ADDENDUM No. 7

TO

CITY OF FRESNO

PUBLIC WORKS STANDARD SPECIFICATIONS

ADOPTED MARCH 4, 1970

RESOLUTION NO. 70-36

UPDATED VERSION APPROVED: DECEMBER 2020 (tentative)

ADMINISTRATIVE DRAFT

for industry review and comment

This addendum is attached to, and made a part of, the above-entitled standard specifications.

The following City Standard Drawings have been amended as indicated below:

1. Items in **RED** may have a fiscal impact to construction budgets, however, not all changes to the prior standards that could incur additional costs have been so identified.
2. Most drawings received minor drafting and typographical edits to detail and callouts for clarity, any such changes that result in practical differences are annotated below.

DPW – PUBLIC WORKS (P Series)	
P-4	1. Multiple options for Dimension "B" removed; Dimension B now refers to Standard Drawing P-6 for driveway widths. 2. Comments previously marked with a single asterisk "*" incorporated into new dimension "C". 3. Comments previously marked with two asterisks "**" converted to Note 1. 4. **Added Note 2**: "SEE API-7, API-8, AND API-9 FOR S. MINNEWAWA AVE. BETWEEN FANCHER CREEK AND CALIFORNIA AVE, BETWEEN CALIFORNIA AVE. AND BUTLER AVE., AND FROM BUTLER TO TULARE AVE." 5. **Added Note 3**: "SEE API-6 FOR VAN NESS EXTENSION BETWEEN HERNDON AVE. AND SAN JOAQUIN RIVER BLUFF." 6. **Added Note 4**: "SEE API-3, API-4 FOR DETAILS RELATING TO MODIFIED STREET TYPES." 7. Prior "REF. & REV." date erroneously shown as June 2015, date corrected to reflect its prior revision with the issuance of Addendum 5 in Oct. 2014.
P-5	1. Existing **callout**: "WHEN WALK POURED SEPARATE, INSTALL *BOUND* BREAKER BEHIND CURB." **Revised to read**: "WHEN WALK POURED SEPARATE, INSTALL *BOND* BREAKER BEHIND CURB." 2. Expansion joint dimension Revised from: 90' to 45' 3. **Added callouts** for "COMMERICAL PATTERNS" and "RESIDENTIAL PATTERNS" 4. **Revised callout** for return radius to reference standard drawings. 5. Existing **NOTE renamed**: "NOTE A" 6. Existing **NOTE renamed**: "NOTE B" 7. Prior "REF. & REV." date erroneously shown as June 2015, date corrected to reflect its prior revision with the issuance of Addendum 5 in Oct. 2014.
P-6	1. **Note 2**: " "d" = 6' MINIMUM AND LESS THAN 12' OR GREATER THAN 20'" **Revised to read:** "DRIVEWAY SPACING, "d", SHALL BE 6' MIN." 2. **Note 6**: "IF ONLY ONE ENTRANCE THEN LOCAL ST. MIN. IS 18' NOT 15'" **Revised to read**: "IF ONLY ONE ENTRANCE LOCAL STREET MIN. SHALL BE 18', NOT 15'. EXCEPTION: SINGLE FAMILY RESIDENTIAL." 3. **Added Note 9**: "RESIDENTIAL DRIVEWAY APPROACHES MUST MATCH THE WIDTH OF THE DRIVEWAY PAVEMENT AND THE WIDTH OF THE GARAGE. THE DRIVEWAY OPENING SHALL EQUAL THE WIDTH OF THE GARAGE DOOR (OR DOORS) PLUS 4' BUT SHALL NOT EXCEED THE MAXIMUM ALLOWABLE WIDTHS AS SHOWN ON THE TABLE, BELOW. THE DRIVEWAY OPENING SHALL BE CENTERED ON THE GARAGE DOOR."

P-9	1. **Added Detail**, "RESIDENTIAL STREET WITH WEDGE CURBS AND ADJACENT SIDEWALKS" 2. **Updated** expansion joint **detail** callout to reference current Caltrans specification: "SEE STATE SPEC. 51-1.12C…" Revised to read: "SEE STATE SPEC. 51-2.01C(1)…"
P-12	1. **Updated** expansion joint detail **callout** to reference current Caltrans specification: "SEE STATE SPEC. 51-1.12C…" Revised to read: "SEE STATE SPEC. 51-2.01C(1)…" 2. **Callout**: "2X6 REDWOOD HEADER (TYP) **Revised to read**: "WHERE REQUIRED PROVIDE 2"x6" REDWOOD HEADER (TYP.)" 3. **Revised** expansion joint **spacing** to 45' (from 90') for 4' valley gutter.
P-17	1. Revised Title Block to include area for revision annotation.
P-28	1. Drawing revised to include 12" **grooved border** as an "**optional**" feature to assist with working the concrete. Also included "Grooved Border" detail. 2. **Note 3** was **amended** to incorporate Note 10. 3. **Note 11** is now **Note 10**. 4. **Note 12** was **removed** from the standard. 5. **Added reference** to P-32 for the Detectable Warning Device. 6. **Removed callout** for 4' min. sidewalk width.
P-29	1. Created alternate detail (Detail B) for condition when landing at bottom of ramp exceeds 5'-0". 2. **Added Note 1**, updated numbering for Notes 2 through 5. 3. **Note 3** (was note 2) **revised** to comply with MUTCD and accommodate new Detail B. 4. **Added Note 10** regarding optional 12" grooved border. 5. **Added** (optional) **grooved border** to details. 6. **Modified** the following **callouts**: a. "TAPER CURB FROM 6" TO ½" BEVEL" Revised to read: "TAPER CURB FROM 6" TO FLUSH". b. "2% MAX. SLOPE DETECTABLE WARNING DEVICES REQUIRED SEE P-32" Revised to read: "DETECTABLE WARNING DEVICES PER CITY STD. DWG. P-32". c. "NOTE: SLOPE 5% MAX ON GUTTER IN RAMP AREA" Revised to: "SLOPE 5% MAX IN GUTTER AND ADJACENT PAVING IN RAMP AREA" d. "6" WIDE RETAINING CURB WITH VARIABLE HEIGHT" Revised to: "RETAINING CURB: 0"-6" 7. **Deleted** the following **callouts and dimensions**: a. "6" STANDARD CURB" b. "4' WALK MIN." c. "8' MIN." d. "10% MAX CROSS SLOPE" e. "8.33% MAX SLOPE" f. "MEET TOP OF CURB" 8. **Added** depiction of **level-landing** at top of ramp as required by Note 6.
P-31	1. **Note 5 revised** to denote it as an optional feature. 2. **Note 8 revised** to reflect a minimum width of 5'. 3. **Note 11 removed** and **Note 12 renumbered** to 11. 4. **Note 13 renumbered** to 12 and text has been revised to match current MUTCD language. 5. **Added Note 13:** "PUSHBUTTONS FOR ACCESSIBLE PEDESTRIAN SIGNALS SHOULD BE LOCATED AS CLOSE AS POSSIBLE TO THE CROSSWALK LINE FURTHEST FROM THE CENTER OF THE INTERSECTION AND AS CLOSE AS POSSIBLE TO THE CURB RAMP. IF TWO ACCESSIBLE PEDESTRIAN PUSHBUTTONS ARE PLACED LESS THAN 10 FEET APART OR ON THE SAME POLE, EACH ACCESSIBLE PEDESTRIAN PUSHBUTTON SHALL BE PROVIDED WITH A PUSHBUTTON LOCATOR TONE, TACTILE ARROW, SPEECH WALK MESSAGE FOR THE WALK INDICATION, AND A SPEECH PUSHBUTTON INFORMATION MESSAGE. REFER TO CA-MUTCD FOR SPECIFIC GUIDANCE." 6. **Ramp width increased** to 5' minimum for ADA turning compliance.
P-32	1. **Revised dome dimensions** to reflect current CBC. 2. **Revised Note 1** to reflect 2016 revision of CBC.

	3. **Added detail** for tapering edge of surface-mounted panels.
P-33	1. **Drawing renumbered** "P-33A", reference below for technical changes.
P-33A	1. Slab thickness changed from 4" to 6"
P-33B	1. New Standard Drawing: "MULTI-FAMILY TYPICAL REFUSE CONTAINER ENCLOSURE DETAILS" for enclosure **Exhibits A and B**.
P-33C	1. New Standard Drawing: "MULTI-FAMILY TYPICAL REFUSE CONTAINER ENCLOSURE DETAILS" for enclosure **Exhibit C**.
P-41	1. **Revised** relative **location** of reclaimed water main and setback to face of curbs.
P-42	1. **Revised** relative **location** of reclaimed water main and setback to face of curbs.
P-52	1. **Removed** requirement for **2' pedestrian easement**. 2. **Sidewalk width reduced** to 4' for Cases 1, 2, and 3 on side with planter.
P-53	1. **Removed** optional 12' sidewalk pattern with **2' pedestrian easement** requirement. 2. **Sidewalk width** reduced to 4' for both street classifications.
P-56	1. **Drawing renumbered** P-56A
P-56A	1. Added "SEE API-4 THRU API-9 FOR S. MINNEWAWA AVE. BETWEEN BUTLER AVE. AND FANCHER CREEK AND FOR VAN NESS EXTENSION BETWEEN HERNDON AVE. AND SAN JOAQUIN RIVER BLUFF." to title block.
P-56B	1. New Standard Drawing: "LOCAL STREET CROSS-SECTIONS WITH WEDGE CURBS"
P-58	1. **Corrected** the trail **width** shown on the plan view. 2. **Revised Note 3** to remove: "MINIMUM RADIUS AT CENTERLINE OF TRAIL SHALL BE 160'." 3. **Revised Note 5** to include reference to Detail 27B for edge line.
P-61	1. Added requirement for three (3) rows of 4" reflective tape to be installed at the top of the bollards for enhanced nighttime visibility by trail users.
P-67	1. **Driveway depth reduced** from 7.5' to 2.0', graphical edits made to drawing accordingly. 2. **Note 2**: "A 36" MINIMUM SIDEWALK AREA BEHIND RAMP SHALL BE MAINTAINED WITH 10' PATTERN OR LESS" **Revised to read**: "A 4.0' MIN. SIDEWALK AREA BEHIND RAMP SHALL BE MAINTAINED. A PEDESTRIAN EASEMENT IS REQUIRED WHEN PATTERN IS LESS THAN 6'." 3. **Added Note 4**: "6' MIN. SIDEWALK REQUIRED ON MAJOR STREETS, 4' MIN. REQUIRED ON LOCAL STREETS." 4. Graphical changes made for clarity and conformance with related standard drawings.
P-70	5. **Added Note 6**: requires developer / engineer to prepare and submit truck-turning simulation when opposing dual-lefts are proposed at a new or existing intersection.
P-72	1. **Drawing title**: "BUS SHELTER ELECTRICAL LAYOUT" **Revised to read**: "BUS STOP WITH SHELTER LAYOUT" 2. All references to electrical conduits and related equipment have been removed. 3. A number of new bus stop appurtenances and furniture have been added to the detail including significant dimensional changes
P-73	1. **Dimension**: "FAR SIDE INTERSECTION" (8") **Revised to read**: " 8' ".
P-79	1. Existing NOTES have been numbered. 2. References to **minimum bike lane widths changed** to 6' when adjacent to on-street parking. 3. **Note 1**: "TO THE GREATEST EXTENT POSSIBLE, CASE I BIKE LANES WILL BE INSTALLED. CONSIDERATION WILL BE GIVEN TO 5-FOOT BIKE LANES (MEASURED FROM FACE OF CURB),

	REDUCED LANE WIDTH, AND/OR ELIMINATION OF TRAFFIC LANES. A TRAFFIC STUDY TO INVESTIGATE, BUT NOT LIMITED TO, TRAFFIC SPEED, SPEED LIMITS, TYPE OF CORRIDOR, AND VOLUMES FOR CARS AND TRUCKS, MAY BE DEVELOPED BEFORE TRAVEL LANES ARE ELIMINATED AND/OR REDUCED IN WIDTH." **Revised to read:** "TO THE GREATEST EXTENT POSSIBLE, CASE I BIKE LANES WILL BE INSTALLED WITH ALL NEW INDUSTRIAL, COLLECTOR OR ARTERIAL STREET DEVELOPMENTS OR RECONSTRUCTION. WHEN AVAILABLE SPACE IN THE ROADWAY DOES NOT ALLOW FOR THE MINIMUM STANDARD WIDTHS, CONSIDERATION WILL BE GIVEN TO NARROWED TRAVEL LANES OR ELIMINATION OF TRAVEL LANES BEFORE CONSIDERING NARROWING OR ELIMINATING BIKE LANES. A TRAFFIC STUDY TO INVESTIGATE TRAFFIC SPEED, SPEED LIMITS, TYPE OF CORRIDOR, VOLUMES FOR CARS AND TRUCKS (OR OTHER DATA AS REQUESTED BY THE CITY TRAFFIC ENGINEER) MAY BE REQUIRED BEFORE ANY PROPOSED TRAVEL OR BIKE LANE REDUCTIONS ARE ALLOWED." 4. **Note 2**: "NO STOPPING AT ANY TIME" SIGNS WILL BE INSTALLED AT 200 FOOT INTERVALS. (OR AT INTERVALS DETERMINED BY EXISTING STREETLIGHT POLES) WHEN STRIPING A CASE I BIKE LANE." **Revised to read:** "WHEN STRIPING A CASE I BIKE LANE, R-28(S) "NO STOPPING AT ANY TIME" SIGNS WILL BE INSTALLED AT 200' MAXIMUM INTERVALS (OR AT INTERVALS DETERMINED BY EXISTING STREETLIGHT POLES)." 5. **Added Note 3**: "ALL STRIPING SHALL BE THERMOPLASTIC, BIKE LANE MARKINGS SHALL BE TRAFFIC PAINT PER CALTRANS SPECIFICATIONS OR METHYL METHACRYLATE (MMA). REFERENCE DETAIL P-80 FOR PROPER PLACEMENT AND INSTALLATION OF BIKE LANE SYMBOLS AND P-81A/B FOR "CONFLICT-ZONE" MARKINGS AND MMA REQUIREMENTS." 6. **Callout(s)**: "CENTER SYMBOL WITHIN 5' BIKE LANE" **Revised to read**: "CENTER CALTRANS A24C, "BIKE LANE SYMBOL WITH PERSON" AND CALTRANS A24A, "BIKE LANE ARROW" WITHIN 5' BIKE LANE". 7. **Callout(s)** for "4" (and) 6" SOLID WHITE STRIPE" **Revised to read**: "4" WHITE STRIPE PER DETAIL 27B" and "6" WHITE STRIPE PER DETAIL 39 OR 39A, AS APPROPRIATE". 8. **Dimension**: "8' MIN. PARKING" **Revised to read**: "8' PARKING".
P-80	1. **Added detail** for Class III bike lanes (shared travel lane) with symbol and signage required when using a "SHARROW" within the roadway. 2. **Added detail** for Class III bike lanes (shared travel lane) with symbol and signage required when using a "SHARROW" within a right-turn lane. 3. **Added callout**: "SHARED ROADWAY SYMBOL "SHARROW" PER MUTCD (CA) FIGURE 9C-9, SEE NOTE 4". 4. **Added callout**: "R4-11 PER MUTCD (CA), SEE NOTE 4." 5. **Added callout**: "R81 PER MUTCD (CA), SEE NOTE 3." 6. **Added callout**: "R3-7 with R118(CA) per MUTCD (CA)" 7. **Added dimension**: "5' MINIMUM, REF. P-79" 8. **Added dimension**: "SHARED TRAVEL LANE" 9. **Added references** to Detail 39/39A where "6" WHITE STRIPE" was used. 10. **Callout**: "MARKINGS (SEE NOTE 1)" **Revised to read**: ""BIKE LANE ARROW" PER CALTRANS A24A & "BIKE LANE SYMBOL WITH PERSON" PER A24C, SEE NOTE 1" 11. **Note 1**: "THE BICYCLE SYMBOL PAVEMENT MARKINGS SHALL BE PLACED ON THE FAR SIDE OF EACH INTERSECTION, 25' FROM THE RETURN. 800' MAXIMUM SPACING. THEY MAY BE PLACED AT OTHER LOCATIONS AS DESIRED." **Revised to read:** "BICYCLE LANE PAVEMENT MARKING SYMBOLS SHALL BE PLACED ON THE FAR SIDE OF EACH INTERSECTION, 25' FROM THE RETURN, AT 800' MAXIMUM SPACING. THEY MAY ALSO BE PLACED AT OTHER LOCATIONS AS DESIRED AND APPROVED BY THE CITY TRAFFIC ENGINEER." 12. **Note 2**: "WHERE MOTORIST RIGHT TURNS ARE PERMITTED, THE SOLID BIKE LANE LINE SHALL BE DASHED UP TO THE INTERSECTION, AS SHOWN, BEGINNING AT A POINT 100' IN ADVANCE OF THE INTERSECTION. A DISTANCE OF 200' SHALL BE USED ON ARTERIALS AND SUPER ARTERIALS WITH A POSTED SPEED LIMIT OF 45 MPH OR GREATER. WHEN RIGHT TURNS ARE PROHIBITED, THE BIKE LANE LINE SHALL BE SOLID TO THE INTERSECTION." **Revised to read:** "WHERE MOTORIST RIGHT

	TURNS ARE PERMITTED, THE SOLID BIKE LANE LINE (DETAIL 39) SHALL BECOME DASHED UP TO THE INTERSECTION (DETAIL 39A), BEGINNING AT A POINT 100' IN ADVANCE OF THE INTERSECTION. A DISTANCE OF 200' SHALL BE USED ON ARTERIALS AND SUPER-ARTERIALS WITH A POSTED SPEED LIMIT OF 45 MPH OR GREATER. WHEN RIGHT TURNS ARE PROHIBITED, THE BIKE LANE LINE SHALL BE SOLID (DETAIL 39) TO THE INTERSECTION." 13. **Note 4** (existing) **renumbered** to Note 6. 14. **Note 4** (new) **added**: "FOR CLASS III BIKE LANES, AN R4-11 SIGN SHALL BE INSTALLED ON THE FAR SIDE OF EACH INTERSECTION AND AT 800' MAXIMUM SPACING. WITH APPROVAL FROM THE CITY TRAFFIC ENGINEER, THIS SIGNAGE MAY BE SUPPLEMENTED WITH PAINTED "SHARROWS" PER MUTCD (CA) FIG. 9C-9." 15. **Note 5** (new) **added**: "FOR SHARROW PLACEMENT IN RIGHT TURN LANES REFER TO MUTCD (CA) FIG. 9C-111. R3-7 WITH R118 SIGNAGE MUST ALSO BE PROVIDED."
P-81	1. Removed from Standard Drawings (previously blank).
P-81A	1. New Standard Drawing: GREEN BIKE LANE: RIGHT-TURN AND DRIVEWAY CONFLICT ZONES.
P-81B	1. New Standard Drawing: GREEN BIKE LANE: TRAP-RIGHT CONFLICT ZONE
P-82	1. Minor drafting edits to highlight the requirement to remove existing longitudinal crosswalk stripes when installing the high-visibility crosswalk.
P-90	1. **Detail revised** to reflect new letter heights: (12" vs. 10" and 9" vs. 8") 2. **Note 2**: "1" WHITE *BOARDER*" **Revised to read**: "1" WHITE *BORDER*" 3. **Note 3**: "10" SERIES 'E' MODIFIED UPPER CASE LETTER – 2" STROKE MINIMUM. ON LONGER STREET NAME SIGNS A NARROWER SERIES IS PERMITTED." **Revised to read**: 12" SERIES 'E' MODIFIED UPPER CASE LETTER – 2" STROKE MINIMUM. ON LONGER STREET NAME SIGNS A NARROWER SERIES IS PERMITTED." 4. **Note 4**: "8" SERIES 'E' MODIFIED LOWER CASE LETTER – 2" STROKE MINIMUM. ON LONGER STREET NAME SIGNS A NARROWER SERIES IS PERMITTED." **Revised to read**: "9" SERIES 'E' MODIFIED LOWER CASE LETTER – 2" STROKE MINIMUM. ON LONGER STREET NAME SIGNS A NARROWER SERIES IS PERMITTED." 5. **Notes** were **renumbered** 1-7 (previously there were two #4's). 6. **Callout**: "3/8" HOLE (SEE NOTE "G") **Revised to read**: "3/8" HOLE, SEE NOTE 7" 7. **Callout**: "1"" **Revised to read**: "1" (TYP.)"
P-92	1. **Detail revised** to reflect new street name letter heights: (6" vs. 5") and to show mixed-case lettering for the street name instead of all caps. 2. **Detail revised** to reflect larger street heading, road type and block number heights: (3" vs. 2") 3. **Note 3**: "LETTERS ON STREET NAME SHALL BE A SERIES B, 5" UPPER CASE. THE SECONDARY DIRECTIONAL INDICATOR, STREET TYPE (AVE., BLVD. ETC) AND BLOCK NUMBERS SHALL BE 2" UPPER CASE. SIGN SHALL HAVE A 1/2" RADIUS CORNER WITH A ¼" OUTSIDE GREEN BORDER AND A 3/B" INSIDE BORDER." **Revised to read**: "LETTERS ON STREET NAME SHALL BE SERIES B, 6" UPPER CASE AND 4.5" LOWER CASE. THE SECONDARY DIRECTIONAL INDICATOR, STREET TYPE (AVE., BLVD. ETC) AND BLOCK NUMBERS SHALL BE 3" UPPER CASE. SIGN SHALL HAVE 1/2" RADIUS CORNERS WITH A 1/4" OUTSIDE GREEN BORDER AND A 3/8" INSIDE WHITE BORDER."
P-93 **P-94** **P-95**	1. **Note 7**: "FOOTING CONCRETE SHALL BE A MINIMUM 2,000 PSI AT 28 DAYS" **Revised to read**: "FOOTING CONCRETE SHALL BE A MINIMUM 2,500 PSI AT 28 DAYS"
P-97	1. **Added Note 9**: "HYDROSEED BASIN SIDE SLOPES AND TOP AREAS IN ACCORDANCE WITH CALTRANS SPECIFICATION SECTION 21-1.03E AND MAINTAIN EROSION CONTROL MEASURES UNTIL SEEDING IS ESTABLISHED."
P-101	1. New Standard Drawing: "INTERSECTION SIGHT TRIANGLES: LOCAL/COLLECTOR/ARTERIAL"

DPW – ELECTRICAL (E Series)	
E-1	1. **Note #1 revised** to include year of issuance for Caltrans Specifications applicable to detail (1997). 2. **Updated pull box** to include crushed rock sump base material. Pull box revised to match STD. DWG. E-4A. 3. **Callout**: "ORIENTATE PEC TO THE NORTH", **Revised to read**: "ORIENT PEC TO THE NORTH" 4. **Callout**: "WELD HAND HOLE COVER AFTER INSPECTION" **Revised to read**: "WELD STEEL HAND-HOLE COVER AROUND FULL PERIMETER AFTER INSPECTION". 5. **Callout**: "TYPE "NM" CONDUIT, REFER TO TABLE ON STD. DWG. E-27 FOR MORE INFORMATION" **Revised to read**: "TYPE "NM" CONDUIT, REFER TO TABLE ON STD. DWG. E-27 FOR DETAIL AND MORE INFORMATION". 6. **Callout**: "CONDUIT PER 23-3.11 AND STD. DWG. E-6" **Revised to read**: "CONDUIT PER SPEC. SECTION 23-3.11". 7. **Callout**: "FUSE INSTALLED IN LUMINAIRE PER SPEC. SECTION 3.12" **Revised to read**: "FUSE INSTALLED IN LUMINAIRE PER SPEC. SECTION 1.23". 8. **Callout**: "TWO (2) #10 STRANDED COPPER CONDUCTORS (THHN) TO FIXTURE." **Revised to read**: "TWO (2) #10 STRANDED COPPER CONDUCTORS (THHN) TO FIXTURE. REF. STD. DET. E-5". 9. **Dimension** for luminaire arm length: "12'" **Revised to read**: "SEE LMA CHART" 10. **Added** LMA **chart** for required luminaire arm lengths. 11. Numbered existing notes, no changes made to existing requirements.
E-2	1. **Drawing sub-title**: "DIRECT BURY WITH NO BASE", **Revised to read**: "EMBEDDED POLE WITH NO FOUNDATION". 2. **Callout**: "ORIENTATE PEC TO THE NORTH", **Revised to read**: "ORIENT PEC TO THE NORTH" 3. **Callout**: "WELD HAND HOLE COVER AFTER INSPECTION", **Revised to read**: "WELD HAND HOLE COVER AROUND FULL PERIMETER AFTER INSPECTION". 4. **Added** pull box to drawing detail inset 5. Numbered existing notes with no technical changes made. 6. **Note 6**: "A PULL BOX WILL BE REQUIRED WHEREVER CONDUIT CHANGES DIRECTION AND WHERE MULTIPLE LIGHTS ARE INSTALLED ON A SINGLE SERVICE. PULLBOX SPACING SHALL NOT EXCEED 200'. (SEE P.W. STD. E-4)", **Revised to read**: "A PULL BOX WILL BE REQUIRED WHEREVER CONDUIT CHANGES DIRECTION AND WHERE MULTIPLE LIGHTS ARE INSTALLED ON A SINGLE SERVICE. PULLBOX SPACING SHALL NOT EXCEED 200'. SEE STD. DWG'S E-4A THROUGH E-4C." 7. **Added Note** 7: "THREE #6 COPPER CONDUCTORS (THHN) #8 WIRE MAY BE USED ON SINGLE POLE INSTALLATIONS" 8. **Callout**: "TWO (2) #10 STRANDED COPPER CONDUCTORS (THHN) TO FIXTURE." **Revised to read**: "TWO (2) #10 STRANDED COPPER CONDUCTORS (THHN) TO FIXTURE. REF. STD. DET. E-5."
E-3	1. **Drawing title modified** to include: "TEMPORARY USE ONLY". 2. GENERAL NOTES renamed: "NOTES". Individual notes were numbered but with no technical changes made. 3. **Callout** for **Item 5**: "CONNECTOR SINGLE LIGHT "A" MULTIPLE LIGHTS "B", **Revised to read**: "CONNECTOR SINGLE LIGHT "A""
E-4A	1. **Updated pull box** and hatch for crushed rock sump. 2. **Added** required thickness to pull box grout. 3. **Added** grouted conduit cutouts.
E-4B	1. **Added** required thickness to pull box grout. 2. Changed "DIRT" to "NON-CONCRETE" to identify a pull box which is not located in concrete sidewalk. 3. **Added** grouted conduit cutouts. 4. **Added** footnote to General Notes: "SPLICES MUST BE APPROVED BY TSSL"
E-4C	1. Drawing title revised to specify: "LOCAL STREETS ONLY (RESIDENTIAL)"

	2. Added required thickness to pull box grout. 3. Added Approved Locking Lid per Section 23-1.10 of City Specifications. 4. **Note 6**: "FUSE AT POINT OF SERVICE SHALL BE 60A IF #6 CONDUCTOR AND 40A IF #8 CONDUCTOR AND SHALL HAVE A TRON HEJ TYPE FUSE HOLDER (SINGLE POLE). INSULATE WIRE CONNECTION SAME AS SPLICES (23-3.12)." **Revised to read**: "FUSE AT POINT OF SERVICE SHALL BE 60A FOR #6 CONDUCTOR AND SHALL HAVE A TRON HEJ TYPE FUSE HOLDER (SINGLE POLE). INSULATE WIRE CONNECTION SAME AS SPLICES (23-3.12)."
E-5	1. Edits made to wiring diagram to show splices at hand hole. 2. Note was numbered. 3. **Note 1**: "WITH EXCEPTION OF BONDING JUMPERS, NO SPLICES WILL BE ALLOWED IN PULL BOXES" **Revised to read**: "WITH EXCEPTION OF BONDING JUMPERS, NO SPLICES WILL BE ALLOWED IN PULL BOXES WITHOUT PRIOR APPROVAL AND THE INSTALLATION OF AN APPROVED LOCKING LID PER SECTION 23-1.10 OF CITY SPECIFICATIONS".
E-6	1. **Amended Note 1** to include: "CONDUIT NOT PLACED UNDERNEATH CONCRETE SIDEWALK OR UNDERNEATH ROADWAYS SHALL BE GRC ENCASED IN A MINIMUM 4" WIDE TWO SACK CONCRETE SLURRY MIX." 2. **Added Note 5**: "STREETS LIGHTS ON MAJOR STREETS SHALL BE FED FROM A SERVICE PEDESTAL WITH A MASTER PHOTO CONTROL AS DETAIL SECTION 3-3.17 OF THE CITY SPECIFICATIONS AND STD. DWG'S. E-15, E-18, OR AS APPROVED BY CITY ENGINEER."
E-7	1. Drawing renumbered to E-7A.
E-7A	1. **Drawing title**: "STREETLIGHT-PLACEMENT DIVIDED ARTERIAL STREETS" **Revised to read**: "STREETLIGHT-PLACEMENT MAJOR STREETS" 2. Updated web address for City of Fresno standard drawings. 3. Updated to show independent street light systems on each side with 165' spacing on major streets.
E-7B	1. **New Standard Drawing**: "STREETLIGHT–PLACEMENT MAJOR/LOCAL INTERSECTION".
E-8	1. **Drawing title:** "STREETLIGHT – PLACEMENT COLLECTOR STREETS" **Revised to read**: "STREETLIGHT-PLACEMENT SIGNALIZED INTERSECTIONS".
E-9	1. **Drawing renumbered** to E-9A
E-9A	1. Updated web address for City of Fresno standard drawings. 2. Updated streetlight spacing on Local/Major streets. 3. Updated streetlight spacing on Local streets.
E-9B	1. **New Standard Drawing**: "STREETLIGHT-PLACEMENT LOCAL INTERSECTIONS
E-10	1. **Updated** Expressway/Arterial luminaire **spacing** for LED streetlight design.
E-11	1. **Changed** certain **dimensions**, added notes and designations for LED streetlight design.
E-12	1. Standard Drawing no longer used.
E-13	1. Updated bike loop symbol. 2. **Note 2**: "ALL NEW LOOPS SHALL BE TESTED AND DOCUMENTED ON SHEET PROVIDED IN THE SECTION 23-2, TESTING SHALL BE TO CALTRANS STATE STANDARD PLANS." **Revised to read**: "ALL NEW LOOPS SHALL BE TESTED AND DOCUMENTED ON SHEET PROVIDED IN SECTION 23-2; TESTING SHALL BE PER CALTRANS STANDARD SPECIFICATIONS."
E-14	1. **Note 1**: "CIRCULAR DETECTION SHALL BE DETERMINED BY THE CONDITION OF EXISTING PAVEMENT AND SHALL HAVE THE APPROVAL OF THE CITY TRAFFIC ENGINEER. CIRCULAR LOOP SAWCUTS SHALL BE PER CALTRANS ES-5B, LOOP SEALANT SHALL BE CALTRANS APPROVED ELASTOMERIC SEALANT OR HOT MELT RUBBERIZED ASPHALT SEALANT." **Revised to read**: "PAVEMENT SHALL BE DEEMED SUITABLE FOR INSTALLATION OF LOOP(S) BY CITY TRAFFIC

	ENGINEER. IF DEEMED NO SUITABLE, PROJECT SHALL GRIND AND OVERLAY AND/OR RECONSTRUCT PAVEMENT AS DETERMINED BY CITY TRAFFIC ENGINEER." 2. Added detector loop winding detail, revised legend to include references to detail.
E-15	1. Wiring schematic revised to reflect design of current manufacturer. 2. Switch amperage requirements updated
E-21	1. Clarified lock jaw lid note #32
E-22	1. Removed hand hole from pole.
E-24	1. Added pull box in front of service pedestal.
E-24A	1. Added pull box in front of service pedestal.
E-24B	1. New Standard Drawing: "SIGNAL LIGHT EQUIPMENT PLACEMENT DETAIL".
E-24C	1. NEW Standard Drawing: "High-intensity Activated crossWalk (HAWK) Layout and Equipment Placement Guideline"
E-28	1. Standard Drawing no longer used.
E-30	1. Added Note 4: "MATCHING BASE BOLT COVERS SHALL BE INSTALLED".
E-31	1. Removed Note 2. 2. Notes 3 and 4 renumbered to 2 and 3. 3. Added Note 4: "MATCHING BASE BOLT COVERS SHALL BE INSTALLED".
E-32	1. Removed Note 2. 2. Notes 3 and 4 renumbered to 2 and 3. 3. Added Note 4: "MATCHING BASE BOLT COVERS SHALL BE INSTALLED".
E-33	1. Removed Note 2. 2. **Notes** 3 and 4 renumbered to 2 and 3. 3. Added Note 4: "MATCHING BASE BOLT COVERS SHALL BE INSTALLED".
E-34A	1. Minor revisions to lower input panel diagram and Opticom *Field Wire* detail.
E-34C	1. Minor revisions to input lower panel diagram.
E-37	1. Added Anchor Bolt detail and notes, updated dimensions.

DPW – INTELLIGENT TRANSPORTATION SYETEM (ITS Series)	
ITS-1	1. **Removed**: “RADAR DETECTOR” **from drawing and legend**. 2. **Removed**: “NO. 6 PULL BOX (FIBERLYTE LID)” **from drawing and legend**. 3. **Removed callout**: “4-1-½” HDPE ITS CONDUIT” **from** drawing. 4. **Removed linework** for 1-½” conduit related to #3, above.
ITS-3	1. **Added callout**: “SEE NOTE 11” 2. **Added conduit and callout** for 1-1/2” RGC between Traffic Signal Service Cabinet and PG&E No. 2 Service box. 3. **Legend**: "ITS CONDUIT” **Revised to read**: "ITS CONDUIT, HDPE CONDUIT" 4. **Legend**: “TRAFFIC SIGNAL CONDUITS” **Revised to read**: “TRAFFIC SIGNAL CONDUITS, RIGID GALVANIZED CONDUIT (RGC)” 5. **Note 2**: “ITS INTERSECTION COMMUNICATION CABINET PER CURRENT CITY OF FRESNO QUALIFIED PRODUCT LIST. (QPL)” **Revised to read**: “ITS INTERSECTON COMMUNICATIONS CABINET, SEE STD PLAN ITS-20A” 6. **Added Note 11**: “INSTALL 1-1/2" RIGID CONDUIT”
ITS-3A	1. **Added callout**: “SEE NOTE 12” 2. **Added callout**: “2” RGC” 3. **Removed:** Communications Cabinet **from drawing**. 4. **Removed:** ITS **conduit** from between 6(E) pullbox and Communication Cabinet. 5. **Rerouted**: ITS **conduits** connecting 4’x7’ ITS Vault to Communications Cabinet now connect the ITS Vault to the HUB. 6. HUB is now dimensioned relative to Traffic Signal Service Cabinet, not Communications Cabinet. 7. **Added conduit** and callout for 1-1/2” RGC between Traffic Signal Service Cabinet and PG&E No. 2 Service box. 8. **Legend**: “TRAFFIC SIGNAL CONDUITS” **Revised to read**: “TRAFFIC SIGNAL CONDUITS, RIGID GALVANIZED CONDUIT (RGC)” 9. **Note 2:** “ITS INTERSECTION COMMUNICATION CABINET PER CURRENT CITY OF FRESNO QUALIFIED PRODUCT LIST. (QPL)” **Revised to read**: “ALL REQUIRED COMMUNICATION EQUIPMENT ASSEMBLIES SPECIFIED ON ITS-21B SHALL BE INSTALLED INSIDE HUB CABINET AS DIRECTED BY ENGINEER.” 10. **Added Note 12**: "INSTALL 1-1/2" RIGID CONDUIT"
ITS-4	1. **Conduit Color Codes**: "4. YELLOW" **Revised to read**: "4. ORANGE W/YELLOW STRIPE" 2. Minor drafting edits and text changes for clarity.
ITS-5	1. **Conduit Color Codes**: "4. YELLOW" **Revised to read**: "4. ORANGE W/YELLOW STRIPE"
ITS-12	1. **Added Note 3**: “ALL CONDUITS INSTALLED SHALL BE LABELED WITH DIRECTION BRASS TAG DIRECTLY ABOVE CONDUITS. EXAMPLE: N (DIRECTION) TO IXXXX (NEXT VAULT ID NUMBER)” 2. **Callout**: “VAULT LID SHALL BE FLUSH WITH SIDEWALK OR BE SET TO FUTURE SIDEWALK GRADE @ 1/4" PER FOOT ABOVE TOP OF CURB” **Revised to read**: “VAULT LID SHALL BE FLUSH WITH SIDEWALK OR SET TO FUTURE SIDEWALK GRADE, SLOPE NOT TO EXCEED 1/4" PER FOOT, AND ABOVE TOP OF CURB”. 3. **Added callout**: “BRASS TAG, VAULT I.D. NUMBER, IXXXX” 4. **Added callout**: “NAMEPLATE MARKED “ITS COMMUNICATION””
ITS-14	1. **Added Note 3**: “ALL CONDUITS INSTALLED SHALL BE LABELED WITH DIRECTION BRASS TAG DIRECTLY ABOVE CONDUITS. EXAMPLE: N (DIRECTION) TO IXXXX (NEXT VAULT ID NUMBER)” 2. **Callout**: “VAULT LID SHALL BE FLUSH WITH SIDEWALK OR BE SET TO FUTURE SIDEWALK GRADE @ 1/4" PER FOOT ABOVE TOP OF CURB” **Revised to read**: “VAULT LID SHALL BE FLUSH WITH SIDEWALK OR SET TO FUTURE SIDEWALK GRADE, SLOPE NOT TO EXCEED 1/4" PER FOOT, AND ABOVE TOP OF CURB”. 3. **Added callout**: “BRASS TAG, VAULT I.D. NUMBER, IXXXX” 4. **Added callout**: “NAMEPLATE MARKED “ITS COMMUNICATION””

ITS-15	1. Standard Drawing no longer used.
ITS-16	1. Standard Drawing no longer used.
ITS-17	1. Standard Drawing no longer used.
ITS-20	1. Standard Drawing no longer used.
ITS-21	1. Standard Drawing no longer used.
ITS-21B	1. **Callout**: "12 COUNT SC PANEL" **Revised to read**: "12 COUNT LC SMFO SPLICE CASSETTE" 2. **Added Callout**: "CAMERA POE INJECTOR" 3. **Added Callout**: "WIRELESS ACCESS POINT POE INJECTOR" 4. **Callout**: "IP POWER STRIP CORD" **Revised to read**: "POWER STRIP POWER CORD" 5. **Drawing Revised** to include depiction of 2 DIN rail mounted switch power supplies 6. **Removed callout**: "BACK OF IP POWER STRIP" 7. **Added Callout**: "RACK MOUNT DIN RAIL ASSEMBLY" 8. **Callout**: "12-COUNT FIBER OPTIC CABLE, -10' SLACK" **Revised to read**: "12-COUNT FIBER OPTIC CABLE TERMINATED TO SPLICE CASSETTE -10' SLACK" 9. **Callout**: "POWER RECEPTACLE FOR IP POWER STRIP ONLY" **Revised to read**: "POWER RECEPTACLE FOR POWER STRIP ONLY" 10. **Added Callout**: "VELCRO WRAP ALL EQUIPMENT TO SHELVES" 11. **Callout**: "19" SHELF, 10" DEEP" **Revised to read**: "19" VENTILATED SHELVES, 10" DEEP" 12. **Callout**: "IP POWER STRIP" **Revised to read**: "SURGE PROTECTED POWER STRIP" 13. **Callout**: "FIBER OPTIC JUMPER" **Revised to read**: "3 METER LC TO LC FIBER OPTIC JUMPER" 14. **Drawing Revised** to include depiction of DIN rail mounted network switch 15. **Callout**: "SFP WITH LC TO SC FIBER PATCH" **Revised to read**: "HARDENED 1 GIG SFP" 16. **Callout**: "DUCT PLUGS AND BELL ENDS TO CITY REQUIREMENTS" **Revised to read**: "BELL ENDS AND DUCT PLUGS ON ALL HDPE CONDUIT TO CITY REQUIREMENT" 17. **Note**: "MINIMUM 4" VERTICAL SPACING BETWEEN EQUIPMENT." **Revised to read**: "MINIMUM 4" VERTICAL SPACING ABOVE 19" SHELF"
ITS-27A	1. **Added Note 5**: "CONTRACTOR MAY ULTILIZE YELLOW WIRE AS A PULL TAPE TO BRING CAT 5e CABLE INTO PROPOSED WIRELESS EQUIPMENT (NOTE: YELLOW WIRE TO RE-INSTALL BACK IN GOOD CONDITION). CONTRACTOR SHALL COORDINATE HIS SCHEDULE WITH CITY TSSL TO PLACE SIGNAL IN TEMPORARY FLASHING PRIOR TO INSTALLATION." 2. **Added Note 6**: "POLE HANDHOLE SHALL BE WELDED IN PLACE AFTER ALL PROPOSED WORK IS COMPLETED AND INSPECTED ON SIGNAL POLE. CONTRACTOR SHALL PROTECT CONDUCTORS FROM DAMAGE DURING WELDING." 3. **Added callout**: "SEE NOTE 6" 4. **Callout**: "OUTDOOR SHIELDED CAT 5e CABLE, MAX RUN LENGTH = 300'." **Revised to read**: "OUTDOOR SHIELDED CAT 5e CABLE, MAX RUN LENGTH = 300'. SEE NOTE 5." 5. **Removed callout**: "CONTRACTOR MAY DRILL MAX 7/8" ACCESS HOLS. FILL WITH WEATHERPROOF KNOCKOUT SEAL."
ITS-27B	1. **Added callout**: "2' TYP" 2. **Callout**: "16"-LONG, 1.5" DIAMETER ALUMINUM PIPE" **Revised to read**: "8"-LONG, 1.5" DIAMETER ALUMINUM PIPE" 3. **Callout**: "4' ANTENNA CABLE (TYP)" **Revised to read**: "2-4' ANTENNA CABLES, SEE NOTE 5" 4. **Callout**: "8"-LONG, 1.5" DIAMETER ALUMINUM PIPE" **Revised to read**: "16"-LONG, 1.5" DIAMETER ALUMINUM PIPE" 5. **Added callout**: "DRIP LOOP" 6. Antenna 1 **drawing revised** to depict integrated antenna with wireless access point 7. **Removed callout**: "ANTENNA 1 (BACK)" 8. **Callout**: "WIRELESS ACCESS POINT" **Revised to read**: "WIRELESS ACCESS POINT ANTENNA 1 BACK" 9. **Callout**: "MINI ASTRO-BRAC OR APPROVED EQUAL WITH ELBOW" **Revised to read**: "MINI ASTRO-BRAC OR APPROVED EQUAL WITH NO ELBOW"

	10. **Added callout**: “CAT5e DRIP LOOP” 11. **Added callout**: “ANTENNA 2” 12. **Added callout**: “8"-LONG, 1.5" DIAMETER ALUMINUM PIPE” 13. **Callout**: “2' ANTENNA CABLE (TYP)” **Revised to read**: “2-4' ANTENNA CABLES (TYP)” 14. **Callout**: “WIRELESS ACCESS POINT” **Revised to read**: “WIRELESS ACCESS POINT ANTENNA 1” 15. **Callout**: “MINI ASTRO-BRAC OR APPROVED EQUAL WITH ELBOW” **Revised to read**: “MINI ASTRO-BRAC OR APPROVED EQUAL” 16. **Note 2**: “ANTENNA 2 MOUNTING IS SIMILAR TO THAT SHOWN IN THE CROSS SECTION ABOVE, BUT NO HOLES ARE DRILLED IN THE MAST ARM, AN 8”-LONG ALUMINUM PIPE IS USED, AND ACCESS POINT IS NOT INSTALLED, AND THE MINI ASTRO-BRAC IS INSTALLED ON TOP OF THE MAST ARM WITH NO ELBOW.” **Revised to read**: “ANTENNA 2 MOUNTING IS SIMILAR TO THAT SHOWN IN THE CROSS SECTION ABOVE, BUT NO HOLES ARE DRILLED IN THE MAST ARM, A 16"-LONG ALUMINUM PIPE IS USED, AN ACCESS POINT IS NOT INSTALLED.” 17. **Note 4**: “ANTENNA 2 WILL BE MOUNTED IN THE SAME DIRECTION AS ANTENNA 1 WHEN IT IS THE LAST ACCESS POINT IN RUN.” **Revised to read**: “ANTENNA 1 AND ANTENNA 2 SHALL HAVE A MINIMUM 2' OF SEPERATION.” 18. **Added Note 5**: “SECURELY STRAP ANTENNA CABLE TO MAST ARM WITH STAINLESS STEEL NYLON COATED STRAPS (FOLLOW NEC STANDARD FOR SPACING.” 19. **Added Note 6**: “ALL ELECTRICAL CONNECTIONS SHALL CONFORM TO MANUFACTURER REQUIREMENTS TO ENSURE WEATHER PROOF CONNECTIONS.”
ITS-28B	1. **Callout**: “WIRELESS RADIO PER SPECIFICATION” **Revised to read**: “WIRELESS RADIO ANTENNA 1 PER SPECIFICATION (SEE NOTE 1)” 2. Antenna 1 **drawing revised** to depict integrated antenna with wireless access point 3. **Removed callout**: “ANTENNA 1 PER SPECIFICATION (SEE NOTE 1)” 4. **Added callout**: “OUTDOOR RATED SHIELDED CAT5E CABLE” 5. **Callout**: “12 AWG POWER TO TESCO” **Revised to read**: “12 AWG POWER TO TESCO SEE NOTE 5” 6. **Removed callout**: “SEE NOTE 5” 7. **Added Note 7**: “POLE HANDHOLE SHALL BE WELDED IN PLACE AFTER ALL PROPOSED WORK IS COMPLETED AND INSPECTED ON STREET LIGHT POLE. CONTRACTOR SHALL PROTECT CONDUCTORS FROM DAMAGE DURING WELDING.”

DPU – WATER (W Series)	
W-1	1. Material Specification, **Note "A": 1-1/2"** meter lid specification: "ARMORCAST A6001969-COF" **Revised to read**: "OLDCASTLE FL30TP AMR MARKED "WATER" 2. Material Specification, **Note "A": 2" meter** lid specification: "ARMORCAST A6001947T-COF" **Revised to read**: "OLDCASTLE FL36TP AMR MARKED "WATER" 3. Material Specifications, **Note "E"**: "1 ½" OR 2" CAST IRON FLANGE" **Revised to read:** "1-1/2" OR 2" METER FLANGE W/5/8"x3" HH PLATED BOLTS & NUTS". 4. Material Specifications, **Note "F"**: "FLANGED METER SPOOL (SCH 80)…" **Revised to read:** "1-1/2" METER: BADGER M120 W/R120 REGISTER OR APPROVED EQUAL OR 2" METER, BADGER M170 W/R170 REGISTER OR APPROVED EQUAL. 5. **Added**: Material Specifications, **Note "O"**: "TRANSMITTER: GALAXY TR3 OR APPROVED EQUAL."
W-2	1. Material Specification, **Note "A"**: 1-1/2" meter lid specification: "ARMORCAST A6001947T-COF" **Revised to read**: "OLDCASTLE FL16 TP MARKED "WATER" 2. Material Specifications, **Note "D"**: " 1 ½" SLIP X 1" MALE ADAPTER (SCH. 80)" **Revised to read:** "1-½" SLIP X 1" BRASS MALE NPT ADAPTER (SCH. 80)" 3. Material Specifications, **Note "G"**: " 1 ¼" X 10 ¾" PVC METER SPOOL (SCH 80)" **Revised to read:** "1" METER: BADGER M55 W/R55 REGISTER OR APPROVED EQUAL" 4. **Added**: Material Specifications, **Note "P"**: "TRANSMITTER: GALAXY TR3 OR APPROVED EQUAL."
W-3	1. **Removed** the depiction of rock bedding from drawing. 2. **Removed callout:** "SURROUND BASE WITH 6" OF ¾" CRUSHE GRAVEL". 3. **Callout**: "WEEP HOLE FOR DRAINAGE" **Revised to read**, "PLUG WEEP HOLE". 4. **Added callout**: "MAINTAIN 36" CLEAR, MIN." 5. Consolidated various notes into "NOTES" list.
W-4	1. Standard Drawing no longer used.
W-6	1. Standard Drawing no longer used.
W-7	1. **Added** Tracer Wire and associated callouts.
W-13	1. Standard Drawing reflects **significant changes** from previous version, including requirement to install water meter box and above-grade enclosure and various material changes. 2. **Added callout**: "INSTALL METER BOX AND ANGLE STOP. REF. STD. DWG. W-1 FOR REQUIREMENTS" 3. **Added callout**: "COMP x COMP 90° ELL, A.Y. McDONALD "NO LEAD" 74761-22 OR APPROVED EQUAL" 4. **Callout**: "1" CORPORATON STOP" **Revised to read**: "1" – 2" BRONZE CORPORATION STOP". 5. **Callout**: "3/4" BALL VALVE" **Revised to read**: "BRASS BALL VALVE". 6. **Callout**: "POLYETHYLENE SERVICE TUBING" **Revised to read**: "TYPE "K" COPPER" 7. **Added callout**: "TYPE "K" COPPER (SWEEP)" 8. **Added callout**: "OPTIONAL SWEEP" 9. **Added callout**: "GALV. STEEL VENT W/DOWN-TURN AIR STRAINER" 10. **Modified detail** for concrete pad to include steel reinforcement. 11. **Note 2**: "VALVE ASSEMBLY AND METAL HOUSING SHALL BE LOCATED IN MEDIAN ISLANDS, LANDSCAPE AREAS OR OUTSIDE OF SIDEWALK AREA WHERE POSSIBLE" **Revised to read**: "VAL-MATIC (MODEL 3/4-25VC) VALVE ASSEMBLY AND METAL HOUSING SHALL BE LOCATED IN MEDIAN ISLANDS, LANDSCAPE AREAS OR OUTSIDE OF SIDEWALK AREA WHERE POSSIBLE." 12. **Added Note 3**: "GALVANIZED PIPES SHALL BE WRAPPED IN TWO LAYERS OF 10 MIL TAPE." 13. **Added Note 4**: "PROVIDE 4' MIN. SIDEWALK CLEARANCE ADJACENT TO AIR-VAC DEVICE FOR ADA

W-14	1. Standard Drawing no longer used.
W-16	1. **Note 2**: "CHECK VALVE TO BE TAPPED AND PLUGGED (FOR INSTALLATION OF BYPASS METER PIPING BY CITY FORCES)." **Revised to read**: "CHECK VALVE TO BE TAPPED TO ACCOMMODATE INSTALLATION OF BYPASS METER PIPING BY CONTRACTOR." 2. **Added inset detail**: "TYPICAL HINGED LID"
W-17	1. Material List: a. **Item #5**, "3/4" BRASS TEE", **Removed** b. **Item #6**, "3/4" BENT NOSE HOSE BIBB", **Removed** c. **Item #11**, "3/4" BRASS 90^{o} ELL", **Quantity changed from one (1) to two (2)** d. **Item #13** components **renumbered** to 13.1 and 13.2 2. Bent Hose Bibb removed from drawing, piping Revised accordingly.
W-22	1. Standard Drawing no longer used.
W-23	1. **Drawing title**: "FIRE HYDRANT INSTALLATION WITH GUARD POSTS" **Revised to read**, "FIRE HYDRANT INSTALLATION WITH FLEXIBLE POSTS" 2. **Steel guard posts** and references to steel guard posts have been **removed and replaced** with flexible posts. 3. **Added callout:** "MAINTAIN 36" CLEAR SPACE AROUND PERIMETER OF HYDRANT FOR OPERATION (POSTS AS SHOWN ARE AN ALLOWED EXCEPTION)" 4. **Note 1,** "THE MAINTENANCE OF THE FIRE HYDRANT PROTECTOR POST SHALL BE THE RESPONSIBILITY OF THE HOMEOWNERS' ASSOCIATION, WITHIN PRIVATE STREETS" **Revised to read**: "THIS STANDARD DRAWING IS APPLICABLE ONLY TO CITY OF FRESNO OWNED AND MAINTAINED FIRE HYDRANTS; PRIVATE HYDRANTS SHALL ADHERE TO PROTECTION CONDITIONS AND RELATED REQUIREMENTS AS SET FORTH BY THE FIRE DEPARTMENT." 5. **Notes 2-4 removed** from standard.
W-24	1. Drawing has been Revised in its entirety, as follows: a. Supporting block quantity and materials have been updated. b. Additional requirements for stainless steel casing added. c. Steel casing schedule added to standard drawing. d. Notes have been completely rewritten.
W-29	1. **Drawing title**: "WATER MAIN BEDDING DETAILS" **Revised to read**: "WATER MAIN TRENCH, BEDDING, AND BACKFILL DETAIL" 2. **Drawing has been revised in its entirety** to reflect current installation standards.
W-37	1. The following changes have been made to the drawing: a. **Plan view:** of Fire Hydrant **Revised** to reflect current Fire Hydrant style. b. **Moved:** "CONTROL VALVE" to Tee. c. **Changed:** "CONTROL VALVE" to "GATE VALVE" d. **Added:** "FLANGE X FLANGE" between Control Valve and Tee. e. **Changed:** "FLANGE X FLANGE" to "FLANGE X MECHANICAL" f. **Added**: Tracer Wire. g. **Added callout**: "PLUG WEEP HOLE" h. **Added depiction:** Retainer Glands shown throughout drawing to reflect full restraints. i. **Added callout**: "MAXIMUM BURY LENGTH NOT TO EXCEED 54" (EXTENSIONS INCLUDED)".
W-40	1. **Added Note** 5: "BY-PASS MATERIAL, 2 INCHES AND GREATER, SHALL BE DUCTILE IRON OR C900 PVC. LESS THAN 2 INCHES SHALL BE COPPER." 2. **Added callout**: "MIN. METER BOX/VAULT SIZE PER TABLE BELOW". 3. **Table title**: "MINIMUM VAULT SIZE" **Revised to read**: "MINIMUM METER BOX/VAULT SIZE".

	4. Changed dimension text to all capital letters for consistency.
W-41	1. **Added Note** 7: "BY-PASS MATERIAL, 2 INCHES AND GREATER, SHALL BE DUCTILE IRON OR C900 PVC. LESS THAN 2 INCHES SHALL BE COPPER." 2. **Added callout**: "MIN. METER BOX/VAULT SIZE PER TABLE BELOW". 3. **Table title**: "MINIMUM VAULT SIZE" **Revised to read**: "MINIMUM METER BOX/VAULT SIZE".
W-42	1. D**rawing title**: "FIRE SERVICE METER SETTING WITH BY-PASS" **Revised to read**: "COMPOUND FM METER SETTING WITH BY-PASS" 2. **Added Note** 5: "BY-PASS MATERIAL, 2 INCHES AND GREATER, SHALL BE DUCTILE IRON OR C900 PVC. LESS THAN 2 INCHES SHALL BE COPPER." 3. **Added callout**: "MIN. METER BOX/VAULT SIZE PER TABLE BELOW". 4. **Table title**: "MINIMUM VAULT SIZE" **Revised to read**: "MINIMUM METER BOX/VAULT SIZE".
W-43	1. **Modified detail** to reflect the use of flanged connections at the TEE's and risers. 2. **Added callout**: "TO BE RETURNED TO CONTRACTOR AFTER WATER SYSTEM ACCEPTANCE AND FINAL WET-TIE BY CITY". 3. **General Notes** bullet list **changed** to numbered. *No technical changes made to Notes.*
W-44	1. **Revised** standard drawing **to reflect** an installation that complies with the requirements of standard drawing W-2. 2. **Note 2**: "SAMPLING STATIONS SHALL BE 18" BURY, WITH A 1" MIP INLET AND A 1" FIP DISCHARGE. A ¼" BENT-NOSE SAMPLING BIBB SHALL BE LOCATED BEFORE THE DISCHARGE." **Revised to read**: "SAMPLING STATIONS SHALL BE 18" BURY, WITH A 1" FIP DISCHARGE. A ¼" BENT-NOSE SAMPLING BIBB SHALL BE LOCATED BEFORE THE DISCHARGE." 3. **Callout**, "¾" COPPER X 1" FIP ELBOW", **Revised to read**: "¾" BRASS X 1" FIP ELBOW" 4. **Callout**, "TYPE "K" SOFT DRAWN COPPER TUBING", **Revised to read**: "3/4" TYPE "K" SOFT DRAWN COPPER TUBING" 5. Drawing Revised as follows: "METER BOX EQUIPMENT VALVE RISER SET" has been replaced. 6. Standard includes a number of changes to support the
W-45	1. **Legend Note 3**: "THE STATIC WATER LEVEL IS MORE THAN 5'" **Revised to read**: "THE STATIC WATER LEVEL IS MORE THAN 10'" 2. BATCH TABLE **row 3:** "BENTONITE CEMENT GROUT" **removed**. 3. BATCH TABLE "cement" **unit measurement**, "sack" **Revised to read**: "sack lbs" 4. BATCH TABLE "cement" **quantity changed** from "1" (sack) to "94" (sack lbs); applies to rows 1 & 2. 5. BATCH TABLE "sand" **quantity changed** from "85" to "188" (lbs); applies to row 1.

DPU – RECYCLED WATER (RW Series)	
RW-1	1. **Note 1**: “RECYCLED WATER PIPELINES SHALL BE COLORED PURPLE (PANTONE 512) AND INTEGRALLY STAMPED “RECYCLED WATER - DO NOT DRINK" ON OPPOSITE SIDES OF THE PIPE. ALTERNATIVELY, NON-PVC RECYCLED WATER PIPELINES MAY BE MARKED WITH LETTERING ON PURPLE MARKING TAPE BEARING THE CONTINUOUS WORDING "RECYCLED WATER-DO NOT DRINK". THE MARKING TAPE SHALL BE A MINIMUM OF SIX INCHES WIDE AND SHALL BE SECURELY ATTACHED DIRECTLY TO THE TOP OF THE PIPELINE EVERY FIVE FEET.” **Revised to read**: “RECYCLED WATER PIPELINES SHALL BE COLORED PURPLE (PANTONE 512) AND INTEGRALLY STAMPED “RECYCLED WATER - DO NOT DRINK" ON OPPOSITE SIDES OF THE PIPE. ALTERNATIVELY, NON-PVC RECYCLED WATER PIPELINES SHALL BE MARKED WITH LETTERING ON PURPLE MARKING TAPE BEARING THE CONTINUOUS WORDING "RECYCLED WATER-DO NOT DRINK". THE MARKING TAPE SHALL BE A MINIMUM OF SIX INCHES WIDE AND SHALL BE SECURELY ATTACHED 12" ABOVE THE TOP OF THE PIPELINE.” 2. **Callout**, “RECYCLED WATER MARKING TAPE, PURPLE (PANTONE 512) WITH TRACE WIRE” **Revised to read**: “RECYCLED WATER MARKING TAPE, PURPLE (PANTONE 512)” 3. **Callout added**: “TRACER WIRE: #10AWG TAPED AT 5’-0” INTERVALS”
RW-6	1. **Drawing name**: “4” RECYCLED WATER SERVICE” **Revised to read**: “4”, 6”, 8” RECYCLED WATER SERVICE”. 2. **Callout**: “METER BOX WITH ARMORCAST LID WITH CAST IRON READING DOOR; LID SHALL BE PURPLE (PANTONE 512) AND MARKED WITH THE WORDS “RECYCLED WATER” **Revised to read**: “ARMORCAST POLYMER CONCRETE BOX, A6001460PCX36 AND ARMORCAST LID, A6001456TA-PUR-COF; LID SHALL BE PURPLE (PANTONE 512) AND MARKED WITH THE WORDS "RECYCLED WATER" 3. **Drawing Revised:** layout of pipes and fittings altered to remove elevation changes and elbows and associated dimensions removed. 4. **Drawing Revised**: gate valve relocated to behind the meter. 5. **Removed callout**, “4” PURPLE PVC PIPE”. 6. **Callout**, “PVC OR DUCTILE PIPE CONTINUOUSLY WRAPPED WITH PURPLE TAPE” **Revised to read**: “4"-6"-8" PVC OR DUCTILE PIPE CONTINUOUSLY WRAPPED WITH PURPLE TAPE” 7. **Added callout**: “RECYCLED WATER METER. SEE NOTES 7-9 FOR METER SPOOL LENGTH” 8. **Callout**: “TRACER WIRE WITH 1' COIL PER STANDARD SPEC. 22-3.3” **Revised to read**: “TRACER WIRE WITH 1' COIL PER STANDARD SPEC. 34-3.3” 9. **Added dimension**, “30””from top of meter box lid to top of pipe 10. **Added Note** 7, “FOR 4" RECYCLED WATER SERVICE, METER SPOOL LENGTH SHALL BE 13 ¾" 11. **Added Note** 8, “FOR 6" RECYCLED WATER SERVICE, METER SPOOL LENGTH SHALL BE 17 ¾" 12. **Added Note** 9, “FOR 8" RECYCLED WATER SERVICE, METER SPOOL LENGTH SHALL BE 24". 13. **Added Note** 10, “METERS DEEPER THAN 30 INCHES TO TOP OF PIPE MUST BE RAISED TO 30 INCHES” 14. **Added Note** 11, “WHEN CURB EXISTS, SET METER BOX 2" TO 6" FROM BACK OF CURB”
RW-7	1. **Callout**: “PURPLE (PANTONE 512) CHRISTY METER BOX WITH LID (17” X 30”) AND MARKED WITH THE WORDS “RECYCLED WATER”” **Revised to read**: “PURPLE (PANTONE 512) CHRISTY B-36 OR APPROVED EQUAL CONCRETE BOX, STEEL LID AND RECYCLED WATER NAME PLATE PER STANDARD DRAWING RW-16" 2. **Callout**: “2" x REQUIRED LENGTH GALVANIZED STEEL PIPE TYPE “K” RIGID OR SOFT, CONTINUOUSLY WRAPPED WITH APPROVED PURPLE RECYCLED WATER MARKING TAPE” **Revised to read**: “2" x REQUIRED LENGTH GALVANIZED STEEL PIPE, CONTINUOUSLY WRAPPED WITH APPROVED PURPLE RECYCLED WATER MARKING TAPE” 3. **Callout**: “TRACER WIRE WITH 1' COIL PER STANDARD SPEC. 22-3.3” **Revised to read**: “TRACER WIRE WITH 1' COIL PER STANDARD SPEC. 34-3.3” 4. **Note 3**: “RESTRAIN ALL JOINTS PER SITY STANDARD SPECIFICATIONS SECTION 21-15.5” **Revised to**

	read, "RESTRAIN ALL JOINTS PER SITY STANDARD SPECIFICATIONS SECTION 33-14.5"
RW-8	1. **Drawing split and renamed, "**RW-8A" and "RW-8B". Technical changes shown for RW-8A, below, apply to both.
RW-8A	1. **Drawing title**, "RECYCLED WATER BLOW-OFF ASSEMBLY" **Revised to read**: "RECYCLED WATER BLOW-OFF ASSEMBLY (PVC OR DUCTILE IRON MAIN)" 2. **Callout**, "2-1/2" STANDARD MALE FIRE HOSE THREADED CONNECTION WITH CAP & RECYCLED WATER IDENTIFICATION TAG PER STANDARD DRAWING RW-18" **Revised to read**: "4" STANDARD IRON PIPE THREAD W/PLUG". 3. **Drawing Revised**: Blow-off connection to main changed from 45° ELL to 90° ELL at bottom of pipe. 4. **Note 4**: "RESTRAIN ALL JOINTS PER SITY STANDARD SPECIFICATIONS SECTION 21-15.5" **Revised to read**, "RESTRAIN ALL JOINTS PER SITY STANDARD SPECIFICATIONS SECTION 33-14.5" 5. **Callout**: "TRACER WIRE CONNECTION TO BE SOLDERED PER STD. SPEC. 34-3.3" **Revised to read**, "TRACER WIRE CONNECTION TO BE PROTECTED AND SOLDERED PER STD. SPEC. 34-3.3" 6. Tracer wire relocated to inside the riser barrel.
RW-8B	1. **New Standard Drawing**: "RECYCLED WATER BLOW-OFF ASSEMBLY (STEEL MAIN)"
RW-9	1. **Drawing title**: "RECYCLED WATER 1" OR 2" AIR RELEASE/VACUUM BREAKER STATION" **Revised to read**, "RECYCLED WATER 1" OR 2" AIR RELEASE/VACUUM BREAKER ASSEMBLY" 2. **Callout(s)**, "1" OR 2" COPPER 90° ELBOW, LONG RADIUS, 95-5 SOLDER JOINTS, 0-300 PSI" **Revised to read**: "1" OR 2" COPPER 90° ELBOW, LONG RADIUS, 95-5 PACK JOINT CONNECTIONS FOR (CTS) TUBING, 0-300 PSI" 3. **Callout**, "1" OR 2" COPPER COUPLING WITH STOPS, 95-5 COPPER SOLDER JOINTS, 0-300 PSI" **Revised to read**: "1" OR 2" COPPER COUPLING WITH STOPS, 95-5 PACK JOINT CONNECTIONS FOR (CTS) TUBING, 0-300 PSI" 4. **Callout**, "1" OR 2" COPPER ADAPTER, SOLDER JOINT BY MALE IPT, 0-300 PSI" **Revised to read**: "1" OR 2" COPPER ADAPTER, PACK JOINT CONNECTIONS FOR (CTS) TUBING, 0-300 PSI" 5. **Callout**, "TRACER WIRE WITH 1' COIL, PER STANDARD SPEC. 22-3.3" **Revised to read:** "TRACER WIRE WITH 1' COIL PER STANDARD SPEC. 34-3.3" 6. **Callout**, "AIR/VAC ENCOLSURE PER STANDARD DRAWING RW-11" **Revised to read**: "AIR/VAC ENCOLSURE PER STANDARD DRAWING RW-26" 7. **Callout added**: "RECYCLED WATER BOX, LID, & RISER PER STANDARD DRAWING RW-2" 8. **Drawing Revised:** limits of concrete pad expanded to incorporate water valve. 9. **Drawing Revised:** water valve added to drawing. 10. **Removed dimension**: "2' MIN" (located between saddle tap and copper coupling) 11. **Added dimension**: "2' MAX" (located between water valve and air/vac valve) 12. **Note 3**: "RESTRAIN ALL JOINTS PER SITY STANDARD SPECIFICATIONS SECTION 21-15.5" **Revised to read**, "RESTRAIN ALL JOINTS PER SITY STANDARD SPECIFICATIONS SECTION 33-14.5" 13. Tracer wire relocated to inside the riser barrel.
RW-10	1. **Drawing title**: "RECYCLED WATER 4" AIR RELEASE/VACUUM BREAKER STATION" **Revised to read**, "RECYCLED WATER 4" AIR RELEASE/VACUUM BREAKER ASSEMBLY" 2. **Callout:** "AIR/VAC ENCOLSURE (To be specified)" **Revised to read**, "AIR/VAC ENCOLSURE PER STANDARD DRAWING RW-26" 3. **Callout**, "TRACER WIRE WITH 1' COIL, PER STANDARD SPEC. 22-3.3" **Revised to read:** "TRACER WIRE WITH 1' COIL PER STANDARD SPEC. 34-3.3" 4. Tracer wire relocated to inside the riser barrel.
RW-11	1. Standard is no longer used.
RW-12	1. **Revised dimensions** on "RECYCLED WATER CROSSING SEWER MAINS" detail.
RW-24	1. Note 6 **renumbered** to Note 7 2. Note 5 **renumbered** to Note 6

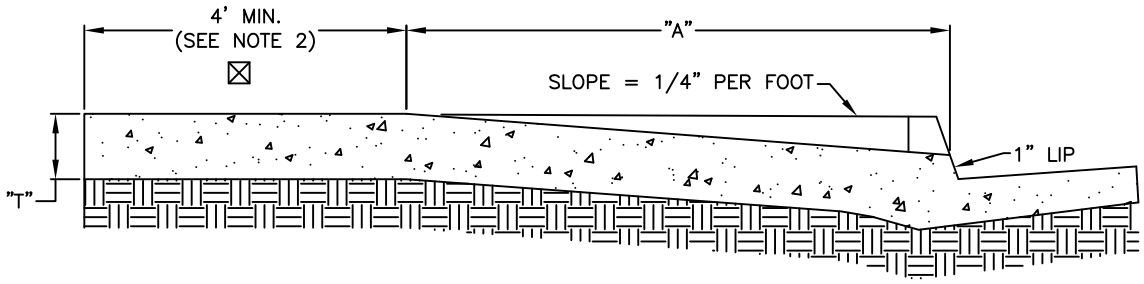
	3. **Added new Note 5**: “SOLDERING PASTE MUST BE APPLIED TO THE LOOPS BEFORE HEAT IS APPLIED IF ROSIN CORE SOLDER IS NOT USED.” 4. **Note 6**: “COVER ALL BARE COPPER WIRE WITH A WATERPROOF WRAP THAT IS APPROVED FOR UNDERGROUND CONNECTIONS. THE WRAP MUST EXTEND A MINIMUM OF TWO INCHES (2") BEYOND THE END OF THE STRIPPED WIRE.” **Revised to read**, “COVER ALL BARE COPPER WIRE WITH A WATERPROOF WRAP THAT IS APPROVED FOR UNDERGROUND CONNECTIONS (3M DBR/Y-6 OR APPROVED EQUAL). THE WRAP MUST EXTEND A MINIMUM OF TWO INCHES (2") BEYOND THE END OF THE STRIPPED WIRE.” 5. **Note 7**: “ALL WIRE MUST BE 12 GAUGE COPPER WIRE.” **Revised to read**, “ALL WIRE MUST BE 10 GAUGE COPPER WIRE.”
RW-25	1. **New Standard Drawing**: “RECYCLED WATER COMMERCIAL TRUCK FILL STATION”
RW-26	1. **New Standard Drawing**: “AIR RELEASE/VACUUM BREAKER VALVE ENCLOSURE”

DPU – SEWER (S Series)	
S-1	1. **Revised** drawing to **indicate** centerline of riser angle, angle dimension **moved** to centerline. 2. **Added** property line symbols (PL). 3. **Dimension**, "5' SEE TABLE DIST. "A", **Revised to read:** "4.5' MIN. 5.5' MAX. SEE TABLE DIST. "A" 4. **Dimension**, "3.9' MAX" **Revised to read:** "3.9' MIN." 5. **Dimension**, "6.3' MIN" **Revised to read:** "6.3' MAX." 6. **Callout**, "STREET GEN. LINE" **Revised to read:** "STREET CEN. LINE" (spelling error corrected)
S-2	1. **General Note 2**, "MANHOLE SHALL BE LINED WITH T-LOCK OR COATED WITH ONE OF THE FOLLOWING: RAVEN 400 OR RAVEN 405, PRODUCTS OF RLS SOLUTIONS; NEOPOXY 5300 SERIES, PRODUCTS OF NEOPOXY INTERNATIONAL; OR QUADEX STRUCTURE GUARD, A PRODUCT OF QUADEX. APPROVED PRODUCTS SHALL BE APPLIED PER MANUFACTURER'S SPECS. NO SUBSTITUTIONS ARE ACCEPTABLE." **Revised to read**: "MANHOLE SHALL BE LINED WITH T-LOCK OR COATED WITH ONE OF THE FOLLOWING: RAVEN 400 OR RAVEN 405, PRODUCTS OF RLS SOLUTIONS; NEOPOXY 5304 OR 5305, PRODUCTS OF NEOPOXY INTERNATIONAL; OR QUADEX STRUCTURE GUARD, A PRODUCT OF QUADEX. APPROVED PRODUCTS SHALL BE APPLIED PER MANUFACTURERS SPECS. NO SUBSTITUTIONS ARE ACCEPTABLE." 2. **Dimension** on cross-section, "O.D. OF PIPE + 16" **Revised to read**: "O.D. OF PIPE + 16" OR 8" MIN. O.D."
S-3	1. **Callout**: "SEE DRAWING S-5B OR *S-5B" **Revised to read**: "SEE DRAWING S-5A OR *S-5B" 2. ***NOTE**: "S-5B FOR 27" DIAMETER PIPES" **Revised to read**: "S-5B FOR 27" OR LARGER DIAMETER PIPES" 3. General **Note 1,** "PRECAST RISER SECTIONS, ADJUSTMENT RINGS AND TAPERED SECTIONS SHALL BE IN ACCORDANCE WITH ASTM C-478. ELLIPTICAL SINGLE LINE REINFORCEMENT WILL NOT BE PERMITTED" **Revised to read**: "PRECAST RISER SECTIONS, ADJUSTMENT RINGS & TAPERED SECTIONS SHALL BE CLASS 2 R.C.P. IN ACCORDANCE WITH ASTM C-478. ELLIPTICAL SINGLE LINE REINFORCEMENT WILL NOT BE PERMITTED. 4. General **Note 2,** "THIS STANDARD DRAWING SHALL BE USED FOR SEWER PIPES WITH DIAMETERS OF UP TO 27"" **Revised to read**: "THIS STANDARD DRAWING SHALL BE USED FOR SEWER PIPES WITH DIAMETERS OF UP TO AND INCLUDING 27"" 5. General **Note 4**, "MANHOLE SHALL BE LINED WITH T-LOCK OR COATED WITH ONE OF THE FOLLOWING: RAVEN 400 OR RAVEN 405, PRODUCTS OF RLS SOLUTIONS; NEOPOXY 5300 SERIES, PRODUCTS OF NEOPOXY INTERNATIONAL; OR QUADEX STRUCTURE GUARD, A PRODUCT OF QUADEX. APPROVED PRODUCTS SHALL BE APPLIED PER MANUFACTURER'S SPECS. NO SUBSTITUTIONS ARE ACCEPTABLE." **Revised to read**: "MANHOLE SHALL BE LINED WITH T-LOCK OR COATED WITH ONE OF THE FOLLOWING: RAVEN 400, 405 OR 405FS, PRODUCTS OF RLS SOLUTIONS; NEOPOXY 5304 OR 5305, PRODUCTS OF NEOPOXY INTERNATIONAL; OR QUADEX STRUCTURE GUARD, A PRODUCT OF QUADEX. APPROVED PRODUCTS SHALL BE APPLIED PER MANUFACTURER'S SPECS. NO SUBSTITUTIONS ARE ACCEPTABLE." 6. **Added Note 5:** "FOR SEWER LINES 12" TO 18", AND NOT WITHIN 600' OF A 30" OR LARGER SEWER MAIN, MAY USE SEWPERCOAT OR APPROVED EQUAL."
S-4	1. General **Note 1,** "PRECAST RISER SECTIONS, ADJUSTMENT RINGS AND TAPERED SECTIONS SHALL BE IN ACCORDANCE WITH ASTM C-478. ELLIPTICAL SINGLE LINE REINFORCEMENT WILL NOT BE PERMITTED" **Revised to read**: "PRECAST RISER SECTIONS, ADJUSTMENT RINGS & TAPERED SECTIONS SHALL BE CLASS 2 R.C.P. IN ACCORDANCE WITH ASTM C-478. ELLIPTICAL SINGLE LINE REINFORCEMENT WILL NOT BE PERMITTED. 2. General **Note 3**, "MANHOLE SHALL BE LINED WITH T-LOCK OR COATED WITH ONE OF THE FOLLOWING: RAVEN 400 OR RAVEN 405, PRODUCTS OF RLS SOLUTIONS; NEOPOXY 5300 SERIES, PRODUCTS OF NEOPOXY INTERNATIONAL; OR QUADEX STRUCTURE GUARD, A PRODUCT OF QUADEX. APPROVED PRODUCTS SHALL BE APPLIED PER MANUFACTURER'S SPECS. NO SUBSTITUTIONS ARE ACCEPTABLE." **Revised to read**: "MANHOLE SHALL BE LINED WITH T-LOCK OR COATED WITH ONE OF THE FOLLOWING: RAVEN 400 OR RAVEN 405, PRODUCTS OF RLS

	SOLUTIONS; NEOPOXY 5304 OR 5305, PRODUCTS OF NEOPOXY INTERNATIONAL; OR QUADEX STRUCTURE GUARD, A PRODUCT OF QUADEX. APPROVED PRODUCTS SHALL BE APPLIED PER MANUFACTURER'S SPECS. NO SUBSTITUTIONS ARE ACCEPTABLE."
S-5B	1. **Note 7**, "ALL COMPONENTS SHALL BE BLACK COATED", **Revised to read**: "ALL COMPONENTS SHALL BE BLACK BITUMINOUS PAINT COATED IN ACCORDANCE WITH ISO 2531" 2. **Added detail**: "LOCKING MECHANISM" 3. **Added** locking mechanism installation **instructions** 4. **Added** inset **detail** for hinge debris hole
S-8	1. **Method 2**, "EPOXY BONDED SADDLE TEE" **Revised to read:** "SADDLE WYE OR TEE"; detail and notes changed accordingly. 2. **Added Note**: "IF MACHINE CORE IS NOT CLEAN CUT (WITHOUT DAMAGE TO THE HOST PIPE) MUST USE METHOD 1 TO INSTALL HOUSE BRANCH" 3. **Added callout**: "TEE BRANCHES NOT ALLOWED ON SEWER MAINS 6"-8" IN DIAMETER"
S-9	1. **Page title**: "HOUSE BRANCH SIZE-APPROVED CONNECTION METHOD" **Revised to read**: "HOUSE BRANCH SIZE-APPROVED CONNECTION METHOD (METHODS SHOWN ON S-8)" 2. **Allowed methods table Revised** to include Method 2 for 4" H.B. going to 6" and 8" sewer mains. 3. **Note 3**: "HOUSE BRANCH CONNECTIONS WITH AN APPROVED SADDLE TO EXISTING SEWER MAINS 10 INCHES AND LARGER BY OTHER THAN A MACHINE CORE SHALL NOT BE ALLOWED" **Revised to read**: "HOUSE BRANCH CONNECTIONS WITH AN APPROVED SADDLE TO EXISTING SEWER MAINS INSTALLED BY ANY OTHER METHOD THAN A MACHINE CORE SHALL NOT BE ALLOWED." 4. **Added Note 6**: "ALL NEW HOUSE BRANCHES AND SERVICE LATERALS MUST BE INSTALLED GREATER THAN 5'-0" FROM OUTSIDE EDGE OF MANHOLE AND MUST BE BETWEEN TWO ACCESS STRUCTURES (I.E. MANHOLE, LAMPHOLE)."
S-10	1. **Added callouts and updated hatching** for "Paved" and "Unpaved" surface conditions. 2. Minor edits to detail and callouts for clarity.
S-13A	1. **New Standard Drawing**: "PIPE/CONDUIT CROSSING UNDER EXISTING SEWER - CASE 1"
S-13B	1. **New Standard Drawing**: "PIPE/CONDUIT CROSSING UNDER EXISTING SEWER - CASE 2"

DPW – ASSOCIATED PLANS INDEX (API Series)	
API-6	1. **Note 2**: "…STANDARD DRAWING P-4" **Revised to read**: "…STANDARD DRAWING API-4"
API-7	1. **Note 2**: "…STANDARD DRAWING P-4" **Revised to read**: "…STANDARD DRAWING API-4" 2. Added callout: "GRADED DIRT SHOULDER (SEE DETAIL API-4) MATERIAL OTHER THAN ORIGINAL SOIL SHALL BE APPROVED BY THE PUBLIC WORKS DIRECTOR."
API-8	1. **Notes 1 & 3**: "…STANDARD DRAWING P-48" **Revised to read**: "…STANDARD DRAWING API-4" 2. **Callout**: "GRADED DIRT SHOULDER (SEE DETAIL P-48…" **Revised to read**: "GRADED DIRT SHOULDER (SEE DETAIL API-4…"
API-9	1. **Note 3**: "…STANDARD DRAWING P-48" **Revised to read**: "…STANDARD DRAWING API-4" 2. **Callout**: "GRADED DIRT SHOULDER (SEE DETAIL P-48…" **Revised to read**: "GRADED DIRT SHOULDER (SEE DETAIL API-4…"
API-10	1. **New Standard Drawing**: "DOWNTOWN CONCRETE SIDEWALK AESTHETIC TREATMENT - SIDEWALK PATTERN"
API-11	1. **New Standard Drawing**: "DOWNTOWN CONCRETE SIDEWALK AESTHETIC TREATMENT"

☒ = DENOTES UNOBSTRUCTED ONSITE PEDESTRIAN LANDING AREA REQUIRED IN ACCORDANCE WITH A.D.A. A PUBLIC PEDESTRIAN EASEMENT SHALL BE DEDICATED IF 4' SIDEWALK EXTENDS INTO PRIVATE PROPERTY.

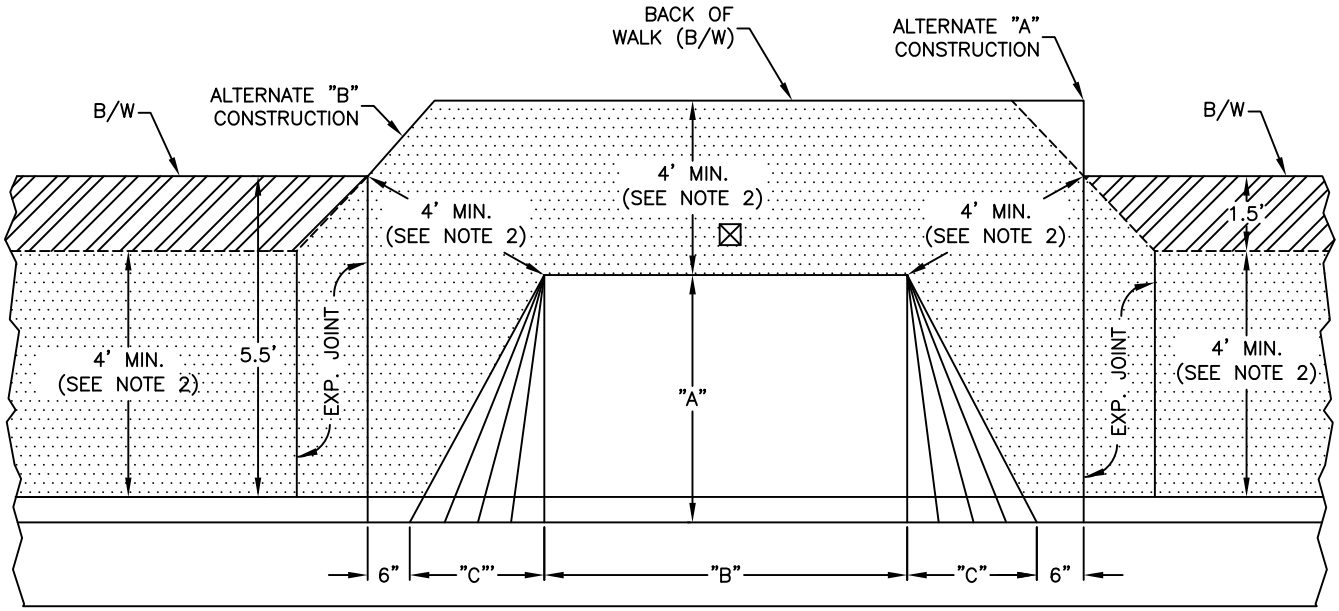


"A" = 3.75' FOR 1 OR 2 DWELLING UNITS
"A" = 4.75' FOR MULTIFAMILY, OFFICE, AND COMMERCIAL WITH UP TO 10 PARKING SPACES.
"A" = 5.75' FOR MULTIFAMILY, OFFICE, AND COMMERCIAL WITH MORE THAN 10 PARKING SPACES.
"T" = 5" FOR RESIDENTIAL USE, 6" FOR COMMERCIAL.

"B" = REFER TO STANDARD DRAWING P-6

"C" = 3' TYP., 5' WHEN ON-STREET PARKING IS PROHIBITED

6" COMPACTED NATIVE SUBGRADE (CNS) AT 95% RELATIVE COMPACTION (R.C.)



CLEAR PEDESTRIAN AREA

RESERVED FOR STREET FURNITURE

NOTES:

1. SIDEWALK WIDTH SHALL BE 4.0' MIN. FOR ADA REQUIREMENTS, CROSS SLOPE NOT TO EXCEED 2%. SIDEWALK CAN BE CONSTRUCTED IN ACCORDANCE WITH ALTERNATES (A) OR (B) ABOVE OR AS APPROVED BY THE CITY.
2. SEE API-7, API-8, AND API-9 FOR S. MINNEWAWA AVE. BETWEEN FANCHER CREEK AND CALIFORNIA AVE, BETWEEN CALIFORNIA AVE. AND BUTLER AVE., AND FROM BUTLER TO TULARE AVE.
3. SEE API-6 FOR VAN NESS EXTENSION BETWEEN HERNDON AVE. AND SAN JOAQUIN RIVER BLUFF.
4. SEE API-3, API-4 FOR DETAILS RELATING TO MODIFIED STREET TYPES.

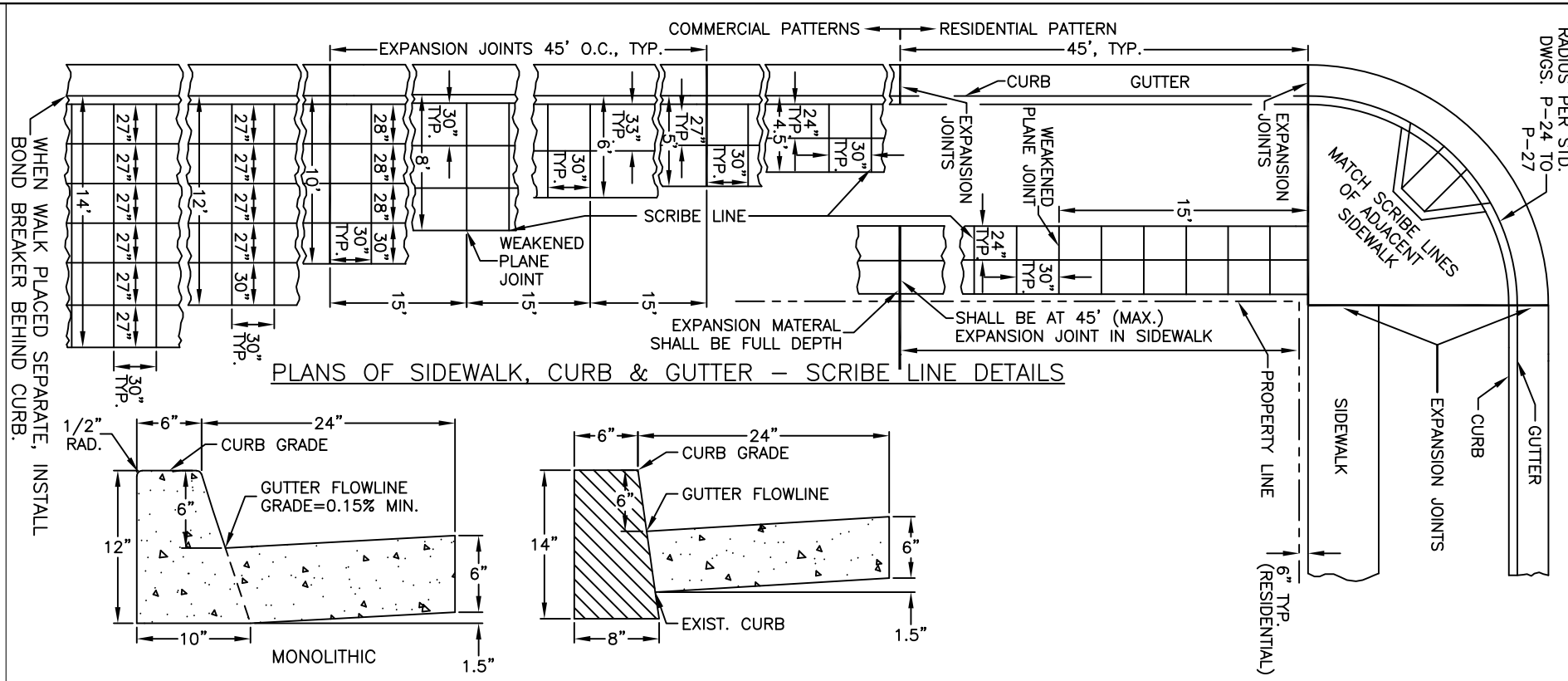
LOCAL STREET DRIVEWAY APPROACHES
FOR MONOLITHIC SIDEWALKS

REF. & REV.
~~OCT. 2014~~
DEC. 2020 (A.7)

CITY OF FRESNO

P-4

CONSTRUCTION DETAILS
FOR CONCRETE SIDEWALK, CURB & GUTTER



PLANS OF SIDEWALK, CURB & GUTTER – SCRIBE LINE DETAILS

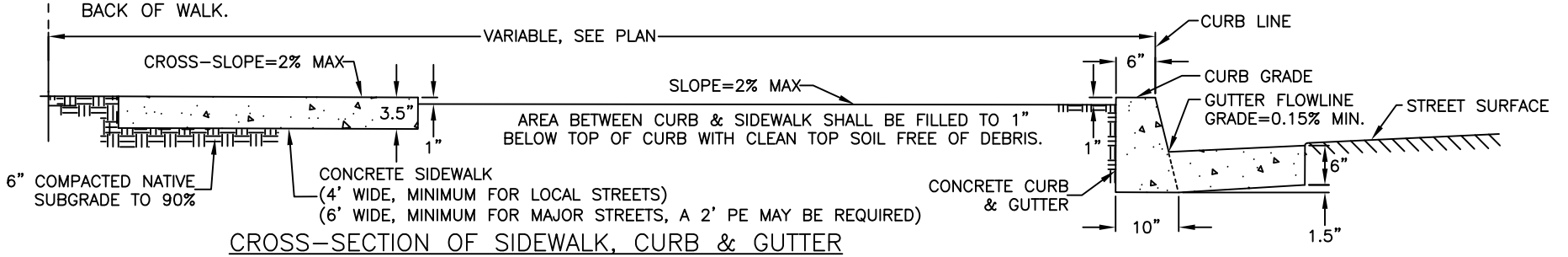
SECTIONS OF CURB & GUTTER

NOTE A:

WHERE SIDEWALK IS NOT CONSTRUCTED, CUT OR FILL FROM 1" BELOW TOP OF CURB TO PROPERTY LINE AT A SLOPE OF 1/4" PER FOOT. A STEEPER SLOPE OF UP TO 10% MAY BE USED IN EXISTING RESIDENTIAL NEIGHBORHOODS WHERE (1) THE CONSTRUCTION OF SIDEWALK IS NOT EXPECTED IN THE FUTURE, (2) THE STEEPER SLOPE IS COMPATIBLE WITH THE ADJACENT PROPERTY, AND (3) THE STEEPER SLOPE WILL ELIMINATE THE NEED FOR A RETAINING WALL. SLOPES IN EXCESS OF 10% MAY BE APPROVED BY THE PUBLIC WORKS DIRECTOR ON A CASE-BY-CASE BASIS. 4' MINIMUM SIDEWALK FOR LOCAL STREETS AND 6' MINIMUM SIDEWALK FOR MAJOR STREETS. FOR MONOLITHIC SIDEWALKS THE WIDTH IS MEASURED FROM THE BACK OF CURB TO THE BACK OF WALK.

NOTE B:

WHEN REQUIRED BY THE ENGINEER, THE CONTRACTOR SHALL FILL AND/OR GRADE AREA BETWEEN NEW GUTTER AND EXISTING STREET SURFACE WITH A.C. SURFACING TO A MIN. DEPTH OF 4" TO MEET EXISTING STREET SURFACING. COMPACTION SHALL BE MADE TO THE SATISFACTION OF THE ENGINEER. CLEAN FACE OF EXIST CURB BEFORE POURING CONCRETE GUTTER.

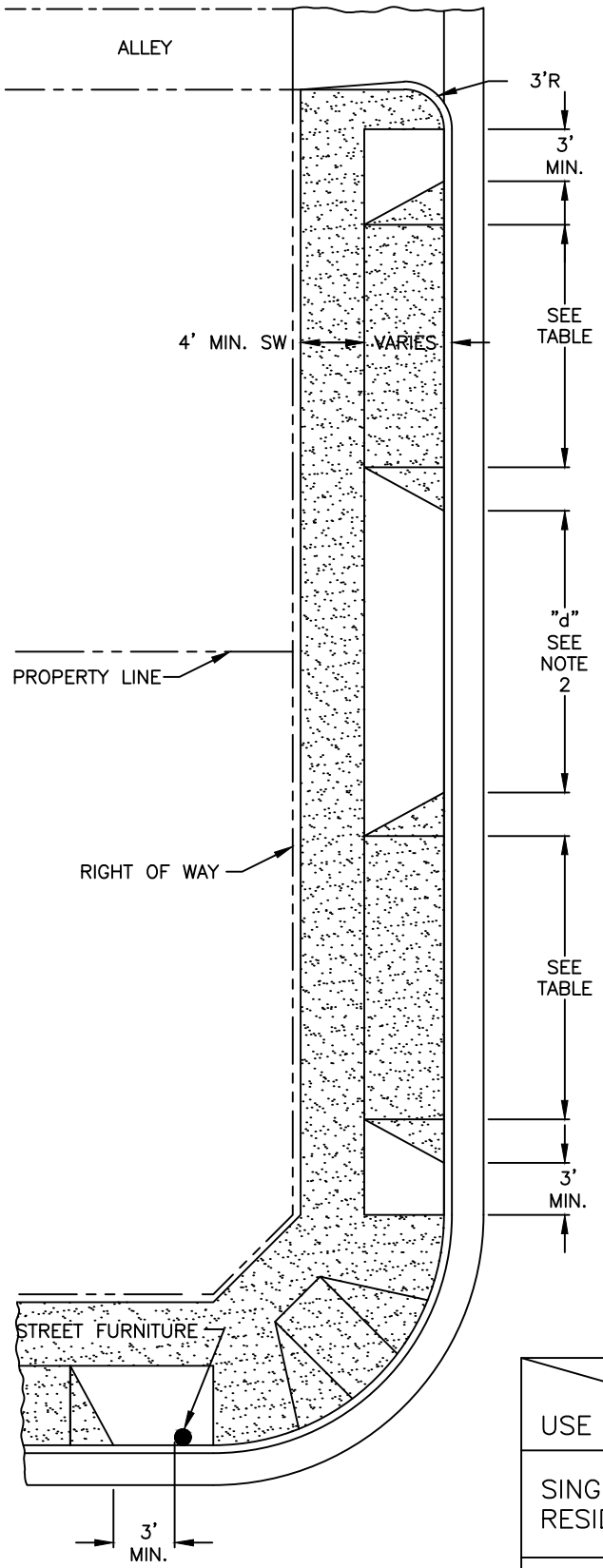


CROSS-SECTION OF SIDEWALK, CURB & GUTTER

REF & REV
~~OCT. 2014~~
DEC. 2020 (A.7)

CITY OF FRESNO

P-5



NOTES:

1. NO MORE THAN 60% OF STREET FRONTAGE SHALL BE CONSTRUCTED AS DRIVEWAY OPENINGS.
2. DRIVEWAY SPACING, "d", SHALL BE 6' MIN.
3. DRIVEWAY OPENINGS GREATER THAN 35' REQUIRE APPROVAL FROM THE CITY ENGINEER.
4. IN COMMERCIAL, INDUSTRIAL, AND MULTI-FAMILY DEVELOPMENTS, CITY ENGINEER MAY APPROVE LARGER APPROACHES IF WARRANTED.
5. MAJOR STREETS: PROVIDE 10' OF RED CURBING (3 COATS) ON BOTH SIDES OF DRIVEWAY APPROACHES.
6. IF ONLY ONE ENTRANCE LOCAL STREET MIN. SHALL BE 18', NOT 15'. EXCEPTION: SINGLE FAMILY RESIDENTIAL.
7. 15' MIN WHEN TRASH ENCLOSURE ON-SITE (REVIEWED ON A CASE BY CASE BASIS).
8. ANY DRIVEWAY APPROACHES ON MAJOR STREET WITHIN 300' OF MAJOR INTERSECTIONS REQUIRE THE APPROVAL OF THE TRAFFIC ENGINEER. THE TRAFFIC ENGINEER MAY APPROVE ONE DRIVEWAY APPROACH WITHIN THAT ENTIRE LENGTH. ADDITIONAL DRIVEWAY APPROACHES REQUIRE THE REVIEW AND APPROVAL OF THE CITY ENGINEER.
9. RESIDENTIAL DRIVEWAY APPROACHES MUST MATCH THE WIDTH OF THE DRIVEWAY PAVEMENT AND THE WIDTH OF THE GARAGE. THE DRIVEWAY OPENING SHALL EQUAL THE WIDTH OF THE GARAGE DOOR (OR DOORS) PLUS 4' BUT SHALL NOT EXCEED THE MAXIMUM ALLOWABLE WIDTHS AS SHOWN ON THE CHART, BELOW. THE DRIVEWAY OPENING SHALL BE CENTERED ON THE GARAGE DOOR(S).

DRIVEWAY OPENING CHART

STREET TYPE / USE TYPE	MAJOR STREET (MINIMUM)	LOCAL STREET (MINIMUM)	MAJOR STREET (MAXIMUM)	LOCAL STREET (MAXIMUM)
SINGLE-FAMILY RESIDENTIAL DRIVE (9)	18'	12'	24' (3)	35'
ALL OTHER TWO-WAY	30'	24'	35' (4)	35'
ONE-WAY ENTRANCE	18'	(7) 15' (6)	24'	24'
ONE-WAY EXIT	12' (7)	12' (7)	24'	24'

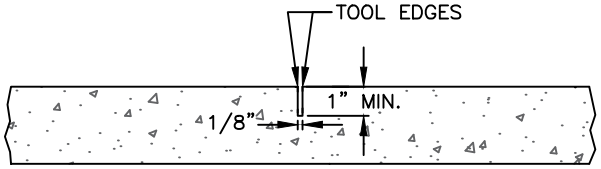
(#) NOTE APPLIES TO CONDITION

DRIVEWAY OPENING AND CLEARANCE REQUIREMENTS

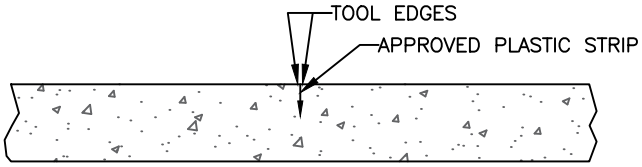
REF. & REV.
~~AUG., 2010~~
DEC. 2020 (A.7)

CITY OF FRESNO

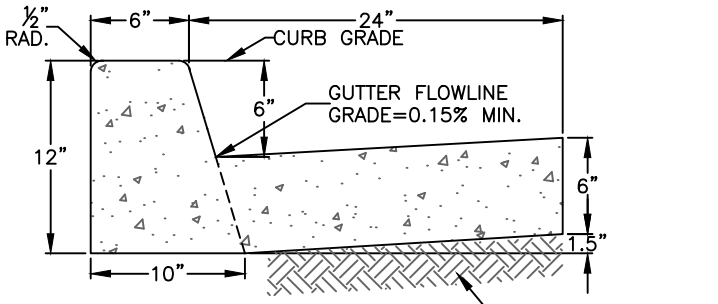
P-6



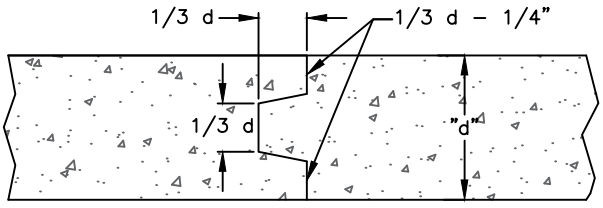
WEAKENED–PLANE JOINT DETAIL



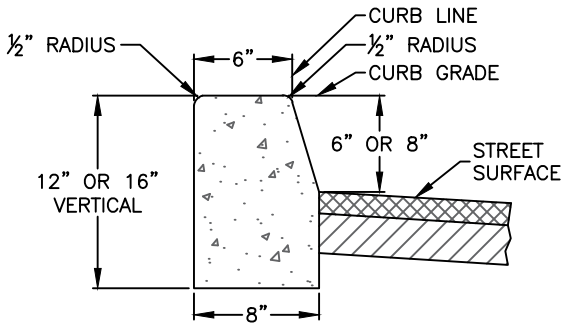
WEAKENED–PLANE JOINT DETAIL
ALTERNATE DESIGN



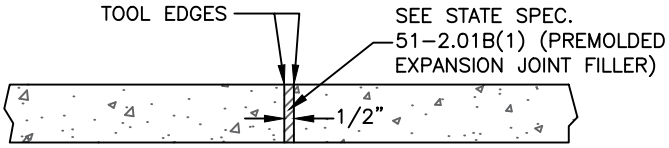
CROSS–SECTION OF
MONOLITHIC CURB & GUTTER



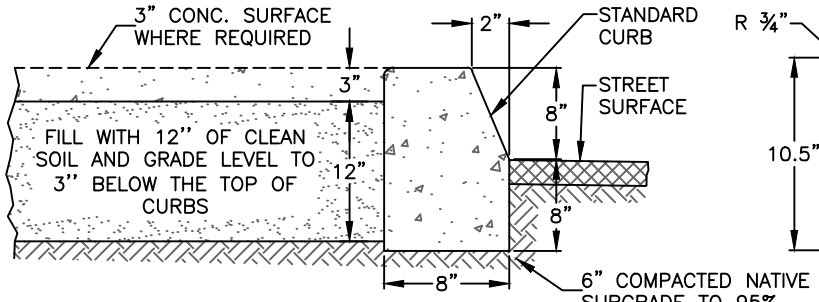
CONSTRUCTION JOINT DETAILS



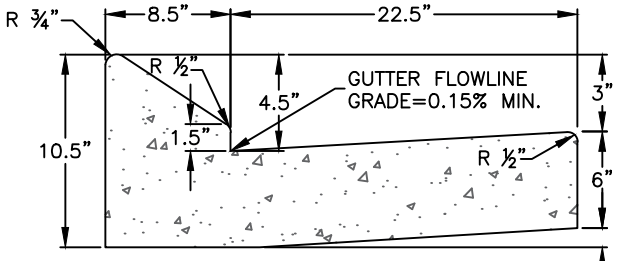
CROSS–SECTION OF CURB



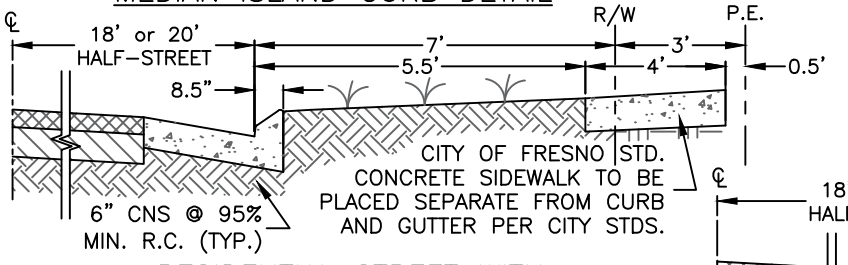
EXPANSION JOINT DETAIL



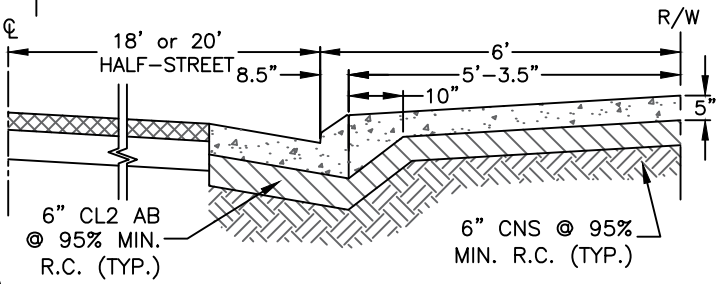
MEDIAN ISLAND CURB DETAIL



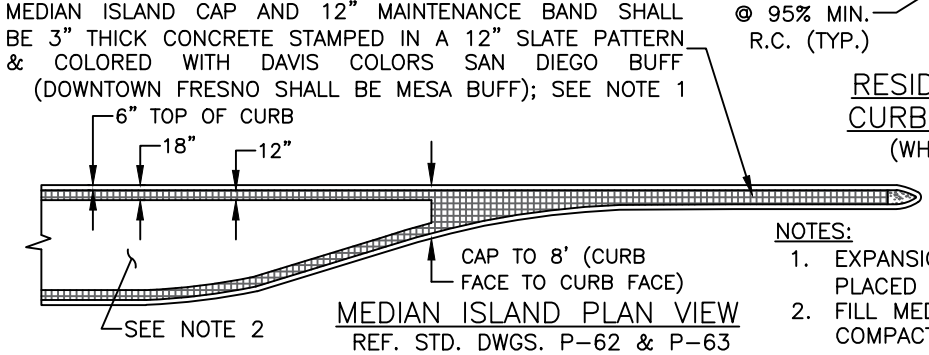
WEDGE CURB & GUTTER
DETAIL



RESIDENTIAL STREET WITH
WEDGE CURBS



RESIDENTIAL STREET WITH WEDGE
CURBS AND ADJACENT SIDEWALKS
(WHEN APPROVED BY CITY ENGINEER)



MEDIAN ISLAND PLAN VIEW
REF. STD. DWGS. P–62 & P–63

NOTES:

1. EXPANSION JOINTS (NOT SHOWN) SHALL BE PLACED EVERY 45' PER STD. DWG. P–5
2. FILL MEDIAN BEFORE PLACING BASE MATERIAL OR COMPACTING IN THE TRAVELED WAY

CONCRETE CONSTRUCTION DETAILS

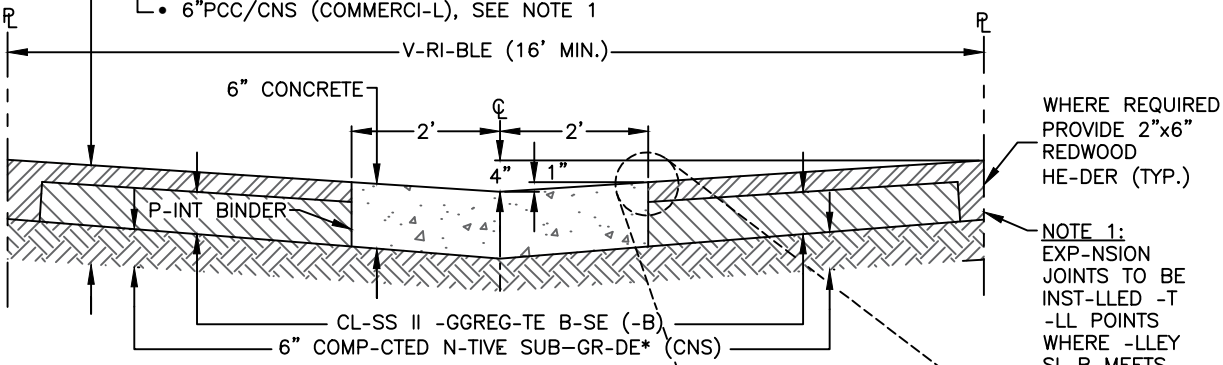
REF & REV
~~JUNE 2015~~
DEC. 2020 (A.7)

CITY OF FRESNO

P–9

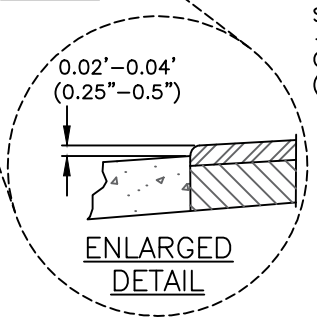
ALTERNATE SECTIONS:
(BUILD TO THE REQUIREMENTS OF THE HIGHEST -DJ-CENT USE)

- 2"-C/4"-B/CNS WITH CONCRETE GUTTER (RESIDENTI-L)
- 3"-C/CNS W/O CONCRETE GUTTER (RESIDENTI-L, LONG. SLOPE ≥ 0.20%)
- 4"-C/CNS WITH CONCRETE GUTTER (COMMERCI-L)
- 6"-C/CNS W/O CONCRETE GUTTER (COMMERCI-L, LONG. SLOPE ≥ 0.20%)
- 6"PCC/CNS (COMMERCI-L), SEE NOTE 1

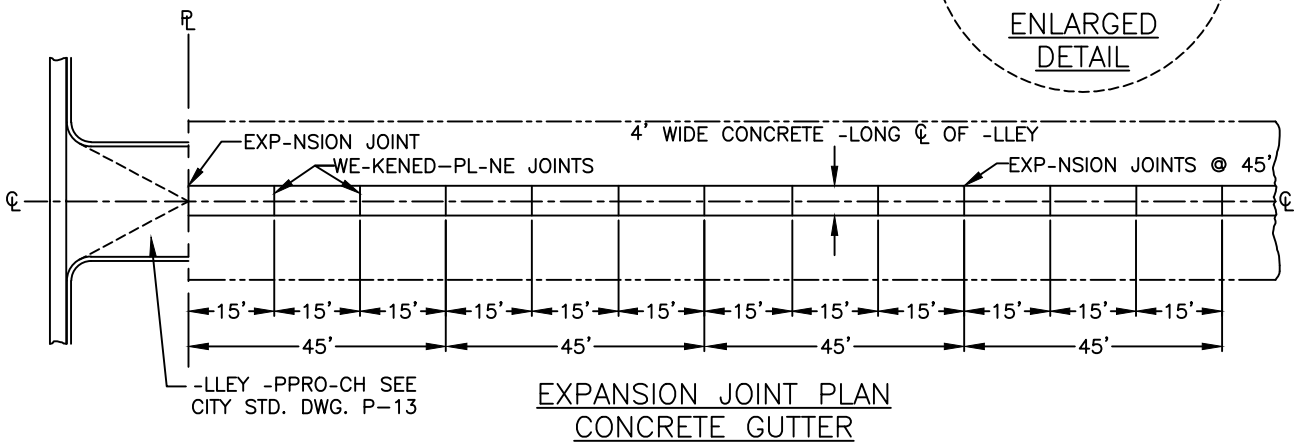


*95% COMPACTION REQUIRED PER CITY STANDARD SPECS.

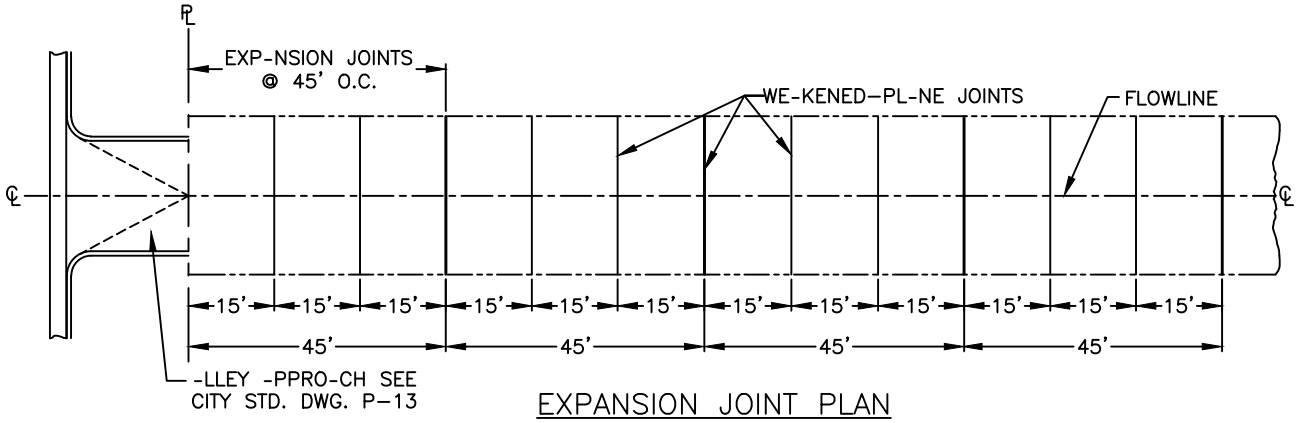
TYPICAL ALLEY CROSS-SECTION



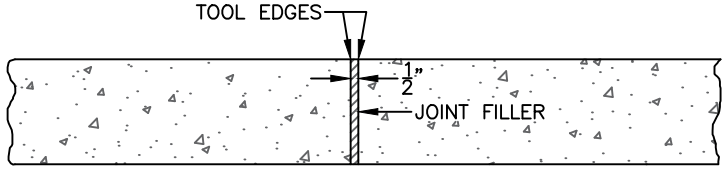
ENLARGED DETAIL



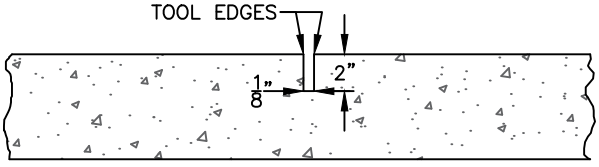
EXPANSION JOINT PLAN
CONCRETE GUTTER



EXPANSION JOINT PLAN
FOR 6" P.C.C. PAVING



EXPANSION JOINT DETAIL
SEE STATE SPEC. 51-2.01B(1)
(PREMOLDED EXPANSION JOINT FILLER)



WEAKENED-PLANE JOINT DETAIL
SEE CITY STD. DWG. P-9
FOR ALTERNATE DESIGN

ALLEY CROSS-SECTION & PLAN
(RESIDENTIAL-COMMERCIAL)

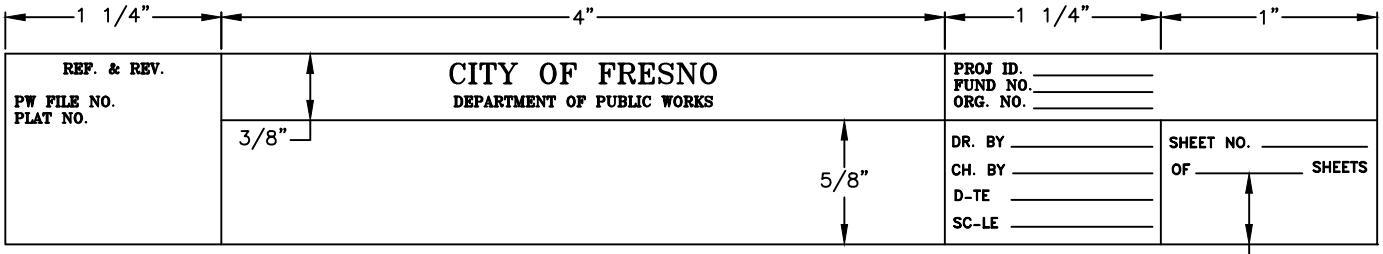
REF. & REV.
~~AUG. 2010~~
DEC. 2020 (A.7)

CITY OF FRESNO

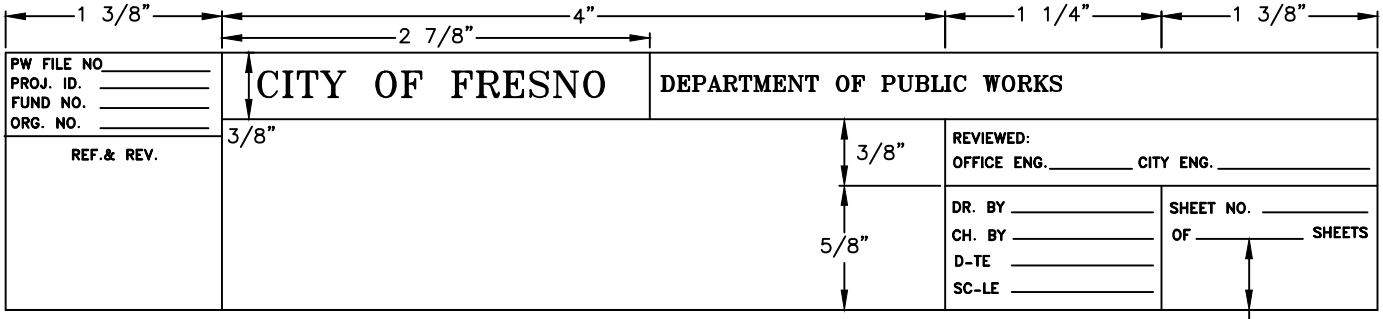
P-12

	SHEET SIZE	LEFT BORDER	OTHER BORDERS	TITLE BLOCK
A	11" X 8 1/2"	0.5 "	0.5 "	A
AA	11" X 17"	0.5 "	0.5 "	A
B***	12" X 25 1/4"	0.25 "	0.25 "	B
C***	12" X 36"	1 "	0.25 "	B
D**	24" X 25 1/4"	1 "	0.25 "	B
E***	24" X 36"	1 "	0.25 "	B
F***	31" X 36"	1 "	0.25 "	B
G**	31" X 25 1/4"	1 "	0.25 "	B
*	18" X 26"	1 "	1 "	

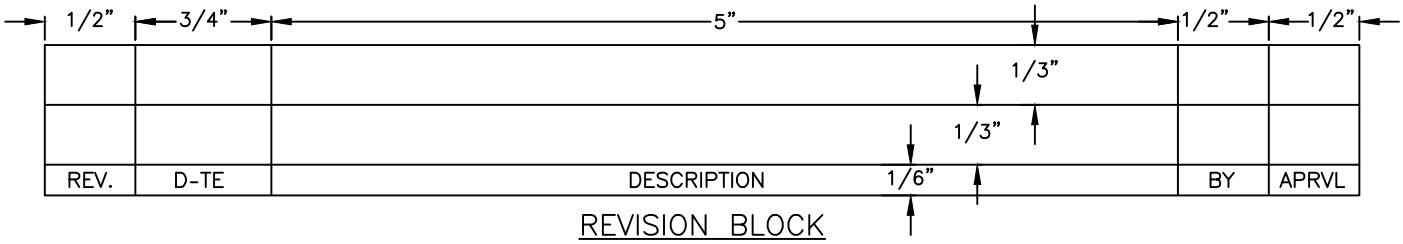
*	ASSESMENT DIAGRAMS, OFFICIAL PLAN LINES, TRACT MAPS, AND PARCEL MAPS
**	NO LONGER USED BY THE CITY OF FRESNO
***	REVISION BLOCK TO BE ADDED AT BOTTOM LEFT CORNER OF EACH DRAWING



TITLE BLOCK 'A'



TITLE BLOCK 'B'



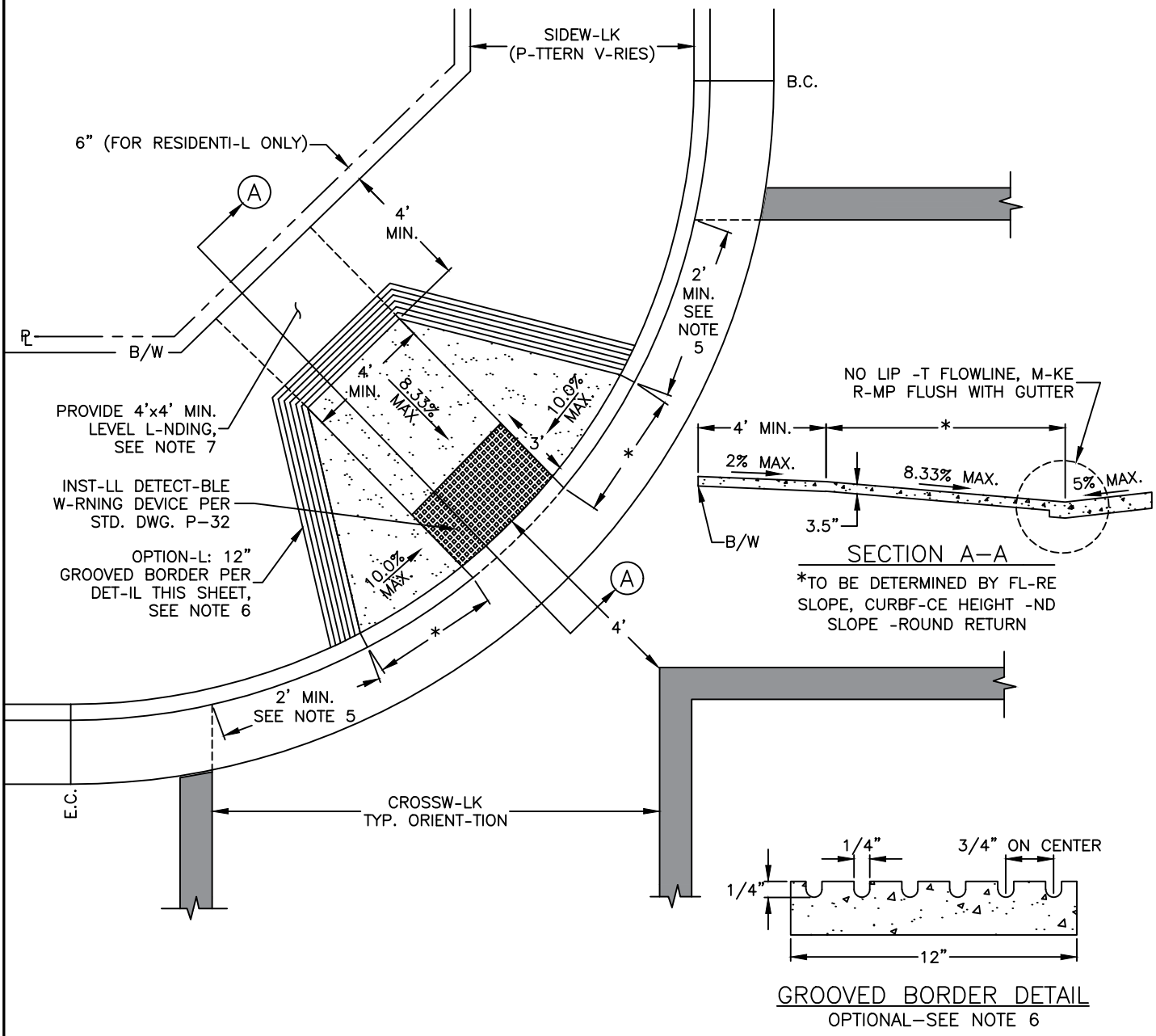
REVISION BLOCK

STANDARD DRAWING SIZES

REF. & REV.
~~AUG. 2010~~
DEC. 2020 (A.7)

CITY OF FRESNO

P–17



NOTES:

1. TRANSITIONS FROM RAMPS AND LANDING TO WALK, GUTTERS OR STREETS SHALL BE FLUSH AND FREE OF ABRUPT CHANGES.
2. SURFACE OF CURB RAMP AND FLARED SIDES SHALL HAVE A MEDIUM BROOM FINISH TRANSVERSE TO PATH OF TRAVEL AND SHALL BE OF CONTRASTING FINISH TO THAT OF ADJACENT SIDEWALK.
3. RAMP SLOPE SHALL NEVER EXCEED 8.33% AND THE FLARED SIDES SHALL NOT EXCEED 10%.
4. THE SLOPE OF ADJOINING GUTTERS, ROAD SURFACE OR ACCESSIBLE ROUTE WITHIN 4' OF THE BOTTOM OF THE RAMP SHALL NOT EXCEED 5% SLOPE.
5. THERE SHALL BE A SEGMENT OF STRAIGHT CURB, AT LEAST 2.0' FEET LONG, ON EACH SIDE OF THE CURB RAMP, AS MEASURED FROM WITHIN THE MARKED CROSSWALK.
6. (OPTIONAL) PROVIDE A 12" WIDE, GROOVED, BORDER AT THE LEVEL SURFACE OF THE SIDEWALK ALONG THE TOP OF THE RAMP AND EACH FLARE. GROOVES SHALL BE APPROX. 1/4" DEEP, 1/4" WIDE AND SPACED 3/4" ON CENTER.
7. PROVIDE A MINIMUM 4' DEEP LEVEL LANDING ON UPPER END AND OVER FULL WIDTH OF RAMP. MAINTAIN A 2% MAX. SLOPE, ANY DIRECTION.
8. THE 4' CLEAR SPACE AT BOTTOM OF RAMP SHALL BE WITHIN THE MARKED CROSSINGS.
9. RAMP SHALL BE MINIMUM OF 4' WIDE AND SHALL LIE GENERALLY IN A SINGLE SLOPED PLANE WITH A MINIMUM OF SURFACE WARPING AND CROSS SLOPE.
10. CURB RAMPS SHALL BE LOCATED OR PROTECTED TO PREVENT THEIR OBSTRUCTION BY PARKED CARS.

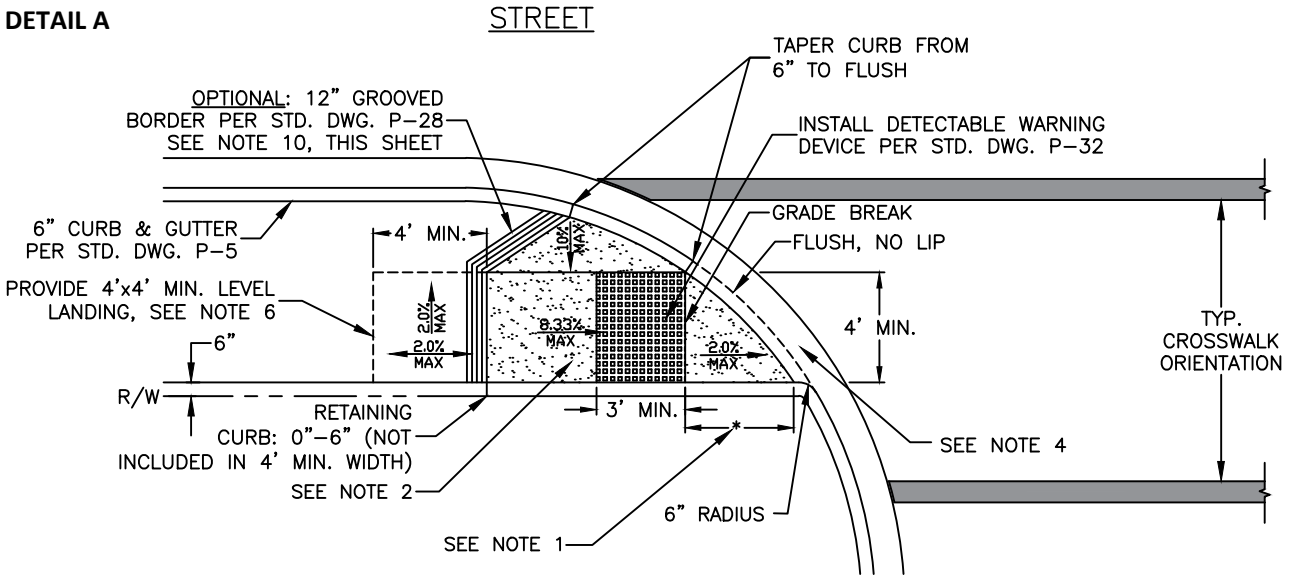
DIAGONAL CURB RAMP
(USE ONLY WHEN NECESSARY)

REF. & REV.
~~AUG. 2010~~
DEC. 2020 (A.7)

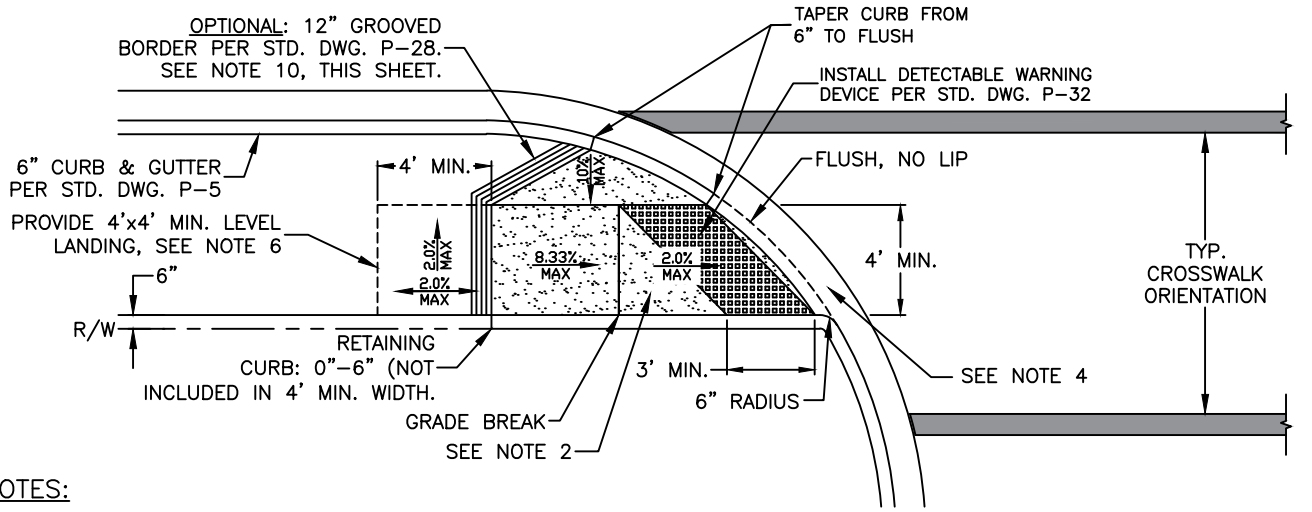
CITY OF FRESNO

P-28

DETAIL A



DETAIL B



NOTES:

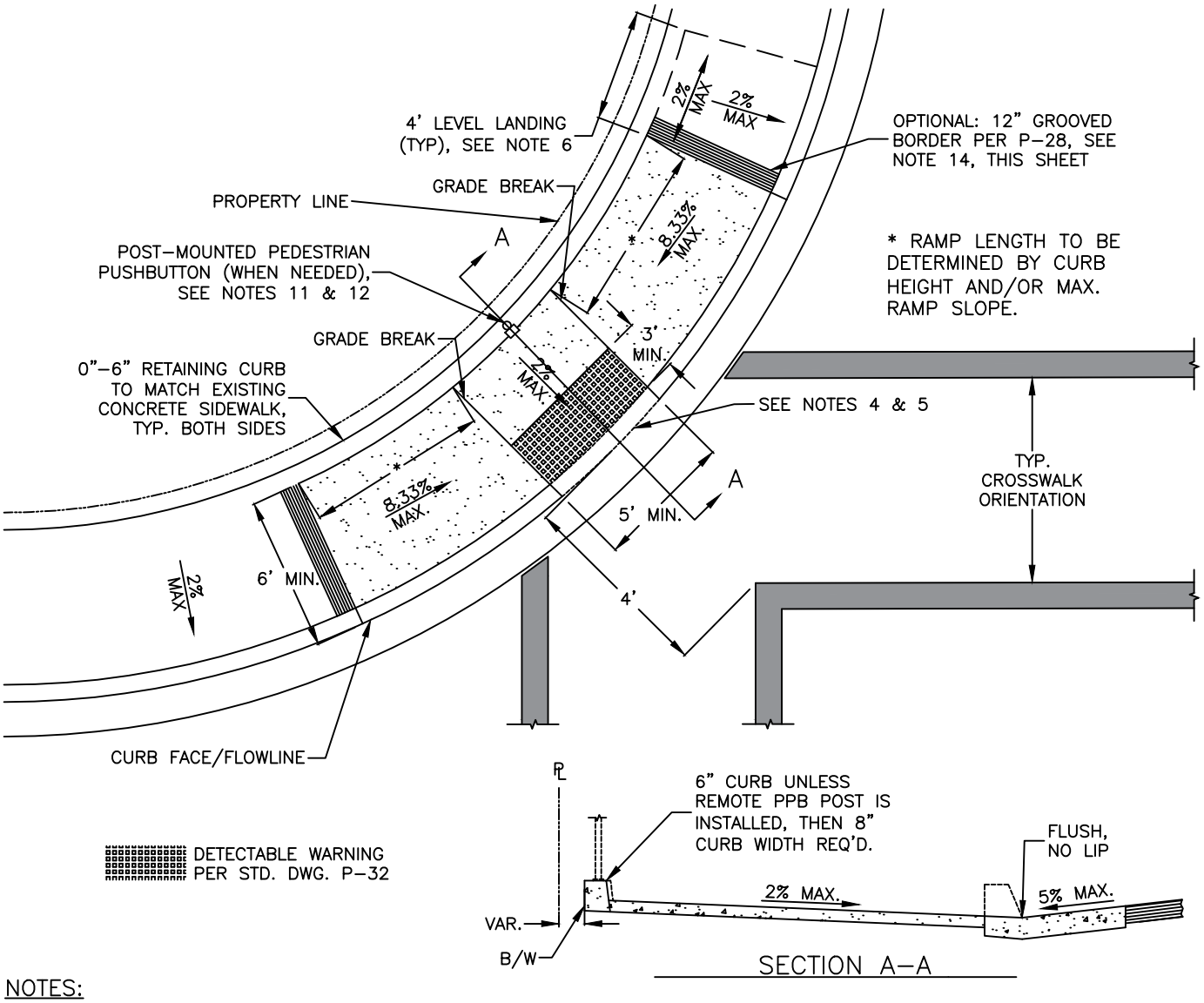
1. USE DETAIL "A" UNLESS DIMENSION "*" IS GREATER THAN 5'-0", IN WHICH CASE DETAIL "B" SHALL BE USED.
2. SURFACE OF CURB RAMP AND FLARED SIDE SHALL HAVE BROOM FINISH TRANSVERSE WITH THE PATH OF TRAVEL AND SHALL BE OF CONTRASTING FINISH TO THAT OF ADJOINING SIDEWALK.
3. ON THE BOTTOM LANDING WITH A 2% MAX. SLOPE, WHERE WALK ADJOINS A VEHICULAR WAY, USE TRUNCATED DOMES, IN-LINE PATTERN PER P.W. STD. P-32. WHERE BOTH ENDS OF THE BOTTOM GRADE BREAK FOR THE RAMP ARE LESS THAN 5'-0" FROM THE BACK OF THE CURB THE DETECTABLE WARNING SURFACES SHALL BE PLACED ON THE RAMP RUN WITH ONE DOME SPACING OF THE BOTTOM GRADE BREAK.
4. THE SLOPE OF ADJOINING GUTTERS, ROAD SURFACE OR ACCESSIBLE ROUTE WITHIN 4'-0" OF THE BOTTOM OF THE RAMP SHALL NOT EXCEED 5% SLOPE.
5. RAMP SLOPE SHALL NEVER EXCEED 8.33%.
6. PROVIDE A MIN. 4'-0" DEEP LEVEL LANDING ON UPPER END AND OVER FULL WIDTH OF RAMP. MAINTAIN A 2% MAX. SLOPE, ANY DIRECTION.
7. THE LOWER END OF THE CURB RAMP SHALL TERMINATE WITHIN THE MARKED CROSSINGS.
8. RAMP SHALL BE MINIMUM OF 4'-0" WIDE AND SHALL LIE GENERALLY IN A SINGLE SLOPED PLANE WITH A MINIMAL OF SURFACE WARPING AND CROSS SLOPE.
9. CURB RAMPS SHALL BE LOCATED AND/OR PROTECTED TO PREVENT OBSTRUCTION BY PARKED CARS.
10. (OPTIONAL) PROVIDE A 12" WIDE, GROOVED, BORDER AT THE LEVEL SURFACE OF THE SIDEWALK ALONG THE TOP OF THE RAMP AND EACH FLARE. GROOVES SHALL BE APPROX. 1/4" DEEP, 1/4" WIDE AND SPACED 3/4" ON-CENTER.

MODIFIED CURB RAMP
AT STREET TYPE DRIVEWAY APPROACH

REF. & REV.
~~JUNE 2015~~
DEC. 2020 (A.7)

CITY OF FRESNO

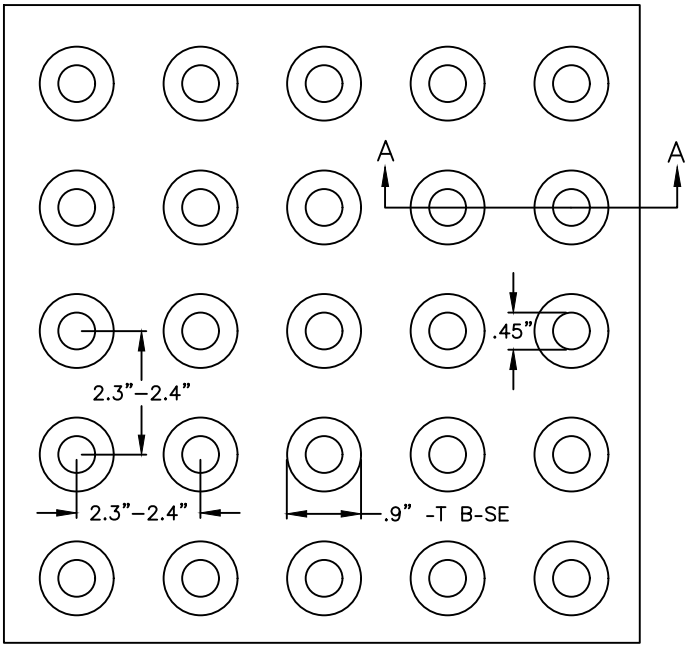
P-29



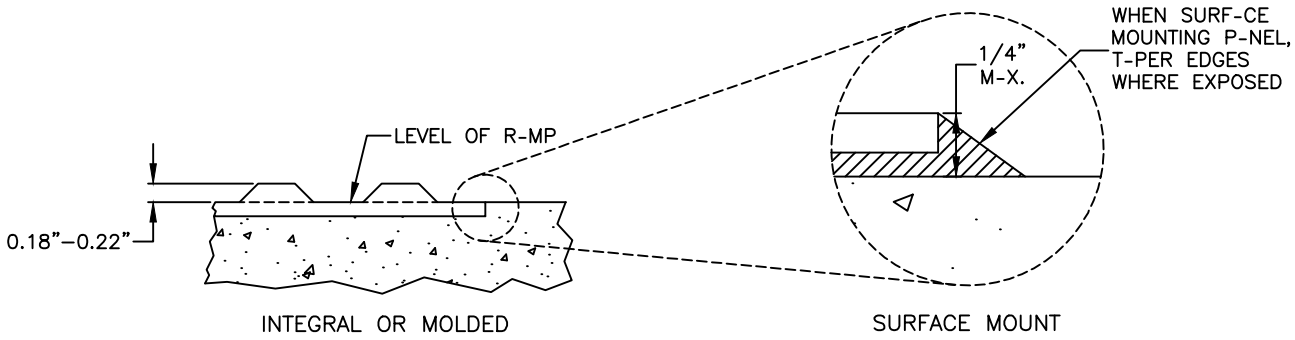
NOTES:

1. TRANSITIONS FROM RAMPS AND LANDING TO WALK, GUTTERS OR STREETS SHALL BE FLUSH AND FREE OF ABRUPT CHANGES.
2. SURFACE OF CURB RAMP AND FLARED SIDES SHALL HAVE BROOM FINISH TRANSVERSE TO PATH OF TRAVEL AND SHALL BE OF CONTRASTING FINISH TO THAT OF ADJACENT SIDEWALK.
3. RAMP SLOPE SHALL NEVER EXCEED 8.33%.
4. THE SLOPE OF ADJOINING GUTTERS, ROAD SURFACE OR ACCESSIBLE ROUTE WITHIN 4' OF THE BOTTOM OF THE RAMP SHALL NOT EXCEED 5% SLOPE.
5. (OPTIONAL) PROVIDE A 12" WIDE GROOVED BORDER AT THE LEVEL SURFACE OF THE SIDEWALK ALONG THE TOP OF THE RAMP. GROOVES SHALL BE APPROX. 1/4" DEEP, 1/4" WIDE AND SPACED 3/4" ON CENTER.
6. THE LOWER LANDING AREA LEADING INTO VEHICULAR WAY SHALL TERMINATE WITHIN THE MARKED CROSSING.
7. PROVIDE A MIN. 4' DEEP LEVEL LANDING ON UPPER ENDS AND OVER FULL-WIDTH OF RAMP. MAINTAIN A 2% MAX. SLOPE, ANY DIRECTION.
8. RAMP AND LOWER LANDING SHALL BE MINIMUM OF 5' WIDE AND SHALL LIE GENERALLY IN A SINGLE SLOPED PLANE WITH A MINIMUM OF SURFACE WARPING AND CROSS SLOPE.
9. CURB RAMPS SHALL BE LOCATED OR PROTECTED TO PREVENT THEIR OBSTRUCTION BY PARKED CARS.
10. ON THE BOTTOM LANDING WITH A 2% MAX. SLOPE, WHERE WALK ADJOINS A VEHICULAR WAY, INSTALL A 36" BAND OF TRUNCATED DOMES, IN-LINE PATTERN PER P.W. STD. P-32, THE FULL WIDTH OF THE LANDING.
11. THIS RAMP TYPE SHALL ONLY BE USED WHEN NECESSARY DUE TO R/W OR PHYSICAL CONSTRAINTS. IT MAY BE UTILIZED FOR DIAGONAL OR DUAL RAMP APPLICATIONS.
12. MODIFIED RAMPS PLACED ON SIGNALIZED INTERSECTIONS SHALL HAVE A PEDESTRIAN PUSH BUTTON ON THE ADJACENT SIGNAL POLE PER CA-MUTCD 4E.08. IN INSTANCES WHERE THIS IS NOT FEASIBLE THE PEDESTRIAN PUSHBUTTON SHALL BE INSTALLED ON A REMOTE POST LOCATED AT THE LOWER LANDING AREA, THE CURB WIDTH SHALL BE INCREASED ACCORDINGLY TO ACCOMMODATE THE POST INSTALLATION.
13. PUSHBUTTONS FOR ACCESSIBLE PEDESTRIAN SIGNALS SHOULD BE LOCATED AS CLOSE AS POSSIBLE TO THE CROSSWALK LINE FURTHEST FROM THE CENTER OF THE INTERSECTION AND AS CLOSE AS POSSIBLE TO THE CURB RAMP. IF TWO ACCESSIBLE PEDESTRIAN PUSHBUTTONS ARE PLACED LESS THAN 10 FEET APART OR ON THE SAME POLE, EACH ACCESSIBLE PEDESTRIAN PUSHBUTTON SHALL BE PROVIDED WITH A PUSHBUTTON LOCATOR TONE, TACTILE ARROW, SPEECH WALK MESSAGE FOR THE WALK INDICATION, AND A SPEECH PUSHBUTTON INFORMATION MESSAGE. REFER TO CA-MUTCD FOR SPECIFIC GUIDANCE.

MODIFIED CURB RAMP	REF. & REV. ~~JUNE 2017~~ DEC. 2020 (A.7)	CITY OF FRESNO P-31



DOME PATTERN



TYPICAL SECTION A–A

NOTES:

1. THE DETECTABLE WARNING SHALL VISUALLY CONTRAST PER THE CALIFORNIA BUILDING CODE, LATEST REVISION. THE MATERIAL USED SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE. THE COLOR SHALL BE YELLOW UNLESS DIRECTED OTHERWISE BY CONSTRUCTION MANAGEMENT.

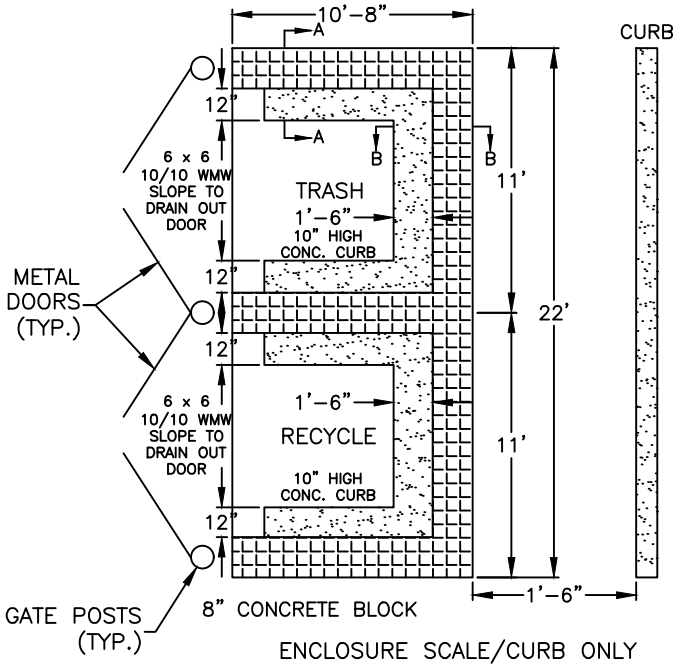
2. THE DOMES MAY BE CONSTRUCTED IN A VARIETY OF METHODS INCLUDING CAST–IN–PLACE OR STAMPED. IT MAY ALSO BE PART OF A PREFABRICATED SURFACE TREATMENT, SEE SURFACE MOUNT DETAIL.

3. ONLY APPROVED DSA/AC DETECTABLE WARNING PRODUCTS AND DIRECTIONAL SURFACES SHALL BE INSTALLED AS PROVIDED IN THE CALIFORNIA CODE OF REGULATIONS (CCR), TITLE 24, PART 1, ARTICLES 2, 3 AND 4. REFER TO CCR TITLE 24, PART 12, CHAPTER 12–11A AND B FOR BUILDING FACILITY ACCESS SPECIFICATIONS FOR PRODUCT APPROVAL FOR DETECTABLE WARNING PRODUCTS AND DIRECTIONAL SURFACES.

4. DETECTABLE WARNING PRODUCTS AND DETECTABLE SURFACES SHALL BE EVALUATED BY AN INDEPENDENT ENTITY, SELECTED BY THE DEPARTMENT OF GENERAL SERVICES, DIVISION OF THE STATE ARCHITECT–ACCESS COMPLIANCE FOR ALL OCCUPANCIES, INCLUDING TRANSPORTATION AND OTHER OUTDOOR ENVIRONMENTS. SEE GOVERNMENT CODE SECTION 4460.

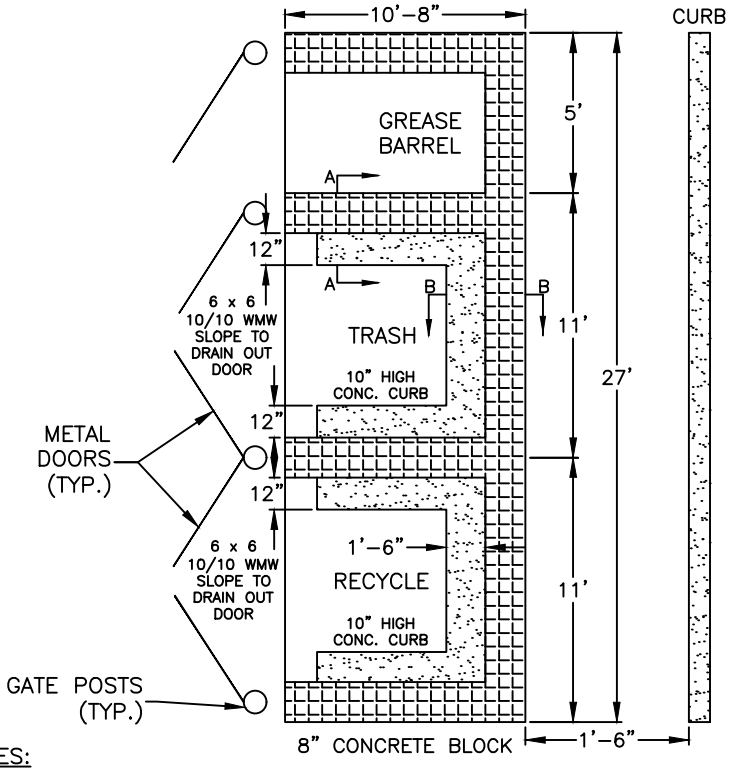
DETECTABLE WARNING DEVICES	REF. & REV. ~~AUG. 2010~~ ~~JUNE 2014~~ DEC. 2020 (A.7)	CITY OF FRESNO P–32

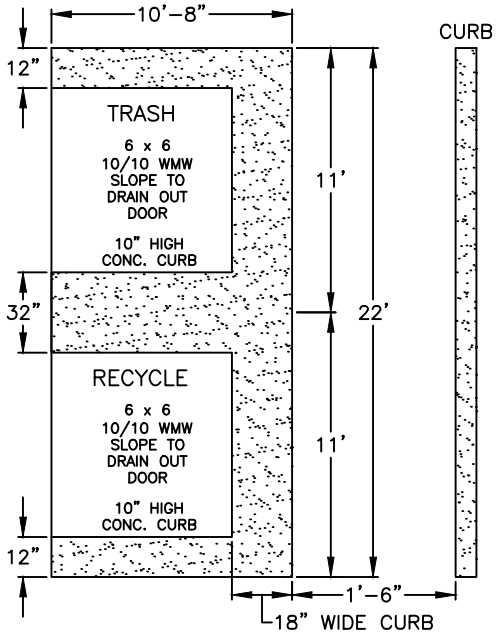
ENCLOSURE SCALE / STANDARD



ENCLOSURE SCALE/CURB ONLY
ZONES-M1, M2, M3, & CM ONLY

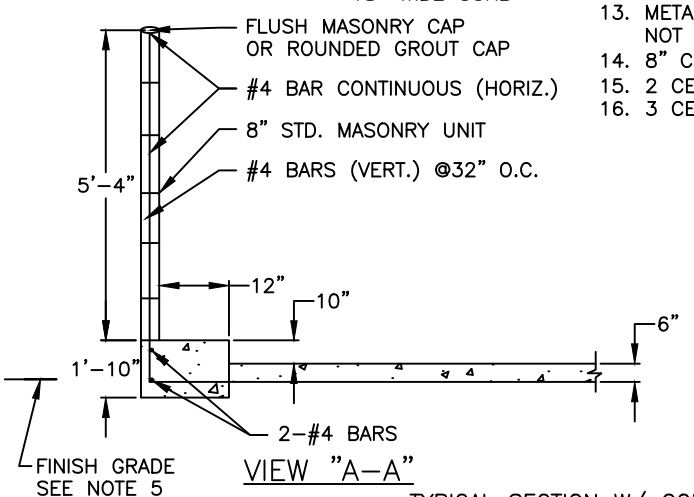
ENCLOSURE SCALE / RESTAURANT



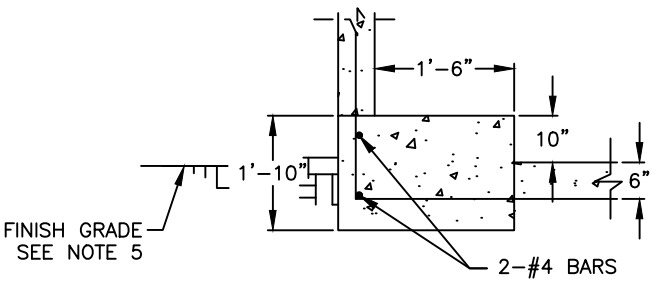


NOTES:

1. ALL CONSTRUCTION SHALL COMPLY WITH THE FRESNO MUNICIPAL CODE.
2. GROUT ALL CELLS.
3. ALL MASONRY UNITS SHALL COMPLY WITH THE LATEST ADOPTED CALIFORNIA BUILDING CODE AND U.B.C. STANDARD 24-4 GRADE N.
4. ALL MASONRY WALLS SHALL BE INSPECTED BY THE CITY OF FRESNO DEVELOPMENT DEPARTMENT.
5. DEPTH OF FOOTINGS ARE INTO NATURAL UNDISTURBED SOIL OR TESTED AND APPROVED COMPACTED FILL.
6. ALL MASONRY UNITS SHALL BE MINIMUM F'M=1500 PSI.
7. REINFORCING STEEL SHALL BE DEFORMED BAR, MIN. GRADE 40.
8. FOOTING CONCRETE SHALL BE A MINIMUM 2000 PSI AT 28 DAYS.
9. MORTAR SHALL BE TYPE-S (MINIMUM 1800 PSI AT 28 DAYS).
   - -ONE (1) PART CEMENT, TYPE-1
   - -ONE-HALF (1/2) PART LIME PUTTY OR HYDRATED LIME.
   - -FOUR AND ONE-HALF (4 1/2) PARTS SAND (MAXIMUM).
10. GROUT SHALL BE A MINIMUM 2000 PSI AT 28 DAYS.
    - -ONE (1) PART CEMENT.
    - -THREE (3) PARTS SAND.
    - -TWO (2) PARTS PEA GRAVEL.
11. FINISH PAD ELEVATION TO BE FLUSH WITH GRADE AT ACCESS PAVEMENT.
12. ANY GATE HINGES SHOULD BE LOCATED ON THE OUTSIDE.
13. METAL DOORS ARE REQUIRED ON ALL ENCLOSURES, CHAIN LINK IS NOT ACCEPTABLE.
14. 8" CONCRETE BLOCK TO BE USED FOR WALLS.
15. 2 CELLS ARE REQUIRED FOR COMMERCIAL/INDUSTRIAL BUILDINGS.
16. 3 CELLS ARE REQUIRED FOR RESTAURANTS.



VIEW "A-A"



VIEW "B-B"

TYPICAL SECTION W/ CONCRETE BLOCK WALL

TYPICAL REFUSE CONTAINER ENCLOSURE DETAILS

REF. & REV.
DEC. 2020 (A.7)

CITY OF FRESNO

P-33A

EXHIBIT "B"
MODIFIED TRASH/RECYCLING ENCLOSURE

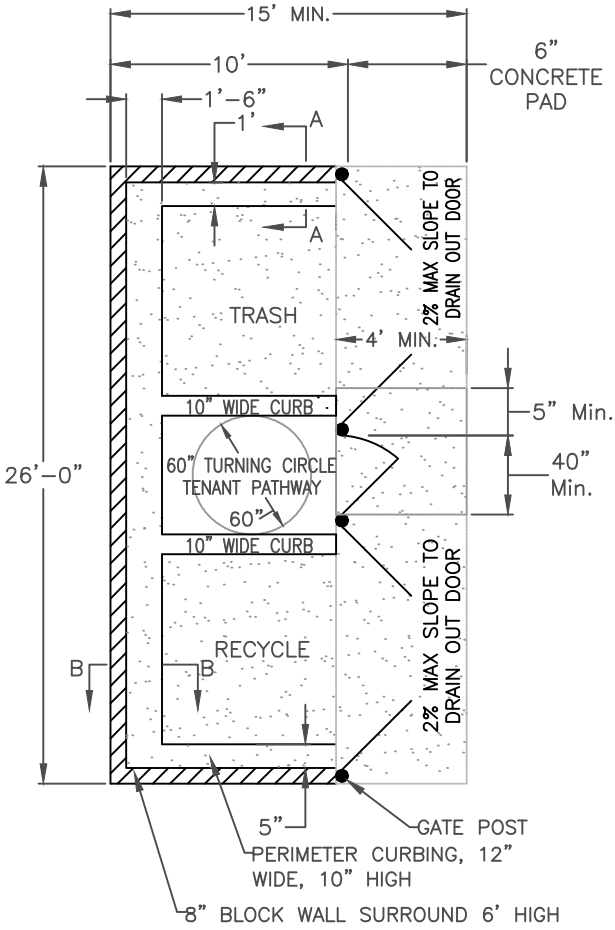
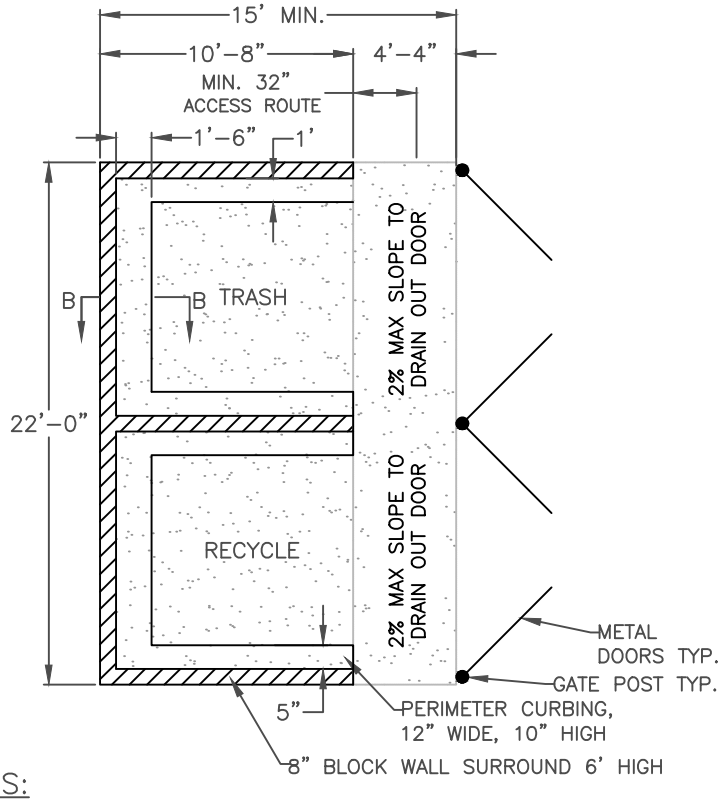
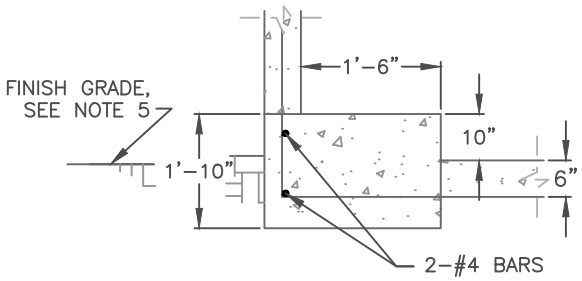


EXHIBIT "A"
MODIFIED TRASH/RECYCLING ENCLOSURE

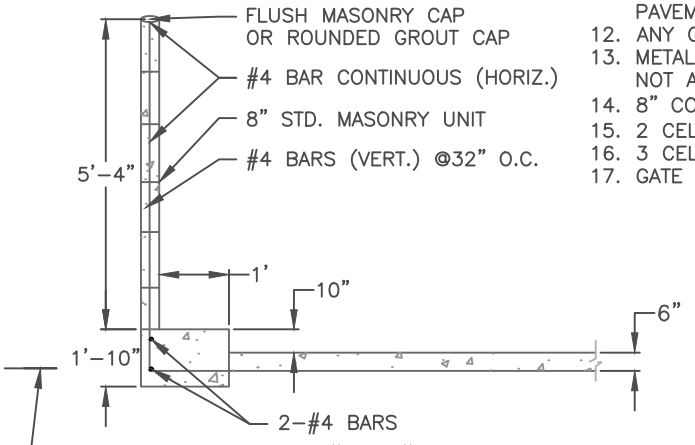


NOTES:

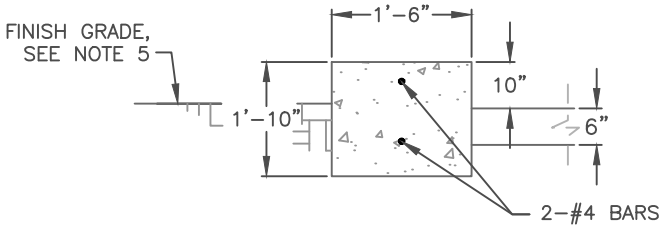
1. ALL CONSTRUCTION SHALL COMPLY WITH THE FRESNO MUNICIPAL CODE.
2. GROUT ALL CELLS.
3. ALL MASONRY UNITS SHALL COMPLY WITH THE LATEST ADOPTED CALIFORNIA BUILDING CODE AND U.B.C. STANDARD 24-4 GRADE N.
4. ALL MASONRY WALLS SHALL BE INSPECTED BY THE CITY OF FRESNO DEVELOPMENT DEPARTMENT.
5. DEPTH OF FOOTINGS ARE INTO NATURAL UNDISTURBED SOIL OR TESTED AND APPROVED COMPACTED FILL.
6. ALL MASONRY UNITS SHALL BE MINIMUM F'M=1500 PSI.
7. REINFORCING STEEL SHALL BE DEFORMED BAR, MIN. GRADE 40.
8. FOOTING CONCRETE SHALL BE A MINIMUM 2000 PSI AT 28 DAYS.
9. MORTAR SHALL BE TYPE-S (MINIMUM 1800 PSI AT 28 DAYS).
   ONE (1) PART CEMENT, TYPE-1
   ONE-HALF (1/2) PART LIME PUTTY OR HYDRATED LIME.
   FOUR AND ONE-HALF (4 1/2) PARTS SAND (MAXIMUM).
10. GROUT SHALL BE A MINIMUM 2000 PSI AT 28 DAYS.
    ONE (1) PART CEMENT.
    THREE (3) PARTS SAND.
    TWO (2) PARTS PEA GRAVEL.
11. FINISH PAD ELEVATION TO BE FLUSH WITH GRADE AT ACCESS PAVEMENT.
12. ANY GATE HINGES SHOULD BE LOCATED ON THE OUTSIDE.
13. METAL DOORS ARE REQUIRED ON ALL ENCLOSURES, CHAIN LINK IS NOT ACCEPTABLE.
14. 8" CONCRETE BLOCK TO BE USED FOR WALLS.
15. 2 CELLS ARE REQUIRED FOR COMMERCIAL/INDUSTRIAL BUILDINGS.
16. 3 CELLS ARE REQUIRED FOR RESTAURANTS.
17. GATE HARDWARE SHALL COMPLY WITH 11-13 404.2.7 OF CBC 2016



VIEW "B-B"



VIEW "A-A"

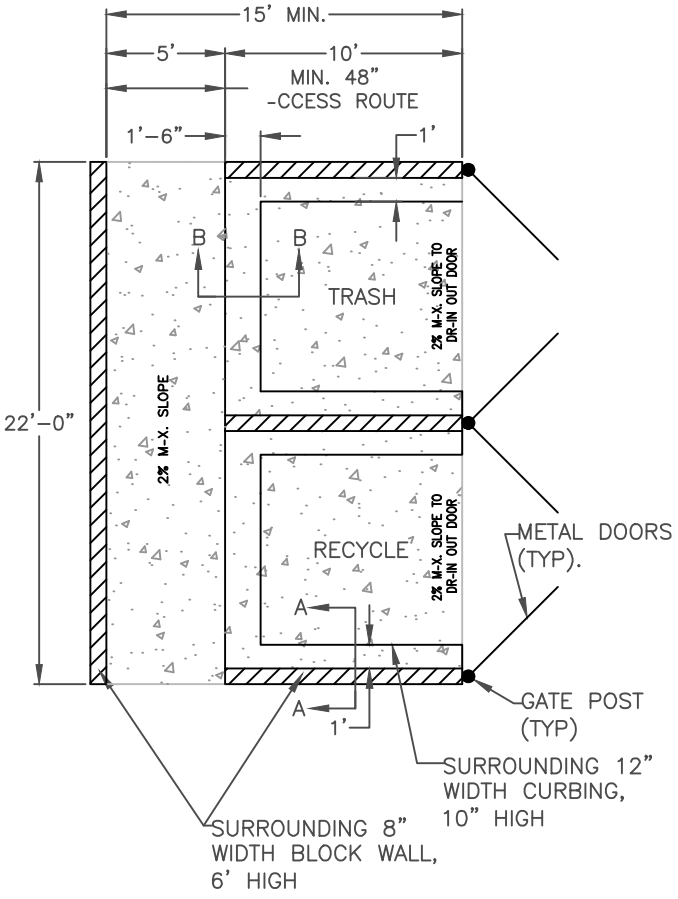


VIEW "C-C"

TYPICAL SECTION W/ CONCRETE BLOCK WALL

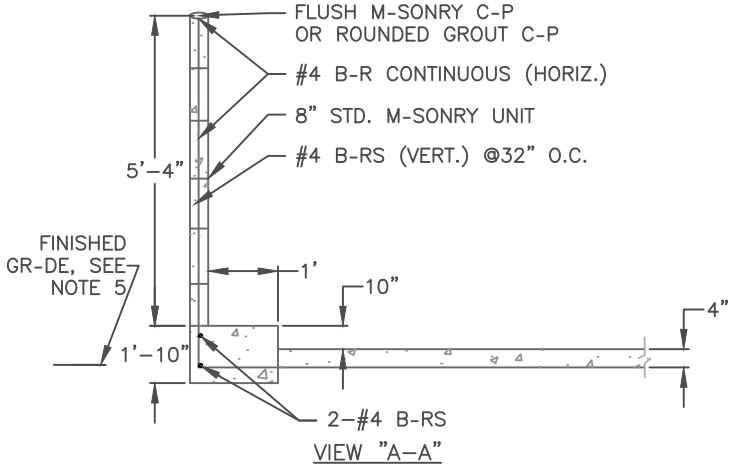
MULTI-FAMILY TYPICAL REFUSE CONTAINER ENCLOSURE DETAILS	REF. & REV. DEC. 2020 (A.7)	CITY OF FRESNO P-33B

EXHIBIT "C"
MULTI–FAMILY TRASH/RECYCLING ENCLOSURE

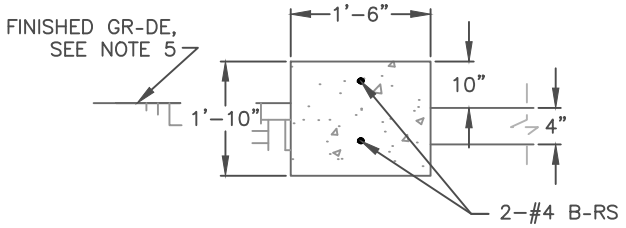


NOTES:

1. -LL CONSTRUCTION SH-LL COMPLY WITH THE FRESNO MUNICIP-L CODE.
2. GROUT -LL CELLS.
3. -LL M-SONRY UNITS SH-LL COMPLY WITH THE L-TEST -DOPTED C-LIFORNI- BUILDING CODE -ND U.B.C. ST-ND-RD 24–4 GR-DE N.
4. -LL M-SONRY W-LLS SH-LL BE INSPECTED BY THE CITY OF FRESNO DEVELOPMENT DEP-RTMENT.
5. DEPTH OF FOOTINGS -RE INTO N-TUR-L UNDISTURBED SOIL OR TESTED -ND -PPROVED COMP-CTED FILL.
6. -LL M-SONRY UNITS SH-LL BE MINIMUM F'M=1500 PSI.
7. REINFORCING STEEL SH-LL BE DEFORMED B-R, MIN. GR-DE 40.
8. FOOTING CONCRETE SH-LL BE - MINIMUM 2000 PSI -T 28 D-YS.
9. MORT-R SH-LL BE TYPE–S (MINIMUM 1800 PSI -T 28 D-YS).
   ONE (1) P-RT CEMENT, TYPE–1
   ONE–H-LF (1/2) P-RT LIME PUTTY OR HYDR-TED LIME.
   FOUR -ND ONE–H-LF (4 1/2) P-RTS S-ND (M-XIMUM).
10. GROUT SH-LL BE - MINIMUM 2000 PSI -T 28 D-YS.
    ONE (1) P-RT CEMENT.
    THREE (3) P-RTS S-ND.
    TWO (2) P-RTS PE- GR- EL.
11. FINISH P-D ELEV-TION TO BE FLUSH WITH GR-DE -T -CCESS P- EMENT.
12. -NY G-TE HINGES SHOULD BE LOC-TED ON THE OUTSIDE.
13. MET-L DOORS -RE REQUIRED ON -LL ENCLOSURES, CH-IN LINK IS NOT -CCEPT-BLE.
14. 8" CONCRETE BLOCK TO BE USED FOR W-LLS.
15. 2 CELLS -RE REQUIRED FOR COMMERCI-L/INDUSTRI-L BUILDINGS.
16. 3 CELLS -RE REQUIRED FOR REST-UR-NTS.



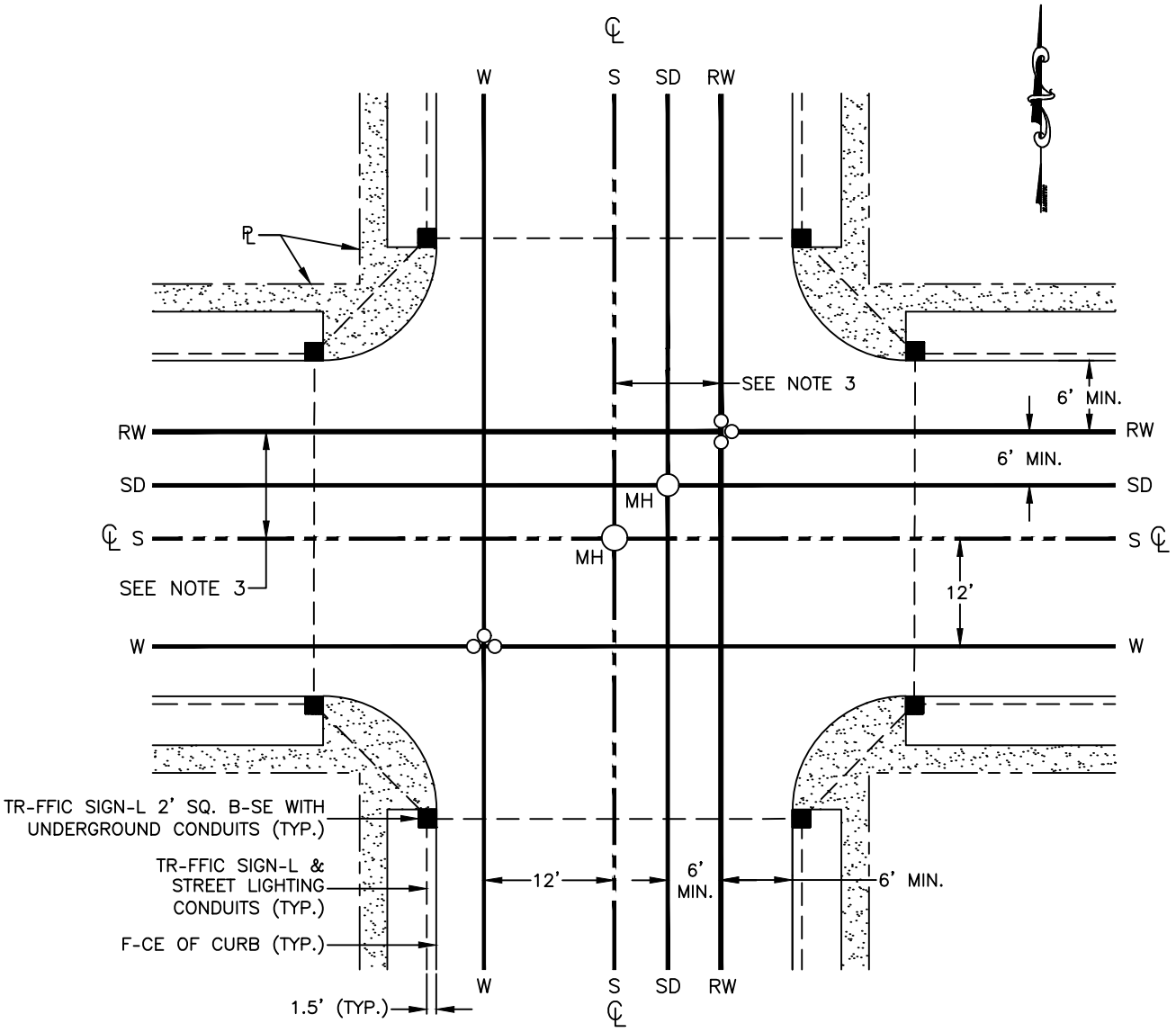
VIEW "A–A"



VIEW "B–B"

TYPICAL SECTION W/ CONCRETE BLOCK WALL

MULTI–FAMILY TYPICAL REFUSE CONTAINER ENCLOSURE DETAILS	REF. & REV. DEC. 2020 (A.7)	CITY OF FRESNO P–33C



NOTES:

1. THIS "STANDARD" IS A GUIDE ONLY AND DEVIATIONS WILL BE ACCEPTABLE WHERE CONDITIONS DICTATE.
2. DIMENSIONS SHOWN ARE DESIRABLE BUT DO NOT GOVERN. THE INTENTION IS TO SHOW THE RELATIVE POSITION OF ALL UTILITIES.
3. REFERENCE STD. DWG. RW-12 FOR MINIMUM SEPARATION REQUIREMENTS.

LEGEND:

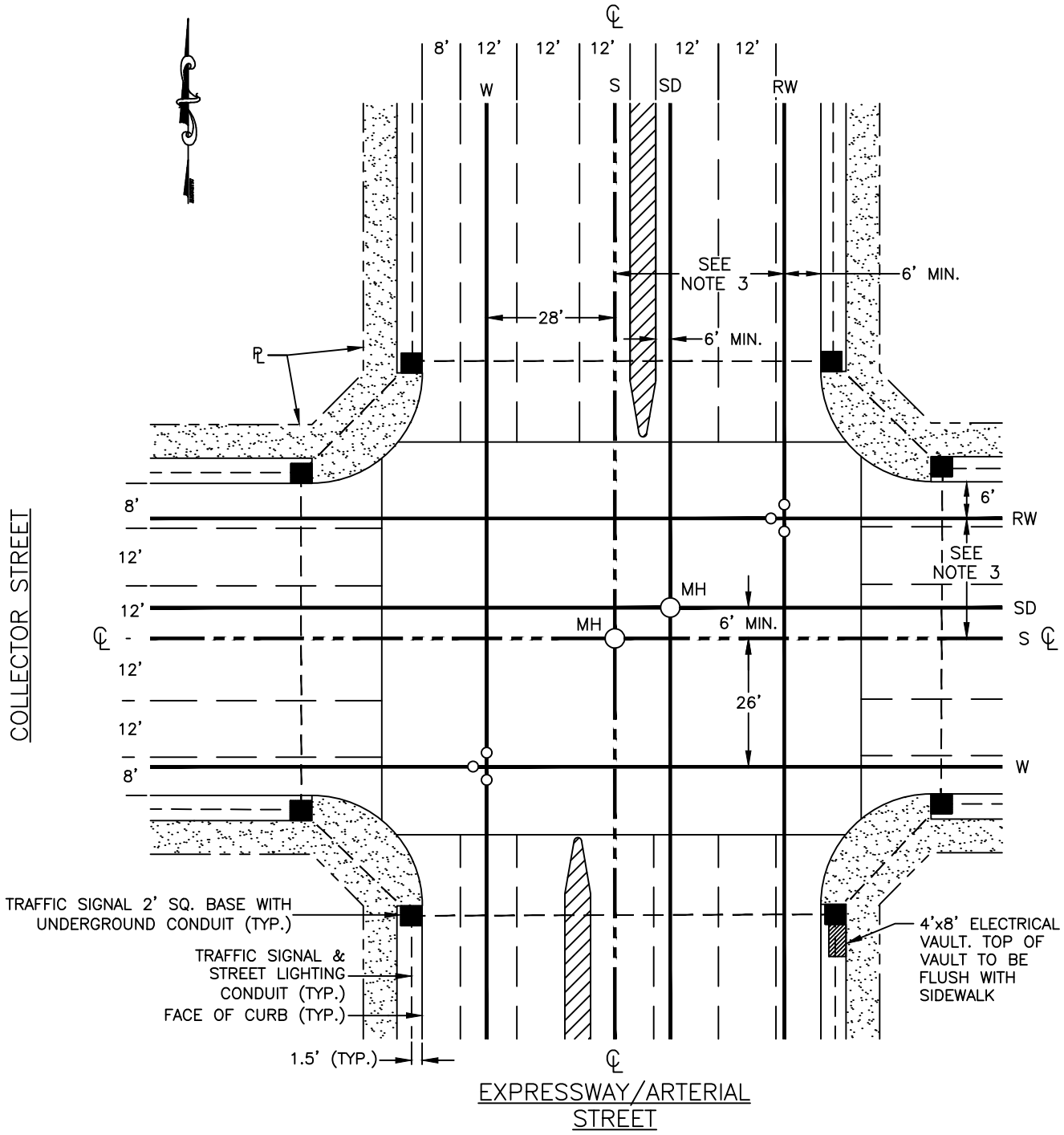
S – SANITARY SEWER
SD – STORM SEWER
W – WATER MAIN
RW – RECYCLED WATER
MH – MANHOLE
℄ – CENTERLINE OF PROPOSED STREET
PL – PROPERTY LINE

LOCATION OF UNDERGROUND FACILITIES
LOCAL STREETS

REF & REV
~~JUNE 2015~~
DEC. 2020 (-.7)

CITY OF FRESNO

P-41



NOTES:

1. THIS "STANDARD" IS A GUIDE ONLY AND DEVIATIONS WILL BE ACCEPTABLE WHERE CONDITIONS DICTATE.
2. DIMENSIONS SHOWN ARE DESIRABLE, BUT DO NOT GOVERN. THE INTENTION IS TO SHOW THE RELATIVE POSITION OF ALL UTILITIES.
3. REFERENCE STD. DWG. RW-12 FOR MINIMUM SEPARATION REQUIREMENTS.

LEGEND

S	SANITARY SEWER
SD	STORM SEWER
W	WATER MAIN
RW	RECYCLED WATER
MH	MANHOLE
℄	CENTERLINE OF PROPOSED OFFICIAL PLAN LINE OR DIRECTOR'S DETERMINATION
ℙ	PROPERTY LINE

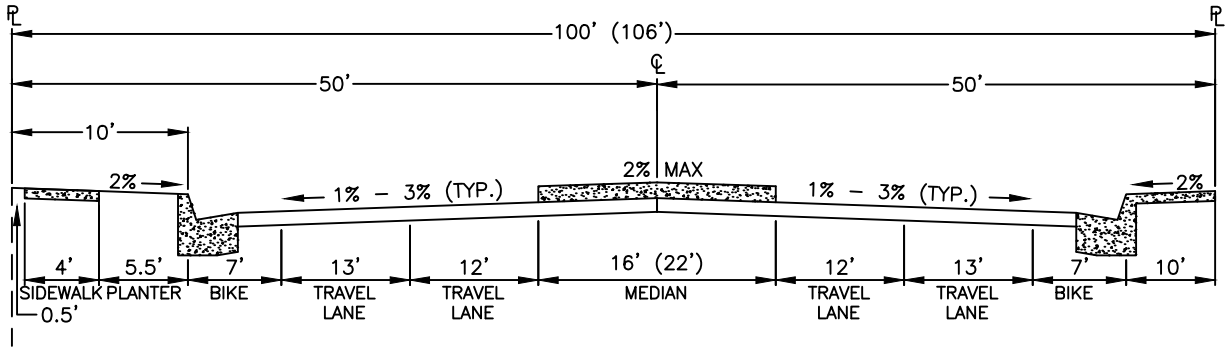
LOCATION OF UNDERGROUND FACILITIES

EXPRESSWAY, ARTERIAL & COLLECTOR STREETS

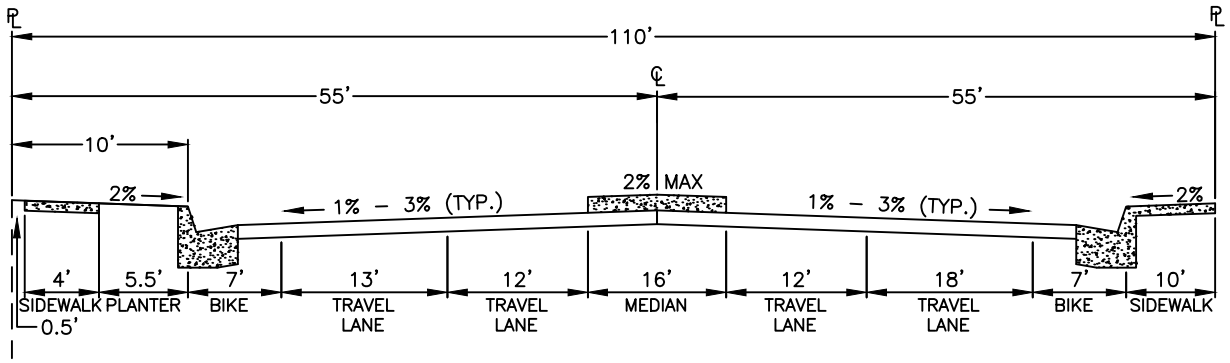
REF & REV
~~JUNE 2015~~
DEC. 2020 (A.7)

CITY OF FRESNO

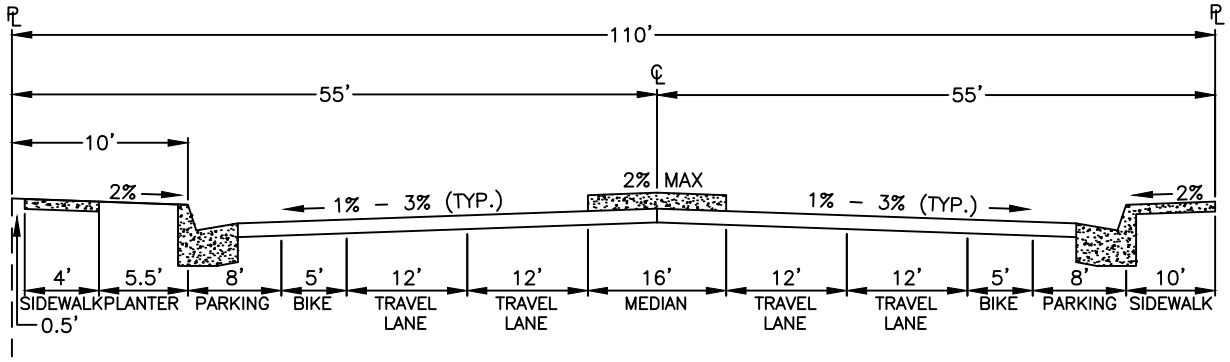
P-42



CASE 1: DIVIDED ARTERIAL – NO PARKING



CASE 2: DIVIDED ARTERIAL – NO PARKING
AND WIDER OUTSIDE TRAVEL LANE

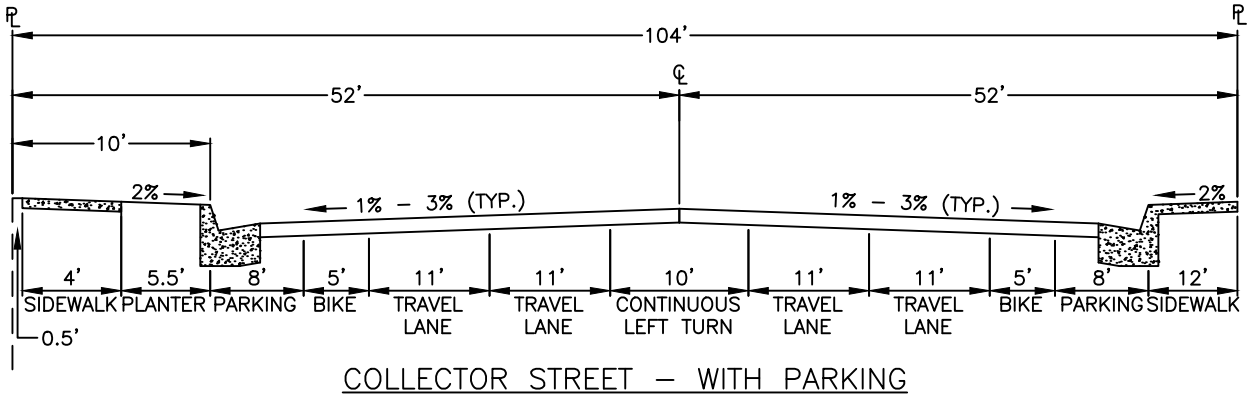


CASE 3: DIVIDED ARTERIAL – WITH PARKING
OR SCHOOL DROP OFF ZONES

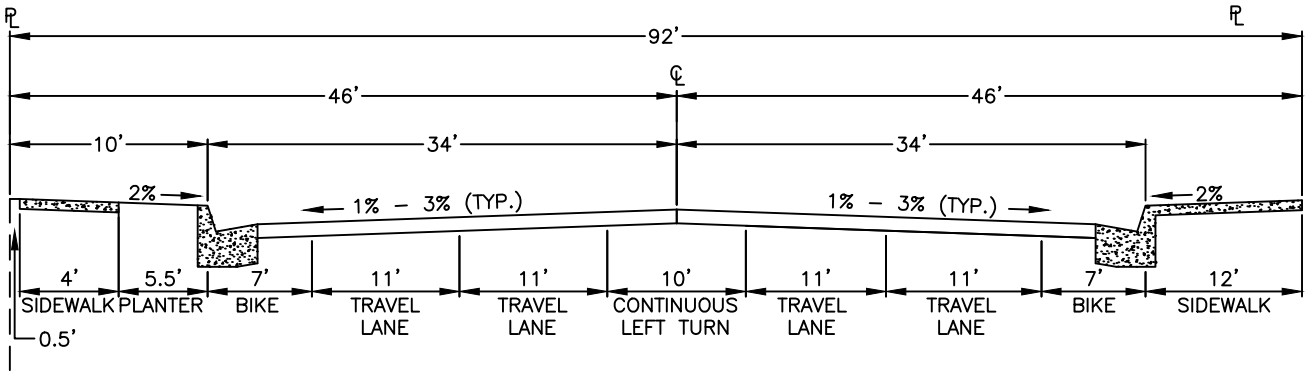
NOTES:

1. USE 26' MEDIAN WHEN DUAL LEFT TURNS ARE REQUIRED.
2. OFFSET CROWN REQUIRES APPROVAL OF THE ENGINEER DEVIATIONS FROM STANDARDS REQUIRE APPROVAL OF THE ENGINEER.
3. ( ) INDICATE A 22' MEDIAN WIDTH ONLY WHERE A SPECIFIC ARTERIAL HAS BEEN PLANNED FOR A 22' MEDIAN ISLAND.
4. CASE 2 SHALL ONLY BE USED FOR SHORT GAP FILLING BETWEEN EXISTING CASE 2 ARTERIALS.
5. CASE 3 SHALL NOT BE USED UNLESS APPROVED BY THE CITY TRAFFIC ENGINEER.

ARTERIAL STREET CROSS–SECTION	REF. & REV. ~~AUG. 2010~~ DEC. 2020 (A.7)	CITY OF FRESNO P–52



COLLECTOR STREET – WITH PARKING
(4 TRAVEL LANES)

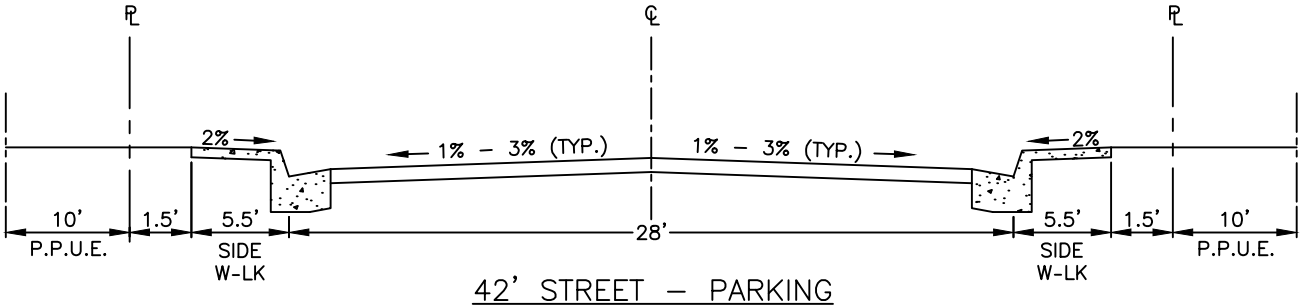


COLLECTOR STREET – NO PARKING
(4 TRAVEL LANES)

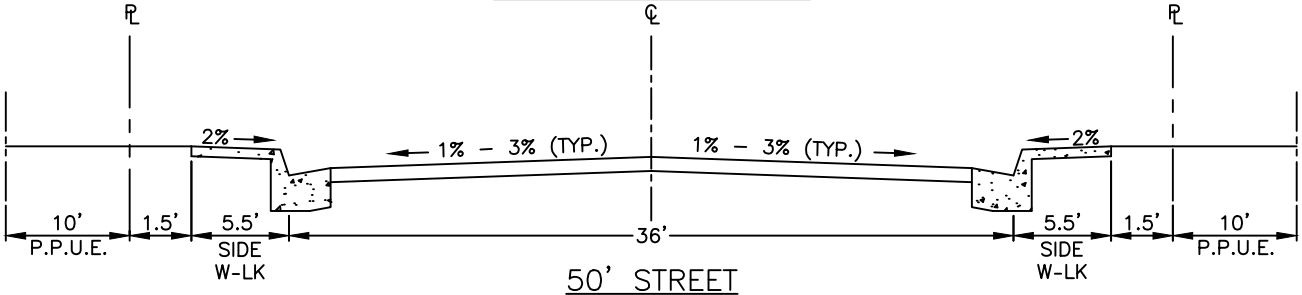
NOTES:

1. OFFSET CROWN REQUIRES APPROVAL OF THE ENGINEER DEVIATIONS FROM STANDARDS REQUIRE APPROVAL OF THE ENGINEER.

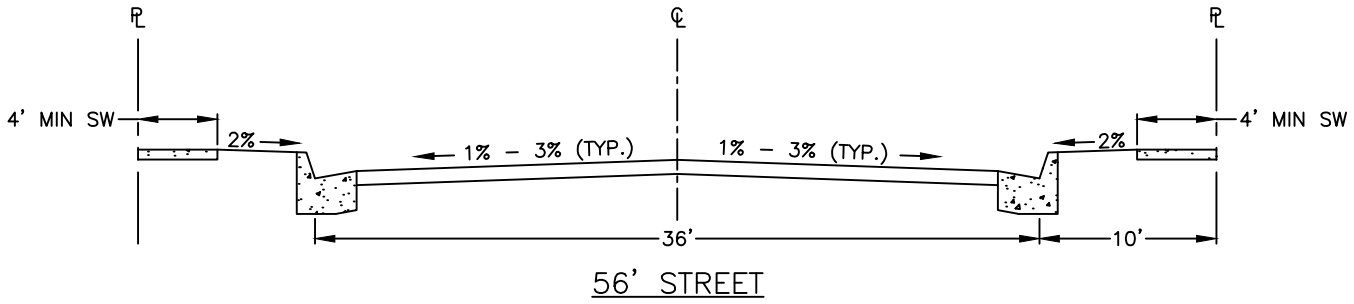
COLLECTOR STREET CROSS–SECTION (4 TRAVEL LANES)	REF. & REV. ~~AUG. 2010~~ DEC. 2020 (A.7)	CITY OF FRESNO P–53



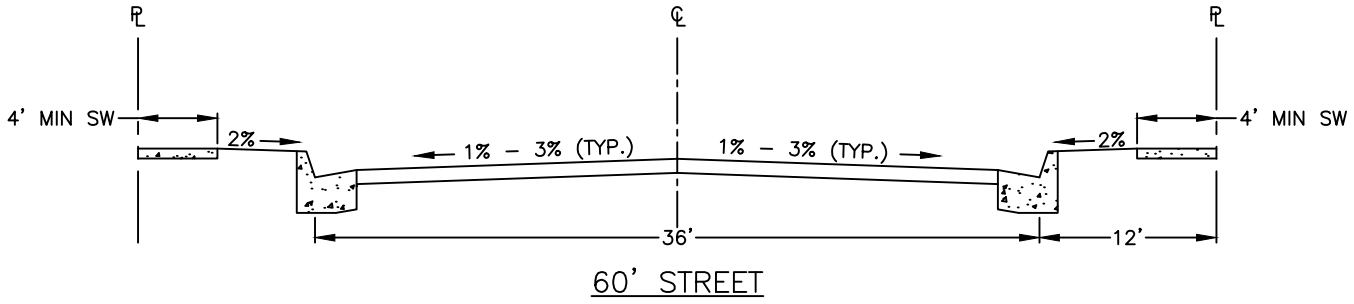
42' STREET – PARKING
ONE ONE SIDE ONLY



50' STREET



56' STREET



60' STREET

NOTES:

1. FOR DRIVEWAY DETAIL SEE STREET SECTIONS THAT MAY BE USED, SEE P.W. DWGS. P–4.
2. OFFSET CROWN REQUIRES APPROVAL OF THE ENGINEER DEVIATIONS FROM STANDARDS REQUIRE APPROVAL OF THE ENGINEER.
3. SIDEWALKS MAY BE LOCATED PARTIALLY OR FULLY OUTSIDE THE STREET RIGHT–OF–WAY WITH THE DEDICATION OF A PEDESTRIAN EASEMENT, WHEN APPROVED BY THE CITY ENGINEER.

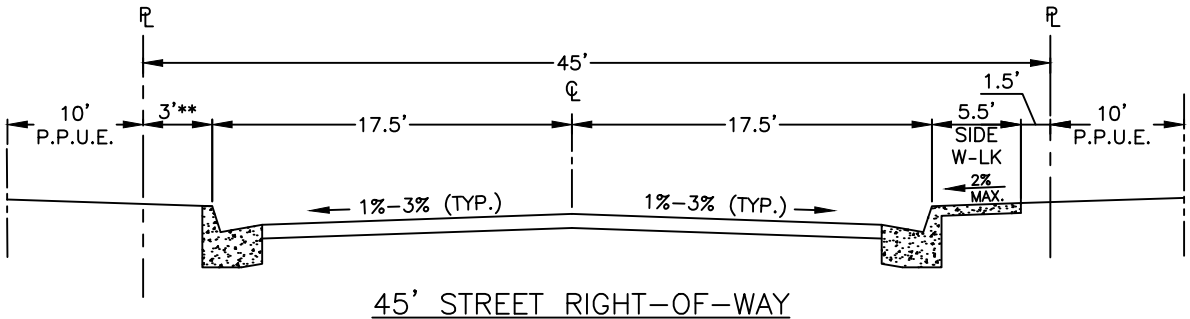
LOCAL STREET CROSS–SECTION

SEE API–4 THRU API–9 FOR S. MINNEWAWA AVE. BETWEEN BUTLER AVE. AND FANCHER CREEK AND FOR VAN NESS EXTENTION BETWEEN HERNDON AVE. AND SAN JOAQUIN RIVER BLUFF.

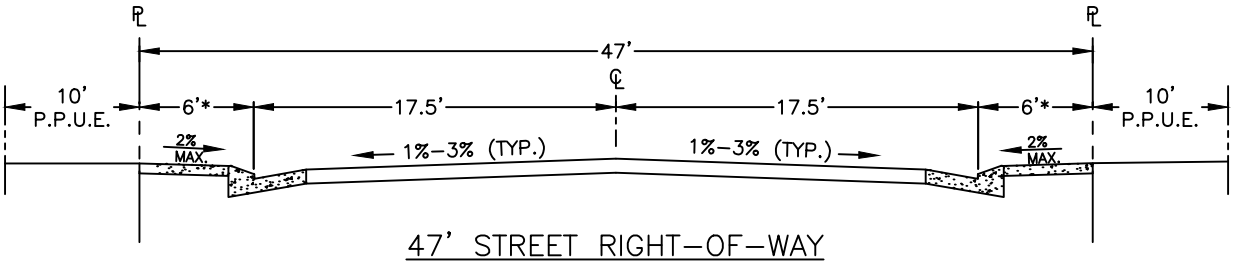
REF. & REV.
~~AUG., 2010~~
DEC. 2020 (A.7)

CITY OF FRESNO

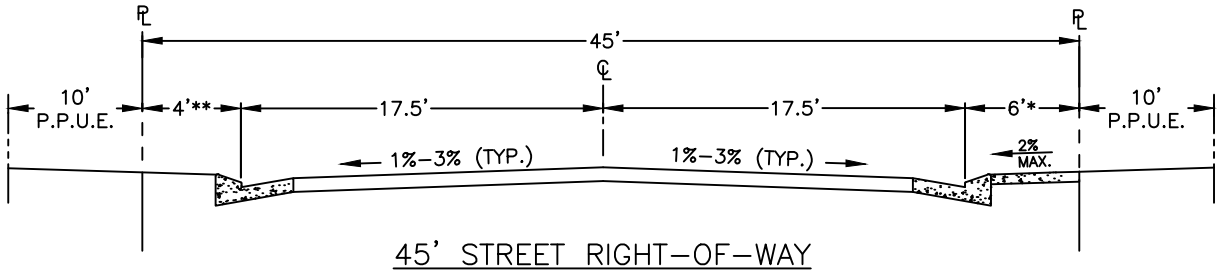
P–56A



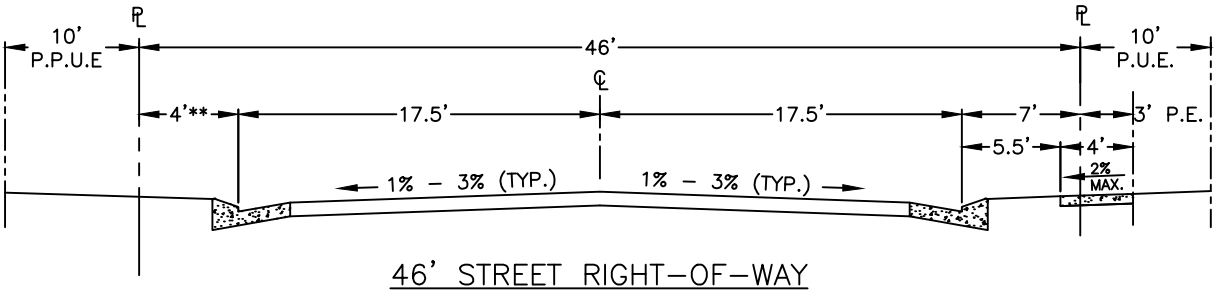
45' STREET RIGHT–OF–WAY



47' STREET RIGHT–OF–WAY
WITH WEDGE CURB



45' STREET RIGHT–OF–WAY
WITH WEDGE CURB



46' STREET RIGHT–OF–WAY
WITH WEDGE CURB

NOTES:

1. FOR DRIVEWAY DETAIL SEE STREET SECTIONS THAT MAY BE USED, SEE STD. DWG. P–4.
2. OFFSET CROWN DESIGN OR OTHER DEVIATIONS FROM STANDARDS REQUIRE THE APPROVAL OF THE CITY ENGINEER.
3. SIDEWALKS MAY BE LOCATED PARTIALLY OR FULLY OUTSIDE THE STREET RIGHT–OF–WAY WITH THE DEDICATION OF A PEDESTRIAN EASEMENT.
4. FRESNO IRRIGATION DISTRICT FACILITIES SHALL BE LOCATED OUTSIDE OF STREET AND PEDESTRIAN EASEMENT AREA.
5. WEDGE CURB IS NOT ALLOWED IN FRONT OF FIRE HYDRANTS.
6. SMALLER P.U.E. IS ACCEPTABLE WITH ALL PERTINENT UTILITY COMPANIES' APPROVAL.

* MONOLITHIC SIDEWALK PATTERN WITH WEDGE CURB REQUIRES A NON–STANDARD SIDEWALK THICKNESS. SEE STD. DWG. P–5.

** NO STREET LIGHTS ARE ALLOWED ON SIDE OF STREET WITHOUT SIDEWALK.

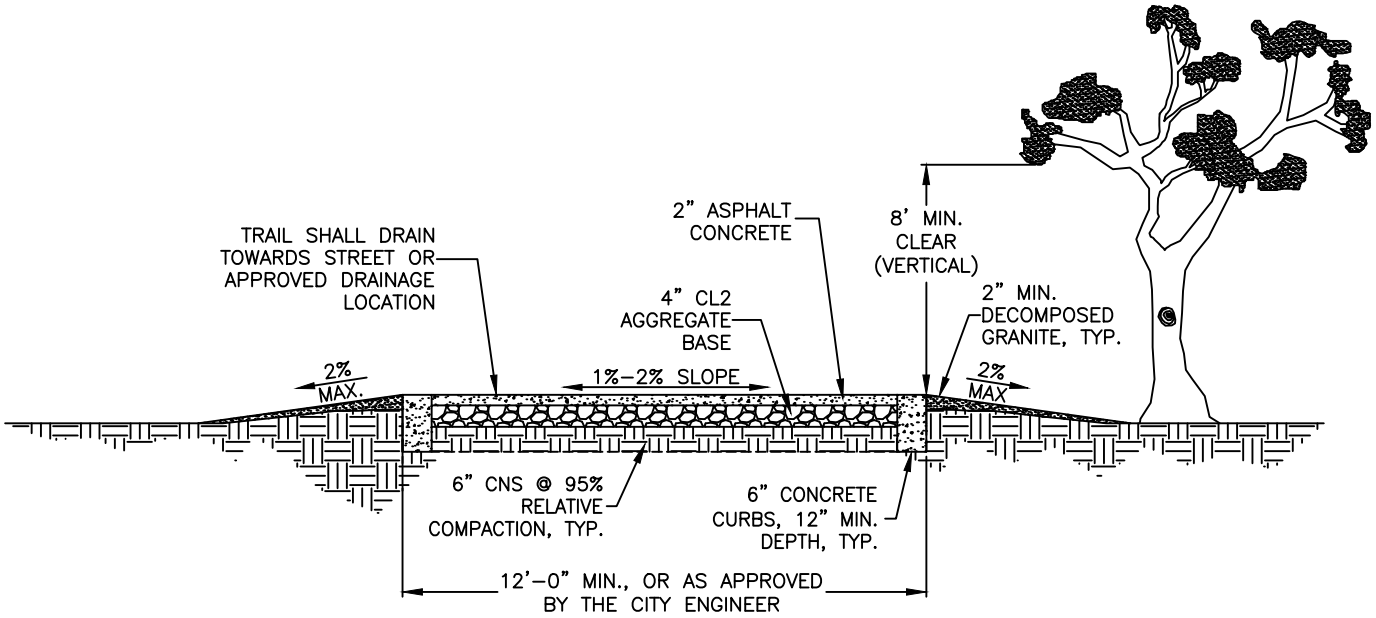
LOCAL STREET CROSS–SECTION (WITH WEDGE CURBS)

SEE API–4 THRU API–9 FOR S. MINNEWAWA AVE. BETWEEN BUTLER AVE. AND FANCHER CREEK AND FOR VAN NESS EXTENSION BETWEEN HERNDON AVE. AND SAN JOAQUIN RIVER BLUFF.

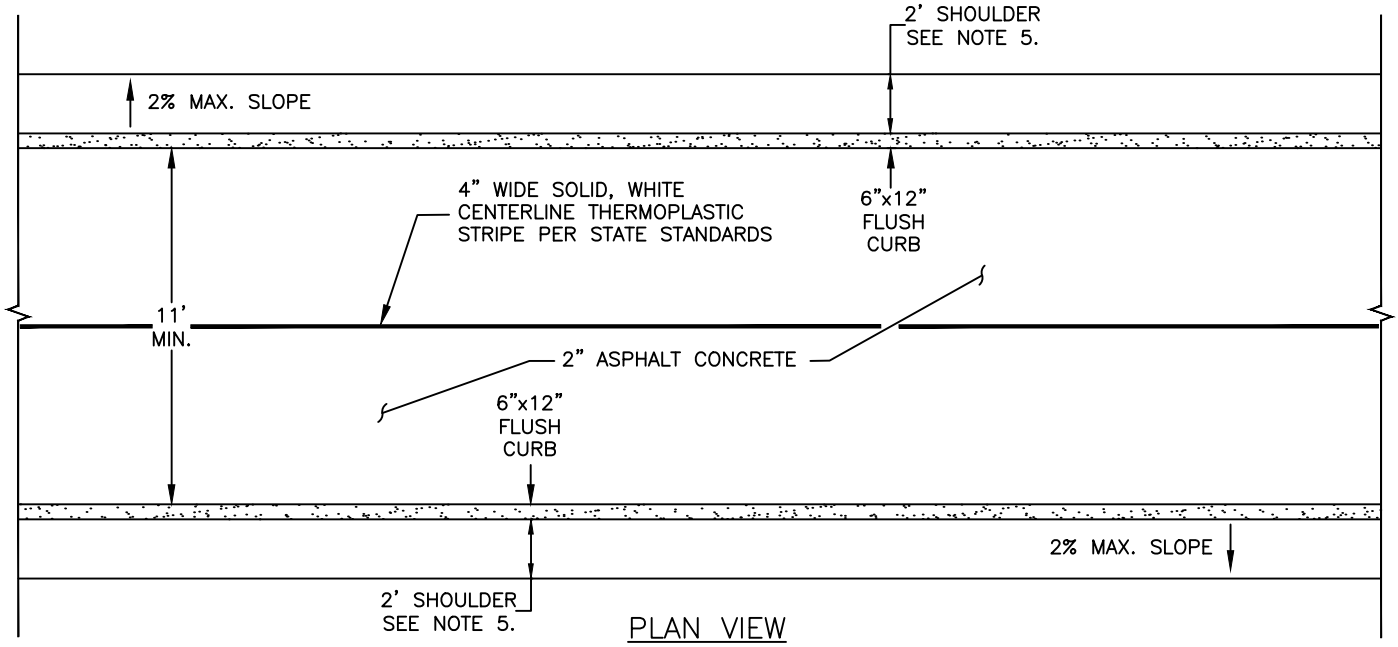
REF. & REV.
~~AUG., 2010~~
DEC. 2020 (A7)

CITY OF FRESNO

P–56B



ELEVATION VIEW

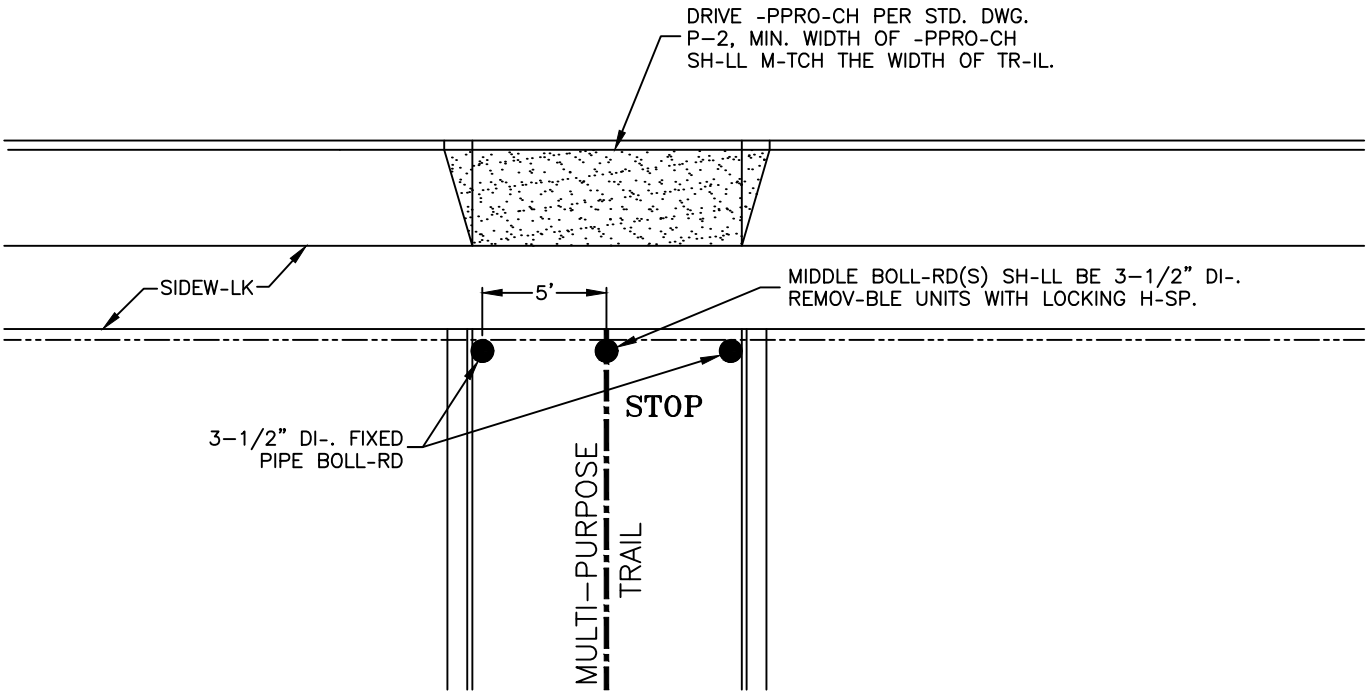


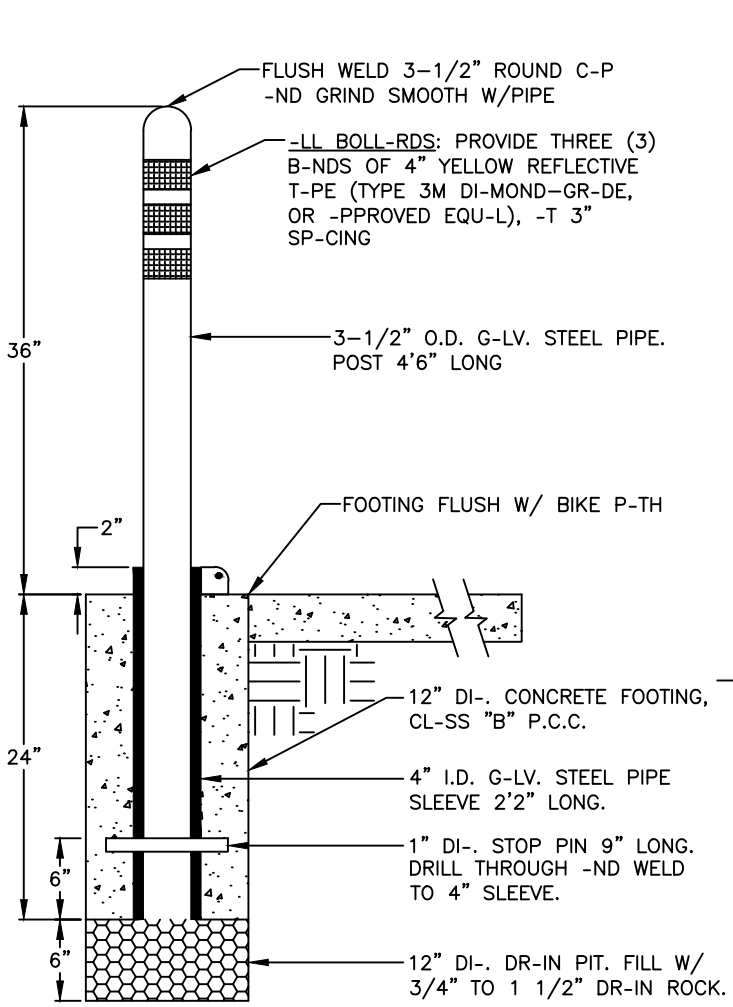
PLAN VIEW

NOTES:

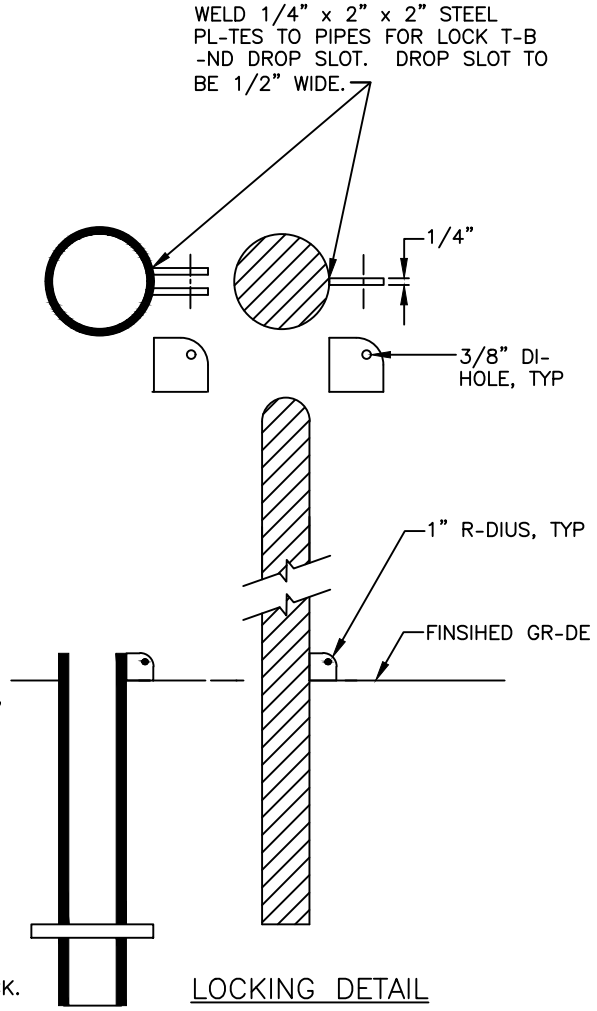
1. DEVIATIONS FROM THIS STANDARD SHALL BE ALLOWED ONLY UPON APPROVAL OF CITY ENGINEER.
2. THIS STANDARD SHALL NOT BE USED IN AREAS OF INUNDATION.
3. CITY ENGINEER MAY PERMIT A CURVILINEAR DESIGN. PRECISE DATA SHALL BE PROVIDED TO STAKE THE ALIGNMENT AND SET APPROPRIATE GRADES.
4. TRAIL DESIGN SHALL COMPLY WITH CHAPTER 1000 OF THE CALTRANS HIGHWAY DESIGN MANUAL AND THE PROWAG FOR SHARED USE PATHS.
5. IF ALL OR PART OF THE SHOULDER IS PAVED WITH THE SAME MATERIAL AS THE PATH, IT IS TO BE DELINEATED FROM THE TRAVELED WAY OF THE PATH WITH A DETAIL 27B EDGE LINE PER CALTRANS STD. PLAN A20B.

ASPHALT CLASS I TRAIL	REF. & REV. ~~JUNE 2015~~ DEC. 2020 (A.7)	CITY OF FRESNO P–58





BOLLARD DETAIL



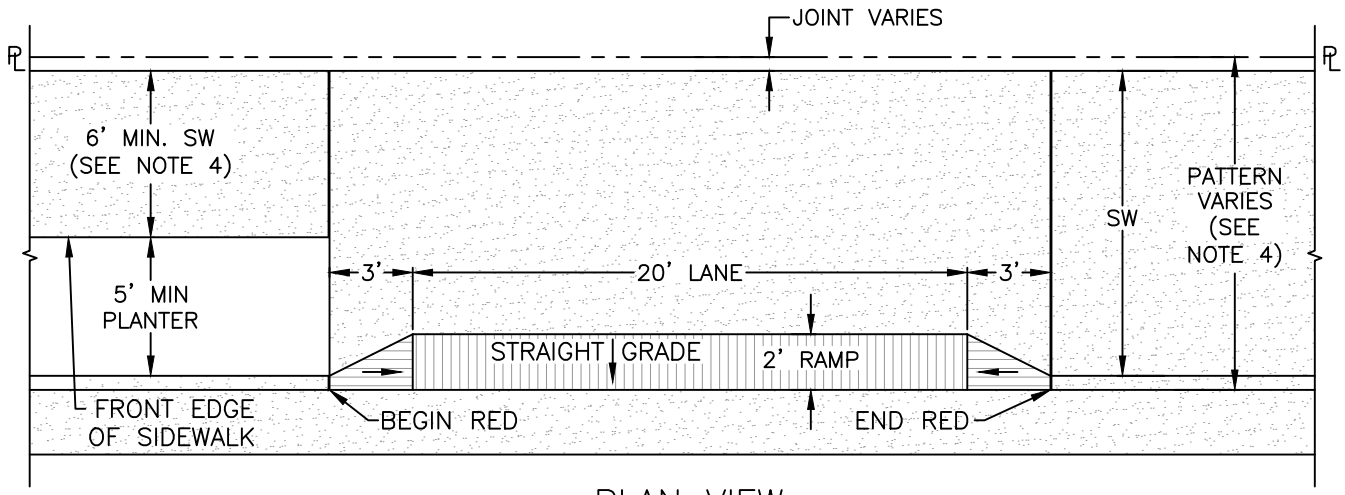
LOCKING DETAIL

TRAIL–STREET INTERSECTION TYPICAL PLAN

REF. & REV.
~~NOV. 2011~~
DEC. 2020 (A.7)

CITY OF FRESNO

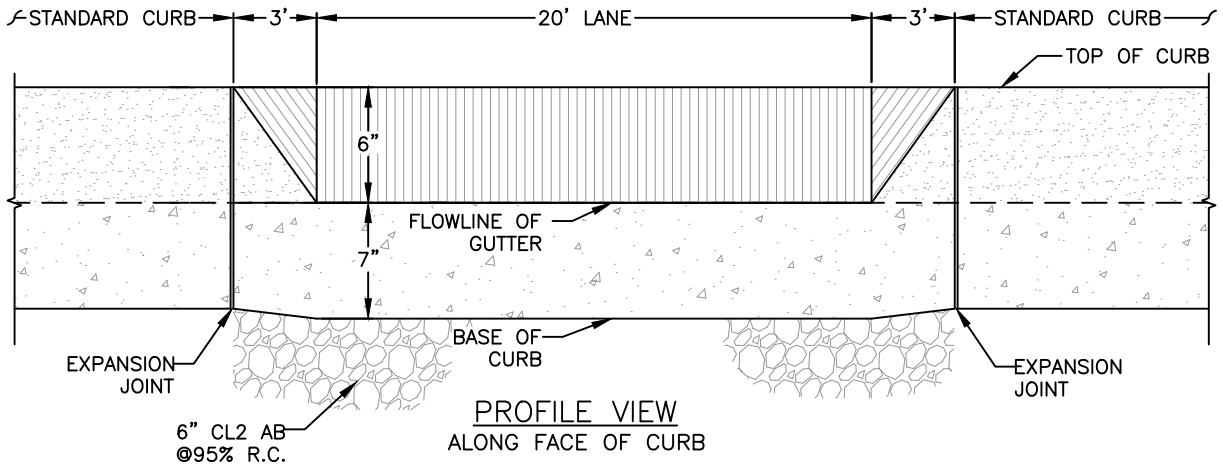
P–61



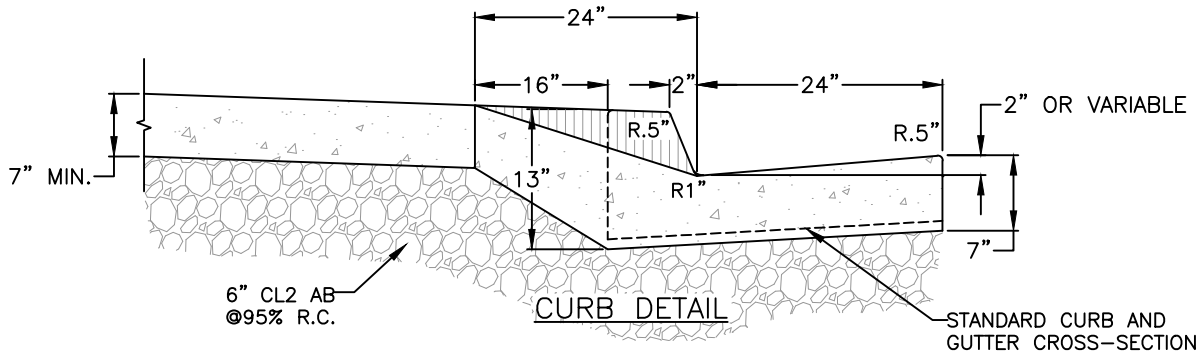
PLAN VIEW

NOTES:

1. RAMP AND SIDEWALK AREAS SHALL BE 7" PCC / 6" CNS.
2. A 4.0' MIN. SIDEWALK AREA BEHIND RAMP SHALL BE MAINTAINED. A PEDESTRIAN EASEMENT IS REQUIRED WHEN PATTERN IS LESS THAN 6'.
3. CURB TOP AND FACE SHALL BE PAINTED RED.
4. 6' MIN. SIDEWALK REQUIRED ON MAJOR STREETS, 4' MIN. REQUIRED ON LOCAL STREETS.



PROFILE VIEW
ALONG FACE OF CURB

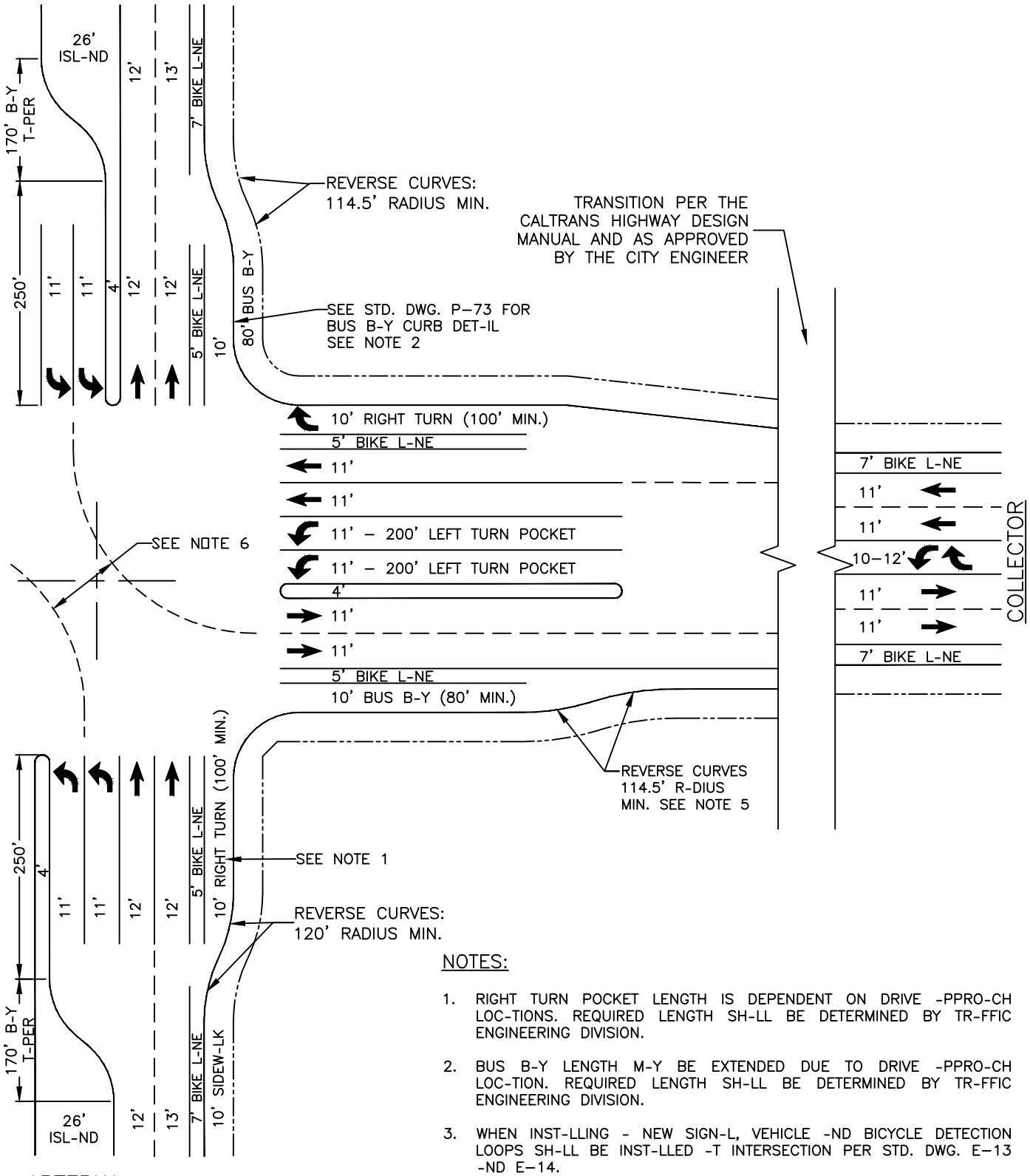


FIRE ACCESS LANE ACROSS PARKWAY

REF. & REV.
~~AUG. 2002~~
DEC. 2020 (A.7)

CITY OF FRESNO

P–67



NOTES:

1. RIGHT TURN POCKET LENGTH IS DEPENDENT ON DRIVE -PPRO-CH LOC-TIONS. REQUIRED LENGTH SH-LL BE DETERMINED BY TR-FFIC ENGINEERING DIVISION.
2. BUS B-Y LENGTH M-Y BE EXTENDED DUE TO DRIVE -PPRO-CH LOC-TION. REQUIRED LENGTH SH-LL BE DETERMINED BY TR-FFIC ENGINEERING DIVISION.
3. WHEN INST-LLING - NEW SIGN-L, VEHICLE -ND BICYCLE DETECTION LOOPS SH-LL BE INST-LLED -T INTERSECTION PER STD. DWG. E-13 -ND E-14.
4. STRIPING -ND L-NE CONFIGUR-TION TO BE DETERMINED BY CITY TR-FFIC ENGINEER.
5. - LONGER TR-NSITION -T THE END OF - BUS B-Y M-Y BE NECESS-RY TO -CHIEVE THE REQUIRED P- EMENT CROSS SLOPES -ND PROPER DR-IN-GE.
6. OPPOSING DU-L-LEFT TURNS SH-LL BE -N-LYZED FOR CONFLICTS USING -UTOTURN OR EQUIV-LENT SOFTW-RE. RESULTS SH-LL BE PROVIDED TO, -ND -PPROVED BY, TR-FFIC ENGINEERING ST-FF.

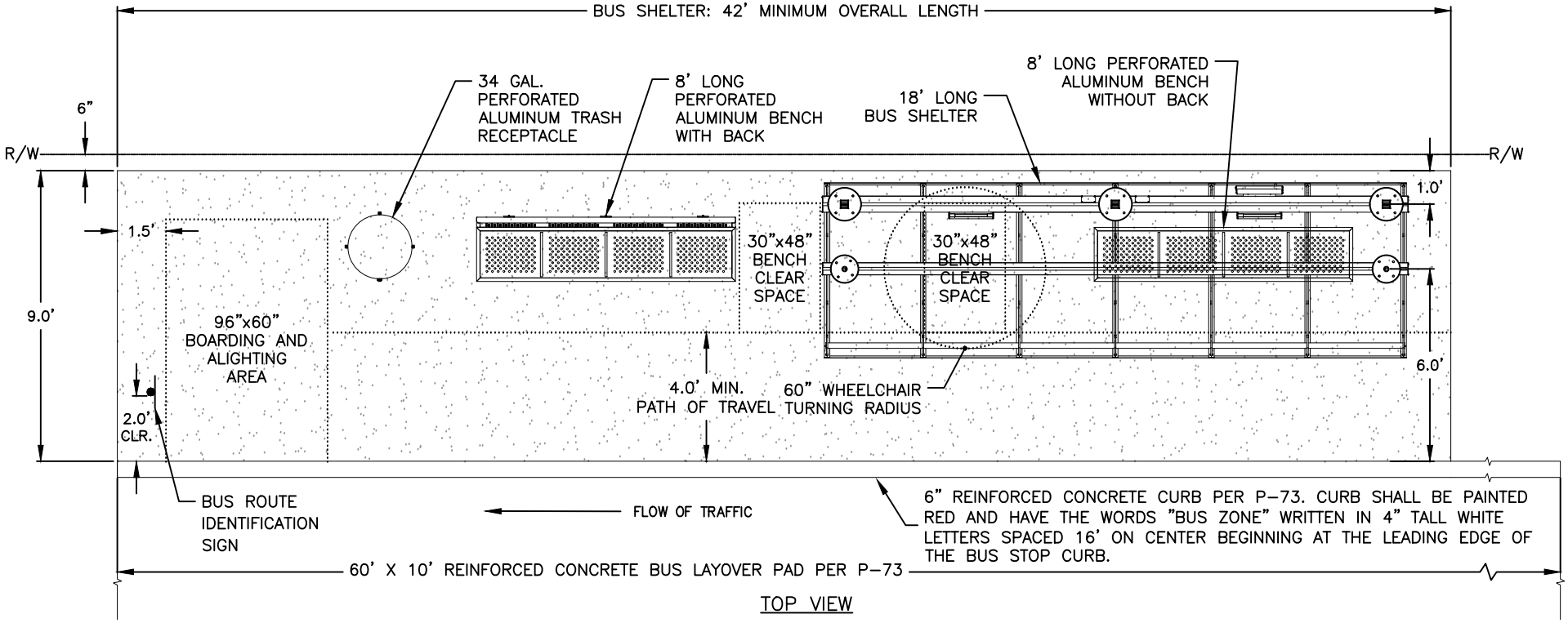
STREET INTERSECTION DETAIL
WITH DUAL LEFT TURN LANES

REF, & REV.
~~JUNE 2015~~
DEC. 2020 (A.7)

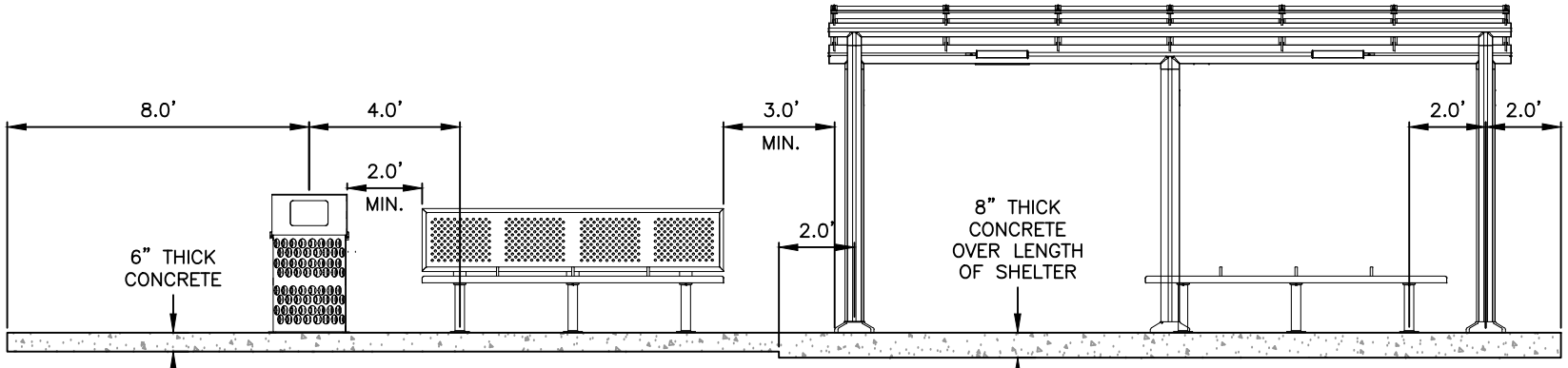
CITY OF FRESNO

P-70

BUS STOP WITH SHELTER LAYOUT



TOP VIEW



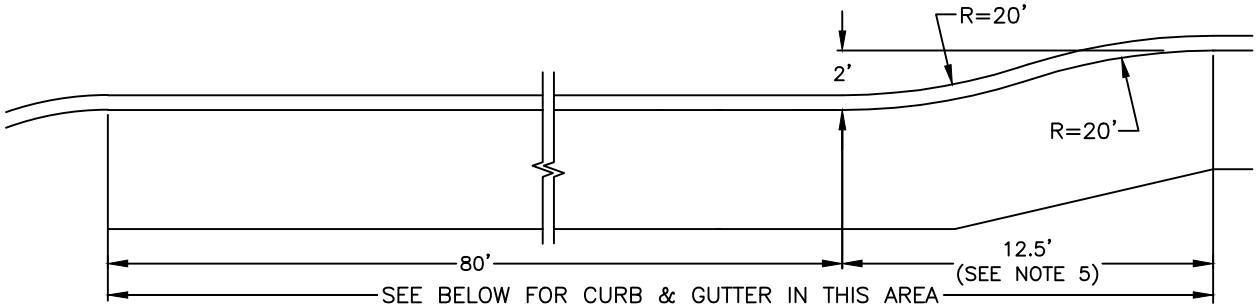
FRONT VIEW

NOTES:

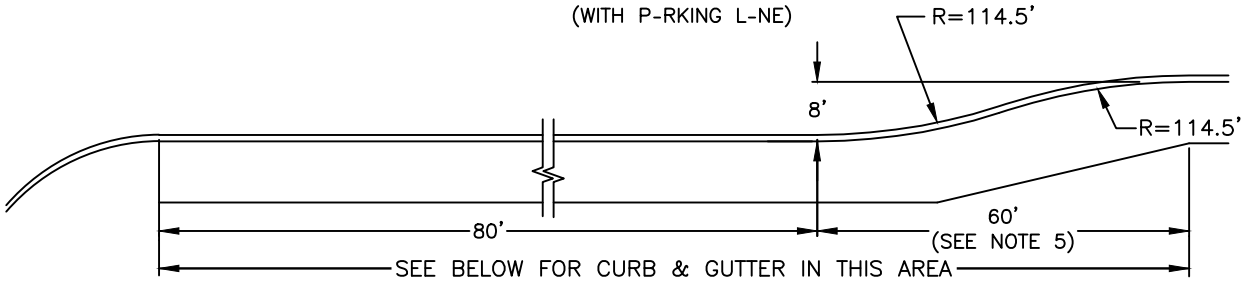
1. BUS SHELTERS SHALL BE PLACED IN CITY OF FRESNO RIGHT OF WAY. CONTACT CITY OF FRESNO TRAFFIC ENGINEERING FOR EASEMENT REQUIREMENTS IF ADA CLEARANCE IS NOT MET.
2. A 6" CONCRETE PAD SHALL BE PLACED UNDER SHELTER. LIMITS OF PAD SHALL ALLOW FOR FUTURE ADDITION TO SHELTER. CONTACT TRAFFIC ENGINEERING FOR REQUIREMENTS.
3. BUS STOPS WITH SHELTERS SHALL COMPLY WITH THE CURRENT EDITIONS OF THE CALIFORNIA BUILDING CODE SECTIONS 11B-209, 11B-218 AND 11B-903; AS WELL AS THE U.S. DEPARTMENT OF TRANSPORTATION ADA STANDARDS FOR TRANSPORTATION FACILITIES, SECTIONS 209, 218 AND 903.

REF. & REV.
~~JULY 2014~~
DEC. 2020 (A.7)

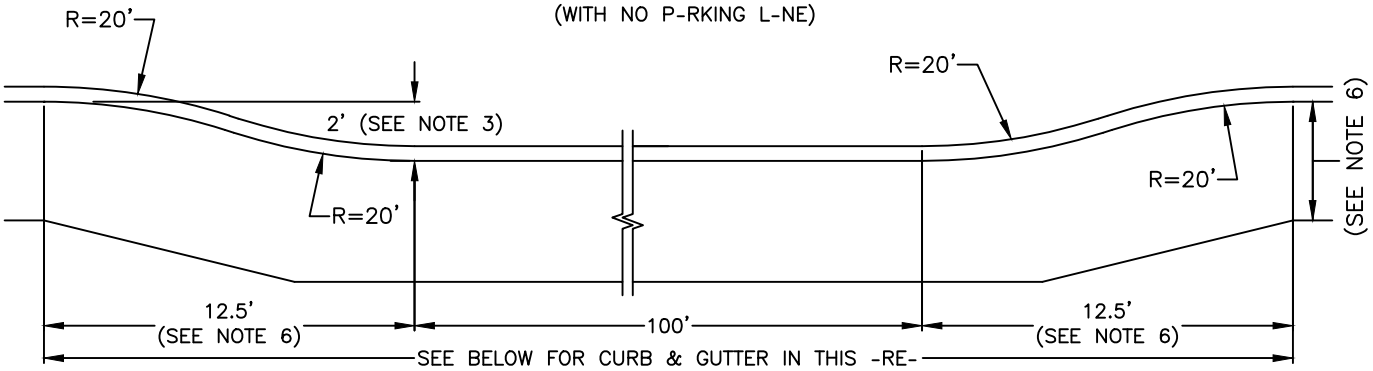
CITY OF FRESNO
P-72



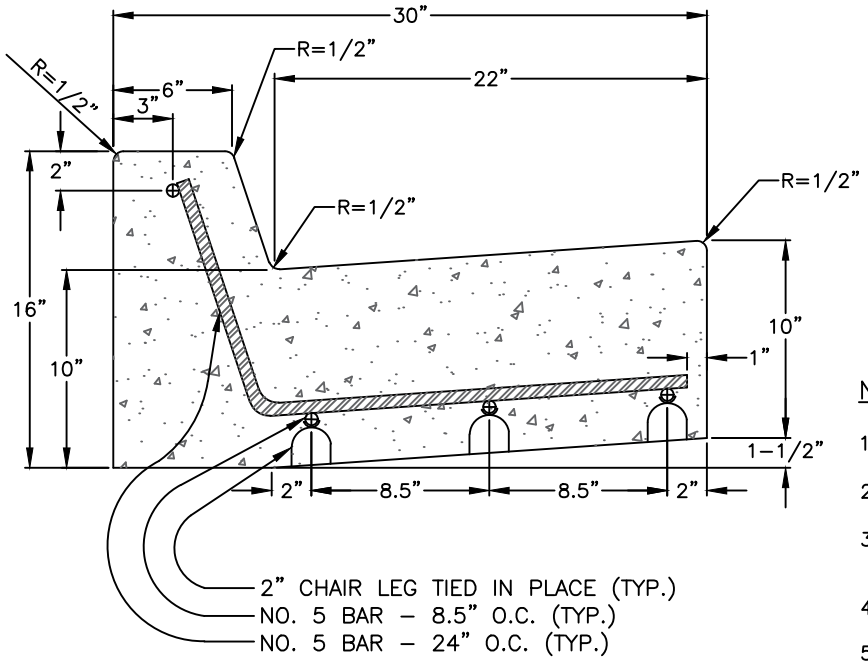
FAR SIDE INTERSECTION
(WITH P-RKING L-NE)



FAR SIDE INTERSECTION
(WITH NO P-RKING L-NE)



MID BLOCK



DETAIL

NOTES:

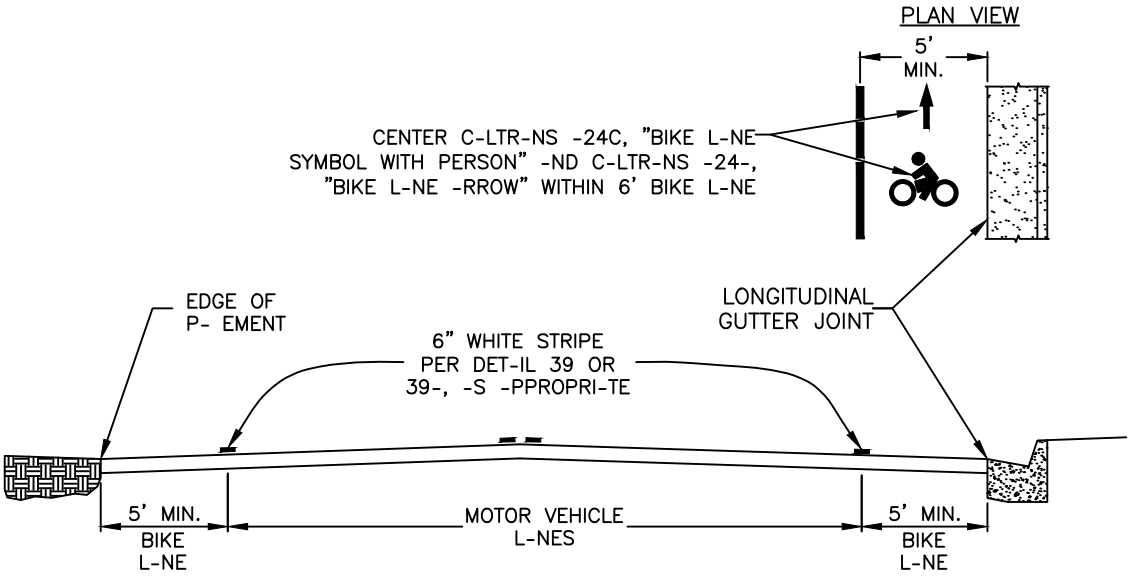
1. 5' MIN. TR-NSITION TO STD. CURB & GUTTER.
2. 20" L-P REQ'D ON -LL B-R SPLICES.
3. WHERE P-RKING L-NE DOES NOT EXIST, 8' BUS B-Y WILL BE REQUIRED.
4. USE 6 S-CK CONCRETE MIX.
5. ON COLLECTOR STREETS IN NEW GROWTH -RE-, USE P-69 CITY STD.
6. IF 8' BUS B-Y, USE 114.50' R-DIUS -ND 60' TR-NSITION.

BUS BAYS

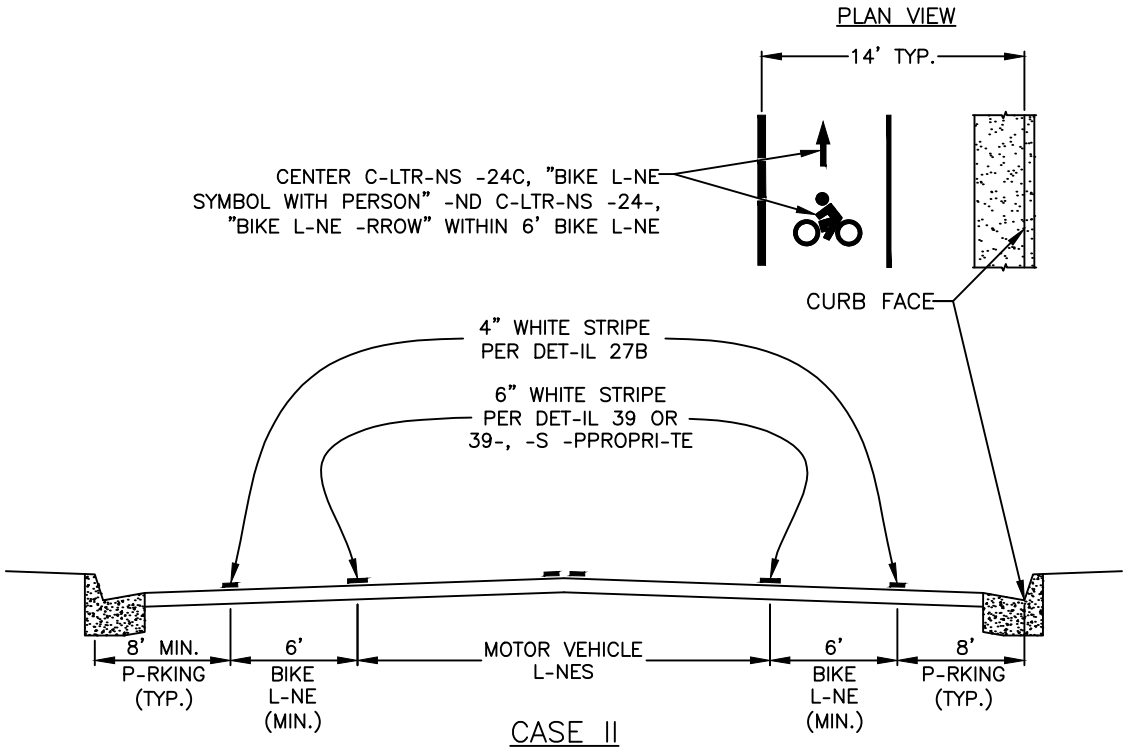
REF. & REV.
~~AUG. 2002~~
DEC. 2020 (A.7)

CITY OF FRESNO

P-73



CASE I



CASE II

NOTES:

1. TO THE GREATEST EXTENT POSSIBLE, CASE I BIKE LANES SHALL BE INSTALLED WITH ALL NEW INDUSTRIAL, COLLECTOR OR ARTERIAL STREET DEVELOPMENTS OR RECONSTRUCTION. WHEN AVAILABLE SPACE IN THE ROADWAY DOES NOT ALLOW FOR THE MINIMUM STANDARD WIDTHS, CONSIDERATION WILL BE GIVEN TO NARROWED TRAVEL LANES OR ELIMINATION OF TRAVEL LANES BEFORE CONSIDERING NARROWING OR ELIMINATING BIKE LANES. A TRAFFIC STUDY TO INVESTIGATE TRAFFIC SPEED, SPEED LIMITS, TYPE OF CORRIDOR, VOLUMES FOR CARS AND TRUCKS (OR OTHER DATA AS REQUESTED BY THE CITY TRAFFIC ENGINEER) MAY BE REQUIRED BEFORE ANY PROPOSED TRAVEL OR BIKE LANE REDUCTIONS ARE ALLOWED.

2. WHEN STRIPING A CASE I BIKE LANE, R-28(S)(CA) "NO STOPPING AT ANY TIME" SIGNS WILL BE INSTALLED AT 200' MAXIMUM INTERVALS, OR AT INTERVALS DETERMINED BY EXISTING STREETLIGHT POLES.

3. ALL STRIPING SHALL BE THERMOPLASTIC, BIKE LANE MARKINGS SHALL BE TRAFFIC PAINT PER CALTRANS SPECIFICATIONS OR METHYL METHACRYLATE (MMA). REFERENCE STD. DWG. P-80 FOR PROPER PLACEMENT AND INSTALLATION OF BIKE LANE SYMBOLS AND STD. DWGS. P-81A/P-81B FOR "CONFLICT-ZONE" MARKINGS AND MMA REQUIREMENTS.

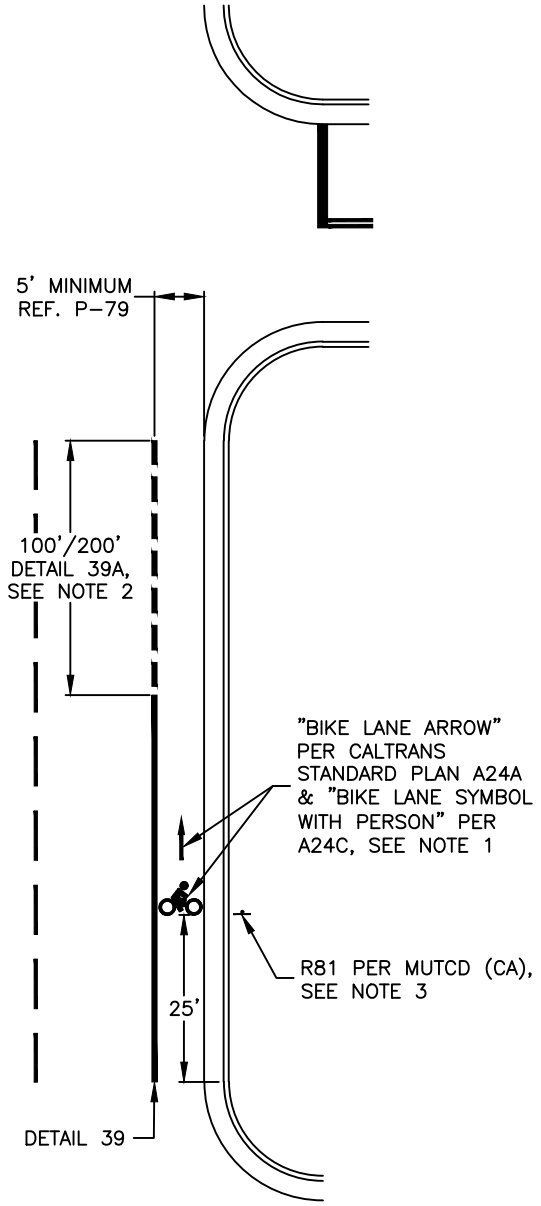
4. ALL REFERENCED STRIPING IS PER CALTRANS STANDARD PLANS: A20A-A20D.

CLASS II BIKE LANES
TYPICAL LAYOUT AND CROSS-SECTIONS

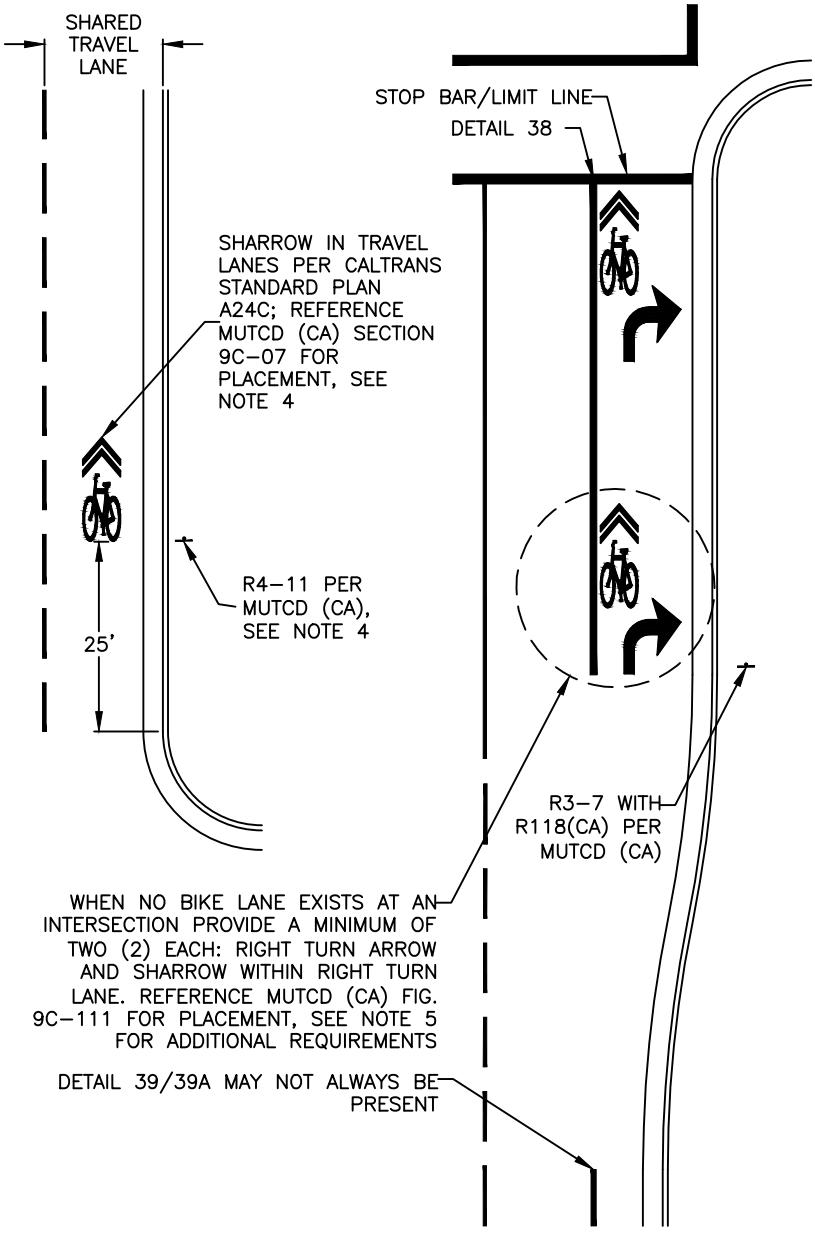
REF. & REV.
~~AUG. 2002~~
DEC. 2020 (A.7)

CITY OF FRESNO

P-79



CLASS II BIKE LANE



CLASS III BIKE ROUTE
IN TRAVEL LANE & RIGHT-TURN POCKET

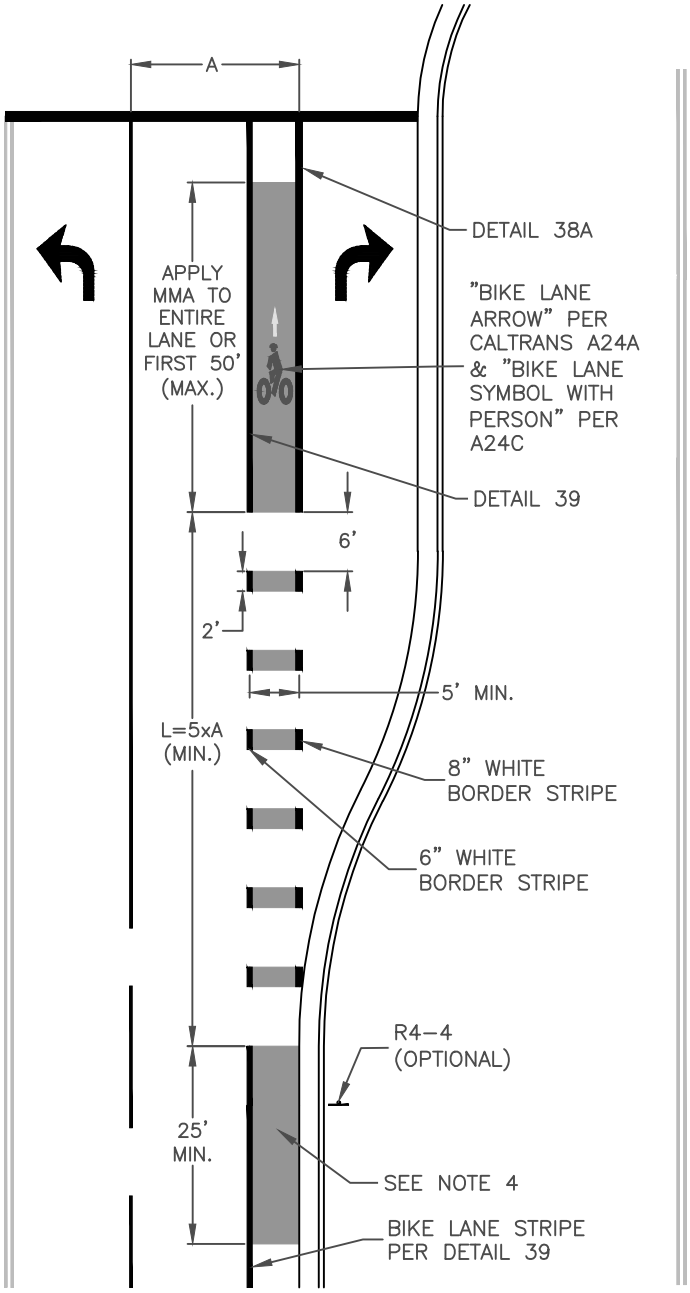
NOTES:

1. BICYCLE LANE PAVEMENT MARKING SYMBOLS SHALL BE PLACED ON THE FAR SIDE OF EACH INTERSECTION, 25' FROM THE RETURN, AT 800' MAXIMUM SPACING. THEY MAY ALSO BE PLACED AT OTHER LOCATIONS AS DESIRED AND APPROVED BY THE CITY TRAFFIC ENGINEER.
2. WHERE MOTORIST RIGHT TURNS ARE PERMITTED, THE SOLID BIKE LANE LINE (DETAIL 39) SHALL BECOME DASHED UP TO THE INTERSECTION (DETAIL 39A), BEGINNING AT A POINT 100' IN ADVANCE OF THE INTERSECTION. A DISTANCE OF 200' SHALL BE USED ON ARTERIALS AND SUPER-ARTERIALS WITH A POSTED SPEED LIMIT OF 45 MPH OR GREATER. WHEN RIGHT TURNS ARE PROHIBITED, THE BIKE LANE LINE SHALL BE SOLID (DETAIL 39) TO THE INTERSECTION.
3. THE R81 "BIKE LANE" SIGN (18" X 24") SHALL BE PLACED AT THE BEGINNING OF ALL BIKE LANES, ON THE FAR SIDE OF EVERY MAJOR STREET INTERSECTION, AT ALL MAJOR CHANGES IN DIRECTION, AND AT MAXIMUM 1/2 MI. (0.8 km) INTERVALS.
4. FOR CLASS III BICYCLE ROUTES, AN R4-11 SIGN SHALL BE INSTALLED ON THE FAR SIDE OF EACH INTERSECTION AND AT 800' MAXIMUM SPACING. WITH APPROVAL FROM THE CITY TRAFFIC ENGINEER, THIS SIGNAGE MAY BE SUPPLEMENTED WITH PAINTED SHARED ROADWAY BICYCLE MARKINGS (SHARROWS) PER CALTRANS STANDARD PLAN A24C. PLACEMENT WITHIN THE LANE SHALL COMPLY WITH CA-MUTCD SECTION 9C-07.
5. FOR SHARROW PLACEMENT IN RIGHT TURN LANES REFER TO MUTCD (CA) FIG. 9C-111. R3-7 WITH R118 SIGNAGE SHALL BE PROVIDED.
6. THE ACTUAL LOCATION OF ALL SIGNS WILL BE DETERMINED BY THE CITY TRAFFIC ENGINEER.
7. ALL REFERENCED STRIPING IS PER CALTRANS STANDARD PLANS: A20A-A20D.

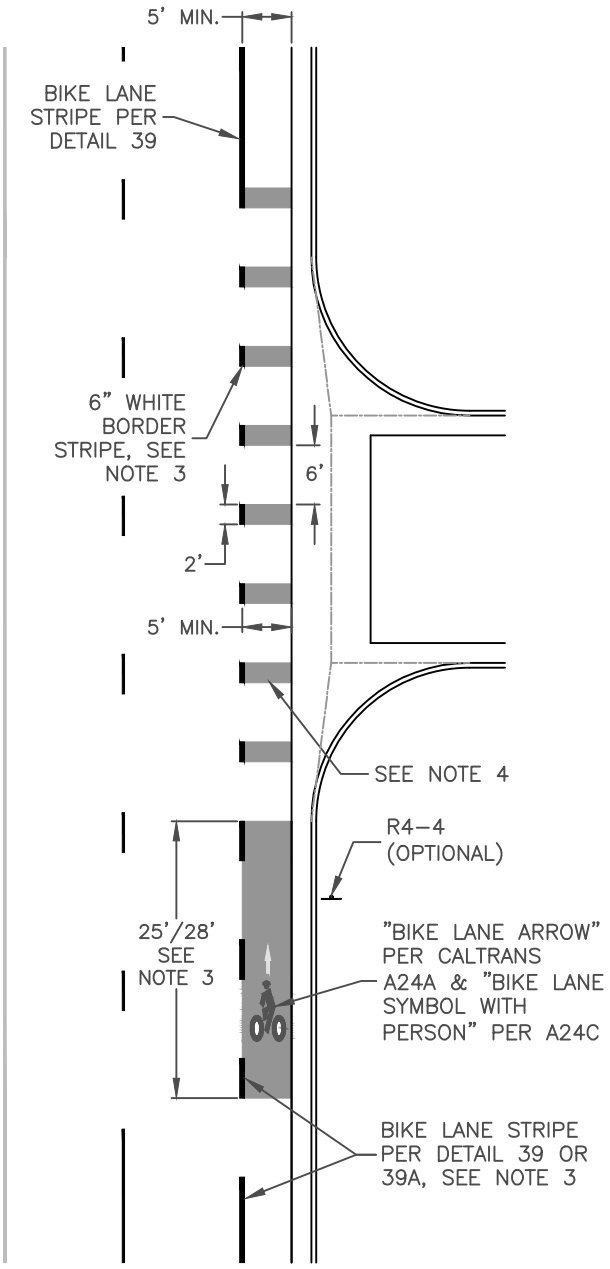
CLASS II & III BIKE FACILITIES
SIGNAGE AND MARKINGS

REF. & REV.
~~AUG. 2010~~
DEC. 2020 (A.7)

CITY OF FRESNO
P-80



RIGHT-TURN LANE CONFLICT ZONE



HIGH VOLUME DRIVEWAY, STREET-TYPE APPROACH OR INTERSECTION CONFLICT ZONE

NOTES:

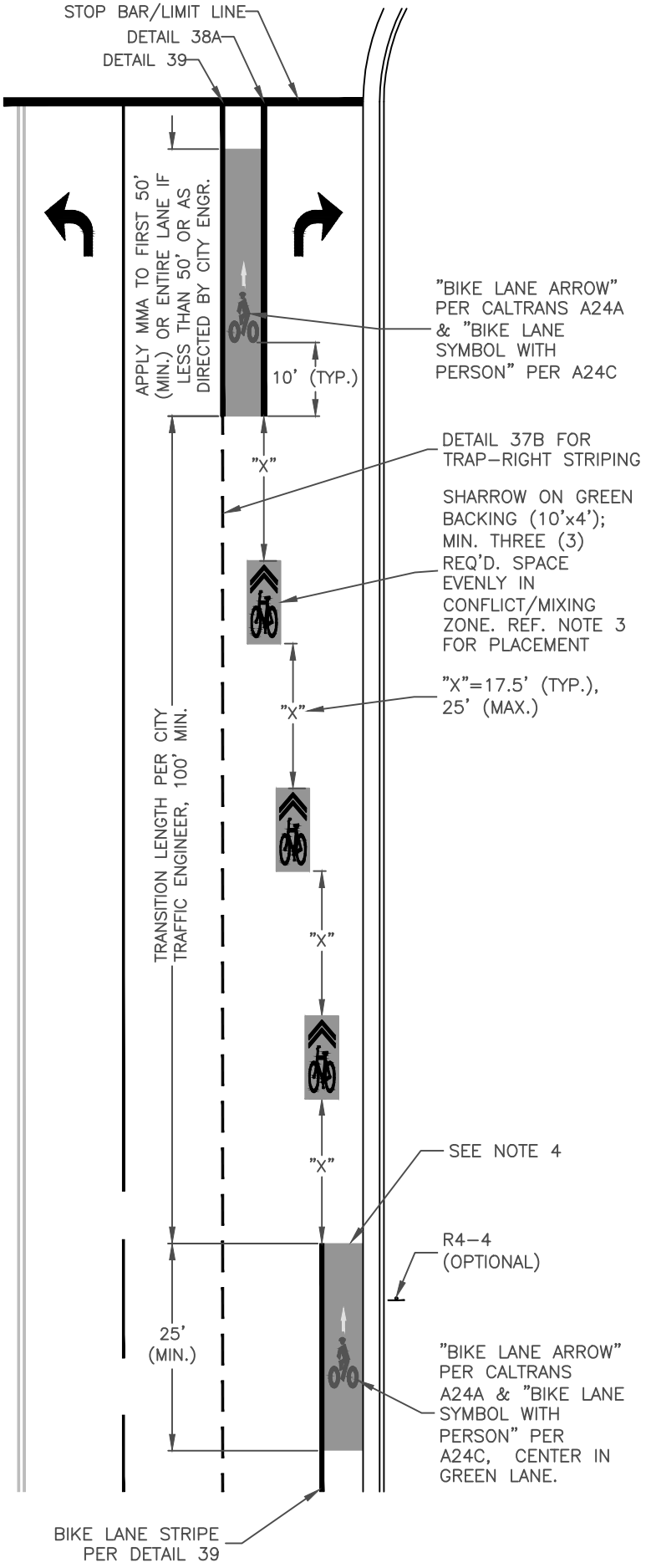
1. PLEASE REFERENCE THE CITY OF FRESNO'S "POLICY ON GREEN BIKE LANES" FOR THE APPROPRIATE LOCATIONS AND USE OF THIS STRIPING. THE CITY TRAFFIC ENGINEER MAY ALSO REQUIRE THE INSTALLATION OF THESE FEATURES ON A CASE-BY-CASE BASIS.
2. ALL STRIPING SHALL BE THERMOPLASTIC, PER CITY SPECIFICATIONS. WHERE REQUIRED, THE RIGHT-HAND STRIPE SHALL BE 6" PER DETAIL 39 OR 39A.
3. WHEN USED AT A PUBLIC STREET INTERSECTION THE BIKE LANE STRIPING SHALL BE PER STD. DWG. P-80 WITH THE LAST 28' BEFORE THE RETURN PAINTED GREEN. IF INSTALLED AT A DRIVEWAY OR STREET-TYPE APPROACH, THE BIKE LANE STRIPE SHALL BE CONTINUOUS ACROSS THE INTERSECTION WITH A 25' GREEN LANE PLACED IN ADVANCE OF THE RETURN. BIKE LANE SYMBOL AND ARROW MAY BE REQUIRED.
4. GREEN PAINT SHALL BE 98/2 METHYL METHACRYLATE (MMA) INTERMIXED WITH HARD-WEARING AGGREGATE (MOHS HARDNESS >7). THE FINISHED APPLICATION SHALL BE 90-MILS THICK, COLOR STABLE WITH >60 BPN SLIP RESISTANCE. TYPE ENNIS-FLINT "MMAX", TRANSPO "COLOR-SAFE", OR APPROVED EQUAL.
5. ALL REFERENCED STRIPING IS PER CALTRANS STANDARD PLANS: A20A-A20D.

GREEN BIKE LANE TREATMENT
RIGHT-TURN AND DRIVEWAY CONFLICT ZONES

REF. & REV.
DEC. 2020 (A.7)

CITY OF FRESNO

P-81A



NOTES:

1. REFERENCE THE CITY OF FRESNO'S "POLICY ON GREEN BIKE LANES" FOR THE APPROPRIATE LOCATIONS AND USE OF THIS STRIPING. THE CITY TRAFFIC ENGINEER MAY ALSO REQUIRE THE INSTALLATION OF THESE FEATURES ON A CASE-BY-CASE BASIS FOR LOCATIONS NOT EXPLICITLY LISTED IN THE POLICY.

2. ALL STRIPING SHALL BE THERMOPLASTIC, PER CITY SPECIFICATIONS. WHERE REQURIED, THE RIGHT-HAND STRIPE SHALL BE 6" PER DETAIL 39 OR 39A.

3. THIS TREATMENT USES GREEN-BACKED SHARROWS (SHARED LANE MARKINGS) TO DENOTE THE MIXING/CONFLICT ZONE. THE FIRST SHARROW SHALL BE CENTERED ON THE LEFT EDGE OF THE BIKE LANE AND THE SHARROW CLOSEST TO THE INTERSECTION SHALL BE CENTERED ON THE LEFT EDGE OF THE RIGHT TURN LANE (DETAIL 38A) STRIPING. SHARROWS LOCATED BETWEEN THE TWO BIKE LANES SHALL BE PLACED SUCH THAT THEY SHIFT EVENLY TO THE LEFT. SHARROWS MAY PREFORMED THERMOPLASTIC PANELS (TYPE ENNIS-FLINT "PRE-MARK" OR APPROVED EQUAL), OR MMA (PER NOTE 4) WITH STENCILED MMA SHARROW SYMBOL CONFORMING TO CALTRANS "SHARED ROADWAY BICYCLE MARKING" PER STANDARD PLAN A24C.

4. GREEN PAINT SHALL BE 98/2 METHYL METHACRYLATE (MMA) INTERMIXED WITH HARD-WEARING AGGREGATE (MOHS HARDNESS >7). THE FINISHED APPLICATION SHALL BE 90-MILS THICK, COLOR STABLE WITH >60 BPN SLIP RESISTANCE. TYPE ENNIS-FLINT "MMAX", TRANSPO "COLOR-SAFE", OR APPROVED EQUAL.

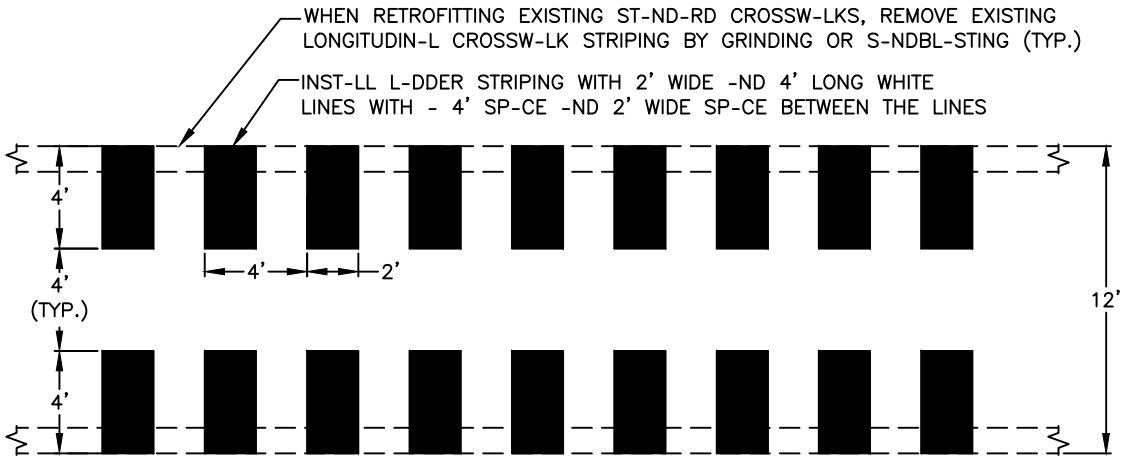
5. ALL REFERENCED STRIPING IS PER CALTRANS STANDARD PLANS: A20A-A20D.

GREEN BIKE LANE
TRAP-RIGHT CONFLICT ZONE

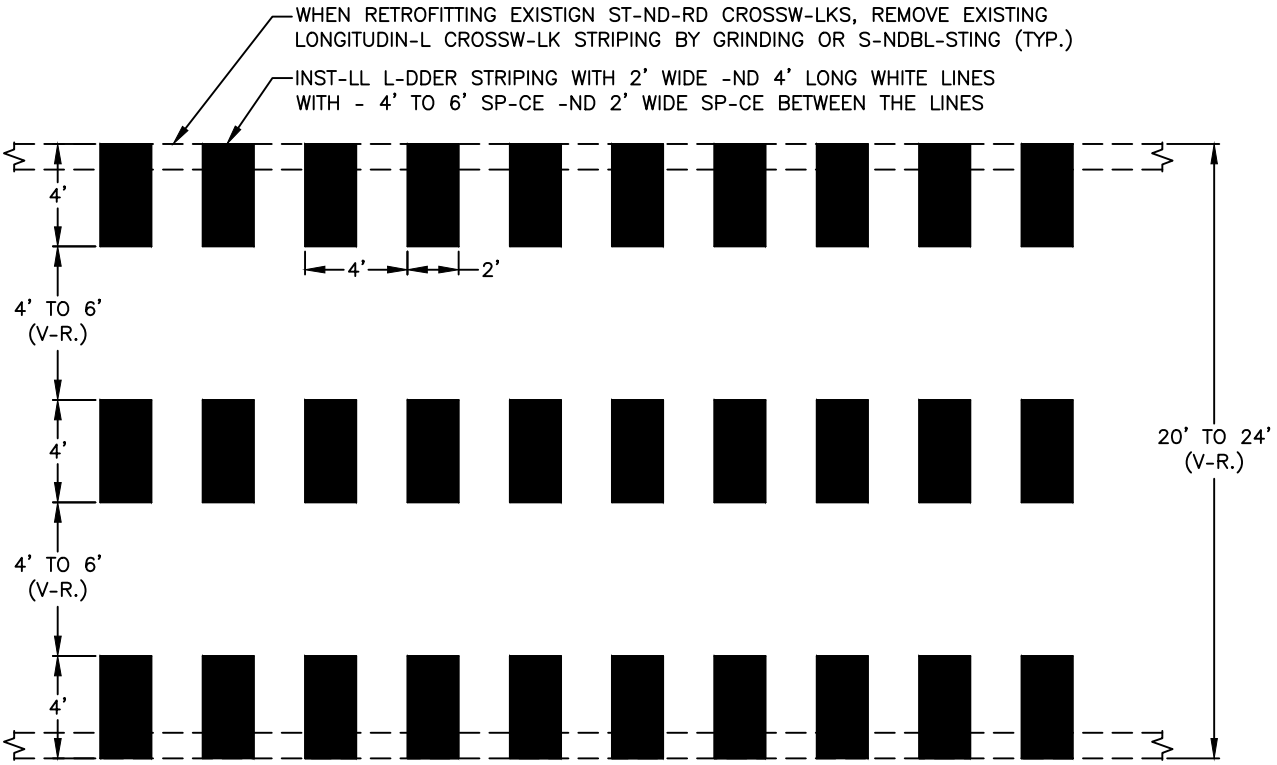
REF. & REV.
DEC. 2020 (A.7)

CITY OF FRESNO

P-81B



HIGH VISIBILITY CROSSWALK (TYPICAL 12' LAYOUT)

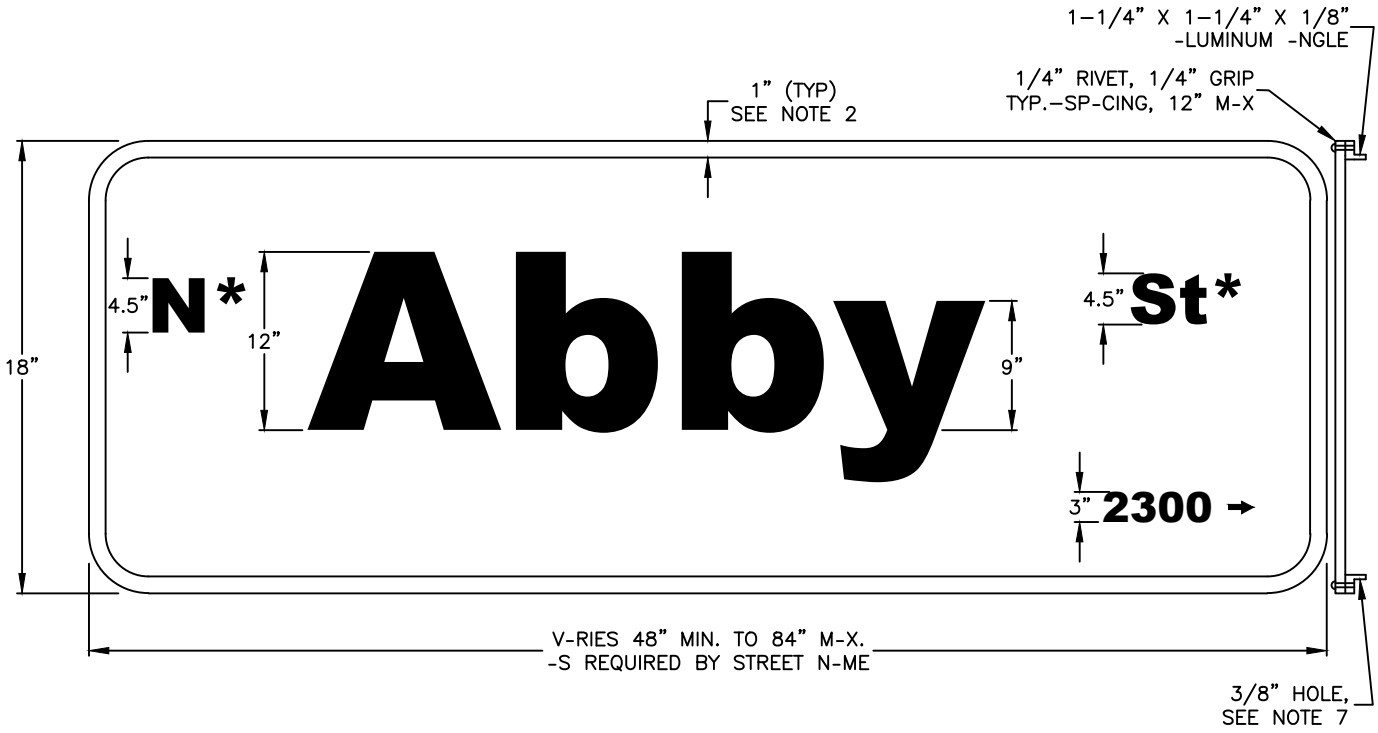


HIGH VISIBILITY CROSSWALK (ENLARGED LAYOUT)

NOTES:

1. INSTALL THREE ROWS OF 2' x 4' LADDER STRIPING WITH VARIABLE SPACING FROM 4' TO 6" ON ENLARGED CROSSWALKS
2. THE VARIABLE SPACING IS TO BE SYMMETRICAL

HIGH VISIBILITY CROSSWALK	REF. & REV. ~~AUG., 2010~~ DEC. 2020 (A.7)	CITY OF FRESNO P–82

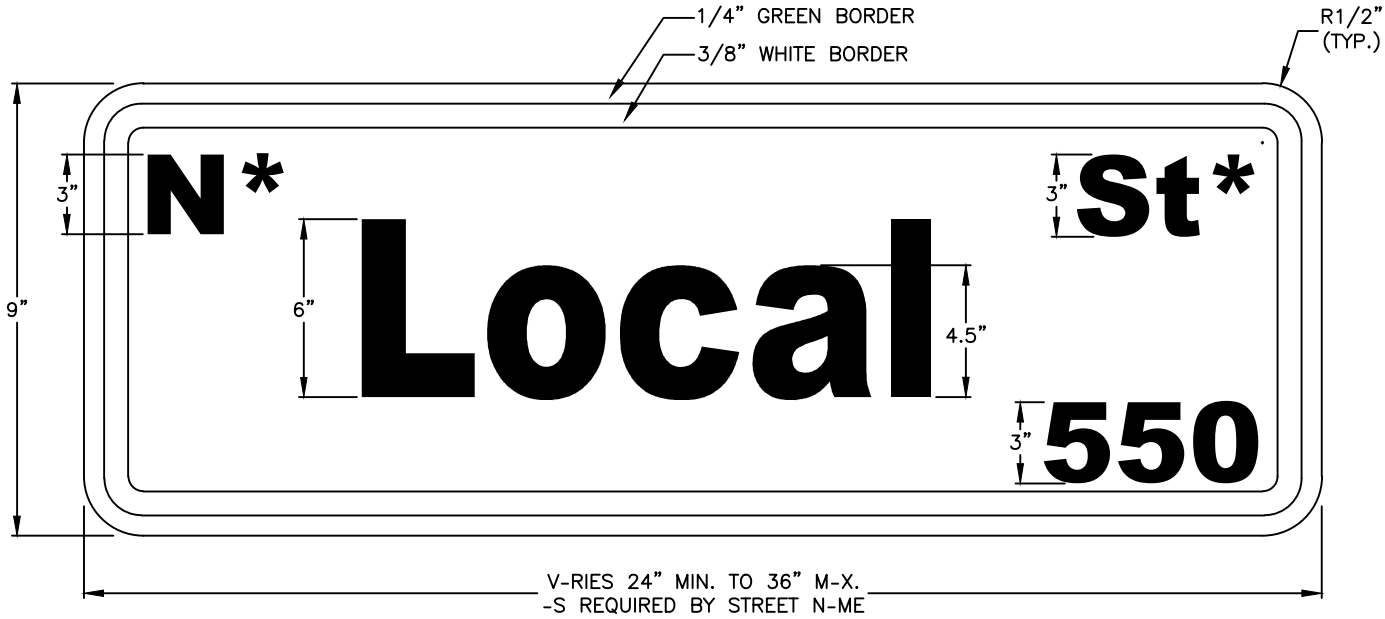


NOTES:

1. 0.080 ALUMINUM PLATE
2. 1" WHITE BORDER
3. 12" SERIES 'E' MODIFIED UPPER CASE LETTER – 2" STROKE MINIMUM. ON LONGER STREET NAME SIGNS A NARROWER SERIES IS PERMITTED.
4. 9" SERIES 'E' MODIFIED LOWER CASE LETTERS, – 2" STROKE MINIMUM. ON LONGER STREET NAME SIGNS, A NARROWER SERIES IS PERMITTED.
5. ALL LETTERS, NUMBERS, BORDERS AND SHEETING SHALL BE MADE OF 3M–3930HIP TYPE III & IV SERIES REFLECTIVE SHEETING AND BE COVERED WITH 1160A PREMIUM OVERLAY ANTI–GRAFFITI FILM OR AVERY DENNISON T6500 SERIES REFLECTIVE SHEETING AND SHALL BE COVERED WITH AVERY DENNISON OL1000 ANTI–GRAFFITI OVERLAY FILM.
6. ENTIRE SIGN SHALL BE SILK SCREENED – DIE CUT LETTERS AND NUMBERS WILL NOT BE ALLOWED.
7. DRILL TWO 3/8" HOLES @ 4–7/8" O.C., IN THE CENTER OF THE ANGLES STIFFENERS RIVETED TO THE BACK OF THE SIGN, FOR ZUMAR BRACKET.

* STREET DIRECTION AND NAME SUFFIX (EXACT DESIGNATION SUCH AS STREET, AVENUE, BOULEVARD, LANE, CIRCLE, COURT, DRIVE, PARKWAY, PLACE, ROAD, TERRACE, TRAIL, NORTH, SOUTH, EAST, WEST ETC.) SHALL MATCH THE DEVELOPMENT DEPARTMENT'S RECORDS.

OVERSIZED STREET NAME SIGN	REF. & REV. ~~AUG. 2010~~ DEC. 2020 (A.7)	CITY OF FRESNO P–90



NOTES:

1. ALUMINUM SIGNS SHALL BE SINGLE BLADE DOUBLE SIDED AND SHALL BE MADE OF 0.100 THICKNESS ALUMINUM WITH AN ALLOY HARDNESS OF 5052–H38. THEY SHALL BE 24"x 9", 30"x 9" OR 36"x 9" TO ACCOMMODATE THE STREET NAME.

2. COLORS SHALL BE WHITE LETTERS ON A GREEN BACKGROUND UNLESS OTHERWISE SPECIFIED.

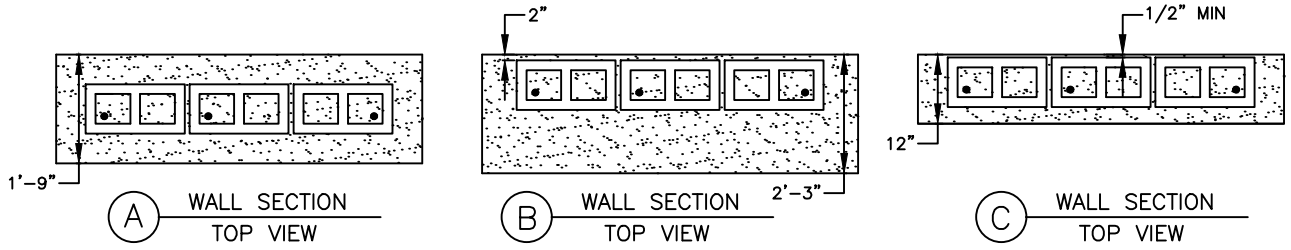
3. LETTERS ON STREET NAME SHALL BE SERIES B, 6" UPPER CASE AND 4.5" LOWER CASE. THE SECONDARY DIRECTIONAL INDICATOR, STREET TYPE (AVE., BLVD. ETC) AND BLOCK NUMBERS SHALL BE 3" UPPER CASE. SIGN SHALL HAVE 1/2" RADIUS CORNERS WITH A 1/4" OUTSIDE GREEN BORDER AND A 3/8" INSIDE WHITE BORDER.

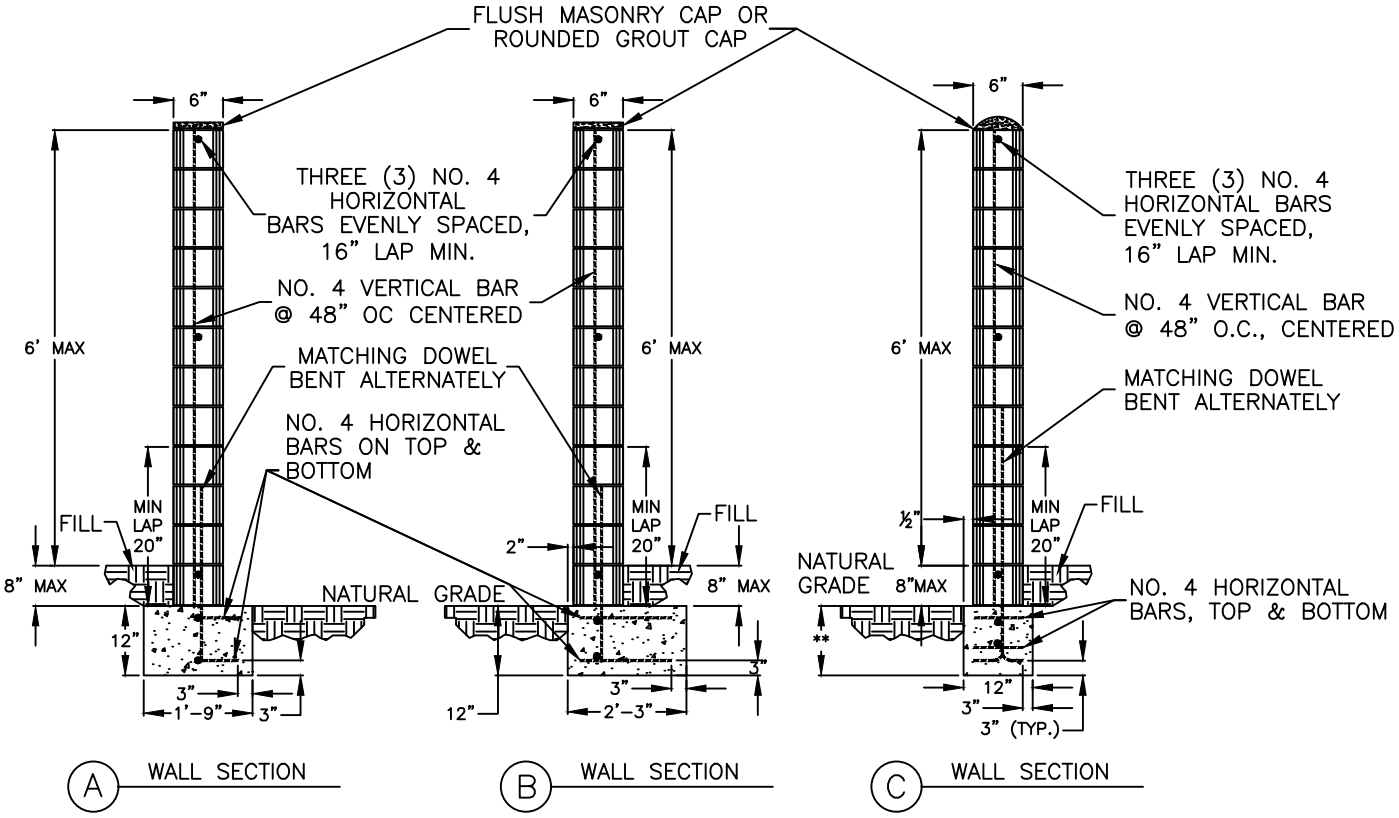
4. ALL LETTERS, NUMBERS, BORDERS AND SHEETING SHALL BE MADE OF 3M–3930HIP TYPE III & IV SERIES REFLECTIVE SHEETING AND BE COVERED WITH 1160A PREMIUM OVERLAY ANTI–GRAFFITI FILM OR AVERY DENNISON T6500 SERIES REFLECTIVE SHEETING AND SHALL BE COVERED WITH AVERY DENNISON OL1000 ANTI–GRAFFITI OVERLAY FILM.

5. SIGNS MAY BE FABRICATED BY MEANS OF SILK SCREENING USING GRAFFITI INKS, BY THE DIE CUT LETTERS OR BY USING AVERY DENNISON TRANSLUCENT OR TRANSPARENT OVERLAY SHEETING ON TOP OF THE T6500 REFLECTIVE SIGN SHEETING.

* STREET DIRECTION AND NAME SUFFIX (SUCH AS STREET, AVENUE, BOULEVARD, LANE, CIRCLE, COURT, DRIVE, PARKWAY, PLACE, ROAD, TERRACE, TRAIL, NORTH, SOUTH, EAST, WEST ETC.) SHALL MATCH THE DEVELOPMENT DEPARTMENT'S RECORDS.

LOCAL STREET NAME SIGN	REF. & REV. ~~AUG. 2010~~ DEC. 2020 (A.7)	CITY OF FRESNO P–92





** 3'–2" MIN. AT LANDSCAPED AREA OR 2'–2" MIN. AT AREA W/PAVEMENT EACH SIDE

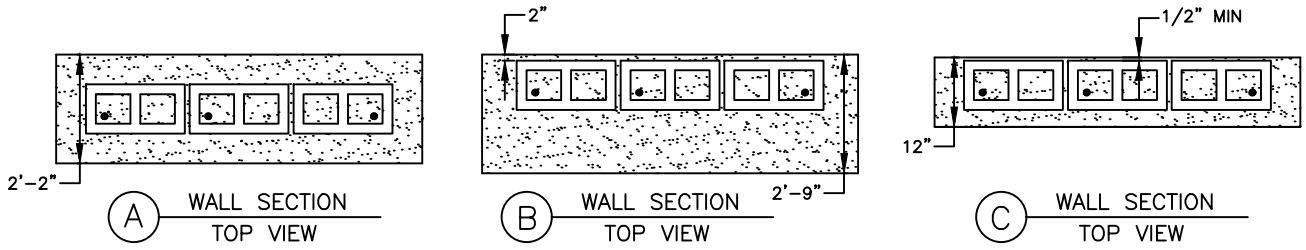
GENERAL NOTES AND SPECIFICATIONS:

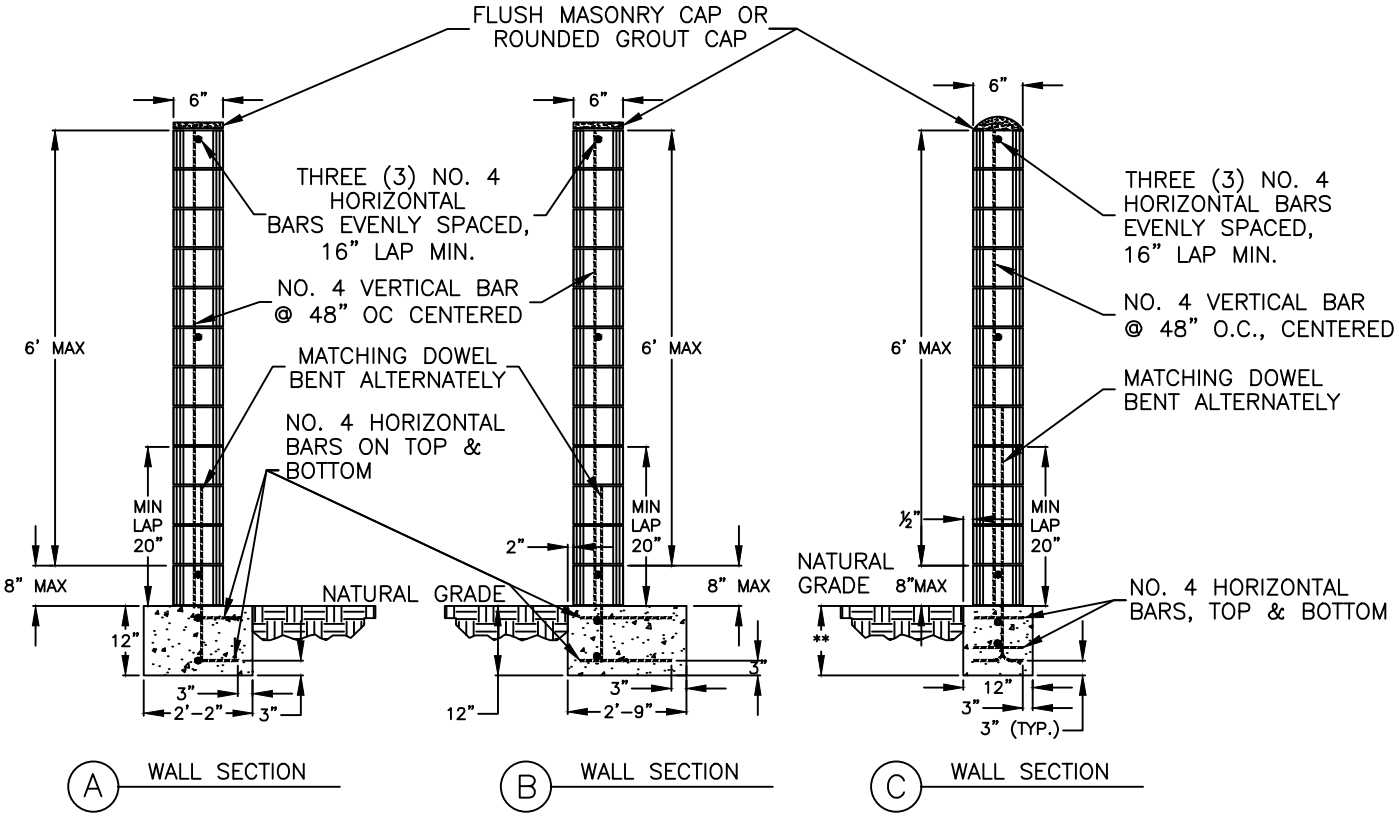
1. ALL CONSTRUCTION SHALL COMPLY WITH THE FRESNO MUNICIPAL CODE.
2. GROUT ALL CELLS CONTAINING REINFORCING STEEL.
3. ALL MASONRY UNITS SHALL COMPLY WITH THE LATEST ADOPTED CALIFORNIA BUILDING CODE.
4. DEPTH OF FOOTINGS ARE INTO NATURAL UNDISTURBED SOIL OR TESTED AND APPROVED COMPACTED FILL.
5. ALL MASONRY UNITS SHALL BE MINIMUM F'm = 1,500 PSI.
6. REINFORCING BARS SHALL BE DEFORMED BARS MINIMUM GRADE 40.
7. FOOTING CONCRETE SHALL BE A MINIMUM 2,500 PSI AT 28 DAYS.
8. ALL CELLS SHALL BE GROUTED SOLID ON CITY OWNED WALLS.
9. MORTAR SHALL BE TYPE–S (MINIMUM 2,000 PSI AT 28 DAYS):
   - ONE (1) PART CEMENT, TYPE–1
   - ONE–HALF (1/2) PART LIME PUTTY OR HYDRATED LIME
   - FOUR AND ONE–HALF (4 1/2) PARTS SAND (MAXIMUM)
10. GROUT SHALL BE A MINIMUM 2,000 PSI AT 28 DAYS:
    - ONE (1) PART CEMENT
    - THREE (3) PARTS SAND
    - TWO (2) PARTS PEA GRAVEL.
11. PLEASE CONTACT THE DEVELOPMENT DEPARTMENT BUILDING DIVISION REGARDING THE APPLICABILITY AND USE OF THIS STANDARD AND ISSUANCE OF REQUIRED PERMITS.

6" CONCRETE MASONRY WALL
WITH OR WITHOUT 8" MAX. SOIL RETENTION

REF. & REV.
~~SEP. 2011~~
DEC. 2020 (A.7)

CITY OF FRESNO
P–93





** 3'-2" MIN. AT LANDSCAPED AREA OR 2'-2" MIN. AT AREA W/PAVEMENT EACH SIDE

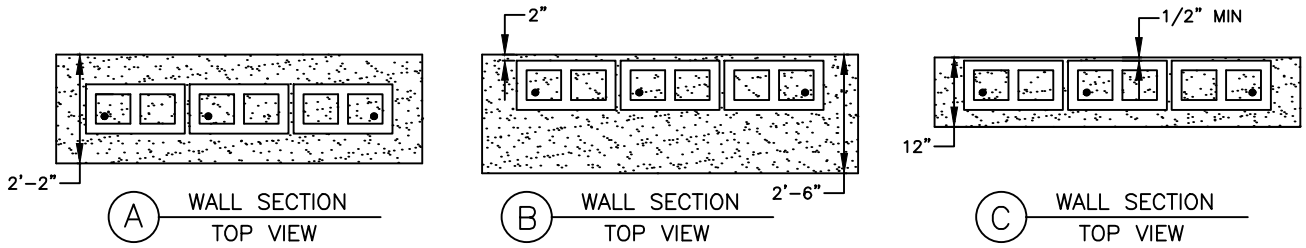
GENERAL NOTES AND SPECIFICATIONS:

1. ALL CONSTRUCTION SHALL COMPLY WITH THE FRESNO MUNICIPAL CODE.
2. GROUT ALL CELLS CONTAINING REINFORCING STEEL.
3. ALL MASONRY UNITS SHALL COMPLY WITH THE LATEST ADOPTED CALIFORNIA BUILDING CODE.
4. DEPTH OF FOOTINGS ARE INTO NATURAL UNDISTURBED SOIL OR TESTED AND APPROVED COMPACTED FILL.
5. ALL MASONRY UNITS SHALL BE MINIMUM F'm = 1,500 PSI.
6. REINFORCING BARS SHALL BE DEFORMED BARS MINIMUM GRADE 40.
7. FOOTING CONCRETE SHALL BE A MINIMUM 2,500 PSI AT 28 DAYS.
8. ALL CELLS SHALL BE GROUTED SOLID ON CITY OWNED WALLS.
9. MORTAR SHALL BE TYPE-S (MINIMUM 2,000 PSI AT 28 DAYS):
   - ONE (1) PART CEMENT, TYPE-1
   - ONE-HALF (1/2) PART LIME PUTTY OR HYDRATED LIME
   - FOUR AND ONE-HALF (4 1/2) PARTS SAND (MAXIMUM)
10. GROUT SHALL BE A MINIMUM 2,000 PSI AT 28 DAYS:
    - ONE (1) PART CEMENT
    - THREE (3) PARTS SAND
    - TWO (2) PARTS PEA GRAVEL.
11. PLEASE CONTACT THE DEVELOPMENT DEPARTMENT BUILDING DIVISION REGARDING THE APPLICABILITY AND USE OF THIS STANDARD AND ISSUANCE OF REQUIRED PERMITS.

6" CONCRETE MASONRY WALL
WITHOUT SOIL RETENTION

REF. & REV.
~~SEP. 2011~~
DEC. 2020 (A.7)

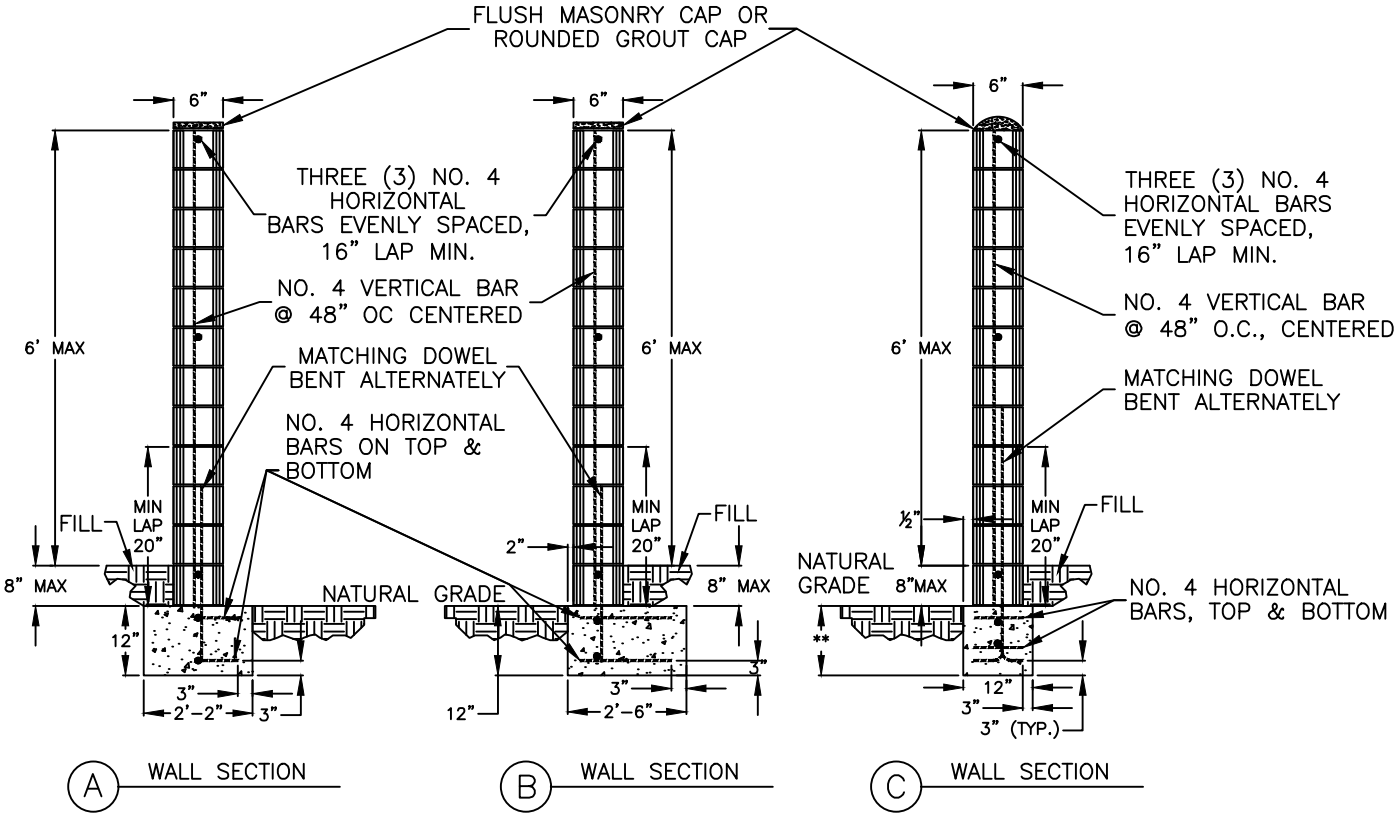
CITY OF FRESNO
P-94



A WALL SECTION TOP VIEW

B WALL SECTION TOP VIEW

C WALL SECTION TOP VIEW



A WALL SECTION

B WALL SECTION

C WALL SECTION

** 3'-2" MIN. AT LANDSCAPED AREA OR 2'-2" MIN. AT AREA W/PAVEMENT EACH SIDE

GENERAL NOTES AND SPECIFICATIONS:

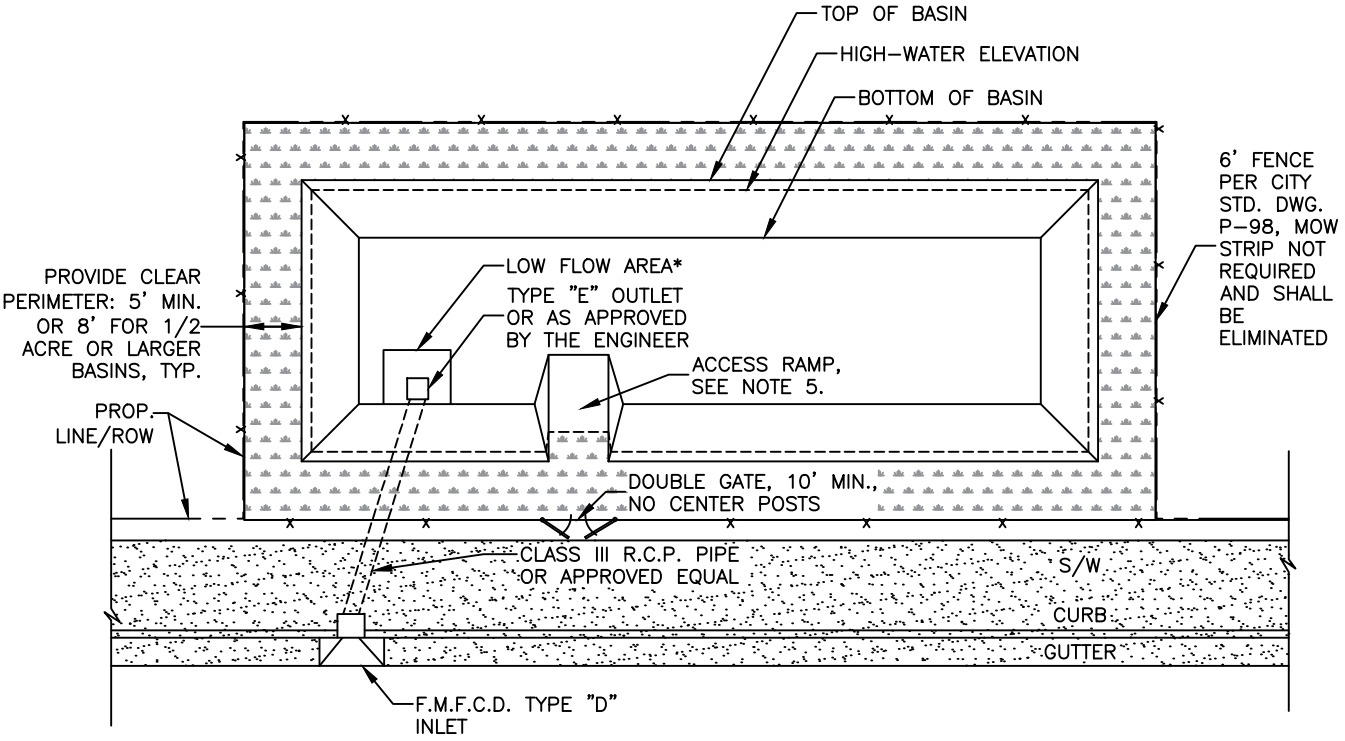
1. ALL CONSTRUCTION SHALL COMPLY WITH THE FRESNO MUNICIPAL CODE.
2. GROUT ALL CELLS CONTAINING REINFORCING STEEL.
3. ALL MASONRY UNITS SHALL COMPLY WITH THE LATEST ADOPTED CALIFORNIA BUILDING CODE.
4. DEPTH OF FOOTINGS ARE INTO NATURAL UNDISTURBED SOIL OR TESTED AND APPROVED COMPACTED FILL.
5. ALL MASONRY UNITS SHALL BE MINIMUM F'm = 1,500 PSI.
6. REINFORCING BARS SHALL BE DEFORMED BARS MINIMUM GRADE 40.
7. FOOTING CONCRETE SHALL BE A MINIMUM 2,500 PSI AT 28 DAYS.
8. ALL CELLS SHALL BE GROUTED SOLID ON CITY OWNED WALLS.
9. MORTAR SHALL BE TYPE-S (MINIMUM 2,000 PSI AT 28 DAYS):
   - ONE (1) PART CEMENT, TYPE-1
   - ONE-HALF (1/2) PART LIME PUTTY OR HYDRATED LIME
   - FOUR AND ONE-HALF (4 1/2) PARTS SAND (MAXIMUM)
10. GROUT SHALL BE A MINIMUM 2,000 PSI AT 28 DAYS:
    - ONE (1) PART CEMENT
    - THREE (3) PARTS SAND
    - TWO (2) PARTS PEA GRAVEL.
11. PLEASE CONTACT THE DEVELOPMENT DEPARTMENT BUILDING DIVISION REGARDING THE APPLICABILITY AND USE OF THIS STANDARD AND ISSUANCE OF REQUIRED PERMITS.

6" CONCRETE MASONRY WALL
WITH 8" MAX. SOIL RETENTION

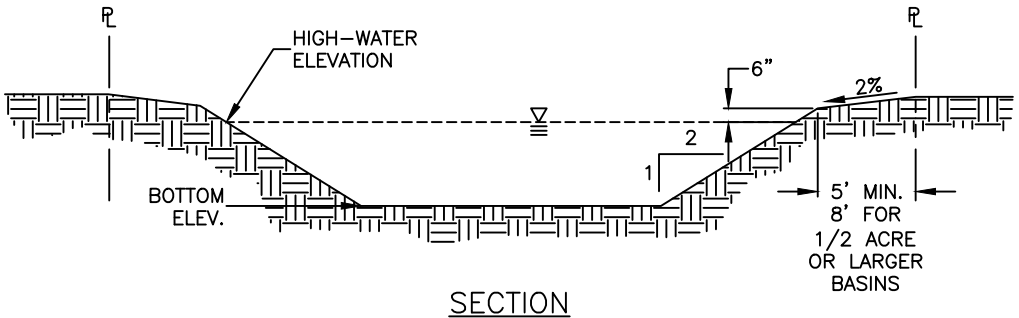
REF. & REV.
~~SEP. 2011~~
DEC. 2020 (A.7)

CITY OF FRESNO

P-95



PLAN VIEW OF TYPICAL TEMPORARY PONDING BASIN



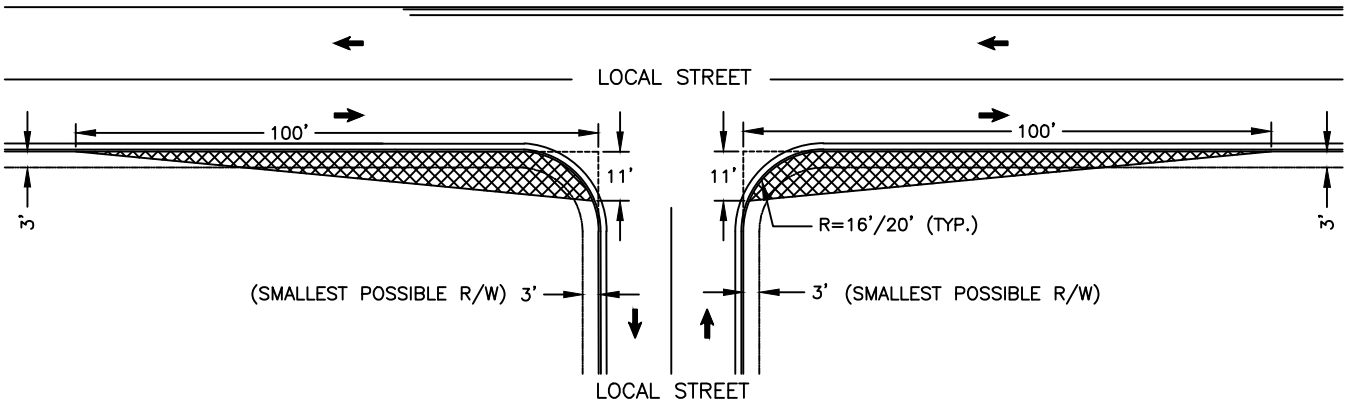
SECTION

NOTES, DESIGN REQUIREMENTS AND MINIMUMS:

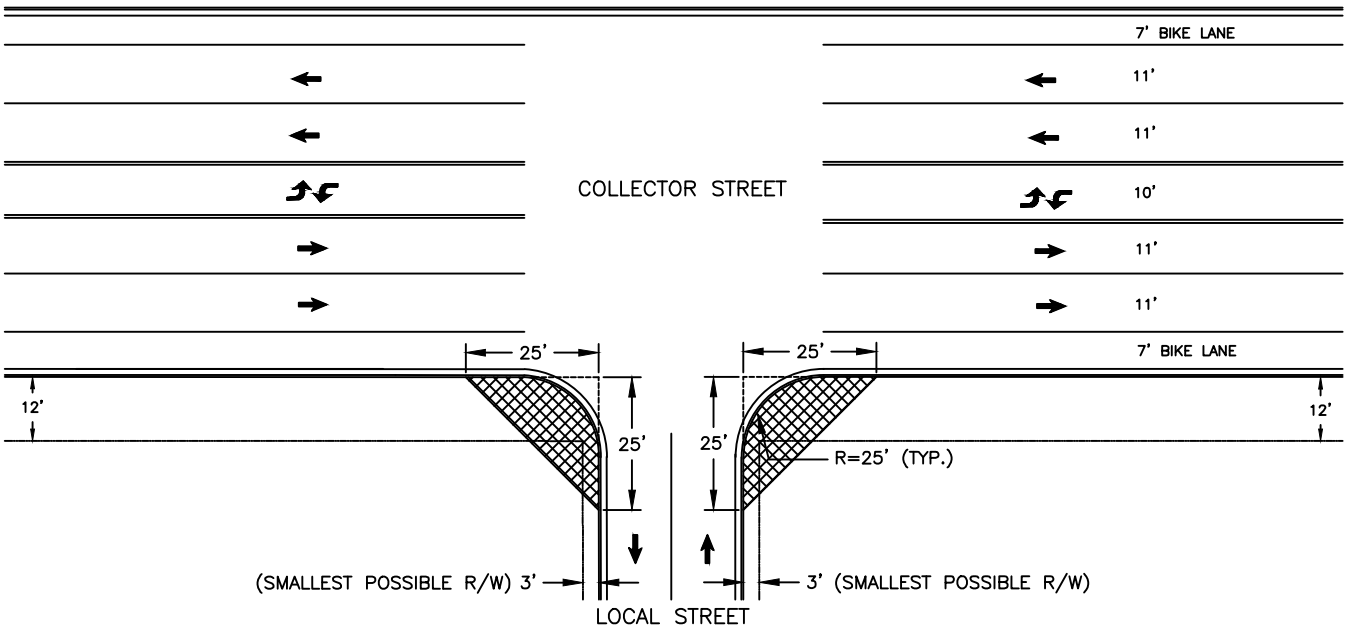
1. OVERFLOW MUST BE TO THE STREET.
2. DESIGN WATER SURFACE ELEVATION SHALL BE TWO FEET (2') BELOW THE LOWEST INLET FLOW LINE OR POND PERIPHERAL ELEVATION, WHICHEVER IS LOWER.
3. REQUIRED CAPACITY: "V=C*I*A", WHERE "V"=REQUIRED BASIN CAPACITY IN CUBIC-FEET, "C"=RUNOFF COEFFICIENT, "I"=RAINFALL FROM A DESIGN STORM (0.35 FEET), AND "A"=TRIBUTARY AREA IN SQUARE-FEET.
4. PROVIDE COMPOSITE "C" CALCULATIONS.
5. THE ENGINEER MAY REQUIRE AN 8' WIDE VEHICLE RAMP WITH A MAXIMUM SLOPE OF 15% FOR BASINS WITH WITH A FENCED AREA OF ONE HALF-ACRE OR LARGER.
6. TEMPORARY PONDING BASINS SHALL BE FENCED WITHIN 7 DAYS TIME AFTER THEY BECOME OPERATIONAL OR WHEN REQUIRED BY THE ENGINEER.
7. THE CITY ENGINEER MAY CONSIDER OTHER BASIN DESIGN ALTERNATIVES, AS A SUBSTITUTE FOR PROVIDING THE 2 FOOT FREEBOARD, WHEN THE BASIN SIZE IMPACTS PROJECT FEASIBILITY.
8. LOCKS FOR THE GATE TO BE #5 MASTER LOCKS, NO. 1C95, 3203 OR 0855.
9. HYDROSEED BASIN SIDE SLOPES AND TOP AREAS IN ACCORDANCE WITH CALTRANS SECTION 21-1.03E AND MAINTAIN EROSION CONTROL MEASURES UNTIL SEEDING IS ESTABLISHED.

* SIZE AND DEPTH OF LOW-FLOW AREA TO BE DETERMINED BY THE ENGINEER.

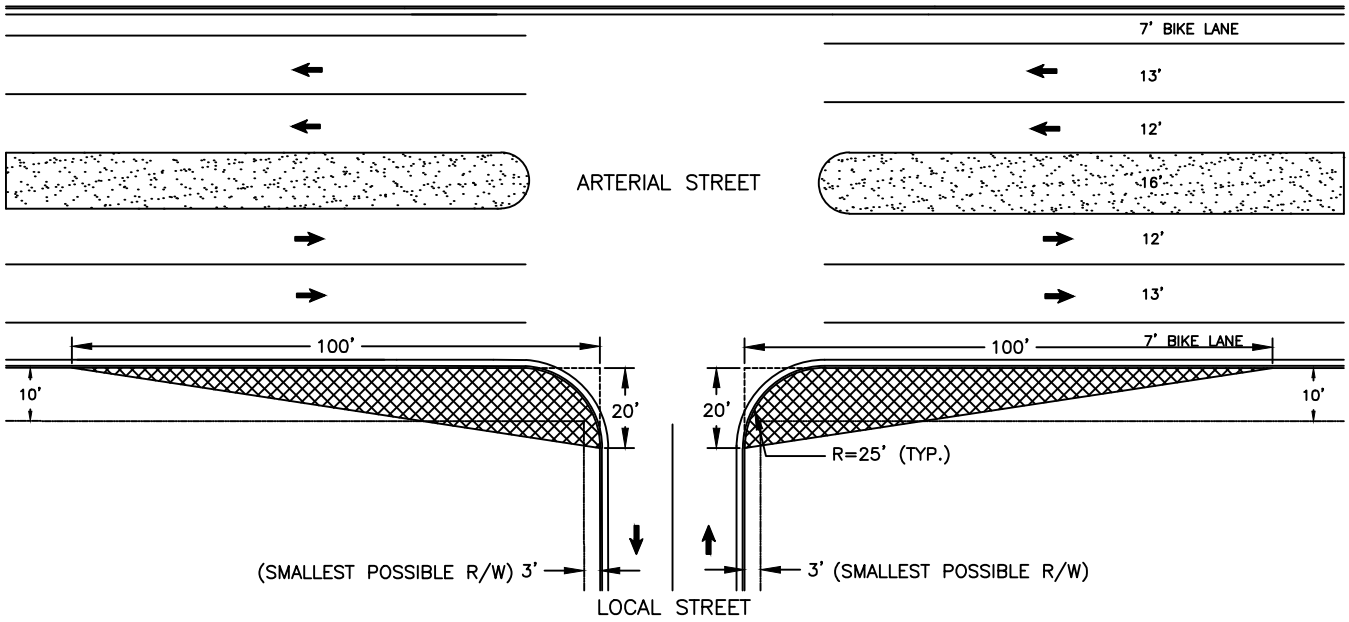
TEMPORARY PONDING BASIN	REF. & REV. ~~AUG. 2010~~ DEC. 2020 (A.7)	CITY OF FRESNO P-97



LOCAL ST. TO LOCAL ST.



LOCAL ST. TO COLLECTOR ST.



LOCAL ST. TO ARTERIAL ST.

NOTE: ALL MAJOR TO MAJOR STREET SIGHT TRIANGLE SHALL BE 30' X 30', MEASURED FROM CURB ALIGNMENT

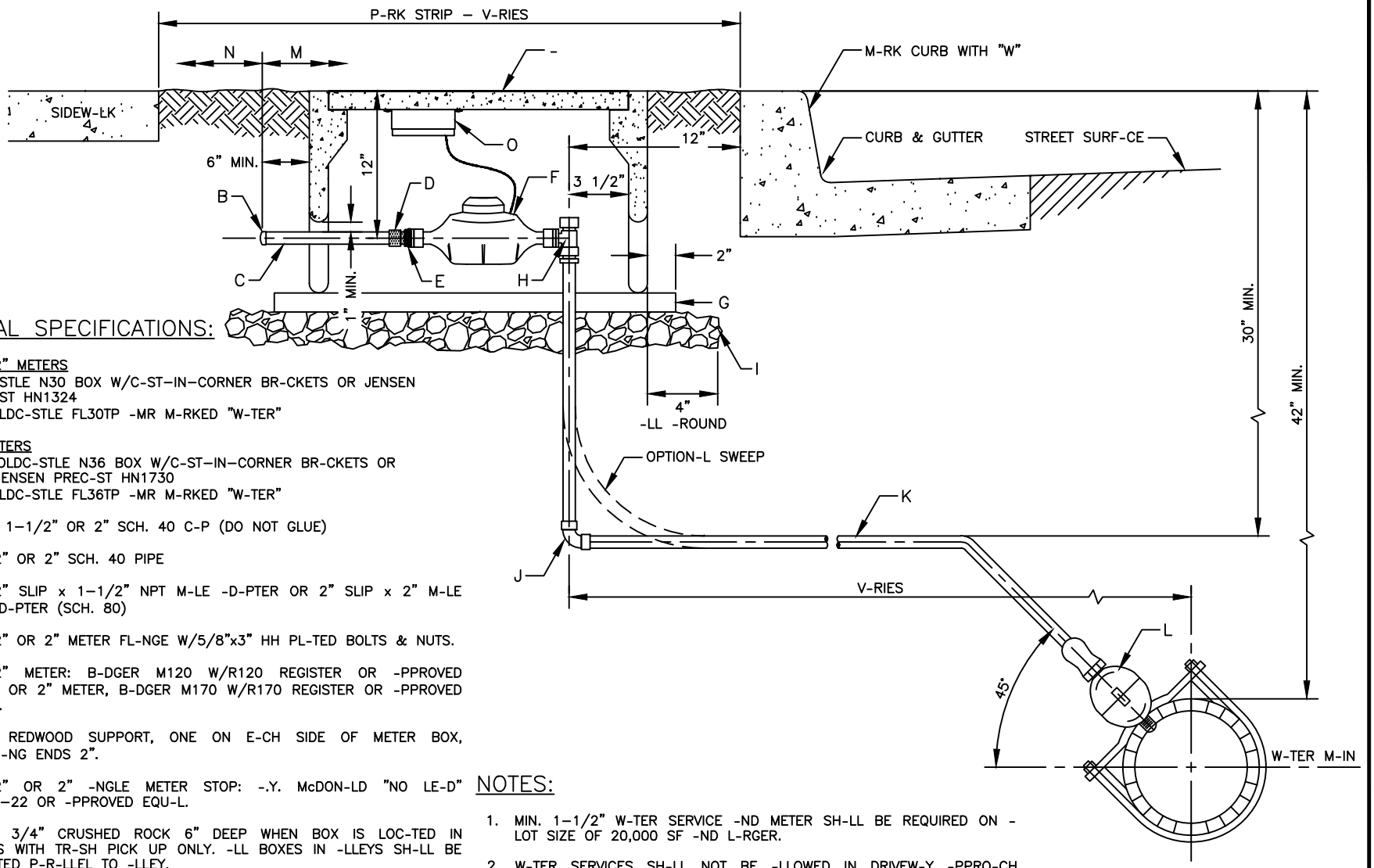
INTERSECTION SIGHT TRIANGLES LOCAL/COLLECTOR/ARTERIAL

REF. & REV.
DEC. 2020 (A.7)

CITY OF FRESNO

P-101

1-1/2" & 2" SERVICE CONNECTION & METER BOX INSTALLATION



MATERIAL SPECIFICATIONS:

-. 1-1/2" METERS
OLDC-STLE N30 BOX W/C-ST-IN-CORNER BR-CKETS OR JENSEN PREC-ST HN1324
LID: OLDC-STLE FL30TP -MR M-RKED "W-TER"

2" METERS
BOX: OLDC-STLE N36 BOX W/C-ST-IN-CORNER BR-CKETS OR JENSEN PREC-ST HN1730
LID: OLDC-STLE FL36TP -MR M-RKED "W-TER"

B. TEMP. 1-1/2" OR 2" SCH. 40 C-P (DO NOT GLUE)

C. 1-1/2" OR 2" SCH. 40 PIPE

D. 1-1/2" SLIP x 1-1/2" NPT M-LE -D-PTER OR 2" SLIP x 2" M-LE NPT -D-PTER (SCH. 80)

E. 1-1/2" OR 2" METER FL-NGE W/5/8"x3" HH PL-TED BOLTS & NUTS.

F. 1-1/2" METER: B-DGER M120 W/R120 REGISTER OR -PPROVED EQU-L OR 2" METER, B-DGER M170 W/R170 REGISTER OR -PPROVED EQU-L.

G. 2"x4" REDWOOD SUPPORT, ONE ON E-CH SIDE OF METER BOX, OVERH-NG ENDS 2".

H. 1-1/2" OR 2" -NGLE METER STOP: -.Y. McDON-LD "NO LE-D" 74602-22 OR -PPROVED EQU-L.

I. PL-CE 3/4" CRUSHED ROCK 6" DEEP WHEN BOX IS LOC-TED IN -LLEYS WITH TR-SH PICK UP ONLY. -LL BOXES IN -LLEYS SH-LL BE ORIENTED P-R-LLEL TO -LLEY.

J. COMP X COMP 90° ELL: -.Y. McDON-LD "NO LE-D" 74761-22 OR -PPROVED EQU-L.

K. TYPE "K" SOFT DR- N COPPER TUBING OR POLYETHYLENE CTS SDR-9 PE 4710

L. 1-1/2" OR 2" CORPOR-TION STOP: -.Y. McDON-LD "NO LE-D" 74701-22 OR -PPROVED EQU-L.

M. W-TER DIVISION RESPONSIBILITY

N. CUSTOMER RESPONSIBILITY

O. TR-NSMITTER: G-L-XY TR3 OR -PPROVED EQU-L.

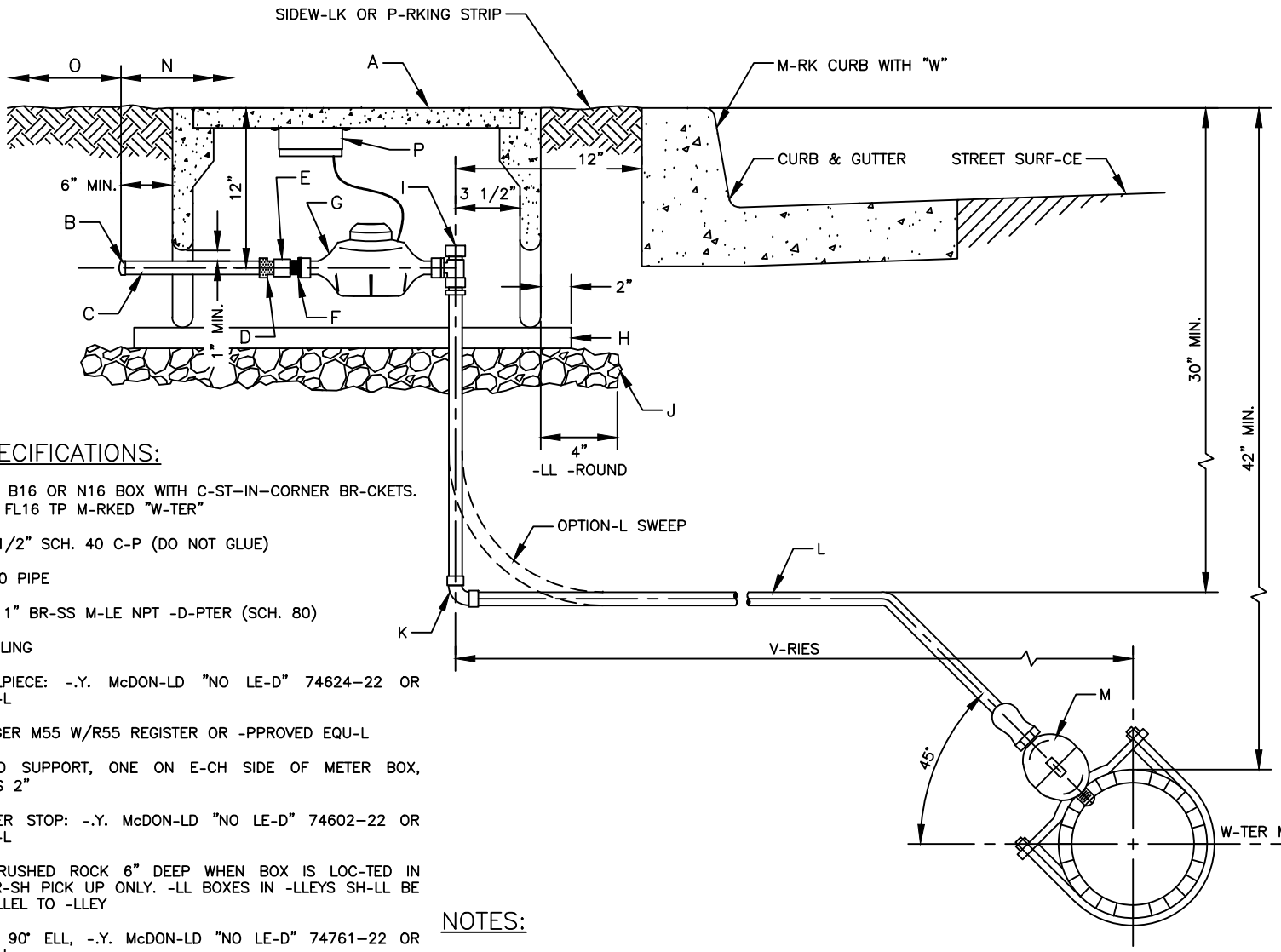
NOTES:

1. MIN. 1-1/2" W-TER SERVICE -ND METER SH-LL BE REQUIRED ON -LOT SIZE OF 20,000 SF -ND L-RGER.
2. W-TER SERVICES SH-LL NOT BE -LLOWED IN DRIVEW-Y -PPRO-CH -RE-S -T -NY RESIDENTI-L OR COMMERCI-L LOC-TION.
3. -LL COPPER FITTINGS SH-LL BE C-MP-K COMPRESSION-TYPE.
4. POLYETHYLENE PIPE SH-LL USE C-MP-K COMPRESSION-TYPE JOINTS WITH ST-INLESS STEEL INSERT.
5. FOR PVC W-TER M-IN T-PS, SERVICE S-DDLES W/ CIRCUMFERENTI-L TYPE B-NDS SH-PED TO FIT THE -CTU-L O.D. OF THE PIPE, -ND H- ING - MINIMUM BE-RING WIDTH OF 3" (1-1/2" PER B-ND), SH-LL BE USED. FOR DUCTILE -ND C-ST IRON M-INS, USE BRONZE OR DUCTILE IRON SERVICE S-DDLES, W/BRONZE OR ST-INLESS DOUBLE STR-PS.

REF & REV
~~JUNE 2011~~
DEC. 2020 (-.7)

CITY OF FRESNO
W-1

1" SERVICE CONNECTION & METER BOX INSTALLATION



MATERIAL SPECIFICATIONS:

-. BOX: OLDC-STLE B16 OR N16 BOX WITH C-ST-IN-CORNER BR-CKETS. LID: OLDC-STLE FL16 TP M-RKED "W-TER"

B. TEMPOR-RY 1-1/2" SCH. 40 C-P (DO NOT GLUE)

C. 1-1/2" SCH. 40 PIPE

D. 1-1/2" SLIP x 1" BR-SS M-LE NPT -D-PTER (SCH. 80)

E. 1" BR-SS COUPLING

F. 1" METER T-ILPIECE: -.Y. McDON-LD "NO LE-D" 74624-22 OR -PPROVED EQU-L

G. 1" METER: B-DGER M55 W/R55 REGISTER OR -PPROVED EQU-L

H. 2"X4" REDWOOD SUPPORT, ONE ON E-CH SIDE OF METER BOX, OVERH-NG ENDS 2"

I. 1" -NGLE METER STOP: -.Y. McDON-LD "NO LE-D" 74602-22 OR -PPROVED EQU-L

J. PL-CE 3/4" CRUSHED ROCK 6" DEEP WHEN BOX IS LOC-TED IN -LLEYS WITH TR-SH PICK UP ONLY. -LL BOXES IN -LLEYS SH-LL BE ORIENTED P-R-LLEL TO -LLEY

K. COMP x COMP 90° ELL, -.Y. McDON-LD "NO LE-D" 74761-22 OR -PPROVED EQU-L

L. TYPE "K" SOFT DR- N COPPER TUBING

M. 1" CORPOR-TION STOP: -.Y. McDON-LD "NO LE-D" 74701-22 OR -PPROVED EQU-L

N. W-TER DIVISION RESPONSIBILITY

O. CUSTOMER RESPONSIBILITY

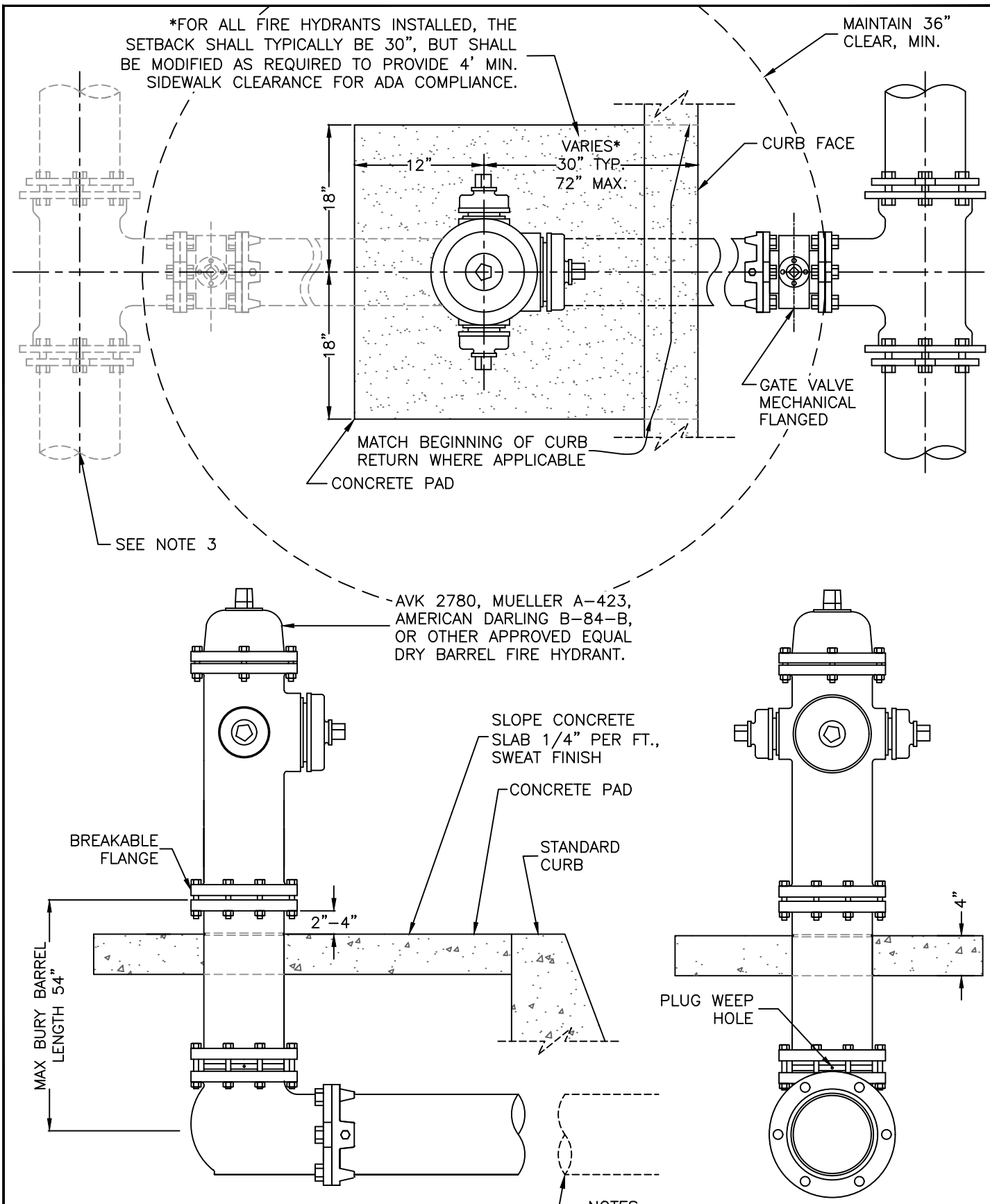
P. TR-NSMITTER: G-L-XY TR3 OR -PPROVED EQU-L

NOTES:

1. W-TER SERVICES SH-LL NOT BE -LLOWED IN DRIVEW-Y -PPRO-CH -RE-S -T -NY RESIDENTI-L OR COMMERCI-L LOC-TION.
2. -LL COPPER FITTINGS SH-LL BE C-MP-K COMPRESSION-TYPE.
3. FOR PVC W-TER M-IN T-PS, SERVICE S-DDLES WITH CIRCUMFERENTI-L TYPE B-NDS SH-PED TO FIT THE -CTU-L O.D. OF THE PIPE, -ND H- ING - MINIMUM BE-RING WIDTH OF 3" (1 1/2" PER B-ND) SH-LL BE USED. FOR DUCTILE -ND C-ST IRON M-INS, USE BRONZE OR DUCTILE IRON SERVICE S-DDLES, WITH BRONZE OR ST-INLESS DOUBLE STR-PS.

REF & REV
~~JUNE 2011~~
DEC. 2020 (-.7)

CITY OF FRESNO
W-2



HYDRANT RUN BETWEEN VALVE & BURY SHALL BE ADJUSTED SO ELEVATION OF HYDRANT BURY FLANGE IS LEVEL & TO GRADE AS SHOWN, OR AS DIRECTED.
BURY DEPTH: 54" MAX., USE 45-DEGREE FITTINGS TO MAINTAIN BURY MAX LENGTH.

NOTES:

1. GATE VALVE TO BE TIED TO MAIN PER STD DWG W-37
2. CAP AND OPERATING NUTS ARE 1-1/8" PENTAGON
3. WHERE MAIN LIES BEHIND CURB, PIPE & VALVE DETAILS SHALL BE REVERSED

FIRE HYDRANT INSTALLATION

REF. & REV.
~~JAN. 1997~~
~~DEC. 2003~~
~~DEC. 2013~~
DEC. 2020 (A.7)

CITY OF FRESNO

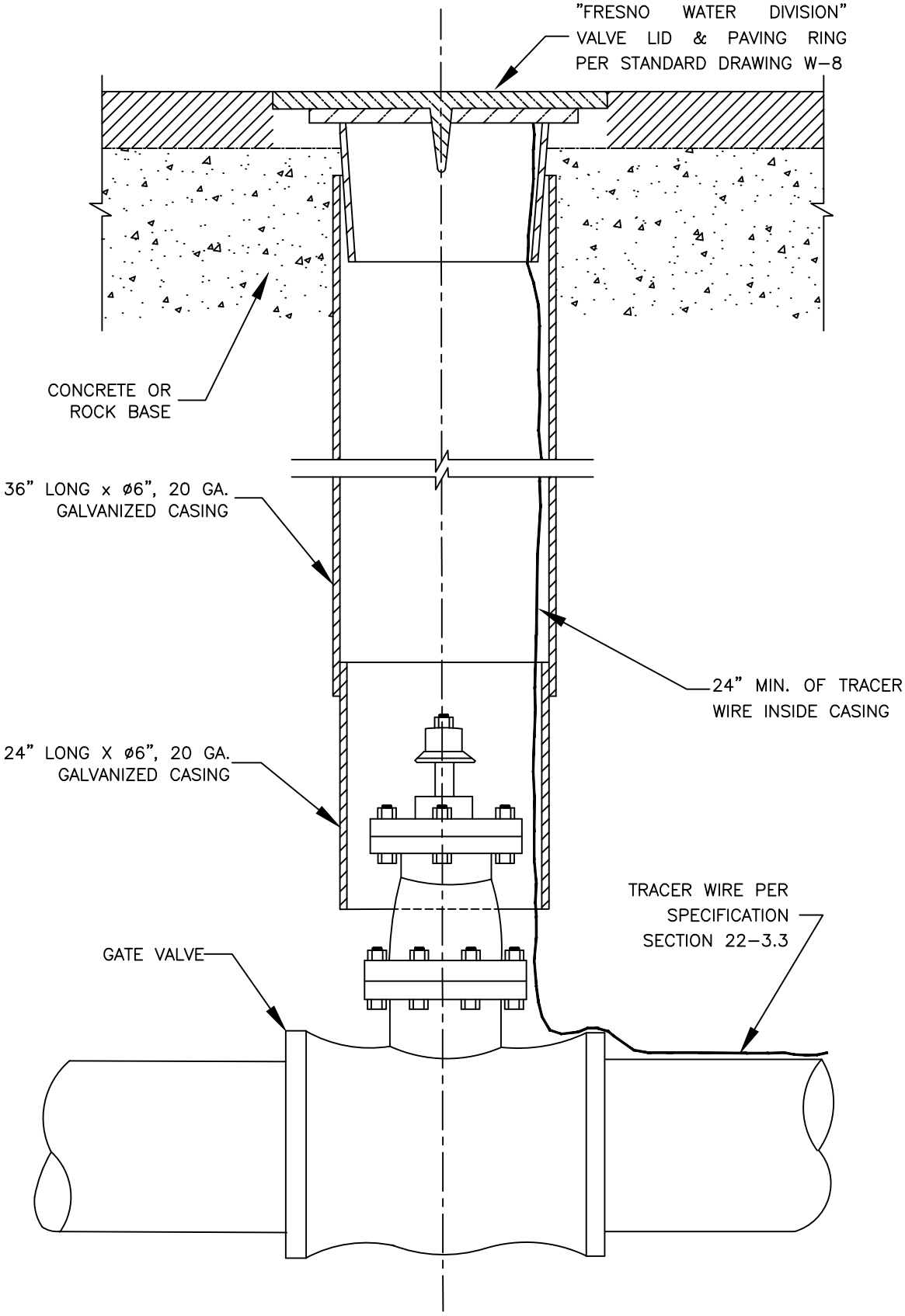
W-3

THIS STANDARD IS
NO LONGER USED

~~FIRE HYDRANT INSTALLATION VALVE OPERATOR DETAIL~~	REF. & REV. ~~AUG. 2002~~ DEC. 2020 (A.7)	CITY OF FRESNO W – 4

THIS STANDARD IS NO LONGER USED

~~THRUST BLOCK~~ ~~FOR CITY FORCES ONLY; TO BE USED ON EXISTING UNRESTRAINED WATER MAIN SYSTEMS~~	REF. & REV. ~~AUG. 2002~~ DEC. 2020 (A.7)	CITY OF FRESNO W – 6



VALVE LID & PAVING RING

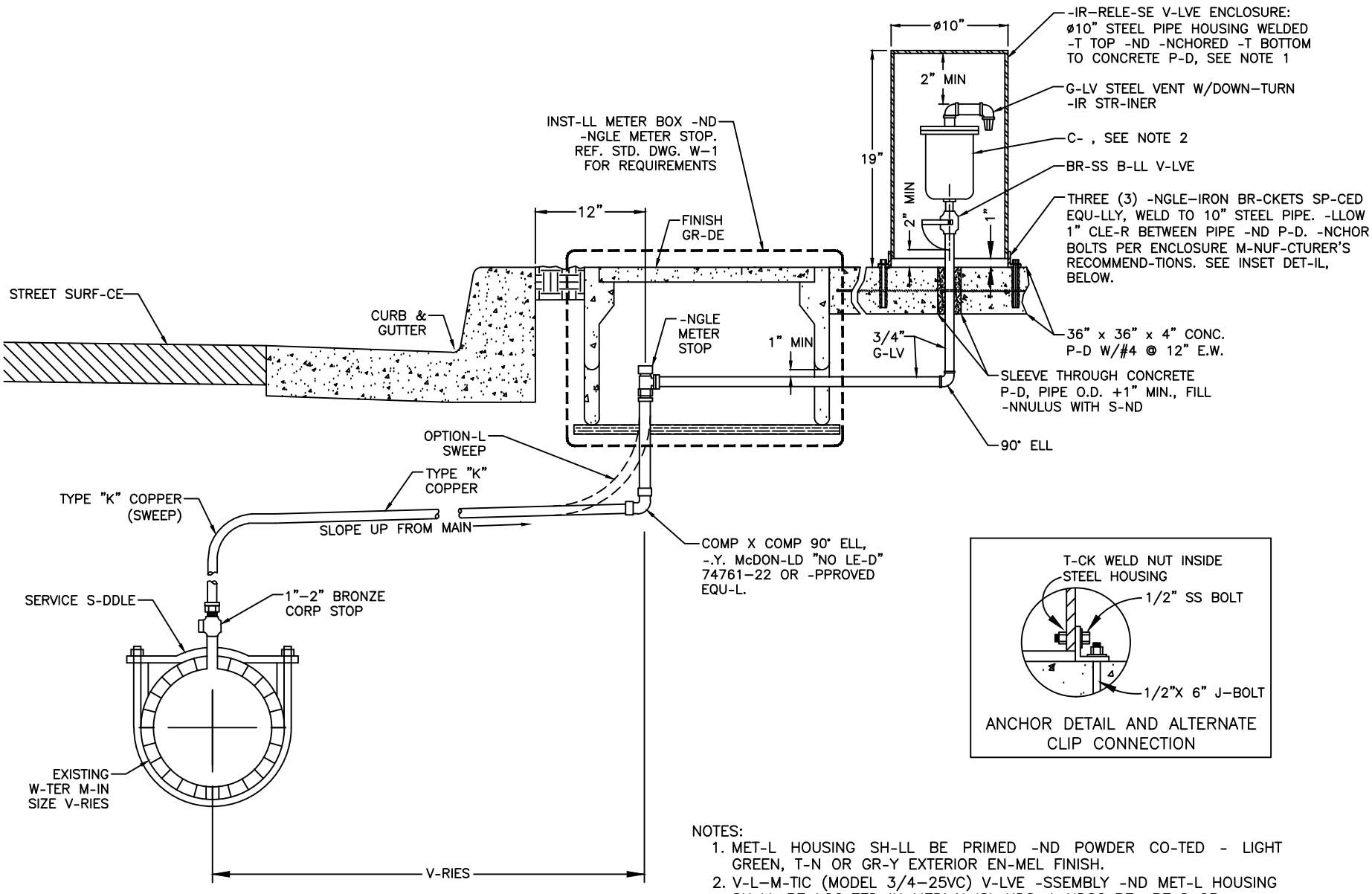
WITH GALVANIZED CASING

REF. & REV.
~~AUG. 2002~~
DEC. 2020 (A.7)

CITY OF FRESNO

W-7

AUTOMATIC AIR RELEASE AND VACUUM VALVE ASSEMBLY



NOTES:

1. MET-L HOUSING SH-LL BE PRIMED -ND POWDER CO-TED - LIGHT GREEN, T-N OR GR-Y EXTERIOR EN-MEL FINISH.
2. V-L-M-TIC (MODEL 3/4-25VC) V-LVE -SSEMBLY -ND MET-L HOUSING SH-LL BE LOC-TED IN MEDI-N ISL-NDS, L-NDSC-PE -RE-S OR OUTSIDE OF SIDEW-LK -RE- WHERE POSSIBLE.
3. G-LV-NIZED PIPES SH-LL BE WR-PPED IN TWO L-YERS OF 10 MIL T-PE.
4. PROVIDE 4' MIN. SIDEW-LK CLE-R-NCE -DJ-CENT TO -IR-V-C DEVICE FOR -D- -CCESSIBILTY REQUIREMENTS.

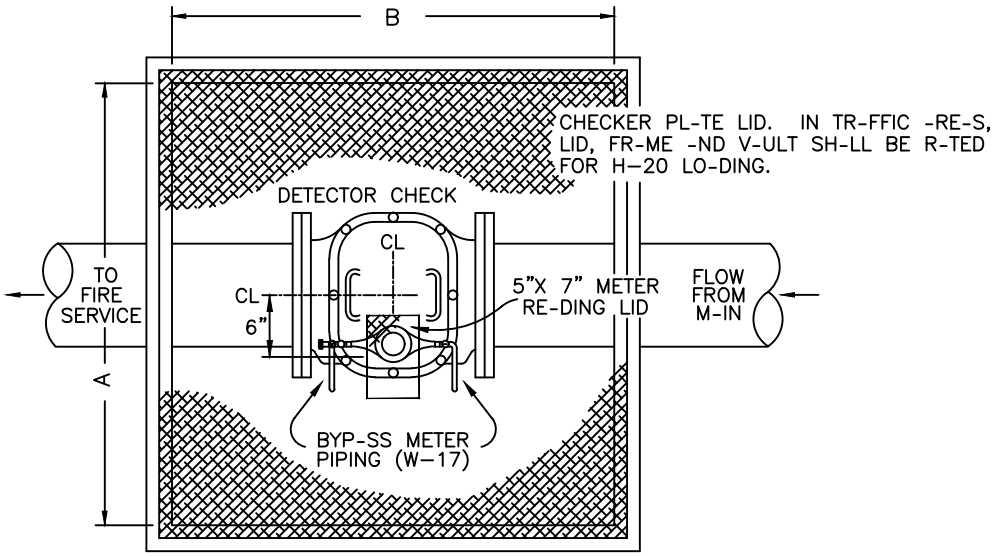
REF. & REV.
~~DEC. 2003~~
DEC. 2020 (A.7)

CITY OF FRESNO

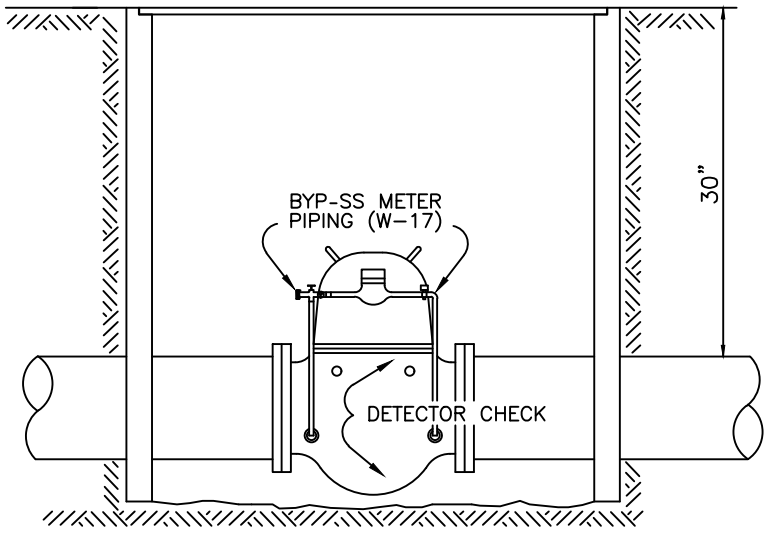
W-13

THIS STANDARD IS
NO LONGER USED

~~PRESSURE VACUUM BREAKER BACKFLOW PREVENTER INSTALLATION~~	REF. & REV. ~~AUG., 2002~~ DEC. 2020 (A.7)	CITY OF FRESNO W–14



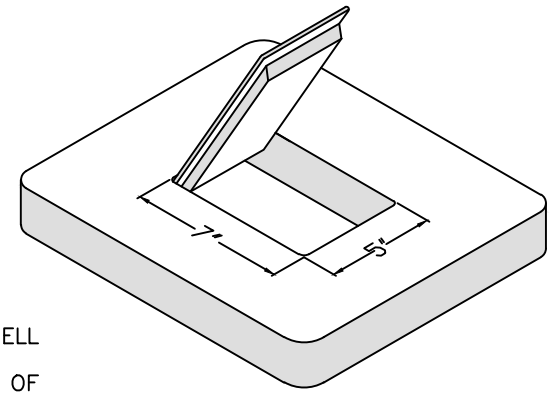
PL-N VIEW



ELEV-TION

NOMINAL INSIDE DIMENSIONS

SERVICE	A	B
4" – 8"	30"	48"
10"	48"	48"



TYPICAL HINGED LID
N.T.S.

NOTES:

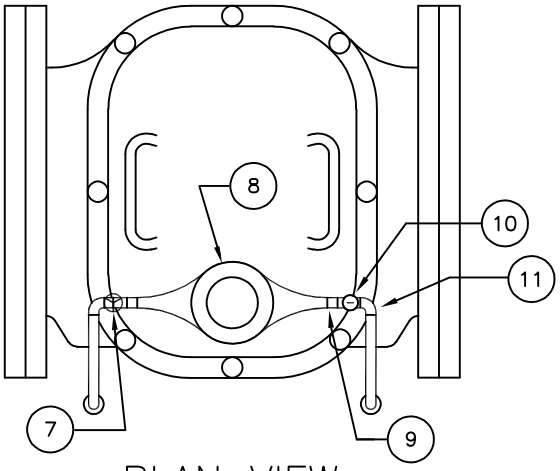
1. CHECK VALVE TO BE HERSEY MODEL E.D.C. OR D.C., GRINNELL MODEL A–2 OR B–2 OR APPROVED EQUAL.
2. CHECK VALVE TO BE TAPPED TO ACCOMMODATE INSTALLATION OF BYPASS METER PIPING BY CONTRACTOR.
3. VAULT OR BOX TO BE CHRISTY, BROOKS OR APPROVED EQUAL.
4. VAULT OR BOX, DETECTOR CHECK VALVE AND COVER TO BE INSTALLED BY DEVELOPER'S CONTRACTOR PER FRESNO MUNICIPAL CODE, SECTION 14, SUBSECTIONS 131–137 INCL. SEE W–17 FOR DETAILS.
5. VAULT OR BOX COVER TO HAVE 5" X 7" HINGED METER READ LID.

FIRE SERVICE DETECTOR CHECK INSTALLATION

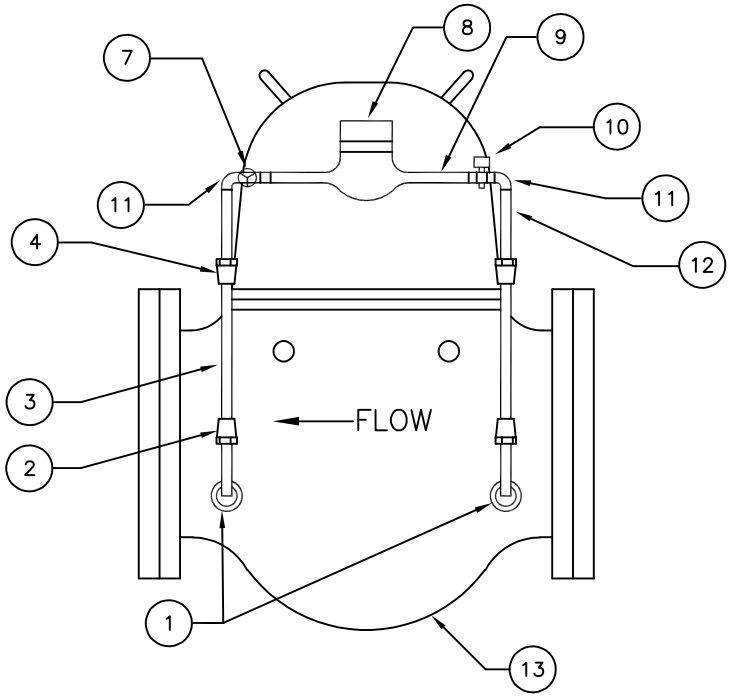
REF. & REV.
~~AUG. 2002~~
DEC. 2020 (A.7)

CITY OF FRESNO

W–16



PLAN VIEW



ELEVATION

MATERIALS LIST:

1. 1" x 3/4" BRASS BUSHING – 2 REQ'D
2. 3/4" J–1550 BRASS COUPLING – 2 REQ'D
3. 3/4" COPPER TUBING – 2 REQ'D
4. 3/4" J–1531 BRASS COUPLING – 2 REQ'D
5. NO LONGER USED
6. NO LONGER USED
7. 3/4" CHECK VALVE – 1 REQ'D
8. 3/4" METER – 1 REQ'D
9. 3/4" METER CONNECTION (TAIL PIECE) – 2 REQ'D
10. 3/4" J–200 CURB STOP – 1 REQ'D
11. 3/4" BRASS 90° ELL – 2 REQ'D
12. 3/4" BRASS CLOSE NIPPLE – 4 REQ'D
13. WEIGHTED DETECTOR CHECK VALVE – 1 REQ'D
    13.1. TO BE INSTALLED BY DEVELOPER
    13.2. TO BE TAPPED AND PLUGGED FOR DETECTOR METER PIPING, SEE W–16

DETECTOR BYPASS METER DETAILS

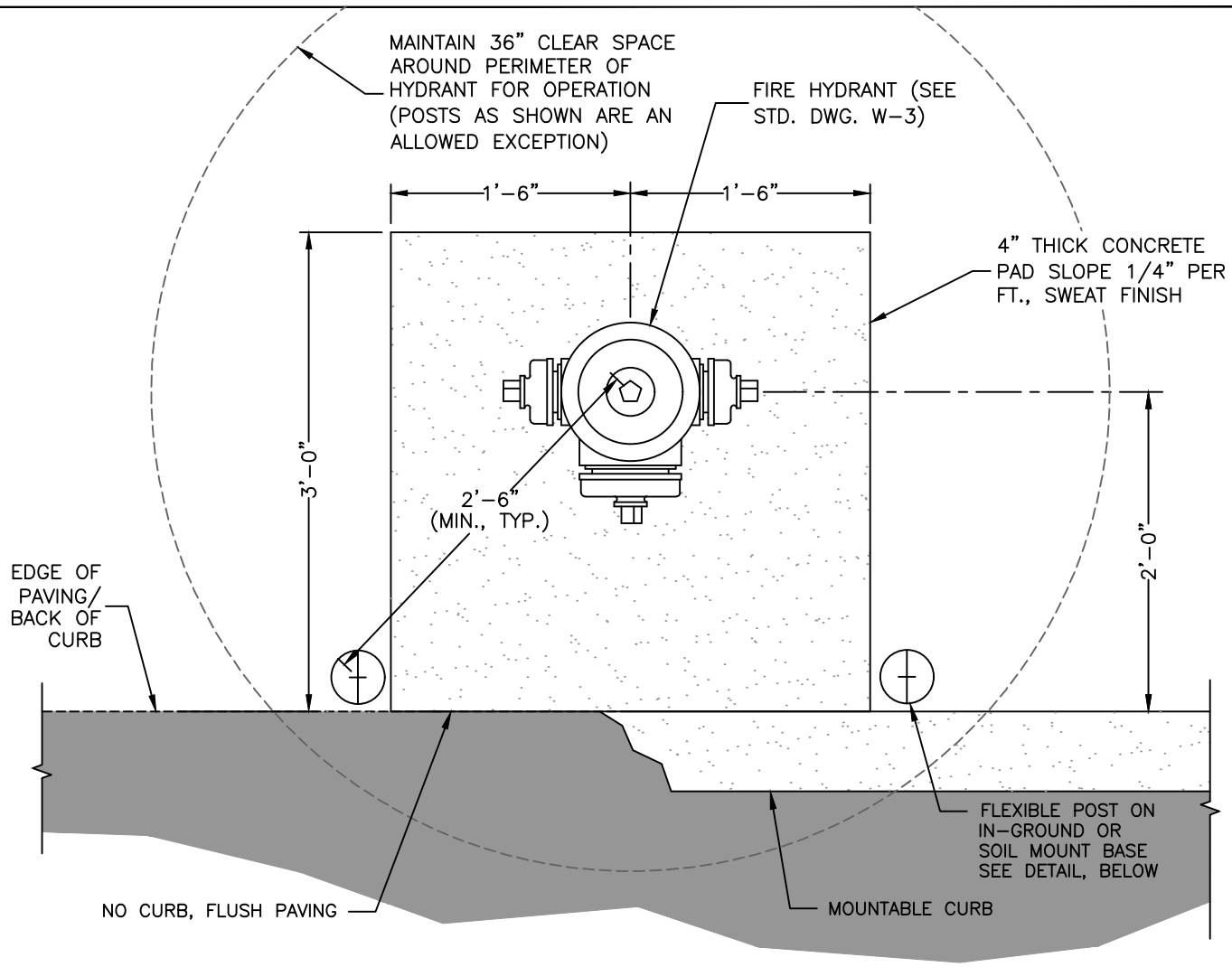
REF. & REV.
~~AUG., 2002~~
DEC. 2020 (A.7)

CITY OF FRESNO

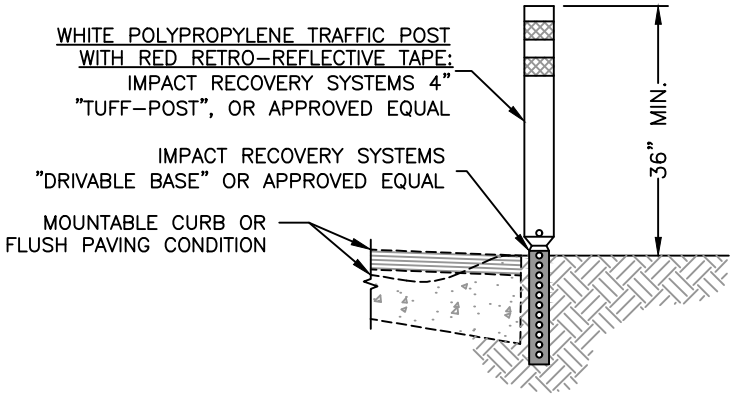
W–17

THIS STANDARD IS
NO LONGER USED

~~GUARD POST DETAILS~~	REF. & REV. ~~DEC. 2003~~ DEC. 2020 (A.7)	CITY OF FRESNO W–22



PLAN VIEW

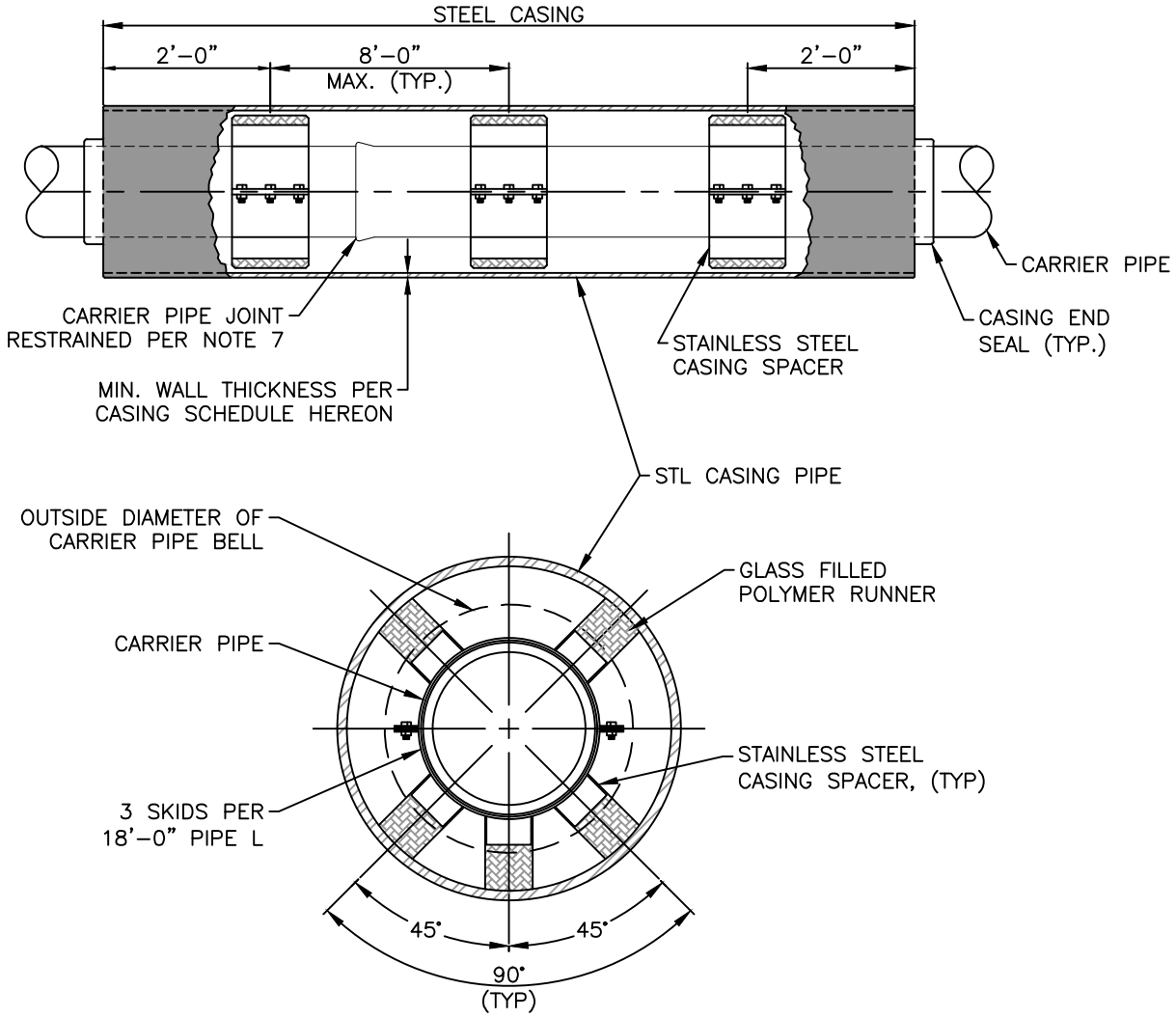


FLEXIBLE POST DETAIL
IN-GROUND OR SOIL MOUNT BASE
(PUBLIC STREETS ONLY)

NOTES:

1. THIS STANDARD DRAWING IS APPLICABLE ONLY TO CITY OF FRESNO OWNED AND MAINTAINED FIRE HYDRANTS; PRIVATE HYDRANTS SHALL ADHERE TO PROTECTION CONDITIONS AND RELATED REQUIREMENTS AS SET FORTH BY THE FIRE DEPARTMENT.

FIRE HYDRANT INSTALLATION WITH FLEXIBLE DELINEATORS	REF. & REV. ~~DEC. 2003~~ DEC. 2020 (A.7)	CITY OF FRESNO W-23



STEEL CASING SCHEDULE			
NOMINAL CARRIER PIPE SIZE	NOMINAL MINIMUM CASING SIZE	MINIMUM WALL THICKNESS	
		STREETS & HIGHWAYS	RAILROADS
6"	16"	0.250"	0.281"
8"	18"	0.250"	0.312"
10"	20"	0.250"	0.344"
12"	22"	0.250"	0.344"
14"	26"	0.312"	0.406"
16"	28"	0.312"	0.438"
24"	38"	0.375"	0.562"
30"	44"	0.500"	0.657"

NOTES:

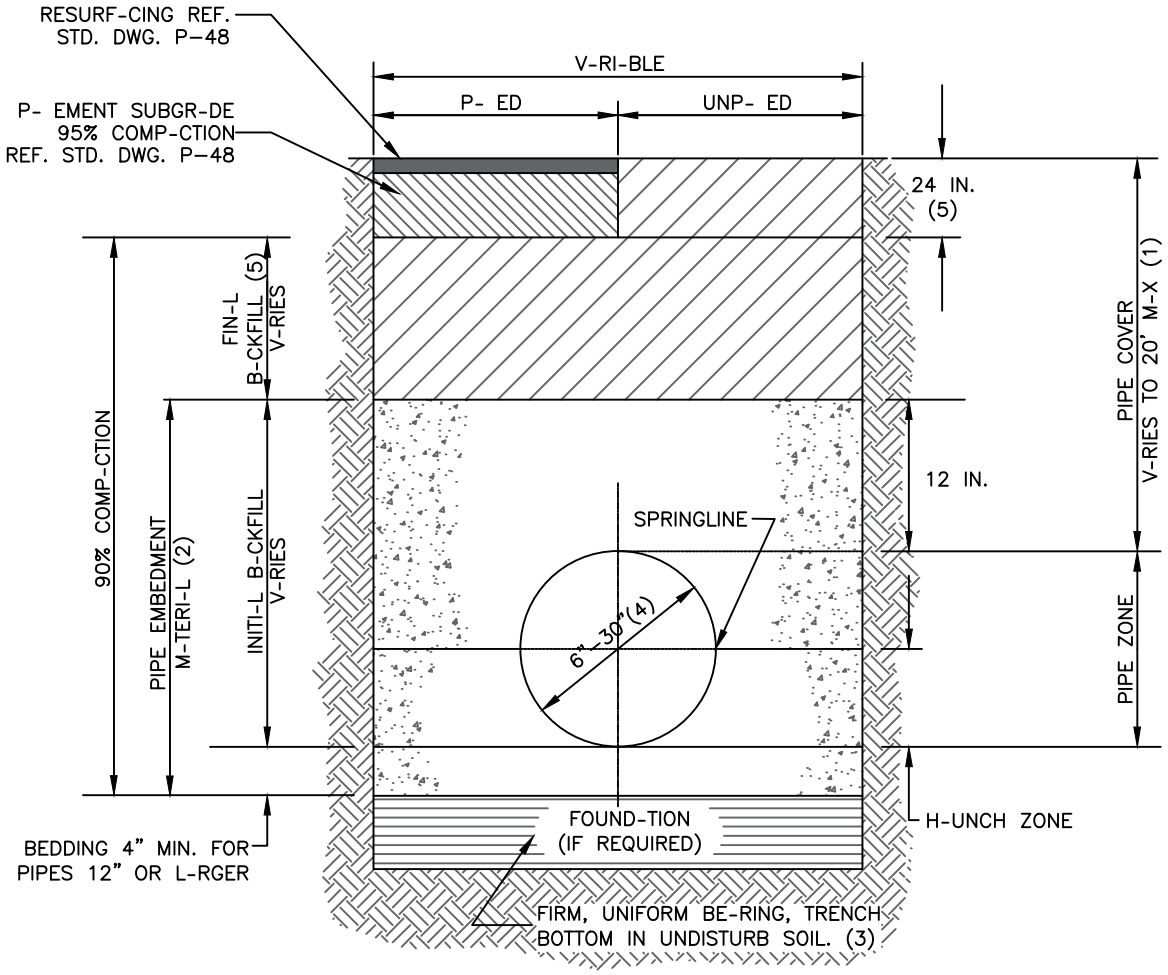
1. REFER TO STANDARD SPECIFICATIONS SECTION 19 – JACKING PIPE.
2. SIZE AND THICKNESS OF CASING SHALL BE AS SHOWN IN STEEL CASING SCHEDULE HEREON. FOR LONG BORES OR SPECIAL SITUATIONS GREATER WALL THICKNESS THAN SHOWN IN SCHEDULE MAY BE REQUIRED. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE STRUCTURAL SUFFICIENCY OF THE CASING DURING CONSTRUCTION AND ALSO THE METHOD OF INSTALLATION.
3. CASING INSTALLATIONS AND WALL THICKNESS UNDER RAILROADS ARE SUBJECT TO APPROVAL BY THE APPROPRIATE RAILWAY AUTHORITY.
4. CASING SPACERS SHALL BE STAINLESS STEEL CENTER RESTRAINED POSITION TYPE.
5. INSTALL A MINIMUM OF THREE (3) CASING SPACERS PER 18' OF CARRIER PIPE SECTION, EQUALLY SPACED.
6. EACH END OF CASING SHALL BE SEALED WITH AN APPROVED RUBBER CASING END SEAL SECURED WITH STAINLESS STEEL BANDS.
7. CARRIER PIPE SHALL BE DUCTILE IRON AND ALL JOINTS INSIDE THE STEEL CASING AND A MINIMUM OF 5' OUTSIDE THE STEEL CASING SHALL BE RESTRAINED. REFER TO STANDARD SPECIFICATION SECTION 21–15 FOR RESTRAINTS.
8. 45° PIPELINE RISERS RUNNING FROM CARRIER PIPE TO TYPICAL DEPTH PIPELINE SHALL BE DUCTILE IRON WITH ALL JOINTS RESTRAINED.

INSTALLATION OF WATER PIPE
IN JACKED STEEL CASING

REF. & REV.
~~AUG., 2002~~
DEC. 2020 (A.7)

CITY OF FRESNO

W–24



NOTES

1. PIPE INST-LL-TIONS WHERE COVER OVER PIPE EXCEEDS 20' SH-LL BE DESIGNED BY - CIVIL ENGINEER -ND SPECIFIED IN THE PROJECT PL-NS -ND SPECI-L PROVISIONS.

2. PIPE EMBEDMENT M-TERI-L SH-LL CONSIST OF CL-SS II OR CL-SS III SELECT N-TUR-L M-TERI-L OR PROCESSED PRODUCT -S DEFINED IN SUBSECTION 22-8.2, "PIPE EMBEDMENT ZONE" OF ST-ND-RD SPECIFIC-TIONS -ND INIT-L B-CKFILL PL-CED IN -CCORD-NCE WITH SUBSECTION 22-8.3, "INITI-L B-CKFILL", OF THE ST-ND-RD SPECIFIC-TIONS.

3. BOTTOM OF TRENCH SH-LL BE IN FIRM, UNIFORM-BE-RING SOIL SURF-CES. WHEN UNSUIT-BLE OR DISTURBED, THE CONTR-CTOR SH-LL REMOVE -ND REFILL WITH SUIT-BLE M-TERI-L -S SPECIFIED IN SUBSECTION 22-8.1, "FOUND-TION -ND BEDDING", OF THE ST-ND-RD SPECIFIC-TIONS.

4. ST-ND-RD DET-IL W-29 SH-LL BE -PPLIC-BLE TO -LL W-TER PIPE INST-LL-TIONS WITH DI-METERS OF 6 TO 30 INCHES. CONSTRUCTION PROCEDURES FOR PIPES L-RGER TH-N 30 INCHES SH-LL BE PROVIDED BY THE DESIGN ENGINEER.

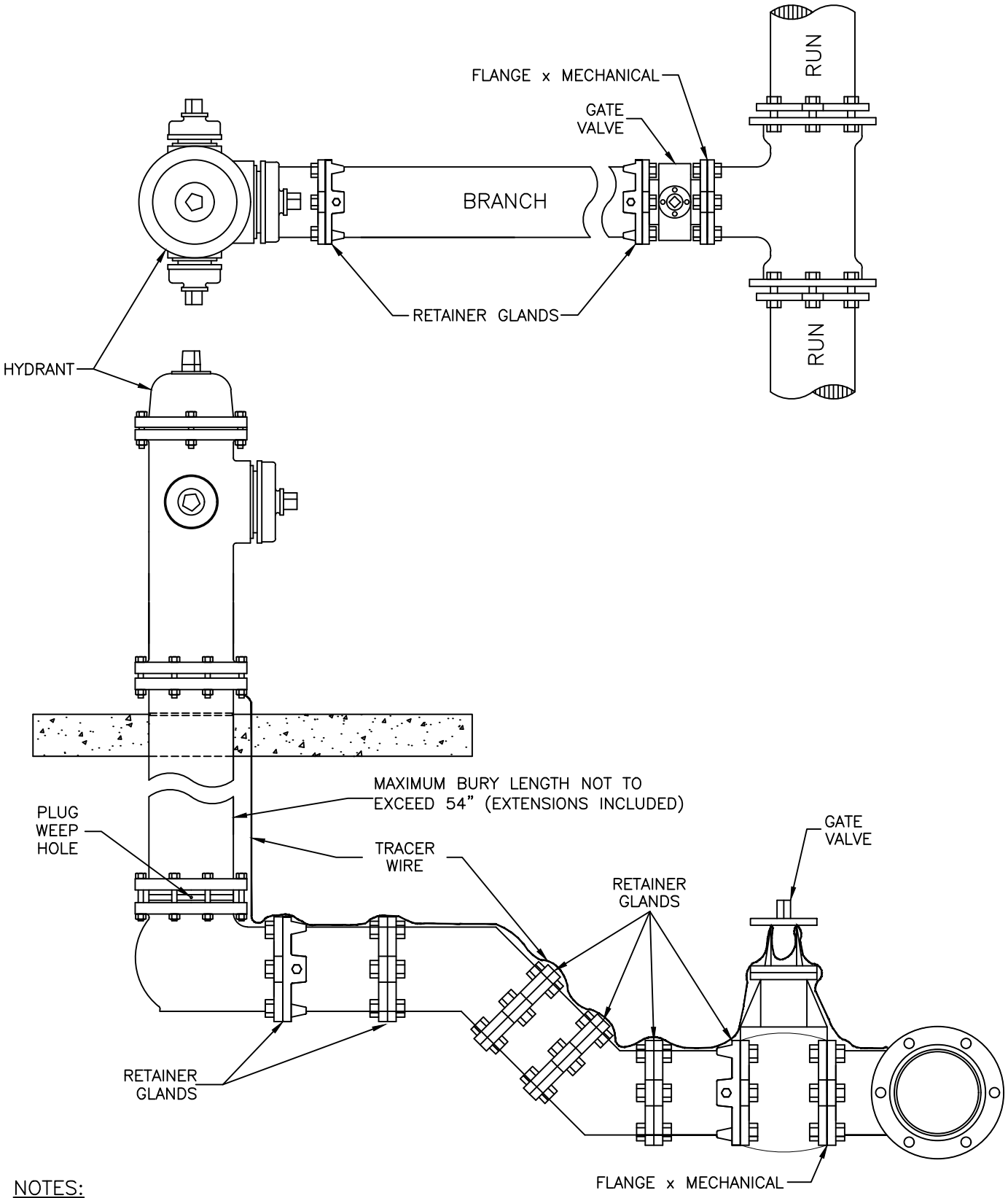
5. IN UNP- ED -RE-S FIN-L B-CKFILL SH-LL EXTEND TO THE SURF-CE ELEV-TION WITH 95% COMP-CTION IN THE UPPER 24" OF TRENCH.

WATER MAIN TRENCH, BEDDING, AND BACKFILL DETAIL

REF. & REV.
~~DEC. 2003~~
DEC. 2020 (A.7)

CITY OF FRESNO

W-29



NOTES:

1. HYDRANT MUST BE FULLY RESTRAINED FROM TEE TO HYDRANT. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS ON PUSH ON PIPE PER CITY SPECIFICATIONS.
2. JOINT RESTRAINT IS NOT REQUIRED ON THE RUN OF THE TEE UNLESS THE TEE FALLS WITHIN THE RESTRAINED LENGTH REQUIREMENT OF ANOTHER FITTING.
3. FOR TEST PRESSURES AND LAYING CONDITIONS SEE SECTION ON GENERAL NOTES FOR USE OF RESTRAINED JOINT LENGTHS.

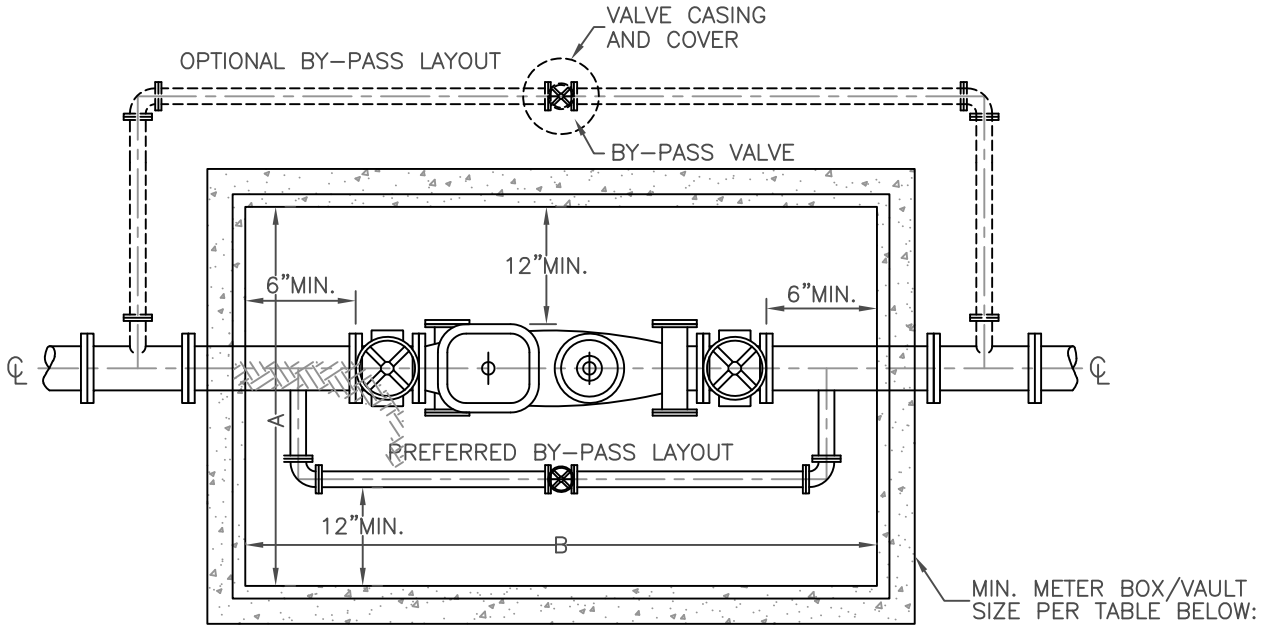
HYDRANT RUN TEE RESTRAINT

FOR PVC OR DUCTILE IRON PIPE

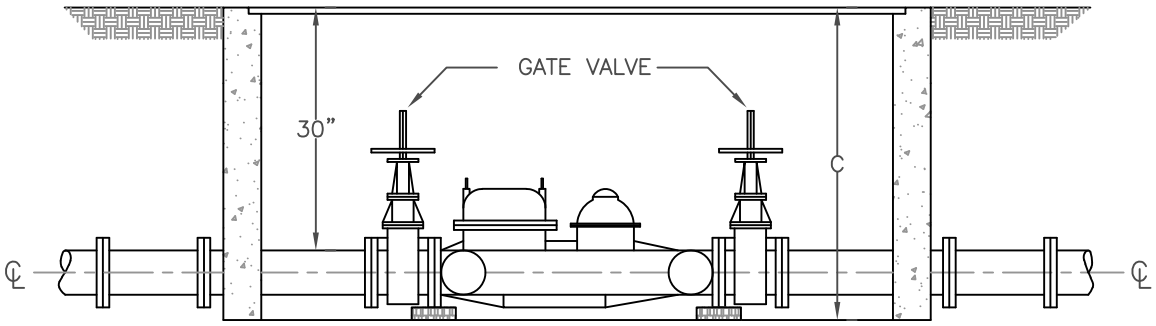
REF. & REV.
~~DEC. 2003~~
DEC. 2020 (A.7)

CITY OF FRESNO

W – 37



PLAN VIEW



ELEVATION

	A	B	C
3",4"&6"	40"	72"	42"

MINIMUM METER
BOX/VAULT SIZE

NOTES:

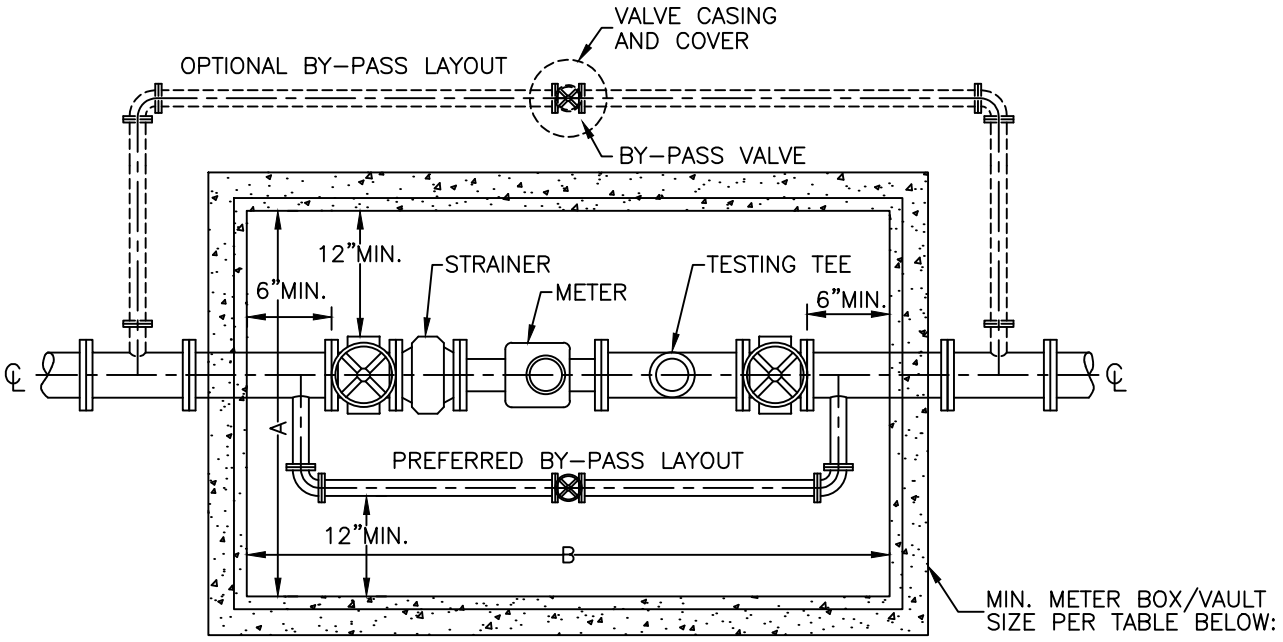
1. BY-PASS MAY BE INSIDE METER BOX OR OUTSIDE METER BOX. IF INSTALLED OUTSIDE METER BOX A CASING AND COVER WILL BE REQUIRED OVER BY-PASS VALVE.
2. 1-1/2 INCH AND 2 INCH BY-PASS VALVES MUST BE BALL VALVES. THREE INCH AND LARGER TO BE RESILIENT SEATING SHUT-OFF VALVES.
3. METERS DEEPER THAN 30 INCHES TO TOP OF PIPE MUST BE RAISED TO 30 INCHES.
4. INLET AND OUTLET VALVES TO BE INSTALLED AT EACH END OF METER.
5. BY-PASS MATERIAL, 2 INCHES AND GREATER, SHALL BE DUCTILE IRON OR C900 PVC. LESS THAN 2 INCHES SHALL BE COPPER.
6. TEST TEE TO BE 3 PIPE DIAMETERS DOWNSTREAM OF METER.

COMPOUND METER SETTING
WITH BY-PASS

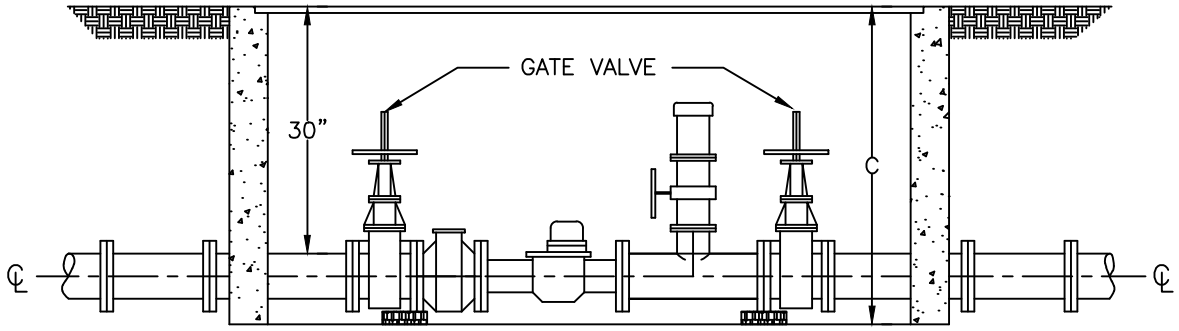
REF. & REV.
~~AUG. 2002~~
DEC. 2020 (A.7)

CITY OF FRESNO

W-40



PLAN VIEW



ELEVATION

	A	B	C
2",3"&4"	20"	48"	42"
4",6"&8"	40"	72"	42"
10"	60"	100"	42"

MINIMUM METER
BOX/VAULT SIZE

NOTES:

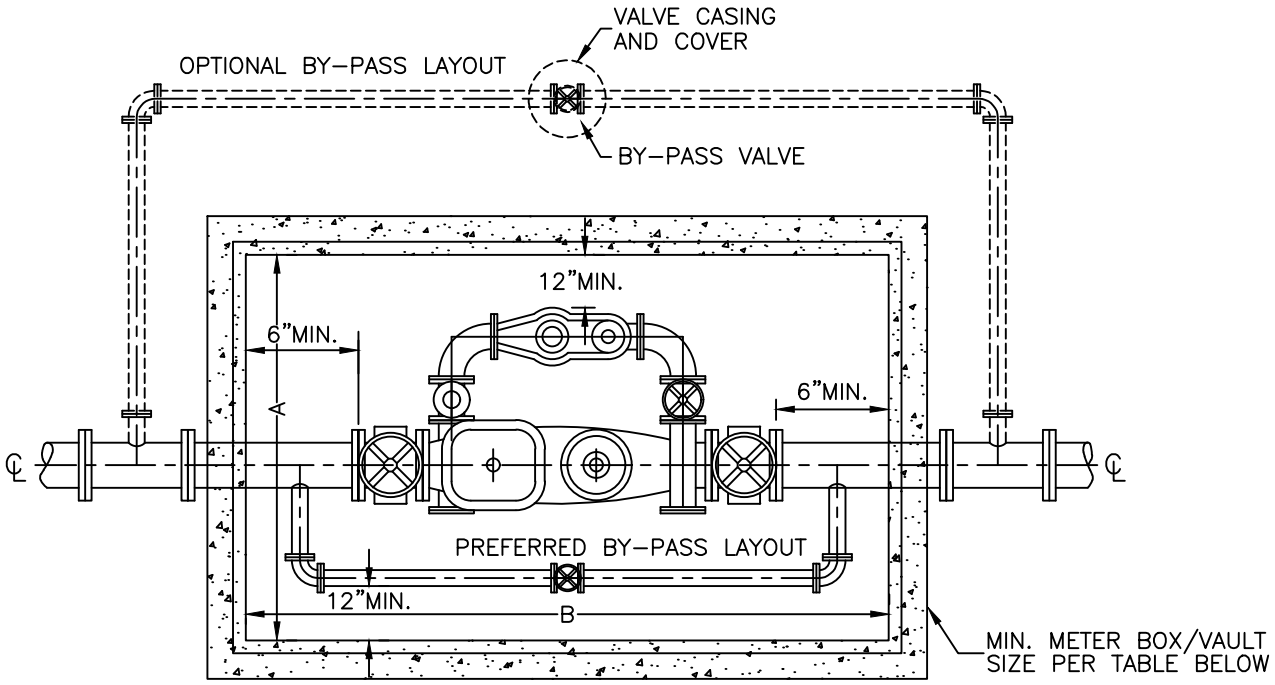
1. BY-PASS MAY BE INSIDE METER BOX OR OUTSIDE METER BOX. IF INSTALLED OUTSIDE METER BOX A CASING AND COVER WILL BE REQUIRED OVER BY-PASS VALVE.
2. 1-1/2 INCH AND 2 INCH BY-PASS VALVES MUST BE BALL VALVES. THREE INCH AND LARGER TO BE RESILIENT SEATING SHUT-OFF VALVES.
3. METERS DEEPER THAN 30 INCHES TO TOP OF PIPE MUST BE RAISED TO 30 INCHES.
4. INLET AND OUTLET VALVES TO BE INSTALLED AT EACH END OF METER.
5. TEST TEE TO BE 3 PIPE DIAMETERS DOWNSTREAM OF METER.
6. WHEN CHARGING METER WITH WATER – OPEN INLET VALVE VERY SLOWLY, THEN SLOWLY OPEN OUTLET VALVE.
7. BY-PASS MATERIAL, 2 INCHES AND GREATER, SHALL BE DUCTILE IRON OR C900 PVC. LESS THAN 2 INCHES SHALL BE COPPER.

TURBINE METER SETTING
WITH BY-PASS

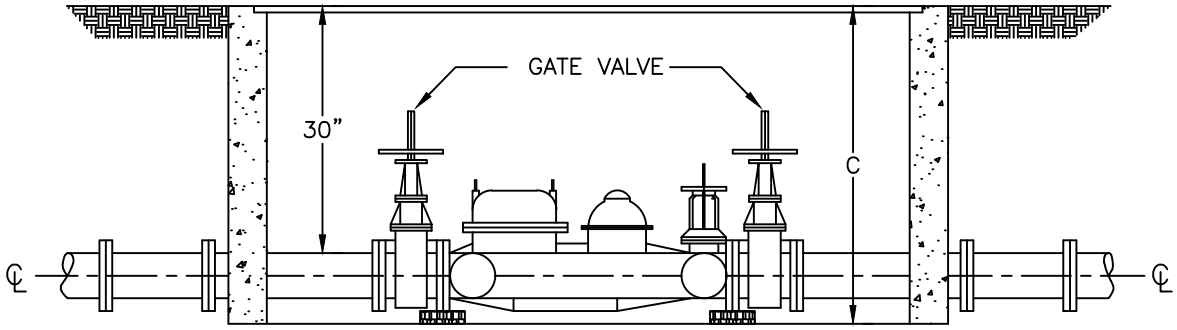
REF. & REV.
~~AUG. 2002~~
DEC. 2020 (A.7)

CITY OF FRESNO

W-41



PLAN VIEW



ELEVATION

	A	B	C
4"& 6"	60"	100"	42"
8"& 10"	80"	132"	42"

MINIMUM METER
BOX/VAULT SIZE

NOTES:

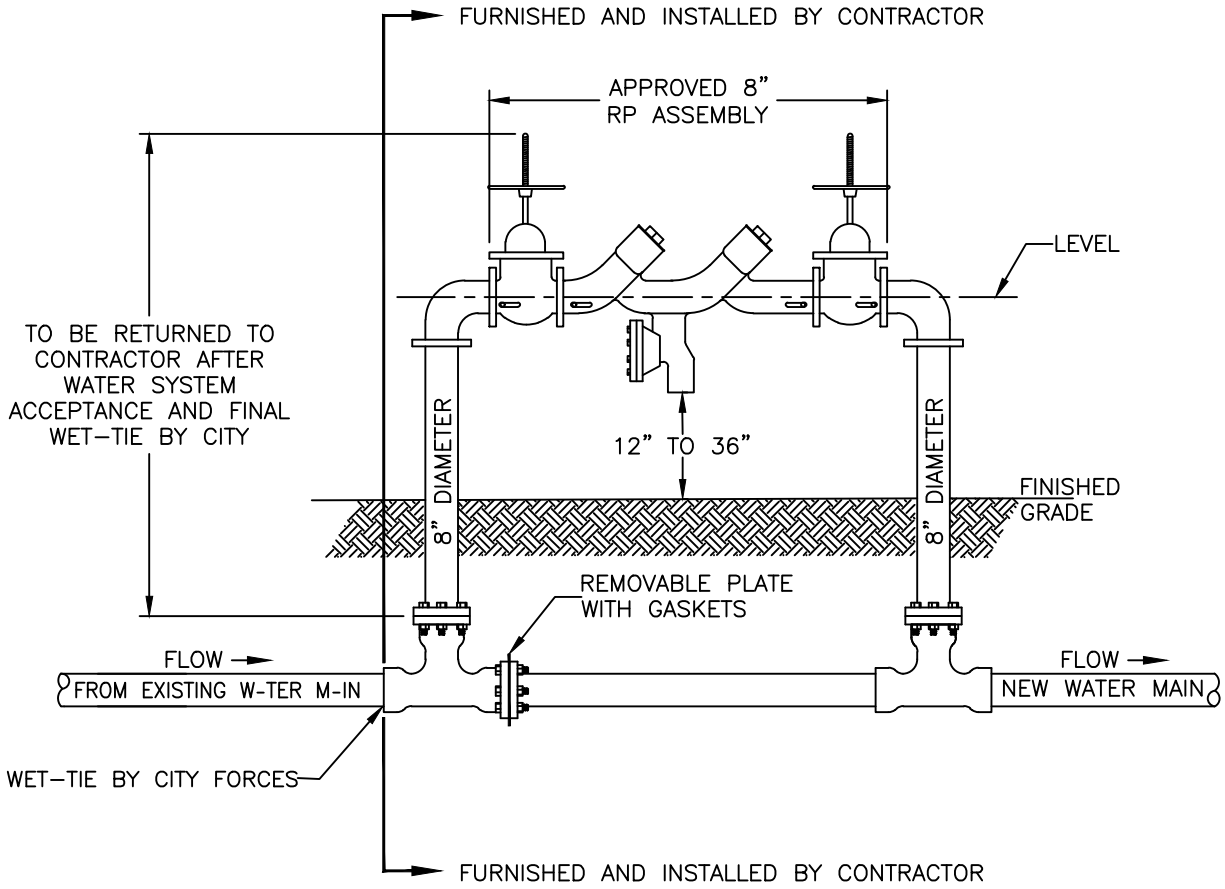
1. BY-PASS MAY BE INSIDE METER BOX OR OUTSIDE METER BOX. IF INSTALLED OUTSIDE METER BOX A CASING AND COVER WILL BE REQUIRED OVER BY-PASS VALVE.
2. 1-1/2 INCH AND 2 INCH BY-PASS VALVES MUST BE BALL VALVES. THREE INCH AND LARGER TO BE RESILIENT SEATING SHUT-OFF VALVES.
3. METERS DEEPER THAN 30 INCHES TO TOP OF PIPE MUST BE RAISED TO 30 INCHES.
4. INLET AND OUTLET VALVES TO BE INSTALLED AT EACH END OF METER.
5. BY-PASS MATERIAL 2 INCHES AND GREATER SHALL BE DUCTILE IRON OR C900 PVC. LESS THAN 2 INCHES SHALL BE COPPER.

COMPOUND FM METER SETTING
WITH BY-PASS

REF. & REV.
~~AUG. 2002~~
DEC. 2020 (A.7)

CITY OF FRESNO

W-42

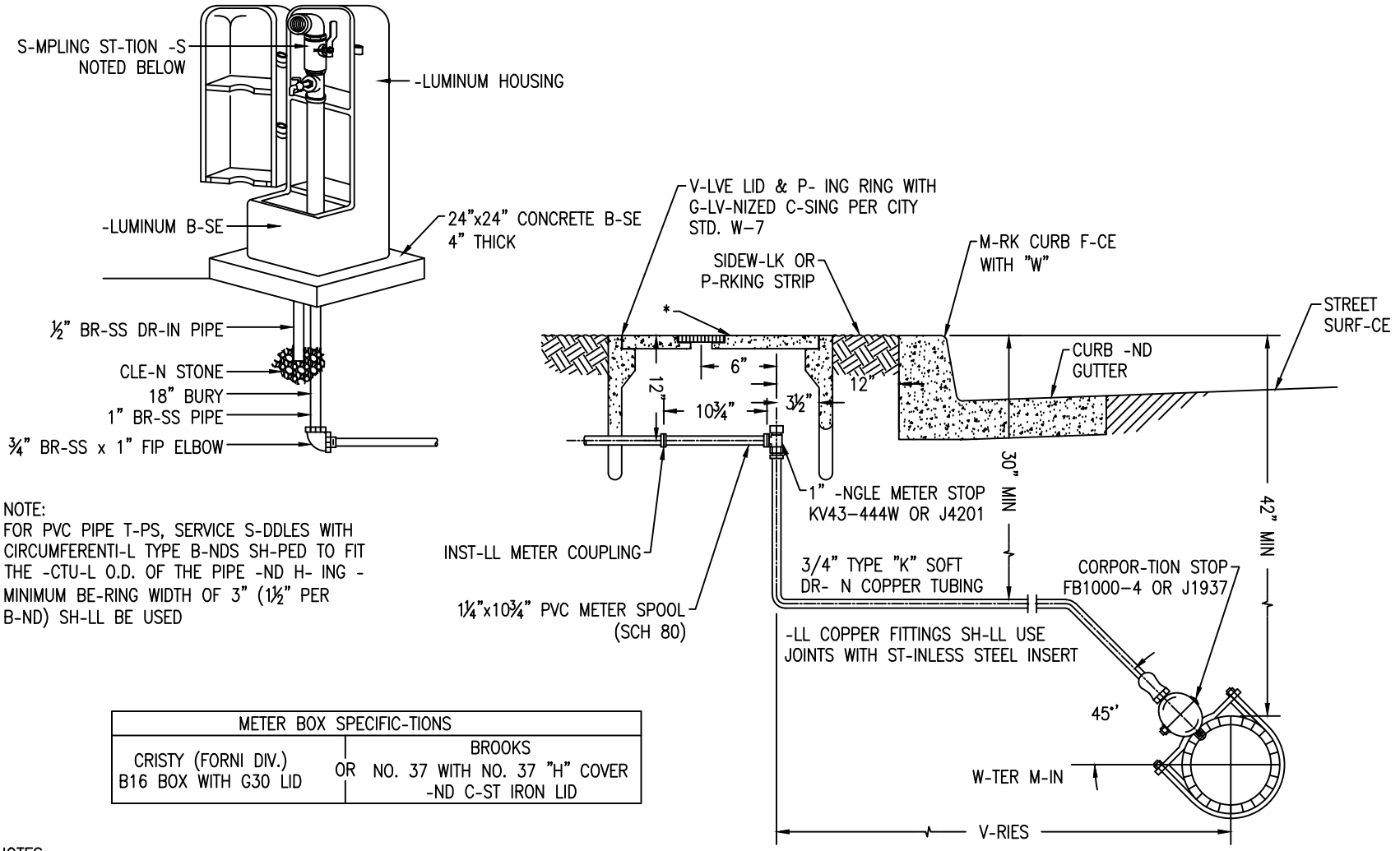


NOTES:

1. VALVES SHALL BE "ULFM INDICATING OS&Y" TYPE.
2. CURRENTLY APPROVED RP DEVICES ARE:
    a. AMES MAXIM 400
    b. WILKINS 3750SY
    c. FEBCO 860
3. RESILIENT SEATED SHUT OFF VALVES AND TEST COCKS ARE REQUIRED.
4. ASSEMBLY MUST BE ACCESSIBLE FOR TESTING AND MAINTENANCE BY FRESNO CITY WATER DIVISION.
5. ANY DEVIATION FROM THESE REQUIREMENTS SHALL BE APPROVED BY THE WATER SYSTEM MANAGER PRIOR TO INSTALLATION.
6. RP DEVICE WITH ASSOCIATED PIPING, VALVES, TEES AND FITTINGS SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.
7. NEW SYSTEM OF MAINS, HYDRANTS AND SERVICES SHALL BE PRESSURE TESTED AND SHALL PASS STANDARD BACTERIAL TESTING PRIOR TO CONNECTION TO EXISTING CITY WATER SYSTEM.
8. WET TIE TO EXISTING SYSTEM WILL BE PERFORMED BY CITY FORCES.
9. AFTER INSTALLATION AND PRIOR TO PLACING IN SERVICE, THE RP DEVICE SHALL BE TESTED BY THE CITY.
10. PRIOR TO FINAL ACCEPTANCE OF THE WATER SYSTEM, A FINAL SET OF PRESSURE TESTS AND BACTERIAL TESTS SHALL BE PERFORMED.
11. UPON PUBLIC WORKS ACCEPTANCE OF THE COMPLETE WATER SYSTEM, CITY FORCES WILL REMOVE THE RP DEVICE AND ASSOCIATED PIPING, VALVES, TEES AND FITTINGS, AND WILL CALL FOR PICKUP BY THE CONTRACTOR.

TEMPORARY RP PRINCIPLE BACKFLOW ASSEMBLY INSTALLATION	REF. & REV. ~~MAR. 2006~~ DEC. 2020 (A.7)	CITY OF FRESNO W–43

SAMPLE STATION INSTALLATION



NOTE:
FOR PVC PIPE T-PS, SERVICE S-DDLES WITH CIRCUMFERENTI-L TYPE B-NDS SH-PED TO FIT THE -CTU-L O.D. OF THE PIPE -ND H- ING - MINIMUM BE-RING WIDTH OF 3" (1½" PER B-ND) SH-LL BE USED

METER BOX SPECIFIC-TIONS		
CRISTY (FORNI DIV.) B16 BOX WITH G30 LID	OR	BROOKS NO. 37 WITH NO. 37 "H" COVER -ND C-ST IRON LID

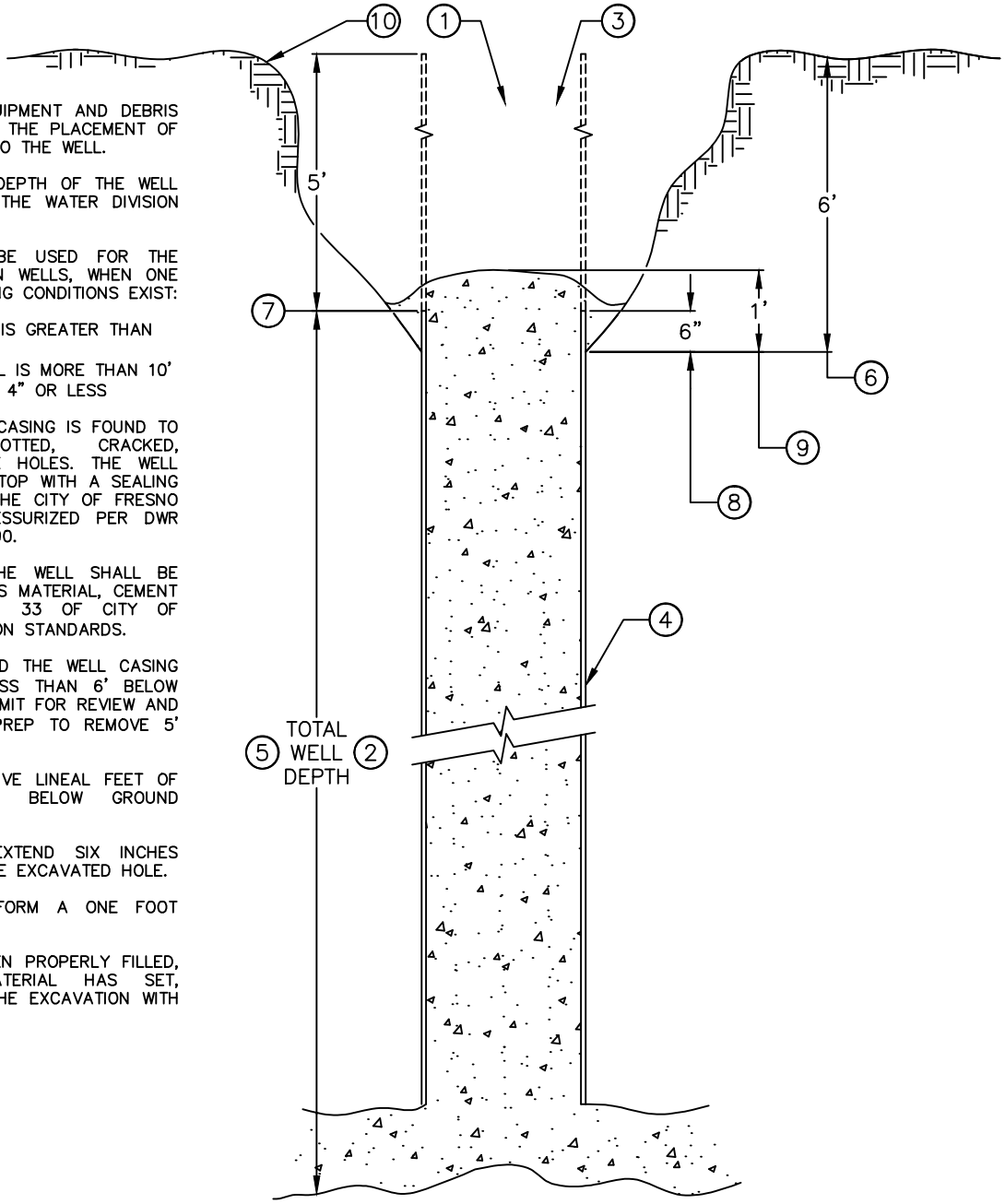
NOTES:
1. S-MPLING ST-TIONS SH-LL BE ECLIPSE 88WC OR S-FETY GU-RD BSS02 OR EQU-L -S -PPROVED BY THE W-TER DIVISION.
2. S-MPLING ST-TIONS SH-LL BE 18" BURY, WITH - 1" FIP DISCH-RGE. - 1/4" BENT-NOSE S-MPLING BIBB SH-LL BE LOC-TED BEFORE THE DISCH-RGE.
3. -LL ST-TIONS SH-LL BE ENCLOSED IN - LOCK-BLE, -LUMINUM-C-ST HOUSING.
4. WHEN OPENED, THE ST-TION SH-LL REQUIRE NO KEY FOR OPER-TION -ND THE W-TER WILL FLOW IN -LL BR-SS W-TERW-Y.
5. -LL WORKING P-RTS SH-LL BE OF BR-SS -ND SERVICE-BLE FROM -BOVE GROUND WITH NO DIGGING. (OPTION-L: IF DESIRED, PROVIDE - DR-IN-GE HOLE WITHIN THE LOCKING COVER TO PREVENT W-TER FROM -CCUMUL-TING INSIDE THE UNIT.)
6. - 1" B-LL V-LVE SH-LL CONTROL THE W-TER FLOW, -ND BE LOC-TED BEFORE (OR -FTER) THE S-MPLING BIBB, -S M-NUF-CTURED BY KUPFERELE FOUNDRY, ST. LOUIS, MO 63102.

REF & REV
~~NOV. 2007~~
~~-06. 2016~~
DEC. 2020 (-.7)

CITY OF FRESNO
W-44

LEGEND:

1. REMOVE ALL PUMPING EQUIPMENT AND DEBRIS FROM THE WELL PRIOR TO THE PLACEMENT OF ANY SEALING MATERIAL INTO THE WELL.
2. A VIDEO OF THE ENTIRE DEPTH OF THE WELL SHALL BE SUBMITTED TO THE WATER DIVISION FOR REVIEW.
3. A TREMIE PIPE SHALL BE USED FOR THE PLACEMENT OF SEALING IN WELLS, WHEN ONE OR MORE OF THE FOLLOWING CONDITIONS EXIST:
   - THE TOTAL WELL DEPTH IS GREATER THAN 30'
   - THE STATIC WATER LEVEL IS MORE THAN 10'
   - THE WELL'S DIAMETER IS 4" OR LESS
4. WHEN THE EXISTING WELL CASING IS FOUND TO BE PERFORATED, SLOTTED, CRACKED, SEPARATED, OR TO HAVE HOLES. THE WELL SHALL BE FILLED TO THE TOP WITH A SEALING MATERIAL APPROVED BY THE CITY OF FRESNO WATER DIVISION AND PRESSURIZED PER DWR BULLETIN 74-81 AND 74-90.
5. THE TOTAL DEPTH OF THE WELL SHALL BE FILLED WITH AN IMPERVIOUS MATERIAL, CEMENT GROUT OR PER SECTION 33 OF CITY OF FRESNO'S WELL DESTRUCTION STANDARDS.
6. EXCAVATE A HOLE AROUND THE WELL CASING TO A DEPTH OF NOT LESS THAN 6' BELOW GROUND SURFACE, OR SUBMIT FOR REVIEW AND APPROVAL METHODS OF PREP TO REMOVE 5' OF WELL CASING.
7. REMOVE A MINIMUM OF FIVE LINEAL FEET OF EXISTING WELL CASING, BELOW GROUND SURFACE.
8. REMAINING CASING TO EXTEND SIX INCHES ABOVE THE BOTTOM OF THE EXCAVATED HOLE.
9. ALLOW SPILL OVER TO FORM A ONE FOOT THICK CAP.
10. AFTER THE WELL HAS BEEN PROPERLY FILLED, AND THE SEALING MATERIAL HAS SET, BACKFILL AND COMPACT THE EXCAVATION WITH NATIVE SOIL.



NOTES:

A. THE DESTRUCTION OF ALL WATER WELLS WITHIN THE JURISDICTION OF THE CITY OF FRESNO SHALL CONFORM TO THE STATE OF CALIFORNIA DEPARTMENT OF WATER RESOURCES STANDARDS: BULLETINS 74-81 & 74-90, AND AS DIRECTED BY THE CITY OF FRESNO WATER DIVISION.

B. AUTHORIZATION FROM THE CAL EPA DEPARTMENT OF TOXIC SUBSTANCES CONTROL (DTSC) OR CALIFORNIA DEPARTMENT OF WATER RESOURCES (DWR) IS REQUIRED TO DESTROY DECOMMISSIONED MONITORING WELLS, SUBMIT A COPY OF THE AUTHORIZATION DOCUMENTATION WITH WELL DESTRUCTION PERMIT APPLICATION.

C. THERE ARE THREE TYPES OF SEALING GROUT MIXTURES USED IN DESTROYING WELLS WITHIN THE CITY OF FRESNO (SEE TABLE FOR BATCH SPECIFICATIONS)

BATCH TABLE

			water	cement	sand	bentonite
			gal	sack lbs	lbs	lbs
1	CEMENT AND SAND GROUT	=	6	94	188	n/a
2	NEAT CEMENT GROUT	=	6	94	n/a	n/a

D. BEFORE WELL DESTRUCTION OPERATIONS BEGIN, A COMPLETE WELL PERMIT APPLICATION PACKAGE FOR DESTRUCTION INCLUDING THE FOLLOWING CALCULATIONS ARE TO BE SUBMITTED FOR APPROVAL:

- A MIX DESIGN OF THE SEALING MATERIAL PREPARED BY THE GROUT SUPPLIER.
- A MIX DESIGN OF THE SEALING MATERIAL PREPARED BY THE PROJECT ENGINEER, OUTLINING FIELD MIXING PROCESS.
- A VOLUME CALCULATION OF THE SEALING MATERIAL, PREPARED BY THE PROJECT ENGINEER.
- A VOLUME CALCULATION FOR THE WELL PREPARED BY A PROJECT ENGINEER SHOWING THE FOLLOWING:

a. VOLUME OF THE WELL CASING & VOLUME OF THE FILTER PACK TO BE FILLED (FOR GRAVEL PACKED WELLS)

b. VOLUME OF THE WELL (FOR OPEN BOTTOM WELLS)

E. ONLY COMPLETE PERMIT APPLICATION PACKAGES WILL BE PROCESSED

F. ONLY CALIFORNIA C57 LICENSED CONTRACTORS ARE AUTHORIZED TO DESTROY ANY WELLS WITHIN THE CITY OF FRESNO.

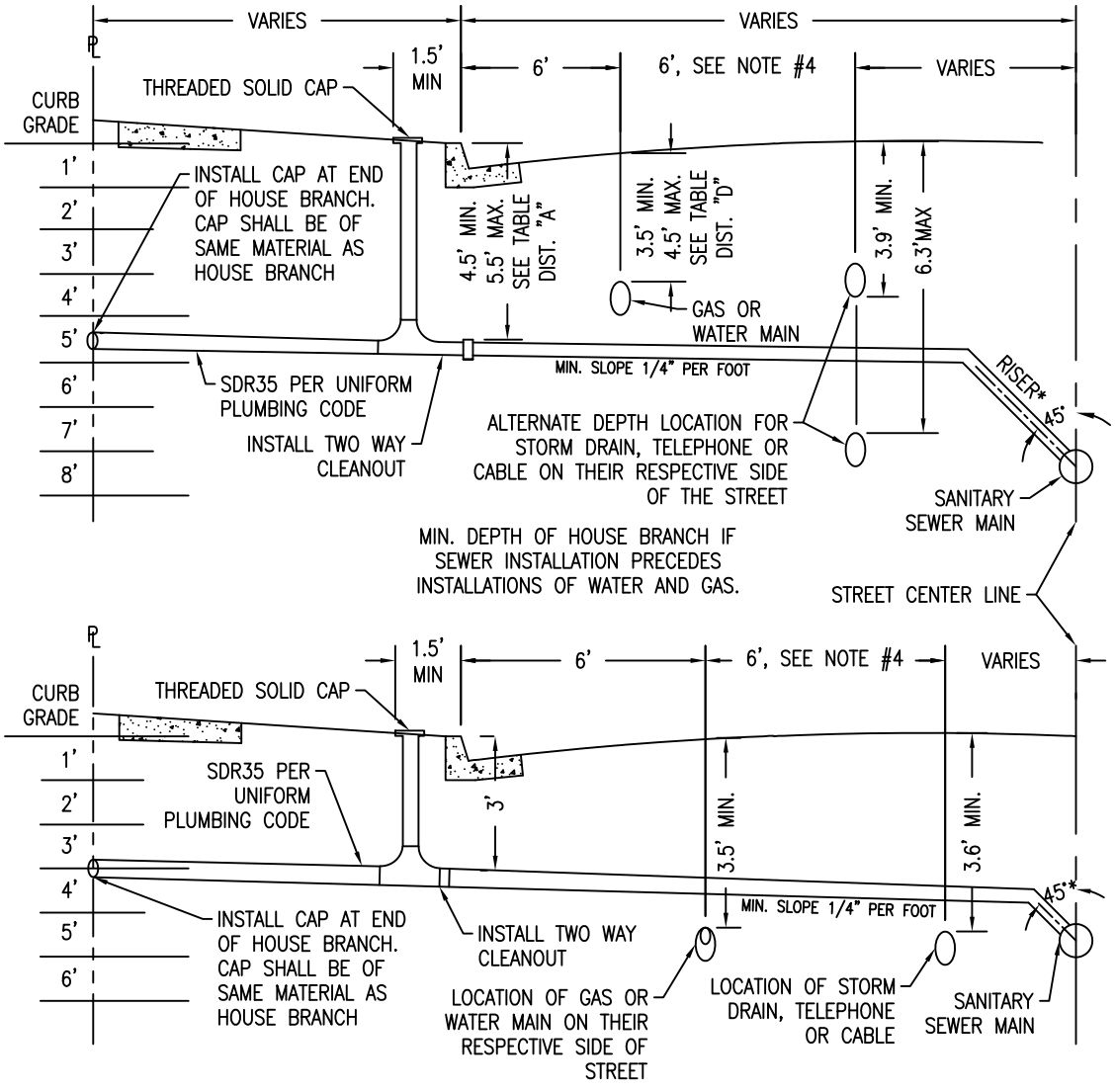
CITY OF FRESNO – WATER DIVISION

WELL DESTRUCTION REQUIREMENTS

REF. & REV.
~~AUG. 1992~~
NOV. ~~2006~~
~~SEPT. 2009~~
DEC. 2020 (A.7)

CITY OF FRESNO

W – 45



MIN. DEPTH OF WATER OR GAS MAINS IF INSTALLATION OF WATER OR GAS MAINS PRECEDES INSTALLATION OF SEWERS ONLY IF APPROVED BY THE ENGINEER.

NOTES:

1. WATER MAINS AND TELEPHONE DUCTS SHALL OCCUPY ONE SIDE OF STREET, GAS MAINS AND STORM SEWERS TO OCCUPY OTHER SIDE.
2. IN NEW SUBDIVISIONS EXTEND HOUSE BRANCHES ABOUT 1.0' BEYOND PROPERTY LINE.
3. IN ALL OTHER CASES, EXTEND HOUSE BRANCHES ABOUT 1.0' BEYOND PROPERTY LINE OR AS DIRECTED BY CITY ENGINEER.
4. REFER TO DWG. P-47 FOR LOCATION OF UNDERGROUND FACILITIES IN ARTERIAL AND COLLECTOR STREETS.
5. MINIMUM VERTICAL CLEARANCE BETWEEN THE HOUSE BRANCH AND WATER MAIN SHALL BE 1.0'.
6. FOR TRENCH BACKFILL SEE DWG's P-48, S-10, W-29 AND SECTION 17-5 OF CITY STANDARD SPECIFICATIONS.
7. SEWER WYE's MUST JOIN THE SEWER MAIN WITH FLOW IN THE SAME DIRECTION.

DEPTH SCHEDULE		
DISTANCE	"A"	"D"
6" WATER OR GAS MAIN	4.5'	3.5'
8" WATER OR GAS MAIN	4.8'	3.8'
10" WATER OR GAS MAIN	5.2'	4.2'
12" WATER OR GAS MAIN	5.5'	4.5'

"A" & "D" DIMENSIONS ARE SET TO ALLOW 1.0' CLEARANCE BETWEEN SEWER AND GAS OR WATER LINES.

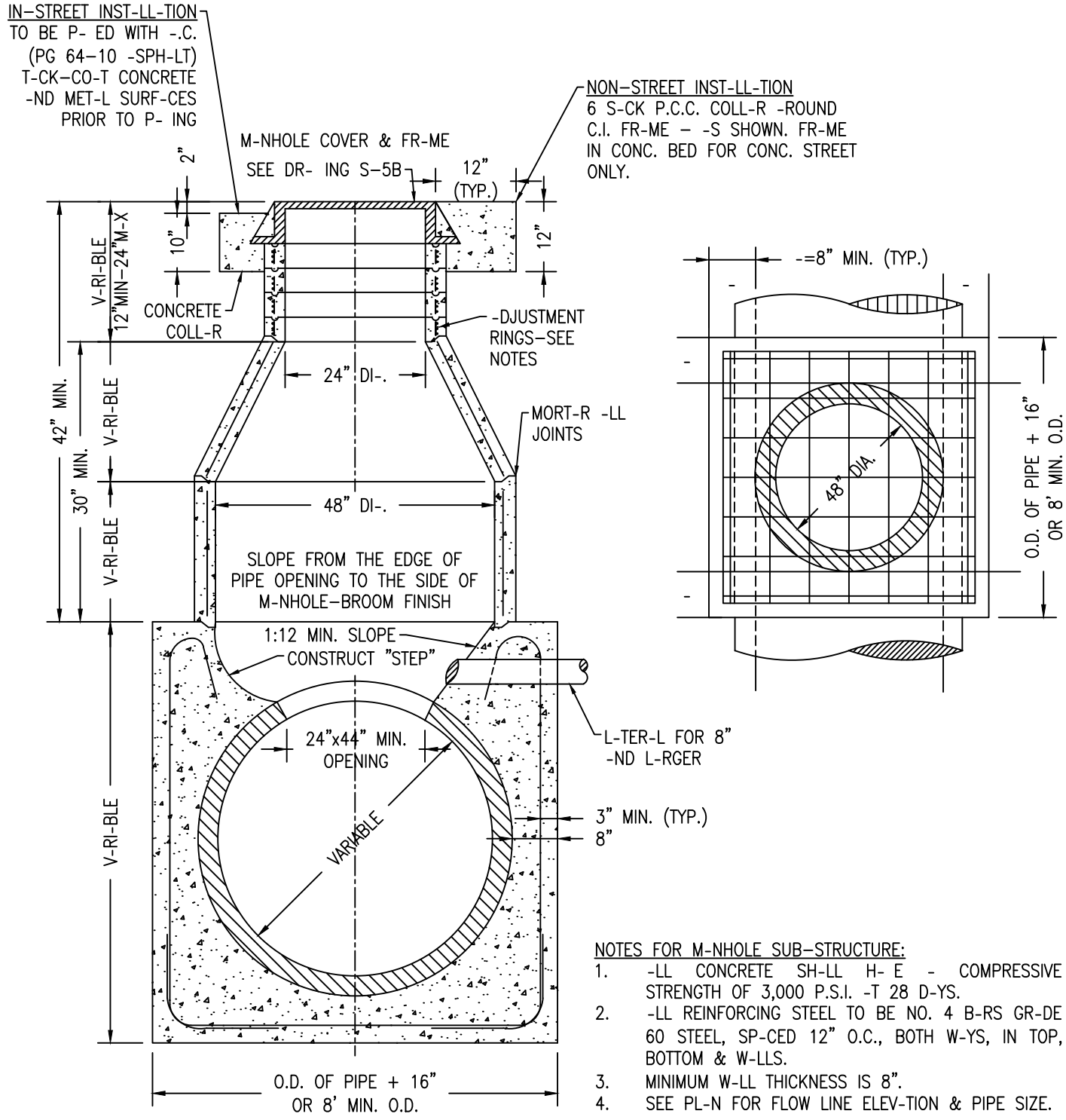
* SPECIAL APPROVAL REQUIRED FOR DEVIATION FROM 45° STANDARD ANGLE.

HOUSE BRANCH & UTILITIES LOCATIONS IN STREETS

REF. & REV.
~~JUNE 2014~~
DEC. 2020 (A.7)

CITY OF FRESNO

S-1



NOTES FOR M-NHOLE SUB-STRUCTURE:

1. -LL CONCRETE SH-LL H- E - COMPRESSIVE STRENGTH OF 3,000 P.S.I. -T 28 D-YS.
2. -LL REINFORCING STEEL TO BE NO. 4 B-RS GR-DE 60 STEEL, SP-CED 12" O.C., BOTH W-YS, IN TOP, BOTTOM & W-LLS.
3. MINIMUM W-LL THICKNESS IS 8".
4. SEE PL-N FOR FLOW LINE ELEV-TION & PIPE SIZE.

GENER-L NOTES:

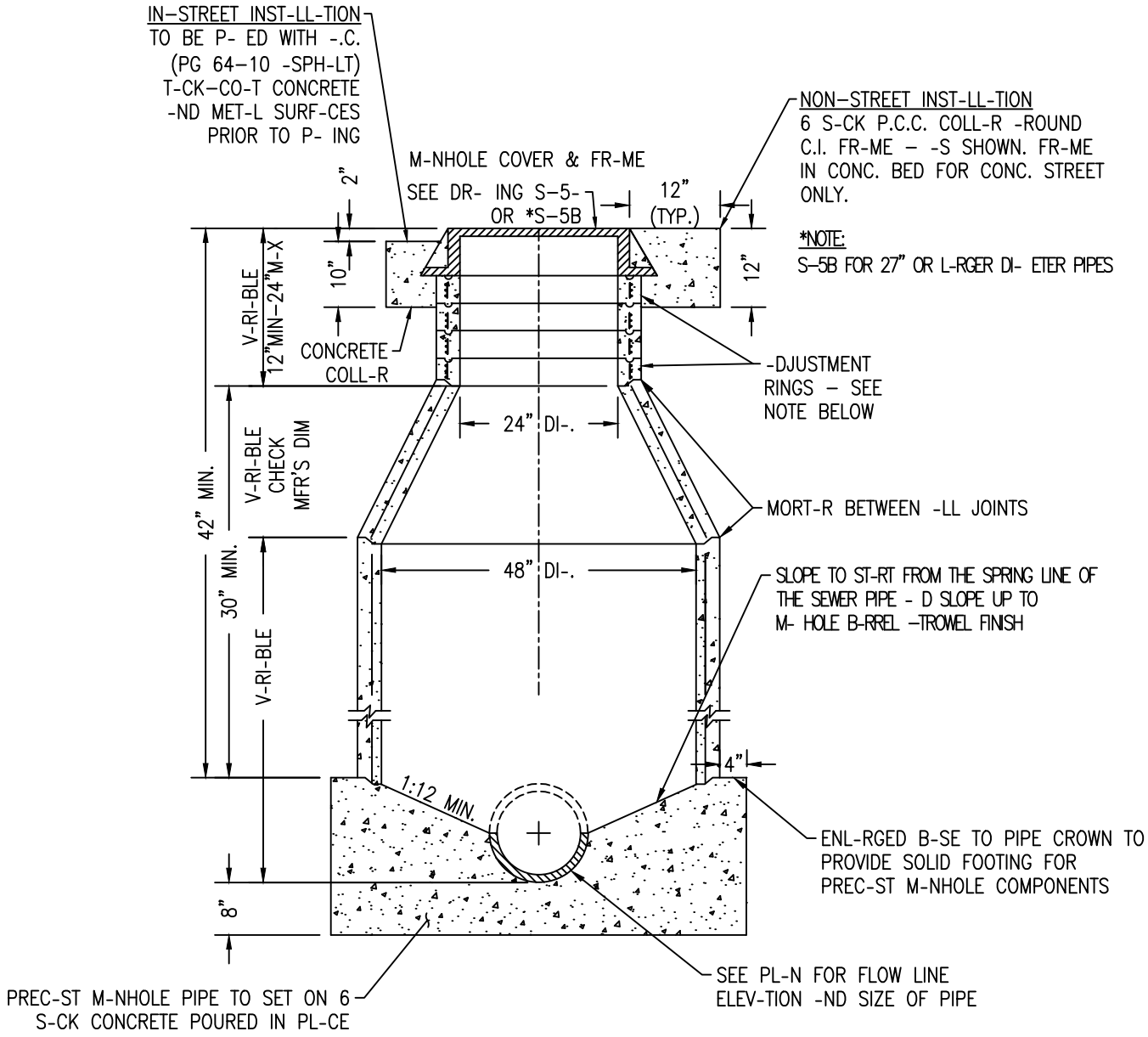
1. PREC-ST PIPE, -DJUSTMENT RINGS & T-PERED SECTIONS SH-LL BE CL-SS 2 R.C.P. IN -CCORD-NCE WITH -STM C-478, ELLIPTIC-L SINGLE LINE REINFORCEMENT WILL NOT BE PERMITTED.
2. M-NHOLE SH-LL BE LINED WITH T-LOCK OR CO-TED WITH ONE OF THE FOLLOWING: R- EN 400 OR R- EN 405, PRODUCTS OF RLS SOLUTIONS; NEOPOXY 5304 OR 5305, PRODUCTS OF NEOPOXY INTERN-TION-L; OR QU-DEX STRUCTURE GU-RD, -PRODUCT OF QU-DEX. -PPROVED PRODUCTS SH-LL BE -PPLIED PER M-NUF-CTURER'S SPECS. NO SUBSTITUTIONS -RE -CCEPT-BLE.
3. THIS ST-ND-RD DR- ING SH-LL BE USED FOR SEWER PIPES WITH DI-METERS GRE-TER TH-N 42" OR IN SITU-TIONS WHERE THE M-NHOLE SUB-STRUCTURE IS REQUIRED -S DIRECTED BY THE CITY ENGINEER.
4. DESIGN FLOW CONFIGUR-TION SEE DR- ING S-12.

SPECIAL SEWER MANHOLE FOR SEWER PIPES WITH DIAMETER GREATER THAN 42'

REF. & REV.
~~-UG. 2015~~
DEC. 2020 (-.7)

CITY OF FRESNO

S-2



MANHOLE DETAILS

NOTES:

1. PREC-ST RISER SECTIONS, -DJUSTMENT RINGS & T-PERED SECTIONS SH-LL BE CL-SS 2 R.C.P. IN -CCORD-NCE WITH -STM C-478. ELLIPTIC-L SINGLE LINE REINFORCEMENT WILL NOT BE PERMITTED.
2. THIS ST-ND-RD DR- ING SH-LL BE USED FOR SEWER PIPES WITH DI-METERS OF UP TO -ND INCLUDING 27".
3. DESIGN FLOW CONFIGUR-TION SEE DR- ING S-12.
4. M-NHOLES ON SEWER LINES EQU-L TO OR GRE-TER TH-N 12", OR ON -NY SIZE SEWER WITHIN 600' OF - 30" OR L-RGER SEWER LINE SH-LL BE LINED WITH T-LOCK OR CO-TED WITH ONE OF THE FOLLOWING: R- EN 400, 405 OR 405FS, PRODUCTS OF RLS SOLUTIONS; NEOPOXY 5304 OR 5305, PRODUCTS OF NEOPOXY INTERN-TION-L; OR QU-DEX STRUCTURE GU-RD, - PRODUCT OF QU-DEX. -PPROVED PRODUCTS SH-LL BE -PPLIED PER M-NUF-CTURER'S SPECS. NO SUBSTITUTIONS -RE -CCEPT-BLE.
5. FOR SEWER LINES 12" TO 18", -ND NOT WITHIN 600' OF - 30" OR L-RGER SEWER M-IN, M-Y USE SEWPERCO-T OR -PPROVED EQU-L.

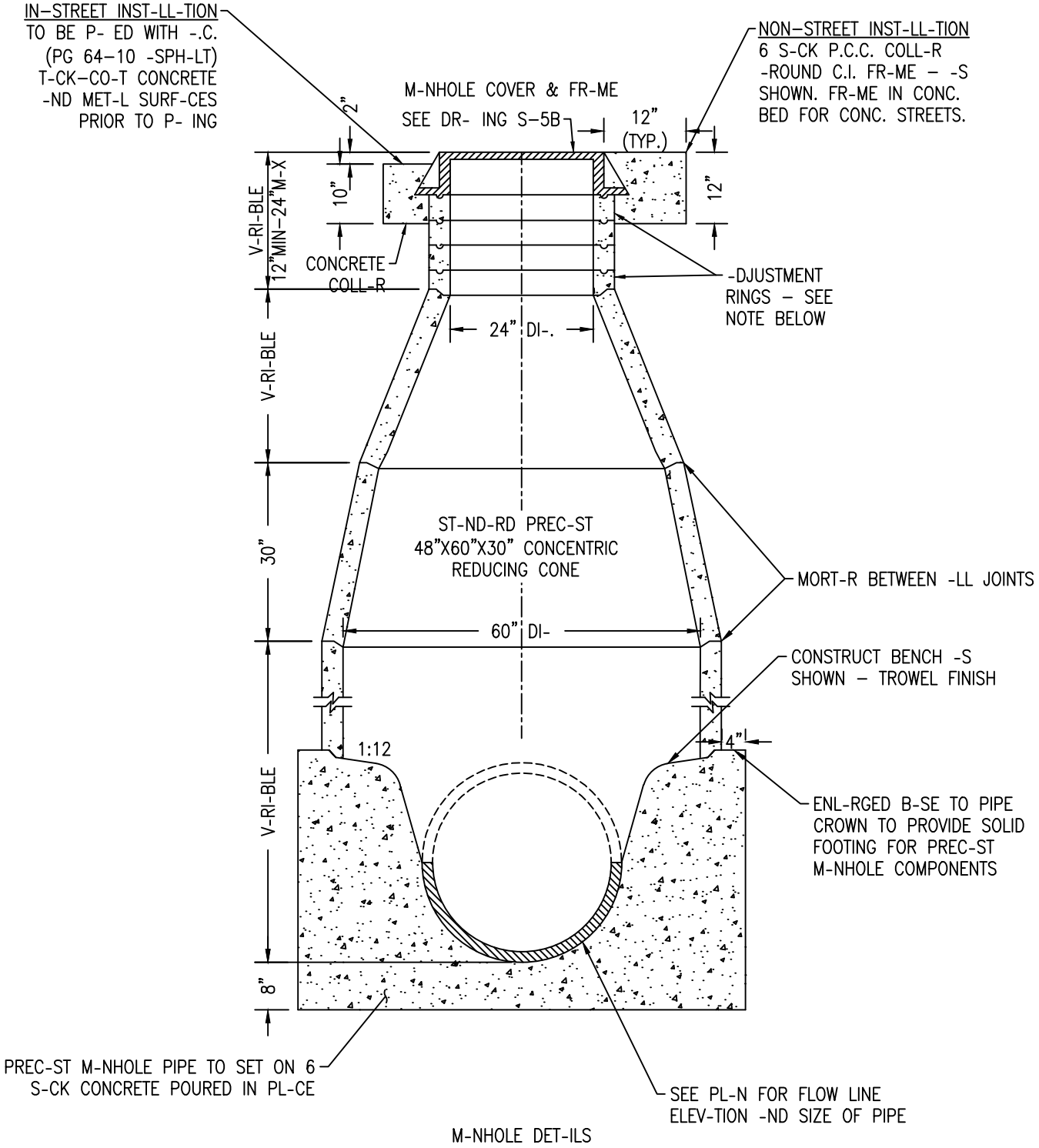
48" SEWER MANHOLE

SEWER PIPES W/DIA. UP TO AND INCLUDING 27" WITH PRECAST SECTIONS AND CAST IRON FRAME AND COVER

REF. & REV.
~~-UG. 2015~~
DEC. 2020 (-.7)

CITY OF FRESNO

S-3



M-NHOLE DET-ILS

NOTES:

1. PREC-ST RISER SECTIONS, -DJUSTMENT RINGS & T-PERED SECTIONS SH-LL BE CL-SS 2 R.C.P. IN -CCORD-NCE WITH -STM C–478. ELLIPTIC-L SINGLE LINE REINFORCEMENT WILL NOT BE PERMITTED.
2. THIS ST-ND-RD DR- ING SH-LL BE USED FOR SEWER PIPES WITH DI-METERS OF 30" THROUGH 42".
3. M-NHOLE SH-LL BE LINED WITH T–LOCK OR CO-TED WITH ONE OF THE FOLLOWING: R- EN 400 OR 405, PRODUCTS OF RLS SOLUTIONS; NEOPOXY 5304 OR 5305, PRODUCTS OF NEOPOXY INTERN-TION-L; OR QU-DEX STRUCTURE GU-RD, - PRODUCT OF QU-DEX. -PPROVED PRODUCTS SH-LL BE -PPLIED PER M-NUF-CTURER'S SPECS. NO SUBSTITUTIONS -RE -CCEPT-BLE.
4. WHEN PIPE IS CUT, -LL EXPOSED REINFORCING STEEL TO BE CO-TED WITH 2" OF CONCRETE.
5. DESIGN FLOW CONFIGUR-TION SEE DR- ING S–12.

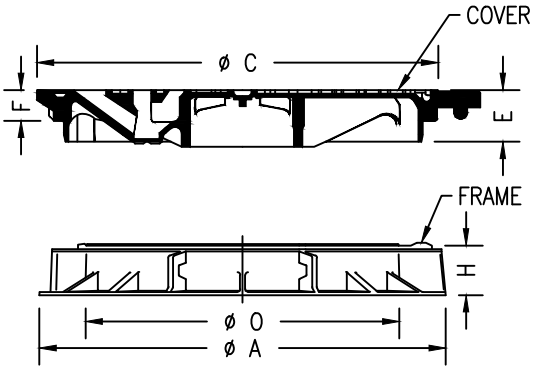
60" SEWER MANHOLE

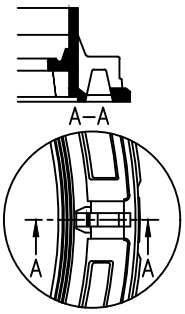
SEWER PIPES W/DIA. OF 30" THRU AND INCLUDING 42"
WITH PRECAST SECTIONS AND
CAST IRON FRAME AND COVER

REF. & REV.
~~-UG. 2015~~
DEC. 2020 (-.7)

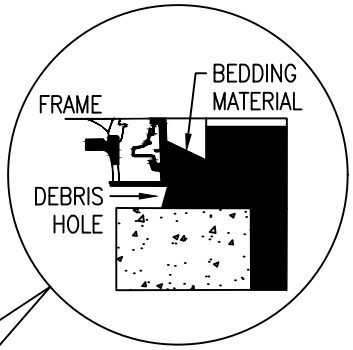
CITY OF FRESNO

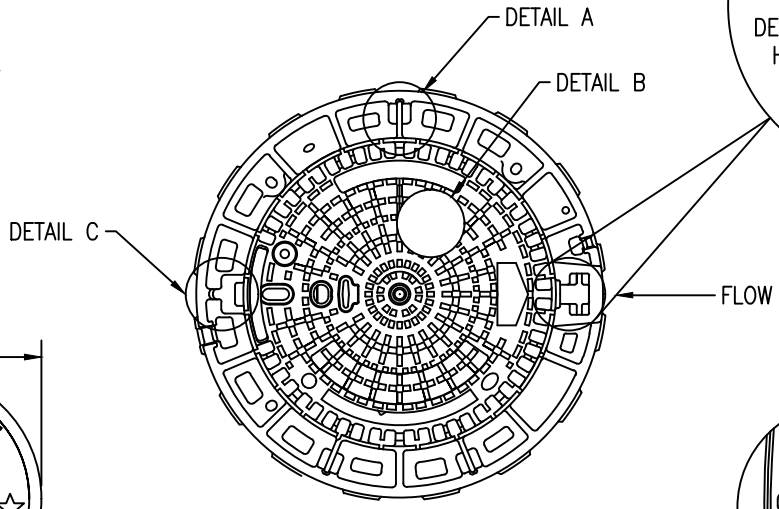
S–4

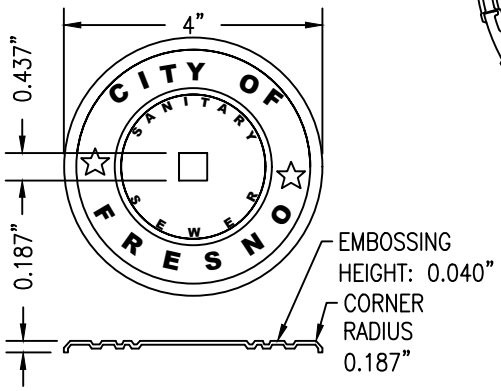




DETAIL A
LIFTING HOLES

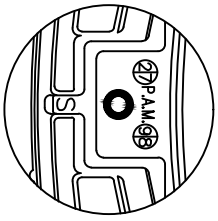




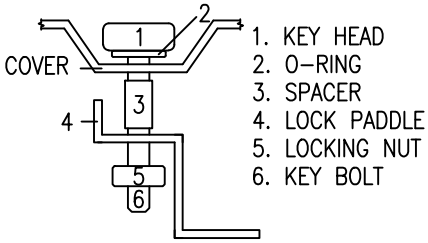


DETAIL B

DIMENSIONS (INCHES)					
A	C	E	F	H	O
33½	26½	3½	2	4	24



DETAIL C



LOCKING MECHANISM

NOTES:

1. MANHOLE COVER AND FRAME SHALL BE PAMREX OR APPROVED EQUAL.
2. FRAME AND COVER SHALL BE MANUFACTURED FROM DUCTILE IRON.
3. COVERS SHALL BE HINGED AND INCORPORATE A 90° BLOCKING SYSTEM TO PREVENT ACCIDENTAL CLOSURE.
4. COVERS SHALL BE ONE MAN OPERABLE USING STANDARD TOOLS AND SHALL BE CAPABLE OF WITHSTANDING A TEST LOAD OF 120,000 LBS.
5. FRAMES SHALL BE CIRCULAR, INCORPORATE A SEATING RING AND A FITTED PLUG IN THE HINGE HOUSING, AND BE AVAILABLE WITH A 24–INCH CLEAR OPENING.
6. THE FRAME DEPTH SHALL NOT EXCEED 4 INCHES, AND THE FLANGE SHALL INCORPORATE BEDDING SLOTS, BOLT HOLES, AND LIFTING EYES.
7. ALL COMPONENTS SHALL BE BLACK BITUMINOUS PAINT COATED IN ACCORDANCE WITH ISO 2531.
   FRAME WEIGHT: 73 LBS.
   COVER WEIGHT: 122 LBS.
   TOTAL WEIGHT: 195 LBS.
8. HINGE SHOULD BE PLACED 90° TO THE ROAD TOWARD THE UPSTREAM FLOW OF THE DOMINATE LINE.

LOCK INSTALLATION INSTRUCTIONS:

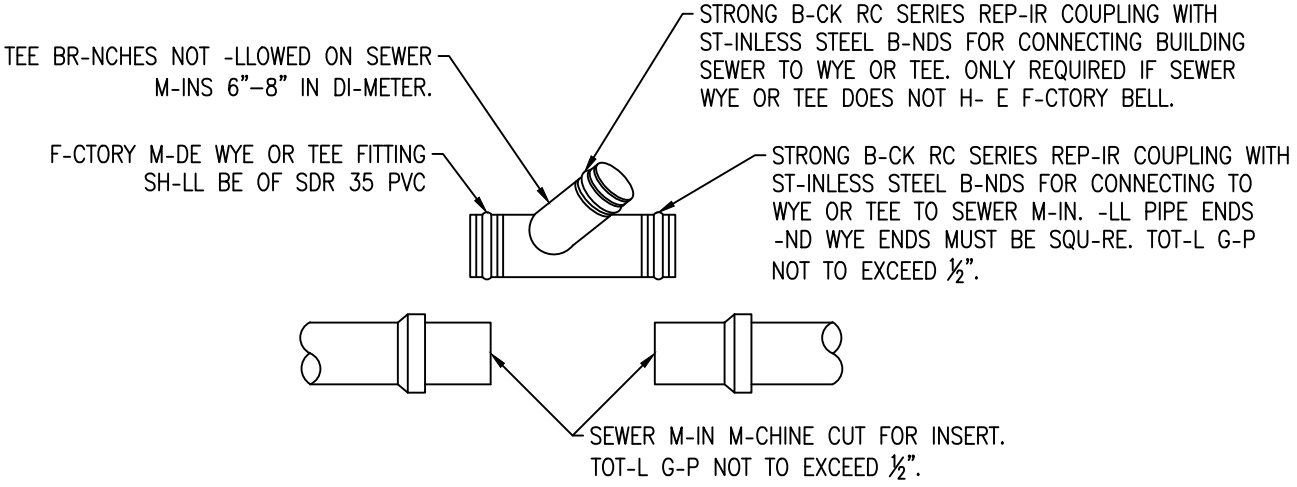
1. DRILL HOLE IN THE COVER AT THE LOCK PUNCH OUT.
2. INSERT KEY BOLT (6) WITH ONLY THE KEY HEAD (1) AND O–RING (2) SHOWING ON THE TOP SIDE OF THE COVER.
3. ON THE BOTTOM SIDE OF THE COVER, INSTALL SPACER (3), LOCK PADDLE (4), AND LOCK NUT (5) IN THE ORDER SHOWN ABOVE.
4. TIGHTEN LOCK NUT (5) UNTIL THERE IS NO SPACE BETWEEN LOCKING NUT, LOCK PADDLE, AND SPACER.
5. WHEN INSTALLING THE COVER, ENSURE THAT THERE IS ADEQUATE CLEARANCE BENEATH THE FRAME FOR THE LOCK TO FULLY ENGAGE, TURNING TO A 90° ANGLE IN RELATION TO THE FRAME.

PAMREX DUCTILE IRON FRAME AND COVER FOR SEWER PIPE 27" OR LARGER

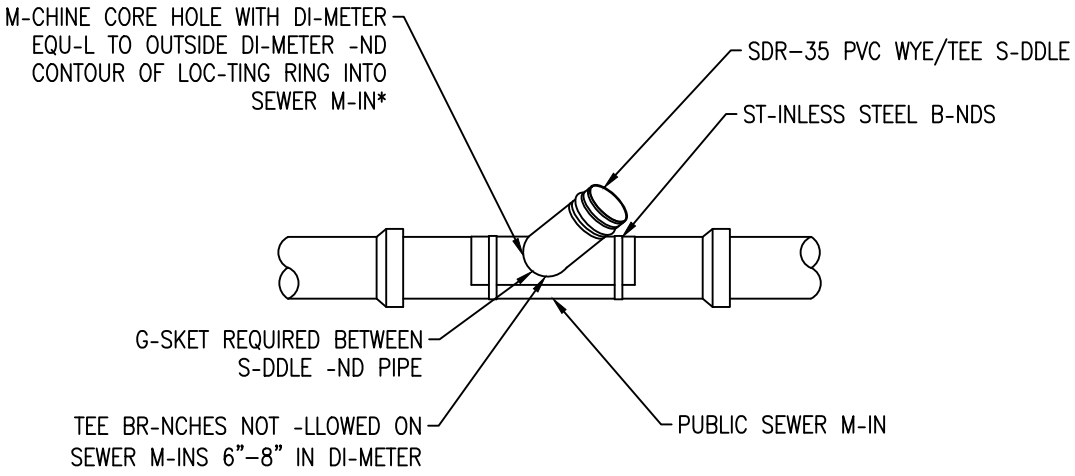
REF. & REV.
~~AUG. 2015~~
DEC. 2020 (A.7)

CITY OF FRESNO

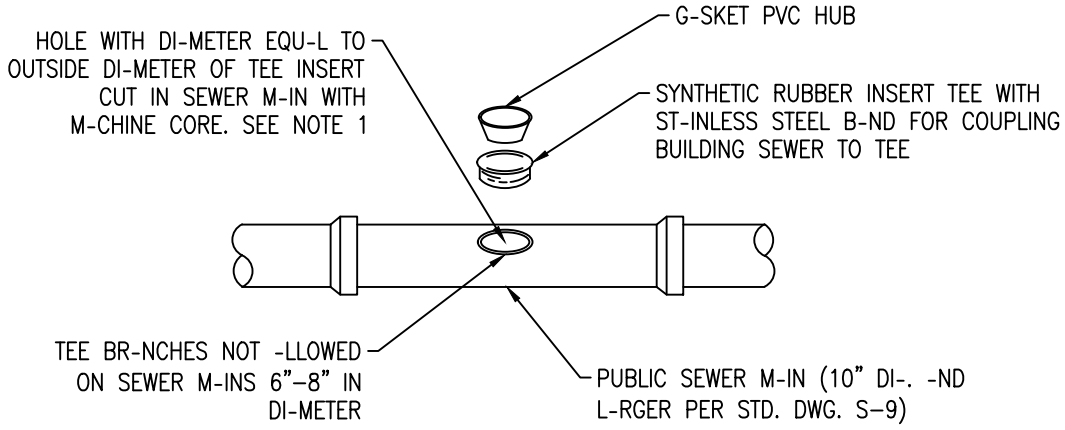
S–5B



METHOD 1: INSERTION OF FACTORY MADE WYE OR TEE



METHOD 2: SADDLE WYE OR TEE



METHOD 3: COMPRESSION TEE

NOTES:

1. IF M-CHINE CORE IS NOT CLE-N CUT (WITHOUT D-M-GE TO THE HOST PIPE) MUST USE METHOD 1 TO INST-LL HOUSE BR-NCH

HOUSE BRANCH CONNECTIONS	REF. & REV. ~~-UG. 2015~~ DEC. 2020 (-.7)	CITY OF FRESNO S–8

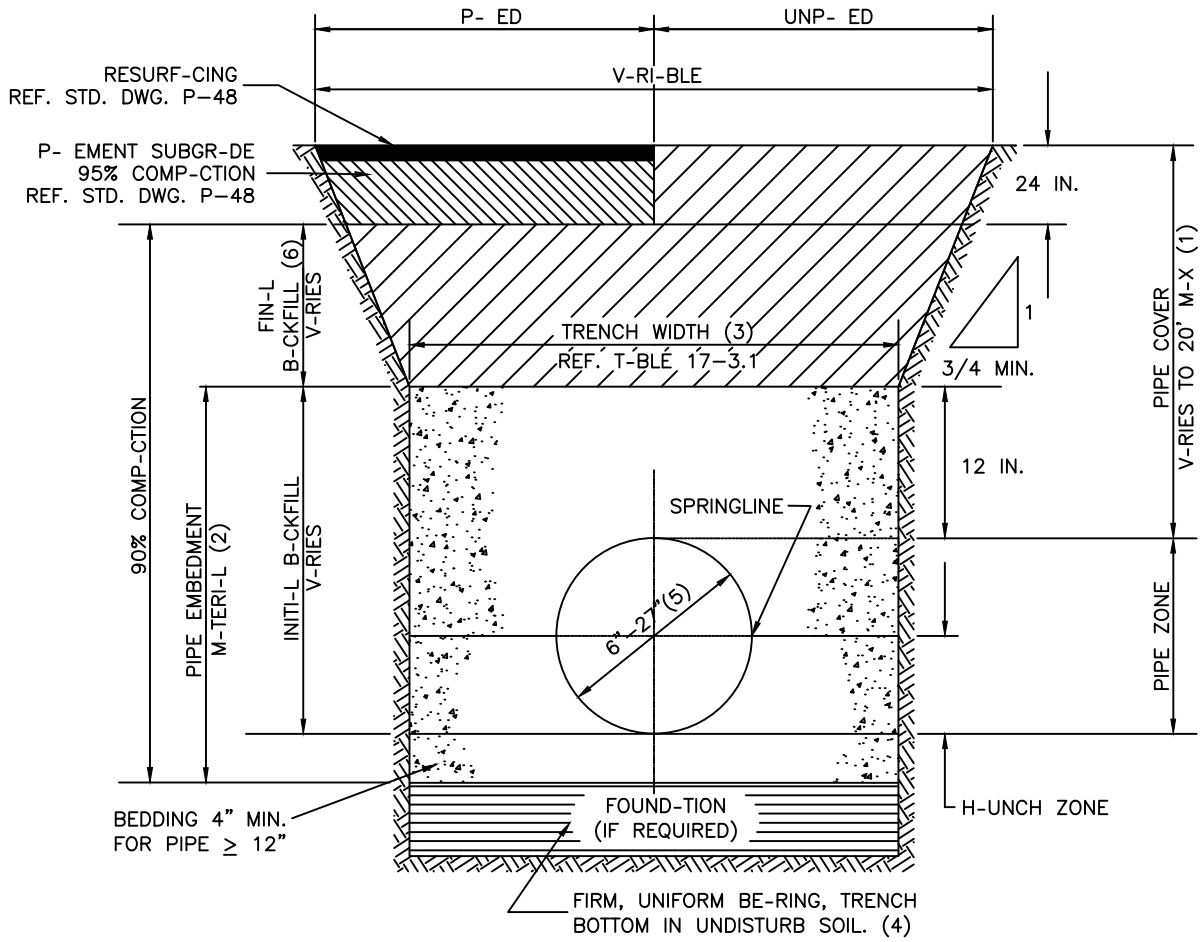
HOUSE BRANCH SIZE–APPROVED CONNECTION METHOD (METHODS SHOWN ON S–8)

H.B. SIZE	SEWER MAIN SIZE 6"	8"	10"	12"	15"
4"	MTHD. 1,2	MTHD. 1,2	MTHD. 1,2,3	MTHD. 1,2,3	MTHD. 1,2,3
6"	MTHD. 1	MTHD. 1	MTHD. 1,2,3	MTHD. 1,2,3	MTHD. 1,2,3

NOTES:

1. -LL WYES -ND TEES SH-LL BE OF S-ME M-TERI-LS -S TH-T OF THE SEWER M-IN OR -PPROVED EQU-L.
2. 8 INCH DI-METER -ND L-RGER HOUSE BR-NCHES REQUIRE - M-NHOLE -T POINT OF CONNECTION.
3. HOUSE BR-NCH CONNECTIONS WITH -N -PPROVED S-DDLE TO EXISTING SEWER M-INS INST-LLED BY -NY OTHER METHOD TH-N - M-CHINE CORE SH-LL NOT BE -LLOWED.
4. S-DDLES SH-LL BE OF S-ME M-TERI-L -S SEWER M-IN OR -PPROVED EQU-L -ND SH-LL NOT EXTEND BEYOND 1/4" INTO THE M-IN SEWER.
5. SEWER HOUSE BR-NCHES SH-LL BE INST-LLED IN CONFORM-NCE WITH DR- ING S–1 OF THE CITY ST-ND-RD SPECIFIC-TIONS -ND THE UNIFORM PLUMBING CODE.
6. -LL NEW HOUSE BR-NCHES -ND SERVICE L-TER-LS MUST BE INST-LLED GRE-TER TH-N 5'–0" FROM OUTSIDE EDGE OF M-NHOLE -ND MUST BE BETWEEN TWO -CCESS STRUCTURES (I.E. M-NHOLE, L-MPHOLE)

ADDITIONAL LIMITATIONS ON HOUSE BRANCH CONNECTIONS	REF. & REV. ~~-UG. 2015~~ DEC. 2020 (-.7)	CITY OF FRESNO S–9

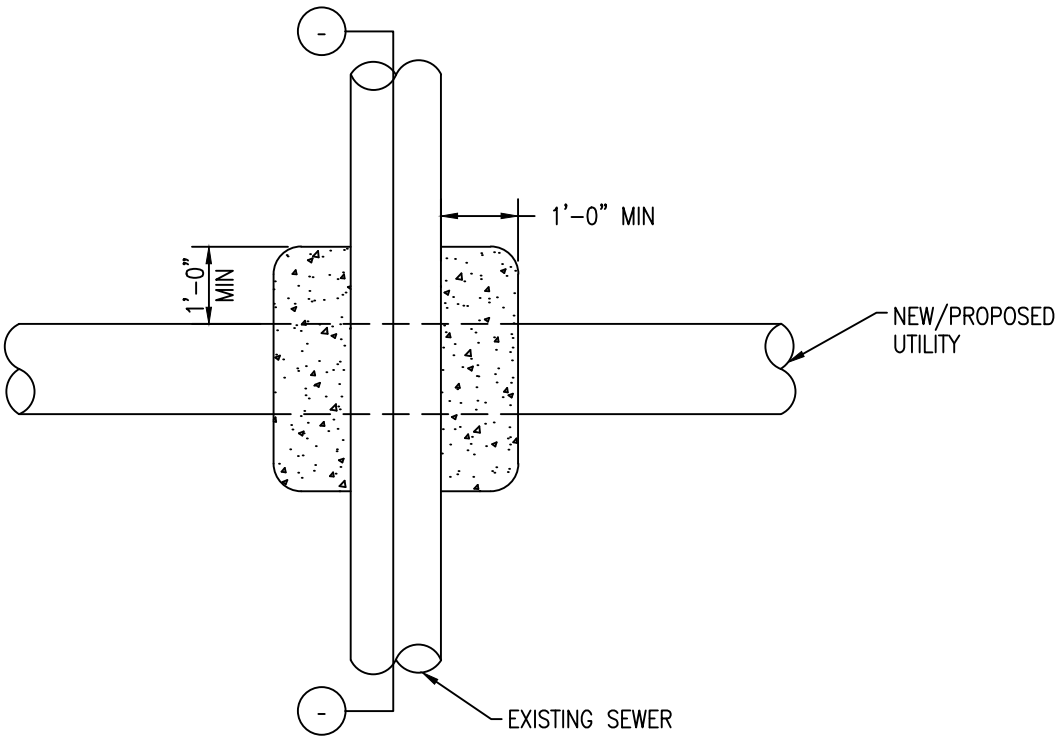


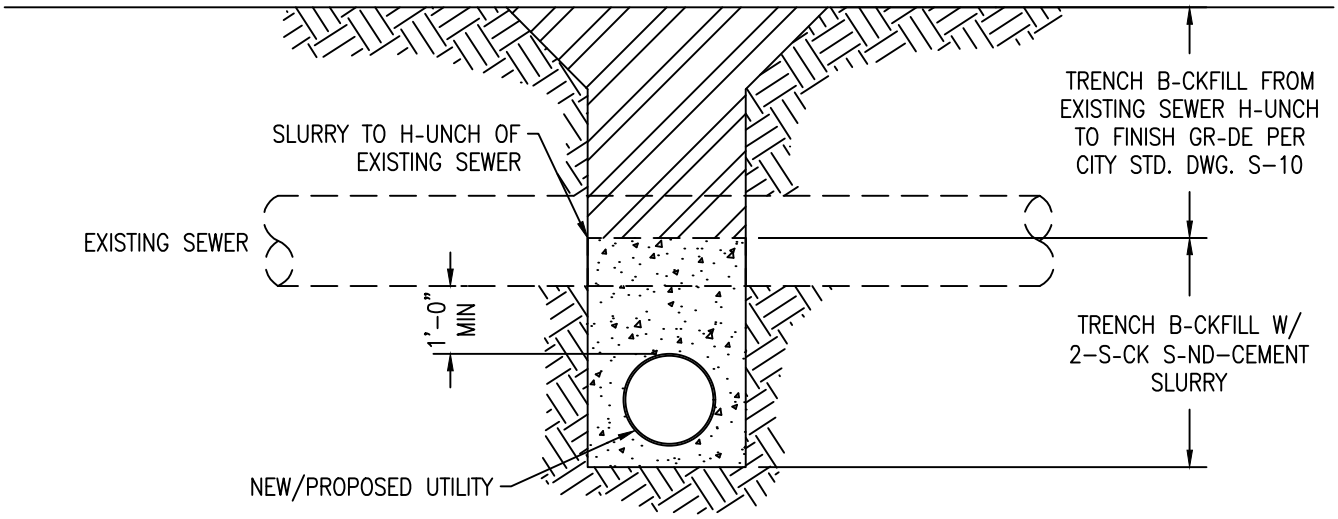
NOTES

1. PIPE INST-LL-TIONS WHERE COVER OVER PIPE EXCEEDS 20' SH-LL BE DESIGNED BY - CIVIL ENGINEER -ND SPECIFIED IN THE PROJECT PL-NS -ND SPECI-L PROVISIONS.
2. PIPE EMBEDMENT M-TERI-L SH-LL CONSIST OF CL-SS II OR CL-SS III SELECT N-TUR-L M-TERI-L OR PROCESSED PRODUCT -S DEFINED IN SUBSECTION 17-5.2, "PIPE EMBEDMENT ZONE" OF ST-ND-RD SPECIFIC-TIONS -ND INIT-L B-CKFILL PL-CED IN -CCORD-NCE WITH SUBSECTION 17-5.3, "INIT-L B-CKFILL", OF THE ST-ND-RD SPECIFIC-TIONS.
3. MINIUM -ND M-XIMUM TRENCH WIDTH -LLOWED SH-LL BE M-INT-INED -S SPECIFIED IN T-BLE 17-3.1, SUBSECTION 17-3.2.1, "TRENCH WIDTHS", OF THE ST-ND-RD SPECIFIC-TIONS.
4. BOTTOM OF TRENCH SH-LL BE IN FIRM, UNIFORM-BE-RING SOIL SURF-CES. WHEN UNSUIT-BLE OR DISTURBED, THE CONTR-CTOR SH-LL REMOVE -ND REFILL WITH SUIT-BLE M-TERI-L -S SPECIFIED IN SUBSECTION 17-5.1, "FOUND-TION -ND BEDDING", OF THE ST-ND-RD SPECIFIC-TIONS.
5. ST-ND-RD DET-IL S-10 SH-LL BE -PPLIC-BLE TO -LL SEWER PIPE INST-LL-TIONS WITH DI-METERS OF 6 TO 27 INCHES. CONSTRUCTION PROCEDURES FOR PIPES L-RGER TH-N 30 INCHES SH-LL BE PROVIDED BY THE CITY ENGINEER.
6. IN UNP- ED -RE-S FIN-L B-CKFILL SH-LL EXTEND TO THE SURF-CE ELEV-TION WITH 95% COMP-CTION IN THE UPPER 24" OF TRENCH.

SEWER MAIN TRENCH, BEDDING, AND BACKFILL DETAIL	REF. & REV. ~~NOV. 2007~~ DEC. 2020 (A.7)	CITY OF FRESNO S-10

CASE 1: UNDAMAGED EXISTING UTILITY AT NEW UTILITY INSTALLATION





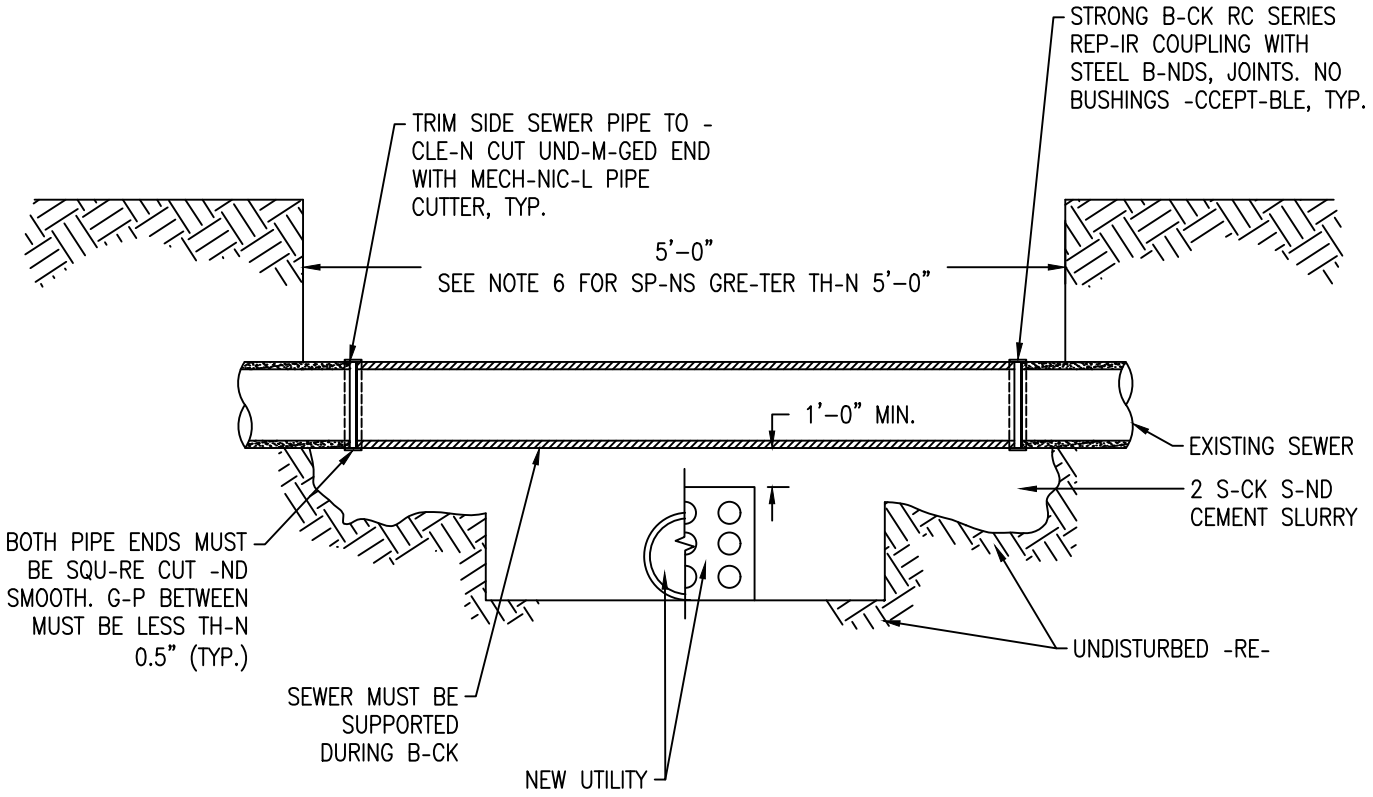
SECTION A-A

NOTES:

1. -LL LINES TO BE PROTECTED IN PL-CE.
2. NO VENTS OR STRUCTURES TO BE LOC-TED WITHIN PIPELINE E-SEMENT.
3. -NY NEW UTILITY SH-LL H- E - MINIMUM OF 1'-0" CLE-R-NCE FROM -NY SEWER F-CILITY. -NY NEW UTILITY WITHIN 1'-0" SH-LL H- E CLSM, 2 S-CK, BETWEEN THE UTILITY LINES.
4. WHERE JOINT IN THE UTILITY OCCURS -T THE EDGE OF THE SLURRY SUPPORT, EXTEND SUPPORT 6" MIN BEYOND THE JOINT.

PIPE/CONDUIT CROSSING UNDER EXISTING SEWER – CASE 1	REF. & REV. DEC. 2020 (-.7)	CITY OF FRESNO S-13A

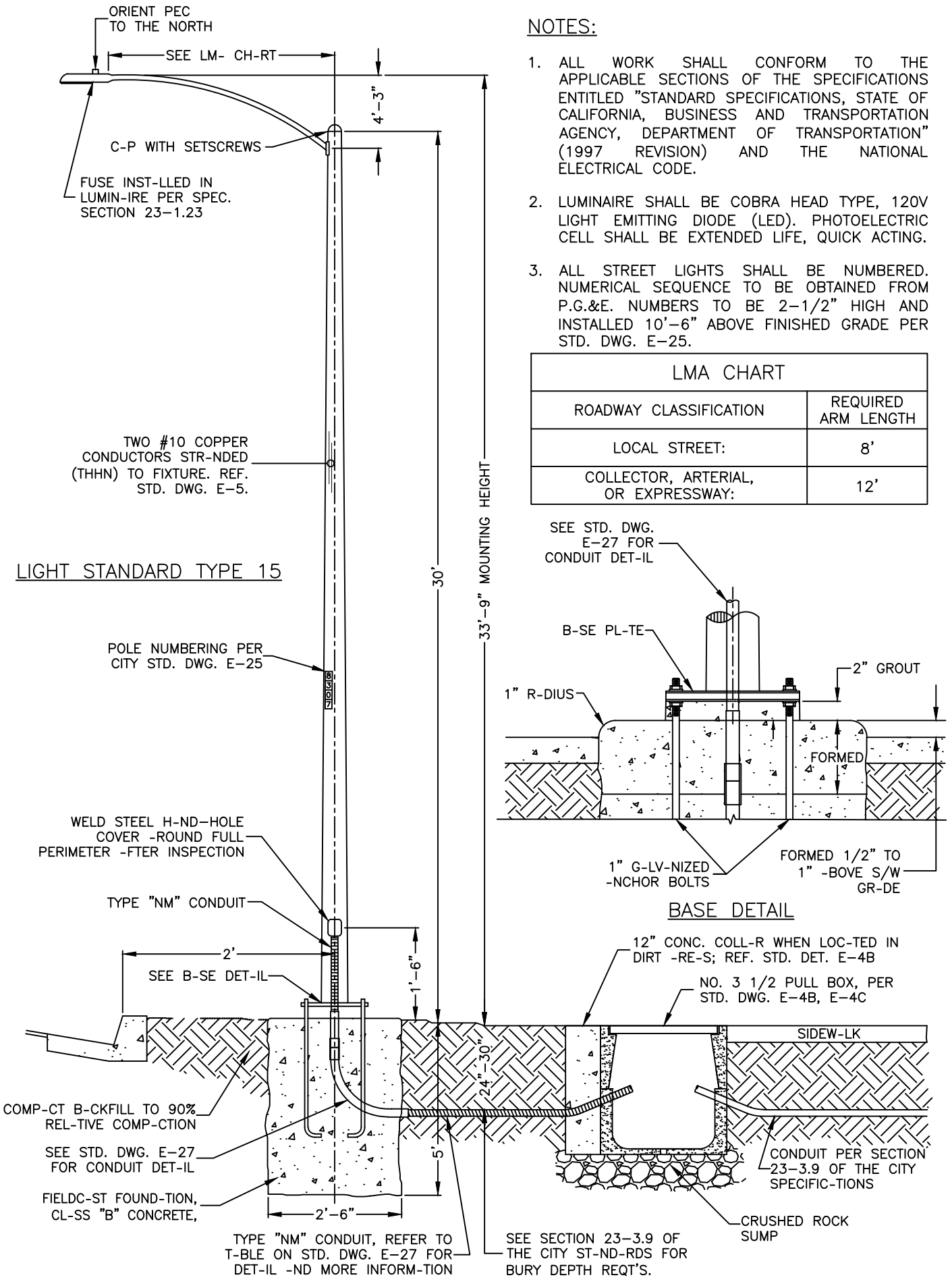
CASE 2: SEWER REPAIR AT NEW UTILITY INSTALLATION



NOTES:

1. -LL LINES TO BE PROTECTED IN PL-CE. THIS DET-IL SH-LL -PPLY WHENEVER THE SEWER M-IN IS CUT OR D-M-GED WHEN CONSTRUCTION P-SSES BENE-TH THESE LINES.
2. INSIDE DI-METER OF REPL-CEMENT PIPE TO BE THE S-ME -S THE EXISTING PIPE TO WHICH IT CONNECTS.
3. PIPE TO H- E THE S-ME SLOPE -S -DJ-CENT PIPELINES.
4. MINIMUM CLE-R-NCE BETWEEN SEWER -ND UTILITY SH-LL BE 1'-0", CLE-R-NCE LESS TH-N 1'-0" MUST BE -PPROVED BY CITY PRIOR TO INST-LL-TION.
5. -NY NEW UTILITY WITHIN 1'-0" SH-LL H- E CLSM, 2 S-CK, BETWEEN THE UTILITY LINES.
6. B-CKFILL EXC -TION WITH 2 S-CK CLSM TO SPRING LINE OF SEWER PIPE. IF MORE TH-N 5'-0" OF SEWER IS EXPOSED, B-CKFILL THE ENTIRE EXPOSED LENGTH TO 1'-0" -BOVE SEWER WITH 2 S-CK CLSM.
7. SEWER PIPES MUST BE CCTV INSPECTED -FTER B-CKFILL -ND, IF -PPLIC-BLE, PRIOR TO P- ING.

PIPE/CONDUIT CROSSING UNDER EXISTING SEWER – CASE 2	REF. & REV. DEC. 2020 (-.7)	CITY OF FRESNO S-13B



NOTES:

1. ALL WORK SHALL CONFORM TO THE APPLICABLE SECTIONS OF THE SPECIFICATIONS ENTITLED "STANDARD SPECIFICATIONS, STATE OF CALIFORNIA, BUSINESS AND TRANSPORTATION AGENCY, DEPARTMENT OF TRANSPORTATION" (1997 REVISION) AND THE NATIONAL ELECTRICAL CODE.
2. LUMINAIRE SHALL BE COBRA HEAD TYPE, 120V LIGHT EMITTING DIODE (LED). PHOTOELECTRIC CELL SHALL BE EXTENDED LIFE, QUICK ACTING.
3. ALL STREET LIGHTS SHALL BE NUMBERED. NUMERICAL SEQUENCE TO BE OBTAINED FROM P.G.&E. NUMBERS TO BE 2-1/2" HIGH AND INSTALLED 10'-6" ABOVE FINISHED GRADE PER STD. DWG. E-25.

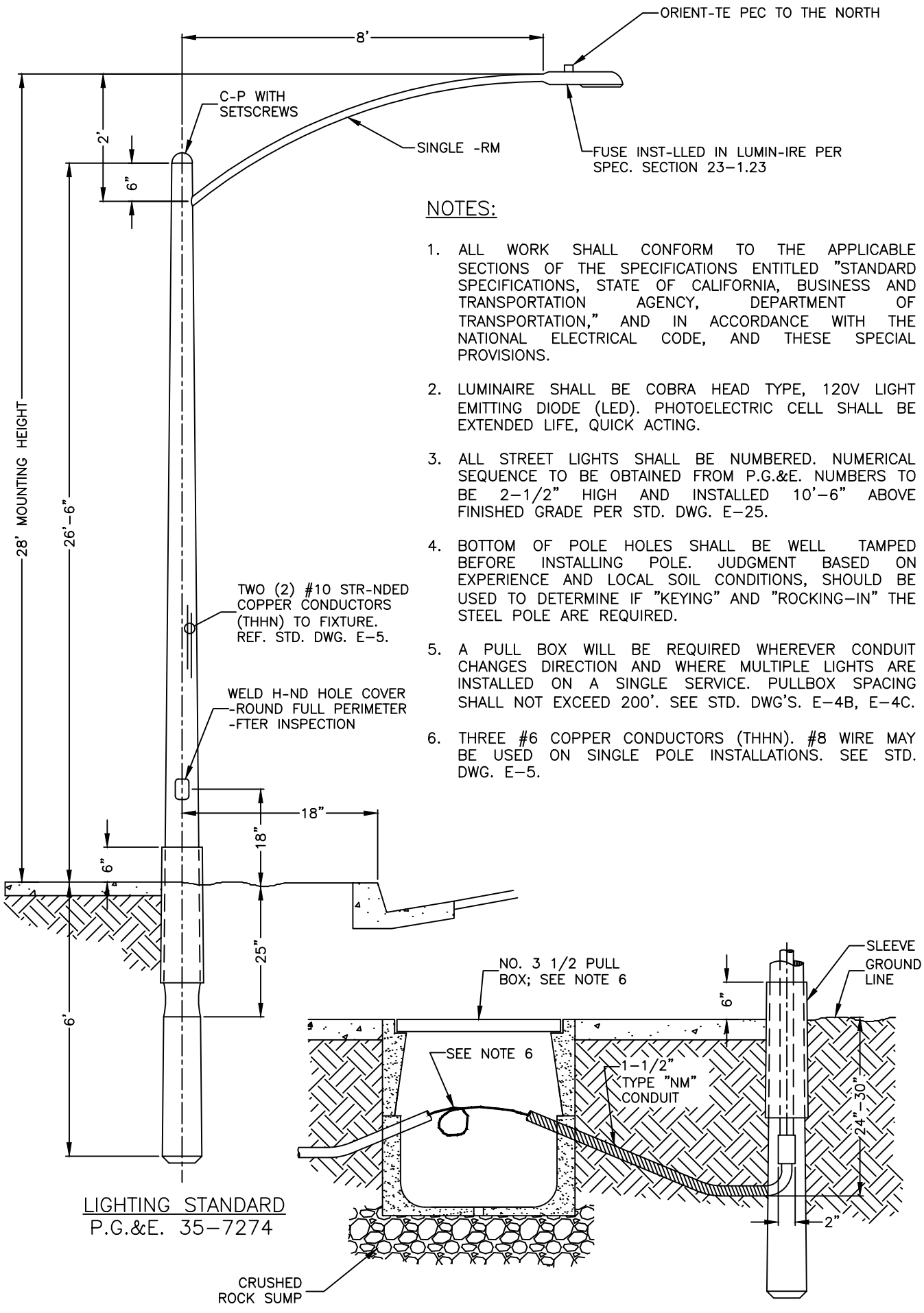
LMA CHART	
ROADWAY CLASSIFICATION	REQUIRED ARM LENGTH
LOCAL STREET:	8'
COLLECTOR, ARTERIAL, OR EXPRESSWAY:	12'

STREETLIGHT-WITH BASE
INCLUDES PULL BOX & PVC CONDUIT

REF. & REV.
~~AUG. 2015~~
DEC. 2020 (A.7)

CITY OF FRESNO

E-1



LIGHTING STANDARD
P.G.&E. 35-7274

NOTES:

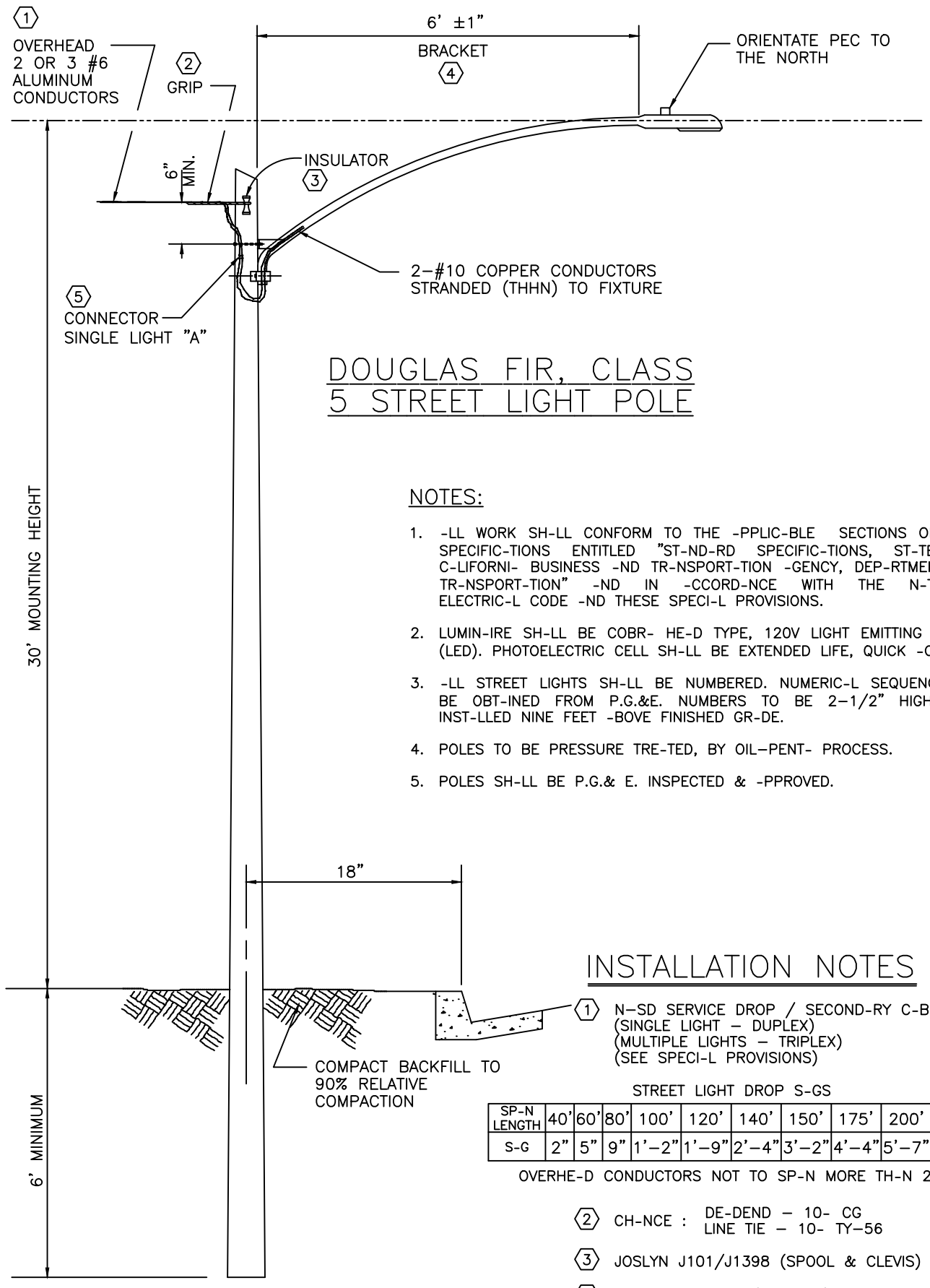
1. ALL WORK SHALL CONFORM TO THE APPLICABLE SECTIONS OF THE SPECIFICATIONS ENTITLED "STANDARD SPECIFICATIONS, STATE OF CALIFORNIA, BUSINESS AND TRANSPORTATION AGENCY, DEPARTMENT OF TRANSPORTATION," AND IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, AND THESE SPECIAL PROVISIONS.
2. LUMINAIRE SHALL BE COBRA HEAD TYPE, 120V LIGHT EMITTING DIODE (LED). PHOTOELECTRIC CELL SHALL BE EXTENDED LIFE, QUICK ACTING.
3. ALL STREET LIGHTS SHALL BE NUMBERED. NUMERICAL SEQUENCE TO BE OBTAINED FROM P.G.&E. NUMBERS TO BE 2-1/2" HIGH AND INSTALLED 10'-6" ABOVE FINISHED GRADE PER STD. DWG. E-25.
4. BOTTOM OF POLE HOLES SHALL BE WELL TAMPED BEFORE INSTALLING POLE. JUDGMENT BASED ON EXPERIENCE AND LOCAL SOIL CONDITIONS, SHOULD BE USED TO DETERMINE IF "KEYING" AND "ROCKING-IN" THE STEEL POLE ARE REQUIRED.
5. A PULL BOX WILL BE REQUIRED WHEREVER CONDUIT CHANGES DIRECTION AND WHERE MULTIPLE LIGHTS ARE INSTALLED ON A SINGLE SERVICE. PULLBOX SPACING SHALL NOT EXCEED 200'. SEE STD. DWG'S. E-4B, E-4C.
6. THREE #6 COPPER CONDUCTORS (THHN). #8 WIRE MAY BE USED ON SINGLE POLE INSTALLATIONS. SEE STD. DWG. E-5.

STREETLIGHT-EMBEDDED
POLE WITH NO FOUNDATION

REF. & REV.
~~AUG. 2015~~
DEC. 2020 (A.7)

CITY OF FRESNO

E-2



DOUGLAS FIR, CLASS 5 STREET LIGHT POLE

NOTES:

1. -LL WORK SH-LL CONFORM TO THE -PPLIC-BLE SECTIONS OF THE SPECIFIC-TIONS ENTITLED "ST-ND-RD SPECIFIC-TIONS, ST-TE OF C-LIFORNI- BUSINESS -ND TR-NSPORT-TION -GENCY, DEP-RTMENT OF TR-NSPORT-TION" -ND IN -CCORD-NCE WITH THE N-TION-L ELECTRIC-L CODE -ND THESE SPECI-L PROVISIONS.
2. LUMIN-IRE SH-LL BE COBR- HE-D TYPE, 120V LIGHT EMITTING DIODE (LED). PHOTOELECTRIC CELL SH-LL BE EXTENDED LIFE, QUICK -CTING.
3. -LL STREET LIGHTS SH-LL BE NUMBERED. NUMERIC-L SEQUENCE TO BE OBT-INED FROM P.G.&E. NUMBERS TO BE 2-1/2" HIGH -ND INST-LLED NINE FEET -BOVE FINISHED GR-DE.
4. POLES TO BE PRESSURE TRE-TED, BY OIL-PENT- PROCESS.
5. POLES SH-LL BE P.G.& E. INSPECTED & -PPROVED.

INSTALLATION NOTES

1. N-SD SERVICE DROP / SECOND-RY C-BLE
(SINGLE LIGHT - DUPLEX)
(MULTIPLE LIGHTS - TRIPLEX)
(SEE SPECI-L PROVISIONS)

STREET LIGHT DROP S-GS

SP-N LENGTH	40'	60'	80'	100'	120'	140'	150'	175'	200'	225'
S-G	2"	5"	9"	1'-2"	1'-9"	2'-4"	3'-2"	4'-4"	5'-7"	7'-1"

OVERHE-D CONDUCTORS NOT TO SP-N MORE TH-N 225'

2. CH-NCE : DE-DEND - 10- CG
LINE TIE - 10- TY-56
3. JOSLYN J101/J1398 (SPOOL & CLEVIS)
4. JOSLYN JP40482 (BR-CKET)
5. CONNECTOR (SEE SPECI-L PROVISIONS)

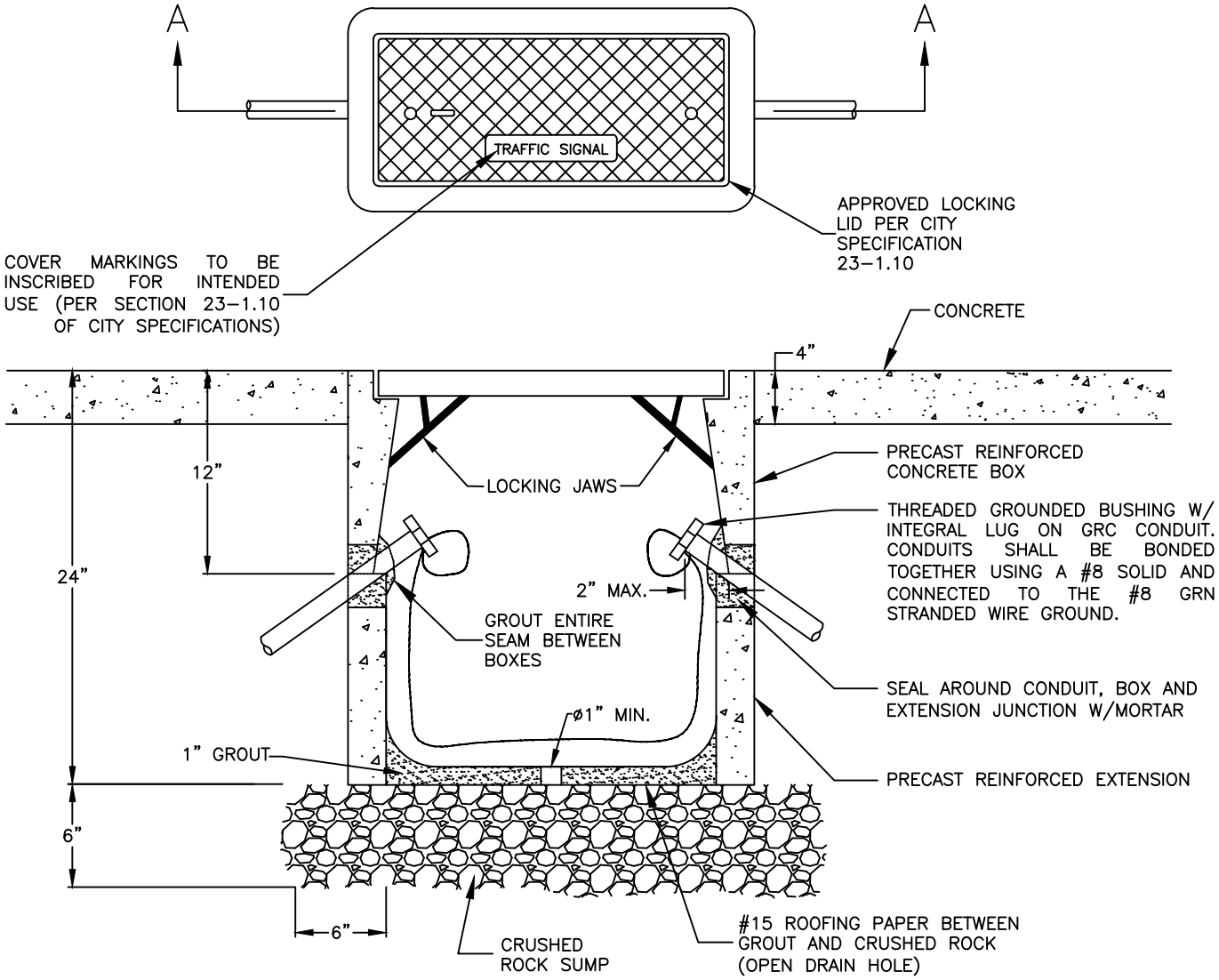
STREETLIGHT-LOCAL STREET

OVERHEAD SERVICE - WOOD POLE
TEMPORARY USE ONLY

REF. & REV.
~~DEC. 2003~~
DEC. 2020 (A.7)

CITY OF FRESNO

E-3

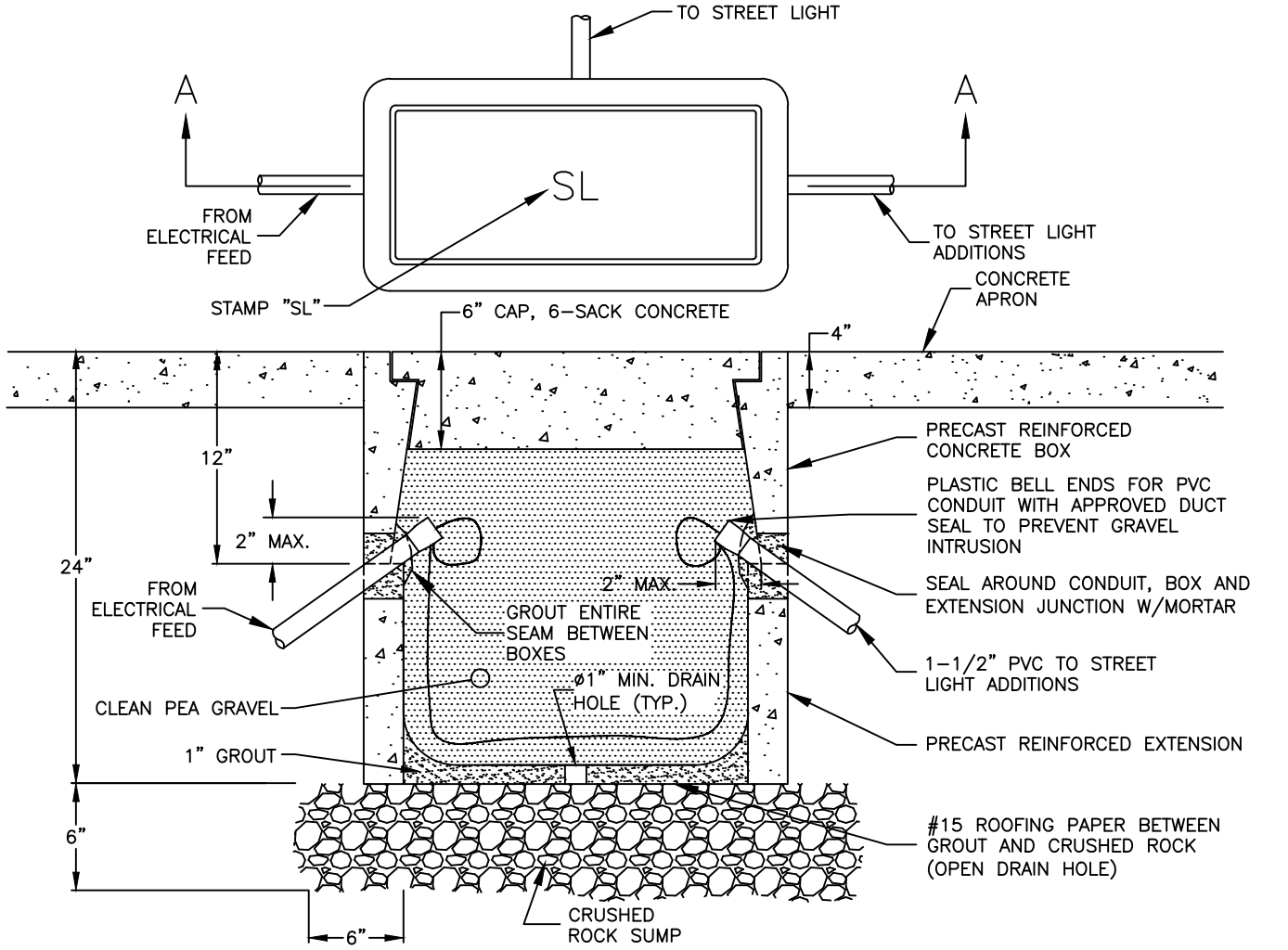


SECTION A–A

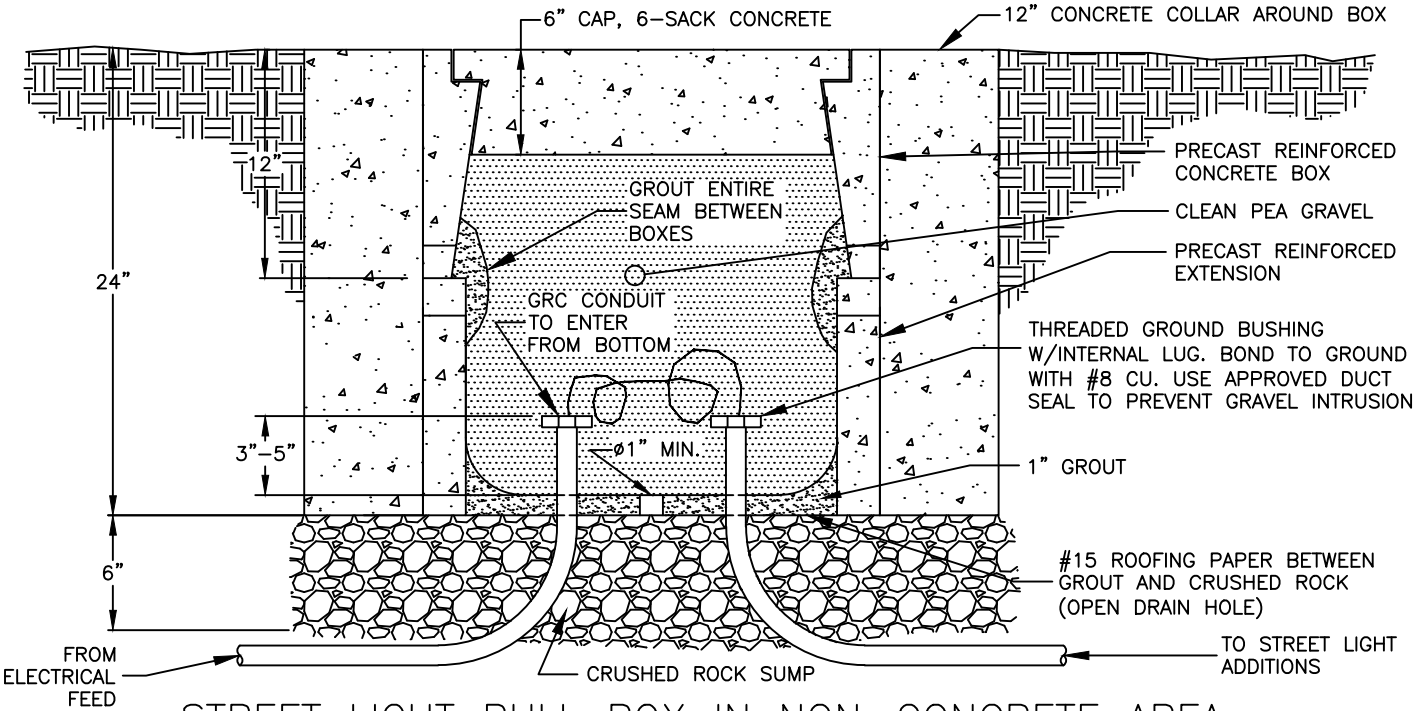
NOTES:

1. PULL BOXES SHALL BE #5 UNLESS OTHERWISE NOTED ON PLANS.
2. WRAP ENTIRE PULL BOX WITH #15 ROOFING PAPER BEFORE BACKFILLING.
3. INSTALL A ONE–FOOT RING OF CONCRETE, 24" DEEP, AROUND THE WRAPPED PULL BOXES INSTALLED IN NON– CONCRETE AREAS, SLOPED TO DRAIN AWAY FROM THE PULL BOX. PULL BOXES IN SIDEWALKS MUST BE SET AT FINISHED GRADE WITH TEMPORARY CONCRETE APRON OR SECTION OF SIDEWALK POURED.
4. PULL BOXES SHALL BE GROUTED PRIOR TO INSTALLATION OF CONDUCTORS, SLOPED TOWARD THE DRAIN HOLE. PLACE A LAYER OF ROOFING PAPER BETWEEN THE CRUSHED ROCK AND THE GROUT, OPEN AT THE DRAIN HOLE.
5. AN APPROVED LOCKING LID SHALL BE INSTALLED ON ALL TRAFFIC SIGNAL PULL BOXES PER SECTION 23–1.10 OF THE CITY STANDARDS.
6. PROVIDE 3' MIN. SLACK ON ALL CONDUCTORS.

TRAFFIC SIGNALS CONCRETE PULL BOXES	REF. & REV. ~~JUNE 2015~~ DEC. 2020 (A.7)	CITY OF FRESNO E–4A



STREET LIGHT PULL BOX IN CONCRETE AREA



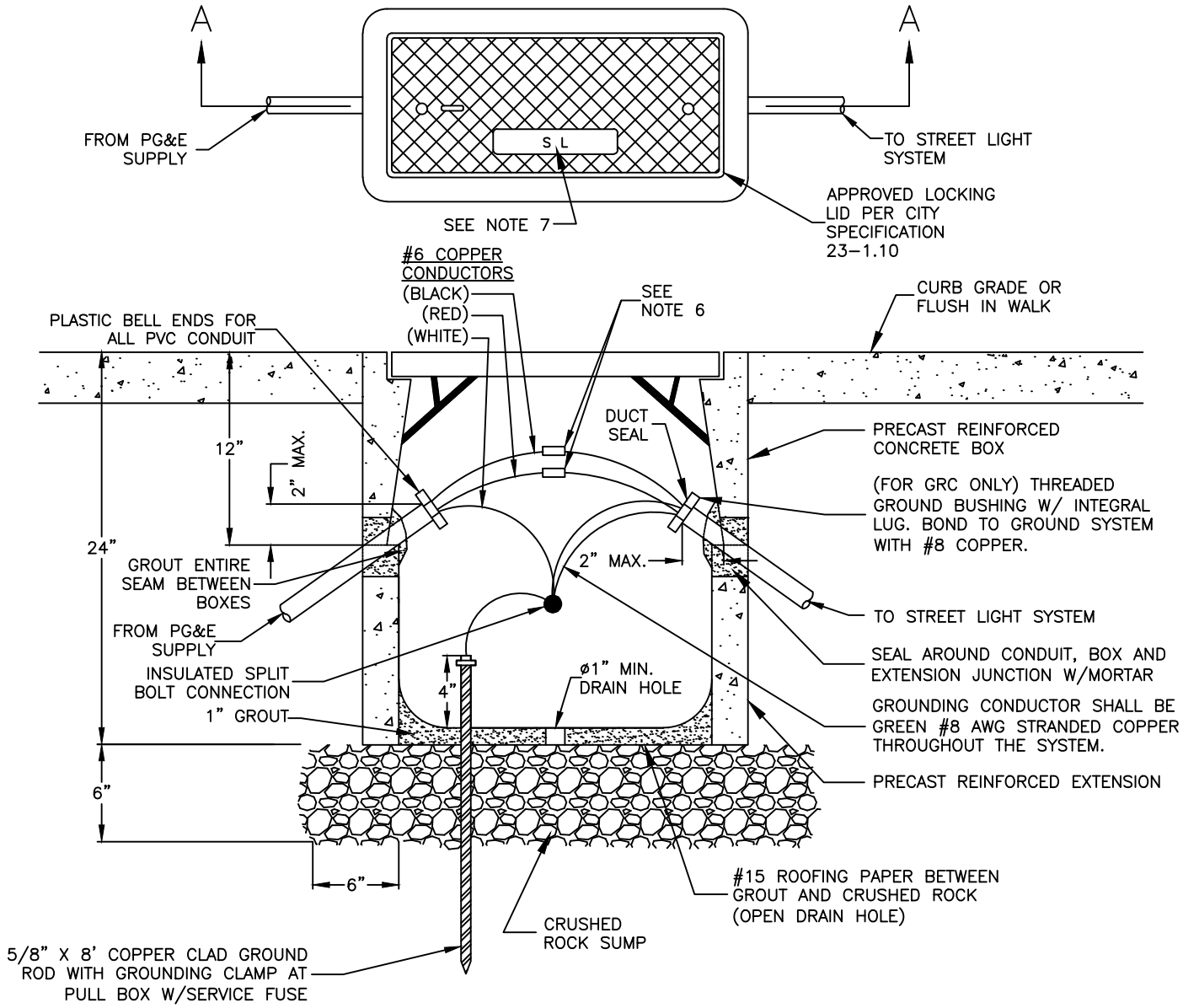
STREET LIGHT PULL BOX IN NON-CONCRETE AREA

NOTES:

1. NOTES PER STD. DETAIL E-4A SHALL APPLY
2. IF SPLICES* OCCUR WITHIN BOX, A LOCKING LID PER SECTION 23-1.10 OF THE CITY SPECIFICATIONS SHALL BE USED IN LIEU OF CONCRETE.

* SPLICES MUST BE APPROVED BY TSSL.

STREETLIGHTS CONCRETE PULL BOXES DETERRENT DETAIL	REF. & REV. ~~JUNE 2015~~ DEC. 2020 (A.7)	CITY OF FRESNO E-4B



SECTION A–A

NOTES:

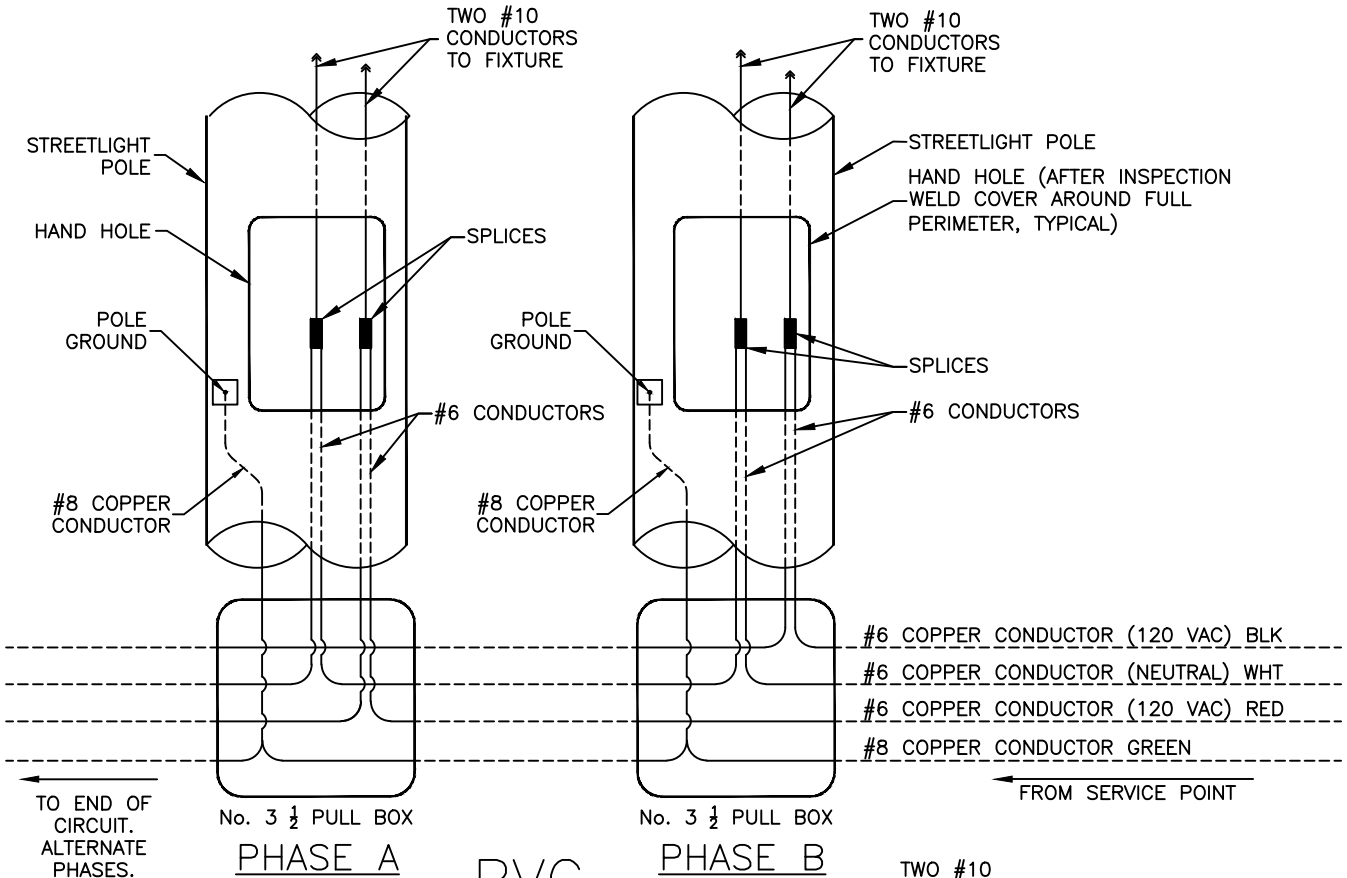
1. PULL BOXES SHALL BE #3–1/2 UNLESS OTHERWISE NOTED ON PLANS.
2. SERVICE PULL BOX SHALL BE WITHIN THE STREET R.O.W. AND NOT PRIVATE PROPERTY.
3. WRAP ENTIRE PULL BOX WITH #15 ROOFING PAPER BEFORE BACKFILLING.
4. INSTALL A ONE–FOOT CONCRETE COLLAR, 24" DEEP, AROUND THE WRAPPED PULL BOXES WHEN INSTALLED IN DIRT OR TURF AREAS, SLOPED TO DRAIN AWAY FROM THE PULL BOX. PULL BOXES IN SIDEWALKS MUST BE SET AT FINISHED GRADE WITH A TEMPORARY CONCRETE APRON OR SECTION OF SIDEWALK POURED.
5. PULL BOXES SHALL BE GROUTED PRIOR TO INSTALLATION OF CONDUCTORS, SLOPED TOWARD THE DRAIN HOLE. PLACE A LAYER OF ROOFING PAPER BETWEEN THE CRUSHED ROCK AND THE GROUT, OPEN AT THE DRAIN HOLE.
6. FUSE AT POINT OF SERVICE SHALL BE 60A FOR #6 CONDUCTOR AND SHALL HAVE A TRON HEJ TYPE FUSE HOLDER (SINGLE POLE). INSULATE WIRE CONNECTION SAME AS SPLICES (23–3.12).
7. AN APPROVED LOCKING LID SHALL BE PROVIDED AND INSCRIBED "SL" PER SECTION 23–1.10 OF THE CITY SPECIFICATIONS.

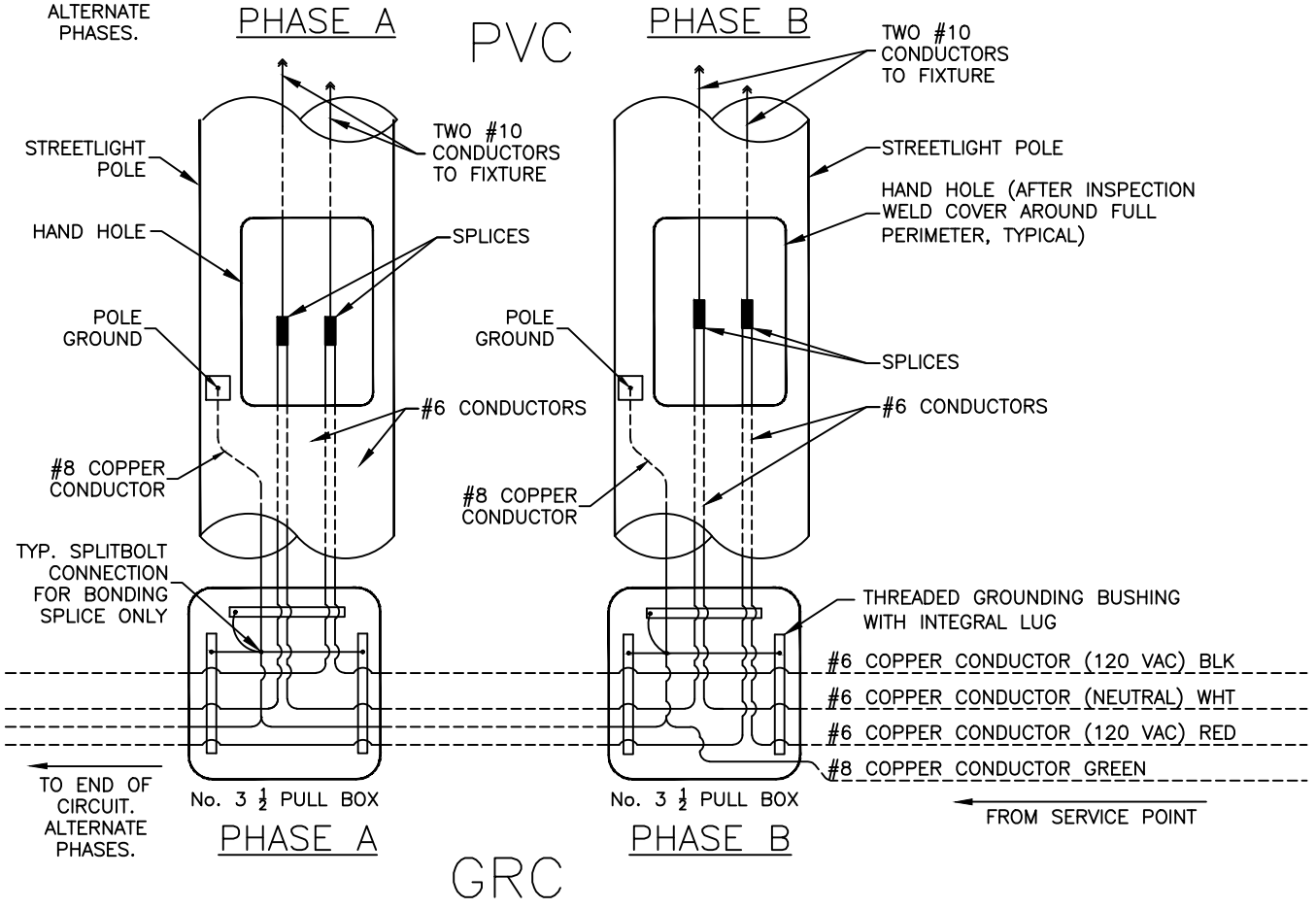
STREETLIGHT POINT OF SERVICE
CONCRETE PULL BOX
LOCAL STREETS ONLY (RESIDENTIAL)

REF. & REV.
~~JUNE 2015~~
DEC. 2020 (A.7)

CITY OF FRESNO

E–4C



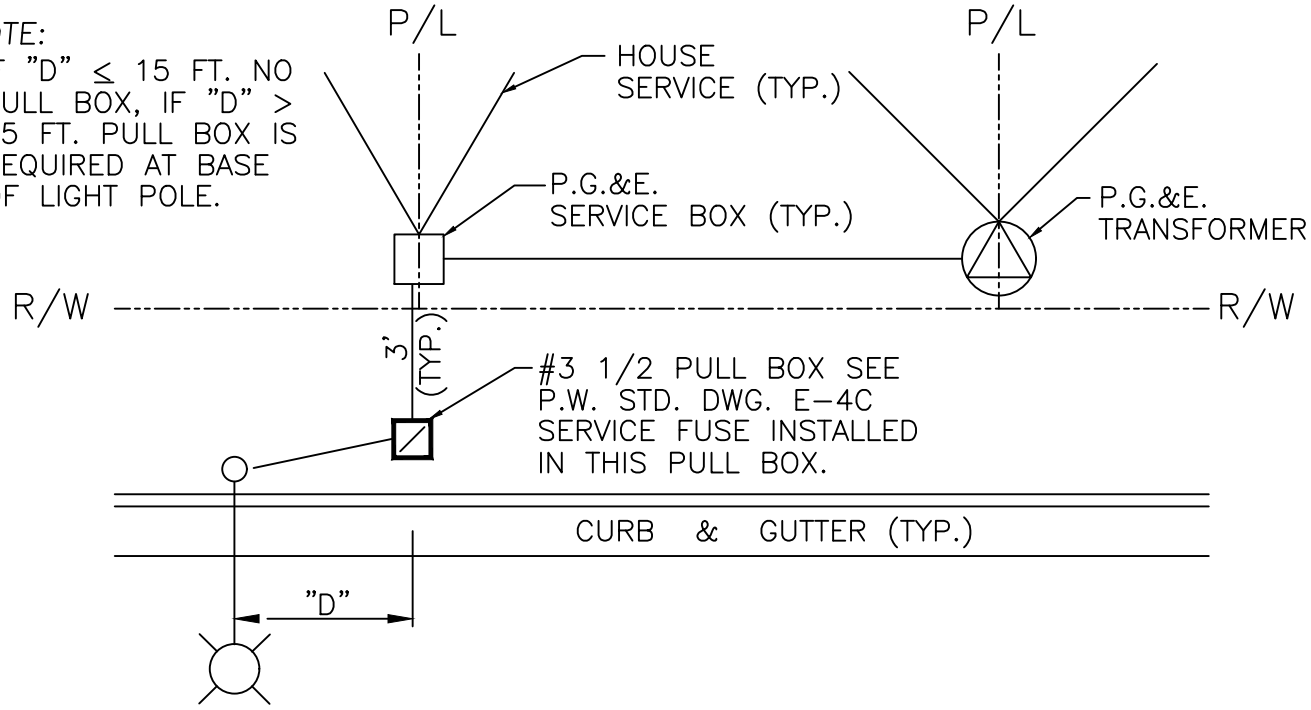


NOTES:

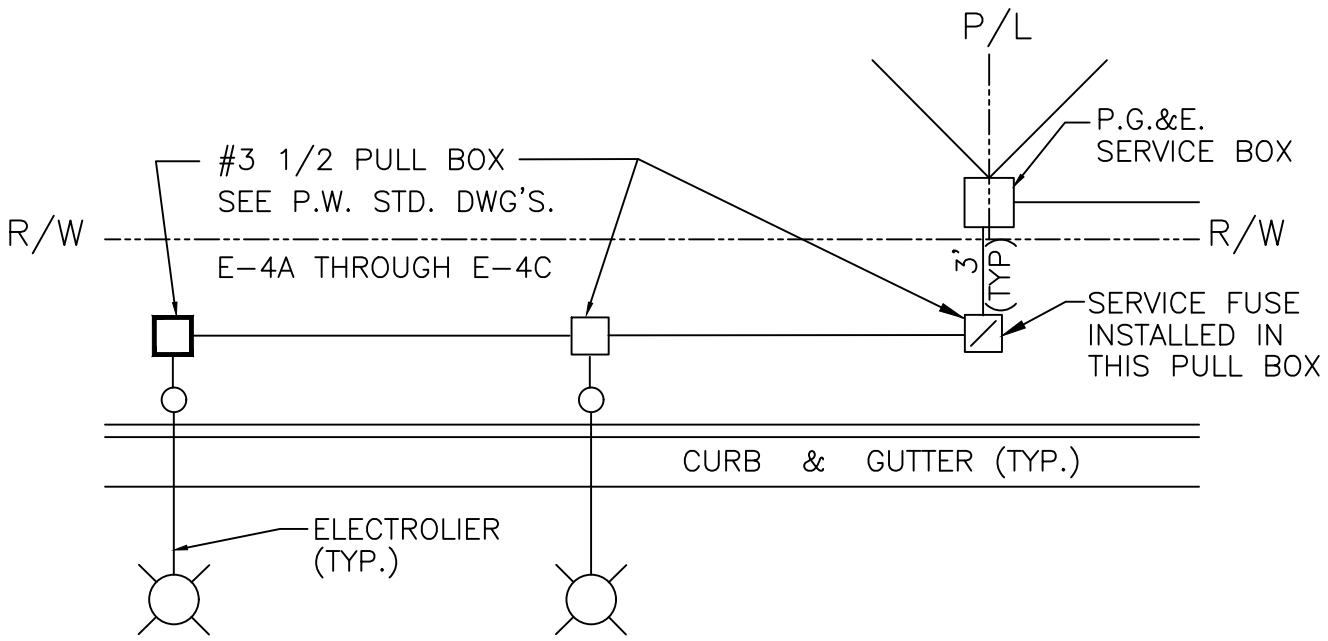
1. WITH EXCEPTION OF BONDING JUMPERS, NO SPLICES WILL BE ALLOWED IN PULL BOXES WITHOUT PRIOR APPROVAL AND THE INSTALLATION OF AN APPROVED LOCKING LID PER SECTION 23–1.10 OF CITY SPECIFICATIONS.

STREETLIGHT–CONNECTION DIAGRAM	REF. & REV. ~~JUNE 2015~~ DEC. 2020 (A.7)	CITY OF FRESNO E–5

NOTE:
IF "D" ≤ 15 FT. NO PULL BOX, IF "D" > 15 FT. PULL BOX IS REQUIRED AT BASE OF LIGHT POLE.



SINGLE LIGHT INSTALLATION

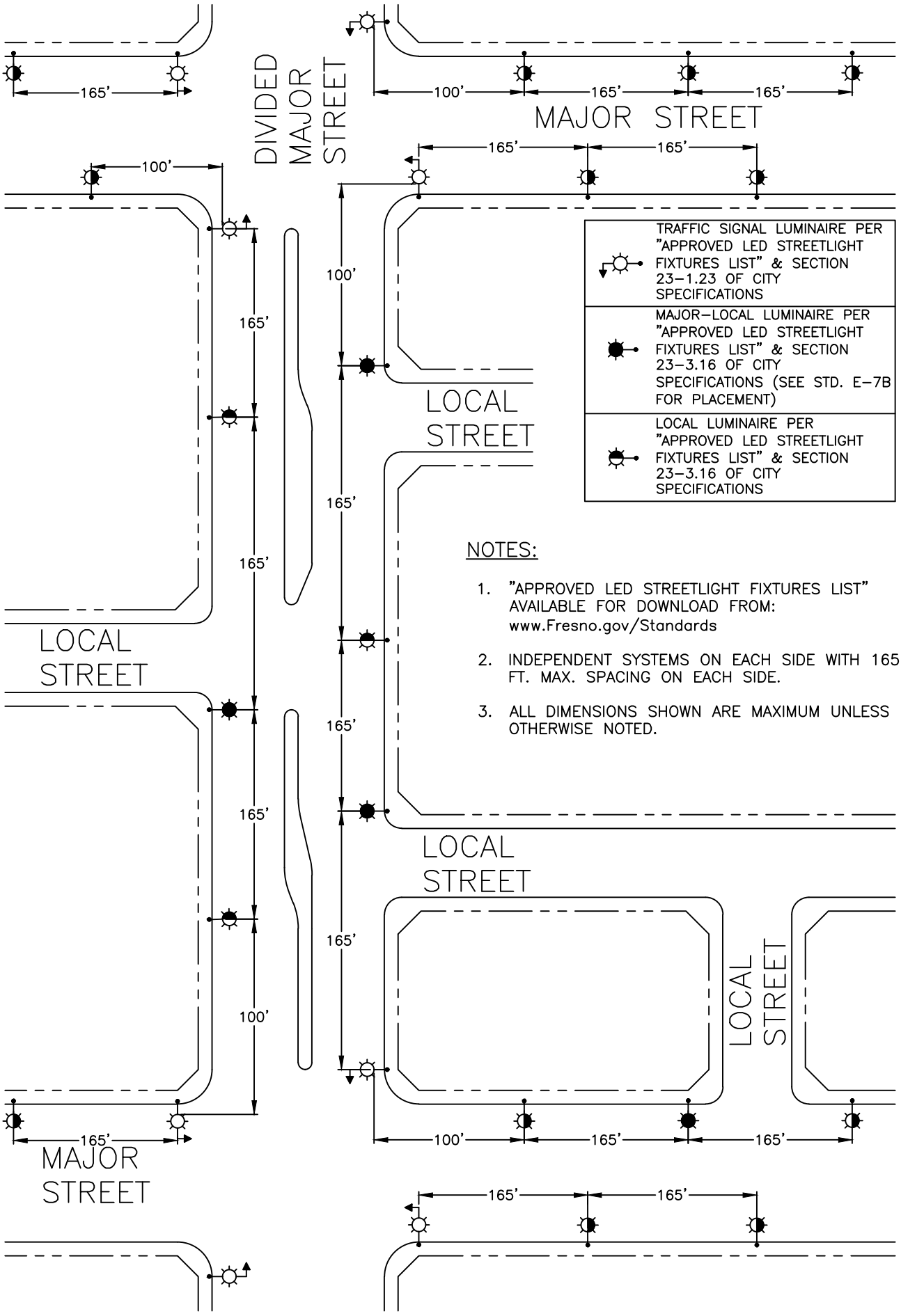


MULTIPLE LIGHT INSTALLATION

NOTES:

1. CONDUIT SHALL BE SCHEDULE 40 PVC ON LOCAL STREETS AND SCHEDULE 80 PVC ON MAJOR STREETS. LOCAL STREET CROSSINGS SHALL BE SCHEDULE 80 PVC, AND MAJOR STREETS CROSSINGS SHALL BE GALVANIZED RIGID CONDUIT (GRC). CONDUIT NOT PLACED UNDERNEATH CONCRETE SIDEWALK OR UNDERNEATH ROADWAYS SHALL BE GRC ENCASED IN A MINIMUM 4" WIDE TWO SACK CONCRETE SLURRY MIX.
2. LOCATE STREET LIGHTS ON THE SAME SIDE OF THE STREET AS THE P.G.&E. SERVICE WHEN POSSIBLE.
3. DO NOT LOCATE THE PULL BOXES ABOVE THE JOINT TRENCH.
4. PULL BOX SPACING SHALL NOT EXCEED 200' AND SHALL BE REQUIRED IN ALL CONDUIT CHANGE OF DIRECTION.
5. STREET LIGHT(S) INSTALLED ON MAJOR STREETS SHALL BE FED FROM A SERVICE PEDESTAL WITH A MASTER PHOTO CONTROL AS DETAILED IN SECTION 3-3.17 OF THE CITY SPECIFICATIONS AND STD. DWG'S. E-15, E-18, OR AS APPROVED BY CITY ENGINEER.

LOCAL STREETLIGHT LAYOUT	REF. & REV. ~~NOV. 2007~~ DEC. 2020 (A.7)	CITY OF FRESNO E-6



NOTES:

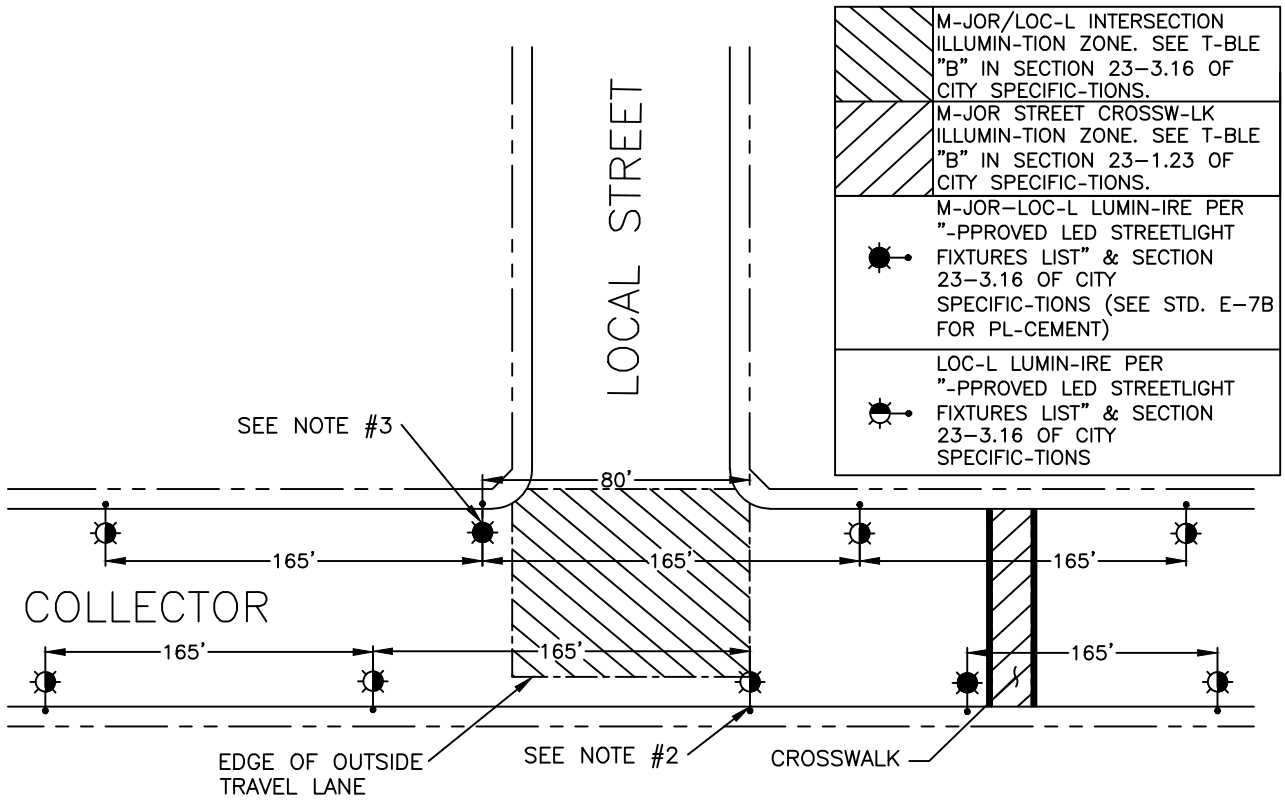
1. "APPROVED LED STREETLIGHT FIXTURES LIST" AVAILABLE FOR DOWNLOAD FROM: www.Fresno.gov/Standards
2. INDEPENDENT SYSTEMS ON EACH SIDE WITH 165 FT. MAX. SPACING ON EACH SIDE.
3. ALL DIMENSIONS SHOWN ARE MAXIMUM UNLESS OTHERWISE NOTED.

STREETLIGHT-PLACEMENT MAJOR STREETS

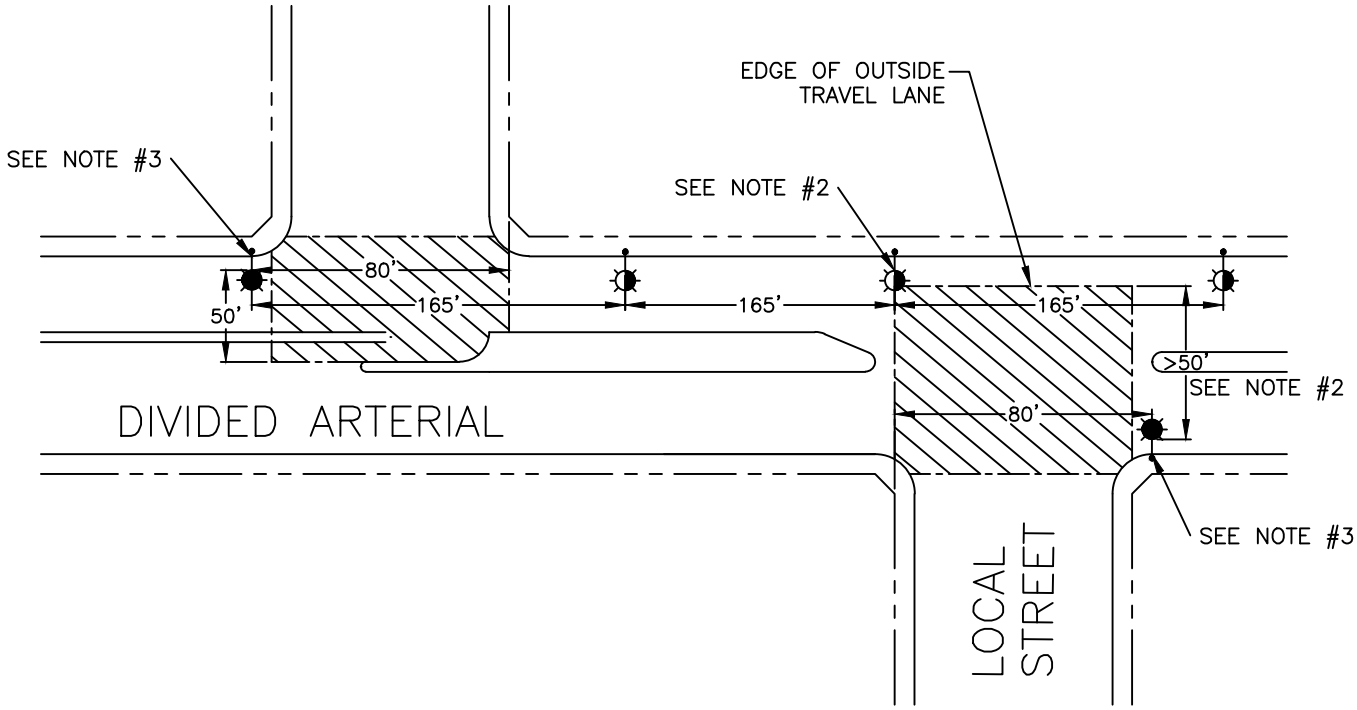
REF. & REV.
~~AUG. 2015~~
DEC. 2020 (A.7)

CITY OF FRESNO

E-7A



COLLECTOR/LOCAL INTERSECTION



DIVIDED ARTERIAL/LOCAL INTERSECTION

NOTES:

1. ALL DIMENSIONS SHOWN ARE MAXIMUM UNLESS OTHERWISE NOTED.
2. IF ILLUMINATION ZONE DEPTH IS GREATER THAN 50 FEET, PLACE MID-BLOCK (LOCAL) LUMINAIRE LIGHT ON RIGHT OF WAY PROJECTION
3. STREETLIGHT POLE SHOULD BE LOCATED WITHIN 10 FEET OF ADJACENT CURB RETURN.

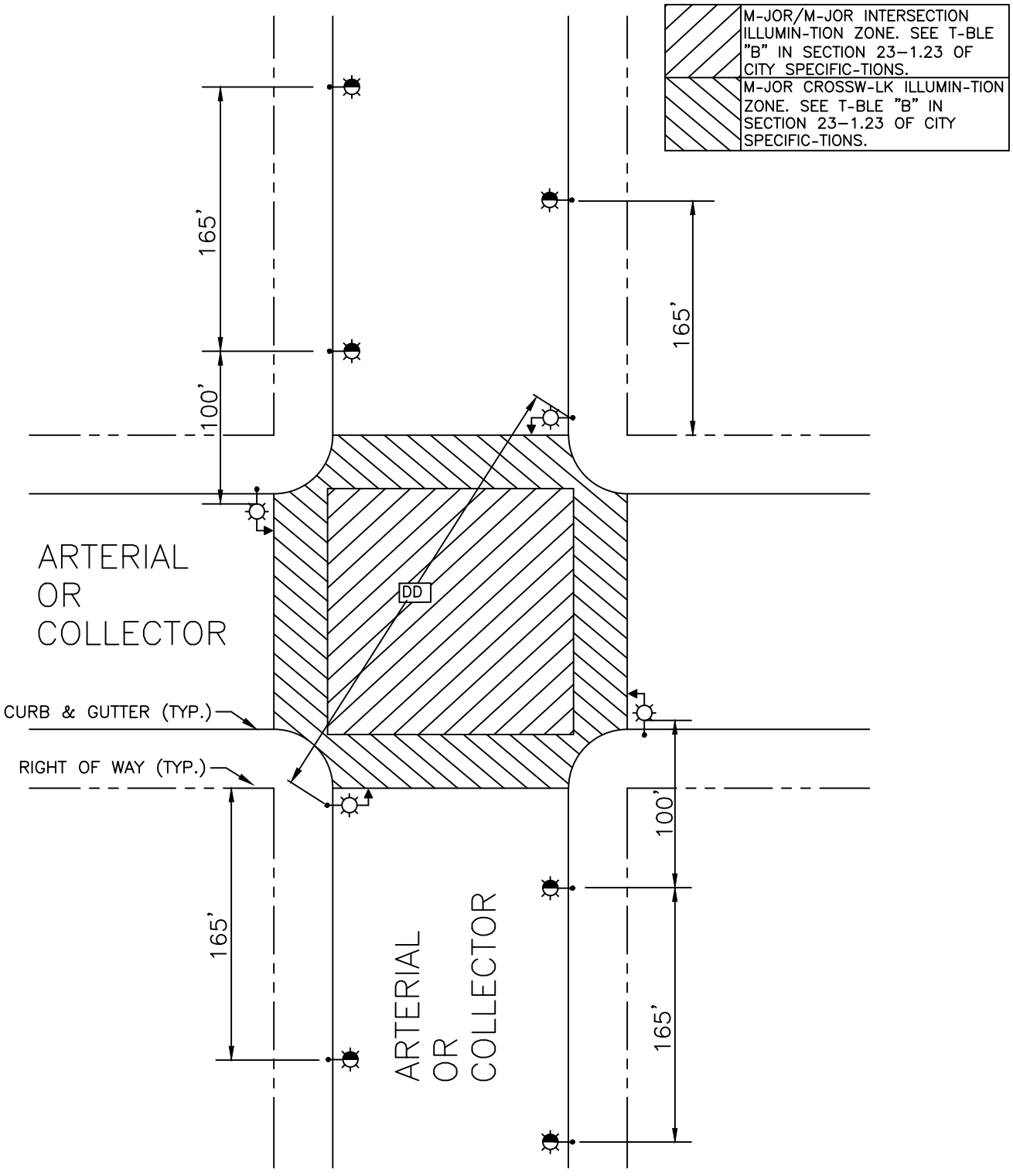
STREETLIGHT-PLACEMENT

MAJOR/LOCAL INTERSECTION

REF. & REV.
DEC. 2020 (A.7)

CITY OF FRESNO

E-7B



SMALL, MEDIUM, OR LARGE* TRAFFIC SIGNAL LUMINAIRE PER SECTION 23-1.23 OF CITY SPECIFICATIONS. *SIZE BASED ON MAXIMUM POLE TO POLEDIAGONAL DISTANCE "DD" AS SHOWN ABOVE.

LOCAL LUMINAIRE PER "APPROVED LED STREETLIGHT FIXTURES LIST" & SECTION 23-3.16 OF CITY SPECIFICATIONS

NOTES:

1. TRAFFIC SIGNAL LUMINARIES, MAJOR-LOCAL, & LOCAL LUMINARIES LIGHTS (ENTRANCE & EXIT) TO BE ON SEPARATE BREAKERS OF SAME CONTACTOR.
2. ALL DIMENSIONS SHOWN ARE MAXIMUM UNLESS OTHERWISE NOTED.

STREETLIGHT-PLACEMENT
SIGNALIZED INTERSECTIONS

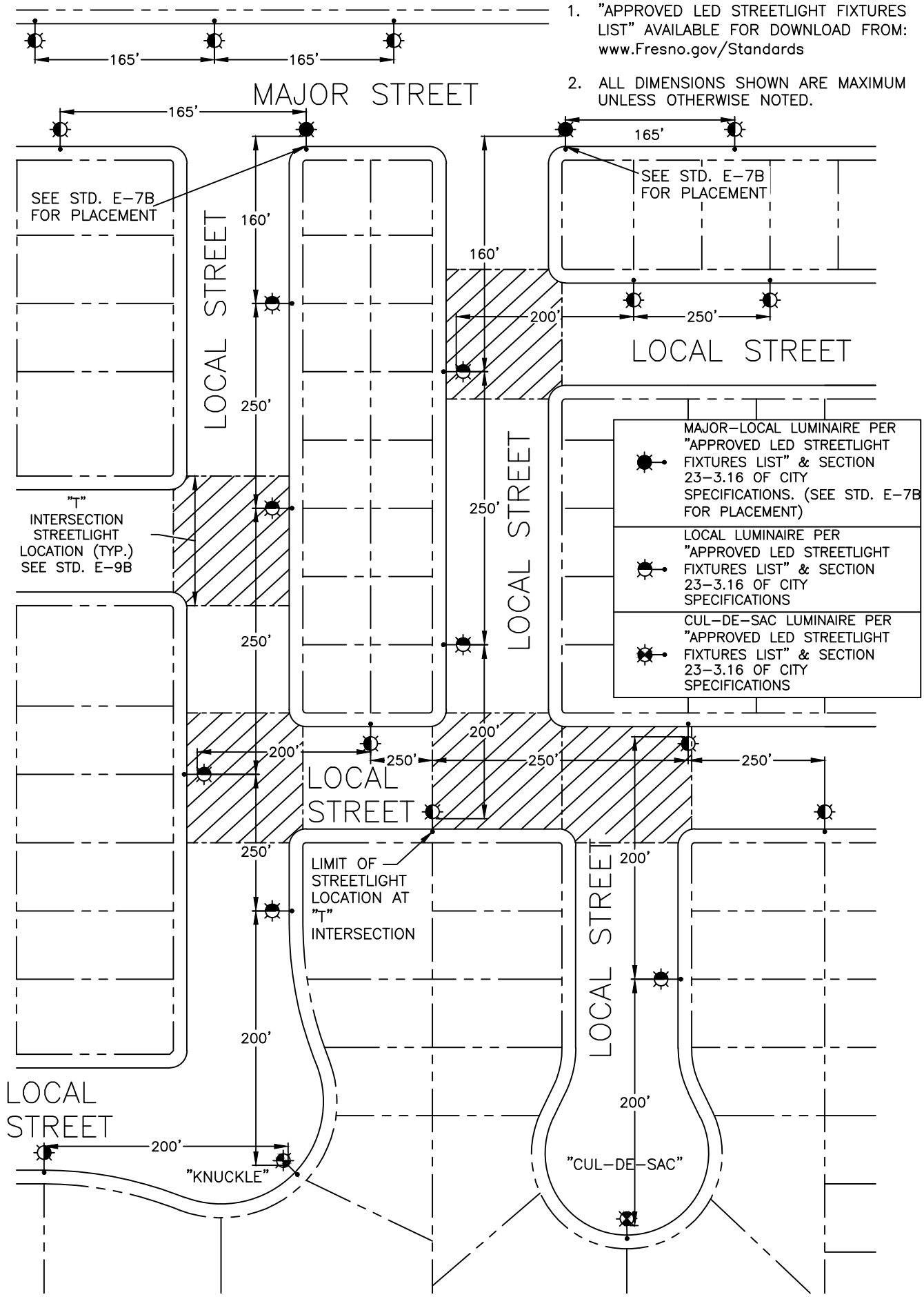
REF. & REV.
DEC. 2020 (A.7)

CITY OF FRESNO

E-8

NOTES:

1. "APPROVED LED STREETLIGHT FIXTURES LIST" AVAILABLE FOR DOWNLOAD FROM: www.Fresno.gov/Standards
2. ALL DIMENSIONS SHOWN ARE MAXIMUM UNLESS OTHERWISE NOTED.

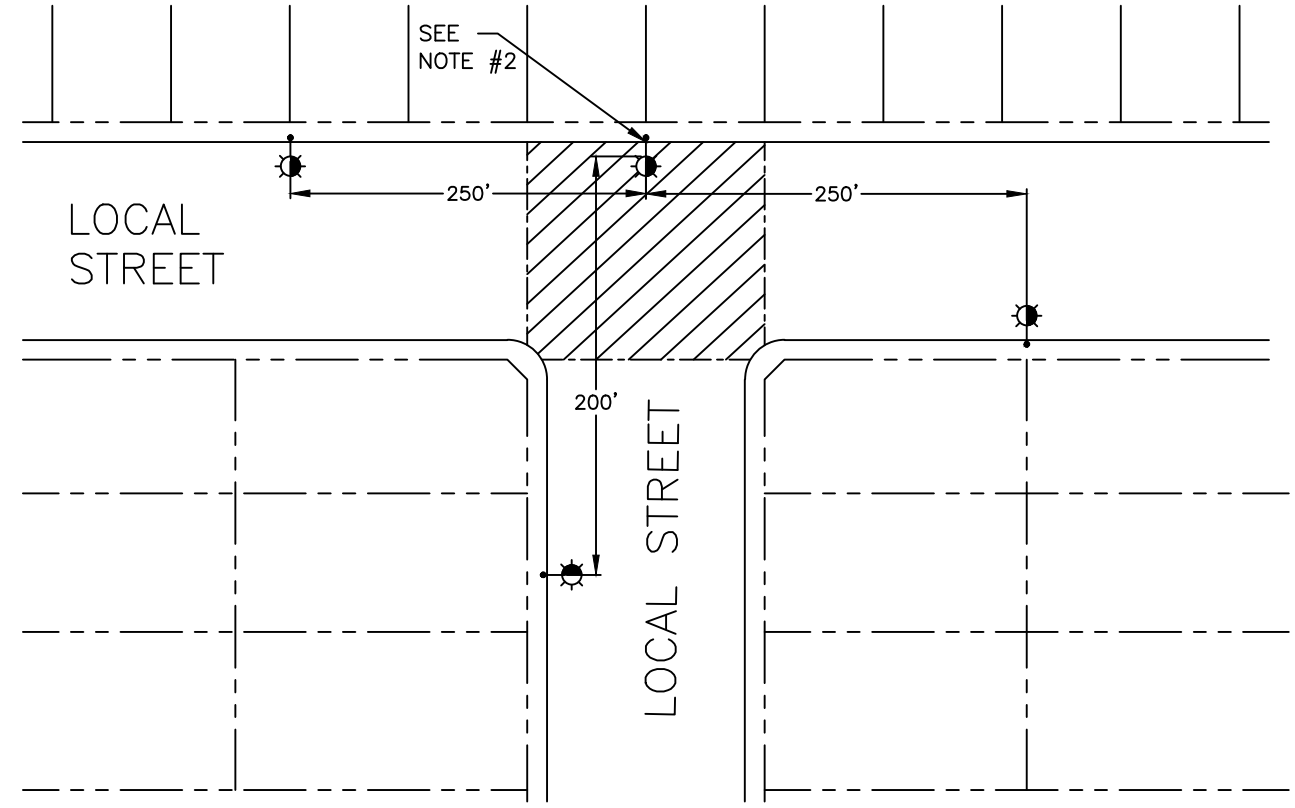


STREETLIGHT-PLACEMENT
LOCAL STREETS

REF. & REV.
~~AUG. 2015~~
DEC. 2020 (A.7)

CITY OF FRESNO

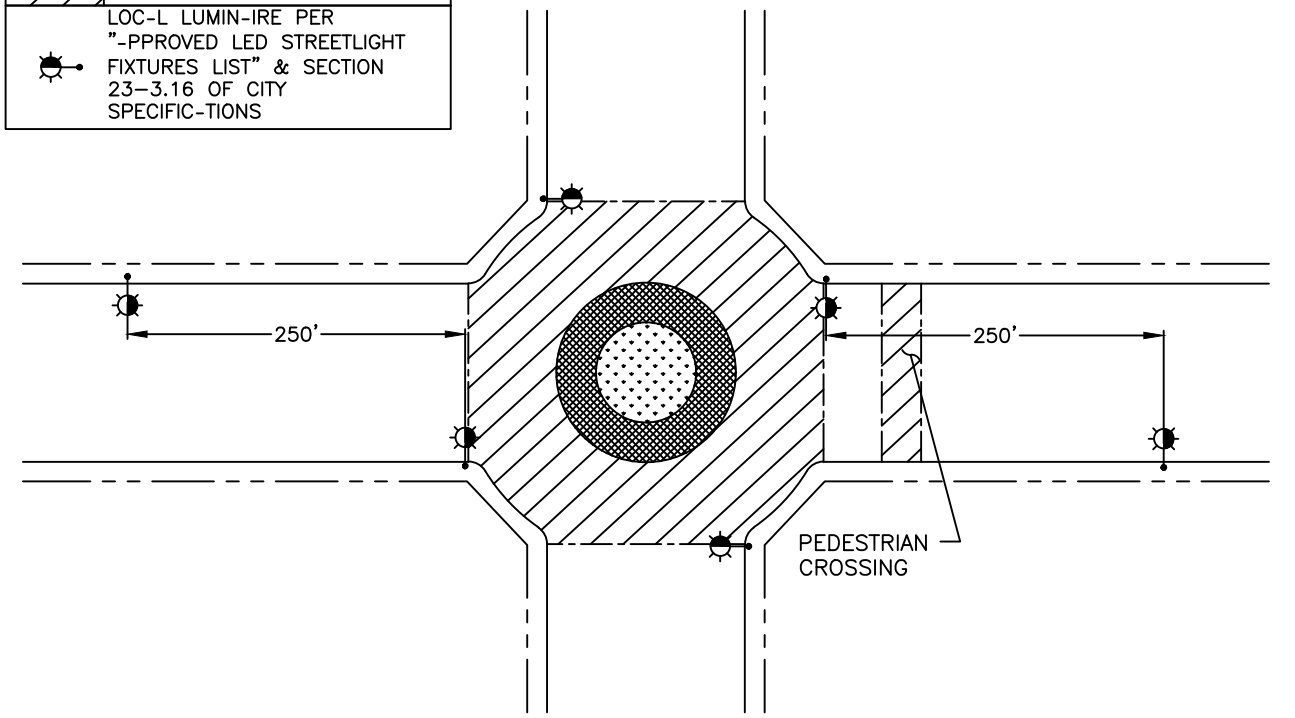
E-9A



"T" INTERSECTION

LOC-L INTERSECTION ILLUMIN-TION ZONE. SEE T-BLE "B" IN SECTION 23–3.16 OF CITY SPECIFIC-TIONS.

LOC-L LUMIN-IRE PER "-PPROVED LED STREETLIGHT FIXTURES LIST" & SECTION 23–3.16 OF CITY SPECIFIC-TIONS



LOCAL TRAFFIC CIRCLE INTERSECTION

NOTES:

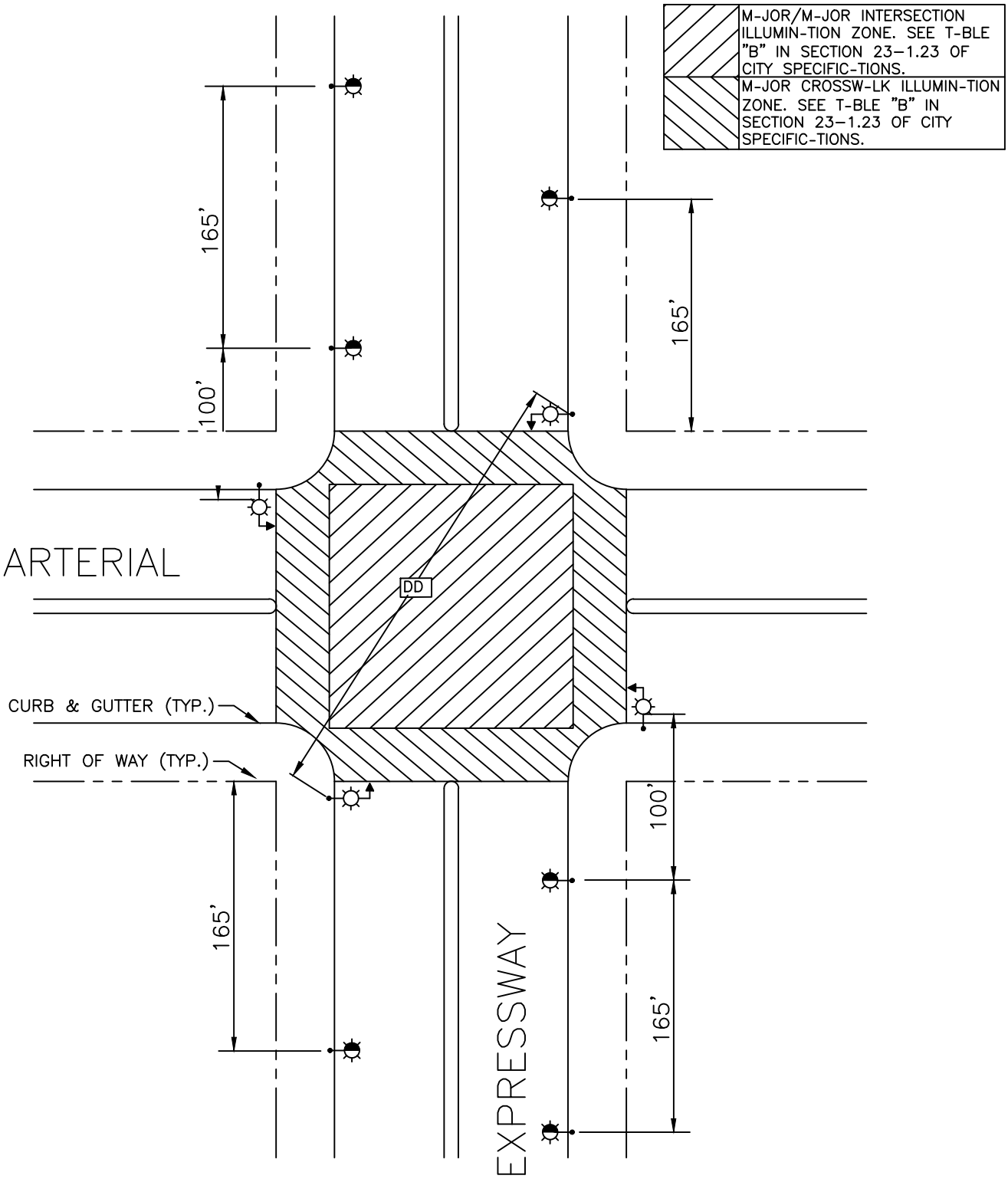
1. ALL DIMENSIONS SHOWN ARE MAXIMUM UNLESS OTHERWISE NOTED.
2. LOCAL LUMINAIRE STREETLIGHT MUST BE PLACED WITHIN RIGHT OF WAY PROJECTION. (ILLUMINATION ZONE)

STREETLIGHT–PLACEMENT
LOCAL INTERSECTIONS

REF. & REV.
DEC. 2020 (A.7)

CITY OF FRESNO

E–9B



IF THE POLE TO POLE DIAGONAL DISTANCE "DD" IS GREATER THAN 200 FEET, PROVIDE PHOTOMETRIC ANALYSIS.

LOCAL LUMINAIRE PER "APPROVED LED STREETLIGHT FIXTURES LIST" & SECTION 23-3.16 OF CITY SPECIFICATIONS

NOTES:

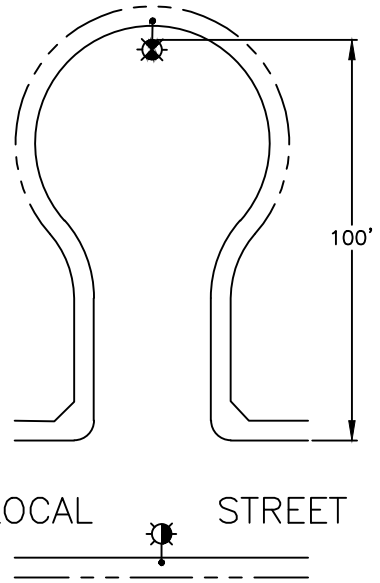
1. TRAFFIC SIGNAL LUMINARIES, MAJOR-LOCAL, & LOCAL LUMINARIES LIGHTS (ENTRANCE & EXIT) TO BE ON SEPARATE BREAKERS OF SAME CONTACTOR.
2. ALL DIMENSIONS SHOWN ARE MAXIMUM UNLESS OTHERWISE NOTED.

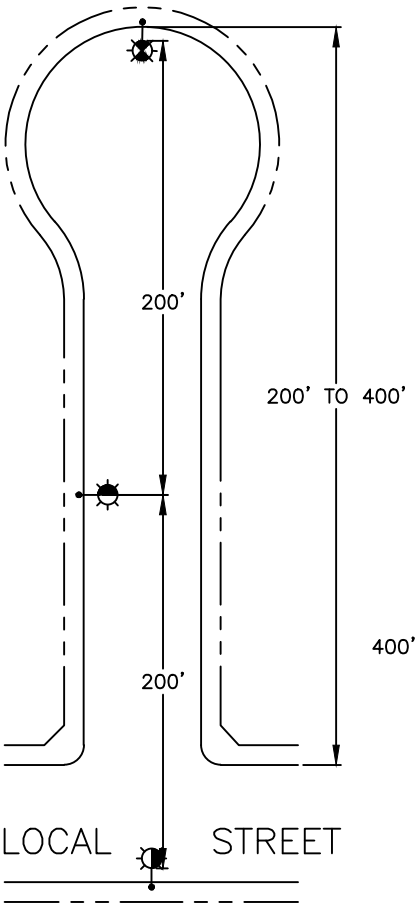
STREETLIGHT-PLACEMENT
EXPRESSWAY

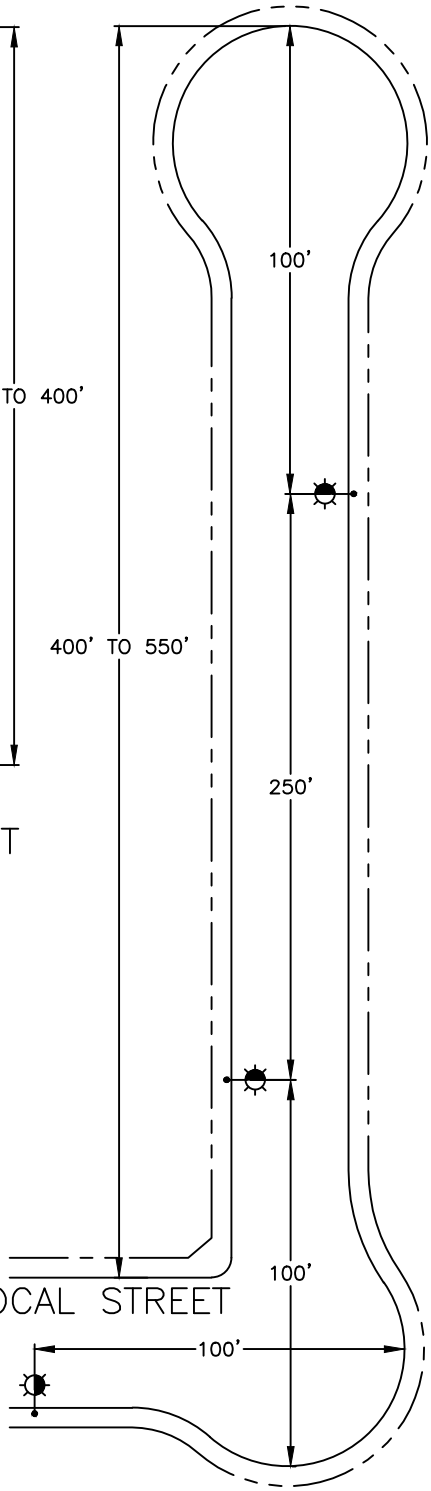
REF. & REV.
~~AUG. 2015~~
DEC. 2020 (A.7)

CITY OF FRESNO

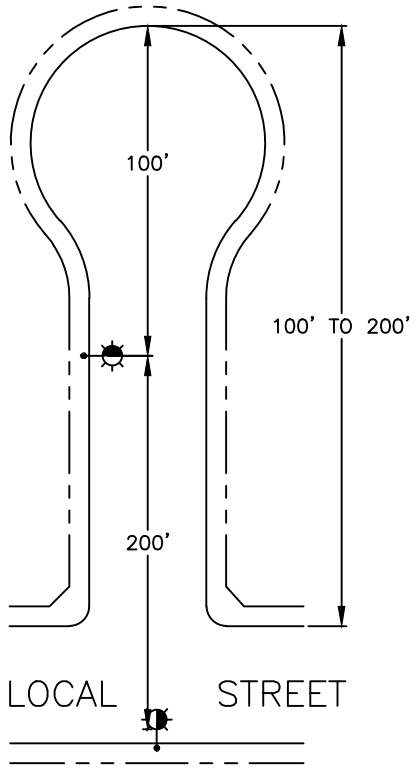
E-10







	LOC-L LUMIN-IRE PER "-PPROVED LED STREETLIGHT FIXTURES LIST" & SECTION 23-3.16 OF CITY SPECIFIC-TIONS
	CUL-DE-S-C LUMIN-IRE PER "-PPROVED LED STREETLIGHT FIXTURES LIST" & SECTION 23-3.16 OF CITY SPECIFIC-TIONS



NOTES:

1. "APPROVED LED STREETLIGHT FIXTURES LIST" AVAILABLE FOR DOWNLOAD FROM: www.Fresno.gov/Standards
2. ALL DIMENSIONS SHOWN ARE MAXIMUM UNLESS OTHERWISE NOTED.

STREETLIGHT-PLACEMENT
CUL-DE-SAC & KNUCKLE STREETS

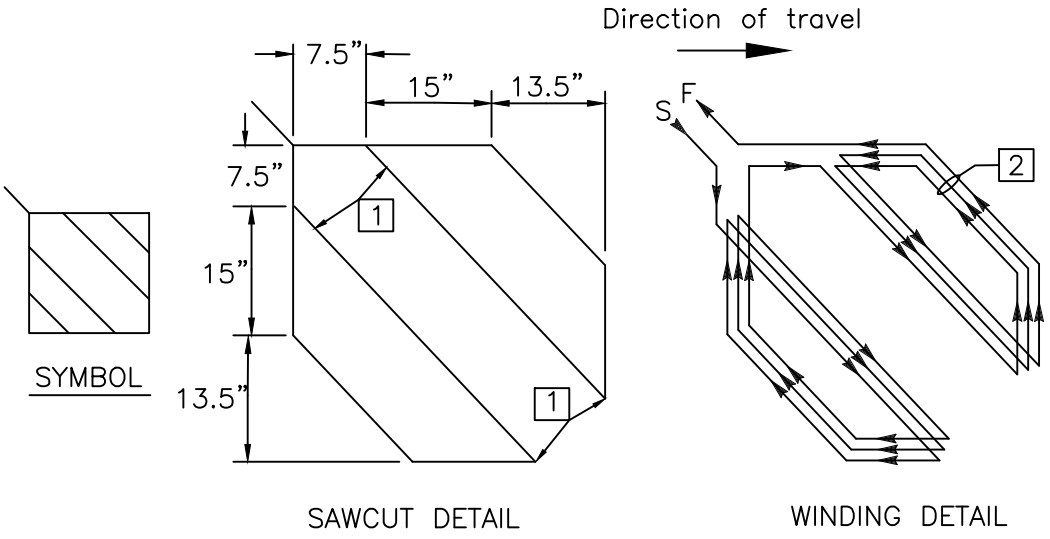
REF. & REV.
~~AUG. 2002~~
DEC. 2020 (A.7)

CITY OF FRESNO

E-11

THIS STANDARD IS
NO LONGER USED

STREETLIGHT–RESTRICTIONS CUL–DE–SAC DESIGNS	REF. & REV. ~~AUG. 2002~~ DEC. 2020 (A.7)	CITY OF FRESNO E–12

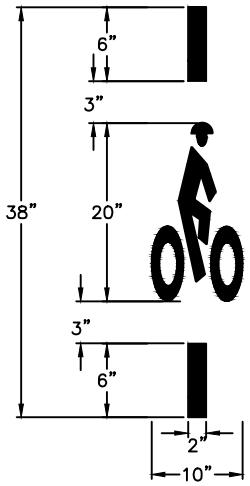


BIKE LOOP (3'X3')
DETECTOR CONFIGURATION

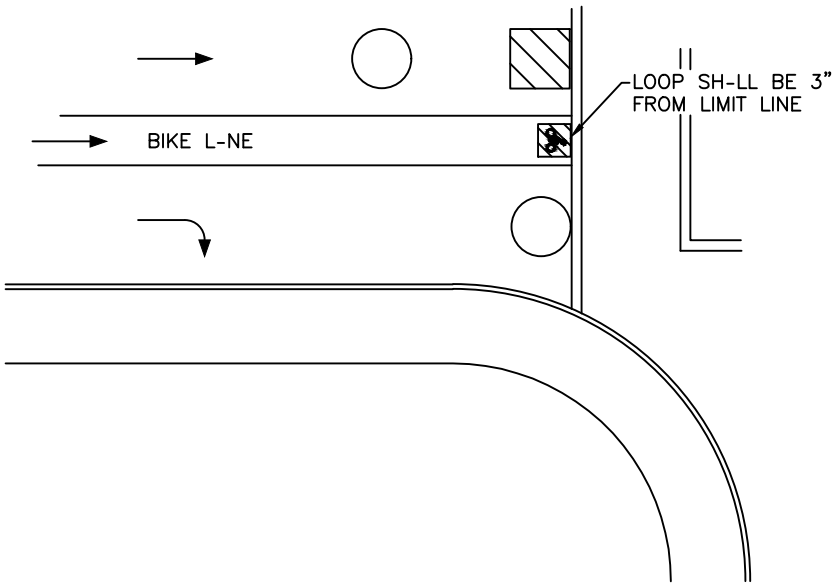
1 Round corners of acute angle sawcuts to prevent damage to conductors.

2 Install 3 turns when only one BIKE loop is on a sensor unit channel. Install 5 turns when one BIKE loop is connected in series with 3 additional 6'x6' loops on a sensor unit channel.

CITY OF FRESNO BIKE LOOP WITH BIKE LOOP DETECTOR SYMBOL 9C-7 OF THE CA-MUTCD, CENTERED ON LOOP.



BICYCLE LOOP DETECTOR
SYMBOL FOR 3'X3' LOOP



NOTES:

1. LOOP SEALANT SHALL BE CALTRANS APPROVED ELASTOMERIC SEALANT OR HOT MELT RUBBERIZED ASPHALT SEALANT.
2. ALL NEW LOOPS SHALL BE TESTED AND DOCUMENTED ON SHEET PROVIDED IN SECTION 23-2; TESTING SHALL BE PER CALTRANS STANDARD SPECIFICATIONS.
3. REFER TO STD. DWG. E-14 FOR LOOP PLACEMENT.

SIGNAL LIGHTS BIKE LOOP DETECTOR DETAIL (3'X3')	REF. & REV. ~~JUNE 2015~~ DEC. 2020 (A.7)	CITY OF FRESNO E-13

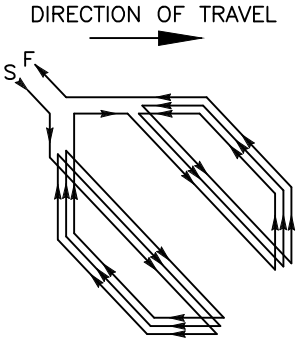
LEGEND:

CALTRANS TYPE 'E': SAWCUT CIRCULAR LOOP DETECTOR – "TYPE 2" LOOP WIRE (ES–5B).

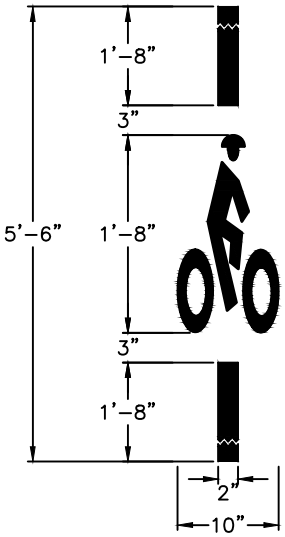
CALTRANS TYPE 'D': SAW CUT DIAGONAL LOOP DETECTOR "TYPE 2" LOOP WIRE (ES–5B). SEE WINDING DETAIL, RIGHT.

CALTRANS TYPE 'D' W/BIKE: DETECTOR SYMBOL (ON STATE STD. PLANS A24C & FIG. 9C–7 (CA) CA–MUTCD) CENTERED ON LOOP. SEE WINDING DETAIL, RIGHT.

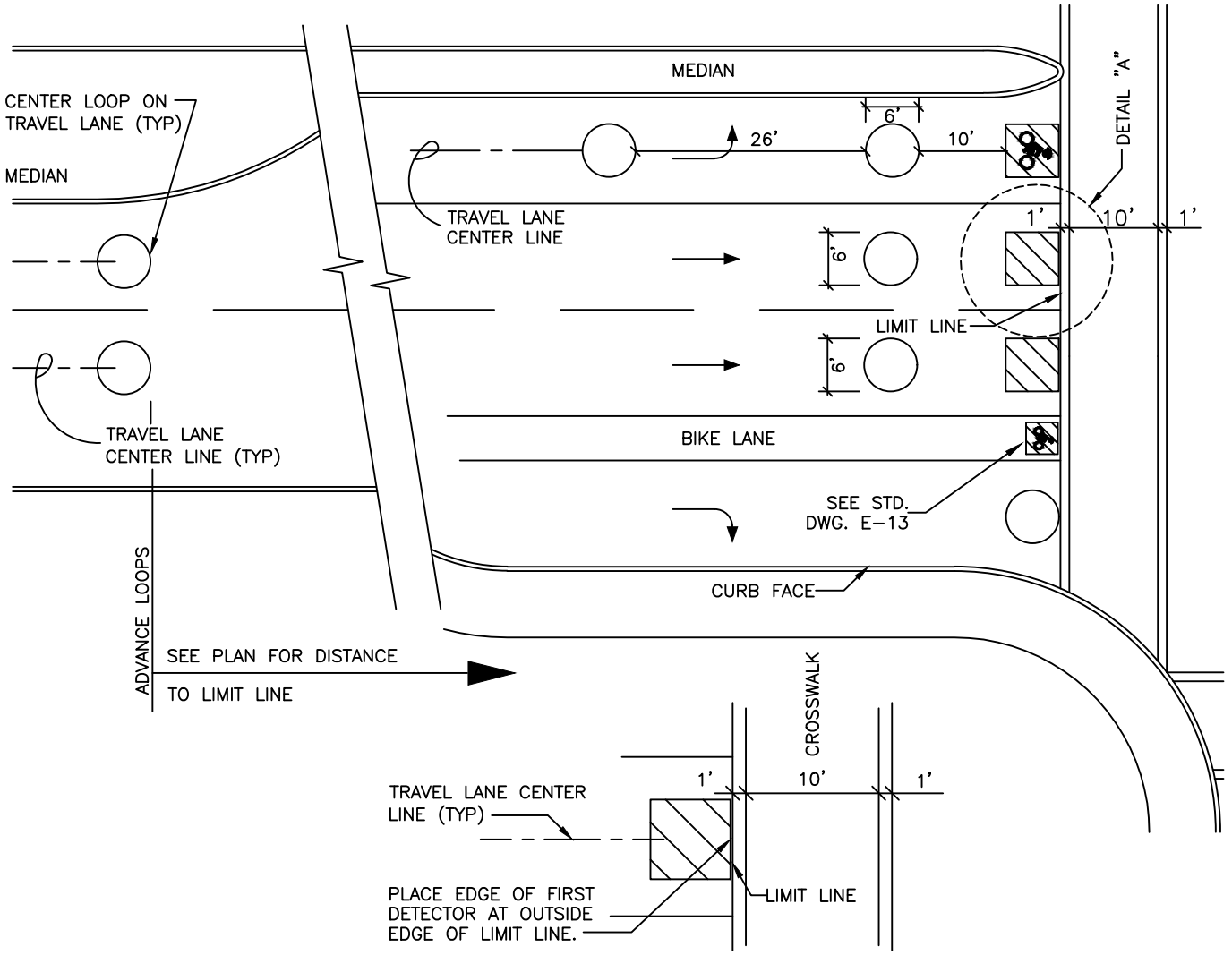
CITY OF FRESNO STD. DWG. E–13 BIKE LOOP (3'x3') WITH BIKE DETECTOR SYMBOL CENTERED ON LOOP. SEE WINDING DETAIL, RIGHT.



WINDING DETAIL



BICYCLE LOOP DETECTOR SYMBOL FOR CALTRANS TYPE 'D'



DETAIL "A"

NOTES:

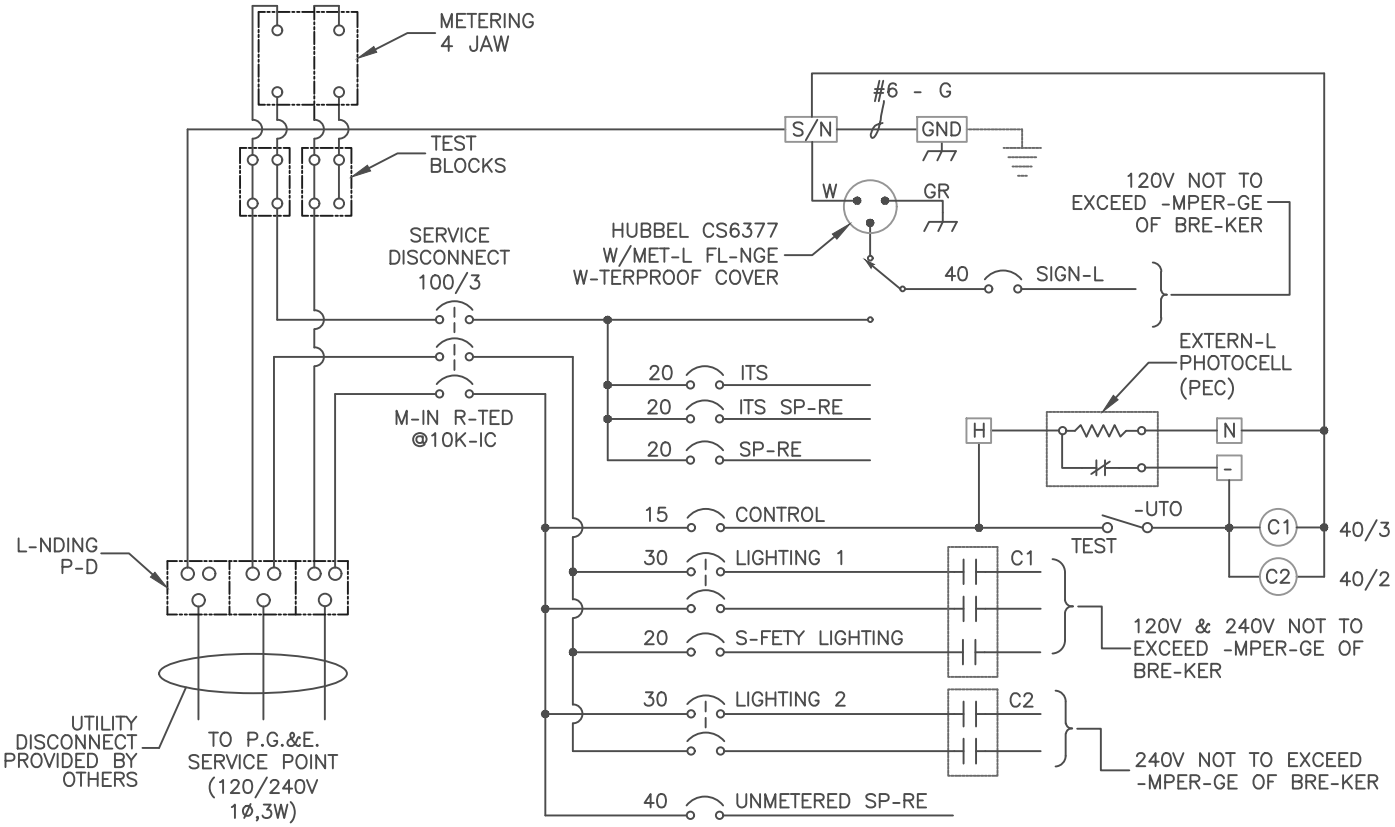
1. PAVEMENT SHALL BE DEEMED SUITABLE FOR INSTALLATION OF LOOP(S) BY THE CITY TRAFFIC ENGINEER. IF DEEMED NOT SUITABLE, PROJECT SHALL GRIND AND OVERLAY AND/OR RECONSTRUCT PAVEMENT AS DETERMINED BY THE CITY TRAFFIC ENGINEER.
2. ALL NEW LOOPS SHALL BE TESTED AND DOCUMENTED ON THE SHEET PROVIDED IN SECTION 23–2 OF THE CITY SPECIFICATIONS. TESTING SHALL BE TO CALTRANS STATE STANDARD PLANS.

SIGNAL LIGHTS
LOOP DETECTOR PLACEMENT

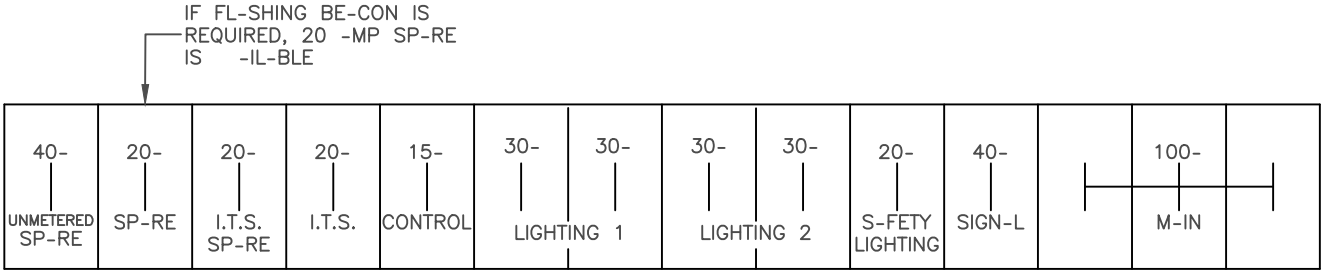
REF. & REV.
~~JUNE 2015~~
DEC. 2020 (A.7)

CITY OF FRESNO

E–14



SERVICE PEDESTAL SCHEMATIC

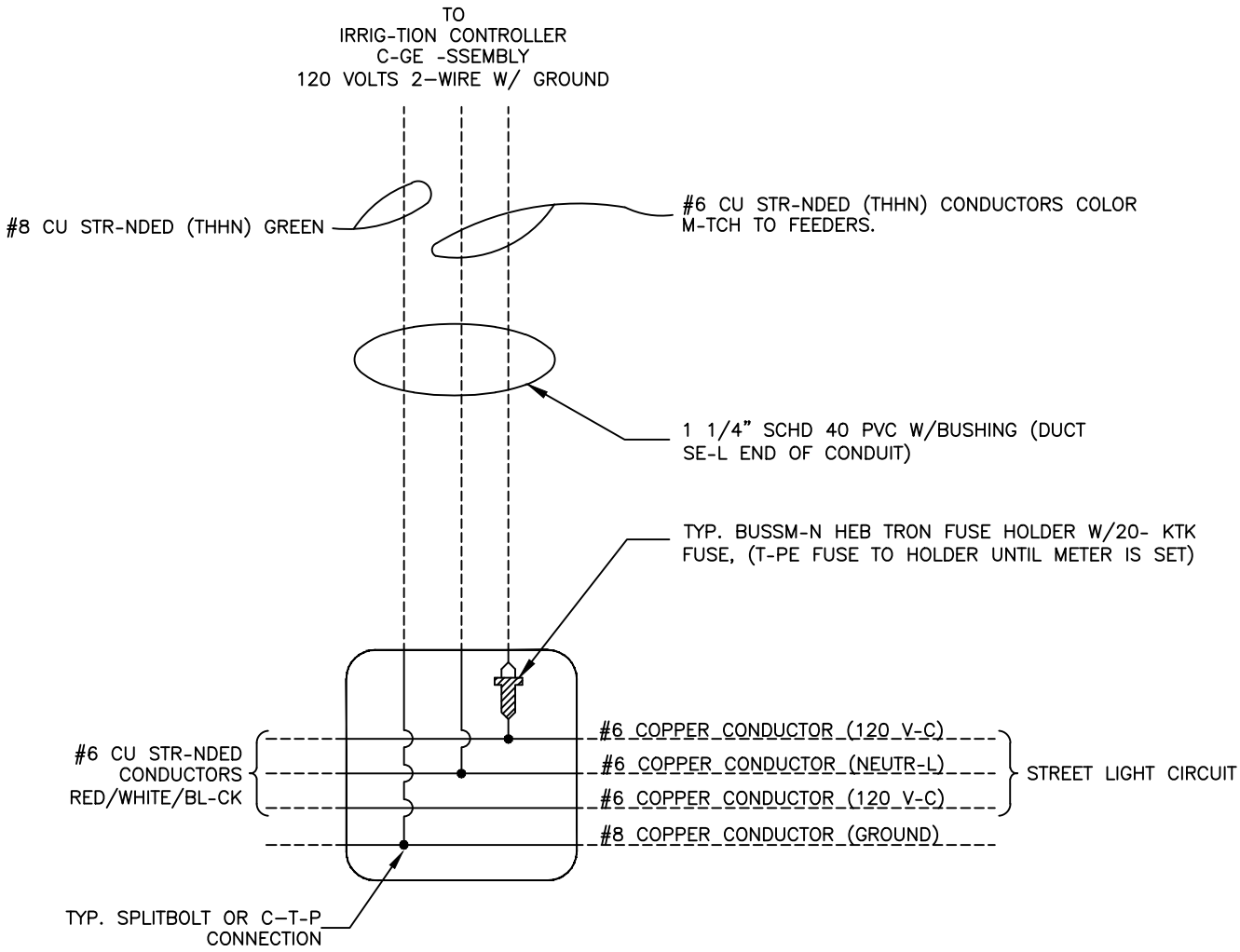


SWITCH LOCATION

NOTES:

1. SERVICE C-BINET SH-LL BE TESCO 26-100 LBS METERED/UNMETERED OR -PPROVED EQU-L.

SIGNAL LIGHT WIRING NEW INSTALLATIONS 26-100 CABINETS	REF. & REV. ~~JUNE 2015~~ DEC. 2020 (A.7)	CITY OF FRESNO E-15



TYPICAL NO. 3 1/2 PULLBOX

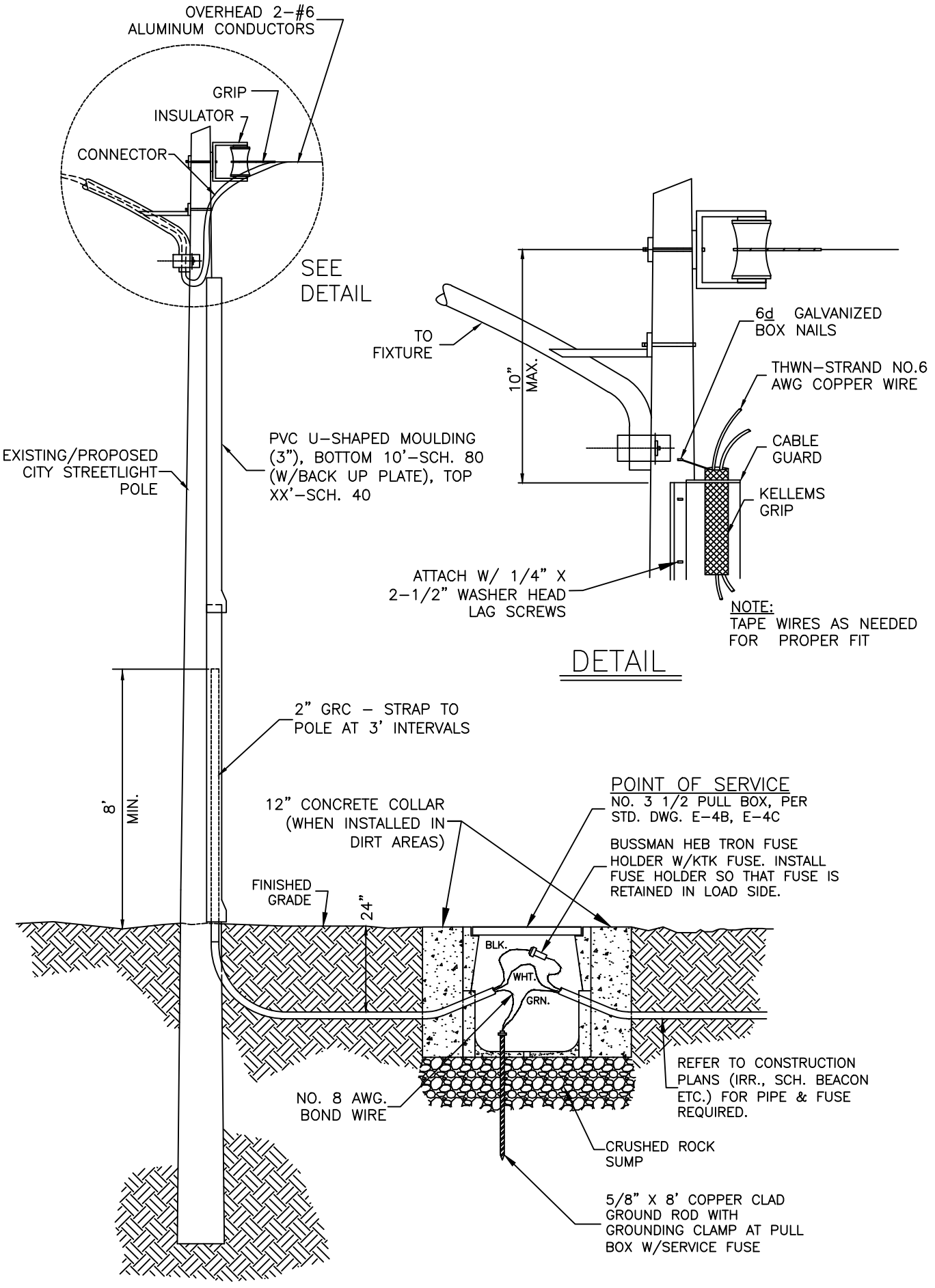
NOTES:

1. GROUT BOX AT CONDUIT ENTRANCE. RESTORE ANY GROUT DAMAGED BY INSTALLATION.

2. INSULATE HOT/NEUTRAL SPLICES AS FOLLOWS:
   COVER WITH 2-LAYERS RUBBER TAPE-FILLING VOIDS.
   APPLY 1-LAYER 1/2 LAPPED PVC TAPE.
   APPLY 1-LAYER FRICTION TAPE & COAT WITH AN APPROVED ELECTRICAL SEALING COMPOUND.

3. AN APPROVED LOCKING LID PER SECTION 23-1.10 OF CITY SPECIFICATIONS SHALL BE INSTALLED AT THE "IRRIGATION SERVICE" PULLBOX.

STREETLIGHT IRRIGATION SERVICE INSTALLATION	REF. & REV. ~~JUNE 2015~~ DEC. 2020 (A.7)	CITY OF FRESNO E-21



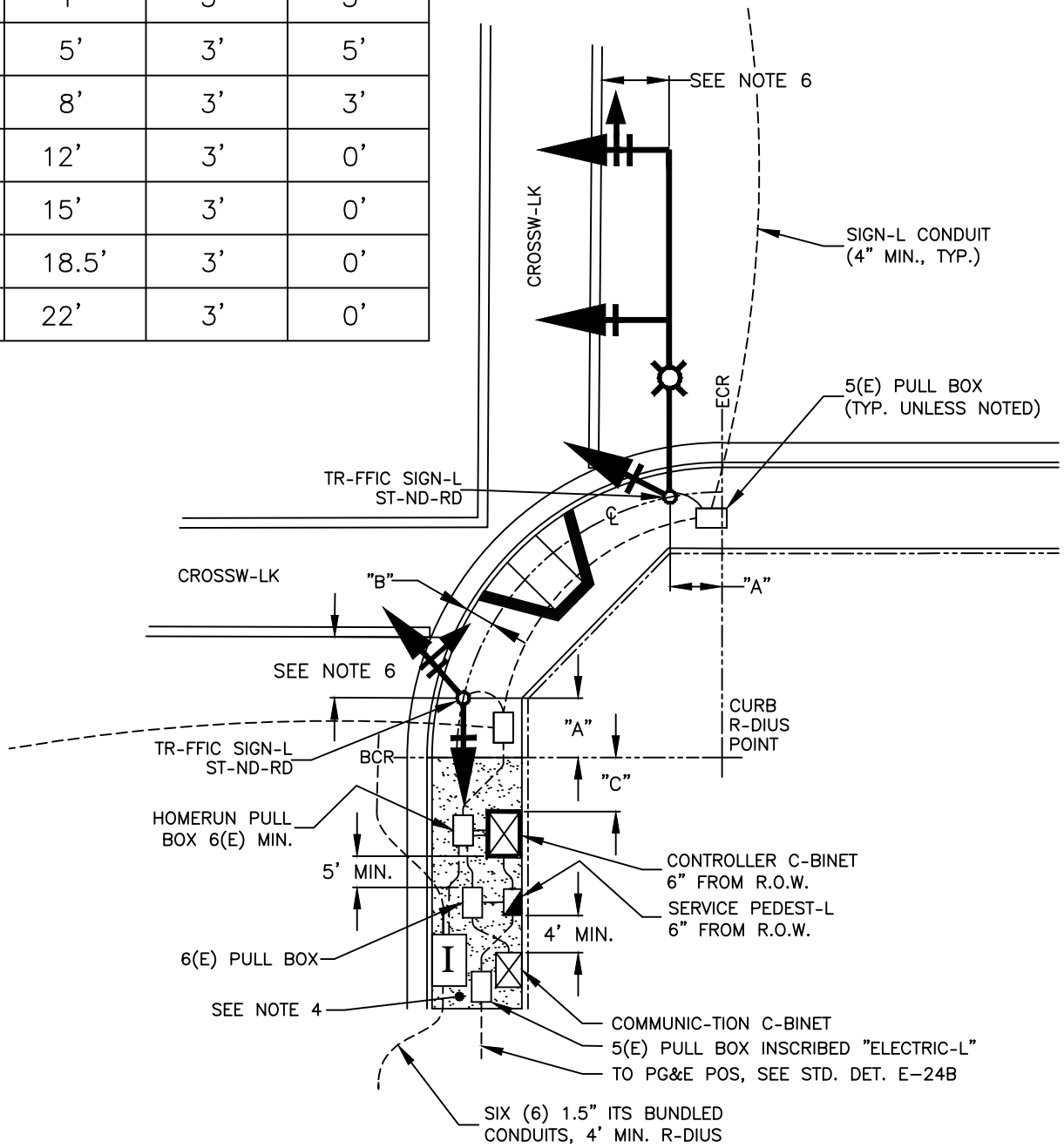
SERVICE RISER DETAIL
FROM EXISTING STREETLIGHT

REF. & REV.
~~AUG. 2002~~
DEC. 2020 (A.7)

CITY OF FRESNO

E–22

CURB RADIUS	"A" DISTANCE	"B" DISTANCE (MIN.)	"C" DISTANCE
20'	1'	3'	5'
25'	5'	3'	5'
30'	8'	3'	3'
35'	12'	3'	0'
40'	15'	3'	0'
45'	18.5'	3'	0'
50'	22'	3'	0'



NOTES:

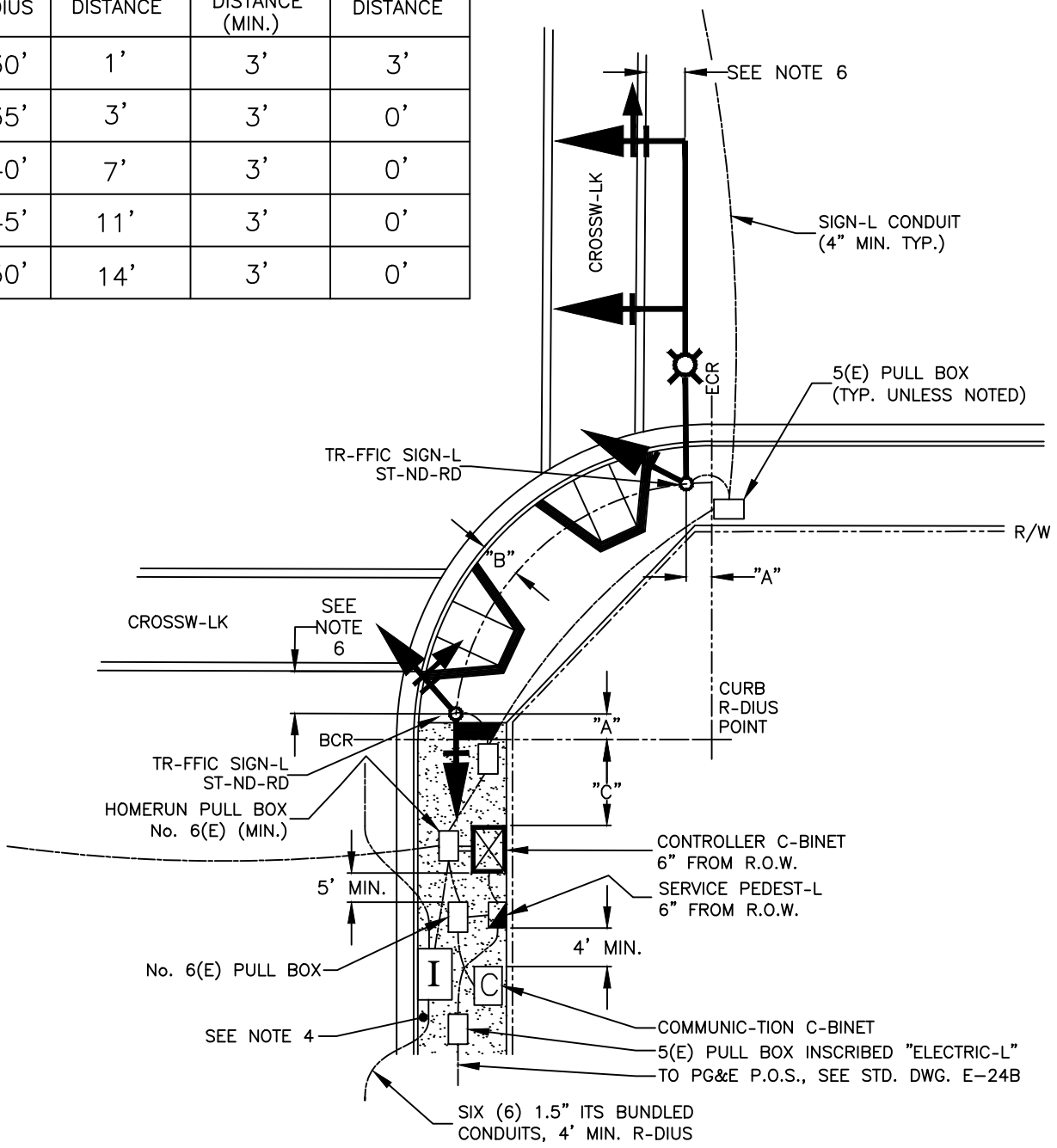
1. ALL EQUIPMENT SHALL BE LOCATED ACCORDING TO CITY OF FRESNO APPROVED PLANS. ANY VARIATION TO THE PLANS SHALL HAVE THE APPROVAL OF THE CITY TRAFFIC ENGINEER.
2. ALL EQUIPMENT SHALL BE LOCATED ACCORDING TO THE ULTIMATE STREET WIDTH AND CURB RETURNS.
3. ULTIMATE AND EXISTING CURB RETURN ARE/SHALL BE SHOWN ON CONSTRUCTION PLANS.
4. ADDITIONAL SIDEWALK TO BE INSTALLED PER CITY STANDARDS AS APPLICABLE TO MAINTAIN A 4' MINIMUM ADA CLEAR PATH ADJACENT TO EQUIPMENT.
5. DISTANCE "C" SHALL BE ADJUSTED AS NECESSARY FOR THE 4' ADA CLEARANCE REQUIREMENT.
6. DISTANCE "A" HAS BEEN CALCULATED TO PLACE A PEDESTRIAN PUSH BUTTON APPROXIMATELY 5' FROM CROSSWALK. IF UNFORESEEN CONDITIONS DO NOT ALLOW SIGNAL STANDARD OR CROSSWALK PLACEMENT AS SHOWN, A PEDESTRIAN PUSH BUTTON POST SHALL BE INSTALLED TO MEET ADA GUIDELINES.
7. LOCATE PULLBOXES FOR TESCO & TS COMBINED 3' FROM FACE OF CURB TO EDGE OF PULLBOX

SIGNAL LIGHT
EQUIPMENT PLACEMENT GUIDELINE

REF. & REV.
~~NOV. 2007~~
DEC. 2020 (A.7)

CITY OF FRESNO
E-24

CURB RADIUS	"A" DISTANCE	"B" DISTANCE (MIN.)	"C" DISTANCE
30'	1'	3'	3'
35'	3'	3'	0'
40'	7'	3'	0'
45'	11'	3'	0'
50'	14'	3'	0'



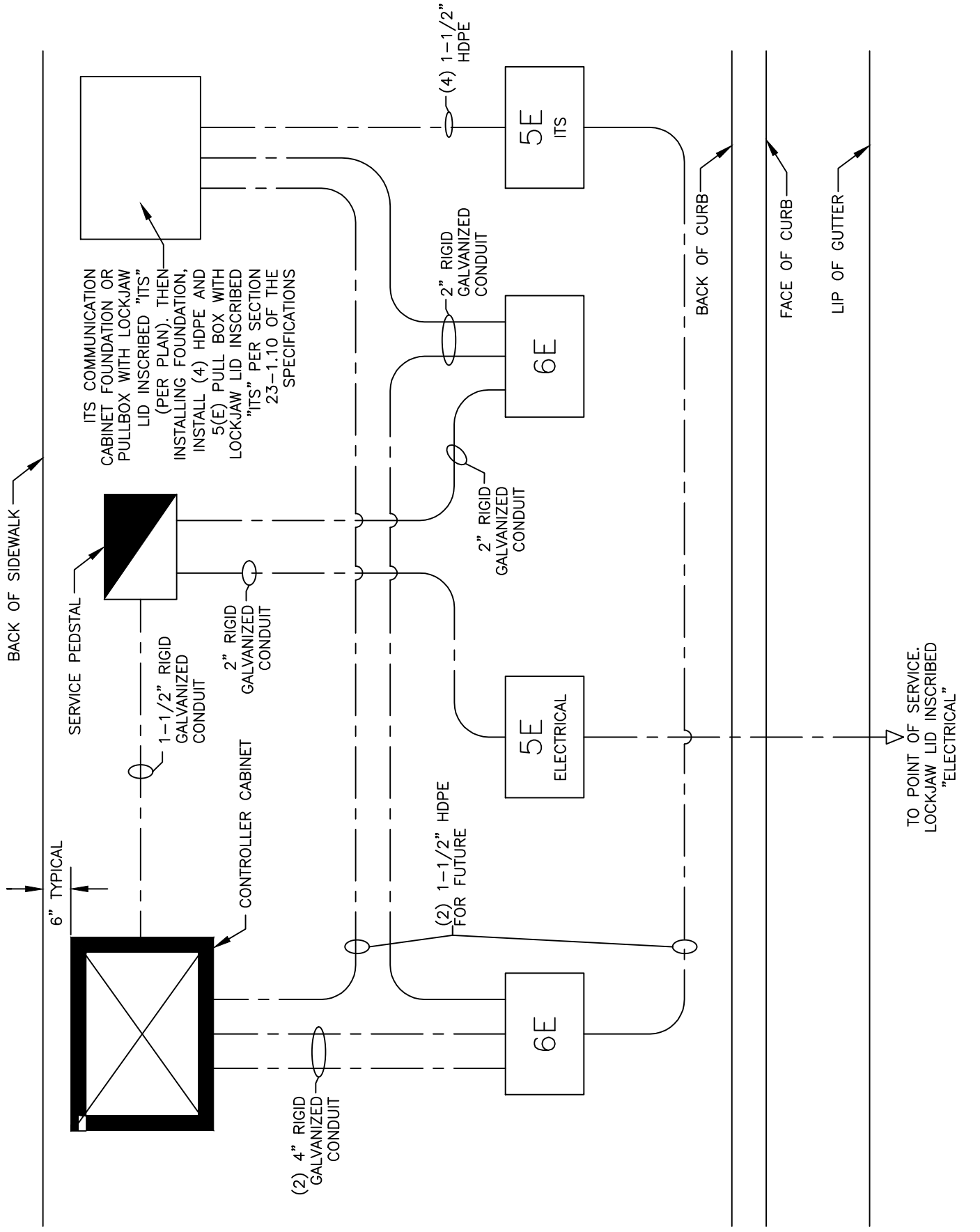
NOTES:

1. ALL EQUIPMENT SHALL BE LOCATED ACCORDING TO CITY OF FRESNO APPROVED PLANS. ANY VARIATION TO THE PLANS SHALL HAVE THE APPROVAL OF THE CITY TRAFFIC ENGINEER.
2. ALL EQUIPMENT SHALL BE LOCATED ACCORDING TO THE ULTIMATE STREET WIDTH AND CURB RETURNS.
3. ULTIMATE AND EXISTING CURB RETURN ARE/SHALL BE SHOWN ON CONSTRUCTION PLANS.
4. ADDITIONAL SIDEWALK TO BE INSTALLED PER CITY STANDARDS AS APPLICABLE TO MAINTAIN A 4' MINIMUM ADA CLEAR PATH ADJACENT TO EQUIPMENT.
5. DISTANCE "C" SHALL BE ADJUSTED AS NECESSARY FOR THE 4' ADA CLEARANCE REQUIREMENT.
6. DISTANCE "A" HAS BEEN CALCULATED TO PLACE A PEDESTRIAN PUSH BUTTON APPROXIMATELY 5' FROM CROSSWALK. IF UNFORESEEN CONDITIONS DO NOT ALLOW SIGNAL STANDARD OR CROSSWALK PLACEMENT AS SHOWN, A PEDESTRIAN PUSH BUTTON POST SHALL BE INSTALLED TO MEET ADA GUIDELINES.

SIGNAL LIGHTS/DUAL RAMPS
EQUIPMENT PLACEMENT GUIDELINE

REF. & REV.
~~JUNE 2015~~
DEC. 2020 (A.7)

CITY OF FRESNO
E-24A



NOTES:

1. SEE CITY OF FRESNO STANDARD DRAWINGS E-24 AND E-24A FOR SPACING REQUIREMENTS.

SIGNAL LIGHT
EQUIPMENT PLACEMENT DETAIL

REF. & REV.
DEC. 2020 (A.7)

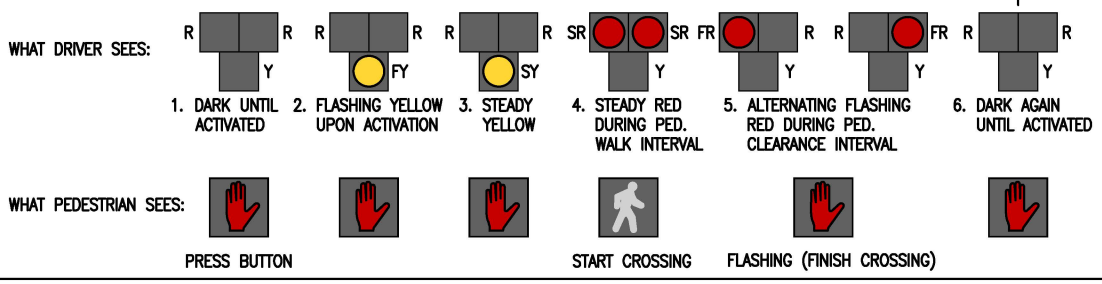
CITY OF FRESNO

E-24B

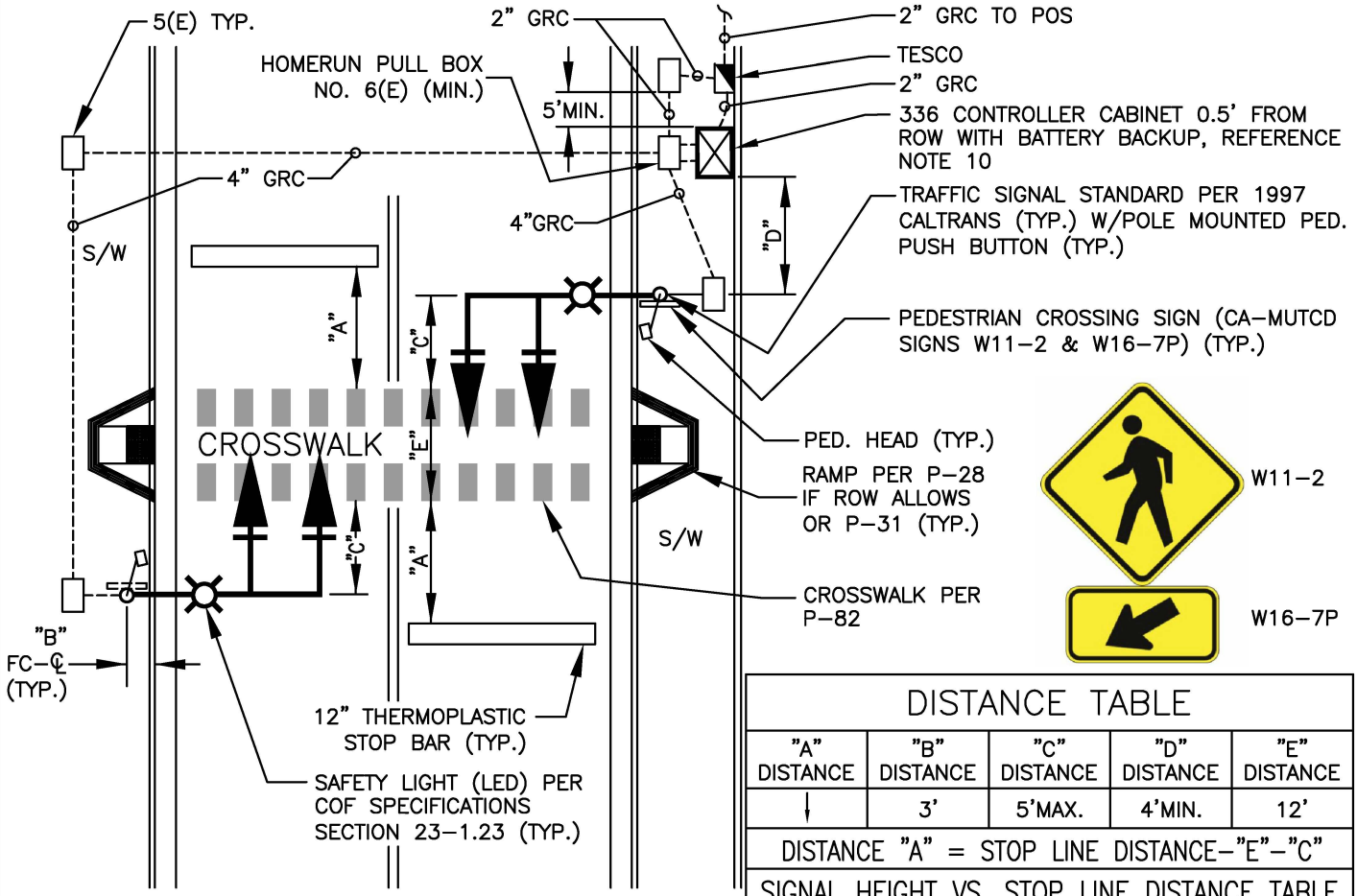
FY = FLASHING YELLOW
SY = STEADY YELLOW
SR = STEADY RED
FR = FLASHING RED

FLASHING SEQUENCE FOR PEDESTRIAN CROSSING SIGNAL

R10-23 SIGN TO BE INSTALLED WITHIN 5' O.C. OF PED. CROSSING SIGNAL



R10-23



DISTANCE TABLE				
"A" DISTANCE	"B" DISTANCE	"C" DISTANCE	"D" DISTANCE	"E" DISTANCE
↓	3'	5'MAX.	4'MIN.	12'

DISTANCE "A" = STOP LINE DISTANCE-"E"-"C"

SIGNAL HEIGHT VS. STOP LINE DISTANCE TABLE

HEIGHT TO TOP OF SIGNAL HOUSING	21'	22'	23'	24'	25'	25'-6"
STOP LINE DISTANCE	40'	42'-8"	45'-6"	48'-6"	51'-3"	53'

NOTES:

1. ALL EQUIPMENT SHALL BE LOCATED ACCORDING TO CITY OF FRESNO APPROVED PLANS. ANY VARIATION TO THE PLANS SHALL HAVE THE APPROVAL OF THE CITY TRAFFIC ENGINEER.
2. ALL EQUIPMENT SHALL BE LOCATED ACCORDING TO THE ULTIMATE STREET WIDTH WITHIN CITY ROW.
3. ULTIMATE AND EXISTING STREET WIDTH SHALL BE SHOWN ON CONSTRUCTION PLANS.
4. ADDITIONAL SIDEWALK TO BE INSTALLED PER CITY STANDARDS AS APPLICABLE TO MAINTAIN A 4' MINIMUM ADA CLEAR PATH ADJACENT TO EQUIPMENT.
5. DISTANCE "C" SHALL BE ADJUSTED AS NECESSARY FOR THE 4' ADA CLEARANCE REQUIREMENT.
6. PLACE PEDESTRIAN PUSH BUTTON APPROXIMATELY 5' FROM CROSSWALK. IF CONDITIONS DO NOT ALLOW SIGNAL STANDARD OR CROSSWALK PLACEMENT AS SHOWN, A PEDESTRIAN PUSH BUTTON POST SHALL BE INSTALLED TO MEET ADA GUIDELINES.
7. LOCATE PULLBOXES FOR TESCO & TS COMBINED 3' FROM FACE OF CURB TO EDGE OF PULLBOX.
8. INSTALLATION OF I.T.S. EQUIPMENT AND CONDUITS SHALL BE AT THE DETERMINATION OF THE CITY ENGINEER.
9. ALL EQUIPMENT SHALL MEET CURRENT CITY OF FRESNO DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS.
10. A BATTERY-BACKUP SYSTEM SHALL BE INCLUDED AS PART OF THIS INSTALLATION UNLESS DIRECTED OTHERWISE BY THE CITY ENGINEER.

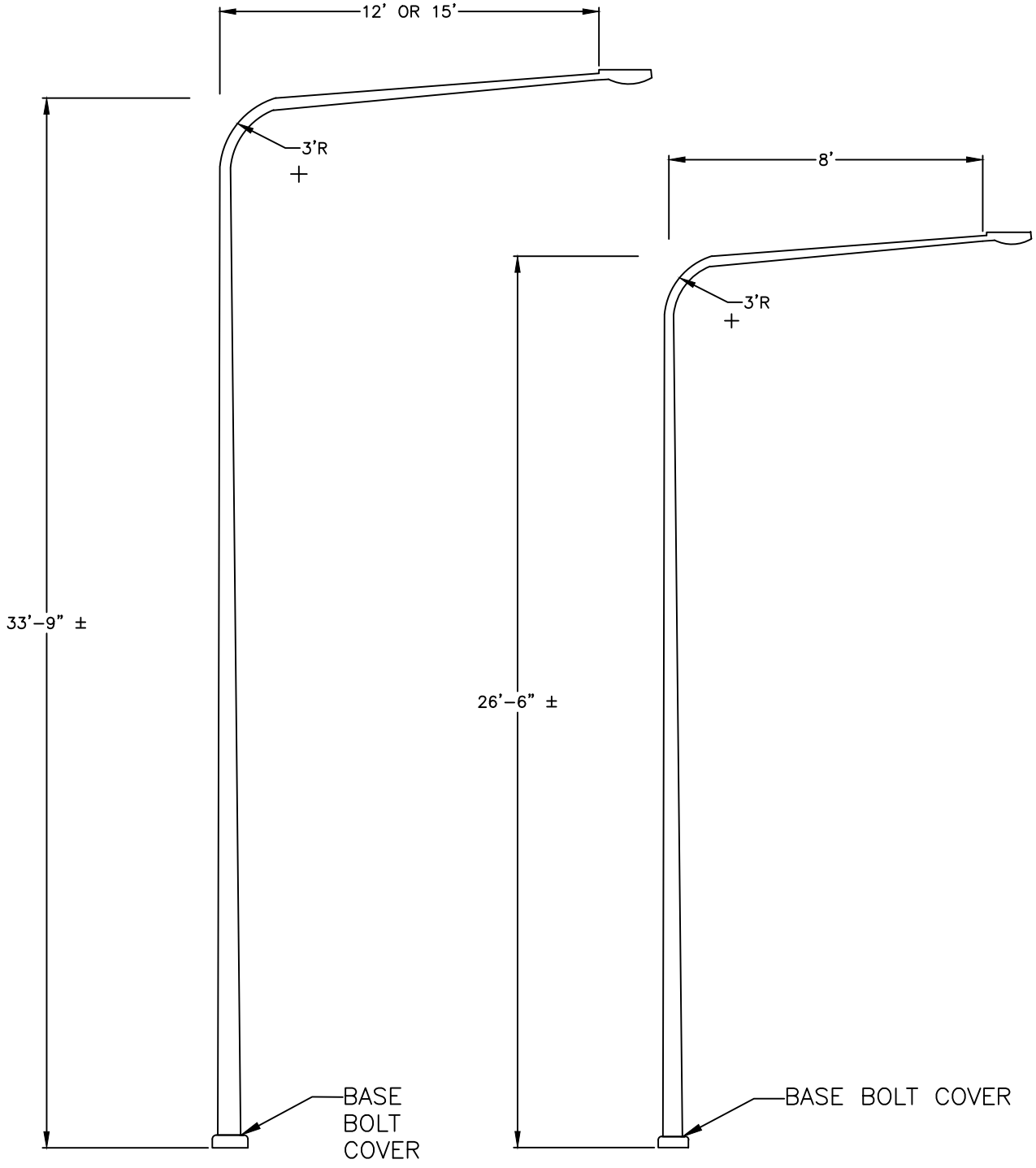
HIGH-INTENSITY ACTIVATED CROSSWALK
LAYOUT AND EQUIPMENT PLACEMENT GUIDELINE

REF. & REV.
DEC. 2020 (A.7)

CITY OF FRESNO
E-24C

THIS STANDARD IS
NO LONGER USED

STREETLIGHT POINT OF SERVICE CONCRETE PULL BOX	REF. & REV. ~~SEPT. 2009~~ DEC. 2020 (A.7)	CITY OF FRESNO E–28



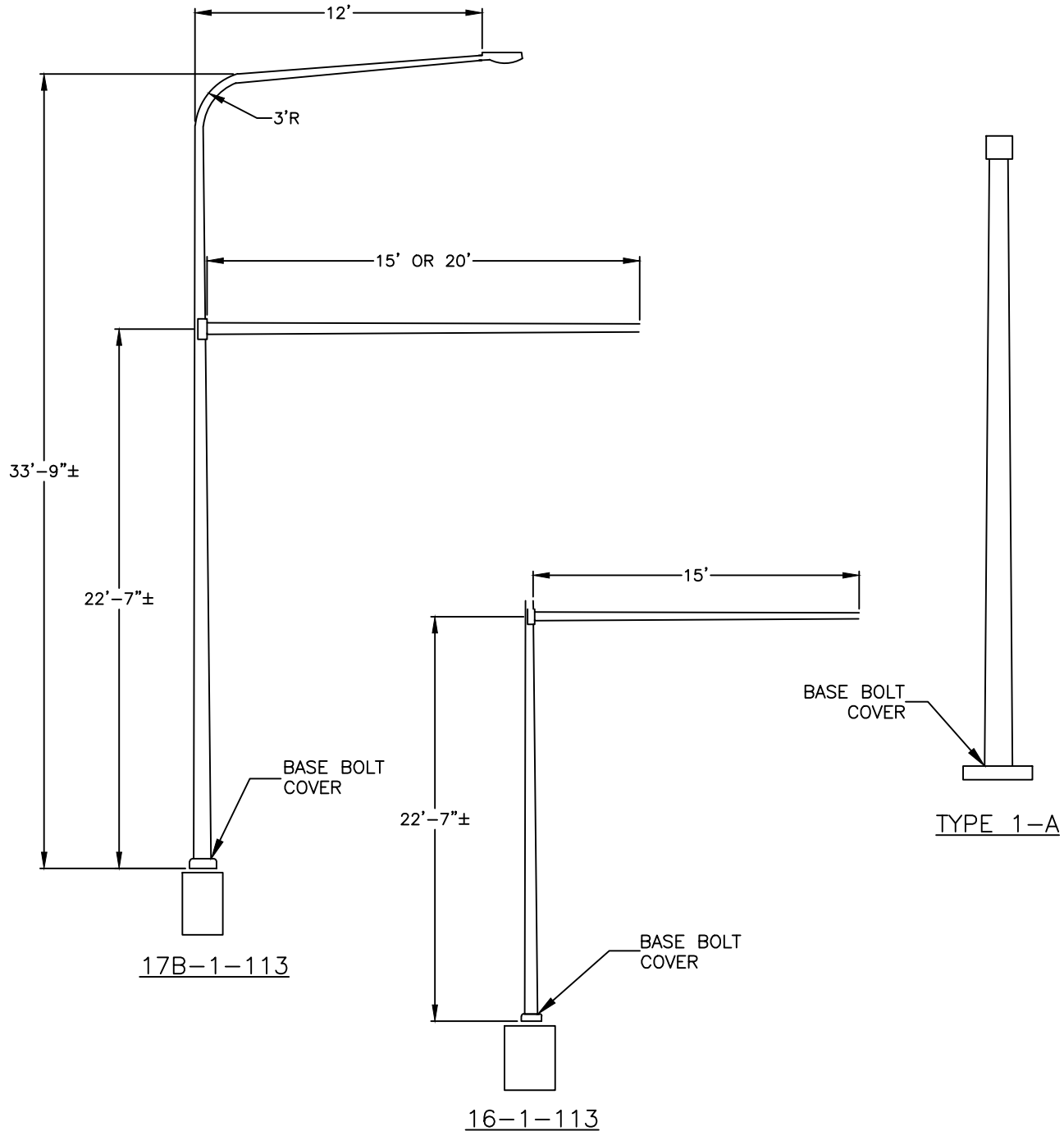
MAJOR STREET STANDARD

LOCAL STREET STANDARD

NOTES:

1. THE DECORATIVE POLE STANDARDS SHALL APPLY TO THE "DOWNTOWN FRESNO AREA" AS DEFINED BY P.W. STD. DWG. E-29.
2. WITH THE EXCEPTION OF POLE DIMENSIONS AND COLORS, ALL NOTES AND REQUIREMENTS PER P.W. STD. DWG. E-1 SHALL APPLY.
3. POLE FINISH: BASE COAT – HOT DIP GALVANIZE TO ASTM A123
   FINISH COAT – TGIC OR URETHANE POLYESTER POWDER
   COLOR – BRONZE TO MATCH ADJACENT DECORATIVE POLES
4. MATCHING BASE BOLT COVERS SHALL BE INSTALLED.

DOWNTOWN STREETLIGHT DECORATIVE POLE DETAILS	REF. & REV. ~~SEPT., 2009~~ DEC. 2020 (A.7)	CITY OF FRESNO E-30



NOTES:

1. THE DECORATIVE POLE STANDARDS SHALL APPLY TO THE "DOWNTOWN FRESNO AREA" AS DEFINED BY P.W. STD. DWG. E-29.
2. POLE FINISH: BASE COAT – HOT DIP GALVANIZE TO ASTM A123
   FINISH COAT – TGIC OR URETHANE POLYESTER POWDER
   COLOR – BRONZE TO MATCH ADJACENT DECORATIVE POLES
3. POLES MUST MEET CALTRANS 1997 STANDARD SPECIFICATIONS FOR TYPE 1-A, 16-1-113, AND 17B-1-113.
4. MATCHING BASE BOLT COVERS SHALL BE INSTALLED.

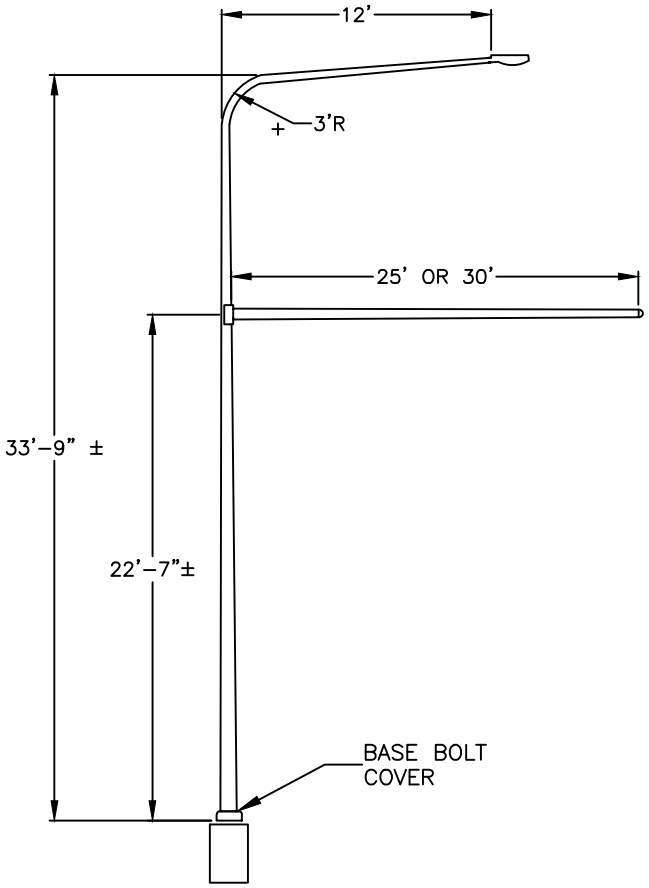
DOWNTOWN SIGNAL POLES

DECORATIVE POLE DETAILS – TYPE 1-A, 16, 17B

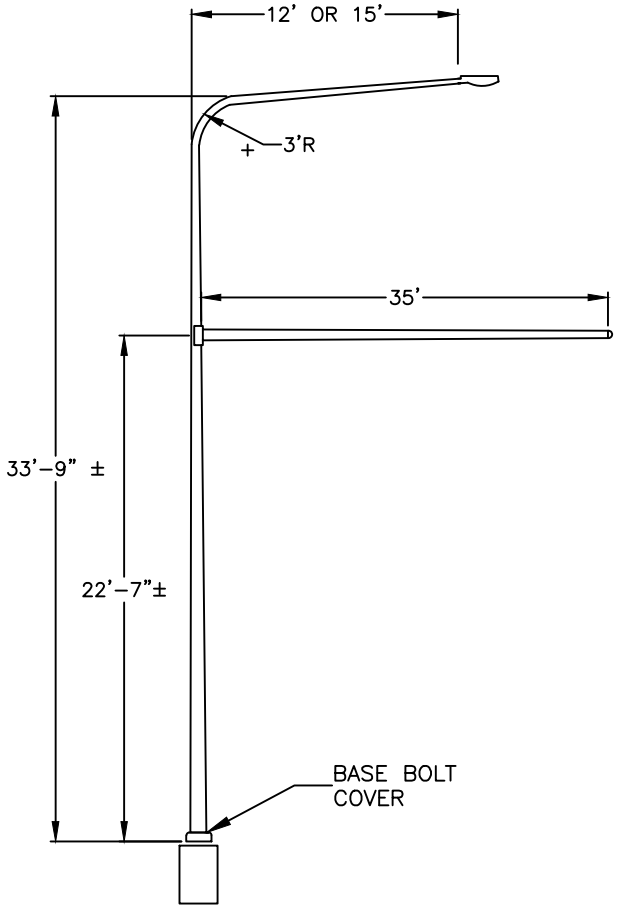
REF. & REV.
~~SEPT. 2009~~
DEC. 2020 (A.7)

CITY OF FRESNO

E-31



19-3-113



24-3-113

NOTES:

1. THE DECORATIVE POLE STANDARDS SHALL APPLY TO THE "DOWNTOWN FRESNO AREA" AS DEFINED BY P.W. STD. DWG. E-29.
2. POLE FINISH: BASE COAT – HOT DIP GALVANIZE TO ASTM A123
   FINISH COAT – TGIC OR URETHANE POLYESTER POWDER
   COLOR – BRONZE TO MATCH ADJACENT DECORATIVE POLES
3. POLES MUST MEET CALTRANS 1997 STANDARD SPECIFICATIONS FOR TYPES 19-3-113 AND 24-3-113.
4. MATCHING BASE BOLT COVERS SHALL BE INSTALLED.

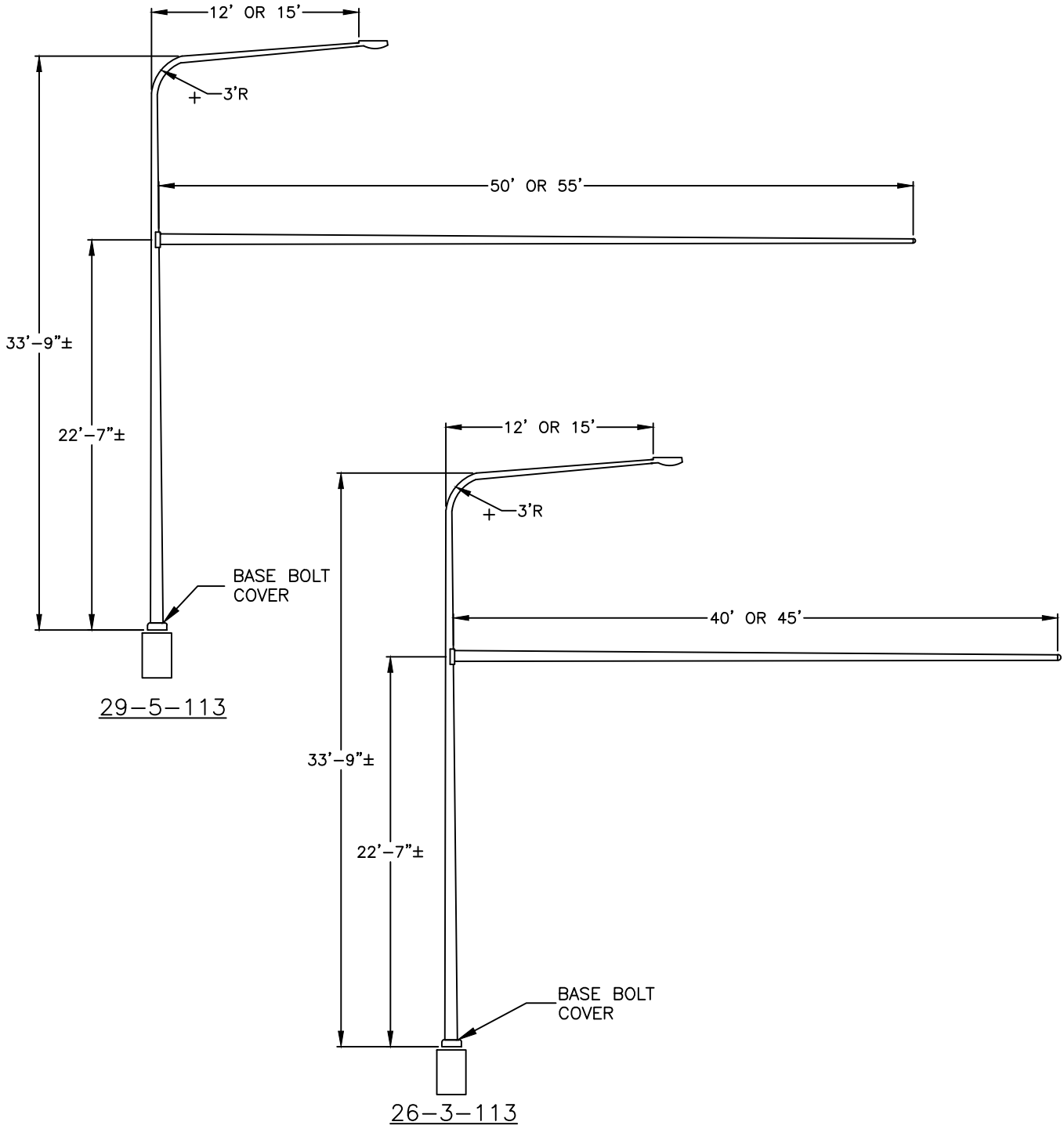
DOWNTOWN SIGNAL POLES

DECORATIVE POLE DETAILS – TYPE 19, 24

REF. & REV.
~~SEPT. 2009~~
DEC. 2020 (A.7)

CITY OF FRESNO

E-32



NOTES:

1. THE DECORATIVE POLE STANDARDS SHALL APPLY TO THE "DOWNTOWN FRESNO AREA" AS DEFINED BY P.W. STD. DWG. E-29.
2. POLE FINISH: BASE COAT – HOT DIP GALVANIZE TO ASTM A123
   FINISH COAT – TGIC OR URETHANE POLYESTER POWDER
   COLOR – BRONZE TO MATCH ADJACENT DECORATIVE POLES
3. POLES MUST MEET CALTRANS 1997 STANDARD SPECIFICATIONS FOR TYPES 29-5-113 AND 26-3-113.
4. MATCHING BASE BOLT COVERS SHALL BE INSTALLED.

DOWNTOWN SIGNAL POLES

DECORATIVE POLE DETAILS – TYPE 26, 29

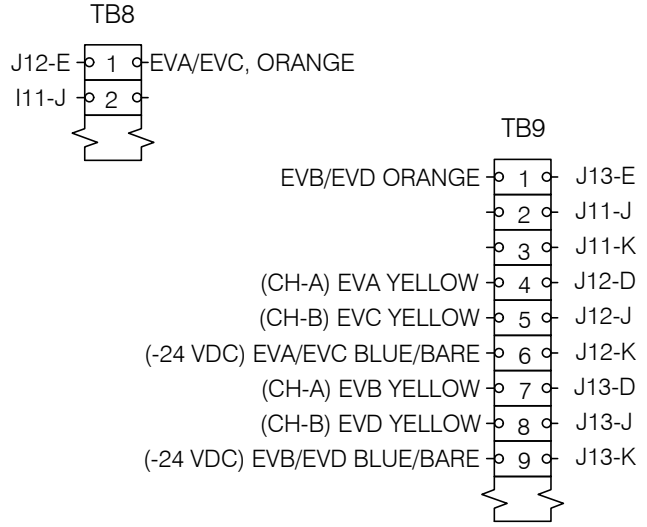
REF. & REV.
~~SEPT. 2009~~
DEC. 2020 (A.7)

CITY OF FRESNO

E-33

OPTICOM FIELD WIRE DETAIL

(FOR STANDARD MODEL 721/752 INSTALLATIONS)



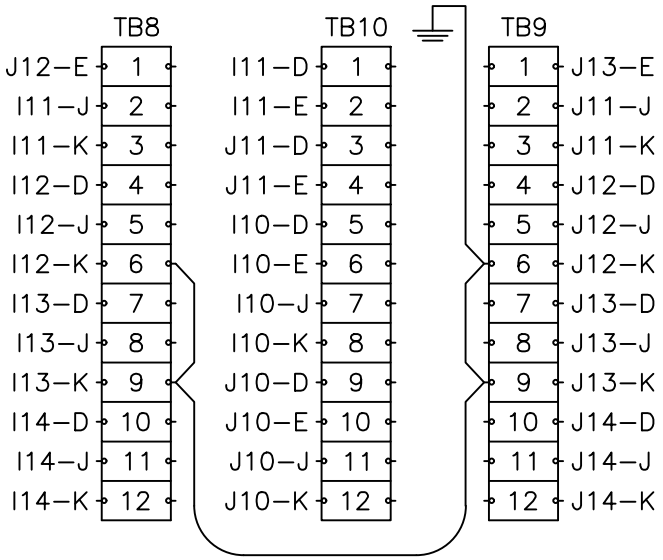
NOTES:

332 CABINET MODIFICATIONS FOR OPTICOM MODEL 762 DISCRIMINATORS (TWO-CHANNEL, DUAL PRIORITY, ENCODED) AND MODEL 721 DETECTORS (TWO DIRECTION, SINGLE CHANNEL).

CAUTION:

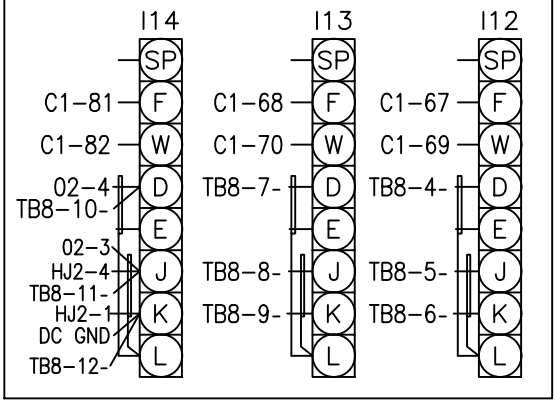
CONNECT TERMINAL K OF THE INPUT FILE SLOTS J12&J13 TO THE EARTH GROUND TO ALLOW DISSIPATION OF STATIC CHARGES ON THE DETECTOR CABLE. FAILURE TO CONNECT TERMINAL K TO THE EARTH GROUND MAY DAMAGE THE EQUIPMENT. IF DETECTORS HAVE BEEN MOUNTED BUT NOT CONNECTED TO THE PHASE SELECTOR, STRIP INSULATION FROM EACH DETECTOR CABLE AND CONNECT ALL THE WIRES TO EARTH GROUND UNTIL THE INSTALLATION CAN BE COMPLETED.

LOWER INPUT PANEL

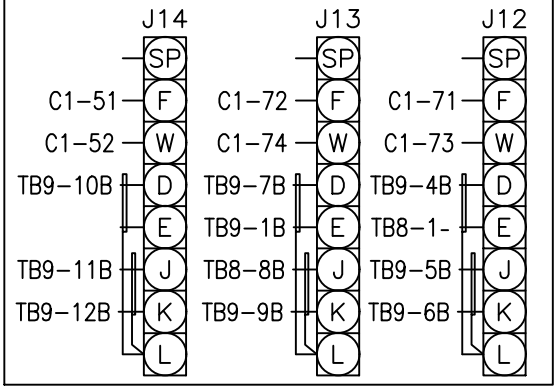


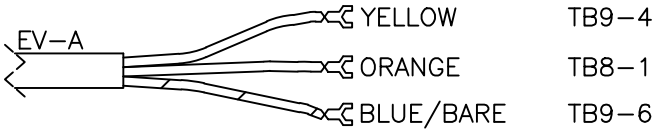
TB10 HD30A SERIES TERMINAL BLOCK OR EQUAL.

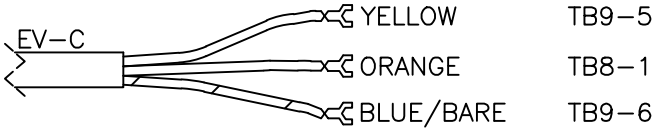
I INPUT FILE - ISOLATION (REAR VIEW)

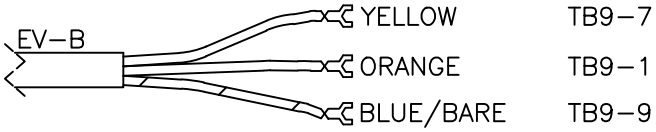


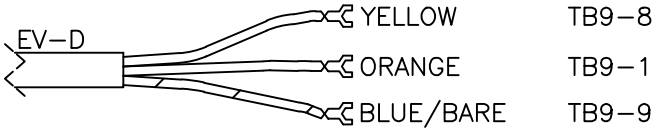
J INPUT FILE- ISOLATION(REAR VIEW)











EMERGENCY VEHICLE PREEMPTION OPTICOM CONNECTIONS

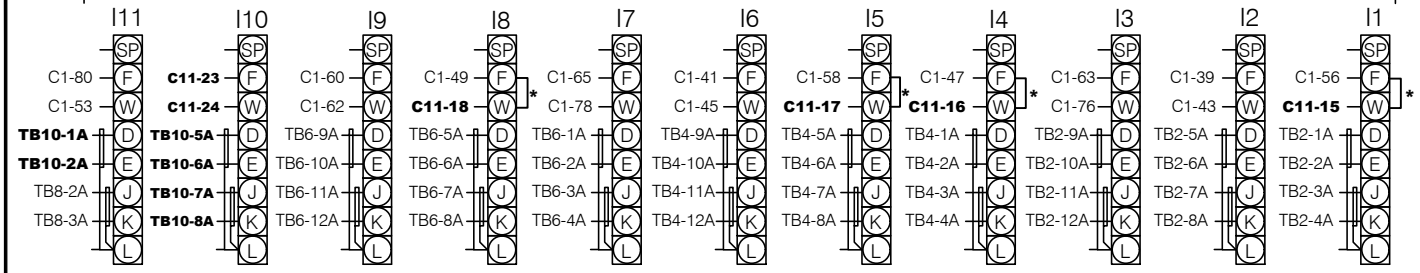
721 DETECTOR AND TERMINAL BLOCK CONNECTIONS

REF. & REV.
~~JUNE 2015~~
DEC. 2020 (A.7)

CITY OF FRESNO

E-34A

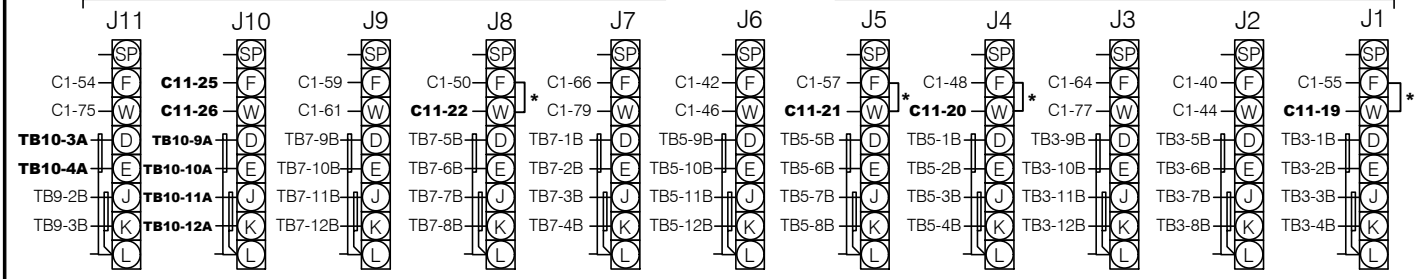
I INPUT FILE (REAR VIEW)

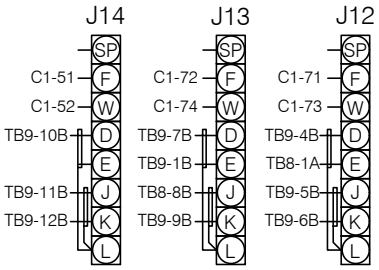


NOTE:
SEE CITY STANDARD DRAWING E-34 WIRING DETAILS FOR INPUT FILE I12, I13, I14, J12, J13 & J14.

INPUT FILE FRONT VIEW														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
U	1I1U (1)	2I2U (2)	2I3U (4)	2I4U (6)	3I5U (7)	4I6U (8)	4I7U (10)	4I8U (12)	1I9U (13)	SPI10U (41)	2I11U (29)	Ø2P	Ø6P	FS
L	1I1L (33)	2I2L (3)	2I3L (5)	2I4L (34)	3I5L (35)	4I6L (9)	4I7L (11)	4I8L (36)	3I9L (14)	SPI10L (42)	4I11L (30)	Ø4P	Ø8P	ST

J INPUT FILE (REAR VIEW)



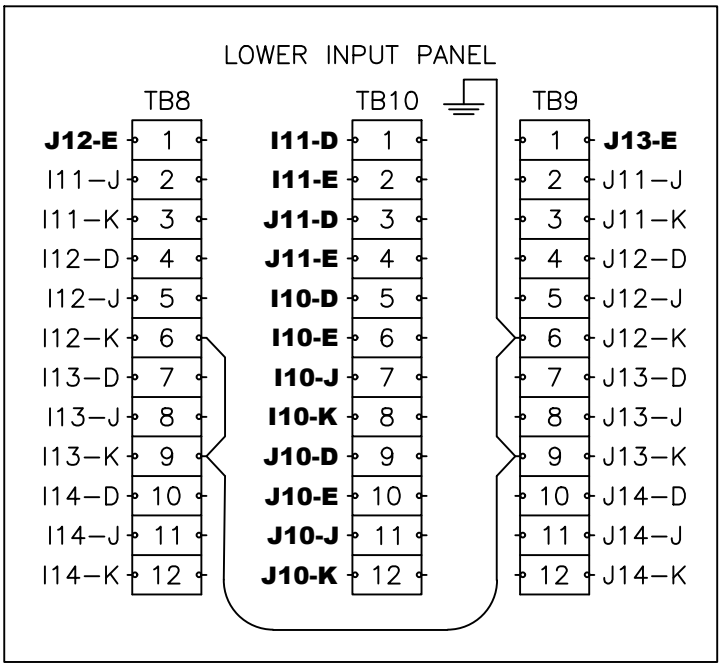


INPUT FILE FRONT VIEW														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
U	5J1U (15)	6J2U (16)	6J3U (18)	6J4U (20)	7J5U (21)	8J6U (22)	8J7U (24)	8J8U (26)	5J9U (27)	SPJ10U (43)	6J11U (31)	EVA	EVB	RR1
L	5J1L (37)	6J2L (17)	6J3L (19)	6J4L (38)	7J5L (39)	8J6L (23)	8J7L (25)	8J8L (40)	7J9L (28)	SPJ10L (44)	8J11L (32)	EVC	EVD	RR2

* REMOVE EXISTING JUMPERS FROM I -ND J FILES

INST-LL TERMIN-L BLOCK TB10, REWIRE TERMIN-L BLOCKS TB8-1 -ND TB9-1. L-BEL TERMIN-L BLOCK TB10 -ND C11 CONDUCTORS.

CABLE C11S		
PIN NO.	UNIVERSAL FUNCTION	CONN. TO
1	SPECIAL-OUTPUT	TB0-1A
2	SPECIAL-OUTPUT	TB0-2A
3	SPECIAL-OUTPUT	TB0-3A
4	SPECIAL-OUTPUT	TB0-4A
5-14	NOT USED	NOT USED
15	1 CALL, EXT	I1-W
16	2 CALL, QUEUE	I4-W
17	3 CALL, EXT	I5-W
18	4 CALL, QUEUE	I8-W
19	5 CALL, EXT	J1-W
20	6 CALL, QUEUE	J4-W
21	7 CALL, EXT	J5-W
22	8 CALL, QUEUE	J8-W
23	SPECIAL-INPUT	I10-F
24	SPECIAL-INPUT	I10-W
25	SPECIAL-INPUT	J10-F
26	SPECIAL-INPUT	J10-W
27	SPECIAL-INPUT	TB0-6A
28	SPECIAL-INPUT	TB0-7A
29	SPECIAL-INPUT	TB0-8A
30	SPECIAL-INPUT	TB0-9A
21-34	NOT USED	NOT USED



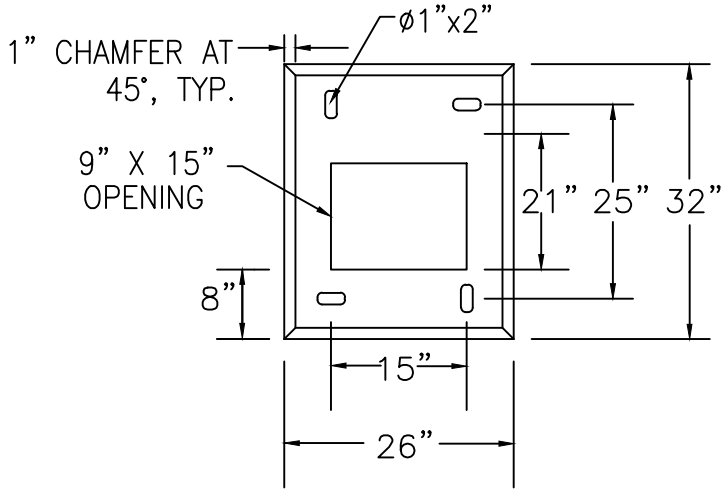
TB10 HD30A SERIES TERMINAL BLOCK OR EQUAL.

332 CABINET C11 RETRO-FIT
C11S CABLE CONNECTIONS

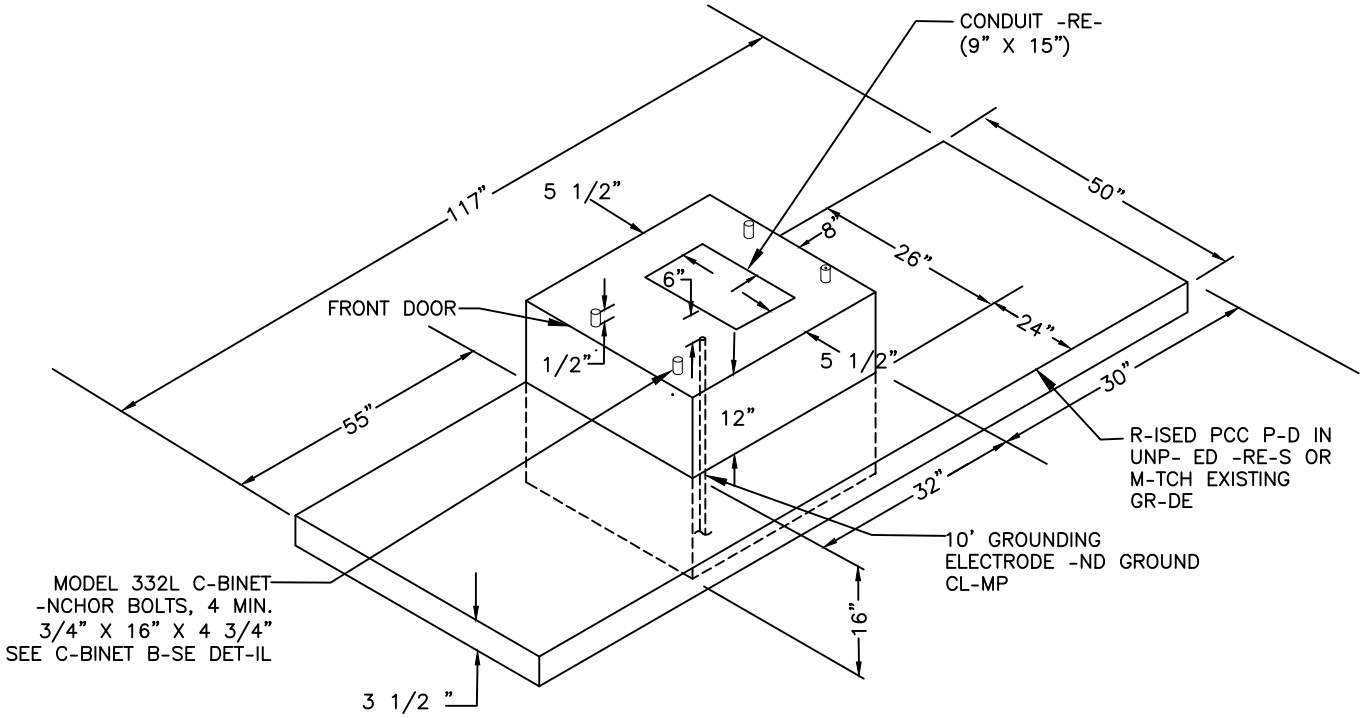
REF. & REV.
~~JUNE 2015~~
DEC. 2020 (A.7)

CITY OF FRESNO

E-34C



CABINET BASE DETAIL*



332L FOUNDATION DETAILS

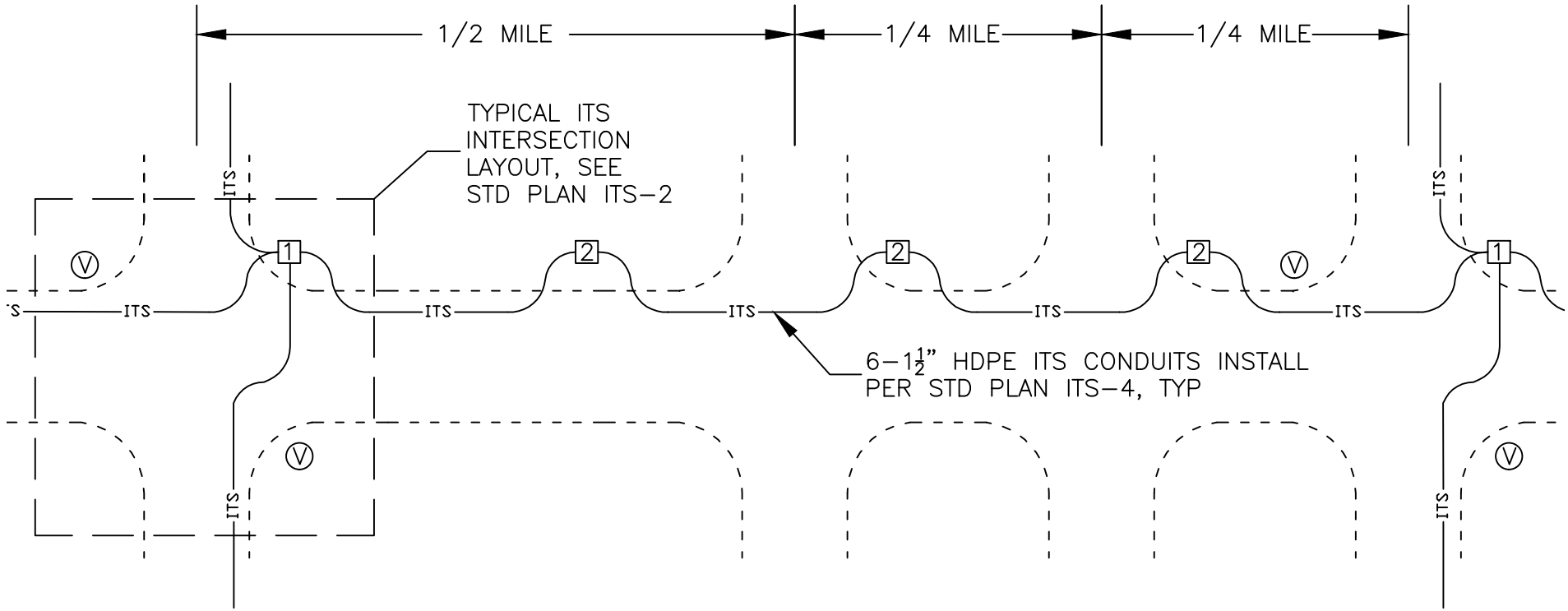
NOTES:

1. TOP OF FOUNDATION SHALL BE 12" ABOVE FINISHED GRADE.
2. CONDUITS EXITING THE CONTROLLER FOUNDATION AND ENTERING INTO THE CONTROLLER CABINET SHALL BE ALIGNED TO ENTER WITHIN THE TEES SPECIFIED CABINETS WITHOUT ANY MODIFICATIONS TO THE CABINET BASE.
3. FOUNDATION SHALL CONFORM TO SECTION 23–1.7 OF THE CITY OF FRESNO STANDARD SPECIFICATIONS AND ES–3C STATE OF CALIFORNIA STANDARD PLANS, WITH THE EXCEPTION OF THE FOUNDATION HEIGHT.
4. AN APPROVED MASTIC OR CAULKING COMPOUND SHALL BE PLACED ON THE FOUNDATION PRIOR TO PLACING THE CABINET TO SEAL OPENINGS BETWEEN BOTTOM OF CABINET AND FOUNDATION.
5. SEE CITY STD. DWG. E–24B FOR LOCATION OF SERVICE PEDESTAL AND ITS CABINET.

* DIMENSIONS ROUNDED TO THE NEAREST 0.1".

332L CABINET FOUNDATION	REF. & REV. ~~JUNE 2015~~ DEC. 2020 (A.7)	CITY OF FRESNO E–37

TYPICAL ITS CORRIDOR LAYOUT



LEGEND

1 4'X7' ITS VAULT, SEE STD PLAN ITS-13 AND ITS-14.

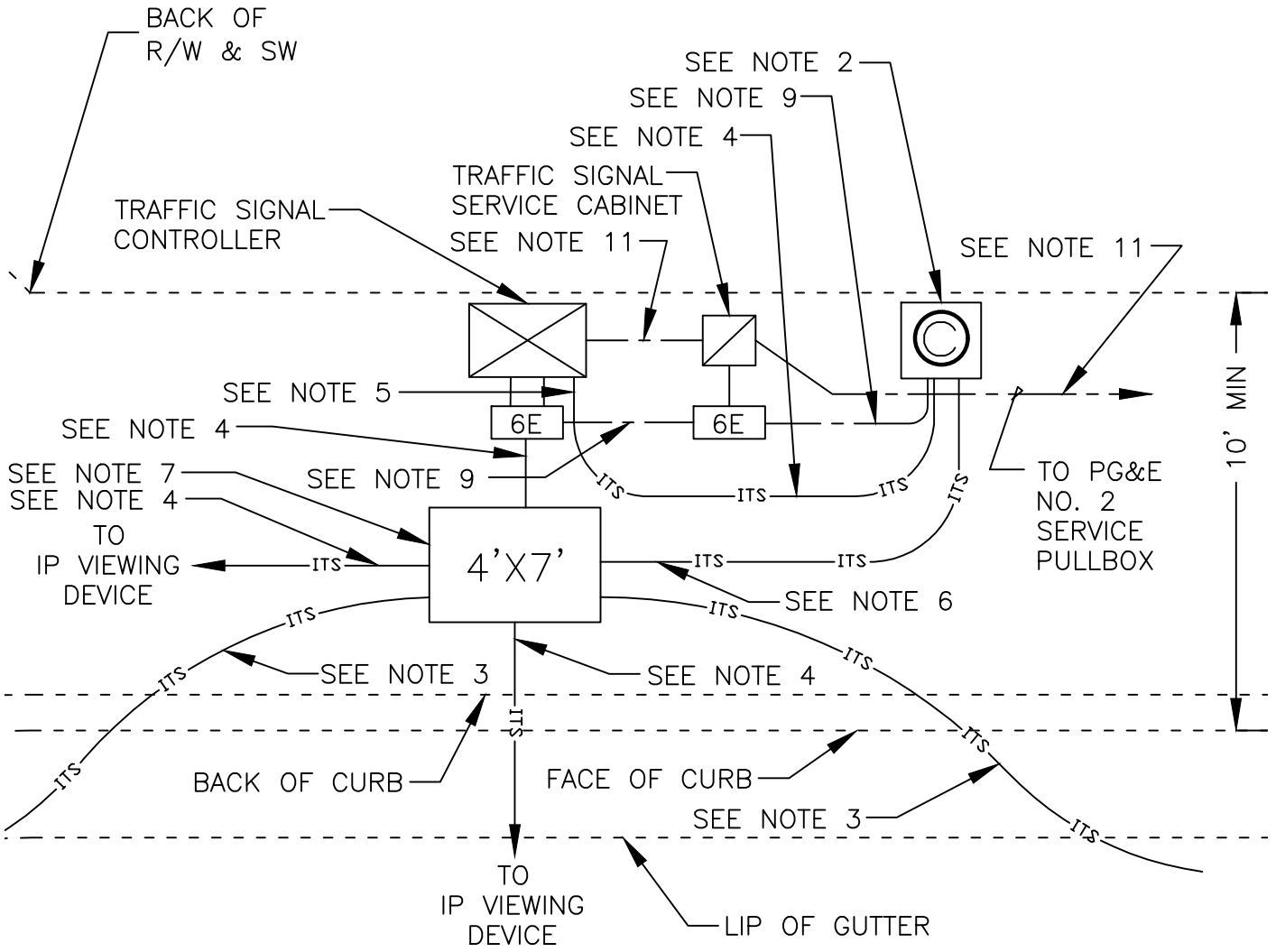
2 3'X5' ITS VAULT, SEE STD PLAN ITS-11 AND ITS-12.

Ⓥ IP CAMERA

REF. & REV.
~~JULY 2014~~
DEC. 2020 (A.7)

CITY OF FRESNO

ITS-1



LEGEND

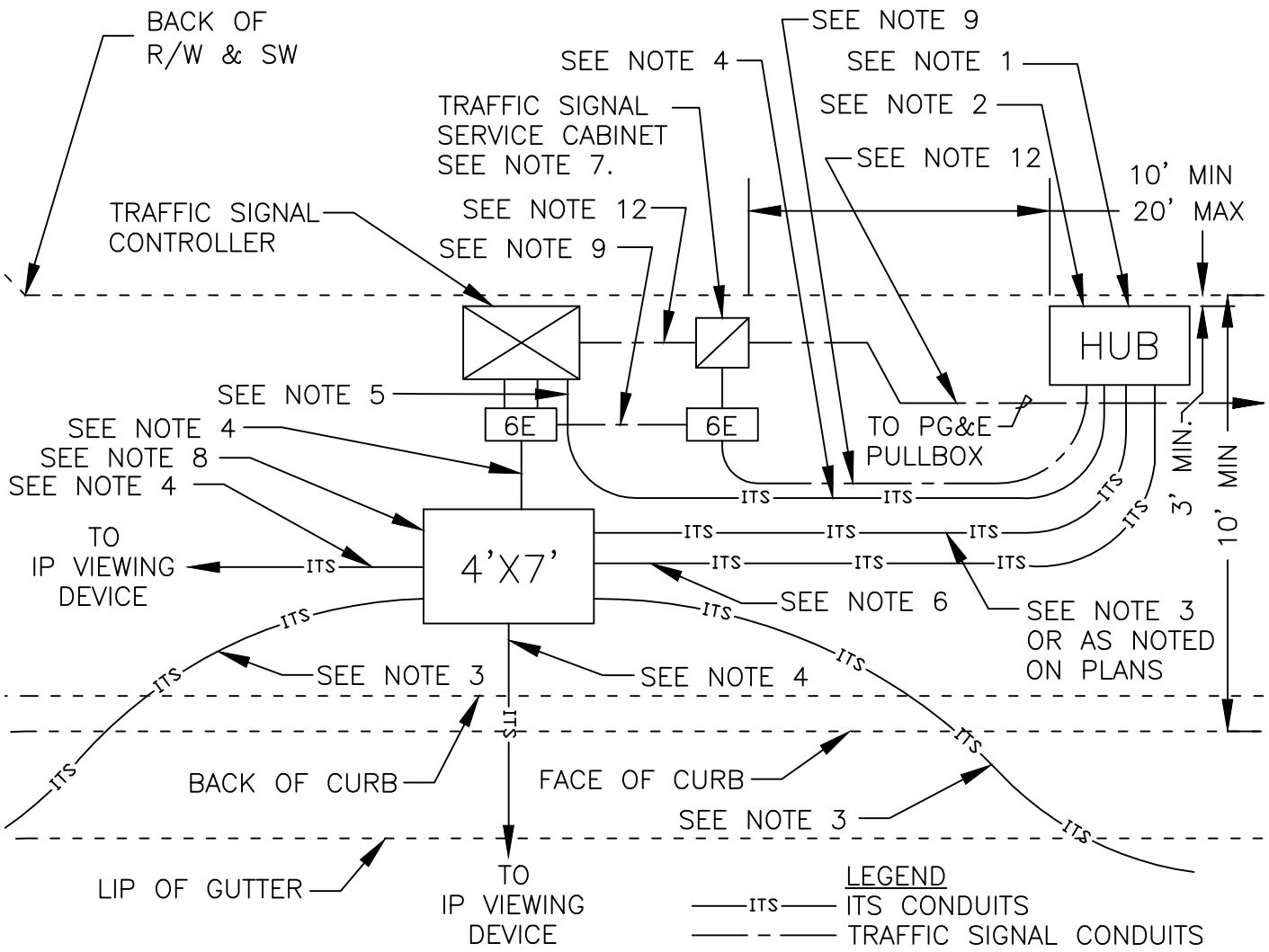
——ITS—— ITS CONDUITS, HDPE CONDUIT

—— - —— TRAFFIC SIGNAL CONDUITS, RIGID GALVANIZED CONDUIT (RGC)

NOTES:

1. FOR LAYOUT WITH ITS HUB CABINET, SEE ITS–3A
2. ITS INTERSECTION COMMUNICATIONS CABINET, SEE STD PLAN ITS–20A.
3. 6–1½" ITS CONDUITS INSTALL PER STD PLAN ITS–5, TYP.
4. 2–1½" ITS CONDUITS INSTALL PER STD PLAN ITS–4, TYP.
5. FOR EXISTING TRAFFIC SIGNAL CONTROLLER, INSTALL 2–1½" CONDUITS INTO HOMERUN 6E PULLBOX.
6. 4–1½" ITS CONDUITS INSTALL PER STD PLAN ITS–4, TYP.
7. 4'x7' ITS VAULT, SEE STD PLAN ITS–13 AND ITS–14.
8. FOR TRAFFIC SIGNAL EQUIPMENT LAYOUT, SEE STD PLAN E–24.
9. INSTALL 2" RIGID CONDUIT.
10. ANY VARIATION FROM THIS STANDARD SHALL HAVE THE APPROVAL OF THE CITY ENGINEER.
11. INSTALL 1½" RIGID CONDUIT.

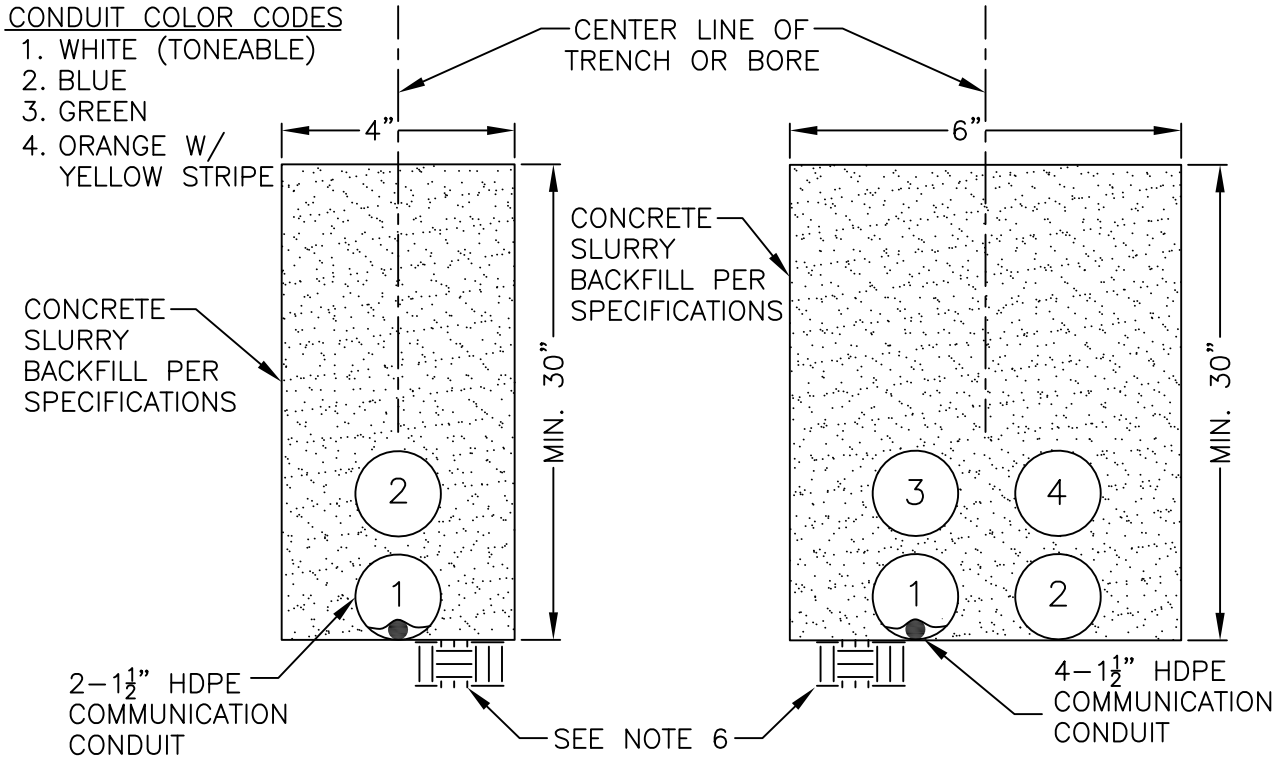
TYPICAL ITS INTERSECTION CONDUIT RUN LAYOUT	REF. & REV. ~~JULY 2011~~ DEC. 2020 (A.7)	CITY OF FRESNO ITS–3



NOTES:

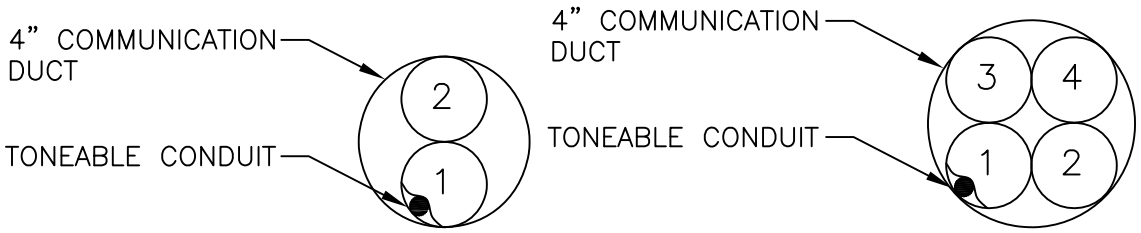
1. ITS CABINET HUB SHALL BE INSTALLED IN A LOCATION APPROVED BY CITY ENGINEER.
2. ALL REQUIRED COMMUNICATIONS EQUIPMENT ASSEMBLIES SPECIFIED ON ITS–21B SHALL BE INSTALLED INSIDE HUB CABINET AS DIRECTED BY ENGINEER.
3. 6–1½" ITS CONDUITS INSTALL PER STD PLAN ITS–5, TYP.
4. 2–1½" ITS CONDUITS INSTALL PER STD PLAN ITS–4, TYP.
5. FOR EXISTING TRAFFIC SIGNAL CONTROLLER, INSTALL 2–1½" CONDUITS INTO HOMERUN 6E PULLBOX.
6. 4–1½" ITS CONDUITS INSTALL PER STD PLAN ITS–4, TYP.
7. UPGRADE TRAFFIC SIGNAL SERVICE CABINET TO TESCO 27–000 AT LOCATIONS REQUIRING A HUB CABINET.
8. 4'x7' ITS VAULT, SEE STD PLAN ITS–13.
9. INSTALL 2" RIGID CONDUIT.
10. FOR TRAFFIC SIGNAL EQUIPMENT LAYOUT, SEE STD PLAN E–24.
11. ANY VARIATION FROM THIS STANDARD SHALL HAVE THE APPROVAL OF THE CITY ENGINEER.
12. INSTALL 1½" RIGID CONDUIT.

TYPICAL ITS INTERSECTION CONDUIT RUN LAYOUT WITH HUB	REF. & REV. ~~JULY 2011~~ DEC. 2020 (A.7)	CITY OF FRESNO ITS–3A



TYPE 2–1 1/2" TRENCHING DETAIL
SEE NOTE 5

TYPE 4–1 1/2" TRENCHING DETAIL
SEE NOTE 5



TYPE 2 CONDUIT INNERDUCT DETAIL

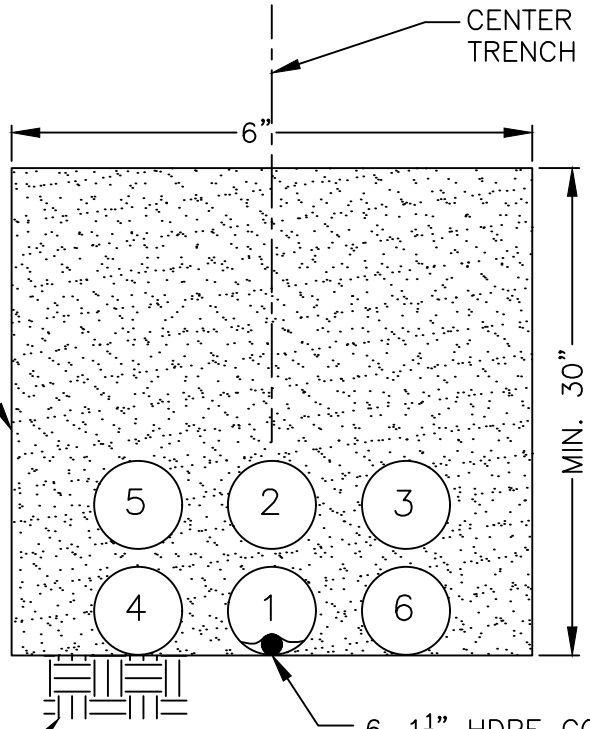
TYPE 4 CONDUIT INNERDUCT DETAIL

NOTES:

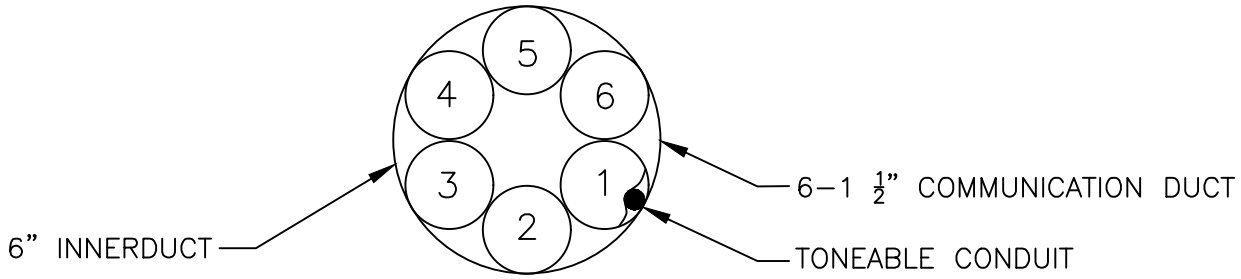
1. ALL CONDUIT SHALL BE SDR–11 HDPE COMMUNICATION.
2. ALL CONDUIT PLACEMENT SHALL BE PLACED PER CALIFORNIA GENERAL ORDER 128 (G.O.128).
3. ALL TRENCH OR BORING OF ITS CONDUIT SHALL HAVE ONE TONEABLE CONDUIT USED FOR TRACER.
4. CONDUITS SHALL BE WHITE, BLUE, GREEN, AND ORANGE W/YELLOW STRIPE AS NUMBERED ABOVE.
5. DIRECTIONAL BORING OPTIONAL.
6. REMOVE TRENCH SPOIL MATERIALS TO UNDISTURBED GROUND.
7. ALL CONDUITS SHALL CONTAIN CITY APPROVED PULL TAPE.

ITS CONDUIT TRENCH DETAIL NO. 1	REF. & REV. ~~FEB., 2008~~ DEC. 2020 (A.7)	CITY OF FRESNO ITS–4

CONDUIT COLOR CODES
1. WHITE (TONEABLE)
2. BLUE
3. GREEN
4. ORANGE W/ YELLOW STRIPE
5. RED
6. ORANGE



TYPE 6–1 1/2" TRENCHING DETAIL
SEE NOTE 5

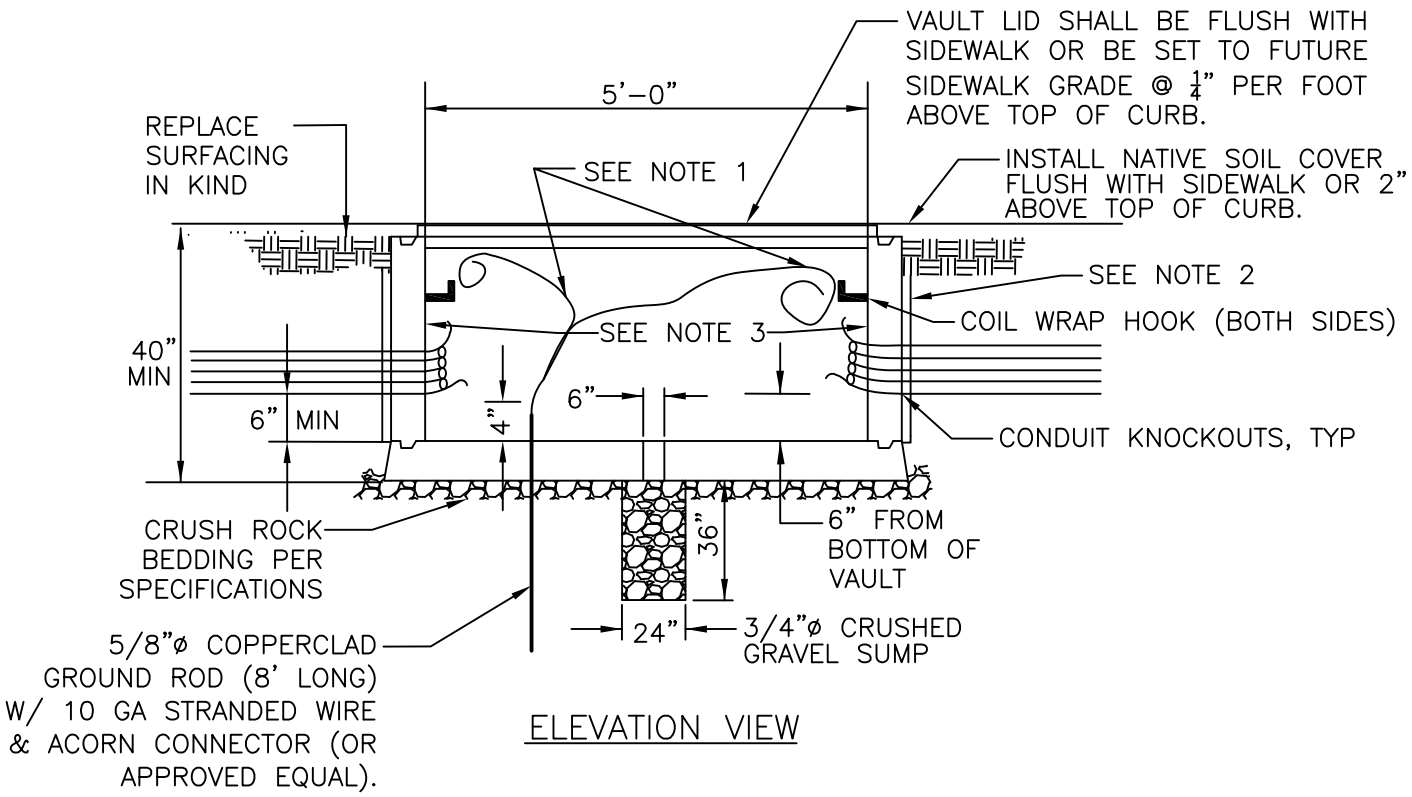


TYPE 6 CONDUIT
INNERDUCT DETAIL

NOTES:

1. ALL CONDUIT SHALL BE SDR–11 HDPE COMMUNICATION.
2. ALL CONDUIT PLACEMENT SHALL BE PLACED PER CALIFORNIA GENERAL ORDER 128 (G.O.128).
3. ALL TRENCH OR BORING OF ITS CONDUIT SHALL HAVE ONE TONEABLE CONDUIT USED FOR TRACER.
4. CONDUITS SHALL BE WHITE, BLUE, GREEN, ORANGE W/YELLOW STRIPE, RED, AND ORANGE AS NUMBERED ABOVE.
5. DIRECTIONAL BORING OPTIONAL.
6. REMOVE TRENCH SPOIL MATERIALS TO UNDISTURBED GROUND.
7. ALL CONDUITS SHALL CONTAIN CITY APPROVED PULL TAPE.

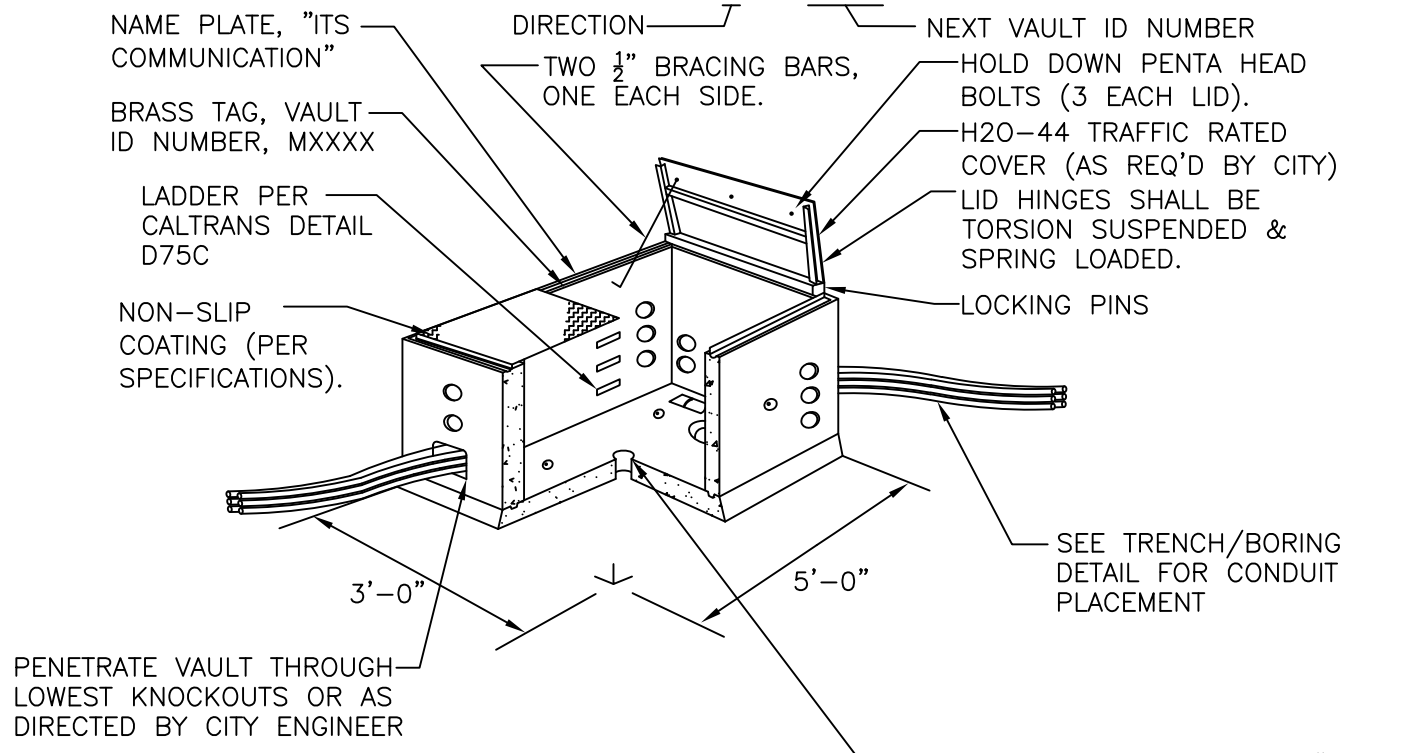
ITS CONDUIT TRENCH DETAIL NO. 2	REF. & REV. ~~FEB., 2008~~ DEC. 2020 (A.7)	CITY OF FRESNO ITS–5



ELEVATION VIEW

NOTES:

1. INSTALL COMMUNICATIONS BELLS ON CONDUIT ENDS & CONNECT TONEABLE CONDUIT TO GROUNDING ROD.
2. WRAP VAULT WITH BUILDING PAPER PER SPECIFICATIONS BEFORE BACKFILLING.
3. ALL CONDUITS INSTALLED SHALL BE LABELED WITH DIRECTION BRASS TAG DIRECTLY ABOVE CONDUITS. EXAMPLE: N TO IXXXX



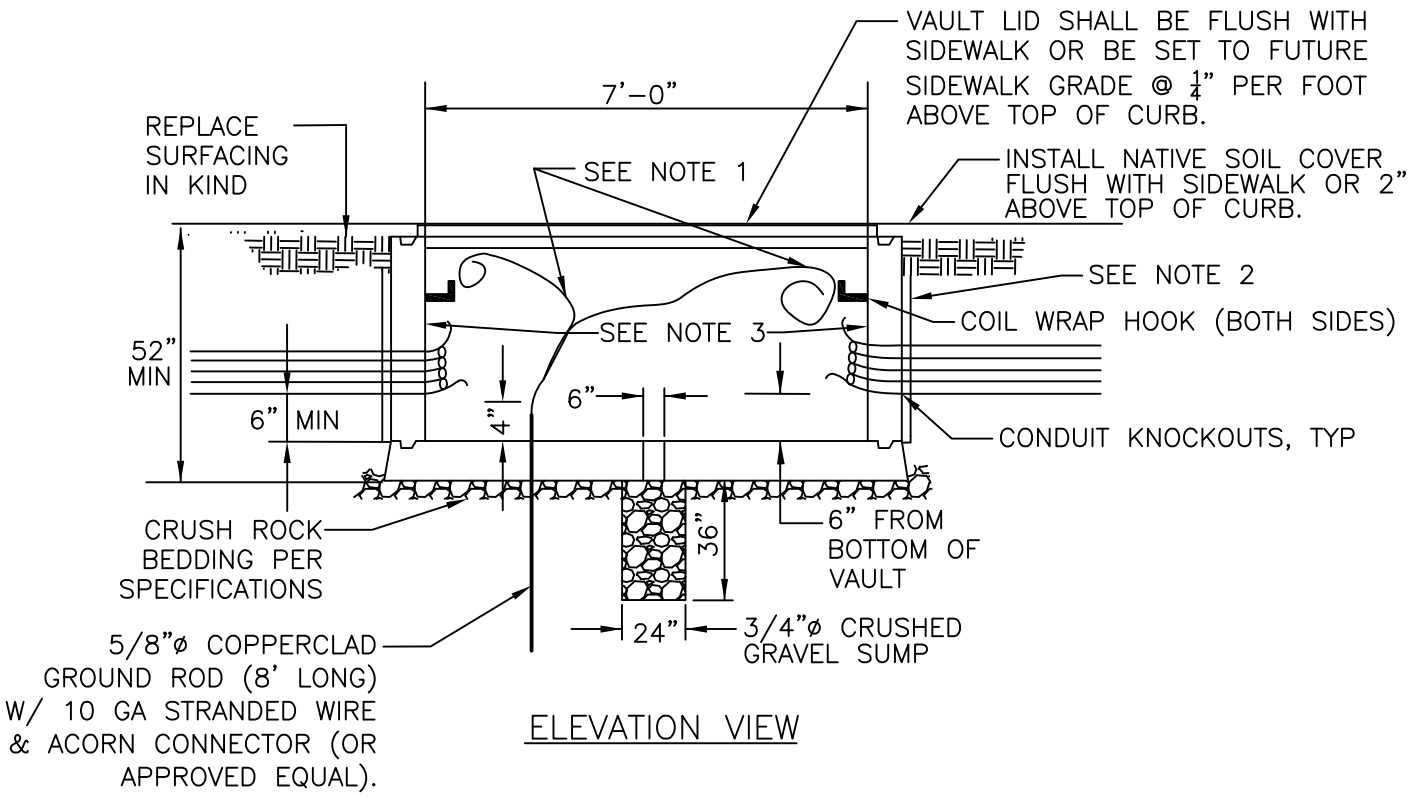
3–D VIEW

ITS 3' X 5' VAULT DETAILS NO. 2

REF. & REV.
~~FEB., 2008~~
DEC. 2020 (A.7)

CITY OF FRESNO

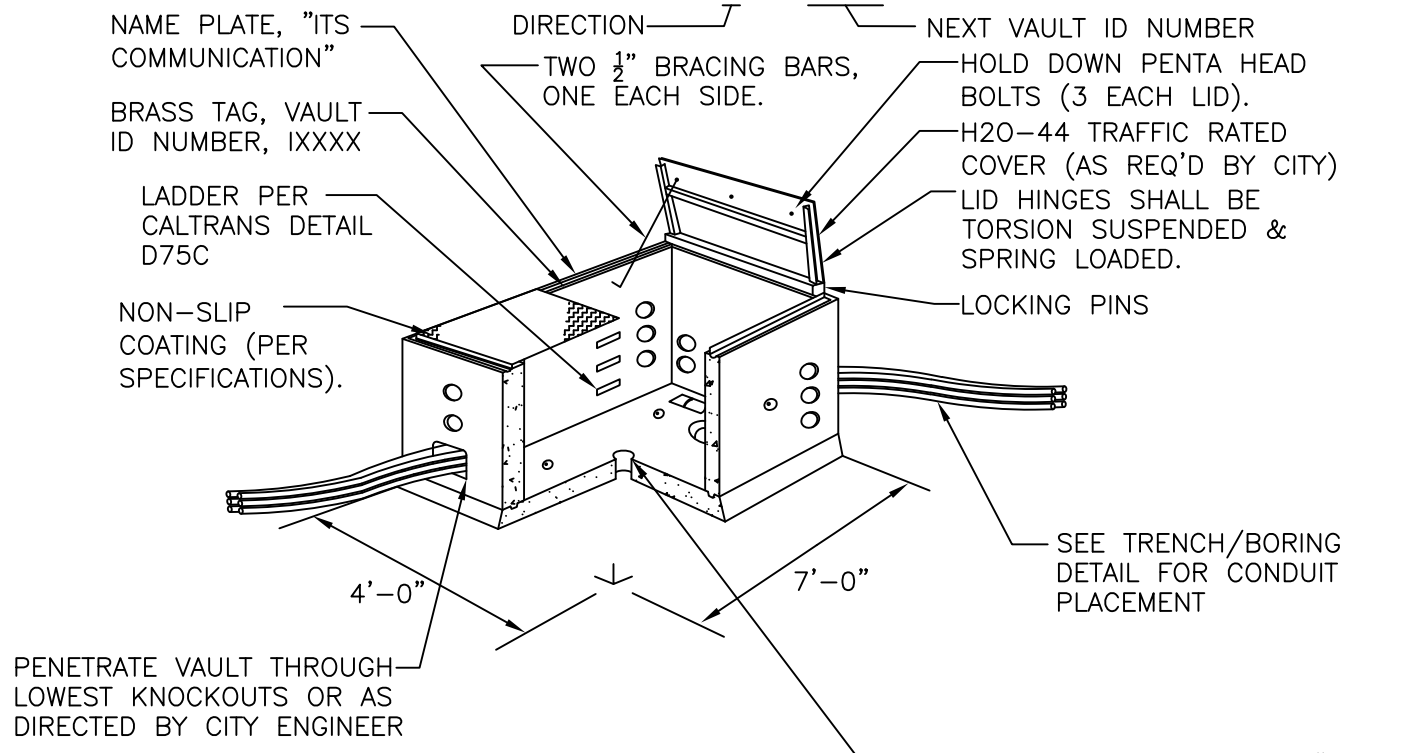
ITS–12



ELEVATION VIEW

NOTES:

1. INSTALL COMMUNICATIONS BELLS ON CONDUIT ENDS & CONNECT TONEABLE CONDUIT TO GROUNDING ROD.
2. WRAP VAULT WITH BUILDING PAPER PER SPECIFICATIONS BEFORE BACKFILLING.
3. ALL CONDUITS INSTALLED SHALL BE LABELED WITH DIRECTION BRASS TAG DIRECTLY ABOVE CONDUITS. EXAMPLE: N TO IXXXX



3–D VIEW

ITS 4' X 7' VAULT DETAILS NO. 2	REF. & REV. ~~FEB., 2008~~ DEC. 2020 (A.7)	CITY OF FRESNO ITS–14

THIS STANDARD IS
NO LONGER USED

~~RADAR DETECTON STATION DETAIL NO. 1~~	REF. & REV. ~~FEB. 2008~~ DEC. 2020 (A.7)	CITY OF FRESNO ITS–15

THIS STANDARD IS
NO LONGER USED

~~RADAR DETECTON STATION~~ ~~DETAIL NO. 2~~	REF. & REV. ~~FEB. 2008~~ DEC. 2020 (A.7)	CITY OF FRESNO ITS–16

THIS STANDARD IS
NO LONGER USED

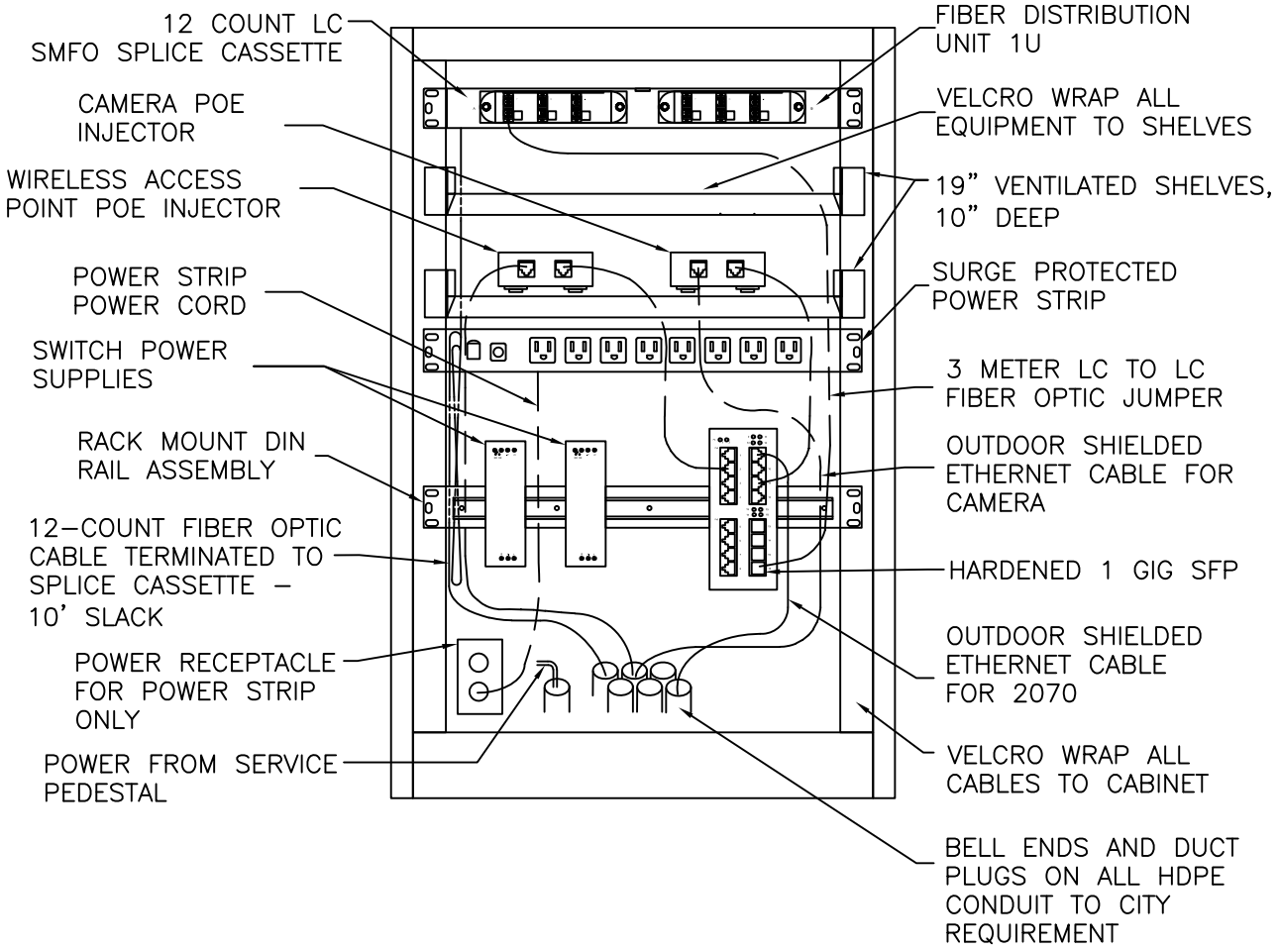
~~RADAR DETECTON STATION~~ ~~DETAIL NO. 3~~	REF. & REV. ~~FEB. 2008~~ DEC. 2020 (A.7)	CITY OF FRESNO ITS–17

THIS STANDARD IS
NO LONGER USED

~~COMMUNICATION CABINET DETAILS~~	REF. & REV. ~~JULY 2011~~ DEC. 2020 (A.7)	CITY OF FRESNO ITS–20

THIS STANDARD IS NO LONGER USED

~~COMMUNICATION CABINET WIRING DIAGRAM~~	REF. & REV. ~~JULY 2011~~ DEC. 2020 (A.7)	CITY OF FRESNO ITS–21

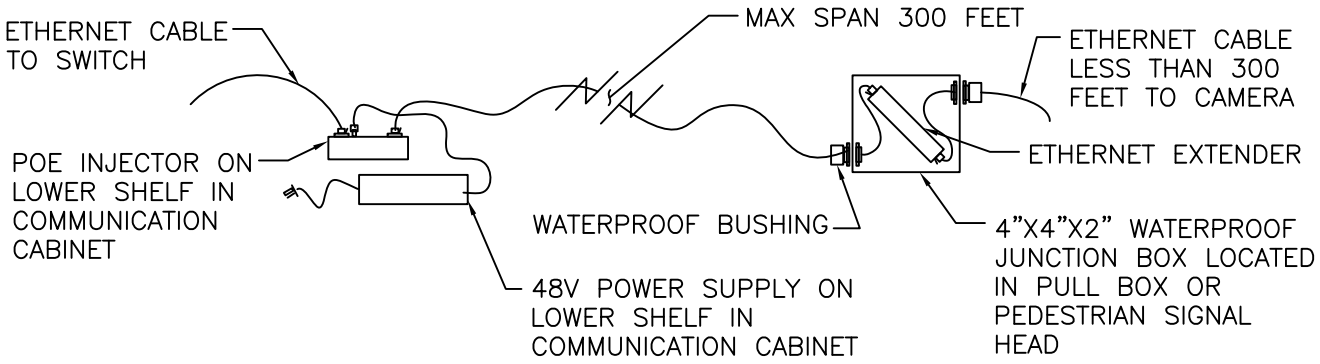


NOTE:

MINIMUM 4" VERTICAL SPACING ABOVE 19" SHELF

(ONLY FOR ETHERNET RUNS LONGER THAN 300')

ETHERNET EXTENDER FOR CAMERA

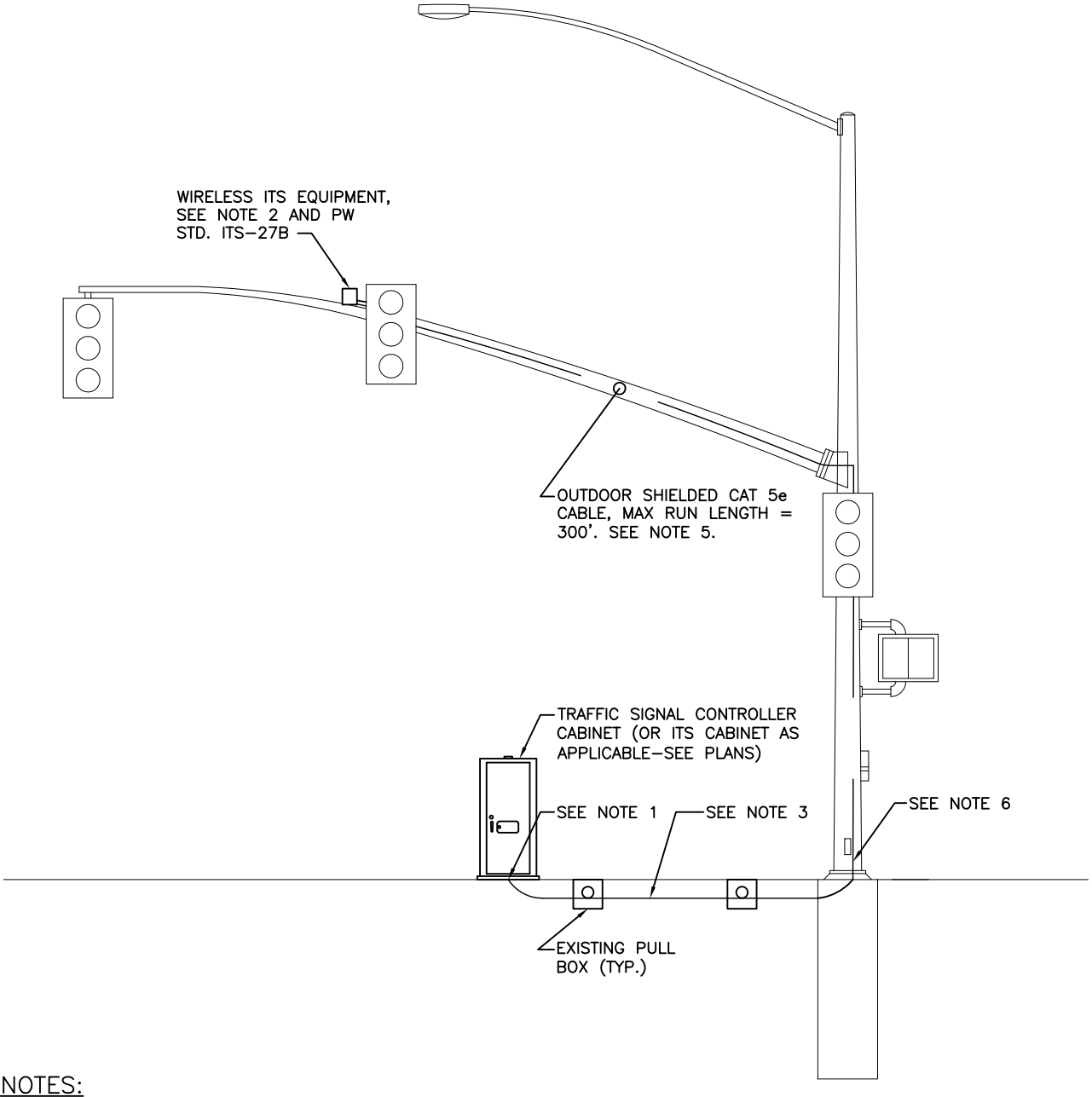


MODEL 336 COMMUNICATION CABINET EQUIPMENT ASSEMBLIES

REF. & REV.
~~JUNE 2015~~
DEC. 2020 (A.7)

CITY OF FRESNO

ITS–21B



NOTES:

1. FOR NETWORKING CONNECTIONS, SEE SPECIFICATIONS. NETWORK CABLE TERMINATING AT ACCESS POINT SHALL BE WRAPPED WITH BLUE TAPE FOR IDENTIFICATION IN ALL PULL BOXES AND IN CABINET. NETWORK CABLE SHIELDING SHALL BE GROUNDED IN CONTROLLER CABINET.

2. CONTRACTOR SHALL PERFORM A FIELD SURVEY WITH A BUCKET TRUCK TO LOCATE OPTIMAL POSITION OF EQUIPMENT ON MAST ARM IN THE PRESENCE OF THE CITY ENGINEER PRIOR TO INSTALLATION.

3. EXTEND CABLES THROUGH TRAFFIC SIGNAL CONDUIT AND PULL BOXES. COIL MIN. 6' OF SLACK IN EACH PULL BOX.

4. CABLE SHALL BE INSTALLED INSIDE SIGNAL MAST ARM FOR TRAFFIC SIGNAL POLES CONFORMING TO CALTRANS STANDARDS DATED 1977 OR NEWER. FOR TRAFFIC SIGNAL POLES CONFORMING TO OLDER STANDARDS – SEE PLANS.

5. CONTRACTOR MAY ULTILIZE YELLOW WIRE AS A PULL TAPE TO BRING CAT 5e CABLE INTO PROPOSED WIRELESS EQUIPMENT (NOTE; YELLOW WIRE TO RE-INSTALL BACK IN GOOD CONDITION). CONTRACTOR SHALL COORDINATE THEIR SCHEDULE WITH CITY TSSL TO PLACE SIGNAL IN TEMPORARY FLASHING PRIOR TO INSTALLATION.

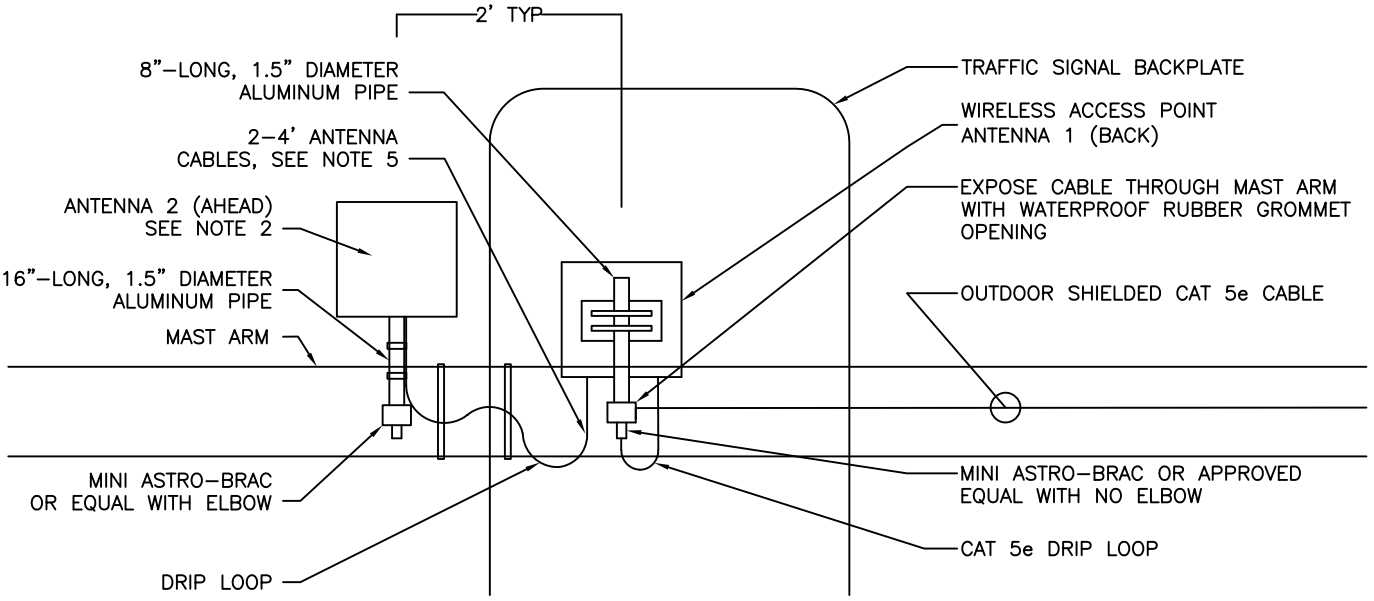
6. POLE HAND HOLE SHALL BE WELDED IN PLACE AFTER ALL PROPOSED WORK IS COMPLETED AND INSPECTED ON SIGNAL POLE. CONTRACTOR SHALL PROTECT CONDUCTORS FROM DAMAGE DURING WELDING.

WIRELESS ITS INSTALLATION

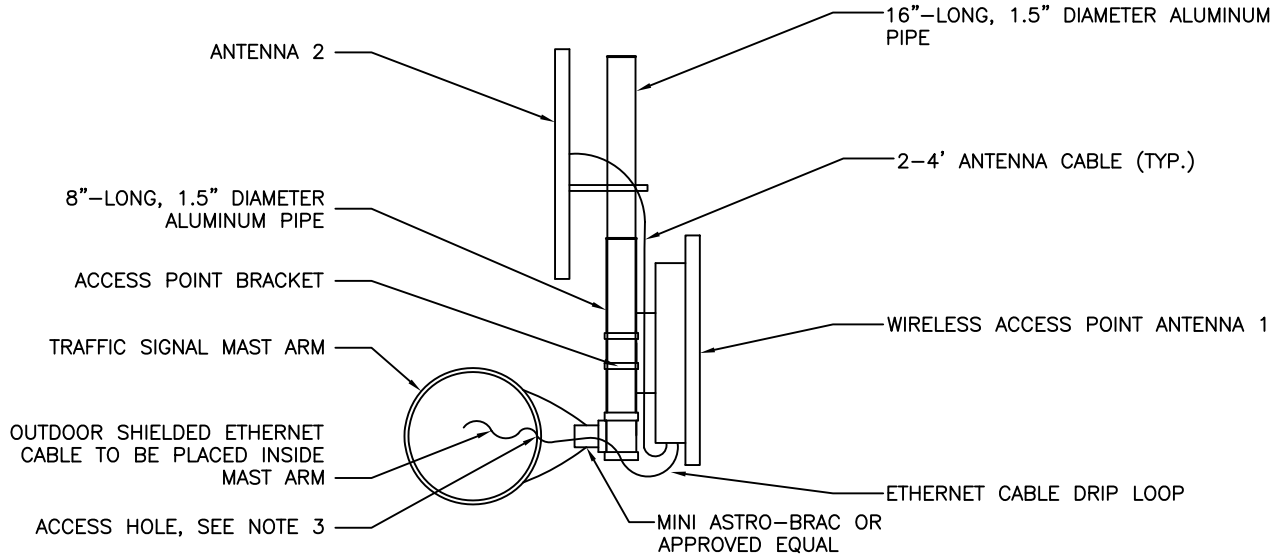
REF. & REV.
~~JULY 2011~~
DEC. 2020 (A.7)

CITY OF FRESNO

ITS-27A



PROFILE



CROSS SECTION

NOTES:

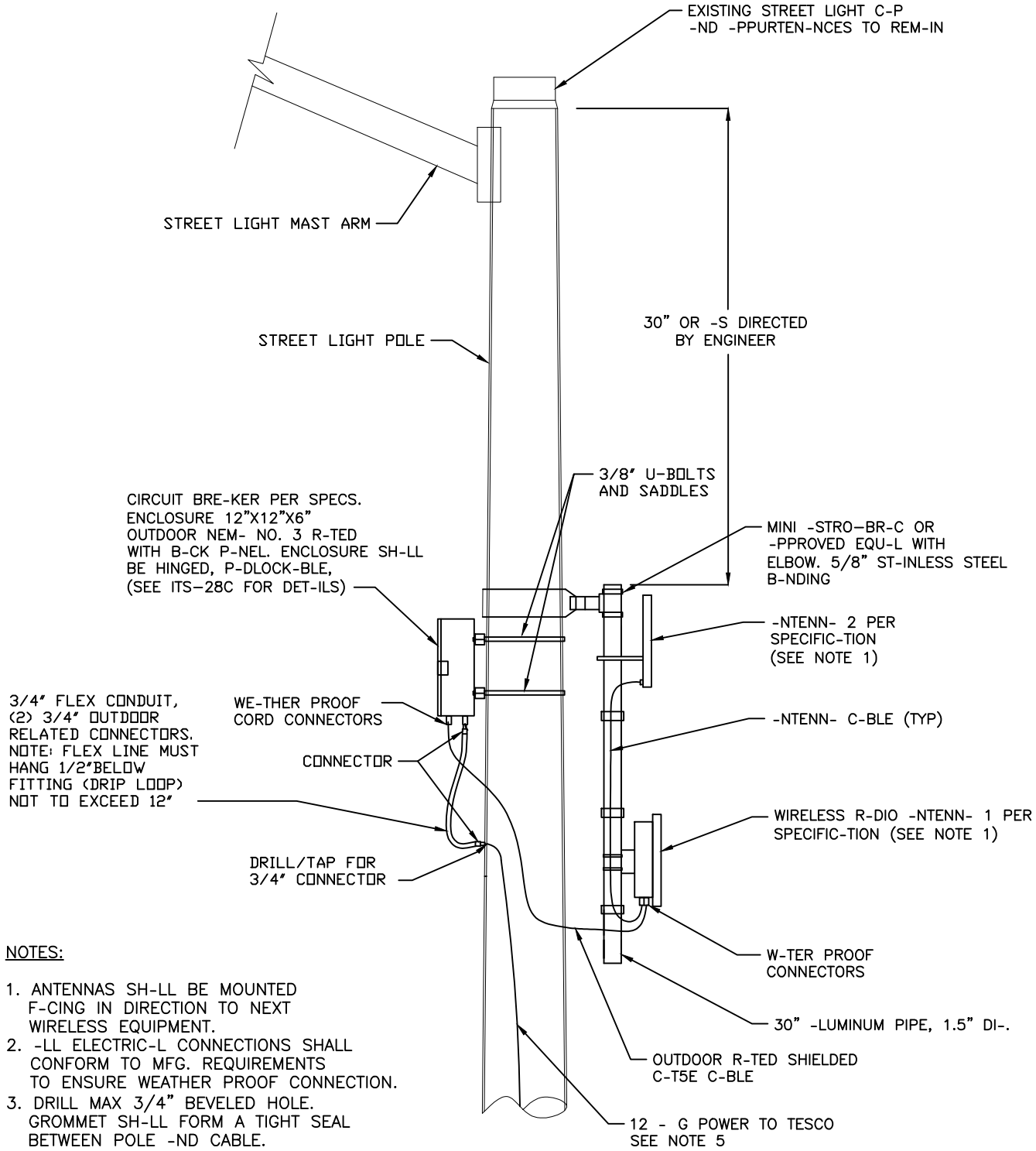
1. ANTENNA 2 WILL BE REQUIRED FOR ALL INTERSECTIONS FOR EXTENSION OF WIRELESS CORRIDOR, SEE PLANS.
2. ANTENNA 2 MOUNTING IS SIMILAR TO THAT SHOWN IN THE CROSS SECTION ABOVE, BUT NO HOLES ARE DRILLED IN THE MAST ARM, A 16"–LONG ALUMINUM PIPE IS USED, AN ACCESS POINT IS NOT INSTALLED.
3. DRILL MAX ¾" BEVELED HOLE. GROMMET SHALL FORM A TIGHT SEAL BETWEEN POLE AND CABLE.
4. ANTENNA 1 AND ANTENNA 2 SHALL HAVE A MINIMUM 2' OF SEPARATION.
5. SECURELY STRAP ANTENNA CABLE TO MAST ARM WITH STAINLESS STEEL NYLON COATED STRAPS (FOLLOW NEC STANDARD FOR SPACING).
6. ALL ELECTRICAL CONNECTIONS SHALL CONFORM TO MANUFACTURER REQUIREMENTS TO ENSURE WEATHER PROOF CONNECTIONS.

WIRELESS ITS INSTALLATION DETAILS

REF. & REV.
~~JULY 2011~~
DEC. 2020 (A.7)

CITY OF FRESNO

ITS–27B



NOTES:

1. ANTENNAS SH-LL BE MOUNTED F-CING IN DIRECTION TO NEXT WIRELESS EQUIPMENT.
2. -LL ELECTRIC-L CONNECTIONS SHALL CONFORM TO MFG. REQUIREMENTS TO ENSURE WEATHER PROOF CONNECTION.
3. DRILL MAX 3/4" BEVELED HOLE. GROMMET SH-LL FORM A TIGHT SEAL BETWEEN POLE -ND CABLE.
4. SECURELY STRAP -NTENN- C-BLES TO POLE WITH ST-INLESS STEEL NYLON CO-TED STR-PS (FOLLOW NEC STAND-RDS FOR SP-CING.)
5. CONTRACTOR SHALL CONNECT THE 120V-C POWER TO THE NE-REST EXISTING TESCO PEDEST-L WITH REQUIRED -DDITIONAL CIRCUIT BRE-KER (20 -MP) -ND NECESS-RY CONDUCTORS (2 SOOW CONDUCTOR, 12 - G). EXISTING PULLBOX -DJACENT TO EXISTING STREET LIGHT POLE WITH CONCRETE FILLED TO BE BROKE-OUT AND WELDS ON POLE. HAND HOLE COVER TO BE GROUND OFF, IN ORDER TO -CCESS -ND INST-LL THE NECESS-RY CONDUCTORS. POLE HAND HOLE SHALL BE WELDED B-CK AND CONCRETE SH-LL BE REPLACED B-CK TO EXISTING PULLBOX -FTER -LL PROPOSED WORK IS COMPLETED AND INSPECTED.
6. THE CONTRACTOR SHALL CONNECT E-RTH GROUND FROM - LOC-L GROUND ROD TO THE BUSSED TERMINALS M-RKED "GROUND".
7. POLE HANDHOLE SHALL BE WELDED IN PL-CE -FTER -LL PROPOSED WORK IS COMPLETED -ND INSPECTED ON STREET LIGHT POLE. CONTR-CTOR SH-LL PROTECT CONDUCTORS FROM DAMAGE DURING WELDING

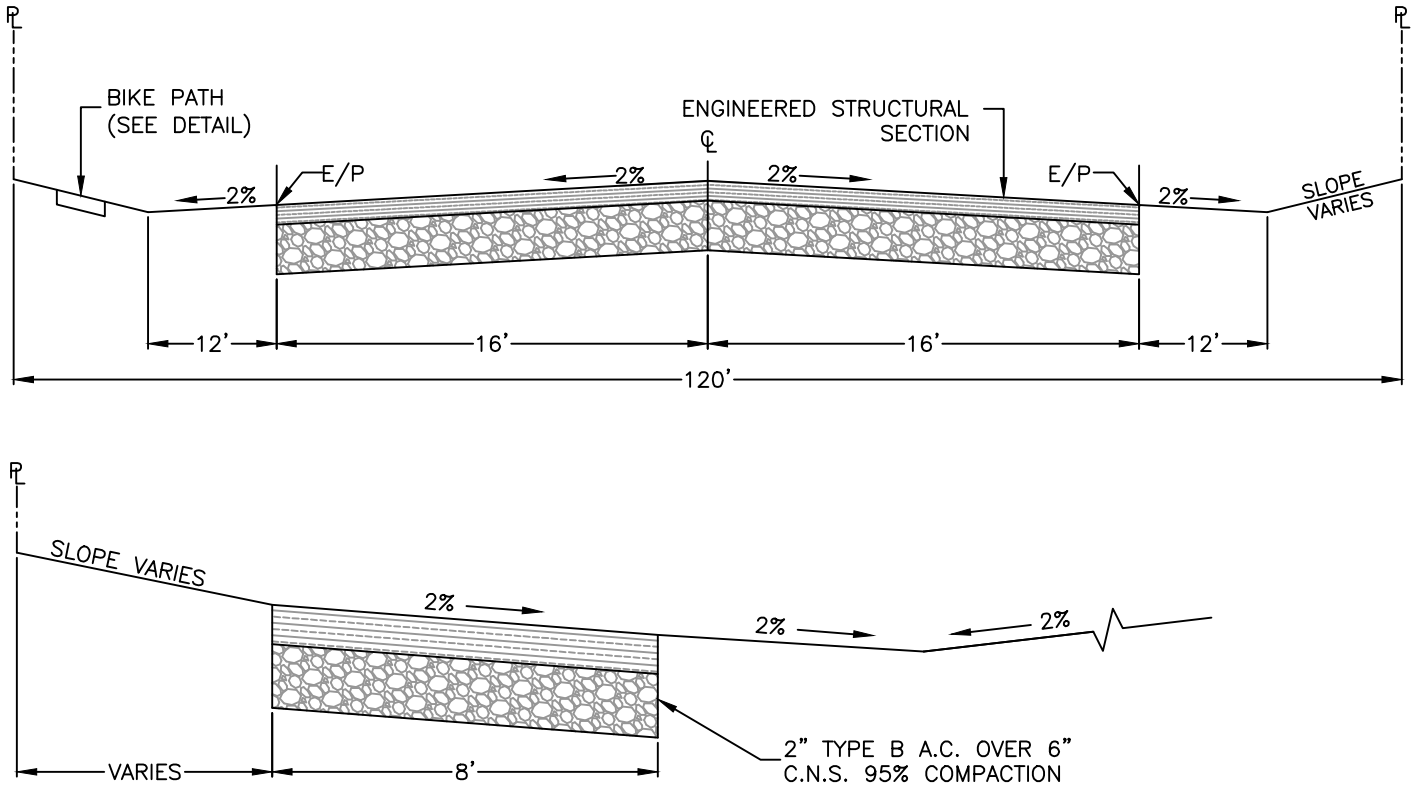
ITS WIRELESS POLE REPEATER INSTALLATION

(POWERED THROUGH SERVICE PEDESTAL)

REF. & REV.
~~JULY 2011~~
DEC. 2020 (A.7)

CITY OF FRESNO

ITS-28B



BIKE PATH DETAIL

NOTES:

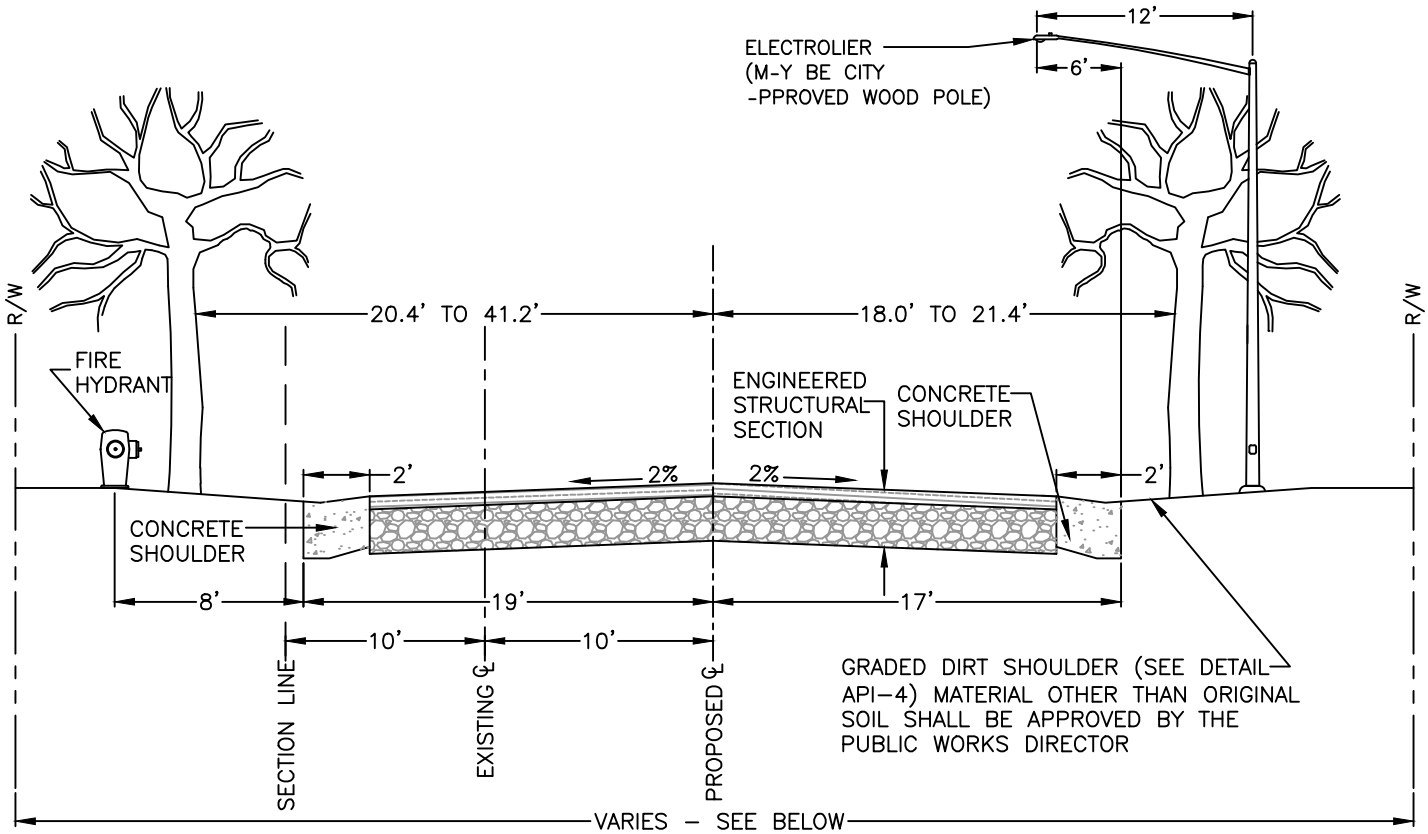
1. CURB AND GUTTER IS PROHIBITED.
2. DRIVEWAY APPROACHES SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD DRAWING API–4.
3. ASPHALT CONCRETE PAVEMENT SHALL CONFORM TO CITY STANDARDS.
4. SEE STANDARD DRAWINGS W–3 AND W–4 FOR LOCATION OF FIRE HYDRANT VALVES.
5. PROPERTY OWNER MAY PLACE ASPHALT CONCRETE PAVEMENT (2" A.C. OVER 6" C.N.S.) BETWEEN EDGE OF PAVEMENT (EP) AND PROPERTY LINE (PL) BY OBTAINING AN ENCROACHMENT PERMIT FROM THE PUBLIC WORKS DEPARTMENT. PROPERTY OWNER SHALL BE RESPONSIBLE FOR MAINTAINING PAVEMENT BETWEEN EP AND PL.
6. ANY ENCROACHMENT INTO THE PUBLIC RIGHT OF WAY SHALL HAVE AN ENCROACHMENT PERMIT AND FEES SHALL BE PAID IN ACCORDANCE WITH THE MASTER FEE SCHEDULE.
7. IF SHOULDER IS PAVED, FLOW LINE OF GUTTER MUST BE ESTABLISHED OR APPROVED BY THE PUBLIC WORKS DEPARTMENT.

VAN NESS EXTENSION
HERNDON AVE. TO SAN JOAQUIN RIVER BLUFF

REF. & REV.
~~AUG. 2010~~
DEC. 2020 (A.7)

CITY OF FRESNO

API–6



EXISTING RIGHT-OF-WAY WIDTHS

40' FANCHER CREEK TO 25' S/O FLORENCE
60' 25' S/O FLORENCE TO 70' S/O PITT
40' 70' S/O PITT TO 30' S/O GEARY
60' 30' S/O GEARY TO 110' N/O GEARY
40' 110' N/O GEARY TO 90' S/O ATCHISON
60' 90' S/O ATCHISON TO CALIFORNIA

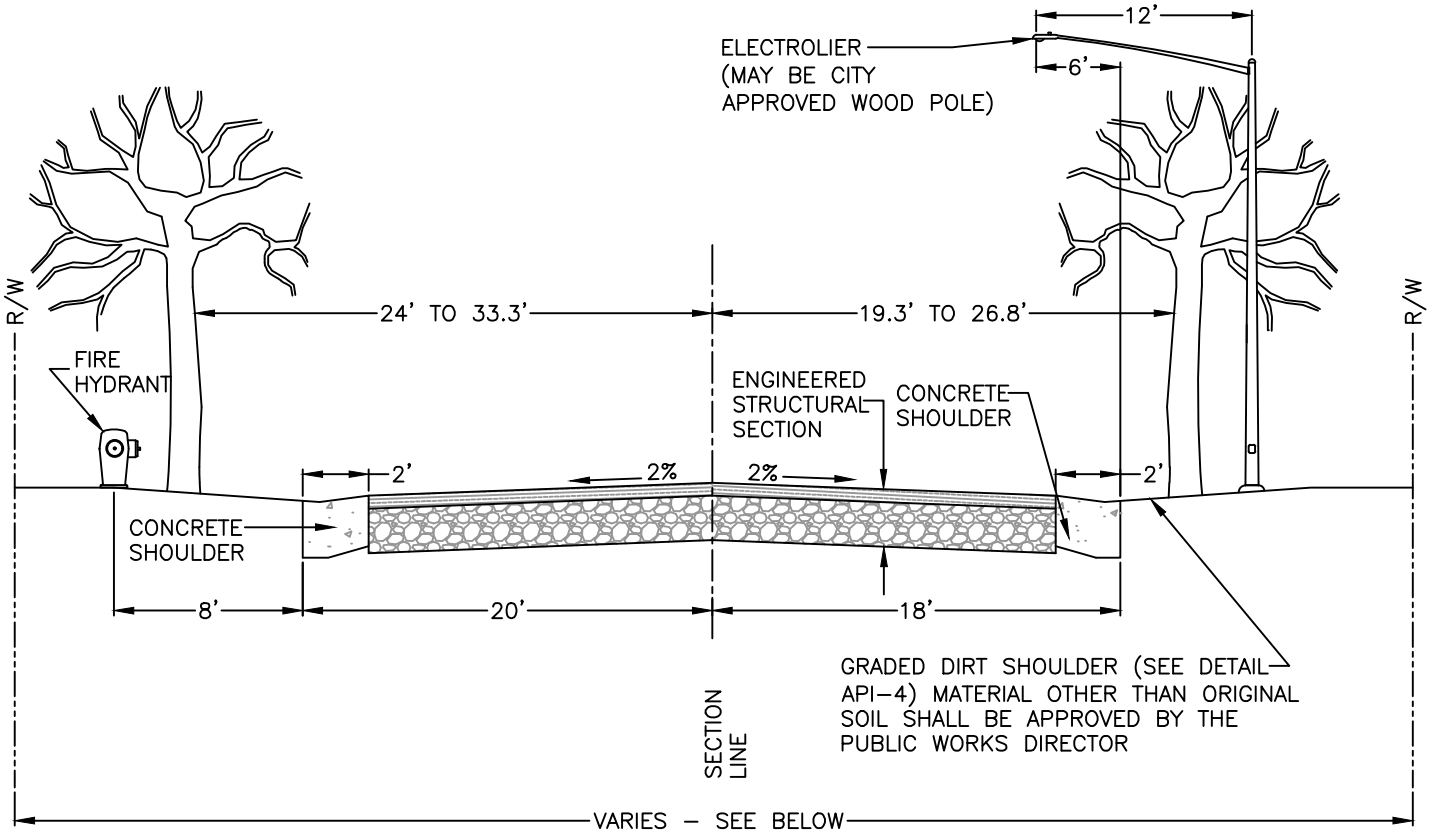
NOTES:

1. A TWO FOOT CONCRETE SHOULDER IS REQUIRED IN AN R-M OVERLAY DISTRICT.
2. ASPHALT CONCRETE PAVING BETWEEN THE EDGE OF PAVEMENT OR CONCRETE SHOULDER AND THE PROPERTY LINE IS PROHIBITED EXCEPT FOR DRIVEWAY APPROACHES.
3. DRIVEWAY APPROACHES SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD DRAWING API-4.
4. ASPHALT CONCRETE PAVEMENT SHALL CONFORM TO CITY STANDARDS.
5. SEE STANDARD DRAWING W-3 AND W-4 FOR LOCATION OF FIRE HYDRANT VALVES.

MINNEWAWA AVENUE
FANCHER CREEK TO CALIFORNIA AVENUE

REF. & REV.
~~AUG. 2010~~
DEC. 2020 (A.7)

CITY OF FRESNO
API-7



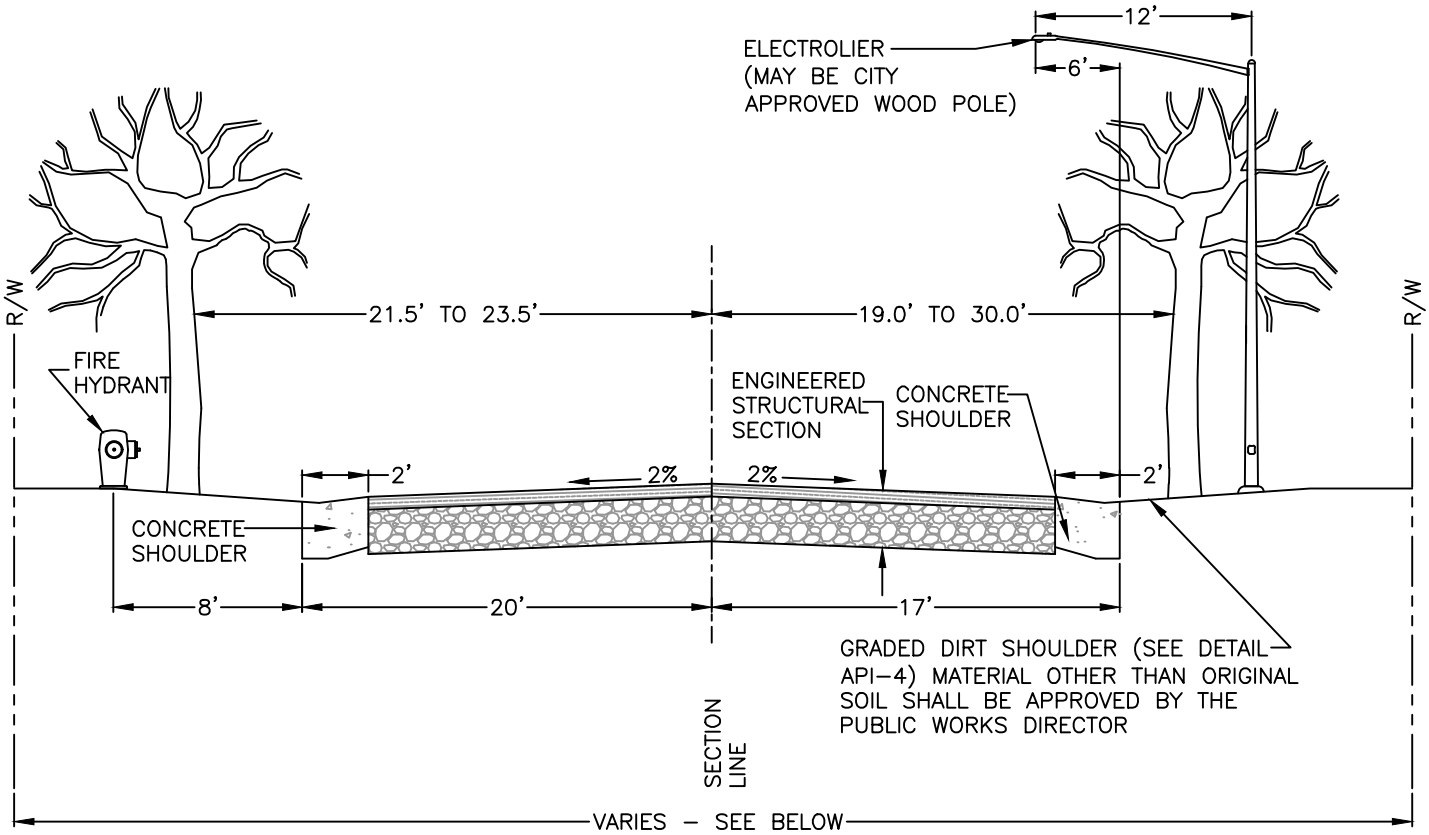
EXISTING RIGHT-OF-WAY WIDTHS

50' CALIFORNIA TO COLUMBIA
40' COLUMBIA TO 145' N/O COLUMBIA
50' 145' N/O COLUMBIA TO 535' N/O COLUMBIA
40' 535' N/O COLUMBIA TO 210' S/O HEATON
50' 210' S/O HEATON TO 205' N/O HEATON
40' 205' N/O HEATON TO BUTLER

NOTES:

1. A TWO FOOT CONCRETE SHOULDER IS REQUIRED IN AN R-M OVERLAY DISTRICT. SEE STANDARD DRAWING API-4.
2. ASPHALT CONCRETE PAVING BETWEEN THE EDGE OF PAVEMENT OR CONCRETE SHOULDER AND THE PROPERTY LINE IS PROHIBITED EXCEPT FOR DRIVEWAY APPROACHES.
3. DRIVEWAY APPROACHES SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD DRAWING API-4.
4. ASPHALT CONCRETE PAVEMENT SHALL CONFORM TO CITY STANDARDS.
5. SEE STANDARD DRAWING W-3 AND W-4 FOR LOCATION OF FIRE HYDRANT VALVES.
6. CURB AND GUTTER EXISTS ON THE EAST SIDE FOR APPROXIMATELY 255' NORTH AND SOUTH OF HEATON.

MINNEWAWA AVENUE CALIFORNIA AVENUE TO BUTLER AVENUE	REF. & REV. ~~AUG. 2010~~ DEC. 2020 (A.7)	CITY OF FRESNO API-8



EXISTING RIGHT-OF-WAY WIDTHS

50'	BUTLER TO 240' N/O LIBERTY
60'	240' N/O LIBERTY TO LANE
50'	LANE TO KINGS CANYON
60'	KINGS CANYON TO HUNTINGTON
40'	HUNTINGTON TO PALM DRIVE
40'-50'	PALM DRIVE TO TULARE

NOTES:

1. A TWO FOOT CONCRETE SHOULDER IS REQUIRED IN AN R-M OVERLAY DISTRICT.
2. ASPHALT CONCRETE PAVING BETWEEN THE EDGE OF PAVEMENT OR CONCRETE SHOULDER AND THE PROPERTY LINE IS PROHIBITED EXCEPT FOR DRIVEWAY APPROACHES.
3. DRIVEWAY APPROACHES SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD DRAWING API-4.
4. ASPHALT CONCRETE PAVEMENT SHALL CONFORM TO CITY STANDARDS.
5. SEE STANDARD DRAWING W-3 AND W-4 FOR LOCATION OF FIRE HYDRANT VALVES.
6. CURB AND GUTTER EXISTS ON THE EAST SIDE FOR APPROXIMATELY 255' NORTH AND SOUTH OF HEATON, ON THE EAST SIDE FROM TULARE TO APPROXIMATELY 570' SOUTH OF TULARE, AND ON THE WEST SIDE FROM KINGS CANYON TO APPROXIMATELY 200' NORTH OF KINGS CANYON.

MINNEWAWA AVENUE

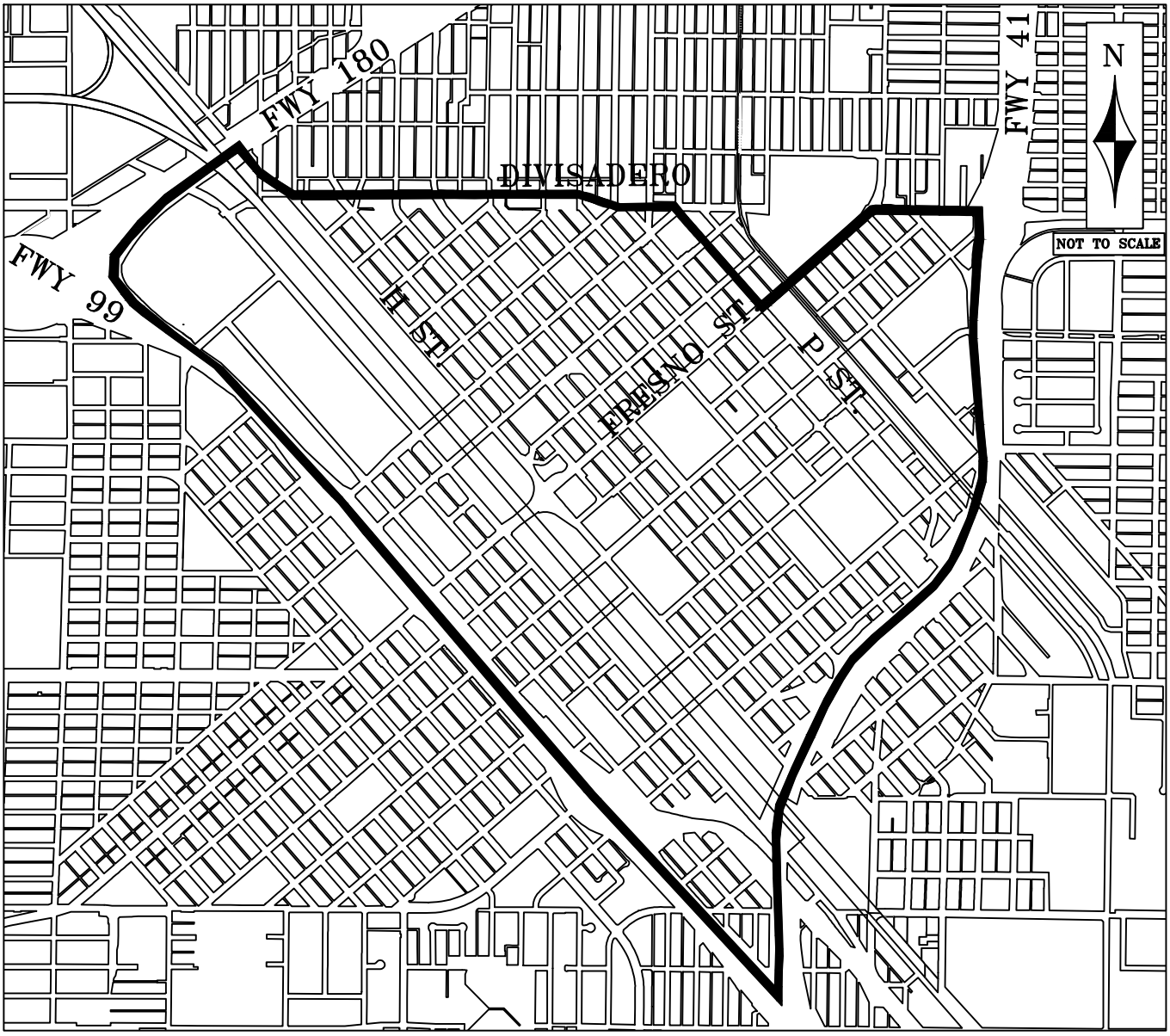
BUTLER AVENUE TO TULARE AVENUE

REF. & REV.
~~AUG. 2010~~
DEC. 2020 (A.7)

CITY OF FRESNO

API-9

DOWNTOWN VICINITY MAP

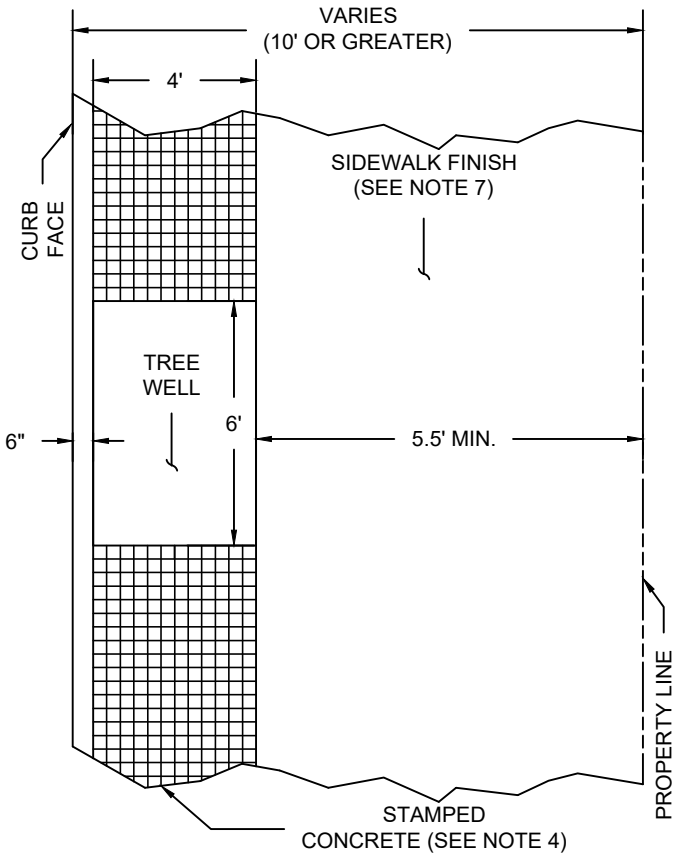


NOTES:

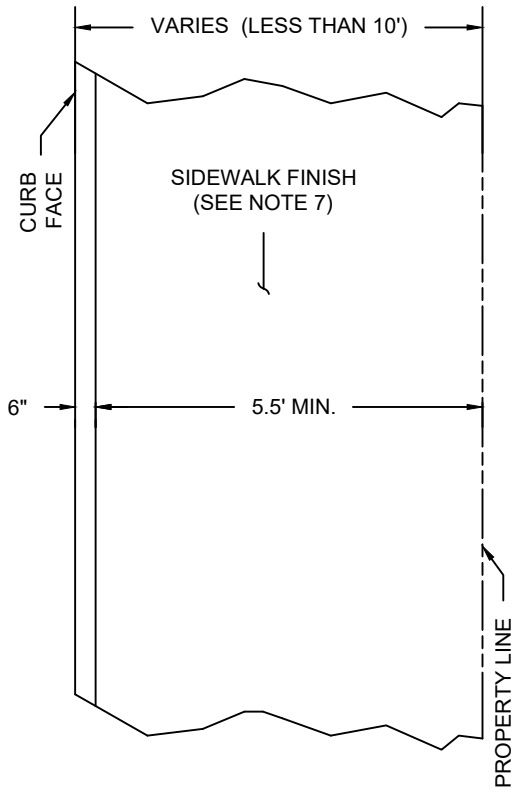
1. NEW CONCRETE SIDEWALK TO BE POURED WITHIN THE "DOWNTOWN FRESNO AREA" SHALL BE DAVIS COLORS MIAMI BUFF COLORED CONCRETE, OR APPROVED EQUIVALENT, AS DETAILED IN THE CITY OF FRESNO STANDARD DRAWING API–11.

2. THE "DOWNTOWN FRESNO AREA" IS BOUNDED BY THE FOLLOWING ROADWAYS: DIVISADERO (SR41 TO FRESNO ST), FRESNO ST (DIVISADERO TO P ST), P ST (FRESNO ST TO DIVISADERO), DIVISADERO (P ST TO H ST), H ST (DIVISADERO TO SR180), SR180 (H ST TO SR99), SR99 (SR180 TO SR41), SR41 (SR99 TO DIVISADERO). BOTH SIDES OF THE BOUNDARY STREETS SHALL UTILIZE THIS SPECIAL AESTHETIC TREATMENT.

DOWNTOWN CONCRETE SIDEWALK AESTHETIC TREATMENT SIDEWALK AESTHETIC BOUNDARY	REF. & REV. DEC. 2020 (A.7)	CITY OF FRESNO API–10



CASE A

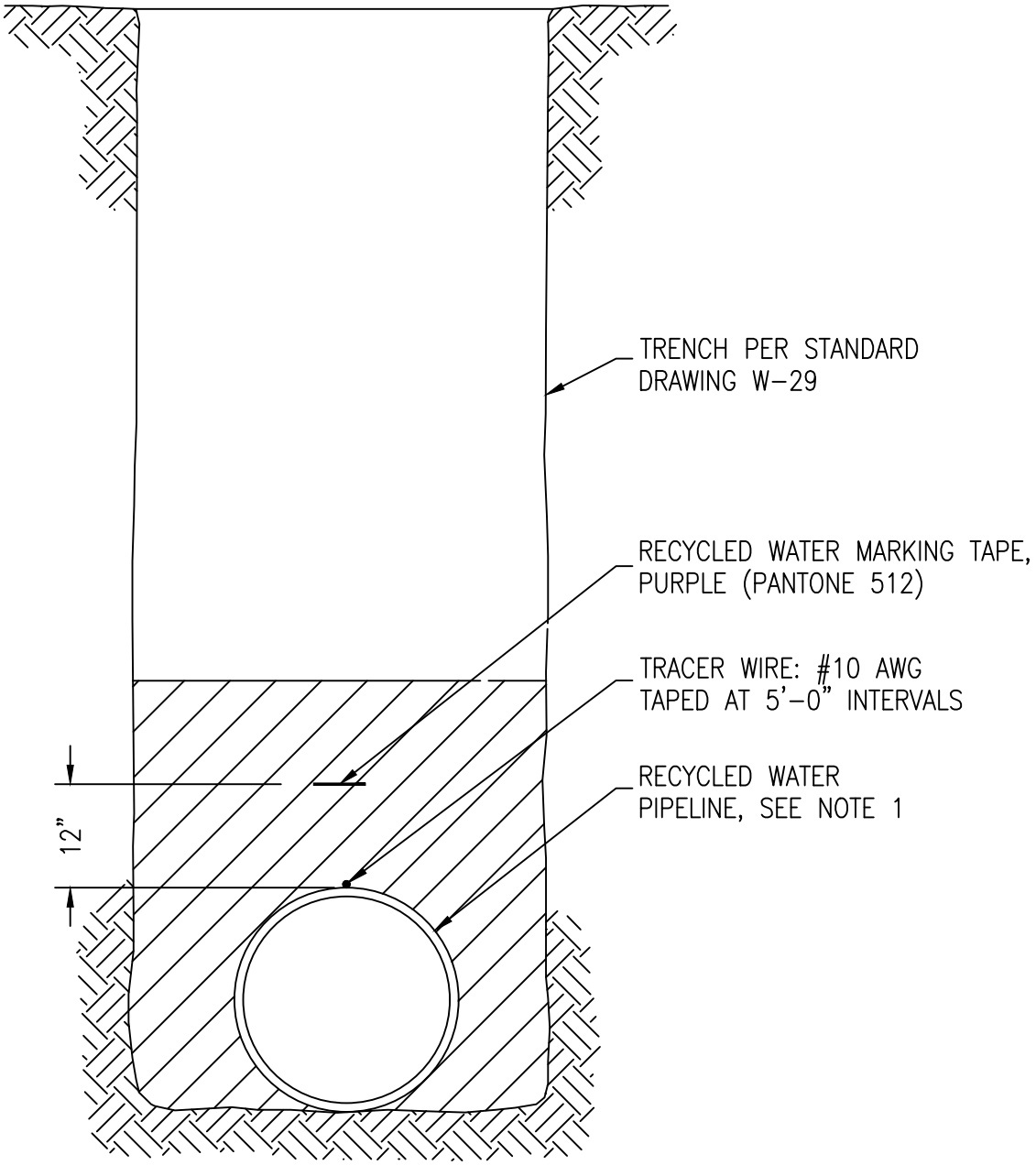


CASE B

NOTES:

1. DOWNTOWN AESTHETIC TREATMENT SHALL BE IMPLEMENTED WITHIN THE BOUNDARIES NOTED ON API–10.
2. ALL SIDEWALK CONCRETE INCLUDING DRIVE APPROACHES, BUT EXCLUDING CURB & GUTTER, SHALL BE COLORED WITH DAVIS COLORS MIAMI BUFF AS SPECIFIED IN API–10.
3. CASE A SHALL BE USED FOR SIDEWALK PATTERNS 10' WIDE OR GREATER; FOR SIDEWALK PATTERNS LESS THAN 10' WIDE CASE B SHALL BE IMPLEMENTED.
4. STAMPED CONCRETE SHALL HAVE A 4"X4" BOMANITE SQUARE PATTERN, OR APPROVED EQUIVALENT, WITH MIAMI BUFF COLOR.
5. TREE WELLS SHALL FOLLOW CITY STANDARD P–8, CASE A.
6. CONCRETE SIDEWALK, CURB, & GUTTER SHALL ADHERE TO CONSTRUCTION DETAILS ON CITY STANDARD P–5.
7. DOWNTOWN AESTHETIC TREATMENT SHALL IMPLEMENT A MEDIUM BROOM FINISH WITHIN THE BOUNDARIES NOTED ON API–10.

DOWNTOWN CONCRETE SIDEWALK AESTHETIC TREATMENT SIDEWALK PATTERN	REF. & REV. DEC. 2020 (A.7)	CITY OF FRESNO API–11

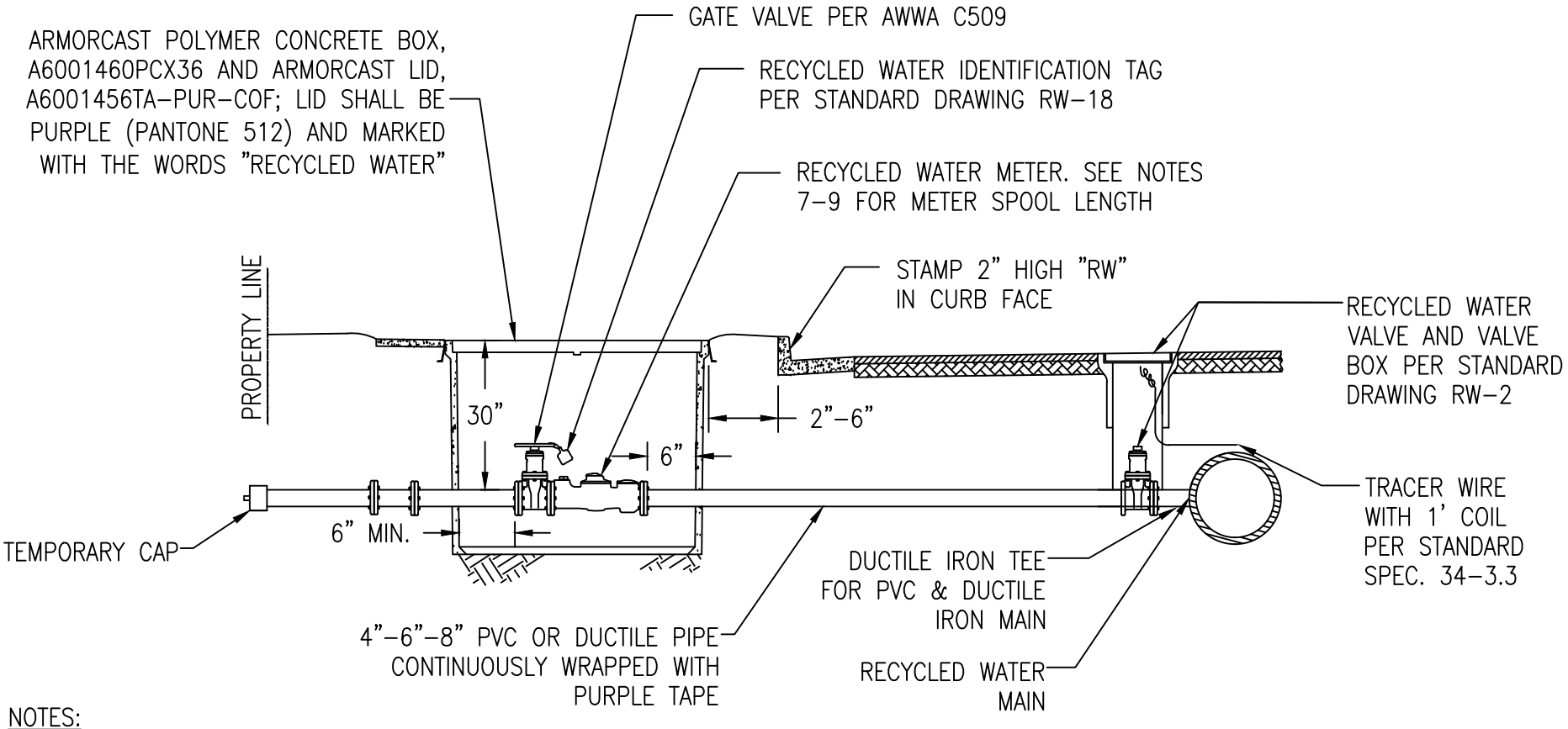


NOTE:

1. RECYCLED WATER PIPELINES SHALL BE COLORED PURPLE (PANTONE 512) AND INTEGRALLY STAMPED "RECYCLED WATER – DO NOT DRINK" ON OPPOSITE SIDES OF THE PIPE. ALTERNATIVELY, NON-PVC RECYCLED WATER PIPELINES SHALL BE MARKED WITH LETTERING ON PURPLE MARKING TAPE BEARING THE CONTINUOUS WORDING "RECYCLED WATER-DO NOT DRINK". THE MARKING TAPE SHALL BE A MINIMUM OF SIX INCHES WIDE AND SHALL BE SECURELY ATTACHED 12" ABOVE THE TOP OF THE PIPELINE.

RECYCLED WATER MAIN IDENTIFICATION	REF. & REV. ~~-UG. 2010~~ DEC. 2020 (-.7)	CITY OF FRESNO RW-1

4", 6", 8" RECYCLED WATER SERVICE



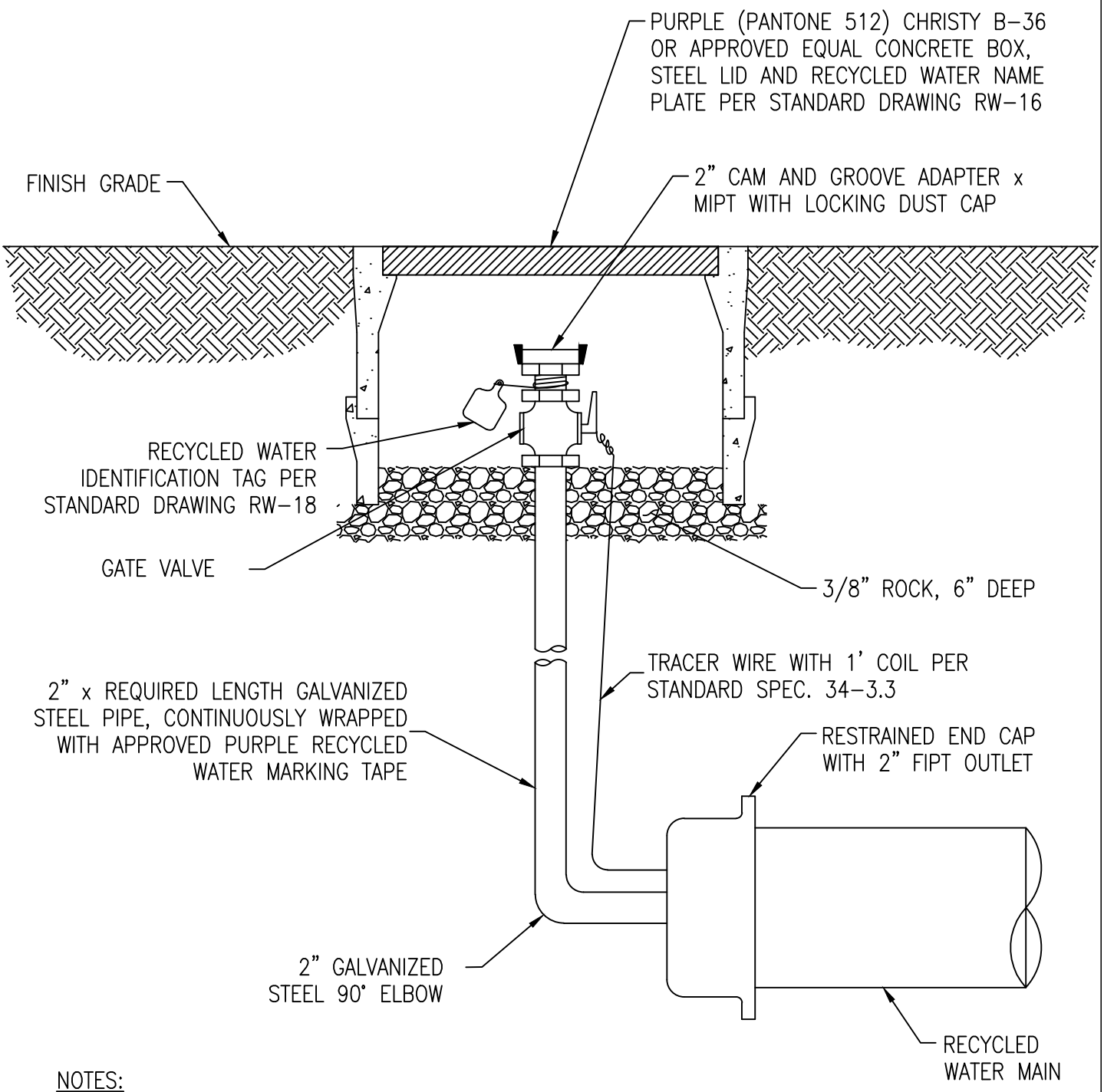
NOTES:

1. RECYCLED WATER SERVICE AND METER BOX INSTALLATION SHALL BE INSPECTED AND APPROVED BY CITY PRIOR TO SIDEWALK INSTALLATION.
2. RECYCLED WATER SERVICES SHALL BE LOCATED A MINIMUM OF 4' CLEAR OF POTABLE WATER SERVICES.
3. ALL MATERIALS SHALL BE AS NOTED OR CITY–APPROVED EQUAL.
4. ALL METER BOXES IN DIRT OR LANDSCAPE AREAS SHALL BE SET IN A 6" CONCRETE SLAB MEASURING AT LEAST 1' BEYOND METER BOX ON ALL SIDES.
5. RESTRAIN ALL JOINTS PER CITY STANDARD SPECIFICATIONS SECTION 33–14.5
6. RECYCLED WATER SERVICES SHALL NOT BE ALLOWED IN DRIVEWAY APPROACH AREAS AT ANY RESIDENTIAL OR COMMERCIAL LOCATION.
7. FOR 4" RECYCLED WATER SERVICE, METER SPOOL LENGTH SHALL BE 13¾".
8. FOR 6" RECYCLED WATER SERVICE, METER SPOOL LENGTH SHALL BE 17¾".
9. FOR 8" RECYCLED WATER SERVICE, METER SPOOL LENGTH SHALL BE 24".
10. METERS DEEPER THAN 30 INCHES TO TOP OF PIPE MUST BE RAISED TO 30 INCHES.
11. WHEN CURB EXISTS, SET METER BOX 2" TO 6" FROM BACK OF CURB.

REF. & REV. ~~FEB. 2018~~ DEC. 2020 (-7)

CITY OF FRESNO

RW–6



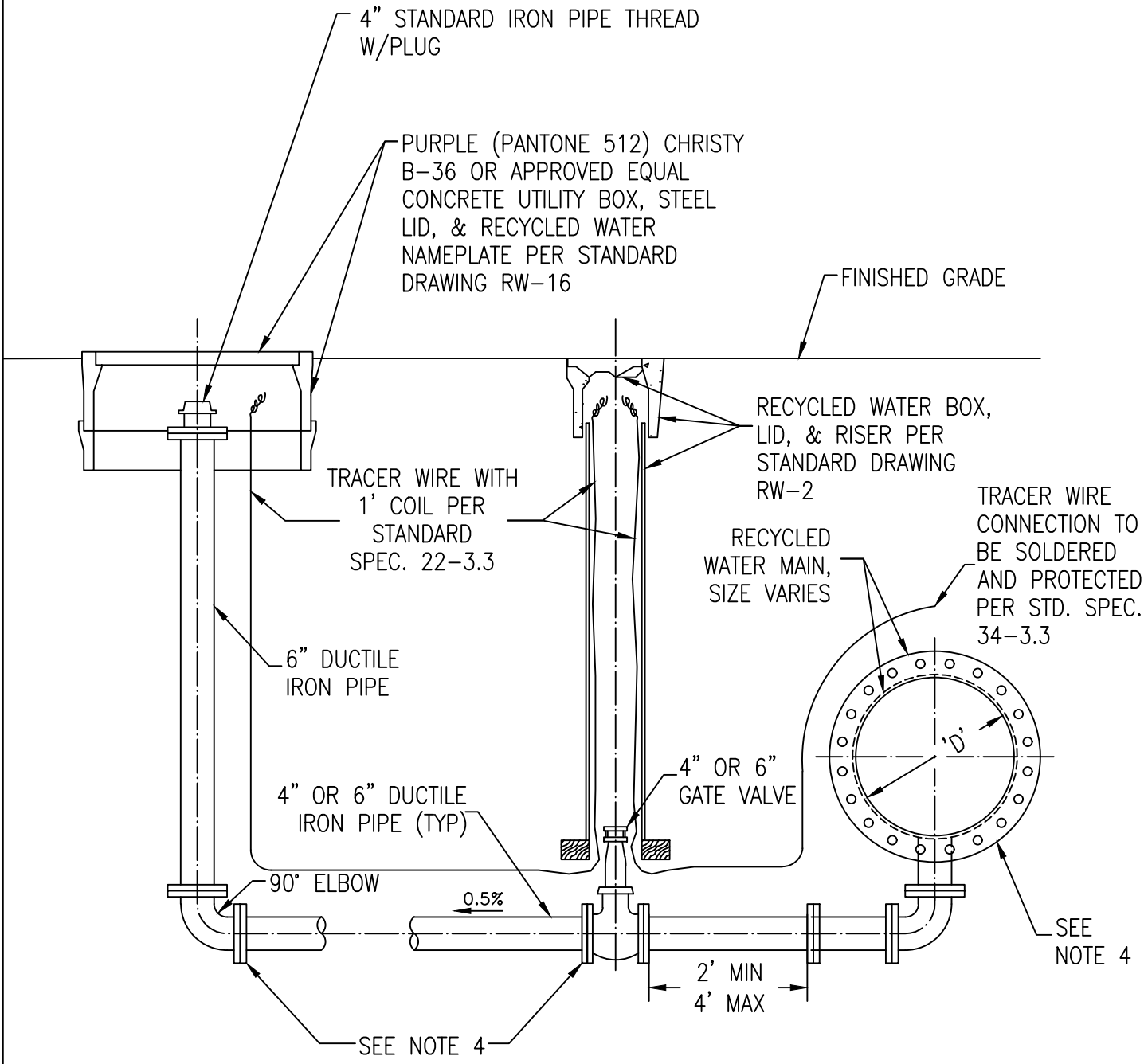
NOTES:

1. SET TOP OF METER BOX FLUSH WITH FINISH GRADE FOR ANY INSTALLATION IN THE CITY RIGHT OF WAY.

2. THE CONSTRUCTION OF A TEMPORARY BLOW-OFF FOR THE USE OF TESTING AND FLUSHING OF NEW RECYCLED WATER MAINS ONLY.

3. RESTRAIN ALL JOINTS PER CITY STANDARD SPECIFICATIONS SECTION 33-14.5

TEMPORARY 2" RECYCLED WATER BLOW-OFF	REF. & REV. ~~FEB. 2018~~ DEC. 2020 (-.7)	CITY OF FRESNO RW-7



NOTES:

1. ALL FITTINGS SHALL BE SECURED WITH FLANGE CONNECTION, HARNESSES OR TIE-RODS AS APPLICABLE.
2. PLACE VALVES AND BLOW-OFFS OUTSIDE SIDEWALK AND DRIVEWAY AREAS.
3. ALL RISERS SHALL BE FLANGED, 6" DIAMETER.
4. RESTRAIN ALL JOINTS PER CITY STANDARD SPECIFICATIONS SECTION 33-14.5

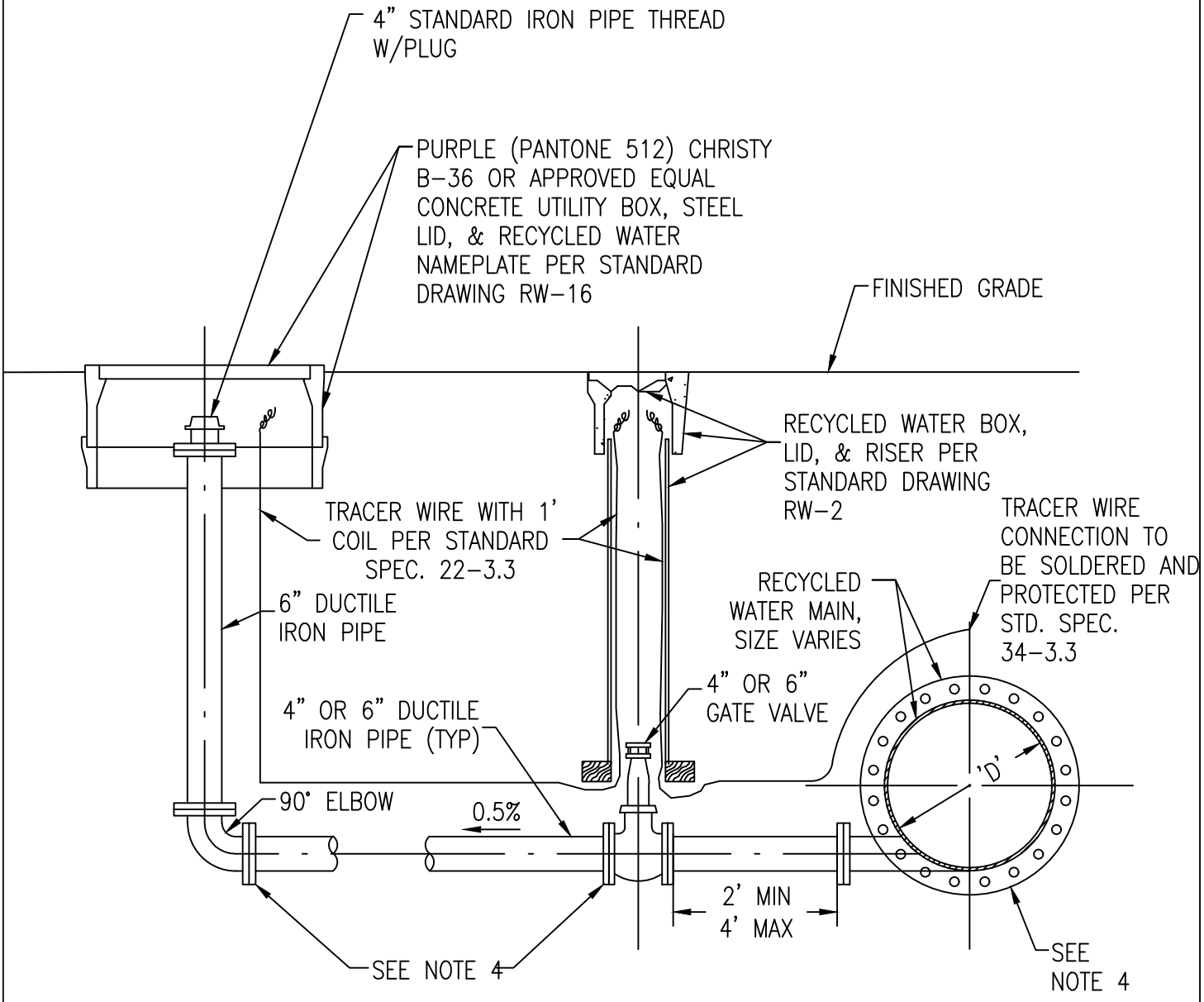
BLOW-OFF PIPE SIZE SCHEDULE	
MAIN	BLOW-OFF
6"	4"
8"	4"
10"	4"
12"	6"
14"	6"
16"	6"
18"	6"
24"	6"
30"	6"

RECYCLED WATER BLOW-OFF ASSEMBLY (PVC OR DUCTILE IRON MAIN)

REF. & REV.
~~FEB. 2018~~
DEC. 2020 (-.7)

CITY OF FRESNO

RW-8A



NOTES:

1. ALL FITTINGS SHALL BE SECURED WITH FLANGE CONNECTION, HARNESSES OR TIE-RODS AS APPLICABLE.
2. PLACE VALVES AND BLOW-OFFS OUTSIDE SIDEWALK AND DRIVEWAY AREAS.
3. ALL RISERS SHALL BE FLANGED, 6" DIAMETER.
4. RESTRAIN ALL JOINTS PER CITY STANDARD SPECIFICATIONS SECTION 33-14.5.

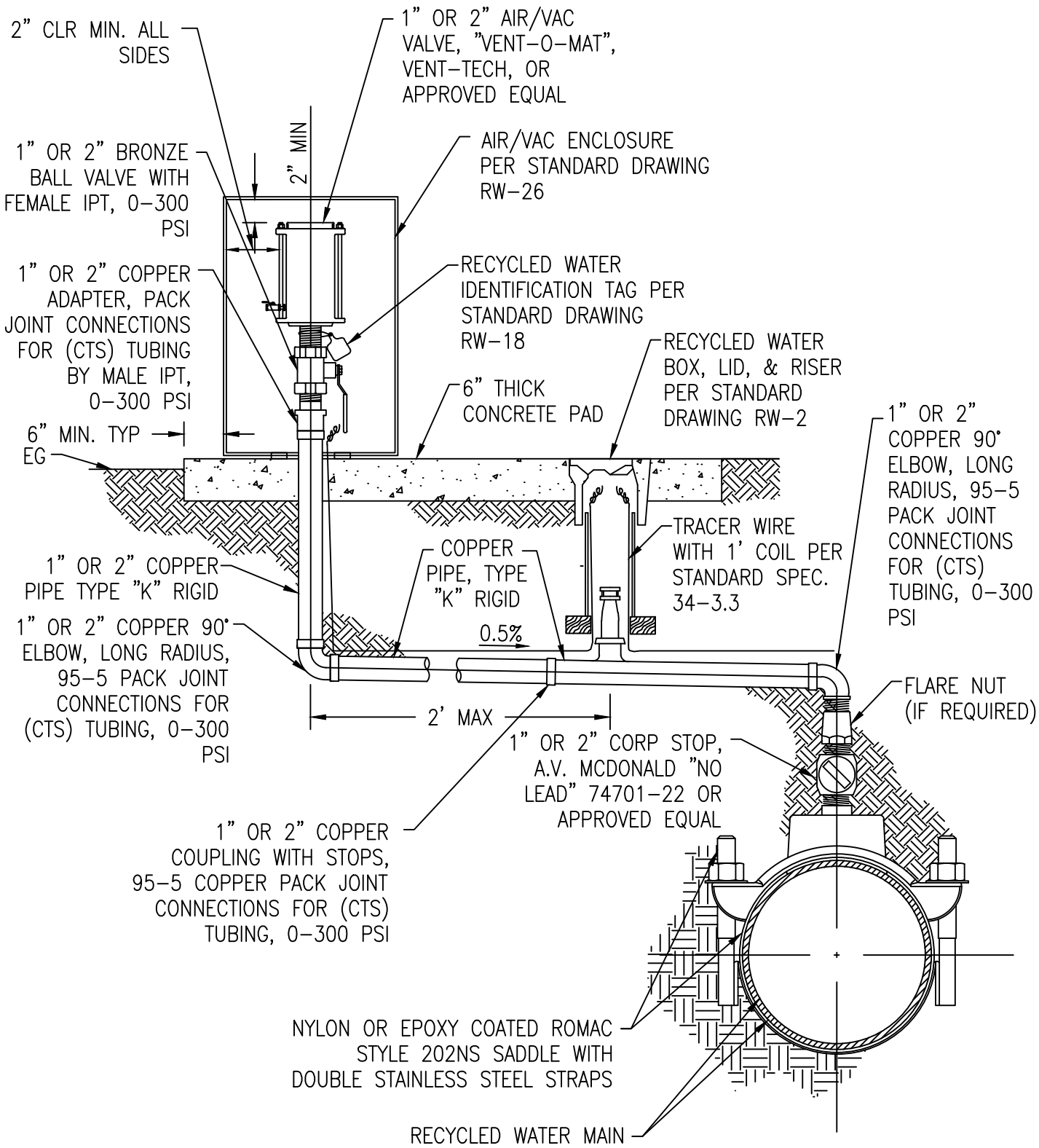
BLOW-OFF PIPE SIZE SCHEDULE	
MAIN	BLOW-OFF
6"	4"
8"	4"
10"	4"
12"	6"
14"	6"
16"	6"
18"	6"
24"	6"
30"	6"

RECYCLED WATER BLOW-OFF ASSEMBLY (STEEL MAIN)

REF. & REV. DEC. 2020 (-.7)

CITY OF FRESNO

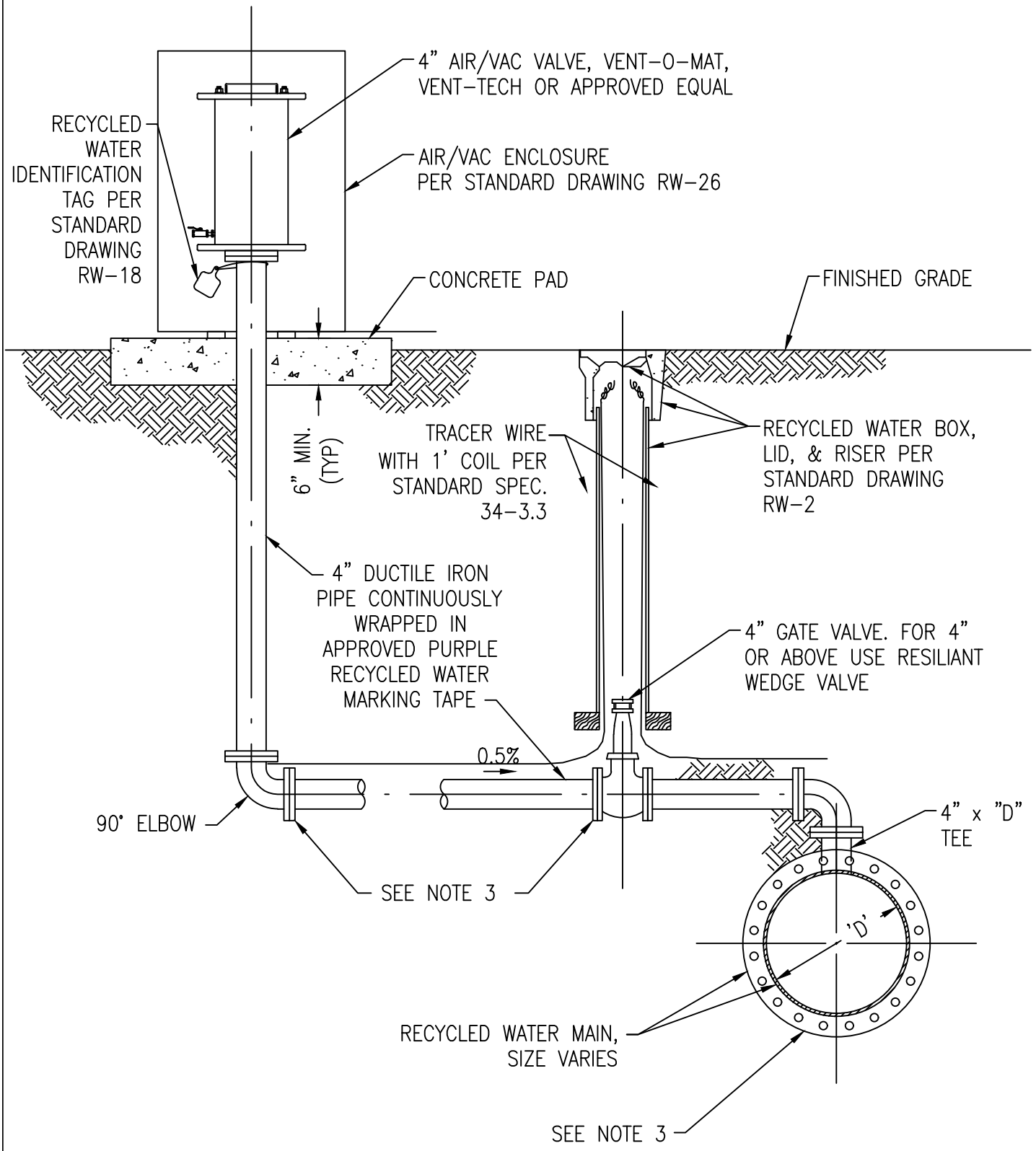
RW-8B



NOTES:

1. CONTRACTOR SHALL FURNISH AND INSTALL ALL ITEMS REQUIRED.
2. ALL MATERIALS SHALL BE AS NOTED OR CITY-APPROVED EQUAL.
3. RESTRAIN ALL JOINTS PER CITY STANDARD SPECIFICATIONS SECTION 33-14.5.

RECYCLED WATER 1" OR 2" AIR RELEASE/VACUUM BREAKER ASSEMBLY	REF. & REV. ~~-PR. 2017~~ DEC. 2020 (-.7)	CITY OF FRESNO RW-9



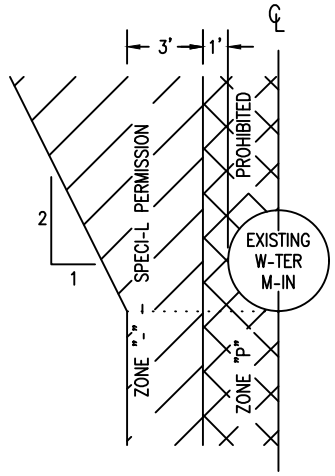
NOTES:

1. CONTRACTOR SHALL FURNISH AND INSTALL ALL ITEMS REQUIRED.
2. ALL MATERIALS SHALL BE AS NOTED OR CITY-APPROVED EQUAL.
3. RESTRAIN ALL JOINTS PER CITY STANDARD SPECIFICATIONS SECTION 21-15.5

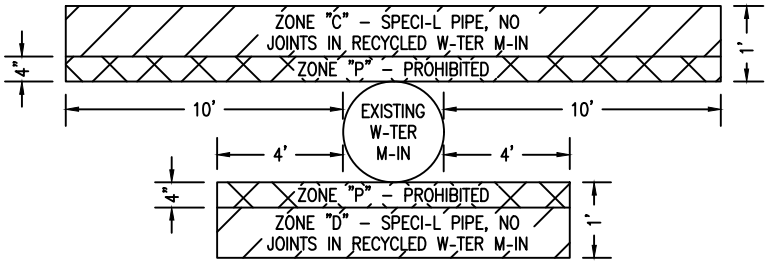
RECYCLED WATER 4" AIR RELEASE/VACUUM BREAKER ASSEMBLY	REF. & REV. ~~-PR. 2017~~ DEC. 2020 (-.7)	CITY OF FRESNO RW-10

THIS STANDARD IS
NO LONGER USED

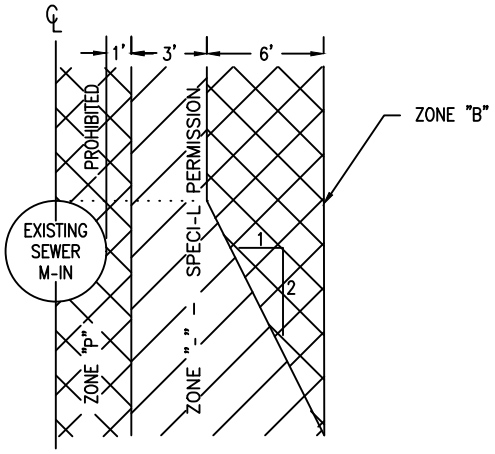
~~1" OR 2" AIR RELEASE/ VACUUM BREAKER VALVE ENCLOSURE~~	REF. & REV. ~~JUNE 2014~~ DEC. 2020 (-.7)	CITY OF FRESNO RW–11



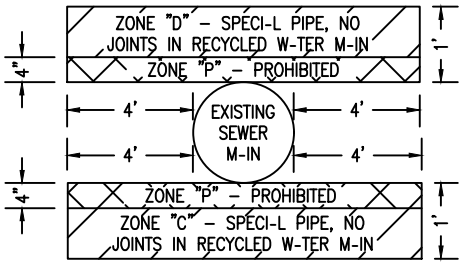
RECYCLED W-TER M-IN P-R-LLEL TO POT-BLE W-TER M-INS



RECYCLED W-TER M-IN CROSSING POT-BLE W-TER M-INS



RECYCLED W-TER M-IN P-R-LLEL TO SEWER M-INS



RECYCLED W-TER M-IN CROSSING SEWER M-INS

B-SIC SEP-R-TION ST-ND-RDS

1. SEP-R-TION DIST-NCE SH-LL BE ME-SURED FROM THE NE-REST OUTSIDE EDGE OF PIPE.
2. W-TER M-INS -ND SUPPLY LINES OF 24" DI-METER OR GRE-TER M-Y CRE-TE SPECI-L H-Z-RDS BEC-USE OF THE L-RGE VOLUMES OF FLOW. INST-LL-TIONS OF W-TER M-INS -ND SUPPLY LINES 24" DI-METER OR L-RGER MUST BE REVIEWED -ND -PPROVED BY THE HE-LTH -GENCY -ND CITY ENGINEER PRIOR TO CONSTRUCTION.

SPECI-L CONSTRUCTION REQUIRED FOR RECYCLED W-TER

ZONE:

"-" NO RECYCLED W-TER LINES P-R-LLEL TO W-TER M-INS SH-LL BE PERMITTED IN THIS ZONE WITHOUT PRIOR WRITTEN -PPROV-L FROM COUNTY, C-LIFORNI- DEP-RTMENT OF PUBLIC HE-LTH -ND THE CITY.

"B" RECYCLED W-TER M-IN SH-LL BE CONSTRUCTED OF:
1. DUCTILE IRON PIPE WITH HOT DIP BITUMINOUS CO-TING.
2. DIPPED -ND WR-PPED 1/4" THICK WELDED STEEL PIPE.
3. CL-SS 305 PRESSURE R-TED PL-STIC W-TER PIPE (DR 14 PER - W- C900) OR EQUIV-LENT.
4. REINFORCED CONCRETE PRESSURE PIPE, STEEL CYLINDER TYPE, PER - W- (C300 OR C302 OR C303).

"C" - RECYCLED W-TER M-IN SH-LL BE CONSTRUCTED OF:
1. DUCTILE IRON PIPE WITH HOT DIP BITUMINOUS CO-TING.
2. DIPPED -ND WR-PPED 1/4" THICK WELDED STEEL PIPE.
3. CL-SS 305 PRESSURE R-TED PL-STIC W-TER PIPE (DR 14 PER - W- C900) OR EQUIV-LENT.
4. REINFORCED CONCRETE PRESSURE PIPE, STEEL CYLINDER TYPE PER - W- (C300 OR C302 OR C303).

"D" - RECYCLED W-TER M-IN SH-LL BE CONSTRUCTED OF:
1. DUCTILE IRON PIPE WITH HOT DIP BITUMINOUS CO-TING.
2. DIPPED -ND WR-PPED 1/4" WELDED STEEL PIPE.
3. CL-SS 200 PRESSURE R-TED PL-STIC W-TER PIPE (DR 14 PER - W- C900) OR EQUIV-LENT.
4. REINFORCED CONCRETE PRESSURE PIPE STEEL CYLINDER TYPE, PER - W- (C300 OR C302 OR C303).

"P" NO RECYCLED W-TER M-IN SH-LL BE CONSTRUCTED

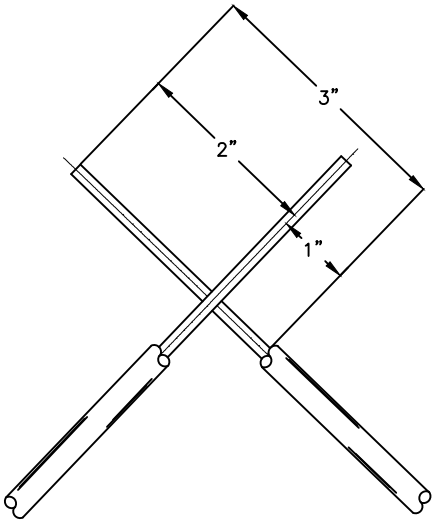
RECYCLED WATER MAIN SEPARATION REQUIREMENTS

REF. & REV.
~~-PR. 2017~~
DEC. 2020 (-.7)

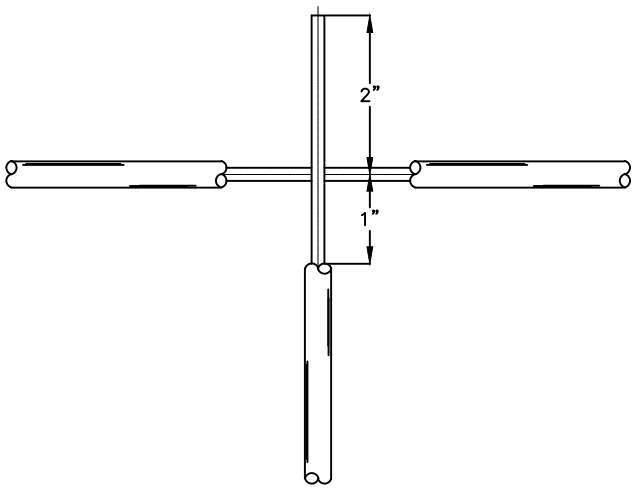
CITY OF FRESNO

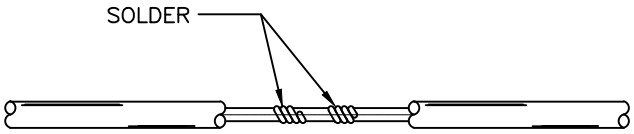
RW–12

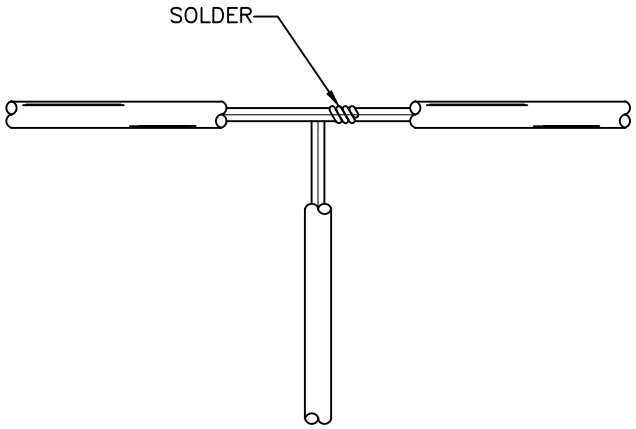
IN–LINE CONNECTION



BRANCH CONNECTION







NOTES:

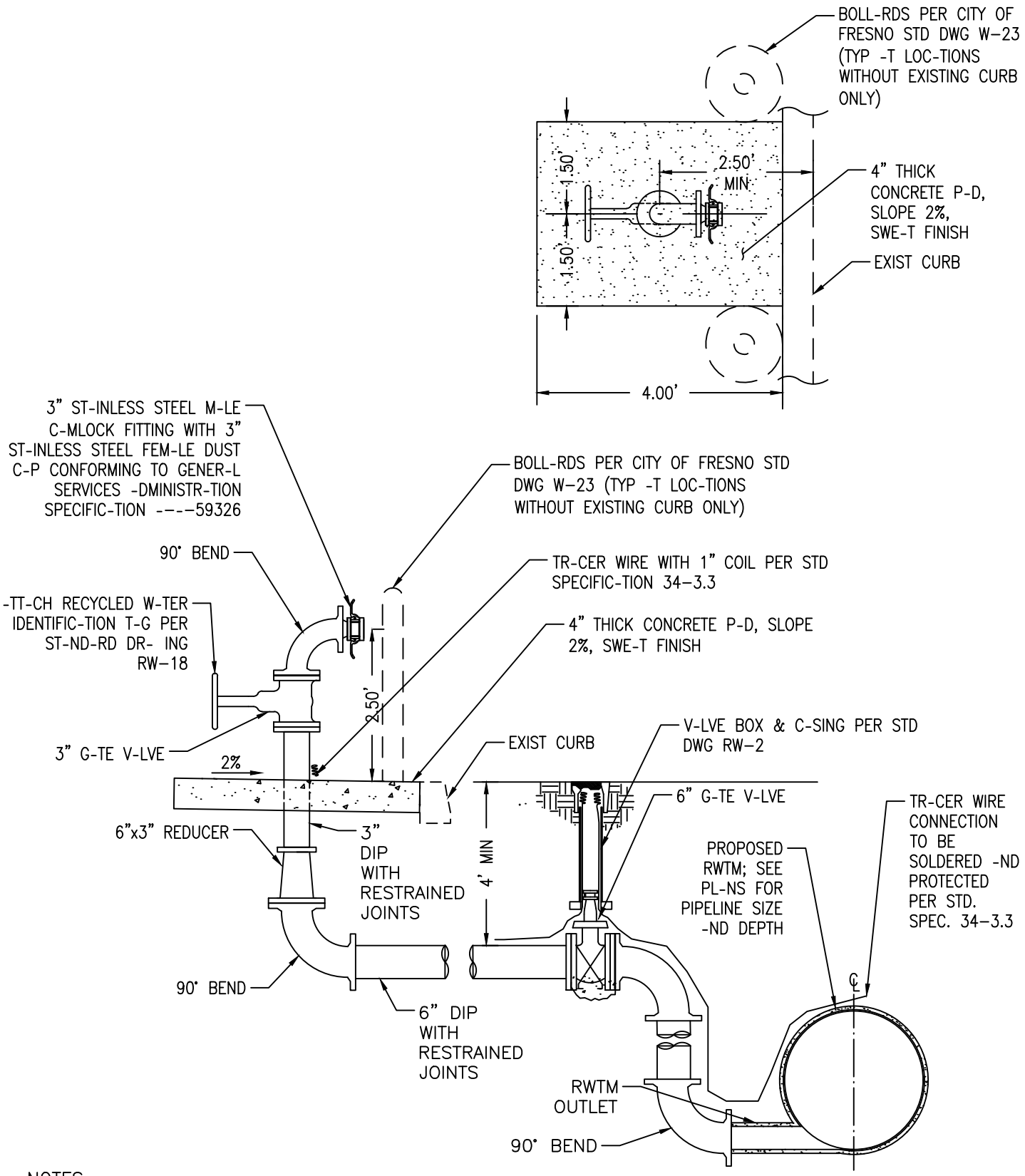
1. STRIP THE INSULATION FROM THE WIRE AS SHOWN IN THE DRAWING, BUT DO NOT CUT THE COPPER WIRE.
2. LOOP THE WIRE ENDS A MINIMUM OF (4) TIMES FOR EACH WIRE OF THE CONNECTION.
3. USING A PROPANE TORCH, APPLY THE FLAME DIRECTLY TO THE JOINT (LOOPS) TO BE SOLDERED.
4. APPLY 62SN OR EQUIVALENT ROSIN CORE SOLDER TO THE SPLICE. SOLDER SHOULD FLOW INTO THE JOINT.
5. SOLDERING PASTE MUST BE APPLIED TO THE LOOPS BEFORE HEAT IS APPLIED IF ROSIN CORE SOLDER IS NOT USED.
6. COVER ALL BARE COPPER WIRE WITH A WATERPROOF WRAP THAT IS APPROVED FOR UNDERGROUND CONNECTIONS (3M DBR/Y–6 OR APPROVED EQUAL). THE WRAP MUST EXTEND A MINIMUM OF TWO INCHES (2") BEYOND THE END OF THE STRIPPED WIRE.
7. ALL WIRE MUST BE 10 GAUGE COPPER WIRE.

TRACER WIRE SPLICE CONNECTION DETAIL

REF. & REV.
~~OCT. 2014~~
DEC. 2020

CITY OF FRESNO

RW–24



NOTES:

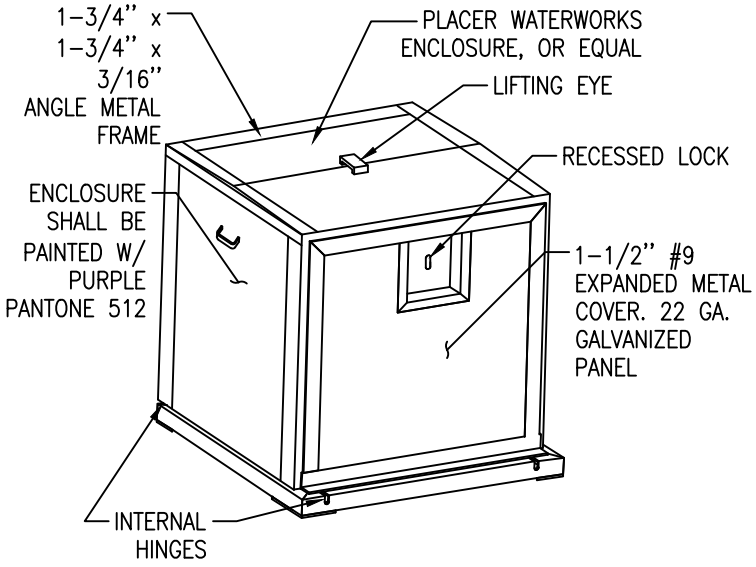
1. PAINT ALL EXPOSED PIPING, VALVE, AND BOLLARDS WITH PURPLE PANTONE 512.
2. ALL JOINTS SHALL BE RESTRAINED PER CITY STANDARD SPECIFICATIONS SECTION 33-14.5.
3. ALL UNDERGROUND PIPING SHALL BE CONTINUOUSLY WRAPPED WITH APPROVED PURPLE RECYCLED WATER MARKING TAPE.
4. ABOVE GROUND CONNECTIONS SHALL BE FLANGED.

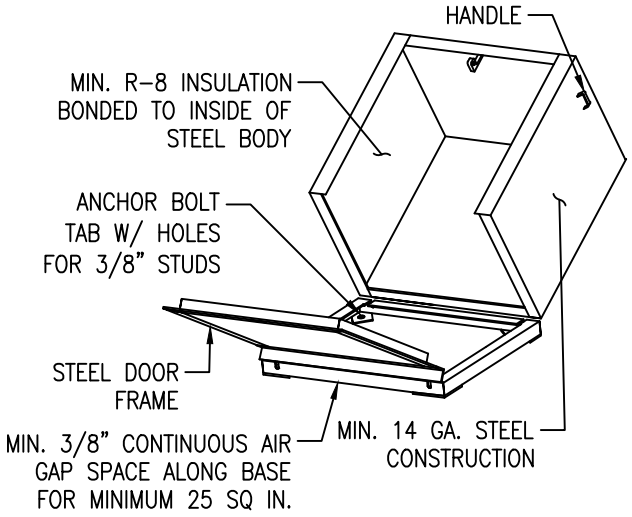
RECYCLED WATER
COMMERCIAL TRUCK FILL STATION

REF. & REV.
DEC. 2020 (-.7)

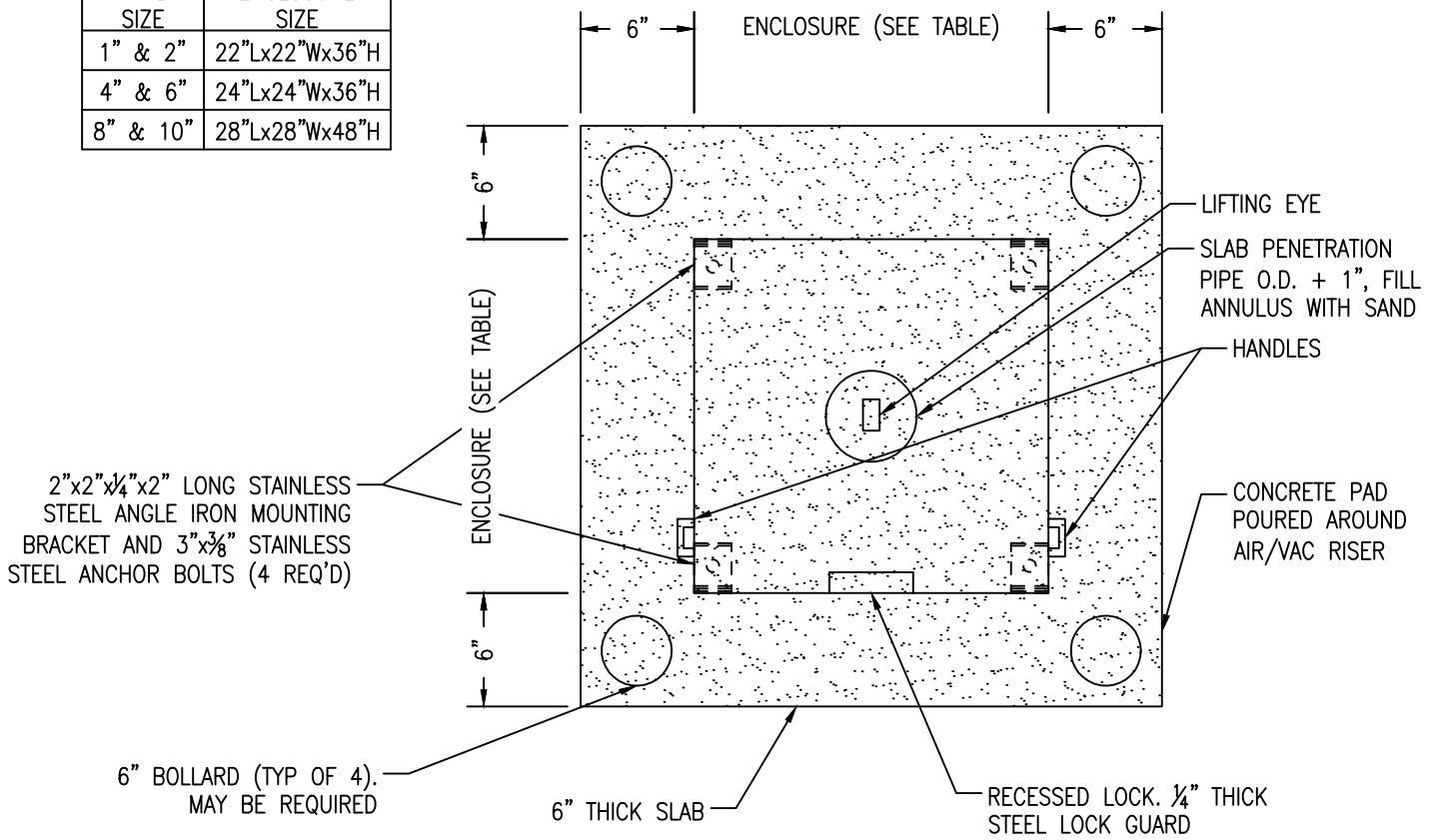
CITY OF FRESNO

RW-25





ARVB SIZE	ENCLOSURE SIZE
1" & 2"	22"Lx22"Wx36"H
4" & 6"	24"Lx24"Wx36"H
8" & 10"	28"Lx28"Wx48"H



NOTES:

1. ENCLOSURE SHALL NOT ENCROACH ON TO PRIVATE PROPERTY, ADA PATH OF TRAVEL, OR VEHICLE TRAFFIC WHEN OPEN.
2. PROVIDE 4' MINIMUM SIDEWALK CLEARANCE ADJACENT TO CAV FOR ADA ACCESSIBILITY REQUIREMENTS.
3. ALL SURFACES SHALL BE ABRASIVE BLASTED (SSPC SP-5 WHITE METAL BLAST) AND POWDER COATED WITH 2-3 MILS ZINC RICH PRIMER WITH 4-5 MILS ANTI-GRAFFITI CHEMISTRY TOP COAT (DFT 6-8 MILS).
4. VALVE ASSEMBLY AND METAL HOUSING SHALL BE LOCATED IN MEDIAN ISLANDS, LANDSCAPE AREAS, OR OUTSIDE OF SIDEWALK AREA WHERE POSSIBLE. VALVE ASSEMBLY MUST BE IN PUBLIC RIGHT-OF-WAY OR PUBLIC UTILITY EASEMENT.
5. ENCLOSURE SHALL MOUNT SECURELY TO CONCRETE PAD USING INTEGRAL BOLT TABS. ONE ANCHOR IN EACH CORNER (4 TOTAL)

AIR RELEASE/VACUUM BREAKER VALVE ENCLOSURE

REF. & REV. DEC. 2020 (A.7)

CITY OF FRESNO

RW-26