PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION
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Addendum No. 1 **May 22, 2025**

City Project No.: 23-067, Package 3
Roads Program Capital Improvement Project

Plan holders:

This addendum includes revisions to Plans and Specifications.

Revisions to Plans and Specifications

In the project Specifications, the following additions, deletions or modifications shall become part of the Contract Documents:

Red strikethrough text (~~text~~) indicates deletions.

Blue Underlined text (text) indicates additions.

In the project Plans, attention has been called to any modified areas but using a red revision cloud.

Item No. 1:

Delete sheets PC-1, X-3, DM-1, DM-5, DM-7, DM-8, DM-10, DM-11, L-1, L-5, L-7, L-8, L-10. L-11. CD-9. CD-13. CD-15. CD-17, G-5, G-7, G-8, G-10, G-11, DU-5, DU-7, DU-8, DU-10, DU-11, UUD-1, UUD-4, UUD-5, UUD-6, UUD-7, UUD-8, UUD-9, UUD-10, UUD-11, UUD-12, UUD-13, UUD-14, UUD-15, DP-1, TH-1, SS-1, SS-4, SS-7, SS-8, SS-10, SS-11, and SS-14,

And replace with attached sheets PC-1, X-3, DM-1, DM-5, DM-7, DM-8, DM-10, DM-11, L-1, L-5, L-7, L-8, L-10. L-11. CD-9. CD-13. CD-15. CD-17, G-5, G-7, G-8, G-10, G-11, DU-5, DU-7, DU-8, DU-10, DU-11, UUD-1, UUD-4, UUD-5, UUD-6, UUD-7, UUD-8, UUD-9, UUD-10, UUD-11, UUD-12, UUD-13, UUD-14, UUD-15, DP-1, TH-1, SS-1, SS-4, SS-7, SS-8, SS-10, SS-11, and SS-14 of this addendum.

Revisions consist of various items that clarify callouts, handling of shallow utilities, Christine Way and Heppner Way roadway and concrete reconstruction limits and grading, mid-block curb ramp near Arbor Way and Heppner Way, crosswalk removal, fence removal along Wallace St, crossing utilities with the proposed drainage system, and construction funding sign detail.

Item No. 2:

Delete Bid Schedule from project specifications and replace with attached Bid Schedule of this addendum.

Item No. 3:

Delete Table of Contents from project specifications and replace with attached Table of Contents of this addendum (see attached revised specifications).

Item No. 4:

Delete Bid Schedule from project specifications and replace with attached Bid Schedule of this addendum (see attached revised specifications).

Item No. 5:

Revise technical specifications Section 5.22 Order of Work, seventh paragraph (see attached revised specifications). Bidder's attention is called to the specific construction time constraints provided in the revisions. As noted, coordination with TUSD will be mandatory and construction in the vicinity of the school must be completed prior to the start of the new school year.

Item No. 6:

Revise technical specifications Section 8.02 Project Milestones, second paragraph, second sentence and third paragraph (see attached revised specifications).

Item No. 7:

Revise technical specifications Section 10 numbering section numbering (see attached revised specifications).

Item No. 8:

Revise technical specifications Section 10.06 Job Site Management, eighth paragraph, first sentence (see attached revised specifications).

Item No. 9:

Delete technical specifications Section 10.16 Earthwork, fourth paragraph (see attached revised specifications).

Item No. 10:

Add revised technical specifications Section 10.16A Unsuitable Material after Section 10.16 Earthwork (see attached revised specifications).

Item No. 11:

Revise technical specifications Section 10.18 Full Depth Reclamation - Cement, third paragraph, first and second bullets. (see attached revised specifications).

Item No. 12:

Add revised technical specifications Section 10.21 Excavate and Expose after Section 10.20 Minor Concrete. (see attached revised specifications).

Item No. 13:

Add revised technical specifications Section 10.22 Slurry Cement (2-Sack) after revised Section 10.21 Excavate and Expose. (see attached revised specifications).

Item No. 14:

Revise technical specifications Section 10.28 Relocate Fire Hydrant, second paragraph. (see attached revised specifications).

Item No. 15:

Revise technical specifications Section 10.33 Remove Fence, second paragraph. (see attached revised specifications).

Item No. 16:

Add revised technical specifications Section 10.38 Remove Thermoplastic Pavement Marking after Section 10.37 Remove Thermoplastic Traffic Stripe. (see attached revised specifications).

Item No. 17:

Revise technical specifications Appendix A: Pavement Design Report (see attached revised report).

Item No. 18:

Q: We have reviewed the FDR-C specification requirements in Section 10.18, specifically the required handwork around the utilities within 24-inches of the bottom of the FDR-C section. Per our estimation, there is upwards of 8,400 LF of utilities that may fall into these categories. This handwork will add a significant cost to the project and substantially impact the production of the FDR-C operations dramatically increases the impact to the public. Would the City be willing to modify the specification to slurry backfill all utilities within 24" of the FDR-C section and also add separate bid items for this work (excavate and expose utilities by the lineal foot and slurry backfill by the cubic

yard)? This will allow the contractors to accurately estimate and bid the required items of work, and will create a level, competitive bid environment for all responsible bidders.

A: Based on this question, the shallow utility strategy has been revised. Bid items have been added for Excavate and Expose Utility (LF) and Cement Slurry (2-sack) (LF). Please refer to the modifications in the plans and the specifications.

End of Addendum No. 1

Point Table

Point #	Northing	Easting	Elevation	Raw Description
1000	2004921.43	6464890.31	105.95	SET 5\8" REBAR
1053	2007330.17	646573.78		TURLOCK CP H12-FOUND IP
1083	1999418.87	6457777.42		TURLOCK CP L9-FOUND IP
2515	2003374.70	6464981.48	105.34	SVCP MAG SE COR STOPBAR
2527	2005471.57	6465772.55	106.66	SVCP MAG NW COR TOP T
2535	2006187.93	6468424.67	111.19	SVCP SSMH
2600	2003437.88	6466391.43	106.08	SVCP MAG SE COR OF "P"
2601	2003751.98	6466423.74	106.68	SVCP MAG SW COR YELLOW CL
2602	2003728.89	6467042.70	107.48	SVCP MAG SE COR STOP BAR
2603	2003662.16	6467101.00	106.86	SVCP MAG SW COR "T"
2604	2003644.31	6468365.75	108.82	SVCP MAG SE COR "T"
2605	2003661.15	6469421.89	110.05	SVCP SDMH
2606	2004882.65	6466506.18	107.05	SVCP MAG SE COR "P"
2607	2005851.07	6466574.87	108.33	SVCP MAG NW COR YELLOW CL
2608	2006698.83	6466560.44	109.13	SVCP MAG NE COR YELLOW CL
2609	2006714.93	6465776.34	108.14	SVCP MAG NW COR "T"
2610	2006690.35	6467673.72	109.07	SVCP MAG NW COR X
2611	2006657.92	6468400.57	110.32	SVCP MAG SE INSIDE COR XWALK
2612	2006920.15	6467370.76	109.56	SVCP MAG NE COR "H"
2613	2006947.35	6468069.05	110.25	SVCP MAG NW COR YELLOW CL
2614	2007023.66	6465777.53	107.52	SVCP MAG NW COR "T"
2615	2006983.23	6467053.55	108.76	SVCP MAG SW COR STOP BAR
2616	2004876.93	6467723.62	108.90	SVCP MAG SE COR STOPBAR
2617	2005842.44	6467719.30	108.47	SVCP 60D TBC SE COR ALLEY/DW
2618	2006266.98	6468158.33	110.47	SVCP 60D SW DW AP 1260 LINN
2619	2005793.24	6468121.00	109.21	SVCP 60D TBC SE COR ADRESS 2290 MIRA FLORES
2620	2006208.22	6467853.57	109.74	SVCP MAG NW COR YLW STRIPE
2621	2006231.30	6467413.07	108.76	SVCP MAG NW COR YLW STRIPE
2622	2005835.61	6467348.08	107.74	SVCP 60D NW COR DW 2050
2623	2007369.82	6467074.43	108.07	SVCP MAG NE COR STOP BAR
2624	2008319.09	6467106.55	107.84	SVCP 60D NE COR OF GUTTER @ AC
2625	2009924.44	6467094.21	110.82	SVCP MAG NW COR "P"
2626	2009482.37	6467727.88	111.35	SVCP MAG NE COR RED CURB POC @ FRONT OF WALK
2627	2008823.69	6467587.21	110.21	SVCP MAG SW COR RED CURB POC @ FRONT OF WALK
2628	2007751.80	6467393.45	108.35	SVCP 60D SW COR OF GUTTER @ AC
2629	2008067.54	6467388.09	108.79	SVCP SSMH @ C/L
2630	2008028.07	6466740.23	108.70	SVCP 80D SW COR RED CURB POC AT FRONT OF WALK

PROJECT VERTICAL BENCHMARKS

BENCHMARK ID	ELEVATION	DESCRIPTION
13-1-3	110.059	FOUND BRASS PLUG NW CORNER ON EAST MARSHALL AT DAUENBERGER ROAD
22-4-2	98.282	FOUND BRASS PLUG SW CORNER ON ORANGE AT HIGH STREET
24-3-1	105.563	FOUND BRASS PLUG SE CORNER ON SOUTH BERKELEY AT EAST AVENUE

LEGEND:

△ CONTROL POINT LOCATION

CONTROL POINT NUMBER

NOTES:

1. CONTRACTOR SHALL COMPLY WITH BUSINESS AND PROFESSIONS CODE SECTION 8771 (b) REGARDING REFERENCING, PRESERVING AND RECONSTRUCTING MONUMENTS, WHETHER OR NOT MONUMENTS ARE SHOWN IN THESE PLANS.
2. IF MONUMENT IS DAMAGED BY CONTRACTOR'S OPERATIONS, CONTRACTOR SHALL REPLACE AT CONTRACTOR'S COST.
3. CONTRACTOR SHALL PROVIDE THE AGENCY A MINIMUM OF TWO (2) WEEKS NOTICE PRIOR TO COMMENCING ANY WORK THAT COULD DAMAGE OR DESTROY ANY SURVEY MONUMENTS.

HORIZONTAL DATUM

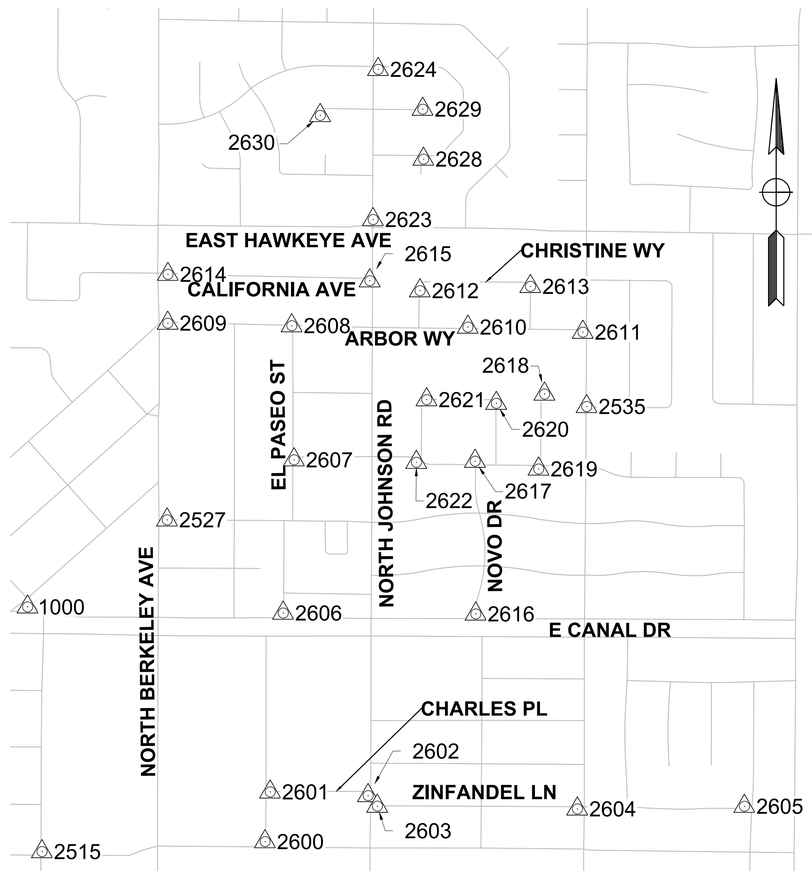
HORIZONTAL DATUM IS BASED ON THE CITY OF TURLOCK G.P.S. CONTROL NETWORK SURVEY FILED IN BOOK 20 OF SURVEYS AT PAGE 56, STANISLAUS COUNTY RECORDS. SAID SURVEY IS BASED ON THE 1983 NORTH AMERICAN DATUM AND ADJUSTMENT AS SHOWN ON THE FACE OF SAID SURVEY. POINTS H12 AND L9 AS SHOWN ON THE SURVEY WERE USED AS THE BASE CONTROL FOR THIS PROJECT.

COORDINATE SYSTEM

THE CALIFORNIA COORDINATE SYSTEM OF 1983 (CCS83), ZONE III.

VERTICAL DATUM

ELEVATIONS BASED ON THE CITY OF TURLOCK BENCHMARK SYSTEM



SURVEY POINTS MAP

100% PLANS

Alignment Table

Alignment		Station	Northing	Easting
NORTH JOHNSON RD "NJ"	Beg	10+00.00	2007310.94	6467074.72
	END	36+78.51	2009989.43	6467087.05
SCONYERS CT "SC"	Beg	10+00.00	2008859.97	6467081.85
	END	16+13.98	2003374.70	6464981.48
HAMMOND DR "HA"	Beg	10+00.00	2007776.19	6467076.86
	END	25+18.83	2006187.93	6468424.67
ASHLEY CT "AS"	Beg	10+00.00	2008071.43	6466698.26
	END	13+29.98	2008066.10	6467078.20
JACKSON CT "JS"	Beg	10+00.00	2008066.10	6467078.20
	END	13+49.93	2008061.11	6467428.09
STUART CT "ST"	Beg	10+00.00	2007586.97	6467374.18
	END	11+85.03	2007771.98	6467377.05

DESIGNED BY: POORE, B.
DRAWN BY: HAYNES, C.
CHECKED BY: HORNER, C.
SCALE: NOT TO SCALE
DATE: 5/21/2025
JOB NO.: 24-00061

NOTE:
ALL REFERENCES AND WRITTEN DIMENSIONS SHALL SUPERCEDE ALL SCALED DISTANCES AND SHALL BE VERIFIED IN THE FIELD. ANY DISCREPANCY SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.

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SCALE 200 0 200 400

REGISTERED PROFESSIONAL ENGINEER JOSEPH A. NORIEGA No. 91551 Exp. 6/30/25 CIVIL STATE OF CALIFORNIA

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CITY OF TURLOCK
ROADS PROGRAM CIP
PROJECT 23-067 PACKAGE #2
PROJECT CONTROL

PC-1

100% PLANS

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SCALE: NOT TO SCALE
DATE: 5/21/2025
JOB NO.: 24-00061

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CITY OF TURLOCK
ROADS PROGRAM CIP
PROJECT 23-067 PACKAGE #3
TYPICAL SECTIONS

Sheet 7 of 126 Sheets

X-3

NOTES (DM-1 TO DM-15):

1. CLEARING AND GRUBBING ARE SHOWN AS APPROXIMATE

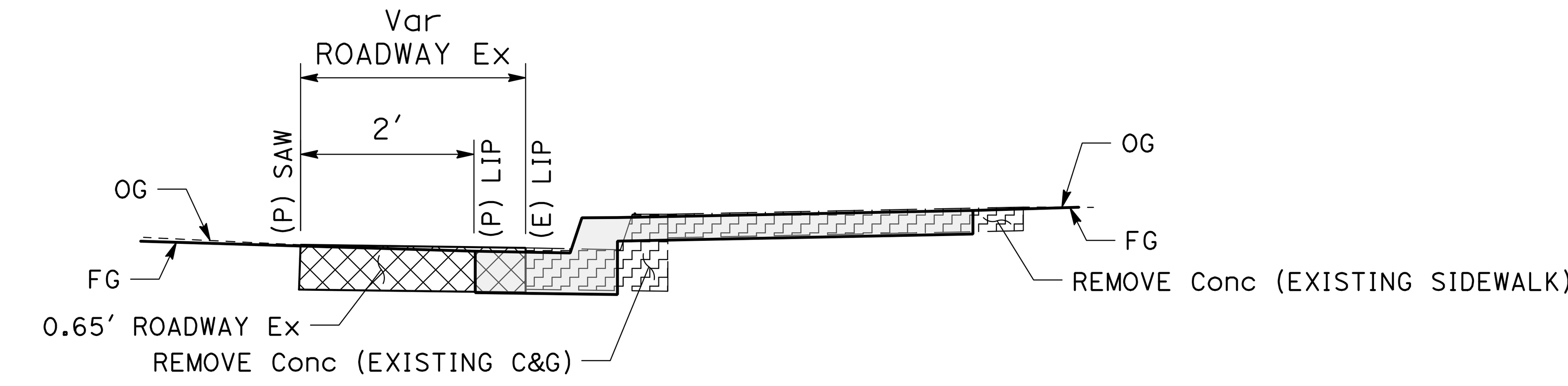
2. SEE LAYOUT SHEETS FOR COLD PLANE DEPTH LIMITS

3. CONTRACTOR TO NOTIFY PROPERTY OWNERS IN ADVANCE OF WORK TO SALVAGE EXISTING LANDSCAPING

4. AS SHOWN ON THE X SHEETS, AND THE TYPICAL CURB, GUTTER, AND SIDEWALK REMOVAL DETAIL ON THIS SHEET, THE SAWCUT STRIP ADJACENT TO PROPOSED CURB AND GUTTER SHALL BE 2' WIDE MEASURED FROM THE PROPOSED GUTTER LIP (NOT THE EXISTING GUTTER LIP).

LEGEND (DM-1 TO DM-15):

- ROADWAY EXCAVATION (0.65' DEPTH FOR 2' SAWCUT AREAS, Var DEPTH FOR DRIVEWAY REMOVALS, 0.3' FOR SIDEWALK AREAS)
- REMOVE CONCRETE (CURB RAMPS, SIDEWALK, VALLEY GUTTER, DRIVEWAYS, CURB AND GUTTER)
- SAWCUT
- REMOVE FENCE
- COLD PLANE AC PAVEMENT (Var DEPTH, PROPOSED PAVEMENT TI=6, SEE TYPICAL SECTIONS)
- COLD PLANE AC PAVEMENT (Var DEPTH, PROPOSED PAVEMENT TI=8, SEE TYPICAL SECTIONS)
- ROADWAY EXCAVATION (Var DEPTH FOR FULL DEPTH HMA PAVEMENT SECTION TI=6) 1
- ROADWAY EXCAVATION (Var DEPTH FOR FULL DEPTH HMA PAVEMENT SECTION TI=8) 1
- REMOVE ASPHALT CONCRETE PAVEMENT



TYPICAL CURB, GUTTER AND SIDEWALK REMOVAL DETAIL

NO SCALE

100% PLANS

DESIGNED BY:	POORE, B.
DRAWN BY:	FRANCO, N.
CHECKED BY:	NORIEGA, E.
SCALE:	1"=20'
DATE:	5/21/2025
JOB NO.:	24-00061

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CITY OF TURLOCK INC. 1908

CITY OF TURLOCK
ROADS PROGRAM CIP PROJECT 23-067 PACKAGE #3
DEMOLITION PLANS

100% PLANS

DESIGNED BY: POORE, B.
DRAWN BY: FRANCO, N.
CHECKED BY: NORIEGA, E.
SCALE: 1"=20'
DATE: 5/21/2025
JOB NO.: 24-00061

NOTE:
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CITY OF TURLOCK
ROADS PROGRAM CIP
PROJECT 23-067 PACKAGE #3
DEMOLITION PLANS

Sheet 14 of 126 Sheets

DM-5

100% PLANS

DESIGNED BY: POORE, B.
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SCALE: 1"=20'
DATE: 5/21/2025
JOB NO.: 24-00061

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CITY OF TURLOCK
ROADS PROGRAM CIP PROJECT 23-067 PACKAGE #3 DEMOLITION PLANS

Sheet 16 of 126 Sheets

DM-7

100% PLANS

DESIGNED BY: POORE, B.
DRAWN BY: FRANCO, N.
CHECKED BY: NORIEGA, E.
SCALE: 1"=20'
DATE: 5/21/2025
JOB NO.: 24-00061

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CITY OF TURLOCK
ROADS PROGRAM CIP PROJECT 23-067 PACKAGE #3 DEMOLITION PLANS

Sheet 17 of 126 Sheets

DM-8

100% PLANS

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CHECKED BY: NORIEGA, E.
SCALE: 1"=20'
DATE: 5/21/2025
JOB NO.: 24-00061

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CITY OF TURLOCK
ROADS PROGRAM CIP PROJECT 23-067 PACKAGE #3 DEMOLITION SHEETS

Sheet 19 of 126 Sheets

DM-10

100% PLANS

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JOB NO.: 24-00061

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CITY OF TURLOCK
ROADS PROGRAM CIP PROJECT 23-067 PACKAGE #3 DEMOLITION SHEETS

Sheet 20 of 126 Sheets

DM-11

NOTES (L-1 TO L-15):

1. SEE TYPICAL SECTION SHEETS FOR SECTION DEPTHS

2. SEE DRAINAGE AND UTILITIES SHEETS FOR DRAINAGE NOTES AND MODIFICATIONS

ALIGNMENT LINE TABLE

LINE #	LENGTH	DIRECTION
L1	550.00'	N0°18'58"E
L2	660.96'	S89°30'06"E

LEGEND (L-1 TO L-15):

- DETECTABLE WARNING SURFACE
- MINOR CONCRETE
- HMA DRIVEWAY CONFORMS (4" HMA (TYPE A) OVER 6" AB (CLASS 2))
- LIMITS OF PAVEMENT RECONSTRUCTION (FDR TI = 6, SEE TYPICAL SECTIONS)
- LIMITS OF PAVEMENT RECONSTRUCTION (FDR TI = 8, SEE TYPICAL SECTIONS)
- LIMITS OF PAVEMENT RECONSTRUCTION (FULL DEPTH HMA TI = 6, SEE TYPICAL SECTIONS, 0.65' HMA (TYPE A))
- LIMITS OF PAVEMENT RECONSTRUCTION (FULL DEPTH HMA TI = 8, SEE TYPICAL SECTIONS, 0.85' HMA (TYPE A))
- SAWCUT
- PROPOSED FLOWLINE
- CROWN

CONSTRUCTION NOTES (L-1 TO L-15):

1. VALLEY GUTTER PER CITY OF TURLOCK STD DWG C-1
2. DW # RESIDENTIAL DRIVEWAY APPROACH PER CITY OF TURLOCK STD DWY C-5 (Mod)
3. CURB RAMP PER CITY OF TURLOCK STD DWG C-11
4. CURB RAMP PER CITY OF TURLOCK STD DWG C-12
5. CURB RAMP PER CITY OF TURLOCK STD DWG C-13
6. DW # ALLEY APPROACH PER CITY OF TURLOCK STD DWG C-7 (Mod)
7. COMMERCIAL DRIVEWAY APPROACH PER CITY OF TURLOCK STD DWG C-8
8. MODIFIED DRIVE-OVER CURB AND GUTTER (SEE CD-13)
9. REMOVE AND REPLACE MONUMENT
10. 6" CURB AND GUTTER (CITY STANDARD C-1)
11. DRIVE-OVER CURB AND GUTTER (SEE CD-13)
12. COMMERCIAL DRIVEWAY APPROACH PER CITY OF TURLOCK STD DWG C-9

100% PLANS

DESIGNED BY:	POORE, B.
DRAWN BY:	FRANCO, N.
CHECKED BY:	NORIEGA, E.
SCALE:	1"=20'
DATE:	5/21/2025
JOB NO.:	24-00061

NOTE:
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CITY OF TURLOCK
ROADS PROGRAM CIP PROJECT 23-067 PACKAGE #3 LAYOUTS

ALIGNMENT LINE TABLE		
LINE #	LENGTH	DIRECTION
L7	619.71'	N0°12'33"E
L8	1238.89'	N0°13'07"E
L9	495.00'	S89°41'38"E

100% PLANS

DESIGNED BY: POORE, B.
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SCALE: 1"=20'
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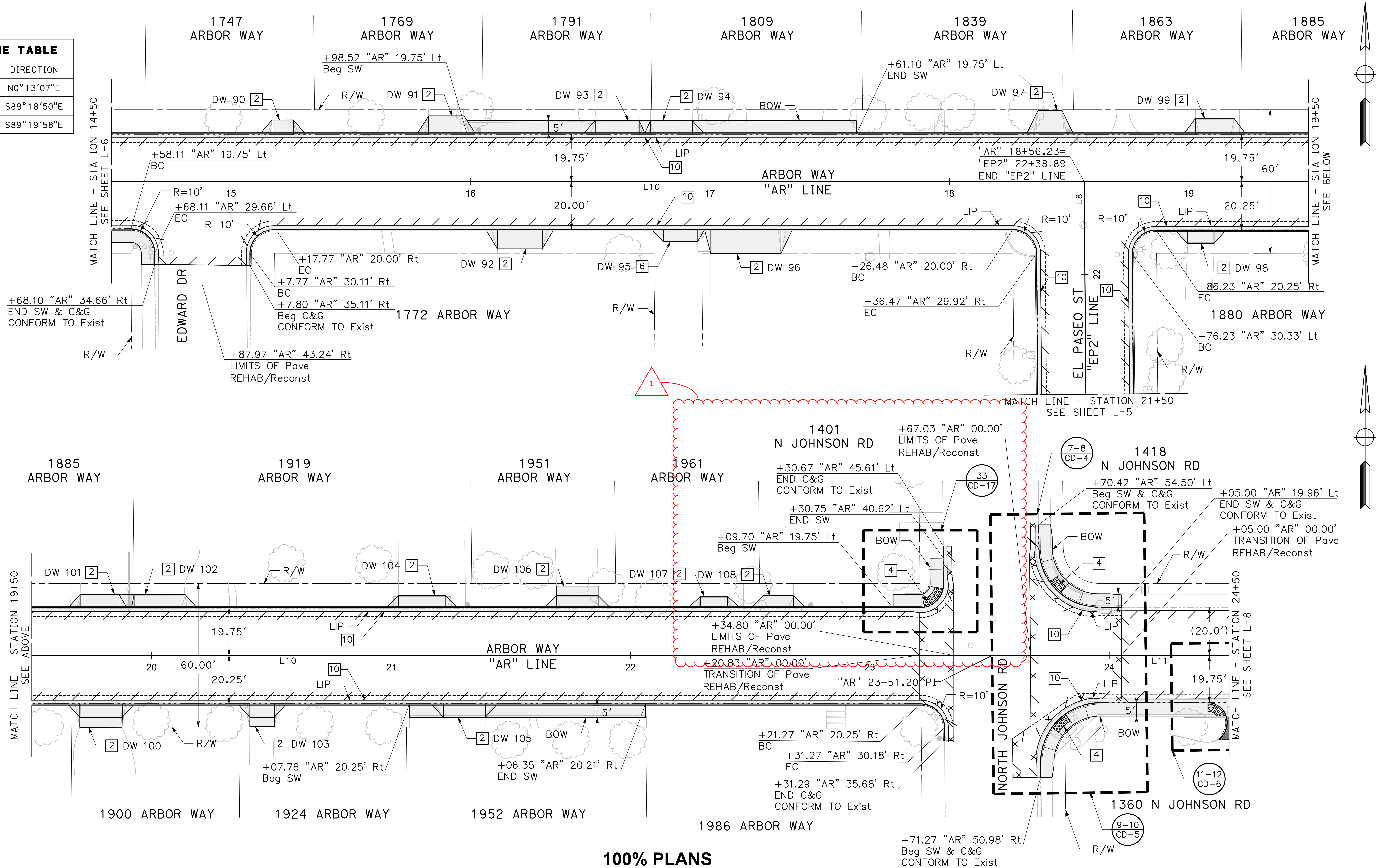
CITY OF TURLOCK
ROADS PROGRAM CIP
PROJECT 23-067 PACKAGE #3
LAYOUTS

Sheet 29 of 126 Sheets

L-5

ALIGNMENT LINE TABLE

LINE #	LENGTH	DIRECTION
L8	1238.89'	N0°13'07"E
L10	1351.20'	S89°18'50"E
L11	1349.22'	S89°19'58"E



100% PLANS

DESIGNED BY: POORE, B.
DRAWN BY: FRANCO, N.
CHECKED BY: NORIEGA, E.
SCALE: 1"=20'
DATE: 5/21/2025
JOB NO.: 24-00061

NOTE:
ALL REFERENCES AND WRITTEN DIMENSIONS SHALL SUPERCEDE ALL SCALED DISTANCES AND SHALL BE VERIFIED IN THE FIELD. ANY DISCREPANCY SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.

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156 S. BROADWAY
SUITE 150
(209)668-5520

CITY OF TURLOCK
ROADS PROGRAM CIP PROJECT 23-067 PACKAGE #3
LAYOUTS

Sheet 31 of 126 Sheets

L-7

ALIGNMENT LINE TABLE

LINE #	LENGTH	DIRECTION
L11	1349.22'	S89°19'58"E

100% PLANS

DESIGNED BY: POORE, B.
DRAWN BY: FRANCO, N.
CHECKED BY: NORIEGA, E.
SCALE: 1"=20'
DATE: 5/21/2025
JOB NO.: 24-00061

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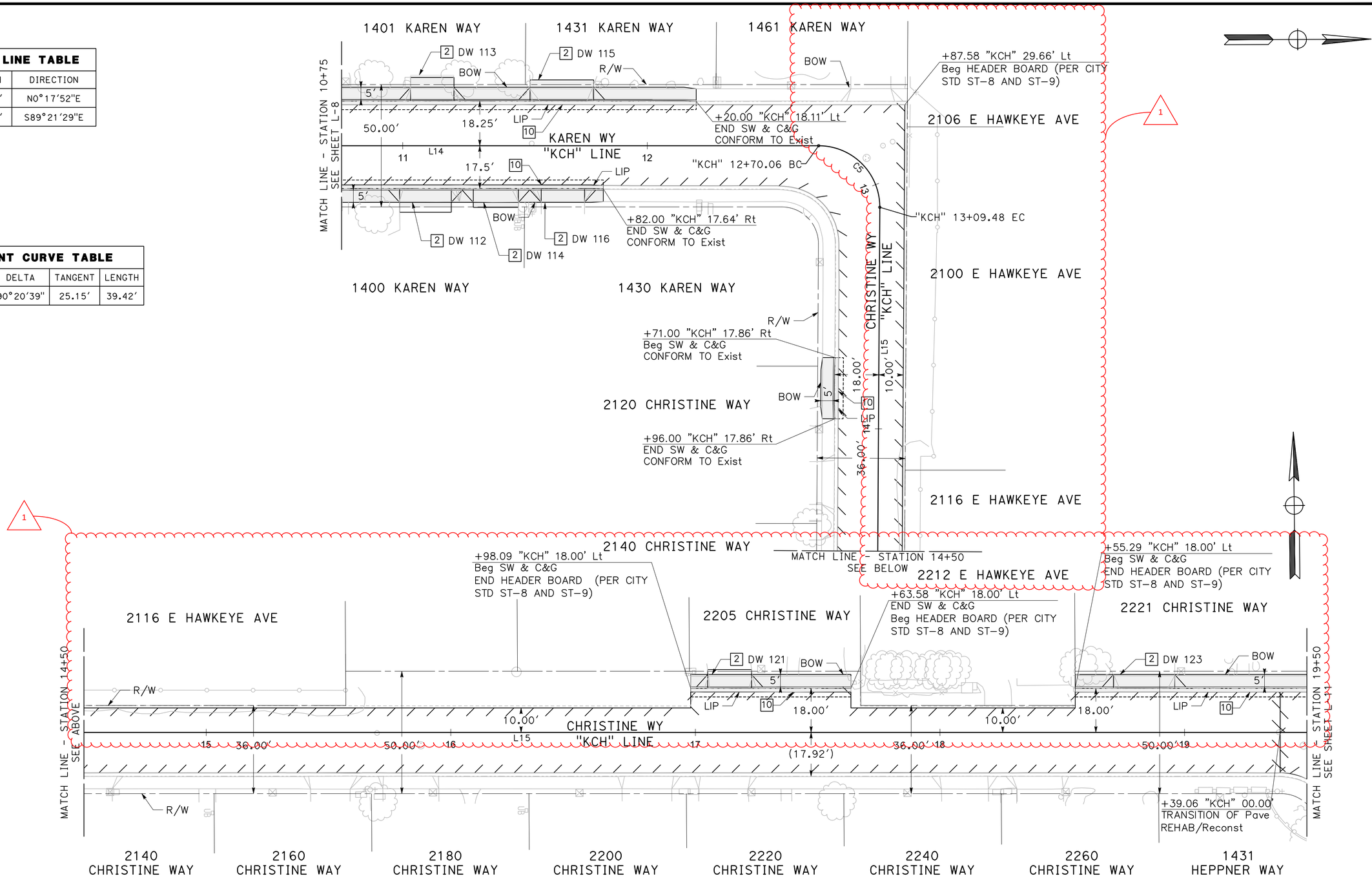
LAYOUTS

Sheet 32 of 126 Sheets

L-8

ALIGNMENT LINE TABLE		
LINE #	LENGTH	DIRECTION
L14	270.06′	N0°17′52"E
L15	644.93′	S89°21′29"E

ALIGNMENT CURVE TABLE				
CURVE	RADIUS	DELTA	TANGENT	LENGTH
C5	25.00′	90°20′39"	25.15′	39.42′



100% PLANS

DESIGNED BY: POORE, B.
DRAWN BY: FRANCO, N.
CHECKED BY: NORIEGA, E.
SCALE: 1"=20′
DATE: 5/21/2025
JOB NO.: 24-00061

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REGISTERED PROFESSIONAL ENGINEER
EDUARDO A. NORIEGA
No. 61455
Exp. 6/30/25
CIVIL
STATE OF CALIFORNIA

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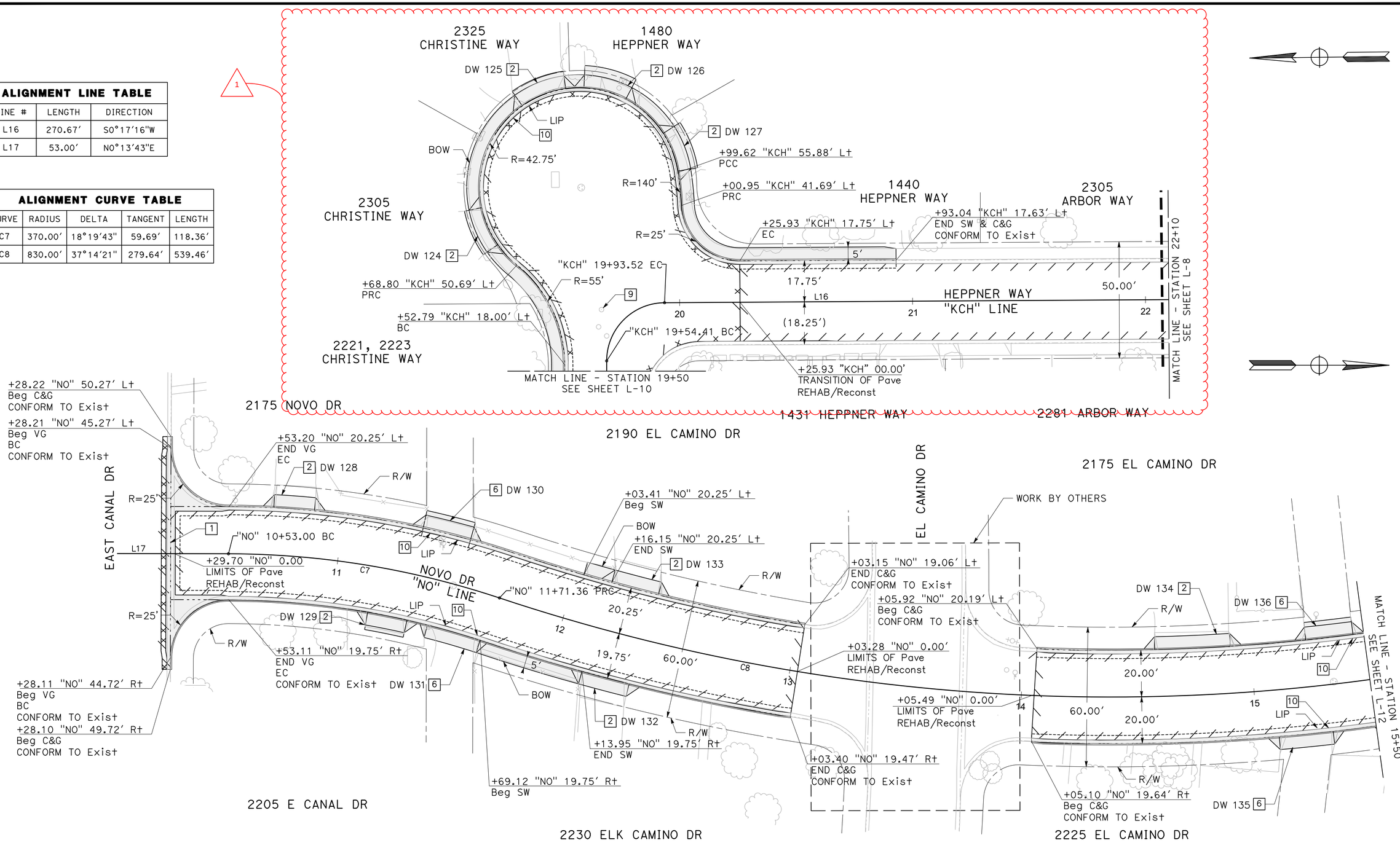
ALIGNMENT LINE TABLE		
LINE #	LENGTH	DIRECTION
L16	270.67′	S0°17′16"W
L17	53.00′	N0°13′43"E

ALIGNMENT CURVE TABLE				
CURVE	RADIUS	DELTA	TANGENT	LENGTH
C7	370.00′	18°19′43"	59.69′	118.36′
C8	830.00′	37°14′21"	279.64′	539.46′



100% PLANS

DESIGNED BY:	POORE, B.
DRAWN BY:	FRANCO, N.
CHECKED BY:	NORIEGA, E.
SCALE:	1"=20'
DATE:	5/21/2025
JOB NO.:	24-00061

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REGISTERED PROFESSIONAL ENGINEER EDWIN A. NORIEGA 61458 Exp. 6/30/25 CIVIL STATE OF CALIFORNIA

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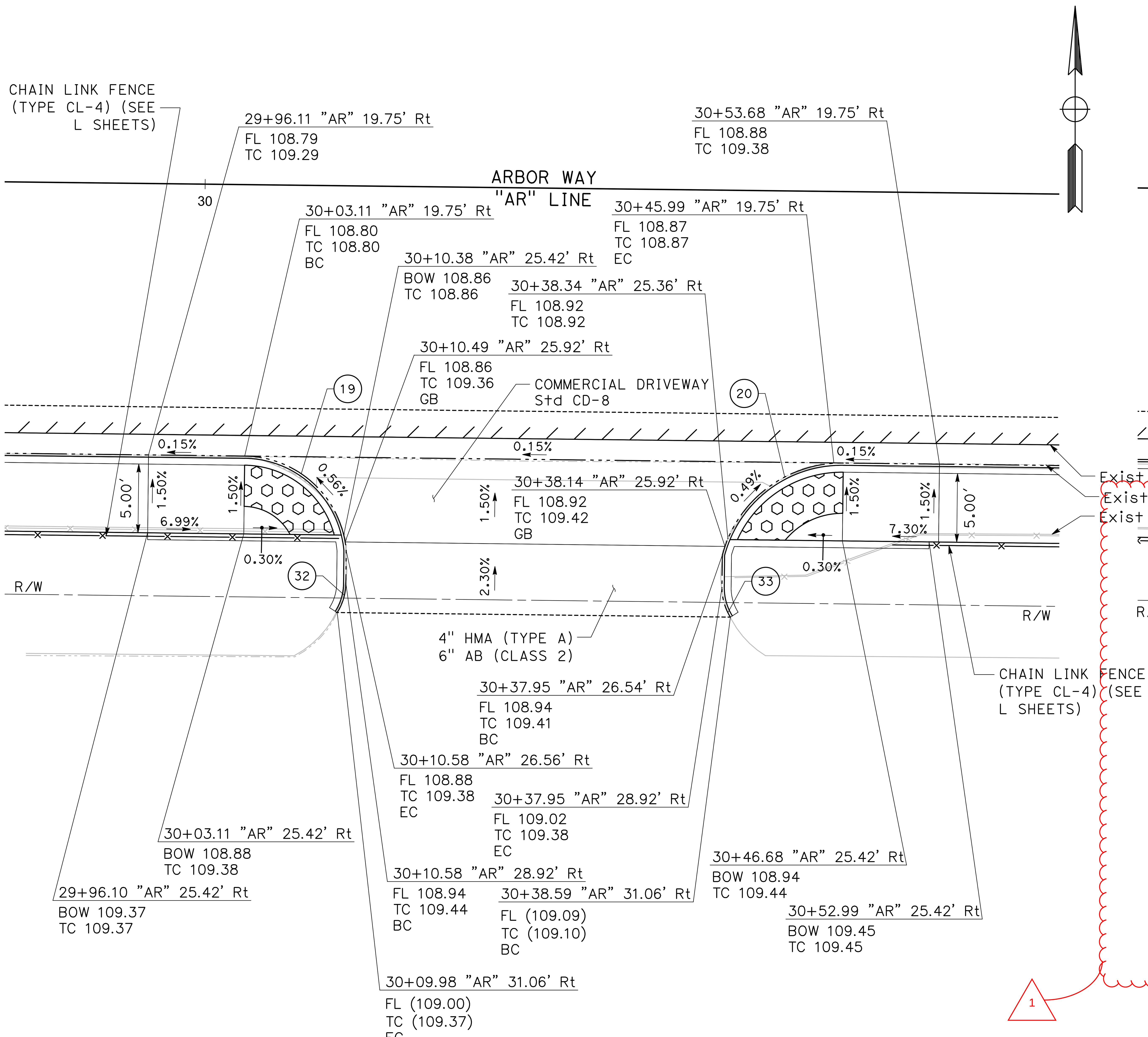
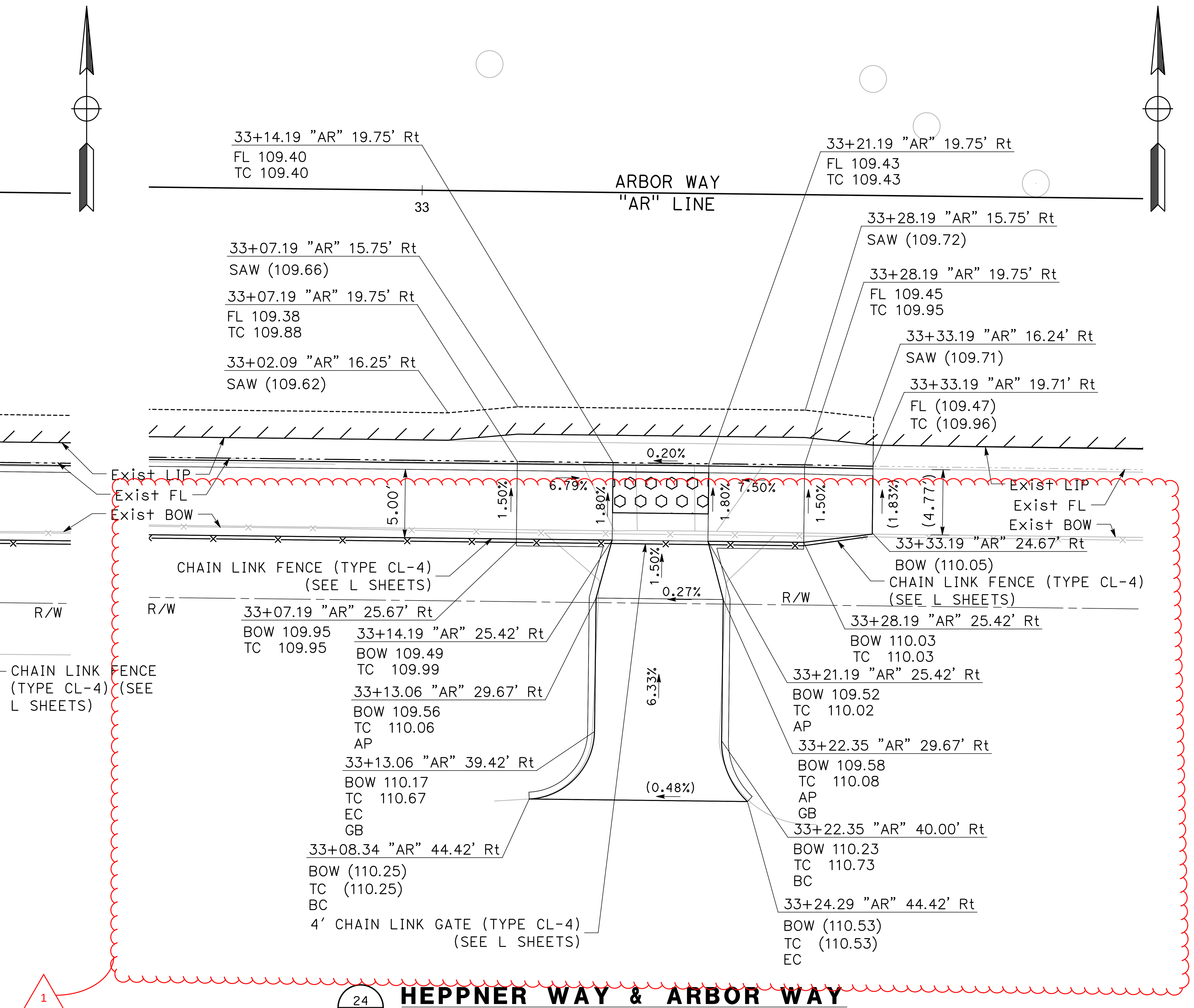


22 CD-9 **ARBOR WAY BETWEEN KAREN WAY & HEPPNER WAY SW AND SE CURB RAMPS** 23 CD-9

SCALE: 1" =5'



24 CD-9 **HEPPNER WAY & ARBOR WAY SW CURB RAMP**

SCALE: 1" =5'

CURVE TABLE

No.	R	Δ	T	L
19	7.50'	84°41'46"	6.84'	11.09'
20	9.00'	75°48'23"	7.01'	11.91'
32	4.00'	32°16'05"	1.16'	2.25'
33	4.00'	32°24'59"	1.16'	2.26'

100% PLANS

DESIGNED BY:	POORE, B.
DRAWN BY:	FRANCO, N.
CHECKED BY:	NORIEGA, E.
SCALE:	1"=5'
DATE:	5/21/2025
JOB NO.:	24-00061

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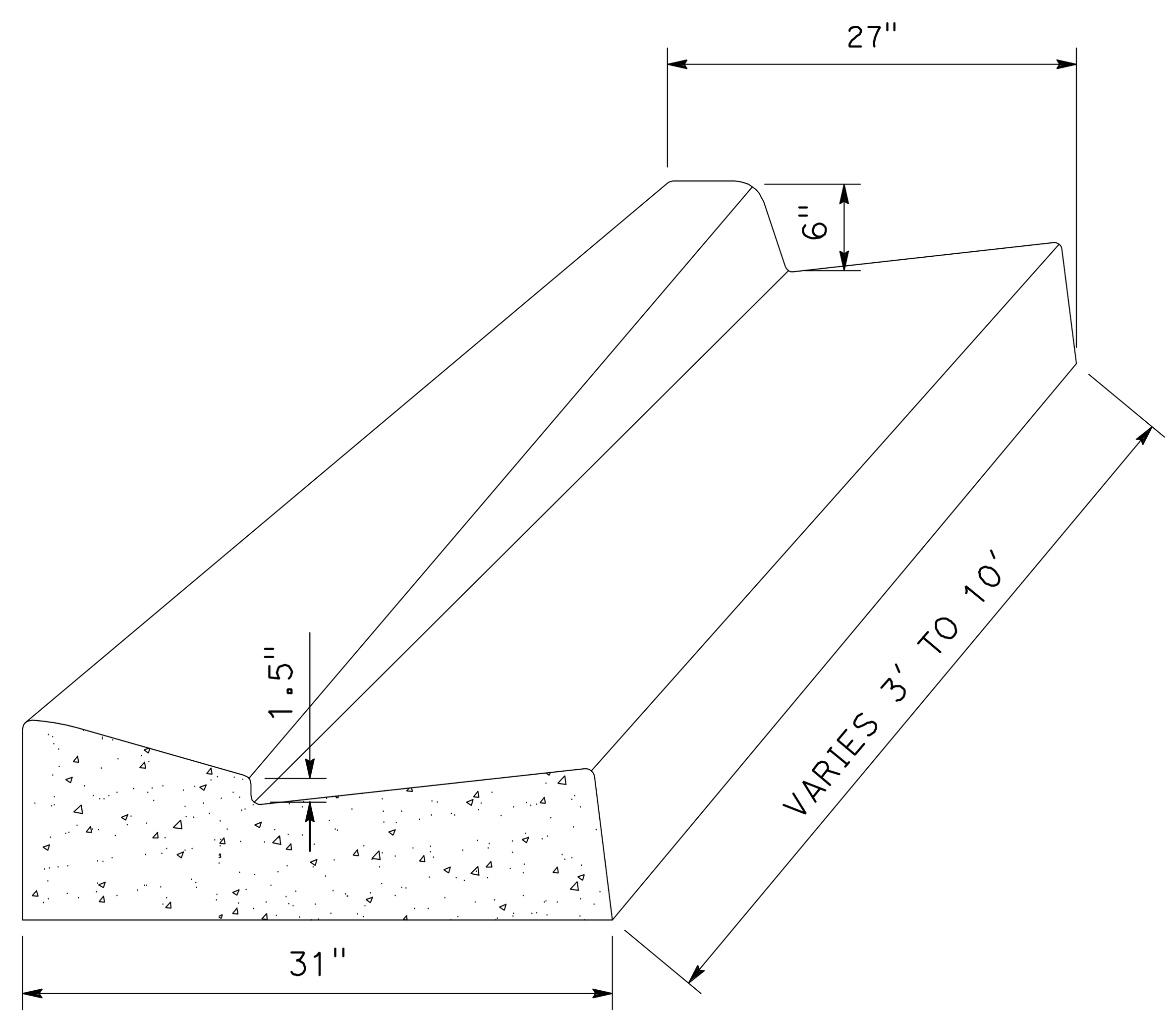
CITY OF TURLOCK
ROADS PROGRAM CIP PROJECT 23-067 PACKAGE #3
CONSTRUCTION DETAILS

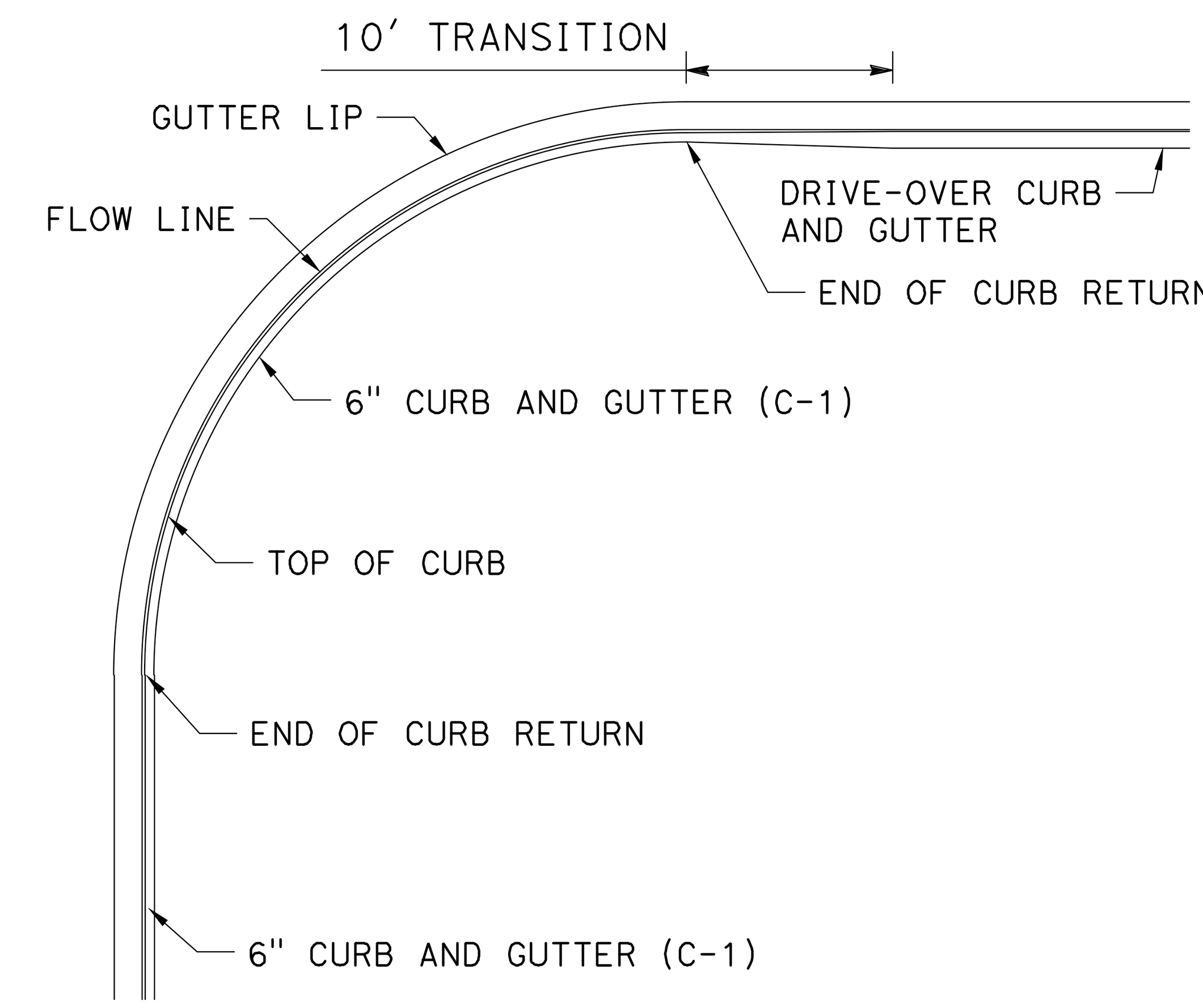
NOTES:

1. FOR C&G TRANSITIONS NEAR DRIVEWAYS, USE TRANSITION LENGTH OF 3'.
2. FOR C&G TRANSITIONS AT INTERSECTIONS AROUND CURB RETURNS, USE TRANSITION LENGTH OF 10'
3. REFER TO THE LAYOUT SHEETS FOR MODIFIED DRIVE-OVER CURB LOCATIONS.
4. DRIVE-OVER CURB SHALL BE TRANSITIONED TO 6" CURB AND GUTTER (C-1) AT DRAINAGE INLETS. A TRANSITION LENGTH OF 3' SHALL BE USED IN THIS CONDITION.
5. WHEN DETAIL A IS USED, THE THICKNESS OF THE FULL DEPTH HMA (TYPE A) SHALL BE:
   0.85' WHEN USED ALONG NORTH QUINCY ROAD (TI = 8).
   0.65' WHEN USED ALONG ALL OTHER STREETS WITHIN THE PROJECT AREA (TI = 6).



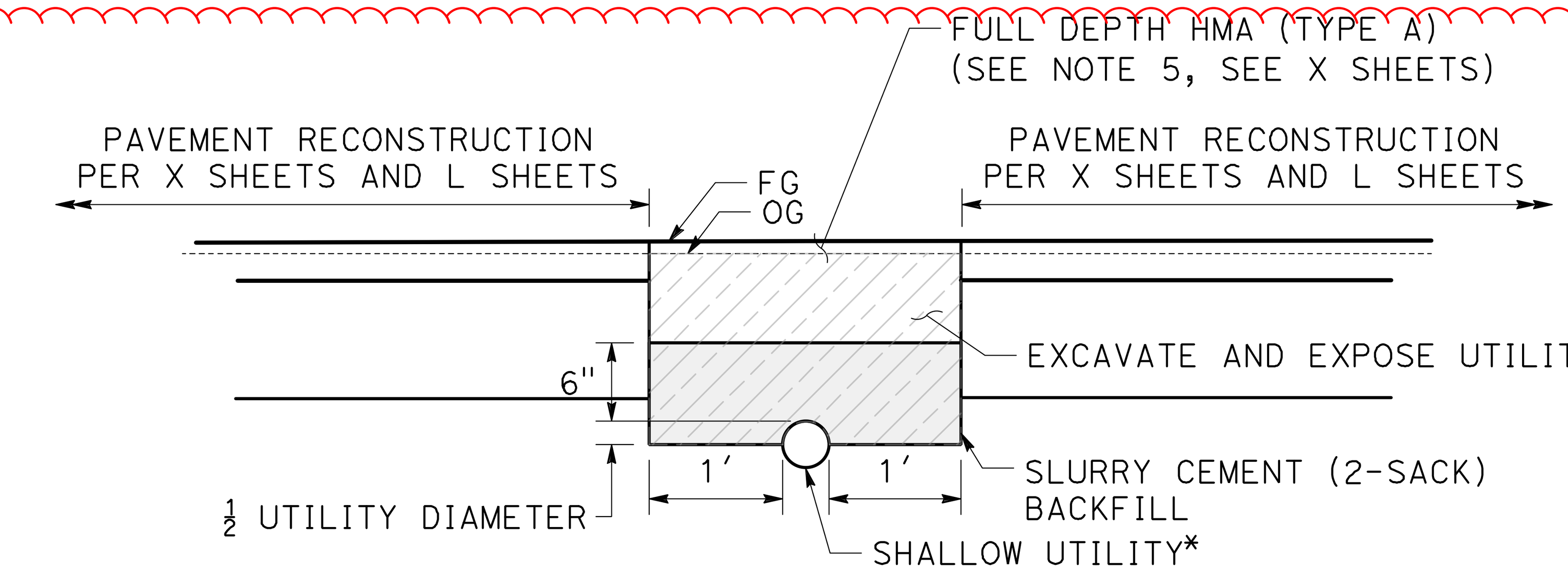
DRIVE-OVER CURB AND GUTTER TO 6"CURB AND GUTTER (C-1) TRANSITION

SCALE: NTS



CURB AND GUTTER TRANSITION AT CURB RETURNS

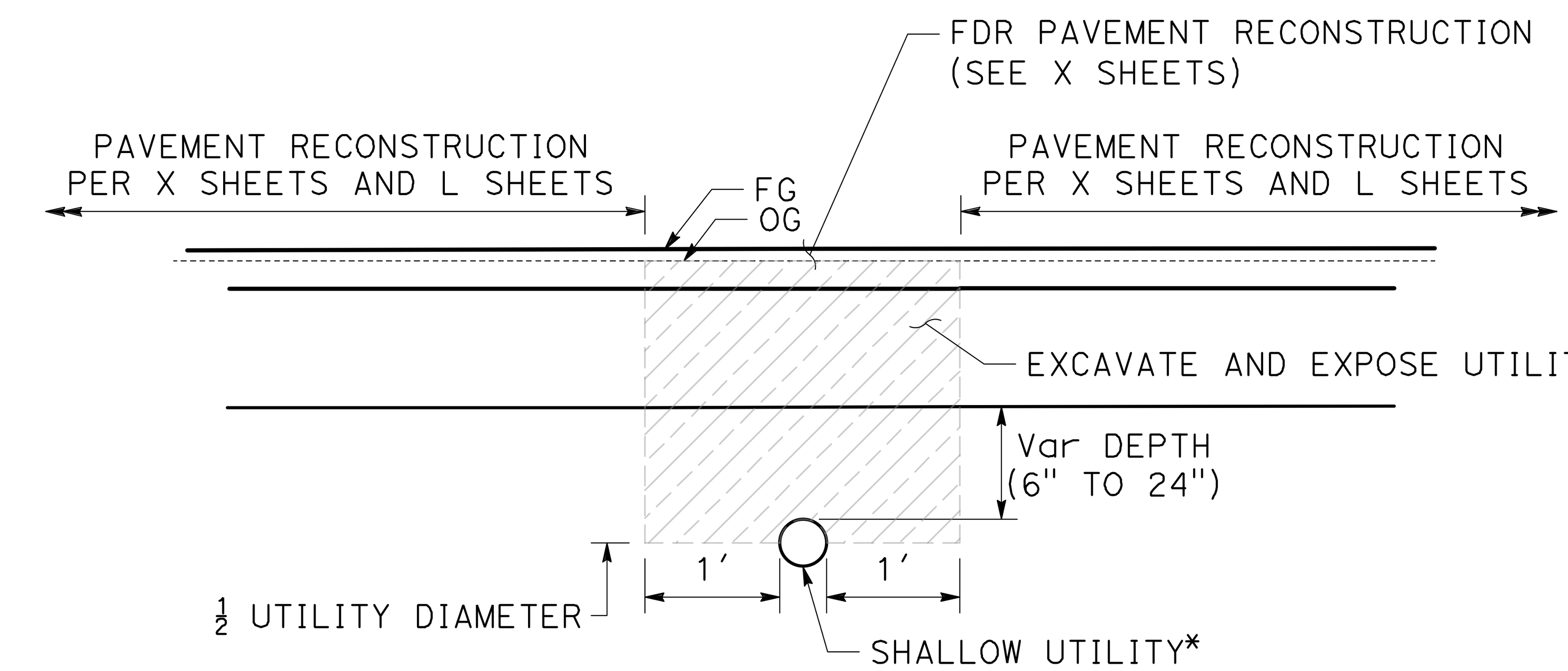
SCALE: NTS



DETAIL A: SHALLOW UTILITY TRENCH SECTION (TOP OF UTILITY IS WITHIN 6" OF PAVEMENT SECTION)

SCALE: NTS

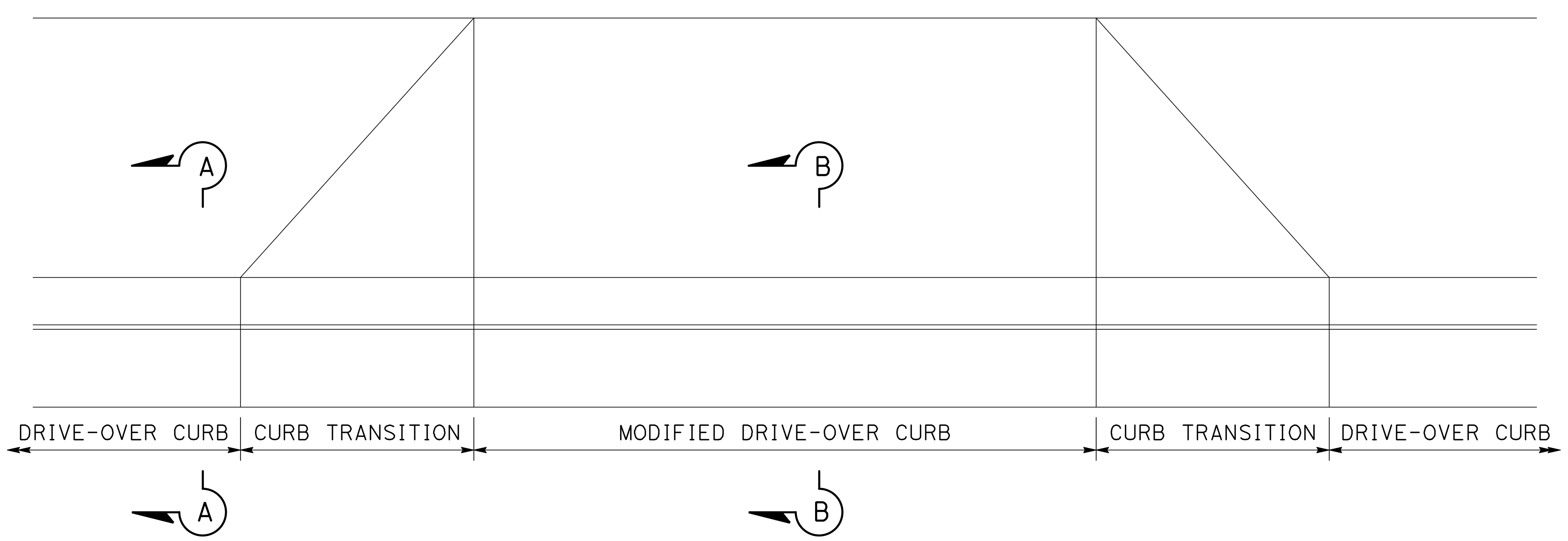
*SEE UUD SHEETS FOR UTILITY DEPTH INFORMATION



DETAIL B: SHALLOW UTILITY TRENCH SECTION (TOP OF UTILITY IS 6" TO 24" BELOW THE PAVEMENT SECTION)

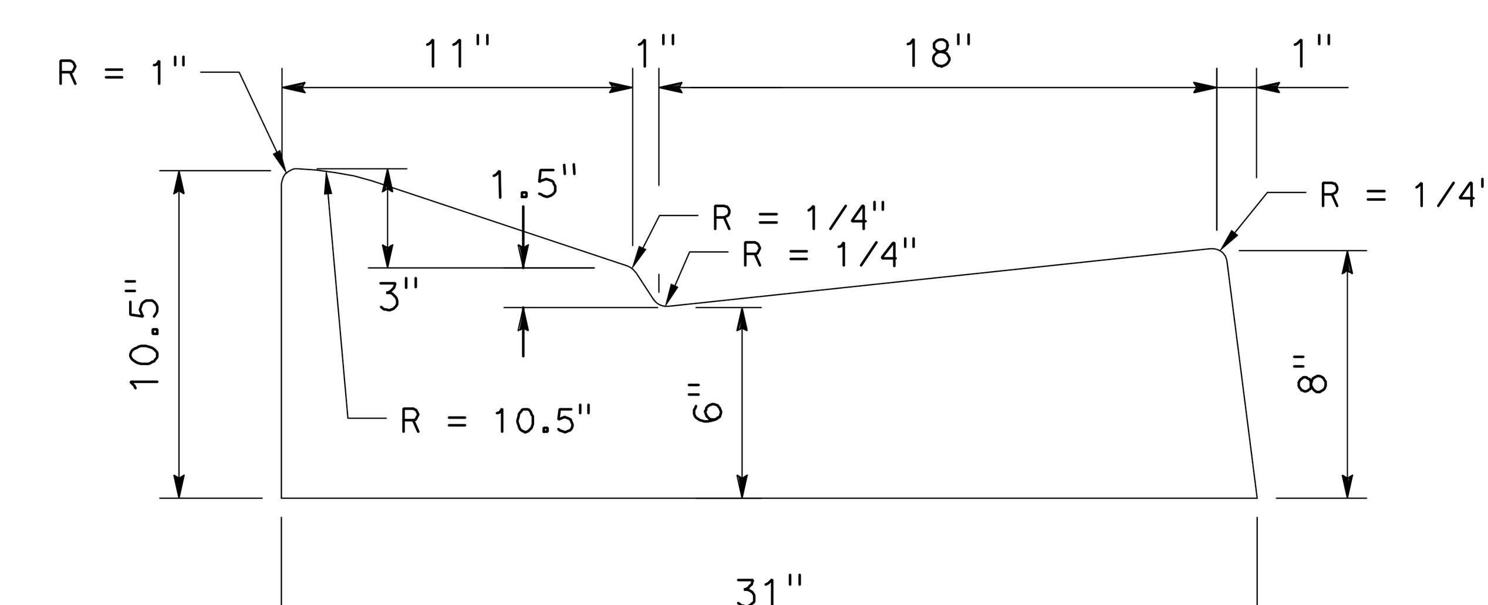
SCALE: NTS

*SEE UUD SHEETS FOR UTILITY DEPTH INFORMATION



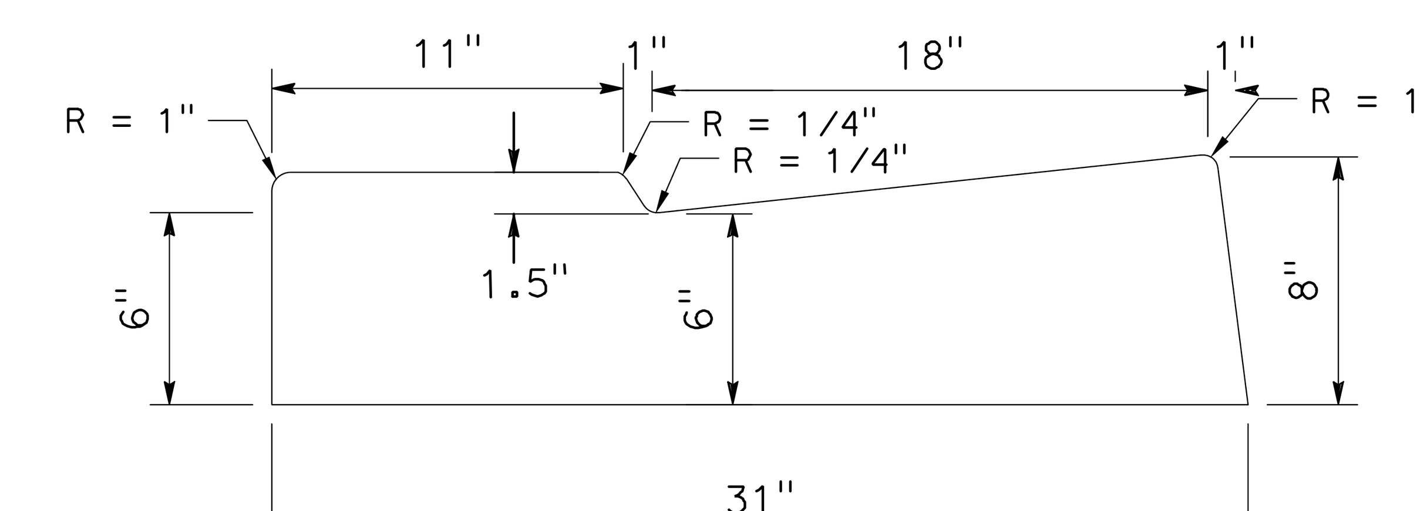
MODIFIED DRIVE-OVER CURB AND GUTTER TRANSITION AT DRIVEWAYS

SCALE: NTS



DRIVE-OVER CURB AND GUTTER DETAIL SECTION A-A

SCALE: NTS



MODIFIED DRIVE-OVER CURB AND GUTTER DETAIL SECTION B-B

SCALE: NTS

100% PLANS

DESIGNED BY:	POORE, B.
DRAWN BY:	FRANCO, N.
CHECKED BY:	NORIEGA, E.
SCALE:	NOT TO SCALE
DATE:	5/22/2025
JOB NO.:	24-00061

NOTE:
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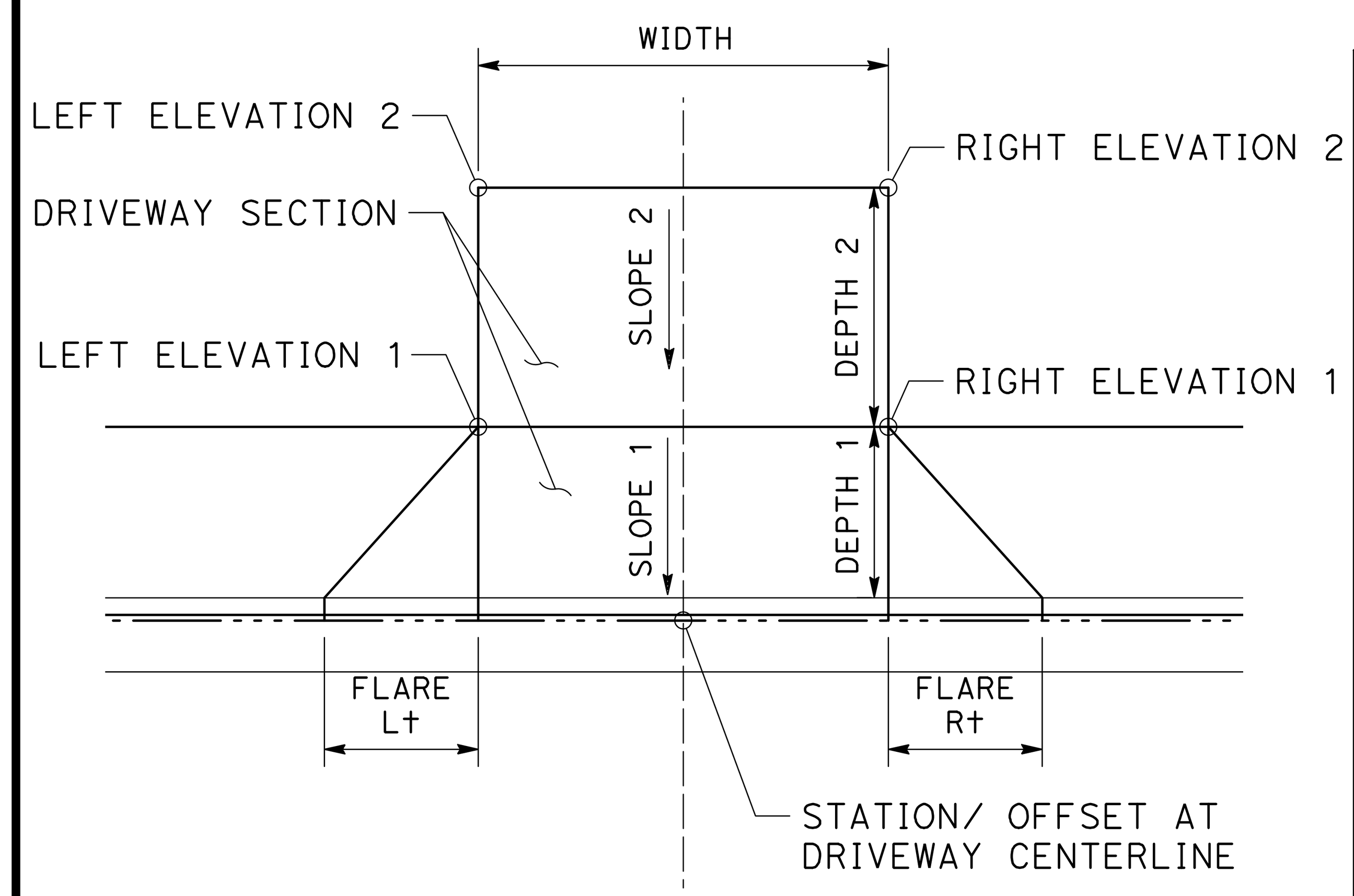
ROADS PROGRAM CIP
PROJECT 23-067 PACKAGE #3
CONSTRUCTION DETAILS

Sheet 52 of 126 Sheets

CD-13



DRIVEWAY DETAIL

SCALE: NTS

DRIVEWAY INFORMATION

DRIVEWAY NUMBER	LOCATION	WIDTH	DEPTH 1	SLOPE 1	LEFT ELEVATION 1	RIGHT ELEVATION 1	FLARE LEFT	FLARE RIGHT	DEPTH 2	SLOPE 2	LEFT ELEVATION 2	RIGHT ELEVATION 2	DRIVEWAY SECTION
65	16+17.49 "EP2" 20.00' Lt	20.64'	5.00'	9.00%	108.57'	108.59'	4.50'	4.50'	2.00'	8.11%	108.73'	108.62'	7.5" Conc
66	16+16.61 "EP2" 19.75' Rt	18.80'	5.00'	5.04%	108.59'	108.53'	1.00'	1.00'	N/A	N/A	N/A	N/A	7.5" Conc
67	16+37.83 "EP2" 19.75' Rt	14.42'	5.00'	6.00%	108.66'	108.64'	4.50'	1.00'	5.25'	5.71%	108.96'	108.82'	5.5" Conc
68	17+79.92 "EP2" 20.00' Lt	10.25'	5.00'	9.50%	108.76'	108.77'	4.50'	4.50'	6.00'	8.72%	109.29'	109.26'	5.5" Conc
69	18+03.33 "EP2" 20.00' Lt	09.16'	5.00'	9.00%	108.76'	108.77'	4.50'	4.50'	3.00'	8.46%	109.02'	108.94'	5.5" Conc
70	19+25.79 "EP2" 20.00' Lt	10.29'	5.00'	8.53%	108.77'	108.87'	4.50'	3.50'	N/A	N/A	N/A	N/A	5.5" Conc
71	19+43.82 "EP2" 20.00' Lt	10.40'	6.00'	9.47%	108.96'	109.00'	3.50'	4.50'	N/A	N/A	N/A	N/A	5.5" Conc
72	19+52.42 "EP2" 19.75' Rt	11.69'	5.00'	4.42%	108.79'	108.85'	4.50'	4.50'	N/A	N/A	N/A	N/A	5.5" Conc
73	20+03.23 "EP2" 19.75' Rt	15.50'	5.00'	7.26'%	109.05'	109.05'	4.50'	4.50'	N/A	N/A	N/A	N/A	5.5" Conc
74	20+20.73 "EP2" 20.00' Lt	09.91'	5.00'	9.50%	109.00'	109.01'	4.50'	4.50'	4.50'	11.74%	109.48'	109.53'	5.5" Conc
75	20+31.64 "EP2" 19.75' Rt	12.50'	5.00'	0.50%	108.75'	108.74'	4.50'	4.50'	3.00'	4.84%	108.73'	108.60'	5.5" Conc
76	11+12.14 "LV" 20.00' Rt	14.44'	5.00'	4.70%	108.73'	108.84'	4.50'	4.50'	N/A	N/A	N/A	N/A	5.5" Conc
77	11+16.10 "LV" 20.00' Lt	19.13'	5.00'	5.68%	108.89'	108.85'	4.50'	3.50'	N/A	N/A	N/A	N/A	5.5" Conc
78	11+44.78 "LV" 20.00' Lt	22.30'	5.00'	5.00%	108.88'	108.89'	3.50'	4.50'	3.00'	5.56%	109.03'	109.06'	5.5" Conc
79	11+98.28 "LV" 20.00' Lt	21.09'	5.00'	6.73%	108.98'	109.04'	4.50'	4.50'	N/A	N/A	N/A	N/A	5.5" Conc
80	12+73.75 "LV" 20.00' Rt	11.58'	5.00'	5.32%	109.09'	108.90'	4.50'	4.50'	N/A	N/A	N/A	N/A	5.5" Conc
81	12+78.90 "LV" 20.00' Lt	18.09'	5.00'	4.62%	108.94'	108.98'	4.50'	4.50'	N/A	N/A	N/A	N/A	5.5" Conc
82	13+03.40 "LV" 20.00' Lt	10.65'	5.00'	5.74%	108.92'	109.06'	4.50'	4.50'	N/A	N/A	N/A	N/A	5.5" Conc
83	13+46.88 "LV" 20.00' Rt	18.86'	5.00'	3.07%	109.03'	109.03'	4.50'	4.50'	N/A	N/A	N/A	N/A	5.5" Conc
84	10+76.99 "AR" 20.25' Lt	21.01'	5.00'	8.00%	108.19'	108.26'	4.50'	4.50'	2.00'	4.63%	108.27'	108.35'	5.5" Conc
85	12+02.20 "AR" 20.25' Lt	18.08'	5.00'	9.27%	108.64'	108.67'	4.50'	4.50'	N/A	N/A	N/A	N/A	5.5" Conc
86	12+51.69 "AR" 19.75' Lt	24.34'	5.00'	9.85%	108.85'	108.84'	4.50'	4.50'	N/A	N/A	N/A	N/A	5.5" Conc
87	13+75.22 "AR" 19.75' Lt	19.75'	5.50'	9.59%	109.02'	109.10'	4.50'	4.50'	N/A	N/A	N/A	N/A	5.5" Conc
88	SEE CD-5												
89	14+05.82 "AR" 19.75' Lt	8.25'	5.25'	8.50%	109.04'	109.05'	4.50'	4.50'	2.00'	5.92%	109.16'	109.12'	5.5" Conc
90	15+21.55 "AR" 19.75' Lt	9.00'	5.25'	6.31%	109.07'	109.10'	4.50'	4.50'	N/A	N/A	N/A	N/A	5.5" Conc
91	15+89.85 "AR" 19.75' Lt	14.76'	7.00'	4.28%	109.15'	109.10'	4.50'	4.50'	N/A	N/A	N/A	N/A	5.5" Conc
92	16+20.54 "AR" 20.00' Rt	18.72'	7.50'	6.63%	109.20'	109.10'	4.50'	2.25'	N/A	N/A	N/A	N/A	5.5" Conc
93	16+61.19 "AR" 19.75' Lt	18.38'	5.00'	6.10%	109.05'	109.05'	4.50'	4.50'	N/A	N/A	N/A	N/A	5.5" Conc
94	16+83.85 "AR" 19.75' Lt	16.50'	5.00'	6.87%	109.05'	109.04'	2.25'	4.50'	N/A	N/A	N/A	N/A	7.5" Conc
95	16+87.70 "AR" 20.00' Rt	14.33'	4.50'	5.91%	109.02'	108.95'	2.50'	2.50'	N/A	N/A	N/A	N/A	5.5" Conc
96	17+14.96 "AR" 20.00' Rt	29.26'	9.50'	4.39%	109.22'	109.13'	4.50'	4.50'	N/A	N/A	N/A	N/A	5.5" Conc
97	18+41.96 "AR" 19.75' Lt	10.02'	9.00'	5.83%	108.95'	108.90'	4.50'	4.50'	N/A	N/A	N/A	N/A	5.5" Conc
98	19+04.85 "AR" 20.25' Rt	11.16'	5.00'	8.67%	108.86'	108.79'	4.50'	4.50'	N/A	N/A	N/A	N/A	5.5" Conc
99	19+10.78 "AR" 19.75' Lt	15.99'	6.00'	5.58%	108.76'	108.80'	4.50'	4.50'	N/A	N/A	N/A	N/A	5.5" Conc
100	19+78.91 "AR" 20.25' Rt	17.75'	5.00'	9.00%	108.87'	108.82'	4.50'	3.00'	4.00'	4.46%	109.05'	109.00'	5.5" Conc
101	19+78.30 "AR" 19.75' Lt	16.21'	5.00'	4.83%	108.77'	108.81'	4.50'	4.50'	N/A	N/A	N/A	N/A	5.5" Conc
102	20+03.37 "AR" 19.75' Lt	21.25'	5.00'	9.25%	109.04'	109.06'	1.00'	4.50'	N/A	N/A	N/A	N/A	5.5" Conc
103	20+46.15 "AR" 20.25' Rt	10.20'	5.00'	8.00%	108.97'	108.95'	4.50'	4.50'	4.00'	5.08%	109.15'	109.14'	5.5" Conc
104	21+13.04 "AR" 19.75' Lt	19.75'	4.50'	8.91%	109.15'	109.10'	4.50'	4.50'	N/A	N/A	N/A	N/A	5.5" Conc
105	21+30.65 "AR" 20.25' Rt	17.50'	5.00'	6.82%	109.09'	109.09'	4.50'	4.50'	N/A	N/A	N/A	N/A	5.5" Conc
106	21+77.76 "AR" 19.75' Lt	17.50'	4.50'	4.70%	109.06'	109.08'	4.50'	4.50'	4.00'	8.09%	109.38'	109.11'	5.5" Conc
107	22+34.92 "AR" 19.75' Lt	11.28'	4.25'	4.60%	109.04'	108.86'	4.50'	4.50'	N/A	N/A	N/A	N/A	5.5" Conc
108	22+61.76 "AR" 19.75' Lt	12.80'	4.50'	5.73%	109.05'	109.04'	4.50'	4.50'	N/A	N/A	N/A	N/A	5.5" Conc
109	25+52.05 "AR" 20.00' Lt	14.50'	5.00'	9.88%	108.77'	108.88'	4.50'	4.50'	N/A	N/A	N/A	N/A	5.5" Conc
110	35+64.24 "AR" 20.00' Lt	19.50'	5.00'	9.69%	110.31'	110.30'	4.50'	4.50'	N/A	N/A	N/A	N/A	5.5" Conc
111	36+07.64 "AR" 20.00' Lt	18.54'	5.00'	9.70%	110.26'	110.23'	4.50'	4.50'	2.00'	5.45%	110.48'	110.42'	5.5" Conc
112	11+10.87 "KCH" 17.50' Rt	21.25'	5.00'	9.50%	109.53'	109.49'	4.50'	4.50'	2.00'	9.89%	109.73'	109.69'	5.5" Conc
113	11+12.08 "KCH" 18.25' Lt	17.75'	5.00'	9.00%	109.44'	109.48'	4.50'	4.50'	4.00'	5.96%	109.63'	109.72'	5.5" Conc
114	11+38.07 "KCH" 17.50' Rt	18.44'	5.00'	9.50%	109.58'	109.56'	4.50'	4.50'	2.00'	4.32%	109.67'	109.72'	5.5" Conc
115	11+65.04 "KCH" 18.25' Lt	26.00'	5.00'	8.00%	109.50'	109.56'	4.50'	4.50'	3.00'	5.24%	109.58'	109.71'	5.5" Conc
116	11+65.46 "KCH" 17.50' Rt	17.68'	5.00'	9.05%	109.63'	109.58'	4.50'	4.50'	N/A	N/A	N/A	N/A	5.5" Conc
117	DRIVEWAY REMOVED												
118	DRIVEWAY REMOVED												
119	DRIVEWAY REMOVED												
120	DRIVEWAY REMOVED												
121	17+13.98 "KCH" 18.00' Lt	17.96'	5.00'	8.00%	110.43'	110.45'	4.50'	4.50'	2.00'	6.09%	110.50'	110.62'	5.5" Conc
122	DRIVEWAY REMOVED												
123	18+83.41 "KCH" 18.00' Lt	25.04'	5.00'	7.51%	110.49'	110.62'	4.50'	4.50'	N/A	N/A	N/A	N/A	5.5" Conc
124	19+70.64 "KCH" 70.41' Lt	20.50'	5.00'	9.00%	111.05'	111.11'	4.50'	4.50'	2.00'	7.37%	111.20'	111.18'	5.5" Conc
125	20+82.99 "KCH" 100.68' Lt	20.18'	5.00'	1.00%	110.89'	110.90'	4.50'	4.50'	2.00'	-2.56%	110.90'	110.85'	5.5" Conc
126	20+88.33 "KCH" 93.35' Lt	18.74'	5.00'	1.00%	110.89'	110.87'	4.50'	4.50'	4.00'	-6.32%	110.61'	110.62'	5.5" Conc
127	20+97.27 "KCH" 64.92' Lt	19.74'	5.00'	1.00%	110.85'	110.83'	4.50'	4.50'	3.00'	-6.74%	110.70'	110.63'	5.5" Conc
128	10+79.71 "NO" 20.25' Lt	17.73'	5.00'	9.97%	109.11'	108.88'	4.50'	4.50'	N/A	N/A	N/A	N/A	5.5" Conc

1

100% PLANS

DESIGNED BY: POORE, B.
DRAWN BY: FRANCO, N.
CHECKED BY: NORIEGA, E.
SCALE: NOT TO SCALE
DATE: 5/21/2025
JOB NO.: 24-00061

NOTE:
ALL REFERENCES AND WRITTEN DIMENSIONS SHALL SUPERCEDE ALL SCALED DISTANCES AND SHALL BE VERIFIED IN THE FIELD. ANY DISCREPANCY SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.

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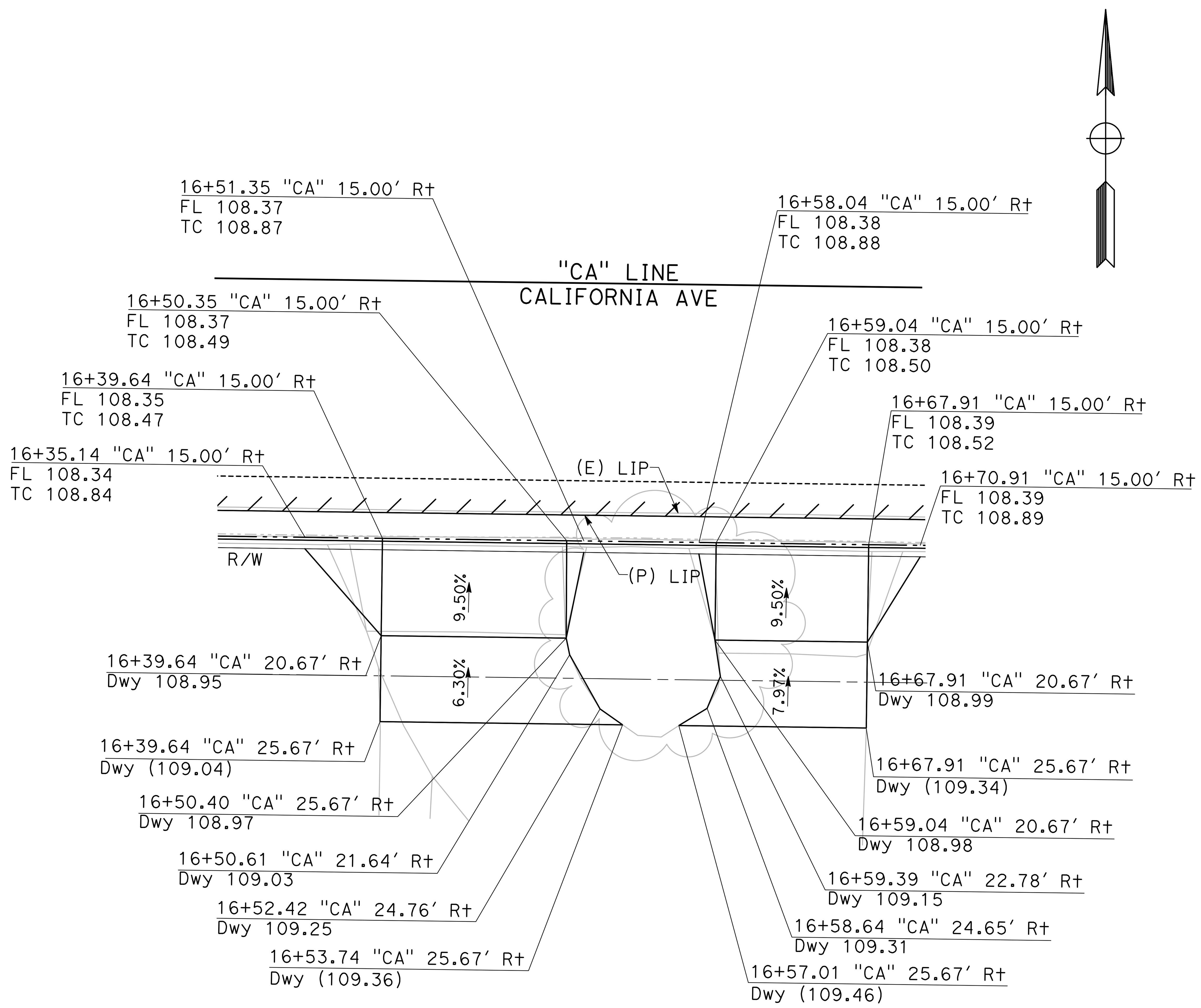
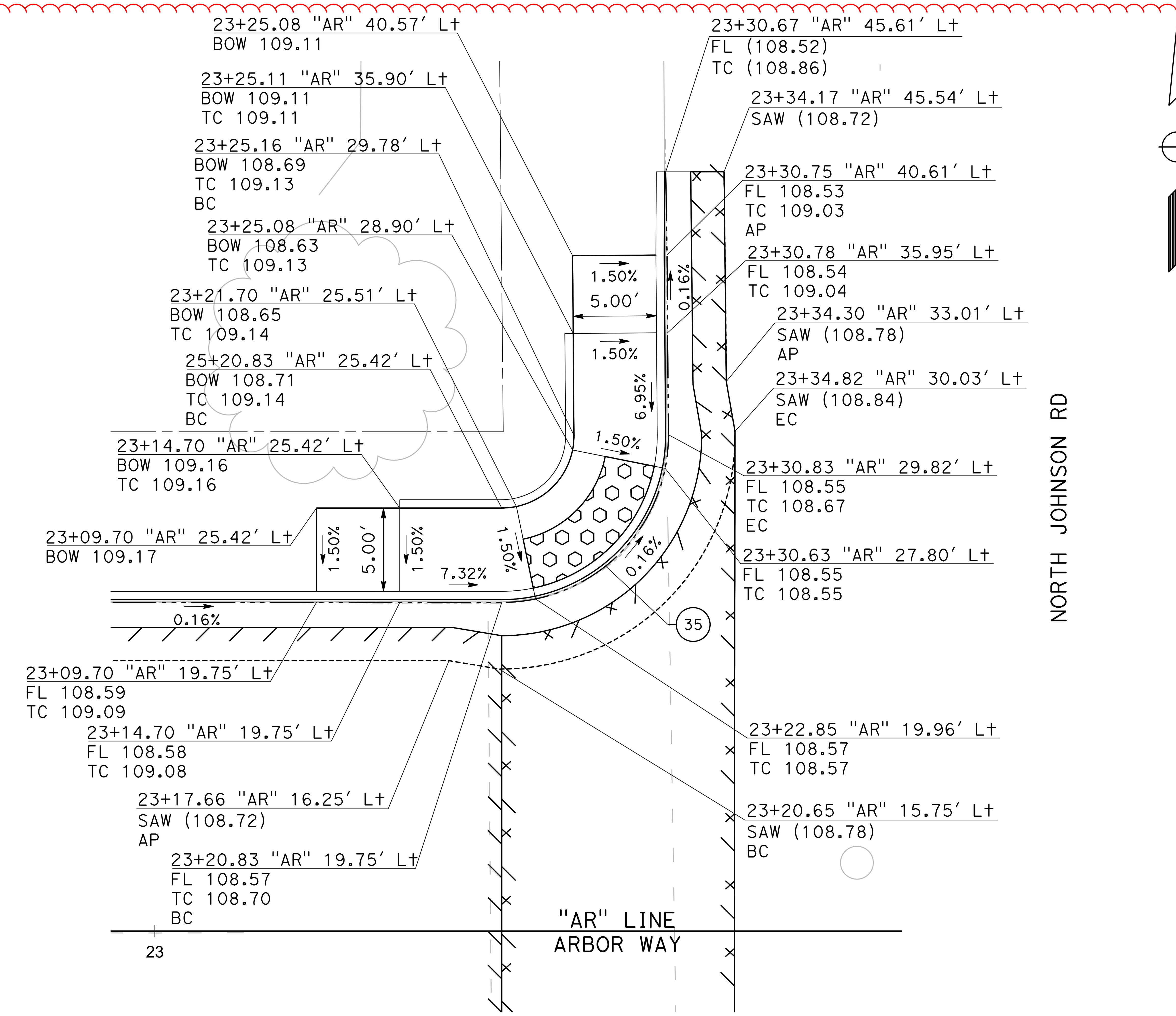
(209)668-5520

CITY OF TURLOCK
ROADS PROGRAM CIP
PROJECT 23-067 PACKAGE #3
CONSTRUCTION DETAILS



DRIVEWAY #161 AND DRIVEWAY #162
GRADING DETAIL - CALIFORNIA AVE
"CA" 16+35.14 - 16+93.31 Rt
SCALE: 1" =5'



33 / CD-17 **N JOHNSON RD & ARBOR WAY**
NW CURB RAMP
SCALE: 1" =5'

CURVE TABLE

No.	R	Δ	T	L
35	10.00'	90°25'21"	10.07'	15.78'

1

100% PLANS

DESIGNED BY: POORE, B.
DRAWN BY: FRANCO, N.
CHECKED BY: NORIEGA, E.
SCALE: 1"=5'
DATE: 5/21/2025
JOB NO.: 24-00061

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CITY OF TURLOCK
ROADS PROGRAM CIP
PROJECT 23-067 PACKAGE #3
CONSTRUCTION DETAILS

Sheet 56 of 126 Sheets

CD-17

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DESIGNED BY: POORE, B.
DRAWN BY: FRANCO, N.
CHECKED BY: NORIEGA, E.
SCALE: 1"=20'
DATE: 5/21/2025
JOB NO.: 24-00061

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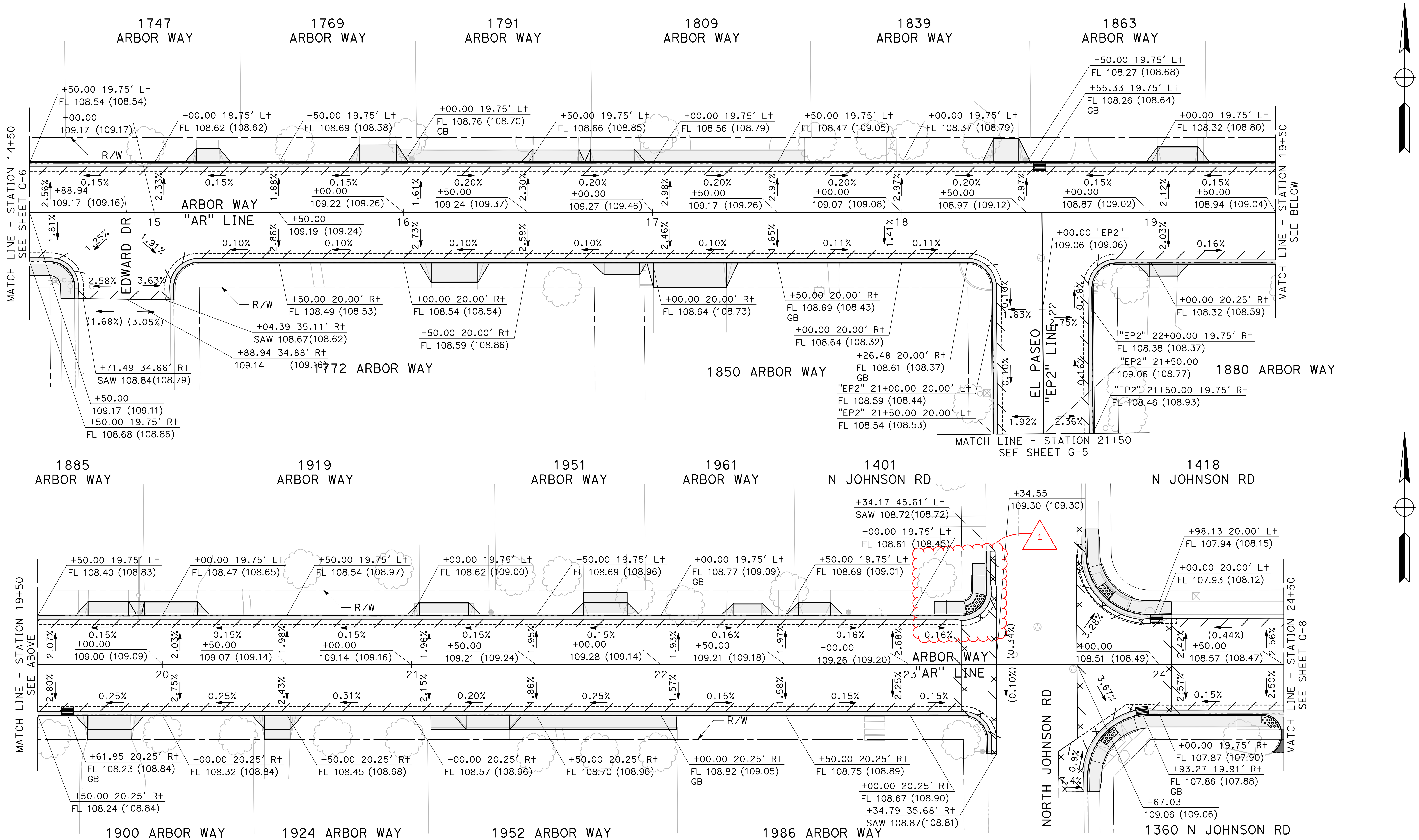
CITY OF TURLOCK
ROADS PROGRAM CIP PROJECT 23-067 PACKAGE #3 GRADING PLANS

Sheet 61 of 126 Sheets

G-5

NOTE:



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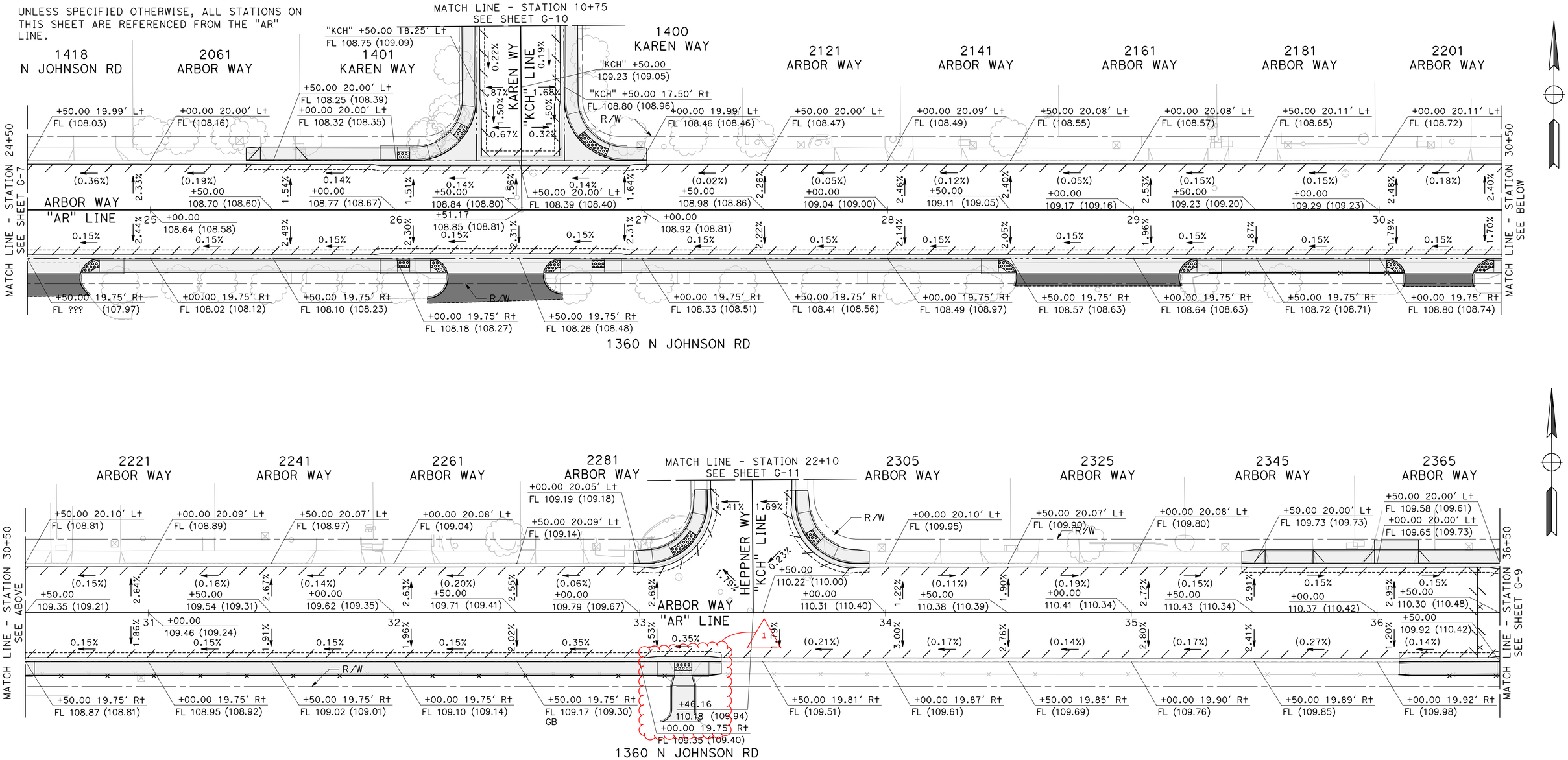
CITY OF TURLOCK
ROADS PROGRAM CIP PROJECT 23-067 PACKAGE #3 GRADING PLANS

Sheet 63 of 126 Sheets

G-7

NOTE:

UNLESS SPECIFIED OTHERWISE, ALL STATIONS ON THIS SHEET ARE REFERENCED FROM THE "AR" LINE.

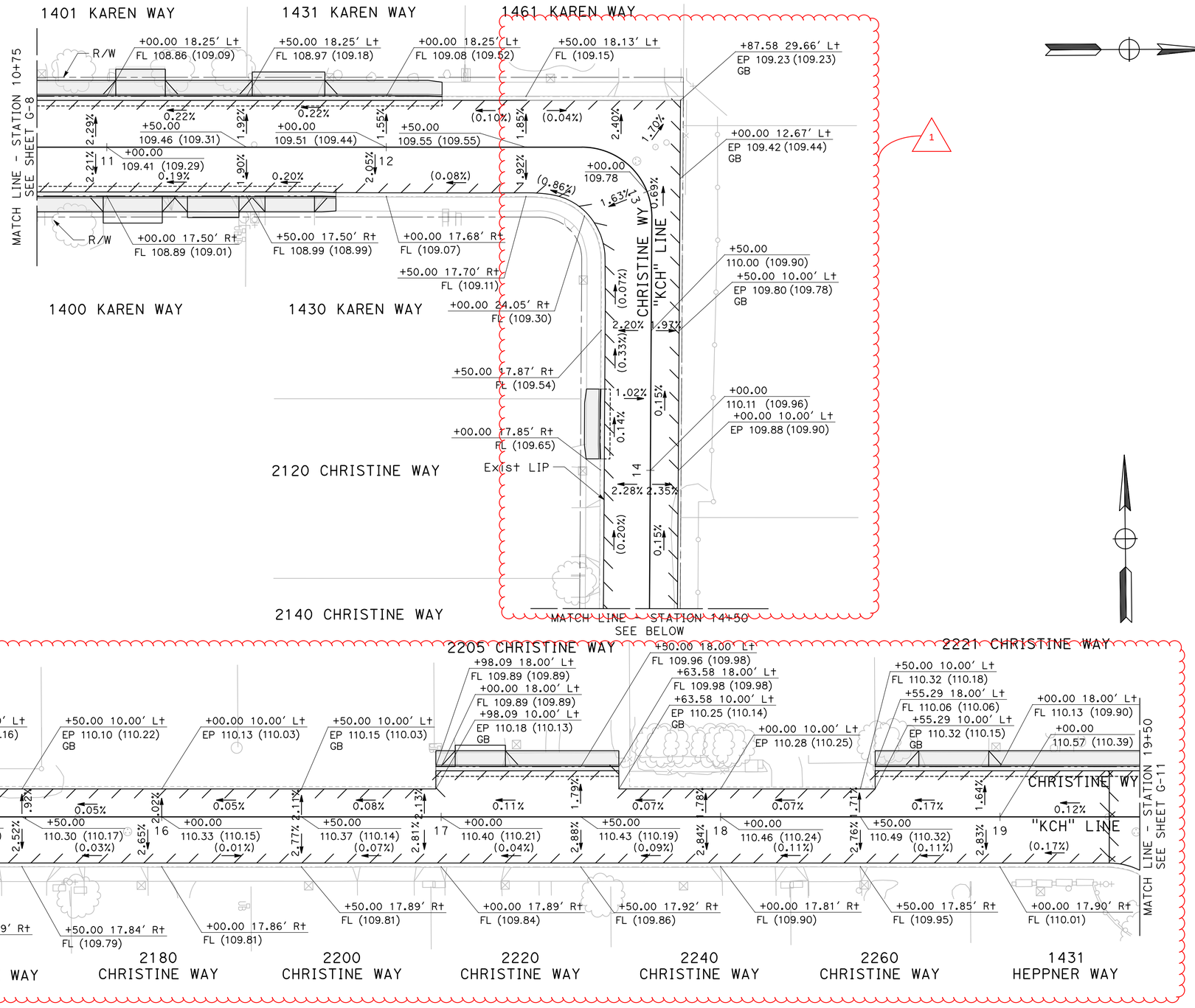


100% PLANS

DESIGNED BY: POORE, B. DRAWN BY: FRANCO, N. CHECKED BY: NORIEGA, E. SCALE: 1"=20' DATE: 5/21/2025 JOB NO.: 24-00061	NOTE: ALL REFERENCES AND WRITTEN DIMENSIONS SHALL SUPERCEDE ALL SCALED DISTANCES AND SHALL BE VERIFIED IN THE FIELD. ANY DISCREPANCY SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.	USA NORTH 811 Call 811 Before You Dig	SCALE 20 0 20 40	REGISTERED PROFESSIONAL ENGINEER EDUARDO A. NORIEGA No. 81455 Exp. 6/30/25 CIVIL STATE OF CALIFORNIA	MARK THOMAS 701 UNIVERSITY AVENUE, SUITE 200 SACRAMENTO, CALIFORNIA 95825 (916) 381-9100 FAX:(916)381-9180 markthomas.com	CITY OF TURLOCK MUNICIPAL SERVICES DEPARTMENT 156 S. BROADWAY SUITE 150 (209)668-5520	CITY OF TURLOCK ROADS PROGRAM CIP PROJECT 23-067 PACKAGE #3 GRADING PLANS	Sheet 64 of 126 Sheets G-8

NOTE:

1. UNLESS SPECIFIED OTHERWISE, ALL STATIONS ON THIS SHEET ARE REFERENCED FROM THE "KCH" LINE.



100% PLANS

DESIGNED BY:	POORE, B.
DRAWN BY:	FRANCO, N.
CHECKED BY:	NORIEGA, E.
SCALE:	1"=20'
DATE:	5/21/2025
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PROJECT 23-067 PACKAGE #3
GRADING PLANS

NOTE:

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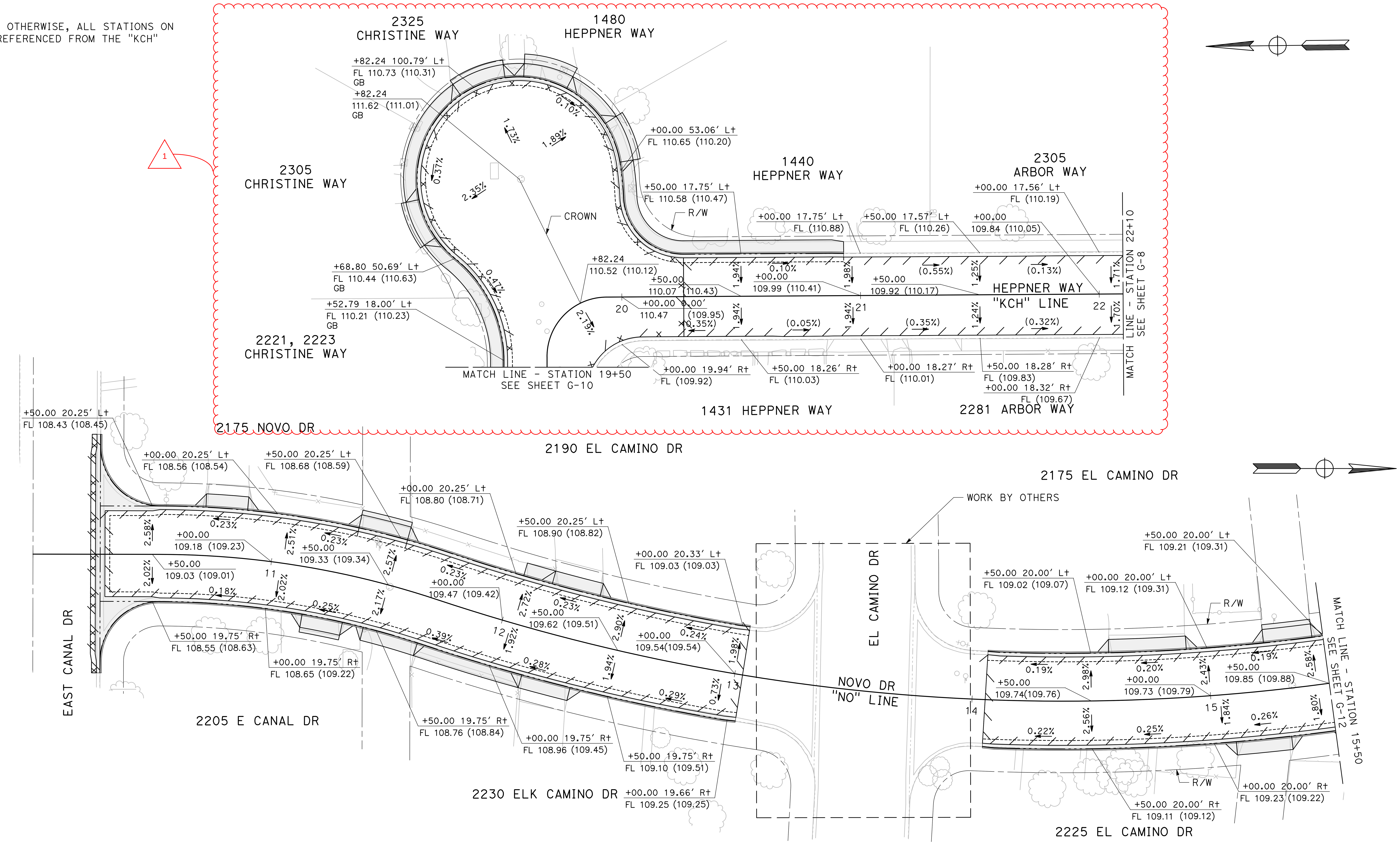

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ROADS PROGRAM CIP
PROJECT 23-067 PACKAGE #3
GRADING PLANS

Sheet 67 of 126 Sheets

G-11

100% PLANS

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DRAWN BY:	FRANCO, N.
CHECKED BY:	NORIEGA, E.
SCALE:	1"=20'
DATE:	5/21/2025
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CITY OF TURLOCK
ROADS PROGRAM CIP
PROJECT 23-067 PACKAGE #3
DRAINAGE AND UTILITIES

Sheet 76 of 126 Sheets

DU-5

100% PLANS

DESIGNED BY:	POORE, B.
DRAWN BY:	FRANCO, N.
CHECKED BY:	NORIEGA, E.
SCALE:	1"=20'
DATE:	5/21/2025
JOB NO.:	24-00061

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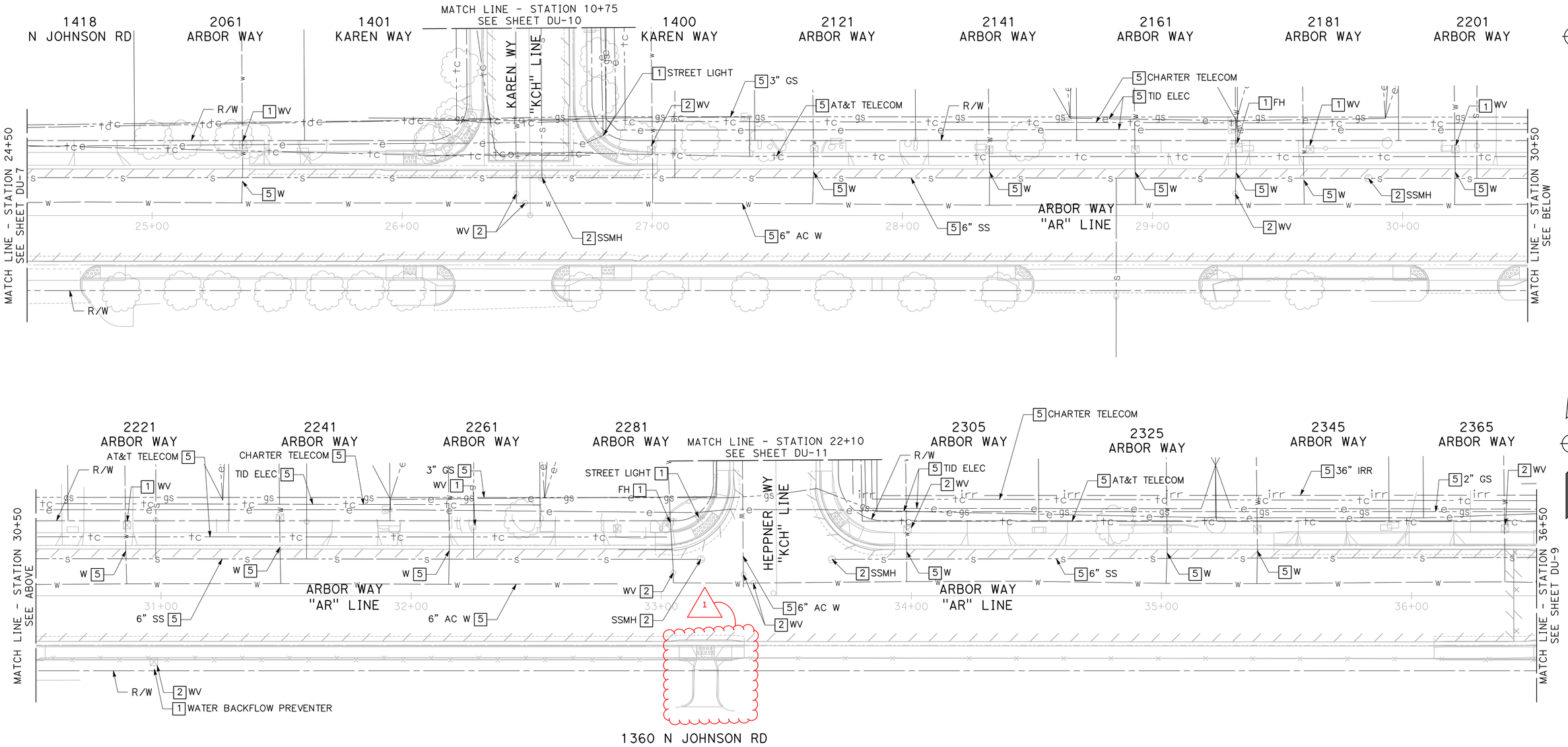
CITY OF TURLOCK
ROADS PROGRAM CIP PROJECT 23-067 PACKAGE #3 DRAINAGE AND UTILITIES

Sheet 78 of 126 Sheets

DU-7



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REGISTERED PROFESSIONAL ENGINEER
EDWARD A. NORIEGA
No. 61552
Exp. 6/30/25
CIVIL
STATE OF CALIFORNIA

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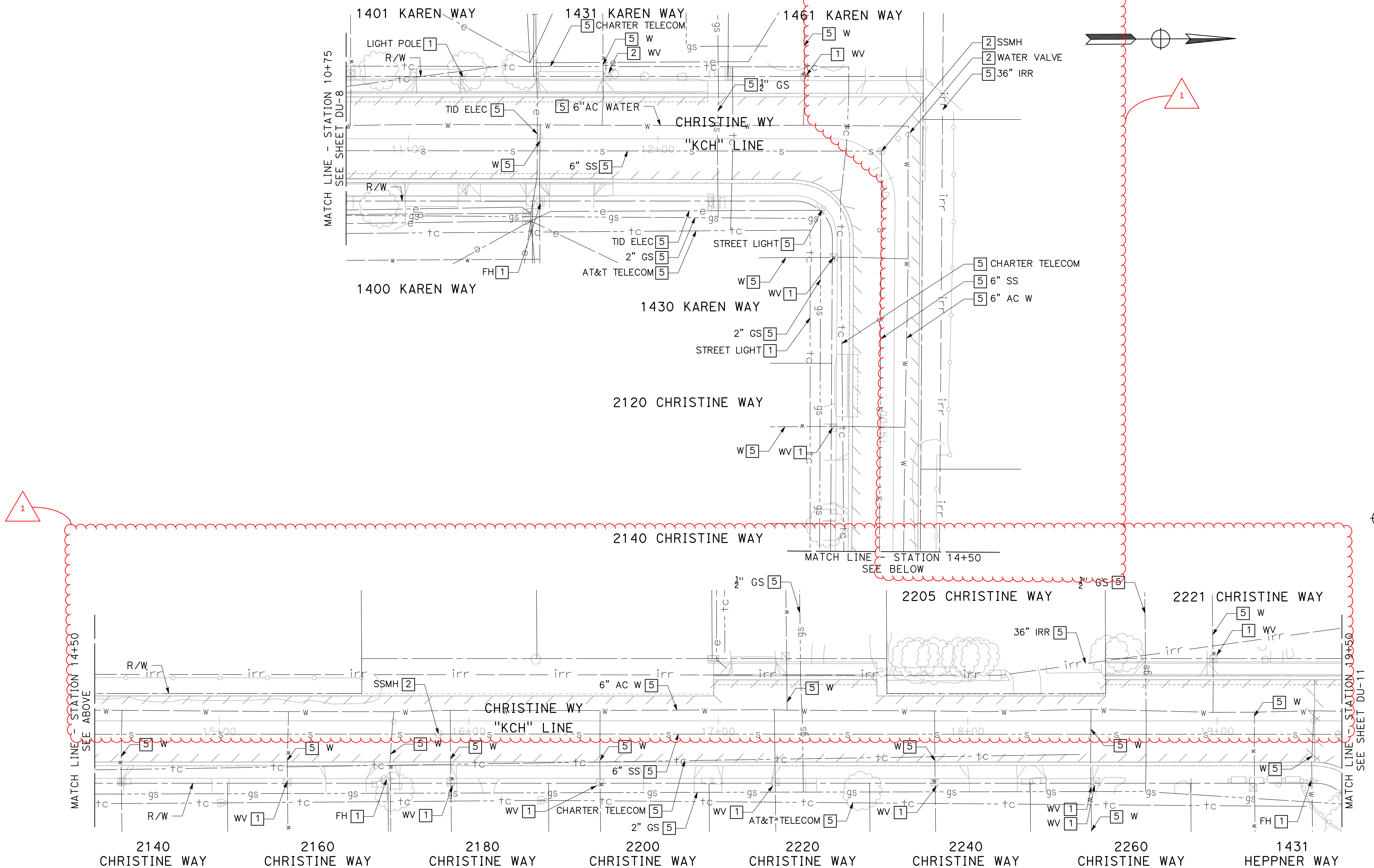
CITY OF TURLOCK
ROADS PROGRAM CIP
PROJECT 23-067 PACKAGE #3
DRAINAGE AND UTILITIES

DU-8



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DESIGNED BY:	POORE, B.
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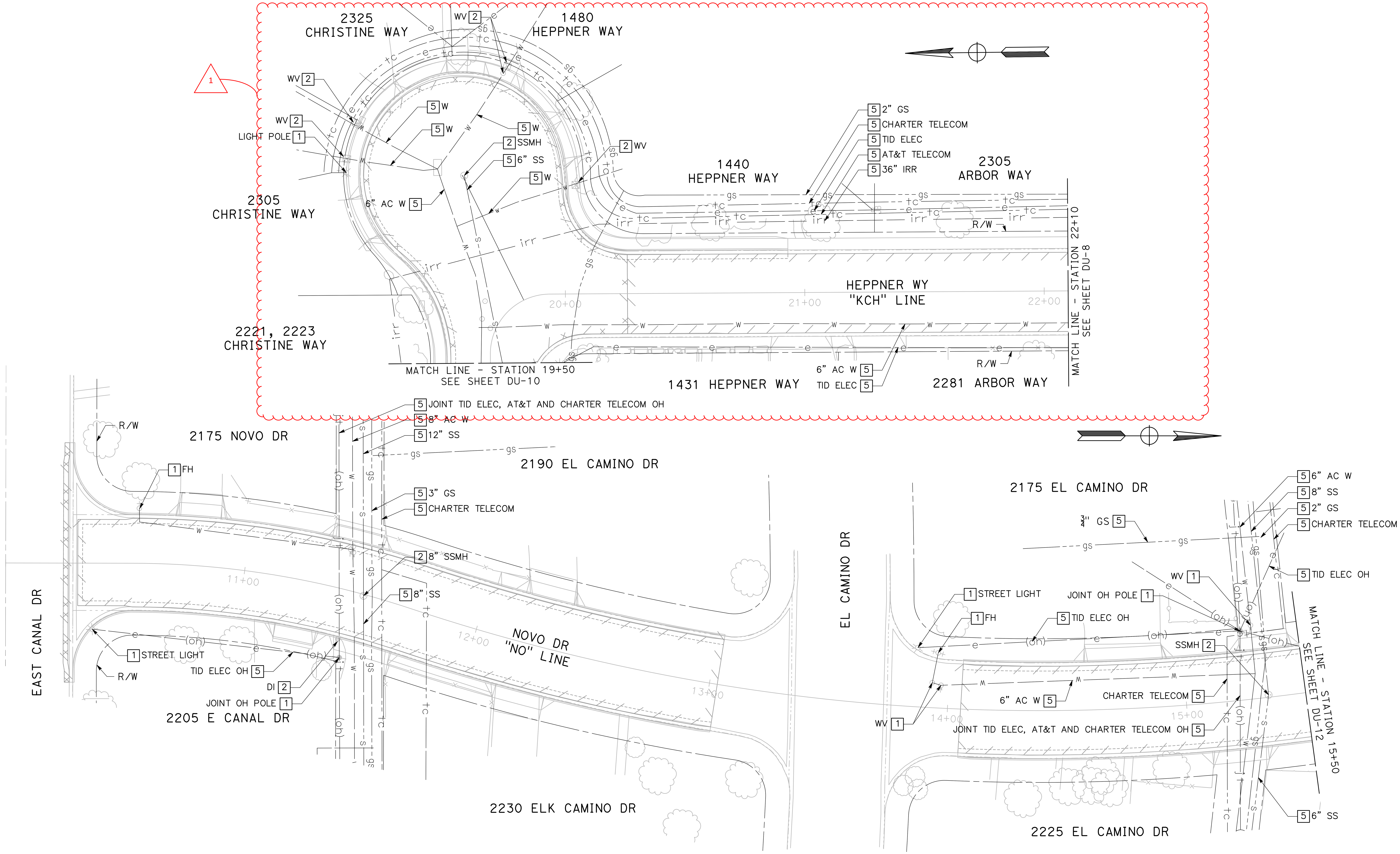
CITY OF TURLOCK
ROADS PROGRAM CIP
PROJECT 23-067 PACKAGE #3
DRAINAGE AND UTILITIES

Sheet 81 of 126 Sheets

DU-10



100% PLANS

DESIGNED BY:	POORE, B.
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CITY OF TURLOCK
ROADS PROGRAM CIP PROJECT 23-067 PACKAGE #3 DRAINAGE AND UTILITIES

Sheet 82 of 126 Sheets

DU-11

NOTES (SHEETS UUD-1 TO UUD-15):

1. THE CONTRACTOR SHALL VERIFY LOCATIONS OF ALL EXISTING UNDERGROUND UTILITIES AND SHALL CONTACT THE RESPECTIVE UTILITY COMPANIES PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION AND PRESERVATION OF ALL SUCH FACILITIES IN THE AREA OF CONSTRUCTION AND SHALL NOTIFY UNDERGROUND SERVICE ALERT OF NORTHERN CALIFORNIA FORTY-EIGHT (48) HOURS IN ADVANCE OF ANY CONSTRUCTION.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF THE REMOVAL OR RELOCATIONS OF ALL EXISTING UTILITIES WITH RESPECTIVE UTILITY COMPANIES.
3. MANHOLE CASTINGS AND COVERS SHALL BE ADJUSTED TO FINAL GRADES BY THE CONTRACTOR AFTER STREET IMPROVEMENTS ARE COMPLETED. ALL EXISTING MANHOLE LIDS WITHIN LIMITS OF STREET IMPROVEMENT SHALL BE MARKED AND TIED TO SURVEY PRIOR TO ADJUSTMENT.
4. FOR CLARITY, OH UTILITIES WILL NOT BE SHOWN ON THE UNDERGROUND UTILITY DEPTHS SHEETS. INFORMATION REGARDING OH UTILITIES CAN BE FOUND ON DRAINAGE AND UTILITIES SHEETS.
5. DEPTHS SHOWN ON THESE SHEETS WERE OBTAINED USING SUBSURFACE UTILITY ENGINEERING METHODS INCLUDING GROUND PENETRATING RADAR. THIS DATA IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION OF ALL UTILITIES.
6. FOR PAVEMENT SECTION OVER SHALLOW UTILITIES, SEE DETAIL A AND DETAIL B ON CD-13.

LEGEND (UUD-1 TO UUD-15):

- tc — (E) COMMUNICATION UG (AT&T)
- t — (E) COMMUNICATION UG (CHARTER)
- e — (E) ELECTRIC UG (TID)
- gs — (E) GAS (PG&E)
- w — (E) WATER (TID)
- s — (E) SEWER (CITY OF TURLOCK)
- sd — (E) STORM DRAIN (CITY OF TURLOCK)
- (E) SD/SS MANHOLE
- (E) WATER VALVE
- (E) FIRE HYDRANT
- (E) DRAIN INLET
- (E) SURVEY MONUMENT
- (E) PG&E GAS VALVE
- (E) SANITARY SEWER CLEANOUT OR (E) WATER VALVE
- (E) WATER METER BOX
- (P) DRAINAGE INLET
- (E) WATER METER OR WATER BOX
- (E) STREET LIGHT
- SHALLOW UTILITY - EXCAVATE AND EXPOSE (SEE NOTE 6)

100% PLANS

DESIGNED BY:	POORE, B.
DRAWN BY:	FRANCO, N.
CHECKED BY:	NORIEGA, E.
SCALE:	1"=20'
DATE:	5/21/2025
JOB NO.:	24-00061

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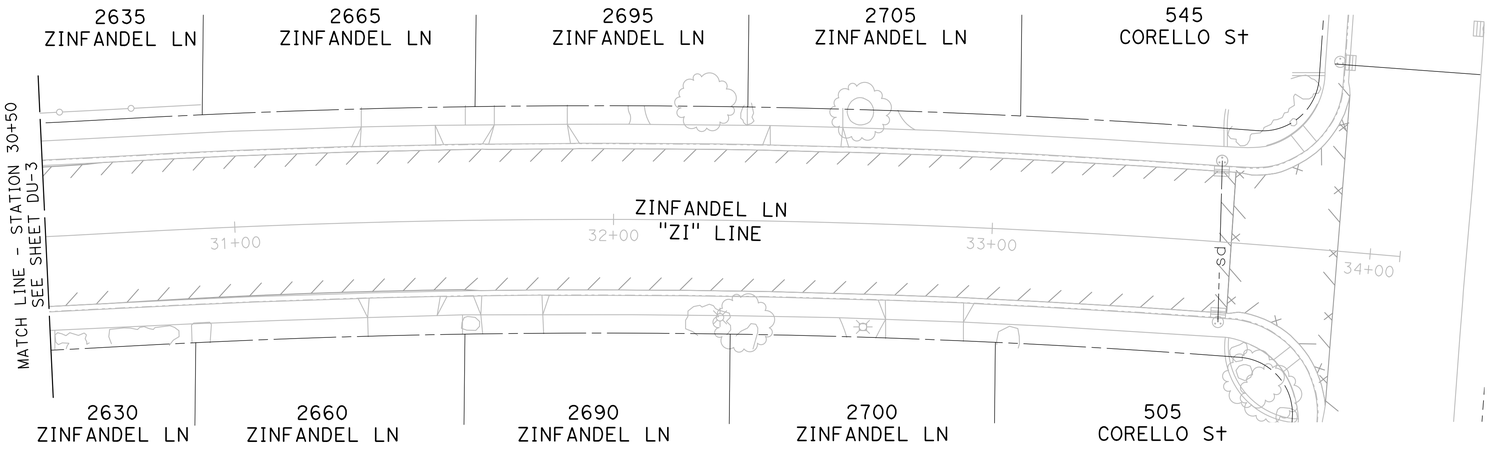
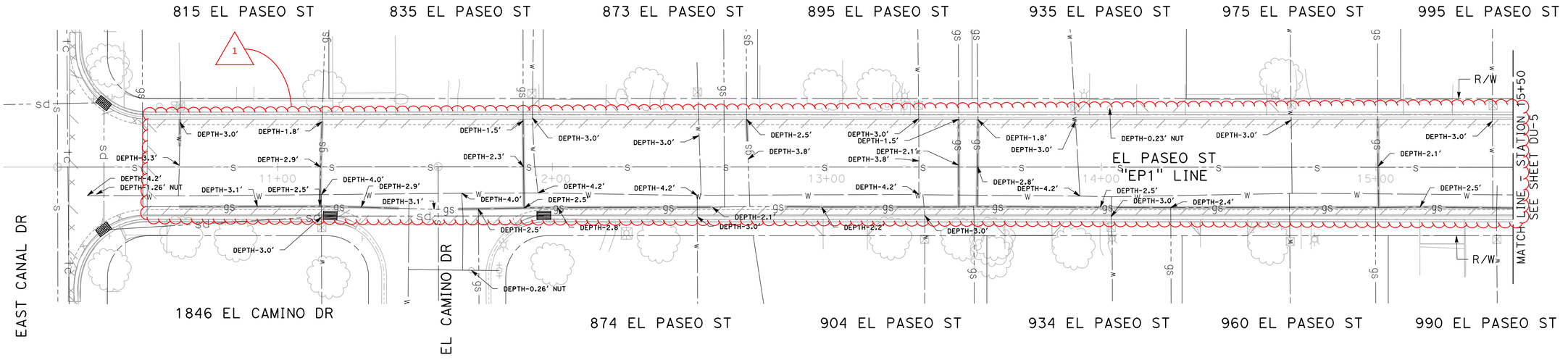
CITY OF TURLOCK
ROADS PROGRAM CIP PROJECT 23-067 PACKAGE #3 UNDERGROUND UTILITY DEPTHS

Sheet 87 of 126 Sheets

UUD-1





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REGISTERED PROFESSIONAL ENGINEER — EDGAR A. NORIEGA — No. 61255 — Exp. 6/30/26 — CIVIL — STATE OF CALIFORNIA

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CITY OF TURLOCK
ROADS PROGRAM CIP
PROJECT 23-067 PACKAGE #3
UNDERGROUND UTILITY DEPTHS

UUD-4

100% PLANS

DESIGNED BY:	POORE, B.
DRAWN BY:	FRANCO, N.
CHECKED BY:	NORIEGA, E.
SCALE:	1"=20'
DATE:	5/21/2025
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PROJECT 23-067 PACKAGE #3
UNDERGROUND UTILITY DEPTHS

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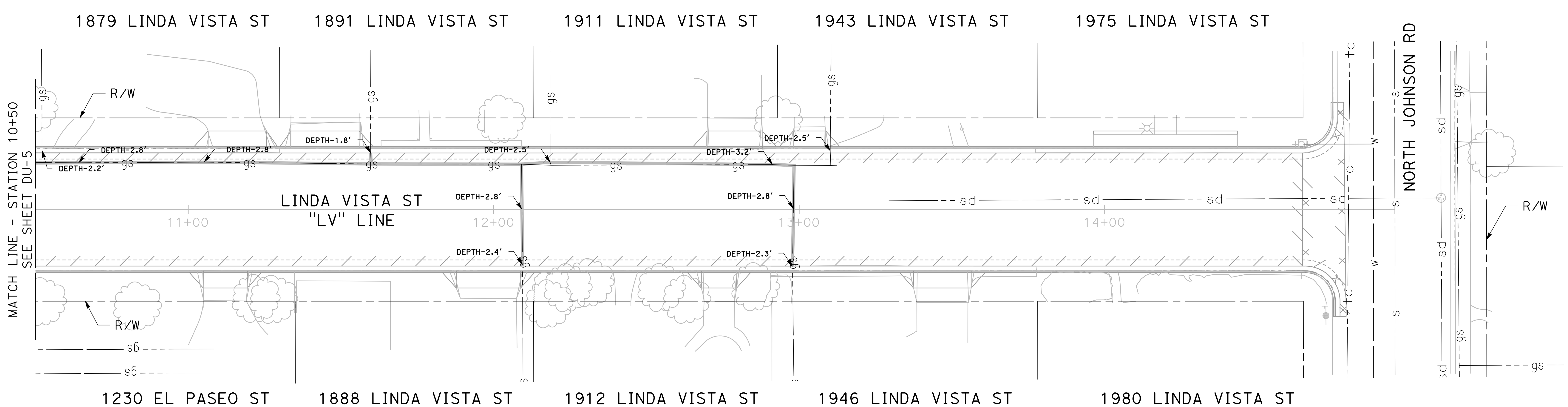
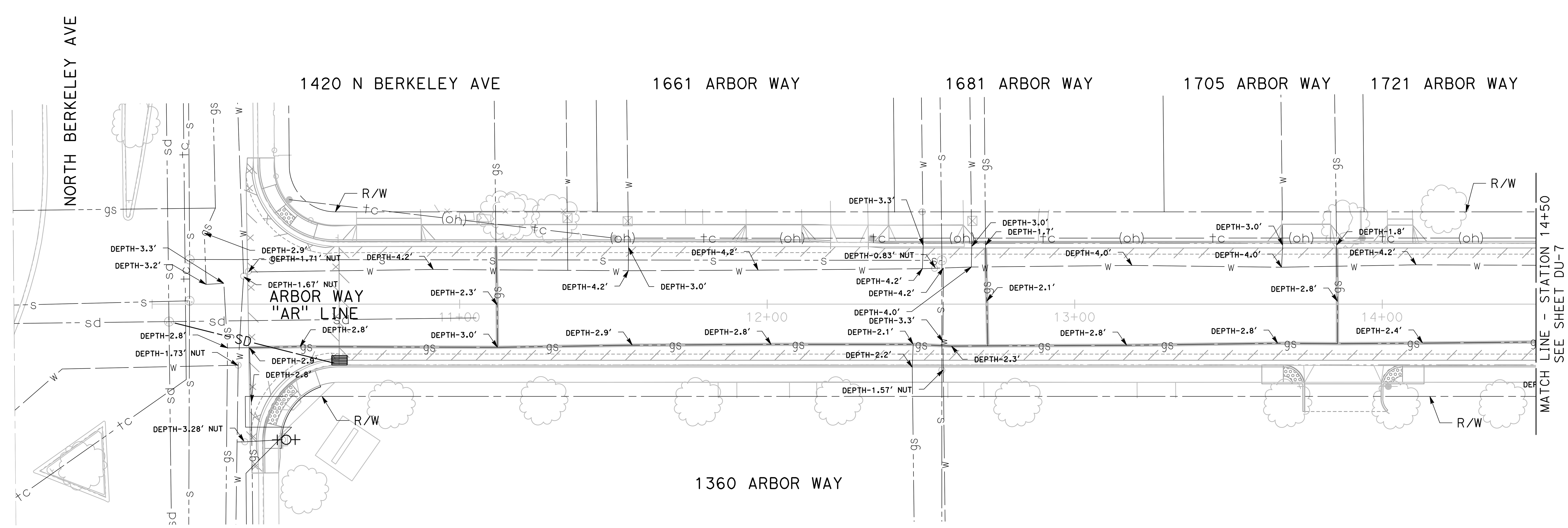
UUD-5





100% PLANS

DESIGNED BY:	POORE, B.
DRAWN BY:	FRANCO, N.
CHECKED BY:	NORIEGA, E.
SCALE:	1"=20'
DATE:	5/21/2025
JOB NO.:	24-00061

NOTE:
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UNDERGROUND UTILITY DEPTHS

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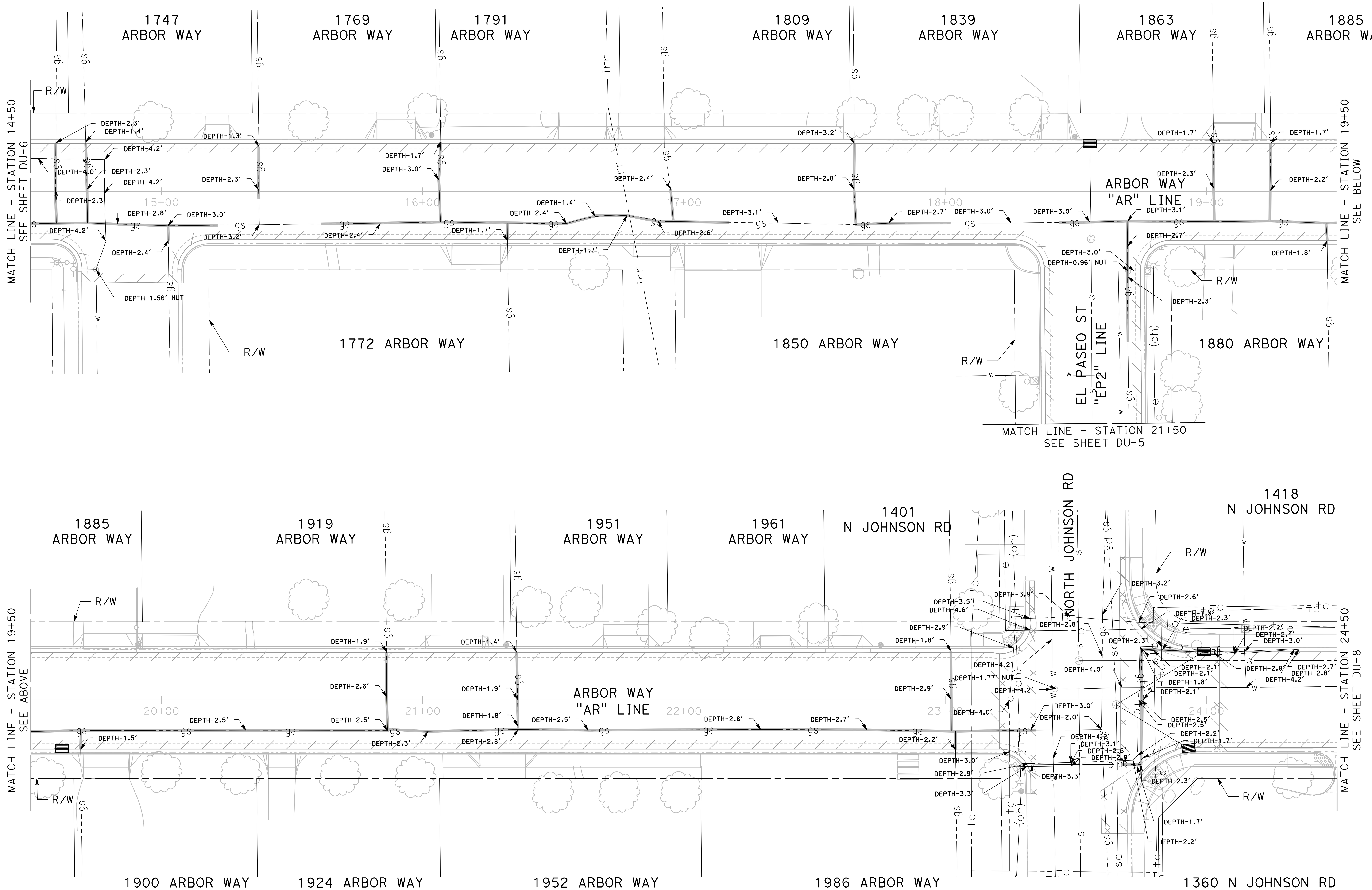
UUD-6



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ROADS PROGRAM CIP PROJECT 23-067 PACKAGE #3
UNDERGROUND UTILITY DEPTHS

Sheet 93 of 126 Sheets

UUD-7

100% PLANS

DESIGNED BY:	POORE, B.
DRAWN BY:	FRANCO, N.
CHECKED BY:	NORIEGA, E.
SCALE:	1"=20'
DATE:	5/21/2025
JOB NO.:	24-00061

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UNDERGROUND UTILITY DEPTHS

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UUD-8

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DRAWN BY:	FRANCO, N.
CHECKED BY:	NORIEGA, E.
SCALE:	1"=20'
DATE:	5/21/2025
JOB NO.:	24-00061

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UUD-9

100% PLANS

DESIGNED BY: POORE, B.
DRAWN BY: FRANCO, N.
CHECKED BY: NORIEGA, E.
SCALE: 1"=20'
DATE: 5/21/2025
JOB NO.: 24-00061

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Sheet 96 of 126 Sheets

UUD-10

100% PLANS

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DRAWN BY: FRANCO, N.
CHECKED BY: NORIEGA, E.
SCALE: 1"=20'
DATE: 5/21/2025
JOB NO.: 24-00061

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UNDERGROUND UTILITY DEPTHS

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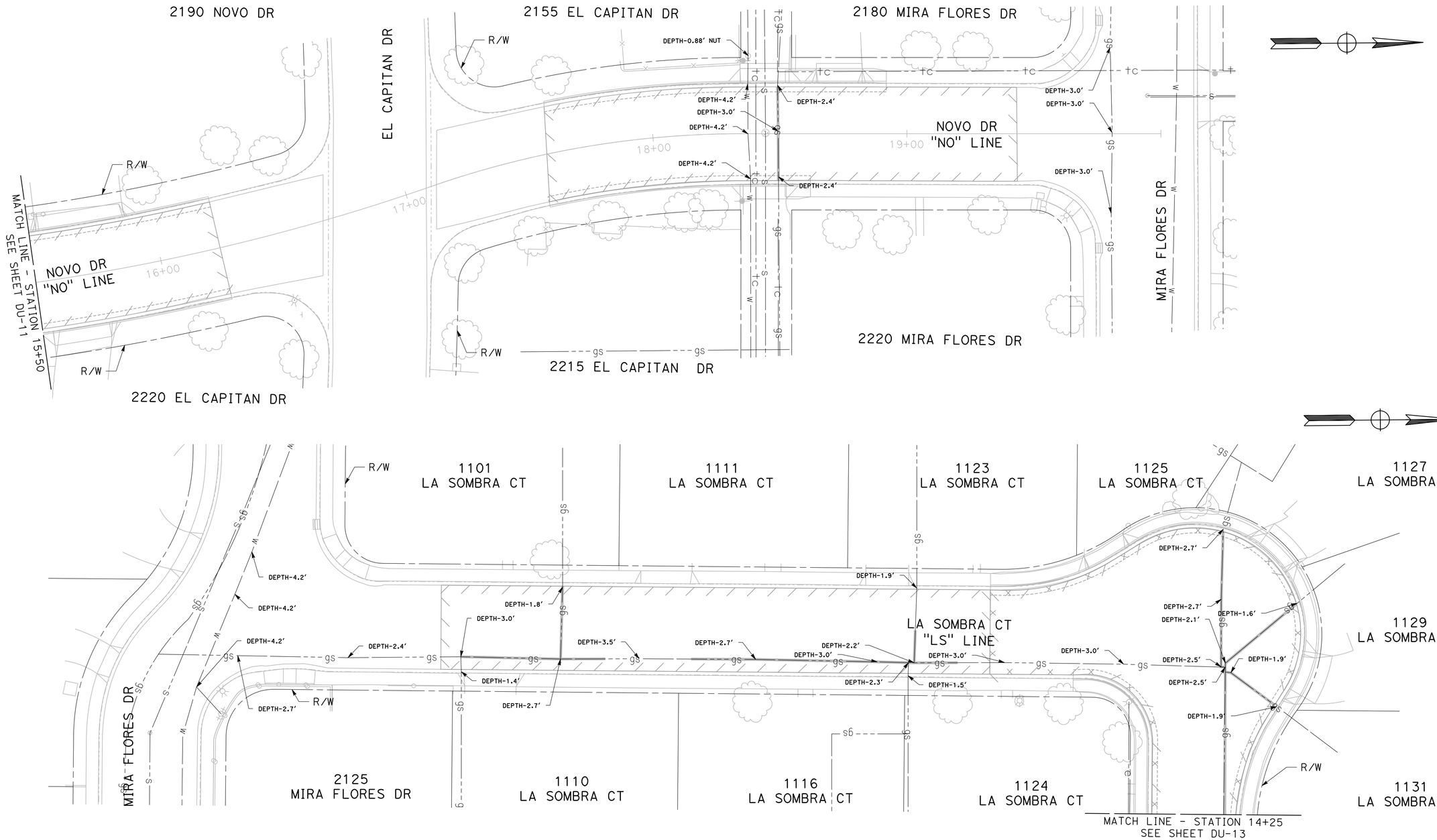
UUD-11



1

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REGISTERED PROFESSIONAL ENGINEER
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No. 61255
Exp. 6/30/25
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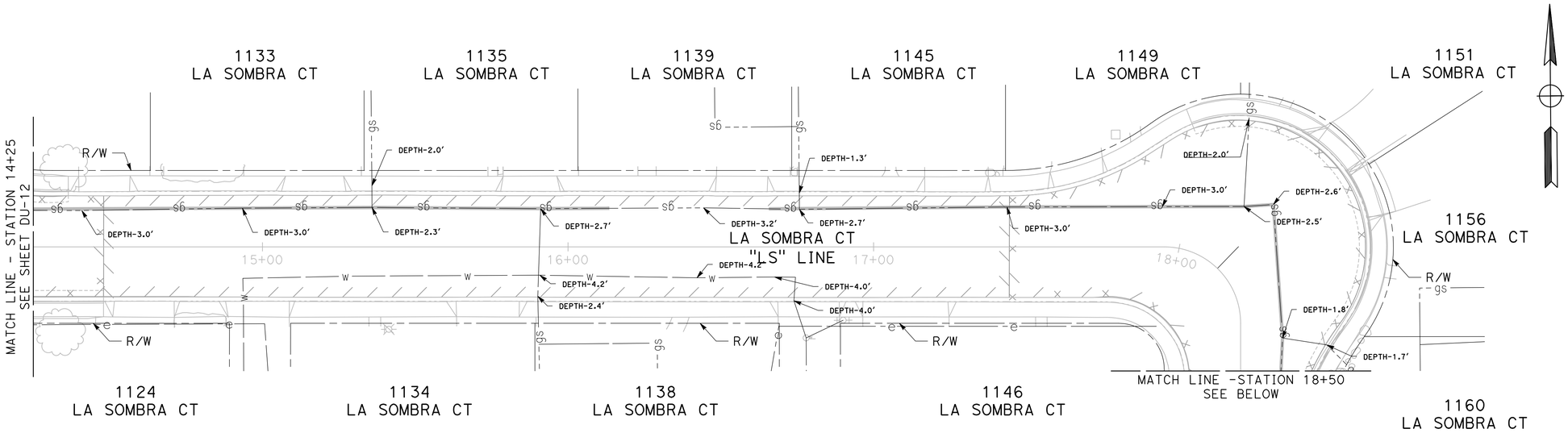
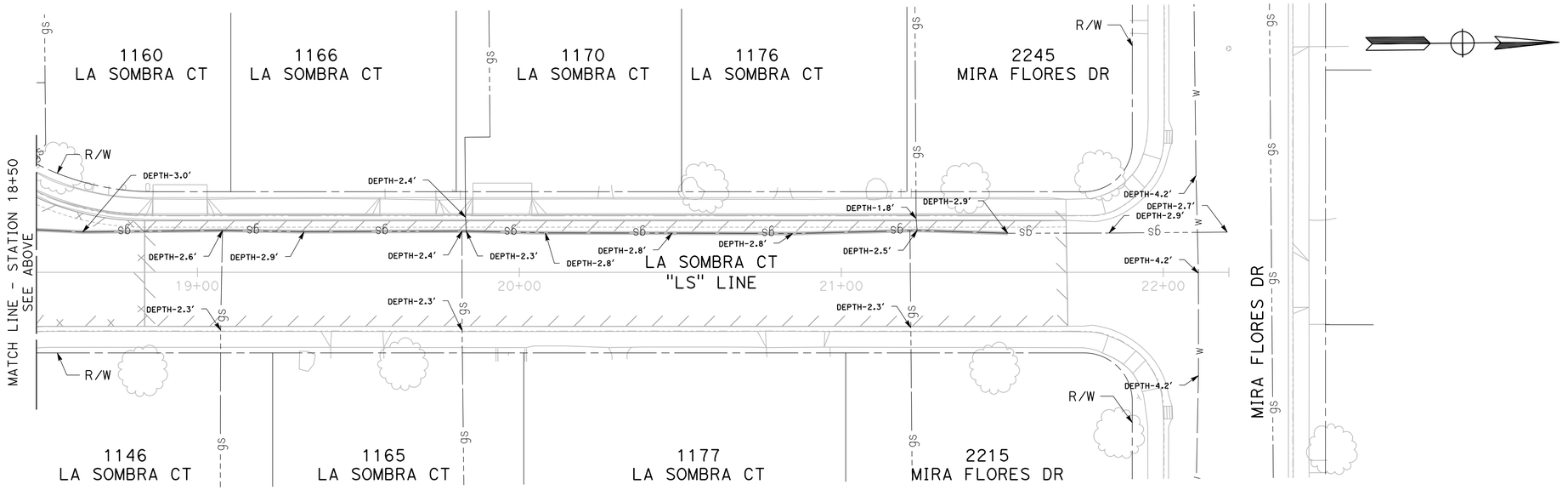
PROJECT 23-067 PACKAGE #3
UNDERGROUND UTILITY DEPTHS

UUD-12





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REGISTERED PROFESSIONAL ENGINEER EDGARDO A. NORIEGA No. 61582 Exp. 6/30/25 CIVIL STATE OF CALIFORNIA

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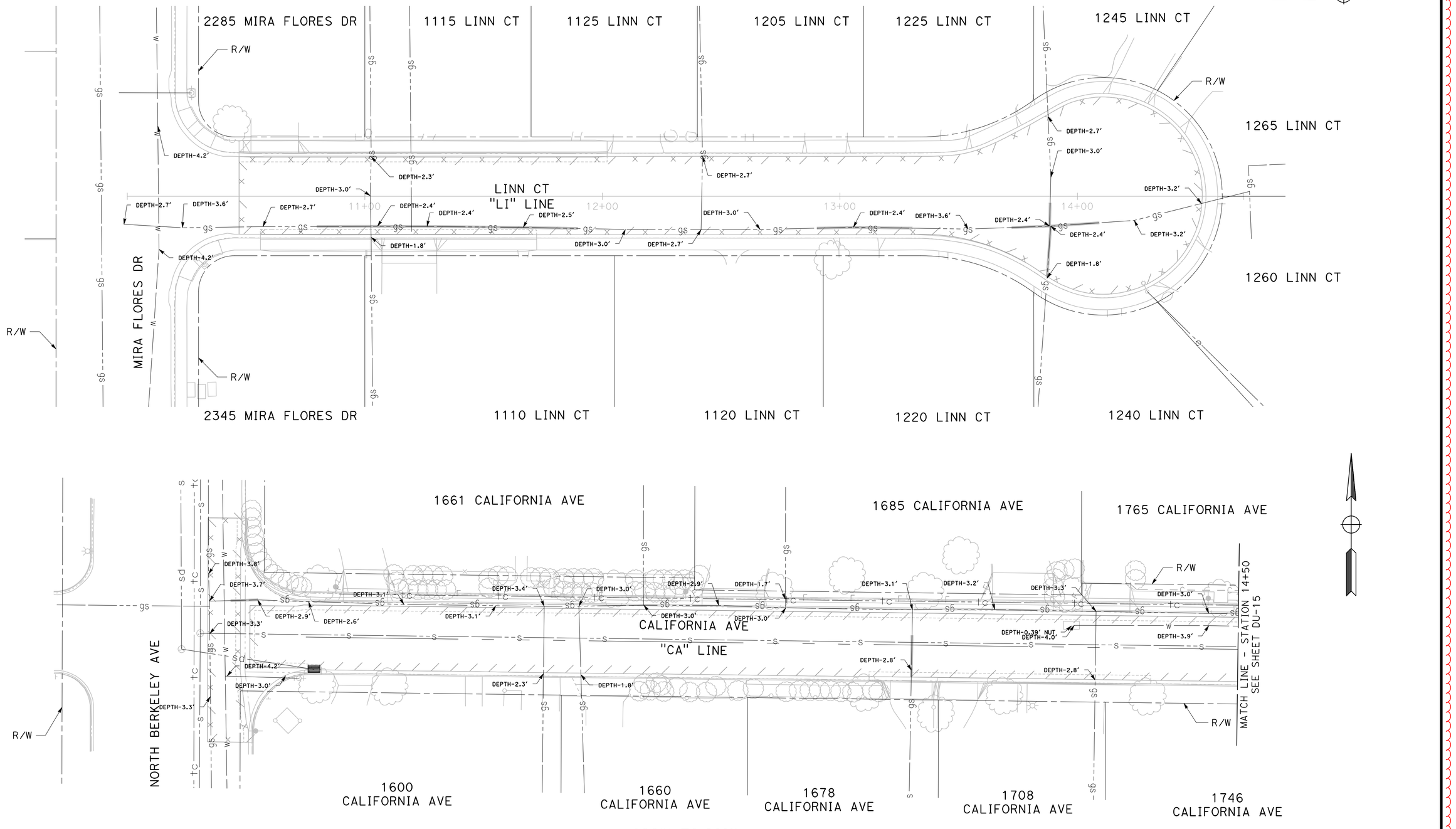
UNDERGROUND UTILITY DEPTHS

UUD-13



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REGISTERED PROFESSIONAL ENGINEER — EDUARDO A. NORIEGA — No. 61858 — Exp. 6/30/25 — CIVIL — STATE OF CALIFORNIA

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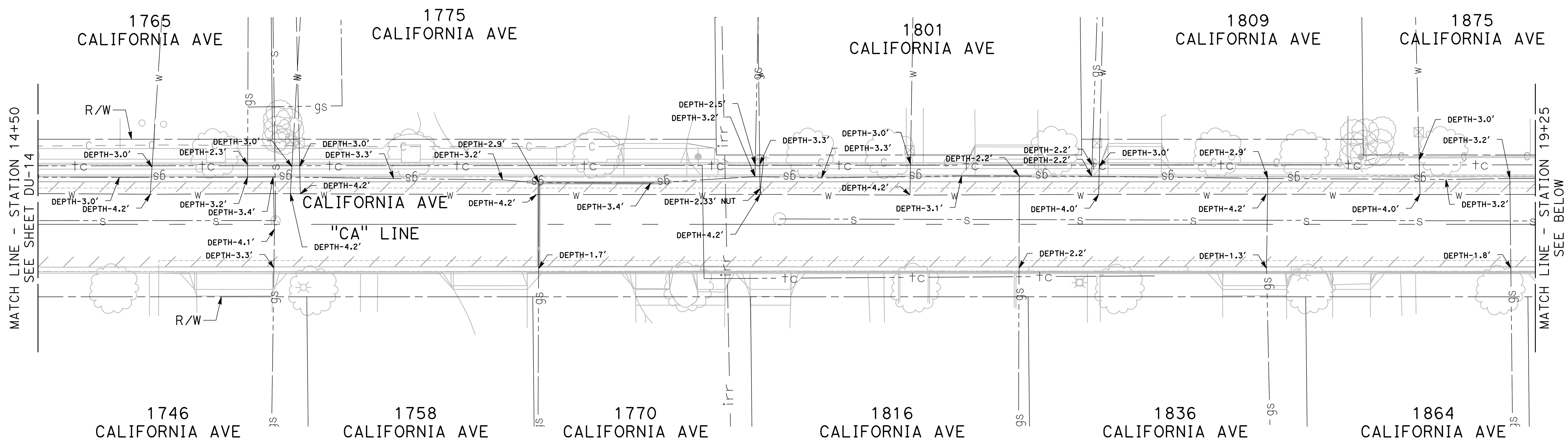
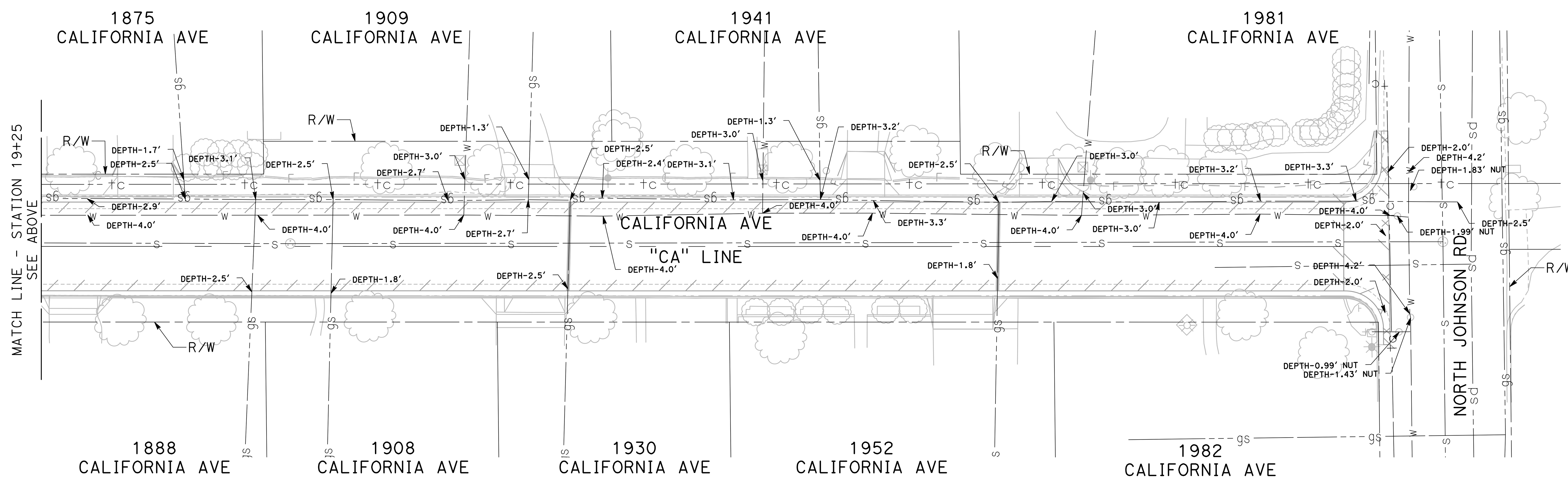
PROJECT 23-067 PACKAGE #3
UNDERGROUND UTILITY DEPTHS

UUD-14





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DESIGNED BY: POORE, B.
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CITY OF TURLOCK
INC. 1908

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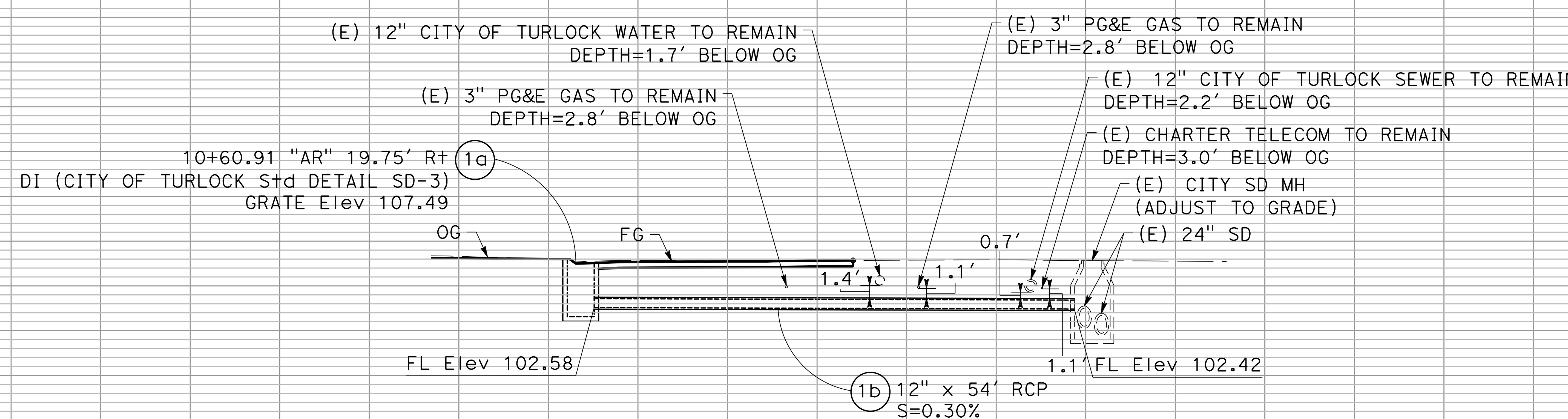
PROJECT 23-067 PACKAGE #3
UNDERGROUND UTILITY DEPTHS

Sheet 101 of 126 Sheets

UUD-15

NOTES:

1. LOCATION REFERENCE FOR MH IS AT CENTER OF THE LID.
2. LOCATION INFORMATION FOR DI ADJACENT TO THE CURB & GUTTER IS PROVIDED ALONG THE FLOWLINE AT THE CENTER OF THE GRATE.
3. INFORMATION FOR CITY OF TURLOCK Std DETAIL SD-3 AND S-3.
4. MINIMUM VERTICAL CLEARANCE OF 12" SHALL BE MAINTAINED BETWEEN CROSSING UTILITIES PER CITY OF TURLOCK Std DETAIL W-14.



DRAINAGE SYSTEM 1

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 10'

1

100% PLANS

DESIGNED BY:	POORE, B.
DRAWN BY:	FRANCO, N.
CHECKED BY:	NORIEGA, E.
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DRAINAGE PROFILE

Sheet 102 of 126 Sheets

DP-1

TRAFFIC CONTROL GENERAL NOTES:

1. VALIDATION: THE TRAFFIC CONTROL PLAN IS NOT VALID UNTIL WORK DATES ARE APPROVED. THE CONTRACTOR SHALL, PER SECTION 601-2 OF THE CITY SUPPLEMENT TO THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, CONTACT THE PUBLIC WORKS TRAFFIC CONTROL SECTION AT (209) 668-5520 TO OBTAIN A PERMIT. THE CONTRACTOR MUST SUBMIT A COMPLETED TRAFFIC CONTROL PERMIT FORM A MINIMUM OF TWO (2) WORKING DAYS PRIOR TO STARTING WORK, OR FIVE (5) WORKING DAYS WHEN WORK WILL AFFECT A TRAFFIC SIGNAL.

2. STANDARDS: THIS TRAFFIC CONTROL PLAN SHALL CONFORM TO EACH OF THE FOLLOWING MANUALS:

EDITION	DESCRIPTION
2014	CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CA MUTCD)
2016	CITY OF TURLOCK STANDARD SPECIFICATIONS AND DRAWINGS
2023	CALTRANS STANDARD PLANS

3. NOTIFICATIONS: THE CONTRACTOR SHALL NOTIFY RELEVANT AGENCIES A MINIMUM OF FIVE (5) WORKING DAYS PRIOR TO ANY EXCAVATION, CONSTRUCTION, OR TRAFFIC CONTROL.

4. THE CONTRACTOR SHALL NOTIFY PROPERTY OWNERS AND TENANTS A MINIMUM OF SEVEN (7) WORKING DAYS PRIOR TO CLOSURE OF DRIVEWAYS. THE CONTRACTOR SHALL POST SIGNS NOTIFYING THE PUBLIC A MINIMUM OF SEVEN (7) WORKING DAYS PRIOR TO CLOSURE OF STREETS.

5. POSTING PARKING RESTRICTIONS: THE CONTRACTOR SHALL POST "TOW-AWAY/NO PARKING SIGNS SEVENTY TWO (72) HOURS IN ADVANCE OF PARKING REMOVAL. SIGNS SHALL INDICATE SPECIFIC DAYS, DATES, AND TIMES OF RESTRICTIONS.

6. EXCAVATIONS: EXCEPT AS OTHERWISE SHOWN ON THE PLANS, TRENCHES SHALL BE BACKFILLED OR TRENCH-PLATED AT THE END OF EACH WORK DAY, AN ASPHALT RAMP SHALL BE PLACED AROUND EACH TRENCH PLATE TO PREVENT THE PLATE FROM BEING DISLODGED. CONTRACTOR SHALL MONITOR TRENCH PLATES DURING NON-WORKING HOURS TO ENSURE THAT THEY DO NOT BECOME DISLODGED, UPON COMPLETION OF EXCAVATION BACKFILL, THE CONTRACTOR SHALL PROVIDE A SATISFACTORY SURFACE FOR TRAFFIC, WHEN CONSTRUCTION OPERATIONS ARE NOT ACTIVELY IN PROGRESS, THE CONTRACTOR SHALL MAINTAIN ALL TRAVEL LANES, BIKE LANES, AND PEDESTRIAN WALKWAYS OPEN TO THE APPROPRIATE TRAFFIC EXCEPT AS OTHERWISE SHOWN ON THE PLANS.

7. RESTORATION OF TRAFFIC CONTROL DEVICES: THE CONTRACTOR SHALL REPAIR OR REPLACE TRAFFIC CONTROL DEVICES (INCLUDING TRAFFIC SIGNS, STRIPING, PAVEMENT MARKERS, PAVEMENT MARKINGS, LEGENDS, CURB MARKINGS, LOOP DETECTORS, TRAFFIC SIGNAL EQUIPMENT, ETC.) DAMAGED OR REMOVED AS A RESULT OF OPERATIONS AND NOT DESIGNATED FOR REMOVAL. REPAIRS AND REPLACEMENTS SHALL BE AT LEAST EQUAL TO EXISTING IMPROVEMENT.

8. TEMPORARY TRAFFIC SIGNAL DETECTION: THE CONTRACTOR SHALL INSTALL CITY APPROVED TEMPORARY VIDEO OR RADAR DETECTION WHEN EXISTING TRAFFIC SIGNAL DETECTION SYSTEMS ARE DAMAGED, DISABLED, OR BECOME INEFFECTIVE DUE TO CONSTRUCTION FOR A PERIOD OF FIVE (5) OR MORE DAYS. THE CONTRACTOR SHALL COMPLETELY REMOVE ALL TEMPORARY TRAFFIC SIGNAL DETECTION EQUIPMENT AND RESTORE/INSTALL A CITY APPROVED PERMANENT VEHICLE DETECTION SYSTEM UPON COMPLETION OF CONSTRUCTION. ALL INSTALLATION AND REMOVALS ARE SUBJECT TO APPROVAL BY THE CITY ENGINEER.

9. CHANGE IN WORK: THE CITY ENGINEER WILL OBSERVE THESE TRAFFIC CONTROL PLANS IN OPERATION AND RESERVE THE RIGHT TO MAKE ANY CHANGES AS FIELD CONDITIONS WARRANT, ANY CHANGES SHALL BE DOCUMENTED AND SUPERCEDE THESE PLANS.

10. OPEN TRENCH: THE CONTRACTOR SHALL PLACE "OPEN TRENCH" SIGNS (C27(CA)) ON TYPE BARRICADES WITHIN THE WORK ZONE, AHEAD OF ANY WORK AREA WHICH INCLUDES OPEN TRENCHES IN EXCESS OF THREE (3) INCHES IN DEPTH, PER CA MUTCD SECTION 6F.103 (CA) GUIDELINES.

11. FOR WORK NOT COVERED BY THESE TRAFFIC CONTROL PLANS: THE CONTRACTOR SHALL PREPARE TRAFFIC CONTROL WORKING DRAWINGS AND SUBMIT THEM TO THE CITY RESIDENT ENGINEER. THE CONTRACTOR SHALL ALLOW A MINIMUM OF TWENTY (20) WORKING DAYS FOR REVIEW OF THE WORKING DRAWINGS. UPON APPROVAL OF THE TRAFFIC CONTROL PLAN, THE PUBLIC WORKS TRAFFIC CONTROL SECTION WILL ISSUE A TRAFFIC CONTROL PLAN (TCP) PERMIT FOR THIS WORK.

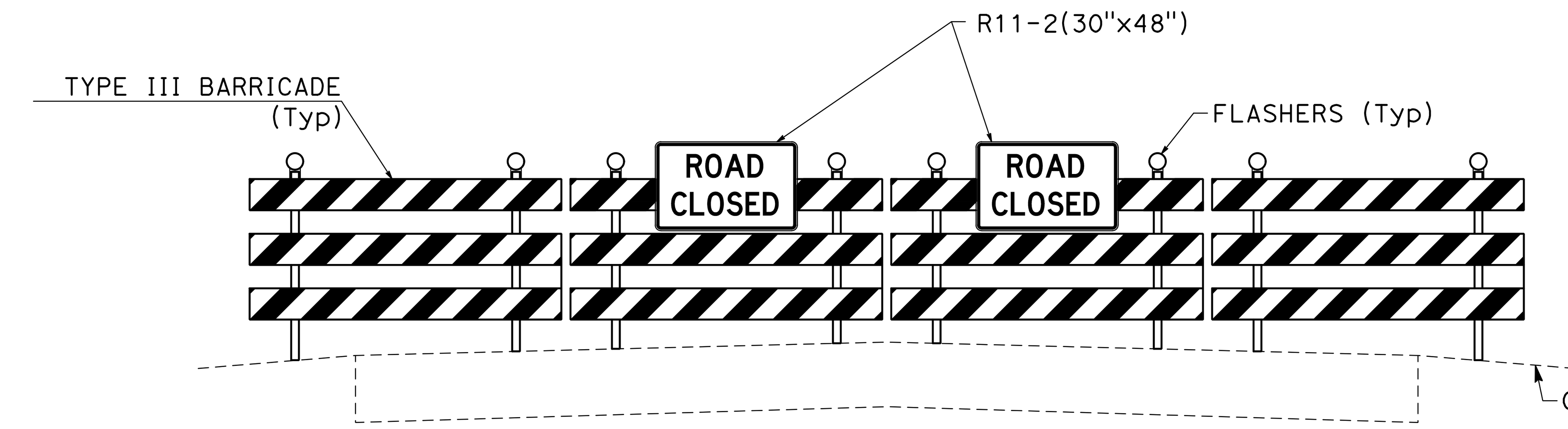
12. CONTRACTOR SHALL INSTALL UNEVEN PAVEMENT SIGNS C46 (CA) ALONG THE EDGE OF AREAS WHERE A STEP OF GREATER THAN 2" EXISTS WHETHER PARALLEL OR PERPENDICULAR TO THE DIRECTION OF TRAVEL.

13. SEE TABLE 6H-3 IN THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CA MUTCD) FOR MEANING OF LETTER CODES ON TYPICAL APPLICATION DIAGRAMS.

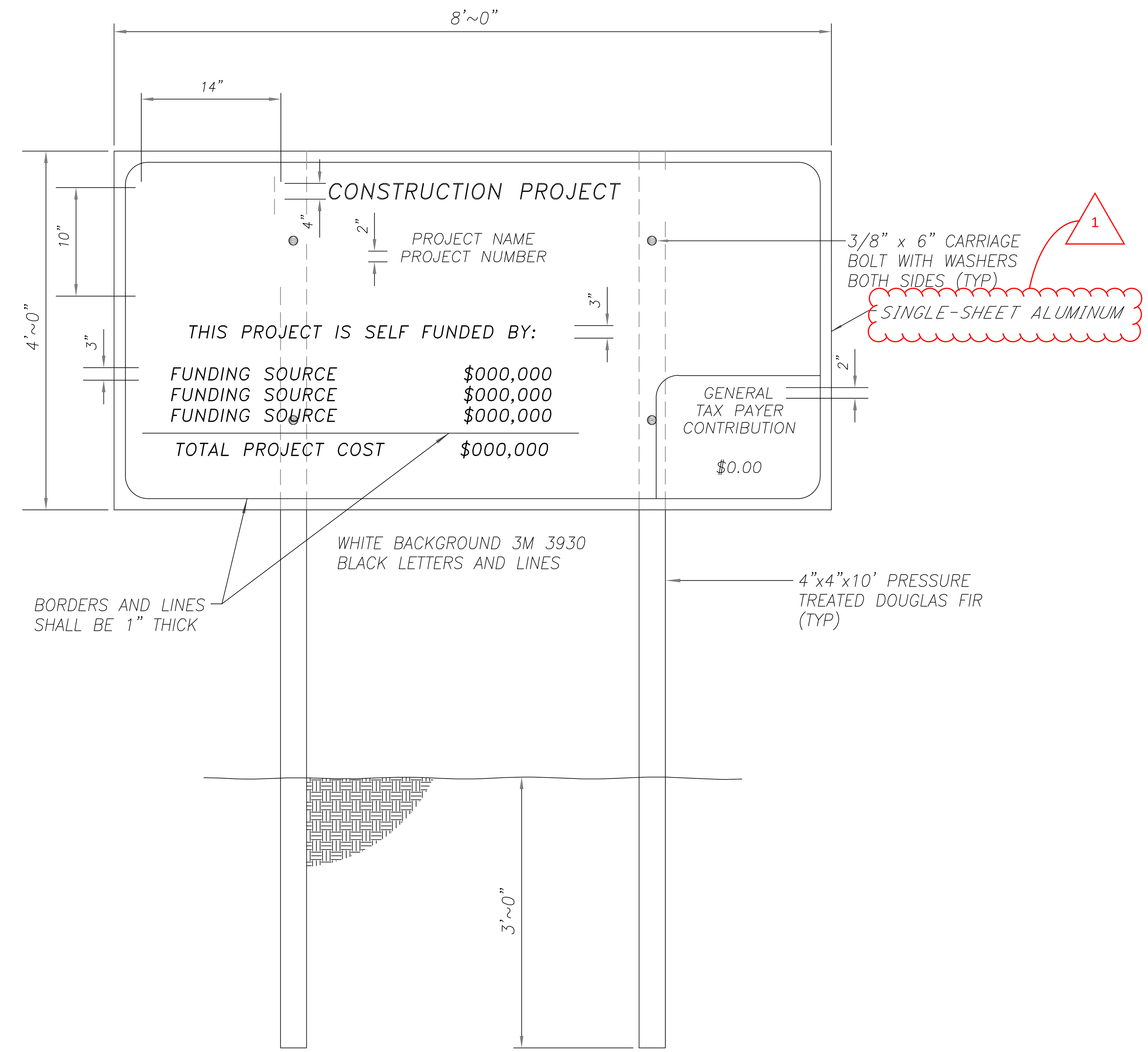
1

14. CONTRACTOR SHALL DEPLOY EIGHT (8) PORTABLE CHANGEABLE MESSAGE SYSTEMS (PCMS) THROUGHOUT CONSTRUCTION, WITH FINAL PLACEMENT TO BE DETERMINED BY ENGINEER.

15. CONTRACTOR SHALL DEPLOY TWELVE (12) CONSTRUCTION FUNDING SIGN PLACEMENT THROUGHOUT CONSTRUCTION, WITH FINAL PLACEMENT TO BE DETERMINED BY ENGINEER.



1 / TH-1 **TEMPORARY BARRICADE ROAD CLOSURE DETAIL**



2 / TH-1 **CONSTRUCTION FUNDING SIGN**

100% PLANS

DESIGNED BY: POORE, B.
DRAWN BY: FRANCO, N.
CHECKED BY: NORIEGA, E.
SCALE: NOT TO SCALE
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JOB NO.: 24-00061

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CITY OF TURLOCK
ROADS PROGRAM CIP
PROJECT 23-067 PACKAGE #3
TRAFFIC HANDLING

Sheet 103 of 126 Sheets

TH-1

NOTES (SS-1 TO SS-15):

1. ALL TRAFFIC STRIPES & PAVEMENT MARKINGS TO BE THERMOPLASTIC AND PER CALTRANS STANDARD PLANS UNLESS OTHERWISE NOTED.
2. THIS PLAN IS ACCURATE FOR SIGNING AND STRIPING WORK WITHIN THE PUBLIC RIGHT OF WAY ONLY.
3. EXACT POSITION AND LOCATION OF ALL ROADSIDE SIGNS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
4. SIGN NUMBER PER CALIFORNIA MUTCD 2014 EDITION.
5. IN LOCATIONS WHERE CURB AND GUTTER IS RECONSTRUCTED IN FRONT OF A FIRE HYDRANT, CONTRACTOR TO REPLACE BLUE PAVEMENT MARKER (BB) PER CITY OF TURLOCK DETAIL W-3.

ABBREVIATIONS (SS-1 TO SS-15):

SNS	STREET NAME SIGN
SSBM	STRAP AND SADDLE BRACKET METHOD

LEGEND (SS-1 TO SS-15):

No. L=XX'	CALTRANS STRIPING DETAIL NUMBER L= LENGTH
No. L=XX'	REMOVE CALTRANS STRIPING DETAIL NUMBER L= LENGTH
⬢	EXISTING ROADSIDE SIGN TO REMAIN
✳	INSTALL ROADSIDE SIGN
▲	RELOCATE/RESET EXISTING ROADSIDE SIGN
◆	REMOVE EXISTING ROADSIDE SIGN
	EXISTING ROADSIDE SIGN
	ROADSIDE SIGN (ONE-POST)
○	BC/EC
△	ANGLE POINT
	TYPE I ARROW
STOP	"STOP" PAVEMENT MARKING
SLOW	"SLOW" PAVEMENT MARKING
SCHOOL	"SCHOOL" PAVEMENT MARKING
XING	"XING" PAVEMENT MARKING
AHEAD	"AHEAD" PAVEMENT MARKING
▼	"YIELD" PAVEMENT MARKING

CONSTRUCTION NOTES (SS-1 TO SS-15):

1. INSTALL 12" WHITE THERMOPLASTIC LIMIT LINE & STOP LETTERS
2. INSTALL WHITE THERMOPLASTIC CROSSWALK CITY DETAIL C-17
3. INSTALL STOP LETTERS
4. INSTALL SLOW LETTERS YELLOW
5. INSTALL SCHOOL LETTERS YELLOW
6. INSTALL XING LETTERS YELLOW
7. INSTALL AHEAD LETTERS
8. INSTALL TYPE I ARROW
9. INSTALL YELLOW THERMOPLASTIC CROSSWALK CITY DETAIL C-17

XX REMOVE THERMOPLASTIC TRAFFIC STRIPE/PAVEMENT MARKING (revision 1)

100% PLANS

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DRAWN BY:	FRANCO, N.
CHECKED BY:	NORIEGA, E.
SCALE:	1"=20'
DATE:	5/22/2025
JOB NO.:	24-00061

NOTE:
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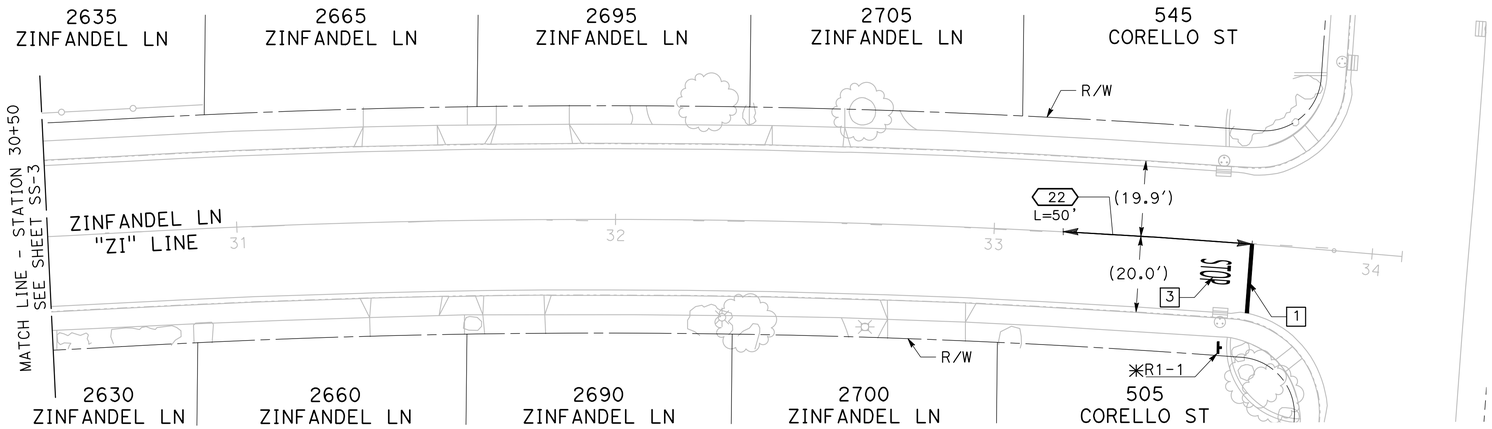
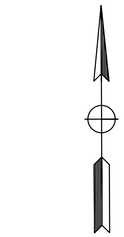
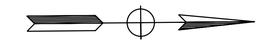
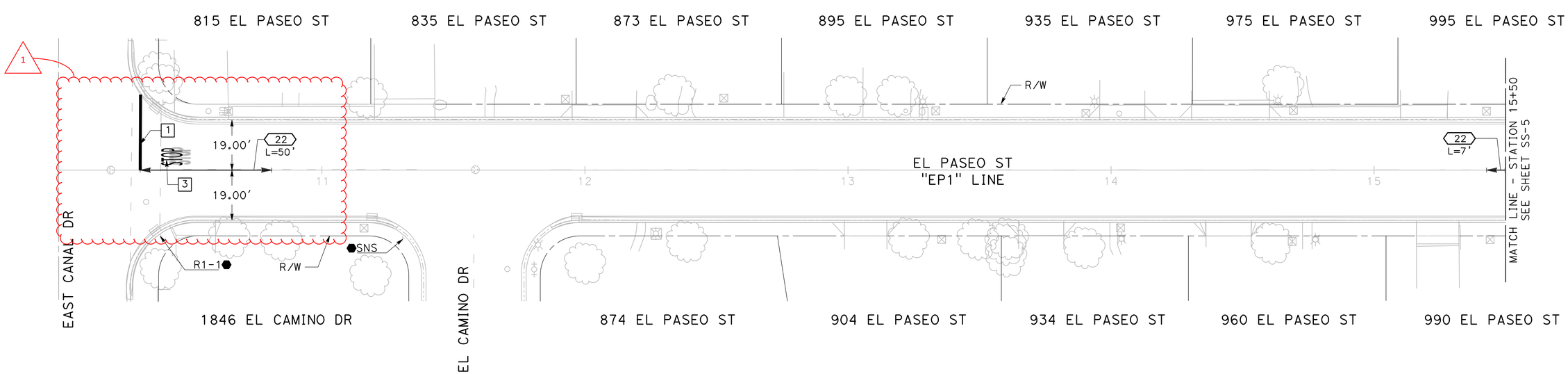
CITY OF TURLOCK
ROADS PROGRAM CIP PROJECT 23-067 PACKAGE #3 SIGNAGE AND STRIPING









100% PLANS

DESIGNED BY: POORE, B.
DRAWN BY: FRANCO, N.
CHECKED BY: NORIEGA, E.
SCALE: 1"=20'
DATE: 5/21/2025
JOB NO.: 24-00061

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REGISTERED PROFESSIONAL ENGINEER
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CITY OF TURLOCK
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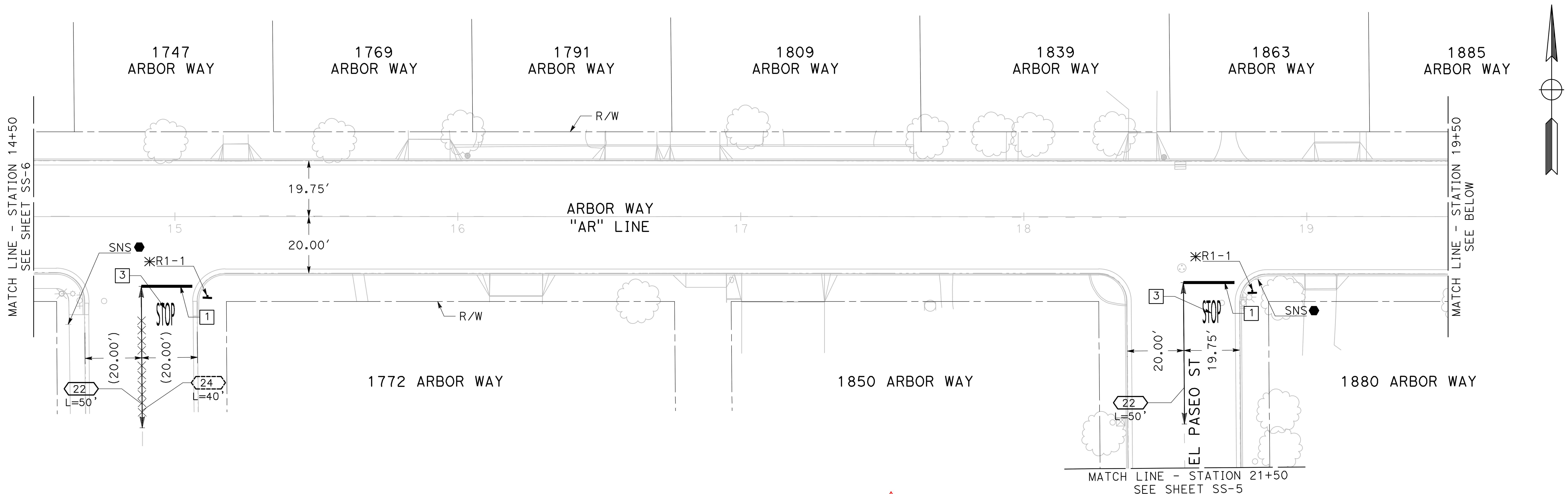
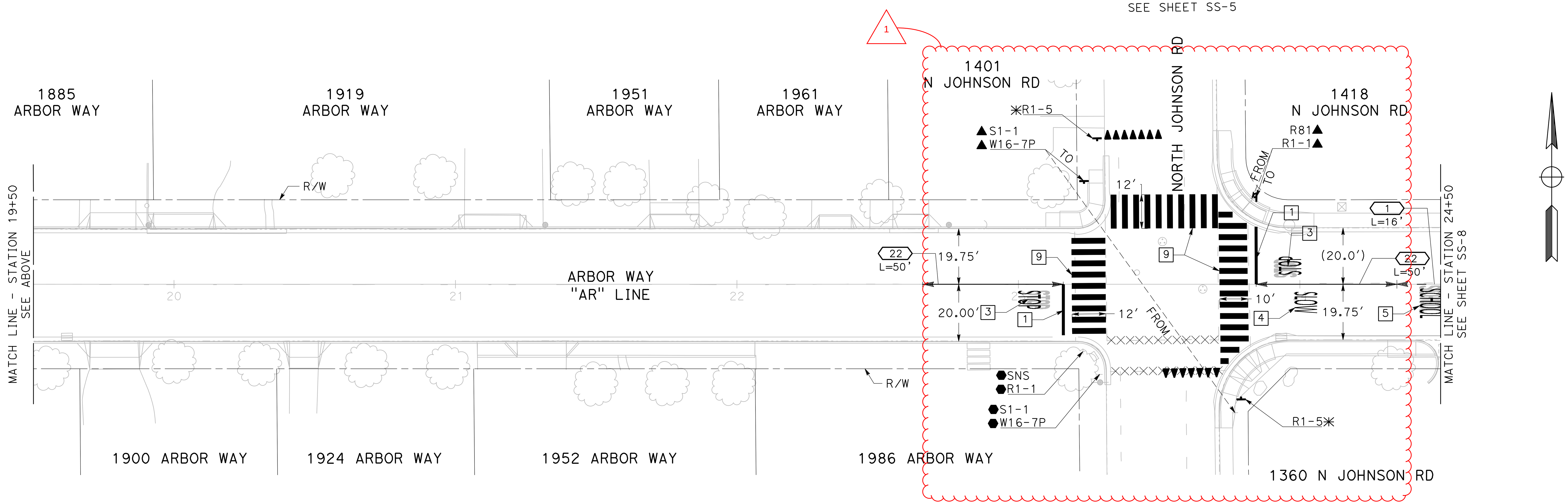
PROJECT 23-067 PACKAGE #3
SIGNAGE AND STRIPING

SS-4





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ROADS PROGRAM CIP
PROJECT 23-067 PACKAGE #3
SIGNAGE AND STRIPING

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SS-7

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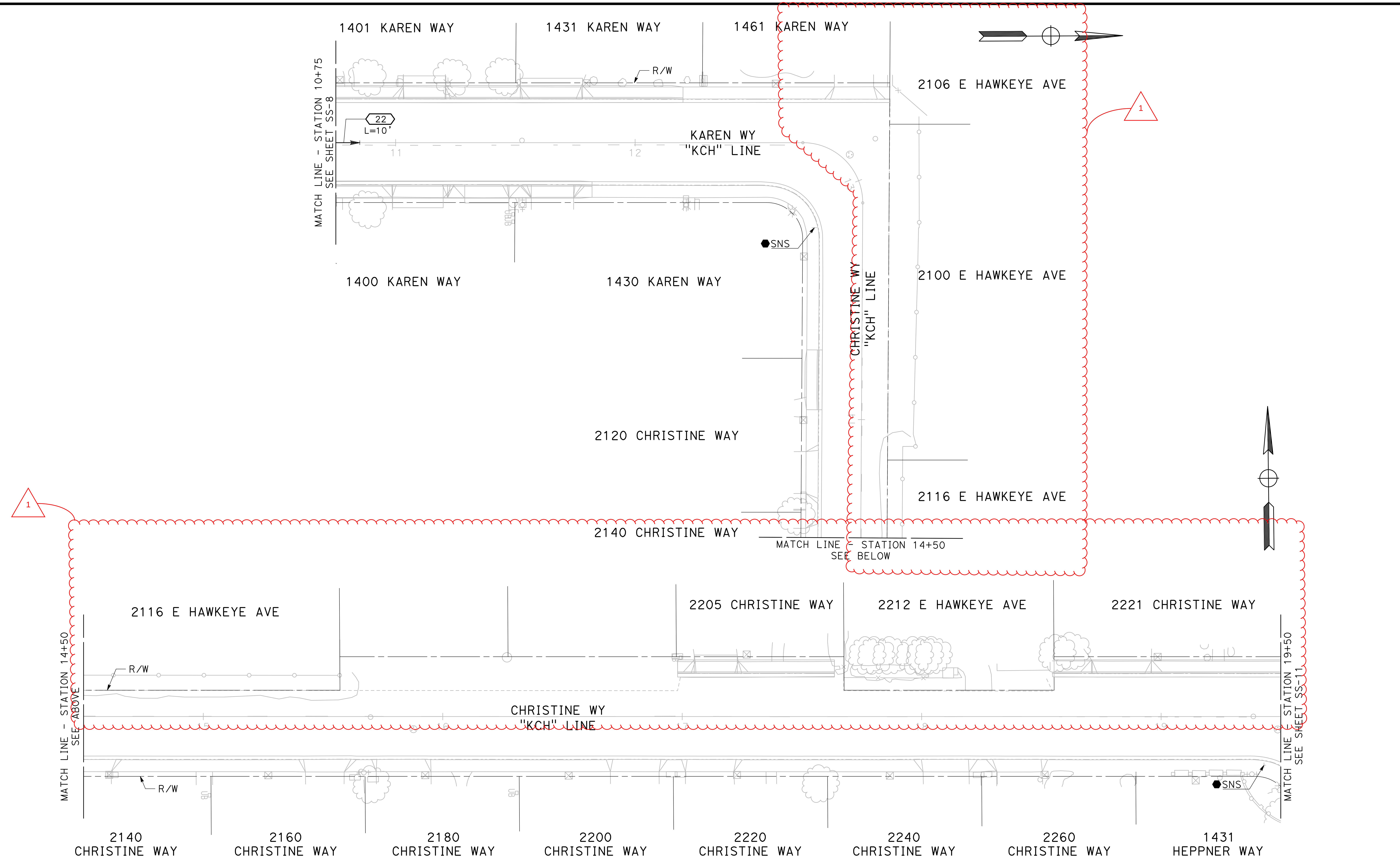

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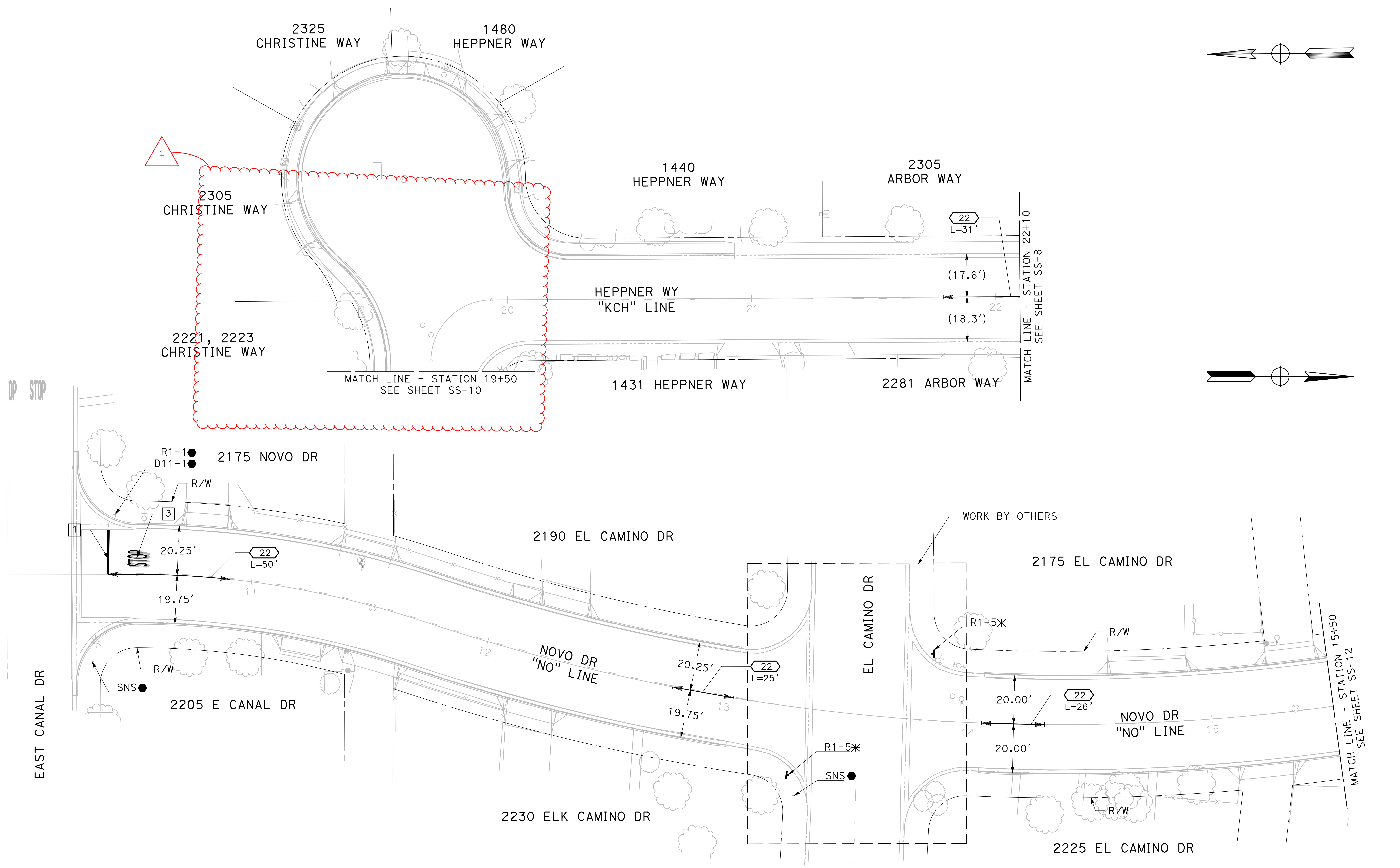
SS-10



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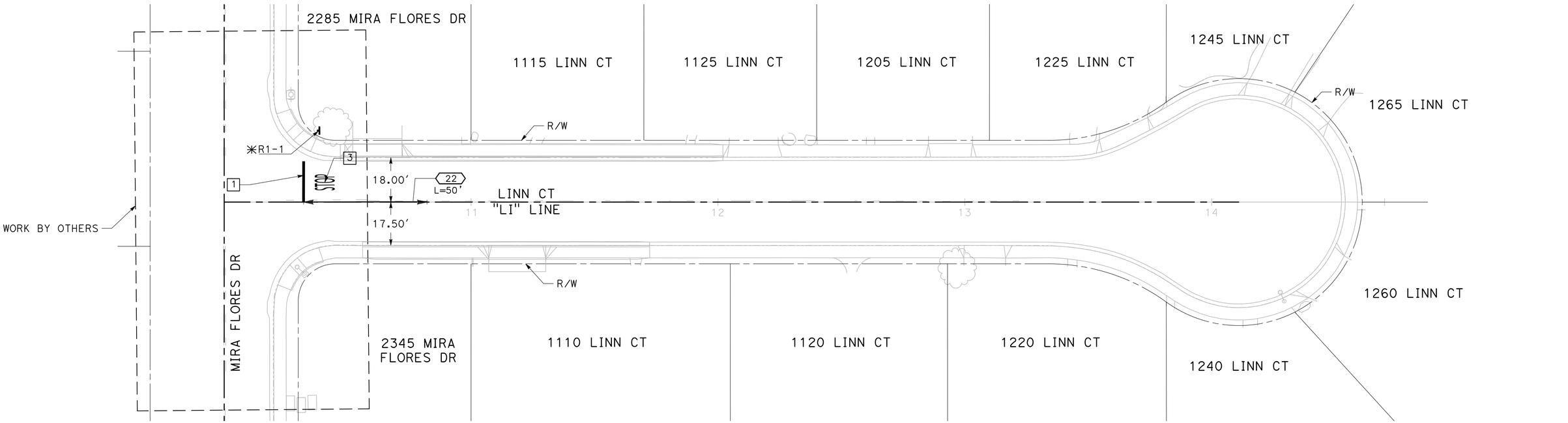
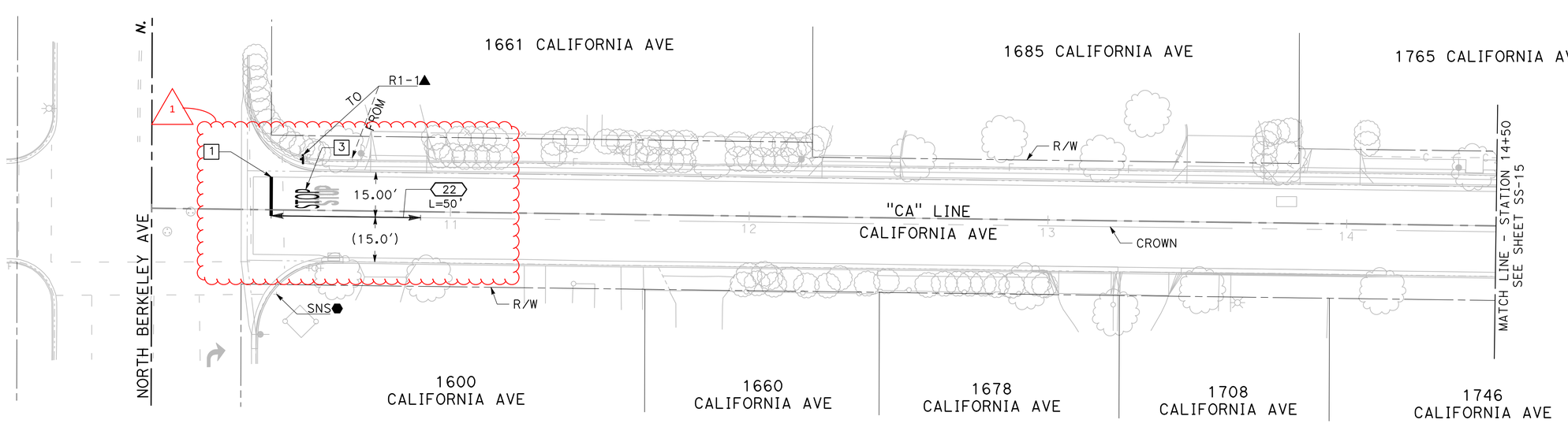
SS-11





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CITY OF TURLOCK
ROADS PROGRAM CIP
PROJECT 23-067 PACKAGE #3
SIGNAGE AND STRIPING

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CITY OF TURLOCK

Project No. 23-067 Package #3

BID SCHEDULE

Item	Description	Quantity	Unit	Unit Price	Total
Roadway Items					
1.	Potholes Existing Utilities	1	LS	$_____	$_____
2.	Construction Area Signs	1	EA	$_____	$_____
3.	Traffic Control System	1	LS	$_____	$_____
4.	Portable Changeable Message Sign	8	EA	$_____	$_____
5.	Construction Funding Sign	12	EA	$_____	$_____
6.	Job Site Management	1	LS	$_____	$_____
7.	Prepare Storm Water Pollution Prevention Plan	1	LS	$_____	$_____
8.	Erosion and Dust Control BMPs	1	LS	$_____	$_____
9.	Construction Staking	1	LS	$_____	$_____
10.	Clearing and Grubbing	1	LS	$_____	$_____
11.	Remove Concrete (Curb Ramps, Sidewalk, Valley Gutter, Driveways, Curb and Gutter)	8570	SY	$_____	$_____
12.	Roadway Excavation ***(F)***	2800	CY	$_____	$_____
13.	Unsuitable Material	1250	CY	$_____	$_____
14.	Remove Asphalt Concrete Pavement	180	SF	$_____	$_____
15.	Cold Plane AC Pavement (Var Depth)	45200	SY	$_____	$_____
16.	Hot Mix Asphalt (Type A)	11600	TON	$_____	$_____
17.	Full Depth Reclamation-Cement	48800	SY	$_____	$_____

Item	Description	Quantity	Unit	Unit Price	Total
18.	Cement (Full Depth Reclamation-Cement)	1030	TON	$_____	$_____
19.	Mix Design (Full-Depth Reclamation-Cement)	1	LS	$_____	$_____
20.	Aggregate Base (Class 2)	120	CY	$_____	$_____
21.	Minor Concrete (Curb and Gutter)	17700	LF	$_____	$_____
22.	Minor Concrete (Retaining Curb)	87	LF	$_____	$_____
23.	Minor Concrete (Curb Ramp)	3570	SF	$_____	$_____
24.	Minor Concrete (Sidewalk)	27100	SF	$_____	$_____
25.	Minor Concrete (Valley Gutter)	3590	SF	$_____	$_____
26.	Minor Concrete (Driveway)	24500	SF	$_____	$_____
27.	Excavate and Expose Utility	6450	LF	$_____	$_____
28.	Concrete Slurry (2-sack)	1000	LF	$_____	$_____
29.	Detectable Warning Surface (Truncated Domes)	650	SF	$_____	$_____
30.	Adjust Drainage Inlet to Grade	15	EA	$_____	$_____
31.	Replace Drainage Inlet (SD-3)	4	EA	$_____	$_____
32.	Install Drainage Inlet (SD-3)	1	EA	$_____	$_____
33.	12” Reinforced Concrete Pipe	54	LF	$_____	$_____
34.	Relocate Fire Hydrant	2	EA	$_____	$_____
35.	Remove and Replace Monument	6	EA	$_____	$_____
36.	Adjust Manhole Frame and Cover (Sewer)	21	EA	$_____	$_____
37.	Adjust Manhole Frame and Cover (Storm Drain)	1	EA	$_____	$_____
38.	Adjust Frame and Cover to Grade (Water Valve)	38	EA	$_____	$_____
39.	Adjust Frame and Cover to Grade (Water Meter)	1	EA	$_____	$_____

Item	Description	Quantity	Unit	Unit Price	Total
40.	Chain Link Fence (Type CL-4)	480	LF	$_____	$_____
41.	4’ Chain Link Gate (Type CL-4)	1	EA	$_____	$_____
42.	Remove Fence	970	LF	$_____	$_____
43.	Install Roadside Sign – One Post	27	EA	$_____	$_____
44.	Relocate Roadside Sign	9	EA	$_____	$_____
45.	Thermoplastic Traffic Stripe	3360	LF	$_____	$_____
46.	Thermoplastic Pavement Markings	4630	SF	$_____	$_____
47.	Remove Thermoplastic Traffic Stripe	240	LF	$_____	$_____
48.	Remove Thermoplastic Pavement Marking	130	SF	$_____	$_____
49.	Video Sewer and Storm Drain Inspection	1	LS	$_____	$_____
Mobilization					
50.	Mobilization	1	LS	$_____	$_____
				TOTAL BID	$_____

(F) Denotes Final Pay Item Per Section 9-1.02C of The State Standard Specifications.

If work in those areas affected by the right-of-entry agreements delays the current controlling operation by more than sixty (60) calendar days, the delay will be considered a right of way delay and the Contractor will be compensated for the delay in conformance with the provisions in Section 8 1.07, "Delays," of the State Standard Specifications. No additional compensation will be considered for a delay less than sixty (60) calendar days.

The City may cancel the portion of the work affected by the right-of-entry agreements. In the event of cancelation, the Contractor shall be compensated for all work executed upon a unit basis in proportion to the amount of the work completed, or upon a cost plus-ten-percent (10%) basis, whichever is the lesser. Materials on the ground, in process of fabrication or in route upon the date of notice of cancelation specially ordered for the Project and which cannot be utilized by Contractor, shall be compensated for by City at cost, including freight, provided Contractor shall take all steps possible to minimize this obligation.

The Contractor's attention is directed to Section 7-11 of the City Standard Specifications regarding cooperation between contractors. The Contractor shall coordinate with the Contractors of the projects listed below. See map and cover sheet for each project attached to these specifications in Appendix B.

- Project No. 23-031, Plan Package 2, Roads Program Capital Improvement Project
- Project No. 23-033, Roads Program Capital Improvement Project
- Project No. 23-040, Water Line Replacement for 2024 Roads Program Construction
- Project No. 23-067, Plan Packages 1 & 2, Roads Program Capital Improvement Project
- Project No. 23-068, Plan Packages 1, 2, & 3, Roads Program Capital Improvement Project
- Project No. 23-069, Roads Program Capital Improvement Project

The Contractor shall protect in place the improvements constructed from the projects listed below, which are currently under warranty with the Contractor of that project. The Contractor shall repair any damage caused to these improvements at no additional cost to the City.

- Project No. 22-001, Package 1, Citywide Street Rehabilitation and Improvement Project
- Project No. 20-002, Southwest Quadrant Road Rehabilitation Project
- Project No. 21-021, Pedras Road Rehabilitation Project
- Project No. 23-031, Plan Package 1, Roads Program Capital Improvement Project
- Project No. 23-031, Plan Package 2, Roads Program Capital Improvement Project
- Project No. 23-032, Roads Program Capital Improvement Project
- Project No. 23-033, Roads Program Capital Improvement Project

Contractor shall coordinate all work on E. Marshall Street, Wallace Street, and Charles Place~~, and Johnson Road~~ with the Turlock Unified School District (TUSD). The sidewalk and fence removal along the west side of Wallace Street must be completed no later than July 25, 2025. All work along E. Marshall Street, Wallace Street, and Charles Place shall be completed prior to the start of the school year on August 12, 2025.

2. Construction area signs.
3. Implementation of SWPPP best management practices once the SWPPP has been accepted.

Submit a notification 72 hours before starting job site activities.

8.02 PROJECT MILESTONES

This section describes damages due to the City should the Contractor fail to meet certain project milestones. Attention is directed to Section 5 "Time of Performance" of the Agreement for liquidated damages for the Contractor's failure to perform all work on this project by the Completion Date.

The Contractor shall perform all required earthwork, grading, and initial paving (first lift) no later than eight (8) calendar days after the date when existing asphalt concrete surfaces have been demolished by way of cold plane grinding from any given area. On road sections that require video inspections of the sewer and storm drain mains in accordance with Section 10.36, this time restriction may be extended to twelve (12) total calendar days. In the event the Contactor fails to complete the required work in the timeframe indicated, the City may deduct from payments or credits due Contractor a sum equal to $500 for each and every calendar day delay in finishing the work.

During road closures, the work must progress continuously until the work is complete and the roadway is fully reopened to traffic.

disturbance of compacted backfill, and prevent flotation or movement of structures, pipelines and sewers. If an NPDES (National Pollutant Discharge Elimination System) permit is required for disposal of water from construction dewatering activities, it shall be obtained by the Contractor prior to any dewatering activities.

The contract lump sum price paid for job site management includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in discharging accumulated stormwater, groundwater, or surface water from excavations or temporary containment facilities as outlined in Section 13-4.03G of the Caltrans Standard Specifications; spill prevention and control;~~,~~ material management;~~,~~ waste management;~~,~~ and non-stormwater management, including identifying, sampling, testing, handling, and disposing of hazardous waste resulting from your activities, as specified in State Standard Specifications and these Special Provisions, and as ordered by the Engineer.

Full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in dewatering activities, shall be considered as included in the lump sum price paid for job site management and no additional compensation will be allowed therefore.

10.07 STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

Prior to commencing construction, a Contractor shall submit to the Engineer a completed SWPPP signed and certified by a Qualified SSWPP Developer (QSD). Once approved, Contractor shall submit SWPPP and Notice of Intent (NOI) with the California Department of Water Quality Control Board. Contractor shall adhere to the SWPPP at all times. Contractor shall file the annual report when the project is completed.

All construction activities shall comply with the requirements of the "*State Water Resources Control Board Phae II Small MS4 General Permit Order No. 2013-0001-DWQ, NPDES General Permit No. CAS000004 for Storm Water Discharge Associated within Construction Activity*".

Erosion and Dust Control BMPs

Contractor is responsible to furnish, install, maintain, and remove when not needed, appropriate and effective best management practices (BMPs) required by the Permit to reduce erosion and sediment transport and all potential pollutant sources.

Furnish, install, maintain, and remove temporary erosion and sediment control measures as required by the Permit.

Furnish, install, maintain, and remove temporary tracking control measures including street sweeping and dust control measures specified in Section 5.17, "Dust Control", of these Special Provisions. Maintain a clean and safe worksite at all times, including street sweeping. If the Contractor fails to maintain a clean worksite, the City may order street sweeping or corrective action at the Contractor's cost.

The Lump Sum amount for Prepare SWPPP and Erosion and Dust Control BMPs shall include, but not

10.15 SAWCUTTING

The Contractor shall sawcut or leave a neat edge on the existing pavement at the pavement removal limits specified on the approved Plans in a manner consistent with the applicable governing agency requirements and specifications.

Sawcutting shall be accomplished by the use of a power driven saw. The depth of cut shall be deep enough to produce a clean, straight break without loosening, cracking, or damaging adjoining asphalt or concrete. Waste material from sawcut operations shall be broom cleaned or vacuumed, and disposed of. Cleaning of sawcut area by washing and directing waste to public storm drains shall not be permitted.

The cost for Sawcutting shall be included in the various other bid items and no additional compensation will be made therefore.

10.16 EARTHWORK

Earthwork shall conform to the provisions in Section 19, "Earthwork", of State Standard Specifications and these Special Provisions.

Surplus excavated material shall become the property of Contractor and shall be disposed of outside the right-of-way and shall conform to the provisions in Section 7-10, "Disposal of Materials Outside the Right of Way", of City Standard Specifications.

Contractor shall not store any backfill, paving, or excavated material within the City right of way unless approved by Engineer.

~~When unsuitable materials are encountered, make reasonable efforts, as determined by the Engineer, to either dry out the soil or add moisture as needed to achieve proper compaction. Subgrade material that is pumping, or unstable due to oversaturation shall not be considered Unsuitable Material pursuant to this section. Prior to notifying the Engineer that you have encountered Unsuitable Material, you shall perform Quality Control Testing verifying that material is not exceeding its Optimum Moisture Content requiring additional drying out effort. The Quality Control Testing Results shall accompany the notification to the Engineer that you have encountered Unsuitable Material. In lieu of moisture conditioning the in-place soils, you may remove and replace soil at your expense.~~

All imported borrow shall be backfill material complying with Section 19-7 of State Standard Specifications. All backfill material shall be compacted at 95% relative compaction for the entire depth of imported material. The minimum compacted section shall be six inches and shall be composed of import borrow, existing material, or a combination of both. The contractor shall provide a submittal to the Engineer for review prior to importing or placing material.

Roadway excavation will be measured and paid by the cubic yard and the volume is determined from the average end areas and the distance between them. This item will be a final pay item. See section 9-1.02C of the State Standard Specifications.

The above price and payment for roadway excavation shall include full compensation for furnishing all labor, material, tools, equipment and incidentals, and for doing all the work involved in importing, excavating, hauling, compacting, and removing the surplus material, as shown on the plans, specified in State Standard Specifications and these Special Provisions, and as directed by Engineer.

10.16A UNSUITABLE MATERIAL

When Unsuitable Materials are encountered, make reasonable efforts, as determined by the Engineer, to either dry out the soil or add moisture as needed to achieve proper compaction.

"Unsuitable Materials" are defined as material encountered below the natural ground surface in embankment areas or below the grading plane in excavation areas that the Engineer determines to be in any of the following conditions:

1. Of such unstable nature that it cannot be compacted to the specified density using ordinary methods at optimum moisture content.
2. Too wet to be properly compacted and cannot be dried before incorporating it into the work.
3. Excessive moisture alone is not sufficient cause for determining that the material is unsuitable inappropriate for the planned use.

Contractor shall notify the Engineer before removing the Unsuitable Material if:

1. Removal is not otherwise described. You request separate payment for the removal and replacement under Item #13 - Unsuitable Material

Subgrade material that is pumping, or unstable due to oversaturation shall not be considered Unsuitable Material pursuant to this section. Prior to notifying the Engineer that you have encountered Unsuitable Material, you shall perform Quality Control Testing verifying that material is not exceeding its Optimum Moisture Content requiring additional drying out effort. The Quality Control Testing Results shall accompany the notification to the Engineer that you have encountered Unsuitable Material. In lieu of moisture conditioning the in-place soils, you may remove and replace soil at your expense.

Typical removal and replacement alternatives may consist of either Option 1 or 2:

1. Remove 6 inches of unsuitable material and replace with Class 2 Aggregate Base over a Tensar NX750 Geogrid. The surface of the AB should meet the requirements of Section 26 of the Caltrans Standard Specifications and be compacted to at least 95% relative compaction based on the ASTM D1557 method. The geogrid should be placed per the manufacturer's recommended guidelines.

2. Remove 6 inches of unsuitable material and replace with compacted asphalt grindings over a Mirafi 160N filter fabric to provide a stabilized base prior to placing the deep lift asphalt. The filter fabric should be placed per the manufacturer's recommended guidelines.

When Unsuitable Material is identified by the Contractor and confirmed by the Engineer, the above price and payment shall include full compensation for furnishing all labor, material, tools, equipment and incidentals, and for doing all the work involved in removal and placement alternative 1 or 2 as specified in these Special Provisions, and as directed by Engineer.

The contract price paid per cubic yard (CY) for Unsuitable Material shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for performing all work involved in Unsuitable Material as specified in these Special Provisions and as directed by the Engineer. This includes, but is not limited to, removing and disposing of the Unsuitable Material and furnishing, placing, and compacting the replacement material.

10.17 HOT MIX ASPHALT (Type A)

Preconstruction Meetings

Hold a preconstruction meeting with the Engineer per section 36-1.01D(2) of the State Standard Specifications. Discuss project specifications and the processes for producing materials and quality control measures for pavement smoothness including visual inspection of finished HMA surface.

Prepare Existing Surface

Contractor shall prep the existing surface prior to placing HMA. Prepping the surface shall consist of sweeping and vacuuming the entire area to remove debris, organic matter, dirt, etc. Any work that will be required to fill potholes or make the surface suitable for paving shall be paid as extra work, through force account.

For full-depth asphalt pavement sections, the underlying subgrade or subbase shall be compacted to at least 95 percent of the maximum dry density (per ASTM D1557) prior to AC paving. Where existing base to remain, Contractor shall compact and prepare per the Aggregate Base requirements in these Special Provisions prior to AC paving.

Prior to any removal of existing asphalt concrete or cold planing, verify all existing ground lines. If you contest the existing ground lines shown in the plans, you must submit your survey information. The Engineer will then have 10 working days to review the submittal. If you begin any removal or cold planing prior to the approval of this submittal, the existing ground lines shown in the plans will be deemed accurate and will be used for calculating quantities of removal or cold planing.

Full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all of the work involved with preparing the existing surface as specified above, shall be considered as included in the price paid for hot mix asphalt (Type A) and no additional compensation will be allowed therefor.

Materials

Hot Mix Asphalt (HMA) shall conform to the provisions in Section 39-2, "Hot Mix Asphalt," of State Standard Specifications.

Notify the Engineer of the start location by station and start time at least 2 business days before each day of smoothness measurements. The Engineer must be present for smoothness measurements.

Payment

HMA will be subject to payment adjustments for Price Index Fluctuations per Section 9-1.07 of State Standards Specifications. The contract price paid per ton of HMA (Type A) shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in placing, compacting, and quality-control of hot mix asphalt including surface preparation, tack coat placement, and pavement smoothness, as shown on the plans, as specified in State Standard Specifications and these Special Provisions, and as directed by the Engineer. This item includes full depth AC Patch adjacent to proposed curbs and gutters, curb ramps and other hardscape construction.

10.18 FULL DEPTH RECLAMATION - CEMENT

Full depth reclamation - cement shall comply with Section 30, "Recycled Pavement" and Section 30-4, "Full Depth Recycling - Cement," of State Standard Specifications.

Work shall consist of pulverizing existing asphalt concrete, base, and subgrade soil following cold planing of existing asphalt concrete. Re-grade based on PG grades on plans and haul away excess material to allow for the net placement of new asphalt concrete. Add cement and water to the blended material in accordance with these and State Standard Specifications. Compact, fine grade to the grades required, cure and micro-crack the completed cement treated surface, prior to placement of asphalt concrete. Micro-cracking of the cement treated surface must be completed 48 to 56 hours after placement.

The Contractor shall be aware of existing utilities within the project limits that have not been potholed and may be within 24" vertical clearance of the FDR operation. The depth of existing utilities, where identified by Subsurface Utility Engineering/ Ground Penetrating Radar, has been provided on the plans. It is the Contractor's responsibility to pothole existing utilities, as described elsewhere in the specifications, and provide a report on the depth of the existing facilities to the Engineer. If the existing facility is determined to be within the **24"** of the FDR operation, the Engineer may elect to proceed with the work based on the following options to avoid relocating the utility:

- -**Top of** utility is less than **24"** below **bottom of** the FDR **section** - Contractor shall Excavate and Expose Utility to the top half of the existing utility using hand or other methods as approved by the utility owner. Excavated material will be set adjacent to the trench for inclusion in the FDR mixing operation or disposed of by the Contractor. Contractor to use appropriate means and methods during mixing and compaction of the FDR-C to avoid damaging underground utilities. A bid item has been provided for the work necessary to Excavate and Expose Utility.
- ~~**Top of** utility is **24"** to **6"** below **bottom of** the FDR **section** - Contractor shall excavate above the utility to the minimum allowable FDR depth using hand or other methods as approved by the Engineer to remove existing roadway base and subgrade to a maximum of 6" above the existing utility to remain. Excavated material will be set adjacent to the trench for~~

~~inclusion in the FDR mixing operation and spread back into the trench prior to the FDR compaction operation.~~

- **Top of** utility is less than 6" below **bottom of** the **section** FDR, or less than 12" below **bottom** of the **section** FDR for High Risk Utility Facilities as defined in Section 5.35 - Contractor shall Excavate and Expose Utility to the top half of the existing utility using hand or other methods as approved by the Engineer, then place a Cement Slurry (2-sack) on top of the utility as shown in the Construction Details on the Plans. The trench and slurry shall extend one foot on either side of the utility. Trench spoils shall be disposed of by the Contractor. The Cement Slurry backfill shall have a minimum depth of 6" above the top of the utility. A full depth HMA (Type A) pavement section shall be placed over the protective Concrete Slurry (2-sack). Bid items have been provided for the work and materials necessary to Excavate and Expose Utility and to place the Cement Slurry (2-sack).
- ~~**Top of** utility is less than 6" below **bottom of** the **section** FDR - Contractor shall excavate above the utility until the top half of the utility is exposed using hand or other methods as approved by the Engineer to remove existing roadway base and subgrade. The trench shall extend one foot on either side of the utility. Trench spoils shall be disposed of by the Contractor. The Contractor shall place 2-sack slurry cement backfill in the trench to the required grade for HMA paving. The slurry cement backfill shall have a minimum depth of 6" above the top of the utility. Slurry cement backfill shall comply with the City Standard Construction Specifications and will be paid for under the Full Depth Reclamation – Cement bid item.~~

Obtain and test material every **500 feet** from the existing pavement structure by coring. You may perform additional sampling and testing to optimize the cement content and adjust for varying underlying materials. Determine the exact locations of the sampling locations between wheel paths. Do not sample in the shoulders. Sampling locations must provide sufficient representative material for the mix design.

The cement content must be **5 percent** by dry weight of FDR—cement with a dry unit weight of **4.4 lb/sf**, except an increase or decrease in the cement content may be ordered based on your mix design. The mix design shown on the plans and specification is based on the removal of all existing AC pavement. The actual mix design used for the project shall be determined by the Contractor in accordance with 30-4.01C(2)(b) "Mix Design," of the State Standard Specifications. The mix design shown on the plans and Specifications is based on the removal of all existing AC pavement. The actual mix design used for the project shall be your mix design. The mix designs shall be submitted to and authorized by the Engineer prior to cold planning the AC pavement. 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.

A test strip per Section 30-1.01D(3) of the State Standard Specifications is not required.

Attention is directed to the presence of shallow utilities within the limits of work. Contractor must use appropriate means and methods during construction to avoid damaging underground utilities. This

shall be reset or repaved by Contractor, as requested by Engineer, to conform to the new minor concrete construction at no additional cost.

Any portions of curb, gutter, sidewalk or any other City improvement damaged by the Contractor during the course of construction be replaced by the Contractor, at their cost, to the satisfaction of the Engineer. The cost of additional replacement of curb, gutter or sidewalk in excess of the estimated quantities shown in the Bid form and Specifications and found necessary during the process of construction (but not due to damage resulting from carelessness on the part of the Contractor during its operation), shall be paid to the Contractor at the unit prices submitted in their bid.

10.21 EXCAVATE AND EXPOSE UTILITY

As previously discussed in Section 10.18, existing utilities that are within 24" of the bottom of the proposed pavement section shall be excavated as shown on the Construction Detail Sheets in the plans. Where shown in the plans, as directed by the Engineer, or where shallow utilities are encountered, the Contractor shall Excavate and Expose Utilities until the top half of the utility is exposed using hand excavation or other methods as approved by the Engineer to remove existing roadway base and subgrade. Excavated material will be set adjacent to the trench for inclusion in the FDR mixing operation or disposed of by the Contractor.

Quantities of Excavate and Expose Utility will be measured by the linear foot as determined from actual measurement of shallow utilities that require protection during construction.

Payment for Excavate and Expose Utility shall be at the contract unit price per linear foot and shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in removing and disposing of roadway pavement and subgrade material, including breaking, removal, hauling, and disposal of existing HMA, asphalt concrete, base, and subbase, as shown on the plans, as specified in the City Standard Specifications and these Special Provisions, and as directed by the Engineer.

10.22 SLURRY CEMENT (2-SACK)

The Contractor shall place Slurry Cement (2-sack) backfill where existing utilities are within 6" of the bottom of the proposed pavement section as identified in the field during construction.

The Slurry Cement (2-sack) backfill shall be placed within the trench per Section 10.18 of these technical specifications and as shown in the plans. The Slurry Cement (2-sack) backfill shall have a minimum depth of 6" above the top of the utility as shown in the Construction Detail Sheets in the plans. The backfill shall comply with the City Standard Construction Specifications.

Quantities of Slurry Cement (2-sack) backfill placed as shown on the plans or directed by the Engineer will be measured by the linear foot as determined from the actual length of Slurry Cement (2-sack) backfill that is placed during construction.

The contract price paid per linear foot for Slurry Cement (2-sack) backfill shall include full compensation for furnishing all labor, materials, tools, equipment, backfill, slurry, and incidentals, and

for doing all the work involved in furnishing and placing the concrete slurry, cleaning the surface, complete in place, as shown on the plans, and as specified in City Standard Specifications and these Special Provisions, and as directed by the Engineer.

10.231 DETECTABLE WARNING SURFACE

Detectable warning surfaces must be installed per the locations shown on the plans and in accordance with City Standard Drawing C-15 and Section 13-10, "Detectable Warning Surface", of the City Standard Specifications and these Special Provisions.

The Contractor shall install detectable warning surfaces in a manner that extends the entire width of the opening of the ramp for a depth of 3 feet.

Submit a 5-year manufacturer's replacement warranty against defects in a prefabricated detectable warning surface. The 5-year manufacturer's replacement warranty for a prefabricated detectable warning surface must cover defects in dome shape, color fastness, sound-on-can acoustic quality, resilience, and attachment. The 5-year warranty period starts at Contract acceptance.

Quantities of detectable warning surface placed as shown on the plans or directed by the Engineer will be measured by the square foot as determined from measurement of the area covered by the detectable warning surface.

The contract price paid per square foot for detectable warning surface shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in furnishing and placing the detectable warning surface, complete in place, as shown on the plans, and as specified in City Standard Specifications and these Special Provisions, and as directed by the Engineer.

10.242 ADJUST DRAINAGE INLET TO GRADE

Contractor shall adjust storm drain inlet in accordance to the details shown in the plans. Adjusting storm drain inlets consists of removing partially the inlet and either lowering or raising the drainage structures.

Adjust to grade with new materials that are similar in character to the existing materials.

Where storm drain inlets are adjusted before placing the uppermost layer of pavement or surfacing, limit the work area so that adjusting the inlet and final paving or surfacing withing the same work day. The top of the inlet grate or cover must be protected during paving operation by heavy plywood covers, steel plate covers, or other authorized methods. Excess paving material must be removed before rolling.

Where inlets are adjusted after placing the uppermost layer of pavement or surfacing, do not adjust the inlet to final grade until the paving or surfacing has been completed immediately adjacent to the inlet.

10.286 RELOCATE FIRE HYDRANT

Relocate existing fire hydrants as shown on the plans, and as directed by the Engineer. All work involved in relocating fire hydrants shall comply with Section 15-8 Fire Hydrants and Standard Drawing No. W-1 of the City of Turlock Standards.

The fire hydrant relocations shall be coordinated with the Engineer to ensure the hydrants are not out of operation for an extended amount of time. The Engineer shall dictate to the Contractor how long they are allowed to have each hydrant out of operation while the work is being completed.

The quantity for Relocate Fire Hydrant will be paid for as units determined from actual count. This item shall include all work necessary to complete the hydrant relocation including, but not limited to, the following:

- Trenching/Excavation
- Trench bracing or stabilization methods
- Concrete removal
- Pipe connections/ joints
- Pipe extensions
- Relocating the existing hydrant assembly to the proposed location shown on the plans
- Trust blocks
- Concrete pad
- Backfill

The contract unit prices paid for Relocate Fire Hydrant shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in relocating the existing fire hydrant, as described above, as shown on the plans, and as specified in these Special Provisions, and as directed by the Engineer.

10.297 REMOVE AND REPLACE MONUMENT

Remove and replace survey monument as shown on the plans. New survey monument work must be performed by a licensed surveyor or civil engineer in the state of California and the work must comply with City Standard Drawing No. M-1.

The quantities of remove and replace monument will be paid for as units determined from actual count.

The contract unit prices paid for remove and replace monuments shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in removing existing and installing new monuments, including disposing excavated materials, backfilling, furnishing and installing monument box, cast iron lid, brick footings, concrete collar and hot mix asphalt paving, complete in place, as shown on the plans, and as specified in these Special Provisions, and as directed by the Engineer.

10.3028 ADJUST FRAMES AND COVERS TO GRADE

Frames and covers of new and existing utility manhole, shall be adjusted to grade and shall conform to the provisions in Section 12-12, "Adjusting Manhole Frames, Monuments and Valve Boxes", of the City Standard Specifications and these Special Provisions.

All city utilities that are within the limits of the full depth reclamation operation shall be lowered (remove lid and frame) and plated before the full depth reclamation operation.

All city utilities shall be raised up to finished grade within 7 days of paving.

All utilities shall be accessible 24 hours per day, 7 days per week throughout construction. The Contractor shall provide reference marks on the nearest curb for all utilities that are lowered.

The contract price paid per each for adjusting frames and covers to grade or adjust manhole frame and cover to grade (including sewer manholes, storm drain manholes, water valves, water meters) shall include full compensation for furnishing all labor, material, tools, equipment and incidentals, and for doing all the work involved in lowering and raising utility manhole frames and cover, complete in place, including structure excavation and backfill, furnishing and installing additional bar reinforcing steel, concrete and HMA (Type A), as shown on the plans, specified in the City Standard Specifications and these Special Provisions, and as directed by Engineer.

10.31~~29~~ CHAIN LINK FENCE (CL-4)

Furnish and install Chain Link Fence (CL-4) as shown on the plans, and as directed by the Engineer. All work involved in constructing the Chain Link Fence (CL-4) shall comply with Section 20 Fencing of the City of Turlock Standards.

The Chain Link Fence (CL-4) shall be 4 feet tall. This item shall include all work necessary to complete the fence installation per the manufacturer's guidelines and consistent with the City's Standards. Where the fence is installed within the limits of the sidewalk, the Contractor shall construct footings to be compliant with ADA standards.

The contract unit prices paid per linear foot of Chain Link Fence (CL-4) shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in installing the Chain Link Fence (CL-4), including excavating, constructing footings, grading, and backfilling, as shown on the plans, and as specified in these Special Provisions, and as directed by the Engineer.

10.32~~0~~ 4' CHAIN LINK GATE (CL-4)

Furnish and install 4' Chain Link Gate (CL-4) as shown on the plans, and as directed by the Engineer. All work involved in constructing the 4' Chain Link Gate (CL-4) shall comply with Section 20 Fencing of the City of Turlock Standards.

The 4' Chain Link Gate (CL-4) shall be 4 feet tall and shall include a gate latch to secure the gate in the closed position. This item shall include all work necessary to complete the gate and latch installation per the manufacturer's guidelines and consistent with the City's Standards. Where the gate is installed within the limits of the sidewalk, the Contractor shall construct footings to be compliant with ADA standards.

The contract unit price paid for 4' Chain Link Gate (CL-4) shall include full compensation for

furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in installing the 4' Chain Link Gate (CL-4), including excavating, constructing footings, grading, and backfilling, as shown on the plans, and as specified in these Special Provisions, and as directed by the Engineer.

10.3~~1~~ REMOVE FENCE

Remove Fence as shown on the plans, and as directed by the Engineer. Fence removal shall include, but not be limited to, demolition, excavation, concrete footing removal, haul-off and disposal of excavated/ removed materials, or other work required to remove the existing fence for proposed improvements.

As noted in Section 5.22, the fence removals along the west side of Wallace Street shall be completed no later than July 25, 2025.

At the end of the fence removal limits, the Contractor shall leave a neat end point and cleanly connect the existing fence to any proposed fence work.

Payment for Remove Fence shall be at the contract unit price per linear foot and shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in removing the existing fence, hauling, disposal of both existing fence and concrete footings, as specified in these Special Provisions, and as directed by the Engineer.

No additional payment for restoration of adjacent trees, roots, grass, and parkway, to remain-in-place, but damaged by the Contractor during construction, shall be made.

10.3~~2~~ INSTALL ROADSIDE SIGN – ONE POST

Contractor shall install sign posts and foundations in accordance with City Standard ST-11 and ST-12 and these Special Provisions.

Sign panels must comply with the lates version of the California Uniform Traffic Control Devices (CA MUTCD) and City Standard Plates. All signs shall be high intensity prismatic.

The contract price paid per each for Install Roadside Sign-One Post shall include full compensation for furnishing all labor, material, tools, equipment and incidentals, and for doing all the work involved in installing each roadside sign, including, but not limited to, excavation, export, backfill, compaction; new concrete foundations / footings, installation of sign post, sign panels and hardware, complete in place, as shown on the plans, specified in the City Standard Specifications and these Special Provisions, and as directed by Engineer.

Full compensation for furnishing and installing sign panel fastening hardware shall be considered as included in the contract prices paid for the roadside signs requiring the hardware and no separate payment will be made therefor.

10.353 RELOCATE ROADSIDE SIGN

Where indicated on the Plans or as specified by the Engineer, the Contractor shall remove existing signs (posts and panels), then reinstall the signs (posts and panels) and foundations in accordance with City Standard ST-11 and ST-12 and these Special Provisions.

Unless the Engineer specifies otherwise, the existing sign panels shall be reused.

The contract price paid per each for Relocate Roadside Sign shall include full compensation for furnishing all labor, material, tools, equipment and incidentals, and for doing all the work involved in removing the existing roadside sign and reinstalling it as shown on the Plans, including, but not limited to, excavation, export, backfill, compaction; new concrete foundations / footings, installation of sign post, complete in place, as shown on the plans, specified in the City Standard Specifications and these Special Provisions, and as directed by Engineer.

10.364 THERMOPLASTIC STRIPING AND MARKINGS

All traffic stripes and pavement markings shall conform to Section 84-2, "Traffic Stripes and Pavement Markings," of State Standard Specifications. All striping and markings shall be thermoplastic.

Thermoplastic traffic stripes will be measured by the linear foot along the line of the traffic stripes, without deductions for gaps in broken traffic stripes. A double thermoplastic traffic stripe, consisting of two 6-inch wide yellow stripes, will be measured as 1 traffic stripe.

Pavement markings shall be measured by the square foot for the area covered.

Payment for thermoplastic pavement markings or thermoplastic traffic stripe shall include full compensation for performing all work required to install thermoplastic pavement markings and thermoplastic traffic stripes, and shall include furnishing and installing pavement markers and establishing alignment for stripes and layout work, respective to the detail on the State Standard Plans, in accordance with these Special Provisions and as directed by the Engineer.

10.375 REMOVE THERMOPLASTIC TRAFFIC STRIPE

This item shall be bid per linear foot and must conform to Section 84-9 (Existing Markings) of the 2023 Caltrans Standard Specifications.

This quantity shall be measured per linear foot of striping regardless of the existing stripe's detail number. The quantity as shown in the Plans is the total linear foot measurement and does not account for gaps or double line stripes.

The contract price paid per linear foot of Remove Thermoplastic Traffic Stripe shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, proper disposal and for doing all work involved in Removing Thermoplastic Traffic Stripe and no additional payments will be made.

Payment for Remove Thermoplastic Traffic Stripe shall include full compensation for performing all work required to remove thermoplastic traffic stripes, including incidentals and proper disposal, in

accordance with these Special Provisions and as directed by the Engineer.

10.38 REMOVE THERMOPLASTIC PAVEMENT MARKING

This item shall be bid per square foot and must conform to Section 84-9 (Existing Markings) of the 2023 Caltrans Standard Specifications.

The contract price paid per square foot of Remove Thermoplastic Pavement Marking shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, proper disposal and for doing all work involved in Removing Thermoplastic Pavement Marking in accordance with these Special Provisions and as directed by the Engineer. and no additional payments will be made.

10.396 VIDEO SEWER AND STORM DRAIN INSPECTION

The contractor shall furnish closed circuit television equipment for an interior inspection of the existing sewer and storm drain mains located within the roadway reconstruction limits. The first video inspection to document the existing condition of the sewer and storm drain mains shall be conducted no more than 14 days prior to the removal of the existing roadway. The second video inspection to demonstrate the Contractor did not cause any damage to the sewer or storm drain mains shall be conducted within 24 hours of completing final compaction of the subgrade, or micro-cracking of the FDR-C section. An electronic copy of the video inspection (standard DVD or Mpeg file format) shall be provided to the City within 24 hours of each inspection at no additional cost to the City. With the copy of the video, the Contractor shall certify, in writing, there is no damage to the inspected sewer and storm drain mains. If there is damage, the Contractor shall indicate in writing, the specific damage and location. The certification must be submitted to and authorized by the Engineer prior to placing HMA pavement.

The requirements for the sewer and storm drain video inspections include:

1. The Video Inspection Company is to certify as to their ability to adequately perform the video inspection.
2. Contractor will provide the City 48-hour notice of inspection schedule so the City inspector may be present to monitor the inspection.
3. A flush truck will be required to be on-site to aid in the video inspection.
4. A copy of the video inspection shall be submitted to the City as proof of inspection along with a certification letter stating no damage to the inspected sewer and storm drain lines has occurred.
5. Sewer lateral lines are to be documented by stationing distance from center line of manhole and the inspection form shall provide a map of the inspected lines.
6. Storm drain lateral lines to and between catch basins shall be video inspected as storm drain mains.
7. To facilitate review, a log of the inspections performed shall correlate with the manholes, stationing, etc., shown on the project plans and the video inspection produced.
8. Joints shall have a view perspective, and have each joint inspected by turning the camera 90 degrees to the joint inspecting all 360 degrees of the connection.
9. Sewer laterals shall have a perspective view identifying clock position to the main and a view into the lateral to identify any damage at the lateral connection.
10. If debris are found during the inspection, the inspection must be terminated and restarted once the debris has been removed and more water flushed through the main.

11. Video Inspection shall be performed in the direction of flow.

The payment for sewer and storm drain video inspection including all labor, material, tools, equipment and incidentals, and for doing all the work involved in the sewer and storm drain video inspection shall be included in Contract lump sum price paid for Video Sewer and Storm Drain.

10.4037 MOBILIZATION & DEMOBILIZATION

Mobilization is intended to compensate the Contractor for operations including, but not limited to, those necessary for the movement of personal, equipment, supplies and incidentals to / from the project site; for the payment of premium cost and insurance for the project; for any necessary costs of acquisition of equipment, including purchase and mobilization expense; and for any other work and operations which must be performed or costs that must be incurred incident to the initiation of meaningful work at the site and for which payment is not otherwise provided in the contract.

(1) When 5 percent of the original contract amount is earned, 50 percent of the amount bid for mobilization, or 5 percent of the original contract amount, whichever is less, may be paid.

(2) When 10 percent of the original contract amount is earned, 75 percent of the amount bid for mobilization or 7.5 percent of the original contract amount, whichever is less, may be paid.

(3) When 20 percent of the original contract amount is earned, 95 percent of the amount bid for mobilization, or 9.5 percent of the original contract amount, whichever is less, may be paid.

(4) When 50 percent of the original contract amount is earned, 100 percent of the amount bid for mobilization, or 10 percent of the original contract amount, whichever is less, may be paid.

(5) Upon completion of all work on the project, payment of any amount bid for mobilization in excess of 10 percent of the original contract amount will be paid.

The Contract lump sum price paid for mobilization shall include full compensation for establishing temporary construction storage locations, moving equipment to the project site for the establishment of facilities necessary for work on the project, applying for and obtaining all required permits, and for all other work and operations which must be performed or costs incurred prior to beginning work on the various contract items, including all related administration throughout its duration, and demobilization.

The total price bid for mobilization shall include the cost of all mobilization, demobilization, and administration for the entire contract period.

The City shall make the final determination of the allowable percentage of completion for the payment of mobilization and shall approve the percentage paid based on the percent of contract amount actually earned which will be based upon actual work completed.

FINAL PAVEMENT REPORT

Turlock Pavement Rehabilitation
Location 1 – N. Johnson Road, Arbor Way, and Zinfandel Lane/Charles Place Neighborhood
Turlock, California

Prepared by:

Crawford & Associates, Inc.
4701 Freeport Boulevard
Sacramento, CA 95822

May 8, 2025

Prepared for:

Mark Thomas
2833 Junction Avenue, Suite 110
San Jose, CA 95134

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Sacramento
Eureka
Modesto
Pleasanton
Santa Rosa
Seattle
Ukiah

May 8, 2025
Crawford File No. 23-931.3

Mr. Ed Noriega, PE
Mark Thomas
2833 Junction Avenue, Suite 110
San Jose, CA 95134

Subject: **City of Turlock 2024 Multiple Roads Rehabilitation**
Location 1
Final Pavement Design Report
Turlock, California

Dear Mr. Noriega,

Crawford & Associates, Inc. (Crawford) is pleased to submit this Final Pavement Design Report for Location 1 (within the N. Johnson Road, Arbor Way, and Zinfandel Lane/Charles Place neighborhood) as part of the City of Turlock Pavement Rehabilitation efforts in Turlock, California. We prepared this report in accordance with our February 27, 2024 agreement associated with City Contract No 2023-109. A separate report will be prepared for Location 2 (also included in City Contract No 2023-109). The purpose of this report is to provide pavement recommendations for consideration by the City of Turlock and the design team.

Thank you for selecting Crawford to be on your design team. Please call if you have questions or require additional information.

Sincerely,

Crawford & Associates, Inc.,

Carmelo Pagan
Staff Engineer

Reviewed By,

Benjamin Crawford, PE, GE
Principal

Amando Castro, PE
Project Manager

REGISTERED PROFESSIONAL ENGINEER
AMANDO BUENAVENTURA CASTRO
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LIST OF TABLES

FIGURES

APPENDIX A

APPENDIX B

1 INTRODUCTION

Crawford & Associates, Inc. (Crawford) is pleased to submit this Final Pavement Design Report for Location 1 (generally within the N. Johnson Road, Arbor Avenue and Zinfandel Lane/Charles Place Neighborhood) as part of the City of Turlock Pavement Rehabilitation efforts in Turlock, California. We prepared this report in accordance with our February 27, 2024 agreement associated with City Contract No 2023-109. A separate report will be prepared for Location 2 (also included in City Contract No 2023-109). The purpose of this report is to support the City of Turlock (City) and the design team during project design, plan, and specification development.

1.1 SCOPE OF SERVICES

To prepare this report, Crawford:

- Discussed the proposed improvements with Mr. Ed Noriega, PE and Ms. Cynthia Horner, PE, with Mark Thomas, and Mr. Fred Pezeshk, PE with the City;
- Conducted a site visit and marked USA on April 8, 2024;
- Conducted a pavement conditions assessment on April 19, 2024;
- Performed pavement coring and subsurface soil sampling between April 26 and May 8, 2024;
- Performed laboratory testing (R-values) on representative subgrade samples; and
- Performed calculations and engineering analysis.

2 PROJECT DESCRIPTION

We understand that this project is a part of the City of Turlock's larger CIP to improve the pavement condition index throughout the City. Based on our conversations with the design team and the City, the primary purpose of this project is to rehabilitate and repair 32 residential roadways (approximately 4 miles total) within the eastern portion of the City (within the N. Johnson Road, Arbor Way, and Zinfandel Lane/Charles Place neighborhood). The City desires the following design traffic index (TI) for this project, for local roads a TI of 6 (7 at intersections), for minor and major collectors a TI of 8 (9 at intersections), and for major and principal arterials a TI of 10 (11 at intersections).

Location 1, as defined in City Contract 2023-109, includes rehabilitating the following roadways as part of this project:

- North Johnson Road between East Hawkeye Avenue and East Tuolumne Avenue;
- Hammond Drive between N Johnson Road and N Johnson Road;
- Stuart Place between the South end and Hammond Drive;
- Ashley court between the West end and North Johnson Road;
- Jackson Court between the North end and North Johnson Road;
- Sconyers Court between the East end and North Johnson Road;
- North Quincy Avenue between Marie Drive and East Hawkeye Avenue;
- Linn Court between its North end and Mira Flores Drive;
- La Sombra Court between Mira Flores Drive and Mira Flores Drive;
- Novo Drive between East Canal Drive and Mira Flores Drive;
- Arbor Way between North Berkeley Avenue and North Quincy Road;

- Karen Way between Arbor Way and Christine Way;
- Christine Way between Karen Way and Heppner Way;
- Heppner Way between Arbor Way and Christine Way;
- California Avenue between North Berkeley Avenue and North Johnson Road;
- El Paseo Drive between East Canal Drive and Arbor Way;
- Linda Vista Drive between El Paseo Drive and North Johnson Road;
- Zinfandel Lane between North Johnson Road and Corello Street;
- Charles Place between Wallace Street and North Johnson Road;
- Wallace Street between E. Marshall Street and Charles Place;

3 HISTORICAL DATA

No as-built plans or maintenance reports were made available while this final pavement report was being prepared.

According to information provided by the City, Pavement Condition Index (PCI) values were assigned to the streets included in this project. PCI is a scale to quantify the condition of a street based on the surface condition observed including crack size, quantity, and depth, raveling, and rutting. Generally, PCI values above 75 (fair to good condition) require preservation methods, between 75 and 50 (fair to poor condition) require resurfacing, and below 50 (poor to very poor condition) require rehabilitation or reconstruction. We supplement the PCI assigned to each street with our pavement condition assessment and describe our findings in the sections below.

4 FIELDWORK

Crawford evaluated the condition of the existing pavement by walking the roadway and reviewing the pavement surface conditions. Crawford cored the pavement at 64 locations to measure the existing structural sections of Hot Mix Asphalt (HMA) and Aggregate Base (AB) thicknesses, identify historical overlays, the presence of paving fabric, and collect subgrade samples for laboratory testing.

We provide the overall project alignment in Figure 1A and present the core locations in Figures 1B and 1C.

4.1 PAVEMENT CONDITION ASSESSMENT

During our pavement assessment, we walked the project alignment and noted the current pavement conditions including cracking, patching/potholes, and surface distress. Based on the observations, and the PCI, project alignment can generally be broken down into two sections as presented in Table 1 below.

Table 1: Turlock Pavement Condition Assessment Generalized Sections

Section	Roadway	PCI Assigned
1	Jackson Court	83
	Sconyers Court	68

Section	Roadway	PCI Assigned
1	Hammond Drive (1740 Hammond Drive to N Johnson Rd)	71
	La Sombra Court (Mira Flores Dr to La Sombra Ct)	63
	Karen Way	69
	Ashley Court	77
	Jackson Court	83
	Arbor Way (Heppner Wy. to N. Quincy Rd)	53
	Christine Way	56
	Heppner Way	82
2	North Johnson Road (E. Hawkeye to Hammond Dr)	5
	North Johnson Road (Hammond Dr to Sconyers Ct)	28
	Hammond Drive (N. Johnson Rd to 1740 Hammond)	0
	North Quincy Road	25
	Linn Court	27
	Stuart Place	13
	La Sombra Court (La Sombra Ct to La Sombra Ct)	37
	La Sombra Court (La Sombra Ct to Mira Flores Dr)	29
	Novo Drive	34
	Arbor Way (N. Berkley Ave to Edward Dr)	24
	Arbor Way (Edward Dr to N. Johnson Rd)	4
	Arbor Way (N. Johnson Rd to Karen Wy)	13
	Arbor Way (Karen Wy to Heppner Wy.)	20
	California Ave	41
	El Paseo Drive (E. Canal Dr to El Capitan Dr)	21

Section	Roadway	PCI Assigned
2	El Paseo Drive (El Capitan Dr to. Arbor Wy.)	34
	Linda Vista Drive	22
	Zinfandel Lane (N. Johnson Rd to Old Vineyard Rd)	14
	Zinfandel Lane (Old Vineyard Rd to N. Quincy Rd)	29
	Zinfandel Lane (N. Quincy Rd to Corrello St)	27
	Charles Place	33
	Wallace Street	15

The assessment of each section is discussed below.

4.1.1 SECTION 1

The streets included in this section were assigned a PCI above 50. This range of PCI correlates to pavement in generally fair to poor condition. The results of our pavement condition assessment generally agree with the assigned PCI values. We observed the streets in Section 1 to be in generally fair condition with low to moderate severity block cracks. Lack of maintenance was observed as vegetation was beginning to grow within the cracks and moderate to high severity raveling was present along all of the streets.

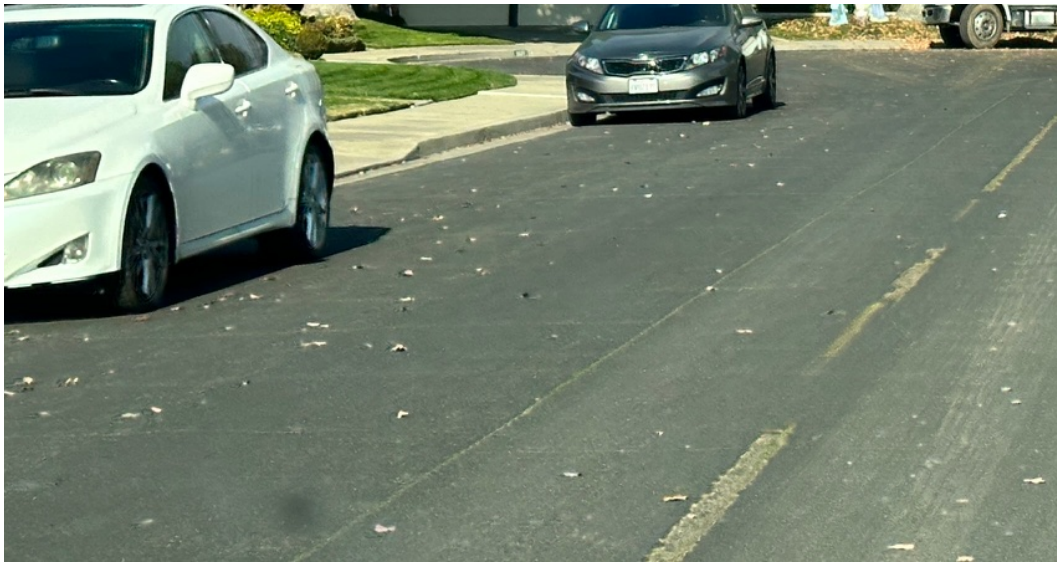


Photo 1: Section 1 Moderate Longitudinal Cracking

4.1.2 SECTION 2

Section 2 represents the heavily distressed roadways with PCI values ranging between 0 and 41. A PCI value below 50 typically indicates heavy distress features (like potholes, alligator cracks, rutting,… etc) and surface treatments will likely not produce the desired end product. Pavement failure in Section 2 is evidenced by the high-severity potholes and heavy alligator cracks we observed during our pavement condition assessment. The patch efforts and filled potholes have failed and are cracks intruding into the patches. Outside of the potholes, we observed high-severity alligator cracking, raveling and rutting (see Photo 2 below).

Photo 2: Section 2 Raveling, Alligator Cracks and Failed Patching

4.2 PAVEMENT CORES

We present the results of our pavement coring and R-value test results in Table 1 below.

Table 2: Pavement Core Results

Section	Core Number	Roadway	AC Thickness (ft)	AB Thickness (ft)	Subgrade Sample Depth (ft)	Existing TI Range	R-value Result
2	C-1	North Johnson Road	0.20	0.37	3.41	4-5	49
	C-2	North Johnson Road	0.16	0.33	2.25	3-4	
	C-3	North Johnson Road	0.16	0.33	4.5	3-4	
	C-4	North Johnson Road	0.16	0.50	4.33	4-5	49
	C-5	North Johnson Road	0.21	0.50	4.29	5-6	
	C-6	North Johnson Road	0.17	0.33	4.5	3-4	
	C-7	Sconyers Court	0.25	0.38	4.37	4-5	
1	C-8	Ashley Court	0.17	0.33	1.83	3-4	
	C-9[1]	Jackson Court	0.17	0.54	4.29	5-6	
	C-10	Hammond Drive	0.21	0.37	4.41	4-5	

Section	Core Number	Roadway	AC Thickness (ft)	AB Thickness (ft)	Subgrade Sample Depth (ft)	Existing TI Range	R-value Result
	C-11	Hammond Drive	0.25	0.50	4.25	5-6	
	C-12	Hammond Drive	0.16	0.50	4.33	4-5	
	C-13	Stuart Place	0.20	0.37	4.41	4-5	
	C-14[1]	California Avenue	0.33	--	4.66	4-5	
	C-15[1]	California Avenue	0.29	--	3.91	3-4	
2	C-16[1]	California Avenue	0.16	0.37	2.91	7-8	
	C-17	Arbor Way	0.25	0.25	4.5	5-6	
	C-18	Arbor Way	0.16	--	4.83	2-3	
	C-19[1]	Arbor Way	0.20	0.45	4.33	6-7	
	C-20[1]	Arbor Way	0.25	0.25	2.08	5-6	
	C-21	Arbor Way	0.16	0.50	3.33	6-7	
1	C-22	Karen Way	0.22	0.33	4.43	5-6	
	C-23	Christine Way	0.16	0.33	3.16	6-7	
	C-24	Heppner Way	0.23	0.26	2.0	5-6	
	C-25	North Quincy Road	0.16	0.33	4.5	4-5	60
	C-26	North Quincy Road	0.37	0.16	3.79	5-6	
	C-27[1]	El Paseo Street	0.10	--	3.02	4-3	
	C-28	El Paseo Street	0.45	--	4.54	5-6	
	C-29[1]	El Paseo Street	0.08	--	2.58	5-6	
	C-30[1]	Linda Vista Street	0.29	--	4.70	3-4	
	C-31	La Sombra Court	0.25	0.33	1.08	5-6	
	C-32	La Sombra Court	0.25	0.16	2.25	4-5	
2	C-33	Linn Court	0.20	0.29	2.5	4-5	
	C-34	Novo Drive	0.16	0.25	4.58	4-5	
	C-35	Novo Drive	0.12	--	4.87	1-2	
	C-36[1]	Wallace Street	0.45	--	3.37	3-4	
	C-37[1]	Charles Place	0.41	--	3.91	2-3	
	C-38	Charles Place	0.33	--	3.37	2-3	
	C-39	Zinfandel Lane	0.08	0.16	3.66	1-2	23
	C-40	Zinfandel Lane	0.16	0.16	2.5	1-2	
	C-41	Zinfandel Lane	0.20	0.12	3.16	1-2	
	C-42	Zinfandel Lane	0.16	0.25	4.08	2-3	
	C-43	North Johnson Road	0.16	--	--	3-4	
2	C-44	North Johnson Road	0.16	0.41	--	4-5	
	C-45	Sconyers Court	0.16	0.41	--	4-5	
1	C-46	Ashley Court	0.13	0.47	--	3-4	49
	C-47	Jackson Court	0.16	0.47	--	5-6	
	C-48	Hammond Drive	0.16	0.54	--	4-5	
2	C-49	Stuart Place	0.13	0.54	--	4-5	
	C-50	California Avenue	0.16	0.33	--	4-5	
	C-51[1]	Arbor Way	0.08	--	--	4-5	
	C-52	Karen Way	0.16	0.25	--	5-6	
1	C-53	Christine Way	0.16	0.29	--	6-7	60
	C-54	Heppner Way	0.13	5.5	--	5-6	
2	C-55	North Quincy Road	0.16	0.33	--	4-5	

Section	Core Number	Roadway	AC Thickness (ft)	AB Thickness (ft)	Subgrade Sample Depth (ft)	Existing TI Range	R-value Result
	C-56[1]	El Paseo Street	0.16	--	--	5-6	
	C-57[1]	Linda Vista Street	0.13	--	--	3-4	
	C-58	La Sombra Court	0.16	0.67	--	5-6	
	C-59	La Sombra Court	0.16	0.67	--	4-5	
	C-60	Linn Court	0.16	0.33	--	4-5	
	C-61	Novo Drive	0.16	0.42	--	4-5	
	C-62	Wallace Street	0.08	--	--	3-4	23
	C-63	Charles Place	0.13	--	--	2-3	
	C-64	Zinfandel Lane	0.16	0.46	--	1-2	

-- Not encountered.
[1] Oil Road Encountered

We used the Caltrans Highway Design Manual, Chapter 630 methodology to back-calculate the traffic index the existing pavement sections. We established in-place/aged gravel factors for the asphalt and aggregate base and used R-values obtained from our laboratory testing. The existing asphalt thickness was generally between 2 to 3 inches, however anomalies were encountered on Wallace Street, El Paseo Street, and Charles Place where approximately 5 inches of HMA was observed. No fabric was present in our cores and aggregate base thickness ranged between 1.5 and 6.5 inches. Oiled gravel/sand was encountered underneath cores 9, 14, 15, 16, 19, 20, 27, 29, 30, 36, and 37 and the thicknesses ranged between 1 to 7 inches.

4.3 SUBGRADE CONDITIONS

We visually classified the encountered subgrade as Poorly-graded Sand with Silt (SP-SM) to Silty Sand (SM). R-Value laboratory tests performed on three subgrade samples (C-5, C-30, and C-42) yielded results of 23, 49, and 60, respectively. We present the core logs with further subgrade descriptions in Appendix A, and laboratory results in Appendix B.

5 CONCLUSIONS AND RECOMMENDATIONS

The PCI for the pavement in Section 1 correlates with preservation-type treatments, like seals or micro-surfacing; however, the existing structural sections fail to support the desired design traffic index and the existing curb and gutter limit rehabilitation alternatives. The existing HMA sections encountered in all of our cores indicate an insufficiency in the structural sections eliminating the potential for a mill and overlay.

Our pavement condition assessment for Section 2 generally agrees with the PCI assigned to each street. The streets are in very poor condition and likely no longer supporting the traffic loading it is currently experiencing. Complete reconstruction or robust rehabilitation is warranted for the streets in Section 2.

We provide our recommended pavement strategies and options for the two sections below. It is our understanding that streets in this project are classified as local roads and minor collectors. Therefore, we provide pavement sections that satisfy a design TI ranging between 6 to 9. Below we provide a rehabilitation strategy that takes into consideration the current condition of the two sections, the existing pavement section thicknesses, and the design TI.

5.1 SECTION 1

Section 1 is fair to poor condition with moderate severity block cracks and fair condition patches. The existing section is significantly deficient when compared to the City's desired traffic index. The cracks present are exasperated by the high severity raveling. Many of the cracks show signs of water seepage, impacting the AB and subgrade.

The existing pavement thicknesses in Section 1 result in an average traffic index of 3 to 4, therefore, to achieve a traffic index of 6 (7 at intersections), an increase in the existing pavement sections would be required. An increase in the section thickness can be accomplished in three ways:

1) Remove the existing pavement section and replace it with a structurally adequate section using either full-depth HMA (recommendations in Section 5.4 of this report) or a traditional pavement section with HMA and AB (recommendations in Section 5.5 of this report).
2) Perform full-depth reclamation (FDR), which increases the section from the top down (recommendations in Section 5.3 of this report) and is typically more economical than a remove and replace (option 1 above).
3) Traditional remove and replace. This is the costliest option and we provide this as a reference for the City to compare to other rehabilitation options.

5.2 SECTION 2

Section 2 is in very poor condition and significant pavement failure was observed during our pavement assessment. To improve the PCI rating and meet the design traffic index, a significant rehabilitation strategy is required. This strategy includes:

1) Full Depth Reclamation (FDR). FDR is likely the most cost effective method of rehabilitation, and the minimum design sections can support TI's greater than the design TI.
2) Full Depth HMA. In lieu of a mill and overlay, complete removal of the HMA section, regrading to meet grade constraints, and placing a new HMA section to satisfy the design TI is an appropriate option for rehabilitation. This option is likely costlier than an FDR, however, still provides the support required to meet the design TI and not interfere with grade constraints.
3) While a mill and overlay (with a grade increase) could provide a sufficient HMA structural section to support the design TI, the remaining HMA (after milling) would be in very poor condition providing a base not conducive for an overlay (much of the remaining HMA would likely unravel during milling and cause constructability issues). The cracks would likely propagate to the surface within 5 years but a temporary increase in the PCI would occur. We do not recommend this option.

5.3 FULL DEPTH RECLAMATION (FDR)

FDR is the process of recycling the existing pavement section (HMA, AB, and subgrade) with cement and water. The FDR mix is then graded to meet the required grade constraints and compacted. Because FDR does not have the skid resistance or strength of HMA, a structural HMA wearing coarse is required.

In-Place Recycle rehabilitation should consist of thoroughly dismantling and mixing the existing (after milling) HMA, AB, and subgrade material with Portland cement (the amount will be

determined if this option is selected) and water to the required depth. Following mixing process, compact the recycled section to 95% relative compaction (ASTM D1557) at least 2% above optimum moisture content.

All exposed surfaces should be kept moist or bituminous cure sealed if exposure is expected to be greater than 3 days. We recommend microcracking the finished recycled section prior to HMA placement; this will help prevent shrinkage cracks from propagating through the HMA section. Finally, the In-Place Recycle section should be proof rolled for stability prior to placing HMA.

Table 3: Full Depth Recycled Sections

Roadway Section	Traffic Index	Thicknesses (ft)		
		HMA[2]	FDR[3,4]	Total Pavement Thickness
Local Road	6.0[1]	0.25	0.75	1.00
	7.0	0.25	1.00	1.25
Minor/Major Collector	8.0	0.30	1.15	1.45
	9.0	0.35	1.30	1.65

[1]Traffic Index is based on the required HMA section, however actual Traffic Index is slightly higher due to using a minimum FDR section.
[2]New HMA wearing coarse.
[3]The depth and location of existing utilities would need to be determined to confirm ability to recycle in-place.
[4]Full Depth Recycling method (G_f = 1.2) based on a minimum developed unconfined compressive strength of 300 psi (CTM 373). Minimum recommended FDR section is 0.70 feet

Full Depth Reclamation (FDR) is more cost effective and relatively fast as compared to remove and replace methods (traditional pavement sections or full depth HMA). If FDR is selected, we can complete mix design(s) at a range of appropriate cement contents for bidding purposes.

5.4 FULL DEPTH HMA

We provide full depth HMA structural sections as an alternative to meet the design TI for the project using a design R-value of 23. This alternative requires the removal of the existing HMA, moisture conditioning and recompacting the exposed subgrade prior to placement of the new HMA.

Table 4: Full Depth HMA Sections

Roadway Section	Traffic Index	Hot Mix Asphalt (ft)
Local Road	6.0	0.65
	7.0	0.75
Minor/Major Collector	8.0	0.85
	9.0	0.95

5.5 TRADITIONAL PAVEMENT SECTION

We provide traditional pavement structural sections as an alternative to meet the design TI for the project using a design R-value of 23.

Table 5: New Pavement Sections

Roadway Section	Traffic Index	Thicknesses (ft)		
		HMA	AB	Total Pavement Thickness
Local Road	6.0	0.25	0.80	1.05
	7.0	0.30	0.95	1.25
Minor/Major Collector	8.0	0.40	1.10	1.50
	9.0	0.45	1.25	1.5

6 CONSTRUCTION CONSIDERATIONS

During our fieldwork, underground utilities were marked and avoided. The presence of underground utilities could significantly impact the rehabilitation alternatives for this project. Should any form of bottom-up construction methods be selected (such as FDR), special attention to existing utilities should be given. The contractor should be responsible for locating any utility within the project limits. Based on our experience and discussion with contractors, a minimum separation/cover of 1.25 ft to 1.5 ft (depending on the type of utility) between the utility and the proposed scarification/recycled section should be used to reduce impacts to utilities.

7 RISK MANAGEMENT

Our experience, and that of our profession, clearly indicates that the risks of costly design, construction, and maintenance problems can be significantly lowered by retaining the Geotechnical Engineer of Record to provide additional services during design and construction. For this project, Crawford should be retained as the Geotechnical Engineer of Record to:

- Review and provide comments on the civil plans and specifications prior to construction;
- Monitor construction to check and document our report assumptions. At a minimum, Crawford should monitor grading, scarification and compaction of the roadway subgrade;
- Update this report if design changes occur, 2 years or more lapse between this report and construction, and/or site conditions have changed.

If we are not retained to perform the above applicable services, we are not responsible for any other party's interpretation of our report, and subsequent addendums, letters, and discussions.

8 LIMITATIONS

Crawford performed services in accordance with generally accepted geotechnical engineering principles and practices currently used in this area. Where referenced, we used ASTM or Caltrans standards as a general (not strict) *guideline* only. We do not warranty our services.

Crawford based this report on the current site conditions. We assume the soil, AB, and HMA conditions encountered during our fieldwork are representative of the subsurface and pavement conditions at the site. Actual conditions between core and boring locations can be different.

Our scope did not include evaluation of on-site hazardous materials, site geology, site seismicity, or flooding potential.

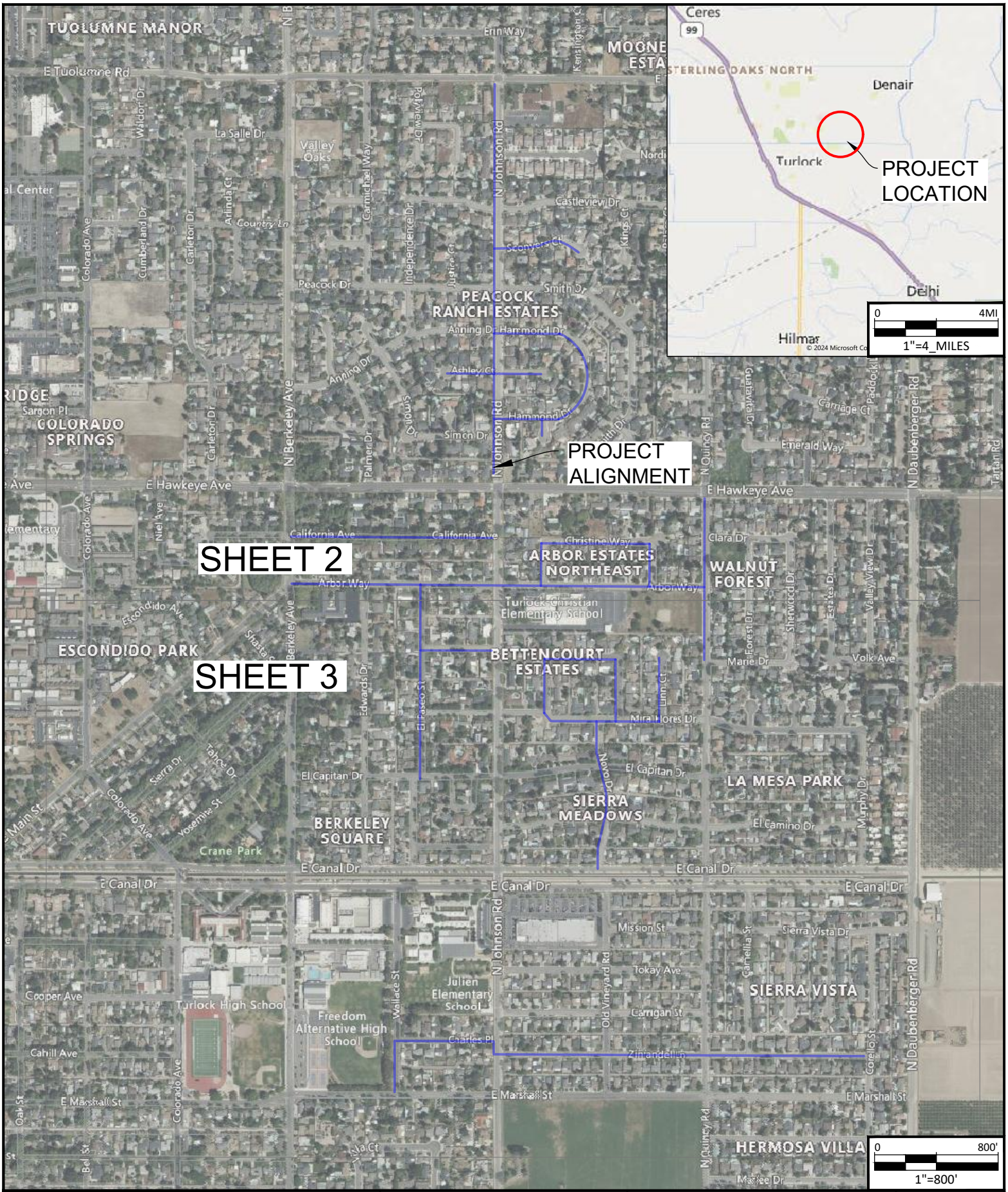
The pavement core locations shown in Figures 1A to 1D are based on visual comparisons made in the field between site features and features shown on aerial mapping, therefore they are approximate.

Modern design and construction are complex, with many regulatory restrictions, involved parties, and construction alternatives. It is common to experience changes and delays. The owner should set aside a reasonable contingency fund based on complexities and cost estimates to cover changes and delay

FIGURES

Figures 1 – Vicinity Map

Figures 2 – Exploration Maps



NORTH

Source:
Basemap: AutoCAD Civil3D Geolocation Tool, using Bing Maps

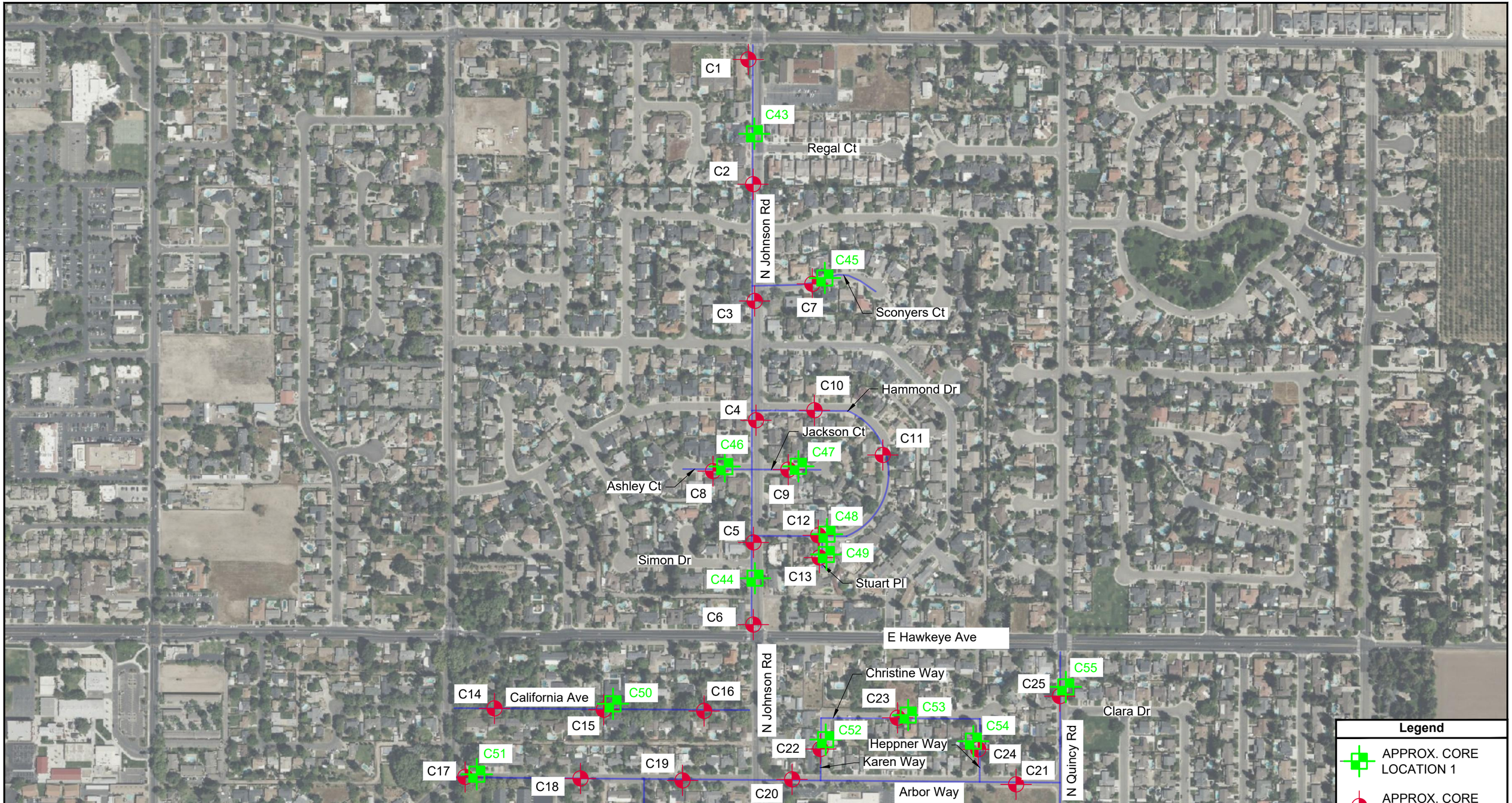
Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

TURLOCK PAVEMENT REHABILITAION LOCATION 3

TURLOCK, CA

Figure 1
Vicinity Map

Prj. No: 23-931.3
Date: 06/04/2024



MATCHLINE- SEE SHEET 2 EXPLORATION MAP

NORTH

Source:
Basemap: AutoCAD Civil3D Geolocation Tool, using Bing Maps

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

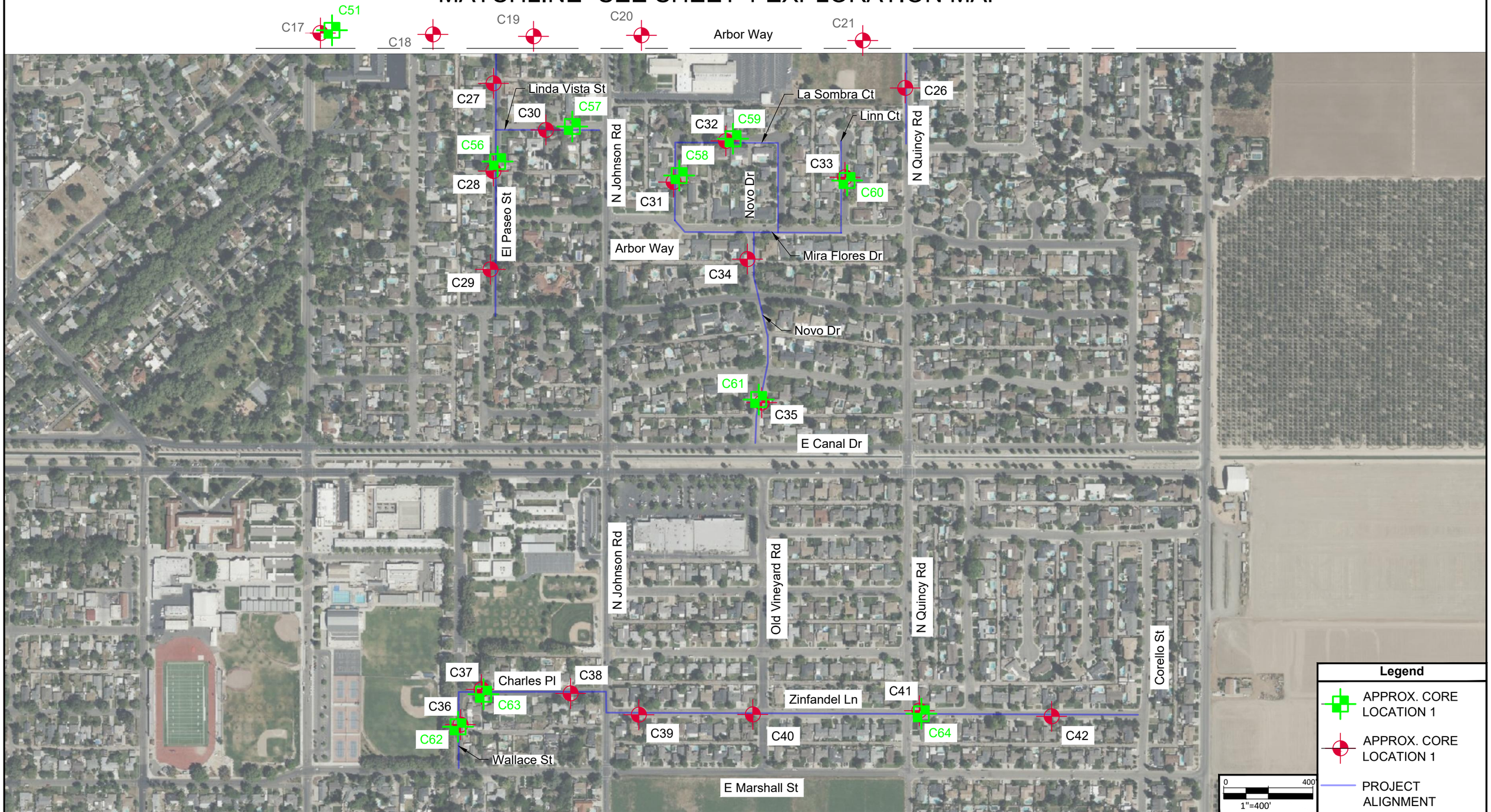
TURLOCK PAVEMENT REHABILITATION
LOCATION 1 & 3

TURLOCK, CA

Figure 2
Exploration Map 1 of 2

Prj. No: 23-931.3
Date: 07/04/2024

MATCHLINE- SEE SHEET 1 EXPLORATION MAP



NORTH

Source:
Basemap: AutoCAD Civil3D Geolocation Tool, using Bing Maps

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Geotechnical Engineering, Design and Construction Services

TURLOCK PAVEMENT REHABILITATION
LOCATION 1 & 3

TURLOCK, CA

Figure 2
Exploration Map 2 of 2

Prj. No: 23-931.3
Date: 07/04/2024

APPENDIX A

Core Logs

Core No.	AC (in)	AB (in)	Subgrade	Additional Notes	Photo
C-1	2.5	4.5	Silty Sand (SM)		
C-2	2	4	Silty Sand (SM)		

Core No.	AC (in)	AB (in)	Subgrade	Additional Notes	Photo
C-3	2	4	Silty Sand (SM)		
C-4	2	6	Silty Sand (SM)		

Core No.	AC (in)	AB (in)	Subgrade	Additional Notes	Photo
C-5	2.5	6	Silt with SAND (ML)		
C-6	2	4	Sandy Silt (ML)		

Core No.	AC (in)	AB (in)	Subgrade	Additional Notes	Photo
C-7	3	4.5	Silty SAND (SM)		
C-8	2	4	Silty SAND (SM)		

Core No.	AC (in)	AB (in)	Subgrade	Additional Notes	Photo
C-9	2	6.5	Silt with SAND (ML)		
C-10	2.5	4.5	Silt with SAND (ML)		

Core No.	AC (in)	AB (in)	Subgrade	Additional Notes	Photo
C-11	3	6	Silt with SAND (ML)		
C-12	2	6	Silt with SAND (ML)		

Core No.	AC (in)	AB (in)	Subgrade	Additional Notes	Photo
C-13	2.5	4.5	Silt with SAND (ML)		
C-14	4	---	Silt with SAND (ML)		

Core No.	AC (in)	AB (in)	Subgrade	Additional Notes	Photo
C-15	3.5	---	Silt with SAND (ML)		
C-16	2.5	4.5	Silt with SAND (ML)		

Core No.	AC (in)	AB (in)	Subgrade	Additional Notes	Photo
C-17	3	3	Silt with SAND (ML)		
C-18	2	---	Silt with SAND (ML)		

Core No.	AC (in)	AB (in)	Subgrade	Additional Notes	Photo
C-19	2.5	5.5	Silt with SAND (ML)		
C-20	3	3	Sandy Silt (ML)		

Core No.	AC (in)	AB (in)	Subgrade	Additional Notes	Photo
C-21	2	6	Sandy Silt (ML)		
C-22	2.75	4	Sandy Silt (ML)		

Core No.	AC (in)	AB (in)	Subgrade	Additional Notes	Photo
C-23	2	4	Sandy Silt (ML)		
C-24	3	3	Sandy Silt (ML)		

Core No.	AC (in)	AB (in)	Subgrade	Additional Notes	Photo
C-25	2	4	Silt with SAND (ML)		
C-26	4.5	2	Sandy Silt (ML)		

Core No.	AC (in)	AB (in)	Subgrade	Additional Notes	Photo
C-27	6	---	Sandy Silt (ML)		
C-28	5.5	---	Sandy Silt (ML)		

Core No.	AC (in)	AB (in)	Subgrade	Additional Notes	Photo
C-29	8	---	Sandy Silt (ML)		
C-30	3.5	---	Sandy Silt (ML)		

Core No.	AC (in)	AB (in)	Subgrade	Additional Notes	Photo
C-31	3	4	Sandy Silt (ML)		
C-32	3	2	Sandy Silt (ML)		

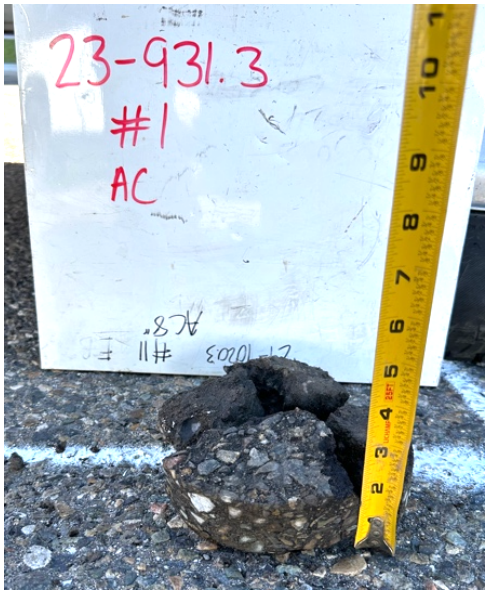
Core No.	AC (in)	AB (in)	Subgrade	Additional Notes	Photo
C-33	2.5	3.5	Sandy Silt (ML)		
C-34	2	3	Sandy Silt (ML)		

Core No.	AC (in)	AB (in)	Subgrade	Additional Notes	Photo
C-35	1.5	---	Sandy Silt (ML)		
C-36	5.5	---	Sandy Silt (ML)		

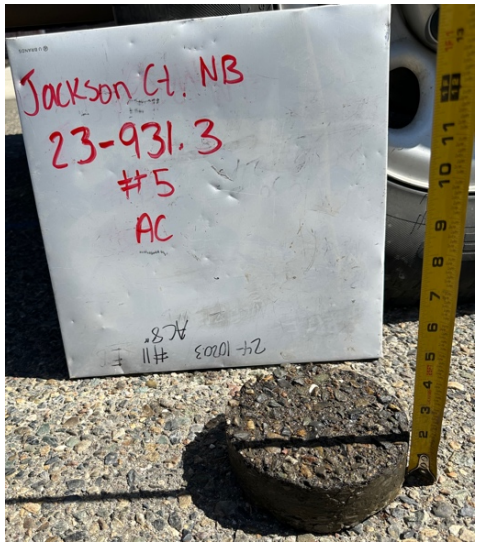
Core No.	AC (in)	AB (in)	Subgrade	Additional Notes	Photo
C-37	5	---	Sandy Silt (ML)		
C-38	4	---	Sandy Silt (ML)		

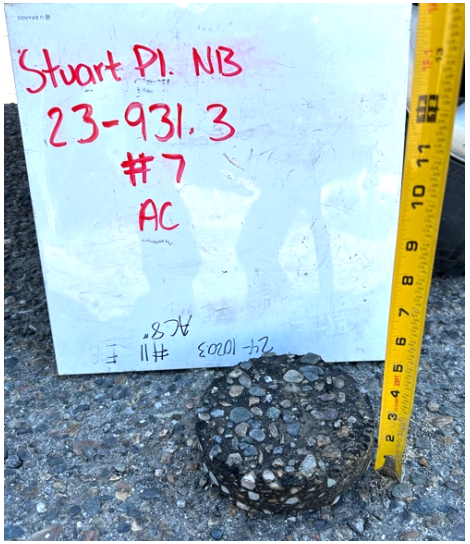
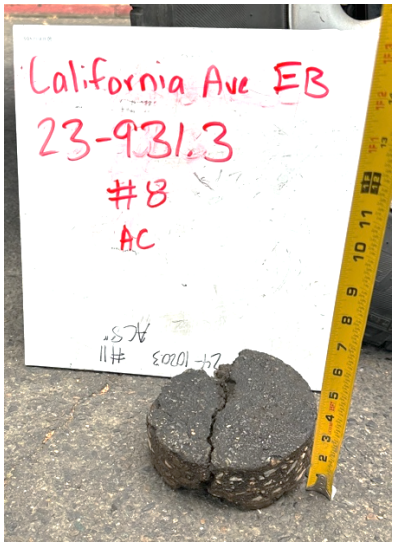
Core No.	AC (in)	AB (in)	Subgrade	Additional Notes	Photo
C-39	1	2	Silt with SAND (ML)		
C-40	2	2	Silt with SAND (ML)		

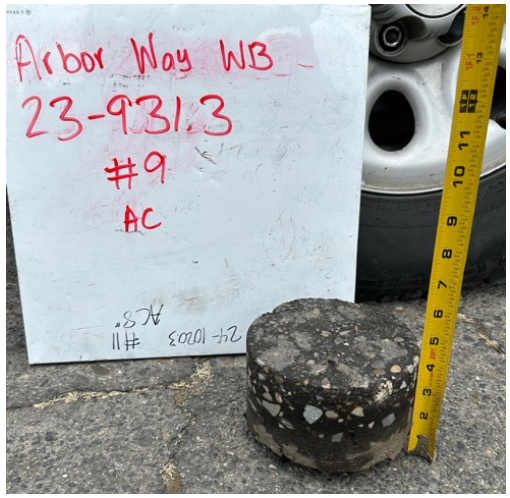
Core No.	AC (in)	AB (in)	Subgrade	Additional Notes	Photo
C-41	2.5	1.5	SANDY Silt (ML)		
C-42	2	3	Silt with SAND (ML)		

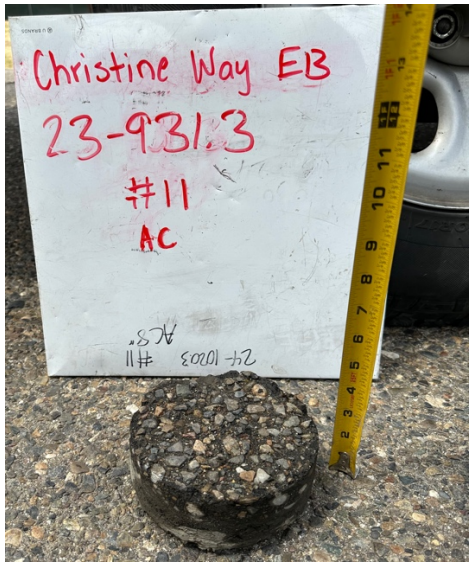
Core No.	AC (in)	AB (in)	Subgrade	Additional Notes	Photo
C-43	2	-	Silty SAND (ML)		
C-44	2	5	Silty SAND (ML)		

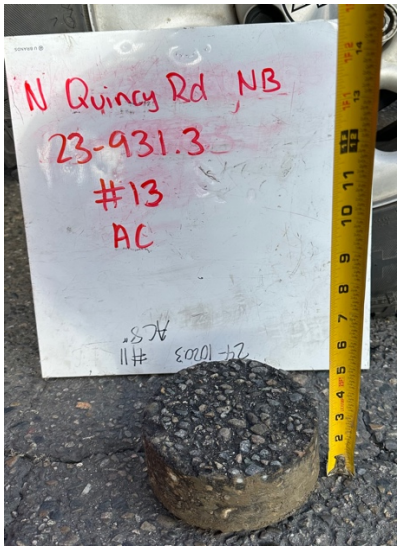
Core No.	AC (in)	AB (in)	Subgrade	Additional Notes	Photo
C-45	2	5	Silty SAND (ML)		
C-46	1.5	5.5	Silty SAND (ML)		

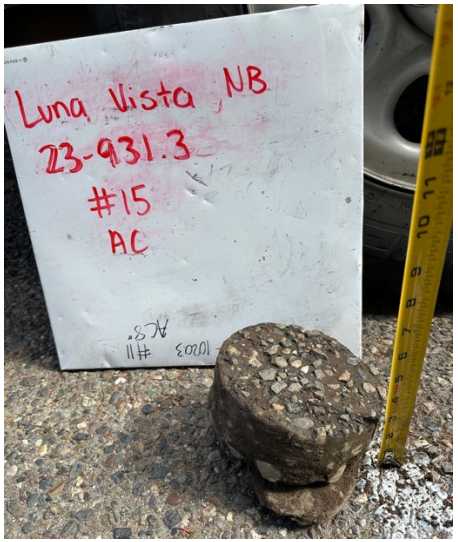
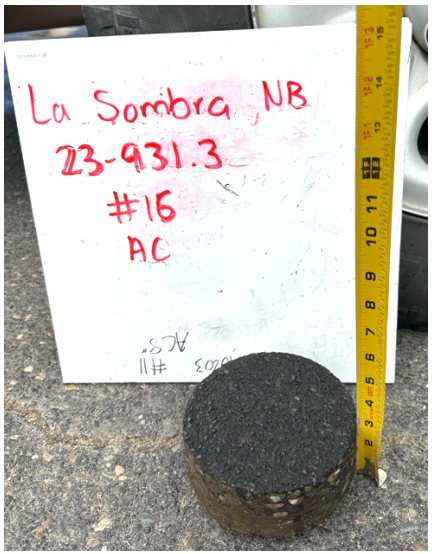
Core No.	AC (in)	AB (in)	Subgrade	Additional Notes	Photo
C-47	2	5.5	Silt with SAND (ML)		
C-48	2	6.5	Sandy SILT (ML)		

Core No.	AC (in)	AB (in)	Subgrade	Additional Notes	Photo
C-49	1.5	6.5	Silty SAND (ML)		
C-50	2	4	Silty SAND (ML)		

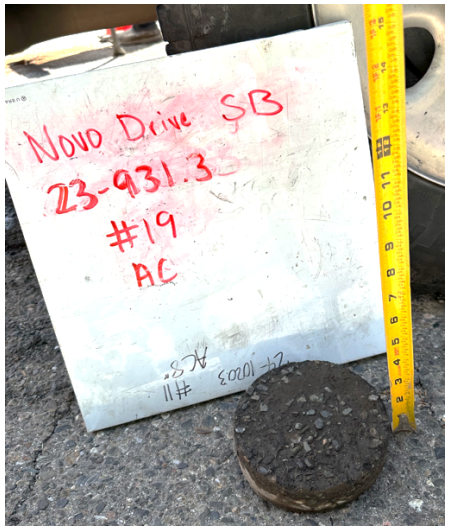
Core No.	AC (in)	AB (in)	Subgrade	Additional Notes	Photo
C-51	1	-	Silt with SAND (ML)	2.5” of oil road	
C-52	2	3	Silt with SAND (ML)		

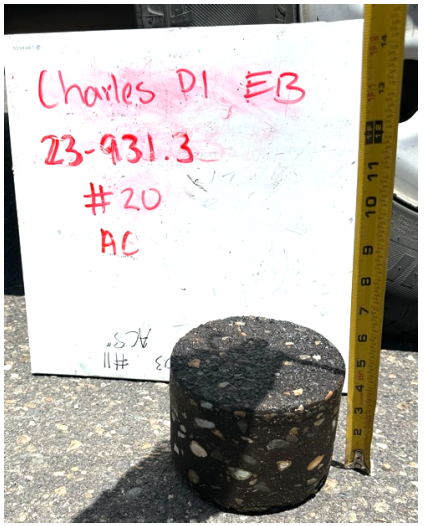
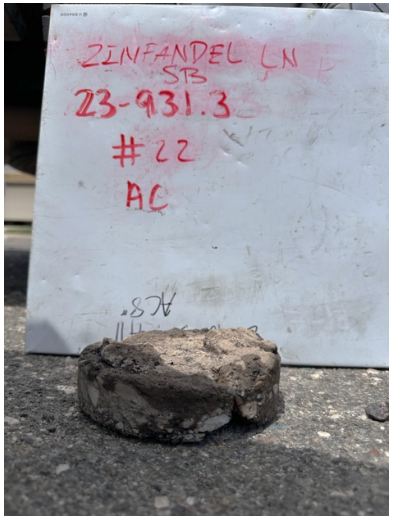
Core No.	AC (in)	AB (in)	Subgrade	Additional Notes	Photo
C-53	2	3.5	Silt with SAND (ML)		
C-54	1.5	5.5	Silt with SAND (ML)		

Core No.	AC (in)	AB (in)	Subgrade	Additional Notes	Photo
C-55	2	4	Silt with SAND (ML)		
C-56	2		Silt with SAND (ML)	5” of oil road	

Core No.	AC (in)	AB (in)	Subgrade	Additional Notes	Photo
C-57	1.5	-	Silt with SAND (ML)	3.5” of oil road	
C-58	2	6	Silt with SAND (ML)		

Core No.	AC (in)	AB (in)	Subgrade	Additional Notes	Photo
C-59	2	8	Silt with SAND (ML)		
C-60	2	4	Silt with SAND (ML)		

Core No.	AC (in)	AB (in)	Subgrade	Additional Notes	Photo
C-61	2	5	Silt with SAND (ML)		
C-62	4	-	Sandy SILT (ML)	3” of oil road	

Core No.	AC (in)	AB (in)	Subgrade	Additional Notes	Photo
C-63 (Says #20 but correct location is #21)	1.5	-	Sandy SILT (ML)	3.25" of oil road	
C-64	1.5	5.5	Sandy SILT (ML)		

APPENDIX B

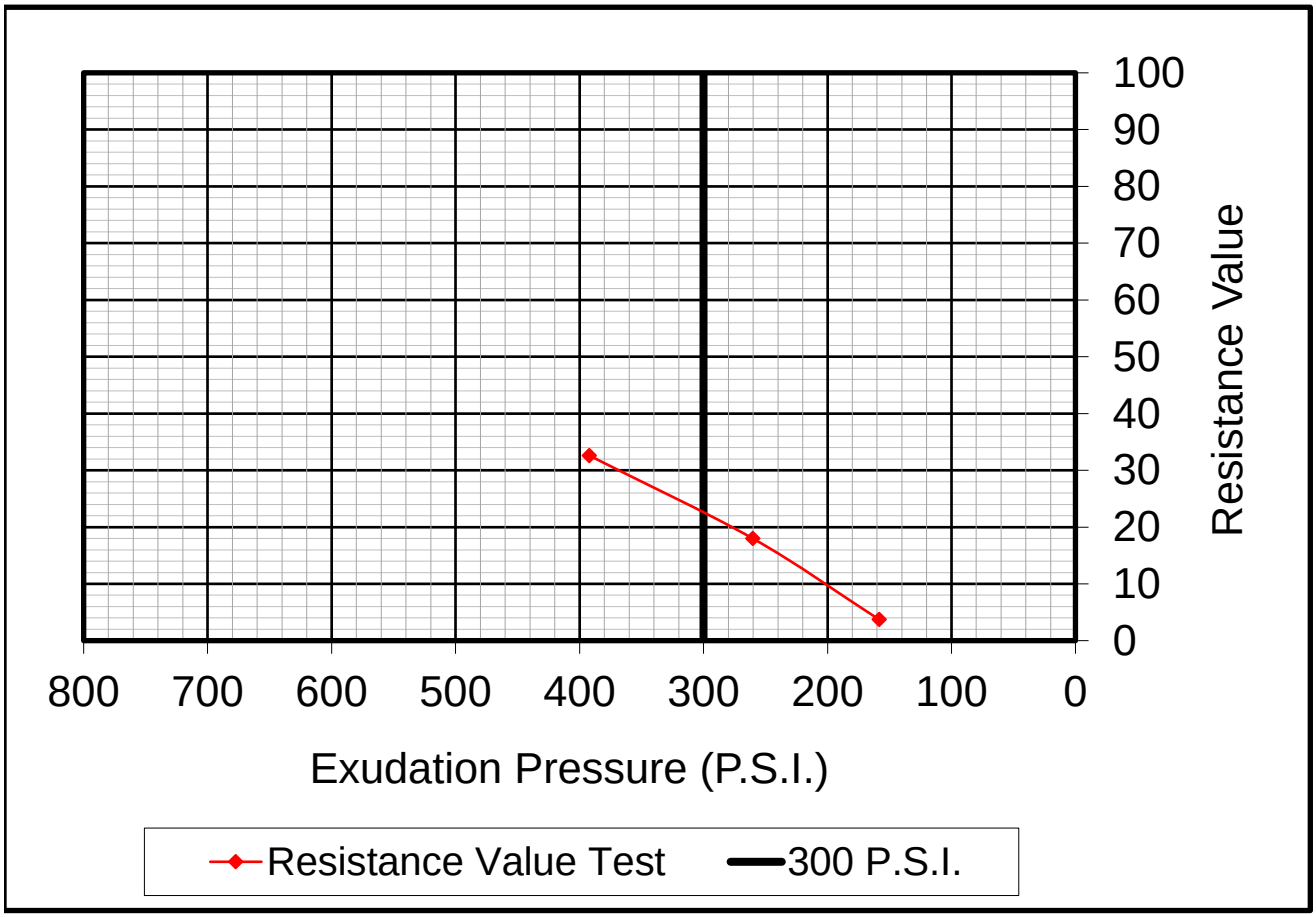
Laboratory Test Results

Pavement Engineering Inc.
Redding • Sacramento • San Luis Obispo
Concord • Santa Clarita

RESISTANCE (R) VALUE TEST

California Test 301

Laboratory No.: L241037
Project No.: 240017 (Crawford & Associates Project: 23-931.3)
Sample Date: April 26, 2024
Report Date: May 20, 2024
Client: Crawford & Associates, Inc.
Project Name: 2024 Laboratory Testing - Turlock Pavement Rehabilitation
Sample Description: Brown Clayey Silt
Sample Location: C41 @ 4"-34"



Specimen No.	1	2	3
Moisture Content (%)	22.4	21.3	22.9
Dry Density (PCF)	110.7	112.6	110.1
Resistance Value (R)	18	33	4
Exudation Pressure (PSI)	260	392	158
Expansion Pressure	22	52	0
As Received Moisture Content (%)	22.4		

RESISTANCE VALUE AT 300 P.S.I. 23

AASHTO R18

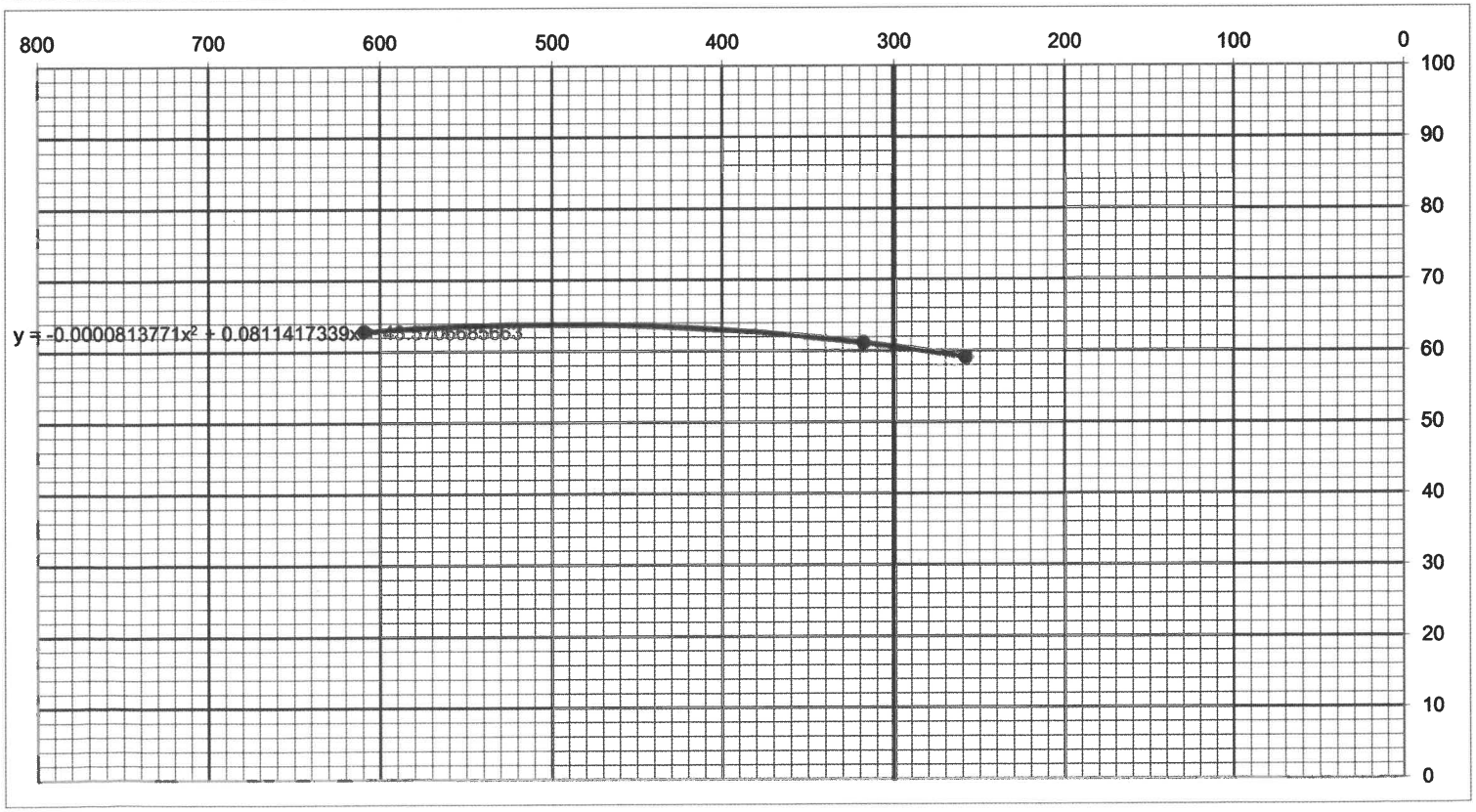
Reviewed By: _____

Brandon Rodebaugh
Materials Engineer

RESISTANCE VALUE

California Test Method No. 301

Job Number:	**23-931.3**	**Date Tested:** 5/24/2024		**R-value:**	**60**
Project:	Turlock Pavement Rahab			**Sample :**	**C30**
Classification of Material:	Sm, Silty Sand , Brown			**Technician:**	D.S.
Initial Sample Weight	1100	1100	1100		
Mold Number	D	F	E		
Air Pressure-PSI	100	75	60		
Initial Moisture %	5.2	5.2	5.2		
Water Added ml/g	50	55	60		
Water Added %	4.8	5.3	5.7		
Final Moist %	10.0	10.5	11.0		
Soil + Mold Weight-Grams	3203.5	3197.3	3162.8		
Mold Weight-Grams	2073	2067	2029		
Soil Weight-Grams	1130.5	1130.3	1133.8		
Height of Sample-Inches	2.55	2.55	2.54		
Density-PCF	122.1	121.6	121.9		
Dial Reading (x.0001 inches)	91	96	107		
Expansion Pressure (psf)	394	416	463		
Stabilometer at 1000 lbs.	24	26	28		
2000 lbs.	42	44	46		
Displacement	4.16	4.19	4.29		
Exudation Pressure-Lbs	7650	3990	3240		
Exudation-PSI	609	318	258		
R-Value Calculated	63	61	59		
Corrected R-Value	63	61	59		



RESISTANCE VALUE

California Test Method No. 301

Job Number:	**23-931.3**	**Date Tested:** 5/24/2024		**R-value:**	**49**
Project:	Turlock Pavement Rahab			**Sample :**	**C5**
Classification of Material:	Sm, Silty Sand , Brown			**Technician:**	D.S.
Initial Sample Weight	1105	1100	1100		
Mold Number	A	B	C		
Air Pressure-PSI	100	75	50		
Initial Moisture %	5.4	5.4	5.4		
Water Added ml/g	55	57	60		
Water Added %	5.2	5.5	5.7		
Final Moist %	10.6	10.8	11.1		
Soil + Mold Weight-Grams	3218.9	3212.4	3211.1		
Mold Weight-Grams	2086	2085	2083		
Soil Weight-Grams	1132.9	1127.4	1128.1		
Height of Sample-Inches	2.48	2.49	2.47		
Density-PCF	125.1	123.8	124.5		
Dial Reading (x.0001 inches)	78	89	99		
Expansion Pressure (psf)	338	385	429		
Stabilometer at 1000 lbs.	30	31	33		
2000 lbs.	49	54	60		
Displacement	4.88	4.91	4.98		
Exudation Pressure-Lbs	7650	3990	3240		
Exudation-PSI	609	318	258		
R-Value Calculated	54	50	46		
Corrected R-Value	54	50	46