of Superintendent to the timely and efficient completion of the Work, Owner reserves the right to request or demand the removal and substitution of Superintendent if deemed necessary by Owner to continue or improve the Work. Owner shall exercise said right by providing written notice to Contractor with a date by which Superintendent should or must be removed and substituted. Failure by Contractor to replace Superintendent as and when requested by Owner may be considered a material breach.

3.14 LABOR AND MATERIALS

3.14.1 Skilled Labor: All labor must be especially skilled for each type of the Work and must be thorough and first class in all respects. Any person whom Inspector or Owner may deem incompetent or disorderly shall be promptly removed from the Work site and not allowed to return in any capacity.

3.14.2 Quality of Materials: All materials used on the Work shall be new and the best market quality, unless specified or shown otherwise. The Work shall be done in the best, most thorough, substantial and workmanlike manner and without flaws. All material and labor shall be subject to the approval of Inspector as to its quality and fitness and shall be immediately removed if it does not meet with his or her approval. Inspector may refuse to issue any certificate or payment until all defective materials or work have been removed and other material of proper quality substituted therefor. All removal and replacement with same shall be done at Contractor's expense. Manufactured articles, materials, and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned as directed by the manufacturer.

ARTICLE 4
ADMINISTRATION OF CONTRACT

4.1 INSPECTOR'S ADMINISTRATION OF CONTRACT

4.1.1 Contract Communications: Unless otherwise provided in the Contract Documents or when direct communications have specifically been authorized, all parties shall communicate through Inspector. Communications by and with Subcontractor and material suppliers shall be through Superintendent. Communications by and with separate contractors, architects, or engineers shall be through Inspector.

4.1.2 Inspections: Inspections shall be carried on by Inspector or as otherwise designated by Owner. Inspector shall see that the Work and intent of the Contract Documents is carried out in its entirety.

4.1.3 Inspector Does Not Control Work: Inspector will not have control over or charge of and will not be responsible for construction means, methods, techniques, sequences, or procedures or for safety precautions and programs in connection with the Work, since these are solely Contractor's responsibility. Inspector will not be responsible for Contractor's failure to carry out the Work in accordance with the Contract Documents. Inspector will not have control over or charge of and will not be responsible for the acts, omissions, or negligence of Contractor, Subcontractor, or their agents or employees, or of any other persons performing portions of the Work.

4.1.4 Inspector Recommends Payments: Based on Inspector's observations and evaluations of Contractor's Applications for Payment, Inspector will review amounts due Contractor and will recommend to Owner payments to Contractor as set forth in Section 6.6.

4.1.5 Inspector's Authority: Inspector will have the authority to stop the Work whenever necessary to ensure proper execution of the Work. Inspector will also have authority to reject Work which does not conform to the Contract Documents. Whenever Inspector considers it necessary or advisable for implementation of the intent of the Contract Documents, Inspector will have the authority to require additional inspections or testing of the Work in accordance with Section 4.2 whether or not such Work is fabricated, installed, or completed. However, neither this authority nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of Inspector to Contractor, Subcontractor, material and equipment suppliers, their agents or employees, or other persons performing portions of the Work.

4.2 INSPECTION AND TESTING

4.2.1 Advance Notice: Contractor shall notify Inspector twenty-four (24) hours prior to any day in which Contractor will require an inspection of any portion of the Work, work in excess of eight (8) hours, or anytime Contractor intends to work weekends. Any Work not performed subject to inspection will not be accepted and will be rejected and/or ordered removed by Inspector.

4.2.2 Access to Work: Inspector will at all times have access to the Work. In addition, authorized representatives and agents of any participating Federal, State, or local agency shall be permitted to inspect all Work, materials, payroll, records on personnel, invoices of materials, and other relevant data and records. Contractor will provide proper facilities for such access and observation of the Work and also for any inspection or testing thereof.

4.2.3 Costs of Tests: Owner shall bear all costs related to testing for conformance of the Work to the Contract Documents. However, if Contractor has called for testing and that test fails, subsequent tests, and all related costs, shall be borne by Contractor.

4.2.4 Inspector Prepares Change Directives/Orders: Inspector will prepare Change Orders and Change Directives and may authorize minor changes in the Work as provided in Article 5.

4.3 CLAIMS

4.3.1 The provisions of this Section are intended to implement Section 9204 of the Public Contract Code, the provisions of which are incorporated herein by reference.

4.3.2 Concealed or Unforeseen Conditions: If conditions are encountered at the Work site which are subsurface or otherwise concealed physical conditions, which differ materially from those indicated in the Contract Documents, or which are unknown physical conditions of an unusual nature, which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, notice by the observing party shall be given to the other party promptly before conditions are disturbed and in no event later than five (5) days after first observance of the conditions. Inspector will promptly investigate such conditions and, if they differ materially and cause an increase or decrease in Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Price or Contract Time, or both. If Inspector determines that the conditions at the Work site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, Inspector shall notify Owner and Contractor in writing, stating the reasons. Claims by either party in opposition to such determination must be made within five (5) days after Inspector has given notice of the decision. If Owner and Contractor cannot agree on an adjustment in the Contract Price or Contract Time, the adjustment shall be referred to Inspector for initial determination, subject to further proceedings pursuant to Section 4.4.

4.3.3 Submission of Claims: All disputes, except for tort claims, must be submitted by Contractor as a Claim. Claims by Contractor, including, but not limited to, Claims by Subcontractor, not addressed in Section 4.3.2, must be made within twenty-one (21) days after occurrence of the event giving rise to said Claim, except Claims made due to delays or hindrances which Contractor alleges were caused by Owner shall be made within ten (10) days after occurrence of the event giving rise to said Claim. Claims must be made by written notice and contain any and all documentation necessary to support the amount requested. Claims must be submitted to Inspector by registered mail or certified mail, return receipt requested. Failure to make a Claim in writing in the time and manner as set forth herein or failure to provide supporting documentation shall bar Contractor from recourse for said Claim and constitute a waiver by Contractor of the subject matter(s) of the Claim. All Claims must be submitted on or before the payment date of the Final Payment.

4.3.4 Claims for Additional Costs:

4.3.4.1 If Contractor wishes to make a Claim for an increase in the Contract Price, Contractor shall submit the Claim as set forth in Section 4.3.3. This submission shall be made by Contractor before proceeding to execute the Work, except in an emergency endangering life or property in which case Contractor shall, as soon as possible, advise Owner of Contractor's intent to do the Work.

4.3.4.2 Increases in Contract Price due to Claims shall be calculated based on the methods detailed in Section 5.4.

4.3.4.3 Under no circumstances shall Contractor recover any administrative overhead costs or recover on the basis of any "Home Office" damages formula, "Total Cost" recovery formula, or any other such formula.

4.3.5 Claims for Additional Time:

4.3.5.1 If Contractor wishes to make a Claim for an increase in the Contract Time, Contractor shall submit the Claim as set forth in Section 4.3.3. Contractor's claim shall

include an estimated probable effect of delay on progress of the Work. In the case of a continuing delay, only one (1) Claim is necessary.

4.3.5.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time and could not have been reasonably anticipated and that weather conditions had an adverse effect on the Work.

4.3.5.3 Owner shall not be liable for any damages on account of any delay or hindrance of Owner, except for an extension of time caused by the same. Contractor shall make any Claims for an extension in time as set forth in Section 4.3.3 for any unreasonable delay or hindrance caused by Owner, and specify the cause thereof.

4.3.6 Submission Under Penalty of Perjury: Contractor shall certify, at the time of submission of a claim, as follows:

"I certify under penalty of perjury under the laws of the State of California, that the claim is made in good faith, that the supporting data is accurate and complete, and that the amount requested accurately reflects the Contract adjustment for which Owner is liable. Executed on ____(date)_____ in ___(City)_____, (State).

By:_____
(Contractor's signature)"

4.3.7 Receipt of Claim:

4.3.7.1 Upon receipt of a Claim, Owner shall conduct a reasonable review of the Claim and, within a period not to exceed forty-five (45) days, shall provide Contractor a written statement identifying what portion of the Claim is disputed and what portion is undisputed. Owner and Contractor may, by mutual agreement, extend the time period provided in this subdivision.

4.3.7.2 If Owner needs approval from its Board to provide Contractor a written statement identifying the disputed portion and the undisputed portion of the Claim, and its Board does not meet within the forty-five (45) days or within the mutually agreed to extension of time following the receipt of a Claim, Owner shall have up to three (3) days following the next duly publicly noticed meeting of its Board after the forty-five (45) day period, or extension, expires to provide Contractor a written statement identifying the disputed portion and the undisputed portion.

4.3.7.3 Any payment due on an undisputed portion of the Claim shall be processed and paid within sixty (60) days after Owner issues its written statement. If Owner fails to issue a written statement, Section 4.4.2 shall apply.

4.4 DISPUTE RESOLUTION

4.4.1 Continue Work during Dispute: In the event of any dispute between Owner and Contractor, Contractor will not stop the Work but will prosecute the Work diligently to completion in the manner directed by Owner and the dispute shall be resolved as provided herein or by a court of law after completion of the Work.

4.4.2 Dispute of Owner's Written Response: If Contractor disputes Owner's written response, or if Owner fails to respond to a Claim within the time prescribed, Contractor may demand an informal conference to meet and confer for settlement of the issues in dispute submitted to Inspector in writing sent by registered mail or certified mail, return receipt requested,.

4.4.2.1 Upon receipt of a demand in writing, Owner shall schedule a meet and confer conference within thirty (30) days for settlement of the dispute.

4.4.2.2 Within ten (10) business days following the conclusion of the meet and confer conference, if the Claim or any portion of the Claim remains in dispute, Owner shall provide Contractor a written statement identifying the portion of the Claim that remains in dispute and the portion that is undisputed.

4.4.2.3 If Owner needs approval from its Board to provide Contractor a written statement identifying the disputed portion and the undisputed portion of the Claim, and its Board does not meet within the ten (10) days or within the mutually agreed to extension of time following the receipt of a Claim, Owner shall have up to three (3) days following the next duly publicly noticed meeting of its Board after the ten (10) day period, or extension, expires to provide Contractor a written statement identifying the disputed portion and the undisputed portion.

4.4.2.4 Any payment due on an undisputed portion of the Claim shall be processed and made within sixty (60) days after Owner issues its written statement.

4.4.2.5 Any disputed portion of the Claim, as identified by Contractor in writing, shall be submitted to nonbinding mediation, with Owner and Contractor sharing the associated costs equally. Owner and Contractor shall mutually agree to a mediator within ten (10) business days after the disputed portion of the Claim has been identified in writing. If the parties cannot agree upon a mediator, each party shall select a mediator and those mediators shall select a qualified third party to mediate. Each party shall bear the fees and costs charged by its respective mediator in connection with the selection of the neutral mediator. If the mediation is successful, any payment due shall be made in compliance with Section 4.4.2.4. If mediation is unsuccessful, the parts of the Claim remaining in dispute shall be subject to applicable procedures outside this Section.

4.4.2.6 Mediation includes any nonbinding process, including, but not limited to, neutral evaluation or a dispute review board in which an independent third party or board assists the parties in dispute resolution through negotiation or by issuance of an evaluation.

4.4.3 Suit in Kings County Only: Any litigation arising out of the Contract Documents shall be brought and adjudicated in Kings County. Contractor hereby waives the removal provisions of Section 394of the Code of Civil Procedure.

4.4.3.1 In any suit filed under Section 20104.4 of the Public Contract Code, Owner shall pay interest at the legal rate on any arbitration award or judgment, as required by Section 20104.6 of the Public Contract Code.

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ARTICLE 5
CHANGES IN WORK

5.1 WAIVER

5.1.1 Waivers of Contract Provisions: It is expressly understood and agreed that no waiver granted by Inspector or Owner of any term, provision, or covenant of the Contract Documents shall constitute precedent or give rise to an expectation of a future waiver for breach of the same or any other terms, provisions, or covenants.

5.2 CHANGES AND CHANGE ORDERS

5.2.1 Owner May Order Changes in Work: Contractor agrees that Owner may order changes, including but not limited to, revisions to Plans and Specifications, performance of extra Work, and the elimination of Work, without invalidating the Contract Documents and without notice to sureties. Orders for such changes will be in writing and signed by the parties. Changes shall not affect the obligations of the sureties on the contract bonds nor require their consent. Contractor shall notify Owner for its evaluation whenever it appears a change is necessary. Contract Time and Contract Price will be adjusted, by written Change Order for changes which materially increase or decrease the time for or cost of the Work. Owner reserves the right to accelerate the Work.

5.2.2 Proposed Change Order: Changes to the Work will be provided to Contractor with a written Proposed Change Order by Owner, which describes the intended changes to the Work. A request for a Proposed Change Order may be made using the Request for Instruction (RFI) or Architect Supplemental Instruction (ASI) process.

5.2.3 Timeline: Within fourteen (14) days, Contractor shall submit to Owner Contractor's proposed cost estimate to be added or deducted from the Contract Price as a result of the change. Any proposed cost estimates shall be authenticated in full by completely detailed estimates and other authenticators of the cost by Contractor, Subcontractor, vendors, or material suppliers, and any adjustments to the Contract Time that is directly attributable to Owner's Proposed Change Order.

5.2.4 Agreement: If an agreement is reached as to the adjustment in compensation for performance of changed Work, but an agreement is not reached as to the adjustment of Contract Time for such Work, Contractor shall proceed with the Work at the agreed cost, reserving to Contractor the right to further pursue Contractor’s Claim for adjustment of time in accordance with Section 4.3.3.

5.2.5 Failure to Submit Cost Estimate: If Contractor fails to submit the cost estimate within the fourteen (14) day timeline, or there is failure to agree to the cost, Owner shall have the right to issue a Change Directive to Contractor to commence Work immediately, and the Contract Price shall be changed in accordance with Owner's estimate of cost, unless, within fourteen (14) days following completion of the added Work or with written notice to delete the Work, Contractor submits to Owner written proof that Owner's estimate is in error.

5.2.6 Contractor, when ordered by Owner, shall proceed with changes before an agreement is reached on adjustment in Contract Price or Contract Time and shall furnish to Owner records as specified in Section 5.4.1.3. If Contractor fails to provide such records, Owner's records will be used for the purpose of adjustment in Contract Time and Contract Price.

5.2.7 Contractor may request progress payments for such Work.

5.3 OTHER CHANGE INSTRUMENTS

5.3.1 Field Order: Inspector may order minor changes in work by use of a Field Order. These minor changes will involve neither changes in the Contract Price or Contract Time. If Contractor disagrees that the change does not involve a change in the Contract Price or Contract Time, then a Change Order or Change Directive shall be used.

5.3.2 Change Directive: In the event that Owner and Contractor do not agree on the Proposed Change Order as set forth in Section 5.2, or in the event it is essential that Contractor proceed expeditiously and without delay, Owner may order changes in the Work by issuance of a Change Directive and Contractor shall promptly proceed with the change in the Work involved.

5.4 BASES OF ADJUSTMENT TO CONTRACT PRICE

5.4.1 Methods of Adjustment: Methods used in determining adjustments to the Contract Price shall be based on one of the following.

5.4.1.1. By mutual acceptance of a lump sum increase or decrease in costs. Upon Owner's written request, Contractor shall furnish a detailed estimate of increase or decrease in costs, together with cost breakdowns and other supporting data within the time specified in such request. Contractor shall be responsible for any additional costs caused by Contractor's failure to provide the estimate within the time specified.

5.4.1.2 By Owner, on the basis of Owner's estimate of the increase or decrease in the costs.

5.4.1.3 By Owner, whether or not negotiations are initiated, by actual and necessary costs, as determined by Owner, on the basis of records. Beginning with the first day and at the end of each day, Contractor shall furnish to Owner detailed hourly records for labor, construction equipment, and services; and itemized records of materials and equipment used that day in performance of the changes. Such records shall be on a form acceptable to Owner. Such records shall be signed by Contractor and, when agreed to by Owner, will become the basis for compensation for the changed work. Such agreement shall not preclude subsequent adjustment based upon a later audit by Owner.

5.4.1.4 By unit prices stated in the Contract Documents, or subsequently agreed upon.

5.4.2 Allowable Costs: The only costs which will be allowed due to changes in the Work shall be computed in the following manner:

5.4.2.1 Compensation for labor shall include the necessary payroll cost, including first level supervision, directly engaged in performance of the changes. Wages shall not exceed current prevailing wages in the locality for performance of the changes. Use of a classification which would increase labor costs will not be permitted. Exceptions will be permitted only when Contractor establishes, to the satisfaction of Owner, the necessity for payment at higher rates or classifications.

5.4.2.2 Materials and Equipment: Compensation for materials and equipment shall include the necessary costs for materials and equipment directly required for performance of the

changes. Cost of materials and equipment may include costs of transportation and delivery. If discounts by suppliers are available to Contractor, they shall be credited to Owner. If materials and equipment are obtained from a supply or source owned by, or in part, by Contractor, payment therefor will not exceed current wholesale prices for such materials and equipment. If, in the opinion of Owner, the cost of materials and equipment is excessive, or if Contractor fails to furnish satisfactory evidence of costs from supplier, the cost of materials and equipment shall be the lowest current wholesale price at which similar materials and equipment are available in the quantities required. Owner reserves the right to furnish materials and equipment required for performance of the changes and Contractor shall have no claim for costs or mark-ups on such materials and equipment.

5.4.2.3 Construction Equipment: Compensation for construction equipment shall include the necessary costs for use of construction equipment directly required for performance of the changes. Any use for less than thirty (30) minutes shall be considered one-half (1/2) hour. No costs will be allowed for time while construction equipment is inoperative, idle, or on stand-by for any reason, unless such times have been approved in advance by Owner. Rental time for construction equipment moved by its own power shall include the time required to move construction equipment to the Work site from the nearest available source for rental of such equipment and time required to return such equipment to the source. If construction equipment is not moved by its own power, loading and transportation costs will be paid in lieu of such rental time. Neither moving time nor loading and transportation costs will be allowed if the construction equipment is used for any Work other than the changes. No allowance will be made for individual pieces of construction equipment and tools having a replacement value of five hundred dollars ($500.00) or less. No construction equipment costs will be recognized in excess of rental rates established by distributors or equipment rental agencies in the locality for performance of the changes. Unless otherwise approved by Owner, the allowable rate for use of construction equipment shall constitute full compensation to Contractor for cost of fuel, power, oil, lubrication, supplies, necessary attachments, repairs and maintenance of any kind, depreciation, storage, insurance, and labor, except for construction equipment operators and any and all costs to Contractor incidental to the use of such construction equipment.

5.4.3 Cost Disallowance: Costs which will not be allowed or paid in Change Orders, Change Directives, or Claim settlements under these Contract Documents include, but are not limited to: interest cost of any type, other than those mandated by statute; Claim preparation or filing costs; legal expenses; the costs of preparing or reviewing Proposed Change Orders, Change Orders, or Change Directives which are not issued by Owner; lost revenues; lost profits; lost income or earnings; rescheduling costs; costs of idled equipment when such equipment is not yet at the site or has not yet been employed on the Work; lost earnings or interest on unpaid retention; Claims consulting costs; the costs of corporate officers or staff visiting the site or participating in meetings with Owner; any compensation due to the fluctuation of foreign currency conversions or exchange rates; or loss of other business.

5.5 EXTENSION OF TIME FOR COMPLETION

5.5.1 Contractor Delayed or Hindered: Should Contractor be delayed or hindered in the completion of the Work by the neglect of Owner, or by fire, strikes, lockouts, embargoes, earthquakes, or any other cause that Inspector approves as not having been reasonably foreseeable at the time of execution of the Contract Documents, the Contract Time shall be extended for a period equivalent to the time lost by reason of any or all of the stated causes. Time extensions must be requested in accordance with Section 4.3.3.

5.5.2 Agreement on Time Extension: Contractor and Owner reserve the right to mutually agree in writing upon an extension of time for completion for causes other than enumerated above. Inspector must recommend the extension and the additional time must be set forth in a signed Change Order.

5.5.3 Time Extension not Waiver: The granting of an extension of time by Owner shall not operate as a waiver or estop Owner from claiming damages due to any other delays, prior or subsequent, which were not approved by Inspector and Owner as provided herein.

5.6 ACCEPTANCE OF CHANGE ORDERS

5.6.1 Contractor's written acceptance of a Change Order shall constitute final and binding agreement to the provisions thereof and a waiver of all Claims in connection therewith, whether direct, indirect, incidental, consequential, or special in nature.

ARTICLE 6
PAYMENTS AND COMPLETION

6.1 GENERAL

6.1.1 Contract Price: The Contract Price as stated in the Contract Documents, including authorized adjustments, is the total maximum amount payable by Owner to Contractor for performance of the Work.

6.1.2 Waiver: Neither the acceptance of the Work by Owner nor the payment of any part or all of the Contract Price shall constitute a waiver by Owner of any claim which Owner may have against Contractor or surety under the Contract Documents or otherwise.

6.1.3 Manner of Paying Warrants: When payment becomes due under the Contract Documents or as otherwise prescribed by law, Owner shall cause a warrant for the certified amount to be drawn upon the proper fund which shall be approved and issued to Contractor within that period of time customarily required to process said warrants in the ordinary course of Owner's business.

6.2 SCHEDULE OF VALUES

6.2.1 Before the first Application for Payment, Contractor shall submit to Inspector a Schedule of Values allocated to various portions of the Work prepared in such form and supported by such data to substantiate its accuracy as Inspector may require. This Schedule of Values, unless objected to by Inspector, shall be used as a basis for reviewing Contractor's Applications for Payment.

6.3 LIST OF COSTS

6.3.1 Contractor shall ensure that he or she and any Subcontractor employed to do work under the Contract Documents shall list costs according to the CSI Divisions of the Schedule of Values in categories that reflect major costs areas for construction projects.

6.4 APPLICATIONS FOR PAYMENT

6.4.1 Submittal of Applications: At least ten (10) days before the date established for each

progress payment, Contractor shall submit to Inspector an itemized Application for Payment for Work completed to date. Such application shall be supported by documentation of Contractor's right to payment as Owner may require, such as copies of requisitions from Subcontractor and material suppliers, and reflect the amount of retention as provided in the Contract Documents.

6.4.2 Basis for Payment: Each Application for Payment shall be submitted by Contractor in accordance with the Contract Documents. Applications shall indicate the percentage of completion of each portion of the Work covered by the Application.

6.5 PROGRESS PAYMENTS

6.5.1 Progress Payments: Based on the Applications for Payment, progress payments shall be made once each month on or about a date to be determined by Owner or on a schedule as mutually agreed by the parties.

6.5.2 Computation of Progress Payments: Subject to the provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

6.5.2.1. That portion of the Contract Price computed by multiplying the percentage completed of each Work task by the portion of the Contract Price allocated to the Work task in the Schedule of Values, less a retainage of five (5) percent;

6.5.2.2. Plus the values of Change Orders for which the final cost or credit has not yet been determined, and which is not in dispute;

6.5.2.3. Plus the portion of the Contract Price allocated to equipment and materials delivered and suitably stored at the site (or, if approved in advance by Owner, suitably stored off the site) for incorporation in the Work, less a retainage of twenty-five (25) percent.

a. If approved in advance by Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing.

b. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by Contractor with procedures satisfactory to Owner to establish Owner's title to such materials and equipment or otherwise protect Owner's interest, and shall include applicable insurance, storage, and transportation to the site for such materials and equipment stored off the site.

6.5.2.4. Less the aggregate of previous payments made by Owner to Contractor for the Work.

6.5.2.5. Less amounts, if any, for which Inspector has withheld or disallowed as provided in Article 9 and Section 6.7.

6.5.2.6. Plus, upon Substantial Completion of the Work, an amount sufficient to increase the total amount paid to Contractor for the Work to ninety (90) percent of the Contract Price, less amounts as Inspector determines for incomplete Work and unsettled claims.

6.5.2.7. Plus, if final completion of the Work is thereafter materially delayed through no fault of Contractor, any additional amounts payable in accordance with the Section 6.8.

6.5.2.8. Less amounts, if any, withheld as anticipated liquidated damages incurred as a result of a delay to the Work's completion, as shown on Contractor's schedule.

6.5.2.9. Less amounts, if any, withheld as compensation for excessive submittals, as further set forth in Section 3.4.2.

6.5.3 Release of Claims: Payment of undisputed progress payments is contingent upon Contractor furnishing Owner with a release of all claims against Owner arising by virtue of the Work relating to the amount so paid. The release may be on the form used for computing progress payments.

6.5.4 Work Free of Liens: Contractor warrants that upon submittal of an Application for Payment, all Work for which Certificates for Payment have been previously issued and payments received from Owner shall be free and clear of liens, claims, security interests, or encumbrances against Contractor by Subcontractor, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials, and equipment in relation to the Work.

6.5.5 Interest Payments: If Owner does not pay Contractor within thirty (30) days after receipt of an undisputed and properly submitted Application for Payment, excluding retention amounts, then Owner shall pay interest to Contractor as provided by Section 20104.50 of the Public Contract Code. If Inspector does not issue a Certificate for Payment, through no fault of Contractor, within seven (7) days after receipt of Contractor's Application for Payment, the number of days available to Owner to make a payment without incurring interest pursuant to this Section shall be reduced by the number of days by which Owner exceeds the seven (7) day return requirement set forth in Section 20104.50, subdivision (c)(2), of the Public Contract Code.

6.6 INSPECTOR'S CERTIFICATION FOR PAYMENT

6.6.1 Inspector's Determination: Inspector will, within seven (7) days after receipt of Contractor's Application for Payment, either issue to Owner a Certification for Payment, with a copy to Contractor, for such amount as Inspector determines is properly due, or notify Contractor and Owner of Inspector's reasons for withholding certification in whole or in part as provided for in Section 6.7.

6.7 WITHHOLDING FROM PAYMENTS

6.7.1 Reasons for Withholding: Owner, upon recommendation of Inspector, may withhold payments or, on account of subsequently discovered evidence, nullify the whole or a part of any progress or retention payments to such extent as may be necessary to protect Owner from loss on account of:

6.7.1.1 Defective work or material not remedied or replaced.

6.7.1.2 The filing of claims or stop notices to withhold or reasonable evidence indicating probable filing of such claims or notices.

6.7.1.3 Failure of Contractor to make payments properly to Subcontractor or for materials or labor.

6.7.1.4 Failure to make payments to any person or entity for financial obligations of

Contractor under terms of the Contract Documents,

6.7.1.5 A reasonable doubt that the Work can be completed for the balance then unpaid.

6.7.1.6 Damage to another contractor.

6.7.1.7 Performance of work in violation of the terms of the Contract Documents.

6.7.1.8 Excessive costs to Owner, as described in Section 1.5 or costs for excessive submittals, Requests for Instruction (RFI), Failed Inspections, as described in Section 3.4.2.

6.7.1.9 Failure of Contractor to comply with requirements for timely submittal of specified documentation, including but not limited to construction schedules, cost proposals, and submittals.

6.7.1.10 Anticipated liquidated damages incurred due to an inability to meet the Contract Time and any updates thereto.

6.7.2 Release of Payment: Owner shall pay Contractor the amounts withheld when the reasons for withholding are removed.

6.8 SUBSTANTIAL COMPLETION

6.8.1 Request for Inspection: When Contractor considers that the Work, or a portion thereof which Owner agrees to accept separately, is substantially complete, Contractor shall request an inspection of the Work. Inspector will then make an inspection to determine whether the Work or designated portion thereof is substantially complete. If Inspector's inspection discloses significant Work which is not in accordance with the requirements of the Contract Documents, Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such Work. Inspector shall prepare a list of any items of Work which is judged to be minor repair work or to be covered by warranties.

6.8.2 Certificate of Substantial Completion: When the Work or designated portion thereof is substantially complete, Inspector will recommend to Owner that Owner issue a Certificate of Substantial Completion which shall establish the date of Substantial Completion and shall fix the time within which Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion. The Certificate of Substantial Completion shall indicate responsibilities assigned to Contractor and shall be accepted in writing by him or her.

6.8.3 Final Payment: Except as otherwise provided, upon issuance of a Certificate of Substantial Completion, a sum sufficient to increase the total payments to ninety-five percent (95%) of the Contract Price shall be paid to Contractor.

6.9 ALTERNATIVES TO FIVE PERCENT (5%) RETENTION

6.9.1 Substitution of Securities for Five Percent (5%) Retention: As provided under Section 22300 of the Public Contract Code, Contractor may, at his or her request and expense, and in lieu of the monies withheld by Owner to ensure performance under the Contract Documents, deposit

securities equivalent to the amount withheld with Owner or with a state or federally chartered bank as an escrow agent, who shall then pay those monies to Contractor upon satisfactory completion of the Work and release of retention by Owner.

6.9.2 Alternatively, as further provided under Section 22300 of the Public Contract Code, Contractor may request and Owner shall make payment of retentions earned directly to the escrow agent at the expense of Contractor. Contractor may direct the investment of the payments into securities at Contractor's expense and shall receive the interest earned on the investments upon the same terms provided for securities deposited by Contractor. Upon satisfactory completion of the Work and release of the retention, Contractor shall receive from the escrow agent all securities, interests, and payments received by the escrow agent from Owner.

6.9.3 Securities eligible for investment under this Section shall include those listed in Government Code Section 16430, bank or savings and loan certificates of deposit, interest bearing demand deposit accounts, standby letters of credit, or any other security mutually agreed to by Contractor and Owner. Contractor shall be the beneficial owner of any securities substituted for monies withheld and shall receive any interest thereon.

6.9.4 Form of Escrow Agreement: The terms and conditions of the escrow shall substantially conform to the form set forth in subdivision (f) of Section 22300 of the Public Contract Code.

6.9.5 Escrow Agreements for Subcontractor: In the event Contractor chooses to receive interest on monies withheld by retention, Contractor shall comply with subdivision (d) of Section 22300 of the Public Contract Code for any Subcontractor performing Work under the Contract Documents.

6.10 FINAL COMPLETION AND PAYMENT OF RETENTION

6.10.1 Affidavit of Payment: After the date of Substantial Completion of the Work and before final acceptance of the Work, Contractor shall file with Inspector his or her notarized affidavit stating that all persons employed, all firms supplying materials, and all Subcontractors have been paid in full, except certain items, if any, to be set forth in such affidavit covering disputed claims, including claims for acceleration, disruption, delays, inefficiencies, and hindrance, or items in connection for which stop notices have been filed under the provisions of the statutes of the State of California. The filing of such affidavit by Contractor shall be a prerequisite to the payment of the five percent (5%) retention.

6.10.2 Final Inspection: Upon receipt of written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, Inspector will promptly make such inspection and, when Inspector finds the Work acceptable under the Contract Documents and the Contract fully performed, Inspector will promptly recommend to Owner that Owner may consider the Work complete and that payment of the retention may be made.

6.10.3 Final Certification: Before payment of the retention, Contractor shall file with Owner a certificate in which he or she certifies that to the best of Contractor's knowledge, information, and belief, and on the basis of observations and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents.

6.10.4 Payment of Retention: Sixty (60) days after the Notice of Completion has been filed, the balance due under the Contract Documents shall be paid, less any monies held for stop notices or as disputed amounts. These payments shall not be construed as an absolute acceptance of the Work done up to the time of such payments. Contractor, if requested by Owner, shall furnish

receipts or other vouchers showing his or her payments for materials and labor.

6.10.5 Disputed Amounts: Pursuant to Section 7107of the Public Contract Code, in the event of a dispute between Owner and Contractor, Owner may withhold from the Final Payment an amount not to exceed one hundred fifty (150) percent of the disputed amount plus any amounts necessary to cover any filed and unreleased stop notices. Except as so withheld, Owner shall pay the retention within sixty (60) days after the date of completion of the Work. In the event that retention amounts are not paid timely, Owner shall be subject to the interest provisions of Section 7107 of the Public Contract Code.

6.10.6 Notice of Completion: The Work shall be accepted in writing in the form of a Notice of Completion when the Work has been completed to the satisfaction of Owner. In judging the Work, no allowance for deviations from the original Specifications will be made unless already approved in writing at the proper times and in the manner as called for herein. The Notice of Completion shall be recorded by Owner.

ARTICLE 7
PROTECTION OF PERSONS AND PROPERTY

7.1 PROTECTION OF WORK, PROPERTY, AND PERSONS

7.1.1 Responsible for Damage to Owner's Property: Contractor shall be entirely responsible for any damage to the property of Owner due to careless handling of tools and/or materials or other causes attributed to Contractor or any Subcontractor in performing the Work.

7.1.2 Responsible for Safety: Contractor will take all necessary precautions for the safety of and will provide the necessary protection to prevent damage, injury, or loss to all employees on the Work and other persons who may be affected thereby, all the Work and all materials or equipment to be incorporated therein, whether in storage on or off the site, and other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement during the course of construction.

7.1.3 Safety and Convenience: Contractor will comply with all applicable laws, ordinances, rules, regulations, and orders of any public body having jurisdiction. Contractor will erect and maintain, as required by the conditions and progress of the Work, all necessary safeguards for safety and protection. Contractor will notify the owners of adjacent utilities when progression of the Work may affect them.

7.1.4 Remedy Damages: Contractor will remedy all damage, injury, or loss to any property caused, directly or indirectly, in whole or part, by Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or anyone of whose acts Contractor may be liable, except damage or loss attributable to the sole fault or to the acts or omissions of Owner or Inspector or anyone employed by them and not attributable, directly, or indirectly, in whole or in part, to the fault or negligence of Contractor.

7.1.5 Protection of Workers in Trenches: As required by Section 6705 of the Labor Code and any other applicable statute, law, or regulation, whenever the Work involves an estimated expenditure in excess of twenty-five thousand dollars ($25,000) for the excavation of any trench or trenches five (5) feet or more in depth, Contractor shall submit for acceptance by Owner, or by a registered civil or structural Engineer employed by Owner to whom authority to accept has been delegated, in advance of excavation, a detailed plan showing the design of shoring, bracing, sloping, or other

provisions to be made for worker protection from the hazard of caving ground during the excavation, or such trench or trenches. If such plan varies from the shoring system standards established by the Construction Safety Orders of the Department of Industrial Relations, Division of Industrial Safety, the plan shall be prepared by a registered civil or structural engineer employed by Contractor and all costs therefor shall be included in the Contract Price for completion of the Work. Nothing in this Section shall be deemed to allow the use of a shoring, sloping, or other protective system less effective than that required by the Construction Safety Orders. Nothing in this Section shall be construed to impose tort liability on Owner, Owner's Engineer, or any of their officials, officers, agents, representatives, or employees.

ARTICLE 8
INSURANCE AND BONDS

8.1 INSURANCE

8.1.1 Contractor shall procure and maintain for the Contract Time and for ten (10) years thereafter insurance against claims for injuries to persons or damages to property, which may arise from or in connection with, the performance of the Work by Contractor, his or her agents, representatives, employees, or Subcontractor. Coverage shall be at least as broad as the specifications set forth below.

8.1.2 Commercial General Liability Insurance (CGL): Contractor shall obtain CGL as provided in Insurance Services Office Form CG 00 01, including products and completed operations, with limits of no less than five million dollars ($5,000,000) per occurrence for bodily injury, personal injury, and property damage. If a general aggregate term applies, either the general aggregate limit shall apply separately to this project/location, or the general aggregate limit shall be twice the required occurrence limit.

8.1.3 Automobile Liability: Contractor shall obtain automobile liability insurance as provided in Insurance Services Office Form Number CA 0001 covering Code 1 (any auto), with limits of no less than five million dollars ($5,000,000) per accident for bodily injury and property damage.

8.1.4 Workers' Compensation: Contractor shall carry workers' compensation insurance as required by California law in at least the amounts set forth in the applicable statutes and shall also carry Employers' Liability insurance with a limit of no less than one million dollars ($1,000,000) per accident for bodily injury or disease.

8.1.5 Professional Liability: For Design/Build projects, Contractor shall have professional liability insurance in an amount of not less than one million dollars ($1,000,000) per occurrence or claim and with a three million dollars ($3,000,000) policy aggregate.

8.1.6 Contractor's Pollution; Asbestos Liability; Errors and Omissions: If the Work includes environmental hazards, Contractor shall have contractors' legal liability, asbestos legal liability, and/or errors and omissions insurance with limits of no less than one million dollars ($1,000,000) per occurrence or claim and two million dollars ($2,000,000) policy aggregate.

8.1.7 Deductibles and Self-Insured Retentions: Contractor shall declare to and obtain the approval of Owner for any deductibles or self-insured retentions. At the option of Owner, Contractor shall either cause the insurer to reduce or eliminate such deductibles or self-insured retentions with respect to Owner, its officers, officials, employees, and agents, or Contractor shall provide a financial guarantee satisfactory to Owner guaranteeing payment of losses and related

investigations, claim administration, and defense expenses.

8.1.8 Endorsement: Contractor shall endorse all insurance policies with the following provisions:

8.1.8.1 The County of Kings, its officers, officials, employees, and agents are to be covered as additional insured on the CGL and automobile liability policies with respect to liability arising out of the Work or operations performed by or on behalf of Contractor, including materials, parts, or equipment furnished in connection with such Work or operations and automobiles owned, leased, hired, or borrowed by or on behalf of Contractor. General liability coverage can be provided in the form of an endorsement to Contractor's insurance in language at least as broad as ISO Form CG 20 10, 11 85, or both CG 20 10 and CG 23 37 forms if later revisions are used.

8.1.8.2 Contractor's insurance shall be the primary insurance for any claims related to the Work with respect to Owner, its officers, officials, employees, and agents. Any insurance maintained by Owner, its officers, officials, employees, or agents shall be in excess of Contractor's insurance and shall not contribute thereto.

8.1.8.3 Each insurance policy obtained as required herein shall provide that coverage shall not be reduced or canceled, except with a minimum of thirty (30) days written notice to Owner.

8.1.8.4 In the event the Work includes trenching or construction of a tunnel, Contractor shall ensure that an exclusion of loss arising from explosion, collapse, and underground shall be endorsed out of the insurance policy.

8.1.9 Acceptability of Insurers: Contractor shall obtain insurance from insurers with a current A.M. Best Rating of no less than A: VII, unless otherwise acceptable to Owner.

8.1.10 Waiver of Subrogation: Contractor hereby agrees to waive rights of subrogation. Contractor agrees to obtain any endorsement that may be necessary to effect this waiver of subrogation. Contractor shall endorse his or her workers' compensation policy with a waiver of subrogation in favor of Owner for all Work performed by Contractor, its employees, agents, and Subcontractor.

8.1.11 Verification of Coverage: Contractor shall furnish Owner with original certificates and endorsements, or copies of the applicable insurance language, effecting coverage required by the Contract Documents. All certificates and endorsements are to be received and approved by Owner before the commencement of any Work. Owner's failure to obtain the required documents prior to the commencement of the Work shall not constitute a waiver of Contractor's obligation as provided herein. Owner reserves the right to require complete, certified copies of all required insurance policies, including endorsements, at any time.

8.1.12 Subcontractor: Contractor shall require and verify that all Subcontractors maintain insurance coverage that meets or exceeds all of the requirements stated herein.

8.2 BONDS

8.2.1 General Requirements for Bonds: Before commencing any Work, Contractor shall file three (3) of each bond together with three (3) certified copies of said bonds with Owner. These bonds shall be in the amounts and for the purposes specified below. They shall be surety bonds and

shall be issued by corporations duly and legally authorized to issue such bonds in the State of California and secured through an authorized agent with an office in California. They shall be maintained by Contractor at his or her expense during the Contract Time or longer as provided.

8.2.2 Performance and Maintenance Bond(s): Contractor shall obtain a Performance bond in the amount of one hundred percent (100%) of the Contract Price which shall guarantee the faithful performance of the Work and insure Owner during the Contract Time. Contractor shall also obtain a maintenance bond in the amount of one hundred percent (100%) of the Contract Price which shall be in full force and effect through the Guarantee Period. Both bonds shall insure against faulty or improper materials and/or workmanship.

8.2.3 Payment Bond: Contractor shall obtain a Payment bond in the amount of one hundred percent (100%) of the Contract Price which shall guarantee the payment in full of all claims for labor and materials in accordance with the provisions of the laws of the State of California.

8.2.4 Change of Surety: If at any time a surety on such bonds becomes irresponsible or loses its right to do business in the State of California, Owner may require another surety which Contractor shall furnish within ten (10) calendar days after receipt of written notice to do so. Evidence of authority of an attorney-in-fact acting for the corporate surety must be provided in the form of a certificate as to his or her power of attorney and to the effect that it is not terminated and remains in full force and effect on the date of the bonds. The form of the bonds shall be subject to approval by Owner.

ARTICLE 9
UNCOVERING AND CORRECTION OF WORK

9.1 DEVIATION FROM CONTRACT DOCUMENTS

9.1.1 Improper Work: If Contractor varies from the Contract Documents in the form or quality of the Work, or the amount or value of the materials herein provided for, Owner shall have the right to order such improper work or materials removed, remade, or replaced without further compensation due to Contractor or Subcontractor. In the event such order is made, any other Work disturbed or damaged by such alteration shall be made good at Contractor’s expense.

9.2 CORRECTION OF WORK

9.2.1 Inspection of Improperly Covered Work: If any Work is covered contrary to the written instructions of Inspector it must, if requested by Inspector, be uncovered for Inspector’s observation and replaced at Contractor’s expense.

9.2.2 Inspection of Covered Work: If Inspector considers it necessary or advisable that covered Work be inspected or tested by others, Contractor, at Inspector's request, will uncover, expose, or otherwise make available for observation, inspection, or testing as Inspector may require, that portion of the Work in question, furnishing all necessary labor, materials, tools, and equipment. Contractor will bear all expenses of such uncovering, exposure, observation, inspection, and testing and of any satisfactory reconstruction, if needed.

9.2.3 Rejected Work: Contractor shall promptly remove from the premises all Work rejected by Inspector or Owner for failure to comply with the Contract Documents, whether incorporated in the construction or not. Contractor shall promptly replace and re-execute the Work either during the Contract Time or during the Guarantee Period in accordance with the Contract Documents

and without expense to Owner. Contractor shall also bear the expense of making good all Work of other contractors or Subcontractor destroyed or damaged by such removal or replacement.

9.2.4 Cost of Correction: All removal and replacement Work shall be done at Contractor's expense. If Contractor does not take action to remove rejected Work within ten (10) days after receipt of written notice, Owner may remove such Work and store the materials at the expense of Contractor. Owner also may perform such Work or repairs itself and charge the expense to Contractor.

9.2.5 Correction During Guarantee Period: If during the Guarantee Period or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, Contractor shall correct it promptly after receipt of written notice from Owner to do so. The Guarantee Period shall be extended with respect to portions of the Work first performed after Notice of Completion by the period of time between Notice of Completion and the actual performance of the Work. This obligation shall survive acceptance of the Work and termination of the Contract. Owner shall give such notice promptly after discovery of the condition.

ARTICLE 10
TERMINATION OR SUSPENSION OF CONTRACT

10.1 TERMINATION BY OWNER FOR CONVENIENCE

10.1.1 Right to Terminate: Owner reserves the right to terminate the Contract at any time upon determination by its Board that termination of the Contract is in the best interest of Owner. Owner shall issue Contractor a written notice specifying that the Contract will be terminated and specify the date of such termination.

10.1.2 Contractor's Duties: Upon receipt of said written notice, Contractor shall stop all Work except that specifically directed to be completed prior to acceptance, perform the Work Inspector deems necessary to secure the Work for termination, remove equipment and tools from the site of the Work, take such action as is necessary to protect materials from damage, dispose of materials not yet used in the Work as directed by Inspector, and clean up the site in accordance with Section 3.11.3.

10.1.3 Payment for Work: If the Contract is terminated for Owner's convenience as provided herein, all finished or unfinished Work and materials previously paid for shall, at the option of Owner, become its property. Contractor shall be paid an amount which reflects costs incurred for Work provided to the date of notification of termination. In addition, Contractor shall be paid the reasonable cost, as solely judged by Inspector, and without profit, for all work performed to secure the Work for termination.

10.2 TERMINATION BY OWNER FOR CAUSE

10.2.1 Written Termination Notice: If Contractor is adjudged a bankrupt or insolvent, makes a general assignment for the benefit of its creditors, has a trustee or receiver appointed for any of its property, files a petition to take advantage of any debtor's act or to reorganize under the bankruptcy or applicable laws, fails to supply sufficient skilled workers or suitable material or equipment on more than one (1) occasion, fails to make prompt payments to Subcontractors for labor, materials, or equipment on more than one (1) occasion, disregards the authority of Inspector, or otherwise violates any provision of the Contract Documents, Owner may, without

prejudice to any other right or remedy and after giving Contractor and its Surety a minimum of ten (10) days written notice of termination, terminate the services of Contractor and take equipment and machinery owned by Contractor and finish the Work by whatever method Owner may deem expedient. In such case, Contractor shall not be entitled to receive any further payment until the Work is finished.

10.2.2 Inspector's Notice to Work or Quit: Without prejudice to other rights or remedies Owner may have if Contractor fails to begin delivery of materials and equipment, commence Work within the time specified, maintain the rate of delivery of material, execute the Work in the manner and at such locations as specified, or is not carrying out the intent of the Contract Documents, an Inspector's written notice may be served upon Contractor and its Surety on its faithful performance bond demanding satisfactory compliance with the Contract Documents. Service shall be made by U.S. Mail, First Class, return receipt requested.

10.2.2.1 If Contractor or its Surety does not comply with such notice within five (5) days after the date delivered as indicated on the return receipt, or after starting to comply, fails to continue, Owner may exclude it from the Work site, take possession of all material and equipment, and complete the Work by Owner's forces, letting the unfinished work to another Contractor, or a combination of such methods.

10.2.3 Owner's Rights after Termination: Where Contractor's services have been terminated by Owner, said termination shall not affect any right of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of monies by Owner due Contractor will not release Contractor from compliance with the Contract Documents.

10.2.3.1 If the unpaid balance of the Contract Price exceeds the direct and indirect costs of completing the Work, including compensation for additional professional services, such excess shall be paid by Contractor. If the unpaid portion of the Contract Price is insufficient for completion, Contractor or its Surety shall pay Owner all costs in excess of the Contract Price within five (5) days after the completion of the Work. In any event, the cost of completing the Work shall be charged against Contractor and its Surety and may be deducted from any monies due or coming due from Owner.

10.2.3.2 If the Surety assumes any part of the Work, it shall take Contractor's place in all respect for that part and shall be paid by Owner for all work performed by it in accordance with the Contract Documents. If the Surety assumes the entire Contract, all monies due Contractor at the time of its default shall be payable to the Surety as the work progresses, subject to the terms of the Contract Documents.

10.2.3.3 The provisions of this Section shall be in addition to all other rights and remedies available to Owner under law or equity.

10.2.4 Subsequent to Notice of Termination: If, after notice of termination under Section 10.2, it is determined for any reason that Contractor was not in default, the rights and obligations of the parties shall be the same as if the notice of termination had been issued pursuant to the provisions of Section 10.1.

10.3 SUSPENSION OF WORK

10.3.1 Owner May Suspend: Owner may suspend the Work or any portion thereof for a period of not more than ninety (90) days or such further time as agreed upon by Contractor, by written

notice to Contractor and Inspector, which shall fix the date on which the Work shall be resumed.

10.3.2 Resumption of Work: Contractor will resume the Work on the date so fixed. Contractor will be allowed an increase in the Contract Price or an extension of the Contract Time, or both, as directly attributed to any suspension.

APPENDIX A:

GEOTECHNICAL REPORT

August 31, 2022 KA Project No. 012-22022

Mr. Will Washburn, PE, Project Engineer
Peters Engineering Group
952 Pollasky Avenue
Clovis, California 93612

RE: Limited Geotechnical Engineering Investigation
Avenal Cutoff Road Improvements
Between Jackson Avenue and the California Aqueduct
Kings County, California

Dear Mr. Washburn:

In accordance with your request, we have performed a limited geotechnical engineering investigation for the planned Avenal Cutoff Road Improvements between Jackson Avenue and the California Aqueduct in Kings County, California. The information provided in this report should be considered supplemental to the *Asphalt Concrete Pavement Investigation* that Moore Twining Associates performed for this project as described in their report dated August 20, 2020 (Project No. D12614.01). The investigation performed by Moore Twining Associates included 20 shallow borings along the project alignment to measure the AC pavement section at these locations and samples of the subgrade were obtained at 10 locations for R-value tests. Although their report provided recommendations for constructing new pavement sections, their laboratory testing program did not include obtaining and treating representative samples with lime or cement to determine the type and amount of stabilizing agent that should be used for full depth reclamation (FDR) of the existing pavement section.

Scope of Services

The limited geotechnical investigation Krazan & Associates, Inc. performed for this project included the following tasks:

- A site reconnaissance to observe the existing conditions along the project alignment and mark test boring locations.
- Obtaining an encroachment permit from Kings County and contacting USA to mark the location of any underground utilities in the vicinity of the proposed test borings.
- Setting up traffic control and drilling 9 test borings along the project alignment to depths of approximately 3 to 4 feet, at the locations indicated on Figure 1, in order measure the existing pavement section and obtain representative subgrade samples for laboratory testing. Once completed, the borings were backfilled with soil cuttings, and then patched with an asphalt cold mix to match the thickness of the existing asphalt concrete.

- Perform laboratory tests on subgrade samples to evaluate the gradation, Atterberg Limits, compaction characteristics, and R-value. In addition, representative composite samples were treated with cement and tested to evaluate the unconfined compressive strength and R-value.

- The preparation of this report, which included geotechnical analysis and providing recommendations for new pavement sections using an FDR-C process.

Site Description

The project alignment is approximately 15 miles in length and lies in a rural area along the west side of Kings County and within the southwestern part of the San Joaquin Valley. Within the project limits, the Avenal Cutoff Road generally consists of a two-lane roadway with a paved width varying from approximately 31 to 34 feet. The subject roadway is surrounded by agricultural properties and some solar energy farms. The roadway is straight and flat with ground surface elevations ranging from approximately 203 feet at the northeast end to approximately 315 feet at the southwest end. Representative conditions along the project alignment are shown in the following photographs.

Near Boring B103 looking southwest.

Near Boring B106 looking southwest.

Near Boring B108 looking southwest.

Results of Field Exploration and Laboratory Testing

All of the test borings we drilled were located near the middle of the southwest bound traffic lane at the locations indicated on Figure 1. Details of the pavement sections and underlying subbase or subgrade encountered at the boring locations are provided in the following table.

Summary of Data from Field Exploration and Laboratory Testing

Boring No.	Asphalt Concrete	Aggregate Base	Subgrade Fill Material	Approx. Depth to Bottom of Fill (feet)
B101	7¼" (1¼"/3"/petromat/3")	5"	Silty Sand w/gravel	2.5
B102	6" (3"/petromat/3")	5"	Silty Sand w/gravel	2.5
B103	5" (4"/petromat/1")	4"	Silty Sand w/gravel	2.6
B104	8½" (3"/petromat/5½")	5"	Silty Sand w/gravel	2.8
B105	3½" over petromat	5" + oil	Silty Sand w/gravel	2.6
B106	4" over petromat	5" + oil	Silty Sand w/gravel	2.6
B107	3½" over petromat	5" + oil	Clayey Sand	2.5
B108	4" over petromat	--	Clayey Sand	2.5
B109	3" over petromat	6" + oil	Clayey Sand/Sandy Clay	3.8

As indicated above, it appeared that the pavement section within the project alignment included a petromat and at least one asphalt concrete (AC) overlay. In addition, the base layer at Borings B105 through B109 consisted of a mixture of aggregate base (AB) and asphalt emulsion (oil), which appeared similarly to a relatively soft AC layer. The pavement sections were underlain by a layer of fill material, which extended to depths of approximately 2.5 to 2.8 feet, except at Boring B109, where the fill material extended to a depth of approximately 3.8 feet. At Borings B101 through B106, the fill material consisted of a fine to coarse-grained silty sand with gravel, which had gradation and R-value characteristics similar to a Caltrans Class 2 Subbase. The fill material encountered at Borings B107 to B109 consisted predominantly of a fine- to medium-grained clayey sand with a Plasticity Index of between 8 and 9. The native soils encountered below the fill material consisted of silt clay at Borings B101 through B107 and clayey silt at Boring B108.

Tests were performed on composite soil samples to determine the maximum dry density, optimum moisture content, gradation, and R-value of the subgrade/fill material along the project alignment. Composite Sample 1 was made up of samples of the fill material from Borings B101, B102, and B103. Composite Sample 2 was made up of samples of the fill material from Borings B104, B105, and B106. Composite Sample 3 was made up of samples of the fill material from Borings B107, B108, and B109. Details of the tests performed on the composite samples are provided on the laboratory test reports attached to this report and a summary of the laboratory test results is provided in the following table.

Composite Sample	Maximum Dry Density (pcf)	Optimum Moisture Content (%)	Percent Passing Sieve Size				R-value
			#4	#16	#50	#200	
1	130.3	7.8	88	71	50	28	74
2	130.6	7.7	77	61	39	17	72
3	124.5	10.2	94	88	76	40	36

In addition to these laboratory tests, samples were split from the composite samples referenced above and treated with cement to evaluate the unconfined compressive strength at 7 days and R-value stability. These test results are summarized in the following table.

Composite Sample	Average 7-Day Compressive Strength (psi)			Cement-Treated R-value*
	4% Cement	5% Cement	6% Cement	
1	450	563	647	84
2	479	615	745	87
3	514	670	796	83

*Composite Samples 1 and 2 treated with 4% cement and Composite Sample 3 treated with 3.5% cement.

For additional information about the soils encountered, please refer to the boring logs and laboratory test results that are attached to this report.

Conclusions and Recommendations

Based on our limited geotechnical engineering investigation, it appears that when Avenal Cutoff Road was constructed within the project limits, a fill material was placed on the native foundation soils prior to constructing the AC and AB pavement section. This fill material appears to be similar to a Caltrans Class 2 Subbase (fine to coarse-grained silty sand with gravel) from the northeast end of the project alignment to somewhere between 30th Avenue and Nevada Avenue. Southwest of this, the fill material consists of a fine to medium-grained clayey sand with a low plasticity. Although there is a significant difference in the R-value between the two types of fill material (72 to 74 for the subbase material and 36 for the clayey sand), when treated with cement the R-value of these materials is above 80. Therefore, it should be possible to use the same Full Depth Reclamation with cement (FDR-C) process to rehabilitate the entire roadway within the project limits. However, based on the pavement investigation performed by Moore Twining Associates for this project, there may be localized areas where the subgrade underlying the existing pavement section is different than what we encountered at our boring locations. Therefore, the subgrade conditions should be further evaluated and verified at the beginning of the construction process as recommended below.

Based on our test results and taking into account normal variations in the soil and the treatment process, it is recommended that the FDR-C for this project use a 4.0 percent cement treatment, based on dry weight,

in order to provide a 7-day compressive strength of at least 400 psi. The FDR-C pavement sections recommended for the rehabilitation of Avenal Cutoff Road within the project limits are provided below:

Traffic Index	Asphalt Concrete	Minimum FDR-C Section*
8.0	4.5"	12.0"
8.5	5.0"	13.0"
9.0	5.5"	13.0"
9.5	5.5"	14.0"
10.0	6.0"	14.0"

**** 95% compaction based on CTM 216 or ASTM Test Method D1557.***

The specifications for this project should require that the FDR-C process be performed in accordance with the current standard of practice and the following recommendations:

- During the grinding and/or removal of the existing AC pavement, the roadway should be potholed at least every 500 feet to verify that the subgrade consists of a fill material consistent with what was encountered at our test boring locations. At locations where a weaker subgrade material, such as silty clay or sandy clay, is encountered, representative samples should be obtained and tested to determine the amount of cement and/or lime treatment that will be required in these areas to properly stabilize the subgrade using the FDR process. In addition, the contractor should perform additional points of exploration to determine the horizontal extent of the weaker subgrade.

- If AC grindings will be mixed with base material and subgrade as part of the FDR-C process, the AC should be pulverized so that the maximum particle size does not exceed 2.5 inches, a minimum of 95 percent passes through a 2-inch sieve, and a minimum of 85 percent passes through a 1.5-inch sieve.

- During the application of cement, the Contractor should perform multiple pan tests in the presence of the Engineer, or his designated representative, to demonstrate the consistency of the spread rate. The pan tests should be performed at least two times per day: at the beginning of work and after 4 hours of spreading has been completed. If any of the pan tests indicate that adjustments need to be made to the spread rate, additional tests should be performed as needed to verify that the correct amount of cement is being applied.

- Water should be added during mixing to provide a moisture content of at least one percentage point over the optimum moisture content. The moisture content should be checked immediately after mixing and prior to compaction.

- The FDR-C layer should be compacted to at least 95 percent relative compaction based on ASTM D558 test procedures that are modified to provide the compaction energy consistent with ASTM D1557.

- As an alternative to using a stiffness gauge to determine when, and the amount of, microcracking that should be done, microcracking can be scheduled to start after at least 60 hours of moist-curing has been completed. The microcracking of the cement-treated base layer should be accomplished by making four (4) passes with a minimum 12-ton vibratory steel wheel roller, travelling at a speed of approximately 2 mph and vibrating at maximum amplitude.

- After the microcracking process is completed, moist-curing of the subgrade should be performed for at least 40 hours and then a seal (SS-1/CSS-1 or the equivalent) should be applied. This will reduce the risk of the subgrade drying out and shrinkage cracks forming, which could reflect through and distress the AC pavement.

A representative from Krazan should perform observations and testing during construction in order to verify that the site preparation and the placement and compaction of the FDR-C layer is done in accordance with the recommendations provided in this report and the project specifications. The AC mix should comply with the Caltrans Standard Specifications. Details of the AC mix design and installation requirements should be specified by the Project Civil Engineer.

Closing Remarks

This report is a Limited Geotechnical Engineering Investigation with the purpose of evaluating the soil conditions with respect to the planned roadway widening at the project site. The scope of our services did not include any Environmental Site Assessment for the presence or absence of hazardous and/or toxic materials in the soil, groundwater, or atmosphere; or the presence of wetlands. Any statements, or absence of statements, in this report or on any boring log regarding odors, unusual or suspicious items, or conditions observed, are strictly for descriptive purposes and are not intended to convey engineering judgment regarding potential hazardous and/or toxic assessment.

The geotechnical engineering information presented herein is based upon professional interpretation utilizing standard engineering practices and a degree of conservatism deemed proper for this project. It is not warranted that such information and interpretation cannot be superseded by future geotechnical engineering developments. We emphasize that this report is valid for the project outlined above and should not be used for any other sites.

If you have any questions, or if we may be of further assistance, please do not hesitate to contact our office at (559) 348-2200.

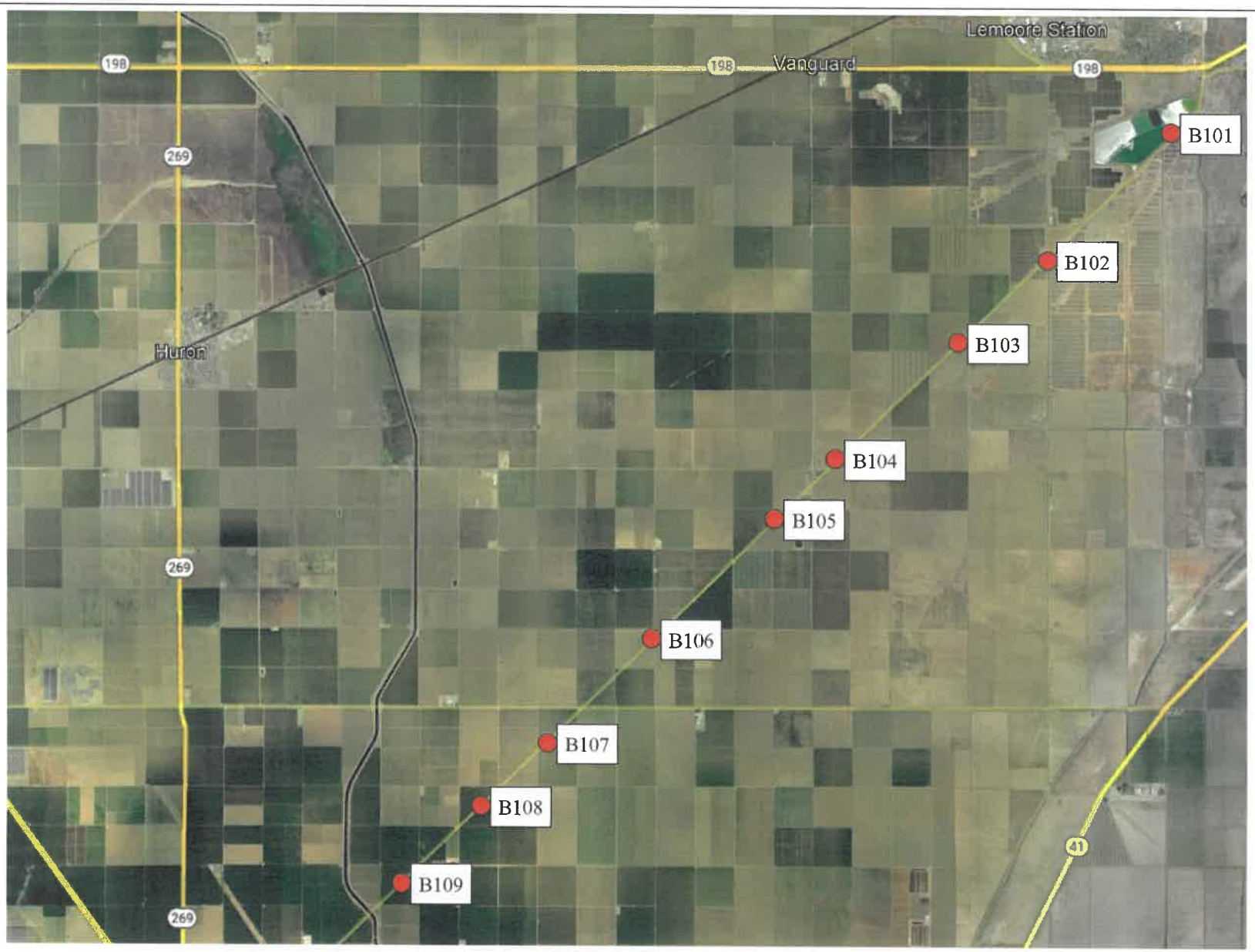
Respectfully submitted,
KRAZAN & ASSOCIATES, INC.

George P. Hattrup

George P. Hattrup
Senior Geotechnical Engineer
RGE No. 2353/RCE No. 43979

GPH:ht

Attachments: Figure 1 – Boring Location Map
Boring Logs B101 through B109
Grain Size Analysis Test Results (3 pages)
Atterberg Limits Test Results (3 pages)
Compaction Characteristics of Soils (3 pages)
Untreated R-Value Test Results (3 pages)
Unconfined Compressive Strength Test Results (3 pages)
Cement-treated R-Value Test Results (3 pages)



APPROXIMATE BORING LOCATION

SITE MAP	**Scale:** NTS	**Date:** September 2022
Avenal Cutoff Road Improvements **B/w Jackson Avenue and California Aqueduct** **Kings County, California**	**Drawn by:** HT	**Approved by:** DJ
	Project No. 012-22022	**Figure No.** 1

Krazan
GEOTECHNICAL ENGINEERING

UNIFIED SOIL CLASSIFICATION SYSTEM

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

COARSE-GRAINED SOILS (more than 50% of material is larger than No. 200 sieve size.)			
GRAVELS More than 50% of coarse fraction larger than No. 4 sieve size	Clean Gravels (Less than 5% fines)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines
		GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
	Gravels with fines (More than 12% fines)	GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
SANDS 50% or more of coarse fraction smaller than No. 4 sieve size	Clean Sands (Less than 5% fines)	SW	Well-graded sands, gravelly sands, little or no fines
		SP	Poorly graded sands, gravelly sands, little or no fines
	Sands with fines (More than 12% fines)	SM	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (50% or more of material is smaller than No. 200 sieve size.)			
SILTS AND CLAYS Liquid limit less than 50%		ML	Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts with slight plasticity
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		OL	Organic silts and organic silty clays of low plasticity
SILTS AND CLAYS Liquid limit 50% or greater		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS		PT	Peat and other highly organic soils

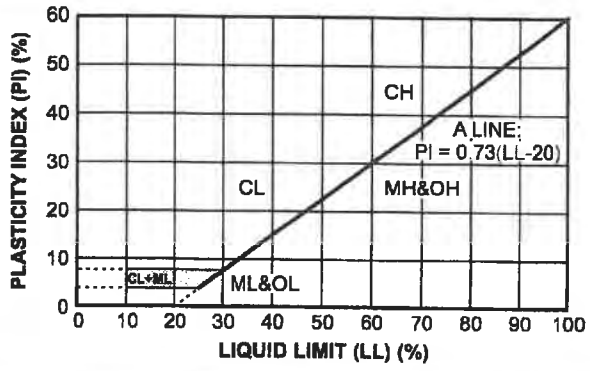
CONSISTENCY CLASSIFICATION

Description	Blows per Foot
Granular Soils	
Very Loose	< 5
Loose	5 – 15
Medium Dense	16 – 40
Dense	41 – 65
Very Dense	> 65
Cohesive Soils	
Very Soft	< 3
Soft	3 – 5
Firm	6 – 10
Stiff	11 – 20
Very Stiff	21 – 40
Hard	> 40

GRAIN SIZE CLASSIFICATION

Grain Type	*Standard Sieve Size*	*Grain Size in Millimeters*
Boulders	Above 12 inches	Above 305
Cobbles	12 to 13 inches	305 to 76.2
Gravel	3 inches to No. 4	76.2 to 4.76
Coarse-grained	3 to ¾ inches	76.2 to 19.1
Fine-grained	¾ inches to No. 4	19.1 to 4.76
Sand	No. 4 to No. 200	4.76 to 0.074
Coarse-grained	No. 4 to No. 10	4.76 to 2.00
Medium-grained	No. 10 to No. 40	2.00 to 0.42
Fine-grained	No. 40 to No. 200	0.42 to 0.074
Silt and Clay	Below No. 200	Below 0.074

PLASTICITY CHART



Log of Boring B101

Project: Avenal Cutoff Road Improvements | **Project No:** 012-22022

Client: Peters Engineering Group | **Figure No.:** A-101

Location: B/w Jackson Avenue and the California Aqueduct, Kings County | **Logged By:** Wayne Andrade

Depth to Water> | **Initial:** None | **At Completion:** None

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	Penetration Test blows/ft (20 40 60)	Water Content (%) (10 20 30 40)
		Ground Surface						
0		ASPHALT CONCRETE = 7¼ inches AGGREGATE BASE = 5 inches						
2		***SILTY SAND (SM)*** FILL, fine- to coarse-grained with GRAVEL; light brown, damp, drills easily						
4		***SILTY CLAY (CL)*** Stiff; dark brown, moist, drills easily						
		End of Borehole						
6								
8								
10								
12								
14								
16								
18								
20								

Drill Method: Hollow Stem | **Drill Date:** 8-9-22

Drill Rig: CME 45C-1 | **Krazan and Associates** | **Hole Size:** 6½ Inches

Driller: Robert Koontz | **Elevation:** 3½ Feet

Sheet: 1 of 1

Log of Boring B102

Project: Avenal Cutoff Road Improvements | **Project No:** 012-22022

Client: Peters Engineering Group | **Figure No.:** A-102

Location: B/w Jackson Avenue and the California Aqueduct, Kings County | **Logged By:** Wayne Andrade

Depth to Water> | **Initial:** None | **At Completion:** None

SUBSURFACE PROFILE			SAMPLE				Penetration Test blows/ft	Water Content (%)
Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	20 40 60	10 20 30 40
0		Ground Surface						
		ASPHALT CONCRETE = 6 inches AGGREGATE BASE = 5 inches						
2		***SILTY SAND (SM)*** FILL, fine- to coarse-grained with GRAVEL; light brown, damp, drills easily						
4		***SILTY CLAY (CL)*** Stiff; dark brown, moist, drills easily						
		End of Borehole						
6								
8								
10								
12								
14								
16								
18								
20								

Drill Method: Hollow Stem | **Drill Date:** 8-9-22

Drill Rig: CME 45C-1 | **Krazan and Associates** | **Hole Size:** 6½ Inches

Driller: Robert Koontz | **Elevation:** 4 Feet

Sheet: 1 of 1

Log of Boring B103

Project: Avenal Cutoff Road Improvements | **Project No:** 012-22022

Client: Peters Engineering Group | **Figure No.:** A-103

Location: B/w Jackson Avenue and the California Aqueduct, Kings County | **Logged By:** Wayne Andrade

Depth to Water> | **Initial:** None | **At Completion:** None

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	Penetration Test blows/ft (20 40 60)	Water Content (%) (10 20 30 40)
0		Ground Surface						
		ASPHALT CONCRETE = 5 inches AGGREGATE BASE = 4 inches						
2		***SILTY SAND (SM)*** FILL, fine- to coarse-grained with GRAVEL; light brown, damp, drills easily						
		SILTY CLAY (CL) Stiff; dark brown, moist, drills easily						
4		End of Borehole						
6								
8								
10								
12								
14								
16								
18								
20								

Drill Method: Hollow Stem | **Drill Date:** 8-9-22

Drill Rig: CME 45C-1 | **Krazan and Associates** | **Hole Size:** 6½ Inches

Driller: Robert Koontz | **Elevation:** 4 Feet

Sheet: 1 of 1

Log of Boring B104

Project: Avenal Cutoff Road Improvements | **Project No:** 012-22022

Client: Peters Engineering Group | **Figure No.:** A-104

Location: B/w Jackson Avenue and the California Aqueduct, Kings County | **Logged By:** Wayne Andrade

Depth to Water> | **Initial:** None | **At Completion:** None

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	Penetration Test blows/ft (20 40 60)	Water Content (%) (10 20 30 40)
		SUBSURFACE PROFILE	SAMPLE					
0		Ground Surface						
		ASPHALT CONCRETE = 8½ inches AGGREGATE BASE = 5 inches						
2		***SILTY SAND (SM)*** FILL, fine- to coarse-grained with GRAVEL; light brown, damp, drills easily						
4		***SILTY CLAY (CL)*** Stiff; dark brown, moist, drills easily						
		End of Borehole						
6								
8								
10								
12								
14								
16								
18								
20								

Drill Method: Hollow Stem | **Drill Date:** 8-9-22

Drill Rig: CME 45C-1 | **Krazan and Associates** | **Hole Size:** 6½ Inches

Driller: Robert Koontz | **Elevation:** 4½ Feet

Sheet: 1 of 1

Log of Boring B105

Project: Avenal Cutoff Road Improvements | **Project No:** 012-22022

Client: Peters Engineering Group | **Figure No.:** A-105

Location: B/w Jackson Avenue and the California Aqueduct, Kings County | **Logged By:** Wayne Andrade

Depth to Water> | **Initial:** None | **At Completion:** None

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	Penetration Test blows/ft (20 40 60)	Water Content (%) (10 20 30 40)
0		Ground Surface						
		ASPHALT CONCRETE = 3½ inches AGGREGATE BASE = 5 inches						
2		***SILTY SAND (SM)*** FILL, fine- to coarse-grained with GRAVEL; light brown, damp, drills easily						
		GRAVEL/AGGREGATE BASE = 3 to 5 inches						
4		***SILTY CLAY (CL)*** Stiff; brown, moist, drills easily						
6		End of Borehole						
8								
10								
12								
14								
16								
18								
20								

Drill Method: Hollow Stem | **Drill Date:** 8-9-22

Drill Rig: CME 45C-1 | **Hole Size:** 6½ Inches

Driller: Robert Koontz | **Elevation:** 4 Feet

Krazan and Associates

Sheet: 1 of 1

Log of Boring B106

Project: Avenal Cutoff Road Improvements | **Project No:** 012-22022

Client: Peters Engineering Group | **Figure No.:** A-106

Location: B/w Jackson Avenue and the California Aqueduct, Kings County | **Logged By:** Wayne Andrade

Depth to Water> | **Initial:** None | **At Completion:** None

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	Penetration Test blows/ft (20 40 60)	Water Content (%) (10 20 30 40)
0		Ground Surface						
		ASPHALT CONCRETE = 4 inches AGGREGATE BASE = 5 inches						
2		***SILTY SAND (SM)*** FILL, fine- to coarse-grained with GRAVEL; light brown, damp, drills easily						
		SILTY CLAY (CL) Stiff; brown, damp, drills easily						
4		End of Borehole						
6								
8								
10								
12								
14								
16								
18								
20								

Drill Method: Hollow Stem | **Drill Date:** 8-9-22

Drill Rig: CME 45C-1 | **Krazan and Associates** | **Hole Size:** 6½ Inches

Driller: Robert Koontz | **Elevation:** 4 Feet

Sheet: 1 of 1

Log of Boring B107

Project: Avenal Cutoff Road Improvements | **Project No:** 012-22022

Client: Peters Engineering Group | **Figure No.:** A-107

Location: B/w Jackson Avenue and the California Aqueduct, Kings County | **Logged By:** Wayne Andrade

Depth to Water> | **Initial:** None | **At Completion:** None

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	Penetration Test blows/ft (20 40 60)	Water Content (%) (10 20 30 40)
0		Ground Surface						
		ASPHALT CONCRETE = 3½ inches AGGREGATE BASE = 5 inches						
2		***CLAYEY SAND (SC)*** FILL, fine- to coarse-grained; light brown, damp, drills easily						
4		***SILTY CLAY (CL)*** Stiff; light brown, damp, drills easily						
		End of Borehole						
6								
8								
10								
12								
14								
16								
18								
20								

Drill Method: Hollow Stem | **Drill Date:** 8-9-22

Drill Rig: CME 45C-1 | **Krazan and Associates** | **Hole Size:** 6½ Inches

Driller: Robert Koontz | **Elevation:** 4 Feet

Sheet: 1 of 1

Log of Boring B108

Project: Avenal Cutoff Road Improvements | **Project No:** 012-22022

Client: Peters Engineering Group | **Figure No.:** A-108

Location: B/w Jackson Avenue and the California Aqueduct, Kings County | **Logged By:** Wayne Andrade

Depth to Water> | **Initial:** None | **At Completion:** None

SUBSURFACE PROFILE			SAMPLE				Penetration Test blows/ft	Water Content (%)
Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	20 40 60	10 20 30 40
0		Ground Surface						
		ASPHALT CONCRETE = 4 inches						
		CLAYEY SAND (SC) FILL, fine- to coarse-grained; light brown, damp, drills easily						
2								
		CLAYEY SILT (ML) Medium dense; brown, damp, drills easily						
4		End of Borehole						
6								
8								
10								
12								
14								
16								
18								
20								

Drill Method: Hollow Stem | **Drill Date:** 8-9-22

Drill Rig: CME 45C-1 | **Krazan and Associates** | **Hole Size:** 6½ Inches

Driller: Robert Koontz | **Elevation:** 4 Feet

Sheet: 1 of 1

Log of Boring B109

Project: Avenal Cutoff Road Improvements | **Project No:** 012-22022

Client: Peters Engineering Group | **Figure No.:** A-109

Location: B/w Jackson Avenue and the California Aqueduct, Kings County | **Logged By:** Wayne Andrade

Depth to Water> | **Initial:** None | **At Completion:** None

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	Penetration Test blows/ft (20 40 60)	Water Content (%) (10 20 30 40)
0		Ground Surface						
		ASPHALT CONCRETE = 3 inches AGGREGATE BASE = 6 inches						
		GRAVEL/SOIL mix = 2½ inches						
2		***CLAYEY SAND/SANDY CLAY (SC/CL)*** FILL, fine-grained; brown, damp, drills easily						
4		End of Borehole						
6								
8								
10								
12								
14								
16								
18								
20								

Drill Method: Hollow Stem | **Drill Date:** 8-9-22

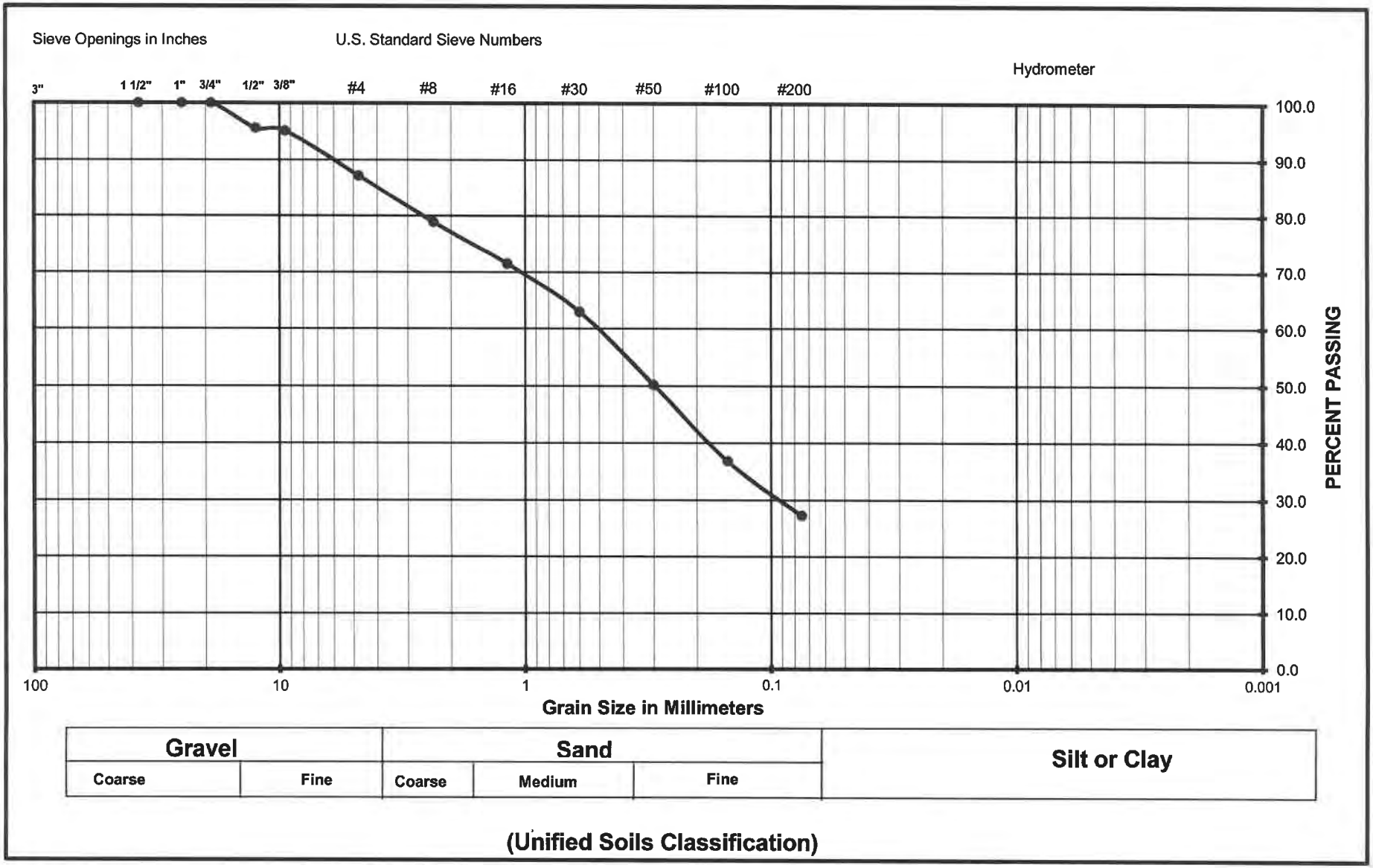
Drill Rig: CME 45C-1 | **Hole Size:** 6½ Inches

Driller: Robert Koontz | **Elevation:** 3½ Feet

Krazan and Associates

Sheet: 1 of 1

Grain Size Analysis

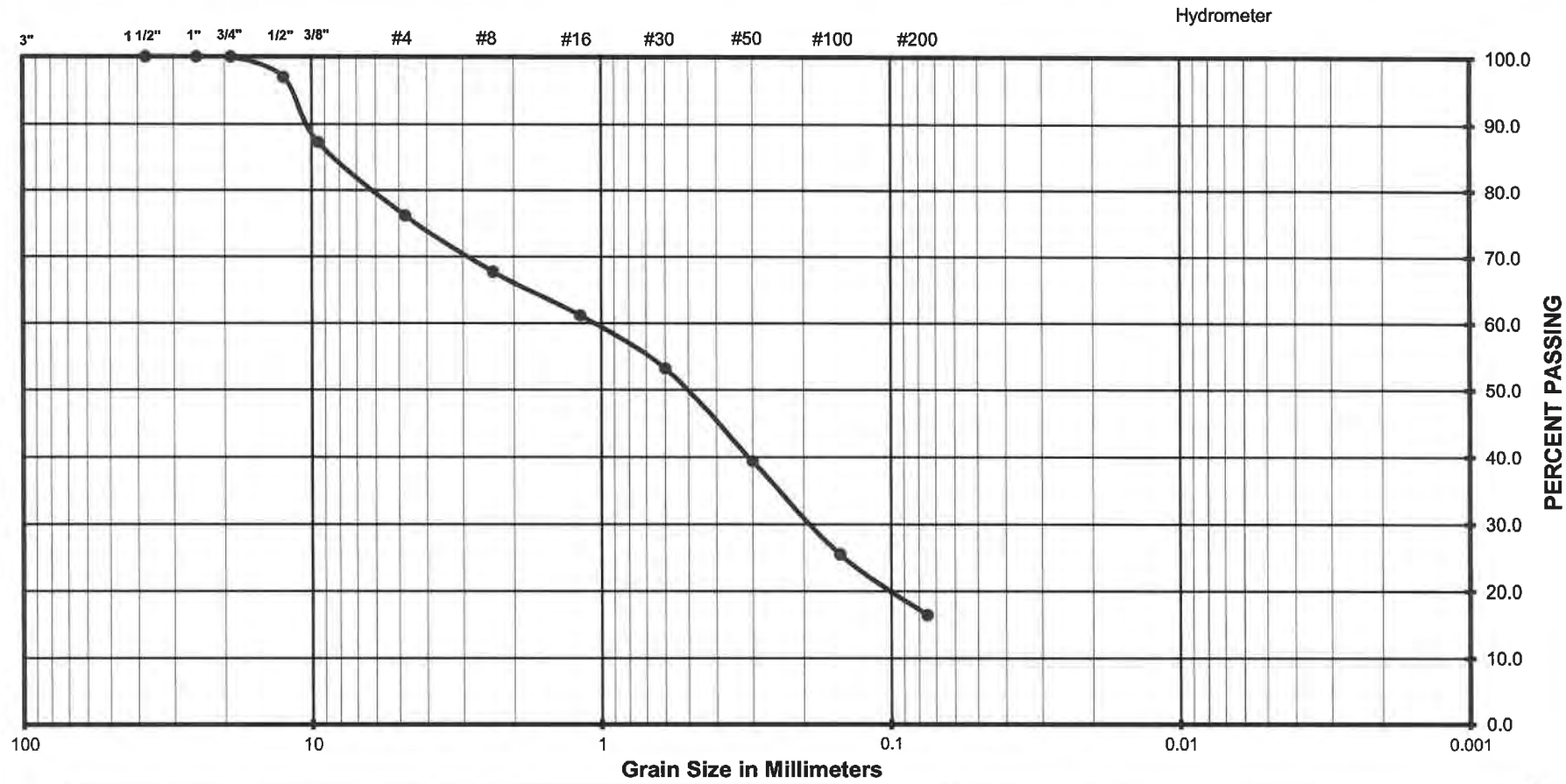


(Unified Soils Classification)

Project Name	Avenal Cutoff Road Improvements
Project Number	012-22022
Soil Classification	SM w/ grvl
Sample Number	Composite #1 @ 1-2.5' (B101/B102/B103)

Krazan Testing Laboratory

Grain Size Analysis



(Unified Soils Classification)

Project Name	Avenal Cutoff Road Improvements
Project Number	012-22022
Soil Classification	SM w/ grvl
Sample Number	Composite #2 @ 1-2.5' (B104/B105/B106)

Krazan Testing Laboratory

Grain Size Analysis

(Unified Soils Classification)

Project Name	Avenal Cutoff Road Improvements
Project Number	012-22022
Soil Classification	SC w/ grvl
Sample Number	Composite #3 @ 1-2.5' (B107/B108/B109)

Krazan Testing Laboratory

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

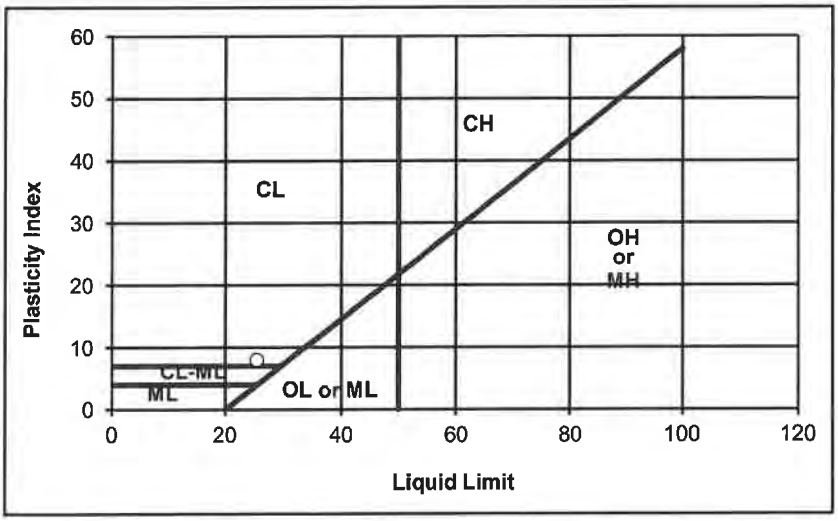
Project: **Avenal Cutoff Road Improvements**
Project Number: **012-22022**
Date Sampled: 8/9/2022
Sampled By: WA
Sample Number: -
Sample Location: B107 @ 1-2.5'
Sample Description: SC

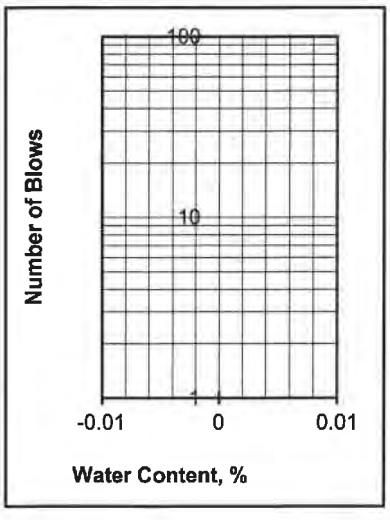
Date Tested: 8/12/2022
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	46.30	48.21		38.07	37.80	
Weight of Dry Soil & Tare (g)	42.88	44.63		34.88	34.86	
Weight of Tare (g)	23.38	23.54		22.40	23.23	
Weight of water (g)	3.42	3.58		3.19	2.95	
Weight of Dry Soil (g)	19.50	21.09		12.49	11.62	
Water Content (% of dry wt.)	17.5%	17.0%		25.5%	25.3%	
Number of Blows				25	25	

Plastic Limit : 17 **Liquid Limit : 25**

Plasticity Index : 8
Unified Soil Classification : CL **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

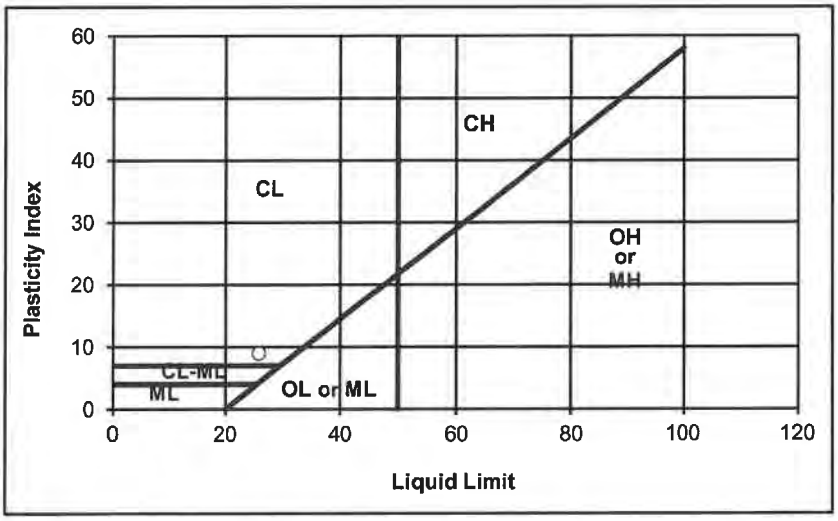
Project: **Avenal Cutoff Road Improvements**
Project Number: **012-22022**
Date Sampled: 8/9/2022
Sampled By: WA
Sample Number: -
Sample Location: B108 @ 1-2.5'
Sample Description: SC

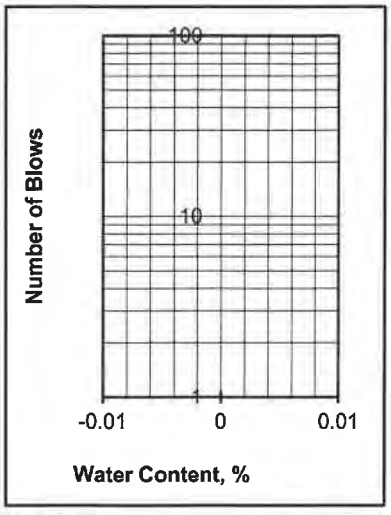
Date Tested: 8/12/2022
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	44.35	46.77		38.43	40.58	
Weight of Dry Soil & Tare (g)	41.18	43.26		35.35	37.06	
Weight of Tare (g)	22.86	23.32		23.48	23.43	
Weight of water (g)	3.17	3.51		3.08	3.52	
Weight of Dry Soil (g)	18.32	19.94		11.87	13.63	
Water Content (% of dry wt.)	17.3%	17.6%		25.9%	25.8%	
Number of Blows				25	25	

Plastic Limit : 17 **Liquid Limit : 26**

Plasticity Index : 9
Unified Soil Classification : CL **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

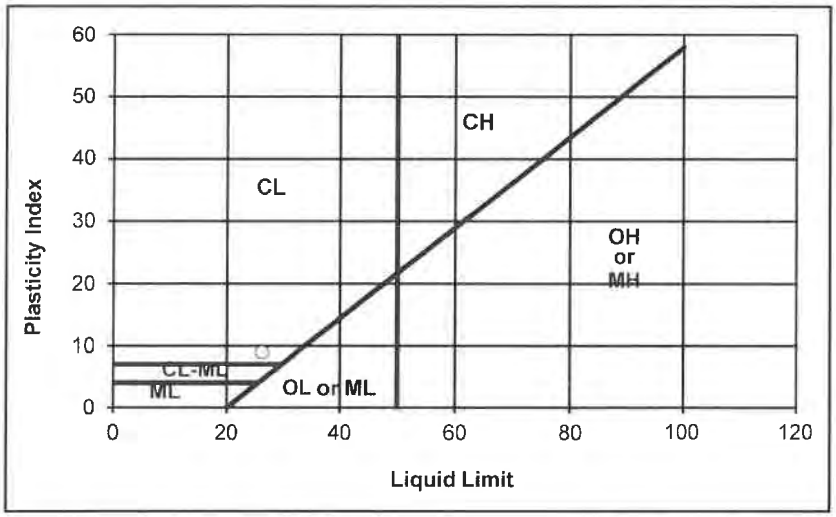
Project: **Avenal Cutoff Road Improvements**
Project Number: **012-22022**
Date Sampled: 8/9/2022
Sampled By: WA
Sample Number: -
Sample Location: B109 @ 1-2.5'
Sample Description: SC/CL

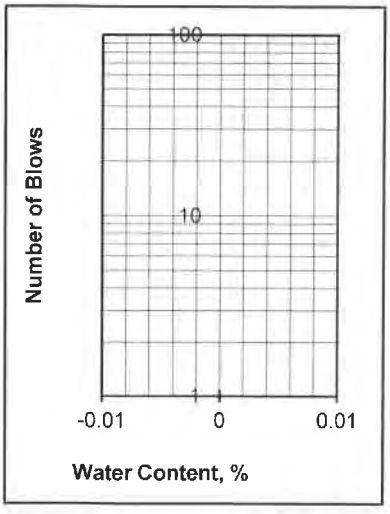
Date Tested: 8/12/2022
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	49.00	42.59		33.79	38.52	
Weight of Dry Soil & Tare (g)	45.30	39.86		30.82	35.35	
Weight of Tare (g)	23.66	23.39		19.56	23.21	
Weight of water (g)	3.70	2.73		2.97	3.17	
Weight of Dry Soil (g)	21.64	16.47		11.26	12.14	
Water Content (% of dry wt.)	17.1%	16.6%		26.4%	26.1%	
Number of Blows				25	25	

Plastic Limit : 17 **Liquid Limit : 26**

Plasticity Index : 9
Unified Soil Classification : CL **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Krazan & ASSOCIATES, INC.

GEOTECHNICAL ENGINEERING ENVIRONMENTAL ENGINEERING CONSTRUCTION TESTING & INSPECTION

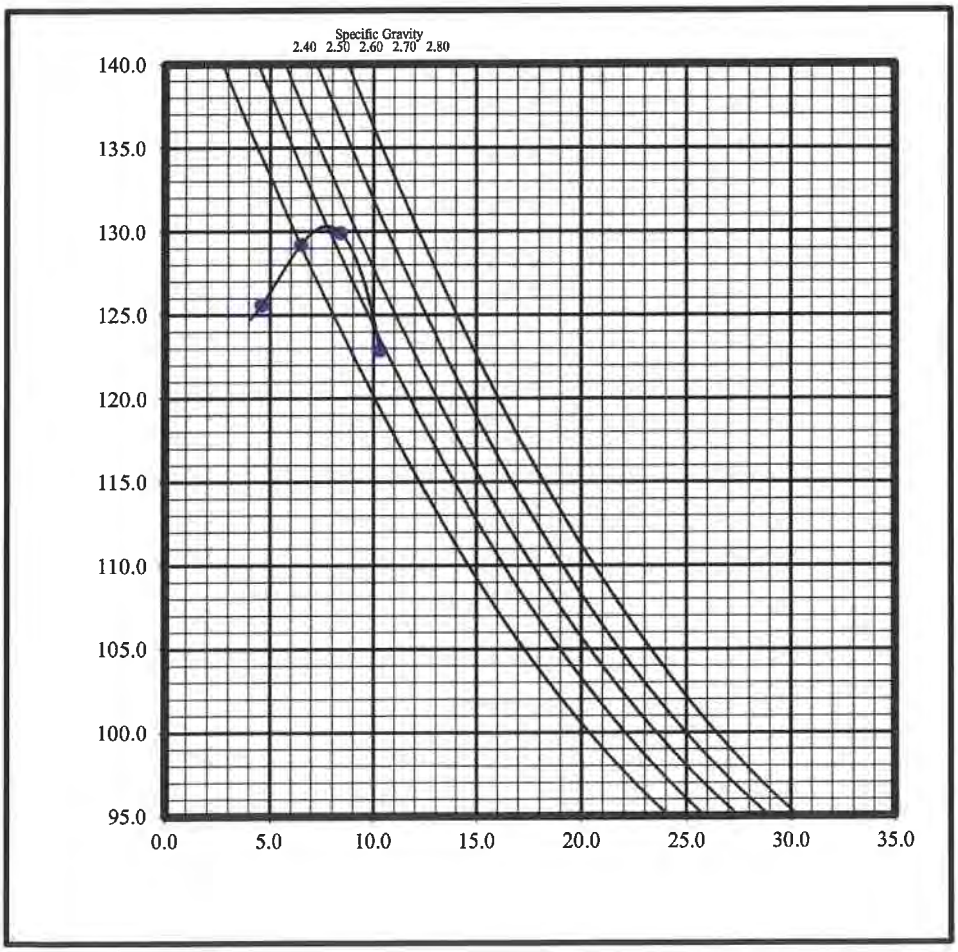
AASHTO

Laboratory Compaction Characteristics of Soil using Modified Effort (56,000 ft. - lbf/ft^3)

ASTM D1557

Project Number	012-22022	Sample Number	Composite #1
Project Name	Avenal Cutoff Road Improvements	Soil Classification	SM
Technician	SH 12168	Soil Description	Brn Silty Sand w/ grvl
Date	8/9/2022	Method	D1557b
Sample Location	B101/102/103 @ 1-2.5'		

	1	2	3	4
Mass of Moist Specimen & Mold, gm	4150.3	4070.6	4101.4	4007.4
Mass of Compaction Mold, gm	2016.7	2016.7	2016.7	2016.7
Mass of Moist Specimen, gm	2133.6	2053.9	2084.7	1990.7
Volume of Mold, cu./ft.	0.0334	0.0334	0.0334	0.0334
Wet Density, lbs./cu.ft.	140.8	135.6	137.6	131.4
Mass of Moisture (Wet), gm	200.0	200.0	200.0	200.0
Mass of Moisture (Dry), gm	184.5	181.3	187.8	191.2
Moisture Content (%)	8.4	10.3	6.5	4.6
Dry Density, lbs/cu.ft.	129.9	122.9	129.2	125.6



Maximum Dry Density, lbs.cu.ft.

130.3

Optimum Moisture Content

7.8%

SDS#: -

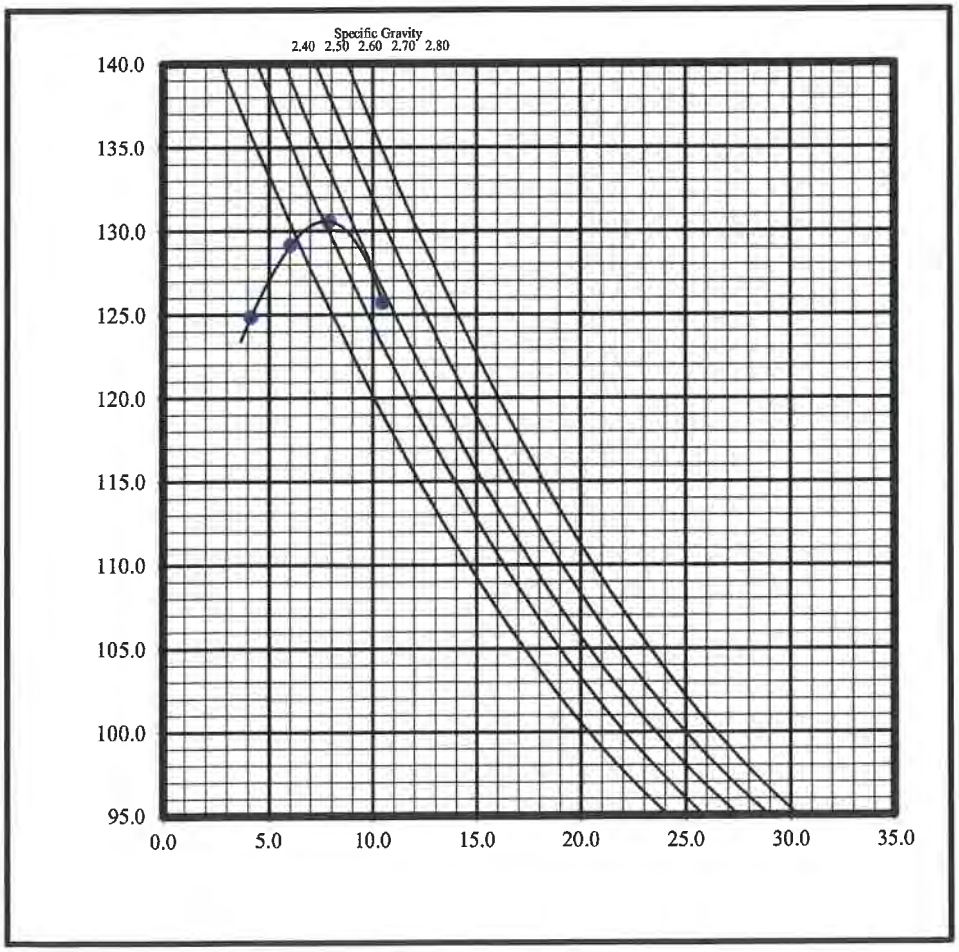
Krazan & ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING ENVIRONMENTAL ENGINEERING CONSTRUCTION TESTING & INSPECTION

Laboratory Compaction Characteristics of Soil using Modified Effort (56,000 ft. - lbf/ft^3)

ASTM D1557

Project Number	012-22022	Sample Number	Composite #2
Project Name	Avenal Cutoff Road Improvements	Soil Classification	SM
Technician	SH 12168	Soil Description	Brn Silty Sand w/ grvl
Date	8/9/2022	Method	D1557b
Sample Location	B104/105/106 @ 1-2.5'		

	1	2	3	4
Mass of Moist Specimen & Mold, gm	4151.4	4121.4	4091.7	3987.4
Mass of Compaction Mold, gm	2016.7	2016.7	2016.7	2016.7
Mass of Moist Specimen, gm	2134.7	2104.7	2075.0	1970.7
Volume of Mold, cu./ft.	0.0334	0.0334	0.0334	0.0334
Wet Density, lbs./cu.ft.	140.9	138.9	137.0	130.1
Mass of Moisture (Wet), gm	200.0	200.0	200.0	200.0
Mass of Moisture (Dry), gm	185.3	181.0	188.6	192.0
Moisture Content (%)	7.9	10.5	6.0	4.2
Dry Density, lbs/cu.ft.	130.5	125.7	129.2	124.9



Maximum Dry Density, lbs.cu.ft.

130.6

Optimum Moisture Content

7.7%

SDS#: -

Krazan & ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING ENVIRONMENTAL ENGINEERING CONSTRUCTION TESTING & INSPECTION

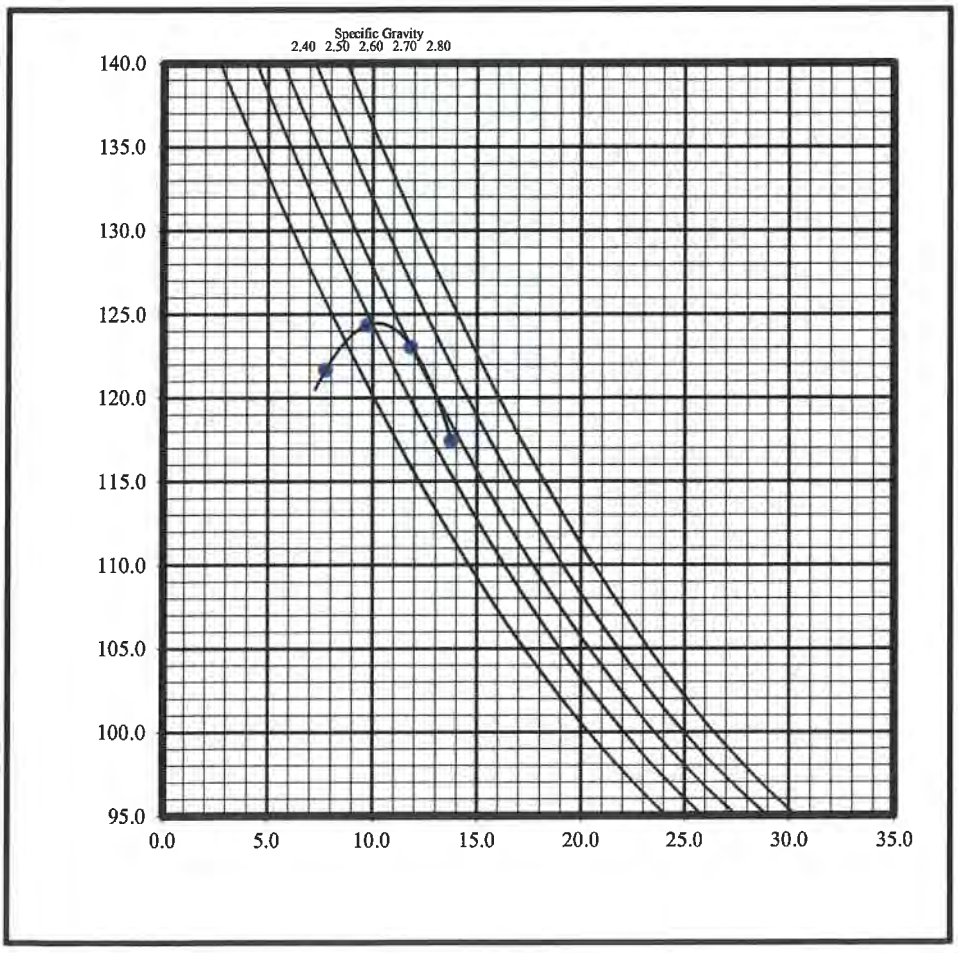
AASHTO

Laboratory Compaction Characteristics of Soil using Modified Effort (56,000 ft. - lbf/ft^3)

ASTM D1557

Project Number	012-22022	Sample Number	Composite #3
Project Name	Avenal Cutoff Road Improvements	Soil Classification	SC
Technician	SH 12168	Soil Description	Brn Clayey Sand w/ grvl
Date	8/9/2022	Method	D1557b
Sample Location	B107/108/109 @ 1-2.5'		

	1	2	3	4
Mass of Moist Specimen & Mold, gm	4082.2	4065.2	3983.4	4021.1
Mass of Compaction Mold, gm	1997.0	1997.0	1997.0	1997.0
Mass of Moist Specimen, gm	2085.2	2068.2	1986.4	2024.1
Volume of Mold, cu./ft.	0.0334	0.0334	0.0334	0.0334
Wet Density, lbs./cu.ft.	137.6	136.5	131.1	133.6
Mass of Moisture (Wet), gm	200.0	200.0	200.0	200.0
Mass of Moisture (Dry), gm	178.8	182.2	185.6	175.8
Moisture Content (%)	11.9	9.8	7.8	13.8
Dry Density, lbs/cu.ft.	123.0	124.4	121.7	117.4



Maximum Dry Density, lbs.cu.ft.

124.5

Optimum Moisture Content

10.2%

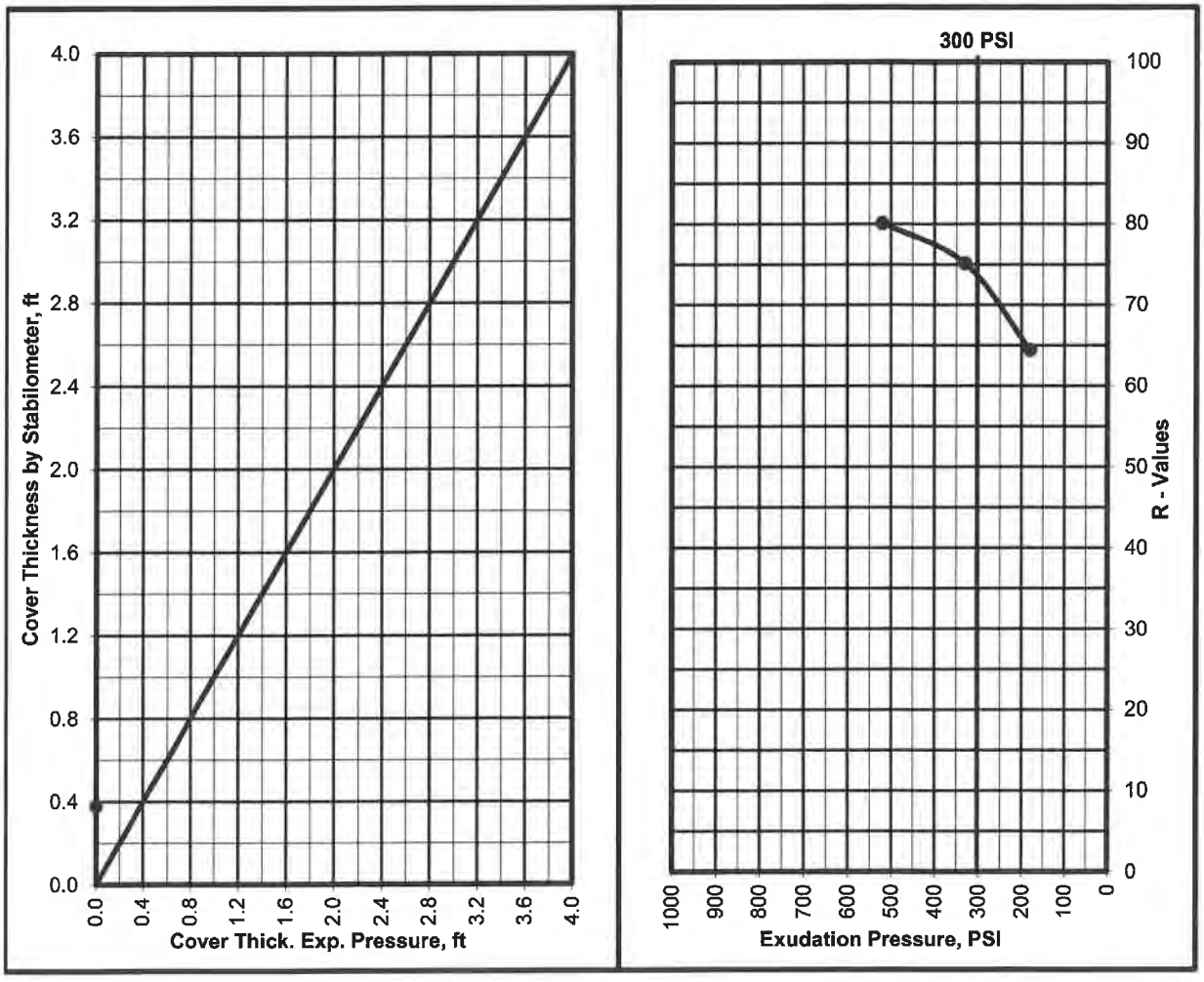
SDS#: -

R - VALUE TEST
ASTM D - 2844 / CAL 301

Project Number	:	012-22022
Project Name	:	Avenal Cutoff Road Improvements
Date	:	8/12/2022
Sample Location/Curve Number	:	Composite #1 (B101/B102/B103)
Soil Classification	:	SM w/ grvl

TEST	A	B	C
Percent Moisture @ Compaction, %	9.8	8.8	9.3
Dry Density, lbm/cu.ft.	126.8	128.5	127.8
Exudation Pressure, psi	180	520	330
Expansion Pressure, (Dial Reading)	0	0	0
Expansion Pressure, psf	0	0	0
Resistance Value R	64	80	75

R Value at 300 PSI Exudation Pressure	**74**
R Value by Expansion Pressure (TI =): 5	**Expansion Pressure nil**



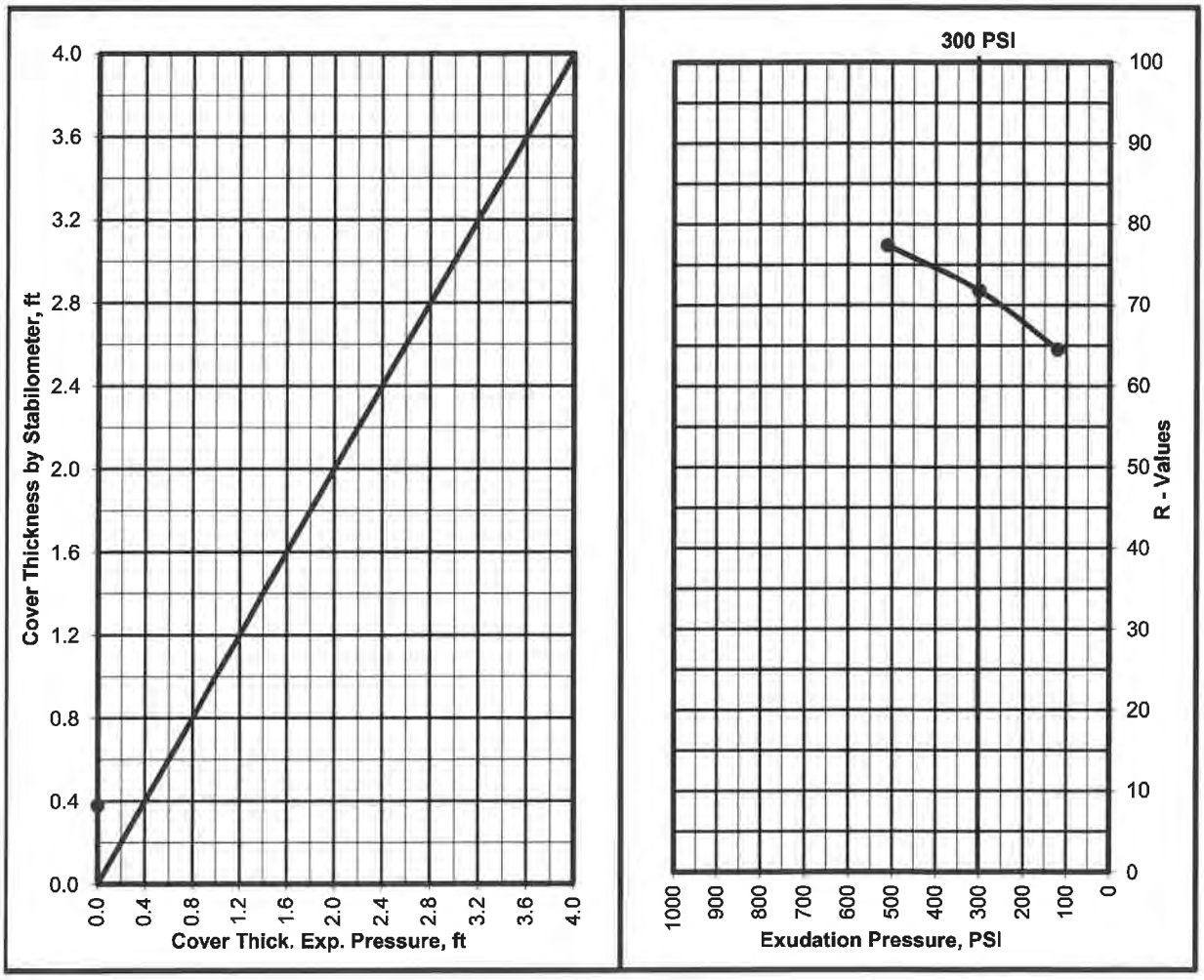
Krazan Testing Laboratory

R - VALUE TEST
ASTM D - 2844 / CAL 301

Project Number	:	012-22022
Project Name	:	Avenal Cutoff Road Improvements
Date	:	8/12/2022
Sample Location/Curve Number	:	Composite #2 (B104/B105/B106)
Soil Classification	:	SM w/ grvl

TEST	A	B	C
Percent Moisture @ Compaction, %	9.3	8.8	8.3
Dry Density, lbm/cu.ft.	126.8	127.1	128.4
Exudation Pressure, psi	120	300	510
Expansion Pressure, (Dial Reading)	0	0	0
Expansion Pressure, psf	0	0	0
Resistance Value R	65	72	77

R Value at 300 PSI Exudation Pressure	**72**
R Value by Expansion Pressure (TI =): 5	**Expansion Pressure nil**



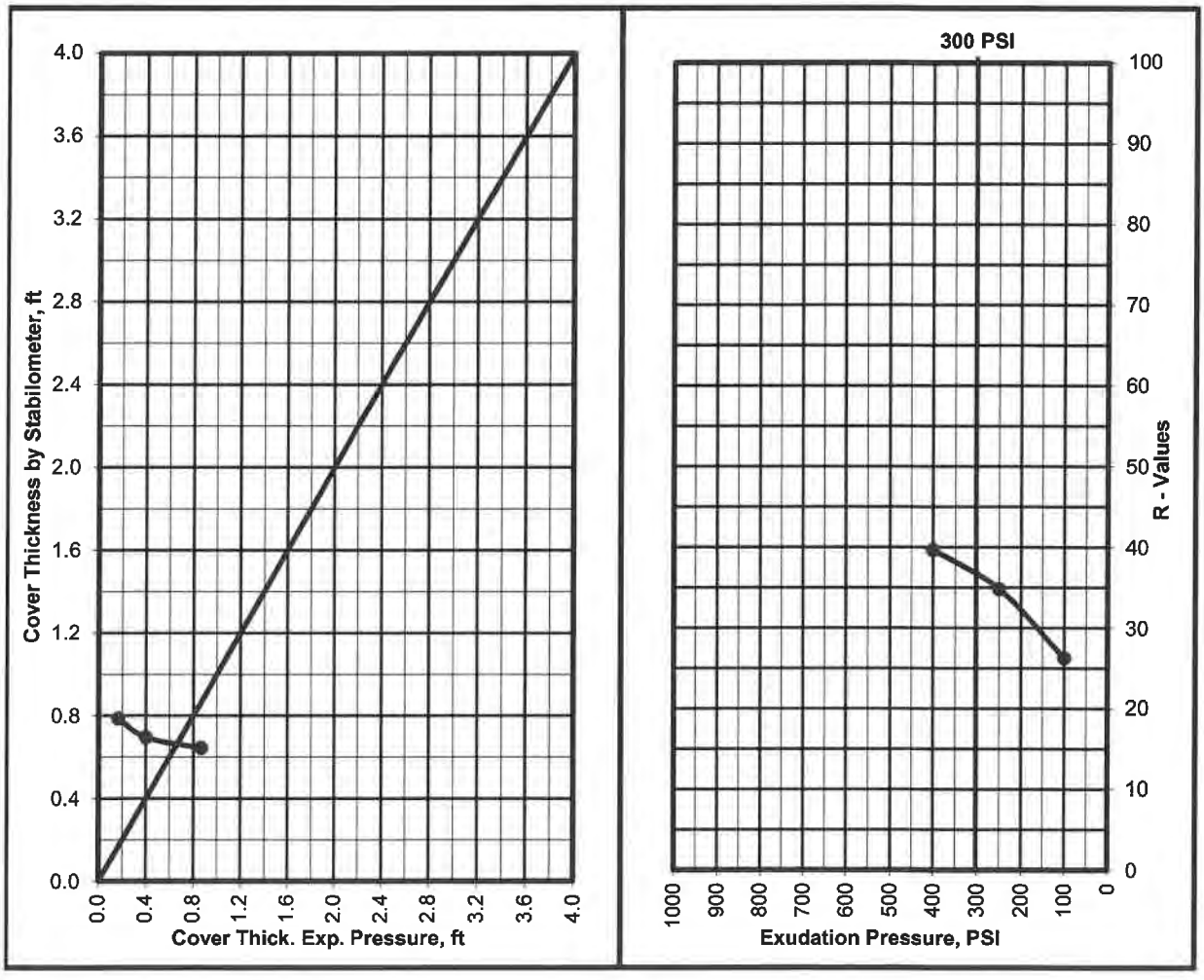
Krazan Testing Laboratory

R - VALUE TEST
ASTM D - 2844 / CAL 301

Project Number	:	012-22022
Project Name	:	Avenal Cutoff Road Improvements
Date	:	8/12/2022
Sample Location/Curve Number	:	Composite #3 (B107/B108/B109)
Soil Classification	:	SC w/ grvl

TEST	A	B	C
Percent Moisture @ Compaction, %	11.2	12.3	13.0
Dry Density, lbm/cu.ft.	118.5	116.9	115.8
Exudation Pressure, psi	400	250	100
Expansion Pressure, (Dial Reading)	26	12	5
Expansion Pressure, psf	113	52	22
Resistance Value R	40	35	26

R Value at 300 PSI Exudation Pressure	**36**
R Value by Expansion Pressure (TI =): 5	**41**



Krazan Testing Laboratory

012-22022
Avenal Cutoff Road Improvements
8/9/2022
Composite #1 (101,102,103)

4.0%			
7 day	8/18/2022	**456**	psi
7 day	8/18/2022	**444**	psi
			psi
7 day Average		**450**	psi
5.0%			
7 day	8/18/2022	**576**	psi
7 day	8/18/2022	**549**	psi
			psi
7 day Average		**563**	psi
6.0%			
7 day	8/18/2022	**641**	psi
7 day	8/18/2022	**652**	psi
			psi
7 day Average		**647**	psi

012-22022
Avenal Cutoff Road Improvements
8/9/2022
Composite #2 (104,105,106)

	4.0%		
7 day	8/19/2022	**471**	psi
7 day	8/19/2022	**487**	psi
			psi
7 day Average		**479**	psi
	5.0%		
7 day	8/19/2022	**624**	psi
7 day	8/19/2022	**605**	psi
			psi
7 day Average		**615**	psi
	6.0%		
7 day	8/19/2022	**737**	psi
7 day	8/19/2022	**753**	psi
			psi
7 day Average		**745**	psi

012-22022
Avenal Cutoff Road Improvements
8/9/2022
Composite #3 (107,108,108)

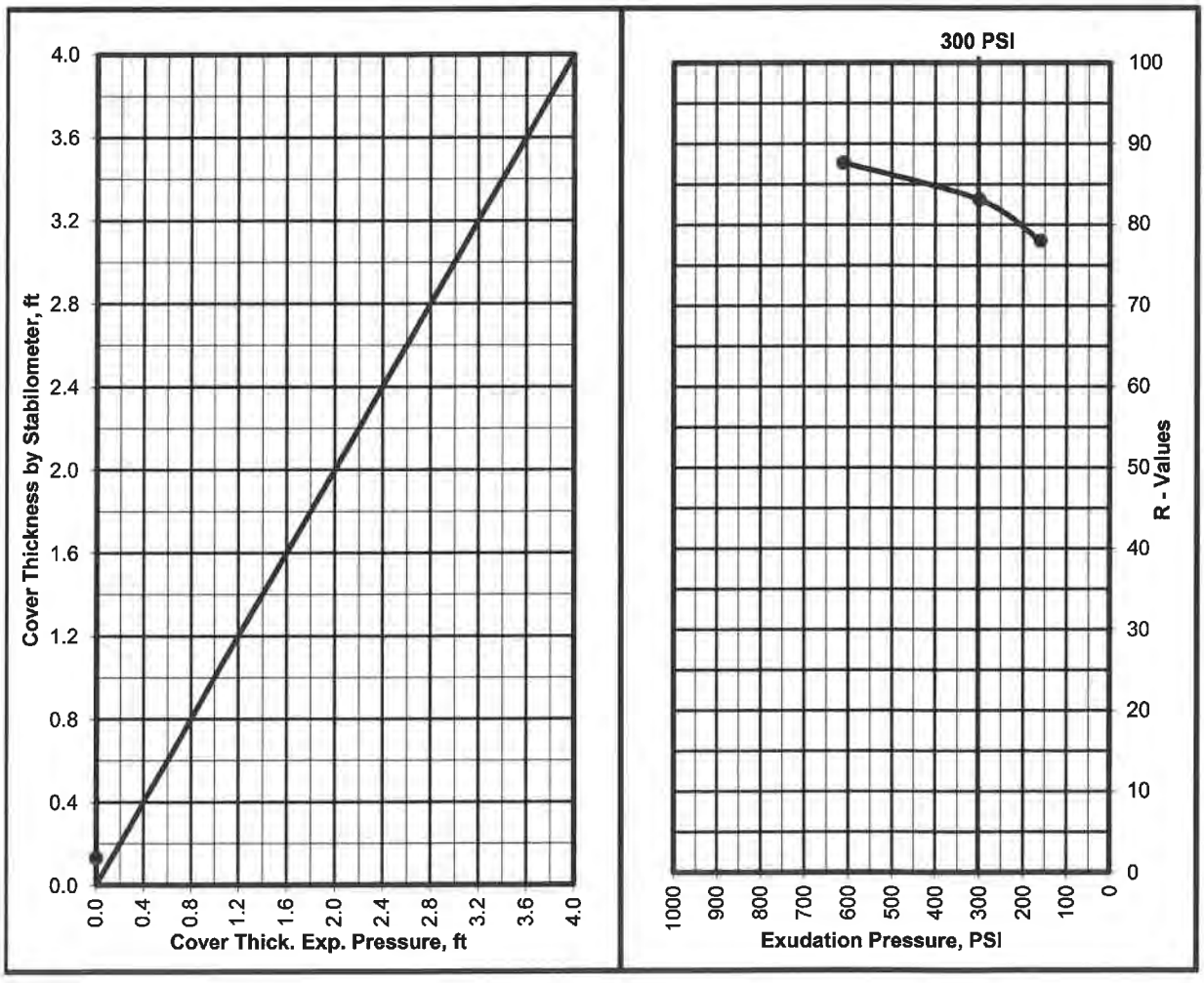
	4.0%		
7 day	8/22/2022	**530**	psi
7 day	8/22/2022	**497**	psi
			psi
7 day Average		**514**	psi
	5.0%		
7 day	8/22/2022	**684**	psi
7 day	8/22/2022	**655**	psi
			psi
7 day Average		**670**	psi
	6.0%		
7 day	8/22/2022	**782**	psi
7 day	8/22/2022	**810**	psi
			psi
7 day Average		**796**	psi

R - VALUE TEST
ASTM D - 2844 / CAL 301

Project Number	:	012-22022
Project Name	:	Avenal Cutoff Road Improvements
Date	:	8/26/2022
Sample Location/Curve Number	:	Composite #3 (B107/B108/B109)
Soil Classification	:	SC w/ grvl (3.5% Cement)

TEST	A	B	C
Percent Moisture @ Compaction, %	11.9	12.4	13.2
Dry Density, lbm/cu.ft.	114.9	115.3	114.4
Exudation Pressure, psi	610	300	160
Expansion Pressure, (Dial Reading)	0	0	0
Expansion Pressure, psf	0	0	0
Resistance Value R	88	83	78

R Value at 300 PSI Exudation Pressure	**83**
R Value by Expansion Pressure (TI =): 5	**Expansion Pressure nil**



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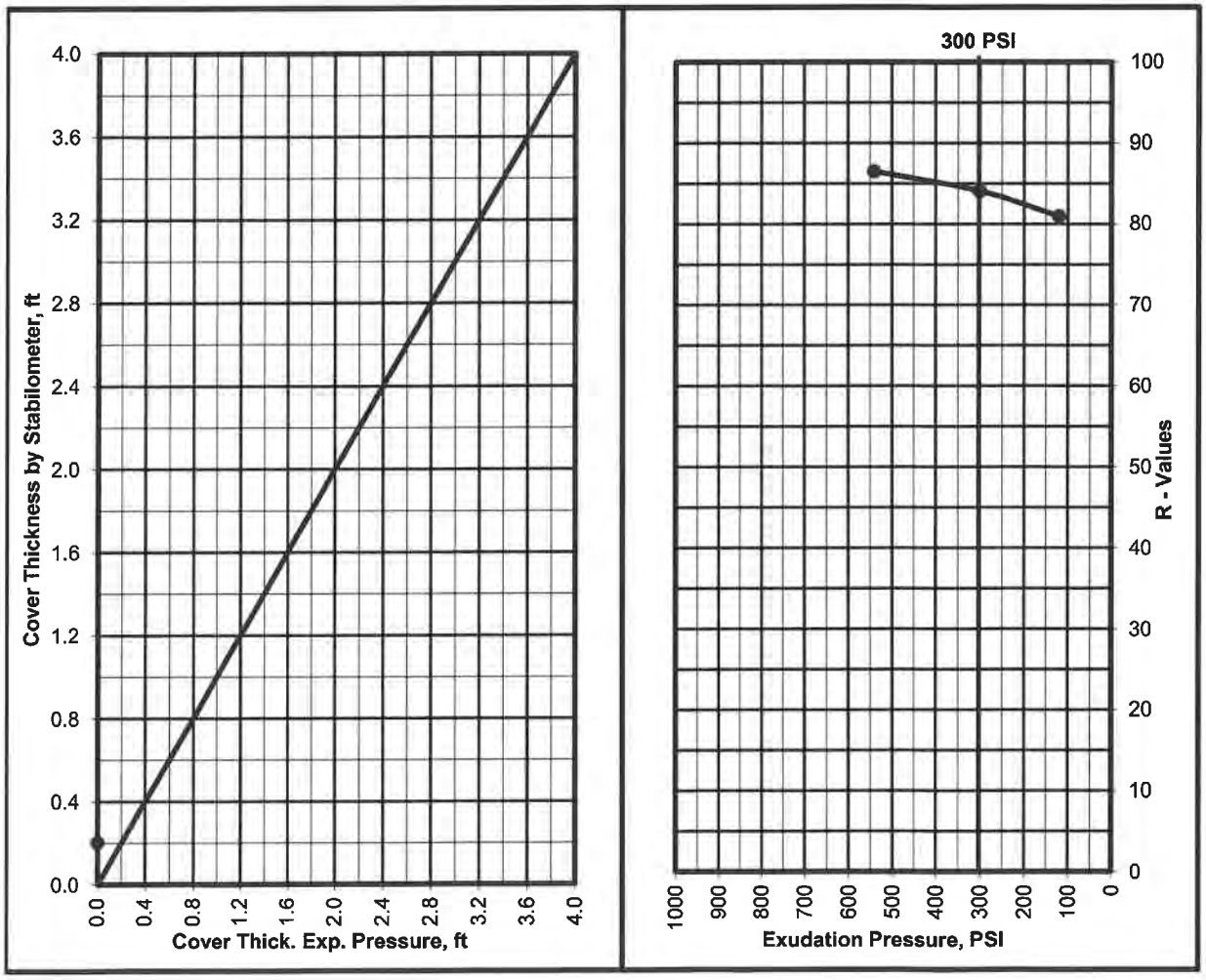
R - VALUE TEST
ASTM D - 2844 / CAL 301

Project Number	:	012-22022
Project Name	:	Avenal Cutoff Road Improvements
Date	:	8/23/2022
Sample Location/Curve Number	:	Composite #1 (B101/B102/B103)
Soil Classification	:	SM w/ grvl (4% Cement)

TEST	A	B	C
Percent Moisture @ Compaction, %	11.5	10.8	10.1
Dry Density, lbm/cu.ft.	125.9	125.7	125.0
Exudation Pressure, psi	120	300	540
Expansion Pressure, (Dial Reading)	0	0	0
Expansion Pressure, psf	0	0	0
Resistance Value R	81	84	86

R Value at 300 PSI Exudation Pressure	**84**
R Value by Expansion Pressure (TI =): 5	**Expansion Pressure nil**



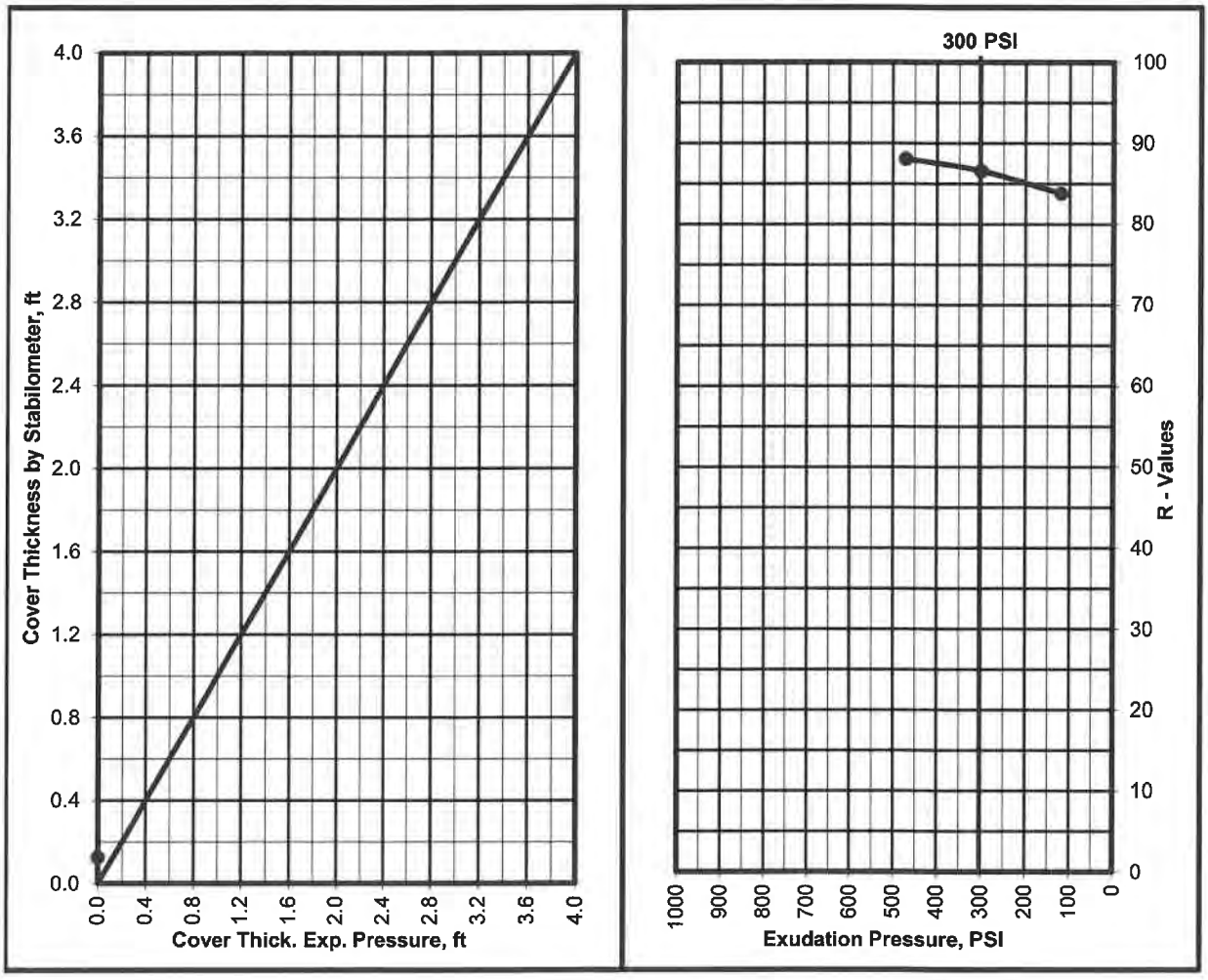
Krazan Testing Laboratory

R - VALUE TEST
ASTM D - 2844 / CAL 301

Project Number	:	012-22022
Project Name	:	Avenal Cutoff Road Improvements
Date	:	8/25/2022
Sample Location/Curve Number	:	Composite #2 (B104/B105/B106)
Soil Classification	:	SM w/ grvl (4.0 % Cement)

TEST	A	B	C
Percent Moisture @ Compaction, %	9.5	10.0	10.7
Dry Density, lbm/cu.ft.	127.3	126.4	126.7
Exudation Pressure, psi	470	300	120
Expansion Pressure, (Dial Reading)	0	0	0
Expansion Pressure, psf	0	0	0
Resistance Value R	88	87	84

R Value at 300 PSI Exudation Pressure	**87**
R Value by Expansion Pressure (TI =): 5	**Expansion Pressure nil**



Krazan Testing Laboratory

MOORE TWINING ASSOCIATES, INC.

ASPHALT CONCRETE PAVEMENT INVESTIGATION

COUNTY OF KINGS PUBLIC WORKS DEPARTMENT

AVENAL CUTOFF ROAD; FROM JACKSON AVENUE TO THE CALIFORNIA AQUEDUCT

KINGS COUNTY, CALIFORNIA

Project Number: D12614.01

For:

Mr. Mitchel Cabrera, P.E.
Division of Engineering
County of Kings Public Works Department
1400 West Lacey Boulevard
Hanford, California 93230

August 20, 2020

www.mooretwining.com

PH: 559.268.7021
FX: 559.268.7126
2527 Fresno Street
Fresno, CA 93721

MOORE TWINING ASSOCIATES, INC.

August 20, 2020 D12614.01

Mr. Mitchel Cabrera, P.E.
Division of Engineering
County of Kings Public Works Department
1400 West Lacey Boulevard
Hanford, California 93230

Subject: Asphalt Concrete Pavement Investigation
Avenal Cutoff Road; from Jackson Avenue to the California Aqueduct
Kings County, California

Dear Mr. Cabrera:

We are pleased to submit this pavement assessment report for the Avenal Cutoff Road project in the Kings County, California.

The contents of this report include the purpose of the investigation, scope of services, background information, investigative procedures, our findings, evaluation, conclusions, and recommendations. It is recommended that those portions of the plans and specifications that pertain to earthwork, and pavements be reviewed by Moore Twining Associates, Inc. (Moore Twining) to determine if they are consistent with our recommendations. This service is not a part of this current contractual agreement; however, the client should provide these documents for our review prior to their issuance for construction bidding purposes.

In addition, it is recommended that Moore Twining be retained to provide inspection and testing services for the excavation, earthwork and pavement phases of construction. These services are necessary to determine if the subsurface conditions are consistent with those used in the analyses and formulation of recommendations for this investigation, and if the construction complies with our

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2527 Fresno Street
Fresno, CA 93721

recommendations. These services are not, however, part of this current contractual agreement. A representative with our firm will contact you in the near future regarding these services.

We appreciate the opportunity to be of service to the County of Kings Public Works Department. If you have any questions regarding this report, or if we can be of further assistance, please contact us at your convenience at 800-268-7021.

Sincerely,
MOORE TWINING ASSOCIATES, INC.

Zubair Anwar, PE
Project Engineer
Geotechnical Engineering Division

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ASPHALT CONCRETE PAVEMENT INVESTIGATION

COUNTY OF KINGS PUBLIC WORKS DEPARTMENT

AVENAL CUTOFF ROAD; FROM JACKSON AVENUE TO THE CALIFORNIA AQUEDUCT

KINGS COUNTY, CALIFORNIA

Project Number: D12614.01

1.0 INTRODUCTION

This report presents the results of a pavement assessment report conducted for the segment of Avenal Cutoff Road extending from Jackson Avenue to the California Aqueduct in Kings County, California. Moore Twining Associates, Inc. (Moore Twining) was authorized by Kings County to perform this investigation.

The contents of this report include the purpose of the investigation and the scope of services provided. The site description, history, previous studies and anticipated construction are discussed. In addition, a description of the investigative procedures used and the subsequent findings obtained are presented. Finally, the report provides an evaluation of the findings, general conclusions, and related recommendations. The report appendices contain the drawings (Appendix A); the logs of borings (Appendix B); the results of laboratory tests (Appendix C); and photographs (Appendix D).

2.0 PURPOSE AND SCOPE OF INVESTIGATION

2.1 Purpose: The purpose of the investigation was to conduct a field exploration and a laboratory testing program, evaluate the data collected during the field and laboratory portions of the investigation, and provide the following:

2.1.1 A general description of the observed pavement surface conditions;

2.1.2 The thicknesses of the existing pavement sections encountered and a description of the subgrade soil conditions encountered;

2.1.3 Recommended design sections for new asphalt concrete (AC) pavements

2.1.4 Recommendations for repair/rehabilitation of the existing pavements; and

2.1.5 Final test boring logs and laboratory test results.

This report is provided specifically for the existing Avenal Cutoff Road segment extending from Jackson Avenue to the California Aqueduct in Kings County referenced in the Site Description section of this report. This investigation did not include a foundation investigation, a pavement deflection study, environmental investigation, nor in-place density tests.

2.2 Scope: Our agreement (MTP 19-1109), dated November 21, 2019, outlined the scope of our services. The actions undertaken during the investigation are summarized as follows.

2.2.1 A visual site reconnaissance and subsurface exploration were conducted.

2.2.2 Laboratory tests were conducted to determine the R-value of various samples obtained during the investigation.

2.2.3 Mr. Mitchel Cabrera (Kings County) was consulted during the investigation.

2.2.4 The data obtained from the investigation were used to evaluate various pavement repair or replacement alternatives.

2.2.5 This report was prepared to describe the background information, the investigation procedures, our findings, evaluation, conclusions and recommendations.

3.0 BACKGROUND INFORMATION

The site description and anticipated construction are summarized in the following subsections.

3.1 Site Description: The subject site includes a 15 mile long segment of Avenal Cutoff Road between Jackson Avenue to the north and the California Aqueduct on the south. The asphalt concrete paved roadway consists of two-lanes. The roadway shoulder generally includes a combination of drainage swales and existing agricultural fields. The west end of the Avenal Cutoff road segment includes an embankment associated with the approach to the California Aqueduct bridge. A site location map is provided as Drawing No. 1 in Appendix A.

Overhead power lines were noted traversing the north and south sides of Avenal Cutoff Road.

Based on our site observations, varying degrees of distress were noted within the asphalt wear surfaces of the existing roadway. The most common pavement distresses observed included alligator cracking, block cracking, transverse cracking and longitudinal cracking. A description of our visual observations of the existing pavement surface conditions are included in Section 5.1 of this report.

3.2 Site History: Based on our review of online aerial images from 1998 to 2018, the subject roadway was constructed prior to 1998.

3.3 Anticipated Conditions: It is our understanding that Kings County is planning to improve the existing roadway via pavement replacement or various forms of pavement rehabilitation and repair.

Based on the information provided Mr. Mitchel Cabrera (Kings County), a Traffic index (TI) of 9.0 is being considered for the Avenal Cutoff Road project design.

4.0 INVESTIGATIVE PROCEDURES

The field exploration and laboratory testing programs conducted for this investigation are summarized in the following subsections.

4.1 Field Exploration: The field exploration consisted of a visual site reconnaissance of the pavement surfaces, coring the pavement and drilling borings to measure the pavement section thicknesses and collect samples of the underlying subgrade soils at select locations.

4.1.1 Site Reconnaissance: A visual windshield type survey of the road segment was first conducted on March 9, 2020 by Mr. Zubair Anwar along with Mr. Mitchel Cabrera (Kings County) to identify the general condition of the overall roadway and to select the boring locations. The site reconnaissance consisted of walking the roadways near each of the boring locations to identify the general surface condition of the existing pavements near each of the boring locations. The reconnaissance was conducted by a Moore Twining staff geologist on March 12 and 13, 2020. The features noted are described in the "Background Information" section of this report and in Section 5.1 of this report.

4.1.2 Pavement Borings/Cores: On March 12 and 13, 2019, twenty (20) borings were drilled in the existing roadway to depths ranging from about 0.6 to 5 feet below the existing pavement surface. The boring frequency and locations were agreed upon with Mr. Mitchel Cabrera (Kings County) based on our initial "windshield" type survey of the road. The approximate boring locations are depicted on Drawing No. 2 in Appendix A.

The pavement borings were drilled using a CME 75 drill rig equipped with a 6-5/8 inch diameter hollow stem auger. In addition, cores were obtained at some locations using a Simco 2400 SK-1 trailer mounted core drilling rig for more reliable estimates of the pavement section materials and thickness. The soils encountered in the test borings were logged during drilling by a staff geologist. The field soil classification was in accordance with the Unified Soil Classification System and consisted of particle size, color, and other distinguishing features of the soil.

The boring locations were estimated by pacing with reference to existing roadway features.

The borings were backfilled with soil cuttings and patched with asphalt cold patch to a thickness at least equal to the existing asphaltic concrete thickness.

4.1.3 Soil Sampling: During drilling of the test borings, bulk samples of the subgrade soil were obtained and taken to Moore Twining's laboratory for laboratory testing.

4.2 Laboratory Testing: The laboratory testing was programmed to determine selected properties of various soil samples. The results of laboratory tests are included in Appendix C.

5.0 FINDINGS AND RESULTS

The findings and results of the field exploration and laboratory testing are summarized in the following subsections.

5.1 Pavement Surface Conditions: At the time of the field exploration in March of 2020, the condition of the existing pavements within the general vicinity of the borings was observed. Photographs of some of the observed conditions are included in Appendix D of this report. Based on our visual observations, areas of alligator cracks, longitudinal cracks, transverse cracks, block cracks, rutting, areas of previous patches/overlays, and traverse cracks were noted within the general vicinity of the boring locations. Cracks as wide as 2 inches were noted within the existing pavements in some areas. Edge cracking within the pavement shoulder was also noted within the north portion of the project site. In general, the pavement surface throughout the length of the road segment was noted be in poor condition with moderate to severe alligator cracking and areas of progressed block cracking. Limited areas of the roadway exhibited distress of lower severity. In addition, numerous patched areas which appeared to be former potholes or skin patching in alligatored areas were noted within the project limits.

5.2 Existing Pavement Thicknesses, Subgrade Soils Encountered and R-Value Results: The existing pavement sections encountered at the boring locations varied. The pavement sections encountered generally consisted of hot mix asphalt concrete with different sequences of overlays over oil treated soil. In seven (7) of the eight (8) locations where physical pavement cores were obtained, pavement fabric was identified below a hot mix asphalt overlay. Thus, a pavement fabric appears to occur within the majority of the roadway segment. It should be noted that due to the limited (down hole) observations at the locations where borings were drilled through the pavement surface and cores were not recovered, the presence or absence of a pavement fabric at the other exploration locations should not be relied upon. The presence of absence of a pavement fabric should be considered based on the findings reported from the eight locations where physical core samples were obtained. The thicknesses of the existing asphalt concrete pavement sections, a description of the subgrade soils encountered and the subgrade R-Value test results at the test boring locations are summarized below in Table No. 1.

Table No. 1
Thickness of Asphaltic Concrete Pavement Sections,
Subgrade Soils Encountered and R-Value Test Results

Boring No.	Road	Boring Location	Total Pavement Thickness Including Oil Dirt (inches)	Subgrade R-Value	Subgrade Soil Classification
B-1	Avenal Cutoff Road	Westbound Lane	7¾*	N/T	Silty Sand
B-2	Avenal Cutoff Road	Eastbound Lane	7¾*	10	Silty Sand over Lean Clay
B-3	Avenal Cutoff Road	Westbound Lane	9½*	N/T	Silty Sand
B-4	Avenal Cutoff Road	Eastbound Lane	8 *	9	Lean Clay
B-5	Avenal Cutoff Road	Westbound Lane	10¾*	9	Lean Clay
B-6	Avenal Cutoff Road	Eastbound Lane	9* (½" Surface treatment over 3¾" AC over Pavement Fabric over 2¾" Oil Dirt with aggregate over 2" Oil Dirt)	N/T	Silty Sand
B-7	Avenal Cutoff Road	Westbound Lane	8½* (4" AC over Pavement Fabric over 2½" Oil Dirt with aggregate over 2" Oil Dirt with aggregate)	N/T	Silty Sand
B-8	Avenal Cutoff Road	Eastbound Lane	8¾*	8	Clayey Sand over Lean Clay

Boring No.	Road	Boring Location	Total Pavement Thickness Including Oil Dirt (inches)	Subgrade R-Value	Subgrade Soil Classification
B-9	Avenal Cutoff Road	Westbound Lane	7¼* (½" Surface treatment over 1½" AC over 1½" AC over Pavement Fabric Over 3¾" Oil Dirt with aggregate)	N/T	Silty Sand
B-10	Avenal Cutoff Road	Eastbound Lane	7½* (1½" AC over 1" AC Over 5" Oil Dirt with gravel)	N/T	Silty Sand
B-11	Avenal Cutoff Road	Westbound Lane	10¼*	9	Lean Clay
B-12	Avenal Cutoff Road	Eastbound Lane	8¾*	8	Silty Sand over Lean Clay
B-13	Avenal Cutoff Road	Westbound Lane	12¼* (3½" AC over Pavement Fabric over 1¼" AC over 2" Oil Dirt with aggregate over 5½" Oil Dirt)	N/T	Clayey Sand
B-14	Avenal Cutoff Road	Southbound Lane	8 * (3¾" AC over Pavement Fabric Over 1¼" AC Over 3" Oil Dirt with aggregate)	N/T	Clayey Sand
B-15	Avenal Cutoff Road	Westbound Lane	9*	21	Sandy Lean Clay
B-16	Avenal Cutoff Road	Southbound Lane	8¾*	31	Clayey Sand
B-17	Avenal Cutoff Road	Westbound Lane	7¼* (½" Surface treatment Over 1½" AC over 1½" AC Over Pavement Fabric Over 3¾" Oil Dirt with aggregate)	N/T	Sandy Lean Clay

Boring No.	Road	Boring Location	Total Pavement Thickness Including Oil Dirt (inches)	Subgrade R-Value	Subgrade Soil Classification
B-18	Avenal Cutoff Road	Southbound Lane	7¾* (2" AC Over Pavement Fabric Over 3¼" AC Over 2½" Oil Dirt)	N/T	Sandy Lean Clay
B-19	Avenal Cutoff Road	Westbound Lane	8¾*	29	Clayey Sand
B-20	Avenal Cutoff Road	Southbound Lane	6¾*	18	Silty Sand over Sandy Lean Clay

Notes: AC - Asphaltic Concrete
NE - Not Encountered
* - Total pavement section includes both hot mix asphalt and oil treated layers such as oil dirt. Due to down hole measurements in the drilled boreholes were pavement cores were not collected, the separate pavement layers (ie, asphalt versus oil treated soil with aggregate) could not be accurately differentiated and measured.
Note -Where physical core samples of the pavement were recovered, individual pavements are identified in the table as separate layers.
N/T - Test not performed for this sample

6.0 ASPHALT CONCRETE PAVEMENT EVALUATION

The data and methodology used to assess the existing asphalt concrete pavements are summarized below. In general, our evaluation of the existing pavements and repair/rehabilitation options included analysis of the structural section based on the reported traffic loading.

6.1 Asphaltic Concrete Pavement Surface Conditions and Pavement Design: In general, the findings from the field exploration indicate the existing hot mix asphalt section is rather thin for the existing road considering the traffic index and the lack of an aggregate base section. Aggregate base materials were not encountered at the boring locations. Based on our visual observations, the condition of the existing asphalt concrete pavements varied; however, in general the existing pavement exhibited a significant degree of distress. Evaluation of the pavement structure for a replacement pavement section depends on factors such as the anticipated traffic loading, and the subgrade soil properties. Evaluation of options such as pavement replacement or major rehabilitation are discussed below. References to gravel equivalent were estimated using the procedures of the California Department of Transportation (Caltrans) Highway Design Manual.

A total of ten (10) R-values were conducted as a part of this investigation. Eight (8) of the lean clay and sandy lean clay samples tested indicated R-values ranging from 8 to 21 and two (2) clayey sand samples tested indicated R-values of 29 and 31. To account of variability over the project site and based on the number of borings which encountered lean clay and sandy lean clay subgrade soils, an R-value of 8 was used for this assessment.

Using the design traffic index of 9.0 and an R-value of 8, the minimum thickness for a new pavement would be 5.5 inches of AC over 19.5 inches of Class 2 Aggregate base. The pavement structural section required for a 20-year design period for Avenal Cutoff Road would require a gravel equivalent of about 2.7 feet.

The average bound pavement section thickness encountered in the eight (8) core locations was about 3.9 inches of asphaltic concrete. The average bound pavement section thickness does not include the oil dirt layers encountered below the pavement section. Aggregate base was not encountered in any of the borings. Thus, the existing pavements would indicate an average gravel equivalent deficiency of about 2 feet based on the average thickness encountered. This gravel equivalent deficiency corresponds to an (average) asphaltic concrete thickness of greater than 12 inches based on a traffic index of 9 and a 20 year design life.

It is our understanding that an overlay with digouts is desired to be considered for pavement rehabilitation. At the time of our field investigation, areas of low to severity alligator cracking, longitudinal and traverse cracks were noted to be fairly prevalent within the existing road segment. Due to the onset of alligator cracking and the structural deficiency of the pavement section, more robust pavement rehabilitation methods including construction of a new two layer pavement section are more appropriate for the roadway. A structural overlay could be performed as a maintenance measure to extend the useful life of the pavement; however, the overlay would not be sufficient to achieve the structural section requirements of a 20-year pavement. Thus, repeated, frequent overlay applications would be anticipated if the overlay approach is used.

Our experience is that well-maintained overlays may extend the functional use of the pavement about 5 to 7 years or so. However, due to the lack of an aggregate base section, the degree of distress, and the presence of weak subgrade soils, typical overlay life spans are expected to be lower for this segment. A pavement interlayer such as TruPave could be considered along with the overlay to reduce the potential for reflective cracking and improve the useful life of the overlay. If the pavement reinforcing is not included with the overlay, a greater potential for reflective cracking would be anticipated and a shorter design period would be anticipated.

6.2 Full Depth Reclamation with Cement: Alternative pavement rehabilitation methods instead of full pavement replacement, such pavement recycling with cement, may also be considered for the project. The full depth pavement reclamation generally consists of pulverizing and blending of existing pavement section materials and subgrade soils to construct a cement treated material as a base layer for a new asphalt concrete surface course. If this approach was considered, the work would typically consist of grading to establish the plan subgrade elevation, mixing in-place material (after removal of surface pavement materials as required based on design grades) with cement, and water to establish a minimum cement treated soil section of 15 inches; spreading and compacting the material, and fine grading to establish the finished grades; curing the cement treated material; microcracking; and hauling away excess material to allow for placement of an aggregate base layer (if used) and a hot mix asphalt concrete surface course.

Where the suggested rehabilitation approach includes full depth recycling with cement, the pavement section thickness design was determined using the gravel equivalent requirements included in the Caltrans Highway Design Manual based upon a gravel factor of 1.3 and a minimum R-value of 60 for cement treated soil/recycled pavement materials. A dedicated stress relief layer consisting of a 6 inch aggregate base section was included in the design to reduce the potential for reflective cracking and to reduce the asphalt concrete section thickness. As an alternative to use of an aggregate base section, an alternative design section was prepared based upon the assumption that only microcracking of the cement treated layer will be conducted to reduce the potential for reflective cracking of the asphalt concrete. However, it should be noted that this alternative has a higher potential for reflective cracking and a thicker asphalt concrete section is required based on the Caltrans design procedures.

7.0 CONCLUSIONS

Based on the data collected during the field exploration and laboratory testing program, our experience in the vicinity of the project site, and our understanding of the project, the following general conclusions are presented.

7.1 The pavement sections encountered generally consisted of hot mix asphalt concrete with different sequences of overlays over oil treated soil. The thicknesses of the existing bound asphalt concrete pavements encountered in the locations where physical cores were obtained ranged from 2.5 to 5.3 inches (this represents the hot mix asphalt pavement materials and excludes the oil dirt layer thicknesses). The hot mix asphalt pavement commonly included pavement fabric (between overlays) and was generally underlain by 2.5 to 7.5 inches of oil treated dirt, which in some cases included aggregate. In seven (7) of the eight (8) locations where physical pavement cores were obtained, pavement fabric was identified below a hot mix asphalt overlay. Thus, a pavement fabric appears to occur within the majority of the roadway segment. It should be noted that due to the limited (down hole) observations at the locations where borings were drilled through the pavement surface and cores were not recovered, the presence or absence of a pavement fabric reported at these other exploration locations should not be relied upon. The thicknesses of the existing asphalt concrete pavement sections, a description of the subgrade soils encountered and the subgrade R-Value test results at the test boring locations are summarized below in Table No. 1.

7.2 The subgrade soils encountered were described as lean clays, sandy lean clays and clayey sands with R-values ranging from 8 to 31.

7.3 Based on our observations, the existing pavements exhibit varying degrees of distress. The most common distress observed included alligator cracking, block cracking, transverse cracking and longitudinal cracking. Based on the results of R-

value testing and analysis conducted as part of this investigation based on the traffic index information provided, recommended repair/rehabilitation options for the subject road segment investigated were developed. In general, due to the lack of sufficient existing pavement structure, pavement reconstruction including an option for full depth pavement reclamation with cement would be required to achieve the design traffic index for the roadway. Due to the limited thickness of the existing pavement structure and the design traffic index of 9.0, even a thick overlay would only be considered as a short term maintenance measure to extend the useful life of the pavement; however, the overlay would not achieve the structural section requirements of a 20-year pavement. The evaluations are summarized in Section 6.1 of this report and the recommendations are included in Section 8.0 of this report.

7.4 Depending on the pavement rehabilitation method selected for the road improvements, shallow utilities and associated improvements may be in conflict with grading for a new pavement section. Thus, the extent and depth of utilities should be evaluated to determine potential conflicts and impacts.

8.0 RECOMMENDATIONS

Based on the evaluation of the field and laboratory data, information provided by Kings County , and our experience with similar projects, the following recommendations are presented for use in the project design and construction.

It is anticipated that a set of plans and specifications will be developed by a civil design professional to detail the construction requirements/selected option for the pavement rehabilitation activities.

Where the requirements of a governing agency, product manufacturer or utility agency differ from the recommendations of this report, the more stringent recommendations should be applied to the project.

8.1 General

8.1.1 Moore Twining should be retained to review the final pavement improvement plans and specifications so that any relevant recommendations can be presented.

8.1.2 A preconstruction meeting including, as a minimum, the owner, design engineer, general contractor, earthwork contractor, paving subcontractor, and Moore Twining should be scheduled by the general contractor at least one week prior to the start of construction or demolition. The purpose of the meeting should be to discuss critical project requirements and scheduling.

8.1.3 The contractor should provide asphalt concrete mix designs, prepared and signed by a registered civil engineer in California, to the Owner for review and approval prior to construction.

8.1.4 It is recommended the extent and depth of existing utilities be evaluated to determine potential impacts/conflicts with the proposed pavement installation.

8.1.5 Contractor(s) bidding on this project should determine if the data are adequate for accurate bid purposes. If the data are not sufficient, the Contractor should conduct supplemental studies and collect more data as required to prepare accurate bids.

8.2 New Asphalt Concrete Pavements

If it is desired to provide a pavement with a 20 year design life for the subject road, the following pavement design and subgrade preparation recommendations could be considered for new two-layer pavements.

It should be noted that the pavement section thicknesses for replacement pavements could be reduced if chemical (i.e., cement) treatment of the subgrade soil is used to establish a structural subbase layer. However, additional laboratory testing would be required to confirm the feasibility of this approach and to develop recommendations for the chemical additive and application rate. If desired, Moore Twining should be contacted to evaluate options using chemical treatment. The useful life of the new pavement sections assume that the vehicle traffic reported will not increase over the life of the pavements, and that regular maintenance as recommended in Section 8.6 of this report will be applied.

Section 8.5 of this report should be referred to for general recommendations if an overlay is to be applied.

8.2.1 The pavement sections in Table No. 2 were based on a R-value of 8 for the subgrade soils, and a traffic index value of 9.0 provided by Kings County.

Table No. 2
New Asphalt Concrete Pavement Section

Traffic Index	AC thickness, inches	AB thickness, inches	Compacted Subgrade, inches
9.0	5.5	19.5	12

AC - Asphaltic Concrete in accordance with this report and the project specifications
AB - Class II Aggregate Base compacted to at least 95 percent relative compaction (ASTM D1557)
Subgrade - Subgrade soils compacted to at least 95 percent relative compaction (ASTM D1557)

8.2.2 In order to increase the longevity of the pavement section, a geotextile layer such as Mirafi 500X or equivalent is recommended below the aggregate base layer. This is an option which may be used by the County to reduce fines migration into the aggregate base over time.

8.2.3 As part of the subgrade preparation, after removal of the existing pavements, the subgrade soils should be scarified to a depth of 12 inches, moisture conditioned to at least one(1) percent above optimum moisture content and compacted to a minimum of 95 percent relative compaction (based on the maximum dry density determined in accordance with ASTM D 1557) prior to placement of aggregate base or asphalt concrete.

8.2.4 Prior to placement of the aggregate base, or general fill, the prepared native subgrade should be proof-rolled using a loaded water truck under the observations of Moore Twining to confirm a firm, non-yielding condition. Soft, unstable areas should be repaired to achieve a surface compact, stable subgrade condition prior to placement of the aggregate base.

8.3 Pavement Reconstruction Using Full Depth Reclamation with Cement

As an alternative to a new traditional two layer pavement section, mixing the in-place soils with cement to construct a cement treated base section (soil cement layer) may also be considered for the project. This approach is referred to as full depth reclamation with cement, when the existing pavement structure is included in the reclamation. However, since the existing pavement structure is very limited, it is assumed that the cement treated layer would mostly consist of subgrade soil treated with cement.

8.3.1 For preliminary design considerations based on the design traffic index of 9.0, the pavement section noted in Table No. 3 below may be considered for budgeting purposes. In the event this approach is considered, a laboratory testing program will be required to assess the feasibility of cement treating the subgrade soils in the subject roadway for use as a structural base layer and to provide recommendations for the cement application rate. The following pavement section should be considered preliminary until completion of the future laboratory testing. In addition, in the event the use of a new pavement section with cement treatment is proposed, specifications should be developed to identify requirements for this work, including pulverization and mixing of existing materials, application of cement, construction joints, curing, micro-cracking, etc.

Table No. 3
Preliminary Asphalt Concrete Pavement Section Using Full Depth Reclamation with Cement

Traffic Index	AC Thickness, inches	Aggregate Base Thickness, inches	Cement Treated Soil Thickness, inches
9.0	5.5	6	15

AC - Asphaltic Concrete in accordance with this report and the project specifications
AB - Class II Aggregate Base compacted to at least 95 percent relative compaction (ASTM D1557)
CTB Cement Treated Base mixture of existing asphalt concrete (if used) and subgrade blended with cement to achieve a target compressive strength of 300 to 500 psi. Minimum 95 percent relative compaction based on dry density determined in accordance with ASTM D1557. The section requires proper control of moisture during mixing and compaction and appropriate curing methods to reduce the potential for excessive shrinkage cracking. Pavement Reclamation with cement should be performed in accordance with Caltrans Standard Specifications Section 30-4 Full Depth Reclamation-Cement.

As an alternative to use of an aggregate base section for stress relief and reduction in the potential for reflective cracking of the asphalt concrete, microcracking of the cement treated soil layer could be used to reduce the potential for reflective cracking. In the event the 6-inch thick aggregate base section is not used for the stress relief layer and micro-cracking of the cement treated layer is conducted, an alternative section of 8½ inches of asphalt concrete over a 15 inch thick section of cement treated soil with a compressive strength of 300 to 500 psi could be considered.

8.4 Options for Full Depth Asphalt Concrete Pavement Sections

As indicated in this report, the majority of the existing asphalt concrete pavements for Avenal Cutoff Road have failed and major rehabilitation techniques or reconstruction should be considered. In order to achieve a traffic index value of 9.0 based on a design R-value of 8, a full depth asphalt concrete section of 14 inches would be required. Due to the thickness of new asphalt pavement, this section does not appear to be a cost effective approach to achieve a traffic index of 9.0.

8.5 Asphalt Concrete Overlays and Repairs

Due to the deficiency in thickness of the existing pavement section and the degree of distress observed to the existing surface course, an asphalt concrete overlay is not expected to significantly extend the useful life of the pavement. However, if it is desired to apply a thick overlay as a temporary maintenance measure before the section can be replaced, the following recommendations may be considered.

8.5.1 As indicated in this report, overlays would not achieve the requirements for a 20-year design period. Due to the existing pavement thickness and the degree of distress observed in the existing roadway (including alligator cracking and rutting), reflective cracking and similar forms of distress would be anticipated to profile through the overlay in a relatively short period of time.

8.5.2 If an overlay is planned, the existing pavements may be milled to a maximum depth of 1 inch. The overlay thickness should be at least 3 inches to provide some structural benefit and improve the functionality of the overlay. To maximize the performance of an overlay, areas which exhibit high levels of distress should be removed and replaced as part of the pavement repairs. It should be noted that due to the degree of distress observed and the extent of these areas, removal and replacement of highly distressed areas may not practical (which reduces the life of the overlay).

8.5.3 A pavement reinforcing mesh such as Trupave may be considered along with the overlay to reduce the potential for reflective cracking and improve the useful life of the overlay.

8.5.4 All pavement rehabilitation work and installation should comply with the requirements of this report, the project plans and specifications and the Kings County, whichever is more stringent.

8.5.5 Where pavement overlays are planned, the existing pavements should be repaired by dig out of the areas exhibiting fatigue failure (alligator cracking, potholes, etc.,) and placement of a new layer of asphalt concrete should be implemented. Digouts repairs should be constructed prior to placement of any overlays or seals. On a preliminary basis, the replacement asphalt concrete for dig outs should include a minimum thickness of 8 inches of asphaltic concrete. As an alternative, a 4 inch thick layer of asphalt concrete could be placed over a 6 inch thick layer of Class 2 aggregate base for the repairs.

8.5.6 The pavement surface to be overlayed should be cleaned by sweeping, flushing or other means to remove all loose particles of paving, all dirt and all other extraneous material.

8.5.7 Cracks should be cleaned of grasses, debris, etc. and sealed prior to application of the leveling course. Cracks should be filled with hot pour rubberized crack filler or other crack filler as specified by the project civil engineer. Other areas of cracks may exist at the time of construction. All cracks must be filled in preparation for the overlay. The Contractor shall visit the project site and observe the site conditions prior to providing a bid for this work.

8.5.8 After cleaning the surface and sealing / filling of the cracks, edge grinding, etc. a tack coat should be applied to a dry surface followed by a leveling course of compacted asphalt concrete.

8.5.9 The completed overlay should be cored at the locations and frequency required by the specifications to verify proper thickness.

8.6 General Recommendations for All Pavements

8.6.1 If actual pavement subgrade materials are significantly different from those tested for this study due to unanticipated grading or soil importing, the pavement sections should be re-evaluated for the changed subgrade conditions.

8.6.2 Pavement materials and construction method should conform to the requirements of Kings County.

8.6.3 Unless otherwise specified by the mix design, it is recommended the asphaltic concrete, including the joint density, should be compacted to an average relative compaction of 93 percent, with no single test value being below a relative compaction of 91 percent and no single test value being above a relative compaction of 97 percent of the referenced laboratory density according to ASTM D2041.

8.6.4 The type of frequency of heavy truck traffic has a significant impact on the life of the pavements. If the type or frequency of heavy trucks increased in the future, Moore Twining should be contacted to provide adjusted pavement thicknesses and revised pavement life estimates based on the change in traffic.

8.7 Pavement Maintenance

The pavement recommendations in this report assume that proper maintenance will be performed on an as needed basis for longevity and safety. When properly performed, regular maintenance of asphaltic concrete pavements can maintain the integrity of the pavements and maximize the serviceable life of the pavement. The following general guidelines have been prepared for future maintenance of the asphaltic concrete roadway.

8.7.1 The surface of the pavement should be monitored on a regular basis to review visual distress, adjacent irrigation systems, surface drainage and performance of prior maintenance activities. At a minimum, regular observations and assessment of the overall pavements should be conducted every 2 to 3 years.

8.7.2 Surface drainage should be monitored regularly for ponding of water and poor drainage. All areas of ponding water and runoff should be repaired immediately.

8.7.3 A sealcoat, and crack sealing/patching as required, should be conducted generally about every 3 to 5 years, or as determined based on the results of regular pavement monitoring.

9.0 DESIGN CONSULTATION

9.1 Moore Twining should be retained to review those portions of the contract drawings and specifications that pertain to earthwork operations and pavement prior to finalization to determine whether they are consistent with our recommendations.

9.2 It is the client's responsibility to provide plans and specification documents for our review prior to their issuance for construction bidding purposes.

9.3 If Moore Twining is not retained for the plan review, we assume no liability for the misinterpretation of our conclusions and recommendations. This review is documented by a formal plan/specification review report provided by Moore Twining.

10.0 CONSTRUCTION MONITORING

10.1 It is recommended that Moore Twining be retained to observe the excavation, earthwork, and pavement construction phases of work to determine that the subsurface conditions are compatible with those used in the analysis and design.

10.2 Moore Twining can conduct the necessary observation and field testing to provide results so that action necessary to remedy indicated deficiencies can be taken in accordance with the plans and specifications. Upon completion of the work, a written summary of our observations, field testing and conclusions will be provided regarding the conformance of the completed work to the intent of the plans and specifications. This service is not, however, part of this current contractual agreement.

10.3 In the event that the earthwork operations for this project are conducted such that the construction sequence is not continuous, (or if construction operations disturb the surface soils) it is recommended that the exposed subgrade be tested to verify

adequate compaction and/or moisture conditioning. If adequate compaction or moisture contents are not verified, the fill soils should be over-excavated, scarified, moisture conditioned and compacted are recommended in the Recommendations of this report.

10.4 The construction monitoring is an integral part of this investigation. This phase of the work provides Moore Twining the opportunity to verify the subsurface conditions interpolated from the soil borings and make alternative recommendations if the conditions differ from those anticipated.

10.5 If Moore Twining is not retained to provide engineering observation and field-testing services during construction activities related to earthwork, pavements and trenches; then, Moore Twining will not be responsible for compliance of any aspect of the construction with our recommendations or performance of the structures or improvements if the recommendations of this report are not followed. After their review, the firm should, in writing, state that they understand and agree with the conclusions and recommendations of this report and agree to conduct sufficient observations and testing to ensure the construction complies with this report's recommendations. Moore Twining should be notified, in writing, if another firm is selected to conduct observations and field-testing services prior to construction.

11.0 NOTIFICATION AND LIMITATIONS

11.1 The conclusions and recommendations presented in this report are based on the information provided regarding the design traffic loading and proposed construction, and the results of the field and laboratory investigation, combined with interpolation of the subsurface conditions between boring locations. The nature and extent of subsurface variations between borings may not become evident until construction.

11.2 If variations or undesirable conditions are encountered during construction, Moore Twining should be notified promptly so that these conditions can be reviewed and our recommendations reconsidered where necessary. It should be noted that unexpected conditions frequently require additional expenditures for proper construction of the project.

11.3 If the proposed construction is relocated or redesigned, or if there is a substantial lapse of time between the submission of our report and the start of work (over 12 months) at the site, or if conditions have changed due to natural cause or construction operations at or adjacent to the site, the conclusions and recommendations contained in this report should be considered invalid unless the changes are reviewed and our conclusions and recommendations modified or approved in writing.

11.4 The conclusions and recommendations contained in this report are valid only for the project discussed in the Anticipated Construction section of this report. The use of the information and recommendations contained in this report for other purposes is

not recommended. The entity or entities that use or cause to use this report or any portion thereof for other structures or site not covered by this report shall hold Moore Twining, its officers and employees harmless from any and all claims and provide Moore Twining's defense in the event of a claim.

11.5 This report presents the results of a limited pavement assessment only and should not be construed as an environmental audit or study.

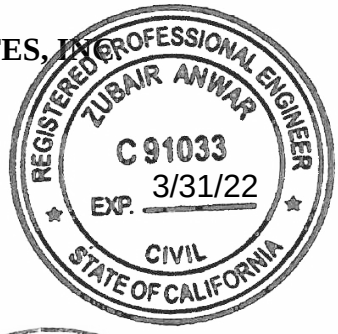
11.6 Our professional services were performed, our findings obtained, and our recommendations prepared in accordance with generally-accepted engineering principles and practices. This warranty is in lieu of all other warranties either expressed or implied.

11.7 Reliance on this report by a third party (i.e., that is not a party to our written agreement) is at the party's sole risk. If the project and/or site are purchased by another party, the purchaser must obtain written authorization and sign an agreement with Moore Twining in order to rely upon the information provided in this report for design or construction of the project.

We appreciate the opportunity to be of service to Kings County. If you have any questions regarding this report, or if we can be of further assistance, please contact us at your convenience.

Sincerely,

MOORE TWINING ASSOCIATES, INC.
Geotechnical Engineering Division



Zubair Anwar, PE
Project Engineer

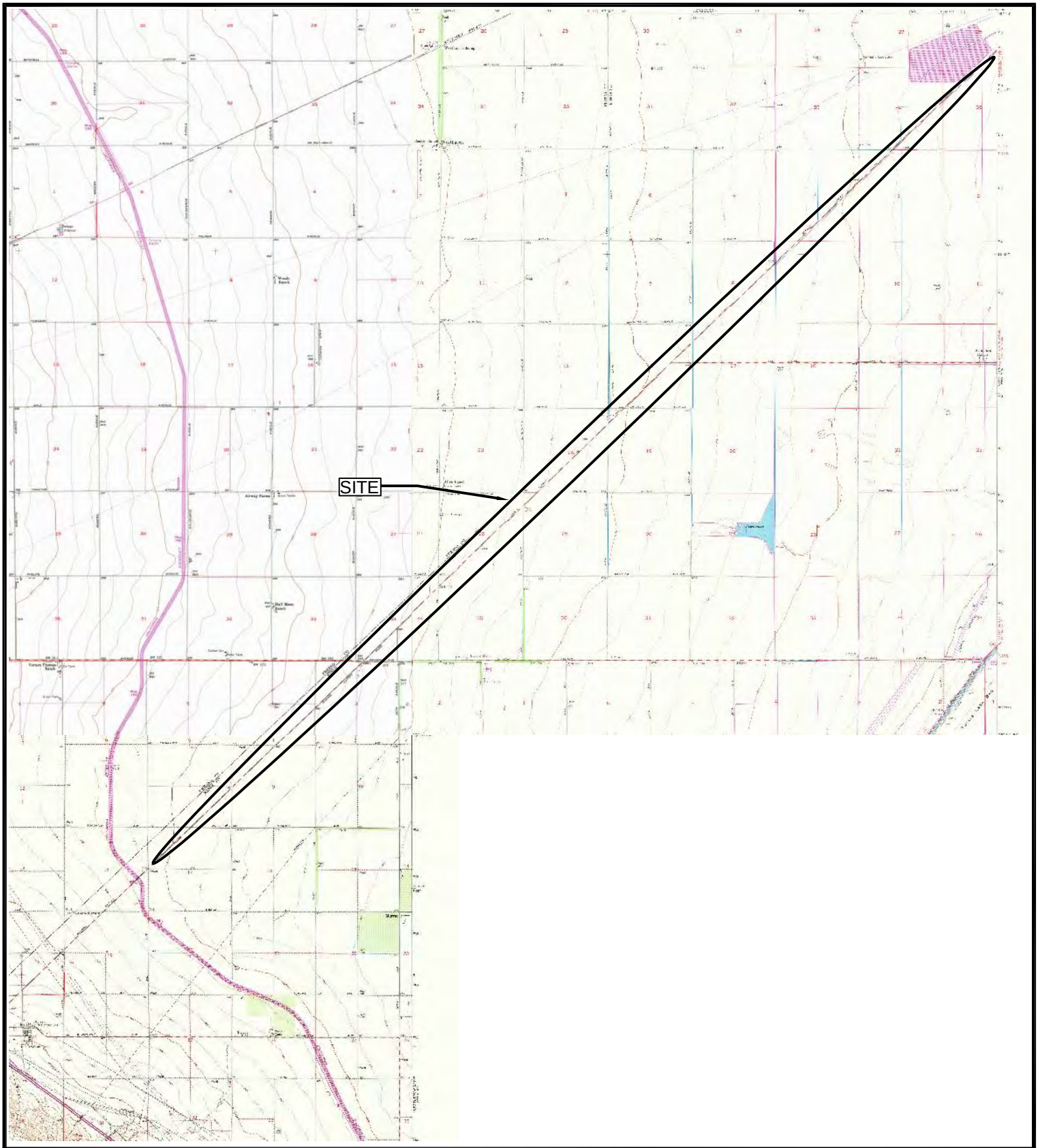
Read L. Andersen, RGE
Manager

APPENDIX A

DRAWINGS

Drawing No. 1 - Site Location Map

Drawing No. 2 - Boring Location Map



SOURCE: U.S.G.S. TOPOGRAPHIC MAPS, 7 ½ MINUTE SERIES
WESTHAVEN (PHOTOREVISED 1981), LA CIMA (PHOTOREVISED 1971),
AND HURON (PHOTOREVISED 1971), CALIFORNIA QUADRANGLES

NTS

SITE LOCATION MAP
ASPHALT CONCRETE PAVEMENT INVESTIGATION
AVENAL CUTOFF ROAD; FROM JACKSON AVENUE
TO CALIFORNIA AQUEDUCT
KINGS COUNTY, CALIFORNIA

FILE NO.: 12614-01-01	DATE: 08/26/20
DRAWN BY: ZA	APPROVED BY:
PROJECT NO. D12614.01	DRAWING NO. 1

MOORE TWINING ASSOCIATES, INC.

CORING/BORING LOCATION MAP
ASPHALT CONCRETE PAVEMENT INVESTIGATION
AVENAL CUTOFF ROAD; FROM JACKSON AVENUE TO CALIFORNIA AQUEDUCT
KINGS COUNTY, CALIFORNIA

FILE NO. 12614-01-01	DATE DRAWN: 08/26/20
DRAWN BY: ZA	APPROVED BY:
PROJECT NO. D12614.01	DRAWING NO. 2

MOORE TWINING ASSOCIATES, INC.
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APPENDIX B

LOGS OF BORINGS

This appendix contains the final logs of borings. These logs represent our interpretation of the contents of the field logs and the results of the field and laboratory tests.

The logs and related information depict subsurface conditions only at these locations and at the particular time designated on the logs. Soil conditions at other locations may differ from conditions occurring at these test boring locations. Also, the passage of time may result in changes in the soil conditions at these test boring locations.

In addition, an explanation of the abbreviations used in the preparation of the logs and a description of the Unified Soil Classification System are provided at the end of Appendix B.

MOORE TWINING ASSOCIATES, INC.

Test Boring: B-1

Project: Asphalt Concrete Pavement Investigation, Avenal Cutoff Road

Project Number: D12614.01

Drilled By: M.T.A.

Logged By: J.C.

Date: March 12, 2020

Drill Type: CME 75

Auger Type: 6-5/8 Inch Hollow Stem Augers

Hammer Type: N/A

Depth to Groundwater First Encountered During Drilling: N/E

ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	Remarks	N-Values blows/ft.	Moisture Content %
0	[redacted]	AC	Pavement Section Thickness = 7-3/4 INCHES			
		SM	SILTY SAND; moist, fine to medium grained, light-brown; Bottom of boring B-1 at 0.8 feet BSG			
1						
2						
3						
4						
5						

Notes: *Refer to Table No. 1 of report for more information regarding the pavement structure composition.*

MOORE TWINING ASSOCIATES, INC.

Test Boring: B-2

Project: Asphalt Concrete Pavement Investigation, Avenal Cutoff Road

Project Number: D12614.01

Drilled By: M.T.A.

Logged By: J.C.

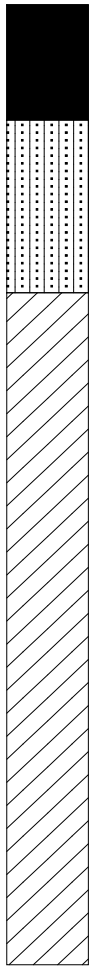
Date: March 12, 2020

Drill Type: CME 75

Auger Type: 6-5/8 Inch Hollow Stem Augers

Hammer Type: N/A

Depth to Groundwater First Encountered During Drilling: N/E

ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	Remarks	N-Values blows/ft.	Moisture Content %
0		AC	Pavement Section Thickness = 7-3/4 INCHES			
1		SM	SILTY SAND; moist, fine to medium brown, with clay, with fine to coarse gravel			
2		CL	LEAN CLAY; moist, low to medium plasticity, dark-brown to black, some fine gravel	R=10		
3						
4						
5			Bottom of boring B-2 at 5 feet BSG			

Notes: *Refer to Table No. 1 of report for more information regarding the pavement structure composition.*

MOORE TWINING ASSOCIATES, INC.

Test Boring: B-3

Project: Asphalt Concrete Pavement Investigation, Avenal Cutoff Road

Project Number: D12614.01

Drilled By: M.T.A.

Logged By: J.C.

Date: March 12, 2020

Drill Type: CME 75

Auger Type: 6-5/8 Inch Hollow Stem Augers

Hammer Type: N/A

Depth to Groundwater First Encountered During Drilling: N/E

ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	Remarks	N-Values blows/ft.	Moisture Content %
0	[redacted]	AC	Pavement Section Thickness = 9-1/2 INCHES			
1		SM	SILTY SAND; moist, fine to medium grained, brown, with clay; Bottom of boring B-3 at 0.9 feet BSG			
2						
3						
4						
5						

Notes: *Refer to Table No. 1 of report for more information regarding the pavement structure composition.*

MOORE TWINING ASSOCIATES, INC.

Test Boring: B-4

Project: Asphalt Concrete Pavement Investigation, Avenal Cutoff Road

Project Number: D12614.01

Drilled By: M.T.A.

Logged By: J.C.

Date: March 12, 2020

Drill Type: CME 75

Auger Type: 6-5/8 Inch Hollow Stem Augers

Hammer Type: N/A

Depth to Groundwater First Encountered During Drilling: N/E

ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	Remarks	N-Values blows/ft.	Moisture Content %
0		AC	Pavement Section Thickness = 8 INCHES			
1		CL	LEAN CLAY; moist, low to medium plasticity, dark-brown			
2						
3						
4						
5			Bottom of boring B-4 at 5 feet BSG			

Notes: *Refer to Table No. 1 of report for more information regarding the pavement structure composition.*

MOORE TWINING ASSOCIATES, INC.

Test Boring: B-5

Project: Asphalt Concrete Pavement Investigation, Avenal Cutoff Road

Project Number: D12614.01

Drilled By: M.T.A.

Logged By: J.C.

Date: March 12, 2020

Drill Type: CME 75

Auger Type: 6-5/8 Inch Hollow Stem Augers

Hammer Type: N/A

Depth to Groundwater First Encountered During Drilling: N/E

ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	Remarks	N-Values blows/ft.	Moisture Content %
0		AC	Pavement Section Thickness = 10-3/4 INCHES			
1		CL	LEAN CLAY; moist, low to medium plasticity, brown	R=9		
2						
3						
4						
5			Bottom of boring B-5 at 5 feet BSG			

Notes: *Refer to Table No. 1 of report for more information regarding the pavement structure composition.*

MOORE TWINING ASSOCIATES, INC.

Test Boring: B-6

Project: Asphalt Concrete Pavement Investigation, Avenal Cutoff Road

Project Number: D12614.01

Drilled By: M.T.A.

Logged By: J.C.

Date: March 13, 2020

Drill Type: Simco 2400 SK-1

Auger Type: N/A

Hammer Type: N/A

Depth to Groundwater First Encountered During Drilling: N/E

ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	Remarks	N-Values blows/ft.	Moisture Content %
0	[redacted]	AC	Pavement Section Thickness = 9 INCHES			
		SM	SILTY SAND; moist, fine to medium grained, brown, with trace fine gravel; Bottom of boring B-6 at 0.6 feet BSG			
1						
2						
3						
4						
5						

Notes: *Refer to Table No. 1 of report for more information regarding the pavement structure composition.*

MOORE TWINING ASSOCIATES, INC.

Test Boring: B-7

Project: Asphalt Concrete Pavement Investigation, Avenal Cutoff Road

Project Number: D12614.01

Drilled By: M.T.A.

Logged By: J.C.

Date: March 13, 2020

Drill Type: Simco 2400 SK-1

Auger Type: 6-5/8 Inch Hollow Stem Augers

Hammer Type: N/A

Depth to Groundwater First Encountered During Drilling: N/E

ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	Remarks	N-Values blows/ft.	Moisture Content %
0	[redacted]	AC	Pavement Section Thickness = 8-1/2 INCHES			
1		SM	SILTY SAND; moist, fine to medium grained, brown; Bottom of boring B-7 at 0.7 feet BSG			
2						
3						
4						
5						

Notes: *Refer to Table No. 1 of report for more information regarding the pavement structure composition.*

MOORE TWINING ASSOCIATES, INC.

Test Boring: B-8

Project: Asphalt Concrete Pavement Investigation, Avenal Cutoff Road

Project Number: D12614.01

Drilled By: M.T.A.

Logged By: J.C.

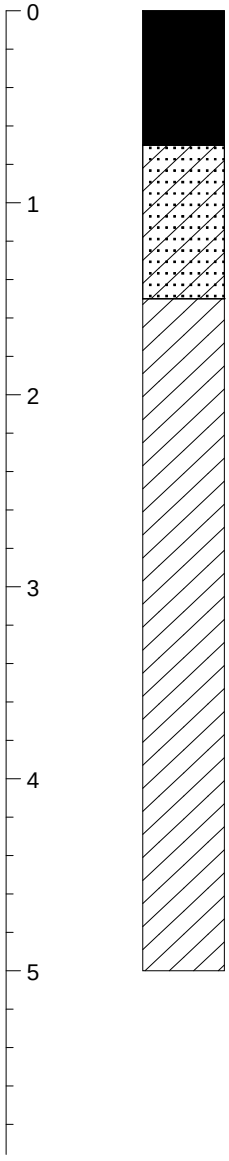
Date: March 12, 2020

Drill Type: CME 75

Auger Type: 6-5/8 Inch Hollow Stem Augers

Hammer Type: N/A

Depth to Groundwater First Encountered During Drilling: N/E



ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	Remarks	N-Values blows/ft.	Moisture Content %
		AC	Pavement Section Thickness = 8-3/4 INCHES			
		SC	CLAYEY SAND; moist, fine to medium grained, brown, with clay			
		CL	LEAN CLAY; moist, low to medium plasticity, brown	R=8		
			Bottom of boring B-8 at 5 feet BSG			

Notes: *Refer to Table No. 1 of report for more information regarding the pavement structure composition.*

MOORE TWINING ASSOCIATES, INC.

Test Boring: B-9

Project: Asphalt Concrete Pavement Investigation, Avenal Cutoff Road

Project Number: D12614.01

Drilled By: M.T.A.

Logged By: J.C.

Date: March 13, 2020

Drill Type: Simco 2400 SK-1

Auger Type: N/A

Hammer Type: N/A

Depth to Groundwater First Encountered During Drilling: N/E

ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	Remarks	N-Values blows/ft.	Moisture Content %
0		AC	Pavement Section Thickness = 7-1/4 INCHES			
1		SM	SILTY SAND; moist, fine to medium grained, brown, with trace fine to coarse gravel; Bottom of boring B-9 at 0.7 feet BSG			
2						
3						
4						
5						

Notes: *Refer to Table No. 1 of report for more information regarding the pavement structure composition.*

MOORE TWINING ASSOCIATES, INC.

Test Boring: B-10

Project: Asphalt Concrete Pavement Investigation, Avenal Cutoff Road

Project Number: D12614.01

Drilled By: M.T.A.

Logged By: J.C.

Date: March 13, 2020

Drill Type: Simco 2400 SK-1

Auger Type: N/A

Hammer Type: N/A

Depth to Groundwater First Encountered During Drilling: N/E

ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	Remarks	N-Values blows/ft.	Moisture Content %
0		AC	Pavement Section Thickness = 7-1/2 INCHES			
1		SM	SILTY SAND; moist, fine to medium grained, brown, with fine to coarse gravel, gravel measuring up to 3"x2"; Bottom of boring B-10 at 0.7 feet BSG			
2						
3						
4						
5						

Notes: *Refer to Table No. 1 of report for more information regarding the pavement structure composition.*

MOORE TWINING ASSOCIATES, INC.

Test Boring: B-11

Project: Asphalt Concrete Pavement Investigation, Avenal Cutoff Road

Project Number: D12614.01

Drilled By: M.T.A.

Logged By: J.C.

Date: March 12, 2020

Drill Type: CME 75

Auger Type: 6-5/8 Inch Hollow Stem Augers

Hammer Type: N/A

Depth to Groundwater First Encountered During Drilling: N/E

ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	Remarks	N-Values blows/ft.	Moisture Content %
0		AC	Pavement Section Thickness = 10-1/4 INCHES			
1		CL	LEAN CLAY; moist, low to medium plasticity, some sand	R=9		
2						
3						
4						
5			Bottom of boring B-11 at 5 feet BSG			

Notes: *Refer to Table No. 1 of report for more information regarding the pavement structure composition.*

MOORE TWINING ASSOCIATES, INC.

Test Boring: B-12

Project: Asphalt Concrete Pavement Investigation, Avenal Cutoff Road

Project Number: D12614.01

Drilled By: M.T.A.

Logged By: J.C.

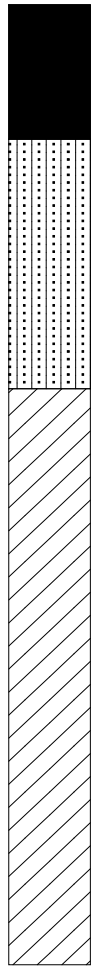
Date: March 12, 2020

Drill Type: CME 75

Auger Type: 6-5/8 Inch Hollow Stem Augers

Hammer Type: N/A

Depth to Groundwater First Encountered During Drilling: N/E

ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	Remarks	N-Values blows/ft.	Moisture Content %
0		AC	Pavement Section Thickness = 8-3/4 INCHES			
1		SM	SILTY SAND; moist, fine to medium grained, brown, some clay			
2		CL	LEAN CLAY; moist, low to medium plasticity, dark-brown	R=8		
3						
4						
5			Bottom of boring B-12 at 5 feet BSG			

Notes: *Refer to Table No. 1 of report for more information regarding the pavement structure composition.*

MOORE TWINING ASSOCIATES, INC.

Test Boring: B-13

Project: Asphalt Concrete Pavement Investigation, Avenal Cutoff Road

Project Number: D12614.01

Drilled By: M.T.A.

Logged By: J.C.

Date: March 13, 2020

Drill Type: Simco 2400 SK-1

Auger Type: N/A

Hammer Type: N/A

Depth to Groundwater First Encountered During Drilling: N/E

ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	Remarks	N-Values blows/ft.	Moisture Content %
0	[redacted]	AC	Pavement Section Thickness = 12-1/4 INCHES			
1		SC	CLAYEY SAND; moist, fine to medium grained, brown, trace fine to coarse gravel; Bottom of boring B-13 at 1.1 feet BSG			
2						
3						
4						
5						

Notes: *Refer to Table No. 1 of report for more information regarding the pavement structure composition.*

MOORE TWINING ASSOCIATES, INC.

Test Boring: B-14

Project: Asphalt Concrete Pavement Investigation, Avenal Cutoff Road

Project Number: D12614.01

Drilled By: M.T.A.

Logged By: J.C.

Date: March 13, 2020

Drill Type: Simco 2400 SK-1

Auger Type: N/A

Hammer Type: N/A

Depth to Groundwater First Encountered During Drilling: N/E

ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	Remarks	N-Values blows/ft.	Moisture Content %
0	[redacted]	AC	Pavement Section Thickness = 8 INCHES			
		SC	CLAYEY SAND; moist, fine to medium grained, brown; Bottom of boring B-14 at 0.8 feet BSG			
1						
2						
3						
4						
5						

Notes: *Refer to Table No. 1 of report for more information regarding the pavement structure composition.*

MOORE TWINING ASSOCIATES, INC.

Test Boring: B-15

Project: Asphalt Concrete Pavement Investigation, Avenal Cutoff Road

Project Number: D12614.01

Drilled By: M.T.A.

Logged By: J.C.

Date: March 12, 2020

Drill Type: CME 75

Auger Type: 6-5/8 Inch Hollow Stem Augers

Hammer Type: N/A

Depth to Groundwater First Encountered During Drilling: N/E

ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	Remarks	N-Values blows/ft.	Moisture Content %
0		AC	Pavement Section Thickness = 9 INCHES			
1		CL	SANDY LEAN CLAY; moist, low to medium plasticity, brown, trace sand	R=21		
2						
3						
4						
5			Bottom of boring B-15 at 5 feet BSG			

Notes: *Refer to Table No. 1 of report for more information regarding the pavement structure composition.*

MOORE TWINING ASSOCIATES, INC.

Test Boring: B-16

Project: Asphalt Concrete Pavement Investigation, Avenal Cutoff Road

Project Number: D12614.01

Drilled By: M.T.A.

Logged By: J.C.

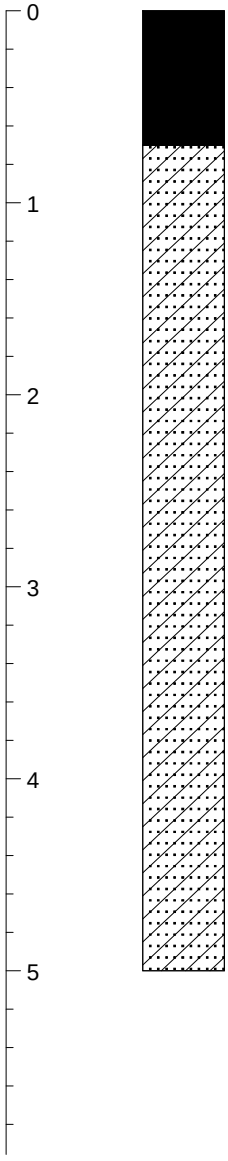
Date: March 12, 2020

Drill Type: CME 75

Auger Type: 6-5/8 Inch Hollow Stem Augers

Hammer Type: N/A

Depth to Groundwater First Encountered During Drilling: N/E



ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	Remarks	N-Values blows/ft.	Moisture Content %
		AC	Pavement Section Thickness = 8-3/4 INCHES			
		SC	CLAYEY SAND; moist, fine to medium grained, brown, trace fine gravel	R=31		
			Bottom of boring B-16 at 5 feet BSG			

Notes: *Refer to Table No. 1 of report for more information regarding the pavement structure composition.*

MOORE TWINING ASSOCIATES, INC.

Test Boring: B-17

Project: Asphalt Concrete Pavement Investigation, Avenal Cutoff Road

Project Number: D12614.01

Drilled By: M.T.A.

Logged By: J.C.

Date: March 13, 2020

Drill Type: Simco 2400 SK-1

Auger Type: N/A

Hammer Type: N/A

Depth to Groundwater First Encountered During Drilling: N/E

ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	Remarks	N-Values blows/ft.	Moisture Content %
0		AC	Pavement Section Thickness = 8-3/4 INCHES			
1		CL	SANDY LEAN CLAY; moist, fine to medium grained, brown; Bottom of at 0.9 feet BSG			
2						
3						
4						
5						

Notes: *Refer to Table No. 1 of report for more information regarding the pavement structure composition.*

MOORE TWINING ASSOCIATES, INC.

Test Boring: B-18

Project: Asphalt Concrete Pavement Investigation, Avenal Cutoff Road

Project Number: D12614.01

Drilled By: M.T.A.

Logged By: J.C.

Date: March 13, 2020

Drill Type: Simco 2400 SK-1

Auger Type: N/A

Hammer Type: N/A

Depth to Groundwater First Encountered During Drilling: N/E

ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	Remarks	N-Values blows/ft.	Moisture Content %
0		AC	Pavement Section Thickness = 7-3/4 INCHES			
		CL	SANDY LEAN CLAY; moist, low to medium plasticity, brown; Bottom of boring B-18 at 0.8 feet BSG			
1						
2						
3						
4						
5						

Notes: *Refer to Table No. 1 of report for more information regarding the pavement structure composition.*

MOORE TWINING ASSOCIATES, INC.

Test Boring: B-19

Project: Asphalt Concrete Pavement Investigation, Avenal Cutoff Road

Project Number: D12614.01

Drilled By: M.T.A.

Logged By: J.C.

Date: March 12, 2020

Drill Type: CME 75

Auger Type: 6-5/8 Inch Hollow Stem Augers

Hammer Type: N/A

Depth to Groundwater First Encountered During Drilling: N/E

ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	Remarks	N-Values blows/ft.	Moisture Content %
0		AC	Pavement Section Thickness = 8-3/4 INCHES			
		SC	CLAYEY SAND; moist, fine to medium grained, with fine gravel	R=27		
1						
2						
3						
4						
5			Bottom of boring B-19 at 5 feet BSG			

Notes: *Refer to Table No. 1 of report for more information regarding the pavement structure composition.*

MOORE TWINING ASSOCIATES, INC.

Test Boring: B-20

Project: Asphalt Concrete Pavement Investigation, Avenal Cutoff Road

Project Number: D12614.01

Drilled By: M.T.A.

Logged By: J.C.

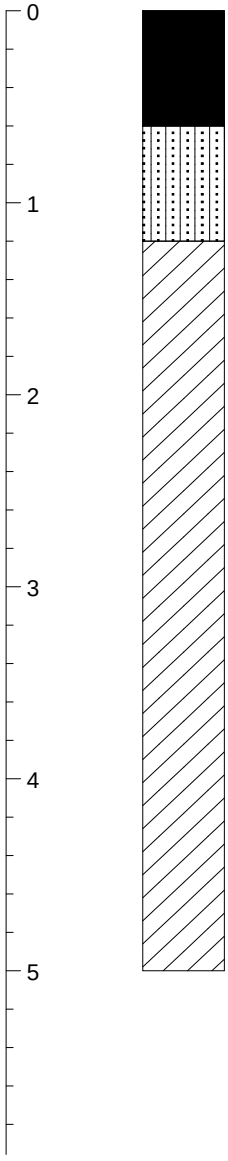
Date: March 12, 2020

Drill Type: CME 75

Auger Type: 6-5/8 Inch Hollow Stem Augers

Hammer Type: N/A

Depth to Groundwater First Encountered During Drilling: N/E



ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	Remarks	N-Values blows/ft.	Moisture Content %
		AC	Pavement Section Thickness = 6-3/4 INCHES			
		SM	SILTY SAND; moist, fine to medium grained, brown			
		CL	SANDY LEAN CLAY; moist, low to medium plasticity, brown			
			Bottom of boring B-20 at 5 feet BSG			

Notes: *Refer to Table No. 1 of report for more information regarding the pavement structure composition.*

KEY TO SYMBOLS

Symbol	Description
Strata symbols	
	Pavement Section Thickness (includes asphalt concrete and oil treated dirt)
	SM: Silty sand
	CL: LEAN CLAY
	SC: Clayey sand

Notes:

1. Cores and test borings were drilled on 3/12/2020 and 3/13/2020 using a CME 75 drill rig equipped with 6-5/8 hollow stem augers and trailer mounted coring rig.

2. Groundwater was not encountered during drilling.

3. Boring locations were located by pace with reference to the existing site features.

4. These logs are subject to the limitations, conclusions, and recommendations in this report.

5. 6. Results of tests conducted on samples recovered are reported on the logs. Abbreviations used are:

AMSL =	Above mean sea level
O.D. =	Outside diameter
R =	R-value
N/A =	Not applicable
N/E =	None encountered
BSG =	below site grade

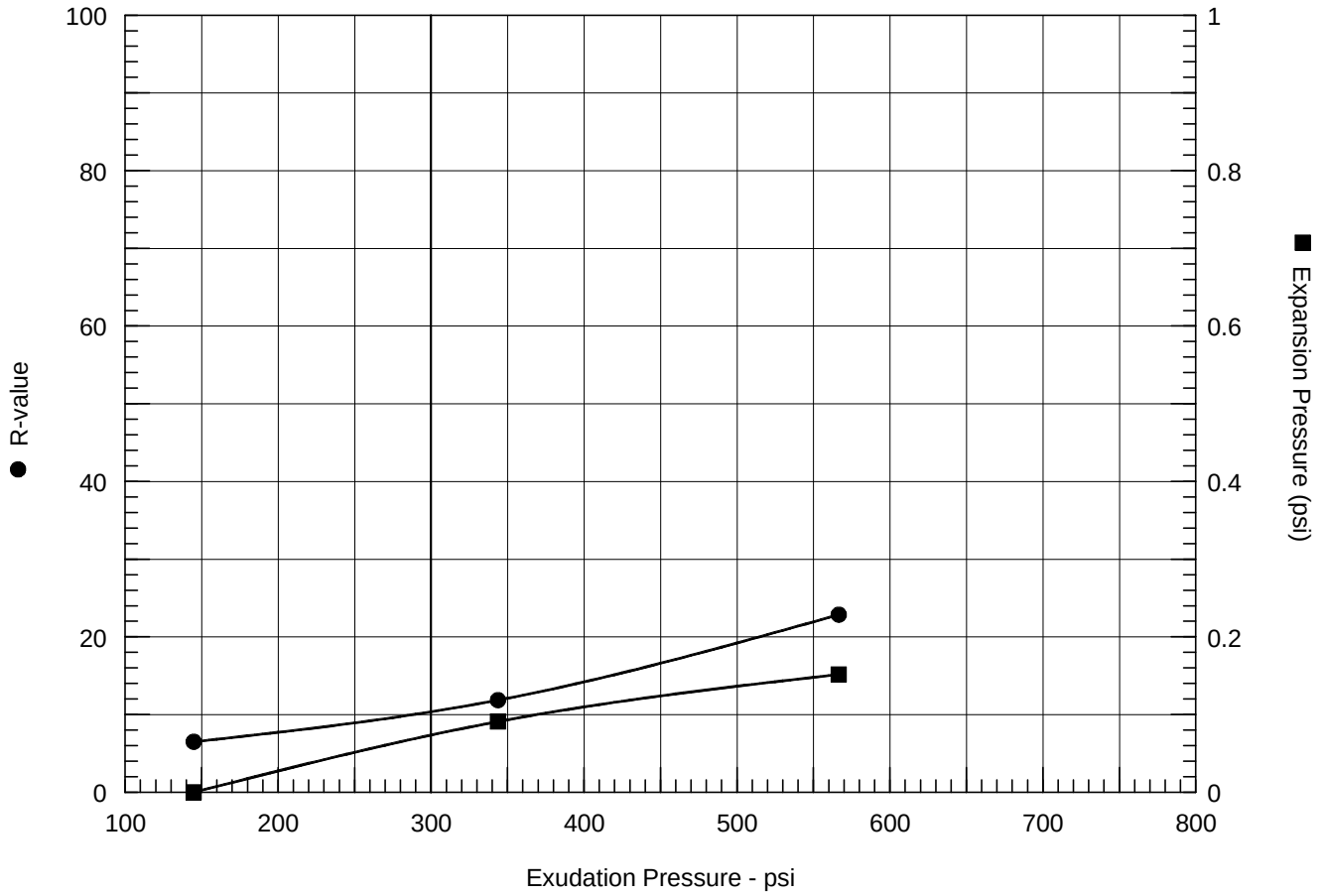
APPENDIX C

RESULTS OF LABORATORY TESTS

This appendix contains the individual results of the following tests. The results of the moisture content and dry density tests are included on the test boring logs in Appendix B. These data, along with the field observations, were used to prepare the final test boring logs in Appendix B.

These Included:	To Determine:
R-Value (ASTM D2844)	The capacity of a subgrade or subbase to support a pavement section designed to carry a specified traffic load.

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - ASTM D 2844

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psi	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	100	113.5	16.0	0.15	113	2.50	567	23	23
2	60	110.2	18.1	0.09	131	2.56	344	11	12
3	40	104.5	20.2	0.00	142	2.68	145	6	6

Test Results	Material Description
R-value at 300 psi exudation pressure = 10 **Exp. pressure at 300 psi exudation pressure =** 0.07 psi	Lean clay

Project No.: D12614.01
Project: Kings County Road Work
Sample Number: B-2 **Depth:** 1.5-5'
Date: 4/8/2020

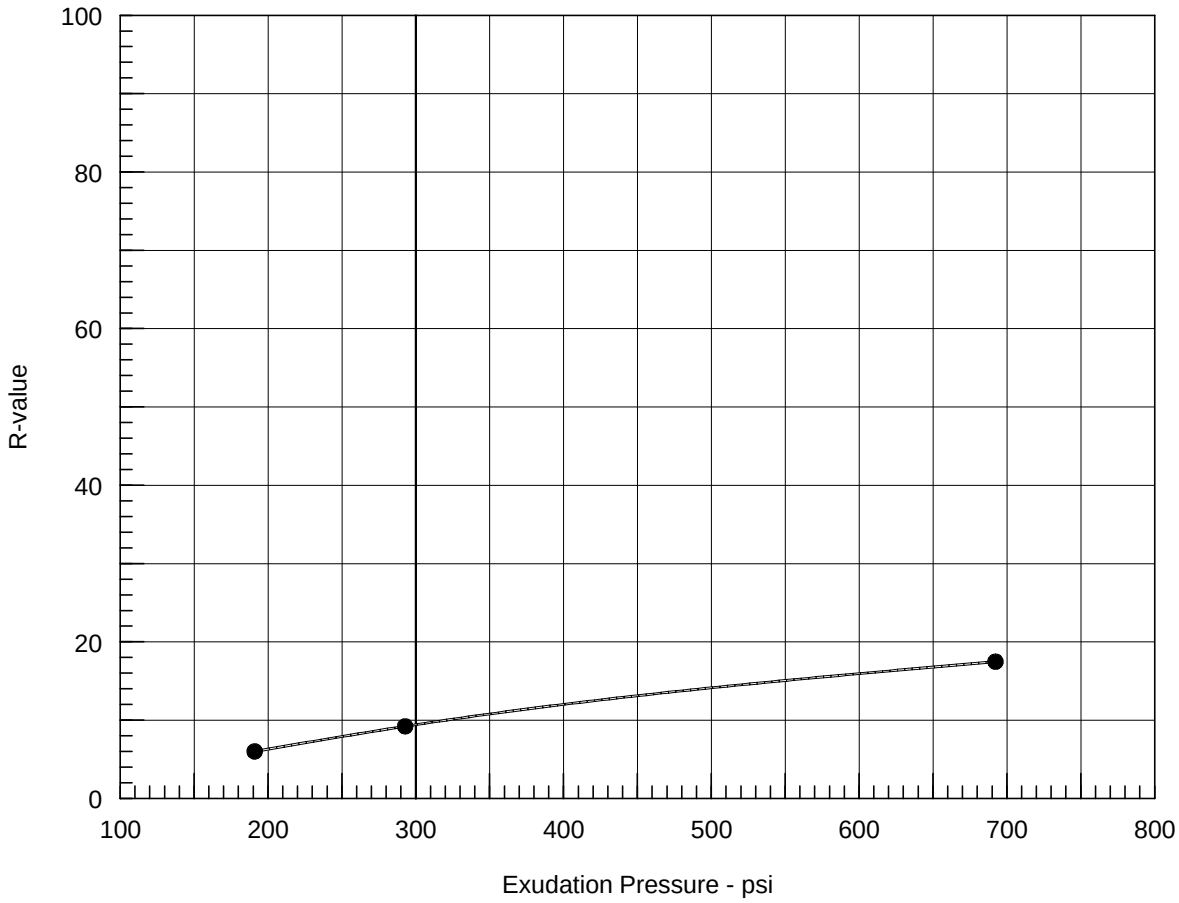
Tested by: MP
Checked by: MS
Remarks:

R-VALUE TEST REPORT

Moore Twining Associates, Inc.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - ASTM D 2844

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psi	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	150	111.2	18.2	0.00	122	2.49	692	17	17
2	50	102.6	20.7	0.00	137	2.57	293	9	9
3	40	99.1	23.0	0.00	145	2.64	191	6	6

Test Results	Material Description
R-value at 300 psi exudation pressure = 9	Lean clay

Project No.: D12614.01
Project: Kings County Road Work
Sample Number: B-4 **Depth:** 0.9-5'
Date: 4/8/2020

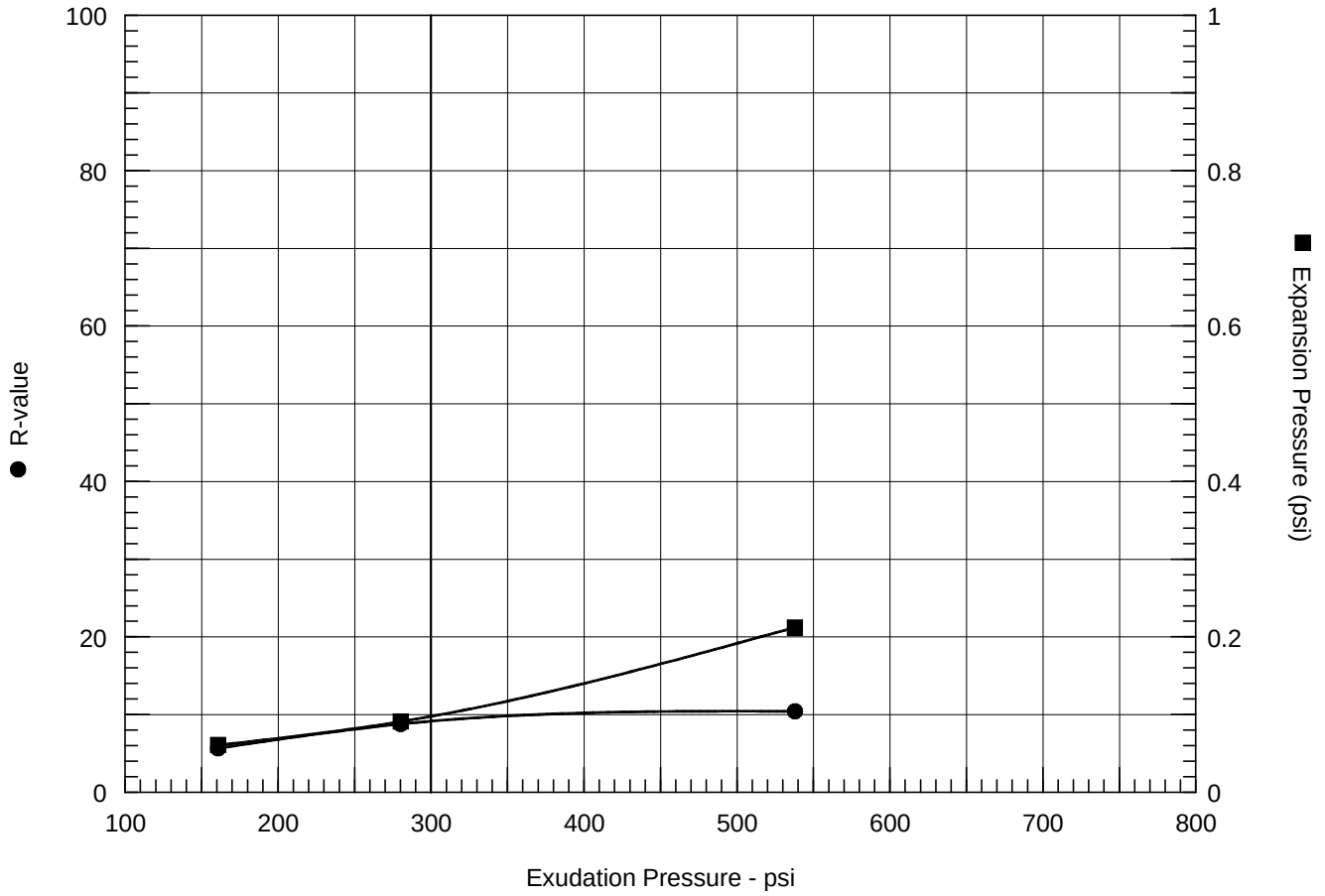
Tested by: MP
Checked by: MS
Remarks:

R-VALUE TEST REPORT

Moore Twining Associates, Inc.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - ASTM D 2844

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psi	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	110	109.7	18.3	0.21	137	2.52	538	10	10
2	60	104.0	20.5	0.09	141	2.65	280	8	9
3	30	98.9	21.9	0.06	145	2.67	161	5	6

Test Results	Material Description
R-value at 300 psi exudation pressure = 9 **Exp. pressure at 300 psi exudation pressure =** 0.10 psi	Lean clay

Project No.: D12614.01
Project: Kings County Road Work
Sample Number: B-5 **Depth:** 1.1-5'
Date: 4/8/2020

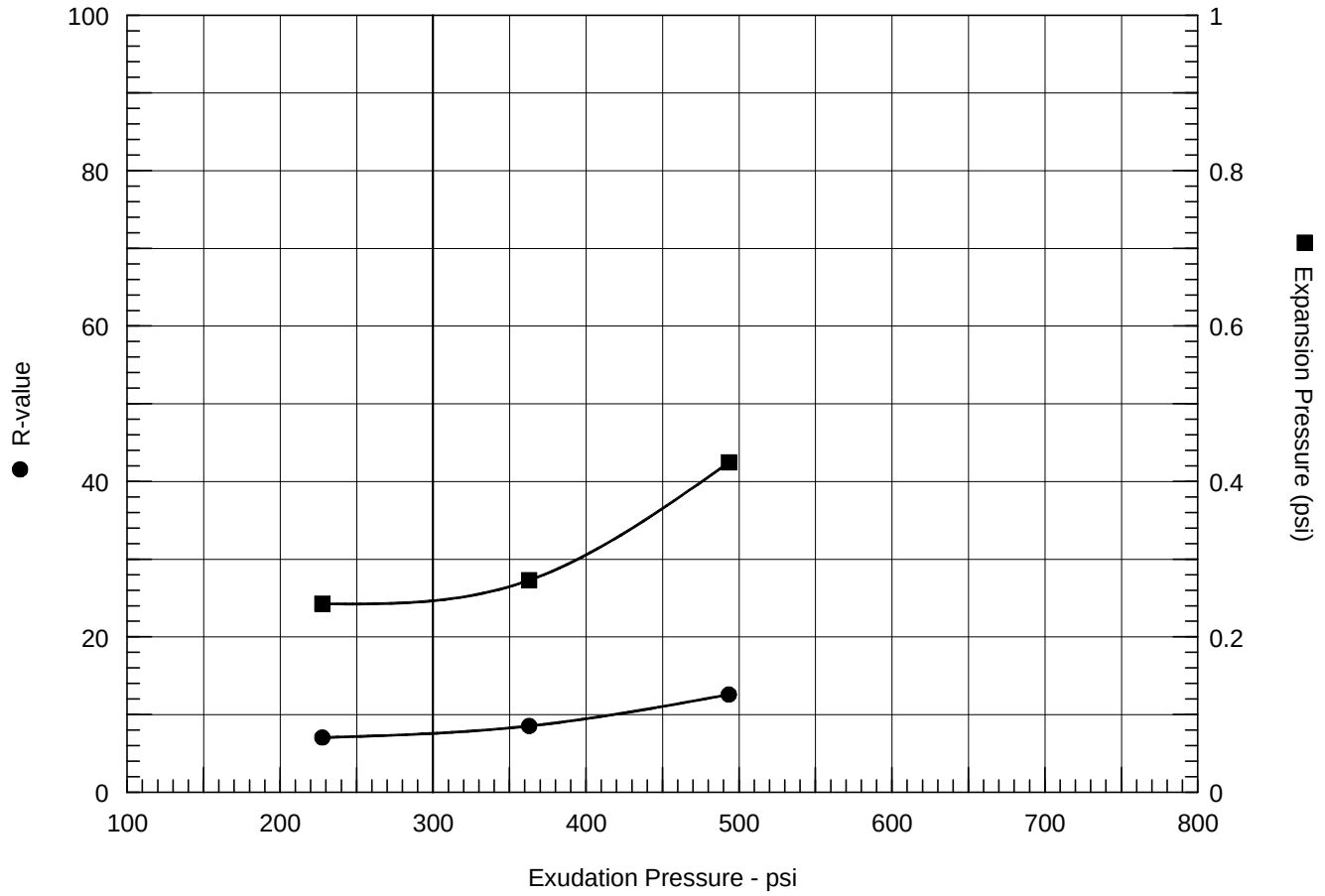
Tested by: MP
Checked by: MS
Remarks:

R-VALUE TEST REPORT

Moore Twining Associates, Inc.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - ASTM D 2844

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psi	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	100	102.5	22.5	0.42	131	2.62	493	12	13
2	50	95.9	24.5	0.27	138	2.64	363	8	9
3	40	94.2	25.6	0.24	142	2.58	228	7	7

Test Results	Material Description
R-value at 300 psi exudation pressure = 8 **Exp. pressure at 300 psi exudation pressure =** 0.25 psi	Lean clay

Project No.: D12614.01
Project: Kings County Road Work
Sample Number: B-8 **Depth:** 1.5-5'
Date: 4/8/2020

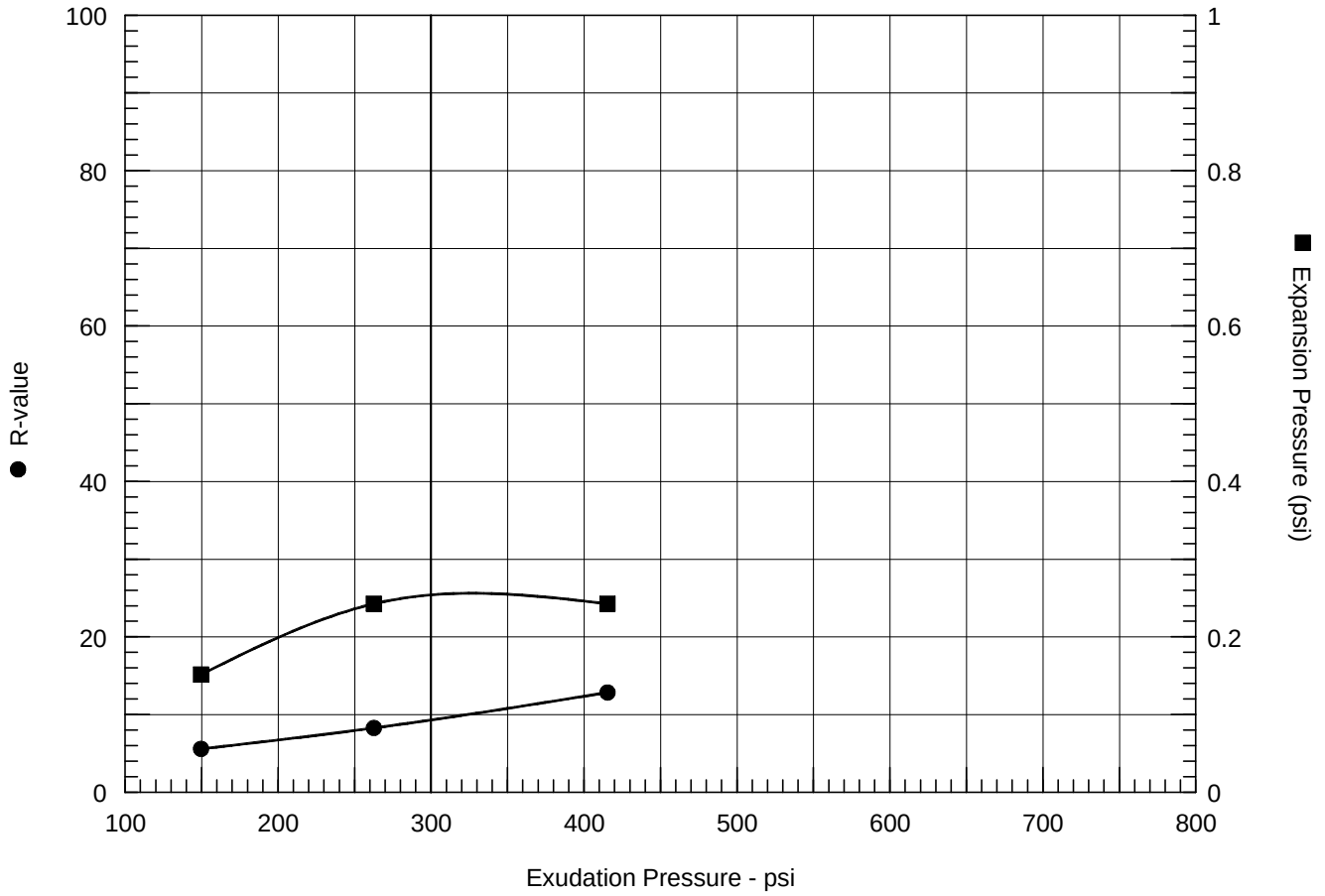
Tested by: MP
Checked by: MS
Remarks:

R-VALUE TEST REPORT

Moore Twining Associates, Inc.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - ASTM D 2844

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psi	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	100	102.1	22.5	0.24	133	2.63	415	12	13
2	50	100.6	25.1	0.24	140	2.50	263	8	8
3	30	92.7	29.2	0.15	145	2.62	150	5	6

Test Results	Material Description
R-value at 300 psi exudation pressure = 9 **Exp. pressure at 300 psi exudation pressure =** 0.25 psi	Lean clay

Project No.: D12614.01
Project: Kings County Road Work
Sample Number: B-11 **Depth:** 1.1-5'
Date: 4/8/2020

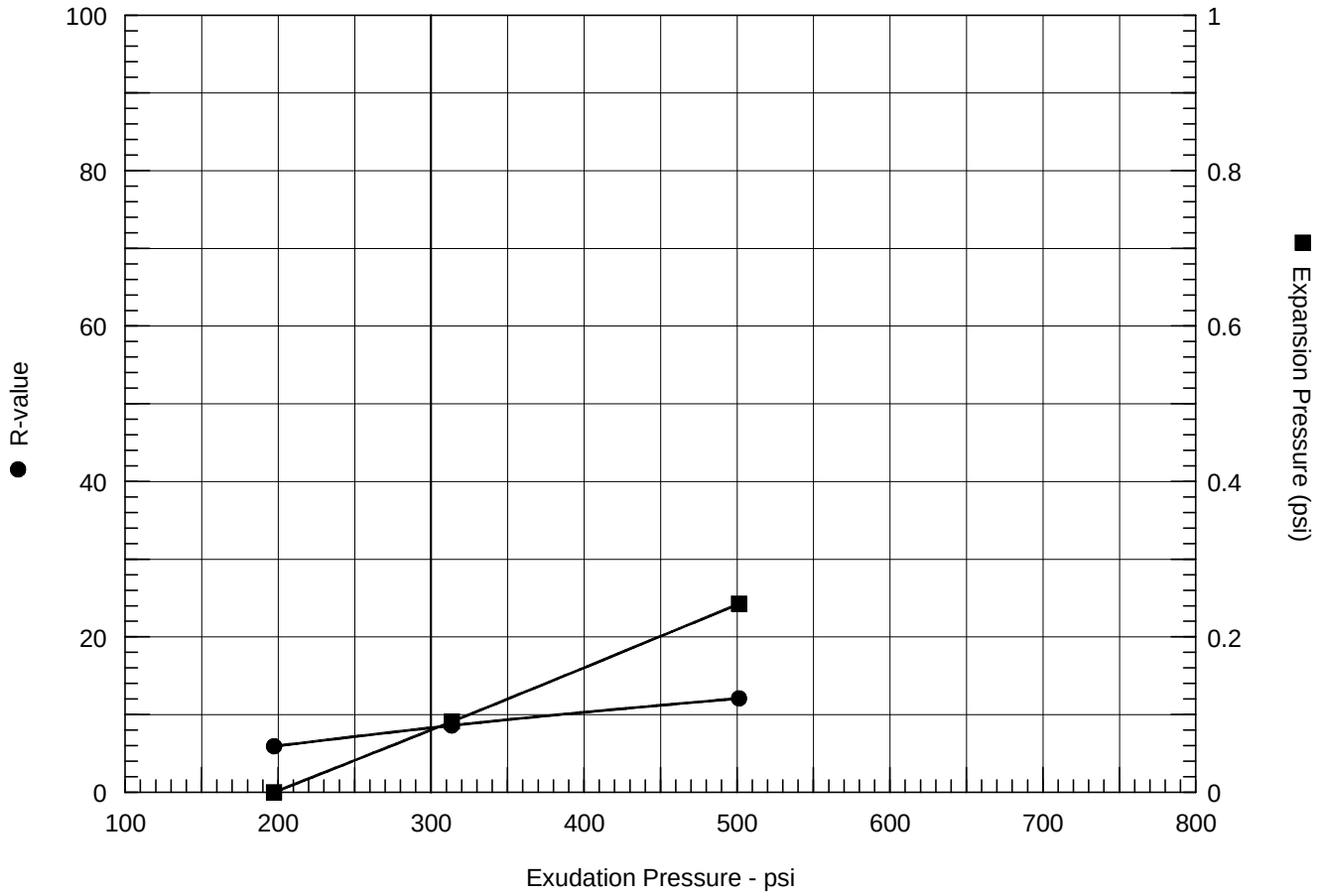
Tested by: MP
Checked by: MS
Remarks:

R-VALUE TEST REPORT

Moore Twining Associates, Inc.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - ASTM D 2844

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psi	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	100	104.7	21.5	0.24	132	2.54	501	12	12
2	70	100.4	23.7	0.09	140	2.63	314	8	9
3	40	95.9	25.2	0.00	145	2.63	197	6	6

Test Results	Material Description
R-value at 300 psi exudation pressure = 8 **Exp. pressure at 300 psi exudation pressure =** 0.08 psi	Lean clay

Project No.: D12614.01
Project: Kings County Road Work
Sample Number: B-12 **Depth:** 2-5'
Date: 4/8/2020

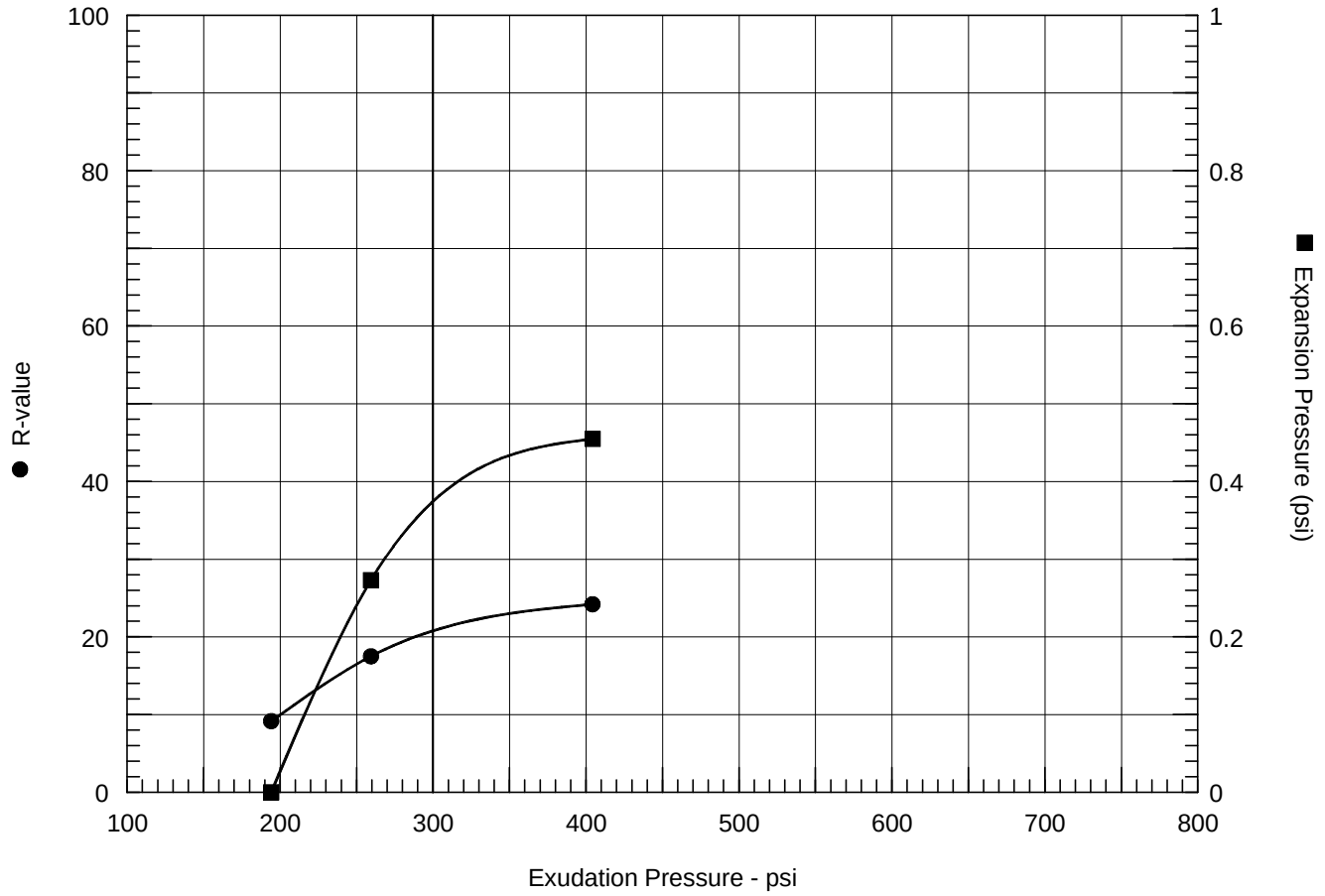
Tested by: MP
Checked by: MS
Remarks:

R-VALUE TEST REPORT

Moore Twining Associates, Inc.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - ASTM D 2844

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psi	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	50	108.6	20.2	0.00	136	2.49	194	9	9
2	100	109.5	18.0	0.27	121	2.48	259	17	17
3	120	112.8	16.3	0.45	105	2.41	404	26	24

Test Results	Material Description
R-value at 300 psi exudation pressure = 21 **Exp. pressure at 300 psi exudation pressure =** 0.37 psi	Sandy lean clay

Project No.: D12614.01
Project: Kings County Road Work
Sample Number: B-15 **Depth:** 1-5'
Date: 4/8/2020

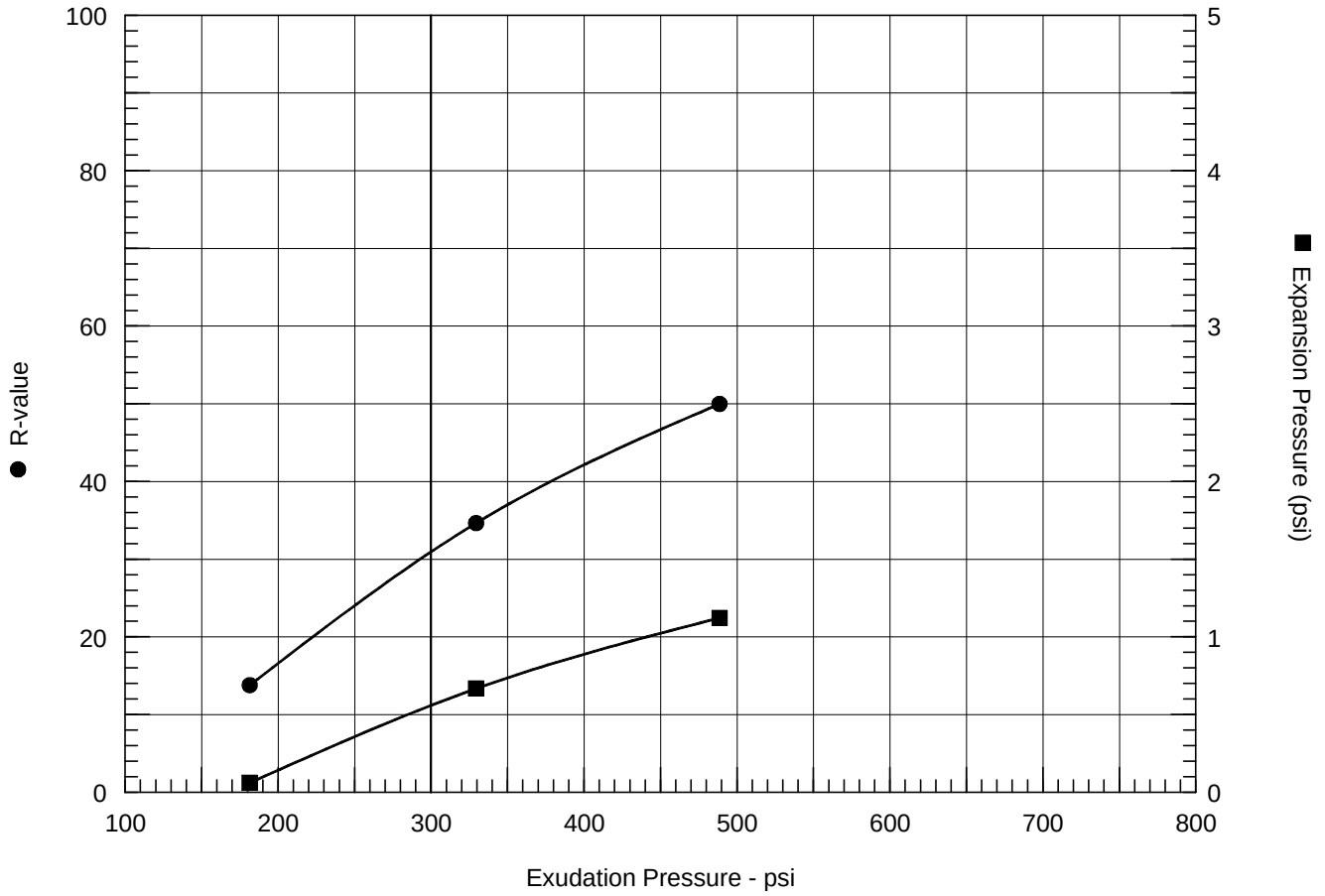
Tested by: MP
Checked by: MS
Remarks:

R-VALUE TEST REPORT

Moore Twining Associates, Inc.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - ASTM D 2844

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psi	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	100	115.5	15.5	0.06	124	2.50	181	14	14
2	210	120.9	12.9	0.67	81	2.40	329	37	35
3	300	123.4	11.8	1.12	56	2.35	489	54	50

Test Results	Material Description
R-value at 300 psi exudation pressure = 31 **Exp. pressure at 300 psi exudation pressure =** 0.56 psi	Clayey sand

Project No.: D12614.01
Project: Kings County Road Work
Sample Number: B-16 **Depth:** 0.9-5'
Date: 4/8/2020

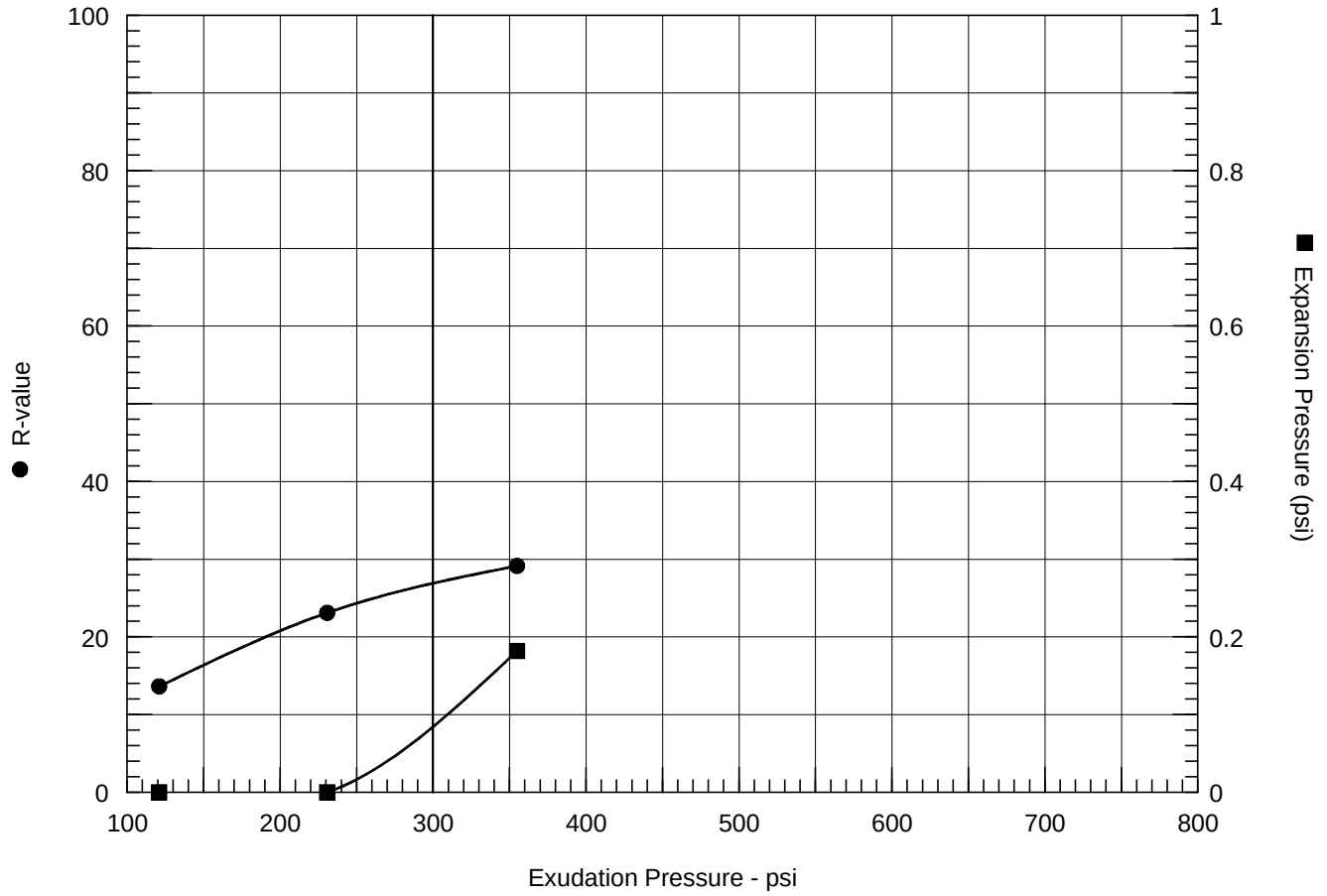
Tested by: MP
Checked by: MS
Remarks:

R-VALUE TEST REPORT

Moore Twining Associates, Inc.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - ASTM D 2844

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psi	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	210	120.3	13.5	0.18	98	2.63	355	27	29
2	110	117.8	14.5	0.00	110	2.69	231	20	23
3	70	114.5	16.0	0.00	121	2.52	121	14	14

Test Results	Material Description
R-value at 300 psi exudation pressure = 27 **Exp. pressure at 300 psi exudation pressure =** 0.08 psi	Clayey sand

Project No.: D12614.01
Project: Kings County Road Work
Sample Number: B-19 **Depth:** 0.9-5'
Date: 4/8/2020

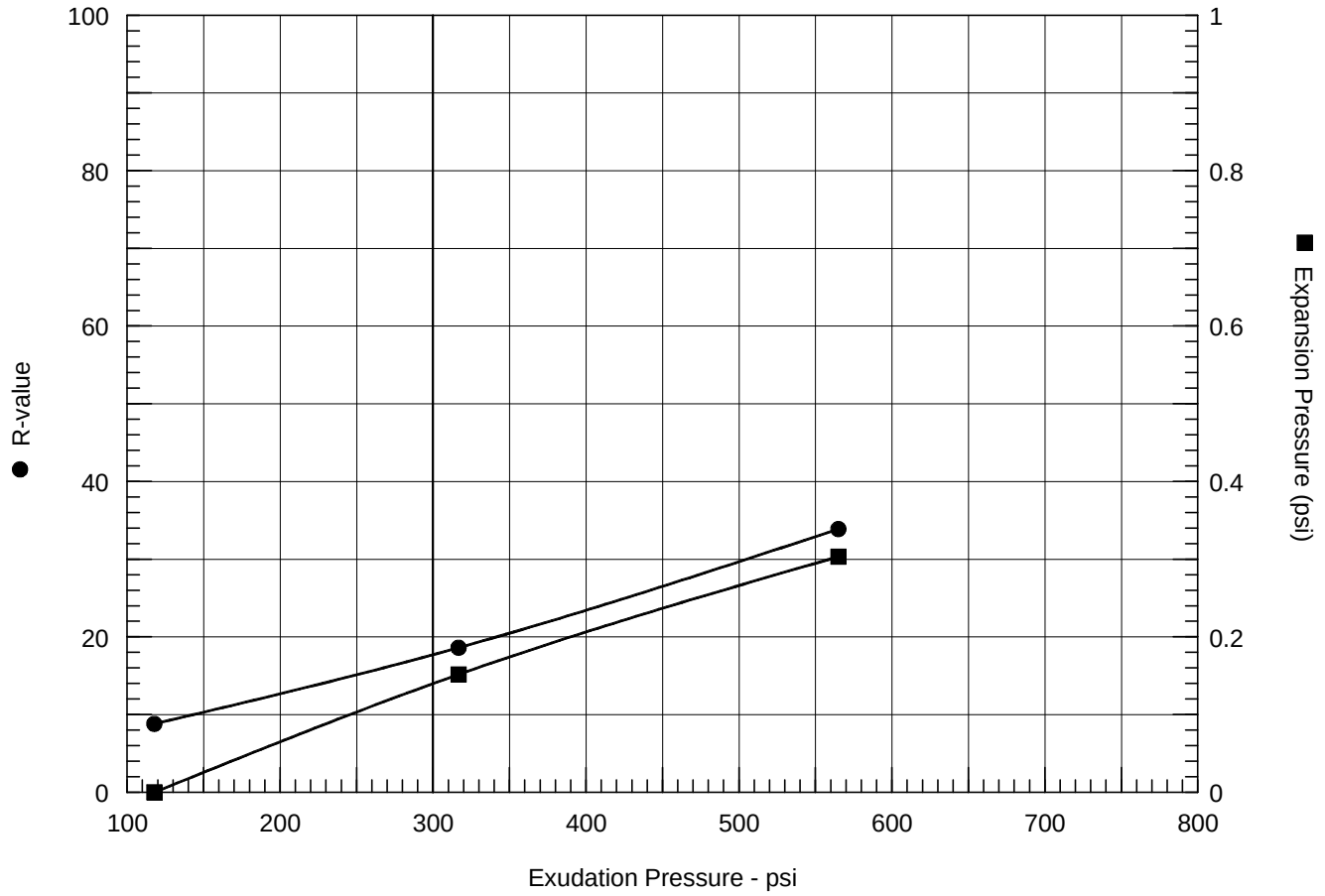
Tested by: MP
Checked by: MS
Remarks:

R-VALUE TEST REPORT

Moore Twining Associates, Inc.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - ASTM D 2844

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psi	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	250	125.6	12.0	0.30	82	2.31	565	38	34
2	100	121.1	13.9	0.15	115	2.51	317	19	19
3	50	115.4	15.8	0.00	136	2.63	118	8	9

Test Results	Material Description
R-value at 300 psi exudation pressure = 18 **Exp. pressure at 300 psi exudation pressure =** 0.14 psi	Sandy lean clay

Project No.: D12614.01
Project: Kings County Road Work
Sample Number: B-20 **Depth:** 1.2-5'
Date: 4/8/2020

Tested by: MP
Checked by: MS
Remarks:

R-VALUE TEST REPORT

Moore Twining Associates, Inc.

Figure _____

APPENDIX D

PHOTOGRAPHS

Photograph Boring Location B-1 – Note rutting and alligator cracks

Photograph Boring Location B-3 – Note edge cracking

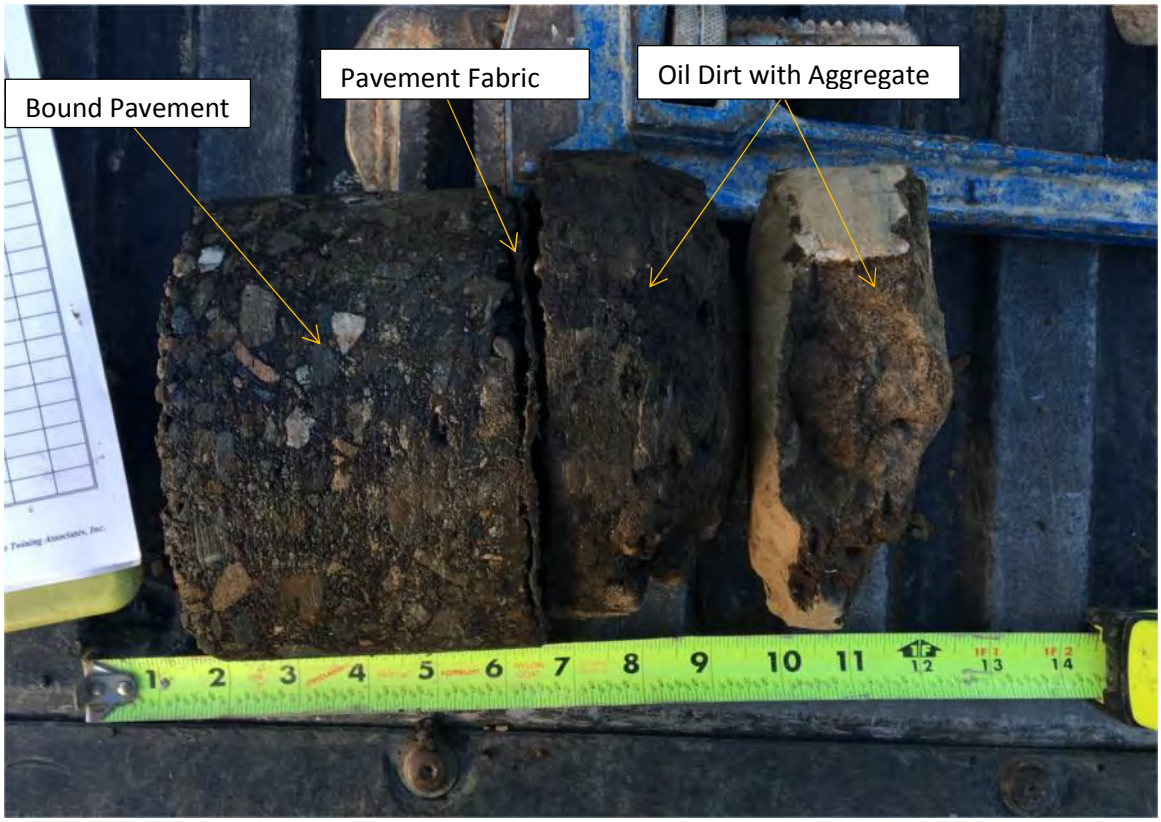
Photograph Boring Location B-6 –Note severe alligator cracking

Photograph Boring Location B-7 – Note severe alligator cracking

Photograph Core Location B-9 – Note block cracks, alligator cracks and patched areas

Photograph Core Location B-13 – Note severe alligator cracks, block cracks and patch areas

Photograph Core Location B-20 – Note alligator and block cracks



Photograph Core Location B-6 – Pavement Section

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APPENDIX B:

SoCal Gas Company Documents

SCG Transmission Notice of CONFLICT

Transmission Technical
Services Department

9400 Oakdale Ave
Chatsworth, CA 91311
SC9314

January 18, 2023

Antonio Romo
Peters Engineering Group
AntonioRomo@peters-engineering.com

Plan File No. 0049-23-8112

Subject: Avenal Cutoff Road between CA-198 and Laurel Avenue

The Southern California Gas Company (SoCalGas) Transmission Department has received your request for pipeline locations within the general area of your proposed project. SoCalGas Transmission operates and maintains high pressure natural gas line(s) within the limits of your construction project. Attached are copies of our pipeline GIS sheets which show the location of our pipelines. While we cannot guarantee the accuracy of these maps, they are included to assist you in your planning and design.

Please be advised § 143.5 of General Order 112 F issued by the California Public Utilities Commission prohibits a building or other encroachment to be constructed within the pipeline right-of-way that would hinder maintenance activities on the pipeline or cause a lengthy delay in accessing the pipeline facilities during an emergency.

Do Not Proceed with any grading, excavation or other construction activity within the pipeline easement area and/or within ten feet (10') of the pipeline. This letter does not constitute clearance for any construction work near or around SoCalGas' Transmission pipeline(s).

Please note the following during planning and design:

- Consideration must be given to the safety of our pipeline during the design and construction stages.

- We will require “final” grading plans and construction profiles prior to the start of construction.

- If a conflict is identified and can only be resolved by the relocation of our facilities, which relocation may or may not be at the expense of SoCalGas, please be advised that the projected timetable for the completion of this relocation can take a year or longer. This includes planning, design, material procurement, cathodic protection, permits, environmental issues, construction and capacity constraints.

- All work within SoCalGas’ easement(s) and/or within 10’ of the pipeline(s) must be observed by a SoCalGas Transmission field representative. No work is authorized without the representative. Arrangements for the required stand-by can be made by calling District Field Operations Supervisor - Everett Moss at (661)763-2806. Two-weeks minimum are needed to schedule a representative on standby. We request that you plan accordingly.

- Please call **DIGALERT** at **811** to have a SoCalGas Transmission field representative locate and mark our active underground facilities at no cost.

Please refer to our Document Control Plan File # 0049-23-8112 on all correspondence**.** For any correspondence directed to the SoCalGas Transmission Department in connection with this project, please contact Saul Rubalcava at SRubalc1@socalgas.com

If you have not already done so, please contact the Distribution Department of SoCalGas for information on the location of Distribution pipelines. Depending on the location of your project in relation to their pipelines, the above restrictions may apply to their pipelines as well. You can contact them at NorthwestDistributionUtilityRequest@semprautilities.com and they will furnish you with any information you may require.

Thank you for your notification.

Best regards,

Nerses Papazyan
SoCalGas Transmission Technical Services Department
SoCalGasTransmissionUtilityRequest@semprautilities.com

SCG Transmission General Requirements

Transmission Technical
Services Department

9400 Oakdale Ave
Chatsworth, CA 91311
SC9314

January 18, 2023

Antonio Romo
Peters Engineering Group
AntonioRomo@peters-engineering.com

Subject: **Avenal Cutoff Road between CA-198 and Laurel Avenue**

DCF: **0049-23-8112**

The following are general requirements provided when performing work or planning projects near SoCalGas high pressure lines. Please review requirements along with project plans and notify SoCalGas Transmission Department about any questions or conflicts.

It is highly recommended that communication is maintained with SoCalGas to address all conflicts. Depending on the specific scope of your project there may be less or more requirements that need to be discussed regarding your project.

1. Consideration must be given to the safety of our pipeline(s) during all project stages.
2. SoCalGas must have continuous and uninterrupted access to the pipeline(s) and easement(s). In addition, SoCalGas conducts routine patrols and surveys of the pipeline(s); SoCalGas needs drivable access along the pipeline(s)/easement(s).
3. Buried pipelines must have a minimum cover of 3 feet and a maximum cover of 7 feet below finished grade. No change of grade whatsoever, even within these parameters, shall be made without prior approval of SoCalGas.
4. Prior to SoCalGas approving encroachment onto its easement(s), SoCalGas must be furnished with final grading plans showing the depth of the pipeline(s) below the existing surface and the depth of the pipeline(s) below the proposed finished grade. These elevations must meet SoCalGas' requirements for buried pipelines.
5. No permanent structures, such as buildings, block walls, foundations, gates, etc., shall be constructed within the easement or over the pipeline(s).

SCG Transmission General Requirements

6 - There shall be no planting of trees or other deep-rooted plants within the easement(s) or over the pipeline(s).

7 - Substructures shall cross perpendicular to the easement(s). Substructure crossings must provide a minimum of 18-inches vertical clearance from the pipeline(s). Additional separation is required for leach lines, fuel lines, etc.

8 - Parallel encroachments within the easement(s) are prohibited. In areas where a parallel substructure is being constructed outside of the easement(s), SoCalGas requires five feet of separation, with three feet of undisturbed fill, in order to protect the integrity of our facilities and allow the facilities to be safely accessed during inspection, maintenance, and repair. Additional separation may be needed for leach lines, fuel lines, high voltage electric, etc.

9 - All encroachments onto SoCalGas' easement(s) must have written approval of SoCalGas prior to construction or encroaching onto the easement(s).

10 - All work within the SoCalGas easement(s) and/or within 10 feet of the pipeline(s) must be witnessed by a SoCalGas representative, and no work will be allowed without the SoCalGas representative on site.

11 - No heavy equipment shall cross the pipeline(s) without SoCalGas' approval. Additional protective measures may be required where heavy equipment is expected to cross the pipeline(s).

12 - No mechanical equipment shall operate within three horizontal feet of the pipeline(s), and any closer work must be performed by hand.

13 - No mechanical equipment shall operate within two vertical feet of the pipeline(s), and any closer work must be performed by hand.

14 - Buried pipeline(s) shall not be left exposed, and exposed pipeline(s) shall not be buried, without prior inspection and approval by SoCalGas. If the pipeline(s) are exposed during construction (e.g. substructure crossings, etc.), the pipeline must be backfilled with sand or zero-sack slurry only.

15 - No vibratory compaction is permitted over the pipeline(s). In rare cases, vibratory compaction may be approved by SoCalGas' Engineering Department following review of detailed site conditions, pipeline data, and equipment specifications.

16 - All contractors and subcontractors must be notified of the presence of the pipeline(s).

17 - Contractors and subcontractors must call DigAlert (811) at least 2 working days prior to construction, grading, or excavation.

18 - Once approved, encroachments within SoCalGas' easement(s) shall be documented in an easement amendment or other document, as deemed appropriate by SoCalGas' Land Services Department.

SCG Transmission General Requirements

In addition to the previous requirements, SoCalGas recommends the following:

19 - Potholes should be made, as necessary, to establish the horizontal and vertical alignment of the pipeline(s) within the project area. This information should be indicated on the plans, as needed. CAUTION: SoCalGas personnel must be present during potholing operations. Arrangements for SoCalGas personnel to stand by during potholing activities can be made by calling DigAlert at 811.

20 - Consideration should be given to building setbacks from the easement lines. A minimum 15-foot setback is recommended whenever possible.

21 - All potential buyers or tenants of the property should be made aware of the presence of the pipeline(s) and easement restrictions.

Best Regards,

SoCalGas Transmission Technical Services