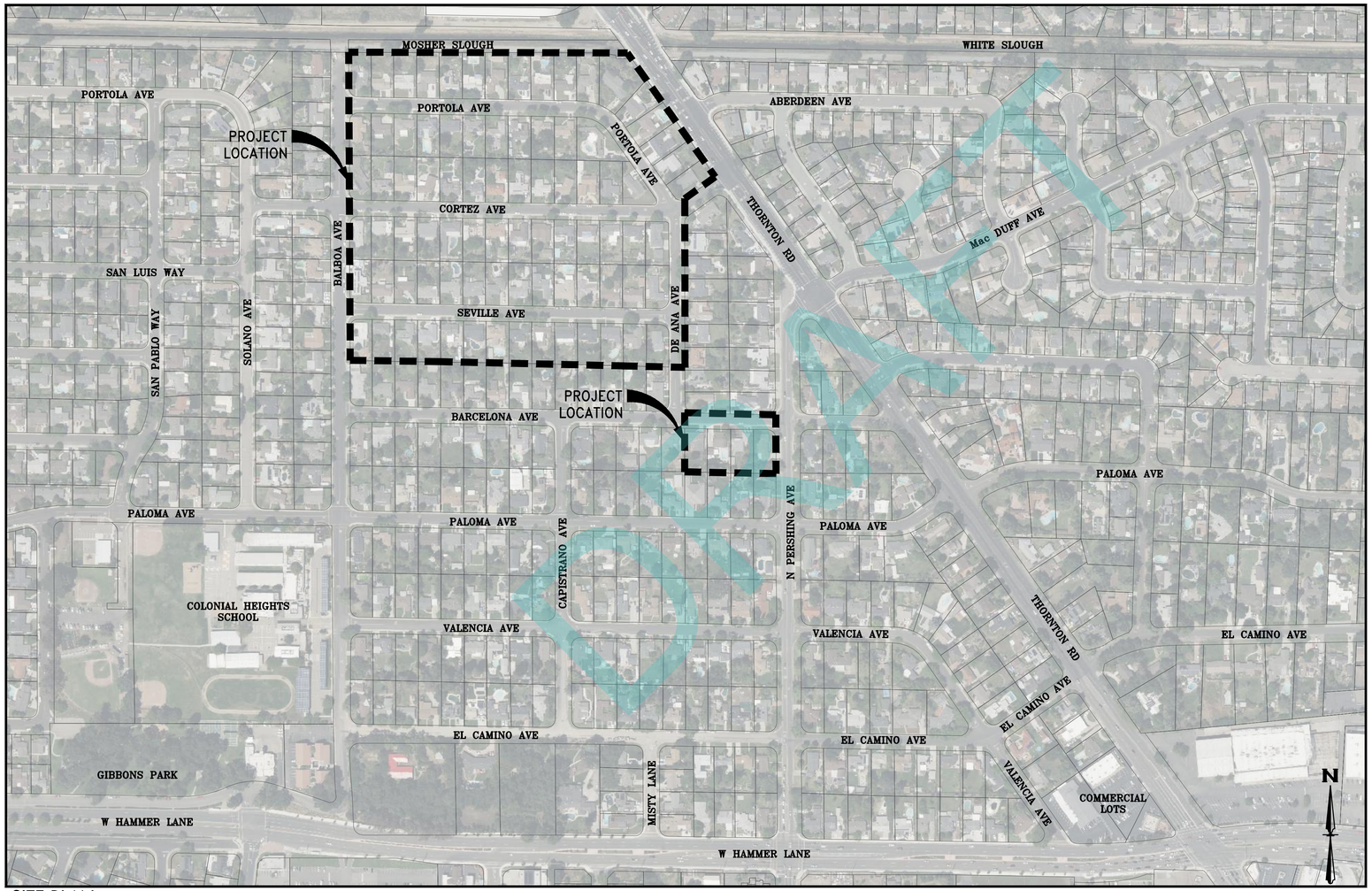
COUNTY OF SAN JOAQUIN
COLONIAL HEIGHTS
WATER MAIN REPLACEMENT PROJECT PHASE 1B

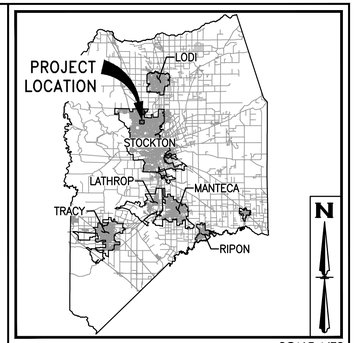
STOCKTON, CALIFORNIA

AMERICAN RESCUE PLAN AGREEMENT NO. XXXXXXXXXX



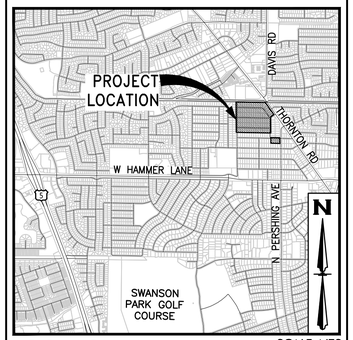
SITE PLAN

SCALE: NTS



VICINITY MAP

SCALE: NTS



LOCATION MAP

SCALE: NTS

90% IMPROVEMENT PLANS

NOTES:

1. FUNDED BY THE AMERICAN RESCUE PLAN.
2. TO BE SUPPLEMENTED BY CALTRANS STANDARD PLANS DATED 2023 AND REVISED STANDARD PLANS

ACCEPTED BY:

CITY OF STOCKTON FIRE DEPARTMENT — DATE

SUBMITTED BY:

DEPUTY DIRECTOR DEVELOPMENT SAN JOAQUIN COUNTY — DATE

BLACKWATER CONSULTING ENGINEERS
602 LYELL DRIVE, MODESTO, CA 95356 • PH:209.322.1820

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

NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	APP

PROJECT NO. J24313:24C
DESIGNED BY PJS
DRAWN BY NYB
CHECKED BY AJV
DATE JULY 2025

PUBLIC WORKS San Joaquin County Working for YOU

COUNTY OF SAN JOAQUIN - COLONIAL HEIGHTS WATER MAIN REPLACEMENT PROJECT PHASE 1B

COVER SHEET

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DRAWING NO. 0G01

SHEET NO. 1 OF 21

CONTACTS

ENGINEER:
BLACK WATER CONSULTING ENGINEERS, INC.
602 LYELL DRIVE
MODESTO, CA 95350
ENGINEER: AJA VERBURG, P.E.
T:209.753.0078

OWNER:
COUNTY OF SAN JOAQUIN DEPARTMENT OF PUBLIC WORKS
1810 E. HAZELTON AVE.
STOCKTON, CA, 95205
ENGINEER: ROBERT DAVALOS, P.E.
T:209.486.3697
FIELD ENGINEERING MANAGER: AWNI TAHA, P.E.
T:209.468.3036
UTILITY DISTRICT SUPERINTENDENT: BEN GUZMAN
T:209.468.3090

GEOTECHNICAL:
MID PACIFIC ENGINEERING, INC.
840 EMBARCADERO DRIVE, SUITE 20
WEST SACRAMENTO, CA, 95606
CONTACT: VASILIY PARFENOV, P.G., C.E.G.
T:916.927.7000

GENERAL NOTES

1. CONTRACTOR SHALL CONSIDER THE INFORMATION PRESENTED AS "GENERAL NOTES" AS PART OF THE CONSTRUCTION DOCUMENTS.
2. PRIOR TO ANY WORK BEING PERFORMED, THE CONTRACTOR SHALL CONTACT THE APPROPRIATE REGULATORY AGENCIES FOR A PRE-CONSTRUCTION CONFERENCE. CONTRACTOR SHALL ALSO NOTIFY THE OWNERS AND ENGINEER SEVENTY-TWO (72) HOURS PRIOR TO MEETING DATE.
3. ENGINEER OF RECORD MUST APPROVE ANY SUBSTITUTIONS. IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS BETWEEN THE DRAWINGS AND OTHER DETAILS; OR EXISTING CONDITIONS NOT SHOWN OR DIFFERENT FROM THOSE SHOWN ON THE DRAWINGS PRIOR TO COMMENCEMENT OF WORK. MATERIALS PROCURED PRIOR TO RESOLUTION OF CONFLICTS SHALL BE AT THE CONTRACTOR'S RISK.
4. ALL WORK IS NEW UNLESS INDICATED AS EXISTING.
5. THE CONTRACTOR SHALL EXERCISE DUE CAUTION AND SHALL CAREFULLY PRESERVE BENCHMARKS, REFERENCE POINTS AND ALL SURVEY STAKES, AND SHALL BEAR ALL EXPENSE FOR REPLACEMENT AND/OR ERRORS CAUSED BY THEIR UNNECESSARY LOSS OR DISTURBANCE. ALL STREET MONUMENTS, LOT CORNERS, BENCHMARKS, AND OTHER PERMANENT PIPE MONUMENTS DISTURBED DURING THE PROCESS OF CONSTRUCTION SHALL BE REPLACED BY A LICENSED CIVIL ENGINEER OR SURVEYOR PRIOR TO ACCEPTANCE OF THE IMPROVEMENTS BY THE SAN JOAQUIN COUNTY.
6. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COMPLY WITH THE PERTINENT SECTIONS OF THE 'CONSTRUCTION SAFETY ORDERS' ISSUED BY THE GOVERNING BUILDING JURISDICTION AND/OR THE STATE OF CALIFORNIA, LATEST EDITION, AND ALL OSHA REQUIREMENTS AS THEY APPLY TO THE PROJECT.
7. THE DRAWINGS AND SPECIFICATIONS REPRESENT THE COMPLETED PROJECT, AND DO NOT INDICATE THE METHOD OR MEANS OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE CONSTRUCTION AND ALL ADJACENT PROPERTIES DURING CONSTRUCTION.
8. THE CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER, AND ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR THE ENGINEER.
9. THE CONTRACTOR SHALL MAINTAIN A NEATLY MARKED SET OF FULL-SIZE RECORD DRAWINGS SHOWING THE FINAL LOCATION AND LAYOUT OF ALL PIPING AND CONDUITS, STRUCTURES AND OTHER FACILITIES. RECORD DRAWINGS SHALL REFLECT CHANGE ORDERS, ACCOMMODATIONS AND ADJUSTMENTS TO ALL IMPROVEMENTS CONSTRUCTED. WHERE NECESSARY, SUPPLEMENTAL DRAWINGS SHALL BE PREPARED AND SUBMITTED BY THE CONTRACTOR.
10. PRIOR TO FINAL ACCEPTANCE OF THE PROJECT, THE CONTRACTOR SHALL DELIVER TO THE ENGINEER, ONE SET OF NEATLY MARKED RECORD DRAWINGS SHOWING THE INFORMATION REQUIRED ABOVE. RECORD DRAWINGS SET SHALL BE CURRENT WITH ALL CHANGES AND DEVIATIONS REDLINED AS A PRECONDITION TO THE FINAL PAYMENT APPROVAL AND/OR FINAL ACCEPTANCE.
11. ALL FERROUS METALS THAT ARE NOT GALVANIZED SHALL BE PREPARED, PRIMED, AND EPOXY COATED. THE PRIMER AND COATING SHALL BE OF THE SAME MANUFACTURER AND APPLIED AS A SYSTEM. THE COATING SYSTEM AND COLOR SHALL BE APPROVED BY THE ENGINEER AND THE OWNER PRIOR TO APPLICATION.
12. THE CONTRACTOR SHALL PROVIDE ALL SHORING, BRACING, SLOPING OR OTHER PROVISIONS NECESSARY TO PROTECT WORKMEN FOR ALL AREAS TO BE EXCAVATED TO A DEPTH OF 5' OR MORE. SAID PROTECTION TO BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE PROJECT AND THE STATE REGULATIONS. ENGINEERED PLANS FOR TRENCHES GREATER THAN 5' WILL BE REQUIRED TO BE SUBMITTED FOR APPROVAL.
13. ALL DIMENSIONS SHOWN ON DRAWINGS SHALL BE VERIFIED WITH EXISTING CONDITIONS. DO NOT SCALE DRAWINGS. ENGINEER OF RECORD MUST APPROVE ANY SUBSTITUTIONS. IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS BETWEEN THE DRAWINGS AND OTHER DETAILS; OR EXISTING CONDITIONS NOT SHOWN OR DIFFERENT FROM THOSE SHOWN ON THE DRAWINGS PRIOR TO COMMENCEMENT OF WORK. MATERIALS PROCURED PRIOR TO RESOLUTION OF CONFLICTS SHALL BE AT THE CONTRACTOR'S RISK.
14. ALL MATERIAL AND WORK SHALL CONFORM TO CURRENT APPLICABLE SAN JOAQUIN COUNTY IMPROVEMENT AND CONSTRUCTION STANDARDS. ALL IMPROVEMENTS ARE SUBJECT TO THE INSPECTION AND APPROVAL OF SAN JOAQUIN COUNTY AND OTHER AGENCIES INVOLVED WITH THIS PROJECT.
15. THE CONTRACTOR SHALL CONTROL DUST AT ALL TIMES. DUST CONTROL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE IMPLEMENTED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL GUIDELINES (INCLUDING, BUT NOT LIMITED TO THE SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT).
16. FENCES THAT NEED TO BE REMOVED DURING CONSTRUCTION SHALL BE REMOVED TO THE NEAREST POST BEYOND THE AREA OF CONSTRUCTION. CONTRACTOR SHALL MATCH REPLACEMENT FENCE AS CLOSE TO THE ORIGINAL FENCE.
17. CONTRACTOR SHALL CONSTRUCT TEMPORARY FENCING WHERE EXISTING FENCE IS REMOVED TO PREVENT UNWANTED CROSSING OF THE PREVIOUS FENCE LINE. ALL UNSUPERVISED EQUIPMENT OR OPEN TRENCHES SHALL ALSO BE FENCED OFF WITH TEMPORARY FENCING.
18. CONTRACTOR SHALL NOTIFY THE HOME OWNER OF ANY CONSTRUCTION ACTIVITIES A MINIMUM OF 48 HOURS PRIOR TO THE COMMENCEMENT OF WORK. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE CLEAR AND SAFE ACCESS ON THE OWNER'S PROPERTY.
19. THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES TO ELIMINATE OR MINIMIZE POLLUTION DISCHARGE CAUSED BY CONSTRUCTION.

EXISTING UTILITY NOTES

1. CONTRACTOR SHALL CALL 811 PRIOR TO INSTALLATION OF NEW UTILITY LINES AND PRIOR TO CONSTRUCTION TO LOCATE ALL UNDERGROUND UTILITIES IN AND AROUND THE AREA OF WORK.
2. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES. THE LOCATION AND SIZE OF ANY EXISTING UNDERGROUND UTILITIES SHOWN ON THE DRAWINGS IS APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY SHOULD ANY EXISTING UTILITY LOCATIONS CONFLICT WITH NEW WORK.
3. THE INFORMATION SHOWN ON THE PLANS WITH REGARD TO THE EXISTING UTILITIES AND/OR IMPROVEMENTS WAS DERIVED FROM FIELD INVESTIGATIONS AND/OR RECORD INFORMATION. THE ENGINEER DOES NOT GUARANTEE THESE LOCATIONS TO BE EITHER TRUE OR EXACT. PRIOR TO CONSTRUCTION, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL EXISTING IMPROVEMENTS AND TO EXPOSE UNDERGROUND UTILITIES RELATED TO THE PROJECT; INCLUDING BUT NOT LIMITED TO SEWER, STORM DRAIN, WATER, IRRIGATION, GAS, ELECTRICAL, ETC. AND SHALL NOTIFY THE ENGINEER AND OWNER IN WRITING FORTY-EIGHT (48) HOURS IN ADVANCE OF EXPOSING THE UTILITIES SO THAT THE EXACT LOCATION AND ELEVATION CAN BE VERIFIED AND DOCUMENTED. IF LOCATION AND/OR ELEVATION DIFFERS FROM THAT SHOWN ON THE DESIGN PLANS, PROVISIONS TO ACCOMMODATE NEW LOCATION/ELEVATION MUST BE MADE PRIOR TO CONSTRUCTION.
4. WE CALL YOUR ATTENTION TO TITLE 8 CALIFORNIA ADMINISTRATION CODE SECTION 1540 (A) (1) OF THE CONSTRUCTION SAFETY ORDERS ISSUED BY THE OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD PURSUANT TO THE CALIFORNIA OCCUPATIONS SAFETY AND HEALTH ACT OF 1973 AS AMENDED WHICH STATES: (1) PRIOR TO OPENING AN EXCAVATION EFFORT SHALL BE MADE TO DETERMINE WHETHER UNDERGROUND INSTALLATIONS; I.E. SEWER, WATER, FUEL, ELECTRICAL LINES, ETC., WILL BE ENCOUNTERED AND IF SO, WHERE SUCH UNDERGROUND INSTALLATIONS ARE LOCATED. WHEN THE EXCAVATION APPROACHES THE APPROXIMATE LOCATION OF SUCH INSTALLATION, THE EXACT LOCATION SHALL BE DETERMINED BY CAREFUL PROBING OR HAND DIGGING; AND, WHEN IT IS UNCOVERED, ADEQUATE PROTECTION SHALL BE PROVIDED FOR THE EXISTING INSTALLATION. ALL KNOWN OWNERS OF UNDERGROUND FACILITIES IN THE AREA CONCERNED SHALL BE ADVISED OF PROPOSED WORK AT LEAST 48 HOURS PRIOR TO THE START OF ACTUAL EXCAVATION.

EXISTING CONDITIONS NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS. WHERE EXISTING CONDITIONS VARY SIGNIFICANTLY FROM THOSE SHOWN ON THESE DRAWINGS, THE ENGINEER OF RECORD SHALL BE NOTIFIED PRIOR TO CONTINUED CONSTRUCTION RELATED TO SUBJECT CONDITIONS.
2. WHENEVER EXISTING FACILITIES ARE DAMAGED, BROKEN OR CUT IN THE INSTALLATION OF WORK COVERED BY THESE PLANS OR SPECIFICATIONS, SAID FACILITIES SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE, AFTER PROPER BACKFILLING AND/OR CONSTRUCTION, WITH MATERIALS EQUAL OR BETTER THAN THE MATERIALS USED IN THE ORIGINAL EXISTING FACILITIES. THE FINISHED PRODUCT SHALL BE SUBJECT TO THE APPROVAL OF THE OWNER, THE ENGINEER AND THE RESPECTIVE REGULATORY AGENCY.
3. PRIOR TO CONSTRUCTION A VISUAL RECORD OF EXISTING CONDITIONS SHALL BE MADE USING VIDEO OR PHOTOGRAPHS, THAT WILL BE USED TO COMPARE PRE- AND POST-CONSTRUCTION CONDITIONS.
4. CONTRACTOR SHALL MAKE EVERY EFFORT TO RESTORE THE OWNER'S PROPERTY TO AS GOOD A CONDITION AS FOUND OR AS MAY REASONABLY BE EXPECTED DEPENDING ON CONDITIONS, AND TO RE-GRADE, LEVEL, OR SMOOTH EXISTING GROUND, REPAVE OR REPLACE LANDSCAPING, FENCES, RETAINING WALLS, GATES OR DECORATIVE ITEMS TO THE CONDITION THEY EXISTED PRIOR TO THE START OF CONSTRUCTION ON SAID PROPERTY AT NO COST TO THE OWNER.
5. CONCRETE, DRIVEWAY, CURB, GUTTER AND SIDEWALK TO BE REPLACED WHERE REMOVED/DAMAGED PER CURRENT COUNTY STANDARDS.

STANDARDS FOR THE WORK

1. PIPE FITTINGS, WIRING, AND SUPPORTS SHALL BE PROVIDED TO PRODUCE COMPLETE, OPERABLE SYSTEMS WITH ALL ELEMENTS PROPERLY INTERCONNECTED AS SHOWN TO MEET THE PERFORMANCE INTENT AS INTERPRETED BY THE OWNER. IF A SPECIFIED DIMENSION LOCATION IS NOT SHOWN FOR INTERCONNECTIONS OR SMALLER SYSTEM ELEMENTS, THE CONTRACTOR SHALL SELECT APPROPRIATE LOCATIONS AND SHOW THEM ON THE SHOP DRAWING SUBMITTALS FOR REVIEW.
2. EQUIPMENT AND MATERIALS SHALL BE NEW AND WITHOUT IMPERFECTIONS AND SHALL BE CONSTRUCTED IN A NEAT AND WORKMANLIKE MANNER; ALIGNED, LEVELED, CLEANED AND DUSTED FOR SATISFACTORY OPERATION. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND BEST STANDARD PRACTICES FOR THIS TYPE OF WORK.

WATER NOTES

1. CONTRACTOR SHALL DETERMINE THE BEST LOCATION TO CONNECT NEW SERVICE LATERAL TO EACH HOME.
2. ABANDONING AND GROUTING OF EXISTING WATER LINES MUST NOT OCCUR UNTIL ALL SERVICES HAVE BEEN TRANSFERRED TO THE NEW WATER LINES. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE SATISFACTORY COORDINATION OF THE PIPE ABANDONMENTS TO MINIMIZE THE IMPACT ON THE WATER SERVICE.
3. REMOVE ALL WATER LINE APPURTENANCES AS NOTED ON THE PLANS, SUCH AS HYDRANTS, VALVES AND VALVE CASTING. DISPOSAL OF THESE APPURTENANCES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. REMOVE ANY FREE STANDING WATER PRIOR TO STARTING FILL PLACEMENT IN TRENCH.
5. PLUG EACH END OF THE WATER MAIN BEING ABANDONED. ENSURE THAT CONCRETE IS AROUND PLUG/BULKHEAD AND AROUND PIPE INCLUDING BEDDING AREA SUCH THAT IT IS NOT PENETRABLE BY GROUNDWATER AND THAT BEDDING AT THIS LOCATION IS NOT A CONDUIT FOR GROUNDWATER.
6. THRUST BLOCKS
   6.1. ALL TEES, CROSSES, BENDS, PLUGS, FIRE HYDRANTS AND OTHER SECTIONS OF PIPING AND APPURTENANCES THAT MIGHT BE CAPABLE OF BEING DISPLACED BY THE ACTION OF EITHER WORKING PRESSURE OR TEST PRESSURES WITHIN THE WATER SYSTEM SHALL BE ANCHORED IN PLACE BY THE USE OF THRUST BLOCKS, THRUST BACKING OR HARNESSES AS SHOWN ON THE STANDARD DRAWINGS. THE BEARING PRESSURES OF THE THRUST BLOCKING ON THE SUPPORTING SOIL SHALL NOT EXCEED THAT ALLOWABLE FOR THE SOIL INVOLVED. REQUIRED THRUST BLOCK BEARING AREAS SHALL BE IN ACCORDANCE WITH SAN JOAQUIN COUNTY STANDARD W-6.
   6.2. CONTRACTOR CAN INSTALL RESTRAINED JOINTS AS AN ALTERNATIVE, WITH APPROVAL FROM SAN JOAQUIN COUNTY.
7. COMMERCIAL/MUNICIPAL BACKFLOW DEVICES SHALL BE AN APPROVED DEVICE, PER CALIFORNIA REGULATIONS RELATED TO DRINKING WATER TITLE 17 AND STATE WATER RESOURCES CONTROL BOARD STANDARDS.
8. ALL COMPONENTS THAT COME INTO CONTACT WITH POTABLE WATER MUST COMPLY WITH THE INDIRECT ADDITIVES REQUIREMENTS OF SECTION 64591 OF THE CALIFORNIA WATERWORKS STANDARDS, BE COMPLIANT WITH APPLICABLE AWWA STANDARDS, NSF/ANSI STANDARD 61 AND MEET THE LEAD-FREE STANDARDS (PLUMBING FIXTURES, VALVES, PIPES AND FITTINGS ARE REQUIRED TO BE MANUFACTURED WITH LESS THAN 0.25% LEAD).
9. APPROVED BACKFLOW PREVENTION ASSEMBLIES (DEVICE AND ACCOMPANYING SHUTOFF VALVES) SPECIFIED MUST BE LISTED ON THE STATE WATER RESOURCES CONTROL BOARD DIVISION OF DRINKING WATER APPROVED LIST FROM USC'S FOUNDATION OF CROSS-CONNECTION CONTROL AND HYDRAULIC RESEARCH:
   HTTP://FCCCHR.USC.EDU/LIST.HTML
10. SERVICE LATERALS SHALL BE HORIZONTAL DIRECTIONAL DRILLED. PNEUMATIC BORING AND OPEN TRENCH MAY BE ALLOWED WITH APPROVAL FROM SAN JOAQUIN COUNTY PRIOR TO TRENCHING.
11. DISPOSAL OF WATER USED IN THE FLUSHING / TESTING PROCESS FOR PIPING INSTALLED AS PART OF THIS PROJECT SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
12. SEPARATION OF NEW WATER MAINS FROM OTHER PIPELINES MUST MEET THE REQUIREMENTS OF THE CALIFORNIA CODE OF REGULATIONS. TITLE 22, SECTION 64572, UNLESS APPROVED BY THE DIVISION OF DRINKING WATER THROUGH A WATER REQUISITE.

SURVEY NOTES

1. PER SECTION 8771 OF THE PROFESSIONAL LAND SURVEYORS ACT, PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR, UNDER THE DIRECTION OF A LICENSED LAND SURVEYOR OR LICENSED LEGALLY AUTHORIZED TO PRACTICE LAND SURVEYING, SHALL LOCATE AND REFERENCE MONUMENTS THAT WILL BE AFFECTED BY CONSTRUCTION, AND A CORNER RECORD SHALL BE FILED WITH SAN JOAQUIN COUNTY SURVEYOR.
2. PRIOR TO COMMENCEMENT OF CONSTRUCTION, CONTRACTOR SHALL PROVIDE COUNTY WITH COPIES OF CORNER RECORDS OR RECORDS OF SURVEY THAT HAVE BEEN FILED WITH THE SAN JOAQUIN COUNTY RECORDER.
3. CONTRACTOR IS RESPONSIBLE FOR THE CONSTRUCTION OF NEW MONUMENTATION PER SAN JOAQUIN COUNTY SPECIFICATIONS AND STANDARDS.

POTHOLING NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR POTHOLING ANY UTILITY CROSSINGS NOT SHOWN ON THE CONSTRUCTION DOCUMENTS PRIOR TO SAWCUTTING AND INSTALLATION OF NEW WATER MAINS AND AS A SUBMITTAL TO THE ENGINEER A MAXIMUM OF 15 WORKING DAYS PRIOR TO STARTING ANY WORK.
2. CONTRACTOR'S POTHOLING SUBMITTALS SHALL INCLUDE FOLLOWING INFORMATION:
   2.1. LOCATION OF EXISTING PIPE
   2.2. MINIMUM COVER OVER EXISTING PIPE
   2.3. OUTSIDE DIAMETER OF PIPE
   2.4. TYPE / MATERIAL OF PIPE
   2.5. ASPHALT CONCRETE AND AGGREGATE BASE THICKNESS
3. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DEVIATION FROM THE PLANS ENCOUNTERED IN THE FIELD PRIOR TO TRENCHING. THE CONTRACTOR SHALL WAIT FOR WRITTEN CONFIRMATION THAT THE DEVIATION HAS BEEN RESOLVED PRIOR TO CONTINUING WORK.
4. ANY DEVIATION FROM THE PLANS SHALL BE RESOLVED BY THE ENGINEER PRIOR TO TRENCHING.
5. CONTRACTOR TO USE CAUTION WHEN EXPOSING EXISTING ELECTRICAL MAINS AND TO PROTECT AT ALL TIMES.
6. CONTRACTOR TO VERIFY HORIZONTAL AND VERTICAL LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.

AGGREGATE BASE NOTES

1. THE AGGREGATE BASE MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF SECTION 26, "AGGREGATE BASES" OF THE CURRENT CALTRANS STANDARD SPECIFICATIONS FOR CLASS 2, THREE-QUARTER (3/4) INCH MAXIMUM COMBINED GRADATION.
2. CONTRACTOR TO SAWCUT AND REPLACE STREET SECTION IN ACCORDANCE WITH SAN JOAQUIN COUNTY DETAIL R-29 MODIFIED AND AS SPECIFIED IN THE CONSTRUCTION DOCUMENTS.

TRAFFIC AND STRIPING NOTES

1. ALL EXISTING PAVEMENT MARKING FOR STOP BARS, CROSSWALKS, ARROWS, SYMBOLS, AND WORDS TO BE REPAIRED OR REPLACED, SHALL BE DONE SO IN IT'S ENTIRETY. CONTRACTOR SHALL NOT REPLACE JUST A PORTION OF THE MARKING DISTURBED.
2. ANY CURB REPLACED SHALL BE PAINTED TO MATCH EXISTING CONDITIONS IF NEEDED AND SHALL BE DONE SO IN IT'S ENTIRETY.
3. WHERE EXISTING ROAD STRIPING AND/OR REFLECTORS ARE DAMAGED DUE TO TRENCHING WORK ASSOCIATED WITH THIS PROJECT, REPAIR OR REPLACE DAMAGED MATERIAL AS REQUIRED TO MATCH EXISTING CONDITIONS PRIOR TO START OF CONSTRUCTION.

STRIPING AND SIGNAGE NOTES

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 COUNTY STANDARD SPECIFICATIONS, AND THE PROJECT SPECIFICATIONS, WHERE THESE STANDARDS ARE IN CONFLICT, THE PROJECT SPECIFICATIONS WILL GOVERN, FOLLOWED BY THE CITY STANDARD SPECIFICATIOONS, THEN THE CALTRANS STANDARDS, AND FINALLY THE MUTCD.
2. "STRIPING" SHALL INCLUDE STOP BARS, CENTERLINE STRIPING OR MARKERS, CROSSWALKS, ARROW, PAINTED WORDS AND LEGENDS, AND ALL OTHER PAVEMENT MARKINGS REQUIRED BY THE CITY TRAFFIC ENGINEER.
3. ALL STRIPING SHALL BE PAINT, UNLESS NOTED OTHERWISE. SEE PLAN SHEETS AND SPECIFICATIONS FOR EXCEPTIONS. ALL STRIPING SHALL BE AT LEAST SIX INCHES (6") WIDE PER CALTRANS STANDARDS.
4. RAISED PAVEMENT MARKERS SHALL BE CERAMIC, REFLECTIVE MARKERS SHALL BE GLASS-FACED, AND BITUMINOUS MARKERS SHALL BE FLEXIBLE TYPE.
5. 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 REFERENCED IN NOTE #1 ABOVE.
6. WHERE PORTIONS OF EXISTING STRIPING (ARROW, LIMIT LINE, ETC) ARE DAMAGED DUE TO CONSTRUCTION, THE ENTIRE AFFECTED STRIPING ITEM SHALL BE GROUND OFF AND REAPPLIED.

TRAFFIC CONTROL NOTES

1. ALL TRAFFIC CONTROL (INCLUDING, BUT NOT LIMITED TO, CONSTRUCTION SIGNING, LIGHTS, FLAGMEN, BARRICADING, AND TRAFFIC DELINEATION) 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. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY TRAFFIC CONTROL DEVICES AND FLAGGERS TO ENSURE THE SAFETY OF THE PUBLIC IN OR AROUND THE WORK AREA.
3. PRIOR TO START OF CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE A CONSTRUCTION STAGE PLAN FOR THE WORK SHOWN ON THESE PLANS TO THE COUNTY FOR REVIEW AND APPROVAL.
4. WORK IN PUBLIC STREETS, ONCE BEGUN, SHALL BE EXPEDITED TO COMPLETION SO AS TO PROVIDE MINIMUM INCONVENIENCE TO ADJACENT PROPERTY OWNERS AND TO THE TRAVELING PUBLIC.
5. STREET CLOSURE OR LANE CLOSURE WILL REQUIRE A TRAFFIC CONTROL PLAN AND THE DESIGNATION OF A QUALIFIED INDIVIDUAL FOR IT'S IMPLEMENTATION AND SAFE MAINTENANCE.
6. THE COST TO COMPLY WITH TRAFFIC CONTROL REQUIREMENTS SHALL BE INCLUDED IN THE VARIOUS ITEMS OF BID AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED THEREFORE.

BASIS OF BEARINGS

BEARINGS ARE BASED ON THE CALIFORNIA COORDINATE SYSTEM, ZONE 3, NAD83, 1991.35 EPOCH ADJUSTMENT. A LINE BETWEEN CITY OF STOCKTON CONTROL MONUMENTS 8 (1N-6) AND 35 ((2N-2) BEARS SOUTH 43°21'30" EAST AS CALCULATED FROM THE COORDINATES AS SHOWN ON THE MAP FILED FOR RECORD IN BOOK 35 OF SURVEYS AT PAGE 5, SAN JOAQUIN COUNTY RECORDS.

BENCHMARK

CITY OF STOCKTON BENCHMARK NO. 8.

SAN JOAQUIN COUNTY BOLT AND WASHER IN MONUMENT WELL MARKING THE EAST ONE-QUARTER (1/4) CORNER OF SECTION 8, TOWNSHIP 2 NORTH, RANGE 6 EAST, THORNTON AND DAVIS ROADS, BOLT AND WASHER MARK COS 1N-6.

ELEVATION = 16.89 FEET (NAVD88)

SHEET INDEX

GEOTECHNICAL NOTES

1. CONTRACTOR SHALL REFERENCE THE FOLLOWING REPORT. GEOTECHNICAL ENGINEERING REPORT, COLONIAL HEIGHTS MAINTENANCE DISTRICT WATER MAIN REPLACEMENT PHASE 1 PROJECT, MPE NO. 06760-01, COMPLETED BY MID PACIFIC ENGINEERING, INC. ON JANUARY 12, 2024

KEY TO DRAWING NUMBERS

PROCESS AREAS	DISCIPLINES
0. GENERAL SHEETS	G – GENERAL
1. PROJECT SITE	C – CIVIL

EXAMPLE DRAWING NUMBER → 1C01
PROCESS AREA
SEQUENTIAL DRAWING NUMBER
DISCIPLINE

90% IMPROVEMENT PLANS

BLACK WATER CONSULTING ENGINEERS
602 LYELL DRIVE, MODESTO, CA 95356 • PH:209.322.1820

Know what's below. Call before you dig.

NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	APP

PROJECT NO. J24313:24C
DESIGNED BY PJS
DRAWN BY NYB
CHECKED BY AJV
DATE JULY 2025

PUBLIC WORKS San Joaquin County Working for YOU

COUNTY OF SAN JOAQUIN - COLONIAL HEIGHTS WATER MAIN REPLACEMENT PROJECT PHASE 1B

GENERAL NOTES AND SHEET INDEX

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DRAWING NO. 0G02
SHEET NO. 2 OF 21

ABBREVIATIONS

AB	AGGREGATE BASE
ABN	ABANDONED
AC	ASPHALT CONCRETE
A/C	AIR CONDITION
ADH	ADHESIVE
ANCH	ANCHOR
ATS	AUTOMATIC TRANSFORMER SWITCH
AVE	AVENUE
BC	BEGIN OF CURVE
BLDG.	BUILDING
BV	BUTTERFLY VALVE
BOV	BLOWOUT VALVE
B.O.	BLOW OFF
CIP	CAST IN PLACE
CL	CENTER LINE
CLR	CLEAR
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CONC OR CC	CONCRETE
CW	COLD WATER
CWM	CITY OF STOCKTON WATER MAIN
DDW	DIVISION OF DRINKING WATER
DIA	DIAMETER
DI	DUCTILE IRON
DIP	DUCTILE IRON PIPE
DWG.	DRAWING
E	EARTH / EAST
EC	EDGE OF CONCRETE / END OF CURVE
EF	EACH FACE
ELB	ELECTRICAL BOX
ELEV.	ELEVATION
ELL	ELBOW
ELV	ELECTRICAL VAULT
EP	EDGE OF PAVEMENT
ESEW	EMERGENCY SHOWER/EYE WASH
EW	EACH WAY
EX	EXISTING
FAA	FEDERAL AVIATION ADMINISTRATION
FDC	FIRE DEPARTMENT CONNECTION
FDN	FOUNDATION
FF	FINISH FLOOR
FG	FINISH GRADE
FH	FIRE HYDRANT
FL	FLOW LINE
GPR	GROUND PENETRATING RADAR
GSP	GALVANIZED STEEL PIPE
GV	GATE VALVE
GR	GRATE
H / HORIZ	HORIZONTAL
HB	HOSE BIB
HP	HORSE POUNDS
HT	HEIGHT
HW	HOT WATER
ID	INSIDE DIAMETER
INV	INVERT
IRR	IRRIGATION
LF	LINEAL FEET OR LINEAR FEET
LT	LEFT
MAINT.	MAINTENANCE
MAX	MAXIMUM
MFR	MANUFACTURER
MG	MILLION GALLONS
MH	MAINTENANCE HOLE
MIN.	MINIMUM
N	NORTH / NEW
NIC	NOT INCLUDED
NC	NORMALLY CLOSED
NO.	NUMBER
NTS	NOT TO SCALE
OC	ON CENTER
O.D.	OUTSIDE DIAMETER
OHE	OVERHEAD ELECTRIC
P.C.	POINT OF CURVATURE
PG&E	PACIFIC GAS AND ELECTRIC
PL	PROPERTY LINE
PSI	POUNDS PER SQUARE INCH
PT	POINT
PVC	POLY VINYL CHLORIDE
R	RADIUS
RC	RELATIVE COMPACTION
P.D.	RELATIVE DENSITY
RD	ROAD
REINF	REINFORCED
REQ'D	REQUIRED
RPBFP	REDUCER PRESSURE BACKFLOW PREVENTER
RT	RIGHT
RTU	REMOTE TERMINAL UNIT
S	SLOPE / SOUTH
SCH	SCHEDULE
SD	STORM DRAIN
SDAD	STORM DRAIN AREA DRAIN
SDCB	STORM DRAIN CATCH BASIN
SDMH	STORM DRAIN MAINTENANCE HOLE
SHT	SHEET
SLB	STREET LIGHT BOX
SJC	SAN JOAQUIN COUNTY
SQ.	SQUARE
SS	SANITARY SEWER
SST	STAINLESS STEEL
ST	STREET
STD	STANDARD
STL	STEEL
TEMP	TEMPORARY
TG	TOP OF GRATE
THRU	THROUGH
T.O.	TOP OF
TSB	TELEPHONE SIGNAL BOX
TYP.	TYPICAL
UON	UNLESS OTHERWISE NOTED
V / VERT	VERTICAL
VFD	VARIABLE FREQUENTLY DRIVE
W	WATER / WEST
WM	WATER METER
WSP	WELDED STEEL PIPE

LEGEND

	EXISTING	PROPOSED
JOINT POLE	JP	N/A
POWER POLE	PP	N/A
PRESSURE RELEASE VALVE		N/A
ELECTRICAL BOX	ELB	N/A
ELECTRICAL VAULT	ELV	N/A
LIGHT POLE		N/A
IRRIGATION CONTROL VALVE	ICV	N/A
CHECK VALVE	CKV	CKV
FIRE HYDRANT		
WHARF HYDRANT		N/A
HOSE BIB	N/A	HB
WATER VALVE	WV	WV
WATER WELL		N/A
WATER METER BOX		
BACTERIOLOGICAL SAMPLING TAP	N/A	
STORM DRAIN AREA DRAIN		N/A
STORM DRAIN CATCH BASIN		N/A
STORM DRAIN MAINTENANCE HOLE		N/A
SIGN		N/A
STORM DRAIN	24"SD — SD	N/A
SANITARY SEWER	8"SS — SS	N/A
WATER	8"W — W	8"W
ABANDONED WATER	W–ABN	
OVERHEAD ELECTRICAL	OHE	N/A
UNDERGROUND ELECTRICAL	UDR	N/A
GAS	GAS	N/A
EDGE OF PAVEMENT		
RIGHT–OF–WAY		N/A
LOT LINE		N/A
EASEMENT		N/A
CENTER LINE		
BARBWIRE FENCE	X	N/A
CHAINLINK FENCE		N/A
WOOD FENCE		N/A
BUILDING		N/A
WALL		N/A
CURB, GUTTER & SIDEWALK		N/A
A.C PAVEMENT SECTION		
NATURAL GROUND OR GRADE		
ROCK		
GRADE CONTOURS	30	N/A

HATCH LEGEND

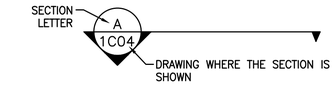
EXISTING AC

EXISTING AB

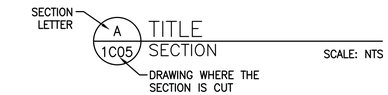
EXISTING CONC

SECTION AND DETAIL NUMBERING SYSTEM

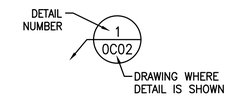
SECTION CUT ON PLAN



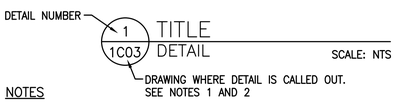
SECTION TITLE WITH REFERENCE



DETAIL CALL–OUT



DETAIL TITLE WITH REFERENCE



NOTES

1. "VAR" IN THE DRAWING DESIGNATION AREA INDICATES DETAIL APPLIES TO MORE THAN ONE DRAWING.
2. " – " IN THE DRAWING AREA INDICATES THAT SECTION OR DETAIL IS SHOWN ON THE SAME DRAWING THAT IT IS CUT FROM OR REFERRED TO.
3. WHEN REFERRED TO IN A NOTE: "SEE DET 1/C7.02"
   "1" IS THE DETAIL NUMBER
   "C6.03" IS THE DRAWING WHERE DETAIL IS SHOWN.

BLACKWATER
CONSULTING ENGINEERS
602 LYELL DRIVE, MODESTO, CA 95356 • PH:209.322.1820

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

NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	APP

PROJECT NO. J24313:24C
DESIGNED BY PJS
DRAWN BY NYB
CHECKED BY AJV
DATE JULY 2025

PUBLIC WORKS San Joaquin County Working for YOU

COUNTY OF SAN JOAQUIN - COLONIAL HEIGHTS WATER MAIN REPLACEMENT PROJECT PHASE 1B

ABBREVIATIONS AND LEGEND

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DRAWING NO. 0G03

SHEET NO. 3 OF 21

90% IMPROVEMENT PLANS

L:\J24313 SAN JOAQUIN CN\CAD\CAD\TASK 24C PHASE 1B\MAP PLANS PLANSET\04_0G04-EX WATER OVR DWG, PLOT: 7/7/2025 4:47:01 PM BY SHARRAN BENJAMIN

BLACKWATER
CONSULTING ENGINEERS
602 LYELL DRIVE, MODESTO, CA 95356 • PH: 209.322.1820

Know what's below. Call before you dig.

NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	APP

PROJECT NO. J24313:24C
DESIGNED BY PJS
DRAWN BY NYB
CHECKED BY AJV
DATE JULY 2025

PUBLIC WORKS
San Joaquin County
Working for YOU

COUNTY OF SAN JOAQUIN - COLONIAL HEIGHTS WATER MAIN REPLACEMENT PROJECT PHASE 1B

EXISTING WATER PLAN

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DRAWING NO. 0G04
SHEET NO. 4 OF 21

ROAD STRUCTURAL SECTION

STREET NAME	R-VALUE[1]	TRAFFIC INDEX[2]	MIN TYPE B AC THICKNESS (INCHES)	MIN CLASS 2 AB THICKNESS (INCHES)
CORTEZ AVENUE	5	5	3	10
SEVILLE AVENUE	5	5	3	10
BARCELONA AVENUE	5	5	3	10

NOTES:

1. BASED ON GEOTECHNICAL ENGINEERING REPORT PREPARED BY MID PACIFIC ENGINEERING, INC.
2. BASED ON SAN JOAQUIN COUNTY STANDARDS.

PORTOLA AVE
RIGHT-OF-WAY
EX. EASEMENT
THORNTON ROAD
PHASE 1B PROJECT LIMITS
CONNECT TO EX. WATER MAIN
CORTEZ AVE
SOLANO AVE
DE ANZA AVE
SEVILLE AVE
BALBOA AVE
BARCELONA AVE
PALOMA AVE
COLONIAL HEIGHTS SCHOOL
CAPISTRANO AVE
N. PERSHING AVE
VALENCIA AVE
EL CAMINO AVE
MISTY LANE
W. HAMMER LANE
COMMERCIAL LOTS

LEGEND

BACTERIOLOGICAL SAMPLING TAP

N

NTS

90% IMPROVEMENT PLANS

BLACKWATER CONSULTING ENGINEERS
602 LYELL DRIVE, MODESTO, CA 95356 • PH: 209.322.1820

Know what's below. Call before you dig.

NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	APP

PROJECT NO. J24313:24C
DESIGNED BY PJS
DRAWN BY NYB
CHECKED BY AJV
DATE JULY 2025

PUBLIC WORKS San Joaquin County Working for YOU

COUNTY OF SAN JOAQUIN - COLONIAL HEIGHTS WATER MAIN REPLACEMENT PROJECT PHASE 1B

PROPOSED WATER PLAN

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DRAWING NO. 0G05

SHEET NO. 5 OF 21

90% IMPROVEMENT PLANS

L:\24313 SAN JOAQUIN CNTY\CAD\1 CAD 24C PHASE 1B\MAP PLANS (PLANSET) 06. 0G06 TOPO DEMO\KEY MAP.DWG PLOT: 7/7/2025 4:47:13 PM BY NAHRAIN BENJAMIN

BLACKWATER
CONSULTING ENGINEERS
602 LYELL DRIVE, MODESTO, CA 95356 • PH: 209.322.1820

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

NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	APP

PROJECT NO.	J24313:24C
DESIGNED BY	PJS
DRAWN BY	NYB
CHECKED BY	AJV
DATE	JULY 2025

PUBLIC WORKS
San Joaquin County
Working for YOU

COUNTY OF SAN JOAQUIN - COLONIAL HEIGHTS WATER MAIN REPLACEMENT PROJECT PHASE 1B

TOPOGRAPHY AND DEMOLITION KEY MAP

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DRAWING NO. 0G06

SHEET NO. 6 OF 21

ROAD STRUCTURAL SECTION

STREET NAME	R-VALUE[1]	TRAFFIC INDEX[2]	MIN TYPE B AC THICKNESS (INCHES)	MIN CLASS 2 AB THICKNESS (INCHES)
CORTEZ AVENUE	5	5	3	10
SEVILLE AVENUE	5	5	3	10
BARCELONA AVENUE	5	5	3	10

NOTES:

1. BASED ON GEOTECHNICAL ENGINEERING REPORT PREPARED BY MID PACIFIC ENGINEERING, INC.
2. BASED ON SAN JOAQUIN COUNTY STANDARDS.

90% IMPROVEMENT PLANS

BLACKWATER CONSULTING ENGINEERS
602 LYELL DRIVE, MODESTO, CA 95356 • PH: 209.322.1820

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

NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	APP

PROJECT NO. J24313:24C
DESIGNED BY PJS
DRAWN BY NYB
CHECKED BY AJV
DATE JULY 2025

PUBLIC WORKS San Joaquin County Working for YOU

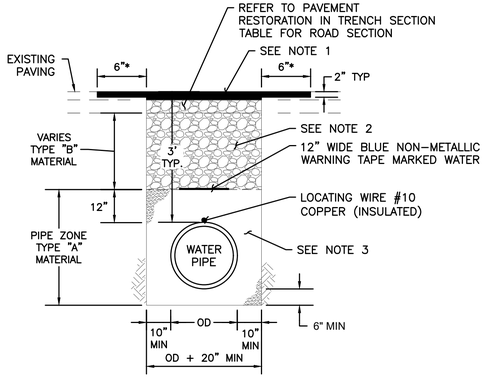
COUNTY OF SAN JOAQUIN - COLONIAL HEIGHTS WATER MAIN REPLACEMENT PROJECT PHASE 1B

PLAN AND PROFILE KEY MAP

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DRAWING NO. 0G07

SHEET NO. 7 OF 21



* WHERE EXISTING EDGE OF PAVEMENT OR LIP OF GUTTER IS WITHIN 6", EXTEND TO EXISTING EDGE OF PAVEMENT OR LIP OF GUTTER.

ROAD STRUCTURAL SECTION

STREET NAME	R-VALUE[1]	TRAFFIC INDEX	MIN TYPE B AC THICKNESS (INCHES)	MIN CLASS 2 AB THICKNESS (INCHES)
CORTEZ AVENUE	5	5	3	10
SEVILLE AVENUE	5	5	3	10
BARCELONA AVENUE	5	5	3	10

NOTES:

1. BASED ON GEOTECHNICAL ENGINEERING REPORT PREPARED BY MID PACIFIC ENGINEERING, INC.
2. BASED ON SAN JOAQUIN COUNTY STANDARDS.

BEDDING AND MATERIALS

TYPE "A" MATERIAL: 3/8" MINUS IMPORTED SCREENED SAND WITH MIN. SAND EQUIVALENT OF 50 PER CALTEST 217-G ALL GRADATIONS TO BE APPROVED BY COUNTY PRIOR TO CONTRUCTION.

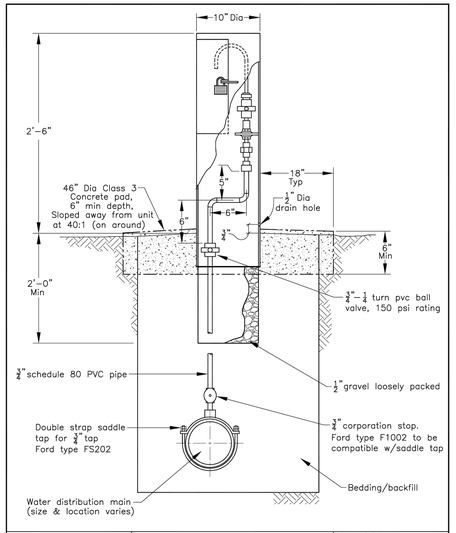
TYPE "B" MATERIAL: CLASS 2 AGGREGATE BASE.

NOTES

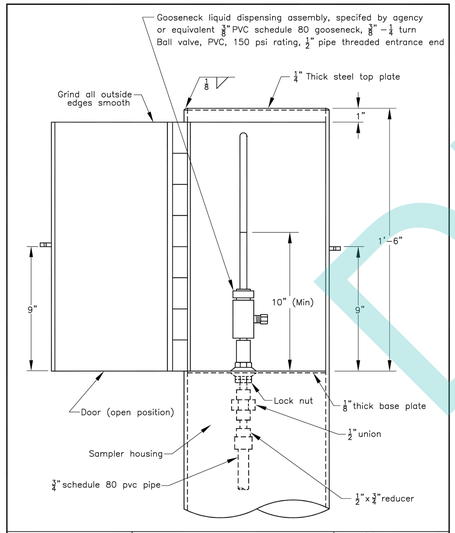
1. COMPACT IN 12" MAX LAYERS TO A MIN RELATIVE COMPACTION OF 95% UNDER PAVEMENT AND 90% OUTSIDE PAVEMENT.
2. COMPACT IN 6" LAYERS TO A MIN RELATIVE COMPACTION OF 90%.
3. RELATIVE COMPACTION OF MATERIALS SHALL BE TESTED IN ACCORDANCE WITH THE STATE OF CALIFORNIA, DEPT. OF TRANSPORTATION TESTING MANUALS, TEST METHOD NO. CALIFORNIA 216 OR 231.
4. 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.
5. ALL EXISTING PAVEMENT SHALL BE NEATLY CUT TO LINE PRIOR TO TRENCH EXCAVATION.
6. WHEN SHOWN BY SOIL COMPOSITION AND COMPATIBILITY, 90% COMPACTION MAY BE USED, WHEN APPROVED BY THE DIRECTOR OF PUBLIC WORKS.
7. SPECIAL BEDDING AND BACKFILL REQUIREMENTS MAY BE SHOWN ON THE PLANS OR SPECIFIED IN THE SPECIAL PROVISIONS.
8. R-29 (MODIFIED) DETAIL TO REPLACE R-29 REFERRED TO IN KEYNOTE 1 ON SHEETS 1C06 TO 1C15.

R-29 (MODIFIED) - TYPICAL TRENCH BACKFILL

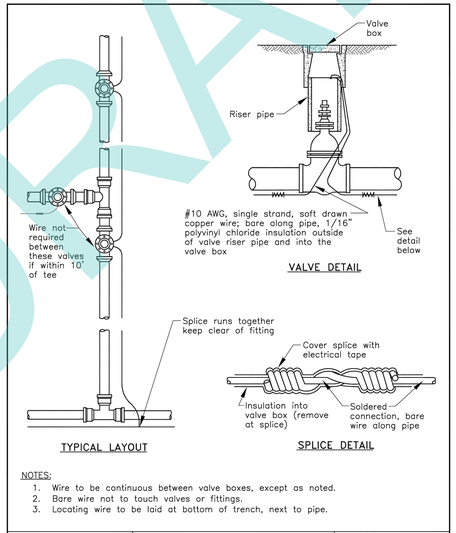
SCALE: NTS



BACTERIOLOGICAL SAMPLING TAP SECTION
COUNTY OF SAN JOAQUIN — DEPARTMENT OF PUBLIC WORKS
Date: DEC 2014 | Std. Dwg. No. W-8



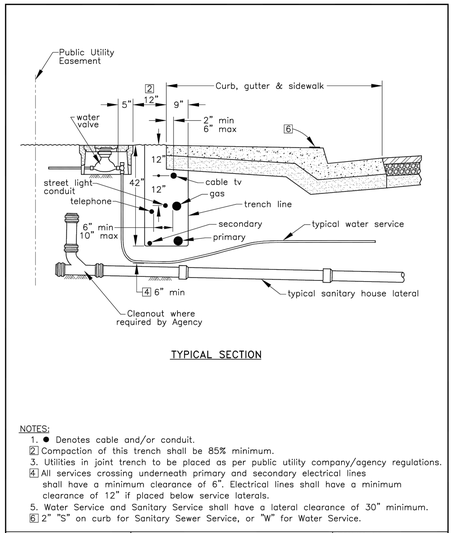
BACTERIOLOGICAL SAMPLING TAP DETAIL
COUNTY OF SAN JOAQUIN — DEPARTMENT OF PUBLIC WORKS
Date: DEC 2014 | Std. Dwg. No. W-9



NOTES:

1. Wire to be continuous between valve boxes, except as noted.
2. Bare wire not to touch valves or fittings.
3. Locating wire to be laid at bottom of trench, next to pipe.

LOCATOR WIRE INSTALLATION
COUNTY OF SAN JOAQUIN — DEPARTMENT OF PUBLIC WORKS
Date: DEC 2014 | Std. Dwg. No. W-11

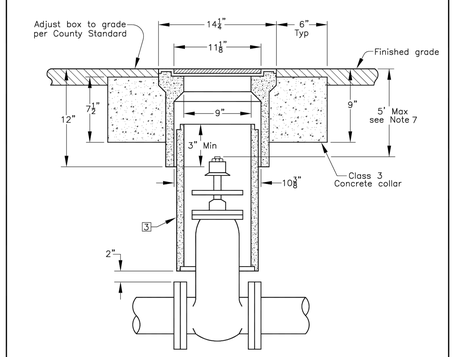


TYPICAL SECTION

NOTES:

1. ● Denotes cable and/or conduit.
2. [2] Compaction of this trench shall be 85% minimum.
3. Utilities in joint trench to be placed as per public utility company/agency regulations.
4. [4] All services crossing underneath primary and secondary electrical lines shall have a minimum clearance of 6". Electrical lines shall have a minimum clearance of 12" if placed below service laterals.
5. Water Service and Sanitary Service shall have a lateral clearance of 30" minimum.
6. [6] 2" "S" on curb for Sanitary Sewer Service, or "W" for Water Service.

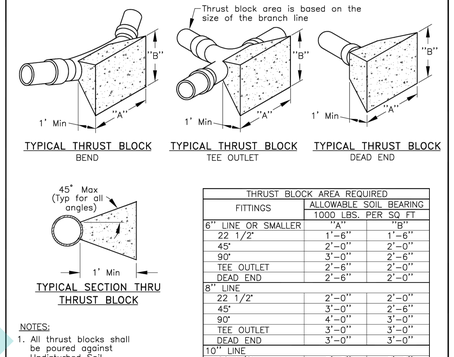
UNDERGROUND UTILITY LOCATIONS
COUNTY OF SAN JOAQUIN — DEPARTMENT OF PUBLIC WORKS
Date: DEC 2014 | Std. Dwg. No. W-12



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. [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-3.
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
COUNTY OF SAN JOAQUIN — DEPARTMENT OF PUBLIC WORKS
Date: DEC 2014 | Std. Dwg. No. W-5

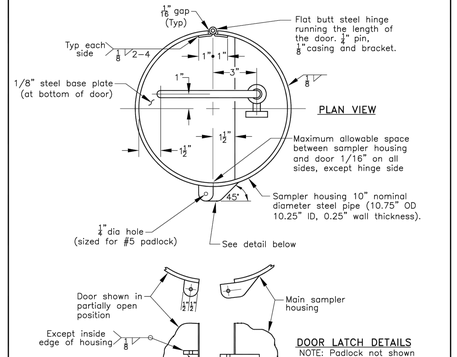


FITTINGS	THRUST BLOCK AREA REQUIRED ALLOWABLE SOIL BEARING 1000 LBS. PER SQ FT "A"	"B"
6" LINE OR SMALLER		
22 1/2°	1'-6"	1'-6"
45°	2'-0"	2'-0"
90°	3'-0"	2'-6"
TEE OUTLET	2'-6"	2'-0"
DEAD END	2'-6"	2'-0"
8" LINE		
22 1/2°	2'-0"	2'-0"
45°	3'-0"	2'-6"
90°	4'-0"	3'-0"
TEE OUTLET	3'-0"	3'-0"
DEAD END	3'-0"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

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 BLOCK CHART
COUNTY OF SAN JOAQUIN — DEPARTMENT OF PUBLIC WORKS
Date: DEC 2014 | Std. Dwg. No. W-6



NOTES:

1. Interior & exterior shall be painted with CR-1 coating or approved equal, prior to installation. Color (silver) shall be approved by the Engineer. One exterior finish coat shall be applied after installation.
2. Contractor shall provide one padlock for each sampling tap as approved by the owner.
3. Housing door shall open towards street and located a min of 18" behind sidewalk or 6' behind curb/edge of pavement where no sidewalk exists.

BACTERIOLOGICAL SAMPLING TAP
COUNTY OF SAN JOAQUIN — DEPARTMENT OF PUBLIC WORKS
Date: DEC 2014 | Std. Dwg. No. W-7

BLACKWATER CONSULTING ENGINEERS
602 LYELL DRIVE, MODESTO, CA 95356 • PH: 209.322.1820

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

NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	APP

PROJECT NO. J24313:24C
DESIGNED BY PJS
DRAWN BY NYB
CHECKED BY AJV
DATE JULY 2025

PUBLIC WORKS San Joaquin County Working for YOU

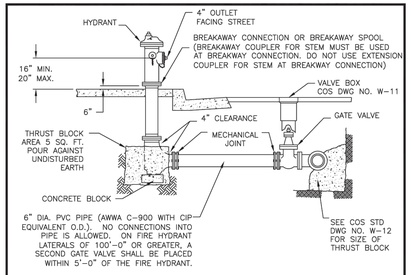
COUNTY OF SAN JOAQUIN - COLONIAL HEIGHTS WATER MAIN REPLACEMENT PROJECT PHASE 1B

STANDARD DETAILS

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DRAWING NO. 0C01

SHEET NO. 8 OF 21



HYDRANTS

1. HYDRANTS SHALL BE ONE OF THE FOLLOWING: CLOW "MEDALLION", KENNEDY "GUARDIAN K81" OR MUELLER "SUPER CENTURIAN" (VERTICAL SHOE HYDRANTS ONLY).
2. HYDRANTS SHALL HAVE 2-1/2" AND 4" NST OUTLETS, WHICH SHALL OPEN COUNTER CLOCKWISE.
3. HYDRANTS SHALL HAVE 1-1/4" PENTAGON OPERATING AND CAP NUTS.
4. DRIP PLUGS, IF ANY, SHALL BE PLUGGED.
5. HYDRANTS SHALL BE LOCATED AT P/L EXTENSION, AT END OF CURB RETURN, 3' MIN. FROM DRIVEWAYS OR AS SHOWN ON PLANS.

HYDRANT "T" TO DUCTILE IRON PIPE OR PVC C-900 FOR NEW DEVELOPMENT

CITY WATER SYSTEM:
RING TITE BY RING TITE BY FLANGE.
CALIFORNIA WATER SERVICE CO.:
GRIP TITE BY GRIP TITE BY FLANGE.

CONTACT RESPECTIVE WATER SYSTEM REGARDING CONNECTION TO PIPE BY OTHER MATERIAL.

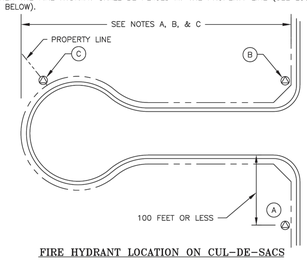
GATE VALVES

CLOW "RESILIENT WEDGE"
MUELLER "RESILIENT SEAT"
AMERICAN DARLING
KENNEDY RESILIENT
WATEROUS SERIES 500

FIRE HYDRANT	REVISION NO.	APPROVED BY CITY ENGINEER:
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	4	DATE: 09/27/2016
	SCALE: NONE	SUPERSEDES DWG. DATED: 01/09/22
		DRAWING NO.: W-13

IF THE LENGTH OF THE CUL-DE-SAC IS:

A. LESS THAN 250'-0", THEN THE FIRE HYDRANT SHALL BE PLACED WITHIN 100'-0" OF THE CUL-DE-SAC ENTRANCE AND NO FIRE HYDRANT SHALL BE PLACED IN THE CUL-DE-SAC (SEE LOCATION A, BELOW).
B. GREATER THAN 250'-0" BUT LESS THAN 400'-0", THEN THE FIRE HYDRANT SHALL BE PLACED AT THE CUL-DE-SAC ENTRANCE AND NO FIRE HYDRANT SHALL BE PLACED IN THE CUL-DE-SAC (SEE LOCATION B, BELOW).
C. GREATER THAN 400'-0", THEN THE FIRE HYDRANT SHALL BE PLACED AT THE PROPERTY LINE (SEE LOCATION C BELOW).

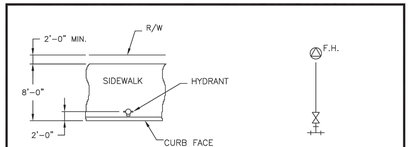


FIRE HYDRANT LOCATION ON CUL-DE-SACS

NOTES:

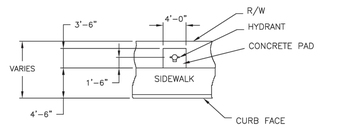
1. FIRE HYDRANTS SHALL BE LOCATED ON ALL REQUIRED ACCESS ROADWAYS AND CITY STREETS ACCORDING TO THE FOLLOWING REQUIREMENTS:
   a) 300'-0" ON CENTER FOR ALL COMMERCIAL/INDUSTRIAL PROPERTIES.
   b) 400'-0" ON CENTER FOR GROUP R-1 OCCUPANCIES AS DEFINED IN THE UBC (UNIFORM BUILDING CODE).
   c) 600'-0" ON CENTER FOR GROUP R-3 OCCUPANCIES AS DEFINED IN THE UBC (UNIFORM BUILDING CODE).
2. DOG-LEGGED CUL-DE-SACS REQUIRE FIRE HYDRANT(S) TO BE LOCATED BY THE FIRE MARSHAL.

FIRE HYDRANT SPACING	REVISION NO.	APPROVED BY CITY ENGINEER:
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	3	DATE: 09/27/2016
	SCALE: NONE	SUPERSEDES DWG. DATED: 01/09/22
		DRAWING NO.: W-14

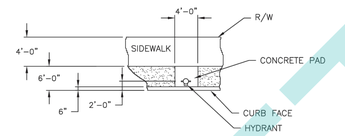


COMMERCIAL

SYMBOL ON PLANS



WITHOUT PLANTER STRIP



WITH PLANTER STRIP

FIRE HYDRANT LOCATION	REVISION NO.	APPROVED BY CITY ENGINEER:
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	5	DATE: 09/27/2016
	SCALE: NONE	SUPERSEDES DWG. DATED: 11/25/03
		DRAWING NO.: W-15

BLACKWATER CONSULTING ENGINEERS
602 LYELL DRIVE, MODESTO, CA 95356 • PH: 209.322.1820

Know what's below. Call before you dig. 811

NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	APP

PROJECT NO. J24313:24C
DESIGNED BY PJS
DRAWN BY NYB
CHECKED BY AJV
DATE JULY 2025

PUBLIC WORKS San Joaquin County Working for YOU

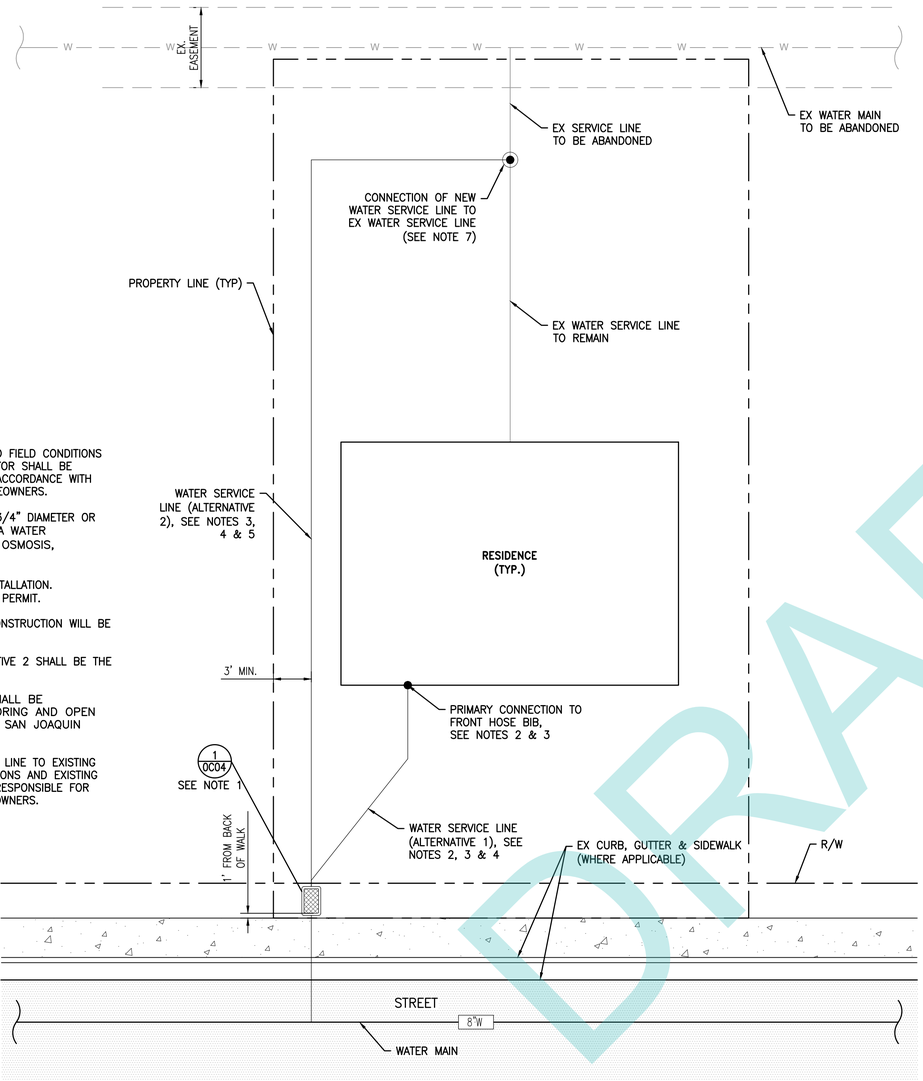
COUNTY OF SAN JOAQUIN - COLONIAL HEIGHTS WATER MAIN REPLACEMENT PROJECT PHASE 1B

STANDARD DETAILS

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DRAWING NO. 0C02

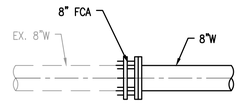
SHEET NO. 9 OF 21



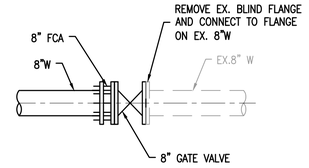
1 - IN-TRACT WATER SERVICE CONNECTION (FRONT AND BACKYARD)
DETAIL
SCALE: NTS

NOTES:

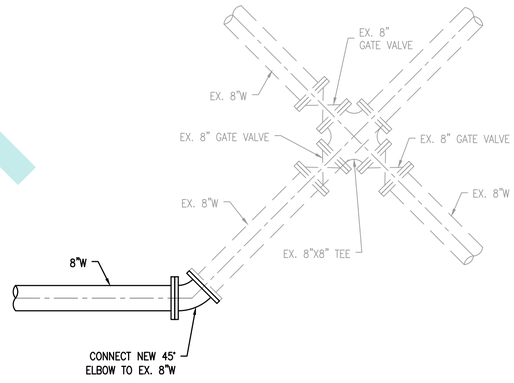
1. EXACT WATER METER BOX LOCATION MAY VARY DUE TO FIELD CONDITIONS AND EXISTING HOME OWNER IMPROVEMENTS. CONTRACTOR SHALL BE RESPONSIBLE FOR WATER METER BOX LOCATIONS, IN ACCORDANCE WITH CONVERSATIONS WITH SAN JOAQUIN COUNTY AND HOMEOWNERS.
2. FOR ALTERNATIVE 1, THE FRONT HOSE BIB MUST BE 3/4" DIAMETER OR LARGER AND INTERIOR PLUMBING MUST NOT INCLUDE A WATER TREATMENT SYSTEM (WATER SOFTENER, REVERSE OSMOSIS, FILTRATION).
3. ALTERNATE 1 IS COMMON/PREFERRED METHOD OF INSTALLATION. ALTERNATIVE 2 WILL BE USED INSTEAD IF CONDITIONS PERMIT.
4. ANY LANDSCAPING OR HARDSCAPE DAMAGE DURING CONSTRUCTION WILL BE REPLACED IN-KIND.
5. IF A WATER TREATMENT SYSTEM IS PRESENT, ALTERNATIVE 2 SHALL BE THE METHOD OF CONNECTION USED.
6. SERVICE LATERALS AND WATER SERVICE LINES SHALL BE HORIZONTAL DIRECTIONAL DRILLED. PNEUMATIC BORING AND OPEN TRENCH MAY BE ALLOWED WITH APPROVAL FROM SAN JOAQUIN COUNTY PRIOR TO TRENCHING.
7. EXACT CONNECTION LOCATION OF NEW WATER SERVICE LINE TO EXISTING WATER SERVICE LINE MAY VARY DUE TO FIELD CONDITIONS AND EXISTING HOME OWNER IMPROVEMENT. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH SAN JOAQUIN COUNTY AND HOMEOWNERS.



2 - 1C06 CONNECT TO EXISTING WATER
DETAIL
SCALE: NTS



3 - 1C09 CONNECT TO EXISTING WATER
DETAIL
SCALE: NTS



4 - 1C07 CONNECT TO EXISTING WATER
DETAIL
SCALE: NTS

BLACKWATER CONSULTING ENGINEERS
602 LYELL DRIVE, MODESTO, CA 95356 • PH: 209.322.1820

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

NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	APP

PROJECT NO. J24313:24C
DESIGNED BY PJS
DRAWN BY NYB
CHECKED BY AJV
DATE JULY 2025

PUBLIC WORKS San Joaquin County Working for YOU

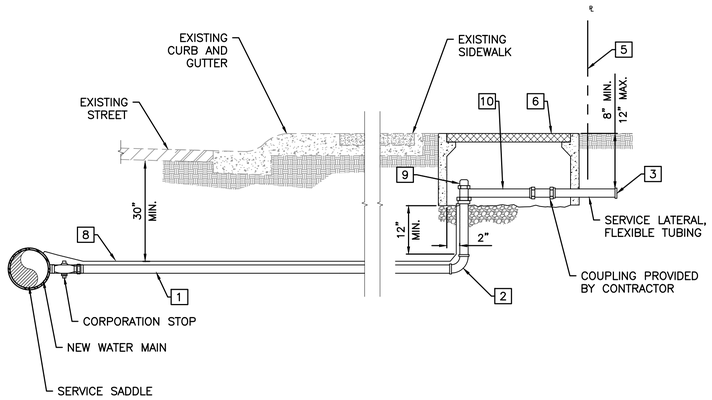
COUNTY OF SAN JOAQUIN - COLONIAL HEIGHTS WATER MAIN REPLACEMENT PROJECT PHASE 1B

DETAILS

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DRAWING NO. 0C03
SHEET NO. 10 OF 21

90% IMPROVEMENT PLANS

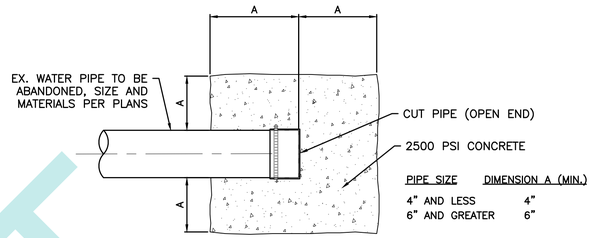


NOTES:

1. 1" DIA. MINIMUM LINE TO EACH LOT
2. SERVICE PIPE TO BE CONTINUOUS (NO JOINTS) BETWEEN MAIN AND ANGLE METER STOP. 90 DEG. COMPRESSION X COMPRESSION ELBOW PER AWWA STANDARDS. INSERT MAY BE USED WHERE APPROVED BY SAN JOAQUIN COUNTY.
3. GATE VALVE IS REQUIRED PRIOR TO ANY POINT OF CONNECTION.
4. THE LOCATION OF THE SERVICE SADDLE SHALL BE A MIN. OF 24" FROM ANOTHER SERVICE SADDLE, BELL, SPIGOT, OR OTHER FITTING.
5. METER BOXES MAY BE ADJACENT TO PROPERTY OR EASEMENT LINE WITH PRIOR APPROVAL SAN JOAQUIN COUNTY.
6. USE CHRISTY B16 METER BOX WITH R-SERIES, FLUSH SOLID COVER OR EQUIVALENT. FOR METER BOXES LOCATED IN DRIVEWAY AREAS, USE CHRISTY B1017 METER BOX AND TRAFFIC COVERS THAT MEET HS20 44 LOADING. CONTRACTOR SHALL GET APPROVAL FOR METER BOXES LOCATED WITHIN DRIVEWAYS PRIOR TO CONSTRUCTION.
7. APPURTENANCES PER SAN JOAQUIN COUNTY REQUIREMENTS.
8. LOCATOR WIRE REQUIRED BY SAN JOAQUIN COUNTY.
9. BALL ANGLE METER STOP WITH LOCK LUG. (AFTER FLUSHING SERVICE, INSTALL LOCK AS APPROVED BY SAN JOAQUIN COUNTY).
10. SPOOL EQUAL TO THE METER DIMENSION PLACED IN BOX.
11. BASED ON EXITING SITE CONDITIONS AND SERVICES LATERAL LOCATION. CONTRACTOR TO DETERMINE APPROPRIATE ALIGNMENT AND METER BOX LOCATION.

1 / 0C02 — 1" WATER SERVICE LINE
TYPICAL DETAIL

SCALE: NTS



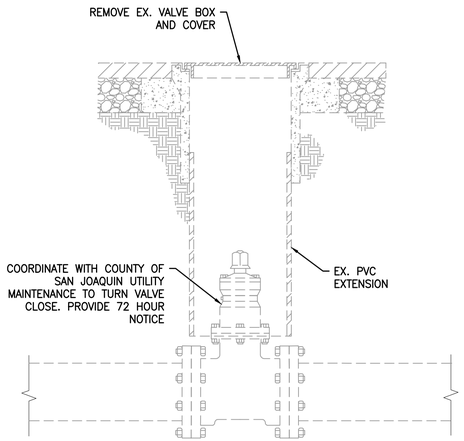
PIPE SIZE	DIMENSION A (MIN.)
4" AND LESS	4"
6" AND GREATER	6"

NOTE:

DRAIN WATERLINE COMPLETELY BEFORE PLUGGING. ALL WATER DRAINED FROM PIPELINE SHALL BE DISPOSED OF BY CONTRACTOR.

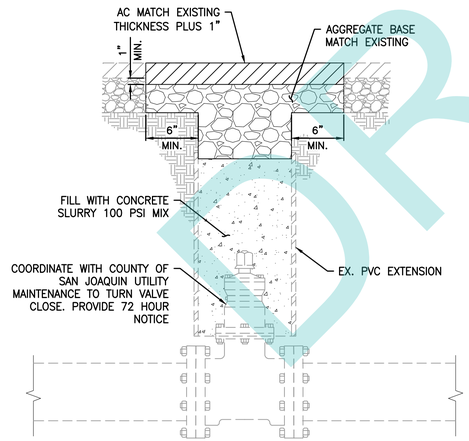
2 / VAR — ABANDONED PIPE CAP
DETAIL

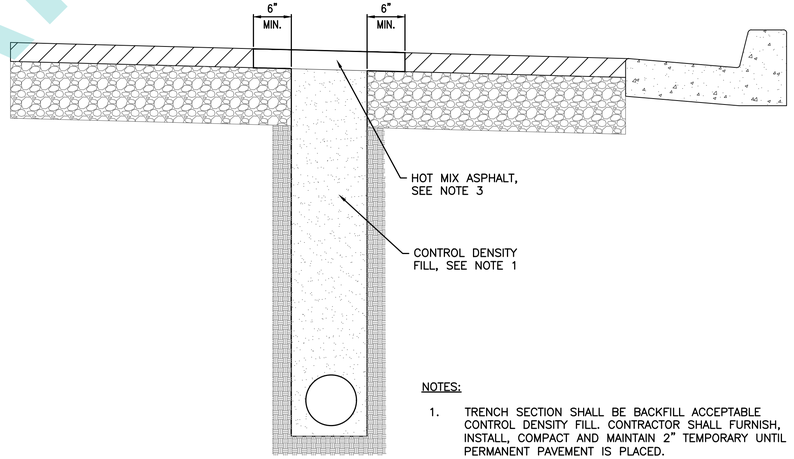
SCALE: NTS



3 / VAR — ABANDON EXISTING VALVE AND VALVE BOX
TYPICAL DETAIL

SCALE: NTS





NOTES:

1. TRENCH SECTION SHALL BE BACKFILL ACCEPTABLE CONTROL DENSITY FILL. CONTRACTOR SHALL FURNISH, INSTALL, COMPACT AND MAINTAIN 2" TEMPORARY UNTIL PERMANENT PAVEMENT IS PLACED.
2. PRIME COAT REQUIRED ABOVE CONTROL DENSITY FILL.
3. HOT MIX ASPHALT MINIMUM THICKNESS FOR TRENCH RESTORATION SHALL BE MINIMUM THICKNESS AS SPECIFIED ON THE PLANS.

4 / - — POTHOLING FOR DESIGN & CONSTRUCTION
DETAIL

SCALE: NTS

BLACKWATER CONSULTING ENGINEERS
602 LYELL DRIVE, MODESTO, CA 95356 • PH:209.322.1820

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

NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	APP

PROJECT NO. J24313:24C
DESIGNED BY PJS
DRAWN BY NYB
CHECKED BY AJV
DATE JULY 2025

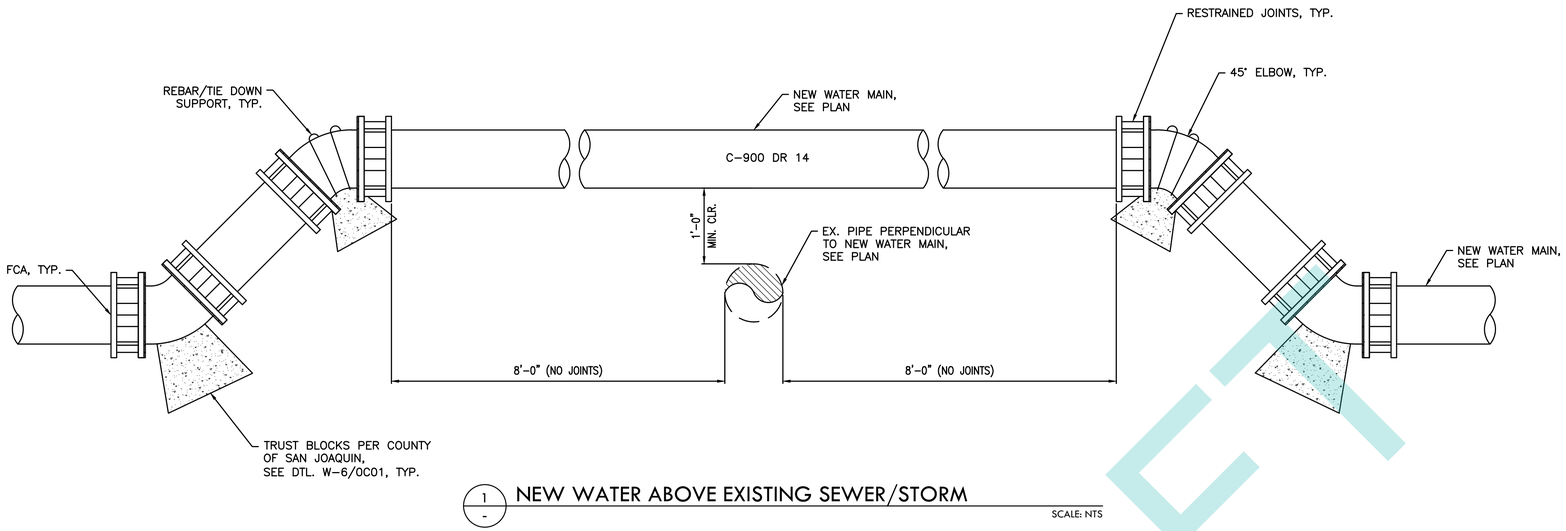
PUBLIC WORKS San Joaquin County Working for YOU

COUNTY OF SAN JOAQUIN - COLONIAL HEIGHTS WATER MAIN REPLACEMENT PROJECT PHASE 1B

DETAILS

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DRAWING NO. 0C04
SHEET NO. 11 OF 21

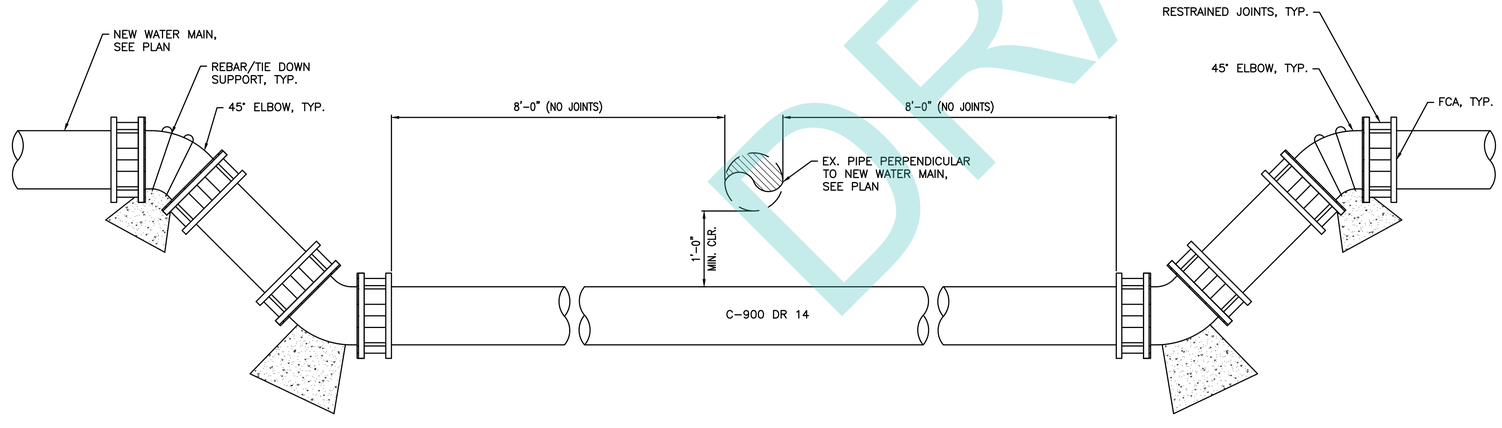


1 - NEW WATER ABOVE EXISTING SEWER/STORM

SCALE: NTS

NOTES:

1. AT CROSSING LOCATIONS, A MINIMUM OF 12" OF VERTICAL CLEARANCE IS REQUIRED FROM OUTSIDE EDGE OF WATER PIPE TO OUTSIDE EDGE OF STORM DRAIN OR SEWER PIPE.
2. WHERE NEW PIPE CROSSES ABOVE EXISTING SEWER OR STORM DRAIN LINES, NO CONNECTION JOINTS SHALL BE MADE WITHIN 8' IN EACH DIRECTION OF CROSSING WITH NO PIPE RESTRICTIONS.
3. PROPOSED WATER PIPE MATERIAL AT STORM DRAIN OR SEWER PIPE CROSSINGS SHALL BE C-900 (DR-14) PVC PIPE.
4. REQUIRED THRUST BLOCK BEARING AREAS SHALL BE IN ACCORDANCE WITH SAN JOAQUIN COUNTY STANDARD W-6. CONTRACTOR SHALL ENSURE THE PROPOSED PIPE IS SUPPORTED AGAINST VERTICAL FORCES. AT UNRESTRAINED 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 SAN JOAQUIN COUNTY TO ASSURE SECURE ATTACHMENT TO THE VERTICAL BEND.
5. CONTRACTOR CAN INSTALL RESTRAINED JOINTS AS AN ALTERNATIVE, WITH APPROVAL FROM SAN JOAQUIN COUNTY AT NO ADDITIONAL COST. RESTRAINED JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
6. WHEN AN 8' MINIMUM JOINT SEPARATION CANNOT BE MET, A 4' MINIMUM JOINT SEPARATION SHALL BE PROVIDED WITH APPROVAL FROM THE CALIFORNIA DIVISION OF DRINKING WATER.



2 - NEW WATER BELOW EXISTING SEWER/STORM

SCALE: NTS

NOTES:

1. AT CROSSING LOCATIONS, A MINIMUM OF 12" OF VERTICAL CLEARANCE IS REQUIRED FROM OUTSIDE EDGE OF WATER PIPE TO OUTSIDE EDGE OF STORM DRAIN OR SEWER PIPE.
2. WHERE NEW PIPE CROSSES BELOW EXISTING SEWER OR STORM DRAIN LINES, NO CONNECTION JOINTS SHALL BE MADE WITHIN 8' IN EACH DIRECTION OF CROSSING WITH NO PIPE RESTRICTIONS.
3. PROPOSED WATER PIPE MATERIAL AT STORM DRAIN OR SEWER PIPE CROSSINGS SHALL BE C-900 (DR-14) PVC PIPE.
4. REQUIRED THRUST BLOCK BEARING AREAS SHALL BE IN ACCORDANCE WITH SAN JOAQUIN COUNTY STANDARD W-6. CONTRACTOR SHALL ENSURE THE PROPOSED PIPE IS SUPPORTED AGAINST VERTICAL FORCES. AT UNRESTRAINED 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 SAN JOAQUIN COUNTY TO ASSURE SECURE ATTACHMENT TO THE VERTICAL BEND.
5. CONTRACTOR CAN INSTALL RESTRAINED JOINTS AS AN ALTERNATIVE, WITH APPROVAL FROM SAN JOAQUIN COUNTY AT NO ADDITIONAL COST. RESTRAINED JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
6. WHEN AN 8' MINIMUM JOINT SEPARATION CANNOT BE MET, A 4' MINIMUM JOINT SEPARATION SHALL BE PROVIDED WITH APPROVAL FROM THE CALIFORNIA DIVISION OF DRINKING WATER.

BLACKWATER CONSULTING ENGINEERS
602 LYELL DRIVE, MODESTO, CA 95356 • PH:209.322.1820

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

NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	APP

PROJECT NO. J24313:24C
DESIGNED BY PJS
DRAWN BY NYB
CHECKED BY AJV
DATE JULY 2025

PUBLIC WORKS San Joaquin County Working for YOU

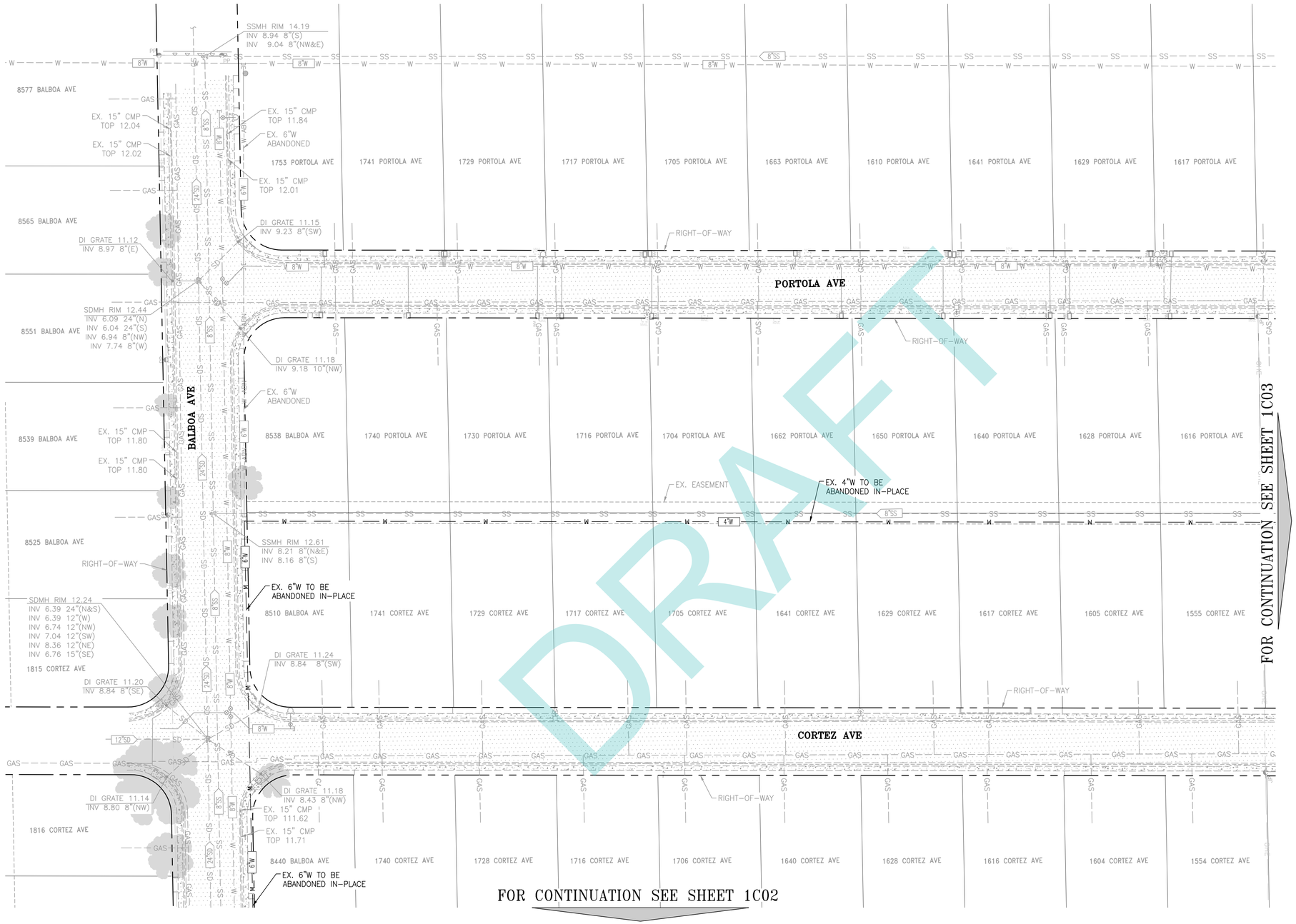
COUNTY OF SAN JOAQUIN - COLONIAL HEIGHTS WATER MAIN REPLACEMENT PROJECT PHASE 1B

PIPE CROSSING DETAILS

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DRAWING NO. 0C05

SHEET NO. 12 OF 21



KEY MAP

GENERAL NOTES

1. ALL HOMES SHALL BE DISCONNECTED FROM ABANDONED WATER LINES IN ACCORDANCE WITH THE WATER NOTES ON SHEET 0G02 AND DETAIL 1/0C03.
2. CONTRACTOR TO USE CAUTION AND PROTECT ALL EXISTING CORRUGATED METAL PIPE (CMP) AT ALL TIMES.
3. CONTRACTOR TO LOCATE ALL VALVES THAT NEED TO BE ABANDONED PER DETAIL 4, SHEET 0C03. VALVES TO BE ABANDONED ARE NOT CALLED OUT ON THE PLANS.

N

0 40 80

SCALE: 1" = 40'

90% IMPROVEMENT PLANS

\\12313 SAN JOAQUIN CIVIL\CAD\TASK 24C PHASE 1B UMP PLANS\PLANSET\09_1C01-1C04-TOPO DEMO.DWG PLOT: 7/9/2025 1:41:05 PM BY NAHRAIN BENJAMIN

BLACKWATER CONSULTING ENGINEERS
602 LYELL DRIVE, MODESTO, CA 95356 • PH:209.322.1820

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

NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	APP

PROJECT NO. J24313:24C
DESIGNED BY PJS
DRAWN BY NYB
CHECKED BY AJV
DATE JULY 2025

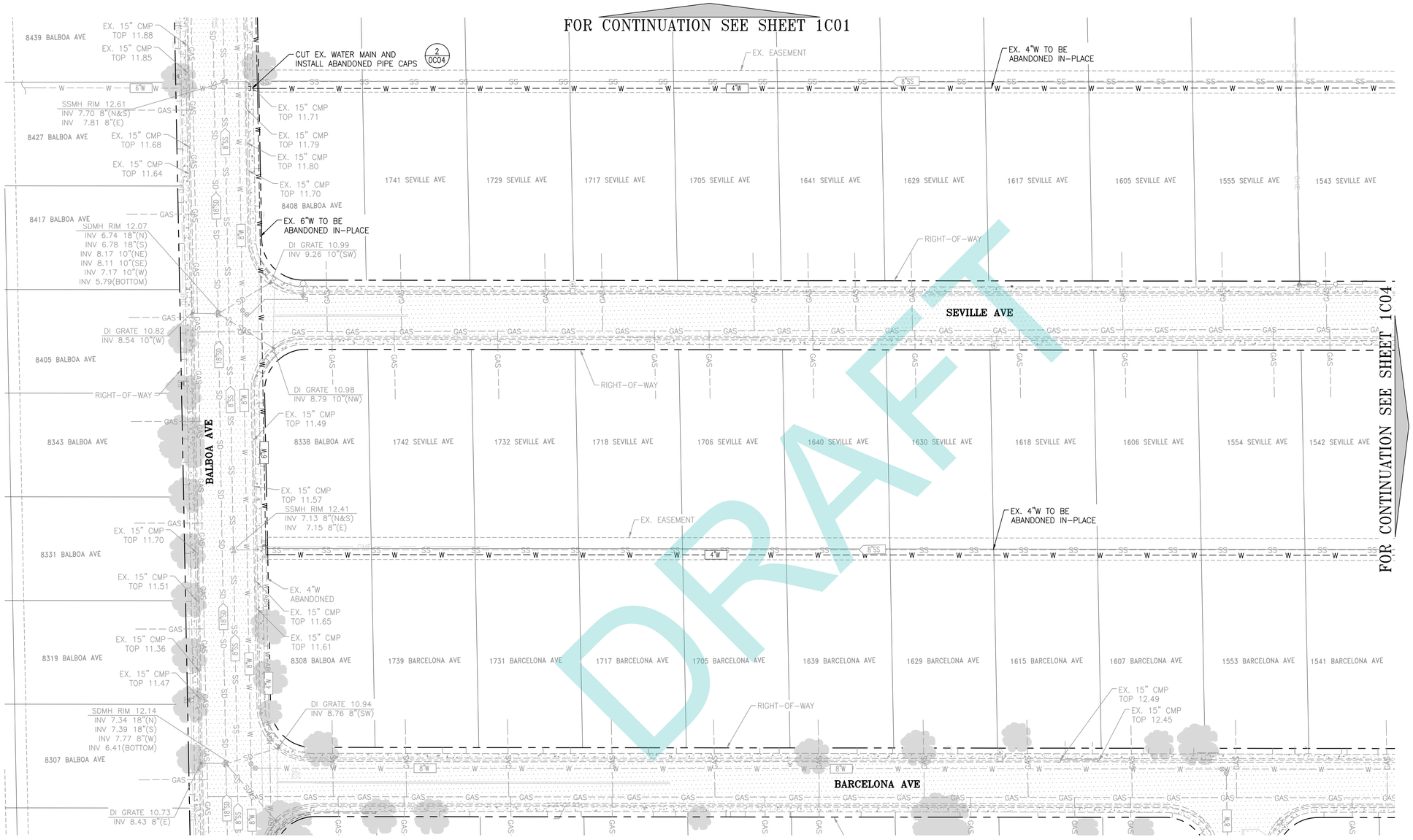
PUBLIC WORKS San Joaquin County Working for YOU

COUNTY OF SAN JOAQUIN - COLONIAL HEIGHTS WATER MAIN REPLACEMENT PROJECT PHASE 1B

TOPOGRAPHY AND DEMOLITION PLAN

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DRAWING NO. 1C01
SHEET NO. 13 OF 21



KEY MAP

GENERAL NOTES

1. ALL HOMES SHALL BE DISCONNECTED FROM ABANDONED WATER LINES IN ACCORDANCE WITH THE WATER NOTES ON SHEET 0G02 AND DETAIL 1/0C03.
2. CONTRACTOR TO USE CAUTION AND PROTECT ALL EXISTING CORRUGATED METAL PIPE (CMP) AT ALL TIMES.
3. CONTRACTOR TO LOCATE ALL VALVES THAT NEED TO BE ABANDONED PER DETAIL 4, SHEET 0C03. VALVES TO BE ABANDONED ARE NOT CALLED OUT ON THE PLANS.

N

0 40 80

SCALE: 1" = 40'

90% IMPROVEMENT PLANS

BLACKWATER CONSULTING ENGINEERS
602 LYELL DRIVE, MODESTO, CA 95356 • PH: 209.322.1820

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

NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	APP

PROJECT NO. J24313:24C
DESIGNED BY PJS
DRAWN BY NYB
CHECKED BY AJV
DATE JULY 2025

PUBLIC WORKS San Joaquin County Working for YOU

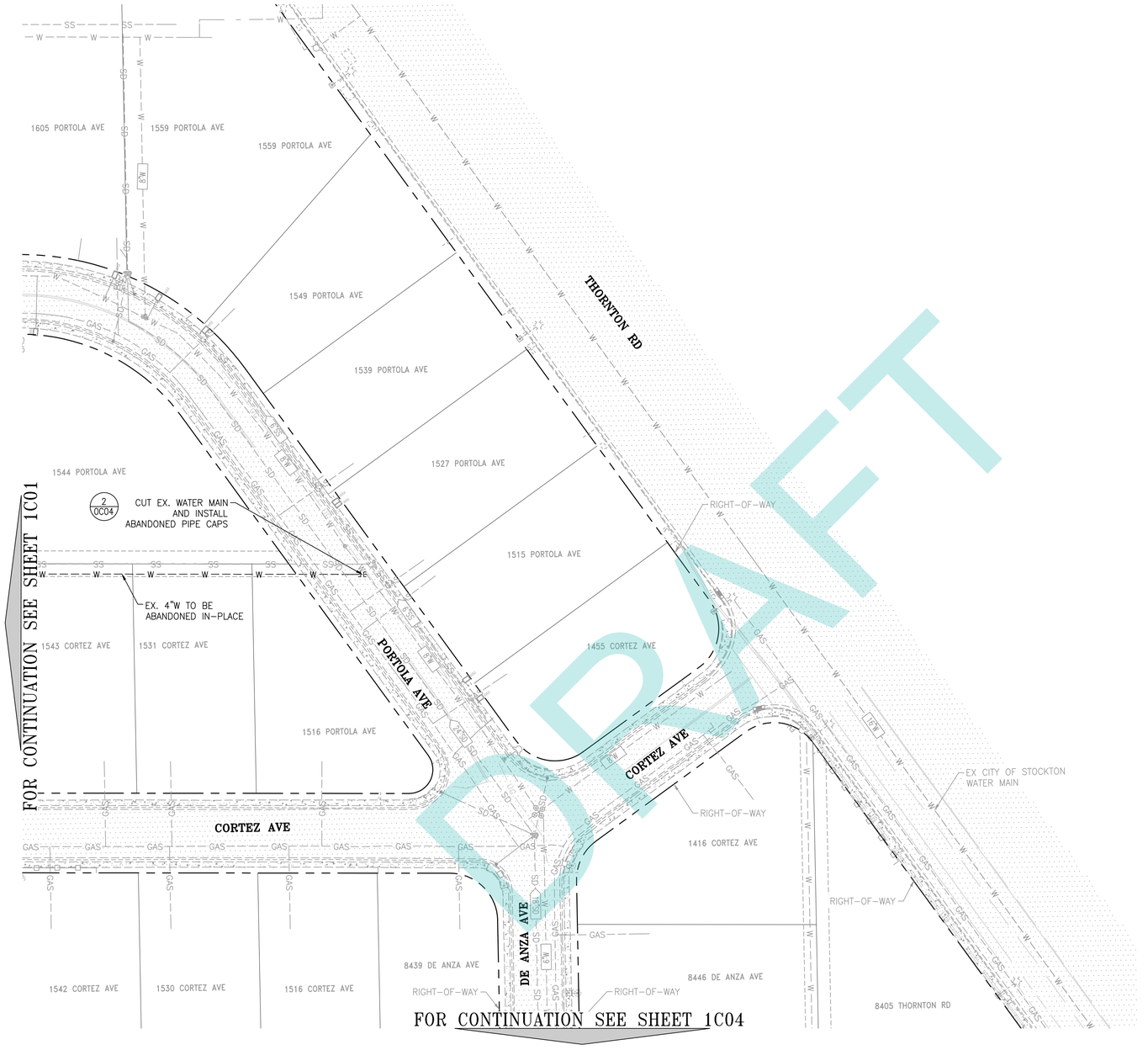
COUNTY OF SAN JOAQUIN - COLONIAL HEIGHTS WATER MAIN REPLACEMENT PROJECT PHASE 1B

TOPOGRAPHY AND DEMOLITION PLAN

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DRAWING NO. 1C02

SHEET NO. 14 OF 21



KEY MAP

GENERAL NOTES

1. ALL HOMES SHALL BE DISCONNECTED FROM ABANDONED WATER LINES IN ACCORDANCE WITH THE WATER NOTES ON SHEET 0G02 AND DETAIL 1/0C03.
2. CONTRACTOR TO USE CAUTION AND PROTECT ALL EXISTING CORRUGATED METAL PIPE (CMP) AT ALL TIMES.
3. CONTRACTOR TO LOCATE ALL VALVES THAT NEED TO BE ABANDONED PER DETAIL 4, SHEET 0C03. VALVES TO BE ABANDONED ARE NOT CALLED OUT ON THE PLANS.

N

0 40 80

SCALE: 1" = 40'

90% IMPROVEMENT PLANS

BLACKWATER CONSULTING ENGINEERS
602 LYELL DRIVE, MODESTO, CA 95356 • PH: 209.322.1820

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

NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	APP

PROJECT NO. J24313:24C
DESIGNED BY PJS
DRAWN BY NYB
CHECKED BY AJV
DATE JULY 2025

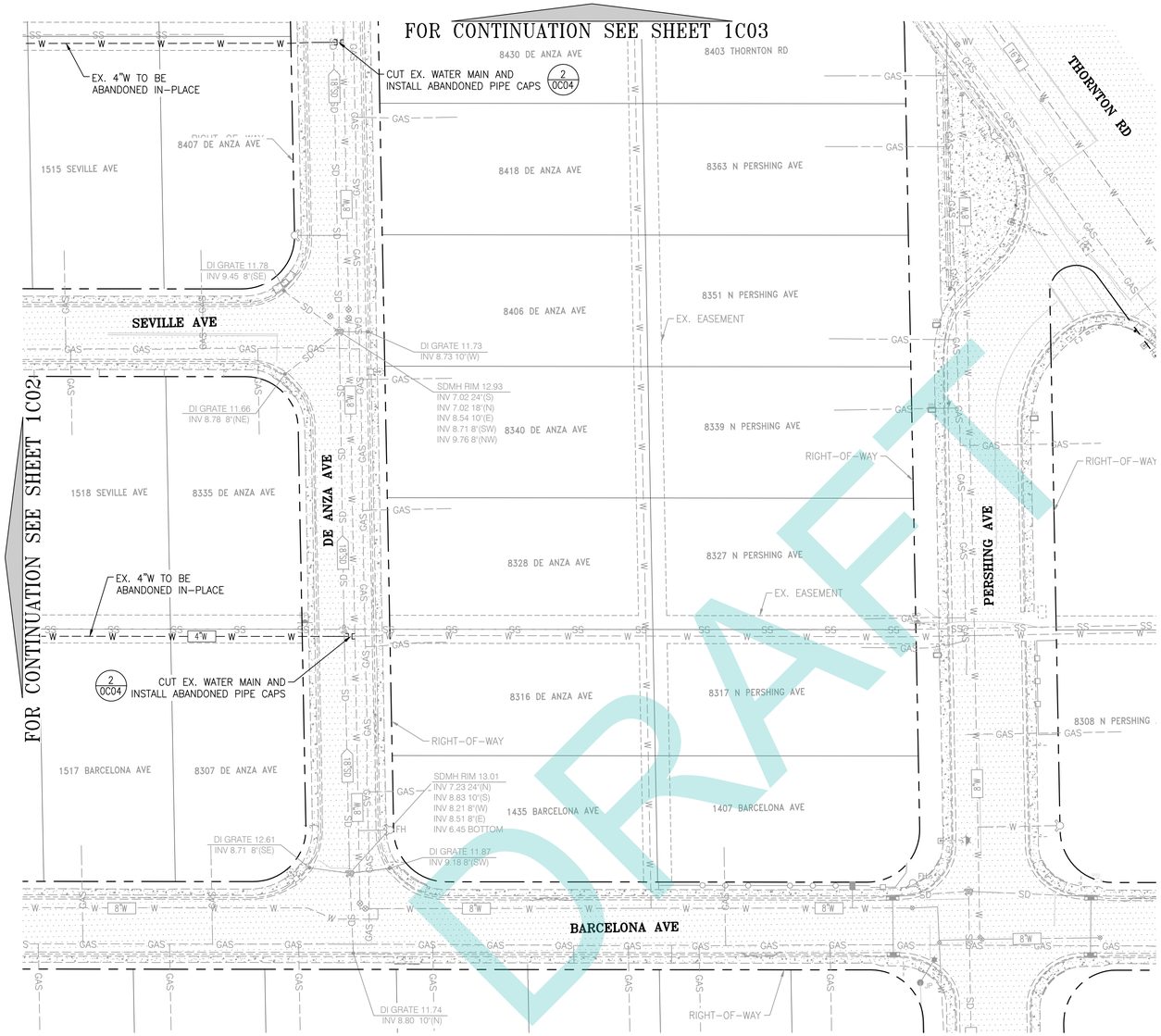
PUBLIC WORKS San Joaquin County Working for YOU

COUNTY OF SAN JOAQUIN - COLONIAL HEIGHTS WATER MAIN REPLACEMENT PROJECT PHASE 1B

TOPOGRAPHY AND DEMOLITION PLAN

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DRAWING NO. 1C03
SHEET NO. 15 OF 21



KEY MAP

GENERAL NOTES

1. ALL HOMES SHALL BE DISCONNECTED FROM ABANDONED WATER LINES IN ACCORDANCE WITH THE WATER NOTES ON SHEET 0G02 AND DETAIL 1/0C03.
2. CONTRACTOR TO USE CAUTION AND PROTECT ALL EXISTING CORRUGATED METAL PIPE (CMP) AT ALL TIMES.
3. CONTRACTOR TO LOCATE ALL VALVES THAT NEED TO BE ABANDONED PER DETAIL 4, SHEET 0C03. VALVES TO BE ABANDONED ARE NOT CALLED OUT ON THE PLANS.

N

0 40 80

SCALE: 1" = 40'

90% IMPROVEMENT PLANS

I:\J24313 SAN JOAQUIN CNTY\CAD\1C04.DWG 7/9/2025 1:29:13 PM BY MARIAN BENJAMIN

BLACKWATER CONSULTING ENGINEERS
602 LYELL DRIVE, MODESTO, CA 95356 • PH: 209.322.1820

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

NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	APP

PROJECT NO. J24313:24C
DESIGNED BY PJS
DRAWN BY NYB
CHECKED BY AJV
DATE JULY 2025

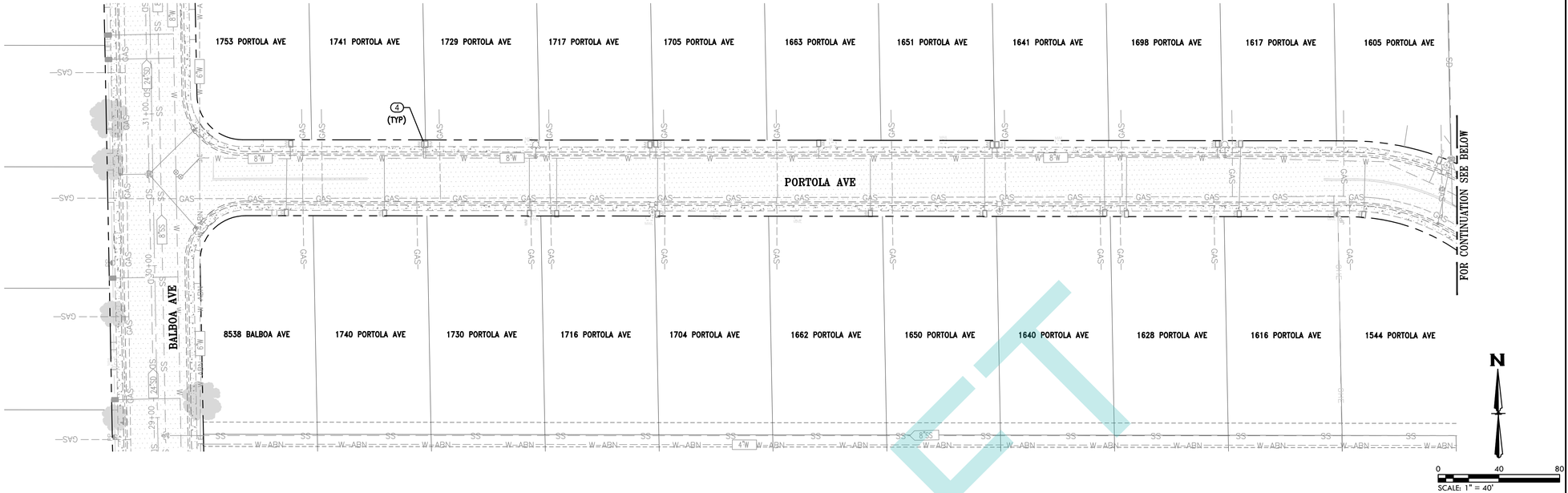
PUBLIC WORKS San Joaquin County Working for YOU

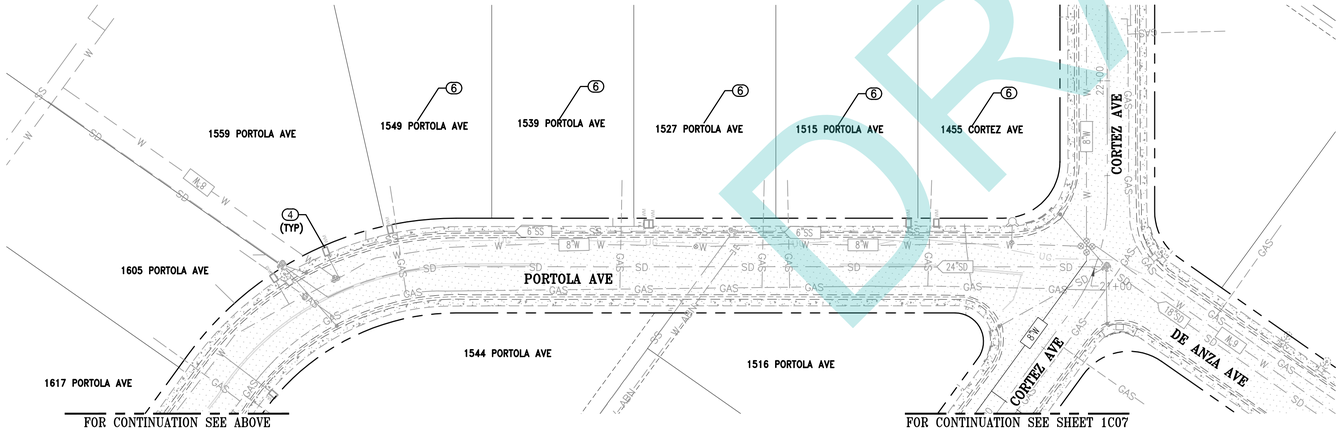
COUNTY OF SAN JOAQUIN - COLONIAL HEIGHTS WATER MAIN REPLACEMENT PROJECT PHASE 1B

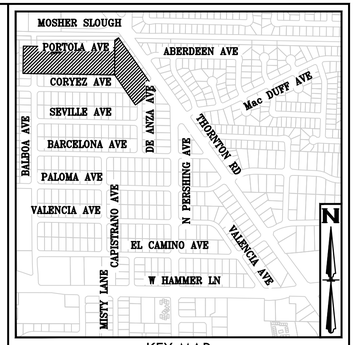
TOPOGRAPHY AND DEMOLITION PLAN

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DRAWING NO. 1C04
SHEET NO. 16 OF 21







KEY MAP

GENERAL NOTES

1. BE AWARE OF OVERHEAD POWER AND UTILITY LINES AND TREES IN AND AROUND AREA OF WORK.
2. NEW WATER MAINS SHALL BE AWWA C-900 DR 18 CLASS 150 PVC PIPE UNLESS OTHERWISE NOTED.
3. WATERLINE INSTALLED WITH LESS THAN 10' CLEAR HORIZONTAL SEPARATION FROM SEWER SHALL BE C-900 DR 14 PIPE MATERIAL.
4. ALL HORIZONTAL AND VERTICAL CURVES IN THE PIPE SHALL MEET THE MINIMUM CURVATURE RADIUS AS SPECIFIED BY THE PIPE MANUFACTURER.
5. CONTRACTOR TO PROVIDE MINIMUM PIPE SEPARATION PER SAN JOAQUIN COUNTY STANDARDS. THE CALIFORNIA REGULATIONS RELATED TO DRINKING WATER, AND DETAILS 1 AND 2, SEE SHEET 0C05.

KEY NOTES

1. CONTRACTOR TO TRENCH AND REPLACE PAVEMENT FOR CONSTRUCTION OF NEW WATER LINE DETAIL R-29 MODIFIED, SHEET 0C01.
2. CONTRACTOR TO INSTALL AND/OR REPLACE FIRE HYDRANT AND VALVE ASSEMBLIES PER CITY OF STOCKTON STANDARDS DWG. NO. W-13. W-14, AND W-15.
3. CONTRACTOR TO INSTALL GATE VALVE AND VALVE BOXES PER SAN JOAQUIN COUNTY STANDARDS DWG. NO. W-5.
4. RESIDENTIAL SERVICE LATERAL AND WATER METER BOX ARE EXISTING. CONTRACTOR TO DETERMINE APPROPRIATE ALIGNMENT FOR THE IN-TRACT WATER SERVICE CONNECTION. CONTRACTOR TO USE ALTERNATIVE 1 OR 2, PER DETAIL 1, SHEET 0C03 FOR IN-TRACT WATER SERVICE CONNECTION.
5. PROPOSED RESIDENTIAL SERVICE LATERAL AND WATER METER BOX, PER DETAIL 1, SHEET 0C03. BASED ON EXISTING SITE CONDITIONS AND SERVICE LATERAL LOCATION, CONTRACTOR TO DETERMINE APPROPRIATE ALIGNMENT FOR THE IN-TRACT SERVICE CONNECTION. CONTRACTOR TO USE ALTERNATIVE 1 OR ALTERNATIVE 2, PER DETAIL 1, SHEET 0C03 FOR IN-TRACT WATER SERVICE CONNECTION.
6. PROPERTY IS NOT INCLUDED IN THIS PROJECT. THE WATER METER, SERVICE LATERAL, AND IN-TRACT WATER SERVICE CONNECTIONS ARE ALREADY INSTALLED. THE WATER MAIN LOCATION CAN NOT CHANGE.
7. CONTRACTOR TO TAKE EXTREME CAUTION DURING CONSTRUCTION IN AREAS WHERE NEW AND EXISTING UTILITIES MAY CROSS. CONTRACTOR IS RESPONSIBLE FOR PROTECTING AND SECURING EXISTING UTILITIES AT POINTS OF UTILITY CROSSINGS.
8. PROPOSED COMMERCIAL SERVICE LATERAL AND METER BOX PER SAN JOAQUIN COUNTY STANDARDS. CONTRACTOR TO PROVIDE WATER METER VAULT IN SIDEWALK WITH SAN JOAQUIN COUNTY APPROVAL. BASED ON EXISTING SITE CONDITIONS, CONTRACTOR TO DETERMINE APPROPRIATE SERVICE LATERAL ALIGNMENT AND CONNECTION.
9. 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.
10. CONTRACTOR TO INSTALL BACTERIOLOGICAL SAMPLING TOP PER SAN JOAQUIN COUNTY STD. DWG'S. NO. W-7, W-8 AND W-9.

N
0 40 80
SCALE: 1" = 40'

90% IMPROVEMENT PLANS

BLACKWATER CONSULTING ENGINEERS
602 LYELL DRIVE, MODESTO, CA 95356 • PH:209.322.1820

Know what's below. Call before you dig. 811

NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	APP

PROJECT NO. J24313:24C
DESIGNED BY PJS
DRAWN BY NYB
CHECKED BY AJV
DATE JULY 2025

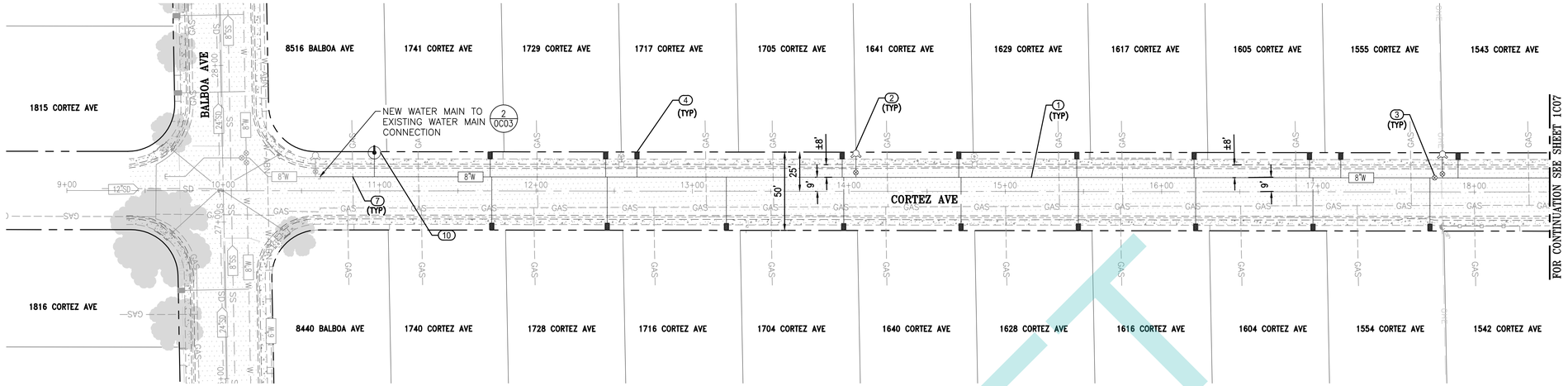
PUBLIC WORKS San Joaquin County Working for YOU

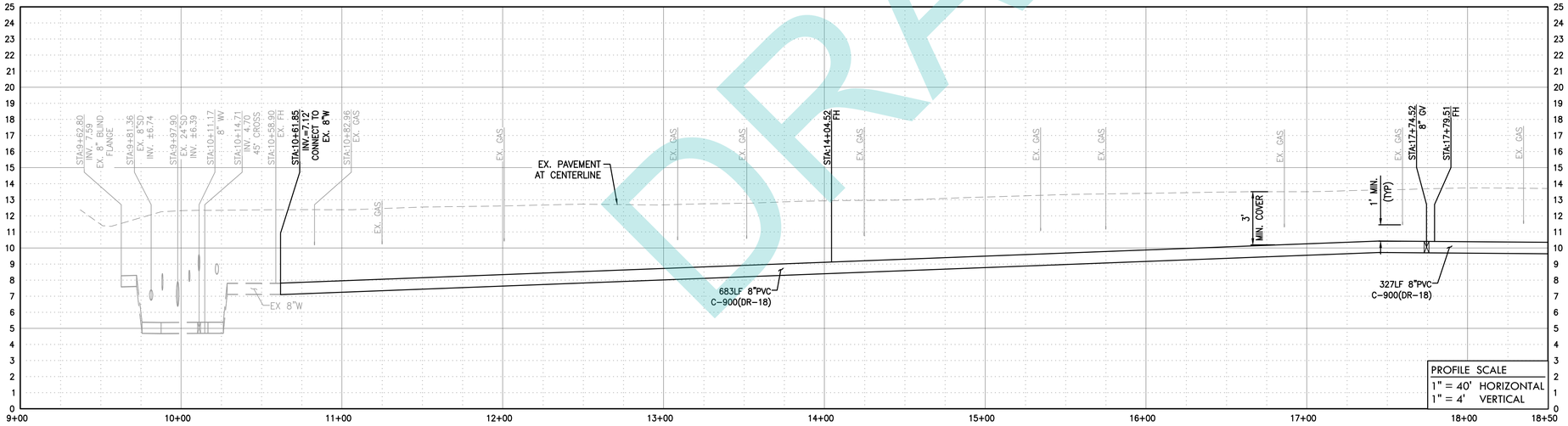
COUNTY OF SAN JOAQUIN - COLONIAL HEIGHTS WATER MAIN REPLACEMENT PROJECT PHASE 1B

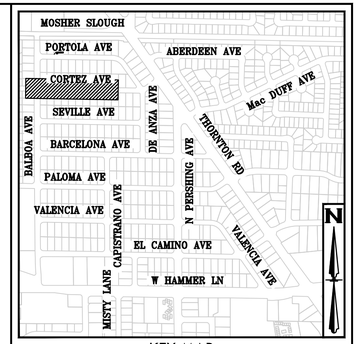
SITE PLAN PORTOLA AVENUE

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DRAWING NO. 1C05
SHEET NO. 17 OF 21







KEY MAP

GENERAL NOTES

1. BE AWARE OF OVERHEAD POWER AND UTILITY LINES AND TREES IN AND AROUND AREA OF WORK.
2. NEW WATER MAINS SHALL BE AWWA C-900 DR 18 CLASS 150 PVC PIPE UNLESS OTHERWISE NOTED.
3. WATERLINE INSTALLED WITH LESS THAN 10' CLEAR HORIZONTAL SEPARATION FROM SEWER SHALL BE C-900 DR 14 PIPE MATERIAL.
4. ALL HORIZONTAL AND VERTICAL CURVES IN THE PIPE SHALL MEET THE MINIMUM CURVATURE RADIUS AS SPECIFIED BY THE PIPE MANUFACTURER.
5. CONTRACTOR TO PROVIDE MINIMUM PIPE SEPARATION PER SAN JOAQUIN COUNTY STANDARDS. THE CALIFORNIA REGULATIONS RELATED TO DRINKING WATER, AND DETAILS 1 AND 2, SEE SHEET 0C05.

PROFILE NOTES

1. EXISTING UTILITY LINES RUNNING PARALLEL TO PROPOSED WATER ARE NOT SHOWN IN THE PROFILE VIEW. SEE PLAN FOR INFORMATION REGARDING THESE LINES.
2. DEPTH OF EXISTING UTILITIES CROSSING PROPOSED LINES IS ASSUMED. CONTRACTOR SHALL VERIFY DEPTHS AT CROSSING LINE VIA POTHOLING.
3. MINIMUM VERTICAL CLEARANCE AT CROSSING BETWEEN PROPOSED PIPES AND EXISTING PIPE IS 12 INCHES.
4. CONTRACTOR TO EXERCISE EXTREME CAUTION TO PROTECT EXISTING GAS LINE AT ALL TIMES DURING CONSTRUCTION.

KEY NOTES

(1) CONTRACTOR TO TRENCH AND REPLACE PAVEMENT FOR CONSTRUCTION OF NEW WATER LINE DETAIL R-29 MODIFIED, SHEET 0C01.

(2) CONTRACTOR TO INSTALL AND/OR REPLACE FIRE HYDRANT AND VALVE ASSEMBLIES PER CITY OF STOCKTON STANDARDS DWG. NO. W-13. W-14, AND W-15.

(3) CONTRACTOR TO INSTALL GATE VALVE AND VALVE BOXES PER SAN JOAQUIN COUNTY STANDARDS DWG. NO. W-5.

(4) RESIDENTIAL SERVICE LATERAL AND WATER METER BOX ARE EXISTING. CONTRACTOR TO DETERMINE APPROPRIATE ALIGNMENT FOR THE IN-TRACT WATER SERVICE CONNECTION. CONTRACTOR TO USE ALTERNATIVE 1 OR 2, PER DETAIL 1, SHEET 0C03 FOR IN-TRACT WATER SERVICE CONNECTION.

(5) PROPOSED RESIDENTIAL SERVICE LATERAL AND WATER METER BOX, PER DETAIL 1, SHEET 0C03. BASED ON EXISTING SITE CONDITIONS AND SERVICE LATERAL LOCATION, CONTRACTOR TO DETERMINE APPROPRIATE ALIGNMENT FOR THE IN-TRACT SERVICE CONNECTION. CONTRACTOR TO USE ALTERNATIVE 1 OR ALTERNATIVE 2, PER DETAIL 1, SHEET 0C03 FOR IN-TRACT WATER SERVICE CONNECTION.

(6) PROPERTY IS NOT INCLUDED IN THIS PROJECT. THE WATER METER, SERVICE LATERAL, AND IN-TRACT WATER SERVICE CONNECTIONS ARE ALREADY INSTALLED. THE WATER MAIN LOCATION CAN NOT CHANGE.

(7) CONTRACTOR TO TAKE EXTREME CAUTION DURING CONSTRUCTION IN AREAS WHERE NEW AND EXISTING UTILITIES MAY CROSS. CONTRACTOR IS RESPONSIBLE FOR PROTECTING AND SECURING EXISTING UTILITIES AT POINTS OF UTILITY CROSSINGS.

(8) PROPOSED COMMERCIAL SERVICE LATERAL AND METER BOX PER SAN JOAQUIN COUNTY STANDARDS. CONTRACTOR TO PROVIDE WATER METER VAULT IN SIDEWALK WITH SAN JOAQUIN COUNTY APPROVAL. BASED ON EXISTING SITE CONDITIONS, CONTRACTOR TO DETERMINE APPROPRIATE SERVICE LATERAL ALIGNMENT AND CONNECTION.

(9) 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.

(10) CONTRACTOR TO INSTALL BACTERIOLOGICAL SAMPLING TOP PER SAN JOAQUIN COUNTY STD. DWG'S. NO. W-7, W-8 AND W-9.

BLACKWATER CONSULTING ENGINEERS
602 LYELL DRIVE, MODESTO, CA 95356 • PH:209.322.1820

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

NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	APP

PROJECT NO. J24313:24C
DESIGNED BY PJS
DRAWN BY NYB
CHECKED BY AJV
DATE JULY 2025

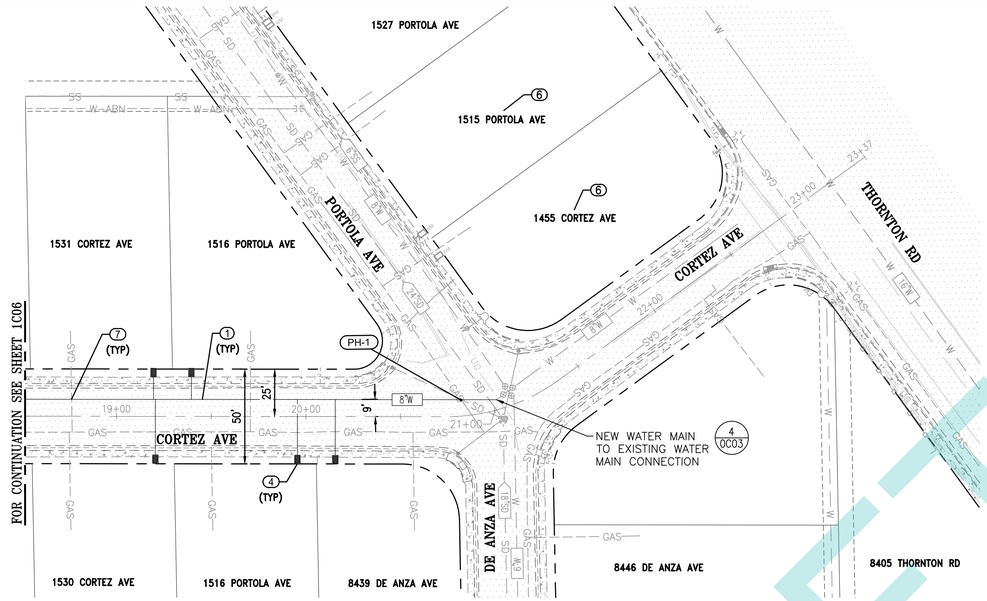
PUBLIC WORKS San Joaquin County Working for YOU

COUNTY OF SAN JOAQUIN - COLONIAL HEIGHTS WATER MAIN REPLACEMENT PROJECT PHASE 1B

CORTEZ AVENUE STA 9+00 TO STA 18+50

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DRAWING NO. 1C06
SHEET NO. 18 OF 21

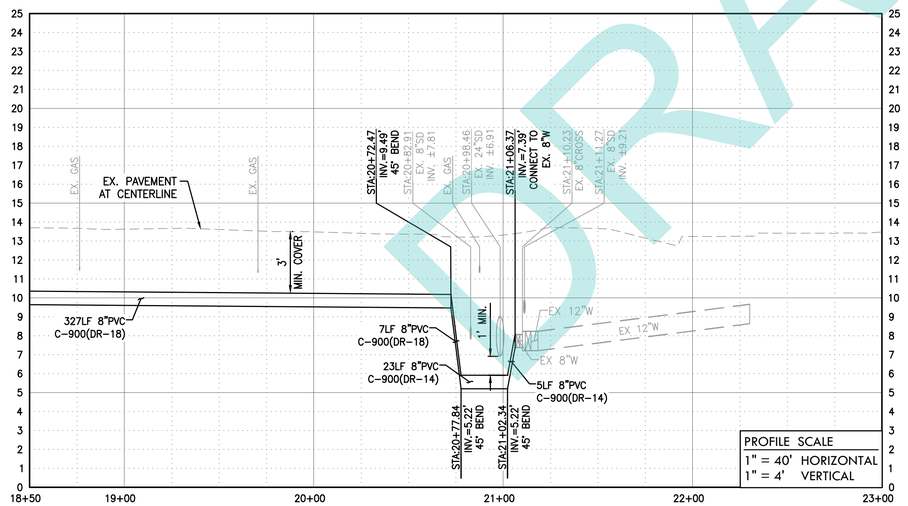


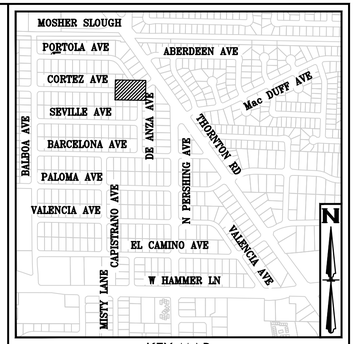
POTHOLE TABLE						
POTHOLE	EXISTING UTILITY	COVER	OUTSIDE DIA	TYPE	AC THK	AB THK
PH-1	GAS					

N

0 40 80

SCALE: 1" = 40'





KEY MAP

GENERAL NOTES

1. BE AWARE OF OVERHEAD POWER AND UTILITY LINES AND TREES IN AND AROUND AREA OF WORK.
2. NEW WATER MAINS SHALL BE AWWA C-900 DR 18 CLASS 150 PVC PIPE UNLESS OTHERWISE NOTED.
3. WATERLINE INSTALLED WITH LESS THAN 10' CLEAR HORIZONTAL SEPARATION FROM SEWER SHALL BE C-900 DR 14 PIPE MATERIAL.
4. ALL HORIZONTAL AND VERTICAL CURVES IN THE PIPE SHALL MEET THE MINIMUM CURVATURE RADIUS AS SPECIFIED BY THE PIPE MANUFACTURER.
5. CONTRACTOR TO PROVIDE MINIMUM PIPE SEPARATION PER SAN JOAQUIN COUNTY STANDARDS. THE CALIFORNIA REGULATIONS RELATED TO DRINKING WATER, AND DETAILS 1 AND 2, SEE SHEET 0C05.

PROFILE NOTES

1. EXISTING UTILITY LINES RUNNING PARALLEL TO PROPOSED WATER ARE NOT SHOWN IN THE PROFILE VIEW. SEE PLAN FOR INFORMATION REGARDING THESE LINES.
2. DEPTH OF EXISTING UTILITIES CROSSING PROPOSED LINES IS ASSUMED. CONTRACTOR SHALL VERIFY DEPTHS AT CROSSING LINE VIA POTHOLING.
3. MINIMUM VERTICAL CLEARANCE AT CROSSING BETWEEN PROPOSED PIPES AND EXISTING PIPE IS 12 INCHES.
4. CONTRACTOR TO EXERCISE EXTREME CAUTION TO PROTECT EXISTING GAS LINE AT ALL TIMES DURING CONSTRUCTION.

KEY NOTES

(1) CONTRACTOR TO TRENCH AND REPLACE PAVEMENT FOR CONSTRUCTION OF NEW WATER LINE DETAIL R-29 MODIFIED, SHEET 0C01.

(2) CONTRACTOR TO INSTALL AND/OR REPLACE FIRE HYDRANT AND VALVE ASSEMBLIES PER CITY OF STOCKTON STANDARDS DWG. NO. W-13. W-14, AND W-15.

(3) CONTRACTOR TO INSTALL GATE VALVE AND VALVE BOXES PER SAN JOAQUIN COUNTY STANDARDS DWG. NO. W-5.

(4) RESIDENTIAL SERVICE LATERAL AND WATER METER BOX ARE EXISTING. CONTRACTOR TO DETERMINE APPROPRIATE ALIGNMENT FOR THE IN-TRACT WATER SERVICE CONNECTION. CONTRACTOR TO USE ALTERNATIVE 1 OR 2, PER DETAIL 1, SHEET 0C03 FOR IN-TRACT WATER SERVICE CONNECTION.

(5) PROPOSED RESIDENTIAL SERVICE LATERAL AND WATER METER BOX, PER DETAIL 1, SHEET 0C03. BASED ON EXISTING SITE CONDITIONS AND SERVICE LATERAL LOCATION, CONTRACTOR TO DETERMINE APPROPRIATE ALIGNMENT FOR THE IN-TRACT SERVICE CONNECTION. CONTRACTOR TO USE ALTERNATIVE 1 OR ALTERNATIVE 2, PER DETAIL 1, SHEET 0C03 FOR IN-TRACT WATER SERVICE CONNECTION.

(6) PROPERTY IS NOT INCLUDED IN THIS PROJECT. THE WATER METER, SERVICE LATERAL, AND IN-TRACT WATER SERVICE CONNECTIONS ARE ALREADY INSTALLED. THE WATER MAIN LOCATION CAN NOT CHANGE.

(7) CONTRACTOR TO TAKE EXTREME CAUTION DURING CONSTRUCTION IN AREAS WHERE NEW AND EXISTING UTILITIES MAY CROSS. CONTRACTOR IS RESPONSIBLE FOR PROTECTING AND SECURING EXISTING UTILITIES AT POINTS OF UTILITY CROSSINGS.

(8) PROPOSED COMMERCIAL SERVICE LATERAL AND METER BOX PER SAN JOAQUIN COUNTY STANDARDS. CONTRACTOR TO PROVIDE WATER METER VAULT IN SIDEWALK WITH SAN JOAQUIN COUNTY APPROVAL. BASED ON EXISTING SITE CONDITIONS, CONTRACTOR TO DETERMINE APPROPRIATE SERVICE LATERAL ALIGNMENT AND CONNECTION.

(9) 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.

(10) CONTRACTOR TO INSTALL BACTERIOLOGICAL SAMPLING TOP PER SAN JOAQUIN COUNTY STD. DWG'S. NO. W-7, W-8 AND W-9.

90% IMPROVEMENT PLANS

BLACKWATER CONSULTING ENGINEERS
602 LYELL DRIVE, MODESTO, CA 95356 • PH:209.322.1820

Know what's below. Call before you dig.

NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	APP

PROJECT NO. J24313:24C
DESIGNED BY PJS
DRAWN BY NYB
CHECKED BY AJV
DATE JULY 2025

PUBLIC WORKS San Joaquin County Working for YOU

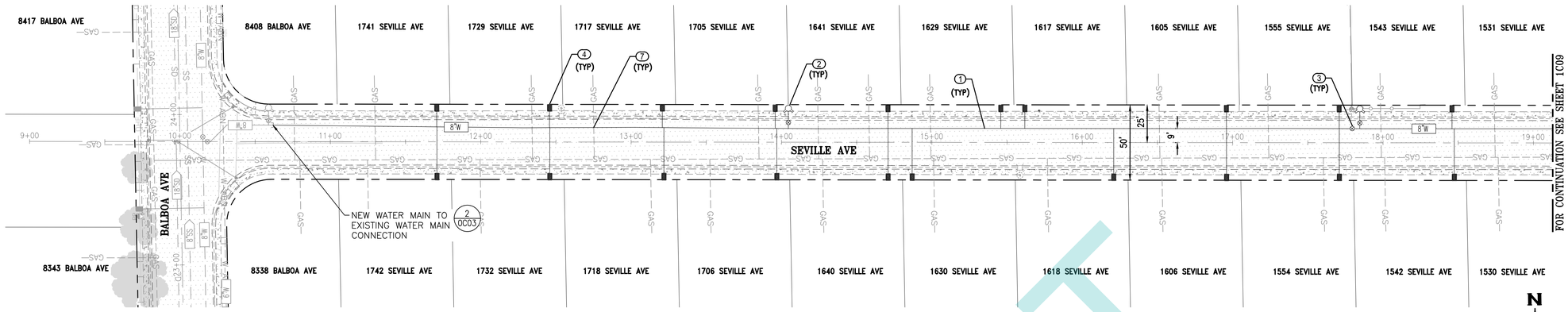
COUNTY OF SAN JOAQUIN - COLONIAL HEIGHTS WATER MAIN REPLACEMENT PROJECT PHASE 1B

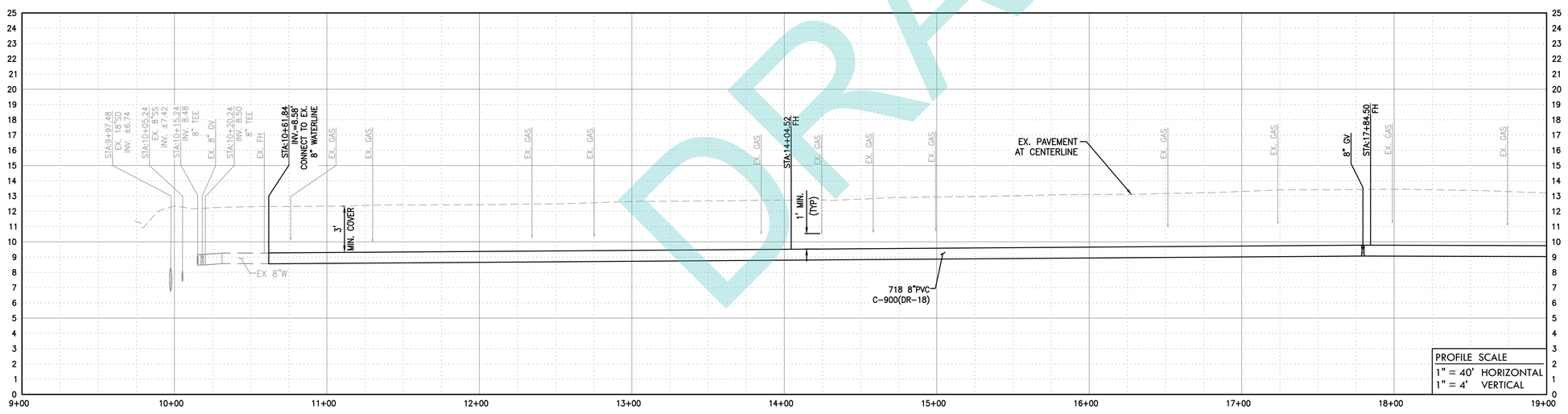
CORTEZ AVENUE
STA 18+50 TO STA 23+00

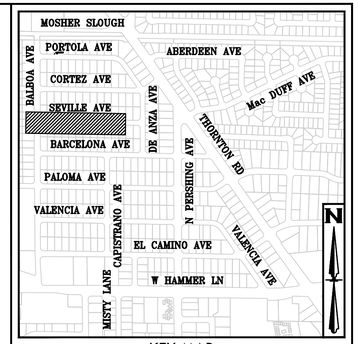
VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DRAWING NO. 1C07

SHEET NO. 19 OF 21







KEY MAP

GENERAL NOTES

1. BE AWARE OF OVERHEAD POWER AND UTILITY LINES AND TREES IN AND AROUND AREA OF WORK.
2. NEW WATER MAINS SHALL BE AWWA C-900 DR 18 CLASS 150 PVC PIPE UNLESS OTHERWISE NOTED.
3. WATERLINE INSTALLED WITH LESS THAN 10' CLEAR HORIZONTAL SEPARATION FROM SEWER SHALL BE C-900 DR 14 PIPE MATERIAL.
4. ALL HORIZONTAL AND VERTICAL CURVES IN THE PIPE SHALL MEET THE MINIMUM CURVATURE RADIUS AS SPECIFIED BY THE PIPE MANUFACTURER.
5. CONTRACTOR TO PROVIDE MINIMUM PIPE SEPARATION PER SAN JOAQUIN COUNTY STANDARDS. THE CALIFORNIA REGULATIONS RELATED TO DRINKING WATER, AND DETAILS 1 AND 2, SEE SHEET 0C05.

PROFILE NOTES

1. EXISTING UTILITY LINES RUNNING PARALLEL TO PROPOSED WATER ARE NOT SHOWN IN THE PROFILE VIEW. SEE PLAN FOR INFORMATION REGARDING THESE LINES.
2. DEPTH OF EXISTING UTILITIES CROSSING PROPOSED LINES IS ASSUMED. CONTRACTOR SHALL VERIFY DEPTHS AT CROSSING LINE VIA POTHOLING.
3. MINIMUM VERTICAL CLEARANCE AT CROSSING BETWEEN PROPOSED PIPES AND EXISTING PIPE IS 12 INCHES.
4. CONTRACTOR TO EXERCISE EXTREME CAUTION TO PROTECT EXISTING GAS LINE AT ALL TIMES DURING CONSTRUCTION.

KEY NOTES

(1) CONTRACTOR TO TRENCH AND REPLACE PAVEMENT FOR CONSTRUCTION OF NEW WATER LINE DETAIL R-29 MODIFIED, SHEET 0C01.

(2) CONTRACTOR TO INSTALL AND/OR REPLACE FIRE HYDRANT AND VALVE ASSEMBLIES PER CITY OF STOCKTON STANDARDS DWG. NO. W-13. W-14, AND W-15.

(3) CONTRACTOR TO INSTALL GATE VALVE AND VALVE BOXES PER SAN JOAQUIN COUNTY STANDARDS DWG. NO. W-5.

(4) RESIDENTIAL SERVICE LATERAL AND WATER METER BOX ARE EXISTING. CONTRACTOR TO DETERMINE APPROPRIATE ALIGNMENT FOR THE IN-TRACT WATER SERVICE CONNECTION. CONTRACTOR TO USE ALTERNATIVE 1 OR 2, PER DETAIL 1, SHEET 0C03 FOR IN-TRACT WATER SERVICE CONNECTION.

(5) PROPOSED RESIDENTIAL SERVICE LATERAL AND WATER METER BOX, PER DETAIL 1, SHEET 0C03. BASED ON EXISTING SITE CONDITIONS AND SERVICE LATERAL LOCATION, CONTRACTOR TO DETERMINE APPROPRIATE ALIGNMENT FOR THE IN-TRACT SERVICE CONNECTION. CONTRACTOR TO USE ALTERNATIVE 1 OR ALTERNATIVE 2, PER DETAIL 1, SHEET 0C03 FOR IN-TRACT WATER SERVICE CONNECTION.

(6) PROPERTY IS NOT INCLUDED IN THIS PROJECT. THE WATER METER, SERVICE LATERAL, AND IN-TRACT WATER SERVICE CONNECTIONS ARE ALREADY INSTALLED. THE WATER MAIN LOCATION CAN NOT CHANGE.

(7) CONTRACTOR TO TAKE EXTREME CAUTION DURING CONSTRUCTION IN AREAS WHERE NEW AND EXISTING UTILITIES MAY CROSS. CONTRACTOR IS RESPONSIBLE FOR PROTECTING AND SECURING EXISTING UTILITIES AT POINTS OF UTILITY CROSSINGS.

(8) PROPOSED COMMERCIAL SERVICE LATERAL AND METER BOX PER SAN JOAQUIN COUNTY STANDARDS. CONTRACTOR TO PROVIDE WATER METER VAULT IN SIDEWALK WITH SAN JOAQUIN COUNTY APPROVAL. BASED ON EXISTING SITE CONDITIONS, CONTRACTOR TO DETERMINE APPROPRIATE SERVICE LATERAL ALIGNMENT AND CONNECTION.

(9) 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.

(10) CONTRACTOR TO INSTALL BACTERIOLOGICAL SAMPLING TOP PER SAN JOAQUIN COUNTY STD. DWG'S. NO. W-7, W-8 AND W-9.

90% IMPROVEMENT PLANS

BLACKWATER CONSULTING ENGINEERS
602 LYELL DRIVE, MODESTO, CA 95356 • PH:209.322.1820

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

NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	APP

PROJECT NO. J24313:24C
DESIGNED BY PJS
DRAWN BY NYB
CHECKED BY AJV
DATE JULY 2025

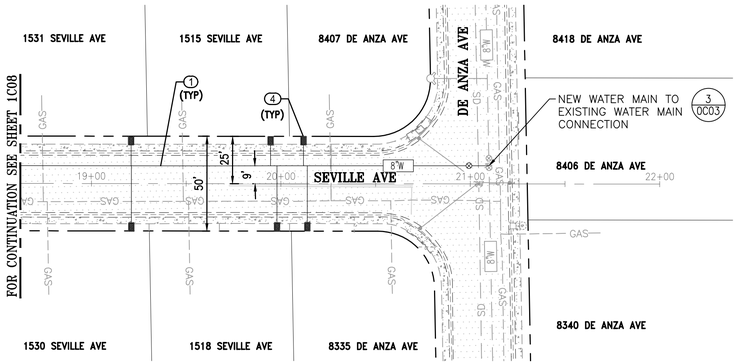
PUBLIC WORKS San Joaquin County Working for YOU

COUNTY OF SAN JOAQUIN - COLONIAL HEIGHTS WATER MAIN REPLACEMENT PROJECT PHASE 1B

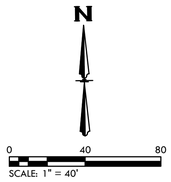
SEVILLE AVENUE STA 9+00 TO STA 19+00

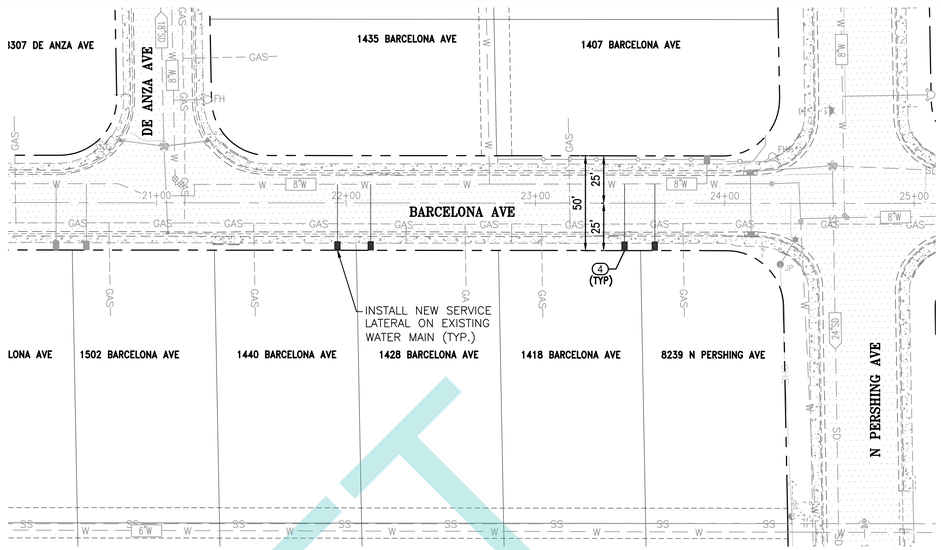
VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DRAWING NO. 1C08
SHEET NO. 20 OF 21

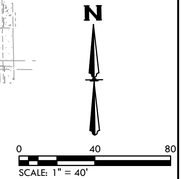


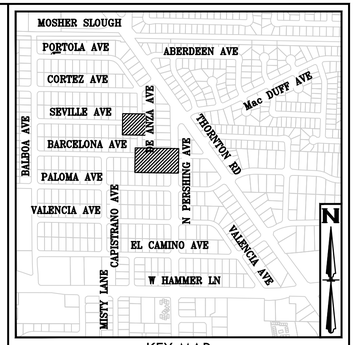
SEVILLE AVE





BARCELONA AVE





KEY MAP

GENERAL NOTES

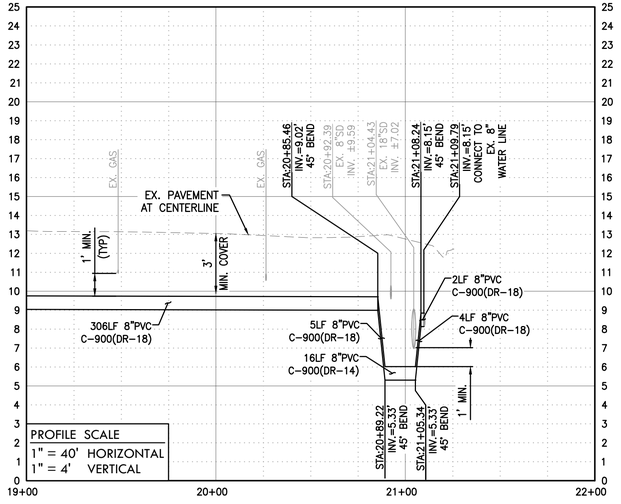
1. BE AWARE OF OVERHEAD POWER AND UTILITY LINES AND TREES IN AND AROUND AREA OF WORK.
2. NEW WATER MAINS SHALL BE AWWA C-900 DR 18 CLASS 150 PVC PIPE UNLESS OTHERWISE NOTED.
3. WATERLINE INSTALLED WITH LESS THAN 10' CLEAR HORIZONTAL SEPARATION FROM SEWER SHALL BE C-900 DR 14 PIPE MATERIAL.
4. ALL HORIZONTAL AND VERTICAL CURVES IN THE PIPE SHALL MEET THE MINIMUM CURVATURE RADIUS AS SPECIFIED BY THE PIPE MANUFACTURER.
5. CONTRACTOR TO PROVIDE MINIMUM PIPE SEPARATION PER SAN JOAQUIN COUNTY STANDARDS. THE CALIFORNIA REGULATIONS RELATED TO DRINKING WATER, AND DETAILS 1 AND 2, SEE SHEET 0C05.

PROFILE NOTES

1. EXISTING UTILITY LINES RUNNING PARALLEL TO PROPOSED WATER ARE NOT SHOWN IN THE PROFILE VIEW. SEE PLAN FOR INFORMATION REGARDING THESE LINES.
2. DEPTH OF EXISTING UTILITIES CROSSING PROPOSED LINES IS ASSUMED. CONTRACTOR SHALL VERIFY DEPTHS AT CROSSING LINE VIA POTHOLING.
3. MINIMUM VERTICAL CLEARANCE AT CROSSING BETWEEN PROPOSED PIPES AND EXISTING PIPE IS 12 INCHES.
4. CONTRACTOR TO EXERCISE EXTREME CAUTION TO PROTECT EXISTING GAS LINE AT ALL TIMES DURING CONSTRUCTION.

KEY NOTES

1. CONTRACTOR TO TRENCH AND REPLACE PAVEMENT FOR CONSTRUCTION OF NEW WATER LINE DETAIL R-29 MODIFIED, SHEET 0C01.
2. CONTRACTOR TO INSTALL AND/OR REPLACE FIRE HYDRANT AND VALVE ASSEMBLIES PER CITY OF STOCKTON STANDARDS DWG. NO. W-13. W-14, AND W-15.
3. CONTRACTOR TO INSTALL GATE VALVE AND VALVE BOXES PER SAN JOAQUIN COUNTY STANDARDS DWG. NO. W-5.
4. RESIDENTIAL SERVICE LATERAL AND WATER METER BOX ARE EXISTING. CONTRACTOR TO DETERMINE APPROPRIATE ALIGNMENT FOR THE IN-TRACT WATER SERVICE CONNECTION. CONTRACTOR TO USE ALTERNATIVE 1 OR 2, PER DETAIL 1, SHEET 0C03 FOR IN-TRACT WATER SERVICE CONNECTION.
5. PROPOSED RESIDENTIAL SERVICE LATERAL AND WATER METER BOX, PER DETAIL 1, SHEET 0C03. BASED ON EXISTING SITE CONDITIONS AND SERVICE LATERAL LOCATION, CONTRACTOR TO DETERMINE APPROPRIATE ALIGNMENT FOR THE IN-TRACT SERVICE CONNECTION. CONTRACTOR TO USE ALTERNATIVE 1 OR ALTERNATIVE 2, PER DETAIL 1, SHEET 0C03 FOR IN-TRACT WATER SERVICE CONNECTION.
6. PROPERTY IS NOT INCLUDED IN THIS PROJECT. THE WATER METER, SERVICE LATERAL, AND IN-TRACT WATER SERVICE CONNECTIONS ARE ALREADY INSTALLED. THE WATER MAIN LOCATION CAN NOT CHANGE.
7. CONTRACTOR TO TAKE EXTREME CAUTION DURING CONSTRUCTION IN AREAS WHERE NEW AND EXISTING UTILITIES MAY CROSS. CONTRACTOR IS RESPONSIBLE FOR PROTECTING AND SECURING EXISTING UTILITIES AT POINTS OF UTILITY CROSSINGS.
8. PROPOSED COMMERCIAL SERVICE LATERAL AND METER BOX PER SAN JOAQUIN COUNTY STANDARDS. CONTRACTOR TO PROVIDE WATER METER VAULT IN SIDEWALK WITH SAN JOAQUIN COUNTY APPROVAL. BASED ON EXISTING SITE CONDITIONS, CONTRACTOR TO DETERMINE APPROPRIATE SERVICE LATERAL ALIGNMENT AND CONNECTION.
9. 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.
10. CONTRACTOR TO INSTALL BACTERIOLOGICAL SAMPLING TOP PER SAN JOAQUIN COUNTY STD. DWG'S. NO. W-7, W-8 AND W-9.



BLACKWATER CONSULTING ENGINEERS
602 LYELL DRIVE, MODESTO, CA 95356 • PH:209.322.1820

Know what's below. Call before you dig.

NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	APP

PROJECT NO. J24313:24C
DESIGNED BY PJS
DRAWN BY NYB
CHECKED BY AJV
DATE JULY 2025

PUBLIC WORKS San Joaquin County Working for YOU

COUNTY OF SAN JOAQUIN - COLONIAL HEIGHTS WATER MAIN REPLACEMENT PROJECT PHASE 1B

SEVILLE AVENUE STA 19+00 TO STA 22+00
BARCELONA AVENUE STA 21+00 TO STA 25+00

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DRAWING NO. 1C09
SHEET NO. 21 OF 21

SAN JOAQUIN COUNTY DEPARTMENT OF PUBLIC WORKS

COUNTY OF SAN JOAQUIN
COLONIAL HEIGHTS
WATER MAIN REPLACEMENT PROJECT PHASE 1B

AMERICAN RESCUE PLAN
AGREEMENT NO. XXXXXXXX

SPECIAL PROVISIONS SECTION 12 THROUGH 99

90% SUBMITTAL

JULY 2025

BLACKWATER
CONSULTING ENGINEERS

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 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.

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**:**

All 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 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 operation.

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. No 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.

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, no less than 2 such lanes must be open to public traffic.

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, replace the 1st paragraph 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.

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.

12-8 RESERVED

12-8 RESERVED, revise title and replace section 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. 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.

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.

12-8.03 SECURITY AND CONTRACTOR PROPERTY

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.

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 Stormwater Pollution Prevention Plan.**

Implementation of said plan, including all labor, materials (including BMPs), equipment, tools, and incidentals, must be considered as included in the contract lump sum price paid for **Prepare Stormwater 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

13-4.03F Sweeping, add:

Construction site BMPs shall remain in place until final sweep is complete.

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 Stormwater 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

15-1.01, add to section:

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 completed by the Contractor as shown on the Project Plans and included as **Pothole for Underground Facilities** bid item.

Payment will not be made for potholes performed by the Contractor to "locate and protect" known utilities other than what is shown on the plans.

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 of materials, 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 be made therefor.

15 EXISTING FACILITIES

15-1.03D-K "Reserved", replace with: "Remove – Abandon Facilities"

15.1.03D Abandon Fire Hydrant

Abandon Existing Fire Hydrant shall include the abandonment of fire hydrants identified on the Project 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 Project 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 and 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 with 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 the requested 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.

15-1.04 (D-G) PAYMENT

15-1.04D Abandon Existing Water Main, Fire Hydrant, and Appurtenances

Abandon Existing Water Main, Abandon Fire Hydrant, and Abandon Appurtenances shall be paid for under Abandon Existing Water Main, Fire Hydrant, and Appurtenances on a lump sum basis. The contract price paid for Abandon Existing Water Main, Fire Hydrant, and Appurtenances 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, 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 as outlined in connect to existing water system. When the contract does not include a separate bid item for abandoning existing water main, fire hydrant, and appurtenances, full compensation for abandon existing water main, fire hydrant, and appurtenances must be considered as included in the contract prices paid for the various other 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.

15-1.04G 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.

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 roadway excavation, as described, full compensation for roadway excavation 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:

If required by the geotechnical report and as field conditions require; 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 include 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.

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

20-10 EXISTING LANDSCAPE

20-10.01 GENERAL

20-10.01A General, replace paragraph 1 with:

Section 20-10.01 includes general specifications for performing work on existing private property, planting, and irrigation facilities.

20-10.01C Construction, add:

The Contractor shall repair any areas, in kind, that are damaged as a result of the new service installation within private property. These areas include, but are 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.

20-10.01D Payment, replace “Not Used” with:

When the contract does not include a separate bid item for General Private Property Damages, full compensation for general private property damages 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.

Landscaping 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 completed 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 placed so 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.

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 weight, 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.**

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 payment 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 no 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.

39S ASPHALT CONCRETE

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.

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.

Unless otherwise shown on the plans, refer to Drawing No. R-29, "Typical Trench Backfill," of the San Joaquin County Improvement Standards 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.

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 therefor. 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 and shall be paid for on a lump sum basis. The contract lump price paid for Pothole for Underground Facilities shall include full compensation for labor, materials, tools, equipment and incidentals, and for doing all the work involved as shown on the Project Plans and as directed by the County Engineer and

Department of Public Works, and no additional compensation will be allowed. and pavement repair work will be considered as included in the various items of work involved and no additional compensation will be made therefor.

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.

77-1.01C References

1. ASTM International (ASTM):

2. American Water Works Association (AWWA):

    a. C800 – Underground Service Line Valves and Fittings
    b. C900 – Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 in. through 60 in (100 mm through 1,500 mm)

77-1.01D General Requirements

1. Except as noted on the plans, all C900 PVC pipe shall be Class 150 (DR18) having a sustained pressure requirement of 500 psi (ASTM D2241) and a minimum burst pressure of 766 psi (ASTM D1599). C900 PVC pipe installed at crossing locations, as shown on the plans, shall be Class 200 (DR 14) having a sustained pressure requirement of 650 psi (ASTM D1598) and a minimum burst pressure of 985 psi (ASTM D1599).

2. Dimensions and tolerances for each nominal pipe sizes shall be in accordance with Section 2.2, Table 1 of AWWA Standard C900.

3. Pipe shall be furnished in standard laying lengths of 20 feet (plus or minus one inch) unless otherwise noted. Each pipe shall have an integral bell formed on the pipe end, and be designed to be at least as strong as the pipe wall (ASTM D2472).

4. An elastomeric gasket shall be designed with a retainer ring, which “locks” the gasket into integral bell groove and shall be installed at the point of manufacturer. Gasket shall be in conformance with ASTM F-477.

5. Each length of pipe furnished shall bear identification markings in conformance with Section 2.6 of AWWA Standard C900.

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

The material used in the pipe zone shall be 3/8” minus imported screened sand with minimum sand equivalent of 50 per Caltest 217-G. All gradations shall be approved by the County prior to construction. The pipe zone depth shall be equal to the outer diameter of the installed pipe plus 12 inches above the pipe and a minimum of 6 inches below the pipe.

The material used to backfill above the pipe zone shall be consistent with Class 2 AB per section 26 of these specifications. The depth of the Class 2 AB backfill shall be the vertical measured distance between the top of the pipe zone and the road structural section and will vary depending on the total trench depth. Imported granular material (Class 2 AB) shall be approved by the Director of Public Works prior to construction.

The backfill requirements and details listed in this section shall supersede the County of San Joaquin Detail R-29, the Geotechnical Report, and all references to backfill mentioned in the technical specifications.

Payment for pipe zone material Type “A” as identified in the project plans shall be included in various items of work.

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. Refer to Section 77-1.02B Backfill for more information and details regarding trench backfill and backfill material.

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. Service lines shall conform to the latest AWWA C800 and C901 including all amendments.

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. Fittings for service lines shall conform to the latest AWWA C800 and C901 including all amendments.

Ball corporation stop, curb stop, coupling, and meter coupling sizes shall match the diameter of the service pipe. Corporation stops shall be brass. Reducing fittings will not be allowed. Inserts for use with pack joint couplings shall be stainless steel. Fittings shall be National Pipe Threads (NPT) or Copper Tube Size (CTS) pack joints where required.

1. Quick Joint or Grip Joint fittings and couplings will not be allowed instead of pack joint fittings and couplings.
2. Acceptable manufacturers for all water service fittings are Ford, Jones, Mueller, McDonald, Cambridge Brass or equal.

Service saddles shall be sized to match the outside diameter of the pipe being tapped. The tap size shall be 1-inch and 2-inch to match the nominal service size. The saddle shall be a double strap style with a Female Iron Pipe Threaded (FIPT) coupling.

For C900 PVC pipe, acceptable saddle manufacturers and products are James Jones Co. – Bronze Saddle J-996 Series or approved equal.

Contractor to supply ball angle meter stop with lock lug. Acceptable manufacturers are barrel locks from Inner-Tite or approved equal.

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. Hydrants shall be Clow “Medallion”, Kennedy “Guardian K81”, Mueller “Super Centurian” or approved equal. Vertical shoe hydrants only.

2. All hydrants shall be painted with “Chrome Yellow” polyurethane high duty industrial enamel. “Chrome Yellow” is Federal Standard 595B, color: FS33538. No painted caps.

3. All hydrants shall comply with AWWA C502, latest revision of San Joaquin County and the City of Stockton standard specifications.

4. All operating valves shall be located below grade and protected by "break off" features so that no water flows if hydrant is knocked off.

5. Hydrant main valve seat shall be a minimum 5-1/4 inches.

6. Hydrant valve shall be molded non-swelling rubber.

7. Hydrant main valve seat shall be threaded into a bronze to bronze subseat.

8. Hydrant bury shall be 36 inches from connection to ground flange. Materials to extend the length of bury must be readily available.

9. Break off check valve shall be installed in the hydrant assembly. Check valves should be a Hydrant Guard HG2-822 or approved equal.

10. Hydrant shall have a 4-inch steamer connection and a double 2.5-inch outlet.

11. 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.

77-3.02A(6) Bacteriological Sampling Tap

Bacteriological Sampling Taps shall conform to San Joaquin County Standard Drawings W-7, W-8, and W-9 as shown on the Standard Drawings and the following:

1. The sampler housing shall be constructed of steel and coated with CR-1 coating or approved equal on all interior and exterior surfaces. A final exterior finish coat shall be applied after installation. Color shall be silver and approved by the County.

2. Bacteriological Sampling Tap assembly shall include the housing, ball valve, gooseneck, saddle tap, corporation stop, concrete pad, and all associated fittings and components as shown on the Standard Drawings.

3. The Contractor shall furnish one padlock per sampling tap, as approved by the County.

4. All buried non-metallic piping shall include tracer wire in accordance with Section 77-4.02A(11).

5. All components shall conform to the latest applicable standards, including AWWA C800 and ASTM F477, where applicable.

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. Refer to Section 77-1.02B Backfill for more information and details regarding trench backfill material.

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.

77-3.03E In-Tract Water Service Connection (Directional Bore & Open Trench)

In-Tract Water Service Connection (Directional Bore & Open Trench) 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; ***reconnecting existing water treatment systems,*** 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 (Directional Bore & Open Trench). This item includes the removal and disposal of up to 50 linear feet of existing in-tract water service line per connection, the installation of up to 10,000 linear feet of proposed 1" diameter in-tract water service line using directional bore for all connections, and the installation of up to 600 linear feet of proposed 1" diameter in-tract water service line using open trench for all connections. Refer to Appendix B-4 for the Water Service Summary Table.

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. Some back yard services have connections for accessory dwelling units (ADU's) between the County's shut-off valve and the house. In-Tract Water Service Connection (Directional Bore & Open Trench) 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, including existing service to ADU's.

In-Tract Water Service Connection (Directional Bore & Open Trench) includes installation of the in-tract service line in the front yard or 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 treatment system*** then the following applies.

In-Tract Water Service Connection (Directional Bore & Open Trench) includes all tools, equipment, materials, and labor necessary to connect the proposed in-tract water system to an existing water treatment system, if there is one. 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.

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 treatment system*** for the County Engineer's approval. Connections to the existing ***water treatment 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.

77-3.03F Bacteriological Sampling Tap

Under this item, the Contractor shall provide all labor and material necessary to install the bacteriological sampling tap and corresponding lateral as shown on the Standard Drawings or specified herein. Bacteriological Sampling Taps shall conform to the requirements of San Joaquin County Standard Drawings W-7, W-8, and W-9. Installation shall include excavation, placement of the concrete pad, installation of the steel housing, piping, valves, fittings, locking door, and appurtenances as shown. The door shall be oriented to open toward the street and shall be located a minimum of 18 inches behind the sidewalk or 6 feet behind the curb or edge of pavement where sidewalk is not present. All piping shall be installed plumb and level, and connected to the water main via a double strap saddle and corporation stop. Gravel shall be placed as shown to facilitate drainage. Tracer wire shall be installed in accordance with Section

77-4.02A(11). The Contractor shall perform all finish work including final exterior coating and installation of a padlock. All work shall be performed to the satisfaction of the County.

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. ***This work includes installing the 1" Water Service Line from the water main to the meter box location***. 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.

77-3.04E In-Tract Water Service Connection (Directional Bore & Open Trench)

In-Tract Water Service Connection (Directional Bore & Open Trench) shall be paid for under **In-Tract Water Service Connection (Directional Bore)** and **In-Tract Water Service Connection (Open Trench)** bid items. The bid items are the length of pipe installed in linear feet for both separate bid items. This item includes the removal and disposal of up to 50 linear feet of existing in-tract water service line per connection, the installation of up to 10,000 linear feet of proposed 1" diameter in-tract water service line using directional bore for all connections, and the installation of up to 600 linear feet of proposed 1" diameter in-tract water service line using open trench for all connections. Refer to Appendix B-4 for the Water Service Summary Table.

Measurement shall be based on the actual length of pipe installed for each separate bid item (Directional Bore & Open Trench). The quantities provided for directional bore and open trench for the installation of the In-Tract Water Service Connections are estimated. 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. Where an existing ***water treatment 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, equipment and 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, ***concrete driveways,*** 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 due to open trenching for In-Tract Water Service Connection (Open Trench) shall be included in the bid items.

77-3.04F Bacteriological Sampling Tap

Bacteriological Sampling Tap shall be paid for on a per unit basis. Measurement shall be based on the actual number of bacteriological sampling taps and laterals installed. The contract price for installing **Bacteriological Sampling Tap** bid item full compensation for furnishing all labor, materials, tools, equipment, and incidentals necessary to complete the work as shown on the Project Plans, in accordance with San Joaquin County Standard Drawings W-7, W-8, and W-9, and as specified in these Special Provisions. The work shall include excavation, concrete pad construction, installation of the steel housing, valves, piping, fittings, saddle tap, corporation stop, gooseneck, padlock, coating, and tracer wire, as well as site restoration and all other incidental work necessary to complete the installation.

The lateral component shall be included in the unit price for each **Bacteriological Sampling Tap** 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.

77-4 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. Refer to Section 77-1.02B Backfill for more information and details regarding trench backfill material.

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 restraint or approved equal. Joint restraints shall be designed for restraining AWWA C900 PVC pipe and shall meet the requirements of ASTM F1674-18 “Standard Test Method for Joint Restraint Products for Use with PVC Pipe”.

Restrained flange adapters and mechanical joint restraints shall be made of ductile iron conforming to ASTM A536 and have flange blot circles compatible with ANSI/AWWA C110/A21.10.

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 (CIOD). PVC pipes shall use CIOD to conform to the ductile iron sizing system and shall conform to AWWA C900-22 to be compatible with standard ductile iron fittings.

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 ductile iron.

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. For C900 PVC pipe, acceptable gate valve manufacturers and products are M&H/Kennedy Valve Company, Mueller, American Flow Control, Series 2500, or approved equal.

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. For C900 PVC pipe, acceptable butterfly valve manufacturers and products are DeZurik/Startell Model BAW, Henry Pratt Company, or approved equal.

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 ductile iron conforming to ASTM A536 and have flange bolt circles compatible with ANSI/AWWA C110/A21.10. Flange bolt holes shall be spot faced if flange fillets interfere with bolt heads and nuts.

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 ductile 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) Ductile Iron Fittings

Ductile iron fittings shall conform to AWWA C900-22, AWWA C605-21, and ASTM A536 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. Gaskets shall conform to AWWA C900-22, AWWA C111-23, and ASTM F477.

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) Pipe Marking Tape

12” wide blue non-metallic pipe marking tape marked “Water” shall be placed between the top of the bedding zone and bottom of the backfill zone.

77-4.02A(10) Tracer Wire

Tracer wire for the purpose of locating buried water mains and services is required for:

1. Water Mains (all material types)
2. Fire hydrant runs
3. Water services at
    a. All dead end streets,
    b. End of all cul-de-sacs, and
    c. Services not perpendicular to the water main

Tracer wire shall be attached to the top of all pipes for distribution mains. Tracer wire should be THWN copper insulated and have black or blue color.

77-4.02A(11) Polyethylene Encasement

All ductile iron pipe shall be protected by a polyethylene encasement meeting the requirements of ANSI/AWWA C105.

77-4.02A(12) Flanged Bolts, Nuts and Studs

Bolts are specified in ANSI B18.2.1 and nuts are specified in ANSI B18.2.2. Bolts and hex nuts shall conform to AWWA C110 and ASTM A307.

77-4.02A(13) Mechanical Joints

Mechanical joints shall conform to AWWA C111/A21.11, AWWA C110/A21.10, and AWWA C153/A21.53.

77-4.02A(14) Tapping Sleeve

Tapping sleeves shall conform to AWWA C223.

77-4.02A(15) Flanged Coupling Adapters

Flanged coupling adapters shall conform to AWWA C219. Acceptable flanged coupling adapter manufacturers are JCM Industries, Romac Industries, or approved equal.

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 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. Refer to Section 77-1.02B Backfill for more information and details regarding trench backfill material.

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.

For in-tract services on customer property, a pressure test shall be required. Contractor shall perform the following:

1. Perform a pressure test on the existing property prior to any connections
2. Connect to a hose bib and ensure all plumbing is shut off to get a reading of the existing property pressure
3. Record the property's pressure prior to connection
4. Complete an air pressure test, prior to connection, on the new in-tract service line
5. Air pressure test can be conducted by filling the in-tract service line up to 50 PSI and waiting 15 minutes to ensure pressure does not drop
6. Connect the in-tract service line to the house and perform another pressure test per bullet point one
7. Ensure pressure does not drop below 40 PSI or the property's initial pressure, whichever is less
8. Ensure the pressure test is taken from the same location as the initial test

There will be no additional compensation allowed for these tests. An alternative test method can be used with approval from the County Engineer.

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 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; 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.

77-4.04 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 and 8" 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; 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, 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) Gate Valve

The **8" 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(4) 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(5) 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.

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:

All striping shall be paint, unless noted otherwise. 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 Minimum	90.0	50.0	ASTM E1347
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 **Striping Repairs,** including Painted Traffic Stripe, shall be paid for under the **Striping Repairs** bid item on a lump sum basis.

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.

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.