

City of



DEPARTMENT OF PUBLIC WORKS

## STANDARD DRAWINGS

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### **ADDENDUM No. 7** **Published March 5, 2021**

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# ADDENDUM No. 7

## TO THE CITY OF FRESNO

### PUBLIC WORKS STANDARD DRAWINGS AND SPECIFICATIONS

ADOPTED MARCH 4, 1970 BY RESOLUTION NO. 70-36

THIS UPDATED VERSION IS APPROVED: MARCH 5, 2021

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:**

- 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)	
<b>P-4</b>	<ol style="list-style-type: none"> <li>Multiple options for Dimension “B” removed; Dimension B now refers to Standard Drawing P-6 for driveway widths.</li> <li>Clarified “STREET FURNITURE” locations shown on diagram.</li> <li>Comments previously marked with a single asterisk “*” incorporated into new dimension “C”.</li> <li>Comments previously marked with two asterisks “**” converted to Note 1.</li> <li><b>Added Note 2:</b> “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.”</li> <li><b>Added Note 3:</b> “SEE API-6 FOR VAN NESS EXTENSION BETWEEN HERNDON AVE. AND SAN JOAQUIN RIVER BLUFF.”</li> <li><b>Added Note 4:</b> “SEE API-3, API-4 FOR DETAILS RELATING TO MODIFIED STREET TYPES.”</li> <li>Prior “REF. &amp; REV.” date erroneously shown as June 2015, date corrected to reflect its prior revision with the issuance of Addendum 5 in Oct. 2014.</li> </ol>
<b>P-5</b>	<ol style="list-style-type: none"> <li>Existing <b>callout:</b> “WHEN WALK POURED SEPARATE, INSTALL <i>BOUND</i> BREAKER BEHIND CURB.” <b>Revised to read:</b> “WHEN WALK POURED SEPARATE, INSTALL <i>BOND</i> BREAKER BEHIND CURB.”</li> <li>Expansion joint dimension Revised from: 90’ to 45’</li> <li>Dimension: “5.5’ MIN.” added to residential side of pattern and to “CROSS-SECTION OF SIDEWALK, CURB &amp; GUTTER”</li> <li><b>Sidewalk thickness dimension:</b> “3.5” <b>Revised to read:</b> “3.5”, 5” WITH WEDGE CURBING”</li> <li><b>Added callouts</b> for “COMMERICAL PATTERNS” and “RESIDENTIAL PATTERNS”</li> <li><b>Revised callout</b> for return radius to reference standard drawings.</li> <li>Existing <b>NOTE renamed:</b> “NOTE A”</li> <li>Existing <b>NOTE renamed:</b> “NOTE B”</li> <li>Prior “REF. &amp; REV.” date erroneously shown as June 2015, date corrected to reflect its prior revision with the issuance of Addendum 5 in Oct. 2014.</li> </ol>
<b>P-6</b>	<ol style="list-style-type: none"> <li><b>Note 2:</b> “ “d” = 6’ MINIMUM AND LESS THAN 12’ OR GREATER THAN 20’ ” <b>Revised to read:</b> “DRIVEWAY SPACING, “d”, SHALL BE 6’ MIN.”</li> <li><b>Note 3:</b> “THE TRAFFIC ENGINEER MAY APPROVE &gt;35’, &lt;40’ ”, <b>Revised to read:</b> “DRIVEWAY OPENINGS GREATER THAN 40” REQUIRE APPROVAL FROM THE CITY ENGINEER”</li> <li><b>Note 4,</b> “IN COMMERCIAL, INDUSTRIAL AND MULTI-FAMILY DEVELOPMENTS, CITY ENGINEER MAY APPROVE ≥ 40’ ” <b>Revised to read:</b> “IN COMMERCIAL, INDUSTRIAL AND MULTI-FAMILY DEVELOPMENTS, CITY ENGINEER MAY APPROVE LARGER APPROACHES IF WARRANTED”</li> <li><b>Note 6:</b> “FOR COMMERCIAL, INDUSTRIAL OR MULTI-FAMILY: 16’ MIN.” <b>Revised to read:</b> “IF ONLY ONE ENTRANCE LOCAL STREET MIN. SHALL BE 16’, NOT 15’. EXCEPTION: SINGLE FAMILY RESIDENTIAL.”</li> </ol>

	<ol style="list-style-type: none"> <li><b>Added Note 8:</b> "16' MIN WHEN TRASH ENCLOSURE ON-SITE (REVIEWED ON A CASE-BY-CASE BASIS)."</li> <li><b>Added Note 9:</b> "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(S)."</li> </ol>
<b>P-9</b>	<ol style="list-style-type: none"> <li><b>Added Detail,</b> "RESIDENTIAL STREET WITH WEDGE CURBS AND ADJACENT SIDEWALKS"</li> <li><b>Updated</b> expansion joint <b>detail</b> callout to reference current Caltrans specification: "SEE STATE SPEC. 51-1.12C..." Revised to read: "SEE STATE SPEC. 51-2.01C(1)..."</li> </ol>
<b>P-12</b>	<ol style="list-style-type: none"> <li><b>Updated</b> expansion joint <b>detail</b> <b>callout</b> to reference current Caltrans specification: "SEE STATE SPEC. 51-1.12C..." Revised to read: "SEE STATE SPEC. 51-2.01C(1)..."</li> <li><b>Callout:</b> "2X6 REDWOOD HEADER (TYP) <b>Revised to read:</b> "WHERE REQUIRED PROVIDE 2"x6" REDWOOD HEADER (TYP.)"</li> <li><b>Revised</b> expansion joint <b>spacing</b> to 45' (from 90') for 4' valley gutter.</li> </ol>
<b>P-17</b>	<ol style="list-style-type: none"> <li>Revised Title Block to include area for revision annotation.</li> </ol>
<b>P-28</b>	<ol style="list-style-type: none"> <li>Drawing revised to include 12" <b>grooved border</b> as an "<b>optional</b>" feature to assist with working the concrete. Also included "Grooved Border" detail.</li> <li><b>Note 3</b> was <b>amended</b> to incorporate Note 10.</li> <li><b>Note 11</b> is now <b>Note 10</b>.</li> <li><b>Note 12</b> was <b>removed</b> from the standard.</li> <li><b>Added reference</b> to P-32 for the Detectable Warning Device.</li> <li><b>Removed callout</b> for 4' min. sidewalk width.</li> </ol>
<b>P-29</b>	<ol style="list-style-type: none"> <li>Created alternate detail (Detail B) for condition when landing at bottom of ramp exceeds 5'-0".</li> <li><b>Added Note 1</b>, updated numbering for Notes 2 through 5.</li> <li><b>Note 3</b> (was note 2) <b>revised</b> to comply with MUTCD and accommodate new Detail B.</li> <li><b>Added Note 10</b> regarding optional 12" grooved border.</li> <li><b>Added</b> (optional) <b>grooved border</b> to details.</li> <li><b>Modified</b> the following <b>callouts</b>: <ol style="list-style-type: none"> <li>"TAPER CURB FROM 6" TO ½" BEVEL" Revised to read: "TAPER CURB FROM 6" TO FLUSH".</li> <li>"2% MAX. SLOPE DETECTABLE WARNING DEVICES REQUIRED SEE P-32" Revised to read: "DETECTABLE WARNING DEVICES PER CITY STD. DWG. P-32".</li> <li>"NOTE: SLOPE 5% MAX ON GUTTER IN RAMP AREA" Revised to: "SLOPE 5% MAX IN GUTTER AND ADJACENT PAVING IN RAMP AREA"</li> <li>"6" WIDE RETAINING CURB WITH VARIABLE HEIGHT" Revised to: "RETAINING CURB: 0"-6"</li> </ol> </li> <li><b>Deleted</b> the following <b>callouts and dimensions</b>: <ol style="list-style-type: none"> <li>"6" STANDARD CURB"</li> <li>"4' WALK MIN."</li> <li>"8' MIN."</li> <li>"10% MAX CROSS SLOPE"</li> <li>"8.33% MAX SLOPE"</li> <li>"MEET TOP OF CURB"</li> </ol> </li> <li><b>Added</b> depiction of <b>level-landing</b> at top of ramp as required by Note 6.</li> </ol>
<b>P-31</b>	<ol style="list-style-type: none"> <li><b>Note 5 revised</b> to denote it as an optional feature.</li> <li><b>Note 8 revised</b> to reflect a minimum width of 5'.</li> <li><b>Note 11 removed</b> and <b>Note 12 renumbered</b> to 11.</li> <li><b>Note 13 renumbered</b> to 12 and text has been revised to match current MUTCD language.</li> <li><b>Added Note 13:</b> "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</li> </ol>

	<p>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.”</p> <p>6. <b>Ramp width increased</b> to 5’ minimum for ADA turning compliance.</p>
<b>P-32</b>	<p>1. <b>Revised dome dimensions</b> to reflect current CBC.</p> <p>2. <b>Revised Note 1</b> to reflect 2016 revision of CBC.</p> <p>3. <b>Added detail</b> for tapering edge of surface-mounted panels.</p>
<b>P-33</b>	<p>1. <b>Drawing renumbered</b> “P-33A”. See P-33A for description of technical changes.</p>
<b>P-33A</b>	<p>1. Slab thickness changed from 4” to 6”</p>
<b>P-33B</b>	<p>1. <b>New Standard Drawing:</b> “MULTI-FAMILY TYPICAL REFUSE CONTAINER ENCLOSURE DETAILS” for enclosure Exhibits A and B.</p>
<b>P-33C</b>	<p>1. <b>New Standard Drawing:</b> “MULTI-FAMILY TYPICAL REFUSE CONTAINER ENCLOSURE DETAILS” for enclosure Exhibit C.</p>
<b>P-41</b>	<p>1. <b>Revised relative location</b> of reclaimed water main and setback to face of curbs.</p>
<b>P-42</b>	<p>1. <b>Revised relative location</b> of reclaimed water main and setback to face of curbs.</p>
<b>P-52</b>	<p>1. <b>Removed</b> requirement for <b>2’ pedestrian easement</b>.</p> <p>2. <b>Sidewalk width reduced</b> to 4’ for Cases 1, 2, and 3 on side with planter.</p>
<b>P-53</b>	<p>1. <b>Removed</b> optional 12’ sidewalk pattern with <b>2’ pedestrian easement</b> requirement.</p> <p>2. <b>Sidewalk width</b> reduced to 4’ for both street classifications.</p>
<b>P-56</b>	<p>1. <b>Drawing renumbered</b> P-56A. See P-56A for description of technical changes.</p>
<b>P-56A</b>	<p>1. <b>Added:</b> “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> <p>2. Where <b>asterisks “*”</b> were <b>previously</b> used to <b>referenced notes</b>, numbering has been added to the cross-sections.</p> <p>3. <b>Note 3, “( ) INDICATE AN ALTERNATIVE CROSS-SECTION LAYOUT”</b> was <b>removed</b>.</p> <p>4. <b>Note 2 (existing) renumbered</b> to Note 3.</p> <p>5. <b>Added (new) Note 2:</b> “FOR DRIVEWAY DETAIL SEE STREET SECTIONS THAT MAY BE USED, SEE P.W. STD. DWGS. P-1, P-2, P-3, AND P-6.”</p>
<b>P-56B</b>	<p>1. <b>New Standard Drawing:</b> “LOCAL STREET CROSS-SECTIONS WITH WEDGE CURBS”</p>
<b>P-58</b>	<p>1. <b>Corrected</b> the trail <b>width</b> shown on the plan view.</p> <p>2. <b>Revised Note 3</b> to remove: “MINIMUM RADIUS AT CENTERLINE OF TRAIL SHALL BE 160’.”</p> <p>3. <b>Revised Note 5</b> to include reference to Detail 27B for edge line.</p>
<b>P-61</b>	<p>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> <p>2. Added dimension: “20’ FROM TOP OF RAMP” to indicate minimum separation between ramp and location of bollards.</p> <p>3. Revised dimension for separation between posts to reflect the clear space between adjacent posts.</p>
<b>P-67</b>	<p>1. <b>Driveway depth reduced</b> from 7.5’ to 2.0’, graphical edits made to drawing accordingly.</p> <p>2. <b>Note 2:</b> “A 36” MINIMUM SIDEWALK AREA BEHIND RAMP SHALL BE MAINTAINED WITH 10’ PATTERN OR LESS” <b>Revised to read:</b> “A 4.0’ MIN. SIDEWALK AREA BEHIND RAMP SHALL BE MAINTAINED. A PEDESTRIAN EASEMENT IS REQUIRED WHEN PATTERN IS LESS THAN 6’.”</p> <p>3. <b>Note 3:</b> “CURB TOP AND FACE SHALL BE PAINTED RED” <b>Revised to read:</b> “CURB TOP AND FACE SHALL BE PAINTED RED WITH TRAFFIC-RATED PAINT, TWO (2) COATS MIN.”</p>



	<ol style="list-style-type: none"> <li><b>Added Note 4:</b> "6' MIN. SIDEWALK REQUIRED ON MAJOR STREETS, 4' MIN. REQUIRED ON LOCAL STREETS."</li> <li>Graphical changes made for clarity and conformance with related standard drawings.</li> </ol>
<b>P-69</b>	<ol style="list-style-type: none"> <li><b>Added "Conflict-zone" striping</b> to drawing.</li> <li><b>Added callout:</b> "INSTALL "CONFLICT-ZONE" STRIPING AS REQ'D PER STD. DWG. P-81A (TYP.)"</li> <li><b>Note 3:</b> "WHEN INSTALLING A NEW SIGNAL, BIKE LANE LOOPS SHALL BE INSTALLED AT INTERSECTION FOR DETECTION" <b>Revised to read:</b> "WHEN INSTALLING A NEW SIGNAL, VEHICLE AND BICYCLE DETECTION LOOPS SHALL BE INSTALLED AT INTERSECTION PER STD. DWG. E-13 AND E-14."</li> </ol>
<b>P-70</b>	<ol style="list-style-type: none"> <li><b>Added "Conflict-zone" striping</b> to drawing.</li> <li><b>Added callout:</b> "INSTALL "CONFLICT-ZONE" STRIPING AS REQ'D PER STD. DWG. P-81A (TYP.)"</li> <li><b>Note 3:</b> "WHEN INSTALLING A NEW SIGNAL, BIKE LANE LOOPS SHALL BE INSTALLED AT INTERSECTION FOR DETECTION" <b>Revised to read:</b> "WHEN INSTALLING A NEW SIGNAL, VEHICLE AND BICYCLE DETECTION LOOPS SHALL BE INSTALLED AT INTERSECTION PER STD. DWG. E-13 AND E-14."</li> <li><b>Added Note 6:</b> "OPPOSING DUAL-LEFT TURNS SHALL BE ANALYZED FOR CONFLICTS USING AUTO-TURN OR EQUIVALENT SOFTWARE. RESULTS SHALL BE PROVIDED TO, AND APPROVED BY, TRAFFIC ENGINEERING STAFF."</li> </ol>
<b>P-72</b>	<ol style="list-style-type: none"> <li><b>Drawing title:</b> "BUS SHELTER ELECTRICAL LAYOUT" <b>Revised to read:</b> "BUS STOP WITH SHELTER LAYOUT"</li> <li>All references to electrical conduits and related equipment have been removed.</li> <li>A number of new bus stop appurtenances and furniture have been added to the detail including significant dimensional changes</li> </ol>
<b>P-73</b>	<ol style="list-style-type: none"> <li><b>Dimension:</b> "FAR SIDE INTERSECTION" (8") <b>Revised to read:</b> " 8' ".</li> </ol>
<b>P-79</b>	<ol style="list-style-type: none"> <li>Existing NOTES have been numbered.</li> <li>References to <b>minimum bike lane widths changed</b> to 6' when adjacent to on-street parking.</li> <li><b>Note 1:</b> "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." <b>Revised to read:</b> "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."</li> <li><b>Note 2:</b> "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." <b>Revised to read:</b> "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)."</li> <li><b>Added Note 3:</b> "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."</li> </ol>

	<p>6. <b>Callout(s):</b> "CENTER SYMBOL WITHIN 5' BIKE LANE" <b>Revised to read:</b> "CENTER CALTRANS A24C, "BIKE LANE SYMBOL WITH PERSON" AND CALTRANS A24A, "BIKE LANE ARROW" WITHIN 5' BIKE LANE".</p> <p>7. <b>Callout(s)</b> for "4" (and) 6" SOLID WHITE STRIPE" <b>Revised to read:</b> "4" WHITE STRIPE PER DETAIL 27B" and "6" WHITE STRIPE PER DETAIL 39 OR 39A, AS APPROPRIATE".</p> <p>8. <b>Dimension:</b> "8' MIN. PARKING" <b>Revised to read:</b> "8' PARKING".</p>
<b>P-80</b>	<p>1. <b>Added detail</b> for Class III bike lanes (shared travel lane) with symbol and signage required when using a "SHARROW" within the roadway.</p> <p>2. <b>Added detail</b> for Class III bike lanes (shared travel lane) with symbol and signage required when using a "SHARROW" within a right-turn lane.</p> <p>3. <b>Added callout:</b> "SHARED ROADWAY SYMBOL "SHARROW" PER MUTCD (CA) FIGURE 9C-9, SEE NOTE 4".</p> <p>4. <b>Added callout:</b> "R4-11 PER MUTCD (CA), SEE NOTE 4."</p> <p>5. <b>Added callout:</b> "R81 PER MUTCD (CA), SEE NOTE 3."</p> <p>6. <b>Added callout:</b> "R3-7 with R118(CA) per MUTCD (CA)"</p> <p>7. <b>Added dimension:</b> "5' MINIMUM, REF. P-79"</p> <p>8. <b>Added dimension:</b> "SHARED TRAVEL LANE"</p> <p>9. <b>Added references</b> to Detail 39/39A where "6" WHITE STRIPE" was used.</p> <p>10. <b>Callout:</b> "MARKINGS (SEE NOTE 1)" <b>Revised to read:</b> "'BIKE LANE ARROW" PER CALTRANS A24A &amp; "BIKE LANE SYMBOL WITH PERSON" PER A24C, SEE NOTE 1"</p> <p>11. <b>Note 1:</b> "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." <b>Revised to read:</b> "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."</p> <p>12. <b>Note 2:</b> "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." <b>Revised to read:</b> "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."</p> <p>13. <b>Note 4</b> (existing) <b>renumbered</b> to Note 6.</p> <p>14. <b>Note 4</b> (new) <b>added:</b> "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."</p> <p>15. <b>Note 5</b> (new) <b>added:</b> "FOR SHARROW PLACEMENT IN RIGHT TURN LANES REFER TO MUTCD (CA) FIG. 9C-111. R3-7 WITH R118 SIGNAGE MUST ALSO BE PROVIDED."</p>
<b>P-81A</b>	1. New Standard Drawing: GREEN BIKE LANE: RIGHT-TURN AND DRIVEWAY CONFLICT ZONES.
<b>P-81B</b>	1. New Standard Drawing: GREEN BIKE LANE: TRAP-RIGHT CONFLICT ZONE
<b>P-82</b>	1. Minor drafting edits to highlight the requirement to remove existing longitudinal crosswalk stripes when installing the high-visibility crosswalk.
<b>P-90</b>	<p>1. <b>Detail revised</b> to reflect new letter heights: (12" vs. 10" and 9" vs. 8")</p> <p>2. <b>Note 2:</b> "1" WHITE <i>BOARDER</i>" <b>Revised to read:</b> "1" WHITE <i>BORDER</i>"</p>

	<p>3. <b>Note 3:</b> "10" SERIES 'E' MODIFIED UPPER CASE LETTER – 2" STROKE MINIMUM. ON LONGER STREET NAME SIGNS A NARROWER SERIES IS PERMITTED." <b>Revised to read:</b> 12" SERIES 'E' MODIFIED UPPER CASE LETTER – 2" STROKE MINIMUM. ON LONGER STREET NAME SIGNS A NARROWER SERIES IS PERMITTED."</p> <p>4. <b>Note 4:</b> "8" SERIES 'E' MODIFIED LOWER CASE LETTER – 2" STROKE MINIMUM. ON LONGER STREET NAME SIGNS A NARROWER SERIES IS PERMITTED." <b>Revised to read:</b> "9" SERIES 'E' MODIFIED LOWER CASE LETTER – 2" STROKE MINIMUM. ON LONGER STREET NAME SIGNS A NARROWER SERIES IS PERMITTED."</p> <p>5. <b>Notes</b> were <b>renumbered</b> 1-7 (previously there were two #4's).</p> <p>6. <b>Callout:</b> "3/8" HOLE (SEE NOTE "G") <b>Revised to read:</b> "3/8" HOLE, SEE NOTE 7"</p> <p>7. <b>Callout:</b> "1"" <b>Revised to read:</b> "1" (TYP.)"</p>
<b>P-92</b>	<p>1. <b>Detail revised</b> to reflect new street name letter heights: (6" vs. 5") and to show mixed-case lettering for the street name instead of all caps.</p> <p>2. <b>Detail revised</b> to reflect larger street heading, road type and block number heights: (3" vs. 2")</p> <p>3. <b>Note 3:</b> "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 3/8" INSIDE BORDER." <b>Revised to read:</b> "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>
<b>P-93 P-94 P-95</b>	<p>1. <b>Note 7:</b> "FOOTING CONCRETE SHALL BE A MINIMUM 2,000 PSI AT 28 DAYS" <b>Revised to read:</b> "FOOTING CONCRETE SHALL BE A MINIMUM 2,500 PSI AT 28 DAYS"</p>
<b>P-97</b>	<p>1. <b>Added Note 9:</b> "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>
<b>P-101</b>	<p>1. New Standard Drawing: "INTERSECTION SIGHT TRIANGLES: LOCAL/COLLECTOR/ARTERIAL"</p>
<b>DPU – WATER (W Series)</b>	
<b>W-1</b>	<p>1. Material Specification, <b>Note "A": 1-1/2"</b> meter lid specification: "ARMORCAST A6001969-COF" <b>Revised to read:</b> "OLDCASTLE FL30TP AMR MARKED "WATER"</p> <p>2. Material Specification, <b>Note "A": 2"</b> meter lid specification: "ARMORCAST A6001947T-COF" <b>Revised to read:</b> "OLDCASTLE FL36TP AMR MARKED "WATER"</p> <p>3. Material Specifications, <b>Note "E": "1 ½" OR 2"</b> CAST IRON FLANGE" <b>Revised to read:</b> "1-1/2" OR 2" METER FLANGE W/5/8"x3" HH PLATED BOLTS &amp; NUTS".</p> <p>4. Material Specifications, <b>Note "F": "FLANGED METER SPOOL (SCH 80)..."</b> <b>Revised to read:</b> "1-1/2" METER: BADGER M120 W/R120 REGISTER OR APPROVED EQUAL OR 2" METER, BADGER M170 W/R170 REGISTER OR APPROVED EQUAL.</p> <p>5. <b>Added:</b> Material Specifications, <b>Note "O": "TRANSMITTER: GALAXY TR3 OR APPROVED EQUAL."</b></p>
<b>W-2</b>	<p>1. Material Specification, <b>Note "A": 1-1/2"</b> meter lid specification: "ARMORCAST A6001947T-COF" <b>Revised to read:</b> "OLDCASTLE FL16 TP MARKED "WATER"</p> <p>2. Material Specifications, <b>Note "D": "1 ½" SLIP X 1" MALE ADAPTER (SCH. 80)"</b> <b>Revised to read:</b> "1-½" SLIP X 1" BRASS MALE NPT ADAPTER (SCH. 80)"</p> <p>3. Material Specifications, <b>Note "G": "1 ¼" X 10 ¾" PVC METER SPOOL (SCH 80)"</b> <b>Revised to read:</b> "1" METER: BADGER M55 W/R55 REGISTER OR APPROVED EQUAL"</p> <p>4. <b>Added:</b> Material Specifications, <b>Note "P": "TRANSMITTER: GALAXY TR3 OR APPROVED EQUAL."</b></p>
<b>W-3</b>	<p>1. <b>Removed</b> the depiction of rock bedding from drawing.</p> <p>2. <b>Removed callout:</b> "SURROUND BASE WITH 6" OF ¾" CRUSHE GRAVEL".</p>

	<ol style="list-style-type: none"> <li><b>Callout:</b> "WEEP HOLE FOR DRAINAGE" <b>Revised to read,</b> "PLUG WEEP HOLE".</li> <li><b>Added callout:</b> "MAINTAIN 36" CLEAR, MIN."</li> <li>Consolidated various notes into "NOTES" list.</li> </ol>
<b>W-4</b>	<ol style="list-style-type: none"> <li>Standard Drawing no longer used.</li> </ol>
<b>W-6</b>	<ol style="list-style-type: none"> <li>Standard Drawing no longer used.</li> </ol>
<b>W-7</b>	<ol style="list-style-type: none"> <li><b>Added</b> Tracer Wire and associated callouts.</li> </ol>
<b>W-11</b> <b>W-12</b>	<ol style="list-style-type: none"> <li>Removed reference to W-6.</li> <li><b>Added callout:</b> "PROVIDE THRUST RESTRAINT JOINTS PER STD. DWGS. W-31 TO W-32"</li> </ol>
<b>W-13</b>	<ol style="list-style-type: none"> <li>Standard Drawing reflects <b>significant changes</b> from previous version, including requirement to install water meter box and above-grade enclosure and various material changes.</li> <li><b>Added callout:</b> "INSTALL METER BOX AND ANGLE STOP. REF. STD. DWG. W-1 FOR REQUIREMENTS"</li> <li><b>Added callout:</b> "COMP x COMP 90° ELL, A.Y. McDONALD "NO LEAD" 74761-22 OR APPROVED EQUAL"</li> <li><b>Callout:</b> "1" CORPORATON STOP" <b>Revised to read:</b> "1" – 2" BRONZE CORPORATION STOP".</li> <li><b>Callout:</b> "3/4" BALL VALVE" <b>Revised to read:</b> "BRASS BALL VALVE".</li> <li><b>Callout:</b> "POLYETHYLENE SERVICE TUBING" <b>Revised to read:</b> "TYPE "K" COPPER"</li> <li><b>Added callout:</b> "TYPE "K" COPPER (SWEEP)"</li> <li><b>Added callout:</b> "OPTIONAL SWEEP"</li> <li><b>Added callout:</b> "GALV. STEEL VENT W/DOWN-TURN AIR STRAINER"</li> <li><b>Modified detail</b> for concrete pad to include steel reinforcement.</li> <li><b>Note 2:</b> "VALVE ASSEMBLY AND METAL HOUSING SHALL BE LOCATED IN MEDIAN ISLANDS, LANDSCAPE AREAS OR OUTSIDE OF SIDEWALK AREA WHERE POSSIBLE" <b>Revised to read:</b> "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."</li> <li><b>Added Note 3:</b> "GALVANIZED PIPES SHALL BE WRAPPED IN TWO LAYERS OF 10 MIL TAPE."</li> <li><b>Added Note 4:</b> "PROVIDE 4' MIN. SIDEWALK CLEARANCE ADJACENT TO AIR-VAC DEVICE FOR ADA"</li> </ol>
<b>W-14</b>	<ol style="list-style-type: none"> <li>Standard Drawing no longer used.</li> </ol>
<b>W-16</b>	<ol style="list-style-type: none"> <li><b>Note 2:</b> "CHECK VALVE TO BE TAPPED AND PLUGGED (FOR INSTALLATION OF BYPASS METER PIPING BY CITY FORCES)." <b>Revised to read:</b> "CHECK VALVE TO BE TAPPED TO ACCOMMODATE INSTALLATION OF BYPASS METER PIPING BY CONTRACTOR."</li> <li><b>Added inset detail:</b> "TYPICAL HINGED LID"</li> </ol>
<b>W-17</b>	<ol style="list-style-type: none"> <li>Material List: <ol style="list-style-type: none"> <li><b>Item #5, "3/4" BRASS TEE", Removed</b></li> <li><b>Item #6, "3/4" BENT NOSE HOSE BIBB", Removed</b></li> <li><b>Item #11, "3/4" BRASS 90° ELL", Quantity changed from one (1) to two (2)</b></li> <li><b>Item #13 components renumbered</b> to 13.1 and 13.2</li> </ol> </li> <li>Bent Hose Bibb removed from drawing, piping Revised accordingly.</li> </ol>
<b>W-22</b>	<ol style="list-style-type: none"> <li>Standard Drawing no longer used.</li> </ol>
<b>W-23</b>	<ol style="list-style-type: none"> <li><b>Drawing title:</b> "FIRE HYDRANT INSTALLATION WITH GUARD POSTS" <b>Revised to read,</b> "FIRE HYDRANT INSTALLATION WITH FLEXIBLE POSTS"</li> <li><b>Steel guard posts</b> and references to steel guard posts have been <b>removed and replaced</b> with flexible posts.</li> </ol>

	<p>3. <b>Added callout:</b> "MAINTAIN 36" CLEAR SPACE AROUND PERIMETER OF HYDRANT FOR OPERATION (POSTS AS SHOWN ARE AN ALLOWED EXCEPTION)"</p> <p>4. <b>Note 1,</b> "THE MAINTENANCE OF THE FIRE HYDRANT PROTECTOR POST SHALL BE THE RESPONSIBILITY OF THE HOMEOWNERS' ASSOCIATION, WITHIN PRIVATE STREETS" <b>Revised to read:</b> "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."</p>
<b>W-24</b>	<p>1. Drawing has been Revised in its entirety, as follows:</p> <ul style="list-style-type: none"> <li>a. Supporting block quantity and materials have been updated.</li> <li>b. Additional requirements for stainless steel casing added.</li> <li>c. Steel casing schedule added to standard drawing.</li> <li>d. Notes have been completely rewritten.</li> </ul>
<b>W-29</b>	<p>1. <b>Drawing title:</b> "WATER MAIN BEDDING DETAILS" <b>Revised to read:</b> "WATER MAIN TRENCH, BEDDING, AND BACKFILL DETAIL"</p> <p>2. <b>Drawing has been revised in its entirety</b> to reflect current installation standards.</p>
<b>W-37</b>	<p>1. The following changes have been made to the drawing:</p> <ul style="list-style-type: none"> <li>a. <b>Plan view:</b> of Fire Hydrant <b>Revised</b> to reflect current Fire Hydrant style.</li> <li>b. <b>Moved:</b> "CONTROL VALVE" to Tee.</li> <li>c. <b>Changed:</b> "CONTROL VALVE" to "GATE VALVE"</li> <li>d. <b>Added:</b> "FLANGE X FLANGE" between Control Valve and Tee.</li> <li>e. <b>Changed:</b> "FLANGE X FLANGE" to "FLANGE X MECHANICAL"</li> <li>f. <b>Added:</b> Tracer Wire.</li> <li>g. <b>Added callout:</b> "PLUG WEEP HOLE"</li> <li>h. <b>Added depiction:</b> Retainer Glands shown throughout drawing to reflect full restraints.</li> <li>i. <b>Added callout:</b> "MAXIMUM BURY LENGTH NOT TO EXCEED 54" (EXTENSIONS INCLUDED)".</li> </ul>
<b>W-40</b>	<p>1. <b>Added Note 5:</b> "BY-PASS MATERIAL, 2 INCHES AND GREATER, SHALL BE DUCTILE IRON OR C900 PVC. LESS THAN 2 INCHES SHALL BE COPPER."</p> <p>2. <b>Added callout:</b> "MIN. METER BOX/VAULT SIZE PER TABLE BELOW".</p> <p>3. <b>Table title:</b> "MINIMUM VAULT SIZE" <b>Revised to read:</b> "MINIMUM METER BOX/VAULT SIZE".</p> <p>4. Changed dimension text to all capital letters for consistency.</p>
<b>W-41</b>	<p>1. <b>Added Note 7:</b> "BY-PASS MATERIAL, 2 INCHES AND GREATER, SHALL BE DUCTILE IRON OR C900 PVC. LESS THAN 2 INCHES SHALL BE COPPER."</p> <p>2. <b>Added callout:</b> "MIN. METER BOX/VAULT SIZE PER TABLE BELOW".</p> <p>3. <b>Table title:</b> "MINIMUM VAULT SIZE" <b>Revised to read:</b> "MINIMUM METER BOX/VAULT SIZE".</p>
<b>W-42</b>	<p>1. <b>Drawing title:</b> "FIRE SERVICE METER SETTING WITH BY-PASS" <b>Revised to read:</b> "COMPOUND FM METER SETTING WITH BY-PASS"</p> <p>2. <b>Added Note 5:</b> "BY-PASS MATERIAL, 2 INCHES AND GREATER, SHALL BE DUCTILE IRON OR C900 PVC. LESS THAN 2 INCHES SHALL BE COPPER."</p> <p>3. <b>Added callout:</b> "MIN. METER BOX/VAULT SIZE PER TABLE BELOW".</p> <p>4. <b>Table title:</b> "MINIMUM VAULT SIZE" <b>Revised to read:</b> "MINIMUM METER BOX/VAULT SIZE".</p>
<b>W-43</b>	<p>1. <b>Modified detail</b> to reflect the use of flanged connections at the TEE's and risers.</p> <p>2. <b>Added callout:</b> "TO BE RETURNED TO CONTRACTOR AFTER WATER SYSTEM ACCEPTANCE AND FINAL WET-TIE BY CITY".</p> <p>3. <b>General Notes</b> bullet list <b>changed</b> to numbered. <i>No technical changes made to Notes.</i></p>
<b>W-44</b>	<p>1. <b>Revised</b> standard drawing <b>to reflect</b> an installation that complies with the requirements of standard drawing W-2.</p>

	<p>2. <b>Note 2:</b> "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." <b>Revised to read:</b> "SAMPLING STATIONS SHALL BE 18" BURY, WITH A 1" FIP DISCHARGE. A ¼" BENT-NOSE SAMPLING BIBB SHALL BE LOCATED BEFORE THE DISCHARGE."</p> <p>3. <b>Callout,</b> "¾" COPPER X 1" FIP ELBOW", <b>Revised to read:</b> "¾" BRASS X 1" FIP ELBOW"</p> <p>4. <b>Callout,</b> "TYPE "K" SOFT DRAWN COPPER TUBING", <b>Revised to read:</b> "¾" TYPE "K" SOFT DRAWN COPPER TUBING"</p> <p>5. Drawing Revised as follows: "METER BOX EQUIPMENT VALVE RISER SET" has been replaced.</p>
<b>W-45</b>	<p>1. <b>Legend Note 3:</b> "THE STATIC WATER LEVEL IS MORE THAN 5'" <b>Revised to read:</b> "THE STATIC WATER LEVEL IS MORE THAN 10'"</p> <p>2. BATCH TABLE <b>row 3:</b> "BENTONITE CEMENT GROUT" <b>removed.</b></p> <p>3. BATCH TABLE "cement" <b>unit measurement,</b> "sack" <b>Revised to read:</b> "sack lbs"</p> <p>4. BATCH TABLE "cement" <b>quantity changed</b> from "1" (sack) to "94" (sack lbs); applies to rows 1 &amp; 2.</p> <p>5. BATCH TABLE "sand" <b>quantity changed</b> from "85" to "188" (lbs); applies to row 1.</p>
<b>DPU – SEWER (S Series)</b>	
<b>S-1</b>	<p>1. <b>Revised</b> drawing to <b>indicate</b> centerline of riser angle, angle dimension <b>moved</b> to centerline.</p> <p>2. <b>Added</b> property line symbols (PL).</p> <p>3. <b>Dimension,</b> "5' SEE TABLE DIST. "A", <b>Revised to read:</b> "4.5' MIN. 5.5' MAX. SEE TABLE DIST. "A"</p> <p>4. <b>Dimension,</b> "3.9' MAX" <b>Revised to read:</b> "3.9' MIN."</p> <p>5. <b>Dimension,</b> "6.3' MIN" <b>Revised to read:</b> "6.3' MAX."</p> <p>6. <b>Callout,</b> "STREET GEN. LINE" <b>Revised to read:</b> "STREET CEN. LINE" (spelling error corrected)</p>
<b>S-2</b>	<p>1. <b>General Note 2,</b> "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." <b>Revised to read:</b> "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."</p> <p>2. <b>Dimension</b> on cross-section, "O.D. OF PIPE + 16" <b>Revised to read:</b> "O.D. OF PIPE + 16" OR 8" MIN. O.D."</p>
<b>S-3</b>	<p>1. <b>Callout:</b> "SEE DRAWING S-5B OR *S-5B" <b>Revised to read:</b> "SEE DRAWING S-5A OR *S-5B"</p> <p>2. <b>*NOTE:</b> "S-5B FOR 27" DIAMETER PIPES" <b>Revised to read:</b> "S-5B FOR 27" OR LARGER DIAMETER PIPES"</p> <p>3. General <b>Note 1,</b> "PRECAST RISER SECTIONS, ADJUSTMENT RINGS AND TAPERED SECTIONS SHALL BE IN ACCORDANCE WITH ASTM C-478. ELLIPTICAL SINGLE LINE REINFORCEMENT WILL NOT BE PERMITTED" <b>Revised to read:</b> "PRECAST RISER SECTIONS, ADJUSTMENT RINGS &amp; TAPERED SECTIONS SHALL BE CLASS 2 R.C.P. IN ACCORDANCE WITH ASTM C-478. ELLIPTICAL SINGLE LINE REINFORCEMENT WILL NOT BE PERMITTED.</p> <p>4. General <b>Note 2,</b> "THIS STANDARD DRAWING SHALL BE USED FOR SEWER PIPES WITH DIAMETERS OF UP TO 27'" <b>Revised to read:</b> "THIS STANDARD DRAWING SHALL BE USED FOR SEWER PIPES WITH DIAMETERS OF UP TO AND INCLUDING 27'"</p> <p>5. General <b>Note 4,</b> "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." <b>Revised to read:</b> "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</p>

	<p>STRUCTURE GUARD, A PRODUCT OF QUADEX. APPROVED PRODUCTS SHALL BE APPLIED PER MANUFACTURER'S SPECS. NO SUBSTITUTIONS ARE ACCEPTABLE."</p> <p>6. <b>Added Note 5:</b> "FOR SEWER LINES 12" TO 18", AND NOT WITHIN 600' OF A 30" OR LARGER SEWER MAIN, MAY USE SEWPERCOAT OR APPROVED EQUAL."</p>
<b>S-4</b>	<p>1. General <b>Note 1</b>, "PRECAST RISER SECTIONS, ADJUSTMENT RINGS AND TAPERED SECTIONS SHALL BE IN ACCORDANCE WITH ASTM C-478. ELLIPTICAL SINGLE LINE REINFORCEMENT WILL NOT BE PERMITTED" <b>Revised to read:</b> "PRECAST RISER SECTIONS, ADJUSTMENT RINGS &amp; TAPERED SECTIONS SHALL BE CLASS 2 R.C.P. IN ACCORDANCE WITH ASTM C-478. ELLIPTICAL SINGLE LINE REINFORCEMENT WILL NOT BE PERMITTED.</p> <p>2. General <b>Note 3</b>, "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." <b>Revised to read:</b> "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."</p>
<b>S-5B</b>	<p>1. <b>Note 7</b>, "ALL COMPONENTS SHALL BE BLACK COATED", <b>Revised to read:</b> "ALL COMPONENTS SHALL BE BLACK BITUMINOUS PAINT COATED IN ACCORDANCE WITH ISO 2531"</p> <p>2. <b>Added detail:</b> "LOCKING MECHANISM"</p> <p>3. <b>Added</b> locking mechanism installation <b>instructions</b></p> <p>4. <b>Added</b> inset <b>detail</b> for hinge debris hole</p>
<b>S-8</b>	<p>1. <b>Method 2</b>, "EPOXY BONDED SADDLE TEE" <b>Revised to read:</b> "SADDLE WYE OR TEE"; detail and notes changed accordingly.</p> <p>2. <b>Added Note:</b> "IF MACHINE CORE IS NOT CLEAN CUT (WITHOUT DAMAGE TO THE HOST PIPE) MUST USE METHOD 1 TO INSTALL HOUSE BRANCH"</p> <p>3. <b>Added callout:</b> "TEE BRANCHES NOT ALLOWED ON SEWER MAINS 6"-8" IN DIAMETER"</p>
<b>S-9</b>	<p>1. <b>Page title:</b> "HOUSE BRANCH SIZE-APPROVED CONNECTION METHOD" <b>Revised to read:</b> "HOUSE BRANCH SIZE-APPROVED CONNECTION METHOD (METHODS SHOWN ON S-8)"</p> <p>2. <b>Allowed methods table Revised</b> to include Method 2 for 4" H.B. going to 6" and 8" sewer mains.</p> <p>3. <b>Note 3:</b> "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" <b>Revised to read:</b> "HOUSE BRANCH CONNECTIONS WITH AN APPROVED SADDLE TO EXISTING SEWER MAINS INSTALLED BY ANY OTHER METHOD THAN A MACHINE CORE SHALL NOT BE ALLOWED."</p> <p>4. <b>Added Note 6:</b> "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)."</p>
<b>S-10</b>	<p>1. <b>Added callouts and updated hatching</b> for "Paved" and "Unpaved" surface conditions.</p> <p>2. Minor edits to detail and callouts for clarity.</p>
<b>S-13A</b>	<p>1. <b>New Standard Drawing:</b> "PIPE/CONDUIT CROSSING UNDER EXISTING SEWER - CASE 1"</p>
<b>S-13B</b>	<p>1. <b>New Standard Drawing:</b> "PIPE/CONDUIT CROSSING UNDER EXISTING SEWER - CASE 2"</p>

DPW – ELECTRICAL (E Series)	
<b>E-1</b>	<ol style="list-style-type: none"> <li><b>Note #1 revised</b> to include year of issuance for Caltrans Specifications applicable to detail (1997).</li> <li><b>Updated pull box</b> to include crushed rock sump base material. Pull box revised to match STD. DWG. E-4A.</li> <li><b>Callout:</b> "ORIENTATE PEC TO THE NORTH", <b>Revised to read:</b> "ORIENT PEC TO THE NORTH"</li> <li><b>Callout:</b> "WELD HAND HOLE COVER AFTER INSPECTION" <b>Revised to read:</b> "WELD STEEL HAND-HOLE COVER AROUND FULL PERIMETER AFTER INSPECTION".</li> <li><b>Callout:</b> "TYPE "NM" CONDUIT, REFER TO TABLE ON STD. DWG. E-27 FOR MORE INFORMATION" <b>Revised to read:</b> "TYPE "NM" CONDUIT, REFER TO TABLE ON STD. DWG. E-27 FOR DETAIL AND MORE INFORMATION".</li> <li><b>Callout:</b> "CONDUIT PER 23-3.11 AND STD. DWG. E-6" <b>Revised to read:</b> "CONDUIT PER SPEC. SECTION 23-3.11".</li> <li><b>Callout:</b> "FUSE INSTALLED IN LUMINAIRE PER SPEC. SECTION 3.12" <b>Revised to read:</b> "FUSE INSTALLED IN LUMINAIRE PER SPEC. SECTION 1.23".</li> <li><b>Callout:</b> "TWO (2) #10 STRANDED COPPER CONDUCTORS (THHN) TO FIXTURE." <b>Revised to read:</b> "TWO (2) #10 STRANDED COPPER CONDUCTORS (THHN) TO FIXTURE. REF. STD. DET. E-5".</li> <li><b>Dimension</b> for luminaire arm length: "12" <b>Revised to read:</b> "SEE LMA CHART"</li> <li><b>Added LMA chart</b> for required luminaire arm lengths.</li> <li>Numbered existing notes, no changes made to existing requirements.</li> </ol>
<b>E-2</b>	<ol style="list-style-type: none"> <li><b>Drawing sub-title:</b> "DIRECT BURY WITH NO BASE", <b>Revised to read:</b> "EMBEDDED POLE WITH NO FOUNDATION".</li> <li><b>Callout:</b> "ORIENTATE PEC TO THE NORTH", <b>Revised to read:</b> "ORIENT PEC TO THE NORTH"</li> <li><b>Callout:</b> "WELD HAND HOLE COVER AFTER INSPECTION", <b>Revised to read:</b> "WELD HAND HOLE COVER AROUND FULL PERIMETER AFTER INSPECTION".</li> <li><b>Added</b> pull box to drawing detail inset</li> <li>Numbered existing notes with no technical changes made.</li> <li><b>Note 6:</b> "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)", <b>Revised to read:</b> "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."</li> <li><b>Added Note 7:</b> "THREE #6 COPPER CONDUCTORS (THHN) #8 WIRE MAY BE USED ON SINGLE POLE INSTALLATIONS"</li> <li><b>Callout:</b> "TWO (2) #10 STRANDED COPPER CONDUCTORS (THHN) TO FIXTURE." <b>Revised to read:</b> "TWO (2) #10 STRANDED COPPER CONDUCTORS (THHN) TO FIXTURE. REF. STD. DET. E-5."</li> </ol>
<b>E-3</b>	<ol style="list-style-type: none"> <li><b>Drawing title modified</b> to include: "TEMPORARY USE ONLY".</li> <li>GENERAL NOTES renamed: "NOTES". Individual notes were numbered but with no technical changes made.</li> <li><b>Callout for Item 5:</b> "CONNECTOR SINGLE LIGHT "A" MULTIPLE LIGHTS "B", <b>Revised to read:</b> "CONNECTOR SINGLE LIGHT "A"'"</li> </ol>
<b>E-4A</b>	<ol style="list-style-type: none"> <li><b>Updated pull box</b> and hatch for crushed rock sump.</li> <li><b>Added</b> required thickness to pull box grout.</li> <li><b>Added</b> grouted conduit cutouts.</li> </ol>
<b>E-4B</b>	<ol style="list-style-type: none"> <li><b>Added</b> required thickness to pull box grout.</li> <li>Changed "DIRT" to "NON-CONCRETE" to identify a pull box which is not located in concrete sidewalk.</li> <li><b>Added</b> grouted conduit cutouts.</li> <li><b>Added</b> footnote to General Notes: "SPICES MUST BE APPROVED BY TSSL"</li> </ol>
<b>E-4C</b>	<ol style="list-style-type: none"> <li>Drawing title revised to specify: "LOCAL STREETS ONLY (RESIDENTIAL)"</li> </ol>



	<ol style="list-style-type: none"> <li>Added required thickness to pull box grout.</li> <li>Added Approved Locking Lid per Section 23-1.10 of City Specifications.</li> <li><b>Note 6:</b> "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)." <b>Revised to read:</b> "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)."</li> </ol>
<b>E-5</b>	<ol style="list-style-type: none"> <li>Edits made to wiring diagram to show splices at hand hole.</li> <li>Note was numbered.</li> <li><b>Note 1:</b> "WITH EXCEPTION OF BONDING JUMPERS, NO SPLICES WILL BE ALLOWED IN PULL BOXES" <b>Revised to read:</b> "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".</li> </ol>
<b>E-6</b>	<ol style="list-style-type: none"> <li><b>Amended Note 1</b> 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."</li> <li><b>Added Note 5:</b> "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."</li> </ol>
<b>E-7</b>	<ol style="list-style-type: none"> <li>Drawing renumbered to E-7A. See E-7A for description of technical changes.</li> </ol>
<b>E-7A</b>	<ol style="list-style-type: none"> <li><b>Drawing title:</b> "STREETLIGHT-PLACEMENT DIVIDED ARTERIAL STREETS" <b>Revised to read:</b> "STREETLIGHT-PLACEMENT MAJOR STREETS"</li> <li>Updated web address for City of Fresno standard drawings.</li> <li>Updated to show independent street light systems on each side with 165' spacing on major streets.</li> </ol>
<b>E-7B</b>	<ol style="list-style-type: none"> <li><b>New Standard Drawing:</b> "STREETLIGHT-PLACEMENT MAJOR/LOCAL INTERSECTION".</li> </ol>
<b>E-8</b>	<ol style="list-style-type: none"> <li><b>Drawing title:</b> "STREETLIGHT – PLACEMENT COLLECTOR STREETS" <b>Revised to read:</b> "STREETLIGHT-PLACEMENT SIGNALIZED INTERSECTIONS".</li> </ol>
<b>E-9</b>	<ol style="list-style-type: none"> <li><b>Drawing renumbered</b> to E-9A. See E-9A for description of technical changes.</li> </ol>
<b>E-9A</b>	<ol style="list-style-type: none"> <li>Updated web address for City of Fresno standard drawings.</li> <li>Updated streetlight spacing on Local/Major streets.</li> <li>Updated streetlight spacing on Local streets.</li> </ol>
<b>E-9B</b>	<ol style="list-style-type: none"> <li><b>New Standard Drawing:</b> "STREETLIGHT-PLACEMENT LOCAL INTERSECTIONS"</li> </ol>
<b>E-10</b>	<ol style="list-style-type: none"> <li><b>Updated</b> Expressway/Arterial luminaire <b>spacing</b> for LED streetlight design.</li> </ol>
<b>E-11</b>	<ol style="list-style-type: none"> <li><b>Changed</b> certain <b>dimensions</b>, added notes and designations for LED streetlight design.</li> </ol>
<b>E-12</b>	<ol style="list-style-type: none"> <li>Standard Drawing no longer used.</li> </ol>
<b>E-13</b>	<ol style="list-style-type: none"> <li>Updated bike loop symbol.</li> <li><b>Note 2:</b> "ALL NEW LOOPS SHALL BE TESTED AND DOCUMENTED ON SHEET PROVIDED IN THE SECTION 23-2, TESTING SHALL BE TO CALTRANS STATE STANDARD PLANS." <b>Revised to read:</b> "ALL NEW LOOPS SHALL BE TESTED AND DOCUMENTED ON SHEET PROVIDED IN SECTION 23-2; TESTING SHALL BE PER CALTRANS STANDARD SPECIFICATIONS."</li> </ol>
<b>E-14</b>	<ol style="list-style-type: none"> <li><b>Note 1:</b> "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." <b>Revised to read:</b> "PAVEMENT SHALL BE DEEMED SUITABLE FOR INSTALLATION OF LOOP(S) BY CITY TRAFFIC</li> </ol>

	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.
<b>E-15</b>	1. Wiring schematic revised to reflect design of current manufacturer. 2. Switch amperage requirements updated
<b>E-21</b>	1. Clarified lock jaw lid note #32
<b>E-22</b>	1. Removed hand hole from pole.
<b>E-24</b>	1. Added pull box in front of service pedestal.
<b>E-24A</b>	1. Added pull box in front of service pedestal.
<b>E-24B</b>	1. <b>New Standard Drawing:</b> “SIGNAL LIGHT EQUIPMENT PLACEMENT DETAIL”.
<b>E-24C</b>	1. <b>NEW Standard Drawing:</b> “High-intensity Activated crossWalk (HAWK) Layout and Equipment Placement Guideline”
<b>E-28</b>	1. Standard Drawing no longer used.
<b>E-30</b>	1. <b>Added Note 4:</b> “MATCHING BASE BOLT COVERS SHALL BE INSTALLED”.
<b>E-31</b>	1. <b>Removed Note 2.</b> 2. <b>Existing Notes 3 and 4 renumbered</b> to 2 and 3. 3. <b>Added Note 4:</b> “MATCHING BASE BOLT COVERS SHALL BE INSTALLED”.
<b>E-32</b>	1. <b>Removed Note 2.</b> 2. <b>Existing Notes 3 and 4 renumbered</b> to 2 and 3. 3. <b>Added Note 4:</b> “MATCHING BASE BOLT COVERS SHALL BE INSTALLED”.
<b>E-33</b>	1. <b>Removed Note 2.</b> 2. <b>Existing Notes 3 and 4 renumbered</b> to 2 and 3. 3. <b>Added Note 4:</b> “MATCHING BASE BOLT COVERS SHALL BE INSTALLED”.
<b>E-34A</b>	1. Minor revisions to lower input panel diagram and Opticom <i>Field Wire</i> detail.
<b>E-34C</b>	1. Minor revisions to input lower panel diagram.
<b>E-34D</b>	1. <b>NEW Standard Drawing:</b> “HAWK Cabinet Wiring Diagram – NORTH/SOUTH”
<b>E-34E</b>	1. <b>NEW Standard Drawing:</b> “HAWK Cabinet Wiring Diagram – EAST/WEST”
<b>E-37</b>	1. Added Anchor Bolt detail and notes, updated dimensions.
<b>DPW – INTELLIGENT TRANSPORTATION SYETEM (ITS Series)</b>	
<b>ITS-1</b>	1. <b>Removed:</b> “RADAR DETECTOR” <b>from drawing and legend.</b> 2. <b>Removed:</b> “NO. 6 PULL BOX (FIBERLYTE LID)” <b>from drawing and legend.</b> 3. <b>Removed callout:</b> “4-1-½” HDPE ITS CONDUIT” <b>from drawing.</b> 4. <b>Removed linework</b> for 1-½” conduit related to #3, above.
<b>ITS-3</b>	1. <b>Added callout:</b> “SEE NOTE 11” 2. <b>Added conduit and callout</b> for 1-1/2” RGC between Traffic Signal Service Cabinet and PG&E No. 2 Service box. 3. <b>Legend:</b> “ITS CONDUIT” <b>Revised to read:</b> “ITS CONDUIT, HDPE CONDUIT” 4. <b>Legend:</b> “TRAFFIC SIGNAL CONDUITS” <b>Revised to read:</b> “TRAFFIC SIGNAL CONDUITS, RIGID GALVANIZED CONDUIT (RGC)” 5. <b>Note 2:</b> “ITS INTERSECTION COMMUNICATION CABINET PER CURRENT CITY OF FRESNO QUALIFIED PRODUCT LIST. (QPL)” <b>Revised to read:</b> “ITS INTERSECTON COMMUNICATIONS CABINET, SEE STD PLAN ITS-20A”

	6. <b>Added Note 11:</b> "INSTALL 1-1/2" RIGID CONDUIT"
<b>ITS-3A</b>	<ol style="list-style-type: none"> <li>1. <b>Added callout:</b> "SEE NOTE 12"</li> <li>2. <b>Added callout:</b> "2" RGC"</li> <li>3. <b>Removed:</b> Communications Cabinet <b>from drawing.</b></li> <li>4. <b>Removed:</b> ITS <b>conduit</b> from between 6(E) pullbox and Communication Cabinet.</li> <li>5. <b>Rerouted:</b> ITS <b>conduits</b> connecting 4'x7' ITS Vault to Communications Cabinet now connect the ITS Vault to the HUB.</li> <li>6. HUB is now dimensioned relative to Traffic Signal Service Cabinet, not Communications Cabinet.</li> <li>7. <b>Added conduit</b> and callout for 1-1/2" RGC between Traffic Signal Service Cabinet and PG&amp;E No. 2 Service box.</li> <li>8. <b>Legend:</b> "TRAFFIC SIGNAL CONDUITS" <b>Revised to read:</b> "TRAFFIC SIGNAL CONDUITS, RIGID GALVANIZED CONDUIT (RGC)"</li> <li>9. <b>Note 2:</b> "ITS INTERSECTION COMMUNICATION CABINET PER CURRENT CITY OF FRESNO QUALIFIED PRODUCT LIST. (QPL)" <b>Revised to read:</b> "ALL REQUIRED COMMUNICATION EQUIPMENT ASSEMBLIES SPECIFIED ON ITS-21B SHALL BE INSTALLED INSIDE HUB CABINET AS DIRECTED BY ENGINEER."</li> <li>10. <b>Added Note 12:</b> "INSTALL 1-1/2" RIGID CONDUIT"</li> </ol>
<b>ITS-4</b>	<ol style="list-style-type: none"> <li>1. <b>Conduit Color Codes:</b> "4. YELLOW" <b>Revised to read:</b> "4. ORANGE W/YELLOW STRIPE"</li> <li>2. Minor drafting edits and text changes for clarity.</li> </ol>
<b>ITS-5</b>	<ol style="list-style-type: none"> <li>1. <b>Conduit Color Codes:</b> "4. YELLOW" <b>Revised to read:</b> "4. ORANGE W/YELLOW STRIPE"</li> </ol>
<b>ITS-12</b>	<ol style="list-style-type: none"> <li>1. <b>Added Note 3:</b> "ALL CONDUITS INSTALLED SHALL BE LABELED WITH DIRECTION BRASS TAG DIRECTLY ABOVE CONDUITS. EXAMPLE: N (DIRECTION) TO IXXX (NEXT VAULT ID NUMBER)"</li> <li>2. <b>Callout:</b> "VAULT LID SHALL BE FLUSH WITH SIDEWALK OR BE SET TO FUTURE SIDEWALK GRADE @ 1/4" PER FOOT ABOVE TOP OF CURB" <b>Revised to read:</b> "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".</li> <li>3. <b>Added callout:</b> "BRASS TAG, VAULT I.D. NUMBER, IXXX"</li> <li>4. <b>Added callout:</b> "NAMEPLATE MARKED "ITS COMMUNICATION""</li> </ol>
<b>ITS-14</b>	<ol style="list-style-type: none"> <li>1. <b>Added Note 3:</b> "ALL CONDUITS INSTALLED SHALL BE LABELED WITH DIRECTION BRASS TAG DIRECTLY ABOVE CONDUITS. EXAMPLE: N (DIRECTION) TO IXXX (NEXT VAULT ID NUMBER)"</li> <li>2. <b>Callout:</b> "VAULT LID SHALL BE FLUSH WITH SIDEWALK OR BE SET TO FUTURE SIDEWALK GRADE @ 1/4" PER FOOT ABOVE TOP OF CURB" <b>Revised to read:</b> "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".</li> <li>3. <b>Added callout:</b> "BRASS TAG, VAULT I.D. NUMBER, IXXX"</li> <li>4. <b>Added callout:</b> "NAMEPLATE MARKED "ITS COMMUNICATION""</li> </ol>
<b>ITS-15</b>	<ol style="list-style-type: none"> <li>1. Standard Drawing no longer used.</li> </ol>
<b>ITS-16</b>	<ol style="list-style-type: none"> <li>1. Standard Drawing no longer used.</li> </ol>
<b>ITS-17</b>	<ol style="list-style-type: none"> <li>1. Standard Drawing no longer used.</li> </ol>
<b>ITS-20</b>	<ol style="list-style-type: none"> <li>1. Standard Drawing no longer used.</li> </ol>
<b>ITS-21</b>	<ol style="list-style-type: none"> <li>1. Standard Drawing no longer used.</li> </ol>
<b>ITS-21B</b>	<ol style="list-style-type: none"> <li>1. <b>Callout:</b> "12 COUNT SC PANEL" <b>Revised to read:</b> "12 COUNT LC SMFO SPLICE CASSETTE"</li> <li>2. <b>Added Callout:</b> "CAMERA POE INJECTOR"</li> <li>3. <b>Added Callout:</b> "WIRELESS ACCESS POINT POE INJECTOR"</li> <li>4. <b>Callout:</b> "IP POWER STRIP CORD" <b>Revised to read:</b> "POWER STRIP POWER CORD"</li> <li>5. <b>Drawing Revised</b> to include depiction of 2 DIN rail mounted switch power supplies</li> <li>6. <b>Removed callout:</b> "BACK OF IP POWER STRIP"</li> <li>7. <b>Added Callout:</b> "RACK MOUNT DIN RAIL ASSEMBLY"</li> </ol>

	<ol style="list-style-type: none"> <li>8. <b>Callout:</b> "12-COUNT FIBER OPTIC CABLE, -10' SLACK" <b>Revised to read:</b> "12-COUNT FIBER OPTIC CABLE TERMINATED TO SPLICE CASSETTE -10' SLACK"</li> <li>9. <b>Callout:</b> "POWER RECEPTACLE FOR IP POWER STRIP ONLY" <b>Revised to read:</b> "POWER RECEPTACLE FOR POWER STRIP ONLY"</li> <li>10. <b>Added Callout:</b> "VELCRO WRAP ALL EQUIPMENT TO SHELVES"</li> <li>11. <b>Callout:</b> "19" SHELF, 10" DEEP" <b>Revised to read:</b> "19" VENTILATED SHELVES, 10" DEEP"</li> <li>12. <b>Callout:</b> "IP POWER STRIP" <b>Revised to read:</b> "SURGE PROTECTED POWER STRIP"</li> <li>13. <b>Callout:</b> "FIBER OPTIC JUMPER" <b>Revised to read:</b> "3 METER LC TO LC FIBER OPTIC JUMPER"</li> <li>14. <b>Drawing Revised</b> to include depiction of DIN rail mounted network switch</li> <li>15. <b>Callout:</b> "SFP WITH LC TO SC FIBER PATCH" <b>Revised to read:</b> "HARDENED 1 GIG SFP"</li> <li>16. <b>Callout:</b> "DUCT PLUGS AND BELL ENDS TO CITY REQUIREMENTS" <b>Revised to read:</b> "BELL ENDS AND DUCT PLUGS ON ALL HDPE CONDUIT TO CITY REQUIREMENT"</li> <li>17. <b>Note:</b> "MINIMUM 4" VERTICAL SPACING BETWEEN EQUIPMENT." <b>Revised to read:</b> "MINIMUM 4" VERTICAL SPACING ABOVE 19" SHELF"</li> </ol>
<b>ITS-27A</b>	<ol style="list-style-type: none"> <li>1. <b>Added Note 5:</b> "CONTRACTOR MAY UTILIZE 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."</li> <li>2. <b>Added Note 6:</b> "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."</li> <li>3. <b>Added callout:</b> "SEE NOTE 6"</li> <li>4. <b>Callout:</b> "OUTDOOR SHIELDED CAT 5e CABLE, MAX RUN LENGTH = 300'." <b>Revised to read:</b> "OUTDOOR SHIELDED CAT 5e CABLE, MAX RUN LENGTH = 300'. SEE NOTE 5."</li> <li>5. <b>Removed callout:</b> "CONTRACTOR MAY DRILL MAX 7/8" ACCESS HOLDS. FILL WITH WEATHERPROOF KNOCKOUT SEAL."</li> </ol>
<b>ITS-27B</b>	<ol style="list-style-type: none"> <li>1. <b>Added callout:</b> "2' TYP"</li> <li>2. <b>Callout:</b> "16"-LONG, 1.5" DIAMETER ALUMINUM PIPE" <b>Revised to read:</b> "8"-LONG, 1.5" DIAMETER ALUMINUM PIPE"</li> <li>3. <b>Callout:</b> "4' ANTENNA CABLE (TYP)" <b>Revised to read:</b> "2-4' ANTENNA CABLES, SEE NOTE 5"</li> <li>4. <b>Callout:</b> "8"-LONG, 1.5" DIAMETER ALUMINUM PIPE" <b>Revised to read:</b> "16"-LONG, 1.5" DIAMETER ALUMINUM PIPE"</li> <li>5. <b>Added callout:</b> "DRIP LOOP"</li> <li>6. Antenna 1 <b>drawing revised</b> to depict integrated antenna with wireless access point</li> <li>7. <b>Removed callout:</b> "ANTENNA 1 (BACK)"</li> <li>8. <b>Callout:</b> "WIRELESS ACCESS POINT" <b>Revised to read:</b> "WIRELESS ACCESS POINT ANTENNA 1 BACK"</li> <li>9. <b>Callout:</b> "MINI ASTRO-BRAC OR APPROVED EQUAL WITH ELBOW" <b>Revised to read:</b> "MINI ASTRO-BRAC OR APPROVED EQUAL WITH NO ELBOW"</li> <li>10. <b>Added callout:</b> "CAT5e DRIP LOOP"</li> <li>11. <b>Added callout:</b> "ANTENNA 2"</li> <li>12. <b>Added callout:</b> "8"-LONG, 1.5" DIAMETER ALUMINUM PIPE"</li> <li>13. <b>Callout:</b> "2' ANTENNA CABLE (TYP)" <b>Revised to read:</b> "2-4' ANTENNA CABLES (TYP)"</li> <li>14. <b>Callout:</b> "WIRELESS ACCESS POINT" <b>Revised to read:</b> "WIRELESS ACCESS POINT ANTENNA 1"</li> <li>15. <b>Callout:</b> "MINI ASTRO-BRAC OR APPROVED EQUAL WITH ELBOW" <b>Revised to read:</b> "MINI ASTRO-BRAC OR APPROVED EQUAL"</li> <li>16. <b>Note 2:</b> "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." <b>Revised to read:</b> "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."</li> </ol>

	<p>17. <b>Note 4:</b> "ANTENNA 2 WILL BE MOUNTED IN THE SAME DIRECTION AS ANTENNA 1 WHEN IT IS THE LAST ACCESS POINT IN RUN." <b>Revised to read:</b> "ANTENNA 1 AND ANTENNA 2 SHALL HAVE A MINIMUM 2' OF SEPERATION."</p> <p>18. <b>Added Note 5:</b> "SECURELY STRAP ANTENNA CABLE TO MAST ARM WITH STAINLESS STEEL NYLON COATED STRAPS (FOLLOW NEC STANDARD FOR SPACING."</p> <p>19. <b>Added Note 6:</b> "ALL ELECTRICAL CONNECTIONS SHALL CONFORM TO MANUFACTURER REQUIREMENTS TO ENSURE WEATHER PROOF CONNECTIONS."</p>
<b>ITS-28B</b>	<p>1. <b>Callout:</b> "WIRELESS RADIO PER SPECIFICATION" <b>Revised to read:</b> "WIRELESS RADIO ANTENNA 1 PER SPECIFICATION (SEE NOTE 1)"</p> <p>2. Antenna 1 <b>drawing revised</b> to depict integrated antenna with wireless access point</p> <p>3. <b>Removed callout:</b> "ANTENNA 1 PER SPECIFICATION (SEE NOTE 1)"</p> <p>4. <b>Added callout:</b> "OUTDOOR RATED SHIELDED CAT5E CABLE"</p> <p>5. <b>Callout:</b> "12 AWG POWER TO TESCO" <b>Revised to read:</b> "12 AWG POWER TO TESCO SEE NOTE 5"</p> <p>6. <b>Removed callout:</b> "SEE NOTE 5"</p> <p>7. <b>Added Note 7:</b> "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."</p>
<b>DPW – ASSOCIATED PLANS INDEX (API Series)</b>	
<b>API-5</b>	<p>1. <b>Callout:</b> "HANDICAP RAMP (TYPICAL)" <b>Revised to read:</b> "ACCESSIBLE RAMP (TYPICAL)"</p> <p>2. <b>Changed the phrase:</b> "ST'D" to "STD.", multiple occurrences.</p>
<b>API-6</b>	<p>1. <b>Note 2:</b> "...STANDARD DRAWING P-4" <b>Revised to read:</b> "...STANDARD DRAWING API-4"</p>
<b>API-7</b>	<p>1. <b>Note 2:</b> "...STANDARD DRAWING P-4" <b>Revised to read:</b> "...STANDARD DRAWING API-4"</p> <p>2. Added callout: "GRADED DIRT SHOULDER (SEE DETAIL API-4) MATERIAL OTHER THAN ORIGINAL SOIL SHALL BE APPROVED BY THE PUBLIC WORKS DIRECTOR."</p>
<b>API-8</b>	<p>1. <b>Notes 1 &amp; 3:</b> "...STANDARD DRAWING P-48" <b>Revised to read:</b> "...STANDARD DRAWING API-4"</p> <p>2. <b>Callout:</b> "GRADED DIRT SHOULDER (SEE DETAIL P-48..." <b>Revised to read:</b> "GRADED DIRT SHOULDER (SEE DETAIL API-4..."</p>
<b>API-9</b>	<p>1. <b>Note 3:</b> "...STANDARD DRAWING P-48" <b>Revised to read:</b> "...STANDARD DRAWING API-4"</p> <p>2. <b>Callout:</b> "GRADED DIRT SHOULDER (SEE DETAIL P-48..." <b>Revised to read:</b> "GRADED DIRT SHOULDER (SEE DETAIL API-4..."</p>
<b>API-10</b>	<p>1. <b>New Standard Drawing:</b> "DOWNTOWN CONCRETE SIDEWALK AESTHETIC TREATMENT - SIDEWALK PATTERN"</p>
<b>API-11</b>	<p>1. <b>New Standard Drawing:</b> "DOWNTOWN CONCRETE SIDEWALK AESTHETIC TREATMENT"</p>
<b>DPU – RECYCLED WATER (RW Series)</b>	
<b>RW-1</b>	<p>1. <b>Note 1:</b> "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." <b>Revised to read:</b> "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."</p>

	<ol style="list-style-type: none"> <li><b>Callout</b>, "RECYCLED WATER MARKING TAPE, PURPLE (PANTONE 512) WITH TRACE WIRE" <b>Revised to read</b>: "RECYCLED WATER MARKING TAPE, PURPLE (PANTONE 512)"</li> <li><b>Callout added</b>: "TRACER WIRE: #10AWG TAPED AT 5'-0" INTERVALS"</li> </ol>
<b>RW-6</b>	<ol style="list-style-type: none"> <li><b>Drawing name</b>: "4" RECYCLED WATER SERVICE" <b>Revised to read</b>: "4", 6", 8" RECYCLED WATER SERVICE".</li> <li><b>Callout</b>: "METER BOX WITH ARMORCAST LID WITH CAST IRON READING DOOR; LID SHALL BE PURPLE (PANTONE 512) AND MARKED WITH THE WORDS "RECYCLED WATER" <b>Revised to read</b>: "ARMORCAST POLYMER CONCRETE BOX, A6001460PCX36 AND ARMORCAST LID, A6001456TA-PUR-COF; LID SHALL BE PURPLE (PANTONE 512) AND MARKED WITH THE WORDS "RECYCLED WATER"</li> <li><b>Drawing Revised</b>: layout of pipes and fittings altered to remove elevation changes and elbows and associated dimensions removed.</li> <li><b>Drawing Revised</b>: gate valve relocated to behind the meter.</li> <li><b>Removed callout</b>, "4" PURPLE PVC PIPE".</li> <li><b>Callout</b>, "PVC OR DUCTILE PIPE CONTINUOUSLY WRAPPED WITH PURPLE TAPE" <b>Revised to read</b>: "4"-6"-8" PVC OR DUCTILE PIPE CONTINUOUSLY WRAPPED WITH PURPLE TAPE"</li> <li><b>Added callout</b>: "RECYCLED WATER METER. SEE NOTES 7-9 FOR METER SPOOL LENGTH"</li> <li><b>Callout</b>: "TRACER WIRE WITH 1' COIL PER STANDARD SPEC. 22-3.3" <b>Revised to read</b>: "TRACER WIRE WITH 1' COIL PER STANDARD SPEC. 34-3.3"</li> <li><b>Added dimension</b>, "30"" from top of meter box lid to top of pipe</li> <li><b>Added Note</b> 7, "FOR 4" RECYCLED WATER SERVICE, METER SPOOL LENGTH SHALL BE 13 ¾"</li> <li><b>Added Note</b> 8, "FOR 6" RECYCLED WATER SERVICE, METER SPOOL LENGTH SHALL BE 17 ¾"</li> <li><b>Added Note</b> 9, "FOR 8" RECYCLED WATER SERVICE, METER SPOOL LENGTH SHALL BE 24".</li> <li><b>Added Note</b> 10, "METERS DEEPER THAN 30 INCHES TO TOP OF PIPE MUST BE RAISED TO 30 INCHES"</li> <li><b>Added Note</b> 11, "WHEN CURB EXISTS, SET METER BOX 2" TO 6" FROM BACK OF CURB"</li> </ol>
<b>RW-7</b>	<ol style="list-style-type: none"> <li><b>Callout</b>: "PURPLE (PANTONE 512) CHRISTY METER BOX WITH LID (17" X 30") AND MARKED WITH THE WORDS "RECYCLED WATER"" <b>Revised to read</b>: "PURPLE (PANTONE 512) CHRISTY B-36 OR APPROVED EQUAL CONCRETE BOX, STEEL LID AND RECYCLED WATER NAME PLATE PER STANDARD DRAWING RW-16"</li> <li><b>Callout</b>: "2" x REQUIRED LENGTH GALVANIZED STEEL PIPE TYPE "K" RIGID OR SOFT, CONTINUOUSLY WRAPPED WITH APPROVED PURPLE RECYCLED WATER MARKING TAPE" <b>Revised to read</b>: "2" x REQUIRED LENGTH GALVANIZED STEEL PIPE, CONTINUOUSLY WRAPPED WITH APPROVED PURPLE RECYCLED WATER MARKING TAPE"</li> <li><b>Callout</b>: "TRACER WIRE WITH 1' COIL PER STANDARD SPEC. 22-3.3" <b>Revised to read</b>: "TRACER WIRE WITH 1' COIL PER STANDARD SPEC. 34-3.3"</li> <li><b>Note 3</b>: "RESTRAIN ALL JOINTS PER SITY STANDARD SPECIFICATIONS SECTION 21-15.5" <b>Revised to read</b>, "RESTRAIN ALL JOINTS PER SITY STANDARD SPECIFICATIONS SECTION 33-14.5"</li> </ol>
<b>RW-8</b>	<ol style="list-style-type: none"> <li><b>Drawing split and renamed</b>, "RW-8A" and "RW-8B". Technical changes shown for RW-8A, below, apply to both.</li> </ol>
<b>RW-8A</b>	<ol style="list-style-type: none"> <li><b>Drawing title</b>, "RECYCLED WATER BLOW-OFF ASSEMBLY" <b>Revised to read</b>: "RECYCLED WATER BLOW-OFF ASSEMBLY (PVC OR DUCTILE IRON MAIN)"</li> <li><b>Callout</b>, "2-1/2" STANDARD MALE FIRE HOSE THREADED CONNECTION WITH CAP &amp; RECYCLED WATER IDENTIFICATION TAG PER STANDARD DRAWING RW-18" <b>Revised to read</b>: "4" STANDARD IRON PIPE THREAD W/PLUG".</li> <li><b>Drawing Revised</b>: Blow-off connection to main changed from 45° ELL to 90° ELL at bottom of pipe.</li> <li><b>Note 4</b>: "RESTRAIN ALL JOINTS PER SITY STANDARD SPECIFICATIONS SECTION 21-15.5" <b>Revised to read</b>, "RESTRAIN ALL JOINTS PER SITY STANDARD SPECIFICATIONS SECTION 33-14.5"</li> <li><b>Callout</b>: "TRACER WIRE CONNECTION TO BE SOLDERED PER STD. SPEC. 34-3.3" <b>Revised to read</b>, "TRACER WIRE CONNECTION TO BE PROTECTED AND SOLDERED PER STD. SPEC. 34-3.3"</li> </ol>

	6. Tracer wire relocated to inside the riser barrel.
<b>RW-8B</b>	1. <b>New Standard Drawing:</b> "RECYCLED WATER BLOW-OFF ASSEMBLY (STEEL MAIN)"
<b>RW-9</b>	<ol style="list-style-type: none"> <li>1. <b>Drawing title:</b> "RECYCLED WATER 1" OR 2" AIR RELEASE/VACUUM BREAKER STATION" <b>Revised to read,</b> "RECYCLED WATER 1" OR 2" AIR RELEASE/VACUUM BREAKER ASSEMBLY"</li> <li>2. <b>Callout(s),</b> "1" OR 2" COPPER 90° ELBOW, LONG RADIUS, 95-5 SOLDER JOINTS, 0-300 PSI" <b>Revised to read:</b> "1" OR 2" COPPER 90° ELBOW, LONG RADIUS, 95-5 PACK JOINT CONNECTIONS FOR (CTS) TUBING, 0-300 PSI"</li> <li>3. <b>Callout,</b> "1" OR 2" COPPER COUPLING WITH STOPS, 95-5 COPPER SOLDER JOINTS, 0-300 PSI" <b>Revised to read:</b> "1" OR 2" COPPER COUPLING WITH STOPS, 95-5 PACK JOINT CONNECTIONS FOR (CTS) TUBING, 0-300 PSI"</li> <li>4. <b>Callout,</b> "1" OR 2" COPPER ADAPTER, SOLDER JOINT BY MALE IPT, 0-300 PSI" <b>Revised to read:</b> "1" OR 2" COPPER ADAPTER, PACK JOINT CONNECTIONS FOR (CTS) TUBING, 0-300 PSI"</li> <li>5. <b>Callout,</b> "TRACER WIRE WITH 1' COIL, PER STANDARD SPEC. 22-3.3" <b>Revised to read:</b> "TRACER WIRE WITH 1' COIL PER STANDARD SPEC. 34-3.3"</li> <li>6. <b>Callout,</b> "AIR/VAC ENCLOSURE PER STANDARD DRAWING RW-11" <b>Revised to read:</b> "AIR/VAC ENCLOSURE PER STANDARD DRAWING RW-26"</li> <li>7. <b>Callout added:</b> "RECYCLED WATER BOX, LID, &amp; RISER PER STANDARD DRAWING RW-2"</li> <li>8. <b>Drawing Revised:</b> limits of concrete pad expanded to incorporate water valve.</li> <li>9. <b>Drawing Revised:</b> water valve added to drawing.</li> <li>10. <b>Removed dimension:</b> "2' MIN" (located between saddle tap and copper coupling)</li> <li>11. <b>Added dimension:</b> "2' MAX" (located between water valve and air/vac valve)</li> <li>12. <b>Note 3:</b> "RESTRAIN ALL JOINTS PER SITY STANDARD SPECIFICATIONS SECTION 21-15.5" <b>Revised to read,</b> "RESTRAIN ALL JOINTS PER SITY STANDARD SPECIFICATIONS SECTION 33-14.5"</li> <li>13. Tracer wire relocated to inside the riser barrel.</li> </ol>
<b>RW-10</b>	<ol style="list-style-type: none"> <li>1. <b>Drawing title:</b> "RECYCLED WATER 4" AIR RELEASE/VACUUM BREAKER STATION" <b>Revised to read,</b> "RECYCLED WATER 4" AIR RELEASE/VACUUM BREAKER ASSEMBLY"</li> <li>2. <b>Callout:</b> "AIR/VAC ENCLOSURE (To be specified)" <b>Revised to read,</b> "AIR/VAC ENCLOSURE PER STANDARD DRAWING RW-26"</li> <li>3. <b>Callout,</b> "TRACER WIRE WITH 1' COIL, PER STANDARD SPEC. 22-3.3" <b>Revised to read:</b> "TRACER WIRE WITH 1' COIL PER STANDARD SPEC. 34-3.3"</li> <li>4. Tracer wire relocated to inside the riser barrel.</li> </ol>
<b>RW-11</b>	1. Standard is no longer used.
<b>RW-12</b>	1. <b>Revised dimensions</b> on "RECYCLED WATER CROSSING SEWER MAINS" detail.
<b>RW-24</b>	<ol style="list-style-type: none"> <li>1. Note 6 <b>renumbered</b> to Note 7</li> <li>2. Note 5 <b>renumbered</b> to Note 6</li> <li>3. <b>Added new Note 5:</b> "SOLDERING PASTE MUST BE APPLIED TO THE LOOPS BEFORE HEAT IS APPLIED IF ROSIN CORE SOLDER IS NOT USED."</li> <li>4. <b>Note 6:</b> "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." <b>Revised to read,</b> "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."</li> <li>5. <b>Note 7:</b> "ALL WIRE MUST BE 12 GAUGE COPPER WIRE." <b>Revised to read,</b> "ALL WIRE MUST BE 10 GAUGE COPPER WIRE."</li> </ol>
<b>RW-25</b>	1. <b>New Standard Drawing:</b> "RECYCLED WATER COMMERCIAL TRUCK FILL STATION"
<b>RW-26</b>	1. <b>New Standard Drawing:</b> "AIR RELEASE/VACUUM BREAKER VALVE ENCLOSURE"

**The following City Standard Specifications have been amended as indicated below:**

1. Updated formatting and page numbering throughout specification document.
2. Update Caltrans standard specification references throughout document.

<b>1-2</b>	1. Added and updated definitions
<b>7-10.4</b>	<ol style="list-style-type: none"> <li>1. Updated Traffic Control Systems to include "And devices" and "Retro reflectivity".</li> <li>2. Added "Signs mounted on a barricade (Type I, II, or III) or any other portable support, shall be at least one foot above the traveled way.</li> <li>3. Added to the in addition items (b), "During non-peak hour times. All lanes shall be open during peak hours."</li> <li>4. Added to the in addition items (b) "Collectors" to additional lanes may be required to be open.</li> <li>5. Added to the in addition items (b), "All changes or modifications shall be approved by the Engineer and the City Traffic Operations &amp; Planning Division." to the end of this item.</li> <li>6. Updated Intersections to require a detour and barricading plan must be submitted at least "Five business days in advance." to match Public Works Policy</li> <li>7. Updated Public Notification to include "Seven" days notification prior to street closure.</li> <li>8. Updated lane closures on "Arterial, collector, and expressway classified" streets instead to "Major". Also, Full closures on "Arterial, collector and expressway classified" streets shall not start until 9am on the first day and shall be pre-notified on-site at least "Seven" days.</li> <li>9. Updated "Arterial, collector, and expressway classified" streets instead of "high-volume". In addition, CMS are "Shall be required" instead of "may require".</li> <li>10. Added Long Term lane closures or road closures shall have all advance warning signs installed on post(s) per City or State Standards.</li> <li>11. Defined Long Term.</li> <li>12. Added lane closures and road closures shall maintain existing pavement markings unless approved by Engineer or his/her designee. Long Term operations that require removal shall comply with section 67.77-04 of the MUTCD.</li> <li>13. Added use of Channelizers and when they are required.</li> <li>14. Added Positive Protection Devices to this subsection and requirements for use.</li> <li>15. Added Storage of Traffic Devices shall not be stored in the City Right-of-Way.</li> <li>16. Updated removal of traffic markings to reference 6F.77-04 of the MUTCD.</li> </ol>
<b>7-10.5</b>	1. Updated this subsection to reference Traffic Operations & Planning Division instead of Traffic Engineering.
<b>14-2</b>	<ol style="list-style-type: none"> <li>1. Removed reference to Class A concrete.</li> <li>2. Added requirement for minimum compressive strength of 3,500 lbs. at 28 days</li> <li>3. Removed reference to 5 sack Class B concrete</li> </ol>
<b>17-3</b>	<ol style="list-style-type: none"> <li>1. Add Section 17-3.2.2 Bell Holes.</li> <li>2. Delete Section 17-3.2.4 Overexcavation.</li> <li>3. Add Sections 17-3.2.6 Barricades and Safety to 17-3.2.11 Open Trench.</li> </ol>
<b>17-5</b>	<ol style="list-style-type: none"> <li>1. Delete second paragraph of section 17-5.1 Foundation and Bedding.</li> <li>2. Revise Section 17-5.2 Pipe Embedment Zone.</li> <li>3. Add sentence to first paragraph of Section 17-5.4 Final Backfill.</li> <li>4. Revise numbering of all Sections as may be necessary.</li> </ol>
<b>17-6</b>	<ol style="list-style-type: none"> <li>1. Revise second paragraph to read, "The Contractor shall place as many "Y" or "T" branches of the size designated as directed. The "Y" or "T" branches, unless otherwise specified, shall be inclined at an angle of 45° from the horizontal.</li> <li>2. Revise "ten inches (10")" reference in paragraph 3 to "eight inches (8")".</li> </ol>



<b>17-7</b>	1. Add as last paragraph "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)."
<b>17-8.3</b>	1. Revise "5300 Series" reference in paragraph 5 with "5304 or 5305". 2. Delete "...lined with T-Lock or..."
<b>19-1</b>	1. Revise section for installation method for casing pipe.
<b>19-2</b>	1. Revise subsection for specific details for casing materials.
<b>19-3</b>	1. Revise subsection for jacking and receiving pit size requirements.
<b>21-5.8</b>	1. Added section for water main replacement project requirements.
<b>21-20.3</b>	1. Fix text overlapping the left side of table in section (b), subsection (1). 2. Revise "3408" reference in section (b), subsection (2) with "4710".
<b>21-11</b>	1. Revise "C-302-74" reference in Case 1, Zones C and D, section 3 to "C302-16".
<b>21-18.1</b>	1. Revise "Section 4.3" reference in section (e) to "Section 4.4".
<b>21-18.1.2</b>	1. Revise section (a) in part to read "...conform to AWWA C900-16 latest edition for 4" to 60..." 2. Revise pressure class from "150" to "235". 3. Revise "Section 4.3" reference in section (f) to "Section 4.4".
<b>21-19.2</b>	1. Added reference for "C-515 Ductile Iron" for coating requirements in subsection (b), Materials and Workmanship.
<b>22-3.2</b>	1. Delete "Chapter 7, Installation, of".
<b>22-3.3</b>	1. Revised tracer wire from "under" to "over" PVC water main.
<b>22-6</b>	1. Revise section name to Trench and Structure Excavation, and Backfill. 2. Add Section 22-6.1, "General." 3. Add Section 22-6.2, "Trench and Structure Excavation." 4. Delete Section 22-6.2, "Trench Bottom." 5. Add Section 22-6.5, "Trench Grade." 6. Add Section 22-6.6, "Fine Grading" 7. Add Section 22-6.10, "Pavement and Concrete Cutting and Removal" 8. Add Section 22-6.11, "Grading and Stockpiling" 9. Add Section 22-6.12, "Open Trench" 10. Revise numbering of all Sections as may be necessary.
<b>22-7</b>	1. Delete Section 22-7, "Using Earth Mounds"
<b>22-8</b>	1. Revise Section name to Foundation, Bedding, Backfilling and Compaction of Trenches. 2. Add Section 22-8.1 Foundation and Bedding to Section 22-8.4 Final Backfill.
<b>22-9.2</b>	1. Revise "Sec. 7.3" reference in section (c) to "Sec 10.3".
<b>23-1.1</b>	1. Reference Section 86 and 87 of State Standard. 2. All work shall be completed in a neat and workmanlike manner.
<b>23-1.2</b>	1. Added, "After receiving approved submittals from City of Fresno TSSL" for materials.
<b>23-1.6</b>	1. Contractor to notify CM Engineer two working days instead of one.
<b>23-1.8</b>	1. Added Signal Mast arms shall not have mid-arm tendons. Signal heads shall be installed with Astro-Bracket, or approved equal at the end of this subsection.

<b>23-1.9</b>	<ol style="list-style-type: none"> <li>1. Updated the fourth paragraph, to include "All conduit ends shall be threaded and joined with City TSSL Division approved fittings."</li> <li>2. Updated the fourth paragraph, to include "Three piece, Erickson type, couplings shall not be used without prior authorization from City TSSL Division and will only be allowed under special circumstances necessitating their use." at the end of this paragraph.</li> <li>3. Updated paragraph five to include "Cut in the field" to conduit threads.</li> <li>4. Updated paragraph seven to include "Than indicated on the plans."</li> <li>5. Updated paragraph eight to include, "Unless approved by the City CM Engineer. Conduits not able to be placed under concrete sidewalk, or roadway, shall be encased in a at least 6" of two-sack slurry.</li> <li>6. Updated paragraph nine to remove" Conduits not able to be placed under sidewalk shall be encased in at least 6" of slurry."</li> </ol>
<b>23-1.10</b>	<ol style="list-style-type: none"> <li>1. Added "Nonconcrete pull boxes shall not be used" at the end of paragraph one.</li> <li>2. Removed Caltrans callout and reference City standards for pull boxes in paragraph two.</li> <li>3. Update pull box wrapping to "15lb. Roofing" paper.</li> <li>4. Added paragraph, "Existing pull boxes accessed during the course..."</li> <li>5. Added "Locking lids shall be torqued to 25ft pounds (lbs.) prior to installing buttons.</li> </ol>
<b>23-1.11</b>	<ol style="list-style-type: none"> <li>1. Removed "Signal or lighting standard and in each" in paragraph three.</li> <li>2. Added "Reference to City standard E-20" in paragraph eight.</li> <li>3. Added, "The terminal shall be installed using the proper tooling and tinned with solder."</li> <li>4. Added, "Optical detector cable shall be..." to the end of this subsection.</li> <li>5. Added specification for controller terminal assembly end at the end of this subsection</li> </ol>
<b>23-1.12</b>	<ol style="list-style-type: none"> <li>1. Updated wording for this subsection</li> </ol>
<b>23-1.16</b>	<ol style="list-style-type: none"> <li>1. Added "Service feeders shall be sized to accommodate the full load amperage rating of the electrical service pedestal. Voltage drop shall be taken into consideration when sizing conductors.</li> </ol>
<b>23-1.17</b>	<ol style="list-style-type: none"> <li>1. Updated Visors to, "Shall be black."</li> </ol>
<b>23-1.18</b>	<ol style="list-style-type: none"> <li>1. Updated note for when reused pedestrian signals are used, they shall have an LED "Countdown" retrofit kit installed.</li> </ol>
<b>23-1.20</b>	<ol style="list-style-type: none"> <li>1. Added "Latest edition of the California MUTCD." for buttons to conform.</li> <li>2. Updated the mounting height to 40".</li> <li>3. Added, "Push buttons mounted on 2 1/2" diameter posts shall..."</li> <li>4. Updated paragraph five to have housing "Adjusted" to conform "tightly" to curvature of pole.</li> <li>5. Removed paragraph six.</li> </ol>
<b>23-1.21</b>	<ol style="list-style-type: none"> <li>1. Updated the 2 wire Polara to the latest iNavigator2.</li> <li>2. Added, "Digital copies of the 'custom messages'" to paragraph two.</li> </ol>
<b>23-1.22</b>	<ol style="list-style-type: none"> <li>1. Removed paragraph that read, "All EVP system equipment submitted to the City must include a certificate of product liability insurance protection of at least \$5,000,000.00"</li> </ol>
<b>23-1.23</b>	<ol style="list-style-type: none"> <li>1. Entire subsection was revised to LED spacing and specifications.</li> <li>2. Small, Medium, Large &amp; Expressway Traffic Signal LED luminaires added per diagonal spacing of poles. In addition, if diagonal spacing exceeds 220 feet, a lighting design is required for City Engineer to review and approve.</li> <li>3. Updated Tables No. 23-1.23 A &amp; B per new LED requirements.</li> </ol>
<b>23-1.24</b>	<ol style="list-style-type: none"> <li>1. Subsection updated, as Barrier Posts were removed front the specification.</li> <li>2. Added "Photoelectric Controls and Shorting Caps shall be listed..."</li> </ol>
<b>23-1.25</b>	<ol style="list-style-type: none"> <li>1. Update references to TSSL &amp; TOC Supervisor.</li> </ol>

<b>23-1.26</b>	<ol style="list-style-type: none"> <li>1. Added references to the CA MUTCD and to subsections 7-10.4 and 7-10.5.</li> </ol>
<b>23-2.1</b>	<ol style="list-style-type: none"> <li>1. Updated all references to 2070 L controller to be 2070 LX.</li> <li>2. Added, "The controller shall accompany manufacture written..." to Model 2070L Controller Assemblies.</li> <li>3. Modified paragraph two under Model 2070L Controller Assemblies.</li> <li>4. Updated the controller modules to "2070-1C CPU with 64 MB DRAM, 128 MB Flash, Linux Operating System, 3 each - 10/100 Ethernet Ports, USB 2.0 Full-speed port for memory, Non-violate SRAM, C13S connector, 3.3v/5v data key, TEES 2009 compatible, Freescale PowerQuick Processor and ATC 5.2b compliant.</li> <li>5. Updated the controller modules to "Patriot V76.13P Firmware installed in Controller".</li> <li>6. Updated the controller modules to include, "2070 LX shall be 100% compatible with the City's existing Trafficware/Naztec Advanced Transportation Management System (ATMS.NOW) without any hardware or software additions and/or modifications.</li> <li>7. Added "A sample Detection Loop Test sheet is provided below" to Testing under this subsection.</li> <li>8. Removed sole source of Naztec 2070L.</li> </ol>
<b>23-3.1</b>	<ol style="list-style-type: none"> <li>1. Removed reference to E-1 through E-36, and left City Std. Drawings as applicable.</li> <li>2. Added, "All work shall be completed in a neat and workmanlike manner."</li> </ol>
<b>23-3.2</b>	<ol style="list-style-type: none"> <li>1. Added, "After receiving approved submittals form City of Fresno TSSL Division." to All materials required to complete work shall be furnished by contractor.</li> </ol>
<b>23-3.7</b>	<ol style="list-style-type: none"> <li>1. Added "1997" to State Standards.</li> <li>2. Removed "and shall contain not less than 470 pounds of cement per cubic yard."</li> </ol>
<b>23-3.9</b>	<ol style="list-style-type: none"> <li>1. Added, "All couplings shall be tightened to provide a good electrical and mechanical connection throughout the entire length of conduit run." and "No running threads are permitted. Three piece..." to paragraph four.</li> <li>2. Removed paragraph five to the end of paragraph four.</li> <li>3. Added, "Conduits not able to be placed under concrete sidewalk..." to end of paragraph eight.</li> <li>4. Updated callout to Standard E-27 instead of E-1 for conduit within the foundation.</li> </ol>
<b>23-3.10</b>	<ol style="list-style-type: none"> <li>1. Added "Nonconcrete pull boxes shall not be used" at the end of paragraph one.</li> <li>2. Added "See City Std. Drawings E-4A through E-4C, regarding requirements for grouting, drain hole, etc." to end of paragraph two.</li> <li>3. Added new paragraphs three, four and five with modifications to four and five.</li> <li>4. Added "Locking lids shall be torqued to 25 ft. pounds prior to installing buttons."</li> </ol>
<b>23-3.11</b>	<ol style="list-style-type: none"> <li>1. Moved paragraph three ahead of paragraphs four and five to emphasize.</li> <li>2. Removed "streetlight standard and in each" in paragraph four.</li> <li>3. Removed "number 5 in" and added "E&amp;F" to paragraph five.</li> <li>4. Added, "With the exception of "Point of Service" pull boxes,..." to the end of paragraph six.</li> </ol>
<b>23-3.12</b>	<ol style="list-style-type: none"> <li>1. Added paragraph one.</li> <li>2. Added, "underground" to paragraph two.</li> </ol>
<b>23-3.13</b>	<ol style="list-style-type: none"> <li>1. Added paragraph four.</li> <li>2. Added paragraph five.</li> </ol>
<b>23-3.15</b>	<ol style="list-style-type: none"> <li>1. Added, "Service feeders shall be sized to accommodate the full load amperage rating of the electrical..." to the end of paragraph two.</li> <li>2. Updated E-4 callout to E-4C.</li> </ol>
<b>23-3.16</b>	<ol style="list-style-type: none"> <li>1. Entire subsection was revised to LED spacing and specifications.</li> <li>2. Mid-Block/Local Roadway (MBLR), Local Cul-De-Sac (LCDS) and Major/Local Intersection (ML) luminaires added. Reference to 23-1.23 for traffic signal luminaires. Also, if diagonal spacing exceeds 220 feet, a lighting design is required for City Engineer to review and approve.</li> </ol>

	<ol style="list-style-type: none"> <li>Updated luminaire specifications to wattage maximums, and performance criteria.</li> <li>Eliminated lux as measurement and now only using footcandle (fc).</li> <li>Added "Average horizontal at pavement along Minor Street &amp; Average to minimum uniformity ratio along Minor Street" Criteria to Crosswalk Illumination.</li> <li>Updated to only allow 3000K and 4000K Correlated Color Temperature luminaires.</li> <li>Updated submittal requirements for luminaires not on City's Approved Product List.</li> </ol>
<b>23-3.17</b>	<ol style="list-style-type: none"> <li>Updated subsection to new PEC &amp; Shorting Cap requirements. (Must be listed product)</li> </ol>
<b>23-3.18</b>	<ol style="list-style-type: none"> <li>Added references to the CA MUTCD and to subsections 7-10.4 and 7-10.5.</li> </ol>
<b>23-4</b>	<ol style="list-style-type: none"> <li>Moved section from Section 30 of Specifications to be incorporated into Section 23.</li> </ol>
<b>23-4.1</b>	<ol style="list-style-type: none"> <li>Added paragraph three, to require a photometric design for ornamental streetlights.</li> </ol>
<b>23-4.2</b>	<ol style="list-style-type: none"> <li>Updated "Pole" to be, "16 feet minimum for major streets and 12 feet minimum for residential streets.</li> <li>Updated luminaire wattage to "LED 30 to 40 Watt Maximum (See Ornamental Design Luminaire Criteria Table) and per approved design by City Engineer."</li> </ol>
<b>23-4.3</b>	<ol style="list-style-type: none"> <li>Updated subsection remove reference to Section 86 of the State Specifications and to comply with all requirements of Section 23-3 of City Specifications.</li> </ol>
<b>23-4.4</b>	<ol style="list-style-type: none"> <li>Added paragraph two to this subsection. Discusses when a streetlight plan is submitted, it shall include a photometric analysis to be reviewed and approved by the City.</li> </ol>
<b>23-4.5</b>	<ol style="list-style-type: none"> <li>Added, "After receiving approved submittals from City of Fresno TSSL" for materials.</li> </ol>
<b>23-4.8</b>	<ol style="list-style-type: none"> <li>Removed paragraphs one and two of the subsection.</li> <li>Updated foundation concrete shall not contain less than "590" pounds of cement per cubic yard.</li> </ol>
<b>23-4.9</b>	<ol style="list-style-type: none"> <li>Added poles to be approved by City TSSL prior to installation.</li> <li>Updated wind speed to withstand to 110 miles per hour.</li> <li>Added pole height for residential areas (12 feet) or 16 feet for non-residential areas.</li> </ol>
<b>23-4.17</b>	<ol style="list-style-type: none"> <li>Entire subsection was revised to LED spacing and specifications.</li> <li>Updated Local and Major Mid-Block Single Luminaire to 30 Watt maximum and Dual Luminaires to 40 Watt (each) maximum and removed Major/Local intersection luminaire.</li> <li>Updated BUG Ratings and Correlated Color Temperature to remain at 3000K only.</li> <li>Removed lux for measurement and only using footcandle (fc).</li> </ol>
<b>23-4.18</b>	<ol style="list-style-type: none"> <li>Added the PEC shall meet the requirements listed in section 23-3.17 for standard luminaries and shall be OSHA NRTL "listed".</li> </ol>
<b>23-4.19</b>	<ol style="list-style-type: none"> <li>Eliminated from specifications.</li> </ol>
<b>25-2.2</b>	<ol style="list-style-type: none"> <li>Deleted subsection "D" and "E", Galvanized Pipe and Fittings, respectively.</li> <li>Under subsection K.2, deleted "galvanized" and replaced with "PVC schedule 80 or Brass" for backflow preventer pipe and fittings.</li> </ol>
<b>25-3.2</b>	<ol style="list-style-type: none"> <li>Under subsection F.3, deleted reference to "galvanized steel threaded pipe".</li> <li>Under subsection I, deleted reference to "galvanized steel pipe".</li> </ol>
<b>27-2</b>	<ol style="list-style-type: none"> <li>Updated to reference submittal checklists for various types of plan submittals</li> </ol>
<b>31-13</b>	<ol style="list-style-type: none"> <li>Remove entire section 31-13, "Qualified Product List (QPL)" from Standard Specifications.</li> </ol>
<b>33-17.1</b>	<ol style="list-style-type: none"> <li>Revise "Section 4.3" reference in section (l) to "Section 4.4".</li> </ol>
<b>33-17.2</b>	<ol style="list-style-type: none"> <li>Revise section (h) in part to read "...conform to AWWA C900-16 latest edition for 4" to 60..."</li> <li>Revise "C900 and C905" references in section (j) to "C605 and C900".</li> <li>Revise "Section 4.3" reference in section (m) to "Section 4.4".</li> </ol>

<b>33-18.1</b>	1. Revise "AWWA A21.11-1972" reference in section (i) to "AWWA A21.11".
<b>34-6</b>	<ol style="list-style-type: none"> <li>1. Revise section name to, "Trench and Structure Excavation, and Backfill."</li> <li>2. Add Section 34-6.1 General.</li> <li>3. Add Section 34-6.2 Trench and Structure Excavation.</li> <li>4. Delete Section 34-6.2 Trench Bottom.</li> </ol>
<b>34-7</b>	<ol style="list-style-type: none"> <li>1. Revise Section name to, "Foundation, Bedding, Backfilling and Compaction of Trenches."</li> <li>2. Add Section 34-8.1, "Foundation and Bedding to Section 34-8.4 Final Backfill."</li> </ol>

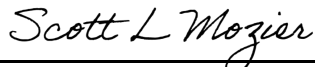
Reviewed and Approved:



Andrew Benelli, P.E.  
City Engineer

March 5, 2021

Date



Scott Mozier, P.E.  
Public Works Director

March 12, 2021

Date

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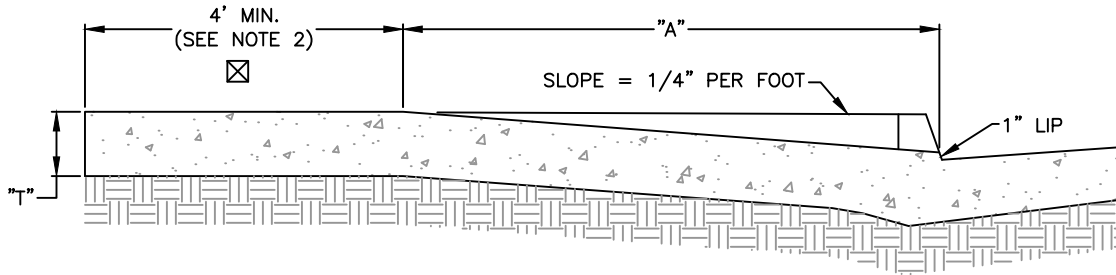
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API-4	Details for Modified Streets
<b>API-5</b>	<b>Intersection Details for Modified Streets (Local and ½ mile Local)</b>
<b>API-6</b>	<b>Van Ness Extension – Herndon Avenue to San Joaquin River Bluff</b>
<b>API-7</b>	<b>Minnewawa Avenue – Fancher Creek to California Avenue</b>
<b>API-8</b>	<b>Minnewawa Avenue – California Avenue to Butler Avenue</b>
<b>API-9</b>	<b>Minnewawa Avenue – Butler Avenue to Tulare Avenue</b>
<b>API-10</b>	<b>Downtown Concrete Sidewalk Aesthetic Treatment – Sidewalk Aesthetic Boundary</b>
<b>API-11</b>	<b>Downtown Concrete Sidewalk Aesthetic Treatment – Sidewalk Pattern</b>

## RECYCLED WATER MAINS STANDARD DRAWINGS

<b>NO.</b>	<b>TITLE OF DRAWING</b>
<b>RW-1</b>	<b>Recycled Water Main Identification</b>
RW-2	Recycled Water Valve and Valve Box
RW-3	Recycled Water Valve Stem Extension

RW-4	1" Service Connection & Meter Box Installation
RW-5	1-1/2" & 2" Service Connection & Meter Box Installation
<b>RW-6</b>	<b>4", 6", 8" Recycled Water Service</b>
<b>RW-7</b>	<b>Temporary 2" Recycled Water Blow-Off</b>
<b>RW-8</b>	<b>No Longer Used – See RW-8A and RW-8B</b>
<b>RW-8A</b>	<b>Recycled Water Blow-Off Assembly (PVC or Ductile Iron Main)</b>
<b>RW-8B</b>	<b>Recycled Water Blow-Off Assembly (Steel Main)</b>
<b>RW-9</b>	<b>Recycled Water 1" or 2" Air Release/Vacuum Breaker Station</b>
<b>RW-10</b>	<b>Recycled Water 4" Air Release/Vacuum Breaker Station</b>
<b>RW-11</b>	<b>No Longer Used</b>
<b>RW-12</b>	<b>Recycled Water Main Separation Requirements</b>
RW-13	Recycled Water Irrigation Information Sign
RW-14	Recycled Water Remote Control Irrigation Valve Identification
RW-15	Recycled Water Backflow Preventer Identification
RW-16	Recycled Water Irrigation Box Cover Markings
RW-17	Recycled Water Irrigation System Clock Marking
RW-18	General Recycled Water Identification Tag
RW-19	Recycled Water Landscape Irrigation Head Identification
RW-20	Quick Coupling Valve
RW-21	Cross Connection Control Test Station
RW-22	Temporary Potable Water Supply To On-Site Recycled Water System
RW-23	Temporary Potable Water Supply To Recycled Water System
<b>RW-24</b>	<b>Tracer Wire Splice Connection Detail</b>
<b>RW-25</b>	<b>Recycled Water Commercial Truck Fill Station</b>
<b>RW-26</b>	<b>Air Release/Vacuum Breaker Valve Enclosure</b>

☒ = 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.

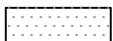
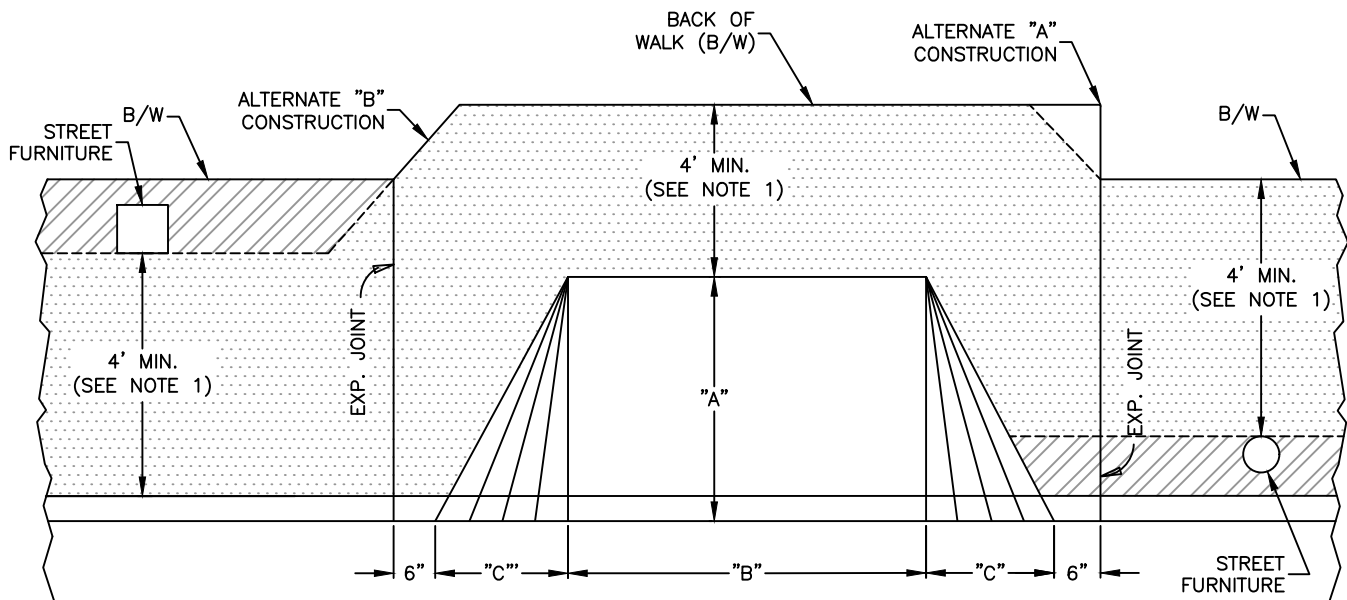
"T" = 5" FOR RESIDENTIAL USE, 6" FOR COMMERCIAL.

"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. ALSO SEE NOTE 1.



STREET FURNITURE SHALL BE INSTALLED IN ITS TYPICAL LOCATION AND 4' MIN. ADA PATH OF TRAVEL SHALL BE PROVIDED AROUND.

#### 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  
MAR. 2021 (A.7)

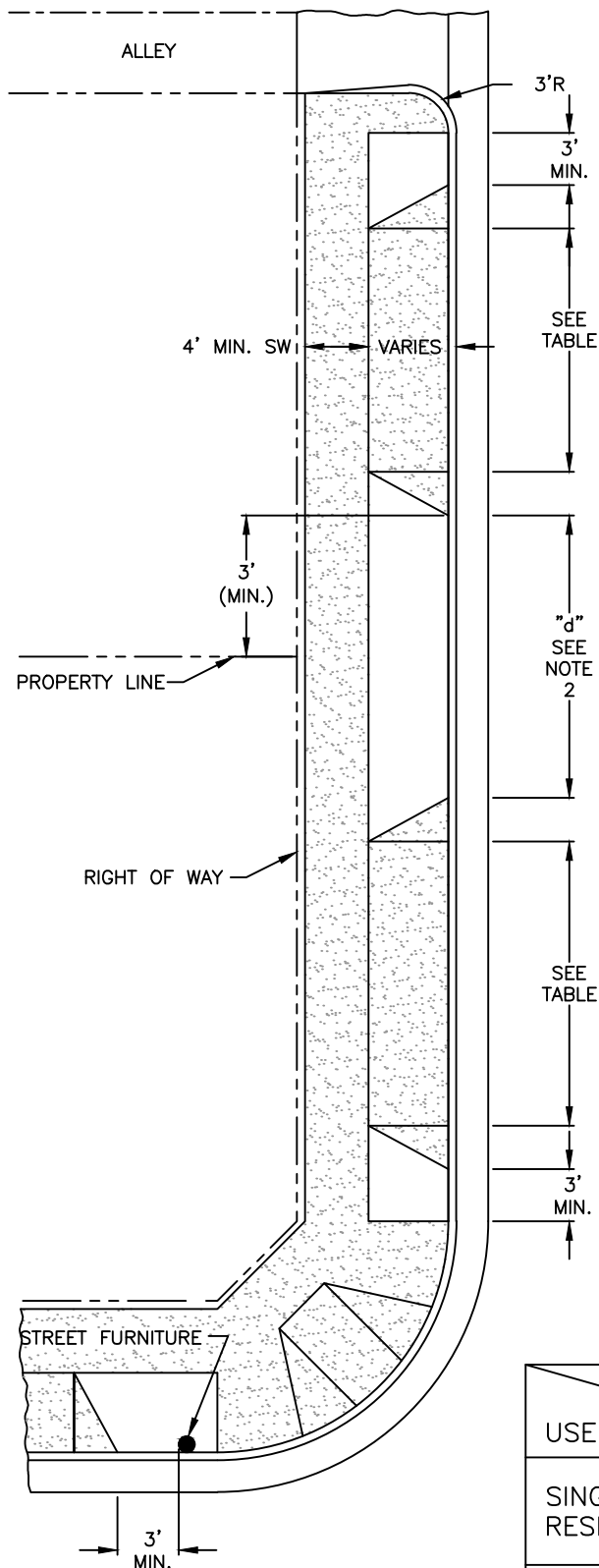
CITY OF FRESNO

P-4



# 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 40' 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 16', NOT 15'. EXCEPTION: SINGLE FAMILY RESIDENTIAL.
7. 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.
8. 16' MIN WHEN TRASH ENCLOSURE ON-SITE (REVIEWED ON A CASE BY CASE BASIS).
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).

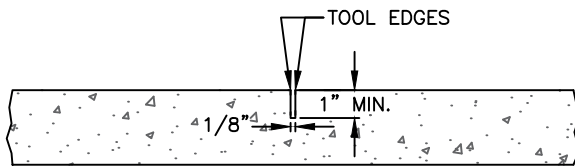


## DRIVEWAY OPENING CHART

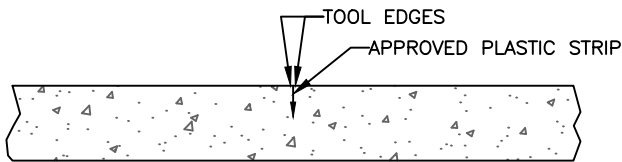
USE TYPE \ STREET TYPE	MAJOR STREET	LOCAL STREET	MAJOR STREET	LOCAL STREET
	MINIMUM		MAXIMUM	
SINGLE-FAMILY RESIDENTIAL DRIVE ⑨	18'	12'	24' ③	35'
ALL OTHER TWO-WAY	30'	24'	35' ④	35'
ONE-WAY ENTRANCE	18'	⑧ 15' ⑥	24'	24'
ONE-WAY EXIT	12' ⑧	12' ⑧	24'	24'

⑨ NOTE APPLIES TO CONDITION

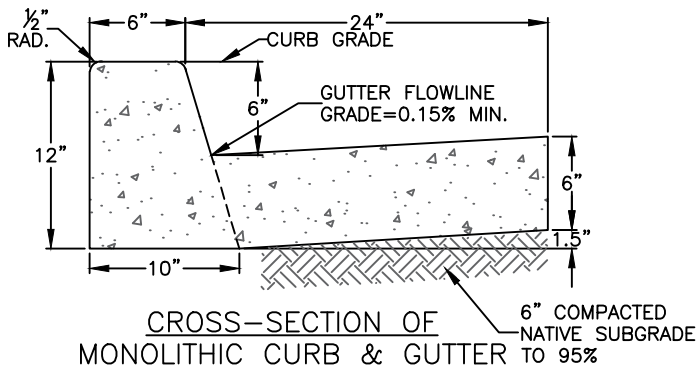




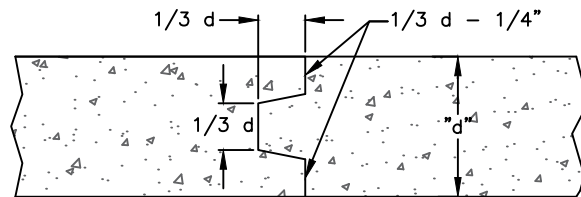
WEAKENED-PLANE JOINT DETAIL



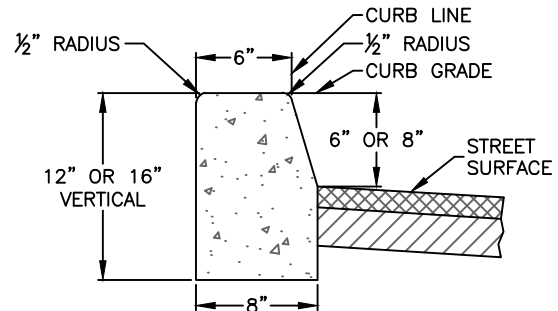
WEAKENED-PLANE JOINT DETAIL  
ALTERNATE DESIGN



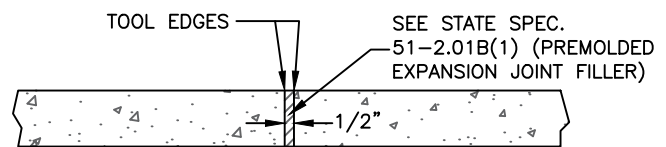
CROSS-SECTION OF  
MONOLITHIC CURB & GUTTER



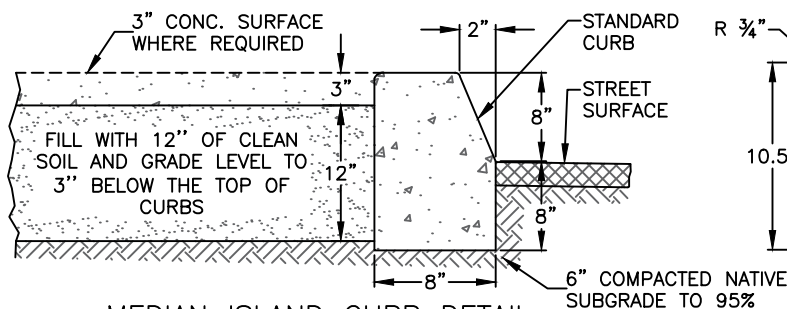
CONSTRUCTION JOINT DETAILS



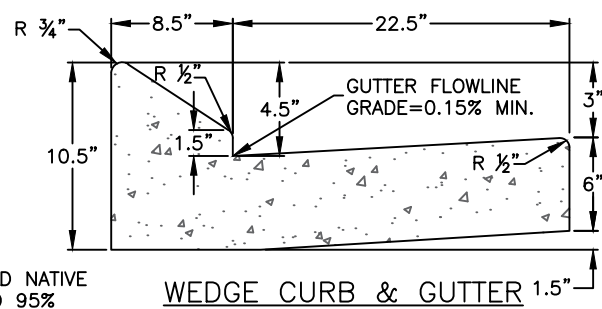
CROSS-SECTION OF CURB



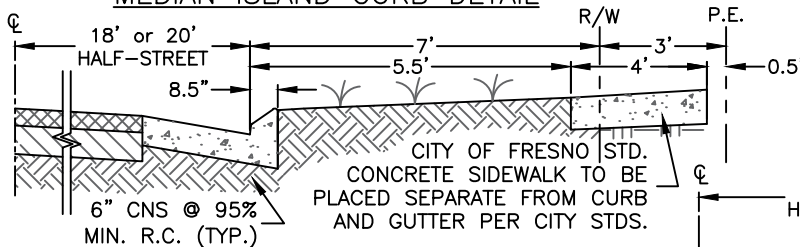
EXPANSION JOINT DETAIL



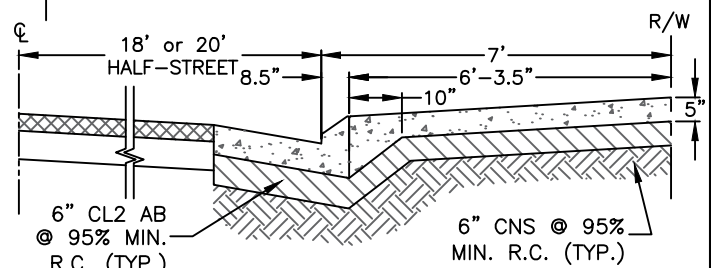
MEDIAN ISLAND CURB DETAIL



WEDGE CURB & GUTTER  
DETAIL

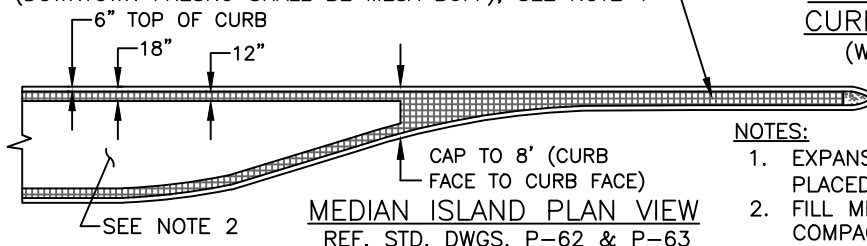


RESIDENTIAL STREET WITH  
WEDGE CURBS



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

MEDIAN ISLAND CAP AND 12" MAINTENANCE BAND SHALL BE 3" THICK CONCRETE STAMPED IN A 12" SLATE PATTERN & COLORED WITH DAVIS COLORS SAN DIEGO BUFF (DOWNTOWN FRESNO SHALL BE MESA BUFF); SEE NOTE 1



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

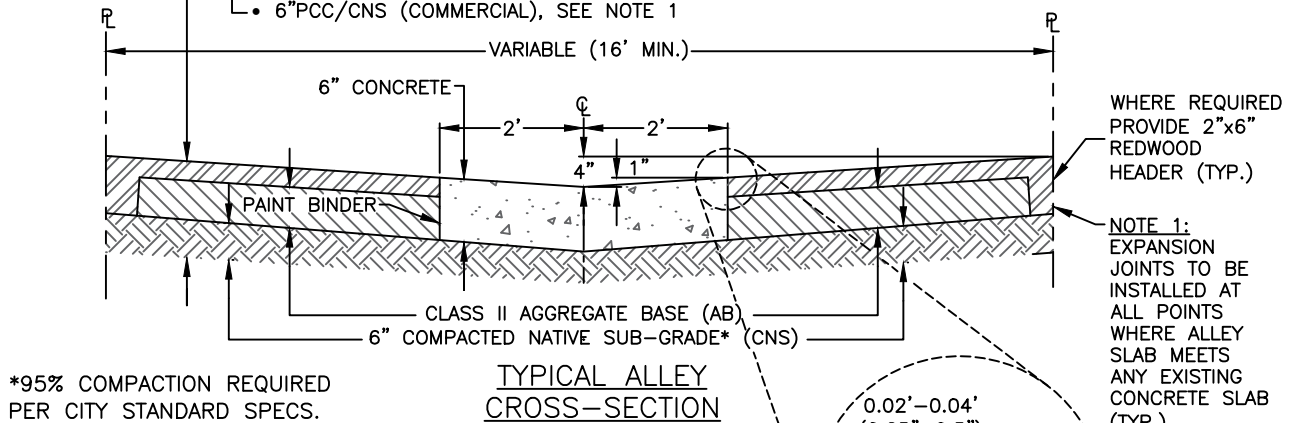
NOTES:

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

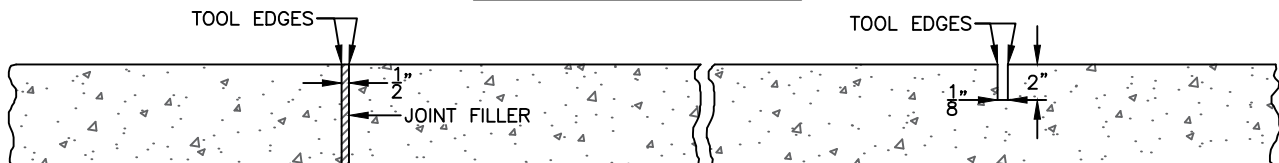
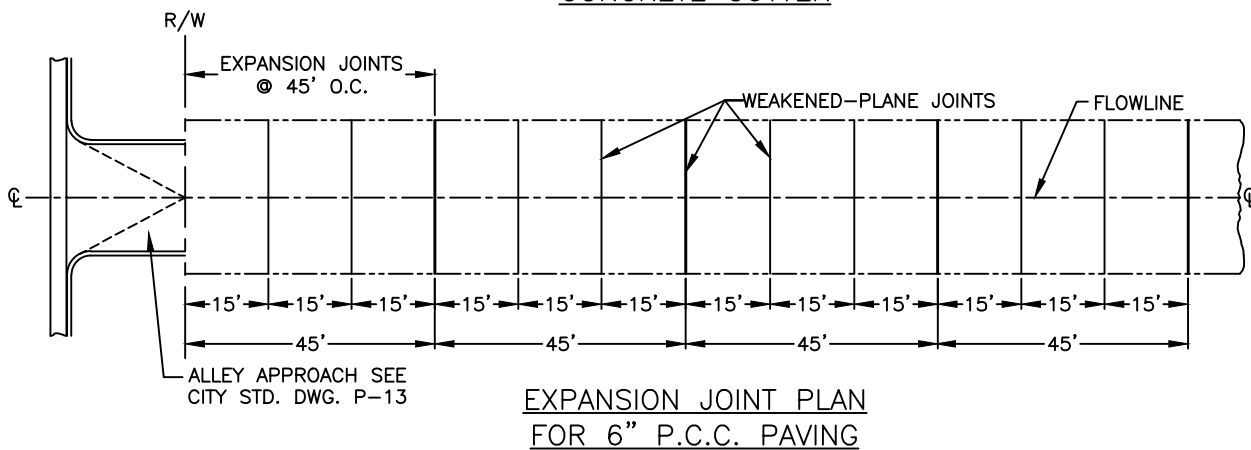
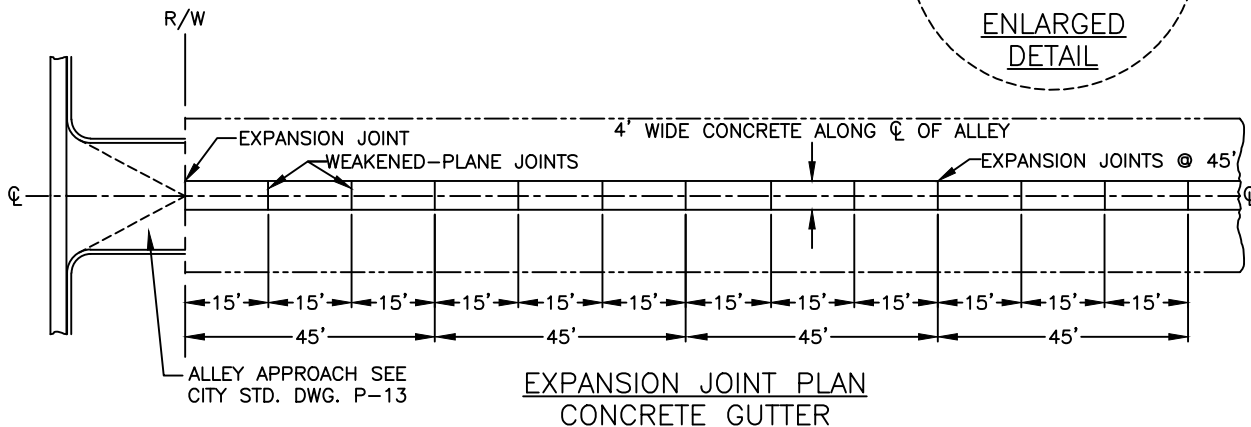
ALTERNATE SECTIONS:

(BUILD TO THE REQUIREMENTS OF THE HIGHEST ADJACENT USE)

- 2"AC/4"AB/CNS WITH CONCRETE GUTTER (RESIDENTIAL)
- 3"AC/CNS W/O CONCRETE GUTTER (RESIDENTIAL, LONG. SLOPE  $\geq 0.20\%$ )
- 4"AC/CNS WITH CONCRETE GUTTER (COMMERCIAL)
- 6"AC/CNS W/O CONCRETE GUTTER (COMMERCIAL, LONG. SLOPE  $\geq 0.20\%$ )
- 6"PCC/CNS (COMMERCIAL), SEE NOTE 1



\*95% COMPACTION REQUIRED PER CITY STANDARD SPECS.



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  
MAR. 2021 (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			

REF. & REV.	<b>CITY OF FRESNO</b> DEPARTMENT OF PUBLIC WORKS	PROJ. ID. _____ FUND NO. _____ ORG. NO. _____	SHEET NO. _____ OF _____ SHEETS
PW FILE NO. _____ PLAT NO. _____	<div style="display: flex; justify-content: space-between;"> <span>3/8"</span> <span>5/8"</span> </div>	DR. BY _____ CH. BY _____ DATE _____ SCALE _____	

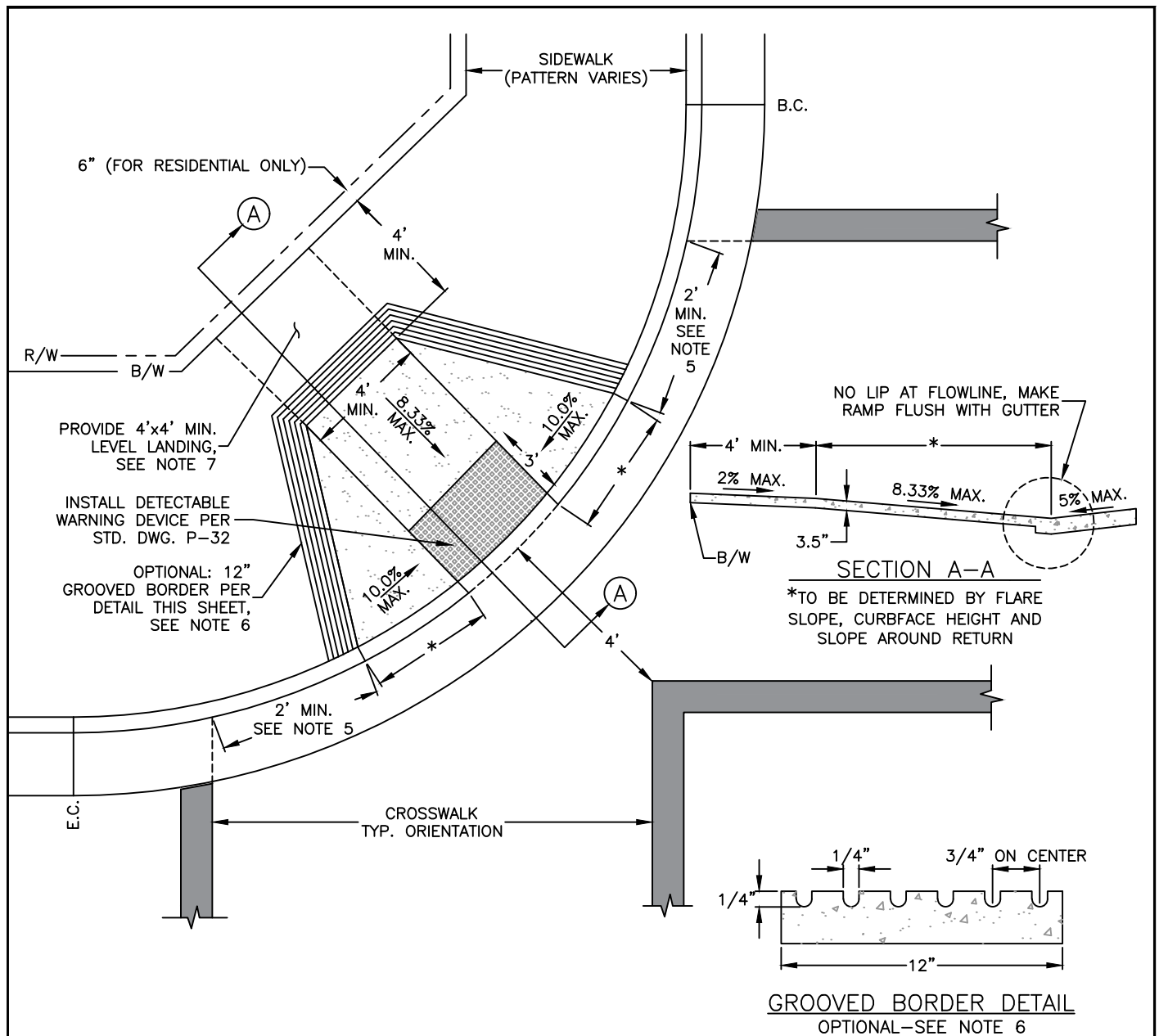
TITLE BLOCK 'A'

PW FILE NO. _____ PROJ. ID. _____ FUND NO. _____ ORG. NO. _____	<b>CITY OF FRESNO</b> DEPARTMENT OF PUBLIC WORKS	REVIEWED: OFFICE ENG. _____ CITY ENG. _____	SHEET NO. _____ OF _____ SHEETS
REF. & REV.	<div style="display: flex; justify-content: space-between;"> <span>3/8"</span> <span>5/8"</span> </div>	DR. BY _____ CH. BY _____ DATE _____ SCALE _____	

TITLE BLOCK 'B'

		1/3"		
		1/3"		
REV.	DATE	DESCRIPTION	BY	APRVL

REVISION BLOCK



#### NOTES:

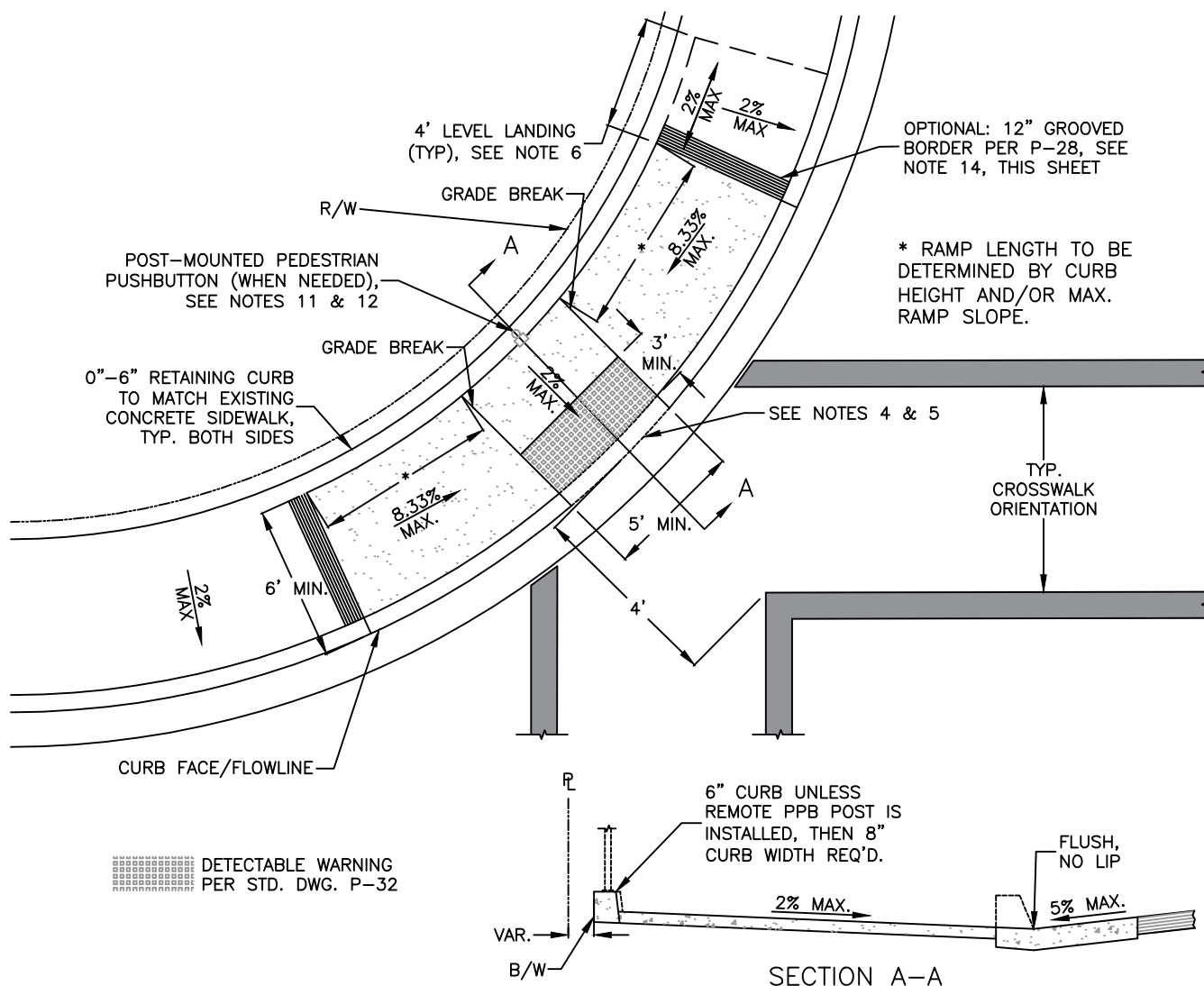
1. TRANSITIONS FROM RAMPS AND LANDING TO WALK, GUTTERS OR STREETS SHALL BE FLUSH AND FREE OF ABRUPT CHANGES.
2. SURFACE OF CURB RAMP AND FLARED SIDES SHALL HAVE A MEDIUM BROOM FINISH TRANSVERSE TO PATH OF TRAVEL AND SHALL BE OF CONTRASTING FINISH TO THAT OF ADJACENT SIDEWALK.
3. RAMP SLOPE SHALL NEVER 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  
MAR. 2021 (A.7)

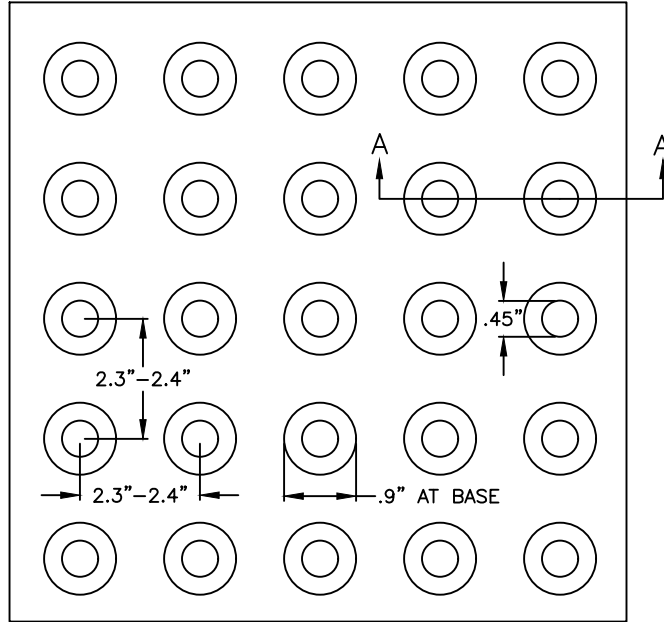
CITY OF FRESNO  
**P-28**



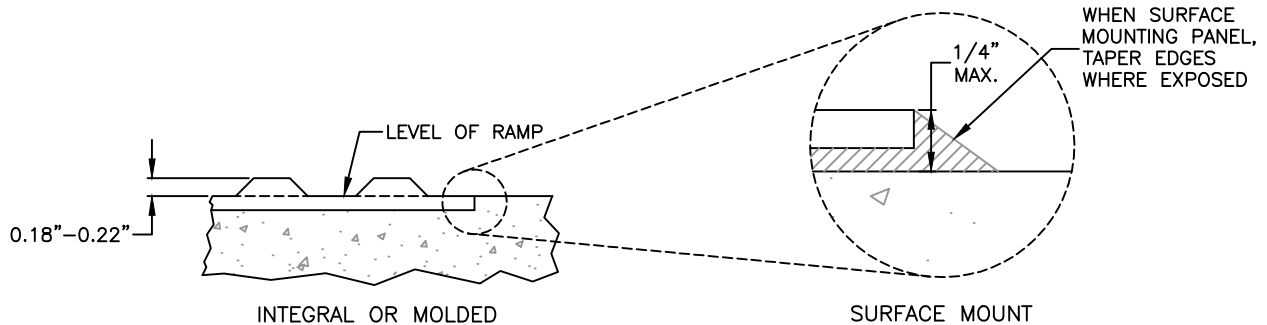


#### NOTES:

- TRANSITIONS FROM RAMPS AND LANDING TO WALK, GUTTERS OR STREETS SHALL BE FLUSH AND FREE OF ABRUPT CHANGES.
- 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.
- RAMP SLOPE SHALL NEVER EXCEED 8.33%.
- THE SLOPE OF ADJOINING GUTTERS, ROAD SURFACE OR ACCESSIBLE ROUTE WITHIN 4' OF THE BOTTOM OF THE RAMP SHALL NOT EXCEED 5% SLOPE.
- (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.
- THE LOWER LANDING AREA LEADING INTO VEHICULAR WAY SHALL TERMINATE WITHIN THE MARKED CROSSING.
- PROVIDE A MIN. 4' DEEP LEVEL LANDING ON UPPER ENDS AND OVER FULL-WIDTH OF RAMP. MAINTAIN A 2% MAX. SLOPE, ANY DIRECTION.
- 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.
- CURB RAMPS SHALL BE LOCATED OR PROTECTED TO PREVENT THEIR OBSTRUCTION BY PARKED CARS.
- 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.
- 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.
- 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.
- 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.



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.

THIS STANDARD IS  
NO LONGER USED

NO LONGER USED  
SEE P-33A, P-33B & P-33C

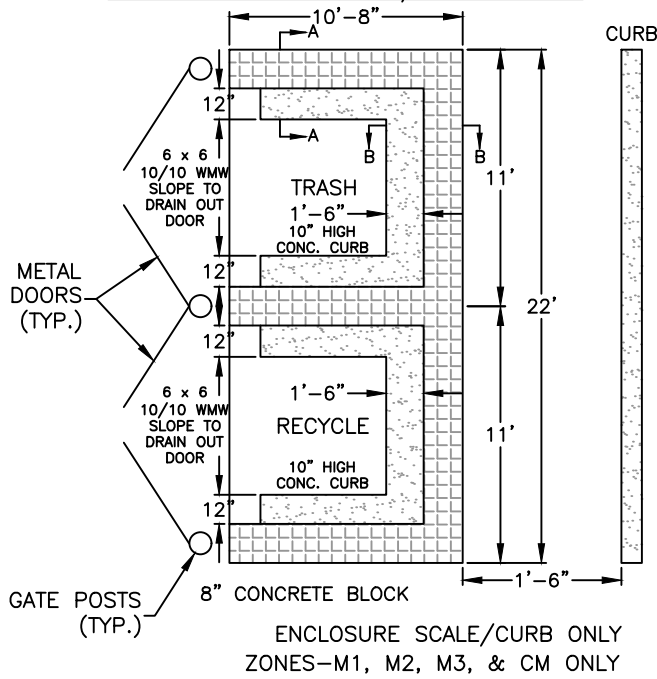
REF. & REV.  
~~AUG. 2010~~  
MAR. 2021 (A.7)

CITY OF FRESNO

P-33

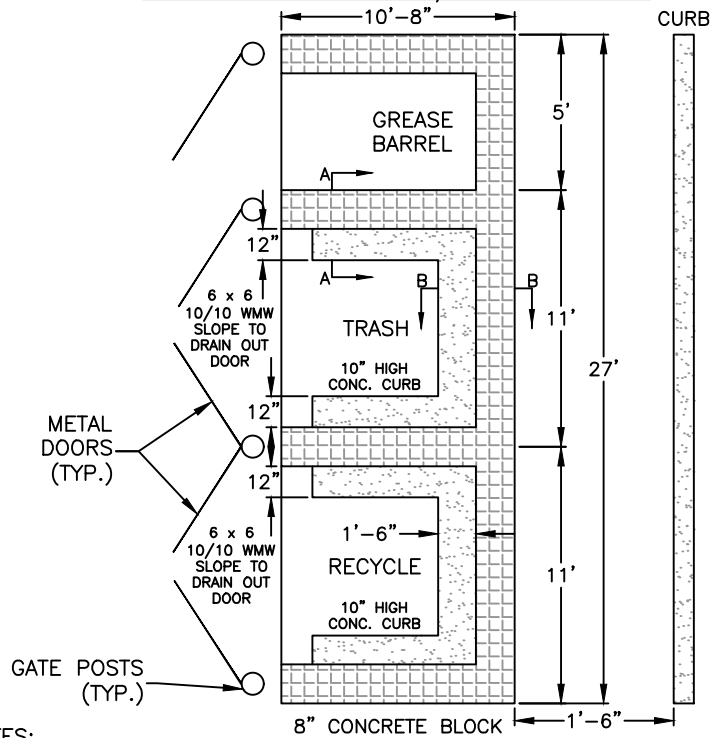


# ENCLOSURE SCALE / STANDARD

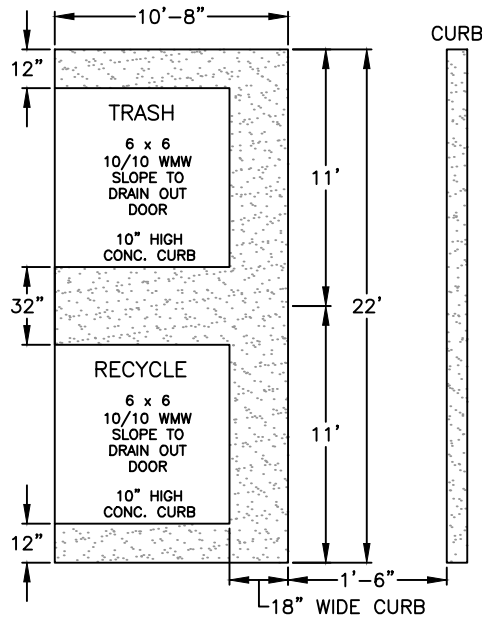


ENCLOSURE SCALE/CURB ONLY  
ZONES-M1, M2, M3, & CM ONLY

# ENCLOSURE SCALE / RESTAURANT

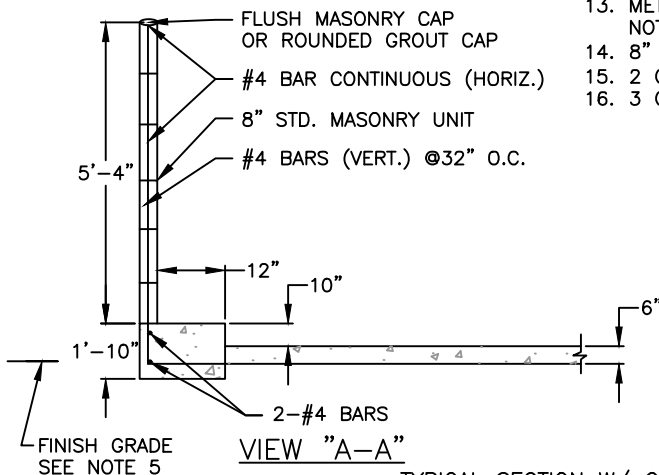


GATE POSTS (TYP.)

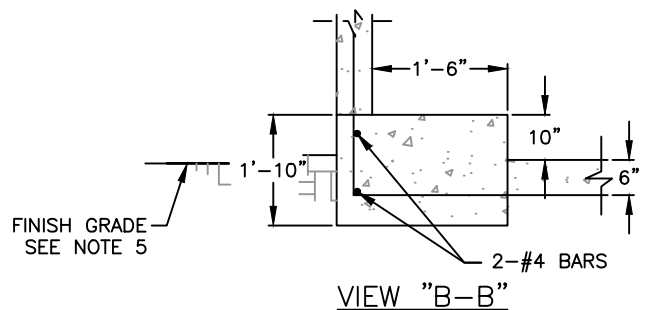


## NOTES:

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.



TYPICAL SECTION W/ CONCRETE BLOCK WALL

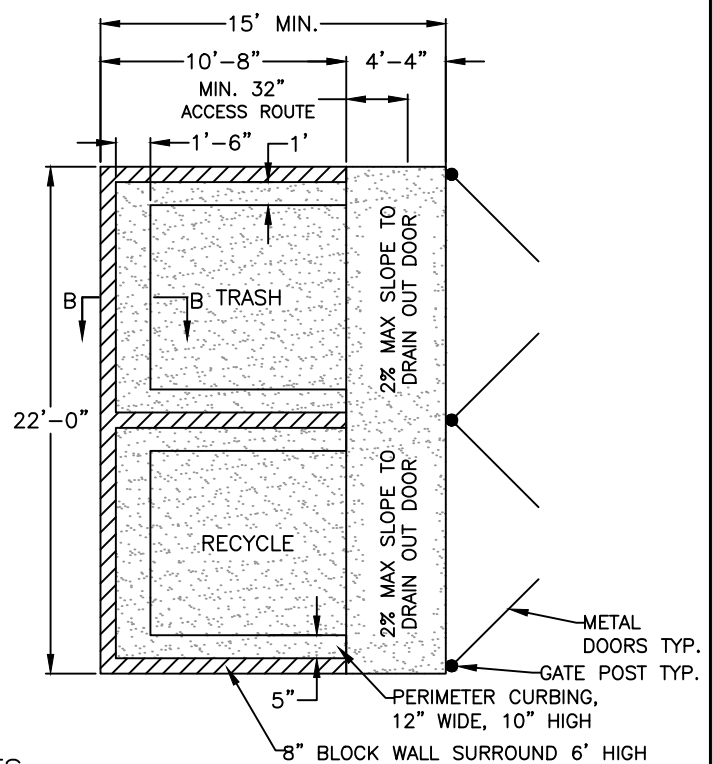


## TYPICAL REFUSE CONTAINER ENCLOSURE DETAILS

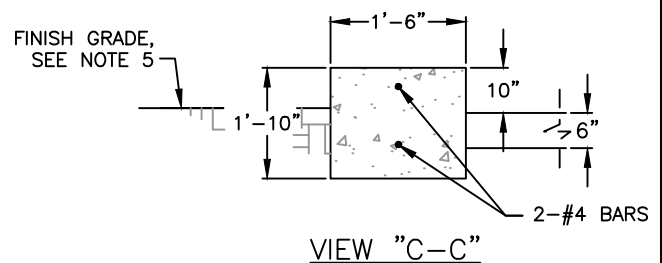
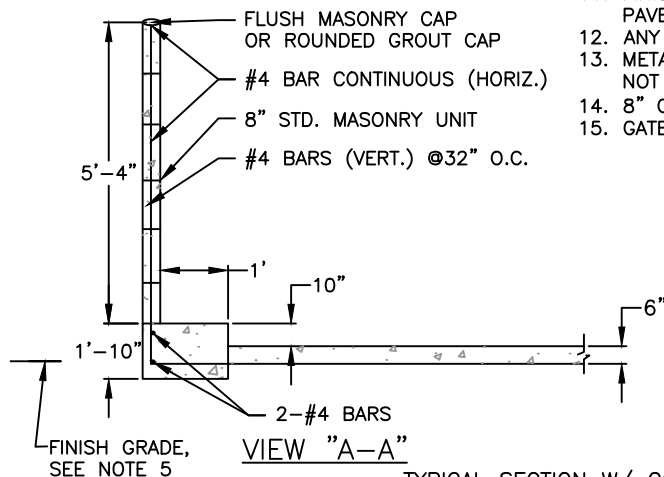
REF. & REV.  
AUG. 2010  
MAR. 2021 (A.7)

CITY OF FRESNO  
P-33A

EXHIBIT "A"  
MODIFIED TRASH/RECYCLING ENCLOSURE

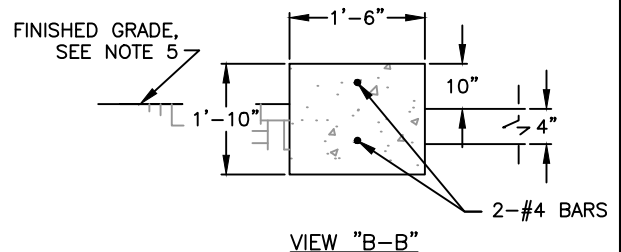
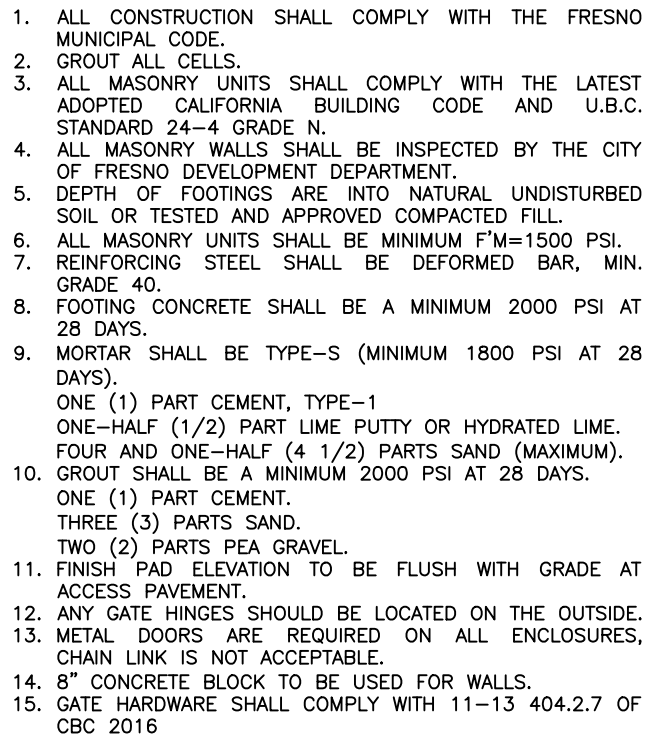


1. ALL CONSTRUCTION SHALL COMPLY WITH THE FRESNO MUNICIPAL CODE.
2. GROUT ALL CELLS.
3. ALL MASONRY UNITS SHALL COMPLY WITH THE LATEST ADOPTED CALIFORNIA BUILDING CODE AND U.B.C. STANDARD 24-4 GRADE N.
4. ALL MASONRY WALLS SHALL BE INSPECTED BY THE CITY OF FRESNO DEVELOPMENT DEPARTMENT.
5. DEPTH OF FOOTINGS 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. GATE HARDWARE SHALL COMPLY WITH 11-13 404.2.7 OF CBC 2016



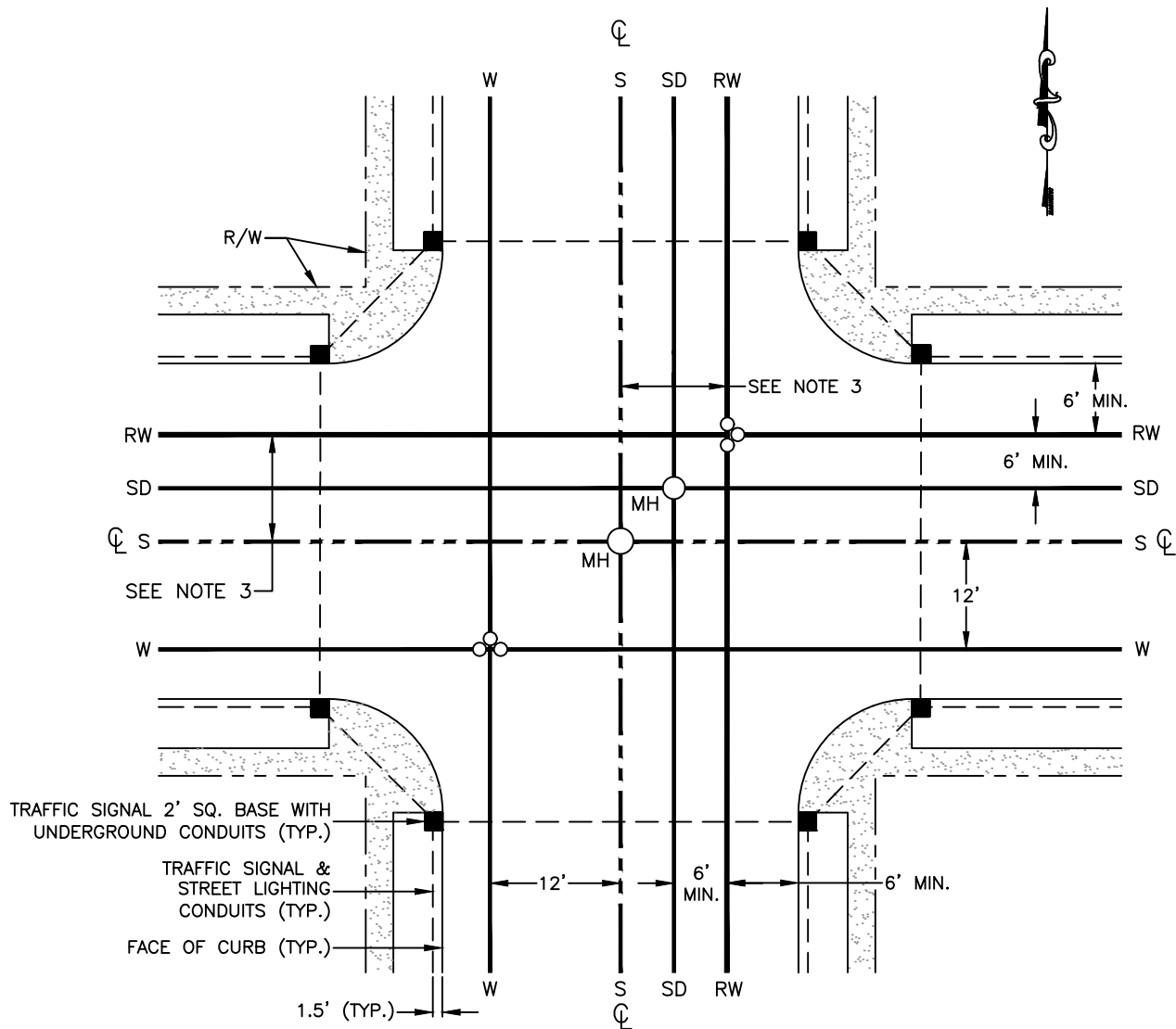
CITY OF FRESNO  
P-33B

NOTES:



MULTI-FAMILY TYPICAL REFUSE CONTAINER  
ENCLOSURE DETAILS - EXHIBIT C

CITY OF FRESNO  
P-33C

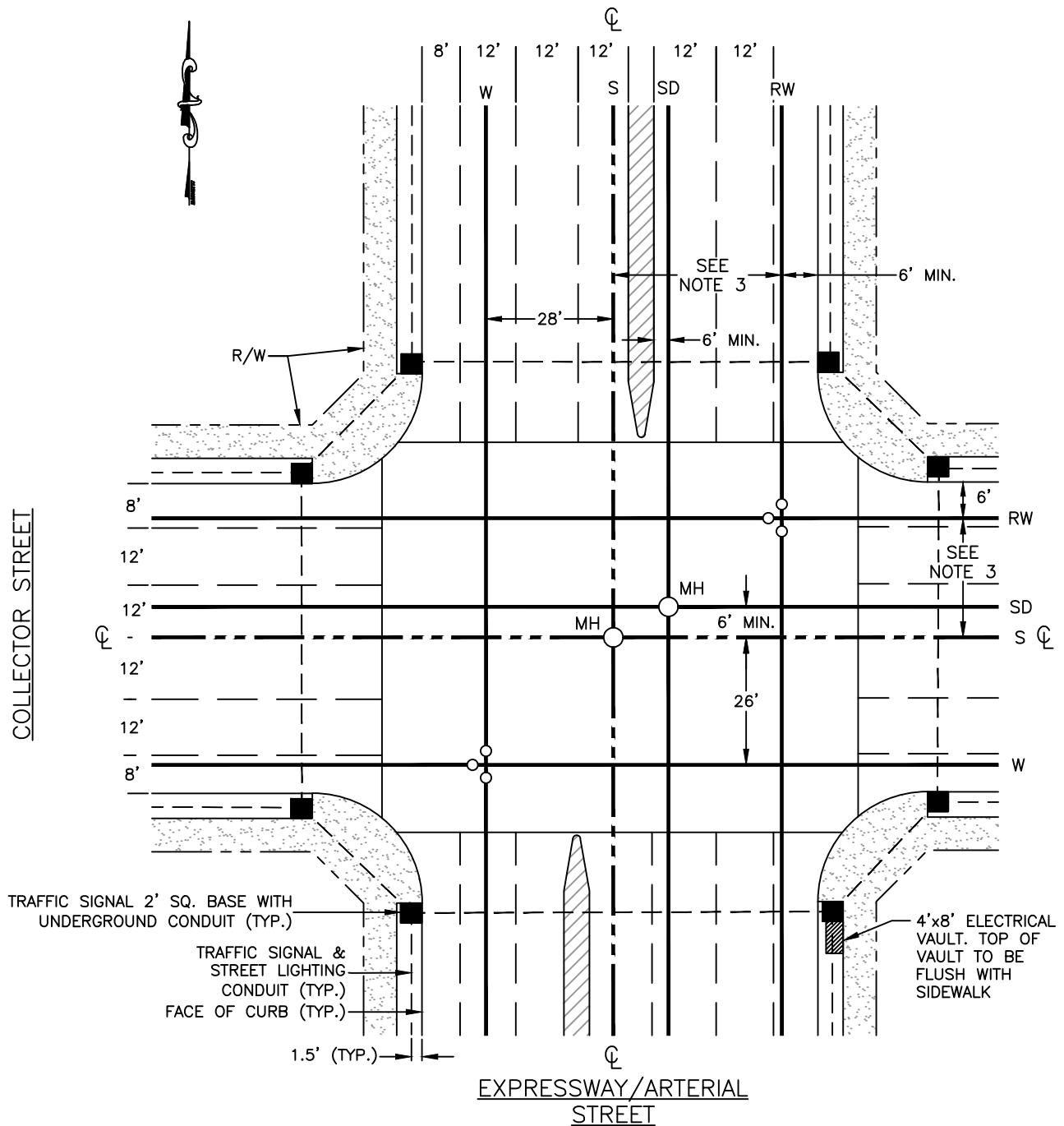


#### NOTES:

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  
 CL - CENTERLINE OF PROPOSED STREET  
 R/W - RIGHT OF WAY

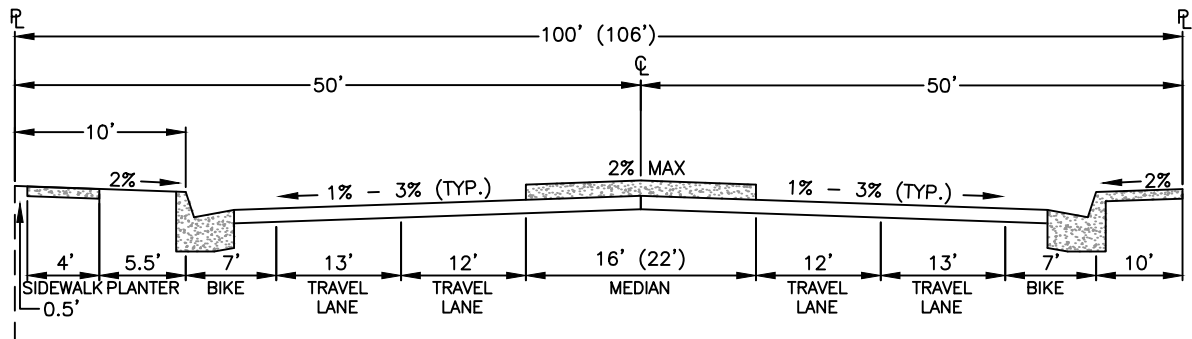


#### NOTES:

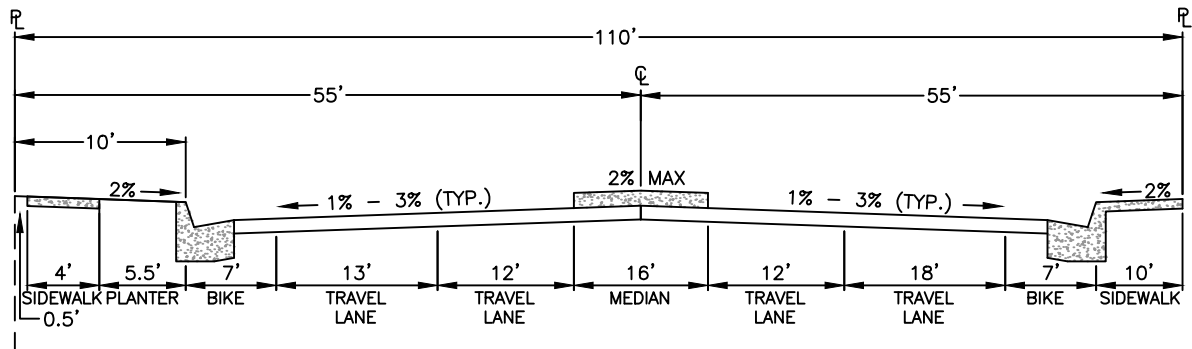
1. THIS "STANDARD" IS A GUIDE ONLY AND DEVIATIONS WILL BE ACCEPTABLE WHERE CONDITIONS DICTATE.
2. DIMENSIONS SHOWN ARE DESIRABLE, BUT DO NOT GOVERN. THE INTENTION IS TO SHOW THE RELATIVE POSITION OF ALL UTILITIES.
3. REFERENCE STD. DWG. RW-12 FOR MINIMUM SEPARATION REQUIREMENTS.

#### LEGEND

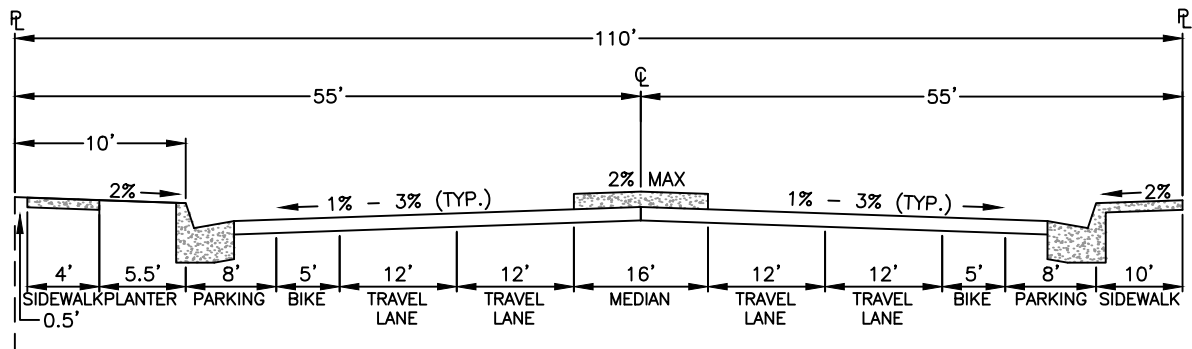
S - SANITARY SEWER  
SD - STORM SEWER  
W - WATER MAIN  
RW - RECYCLED WATER  
MH - MANHOLE  
CL - CENTERLINE OF PROPOSED OFFICIAL PLAN LINE OR DIRECTOR'S DETERMINATION  
R/W - PROPERTY LINE



CASE 1: DIVIDED ARTERIAL – NO PARKING



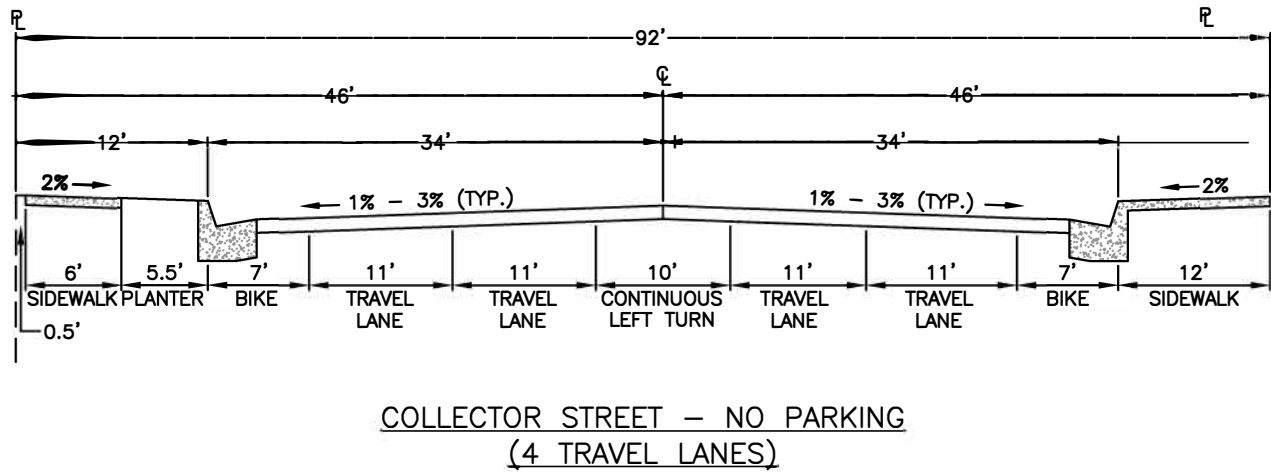
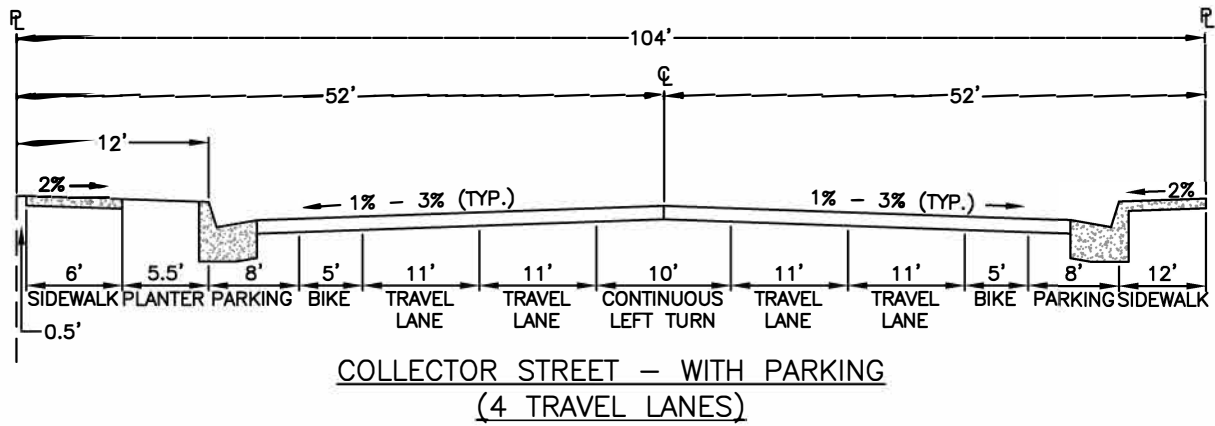
CASE 2: DIVIDED ARTERIAL – NO PARKING  
AND WIDER OUTSIDE TRAVEL LANE



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.



**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 JN  
MAR. 2021 (A.7)

CITY OF FRESNO  
P-53

THIS STANDARD IS  
NO LONGER USED

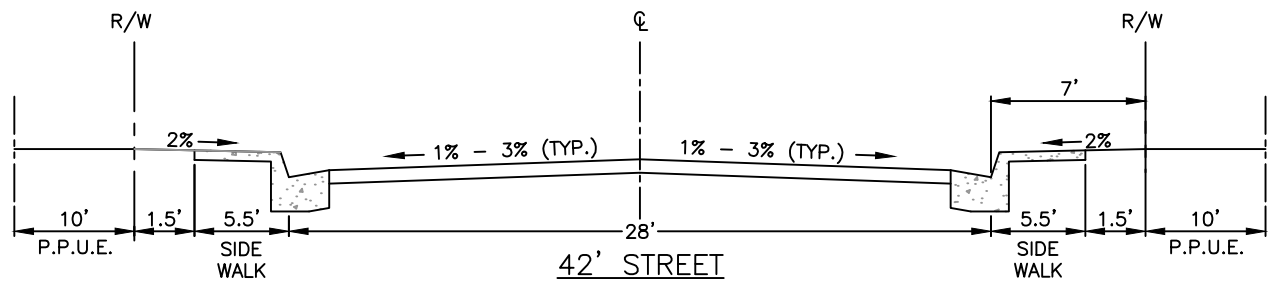
NO LONGER USED  
SEE P-56A

REF. & REV.  
~~JUNE 2015~~  
MAR. 2021 (A.7)

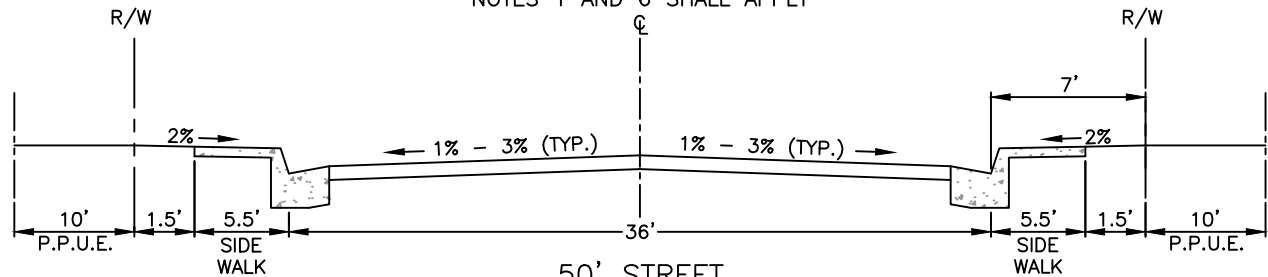
CITY OF FRESNO

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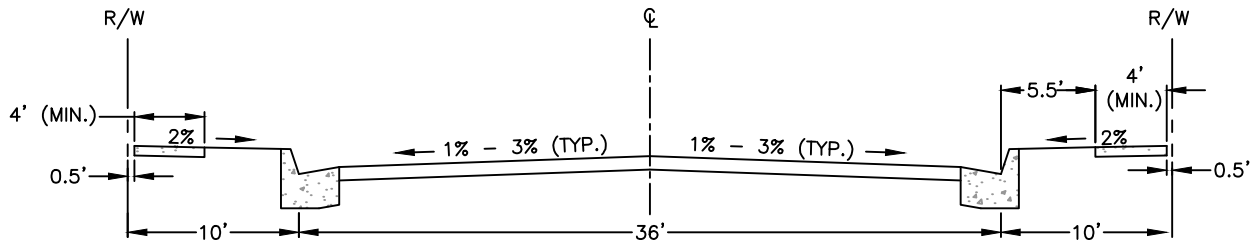




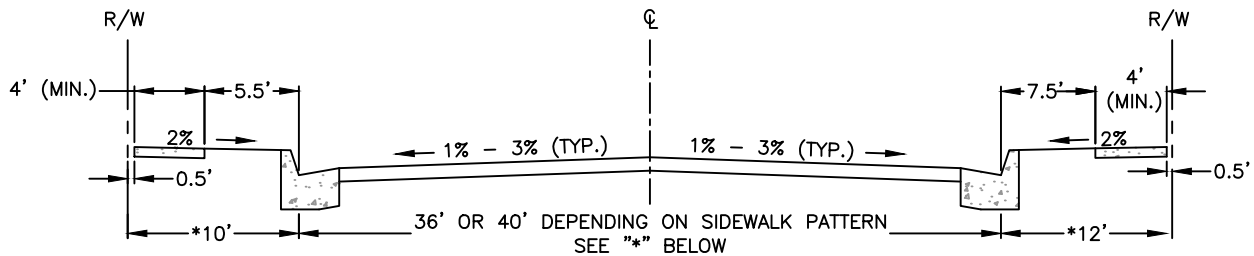
ONLY ALLOWED ON STREETS WITH HOMES ON ONE SIDE  
OF THE ROADWAY & PARKING ON ONE SIDE ONLY  
NOTES 1 AND 6 SHALL APPLY



NOTES 1, 5 AND 6 SHALL APPLY



NOTE 2 SHALL APPLY



\*60' STREETS MAY HAVE 10' OR 12' SIDEWALK PATTERNS  
NOTE 2 SHALL APPLY

#### NOTES:

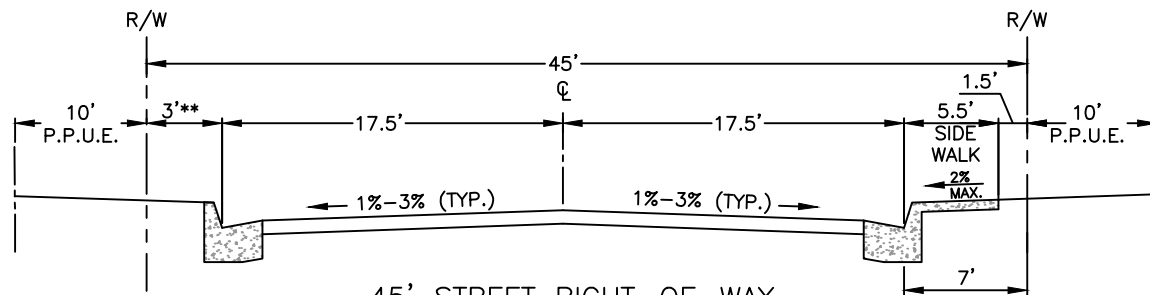
1. FOR DRIVEWAY DETAIL SEE STREET SECTIONS THAT MAY BE USED, SEE P.W. DWGS. P-4 AND P-6.
2. FOR DRIVEWAY DETAIL SEE STREET SECTIONS THAT MAY BE USED, SEE P.W. STD. DWGS. P-1, P-2, P-3, AND P-6.
3. OFFSET CROWN REQUIRES APPROVAL OF THE ENGINEER; DEVIATIONS FROM STANDARDS REQUIRE APPROVAL OF THE ENGINEER.
4. 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.
5. 1,500 FOOT MAXIMUM BLOCK LENGTH
6. IN OTHER THAN SINGLE FAMILY AREAS, THIS STREET SECTION CAN ONLY BE USED ON CUL-DE-SACS AND ON BLOCK STREETS NOT TO EXCEED 800 FEET IN LENGTH.
7. FRESNO IRRIGATION DISTRICT FACILITIES SHALL BE LOCATED IN A SEPARATE EASEMENT OUT OF THE STREET AREA.

## LOCAL STREET CROSS-SECTION

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.

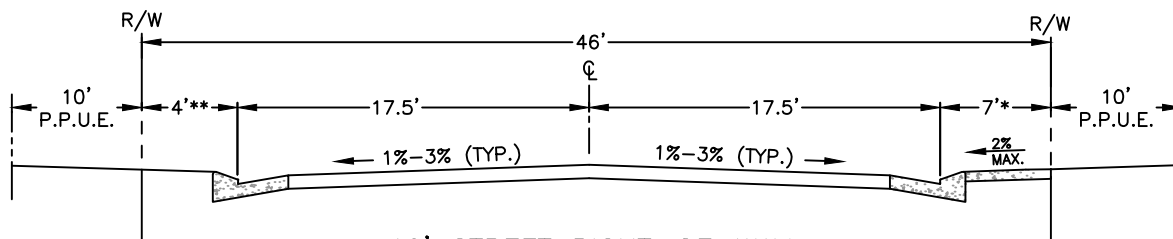
REF. & REV.  
AUG. 2010  
JUNE 2015  
MAR. 2021 (A.7)

CITY OF FRESNO  
P-56A



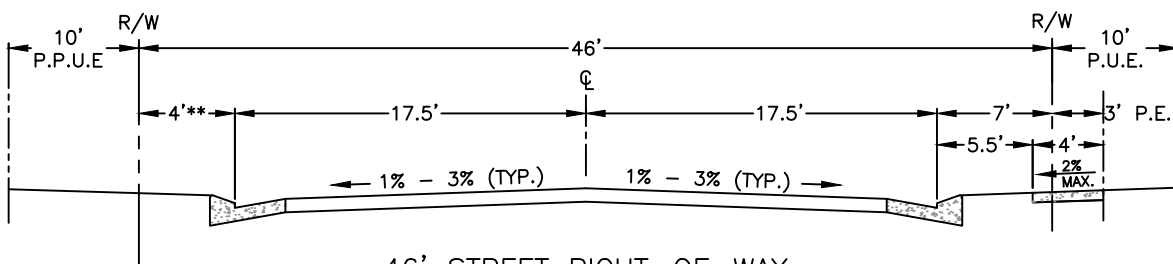
45' STREET RIGHT-OF-WAY

SEE NOTE 1



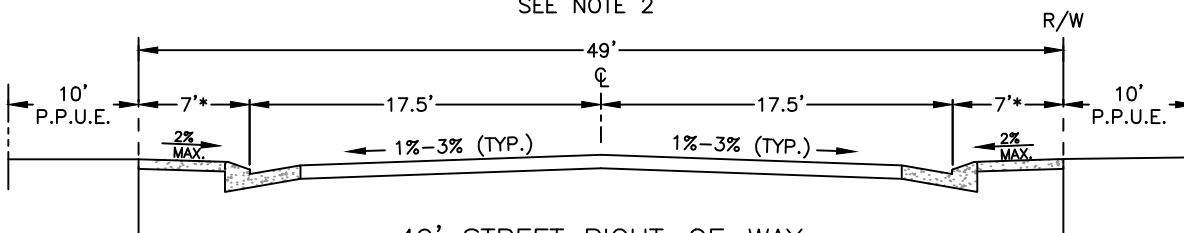
46' STREET RIGHT-OF-WAY  
WITH WEDGE CURB

SEE NOTE 1



46' STREET RIGHT-OF-WAY  
WITH WEDGE CURB

SEE NOTE 2



49' STREET RIGHT-OF-WAY  
WITH WEDGE CURB

SEE NOTE 1

NOTES:

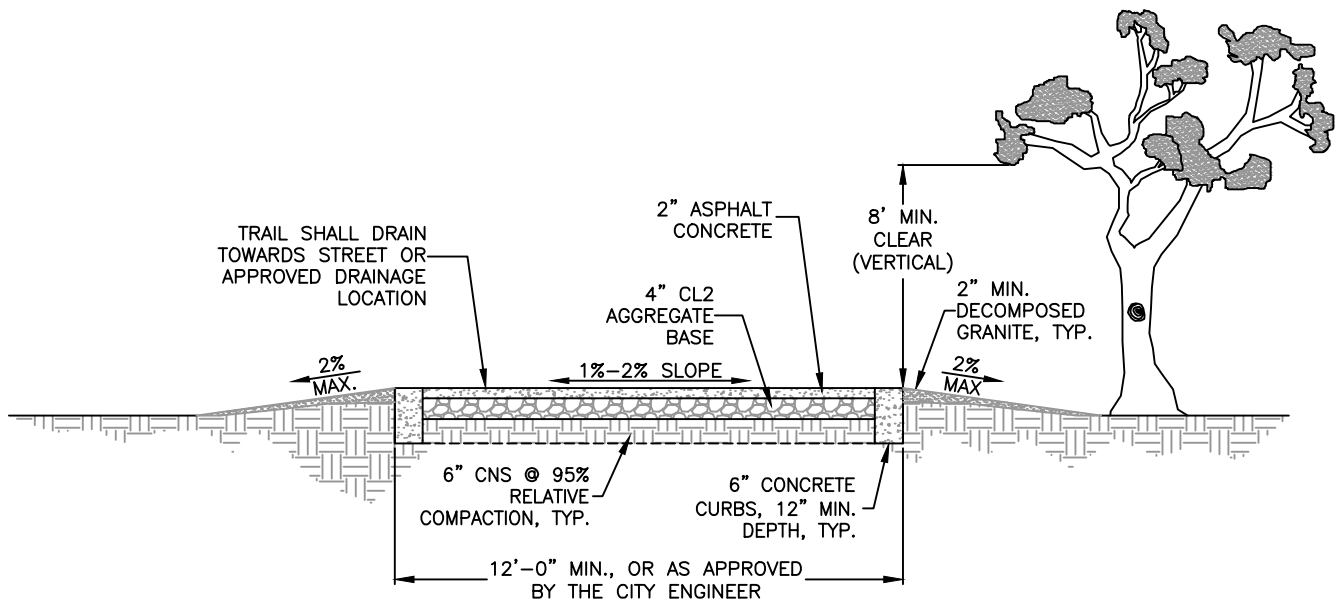
1. FOR DRIVEWAY DETAIL SEE STREET SECTIONS THAT MAY BE USED, SEE P.W. STD. DWGS. P-4 AND P-6.
  2. FOR DRIVEWAY DETAIL SEE STREET SECTIONS THAT MAY BE USED, SEE P.W. STD. DWGS. P-1, P-2, P-3 AND P-6.
  3. OFFSET CROWN DESIGN OR OTHER DEVIATIONS FROM STANDARDS REQUIRE THE APPROVAL OF THE CITY ENGINEER.
  4. SIDEWALKS MAY BE LOCATED PARTIALLY OR FULLY OUTSIDE THE STREET RIGHT-OF-WAY WITH THE DEDICATION OF A PEDESTRIAN EASEMENT.
  5. FRESNO IRRIGATION DISTRICT FACILITIES SHALL BE LOCATED OUTSIDE OF STREET AND PEDESTRIAN EASEMENT AREA.
  6. WEDGE CURB IS NOT ALLOWED IN FRONT OF FIRE HYDRANTS.
  7. 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)**

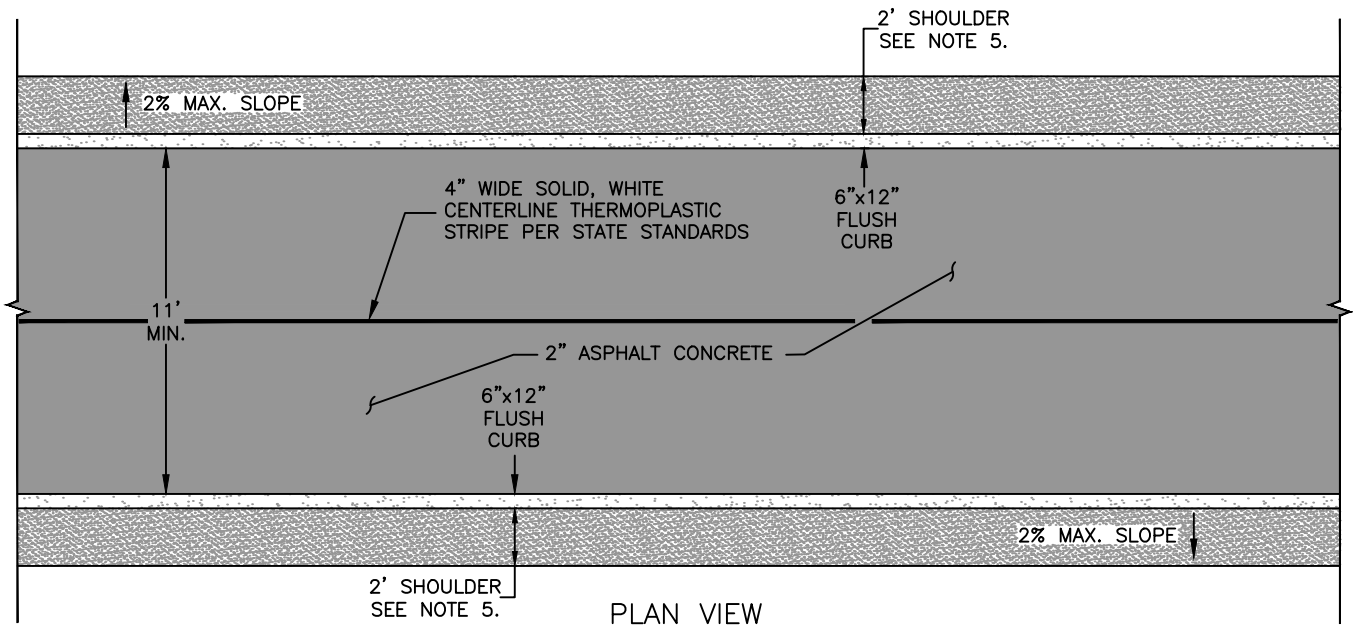
SEE API-4 THRU API-9 FOR S. MINNEWAWA AVE. BETWEEN BUTLER AVE. AND FANCHER CREEK AND FOR VAN NESS EXTENSION BETWEEN HERNDON AVE. AND SAN JOAQUIN RIVER BLUFF.

REF. & REV.  
MAR. 2021 (A7)

CITY OF FRESNO  
**P-56B**



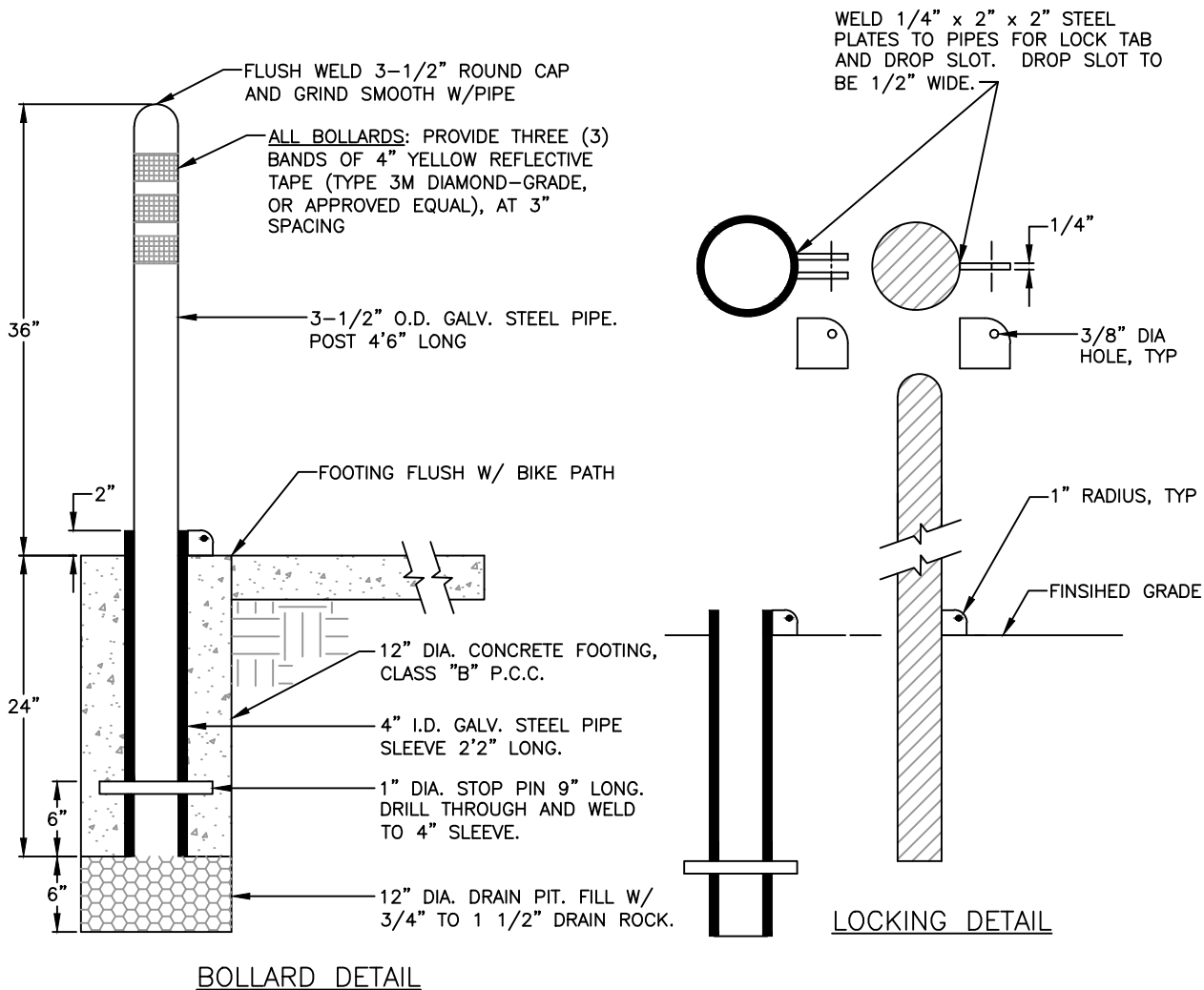
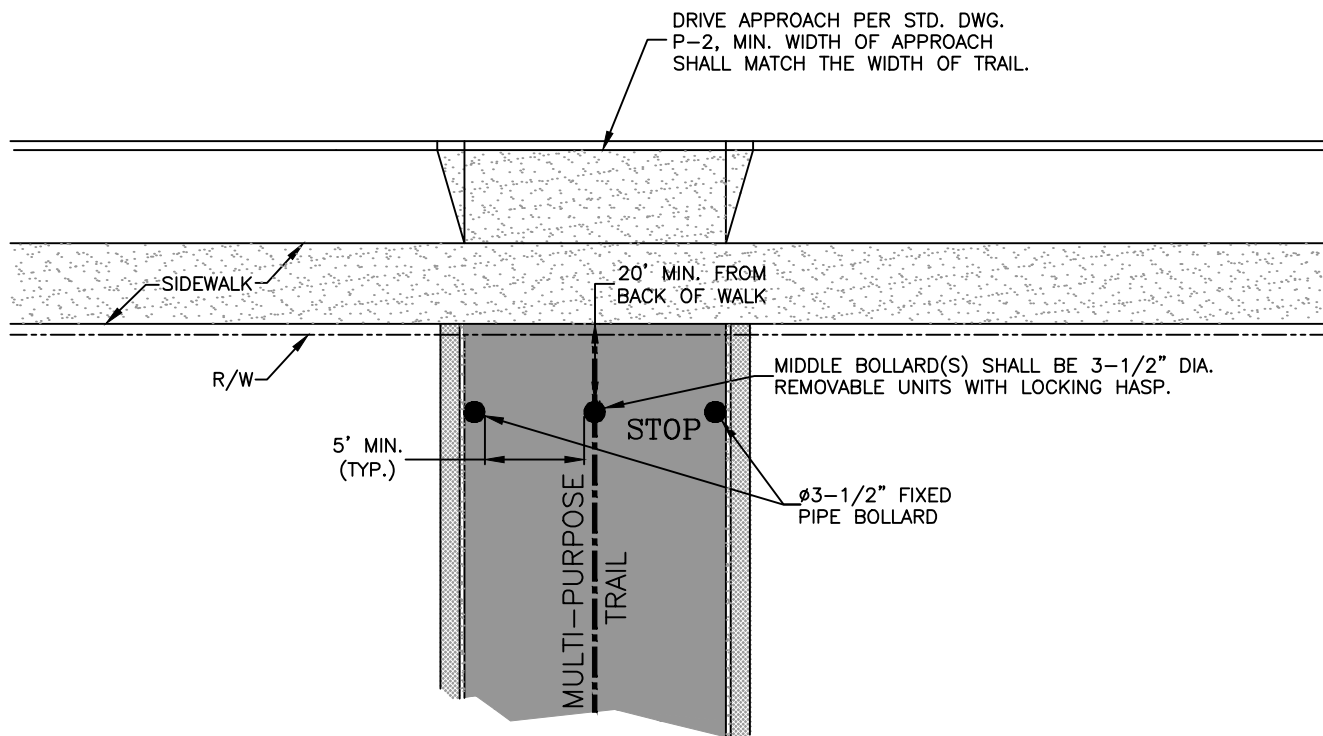
ELEVATION VIEW



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.



-ALL BOLLARDS: PROVIDE THREE (3) BANDS OF 4" YELLOW REFLECTIVE TAPE (TYPE 3M DIAMOND-GRADE, OR APPROVED EQUAL), AT 3" SPACING

-3-1/2" O.D. GALV. STEEL PIPE.  
POST 4'6" LONG

—FOOTING FLUSH W/ BIKE PATH

- 12" DIA. CONCRETE FOOTING,  
CLASS "B" P.C.C.

4" I.D. GALV. STEEL PIPE  
SLEEVE 2'2" LONG.

- 1" DIA. STOP PIN 9" LONG.  
DRILL THROUGH AND WELD  
TO 4" SLEEVE.

- 12" DIA. DRAIN PIT. FILL W/  
3/4" TO 1 1/2" DRAIN ROCK.

WELD 1/4" x 2" x 2" STEEL  
PLATES TO PIPES FOR LOCK TAB  
AND DROP SLOT. DROP SLOT TO  
BE 1/2" WIDE. ➤

-3/8" DIA  
HOLE, TYP

—1" RADIUS, TYP

—FINISHED GRADE

### LOCKING DETAIL

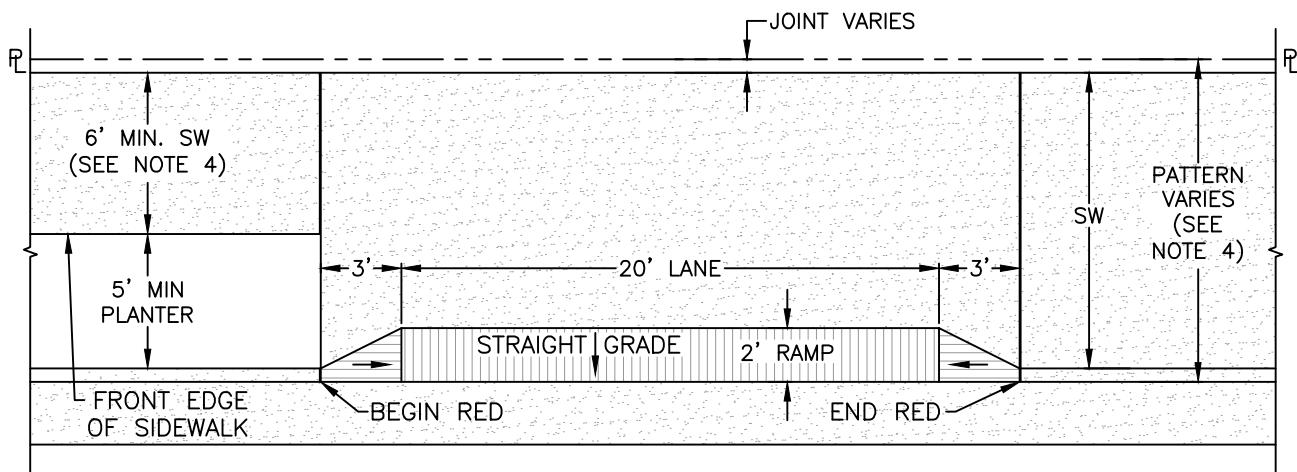
## TRAIL-STREET INTERSECTION TYPICAL PLAN

## TYPICAL PLAN

REF. & REV.  
~~NOV. 2011~~  
MAR. 2021 (A.7)

CITY OF FRESNO

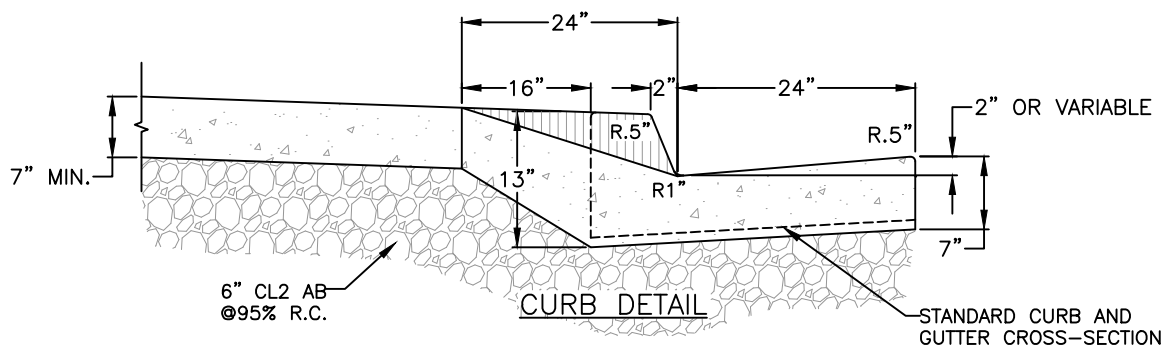
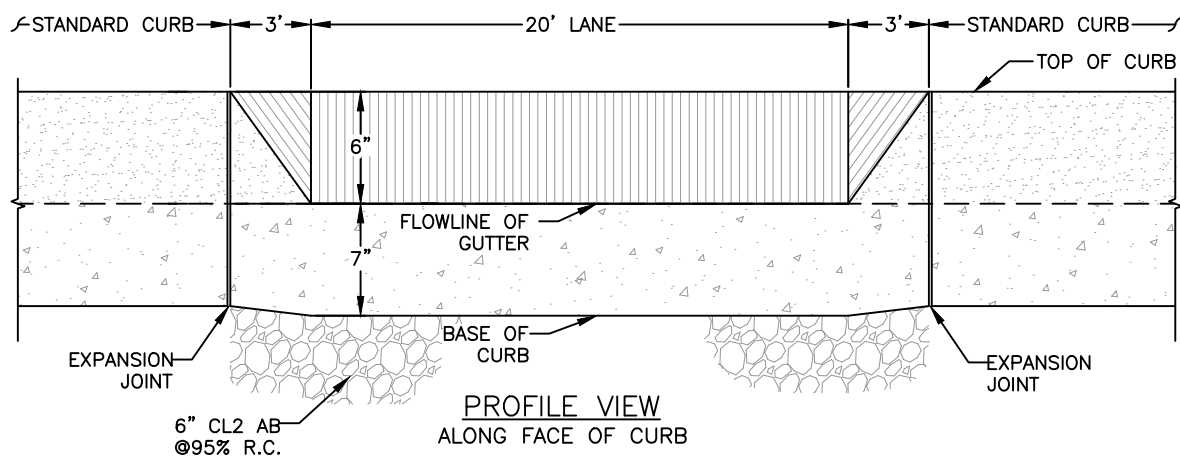
P-61

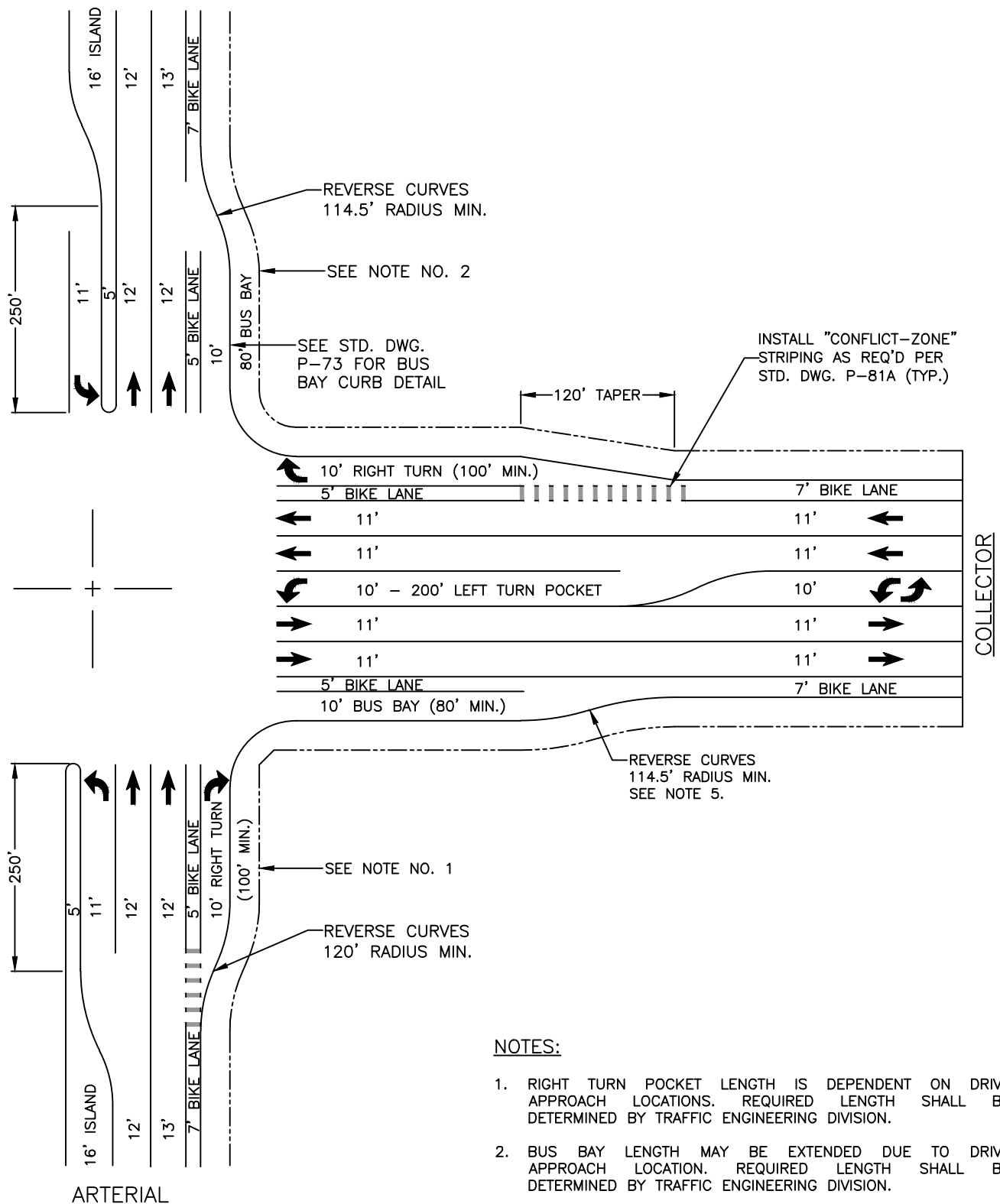


PLAN VIEW

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 WITH TRAFFIC-RATED PAINT, TWO (2) COATS MIN.
4. 6' MIN. SIDEWALK REQUIRED ON MAJOR STREETS, 4' MIN. REQUIRED ON LOCAL STREETS.

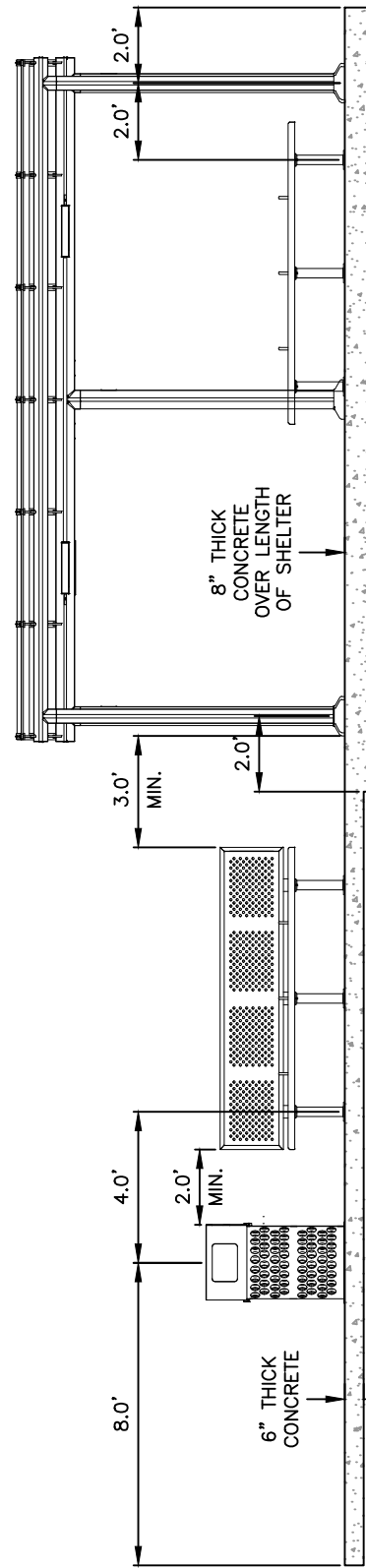
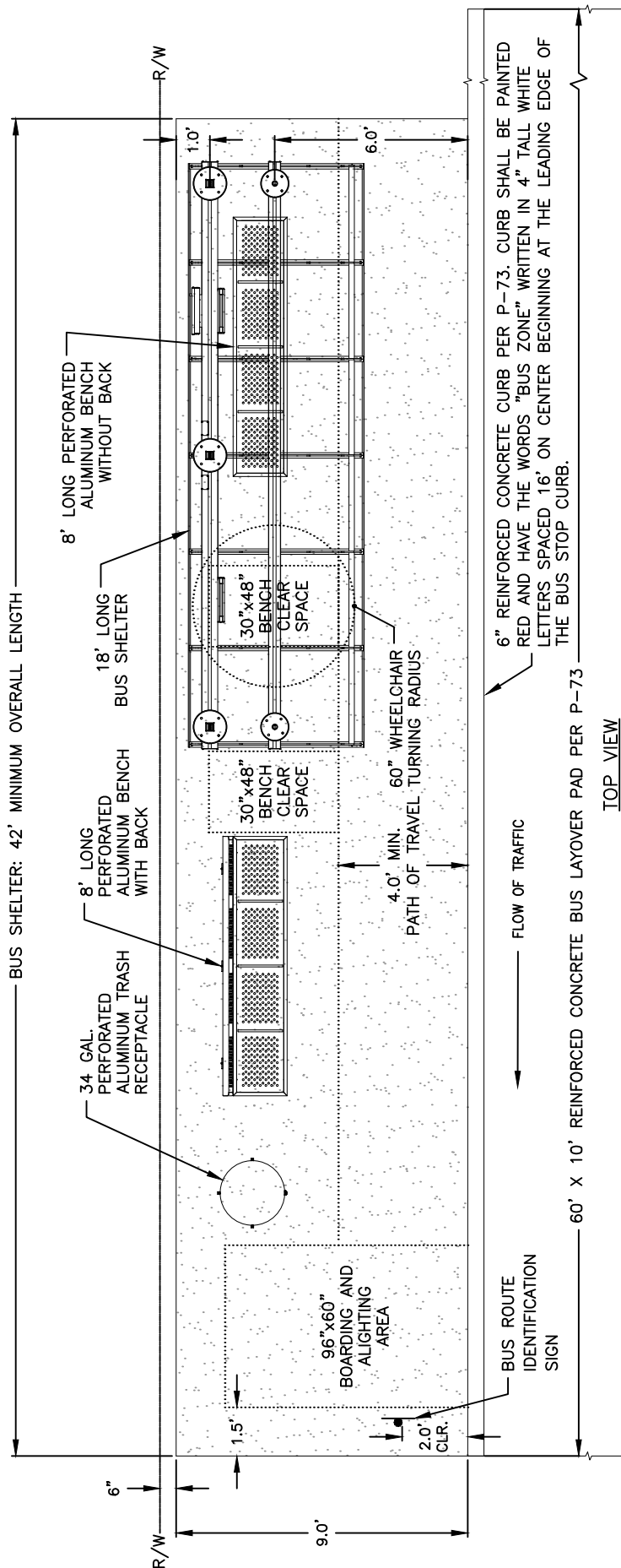




#### NOTES:

1. RIGHT TURN POCKET LENGTH IS DEPENDENT ON DRIVE APPROACH LOCATIONS. REQUIRED LENGTH SHALL BE DETERMINED BY TRAFFIC ENGINEERING DIVISION.
2. BUS BAY LENGTH MAY BE EXTENDED DUE TO DRIVE APPROACH LOCATION. REQUIRED LENGTH SHALL BE DETERMINED BY TRAFFIC ENGINEERING DIVISION.
3. WHEN INSTALLING A NEW SIGNAL, VEHICLE AND BICYCLE DETECTION LOOPS SHALL BE INSTALLED AT INTERSECTION PER STD. DWG. E-13 AND E-14.
4. STRIPING AND LANE CONFIGURATION TO BE DETERMINED BY CITY TRAFFIC ENGINEER.
5. A LONGER TRANSITION AT THE END OF A BUS BAY MAY BE NECESSARY TO ACHIEVE THE REQUIRED PAVMENT CROSS SLOPES AND PROPER DRAINAGE.





#### 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.

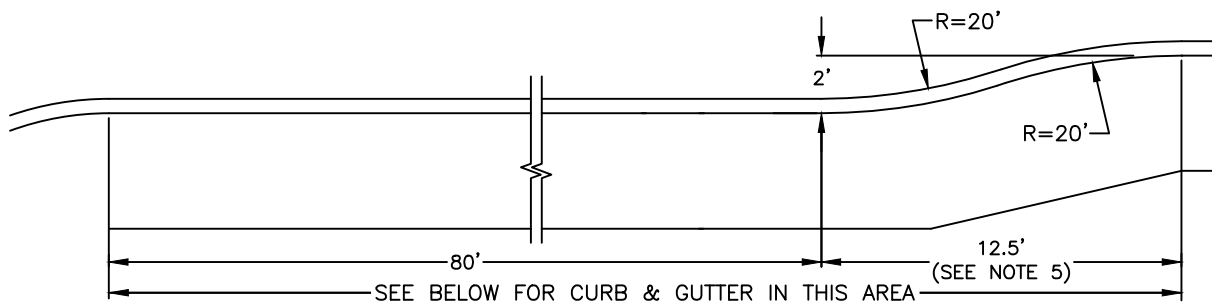
## BUS STOP WITH SHELTER LAYOUT

REF. & REV.  
JULY 2011  
MAR. 2021 (A.7)

CITY OF FRESNO

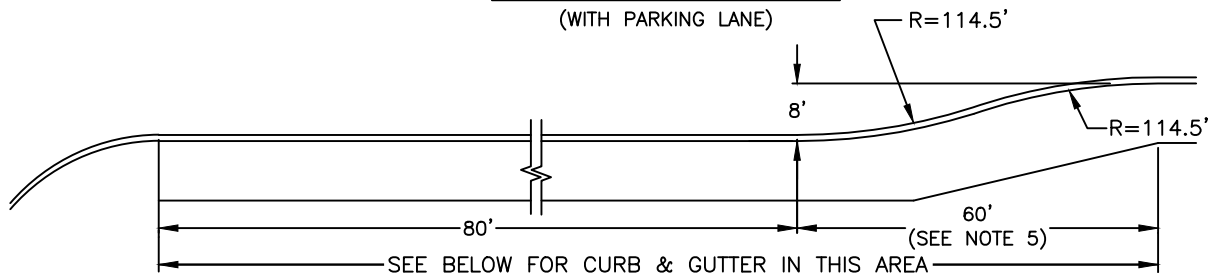
P-72





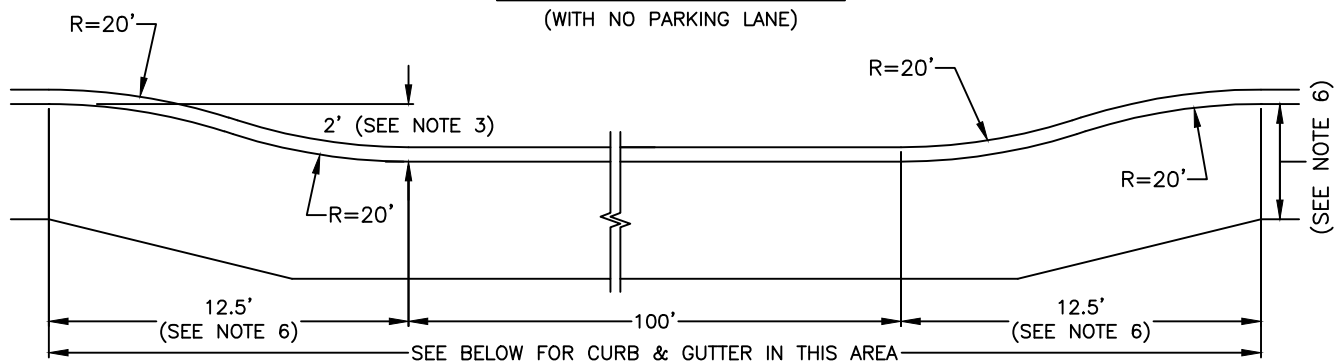
### FAR SIDE INTERSECTION

(WITH PARKING LANE)

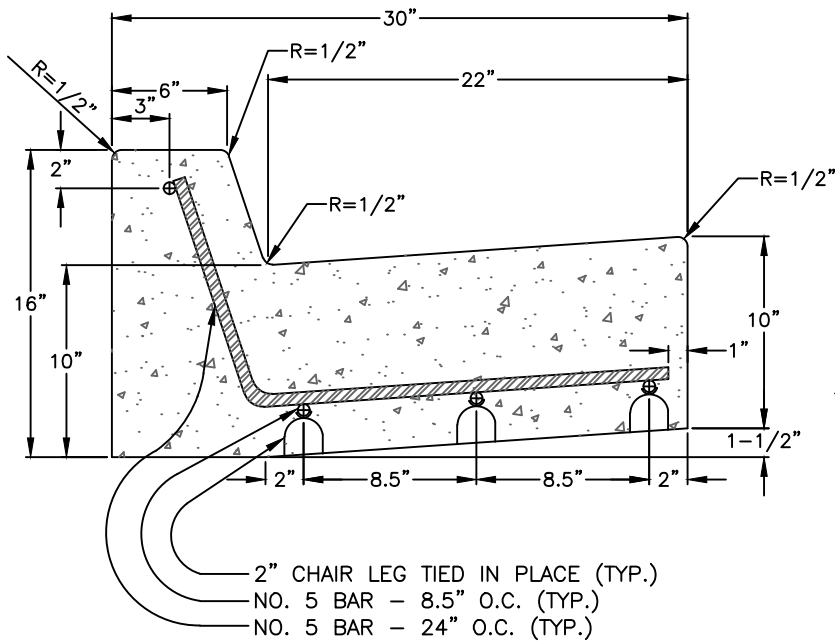


### FAR SIDE INTERSECTION

(WITH NO PARKING LANE)



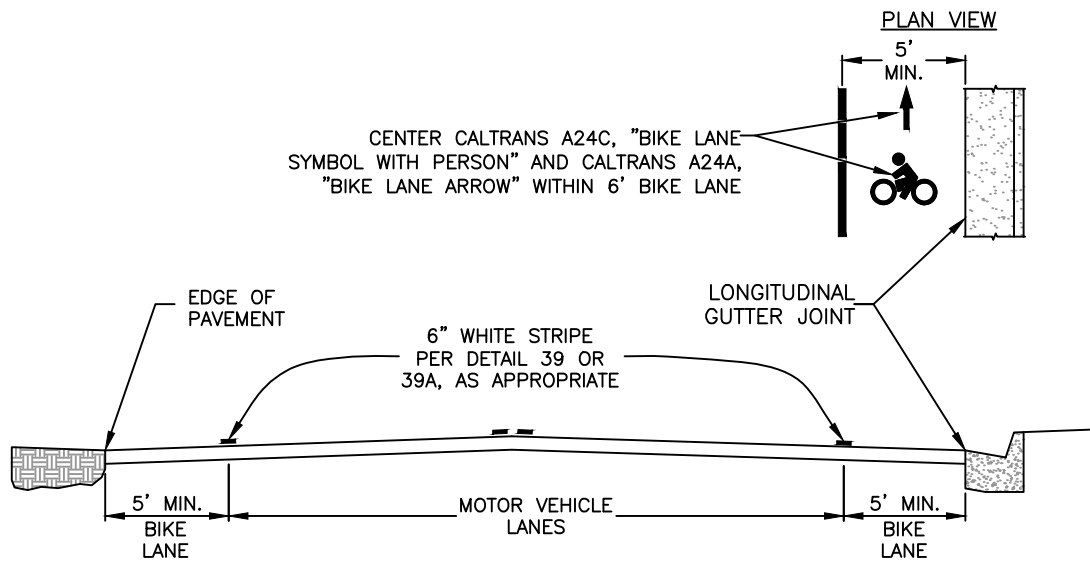
### MID BLOCK



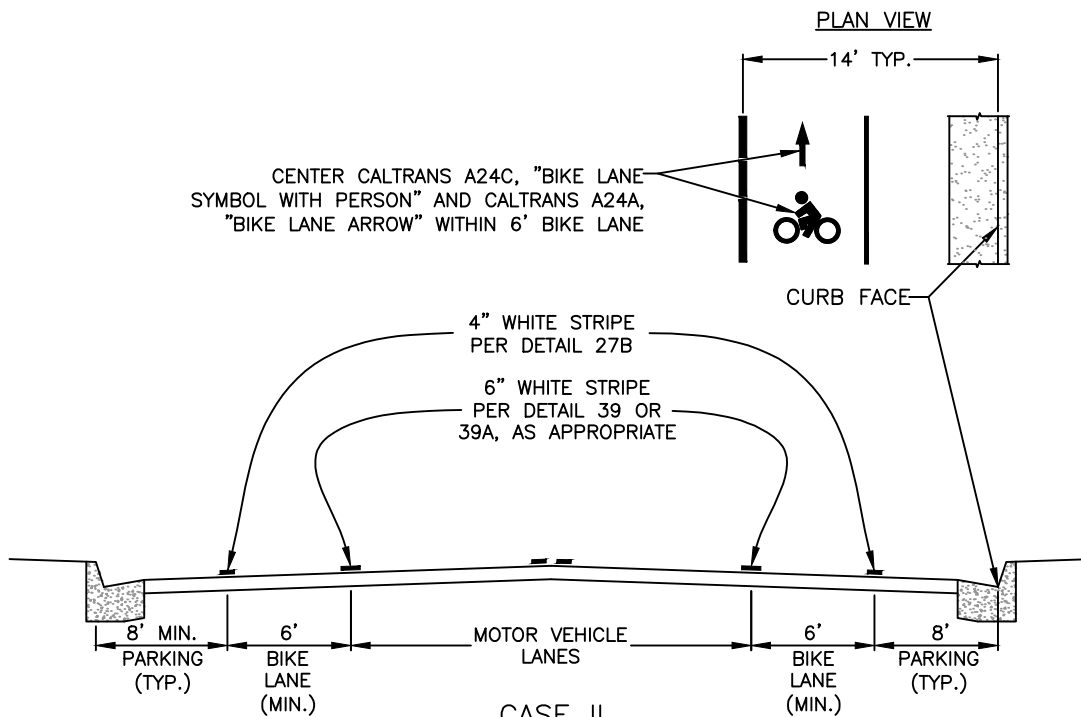
### DETAIL

### NOTES:

1. 5' MIN. TRANSITION TO STD. CURB & GUTTER.
2. 20" LAP REQ'D ON ALL BAR SPLICES.
3. WHERE PARKING LANE DOES NOT EXIST, 8' BUS BAY WILL BE REQUIRED.
4. USE 6 SACK CONCRETE MIX.
5. ON COLLECTOR STREETS IN NEW GROWTH AREA, USE P-69 CITY STD.
6. IF 8' BUS BAY, USE 114.50' RADIUS AND 60' TRANSITION.



CASE I



CASE II

NOTES:

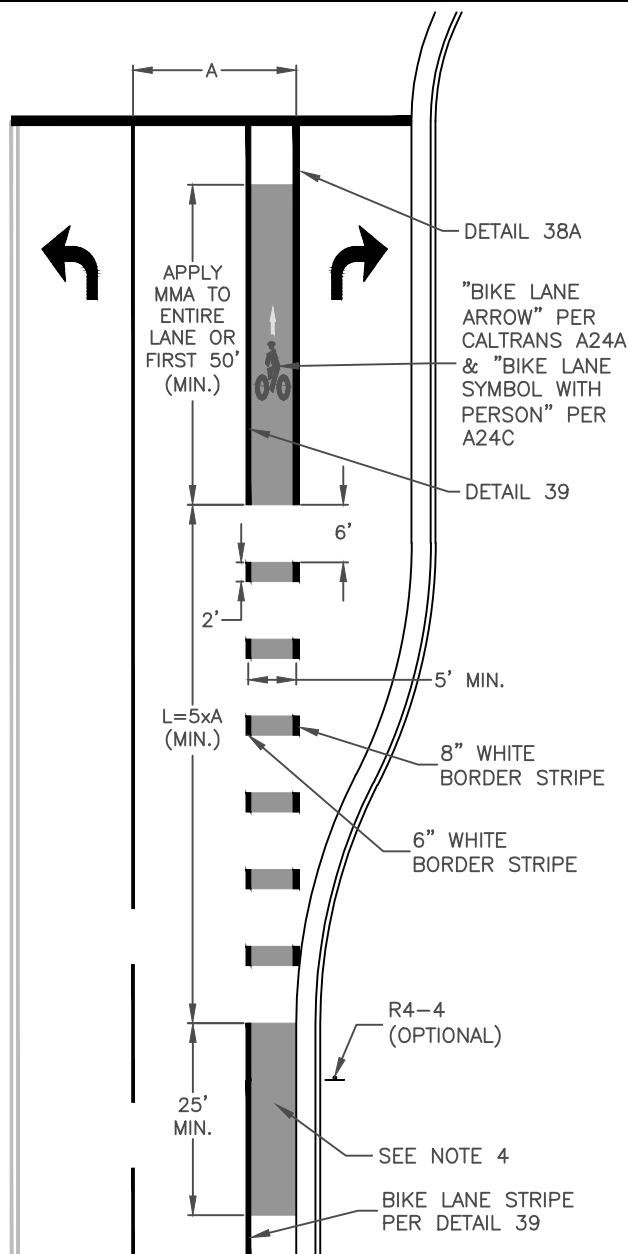
1. TO THE GREATEST EXTENT POSSIBLE, CASE I BIKE LANES SHALL BE INSTALLED WITH ALL NEW INDUSTRIAL, COLLECTOR OR ARTERIAL STREET DEVELOPMENTS OR RECONSTRUCTION. WHEN AVAILABLE SPACE IN THE ROADWAY DOES NOT ALLOW FOR THE MINIMUM STANDARD WIDTHS, CONSIDERATION WILL BE GIVEN TO NARROWED TRAVEL LANES OR ELIMINATION 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**

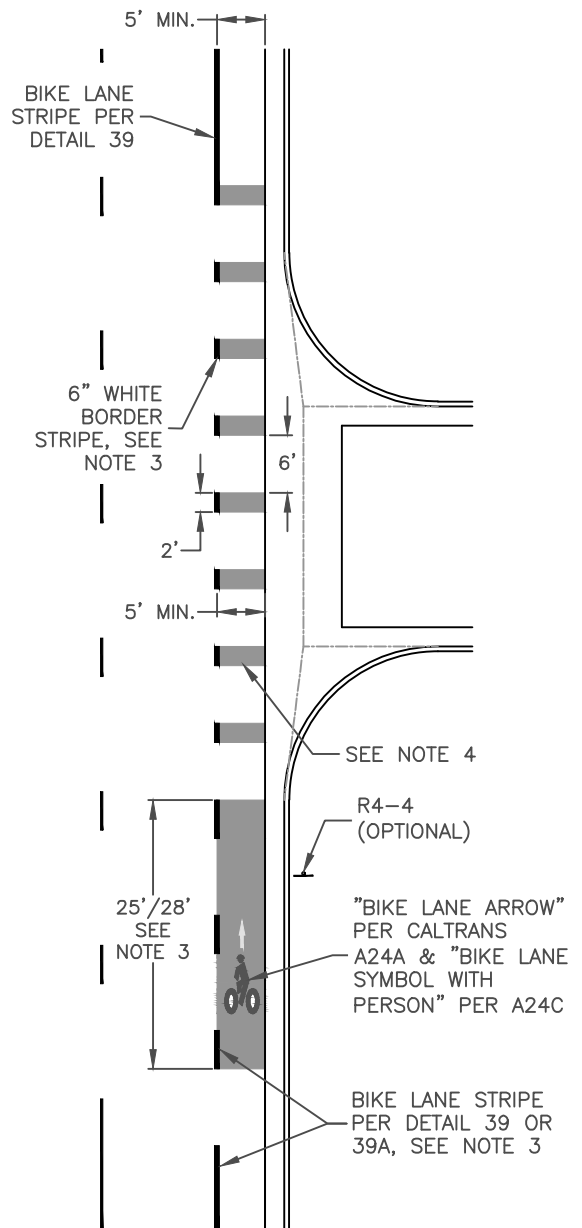
REF. & REV.  
AUG. 2002  
MAR. 2021 (A.7)

**CITY OF FRESNO**  
**P-79**





RIGHT-TURN LANE  
CONFLICT ZONE



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

NOTES:

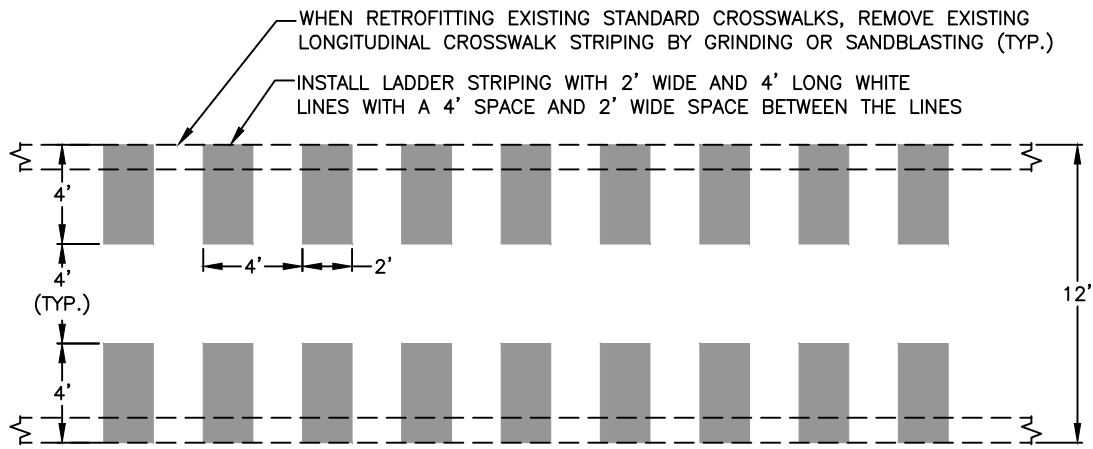
1. PLEASE REFERENCE THE CITY OF FRESNO'S "POLICY ON GREEN BIKE LANES" FOR THE APPROPRIATE LOCATIONS AND USE OF THIS STRIPING. THE CITY TRAFFIC ENGINEER MAY ALSO REQUIRE THE INSTALLATION OF THESE FEATURES ON A CASE-BY-CASE BASIS.
2. ALL STRIPING SHALL BE THERMOPLASTIC, PER CITY SPECIFICATIONS. WHERE REQUIRED, 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", TRANSPON "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**

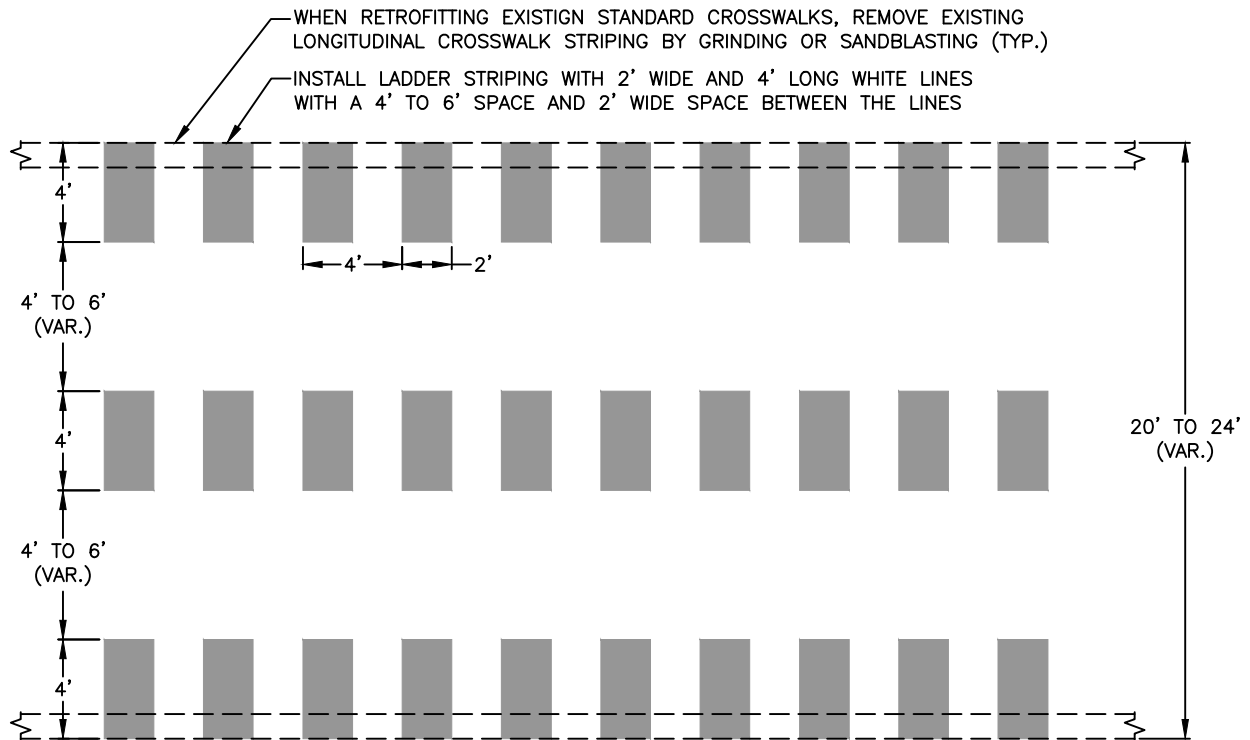
REF. & REV.  
MAR. 2021 (A.7)

**CITY OF FRESNO  
P-81A**





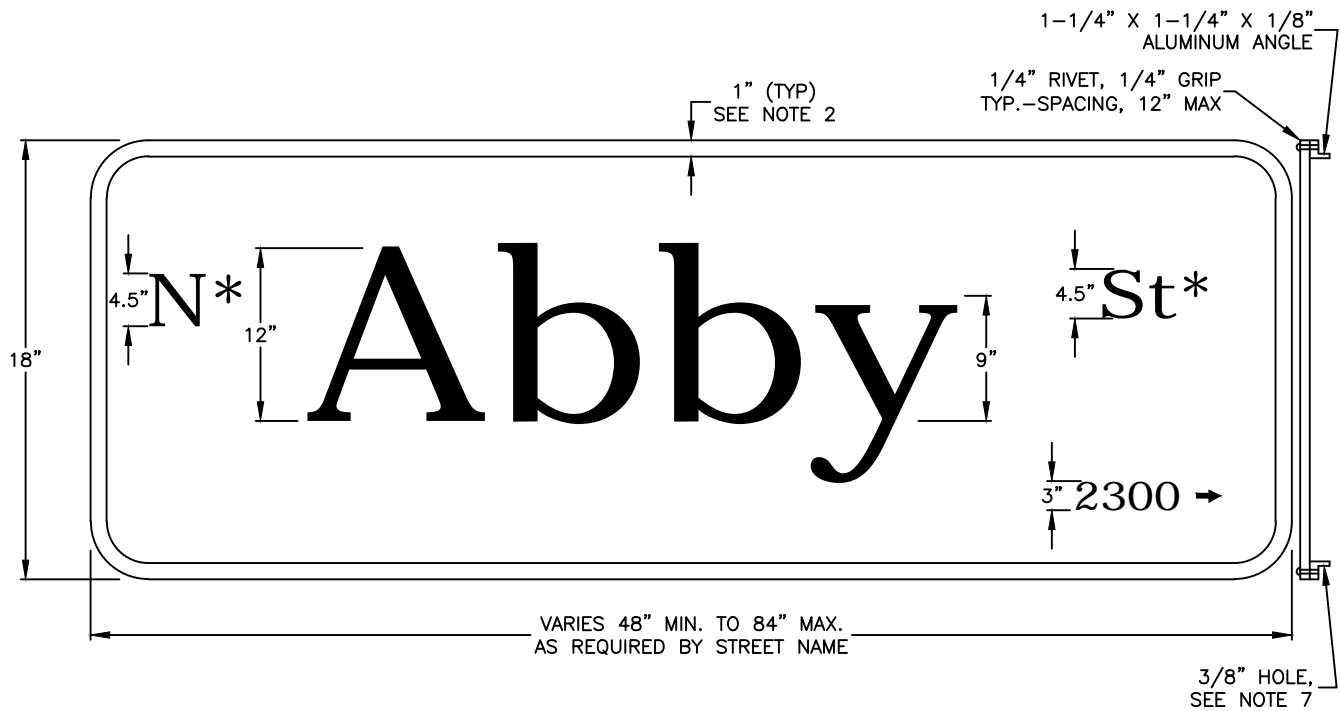
HIGH VISIBILITY CROSSWALK (TYPICAL 12' LAYOUT)



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



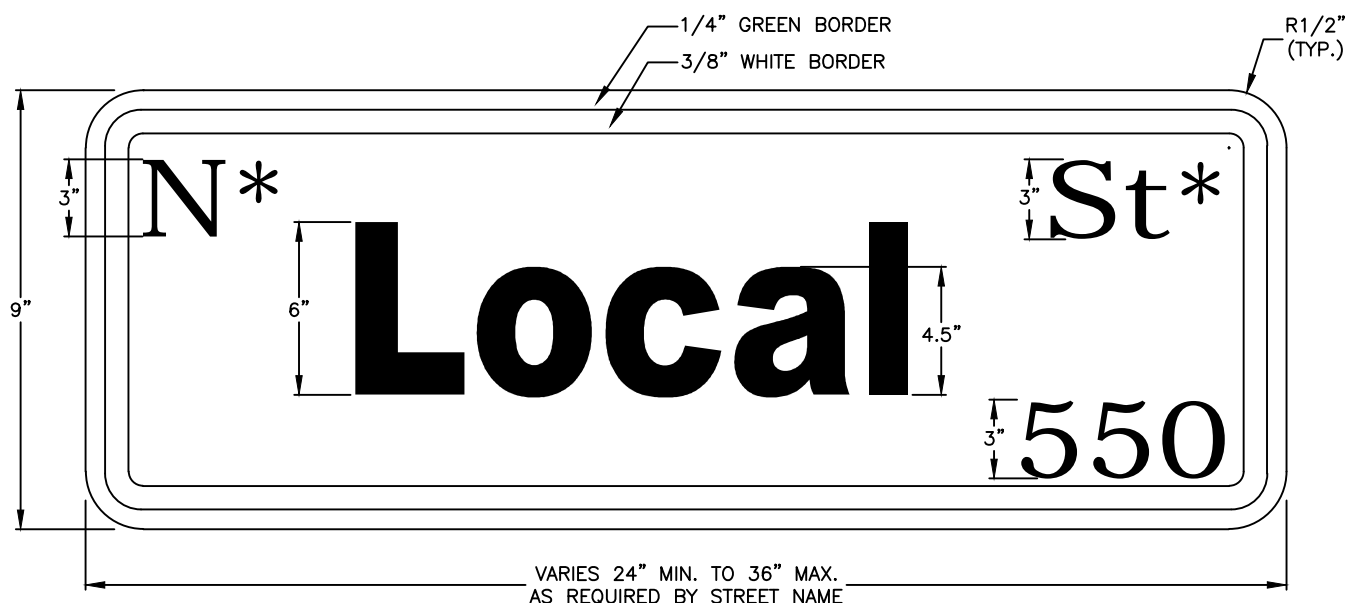
NOTES:

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  
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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.

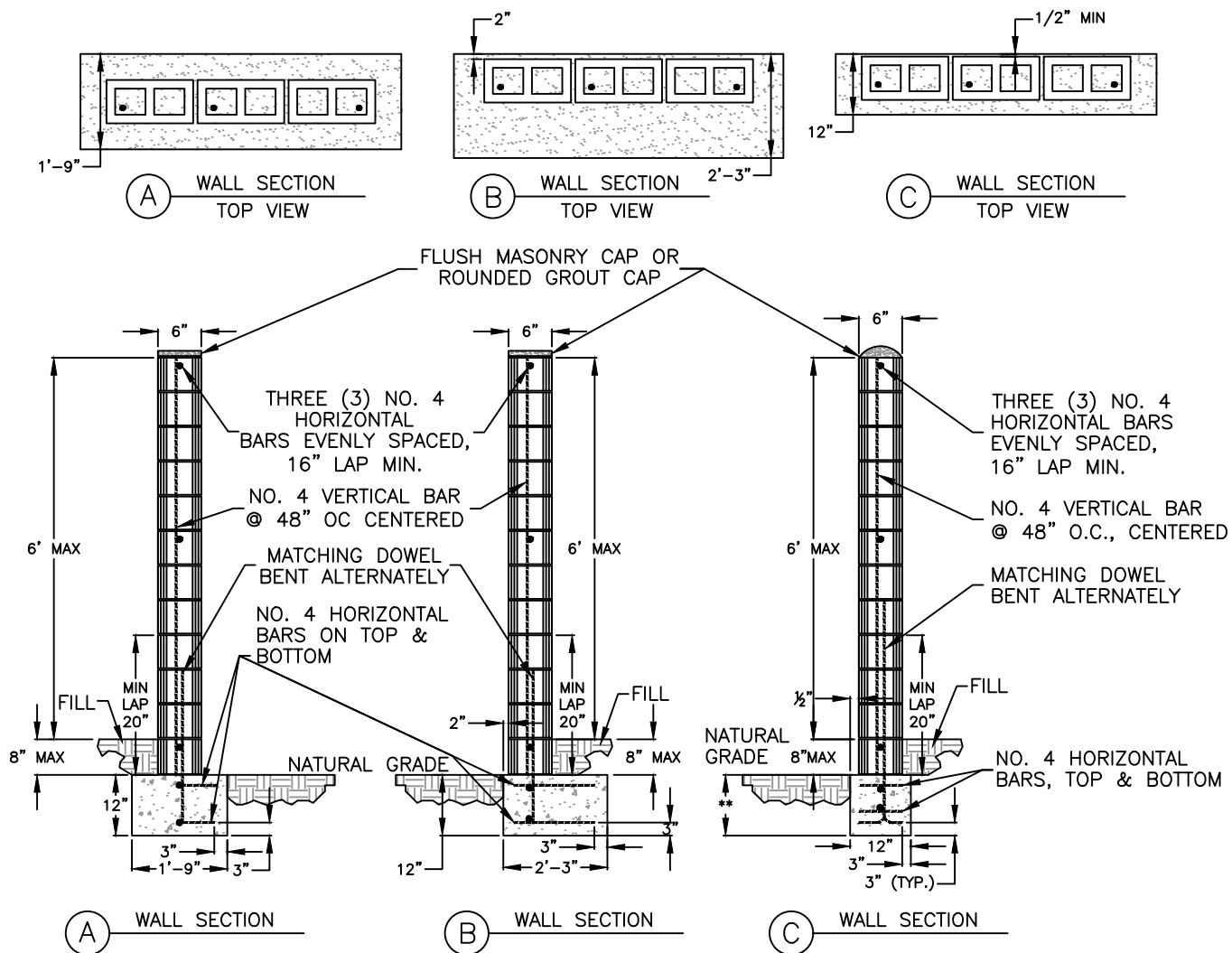
\* STREET DIRECTION AND NAME SUFFIX (SUCH AS STREET, AVENUE, BOULEVARD, LANE, CIRCLE, COURT, DRIVE, PARKWAY, PLACE, ROAD, TERRACE, TRAIL, NORTH, SOUTH, EAST, WEST ETC.) SHALL MATCH THE DEVELOPMENT DEPARTMENT'S RECORDS.

LOCAL STREET NAME SIGN

REF. & REV.  
AUG. 2010  
MAR. 2021 (A.7)

CITY OF FRESNO  
P-92





#### GENERAL NOTES AND SPECIFICATIONS:

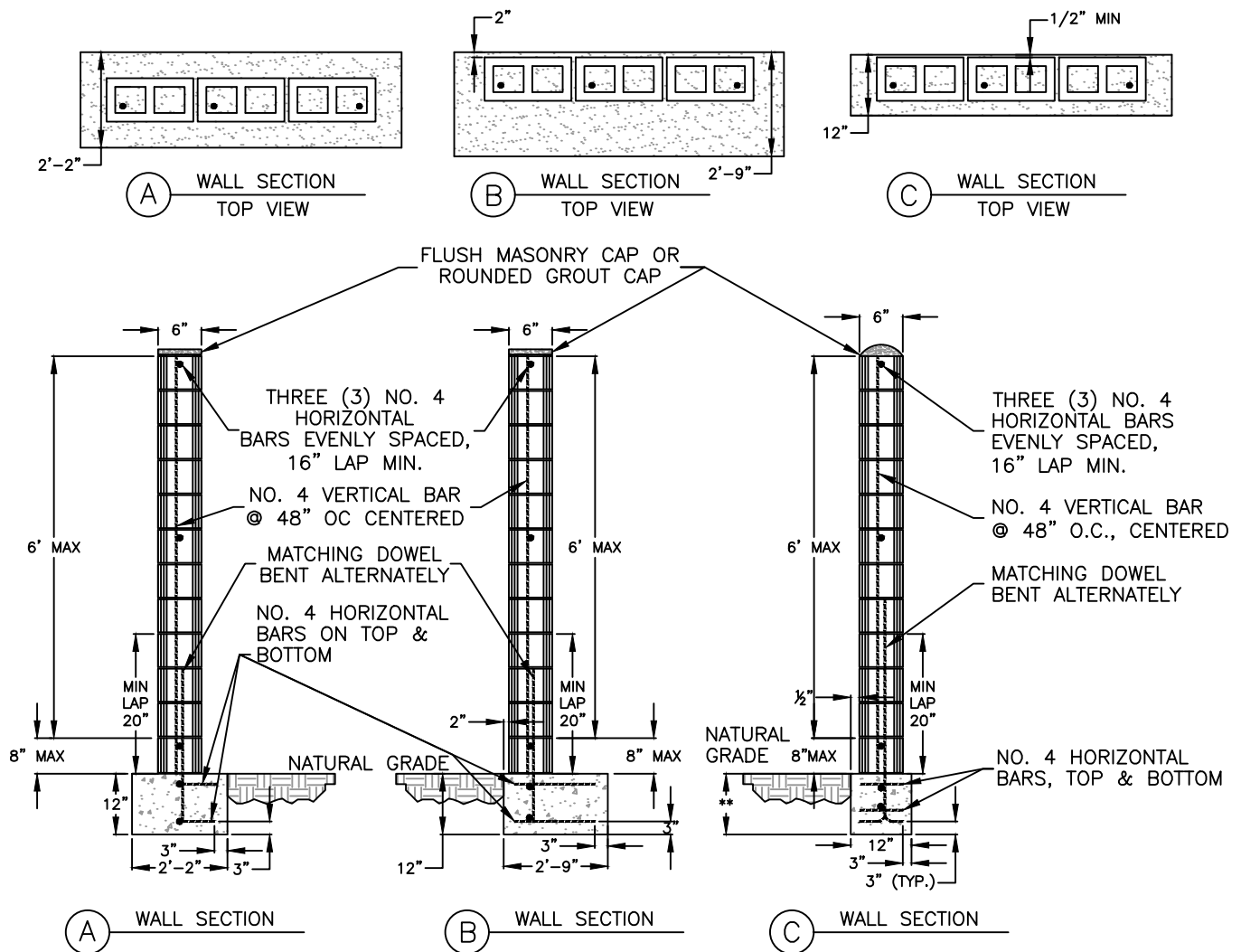
1. ALL CONSTRUCTION SHALL COMPLY WITH THE FRESNO MUNICIPAL CODE.
2. GROUT ALL CELLS CONTAINING REINFORCING STEEL.
3. ALL MASONRY UNITS SHALL COMPLY WITH THE LATEST ADOPTED CALIFORNIA BUILDING CODE.
4. DEPTH OF FOOTINGS ARE INTO NATURAL UNDISTURBED SOIL OR TESTED AND APPROVED COMPACTED FILL.
5. ALL MASONRY 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.

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

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

REF. & REV.  
SEP. 2011  
MAR. 2021 (A.7)

CITY OF FRESNO  
P-93



#### 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.

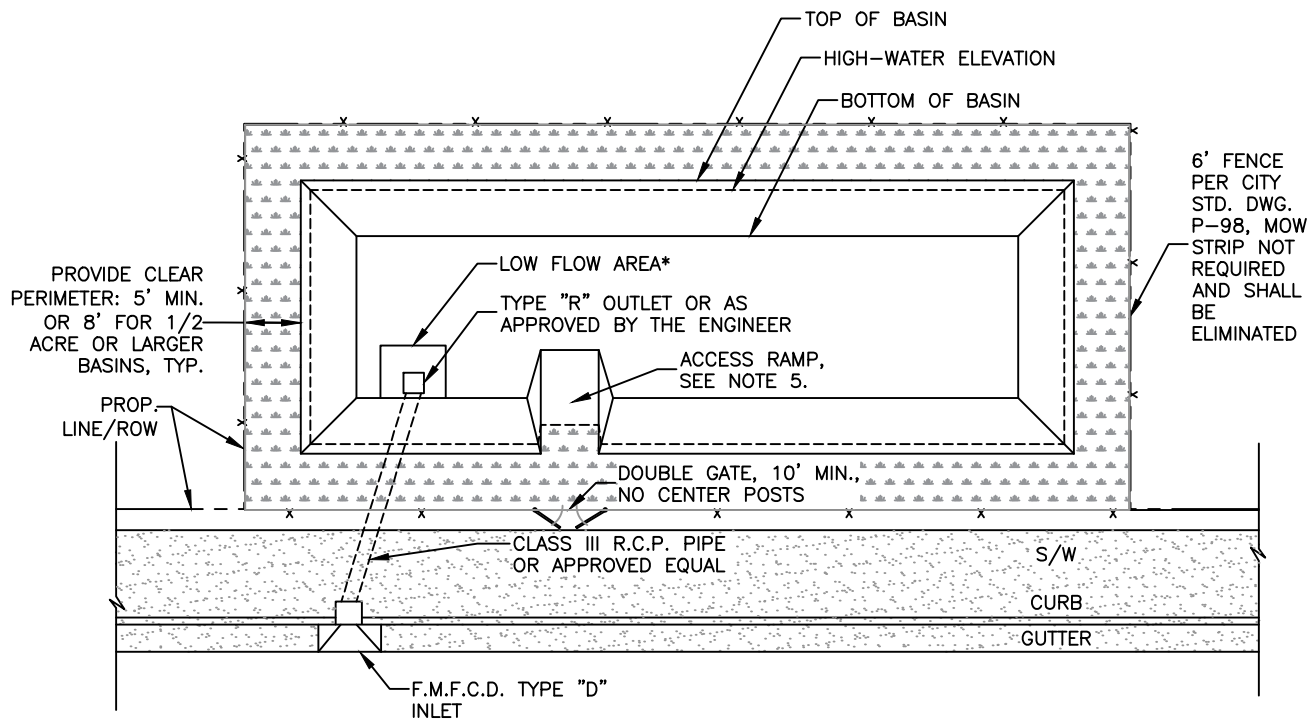
\*\* 3'-2" MIN. AT LANDSCAPED  
AREA OR 2'-2" MIN. AT AREA  
W/PAVEMENT EACH SIDE

## 6" CONCRETE MASONRY WALL WITHOUT SOIL RETENTION

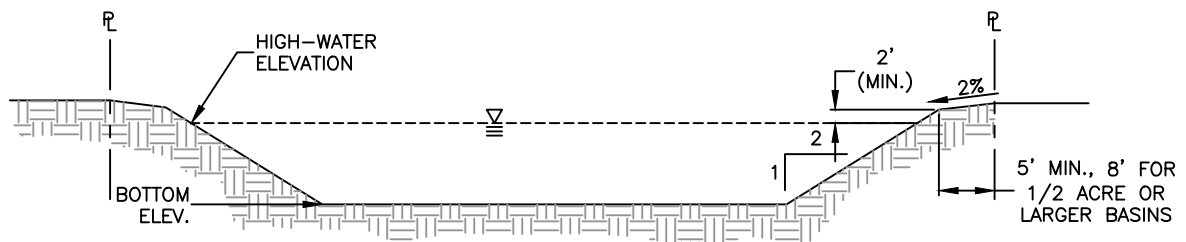
REF. & REV.  
SEP. 2011  
MAR. 2021 (A.7)

CITY OF FRESNO  
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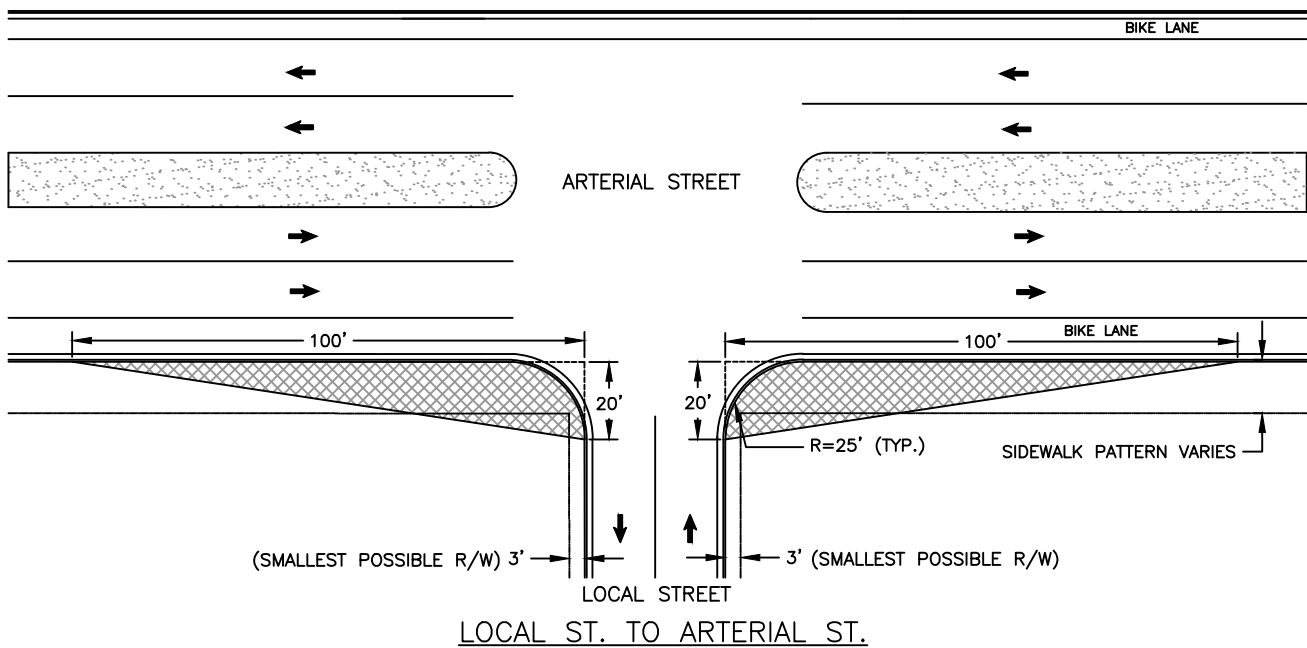
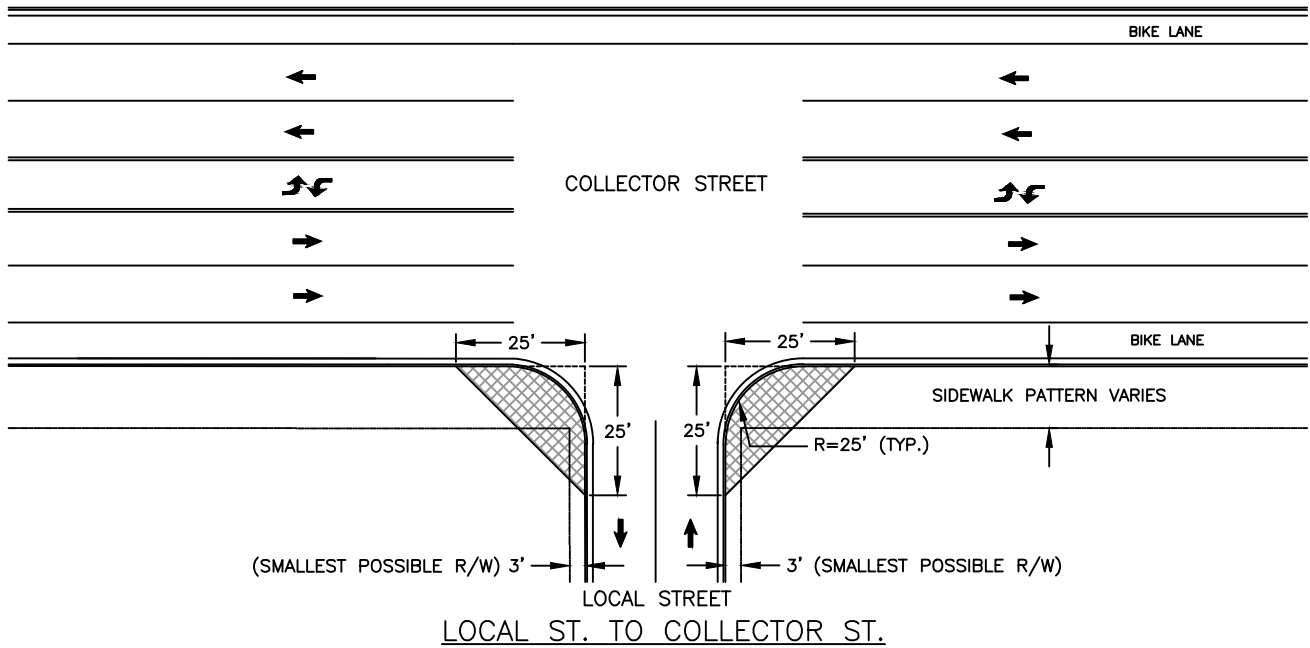
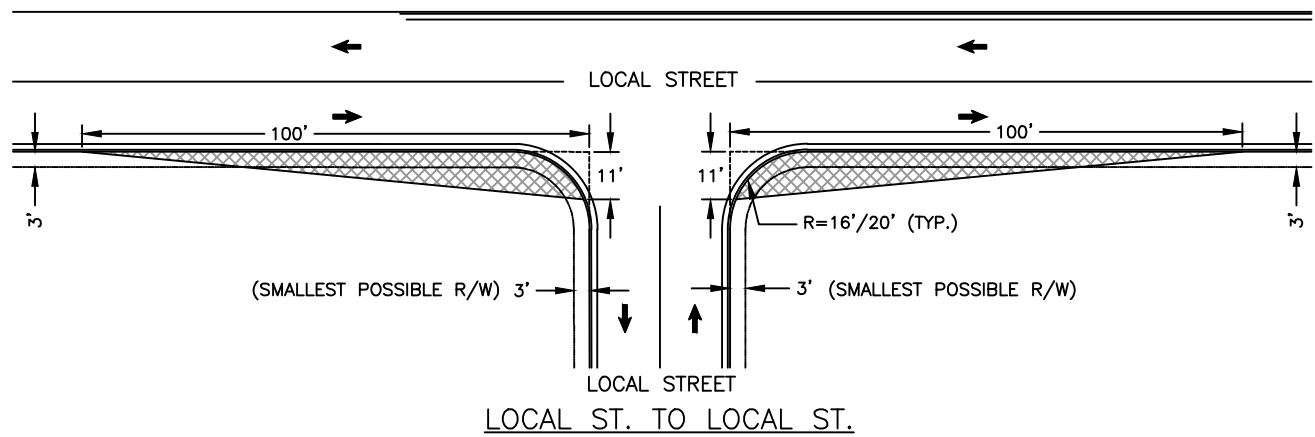
PLAN VIEW OF TYPICAL TEMPORARY PONDING BASIN



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.

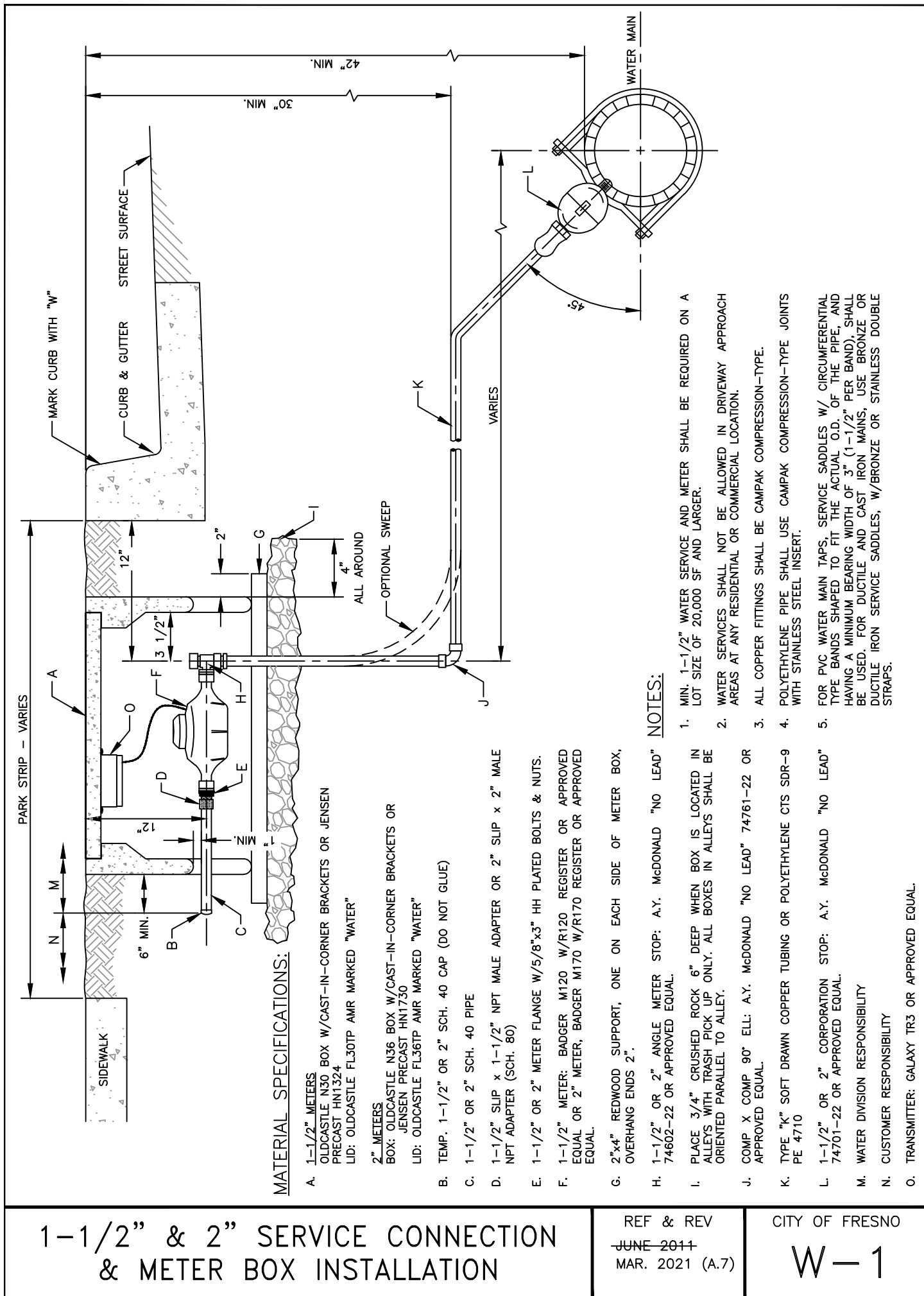


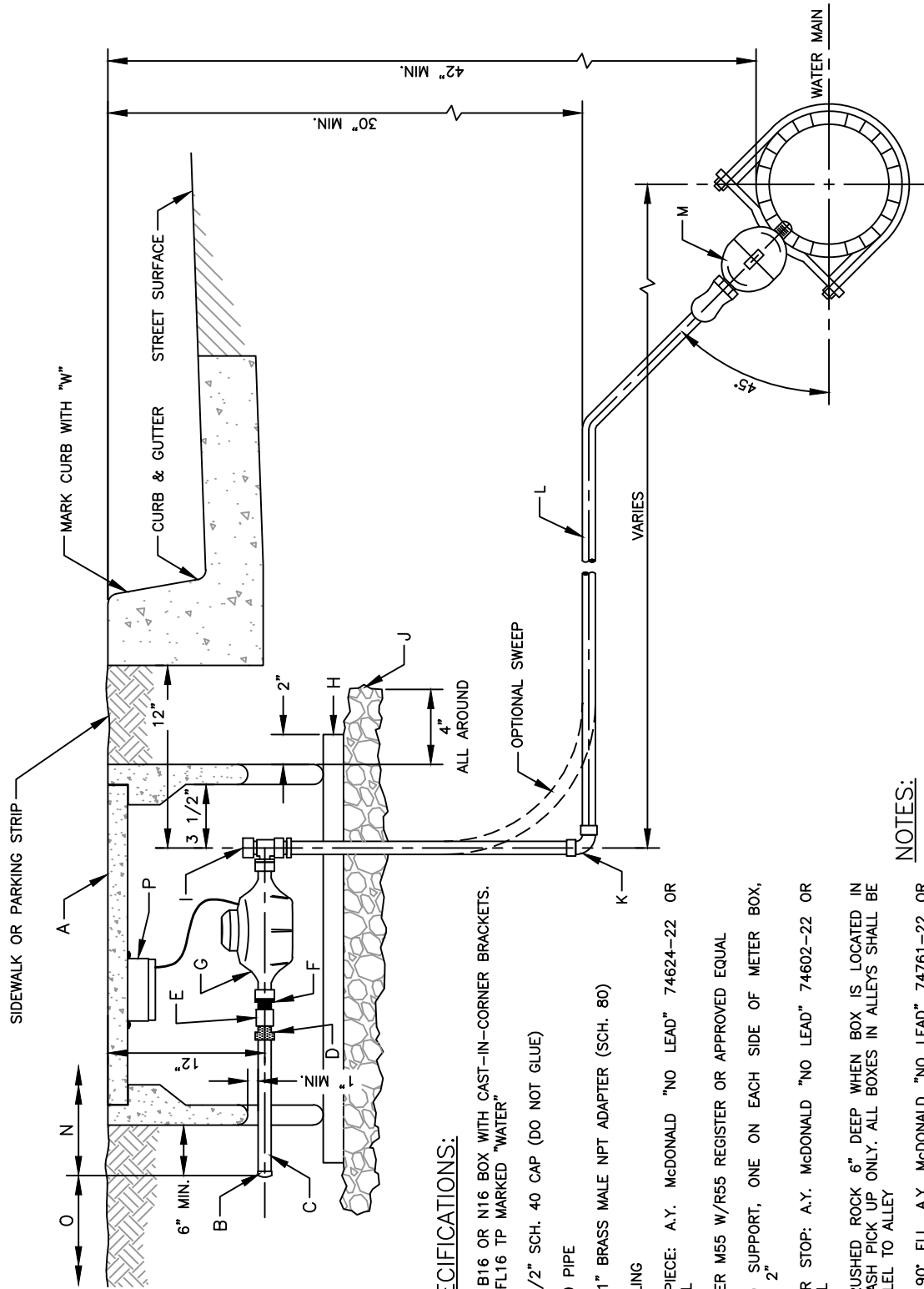
NOTE: ALL MAJOR TO MAJOR STREET SIGHT TRIANGLE SHALL BE 30' X 30', MEASURED FROM CURB ALIGNMENT

# INTERSECTION SIGHT TRIANGLES LOCAL/COLLECTOR/ARTERIAL

REF. & REV.  
MAR. 2021 (A.7)

CITY OF FRESNO  
P-101





# **MATERIAL SPECIFICATIONS:**

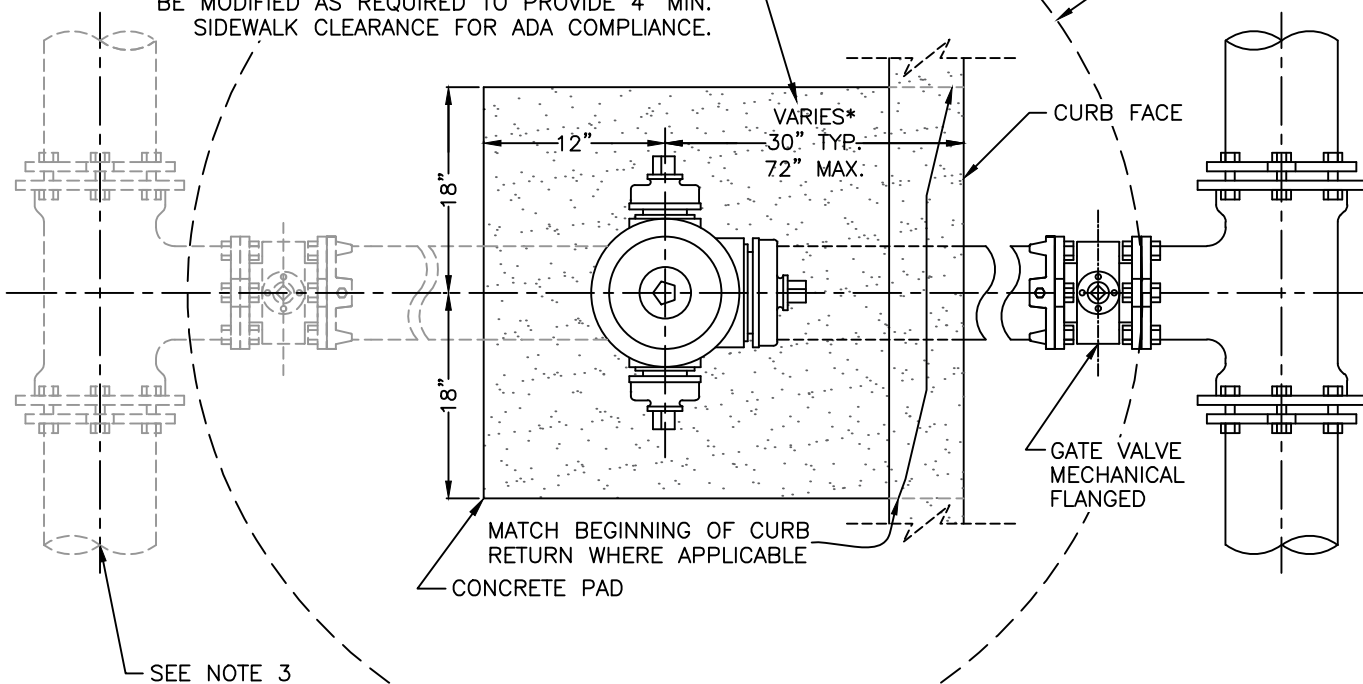
- A. BOX: OLDCASTLE B16 OR N16 BOX WITH CAST-IN-CORNER BRACKETS.  
LID: OLDCASTLE FL16 TP MARKED "WATER"
- B. TEMPORARY 1-1/2" SCH. 40 CAP (DO NOT GLUE)
- C. 1-1/2" SCH. 40 PIPE
- D. 1-1/2" SLIP x 1" BRASS MALE NPT ADAPTER (SCH. 80)
- E. 1" BRASS COUPLING
- F. 1" METER TAILPIECE: A.Y. McDONALD "NO LEAD" 74624-22 OR APPROVED EQUAL
- G. 1" METER: BADGER M55 W/R55 REGISTER OR APPROVED EQUAL
- H. 2"x4" REDWOOD SUPPORT, ONE ON EACH SIDE OF METER BOX, OVERHANG ENDS 2"
- I. 1" ANGLE METER STOP: A.Y. McDONALD "NO LEAD" 74602-22 OR APPROVED EQUAL
- J. PLACE 3/4" CRUSHED ROCK 6" DEEP WHEN BOX IS LOCATED IN ALLEYS WITH TRASH PICK UP ONLY. ALL BOXES IN ALLEYS SHALL BE ORIENTED PARALLEL TO ALLEY
- K. COMP x COMP 90° ELL, A.Y. McDONALD "NO LEAD" 74761-22 OR APPROVED EQUAL
- L. TYPE "K" SOFT DRAWN COPPER TUBING
- M. 1" CORPORATION STOP: A.Y. McDONALD "NO LEAD" 74701-22 OR APPROVED EQUAL
- N. WATER DIVISION RESPONSIBILITY
- O. CUSTOMER RESPONSIBILITY
- P. TRANSMITTER: GALAXY TR3 OR APPROVED EQUAL

## **NOTES:**

1. WATER SERVICES SHALL NOT BE ALLOWED IN DRIVEWAY APPROACH AREAS AT ANY RESIDENTIAL OR COMMERCIAL LOCATION.
2. ALL COPPER FITTINGS SHALL BE CAMPAK COMPRESSION-TYPE.
3. FOR PVC WATER MAIN TAPS, SERVICE SADDLES WITH CIRCUMFERENTIAL TYPE BANDS SHAPED TO FIT THE ACTUAL O.D. OF THE PIPE, AND HAVING A MINIMUM BEARING WIDTH OF 3" (1 1/2" PER BAND) SHALL BE USED. FOR DUCTILE AND CAST IRON MAINS, USE BRONZE OR DUCTILE IRON SERVICE SADDLES, WITH BRONZE OR STAINLESS DOUBLE STRAPS.

\*FOR ALL FIRE HYDRANTS INSTALLED, THE SETBACK SHALL TYPICALLY BE 30", BUT SHALL BE MODIFIED AS REQUIRED TO PROVIDE 4' MIN. SIDEWALK CLEARANCE FOR ADA COMPLIANCE.

MAINTAIN 36" CLEAR, MIN.



AVK 2780, MUELLER A-423, AMERICAN DARLING B-84-B, OR OTHER APPROVED EQUAL DRY BARREL FIRE HYDRANT.

SLOPE CONCRETE SLAB 1/4" PER FT., SWEAT FINISH

CONCRETE PAD

STANDARD CURB

BREAKABLE FLANGE

MAX BURY BARREL LENGTH 54"

2"-4"

PLUG WEEP HOLE

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  
MAR. 2021 (A.7)

CITY OF FRESNO

W-3



THIS STANDARD IS  
NO LONGER USED

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REF. & REV.  
~~AUG. 2002~~  
MAR. 2021 (A.7)

CITY OF FRESNO

W-4

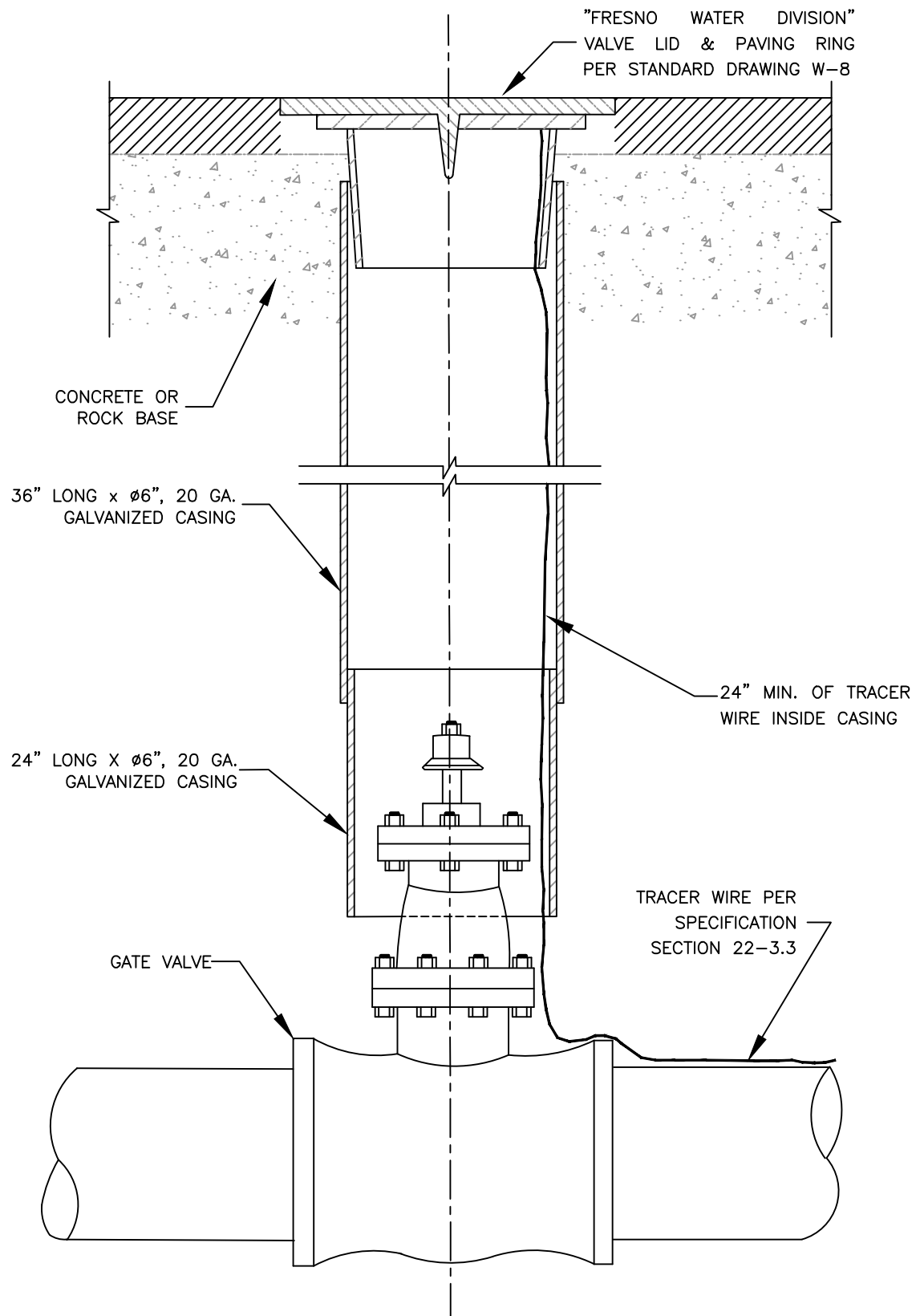
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REF. & REV.  
~~AUG. 2002~~  
MAR. 2021 (A.7)

CITY OF FRESNO

W-6

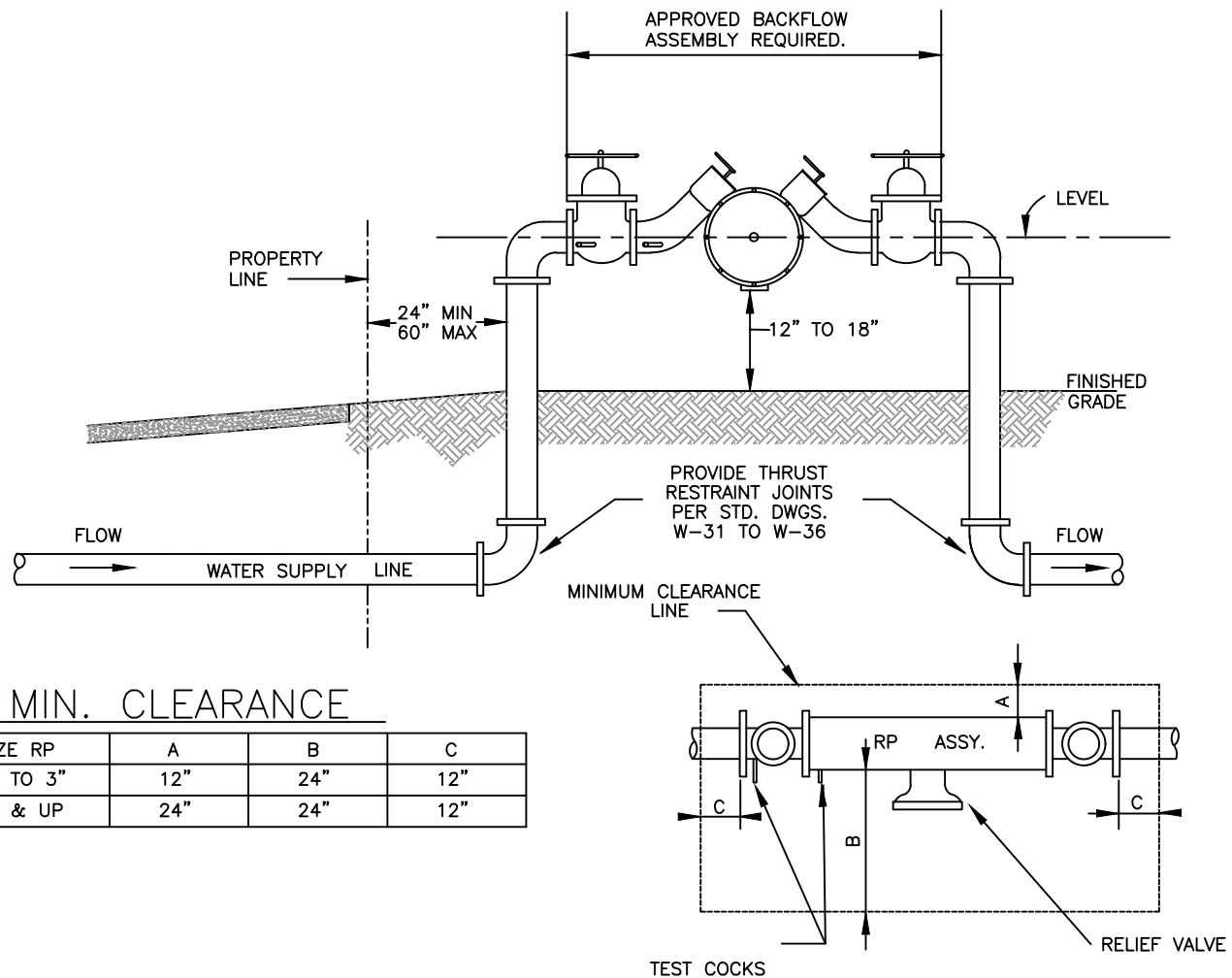


VALVE LID & PAVING RING  
WITH GALVANIZED CASING

REF. & REV.  
AUG. 2002  
MAR. 2021 (A.7)

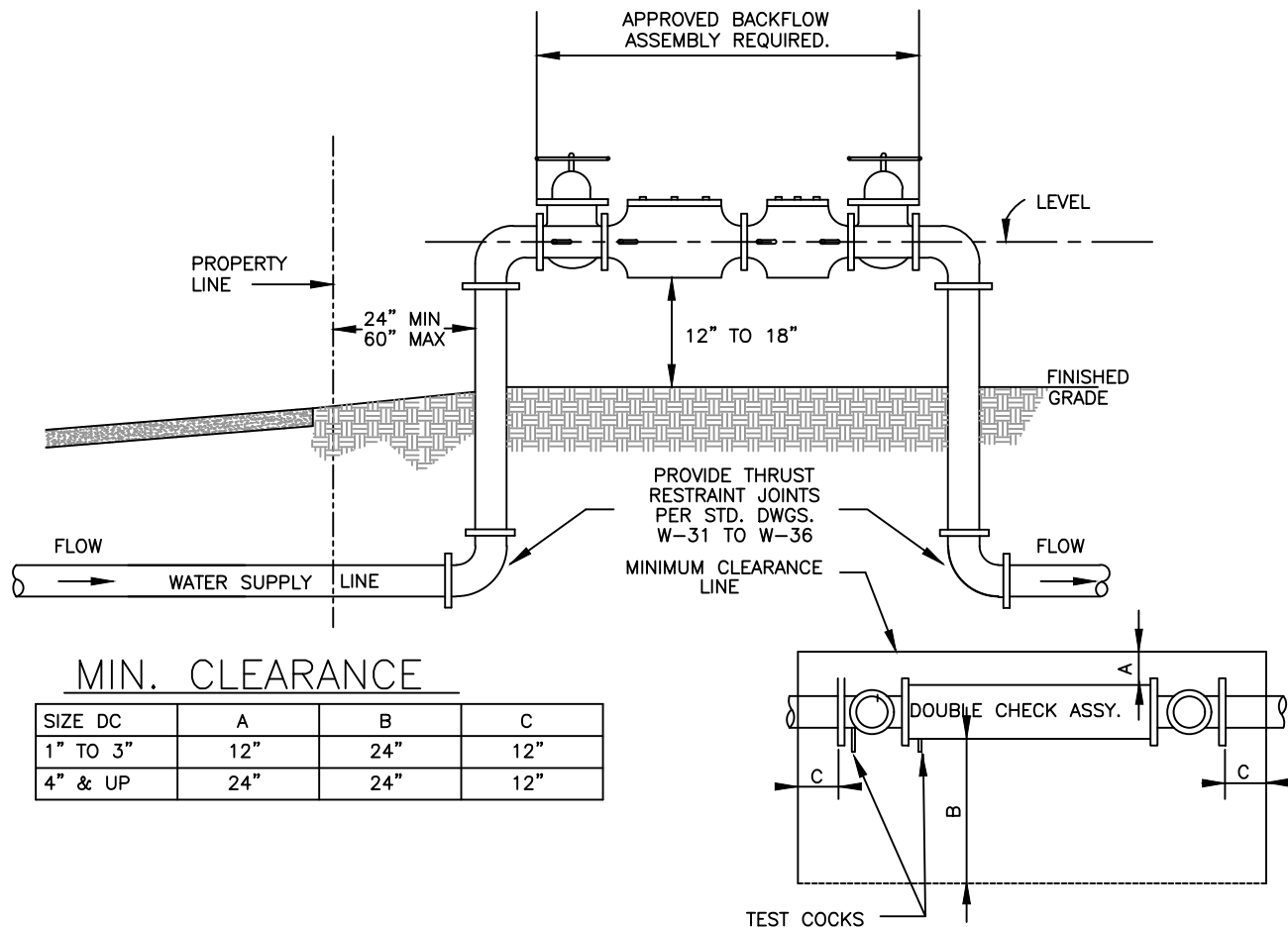
CITY OF FRESNO

W-7



#### GENERAL NOTES:

1. RESILIENT SEATED SHUT OFF VALVES AND TEST COCKS ARE REQUIRED.
2. NO TAPS, TEES OR CONNECTIONS OF ANY KIND ARE PERMITTED BETWEEN THE WATER METER AND THE BACKFLOW ASSEMBLY.
3. PROTECTION FROM FREEZE DAMAGE MAY BE REQUIRED IN EXPOSED AREAS.
4. ASSEMBLY MUST BE ACCESSIBLE FOR TESTING AND MAINTENANCE PER FRESNO MUNICIPAL CODE.
5. ASSEMBLY TO BE THE SAME SIZE AS THE WATER SUPPLY LINE PER UNIFORM PLUMBING CODE.
6. PRESSURE LOSS THROUGH RP ASSEMBLY MUST BE INCLUDED IN PRESSURE LOSS CALCULATIONS FOR SIZING OF THE WATER SYSTEM PER UNIFORM PLUMBING CODE.
7. MINIMUM CLEARANCES AROUND ASSEMBLY MUST BE MAINTAINED. REFER TO MINIMUM CLEARANCE CHART ON THIS PAGE.
8. INSTALL A MINIMUM OF ONE UNION IN THE PIPING SYSTEM WITHIN 12 INCHES OF THE ASSEMBLY – 3/4 THRU 2" SIZES.
9. DRAINAGE TO EXTERIOR OF THE BUILDING IS REQUIRED WHEN ASSEMBLY IS INSTALLED INSIDE.
10. ANY DEVIATION FROM THESE REQUIREMENTS SHALL BE APPROVED BY THE WATER SYSTEM MANAGER PRIOR TO INSTALLATION.



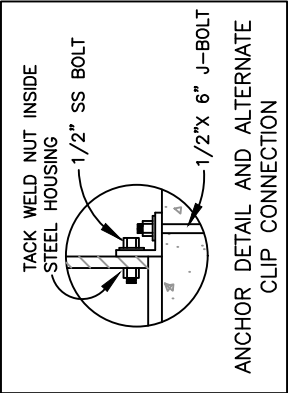
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## DOUBLE CHECK VALVE INSTALLATION

REF. & REV.  
AUG. 2002  
MAR. 2021 (A.7)

CITY OF FRESNO  
W-12



1. METAL HOUSING SHALL BE PRIMED AND POWDER COATED A LIGHT GREEN, TAN OR GRAY EXTERIOR ENAMEL FINISH.
2. 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.
3. GALVANIZED PIPES SHALL BE WRAPPED IN TWO LAYERS OF 10 MIL TAPE.
4. PROVIDE 4' MIN. SIDEWALK CLEARANCE ADJACENT TO AIR-VAC DEVICE FOR ADA ACCESSIBILITY REQUIREMENTS.

CITY OF FRESNO  
W-13

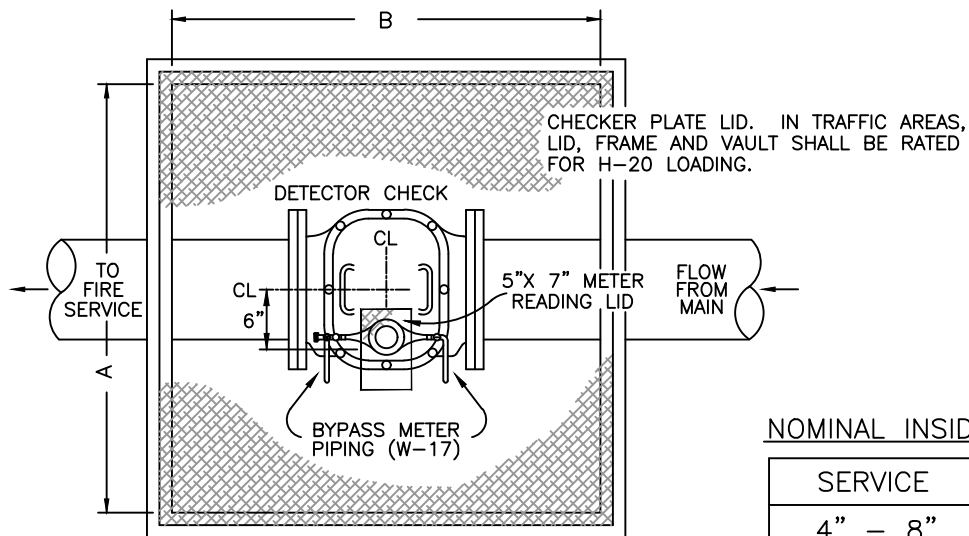
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~~AUG., 2002~~  
MAR. 2021 (A.7)

CITY OF FRESNO

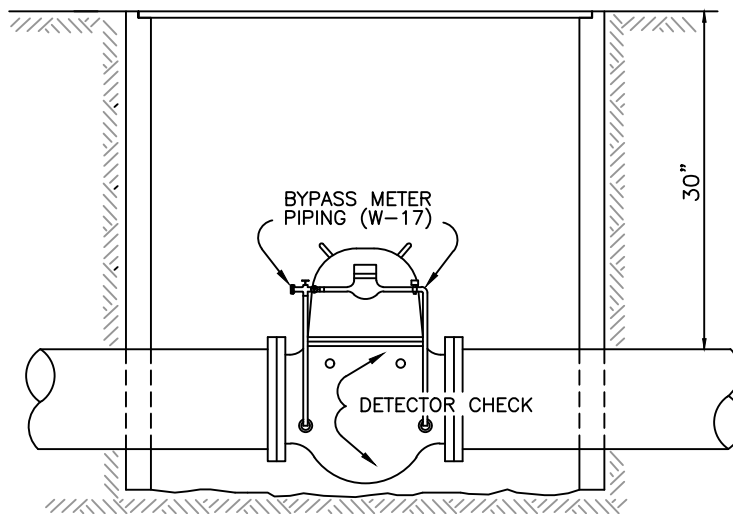
W-14



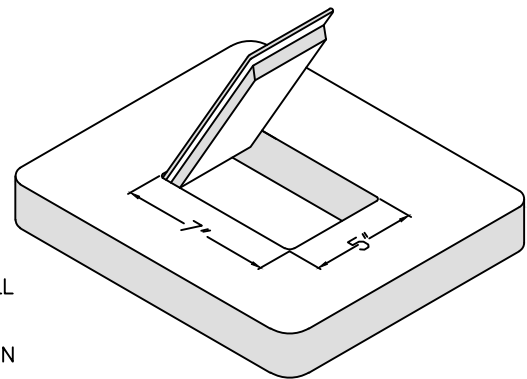
PLAN VIEW

NOMINAL INSIDE DIMENSIONS:

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



ELEVATION



TYPICAL HINGED LID  
N.T.S.

NOTES:

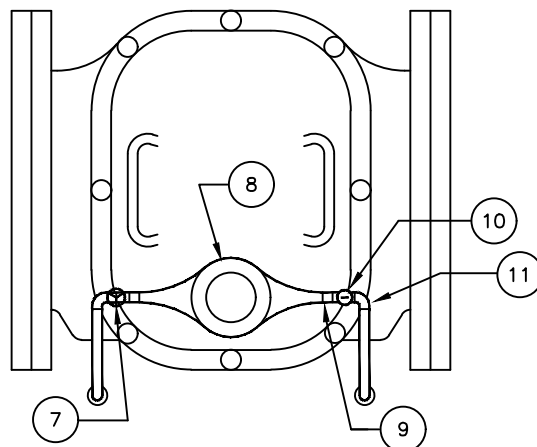
1. CHECK VALVE TO BE HERSEY MODEL E.D.C. OR D.C., GRINNELL MODEL A-2 OR B-2 OR APPROVED EQUAL.
2. CHECK VALVE TO BE TAPPED TO ACCOMMODATE INSTALLATION OF BYPASS METER PIPING BY CONTRACTOR.
3. VAULT OR BOX TO BE CHRISTY, BROOKS OR APPROVED EQUAL.
4. VAULT OR BOX, DETECTOR CHECK VALVE AND COVER TO BE INSTALLED 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

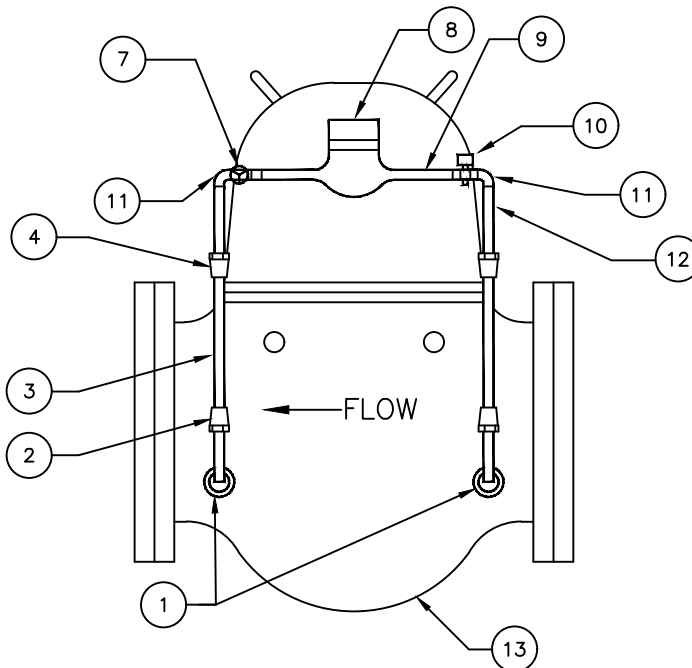
REF. & REV.  
AUG. 2002  
MAR. 2021 (A.7)

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

THIS STANDARD IS  
NO LONGER USED

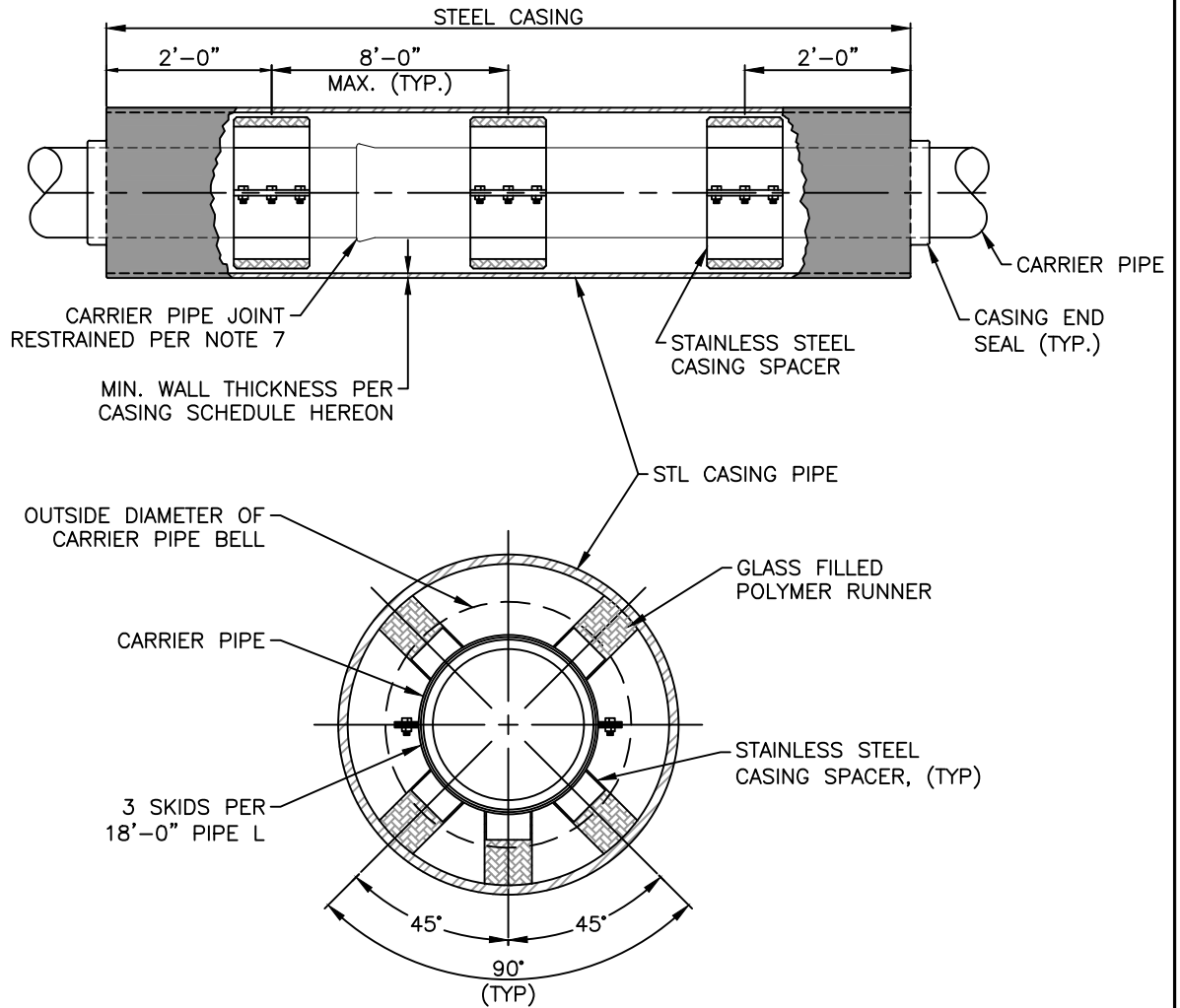
NO LONGER USED

REF. & REV.  
~~DEC. 2003~~  
MAR. 2021 (A.7)

CITY OF FRESNO

W-22





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:

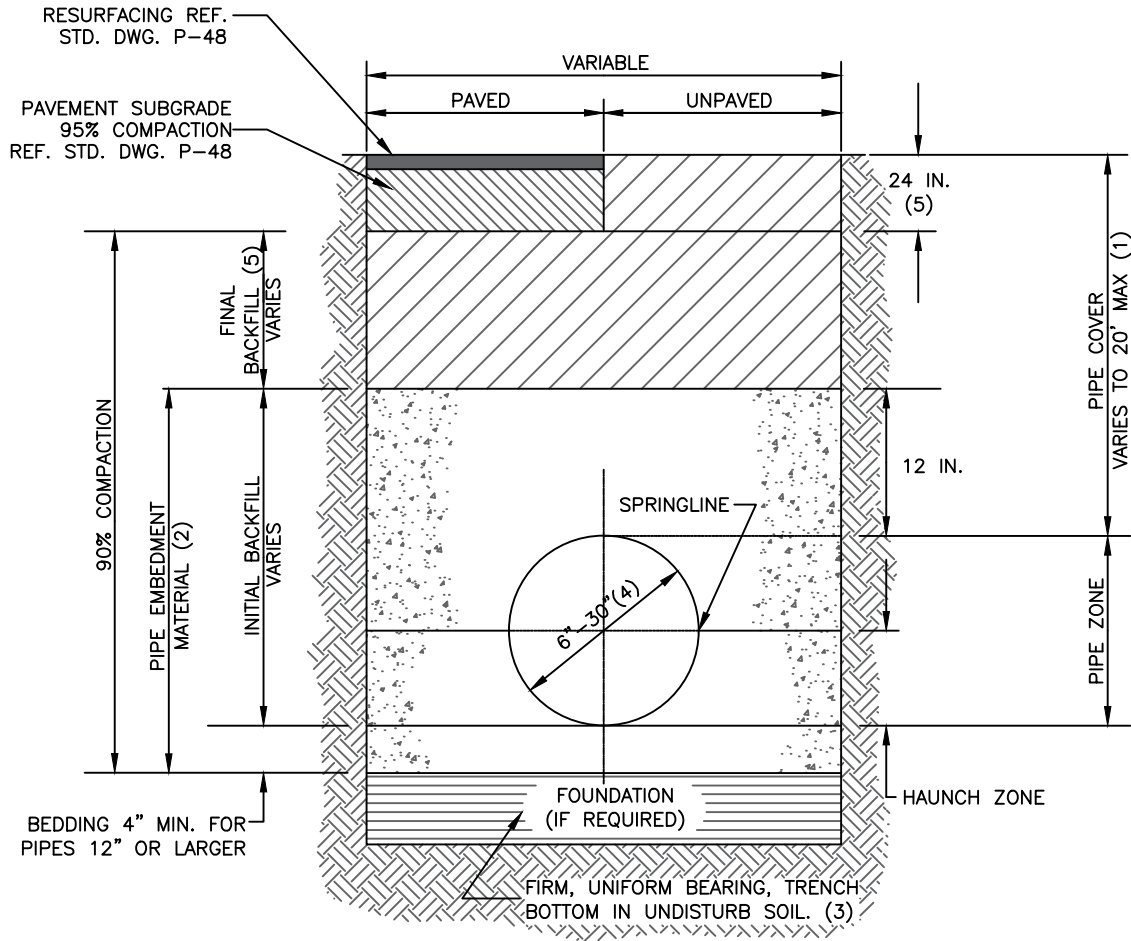
1. REFER TO STANDARD SPECIFICATIONS SECTION 19 – JACKING PIPE.
2. SIZE AND THICKNESS OF CASING SHALL BE AS SHOWN IN STEEL CASING SCHEDULE HEREON. FOR LONG BORES OR SPECIAL SITUATIONS GREATER WALL THICKNESS THAN SHOWN IN SCHEDULE MAY BE REQUIRED. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE STRUCTURAL 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  
MAR. 2021 (A.7)

CITY OF FRESNO

W-24



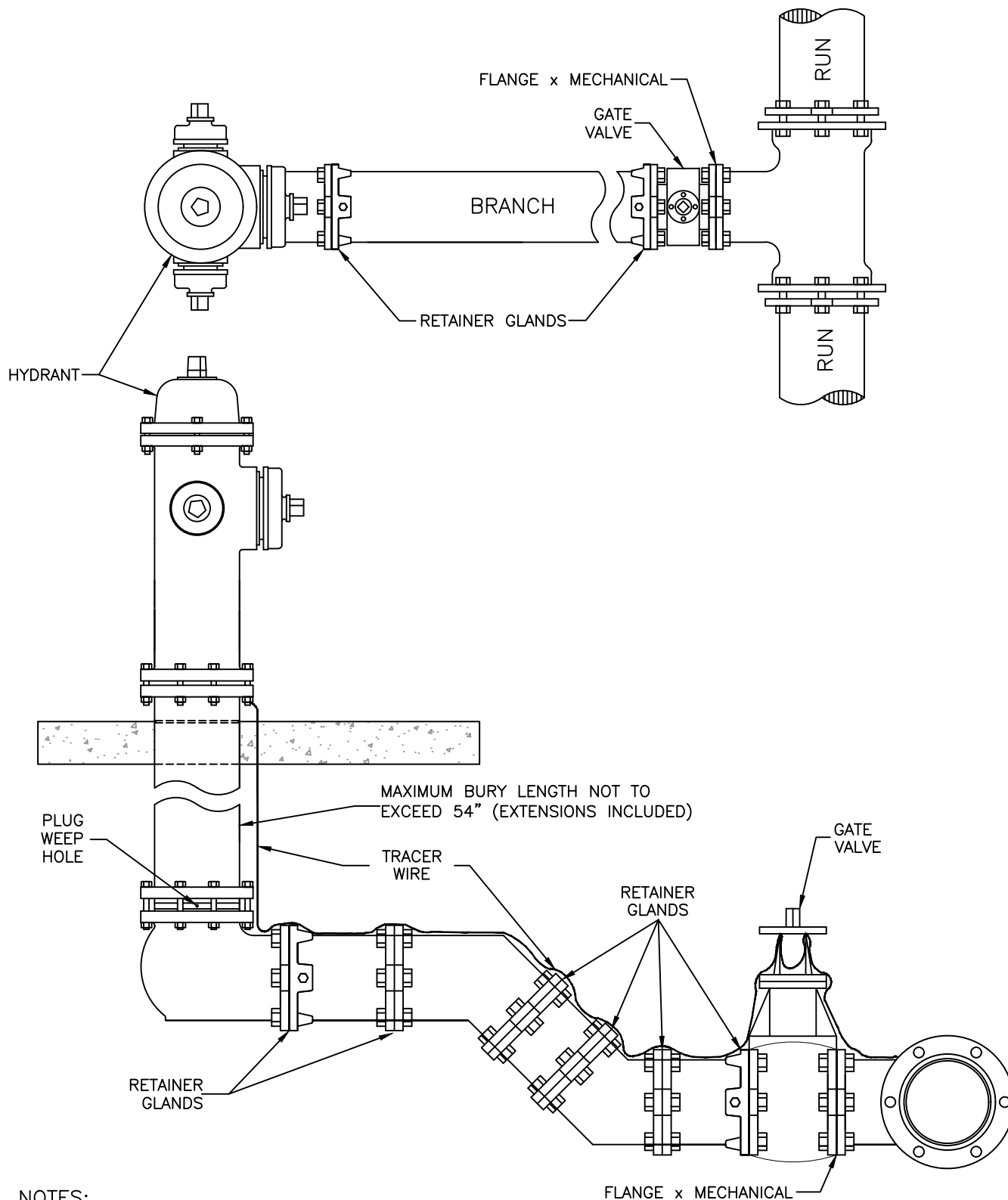
#### NOTES

1. PIPE INSTALLATIONS WHERE COVER OVER PIPE EXCEEDS 20' SHALL BE DESIGNED BY A CIVIL ENGINEER AND SPECIFIED IN THE PROJECT PLANS AND SPECIAL PROVISIONS.
2. PIPE EMBEDMENT MATERIAL SHALL CONSIST OF CLASS II OR CLASS III SELECT NATURAL MATERIAL OR PROCESSED PRODUCT AS DEFINED IN SUBSECTION 22-8.2, "PIPE EMBEDMENT ZONE" OF STANDARD SPECIFICATIONS AND INITIAL BACKFILL PLACED IN ACCORDANCE WITH SUBSECTION 22-8.3, "INITIAL BACKFILL", OF THE STANDARD SPECIFICATIONS.
3. BOTTOM OF TRENCH SHALL BE IN FIRM, UNIFORM-BEARING SOIL SURFACES. WHEN UNSUITABLE OR DISTURBED, THE CONTRACTOR SHALL REMOVE AND REFILL WITH SUITABLE MATERIAL AS SPECIFIED IN SUBSECTION 22-8.1, "FOUNDATION AND BEDDING", OF THE STANDARD SPECIFICATIONS.
4. STANDARD DETAIL W-29 SHALL BE APPLICABLE TO ALL WATER PIPE INSTALLATIONS WITH DIAMETERS OF 6 TO 30 INCHES. CONSTRUCTION PROCEDURES FOR PIPES LARGER THAN 30 INCHES SHALL BE PROVIDED BY THE DESIGN ENGINEER.
5. IN UNPAVED AREAS FINAL BACKFILL SHALL EXTEND TO THE SURFACE ELEVATION WITH 95% COMPACTION IN THE UPPER 24" OF TRENCH.

WATER MAIN TRENCH, BEDDING,  
AND BACKFILL DETAIL

REF. & REV.  
DEC. 2003  
MAR. 2021 (A.7)

CITY OF FRESNO  
W-29



**NOTES:**

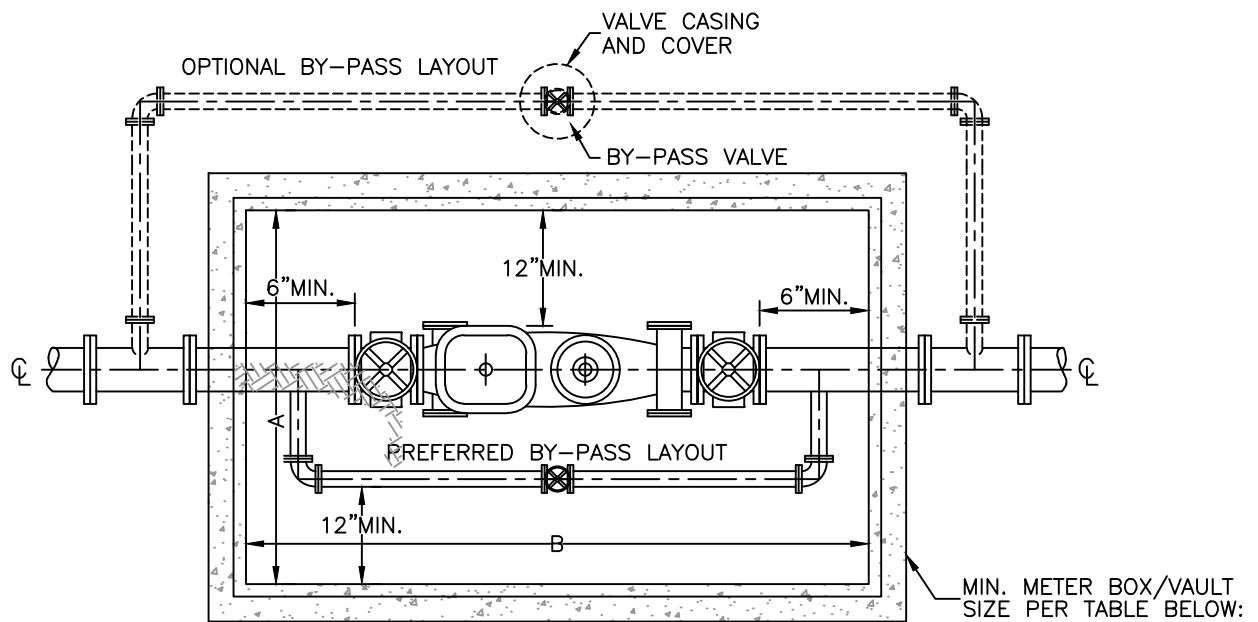
1. HYDRANT MUST BE FULLY RESTRAINED FROM TEE TO HYDRANT. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS ON PUSH ON PIPE PER CITY SPECIFICATIONS.
2. JOINT RESTRAINT IS NOT REQUIRED ON THE RUN OF THE TEE UNLESS THE TEE FALLS WITHIN THE RESTRAINED LENGTH REQUIREMENT OF ANOTHER FITTING.
3. FOR TEST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

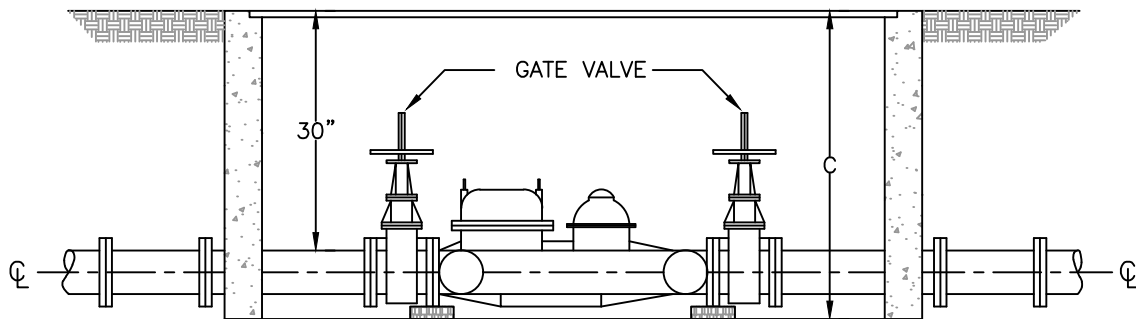
REF. & REV.  
DEC. 2003  
MAR. 2021 (A.7)

CITY OF FRESNO

W-37



PLAN VIEW



ELEVATION

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

MINIMUM METER  
BOX/VAULT SIZE

NOTES:

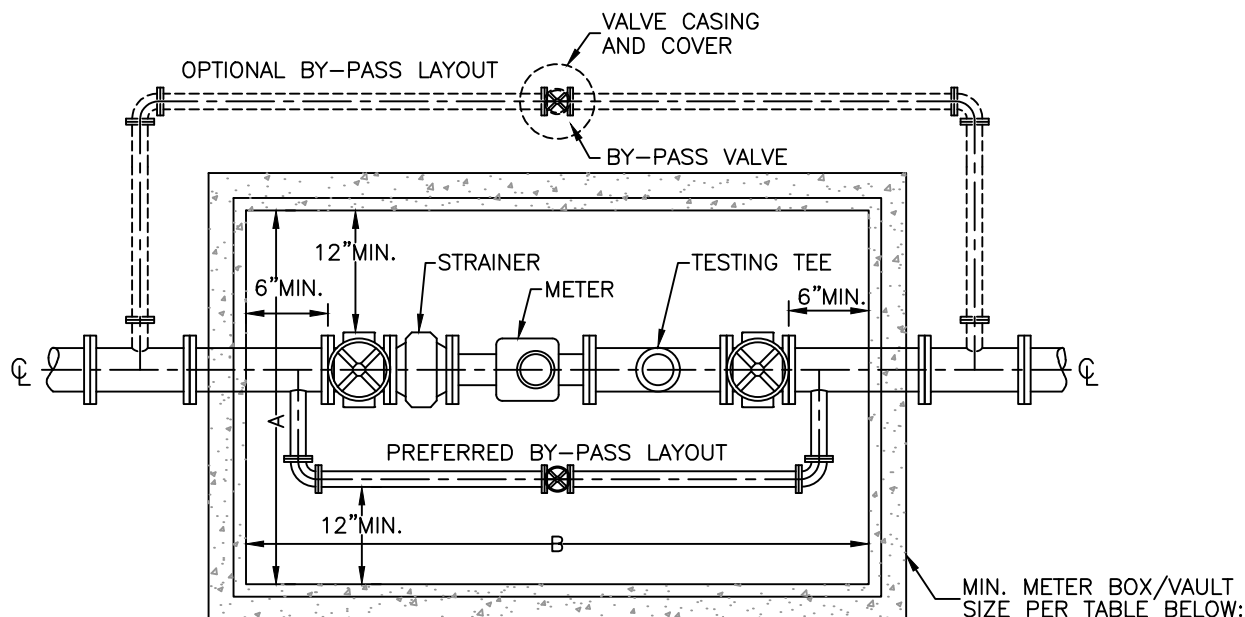
1. BY-PASS MAY BE INSIDE METER BOX OR OUTSIDE METER BOX. IF INSTALLED OUTSIDE METER BOX A CASING AND COVER WILL BE REQUIRED OVER BY-PASS VALVE.
2. 1-1/2 INCH AND 2 INCH BY-PASS VALVES MUST BE BALL VALVES. THREE INCH AND LARGER TO BE RESILIENT SEATING SHUT-OFF VALVES.
3. METERS DEEPER THAN 30 INCHES TO 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

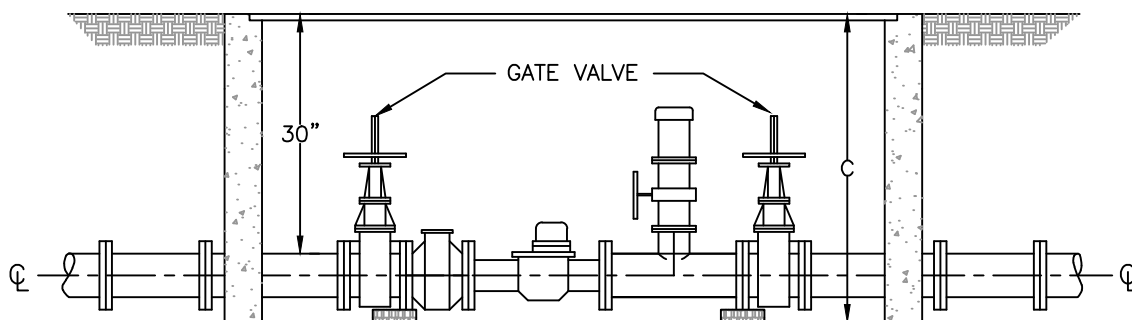
REF. & REV.  
AUG. 2002  
MAR. 2021 (A.7)

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/VULT SIZE

NOTES:

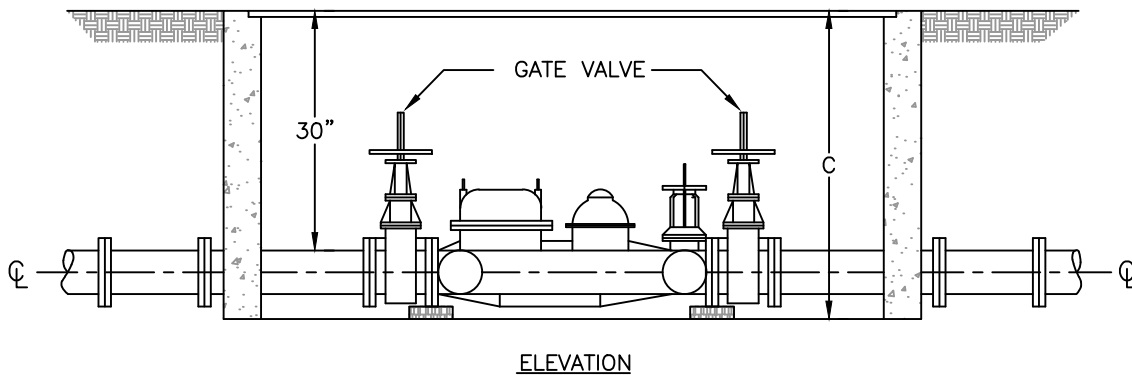
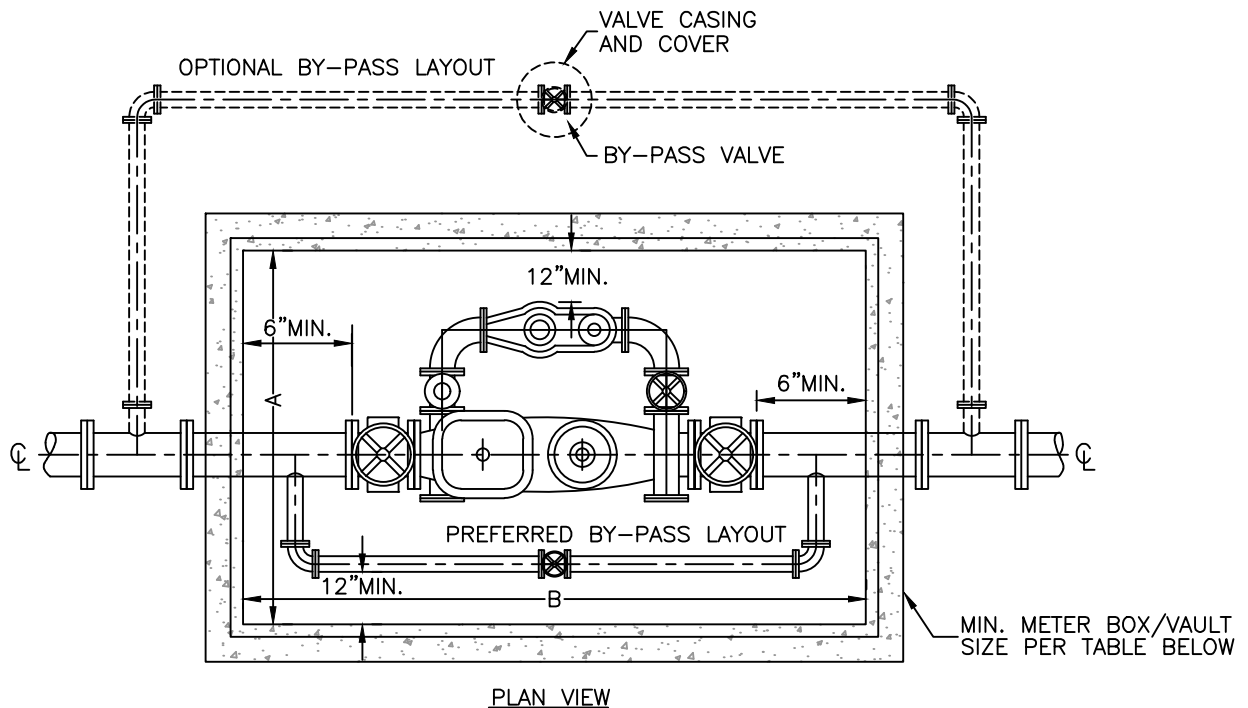
1. BY-PASS MAY BE INSIDE METER BOX OR OUTSIDE METER BOX. IF INSTALLED OUTSIDE METER BOX A CASING AND COVER WILL BE REQUIRED OVER BY-PASS VALVE. 1-1/2 INCH AND 2 INCH BY-PASS VALVES MUST BE BALL VALVES. THREE INCH AND LARGER TO BE RESILIENT SEATING SHUT-OFF VALVES.
2. METERS DEEPER THAN 30 INCHES TO TOP OF PIPE MUST BE RAISED TO 30 INCHES.
3. INLET AND OUTLET VALVES TO BE INSTALLED AT EACH END OF METER.
4. TEST TEE TO BE 3 PIPE DIAMETERS DOWNSTREAM OF METER.
5. WHEN CHARGING METER WITH WATER - OPEN INLET VALVE VERY SLOWLY, THEN SLOWLY OPEN OUTLET VALVE.
6. 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  
MAR. 2021 (A.7)

**CITY OF FRESNO**  
**W-41**





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

MINIMUM METER  
BOX/VAULT SIZE

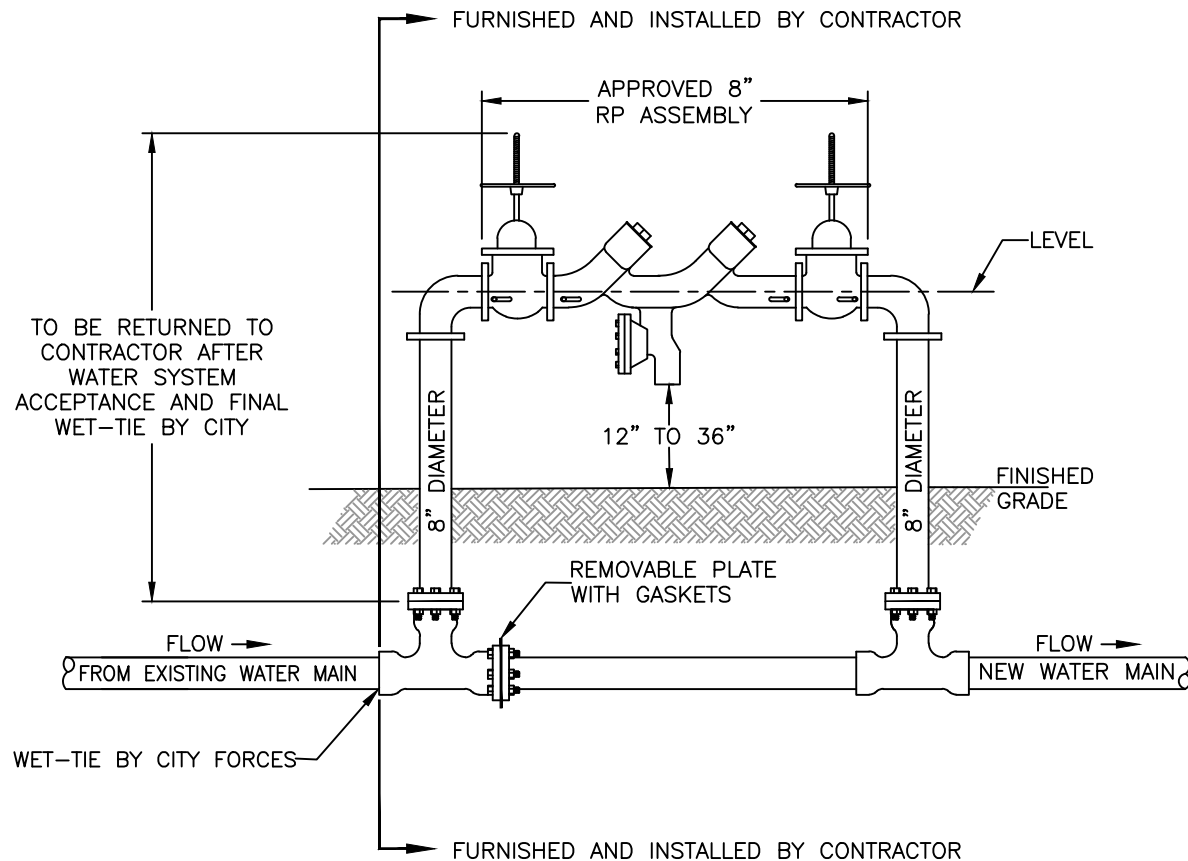
NOTES:

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  
MAR. 2021 (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

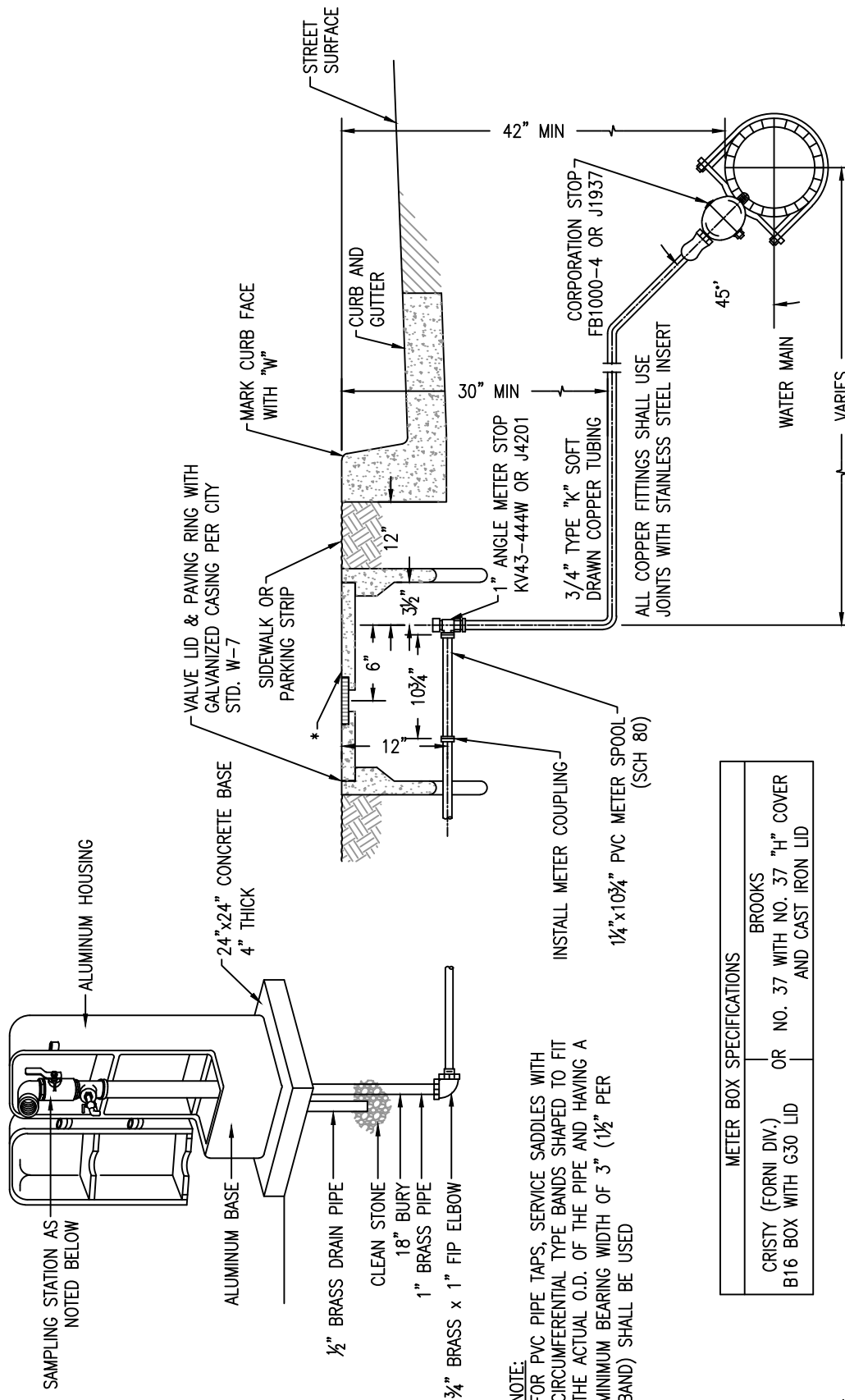
REF. & REV.  
MAR. 2006  
MAR. 2021 (A.7)

CITY OF FRESNO  
W-43

# SAMPLE STATION INSTALLATION

REF & REV  
AUG. 1994  
MAR. 2007  
SEPT. 2009  
MAR. 2021 (A.7)

CITY OF FRESNO  
W-44

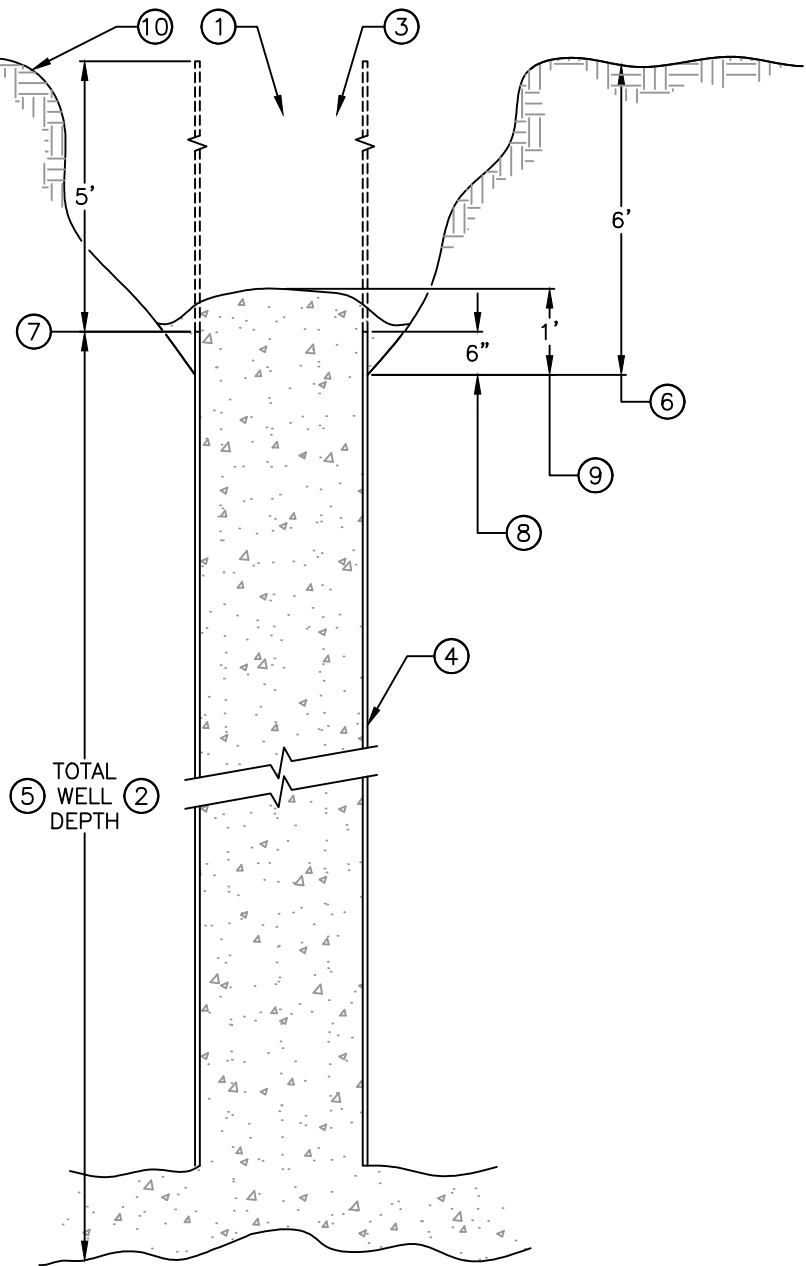


## NOTES:

1. SAMPLING STATIONS SHALL BE ECLIPSE 88WC OR SAFETY GUARD BSS02 OR EQUAL AS APPROVED BY THE WATER DIVISION.
2. SAMPLING STATIONS SHALL BE 18" BURY, WITH A 1" FIP DISCHARGE. A 1/4" BENT-NOSE SAMPLING BIBB SHALL BE LOCATED BEFORE THE DISCHARGE.
3. ALL STATIONS SHALL BE ENCLOSED IN A LOCKABLE, ALUMINUM-CAST HOUSING.
4. WHEN OPENED, THE STATION SHALL REQUIRE NO KEY FOR OPERATION AND THE WATER WILL FLOW IN ALL BRASS WATERWAY.
5. ALL WORKING PARTS SHALL BE OF BRASS AND SERVICEABLE FROM ABOVE GROUND WITH NO DIGGING. (OPTIONAL: IF DESIRED, PROVIDE A DRAINAGE HOLE WITHIN THE LOCKING COVER TO PREVENT WATER FROM ACCUMULATING INSIDE THE UNIT).
6. A 1" BALL VALVE SHALL CONTROL THE WATER FLOW, AND BE LOCATED BEFORE (OR AFTER) THE SAMPLING BIBB, AS MANUFACTURED BY KUPFERELE FOUNDRY, ST. LOUIS, MO 63102.

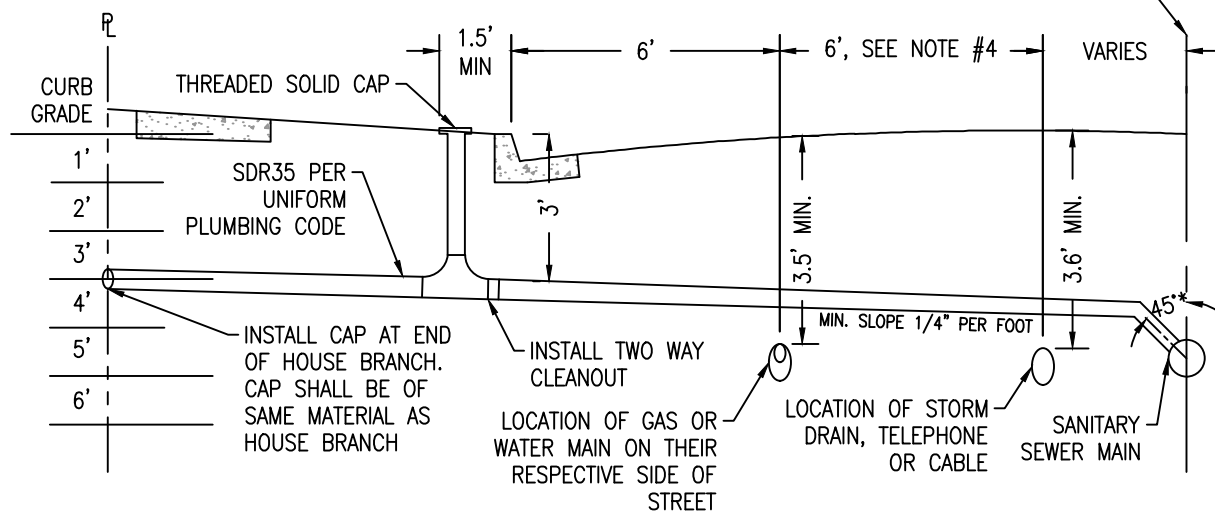
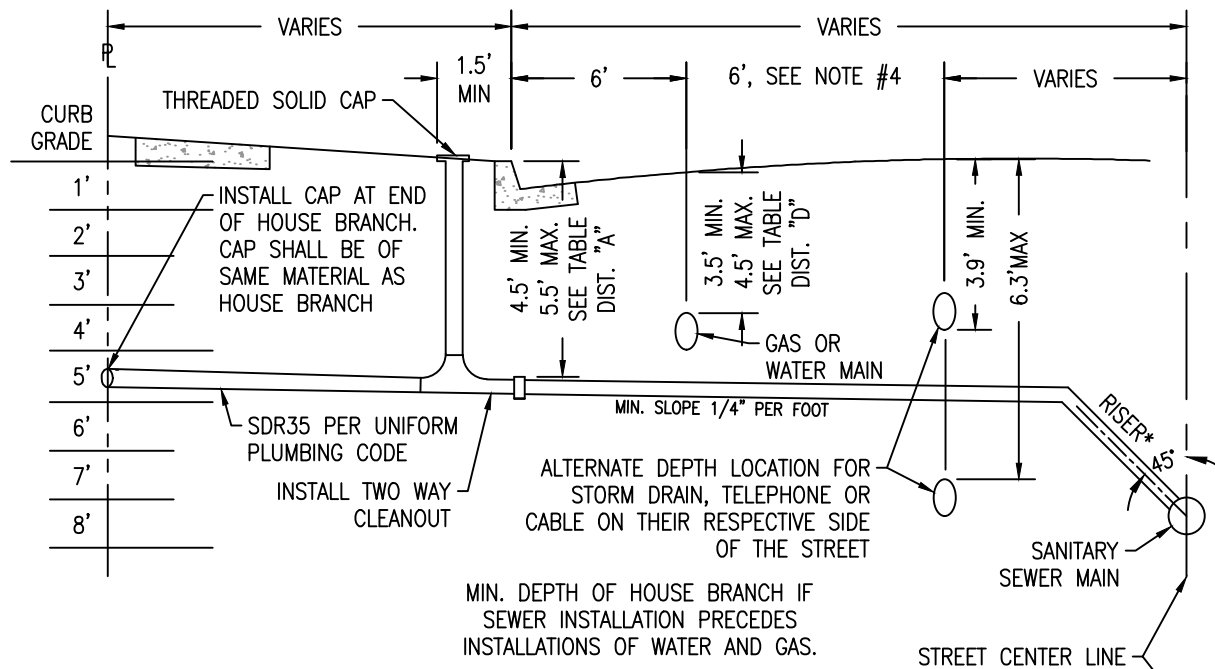
# **LEGEND:**

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)
- |   |                       | 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.



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. REFER TO DWG. P-47 FOR LOCATION OF UNDERGROUND FACILITIES IN ARTERIAL AND COLLECTOR STREETS.
4. MINIMUM VERTICAL CLEARANCE BETWEEN THE HOUSE BRANCH AND WATER MAIN SHALL BE 1.0'.
5. FOR TRENCH BACKFILL SEE DWG's P-48, S-10, W-29 AND SECTION 17-5 OF CITY STANDARD SPECIFICATIONS.
6. 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

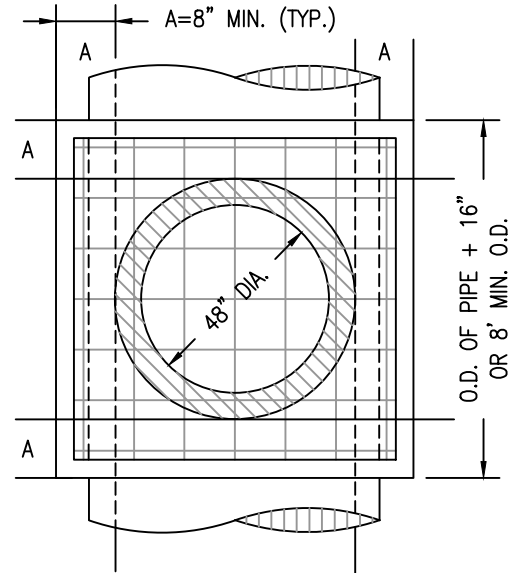
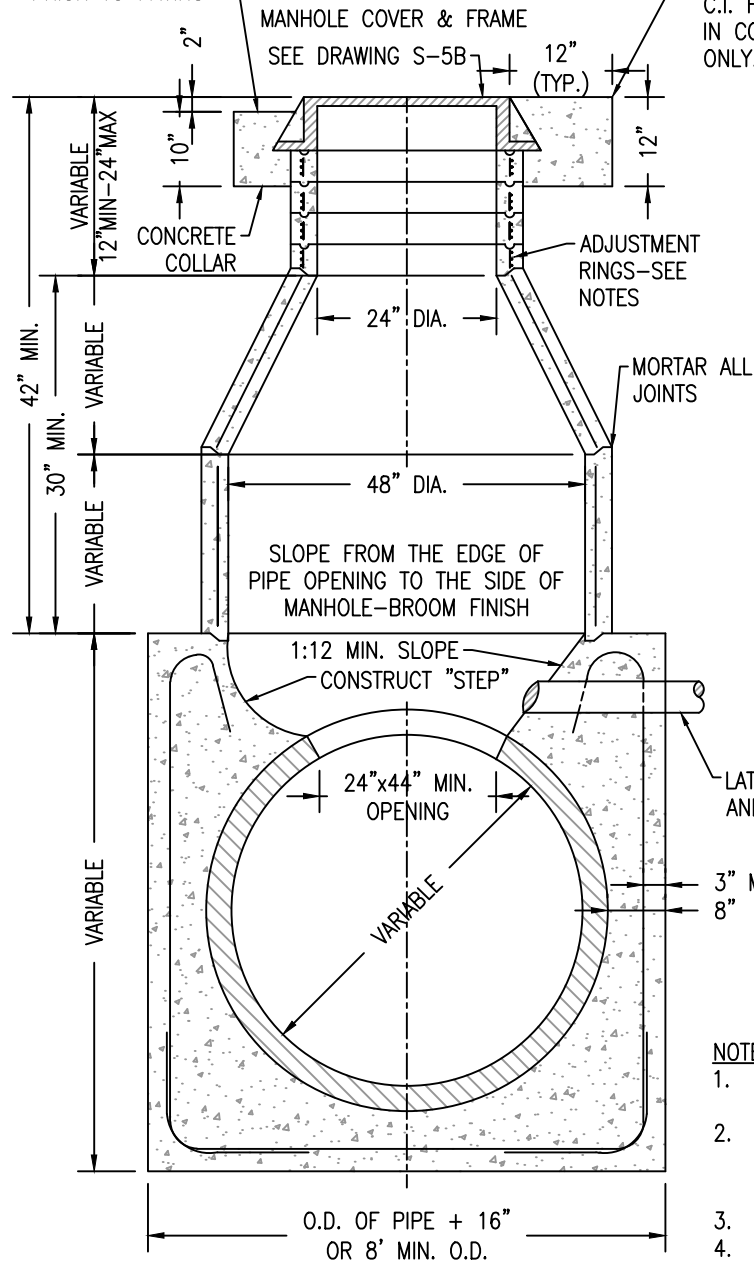
REF. & REV.  
JUNE 2014  
MAR. 2021 (A.7)

CITY OF FRESNO

S-1

IN-STREET INSTALLATION  
TO BE PAVED WITH A.C.  
(PG 64-10 ASPHALT)  
TACK-COAT CONCRETE  
AND METAL SURFACES  
PRIOR TO PAVING

NON-STREET INSTALLATION  
6 SACK P.C.C. COLLAR AROUND  
C.I. FRAME - AS SHOWN. FRAME  
IN CONC. BED FOR CONC. STREET  
ONLY.



#### NOTES FOR MANHOLE SUB-STRUCTURE:

1. ALL CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 3,000 P.S.I. AT 28 DAYS.
2. ALL REINFORCING STEEL TO BE NO. 4 BARS GRADE 60 STEEL, SPACED 12" O.C., BOTH WAYS, IN TOP, BOTTOM & WALLS.
3. MINIMUM WALL THICKNESS IS 8".
4. SEE PLAN FOR FLOW LINE ELEVATION & PIPE SIZE.

#### GENERAL NOTES:

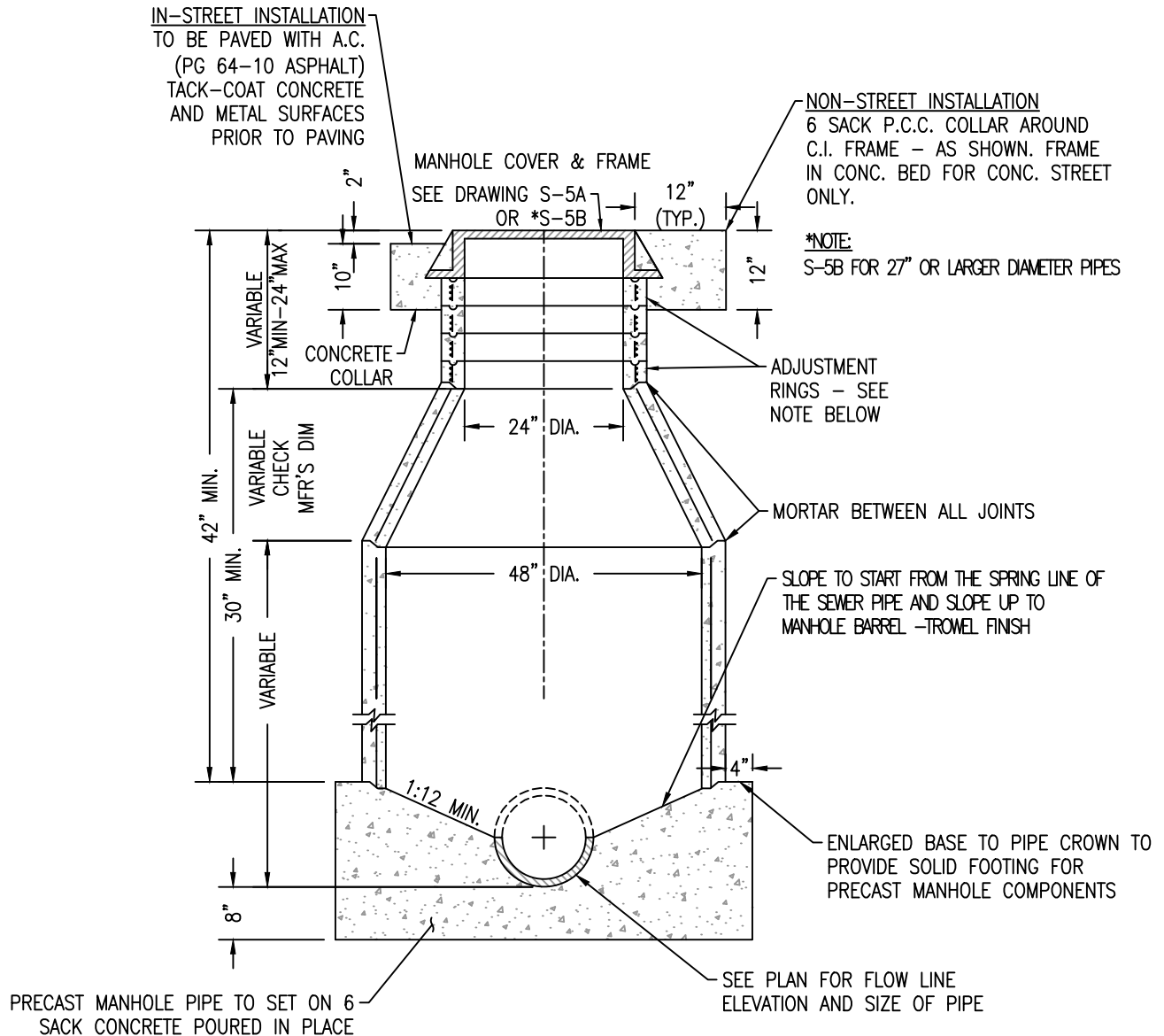
1. PRECAST PIPE, ADJUSTMENT RINGS & TAPERED SECTIONS SHALL BE CLASS 2 R.C.P. IN ACCORDANCE WITH ASTM C-478, ELLIPTICAL SINGLE LINE REINFORCEMENT WILL NOT BE PERMITTED.
2. MANHOLE SHALL BE LINED WITH T-LOCK OR COATED WITH ONE OF THE FOLLOWING: RAVEN 400 OR RAVEN 405, PRODUCTS OF RLS SOLUTIONS; NEOPOXY 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.
3. THIS STANDARD DRAWING SHALL BE USED FOR SEWER PIPES WITH DIAMETERS GREATER THAN 42" OR IN SITUATIONS WHERE THE MANHOLE SUB-STRUCTURE IS REQUIRED AS DIRECTED BY THE CITY ENGINEER.
4. DESIGN FLOW CONFIGURATION SEE DRAWING S-12.

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

REF. & REV.  
AUG. 2015  
MAR. 2021 (A.7)

CITY OF FRESNO

S-2



## MANHOLE DETAILS

### NOTES:

1. 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. THIS STANDARD DRAWING SHALL BE USED FOR SEWER PIPES WITH DIAMETERS OF UP TO AND INCLUDING 27".
3. DESIGN FLOW CONFIGURATION SEE DRAWING S-12.
4. MANHOLES ON SEWER LINES EQUAL TO OR GREATER THAN 12", OR ON ANY SIZE SEWER WITHIN 600' OF A 30" OR LARGER SEWER LINE 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.
5. FOR SEWER LINES 12" TO 18", AND NOT WITHIN 600' OF A 30" OR LARGER SEWER MAIN, MAY USE SEWPERCOAT OR APPROVED EQUAL.

## 48" SEWER MANHOLE

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

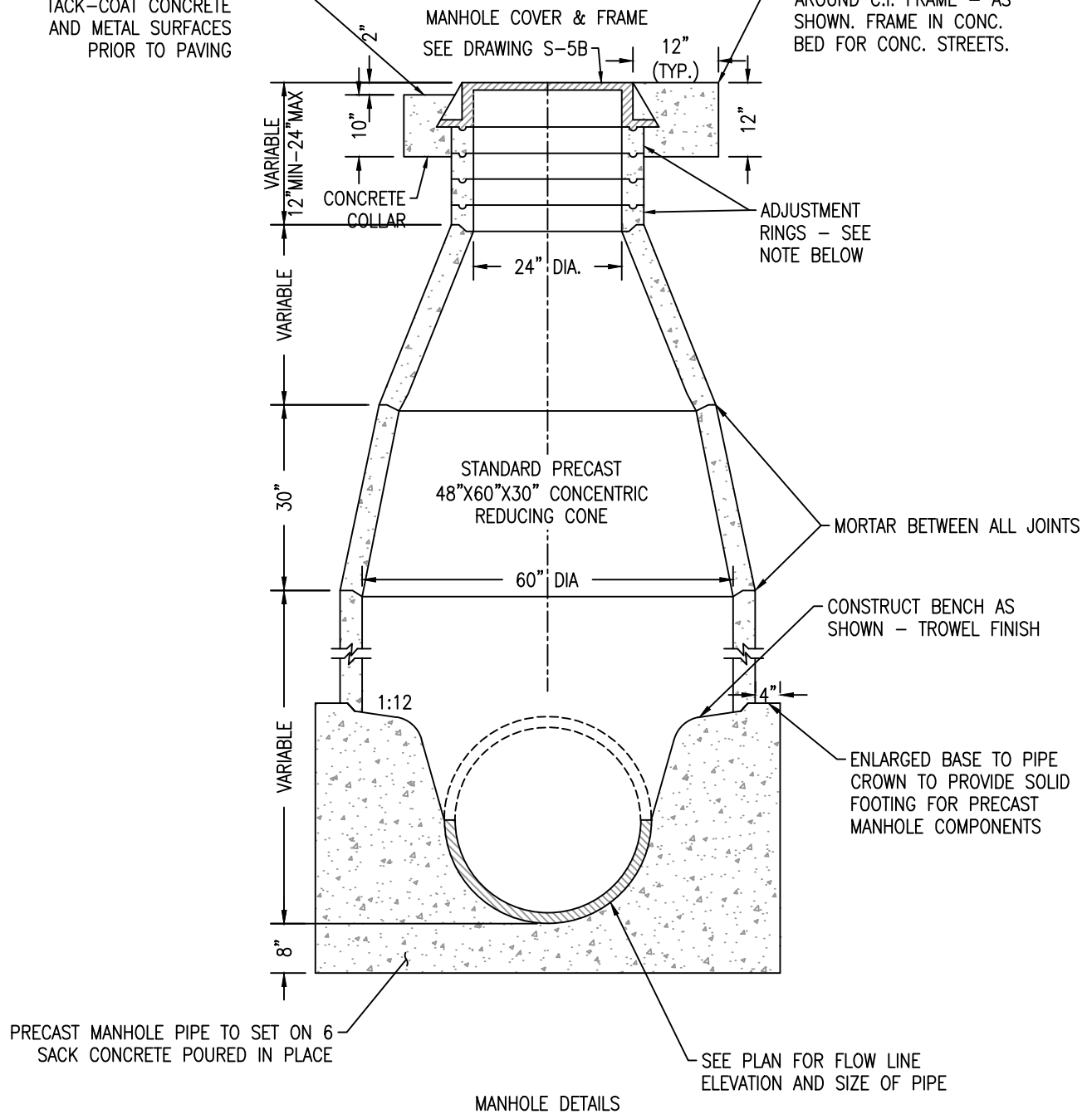
REF. & REV.  
AUG. 2015  
MAR. 2021 (A.7)

CITY OF FRESNO

S-3

IN-STREET INSTALLATION  
TO BE PAVED WITH A.C.  
(PG 64-10 ASPHALT)  
TACK-COAT CONCRETE  
AND METAL SURFACES  
PRIOR TO PAVING

NON-STREET INSTALLATION  
6 SACK P.C.C. COLLAR  
AROUND C.I. FRAME - AS  
SHOWN. FRAME IN CONC.  
BED FOR CONC. STREETS.



MANHOLE DETAILS

**NOTES:**

1. 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. THIS STANDARD DRAWING SHALL BE USED FOR SEWER PIPES WITH DIAMETERS OF 30" THROUGH 42".
3. MANHOLE SHALL BE LINED WITH T-LOCK OR COATED WITH ONE OF THE FOLLOWING: RAVEN 400 OR 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.
4. WHEN PIPE IS CUT, ALL EXPOSED REINFORCING STEEL TO BE COATED WITH 2" OF CONCRETE.
5. DESIGN FLOW CONFIGURATION SEE DRAWING S-12.

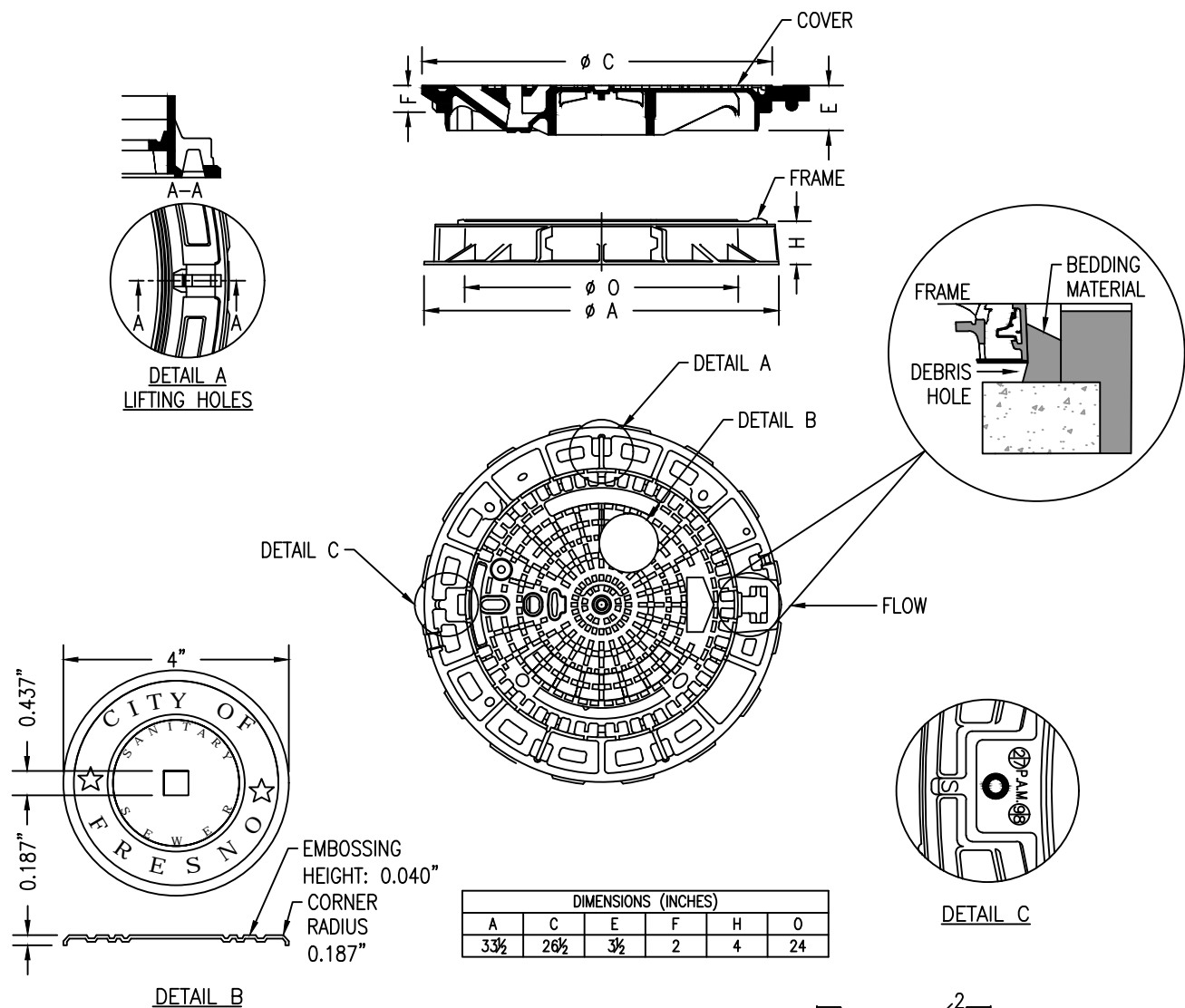
**60" SEWER MANHOLE**  
SEWER PIPES W/DIA. OF 30" THRU AND INCLUDING 42"  
WITH PRECAST SECTIONS AND  
CAST IRON FRAME AND COVER

REF. & REV.  
AUG. 2015  
MAR. 2021 (A.7)

CITY OF FRESNO

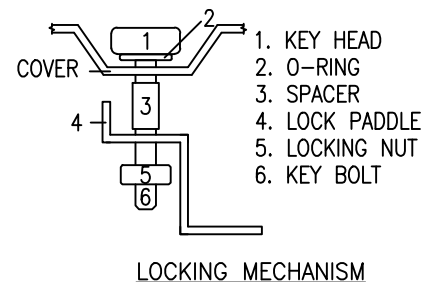
**S-4**





#### 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.



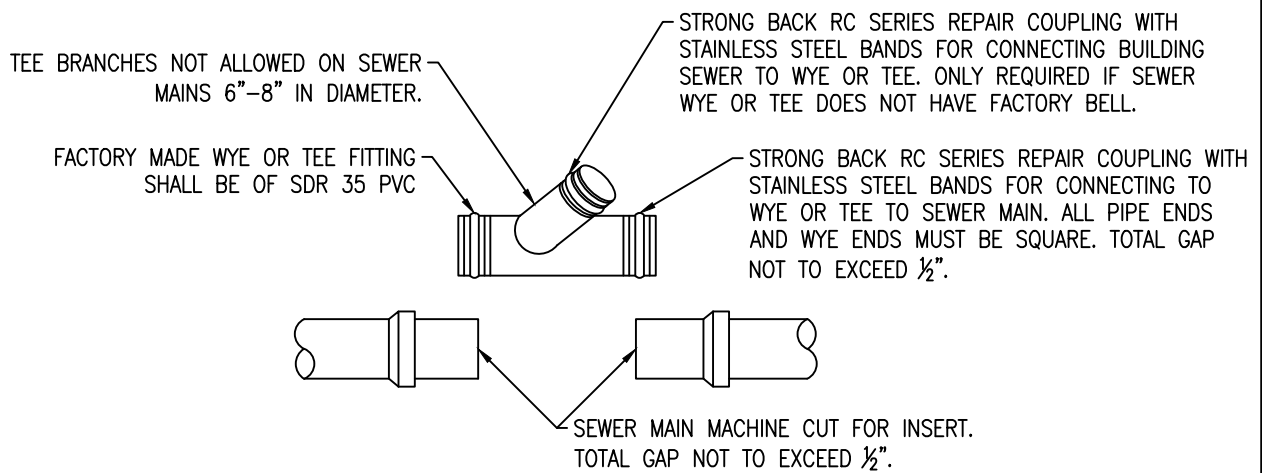
#### LOCK INSTALLATION INSTRUCTIONS:

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.

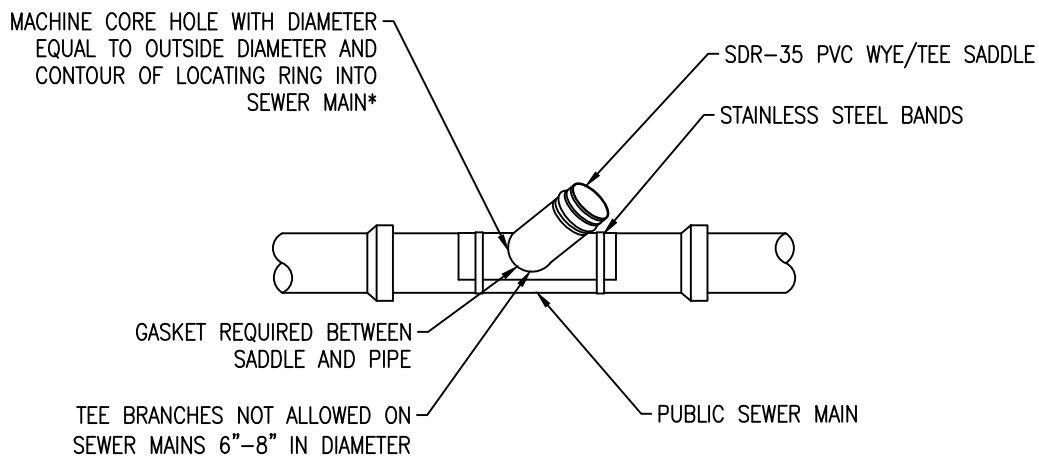
## PAMREX DUCTILE IRON FRAME AND COVER FOR SEWER PIPE 27" OR LARGER

REF. & REV.  
AUG. 2015  
MAR. 2021 (A.7)

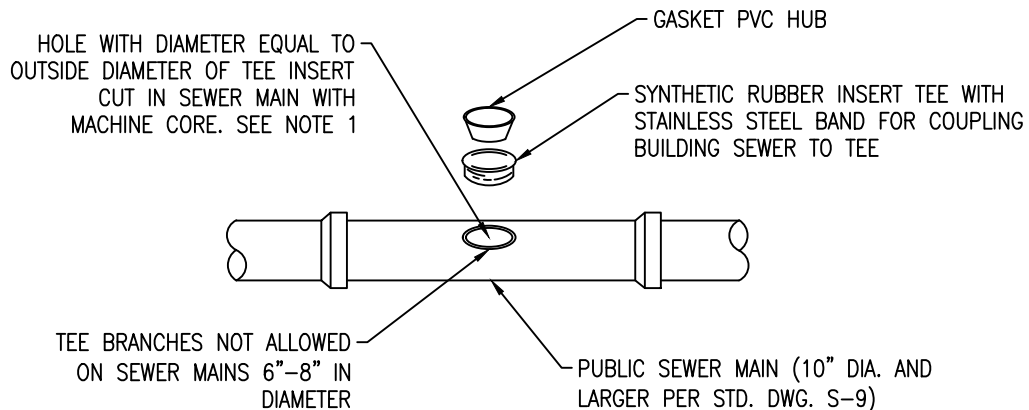
CITY OF FRESNO  
S-5B



### METHOD 1: INSERTION OF FACTORY MADE WYE OR TEE



### METHOD 2: SADDLE WYE OR TEE



### METHOD 3: COMPRESSION TEE

#### NOTES:

1. IF MACHINE CORE IS NOT CLEAN CUT (WITHOUT DAMAGE TO THE HOST PIPE) MUST USE METHOD 1 TO INSTALL HOUSE BRANCH

# HOUSE BRANCH SIZE—APPROVED CONNECTION METHOD (METHODS SHOWN ON S-8)

		SEWER MAIN SIZE				
		6"	8"	10"	12"	15"
H.B. SIZE	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

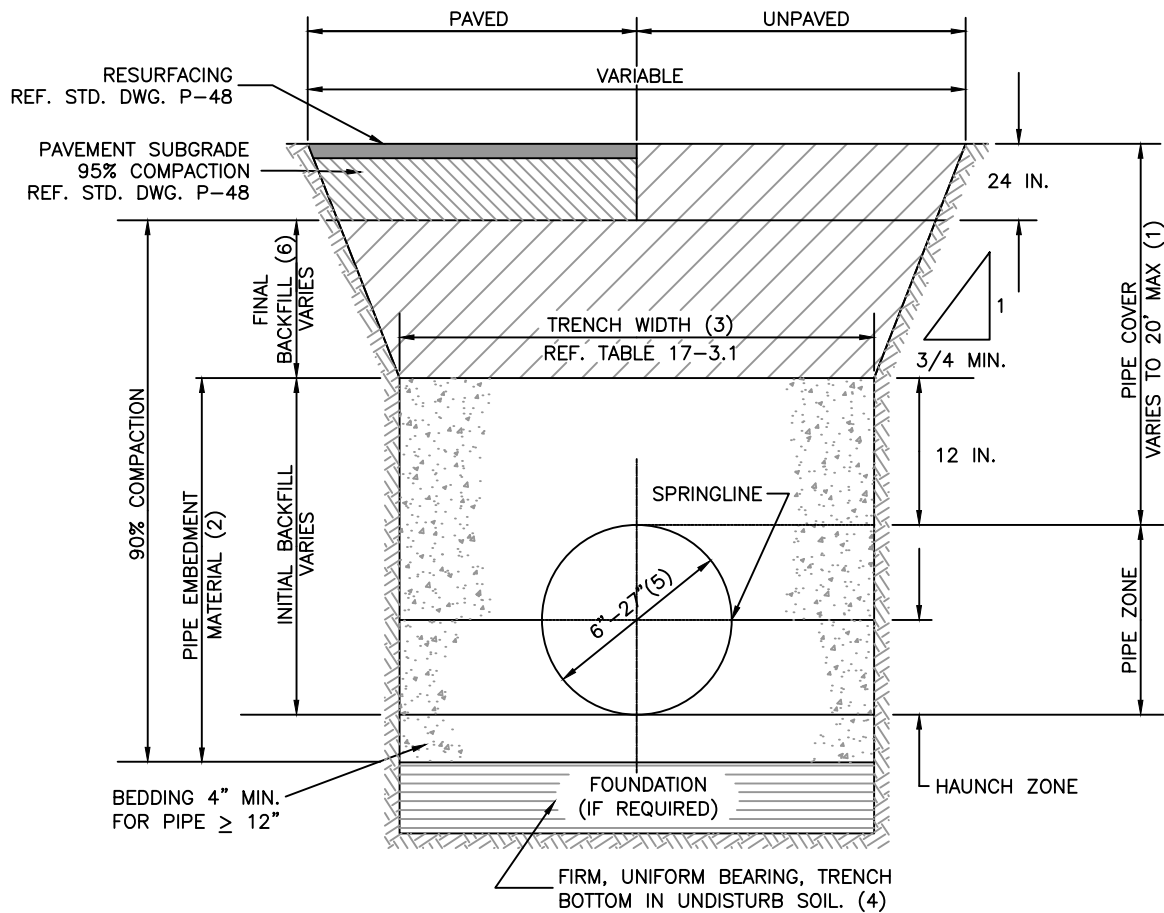
**NOTES:**

1. ALL WYES AND TEES SHALL BE OF SAME MATERIALS AS THAT OF THE SEWER MAIN OR APPROVED EQUAL.
2. 8 INCH DIAMETER AND LARGER HOUSE BRANCHES REQUIRE A MANHOLE AT POINT OF CONNECTION.
3. 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. SADDLES SHALL BE OF SAME MATERIAL AS SEWER MAIN OR APPROVED EQUAL AND SHALL NOT EXTEND BEYOND 1/4" INTO THE MAIN SEWER.
5. SEWER HOUSE BRANCHES SHALL BE INSTALLED IN CONFORMANCE WITH DRAWING S-1 OF THE CITY STANDARD SPECIFICATIONS AND THE UNIFORM PLUMBING CODE.
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)

**ADDITIONAL LIMITATIONS  
ON HOUSE BRANCH CONNECTIONS**

REF. & REV.  
~~AUG. 2015~~  
MAR. 2021 (A.7)

CITY OF FRESNO  
**S-9**



#### NOTES

1. PIPE INSTALLATIONS WHERE COVER OVER PIPE EXCEEDS 20' SHALL BE DESIGNED BY A CIVIL ENGINEER AND SPECIFIED IN THE PROJECT PLANS AND SPECIAL PROVISIONS.
2. PIPE EMBEDMENT MATERIAL SHALL CONSIST OF CLASS II OR CLASS III SELECT NATURAL MATERIAL OR PROCESSED PRODUCT AS DEFINED IN SUBSECTION 17-5.2, "PIPE EMBEDMENT ZONE" OF STANDARD SPECIFICATIONS AND INITIAL BACKFILL PLACED IN ACCORDANCE WITH SUBSECTION 17-5.3, "INITIAL BACKFILL", OF THE STANDARD SPECIFICATIONS.
3. MINIMUM AND MAXIMUM TRENCH WIDTH ALLOWED SHALL BE MAINTAINED AS SPECIFIED IN TABLE 17-3.1, SUBSECTION 17-3.2.1, "TRENCH WIDTHS", OF THE STANDARD SPECIFICATIONS.
4. BOTTOM OF TRENCH SHALL BE IN FIRM, UNIFORM-BEARING SOIL SURFACES. WHEN UNSUITABLE OR DISTURBED, THE CONTRACTOR SHALL REMOVE AND REFILL WITH SUITABLE MATERIAL AS SPECIFIED IN SUBSECTION 17-5.1, "FOUNDATION AND BEDDING", OF THE STANDARD SPECIFICATIONS.
5. STANDARD DETAIL S-10 SHALL BE APPLICABLE TO ALL SEWER PIPE INSTALLATIONS WITH DIAMETERS OF 6 TO 27 INCHES. CONSTRUCTION PROCEDURES FOR PIPES LARGER THAN 30 INCHES SHALL BE PROVIDED BY THE CITY ENGINEER.
6. IN UNPAVED AREAS FINAL BACKFILL SHALL EXTEND TO THE SURFACE ELEVATION WITH 95% COMPACTION IN THE UPPER 24" OF TRENCH.

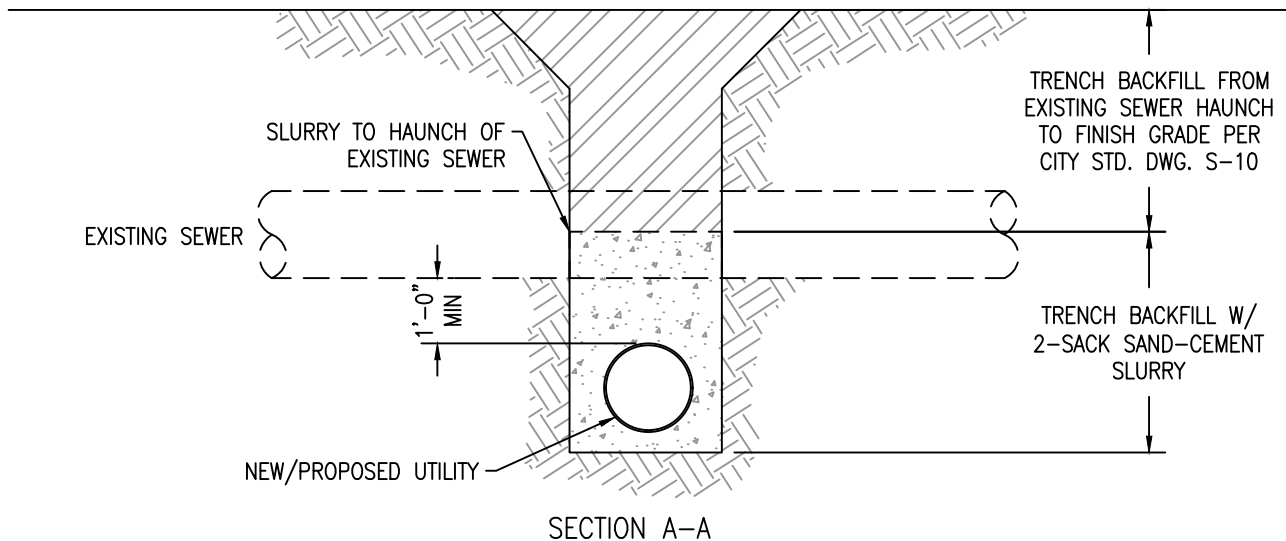
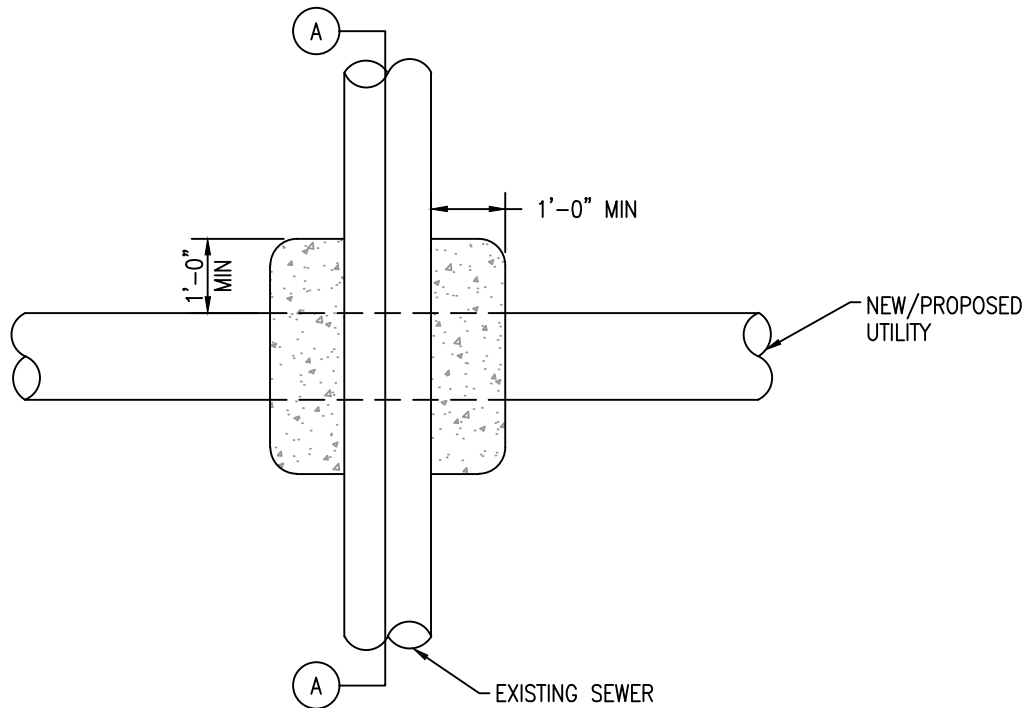
## SEWER MAIN TRENCH, BEDDING, AND BACKFILL DETAIL

REF. & REV.  
NOV. 2007  
MAR. 2021 (A.7)

CITY OF FRESNO

S-10

# CASE 1: UNDAMAGED EXISTING UTILITY AT NEW UTILITY INSTALLATION



## NOTES:

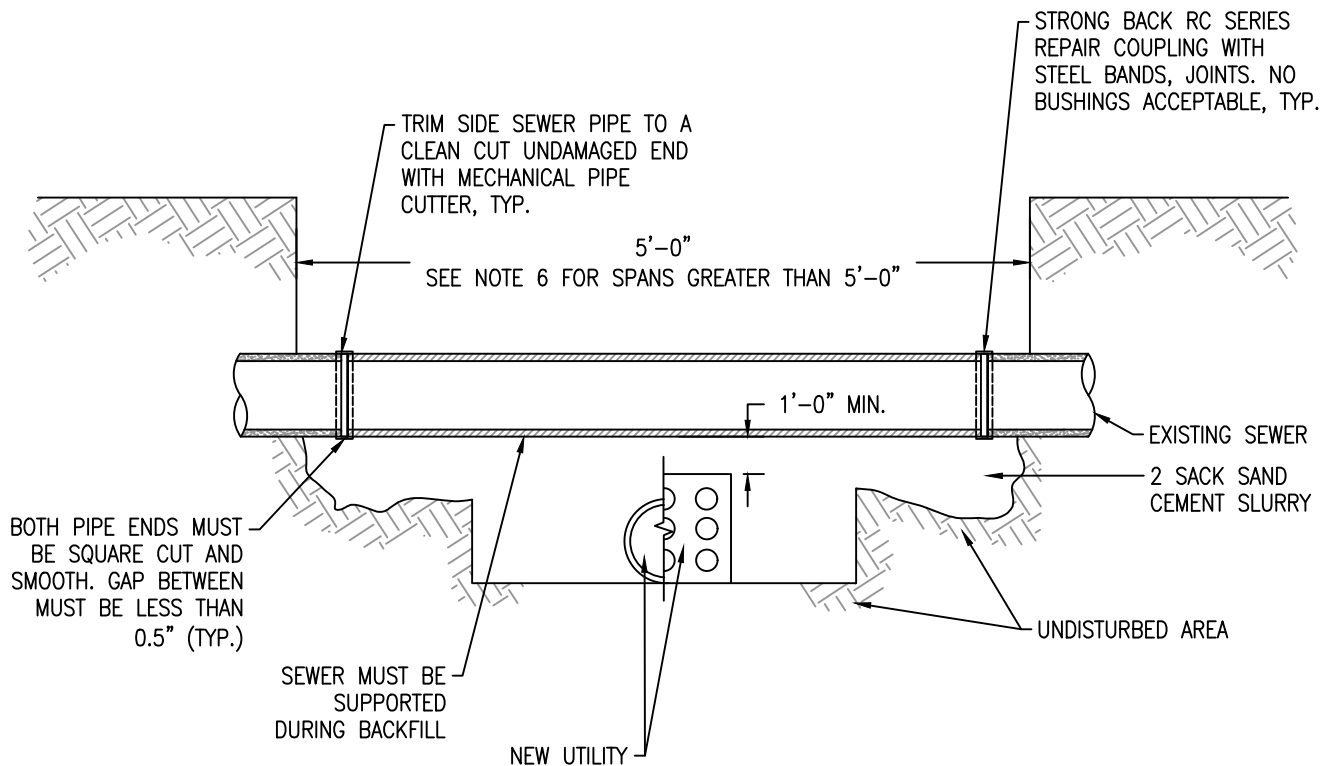
1. ALL LINES TO BE PROTECTED IN PLACE.
2. NO VENTS OR STRUCTURES TO BE LOCATED WITHIN PIPELINE EASEMENT.
3. ANY NEW UTILITY SHALL HAVE A MINIMUM OF 1'-0" CLEARANCE FROM ANY SEWER FACILITY. ANY NEW UTILITY WITHIN 1'-0" SHALL HAVE CLSM, 2 SACK, BETWEEN THE UTILITY LINES.
4. WHERE JOINT IN THE UTILITY OCCURS AT THE EDGE OF THE SLURRY SUPPORT, EXTEND SUPPORT 6" MIN BEYOND THE JOINT.

PIPE/CONDUIT CROSSING UNDER  
EXISTING SEWER – CASE 1

REF. & REV.  
MAR. 2021 (A.7)

CITY OF FRESNO  
S-13A

## CASE 2: SEWER REPAIR AT NEW UTILITY INSTALLATION



### NOTES:

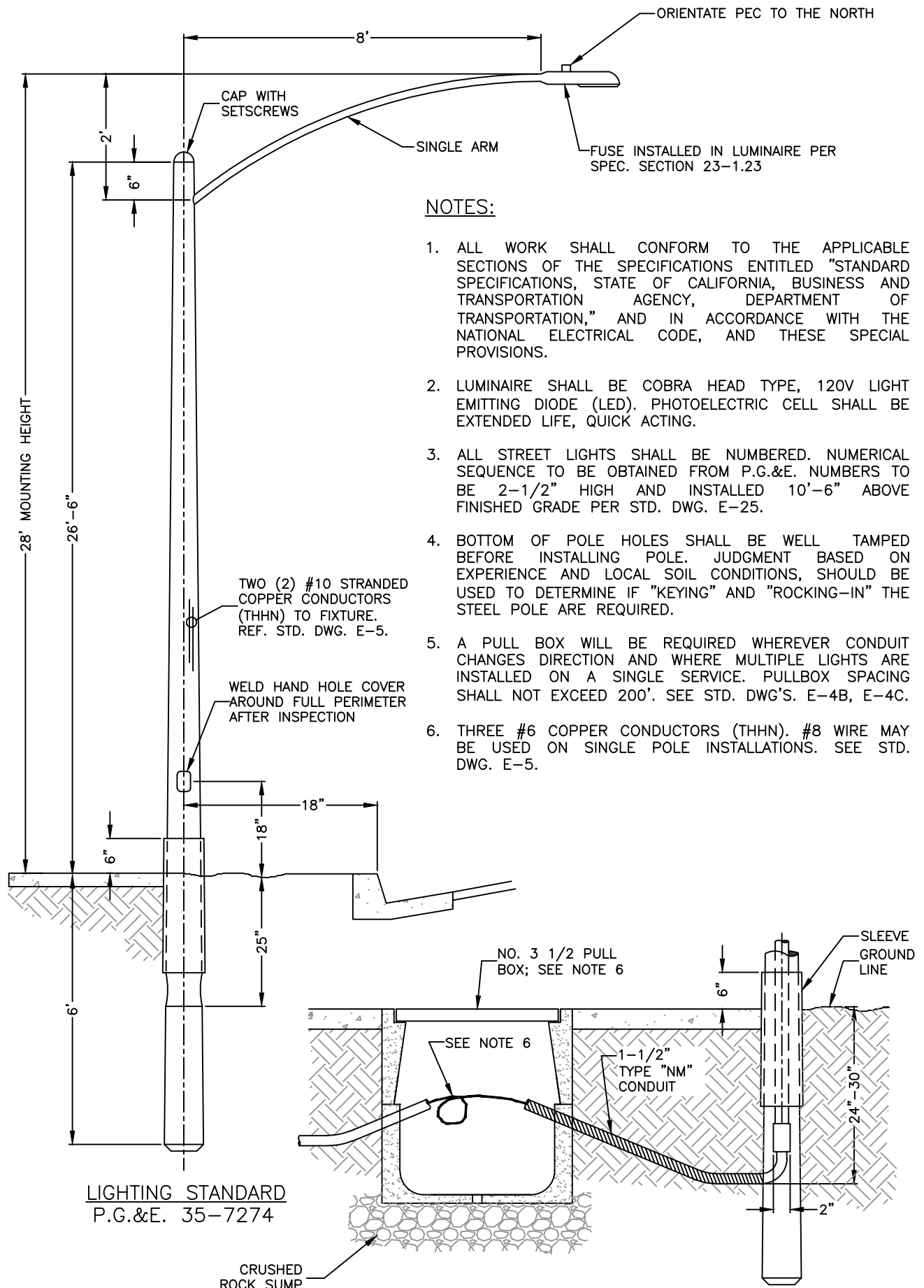
1. ALL LINES TO BE PROTECTED IN PLACE. THIS DETAIL SHALL APPLY WHENEVER THE SEWER MAIN IS CUT OR DAMAGED WHEN CONSTRUCTION PASSES BENEATH THESE LINES.
2. INSIDE DIAMETER OF REPLACEMENT PIPE TO BE THE SAME AS THE EXISTING PIPE TO WHICH IT CONNECTS.
3. PIPE TO HAVE THE SAME SLOPE AS ADJACENT PIPELINES.
4. MINIMUM CLEARANCE BETWEEN SEWER AND UTILITY SHALL BE 1'-0", CLEARANCE LESS THAN 1'-0" MUST BE APPROVED BY CITY PRIOR TO INSTALLATION.
5. ANY NEW UTILITY WITHIN 1'-0" SHALL HAVE CLSM, 2 SACK, BETWEEN THE UTILITY LINES.
6. BACKFILL EXCAVATION WITH 2 SACK CLSM TO SPRING LINE OF SEWER PIPE. IF MORE THAN 5'-0" OF SEWER IS EXPOSED, BACKFILL THE ENTIRE EXPOSED LENGTH TO 1'-0" ABOVE SEWER WITH 2 SACK CLSM.
7. SEWER PIPES MUST BE CCTV INSPECTED AFTER BACKFILL AND, IF APPLICABLE, PRIOR TO PAVING.

PIPE/CONDUIT CROSSING UNDER  
EXISTING SEWER — CASE 2

REF. & REV.  
MAR. 2021 (A.7)

CITY OF FRESNO  
S-13B



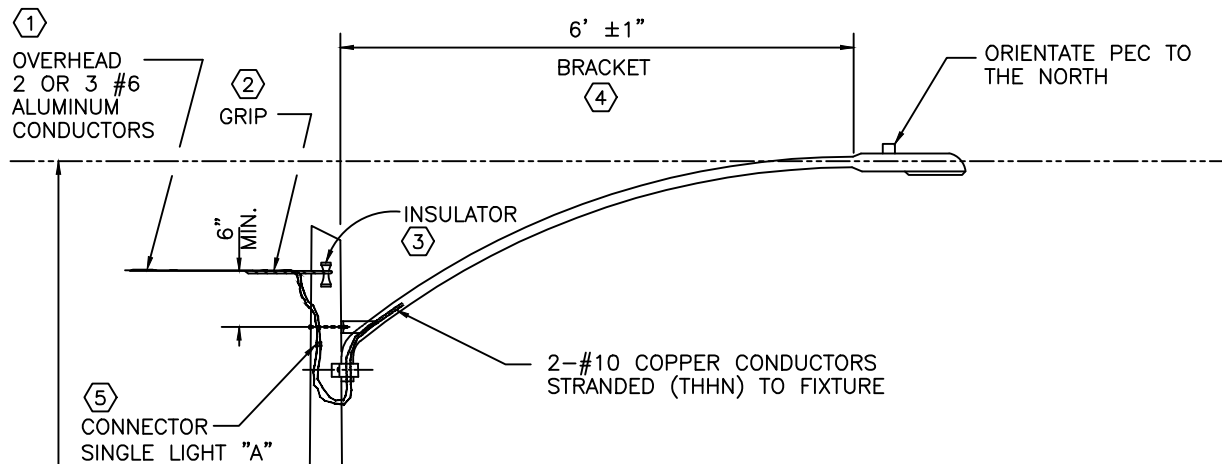


# STREETLIGHT-EMBEDDED POLE WITH NO FOUNDATION

REF. & REV.  
AUG. 2015  
MAR. 2021 (A.7)

CITY OF FRESNO  
E-2

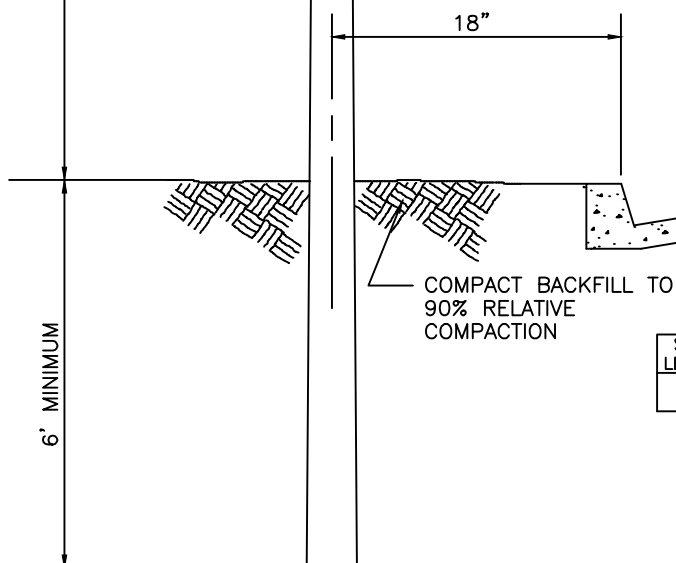




## DOUGLAS FIR, CLASS 5 STREET LIGHT POLE

### 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 NINE FEET ABOVE FINISHED GRADE.
4. POLES TO BE PRESSURE TREATED, BY OIL-PENTA PROCESS.
5. POLES SHALL BE P.G.& E. INSPECTED & APPROVED.



### INSTALLATION NOTES

- ① N-SD SERVICE DROP / SECONDARY CABLE  
(SINGLE LIGHT - DUPLEX)  
(MULTIPLE LIGHTS - TRIPLEX)  
(SEE SPECIAL PROVISIONS)

#### STREET LIGHT DROP SAGS

SPAN LENGTH	40'	60'	80'	100'	120'	140'	150'	175'	200'	225'
SAG	2"	5"	9"	1'-2"	1'-9"	2'-4"	3'-2"	4'-4"	5'-7"	7'-1"

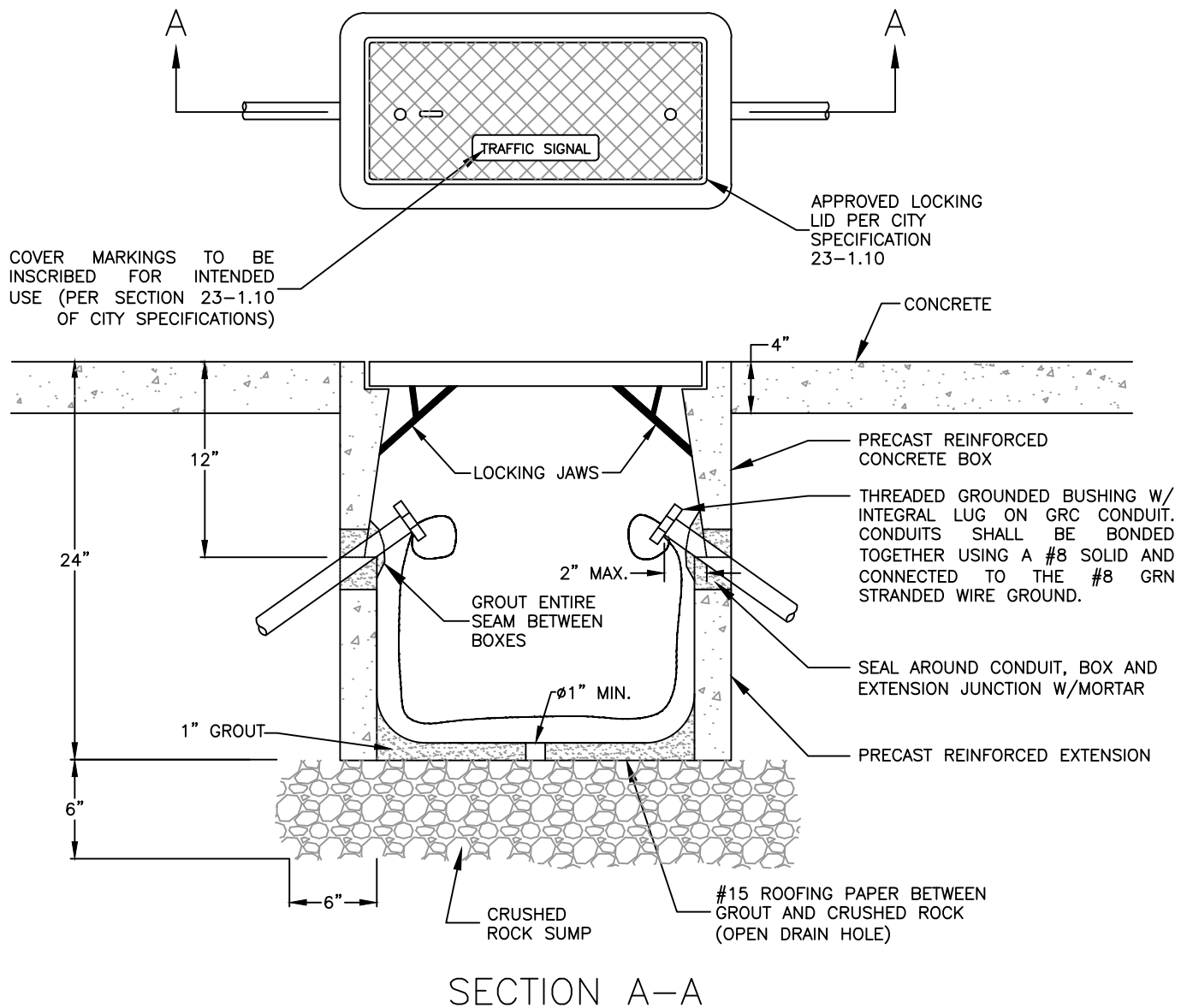
OVERHEAD CONDUCTORS NOT TO SPAN MORE THAN 225'

- ② CHANCE : DEADEND - 10AWCG  
LINE TIE - 10AWTY-56
- ③ JOSLYN J101/J1398 (SPOOL & CLEVIS)
- ④ JOSLYN JP40482 (BRACKET)
- ⑤ CONNECTOR (SEE SPECIAL PROVISIONS)

STREETLIGHT-LOCAL STREET  
OVERHEAD SERVICE - WOOD POLE  
TEMPORARY USE ONLY

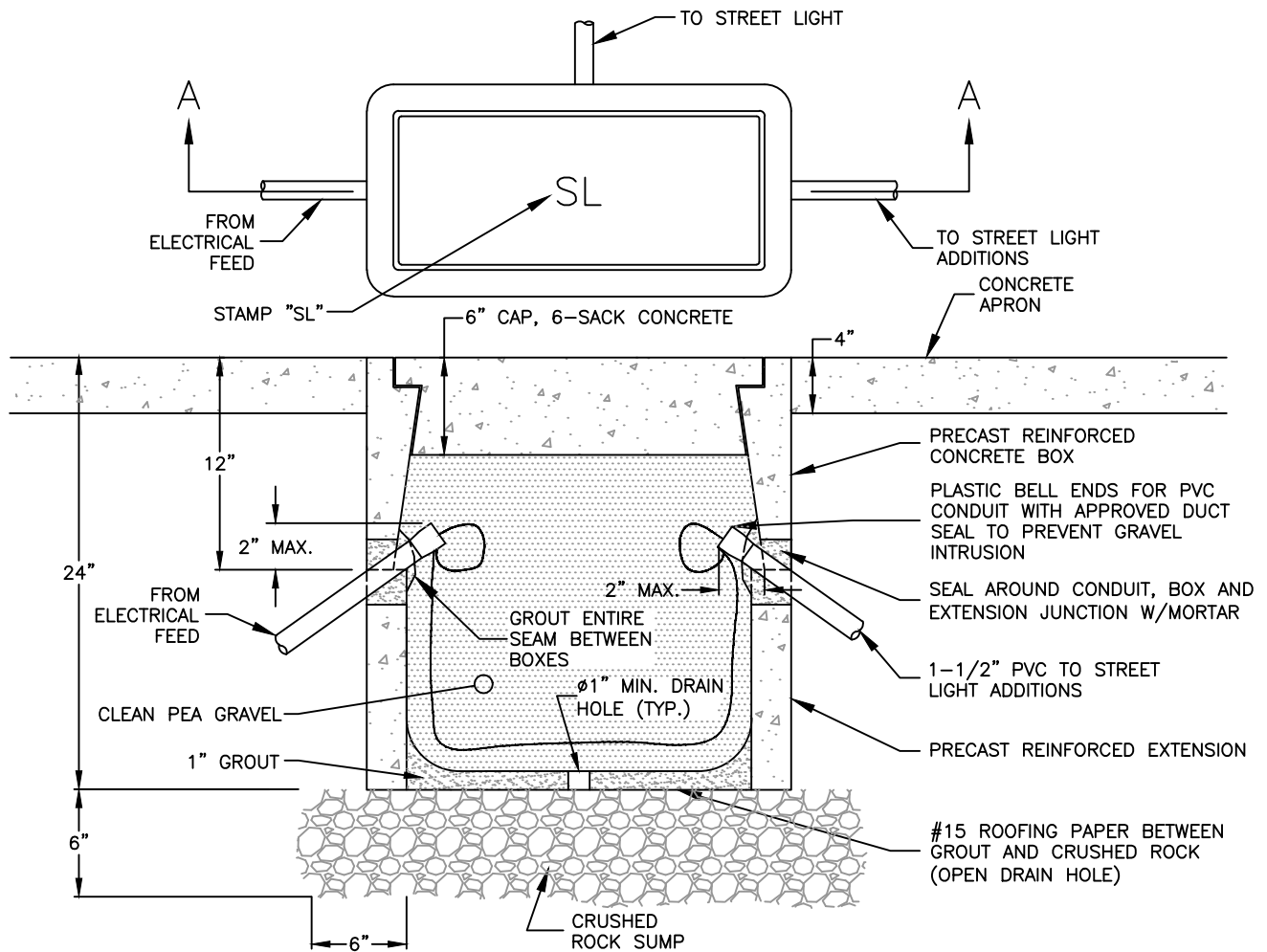
REF. & REV.  
DEC. 2003  
MAR. 2021 (A.7)

CITY OF FRESNO  
E-3

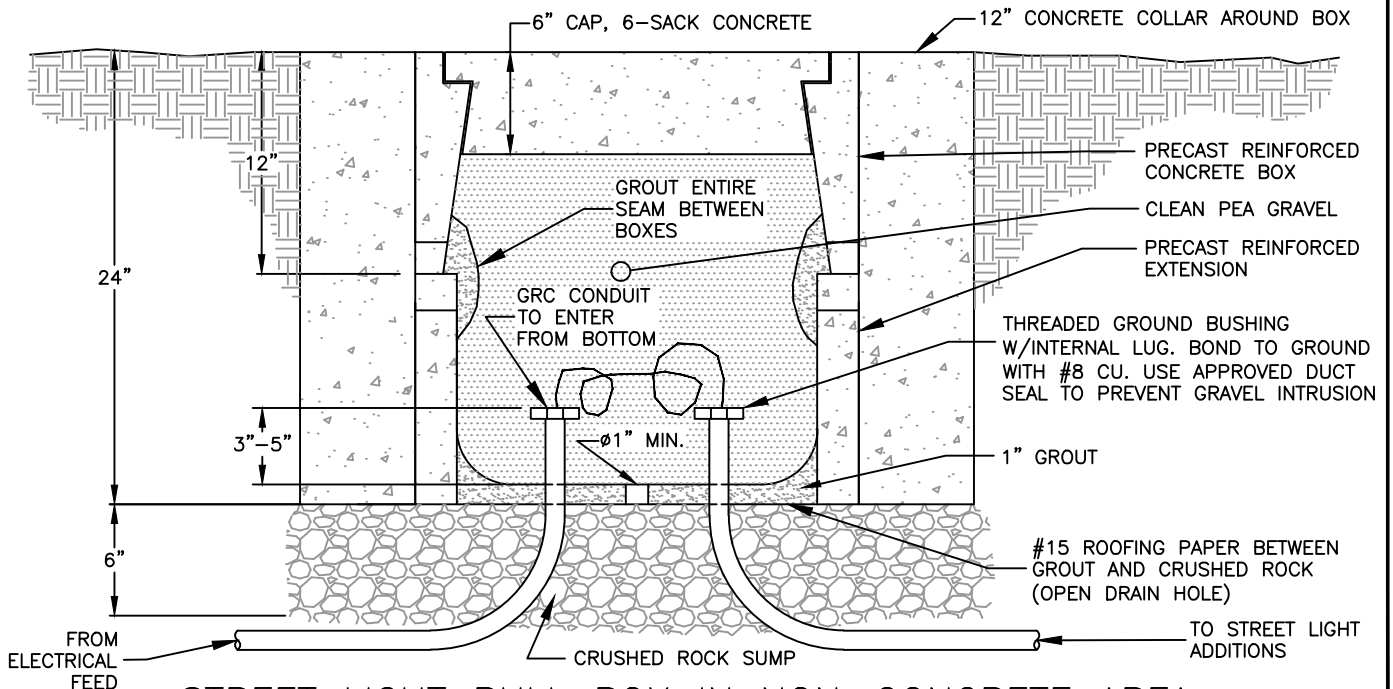


#### NOTES:

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.



STREET LIGHT PULL BOX IN CONCRETE AREA



STREET LIGHT PULL BOX IN NON-CONCRETE AREA

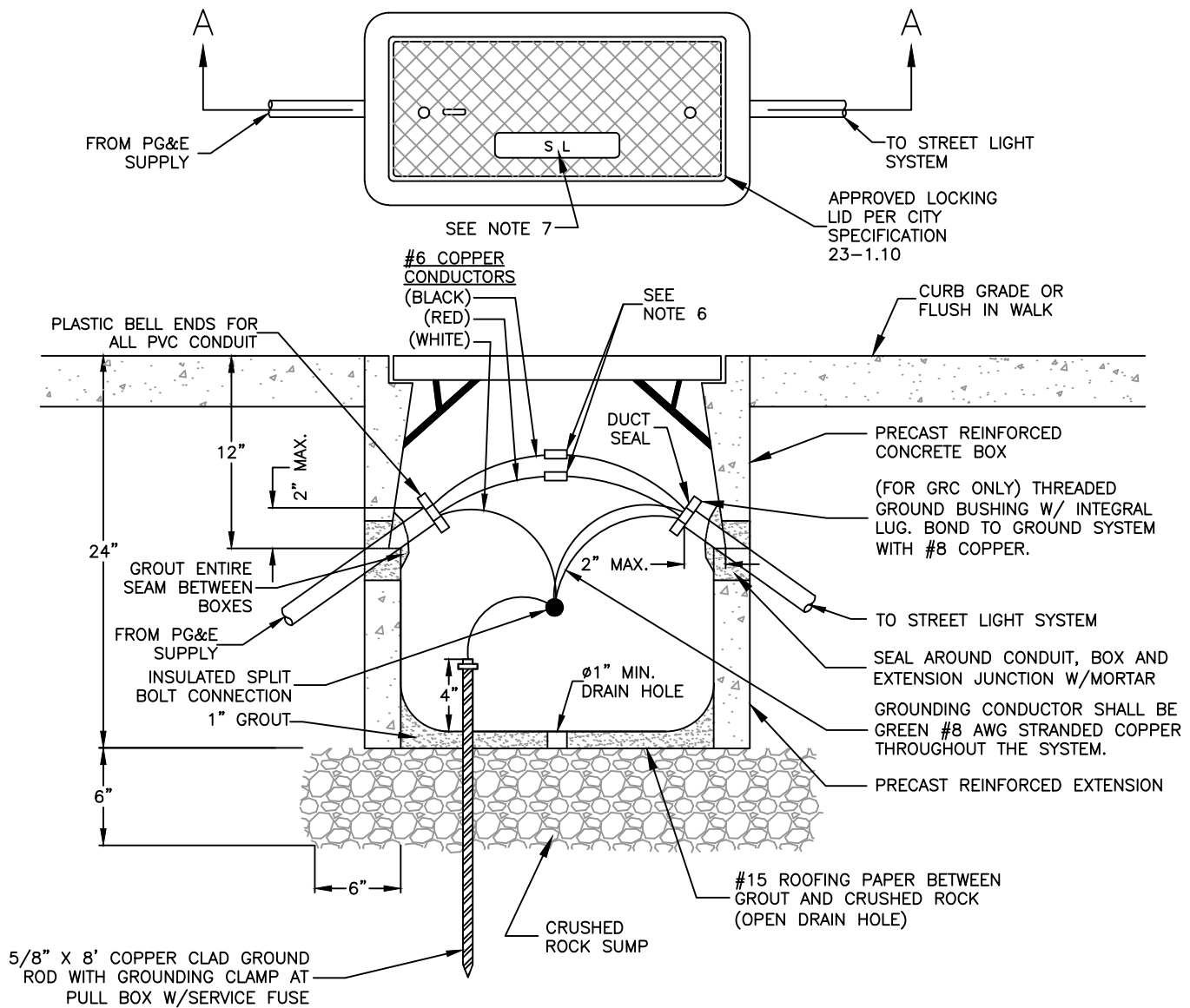
NOTES:

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  
MAR. 2021 (A.7)

CITY OF FRESNO  
E-4B



## SECTION A-A

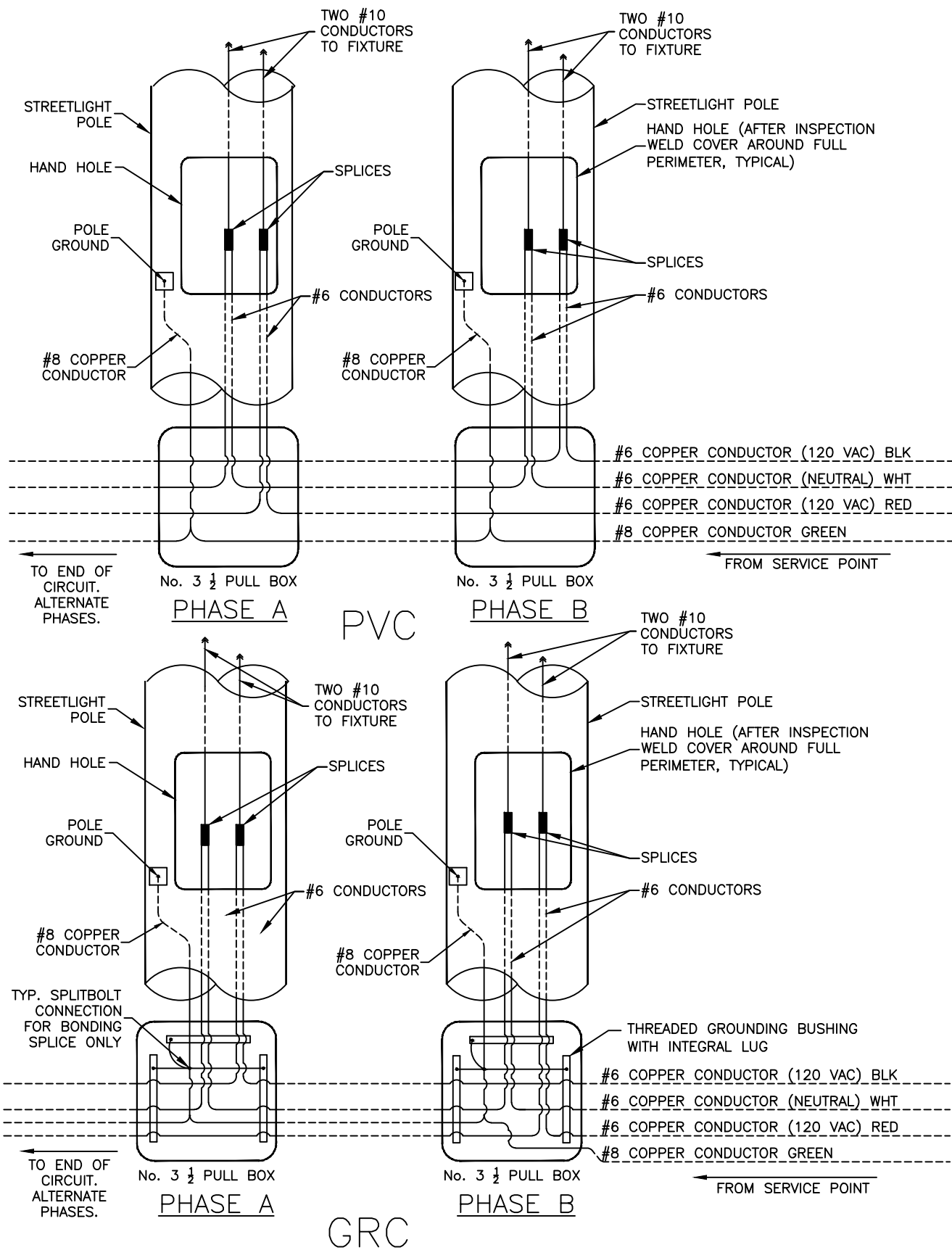
### NOTES:

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  
 MAR. 2021 (A.7)

**CITY OF FRESNO**  
**E-4C**

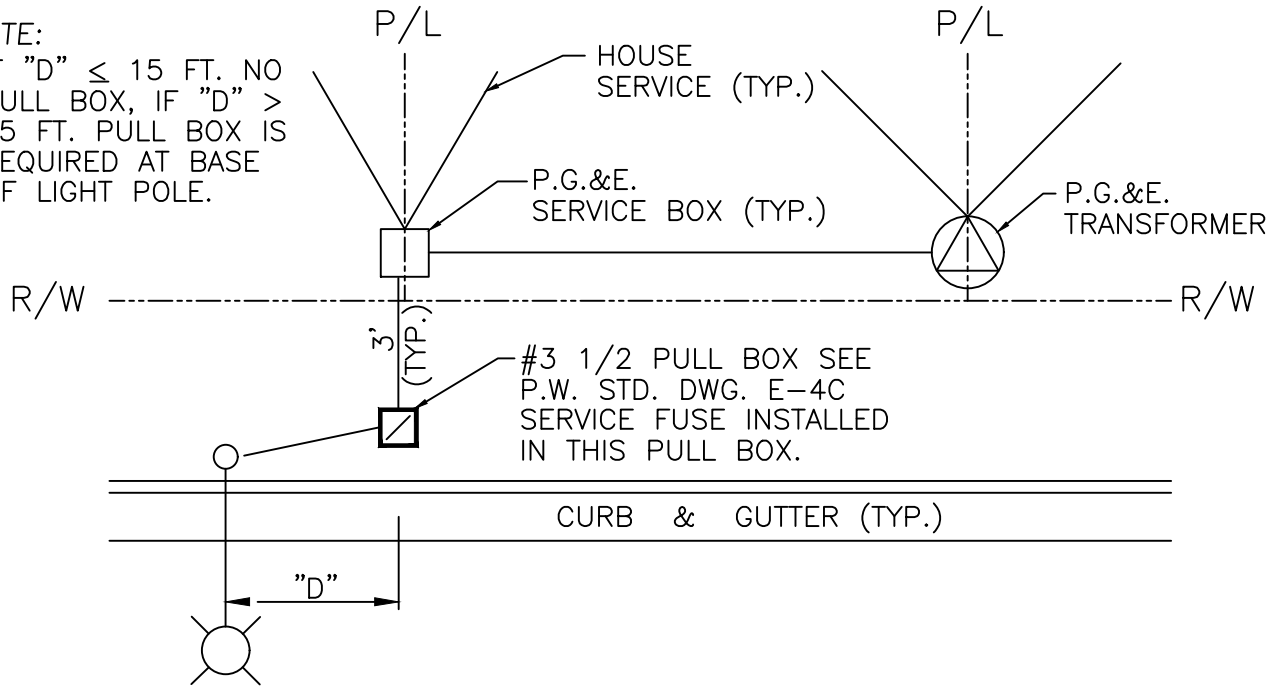


**NOTES:**

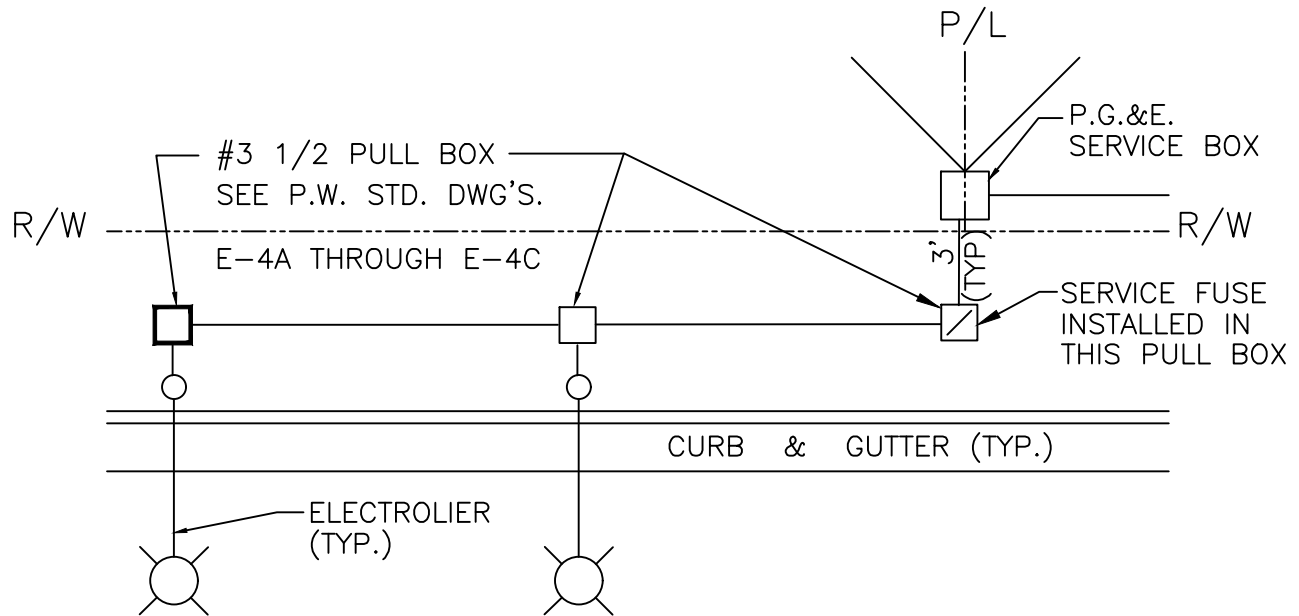
1. WITH EXCEPTION OF BONDING JUMPERS, NO SPLICES WILL BE ALLOWED IN PULL BOXES WITHOUT PRIOR APPROVAL AND THE INSTALLATION OF AN APPROVED LOCKING LID PER SECTION 23-1.10 OF CITY SPECIFICATIONS.

**NOTE:**

IF "D"  $\leq$  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.

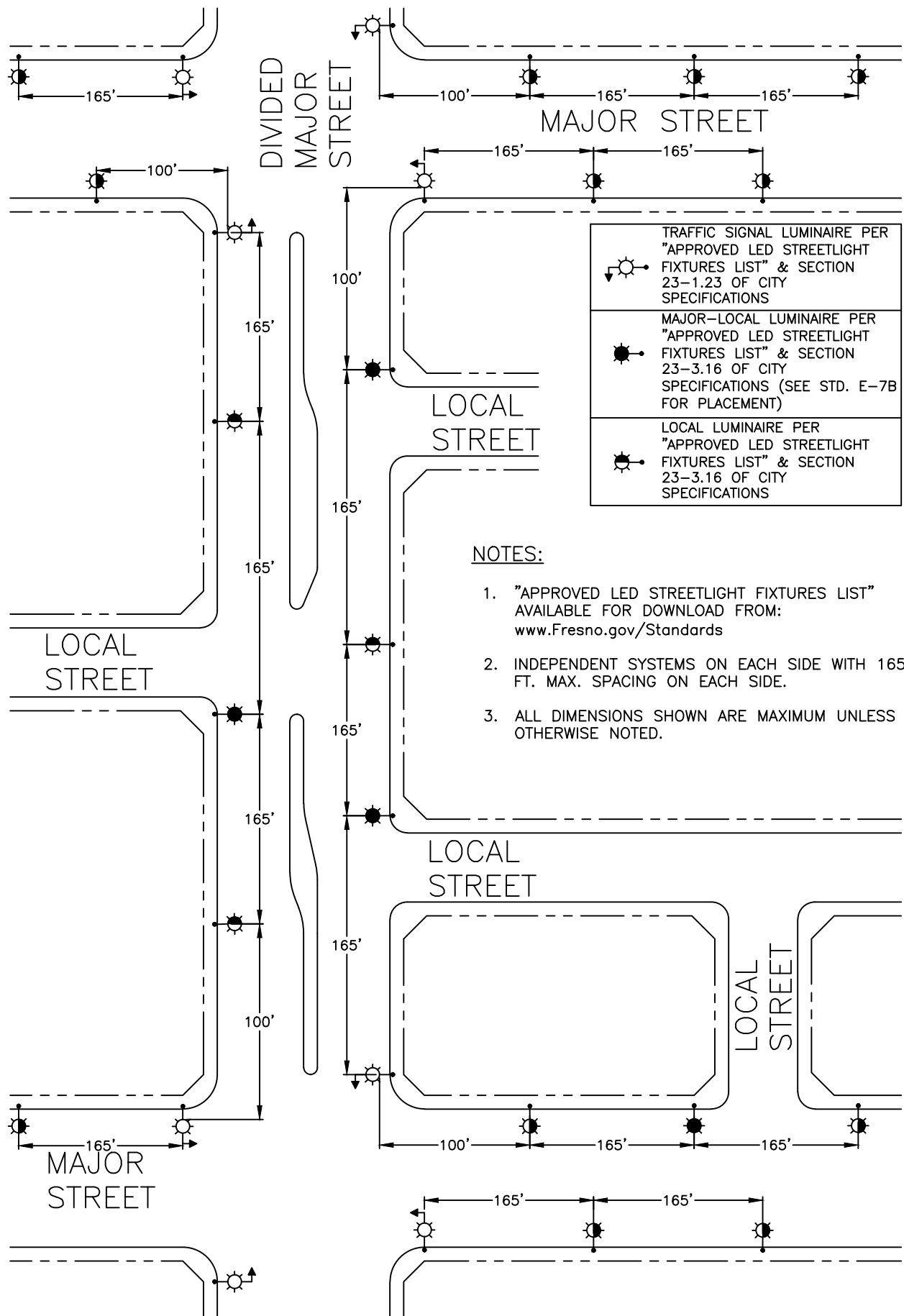
THIS STANDARD IS  
NO LONGER USED

NO LONGER USED  
SEE E-7A

REF. & REV.  
~~AUG. 2015~~  
MAR. 2021 (A.7)

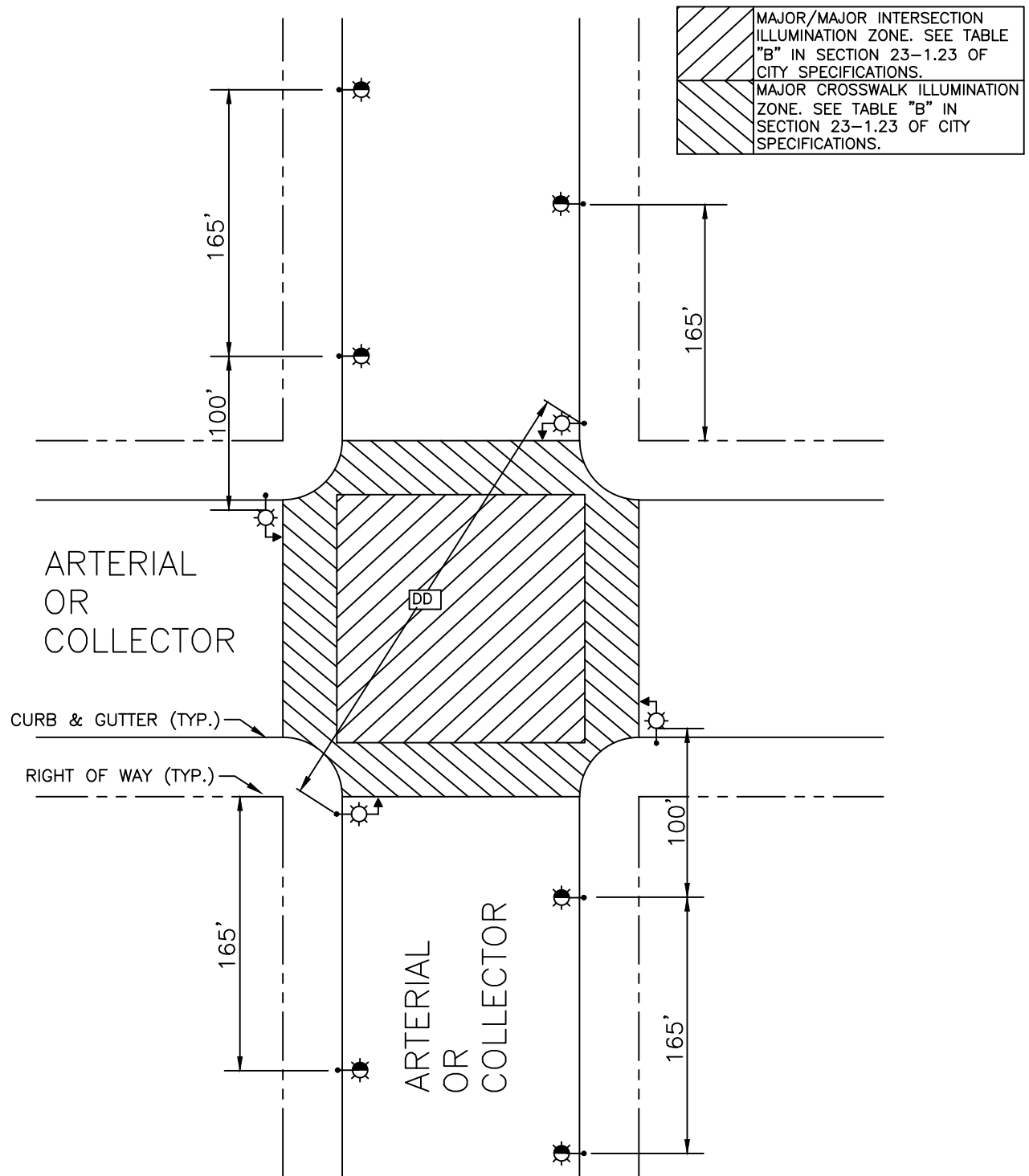
CITY OF FRESNO



E-7









-  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.

THIS STANDARD IS  
NO LONGER USED

NO LONGER USED  
SEE E-9A

REF. & REV.  
~~AUG. 2015~~  
MAR. 2021 (A.7)

CITY OF FRESNO

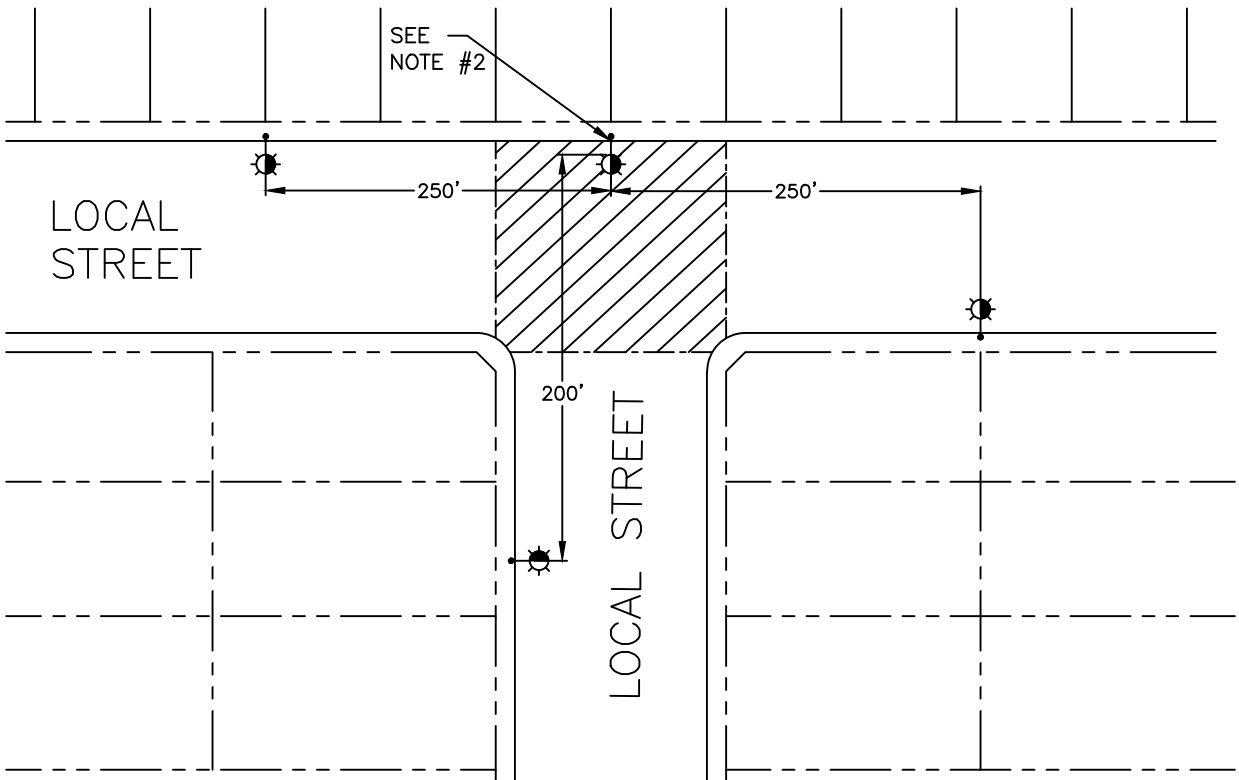
E-9

1. "APPROVED LED STREETLIGHT FIXTURES LIST" AVAILABLE FOR DOWNLOAD FROM:  
[www.Fresno.gov/Standards](http://www.Fresno.gov/Standards)



- [illegible]

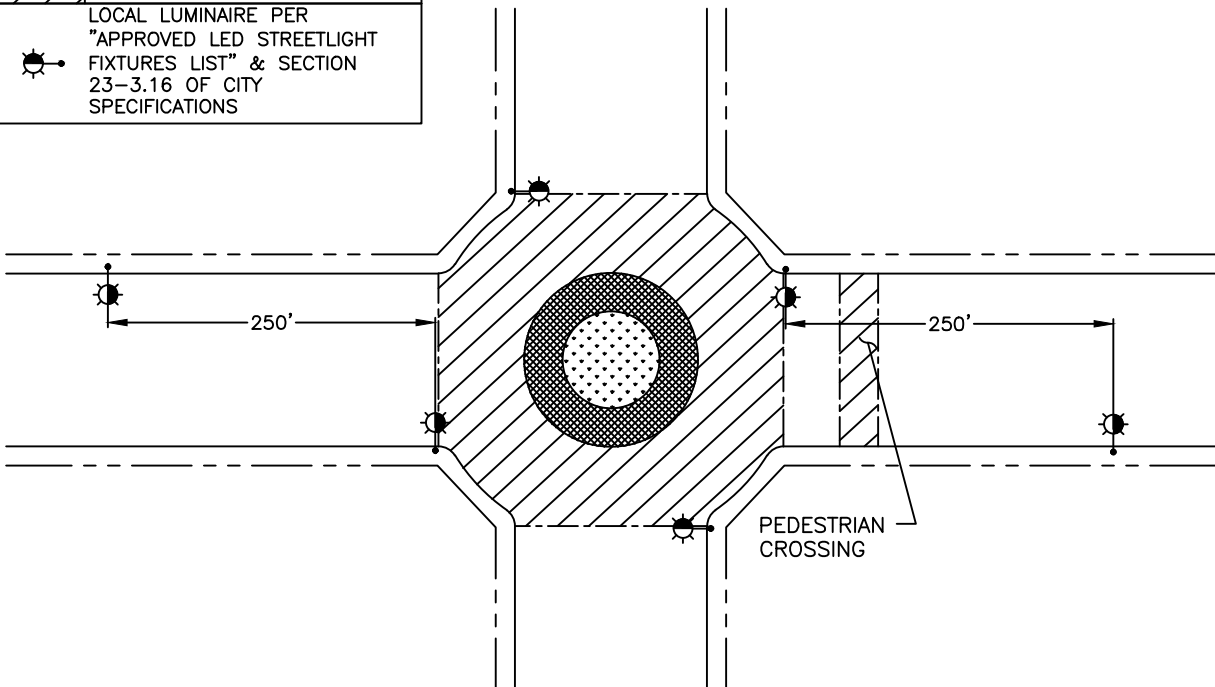
REF. & REV.  
~~AUG. 2015~~  
MAR. 2021 (A.7)

E-9A



"T" INTERSECTION

	LOCAL INTERSECTION ILLUMINATION ZONE. SEE TABLE "B" IN SECTION 23-3.16 OF CITY SPECIFICATIONS.
	LOCAL LUMINAIRE PER "APPROVED LED STREETLIGHT FIXTURES LIST" & SECTION 23-3.16 OF CITY SPECIFICATIONS



LOCAL TRAFFIC CIRCLE INTERSECTION

NOTES:

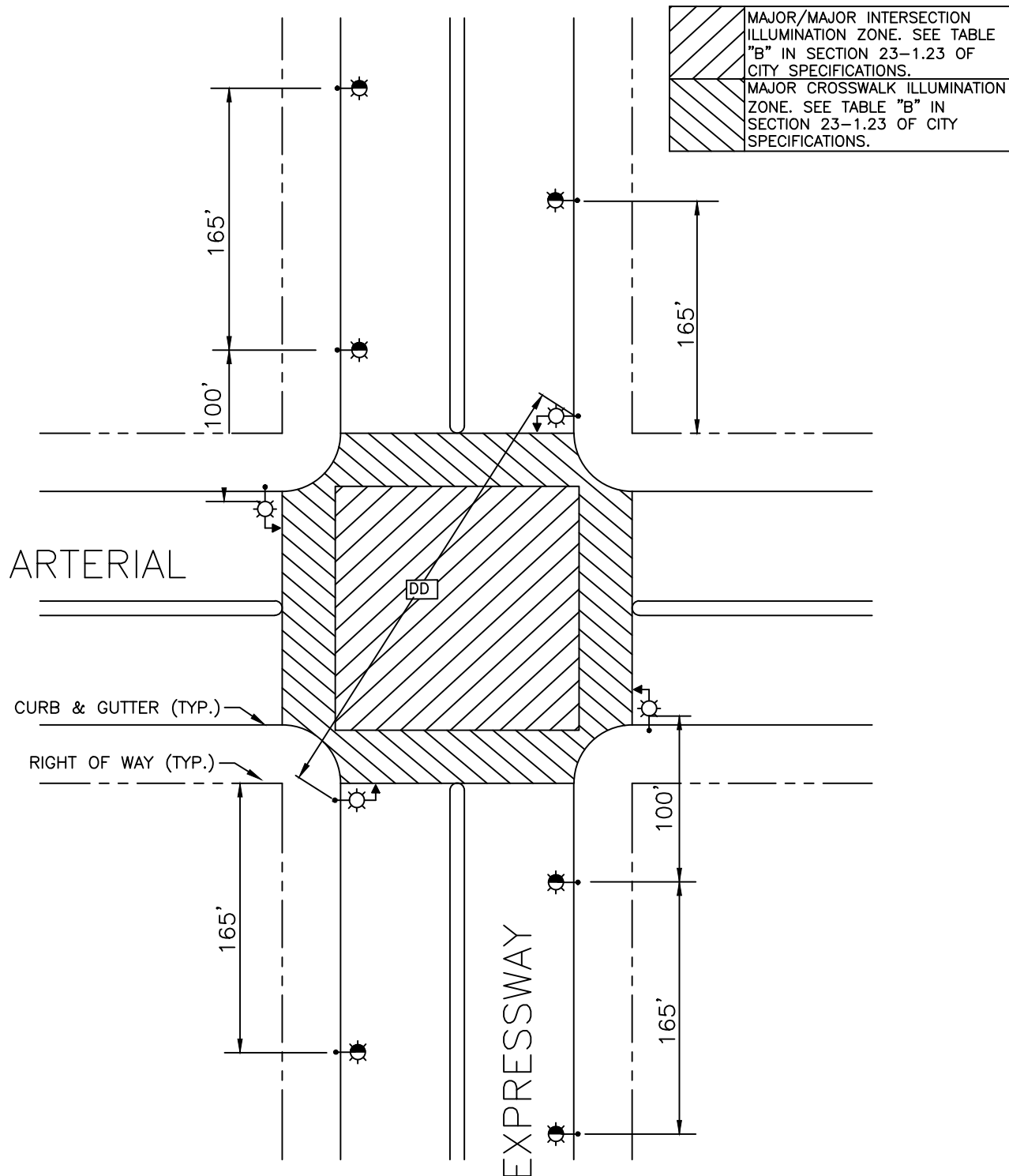
1. ALL DIMENSIONS SHOWN ARE MAXIMUM UNLESS OTHERWISE NOTED.
2. LOCAL LUMINAIRE STREETLIGHT MUST BE PLACED WITHIN RIGHT OF WAY PROJECTION. (ILLUMINATION ZONE)

**STREETLIGHT-PLACEMENT**  
LOCAL INTERSECTIONS

REF. & REV.  
MAR. 2021 (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:

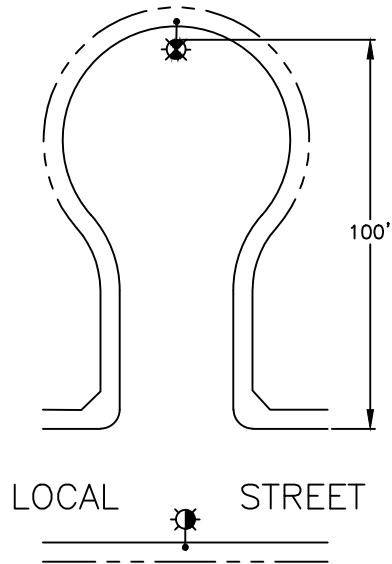
1. TRAFFIC SIGNAL LUMINARIES, MAJOR-LOCAL, & LOCAL LUMINARIES LIGHTS (ENTRANCE & EXIT) TO BE ON SEPARATE BREAKERS OF SAME CONTACTOR.
2. ALL DIMENSIONS SHOWN ARE MAXIMUM UNLESS OTHERWISE NOTED.



## STREETLIGHT-PLACEMENT EXPRESSWAY

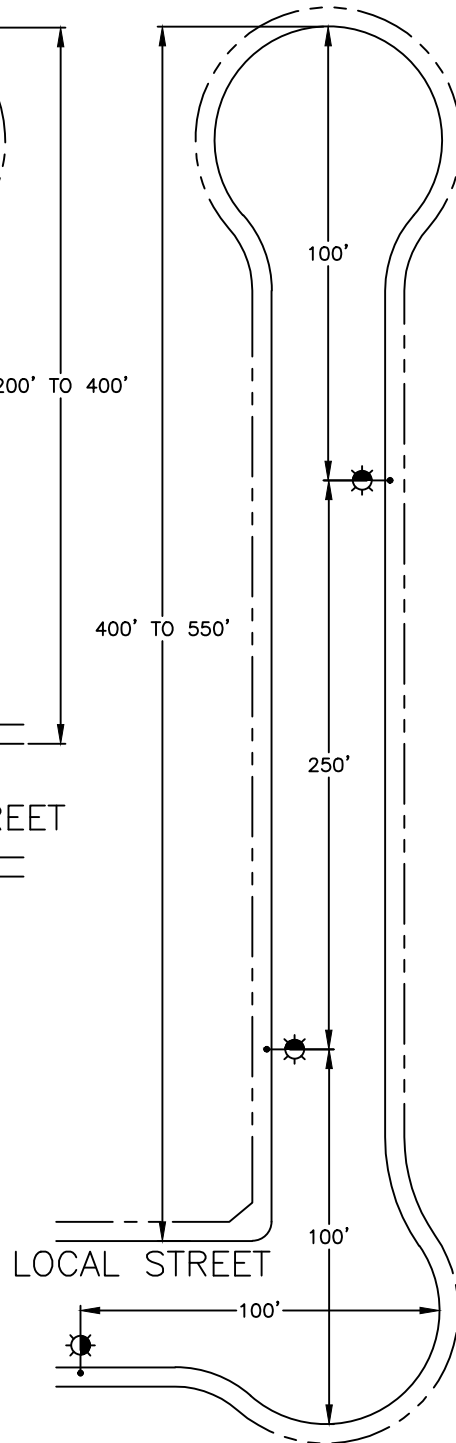
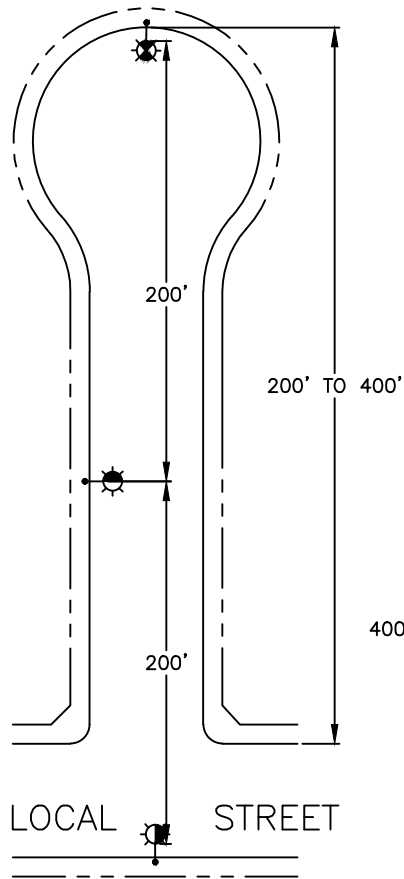
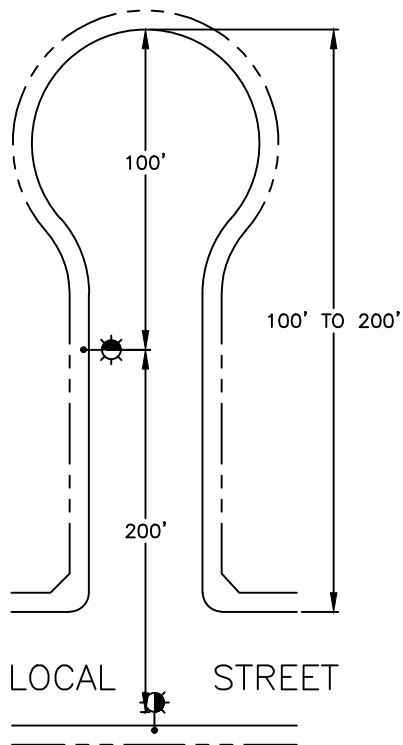
REF. & REV.  
AUG. 2015  
MAR. 2021 (A.7)

CITY OF FRESNO

E-10



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



#### NOTES:

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

THIS STANDARD IS  
NO LONGER USED

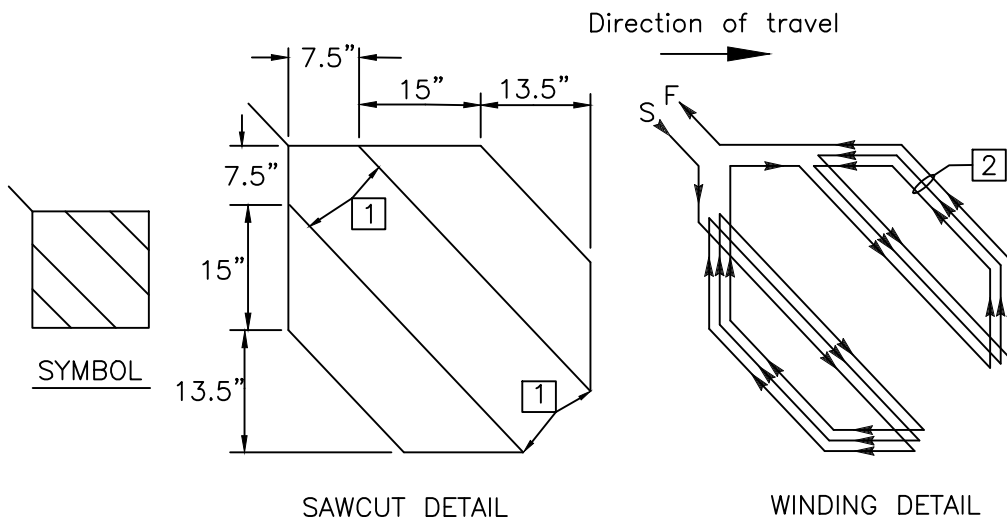
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REF. & REV.  
~~AUG. 2002~~  
MAR. 2021 (A.7)

CITY OF FRESNO

E-12



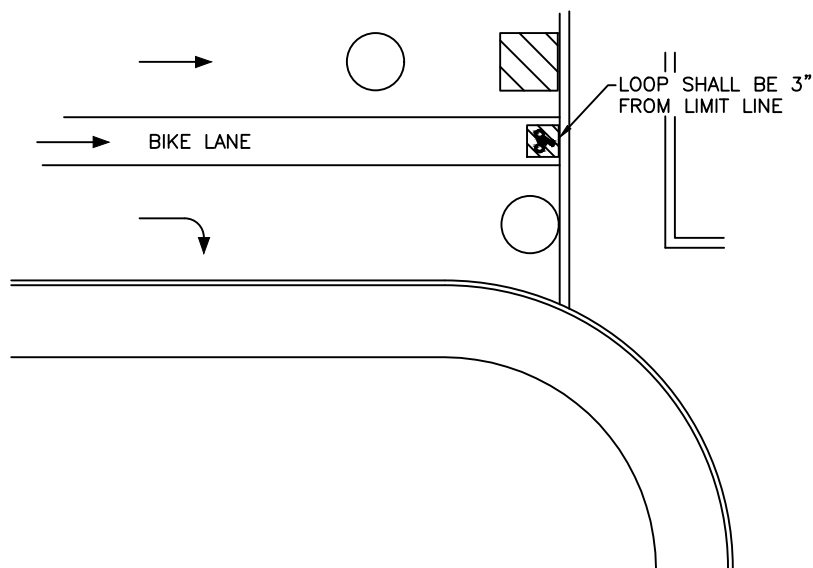
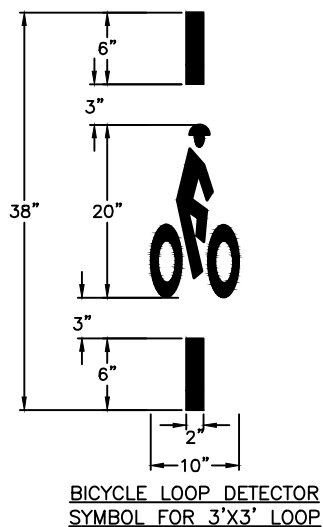


BIKE LOOP (3'X3')  
DETECTOR CONFIGURATION

- 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.



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.

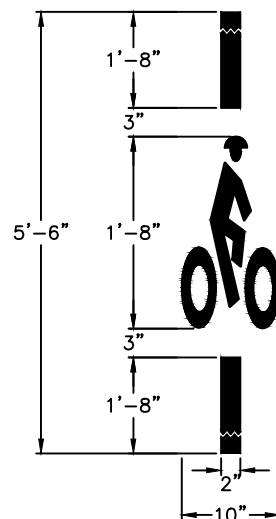
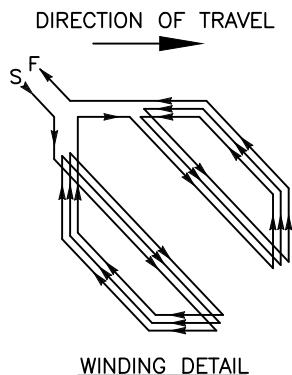
# LEGEND:

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

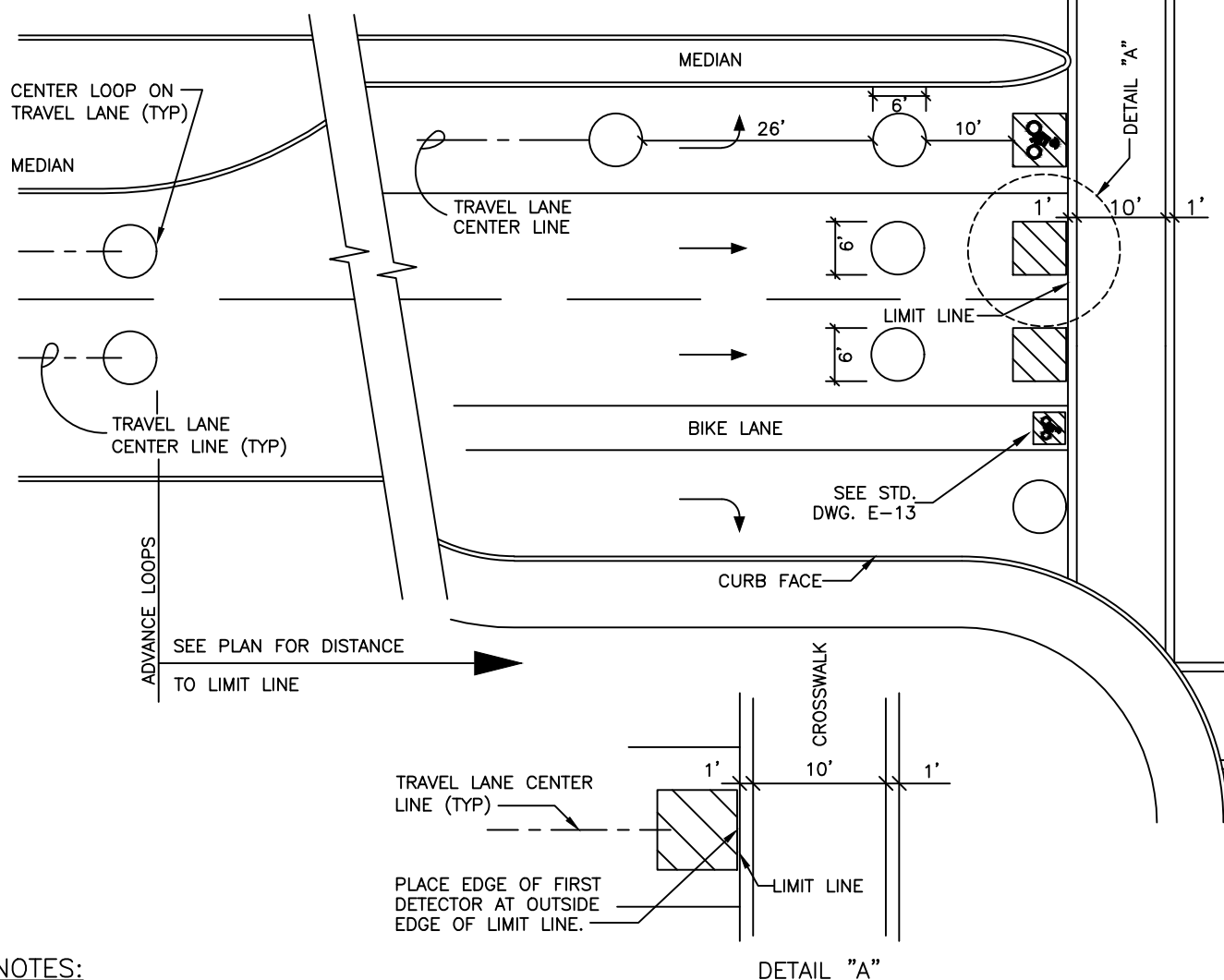
▨ CALTRANS TYPE 'D': SAW CUT DIAGONAL LOOP DETECTOR "TYPE 2" LOOP WIRE (ES-5B). SEE WINDING DETAIL, RIGHT.

🚲 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.



BICYCLE LOOP DETECTOR SYMBOL FOR CALTRANS TYPE 'D'

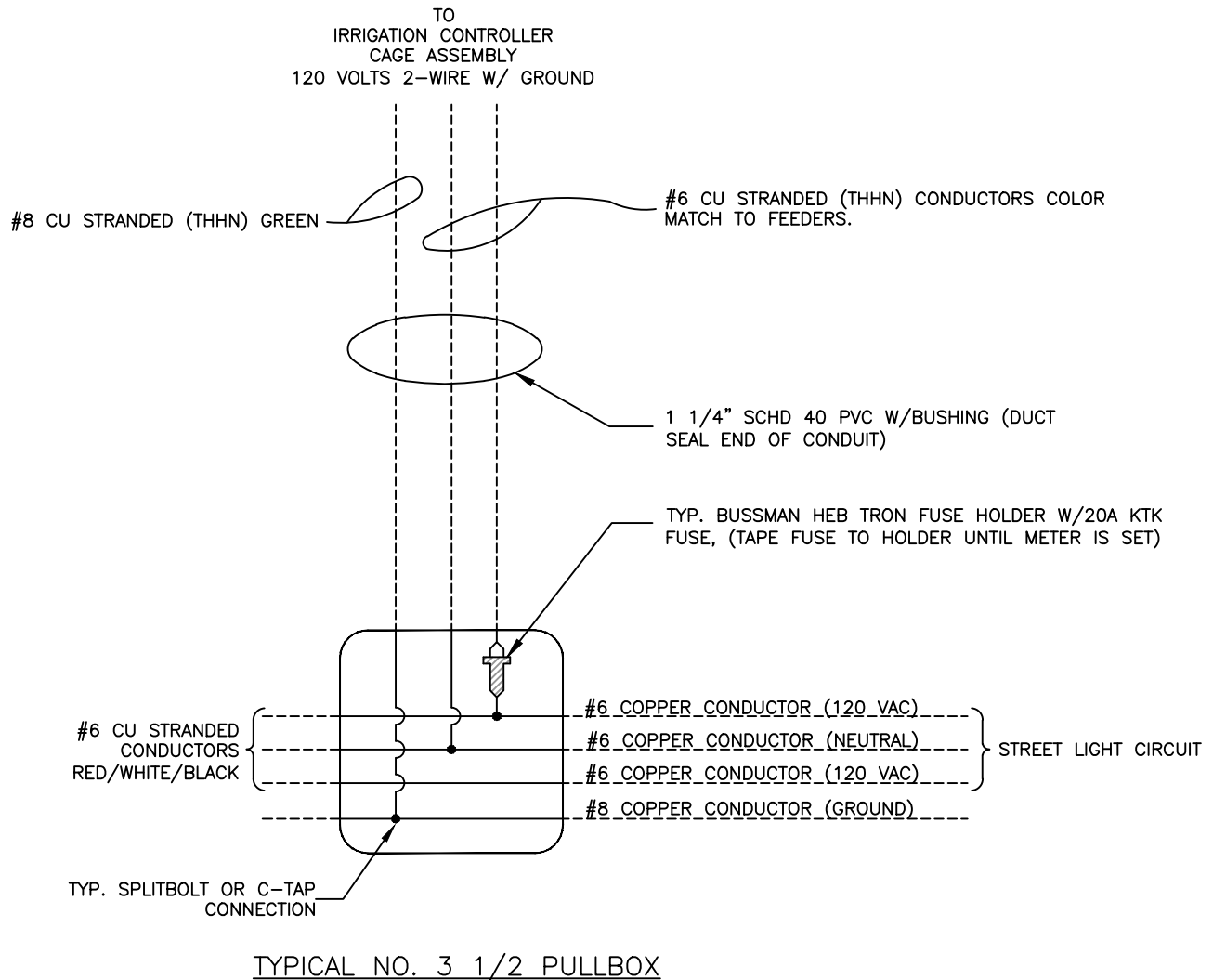


## NOTES:

- 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.
- 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.



1. SERVICE CABINET SHALL BE TESCO 26-100 LBS METERED/UNMETERED OR APPROVED EQUAL.



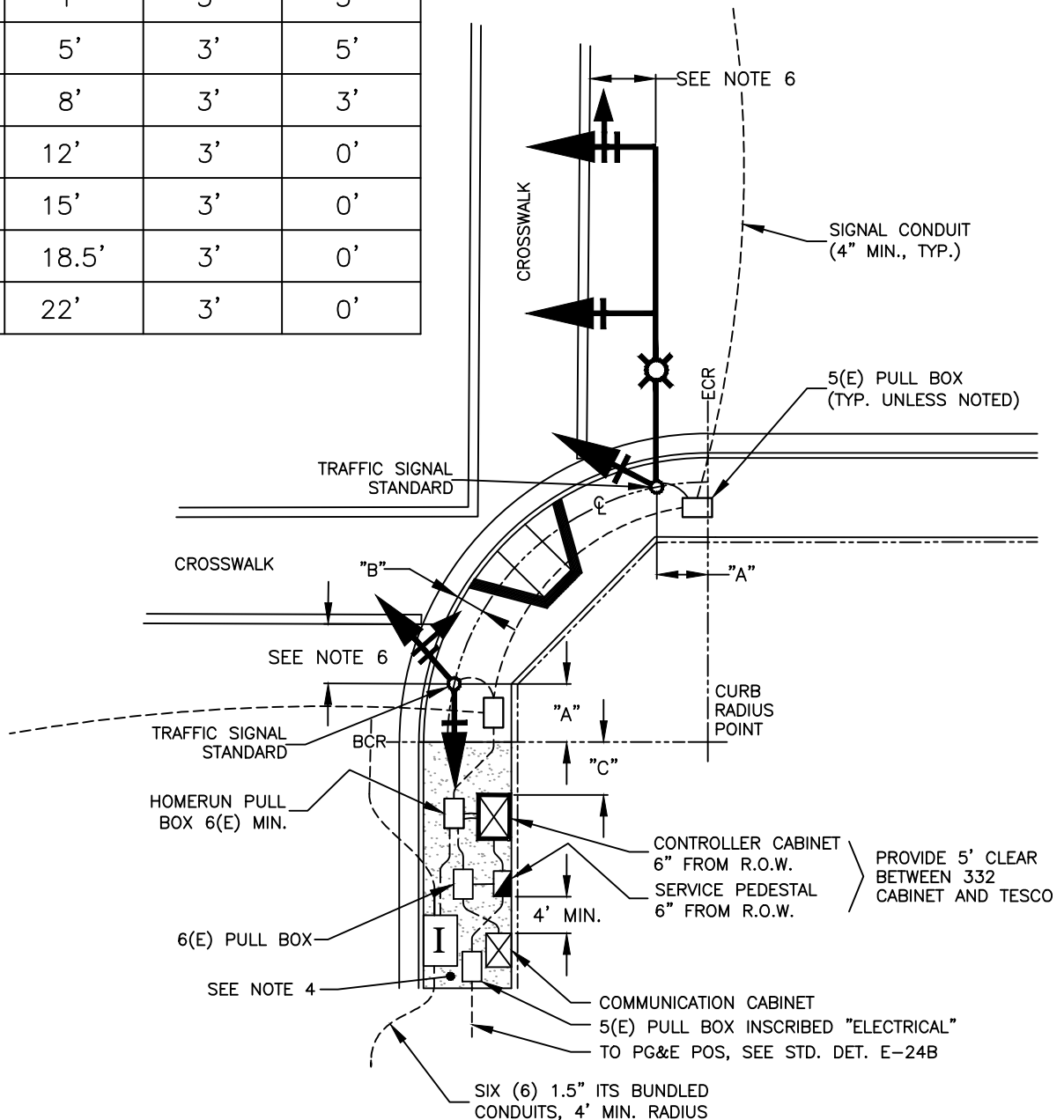
#### NOTES:

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.



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~~  
MAR. 2021 (A.7)

CITY OF FRESNO

E-24



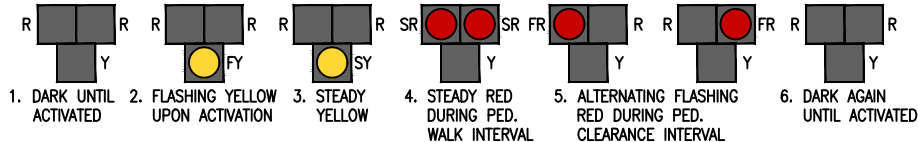
CITY OF FRESNO  
E-24B



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

## FLASHING SEQUENCE FOR PEDESTRIAN CROSSING SIGNAL

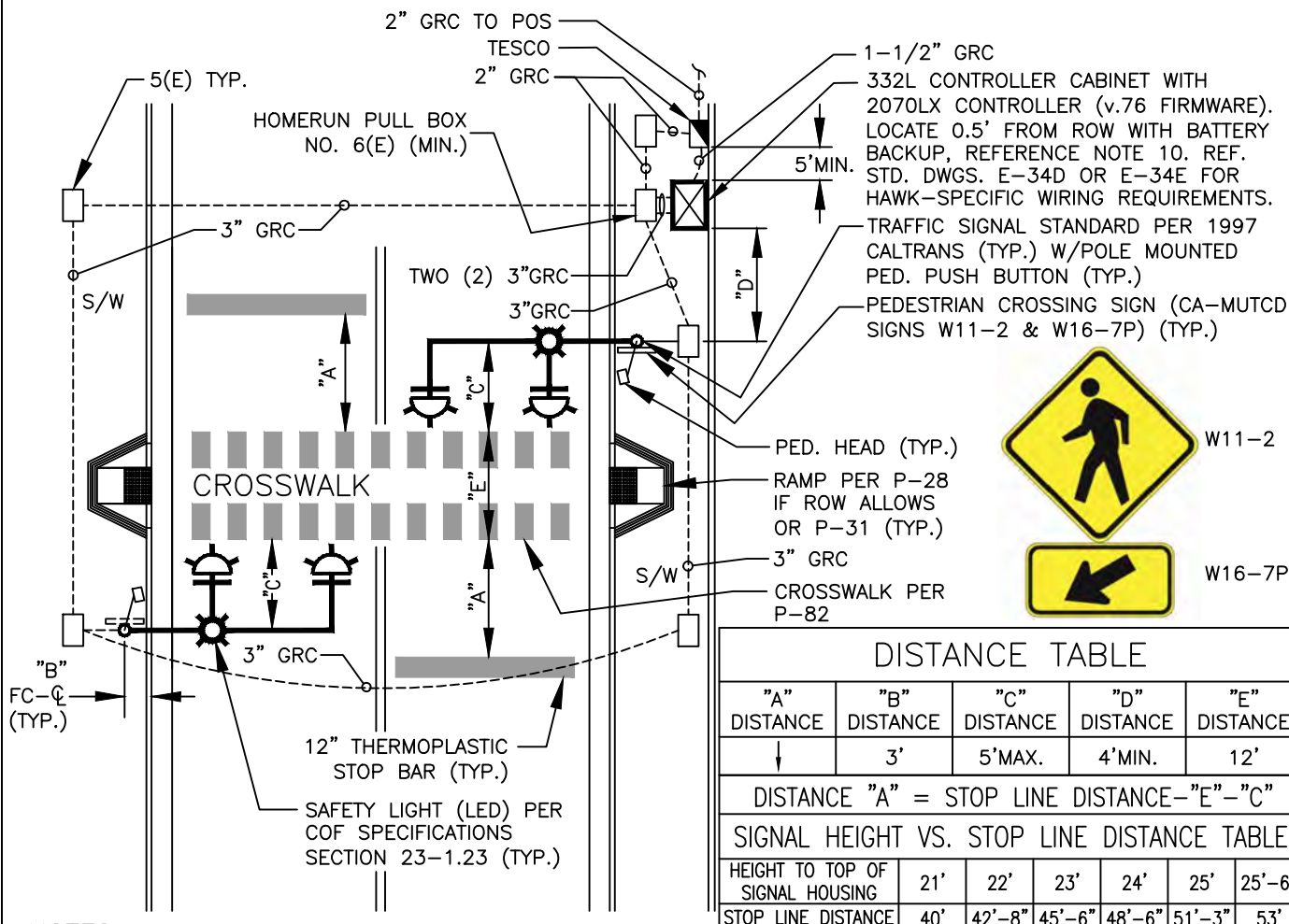
WHAT DRIVER SEES:



WHAT PEDESTRIAN SEES:



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



### NOTES:

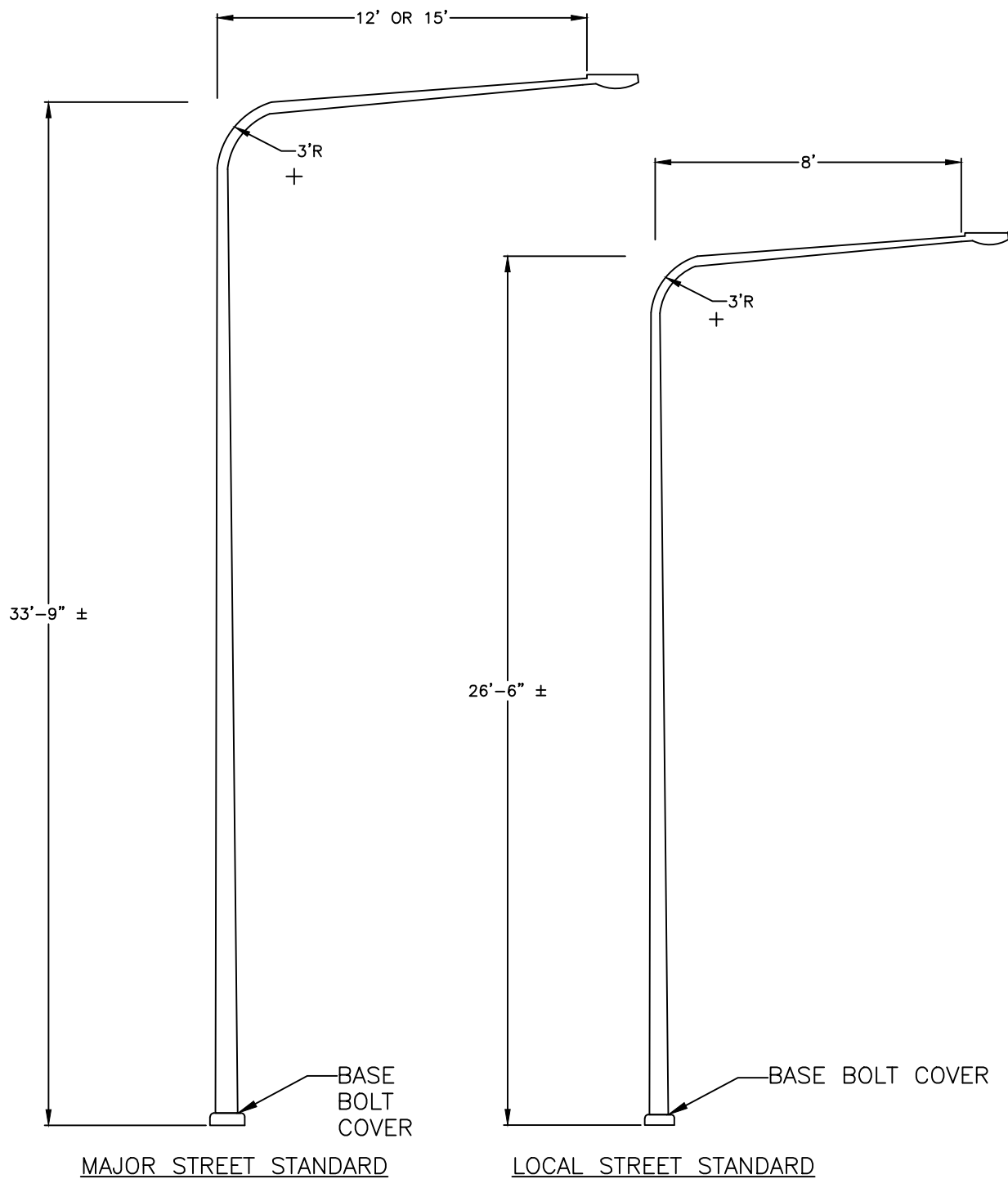
- ALL EQUIPMENT SHALL BE LOCATED ACCORDING TO CITY OF FRESNO APPROVED PLANS. ANY VARIATION TO THE PLANS SHALL HAVE THE APPROVAL OF THE CITY TRAFFIC ENGINEER.
- ALL EQUIPMENT SHALL BE LOCATED ACCORDING TO THE ULTIMATE STREET WIDTH WITHIN CITY ROW.
- ULTIMATE AND EXISTING STREET WIDTH SHALL BE SHOWN ON CONSTRUCTION PLANS.
- ADDITIONAL SIDEWALK TO BE INSTALLED PER CITY STANDARDS AS APPLICABLE TO MAINTAIN A 4' MINIMUM ADA CLEAR PATH ADJACENT TO EQUIPMENT.
- DISTANCE "C" SHALL BE ADJUSTED AS NECESSARY FOR THE 4' ADA CLEARANCE REQUIREMENT.
- 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.
- LOCATE PULLBOXES FOR TESCO & TS COMBINED 3' FROM FACE OF CURB TO EDGE OF PULLBOX.
- INSTALLATION OF I.T.S. EQUIPMENT AND CONDUITS SHALL BE AT THE DISCRETION OF THE CITY ENGINEER.
- ALL EQUIPMENT SHALL MEET CURRENT CITY OF FRESNO DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS.
- 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.  
MAR. 2021 (A.7)

CITY OF FRESNO  
E-24C

THIS STANDARD IS  
NO LONGER USED



NOTES:

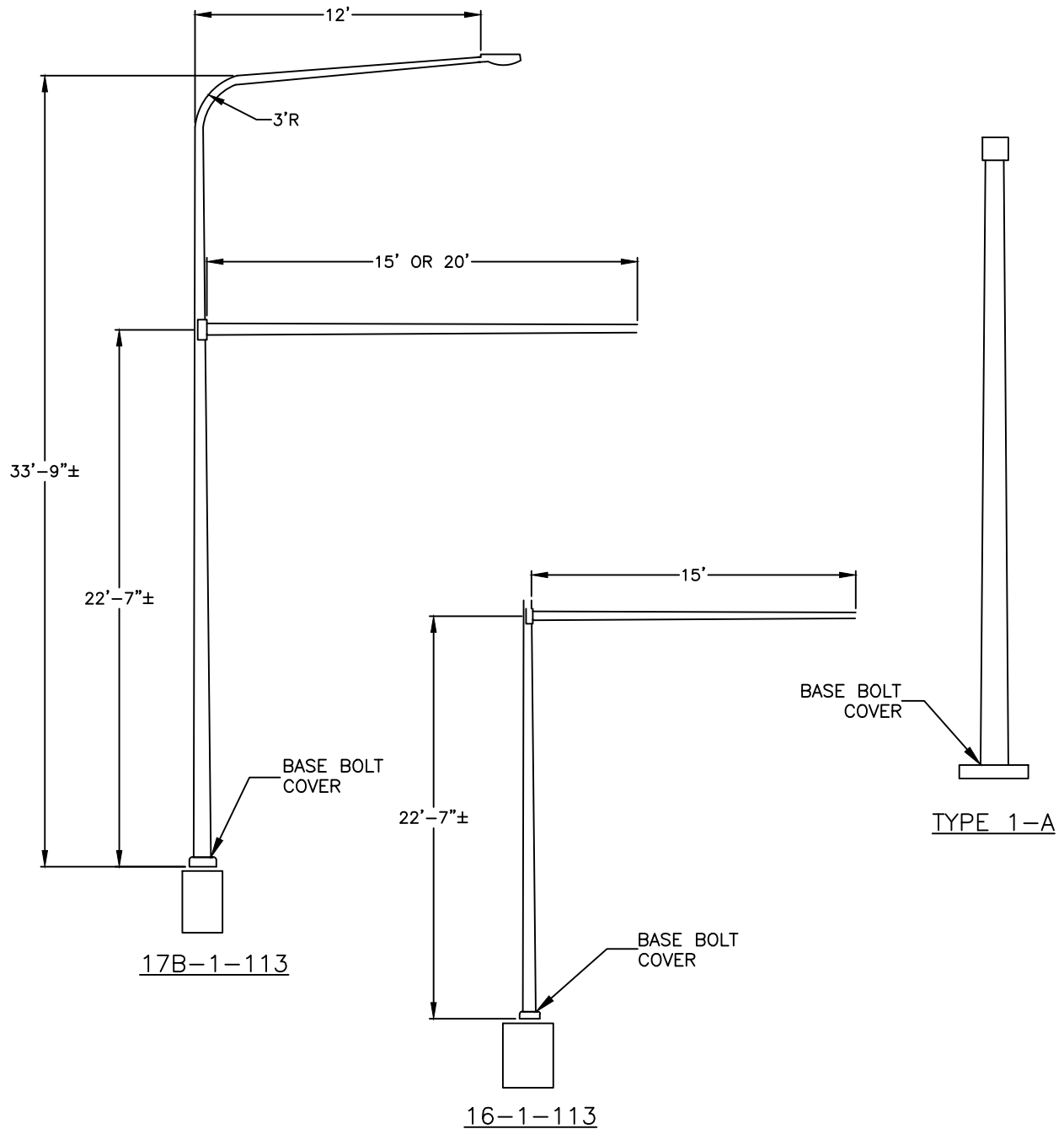
1. THE DECORATIVE POLE STANDARDS SHALL APPLY TO THE "DOWNTOWN FRESNO AREA" AS DEFINED BY P.W. STD. DWG. E-29.
2. WITH THE EXCEPTION OF POLE DIMENSIONS AND COLORS, ALL NOTES AND REQUIREMENTS PER P.W. STD. DWG. E-1 SHALL APPLY.
3. POLE FINISH: BASE COAT - HOT DIP GALVANIZE TO ASTM A123  
FINISH COAT - 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  
MAR. 2021 (A.7)

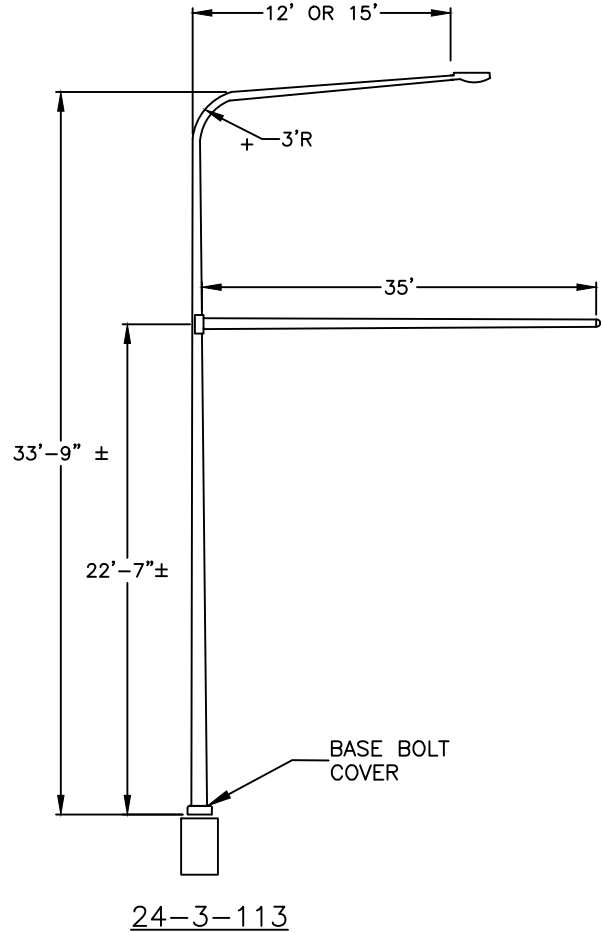
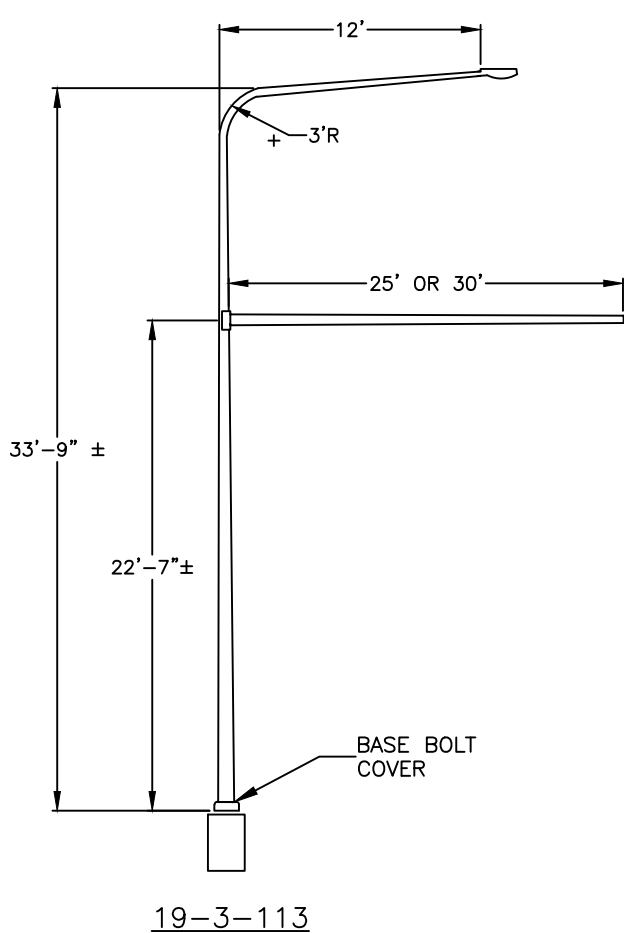
CITY OF FRESNO

**E-30**



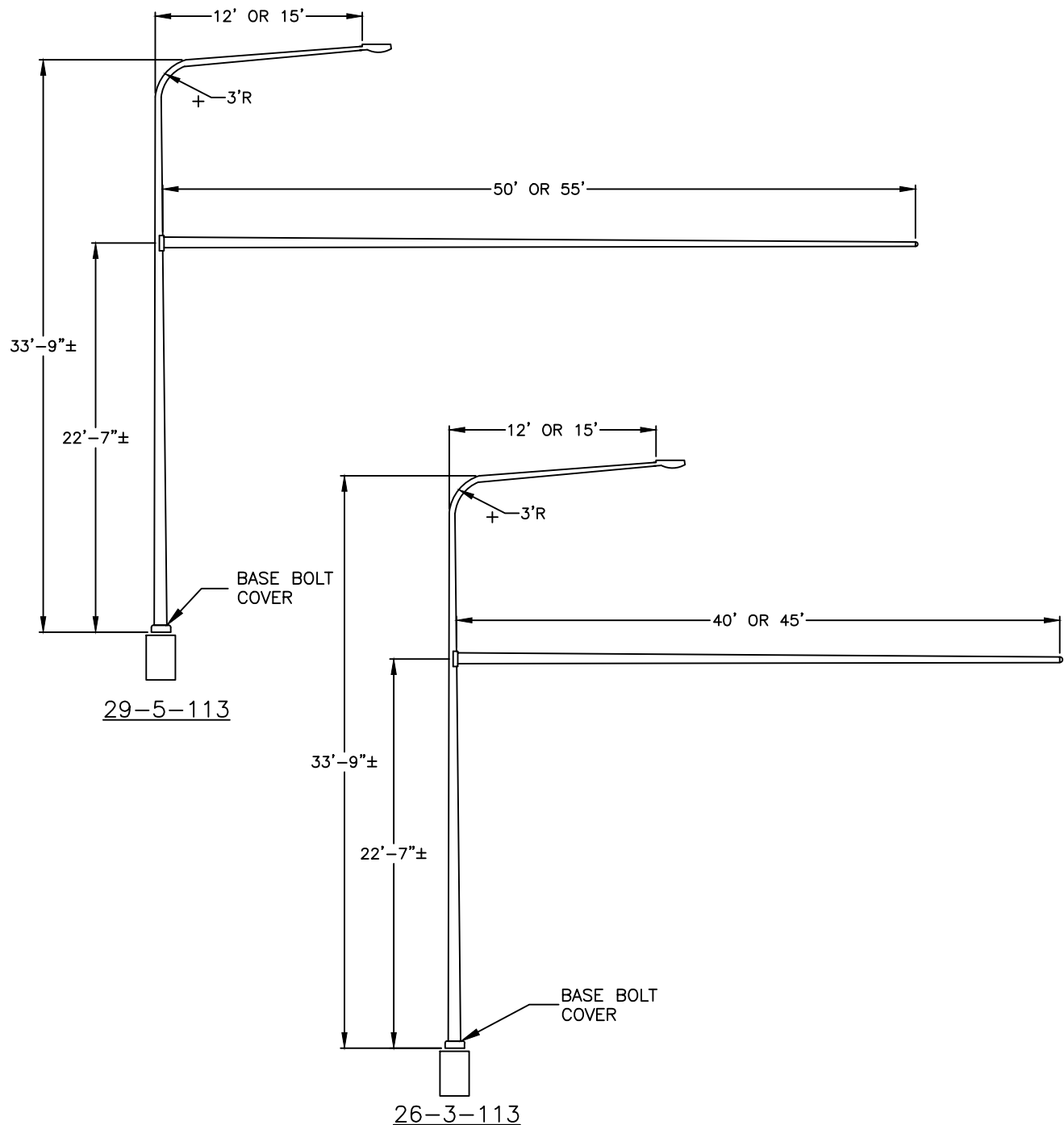
#### NOTES:

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.



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.



#### 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

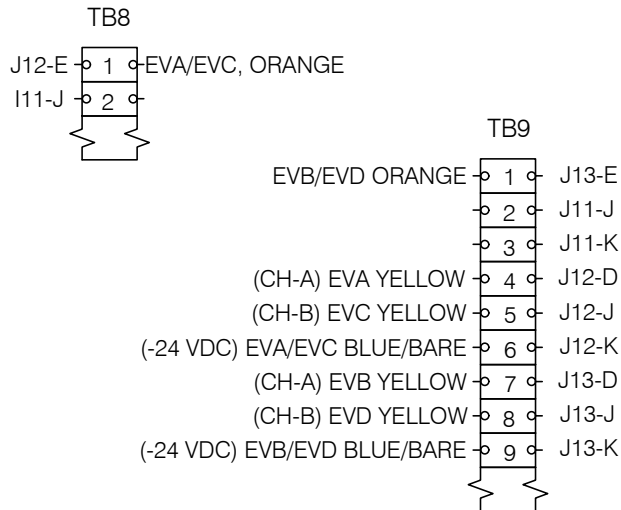
### DECORATIVE POLE DETAILS – TYPE 26, 29

REF. & REV.  
SEPT. 2009  
MAR. 2021 (A.7)

CITY OF FRESNO

E-33

# OPTICOM FIELD WIRE DETAIL (FOR STANDARD MODEL 721/752 INSTALLATIONS)



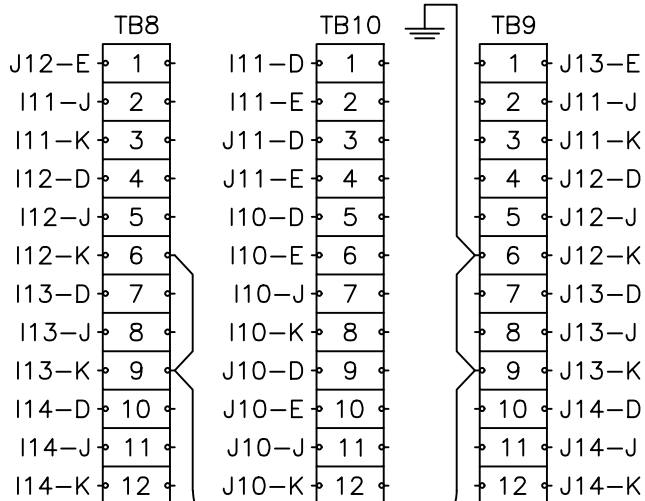
## NOTES:

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

## CAUTION:

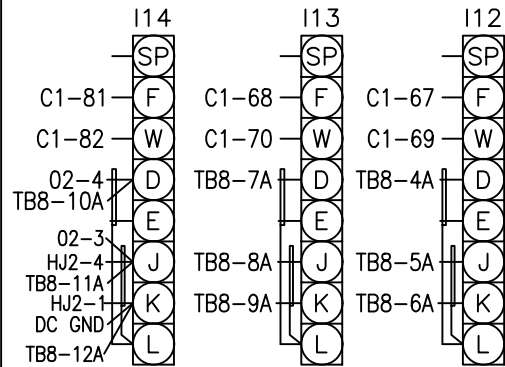
CONNECT TERMINAL K OF THE INPUT FILE SLOTS J12&J13 TO THE EARTH GROUND TO ALLOW DISSIPATION OF STATIC CHARGES ON THE DETECTOR CABLE. FAILURE TO CONNECT TERMINAL K TO THE EARTH GROUND MAY DAMAGE THE EQUIPMENT. IF DETECTORS HAVE BEEN MOUNTED BUT NOT CONNECTED TO THE PHASE SELECTOR, STRIP INSULATION FROM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

## LOWER INPUT PANEL

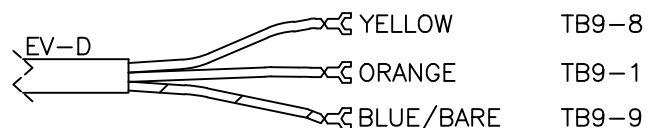
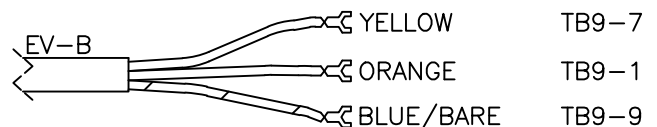
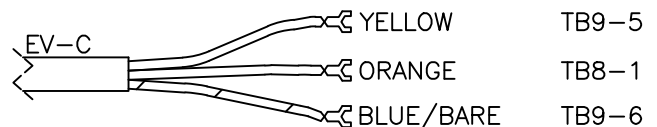
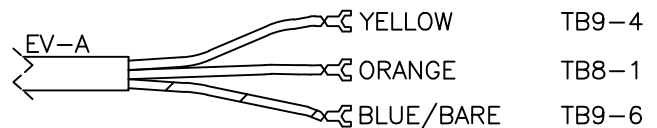
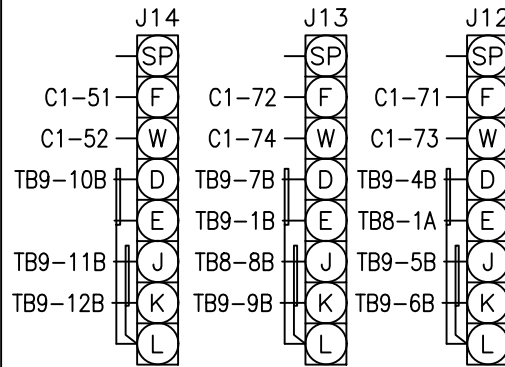


TB10 HD30A SERIES TERMINAL BLOCK OR EQUAL.

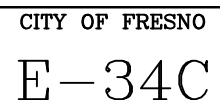
## I INPUT FILE - ISOLATION (REAR VIEW)



## J INPUT FILE- ISOLATION (REAR VIEW)



## DETECTORS

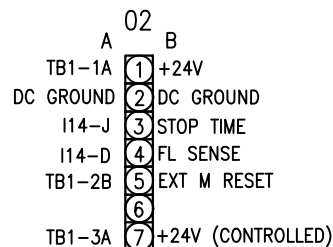






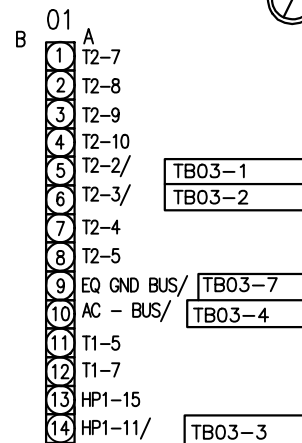
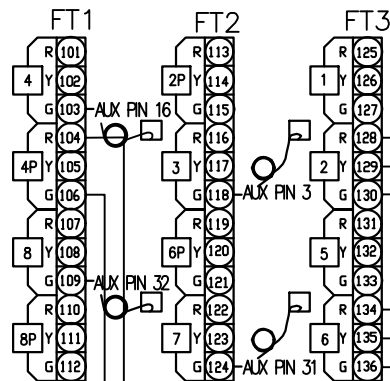
C4

# FLASH PROGRAM BLOCKS (INSIDE)



IR

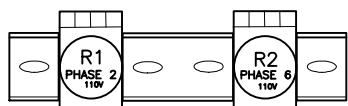
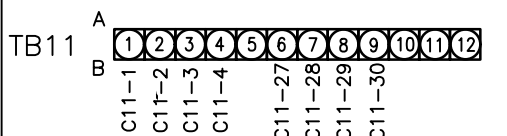
LR



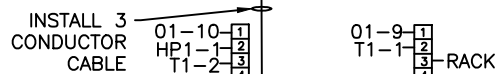
AUX FILE CONNECTION OPTIONAL

## OUTPUT FILE REAR VIEW

TERMINATE TO PED 04 MODULE  
SEE CITY STD. DWG. E-20 FOR PEDESTRIAN  
SIGNAL & PPB TERMINAL LOCATION DETAILS

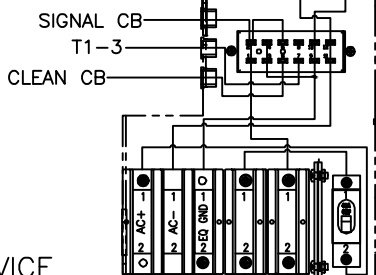


CAUTION  
110V CIRCUIT

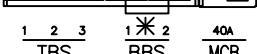


(AUX-33)  
AC-

\* = REMOVE JUMPER WHEN  
CONNECTING BBS



## SERVICE PANEL



TERMINATE TO RED 1  
TERMINATE TO SB YELLOW

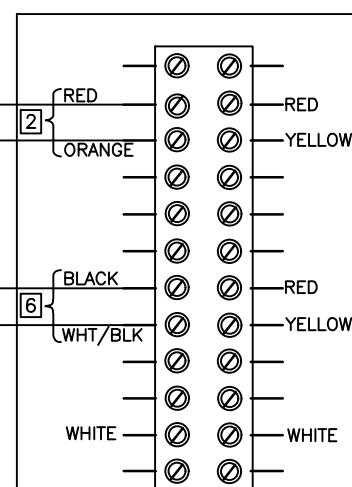
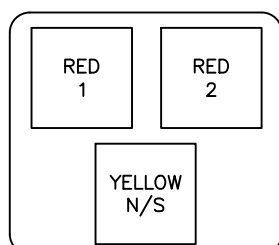
PRIMARY

INSTALL 3  
CONDUCTOR CABLE

SECONDARY

TERMINATE TO RED 2  
TERMINATE TO NB YELLOW

## HAWK SIGNAL HEAD



## VEHICLE TERMINAL COMPARTMENT

SEE CITY STD. DWG. E-19  
FOR VEHICLE SIGNAL  
TERMINAL LOCATION DETAILS

NOTE: SPARE CONDUCTORS TO  
BE TAPED AND NEATLY LACED  
IN TS-4

## HAWK - BILL OF MATERIAL

ITEM NUMBER	DESCRIPTION
RR2P-UL-AC110V	IDEC, DPDT, RELAY, INDICATOR LIGHT, AC110V, 10A
SR2P-06	IDEC, RAIL SOCKET, 8 POSITION, DIN RAIL
PB345-ND	TE, DIN RAIL, 34.8MMx10.29mm, SLOTTED
2005.2	CONTRAC-CLIP, END STOP FOR 35MM DIN RAIL

# HAWK CABINET WIRING DIAGRAM NORTH/SOUTH

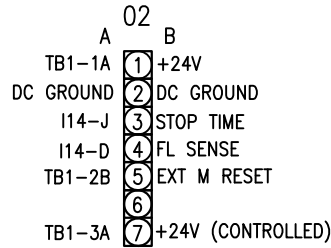
REF. & REV.  
MAR. 2021 (A.7)

CITY OF FRESNO  
E-34D



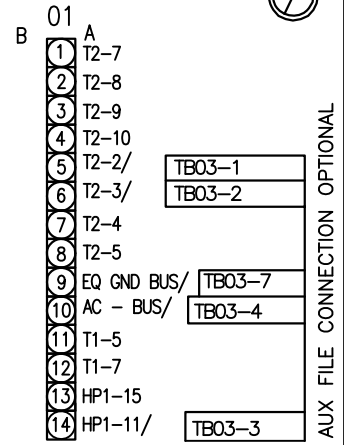
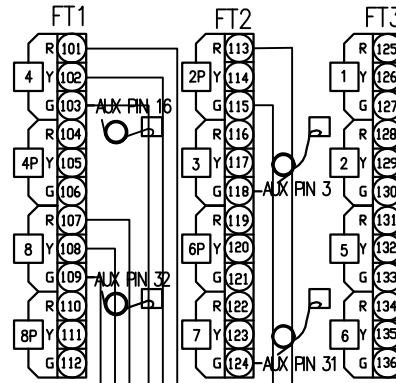
C4

# FLASH PROGRAM BLOCKS (INSIDE)



IR

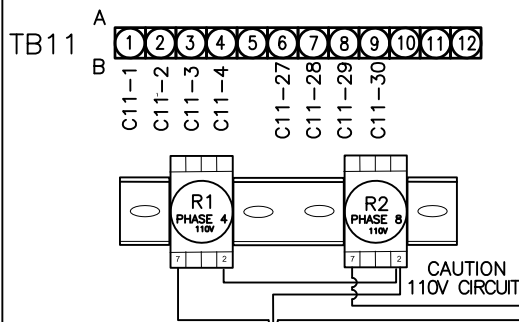
LR



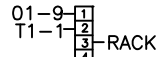
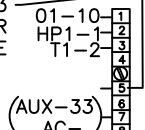
## OUTPUT FILE REAR VIEW

INSTALL 3  
CONDUCTOR CABLE

TERMINATE TO PED 02 MODULE  
SEE CITY STD. DWG. E-20 FOR PEDESTRIAN  
SIGNAL & PPB TERMINAL LOCATION DETAILS



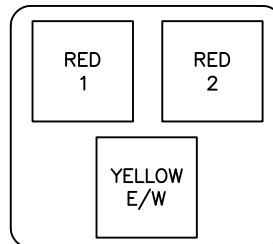
INSTALL 3  
CONDUCTOR CABLE



SECONDARY

TERMINATE TO RED 2  
TERMINATE TO EB YELLOW

## HAWK SIGNAL HEAD

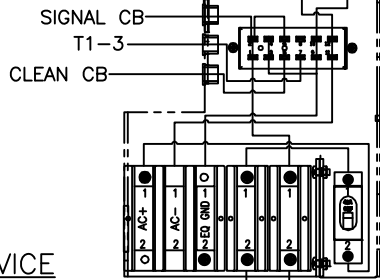


## VEHICLE TERMINAL COMPARTMENT

SEE CITY STD. DWG. E-19  
FOR VEHICLE SIGNAL  
TERMINAL LOCATION DETAILS

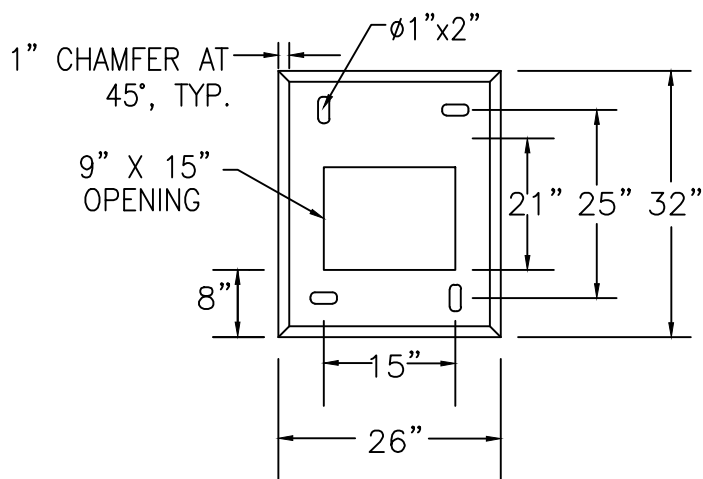
NOTE: SPARE CONDUCTORS TO  
BE TAPED AND NEATLY LACED  
IN TS-4

\* = REMOVE JUMPER WHEN  
CONNECTING BBS

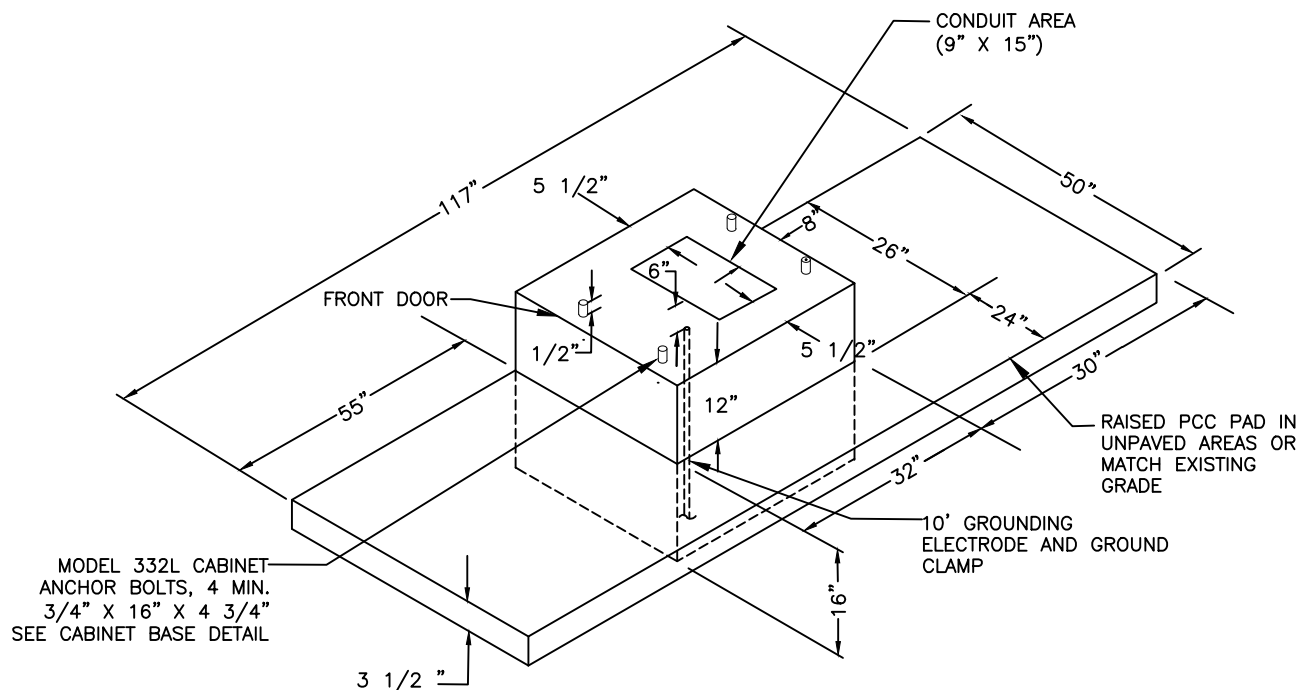


## SERVICE PANEL

	A	B
1	HAWK – BILL OF MATERIAL	
2	ITEM NUMBER	DESCRIPTION
3	RR2P-UL-AC110V	IDEC, DPDT, RELAY, INDICATOR LIGHT, AC110V, 10A
4	SR2P-06	IDEC, RAIL SOCKET, 8 POSITION, DIN RAIL
5	PB345-ND	TE, DIN RAIL, 34.8MMx10.29mm, SLOTTED
6	2005.2	CONTRAC-CLIP, END STOP FOR 35MM DIN RAIL



CABINET BASE DETAIL\*

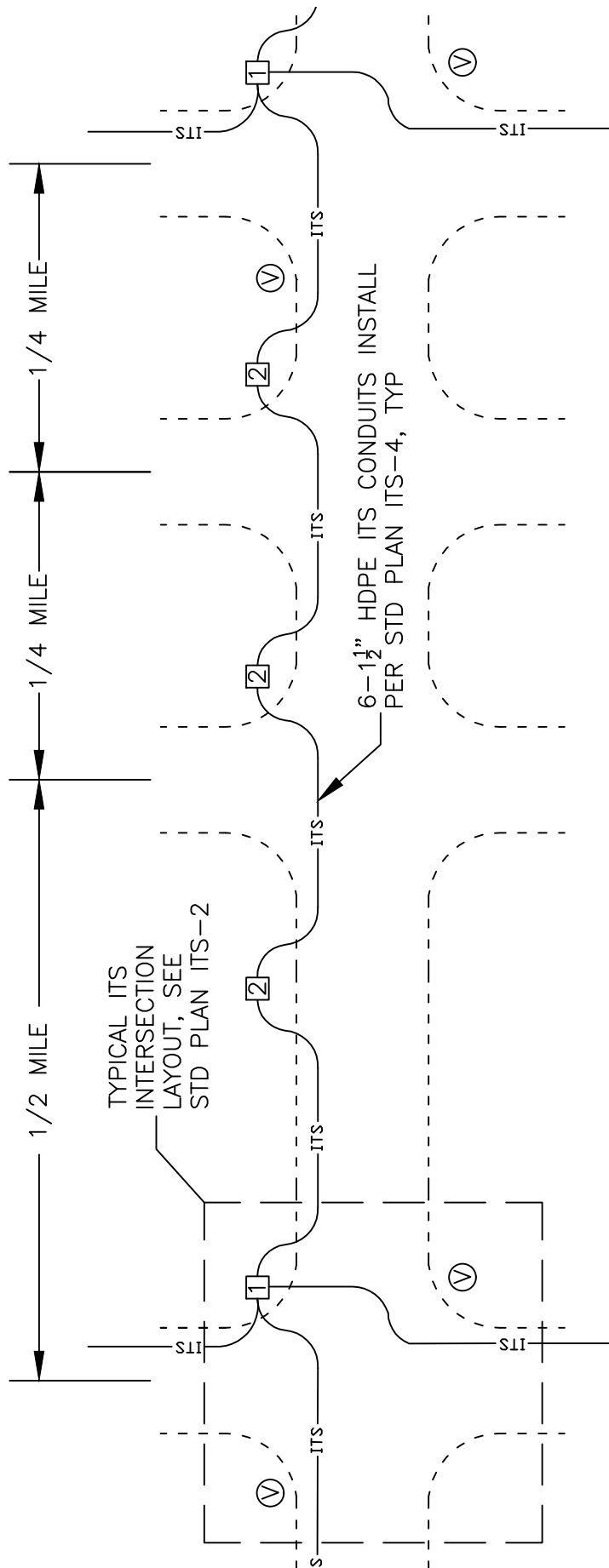


332L FOUNDATION DETAILS

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".



### 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.

V IP CAMERA

## TYPICAL ITS CORRIDOR LAYOUT

REF. & REV.  
JULY 2011  
MAR. 2021 (A.7)

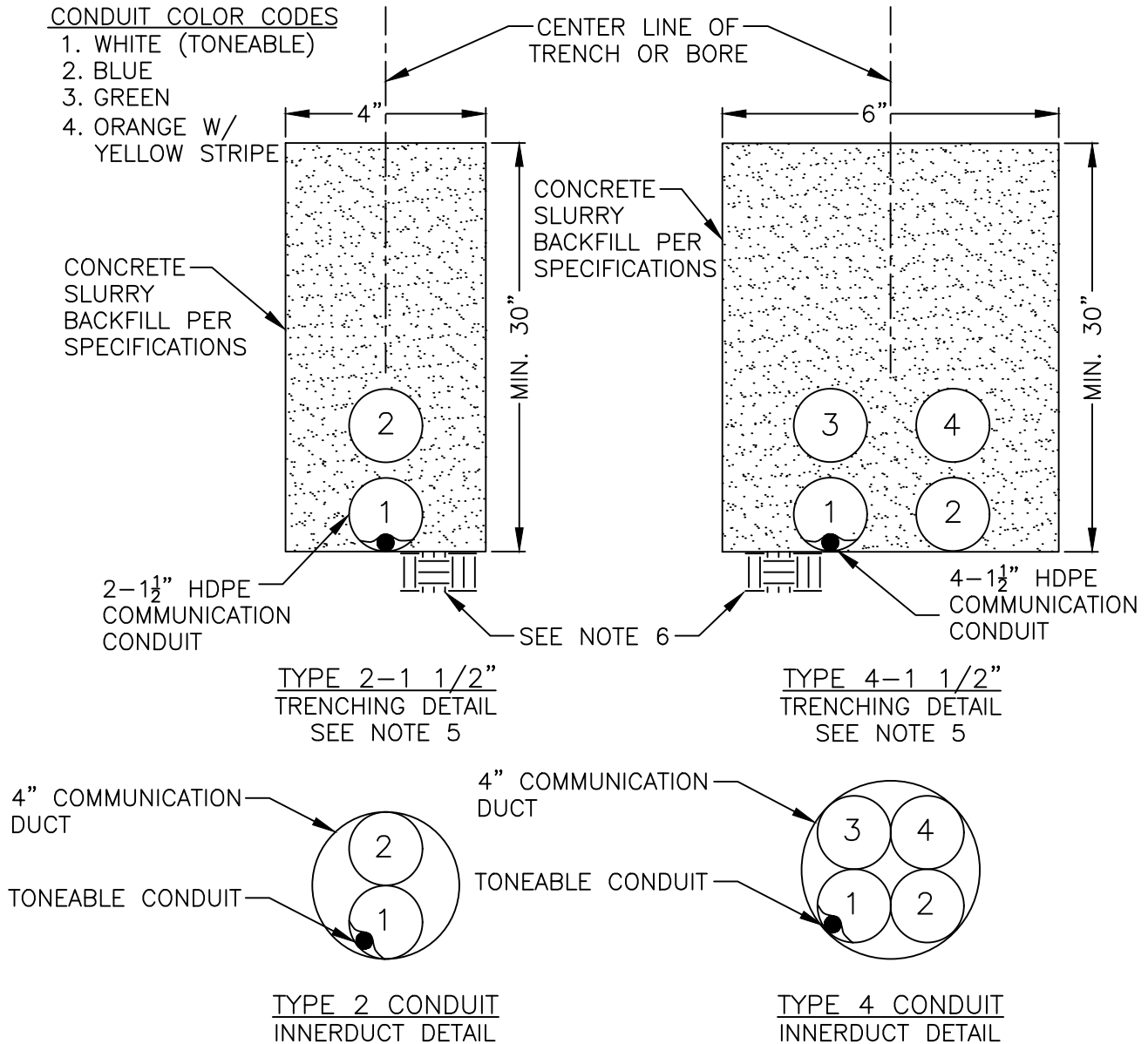
CITY OF FRESNO  
ITS-1

CITY OF FRESNO  
ITS-3



CONDUIT COLOR CODES

1. WHITE (TONEABLE)
2. BLUE
3. GREEN
4. ORANGE W/  
YELLOW STRIPE



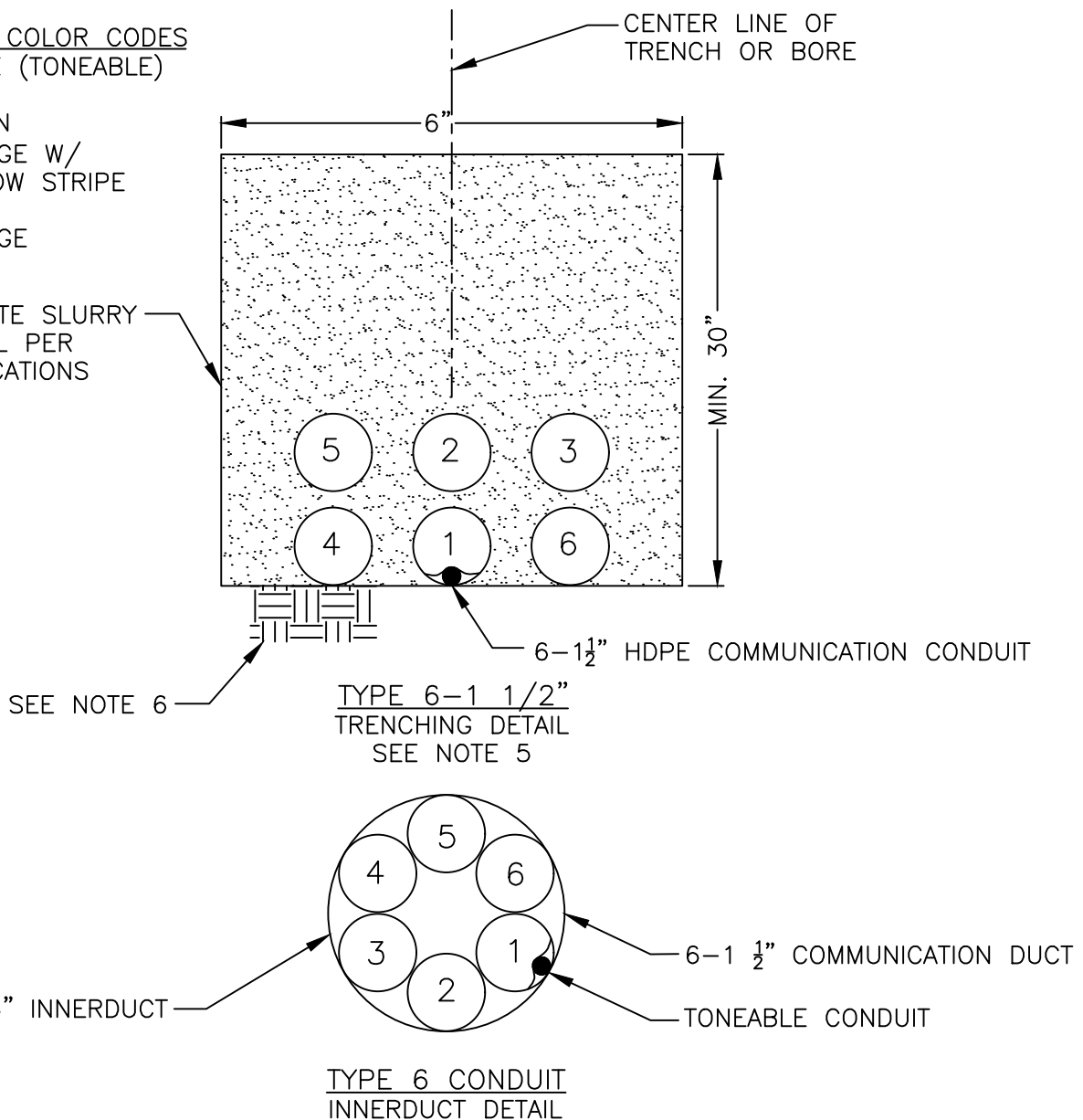
NOTES:

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.

### CONDUIT COLOR CODES

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

CONCRETE SLURRY  
BACKFILL PER  
SPECIFICATIONS



### NOTES:

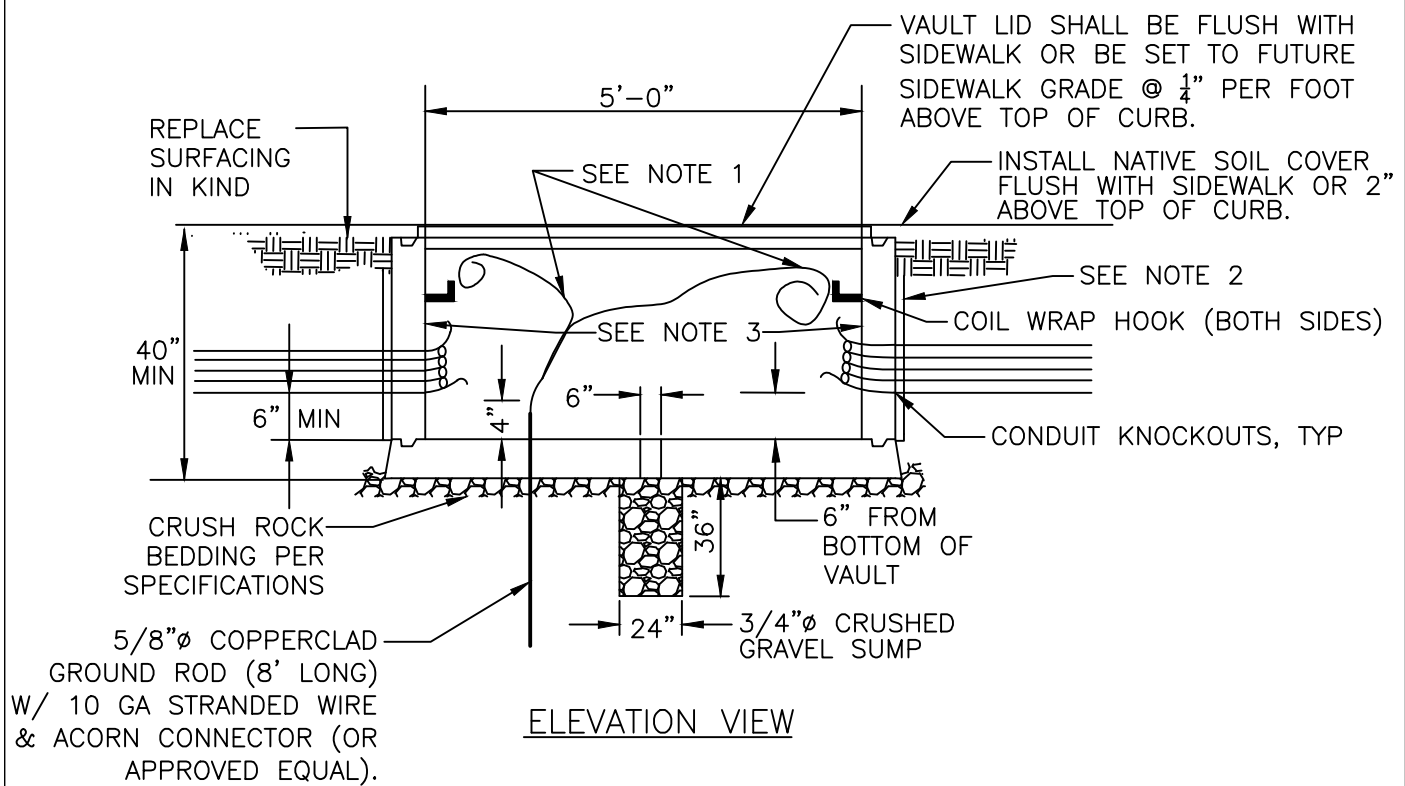
1. ALL CONDUIT SHALL BE SDR-11 HDPE COMMUNICATION.
2. ALL CONDUIT PLACEMENT SHALL BE PLACED PER CALIFORNIA GENERAL ORDER 128 (G.O.128).
3. ALL TRENCH OR BORING OF ITS CONDUIT SHALL HAVE ONE TONEABLE CONDUIT USED FOR TRACER.
4. CONDUITS SHALL BE WHITE, BLUE, GREEN, ORANGE W/YELLOW STRIPE, RED, AND ORANGE 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  
MAR. 2021 (A.7)

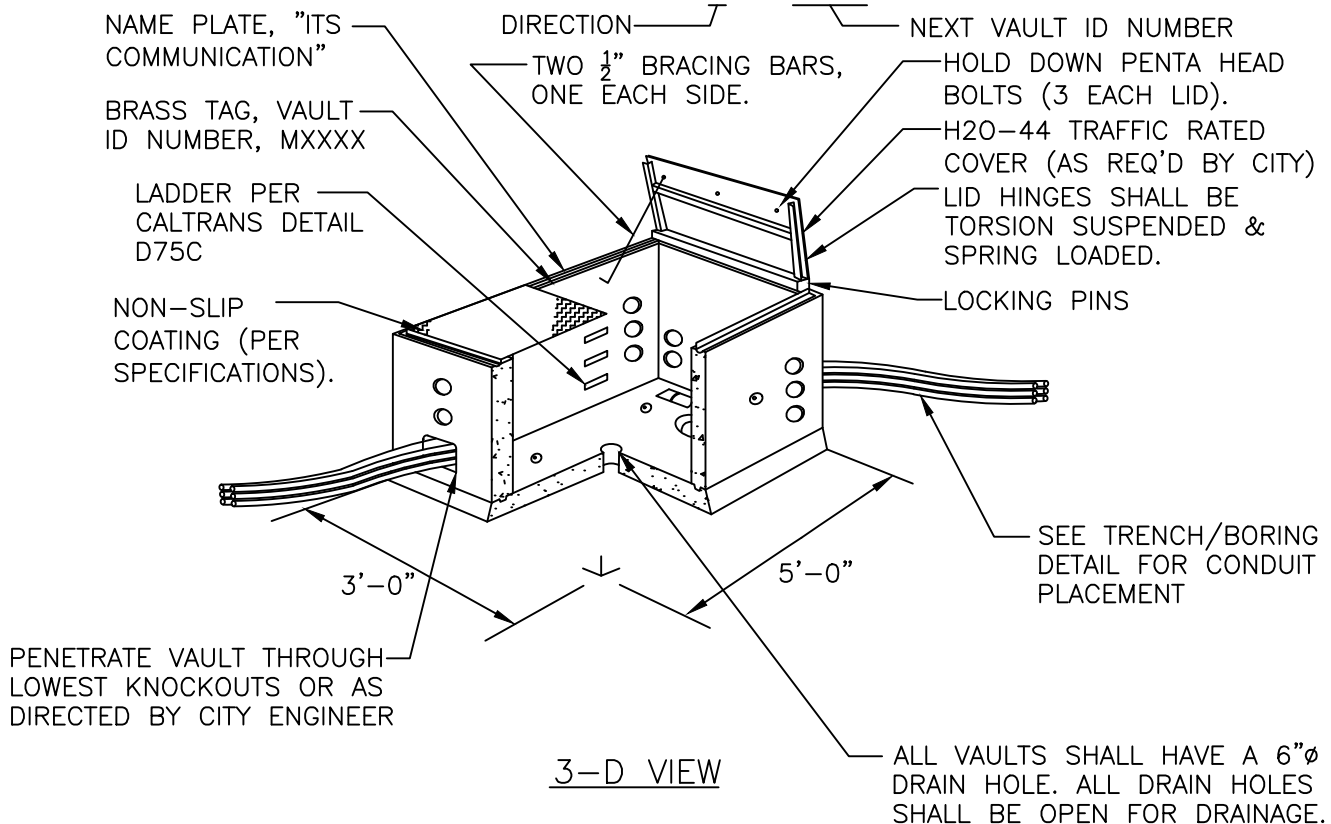
CITY OF FRESNO  
ITS-5





#### NOTES:

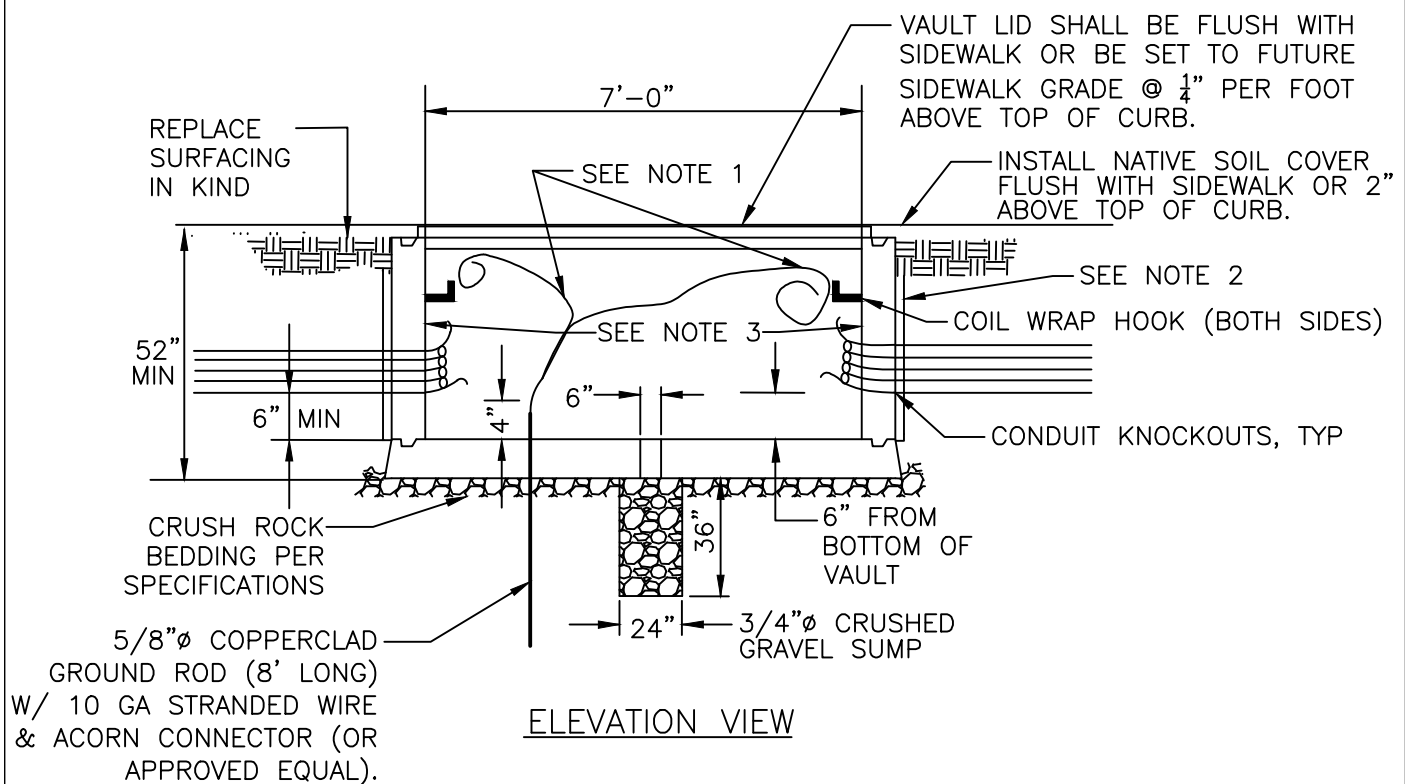
1. INSTALL COMMUNICATIONS BELLS ON CONDUIT ENDS & CONNECT TONEABLE CONDUIT TO GROUNDING ROD.
2. WRAP VAULT WITH BUILDING PAPER PER SPECIFICATIONS BEFORE BACKFILLING.
3. ALL CONDUITS INSTALLED SHALL BE LABELED WITH DIRECTION BRASS TAG DIRECTLY ABOVE CONDUITS. EXAMPLE: N TO IXXXX



## ITS 3' X 5' VAULT DETAILS NO. 2

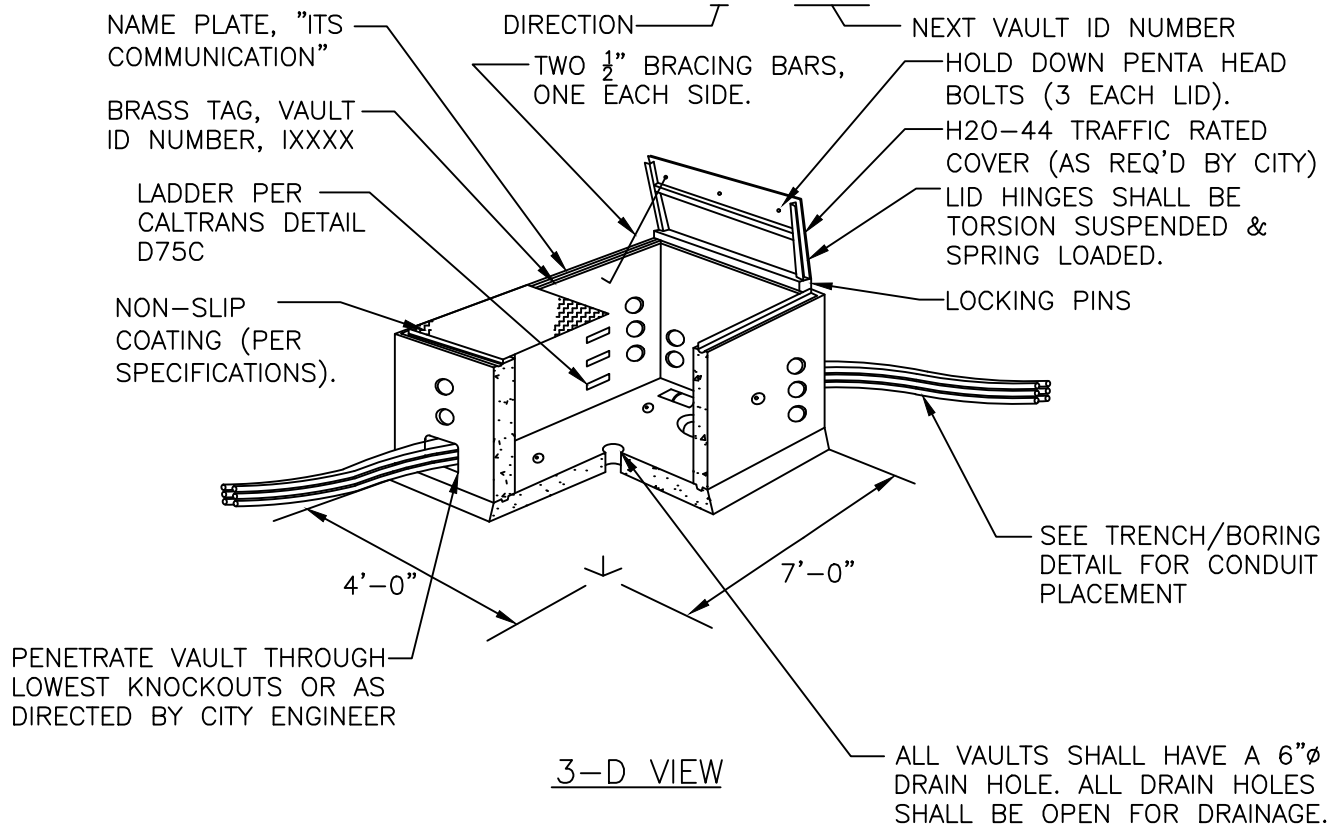
REF. & REV.  
FEB., 2008  
MAR. 2021 (A.7)

CITY OF FRESNO  
ITS-12



#### 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



## ITS 4' X 7' VAULT DETAILS NO. 2

REF. & REV.  
FEB., 2008  
MAR. 2021 (A.7)

CITY OF FRESNO  
ITS-14

THIS STANDARD IS  
NO LONGER USED

NO LONGER USED

REF. & REV.  
~~FEB. 2008~~  
MAR. 2021 (A.7)

CITY OF FRESNO  
ITS-15

THIS STANDARD IS  
NO LONGER USED

NO LONGER USED

REF. & REV.  
~~FEB. 2008~~  
MAR. 2021 (A.7)

CITY OF FRESNO  
ITS-16

THIS STANDARD IS  
NO LONGER USED

NO LONGER USED

REF. & REV.  
~~FEB. 2008~~  
MAR. 2021 (A.7)

CITY OF FRESNO  
ITS-17

THIS STANDARD IS  
NO LONGER USED

NO LONGER USED

REF. & REV.  
~~JULY 2011~~  
MAR. 2021 (A.7)

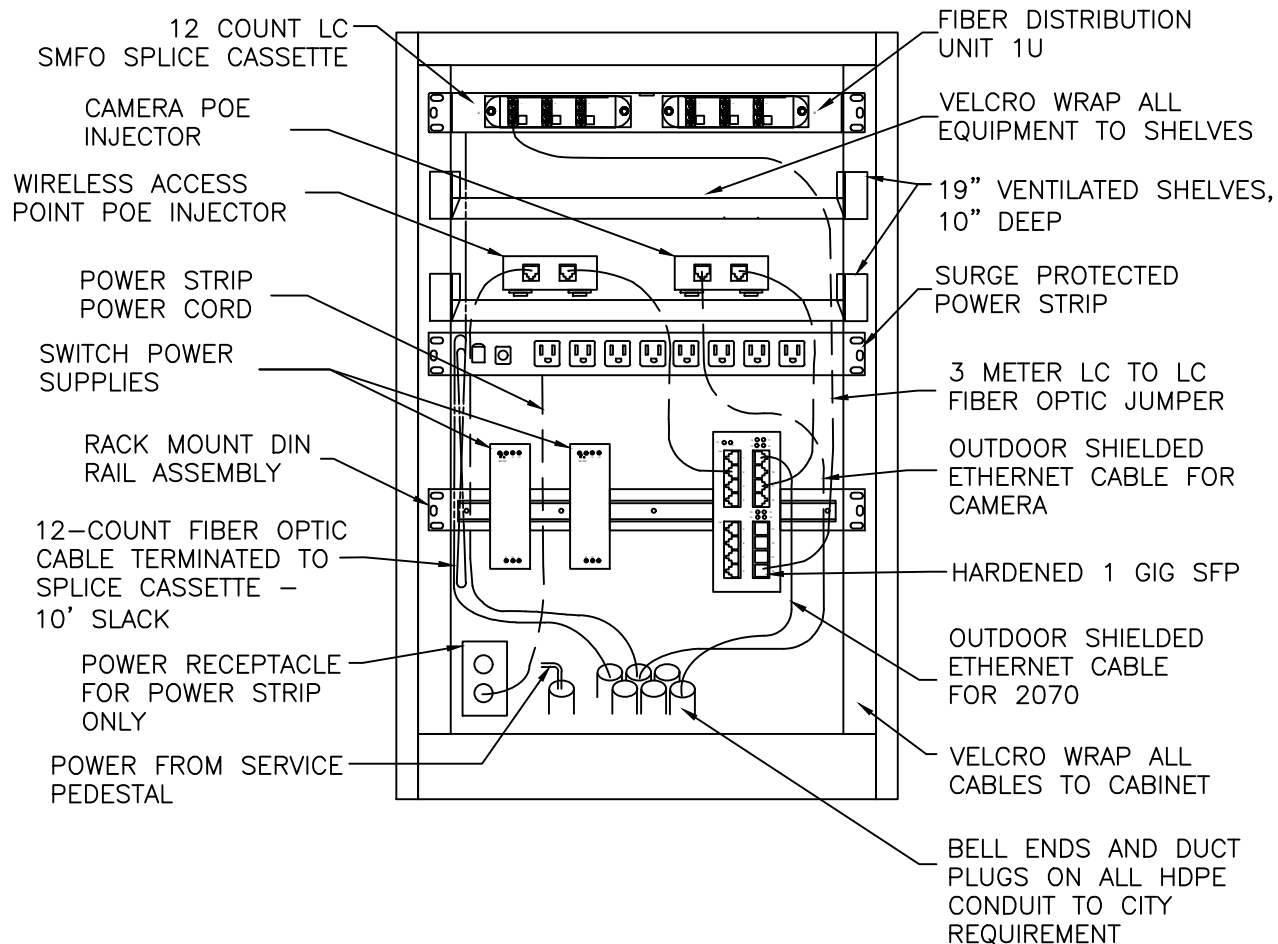
CITY OF FRESNO  
ITS-20

THIS STANDARD IS  
NO LONGER USED

NO LONGER USED

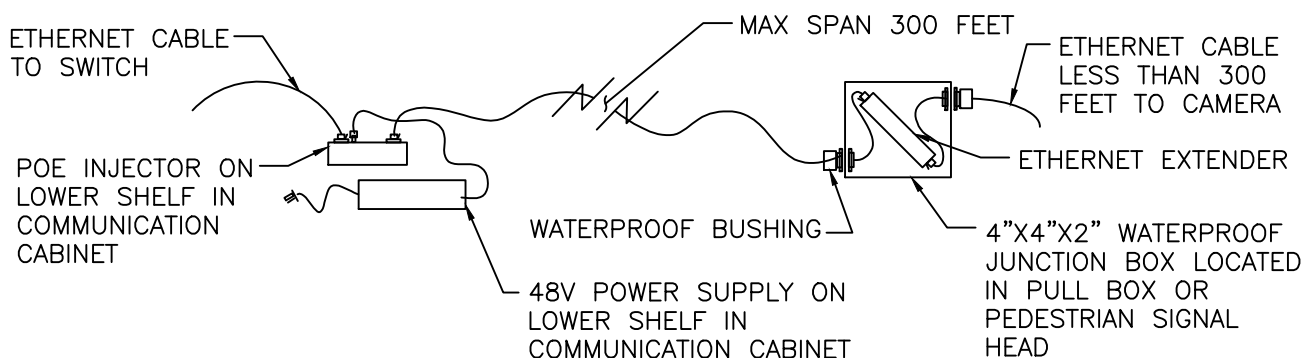
REF. & REV.  
~~JULY 2011~~  
MAR. 2021 (A.7)

CITY OF FRESNO  
ITS-21

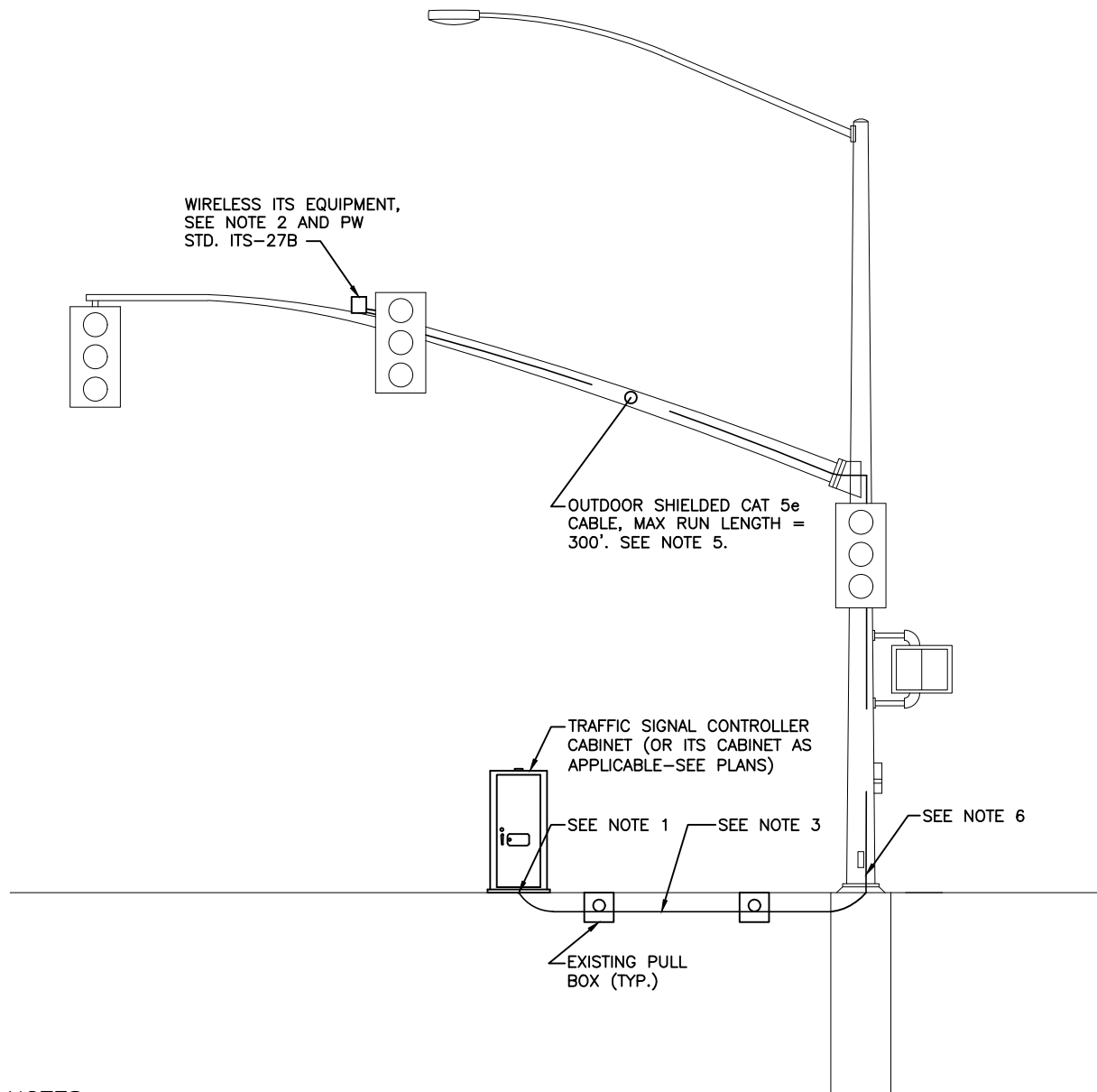


NOTE:  
MINIMUM 4" VERTICAL SPACING ABOVE 19" SHELF

(ONLY FOR ETHERNET RUNS LONGER THAN 300')  
ETHERNET EXTENDER FOR CAMERA







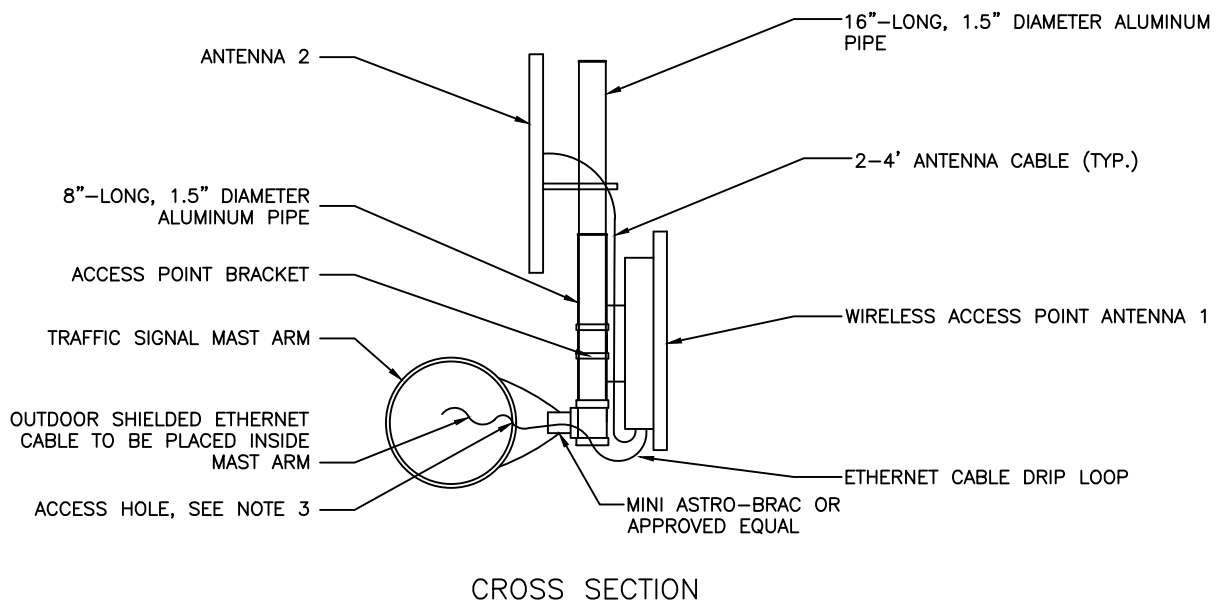
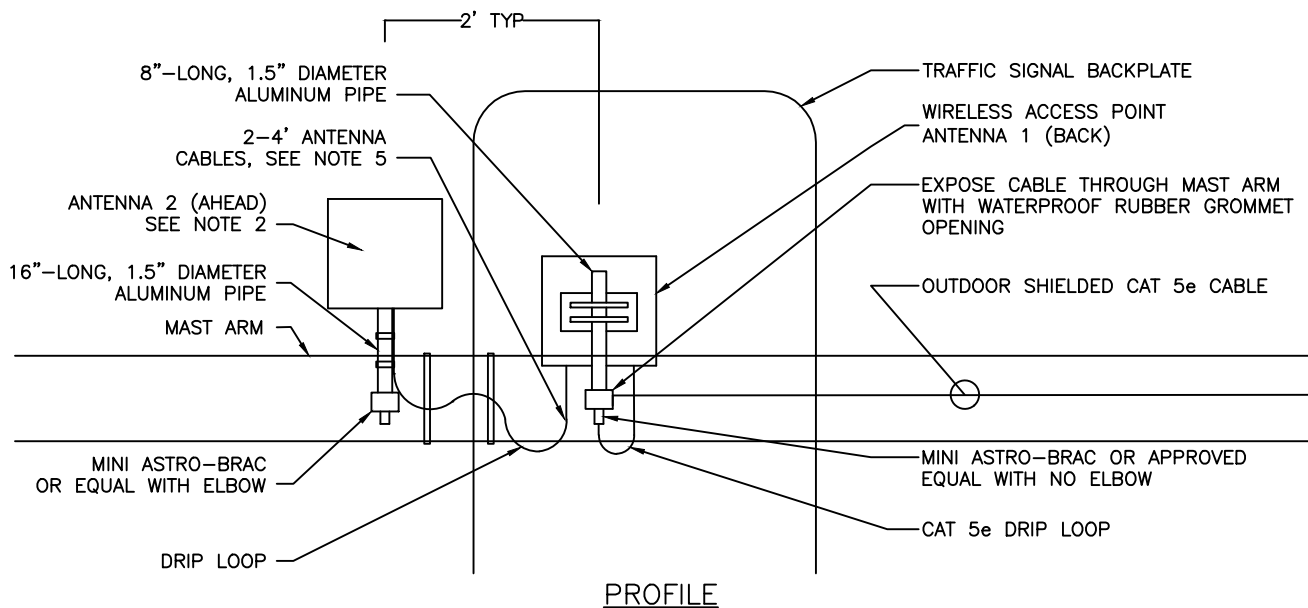
#### NOTES:

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 UTILIZE 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  
MAR. 2021 (A.7)

CITY OF FRESNO  
ITS-27A



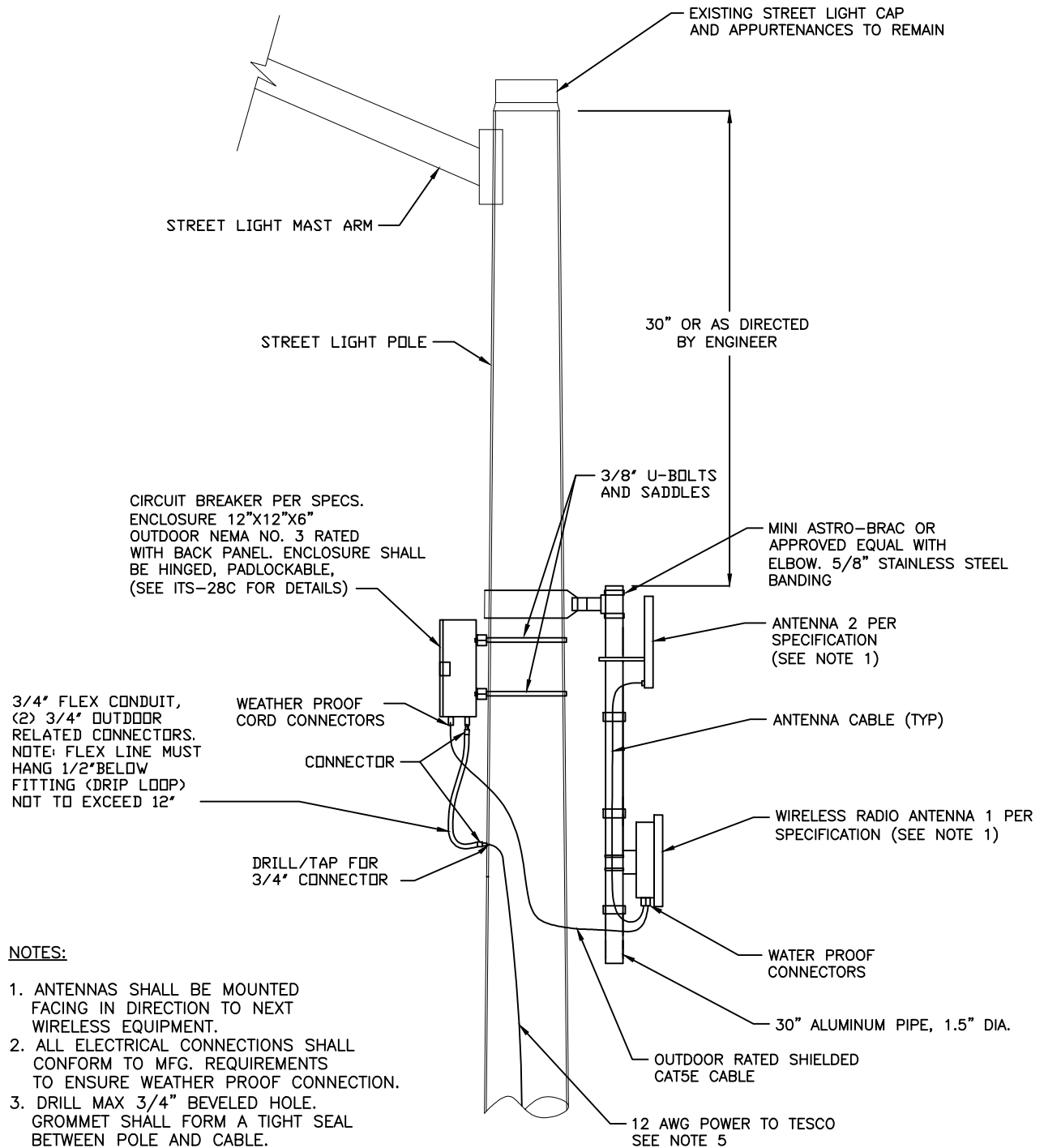
#### NOTES:

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  $\frac{3}{4}$ " 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  
MAR. 2021 (A.7)

CITY OF FRESNO  
ITS-27B



**NOTES:**

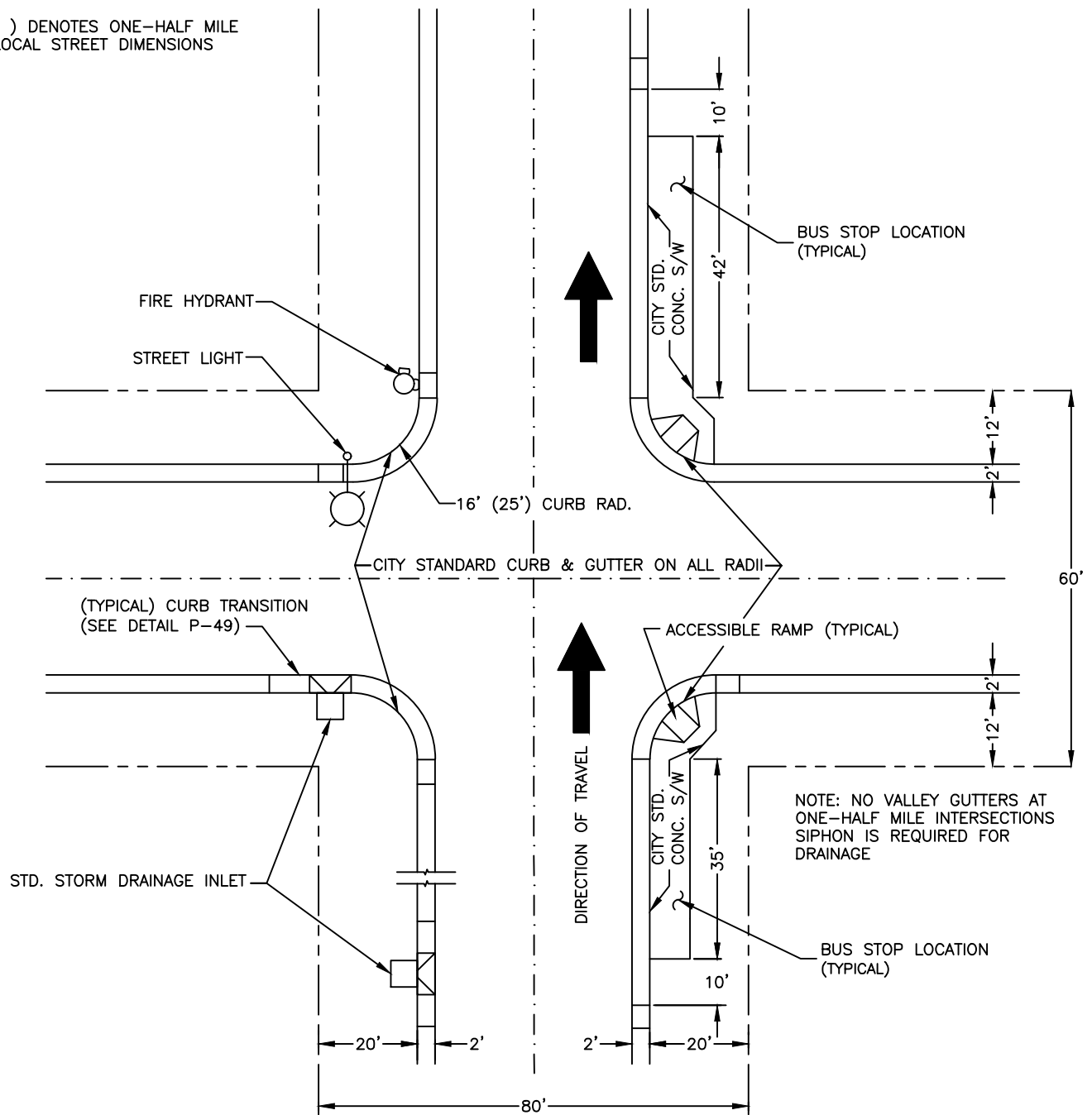
1. ANTENNAS SHALL BE MOUNTED FACING IN DIRECTION TO NEXT WIRELESS EQUIPMENT.
2. ALL ELECTRICAL CONNECTIONS SHALL CONFORM TO MFG. REQUIREMENTS TO ENSURE WEATHER PROOF CONNECTION.
3. DRILL MAX 3/4" BEVELED HOLE. GROMMET SHALL FORM A TIGHT SEAL BETWEEN POLE AND CABLE.
4. SECURELY STRAP ANTENNA CABLES TO POLE WITH STAINLESS STEEL NYLON COATED STRAPS (FOLLOW NEC STANDARDS FOR SPACING.)
5. CONTRACTOR SHALL CONNECT THE 120VAC POWER TO THE NEAREST EXISTING TESCO PEDESTAL WITH REQUIRED ADDITIONAL CIRCUIT BREAKER (20 AMP) AND NECESSARY CONDUCTORS (2 SOOW CONDUCTOR, 12 AWG). EXISTING PULLBOX ADJACENT 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 ACCESS AND INSTALL THE NECESSARY CONDUCTORS. POLE HAND HOLE SHALL BE WELDED BACK AND CONCRETE SHALL BE REPLACED BACK TO EXISTING PULLBOX AFTER ALL PROPOSED WORK IS COMPLETED AND INSPECTED.
6. THE CONTRACTOR SHALL CONNECT EARTH GROUND FROM A LOCAL GROUND ROD TO THE BUSSED TERMINALS MARKED "GROUND".
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

# ITS WIRELESS POLE REPEATER INSTALLATION (POWERED THROUGH SERVICE PEDESTAL)

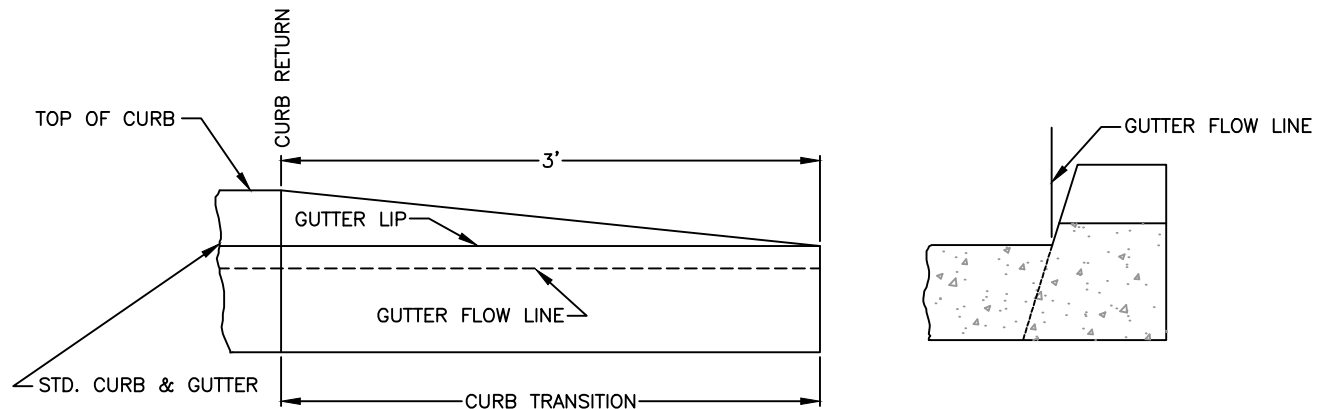
REF. & REV.  
JULY 2011  
MAR. 2021 (A.7)

CITY OF FRESNO  
ITS-28B

( ) DENOTES ONE-HALF MILE  
LOCAL STREET DIMENSIONS



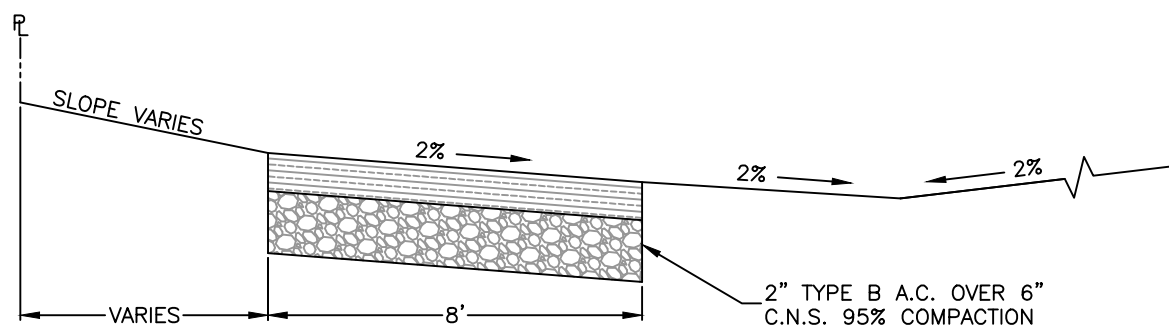
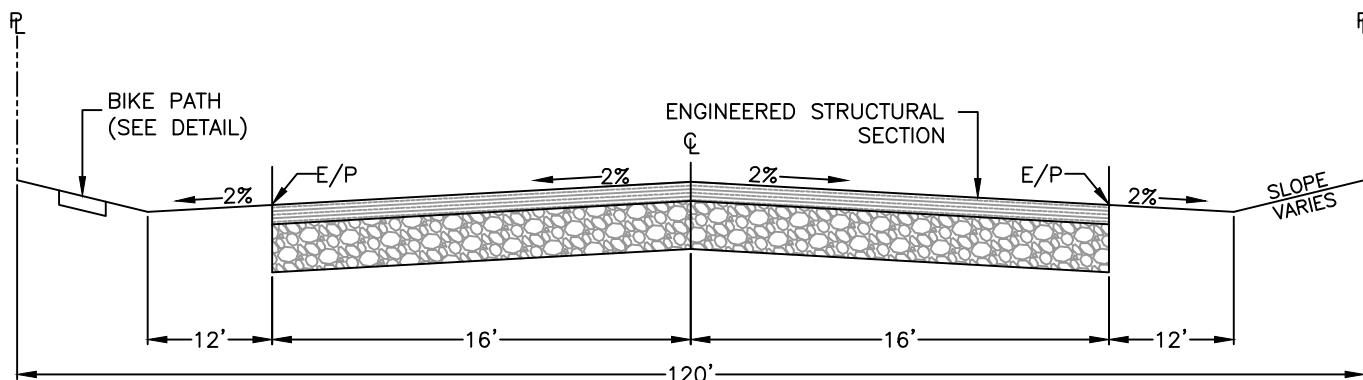
NOTE: MAJOR STREETS REQUIRE FULL STREET IMPROVEMENTS TO CURRENT URBAN STANDARDS.



# INTERSECTION DETAILS FOR MODIFIED STREETS (LOCAL & $\frac{1}{2}$ MILE LOCAL)

REF. & REV.  
AUG. 2010  
MAR. 2021 (A.7)

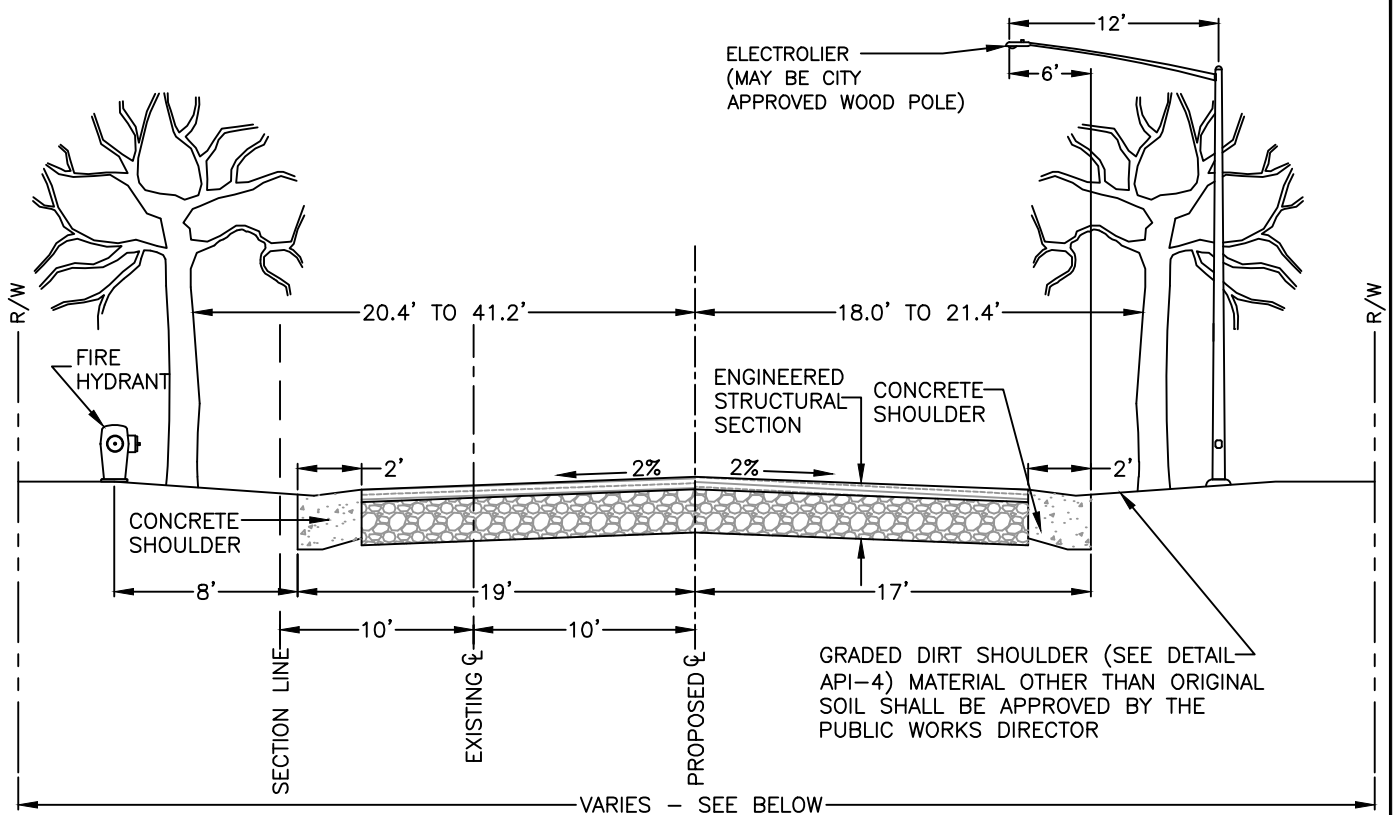
CITY OF FRESNO  
API-5



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.



### 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

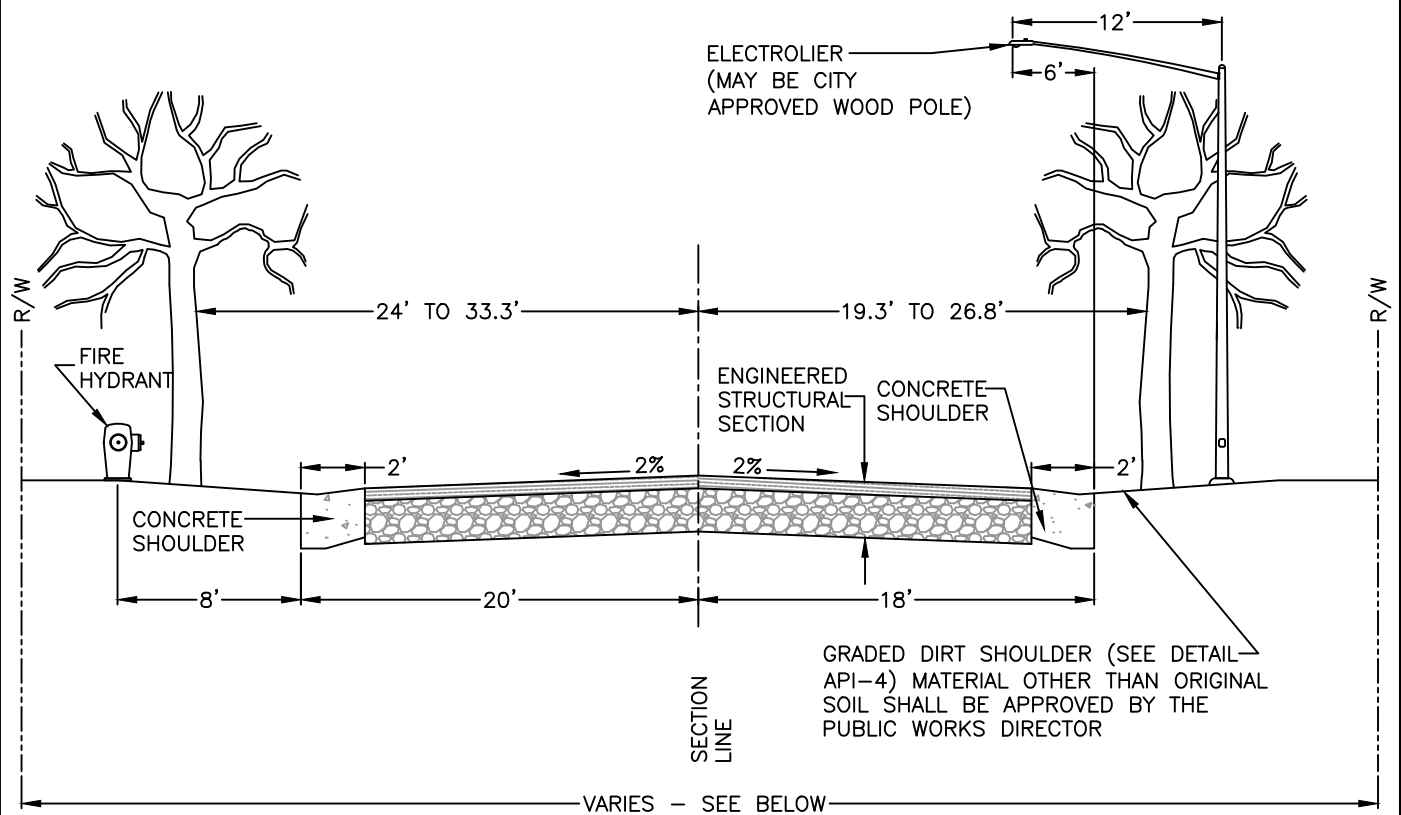
### NOTES:

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  
 MAR. 2021 (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

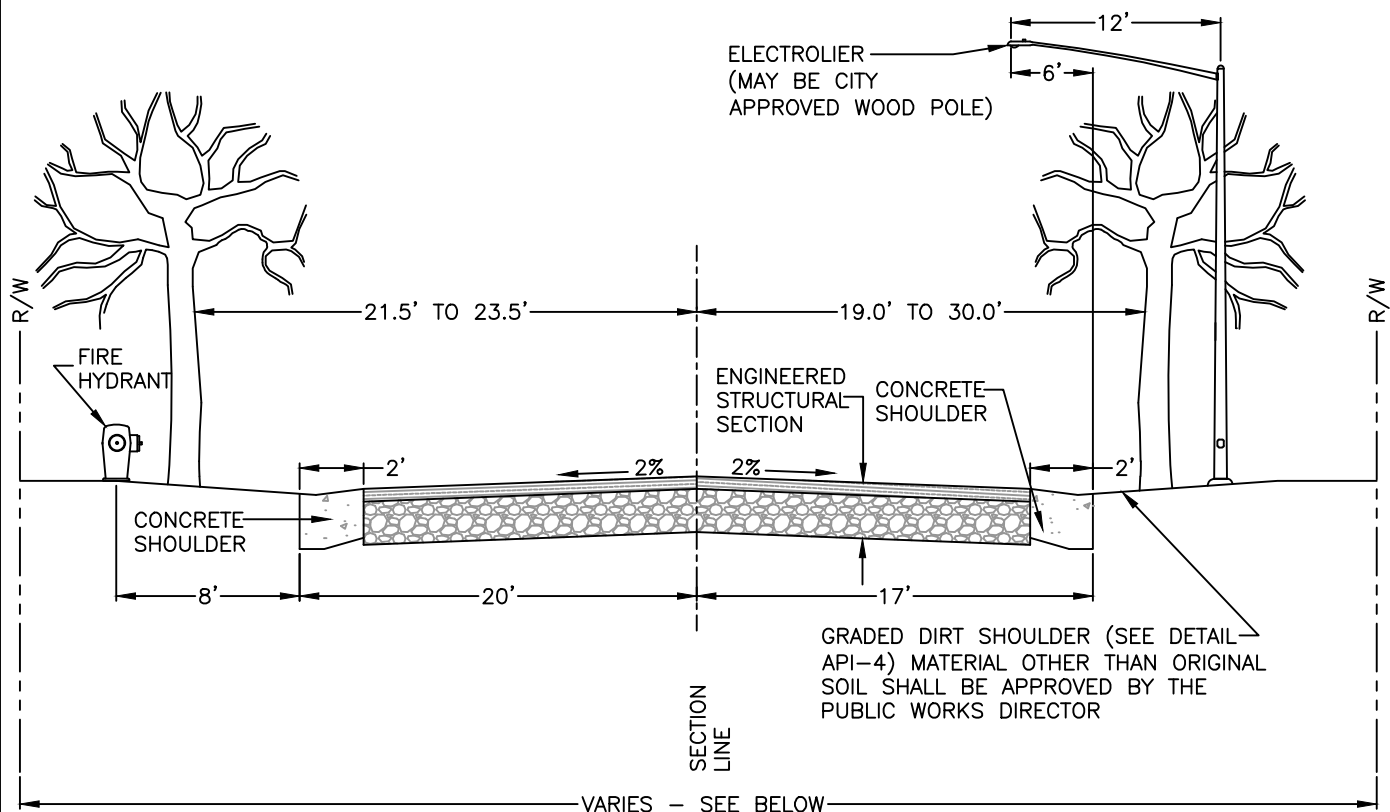
### NOTES:

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  
 MAR. 2021 (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.

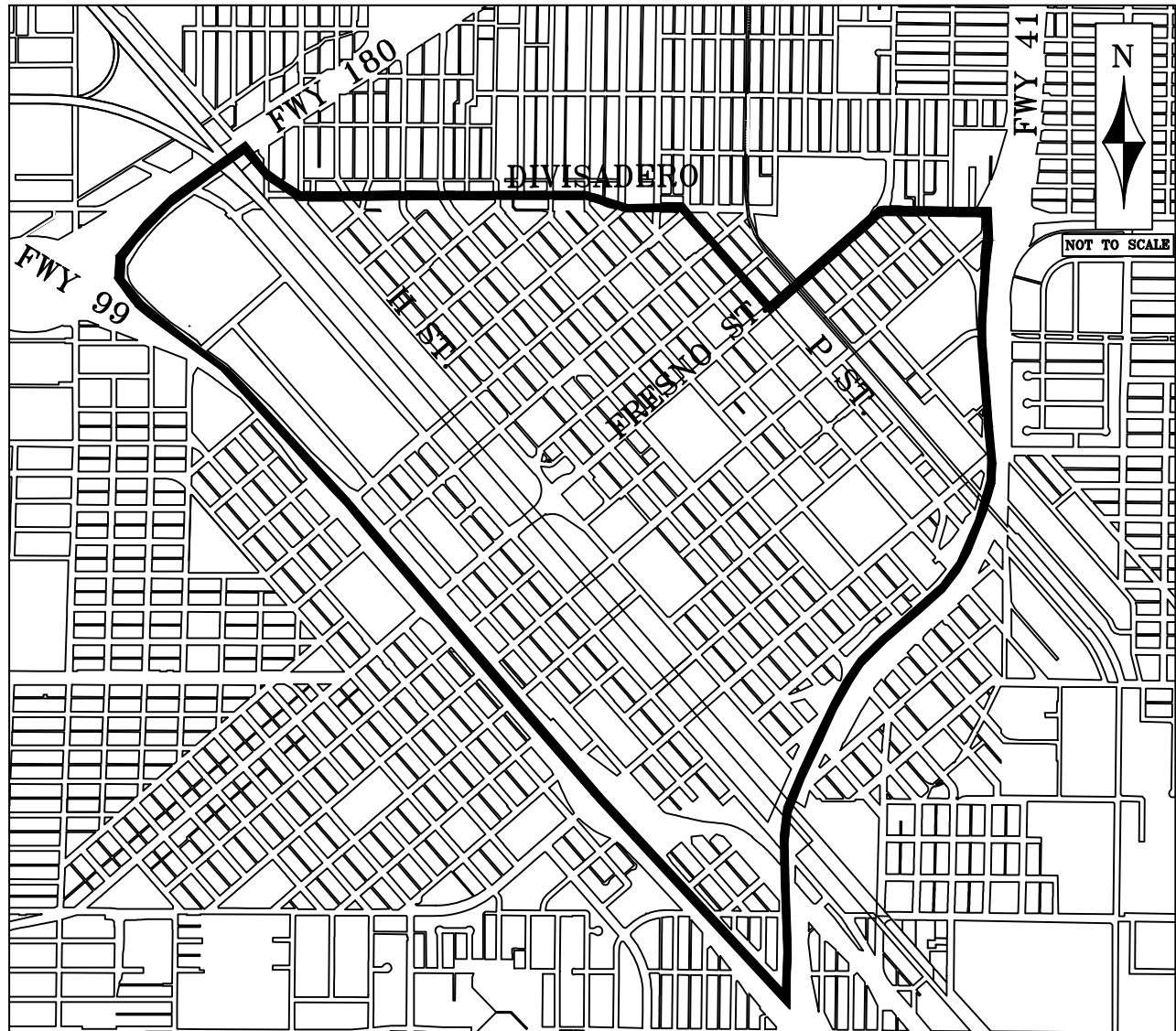
MINNEWAWA AVENUE  
BUTLER AVENUE TO TULARE AVENUE

REF. & REV.  
AUG. 2010  
MAR. 2021 (A.7)

CITY OF FRESNO  
API-9



## DOWNTOWN VICINITY MAP



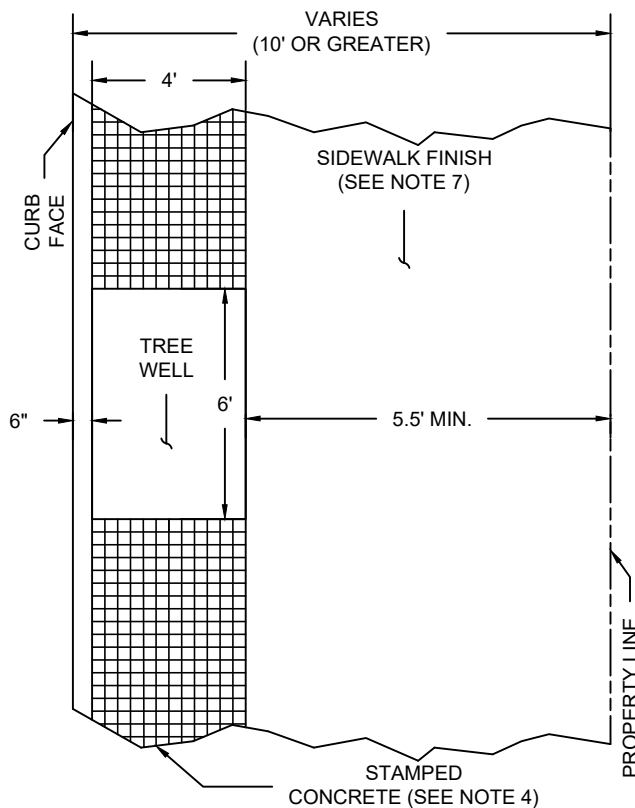
### NOTES:

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.

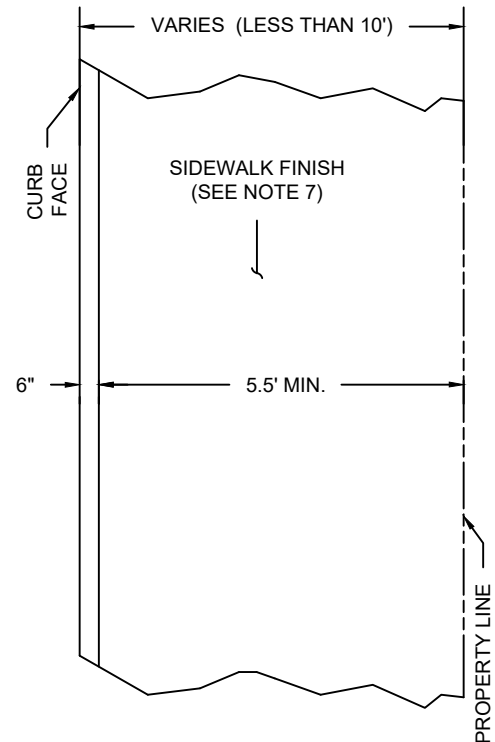
DOWNTOWN CONCRETE SIDEWALK  
AESTHETIC TREATMENT  
SIDEWALK AESTHETIC BOUNDARY

REF. & REV.  
MAR. 2021 (A.7)

CITY OF FRESNO  
API-10



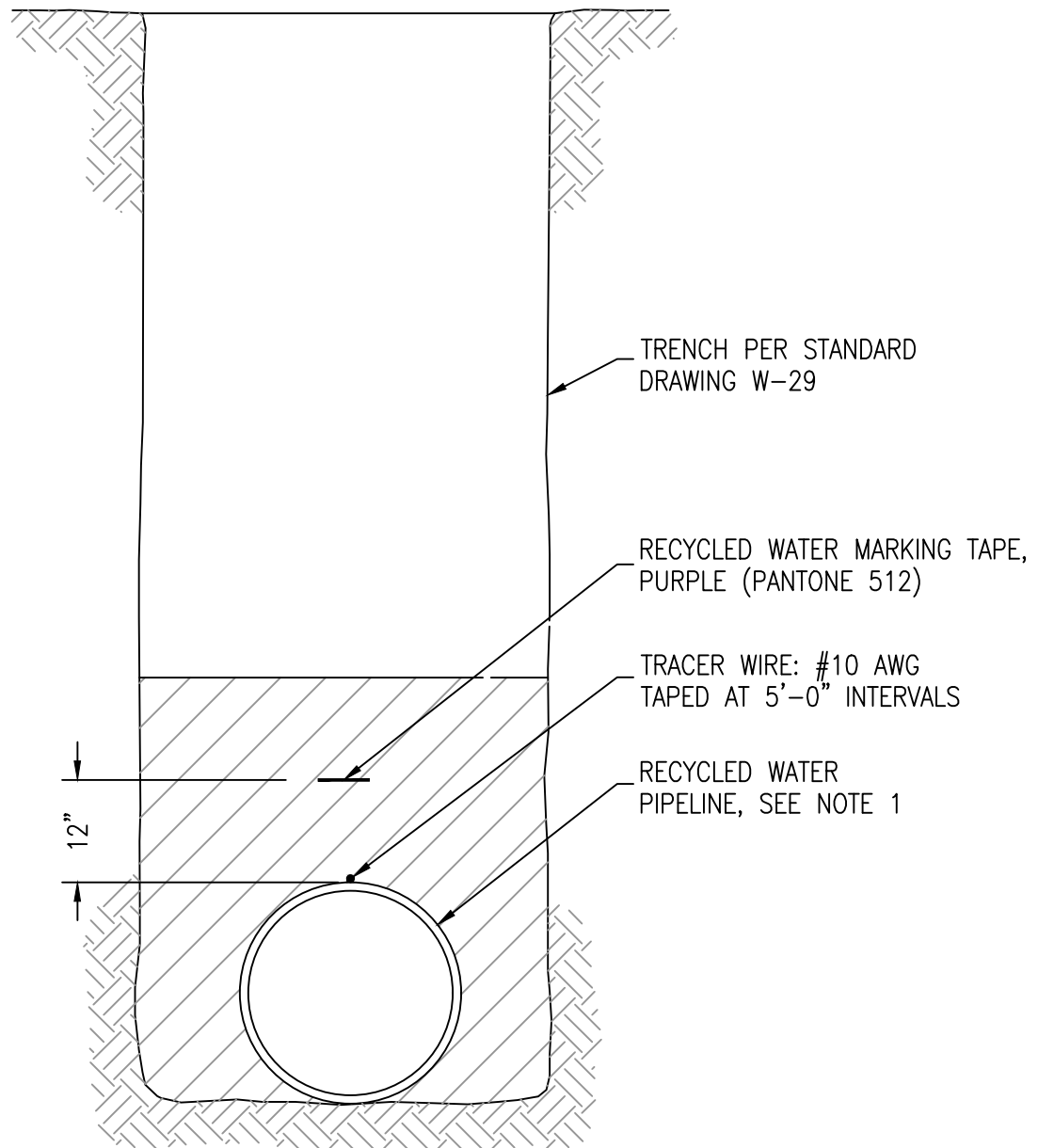
**CASE A**



**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.



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

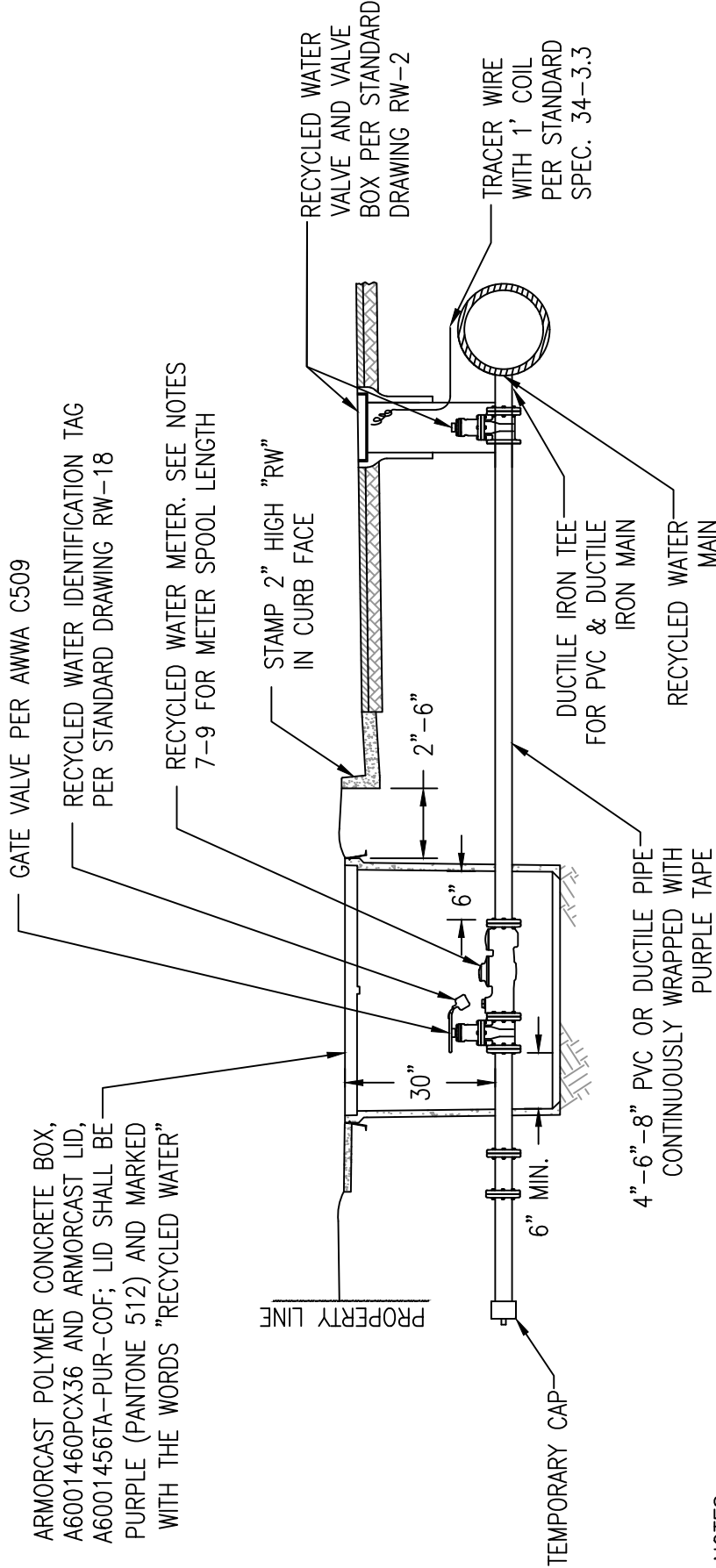
REF. & REV.  
~~AUG. 2010~~  
MAR. 2021 (A.7)

CITY OF FRESNO  
RW-1

# 4", 6", 8" RECYCLED WATER SERVICE

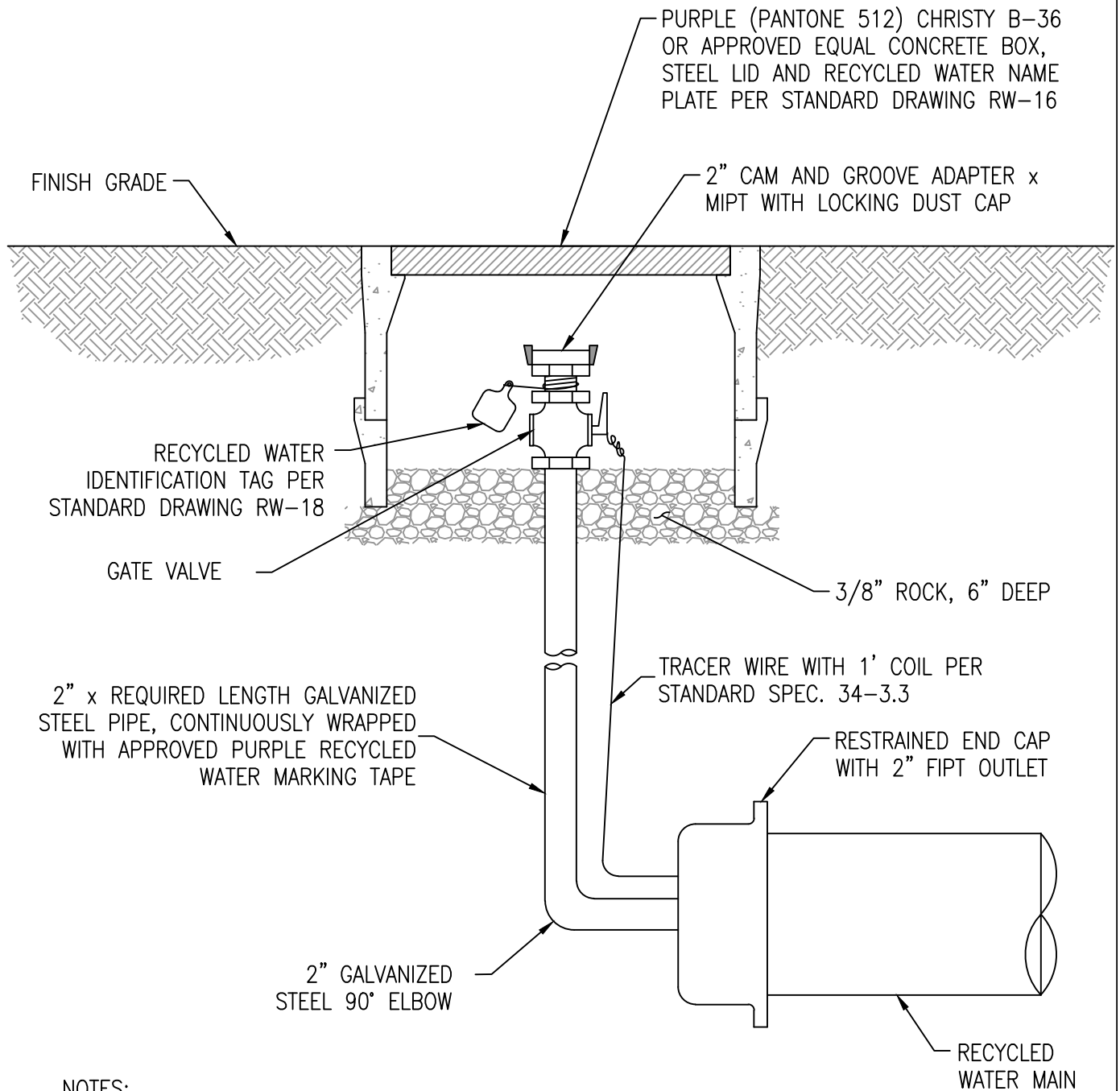
REF. & REV.  
AUG. 2015  
MAR. 2021 (A.7)

CITY OF FRESNO  
RW-6



## 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 13 $\frac{3}{4}$ ".
8. FOR 6" RECYCLED WATER SERVICE, METER SPOOL LENGTH SHALL BE 17 $\frac{3}{4}$ ".
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.



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.  
AUG. 2015  
MAR. 2021 (A.7)

CITY OF FRESNO  
RW-7

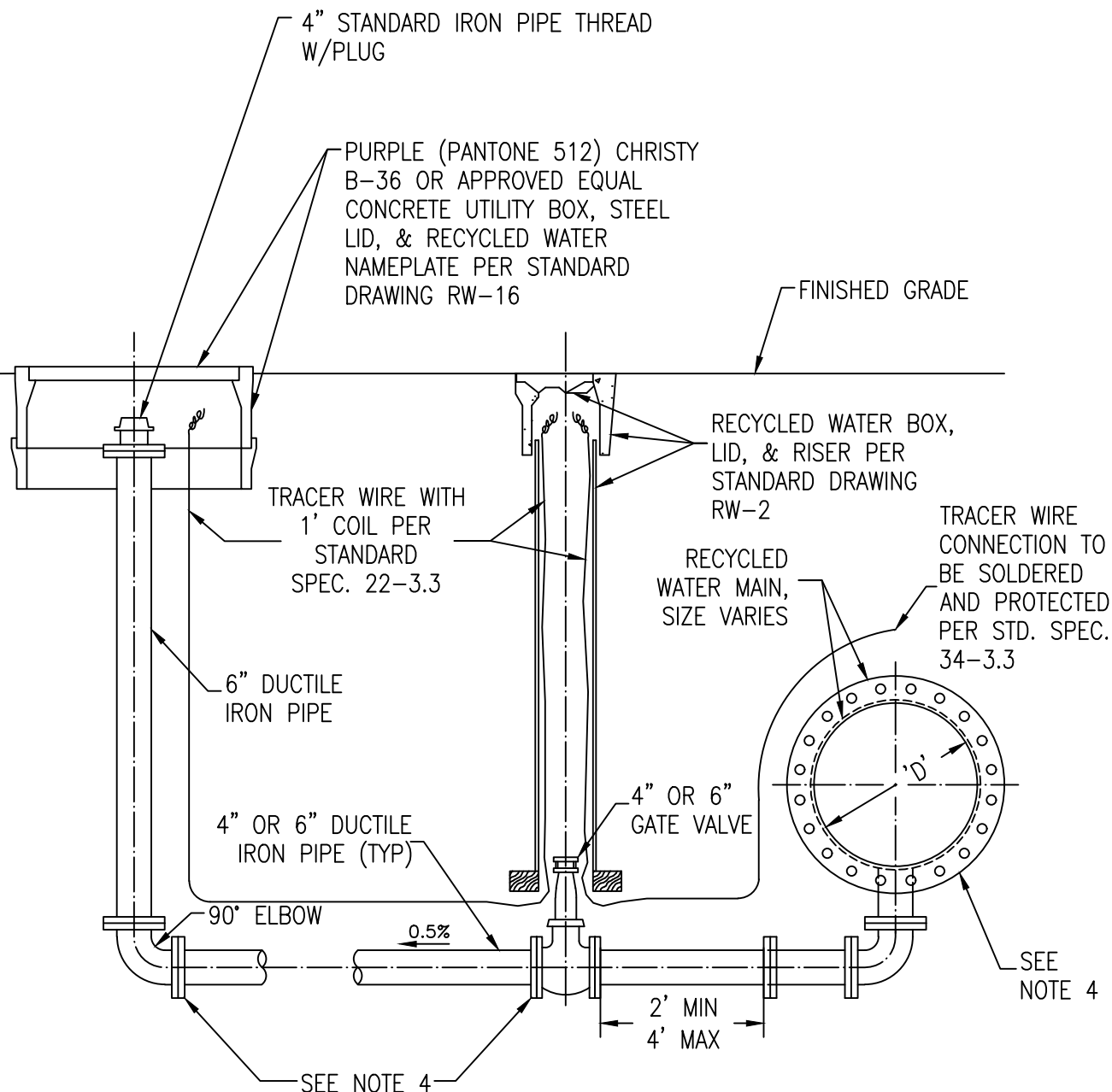
THIS STANDARD IS  
NO LONGER USED

NO LONGER USED  
SEE RW-8A & RW-8B

REF. & REV.  
~~AUG. 2015~~  
MAR. 2021 (A.7)

CITY OF FRESNO

RW-8



# NOTES:

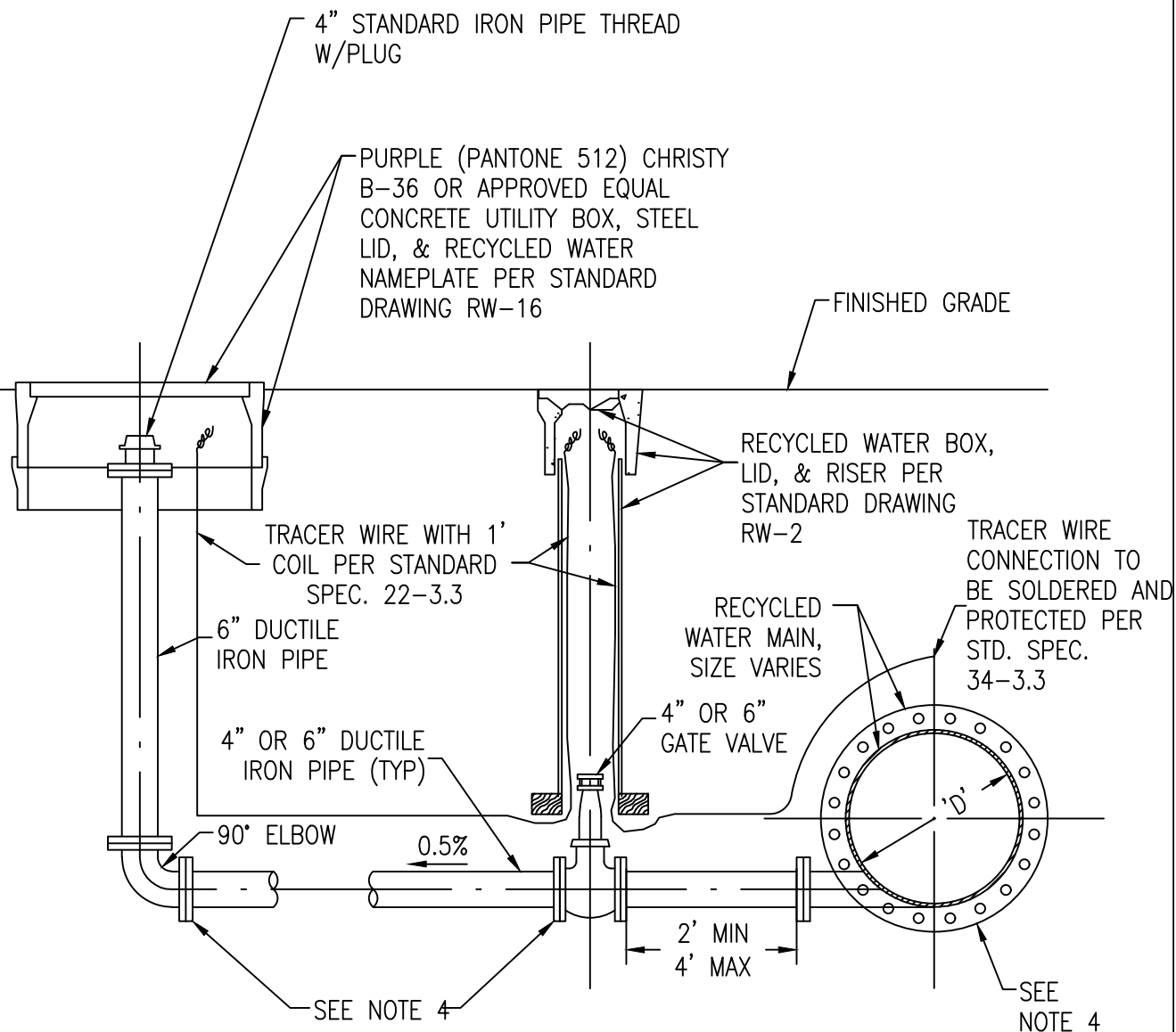
- ALL FITTINGS SHALL BE SECURED WITH FLANGE CONNECTION, HARNESSSES OR TIE-RODS AS APPLICABLE.
- PLACE VALVES AND BLOW-OFFS OUTSIDE SIDEWALK AND DRIVEWAY AREAS.
- ALL RISERS SHALL BE FLANGED, 6" DIAMETER.
- RESTRAIN ALL JOINTS PER CITY STANDARD SPECIFICATIONS SECTION 33-14.5

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.  
MAR. 2021 (A.7)

CITY OF FRESNO  
RW-8A



**NOTES:**

1. ALL FITTINGS SHALL BE SECURED WITH FLANGE CONNECTION, HARNESSSES 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.

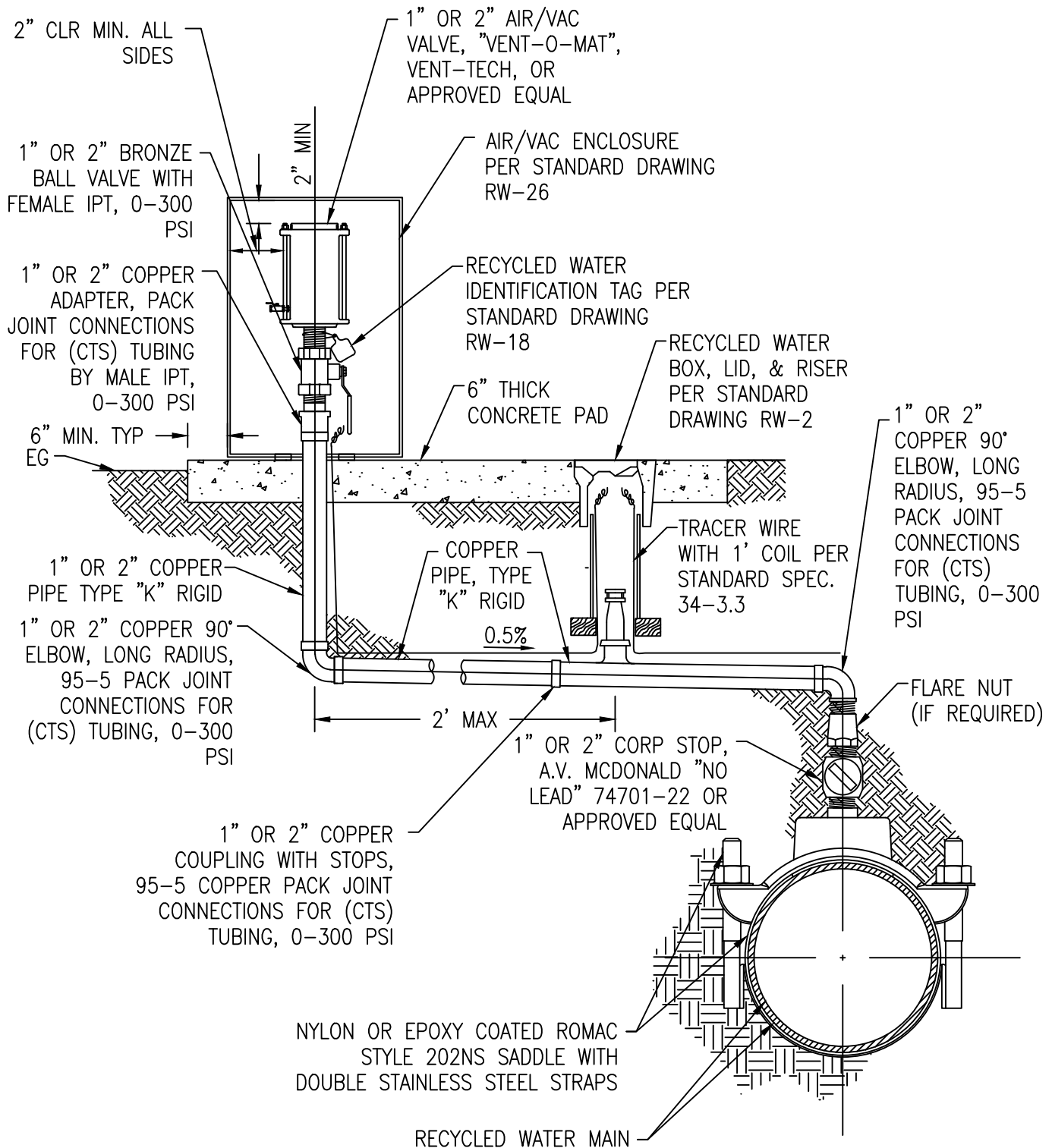
BLOW-OFF PIPE SIZE SCHEDULE	
MAIN	BLOW-OFF
6"	4"
8"	4"
10"	4"
12"	6"
14"	6"
16"	6"
18"	6"
24"	6"
30"	6"

**RECYCLED WATER  
BLOW-OFF ASSEMBLY  
(STEEL MAIN)**

REF. & REV.  
MAR. 2021 (A.7)

CITY OF FRESNO  
**RW-8B**





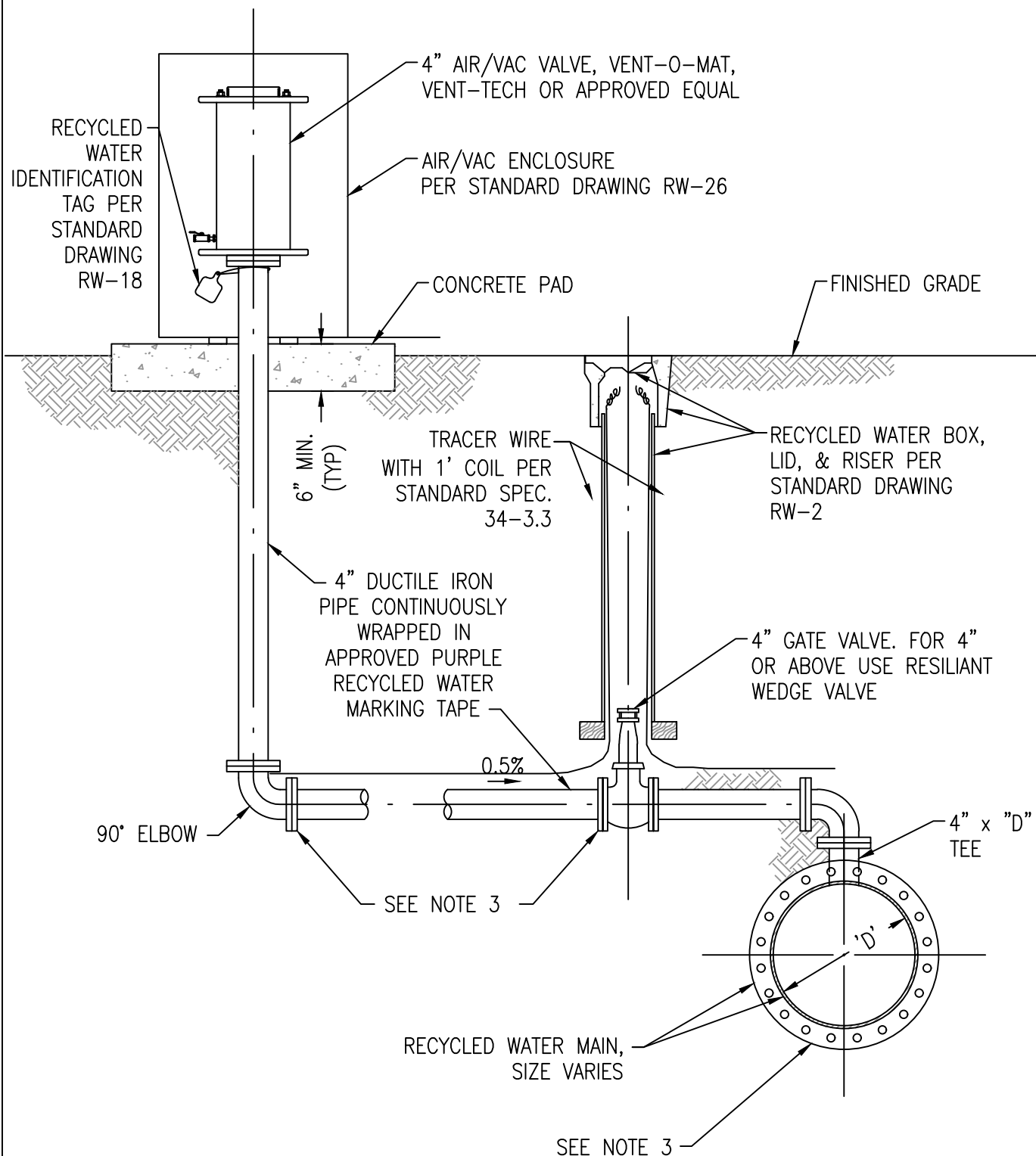
NOTES:

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.  
AUG. 2015  
MAR. 2021 (A.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.  
AUG. 2015  
MAR. 2021 (A.7)

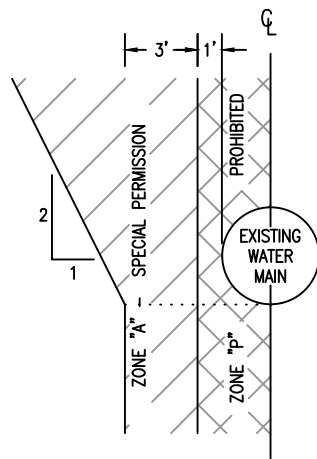
CITY OF FRESNO  
RW-10

THIS STANDARD IS  
NO LONGER USED

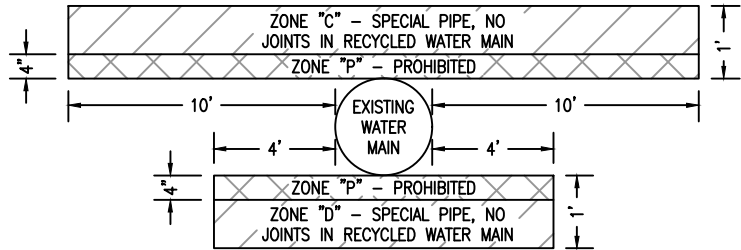
NO LONGER USED

REF. & REV.  
~~JUNE 2014~~  
MAR. 2021 (A.7)

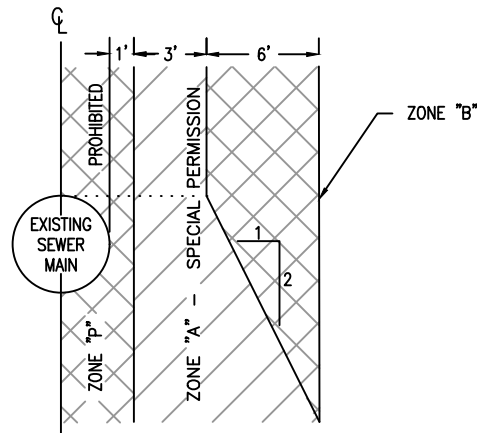
CITY OF FRESNO  
RW-11



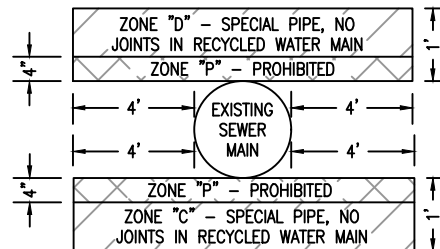
RECYCLED WATER MAIN PARALLEL TO POTABLE WATER MAINS



RECYCLED WATER MAIN CROSSING POTABLE WATER MAINS



RECYCLED WATER MAIN PARALLEL TO SEWER MAINS



RECYCLED WATER MAIN CROSSING SEWER MAINS

#### BASIC SEPARATION STANDARDS

1. SEPARATION DISTANCE SHALL BE MEASURED FROM THE NEAREST OUTSIDE EDGE OF PIPE.
2. WATER MAINS AND SUPPLY LINES OF 24" DIAMETER OR GREATER MAY CREATE SPECIAL HAZARDS BECAUSE OF THE LARGE VOLUMES OF FLOW. INSTALLATIONS OF WATER MAINS AND SUPPLY LINES 24" DIAMETER OR LARGER MUST BE REVIEWED AND APPROVED BY THE HEALTH AGENCY AND CITY ENGINEER PRIOR TO CONSTRUCTION.

#### SPECIAL CONSTRUCTION REQUIRED FOR RECYCLED WATER

##### ZONE:

"A" NO RECYCLED WATER LINES PARALLEL TO WATER MAINS SHALL BE PERMITTED IN THIS ZONE WITHOUT PRIOR WRITTEN APPROVAL FROM COUNTY, CALIFORNIA DEPARTMENT OF PUBLIC HEALTH AND THE CITY.

"B" RECYCLED WATER MAIN SHALL BE CONSTRUCTED OF:

1. DUCTILE IRON PIPE WITH HOT DIP BITUMINOUS COATING.
2. DIPPED AND WRAPPED 1/4" THICK WELDED STEEL PIPE.
3. CLASS 305 PRESSURE RATED PLASTIC WATER PIPE (DR 14 PER AWWA C900) OR EQUIVALENT.
4. REINFORCED CONCRETE PRESSURE PIPE, STEEL CYLINDER TYPE, PER AWWA (C300 OR C302 OR C303).

"C" A RECYCLED WATER MAIN SHALL BE CONSTRUCTED OF:

1. DUCTILE IRON PIPE WITH HOT DIP BITUMINOUS COATING.
2. DIPPED AND WRAPPED 1/4" THICK WELDED STEEL PIPE.
3. CLASS 305 PRESSURE RATED PLASTIC WATER PIPE (DR 14 PER AWWA C900) OR EQUIVALENT.
4. REINFORCED CONCRETE PRESSURE PIPE, STEEL CYLINDER TYPE PER AWWA (C300 OR C302 OR C303).

"D" A RECYCLED WATER MAIN SHALL BE CONSTRUCTED OF:

1. DUCTILE IRON PIPE WITH HOT DIP BITUMINOUS COATING.
2. DIPPED AND WRAPPED 1/4" WELDED STEEL PIPE.
3. CLASS 200 PRESSURE RATED PLASTIC WATER PIPE (DR 14 PER AWWA C900) OR EQUIVALENT.
4. REINFORCED CONCRETE PRESSURE PIPE STEEL CYLINDER TYPE, PER AWWA (C300 OR C302 OR C303).

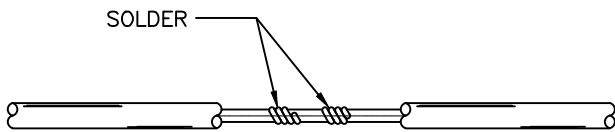
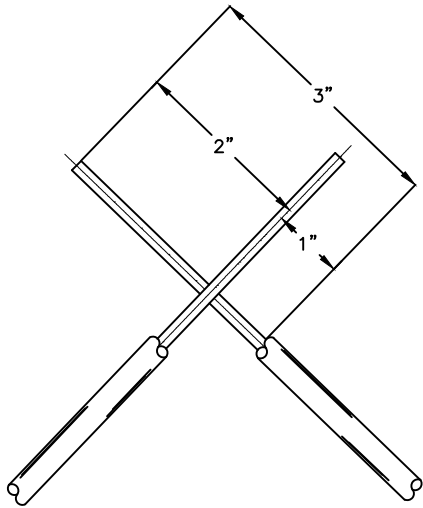
"P" NO RECYCLED WATER MAIN SHALL BE CONSTRUCTED

## RECYCLED WATER MAIN SEPARATION REQUIREMENTS

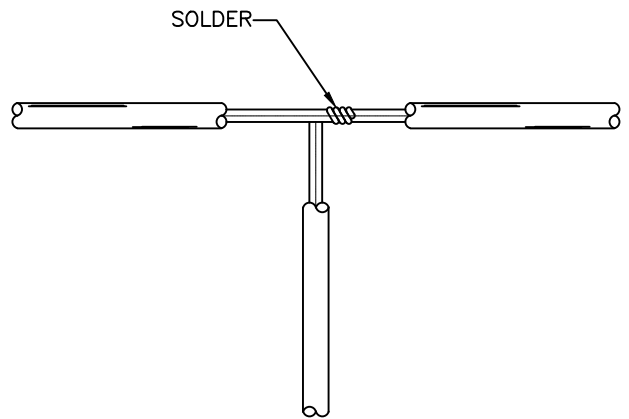
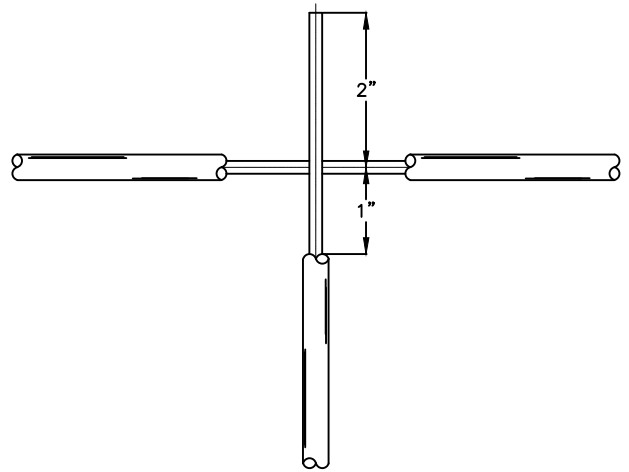
REF. & REV.  
JUN. 2014  
MAR. 2021 (A.7)

CITY OF FRESNO  
RW-12

IN-LINE CONNECTION

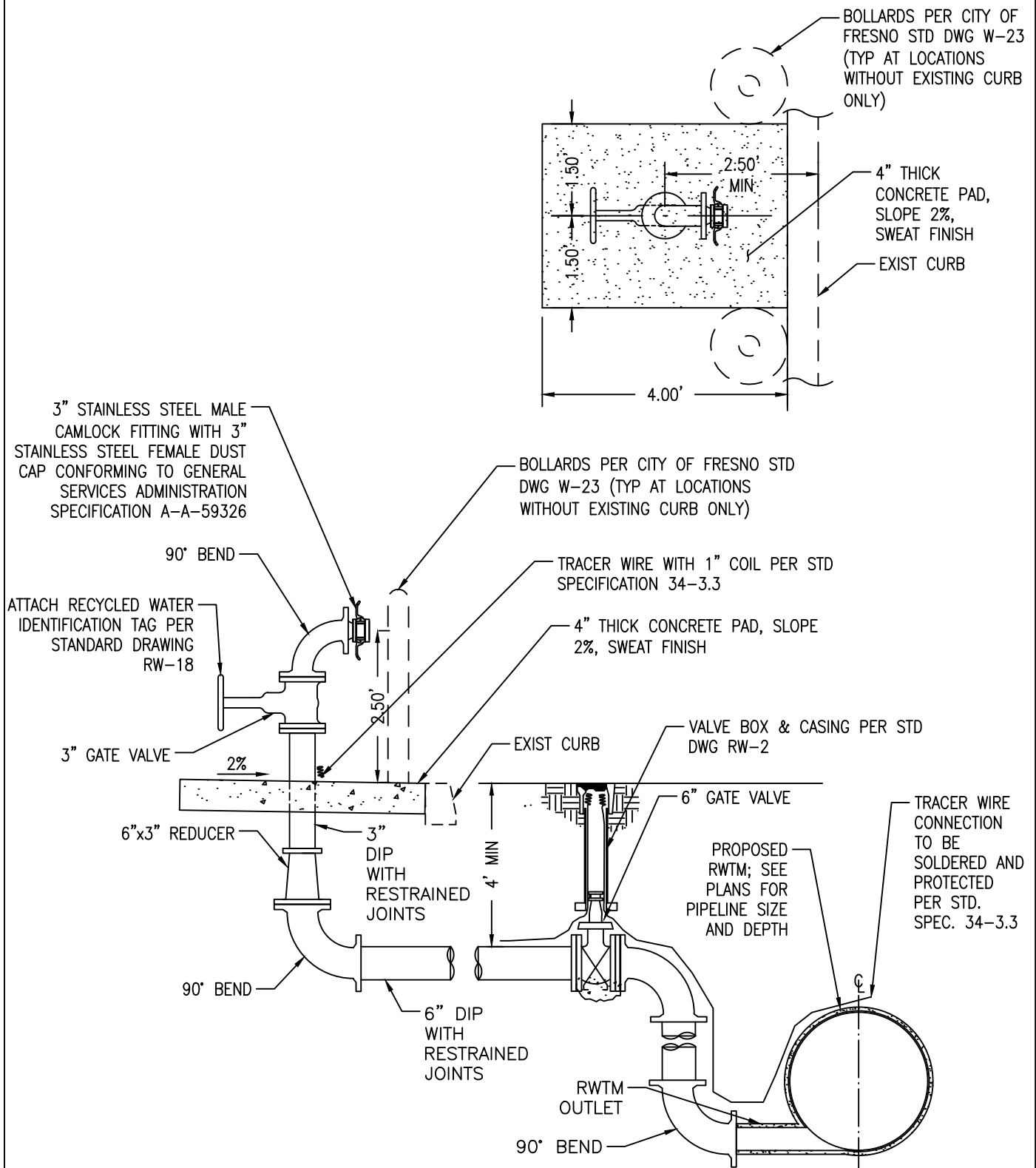


BRANCH CONNECTION



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.



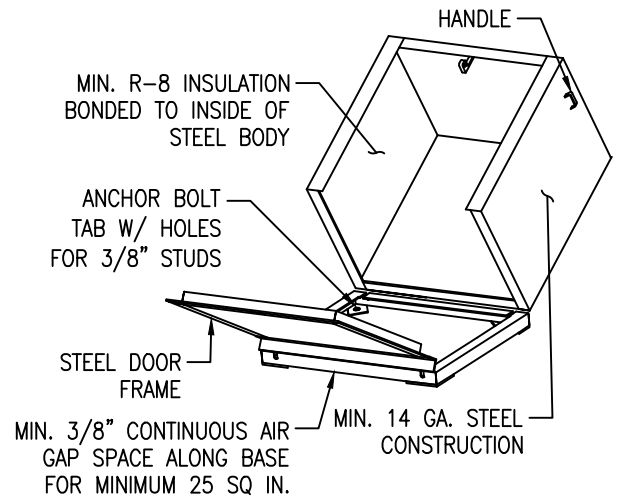
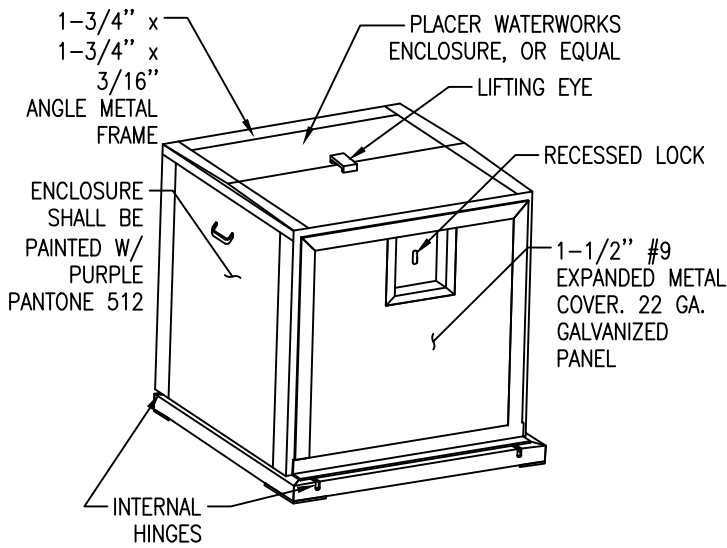
**NOTES:**

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.

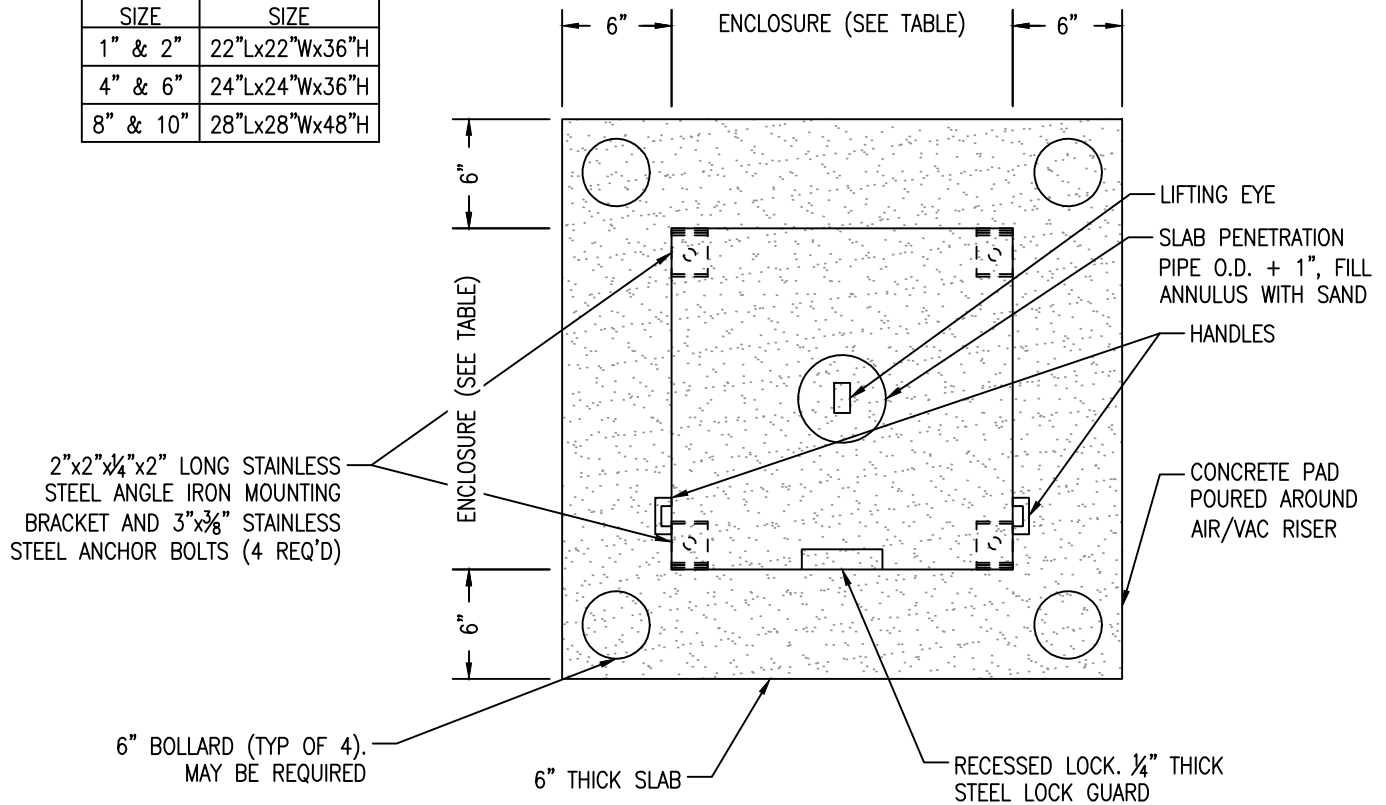
**RECYCLED WATER  
COMMERCIAL TRUCK FILL STATION**

REF. & REV.  
MAR. 2021 (A.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:**

- ENCLOSURE SHALL NOT ENCROACH ON TO PRIVATE PROPERTY, ADA PATH OF TRAVEL, OR VEHICLE TRAFFIC WHEN OPEN.
- PROVIDE 4' MINIMUM SIDEWALK CLEARANCE ADJACENT TO CAV FOR ADA ACCESSIBILITY REQUIREMENTS.
- 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).
- 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.
- 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.  
MAR. 2021 (A.7)

CITY OF FRESNO  
RW-26