

**CITY OF FRESNO  
PUBLIC WORKS DEPARTMENT  
GENERAL NOTES FOR  
TRAFFIC SIGNAL NOTES ASSOCIATED WITH A PERMIT PROJECT**

**GENERAL NOTES:**

1. WORK SHALL BE DONE IN ACCORDANCE WITH THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD PLANS AND SPECIFICATIONS, 2015 EDITION, THE LATEST CALTRANS ADOPTED EDITION OF THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CA-MUTCD), THE LATEST EDITION OF THE CITY OF FRESNO STANDARD SPECIFICATIONS AND DRAWINGS. SIGNAL POLES/STANDARDS FOR 113 KM/H WIND VELOCITY, 1-A, AND TYPE 15 SHALL BE PER THE STATE STANDARD PLANS AND SPECIFICATIONS, DATED JULY 1997.
2. THESE PLANS ARE ACCURATE FOR ELECTRICAL WORK ONLY.
3. SCHEDULING OF WORK SHALL CONFORM TO THE PROVISIONS IN SECTION 8-1.02, "SCHEDULING OF WORK" OF THE STATE STANDARD SPECIFICATIONS. PARTICULAR ATTENTION SHALL BE DIRECTED TO "NO ABOVE GROUNDWORK, EXCEPT SERVICE EQUIPMENT, SHALL BE PERFORMED UNTIL THE CONTRACTOR HAS ALL MATERIALS ON HAND TO COMPLETE THAT PARTICULAR SIGNAL LOCATION OR LIGHTING CIRCUIT".
4. THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF ALL EXISTING UTILITIES WHETHER OR NOT THEY ARE SHOWN ON THESE PLANS, AND SHALL PROVIDE PROTECTION PRIOR TO, DURING, AND AFTER TRENCHING, JACKING AND/OR BORING. THE CONTRACTOR SHALL CONTACT UNDERGROUND SERVICE ALERT (USA) BY CALLING 811 AT LEAST TWO (2) WORKING DAYS BEFORE BEGINNING WORK.
5. CONDUIT INSTALLATION ACROSS ROADWAYS SHALL BE BY JACKING AND/OR DIRECTIONAL DRILLING METHODS UNLESS OTHERWISE NOTED ON THE PLANS.
6. CONTRACTOR SHALL ARRANGE WITH UTILITY COMPANIES FOR ALL REQUIRED UTILITY RELOCATIONS, INCLUDING OVERHEAD CONFLICTS.
7. ALL TRAFFIC SIGNAL AND LIGHTING FACILITIES, INCLUDING CABINETS, STANDARDS, PULL BOXES, CONDUITS AND LOOP DETECTORS, ARE SHOWN IN THEIR APPROXIMATE LOCATIONS. AFTER ALL UNDERGROUND UTILITIES ARE MARKED, THE CONTRACTOR SHALL MARK FINAL LOCATIONS IN THE FIELD AND NOTIFY THE ENGINEER AT LEAST TWO (2) WORKING DAYS PRIOR TO COMMENCING WORK TO VERIFY THE MARKED LOCATIONS.
8. ALL SALVAGED EQUIPMENT SHALL BE RETURNED TO THE CITY CORPORATION YARD, 3191 W. BELMONT AVENUE, FRESNO. THE CONTRACTOR SHALL NOTIFY THE CITY BY CONTACTING TRAFFIC SIGNAL SHOP AT (559) 621-1312 AT LEAST TWO (2) WORKING DAYS PRIOR TO DELIVERY. CONTRACTOR SHALL PROVIDE ADEQUATE MEANS FOR SAFELY UNLOADING EQUIPMENT.
9. PULL BOXES SHALL BE NO. 5(E) UNLESS OTHERWISE NOTED ON THE PLANS. PULL BOXES SHALL NOT BE INSTALLED IN CURB RAMPS. VANDAL-RESISTANT LOCKING LIDS SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR AT FINAL INSPECTION OF THE TRAFFIC SIGNAL. CONTRACTOR SHALL PROVIDE TEMPORARY LIDS DURING CONSTRUCTION. LOCKING LIDS SHALL BE GALVANIZED STEEL DIAMOND PLATE,

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PUBLIC WORKS DEPARTMENT  
GENERAL NOTES FOR  
TRAFFIC SIGNAL NOTES ASSOCIATED WITH A PERMIT PROJECT**

MINIMUM THICKNESS 3/16", WITH MINIMUM TWO (2) CLAMPING JAWS AND SHALL BE KEYED TO THE CITY OF FRESNO KEY. CONDUIT RUN SHALL NOT EXCEED WITHOUT A PULL BOX. CONTRACTOR SHALL TIGHTEN DOWN ALL LOCKING LIDS TO A MINIMUM TORQUE SPEC OF 25 FOOT-POUNDS.

10. ALL PULL BOXES INSTALLED IN NON-CONCRETE AREAS SHALL BE SURROUNDED BY A ONE (1) FOOT-WIDE CONCRETE COLLAR TO A DEPTH EQUAL TO THE PULL BOX AND EXTENSION PER CITY OF FRESNO SPECIFICATIONS AND SHALL HAVE A VANDAL-RESISTANT LOCKING LID INSTALLED (SEE NOTE ABOVE). ALL CONDUIT ENTRIES INTO ADVANCE DETECTION, INTERMEDIATE DETECTION, AND STREET LIGHTING PULL BOXES INSTALLED IN NON-CONCRETE AREAS SHALL ENTER THE PULL BOX FROM THE BOTTOM USING 90 DEGREE ELBOWS AND EXTENDING 3 TO 5 INCHES ABOVE THE FINISHED GROUT.
11. ALL CONDUITS SHALL HAVE BUSHINGS INSTALLED PRIOR TO INSTALLING CONDUCTORS. STEEL CONDUITS SHALL HAVE LAY IN STYLE LUGS THAT ARE CAST INTEGRAL WITH THE BUSHING.
12. CONDUIT BENDS OF 90 DEGREES ARE PROHIBITED UNLESS OTHERWISE NOTED OR WRITTEN PERMISSION IS GIVEN BY THE CITY OF FRESNO ENGINEER.
13. ALL NEUTRAL CONDUCTORS SHALL BE WHITE IN COLOR THROUGHOUT THEIR ENTIRE LENGTH.
14. TRAFFIC SIGNAL CABLE SHALL NOT BE SPLICED BETWEEN THE CONTROLLER CABINET AND THE TERMINAL COMPARTMENTS MOUNTED ON THE POLES. DETECTOR CABLES SHALL NOT BE SPLICED BETWEEN THE CONTROLLER CABINET AND THE PULL BOX ADJACENT TO THE DETECTOR LEAD-IN.
15. SEAL CONDUIT WITH AN APPROVED DUCT SEAL AFTER ALL CONDUCTORS HAVE BEEN INSTALLED.
16. SEALANT FOR FILLING THE SAWCUT LOOPS SLOTS SHALL BE HOT-MELT RUBBERIZED ASPHALT SEALANT PER STATE OF CALIFORNIA SPECIFICATIONS OR LOOP SEALANT SHALL BE ELASTOMERIC SEALANT 3M, BLACK 5000.
17. PEDESTRIAN PUSH BUTTONS SHALL HAVE 2"-DIAMETER ACTUATORS AND COMPLY WITH THE AMERICANS WITH DISABILITIES ACT (ADA).
18. ALL VEHICLE AND PEDESTRIAN SIGNAL SECTIONS SHALL UTILIZE LIGHT EMITTING DIODE (LED) SIGNAL MODULES IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. VEHICLE SIGNAL SECTIONS SHALL HAVE 12" DIAMETER LENSES WITH BACKPLATES AND TUNNEL VISORS. ALL VEHICLE AND PEDESTRIAN SIGNAL SECTIONS SHALL HAVE METAL AND RUBBER WASHERS INSTALLED ON THE INSIDE OF THE HEAD.
19. SAFTEY LUMINAIRE SHALL BE LED PER CITY OF FRESNO SPECIFICATIONS (SECTION 23-1.23) FOR SAFTEY LUMINAIRE REQUIREMENTS.

**CITY OF FRESNO  
PUBLIC WORKS DEPARTMENT  
GENERAL NOTES FOR  
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20. PEDESTRIAN SIGNAL UNITS SHALL BE FULL SYMBOL, MUTCD COMPLIANT, LED “COUNTDOWN” TYPE WITH 9 INCH NUMERALS; GELCORE MODEL PS7-CFF1-01A-18 OR APPROVED EQUAL. SIGNAL ALIGNMENT SHALL BE AS DIRECTED BY THE ENGINEER.
21. THE CONTRACTOR SHALL FURNISH AND INSTALL A COMPLETE OPTICOM (GTT) EMERGENCY VEHICLE PREEMPTION (EVP) SYSTEM (721 TWO-DIRECTION DETECTION, SINGLE CHANNEL) IN ACCORDANCE WITH THE CITY STANDARD SPECIFICATIONS. EVP DETECTOR UNITS SHALL BE INSTALLED ON SIGNAL MAST ARMS AS SHOWN ON THE PLAN, CENTERED OVER THE NUMBER ONE THROUGH LANE, WITH BRACKETS APPROVED BY THE TRAFFIC SIGNAL SUPERVISOR. THE CONTRACTOR SHALL DELIVER THE MODEL 762 DISCRIMINATORS TO THE CITY CORPORATION YARD AT 2101 G STREET, FRESNO, CA 93706 AND NOTIFY THE CITY TRAFFIC SIGNAL SHOP, (559) 621-1312, AT LEAST TWO (2) WORKING DAYS PRIOR TO DELIVERY.
22. CONTRACTOR SHALL SCHEDULE WITH CONSTRUCTION MANAGEMENT (559) 621-5600 ALL EQUIPMENT DELIVERIES THAT REQUIRE TESTING BY THE CITY’S TSSL SHOP. EQUIPMENT SHALL BE DELIVERED BY THE CONTRACTOR ONLY AT A PREARRANGED TIME AND DAY.
23. THE CONTRACTOR SHALL FURNISH AND INSTALL NEW OVERSIZED STREET NAME SIGNS ON SIGNAL STANDARDS, AS SHOWN ON THE PLAN, PER CITY STANDARD DRAWING P-90. FURNISH AND INSTALL NEW MOUNTING BRACKETS, AS NECESSARY. SUBMITTALS SHALL BE APPROVED BY THE CITY PRIOR TO ORDERING.
24. ALL SIGNS SHALL BE 3M-3930HIP TYPE III & IV SERIES REFLECTIVE SHEETING AND SHALL 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.
25. THE CONTRACTOR SHALL CONTACT THE CITY OF FRESNO TRAFFIC OPERATIONS CENTER SUPERVISOR AT (559) 621-8669 TO OBTAIN I.T.S. EQUIPMENT SPECIFICATIONS PRIOR TO THE COMMENCEMENT OF WORK. **INCLUDE W/ ITS!**
26. TONEABLE CONDUIT SHALL BE CHECKED FOR CONTINUITY AND BONDED TO EARTH GROUND. **INCLUDE W/ ITS!**
27. 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.
28. ALL RESURFACING SHALL MATCH EXISTING SURFACES AFTER SIGNAL FACILITIES ARE REMOVED AND/OR RELOCATED.
29. THE EXISTING TRAFFIC SIGNAL SYSTEM, INCLUDING DETECTION, AND/OR STREET LIGHTING SHALL REMAIN OPERATIONAL DURING CONSTRUCTION, UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE CITY ENGINEER. **INCLUDE W/ EXISTING SIGNAL OR STREET LIGHTS!**

**CITY OF FRESNO  
PUBLIC WORKS DEPARTMENT  
GENERAL NOTES FOR  
TRAFFIC SIGNAL NOTES ASSOCIATED WITH A PERMIT PROJECT**

30. ALL LUMINAIRE CIRCUITS SHALL BE FUSED. THE FUSE SHALL BE LOCATED IN LUMINAIRE HOUSING AT EACH POLE (5 AMP KTK FUSE IN TRON HEB TYPE FUSE HOLDER).
31. THE CONTRACTOR SHALL FURNISH AND INSTALL POLE NUMBERS WHEN PG&E INDICATES THE NUMBER. POLE NUMBERS SHALL BE SHOWN ON THE AS BUILT DRAWINGS.
32. THE CONTRACTOR SHALL FURNISH AND INSTALL AN ACCESSIBLE (AUDIBLE) PEDESTRIAN SIGNAL (APS) SYSTEM (2-WIRE POLARA iNAVIGATOR2 OR APPROVED EQUAL) IN CONFORMANCE WITH THE CITY'S STANDARD SPECIFICATIONS. THE APS SHALL PROVIDE BOTH A VIBRATING ARROW BUTTON AND AUDIBLE SOUNDS DURING THE "WALK" INTERVAL, AS WELL AS A LOCATING TONE DURING THE PEDESTRIAN CLEARANCE AND DON'T WALK INTERVALS. THE APS SYSTEM SHALL MEET CURRENT ADA AND CA-MUTCD REQUIREMENTS. ALL PEDESTRIAN PUSH BUTTONS SHALL HAVE A FOUR FOOT ACCESSIBLE PATH IN FRONT OF THE BUTTON.

THE APS ICCU-C (INTELLIGENT CENTRAL CONTROL UNIT) SHALL BE SUPPLIED AND BE PLACED IN CABINET INPUT FILE I-12/I-13 WITH THE CARD EDGE PLUGGED INTO I-13. THE POWER SUPPLY PIGTAIL SHALL BE CUT TO LENGTH TO ELIMINATE EXCESS CABLE, WITH POWER OBTAINED FROM THE PDA T1 TERMINAL STRIP, TERMINALS 1, 3 & 5. CONTRACTOR SHALL PROVIDE TSSL THE LATEST MEANS OF PROGRAMMING THE APS SYSTEM, AND DIGITAL COPIES OF AUDIO FILES. THE MEANS OF PROGRAMMING THE APS MUST MEET THE REQUIREMENTS OF THE MANUFACTURERS APPROVED AND TESTED DEVICES' LIST. THE CONTRACTOR OR VENDOR REPRESENTATIVE SHALL INSTALL THE INITIAL PROGRAMMING WITH THE SUBMITTED UNIT WITH TSSL PRESENT. UPON COMPLETION CONTRACTOR WILL PROVIDE TSSL WITH THE PROGRAMMING UNIT. **[INCLUDE WITH APS]**

33. ALL TRAFFIC SIGNAL AND STREET LIGHT MATERIALS SHALL BE APPROVED BY THE CITY OF FRESNO TSSL DIVISION IN WRITING PRIOR TO ORDERING OF MATERIALS. ALL MATERIALS NOT APPROVED PRIOR TO ORDERING SHALL BE SUBJECT TO REJECTION AT NO COST TO THE CITY.
34. ANY STREET LIGHT OR TRAFFIC SIGNAL PULL BOX IN THE SCOPE OF WORK OR ACCESSED BY THE CONTRACTOR SHALL BE CLEANED COMPLETELY, GROUTED, AND DUCT SEAL INSTALLED IN CONDUITS. **[INCLUDE WITH EXISTING SIGNAL OR STREETLIGHTS]**
35. ANY BROKEN PULL BOX WITHIN THE PROJECT SHALL BE REPLACED BY THE CONTRACTOR. **[INCLUDE WITH EXISTING SIGNAL OR STREETLIGHTS]**
36. ANY PULL BOX ADJUSTED TO GRADE MUST BE ABLE TO ACCEPT A CITY OF FRESNO APPROVED LOCKING LID AND THE CONDUITS MUST BE ADJUSTED TO MEET THE CITY STANDARDS. **[INCLUDE WITH EXISTING SIGNAL OR STREETLIGHTS]**

**[DO NOT INCLUDE TEXT IN BRACKETS ON PLANS]**

**Revision Log:**

Revised 2/24/2014: \_\_\_\_\_

Revised 3/2017: Appended #33 per TSSL

**CITY OF FRESNO  
PUBLIC WORKS DEPARTMENT  
GENERAL NOTES FOR  
TRAFFIC SIGNAL NOTES ASSOCIATED WITH A PERMIT PROJECT**

Revised 4/2017: Appended #33 per TSSL

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Revised 6/2020: Appended #9; Removed #15 and renumbered notes; Appended #32 per TSSL and Appended #17 per ADA

Revised 3/2021: Appended #9 & #32; Added #33 through #36 per TSSL.

Revised 7/2021: Formatting update.