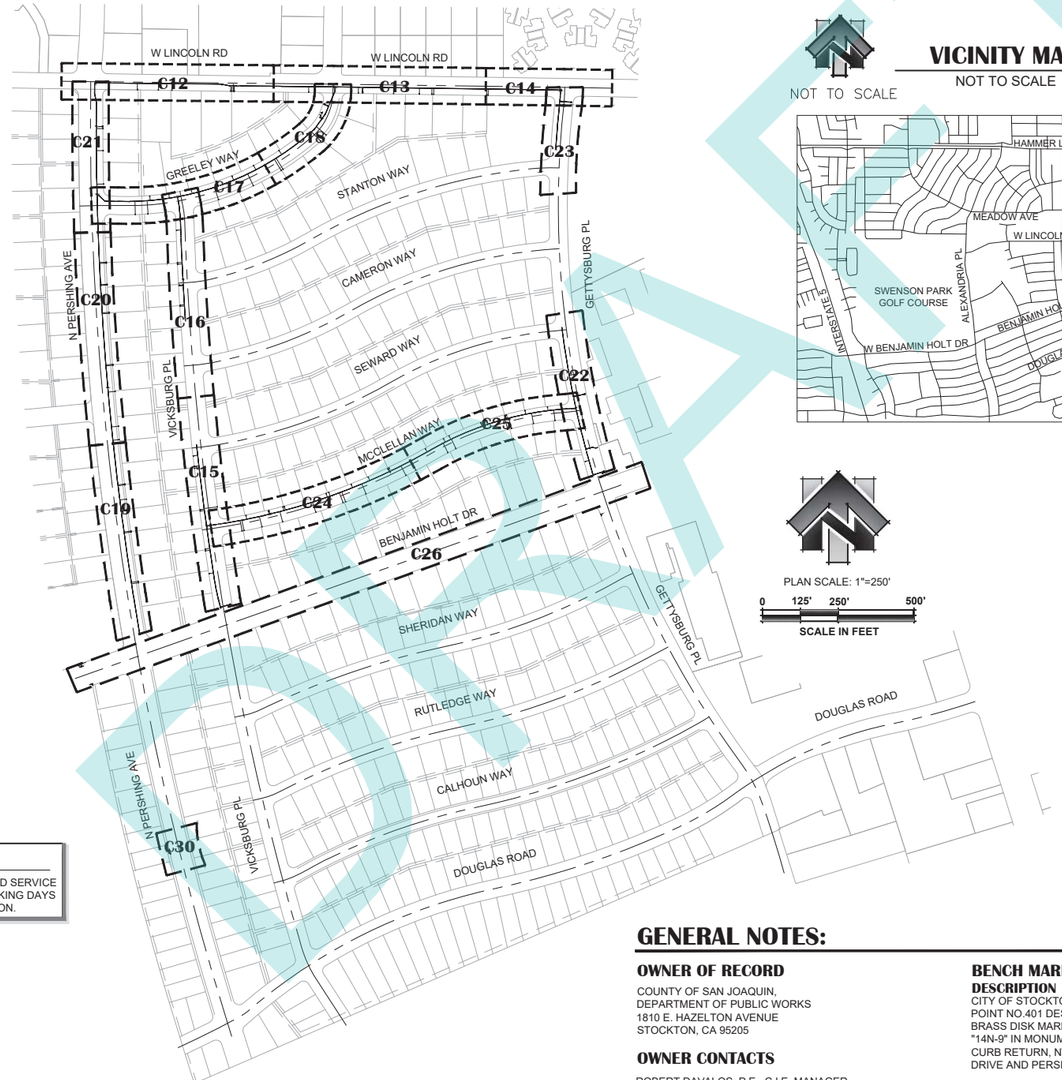
COUNTY OF SAN JOAQUIN, CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
COMMUNITY INFRASTRUCTURE ENGINEERING
IMPROVEMENT PLANS FOR:

LINCOLN VILLAGE MAINTENANCE DISTRICT
LINCOLN VILLAGE WATER MAIN REPLACEMENT PHASE 1B
CIP #610127

R.E.Y. PROJECT No. 7677.001

SHEET INDEX



PLAN SCALE: 1"=250'
0 125' 250' 500'
SCALE IN FEET

VICINITY MAP
NOT TO SCALE

UTILITY REPRESENTATIVES

UTILITY	REPRESENTATIVE	TELEPHONE
GAS PG & E	PAUL SENSIBAUGH	(916) 760-5737
ELECTRICITY PG & E	PAUL SENSIBAUGH	(916) 760-5737
TELEPHONE AT&T	SHARON DINNELL	(916) 484-2388
TELEPHONE VERIZON	CHAD AUCHEY	(510) 580-6363
WATER CAL WATER	DAVID EBERHARDT	(209) 547-7900
SEWER CITY OF STOCKTON	ALI GHAREGOZLOO	(209) 937-8787
DRAINAGE CITY OF STOCKTON	ALI GHAREGOZLOO	(209) 937-8787
U.S.A. U.S.A.		(800) 624-2444
FIRE FIRE DEPARTMENT	PHIL SIMON	(209) 937-8271
CABLE TV COMCAST	DARRIN EATON	(916) 830-6757
COMMUNICATION CONSOLIDATED COMMUNICATIONS	WENDY DAPORE	(916) 786-1218

Know what's below. Call before you dig.

CALL BEFORE YOU DIG

THE CONTRACTOR SHALL CALL "UNDERGROUND SERVICE ALERT" (USA) AT 800-642-2444 AT LEAST 2 WORKING DAYS PRIOR TO PERFORMING ANY EXCAVATION.

GENERAL NOTES:

OWNER OF RECORD
COUNTY OF SAN JOAQUIN,
DEPARTMENT OF PUBLIC WORKS
1810 E. HAZELTON AVENUE
STOCKTON, CA 95205

OWNER CONTACTS
ROBERT DAVALOS, P.E., C.I.E. MANAGER
(209)468-3697

BEN GUZMAN, UTILITY DISTRICT SUPERINTENDENT
(209)468-3090

AWNI TAHA, P.E., ENGINEERING SERVICE MANAGER - FIELD
(209)468-3036

BENCH MARK
DESCRIPTION
CITY OF STOCKTON BENCHMARK BOOK. BENCHMARK POINT NO.401 DESCRIBED AS FOLLOWS:
BRASS DISK MARKING COS MONUMENT STAMPED "14N-9" IN MONUMENT WELL +/- 5.5 FT SE OF SOUTH CURB RETURN, NW CORNER OF BENJAMIN HOLT DRIVE AND PERSHING AVENUE

BASIS OF BEARING
CALIFORNIA STATE PLANE, NAD83 ZONE III, 1991.35 EPOCH AS DELINEATED IN RECORD OF SURVEY BOOK 35 MAP 05 SAN JOAQUIN COUNTY RECORDS, DEFINING THE CITY OF STOCKTON HORIZONTAL CONTROL SYSTEM AND TAKEN FROM BETWEEN FOUND POINTS NO. 160 AND 397 OF SAID SURVEY.

DESIGNED UNDER THE DIRECTION OF

JAMES W. FISHER, P.E. DATE

SUBMITTED BY COUNTY OF SAN JOAQUIN, CALIFORNIA DEPARTMENT OF PUBLIC WORKS

ALEX CHETLEY
DEPUTY DIRECTOR - DEVELOPMENT DATE

APPROVED BY STOCKTON FIRE DEPARTMENT

PHIL SIMON, ASSISTANT FIRE MARSHAL DATE

NO.	REVISION DESCRIPTION	CHECKED BY	DATE
	90% NOT FOR CONSTRUCTION		

DRAWING SCALE
HOR. SCALE: AS SHOWN
VERT. SCALE: N/A

REY ENGINEERS, INC.
CivilEngineers | LandSurveyors | LDAR
1234 Performance Drive, Stockton, CA 95211
Phone: (916) 853-3636 Fax: (916) 853-3600

IMPROVEMENT PLANS FOR:
LINCOLN VILLAGE WATER MAIN REPLACEMENT PHASE 1B
CIP #610127
TITLE
COUNTY OF SAN JOAQUIN CALIFORNIA

DRAWING INFO
DATE: 10-15-2024
DRAFTER: THKH
DESIGNER: KH
REVIEWER: JWF

R.E.Y. PROJECT NO.
7677.001
SHEET NO. C01 OF C31

NOTES

GENERAL

1. ALL UTILITY LINES SHOWN ON PLANS ARE FOR REFERENCE ONLY, AND ARE TO BE RELOCATED BY OTHERS. PRIOR TO COMMENCING ANY WORK, IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO HAVE EACH UTILITY COMPANY LOCATE IN THE FIELD THEIR MAIN SERVICE LINES AND LATERALS. THE CONTRACTOR MUST NOTIFY MEMBERS OF THE UNDERGROUND SERVICE ALERT (U.S.A.) 48 HOURS IN ADVANCE OF PERFORMING EXCAVATION WORK BY CALLING THE TOLL FREE NUMBER 811 OR 1- 800-642-2444.
2. THE CONTRACTOR MUST FIELD VERIFY ALL EXISTING HIGHWAY AND UTILITY FACILITIES' LOCATIONS AND DEPTHS. IT WILL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO LOCATE AND PROTECT ALL EXISTING HIGHWAY AND UTILITY FACILITIES, SO THAT NO DAMAGE RESULTS TO THEM DURING THE PERFORMANCE OF THIS CONTRACT. THE CONTRACTOR WILL BE REQUIRED TO COOPERATE WITH OTHER CONTRACTORS AND UTILITY COMPANIES INSTALLING NEW STRUCTURES, UTILITIES AND SERVICES TO THE PROJECT. PAYMENT FOR THIS WORK WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS OF WORK.
3. ALL EXISTING UNDERGROUND UTILITIES MAY NOT BE SHOWN. THE CONTRACTOR SHALL TAKE PRECAUTIONARY MEASURES TO PROTECT THESE UTILITIES. THE CONTRACTOR SHALL DO NO EXCAVATION UNTIL ALL UTILITY COMPANIES AND THE SAN JOAQUIN COUNTY HAS BEEN NOTIFIED AND HAS BEEN GIVEN THE OPPORTUNITY TO MARK FACILITIES IN THE FIELD.
4. PRIOR TO TRENCHING FOR ANY WATER PIPE, THE CONTRACTOR SHALL VERIFY, IN THE FIELD, THE SIZE AND LOCATION OF THE EXISTING PIPE AT THE POINT OF CONNECTION. ANY DEVIATION FROM THE PLANS SHALL BE RESOLVED BY THE ENGINEER PRIOR TO TRENCHING.
5. CONTRACTOR IS RESPONSIBLE FOR VERIFYING LOCATION, PROTECTING, AND SUPPORTING ALL EXISTING UTILITY SERVICES TO INDIVIDUAL PARCELS.
6. ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE HEALTH AND SAFETY LAWS OF THE STATE OF CALIFORNIA AND CAL/OSHA STANDARDS.
7. TRENCH BACKFILL SHALL BE COMPACTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
8. ALL EXCESS MATERIALS AND/OR DEBRIS SHALL BE REMOVED UPON COMPLETION OF INSTALLATION.
9. ALL LINES ABANDONED DURING CONSTRUCTION SHALL BE ABANDONED IN PLACE AS DESCRIBED IN THE CONTRACT DOCUMENTS.
10. THE CONTRACTOR MUST MAINTAIN ACCESS FOR RESIDENTS AT ALL TIMES AND PLACE TEMPORARY RAMPS TO AFFECTED RESIDENTS' DRIVEWAYS AT THE END OF EACH WORKING DAY IF A DROP OFF GREATER THAN 0.15' EXISTS. RAMP MATERIALS MUST BE CONSISTENT WITH THAT OF THE ROADBED (OR ROADWAY) SURFACE THAT IT IS TO BE PLACED UPON. PAYMENT FOR THIS WORK MUST BE CONSIDERED AS INCLUDED IN THE VARIOUS ITEMS OF WORK INVOLVED.
11. THE CONTRACTOR MUST EXERCISE DUE CAUTION AND CAREFULLY PRESERVE SURVEY BENCH MARKS, CONTROL POINTS, REFERENCE POINTS AND ALL SURVEY STAKES, AND MUST BEAR ALL EXPENSES FOR REPLACEMENT AND/OR ERRORS CAUSED BY THEIR UNNECESSARY LOSS OR DISTURBANCE.
12. EXPANSION JOINTS WILL BE PROVIDED AT 120' MAXIMUM ON CONCRETE CURB, GUTTER AND SIDEWALK, AND AT RETURNS, BOTH SIDES OF DRIVEWAYS, HYDRANTS, CATCH BASINS AND OTHER FIXED OBJECTS.
13. UNLESS OTHERWISE INDICATED IN THE SPECIFICATIONS, REMOVAL OF TREES, SHRUBS, FENCES, PILLARS, LANDSCAPE FEATURES MUST BE CONSIDERED AS INCLUDED IN THE CONTRACT LUMP SUM PRICE PAID FOR CLEARING AND GRUBBING.
14. SUPPLEMENTAL INFORMATION UPLOADED TO BID EXPRESS IS CONSIDERED TO BE INCLUDED AS PART OF THE CONTRACT DOCUMENTS.

WATER

1. ALL WATER IMPROVEMENTS SHALL CONFORM TO THE CONTRACT DOCUMENTS.
2. CONTRACTOR TO FIELD VERIFY LOCATIONS HORIZONTALLY AND VERTICALLY OF EXISTING WATER IMPROVEMENTS.
3. CONTRACTOR TO PROTECT EXISTING WATER IMPROVEMENTS, WHICH MAY INCLUDE (BUT NOT LIMITED TO) EXISTING WATER LINES, THRUST BLOCKS, FIRE HYDRANTS AND LATERALS.
4. WATER SERVICE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION.
5. CONTRACTOR WILL MAKE ALL CONNECTIONS TO EXISTING WATER MAINS. AFTER NEW WATER MAIN IS COMPLETED, ALL EXISTING WATER LINES ARE TO REMAIN IN SERVICE UNTIL ABANDONED. CONTRACTOR WILL ABANDON EXISTING WATER LINES AND FIRE HYDRANTS AS SHOWN ON THE PLANS. COORDINATE WITH THE COUNTY INSPECTOR.
6. CONTRACTOR SHALL INSTALL 1-INCH SERVICE PIPE, METER AND METER BOX TO ALL LOTS, UNLESS DESCRIBED OTHERWISE IN THE CONTRACT DOCUMENTS. ALL METER BOXES SHALL BE LOCATED IN THE PUBLIC RIGHT OF WAY.
7. ALL WATER SERVICES SHALL BE 1-INCH MINIMUM. WATER SERVICES SHALL BE CONNECTED TO WATER MAINS PER SAN JOAQUIN COUNTY STANDARDS.
8. ALL WATER LINES SHALL BE PRESSURE TESTED, DISINFECTED, FLUSHED AND TESTED FOR BACTERIA IN CONFORMANCE WITH THE CONTRACT DOCUMENTS PRIOR TO FINAL ACCEPTANCE BY THE SAN JOAQUIN COUNTY.
9. SEPARATION OF NEW WATER MAINS FROM OTHER PIPELINES MUST MEET THE REQUIREMENTS OF THE CALIFORNIA CODE OF REGULATIONS, TITLE 22, SECTION 64572.

STRIPING AND SIGNAGE

1. ALL STRIPING AND SIGNAGE SHALL CONFORM TO THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) WITH CALIFORNIA SUPPLEMENT, CURRENT CALTRANS STANDARDS, CURRENT SAN JOAQUIN COUNTY STANDARD SPECIFICATIONS, AND THE PROJECT SPECIFICATIONS. WHERE THESE STANDARDS ARE IN CONFLICT, THE PROJECT SPECIFICATIONS WILL GOVERN, FOLLOWED BY THE SAN JOAQUIN COUNTY STANDARD SPECIFICATIONS, THEN THE CALTRANS STANDARDS, AND FINALLY THE MUTCD.
2. "STRIPING" SHALL INCLUDE STOP BARS, CENTERLINE STRIPING OR MARKERS, CROSSWALKS, ARROWS, PAINTED WORDS AND LEGENDS, AND ALL OTHER PAVEMENT MARKINGS REQUIRED BY THE COUNTY TRAFFIC ENGINEER.
3. ALL STRIPING SHALL BE THERMOPLASTIC, UNLESS NOTED OTHERWISE. ALL STRIPING SHALL BE AT LEAST SIX INCHES (6") WIDE PER CALTRANS STANDARDS.
4. RAISED PAVEMENT MARKERS SHALL BE CERAMIC, REFLECTIVE MARKERS SHALL BE GLASSED-FACED, AND BITUMINOUS MARKERS SHALL BE FLEXIBLE TYPE.
5. ANY CURB REPLACED SHALL BE PAINTED TO MATCH EXISTING CONDITIONS IF NEEDED AND SHALL BE DONE SO IN ITS ENTIRETY.
6. LOCATION OF STRIPING AND SIGNAGE TO BE INSPECTED BY THE COUNTY TRAFFIC ENGINEERING DIVISION PRIOR TO BEING INSTALLED. CONTRACTOR TO COORDINATE.
7. IF THE IMPROVEMENTS NECESSITATE THE OBLITERATION, TEMPORARY OBSTRUCTION, TEMPORARY REMOVAL OR RELOCATION OF ANY EXISTING STRIPING OR SIGNAGE, SUCH STRIPING OR SIGNAGE (REGARDLESS OF CONDITION PRIOR TO CONSTRUCTION) SHALL BE RESTORED OR REPLACED WITH LIKE MATERIALS TO THE SATISFACTION OF THE COUNTY TRAFFIC ENGINEER AND ANY APPLICABLE STANDARDS AS REFERENCE IN NOTE #1 ABOVE.
8. WHERE PORTIONS OF EXISTING PAVEMENT MARKINGS / LEGENDS (ARROWS, LIMIT LINES, CROSSWALKS, ETC) ARE DAMAGED DUE TO CONSTRUCTION, THE ENTIRE PAVEMENT MARKING / LEGEND SHALL BE REPLACED, NOT JUST THE DAMAGED PORTION.
9. IF IMPACTED BY PROPOSED IMPROVEMENTS, RESTORE STREET STRIPING, WHICH MAY INCLUDE STOP BARS, CENTERLINE STRIPING OR MARKERS, CROSSWALKS AND ALL OTHER EXISTING MARKINGS REQUIRED BY THE SAN JOAQUIN COUNTY DIRECTOR OF PUBLIC WORKS.
10. IF IMPACTED BY PROPOSED IMPROVEMENTS, RESTORE SIGNAGE, WHICH MAY INCLUDE STOP SIGNS, SPEED LIMITS SIGNS AND ALL OTHER EXISTING SIGNAGE REQUIRED BY THE SAN JOAQUIN COUNTY DIRECTOR OF PUBLIC WORKS.

POTHOLING

1. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL POTHOLE ALL EXISTING UNDERGROUND UTILITIES IN THE AREA OF THE PROPOSED TRENCH.
2. CONTRACTOR SHALL PROVIDE A SUBMITTAL OF POTHOLING FINDINGS TO THE PROJECT ENGINEER A MINIMUM OF FIFTEEN (15) WORKING DAYS PRIOR TO COMMENCING WORK. THE SUBMITTAL SHALL INCLUDE THE FOLLOWING:
   A) MINIMUM COVER OVER EACH PIPE
   B) OUTSIDE DIAMETER OF EACH PIPE
   C) TYPE / MATERIAL OF EACH PIPE
   D) ASPHALT CONCRETE THICKNESS
   E) AGGREGATE BASE THICKNESS
3. CONTRACTOR SHALL INCLUDE THE COST OF ALL POTHOLING AS IDENTIFIED IN THESE IMPROVEMENT PLANS IN THEIR BID.
4. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD IMMEDIATELY IF ANY DISCREPANCIES ARE FOUND BETWEEN THE CONSTRUCTION DOCUMENTS AND THE ACTUAL FIELD CONDITIONS AS DETERMINED THROUGH POTHOLING.

ABOVE GROUND ELECTRICAL, CABLE, & COMMUNICATIONS FACILITIES

1. CONTRACTOR SHALL EXERCISE CAUTION AROUND ALL OVERHEAD ITEMS INCLUDING, BUT NOT LIMITED TO, POWER AND TELEPHONE LINES, TEMPORARY TRAFFIC SIGNALS, TRAFFIC SIGNAL MAST ARMS, OVERHEAD SIGN BRIDGES, SIGN SUPPORT SPAN WIRES, SIGNS, STREET LIGHTS, HIGH VOLTAGE POWER LINES AND TOWERS, AND SUPPORT WIRES. OBSERVE THE LOCATION OF THESE OVERHEAD FACILITIES. PLAN AND CONDUCT WORK OPERATIONS ACCORDINGLY. CONTRACTOR TO TAKE PRECAUTIONS TO PROTECT AND AVOID DAMAGE TO ALL OVERHEAD FACILITIES.
2. DO NOT RELOCATE FACILITIES UNLESS REQUIRED BY THE UTILITIES COMPANY (MUST MEET ALL THE UTILITY COMPANY REQUIREMENTS - CONTRACTOR TO WORK DIRECTLY WITH THE UTILITY COMPANY).
3. OBSERVE AND INVESTIGATE THE PRESENCE OF FACILITIES THAT MAY BE AFFECTED BY THE WORK. CONSULT WITH THE UTILITY OWNERS AND OPERATORS TO DETERMINE THE EXTENT OF ANY HAZARDS AND TAKE REQUIRED MEASURES AND FOLLOW APPROVED SAFETY PROCEDURES DURING THE WORK.
4. COORDINATE SUPPORT OF POLES AT RISK OF BEING UNDERMINES BY WORKING WITH THE UTILITY OWNER.
5. FOR 50 KV LINES AND LESS, AT NO TIME SHALL PERSONNEL OR EQUIPMENT APPROACH CLOSER THAN 10 FEET TO ANY ENERGIZED PRIMARY CONDUCTORS FOR WORK BEING CONDUCTED WITHIN 50 FEET OF 50 KV OVERHEAD LINES OR GREATER. CONTACT THE MODESTO IRRIGATION DISTRICT AT LEAST 2 WEEKS PRIOR FOR SPECIFIC INSTRUCTIONS.
6. COMPLY WITH ALL REQUIREMENTS AND MANDATORY DISTANCE FROM OVERHEAD POWER LINES AND TOWERS AS SPECIFIED BY THE UTILITY OWNER.

EXISTING UTILITIES

1. ALL EXISTING UNDERGROUND UTILITIES MAY NOT BE SHOWN. THE CONTRACTOR SHALL TAKE PRECAUTIONARY MEASURES TO PROTECT THESE UTILITIES.
2. THE LOCATION OF THE EXISTING UNDERGROUND STRUCTURES AND UTILITIES HAVE BEEN LOCATED IN THE FIELD OR OBTAINED FROM AVAILABLE RECORDS. THE CONTRACTOR SHALL ASSUME THE SOLE RESPONSIBILITY FOR DETERMINING OR CONFIRMING THE EXACT LOCATIONS OF THESE FACILITIES AND PROTECTING SAME FROM DAMAGE.
3. THE CONTRACTOR SHALL NOT EXCAVATE UNTIL ALL UTILITIES COMPANIES AND SAN JOAQUIN COUNTY DEPARTMENT OF PUBLIC WORKS HAVE BEEN NOTIFIED AND HAVE BEEN GIVEN THE OPPORTUNITY TO MARK THEIR FACILITIES IN THE FIELD.
4. THE CONTRACTOR SHALL PROTECT EXISTING SEWER AND STORM DRAIN IMPROVEMENTS, WHICH MAY INCLUDE (BUT NOT LIMITED TO) EXISTING SEWER LINES, MAINTENANCE HOLES, CLEANOUTS, AND LATERALS, EXISTING STORM DRAIN LINES, MANHOLES, CATCH BASINS, AND ROCKWELLS.
5. THE LOCATION OF EXISTING UTILITES TO INDIVIDUAL PARCELS ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING, PROTECTING AND SUPPORTING ALL UTILITY SERVICES.

ABBREVIATIONS

BACT	BACTERIOLOGICAL SAMPLING TAP STATION
BH	BENJAMIN HOLT DRIVE WATER MAIN REPLACEMENT
BFP	BACKFLOW PREVENTION
BOV	BLOW-OFF
BOW	BACK OF WALK
BTFLY	BUTTERFLY
CL	CENTERLINE
(E)	EXISTING
FDC	FIRE DEPARTMENT CONNECTION
FH	FIRE HYDRANT ASSEMBLY & LATERAL
INTX	INTERSECTION
JT	JOINT TRENCH
LF	LINEAR FOOT
MH	MAINTENANCE HOLE
PH	POTHOLE
PH 1A	LINCOLN VILLAGE WATER MAIN REPLACEMENT PHASE 1A (DWR #4600015529)
PIP	PROTECT IN PLACE
PUE	PUBLIC UTILITY EASEMENT
(P)	PROPOSED
RZPA	REDUCED ZONE PRESSURE ASSEMBLY
SS	SANITARY SEWER
SSCO	SANITARY SEWER CLEANOUT
SVC	SERVICE
S=	SLOPE
TBC	TOP BACK OF CURB
TBW	TOP BACK OF SIDEWALK
TELE	TELEPHONE
VERT	VERTICAL
W	WATER
WH/AP	WHERE APPLICABLE
WS	WATER SERVICE (1" UNLESS NOTED OTHERWISE)
WTR	WATER
UON	UNLESS OTHERWISE NOTED

LEGEND

SCALED FOR CLARITY

- 6"W — WATER PIPE AND SIZE
- WATER VALVE (SEE DETAIL 3, SHEET C08)
- HORIZONTAL BEND
- VERTICAL BEND
- TEE
- CROSS
- WATER SERVICE LINE (SEE DETAIL 1, SHEET C08)
- FIRE HYDRANT ASSEMBLY & LATERAL (SEE DETAIL 2, SHEET C08)
- AIR-VACUUM RELEASE VALVE (SEE DETAIL 4, SHEET C08)
- 12"SS — SS — (E)SANITARY SEWER PIPE & SIZE
- SD — 60"SD — (E)STORM DRAIN PIPE & SIZE
- 6"W — W — (E)WATER PIPE & SIZE
- GAS — (E)GAS
- OHE — (E)OVERHEAD ELECTRIC
- E — (E)UNDERGROUND ELECTRIC
- OHT — (E)OVERHEAD TELEPHONE
- ABN — (E)ABANDONED WATERLINE
- FO — (E)UNDERGROUND FIBER OPTIC
- C — (E)UNDERGROUND COMM
- (E)PROPERTY LINE
- (S) (E)SANITARY SEWER MANHOLE
- (E)SANITARY SEWER CLEANOUT
- (D) (E)STORM DRAIN MANHOLE
- (E)STORM DRAIN INLET
- (E)WATER METER BOX
- (E)FIRE HYDRANT
- (E)WATER VALVE
- (E)GAS VALVE
- (E)STREET LIGHT
- (E)GUY ANCHOR
- (E)UTILITY POLE
- (E)ELECTRIC BOX
- (E)TREE
- MAIL (E)MAILBOX
- (E)SURVEY MONUMENT
- (E)CONCRETE
- (E)FENCE

NO.	REVISION DESCRIPTION	CHECKED BY	DATE
	90% NOT FOR CONSTRUCTION		

DRAWING SCALE
HOR. SCALE: N.T.S.
VERT. SCALE: N.T.S.

SAN JOAQUIN COUNTY CALIFORNIA

R.E.Y. ENGINEERS, INC.
Civil Engineers | Land Surveyors | LCHA
1452 Standiford Ave, Suite B20 | Modesto, CA 95350
Phone (209) 524-8553 | Fax (209) 524-8555

IMPROVEMENT PLANS FOR:
LINCOLN VILLAGE WATER MAIN REPLACEMENT PHASE 1B
CIP #6101127
NOTES, ABBREVIATIONS & LEGEND
COUNTY OF SAN JOAQUIN CALIFORNIA

DRAWING INFO
DATE: 10-16-2024
DRAFTER: THKH
DESIGNER: KH
REVIEWER: JWF

R.E.Y. PROJECT NO.
7677.001
SHEET NO. C02 OF C31

PLAN SCALE:

0 20' 40' 80'

SCALE IN FEET

LEGEND

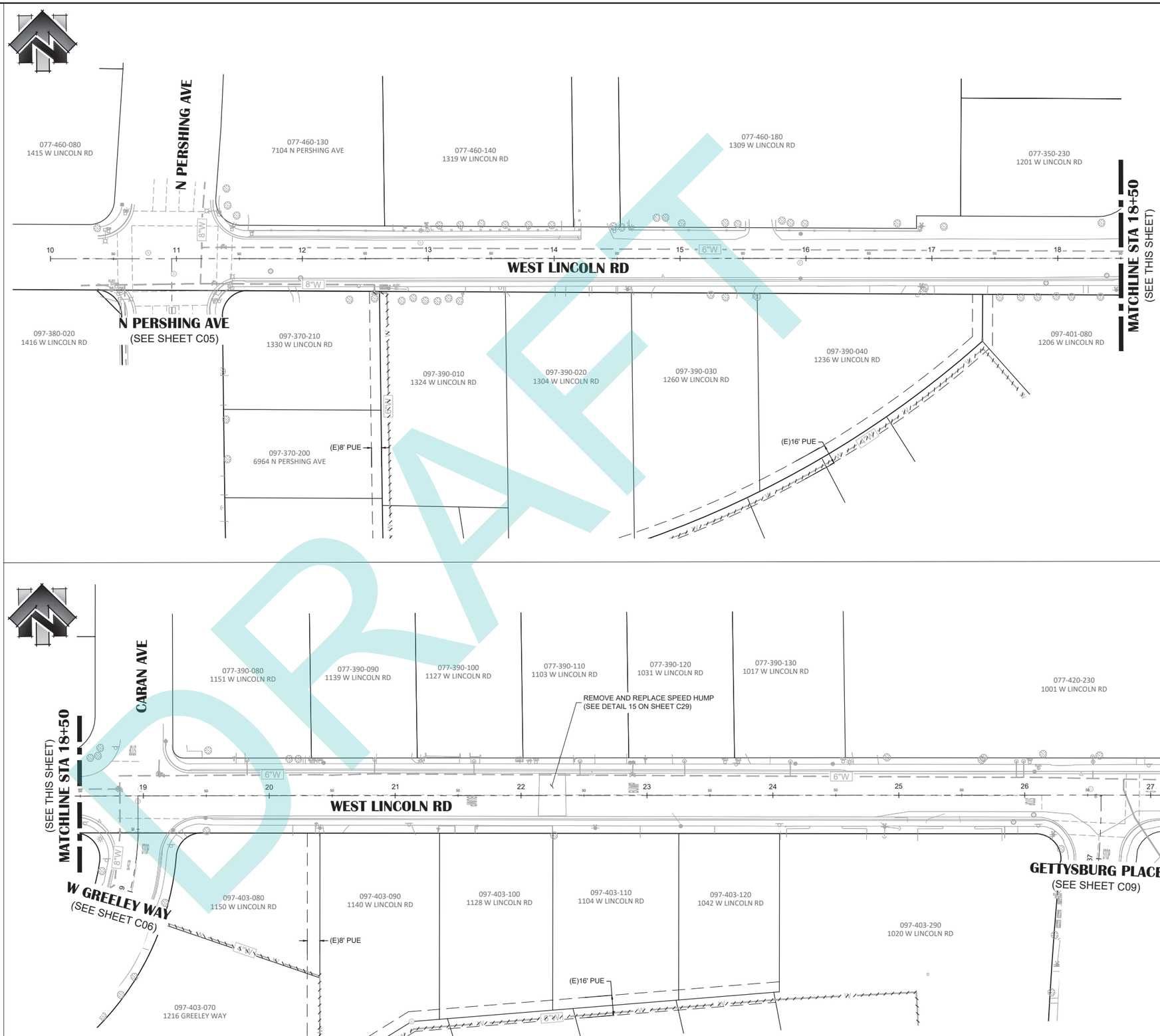
SYMBOLS ENLARGED FOR CLARITY

(E)WATER PIPE TO BE ABANDONED IN-PLACE

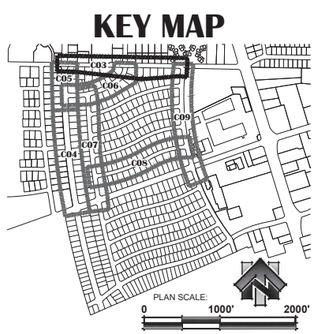
PROTECT IN PLACE (E)WATER VALVE

PROTECT IN PLACE (E)FIRE HYDRANT

1. (E)WATER PIPES ARE SHOWN SCHEMATICALLY. CONTRACTOR TO POTHOLE EXISTING WATER PIPES TO CONFIRM EXACT SIZE, DEPTH AND LOCATION OF WHERE CONNECTIONS AND ABANDONMENT WILL OCCUR PRIOR TO BEGINNING WORK.
2. EXISTING WATER PIPES, WATER SERVICES AND FIRE HYDRANTS ARE TO BE PROTECTED IN PLACE AND REMAIN IN SERVICE WHILE NEW WATER SERVICES, WATER PIPES, AND FIRE HYDRANTS ARE INSTALLED. CONTRACTOR SHALL COORDINATE CROSS OVERS TO NEW SYSTEM WITH COUNTY AND MINIMIZE OUTAGE DURATIONS.
3. A MINIMUM OF 2 CONNECTIONS TO EXISTING SYSTEM ARE REQUIRED PRIOR TO ANY SERVICE OR FIRE HYDRANT CROSS OVERS.
4. EMPTY METER/UTILITY BOXES SHALL BE REMOVED AND SITE RESTORED TO MATCH PREVIOUS CONDITIONS. CONTRACTOR SHALL CONFIRM WITH COUNTY REPRESENTATIVE BEFORE REMOVING.
5. ALL EXISTING WATER SERVICE LINES TO BE ABANDONED SHALL BE CUT AND CAPPED 1' FROM THE WATER MAIN AND ABANDONED IN PLACE.
6. DEMOLISH, DISMANTLE, AND REMOVE THE ABANDONED FIRE HYDRANT DOWN TO BEYOND THE BURIED HYDRANT ELBOW. CUT AND CAP (E)FIRE HYDRANT LATERAL PIPE PER DETAIL 8 ON SHEET C27.
7. EXISTING APPURTENANCES (ARV & BLOW-OFFS) WERE NOT FOUND WITHIN THE LIMITS OF THE PROJECT. IF EXISTING APPURTENANCES ARE FOUND DURING CONSTRUCTION, ABANDON PER SPECIAL PROVISIONS.
8. OTHER UTILITIES NOT SHOWN FOR CLARITY.



KEY MAP



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	90% NOT FOR CONSTRUCTION		

DRAWING SCALE

HOR. SCALE: 1" = 40'

VERT. SCALE: N/A

SAN JOAQUIN COUNTY CALIFORNIA

REY. ENGINEERS, INC.
Civil Engineers | Land Surveyors | DBA
1926 Avenue of the Arts, Suite 200, Tustin, CA 92782
Phone: (714) 838-8400 Fax: (714) 838-8439

IMPROVEMENT PLANS FOR:
LINCOLN VILLAGE WATER MAIN REPLACEMENT PHASE 1B
CIP #610127
DEMO PLAN W LINCOLN STA 10+00 - STA 27+00
COUNTY OF SAN JOAQUIN CALIFORNIA

DRAWING INFO

DATE:	10-16-2024
DRAFTER:	THKH
DESIGNER:	KH
REVIEWER:	JWE

R.E.Y. PROJECT NO.
7677.001
SHEET NO. **C03** OF **C31**

PLAN SCALE:

0 20' 40' 80'

SCALE IN FEET

LEGEND

SYMBOLS ENLARGED FOR CLARITY

(E)WATER PIPE TO BE ABANDONED IN-PLACE

ABANDON (E)WATER VALVE (SEE DETAIL 8 ON SHEET C27)

CUT AND CAP (E)WATER PIPE (SEE DETAIL 8 ON SHEET C27)

PROTECT IN PLACE (E)WATER VALVE

PROTECT IN PLACE (E)FIRE HYDRANT

1. (E)WATER PIPES ARE SHOWN SCHEMATICALLY. CONTRACTOR TO POTHOLE EXISTING WATER PIPES TO CONFIRM EXACT SIZE, DEPTH AND LOCATION OF WHERE CONNECTIONS AND ABANDONMENT WILL OCCUR PRIOR TO BEGINNING WORK.
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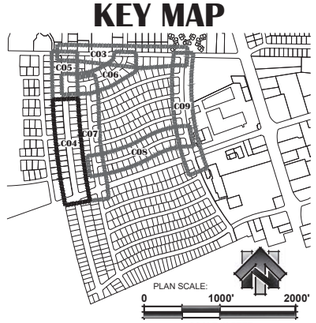
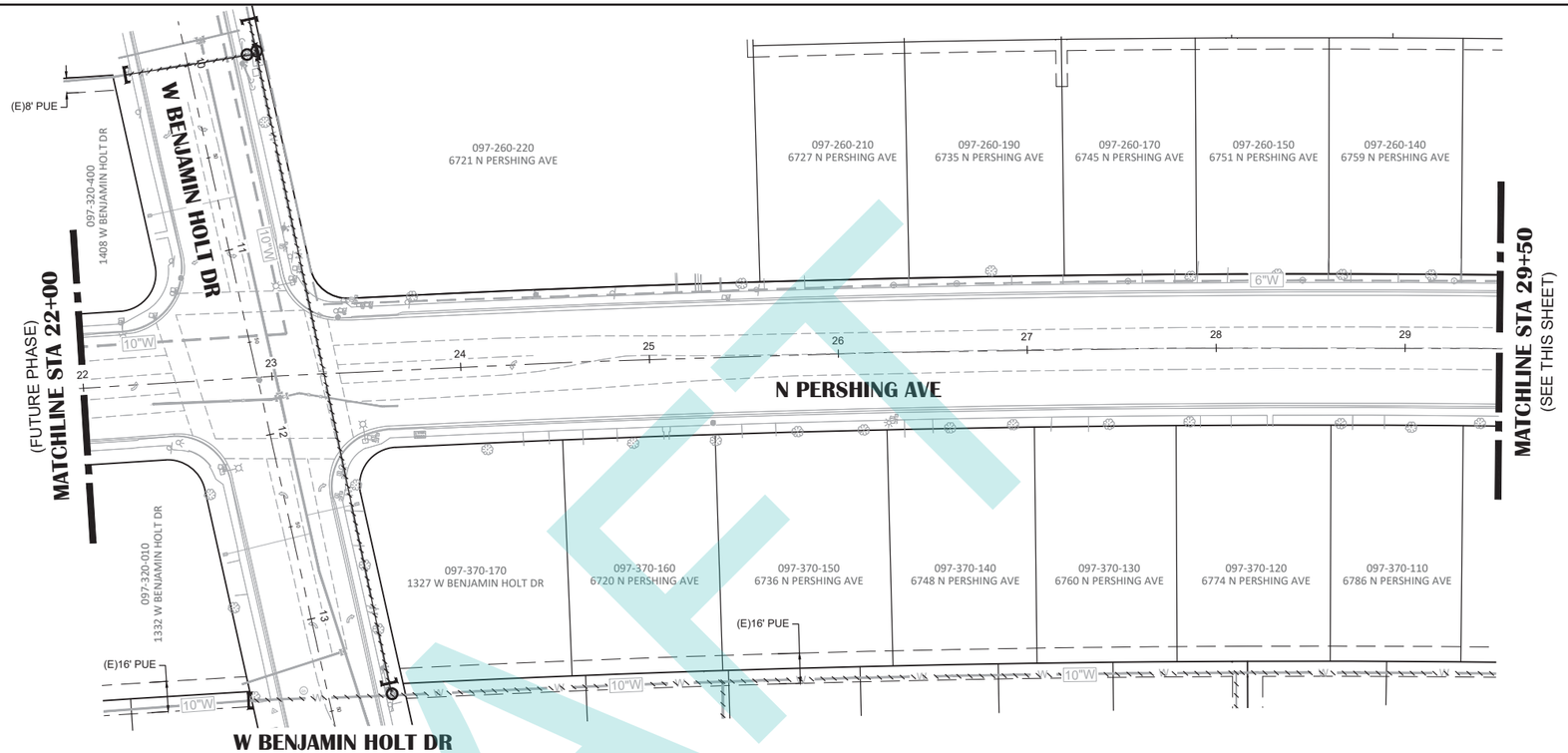
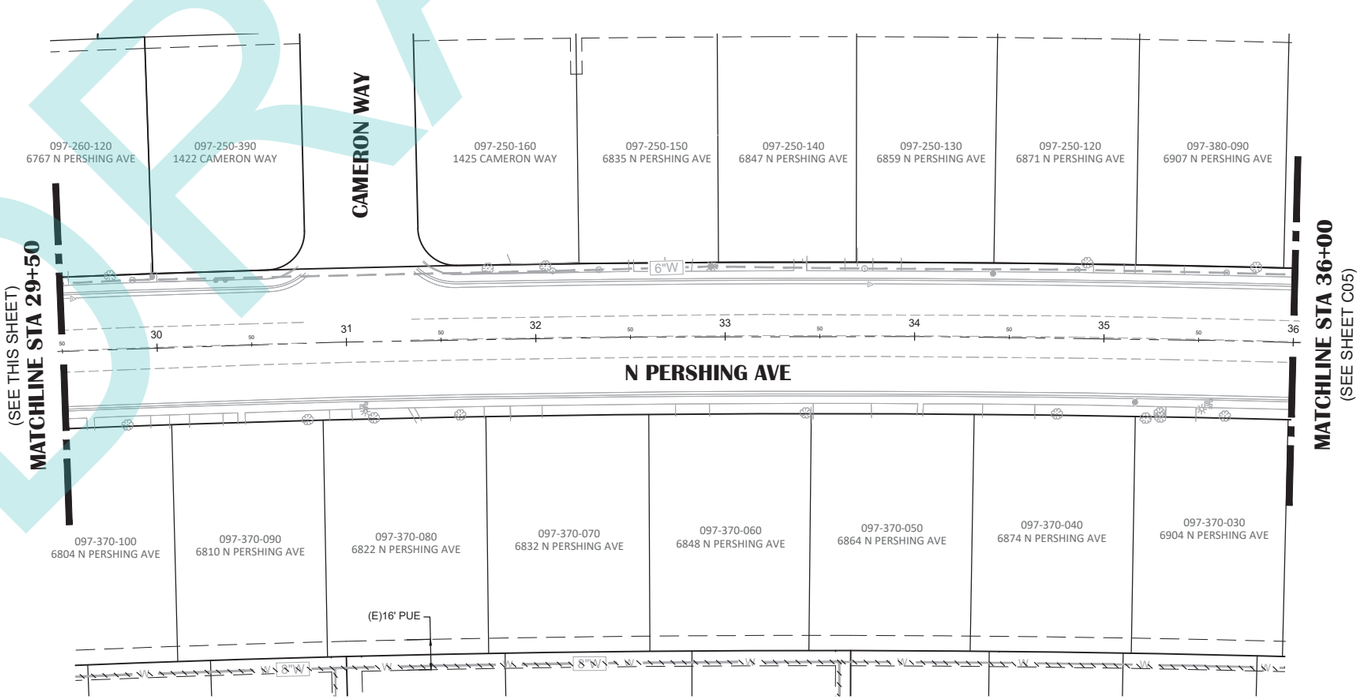
KEY MAP







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DRAWING SCALE

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VERT. SCALE: N/A

SAN JOAQUIN COUNTY CALIFORNIA

REY ENGINEERS, INC.
Civil Engineers | Land Surveyors | LD/AR
1524 Lamperti Street, Suite 220 | Lincoln, CA 95648
Phone (916) 434-1600 | Fax (916) 434-1699

IMPROVEMENT PLANS FOR:

LINCOLN VILLAGE WATER MAIN REPLACEMENT PHASE 1B

CIP #610127

DEMO PLAN PERSHING AVE STA 22+00 TO STA 36+00

COUNTY OF SAN JOAQUIN CALIFORNIA

DRAWING INFO

DATE: 10-16-2024
DRAFTER: THKH
DESIGNER: KH
REVIEWER: JWF

R.E.Y. PROJECT NO. **7677.001**

SHEET NO. **C04** OF **C31**

PLAN SCALE:

0 20' 40' 80'

SCALE IN FEET

LEGEND

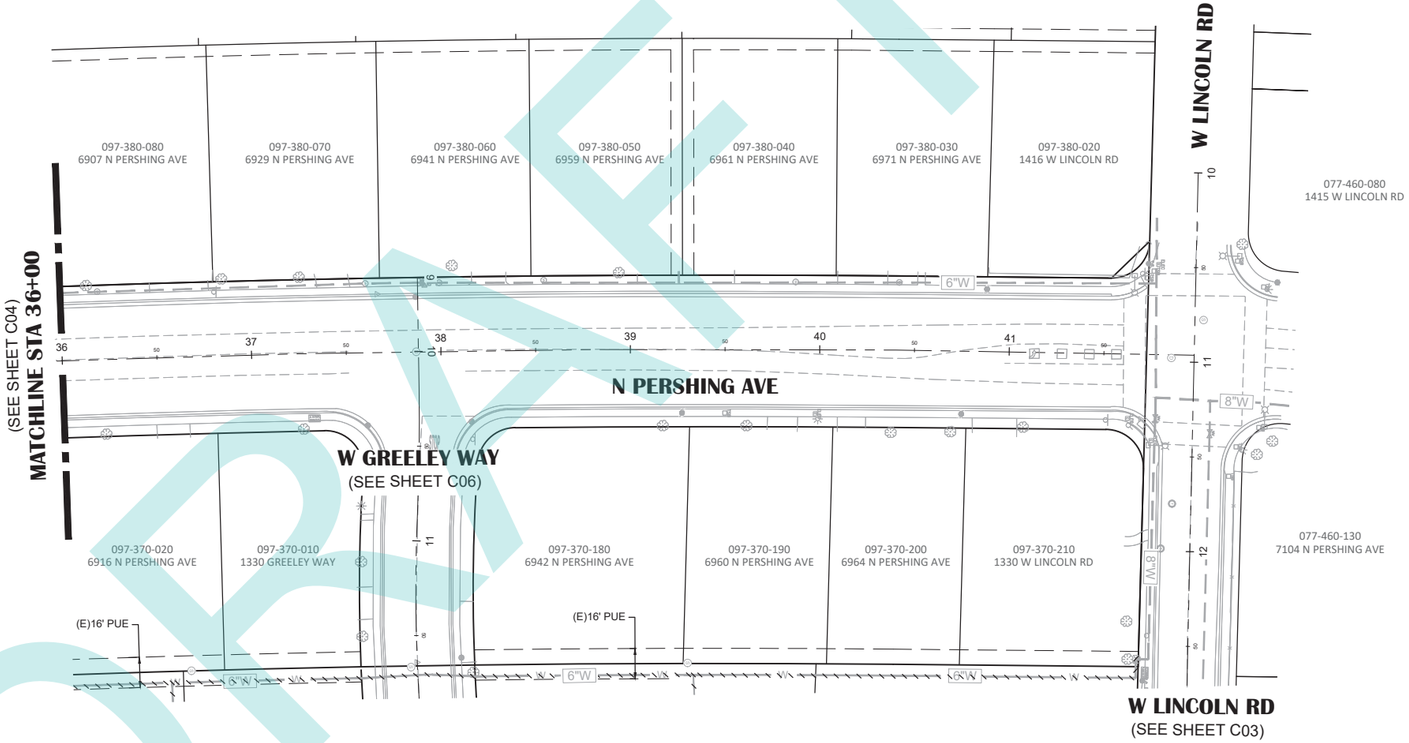
SYMBOLS ENLARGED FOR CLARITY

(E)WATER PIPE TO BE ABANDONED IN-PLACE

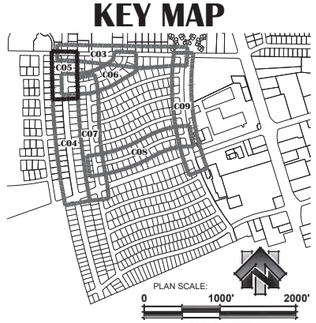
PROTECT IN PLACE (E)WATER VALVE

PROTECT IN PLACE (E)FIRE HYDRANT

1. (E)WATER PIPES ARE SHOWN SCHEMATICALLY. CONTRACTOR TO POTHOLE EXISTING WATER PIPES TO CONFIRM EXACT SIZE, DEPTH AND LOCATION OF WHERE CONNECTIONS AND ABANDONMENT WILL OCCUR PRIOR TO BEGINNING WORK.
2. EXISTING WATER PIPES, WATER SERVICES AND FIRE HYDRANTS ARE TO BE PROTECTED IN PLACE AND REMAIN IN SERVICE WHILE NEW WATER SERVICES, WATER PIPES, AND FIRE HYDRANTS ARE INSTALLED. CONTRACTOR SHALL COORDINATE CROSS OVERS TO NEW SYSTEM WITH COUNTY AND MINIMIZE OUTAGE DURATIONS.
3. A MINIMUM OF 2 CONNECTIONS TO EXISTING SYSTEM ARE REQUIRED PRIOR TO ANY SERVICE OR FIRE HYDRANT CROSS OVERS.
4. EMPTY METER/UTILITY BOXES SHALL BE REMOVED AND SITE RESTORED TO MATCH PREVIOUS CONDITIONS. CONTRACTOR SHALL CONFIRM WITH COUNTY REPRESENTATIVE BEFORE REMOVING.
5. ALL EXISTING WATER SERVICE LINES TO BE ABANDONED SHALL BE CUT AND CAPPED 1' FROM THE WATER MAIN AND ABANDONED IN PLACE.
6. DEMOLISH, DISMANTLE, AND REMOVE THE ABANDONED FIRE HYDRANT DOWN TO BEYOND THE BURIED HYDRANT ELBOW. CUT AND CAP (E)FIRE HYDRANT LATERAL PIPE PER DETAIL 8 ON SHEET C27.
7. EXISTING APPURTENANCES (ARV & BLOW-OFFS) WERE NOT FOUND WITHIN THE LIMITS OF THE PROJECT. IF EXISTING APPURTENANCES ARE FOUND DURING CONSTRUCTION, ABANDON PER SPECIAL PROVISIONS.
8. OTHER UTILITIES NOT SHOWN FOR CLARITY.



KEY MAP



NO.	REVISION DESCRIPTION	CHECKED BY	DATE
	90% NOT FOR CONSTRUCTION		

DRAWING SCALE
HOR. SCALE: 1" = 40'
VERT. SCALE: N/A

SAN JOAQUIN COUNTY CALIFORNIA

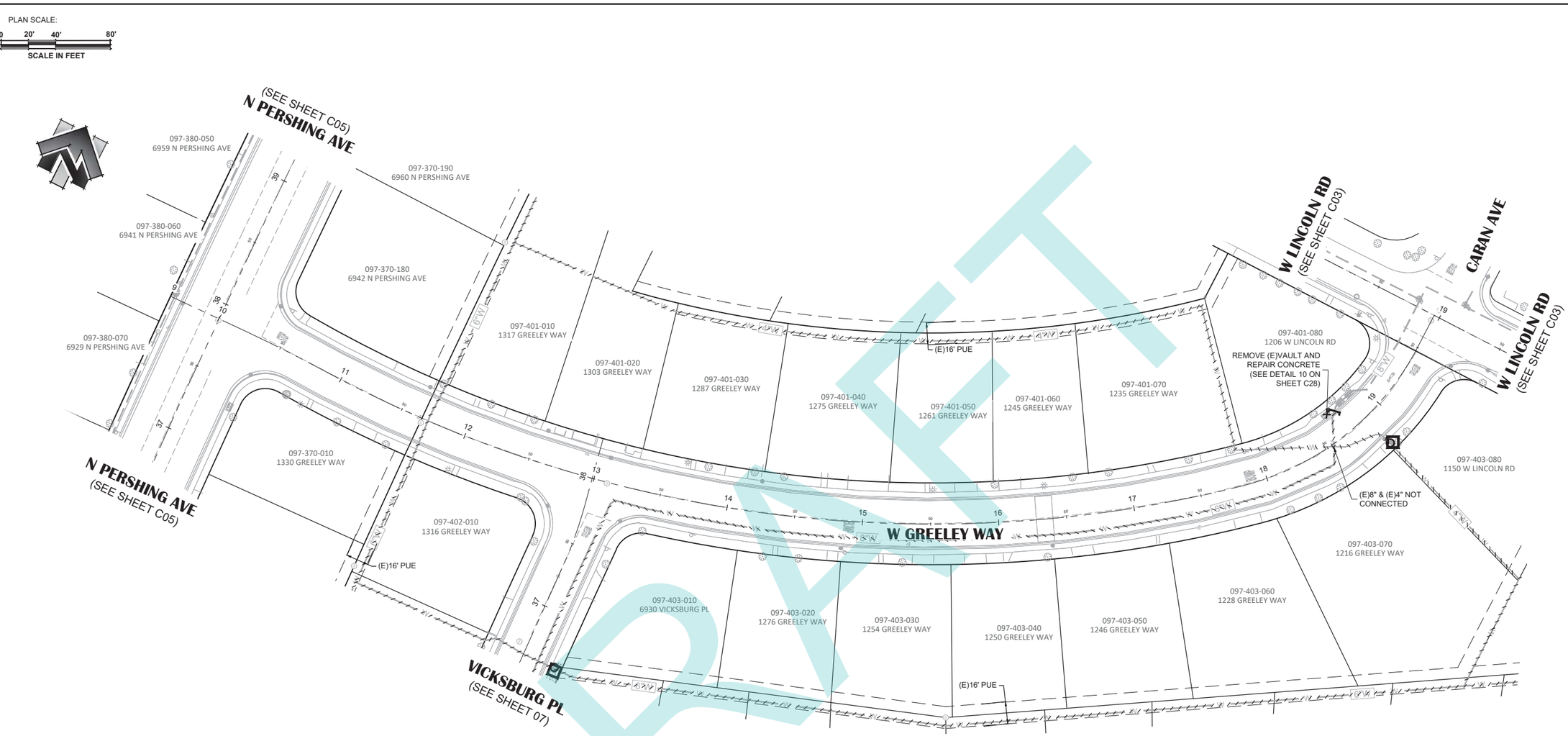
R.E.Y. ENGINEERS, INC.
Civil Engineers | Land Surveyors | LD/LS
925 Blue Ravine Road, Folsom, CA 95630
Phone: (916) 985-9461 Fax: (916) 985-9669

IMPROVEMENT PLANS FOR:
LINCOLN VILLAGE WATER MAIN REPLACEMENT PHASE 1B
CIP #610127
DEMO PLAN PERSHING AVE STA 36+00 TO STA 42+00
COUNTY OF SAN JOAQUIN
CALIFORNIA

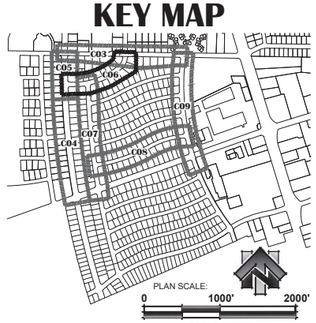
DRAWING INFO
DATE: 10-16-2024
DRAFTER: THKH
DESIGNER: KH
REVIEWER: JWE

R.E.Y. PROJECT NO.
7677.001
SHEET NO. C05 OF C31

PLAN SCALE:
0 20' 40' 80'
SCALE IN FEET



KEY MAP



LEGEND

SYMBOLS ENLARGED FOR CLARITY

- (E)WATER PIPE TO BE ABANDONED IN-PLACE
- ABANDON (E)WATER VALVE (SEE DETAIL 8 ON SHEET C27)
- CUT AND CAP (E)WATER PIPE (SEE DETAIL 8 ON SHEET C27)
- REMOVE (E)VAULT (SEE DETAIL X ON SHEET C27)
- PROTECT IN PLACE (E)WATER VALVE
- REMOVE & ABANDON (E)FIRE HYDRANT (SEE NOTES 6, THIS SHEET)
- PROTECT IN PLACE (E)FIRE HYDRANT

1. (E)WATER PIPES ARE SHOWN SCHEMATICALLY. CONTRACTOR TO POTHOLE EXISTING WATER PIPES TO CONFIRM EXACT SIZE, DEPTH AND LOCATION OF WHERE CONNECTIONS AND ABANDONMENT WILL OCCUR PRIOR TO BEGINNING WORK.
2. EXISTING WATER PIPES, WATER SERVICES AND FIRE HYDRANTS ARE TO BE PROTECTED IN PLACE AND REMAIN IN SERVICE WHILE NEW WATER SERVICES, WATER PIPES, AND FIRE HYDRANTS ARE INSTALLED. CONTRACTOR SHALL COORDINATE CROSS OVERS TO NEW SYSTEM WITH COUNTY AND MINIMIZE OUTAGE DURATIONS.
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7. EXISTING APPURTENANCES (ARV & BLOW-OFFS) WERE NOT FOUND WITHIN THE LIMITS OF THE PROJECT. IF EXISTING APPURTENANCES ARE FOUND DURING CONSTRUCTION, ABANDON PER SPECIAL PROVISIONS.
8. OTHER UTILITIES NOT SHOWN FOR CLARITY.

NO.	REVISION DESCRIPTION	CHECKED BY	DATE
	90% NOT FOR CONSTRUCTION		

DRAWING SCALE
HOR. SCALE: 1" = 40'
VERT. SCALE: N/A

SAN JOAQUIN COUNTY CALIFORNIA

R.E.Y. ENGINEERS, INC.
Civil Engineers | Land Surveyors | DBA
925 Blue Gum Avenue, Modesto, CA 95358
Phone (209) 544-3507 Fax (209) 544-3508

IMPROVEMENT PLANS FOR:
LINCOLN VILLAGE WATER MAIN REPLACEMENT PHASE 1B
CIP #610127
DEMO PLAN GREELEY WAY STA 10+00 - STA 19+50
COUNTY OF SAN JOAQUIN
CALIFORNIA

DRAWING INFO
DATE: 10-16-2024
DRAFTER: THKH
DESIGNER: AH
REVIEWER: JWF

R.E.Y. PROJECT NO.
7677.001
SHEET NO. C06 OF C31

PLAN SCALE:

0 20' 40' 80'

SCALE IN FEET

LEGEND

SYMBOLS ENLARGED FOR CLARITY

(E)WATER PIPE TO BE ABANDONED IN-PLACE

ABANDON (E)WATER VALVE (SEE DETAIL 8 ON SHEET C27)

CUT AND CAP (E)WATER PIPE (SEE DETAIL 8 ON SHEET C27)

PROTECT IN PLACE (E)WATER VALVE

REMOVE & ABANDON (E)FIRE HYDRANT (SEE NOTE 6, THIS SHEET)

PROTECT IN PLACE (E)FIRE HYDRANT

1. (E)WATER PIPES ARE SHOWN SCHEMATICALLY. CONTRACTOR TO POTHOLE EXISTING WATER PIPES TO CONFIRM EXACT SIZE, DEPTH AND LOCATION OF WHERE CONNECTIONS AND ABANDONMENT WILL OCCUR PRIOR TO BEGINNING WORK.
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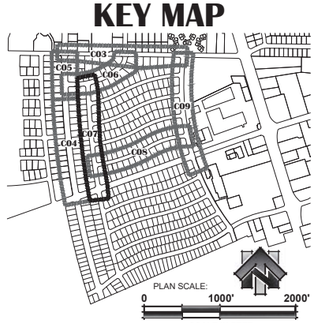
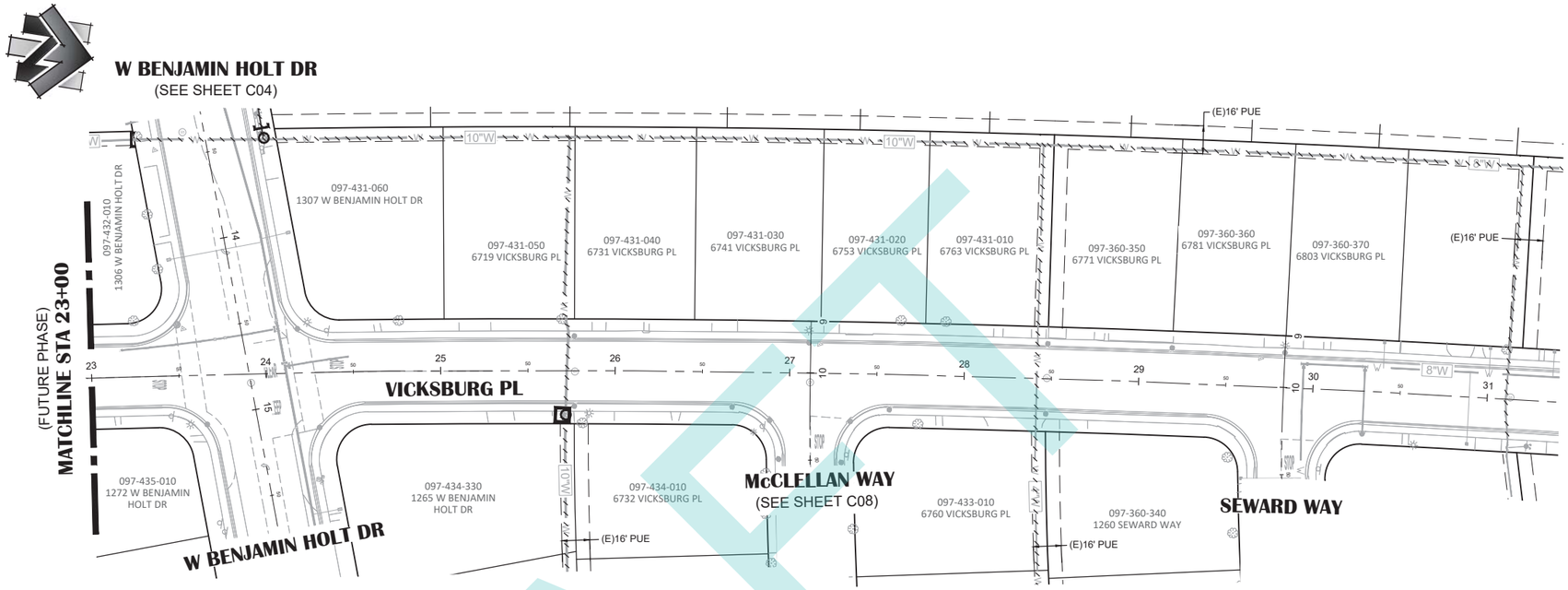
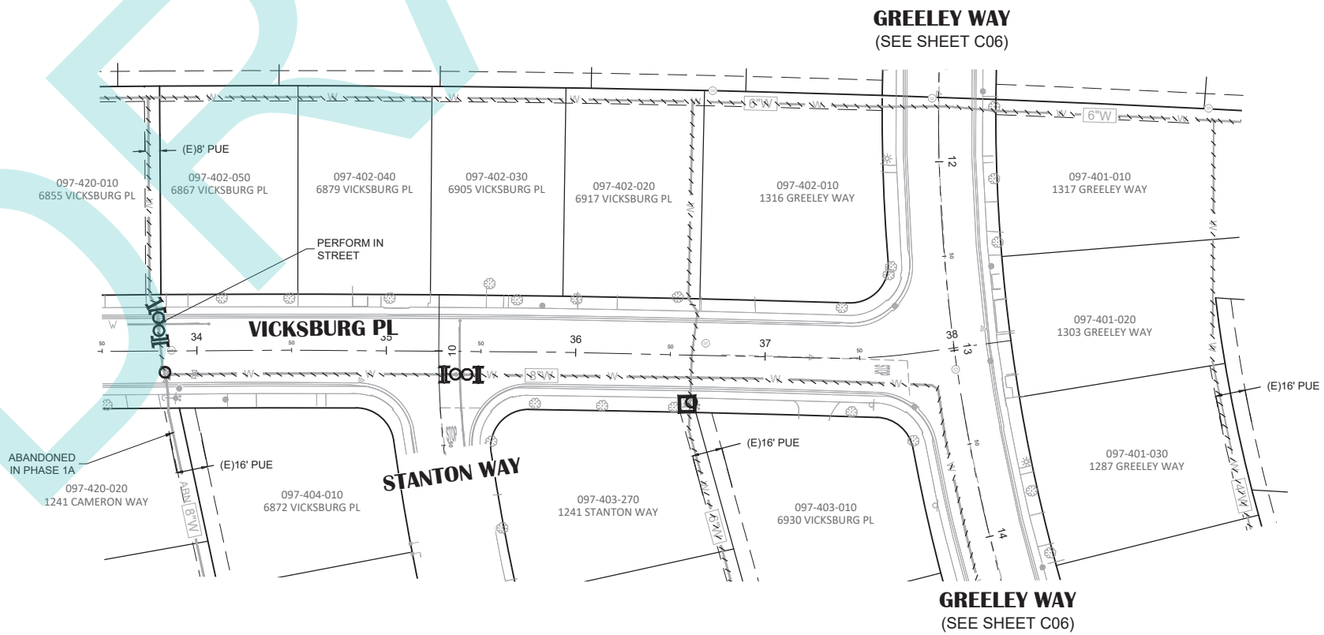
8. OTHER UTILITIES NOT SHOWN FOR CLARITY.

KEY MAP







NO.	REVISION DESCRIPTION	CHECKED BY	DATE
	90% NOT FOR CONSTRUCTION		

DRAWING SCALE

HOR. SCALE: 1" = 40'

VERT. SCALE: N/A

SAN JOAQUIN COUNTY CALIFORNIA

REY ENGINEERS, INC.
Civil Engineers | Land Surveyors | LCMA
924 Lawrence Expressway, Sunnyvale, CA 94085
Phone: (408) 245-3400 Fax: (408) 245-3500

IMPROVEMENT PLANS FOR:
LINCOLN VILLAGE WATER MAIN REPLACEMENT PHASE 1B
CIP #610127
DEMO PLAN VICKSBURG PL STA 23+00 - STA 38+00
COUNTY OF SAN JOAQUIN CALIFORNIA

DRAWING INFO

DATE: 10-16-2024
DRAFTER: THKH
DESIGNER: KH
REVIEWER: JWE

R.E.Y. PROJECT NO.
7677.001
SHEET NO. **C07** OF **C31**

PLAN SCALE:

0 20' 40' 80'

SCALE IN FEET

LEGEND

SYMBOLS ENLARGED FOR CLARITY

(E)WATER PIPE TO BE ABANDONED IN-PLACE

ABANDON (E)WATER VALVE (SEE DETAIL 8 ON SHEET C27)

CUT AND CAP (E)WATER PIPE (SEE DETAIL 8 ON SHEET C27)

PROTECT IN PLACE (E)WATER VALVE

REMOVE & ABANDON (E)FIRE HYDRANT (SEE NOTES 6, THIS SHEET)

PROTECT IN PLACE (E)FIRE HYDRANT

1. (E)WATER PIPES ARE SHOWN SCHEMATICALLY. CONTRACTOR TO POTHOLE EXISTING WATER PIPES TO CONFIRM EXACT SIZE, DEPTH AND LOCATION OF WHERE CONNECTIONS AND ABANDONMENT WILL OCCUR PRIOR TO BEGINNING WORK.
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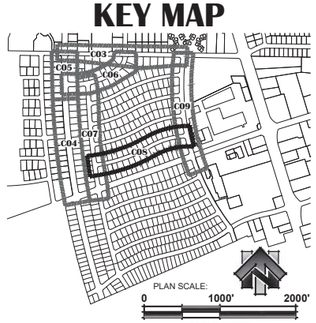

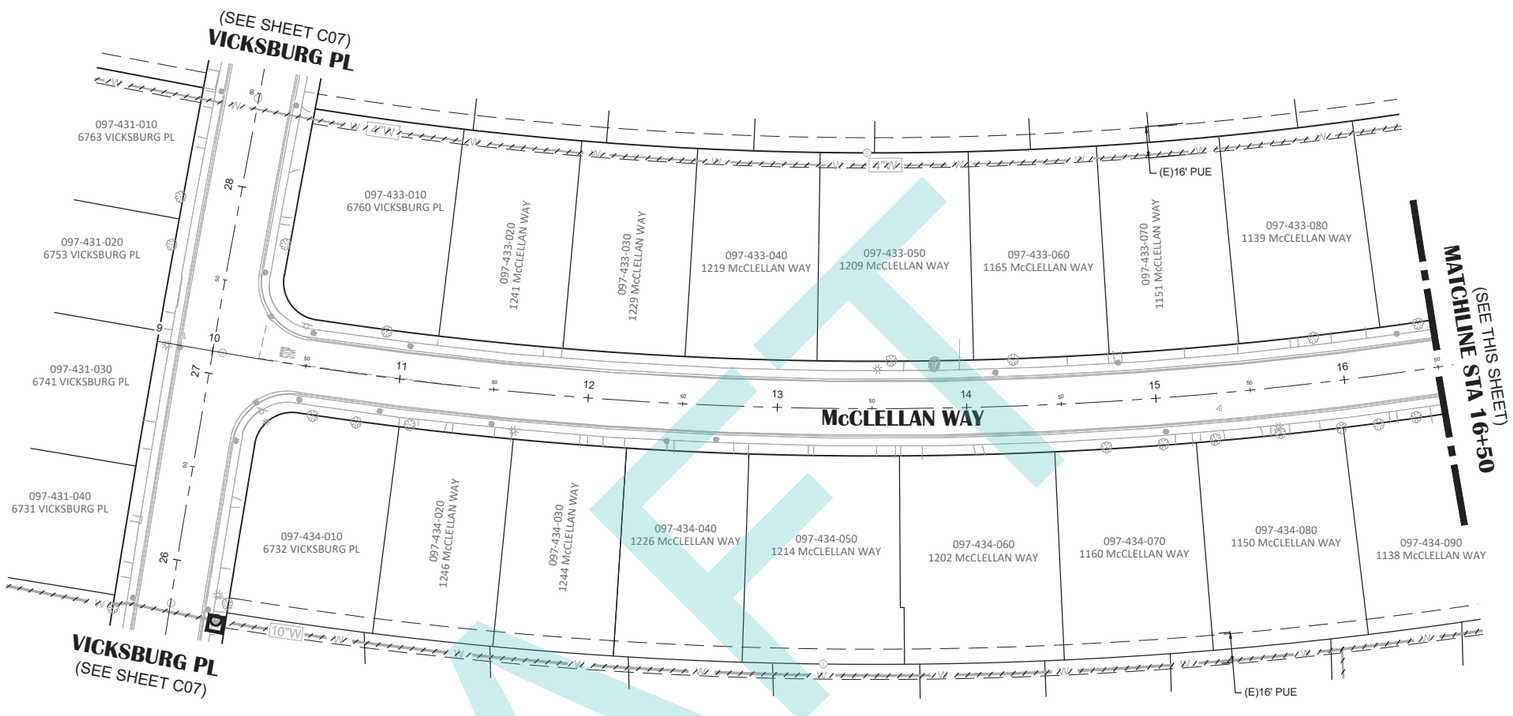

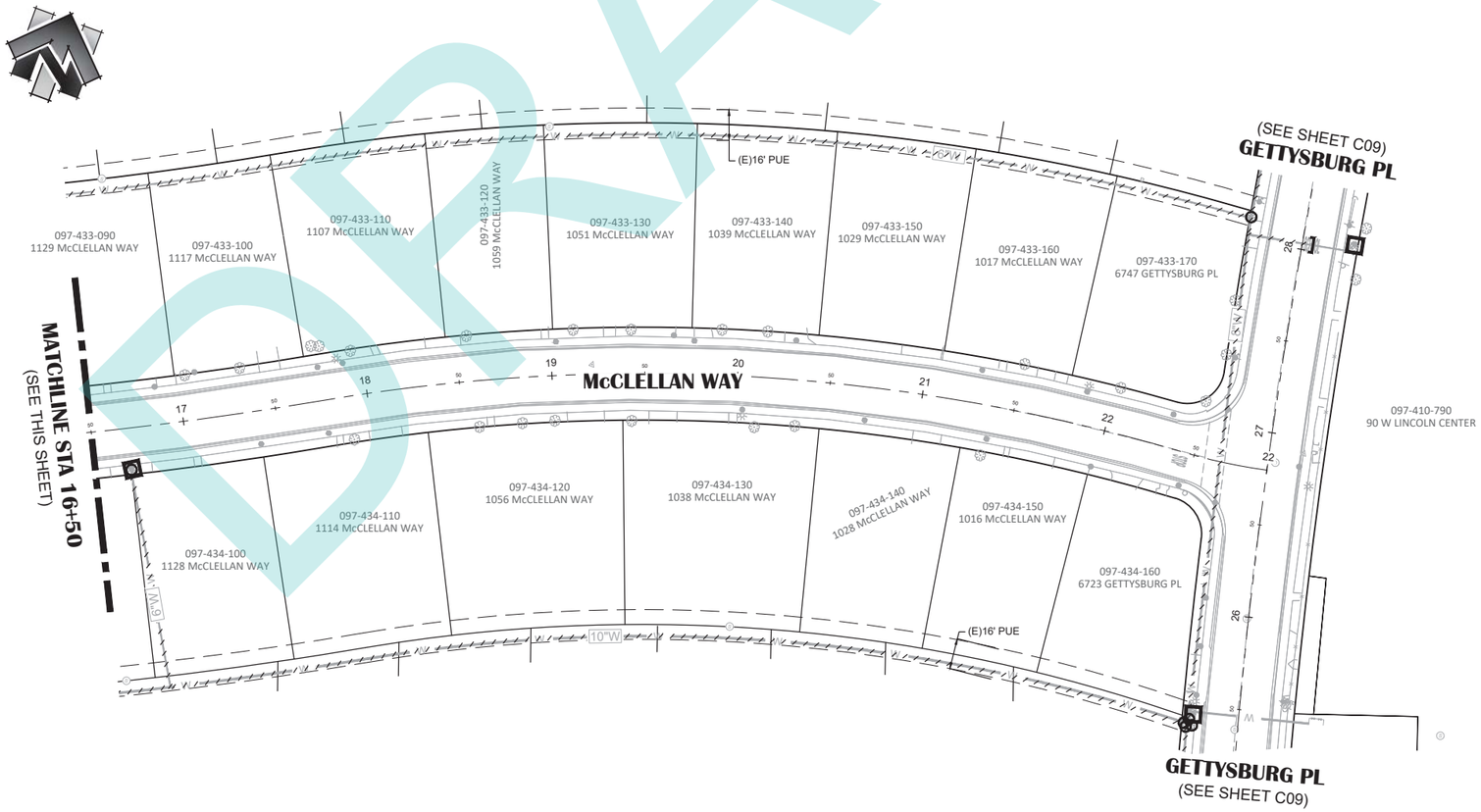

NO.	REVISION DESCRIPTION	CHECKED BY	DATE
	90% NOT FOR CONSTRUCTION		

DRAWING SCALE

HOR. SCALE: 1" = 40'

VERT. SCALE: N/A

REY ENGINEERS, INC.
Civil Engineers | Land Surveyors | LDAR
1650 Response Road, Suite 200, Sacramento, CA 95815
Phone (916) 924-8037 Fax (916) 924-8039

IMPROVEMENT PLANS FOR:
LINCOLN VILLAGE WATER MAIN REPLACEMENT PHASE 1B
CIP #610127
DEMO PLAN McCLELLAN WAY STA 10+00 - STA 22+50
COUNTY OF SAN JOAQUIN CALIFORNIA

DRAWING INFO

DATE: 10-16-2024
DRAFTER: THKH
DESIGNER: KH
REVIEWER: JWE

R.E.Y. PROJECT NO. 7677.001

SHEET NO. C08 OF C31

PLAN SCALE:
0 20' 40' 80'
SCALE IN FEET

LEGEND

SYMBOLS ENLARGED FOR CLARITY

(E)WATER PIPE TO BE ABANDONED IN-PLACE

ABANDON (E)WATER VALVE (SEE DETAIL 8 ON SHEET C27)

CUT AND CAP (E)WATER PIPE (SEE DETAIL 8 ON SHEET C27)

PROTECT IN PLACE (E)WATER VALVE

REMOVE & ABANDON (E)FIRE HYDRANT (SEE NOTE 6, THIS SHEET)

PROTECT IN PLACE (E)FIRE HYDRANT

1. (E)WATER PIPES ARE SHOWN SCHEMATICALLY. CONTRACTOR TO POTHOLE EXISTING WATER PIPES TO CONFIRM EXACT SIZE, DEPTH AND LOCATION OF WHERE CONNECTIONS AND ABANDONMENT WILL OCCUR PRIOR TO BEGINNING WORK.
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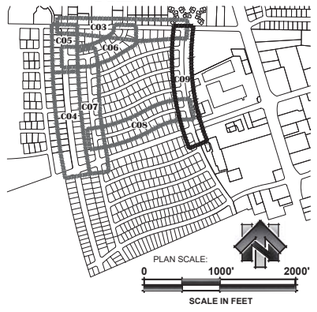
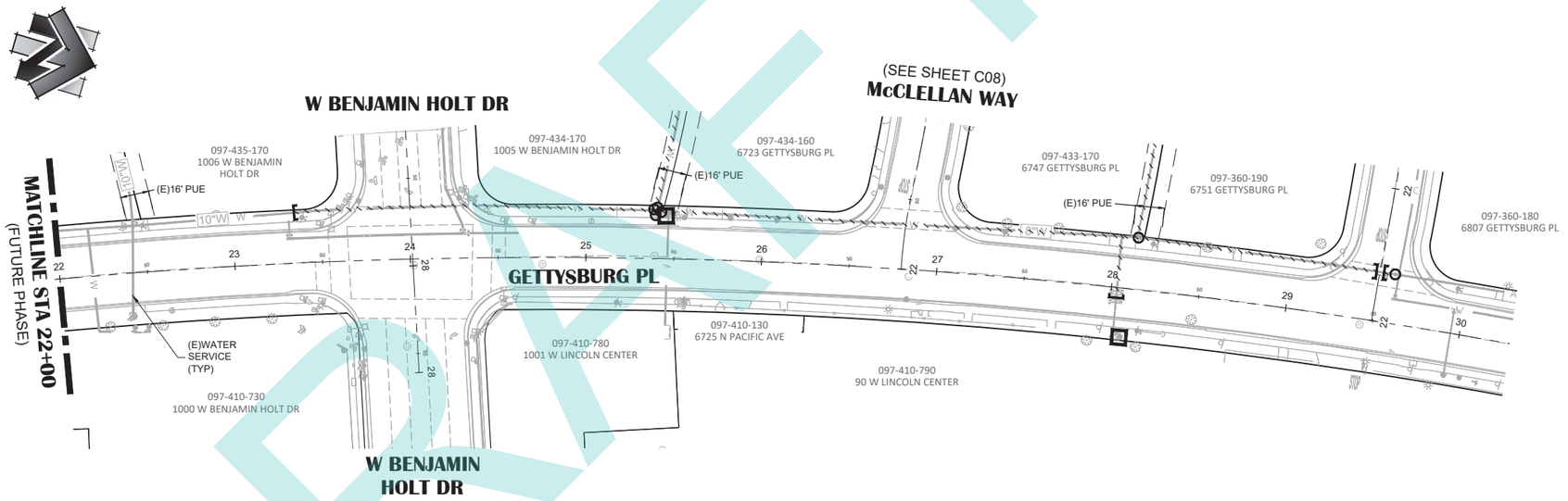
8. OTHER UTILITIES NOT SHOWN FOR CLARITY.

KEY MAP





NO.	REVISION DESCRIPTION	CHECKED BY	DATE
	90% NOT FOR CONSTRUCTION		

DRAWING SCALE
HOR. SCALE: 1" = 40'
VERT. SCALE: N/A

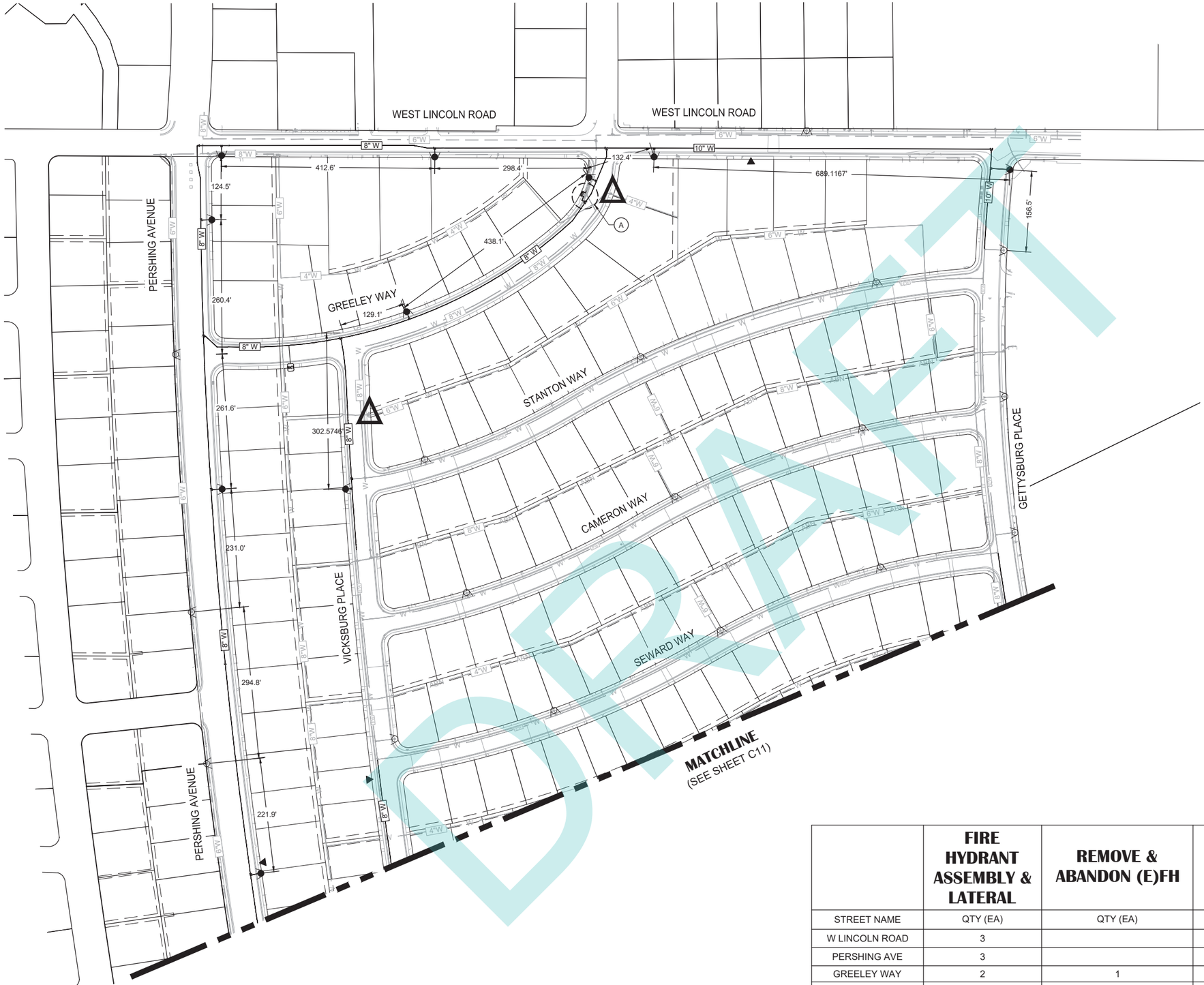
SAN JOAQUIN COUNTY CALIFORNIA

R.E.Y. ENGINEERS, INC.
Civil Engineers | Land Surveyors | DBA
925 Blue Ravine Road, Folsom, CA 95630 | 916.294.4252

IMPROVEMENT PLANS FOR:
LINCOLN VILLAGE WATER MAIN REPLACEMENT PHASE 1B
CIP #610127
DEMO PLAN GETTYSBURG PL STA 22+00 - STA 37+50
COUNTY OF SAN JOAQUIN CALIFORNIA

DRAWING INFO
DATE: 10-16-2024
DRAFTER: THKH
DESIGNER: KH
REVIEWER: JW

R.E.Y. PROJECT NO.
7677.001
SHEET NO. C09 OF C31



PLAN SCALE:
0 50' 100' 200'
SCALE IN FEET

LEGEND

- 8" W — WATER PIPE AND SIZE
- 8"W — EXISTING CITY WATER PIPE
- W 8"W — EXISTING COUNTY WATER PIPE
- PROPERTY LINES
- PUBLIC UTILITY EASEMENT
- (A) — REDUCED PRESSURE ZONE ASSEMBLY (SEE SHEET C29 FOR CONNECTION DETAIL)
- FIRE HYDRANT ASSEMBLY & LATERAL
- 1" ARV
- BAC — BACTERIOLOGICAL SAMPLING TAP STATION
- (E)FIRE HYDRANT (PROTECT IN PLACE)
- REMOVE & ABANDON (E)FIRE HYDRANT

	FIRE HYDRANT ASSEMBLY & LATERAL	REMOVE & ABANDON (E)FH	1" ARV	BACT
STREET NAME	QTY (EA)	QTY (EA)	QTY (EA)	QTY (EA)
W LINCOLN ROAD	3		1	
PERSHING AVE	3			
GREELEY WAY	2	1		1
VICKSBURG PLACE	1	1	1	
GETTYSBURG PL	1			
TOTAL	10	2	2	1

NO.	REVISION DESCRIPTION	CHECKED BY	DATE
	90% NOT FOR CONSTRUCTION		

DRAWING SCALE
HOR. SCALE: 1" = 100'
VERT. SCALE: N/A

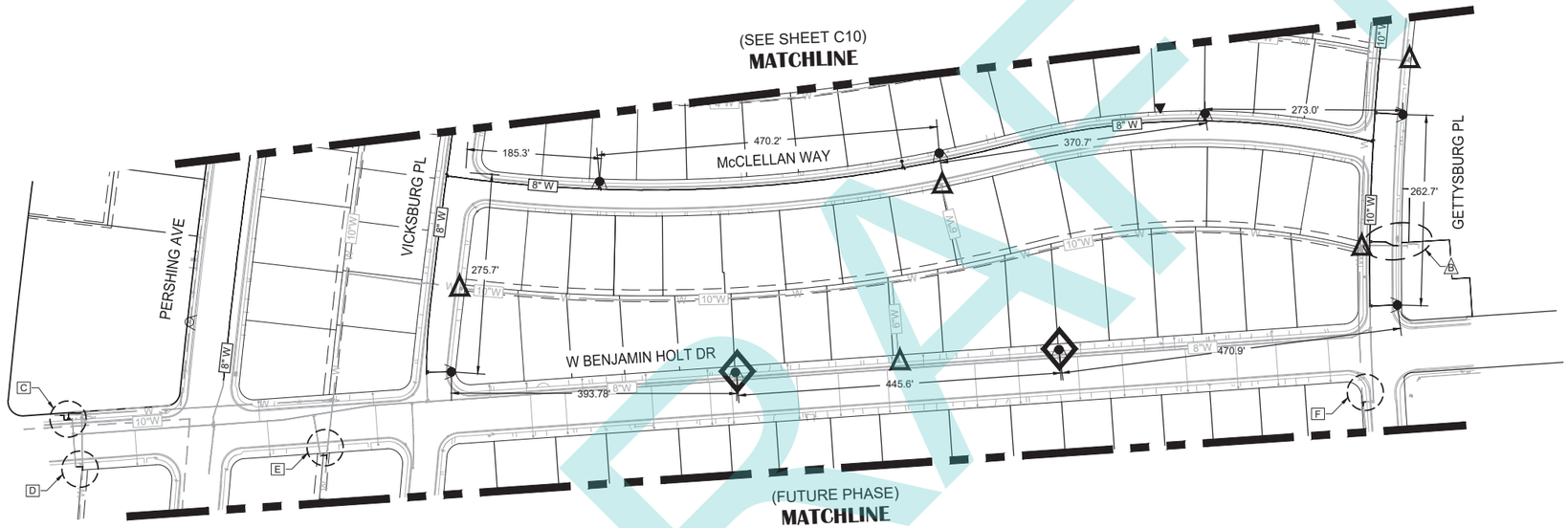
R.E.Y. ENGINEERS, INC.
Civil Engineers | Land Surveyors | DBA
925 Sylvan Ave. Suite 220 Modesto, CA 95350
Phone (209) 524-3000 Fax (209) 524-3003

IMPROVEMENT PLANS FOR:
LINCOLN VILLAGE WATER MAIN REPLACEMENT PHASE 1B
CIP #610127
UTILITY PLAN
COUNTY OF SAN JOAQUIN CALIFORNIA

DRAWING INFO
DATE: 10-16-2024
DRAFTER: THKH
DESIGNER: KH
REVIEWER: JVF

R.E.Y. PROJECT NO.
7677.001
SHEET NO. C10 OF C31

	FIRE HYDRANT ASSEMBLY & LATERAL	CONNECT FH TO BREAK-AWAY SPOOL	REMOVE & ABANDON (E)FH	1" ARV
STREET NAME	QTY (EA)	QTY (EA)	QTY (EA)	QTY (EA)
VICKSBURG PLACE	1		1	
GETTYSBURG PL	2		1	
MCCLELLAN WAY	3			1
W BENJAMIN HOLT DR		2		
TOTAL	6	2	5	1



0 50' 100' 200'
SCALE IN FEET

LEGEND

- 8" W — WATER PIPE AND SIZE
- 8"W — EXISTING CITY WATER PIPE
- W 8"W — EXISTING COUNTY WATER PIPE
- PROPERTY LINES
- PUBLIC UTILITY EASEMENT
- X — CONNECT TO (E)WATER SYSTEM (SEE SHEET C29 & C30 FOR CONNECTION DETAIL)
- B — CONNECT TO (E)BFP (SEE SHEET C29 FOR CONNECTION DETAIL)
- CONNECT FIRE HYDRANT TO BREAK-AWAY SPOOL
- FIRE HYDRANT ASSEMBLY & LATERAL
- 1" ARV
- (E)FIRE HYDRANT (PROTECT IN PLACE)
- REMOVE & ABANDON (E)FIRE HYDRANT

NO.	REVISION DESCRIPTION	CHECKED BY	DATE

90%
NOT FOR CONSTRUCTION

DRAWING SCALE
HOR. SCALE: 1" = 100'
VERT. SCALE: N/A

SAN JOAQUIN COUNTY CALIFORNIA

REY ENGINEERS, INC.
Civil Engineers | Land Surveyors | DMA
426 Aviation Blvd, Suite 207 | Santa Rosa, CA 95403
Phone: (707) 636-2430 | Fax: (707) 636-2435

IMPROVEMENT PLANS FOR:
LINCOLN VILLAGE WATER MAIN REPLACEMENT PHASE 1B
CIP #610127
UTILITY PLAN
COUNTY OF SAN JOAQUIN CALIFORNIA

DRAWING INFO
DATE: 10-16-2024
DRAFTER: THKH
DESIGNER: KH
REVIEWER: JWF

R.E.Y. PROJECT NO.
7677.001
SHEET NO. C11 OF C31

PLAN SCALE: 1" = 40'

0 20' 40' 80'

SCALE IN FEET

BENCHMARK DATA				
#	GRID NORTHING	GRID EASTING	ELEVATION	POINT DESCRIPTION
△528	2192636.91	6322976.49	10.99	SET MAG W/ REY CONTROL WASHER
△529	2192627.52	6322620.63	10.35	SET MAG W/ REY CONTROL WASHER

℄ LINE TABLE

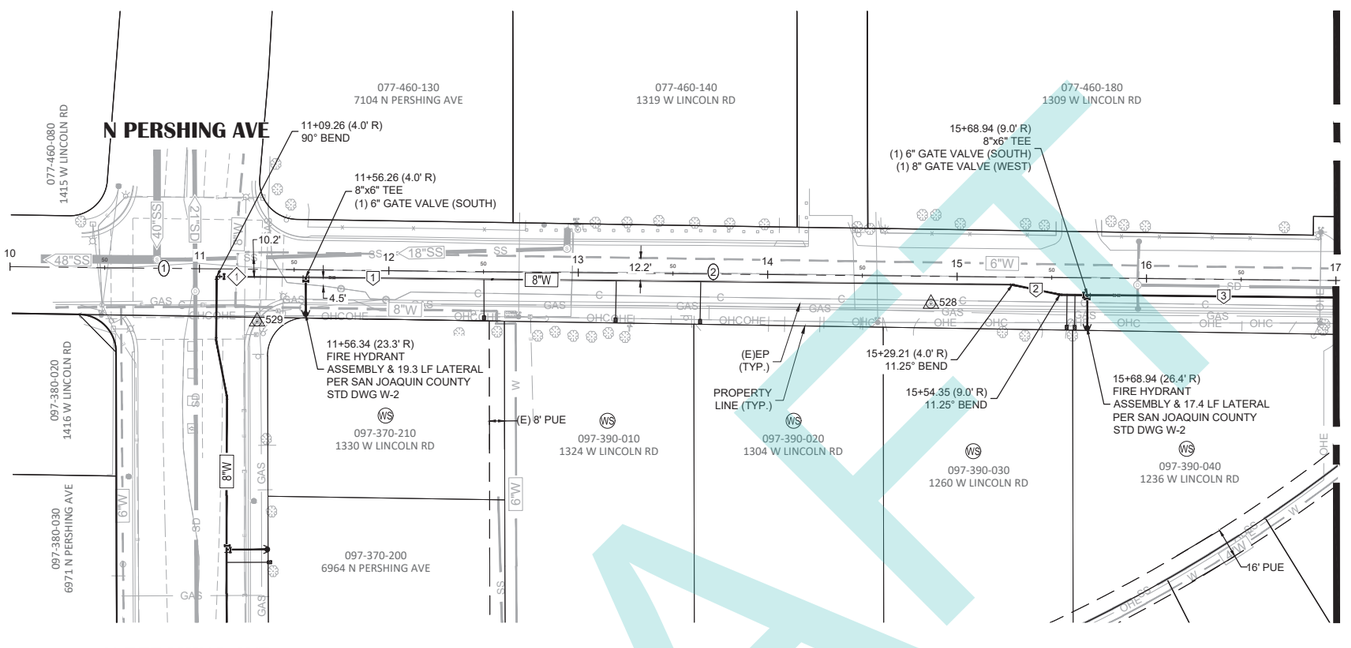
#	BEARING	LENGTH
1	S89°24'05"E	96.28'
2	S89°24'05"E	603.72'

WATER MAIN PIPE LINE DATA

#	BEARING	LENGTH	SIZE
1	S89°24'05"E	419.95'	8"
2	S78°09'05"E	25.63'	8"
3	S89°24'05"E	145.65'	8"

POTHOLE TABLE

POTHOLE	EXISTING UTILITY	COVER	OUTSIDE DIA	MATERIAL TYPE	AC THK	AB THK
◇1						



EXISTING GRADE ABOVE W PIPE ►

PROPOSED GRADES @ TOP OF W PIPE ►

	10	11	12	13	14	15	16	17
EXISTING GRADE ABOVE W PIPE ►	(E)11.32	(E)11.27	(E)11.21	(E)11.15	(E)11.10	(E)11.11	(E)11.13	(E)11.14
PROPOSED GRADES @ TOP OF W PIPE ►	6.16	6.24	6.32	6.40	6.48	6.56	7.02	7.45

	18	19	20	21	22	23	24	25
EXISTING GRADE ABOVE W PIPE ►	(E)11.16	(E)11.16	(E)11.18	(E)11.22	(E)11.26	(E)11.29	(E)11.30	(E)11.33
PROPOSED GRADES @ TOP OF W PIPE ►	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45

	26	27	28	29	30	31	32	33
EXISTING GRADE ABOVE W PIPE ►	(E)11.37	(E)11.42	(E)11.46	(E)11.52	(E)11.55	(E)11.57	(E)11.59	(E)11.61
PROPOSED GRADES @ TOP OF W PIPE ►	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45

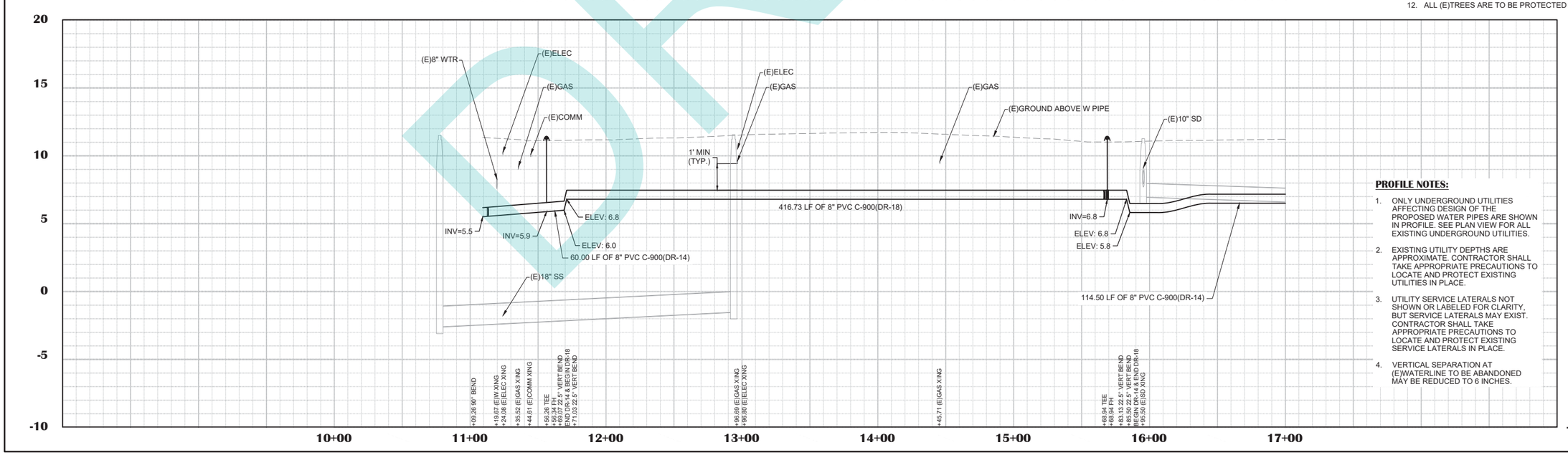
	34	35	36	37	38	39	40	41
EXISTING GRADE ABOVE W PIPE ►	(E)11.62	(E)11.65	(E)11.66	(E)11.68	(E)11.69	(E)11.70	(E)11.70	(E)11.69
PROPOSED GRADES @ TOP OF W PIPE ►	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45

	42	43	44	45	46	47	48	49
EXISTING GRADE ABOVE W PIPE ►	(E)11.65	(E)11.60	(E)11.56	(E)11.52	(E)11.47	(E)11.45	(E)11.41	(E)11.35
PROPOSED GRADES @ TOP OF W PIPE ►	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45

	50	51	52	53	54	55	56	57
EXISTING GRADE ABOVE W PIPE ►	(E)11.30	(E)11.24	(E)11.21	(E)11.12	(E)11.04	(E)11.00	(E)11.00	(E)11.03
PROPOSED GRADES @ TOP OF W PIPE ►	7.45	7.45	7.45	7.45	7.45	7.45	6.46	6.46

	58	59	60	61	62	63	64	65
EXISTING GRADE ABOVE W PIPE ►	(E)11.06	(E)11.09	(E)11.12	(E)11.12	(E)11.12	(E)11.14	(E)11.15	(E)11.17
PROPOSED GRADES @ TOP OF W PIPE ►	6.46	6.48	6.65	6.94	7.12	7.15	7.15	7.15

	66	67	68	69
EXISTING GRADE ABOVE W PIPE ►	(E)11.18	(E)11.19	(E)11.19	(E)11.19
PROPOSED GRADES @ TOP OF W PIPE ►	7.15	7.15	7.15	7.15



PROFILE NOTES:

1. ONLY UNDERGROUND UTILITIES AFFECTING DESIGN OF THE PROPOSED WATER PIPES ARE SHOWN IN PROFILE. SEE PLAN VIEW FOR ALL EXISTING UNDERGROUND UTILITIES.
2. EXISTING UTILITY DEPTHS ARE APPROXIMATE. CONTRACTOR SHALL TAKE APPROPRIATE PRECAUTIONS TO LOCATE AND PROTECT EXISTING UTILITIES IN PLACE.
3. UTILITY SERVICE LATERALS NOT SHOWN OR LABELED FOR CLARITY, BUT SERVICE LATERALS MAY EXIST. CONTRACTOR SHALL TAKE APPROPRIATE PRECAUTIONS TO LOCATE AND PROTECT EXISTING SERVICE LATERALS IN PLACE.
4. VERTICAL SEPARATION AT (E)WATERLINE TO BE ABANDONED MAY BE REDUCED TO 6 INCHES.

SHEET LEGEND:

SEE SHEET C02 FOR FULL LEGEND.

- (F) POTHOLE LOCATION & NUMBER.
- (#) CENTERLINE ALIGNMENT LINE SEGMENT. SEE TABLE ON THIS SHEET.
- [#] WATERLINE ALIGNMENT LINE SEGMENT. SEE TABLE ON THIS SHEET.
- (WS) IN-TRACT WATER SERVICE CONNECTION (SEE DETAIL 6 & 7 ON SHEET C27)

PLAN NOTES:

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12. ALL (E)TREES ARE TO BE PROTECTED IN PLACE.

NO.	REVISION DESCRIPTION	CHECKED BY	DATE

90% NOT FOR CONSTRUCTION

DRAWING SCALE
HOR. SCALE: 1" = 40'
VERT. SCALE: 1" = 4'

SAN JOAQUIN COUNTY CALIFORNIA

REY ENGINEERS, INC.
Civil Engineers | Land Surveyors | DRE
1625 Shaw Ave, Suite 103, Clovis, CA 93611
Phone: (559) 325-0909 Fax: (559) 325-0909

IMPROVEMENT PLANS FOR:
LINCOLN VILLAGE WATER MAIN REPLACEMENT PHASE 1B
CIP #610127
P&P W LINCOLN RD STA 10+00 - STA 17+00
COUNTY OF SAN JOAQUIN CALIFORNIA

DRAWING INFO
DATE: 10-16-2024
DRAFTER: THKH
DESIGNER: KH
REVIEWER: JWE

R.E.Y. PROJECT NO.
7677.001
SHEET NO. C12 OF C31

PLAN SCALE: 1" = 40'

0 20' 40' 80'

SCALE IN FEET

BENCHMARK DATA				
#	GRID NORTHING	GRID EASTING	ELEVATION	POINT DESCRIPTION
△520	2192627.46	6323355.16	10.73	SET MAG W/ REY CONTROL WASHER
△521	2192659.27	6323746.77	11.77	SET MAG W/ REY CONTROL WASHER

℄ LINE TABLE

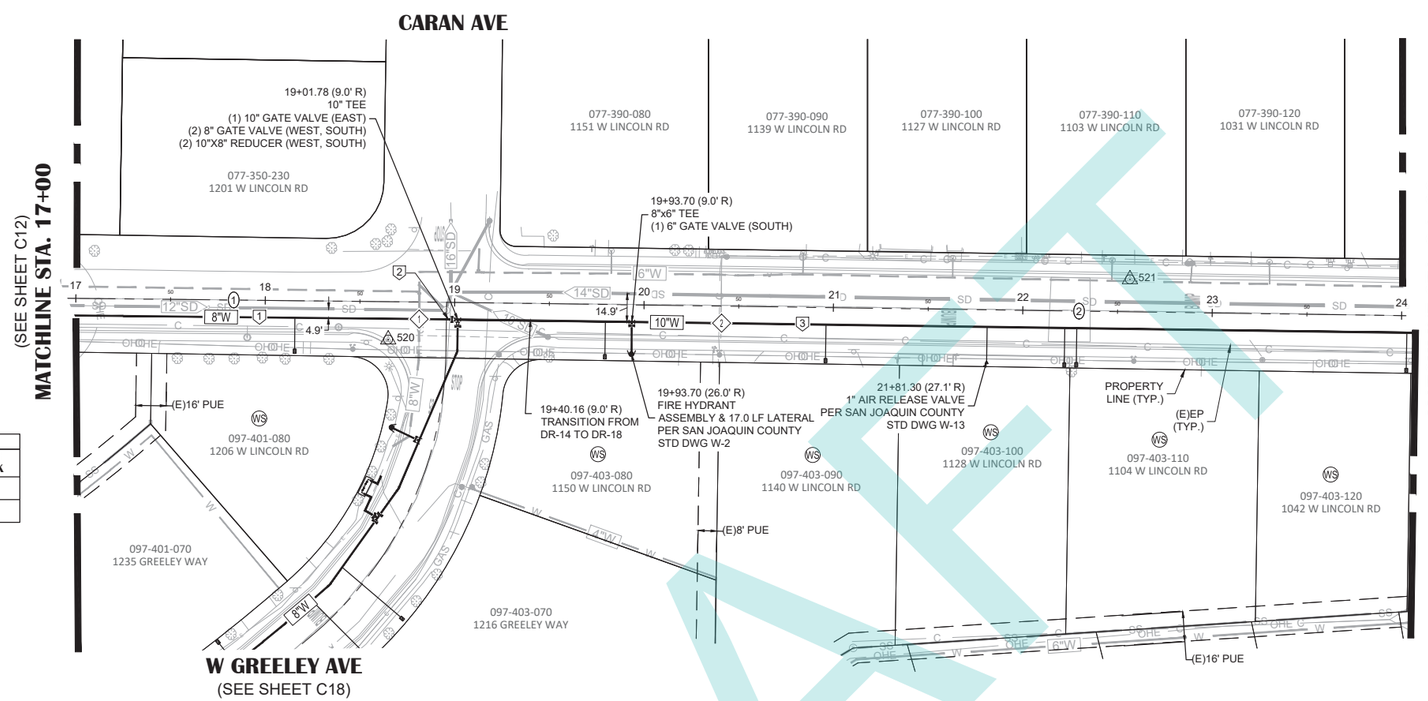
#	BEARING	LENGTH
1	S89°24'05"E	195.78'
2	S89°11'58"E	504.19'

WATER MAIN PIPE LINE DATA

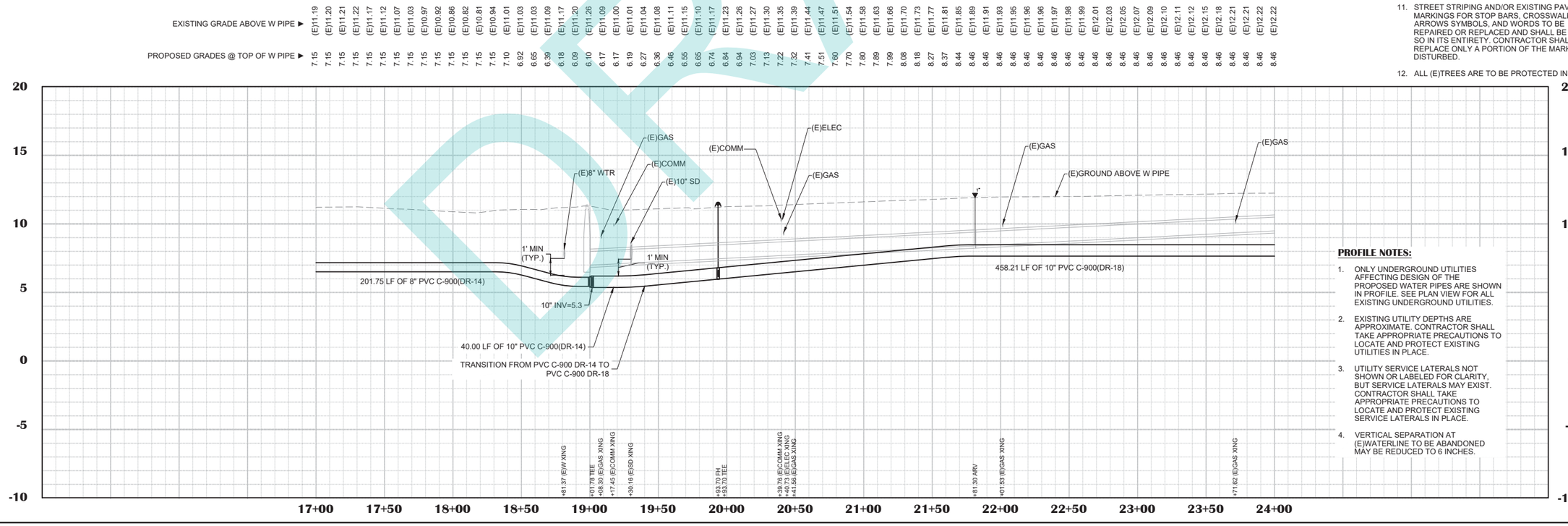
#	BEARING	LENGTH	SIZE
1	S89°24'05"E	195.76'	8"
2	S89°11'58"E	5.98'	8"
3	S89°11'58"E	498.22'	10"

POTHOLE TABLE

POTHOLE	EXISTING UTILITY	COVER	OUTSIDE DIA	MATERIAL TYPE	AC THK	AB THK
1						
2						



WEST LINCOLN ROAD



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SHEET LEGEND:

SEE SHEET C02 FOR FULL LEGEND.

- (P) POTHOLE LOCATION & NUMBER.
- (#) CENTERLINE ALIGNMENT LINE SEGMENT. SEE TABLE ON THIS SHEET.
- (#) WATERLINE ALIGNMENT LINE SEGMENT. SEE TABLE ON THIS SHEET.
- (WS) IN-TRACT WATER SERVICE CONNECTION (SEE DETAIL 6 & 7 ON SHEET C27)

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NO.	REVISION DESCRIPTION	CHECKED BY	DATE
	90% NOT FOR CONSTRUCTION		

DRAWING SCALE

HOR. SCALE: 1" = 40'
VERT. SCALE: 1" = 4'

SAN JOAQUIN COUNTY CALIFORNIA

REY ENGINEERS, INC.
CivilEngineers | LandSurveyors | DAM
420 Aerial Way, Suite 200 Fresno, CA 93650
Phone: (559) 840-4500 Fax: (559) 840-4501

IMPROVEMENT PLANS FOR:
LINCOLN VILLAGE WATER MAIN REPLACEMENT PHASE 1B
CIP #610127
P&P W LINCOLN RD STA 17+00 - STA 24+00
COUNTY OF SAN JOAQUIN CALIFORNIA

DRAWING INFO

DATE:	10-16-2024
DRAFTER:	THKH
DESIGNER:	KH
REVIEWER:	JWF

R.E.Y. PROJECT NO.
7677.001
SHEET NO. C13 OF C31

PLAN SCALE: 1" = 40'
0 20' 40' 80'
SCALE IN FEET

BENCHMARK DATA				
#	GRID NORTHING	GRID EASTING	ELEVATION	POINT DESCRIPTION
△522	2192653.12	6324135.29	11.58	SET MAG W/ REY CONTROL WASHER

℄ LINE TABLE

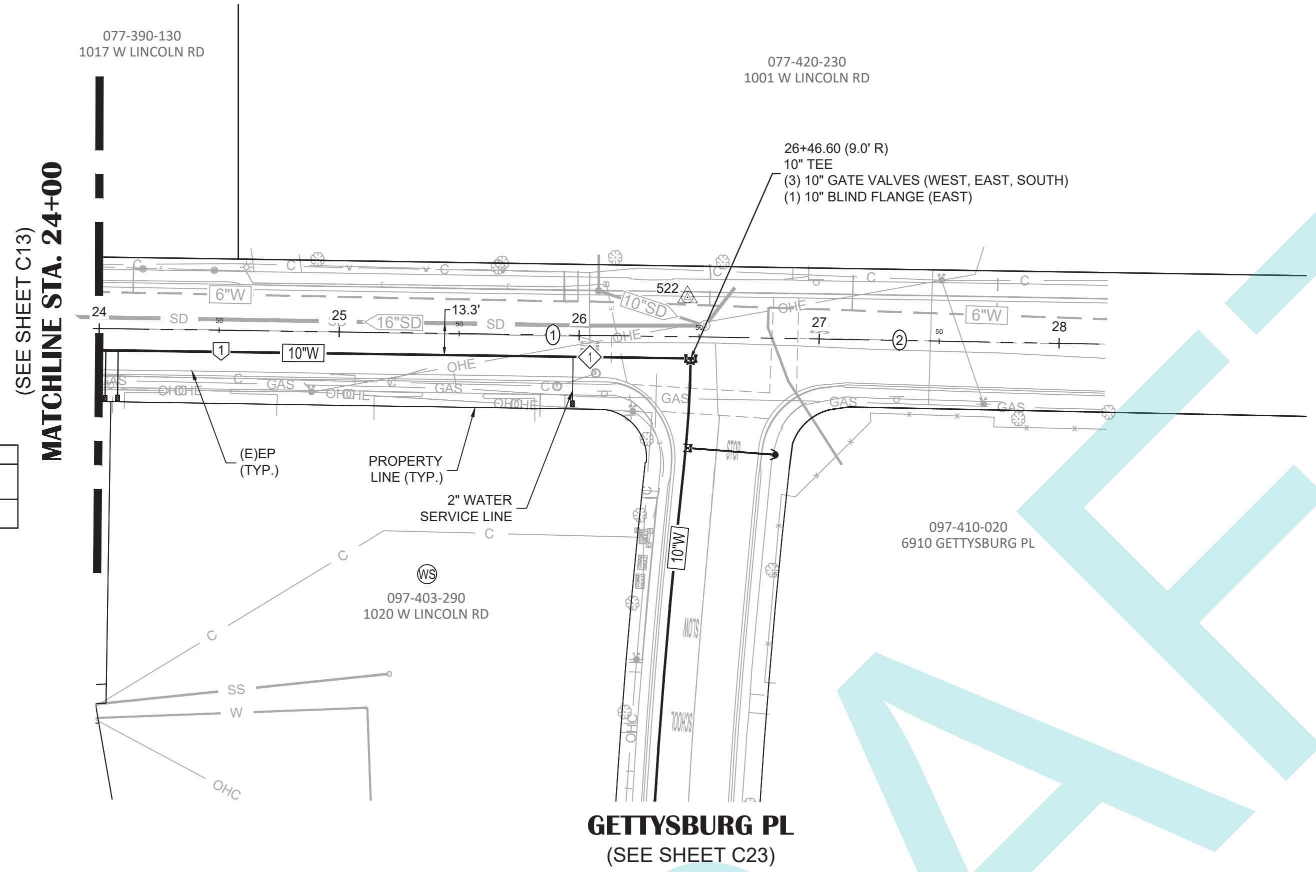
#	BEARING	LENGTH
①	S89°11'59"E	260.57'
②	S88°58'09"E	155.94'

WATER MAIN PIPE LINE DATA

#	BEARING	LENGTH	SIZE
1	S89°11'58"E	246.60'	10"

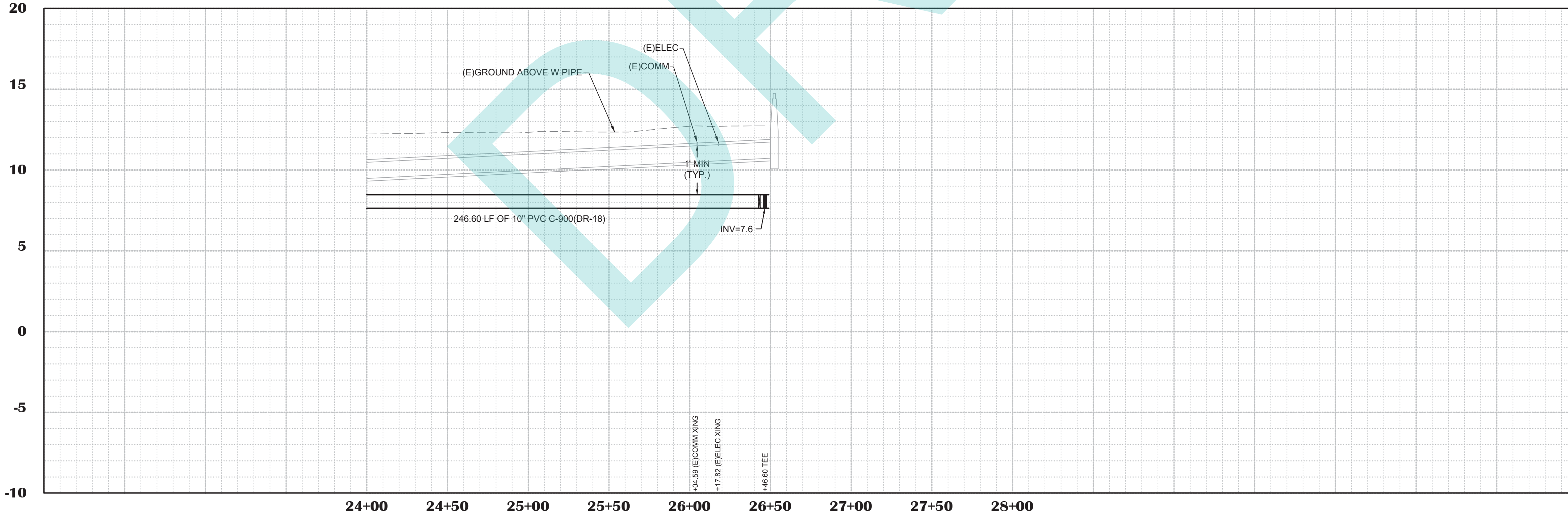
POTHOLE TABLE

POTHOLE	EXISTING UTILITY	COVER	OUTSIDE DIA	MATERIAL TYPE	AC THK	AB THK
◇1						



WEST LINCOLN ROAD

EXISTING GRADE ABOVE W PIPE ▶	(E)12.22	(E)12.23	(E)12.24	(E)12.26	(E)12.28	(E)12.31	(E)12.31	(E)12.30	(E)12.30	(E)12.29	(E)12.33	(E)12.38	(E)12.37	(E)12.36	(E)12.35	(E)12.34	(E)12.34	(E)12.42	(E)12.52	(E)12.62	(E)12.70	(E)12.69	(E)12.70	(E)12.71	(E)12.72
PROPOSED GRADES @ TOP OF W PIPE ▶	8.46	8.46	8.46	8.46	8.46	8.46	8.46	8.46	8.46	8.46	8.46	8.46	8.46	8.46	8.46	8.46	8.46	8.46	8.46	8.46	8.46	8.46	8.46	8.46	8.46



SHEET LEGEND:

SEE SHEET C02 FOR FULL LEGEND.

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DRAWING SCALE
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R.E.Y. ENGINEERS, INC.
Civil Engineers | Land Surveyors | LiDAR
905 Sutter Street, Suite 200 Folsom, CA 95630
Phone: (916) 366-3040 Fax: (916) 366-3303

IMPROVEMENT PLANS FOR:
LINCOLN VILLAGE WATER MAIN REPLACEMENT PHASE 1B
CIP #610127
P&P W LINCOLN RD STA 24+00 - STA 28+16.49
COUNTY OF SAN JOAQUIN
CALIFORNIA

DRAWING INFO
DATE: 10-16-2024
DRAFTER: TH/KH
DESIGNER: KH
REVIEWER: JWF

R.E.Y. PROJECT NO.
7677.001
SHEET NO. C14 OF C31

\\REYSRFILE01.reyengrs.loc\Projects\7677 - san joaquin county\001 - lincoln village maintenance district water main replacement\10 - cad drawings\improvement plans\Phase 1B\7677.001 - P&P - PHASE 1B.dwg Oct 15, 2024 - 3:20pm, khoover

PLAN SCALE: 1" = 40'

0 20' 40' 80'

SCALE IN FEET

LINE TABLE

#	BEARING	LENGTH
1	N10°16'20"W	133.58'

CURVE DATA

#	LENGTH	RADIUS	DELTA
1	21.50'	9655.00'	0°07'39"
2	15.54'	1000.00'	0°53'26"
3	679.37'	9670.00'	4°01'31"

WATER MAIN PIPE CURVE DATA

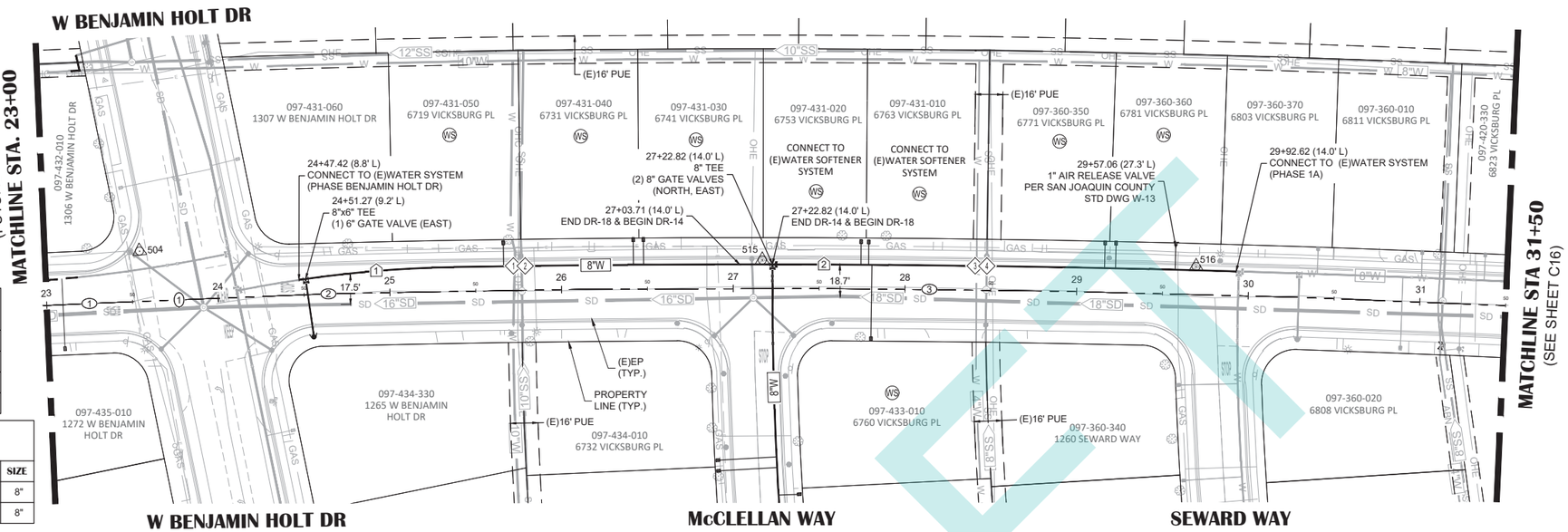
#	LENGTH	RADIUS	DELTA	SIZE
1	90.56'	700.00'	7°24'46"	8"
2	455.67'	9684.00'	2°41'46"	8"

POTHOLE TABLE

POTHOLE	EXISTING UTILITY	COVER	OUTSIDE DIA	MATERIAL TYPE	AC THK	AB THK
1						
2						
3						
4						

BENCHMARK DATA

#	GRID NORTHING	GRID EASTING	ELEVATION	POINT DESCRIPTION
△504	2190821.58	6323014.76	9.35	SET MAG W/ REY CONTROL WASHER
△515	2191183.32	6322966.93	9.26	SET MAG W/ REY CONTROL WASHER
△516	2191434.16	6322935.74	9.97	SET MAG W/ REY CONTROL WASHER

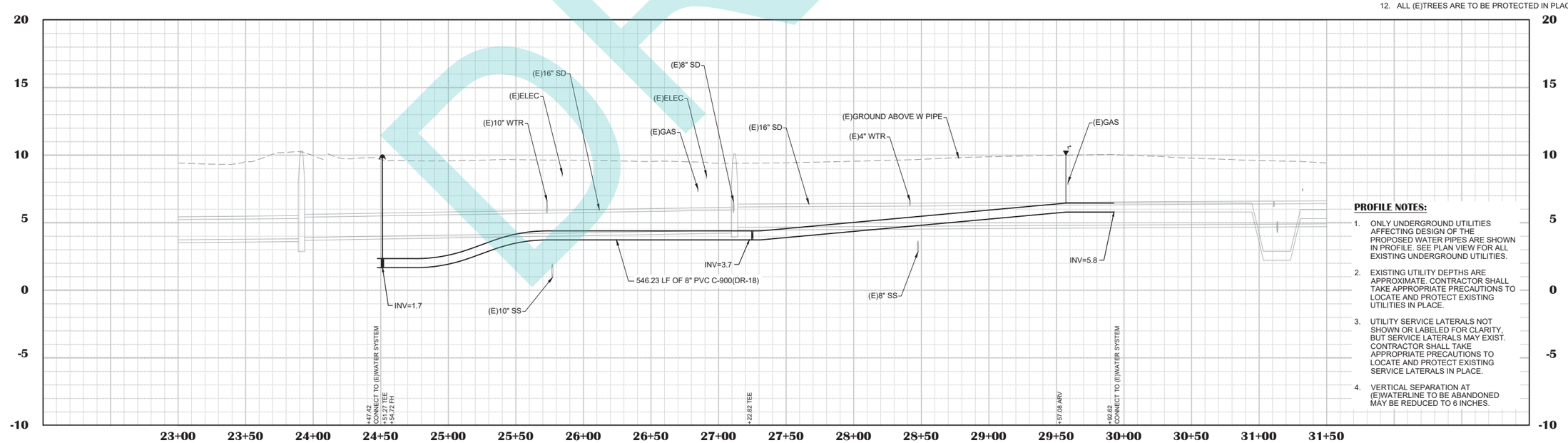


VICKSBURG PL

EXISTING GRADE ABOVE W PIPE ►

PROPOSED GRADES @ TOP OF W PIPE ►

(E)9.65	(E)9.58	(E)9.57	(E)9.56	(E)9.55	(E)9.56	(E)9.57	(E)9.59	(E)9.62	(E)9.65	(E)9.64	(E)9.63	(E)9.62	(E)9.61	(E)9.60	(E)9.60	(E)9.59	(E)9.56	(E)9.54	(E)9.52	(E)9.51	(E)9.53	(E)9.51	(E)9.48	(E)9.45	(E)9.38	(E)9.38	(E)9.39	(E)9.39	(E)9.40	(E)9.42	(E)9.44	(E)9.46	(E)9.48	(E)9.50	(E)9.53	(E)9.55	(E)9.58	(E)9.60	(E)9.63	(E)9.67	(E)9.71	(E)9.76	(E)9.81	(E)9.84	(E)9.86	(E)9.88	(E)9.90	(E)9.92	(E)9.94	(E)9.95	(E)9.97	(E)9.99	(E)10.01	(E)10.02
2.32	2.32	2.32	2.33	2.41	2.58	2.84	3.18	3.54	3.88	4.13	4.29	4.37	4.37	4.37	4.37	4.37	4.37	4.37	4.37	4.37	4.37	4.37	4.37	4.37	4.37	4.37	4.37	4.37	4.46	4.55	4.64	4.73	4.82	4.91	5.00	5.09	5.18	5.27	5.37	5.46	5.55	5.64	5.73	5.82	5.91	6.00	6.09	6.18	6.28	6.37	6.43	6.43	6.43



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- (#) CENTERLINE ALIGNMENT CURVE SEGMENT. SEE TABLE ON THIS SHEET.
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10. IF CLEARANCE BETWEEN PIPE CROSSING IS LESS THAN 1-FT, NOTIFY ENGINEER. ENGINEER WILL PROVIDE APPROPRIATE DIRECTION.
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12. ALL (E)TREES ARE TO BE PROTECTED IN PLACE.

NO.	REVISION DESCRIPTION	CHECKED BY	DATE
	90% NOT FOR CONSTRUCTION		

DRAWING SCALE

HOR. SCALE: 1" = 40'

VERT. SCALE: 1" = 4'

SAN JOAQUIN COUNTY CALIFORNIA

REY ENGINEERS, INC.
Civil Engineers | Land Surveyors | DBA
1062 Sandhill Avenue, Suite 100, Turlock, CA 95380
Phone (209) 668-5300 Fax (209) 668-5303

IMPROVEMENT PLANS FOR:
LINCOLN VILLAGE WATER MAIN REPLACEMENT PHASE 1B
CIP #610127
P&P VICKSBURG PL STA 23+00 - STA 31+50
COUNTY OF SAN JOAQUIN CALIFORNIA

DRAWING INFO

DATE: 10-16-2024
DRAFTER: THKH
DESIGNER: KH
REVIEWER: JWE

R.E.Y. PROJECT NO. 7677.001

SHEET NO. C15 OF C31

PLAN SCALE: 1" = 40'

0 20' 40' 80'

SCALE IN FEET

℄ LINE TABLE

#	BEARING	LENGTH
①	N11°11'44"W	51.37'

℄ CURVE DATA

#	LENGTH	RADIUS	DELTA
①	580.37'	9670.00'	3°26'19"
②	48.58'	300.00'	9°16'41"

WATER MAIN PIPE LINE DATA

#	BEARING	LENGTH	SIZE
1	N10°49'04"W	4.00'	8"

WATER MAIN PIPE CURVE DATA

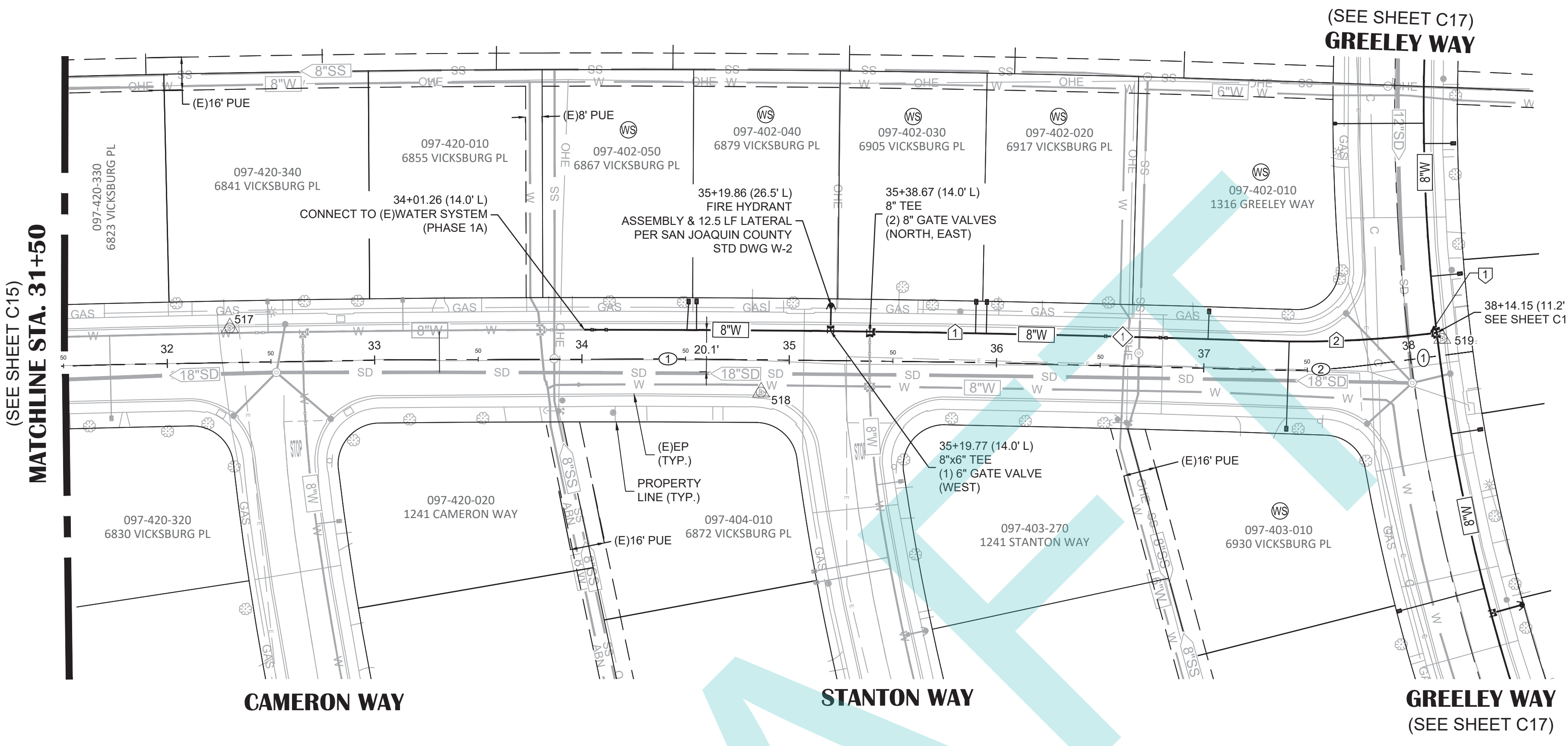
#	LENGTH	RADIUS	DELTA	SIZE
1	329.58'	9684.00'	1°57'00"	8"
2	77.67'	500.00'	8°54'01"	8"

POTHOLE TABLE

POTHOLE	EXISTING UTILITY	COVER	OUTSIDE DIA	MATERIAL TYPE	AC THK	AB THK
◇1						

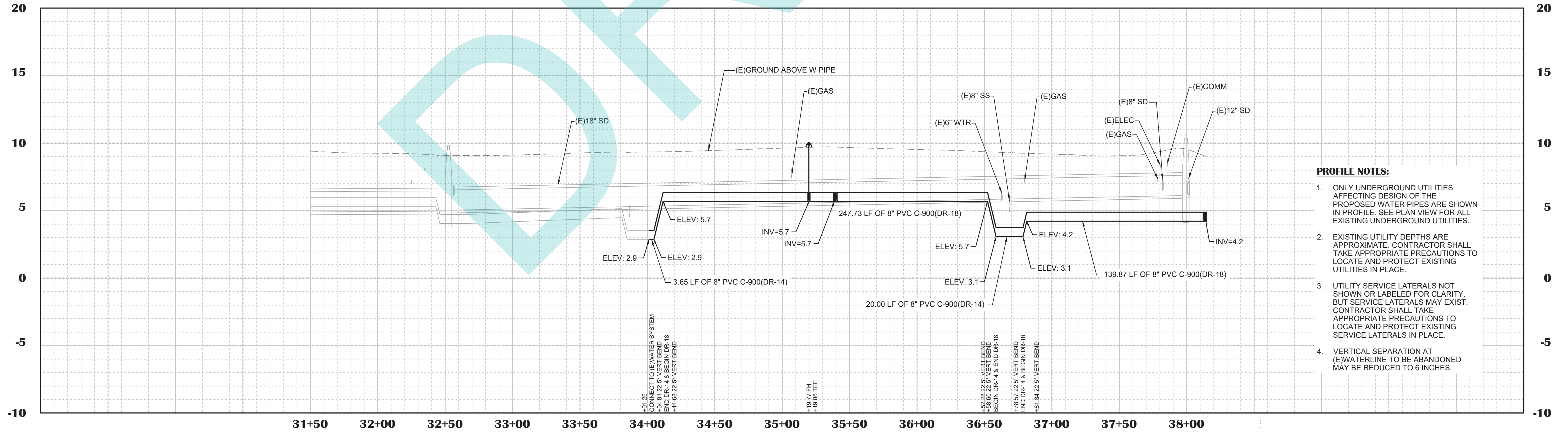
BENCHMARK DATA

#	GRID NORTHING	GRID EASTING	ELEVATION	POINT DESCRIPTION
△517	2191694.59	6322909.59	9.11	SET MAG W/ REY CONTROL WASHER
△518	2191952.32	6322923.40	9.63	SET MAG W/ REY CONTROL WASHER
△519	2192278.38	6322875.62	8.87	SET MAG W/ REY CONTROL WASHER



VICKSBURG PL

EXISTING GRADE ABOVE W PIPE ►	PROPOSED GRADES @ TOP OF W PIPE ►
(E)9.35	5.64
(E)9.36	6.34
(E)9.39	6.34
(E)9.42	6.34
(E)9.45	6.34
(E)9.48	6.34
(E)9.51	6.34
(E)9.55	6.34
(E)9.58	6.34
(E)9.61	6.34
(E)9.64	6.34
(E)9.68	6.34
(E)9.71	6.34
(E)9.70	6.34
(E)9.66	6.34
(E)9.63	6.34
(E)9.60	6.34
(E)9.57	6.34
(E)9.54	6.34
(E)9.52	6.34
(E)9.49	6.34
(E)9.47	6.34
(E)9.44	6.35
(E)9.40	6.35
(E)9.36	6.35
(E)9.31	3.73
(E)9.34	3.73
(E)9.24	4.32
(E)9.21	4.87
(E)9.18	4.87
(E)9.15	4.87
(E)9.11	4.87
(E)9.10	4.87
(E)9.12	4.87
(E)9.08	4.87
(E)9.09	4.87
(E)9.20	4.87
(E)9.36	4.87
(E)9.56	4.87
(E)9.55	4.87
(E)9.17	4.87



PROFILE NOTES:

1. ONLY UNDERGROUND UTILITIES AFFECTING DESIGN OF THE PROPOSED WATER PIPES ARE SHOWN IN PROFILE. SEE PLAN VIEW FOR ALL EXISTING UNDERGROUND UTILITIES.
2. EXISTING UTILITY DEPTHS ARE APPROXIMATE. CONTRACTOR SHALL TAKE APPROPRIATE PRECAUTIONS TO LOCATE AND PROTECT EXISTING UTILITIES IN PLACE.
3. UTILITY SERVICE LATERALS NOT SHOWN OR LABELED FOR CLARITY, BUT SERVICE LATERALS MAY EXIST. CONTRACTOR SHALL TAKE APPROPRIATE PRECAUTIONS TO LOCATE AND PROTECT EXISTING SERVICE LATERALS IN PLACE.
4. VERTICAL SEPARATION AT (E)WATERLINE TO BE ABANDONED MAY BE REDUCED TO 6 INCHES.

SHEET LEGEND:

SEE SHEET C02 FOR FULL LEGEND.

◇#	POTHOLE LOCATION & NUMBER.
(#)	CENTERLINE ALIGNMENT LINE SEGMENT. SEE TABLE ON THIS SHEET.
(#)	CENTERLINE ALIGNMENT CURVE SEGMENT. SEE TABLE ON THIS SHEET.
#	WATERLINE ALIGNMENT LINE SEGMENT. SEE TABLE ON THIS SHEET.
#	WATERLINE ALIGNMENT CURVE SEGMENT. SEE TABLE ON THIS SHEET.
(WS)	IN-TRACT WATER SERVICE CONNECTION (SEE DETAIL 6 & 7 ON SHEET C27)

PLAN NOTES:

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NO.	REVISION DESCRIPTION	CHECKED BY	DATE

90% NOT FOR CONSTRUCTION

DRAWING SCALE

HOR. SCALE: 1" = 40'
VERT. SCALE: 1" = 4'

SAN JOAQUIN COUNTY CALIFORNIA

R.E.Y. ENGINEERS, INC.
Civil Engineers | Land Surveyors | LiDAR
905 Sutter Street, Suite 200 Folsom, CA 95630
Phone: (916) 366-3040 Fax: (916) 366-3303

IMPROVEMENT PLANS FOR:
LINCOLN VILLAGE WATER MAIN REPLACEMENT PHASE 1B
CIP #610127
P&P VICKSBURG PL STA 31+50 - STA 38+30.32
COUNTY OF SAN JOAQUIN CALIFORNIA

DRAWING INFO

DATE: 10-16-2024
DRAFTER: TH/KH
DESIGNER: KH
REVIEWER: JWF

R.E.Y. PROJECT NO.
7677.001

SHEET NO. **C16** OF **C31**

\\REYSVRFILE01.reyengrs.loc\Projects\7677 – san joaquin county\001 – lincoln village maintenance district water main replacement\10 – cad drawings\improvement plans\Phase 1B\7677.001 – P&P – PHASE 1B.dwg Oct 15, 2024 – 3:20pm, khoover

PLAN SCALE: 1" = 40'

0 20' 40' 80'

SCALE IN FEET

BENCHMARK DATA				
#	GRID NORTHING	GRID EASTING	ELEVATION	POINT DESCRIPTION
△519	2192278.38	6322875.62	8.87	SET MAG W/ REY CONTROL WASHER
△530	2192223.72	6322559.22	8.86	SET MAG W/ REY CONTROL WASHER

℄ LINE TABLE

#	BEARING	LENGTH
1	N88°26'29"E	59.48'

℄ CURVE DATA

#	LENGTH	RADIUS	DELTA
1	65.50'	1125.00'	3°20'10"
2	514.10'	940.00'	31°20'10"

WATER MAIN PIPE LINE DATA

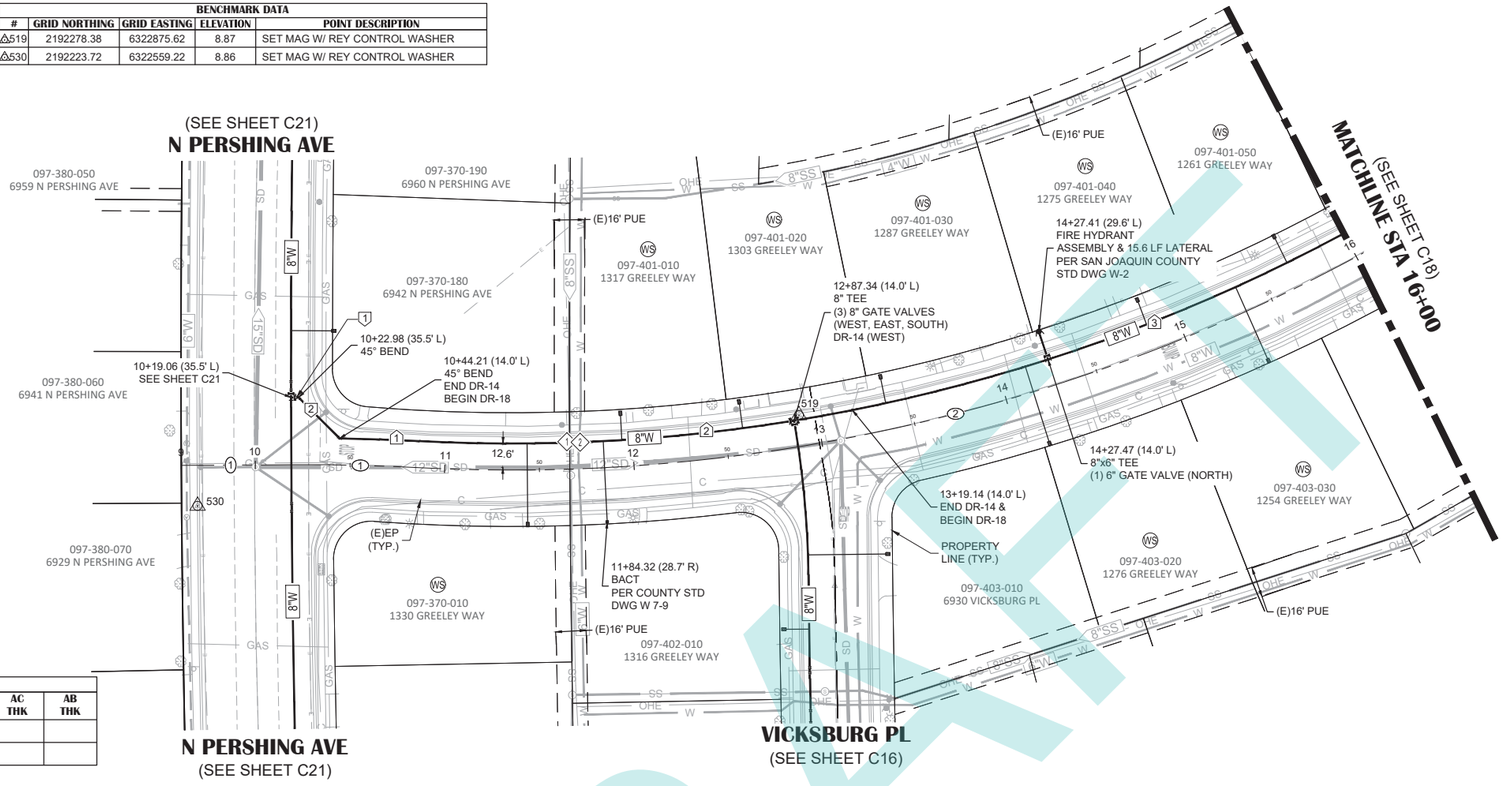
#	BEARING	LENGTH	SIZE
1	N88°29'07"E	4.00'	8"
2	S46°09'09"E	30.55'	8"

WATER MAIN PIPE CURVE DATA

#	LENGTH	RADIUS	DELTA	SIZE
1	42.20'	1139.00'	2°07'22"	8"
2	198.44'	926.00'	12°16'42"	8"
3	308.01'	926.00'	19°03'28"	8"

POTHOLE TABLE

POTHOLE	EXISTING UTILITY	COVER	OUTSIDE DIA	MATERIAL TYPE	AC THK	AB THK
◇1						
◇2						

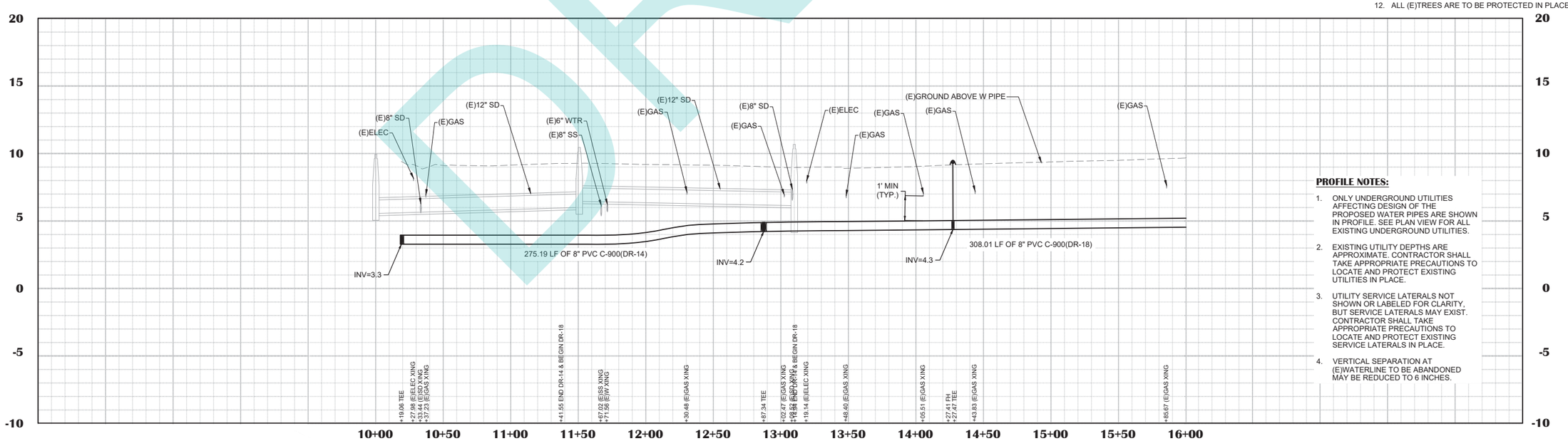


W GREELEY WAY

EXISTING GRADE ABOVE W PIPE ►

PROPOSED GRADES @ TOP OF W PIPE ►

(E)9.33	(E)9.07	(E)9.01	(E)9.09	(E)9.10	(E)9.08	(E)9.07	(E)9.08	(E)9.12	(E)9.16	(E)9.19	(E)9.23	(E)9.24	(E)9.25	(E)9.25	(E)9.23	(E)9.21	(E)9.19	(E)9.17	(E)9.16	(E)9.15	(E)9.14	(E)9.12	(E)9.11	(E)9.09	(E)9.06	(E)9.03	(E)8.99	(E)8.95	(E)8.94	(E)8.96	(E)8.97	(E)8.97	(E)8.88	(E)8.91	(E)8.94	(E)8.96	(E)8.98	(E)9.01	(E)9.06	(E)9.10	(E)9.15	(E)9.18	(E)9.22	(E)9.25	(E)9.28	(E)9.30	(E)9.33	(E)9.35	(E)9.38	(E)9.41	(E)9.43	(E)9.45	(E)9.47	(E)9.51	(E)9.54	(E)9.58	(E)9.61	(E)9.64
9.33	9.07	9.01	9.09	9.10	9.08	9.07	9.08	9.12	9.16	9.19	9.23	9.24	9.25	9.25	9.23	9.21	9.19	9.17	9.16	9.15	9.14	9.12	9.11	9.09	9.06	9.03	8.99	8.95	8.94	8.96	8.97	8.97	8.88	8.91	8.94	8.96	8.98	9.01	9.06	9.10	9.15	9.18	9.22	9.25	9.28	9.30	9.33	9.35	9.38	9.41	9.43	9.45	9.47	9.51	9.54	9.58	9.61	9.64



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SHEET LEGEND:

SEE SHEET C02 FOR FULL LEGEND.

- (F) POTHOLE LOCATION & NUMBER.
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- (#) CENTERLINE ALIGNMENT CURVE SEGMENT. SEE TABLE ON THIS SHEET.
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DRAWING SCALE
HOR. SCALE: 1" = 40'
VERT. SCALE: 1" = 4'

SAN JOAQUIN COUNTY CALIFORNIA

R.E.Y. ENGINEERS, INC.
Civil Engineers | Land Surveyors | LDAR
925 Blue Gum Ave. Suite 200 Modesto, CA 95358
Phone (209) 543-0300 Fax (209) 543-0300

IMPROVEMENT PLANS FOR:
LINCOLN VILLAGE WATER MAIN REPLACEMENT PHASE 1B
CIP #610127
P&P GREELEY WAY STA 9+60.91 - STA 16+00
COUNTY OF SAN JOAQUIN
CALIFORNIA

DRAWING INFO
DATE: 10-16-2024
DRAFTER: THKH
DESIGNER: AJH
REVIEWER: JVR

R.E.Y. PROJECT NO.
7677.001
SHEET NO. C17 OF C31

PLAN SCALE: 1" = 40'

0 20' 40' 80'

SCALE IN FEET

℄ LINE TABLE		
#	BEARING	LENGTH
①	N0°48'02"E	26.02'

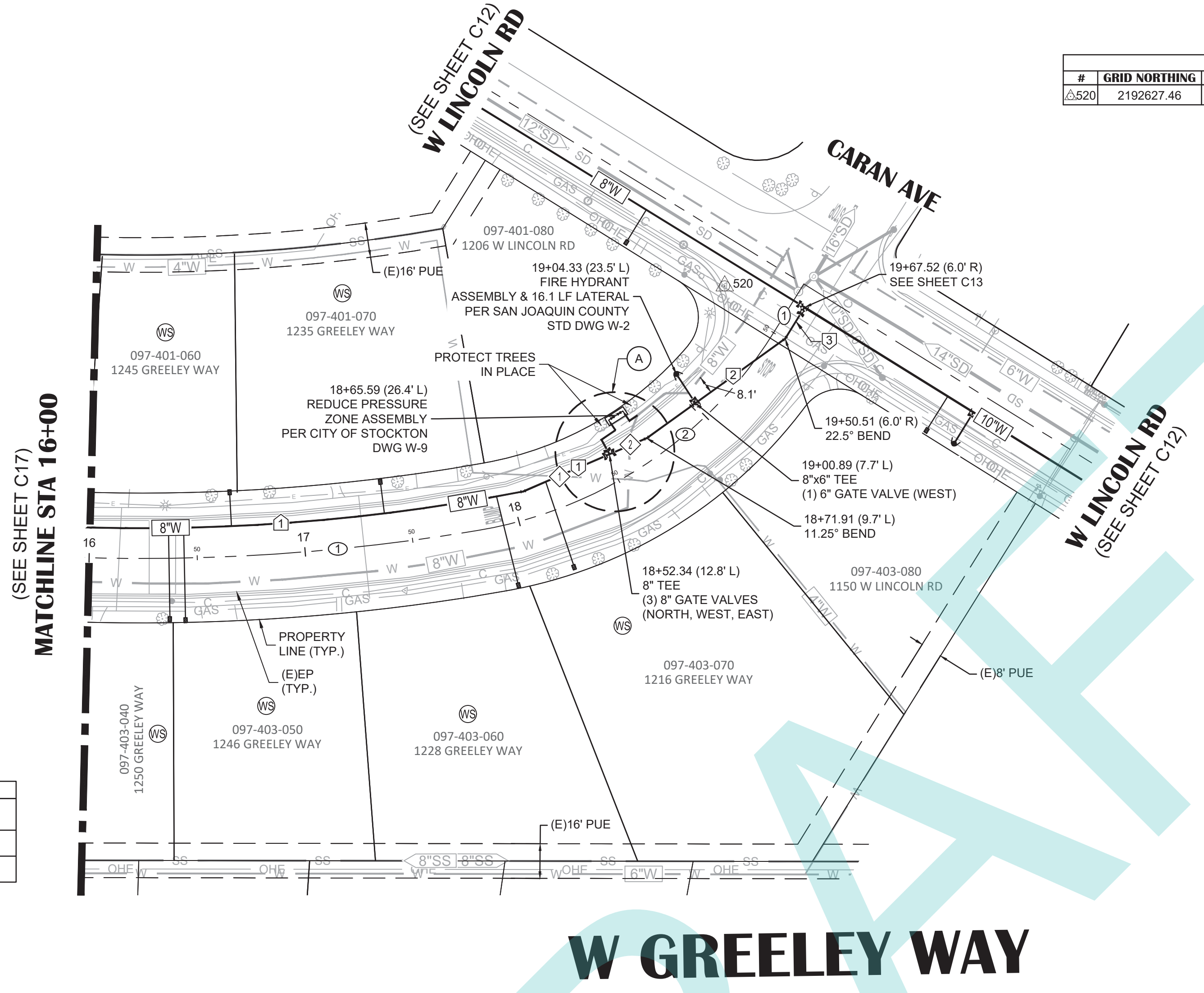
℄ CURVE DATA			
#	LENGTH	RADIUS	DELTA
①	180.78'	940.00'	11°01'10"
②	169.72'	200.00'	48°37'18"

WATER MAIN PIPE LINE DATA			
#	BEARING	LENGTH	SIZE
1	N35°39'02"E	62.18'	8"
2	N23°18'02"E	78.88'	8"
3	N0°48'02"E	17.02'	8"

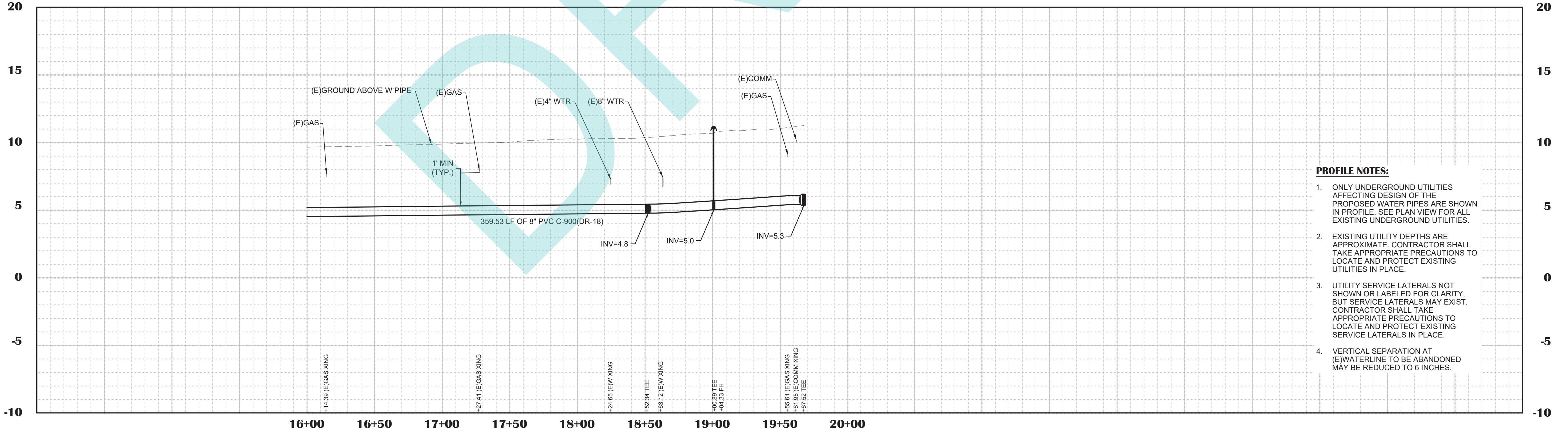
WATER MAIN PIPE CURVE DATA				
#	LENGTH	RADIUS	DELTA	SIZE
1	201.45'	926.00'	12°27'52"	8"

POTHOLE TABLE						
POTHOLE	EXISTING UTILITY	COVER	OUTSIDE DIA	MATERIAL TYPE	AC THK	AB THK
◇1						
◇2						

BENCHMARK DATA				
#	GRID NORTHING	GRID EASTING	ELEVATION	POINT DESCRIPTION
△520	2192627.46	6323355.16	10.73	SET MAG W/ REY CONTROL WASHER



EXISTING GRADE ABOVE W PIPE ▶	(E)9.64	(E)9.67	(E)9.69	(E)9.71	(E)9.72	(E)9.74	(E)9.78	(E)9.81	(E)9.83	(E)9.85	(E)9.88	(E)9.91	(E)9.94	(E)9.96	(E)9.99	(E)10.02	(E)10.11	(E)10.17	(E)10.21	(E)10.25	(E)10.23	(E)10.28	(E)10.28	(E)10.28	(E)10.30	(E)10.35	(E)10.42	(E)10.50	(E)10.58	(E)10.64	(E)10.67	(E)10.85	(E)10.90	(E)10.95	(E)10.97	(E)11.04	(E)11.15
PROPOSED GRADES @ TOP OF W PIPE ▶	5.18	5.19	5.20	5.21	5.22	5.23	5.24	5.25	5.26	5.27	5.28	5.29	5.30	5.31	5.32	5.33	5.34	5.35	5.36	5.37	5.38	5.39	5.40	5.41	5.42	5.43	5.45	5.49	5.55	5.61	5.68	5.75	5.81	5.88	5.95	6.02	6.09



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SHEET LEGEND:

SEE SHEET C02 FOR FULL LEGEND.

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(#)	CENTERLINE ALIGNMENT LINE SEGMENT. SEE TABLE ON THIS SHEET.
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#	WATERLINE ALIGNMENT LINE SEGMENT. SEE TABLE ON THIS SHEET.
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Ⓐ	REDUCE PRESSURE ZONE ASSEMBLY (SEE SHEET C29 FOR CONNECTION DETAIL)
WS	IN-TRACT WATER SERVICE CONNECTION (SEE DETAIL 6 & 7 ON SHEET C27)

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DRAWING SCALE
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Civil Engineers | Land Surveyors | LIDAR
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IMPROVEMENT PLANS FOR:
LINCOLN VILLAGE WATER MAIN REPLACEMENT PHASE 1B
CIP #610127
P&P GREELEY WAY STA 16+00 - STA 19+76.52
COUNTY OF SAN JOAQUIN CALIFORNIA

DRAWING INFO
DATE: 10-16-2024
DRAFTER: TH/KH
DESIGNER: KH
REVIEWER: JWF

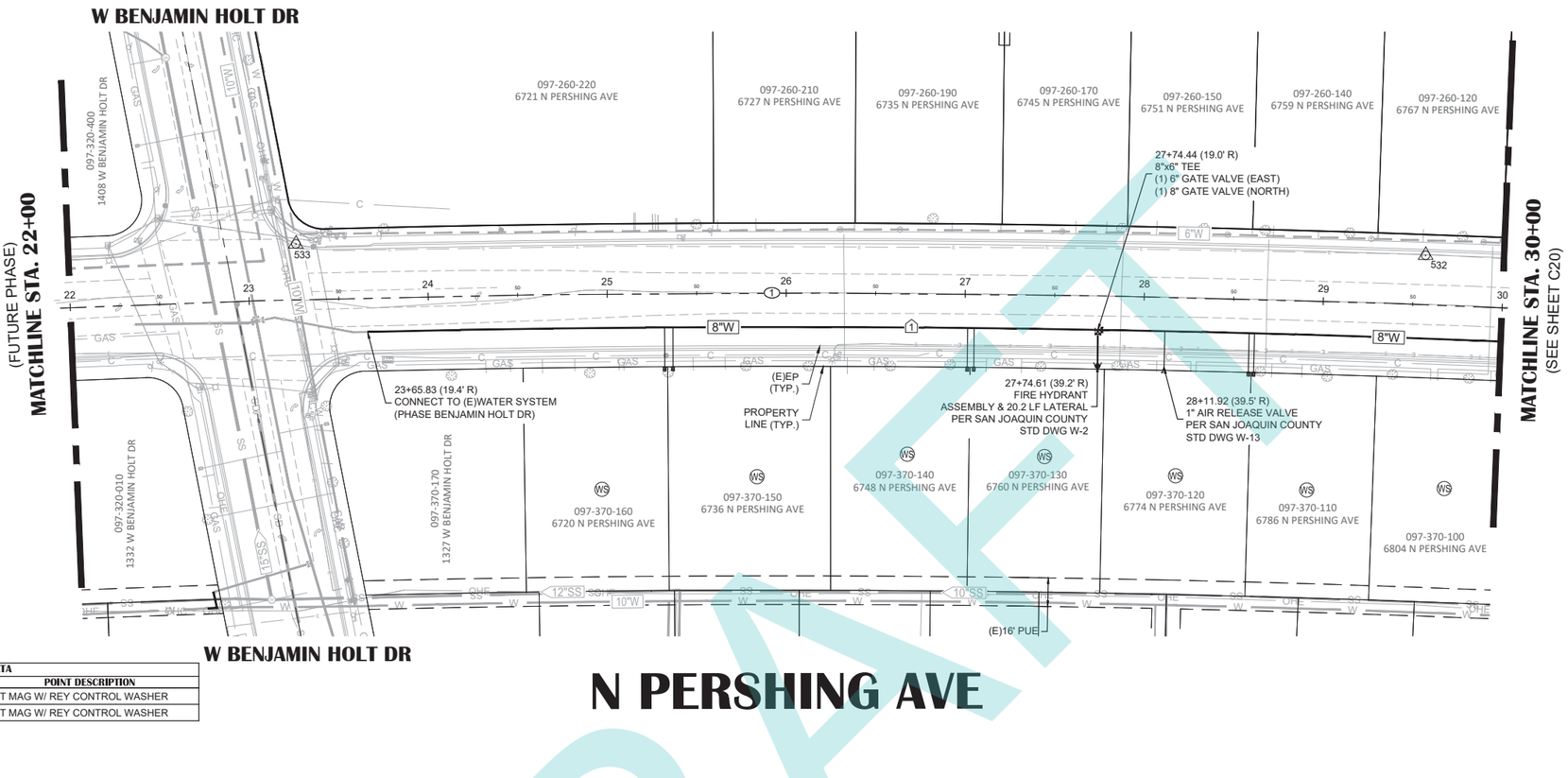
R.E.Y. PROJECT NO.
7677.001
SHEET NO. C18 OF C31

\\REYSRFILE01.reyengrs.loc\Projects\7677 - san joaquin county\001 - lincoln village maintenance district water main replacement\10 - cad drawings\improvement plans\Phase 1B\7677.001 - P&P - PHASE 1B.dwg Oct 15, 2024 - 3:21pm, khoover

℄ CURVE DATA			
#	LENGTH	RADIUS	DELTA
1	800.00'	9960.00'	4°36'07"

WATER MAIN PIPE CURVE DATA				
#	LENGTH	RADIUS	DELTA	SIZE
1	632.97'	9941.00'	3°38'53"	8"

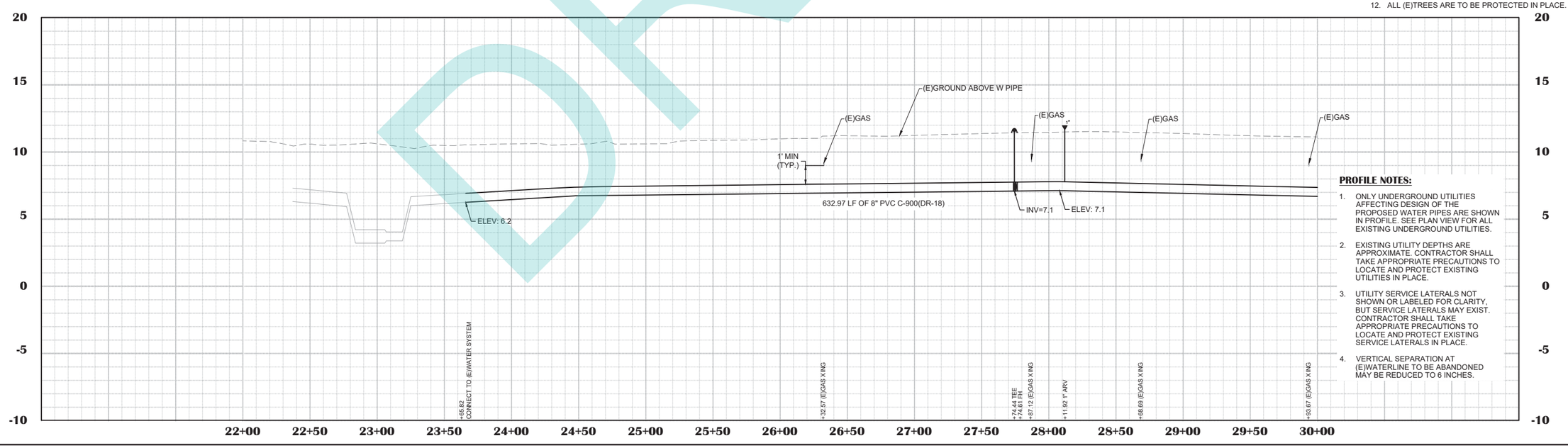
BENCHMARK DATA				
#	GRID NORTHING	GRID EASTING	ELEVATION	POINT DESCRIPTION
△532	2191413.35	6322619.29	10.72	SET MAG W/ REY CONTROL WASHER
△533	2190788.09	6322705.24	10.12	SET MAG W/ REY CONTROL WASHER



EXISTING GRADE ABOVE W PIPE ►

PROPOSED GRADES @ TOP OF W PIPE ►

(E)10.5	(E)10.5	(E)10.6	(E)10.6	(E)10.6	(E)10.6	(E)10.5	(E)10.5	(E)10.6	(E)10.6	(E)10.8	(E)10.6	(E)10.6	(E)10.6	(E)10.6	(E)10.7	(E)10.8	(E)10.8	(E)10.8	(E)10.9	(E)10.9	(E)10.9	(E)10.9	(E)10.9	(E)11.0	(E)11.0	(E)11.0	(E)11.1	(E)11.2	(E)11.2	(E)11.2	(E)11.2	(E)11.2	(E)11.2	(E)11.2	(E)11.3	(E)11.3	(E)11.3	(E)11.4	(E)11.4	(E)11.4	(E)11.4	(E)11.4	(E)11.4	(E)11.5	(E)11.5	(E)11.5	(E)11.5	(E)11.5	(E)11.4	(E)11.4	(E)11.4	(E)11.4	(E)11.3	(E)11.3	(E)11.2	(E)11.2	(E)11.2	(E)11.2	(E)11.2	(E)11.1	(E)11.1	(E)11.1
6.92	6.98	7.04	7.10	7.16	7.22	7.28	7.33	7.37	7.39	7.41	7.42	7.43	7.44	7.45	7.46	7.47	7.48	7.50	7.51	7.52	7.53	7.54	7.55	7.56	7.57	7.58	7.59	7.60	7.61	7.62	7.64	7.65	7.66	7.67	7.68	7.69	7.70	7.71	7.72	7.73	7.74	7.75	7.76	7.77	7.75	7.72	7.70	7.68	7.66	7.63	7.61	7.59	7.57	7.54	7.52	7.50	7.48	7.45	7.43	7.41	7.39	7.36	7.34



PROFILE NOTES:

1. ONLY UNDERGROUND UTILITIES AFFECTING DESIGN OF THE PROPOSED WATER PIPES ARE SHOWN IN PROFILE. SEE PLAN VIEW FOR ALL EXISTING UNDERGROUND UTILITIES.
2. EXISTING UTILITY DEPTHS ARE APPROXIMATE. CONTRACTOR SHALL TAKE APPROPRIATE PRECAUTIONS TO LOCATE AND PROTECT EXISTING UTILITIES IN PLACE.
3. UTILITY SERVICE LATERALS NOT SHOWN OR LABELED FOR CLARITY, BUT SERVICE LATERALS MAY EXIST. CONTRACTOR SHALL TAKE APPROPRIATE PRECAUTIONS TO LOCATE AND PROTECT EXISTING SERVICE LATERALS IN PLACE.
4. VERTICAL SEPARATION AT (E)WATERLINE TO BE ABANDONED MAY BE REDUCED TO 6 INCHES.

SHEET LEGEND:

SEE SHEET C02 FOR FULL LEGEND.

(#) CENTERLINE ALIGNMENT CURVE SEGMENT. SEE TABLE ON THIS SHEET.

[#] WATERLINE ALIGNMENT CURVE SEGMENT. SEE TABLE ON THIS SHEET.

WS IN-TRACT WATER SERVICE CONNECTION (SEE DETAIL 6 & 7 ON SHEET C27)

PLAN NOTES:

1. EXISTING UTILITY LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL TAKE APPROPRIATE PRECAUTIONS TO LOCATE AND PROTECT EXISTING UTILITIES IN PLACE.
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3. IN-TRACT WATER SERVICE CONNECTION (FRONT & BACKYARD) SHALL BE COORDINATED WITH THE COUNTY ENGINEER AND/OR ITS REPRESENTATIVES PRIOR TO CONSTRUCTION. SEE DETAIL 6 & 7 ON SHEET C27.
4. ALL CONCRETE (CURB, GUTTER, SIDEWALK, DRIVEWAYS, ETC.) DAMAGED DURING CONSTRUCTION SHALL BE REPLACED IN-KIND PER COUNTY STANDARD PLANS AND DETAILS.
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6. ANY PAVEMENT DAMAGED DUE TO CONSTRUCTION ACTIVITIES OUTSIDE OF THE PROJECT LIMITS SHALL BE RESTORED AT THE CONTRACTOR'S EXPENSE.
7. WATER SERVICE LINE AND METER BOX LOCATIONS ARE APPROXIMATE AND SHALL BE COORDINATED WITH THE COUNTY PRIOR TO CONSTRUCTION.
8. CONTRACTOR TO PROVIDE COUNTY 72 HOURS NOTICE PRIOR TO ANY SHUTDOWNS. COUNTY WILL PERFORM ALL SHUTDOWNS INCLUDING VALVE TURNING.
9. ALL CONNECTIONS TO THE EXISTING SYSTEM SHALL BE PERFORMED BY THE CONTRACTOR WITH OVERSIGHT FROM COUNTY UTILITY MAINTENANCE STAFF.
10. IF CLEARANCE BETWEEN PIPE CROSSING IS LESS THAN 1-FT, NOTIFY ENGINEER. ENGINEER WILL PROVIDE APPROPRIATE DIRECTION.
11. STREET STRIPING AND/OR EXISTING PAVEMENT MARKINGS FOR STOP BARS, CROSSWALKS, ARROWS SYMBOLS, AND WORDS TO BE REPAIRED OR REPLACED AND SHALL BE DONE SO IN ITS ENTIRETY. CONTRACTOR SHALL NOT REPLACE ONLY A PORTION OF THE MARKING DISTURBED.
12. ALL (E)TREES ARE TO BE PROTECTED IN PLACE.

NO.	REVISION DESCRIPTION	CHECKED BY	DATE
	90% NOT FOR CONSTRUCTION		

DRAWING SCALE
HOR. SCALE: 1" = 40'
VERT. SCALE: 1" = 4'

SAN JOAQUIN COUNTY CALIFORNIA

REY. ENGINEERS, INC.
CivilEngineers | LandSurveyors | LDAR
1524 Spruce St, Suite 220 Riverside, CA 92507
Phone: (951) 682-5520 Fax: (951) 682-5525

IMPROVEMENT PLANS FOR:
LINCOLN VILLAGE WATER MAIN REPLACEMENT PHASE 1B
CIP #610127
P&P N PERSHING AVE STA 30+00 - STA 37+00
COUNTY OF SAN JOAQUIN
CALIFORNIA

DRAWING INFO
DATE: 10-16-2024
DRAFTER: THKH
DESIGNER: KH
REVIEWER: JWF

R.E.Y. PROJECT NO.
7677.001
SHEET NO. C19 OF C31

PLAN SCALE: 1" = 40'

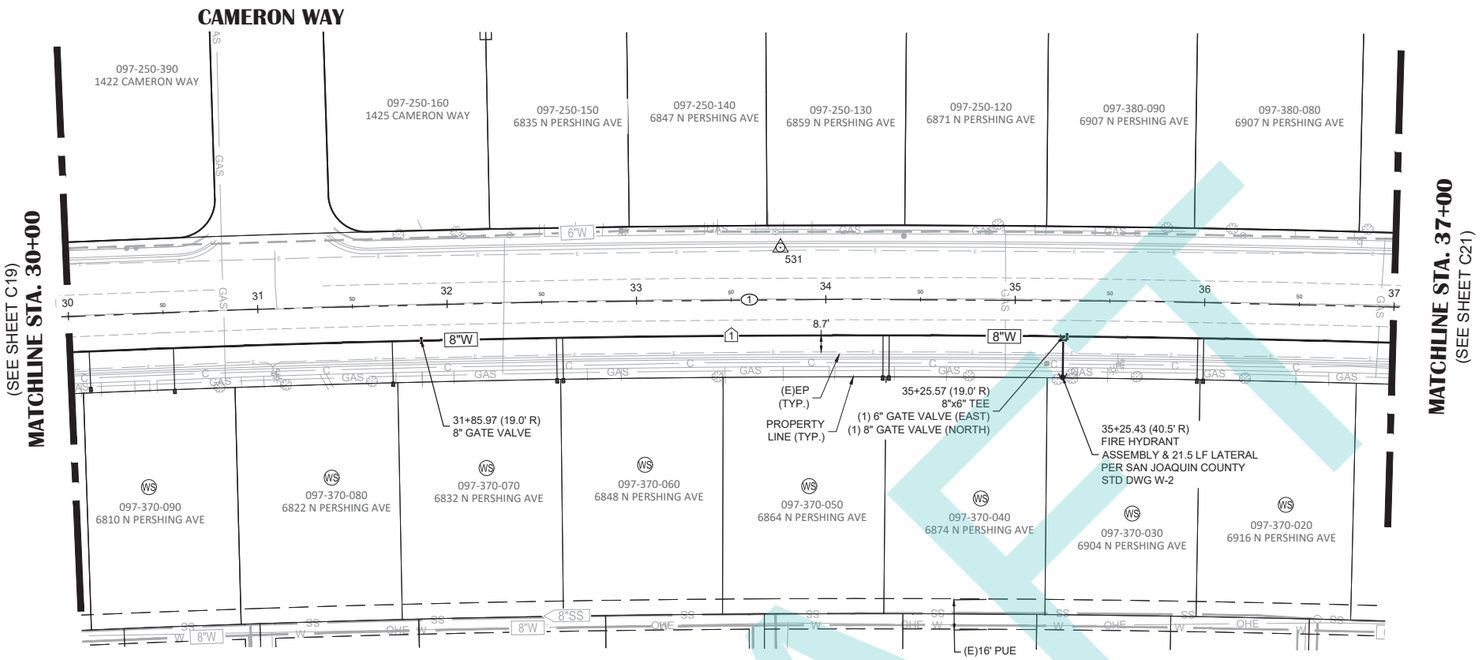
0 20' 40' 80'

SCALE IN FEET

℄ CURVE DATA			
#	LENGTH	RADIUS	DELTA
①	700.00'	9960.00'	4°01'37"

WATER MAIN PIPE CURVE DATA				
#	LENGTH	RADIUS	DELTA	SIZE
①	698.66'	9941.00'	4°01'37"	8"

BENCHMARK DATA				
#	GRID NORTHING	GRID EASTING	ELEVATION	POINT DESCRIPTION
△531	2191832.69	6322581.65	9.68	SET MAG W/ REY CONTROL WASHER



SHEET LEGEND:

SEE SHEET C02 FOR FULL LEGEND.

- (#) CENTERLINE ALIGNMENT CURVE SEGMENT. SEE TABLE ON THIS SHEET.
- (#) WATERLINE ALIGNMENT CURVE SEGMENT. SEE TABLE ON THIS SHEET.
- (WS) IN-TRACT WATER SERVICE CONNECTION (SEE DETAIL 6 & 7 ON SHEET C27)

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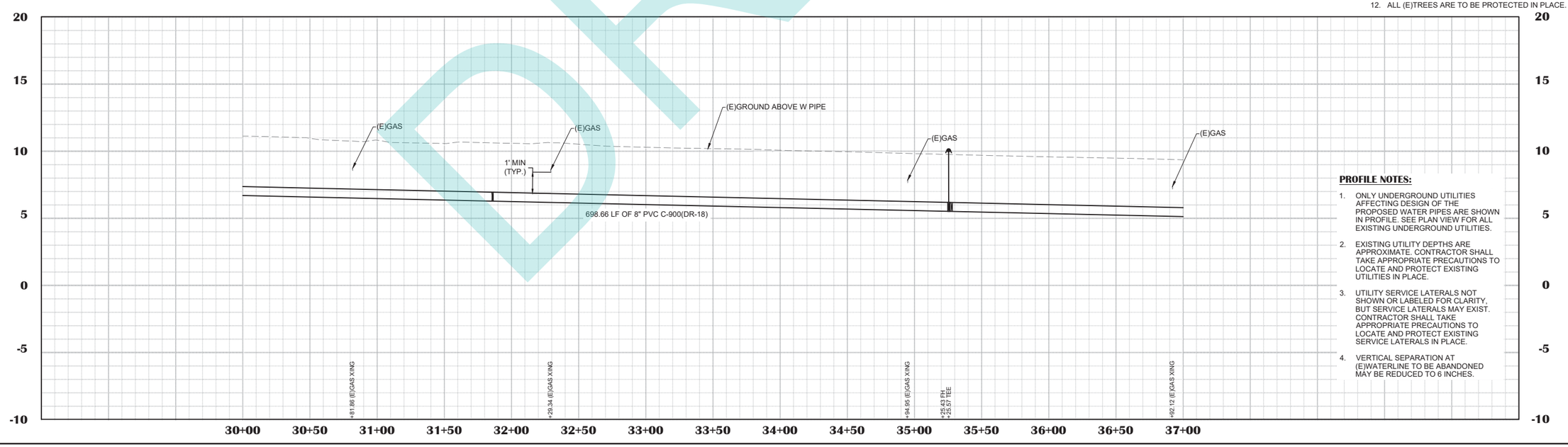

PROFILE NOTES:

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NO.	REVISION DESCRIPTION	CHECKED BY	DATE
	90% NOT FOR CONSTRUCTION		

DRAWING SCALE
HOR. SCALE: 1" = 40'
VERT. SCALE: 1" = 4'

SAN JOAQUIN COUNTY CALIFORNIA

REY ENGINEERS, INC.
CA Engineering | Land Surveying | DBA
420 Aerojet Way, Suite 220, Fresno, CA 93650
Phone: (559) 840-4300 Fax: (559) 840-4330

IMPROVEMENT PLANS FOR:
LINCOLN VILLAGE WATER MAIN REPLACEMENT PHASE 1B
CIP #610127
P&P N PERSHING AVE STA 30+00 - STA 37+00
COUNTY OF SAN JOAQUIN CALIFORNIA

DRAWING INFO
DATE: 10-16-2024
DRAFTER: THKH
DESIGNER: KH
REVIEWER: JWF

R.E.Y. PROJECT NO.
7677.001
SHEET NO. C20 OF C31

PLAN SCALE: 1" = 40'

0 20' 40' 80'

SCALE IN FEET

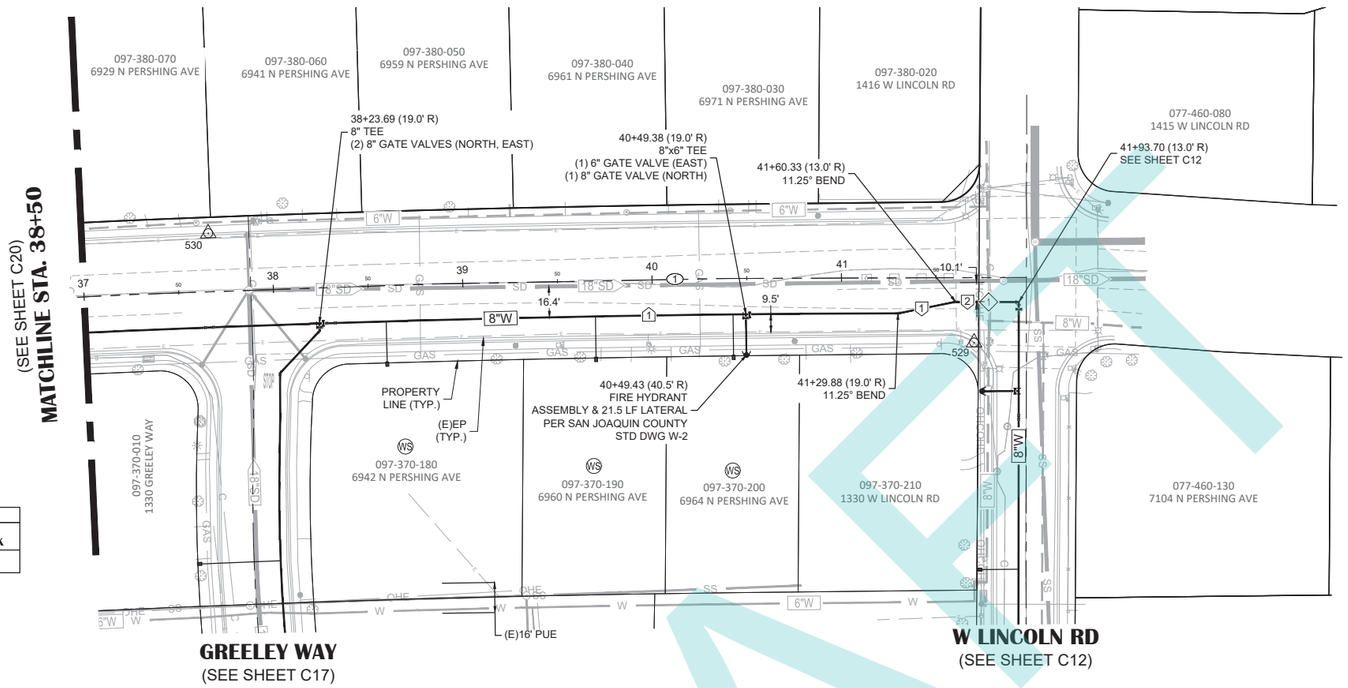
℄ CURVE DATA			
#	LENGTH	RADIUS	DELTA
1	497.66'	9960.00'	2°51'46"

WATER MAIN PIPE LINE DATA			
#	BEARING	LENGTH	SIZE
1	N10°40'03"W	30.99'	8"
2	N0°40'43"E	33.33'	8"

WATER MAIN PIPE CURVE DATA				
#	LENGTH	RADIUS	DELTA	SIZE
1	429.06'	9941.00'	2°28'22"	8"

POTHOLE TABLE						
POTHOLE	EXISTING UTILITY	COVER	OUTSIDE DIA	MATERIAL TYPE	AC THK	AB THK
1						

BENCHMARK DATA				
#	GRID NORTHING	GRID EASTING	ELEVATION	POINT DESCRIPTION
△529	2192627.52	6322620.63	10.35	SET MAG W/ REY CONTROL WASHER
△530	2192223.72	6322559.22	8.86	SET MAG W/ REY CONTROL WASHER



EXISTING GRADE ABOVE W PIPE ►

PROPOSED GRADES @ TOP OF W PIPE ►

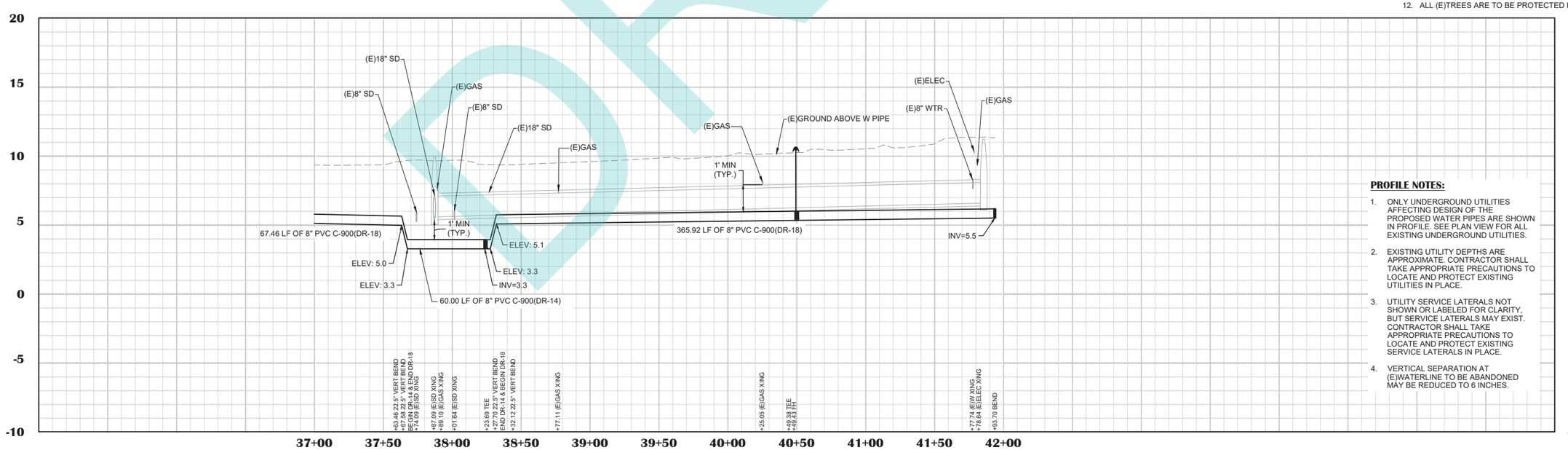
37+00	37+50	38+00	38+50	39+00	39+50	40+00	40+50	41+00	41+50	42+00
(E)9.3	(E)9.3	(E)9.3	(E)9.3	(E)9.3	(E)9.4	(E)9.6	(E)9.7	(E)9.6	(E)9.7	(E)9.6
5.77	5.75	5.73	5.71	5.68	5.66	5.64	3.92	3.92	3.92	3.92

42+50	43+00	43+50	44+00	44+50	45+00	45+50	46+00	46+50	47+00	47+50
(E)9.7	(E)9.6	(E)9.4	(E)9.4	(E)9.4	(E)9.4	(E)9.4	(E)9.5	(E)9.5	(E)9.6	(E)9.6
3.92	3.92	3.92	4.90	5.74	5.75	5.77	5.78	5.79	5.80	5.81

48+00	48+50	49+00	49+50	50+00	50+50	51+00	51+50	52+00	52+50	53+00
(E)9.7	(E)9.7	(E)9.8	(E)9.8	(E)9.9	(E)9.8	(E)9.9	(E)9.9	(E)9.9	(E)10.0	(E)10.2
5.83	5.84	5.85	5.86	5.87	5.88	5.90	5.91	5.92	5.93	5.94

53+50	54+00	54+50	55+00	55+50	56+00	56+50	57+00	57+50	58+00	58+50
(E)10.1	(E)10.1	(E)10.2	(E)10.2	(E)10.5	(E)10.5	(E)10.4	(E)10.5	(E)10.5	(E)10.7	(E)10.6
5.95	5.97	5.98	5.99	6.00	6.01	6.02	6.04	6.05	6.06	6.07

59+00	59+50	60+00	60+50	61+00	61+50	62+00	62+50	63+00	63+50	64+00
(E)10.6	(E)10.7	(E)10.9	(E)11.3	(E)11.3	(E)11.4	(E)11.3				
6.08	6.09	6.11	6.12	6.13	6.14	6.15				



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SHEET LEGEND:

SEE SHEET C02 FOR FULL LEGEND.

- ◇ POTHOLE LOCATION & NUMBER.
- (#) CENTERLINE ALIGNMENT CURVE SEGMENT. SEE TABLE ON THIS SHEET.
- #◇ WATERLINE ALIGNMENT LINE SEGMENT. SEE TABLE ON THIS SHEET.
- (#) WATERLINE ALIGNMENT CURVE SEGMENT. SEE TABLE ON THIS SHEET.
- (WS) IN-TRACT WATER SERVICE CONNECTION (SEE DETAIL 6 & 7 ON SHEET C27)

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NO.	REVISION DESCRIPTION	CHECKED BY	DATE

90% NOT FOR CONSTRUCTION

DRAWING SCALE
HOR. SCALE: 1"=40'
VERT. SCALE: 1"=4'

SAN JOAQUIN COUNTY CALIFORNIA

REY ENGINEERS, INC.
CivilEngineers | LandSurveyors | LDAR
1650 Response Road, Suite 200, Sacramento, CA 95815
916.239.4000 Fax 916.239.4001

IMPROVEMENT PLANS FOR:
LINCOLN VILLAGE WATER MAIN REPLACEMENT PHASE 1B
CIP #610127
P&P N PERSHING AVE STA 37+00 - STA 42+97.66
COUNTY OF SAN JOAQUIN
CALIFORNIA

DRAWING INFO
DATE: 10-16-2024
DRAFTER: THKH
DESIGNER: KH
REVIEWER: JWF

R.E.Y. PROJECT NO.
7677.001
SHEET NO. C21 OF C31

\\REYSVRFILE01.reyengrs.loc\Projects\7677 – san joaquin county\001 – lincoln village maintenance district water main replacement\10 – cad drawings\improvement plans\Phase 1B\7677.001 – P&P 1 – PHASE 1B.dwg Oct 15, 2024 – 3:21pm, khoover

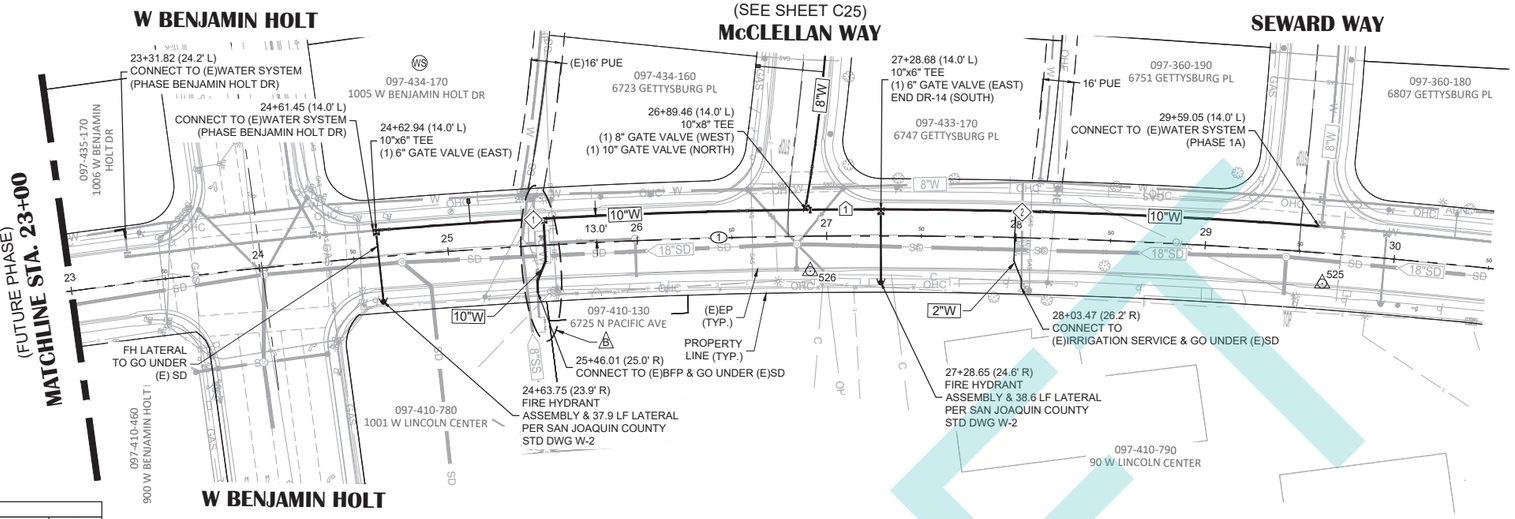
PLAN SCALE: 1" = 40'

0 20' 40' 80'

SCALE IN FEET

℄ CURVE DATA			
#	LENGTH	RADIUS	DELTA
1	750.00'	3100.00'	13°51'43"

WATER MAIN PIPE CURVE DATA				
#	LENGTH	RADIUS	DELTA	SIZE
1	499.84'	3114.00'	9°11'49"	10"



POTHOLE TABLE						
POTHOLE	EXISTING UTILITY	COVER	OUTSIDE DIA	MATERIAL TYPE	AC THK	AB THK
1						
2						

BENCHMARK DATA				
#	GRID NORTHING	GRID EASTING	ELEVATION	POINT DESCRIPTION
△525	2191852.82	6324170.25	11.78	SET MAG W/ REY CONTROL WASHER
△526	2191586.78	6324218.59	11.19	SET MAG W/ REY CONTROL WASHER

SHEET LEGEND:

SEE SHEET C02 FOR FULL LEGEND.

- (F) POTHOLE LOCATION & NUMBER.
- (#) CENTERLINE ALIGNMENT CURVE SEGMENT. SEE TABLE ON THIS SHEET.
- (#) WATERLINE ALIGNMENT CURVE SEGMENT. SEE TABLE ON THIS SHEET.
- (A) CONNECT TO (E)BFP (SEE SHEET C29 FOR CONNECTION DETAIL)
- (WS) IN-TRACT WATER SERVICE CONNECTION (SEE DETAIL 6 & 7 ON SHEET C27)

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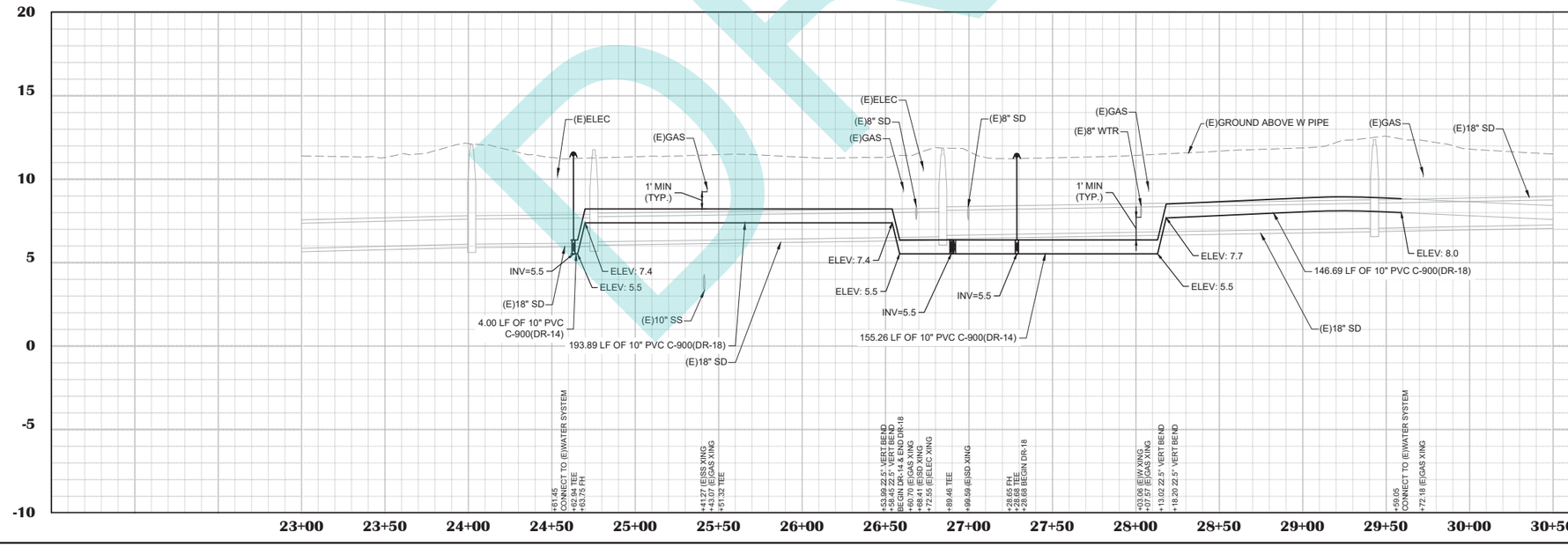
EXISTING GRADE ABOVE W PIPE ►

PROPOSED GRADES @ TOP OF W PIPE ►

23+00	23+50	24+00	24+50	25+00	25+50	26+00	26+50	27+00	27+50	28+00	28+50	29+00	29+50	30+00	30+50
(E)11.2	(E)11.3	(E)11.3	(E)11.3	(E)11.4	(E)11.4	(E)11.4	(E)11.4	(E)11.5	(E)11.5	(E)11.4	(E)11.3	(E)11.3	(E)11.2	(E)11.3	(E)11.3
8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20
(E)11.3	(E)11.3	(E)11.3	(E)11.4	(E)11.4	(E)11.4	(E)11.4	(E)11.5	(E)11.5	(E)11.4	(E)11.3	(E)11.3	(E)11.2	(E)11.2	(E)11.3	(E)11.3
8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20
(E)11.4	(E)11.4	(E)11.4	(E)11.5	(E)11.5	(E)11.4	(E)11.3	(E)11.3	(E)11.2	(E)11.2	(E)11.3	(E)11.3	(E)11.4	(E)11.6	(E)11.9	(E)11.8
6.34	6.34	6.34	6.34	6.34	6.34	6.34	6.34	6.34	6.34	6.34	6.34	6.34	6.34	6.34	6.34
(E)11.6	(E)11.3	(E)11.2	(E)11.2	(E)11.2	(E)11.3	(E)11.3	(E)11.4	(E)11.4	(E)11.2	(E)11.2	(E)11.2	(E)11.3	(E)11.3	(E)11.3	(E)11.4
6.34	6.34	6.34	6.34	6.34	6.34	6.34	6.34	6.34	6.34	6.34	6.34	6.34	6.34	6.34	6.34
(E)11.6	(E)11.4	(E)11.5	(E)11.5	(E)11.6	(E)11.6	(E)11.7	(E)11.7	(E)11.8	(E)11.9	(E)11.9	(E)12.2	(E)12.3	(E)12.5	(E)12.6	
6.34	8.50	8.55	8.59	8.63	8.68	8.72	8.76	8.81	8.85	8.89	8.92	8.91	8.89	8.85	



PROFILE NOTES:

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NO.	REVISION DESCRIPTION	CHECKED BY	DATE
	90% NOT FOR CONSTRUCTION		

DRAWING SCALE

HOR. SCALE: 1" = 40'

VERT. SCALE: 1" = 4'

SAN JOAQUIN COUNTY CALIFORNIA

REY ENGINEERS, INC.
CivilEngineers | LandSurveyors | LDAR
924 Anderson Road, Davis, CA 95616
Phone: (916) 564-4500 Fax: (916) 564-4501

IMPROVEMENT PLANS FOR:
LINCOLN VILLAGE WATER MAIN REPLACEMENT PHASE 1B
CIP #610127
P&P GETTYSBURG PL STA 23+00 - STA 30+50
COUNTY OF SAN JOAQUIN
CALIFORNIA

DRAWING INFO

DATE: 10-16-2024
DRAFTER: THKH
DESIGNER: KH
REVIEWER: JWF

R.E.Y. PROJECT NO.
7677.001

SHEET NO. C22 OF C31

PLAN SCALE: 1" = 40'

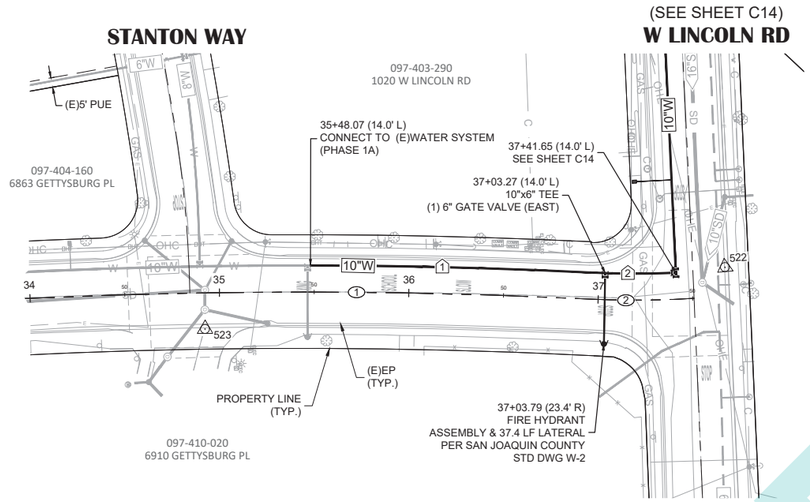
0 20' 40' 80'

SCALE IN FEET

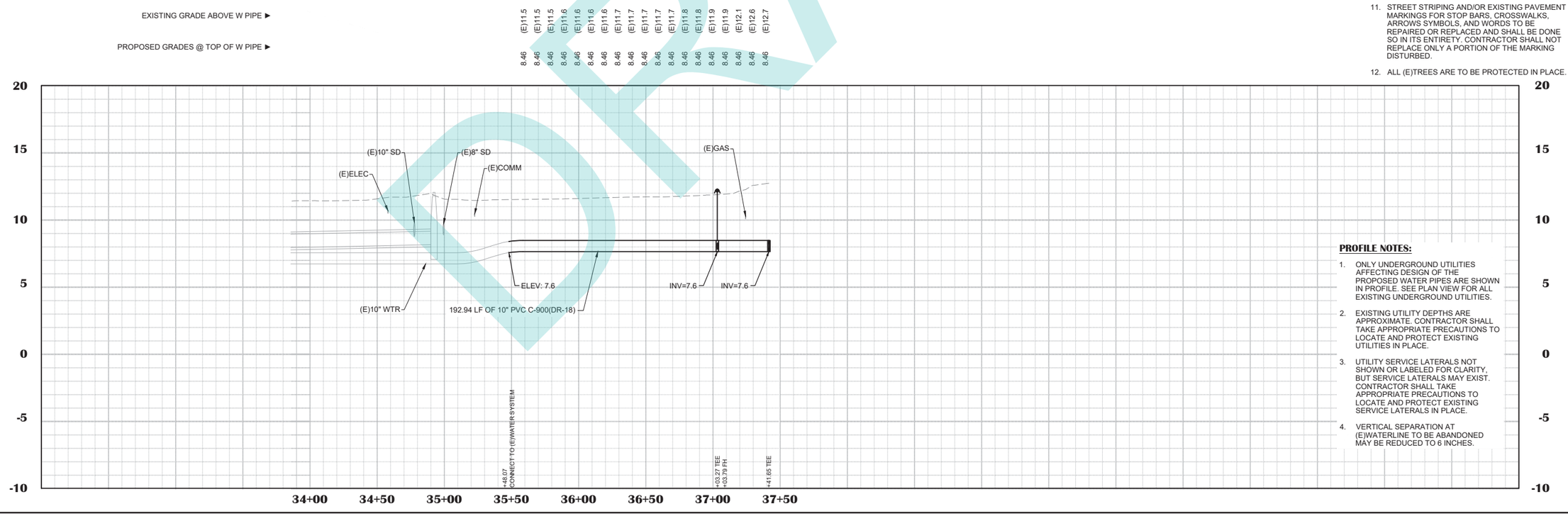
℄ CURVE DATA			
#	LENGTH	RADIUS	DELTA
1	295.38'	3100.00'	5°27'34"
2	55.31'	500.00'	6°20'15"

WATER MAIN PIPE CURVE DATA				
#	LENGTH	RADIUS	DELTA	SIZE
1	147.97'	3112.21'	2°43'27"	10"
2	44.97'	486.00'	5°18'07"	10"

BENCHMARK DATA				
#	GRID NORTHING	GRID EASTING	ELEVATION	POINT DESCRIPTION
△522	2192653.12	6324135.29	11.58	SET MAG W/ REY CONTROL WASHER
△523	2192377.76	6324151.36	11.05	SET MAG W/ REY CONTROL WASHER
△524	2192127.53	6324110.53	10.92	SET MAG W/ REY CONTROL WASHER



GETTYSBURG PL



SHEET LEGEND:

SEE SHEET C02 FOR FULL LEGEND.

(#) CENTERLINE ALIGNMENT CURVE SEGMENT. SEE TABLE ON THIS SHEET.

[#] WATERLINE ALIGNMENT CURVE SEGMENT. SEE TABLE ON THIS SHEET.

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DRAWING SCALE
HOR. SCALE: 1" = 40'
VERT. SCALE: 1" = 4'

SAN JOAQUIN COUNTY CALIFORNIA

REY ENGINEERS, INC.
Civil Engineers | Land Surveyors | DBA
400 Lesmeister Drive, Suite 200 Tracy, CA 95376
Phone (209) 836-3000 Fax (209) 836-3030

IMPROVEMENT PLANS FOR:
LINCOLN VILLAGE WATER MAIN REPLACEMENT PHASE 1B
CIP #610127
P&P GETTYSBURG PL STA 34+00 - STA 37+50.68
COUNTY OF SAN JOAQUIN CALIFORNIA

DRAWING INFO
DATE: 10-16-2024
DRAFTER: THKH
DESIGNER: KH
REVIEWER: JWF

R.E.Y. PROJECT NO.
7677.001
SHEET NO. C23 OF C31

\\REYSVRFILE01.reyengrs.loc\Projects\7677 – san joaquin county\001 – lincoln village maintenance district water main replacement\10 – cad drawings\improvement plans\Phase 1B\7677.001 – P&P 1 – PHASE 1B.dwg Oct 15, 2024 – 3:22pm, khoover

℄ LINE TABLE

#	BEARING	LENGTH
1	N82°03'30"E	29.57'

℄ CURVE DATA

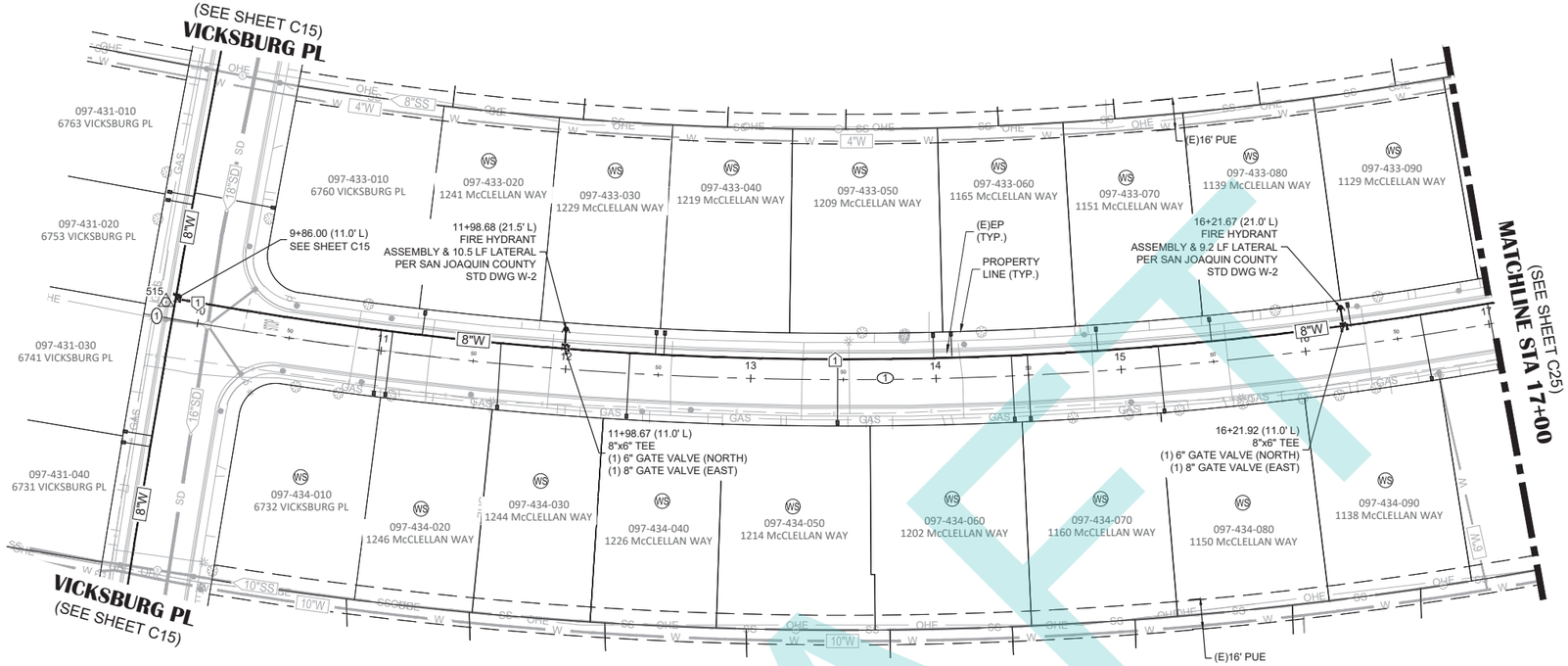
#	LENGTH	RADIUS	DELTA
1	700.00'	2025.00'	19°48'21"

WATER MAIN PIPE LINE DATA

#	BEARING	LENGTH	SIZE
1	N82°03'30"E	14.00'	8"

WATER MAIN PIPE CURVE DATA

#	LENGTH	RADIUS	DELTA	SIZE
1	696.19'	2014.00'	19°48'21"	8"



BENCHMARK DATA

#	GRID NORTHING	GRID EASTING	ELEVATION	POINT DESCRIPTION
△515	2191183.32	6322966.93	9.26	SET MAG W/ REY CONTROL WASHER

SHEET LEGEND:

SEE SHEET C02 FOR FULL LEGEND.

- (#) CENTERLINE ALIGNMENT LINE SEGMENT. SEE TABLE ON THIS SHEET.
- (#) CENTERLINE ALIGNMENT CURVE SEGMENT. SEE TABLE ON THIS SHEET.
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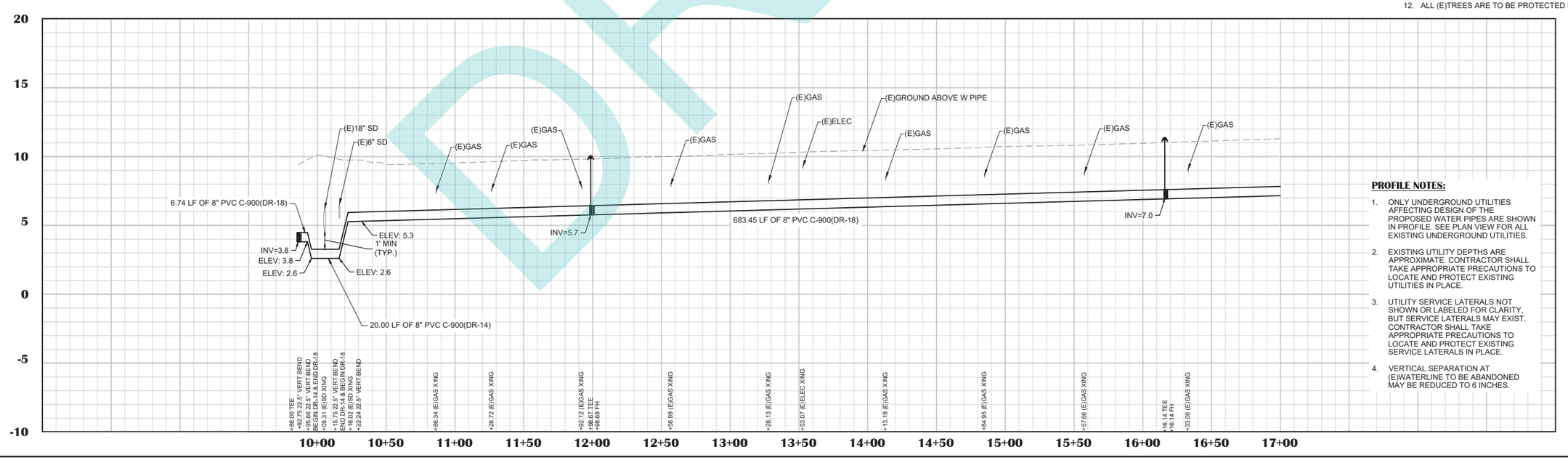

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SAN JOAQUIN COUNTY CALIFORNIA

REY ENGINEERS, INC.
CivilEngineers | LandSurveyors | DAR
1524 Tollhouse Road, Suite 101, Clovis, CA 93611
559.325.8686 | fax 559.325.8660
www.reyengineers.com

IMPROVEMENT PLANS FOR:
LINCOLN VILLAGE WATER MAIN REPLACEMENT PHASE 1B
CIP #610127
P&P McCLELLAN WAY STA 10+00 - STA17+00
COUNTY OF SAN JOAQUIN CALIFORNIA

DRAWING INFO
DATE: 10-16-2024
DRAFTER: THKH
DESIGNER: KH
REVIEWER: JWF

R.E.Y. PROJECT NO.
7677.001
SHEET NO. C24 OF C31

PLAN SCALE: 1" - 40'

0 20' 40' 80'

SCALE IN FEET

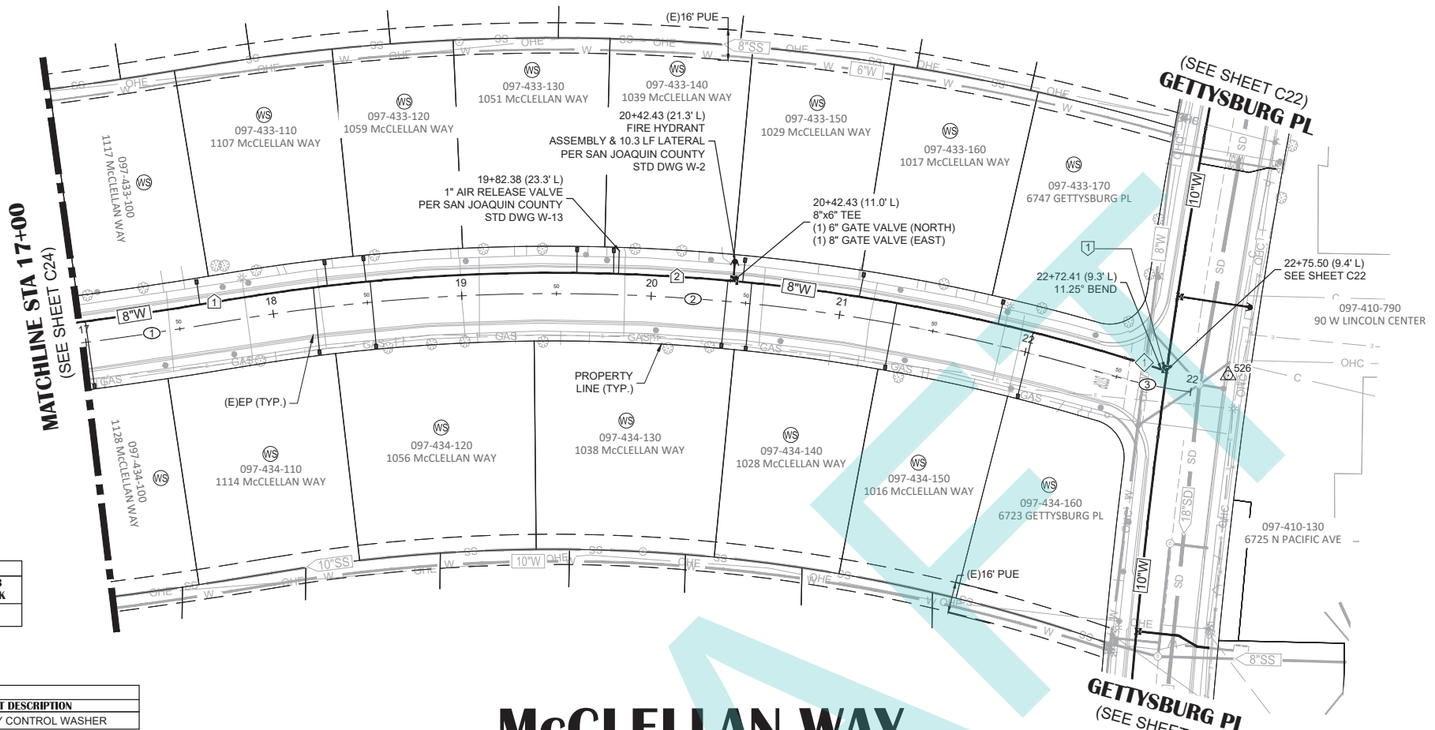
℄ CURVE DATA			
#	LENGTH	RADIUS	DELTA
1	76.28'	2025.00'	2°09'30"
2	467.44'	1025.00'	26°07'45"
3	46.21'	300.00'	8°49'32"

WATER MAIN PIPE LINE DATA			
#	BEARING	LENGTH	SIZE
1	N77°39'27"E	3.00'	8"

WATER MAIN PIPE CURVE DATA				
#	LENGTH	RADIUS	DELTA	SIZE
1	75.87'	2014.00'	2°09'30"	8"
2	500.21'	1036.00'	27°39'51"	8"

POTHOLE TABLE						
POTHOLE	EXISTING UTILITY	COVER	OUTSIDE DIA	MATERIAL TYPE	AC THK	AB THK
1						

BENCHMARK DATA				
#	GRID NORTHING	GRID EASTING	ELEVATION	POINT DESCRIPTION
△526	2191586.78	6324218.59	11.19	SET MAG W/ REY CONTROL WASHER

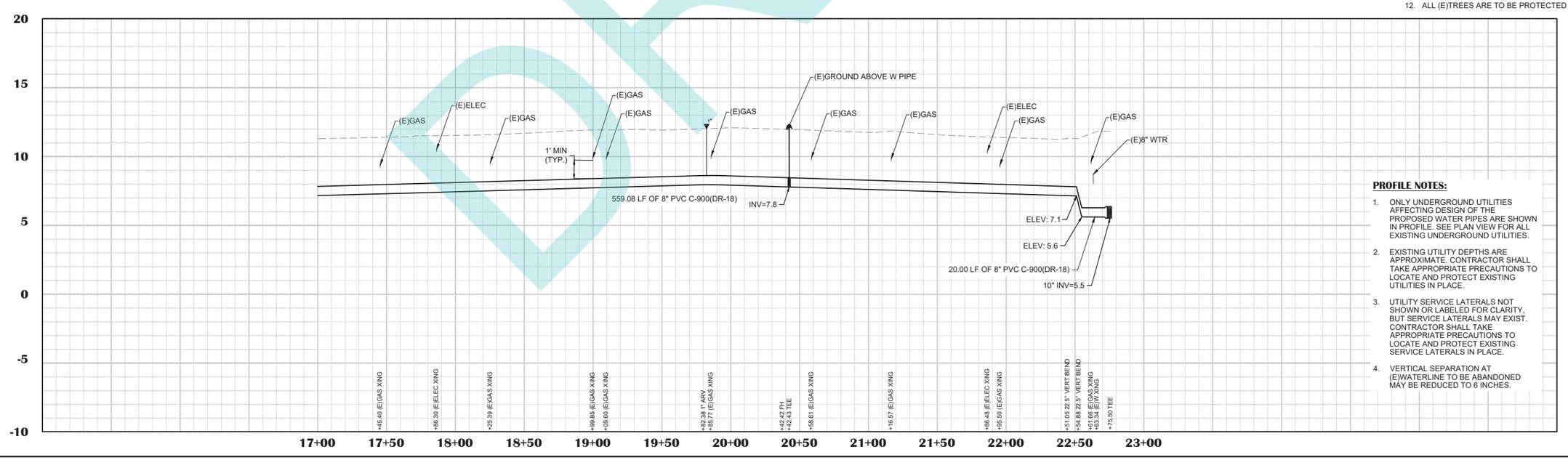


EXISTING GRADE ABOVE W PIPE ►

(E)11.27	(E)11.29	(E)11.31	(E)11.34	(E)11.37	(E)11.39	(E)11.41	(E)11.45	(E)11.49	(E)11.50	(E)11.51	(E)11.53	(E)11.56	(E)11.59	(E)11.63	(E)11.67	(E)11.72	(E)11.77	(E)11.83	(E)11.88	(E)11.90	(E)11.91	(E)11.92	(E)11.95	(E)11.93	(E)11.91	(E)11.93	(E)11.96	(E)11.99	(E)12.03	(E)12.06	(E)12.05	(E)12.02	(E)11.99	(E)11.96	(E)11.94	(E)11.90	(E)11.85	(E)11.81	(E)11.77	(E)11.74	(E)11.78	(E)11.81	(E)11.72	(E)11.64	(E)11.57	(E)11.50	(E)11.47	(E)11.42	(E)11.39	(E)11.36	(E)11.33	(E)11.30	(E)11.25	(E)11.25	(E)11.29	(E)11.58	(E)11.80

PROPOSED GRADES @ TOP OF W PIPE ►

7.81	7.84	7.87	7.89	7.92	7.95	7.98	8.01	8.03	8.06	8.09	8.12	8.15	8.18	8.20	8.23	8.26	8.29	8.32	8.35	8.37	8.40	8.43	8.46	8.49	8.52	8.54	8.57	8.60	8.60	8.57	8.54	8.51	8.48	8.45	8.42	8.38	8.35	8.32	8.29	8.26	8.23	8.20	8.17	8.13	8.10	8.07	8.04	8.01	7.98	7.95	7.92	7.88	7.85	7.82	7.79	6.26	6.26



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- (#) POTHOLE LOCATION & NUMBER.
- (#) CENTERLINE ALIGNMENT CURVE SEGMENT. SEE TABLE ON THIS SHEET.
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IMPROVEMENT PLANS FOR:
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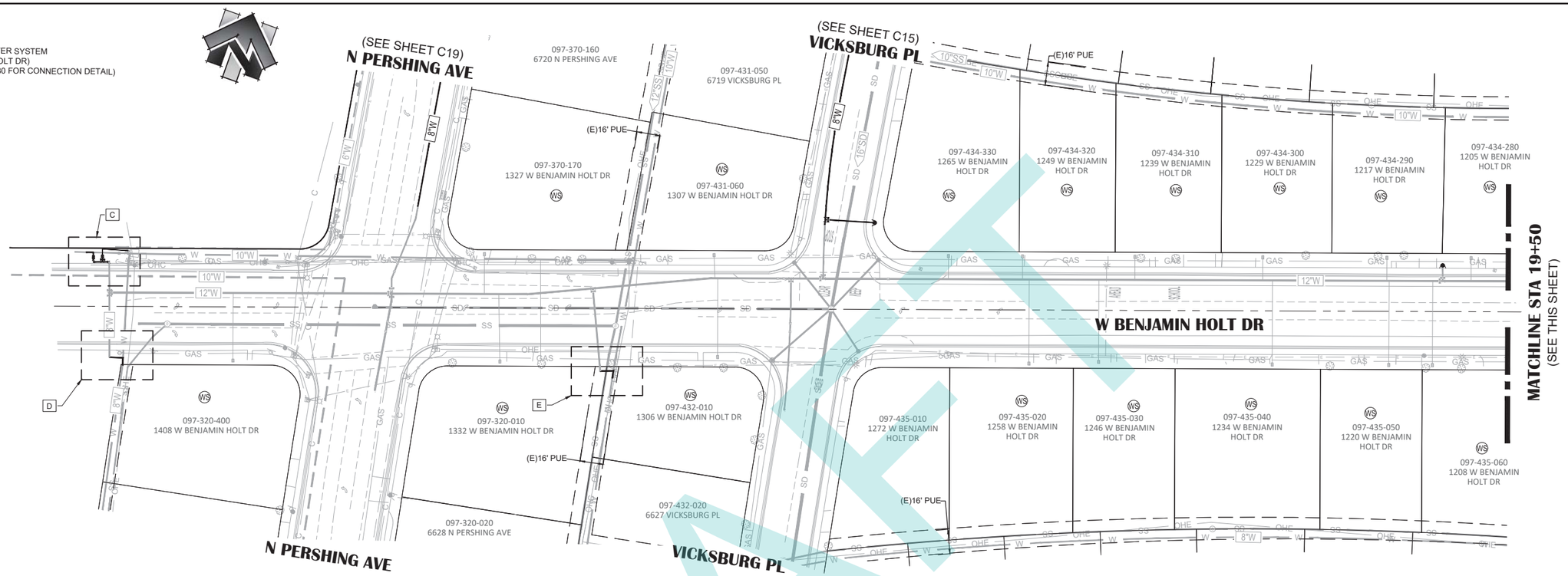
CIP #610127
P&P McCLELLAN WAY STA 17+00 - STA 22+89.93
COUNTY OF SAN JOAQUIN CALIFORNIA

DRAWING INFO
DATE: 10-16-2024
DRAFTER: THKH
DESIGNER: KH
REVIEWER: JWF

R.E.Y. PROJECT NO.
7677.001
SHEET NO. C25 OF C31

SHEET LEGEND:

[X] CONNECT TO (E)WATER SYSTEM
(PHASE BENJAMIN HOLT DR)
(SEE SHEET C29 & C30 FOR CONNECTION DETAIL)



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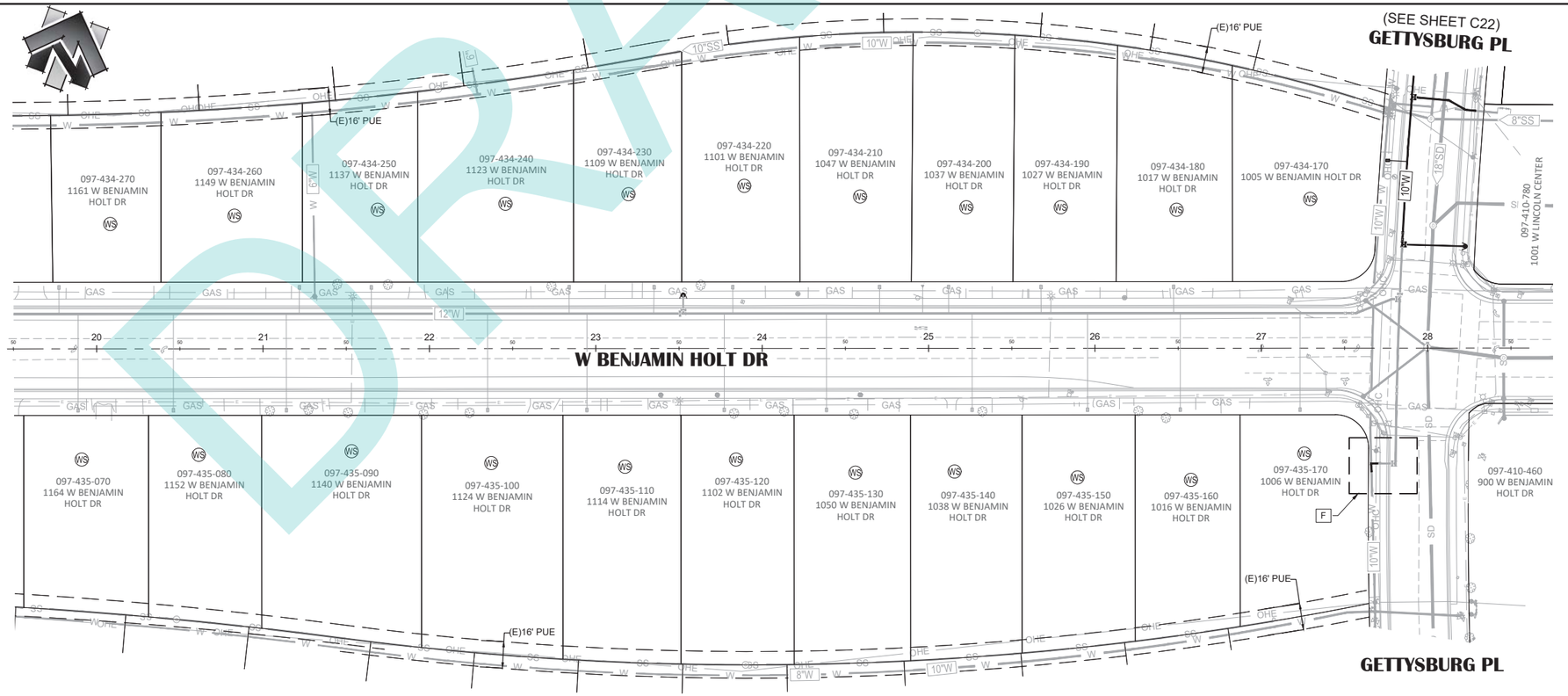
5. ALL LANDSCAPING AND IRRIGATION DAMAGED DURING CONSTRUCTION SHALL BE REPLACED IN-KIND TO COUNTY'S SATISFACTION AND AT THE CONTRACTOR'S EXPENSE.
6. ANY PAVEMENT DAMAGED DUE TO CONSTRUCTION ACTIVITIES OUTSIDE OF THE PROJECT LIMITS SHALL BE RESTORED AT THE CONTRACTOR'S EXPENSE.
7. WATER SERVICE LINE AND METER BOX LOCATIONS ARE APPROXIMATE AND SHALL BE COORDINATED WITH THE COUNTY PRIOR TO CONSTRUCTION.
8. CONTRACTOR TO PROVIDE COUNTY 72 HOURS NOTICE PRIOR TO ANY SHUTDOWNS. COUNTY WILL PERFORM ALL SHUTDOWNS INCLUDING VALVE TURNING.
9. ALL CONNECTIONS TO THE EXISTING SYSTEM SHALL BE PERFORMED BY THE CONTRACTOR WITH OVERSIGHT FROM COUNTY UTILITY MAINTENANCE STAFF.
10. IF CLEARANCE BETWEEN PIPE CROSSING IS LESS THAN 1-FT, NOTIFY ENGINEER. ENGINEER WILL PROVIDE APPROPRIATE DIRECTION.
11. STREET STRIPING AND/OR EXISTING PAVEMENT MARKINGS FOR STOP BARS, CROSSWALKS, ARROWS SYMBOLS, AND WORDS TO BE REPAIRED OR REPLACED AND SHALL BE DONE SO IN ITS ENTIRETY. CONTRACTOR SHALL NOT REPLACE ONLY A PORTION OF THE MARKING DISTURBED.
12. ALL (E)TREES ARE TO BE PROTECTED IN PLACE.



NO.	REVISION DESCRIPTION	CHECKED BY	DATE
	90% NOT FOR CONSTRUCTION		

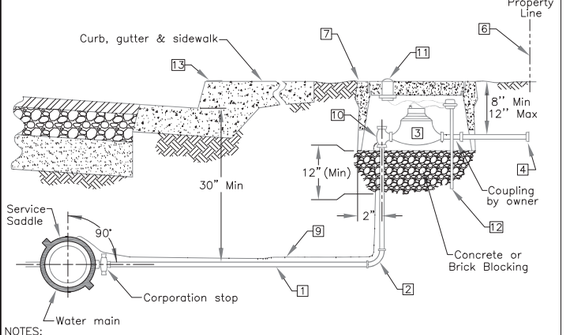
DRAWING SCALE
HOR. SCALE: 1" = 40'
VERT. SCALE: 1" = 4'

REY ENGINEERS, INC.
Civil Engineers | Land Surveyors | DIR
925 Serpentine Lane, Suite 120, Pleasanton, CA 94566
Phone (925) 426-3000 Fax (925) 426-3003

IMPROVEMENT PLANS FOR:
LINCOLN VILLAGE WATER MAIN REPLACEMENT PHASE 1B
CIP #610127
PLAN W. BENJAMIN HOLT DR STA 9+50.00 - 28+60.94
COUNTY OF SAN JOAQUIN CALIFORNIA

DRAWING INFO
DATE: 10-16-2024
DRAFTER: THKH
DESIGNER: KH
REVIEWER: JWE

R.E.Y. PROJECT NO.
7677.001
SHEET NO. **C26** OF **C31**

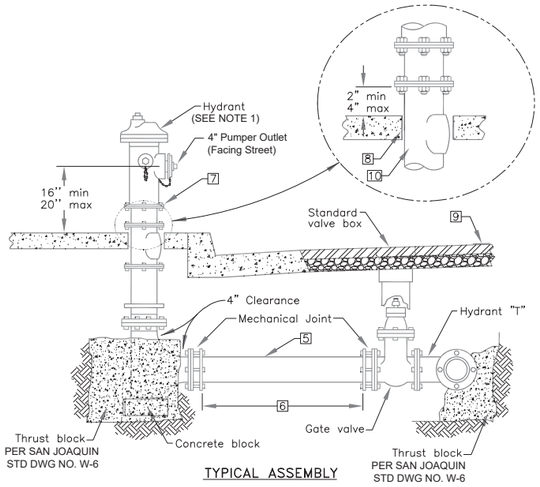


NOTES:

1. 1" Dia min line to each lot.
2. Service pipe to be continuous (no joints) between main and angle meter stop. 90° Compression x Compression Elbow per AWWA standards. Inserts may be used where approved by agency.
3. Meters shall be specified by agency. Meters shall be furnished and installed by the Contractor. Agencies may elect to provide the meter as part of the connection fee.
4. Gate valve is required prior to any point of connection.
5. The location of the service saddle shall be a min. of 24" from another service saddle, bell, spigot, or other fitting.
6. Meter box may be placed adjacent to property or easement line with prior approval of agency.
7. Touch read meter box per agency requirements. (All boxes located in driveway areas to have traffic covers)
8. Appurtenances per agency requirements.
9. Locator wire required by agency.
10. Ball angle meter stop with lock lug. (After flushing service, install lock supplied by agency)
11. Touch read pad per agency requirements. (Provide a min of 4 feet of wire)
12. Remote read transceiver per agency requirements. Supported by 1/2" Schedule 80 conduit (24" min) Provide 1" clearance below the lid.
13. 2" "W" stamped on top of curb.
14. Meters greater than 2" shall have an empty spool equal to the meter dimension placed in box.

WATER SERVICE INSTALLATION	Approved by:
COUNTY OF SAN JOAQUIN DEPARTMENT OF PUBLICE WORKS	No. Revision Description Date
Date: DEC 2014	Std. Dwg. No. W-1

1



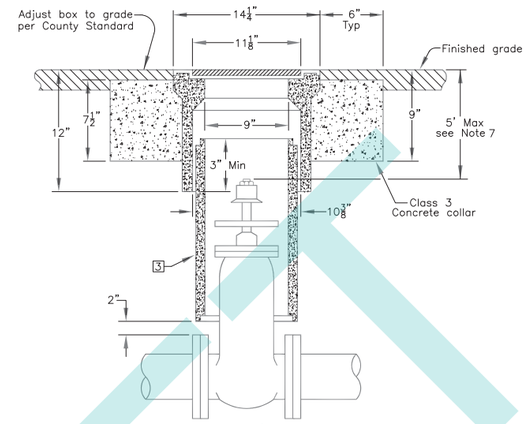
TYPICAL ASSEMBLY

NOTES:

1. Hydrant model to be approved by City of Stockton. Hydrant shall be one of the following: Clow "Medallion", Kennedy "Guardian K81" or Mueller "Super Centurian" (vertical shoe hydrants only).
2. See standards for proper location of hydrant.
3. Hydrant shall be clean and free of concrete.
4. Hydrants shall be painted yellow, in accordance with agency standards.
5. 6" dia PVC pipe (AWWA C-900 with CIP equivalent OD) USE DR-14 AT UNDERCROSSINGS OF SS & SD.
6. Fire hydrant laterals greater than 100 LF, shall have a gate valve installed near the fire hydrant as approved by the agency.
7. Break-away spool with hollow break-off bolts (nut on bottom at connection to hydrant).
8. Expansion joint material where hydrant is placed in concrete.
9. Blue reflective marker shall be placed 12" towards hydrant from center of street.
10. Clow Valve Company breakoff check valve Model LBI 400A or equal.

MODIFIED FIRE HYDRANT ASSEMBLY	Approved by:
COUNTY OF SAN JOAQUIN DEPARTMENT OF PUBLICE WORKS	No. Revision Description Date
Date: DEC 2014	Std. Dwg. No. W-2

2

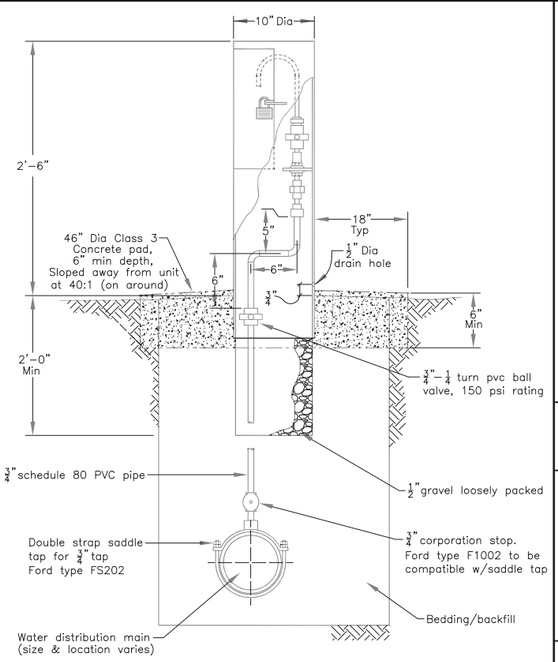


NOTES:

1. Valve box and lid shall be Christy No. G5 or as approved by the agency.
2. All lids shall have machined seating surfaces.
3. Valve box risers shall be as manufactured for the valve box supplied. Valve box riser to be one continuous piece and centered on valve. Should be a riser OR 8" dia, Class 100 PVC. See Note 5.
4. For blowoff installation, refer to County Standard Drawing No. W-4.
5. Alternative valve box and risers may be used where approved by the agency.
6. Concrete collar not required when valve box is located in concrete sidewalk area.
7. Valve stem extensions may be used to comply with 5' max distance from grade to nut.
8. Trace wire required.

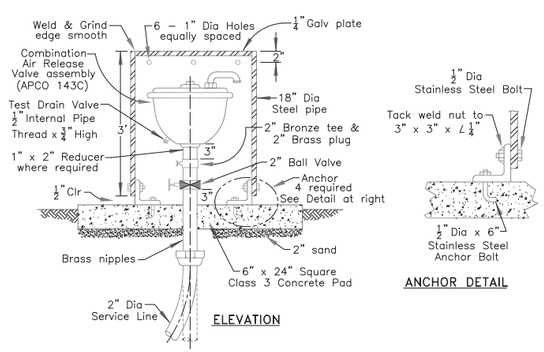
VALVE BOX DETAIL	Approved by:
COUNTY OF SAN JOAQUIN DEPARTMENT OF PUBLICE WORKS	No. Revision Description Date
Date: DEC 2014	Std. Dwg. No. W-5

3



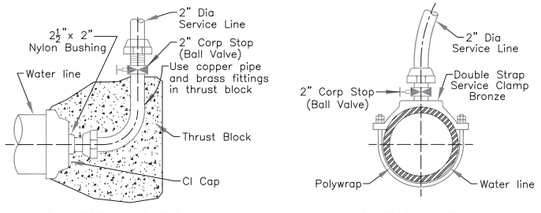
BACTERIOLOGICAL SAMPLING TAP SECTION	Approved by:
COUNTY OF SAN JOAQUIN DEPARTMENT OF PUBLICE WORKS	No. Revision Description Date
Date: DEC 2014	Std. Dwg. No. W-8

4



ELEVATION

ANCHOR DETAIL



CONNECTION AT END OF MAIN LINE

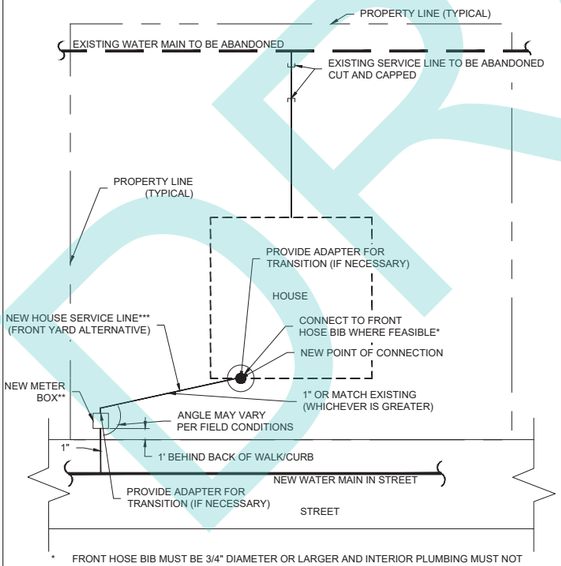
CONNECTION AT HIGH POINT OF LINE

NOTES:

1. Assemblies installed at easements, roads and streets without curbs shall be protected with guard post.

AIR-VACUUM RELEASE VALVE	Approved by:
COUNTY OF SAN JOAQUIN DEPARTMENT OF PUBLICE WORKS	No. Revision Description Date
Date: DEC 2014	Std. Dwg. No. W-13

5



* FRONT HOSE BIB MUST BE 3/4" DIAMETER OR LARGER AND INTERIOR PLUMBING MUST NOT INCLUDE A WATER SOFTENER

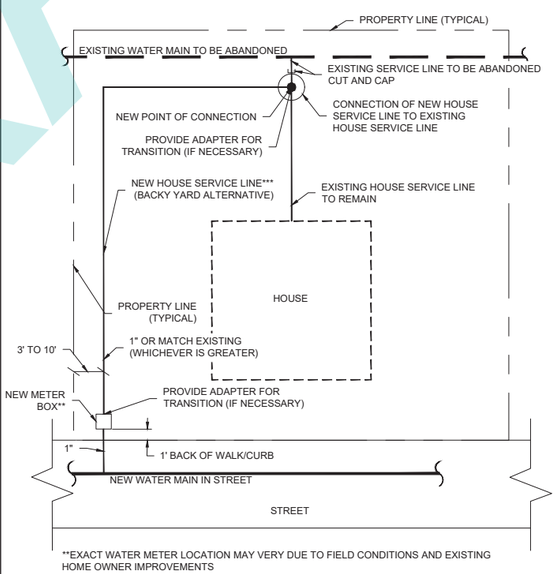
** EXACT WATER METER LOCATION MAY VERY DUE TO FIELD CONDITIONS AND EXISTING HOME OWNER IMPROVEMENTS

*** HDPE, POLYETHYLENE, POLYBUTYLENE, OR APPROVED EQUAL SHALL BE USED FOR HOSE SERVICE LINE. IF EXISTING CONDITIONS DO NOT PERMIT A FRONT YARD SERVICE CONNECTION, BACKYARD SERVICE CONNECTION SHALL BE USED INSTEAD. SEE DETAIL 7 (THIS SHEET).

FRONT YARD IN-TRACT WATER SERVICE CONNECTION

NOT TO SCALE

6



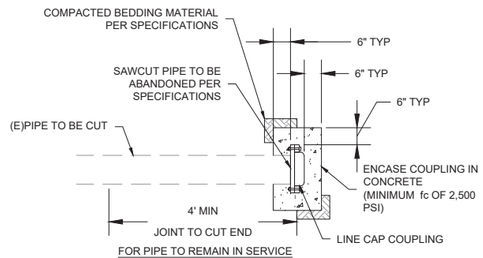
** EXACT WATER METER LOCATION MAY VERY DUE TO FIELD CONDITIONS AND EXISTING HOME OWNER IMPROVEMENTS

*** HDPE, POLYETHYLENE, POLYBUTYLENE, OR APPROVED EQUAL SHALL BE USED. IF EXISTING CONDITIONS PERMIT A FRONT YARD SERVICE CONNECTION, FRONT YARD IN-TRACT SERVICE CONNECTION SHALL BE USED. SEE DETAIL 6 (THIS SHEET).

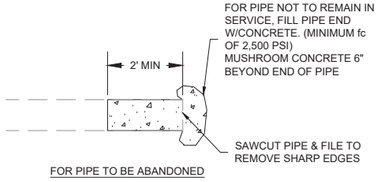
BACK YARD IN-TRACT WATER SERVICE CONNECTION

NOT TO SCALE

7



FOR PIPE TO REMAIN IN SERVICE



FOR PIPE TO BE ABANDONED

CUT AND CAP

NOT TO SCALE

8

NO.	REVISION DESCRIPTION	CHECKED BY	DATE
	90% NOT FOR CONSTRUCTION		

DRAWING SCALE

HOR. SCALE: N.T.S.
VERT. SCALE: N.T.S.

SAN JOAQUIN COUNTY CALIFORNIA

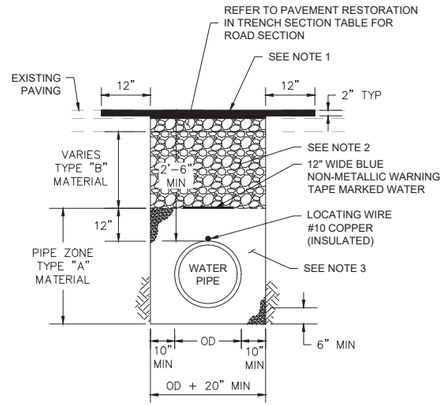
R.E.Y. ENGINEERS, INC.
Civil Engineers | Land Surveyors | DBA
1452 Standiford Avenue, Suite B-200, Modesto, CA 95350
Phone (209) 526-7373 Fax (209) 526-7373

IMPROVEMENT PLANS FOR:
LINCOLN VILLAGE WATER MAIN REPLACEMENT PHASE 1B
CIP #610127
DETAILS
COUNTY OF SAN JOAQUIN
CALIFORNIA

DRAWING INFO

DATE: 10-16-2024
DRAFTER: THKH
DESIGNER: KH
REVIEWER: JWF

R.E.Y. PROJECT NO.
7677.001
SHEET NO. C27 OF C31



BEDDING AND MATERIALS

TYPE "A" MATERIAL: ⅜" MINUS IMPORTED SCREENED SAND WITH MIN. SAND EQUIVALENT OF 50 PER CALTEST 217-G ALL GRADATIONS TO BE APPROVED BY COUNTY PRIOR TO CONTRUCTION.

TYPE "B" MATERIAL: CLASS 2 AGGREGATE BASE.

NOTES

1. NEW PAVEMENT SHALL BE 1" THICKER THAN EXISTING PAVEMENT, MINIMUM OF 0.25 FT. NEW BASE SHALL BE 1" THICKER THAN EXISTING BASE, MIN OF 0.50 FT.
2. COMPACT IN 12" MAX LAYERS TO A MIN RELATIVE COMPACTION OF 95% UNDER PAVEMENT AND 90% OUTSIDE PAVEMENT.
3. COMPACT IN 6" LAYERS TO A MIN RELATIVE COMPACTION OF 90%.
4. RELATIVE COMPACTION OF MATERIALS SHALL BE TESTED IN ACCORDANCE WITH THE STATE OF CALIFORNIA, DEPT. OF TRANSPORTATION TESTING MANUALS, TEST METHOD NO. CALIFORNIA 216 OR 231.
5. JETTING OR PONDING WILL BE PERMITTED WITHIN THE STREET RIGHT-OF-WAY WITH A 3 YEAR BOND, WHEN APPROVED BY THE DIRECTOR OF PUBLIC WORKS.
6. ALL EXISTING PAVEMENT SHALL BE NEATLY CUT TO LINE PRIOR TO TRENCH EXCAVATION.
7. WHEN SHOWN BY SOIL COMPOSITION AND COMPATIBILITY, 90% COMPACTION MAY BE USED, WHEN APPROVED BY THE DIRECTOR OF PUBLIC WORKS.
8. SPECIAL BEDDING AND BACKFILL REQUIREMENTS MAY BE SHOWN ON THE PLANS OR SPECIFIED IN THE SPECIAL PROVISIONS.

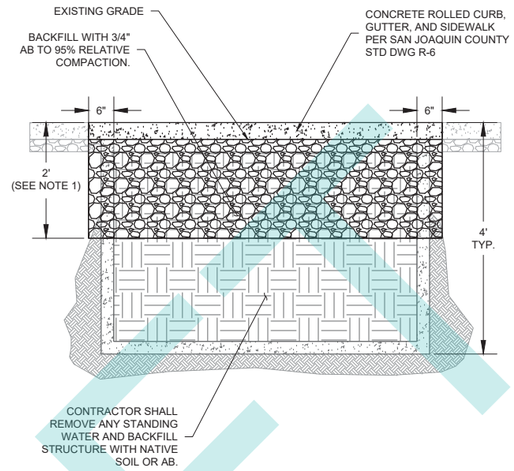
PAVEMENT RESTORATION IN TRENCH SECTION

STREET NAME	TRAFFIC INDEX	HMA (IN)	AB (IN)	SUBGRADE COMPACTION (%)
W LINCOLN RD	7.0	6	12	95
GREELEY WAY	5.0	5	8	95
PERSHING AVE	7.0	6	12	95
VICKSBURG PL	6.0	5	12	95
McCLELLAN WAY	5.0	5	8	95
GETTYSBURG PL	7.0	6	12	95

NOTE: PLEASE SEE THE GEOTECH REPORT BY GEOCON PROJECT NO. S2636-05-01 FOR FURTHER INFORMATION REGARDING PROPOSED PAVEMENT SECTION & EXISTING SITE CONDITIONS.

TYPICAL TRENCH BACKFILL
NOT TO SCALE

9

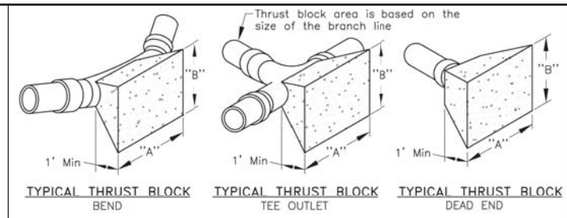


NOTES:

1. REMOVE AND DISPOSE (E)VAULT LID AND STRUCTURE TO A MINIMUM DEPTH OF 2'. THE STRUCTURE FILLED IN ACCORDANCE WITH THIS DETAIL.
2. EXCAVATE AND BACKFILLED AT LEAST 6" WIDER THAN THE VAULT.

REMOVE EXISTING VAULT
NOT TO SCALE

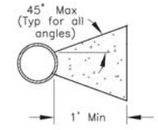
10



TYPICAL THRUST BLOCK
BEND

TYPICAL THRUST BLOCK
TEE OUTLET

TYPICAL THRUST BLOCK
DEAD END



TYPICAL SECTION THRU THRUST BLOCK

NOTES:

1. All thrust blocks shall be poured against Undisturbed Soil.
2. Restraint system for vertical pipe bends shall be approved by the agency.
3. Thrust restraint systems for pipes larger than 12" shall be designed on a case by case basis and shall be approved by the agency.
4. Concrete shall be Class 3.

THRUST BLCCK AREA REQUIRED		
FITTINGS	ALLOWABLE SOIL BEARING 1000 LBS. PER SQ FT	
	"A"	"B"
6" LINE OR SMALLER		
22 1/2°	1'-6"	1'-6"
45°	2'-0"	2'-0"
90°	3'-0"	2'-6"
TEE OUTLET	2'-6"	2'-0"
DEAD END	2'-6"	2'-0"
8" LINE		
22 1/2°	2'-0"	2'-0"
45°	3'-0"	2'-6"
90°	4'-0"	3'-0"
TEE OUTLET	3'-0"	3'-0"
DEAD END	3'-0"	3'-0"
10" LINE		
22 1/2°	3'-0"	2'-0"
45°	3'-6"	3'-0"
90°	5'-0"	4'-0"
TEE OUTLET	4'-0"	3'-6"
DEAD END	4'-0"	3'-6"
12" LINE		
22 1/2°	3'-0"	3'-0"
45°	4'-0"	4'-0"
90°	7'-0"	4'-0"
TEE OUTLET	5'-0"	4'-0"
DEAD END	5'-0"	4'-0"

Public Works — San Joaquin County — Working for YOU

THRUST BLOCK CHART

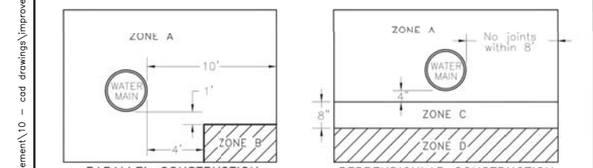
COUNTY OF SAN JOAQUIN
DEPARTMENT OF PUBLIC WORKS

Date: DEC 2014 | Std. Dwg. No. W-6

Approved by:

No.	Revision Description	Date

11

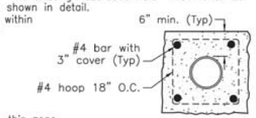


PARALLEL CONSTRUCTION — PERPENDICULAR CONSTRUCTION

NOTES: 1. The minimum separation distances set forth in this section shall be measured from the nearest outside edge of each pipe barrel.
2. All crossings shall be at 90° where possible.

HAZARDOUS FLUID MAIN (INCLUDING SEWER) AND WATER MAIN:

ZONE A: Hazardous fluid main will not be permitted in this zone.
ZONE B/C: Special permission from the County Environmental Health Department is required. Permission may be granted for existing main replacement in the same location, has a diameter no greater than six inches more than the diameter of the main it is replacing and when the total parallel pipe length is less than 1320 linear feet. Main material listed below shall be used. The existing hazardous fluid main shall be encased with reinforced concrete as shown in detail.
ZONE C/D: No connection joints shall be made within eight horizontal feet from the main.



Reinforced Concrete Encasement Detail (Class B P.C.C.)

STORM MAIN AND WATER MAIN:

ZONE A: Storm main will not be permitted in this zone.
ZONE B: Permitted location for storm main.
ZONE C: Special permission from the County Environmental Health Department is required. Permission may be granted for existing main replacement in the same location and has a diameter no greater than six inches more than the diameter of the main it is replacing. Main material listed below shall be used. The existing storm main shall be encased with reinforced concrete as shown in detail.
ZONE C/D: No connection joints shall be made within eight horizontal feet of the main.

SPECIAL MATERIALS:

New Water Main: Class-200 or equivalent per AWWA standards.
New Gravity Parallel Main: Extra-strength vitrified clay pipe with compression joints; or rubber gasketed plastic pipe conforming to ASTM D3034 SDR-35 specification.
New Industrial or Commercial Gravity Perpendicular Crossing: Class-50 or heavier ductile iron pipe with standard bituminous coating and approved mechanical joints shall be used.
New Residential Gravity Perpendicular Crossing: Ductile iron pipe as above, Class-200 PVC (DR14 per AWWA C900) plasitc pipe or rubber gasketed pipe conforming to ASTM D3034 SDR35 specificaion may be used.

12

Public Works — San Joaquin County — Working for YOU

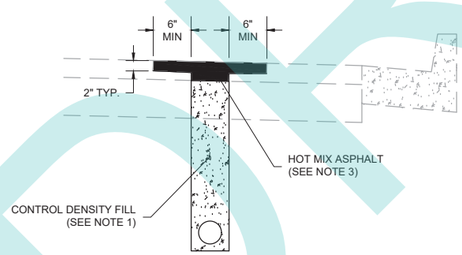
WATER-SEWER-STORM SEPARATION STANDARDS

COUNTY OF SAN JOAQUIN
DEPARTMENT OF PUBLIC WORKS

Date: DEC 2014 | Std. Dwg. No. W-10

Approved by:

No.	Revision Description	Date

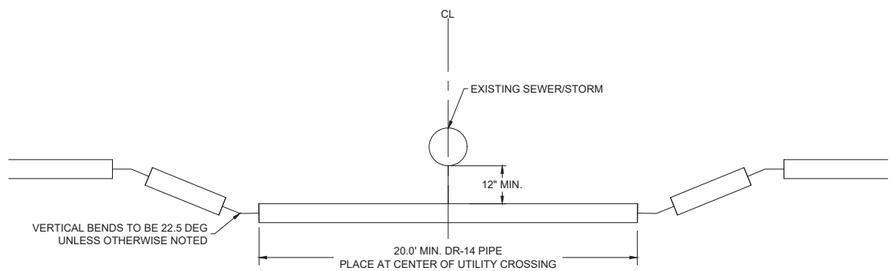


NOTES:

1. POTHOLE SHALL BE BACKFILLED WITH ACCEPTABLE CONTROL DENSITY FILL. CONTRACTOR SHALL FURNISH, INSTALL, COMPACT AND MAINTAIN A MINIMUM OF 2" TEMPORARY PAVEMENT UNTIL PERMANENT PAVEMENT IS PLACED.
2. PRIME COAT REQUIRED ABOVE CONTROL DENSITY FILL.
3. HOT MIX ASPHALT MINIMUM THICKNESS FOR PERMANENT POTHOLE SURFACE SHALL BE PER PAVEMENT RESTORATION IN TRENCH SECTION TABLE ABOVE. PERMANENT POTHOLE SURFACE RESTORATION CAN BE PERFORMED AT SAME TIME AS PERMANENT TRENCH SURFACE RESTORATION.

POTHOLE
NOT TO SCALE

13



WATER CROSSING UNDER EXISTING SEWER/STORM
NOT TO SCALE

14

NO.	REVISION DESCRIPTION	CHECKED BY	DATE

90% NOT FOR CONSTRUCTION

DRAWING SCALE
HOR. SCALE: N.T.S.
VERT. SCALE: N.T.S.

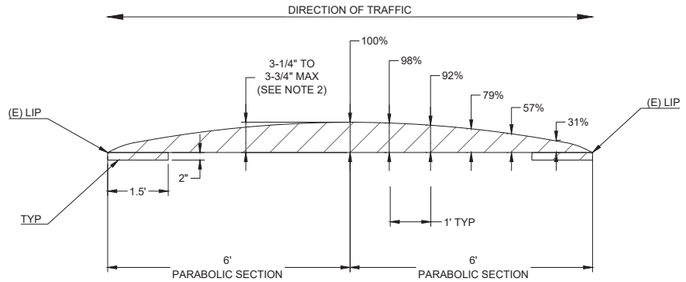
SAN JOAQUIN COUNTY CALIFORNIA

R.E.Y. ENGINEERS, INC.
Civil Engineers | Land Surveyors | LDAR
902 Sperry Road, Stockton, CA 95207
Phone (209) 956-0150 Fax (209) 956-0164

IMPROVEMENT PLANS FOR:
LINCOLN VILLAGE WATER MAIN REPLACEMENT PHASE 1B
CIP #610127
DETAILS
COUNTY OF SAN JOAQUIN
CALIFORNIA

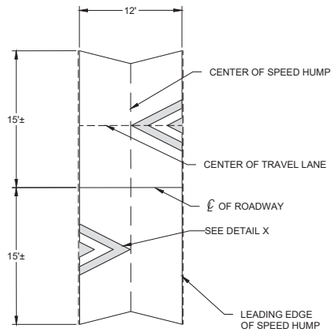
DRAWING INFO
DATE: 10-16-2024
DRAFTER: THKH
DESIGNER: KH
REVIEWER: JWE

R.E.Y. PROJECT NO.
7677.001
SHEET NO. C28 OF C31



SECTION

NOTES:
1. DO NOT EXCEED THE MAXIMUM HEIGHT OF (E)SPEED HUMP

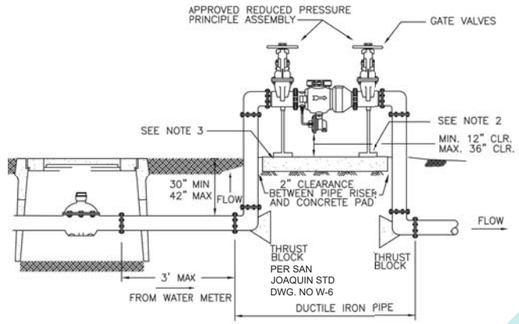


PLAN

REMOVE AND REPLACE SPEED HUMP DETAIL

NOT TO SCALE

15



NOTES:

1. THE MINIMUM STANDARD OF PROTECTION ALLOWED IS A REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION DEVICE.
2. SUPPORTS ARE REQUIRED FOR BACKFLOW PREVENTION ASSEMBLIES.
3. A CONCRETE PAD WITH A MINIMUM OF 4" THICKNESS IS REQUIRED.
4. ---
5. NO CONNECTIONS OR TEES ARE ALLOWED BETWEEN THE METER AND BACKFLOW PREVENTION DEVICE.
6. SEPARATE SUBMITTALS TO THE MUNICIPAL UTILITIES DEPARTMENT ARE REQUIRED FOR BACKFLOW PREVENTION ASSEMBLIES.
7. COUNTY'S MAINTENANCE RESPONSIBILITIES END AT THE WATER METER.
8. SIZE OF ASSEMBLY TO MATCH SIZE OF METER. METER BOX B43 MIN.
9. PROTECTIVE ENCLOSURE REQUIRED WITH LOCKING MECHANISM AND HINGE AS MANUFACTURED BY LE MEUR WELDING & MANUFACTURING OR APPROVED EQUAL. GREEN IN COLOR. INCLUDE BACKFLOW BLANKET.

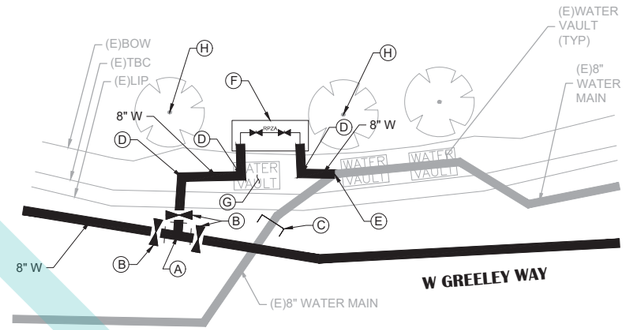
REDUCED ZONE PRESSURE ASSEMBLY

CITY OF STOCKTON
DEPARTMENT OF PUBLIC WORKS

REVISION NO.	APPROVED BY CITY ENGINEER: DATE 09/27/2016
SCALE: NONE	SUPERSEDES DWG. DATED	DRAWING NO. W-9

16

REDUCE PRESSURE ZONE ASSEMBLY - LOCATION A
N.T.S.



NOTES

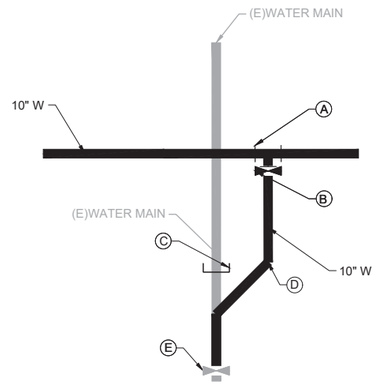
* A - TEE
* B - VALVE
* C - CUT & CAP (E)WATER PIPE FOR ABANDONMENT.
D - 90° BEND
E - CONNECTION TO (E)SYSTEM WITH COUPLING (CONTRACTOR TO DETERMINE (E)WATER MAIN ELEVATION)
F - REDUCE ZONE PRESSURE ZONE ASSEMBLY PER CITY OF STOCKTON DWG W-9
G - REMOVE EXISTING VAULT (SEE DETAIL 10 ON SHEET C28)
* H - PROTECT (E)TREES

CONTRACTOR TO PROVIDE THRUST BLOCKS ON ALL TEES AND BENDS 45° OR GREATER.

* NOT TO BE PAID FOR IN REDUCE PRESSURE ZONE ASSEMBLY

A

CONNECT TO (E)BFP - LOCATION B
N.T.S.



PLAN VIEW

NOTES

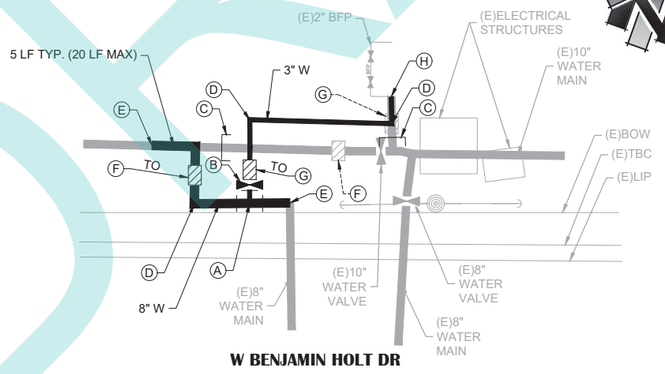
* A - TEE
* B - VALVE
* C - CUT & CAP (E)WATER PIPE FOR ABANDONMENT.
D - 45° BEND
E - CONNECTION TO (E)BACKFLOW PREVENTION AT EXISTING VALVE (CONTRACTOR TO DETERMINE (E)WATER PIPE ELEVATION)

CONTRACTOR TO PROVIDE THRUST BLOCKS ON ALL TEES AND BENDS 45° OR GREATER.

* NOT TO BE PAID FOR IN CONNECT TO (E)BFP BID ITEM

B

CONNECT TO (E)WATER SYSTEM (PHASE BENJAMIN HOLT DR) - LOCATION C
N.T.S.



NOTES

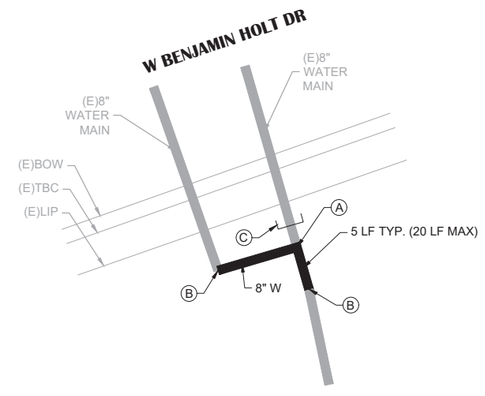
A - TEE
B - VALVE
* C - CUT & CAP (E)WATER PIPE FOR ABANDONMENT
D - 90° BEND
E - CONNECTION TO (E)SYSTEM WITH COUPLING (CONTRACTOR TO DETERMINE (E)WATER MAIN ELEVATION)
F - RELOCATE (E)8" WATER METER
G - RELOCATE (E)3" WATER METER
H - CONNECT TO (E)2" BFP

CONTRACTOR TO PROVIDE THRUST BLOCKS ON ALL TEES AND BENDS 45° OR GREATER.

* NOT TO BE PAID FOR IN CONNECT TO (E)WATER SYSTEM (PHASE BENJAMIN HOLT DR) BID ITEM

C

CONNECT TO (E)WATER SYSTEM (PHASE BENJAMIN HOLT DR) - LOCATION D
N.T.S.



PLAN VIEW

NOTES

A - 90° BEND
B - CONNECTION TO (E)SYSTEM WITH COUPLING (CONTRACTOR TO DETERMINE (E)WATER PIPE ELEVATION)
* C - CUT & CAP (E)WATER PIPE FOR ABANDONMENT

CONTRACTOR TO PROVIDE THRUST BLOCKS ON ALL TEES AND BENDS 45° OR GREATER.

* NOT TO BE PAID FOR IN CONNECT TO (E)WATER SYSTEM BID ITEM

D

NO.	REVISION DESCRIPTION	CHECKED BY	DATE
	90% NOT FOR CONSTRUCTION		

DRAWING SCALE
HOR. SCALE: N.T.S.
VERT. SCALE: N.T.S.

SAN JOAQUIN COUNTY CALIFORNIA

REY ENGINEERS, INC.
Civil Engineers | Land Surveyors
1524 Lancaster Avenue | Suite 220 | Turlock, CA 95380
Phone: (209) 668-5132 | Fax: (209) 668-5135

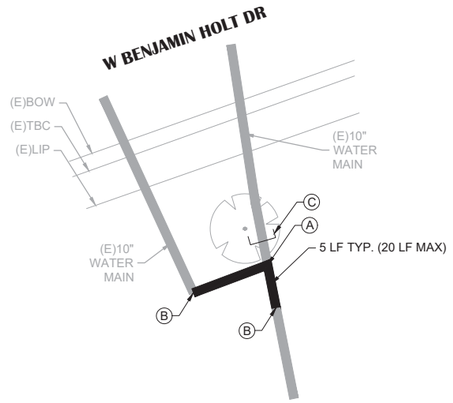
IMPROVEMENT PLANS FOR:
LINCOLN VILLAGE WATER MAIN REPLACEMENT PHASE 1B
CIP #610127
DETAILS & CONNECTION DETAILS
COUNTY OF SAN JOAQUIN
CALIFORNIA

DRAWING INFO
DATE: 10-16-2024
DRAFTER: THKH
DESIGNER: KH
REVIEWER: JWF

R.E.Y. PROJECT NO.
7677.001
SHEET NO. C29 OF C31

CONNECT TO (E)WATER SYSTEM (PHASE BENJAMIN HOLT DR) - LOCATION E

N.T.S.



PLAN VIEW

NOTES

A - 90° BEND
B - CONNECTION TO (E)SYSTEM WITH COUPLING (CONTRACTOR TO DETERMINE (E)WATER PIPE ELEVATION)
* C - CUT & CAP (E)WATER PIPE FOR ABANDONMENT

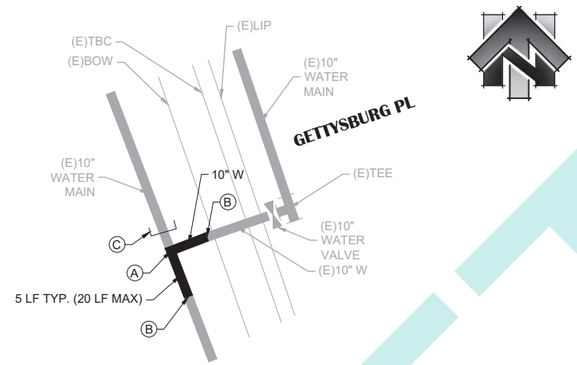
CONTRACTOR TO PROVIDE THRUST BLOCKS ON ALL TEES AND BENDS 45° OR GREATER.

* NOT TO BE PAID FOR IN CONNECT TO (E)WATER SYSTEM BID ITEM

E

CONNECT TO (E)WATER SYSTEM (PHASE BENJAMIN HOLT DR) - LOCATION F

N.T.S.



PLAN VIEW

NOTES

A - 90° BEND
B - CONNECTION TO (E)SYSTEM WITH COUPLING (CONTRACTOR TO DETERMINE (E)WATER PIPE ELEVATION)
* C - CUT & CAP (E)WATER PIPE FOR ABANDONMENT

CONTRACTOR TO PROVIDE THRUST BLOCKS ON ALL TEES AND BENDS 45° OR GREATER.

* NOT TO BE PAID FOR IN CONNECT TO (E)WATER SYSTEM BID ITEM

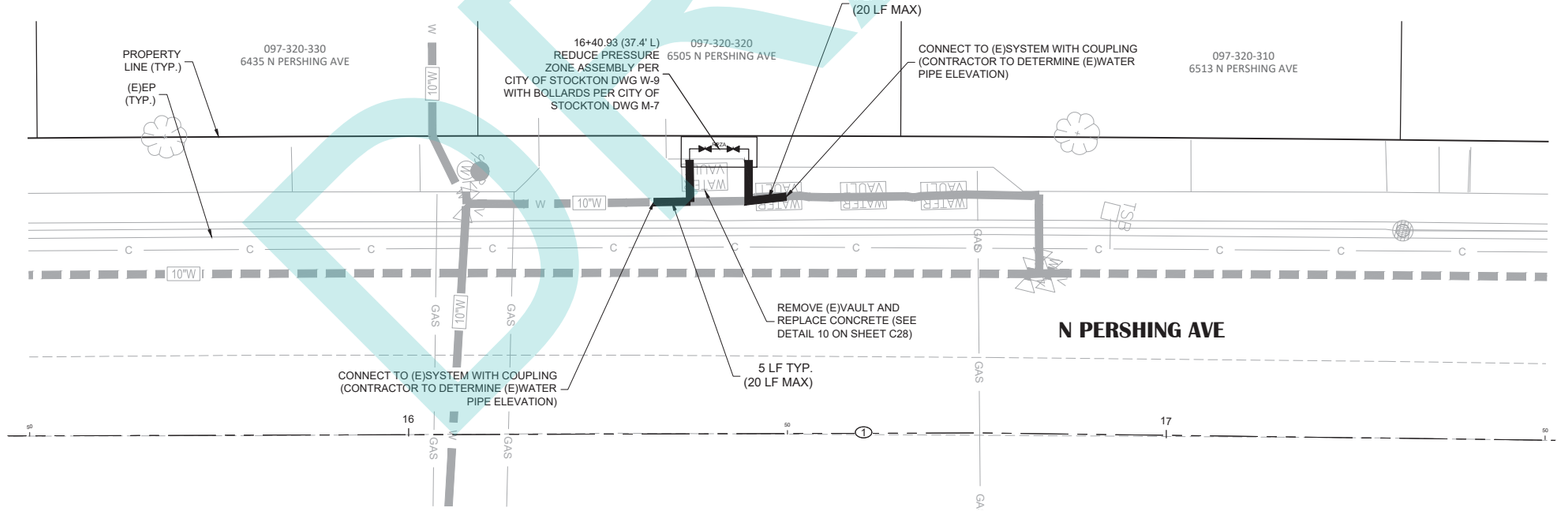
F

PLAN SCALE: 1" = 10'

0 5' 10' 20'

SCALE IN FEET

℄ CURVE DATA			
#	LENGTH	RADIUS	DELTA
1	200.00'	9960.00'	1°09'02"



REDUCE PRESSURE ZONE ASSEMBLY - LOCATION G

NO.	REVISION DESCRIPTION	CHECKED BY	DATE
	90% NOT FOR CONSTRUCTION		

DRAWING SCALE
HOR. SCALE: AS NOTED
VERT. SCALE: N.T.S.

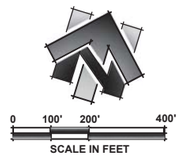
SAN JOAQUIN COUNTY CALIFORNIA

R.E.Y. ENGINEERS, INC.
Civil Engineers | Land Surveyors | LD/LA
1234 O Street, Suite 203 Fresno, CA 93721
Phone (559) 233-3116 Fax (559) 233-9208

IMPROVEMENT PLANS FOR:
LINCOLN VILLAGE WATER MAIN REPLACEMENT PHASE 1B
CIP #610127
CONNECTION DETAILS & N PERSHING AVE RPZA
COUNTY OF SAN JOAQUIN CALIFORNIA

DRAWING INFO
DATE: 10-16-2024
DRAFTER: THKH
DESIGNER: KH
REVIEWER: JWE

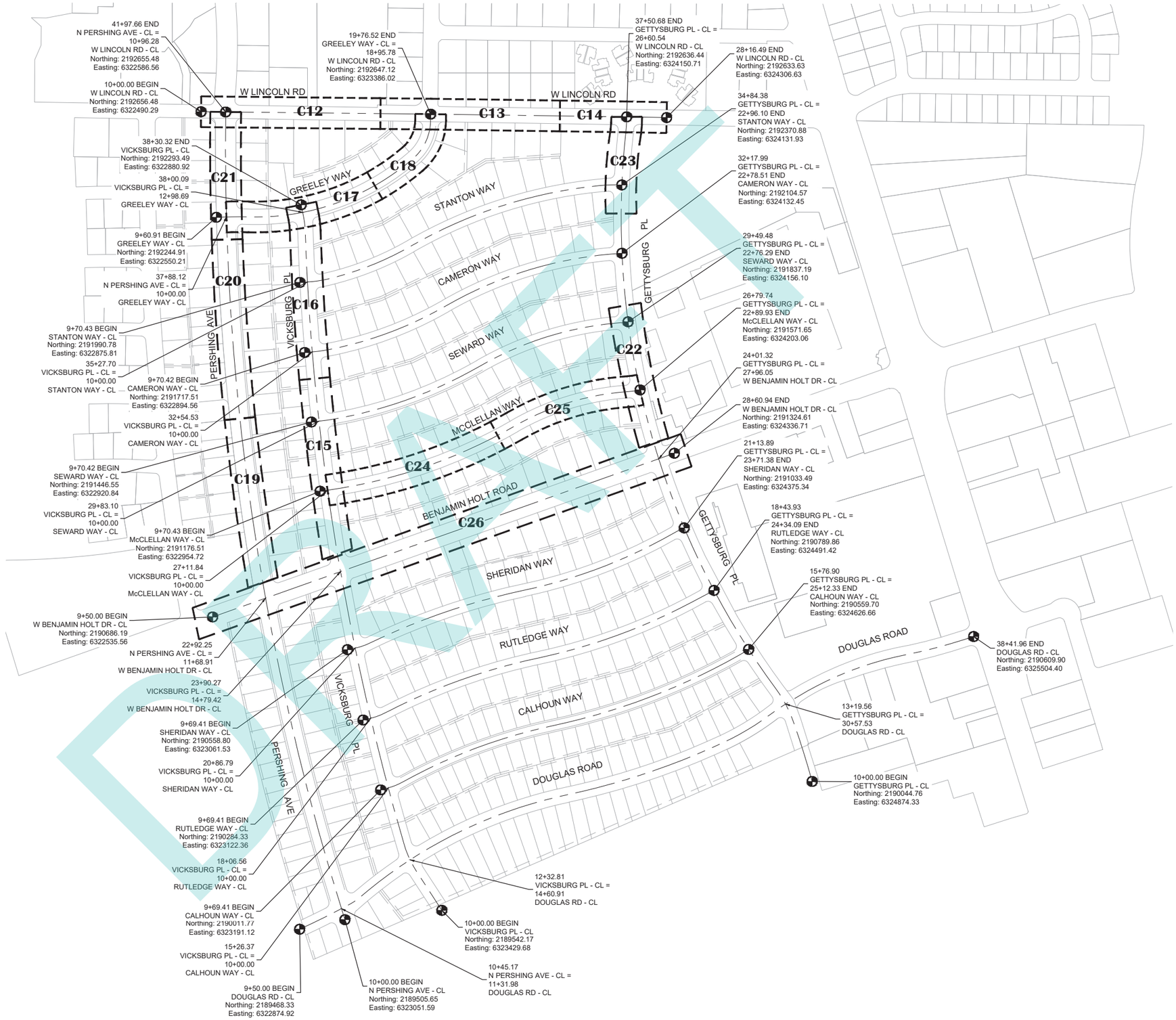
R.E.Y. PROJECT NO.
7677.001
SHEET NO. **C30** OF **C31**



LEGEND

SYMBOLS ENLARGED FOR CLARITY

BEGIN / END ALIGNMENT LOCATION
(SEE SHEET C13 - 25) FOR
ALIGNMENT LINE AND CURVE DATA



NO.	REVISION DESCRIPTION	CHECKED BY	DATE

90% NOT FOR CONSTRUCTION

DRAWING SCALE
HOR. SCALE: 1" = 200'
VERT. SCALE: N.T.S.

SAN JOAQUIN COUNTY CALIFORNIA

R.E.Y. ENGINEERS, INC.
Civil Engineers | Land Surveyors | LD/LS
1452 Blue Oaks Blvd. Suite 200 Roseville, CA 95678
Phone: (916) 782-2100 Fax: (916) 782-2900

IMPROVEMENT PLANS FOR:
LINCOLN VILLAGE WATER MAIN REPLACEMENT PHASE 1B
CIP #610127
SURVEY CONTROL
COUNTY OF SAN JOAQUIN CALIFORNIA

DRAWING INFO
DATE: 10-16-2024
DRAFTER: THKH
DESIGNER: KH
REVIEWER: JVE

R.E.Y. PROJECT NO.
7677.001
SHEET NO. **C31** OF **C31**

DEPARTMENT OF PUBLIC WORKS

COUNTY OF SAN JOAQUIN

STATE OF CALIFORNIA

SPECIFICATIONS

(INCLUDING SPECIAL PROVISIONS, NOTICE TO BIDDERS, BID AND CONTRACT)

FOR THE

LINCOLN VILLAGE WATER MAIN REPLACEMENT

(N Pershing Ave, W Lincoln Road, W Greeley Way, Gettysburg Place, Vicksburg Place, McCleallan Way)

CIP #610127

For use in connection with California State Department of Transportation
STANDARD SPECIFICATIONS dated 2022
STANDARD PLANS dated 2022 and REVISED STANDARD PLANS
and LABOR SURCHARGE and EQUIPMENT RENTAL RATES

DATED_____ , 2024 SUBMITTED_____

Alex Chetley
Deputy Director of Public Works

LINCOLN VILLAGE WATER MAIN REPLACEMENT

(N Pershing Ave, W Lincoln Road, W Greeley Way, Gettysburg Place, Vicksburg Place, McCleallan Way)

CIP #610127

Section 1 through 10 of these special provisions are prepared by or under the direction of the following engineer(s):

Robert Davalos
REGISTERED CIVIL ENGINEER 74629
San Joaquin County

Section 12 through 99 of these special provisions are prepared by or under the direction of the following engineer(s):

James W. Fisher
REGISTERED CIVIL ENGINEER 73197
R.E.Y. Engineers

TABLE OF CONTENTS

PROJECT: LINCOLN VILLAGE WATER MAIN REPLACEMENT
(Vicksburg to Gettysburg / Stanton to Seward Way)

TABLE OF CONTENTS (Continued)

TABLE OF CONTENTS (Continued)

TABLE OF CONTENTS (Continued)

APPLICABLE COUNTY IMPROVEMENT STANDARDS

W-1	Water Service Installation
W-2	Modified Fire Hydrant Assembly
W-3	Fire Service Connection Detail
W-4	Blow-Off Layout
W-5	Valve Box Detail
W-6	Thrust Block Chart
W-7	Bacteriological Sampling Tap
W-8	Bacteriological Sampling Tap Section
W-9	Bacteriological Sampling Tap Detail
W-10	Water-Sewer-Storm Separation Standards
W-11	Locator Wire Installation
W-12	Underground Utility Locations
W-13	Air-Vacuum release Valve
R-5	Concrete Curb, Gutter and Sidewalk Construction Standards
R-6	Roll Curb, Gutter and Sidewalk
R-10A	Curb Ramps
R-10B	Curb Ramps Sections and Notes
R-10C	Curb Ramp Details
R-10D	Curb Ramp Detectable Warning Surface Detail
R-11	Expansion Joints, Weakened Plane Joints and Score Lines
R-16	Typical Residential Driveway at Vertical Curb and Gutter
R-29	Typical Trench Backfill
R-30	Adjusting Street Facilities to Grade

APPLICABLE CITY IMPROVEMENT STANDARDS

M-7	Bollard Standard
W-9	Reduce Zone Pressure Assembly

APPLICABLE STATE STANDARD PLANS 2022 EDITION

A20A	Pavement Markers and Traffic Lines - Typical Details
A20B	Pavement Markers and Traffic Lines - Typical Details
A20D	Pavement Markers and Traffic Lines - Typical Details
A24D	Pavement Markings – Words
A24E	Pavement Markings – Words
A87A	Curbs and Driveways

APPENDIX

A-1	Geotechnical Investigation Report
B-1	Certificate of Monument Preservation
C-1	Small Community Drought Relief Program - Sign Guidelines

COUNTY OF SAN JOAQUIN
DEPARTMENT OF PUBLIC WORKS
NOTICE TO BIDDERS

In accordance with the plans and specifications therefor, the County of San Joaquin provides the following notice for the **Lincoln Village Water Main Replacement**.

Bids will be received electronically by the Department of Public Works (Department) via the BidExpress website (www.bidexpress.com), **until 1:30 p.m. on the 8th day of August 2024.** The Department will open and publicly read the bids at the Department's office and via webcast at www.youtube.com/channel/UC6cc1m_5WvN283Ix6DV_GZA, immediately after the specified closing time for the above-mentioned project.

The work is located approximately one and one-half mile east of Interstate 5 in the Lincoln Village Maintenance District in Stockton, CA bounded by Stanton Way to the North, Gettysburg Place to the East, Vicksburg Place to the West, and Seward Way to the South. Construction is tentatively scheduled for to begin in December of 2024 and be completed in 150 working days.

The work, in general, consists of installation of new water mains and services in existing streets and abandonment of existing water mains and services in residential backyards.

To bid, all bidders must be registered and create a Digital ID with Bid Express, found at www.bidexpress.com. The bid forms found at that website may only be used to submit an electronic bid. **Paper bids will not be accepted**. Please allow at least five (5) business days to complete the electronic bidding registration process for the first time. It is highly recommended that a Digital ID be active 48 hours in advance of submitting an electronic bid. All costs associated with obtaining a Digital ID and submitting a bid using Bid Express is the sole responsibility of the bidder.

The specifications and plans (Contract Documents) will be available at www.bidexpress.com. Any addenda issued for this project will also be available at this website. A link to the Bid Express Solicitation Page can be obtained at www.bidexpress.com/businesses/23724/home?agency=true. Only one bid per bidder will be accepted.

Bids are required for the entire work described herein.

A bid security of 10% is required from all bidders. The bid security must be in the form of cash, certified or cashier's check, electronic bond (eBond), or a bid bond in favor of the Department. Bid Security other than electronic bond must be received by the Department prior to the bid opening closing time specified above. A payment bond and a performance bond each 100% of the value of the contract are required from the successful bidder.

This contract is subject to State contract nondiscrimination and compliance requirements pursuant to Government Code, Section 12990. The contractor, sub-recipient, or subcontractor must comply with federal nondiscrimination requirements pursuant to Section 49 CFR 26.

Inquiries or questions based on alleged patent ambiguity of the plans, specifications or estimate must be communicated as a bidder inquiry prior to bid opening. Any such inquiries or questions, submitted after bid opening, will not be treated as a bid protest.

Submit all bidder inquires directly through the Department's solicitation page under the section titled "Q&A." All responses to bidder inquires and addenda will be available at www.bidexpress.com. It is each bidder's responsibility to check the website for these documents.

San Joaquin County has adopted a policy to require local hire participation in the construction workforce in accordance with the Board of Supervisors' policy. All bidders are required to submit the Local Hire Information Form and Checklist with their bid.

BID ITEM LIST (1 OF 2)

PROJECT: LINCOLN VILLAGE WATER LINE REPLACEMENT

ITEM NO.	ITEM CODE	ITEM NAME	UNIT OF MEASURE	ESTIMATED QUANTITY
1	005000	Construction Survey	LS	1
2	090010	Force Account	---	---
3	090030	Mobilization/Demobilization	LS	1
4	120100	Traffic Control System	LS	1
5	130300	Prepare Storm Water Pollution Prevention Plan	LS	1
6	153306	Pothole for Underground Facilities	LS	1
7	208590	6" Gate Valve	EA	16
8	208591	8" Gate Valve	EA	22
9	208593	10" Gate Valve	EA	5
10	260202	Class 2 Aggregate Base	TON	7,400
11	390132	Hot Mix Asphalt (Type A)	TON	801
12	645011	8" Polyvinyl Chloride Pipe (AWWA-C900) DR-18	LF	5,033
13	645012	8" Polyvinyl Chloride Pipe (AWWA-C900) DR-14	LF	775
14	645013	10" Polyvinyl Chloride Pipe (AWWA-C900) DR-18	LF	1,238
15	645014	10" Polyvinyl Chloride Pipe (AWWA-C900) DR-14	LF	199
16	710115	Abandon Existing Water Main, Fire Hydrant, and Appurtenances	LS	1
17	710125	Connect to Existing Water System	EA	1
18		Connect to Existing Water System (Phase 1A)	EA	4
19		Connect to Existing Water System (Benjamin Holt)	EA	6
20	710127	In-Tract Water Service Connection (Front Yard)	EA	45
21	710129	In-Tract Water Service Connection (Back Yard)	EA	46
22	740241	Testing, Disinfection, and Flushing	LS	1
23	996001	Fire Hydrant Assembly & Lateral	EA	16
24	996400	Bacteriological Sampling Tap Station	EA	1
25	996400	Connect to Existing Backflow Preventer	EA	1
26	996401	1" Air-Vacuum Release Valve	EA	3
27	996501	1" Water Service Line	EA	91
28		Remove Existing Vault	EA	2
29		Connect Fire Hydrant to Break-Away Spool	EA	2
30		Reduced Pressure Zone Assembly	EA	2
31		Connect to Existing Irrigation Service	EA	1

The Contractor must possess a **Class A** license at the time this contract is awarded.

A contractor or subcontractor will not be qualified to bid on, be listed in a bid, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of any contract for public work, as defined in this chapter, unless currently registered and qualified to perform public work pursuant to Section 1725.5. It is not a violation of this section for an unregistered contractor to submit a bid that is authorized by Section 7029.1 of the Business and Professions Code or by Section 10164 or 20103.5 of the Public Contract Code, provided the contractor is registered to perform public work pursuant to Section 1725.5 at the time the contract is awarded.

The County of San Joaquin, hereby notifies all Bidders that it will affirmatively ensure that in any contract entered into pursuant to this advertisement, minority business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, sex or national origin in consideration for an award.

San Joaquin County has adopted a policy goal to strongly encourage local hire and apprenticeship participation in the construction workforce in accordance with the Board of Supervisors' policy.

Contracts estimated by the County to cost $200,000 or more require the successful bidder to demonstrate their attempts to employ local hire. All bidders are required to submit the Local Hire Information Form and checklist with their bid.

This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

Pursuant to Section 1773 of the Labor Code, the general prevailing wage rates in the County in which the work is to be done have been determined by the Director of the California Department of Industrial Relations. These wages are set forth in the General Prevailing Wage Rates for this project are available from the California Department of Industrial Relations' Internet web site at Director's General Prevailing Wage Determinations (ca.gov). The Federal minimum wage rates for this project as predetermined by the United States Secretary of Labor are available from the Department of Labor's internet web site at https://sam.gov/. Addenda to modify the Federal minimum wage rates, if necessary, will be issued to holders of "Bid and Contract" books. Future effective general prevailing wage rates, which have been predetermined and are on file with the California Department of Industrial Relations are referenced but not printed in the general prevailing wage rates.

Attention is directed to the Federal minimum wage requirements in Section 7-1.02K(2),"Wages," of this book. If there is a difference between the minimum wage rates predetermined by the Secretary of Labor and the general prevailing wage rates determined by the Director of the California Department of Industrial Relations for similar classifications of labor, the Contractor and subcontractors will pay not less than the higher wage rate. The Department will not accept lower State wage rates not specifically included in the Federal minimum wage determinations. This includes "helper" (or other classifications based on hours of experience) or any other classification not appearing in the Federal wage determinations. Where Federal wage determinations do not contain the State wage rate determination otherwise available for use by the Contractor and subcontractors, the Contractor and subcontractors will pay not less than the Federal minimum wage rate which most closely approximates the duties of the employees in question.

The U.S. Department of Transportation (DOT) provides a toll-free hotline to report bid rigging activities. Use the hotline to report bid rigging, bidder collusion, and other fraudulent

activities. The hotline number is (800) 424-9071. The service is available 24 hours, 7 days a week, and is confidential and anonymous. The hotline is part of the DOT's effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the DOT Inspector General.

The Board reserves the right to reject any or all bids and further reserves the right to waive minor irregularities in the bids.

Date July 9, 2024

COUNTY OF SAN JOAQUIN,
a political subdivision of
the State of California

By: MIGUEL VILLAPUDUA
Chairman of the Board of Supervisors

COUNTY OF SAN JOAQUIN
DEPARTMENT OF PUBLIC WORKS

1 GENERAL

1-1.01 GENERAL, add:

The work embraced herein must be done in accordance with the Department of Transportation Standard Specifications dated 2022, hereinafter referred to as the Standard Specifications, and the Department of Transportation Standard Plans dated 2022, hereinafter referred to as the Standard Plans, insofar as the same may apply and in accordance with the following special provisions.

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

Revised Standard Specifications set forth in these special provisions must be considered as part of the Standard Specifications for the purposes set forth in Section 5-1.02, "Contract Components."

1-1.05 REFERENCES, replace last paragraph with:

Where in the Standard Specifications, special provisions, Notice to Bidders, bid, contract or other contract documents, the following terms are revised, added or used, the intent and meaning must be interpreted as follows:

Attorney General	County Counsel of San Joaquin
State, or County	County of San Joaquin
Department	County of San Joaquin
Director	Board of Supervisors, County of San Joaquin
District	County of San Joaquin
Department of Transportation State of California	Department of Public Works County of San Joaquin
Engineer and Deputy Director Transportation Engineering	Director of Public Works, County of San Joaquin acting either directly or through properly authorized agent and consultants

1-1.06 ABBREVIATIONS, add the following definitions to Abbreviation Table:

ASTM	American Society for Testing Materials
CFR	Code of Regulations
CONT	Contract
NTP	Notice to Proceed
QA	Quality Assurance
QC	Quality Control

1-1.07 DEFINITIONS

1-1.07B Glossary, revise, add or use the definitions of this section with the following:

Agency: County of San Joaquin

Bid Item List: List of bid items and the associated quantities. The verified Bid Item List with verified prices. The Contract Proposal of Low Bidder is the verified Bid Item List. After Contract award, interpret reference to the Bid Item List as a reference to the verified Bid Item List.

Board of Supervisors: Board of Supervisors of San Joaquin County, State of California.

California Test: Caltrans-developed test for determining work quality. For California Tests, go to the METS website.

Caltrans: California Department of Transportation as defined in the State & Highway Code Section 20 and authorized in State & Highway Code Section 90, and its authorized representatives.

Contract Documents: The Contract Documents consist of: Notice to Bidders, the prevailing rate of per diem wage rates as determined by the California Department of Industrial Relations, the accepted Bid, including, Bid Item List, Non-Collusion Affidavit, Equal Employment Opportunity Certification, Subcontractor List, Bidder's List of subcontractor, Construction Contract Commitment, Proposer/Contractor Good Faith Efforts, Bidder's List of Subcontractor, Bidder Local Hire Form and Checklist, Local Hire Information Checklist, Bidder Trucking Information Form, Bid Security or Bid Bond, this Contract Agreement, Workers Compensation Certificate, Performance Bond, Labor and Materials Bond, Notice of Award, Notice of Completion, Special Provisions, California 2022 Standard Specifications, California Labor Surcharge and Equipment Rental Rates, Plans, any issued Addenda, Change Orders, and any other applicable documents not listed including modifications incorporated in these documents.

County: County of San Joaquin, a political subdivision of the State of California.

Engineer or Office Engineer: San Joaquin County Director of Public Works, acting either directly or through properly authorized agents, and such agents acting within the scope of the particular duties delegated to them.

Improvement Standards: Improvement Standards of County of San Joaquin, Department of Public Works.

Notice to Contractors: References to Notice to Contractors or Notice to Bidders are the same documents.

Purchasing Agent: The Purchasing Manager, of County, acting either directly or through properly authorized agents, such agents acting within the scope of the particular duties delegated to them.

Submittal: When a submittal is identified to be made to METS or to OSD, submit the items to the Engineer unless otherwise directed.

1-1.08 DISTRICTS, delete.

1-1.10 PAVEMENT CLIMATE REGIONS, delete.

1-1.11 WEBSITES, ADDRESSES, AND TELEPHONE NUMBERS, replace the "Website, Address, and Telephone Number" of the Office Engineer in the table with:

Reference or agency or department unit/Name	Website	Address	Telephone No.
Office Engineer	www.bidexpress.com	DESIGN ENGINEER COUNTY OF SAN JOAQUIN DEPARTMENT OF PUBLIC WORKS 1810 EAST HAZELTON AVENUE STOCKTON, CA 95205	(209) 468-3000

1-1.12 MISCELLANY, replace section with:

Make checks and bonds payable to the "County of San Joaquin."

2 BIDDING

2-1.04 PREBID OUTREACH MEETING, replace section with:

Prebid meeting information is shown on the Notice to Bidders.

Replace **"2.1.05 RESERVED"** with:

2-1.05 CONFLICT OF INTEREST

In conformance with Public Contract Code Section 7106, a Noncollusion Affidavit is included in the bid documents. Signing the bid shall also constitute signature of the Noncollusion Affidavit.

2-1.06 BID DOCUMENTS

2-1.06A General, replace section with:

The State Standard Specifications and State Standard Plans may be viewed at the Caltrans' website.

Bids and copies of the Plans and Specifications will be available at the Department of Public Works' Solicitation Page at Bid Express, found at
Bid Express :: San Joaquin County Department of Public Works.

The "Specifications" include the special provisions, Notice to Bidders, bid and contract.

2-1.06B Supplemental Project Information, replace paragraph 3 through 8 with:

Supplemental Project Information, if any, will be available at www.bidexpress.com.

2-1.10 SUBCONTRACTOR LIST, replace item 4 of the list in paragraph 2 with:

4. Portion of work it will perform. Show the portion of the work by:
    4.1 Bid Item Number(s) for the subcontracted work
    4.2 Description of subcontracted work
    4.3 Dollar amount of subcontracted work

2-1.12 DISADVANTAGED BUSINESS ENTERPRISES, delete.

2-1.15 DISABLED VETERAN BUSINESS ENTERPRISES, delete.

2-1.18 SMALL BUSINESS AND NON-SMALL BUSINESS SUBCONTRACTOR PREFERENCES, delete.

2-1.26 LOCAL HIRE

This project is subject to the County's Local Hire policy.

Bidder's attention is directed to the following matters:

Bids: Bids, to receive consideration, must be made in accordance with the following instructions:

San Joaquin County has adopted a policy goal to strongly encourage local hire and apprenticeship participation in the construction workforce in accordance with Board of Supervisors' policy. Bidder's attention is directed to the following provisions relating to this policy:

a. For purposes of this policy only, the definition of Contractor is limited to the total workforce of the prime or principal contractor and all subcontractors who will work in San Joaquin County under the construction contract.

b. A "local hire" is defined as an employee whose residence within San Joaquin County at the time of opening of bids for the project.

c. Bidders are to complete the "Bidder Local Hire Information Form and Checklist".

With respect to application of the Local Hire policy, bidder's attention is directed to the following:

1. San Joaquin County Board of Supervisors hereby adopts a policy to strongly encourage, within the constraints of federal and state law, the employment of County residents on County funded construction projects.

2. Bidders on construction projects are required to complete and submit the *Local Hire Information Form and Checklist* for construction bids in excess of $200,000, which indicates the bidder's effort to employ local hire.

3. In the event that two or more responsive bids are the same and the lowest, the County must award the contract in accordance with the highest local participation rate of the bidder employing local residents as indicated on the *Bidder Local Hire Information Form and Checklist*. If bids remain tied, a coin toss will decide the winning bidder.

    a. Contracts estimated by the County to be less than $200,000 do not have a local hire goal.

    b. Contracts estimated by the County to cost $200,000 or more require the successful bidder to demonstrate their attempts to employ local hire.

2-1.27 CALIFORNIA COMPANIES, delete.

2-1.31 OPT OUT OF PAYMENT ADJUSTMENTS FOR PRICE INDEX FLUCTUATIONS, delete.

2-1.33 BID DOCUMENT COMPLETION AND SUBMITTAL

2-1.33A General, replace section with:

Complete and submit the bids electronically under the Department of Public Works' Solicitation Page at the BidExpress website, found at www.bidexpress.com/businesses/23724/home?agency=true.

To bid electronically, all bidders must be registered and create a Digital ID with Bid Express. Please allow at least five (5) business days to complete the electronic bidding registration process for the first time. It is highly recommended that a Digital ID be active 48 hours in advance of submitting an electronic bid.

Your authorized digital signature is your confirmation of and agreement to all certifications and statements contained in the Bid. On forms and certifications that you submit through the electronic bidding service, you agree that each form and certification where a signature is required is deemed as having your signature.

Failure to submit the forms and information as specified may result in a nonresponsive bid.

2-1.33B Bid Form Submittal Schedules

2-1.33B(1) General, replace sentence 1 of paragraph 1 with:

Bid forms are included in the advertised project Plans and Specifications and are specific to this contract.

2-1.34 BIDDER'S SECURITY, replace section with:

All bids must be accompanied by cash, a certified check, cashier's check, electronic bond (eBond), or bid bond of a corporate surety made payable to the County of San Joaquin, for a sum of at least 10 percent of the amount of bid. A hard copy bid bond must be signed by both principal and surety with each signature acknowledged before a notary public. The bid bond must also contain the project name and the name, address and telephone number of the local agent of the surety bonding insurance company. Such guarantees must be forfeited to said County should the bidder to whom the contract is awarded fails to enter into a contract.

Electronic bidder's bond by an admitted surety insurer submitted using an electronic registry service approved by the Department is available for submission with bid.

Bid security other than electronic bidder's bond must be received by the Department of Public Works prior to the bid opening date and closing time specified in the Notice to Bidders. The envelope containing Bid Security should be clearly marked on the outside

with “Bid Documents for Lincoln Village Water Main Replacement”.

Replace “**2-1.37 RESERVED**” with:

2-1.37 BID SUBMITTAL

All bids must be submitted electronically using Bid Express, www.bidexpress.com, on or before the date and closing time specified in the "Notice to Bidders."

No bid must be valid unless signed by the person making the bid. If the party is an individual, the name must be signed by the individual; if the party is a partnership, the name of the partnership must be given and signed by one of the partners; if the name is a corporation, the bid should be signed by the corporation's properly authorized officer or officers. The person signing the bid must also be registered to the Digital ID that submits the bid through the electronic bidding service.

Bidders are required to submit the *Subcontractor List* and *Bidder Local Hire Information Form* and *Checklist* at the time of bid.

Only one bid per bidder will be accepted.

BID TO THE BOARD OF SUPERVISORS
COUNTY OF SAN JOAQUIN

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TO THE BOARD OF SUPERVISORS, COUNTY OF SAN JOAQUIN:

This bid is submitted for the **Lincoln Village Water Main Replacement**. All work for which this bid is submitted will be in accordance with the special provisions (including the payment of not less than the State general prevailing wage rates or the Federal minimum wage rates set forth herein), the project plans, including any addenda thereto, the contract annexed hereto, and in accordance with the State of California Department of Transportation Standard Plans, dated 2022, the Standard Specifications, dated 2022, and the Labor Surcharge and Equipment Rental Rates in effect on the date the work is accomplished.

The undersigned, as bidder, declares that the only persons or parties interested in this bid as principals are those named herein; that this bid is made without collusion with any other person, firm or corporation. Undersigned further declares that he has carefully examined the location of the proposed work, the proposed form of contract, and the plans and specifications therefore. If this bid is accepted, he will enter into a written contract contained in the Specifications for the project within ten (10) days after being requested to do so, and will provide all necessary bonds and insurance for the **Lincoln Village Water Main Replacement** and that he will take in full payment therefore the following unit prices, to wit:

BID ITEM LIST

ITEM NO.	ITEM CODE	ITEM NAME	UNIT OF MEASURE	ESTIMATED QUANTITY	UNIT PRICE (in Figures)	TOTAL (in Figures)
1	005000	Construction Survey	LS	1	$100,000	$100,000
2	090010	Force Account	---	---		
3	090030	Mobilization/Demobilization	LS	1		
4	120100	Traffic Control System	LS	1		
5	130300	Prepare Storm Water Pollution Prevention Plan	LS	1		
6	153306	Pothole for Underground Facilities	LS	1		
7	208590	6" Gate Valve	EA	16		
8	208591	8" Gate Valve	EA	22		
9	208593	10" Gate Valve	EA	5		
10	260202	Class 2 Aggregate Base	TON	7,400		
11	390132	Hot Mix Asphalt (Type A)	TON	801		
12	645011	8" Polyvinyl Chloride Pipe (AWWA-C900) DR-18	LF	5,033		
13	645012	8" Polyvinyl Chloride Pipe (AWWA-C900) DR-14	LF	775		
14	645013	10" Polyvinyl Chloride Pipe (AWWA-C900) DR-18	LF	1,238		
15	645014	10" Polyvinyl Chloride Pipe (AWWA-C900) DR-14	LF	199		
16	710115	Abandon Existing Water Main, Fire Hydrant, and Appurtenances	LS	1		
17	710125	Connect to Existing Water System	EA	1		
18		Connect to Existing Water System (Phase 1A)	EA	4		
19		Connect to Existing Water System (Benjamin Holt)	EA	6		
20	710127	In-Tract Water Service Connection (Front Yard)	EA	45		

BID ITEM LIST

ITEM NO.	ITEM CODE	ITEM NAME	UNIT OF MEASURE	ESTIMATED QUANTITY	UNIT PRICE (in Figures)	TOTAL (in Figures)
21	710129	In-Tract Water Service Connection (Back Yard)	EA	46		
22	740241	Testing, Disinfection, and Flushing	LS	1		
23	996001	Fire Hydrant Assembly & Lateral	EA	16		
24	996400	Bacteriological Sampling Tap Station	EA	1		
25	996400	Connect to Existing Backflow Preventer	EA	1		
26	996401	1" Air-Vacuum Release Valve	EA	3		
27	996501	1" Water Service Line	EA	91		
28		Remove Existing Vault	EA	2		
29		Connect Fire Hydrant to Break-Away Spool	EA	2		
30		Reduced Pressure Zone Assembly	EA	2		
31		Connect to Existing Irrigation Service	EA	1		

Total $ _____

PUBLIC CONTRACT CODE SECTION 10162 QUESTIONNAIRE

In conformance with Public Contract Code Section 10162, the bidder must complete, under penalty of perjury, the following questionnaire:

Has the bidder, any officer of the bidder, or any employee of the bidder who has a proprietary interest in the bidder, ever been disqualified, removed, or otherwise prevented from bidding on, or completing a federal, state, or local government project because of a violation of law or a safety regulation?

Yes _____ No _____

If the answer is yes, explain the circumstances in the following space.

PUBLIC CONTRACT CODE SECTION 10232 STATEMENT

In conformance with Public Contract Code Section 10232, the Contractor, hereby states under penalty of perjury, that no more than one final unappealable finding of contempt of court by a federal court has been issued against the Contractor within the immediately preceding two year period because of the Contractor's failure to comply with an order of a federal court which orders the Contractor to comply with an order of the National Labor Relations Board.

Note: The above Statement and Questionnaire are part of the Bid. Signing this Bid on the signature portion thereof must also constitute signature of this Statement and Questionnaire.

Bidders are cautioned that making a false certification may subject the certified to criminal prosecution.

NONCOLLUSION AFFIDAVIT
(Title 23 United States Code Section 112 and
Public Contract Code Section 7106)

In accordance with Title 23 United States Code Section 112 and Public Contract Code Section 7106 the bidder declares that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone must refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

Note: The above Noncollusion Affidavit is part of the Bid. Signing this Bid on the signature portion thereof must also constitute signature of this Noncollusion Affidavit.
Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

BUSINESS AND PROFESSIONS CODES SECTION 7028.15 STATEMENT

In conformance with Business and Professions Code Section 7028.15, the Contractor, hereby states that all representations made herein are made under penalty of perjury.

TITLE 49, CODE OF FEDERAL REGULATIONS, PART 29

The bidder, under penalty of perjury, certifies that, except as noted below, he/she or any other person associated therewith in the capacity of owner, partner, director, officer, and manager:

- Is not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility by any federal agency;
- Has not been suspended, debarred, voluntarily excluded or determined ineligible by any federal agency within the past 3 years;
- Does not have a proposed debarment pending; and
- Has not been indicted, convicted, or had a civil judgment rendered against it by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past 3 years.

If there are any exceptions to this certification, insert the exceptions in the following space.

Exceptions will not necessarily result in denial of award, but will be considered in determining bidder responsibility. For any exception noted above, indicate below to whom it applies, initiating agency, and dates of action.

Notes: Providing false information may result in criminal prosecution or administrative sanctions.

The above certification is part of the Bid. Signing this Bid on the signature portion thereof must also constitute signature of this Certification.

Non-Lobbying
Certification for Federal Aid Contracts

The prospective participant certifies, by signing and submitting this bid, to the best of his or her knowledge and belief, that:

(l) No federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any federal contract, the making of any federal grant, the making of any federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this federal contract, grant, loan, or cooperative agreement, the undersigned must complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities," in accordance with its instructions.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification must be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

The prospective participant also agrees by submitting his or her bid that he or she must require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such sub recipients must certify and disclose accordingly.

PUBLIC CONTRACT CODE SECTION 10285.1 STATEMENT

In conformance with Public Contract Code Section 10285.1 (Chapter 376, Stats. 1985), the bidder hereby declares under penalty of perjury that the bidder has ____, has not ____ been convicted within the preceding three years of any offenses referred to in that section, including any charge of fraud, bribery, collusion, conspiracy, or any other act in violation of any state or federal antitrust law in connection with the bidding upon, award of, or performance of, any public works contract, as defined in Public Contract Code Section 1101, with any public entity, as defined in Public Contract Code Section 1100, including the Regents of the University of California or the Trustees of the California State University. The term "bidder" is understood to include any partner, member, officer, director, responsible managing officer, or responsible managing employee thereof, as referred to in Section 10285.1.

Note: The bidder must place a check mark after "has" or "has not" in one of the blank spaces provided.

The above Statement is part of the Bid. Signing this Bid on the signature portion thereof must also constitute signature of this Statement.

Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

(THE BIDDER'S EXECUTION ON THE SIGNATURE PORTION OF THIS PROPOSAL WILL ALSO CONSTITUTE AN ENDORSEMENT AND EXECUTION OF THOSE CERTIFICATIONS WHICH ARE A PART OF THIS BID)

EQUAL EMPLOYMENT OPPORTUNITY CERTIFICATION

The bidder_____, proposed subcontractor _____, hereby certifies that he has_____, has not___, participated in a previous contract or subcontract subject to the equal opportunity clauses, as required by Executive Orders 10925, 11114, or 11246, and that, where required, he has filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filling requirements.

Note: The above certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor (41 CFR 60-1.7(b) (1)), and must be submitted by bidders and proposed subcontractors only in connection with contracts and subcontracts, which are subject to the equal opportunity clause. Contracts and subcontracts which are exempt from the equal opportunity clause are set forth in 41 CFR 60-1.5. (Generally only contracts or subcontracts of $10,000 or under are exempt.)

Currently, Standard Form 100 (EEO-1) is the only report required by the Executive Orders or their implementing regulations.

Proposed prime contractors and subcontractors who have participated in a previous contract or subcontract subject to the Executive Orders and have not filed the required reports should note that 41 CFR 60-1.7(b) (1) prevents the award of contracts and subcontracts unless such contractor submits a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the Director, Office of Federal Contract Compliance, U.S. Department of Labor.

SUBCONTRACTOR LIST

In accordance with the "Subletting and Subcontracting Fair Practices Act" (Public Contract Code Sections 4100-4114, inclusive) each bidder in their Bid must provide the information requested below on each subcontractor that will perform work or labor or render service for the bidder in excess of one-half of one percent of the total bid or $10,000, whichever is greater.

(If a subcontractor will perform multiple items of work, list each item individually and include required information. Submit additional sheets, if necessary. Example:)

Contractor License #*123456* DIR Registration #: 1000000001 Company: *Striping Subcontractor, Inc.* Address: *123 Main Street, Anywhere, CA* Email Address: *stripingco@yahoo.com*	*16*	*4" Paint Traffic Stripe (1-Coat)*	*$11,875*
	17	*8" Paint Traffic Stripe (1-Coat)*	*$700*
	18	*Paint Pavement Markings (1-Coat)*	*$7,200*

Bidding Firm Name:_____

SUBCONTRACTOR INFORMATION	BID ITEM NUMBER(S)	DESCRIPTION OF WORK	DOLLAR AMOUNT
Contractor License #: *DIR Registration #: Company: Address: Email Address:			
Contractor License # DIR Registration #: Company: Address: Email Address:			
Contractor License #: DIR Registration #: Company: Address: Email Address:			
Contractor License # DIR Registration #: Company: Address: Email Address:			

* Department of Industrial Relations Registration number

BIDDER LOCAL HIRE
INFORMATION FORM AND CHECKLIST

Project Name:_____ Bidder's Name:_____

_____ *Bidders are required to submit this Form and Checklist with their bid.* Address:_____

Bid Amount $:_____ _____

Bid Opening Date:_____ _____

LOCAL HIRE INFORMATION	YES	NO
Bidder agrees to attempt to employ local hire in their workforce and the workforce of their subcontractors.		
Bidder agrees to purchase at least one display ad in a newspaper of general circulation in San Joaquin County announcing job opportunities on the construction project and encouraging local residents to apply.		

Contractor intends to secure his workforce from the following sources: (Please Describe)

_____

_____

_____

_____ _____ _____

Signature of Bidder Date (Area Code) Telephone Number

LOCAL HIRE INFORMATION CHECKLIST

COUNTY OF SAN JOAQUIN

Please check all boxes that apply:

☐ Placed a valid job order for existing and projected position vacancies with the local office of the State Employment Development Department, for no less than 10 consecutive calendar days.

☐ Placed a valid job order for existing and projected position vacancies with WorkNet of San Joaquin County, for no less than 10 consecutive calendar days.

☐ Advertised existing and projected position vacancies, job informational meetings, job application workshops, and job interviews by posting notices which identify the position(s) to be filled, the qualifications required, and where to obtain additional information about the application process, in conspicuous local authorized public places, including but not limited to post offices and libraries.

☐ Conducted a job informational meeting to inform the community of employment opportunities of the contractor (may be combined with other contractors).

☐ Provided ongoing assistance to residents of San Joaquin County in completing job application forms.

☐ Conducted a job application workshop to assist the community in applying and interviewing for jobs in contracting industry (may be combined with other contractors).

☐ Conducted job interviews within San Joaquin County.

☐ Advertised valid existing and projected position vacancies through the local media, such as community television network, local newspapers of general circulation, and trade papers or minority focus newspapers.

☐ Any other means of obtaining employees who reside within San Joaquin County that are reasonably calculated to comply with the goals of this policy. Please describe:

_____

_____

_____

Please provide supporting documentation for all boxes checked. Sign and submit form and checklist with your bid.

I declare the above information is true and accurate and submitted under penalty of perjury.

By my signature below, I acknowledge that I have met the requirements of the County's Local Hire Policy.

_____ _____

Owner/Authorized Representative (Signature) Name of firm

_____ _____

Name and Title (Print)

Accompanying this bid is _____ ***(Cash, Cashier's Check, Certified Check, electronic bond (eBond) or Bidder's Bond)***

in an amount equal to at least ten percent (10%) of the total bid, made payable to the County of San Joaquin. If the bid is accepted, said guaranty must be retained by said County until the required contract and bonds are executed, or forfeited to said County if said contract and bonds be not executed.

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

If bidder or other interested person is a corporation, state legal name of corporation, also names of the president, secretary, treasurer, and manager thereof; if a copartnership, state true name of firm, also names of all individual copartners composing firm; if bidder of interested person is an individual, state first and last names in full. No bid shall be valid unless signed and electronically submitted by the person making the bid.

_____

_____

_____

By my signature on this bid I certify, under penalty of perjury under the laws of the State of California, that the Business and Professions Code Section 7028.15 representations, foregoing questionnaire and statements of Public Contract Code Sections 10162, 10232 and 10285.1 are true and correct and that the bidder has complied with the requirements of Section 8103 of the Fair Employment and Housing Commission Regulations (Chapter 5, Title 2 of the California Administrative Code). By my signature of this bid I further certify, under penalty of perjury under the laws of the State of California and the United States of America, that the Noncollusion Affidavit required by Title 23 United States Code, Section 112 and Public Contract Code Section 7106; and the Title 49 Code of Federal Regulations, Part 29 Debarment and Suspension Certification are true and correct.

Date:_____ Firm Name:_____
Signature of Bidder:_____ Title:_____
Print Bidder's Name:_____ Email:_____
Business P.O. Box:_____
City, State, Zip:_____
Business Street Address:_____
(Please include even if P.O Box used)
City, State, Zip:_____
Telephone No.: ( ) _____ FAX No.: ( ) _____
Contractor's License No.: _____ Expiration Date:_____
License Classification(s):_____
Department of Industrial Relations Registration No.: _____

3 CONTRACT AWARD AND EXECUTION

3-1.02 CONSIDERATION OF BIDS

3-1.02A General, add:

When more than one schedule of work to be performed is included, the lowest bid will be the lowest total of the bid prices on the Base Contract and those schedules taken in the order they appear in the bid and added to the Base Contract that are less or equal to a funding amount read publicly prior to the opening of bids. If no bids are less than the stated amount, the lowest bid will be the lowest cost base bid submitted.

A responsive, responsible bidder who submitted the lowest bid as determined by this section will be awarded the contract, if it is awarded. This section does not preclude the local agency from adding or deduction from the contract any of the schedules after the lowest responsible bidder has been determined.

3-1.02B Tied Bids, replace section with:

In the extent that two or more bids are the same and the lowest, the County awards the contract in accordance with Section 3-1.04 “Contract of Award.”

3-1.04 CONTRACT AWARD, replace section with:

Bid protests are to be delivered to the following address: San Joaquin County, Office of County Counsel, 44 N. San Joaquin St., Sixth Floor Suite 679, Stockton, California 95202.

The award of the contract, if it be awarded, will be to the lowest responsive, responsible bidder whose bid complies with all the requirements prescribed. The award must be made within 60 days after bid opening. The Department may extend the award period if the bidder agrees.

3-1.05 CONTRACT BONDS (PUB CONT CODE §§ 10221 AND 10222), replace section with:

A surety bond of one hundred percent (100%) of the contract price will be required of the successful bidder to guarantee the faithful performance of said contract, and also required must be a separate "Labor and Materials" surety bond of one hundred percent (100%) of the contract price and in accordance with the requirements of Section 3247-3252, inclusive of the Civil Code of the State of California. A sample of the required Performance Bond verbiage has been provided with the Contract Forms.

3-1.07 INSURANCE POLICIES, replace section with:

The Contractor and subcontractors will be required to obtain all insurance required under this paragraph and no work will be allowed until such insurance has been approved by the County. Copies of insurance certificates evidencing the required coverage must be furnished to the County. Certificates of insurance must indicate that the coverage cannot be reduced or cancelled until thirty days' written notice has been furnished the County.

1. Compensation Insurance: The Contractor must take out and maintain, during the life of this contract, workers' compensation insurance for all of their employees employed at the site of the project and, in case any work is sublet, the Contractor must require the subcontractor similarly to provide workers' compensation insurance for all of the latter's employees. If any class of employees engaged in hazardous work under this contract at the site of the project is not protected under the Workers' Compensation Statute, the Contractor must provide and must cause any subcontractor to provide insurance for the protection of employees engaged in hazardous work.

2. Bodily Injury Liability and Property Damage Liability Insurance: The Contractor must take out and maintain during the life of this contract such bodily injury liability and property damage liability insurance as must protect them from claims for damages for personal injury, including accidental death as well as from claims for property damage, including coverage on property in the care, custody and control of the Contractor which may arise from their operations under this contract, whether such operations by themself or by any subcontractor or by anyone directly or indirectly employed by either of them, and such insurance must be Public Liability Insurance, in an amount no less than $1,000,000 (combined single limit) per occurrence.

The above insurance must be of the broad form coverage type, affording coverage on property in the care, custody and control of the Contractor, and it is specifically required that the exclusions commonly referred to, in the insurance industry, as the "XCU Exclusions" must be deleted from the Contractor's insurance. Adequate proof of insurance in compliance with the above requirements must be furnished to the County. An additional insured endorsement to Contractor's liability insurance policy naming the County, its officers and employees as additional insureds, must be furnished to the County. Notwithstanding the above, Contractor's liability insurance policy must be endorsed as primary insurance.

Contractor will indemnify and defend Owner from all claims, demands, or liability arising out of or encountered in connection with this contract or the prosecution of work under it, whether such claims, demands, or liability are caused by Contractor, Contractor’s agents or employees, or subcontractors employed on the project, their agents or employees, or products installed on the project by Contractor or subcontractors, excepting only such injury or harm as may be caused solely and exclusively by Owner’s fault or negligence. Such indemnification must extend to claims, demands, or liability for injuries occurring after completion of the project, as well as during the work’s progress.

3-1.08 SMALL BUSINESS PARTICPATION REPORT, delete.

3-1.11 PAYEE DATA RECORD, delete.

3-1.18 CONTRACT EXECUTION, replace section with:

The contract must be executed by the successful bidder and must be returned with the following to County:

1. Bonds required in Section 3-1.05
2. Insurance Certificates required in Section 3-1.07
3. Form W-9
4. Form FHWA-1273

Contract and above listed documents must be returned to the Agency so that they are received within 10 days, not including Saturdays, Sundays, and legal holidays, after the bidder has received the contract for execution. Failure to do so must be just cause for forfeiture of the bid guaranty. The executed contract documents must be delivered to the following address: San Joaquin County Counsel, 44 N. San Joaquin St., Suite 679, Stockton, California 95202.

A successful bidder must be required to have a current W-9 form on file with the County. If not already on file, the form will be included in the contract documents to be executed by the successful bidder. The form must be completed and returned to the Agency by the successful bidder with the executed contract and contract bonds. A copy of the contract form is included in these special provisions.

3-1.19 BIDDERS' SECURITIES, replace section with:

The bid guaranties accompanying the bids of all bidders will be retained until the contract has been awarded by the Board of Supervisors, after which all such guaranties, except the first lowest responsible bidder's guaranty, will be returned to the respective bidders whose bids they accompany. The bid guaranty of the first lowest responsible bidder will be retained until the contract documents have been fully executed and filed with the County Recorder's office.

CONTRACT

This Contract made this ____ day of _____ 20__, by and between the COUNTY OF SAN JOAQUIN, a political subdivision duly organized and existing under the laws of the State of California, hereinafter referred to as "Owner," acting by and through its Board of Supervisors, who has executed and delivered this Contract in said capacity, and not otherwise, and _____, hereinafter referred to as "Contractor."

WITNESSETH

That the Owner and Contractor for the consideration stated herein, covenant and agree as follows:

(1) The Contractor must furnish all labor, materials, tools, equipment, services and transportation, and any and all other expenses necessary or incidental to the performance of the work for the _____, hereinafter called the "Work," all as more particularly set out in detail in the plans and Specifications, and in strict compliance with all the Contract documents referred to herein and including all modifications incorporated in these documents before their execution.

(2) The Contractor agrees to accept and the Owner agrees to pay under the conditions set forth in the Specifications, the prices set forth in the Bid, which prices by this reference must be considered a part of this Contract as though fully set forth herein.

/ / / / /

/ / / / /

/ / / / /

/ / / / /

The prices paid as herein provided must be considered full compensation for furnishing all materials and doing all the work embraced and contemplated in the Contract, and for all risks, loss or damage arising out of the nature of said work, or from the action of the elements or from any unforeseen difficulties or obstructions which may arise or be encountered in the prosecution of the Work until its acceptance by the Owner and for well and faithfully completing the Work according to the Plans and Specifications.

(3) The Contractor agrees to prosecute the Work with such diligence that this Contract must be completed on or before the expiration of the working days or completion date specified in the Specifications for the completion of the Work.

(4) This Contract consists of the following documents to wit:

a. Notice to Bidders

b. Federal Bid

c. This Contract

d. The Specifications for the Work

e. The Plans for the Work

f. Addenda, if required

g. Standard Specifications, Department of Transportation, State of California, dated 2022

h. Standard Plans, Department of Transportation, State of California, dated 2022

i. General Prevailing Wage Rates, Department of Transportation, State of California

j. Labor surcharge and equipment rental rates, Department of Transportation, State of California

k. Federal Minimum Wages Rates

l. Form FHWA-1273

The provisions set forth in the General Prevailing Wage Rates and the Labor Surcharge and Equipment Rental Rates (Items i. and j. above) will take precedence over any conflicting provisions in Contractor's Bid (Item b. above).

In signing this Contract, the Contractor makes the following certification:

> "I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this Contract."

IN WITNESS WHEREOF, eight identical counterparts of this Contract, each of which must for all purposes be deemed an original, thereof, have been duly executed by the parties hereinabove named, on the day and year first hereinabove written.

COUNTY OF SAN JOAQUIN,
a political subdivision of
the State of California

By_____
Chairman of the Board of Supervisors
of the County of San Joaquin,
State of California

"OWNER"

ATTEST: RACHÉL DeBORD
Clerk of the Board of Supervisors
of the County of San Joaquin,
State of California

By_____ (SEAL)
Deputy Clerk

Company Name_____

By _____

Title _____

Contractor's License No. _____

Class of License _____

Expiration Date _____

Federal Employer Identification No. _____

"CONTRACTOR"

ACKNOWLEDGEMENT BY OBLIGEE/CONTRACTOR

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

State of California
County of _____

On _____ before me, _____
(Notary)

personally appeared_____,
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal. (Seal)

Signature_____

CONTRACT APPROVED AS TO FORM:

By_____ Date _____
MATTHEW P. DACEY
Deputy County Counsel
Attorney for Owners

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: That WHEREAS, the County of San Joaquin, by Resolution passed_____, 20___, has given to_____ _____, hereinafter designated as the "Principal", a Notice of Intent to Award Contract for the Work described as follows:

WHEREAS, said Principal is required under the terms of said Notice to furnish a Bond for the faithful performance of such Notice.

NOW THEREFORE, we the Principal and _____ _____as Surety, an admitted Surety insurer pursuant to Code of Civil Procedure Section 995.120, legally doing business in California at _____, are held and firmly bound unto the County of San Joaquin, in the sum of _____ DOLLARS ($_____), lawful money of the United States of America, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that if the above bound Principal, his or its heirs, executors, administrators, successors or assigns, must in all things stand to and abide by and will and truly keep and perform, the covenants, conditions and agreements as defined in the said Contract and any alteration thereof made as therein provided on this or their part, to be kept and performed at the times and in the manner therein specified, and in all respects according to their true intent and meaning, and will indemnify and save harmless the County of San Joaquin, its officers and agents, as therein stipulated, then this obligation will become null and void, otherwise, it must be and remain in full force and virtue.

As a condition precedent to the satisfactory completion of the Contract, the above obligation must hold good for a period of one (1) year after the acceptance of the Work by County, during which time if Principal fails to make full, complete, and satisfactory repair and replacements and totally protect the County from loss or damage made evident during the period of one (1) year from the date of acceptance of the Work, and resulting from or caused by defective materials or faulty workmanship, the above obligation in penal sum thereof must remain in full force and effect. However, nothing in this paragraph will limit the obligation of the Surety and the obligation of the Surety must continue so long as any obligation of Principal remains.

And said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the work to be performed thereunder, or the Specifications accompanying the same, must in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract, or to the Work, or to the Specifications. All terms and conditions as set forth in the General Conditions, as supplemented, to the Contract are incorporated by reference and Surety acknowledges that it is bound thereby, including the disputes clause(s) therein.

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

IN WITNESS WHEREOF, this instrument has been duly executed by the Principal and Surety above named, on the _____ day of _____, 20____.

(Corporate Seal)

_____
Principal

By: _____

_____
Typed or Printed Name

Title: _____

(Corporate Seal)

_____
Surety

By: _____

_____
Typed or Printed Name

(Attached Attorney-in-Fact Certificate)

Title:_____

4 SCOPE OF WORK

4-1.06 DIFFERING SITE CONDITIONS (23 CFR 635.109)

4-1.06B Contractor's Notification, replace paragraph 1 with:

During the progress of the work, if subsurface or latent physical conditions are encountered at the site differing materially from those indicated in the contract or if unknown physical conditions of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in the work provided for in the contract, are encountered at the site, the party discovering such conditions shall promptly notify the other party in writing of the specific differing conditions before the site is disturbed and before the affected work is performed.

4-1.06C Engineer's Investigation and Decision, replace section with:

Upon written notification, the engineer will investigate the conditions, and if it is determined that the conditions materially differ and cause an increase or decrease in the cost or time required for the performance of any work under the contract, an adjustment, excluding anticipated profits, will be made and the contract modified in writing accordingly. The engineer will notify the contractor of the determination whether or not an adjustment of the contract is warranted.

No contract adjustment which results in a benefit to the contractor will be allowed unless the contractor has provided the required written notice.

No contract adjustment will be allowed under this clause for any effects caused on unchanged work.

4-1.13 CLEANUP, replace paragraph 2 with:

Do not remove warning, regulatory, or guide signs until directed by the Engineer.

5 CONTROL OF WORK

5-1.01 GENERAL, replace paragraph 9 with:

Unless otherwise directed by the Engineer, use contract administrative forms available at the CA Department of Transportation website.

5-1.02 CONTRACT COMPONENTS, revise item 1 of the list in paragraph 2 as follows:

If a discrepancy exists:

1. Governing ranking of Contract Parts in descending order is:
    - 1.1 Construction Contract
    - 1.2 Special Provisions
    - 1.3 Project Plans
    - 1.4 Caltrans Traffic Manual
    - 1.5 Revised Standard Specifications
    - 1.6 Standard Specifications
    - 1.7 Revised Standard Plans
    - 1.8 Standard Plans
    - 1.9 Supplemental Project Information

5-1.09 PARTNERING

5-1.09A General, replace paragraph 2 with:

For a contract with a total bid over $2 million and 60 or more working days, professionally facilitated project partnering is encouraged.

5-1.13 SUBCONTRACTING

5-1.20 COORDINATION WITH OTHER ENTITIES

5-1.20B Permits, Licenses, Agreements, and Certifications

5-1.20B(1) General, add:

When any portion of the work is shown to occur within the right-of-way of railroads, adjoining cities and/or other counties and agencies, you must obtain all of the necessary encroachment permits prior to the start work. Placement of traffic control signs within non-County right-of-way must not occur until the respective encroachment permit has been obtained. Contact information of agencies from which you must acquire permits/agreements will be shown on the plans and/or in the appendix of these specifications.

The Contractor must furnish the Engineer proof of permit application(s) within 5 working days after contract execution, and furnish approved Encroachment Permit(s) 5 working days prior to commencement of any work.

Full compensation for conforming to the requirements in this permit, including the cost of the permits/agreements, must be considered as included in the contract prices paid for the

various item or work and no additional compensation will be allowed therefor.

5-1.24 CONSTRUCTION SURVEYS, replace section with:

5-1.24A Department-Performed Construction Survey

Section 5-1.24A only applies when there is no bid item for Construction Survey shown on the Bid Item List.

Upon approval of staking request, the Engineer will provide the following stakes if applicable:

A. Control Stakes:

1. One set of line and grade reference stakes will be set on or adjacent to the right of way line.
2. One set of final grade stakes.
3. One set of curb and gutter stakes.
4. One set of sewer flowline stakes offset from trench centerline. Offset distance is to be determined in the field.
5. One set of culvert flowline stakes when determined necessary by the Engineer.

B. Structure Stakes:

1. Centerline of construction.
2. Exterior lines of Structure.
3. Bent Lines.
4. Bench Mark.

You must provide the Department at least a five-day's notice for all construction staking requests.

Replace **"5-1.24B Department Construction Surveys for Automated Machine Guidance"** with:

5-1.24B Contractor-Performed Construction Survey

Section 5-1.24B applies if a bid item for Construction Survey is shown on the Bid Item List.

The Contractor will provide the staking required for completion of the work.

Staking will consist of furnishing and setting construction stakes and markers by the

Contractor to establish the lines and grades required for completion of the work as shown on the plans and as specified in the Standard Specifications and Special Provisions and as necessary for the Engineer to check lines, grades, alignment and elevation.

Construction survey must be performed by a Licensed Land Surveyor in the State of California as necessary to control the work. The Contractor will determine the work and staking required and must be verified by the Engineer. Construction stakes and marks must be furnished and set with accuracy adequate to assure that the completed work conforms to the lines, grades, and section shown on the plans. Contractor must reset any survey monumentation disturbed by construction.

All computations necessary to establish the exact position of the work from control points will be made by the Contractor. All computations, survey notes, and other records necessary to accomplish the work must be neat, legible, and accurate. Copies of such computation notes and other records must be furnished to the Engineer prior to beginning work that requires their use.

Construction stakes damaged from any cause during the progress of the work will be replaced by the Contractor at their expense, as required or at the direction of the Engineer. Construction stakes must be removed from the site of work when no longer needed.

Upon completion of construction staking and prior to acceptance of the contract all computations, survey notes, and other data used to accomplish the work must be furnished to the Engineer and will become the property of San Joaquin County.

The contract lump sum price paid for **Construction Survey** will include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and doing all work involved in performing Construction Survey, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by Engineer.

Full compensation for furnishing and setting all other stakes necessary to construct the project will be considered as included in the prices paid for the various contract items of work, and no additional compensation will be allowed therefor.

5-1.27 RECORDS

5-1.27E Change Order Bills, replace section with:

Maintain Separate records for change order work costs. Change order bills must be submitted on forms approved by County.

Add:
5-1.27F Record Drawings

1. General

   a. Record Drawings refer to those documents maintained and annotated by the Contractor during construction to illustrate the final location of all structures, piping, equipment, electrical conduits and raceways, pull boxes, outlet boxes and cables.

b. The Contractor shall record all changes or deviations that vary from the original Contract Documents including all addenda, if any. Identify buried or concealed construction and utility features, new and existing that are revealed during the course of construction. Record the horizontal and vertical location of buried utilities that differ from the locations described, or which were not described on the Contract Documents.

c. When the configuration and arrangement of the Work is changed from that described in the Contract Documents, the authorizing document for the change, such as a Request for Information, Change Order, Shop Drawing, or Field Order, shall be clearly referenced on the Record Drawings as a comment.

d. Supplement the Record Drawings with detailed layout sketches, schedules, installation drawings and fabrication drawings.

2. Execution

a. Record Drawings shall be full size and maintained in a clean and legible condition. Engineer will provide one set of full size Drawings for use as a Record Drawing set.

b. Do not use the Record Drawing set for construction purposes.

c. At the completion of the work, but prior to final payment, submit the Record Drawing set to the Engineer.

d. Marking of the drawings shall be kept current and shall be done at the time the material and equipment are installed.

e. Annotations to the Record Drawings shall be legible and shall be made with an erasable colored pencil conforming to the following color code:

i. Additions and Final Dimensions – Red
ii. Deletions – Green
iii. Comments – Blue

f. Engineer will review the Contractor's updated Record Drawing mark-ups on a monthly basis during the evaluation of each progress payment.

i. Progress payment approval is contingent upon complete and up-to-date Record Drawing mark-ups.
ii. Payment approval will be delayed if mark-up drawings are not up-to-date.

Payment for complying with these provisions will be considered as included in the contract prices paid for the various items of work involved and no additional compensation will be allowed, therefore.

5-1.30 NONCOMPLIANT AND UNAUTHORIZED WORK, add:

The Department may reduce payment for noncompliant work left in place.

5-1.32 AREAS FOR USE, replace paragraph 2 with:

The Contractor shall make its own arrangements for any storage areas necessary for the proper execution of work. Plans shall be submitted to the County engineer for all proposed storage areas in order to obtain any necessary permits. The Contractor shall obtain written documentation from the land owner giving permission, and holding the County harmless. All necessary permits for storage areas and copies of the land owner's permission for use and indemnification of the County shall be submitted to the County

5-1.39 DAMAGE REPAIR AND RESTORATION

5-1.39C Landscape Damage

5-1.39C(1) General, delete paragraph 3.

5-1.43 POTENTIAL CLAIMS AND DISPUTE RESOLUTION

5-1.43A General, replace paragraphs 2-4 with:

For each potential claim, assign an identification number determined by chronological sequencing and the first date of the potential claim.

Use the identification number for each potential claim on the:

1. Initial Potential Claim Record form
2. Supplemental Potential Claim Record form
3. Full and Final Potential Claim Record form
4. Closed Potential Claim Record form

5-1.43A General, add after paragraph 6:

Where not preempted by Federal and/or State law, including but not limited to Public Contract Code 9204, Section 5-1.43, "Potential Claims and Dispute Resolution", of Standard Specifications and the following provisions, as modified herein, will be utilized as the remedy procedures for any disputes or claims arising under or related to performance of the contract.

At any time after the Engineer receives an Initial Potential Claim Record, you and the Department may agree in writing to different time limits than those set forth herein.

5-1.43D Full and Final Potential Claim Record, add after paragraph 5:

If the Full and Final Potential Claim Record is timely submitted to the Engineer and the Engineer fails to furnish a response within the time limits prescribed for issuing a written statement under Public Contract Code, section 9204, subdivision (d)(1), the Engineer shall

be deemed to have decided to reject the Full and Final Claim Record in its entirety.

Replace **"5-1.43E ALTERNATE DISPUTE RESOLUTION"** in its entirety with:

5-1.43E CONSTRUCTION CLAIM PROCEDURES

Attention is directed to the following Sections:
5-1.27E Change Order Bills
5-1.43B Initial Potential Claim Record
8-1.04B Standard Start
9-1.17 Payment After Contract Acceptance
9-1.22 Arbitration

The above provisions, as modified herein, will be utilized as the remedy procedures for any disputes or claims arising under or related to performance of the contract.

5-1.43E(1) Dispute Resolution

Submit a request, in writing, for an informal, meet and confer conference if you dispute the Engineer's response to your Full and Final Potential Claim Record. The Engineer's receipt of the request for the meet and confer conference must be evidenced by postal return receipt.

The Engineer will schedule a meet and confer conference within 30 days for settlement of the dispute. Then Engineer will furnish you with a written statement within 10 days following conclusion of the meet and confer conference identifying the portions of the claim that remain in dispute and the portions that are undisputed. Any payment due on undisputed portions of the claim are made within 60 days after the written statement is furnished.

Identify any remaining portions of the claim in writing for submittal to non-binding mediation. Mediation costs shall be shared equally between you and the Department.
If the parties cannot agree upon a mediator, each party shall select a mediator and those mediators shall select a qualified neutral third party to mediate with regard to the disputed portion of the claim.

Each party shall bear the fees and costs charged by its respective mediator in connection with the selection of the neutral mediator. If mediation is unsuccessful, the parts of the claim remaining in dispute shall be subject to applicable procedures, or as stated herein.

Claims (demands for monetary compensation or damages) arising under or relating to performance of the contract will be resolved by litigating the claim in a court of competent jurisdiction. Provided, however, if you and the Department mutually agree, in writing, to submit the claim to arbitration, the matter will go directly to arbitration proceedings. The agreement to pursue the matter through arbitration will be the parties' sole legal recourse such that the parties may not subsequently litigate the matter in any court proceeding except as to enforcement of the arbitration award or as otherwise provided in this section.

Arbitration, if expressly agreed upon in writing by the parties, will be pursuant to the provisions of California Code of Civil Procedure Section 1280 et seq., except wherever there are inconsistencies with those provisions and this section, this section will prevail. The arbitrator's award will be decided under and in accordance with the laws of this State,

supported by law and substantial evidence and, in writing, contain the basis for the decision, findings of fact and conclusions of law. In addition to vacating an award on the grounds set out in Sections 1286.2 and 1286.4 of the California Code of Civil Procedure, a court will vacate the award if after review of the award it determines either that the award is not properly supported by substantial evidence or that it is based in whole or in part by an error of law.

The arbitrator will have jurisdiction over the procedures and substantive matters relating to the claim as set out in the arbitration submittal agreement executed by the parties.

Arbitration will be initiated by a Complaint in Arbitration made in compliance with the requirements of said regulations. A Complaint in Arbitration by the Contractor will be made not later than 90 days after the date of service in person or by mail on the Contractor of the final written decision by the Department on the claim.

6 CONTROL OF MATERIALS

6-1.04 BUY AMERICA replace section with:

6-1.04 BUY AMERICA

6-1.04A General

Buy America requirements do not apply to the following:

1. Tools and construction equipment used in performing the work
2. Temporary work that is not incorporated into the finished project

6-1.04B Crumb Rubber (Pub Res Code § 42703(d))

Furnish crumb rubber with a certificate of compliance. Crumb rubber must be:

1. Produced in the United States
2. Derived from waste tires taken from vehicles owned and operated in the United States

6-1.04C Steel and Iron Materials

Steel and iron materials must be melted and manufactured in the United States except:

1. Foreign pig iron and processed, pelletized, and reduced iron ore may be used in the domestic production of the steel and iron materials
2. If the total combined cost of the materials produced outside the United States does not exceed the greater of 0.1 percent of the total bid or $2,500, the material may be used if authorized

Furnish steel and iron materials to be incorporated into the work with certificates of compliance and certified mill test reports. Mill test reports must indicate where the steel and iron were melted and manufactured.

All melting and manufacturing processes for these materials, including an application of a coating, must occur in the United States. Coating includes all processes that protect or enhance the value of the material to which the coating is applied.

6-1.04D Manufactured Products

Iron and steel used in precast concrete manufactured products must meet the requirements of section 6- 1.04C regardless of the amount used.

Iron and steel used in other manufactured products must meet the requirements of section 6-1.04C if the weight of steel and iron components constitute 90 percent or more of the total weight of the manufactured product.

6-1.04E Construction Materials

Buy America requirements apply to the following construction materials unless otherwise specified:

1. Non-ferrous metals
2. Plastic and polymer-based products such as:
   2.1. Polyvinylchloride
   2.2. Composite building materials
   2.3. Polymers used in fiber optic cables
3. Glass
4. Lumber
5. Drywall

Where one or more of these construction materials have been combined by a manufacturer with other materials through a manufacturing process, Buy America requirements do not apply unless otherwise specified.

Furnish construction materials to be incorporated into the work with certificates of compliance with each project delivery. Manufacturer's certificate of compliance must identify where the construction material was manufactured and attest specifically to Buy America compliance.

All manufacturing processes for these materials must occur in the United States.

7 LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

7-1.02 LAWS

7-1.02D Unmanned Aircraft Systems, delete references to website submission.

7-1.02K Labor Code

7-1.02K(2) Wages, replace paragraph 2 with:

The Contractor is required to pay the higher of the two wage rates published by the sources listed below:

1. Prevailing Wage Rates are available at the Department of Labor Web site, https://sam.gov/. Federal Wage rates for the project must be those in effect 10 calendar days prior to bid opening.

2. From the Department of Industrial Relations, general prevailing wage rates are available at http://www.dir.ca.gov/oprl/DPreWageDetermination.htm . These wage rates are not included in the Bid and Contract for the project. Changes, if any, to the general prevailing wage rates will be available at the Web site above.

Bidders are advised that a recent Department of Industrial Relation's determination indicates Fabricators are subject to prevailing wage requirements under the following conditions:

Workers employed by contractors or subcontractors are "employed in the execution of a contract for public works" when they are engaged in the off-site fabrication of items produced specially for the public works project and not for sale on the general market.

Where a contractor is producing products both for its own projects and for sale on the general market, the test for whether a pre-fabricated item is specially made for the public works project turns on factors such as whether the item was produced in accordance with the plans and specifications of the architects and/or engineers for that project and/or shop drawings based thereon such that the item differs from a standard, generic item.

Standard items must be considered to be produced specially for the public works project if they were modified to meet the specific requirements of that project.

For the foregoing reasons, prevailing wages must be paid to the employees of contractors and subcontractors engaged in the off-site fabrication or pre-fabrication of items specially produced for public works projects.

7-1.02K(3) Certified Payroll Records (Labor Code §1776), replace paragraphs 6 through 10 with:

Certified payroll records must be submitted to San Joaquin County Department of Public Works, Attention: Field Engineering, P.O. Box 1810, Stockton, California 95201. Electronic submittal must not be accepted.

All contractors and subcontractors must furnish electronic certified payroll records directly to the Labor Commissioner, also known as Division of Labor Standards Enforcement.

7-1.02K(4) Apprentices, add**:**

Unless such provision would conflict with a state or federal law or regulation applicable to a particular contract for a public works project, County contracts for public works in excess of $200,000 will contain provisions pursuant to which each contractor or subcontractor will make a good faith effort to employ apprentices who are enrolled in and participating in a viable apprenticeship program serving the San Joaquin County and approved by the State Department of Apprenticeship Standards. This apprenticeship requirement will apply for each apprenticable craft or trade in which the contractor employs workers in performing any of the work under the contract. A contractor may evidence its good faith effort by complying with California Labor Code Section 1777.5 and the implementing regulations and seeking apprentices from apprenticeship programs serving the San Joaquin County.

A contractor employing apprentices pursuant to this section will employ apprentices in a ratio consistent with the provisions of California Labor Code or Federal requirements as applicable for federal aid contracts.

This section will not be construed to exempt a contractor from any other applicable requirement imposed upon the contractor by federal or state law.

7-1.02K(6) Occupational Safety and Health Standards

7-1.02K(6)(j)(ii) Lead Compliance Plan, replace paragraph 1 with:

Section 7-1.02K(6)(j)(ii) applies when the contract documents require a lead compliance plan.

7-1.06 INSURANCE, replace section with:

Refer to special provision Section 3, "Award and Execution of Contract," for insurance requirements.

8 PROSECUTION AND PROGRESS

8-1.04 START OF JOB SITE ACTIVITIES

8-1.04B Standard Start, replace section with:

Do not enter the work site or initiate construction operations until you have submitted to the County in proper form all contract, surety bonds, evidences of insurance and all other documents required of you in connection with the contract and all such documents have been approved and/or executed, as appropriate, by County. Written notice to proceed must be issued by the Department.

When traffic signal materials are part of the contract, you must furnish material submittals to the Engineer within 15 calendar days after the contract is awarded and must show the estimated date of delivery for traffic signal materials, which include, but not limited to:

- Traffic signal standards or lighting standards (e.g., poles and/or mast arms)
- Traffic signal head/housing modules
- Traffic signal controller cabinets and/or service pedestals

Once material submittals are approved by the Engineer, provide a statement from the traffic signal vendor indicating that all of the necessary traffic signal material has been ordered and accepted by said vendor. Written evidence, indicating that the necessary traffic signal equipment is in your possession, must be provided to the Engineer prior to entering the work site or initiating construction operations.

The working days must begin on December 2, 2024, contingent upon prior receipt of notice to proceed. If the notice is not received before the specified date, working days must begin on the first working day of the week following the date of the notice to proceed.

The beginning of working days may be rescheduled by mutual agreement between the Contractor and the Department by written correspondence.

When the plans indicate that Public Outreach is necessary for this project, the Contractor must arrange an informational meeting for the general public two weeks prior to the start of construction concerning the project scope and timing. Meeting site must be in a public location (i.e.: school, park, fire house…) within three blocks of project site unless otherwise approved by the Engineer. A public address (PA) system will be required for the meeting. Location and time of the meeting must be approved by the Engineer. The Contractor must perform public outreach by advertising the meeting in the local newspaper and sending written notifications to the residents located within project limits. Full compensation for performing this meeting, including acquiring meeting site, supplying PA system, advertising, notifying residents, and all other incidentals, must be considered as included in the prices paid for various contract items of work and no separate payment will be made therefor. **If COVID-19 restrictions prevent an in-person public meeting, said meeting shall be conducted online using a video-telephony program such as Zoom or approved equal.**

8-1.05 TIME, replace paragraphs 1 through 3 with:

The Contractor must complete all work before the expiration of **150 working days.**

9 PAYMENT

9-1.02 MEASUREMENT

9-1.02C Final Pay Item Quantities, add:

Final Pay Quantities are identified by the letter "(F)" in the bid item lists of the Notice to Bidders and Bid in the "Item No." column.

9-1.03 PAYMENT SCOPE, add:

The prime contractor or subcontractor shall pay to any subcontractor, not later than **seven days** after receipt of each progress payment, unless otherwise agreed to in writing, the respective amounts allowed the contractor on account of the work performed by the subcontractors, to the extent of each subcontractor's interest therein. In the event that there is a good faith dispute over all or any portion of the amount due on a progress payment from the prime contractor or subcontractor to a subcontractor, the prime contractor or subcontractor may withhold no more than 150 percent of the disputed amount. Any violation of this requirement shall constitute a cause for disciplinary action and shall subject the licensee to a penalty, payable to the subcontractor, of 2 percent of the amount due per month for every month that payment is not made. In any action for the collection of funds wrongfully withheld, the prevailing party shall be entitled to their attorney's fees and costs. The sanctions authorized under this requirement shall be separate from, and in addition to, all other remedies, either civil, administrative, or criminal. This clause applies to both DBE and non-DBE subcontractors.

9-1.07 PAYMENT ADJUSMENT FOR PRICE INDEX FLUCTUATIONS, delete.

9-1.16 PROGRESS PAYMENTS

9-1.16A General, add after paragraph 1:

The Engineer's Monthly Estimate Period must begin on the first Monday following the 15th day of the month. Payment must be due the month following the Engineer's Monthly Estimate Period.

9-1.16F Retentions, replace section with:

No retainage will be held by the Department from progress payments due to the prime contractor. Prime contractors and subcontractors are prohibited from holding retainage from subcontractors. Any delay or postponement of payment may take place only for good cause and with the Department's prior written approval.

Any violation of these provisions Prompt Progress Payment and Prompt Payment of Withheld Funds to Subcontractors shall subject the violating contractor or subcontractor to the penalties, sanctions, and other remedies specified in Section 7108.5 of the California Business and Professions Code and Section 10262 of the California Public Contract Code. This requirement shall not be construed to limit or impair any contractual, administrative or judicial remedies, otherwise available to the contractor or subcontractor in the event of a dispute involving late payment or nonpayment by the contractor, deficient subcontractor performance and/or noncompliance by a subcontractor. This clause applies to both DBE and non-DBE subcontractors.

9-1.17 PAYMENT AFTER CONTRACTOR ACCEPTANCE

9-1.17C Proposed Final Estimate, add:

The Contractor bid item “Force Account” will not be included in the calculation of the total bid price for the purposes of determining an adjustment of overhead costs as set forth in this section.

The Force Account bid item shall only be used if authorized by a County representative. Force Account will only be used as-needed, and a portion of the bid item amount may be used or it may not be used at all.

10 GENERAL

10-1 GENERAL

10-1.02 WORK SEQUENCING

10-1.02B Traffic Elements, add before paragraph 1:

When the work includes the installation of underlying conduits or loop detectors, do not place the uppermost layer of new pavement until all underlying conduits and loop detectors are installed.

10-1.02E Excavation, add before paragraph 1:

Excavation within 6 feet of the existing traveled way must not precede the paving operation by more than 5 working days unless:

1. Authorized

2. Material is placed and compacted against the vertical cuts within 2 feet of the existing traveled way. During excavation operations, native material may be used for this purpose except once the placement of the structural section starts, structural material must be used. Place the material up to the top of the existing pavement and taper at a slope of 4:1 (horizontal: vertical) or flatter to the bottom of the excavation. Do not use treated base for the taper.

Replace **"10-1.05 RESERVED"** with:

10-1.05 RELATIONS WITH LOCAL SCHOOLS

Schools/educational centers within the vicinity of the project must be provided a 72-hours advance notice prior to commencement of any work. Due to the unforeseen possibility of the presence of students at schools/educational centers, any work obstructing direct access to schools/educational centers must be performed on the weekend. Weekday work near schools may be performed before or after pickup/drop off hours if written approval is obtained by the School District and the Resident Engineer. Written approval must indicate permissible work (time) windows. There will be no exceptions without these prior approvals. No extra or additional compensation is implied for performing work during weekends.

10-4 WATER USAGE, replace item 4 of paragraph 3 with**:**

4. Dust palliative for dust control requires preapproval by the Engineer.

10-5 DUST CONTROL, replace item 1 of paragraph 2 with:

1. Applying non-potable water under Section 10-6, "Watering," of the Standard Specifications and these Special Provisions.

10-5 DUST CONTROL, add after paragraph 2:

No separate payment will be made for any work performed or materials used to control dust resulting from the Contractor's operations either inside or outside the right-of-way, or for controlling dust caused by public traffic during Contractor's working hours. Full compensation for such dust control will be considered as included in the prices paid for the various items of work involved and no additional compensation will be allowed therefor.

When the Engineer orders the application of water for the purpose of controlling dust caused by public traffic during non-working hours after the Contractor has shut down operations for overnight, for a weekend, for a holiday or for temporary suspension of work, in accordance with Section 8-1.06, "Suspensions," of the Standard Specifications, such work will be paid for at the contract unit price for **Dust Control (Non-working Hours)**.

Payment quantity of Dust Control (Non-working Hours) must be measured and paid for as follows:

After working hours.....1 each Dust Control (Non-working Hours) per day

Saturday or non-working day..... 2 each Dust Control (Non-working Hours) per day

Sunday or Holiday..... 3 each Dust Control (Non-working Hours) per day

No adjustment of compensation will be made for the unit item of Dust Control (Non-working Hours) for any increase or decrease in the hours of work or the quantity of water required, regardless of the reason for such increase or decrease.

10-6 WATERING, replace sentence 1 of paragraph 3 with:

Water for dust control on this project must be non-potable.

If non-potable water is unavailable, use of potable water for dust control is permissible with the approval of the Engineer. When non-potable water is permissible, it must either be recycled water or non-potable water developed from other sources. Contractor must obtain a permit for potable water usage and pay all applicable fees from San Joaquin County Public Works Community Infrastructure Engineering Division or to any other outside agency for obtaining their potable water.

Provide written notification to the Engineer of the intended source(s) to be used, prior to starting work on the project.

10-6 WATERING, add after paragraph 11:

When the contract does not include a contract pay item for **Watering**, full compensation for Watering must be considered as included in the contract prices paid for the various items of work involved.

Replace **"10-7 RESERVED"** with

10-7 CONSTRUCTION NOISE

Construction related noise shall be in compliance with all applicable noise ordinances of the local authority having jurisdiction

Replace "**10-8 RESERVED"** with

10-8 PROTECTION OF EXISTING FACILITIES

Ensure the preservation of the current pavement during all construction activities. Record a video of the pavement condition adjacent to the waterline installation at least two weeks before construction commences and submit a copy to the Engineer. Any damage inflicetd by the Contractor's activities must be rectified at the contractor's cost.

12 TEMPORARY TRAFFIC CONTROL

12-1 GENERAL

12-1.01 GENERAL, add:

Submit a construction area Traffic Control Plan, for approval by the County, at least 10 working days prior to start of work.

12-1.03 CONSTRUCTION , add:

It is the responsibility of the Contractor to install and coordinate their traffic control plan with other Contractors and utility companies working on adjacent roadways so as to avoid delays and conflicts to either project.

The Contractor is responsible for development, submitting for approval, and implementation of a traffic control plan as well as the removal of all temporary traffic control devices. The Contractor shall present at the pre-construction conference, for the County Engineer's approval, a complete and comprehensive Traffic Control Plan describing how traffic control will be achieved during the life of the project. The Contractor is also responsible for submitting, obtaining and abiding by a City of Stockton Encroachment Permit for work within the City's right-of-way, if necessary.

The Contractor shall provide traffic control within the project's work area and comply with the latest edition of the "Work Area Traffic Control Handbook" published by Building News Inc., "California Manual on Uniform Traffic Control Devices, Revision 3" (2014 CA MUTCD, Revision 6) hereinafter referred to as the Traffic Control Manual or MUTCD, and Caltrans Standard Plans, for items related to traffic control within the work area, described in these Special Provisions, and as directed by the County Engineer.

The provisions in this section will not relieve the Contractor from his responsibility to provide such additional devices or traffic management take such measures as may be necessary to comply with the provisions of Section 7-1.04, "Public Safety", of the 2022 Caltrans Standard Specifications. If any component in the traffic control system is displaced or ceases to operate or function as specified from any cause during the progress of the work, the Contractor shall immediately repair or replace said component and shall restore the component to its original.

If working 30 minutes after sunset or later, lighting and traffic control shall comply with California Code of Regulations Title 8, Division 1, Chapter 4, Subchapter 4, Article 3, Section 1523 – Illumination and Traffic Control Manual.

At the end of each workday, the Contractor shall remove all components of the traffic control system, except portable delineators placed along a pavement elevation differential, or as required by the County Engineer.

Before obstructing any private driveway entrance or County Street with equipment or other barriers for any prolonged period of time, the Contractor shall notify the known users of the respective thoroughfare(s) involved and shall provide access for pedestrian traffic to and from the street.

If closure of any street is necessary during construction, the Contractor shall submit a formal application and complete detour plan for a street closure to the County at least 15 working days prior to the needed street closure in order for the County to review the application. The detour plan shall include all necessary signing and detour requirements.

All hauling by motor vehicles shall be confined to designated truck routes, except where otherwise authorized in writing by the County Engineer.

The Contractor shall make its own arrangements for any necessary off-site storage areas necessary for proper execution of work. Plans shall be submitted to the County engineer for all proposed offsite storage areas in order to obtain any necessary permits. The Contractor shall obtain all necessary permits for offsite storage and shall submit copies of the owner's written permission for such private property use.

The Contractor will not be allowed use of public street right-of-way or public land for work or storage areas without written approval of the County Engineer.

Nothing herein shall be construed to entitle the Contractor to the exclusive use of any public street, alley way, or parking area during the performance of the Work hereunder, and it shall so conduct its operations as not to interfere unnecessarily with the authorized work of the County, utility companies, or other agencies, or public access in such streets, alleys, ways, or parking areas. The Contractor shall be responsible for any damage to public facilities in the public right-of-way. Any damage done to these public facilities will be repaired and/or replaced by the Contractor to the satisfaction of the County Engineer.

The fact that rain or other causes may force suspension or delay of the work shall not relieve the Contractor of his responsibility for maintaining traffic around the project and providing local access as specified herein. The Contractor shall at all times keep on the job such materials and equipment as may be necessary to keep streets and driveways within the project area open to traffic and in good repair.

Should the Contractor fail, in the opinion of the County Engineer, to provide all the materials, work force and equipment necessary to maintain traffic around the work area as set forth herein, the County, upon the recommendations of the County Engineer, may take steps necessary to suspend the Contract. The County may then, upon such suspension, cause such work to be done as may be necessary to maintain traffic, and charge same against the Contractor and sureties including overhead and legal expenses.

12-1.04 Payment, add:
Temporary Traffic Control, including the Traffic Control Plan, shall be included in the Traffic Control System bid item. If no separate bid item is shown for the described work, full compensation must be considered as included in the payment for the various items of work involved.

The adjustment provisions in Section 4-1.05, "Changes and Extra Work", of the 2022 Caltrans Standard Specifications, shall not apply to the item of Traffic Control System. Adjustments in compensation for Traffic Control will be made only for increased or decreased traffic control system required by changes ordered by the County Engineer and will be made on the basis of the cost of the increased or decreased traffic control necessary. Such adjustment will be made on a force account basis as provided in Section 9-1.04, "Force Account Payment", of the 2022 Caltrans Standard Specifications for increased work, and estimated on the same basis in the case of decreased work.

12-3 TEMPORARY TRAFFIC CONTROL DEVICES

12-3.11 CONSTRUCTION AREA SIGNS
12.3.11A General
12-3.11A(1) Summary, replace paragraph 1 with:

Section 12-3.11 includes specifications for placing, installing, maintaining, and removing construction area signs.

Unless otherwise described, advance warning and detour signs (when applicable) outside of the construction zone will be furnished, installed, and maintained by County forces. Detour Plan will either be available in the appendix of these Project specifications or as supplemental information on www.bidexpress.com. Applicable Advanced Warning Signs will be available upon request to the awarded contractor.

12-3.11B Materials
12-3.11B(5) General Information Signs
12-3.11B(5)(a) General, replace "Reserved" with:

When the plans or specifications indicate that construction funding identification or other general information signs are to be installed by County forces, you must maintain and relocate said signs as necessary, or as directed by the Engineer at no additional cost.

After project completion, salvage the signs and deliver them to the Department's Corporation Yard located at 1810 East Hazelton Avenue, Stockton, California. Contact Public Works' Dispatch at (209) 468-3074 to make arrangements to have County personnel receive the salvaged materials.

12-3.11C Construction, include with:

Construction area signs shall be furnished, installed, maintained and removed by the Contractor when no longer required. The term "Construction Area Signs" shall also include

temporary object markers and portable delineators required for the direction of public traffic through or around the work area during construction. Object markers and portable delineators listed or designated on the plans shall be furnished, installed, maintained, and removed by the Contractor in the same manner specified for construction area signs.

12-3.11D Payment, replace "Not Used" with:

Temporary Traffic Control Devices shall be included in the Traffic Control System bid item. If no separate bid item is shown for the described work, full compensation must be considered as included in the payment for the various items of work involved.

The cost of furnishing, installing and maintaining signs, lights, barricades, and other facilities for the safety, sole convenience, and direction of public traffic around the work area, all as shown on the plans or as directed by the County Engineer, shall be considered as included in the Traffic Control System costs and no additional compensation will be allowed.

Any additional Area Construction Signs, directed by the County Engineer and not originally identified in the Traffic Control System submittal, shall be tracked through Force account work.

12-3.32 PORTABLE CHANGEABLE MESSAGE SIGNS
12-3.32A(1) Summary, replace paragraph 1 with:

Section 12-3.32 is applicable when the contract includes a bid item for portable changeable message signs. Said section includes specifications for placing, maintaining, and removing portable changeable message signs.

12-3.32C Construction, add between paragraphs 10 and 11:

Display portable changeable message signs 7 calendar days prior to commencement of work. Traffic Control Plan must indicate the proposed locations of advanced warning portable changeable message signs.

12-3.32D Payment, replace "Not Used" with:

Payment quantity for Portable Changeable Message Sign is measured by the unit from actual count.

If no separate bid item is shown for the described work, full compensation must be considered as included in the payment for the various items of work involved.

12-4 MAINTAINING TRAFFIC

12-4.02 TRAFFIC CONTROL SYSTEMS
12-4.02A(1) Summary, replace paragraph 1 with:

Section 12-4.02 includes specifications for providing traffic control systems to close traffic lanes with stationary and moving lane closures.

12-4.02A(3)(d) Traffic Break Schedule, delete.

12-4.02C(2) Lane Closure System

12-4.02C(2)(a) General, delete.

12-4.02C(3) Closure Requirements and Charts

12-4.02C(3)(a) General, replace section with "Reserved."

Revise **Section 12-4.02C(3)(k)** title to **"Conventional Highway Lane Requirements,"** and add**:**

Most of the construction is within County owned property, right-of-way, and easements and provisions shall be made for the safe passage of vehicular and pedestrian traffic around the area of the work at all times. Local and emergency traffic shall be given access to their destination through the project area at all times, including access to private driveways. Access to all residents/businesses shall be maintained at all times during the construction period.

The Contractor shall be responsible for keeping the local Police Department and local Fire Department informed of obstructions to either public or private roads caused by this operations.

The Contractor shall post "No Parking, Tow-Away" signs on barricades along the roadway and within any parking lots at least 72 hours prior to the construction work in that area. Should the construction work not occur on the specified day, new notices shall be distributed by the Contractor. The Contractor shall not post "No Parking, Tow-Away" signs barricades across more than 1,000 linear feet of roadway at a time.

Traffic lane and street closures shall be per the approved Traffic Control Plans, and under no circumstances shall the Contractor close off a street for any period of time without prior approval from the County Engineer.

The full width of the traveled way shall be open for use by public traffic on Saturdays, Sundays, designated County holidays, and after 3:00 p.m. on Fridays. Not less than two travel lanes (one in each direction) shall be open for use by public traffic on the day preceding designated County holidays and when construction operations are not actively in progress.

No lane closures are allowed before 8:15 AM.

When school is in session the following criteria apply for Gettysburg Place and West Lincoln Road Street and West Benjamin Holt Drive Street:

- No lane closures are allowed Monday through Friday from 7:30AM to 8:30AM.
- No lane closures are allowed Mondays between 1:15 PM and 2:00 PM and on Tuesday through Friday between 2:15 PM and 3:00 PM.
- Only one intersection within the project site including Gettysburg Place can be under traffic control at any given time, unless otherwise approved by the County Engineer.

The Contractor shall coordinate with Lincoln Elementary School and the adjacent commercial lots when construction operations will be present within their vicinity.

Unless otherwise described, a minimum of 1 paved traffic lane, not less than 10 feet in width, must be open for use by public traffic at all times. When construction operations are not actively in progress, not less than 2 such lanes must be open to public traffic.

On roadways with 2 or more traffic lanes in each direction, conduct traffic operations with at least 1 paved traffic lane open in each direction at all times.

Under one-way reversing traffic control operations, you may stop traffic in one direction for periods not to exceed 10 minutes. After each stoppage, all accumulated traffic for that direction must pass through the work zone before another stoppage is made.

Revise **Section 12-4.02C(3)(m)** title to **"Road Closure Requirements,"** and add:

When road closure is indicated on the plans, divert through traffic around the project. Unless specific restrictions are indicated on the plans, or elsewhere within these special provisions, local traffic must be permitted to pass through construction operations at all times with as little inconvenience and delay as possible.

Only streets receiving an application of slurry seal are allowed to be closed to traffic for a maximum of four hours. To avoid inconveniencing an entire area, streets to be slurry sealed must not be closed simultaneously.

12-4.02C(7) Traffic Control System Requirements

12-4.02C(7)(a) General, replace paragraph 1 with:

When placing traffic stripes and pavement markers, control traffic with stationary or moving lane closures. During other activities, control traffic using stationary lane closures.

12-4.02C(7)(b) Stationary Closures, add after paragraph 2:

For traffic under one-way control on unpaved areas, the cones shown along the centerline need not be placed.

If the pilot car is used for traffic control, the cones shown along the centerline need not be placed. The pilot car must have radio contact with personnel in the work area. Operate the pilot car through the traffic control zone at a speed not greater than 25 miles per hour.

12-4.02D Payment, replace section with:

Traffic Control System, including Flaggers, shall be included in the Traffic Control System bid item. If no separate bid item is shown for the described work, full compensation must be considered as included in the payment for the various items of work involved.

The adjustment provisions in Section 4-1.05, "Changes and Extra Work", of the 2022 Caltrans Standard Specifications, shall not apply to the item of Traffic Control System. Adjustments in compensation for Traffic Control will be made only for increased or decreased traffic control system required by changes ordered by the County Engineer and will be made on the basis of the cost of the increased or decreased traffic control necessary. Such adjustment will be made on a force account basis as provided in Section 9-1.04, "Force Account Payment", of the 2022 Caltrans Standard Specifications for increased work, and estimated on the same basis in the case of decreased work.

In lieu of Section 12-4.02, of the 2022 Caltrans Standard Specifications, the full cost of furnishing all flaggers to provide for the passage of public traffic through the work area under the provisions in Section 7-1.03 and Section 7-1.04, of the 2022 Caltrans Standard Specifications, shall be considered as included in the various Contract items of work and no additional compensation will be allowed.

12-6 TEMPORARY PAVEMENT DELINEATION

12-6.01 GENERAL, replace paragraph 1 with:

Section 12-6 includes specifications for placing, applying, maintaining, and removing temporary pavement delineation.

12-6.03 CONSTRUCTION
12-6.03A General, replace sentence 2 of paragraph 1 with:

Temporary pavement delineation must consist of a lane line, centerline, and pavement markings for traveled ways open to traffic.

12-6.03B Temporary Lane Line and Centerline Delineation, add between paragraphs 2 and 3:

Cement the markers to the surfacing with the adhesive recommended by the manufacturer, except do not use epoxy adhesive to place pavement markers in areas where removal of the markers will be required.

Temporary lane line delineation placed on portland cement concrete pavement must consist of a white traffic stripe supplemented by a black-contrast traffic stripe and clear

retroreflective pavement markers. Place the temporary lane line and clear retroreflective pavement markers longitudinally at intervals not exceeding 48 feet. The black contrast stripe and clear retroreflective pavement markers may remain in place at locations where you will be placing permanent pavement delineation.

12-6.03C Temporary Edge Line Delineation, replace lines 1.1 and 2.1 of paragraph 1 with:

1.1 Solid traffic stripe tape of the same color and detail as the stripe being replaced

2.1 Solid traffic stripe tape of the same color and detail as the stripe being replaced

12-6.03C Temporary Edge Line Delineation, replace paragraph 2 with:

You may apply temporary traffic stripe paint of the same color as the stripe being replaced instead of solid temporary traffic stripe tape where the removal of the temporary traffic stripe is not required.

12-6.03C Temporary Edge Line Delineation, add to start of paragraph 4:

Channelizers used for temporary edge line delineation must be one of the 36-inch, orange surface-mounted types, and on the Authorized Material List.

12-6.03D Temporary Traffic Stripe, Pavement Marking, and Pavement Markers
12-6.03D(1) General, replace "Reserved" with:

If pavement markings are obliterated and temporary pavement delineation to replace the markings is not shown, apply temporary pavement markings prior to opening traveled ways to traffic.

Temporary markers and/or markings shall be installed by the Contractor for any existing crosswalk line, limit line, arrow, and other legend or traffic lane line removed or damaged by the work activity prior to the end of the work shift and before opening the lanes for traffic.

Requirements for Placing Temporary Pavement Markings and Striping

Existing Striping	Temporary Striping
12-inch crosswalk line	3 – 4 inch white stripes appearing as 1– 12 inch stripe
8-inch solid line	1 – 4 inch white solid stripe
4-inch broken white	1 – 4 inch white stripe (typically 7' long, 17' gaps*)
4-inch broken yellow	1 – 4 inch yellow stripe (typically 7' long, 17' gaps*)
Double yellow	2 – 4 inch yellow solid stripes 3 inches apart

* Consult Chapter 3 of the California MUTCD for further details. The dimensions for broken lines apply for streets with posted speed limits of 35 MPH or less. For speed limits of 40

MPH or more, the dimensions are for 12' long stripes with 36' gaps.

For Temporary Marking and Temporary Striping materials, refer to the *"Temporary (Removable) Striping and Pavement Marking Tape (180 days or less)"* section of the Authorized Materials List for Signing and Delineation Materials from Caltrans.

Replace the 1st Paragraph of section 12-6.04 with:

There is no specific bid item for temporary traffic striping or pavement markings. The work shall be considered included in all other bid items and no additional compensation will be made therefore.

12-6.03D(4) Temporary Pavement Marking Tape, add to end of paragraph 1:

Temporary pavement marking tape must be the same color and dimensions as the pavement marking detail being replaced, or as superseded by a subsequent traffic pattern or new striping detail.

12-6.03D(5) Temporary Pavement Marking Paint, add to end of paragraph 1:

Temporary pavement marking paint must be the same color and dimensions as the pavement marking detail being replaced, or as superseded by a subsequent traffic pattern or new striping detail.

12-6.04 PAYMENT, add between paragraphs 1 and 2:

In Section 84, "Markings," references made to 6-inch stripe must be revised to 4-inch stripe unless otherwise indicated on the plans. Application rates defined for materials placed per linear foot under Section 84 must be revised based on the width of the striping and marking as defined on the project plans.

If no separate bid item is shown for the described work, full compensation must be considered as included in the payment for the various items of work involved.

Replace 12-8 RESERVED with:

12-8 CONSTRUCTION ZONE STANDARDS

12-8.01 GENERAL

12-8.01A Summary

Contractor is responsible for maintaining a safe work area during and after working hours.

12-8.02 Maintaining Traffic

12-8.02A Tow-Away Lanes

Contractor shall be responsible for keeping "Tow-Away No Stopping" traffic lanes clear during the effective hours posted.

12-8.02B Metal Plating

Any temporary metal plating and metal bridging shall be coated with a non-skid and rust inhibitive product. Examples of non-skid metal plating are surfaces with waffle or herringbone pattern undulations. Plating shall be installed with no edges or corners sticking up and with no bouncing or shifting. Plates shall be secured against shifting by tack welding, or fasteners. Any non-skid product shall have a friction factor of 0.35 or greater as measured by the California Test 342.

Plates shall be free of any openings greater than ¼ inch.

12-8.02C Transitioning (Ramping)

Whenever the grade difference between the existing pavement and the excavated area is greater than ¼ inch, Contractor shall provide longitudinal and transverse transitions prior to opening the lanes to traffic. The maximum slope on these transitions shall be 1:18. Transitions shall be installed with hot mix asphalt. This section applies to newly constructed roadway base, manholes, metal plating, bridging, trenching etc.

Cold mix asphalt may be used in lieu of hot mix asphalt for temporary ramping. The contractor is responsible for maintaining cold mix asphalt at all times and complying with ADA regulations if applicable. Cold mix shall comply with Sections 4-1.13 and 7-1.04.

ractor is responsible for maintaining cold mix asphalt at all times and complying with ADA regulations if applicable. Cold mix shall comply with Sections 4-1.13 and 7-1.04.

12-8.03 Security and Contractor Property

The Contractor shall be responsible for the security of all Contractor property including, but not limited to, equipment, material that has not yet been installed, and tools. If the Contractor fails to properly lock, store, and secure equipment, tools, materials, etc., his property may be stolen. This area has a higher risk of theft than most areas within the City. The Contractor should expect trespassing within the project and staging areas. The Contractor shall do his best to deter trespassing onto the project and staging areas. No additional payment shall be made for added security measures. No additional payment shall be made for equipment, tools, materials, or any other property of the Contractor that is lost or stolen.

12-8.04 PAYMENT

Construction zone standards shall be included in the Traffic Control System bid item. If no separate bid item is shown for the described work, full compensation must be considered as included in the payment for the various items of work involved.

13 WATER POLLUTION CONTROL

13-1 GENERAL

13-1.01 GENERAL

13-1.01A Summary, add:

This project is anticipated to disturb **between 1 and 5 acres** of soil and is considered to be a Linear Underground Project (LUP)

13-1.01B Definitions, add:

Department: When used in reference to manuals and General Permits, Department must mean San Joaquin County Department of Public Works.

13-3 STORMWATER POLLUTION PREVENTION PLAN

13-3.01C Submittals

13-3.01C(2)(a) General, replace paragraph 1 with:

Within 7 days of Contract approval:

1. Submit 3 copies of your SWPPP for review. You may assign a QSD other than the WPC manager to develop the SWPPP. Allow 5 days for the Department's review. The Engineer provides comments and specifies the date when the review stopped if revisions are required.
2. Change and resubmit a revised SWPPP within 5 days of receiving the Engineer's comments. The Department's review resumes when a complete SWPPP has been resubmitted.
3. When the Engineer authorizes the SWPPP, submit an electronic copy and 4 printed copies of the authorized SWPPP.
4. If the RWQCB requires review of the authorized SWPPP, the Engineer submits the authorized SWPPP to the RWQCB for its review and comments.
5. If the Engineer requests changes to the SWPPP based on the RWQCB's comments, amend the SWPPP within 5 days.

Upon approval of SWPPP by Engineer, Contractor must submit Permit Registration Documents (PRDs) on the State's online "SMARTS" system for any project that will disturb one acre or more of earth, or any projects that involve a smaller disturbance, but is part of a larger project plan. The Contractor must register with the State as a data submitter and must submit online the required PRDs including: the online NOI form; risk level determination information; a Storm Water Pollution Prevention Plan (SWPPP); a site map; and a vicinity map. The County will be the Legally Responsible Person (LRP) and will establish an LRP-account and certify the PRD submittals once they have been uploaded by the Contractor.

Contractor must provide payment of fees. Fees are calculated per acre of disturbed area as determined by the SWRCB. The SWPPP must comply with the requirements of the Construction General Permit. Further information regarding filing a NOI, calculating fees and preparing a SWPPP can be obtained from the SWRCB. Call the SWRCB at 916-341-5536 and 1-(866)-563-3107 or visit the website at http://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.shtml for more information on the General Permit and associated requirements.

13-3.04 Payment, add:

When there are no separate bid items for Rain Event Action Plan, Storm Water Sampling and Analysis Day, and Storm Water Annual Report, payment for said items will be considered as included in the various items of work involved and no additional payment will be made therefor.

Payment for preparing the PRD and PRD fees must all be considered as included in the contract lump sum price paid for **Prepare Storm Water Pollution Prevention Plan.**

Implementation of said plan must be considered as included in the contract lump sum price paid for **Prepare Storm Water Pollution Prevention Plan**.

For each failure to submit a completed storm water annual report, the Department withholds $10,000. This withhold is in addition to other performance failure withholds.

13-4 JOB SITE MANAGEMENT

13-4.04 Payment, replace "Not Used" with:

Unless there is a separate bid item, Job Site Management must be considered as included in the contract lump sum price paid for **Prepare Storm Water Pollution Prevention Plan.**

13-7.03D Payment, replace section with:

Installation, relocation, and maintenance of construction entrances or roadways is borne by the Contractor.

14 ENVIRONMENTAL STEWARDSHIP

14-1.01 GENERAL, add:

For trees within the public right-of-way The Contractor shall exercise all necessary precautions so as not to damage or destroy any trees or shrubs, including those lying within the public rights-of-way, and shall not trim or remove any trees unless such trees have been approved for trimming or removal by the County. Trees and shrubs which are not scheduled for removal shall be protected with temporary fencing placed around their drip lines. All existing trees and shrubs which are damaged during construction shall be trimmed or replaced by the Contractor or a certified tree company and to the satisfaction of the County. Tree trimming and replacement shall be accomplished in accordance with the requirements of the County

14-8 Noise and Vibration
14-8.01 GENERAL, add:

The Contractor shall be advised that the operation of any noise creating blower, power fan, or internal combustion engine which causes noise due to the explosion of operating gases or fluids is prohibited between the hours of 7:00 p.m. to 7:00 a.m. The operation of any pile driver, steam shovel, pneumatic hammer, derrick, steam, electrical hoist, sandblaster or other equipment used in construction, demolition or other repair work, the use of which is attended by loud or unusual noise, is prohibited between the hours of 7:00 p.m. and 7:00 a.m..

14-10 SOLID WASTE DISPOSAL AND RECYCLING

14-10.02 SOLID WASTE DISPOSAL AND RECYCLING REPORT, delete.

14-11.02 DISCOVERY OF UNANTICIPATED ASBESTOS AND HAZARDOUS SUBSTANCES
Add:

Facilities designated for removal are assumed to contain asbestos and hazardous material. Remove said facilities in accordance with Section 13, “Water Pollution Control” and Section 14, “Environmental Stewardship”, of the Standard Specifications and these Special Provisions.

Full compensation for Handling, Removing, and Disposing Hazardous Material must be considered as included in the contract price paid for removal and/or abandonment of all existing appurtenances including, but not limited to, Fire Hydrants, Valves, ARV’s, BO’s, Vaults and Water Mains and no additional compensation will be allowed therefor.
When the contract does not include a separate bid item for removal, disposal, or abandonment of a facility, as described, full compensation for handling, removing and disposing hazardous material must be considered as included in the contract prices paid for the various items of work involved.

15 EXISTING FACILITIES

Add to section 15-1.01:

The types, locations, sizes and/or depths of existing underground utilities as shown on the Contract Documents were obtained from sources of varying reliability. The Contractor is cautioned that only actual excavation will reveal the types, extent, sizes, locations and depths of such underground utilities. A reasonable effort has been made to locate and delineate all known underground utilities. However, the County can assume no responsibility for the completeness or accuracy of its delineation of such underground utilities nor for the existence of other buried objects or utilities which may be encountered but which are not shown on these Plans. The majority of the utilities shown on the Plans were drafted per locations indicated on the respective purveyors' facility maps. Additionally, survey crews collected manholes, drain inlets, and dry utility boxes.

The Contractor shall contact the Underground Service Alert (U.S.A.) two working days in advance of performing any excavation work by calling the toll-free number 1-800-227-2600.

Locations of utility services and laterals are not always provided by utility companies and when shown are approximate (unless potholed). Nothing herein shall be deemed to require the County to indicate the presence of existing utility services, laterals, or appurtenances whenever their presence can be inferred from other visible facilities such as buildings, meters, junction boxes, valves, service facilities, identification markings and other indicators on or adjacent to the work. Potholing to locate services, laterals, and related appurtenances will be at the discretion of the Contractor and no separate bid item will be included for such pothole excavations unless the pothole has been delineated on the Project Plans.

Payment will not be made for potholes performed by the Contractor to "locate and protect" known utilities.

15-1.03 CONSTRUCTION
15-1.03B Removing Concrete, add before paragraph 1:

Existing concrete must be cut in neat lines where new asphalt concrete or concrete is to join existing concrete.

15-1.03B Removing Concrete, replace paragraph 8 with:

Removal of concrete includes the below-ground portion and steel reinforcement.

Any utilities damaged during the removal of concrete shall be repaired to the satisfaction of the utility owner at the Contractor's expense.

Concrete, including any reinforcement, must be disposed of outside of the right-of-way.

Replacement of a concrete gutter or curb facility abutting the existing pavement must include the removal of a section of adjacent pavement, equal to the length of replaced concrete. Pavement to be removed will be as shown on the plans. Said pavement section must be replaced with HMA in accordance with Section 39, "Hot Mix Asphalt."

15-1.04 PAYMENT, replace "Not Used" with:
15-1.04B Payment

Removing Concrete is paid for at the contract lump sum price, length, area, or volume of removed concrete, whichever is designated on the Bid Item list.

When the plans require the removal of adjacent pavement as part of the concrete removal, full compensation for removing the pavement section will be considered as included in the Removing Concrete bid item. Structural material and placement of new hot mix asphalt will be considered as included in the contract unit price paid for the type of hot mix asphalt used to reconstruct the removed pavement section.

When the contract does not include a separate bid item for removing concrete, as described, full compensation for removing concrete and any required adjacent pavement must be considered as included in the contract prices paid for the various items of work involved.

15 EXISTING FACILITIES

15-1.03 CONSTRUCTION

15-1.03C Salvaging Facilities, replace paragraph 2 with:

Haul salvaged material directly to the described location. If authorized, you may temporarily stockpile salvaged material at the job site. Replace any salvaged material that is lost before it is stockpiled at the described location specified.

15-1.04 PAYMENT, replace “Not Used” with:

15-1.04C Payment

Salvaging Facilities, including delivery of salvaged material, is considered as included in the contract prices paid for the various items of work involved and no additional compensation will made therefore.

15 EXISTING FACILITIES

Section 15-1.03D-K, “Reserved” replace with: “Remove - Abandon Facilities”

15-1.03 CONSTRUCTION
15-1.03D Abandon Fire Hydrant

Abandon Existing Fire Hydrant shall include the abandonment of fire hydrants identified on the plans. This includes all labor, equipment, materials and coordination necessary to remove the fire hydrant assembly, down to the buried hydrant elbow or lateral, and other visible appurtenances such as, but not limited to, valve boxes and risers. Abandon fire hydrant also includes, but is not limited to: demolition and removal of pavement sections as necessary, excavation and backfill, concrete caps, fittings, site restoration, and abandonment in-place of the existing fire hydrant lateral pipe and/or elbow to the mainline.

Valves shall be abandoned by removing any operating nut, piping, fittings, vent, box, and riser to a point at least 24 inches below the finish grade or existing ground surface. The void left from any boxes shall be filled with aggregate base and paved where in the street. Outside of paved areas restore existing landscape in compliance with the special provisions to match adjacent landscape. This item of work includes all labor, equipment, and materials necessary to cut and cap the existing lateral at locations shown on the plans where existing fire hydrants are abandoned.

15-1.03E Abandon Existing Appurtenances

Abandon Existing Appurtenances shall include abandonment of existing water valves, air release valves, blow-offs, sections of water mains and other appurtenances identified on the plans. This includes all labor, equipment, and materials necessary to demolish, dismantle and remove each water valve, blow-off, air release valve, and other visible appurtenances including fittings, valve boxes, lids, and risers that are connected to the water main. This includes, but is not limited to, demolition and removal of pavement sections as necessary; excavation and backfill; concrete; concrete caps; fittings; temporary surface restoration; and permanent surface restoration.

Valves shall be abandoned by removing any operating nut, piping, fittings, vent, box, and riser to a point at least 24 inches below the finish grade or existing ground surface. The void left from any boxes shall be filled with aggregate base and paved where in the street. Outside of paved areas restore existing landscape in compliance with the special provisions to match adjacent landscape. This item of work includes all labor, equipment, and materials necessary to cut and cap the existing lateral at locations shown on the plans where existing appurtenances are abandoned.

15-1.03F Abandon Existing Water Main

Abandon Existing Water Main shall include the cut & cap of the existing water main at the location as shown on the Project Plans. This includes all labor, equipment, and materials necessary to abandon existing water main including piping and fittings that are connected to

the existing water main. This includes, but is not limited to, demolition and removal of pavement sections as necessary; excavation and backfill; concrete; concrete caps; fittings; temporary surface restoration; and permanent surface restoration.

The void left from abandon existing water main shall be filled with aggregate base and paved where in the street, concrete installed where on the sidewalk, and filled with top soil where in front yards. This item of work includes all labor, equipment, and materials necessary to cut and cap the existing waterline at locations shown on the Plans where abandonment of existing water main occurs.

15-1.03G Connection and Abandonment Plan (Shut Down Plan)

The Contractor shall prepare a Connection and Abandonment Plan (Shut Down Plan) for County approval. The plan shall show how and where the Contractor will make all tie-ins, abandonments, and shut-downs. All existing pipelines, fire hydrants, air/vacuum release valves, and services shall remain active during construction of the new water system. The Contractor is responsible to review each tie-in and abandonment location to determine the material, labor, and equipment requirements for each tie-in and abandonment. The Contractor is responsible for determining and obtaining approval from the County Engineer for the tie-in, abandonment, and outage sequencing; and includes all costs in their bid for any temporary and permanent facilities necessary to execute the plan. The Contractor shall provide the County a schedule of the proposed work and coordinate with the County on all water system outages. The Contractor is responsible for developing shut down notices (subject to review and approval by the County) which will be delivered to customers affected by the outage. The shutdown notices must be capable of being attached to the door and are not allowed to be placed under the doormat. The Contractor is responsible for delivering the shutdown notices to the County customers no less than 72 working hours before the anticipated shutdown date, with confirmed delivery by the inspector.

The Connection and Abandonment Plan shall include the following items:

- Sequence of connections and outages
- Duration of each outage – note that max outage shall be 8 hours
- Valves isolated for each outage – County will provide approval within 72 hours for existing system upon request from contractor
- Extent of outages and customers affected by each outage – County will provide approval within 72 hours from request by contractor
- Shut down notices to deliver to customers affected by each outage
- Anticipated dates of outages and connections
- Anticipated dates for testing and disinfecting
- Dewatering and flushing locations for each outage
- Handling and disposal of dewatered and flushed potable water
- Sampling locations for testing – County will provide required number of samples within 72 hours from request by contractor. Sampling locations will be provided to contractor/testing lab the day of
- Sequence of abandonments after new system is constructed, tested, and tied in.

The Connection and Abandonment Plan shall be developed under the following work restrictions and requirements:

- The plan shall be submitted to the County for review and approval a minimum of one week prior to there quested shutdown or connection to the existing system.
- The County will not allow water shutdowns of the water system on Fridays, weekends, holidays, or the day preceding holidays.
- The County will not allow planned consecutive days of water shut-downs.
- The County will not allow water shutdowns if the outdoor temperature is forecasted to be equal to or greater than 100 degrees F.
- The earliest time a shutdown will occur is 8:30 AM.
- A minimum 24 hours prior to outages, the Contractor shall take all necessary measurements and lay out all pipe material and fixtures required for the connection to existing water pipe to ensure
- interruption to customers is as short as possible.
- The County will not allow a planned shut-down of a school during regular school hours.

The Contractor shall notify the County Inspector 24 hours prior to measurement and lay out for inspection of all materials required for the connection to existing water pipe. Failure to notify the County Inspector 24 hours in advance and/or failure to ensure all materials required for the connection be present onsite will result in rescheduling the planned outage at The Contractor's own expense.

15-1.03H Remove Existing Vault

Remove Existing Vault shall include removal of existing vaults identified on the plans. This includes all labor, equipment, and materials necessary to demolish, dismantle and remove the vault and its appurtenances including piping and fittings that are connected to the existing water main. This includes, but is not limited to, demolition and removal of pavement sections as necessary; excavation and backfill; concrete; concrete caps; fittings; temporary surface restoration; and permanent surface restoration.

The void left from vaults shall be filled with aggregate base and paved where in the street, concrete installed where on the sidewalk, and filled with top soil where in front yards. This item of work includes all labor, equipment, and materials necessary to cut and cap the existing waterline at locations shown on the Plans where existing vaults are removed.

15-1.04 (D-H) PAYMENT
15-1.04D Abandon Existing Fire Hydrant

Abandon Existing Fire Hydrant shall be paid for on a lump sum basis. Measurement shall be based on a percentage of the actual number of fire hydrants abandoned. The contract unit price paid per unit for Abandon Existing Fire Hydrant shall include full compensation for all the labor, materials, tools, equipment, and incidentals for doing all the

work involved in removing the water valves, piping, fire hydrants, including permitting, sawcutting, restoration, disposal of material, and cut and cap, all as indicated on the plans, specified in the Standard Specifications, these Special Provisions, and as directed by the County Engineer, and no additional compensation will be allowed.

15-1.04E Abandon Existing Appurtenances

Abandon Existing Appurtenances shall be paid for on a lump sum basis. Payment shall be based on a percentage of the actual number of appurtenances abandoned. The contract unit price paid per unit for Abandon Existing Appurtenance shall include full compensation for all the labor, materials, tools, equipment, and incidentals for doing all the work involved in removing the water valves, boxes, signs, or other appurtenances, including permitting, sawcutting, restoration, disposal of material, and cut and cap, all as indicated on the plans, specified in the Standard Specifications, these Special Provisions, and as directed by the County Engineer, and no additional compensation will be allowed.

15-1.04F Abandon Existing Water Main

Abandon Existing Water Main shall be paid for on a lump sum basis. The contract unit price paid per unit for Abandon Existing Water Main shall include full compensation for all the labor, materials, tools, equipment, and incidentals for doing all the work involved which includes cut and cap of the abandoned water main complete and in place, in removing the water valves, boxes, signs, or other appurtenances, including permitting, sawcutting, restoration, disposal of material, all as indicated on the plans, specified in the Standard Specifications, these Special Provisions, and as directed by the County Engineer, and no additional compensation will be allowed as outlined in connect to existing water system. When the contract does not include a separate bid item for abandoning existing water main, full compensation for abandon existing water main must be considered as included in the contract prices paid for the various other items of work involved.

15-1.04G Connection and Abandonment Plan (Shut Down Plan)

If no separate bid item is shown for the described work, full compensation must be considered as included in the payment for the various items of work involved.

Additional payment will not be made for preparation of Connection and Abandonment Plan (Shut Down Plan). Connection and Abandonment (Shut Down Plan) is incidental to other items of work and no additional compensation will be allowed therefore.

15-1.04H Remove Existing Vault

Remove Existing Vault shall be paid for on a per unit basis. Payment shall be based on the actual number of vaults removed. The contract unit price paid per unit for Remove Existing Vault shall include full compensation for all the labor, materials, tools, equipment, and incidentals for doing all the work involved in removing the water valves, boxes, signs, or other appurtenances, including permitting, sawcutting, restoration, and disposal of material,

all as indicated on the plans, specified in the Standard Specifications, these Special Provisions, and as directed by the County Engineer, and no additional compensation will be allowed.

17 GENERAL

17-2 CLEARING AND GRUBBING

17-2.03 CONSTRUCTION

17-2.03A General, replace paragraphs 4 and 5 with:

Prior to applying any surface seals or performing any paving, reconstruction, repairs, and/or shoulder backing operations, clear and grub the entire length of the job site to the limits shown on the plans and as specified in the Standard Specifications and these Special Provisions.

Unless otherwise indicated on the plans, orchards, vineyards, and/or other cultivated areas must be protected in place.

17-2.03B Clearing, replace section with:

For roadway areas without existing curb or sidewalk:

1. Clear the area above the ground of all objectionable material including: trees, vines, logs, upturned stumps, downed trees, plants, brush grass, weeds, concrete, masonry, and cold-mix asphalt concrete along edge of pavement.

2. Tree branches extending over the roadway pavement and which hang within 15 feet of the finished grade must be cut off in a workmanship like manner. Cut other branches to give each tree a balanced appearance. Pruning must include removal of deadwood, suckers, and broken and bruised branches 1 inch or larger in diameter. Cut off branches close to the trunk in accordance with section 20-3.01C(2), “Pruning.”

3. Trim oversized vegetation/trees that obstruct the visibility of traffic control devices and construction area signs.

For roadway areas with existing curb and/or sidewalk that are to remain in place:

1. Clear and grubbing consists of removing objectionable material from curb, gutter, and sidewalks construction areas.

2. Unless otherwise shown on the plans, only trim oversized vegetation/trees that obstruct the visibility of traffic control devices and construction area signs.

3. All shade and ornamental trees behind said existing facilities must be preserved unless otherwise designated on the plans for removal.

4. Plants and lawn must be preserved adjacent to new shoulder construction where natural ground surface and finished grade are compatible, unless otherwise designated on the plans or directed by the Engineer.

For roadway areas that are to be widened, and/or that consist of existing curb and/or sidewalk areas that are to be reconstructed:

1. Clear the area above the ground of all objectionable material including: trees, vines, logs, upturned stumps, downed trees, plants, brush grass, weeds, concrete, masonry, and cold-mix asphalt concrete.

2. Tree branches extending over the roadway pavement and which hang within 15 feet of the finished grade must be cut off in a workmanship like manner. Cut other branches to give each tree a balanced appearance. Pruning must include removal of deadwood, suckers, and broken and bruised branches 1 inch or larger in diameter. Cut off branches close to the trunk in accordance with section 20-3.01C(2), "Pruning."

3. Trim oversized vegetation/trees that obstruct the visibility of traffic control devices and construction area signs.

Unless otherwise shown on the plans, existing driveway pipe culverts will remain in place.

17-2.03D Disposal of Materials, replace paragraph 1 with:

Unless the contract includes a bid item for Duff as specified in section 21-2.02B, "Duff," dispose (off-site) of objectionable materials resulting from clearing and grubbing activities.

17-2.04 PAYMENT, replace "Not Used" with:

Clearing and Grubbing**,** as described, is paid for at the contract lump sum price. When existing driveway pipe culverts are shown on the plans to be removed or salvaged, full compensation for the shown work, must be considered as included in the Clearing and Grubbing pay item. Unless there is a separate bid item for the removal of trees, full compensation for the removal and disposal of trees must be considered as included in the Clearing and Grubbing pay item.

When the contract does not include a separate bid item for clearing and grubbing, clear and grub only what is necessary in order to perform the specified construction operations. Full compensation for said work must be considered as included in the contract prices paid for the various items of work involved.

19 EARTHWORK

19-1 GENERAL

19-1.03 CONSTRUCTION
19-1.03C Grade Tolerance, replace with:

The surface of the grading plane must not be more than 0.05 foot above or below the grade established by the Engineer.

Before grade is approved by the Engineer, all earthwork (including driveways and slopes) must be compacted to grade.

19-2 ROADWAY EXCAVATION

19-2.01A GENERAL
19-2.01A Summary, add to end of list in paragraph 1:

5. Breaking up of existing pavement

19-2.04 PAYMENT, add after paragraph 6:

Ditch excavation, as described, is paid for as **Roadway Excavation** unless a separate bid item is shown on the Bid Item List.

19-5 COMPACTION

19-5.03 CONSTRUCTION
19-5.03A General, add between paragraphs 1 and 2:

Relative compaction requirements will be as shown on the plans and/or indicated elsewhere in these Special Provisions. When not shown on the plans and/or not indicated elsewhere in these Special Provisions, compaction requirements will be 95 percent relative compaction.

19-5.03B Relative Compaction (95 Percent), delete item 2 in paragraph 1.

19-5.03C Relative Compaction (90 Percent), delete.

19-6 EMBANKMENT CONSTRUCTION

19-6.03 CONSTRUCTION
19-6.03C Placing and Compacting, add between paragraphs 3 and 4:

Existing pavement used as embankment must be broken up into pieces not larger than 4 inches in greatest dimension.

19-6.04 Payment, add:

When the contract does not include a separate bid item for removing concrete, as described, full compensation for removing concrete and any required adjacent pavement must be considered as included in the contract prices paid for the various items of work involved.

19 EARTHWORK

19-3 STRUCTURE EXCAVATION AND BACKFILL

19-3.03 CONSTRUCTION
19-3.03E Structure Backfill

19-3.03E(1) General, replace sentence 3 of paragraph 1 with:

Backfill layers must be at most 0.67 foot thick.

19-3.03E(1) General, replace paragraphs 5 and 6 with:

Ponding and jetting will not be permitted.

19-3.03E(1) General, add between paragraphs 7 and 8:

Compaction and Material Requirements: Unless otherwise shown on the plans, the compaction and material requirements within the limits of structure backfill for pipes and arches must be as follows:

(a) From the bottom of the trench to one-half of the outside diameter of the pipe must be no less than 95 percent relative compaction.

(b) From one-half the outside diameter of the pipe to 3 feet below finish grade must be no less than 85 percent relative compaction. Backfill material must be selected material from structure excavation.

(c) From 3 feet below finish grade to the finish grade of pavement must be no less than 95 percent relative compaction.

(d) From 3 feet below finish grade to the finish grade outside of pavement must be no less than 90 percent relative compaction.

Unless otherwise specified, structure backfill outside of the paved portions of the roadway must be native material selected for its resistance to erosion.

19-3.04 PAYMENT, add:

When the contract does not include a separate bid item for Structure Excavation and Backfill, full compensation for performing structure excavation and backfill must be considered as included in the contract prices paid for the various items of work involved.

19 EARTHWORK

19-7 BORROW MATERIAL

19-7.02 MATERIALS
19-7.02C Imported Borrow, add after paragraph 1:

Imported borrow must have a dry weight of not less than 100 pounds per cubic foot when compacted at 100 percent relative compaction.

19-7.04 PAYMENT, add:

When the payment quantity of Imported Borrow is measured by weight, the measurement must be determined in accordance with Section 9-1.02D, "Quantities of Aggregate and Other Roadway Materials."

Furnish the Engineer with weighmaster certified tickets at the point of delivery.

Said tickets must, at a minimum, include:

1. Name of Contractor and Material Producer
2. Project title and County
3. Truck number
4. Date and time of loading;
5. Gross, tare, and net weights; and weighmaster's signature.

Material not used for construction must be deducted from payment quantities.

When the contract does not include a separate bid Item for Imported Borrow**,** full compensation for Imported Borrow must be considered as included in the contract prices paid for the various items of work involved.

19 EARTHWORK

19-5 COMPACTION

19-5.01 General, add:

When the work is designated as Earthwork (Miscellaneous Areas), replace all references of 95 percent compaction in Section 19-5 with 90 percent relative compaction.

19-5.03B Relative Compaction (95 Percent**)**, delete item 2 in paragraph 1.

19-6 EMBANKMENT CONSTRUCTION

19-6.03C Placing and Compacting, add between paragraphs 3 and 4:

When the existing pavement is to be removed and used as embankment, the surfacing must be broken up into pieces not larger than 4 inches in greatest dimension. All surplus materials not to be salvaged or stockpiled material must be disposed out of County right-of-way.

Replace "**19-8 LIGHTWEIGHT CELLULAR CONCRETE"** with:

19-8A EARTHWORK (MISCELLANEOUS AREAS)

19-8A.01 GENERAL

Section19-8A includes specifications for Earthwork (Miscellaneous Areas). Earthwork (Miscellaneous Areas) must comply with Earthwork sections 19-1, "Earthwork," 19-2, "Roadway Excavation," 19-5, "Compaction," and 19-6, "Embankment Construction."

19-8A.04 PAYMENT

Payment quantity of Earthwork (Miscellaneous Areas) is measured by the actual length measured, along each side of the roadway's edge of pavement and adjacent to where the earthwork operation is performed. When Earthwork (Miscellaneous Areas), as described, is measured by the station, each station must be considered as 100 feet.

Payment for breaking up existing pavement, excavation, embankment, local borrow, disposing, grading and compacting will be included in the contract unit price paid for Earthwork (Miscellaneous Areas). When the contract does not include a separate bid item for Earthwork (Miscellaneous Areas), full compensation for performing Earthwork (Miscellaneous Areas) must be considered as included in the contract prices paid for the various items of work involved. When Imported Borrow is authorized by the Engineer, a separate payment will be made.

19 EARTHWORK

19-5 COMPACTION

19-5.01 General, add:

When the work is designated as Earthwork (Concrete Curb and Sidewalk), replace all references of 95 percent compaction in Section 19-5 with 90 percent relative compaction.

19-5.03B Relative Compaction (95 Percent), delete item 2 in paragraph 1.

Replace **"19-8 LIGHTWEIGHT CELLULAR CONCRETE"** with:

19-8B EARTHWORK (CONCRETE CURBS AND SIDEWALKS)

19-8B.01 GENERAL

Section 19-8B includes specifications for Earthwork (Concrete Curbs and Sidewalks).

Excavation for Concrete Curbs and Sidewalks along improved frontages must be limited to 6 inches behind new concrete construction adjacent to property line unless otherwise shown on the plans.

Ground area to be used for landscaping purposes, which has been excavated or is below finished grade, must be backfilled with selected material or imported topsoil, free of stones. Backfilled material in ground areas must be compacted equal to natural ground and may be compacted by ponding with water.

The ground area adjacent to new concrete or pavement construction must be graded flush to match new improvements as shown on the plans. Backfill material in slope areas greater than 6:1 must be selected for resistance to erosion.

19-8B.04 PAYMENT

Payment quantity of Earthwork (Concrete Curb and Sidewalk) must include excavation of material necessary for the construction of the planned facility and obtaining and placing selected material and imported topsoil, as shown on the plans.

When the contract does not include a separate bid item for Earthwork (Concrete Curb and Sidewalk), full compensation for Earthwork (Concrete Curb and Sidewalk), including excavation, subgrade preparation, furnishing and placing selected material and imported topsoil, grading and compacting earthwork, and for disposing of materials, must all be considered as included in the contract prices paid for the various items of work involved.

20 LANDSCAPE

20-10 EXISTING LANDSCAPE

20-10.02 EXISTING IRRIGATION FACILITIES

20-10.02A General
20-10.02A(1) Summary, replace paragraph 1 with:

Section 20-10.02 includes general specifications for installing irrigation systems and maintaining and modifying existing sprinkler systems. Existing sprinkler systems, or portions thereof, must be relocated behind new construction as shown on the plans or as directed by the Engineer. Materials must be compatible with the existing system, unless otherwise shown on the plans. Salvaged sprinkler heads not used on the relocated system must be turned over, in good condition, to the property owner involved.

The Contractor shall repair any areas, in kind, within private property damage as a result of the new service installation including, but not limited to: paved surfaces, landscaping, landscape features, turf, private irrigation piping, utility conduits, underground wiring and any other surface or subsurface feature damaged or altered as a result of construction.

Existing landscape must be replaced in-kind once construction activities have been completed.

20-10.02D Payment, replace "Not Used" with:

Payment quantity for Relocate Sprinkler Head is measured by the actual count of relocated sprinkler heads and paid for at the corresponding contract unit price**.** When the contract does not include a separate bid item for Relocate Sprinkler Head, full compensation for relocating sprinkler heads, as described, must be considered as included in the contract prices paid for the various items of work involved.

20 LANDSCAPE

20-2 IRRIGATION

20-2.01C(2) Trenching and Backfilling, replace sentence 2 of paragraph 2 with:

Removal of rocks and debris must be considered as included in the contract prices paid for the various items of work involved.

20-4 PLANT ESTABLISHMENT WORK, delete.

20-10 EXISTING LANDSCAPE

20-10.01 GENERAL
20-10.01A General, add:

This work consists of maintaining, preserving and restoring existing landscaping within the limits of construction operations.

Landcaping includes but is not limited to: natural or artificial surface features or materials, vegetation, trees, fencing, walls, driveways, walkways, porches, decks, mow strips, ponds, fountains, sprinkler systems, drainage systems and exposed aggregate, stone or bark.

Portions of the project require work near existing landscaping to abandon existing water services, meters, and appurtenances; and install new water services, meters, and appurtenances. The Contractor shall visit the site and become familiar with all conditions relative to landscaping, elevations, soils, area of work, clearances, etc.; no extra payment will be allowed for work occasioned by improper appraisal of existing conditions. Contractor shall document existing conditions with photographs and video. The Contractor is responsible for coordinating with individual property owners and the Home Owner's Association, and ensuring that all property is restored to pre-construction conditions.

Replacement of landscaping surfaces shall match existing as much as possible and may include exposed aggregate, stamped concrete, colored concrete, brick, and/or stone, etc.

Existing landscaping shall be preserved wherever possible. All landscaping, including plants, flowers, and/or other vegetation damaged by construction shall be replaced or repaired at no cost to the County, property owner, or Home Owner's Association.

The Contractor shall replace all damaged vegetation with plants similar in variety, size, and shape to the existing landscaping. In the event that like landscaping is not commercially available, the Contractor shall coordinate with the property owner or Home Owner's Association for a replacement.

The existing lawn (sod) may be removed under section 20-2.01C(2), "Trenching and Backfilling," and reused over backfilled areas.

Removed sod must be stored in a cool place and must be kept moist. If the Engineer determines that due to your negligence, the removed sod is not suitable for use after storage, new sod of a similar variety must be furnished and placed at your expense. Removed sod that is not reused must be disposed of.

New sod to be installed must be grown under California agricultural codes and must be shipped with pinto tags. The new sod must be free from disease, weeds, insects and non-desirable types of grasses and clovers. Soil upon which the sod has been grown must contain less than 50 percent silt and clay.

The sod must be machine cut at a uniform soil thickness of 5/8 (±1) inch not including top growth and thatch.

A certificate of compliance for the sod must be furnished to the Engineer, under the provisions in Section 6-2.03C, "Certificates of Compliance," of the Standard Specifications.

The sod must be protected during delivery with tarps or other protective covers and must not be allowed to dry out during delivery nor before placement. All weeds and debris must be removed before placing the sod and disposed of outside the highway.

Trenches must be backfilled, compacted and graded such that the finished grade of the replacement sod matches the elevation of the adjacent existing sod. Any trench settlement occurring during the life of the contract must be corrected at your expense.

Commercial fertilizer (granular) must be applied to the areas to receive sod as per the supplier's recommendations prior to placing sod.

After the commercial fertilizer has been applied, the areas to receive sod must be fine graded and rolled. The soil adjacent to sidewalks and concrete driveways must be between 1-1/4 inches and 1-3/4 inches below the finished grade of such sidewalks and concrete driveways after fine grading, rolling, and settlement.

Sodded areas must be watered as often and in sufficient amounts as conditions may require keeping the soil and plant roots moist during the life of the contract.

The finished grade of the areas to be planted with sod must be graded to drain and must be smooth and uniform prior to placing the sod.

The sod must be so placed that all ends are staggered a minimum of 2 feet and so that all edges and ends are placed firmly together. Any irregular or uneven areas in the completed lawn must be restored to a smooth and even appearance.

Existing sprinkler systems, or portions thereof, must be maintained or preserved during construction operations. Any damage to the existing system must be repaired within 48 hours at the Contractor's expense. Upon completion of the work, you must restore the sprinkler system to its original condition.

At your option, you may remove sprinkler lines and equipment that lie within the limits of the work. Any lines that are so cut must be capped to allow the remaining system to continue operation. Electrical control wiring must not be cut.

Existing materials and sprinkler heads may be salvaged and reused if undamaged during removal. All materials used in replacing and restoring the sprinkler system must be compatible with the existing system. Salvaged materials and sprinkler heads not reused must be turned over to the property owner.

The Contractor shall repair any areas, in kind, within private property damage as a result of the new service installation including, but not limited to: paved surfaces, landscaping, landscape features, turf, private irrigation piping, utility conduits, underground wiring and any other surface or subsurface feature damaged or altered as a result of construction.

20-10.03D Payment, replace “Not Used” with:

Payment quantity of Restore Existing Landscape, as described, is measured by the actual area, where the existing landscape is removed. When the contract does not include a separate bid item for Restore Existing Landscape, full compensation for restoring existing landscape, as described, must be considered as included in the contract prices paid for the various items of work involved.

26 AGGREGATE BASES

26-1.02 MATERIALS
26-1.02A General, replace paragraph 2 with:

Aggregate base must be Class 2 meeting the 3/4-inch maximum aggregate grading.

26-1.04 PAYMENT, add:

When **Class 2 Aggregate Base** is paid for by TON, furnish the Engineer with weighmaster certified tickets at the point of delivery.

Said tickets must, at a minimum, include:

1. Name of Contractor and Material Producer
2. Project title and County
3. Truck number
4. Date and time of loading
5. Gross, tare, and net weights; and weighmaster's signature.

Material not used for construction must be deducted from payment quantities.

When the contract does not include a separate bid item for aggregate base, full compensation for furnishing and placing aggregate base, as described, must be considered as included in the contract prices paid for the various items of work involved.

Class 2 Aggregate Base bid item includes the backfill for all bid items, per these improvement plans up to the property line, except for **Connect to Existing Water System and Abandon Existing Water Main, Fire Hydrant, and Appurtenances.**

38 DRIVEWAYS

Replace **"38 Reserved"** with:

38-1 Driveways

38-1.01 General

Section 38-1 includes specifications for placement, repair, and/or replacement of driveways.

38-1.02 Materials

Not Used

38-1.03 Construction

Paved driveways and frontages must be sloped to drain.

38-1.04 PAYMENT

Payment quantity for Driveways is measured by the actual areas of graded driveways based on horizontal dimensions. Structural materials and placement will be paid for at the contract unit price for the type of hot mix asphalt used to construct the driveway.

No adjustment of compensation will be made for any increase or decrease in the quantities of Driveways, regardless of the reason for such increase or decrease. Section 9-1.06, "Changed Quantity Payment Adjustments," does not apply to pay items for Driveways.

If no separate bid item is shown for the described work, full compensation must be considered as included in the payment for the various items of work involved.

39 ASPHALT CONCRETE

39-1 GENERAL

39-1.02 MATERIALS, replace "Not Used" with:

Type of HMA to be produced and placed will be as shown on the plans and/or Bid Item List.

39-2 HOT MIX ASPHALT

39-2.01 GENERAL

39-2.01A(2) Definitions, revise definition of "miscellaneous areas" and add item 8 to said revised definition as follows:

miscellaneous areas: Areas outside and inside the traveled way and shoulders such as:

8. Skin patches on roadway

39-2.01A(3) Submittals
39-2.01A(3)(b) Job Mix Formula
39-2.01A(3)(b)(i) General, delete paragraph 3 and add:.

Submit Job Mix Formula Proposals for HMA mix designs before HMA production at least 10 working days prior to the construction start date.

39-2.01A(3)(c) Quality Control Plan, replace sentence 1 of paragraph 1 with:

QC plans are only required for all types of RHMA.

39-2.01A(4)(i)(ii) In-Place Density, replace section with:

The Engineer tests for Percent of Maximum Theoretical Density using California Test 375 (ASTM D2950 (c)), "Determining the In-Place Density and Relative Compaction of Hot Mix Asphalt Pavement Using Nuclear Gages," and Maximum Theoretical Density (Rice) using California Test 309, "Method of Test for Determining Theoretical Maximum Specific Gravity and Density of Hot Mix Asphalt." No single density result must represent more than the smaller of 500 tons or one day's production. Any single density result below 91% or over 97% must be subject to a reduction in pay per the following table:

Reduced Payment Factors for Percent of Maximum Theoretical Density

HMA percent of maximum theoretical density	Reduced payment factor	HMA percent of maximum theoretical density	Reduced payment factor
91.0	0.0000	97.0	0.0000
90.9	0.0125	97.1	0.0125
90.8	0.0250	97.2	0.0250
90.7	0.0375	97.3	0.0375
90.6	0.0500	97.4	0.0500
90.5	0.0625	97.5	0.0625
90.4	0.0750	97.6	0.0750
90.3	0.0875	97.7	0.0875
90.2	0.1000	97.8	0.1000
90.1	0.1125	97.9	0.1125
90.0	0.1250	98.0	0.1250
89.9	0.1375	98.1	0.1375
89.8	0.1500	98.2	0.1500
89.7	0.1625	98.3	0.1625
89.6	0.1750	98.4	0.1750
89.5	0.1875	98.5	0.1875
89.4	0.2000	98.6	0.2000
89.3	0.2125	98.7	0.2125
89.2	0.2250	98.8	0.2250
89.1	0.2375	98.9	0.2375
89.0	0.2500	99.0	0.2500
<89.0	Remove and replace	>99.0	Remove and replace

39-2.01B(3) Asphalt Binder, replace paragraph 2 with:

Unless otherwise shown on the plans, the grade of asphalt binders for Type A HMA and RHMA-G must be PG 64-10 and PG 64-16, respectively.

39-2.01B(9) Geosynthetic Pavement Interlayer, replace paragraph 2 with:

The asphalt binder for geosynthetic pavement interlayer must be PG 70-10.

39-2.01B(10) Tack Coat, replace sentence 2 of paragraph 1 with:

Tack coat must be SS1h.

39-2.01B(11) Miscellaneous Areas and Dikes, replace items 1 and 2 of paragraph 1 with:

1. For miscellaneous areas, use 1/2-inch Type A HMA aggregate gradation and asphalt binder Grade PG-64-10, unless otherwise shown.

2. For dikes, use 3/8-inch Type A HMA aggregate gradation and asphalt binder Grade PG-64-10, unless otherwise shown.

39-2.01C Construction

39-2.01C(2) Spreading and Compacting Equipment

39-2.01C(2)(a) General, add after item 5 of paragraph 1:

6. A ski device is required for longitudinal control. The minimum length of the device must be 27 feet.

39-2.01C(3) Surface Preparation

39-2.01C(3)(a) General, add after paragraph 1:

Existing pavement markers must be removed and disposed of, unless otherwise shown on the plans. During the removal of ceramic type pavement markers, screens or other protective devices must be furnished to contain any fragments as provided for in Section 7-1.04, "Public Safety."

39-2.01C(3)(g) Geosynthetic Pavement Interlayer, add between sentences 1 and 2 of paragraph 1:

Binder must not be placed when weather conditions will not remain suitable to complete the placement of the interlayer and hot mix asphalt resurfacing.

39-2.01C(3)(g) Geosynthetic Pavement Interlayer, replace paragraph 2 with:

Before placing the interlayer or asphalt binder:

1. Spalled areas on the existing pavement surface, less than 4 square feet and less than four 4 inches deep, must be tack coated, filled with hot mix asphalt and compacted as directed by the Engineer. Compensation for this work is considered as included in the contract unit price paid for Hot Mix Asphalt and no separate payment will be made thereof.

2. Clean the pavement of loose and extraneous material.

Placement of the interlayer must be limited to 1,500 feet in advance of the paving machine during any work shift unless otherwise authorized by the Engineer.

A small quantity of hot mix asphalt or sand, to be determined by the Engineer, may be spread over the fabric immediately in advance of placing hot mix asphalt surfacing in order to prevent fabric from being picked up by construction equipment. If sand is chosen to prevent interlayer pickup, it must be spread evenly at a rate not to exceed 2 pounds per square yard. The sand must be rolled into the fabric prior to placing HMA and excess sand must be swept off.

39-2.01C(3)(g) Geosynthetic Pavement Interlayer, add before paragraph 3:

Where geosynthetic pavement interlayer is shown to be placed in milled areas, increase the binder application in milled areas by an additional 0.05-0.10 gallons per square yard.

39-2.01C(3)(g) Geosynthetic Pavement Interlayer, replace sentence 1 of paragraph 7 with:

Overlap the interlayer borders between 2 to 6 inches.

39-2.01C(5) Pavement Edge Treatments, add between paragraphs 3 and 4:

Prior to placing hot mix asphalt or concrete pavement for mainline, grade the shoulder material 1-foot minimum width where the tapered edge will be placed to provide a foundation that will support the placement of the tapered edge.

If additional shoulder material is needed for foundation, import Class 2 Aggregate Base (shoulder backing) to fill in areas of low spots to provide a foundation that will support the placement of the tapered edge.

39-2.01C(5) Pavement Edge Treatments, replace paragraphs 6 and 7 with**:**

For tapered edge treatment, the angle of the slope must not deviate by more than ± 10 degrees from the angle shown. The angle will be measured from the plane of the adjacent finished pavement surface.

39-2.01C(15)(b) Method Compaction, replace paragraph 1 with:

Use method compaction when placing HMA.

39-2.01D Payment, replace section with:

Payment quantity for furnishing, placing, and compacting all types of hot mix asphalt, as described, will be measured by weight or area, whichever is shown on the Bid Item List.

Full compensation for removing pavement markers must be considered as included in the contract price paid for the type of hot mix asphalt involved, as shown on the Bid Item List.

When geosynthetic pavement interlayer is shown on the plans, full compensation for furnishing and placing asphalt binder for the geosynthetic pavement interlayer, including milled areas, must be considered as included in the contract price paid for Geosynthetic Pavement Interlayer (Paving Fabric).

Full compensation for constructing tapered edge treatments is included in the contract price paid for the type of hot mix asphalt involved, as shown on the Bid Item List. Payment will be deducted by five dollars ($5.00) for every linear foot of tapered edge treatment not in compliance with this special provision and plan details.

When the plans require Hot Mix Asphalt (Leveling) or Place Hot Mix Asphalt (Miscellaneous Areas), but the contract does not include separate (corresponding) bid items, payment quantity for paving a leveling course or miscellaneous areas will be measured and paid for under the bid item for the type of hot mix asphalt used to perform said work.

Hot mix asphalt used for advance leveling, as provided in Section 39-2.02C, “Construction," when ordered by the Engineer and not shown on the plans, will be paid for by Force Account.

Payment quantity for imported shoulder backing for placement to support tapered pavement edge, as shown on the plans, is measured and paid for as Shoulder Backing.

If no separate bid item is shown for the described work, full compensation must be considered as included in the payment for the various items of work involved.

Permanent restoration, in the roadway due to trench excavation, will be included in this pay item of **Hot Mix Asphalt (Type A)** except for **Connect to Existing Water System.**

39-2.02 TYPE A HOT MIX ASPHALT

39-2.02B(4)(b) Aggregate Gradations, replace sentence 1 and corresponding table of paragraph 1 with:

Hot Mix Asphalt (Type A) must comply with the 1/2-inch Type A HMA gradation table unless otherwise described.

39-2.02C Construction, replace sentences 1 and 2 and items 1 and 2 of paragraph 1 with:

Hot mix asphalt must be placed as follows:
1.

Total Thickness Shown on Plans[a]	No. of Layers	Top Layer Thickness (foot)		Next Lower Layer Thickness (foot)		All Other Lower Layer Thickness (foot)	
		Min.	Max.	Min.	Max.	Min.	Max.
0.24 - foot or less	1	–	–	–	–	–	–
0.25 - 0.29 foot	2	0.12	0.13	0.12	0.17	–	–
0.30 - 0.45 foot	2	0.15	0.20	0.15	0.25	–	–
0.46 - foot or more	b	0.15	0.20	0.15	0.25	0.15	0.4

a. When Geosynthetic Pavement Interlayer (Paving Fabric), mat or grid is shown to be placed between layers of HMA, the thickness of HMA above the Geosynthetic Pavement Interlayer (Paving Fabric) must be considered to be the "Total Thickness Shown on Plans" for the purpose of spreading and compacting the HMA above the Geosynthetic Pavement Interlayer (Paving Fabric). The minimum lift thickness of HMA over Geosynthetic Pavement Interlayer (Paving Fabric), mat or grid must be 0.12 foot.

b. At least 2 layers must be placed if total thickness is 0.45 - foot. At least 3 layers must be placed if total thickness is more than 0.45 - foot and less than 0.90 - foot. At least 4 layers must be placed if total thickness is 0.90 - foot or more. For Miscellaneous Areas or Pavement Repair, at least 2 layers must be placed if total thickness is 0.50 foot.

2. When hot mix asphalt gutters are designated on the plans, a string line or wire grade reference will be required to control longitudinal grade of the gutter. The gutter will be water tested before acceptance. The maximum deviation from a true grade must not result in ponding water for depth exceeding 0.04 foot.

39-2.02C Construction, add:

Portable delineators in conformance with Section 12-3.04, "Portable Delineators," must be furnished and placed at a maximum spacing of 300 feet on tangents and 100 feet on curves along any edge of new surfacing which has a drop off of more than 0.10 foot. Delineators must be staggered when required on both sides of traffic.

39-2.03 RUBBERIZED HOT MIX ASPHALT–GAP GRADED
39-2.03B(4)(b) Aggregate Gradations, replace paragraph 1 with:

When RHMA-G is specified for use, the corresponding gradation must comply with the 1/2-inch RHMA-G gradation table unless otherwise described.

39 ASPHALT CONCRETE

39-3 EXISTING ASPHALT CONCRETE

39-3.04 COLD PLANING ASPHALT CONCRETE PAVEMENT

39-3.04A General, replace paragraph 3 with:

Unless stated otherwise, schedule cold planing activities so that not more than two calendar days elapse between the time the pavement is cold planed and the HMA is placed.

39-3.04B Materials, add to end of paragraph:

"… or as directed by the Engineer."

39-3.04C Construction

39-3.04C(2) Grade Control and Surface Smoothness, add to end of paragraph 5:

The depth, length, width, and shape of the cut must be as shown or as ordered by the Engineer. The final cut must result in a neat and uniform surface. Do not damage the remaining surface.

39-3.04C(3) Planed Material, add:

Any exposed sub-grade material must be compacted per Section 19-5, "Compaction," of the Standard Specifications, prior to paving operation.

Materials not to be salvaged must be disposed of outside of the right of way per the specifications at a permitted recycling facility, or in accordance with Section 5-1.20B(4), "Contractor–Property Owner Agreement."

39-3.04C(4) Temporary HMA Tapers, replace paragraph 1 with:

If a drop off between the existing roadway surfacing and the planed area at transverse joints is 1 inch or greater, construct a temporary HMA taper with a slope of 1:30 (vertical: horizontal), or as directed by the Engineer. Temporary HMA tapers for posted speeds that are higher than 45 mph must have a slope of 1:40, or as directed by the Engineer. Roads with unposted speed limits will be assumed to have a speed limit of 55 mph. At a minimum, bump signs must be placed in the direction of travel and maintained until the planed road is paved to final grade.

If the planing operations result in a drop-off of 1.5 inches or greater along existing driveways, construct a temporary HMA taper at driveway locations by the end of each working day.

The temporary HMA taper at driveway locations must be:

1. Placed to the level of the existing roadway surfacing or gutter and tapered on a slope of 30:1 (horizontal: vertical) or flatter to the level of the planed area.
2. Compacted by any method that will produce a smooth riding surface.

39-3.04D Payment, replace "Not Used" with:

Payment quantity for Cold Plane Pavement is measured by the actual surface area of planed pavement. Pavement may include various types of roadway materials, including but not limited to: asphalt concrete, chip and slurry seals, other bituminous-based material, fabric, base, subbase, and/or earth material. Payment for removal of pavement markers, thermoplastic traffic stripe, painted traffic stripe, pavement markings, and compacting the exposed sub-grade within the area of cold planing is included in the payment for Cold Plane Pavement. Materials and placement of temporary HMA tapers will be paid for at the contract unit prices for HMA involved unless stated otherwise in these special provisions.

If no separate bid item is shown for the described work, full compensation must be considered as included in the payment for the various items of work involved.

Revise section title **"39-3.05 REMOVE BASE AND SURFACING"** to:

39-3.05 REMOVE SUBBASE, BASE AND SURFACING

39-3.05C Construction, replace section with:

Where subbase, base and surfacing are shown to be removed, do so to the depths shown on the plans.

39-3.05D Payment, replace section with:

Payment quantity of Remove Subbase, Base and Surfacing is measured by the actual surface area of removed material or volume determined from the dimensions shown, whichever is designated on the Bid Item List. Payment for said item includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in Remove Subbase, Base and Surfacing, including disposing of removed material, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

If no separate bid item is shown for the described work, full compensation must be considered as included in the payment for the various items of work involved.

Replace "**39-3.06 RESERVED**" with:

39-3.06 COLD PLANE FINE GRINDING

39-3.06A General

Section 39-3.06 applies when the contract requires Cold Plane Pavement (Fine Grinding).

Cold Plane Existing Pavement (Fine Grinding) must conform to the requirements in Section 39, "Asphalt Concrete," of the Standard Specifications and these special provisions.

39-3.06B Materials

Not Used

39-3.06C Construction

Cold plane grinders must have a minimum drum width of 6 feet. The teeth must have a spacing of maximum of 1/4 inch and the drum must have a minimum of 276 teeth. All grinders used on the project will provide verification that they meet the teeth spacing required in the specification. New teeth must be installed prior to the beginning of grinding operations. Any teeth replacement must be done using an entire new set and individual replacement will not be allowed once grinding has begun. A continuous grind averaging 1/4-inch-deep must be performed on the entire roadway surface. The grinder must be operated at a speed that will ensure the teeth pattern left on the pavement must be parallel to the direction of travel. The finished roadway must meet a 12-foot straight edge requirement of 0.02 foot when measured longitudinally and transversely. All loose materials generated from the grinding operations will be removed from the project. An adequate amount of water must be used while grinding to preclude fugitive dust during grinding and loading operations.

39-3.06D Payment

Payment quantity for Cold Plane Pavement (Fine Grinding) is measured by the actual surface area of planed pavement and must include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in Cold Plane Pavement (Fine Grinding), including disposing of removed material, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

If no separate bid item is shown for the described work, full compensation must be considered as included in the payment for the various items of work involved.

39-3 EXISTING ASPHALT CONCRETE

Replace "**39-3.07 RESERVED**" with:

39-3.07 PAVEMENT REPAIR

39-3.07A General

Section 39-3.07 applies when pavement repair is shown on the plans or required by the Engineer.

Although there are potholes locations identified on the project plans this is not an indication of how many potholes shall be used. Potholes locations shown on the plans are only a reference and should only be used as a guide. The potholes shown on the plans shall be paid for per Section 77. The contractor shall follow the below sections for where a pothole should be completed.

39-3.07B Materials

Reserved

39-3.07C Construction

Where described or directed by the Engineer, broken, failed or other unsatisfactory areas of the existing structural section must be removed and disposed of. Excavated materials may include, but not limited to: asphalt concrete, chip and slurry seals, other bituminous-based material, fabric, base, subbase, and/or earth material. Unless otherwise indicated, excavated materials will not be salvaged and must be disposed of outside of the right-of-way.

The contractor must verify the depth and location of ALL underground utilities shown on the plans and as delineated in the field by utility companies. The number of potholes will be as determined by the Contractor to avoid conflicts with existing underground utilities. Said work will be considered as included in the various items of work involved and no additional compensation will be made therefor.

Unless otherwise shown on the plans, refer to Drawing No. R-29, "Typical Trench Backfill," of the San Joaquin County Improvement Standards and the improvement plans when trenching is necessary.

39-3.07D Payment

Payment quantity of Pavement Repair is measured by the actual surface area of repaired pavement. Structural materials and placement will be paid for at the contract unit price for the type of hot mix asphalt used for pavement repairs.

When the contract does not include pavement repairs, but is ordered by the Engineer, the work will be performed under a contract change order.If no separate bid item is shown for the described work, full compensation must be considered as included in the payment for the various items of work involved.

39 ASPHALT CONCRETE

Replace **"39-3.08 RESERVED"** with:

39-3.08 LIQUID ASPHALT PRIME COAT

39-3.08A General

This section covers oiled base or native surfacing. Areas receiving liquid asphalt prime coat must be shown on the plans.

39-3.08B Materials

Liquid asphalt for prime coat must be SC-70 or SC-250. Sand must be free of organic material and clay and sized so that 90% will pass a No. 4 sieve and less than 5% will pass a No. 200 sieve.

39-3.08C Construction

Apply 0.25 gallons of prime coat per square yard of designated area.

Liquid Asphalt must not be applied when the atmospheric temperature is below 50 degrees Fahrenheit.

Close traffic to areas receiving prime coat. Do not track prime coat onto pavement surfaces.

At locations where public traffic is being routed over the roadbed to be treated, the prime coat must not be applied to more than one-half the width of the traveled way at a time, and the remaining width must be kept free of obstructions and open for use by public traffic until the treatment first applied is ready for use by public traffic.

If directed by the Engineer, sand must be spread at a rate of 3 to 6 pounds per square yard.

When the bid item is designated as **Alternative A—Liquid Asphalt Prime Coat** the following also applies:

1. Before paving, prime coat must cure for 48 hours.

2. Liquid Asphalt must not be applied until a minimum of 24 hours after the Engineer has accepted the aggregate base for surface tolerances and compaction requirements.

39-3.08D Payment

The Engineer determines prime coat quantities under these special provisions for liquid asphalt. Payment quantities for Liquid Asphalt Prime Coat or Alternative A—Liquid Asphalt Prime Coat will be measured and paid for by the Ton. Such price must include preparation for treatment, furnishing and applying liquid asphalt, water and removing excess sand.

The above contract prices and payments must include full compensation for furnishing all labor, materials, tools, equipment, incidentals, and for doing all the work involved in applying the Liquid Asphalt Prime Coat or Alternative A-Liquid Asphalt Prime Coat, complete in place, as shown on the plans, as described, and as directed by the Engineer.

If there is no separate bid item for liquid asphalt prime coat, full compensation for applying liquid asphalt (prime coat), as described, is considered the contract price paid for the type of HMA involved.

Payment for sand, if required, must be made in accordance with Section 9-1.04, "Force Account."

If no separate bid item is shown for the described work, full compensation must be considered as included in the payment for the various items of work involved.

73 CONCRETE CURBS AND SIDEWALKS

73-1 GENERAL

73-1.01 GENERAL, add after paragraph 2**:**

"Weakened Plane Joint" is considered the same as "Contraction Joint."

73-1.02 MATERIALS
73-1.02B Detectable Warning Surfaces, add after paragraph 1:

All detectable warning surfaces must be prefabricated and cast into fresh concrete. When existing concrete ramps are to be retrofitted with detectable warning surfaces, the installation must be performed in accordance with Section “73-10.03, ‘Construction,” of the Standard Specifications and these special provisions.

Surface mounted detectable warning surfaces are not allowed.

73-2 CURBS

73-2.03 CONSTRUCTION
73-2.03A General, replace sentence 2 of paragraph 4 with:

Weakened plane joints must be constructed at 10-foot maximum intervals on tangent sections and at a minimum of one-third points on radii.

73-2.03A General, add after paragraph 7:

Where curb and gutter only is constructed, driveways must be placed monolithically with the curb and gutter or must conform to one of the following alternatives:

(a) Dowels (5/8-inch diameter by 24 inches long) spaced at 4-foot intervals.

(b) Keyway constructed 2 inches in height and 1 inch in depth.

The maximum deviation from a true grade must not result in ponding water for a depth exceeding 0.02-foot. All concrete gutters must be water tested for drainage in the presence of the Engineer before acceptance.

73-3 SIDEWALKS, GUTTER DEPRESSIONS, ISLAND PAVING, CURB RAMPS, AND DRIVEWAYS

73-3.03 CONSTRUCTION, add before paragraph 1:

Where existing sidewalk is to be repaired/reconstructed on both sides of the roadway, one side must remain open for use by pedestrians. Ground area to be used for landscaping purposes, which has been excavated or is below finished grade, must be backfilled with selected material or imported topsoil free of stones conforming to the provisions of Section

21-2.02C, "Imported Topsoil," of the Standard Specifications and these special provisions, unless shown otherwise on the plans.

All Minor Concrete items must have 4 inch minimum of Class 4 Aggregate Subbase under the concrete section and compacted to a minimum of 95 percent relative compaction, regardless of ″R″ value.

73-3.04 PAYMENT, replace section with:

When Minor Concrete (Curb and Gutter), Minor Concrete (Curb, Gutter and Sidewalk), Minor Concrete (Curb), or Minor Concrete (Curb Ramp) is paid for by linear foot, measurement must be made along the gutter flow line. Payment for said items of work includes all necessary materials, including aggregate base/subbase and dowels, expansion joints retaining curbs behind the back-of-walk, and labor, tools, equipment, and incidental work to construct, complete in place, as shown on the plans, and in accordance with Standard Specifications and these special provisions.

If no separate bid item is shown for the described work, full compensation must be considered as included in the payment for the various items of work involved.

Payment quantity for Minor Concrete (Miscellaneous Areas) and all types of minor concrete driveways and walkways, is measured by the area. Payment for said items of work includes all necessary materials, including aggregate base/subbase, dowels, expansion joints, labor, tools, equipment, and incidental work to construct, complete in place, as shown on the plans, and in accordance with Standard Specifications and these special provisions.

Asphalt concrete, Portland cement concrete, and existing sod that is to be removed and replaced for form work and the furnishing and installing of detectable warning surface including saw-cutting, removing, disposing, excavating, backfilling and materials needed are all considered as included in the contract prices paid for the types of minor concrete involved and as shown on the Bid Item List.

If no separate bid item is shown for the described work, full compensation must be considered as included in the payment for the various items of work involved.

Payment quantity of Detectable Warning Surface is measured by the actual count of installed detectable warning surface units. Each curb ramp location is considered as one unit, regardless of the detectable warning surface (DWS) dimension.

When there is no separate bid item for detectable warning surface, furnishing and installing detectable warning surface must be considered as included in the various items of work involved and no additional compensation will be allowed therefor.

73-10 EXISTING CURBS AND SIDEWALKS

73-10.03 CONSTRUCTION, add between paragraphs 1 and 2:

To install detectable warning surfaces to an existing curb ramp:

1. Grind off any elevation change between gutter and traversable part of ramp.
2. Sawcut and remove existing concrete to the required dimensions, or as directed by the Engineer.
3. Install two dowels (5/8 inch by 12 inches long) at equidistant intervals on each side of the opening with a minimum of 4 inches of embedment into the existing concrete.
4. Place minor concrete and cast detectable warning surface.

73-10.04 PAYMENT, replace section with:

Payment quantity of DWS to be installed on existing curb ramps is be measured by the actual count of each curb ramp location retrofitted with DWS and paid for as Detectable Warning Surface (Retrofit). The contract unit price for Detectable Warning Surface (Retrofit) includes saw-cutting, removing and disposing of portions of the existing curb ramp, excavating and backfilling, furnishing and placing all necessary materials, including dowels and concrete, and for providing all labor, tools, equipment, and incidentals necessary to complete the work.

When there is no separate bid item for retrofitting existing curb ramps with detectable warning surface, furnishing and installing detectable warning surfaces must be considered as included in the various items of work involved and no additional compensation will be allowed therefor.

73 CONCRETE CURBS AND SIDEWALKS

73-10 EXISTING CURBS AND SIDEWALKS

73-10.03 Construction, add**:**

Grind off any elevation change between the existing gutter and traversable part of ramp.

73-10.04 Payment, add**:**

Payment quantity of Modify Curb Ramp is measured by the actual count (each) of curb ramp locations that require modification. When there is no separate bid item for Modify Curb Ramp, furnishing and installing Modify Curb Ramp must be considered as included in the various other items of work involved and no additional compensation will be allowed therefor.

77 WATER SUPPLY SYSTEM

Replace "Reserved" in section 77-1 with:

77-1 TRENCH EXCAVATION, BACKFILL, AND COMPACTION

77-1.01 GENERAL

77-1.01A Summary

This section governs the work for trench excavation, backfill, and compaction for underground pipeline work including, but not limited to, the installation of PVC and DIP water and removal and replacement of water services.

77-1.01B Submittals

Upon request, the following items shall be submitted and approved by the Engineer:

1. Test results showing gradation, durability, and sand equivalent of pipe zone material.
2. Permit and notification form for excavations 5 feet or more in depth as required by Cal-OSHA, including any trench excavation or shoring plans.

The testing frequency and location shall be approved by the Engineer.

77-1.02 MATERIALS

77-1.02A Trench Excavation

Excavation is unclassified. The Contractor shall complete all excavations regardless of the type of materials encountered. The Contractor shall make his own estimate of the kind and extent of the various materials which will be encountered in the excavation.

77-1.02B Backfill

Backfill shall be consistent with Class 2 AB per section 26 of these specifications.

Pipe zone shall be consistent with the project plans. A 3/8" Minus imported screened sand with minimum sand equivalent of 50 per Caltest 217-G.

77-1.03 CONSTRUCTION

77-1.03A Excavation

77-1.03A(1) General

Excavation for pipelines, fittings, and appurtenances shall be open trench to the depth and in the direction necessary for the proper installation of the same as shown on the contract drawings or as otherwise approved by the Engineer. Excavation shall only proceed when the

necessary materials have been delivered to the site.

The Contractor shall bear all costs of disposing of roots and all other waste materials from the excavation. Material shall be disposed of in such a manner as to meet all requirements of the state, county, and local regulations regarding health, safety, and public welfare. Non-flammable material and flammable material, when burning is not permitted, shall be disposed of off the construction site in an approved location at the Contractor's expense.

The Contractor shall remove obstructions within the trench area or adjacent thereto, such as abandoned concrete structures, logs, and debris of all types, without additional compensation. The Engineer may, if requested, make changes in the trench alignment to avoid major obstructions, if such alignment can be made without adversely affecting the intended function of the facility.

77-1.03A(2) Excavation and Backfill

Excavation and backfill shall conform to the provisions in Section 19, "Earthwork (Structure Excavation and Backfill)," of these special provisions.

The pipe shall be laid in a trench excavated to the lines and grades designated by the Engineer. The bottom of the trench shall be graded and prepared to provide a firm and uniform bearing throughout the entire length of the pipe barrel.

Suitable excavation shall be made to receive the bell of the pipe and the joint shall not bear upon the bottom of the trench. All adjustment to line and grade shall be made by scraping away or filling in with sand, gravel, or granular material under the body of the pipe, and not by wedging or blocking.

Trenches shall not be left open farther than 300 feet in advance of pipe laying operations or 200 feet to the rear thereof, unless otherwise permitted by the Director.

The excavation shall be supported so that it will be safe and that the ground alongside the excavation will not slide or settle, and all existing improvements, either on public or private property, will be fully protected from damage.

All supports shall be removed after construction is completed, unless otherwise directed by the Engineer, and shall be withdrawn in a manner that will prevent the caving of the sides of the excavation. All openings caused by the removal of supports shall be filled with suitable material properly compacted.

Backfill materials shall be placed on both sides of the pipe simultaneously to prevent any undue strain on the pipe.

Compacting equipment or methods that may damage the pipe or cause excessive displacement shall not be used.

All pipe damaged during construction operations shall be replaced by the Contractor at their expense to the satisfaction of the Engineer.

Pavement that is damaged during backfill and trenching shall be repaired to the satisfaction of the Engineer.

77-3 WATER SERVICE LINES AND APPURTENANCES

77-3.01 GENERAL

77-3.01A Summary

This section governs materials and installation of service line materials and fittings.

77-3.01B Submittals

Prior to the purchase of the material to be used in the County's system, the manufacturer's catalog data showing model, part number, pressure ratings, and materials of construction shall be submitted to and approved by the Engineer.

77-3.02 MATERIALS

77-3.02A Service Line Materials and Fittings

77-3.02A(1) General

Service line materials and fittings include service line pipe, service saddles, service fittings, meter stops, corporation stops, curb stops, and ball valves.

77-3.02A(2) 1" Water Service Line

Service lines up to and including the meter box shall be as detailed in the Project Plans, as applicable for the service intended and with the AWWA Standard C-800, except as hereinafter modified or as modified by the plans and these special conditions.

Service lines shall be solid copper water tubing, type K, polyethylene pressure pipe, or polybutylene pressure pipe, with compression-type fittings. Utility boxes with the latest technology in radio read telemetry will be installed in front yards adjacent to the County Right-of-Way. Any necessary Backflow devices will be installed in accordance with County Standards.

1. Type of service line pipe shall be limited to the following:

   a) Copper water tube, Type K or ASTM B-88.

   b) Ultra High Molecular Weight (UHMW) P.E. 3406, P.E. 3408, CS 255-63, Polyethylene as manufactured by Driscopipe, Orangeburg or an approved equal in one inch (1") iron pipe sizes only. Plastic pipe larger than one and one quarter inch (1-1/4") and up to and including two inch (2") iron pipe sizes shall be PB 2110 Polybutylene. Connection of plastic pipe shall be made using Mueller 110

compression connections or approved equal.

All non-metallic pipe/tubing, regardless of installation location, shall be installed with a tracer wire in accordance with County Specifications.

77-3.02A(3) Fittings

Fittings shall conform to Section 4-3.01 of the County of San Joaquin Improvement Standards.

77-3.02A(4) Fire Hydrant Assembly & Lateral

Fire hydrants shall conform to the requirements of the Fire Department of the City of Stockton as shown on the Standard Drawings and the following:

1. All hydrants shall be painted with “Chrome Yellow” polyurethane high duty industrial enamel. “Chrome Yellow” is Federal Standard 595B, color: FS33538.

2. All hydrants shall comply with AWWA C502, latest revision of San Joaquin County and the City of Stockton standard specifications.

3. All operating valves shall be located below grade and protected by "break off" features so that no water flows if hydrant is knocked off.

4. Hydrant main valve seat shall be a minimum 5-1/4 inches.

5. Hydrant valve shall be molded non-swelling rubber.

6. Hydrant main valve seat shall be threaded into a bronze to bronze subseat.

7. Hydrant bury shall be 36 inches from connection to ground flange. Materials to extend the length of bury must be readily available.

8. Break off check valve shall be installed in the hydrant assembly. Check valves should be of Model LBI 400A or approved equal.

9. Hydrant shall have a 4-inch streamer connection and a double 2.5-inch outlet.

10. Break-away spool with hollow break-off bolts (nut on bottom at connection to hydrant).

Fire Hydrant Assembly & Lateral shall include the 6” lateral diameter PVC pipe (AWWA C-900 with CIP equivalent OD) and 6” gate valve per Project Plans.

77-3.02A(5) In-Tract Water Service Connection

In-Tract Water Service Connection shall be as detailed in the Project Plans..

1. Type of in-tract water service pipe shall be limited to the following:

a) 1” HDPE SDR-11 or approved equal for horizontal directional drilling only.

77-3.03 CONSTRUCTION

77-3.03A 1” Water Service Line

Water Services Lines shall be installed in accordance and as shown on the Project Plans and as approved by San Joaquin County. The location of new water services lines shown on the plans may be adjusted during construction with prior approval from the County Engineer to clear obstructions and avoid conflict with existing utilities. Minimum horizontal separation between sanitary sewer laterals and water laterals shall be 10 feet, more separation is preferred.

The Contractor shall replace any existing improvements, damaged or displaced, in kind during the installation of the services. Existing improvements shall include, but not be limited to, existing curb, gutter, sidewalk, pedestrian ramp, landscaping, lighting or irrigation lines. No additional compensation will be made for the replacement of existing improvements. Service pipe crossing below gutter, curb and sidewalk shall be installed using horizontal boring or pushing methods. Water pressure washing methods are not permitted.

Water Services Lines (1” to 2” Diameter) shall be installed in accordance with the requirements of Section 4-3 of the 2014 San Joaquin County Public Works Improvement Standards and these Special Provisions.

Water Service Line (1” to 2” Diameter) shall include all tools, equipment, materials, and labor necessary to install water service lines from the new water main up to and including the meter box, as shown on the plans, per Section 4-3 of the 2014 San Joaquin County Public Works Improvement Standards and as described in these Special Provisions, and as directed by the County Engineer. Including but not limited to: fabrication, freighting, and furnishing of the service line, meter box, transceiver, fittings (including reducers and tees), idlers, meter stop, lock lugs, valves, nipples, nuts and bolts, couplers, corporation stops, curb stops, tracing wire, service saddles, and dielectric tape; sawcutting; excavation; spoiling; dewatering; shoring; temporary plating; bedding; placement; thrust blocking; restraints; tracing wire; backfill; compaction of backfill; temporary surface pavement; permanent surface pavement or concrete; restore existing landscaping, striping; and all incidental work in the installation of the service line. Contractor is responsible for any incompatibility of Water Service Line with future meter installation. This bid item includes all labor, equipment, materials, to connect the new service line through the meter box to the service side. This item also includes concrete restoration for the gutter, valley gutter, driveways, curb, and sidewalk.

Water Service Line (1” to 2” Diameter) excludes work from the idler to the connection to the existing customer’s in-tract service line. This work is included in a separate item of work.

The Contractor shall inspect each affected property prior to reconnecting service line to determine precise alignment of new piping, point of connection to building plumbing system, location, and type of surface or feature to be repaired, and any other information pertinent to reconnecting the water service.

Prior to installation of new water services on private property, the Contractor shall perform a video survey of the proposed service piping alignment and any areas to be disturbed within each affected property. Video recordings shall be in color, shall include the date and time, and be of sufficient quality and clarity to indicate the existing condition of the property. Videos shall be recorded within 10 calendar days prior to commencement of any disturbance of private properties. A playable video survey shall be provided to the Engineer in a flash drive.

Water service piping installed using conventional, open-cut trenching methods shall be installed in accordance with these Specifications and current San Joaquin County Standard Specifications with excavation and trenching conforming to Section 10, and backfilling conforming to Section 19 Earthwork, except as otherwise noted in the Contract Documents.

Trenching shall be performed to minimize the impact to surrounding areas as much as practical utilizing conventional machine powered or hand tools. Open trench will only be allowed with approval from San Joaquin County prior to trenching.

77-3.03B Fittings

Installation of fittings shall be as recommended by the manufacturer. Pipe or fittings made of nonferrous metals (bronze) shall be isolated from ferrous metals with insulating unions or couplings.

77-3.03C Hydrostatic Testing

The Contractor shall hydrostatic test per San Joaquin County Standards all appurtenances in place with the pipe being tested.

77-3.03D Fire Hydrant Assembly and Lateral

Under this item, the Contractor shall provide all labor and material necessary to install the fire hydrant assembly and corresponding lateral as shown on the plans or specified herein. Fire Hydrant Assembly & Lateral shall include all tools, equipment, materials, and labor necessary to install the fire hydrant assembly from the gate valve to the fire hydrant per the Plans, Section 4-3 of the 2014 San Joaquin County Public Works Improvement Standards, these Special Provisions, and as directed by the County Engineer, including, but not limited to: installation of the piping and fire hydrant; sawcutting; excavation; spoiling; dewatering; shoring; temporary plating; bedding; placement; fittings; valving; hydrant; shear bolts and breakaway spool, hydrant bury; thrust blocking; restraints; tracing wire; backfill; compaction of backfill; temporary surface pavement; permanent surface pavement; restore existing landscape, concrete restoration; concrete collar; striping; and all incidental work in the installation of the fire hydrant.

Where possible, hydrants shall be placed at property line extension at the end of a curb return, 3’ minimum from driveways or as shown on the improvement plans.

Fire hydrants along W. Benjamin Holt Drive shall be installed on the break-away spool to complete the final installation.

77-3.03E Connect Fire Hydrant to Break-Away Spool

Connect Fire Hydrant to Break-Away Spool includes all tools, equipment, materials, and labor necessary to connect Fire Hydrant to Break-Away Spools. The fire hydrant assembly shall include coordination of with County personnel to close the fire hydrant lateral valve, dewatering, and necessary procedure to install an already purchased fire hydrant barrel.

77-3.03F In-Tract Water Service Connection (Front Yard & Back Yard)

In-Tract Water Service Connection includes all tools, equipment, materials, and labor necessary to install the new in-tract water service line (downstream of the meter box), connect the new in-tract water system to the existing in-tract service line, existing service point of connection or installation and connection to a new service point of connection, and abandon the existing service connection to the existing water main per Section 4-3 of the 2014 San Joaquin County Public Works Improvement Standard, as described by these Special Provisions, and as directed by the County Engineer. Including but not limited to coordination with the County; temporary shut-down of the in-tract water system where required; groundwater and pipeline dewatering; removal and disposal of the existing pipe; sawcutting, excavation, spoiling, shoring, temporary plating, bedding, placement, couplings, thrust blocking, restraints, backfill, compaction of backfill, temporary surface pavement, permanent surface pavement, concrete restoration, landscaping restoration, directional boring, boring pits, cutting the removing portions of the existing pipe; safely and properly disposing of removed pipe; concrete caps; fittings required for the abandonment and connection; and all incidental work in the In-Tract Water Service Connection. This item includes the removal and disposal of up to 50 linear feet of existing in-tract water service line, the installation of up to 50 linear feet of proposed 1” diameter in-tract water service line for Front Yard connections, and the installation of up to 150 linear feet of proposed 1” diameter in-tract water service line for Back Yard connections.

Most residences are served by back yard water mains that typically have services that connect at the back of the house, or, sometimes, on the side of the house. Many back yard services have connections for irrigation systems, hose bibs, etc. between the County’s shut-off valve and the house. In-Tract Water Service Connection includes all coordination necessary to evaluate each customer’s existing service line and provide a new service without disrupting any known or unknown irrigation lines and ensure that existing water pipe connections remain in service.

In-Tract Water Service Connection (Front Yard & Back Yard) includes installation of the in-tract service line in the front yard and back yard that is required to connect to and abandon the existing in- tract system. The work shall be per the Project Plans which provide details for two types of in-tract service connections, one for connections to the existing in-tract system in the front yard and one for connections to the existing in-tract system in the back yard. The Contractor shall coordinate with the County Engineer to determine the applicable Detail for each customer. When possible, an on-site meeting with the customer and a representative of the County shall take place to determine the precise alignment of new piping, point of connection to plumbing system, location, and type of surface or feature to be repaired and any other information pertinent to reconnecting the property owner’s water service

connection.. It is important that the customer and the County work together to determine the point of connection and the water line path that is satisfactory to both parties.

When the resident of the property being connected to identifies they have an existing water softener system then the following applies.

Connect to Existing Water Softener includes all tools, equipment, materials, and labor necessary to connect the proposed in-tract water system to the existing water softener system. Including but not limited to coordination with the County; temporary shut-down of the in-tract water system where required; removal and disposal of the existing pipe and appurtenances; excavation, spoiling, shoring, temporary plating, bedding, placement, couplings, restraints, backfill, compaction of backfill, temporary surface pavement, permanent surface pavement, concrete restoration, landscaping restoration; fittings required for the connection; and all incidental work in the Connect to Existing Water Softener System.

The Contractor is responsible for delivering shutdown notices to the County customers 2-weeks, 1-week, 72 hours, and 24 hours prior to the time of proposed interruption.

Interruptions of service shall not exceed four hours.

The Contractor shall designate the method and sequence of connecting to existing water softener system for the County Engineer's approval. Connections to the existing water softener system shall not be made prior to obtaining satisfactory tests required by these Special Provisions and as per Section 4-3 of the 2014 San Joaquin County Public Works Improvement Standards unless allowed by County Engineer.

Horizontal Control drilling/boring machines may be used as a means of installing a new customer 1" Water Service Line. Open trenching may be used where conditions are favorable, or directional boring is inappropriate, and when approved by the County.

The directional bore equipment must have directional control of the boring tool and have an electronic boring tool location detection system. During operation, the directional bore equipment must be able to determine the location of the tool both horizontally and vertically.

The proper fittings must be used to transition to the water main and proposed in-tract water service connection.

Back yard conditions may exist where horizontal control boring may not be feasible. When this is the case, open trench cut will need to be evaluated and approved by San Joaquin County. Inspection should take place where connections will be made in the back yard to determine the least invasive construction method.

The Contractor shall bear the cost for all surface and subsurface improvement restoration associated with open cut trenching.

77-3.04 PAYMENT

77-3.04A 1" Water Service Line

Measurement and payment for **1" Water Service Line** bid items shall be full compensation by each, as shown on the Project Plans. Work shall include all work required to hot tap the service (if necessary), installation of new service line, cutting and capping old water service line, if applicable, and any other work incidental to replacing and/or installing the water services as shown on the Project Plans.

The Contractor shall be responsible for examining all specified properties to determine all labor, materials, and equipment necessary to install a new 1-inch water service; equipment, meter box and service line; and complete the installation of the new meter boxes as specified in the project plans. This includes, but not limited to, furnishing valve(s), service saddle, corp stop, curb stop, pipe, fittings, couplings, excavation, drain rock, backfill and compaction, furnishing and installing new in-tract line, tie-in to existing in-tract line, temporary and permanent surface restoration and all other incidentals necessary to complete the item. No additional compensation will be made if wet connections are required.

Class 2 AB used for backfill shall be paid for under the **Class 2 Aggregate Base** bid item up to the property line where the box is installed. Permanent surface restoration, in the roadway, shall be paid for under the **Hot Mix Asphalt (Type A)** bid item.

77-3.04B Fittings

When the contract does not include a separate bid item for fittings it must be considered as included in the contract prices paid for the various items of work involved.

77-3.04C Hydrostatic Testing

When the contract does not include a separate bid item for hydrostatic testing it must be considered as included in the contract prices paid for the various items of work involved.

77-3.04D Fire Hydrant Assembly & Lateral

Fire Hydrant Assembly & Lateral shall be paid for on a per unit basis. Measurement shall be based on the actual number of fire hydrants and laterals installed. The contract price for installing Fire Hydrant Assembly & Lateral bid item shall include full compensation for all labor, materials, tools, equipment and incidentals for doing all work involved in furnishing and installing the Fire Hydrant Assembly & Lateral as specified per Section 4 of the San Joaquin County Design and Construction Standards, as shown on the plans and these Special Provisions, and as directed by the County Engineer.

The lateral component, including the 6" gate valve, of the Fire Hydrant Assembly shall be included in the unit price for each **Fire Hydrant Assembly & Lateral** installed.

Class 2 AB used for backfill shall be paid for under the **Class 2 Aggregate Base** bid item. Permanent surface restoration, in the roadway, shall be paid for under the **Hot Mix Asphalt (Type A)** bid item.

77-3.04D(A) Connect Fire Hydrant to Break-Away Spool

Connect Fire Hydrant to Break-Away Spool shall be paid for un a per unit basis. Measurement shall be based on the actual number of fire hydrants connected to break-away spools. The contract price for installing Connect Fire Hydrant to Break-Away Spool bid item shall include full compensation for all labor, materials, tools, equipment and incidentals for doing all work involved in furnishing and installing the Connect Fire Hydrant to Break-Away Spool as specified per Section 4 of the San Joaquin County Design and Construction Standards, as shown on the plans and these Special Provisions, and as directed by the County Engineer.

The fire hydrant barrels have already been purchased and payment shall include the connection to the existing break-away spool with the potential to replace any nuts, bolts, or gaskets as needed.

77-3.04E In-Tract Water Service Connection (Front Yard & Back Yard)

In-Tract Water Service Connection (Front Yard & Back Yard) shall be paid for under **In-Tract Water Service Connection (Front Yard)** and **In-Tract Water Service Connection (Back Yard)** bid items on a per unit basis for both separate bid items. Measurement shall be based on the actual number of connection locations and the type of connection (front yard or back yard). The quantities provided for each type of In-Tract Water Service Connection are estimated including lengths of pipe for front and rear yard connections. The Contractor shall coordinate with the County Engineer to determine the type of connection (front yard or back yard) for each In- Tract Water Service Connection and adjust the quantities for each type. Where an existing water softener system exists this shall be included in the unit price per this section. The contract unit price paid for each In-Tract Water Service Connection location shall include full compensation for all labor, materials, tools, equipmentand incidentals, and for doing all the work involved, complete and in place, as specified in these Special Provisions, shown on the Plans, and as directed by the County Engineer, and no additional compensation will be allowed.

The contractor shall repair any areas, in kind, within private property damaged as a result of the new in-tract service including, but nor limited to paved surfaces, landscaping features, turf, private irrigation piping, utility conduits, underground wiring and any other surface or subsurface feature damaged or altered as a result of construction.

Backfill of Class 2 Aggregate Base due to open trenching for **In-Tract Water Service Connection (Front Yard)** and **In-Tract Water Service Connection (Back Yard)** shall be included in the bid items.

77-4 WATER MAIN CONSTRUCTION

77-4.01 GENERAL

77-4.01A Summary

This section governs materials and installation of water main line materials and fittings; including laying, jointing, bedding, testing and approvals. All incidentals and appurtenant operations necessary for the construction of pipelines shall be done in strict accordance with the drawings and other terms and conditions of the contract.

All standard specifications, i.e., AWWA, ASTM, etc., made a portion of these specifications by reference shall be the latest edition and revision thereof.

The contractor shall be responsible for all material furnished by him and shall replace it at his own expense, should the material be defective in manufacture or damaged in handling after delivery by the manufacturer. This shall include the furnishing of all material and labor required to replace defective material discovered prior to final acceptance of the work.

Pipe surfaces shall be free from nicks, scratches and other blemishes. The joining surfaces of pipe spigots and of integral bell and sleeve reinforced bell sockets shall be free from gouges or other imperfections that might cause leakage.

77-4.01B SUBMITTALS

Submittals shall be provided for the following items plus all additional items required in the specifications for the particular type of pipe:

1. Pipe and joining material
2. Fittings
3. Specialties
4. Prior to the purchase of gate valves to be used in the County's system, the following items shall be submitted and approved by the Engineer:
    a. Manufacturer's catalog data and detail construction sheets showing the size to be used, valve dimensions, pressure rating, and materials of construction.
    b. Manufacturer's catalog data and NSF certification seal on the lining to be used.

77-4.02 MATERIALS

77-4.02A Main Line Materials and Fittings 77-4.02A(1) General

A certificate of compliance shall be furnished with all materials listed herein. All pipes and

fittings (except valves) shall have a minimum working pressure of 150 pounds per square inch (psi) and shall comply with Section 4 of the San Joaquin County Improvement Standards.

77-4.02A(2) Joint Restraint

Restrained Joints shall be installed at no extra cost to the County. Custom PVC fittings per this specification shall be restrained using an EBAA Series 2500 joint restrain or approved equal.

77-4.02A(3) PVC C-900 (DR-14 & DR-18)

Polyvinyl Chloride (PVC) pipe shall be furnished in the classes, sizes, and grades designated on the plans and special provisions.

Polyvinyl Chloride pipe shall meet the requirements of AWWA C-900 "Polyvinyl Chloride (PVC) Pressure Pipe." Pipe sizes shall be four inches through twelve inches only - AWWA Class 150 minimum. All Class 150 pipe shall meet the requirements of DR 18 and Class 200 pipe shall meet the requirements of DR 14 with cast iron O.D.

All pipe shall be suitable for use as a pressure conduit. Provisions shall be made for expansion and contraction at each joint with an "o" ring elastomeric gasket seal meeting the requirements or ASTM D-1869 and F-477. Solvent welded joints will not be permitted. The bell section shall be designed to be at least as strong as the pipe wall.

Fitting for PVC pipe shall be cast iron only.

When special construction of the water main is required for the separation of water mains and sanitary sewers or storm drains as set forth in Section 64630 of Title 22 of the California Administrative Code, Alternate Pipe shall consist of the following:

1. Ductile iron pipe per AWWA C151;

2. Welded steel pipe per AWWA C200, 1/4" thick and lined and wrapped per AWWA C203;

3. Class 200 PVC pipe per AWWA C900, DR-14;

77-4.02A(4) Valves

This specification includes 4-inch through 12-inch diameter valves of all kinds for buried service in a domestic water system.

Gate valves shall be double disc type with parallel seats and non-rising stems, meeting or exceeding the latest revisions of AWWA C-500 with a design working pressure of 200 psi. Valve disc seats shall be Grade 1 bronze.

Resilient seated gate valves conforming to AWWA specifications C509-80 are acceptable and are required for fire hydrant installations.

Butterfly valves shall meet or exceed the latest revisions of AWWA C-504 with a design working pressure of 150 psi. Operators for butterfly valves 20 inches and smaller shall be Class 150; larger operators will be as specified in the special provisions and designed for actual line conditions as covered in AWWA C-504, Appendix A.

Valve ends shall be mechanical joint or flanged in accordance with AWWA C-500 unless otherwise specified.

Valves for use with flanged pipe shall be cast with Class 125 flanges, dimensions and drilling shall conform to ASA B16.1. Flange bolt holes shall be spot faced if flange fillets interfere with bolt heads and nuts.

Check valves on pump discharge shall be outside arm with counter weight and spring control.

The inlet flange for tapping gate valves shall be provided with Class 125 flange for attaching to tapping sleeve. The flange shall have a machined projection compatible with a machined recess in the tapping sleeve. The outlet of the valve shall be provided with a flange for tapping machine mounting. Tapping sleeves shall be mechanical joint and flange unless deviation is permitted by the County.

All pipe fitting, joint, and tapping gate valve connections must be hot tap to prevent water shut off from residents and business locations.

All stem seals, gate valves and butterfly valves, shall be "O" rings only.

Wrench nuts shall be made of top grade cast iron, fitting the top of the valve stem and secured by nut or key. Wrench nuts shall be 1-15/16 inch square at the top and 2 inches square at the bottom.

Valves requiring operating wrenches exceeding 6 feet in length shall have extension and guides installed in valve boxes.

The open direction shall be left (counterclockwise) and the closed direction right (clockwise) for gate valves for 10” or smaller, Butterfly for 12” and larger.

Valve stems shall be stainless steel.

77-4.02A(5) Cast Iron Fittings

Cast iron fittings shall be Class D fittings conforming to ASTM Designation 126 and shall be 150 pounds. All valves and fittings shall be flanged.

77-4.02A(6) Valve Boxes

Valve boxes and covers shall conform to San Joaquin County Standard Drawings.

77-4.02A(7) Gaskets

Gaskets for flanged joints shall be full-circle 1/16-inch composition gaskets.

77-4.02A(8) Thrust Blocks

Concrete for thrust blocks shall be Class II in accordance with Section 90, " Concrete," of the Standard Specifications. At unrestrained vertical bends, thrust blocks must include a minimum of two (2) number four (#4) steel reinforcing bars with 2-inch minimum concrete embedment as directed by the County to assure secure attachment to the vertical bend.

77-4.02A(9) Blind Flanges

Blind Flanges shall conform to ASME B16.24 and all other applicable standards.

77-4.03 CONSTRUCTION

77-4.03A(1) General

The pipe shall be handled with care at all times and in a manner that meets the approval of the Engineer. Extreme care shall be exercised in the use of any mechanical devices used in laying the pipe to avoid scarring or other damage.

The County or it's representatives shall be the judge of whether a pipe is seriously damaged and any pipe so classified shall be permanently removed from the site of the work.

Installation and clearances for water main crossings shall be in accordance with the requirements of Section 64630 of Title 22, California Administrative Code and these plans and special provisions.

The inside of all pipes and couplings shall be free from dirt, grease, or other deleterious materials. The open ends of all pipe previously laid shall be adequately plugged water tight whenever pipe laying operations are suspended at the end of each work day, or for any other reason.

Select material shall be placed and thoroughly compacted across the bottom of the trench to provide full support of all the pipe. Bells and/or couplings shall have soil removed to provide a uniform bearing.

All connections to existing lines shall be made with flanged fittings with isolation plates. Connection details shall be subject to approval by the County.

At all locations shown on the improvement plans where the waterline crosses under an existing sewer or storm drain line, the location of the crossing shall occur at the mid- stick of water pipe, to reduce chances of contamination. At crossing locations, a minimum of 1' of vertical clearance is required from outside edge of water pipe to outside edge of storm drain or sewer pipe. Proposed water pipe material at the crossings shall be C-900 (DR-14) PVC pipe with thrust blocks. Contractor may elect to supply and install restrained joint fittings in

lieu of concrete thrust blocks as appropriate, with approval from the County, unless noted on the plans that both are required. At unrestrained vertical bends, thrust blocks must include a minimum of two (2) number four (#4) steel reinforcing bars with 2-inch minimum concrete embedment as directed by the County to assure secure attachment to the vertical bend.

At locations where the waterline crosses under an existing sewer line, the stick of water pipe centered under the existing sewer line shall be 20' long and minimum of 18' long. The proposed water main shall cross the existing sewer line at an angle of at least 45 degrees, and there shall be at least 8' of separation between the edge of the existing sewer pipe and the nearest joint in the water main.

At locations where the waterline crosses under an existing storm drain line, the stick of pipe centered under the existing storm line shall typically be 20' long to 18' long, where possible. If the installation of 20' long to 18' long stick is not shown on the plans, the water pipe shall be installed to provide at least 8' of separation from the edge of the existing storm drain pipe and the nearest joint in the water main. The proposed water main shall cross the existing storm drain line at an angle of at least 45 degrees.

The Contractor must verify the depth and location of underground utilities shown on the plans and as delineated in the field by utility companies. The number of potholes will correspond with what is shown on the Project Plans. Pavement repair work will be considered as included in the various items for work involved and no additional compensation will be made thereof. Potholing to locate services, laterals, and related appurtenances will be completed by the Contractor as shown on the Project Plans and included as **Pothole for Underground Facilities** bid item.

All new water mains and services shall be tested and disinfected in accordance with the requirements of Section 77 of the San Joaquin County Standard Specifications.

Water Main installation includes all tools, equipment, materials, and labor necessary to install 6", 8", 10", 12" and 16" PVC pipe, including but not limited to: fabrication, freighting, and furnishing of the pipeline; sawcutting; excavation; spoiling; dewatering; shoring; temporary plating; bedding; placement; caps and blind flanges; fittings (bends and reducers); tracing wire; backfill; compaction of backfill; temporary surface pavement; permanent surface pavement; concrete encasements (as required per W-10 of the San Joaquin County Improvement Standards), arches, or cradles; concrete restoration (including curb, gutter, sidewalk, pedestrian ramps, landscape, driveways, speed humps, and valley gutters); striping; and all incidental work in the installation of the waterline. As shown on the Project Plans and with approval from San Joaquin County, the Contractor can use DR-14 pipe in lieu of concrete encasements for pipe crossings.

The Contractor shall be responsible for the safe storage of material until it has been incorporated into the completed project. The interior of all pipe and fittings shall covered or capped to be kept free from dirt and foreign matter at all times.

Pipe shall be stored at the job site in unit packages provided by the manufacturer. Caution shall be exercised to avoid compression, damage or deformation to bell ends of the pipe. If pipe is to be exposed to direct sunlight for more than 14 days, pipe must be covered with an

opaque material while permitting adequate air circulation above and around the pipe to prevent excessive heat accumulation. Gaskets shall be protected from excessive exposure to heat, direct sunlight, ozone, oil and grease.

77-4.03A(2) Joint Restraint

Restrained length shall be as required per manufacturer's recommendations and shall be a minimum of 18-feet of restrained pipe into the fitting from all directions.

Mechanically restrained joints shall be required along water pipe where less than 10' horizontal separation and 1' vertical separation for any parallel sewer pipeline cannot be met.

Mechanically restrained joints shall be required along water pipe within 8' of the outside edge of the crossing sewer pipe where less than 1' vertical separation above the sewer pipe cannot be met.

Mechanically restrained joints shall be required along water pipe within 8' of the outside edge of the crossing storm drain pipe where less than 1' vertical separation above the storm drain pipe cannot be met.

77-4.03B Execution

77-4.03B(1) Handling and Transportation

Handling and transportation of pipe shall be in accordance with the pipe manufacturer's published instructions. Heavy canvas, or nylon slings of suitable strength shall be used for lifting and supporting materials. Chains or cables shall not be used. Pipe and fittings shall not be stored on rocks or gravel, or other hard material which might damage the pipe. All rubber gaskets shall be stored in a cool, well-ventilated place and should not be exposed to the direct rays of the sun. Gaskets shall not be allowed in contact with oils, fuels, petroleum, or solvents.

77-4.03B(2) Pipe Laying

Pipe shall be laid in accordance with the pipe manufacturer's published instructions, as complimented and modified herein and in the plans.

77-4.03B(3) Testing

The test for hydrostatic pressure shall commence no sooner than seven (7) days after the last concrete thrust block has been cast with standard cement or at least after thirty- six (36) hours with high early strength cement, and after backfilling and compacting the trench to the plane upon which the asphalt concrete surfacing is to be placed. The Contractor shall take the necessary precautions to ensure that the pipe fittings, couplings, valves, and other appurtenances are not displaced during the test. Twenty- four (24) hours prior to the time of the test, the sections of pipe to be tested shall be filled with water, and care shall be exercised to assure removal of all air from the pipe.

After the twenty-four (24) hour period, the completed pipe sections to be tested shall be subjected to a hydrostatic test pressure of one hundred fifty (150) pounds per square inch for two (2) hours. During this period the test pressure shall be maintained and the amount of make-up water measured. The leakage rate for this test shall not exceed 0.01 gallons for each inch of diameter for each pipe joint in the section being tested.

Any leaks, failures, or imperfect construction revealed during the test period shall be corrected by the Contractor at their own cost and expense. The Contractor shall repair all defects, fill and recompact the trench and retest the section of line until satisfactory results are obtained.

No valve or other control on an existing system shall be operated for any purpose by the Contractor. The Contractor shall coordinate with San Joaquin County Public Works to operate any valve, hydrant, blowoff or curb stop. The Contractor is responsible for delivering shutdown notices to the County customers 2-weeks, 1-week, 72 hours, and 24 hours prior to the time of proposed interruption. Interruptions of service shall not exceed four hours.

77-4.03B(4) Disinfection

The Contractor shall furnish all materials, equipment, tools and labor necessary to do the work required to disinfect the new water mains as specified in these special provisions and as directed by the County. The interior of all pipe, fittings, and other accessories shall be kept as free as possible from dirt, foreign material and bacteria at all times. During pipe laying operations, when bacterial contamination of interior pipe surfaces is obvious or suspected by the Director, he may order said surfaces to be swabbed with an approved bactericidal solution.

77-4.03B(5) Isolation of New Main

All new water lines shall be completely isolated from all existing mains until they have been tested and disinfected to the satisfaction of the Director. New mains may be filled from existing mains, but only when using an approved temporary tap assembly. The temporary tap shall consist of a shut off valve and a State Department of Health Services approved reduced pressure backflow prevention device. Connection details shall be submitted to the Director for approval prior to installation.

When the new main is properly disinfected and the isolation dam is removed from connection flange or other type connection is made, extreme care shall be exercised to prevent the entry of contamination. Connection fittings shall be thoroughly swabbed with an approved bactericide immediately prior to their installation.

Flush the mains thoroughly at the end of the contact period. The orthotolidine test shall show no more chlorine in the water leaving the main than in the water entering the main.

The Contractor shall collect a sample for bacteriological examination in a sterile bottle provided by the laboratory. On the label, give date, address, and the name or number for the project. The sample may be taken through the same blowoff used for flushing the heavily chlorinated water out of the main so that the blowoff is sterilized.

If the bacteriological tests are unsatisfactory, the main shall be re-sterilized using Method No. 2, and the sterilization repeated, if necessary, until satisfactory results are obtained.
Method No. 1 - H.T.H. Tablet Method

This method is preferred for short jobs and for small diameter pipe of any kind. It cannot be used where trench water has entered the main. The main cannot be flushed prior to sterilization, so the method requires that the pipe be kept clean during installation.

Using Permatex No. 1 as an adhesive, fasten the required number of tablets (see Table I) to the inside top of each length of pipe. The tablets may be fastened to the pipe before it is placed in the trench providing the top of the pipe is marked to ensure that the tablets are on the top of the pipe after installation.

When using dresser or similar couplings, an additional tablet shall be crushed and placed in the annular space between the coupling and the pipe. Fill the pipe very slowly and proceed as outlined under General Instructions of the manufacturer.

Method No. 2 - H.T.H. Solution with Hand Pump Method

This method is general in scope and must be used when it is necessary to re- chlorinate an existing main. When this method is used on a main coupled with dresser or similar couplings, a pinch of H.T.H. powder shall be placed in each coupling as the main is laid.

Equipment required includes an ordinary hand test pump, solution hose, and a five gallon can to contain the chlorine solution.

Compact and convenient assembly can be made by mounting the solution can and the pump on a suitable board with a pipe connection from the tank on the suction side of the pump.

H.T.H. comes as a powder which must be dissolved in water. Strong chlorine solutions should be handled with care according to manufacturer's instructions.

Make up chlorine solution according to Table II. The quantity required is estimated from Table II. An excess volume should be prepared so as not to empty the container before the job is complete.

Connect pump to main. Use a corporation cock for this purpose and make connection at or ahead of the inlet end of the new line.

After flushing the line thoroughly adjust flow by timing the period required to fill a five gallon can.

Pump chlorine solution into the line at a rate of one gallon of solution in three minutes.

Continue pumping until orthotolidine tests on a sample taken from discharge end of line being treated shows a red color, or until the odor of chlorine is noticed.

After finishing application of chlorine, close valve or blowoff. Disconnect and flush pump thoroughly with fresh water. If the above procedure has to be varied because of some unusual condition, it will be necessary only to regulate the pump, control the water flow, or adjust the strength of the chlorine solution to give a dose of at least 50 ppm.

TABLE I
NUMBER OF TABLETS REQUIRED FOR
MAIN STERILIZATION

	Diameter of Pipe					
Length of Section	2"	4"	6"	8"	10"	12"
13' or Less	1	1	2	2	3	5
18'	1	1	2	3	5	6
20'	1	1	2	3	5	7
30'	1	2	3	5	7	10
40'	1	2	4	6	9	14

TABLE II
CHLORINE SOLUTION STRENGTH
HAND PUMP METHOD OF MAIN CHLORINATION

Amount of chemical in 5 Gallons of Solution

Discharge Rate GPM	H.T.H.
10	0.25 lbs.
20	0.50 lbs.
35	0.75 lbs.
50	1.00 lbs.
75	1.50 lbs.
100	2.00 lbs.

Choose a suitable discharge rate and determine the time required to apply the chlorine from Table III.

Compare the gallons of solution required by dividing this time by 3.

Use the above table to determine the strength of solution required. Example: If the estimate time from Table III is 35 minutes, 11-2/3 gallons will be required; and if the discharge rate is 50 GPM, the solution should contain one pound of H.T.H. in five gallons. Prepare 15 gallons of solution so as to be sure of having an adequate amount.

Operate the hand pump at a rate of five gallons in 15 minutes, or one gallon in three minutes.

TABLE III
Time in Minutes to Apply Chlorine to 100 Feet of Pipe

Discharge Rate GPM	2"	4"	6"	8"	10"	12"
10	2	7	15	26	41	59
20		3	7	13	20	29
35		2	4	8	12	17
50			3	5	8	12
75			2	4	6	8
100				3	4	6

The above table is used to estimate the time required to apply chlorine. For example: 700' of 8" main can be filled with chlorine solution in 35 minutes with a discharge rate of 50 GPM.

77-4.03B(6) Connection to Existing Water System

Connect to Existing Water System includes all tools, equipment, materials, and labor necessary to connect the proposed water system to the existing water system and abandon the existing mainline servicing those areas served by the proposed main. Including but not limited to coordination with the County; temporary shut-down of the water system where required; development of groundwater and pipeline dewatering; removal and disposal of the existing pipe; relocation of existing 8” and 3” meters; connection to irrigation service; sawcutting, excavation, spoiling, shoring, temporary plating, bedding, placement, couplings, thrust blocking, restraints, backfill, compaction of backfill, temporary surface pavement, permanent surface pavement, concrete restoration, landscaping restoration, and striping required that is above and beyond what is needed to install the new waterline; cutting the existing pipe; removing portions of the existing pipe; safely and properly disposing of removed pipe; concrete caps; fittings required for the abandonment and connection; and all incidental work in the Connect to Existing System. This item includes the removal and disposal of up to 20 linear feet of existing water pipe per connection location.

Connect to Existing Water System includes all labor, equipment, materials, preparation of a Connection and Abandonment (Shutdown) Plan and coordination necessary to complete the mainline connections, abandonments including cut and cap, and outages. The proposed water system is to be isolated from the existing County system until bacteriologically acceptable. The Contractor shall designate the method and sequence of connecting to existing mains for the County Engineer’s approval to minimize contamination danger. Connections to existing facilities shall not be made prior to obtaining satisfactory tests required by these Special Provisions and as per Section 4-3 of the 2014 San Joaquin County Public Works Improvement Standards.

All demolished materials shall be removed from the site and disposed of by the Contractor.

The Contractor shall exercise extreme care and meet all safety requirements of OSHA when working, handling, removing, and disposing asbestos cement pipe. The Contractor shall be solely responsible for all injuries, damages, or liabilities of any kind, caused by working, removing, and handling of such material or equipment.

The Contractor shall provide the County a schedule of the proposed work and coordinate with the County on all water system outages. The Contractor shall determine the extents of the outages and the effected parcels during connections to the existing system and service switch-overs.

The Contractor is responsible for delivering shutdown notices to the County customers 2-weeks, 1-week, 72 hours, and 24 hours prior to the time of proposed interruption.

Interruptions of service shall not exceed four hours. Manipulation of existing valves shall only be done by the County utility personnel.

A transition coupling shall be installed when connecting the new water pipe to the existing pipe, unless otherwise noted on the plans. Transition coupling shall be manufactured by Dresser or as approved equal by the County Engineer.

77-4.03B(7) Connection to Existing Water System (Phase 1A)

Connect to Existing Water System (Phase 1A) includes all tools, equipment, materials, and labor necessary to connect the proposed water system to the existing water system. Including but not limited to coordination with the County; temporary shut-down of the water system where required; development of groundwater and pipeline dewatering; sawcutting, excavation, spoiling, shoring, temporary plating, bedding, placement, couplings, thrust blocking, restraints, backfill, compaction of backfill, temporary surface pavement, permanent surface pavement, concrete restoration, landscaping restoration, and striping required that is above and beyond what is needed to install the new waterline; cutting the existing pipe; removing portions of the existing pipe as needed; safely and properly disposing of removed pipe and temporary blow-offs; concrete caps; fittings required for the abandonment and connection; and all incidental work in the Connect to Existing System. This item includes the removal and disposal of up to 20 linear feet of existing water pipe per connection location as needed.

Connect to Existing Water System (Phase 1A) includes all labor, equipment, materials, preparation of a Connection and Abandonment (Shutdown) Plan and coordination necessary to complete the mainline connections, and outages. The proposed water system is to be isolated from the existing County system until bacteriologically acceptable. The Contractor shall designate the method and sequence of connecting to existing mains for the County Engineer's approval to minimize contamination danger.

Connections to existing facilities shall not be made prior to obtaining satisfactory tests required by these Special Provisions and as per Section 4-3 of the 2014 San Joaquin County Public Works Improvement Standards.

All demolished materials shall be removed from the site and disposed of by the Contractor.

The Contractor shall exercise extreme care and meet all safety requirements of OSHA when working, handling, removing, and disposing asbestos cement pipe. The Contractor shall be solely responsible for all injuries, damages, or liabilities of any kind, caused by working, removing, and handling of such material or equipment.

The Contractor shall provide the County a schedule of the proposed work and coordinate with the County on all water system outages. The Contractor shall determine the extents of the outages and the effected parcels during connections to the existing system and service switch-overs.

The Contractor is responsible for delivering shutdown notices to the County customers 2-weeks, 1-week, 72 hours, and 24 hours prior to the time of proposed interruption.

Interruptions of service shall not exceed four hours. Manipulation of existing valves shall only be done by the County utility personnel.

A transition coupling shall be installed when connecting the new water pipe to the existing pipe, unless otherwise noted on the plans. Transition coupling shall be manufactured by Dresser or as approved equal by the County Engineer.

77-4.03B(8) Connection to Existing Water System (Benjamin Holt)

Connect to Existing Water System (Benjamin Holt) includes all tools, equipment, materials, and labor necessary to connect the proposed water system to the existing water system and abandon the existing mainline servicing those areas served by the proposed main. Including but not limited to coordination with the County; temporary shut-down of the water system where required; development of groundwater and pipeline dewatering; removal and disposal of the existing pipe; sawcutting, excavation, spoiling, shoring, temporary plating, bedding, placement, couplings, thrust blocking, restraints, backfill, compaction of backfill, temporary surface pavement, permanent surface pavement, concrete restoration, landscaping restoration, and striping required that is above and beyond what is needed to install the new waterline; cutting the existing pipe; removing portions of the existing pipe; safely and properly disposing of removed pipe; concrete caps; fittings required for the abandonment and connection; and all incidental work in the Connect to Existing Water System (Benjamin Holt). This item includes the removal and disposal of up to 20 linear feet of existing water pipe per connection location as needed.

Connect to Existing Water System (Benjamin Holt) includes all labor, equipment, materials, preparation of a Connection and Abandonment (Shutdown) Plan and coordination necessary to complete the mainline connections, abandonments including cut and cap, and outages. The proposed water system is to be isolated from the existing County system until bacteriologically acceptable. The Contractor shall designate the method and sequence of connecting to existing mains for the County Engineer's approval to minimize contamination danger.
Connections to existing facilities shall not be made prior to obtaining satisfactory tests required by these Special Provisions and as per Section 4-3 of the 2014 San Joaquin County Public Works Improvement Standards.

All demolished materials shall be removed from the site and disposed of by the Contractor. The Contractor shall exercise extreme care and meet all safety requirements of OSHA when working, handling, removing, and disposing asbestos cement pipe. The Contractor shall be solely responsible for all injuries, damages, or liabilities of any kind, caused by working, removing, and handling of such material or equipment.

The Contractor shall provide the County a schedule of the proposed work and coordinate with the County on all water system outages. The Contractor shall determine the extents of the outages and the effected parcels during connections to the existing system and service switch-overs.

The Contractor is responsible for delivering shutdown notices to the County customers 2-weeks, 1-week, 72 hours, and 24 hours prior to the time of proposed interruption.

Interruptions of service shall not exceed four hours. Manipulation of existing valves shall only be done by the County utility personnel.

A transition coupling shall be installed when connecting the new water pipe to the existing pipe, unless otherwise noted on the plans. Transition coupling shall be manufactured by Dresser or as approved equal by the County Engineer.

77-4.03B(9) Connect to Existing Backflow Preventer

Connect to Existing Backflow Preventer Includes all tools, equipment, materials, and labor necessary to connect the proposed water system to the existing backflow preventer and remove the existing service line per Section 4-3 of the 2014 San Joaquin County Public Works Improvement Standards, as described by these Special Provisions, and directed by the County Engineer. Including but not limited to coordination with the County; temporary shut-down of the water system where required; development of groundwater and pipeline dewatering; removal and disposal of the existing pipe; sawcutting, excavation, spoiling, shoring, temporary plating, bedding, placement, couplings, thrust blocking, restraints, backfill, compaction of backfill, temporary surface pavement, permanent surface pavement, concrete restoration, landscaping restoration, and striping required that is above and beyond what is needed to install the new waterline; cutting the existing pipe; removing portions of the existing pipe; safely and properly disposing of removed pipe; concrete caps; fittings required for the abandonment and connection; and all incidental work in the Connect to Existing Backflow Preventer. This item includes the removal and disposal of up to 50 linear feet of existing water pipe per connection location.

Connect to Existing Backflow Preventer includes all labor, equipment, materials, preparation of a Connection and Abandonment Plan and coordination necessary to complete the backflow preventer connections, abandonments, and outages. The proposed backflow preventer is to be isolated from the existing County system until bacteriologically acceptable. The Contractor shall designate the method and sequence of connecting to existing backflow preventer for the County Engineer’s approval to minimize contamination danger.

Connections to existing facilities shall not be made prior to obtaining satisfactory tests required

by these Special Provisions and as per Section 4-3 of the 2014 San Joaquin County Public Works Improvement Standards unless allowed by County Engineer.

The Contractor shall provide the County a schedule of the proposed work and coordinate with the County and Customer on all water system outages. The Contractor shall determine the extents of the outages and the effected parcel required during connections to the existing system and backflow preventer switch-overs.

The Contractor is responsible for delivering shutdown notices to the County customers 2-weeks, 1-week, 72 hours, and 24 hours prior to the time of proposed interruption.

Interruptions of service shall not exceed four hours. Manipulation of existing valves shall only be done by the County utility personnel.

Work restrictions and requirements for outages can be found in Section 3.01 of these Special Provisions.

Transition coupling shall be installed when connecting the new water pipe to the existing pipe. Transition coupling shall be as manufactured by Dresser or as approved equal by the County Engineer.

77-4.03B(10) Reduced Pressure Zone Assembly

Reduced Pressure Zone Assembly Includes all tools, equipment, materials, and labor necessary to construct a reduced pressure zone assembly to the existing city intertie and remove the existing service line per Section 4-3 of the 2014 San Joaquin County Public Works Improvement Standards and the City of Stockton Standard Drawing W-9, as described by these Special Provisions, and directed by the County and City Engineer. Including but not limited to coordination with the County and City; temporary shut-down of the water system where required; development of groundwater and pipeline dewatering; connection to existing water system; removal and disposal of the existing pipe; sawcutting, excavation, spoiling, shoring, temporary plating, bedding, placement, couplings, thrust blocking, restraints, backfill, compaction of backfill, temporary surface pavement, permanent surface pavement, concrete restoration, landscaping restoration, and striping required that is above and beyond what is needed to install the new waterline; cutting the existing pipe; removing portions of the existing pipe; safely and properly disposing of removed pipe; concrete caps; fittings required for the abandonment and connection; and all incidental work in the Reduced Pressure Zone Assembly. This item includes the removal and disposal of up to 50 linear feet of existing water pipe per connection location.

Reduced Pressure Zone Assembly's are located on West Greeley Way and N Pershing Avenue south of Benjamin Holt and are required at the City of Stockton's intertie water supply.

77-4.03B(11) Connect to Existing Irrigation Service

Connect to Existing Irrigation Valve Includes all tools, equipment, materials, and labor necessary to connect the proposed water system to the existing irrigation valve per Section 4-

3 of the 2014 San Joaquin County Public Works Improvement Standards, as described by these Special Provisions, and directed by the County Engineer. Including but not limited to coordination with the County; temporary shut-down of the water system where required; development of groundwater and pipeline dewatering; removal and disposal of the existing pipe; installing of new 2" pipe, sawcutting, potholing, excavation, spoiling, shoring, temporary plating, bedding, placement, couplings, thrust blocking, restraints, backfill, compaction of backfill, temporary surface pavement, permanent surface pavement, concrete restoration, landscaping restoration, and striping required that is above and beyond what is needed to install the new waterline; cutting the existing pipe; removing portions of the existing pipe; safely and properly disposing of removed pipe; concrete caps; fittings required for the abandonment and connection; and all incidental work in the Connect to Existing Irrigation Valve. This item includes the removal and disposal of up to 50 linear feet of existing water pipe per connection location as needed.

77-4.04 PAYMENT

77-4.04A(1) PVC C-900 Water Pipe (DR-14 & DR-18)

The payment quantity for the **8" Polyvinyl Chloride Pipe (AWWA C-900) DR-18, 8" Polyvinyl Chloride Pipe (AWWA C-900) DR-14, 10" Polyvinyl Chloride Pipe (AWWA C-900) DR-18, and 10" Polyvinyl Chloride Pipe (AWWA C-900) DR-14** bid items are the length of the pipe installed measured parallel to the ground surface along the centerline of the trench at the finished grade in linear feet. The various PVC C-900 Water Pipe bid items shall include all tools, equipment, materials, and labor necessary to install the pipe including, but not limited to freighting, and furnishing of the pipe; sawcutting; excavation; spoiling; dewatering; shoring; removal and disposal of the existing trench material; temporary plating; bedding; placement; fittings and flanges; connecting to the system; restrained joints; backfilling; compacting of backfill; temporary and permanent surface restoration, as necessary, including speed humps; concrete encasements (as required per W-10 of the San Joaquin County Improvement Standards), and all incidental work in the installation of the waterline and all incidental work in the installation of the new pipeline.

Class 2 AB used for backfill shall be paid for under the **Class 2 Aggregate Base** bid item. Permanent surface restoration, in the roadway, shall be paid for under the **Hot Mix Asphalt (Type A)** bid item.

77-4.04A(2) Connect to Existing Water System

Connect to Existing Water System shall be paid for on a per unit basis. Measurement shall be based on the actual number of connection locations as identified on the plans. The contract unit price paid for each Connect to Existing Water System location shall include full compensation for all labor, materials, tools, equipment and incidentals, and for doing all the work involved, including cut and cap of the abandoned water main complete and in place, relocation of existing 8" and 3" meters, connection to irrigation service, as specified in these Special Provisions, and as directed by the County Engineer, and no additional compensation will be allowed.

Connect to Existing Water System shall include Class 2 Aggregate Base for the backfill

and Hot Mix Asphalt (Type A) for permanent restoration in this bid item.

77-4.04A(3) Connect to Existing Water System (Phase 1A)

Connect to Existing Water System (Phase 1A) shall be paid for on a per unit basis. Measurement shall be based on the actual number of connection locations as identified on the plans. The contract unit price paid for each Connect to Existing Water System (Phase 1A) location shall include full compensation for all labor, materials, tools, equipment and incidentals, and for doing all the work involved, as specified in these Special Provisions, and as directed by the County Engineer, and no additional compensation will be allowed.

Connect to Existing Water System (Phase 1A) shall include Class 2 Aggregate Base for the backfill and Hot Mix Asphalt (Type A) for permanent restoration in this bid item.

77-4.04A(4) Connect to Existing Water System (Benjamin Holt)

Connect to Existing Water System (Benjamin Holt) shall be paid for on a per unit basis. Measurement shall be based on the actual number of connection locations as identified on the plans. The contract unit price paid for each Connect to Existing Water System (Benjamin Holt) location shall include full compensation for all labor, materials, tools, equipment and incidentals, and for doing all the work involved, including cut and cap of the abandoned water main complete and in place, as specified in these Special Provisions, and as directed by the County Engineer, and no additional compensation will be allowed.

Connect to Existing Water System (Benjamin Holt) shall include Class 2 Aggregate Base for the backfill and Hot Mix Asphalt (Type A) for permanent restoration in this bid item.

77-4.04A(5) Gate Valve

The **8" Gate Valve** and **10" Gate Valve** bid items shall be paid for on a per unit basis. Measurement shall be based on the actual number of Gate Valves installed. The contract unit price paid for each Gate Valve shall include full compensation for all labor, materials, tools, equipment and incidentals, and for doing all the work involved, complete and in place, as specified per Section 4-3.01 and San Joaquin County Design Standards and as directed by the County Engineer and Department of Public Works, and no additional compensation will be allowed.

77-4.04A(6) Fittings

When the contract does not include a separate bid item for fittings it must be considered as included in the contract prices paid for the various items of work involved.

77-4.04A(7) Connect to Existing Backflow Preventer

Connect to Existing Backflow Preventer shall be paid for on a per unit basis. Measurement shall be based on the actual number of locations where connections are identified on the plans. The contract unit price paid for each Connect to Existing Backflow

Preventer location shall include full compensation for all labor, materials, tools, equipment and incidentals, and for doing all the work involved, complete and in place, as specified per Section 4-3 of the 2014 San Joaquin County Public Works Improvement Standards, these Special Provisions, and as directed by the County Engineer, and no additional compensation will be allowed.

Class 2 AB used for backfill shall be paid for under the **Class 2 Aggregate Base** bid item. Permanent surface restoration, in the roadway, shall be paid for under the **Hot Mix Asphalt (Type A)** bid item.

77-4.04A(8) Testing, Disinfection, and Flushing

Testing, Disinfection, and Flushing shall be paid for on a lump sum basis. Measurement will be based on the percentage of work completed as determined by the County Engineer. The contract lump price paid for Testing, Disinfection, and Flushing shall include full compensation for all labor, materials, tools, equipment and incidentals, and for doing all the work involved, complete and in place, as specified per these Special Provisions and as directed by the County, and no additional compensation will be allowed.

77-4.04A(9) Reduced Pressure Zone Assembly

Reduced Pressure Zone Assembly shall be paid for on a per unit basis. Measurement shall be based on the actual number of locations where reduced pressure zone assemblies are identified on the plans and connection to the existing water system. The contract unit price paid for each Reduced Pressure Zone Assembly location shall include full compensation for all labor, materials, tools, equipment and incidentals, and for doing all the work involved, complete and in place, as specified per Section 4-3 of the 2014 San Joaquin County Public Works Improvement Standards and the City of Stockton Standard Drawing W-9, these Special Provisions, and as directed by the County Engineer, and no additional compensation will be allowed.

77-4.04A(10) Connect to Existing Irrigation Service

Connect to Existing Irrigation Service shall be paid for on a per unit basis. Measurement shall be based on the actual number of locations where connections as shown on the plans. Measurement shall be based on the connection locations identified on the plans. The contract unit price paid for each Connect to Existing Irrigation Service location shall include full compensation for all labor, materials, tools, equipment and incidentals, and for doing all the work involved, laying 2” irrigation service pipe, complete and in place, as specified per Section 4-3 of the 2014 San Joaquin County Public Works Improvement Standards, these Special Provisions, and as directed by the County Engineer, and no additional compensation will be allowed.

Class 2 AB used for backfill shall be paid for under the **Class 2 Aggregate Base** bid item. Permanent surface restoration, in the roadway, shall be paid for under the **Hot Mix Asphalt (Type A)** bid item.

78 INCIDENTAL CONSTRUCTION

78-2 SURVEY MONUMENTS

78-2.01 GENERAL, replace paragraphs 1 and 2 with and add:

Section 78-2 includes specifications for:

1) Locating and protecting existing survey monuments.
2) Adjusting the frames and covers of existing survey monuments
3) Constructing survey monuments.

Notify the Engineer at least 7 days before you construct a survey monument or adjust a monument cover to grade. Do not disturb a survey monument without authorization.

This item also includes all labor, instruments, tools, and other materials required to identify, preserve and protect survey information (i.e. existing monuments, existing survey markers, etc.) within the Project's area of disturbance per these Specifications, Section 1-2 and 2-4 of the 2014 San Joaquin County Public Works Improvement Standards, California Business & Professions Code, and California Street & Highways Code. The Contractor is to ensure that a California Licensed Land Surveyor or Professional Engineer evaluates the project site, including all staging areas, no more than one month prior to start of construction to investigate, verify, and reference the location of existing monuments and/or survey markers which may be disturbed during the course of construction. Existing monuments and/or survey markers to be preserved may be considered recorded or unrecorded and may not be visible from the ground's surface.

This Licensed Land Surveyor or Professional Engineer shall prepare a Pre-Construction Certificate of Monument Preservation (see Appendix B-1) to document whether monuments and/or survey markers exist or do not exist in the area which may be disturbed during the course of construction. The Pre-Construction Certificate of Monument Preservation shall be provided to the County prior to the start of construction. The Contractor shall be responsible for ensuring this Licensed Land Surveyor or Professional Engineer resets all existing monuments and other survey markers destroyed during construction per California Business and Professions Code Section 8771. If existing monuments and/or survey markers were disturbed during the course of construction, the Contractor shall submit a Post-Construction Certificate of Monument Preservation (see Appendix B-1) prepared by a California Licensed Land Surveyor or Professional Engineer to the County prior to release of final payment to the Contractor. The Pre-Construction and Post-Construction Certificate of Monument Preservation, or an approved equal, shall be completed on the form included In this bid package. All such survey information destroyed during construction shall be reset at the Contractor's expense and to the satisfaction of the County Engineer.

78-2.02 MATERIALS, delete paragraph 2 and replace paragraphs 3 and 4 with**:**

The frames and covers must be fabricated from cast iron in accordance with San Joaquin County Improvement Standards as referenced in the plans.

The frames, covers, and hardware must comply with Section 75, “Miscellaneous Metals,” and applicable San Joaquin County Improvement Standards.

No metal riser rings will be allowed.

78-2.03 CONSTRUCTION, replace section with and add:

Coordinate the setting of reference points and construction of boxes with the Engineer. At least one day prior to the start of paving operations, provide the Engineer reference points to locate monuments.

Certification of Monument Preservation must be completed with the provided forms found in Appendix B-1. Both Pre and Post-Construction Acknowledgement of Monument Preservation is required.

The Contractor shall be fully responsible for the accuracy of the construction staking. Construction stakes and marks shall be furnished and set with accuracy to assure that the completed work conforms to the lines, grades, and section shown on the plans. All computations necessary to establish the exact position of the work from control points shall be performed by the Contractor. All computation, survey notes, and other records necessary to accomplish the work shall be neat, legible and accurate. Such computations, notes and other records shall be made available to the County Engineer upon request and shall become the property of the County and delivered to the County Engineer before acceptance of the project. Construction stakes shall be removed from the site of the work when no longer needed.

It shall be the Contractor's responsibility to notify the County Engineer of any discrepancies found between field conditions and grades and notes shown on the plans prior to beginning construction on item of work.

78-2.04 PAYMENT, replace “Not Used” with:

Payment quantity of Adjusting Frames and Covers for Survey Monuments is measured by the unit from actual count of adjusted frames and covers.

Payment quantity of **Constructing Survey** is measured as a lump sum fee.

If no separate bid item is shown for the described work, full compensation must be considered as included in the payment for the type of pavement or type of surfacing shown on the Bid Item List.

If no separate bid item is shown of the described work, and if pavement or surfacing is not involved, full compensation must be considered as included in the payment for the type of excavation shown on the Bid Item List.

78 INCIDENTAL CONSTRUCTION

78-21 RESETTING AND RELOCATING MAILBOXES

78-21.01 GENERAL, add after paragraph 2:

Mailboxes include newspaper boxes. Provide access for the mail and newspaper delivery at all times. Reset the mailbox location as necessary during your work. Mount mailboxes on posts that are set in the ground. If authorized, temporary supports may be used. Use of posts concreted in buckets for temporary supports are acceptable, as approved by the Engineer.

Reset newspaper box wherever it is attached to the existing facility.

For the final location, install mailboxes on perforated steel tubing (break-away type) or new redwood posts that comply with the specifications for sign posts under Section 56, “Overhead Sign Structures, Standards, and Poles.”

Backfill the space around posts with earth material. Place the backfill in 4-inch thick layers. Moisten and thoroughly compact each layer.

Dispose of posts, mounts, and hardware that are no longer needed.

78-21.04 PAYMENT, replace paragraph 4 with:

The measurement units for Resetting or Relocating Mailboxes and Newspaper Boxes on one or more posts are the number of posts upon which said mailboxes and newspaper boxes are mounted on.

When there is no separate bid item for resetting or relocating mailboxes and Newspaper Boxes, full compensation for said work must be considered as included in the various items of work involved.

78 INCIDENTAL CONSTRUCTION

78-23 UTILITIES

78-23.01 GENERAL, replace paragraph 1 with:

Section 78-23 includes specifications for:
1) Locating and protecting existing utilities and associated facilities
2) Adjusting the frames and covers of existing utility facilities
3) Constructing utility-related facilities

Notify the Engineer at least 7 days before you construct or adjust the utility frame or cover to grade. Adjust frames, covers, grates, and manholes in accordance with Section 71-5.03B, “Frames, Covers, and Grates”.

78-23.02 MATERIALS, replace section with:

The frames and covers must be fabricated from cast iron in accordance with standards drawing as shown or referenced on the plans. Use minor concrete with at least 590 pounds of cementitous material per cubic yard, or as shown on the applicable standard drawing, whichever is higher.

The frames, covers, and hardware must comply with Section 75, “Miscellaneous Metal.”

No metal riser rings will be allowed.

78-23.03 CONSTRUCTION, add:

Coordinate the setting of reference points and construction of utility facilities with the Engineer. At least one day prior to the start of paving operations, provide the Engineer reference points to locate the utility facilities.

78-23.04 PAYMENT, replace section with:

Payment quantity of Adjusting Frames and Covers for Utility Facilities is measured by the unit from actual count of adjusted frames and covers.

If no separate bid item is shown for the described work, full compensation must be considered as included in the payment for the type of pavement or type of surfacing shown on the Bid Item List.

If no separate bid item is shown of the described work, and if pavement or surfacing is not involved, full compensation must be considered as included in the payment for the various items of work involved.

80 FENCES

80-1 GENERAL

80-1.03 CONSTRUCTION, add between paragraphs 1 and 2:

Temporary fences must be installed prior to removing existing fences.

80-1.04 PAYMENT, add after paragraph 2:

When the contract does not include a separate bid item for Temporary Fences, the payment quantity for installing and removing temporary fences is considered as included in the contract unit price paid for other various bid items.

82 SIGNS AND MARKERS

82-1 GENERAL

82-1.01 GENERAL
82-1.01A Summary, replace paragraph 2 with:

Signs must comply with the latest edition of the *California Manual on Uniform Traffic Control Devices* (CA MUTCD) and FHWA publication *Standard Highway Signs and Markings*. Sign construction must also comply with the *California Sign Specifications and Federal Standard Highway Signs and Markings* book available at the Caltrans Traffic Operations website under signs and work zones.

82-2 SIGN PANELS

82-2.02 MATERIALS
82-2.02A General, replace item 1 of paragraph 2 with:

Phrase *Property of San Joaquin County*

82-2.02B Aluminum Sheeting, add between paragraphs 1 and 2:

Aluminum sheeting thickness must be a minimum of 0.070-inch.

82-2.02F Fiberglass-Reinforced Plastic Panels, delete.

82-2.04 PAYMENT, replace section with:

Payment quantity of sign panels is measured by the actual unit count of installed sign panels. Each sign panel, regardless of type or dimensions, will be considered as one unit. The measurement unit for multiple sign panels on one post is the number of sign panels installed on the post. Full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for all work involved in installing sign panels, complete in place, must be considered as included in the contract unit price paid for Roadside Sign, or the type of sign panel, whichever is shown on the Bid Item List. If no separate bid item is shown for the described work, full compensation must be considered as included in the payment for the various items of work involved.

82 SIGNS AND MARKERS

82-9 EXISTING ROADSIDE SIGNS AND MARKERS

82-9.03 CONSTRUCTION
82-9.03A General, replace with:

Unless otherwise indicated on the plans, reset or relocate roadside signs using existing posts.

82-9.04 PAYMENT, replace section with:

Payment quantity for Relocate Roadside Sign is measured by the number of posts relocated/installed, regardless of the number of sign panels mounted/attached to the post.

Payment for relocating existing roadside signs and posts, or relocating roadside signs onto new posts if required by the plans, must be considered as included in the contract unit price paid for Relocate Roadside Sign and no additional compensation will be allowed therefor. In addition, any existing posts designated for removal must be considered as included in the payment made for Relocate Roadside Sign.

If no separate bid item is shown for the described work, full compensation must be considered as included in the payment for the various items of work involved.

84 MARKINGS

84-2 TRAFFIC STRIPES AND PAVEMENT MARKINGS

84-2.01 GENERAL

84-2.01A Summary, add:

Unless otherwise indicated on the project drawings/plans or bid item list, all “6-inch” references or callouts in the Standard Plans and Specifications are revised to “4-inch" traffic stripes. Application rates defined for materials placed per linear foot under Section 84 must be revised based on the width of striping or marking as defined on the project plans.

84-2.02 MATERIALS

84-2.02B Glass Beads, replace section with:

Glass beads applied to paint must comply with the following specifications:

Gradation: The glass spheres must conform to the following gradations requirements when tested according with ASTM method D1214.

U.S. Mesh	Microns	% Retained
18	1000	5-15
30	600	20-35
50	300	55-75
100	150	0-5

Color / Clarity: Beads must be colorless / clear and free of carbon residues.

Roundness: All +20US Mesh beads must be 85% minimum rounds. Overall rounds must be 75% minimum. ASTM-1155 test method for all beads except the +20 US Mesh which are inspected visually.

Index of Refraction: Minimum 1.51 by oil immersion method.

Resistance to Acid: When place 10 g of the beads in a 100 mL beaker and cover with a 1N sulfuric acid. Let soak for 5 minutes. Rinse the beads 3 times with distilled water. Dry, then examine the beads under a microscope and compare with the untreated sample, the beads must not develop any surface haze or dulling.

Resistance to Calcium Chloride: When place 10 g of the beads in a 100 mL beaker and cover with a 1N calcium chloride solution. Let soak for 3 hours. Rinse the beads 3 times with distilled water. Dry, then examine the beads under a microscope and compare with the untreated sample, the beads must not develop any surface haze or dulling.

Resistance to Sodium Sulfide: When place 10 g of the beads in a glass stopper bottle and cover with a solution containing by weight 50% sodium sulfide, 48% distilled water, and 2% of an anionic wetting agent. Soak the beads for one hour and then rinse the beads 3

times with distilled water. Dry, then examine the beads under a microscope and compare with untreated sample, the sodium sulfide solution must not darken the beads.

Water Resistance: When place 10 g of the beads in a 20 x 80 mm extraction thimble. Place the thimble in a large (No. 3) Soxhlet extractor with a 125 mL boiling flask. Add 100 mL of distilled water, and reflux for two hours. Rinse the beads 3 times with distilled water. Remove the beads, dry, then examine the beads under a microscope and compare with untreated beads. Add five drops of one percent phenolphthalein indicator to the content of the boiling flask and titrate with 0.1N hydrochloric acid to the phenolphthalein indicator end point, the water must not produce dulling or hazing of the beads, and not more than 4.5 ml of 0.1N hydrochloric acid must be used for the titration.

Coating: *T-20 MR/AC-Waterborne Coating*

Arsenic, Antimony and Lead Content: The glass spheres must not contain more than 200 ppm (total) arsenic, 200 ppm (total) antimony, nor more than 200 ppm (total) lead, when tested according to EPA Methods 3052 and 6010B. Other suitable x-ray fluorescence spectrometry analysis methods may be used to screen samples of glass spheres for arsenic, antimony, and lead content.

Appearance: A minimum of 85% of the beads by count must be colorless, true spheres, free of dark spots, milkiness, air inclusions and surface scratches when viewed under 20X magnification. The beads must be clean and free from foreign matter in accordance with high grade commercial practice.

84-2.02G Paint, replace section with:

The paint for traffic stripes and pavement markings must be acrylic water-based paint and comply with the specifications for the paint type and color shown in following table:

Paint Specifications

Property	White	Yellow	Test
Pigment – Percent by weight, minimum	62.0	62.0	ASTM D3723
Total Solids – Percent by weight, minimum	75.0	75.0	ASTM D2369
Nonvolatile vehicle – Percent by weight vehicle, minimum*	35.0	37.0	FTMS 4051
Viscosity, KU @ 77 degrees F	80 – 95	80 – 95	ASTM D562
Density, lb/gal, minimum	14.1	13.8	ASTM D1475
Volatile Organic Content (VOC) – g/l maximum	100	100	EPA Method 24
Contrast Ratio, 5 mils wet, minimum	.95	.95	ASTM D2805
Directional Reflectance	90.0	50.0	ASTM E1347

Minimum			
Dry Opacity – Minimum (5 mils wet)	0.95	0.95	ASTM D2805

* Binder – 100 percent acrylic cross-linking polymer, by weight, as determined by infrared analysis and other chemical analysis available to the Department. Refer to ASTM D 2205.

A. No-Pick-Up Time
   1. Paint may not smear or track five minutes after application to the roadway using standard application equipment, at the mil thickness required, and with an ambient shaded temperature of at least 50 degrees F.

B. Additional Requirements
   1. Free of lead or other related heavy metals. Refer to ASTM D5381. Refer to ASTM D2743 and ASTM D5381 for tests used to verify paint samples meet ASTM requirements.

84-2.03 CONSTRUCTION

84-2.03A General, add before paragraph 1:

Before obliterating or applying any surfacing over any existing traffic stripes, pavement markings, and pavement markers to be replaced at the same location, reference the stripes, markings, and markers. Include limits and transitions with control points to reestablish the new stripes, markings, and markers. Submit your references to the control points at least 5 working days before obliterating or applying any surfacing over the stripes, markings, and markers. It is your responsibility to preserve all reference control points.

Contact the Engineer a minimum of 2 days prior to the placement of stripes, pavement markings, and pavement markers to obtain approval for the alignment of traffic stripes and all layouts for pavement markings.

When installing the traffic striping and pavement markings, the Contractor must complete the following activities:

1. Establish control points at 100-foot intervals on tangent and at 50-foot intervals on curves.

2. Maintain the line within 2 inches of the established control points and mark the roadway between control points as needed.
   a. Remove paint that is not placed within tolerance of the established control points and replace at no cost to the Department.
   b. Maintain the line dimension within 10% of the width and length dimensions defined in Standard Drawings.

84-2.03B(6) Paint, replace paragraphs 6-8 and paragraph 11 with:

Painted traffic striping and pavement markings shall meet the following requirements:

A. Apply Pavement marking paint at the following wet mil thickness:
   1. 20-25 wet mils for all longitudinal markings.
   2. Approximate application rate for required mil thickness requirements:
      a. 4-inch Solid Line – From 190 to 240 ft/gal
      b. 4-inch Broken Line – From 760 to 960 ft/gal
      c. 8-inch Solid Line – From 95 to 120 ft/gal.

B. No additional payment for pavement markings placed in excess of required wet mils in thickness or exceeding dimensional requirements outlined.

C. Glass Sphere (Beads) – Apply at least 7 lb/gal of paint, the full length and width of line and pavement markings.

D. Begin striping operations no later than 24 hours after ordered or approved by the Engineer.

E. Apply lines and pavement markings only when the ambient air and pavement temperature is 50 degrees F and rising for Acrylic Water Based Paint.

84-2.04 PAYMENT, replace section with:

The payment quantity for Painted Traffic Stripe is the length measured along the line of the painted traffic stripe without deductions for gaps in the broken traffic stripe. If no separate bid item is shown for the described work, full compensation must be considered as included in the payment for the various items of work involved.

A painted double traffic stripe consisting of two 4-inch-wide yellow stripes separated by a 3-inch-wide black stripe will be measured as 1 traffic stripe.

The payment quantity for a painted pavement marking is measured by the actual area covered.

When the contract does not include a separate bid item for Traffic Stripe and Pavement Marking Tape must be considered as included in the contract prices for the various items of work involved.

84 MARKINGS

84-2 TRAFFIC STRIPES AND PAVEMENT MARKINGS

84-2.01 GENERAL

84-2.01A Summary, add:

Thermoplastic traffic stripes and pavement markings must be extruded thermoplastic. Unless otherwise indicated on the project drawings/plans or bid item list, all “6-inch” references or callouts in the Standard Plans and Specifications are revised to “4-inch" traffic stripes. Application rates defined for materials placed per linear foot under Section 84 must be revised based on the width of striping or marking as defined on the project plans.

84-2.03 CONSTRUCTION

84-2.03A General, add before paragraph 1:

Before obliterating or applying any surfacing over any existing traffic stripes, pavement markings, and pavement markers to be replaced at the same location, reference the stripes, markings, and markers. Include limits and transitions with control points to reestablish the new stripes, markings, and markers. Submit your references to the control points at least 5 working days before obliterating or applying any surfacing over the stripes, markings, and markers. It is your responsibility to preserve all reference control points.

Contact the Engineer a minimum of 2 working days prior to the placement of stripes, pavement markings, and pavement markers to obtain approval for the alignment of traffic stripes and all layouts for pavement markings.

84-2.03B(2)(b) Extruded Thermoplastic, replace paragraph 2 with:

Apply extruded thermoplastic for a traffic stripe at a rate of at least 0.34 lb/ft of 4-inch-wide solid stripe. The applied thermoplastic stripe must be from 0.110 to 0.150-inch thick.

84-2.04 PAYMENT, replace section with:

The payment quantity for Thermoplastic Traffic Stripe is the length measured along the line of the thermoplastic traffic stripe without deductions for gaps in the broken traffic stripe. If no separate bid item is shown for the described work, full compensation must be considered as included in the payment for the various items of work involved.

When the contract does not include a separate bid item for Traffic Stripe and Pavement Marking Tape must be considered as included in the contract prices for the various items of work involved.

84 MARKINGS

84-2 TRAFFIC STRIPES AND PAVEMENT MARKINGS

84-2.02 MATERIALS

84-2.02E Traffic Stripe and Pavement Marking Tape, replace with:

Use 3M Starmark High Performance Tape Series 380I ES or Engineer approved equal. Traffic stripe and pavement marking tape must be on the Caltrans Authorized Material List for signing and delineation materials. Install the product per the manufacturer's instructions and the guidelines in the "3M Adhesion Guide for Pavement Marking Tapes".

When contrast is required for traffic striping and pavement marking tape, the tape must be pre-formed and consist of a retroreflective white film with retroreflective beads and a contrasting nonreflective black film border, bonded on each side of the white film to form a continuous roll. Each black border must be a minimum of 2 inches wide. The width of the tape must be at least 4 inches wider than the stripe width.

84-2.03 CONSTRUCTION

84-2.03A General, add:

Before obliterating or applying any surfacing over existing traffic stripes, pavement markings, and/or pavement markers to be replaced at the same location, reference the stripes, markings, and markers. Include limits and transitions with control points to reestablish the new stripes, markings, and markers. Submit your references to the control points at least 5 working days before obliterating or applying any surfacing over the stripes, markings, and markers. The Contractor is responsible for preserving all reference control points.

Contact the Engineer a minimum of 2 days prior to the placement of stripes, pavement markings, and pavement markers to obtain approval for the alignment of traffic stripes and all layouts of pavement markings.

When installing the traffic stripes and pavement markings, complete the following activities:

1. Establish control points at 100 ft intervals on tangent and at 50 ft intervals on curves.

2. Maintain the line within 2 inches of the established control points and mark the roadway between control points as needed.
   a. Remove tape that is not placed within tolerance of the established control points and replace at no cost to the Department.
   b. Maintain the line dimension within 10 percent of the width and length dimensions defined in Standard Drawings.

84-2.04 PAYMENT, replace with:

The payment quantity for Traffic Stripe Tape is the length measured along the line of the traffic stripe without deductions for gaps in the broken traffic stripe. If no separate bid item is shown for the described work, full compensation must be considered as included in the payment for the various items of work involved.

The payment quantity for a pavement marking tape is the area covered.

A double traffic stripe consisting of two 4-inch-wide yellow stripes separated by a 3-inch-wide black stripe is measured as 2 traffic stripes.

When the contract does not include a separate bid item for Traffic Stripe and Pavement Marking Tape must be considered as included in the contract prices for the various items of work involved.

87 Electrical Systems

87-1.01 GENERAL, replace paragraph 1 with:

Section 87 includes general specifications for constructing/reconstructing and installing electrical systems.

87-1.01 GENERAL, add:

Unless indicated otherwise, existing electrical systems that are designated for removal/replacement must be disposed of outside of the highway right-of-way. Traffic signal system reconstruction work must be performed as shown on the plans.

Reconstruction of the traffic signal system will include removal and installation of traffic detector loops, conduit, adjusting detector handhole frames and covers and pull boxes to finished grade.

Remove entire series of loop detectors to the handhole or pull box. When the project requires HMA to be placed in multiple lifts, install the loop conductors on the surface of the lift prior to the final HMA layer.

87-1.02 MATERIALS, replace “Not Used” with**:**

Conduit installed underground must be Type 3.

The conduit in a foundation and between a foundation and the nearest pull box must be Type 1.

If a standard coupling cannot be used for joining Type 1 conduit, use a UL-listed threaded union coupling, a concrete-tight split coupling, or a concrete-tight set screw coupling.

87-1.03 CONSTRUCTION

87-1.03B Conduit Installation

87-1.03B(1) General, add:

Type 3 conduit is placed in a trench, not in the pavement or under concrete sidewalk. After the bedding material is placed and the conduit is installed, backfill the trench to not less than 4 inches above the conduit with minor concrete under Section 90-2, “Minor Concrete,” except the concrete must contain not less than 421 pounds of cementitious material per cubic yard. Backfill the remaining trench to finished grade with backfill material.

At those locations where conduit is required to be installed under pavement and underground facilities designated as high priority subsurface installation under Govt. Code § 4216 et seq. exist, conduit must be placed by the trenching-in pavement method under section 87-1.03B(6), “Conduit Installation by the Trenching-In-Pavement Method.”

At other locations where conduit is required to be installed under pavement and if a delay to vehicles will not exceed 10 minutes, conduit may be installed by the trenching in pavement method.

In a ground or sidewalk area, embed the bottom of a pull box in crushed rock.

Wrap conductors around the projecting end of conduit in pull boxes. Secure conductors and cables to the projecting end of the conduit in pull boxes.

Splices must be insulated by "Method B."

87-1.03F(3) Conductors

87-1.03F(3)(c)(ii) Inductive Loop Conductors, replace section with**:**

Conductor for each loop detector must be Type 2 loop wire.

Conductor for loop detector lead in cable must be Type B.

87-1.03V Detectors, add:

Preformed inductive loops may be used with the approval by the Engineer.

Loop detector configuration type must be the same as the existing loop detector configuration type. Type E loop detector configuration may be used where Type A or Type B loop detector configuration is existing.

87-1.03V(2) Inductive Loop Detectors, add:

For Type E detector loops, sides of the slot must be vertical and the minimum radius of the slot entering and leaving the circular part of the loop must be 1-1/2 inches. Slot width must be a maximum of 5/8 inch. Loop wire for circular loops must be Type 2.

87-1.03W Sealants

87-1.03W(1) General, replace “Reserved” with:

Slots of circular loops must be filled with elastomeric sealant or hot-melt rubberized asphalt sealant.

The depth of the loop sealant above the top of the uppermost loop wire in the sawed slots must be 2 inches, minimum.

Fill slots in concrete with elastomeric, hot-melt rubberized asphalt or epoxy sealant for loop detectors.

87-1.04 PAYMENT, replace “Not Used” with:

Full compensation for furnishing all labor, materials, tools, equipment, removing existing loop detectors, installing new loop detectors in operating order, testing, and incidentals, and for doing all the work involved in, as described, including disposing of material removed as shown on the plans, as specified in the Standard Specifications and these special

provisions, and as directed by the Engineer, must be considered as included in other various bid items.

Relocation or adjusting frames and covers of detector handholes and pull boxes will be considered as included in the lump sum payment for Reconstruct Traffic Signal Vehicle Detection System**.** If no separate bid item is shown for the described work, full compensation must be considered as included in the payment for the various items of work involved.

Replace **"99 RESERVED"** with**:**

99 Mobilization and Demobilization

99-1.01 GENERAL

This section covers the contract bid item **Mobilization and Demobilization** and includes:

1. Transporting to the work site and setting up the equipment required for the performance of the work.

2. Final site cleanup, including removal of all equipment and temporary facilities.

3. Procuring and installing DWR funding sign per Appendix C-1 prior to construction and removing and disposing of DWR funding sign after construction.

99-1.02 SUBMITTALS

Submit a list of equipment to be included in the mobilization and demobilization process. Submittal list must be approved by the Engineer prior to mobilization.

99-1.03 CONSTRUCTION

Notify the Engineer 5 days prior to mobilization or demobilization.

The equipment shall be complete with accessories and support materials. The equipment shall be completely functional, in good working order, and in compliance with applicable air quality standards and requirements.

99-1.04 MEASUREMENT AND PAYMENT

Mobilization and Demobilization will be measured and paid for as follows:

1. The mobilization portion of the Mobilization and Demobilization bid item will be 60 percent of the total lump sum contract price for the purposes of payment calculation and will not be paid until the equipment listed in the submittal list has been transported to the work site. Progress payments for mobilization will be paid in accordance with Section 9, "Payment," of the Standard Specifications and Special Provisions.

2. The demobilization portion of the contract item will be 40 percent of the lump sum contract price for the purposes of payment calculation and shall not be paid until the contract work has been completed, including removal of the temporary facilities and final site cleanup.

GEOTECHNICAL INVESTIGATION

Lincoln Village Maintenance District
Water Main Replacement
San Joaquin County, California

PREPARED FOR:

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905 SUTTER STREET, SUITE 200
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PREPARED BY:

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GEOCON

GEOCON PROJECT NO. S2636-05-01

JANUARY 2024

Project No. S2636-05-01
January 23, 2024

VIA ELECTRONIC MAIL

Jim Fisher
Principal Engineer
R.E.Y Engineers, Inc.
905 Sutter Street, Suite 200
Folsom, California 95630

Subject: GEOTECHNICAL INVESTIGATION
LINCOLN VILLAGE MAINTENANCE DISTRICT WATER MAIN REPLACEMENT
LINCOLN VILLAGE MAINTENANCE DISTRICT
STOCKTON, CALIFORNIA

Mr. Fisher:

In accordance with your authorization of our proposal (Geocon Proposal No. LS-23-226 dated July 10, 2023), we have performed a geotechnical investigation for the proposed water main replacement project along various streets within Lincoln Village Maintenance District in Stockton, California. The approximate project location is shown on the Vicinity Map, Figure 1.

PURPOSE AND SCOPE

The purpose of our geotechnical investigation was to generally evaluate the subsurface conditions within the project area and provide geotechnical recommendations for the project as presently proposed. To prepare this report, we performed the following scope of services:

- Performed a limited geologic/geotechnical literature review to aid in evaluating the geologic and geotechnical conditions in the project area.
- Reviewed a geotechnical report prepared for proposed pavement rehabilitation of Benjamin Holt Drive within the project limits (Siegfried, 2023). Logs of exploratory borings and geotechnical laboratory test results from this report are attached as Appendix A.
- Reviewed available improvement plans and supplementary geotechnical investigation provided by REY Engineers to aid in selecting exploratory boring locations.
- Performed a site reconnaissance to observe existing conditions, determine equipment access, and mark out exploratory boring locations for subsequent utility clearance.
- Notified subscribing utility companies via Underground Service Alert (USA) a minimum of two working days (as required by law) prior to performing exploratory excavations at the site.
- Applied for and obtained an encroachment permit from San Joaquin County.
- Performed four exploratory borings (B1 through B4) along the project alignment, using a truck-mounted drill rig equipped with solid flight augers. Each of our borings were advanced to a depth of approximately 16½ feet. Approximate locations of our borings and the previous borings by Siegfried along Benjamin Holt Drive are shown on the Site Plan, Figure 2 and Proposed Project Plan, Figure 3.

- Provided necessary traffic control measures during our field exploration activities.
- Measured the existing roadway pavement structural section thickness at each boring location.
- Obtained relatively undisturbed and bulk soil samples from the exploratory borings for visual examination, classification, and laboratory testing.
- Logged the borings in general accordance with the Unified Soil Classification System (USCS). Figure 4 is a Key to Logs and Figures 5 through 8 are logs of the borings.
- Upon completion, backfilled the borings with neat cement grout in accordance with San Joaquin County Environmental Health regulations and patched the borings at the surface with rapid set concrete.
- Performed laboratory tests to evaluate pertinent geotechnical parameters. Figures 9 through 15 present the laboratory test results.
- Prepared this report with our findings, conclusions, and recommendations.

SITE AND PROJECT DESCRIPTION

The project consists of installing approximately 16,600 linear feet (LF) of new 8-inch water pipe, approximately 9,600 LF of 10-inch water pipe, and approximately 200 LF of 12-inch water pipe within the existing Lincoln Village Maintenance District in Stockton, California. The proposed water pipes will be installed within existing roadways approximately 4 to 9 feet deep. The limits of the proposed improvements bound the site to the north by West Lincoln Road, to the east primarily by Gettysburg Place with improvements in one section extending eastward to Thornton Road, to the south primarily by Douglas Road with improvements in two sections extending southward to Gettysburg Place and Vicksburg Place, and to the west by North Pershing Avenue. The streets bounding the project improvements are generally surrounded by residential subdivisions and commercial developments. Associated improvements will include several water sampling stations located near the intersections between Gettysburg Place and Douglas Road, and between McClellan Way and Vicksburg Place, intertie connections to County and City water mains, and setups in several locations for future connections. Based on our observations and according to satellite imagery topographic information (Google Earth Pro, October 2023), the project area topography is generally flat with elevations ranging from approximately 9 feet to 13 feet above mean sea level (MSL). The current site configuration is shown on the Site Plan, Figure 2, and the current and proposed waterline locations are shown on the Proposed Project Plan, Figure 3.

SUBSURFACE CONDITIONS

We identified subsurface conditions by observing and sampling exploratory borings and reviewing geologic literature. The *Preliminary Geologic Map of the Lodi 30'x60' Quadrangle, California* (Dawson, 2009), shows the project area is underlain by the lower member of the late Pleistocene-age Modesto Formation (map symbol Qm1b), an older alluvium comprised of fine-grained flood basin and alluvial fan deposits which generally consist of discontinuous, interbedded mixtures of alluvial sand, silt, and clay with zones of cemented soil. The soil descriptions provided below include the USCS symbol where applicable.

Existing Pavement

We encountered existing pavement in each of our borings (B1 through B4). Approximate pavement structural section material thicknesses are summarized in Table 1 and shown on the boring logs (Figures 5 through 8).

TABLE 1
EXISTING PAVEMENT SECTIONS

Boring Location	HMA[1] thickness (inches)	AB[2] thickness (inches)
B1 (West Greeley Way)	4	7
B2 (McClellan Way)	4½	6
B3 (Sheridan Way)	2	6
B4 (Douglas Road)	9	4½

Notes:
1. HMA = hot-mix asphalt
2. AB = aggregate base material

Alluvium (Modesto Formation)

Below the pavement section in each of our borings, we encountered alluvial soils generally consisting of very stiff to hard sandy lean clay (CL) and medium dense to dense silty sand (SM) with varying clay content. In several of our borings, we encountered cemented (hardpan) layers and dense sand layers at variable depths. These conditions typically occurred between approximately 3 to 7½ feet.

We also reviewed the *Geotechnical Investigation*, (March 13, 2023) prepared by Siegfried Engineering, Inc., provided to us for recent work in support of the West Benjamin Holt Pavement Rehabilitation Project. Boring logs and laboratory test results from this report is attached as Appendix A. Siegfried's 24 exploratory borings extended to a depth of approximately 4½ feet below the existing pavement surface, and generally encountered sandy lean clay (CL), fat clay (CH), and sandy silt (ML).

Soil and geologic conditions described herein are generalized. The boring logs included as Figures 5 through 8 detail soil type, color, moisture, consistency, and USCS classification of the soils encountered at specific locations and elevations.

Groundwater

We encountered perched water in our boring B3 at a depth of approximately 15 feet below existing ground surface, advanced to approximately 16½ feet on September 5, 2023. We did not encounter perched water or permanent groundwater in any of the remaining borings B1, B2, or B4, advanced to approximately 16½ feet on the same day.

Review of the *Department of Water Resources (DWR) Sustainable Groundwater Management Act (SGMA) Data Viewer* indicates that the depth to groundwater in the site vicinity fluctuates seasonally between approximately 40 and 50 feet below ground surface.

It should be noted that fluctuations in the level of groundwater may occur due to variations in rainfall, temperature, and other factors. Depth to groundwater can also vary significantly due to localized pumping, irrigation practices, and seasonal fluctuations. Therefore, it is possible that groundwater could be higher or lower than the level recorded through the SGMA Data Viewer.

Laboratory Test Results

We performed Resistance-Value (R-Value) testing on select subgrade soil bulk samples to evaluate pavement support characteristics at each boring location. R-Value testing was performed in accordance with California Test Method (CTM) 301. We also performed other laboratory tests on selected soil samples in general accordance with American Society of Testing and Materials (ASTM) procedures. Testing was performed to evaluate in-situ dry density and moisture content, plasticity characteristics, and corrosion potential. R-Value test results are presented in Table 2. Corrosion screening laboratory test results and discussion are presented in subsequent sections of this report. Other laboratory test results are presented as Figures 9 through 15.

TABLE 2
SUMMARY OF R-VALUE TEST RESULTS

Sample Number	Sample Depth (feet)	Average Dry Density (pcf)	Average Moisture Content (%)	R-Value
B1-Bulk	0-5	105.7	17.2	21
B2-Bulk	0-5	103.7	23.3	<5
B3-Bulk	0-5	112.5	15.5	<5
B4-Bulk	0-5	105.2	13.7	<5

Soil Corrosion Screening

We performed pH, resistivity, chloride, and sulfate tests on two samples to generally evaluate the corrosion potential of the soil with respect to proposed subsurface utility infrastructure. These tests were performed in accordance with CTM Nos. 643, 422, and 417. The results are presented in Table 3 and should be considered for design of underground utility infrastructure.

TABLE 3
SOIL CORROSION PARAMETER TEST RESULTS
(CALIFORNIA TEST METHODS 643, 417, AND 422)

Sample No.	Sample Depth (ft.)	pH	Minimum Resistivity (ohm-cm)	Chloride (ppm)	Sulfate (ppm)
B1-Bulk	0-5	7.88	1,930	5.6	14.1
B2-Bulk	0-5	7.53	1,550	4.6	40.6
B3-Bulk	0-5	7.60	1,210	34.0	58.8
B4-Bulk	0-5	7.53	1,390	16.0	88.0

Notes: ppm = parts per million

Soil with a low pH (higher acidity) is considered corrosive as it can react with lime in cement to leach out soluble reaction products and result in a more porous and weaker concrete. Per Caltrans *Corrosion Guidelines* (Caltrans, 2021), soil with a pH of 5.5 or lower may be corrosive to concrete or steel in contact with the ground. Based on the laboratory pH test results and Caltrans criteria, soil at the locations tested does not have a higher propensity for corrosion.

Soil resistivity is the measure of the soil's ability to transmit electric current. Corrosion of buried ferrous metal is proportional to the resistivity of the soil. A lower resistivity indicates a higher propensity for transmitting electric currents that can cause corrosion of buried ferrous metal items. In general, the higher the resistivity, the lower the rate for corrosion. Per Caltrans *Corrosion Guidelines*, resistivity serves as an indicator parameter for the possible presence of soluble salts and it is not included as a parameter to define a corrosive area for structures. A minimum resistivity value for soil less than 1,500 ohm-cm may indicate the presence of high quantities of soluble salts and a higher propensity for corrosion. Based on the laboratory minimum resistivity test results and Caltrans criteria, soil at the locations tested may have a higher propensity for corrosion.

Table 4 presents a summary of concrete requirements set forth by the California Building Code (CBC) Section 1904 and American Concrete Institute (ACI) 318 for possible chloride exposure. Chlorides can break down the protective oxide layer on steel surfaces resulting in corrosion. Sources of chloride include, but are not limited to, deicing chemicals, salt, brackish water, seawater, or spray from these sources.

TABLE 4
REQUIREMENTS FOR CONCRETE EXPOSED TO CHLORIDE-CONTAINING SOLUTIONS
(AFTER ACI 318 TABLES 19.3.1.1 and 19.3.2.1)

Chloride Severity	Exposure Class	Condition	Maximum Water to Cement Ratio by Weight	Minimum Compressive Strength (psi)
Not Applicable	C0	Concrete dry or protected from moisture	N/A	2,500
Moderate	C1	Concrete exposed to moisture but not to external sources of chlorides	N/A	2,500
Severe	C2	Concrete exposed to moisture and an external source of chlorides	0.40	5,000

The appropriate Chloride Severity/Exposure Class should be determined by the project designer based on the specific conditions at the location of the proposed structure. Further guidance is provided in ACI 318. Per Caltrans *Corrosion Guidelines*, soil with a chloride concentration of 500 ppm or higher may be corrosive to steel structures or steel reinforcement in concrete. Based on Caltrans criteria, soil at the locations tested is not corrosive with respect to chloride content.

Table 5 presents a summary of concrete requirements set forth by CBC Section 1904 and ACI 318 for sulfate exposure. Similar to chlorides, sulfates can break down the protective oxide layer on steel leading to corrosion. Sulfates can also react with lime in cement to soften and crack concrete.

TABLE 5
REQUIREMENTS FOR CONCRETE EXPOSED TO SULFATE-CONTAINING SOLUTIONS
(AFTER ACI 318 TABLES 19.3.1.1 and 19.3.2.1)

Sulfate Severity	Exposure Class	Water-Soluble Sulfate (SO_4) Content		Cement Type (ASTM C 150)	Maximum Water to Cement Ratio by Weight[1]	Minimum Compressive Strength (psi)
		Percent By Mass	Parts Per Million (ppm)			
Not Applicable	S0	$SO_4 < 0.10$	$SO_4 < 1,000$	No Type Restriction	N/A	2,500
Moderate	S1	$0.10 \leq SO_4 < 0.20$	$1,000 \leq SO_4 < 2,000$	II	0.50	4,000
Severe	S2	$0.20 \leq SO_4 \leq 2.00$	$2,000 \leq SO_4 \leq 20,000$	V	0.45	4,500
Very Severe	S3 – Option 1	$SO_4 > 2.00$	$SO_4 > 20,000$	V+Pozzolan or Slag	0.45	4,500
	S3 – Option 2			V	0.40	5,000

Notes:
1. Maximum water to cement ratio limits are different for lightweight concrete, see ACI 318 for details.

Based on the laboratory test results, the Sulfate Severity is classified as "Not Applicable", and the Exposure Class is S0. The concrete mix deign(s) should be developed accordingly. The presence of water-soluble sulfates is not a visually discernible characteristic; therefore, other soil samples from the site could yield different concentrations. Additionally, over time landscaping activities (i.e., addition of fertilizers and other soil nutrients) may affect the concentration.

Geocon does not practice in the field of corrosion engineering and the above information is provided as screening criteria only. If corrosion sensitive improvements are planned, we recommend that further evaluations by a corrosion engineer be performed to incorporate the necessary precautions to avoid premature corrosion on buried metal pipes and metal or concrete structures in direct contact with the soils.

CONCLUSIONS AND RECOMMENDATIONS

General

No soil or geologic conditions were encountered during our investigation that would preclude the project construction as planned, provided the recommendations contained in this report are incorporated into the design and construction of the project.

The primary geotechnical constraints identified in our investigation are:

- Potential caving/sloughing of project excavations, and
- Existing underground utilities in the project area.

The designer and contractor should be aware of these constraints. Discussion of these constraints recommended procedures for mitigation, and design criteria are included herein.

Conclusions and recommendations provided in this report are based on our understanding of the project and analysis of data obtained from our limited field exploration program and laboratory testing program.

Excavation and Soil Characteristics

In our opinion, excavations in the project area may be accomplished with standard to moderate effort using conventional heavy-duty excavation equipment capable of excavating to the planned project depths. Some increased excavation difficulty should be expected in hardpan and dense sandy layers generally at depths of 3 feet and deeper.

Because of the discontinuous layers of granular soils in the project area at variable depths as well as unknown utility trench backfill and pipe embedment materials for adjacent existing utilities, there is potential for sidewall caving and sloughing of excavations. Additionally, seepage from potential leaking utility lines or other sources can exacerbate potential sidewall caving/sloughing. These conditions may require flattening/sloping back trench sidewalls, or enhanced shoring to maintain a stable trench. General temporary excavation sloping and shoring recommendations are provided herein.

Excavations should be performed carefully to avoid damaging existing underground utilities and adjacent structures. Adjacent improvements should be monitored by the contractor so that excavation methods and support systems can be modified in a timely manner, if surface deflections are observed.

Based on laboratory testing, in-situ moisture content of fine-grained soil generally ranges from approximately 15% to 27%, which is higher than optimum moisture content. Therefore, excavated soil used for trench backfill may require significant drying effort in order to achieve compaction. Earthwork contractors should be aware of moisture sensitivity of soils and potential compaction/workability difficulties.

Temporary Excavations

Temporary excavations must meet Cal/OSHA requirements as appropriate. Excavation sloping, benching, the use of trench shields, and the placement of trench spoils should conform to the latest applicable Cal/OSHA standards. The contractor should have a Cal/OSHA-approved “competent person” onsite during excavation to evaluate trench conditions and to make appropriate recommendations where necessary. It is the contractor’s responsibility to provide sufficient and safe excavation support as well as protecting nearby utilities, structures, and other improvements which may be damaged by earth movements.

The excavation support recommendations provided by Cal/OSHA are generally geared towards protecting human life and not necessarily towards reducing the potential for damage to nearby structures, utilities, or surface improvements. The contractor is responsible for using the proper active shoring systems or sloping to prevent damage to any structure or improvements near underground excavations.

Project excavations will be adjacent to other existing utilities. The condition of existing utility backfill is generally not known and there is a potential for existing backfill (particularly granular/sandy backfill materials) adjacent to excavations which can cause excavation sidewall instability and sloughing. The contractor should be aware of the potential for sloughing (and possibly caving/undermining of adjacent ground surface or improvements) and have equipment readily available to flatten slopes or install shoring if necessary.

Where portable safety shields (trench boxes) are used to protect workers, trench side walls are not directly supported. Thus, the use of a shield should be limited to open areas to minimize the potential of effects on adjacent improvements or ground surface settlement behind the shield. Trench shields should be sized to minimize clearance between the shield and trench side walls. Unsupported trenches should be backfilled immediately after removing the shield.

Shoring should be used in areas where temporary slopes must be steeper than those required by Cal/OSHA or where the presence of adjacent improvements prohibits sloping. Design of shoring systems is the responsibility of the contractor. Qualified contractor personnel should inspect shoring systems daily during construction. If excessive movement or slippage is noted, the bracing system should be strengthened before personnel are allowed to enter the excavation.

Trench Bottoms / Bearing Conditions / Foundation for Water Pipes

Based on conditions encountered in our borings, exposed soils at the anticipated depths of trench bottoms (4 to 9 feet) should generally be suitable for support of underground utilities. Potential seepage from leaking utilities or other sources may result in wet and/or unstable trench bottoms and mitigation may be necessary. Typical mitigation alternatives include over-excavation of approximately 6 to 12 inches and replacement with a crushed gravel layer wrapped in geosynthetic filter fabric to provide a stable bottom for support of the pipe. Trench filter fabric should conform to County and City specifications.

The weight of the pipe, contents, and compacted backfill above the pipe should not result in a significant increase in load over present overburden. Assuming soft and/or unsuitable subgrade areas are mitigated, pipeline settlement should be negligible.

Pipe Loading Design Criteria

Trench loading is typically computed using Marston's Formula in accordance with ASCE *Manual of Engineering Practice No. 60/WPCF Manual of Practice No. FD-5*. Trench loading will depend on depth of cover, total unit weight of compacted backfill, surface loading, and installation conditions. We recommend using the following geotechnical values in trench loading calculations:

- Average soil backfill total unit weight = 120 pounds per cubic foot
- Settlement Ratio (r_{sd}) factor = -0.2 (flexible pipe) or 0.5 (rigid pipe)
- $k\mu'$ factor = 0.19

Traffic loading, load factors, and other parameters should be determined by the design engineer.

Pipe Bedding and Trench Backfill

Earthwork operations should be observed and fills tested for recommended compaction and moisture content by a Geocon representative.

Prior to commencing earthwork, a pre-construction conference should be held at the site with a representative of San Joaquin County, the earthwork contractor, and the geotechnical engineer in attendance. Soil handling instructions and/or the project plans should be discussed at the pre-construction conference.

Pipe bedding and pipe zone backfill ("initial backfill") is generally defined as material supporting, surrounding and extending 12 inches above the crown of the pipe. For flexible and rigid pipes, bedding and initial backfill material should consist of ¾-inch (Type B) or 1-inch (Type C) clean crushed rock. For rigid pipes, initial backfill above the springline of the pipe may consist of compacted native soil or clean crushed rock (Type B or C). In general, pipe zone bedding and initial backfill should conform to the specifications shown on the *San Joaquin County, Standard Drawings R-29 and R-37,* and the *County of San Joaquin Department of Public Works, Improvement Standards, Section 2-5.0.*

Trench backfill is the material placed above the bedding, starting 12 inches above the crown of the pipe. Excavated soils, as allowed by the City of Stockton, are suitable for reuse as trench backfill, provided they do not contain deleterious matter, debris, organic material, rock or cementations larger than 3 inches in maximum dimension. This may require screening and removal of gravel/cobbles larger than 3 inches. Based on the *County of San Joaquin, Standard Drawing R-29, Typical Trench Backfill,* excavated soils should not be placed within the top 10 inches of the road surface. This zone should consist of Caltrans Class 2 aggregate base (AB) placed to the bottom of the hot-mix asphalt (HMA) section. The pavement section thickness should be at least 1 inch thicker than the existing pavement, with a minimum of 4 inches, while the AB should be at least 1 inch thicker than the existing AB, with a minimum of 6 inches. Based on our laboratory test results, in-situ moisture content of clayey soils generally ranges from 15% to 27%, and in-situ moisture content of sandy soils is generally around 9%. Proper moisture conditioning efforts will likely be necessary to achieve suitable compaction, regardless of the time of year.

Trench backfill and bedding should be mechanically compacted. Flooding or jetting is not recommended. Trench backfill consisting of excavated soil or Class 2 AB should be placed in lifts of 8 inches or less in loose thickness, moisture-conditioned at or above optimum moisture content, and compacted to at least 90% relative compaction based on ASTM D1557 test method. The upper 6 inches of pavement subgrade and all AB should be compacted to at least 95% relative compaction.

HMA Pavement

We performed Resistance-Value (R-Value) testing on bulk soil samples at each exploratory boring location to evaluate subgrade soil pavement support characteristics. Our testing resulted in R-Values ranging from less than 5 to 21 (Table 2). Testing performed by Siegfried Engineering, Inc., during their investigation resulted in R-Values ranging from less than 5 to 9. To account for subgrade soil variability, we recommend using an R-Value of 5 for pavement design. The project civil engineer should determine the appropriate Traffic Index (TI) for pavement design. Table 6 provides alternative pavement sections for various TIs. The recommended pavement sections in Table 6 include a minimum HMA thickness of 4 inches and minimum AB thickness of 6 inches as required by San Joaquin County. Additionally, all new pavement sections shall be a minimum of 1 inch thicker than existing pavement, as noted in *San Joaquin County Standard Drawing R-29*. Approximate existing pavement thickness encountered in our borings are summarized in Table 1.

TABLE 6
FLEXIBLE PAVEMENT SECTIONS

Traffic Index	5.0	6.0	7.0	8.0
HMA (in.)	4	4	4	4½
AB (in.)	8	12	16	19
Total Section Thickness (in.)	12	16	20	23½

The recommended pavement section is based on the following assumptions:

1. Subgrade soil has a minimum R-Value of 5.
2. Subgrade soil is processed, uniformly moisture-conditioned at or near optimum moisture content, compacted to 95% or higher relative compaction, and is stable. The 95% relative compaction requirement applies to the top 6 inches of pavement area subgrade; however, underlying materials must be sufficiently compacted and stable. Prior to placing AB, subgrade soil should be proof-rolled with a loaded water truck to verify stability. We note that additional removals, deeper scarification, moisture-conditioning, and compaction efforts may be required to achieve overall stability and compaction.
3. Class 2 AB has a minimum R-Value of 78 and meets the requirements of Section 26 of the latest Caltrans *Standard Specifications*.
4. Class 2 AB and subgrade is compacted to 95% or higher relative compaction at or near optimum moisture content. Prior to placing AC, the AB should be proof-rolled with a loaded water truck to verify stability.
5. Periodic maintenance of HMA pavements is performed.

FURTHER GEOTECHNICAL SERVICES

Plan and Specification Review

We should review the improvement plans and specifications prior to final design submittal to assess whether our recommendations have been properly implemented and evaluate if additional analysis and/or recommendations are required.

Testing and Observation Services

The recommendations provided in this report are based on the assumption that we will continue as Geotechnical Engineer of Record throughout the construction phase. It is important to maintain continuity of geotechnical interpretation and confirm that field conditions encountered during construction are similar to those anticipated during design. Testing and observation services by the Geotechnical Engineer of Record are necessary to verify that construction has been performed in accordance with this report, approved plans, and specifications. If we are not retained for these services, we cannot assume any responsibility for other's interpretation of our recommendations or the future performance of the project.

REFERENCES

1. California Department of Transportation (Caltrans), *Corrosion Guidelines, Version 3.2*, May 2021.

2. Caltrans, *Highway Design Manual,* July 1, 2020.

3. California Department of Water Resources (DWR), *Sustainable Groundwater Management Act (SGMA) Data Viewer,* (https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#gwlevels), accessed October 2023.

4. County of San Joaquin Department of Public Works, *Improvement Standards,* adopted November 2014 with revisions through August 2022.

5. Dawson, T., *Preliminary geologic map of the Lodi 30′× 60′ Quadrangle, California;* California Geological Survey Regional Geologic Map Series, 1: 100,000, 2009.

6. Siegfried Engineers, Inc., *Geotechnical Investigation West Benjamin Holt Drive Pavement Rehabilitation Project, San Joaquin County, California,* March 13, 2023.

7. Unpublished reports, aerial photographs, and maps on file with Geocon.

LIMITATIONS

The recommendations of this report pertain only to the site investigated and are based upon the assumption that the soil conditions do not deviate from those disclosed in the investigation. If any variations or undesirable conditions are encountered during construction, or if the proposed construction will differ from that anticipated herein, we should be notified so that supplemental recommendations can be given.

This report is issued with the understanding that it is the responsibility of the owner or their representative to ensure that the information and recommendations contained herein are brought to the attention of the design team for the project and incorporated into the plans and specifications and the necessary steps are taken to see that the contractor and subcontractors carry out such recommendations in the field.

The recommendations contained in this report are preliminary until verified during construction by representatives of our firm. Changes in the conditions of a property can occur with the passage of time, whether they are due to natural processes or the works of man on this or adjacent properties. Additionally, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated partially or wholly by changes outside our control. Therefore, this report is subject to review and should not be relied upon after a period of three years.

Our professional services were performed, our findings obtained, and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices used in the site area at this time. No warranty is provided, express or implied.

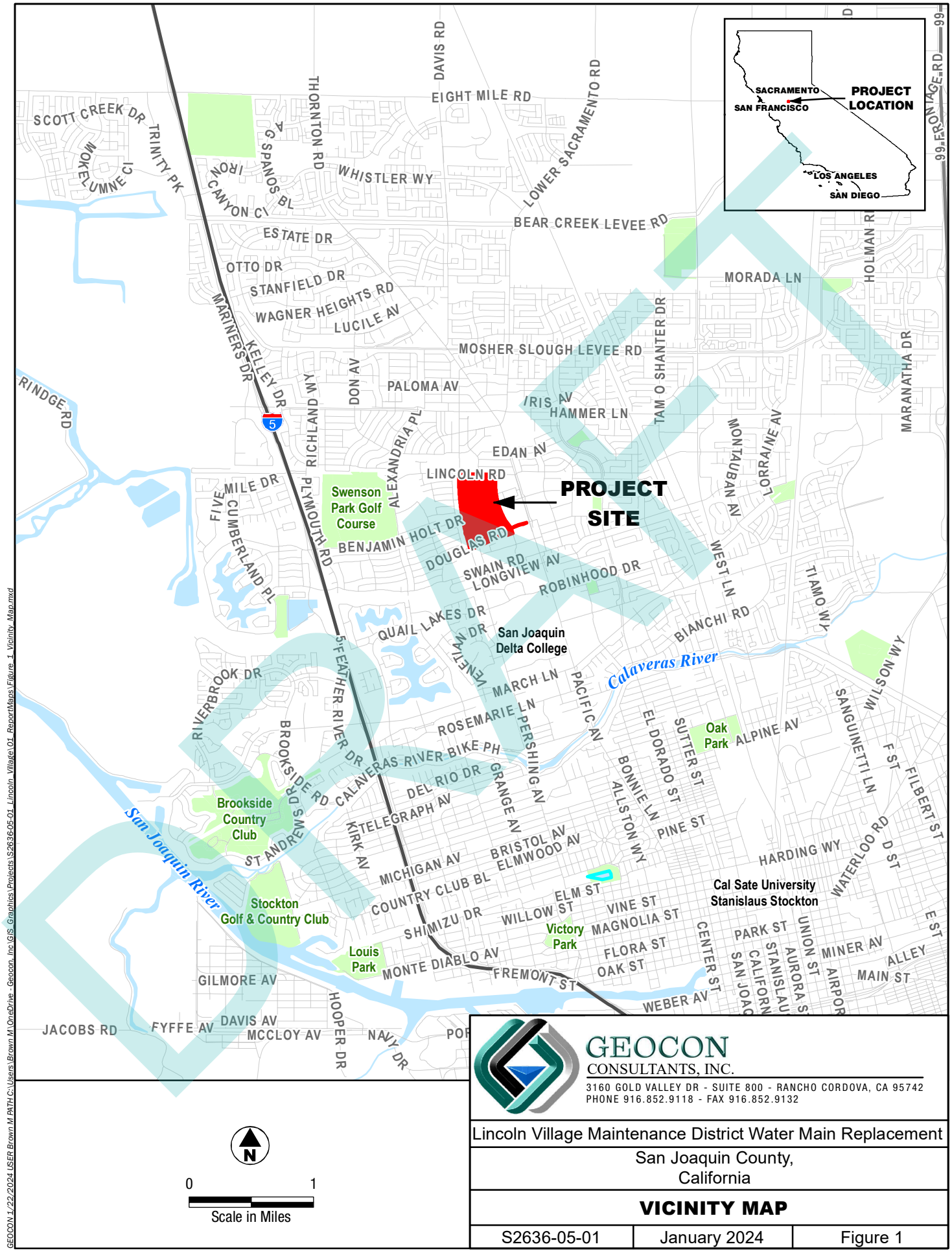
Respectfully Submitted,

GEOCON CONSULTANTS, INC.

Lauren Herbert
Senior Staff Engineer

Jeremy J. Zorne, PE, GE
Senior Engineer

Attachments:
Figure 1, Vicinity Map
Figure 2, Site Plan
Figure 3, Proposed Project Plan
Figure 4, Key to Logs
Figure 5 through 8, Log of Borings
Figure 9, Summary of Laboratory Results
Figure 10, Atterberg Limits
Figure 11, Grain Size Distributions
Figure 12 through 15, Resistance Value Test Results
Appendix A, Boring Logs and Lab Test Results (Siegfried, 2023)



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Lincoln Village Maintenance District Water Main Replacement

San Joaquin County, California

VICINITY MAP

S2636-05-01	January 2024	Figure 1

GEOCON 1/22/2024 USER:Brown M PATH:C:\Users\Brown M\OneDrive - Geocon, Inc\GIS Graphics\Projects\S2636-05-01_Lincoln Village 01_ReportMaps\Figure 1_Vicinity Map.mxd

Legend

B4 ⊗ Approximate Boring Location (Geocon 10/2023)

H ⊗ Approximate Boring Location (Siegfried 2/2023)

Approximate Project Boundary

N

0 350

Scale in Feet

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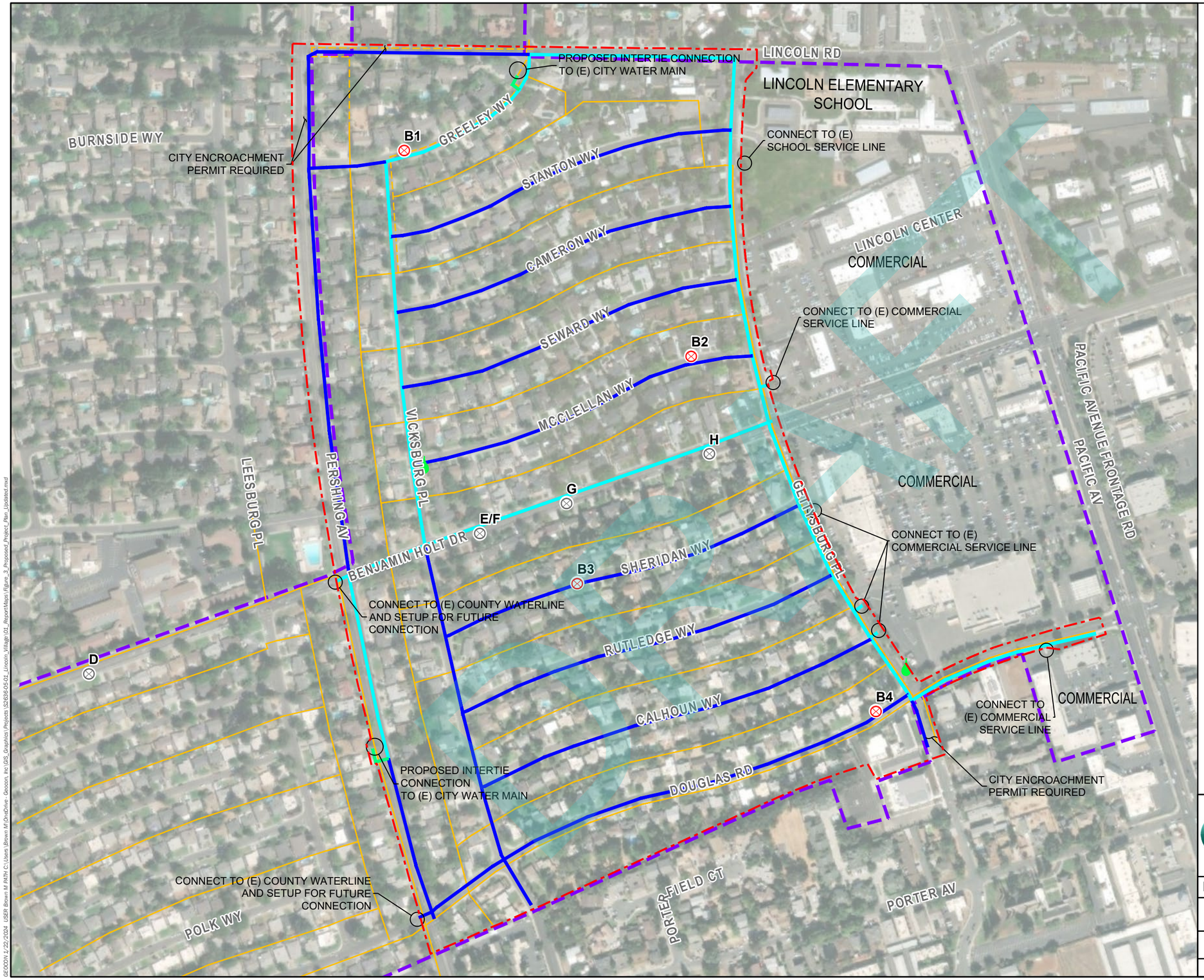
Lincoln Village Maintenance District Water Main Replacement

San Joaquin County, California

SITE PLAN

S2636-05-01	January 2024	Figure 2



Legend

- B4 ⊗ Approximate Boring Location (Geocon 10/2023)
- H ⊗ Approximate Boring Location (Siegfried 2/2023)
- Approximate Project Boundary
- (E) On-Site Waterline
- (E) City Interconnect Waterline
- Propsoed 12" Water Line
- Proposed 10" Water Line
- Proposed 8" Water Line
- Proposed Water Sample Station (Conceptual Location)
- Approximate District Boundary

Proposed Design Drawing: R.E.Y. Engineers, Inc. (11/5/2021)

N

0 350

Scale in Feet

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Lincoln Village Maintenance District Water Main Replacement

San Joaquin County,
California

PROPOSED PROJECT PLAN

S2636-05-01	January 2024	Figure 3

UNIFIED SOIL CLASSIFICATION

MAJOR DIVISIONS				TYPICAL NAMES
COARSE-GRAINED SOILS (MORE THAN HALF IS COARSER THAN NO. 200 SIEVE)	GRAVELS (MORE THAN HALF COARSE FRACTION IS LARGER THAN NO.4 SIEVE SIZE)	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW	WELL GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES
			GP	POORLY GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES
		GRAVELS WITH OVER 12% FINES	GM	SILTY GRAVELS, SILTY GRAVELS WITH SAND
			GC	CLAYEY GRAVELS, CLAYEY GRAVELS WITH SAND
	SANDS (MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO.4 SIEVE SIZE)	CLEAN SANDS WITH LITTLE OR NO FINES	SW	WELL GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES
			SP	POORLY GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES
		SANDS WITH OVER 12% FINES	SM	SILTY SANDS WITH OR WITHOUT GRAVEL
			SC	CLAYEY SANDS WITH OR WITHOUT GRAVEL
FINE-GRAINED SOILS (MORE THAN HALF IS FINER THAN NO. 200 SIEVE)	SILTS AND CLAYS LIQUID LIMIT 50% OR LESS		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTS WITH SANDS AND GRAVELS
			CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, CLAYS WITH SANDS AND GRAVELS, LEAN CLAYS
			OL	ORGANIC SILTS OR CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50%		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS, FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH	ORGANIC CLAYS OR CLAYS OF MEDIUM TO HIGH PLASTICITY
	HIGHLY ORGANIC SOILS		PT	PEAT AND OTHER HIGHLY ORGANIC SOILS

BORING/TRENCH LOG LEGEND

- No Recovery
- Shelby Tube Sample
- Bulk Sample
- SPT Sample
- Modified California Sample
- Groundwater Level (At Completion)
- Groundwater Level (Seepage)

PENETRATION RESISTANCE

SAND AND GRAVEL			SILT AND CLAY			
RELATIVE DENSITY	BLOWS PER FOOT (SPT)*	BLOWS PER FOOT (MOD-CAL)*	CONSISTENCY	BLOWS PER FOOT (SPT)*	BLOWS PER FOOT (MOD-CAL)*	COMPRESSIVE STRENGTH (tsf)
VERY LOOSE	0 - 4	0 - 6	VERY SOFT	0 - 2	0 - 3	0 - 0.25
LOOSE	5 - 10	7 - 16	SOFT	3 - 4	4 - 6	0.25 - 0.50
MEDIUM DENSE	11 - 30	17 - 48	MEDIUM STIFF	5 - 8	7 - 13	0.50 - 1.0
DENSE	31 - 50	49 - 79	STIFF	9 - 15	14 - 24	1.0 - 2.0
VERY DENSE	OVER 50	OVER 79	VERY STIFF	16 - 30	25 - 48	2.0 - 4.0
			HARD	OVER 30	OVER 48	OVER 4.0

*NUMBER OF BLOWS OF 140 LB HAMMER FALLING 30 INCHES TO DRIVE LAST 12 INCHES OF AN 18-INCH DRIVE

MOISTURE DESCRIPTIONS

FIELD TEST	APPROX. DEGREE OF SATURATION, S (%)	DESCRIPTION
NO INDICATION OF MOISTURE; DRY TO THE TOUCH	S<25	DRY
SLIGHT INDICATION OF MOISTURE	25≤S<50	DAMP
INDICATION OF MOISTURE; NO VISIBLE WATER	50≤S<75	MOIST
MINOR VISIBLE FREE WATER	75≤S<100	WET
VISIBLE FREE WATER	100	SATURATED

QUANTITY DESCRIPTIONS

APPROX. ESTIMATED PERCENT	DESCRIPTION
<5%	TRACE
5 - 10%	FEW
11 - 25%	LITTLE
26 - 50%	SOME
>50%	MOSTLY

GRAVEL/COBBLE/BOULDER DESCRIPTIONS

CRITERIA	DESCRIPTION
PASS THROUGH A 3-INCH SIEVE AND BE RETAINED ON A NO. 4 SIEVE (#4 TO 3")	GRAVEL
PASS A 12-INCH SQUARE OPENING AND BE RETAINED ON A 3-INCH SIEVE (3"-12")	COBBLE
WILL NOT PASS A 12-INCH SQUARE OPENING (>12")	BOULDER

LABORATORY TEST KEY

CP – COMPACTION CURVE (ASTM D1557)
CR – CORROSION ANALYSIS (CTM 422, 643, 417)
DS – DIRECT SHEAR (ASTM D3080)
EI – EXPANSION INDEX (ASTM D4829)
GSA – GRAIN SIZE ANALYSIS (ASTM D422)
MC – MOISTURE CONTENT (ASTM D2216)
PI – PLASTICITY INDEX (ASTM D4318)
R – R-VALUE (CTM 301)
SE – SAND EQUIVALENT (CTM 217)
TXCU – CONSOLIDATED UNDRAINED TRIAXIAL (ASTM D4767)
TXUU – UNCONSOLIDATED UNDRAINED TRIAXIAL (ASTM D2850)
UC – UNCONFINED COMPRESSIVE STRENGTH (ASTM D2166)

BEDDING SPACING DESCRIPTIONS

THICKNESS/SPACING	DESCRIPTOR
GREATER THAN 10 FEET	MASSIVE
3 TO 10 FEET	VERY THICKLY BEDDED
1 TO 3 FEET	THICKLY BEDDED
3 ⅝-INCH TO 1 FOOT	MODERATELY BEDDED
1 ⅛-INCH TO 3 ⅝-INCH	THINLY BEDDED
⅜-INCH TO 1 ⅛-INCH	VERY THINLY BEDDED
LESS THAN ⅜-INCH	LAMINATED

STRUCTURE DESCRIPTIONS

CRITERIA	DESCRIPTION
ALTERNATING LAYERS OF VARYING MATERIAL OR COLOR WITH LAYERS AT LEAST ¼-INCH THICK	STRATIFIED
ALTERNATING LAYERS OF VARYING MATERIAL OR COLOR WITH LAYERS LESS THAN ¼-INCH THICK	LAMINATED
BREAKS ALONG DEFINITE PLANES OF FRACTURE WITH LITTLE RESISTANCE TO FRACTURING	FISSURED
FRACTURE PLANES APPEAR POLISHED OR GLOSSY, SOMETIMES STRIATED	SLICKENSIDED
COHESIVE SOIL THAT CAN BE BROKEN DOWN INTO SMALLER ANGULAR LUMPS WHICH RESIST FURTHER BREAKDOWN	BLOCKY
INCLUSION OF SMALL POCKETS OF DIFFERENT SOIL, SUCH AS SMALL LENSES OF SAND SCATTERED THROUGH A MASS OF CLAY	LENSED
SAME COLOR AND MATERIAL THROUGHOUT	HOMOGENOUS

CEMENTATION/INDURATION DESCRIPTIONS

FIELD TEST	DESCRIPTION
CRUMBLES OR BREAKS WITH HANDLING OR LITTLE FINGER PRESSURE	WEAKLY CEMENTED/INDURATED
CRUMBLES OR BREAKS WITH CONSIDERABLE FINGER PRESSURE	MODERATELY CEMENTED/INDURATED
WILL NOT CRUMBLE OR BREAK WITH FINGER PRESSURE	STRONGLY CEMENTED/INDURATED

IGNEOUS/METAMORPHIC ROCK STRENGTH DESCRIPTIONS

FIELD TEST	DESCRIPTION
MATERIAL CRUMBLES WITH BARE HAND	WEAK
MATERIAL CRUMBLES UNDER BLOWS FROM GEOLOGY HAMMER	MODERATELY WEAK
½-INCH INDENTATIONS WITH SHARP END FROM GEOLOGY HAMMER	MODERATELY STRONG
HAND-HELD SPECIMEN CAN BE BROKEN WITH **ONE** BLOW FROM GEOLOGY HAMMER	STRONG
HAND-HELD SPECIMEN CAN BE BROKEN WITH **COUPLE** BLOWS FROM GEOLOGY HAMMER	VERY STRONG
HAND-HELD SPECIMEN CAN BE BROKEN WITH **MANY** BLOWS FROM GEOLOGY HAMMER	EXTREMELY STRONG

IGNEOUS/METAMORPHIC ROCK WEATHERING DESCRIPTIONS

DEGREE OF DECOMPOSITION	FIELD RECOGNITION	ENGINEERING PROPERTIES
SOIL	DISCOLORED, CHANGED TO SOIL, FABRIC DESTROYED	EASY TO DIG
COMPLETELY WEATHERED	DISCOLORED, CHANGED TO SOIL, FABRIC MAINLY PRESERVED	EXCAVATED BY HAND OR RIPPING (Saprolite)
HIGHLY WEATHERED	DISCOLORED, HIGHLY FRACTURED, FABRIC ALTERED AROUND FRACTURES	EXCAVATED BY HAND OR RIPPING, WITH SLIGHT DIFFICULTY
MODERATELY WEATHERED	DISCOLORED, FRACTURES, INTACT ROCK-NOTICEABLY WEAKER THAN FRESH ROCK	EXCAVATED WITH DIFFICULTY WITHOUT EXPLOSIVES
SLIGHTLY WEATHERED	MAY BE DISCOLORED, SOME FRACTURES, INTACT ROCK-NOT NOTICEABLY WEAKER THAN FRESH ROCK	REQUIRES EXPLOSIVES FOR EXCAVATION, WITH PERMEABLE JOINTS AND FRACTURES
FRESH	NO DISCOLORATION, OR LOSS OF STRENGTH	REQUIRES EXPLOSIVES

IGNEOUS/METAMORPHIC ROCK JOINT/FRACTURE DESCRIPTIONS

FIELD TEST	DESCRIPTION
NO OBSERVED FRACTURES	UNFRACTURED/UNJOINTED
MAJORITY OF JOINTS/FRACTURES SPACED AT 1 TO 3 FOOT INTERVALS	SLIGHTLY FRACTURED/JOINTED
MAJORITY OF JOINTS/FRACTURES SPACED AT 4-INCH TO 1 FOOT INTERVALS	MODERATELY FRACTURED/JOINTED
MAJORITY OF JOINTS/FRACTURES SPACED AT 1-INCH TO 4-INCH INTERVALS WITH SCATTERED FRAGMENTED INTERVALS	INTENSELY FRACTURED/JOINTED
MAJORITY OF JOINTS/FRACTURES SPACED AT LESS THAN 1-INCH INTERVALS; MOSTLY RECOVERED AS CHIPS AND FRAGMENTS	VERY INTENSELY FRACTURED/JOINTED

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KEY TO LOGS | Figure 4

PROJECT NO. **S2636-05-01** PROJECT NAME **Lincoln Village District Water Main Replacement**

BORING B1

ELEV. (MSL.) ~10' DATE COMPLETED 9/5/2023

ENG./GEO. LAH DRILLER V&W Drilling

EQUIPMENT CME 75 HAMMER TYPE Automatic | 140lb

DEPTH IN FEET	SAMPLE INTERVAL & RECOVERY	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)	ADDITIONAL TESTS
0					Approximately 4 inches of Asphalt				
1	B1-Bulk				Approximately 7 inches of Aggregate Base				GSA, PI, R, CR
	B1-1.5			CL	**ALLUVIUM** Hard, moist, light brown, Sandy Lean CLAY, with calcification PP>4.5 tsf				
2	B1-2.0					46	100.8	16.8	
3									
	B1-3.5				brown to reddish brown with black mottling, PP>4.5 tsf				
4	B1-4.0					39	110.6	17.5	
5									
	B1-5.5				increasing sand content, weakly cemented, PP>4.5 tsf				
6	B1-6.0					44			
7									
8	B1-8.0				light brown, PP>4.5 tsf				
	B1-8.5					72			
9									
10									
	B1-10.5				with calcification, moderately to strongly cemented, PP>4.5 tsf				
11	B1-11.0					79/11"			
12									
13									
14									
15					PP>4.5 tsf				
	B1-15.5				grayish brown, increasing silt content, with calcification, weakly cemented				
16	B1-16.0					44	95.0	27.8	
					BORING TERMINATED AT 16.5 FEET GROUNDWATER NOT ENCOUNTERED BACKFILLED WITH NEAT CEMENT GROUT				

Figure A5, Log of Boring, page 1 of 1

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SAMPLE SYMBOLS
- ☐ ... SAMPLING UNSUCCESSFUL
- ▨ ... DISTURBED OR BAG SAMPLE
- ◧ ... STANDARD PENETRATION TEST
- ◥ ... CHUNK SAMPLE
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **S2636-05-01** PROJECT NAME **Lincoln Village District Water Main Replacement**

BORING B2

ELEV. (MSL.) **~13'** DATE COMPLETED **9/5/2023**

ENG./GEO. **LAH** DRILLER **V&W Drilling**

EQUIPMENT **CME 75** HAMMER TYPE **Automatic | 140lb**

DEPTH IN FEET	SAMPLE INTERVAL & RECOVERY	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)	ADDITIONAL TESTS
0			Approximately 4½ inches of Asphalt				
1	B2-Bulk		Approximately 6 inches of Aggregate Base				
	B2-1.5	CL	**ALLUVIUM**				PI, R CR
2	B2-2.0		Very stiff, moist, dark brown, Sandy Lean CLAY PP=3.5 tsf	13	109.1	20.0	
3							
	B2-3.5	SM	Dense, moist, brown to reddish brown, Silty fine SAND with Clay, weakly cemented				
4	B2-4.0			57			
5		CL	Hard, moist, light brown to brown, Sandy Lean CLAY, with calcification				
	B2-5.5				98.3	26.5	
6	B2-6.0		PP>4.5 tsf	37			
7							
8	B2-8.0		very stiff, grayish brown to brown with black mottling, with silt, PP=3.5 tsf				
	B2-8.5			16			
9							
10							
	B2-10.5		with reddish mottling, PP=3.5 tsf				
11	B2-11.0			19			
12							
13							
14							
15							
	B2-15.5		grayish brown, increasing silt content, weakly cemented, PP=3.75 tsf				
16	B2-16.0			20			
			BORING TERMINATED AT 16.5 FEET GROUNDWATER NOT ENCOUNTERED BACKFILLED WITH NEAT CEMENT GROUT				

Figure A6, Log of Boring, page 1 of 1

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SAMPLE SYMBOLS: ☐ ... SAMPLING UNSUCCESSFUL; ◧ ... STANDARD PENETRATION TEST; ■ ... DRIVE SAMPLE (UNDISTURBED); ⊠ ... DISTURBED OR BAG SAMPLE; ◪ ... CHUNK SAMPLE; ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **S2636-05-01** PROJECT NAME **Lincoln Village District Water Main Replacement**

BORING B3

ELEV. (MSL.) ~9' DATE COMPLETED 9/5/2023

ENG./GEO. LAH DRILLER V&W Drilling

EQUIPMENT CME 75 HAMMER TYPE Automatic | 140lb

DEPTH IN FEET	SAMPLE INTERVAL & RECOVERY	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)	ADDITIONAL TESTS
0					Approximately 2 inches of Asphalt				
1	B3-Bulk			CL	Approximately 6 inches of Aggregate Base				GSA, PI, R, CR
2	B3-1.5 B3-2.0				**ALLUVIUM** Hard, moist, dark brown, Sandy Lean CLAY PP>4.5 tsf	24	109.9	17.1	
3									
4	B3-3.5 B3-4.0				brown, increasing sand content, PP>4.5 tsf	25	115.0	13.8	
5									
6	B3-5.5 B3-6.0				very stiff, increasing moisture content, PP=4.0 tsf	23			
7									
8	B3-8.0			SM	Medium dense, moist, grayish brown with reddish brown and black mottling, Silty fine SAND				
9	B3-8.5					31			
10									
11	B3-10.5 B3-11.0				micaceous	35			
12									
13									
14									
15			▽		wet				
16	B3-15.5 B3-16.0				fine to medium Sand	26			
					BORING TERMINATED AT 16.5 FEET PERCHED WATER ENCOUNTERED AT 15 FEET BACKFILLED WITH NEAT CEMENT GROUT				

Figure A7, Log of Boring, page 1 of 1

GEOCON

SAMPLE SYMBOLS
- ☐ ... SAMPLING UNSUCCESSFUL
- ▨ ... DISTURBED OR BAG SAMPLE
- ◧ ... STANDARD PENETRATION TEST
- ◥ ... CHUNK SAMPLE
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **S2636-05-01** PROJECT NAME **Lincoln Village District Water Main Replacement**

BORING B4

ELEV. (MSL.) **~13'** DATE COMPLETED **9/5/2023**

ENG./GEO. **LAH** DRILLER **V&W Drilling**

EQUIPMENT **CME 75** HAMMER TYPE **Automatic | 140lb**

DEPTH IN FEET	SAMPLE INTERVAL & RECOVERY	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)	ADDITIONAL TESTS
0					Approximately 9 inches of Asphalt				
1					Approximately 4½ inches of Aggregate Base				
	B2-Bulk			CL	**ALLUVIUM**				PI, R, CR
2	B4-1.5 B4-2.0				Hard, moist, dark brown with reddish brown mottling, Sandy Lean CLAY PP>4.5 tsf	26	102.4	15.0	
3				SM	Dense, moist, reddish brown to brown, Silty fine SAND with Clay, moderately to strongly cemented				
	B4-3.5								
4	B4-4.0					46	111.9	9.2	
5									
	B4-5.5			CL	Hard, moist, reddish brown to brown, Sandy Lean CLAY				
6	B4-6.0				PP>4.5 tsf	39	101.2	16.9	
7									
8	B4-8.0				grayish brown to brown, PP>4.5 tsf				
	B4-8.5					43			
9									
10									
	B4-10.5				with black mottling, increasing sand content, PP=4.5 tsf				
11	B4-11.0					38			
12									
13									
14									
15									
	B4-15.5				very stiff, with black mottling, weakly cemented, PP=3.5 tsf				
16	B4-16.0					36			
					BORING TERMINATED AT 16.5 FEET GROUNDWATER NOT ENCOUNTERED BACKFILLED WITH NEAT CEMENT GROUT				

Figure A8, Log of Boring, page 1 of 1

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SAMPLE SYMBOLS
- ☐ ... SAMPLING UNSUCCESSFUL
- ▨ ... DISTURBED OR BAG SAMPLE
- ◧ ... STANDARD PENETRATION TEST
- ◥ ... CHUNK SAMPLE
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

Sample ID	Depth (feet)	Liquid Limit	Plastic Limit	Plasticity Index	Expansion Index	%<#200 Sieve	Water Content (%)	Dry Density (pcf)
B1-Bulk	0-5	31	19	12		62.0		
B1-2.0							16.8	100.8
B1-4.0							17.5	110.6
B1-16.0						58.6	27.8	95.0
B2-Bulk	0-5	35	18	17				
B2-2.0							20.0	109.1
B2-4.0						23.4		
B2-5.5							26.5	98.3
B3-Bulk	0-5	35	17	18		65.9		
B3-2.0							17.1	109.9
B3-4.0						49.8	13.8	115.0
B4-Bulk	0-5	38	18	20				
B4-2.0							15.0	102.4
B4-4.0							9.2	111.9
B4-6.0							16.9	101.2

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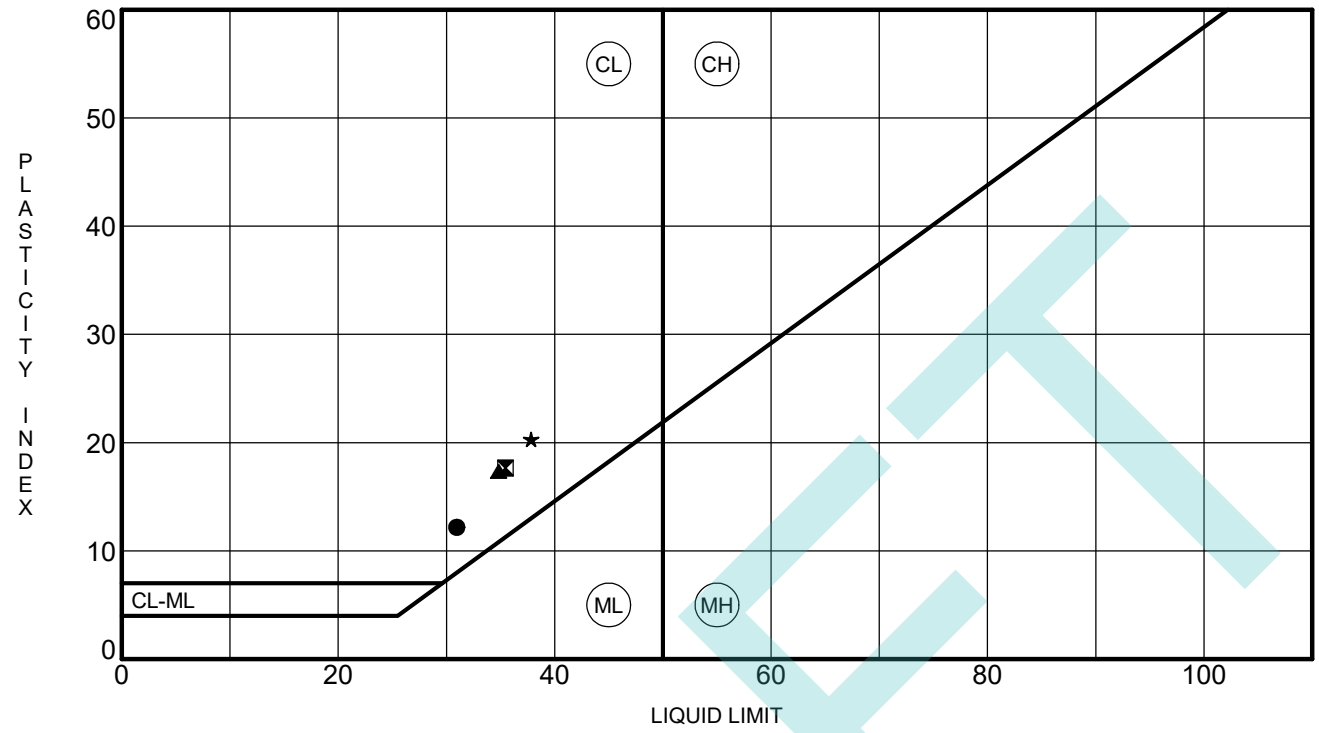
Summary of Laboratory Results

Project: Lincoln Village District Water Main Replacement
Location: Stockton, CA
Number: S2636-05-01
Figure: 9



	Specimen Identification	LL	PL	PI	Fines	Classification
●	**B1-Bulk**	**31**	**19**	**12**		**Sandy Lean CLAY**
⊠	**B2-Bulk**	**35**	**18**	**17**		**Sandy Lean CLAY**
▲	**B3-Bulk**	**35**	**17**	**18**		**Sandy Lean CLAY**
★	**B4-Bulk**	**38**	**18**	**20**		**Sandy Lean CLAY**

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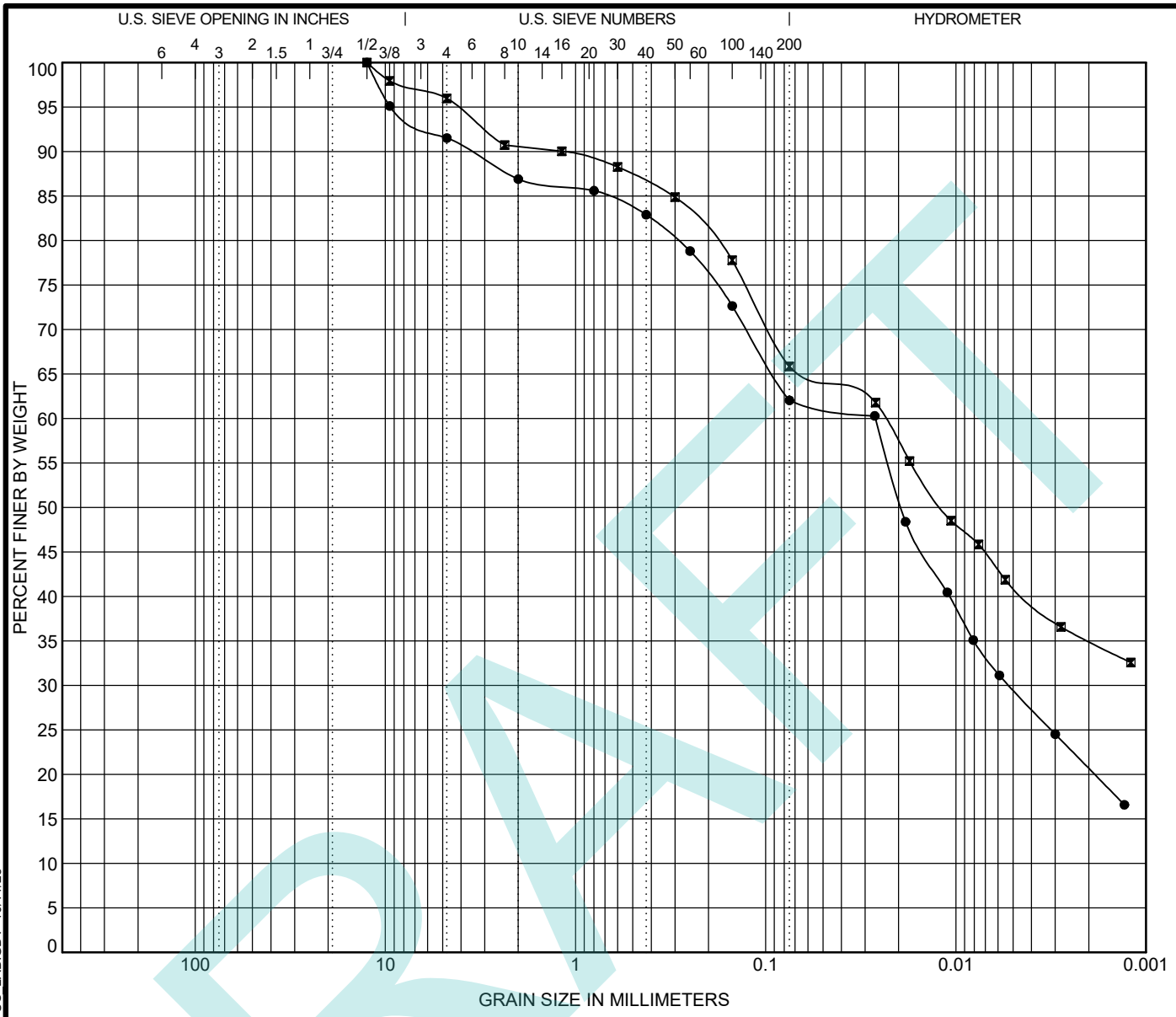
ATTERBERG LIMITS

Project: Lincoln Village District Water Main Replacement
Location: Stockton, CA
Number: S2636-05-01
Figure: 10



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Sample No.	Classification	LL	PL	PI	Cc	Cu
●	**B1-Bulk**	**Sandy Lean CLAY**	**31**	**19**	**12**		
⊠	**B3-Bulk**	**Sandy Lean CLAY**	**35**	**17**	**18**		

	Sample No.	D100	D50	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**B1-Bulk**	**12.5**	**0.019**	**0.005**		**8.5**	**29.5**	**41.4**	**20.7**
⊠	**B3-Bulk**	**12.5**	**0.012**			**4.0**	**30.1**	**30.9**	**35.0**

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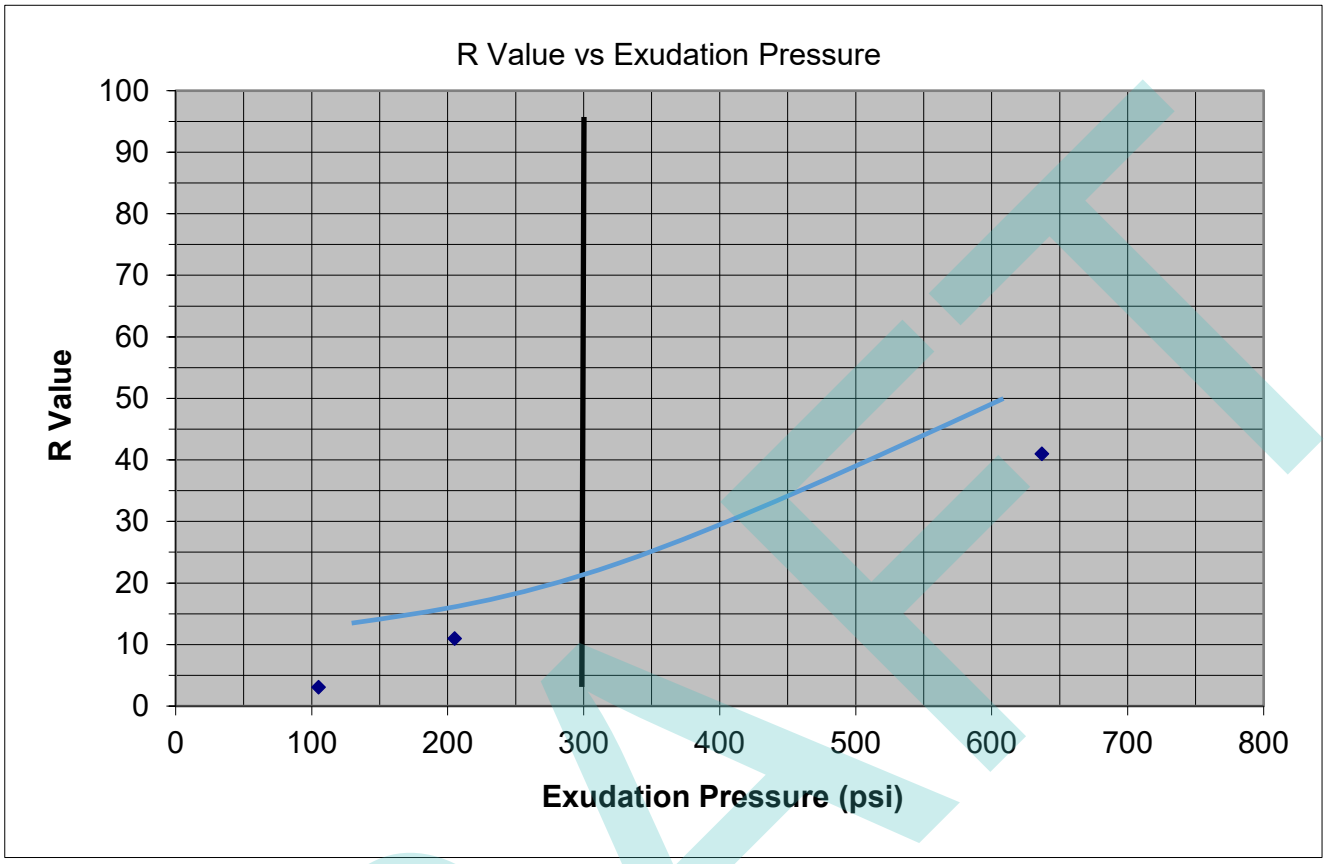
GRAIN SIZE DISTRIBUTION (ASTM D422, D6913)

Project: Lincoln Village District Water Main Replacement
Location: Stockton, CA
Number: S2636-05-01
Figure: B1



Sample ID & Description				
Boring Number	B1-Bulk			
Sample Depth (feet)	0-5'			
Material Description	Brown Sandy Lean CLAY			

Test Data			
Specimen	6	11	12
Exudation Pressure (psi)	105	205	637
Expansion Dial (.0001")	2	15	90
Expansion Pressure (psf)	8.7	65.0	389.7
Resistance 'R' Value	3	11	41
Moisture at test (%)	21	18.7	16.4
Dry density at test (pcf)	102.6	108.3	114.8
R Value at 300 psi exudation pressure			**21**
R Value by expansion pressure (TI=7.0)			**34**
R Value by Equilibrium			**21**

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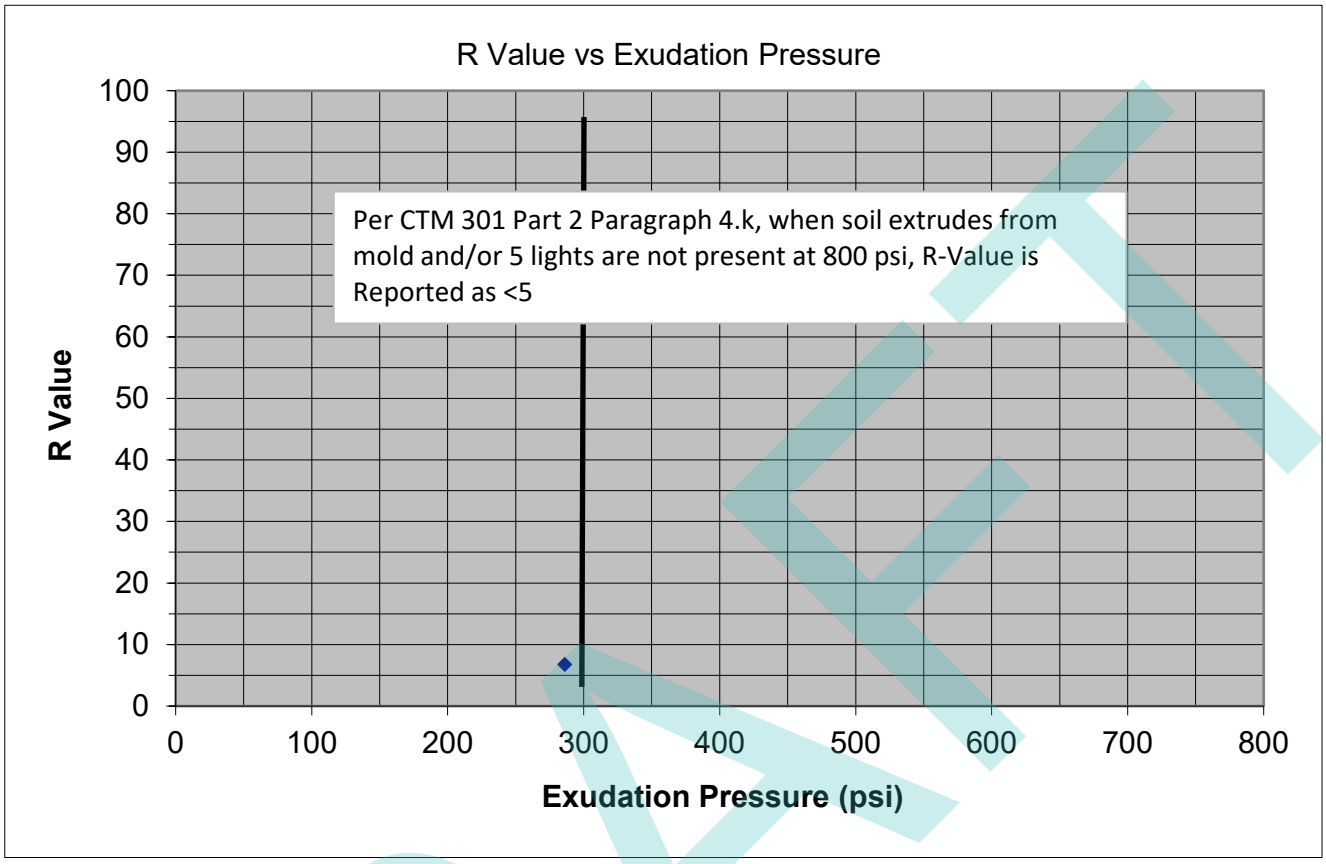
Resistance "R" Value, ASTM D2844, CTM 301

Project:	Lincoln Village District Water Main
Location:	Stockton, CA
Number:	S2636-05-01
Figure:	12



Sample ID & Description		
Boring Number	B1-Bulk	
Sample Depth (feet)	0-5'	
Material Description	Brown Sandy Lean CLAY	
Test Data		
Specimen	1	
Exudation Pressure (psi)	286	
Expansion Dial (.0001")	0	
Expansion Pressure (psf)	0.0	
Resistance 'R' Value	7	
Moisture at test (%)	19.9	
Dry density at test (pcf)	105.6	
R Value at 300 psi exudation pressure		**<5**
R Value by expansion pressure (TI=5.0)		**--**
R Value by Equilibrium		**<5**

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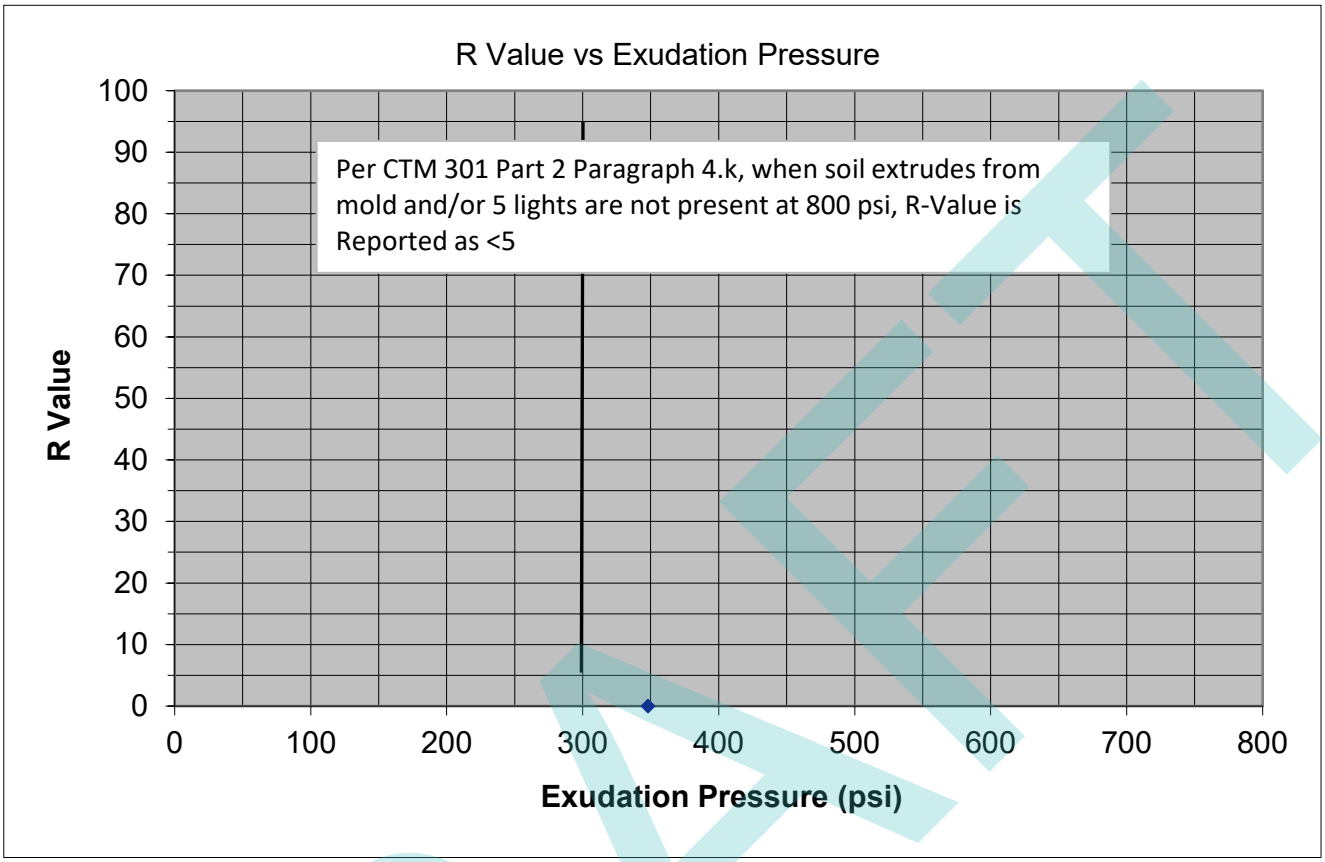
Resistance "R" Value, ASTM D2844, CTM 301

Project:	Lincoln Village District Water Main
Location:	Stockton, CA
Number:	S2636-05-01
Figure:	13



Sample ID & Description		
Boring Number	B3-Bulk	
Sample Depth (feet)		
Material Description	Brown Sandy Lean CLAY	

Test Data		
Specimen	2	
Exudation Pressure (psi)	348	
Expansion Dial (.0001")	26	
Expansion Pressure (psf)	112.6	
Resistance 'R' Value	<5	
Moisture at test (%)	19.3	
Dry density at test (pcf)	107.6	
R Value at 300 psi exudation pressure		**<5**
R Value by expansion pressure (TI=5.0)		**--**
R Value by Equillibrium		**<5**

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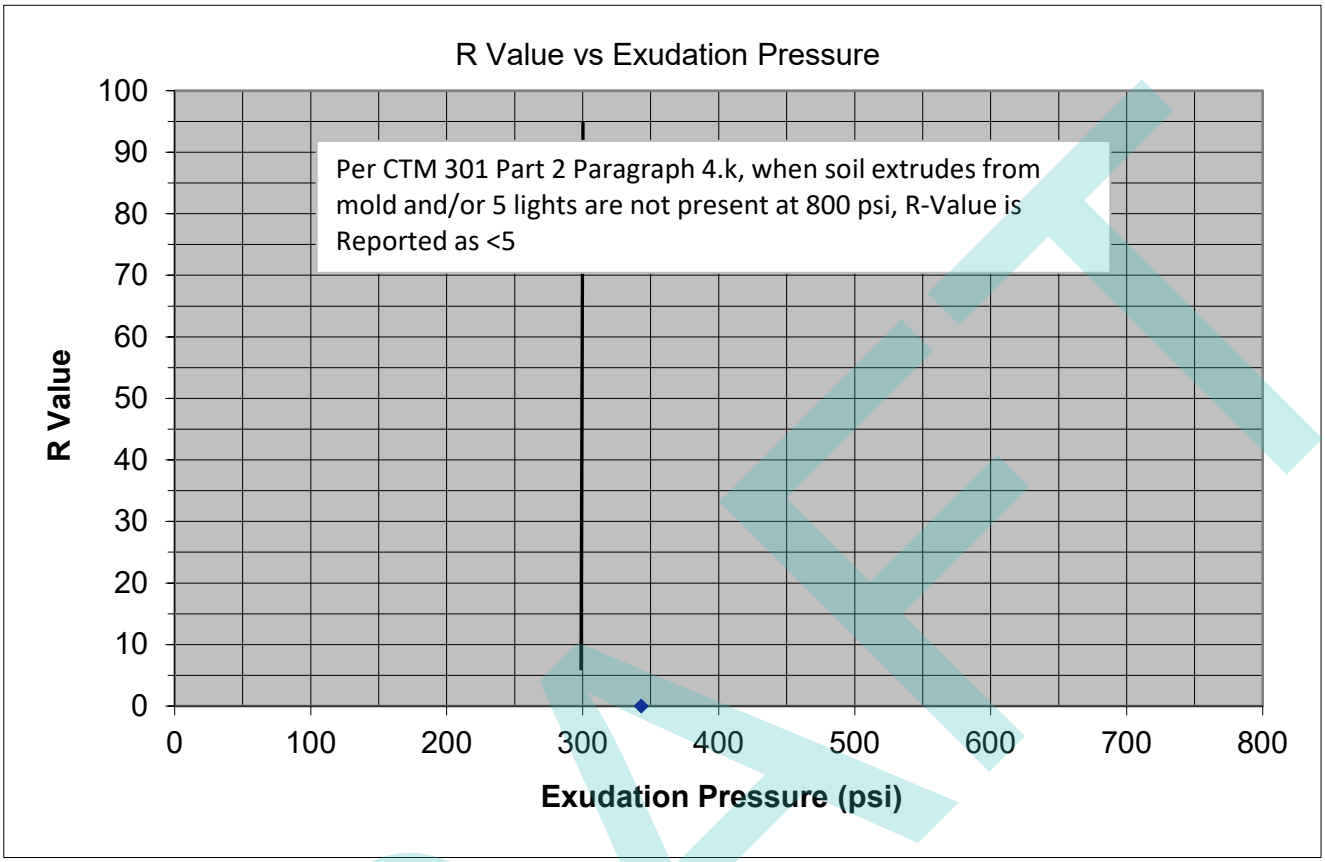
Resistance "R" Value, ASTM D2844, CTM 301

Project:	Lincoln Village Water Main
Location:	Stockton, CA
Number:	S2636-05-01
Figure:	14



Sample ID & Description		
Boring Number	B4-Bulk	
Sample Depth (feet)		
Material Description	Brown Sandy Lean CLAY	
Test Data		
Specimen	1	
Exudation Pressure (psi)	343	
Expansion Dial (.0001")	14	
Expansion Pressure (psf)	60.6	
Resistance 'R' Value	<5	
Moisture at test (%)	18.9	
Dry density at test (pcf)	107.4	
R Value at 300 psi exudation pressure		**<5**
R Value by expansion pressure (TI=5.0)		**--**
R Value by Equillibrium		**<5**

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Resistance "R" Value, ASTM D2844, CTM 301

Project:	Lincoln Village Water Main
Location:	Stockton, CA
Number:	S2636-05-01
Figure:	15

APPENDIX A

SIEGFRIED

BOREHOLE NUMBER B-A1

CLIENT San Joaquin County Engineering
PROJECT NAME Benjamin Holt Pavement Rehabilitation
PROJECT NUMBER 23037
PROJECT LOCATION Benjamin Holt Drive, Stockton, CA
DATE STARTED 02-02-2023 **COMPLETED** 02-03-2023
POSITION
DRILLING CONTRACTOR West Coast Exploration
GROUND ELEVATION **FINAL DEPTH** 4.50 ft
DRILLING METHOD Solid Stem Auger
GROUNDWATER LEVELS: Not Encountered
EQUIPMENT Simco B24
▽ **AT TIME OF DRILLING**
HOLE SIZE 4.0 in.
▼ **AT END OF DRILLING** Not Encountered
LOGGED BY Brad Quon, GE **CHECKED BY** Brad Quon, GE
▽ **AFTER DRILLING**

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT (pcf)	MOISTURE CONTENT (%)
		0.33 Asphalt Concrete (AC): approximately 4 inches					
		0.75 Aggregate Base (AB): approximately 5 inches					
		Sandy Lean CLAY (CL): gray brown, moist, low plasticity, fine sand	1B	6-11-15 (26)	3.00		
			1C		1.90	107	21
		3.00 Sandy SILT (ML): light brown, moist, low plasticity	2	5-6-8 (14)			
		4.50 Terminated at 4.50 ft.					
5							
10							
15							
20							
25							

NOTES

SIEGFRIED

BOREHOLE NUMBER B-A2

CLIENT San Joaquin County Engineering
PROJECT NAME Benjamin Holt Pavement Rehabilitation
PROJECT NUMBER 23037
PROJECT LOCATION Benjamin Holt Drive, Stockton, CA
DATE STARTED 02-02-2023 **COMPLETED** 02-03-2023
POSITION
DRILLING CONTRACTOR West Coast Exploration
GROUND ELEVATION **FINAL DEPTH** 4.50 ft
DRILLING METHOD Solid Stem Auger
GROUNDWATER LEVELS: Not Encountered
EQUIPMENT Simco B24
AT TIME OF DRILLING
HOLE SIZE 4.0 in.
AT END OF DRILLING Not Encountered
LOGGED BY Brad Quon, GE **CHECKED BY** Brad Quon, GE
AFTER DRILLING

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)
		0.50 Asphalt Concrete (AC): approximately 6 inches			
		0.92 Aggregate Baserock (AB): approximately 5 inches			
		Sandy Lean CLAY (CL): light brown, moist, low plasticity	1B 1C	10-14-21 (35)	1.50 3.00
		2.50 Sandy SILT (ML): light brown, moist, low plasticity	2	8-9-12 (21)	
		4.50 Terminated at 4.50 ft.			
5					
10					
15					
20					
25					

NOTES

SIEGFRIED

BOREHOLE NUMBER B-A3

CLIENT San Joaquin County Engineering
PROJECT NAME Benjamin Holt Pavement Rehabilitation
PROJECT NUMBER 23037
PROJECT LOCATION Benjamin Holt Drive, Stockton, CA
DATE STARTED 02-02-2023 **COMPLETED** 02-03-2023
POSITION
DRILLING CONTRACTOR West Coast Exploration
GROUND ELEVATION **FINAL DEPTH** 4.50 ft
DRILLING METHOD Solid Stem Auger
GROUNDWATER LEVELS: Not Encountered
EQUIPMENT Simco B24
▽ **AT TIME OF DRILLING**
HOLE SIZE 4.0 in.
▼ **AT END OF DRILLING** Not Encountered
LOGGED BY Brad Quon, GE **CHECKED BY** Brad Quon, GE
▽ **AFTER DRILLING**

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)
		0.46 Asphalt Concrete (AC): approximately 5-1/2 inches		
		1.00 Aggregate Baserock (AB): approximately 6-1/2 inches		
		Sandy Lean CLAY (CL): light brown, moist, low plasticity, fine sand	1B 1C	9-12-11 (23)
			2	6-8-10 (18)
		4.50 - increased moisture content noted at 4'		
		Terminated at 4.50 ft.		
5				
10				
15				
20				
25				

NOTES

SIEGFRIED

BOREHOLE NUMBER B-B1

CLIENT San Joaquin County Engineering
PROJECT NAME Benjamin Holt Pavement Rehabilitation
PROJECT NUMBER 23037
PROJECT LOCATION Benjamin Holt Drive, Stockton, CA
DATE STARTED 02-02-2023 **COMPLETED** 02-03-2023
POSITION
DRILLING CONTRACTOR West Coast Exploration
GROUND ELEVATION **FINAL DEPTH** 4.50 ft
DRILLING METHOD Solid Stem Auger
GROUNDWATER LEVELS: Not Encountered
EQUIPMENT Simco B24
AT TIME OF DRILLING
HOLE SIZE 4.0 in.
AT END OF DRILLING Not Encountered
LOGGED BY Brad Quon, GE **CHECKED BY** Brad Quon, GE
AFTER DRILLING

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
		0.50 Asphalt Concrete (AC): approximately 6 inches 0.92 Aggregate Baserock (AB): approximately 5 inches Sandy Lean CLAY (CL), brown, moist, low plasticity	Bulk 2 1B 1C	14-14-15 (29)	112	17	41	15	26	64
			2	3-2-2 (4)						
		4.50 Terminated at 4.50 ft.								
5										
10										
15										
20										
25										

NOTES

SIEGFRIED

BOREHOLE NUMBER B-B2

CLIENT San Joaquin County Engineering
PROJECT NAME Benjamin Holt Pavement Rehabilitation
PROJECT NUMBER 23037
PROJECT LOCATION Benjamin Holt Drive, Stockton, CA
DATE STARTED 02-02-2023 **COMPLETED** 02-03-2023
POSITION
DRILLING CONTRACTOR West Coast Exploration
GROUND ELEVATION **FINAL DEPTH** 4.50 ft
DRILLING METHOD Solid Stem Auger
GROUNDWATER LEVELS: Not Encountered
EQUIPMENT Simco B24
AT TIME OF DRILLING
HOLE SIZE 4.0 in.
AT END OF DRILLING Not Encountered
LOGGED BY Brad Quon, GE **CHECKED BY** Brad Quon, GE
AFTER DRILLING

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)
		0.42 Asphalt Concrete (AC): approximately 5 inches		
		0.88 Aggregate Baserock (AB): approximately 5-1/2 inches		
		Sandy Lean Clay (CL): light brown, most, low plasticity	1B 1C	13-10-10 (20)
			2	6-11-17 (28)
		4.50		
		Terminated at 4.50 ft.		
5				
10				
15				
20				
25				

NOTES

SIEGFRIED

BOREHOLE NUMBER B-B3

CLIENT San Joaquin County Engineering
PROJECT NAME Benjamin Holt Pavement Rehabilitation
PROJECT NUMBER 23037
PROJECT LOCATION Benjamin Holt Drive, Stockton, CA
DATE STARTED 02-02-2023 **COMPLETED** 02-03-2023
POSITION
DRILLING CONTRACTOR West Coast Exploration
GROUND ELEVATION **FINAL DEPTH** 3.00 ft
DRILLING METHOD Solid Stem Auger
GROUNDWATER LEVELS: Not Encountered
EQUIPMENT Simco B24
AT TIME OF DRILLING
HOLE SIZE 4.0 in.
AT END OF DRILLING Not Encountered
LOGGED BY Brad Quon, GE **CHECKED BY** Brad Quon, GE
AFTER DRILLING

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)
		0.42 Asphalt Concrete (AC): approximately 5 inches		
		0.88 Aggregate Baserock (AB): approximately 5-1/2 inches		
		Sandy Lean Clay (CL): light brown, moist, low plasticity	1B 1C	15-14-12 (26)
		3.00		
		Terminated at 3.00 ft.		
5				
10				
15				
20				
25				

NOTES

SIEGFRIED

BOREHOLE NUMBER B-C1

CLIENT San Joaquin County Engineering
PROJECT NAME Benjamin Holt Pavement Rehabilitation
PROJECT NUMBER 23037
PROJECT LOCATION Benjamin Holt Drive, Stockton, CA
DATE STARTED 02-02-2023 **COMPLETED** 02-03-2023
POSITION
DRILLING CONTRACTOR West Coast Exploration
GROUND ELEVATION **FINAL DEPTH** 4.50 ft
DRILLING METHOD Solid Stem Auger
GROUNDWATER LEVELS: Not Encountered
EQUIPMENT Simco B24
▽ **AT TIME OF DRILLING**
HOLE SIZE 4.0 in.
▼ **AT END OF DRILLING** Not Encountered
LOGGED BY Brad Quon, GE **CHECKED BY** Brad Quon, GE
▽ **AFTER DRILLING**

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
		0.46 Asphalt Concrete (AC): approximately 5-1/2 inches									
		0.83 Aggregate Baserock (AB): approximately 5-1/2 inches									
		Sandy Lean Clay (CL): brown, moist, low plasticity, fine sand	Bulk 3					39	14	25	67
			1B 1C	9-9-11 (20)	2.25	102	23				
			2	3-4-4 (8)							
		4.50									
		Terminated at 4.50 ft.									
5											
10											
15											
20											
25											

NOTES

SIEGFRIED

BOREHOLE NUMBER B-C2

CLIENT San Joaquin County Engineering
PROJECT NAME Benjamin Holt Pavement Rehabilitation
PROJECT NUMBER 23037
PROJECT LOCATION Benjamin Holt Drive, Stockton, CA
DATE STARTED 02-02-2023 **COMPLETED** 02-03-2023
POSITION
DRILLING CONTRACTOR West Coast Exploration
GROUND ELEVATION **FINAL DEPTH** 4.50 ft
DRILLING METHOD Solid Stem Auger
GROUNDWATER LEVELS: Not Encountered
EQUIPMENT Simco B24
AT TIME OF DRILLING
HOLE SIZE 4.0 in.
AT END OF DRILLING Not Encountered
LOGGED BY Brad Quon, GE **CHECKED BY** Brad Quon, GE
AFTER DRILLING

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)
		0.46 Asphalt Concrete (AC): approximately 5-1/2 inches		
		0.88 Aggregate Baserock (AB): approximately 5 inches		
		Sandy Lean Clay (CL): brown, moist, low plasticity (FILL)	1B 1C	11-15-15 (30)
			2	6-5-8 (13)
		4.50		
		Terminated at 4.50 ft.		
5				
10				
15				
20				
25				

NOTES

SIEGFRIED

BOREHOLE NUMBER B-C3

CLIENT San Joaquin County Engineering
PROJECT NAME Benjamin Holt Pavement Rehabilitation
PROJECT NUMBER 23037
PROJECT LOCATION Benjamin Holt Drive, Stockton, CA
DATE STARTED 02-02-2023 **COMPLETED** 02-03-2023
POSITION
DRILLING CONTRACTOR West Coast Exploration
GROUND ELEVATION **FINAL DEPTH** 4.50 ft
DRILLING METHOD Solid Stem Auger
GROUNDWATER LEVELS: Not Encountered
EQUIPMENT Simco B24
AT TIME OF DRILLING
HOLE SIZE 4.0 in.
AT END OF DRILLING Not Encountered
LOGGED BY Brad Quon, GE **CHECKED BY** Brad Quon, GE
AFTER DRILLING

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)
		0.42 Asphalt Concrete (AC): approximately 5 inches		
		0.96 Aggregate Baserock (AB): approximately 6-1/2 inches		
		Sandy Lean Clay (CL): light brown, moist, low plasticity	1B 1C	28-34-35 (69)
		3.00 Sandy Silt (ML): light brown, moist, low plasticity, fine sand	2	9-9-13 (22)
		4.50 Terminated at 4.50 ft.		
5				
10				
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20				
25				

NOTES

SIEGFRIED

BOREHOLE NUMBER B-D1

Sheet 1 of 1

CLIENT San Joaquin County Engineering
PROJECT NAME Benjamin Holt Pavement Rehabilitation
PROJECT NUMBER 23037
PROJECT LOCATION Benjamin Holt Drive, Stockton, CA
DATE STARTED 02-02-2023 **COMPLETED** 02-03-2023
POSITION
DRILLING CONTRACTOR West Coast Exploration
GROUND ELEVATION **FINAL DEPTH** 4.50 ft
DRILLING METHOD Solid Stem Auger
GROUNDWATER LEVELS: Not Encountered
EQUIPMENT Simco B24
AT TIME OF DRILLING
HOLE SIZE 4.0 in.
AT END OF DRILLING Not Encountered
LOGGED BY Brad Quon, GE **CHECKED BY** Brad Quon, GE
AFTER DRILLING

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
		0.50 Asphalt Concrete (AC): approximately 6 inches								
		0.96 Aggregate Baserock (AB): approximately 5-1/2 inches								
		Fat CLAY (CH): black, moist, high plasticity	Bulk 4				53	16	37	76
			1B	9-11-13 (24)	104	21				
			1C							
			2	3-4-5 (9)						
		4.50								
5		Terminated at 4.50 ft.								
10										
15										
20										
25										

NOTES

SIEGFRIED

BOREHOLE NUMBER B-D2

CLIENT San Joaquin County Engineering
PROJECT NAME Benjamin Holt Pavement Rehabilitation
PROJECT NUMBER 23037
PROJECT LOCATION Benjamin Holt Drive, Stockton, CA
DATE STARTED 02-02-2023 **COMPLETED** 02-03-2023
POSITION
DRILLING CONTRACTOR West Coast Exploration
GROUND ELEVATION **FINAL DEPTH** 4.50 ft
DRILLING METHOD Solid Stem Auger
GROUNDWATER LEVELS: Not Encountered
EQUIPMENT Simco B24
AT TIME OF DRILLING
HOLE SIZE 4.0 in.
AT END OF DRILLING Not Encountered
LOGGED BY Brad Quon, GE **CHECKED BY** Brad Quon, GE
AFTER DRILLING

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)
		0.42 Asphalt Concrete (AC): approximately 5 inches			
		0.83 Aggregate Baserock (AB): approximately 5 inches			
		Fat CLAY (CH): black, moist, high plasticity	1B 1C	7-9-11 (20)	2.25
		3.00 Sandy Lean CLAY (CL): brown, moist, low plasticity	2	3-4-8 (12)	
		4.50 Terminated at 4.50 ft.			
5					
10					
15					
20					
25					

NOTES

SIEGFRIED

BOREHOLE NUMBER B-D3

CLIENT San Joaquin County Engineering
PROJECT NAME Benjamin Holt Pavement Rehabilitation
PROJECT NUMBER 23037
PROJECT LOCATION Benjamin Holt Drive, Stockton, CA
DATE STARTED 02-02-2023 **COMPLETED** 02-03-2023
POSITION
DRILLING CONTRACTOR West Coast Exploration
GROUND ELEVATION **FINAL DEPTH** 4.50 ft
DRILLING METHOD Solid Stem Auger
GROUNDWATER LEVELS: Not Encountered
EQUIPMENT Simco B24
AT TIME OF DRILLING
HOLE SIZE 4.0 in.
AT END OF DRILLING Not Encountered
LOGGED BY Brad Quon, GE **CHECKED BY** Brad Quon, GE
AFTER DRILLING

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)
		0.58 Asphalt Concrete (AC): approximately 7 inches		
		0.83 Aggregate Baserock (AB): approximately 7 inches		
		Sandy Fat CLAY (CH): light brown, moist, hight plasticity, fine sand	1B 1C	10-14-50 (64)
			2	16-18-22 (40)
		4.50 -grades gray to dark gray		
		Terminated at 4.50 ft.		
5				
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NOTES

SIEGFRIED

BOREHOLE NUMBER B-E1

CLIENT San Joaquin County Engineering
PROJECT NAME Benjamin Holt Pavement Rehabilitation
PROJECT NUMBER 23037
PROJECT LOCATION Benjamin Holt Drive, Stockton, CA
DATE STARTED 02-02-2023 **COMPLETED** 02-03-2023
POSITION
DRILLING CONTRACTOR West Coast Exploration
GROUND ELEVATION **FINAL DEPTH** 4.50 ft
DRILLING METHOD Solid Stem Auger
GROUNDWATER LEVELS: Not Encountered
EQUIPMENT Simco B24
AT TIME OF DRILLING
HOLE SIZE 4.0 in.
AT END OF DRILLING Not Encountered
LOGGED BY Brad Quon, GE **CHECKED BY** Brad Quon, GE
AFTER DRILLING

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
		0.50 Asphalt Concrete (AC): approximately 6 inches									
		0.92 Aggregate Baserock (AB): approximately 5 inches									
		Sandy Lean CLAY (CL): brown, moist, low plasticity, fine sand	Bulk 5					28	14	14	56
			1B	8-22-28 (50)	4.50	109	20				
			1C								
			2	11-15-20 (35)							
		4.50									
		Terminated at 4.50 ft.									
5											
10											
15											
20											
25											

NOTES

SIEGFRIED

BOREHOLE NUMBER B-E2

CLIENT San Joaquin County Engineering
PROJECT NAME Benjamin Holt Pavement Rehabilitation
PROJECT NUMBER 23037
PROJECT LOCATION Benjamin Holt Drive, Stockton, CA
DATE STARTED 02-02-2023 **COMPLETED** 02-03-2023
POSITION
DRILLING CONTRACTOR West Coast Exploration
GROUND ELEVATION **FINAL DEPTH** 4.50 ft
DRILLING METHOD Solid Stem Auger
GROUNDWATER LEVELS: Not Encountered
EQUIPMENT Simco B24
AT TIME OF DRILLING
HOLE SIZE 4.0 in.
AT END OF DRILLING Not Encountered
LOGGED BY Brad Quon, GE **CHECKED BY** Brad Quon, GE
AFTER DRILLING

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)
		0.50 Asphalt Concrete (AC): approximately 6 inches			
		0.96 Aggregate Baserock (AB): approximately 5-1/2 inches			
		Sandy Lean CLAY (CL): brown, moist, low plasticity, fine sand	1B 1C	10-15-20 (35)	3.75
			2	7-9-10 (19)	
		4.50 Terminated at 4.50 ft.			
5					
10					
15					
20					
25					

NOTES

SIEGFRIED

BOREHOLE NUMBER B-E3

CLIENT San Joaquin County Engineering
PROJECT NAME Benjamin Holt Pavement Rehabilitation
PROJECT NUMBER 23037
PROJECT LOCATION Benjamin Holt Drive, Stockton, CA
DATE STARTED 02-02-2023 **COMPLETED** 02-03-2023
POSITION
DRILLING CONTRACTOR West Coast Exploration
GROUND ELEVATION **FINAL DEPTH** 4.50 ft
DRILLING METHOD Solid Stem Auger
GROUNDWATER LEVELS: Not Encountered
EQUIPMENT Simco B24
AT TIME OF DRILLING
HOLE SIZE 4.0 in.
AT END OF DRILLING Not Encountered
LOGGED BY Brad Quon, GE **CHECKED BY** Brad Quon, GE
AFTER DRILLING

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)
		0.42 Asphalt Concrete (AC): approximately 5 inches		
		0.92 Aggregate Baserock (AB): approximately 6 inches		
		Sandy Lean CLAY (CL): brown, moist, low plasticity, fine sand		11-12-17 (29)
				8-12-14 (26)
		4.50		
		Terminated at 4.50 ft.		
5				
10				
15				
20				
25				

NOTES

SIEGFRIED

BOREHOLE NUMBER B-F1

Sheet 1 of 1

CLIENT San Joaquin County Engineering
PROJECT NAME Benjamin Holt Pavement Rehabilitation
PROJECT NUMBER 23037
PROJECT LOCATION Benjamin Holt Drive, Stockton, CA
DATE STARTED 02-02-2023 **COMPLETED** 02-03-2023
POSITION
DRILLING CONTRACTOR West Coast Exploration
GROUND ELEVATION **FINAL DEPTH** 4.50 ft
DRILLING METHOD Solid Stem Auger
GROUNDWATER LEVELS: Not Encountered
EQUIPMENT Simco B24
AT TIME OF DRILLING
HOLE SIZE 4.0 in.
AT END OF DRILLING Not Encountered
LOGGED BY Brad Quon, GE **CHECKED BY** Brad Quon, GE
AFTER DRILLING

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX
		0.50 Asphalt Concrete (AC): approximately 6 inches								
		0.92 Aggregate Baserock (AB): approximately 5 inches								
		Sandy Lean CLAY (CL): brown, moist, low plasticity, fine sand	Bulk 6					36	19	17
			1B 1C	11-18-25 (43)	4.00	119	16			
			2	12-20-22 (42)						
		4.50								
5		Terminated at 4.50 ft.								
10										
15										
20										
25										

NOTES

SIEGFRIED

BOREHOLE NUMBER B-F2

CLIENT San Joaquin County Engineering
PROJECT NAME Benjamin Holt Pavement Rehabilitation
PROJECT NUMBER 23037
PROJECT LOCATION Benjamin Holt Drive, Stockton, CA
DATE STARTED 02-02-2023 **COMPLETED** 02-03-2023
POSITION
DRILLING CONTRACTOR West Coast Exploration
GROUND ELEVATION **FINAL DEPTH** 4.50 ft
DRILLING METHOD Solid Stem Auger
GROUNDWATER LEVELS: Not Encountered
EQUIPMENT Simco B24
AT TIME OF DRILLING
HOLE SIZE 4.0 in.
AT END OF DRILLING Not Encountered
LOGGED BY Brad Quon, GE **CHECKED BY** Brad Quon, GE
AFTER DRILLING

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)
		0.46 Asphalt Concrete (AC): approximately 5-1/2 inches		
		0.88 Aggregate Baserock (AB): approximately 5 inches		
		Sandy Lean CLAY (CL): brown, moist, low plasticity, fine sand	1B 1C	8-11-18 (29)
			2	9-12-15 (27)
		4.50 Terminated at 4.50 ft.		
5				
10				
15				
20				
25				

NOTES

SIEGFRIED

BOREHOLE NUMBER B-F3

CLIENT San Joaquin County Engineering
PROJECT NAME Benjamin Holt Pavement Rehabilitation
PROJECT NUMBER 23037
PROJECT LOCATION Benjamin Holt Drive, Stockton, CA
DATE STARTED 02-02-2023 **COMPLETED** 02-03-2023
POSITION
DRILLING CONTRACTOR West Coast Exploration
GROUND ELEVATION **FINAL DEPTH** 4.50 ft
DRILLING METHOD Solid Stem Auger
GROUNDWATER LEVELS: Not Encountered
EQUIPMENT SIMCO B24
AT TIME OF DRILLING
HOLE SIZE 4.0 in.
AT END OF DRILLING Not Encountered
LOGGED BY Brad Quon, GE **CHECKED BY** Brad Quon, GE
AFTER DRILLING

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)
		0.45 Asphalt Concrete (AC): approximately 5-1/2 inches		
		0.92 Aggregate Baserock (AB): approximately 5-1/2 inches		
		Sandy Lean CLAY (CL): brown, moist, low plasticity, fine sand	1B 1C	18-25-36 (61)
			2	11-14-14 (28)
		4.50		
		Terminated at 4.50 ft.		
5				
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15				
20				
25				

NOTES

SIEGFRIED

BOREHOLE NUMBER B-G1

CLIENT San Joaquin County Engineering
PROJECT NAME Benjamin Holt Pavement Rehabilitation
PROJECT NUMBER 23037
PROJECT LOCATION Benjamin Holt Drive, Stockton, CA
DATE STARTED 02-02-2023 **COMPLETED** 02-03-2023
POSITION
DRILLING CONTRACTOR West Coast Exploration
GROUND ELEVATION **FINAL DEPTH** 4.50 ft
DRILLING METHOD Solid Stem Auger
GROUNDWATER LEVELS: Not Encountered
EQUIPMENT Simco B24
▽ **AT TIME OF DRILLING**
HOLE SIZE 4.0 in.
▼ **AT END OF DRILLING** Not Encountered
LOGGED BY Brad Quon, GE **CHECKED BY** Brad Quon, GE
▽ **AFTER DRILLING**

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT (pcf)	MOISTURE CONTENT (%)
		0.45 Asphalt Concrete (AC): approximately 5-1/2 inches					
		0.92 Aggregate Baserock (AB): approximately 5-1/2 inches					
		Fat CLAY (CH): black, slightly moist, high plasticity	1B 1C	10-12-20 (32)	2.00	102	24
		4.50	2	9-9-15 (24)			
		Terminated at 4.50 ft.					
5							
10							
15							
20							
25							

NOTES

SIEGFRIED

BOREHOLE NUMBER B-G2

CLIENT San Joaquin County Engineering
PROJECT NAME Benjamin Holt Pavement Rehabilitation
PROJECT NUMBER 23037
PROJECT LOCATION Benjamin Holt Drive, Stockton, CA
DATE STARTED 02-02-2023 **COMPLETED** 02-03-2023
POSITION
DRILLING CONTRACTOR West Coast Exploration
GROUND ELEVATION **FINAL DEPTH** 4.50 ft
DRILLING METHOD Solid Stem Auger
GROUNDWATER LEVELS: Not Encountered
EQUIPMENT Simco B24
AT TIME OF DRILLING
HOLE SIZE 4.0 in.
AT END OF DRILLING Not Encountered
LOGGED BY Brad Quon, GE **CHECKED BY** Brad Quon, GE
AFTER DRILLING

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)
		0.46 Asphalt Concrete (AC): approximately 5-1.2 inches			
		0.88 Aggregate Baserock (AB): approximately 5 inches			
		Sandy Lean CLAY (CL): brown, moist, low plasticity, fine sand	1B	9-14-14 (28)	3.75
			1C		
			2	11-18-25 (43)	
		4.50			
		Terminated at 4.50 ft.			
5					
10					
15					
20					
25					

NOTES

SIEGFRIED

BOREHOLE NUMBER B-G3

CLIENT San Joaquin County Engineering
PROJECT NAME Benjamin Holt Pavement Rehabilitation
PROJECT NUMBER 23037
PROJECT LOCATION Benjamin Holt Drive, Stockton, CA
DATE STARTED 02-02-2023 **COMPLETED** 02-03-2023
POSITION
DRILLING CONTRACTOR West Coast Exploration
GROUND ELEVATION **FINAL DEPTH** 4.50 ft
DRILLING METHOD Solid Stem Auger
GROUNDWATER LEVELS: Not Encountered
EQUIPMENT Simco B24
AT TIME OF DRILLING
HOLE SIZE 4.0 in.
AT END OF DRILLING Not Encountered
LOGGED BY Brad Quon, GE **CHECKED BY** Brad Quon, GE
AFTER DRILLING

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)
		0.46 Asphalt Concrete (AC): approximately 5-1/2 inches		
		0.96 Aggregate Baserock (AB): approximately 6 inches		
		Sandy Lean CLAY (CL): brown, moist, low plasticity, fine sand	1B 1C	7-12-18 (30)
			2	7-10-12 (22)
		4.50		
		Terminated at 4.50 ft.		
5				
10				
15				
20				
25				

NOTES

SIEGFRIED

BOREHOLE NUMBER B-H1

CLIENT San Joaquin County Engineering
PROJECT NAME Benjamin Holt Pavement Rehabilitation
PROJECT NUMBER 23037
PROJECT LOCATION Benjamin Holt Drive, Stockton, CA
DATE STARTED 02-02-2023 **COMPLETED** 02-03-2023
POSITION
DRILLING CONTRACTOR West Coast Exploration
GROUND ELEVATION **FINAL DEPTH** 4.50 ft
DRILLING METHOD Solid Stem Auger
GROUNDWATER LEVELS: Not Encountered
EQUIPMENT Simco B24
AT TIME OF DRILLING
HOLE SIZE 4.0 in.
AT END OF DRILLING Not Encountered
LOGGED BY Brad Quon, GE **CHECKED BY** Brad Quon, GE
AFTER DRILLING

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT (pcf)	MOISTURE CONTENT (%)
		0.46 Asphalt Concrete (AC): approximately 5-1/2 inches					
		0.92 Aggregate Baserock (AB): approximately 5-1/2 inches					
		Sandy Lean CLAY (CL): brown to dark brown, moist, low plasticity, fine sand (FILL)					
		2.00 Sandy SILT (ML): brown, slightly moist, fine sand	1B	12-15-40 (55)	4.50	108	18
			1C				
			2	20-22-28 (50)			
		4.50					
5		Terminated at 4.50 ft.					
10							
15							
20							
25							

NOTES

SIEGFRIED

BOREHOLE NUMBER B-H2

CLIENT San Joaquin County Engineering
PROJECT NAME Benjamin Holt Pavement Rehabilitation
PROJECT NUMBER 23037
PROJECT LOCATION Benjamin Holt Drive, Stockton, CA
DATE STARTED 02-02-2023 **COMPLETED** 02-03-2023
POSITION
DRILLING CONTRACTOR West Coast Exploration
GROUND ELEVATION **FINAL DEPTH** 4.50 ft
DRILLING METHOD Solid Stem Auger
GROUNDWATER LEVELS: Not Encountered
EQUIPMENT Simco B24
AT TIME OF DRILLING
HOLE SIZE 4.0 in.
AT END OF DRILLING Not Encountered
LOGGED BY Brad Quon, GE **CHECKED BY** Brad Quon, GE
AFTER DRILLING

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)
		0.46 Asphalt Concrete (AC): approximately 5-1/2 inches			
		0.92 Aggregate Baserock (AB): approximately 5-1/2 inches			
		Fat CLAY (CH): black, moist, high plasticity	1B 1C	12-20-24 (44)	4.50
			2	12-20-25 (45)	
		4.50 Terminated at 4.50 ft.			
5					
10					
15					
20					
25					

NOTES

SIEGFRIED

BOREHOLE NUMBER B-H3

CLIENT San Joaquin County Engineering
PROJECT NAME Benjamin Holt Pavement Rehabilitation
PROJECT NUMBER 23037
PROJECT LOCATION Benjamin Holt Drive, Stockton, CA
DATE STARTED 02-02-2023 **COMPLETED** 02-03-2023
POSITION
DRILLING CONTRACTOR West Coast Exploration
GROUND ELEVATION **FINAL DEPTH** 4.50 ft
DRILLING METHOD Solid Stem Auger
GROUNDWATER LEVELS: Not Encountered
EQUIPMENT Simco B24
AT TIME OF DRILLING
HOLE SIZE 4.0 in.
AT END OF DRILLING Not Encountered
LOGGED BY Brad Quon, GE **CHECKED BY** Brad Quon, GE
AFTER DRILLING

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)
		0.46 Asphalt Concrete (AC): approximately 5-1/2 inches		
		0.92 Aggregate Baserock (AB): approximately 5-1/2 inches		
		Fat CLAY (CH): black, moist, high plasticity	1B 1C	15-22-28 (50)
			2	19-10-17 (27)
		4.50		
		Terminated at 4.50 ft.		
5				
10				
15				
20				
25				

NOTES

CONSTRUCTION TESTING SERVICES

Earthwork Materials Master Testing Summary

Tested in General Accordance with ASTM D6913, D1140, D2487 and D4318

Project Name: Ben Holt Pavement Rehab
Project Number: SEI 23037
Contract Number: ---

CTS Job No. 19386
Client: Siegfried
Report Date: 2/13/2023

															ASTM D6913 / D1140 % Passing																ASTM D4318		ASTM D2487	
Date	CT #	QC Test No.	Tech	General Location	Feature	Soil Type	Material Source	Station	Offset from CL (CL, L or R) (ft)	Elev. [depth] (ft)	Northing / Latitude	Easting / Longitude	6-inch Sieve	4-inch Sieve	3-inch Sieve	2-inch Sieve	1-1/2-inch Sieve	1-inch Sieve	3/4-inch Sieve	1/2-inch Sieve	3/8-inch Sieve	No.4 Sieve	No.8 Sieve	No.10 Sieve	No.16 Sieve	No.30 Sieve	No.40 Sieve	No.50 Sieve	No.100 Sieve	No.200 Sieve	Liquid Limit	Plasticity Index	USCS	Description
2/2/2023	---	Bulk 2	Client	1-3' below asphalt	---	---	Native	---	---	---	---	---	100	100	100	100	100	100	99	99	98	97	96	95	94	92	90	87	77	63.6	41	26	CL	Sandy Lean Clay
2/2/2023	---	Bulk 3	Client	1-3' below asphalt	---	---	Native	---	---	---	---	---	100	100	100	100	100	100	100	100	100	99	98	98	97	95	92	89	80	66.9	39	25	CL	Sandy Lean Clay
2/2/2023	---	Bulk 4	Client	1-3' below asphalt	---	---	Native	---	---	---	---	---	100	100	100	100	100	100	100	99	99	99	97	97	95	93	91	89	82	75.7	53	37	CH	Fat Clay with Sand
2/2/2023	---	Bulk 5	Client	1-3' below asphalt	---	---	Native	---	---	---	---	---	100	100	100	100	100	100	100	100	100	99	98	98	97	96	95	92	73	56.5	28	14	CL	Sandy Lean Clay
2/2/2023	---	Bulk 6	Client	1-3' below asphalt	---	---	Native	---	---	---	---	---	100	100	100	100	100	100	98	98	98	97	96	96	95	93	92	91	84	71.5	36	17	CL	Lean Clay with Sand

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General Notes (If Applicable):

Reviewed by: Amy Reeves, EIT
Title: Senior Staff Engineer
Date: 2/13/2023

4400 Yankee Hill Road, Rocklin, CA 95677 | (916) 419-4747 office | (916) 419-4774 fax
2118 Rheem Drive | Pleasanton, CA 94588 | (925) 462-5151 office | (925) 462-5183

CONSTRUCTION TESTING SERVICES

Earthwork MaterialsTesting

Tested in General Accordance with ASTM D6913, D1140, D2487 and D4318

Project Name: Ben Holt Pavement Rehab
Project Location: SEI 23037
Contract Number: ---

CTS Job No. 19386
Client: Siegfried
Report Date: 2/13/2023

													ASTM D6913 / D1140 % Passing																	ASTM D4318		ASTM D2487		
Date	CT #	QC Test No.	Tech	General Location	Feature	Soil Type	Material Source	Station	Offset from CL (CL, L or R) (ft)	Elev. [depth] (ft)	Northing / Latitude	Easting / Longitude	6-inch Sieve	4-inch Sieve	3-inch Sieve	2-inch Sieve	1-1/2-inch Sieve	1-inch Sieve	3/4-inch Sieve	1/2-inch Sieve	3/8-inch Sieve	No.4 Sieve	No.8 Sieve	No.10 Sieve	No.16 Sieve	No.30 Sieve	No.40 Sieve	No.50 Sieve	No.100 Sieve	No.200 Sieve	Liquid Limit	Plasticity Index	USCS	Description	Meets Criteria ?
												Sieve Opening (in)	6.0	4.0	3.0	2.0	1.5	1.0	0.75	0.50	0.375	0.187	0.0937	0.0787	0.0469	0.0234	0.0165	0.0117	0.0059	0.0029					
												Sieve Opening (mm)	152.4	101.6	76.2	50.8	38.1	25.4	19.0	12.7	9.51	4.76	2.38	2.00	1.19	0.595	0.420	0.297	0.149	0.074					
2/2/2023	---	Bulk 2	Client	1-3' below asphalt	---	---	Native	---	---	---	---	---	100	100	100	100	100	100	99	99	98	97	96	95	94	92	90	87	77	63.6	41	26	CL	Sandy Lean Clay	#N/A

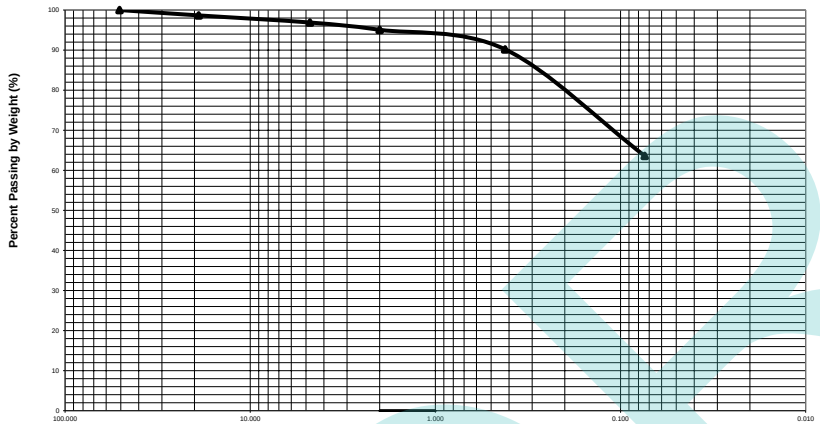
D6913 Reporting	
Date Performed	2/10/2023
Technician Performing Sieve	JJ
Test Method Used (A or B)	A
Preparation Method (Moist, Air Dried, Oven Dried)	Moist
Dispersion Process	Non Mechanical

D1140 Reporting	
Date Performed	2/9/2023
Technician Performing Wash	JJ
Soak Time (min)	200

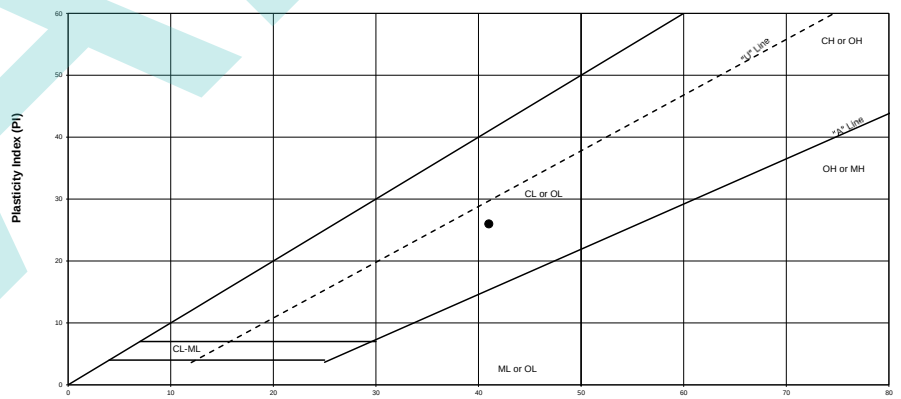
D4318 Reporting	
Specimen Preparation (wet or dry)	Wet
Plastic Limit Equipment (Hand Rolled or Devise)	Hand Rolled
Liquid Limit Equipment (Manual or Mechanical	Manual
Groving Tool (Plastic, Flat Metal or Curved Metal)	Plastic
Liquid limit Method (Single or Multi Point)	Multipoint

D2487 Reporting			
% Gravel	% Sand	% Fines	
3	33	64	
Additional Calculations for Granular Classification if Applicable			
D60	D30	D10	Cu	Cc

Gradation Graph



Plasticity Chart



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Reviewed by: Amy Reeves, EIT
Title: Senior Staff Engineer
Date: 2/13/2023

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2118 Rheem Drive | Pleasanton, CA 94588 | (925) 462-5151 office | (925) 462-5183

CONSTRUCTION TESTING SERVICES

Earthwork MaterialsTesting

Tested in General Accordance with ASTM D6913, D1140, D2487 and D4318

Project Name: Ben Holt Pavement Rehab
Project Location: SEI 23037
Contract Number: ---

CTS Job No. 19386
Client: Siegfried
Report Date: 2/13/2023

													ASTM D6913 / D1140 % Passing																		ASTM D4318		ASTM D2487		
Date	CT #	QC Test No.	Tech	General Location	Feature	Soil Type	Material Source	Station	Offset from CL (CL, L or R) (ft)	Elev. [depth] (ft)	Northing / Latitude	Easting / Longitude	6-inch Sieve	4-inch Sieve	3-inch Sieve	2-inch Sieve	1-1/2-inch Sieve	1-inch Sieve	3/4-inch Sieve	1/2-inch Sieve	3/8-inch Sieve	No.4 Sieve	No.8 Sieve	No.10 Sieve	No.16 Sieve	No.30 Sieve	No.40 Sieve	No.50 Sieve	No.100 Sieve	No.200 Sieve	Liquid Limit	Plasticity Index	USCS	Description	Meets Criteria ?
												Sieve Opening (in)	6.0	4.0	3.0	2.0	1.5	1.0	0.75	0.50	0.375	0.187	0.0937	0.0787	0.0469	0.0234	0.0165	0.0117	0.0059	0.0029					
												Sieve Opening (mm)	152.4	101.6	76.2	50.8	38.1	25.4	19.0	12.7	9.51	4.76	2.38	2.00	1.19	0.595	0.420	0.297	0.149	0.074					
2/2/2023	---	Bulk 3	Client	1-3' below asphalt	---	---	Native	---	---	---	---	---	100	100	100	100	100	100	100	100	100	99	98	98	97	95	92	89	80	66.9	39	25	CL	Sandy Lean Clay	#N/A

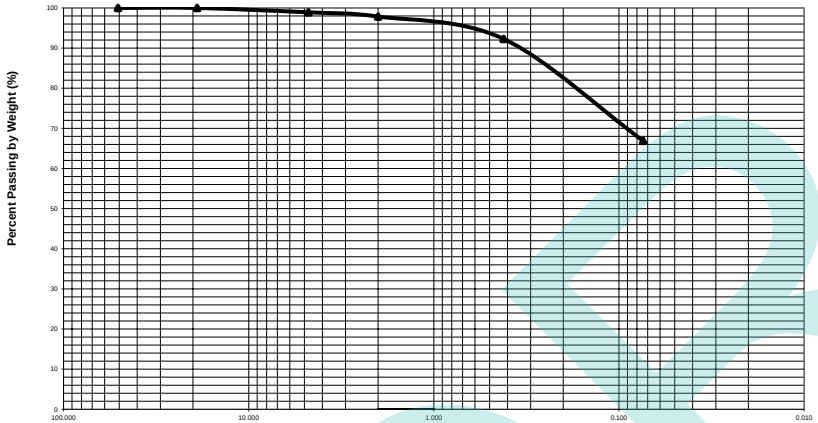
D6913 Reporting	
Date Performed	2/10/2023
Technician Performing Sieve	JJ
Test Method Used (A or B)	A
Preparation Method (Moist, Air Dried, Oven Dried)	Moist
Dispersion Process	Non Mechanical

D1140 Reporting	
Date Performed	2/9/2023
Technician Performing Wash	JJ
Soak Time (min)	210

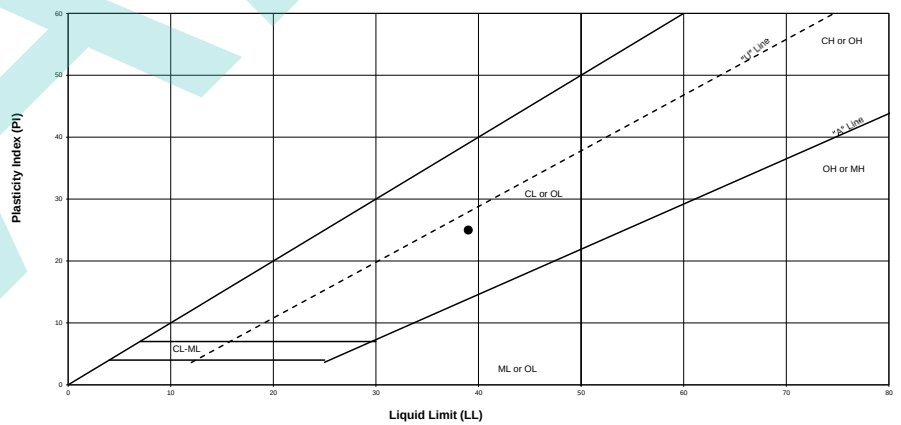
D4318 Reporting	
Specimen Preparation (wet or dry)	Wet
Plastic Limit Equipment (Hand Rolled or Devise)	Hand Rolled
Liquid Limit Equipment (Manual or Mechanical	Manual
Groving Tool (Plastic, Flat Metal or Curved Metal)	Plastic
Liquid limit Method (Single or Multi Point)	Multipoint

D2487 Reporting				
% Gravel	% Sand	% Fines		
1	32	67		
Additional Calculations for Granular Classification if Applicable				
D60	D30	D10	Cu	Cc

Gradation Graph



Plasticity Chart



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Reviewed by: Amy Reeves, EIT
Title: Senior Staff Engineer
Date: 2/13/2023

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2118 Rheem Drive | Pleasanton, CA 94588 | (925) 462-5151 office | (925) 462-5183

CONSTRUCTION TESTING SERVICES

Earthwork MaterialsTesting

Tested in General Accordance with ASTM D6913, D1140, D2487 and D4318

Project Name: Ben Holt Pavement Rehab
Project Location: SEI 23037
Contract Number: ---

CTS Job No. 19386
Client: Siegfried
Report Date: 2/13/2023

Date	CT #	QC Test No.	Tech	General Location	Feature	Soil Type	Material Source	Station	Offset from CL (CL, L or R) (ft)	Elev. [depth] (ft)	Northing / Latitude	Easting / Longitude	ASTM D6913 / D1140 % Passing																	ASTM D4318		ASTM D2487		
													6-inch Sieve	4-inch Sieve	3-inch Sieve	2-inch Sieve	1-1/2-inch Sieve	1-inch Sieve	3/4-inch Sieve	1/2-inch Sieve	3/8-inch Sieve	No.4 Sieve	No.8 Sieve	No.10 Sieve	No.16 Sieve	No.30 Sieve	No.40 Sieve	No.50 Sieve	No.100 Sieve	No.200 Sieve	Liquid Limit	Plasticity Index	USCS	Description	Meets Criteria ?
												Sieve Opening (in)	6.0	4.0	3.0	2.0	1.5	1.0	0.75	0.50	0.375	0.187	0.0937	0.0787	0.0469	0.0234	0.0165	0.0117	0.0059	0.0029					
												Sieve Opening (mm)	152.4	101.6	76.2	50.8	38.1	25.4	19.0	12.7	9.51	4.76	2.38	2.00	1.19	0.595	0.420	0.297	0.149	0.074					
2/2/2023	---	Bulk 4	Client	1-3' below asphalt	---	---	Native	---	---	---	---	---	100	100	100	100	100	100	100	99	99	99	97	97	95	93	91	89	82	75.7	53	37	CH	Fat Clay with Sand	#N/A

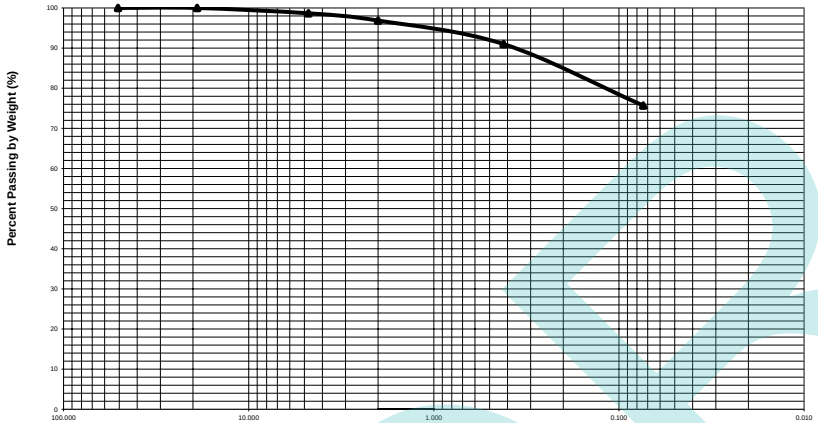
D6913 Reporting	
Date Performed	2/10/2023
Technician Performing Sieve	JJ
Test Method Used (A or B)	A
Preparation Method (Moist, Air Dried, Oven Dried)	Moist
Dispersion Process	Non Mechanical

D1140 Reporting	
Date Performed	2/9/2023
Technician Performing Wash	JJ
Soak Time (min)	230

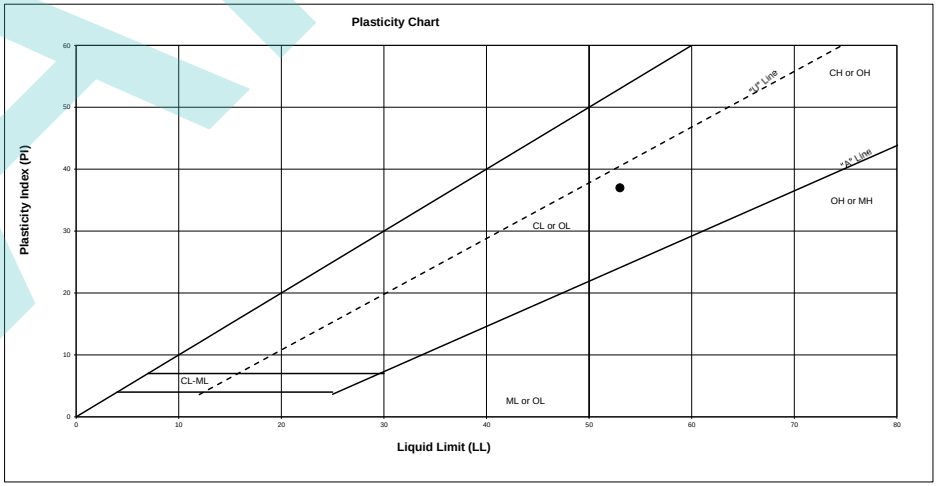
D4318 Reporting	
Specimen Preparation (wet or dry)	Wet
Plastic Limit Equipment (Hand Rolled or Devise)	Hand Rolled
Liquid Limit Equipment (Manual or Mechanical	Manual
Groving Tool (Plastic, Flat Metal or Curved Metal)	Plastic
Liquid limit Method (Single or Multi Point)	Multipoint

D2487 Reporting				
% Gravel	% Sand	% Fines		
1	23	76		
Additional Calculations for Granular Classification if Applicable				
D60	D30	D10	Cu	Cc

Gradation Graph



Plasticity Chart



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Reviewed by: Amy Reeves, EIT
Title: Senior Staff Engineer
Date: 2/13/2023

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CONSTRUCTION TESTING SERVICES

Earthwork MaterialsTesting

Tested in General Accordance with ASTM D6913, D1140, D2487 and D4318

Project Name: Ben Holt Pavement Rehab
Project Location: SEI 23037
Contract Number: ---

CTS Job No. 19386
Client: Siegfried
Report Date: 2/13/2023

													ASTM D6913 / D1140 % Passing																	ASTM D4318		ASTM D2487		
Date	CT #	QC Test No.	Tech	General Location	Feature	Soil Type	Material Source	Station	Offset from CL (CL, L or R) (ft)	Elev. [depth] (ft)	Northing / Latitude	Easting / Longitude	6-inch Sieve	4-inch Sieve	3-inch Sieve	2-inch Sieve	1-1/2-inch Sieve	1-inch Sieve	3/4-inch Sieve	1/2-inch Sieve	3/8-inch Sieve	No.4 Sieve	No.8 Sieve	No.10 Sieve	No.16 Sieve	No.30 Sieve	No.40 Sieve	No.50 Sieve	No.100 Sieve	No.200 Sieve	Liquid Limit	Plasticity Index	USCS	Description	Meets Criteria ?
												Sieve Opening (in)	6.0	4.0	3.0	2.0	1.5	1.0	0.75	0.50	0.375	0.187	0.0937	0.0787	0.0469	0.0234	0.0165	0.0117	0.0059	0.0029					
												Sieve Opening (mm)	152.4	101.6	76.2	50.8	38.1	25.4	19.0	12.7	9.51	4.76	2.38	2.00	1.19	0.595	0.420	0.297	0.149	0.074					
2/2/2023	---	Bulk 5	Client	1-3' below asphalt	---	---	Native	---	---	---	---	---	100	100	100	100	100	100	100	100	100	99	98	98	97	96	95	92	73	56.5	28	14	CL	Sandy Lean Clay	#N/A

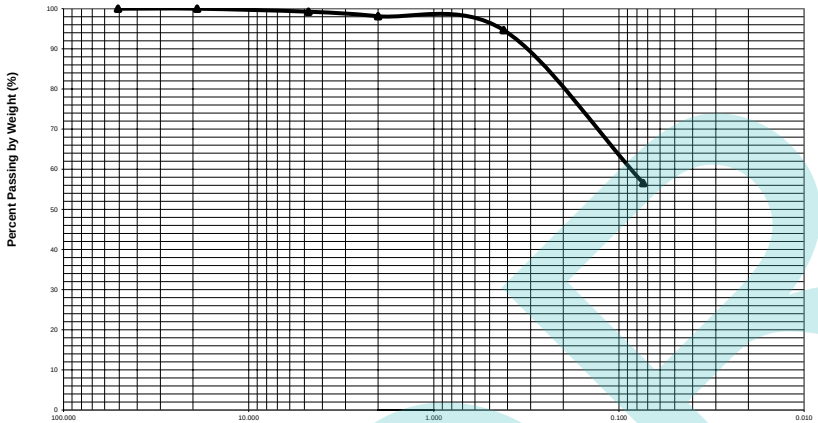
D6913 Reporting	
Date Performed	2/10/2023
Technician Performing Sieve	JJ
Test Method Used (A or B)	A
Preparation Method (Moist, Air Dried, Oven Dried)	Moist
Dispersion Process	Non Mechanical

D1140 Reporting	
Date Performed	2/9/2023
Technician Performing Wash	JJ
Soak Time (min)	240

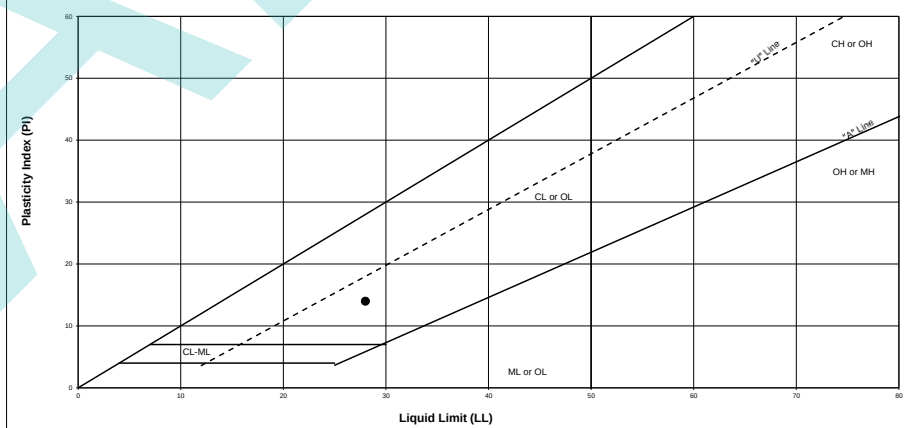
D4318 Reporting	
Specimen Preparation (wet or dry)	Wet
Plastic Limit Equipment (Hand Rolled or Devise)	Hand Rolled
Liquid Limit Equipment (Manual or Mechanical	Manual
Groving Tool (Plastic, Flat Metal or Curved Metal)	Plastic
Liquid limit Method (Single or Multi Point)	Multipoint

D2487 Reporting			
% Gravel	% Sand	% Fines	
1	43	57	
Additional Calculations for Granular Classification if Applicable			
D60	D30	D10	Cu	Cc

Gradation Graph



Plasticity Chart



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Reviewed by: Amy Reeves, EIT
Title: Senior Staff Engineer
Date: 2/13/2023

4400 Yankee Hill Road, Rocklin, CA 95677 | (916) 419-4747 office | (916) 419-4774 fax
2118 Rheem Drive | Pleasanton, CA 94588 | (925) 462-5151 office | (925) 462-5183

CONSTRUCTION TESTING SERVICES

Earthwork MaterialsTesting

Tested in General Accordance with ASTM D6913, D1140, D2487 and D4318

Project Name: Ben Holt Pavement Rehab
Project Location: SEI 23037
Contract Number: ---

CTS Job No. 19386
Client: Siegfried
Report Date: 2/13/2023

													ASTM D6913 / D1140 % Passing																	ASTM D4318		ASTM D2487		
Date	CT #	QC Test No.	Tech	General Location	Feature	Soil Type	Material Source	Station	Offset from CL (CL, L or R) (ft)	Elev. [depth] (ft)	Northing / Latitude	Easting / Longitude	6-inch Sieve	4-inch Sieve	3-inch Sieve	2-inch Sieve	1-1/2-inch Sieve	1-inch Sieve	3/4-inch Sieve	1/2-inch Sieve	3/8-inch Sieve	No.4 Sieve	No.8 Sieve	No.10 Sieve	No.16 Sieve	No.30 Sieve	No.40 Sieve	No.50 Sieve	No.100 Sieve	No.200 Sieve	Liquid Limit	Plasticity Index	USCS	Description	Meets Criteria ?
												Sieve Opening (in)	6.0	4.0	3.0	2.0	1.5	1.0	0.75	0.50	0.375	0.187	0.0937	0.0787	0.0469	0.0234	0.0165	0.0117	0.0059	0.0029					
												Sieve Opening (mm)	152.4	101.6	76.2	50.8	38.1	25.4	19.0	12.7	9.51	4.76	2.38	2.00	1.19	0.595	0.420	0.297	0.149	0.074					
2/2/2023	---	Bulk 6	Client	1-3' below asphalt	---	---	Native	---	---	---	---	---	100	100	100	100	100	100	98	98	98	97	96	96	95	93	92	91	84	71.5	36	17	CL	Lean Clay with Sand	#N/A

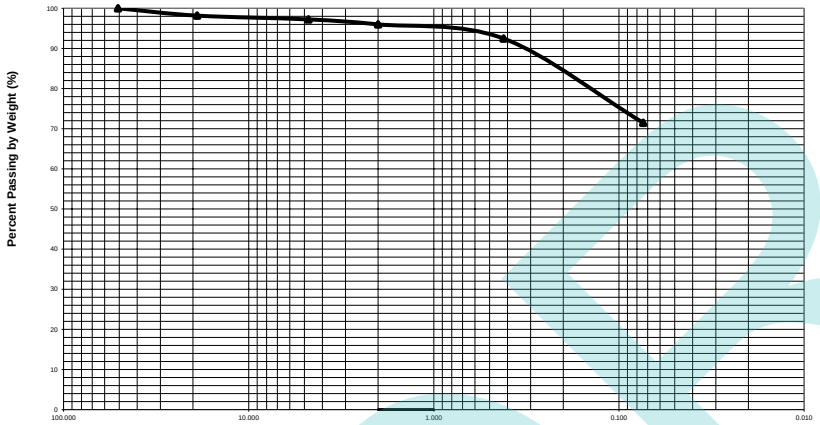
D6913 Reporting	
Date Performed	2/10/2023
Technician Performing Sieve	JJ
Test Method Used (A or B)	A
Preparation Method (Moist, Air Dried, Oven Dried)	Moist
Dispersion Process	Non Mechanical

D1140 Reporting	
Date Performed	2/9/2023
Technician Performing Wash	JJ
Soak Time (min)	260

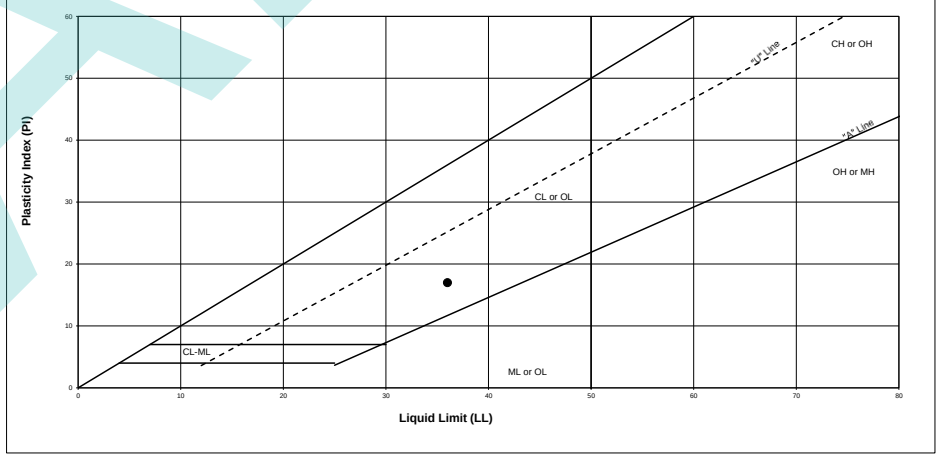
D4318 Reporting	
Specimen Preparation (wet or dry)	Wet
Plastic Limit Equipment (Hand Rolled or Devise)	Hand Rolled
Liquid Limit Equipment (Manual or Mechanical	Manual
Groving Tool (Plastic, Flat Metal or Curved Metal)	Plastic
Liquid limit Method (Single or Multi Point)	Multipoint

D2487 Reporting				
% Gravel	% Sand	% Fines		
3	26	71		
Additional Calculations for Granular Classification if Applicable				
D60	D30	D10	Cu	Cc

Gradation Graph



Plasticity Chart



General Notes (If Applicable):

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Reviewed by: Amy Reeves, EIT
Title: Senior Staff Engineer
Date: 2/13/2023

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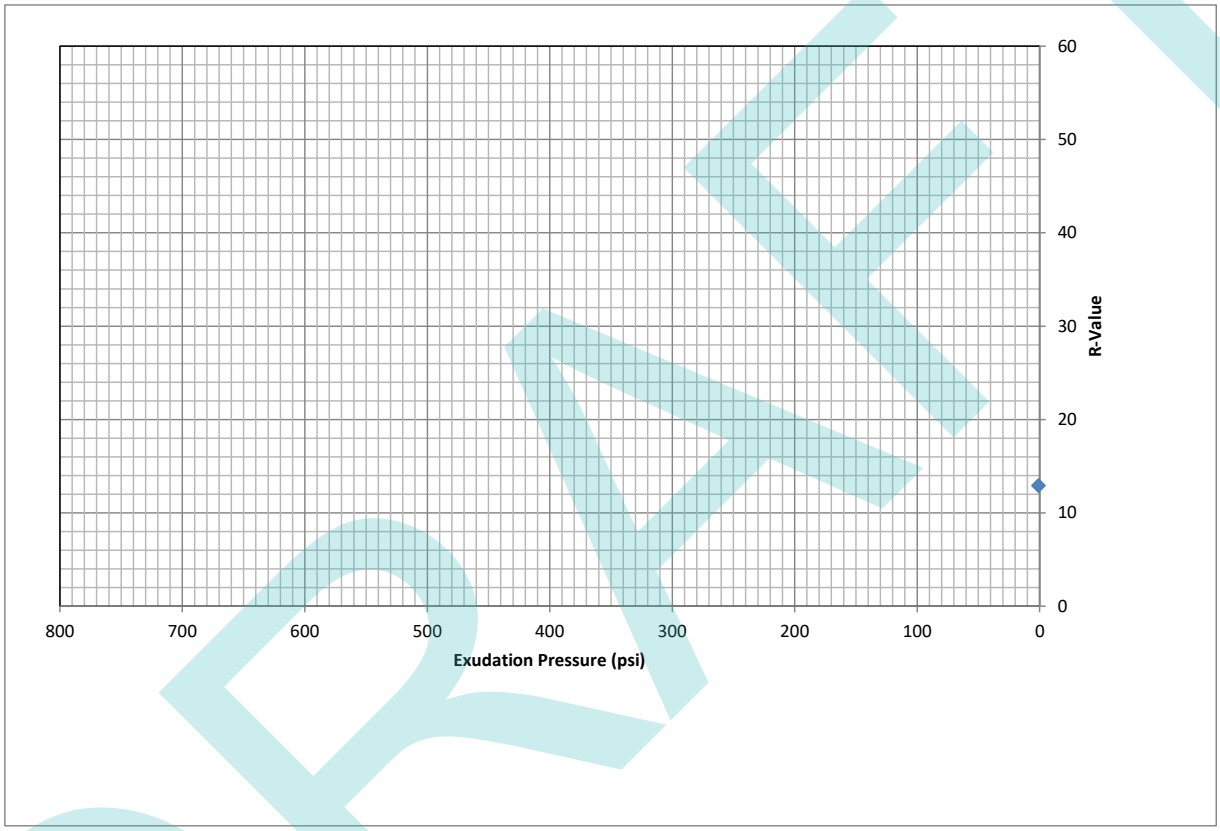
CONSTRUCTION TESTING SERVICES

Resistance "R" Value by Stabilometer

Test Performed in General Accordance with: ☑ CT 301 ☐ ASTM D 2844-07

Project Name:	Ben Holt Pavement Rehab	**CTS Job No.**	19386
Job Number:	SEI 23037	**Client:**	Siegfried Engineering, Inc.
Date Sampled:	2/2/2023	**Sample Location:**	1-3' Below Asphalt
Date Tested:	2/9/2023	**Lab Log In:**	256583
Sampled by:	Client	**Source:**	Native
Tested by:	Cory Blue	**Description:**	Bulk 2 - Sandy Lean Clay



Specimen	Dry Density (pcf)	Moisture Content %)	Exudation Pressure (psi)	Corrected R Value	Expansion Pressure (psf)
A	108.8	17.8	696	13	261
B		#DIV/0!			<1
C		#DIV/0!			<1

R-Value at 300 psi **<5**

Limitations:

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Reviewed by: Amy Reeves, EIT

Title: Senior Staff Engineer

Date: 2/10/2023

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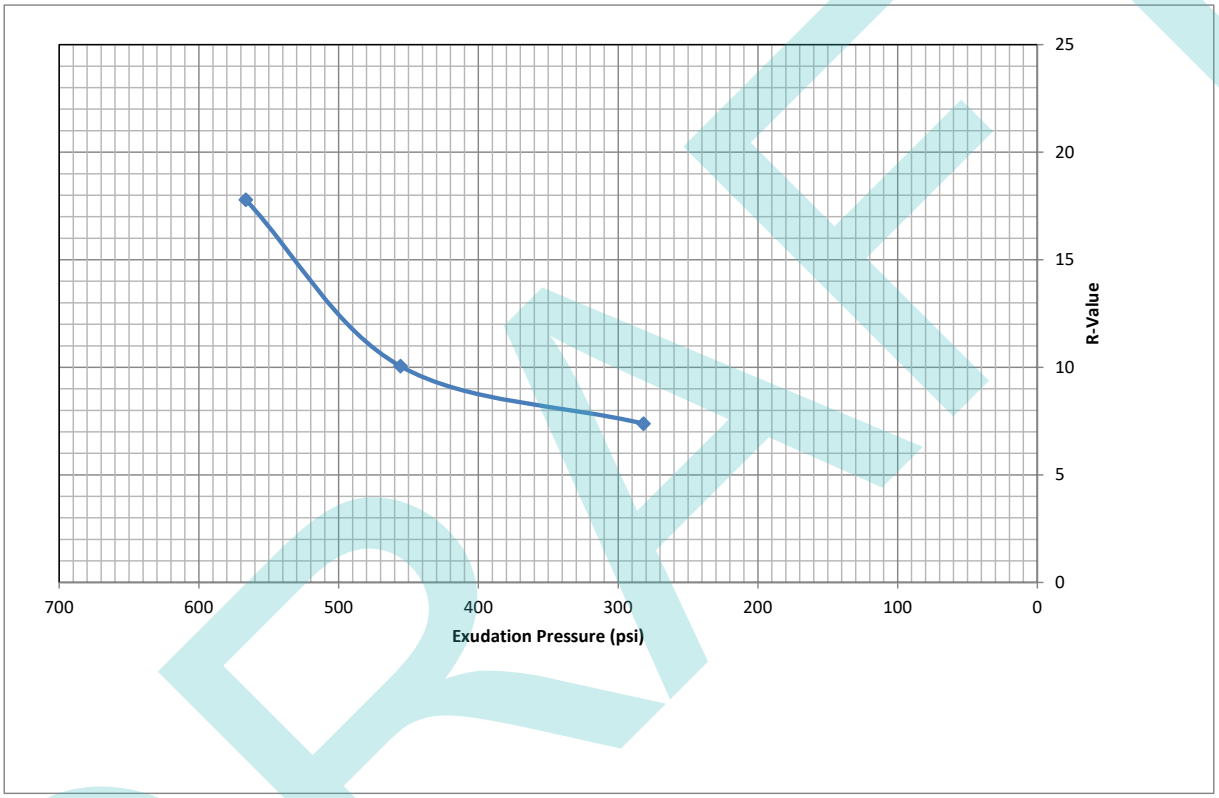
CONSTRUCTION
TESTING SERVICES

Resistance "R" Value by Stabilometer

Test Performed in General Accordance with
☑ CT 301
☐ ASTM D 2844-07

Project Name:	Ben Holt Pavement Rehab	**CTS Job No.**	19386
Client Job No:	SEI 23037	**Client:**	Siegfried Engineering, Inc
Date Sampled:	2/2/2023	**Sample Location:**	1-3' Below Asphalt
Date Tested:	2/14/2023	**Lab Log In:**	256584
Sampled by:	Client	**Source:**	Native
Tested by:	C. Blue	**Description:**	Bulk 3 - Lean Clay



Specimen	Dry Density (pcf)	Moisture Content %)	Exudation Pressure (psi)	Corrected R Value	Expansion Pressure (psf)
A	111.2	17.8	566	18	172
B	111.2	19.0	456	10	203
C	111.2	20.1	282	7	146

R-Value at 300 psi **8**

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Reviewed by: Baheer Dawar, EIT
Title: Staff Engineer
Date: 2/15/2023

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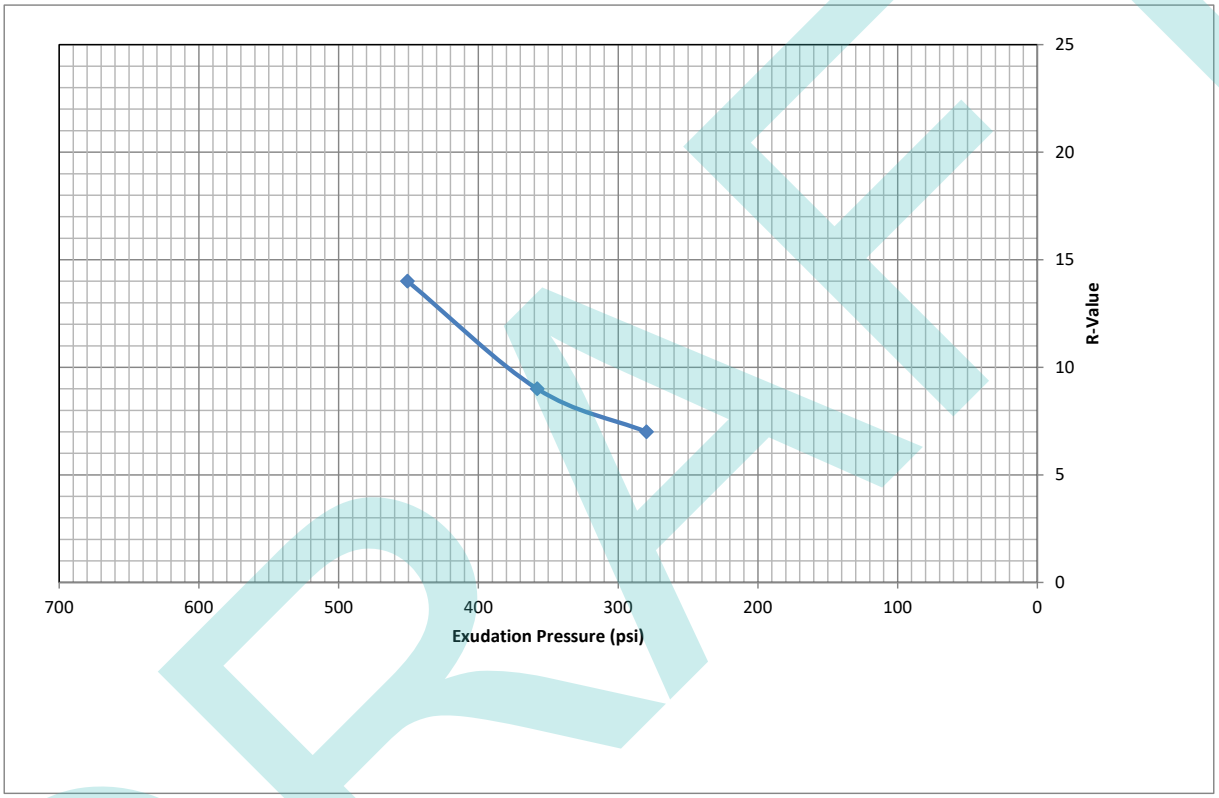
CONSTRUCTION TESTING SERVICES

Resistance "R" Value by Stabilometer

Test Performed in General Accordance with
☑ CT 301
☐ ASTM D 2844-07

Project Name:	Ben Holt Pavement Rehab	**CTS Job No.**	19386
Client Job No:	SEI 23037	**Client:**	Siegfried Engineering, Inc
Date Sampled:	2/2/2023	**Sample Location:**	1-3' Below Asphalt
Date Tested:	2/10/2023	**Lab Log In:**	256586
Sampled by:	Client	**Source:**	Native
Tested by:	C. Blue	**Description:**	Bulk 5 - Lean Clay



Specimen	Dry Density (pcf)	Moisture Content %)	Exudation Pressure (psi)	Corrected R Value	Expansion Pressure (psf)
A	112.3	17.0	451	14	124
B	112.2	18.2	358	9	141
C	112.3	19.4	280	7	53

R-Value at 300 psi **8**

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Reviewed by: Baheer Dawar, EIT
Title: Staff Engineer
Date: 2/14/2023

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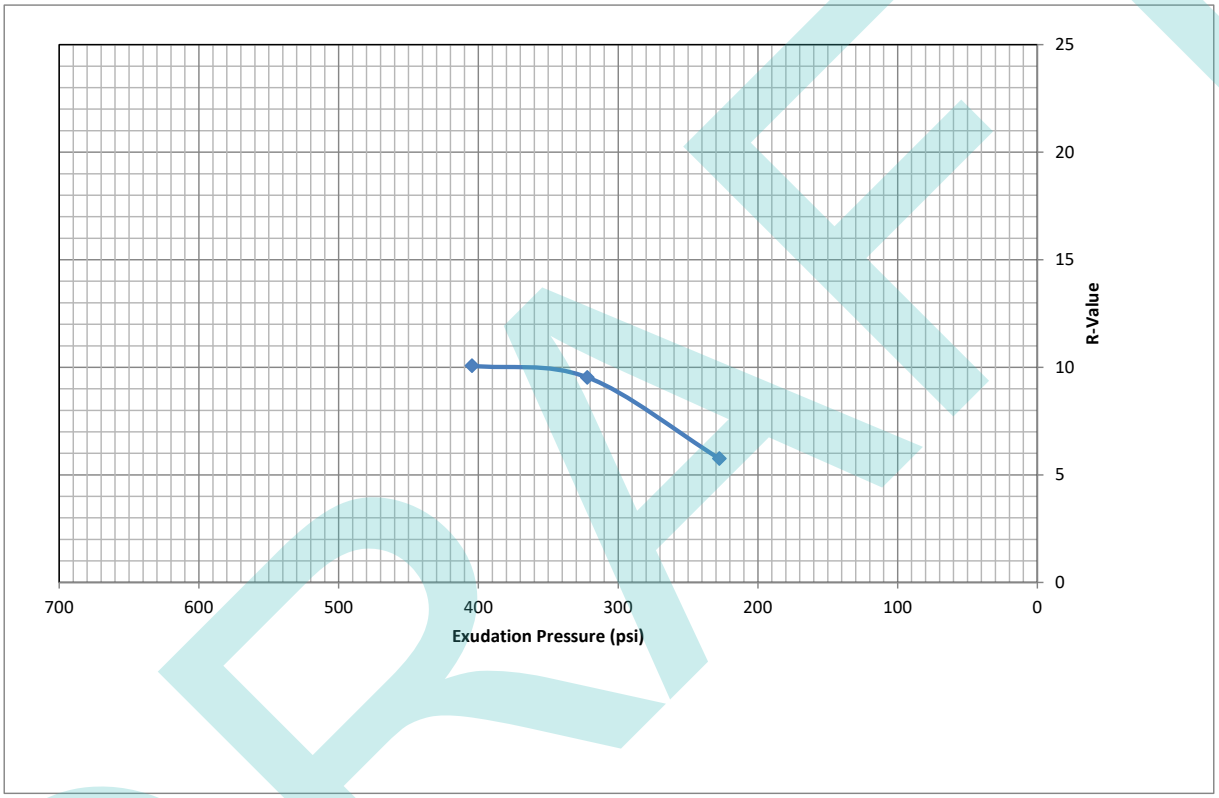
CONSTRUCTION TESTING SERVICES

Resistance "R" Value by Stabilometer

Test Performed in General Accordance with
☑ CT 301
☐ ASTM D 2844-07

Project Name:	Ben Holt Pavement Rehab	**CTS Job No.**	19386
Client Job No:	SEI 23037	**Client:**	Siegfried Engineering, Inc
Date Sampled:	2/2/2023	**Sample Location:**	1-3' Below Asphalt
Date Tested:	2/14/2023	**Lab Log In:**	256587
Sampled by:	Client	**Source:**	Native
Tested by:	C. Blue	**Description:**	Bulk 6 - Lean Clay



Specimen	Dry Density (pcf)	Moisture Content %)	Exudation Pressure (psi)	Corrected R Value	Expansion Pressure (psf)
A	107.0	19.9	404	10	79
B	107.0	21.1	322	10	247
C	107.0	22.3	228	6	53

R-Value at 300 psi **9**

Limitations:

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Title: Staff Engineer
Date: 2/15/2023

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Sunland Analytical

11419 Sunrise Gold Circle, #10
Rancho Cordova, CA 95742
(916) 852-8557

Date Reported 02/15/2023
Date Submitted 02/09/2023

To: Amy Reeves
Construction Testing Services
4400 Yankee Hill Rd
Rocklin, CA 95677-1629

From: Gene Oliphant, Ph.D. \ Randy Horney RH
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : SFLD-3230 Site ID : BULK 2.
Thank you for your business.

* For future reference to this analysis please use SUN # 89008-184899.

EVALUATION FOR SOIL CORROSION

Soil pH	7.66	
Minimum Resistivity	1.02 ohm-cm (x1000)	
Chloride	35.8 ppm	00.00358 %
Sulfate	136.6 ppm	00.01366 %

METHODS
pH and Min.Resistivity CA DOT Test #643
Sulfate CA DOT Test #417, Chloride CA DOT Test #422m

Sunland Analytical
11419 Sunrise Gold Circle, #10
Rancho Cordova, CA 95742
(916) 852-8557

Date Reported 02/15/2023
Date Submitted 02/09/2023

To: Amy Reeves
Construction Testing Services
4400 Yankee Hill Rd
Rocklin, CA 95677-1629

From: Gene Oliphant, Ph.D. \ Randy Horney RH
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : SFLD-3230 Site ID : BULK 3.
Thank you for your business.

* For future reference to this analysis please use SUN # 89008-184900.

EVALUATION FOR SOIL CORROSION

Soil pH	7.56		
Minimum Resistivity	0.70 ohm-cm (x1000)		
Chloride	89.4 ppm	00.00894	%
Sulfate	324.8 ppm	00.03248	%

METHODS
pH and Min.Resistivity CA DOT Test #643
Sulfate CA DOT Test #417, Chloride CA DOT Test #422m

Sunland Analytical

11419 Sunrise Gold Circle, #10
Rancho Cordova, CA 95742
(916) 852-8557

Date Reported 02/15/2023
Date Submitted 02/09/2023

To: Amy Reeves
Construction Testing Services
4400 Yankee Hill Rd
Rocklin, CA 95677-1629

From: Gene Oliphant, Ph.D. \ Randy Horney
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : SFLD-3230 Site ID : BULK 4.
Thank you for your business.

* For future reference to this analysis please use SUN # 89008-184901.

EVALUATION FOR SOIL CORROSION

Soil pH	7.60	
Minimum Resistivity	0.83 ohm-cm (x1000)	
Chloride	8.2 ppm	00.00082 %
Sulfate	151.1 ppm	00.01511 %

METHODS
pH and Min.Resistivity CA DOT Test #643
Sulfate CA DOT Test #417, Chloride CA DOT Test #422m

Sunland Analytical
11419 Sunrise Gold Circle, #10
Rancho Cordova, CA 95742
(916) 852-8557

Date Reported 02/15/2023
Date Submitted 02/09/2023

To: Amy Reeves
Construction Testing Services
4400 Yankee Hill Rd
Rocklin, CA 95677-1629

From: Gene Oliphant, Ph.D. \ Randy Horney RH
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : SFLD-3230 Site ID : BULK 5.
Thank you for your business.

* For future reference to this analysis please use SUN # 89008-184902.

EVALUATION FOR SOIL CORROSION

Soil pH	8.63		
Minimum Resistivity	1.13 ohm-cm (x1000)		
Chloride	12.0 ppm	00.00120	%
Sulfate	121.8 ppm	00.01218	%

METHODS
pH and Min.Resistivity CA DOT Test #643
Sulfate CA DOT Test #417, Chloride CA DOT Test #422m

Sunland Analytical
11419 Sunrise Gold Circle, #10
Rancho Cordova, CA 95742
(916) 852-8557

Date Reported 02/15/2023
Date Submitted 02/09/2023

To: Amy Reeves
Construction Testing Services
4400 Yankee Hill Rd
Rocklin, CA 95677-1629

From: Gene Oliphant, Ph.D. \ Randy Horney
General Manager \ Lab Manager RH

The reported analysis was requested for the following location:
Location : SFLD-3230 Site ID : BULK 6.
Thank you for your business.

* For future reference to this analysis please use SUN # 89008-184903.

EVALUATION FOR SOIL CORROSION

Soil pH	7.72	
Minimum Resistivity	0.54 ohm-cm (x1000)	
Chloride	130.5 ppm	00.01305 %
Sulfate	438.0 ppm	00.04380 %

METHODS
pH and Min.Resistivity CA DOT Test #643
Sulfate CA DOT Test #417, Chloride CA DOT Test #422m

SAN JOAQUIN COUNTY
Greatness grows here.

Public Works
Working for YOU

Department of Public Works

Fritz Buchman, Director

Alex Chetley, *Deputy Director – Development*
Kristi Rhea, *Deputy Director - Administration*
David Tolliver, *Deputy Director - Operations*
Najee Zarif, *Deputy Director - Engineering*

Acknowledgement of Monument Preservation

I, _____, a duly Licensed Land Surveyor or a Professional Engineer
(Please print)

authorized to perform Land Surveying in the State of California, Registration No._____,

hereby acknowledge and accept all responsibility for the monument preservation as required per Section 8771(a-f) of the Business and Professions Code within the bounds of the construction activity permitted by San Joaquin County Permit No._____.

I further acknowledge that I am hereby responsible for the Acknowledgement of Monument Preservation prior to final acceptance of the construction activity.

_____
Signature Seal

_____
Date

PS-MONUMENT PRESERVATION

☐ Survey Monuments Found – Post Acknowledgment/ Corner Record to follow.

☐ No Survey Monument Found.

☐ Pre-Construction

☐ Post-Construction

Excerpts from California Laws Relating to Monument Conservation

Business & Professions Code
(Land Surveyors Act) §8771.
(b) When monuments exist that control the location of subdivisions...roads, streets or highways...the monuments shall be located and referenced by or under the direction of a licensed land surveyor or registered civil engineer prior to the time when any streets, highways, other rights-of-way, or easements are improved, constructed, reconstructed, maintained, resurfaced, or relocated, and a corner record or record of survey of the references shall be filed with the county surveyor....
...It shall be the responsibility of the governmental agency or others performing construction work to provide for the monumentation required by this section...

Business & Professions Code (Land Surveyors Act) §8725

...It is unlawful for any person ...to set, reset, replace, or remove any survey monument on land in which he or she has no legal interest, unless he or she has been licensed or specifically exempted from licensing under this chapter.

CLSA

PENAL CODE

§605. Every person who either:

1. Maliciously removes any monument erected for the purpose of designating any point in the boundary of any lot or tract of land, or a place where a subaqueous telegraph cable lies; or,
2. Maliciously defaces or alters the marks upon any such monument; or,
3. Maliciously cuts down or removes any tree upon which any such marks have been made for such purpose, with intent to destroy such marks; Is guilty of a misdemeanor.

Government Code §27581

All monuments located in public highways shall be placed with the top not less than 12 inches below the surface of the ground, but when not located in public highways, they shall be placed with the top six inches above the surface of the ground...

Note: These excerpts from California law have been edited to provide relevant portions in a limited space. You must refer to the complete text of the statutes and laws for full meaning and context.

an informational brochure of California Land Surveyors Association

CLSA

What are Survey Monuments?

The corners of parcels or lines of easements can only be visualized on the ground by setting markers, or survey monuments. A survey monument is a physical marker that locates a corner or line on the ground. They can be on a line or offset from a line, on, above or below the surface, noticeable or almost invisible. These markers can take many forms, some more durable than others:

- a chiseled cross in a sidewalk set 60 years ago
- a nail and brass tag under 2" of pavement
- iron pipes of any diameter driven into the ground, either buried well below the surface or visible at the surface
- wood stakes or posts, with or without identifying tags
- old nails or "X" scribed in concrete
- rebar, with or without identifying caps
- a scribed stone or post placed in or on the ground, sometimes with a rock mound around it

... the list goes on.

Why are Survey Monuments Important?

Existing monuments are used to maintain the integrity and continuity of adjoining properties, neighborhoods, subdivisions, roads, highways, cities, counties, states, and even countries.

The land surveying community has observed an increase in the mortality rate of survey monuments set for right of way control, public, and private property boundaries. With their destruction, the potential for conflicts and uncertainty of boundaries arises.

How Can a Land Surveyor Help?

You may be able to recognize a survey monument set at or above the surface of the ground. But your local Land Surveyor is experienced and qualified to research and properly identify what markers may still exist near your project – and to find and recover them without destruction!

What are the Benefits of Monument Conservation?

- ✔ Protection of Rights - Survey monuments protect the rights of property owners, easement holders, and their adjoiners.
- ✔ Keeping the Law - Malicious removal or destruction of survey monuments is against the law.
- ✔ Stability – Survey monuments provide stability and balance of interests in real property.
- ✔ Avoid liability! - You may be liable for the destruction of monuments caused by your improvements.
- ✔ Cost Savings - It costs much less to preserve a monument than it does to replace it after it is destroyed.
- ✔ Tax Savings – Resetting road, property or easement monuments after a public improvement project adds significant costs which will ultimately be borne by the tax-paying public.
- ✔ Preserve Original Locations - Property lines and easements can be easily identified in their original location when monuments are preserved.
- ✔ Stay out of Court – Avoid possible civil actions based on unknown boundary locations when monuments are preserved.

CLSA

How to Avoid Monument Destruction & Penalties

Use the skills and expertise of your local Land Surveyor! He or she can provide the following services to conserve survey monuments before and after construction...

Before Construction or Project

- ✔ research - research record information for existence of markers and benchmarks
- ✔ locate & identify – search for and find existing markers and benchmarks, whether visible or buried
- ✔ reference – set reference marks to original monuments that will remain throughout and after construction

After Construction or Project

- ✔ replacement – set replacement markers in original position using reference marks if original monuments are disturbed or destroyed
- ✔ document – file proper documentation with the proper agency(ies) showing original and replacement monuments
- ✔ preservation – set protective posts or structures near monuments for future identification

Be sure to obtain copies of the Surveyor's documentation and/or take photos of monuments, whether original or replacement monuments.

REMEMBER – $1 of prevention is worth $10 "cure" - replacing a monument AFTER it is destroyed takes 10 times the cost to protect it BEFORE it is destroyed.

Small Community Drought Relief Program
Program Sign Guidelines

NAME OF PROJECT

FOR

NAME OF PUBLIC AGENCY

Funding for this project has been provided in full or in part from the State Department of Water Resources.

FINANCED UNDER THE

Small Community Drought Relief Program

ADMINISTERED BY

CALIFORNIA STATE DEPARTMENT OF WATER RESOURCES

ENGINEER:

CONTRACTOR:

3' to 5'

4' to 8'

- This is a conceptual design sketch that is NOT to scale.
- Provide adequate structural supports for sign as site conditions may require.
- Keep sign a proper distance above prevailing grade to permit public viewing.
- Size DWR logo to permit public viewing.
- Paint letters blue (Blue No.15102 in federal color standard No.595).
- DWR Logo at: https://d3.water.ca.gov/owncloud/index.php/s/s8CFdC3cvgf9v9p/download