

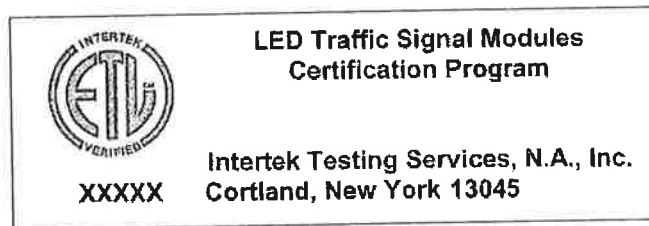
Programmed visibility traffic signal heads shall conform to the provisions in Section 86-4.05, "Programmed Visibility Vehicle Signal Faces", of the Standard Specifications and these Special Provisions.

Signal section housing, Backplates and visors shall be metal type. Backplates shall be louvered. Visors shall be the "tunnel" type, unless otherwise specified. Top opening of signal heads shall be sealed with neoprene gaskets.

Signal Mounting Assemblies, Backplates, Signal Sections and Housings shall be made from the same manufacturer and the section assemblies shall be uniform in appearance and alignment.

All vehicle signal indications shall be 12-inch diameter Light Emitting Diode (LED) modules in accordance with the following:

1. All circular LED modules shall comply with Institute of Transportation Engineers (ITE) Vehicle Traffic Control Signal Heads (VETCH) - LED Circular Supplement, Adopted June 27, 2005.
2. All arrow LED modules shall comply with ITE VETCH - LED Vehicle Arrow Traffic Signal Supplement, Adopted July 1, 2007.
3. All modules shall fit in existing signal housings without the use of special tools.
4. All modules shall be certified in the Intertek LED Traffic Signal Modules Certification Program and be labeled with the ETL Verified Label as follows:



5. Luminous intensity requirements of the VTCSH must be met across the entire temperature range from -40°C to +74°C, (-40°F to +165°F).
6. The following cable colors shall be used for the AC power leads on all modules: white for common, red for the red module line, yellow for the yellow module line, and brown for the green module line.
7. The AC power leads shall exit the module via a rubber grommet strain relief, and shall be terminated with quick connect terminals with spade tab adapters. The leads shall be separate at the point at which they leave the module.

8. All external wiring used in the module shall be anti-capillary type cable to prevent the wicking of moisture to the interior of the module.
9. All power supplies shall be coated for additional moisture and thermal protection.
10. The module shall have an incandescent, non-pixelated appearance when illuminated.
11. Nominal power usage is measured at 25° C, 120 VAC. For the 8" modules, it shall not exceed 8 watts for Red, 8 watts for Yellow, and 8 watts for Green modules. For the 12" modules, it shall not exceed 10 watts for Red, 19 watts for Yellow, and 11 watts for Green modules. For the arrows, it shall not exceed 6 watts for any color.
12. All modules shall use LEDs that have been manufactured with materials that have industry acceptance as being suitable for uses in outdoor applications. At no time is the use of LEDs that utilize AlGaAs technology acceptable.
13. The external lens shall have a smooth outer surface to prevent the buildup of dirt & dust and shall be designed to minimize the potential for sun phantom signals.
14. The module lens material must be tinted for bids that require tinted lens. A tinted transparent film or coating is not permitted. Individual bids may require clear, non-tinted lenses.
15. A module shall be sealed against dust and moisture intrusion, including rain and blowing rain per Mil-Std-810F Method 506.4, Procedure 1.
16. Arrow modules shall be clearly marked with the phrase "Suitable for mounting in any orientation".
17. Modules shall be repaired or replaced if the module fails to function as intended due to workmanship or material defects within warranty period.
18. Modules shall be repaired or replaced if the module exhibit luminous intensities less than the minimum specified values within 60 months of the date of delivery.
19. The Manufacturer shall clearly disclose the country in which the factory of module origin is located, the name of the company or organization that owns the factory including all of its parent companies and/or organizations, and their respective country of corporate citizenship.

Full compensation for furnishing and installing vehicle signal assembly is included in the contract lump sum price paid for Signal And Lighting and no separate payment will be made therefor.

## **PEDESTRIAN SIGNAL ASSEMBLIES:**

Pedestrian signals shall conform to the provisions in Section 86-4.06, "Pedestrian Signal Faces", of the Standard Specifications and these Special Provisions.

Pedestrian signals shall be provided with a polycarbonate egg crate or Z-crate screen.

Pedestrian Signal Mounting Assemblies and Pedestrian Signal Housings shall be made from the same manufacturer and the section assemblies shall be uniform in appearance and alignment.

Pedestrian signal indications shall utilize light emitting diode signal modules in accordance to the following:

1. It shall comply with ITE specification: Pedestrian Traffic Control Signal Indications (PTCSI) Part 2: LED Pedestrian Traffic Signal Modules, Adopted March 19, 2004.
2. All modules shall fit in existing signal housings without the use of special tools.
3. All modules shall be certified in the Intertek LED Traffic Signal Modules Certification Program and be labeled with the ETL Verified Label as follows:



The PTCSI does not cover the countdown features of countdown pedestrian signal LED modules. The countdown features shall incorporate the following:

1. Fully compliant to NEMA TS-1, NEMA TS-2, Type 170, and Type 2070 traffic signal controller specifications.
2. The countdown portion of the pedestrian (ped) module shall have a high off-state input impedance so as not to provide a load indication to conflict monitors and interfere with the monitoring of the pedestrian signal. The input impedance of the countdown circuitry shall maintain a voltage reading above 25 VAC to the conflict monitor for up to four units connected on the same channel.
3. The countdown drive circuitry shall not be damaged when subjected to defective load switches providing a half wave signal input.
4. The countdown ped module shall have an internal conflict monitor circuit preventing any possible conflicts between the Hand, Person, and Countdown signal indications. It shall be impossible for the display to countdown during a solid Hand indication.

5. Per CA MUTCD Manual 2006 edition, section 4E.07: "If used, the countdown displays shall display the number of seconds remaining until the termination of the pedestrian change interval. Countdown displays shall not be used during the walk interval or during the yellow change interval of a concurrent vehicular phase".
6. The countdown ped module shall have a micro-processor capable of recording its own time when connected to a traffic controller. It shall be capable of displaying the digits 0 through 99.
7. When power is first applied or restored to the ped module, the countdown display will be blank during the initial cycle while it records the countdown time using the walk (person) & don't walk (flashing hand) signal indications. The normal hand and person icons shall be displayed during this cycle.
8. The countdown ped module shall continuously monitor the traffic controller for any changes to the pedestrian phase time and re-program itself automatically if needed.
9. The countdown ped module shall register the time for the walk and clearance intervals individually and shall begin counting down at the beginning of the pedestrian clearance interval. The digits shall not flash during the countdown.
10. When the flashing hand becomes solid, the ped module shall display 0 for one second and then blank-out. The display shall remain dark until the beginning of the next countdown.
11. In the event of a pre-emption, the countdown ped module shall skip the remaining time, reach 0 at the same time as the flashing Hand becomes solid, and remain dark until the next cycle.
12. In the cycle following preemption call, the signal shall display the correct time and not be affected by the reduced previous cycle. The countdown shall remain synchronized with the signal indications and always reach 0 at the same time as the flashing Hand becomes solid.
13. If a pedestrian button is activated during the clearance interval, some controllers can change to a second walk cycle without a don't walk phase. The countdown module shall also be capable of consecutive walk cycles. The display digits will be blank during the second walk and countdown properly during the second flashing hand.
14. The countdown ped module shall not display an erroneous or conflicting time when subjected to defective load switches. Should there be a short power interruption during the ped clearance interval or if voltage is applied to both the hand and person simultaneously the display will go to "0" then blank.
15. The countdown ped module shall have accessible dip-switches for the user selectable options. The unit shall have a removable plug on the rear allowing easy access to control



the user selectable functions. The countdown is disabled when all the switches are in the "ON" position. The unit shall be shipped from the factory with the specified default setting

16. Switch 1 – Blank Cycle Following a Timing Change – Factory default is "OFF". When this switch is "OFF" the unit will allow the time to be displayed normally during the cycle following a truncated timing such as a preemption call. The countdown shall be capable of displaying the correct time and not affected by the previous reduced cycle. The unit will require 2 consecutive reduced cycles of identical value to validate and record a new time setting. If the timing is extended the unit will record it immediately. In the "ON" position when a change in timing is detected the unit will blank out during the following cycle while the new cycle time is measured and recorded if confirmed.
17. Switch 2 – Disables Auto-sync Mode- Factory default setting is "OFF". When this switch is in the "OFF" position the auto-sync is enabled. When the clearance interval begins and the initial flash of the hand is not in sync with the walk signal the unit will measure the offset and reduce the duration of the first second by the value of the offset. This will ensure the countdown reached zero at the same time as the flashing hand becomes solid. In the "ON" position there is no time correction when the flashing hand is in offset with the walk signal. The duration of the first second will not be reduced and the hand will appear solid shortly before the countdown reaches zero.
18. Switch 3 – Countdown Starts with Flashing Hand Signal – Factory default setting is "ON". When this switch is "ON" the countdown begins when the hand signal is turned on. With this switch "ON" and the auto-sync mode enabled a short power interruption will have no effect on the countdown display. With switch 3 in the "OFF" position the countdown begins when the walk signal is turned off. This eliminates the effect of an offset hand signal. When switch 3 is in the "OFF" position the auto-sync switch 2 has no effect on the countdown. In this mode if the power to the walk signal is interrupted, the unit will interpret this as the start of the clearance interval and will display the countdown time for 2 seconds before the operation is cancelled. The countdown will resume with the normal ending of the walk signal
19. Switch 4 – Stores Time Value in Memory, Immediate. Restart. - Factory default setting is "OFF". When this switch is in the "OFF" position and power is removed from the unit, the time value stored in the unit is erased. The unit will need to run a dark cycle before it can display the countdown again. In the "ON" position the countdown timing is stored in memory. Following a power interruption, the unit will restart with the stored value and not remain dark during the learning cycle. If the value is different after restart, it will be recorded and displayed correctly at the following cycle.
20. Switch 5 – All LEDs "ON", Test Mode – Factory default setting is "OFF". With this switch in the "ON" position all LEDs are turned on simultaneously. With both switches 4 and 5 in the "ON" position the LED test mode will also scan the 7 individual segments of both digits.

21. The countdown shall be disabled when all switches are placed in the "ON" position.
22. Nominal power usage for Ped Modules at 25°C (77°F), 120 VAC input shall not exceed the values shown in Table 1.

**Table 1 -- Nominal Power of Pedestrian Signals**

Size	Description	Wattage @ 25°C		
		Hand	Person	Countdown <sup>1</sup>
16"x18"	Side by Side Hand & Person	8	7	N/A
16"x18"	Hand & Person Overlay with Countdown	9	7	5

<sup>1</sup> Wattage for the countdown is measured when the digits 18 are displayed.

23. All wiring shall meet the requirements of Section 13.02 of the VTCSH standard. Secured, color coded, 600V, 18 AWG jacketed wires, 1 meter (39 in) in length, conforming to the NFPA 70, National Electrical Code, and rated for service at +105°C, shall be provided.
24. The following color scheme shall be used for the ped module's AC power leads: Orange for the upraised hand, Blue for the walking person, and White for common. The countdown portion of the LED ped module shall be internally wired to the hand and walking person power.
25. The AC power leads shall exit the ped module via a rubber grommited strain relief, and shall be terminated with insulated female quick connect terminals with spade / tab adapters. The leads shall be separate at the point at which they leave the ped module.
26. All external wiring utilized in the ped modules shall be anti-capillary type wire to prevent the wicking of moisture to the interior of the ped module.
27. The Hand and Person Icons shall utilize separate power supplies. On countdown products, the countdown ped module must have its own power supply but may take the incoming AC power from the hand / person AC signal lines. All power supplies shall be located inside the ped module.
28. All power supplies shall be conformally coated for additional protection.
29. Off State Voltage Decay: When the hand or person icon is switched from the On state to the Off state the terminal voltage shall decay to a value less than 10 VAC RMS in less than 100 milliseconds when driven by a maximum allowed load switch leakage current of 10 milliamps peak (7.1 milliamps AC).

30. For a minimum period of 60 months, measured at 80 to 135 VAC RMS and over the ambient temperatures of -40°C to +74°C (-40°F to +165°F), the minimum maintained luminance values for the ped modules, when measured normal to the plane of the icon surface, shall not be less than:

Walking Person, White: 2,200 cd/m<sup>2</sup>

Upraised Hand, Portland Orange: 1,400 cd/m<sup>2</sup>

Countdown Digits, Portland Orange: 1,400 cd/m<sup>2</sup>

31. The external lens shall have a textured outer surface to reduce glare.
32. Icons that are printed on the lens shall be on the interior surfaces in order to prevent scratching and abrasion to the icons.
33. All icons and numbers shall have a uniform incandescent non-pixelated appearance.
34. All exposed components of a ped module shall be suitable for prolonged exposure to the environment, without appreciable degradation that would interfere with function or appearance. As a minimum, selected materials shall be rated for service for a period of a minimum of 60 months in a south-facing Arizona Desert installation.
35. All LEDs used to illuminate the ped module shall use material that has industry acceptance for use in outdoor applications. At no time is the use of LEDs that utilize AlGaAs technology acceptable.
36. The countdown display shall consist of two 7 segment digits as shown below. All countdown display digits shall be 9 inches in height for use in all size crosswalks in compliance with MUTCD recommendations.

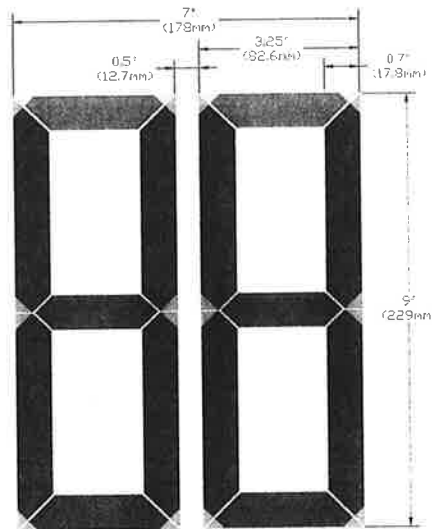


Figure 2: Countdown Display

37. Ped modules shall be repaired or replaced if the ped module fails to function as intended due to workmanship or material defects within warranty period.
38. Ped modules shall be repaired or replaced if the ped module exhibit luminous intensities less than the minimum specified values within 60 months of the date of delivery.
39. The manufacturer shall clearly disclose the country in which the factory of ped module origin is located, the name of the company or organization that owns the factory including all of its parent companies and organizations, and their respective country of corporate citizenship.

Full compensation for furnishing and installing pedestrian signal assemblies is included in the contract lump sum price paid for Signal And Lighting and no separate payment will be made therefor.

#### **PEDESTRIAN PUSH BUTTONS**

Pedestrian and bicycle push buttons shall conform to the provisions in Section 86-5.02, "Pedestrian Push Buttons", of the Standard Specifications and these Special Provisions. Attention is directed to State of California Standard Plan ES-5C.

Pedestrian push buttons shall be Type B.

Pedestrian push button housings shall be die-cast or permanent mold cast aluminum.

Pedestrian push button signs shall be porcelain enameled metal.

Paragraph 3. of Section 86-5.02 "Pedestrian Push Buttons", of the Standard Specifications is deleted.

The pedestrian push button shall be ADA compliant, constructed of high density thermoplastic and utilize solid state Piezo switch technology. Button shall be yellow, outer body color shall be black.

Pedestrian push button shall be Polara model MPBP-BY, Campbell Co model Model-700P or approved equal.

Full compensation for furnishing and installing pedestrian push buttons is included in the contract lump sum price paid for Signal And Lighting and no separate payment will be made therefor.

## **DETECTORS**

Loop detector sensor units, magnetic detector amplifiers and magnetic sensing elements will be State-furnished in conformance with the provisions in "Materials" of these Special Provisions.

Loop wire shall be Type 2.

Loop detector lead-in cable shall be Type B.

Slots shall be filled with hot-melt rubberized asphalt sealant.

At the Contractor's option, where a Type A or a Type B loop is designated on the plans, a Type E loop may be substituted.

For Type E detector loops, sides of the slot shall be vertical and the minimum radius of the slot entering and leaving the circular part of the loop shall be 40 mm. Slot width shall be a maximum of 16 mm. Loop wire for circular loops shall be Type 2. Slots of circular loops shall be filled with elastomeric sealant or hot melt rubberized asphalt sealant.

Full compensation for loop detector sensor units, magnetic detector amplifiers and magnetic sensing elements are included in the contract unit price paid per each for Model 170E/Model 2070 Controller Assembly, the furnishing and installing of loop wire and loop detector lead-in cable shall be included in the lump sum price paid for Signal And Lighting including the installation of loop detector sensor units, magnetic detector amplifiers and magnetic sensing elements and no separate payment will be made therefor.

## **LUMINAIRES**

Luminaires shall conform to the provisions in Section 86-6, "Lighting", of the Standard Specifications and these Special Provisions.

Luminaires shall be of the cutoff type and shall be 200 or 250 Watt High Pressure Sodium Vapor as shown on the construction plans. The fixtures shall be constructed with flat lenses, integral ballasts, and detachable power unit assemblies. The power unit assemblies shall contain the ballast, starter board, capacitors, and a heavy duty terminal block.

Each luminaire shall be furnished without the photoelectric unit receptacle. If the luminaire housing is provided with a hole for the receptacle, the hole shall be closed in a weatherproof manner.

Full compensation for furnishing and installing luminaries is included in the contract lump sum price paid for Signal And Lighting and no separate payment will be made therefor.

## **PHOTOELECTRIC CONTROLS**

Photoelectric controls shall conform to the provisions in Section 86-6.07, "Photoelectric Controls", of the Standard Specifications and these Special Provisions.

Photoelectric controls shall be a dual Type V for luminaires and internally illuminated street name signs conforming to the detail on the plans.

Photoelectric units shall be the delay type.

Full compensation for furnishing and installing photoelectric controls is included in the contract lump sum price paid for Signal And Lighting and no separate payment will be made therefor.

## **TRAFFIC SIGNAL FIELD TESTS**

Field Tests shall conform to the provisions in Section 86-2.14, "Testing", of the Standard Specifications.

## **MAINTAINING EXISTING AND TEMPORARY ELECTRICAL SYSTEMS:**

Maintaining existing and temporary electrical systems shall conform to the provisions in Section 86-1.06 "Maintaining Existing and Temporary Electrical Systems" and these Special Provisions. Attention is also directed to Section 86-7 "Removing, Reinstalling or Salvaging Electrical Equipment" of the Standard Specifications.

The Contractor shall request prior authorization from the Engineer for each traffic signal system shutdown. Traffic signal system shutdown shall be coordinated through the Engineer, and shall be kept to a minimum, as determined by the Engineer.

The Contractor may request authorization from the Engineer to use temporary overhead conductors for temporary traffic signal operation.

Traffic signal system shutdowns shall be limited to periods between the hours of 9:00 A.M. and 4:00 P.M.

The Contractor shall place "Stop Ahead" and "Stop" signs to direct vehicle and pedestrian traffic through the intersection during traffic signal shutdown. Temporary "Stop Ahead" and "Stop" signs shall be either covered or removed when the system is turned on.

"Stop Ahead" and "Stop" signs shall be furnished by the Contractor and shall conform to the provisions in Section 12-3.06, "Construction Area Signs" of the Standard Specifications. Minimum size of "Stop" signs shall be 48 inches.

One "Stop Ahead" sign and one "Stop" sign shall be placed for each direction of traffic. For two lanes approaches, two "Stop" signs shall be placed. Location of the signs shall be as directed by the Engineer.

"Stop Ahead" signs shall be supplemented with portable flashing beacons, which shall meet the requirements of Section 5-06.3 of the State of California Traffic Manual.

During periods of traffic signals or beacon shutdowns, existing flashing beacons shall be supplemented with portable flashing beacons, which shall meet the requirements of section 5-06.3 of the State of California traffic manual. If directed by the Engineer, the contractor shall furnish, connect, and maintain a generator for temporary operation of the traffic signal. The Contractor shall fully coordinate and cooperate with the County's traffic signal maintenance forces in all matters pertaining to the operation of existing traffic signal equipment.

Full compensation, except as otherwise provided herein, for conforming to the requirements of this article shall be considered as included in the lump sum price paid for the traffic signal modifications and inter-connect and no additional compensation will be allowed therefor.

#### **EMERGENCY VEHICLE PRE-EMPTION SYSTEM:**

A complete, functioning emergency vehicle pre-emption (EVP) system shall be furnished and installed for each project location as indicated on the construction plans. The transmitting equipment is not included in this contract.

EVP equipment to be furnished and installed or provided shall include:

1. Optical detector for each approach, as shown on the plans.
2. Rack-mounted 2-channel phase selectors in each controller assembly, as specified on the construction plans, sufficient for 8 phase operation.
3. Detector cable.

The EVP system shall be designed to prevent simultaneous pre-emption by two or more emergency vehicles on separate approaches to the intersection.

The Engineer shall approve EVP sequence of operation prior to timing and turn-on of each respective traffic signal.

The Contractor shall arrange for, and pay the cost of, the services of a knowledgeable representative from the EVP manufacturer, to be present for the first day of the traffic signal and lighting function test to insure proper installation and functioning of the EVP equipment.

The Contractor shall furnish and install EVP equipment in a complete, operative manner, as intended by the manufacturer, and these Special Provisions. The Contractor shall arrange for, and pay the cost of, the services of the controller manufacturer to perform any controller modifications required for the installation, or operation, of the EVP equipment.

## **OPTICAL DETECTION/DISCRIMINATION ASSEMBLY**

### **General**

Each optical detection/discrimination assembly shall consist of one or more optical detectors, connecting cable, and discrimination modules.

### **Optical Detector**

The optical detector shall be mounted on the indicated signal mast arm per Riverside County Standard No. 1202.

Each optical detector shall be waterproof unit capable of receiving optical energy from a single direction. The reception angle for each optical detector unit shall be a minimum of 8 degrees in all directions about the aiming axis of the unit.

Internal circuitry shall be solid state and electrical power shall be provide by the associated discrimination module.

Each optical detector unit shall have a minimum of a ½ inch NPT opening used for mounting and for bringing the connecting cable into the terminal block located within the assembly. The housing shall be provided with weep holes to permit drainage of condensed moisture.

Each optical detector shall be installed, wired, and aimed as specified by the manufacturer.

### **Cable**

Optical detector cable shall meet the requirements of IPCEA-S-61-402/NEMA WC 5, Section 7.4, 600 V Control cable, 75 degrees C, Type B, and the following:

1. The cable shall contain 3 conductors, each of which shall be AWG# 20 (7 x 28) stranded, tinned copper. Insulation of individual conductors shall be color-coded: 1-Yellow, 1-Orange, and 1-Blue.
2. The shield shall be either tinned copper braid or aluminized polyester film with a nominal 20% overlap. When film is used, an AWG# 20 (7 x 28) stranded, tinned, bare drain wire shall be placed between the insulated conductors and the shield and in contact with the conductive surface of the shield.



3. The jacket shall be marked as required by IPCEA/NEMA.

The cable run between each detector and the Traffic Controller cabinet shall be continuous without splices.

### **Phase Selector Module**

Each phase selector shall conform to the requirements of Chapter I of the State of California, Department of Transportation, "Traffic Signal Control Equipment Specifications", shall be compatible and usable with a Model 170E or 2070 controller unit, and shall be mounted in the input file of a Model 332 or Model 333 controller cabinet.

Each phase selector shall be capable of operating at least two or more channels, each of which shall provide an independent output for each separate input.

Each phase selector, when used with its associated optical detectors, shall perform as a minimum, the following:

1. Receive Class I and Class II signals.
2. Decode the signals based on optical frequency, at 9.639 Hz + or -0.119 Hz for Class I signals and 14.035 Hz + or -0.255 Hz for Class II signals.
3. Establish the validity of received signals based on optical frequency and length of time received. A signal shall be considered valid only when received for more than 0.50 second. No combination of Class I signals shall be recognized as a Class II signal regardless of the number of signals being received, up to a maximum of 10 signals. Once a valid signal has been recognized, the effect shall be held by the module, in the event of temporary loss of signal for a minimum period of 4.0 seconds.
4. Provide an output for each channel that will result in a "low" or grounded condition of the appropriate input of a Model 170 controller unit. For a Class I signal, the output shall be a 6.25 Hz + or - 0.1 %, rectangular waveform with a 50 % duty cycle. For Class II signal, the output shall be steady.

Each phase selector shall receive power from the controller cabinet at either 12 VDC or 120 VAC.

Auxiliary inputs for each channel may enter each module through a front panel connector or by a parallel hook-up of the associated detector cables at the input location.

The phase selector shall provide an optically isolated output for each channel to the Model 170 controller unit. All outputs signals shall comply with NEMA signal level definitions and shall be compatible with the Model 170 controller assemblies' inputs.

Each phase selector shall be provided with means of preventing transients received by the detector from affecting the Model 170 controller assembly.

Each phase selector shall have a single connector board and shall occupy one slot of the input file. The front panel of each phase selector module shall have a handle to facilitate withdrawal and have the following controls and functions for each channel:

1. Range adjustments for both class I and Class II signals.
2. A 3-position, center off, momentary contact switch, one position (down) labeled for test operation of Class I signals, and one position (up) labeled for test operation of Class II signals.
3. A "signal" indication and a "call" indication each for Class I and for Class II signals. The "signal" indications denote that a signal, which is not valid, has been received; a "call" indication denotes a steady, valid signal has been received. These 2 indications may be accomplished with a single indication lamp.

In addition, the front panel shall be provided with additional connectors or ports used to perform other functions as specified by the manufacturer.

### **Cabinet Wiring**

Wiring for a Model 332 cabinet shall conform to the following:

1. Slots 12 and 13 of input file "J" shall be wired to accept either a 2 channel or a 4 channel module.
2. Field wiring for the primary detectors, except the 24 VDC power, shall terminate on either terminal block TB-9 in the controller cabinet or on the rear of input file "J", depending on cabinet configuration. Where TB-9 is used, position assignments shall be as follows:

TB-9 – 1	= Not Used	
TB-9 – 2	= + 24 VDC Out	(Orange)
TB-9 – 3	= + 24 VDC Out	(Orange)
TB-9 – 4	= EVA Detector	(Yellow)
TB-9 – 5	= EVC Detector	(Yellow)
TB-9 – 6	= DC Common Out	(Blue)
TB-9 – 7	= EVB Detector	(Yellow)

TB-9 – 8 = EVD Detector (Yellow)  
TB-9 – 9 = DC Common Out (Blue)

Assuming TB9-2 & TB9-3 are unused on the "J" File. Move wires on J11-J & J11-K (Twisted Pair) to J12-E & J13-E Respectively.

Field wiring for auxiliary detectors may terminate on terminal board TB-0 (If Unused) in the controller cabinet. Use manufactures recommended wiring for these connections.

### **System Operation**

The contractor shall demonstrate that the components of each system are compatible and will perform satisfactorily as a system. Satisfactorily performance shall be determined using the following test procedure during the functional test period:

- A. Each system to be used for testing shall consist of an optical detector, an optical detector cable and a phase selector module.
- B. The phase selector shall be installed in the proper input file slot of the Model 332 or 333 controller cabinet assembly.
- C. Two tests shall be conducted; one using a Class I signal emitter and a distance of 1000 feet between the emitter and the detector, the other using a Class II signal emitter and a distance of 1800 ft between the emitter and the detector. Range adjustments on the phase selector shall be set to "Maximum" for each test.
- D. During the tests of the Class I and Class II emitters, the proper response from the Model 170E and 2070 controller unit during the "ON" interval and there shall be no improper operation of the Model 170E or 2070 controller unit or the monitor during the "OFF" interval.

### **Payment:**

The cost of furnishing, installing, and testing the complete EVP system equipment shall be included in the lump sum price paid for the traffic signal installation and no additional compensation shall be allowed therefore.

## **BATTERY BACKUP SYSTEM :**

### **GENERAL**

#### **Summary**

This work includes installing battery backup system (BBS). Comply with Section 86, "Signals, Lighting and Electrical Systems" of the Standard Specifications and TEES.

The Contractor must purchase the BBS components from the California Department of Transportation.

The Contractor must furnish the external cabinet and batteries.

#### **Submittals**

Before shipping external cabinets to the jobsite, submit material list including contract number, cabinet serial numbers, and contact information to the Transportation Laboratory.

Submit a Certificate of Compliance for each external cabinet and batteries to the Engineer under Section 6-1.07, "Certificates of Compliance" of the Standard Specifications.

#### **Quality Control and Assurance**

The State may test the cabinets.

#### **Functional Testing**

After complete installation, BBS functional test must be performed. Test for 30 minutes of continuous, satisfactory operation with utility power turned off. Perform test in the presence of the Engineer.

#### **Warranty**

Batteries must be warranted by the manufacturer to operate within a temperature range of -25 °C to +60 °C for 2 years.

Batteries must have a written warranty against defects in materials and workmanship from the manufacturer prorated for a period of 60 months after installation. The Contractor must provide the Engineer with all warranty documentation before installation. Replacement batteries must be available within 5 business days after receipt of failed batteries at no cost to the State except the cost of shipping the failed batteries. Replacement batteries must be delivered to Caltrans Maintenance Electrical Shop at 175 West Cluster Street, San Bernardino, California.

## MATERIALS

Batteries must:

1. Be deep cycle, sealed prismatic, lead-calcium-based, absorbed-glass mat and valve-regulated lead acid (AGM/VRLA) type.
2. Have voltage rating of 12 V.
3. Be group size 24.
4. Be commercially available and stocked locally.
5. Have a carrying handle.
6. Be marked with date code, maximum recharge data, and recharge cycles.
7. Have 2 top-mounted, threaded, stud posts that include all washers and nuts required for attaching 9.5-mm ring lugs of a State-furnished BBS battery harness.
8. Include rubber insulating protective covers for protecting the lugs, posts, and wiring - red for positive terminal and black for negative terminal.
9. Be new and fully-charged when furnished.
10. Be free from damage or deformities.

External cabinet must be one listed on the Pre-Qualified Products List at:  
[http://www.dot.ca.gov/hq/esc/approved\\_products\\_list/](http://www.dot.ca.gov/hq/esc/approved_products_list/)

External cabinet must be capable of housing:

1. 8 batteries.
2. Inverter/charger unit.
3. Power transfer relay.
4. Manually-operated bypass switch.
5. Required control panels.
6. Wiring and harnesses.

Dimensions and details for the external cabinet, for attaching the external cabinet to the Model 332A cabinet, and for wiring the State-furnished equipment will be available in an information handout as described in "Project Information" of these Special Provisions.

The following details must comply with Section 86-3.04, "Controller Cabinets" of the Standard Specifications and TEES:

1. Door construction, including material, thickness, coating, and welds.
2. Frame.
3. Door seals.
4. Continuous stainless steel piano hinge or 4 leaves with 2 bolts on each side of each leaf, used to connect the door to external cabinet.
5. Padlock clasp or latch and lock mechanism.

## SECTION 6 - SPECIAL REQUIREMENTS

### SECTION 14 - EARTHWORK

14.1 Description - This section covers the contract items Excavation; Channel Excavation; Structure Excavation; Foundation Excavation; Precompaction; Basin Excavation; Asphalt Concrete Excavation; Backfill; Structure Backfill; Embankment; Slurry Cement Backfill; and Filter Material.

14.2 General Excavation Requirements - Pipe Excavation shall be in conformance with Section 306 of the Standard Specifications. Structure Excavation shall be in conformance with Section 300-3 of the Standard Specifications. Access to trenches shall be in conformance with Section 306-1.1.4 and the manner of bracing excavations shall be in conformance with Section 306-1.1.6 of the Standard Specifications.

Excavation shall be kept to the minimum widths required for efficient placing of the pipe or structure and the construction of the various other concrete structures. However, for pipe placement the minimum width of trench shall be 24 inches greater than the outside diameter of the pipe. The maximum length of open trench shall be in conformance with Section 306-1.1.2 of the Standard Specifications.

In excavating for surfaces against which concrete is to be placed, care shall be exercised in removing the final lift. Upon completion of excavation for structures and pipe, surfaces against which concrete is to be placed shall be free of debris, mud or ponded water.

The foundation for all concrete structures including concrete channels and sideslopes will be inspected and tested after excavation. The subgrade shall be compacted to ninety percent (90%) relative compaction prior to the placement of concrete.

Material which will not provide a suitable foundation shall be removed and replaced with compacted select material as directed by the Engineer.

Any overexcavation shall be filled with select material compacted to ninety percent (90%) relative compaction and meeting the material requirements for backfill.

The Contractor shall remove slides and materials eroding into the work, and the slopes and grades refinished to original grades as specified.

The Contractor shall dispose of all surplus excavated material outside of the limits of the construction easements and permanent rights of way.

14.3 Excavation - The contract item Excavation covers the removal of all material including asphalt, aggregate base, abandoned pipelines and concrete from within the excavation paylines as specified and as required for the construction and installation of the reinforced concrete box,

than 15, provided the Contractor takes appropriate action to drain the water.

- b. Undensified lifts shall not exceed 4 feet.
- c. Suitable backfill material to be jetted shall have a sand equivalent of 30 or greater.
- d. If cast-in-place concrete pipe is used, jetting will not be permitted.
- e. Jetting of the top 4 feet of backfill measured from the subgrade plane will not be permitted in roadway areas.

The work shall be performed in such a manner that water will not be impounded. Backfill shall be brought up uniformly on each side of the structure. Jetting methods shall be supplemented by the use of vibratory or other compaction equipment when necessary to obtain the required compaction.

Approval to use specific methods and compaction equipment shall not be construed as guaranteeing or implying that the use of such methods and equipment will not result in damage to adjacent ground, existing improvements or improvements installed under the contract, nor shall it be construed as guaranteeing proper compaction. The Contractor shall make his own determination in this regard.

All backfill and bedding around structures and pipe shall be compacted to not less than ninety percent (90%) relative compaction. Where such material is placed under existing or proposed paved roadways, the top 3 feet, measured from the subgrade plane, shall be compacted to ninety-five percent (95%) and shall be compacted by Method (1).

Trench bottoms for structures and pipe shall be graded to provide firm and uniform bearing throughout the entire length of the structures and pipe.

Pipe and box bedding shall consist of well graded granular material having a sand equivalent value of not less than 30 and be capable of being readily consolidated by jetting and vibrating. Jetting shall be as described by Method (2) Water Densification and the jet pipe shall be inserted at intervals of three (3) feet maximum continuous along each side of the pipe. Gravel of crushed aggregate shall not be used for bedding materials. Pipe and box bedding shall be placed to one foot above the top of the reinforced concrete pipe or box as shown on the drawings. The Contractor may use onsite material for pipe and box bedding subject to the approval of the Engineer and provided it meets the requirements as set forth above.

The Contractor may use onsite material for pipe and box bedding subject to the approval of the Engineer and provided it meets the requirements as set forth above. The Contractor shall make

his own determination as to the availability of suitable onsite material. Should onsite material be unsatisfactory, the Contractor will be required to import suitable material.

Backfill material placed above the bedding shall consist of either select material from the excavation or imported material, as approved by the Engineer.

14.11 Testing – District personnel shall perform compaction tests as described below. These tests represent the minimum required. Additional tests may be taken at the Engineer's discretion.

1. Mainline Trenches – A complete series of compaction tests will be taken for each 4-foot thickness of backfill placed. Each series will consist of tests taken at approximate maximum intervals of 300 feet. Each series will begin at the top of the bedding zone.
2. Connector Pipe Trenches – Compaction tests will be taken on 50% of the laterals, one test for each 4-foot of depth.
3. Any failed test will result in a retest.

When water densification is requested, sand equivalent tests representing foundation soils and proposed backfill material shall be obtained at approximate maximum intervals of 1,000 feet. Additional tests may be necessary to define limits of suitable backfill material.

14.12 Backfill - The contract item Backfill includes all backfill, and pipe and box bedding material compacted as specified around the various concrete structures and pipe within the paylines as shown on M815 of the standard drawings.

14.16 Filter Material - The contract item Filter Material includes all filter material to be placed below the reinforced concrete pipe, box and various other structures but exclusive of connector pipes and catch basins.

The Contractor should note that the placing of filter material will be determined from field conditions as directed by the Engineer.

The materials for filter material shall conform to Sections 90-2.02 and 90-3.01 of the State Standard Specifications. Grading shall meet the requirements for 1" x No. 4 coarse aggregate as per Section 90-3.02 of the State Standard Specifications. The filter material shall be consolidated and the surface trimmed to final grade as directed by the Engineer.

14.17 Measurement – No measurement shall be allowed for Excavation and Backfill. Payment for these items shall be included in the various Contract Bid Items requiring Excavation and Backfill.



## SECTION 15 - TRENCH SAFETY SYSTEM

15.1 Description - This section covers the contract item Trench Safety System. This item is defined as a method of protecting employees from cave-ins, from material that could fall or roll from an excavation face or into an excavation, or from the collapse of adjacent structures. Trench safety systems include support systems, sloping and benching systems, shield systems and other systems that will provide necessary protection. The item includes the furnishing and implementation of the safety system as required by Section 306-1.1.6 of the Standard Specifications or as directed by the Engineer.

15.2 Trench Safety System - Excavation for any trench five (5) feet or more in depth shall not begin until the Contractor has provided to the Engineer, a detailed plan for worker protection from the hazards of caving ground during the excavation of the trench. The plan shall show the details of the design of shoring, bracing, sloping or other provisions to be made for worker protection including any design calculations done in the preparation of the plan. No such plan shall allow the use of shoring, sloping or a protective system less effective than that required by the Construction Safety Orders of the California Department of Industrial Relations, Division of Occupational Safety and Health Administration (Cal-OSHA). The plan shall be prepared and signed by an engineer who is registered as a civil engineer in the State of California, and the plan and design calculations shall be submitted for review at least two (2) weeks before the Contractor intends to begin trenching operations.

All safety plans shall reflect surcharge loadings imparted to the side of the trench by equipment and stored materials. Surcharge loads shall be monitored to verify that such loads do not exceed the design assumptions for the system.

The Contractor should not assume that only one type of trench safety system such as a shield or "trench box" will be adequate for all trenching situations encountered on a given project. The Contractor should be prepared with alternative safety system designs (such as solid sheeting) should construction circumstances dictate the use of such.

Trench safety system designs for support systems, shield systems or other protective systems whether drawn from manufacturers' data, other tabulated data or designed for this particular project must be signed by a civil engineer registered in the State of California prior to submittal to the District for review. A shoring plan for the specific use of a shield shall be prepared. Catalogs or engineering data for a product should be identified in the plan as supporting data. All specific items or applicable conditions must be outlined on the submittal.

The State of California Department of Transportation "Trenching and Shoring Manual" will be used as a guide for plan review and approval.

Also included in this item is the fencing and barricading of the open trench as required for the safety of pedestrians and vehicular traffic as directed by the Engineer.

15.4 Measurement and Payment - The contract price paid for the item Trench Safety System shall include full compensation for all costs incurred under this section.

This payment will be made on a basis of the percentage of the work completed on the items related to trenching operations.

**SECTION 16 - CONCRETE CONSTRUCTION**

16.1 Description - This section includes the contract items Reinforcing Steel and the various classes of Concrete.

16.2 General Requirements - Concrete for all purposes shall be composed of Portland Cement, aggregates and water of the quantities and qualities herein specified, and in the required proportions. The ingredients are to be well mixed and brought to the proper consistency and to have a compressive strength at the age of 28 days of not less than the amount shown in the following tabulation for each type of work listed:

<u>CONCRETE CLASS</u>	<u>MINIMUM SACKS CEMENT/C.Y.</u>	<u>POUNDS PER TYPE OF WORK</u>	<u>SQUARE INCH</u>
A	6	Bridges, Walls, Boxes, Rectangular Channel and Transition Structure Nos. 1, 2, 3 and 4, Concrete Bulkhead and Cast-in-Place	4000*
A	6	Slope Paving, Trapezoidal Channel, Catch Basins, Drop Inlets, Junction Structure Nos. 1, 2, 3, 4, 6 and 7, Manholes, Concrete Collars and Headwalls	3250*
B	5	Local Depressions, Cutoff Walls, Encasements, Curb and Gutter, Cross Gutters, Driveways, Sidewalk and Miscellaneous Concrete not otherwise specified	3000*

\*Note: Concrete for use in structures constructed from State of California, Department of Transportation Standard Plans shall have compressive strengths as called for on those plans.

16.3 Material and Methods - All concrete materials, methods, forms and proportioning shall conform to Sections 51 and 90, and additionally, curb construction shall conform to Section 73 of the State Standard Specifications. Concrete test specimens will be made in accordance with ASTM Designation C-31 and C172. Test for concrete compressive strengths will be performed in accordance with ASTM Designation C-39. Combined aggregate grading for all concrete shall be in conformance with Section 90-3.04 of the State Standard Specifications and the following tabulation for each type of work listed:

<u>TYPE OF WORK</u>	<u>COMBINED AGGREGATE GRADING</u>
Bridge Footings, and Cast-in-Place Concrete Pipe with diameters of 48" or greater. The inverts of: Spillways, Trapezoidal Channels, Reinforced Concrete Box, Rectangular Channels, Junction Structures, Transition Structures and Manholes.	1-1/2" Maximum
Bridges, Retaining Walls, Slope Paving, Trapezoidal Channel, Box Deck and Walls, Rectangular Channel Walls, Headwalls, Catch Basins, Drop Inlets, Local Depressions, Curb and Gutter, Driveways, Sidewalk, Cutoff Walls, Bulkheads, Collars, Encasements and Cast-in-Place Concrete Pipe with diameters of less than 48" and other <b>Miscellaneous Concrete not otherwise specified.</b> <b>All other concrete structures</b>	1" Maximum

Fly Ash, Class F may be substituted for cement, up to a maximum of 15 percent by weight for all concrete. Fly Ash shall meet the standards of ASTM Designation: C-618. Water reducing agents meeting ASTM Designation: C-494 will be permitted in amounts recommended by the supplier and approved by the Engineer in writing.

No other admixture shall be used in any class of concrete without written permission from the Engineer.

Supplementing Section 90-1.01 of the State Standard Specifications, prior to placement of any concrete the Contractor shall submit mix designs, for all types of concrete to be placed, to the Engineer for approval. Supplementing Section 90-6.03 of the State Standard Specifications, concrete delivered to the job site shall be accompanied by a ticket containing the weight of each of the individual ingredients in the mix.

16.4 General Reinforcing Steel Requirements - Reinforcing steel for all reinforced concrete structures shall be Grade 60 Low-Alloy or Grade 60 Billet-Steel. The reinforcing steel for use in structures constructed from State of California, Department of Transportation Standard Plans

shall be of Grade 60 or as called for on those plans. Cleaning, bending, placing and spacing of reinforcement shall conform to the applicable provisions of Section 52 of the State Standard Specifications and to the drawings. The Contractor shall furnish a "Certificate of Compliance" with the specification of ASTM Designation: A-706/A or A-615/A. All splices shall conform to the requirements of A.C.I. Manual, Standard 318, latest edition. Splices requested by the Contractor for his convenience shall be subject to approval by the Engineer. Longitudinal lap shall be 16 inches minimum for #4 bars and 19 inches minimum for #5 bars.

16.5 Consistency - The consistency of the concrete shall be such as to allow it to be worked into place without segregation. Unless otherwise specified, the slump shall be 3 inches plus or minus 1 inch for all concrete, except the concrete for the cast-in-place concrete pipe which shall have a slump of 2 inches plus or minus 1 inch.

The slump test shall be performed in accordance with the requirements of ASTM Designation: C-143. Slumps greater than those specified may be cause for rejection of the concrete by the Engineer.

16.6 Placing - Supplementing Section 51-1.09 of the State Standard Specifications, concrete shall not be placed except in the presence of the Engineer. The Contractor shall give reasonable notice to the Engineer each time he intends to place concrete. Such notice shall be far enough in advance to give the Engineer adequate time to inspect the subgrade, forms, steel reinforcement and other preparations for compliance with the specifications before concrete is delivered for placing.

Formed concrete shall be placed in horizontal layers in lifts of not more than 20 inches. Hoppers and chutes, pipes and "elephant trunks" shall be used as necessary to prevent segregation of the concrete.

16.7 Form Removal and Finish - Forms shall be removed only when the Engineer has given his approval. Forms shall be removed in such a way as to prevent damage to the concrete. Supports shall be removed in a manner that will permit the concrete to take stresses due to its own weight uniformly.

Forms shall not be removed sooner than the following minimum time or strength after the concrete is placed. These times represent cumulative number of days and fractions of days, not necessarily consecutive, during which the temperature of the air adjacent to the concrete is above 50 degrees F. If the temperature falls below 50 degrees Fahrenheit at any time after the concrete is placed in the forms, the Engineer will advise the Contractor of additional time required before forms can be removed.

<u>Element</u>	<u>Strength or Time</u>
<b>Bridge deck slabs, loaded bridge abutments or retaining walls - supporting forms and shoring, and reinforced concrete boxes with spans equal to or greater than 14 feet</b>	<b>3000 psi or 7 days</b>
Reinforced Concrete Boxes at pavement grade.	3000 psi or 7 days
<b>Reinforced Concrete Boxes with spans less than 14 feet, and not at pavement grade, Transition Structure Nos. 1, 2 &amp; 4</b>	<b>1600 psi</b>
<b>All other structures</b>	<b>16 hours</b>

The finish on all exposed formed surfaces shall conform to Section 51-1.18B Class 1 Surface Finish of the State Standard Specifications. A tight wood float finish will be required on the surface of trapezoidal channels and bridge decks and excessive surface working will not be permitted. The exposed concrete surfaces shall be broomed in a transverse direction with a fine textured hair push broom to produce a uniform surface and eliminate float marks. Brooming shall be done when the surface is sufficiently set to prevent deep scarring. If directed by the Engineer, a fine spray of water shall be applied to the surface immediately in advance of brooming.

Exposed corners of all concrete structures shall be finished with a 3/4" chamfer.

Concrete flatwork shall match adjacent surfaces. The concrete shall be struck off and tamped or vibrated until a layer of mortar has been brought to the surface. The top surface and face of curbs, gutters, catch basins and sidewalks shall be finished to match adjacent surfaces.

16.8 Curing - All concrete shall be prevented from drying for a curing period of at least seven (7) days after it is placed. Surfaces exposed to air during the curing process shall be kept continuously moist for the entire period or until curing compound is applied.

Formed surfaces shall be thoroughly wetted immediately after forms are removed and shall be kept wet until patching and repairs are completed. Water or covering shall be applied in such a way that the concrete surface is not eroded or otherwise damaged. Water for curing shall be clean and free from any substances that will cause discoloration of the concrete.

Concrete may be coated with curing compound in lieu of the continued application of moisture. The curing compound shall comply with the requirements of Section 90-7.01B of the State Standard Specifications. The curing compound shall be No. 5 White Pigmented Curing Compound conforming to the requirements of ASTM Designation: C-309, Type 2, Class B for all

spaced at 18-inch centers as tie bars. The construction joints shall be straight and finished in a workmanlike manner.

Surfaces of construction joints shall be cleaned as set forth in Section 51-1.13 of the State Standard Specifications.

For reinforced concrete boxes, keyed transverse construction joints shall be placed not more than 50 feet or be less than 10 feet. Transverse joints in the invert, walls and deck shall be in the same plane. Transverse construction joints shall be constructed per details on the Standard Drawings.

For rectangular channels, keyed transverse construction joints shall not exceed 50 feet or be less than 10 feet. Transverse joints in the invert and the walls shall be in the same plane. Transverse construction joints shall be constructed per details on the Standard Drawings.

16.11 Use of the Channel Invert - Dump trucks, concrete trucks and earth moving equipment (whether full or empty) will not be allowed to operate on the invert of the concrete channel.

A small crane with capacity not to exceed 10 tons will be permitted to operate on the concrete channel invert for the purpose of setting and moving forms, and erecting the steel reinforcement for the walls. Wheel loading types and amounts will be subject to the approval of the Engineer. Vehicles of 3/4 ton capacity (or less) will also be permitted access to the invert. The speed of any vehicle using the invert will be limited to 10 m.p.h. maximum to avoid impact loading.

No other category of equipment, except that specifically approved by the Engineer in writing will be permitted to use the invert of the channel for access to the work area.

In any event, vehicular access to the invert will not be permitted until the concrete has achieved its design strength. Approval for access to use the invert shall not relieve the Contractor of the responsibility to avoid damage to the concrete. Cracking, displacement or other damage which occurs to the invert will be cause to restrict some or all of the categories of equipment allowed access to the channel. Repair or replacement of damaged concrete will be required.

16.12 Class "A" Concrete, Reinforced Concrete Box - The contract item Class "A" Concrete, Reinforced Concrete Box covers the concrete incorporated in the construction of all reinforced concrete boxes.

Reinforced concrete box walls shall be constructed by placing the concrete directly against timber or steel sheeting used as the outside form and shoring. Sheeting shall be closely fitted and extend a minimum of 12 inches above the ground surface. Unless otherwise directed, all sheeting shall be removed and the void created shall be immediately backfilled with a well graded sand and thoroughly jetted to the relative densities specified in Backfill.

The Contractor has an option of forming both sides of the reinforced concrete box walls, however, due to additional loads on the box structure resulting from this trench condition, the Contractor will be required to submit an alternate box design prepared by a civil engineer registered in the State of California. All alternate box designs are subject to the approval of the Engineer and no additional payment will be made for the alternate box if approved.

If the box is constructed from State of California, Department of Transportation Standard Plans, either method of forming noted in the above paragraphs may be used without an alternate box design being submitted.

Loading and vehicular use of box deck slab shall comply with the requirements of Section 51-1.11 of the State Standard Specifications (also apply to bridge deck slab).

Also included in this item of work will be the construction of the weepholes if required in the invert slab or sides of the reinforced concrete box.

16.16 Class "A" Concrete, Minor Structures - The contract item Class "A" Concrete, Minor Structures includes the complete construction of the catch basins, collars, concrete bulkhead, and drop inlets. Included in the pay item is all earthwork and reinforcing steel required for these structures, but exclusive of the required miscellaneous iron and steel.

16.22 Transition Structures - The contract item Transition Structure Nos. 1, 2 and 3 covers the complete construction of these various structures, exclusive of earthwork and reinforcing steel.

16.23 Junction Structure No. 2 - The contract item Junction Structure No. 2 covers the complete construction of these structures, including reinforcing steel, exclusive of earthwork.

No separate payment will be made for Junction Structure No. 3 or Junction Structure No. 4.

16.24 Manholes - The contract items Manhole Nos. 1, 2, 3 and 4 cover the complete construction of these various structures, including reinforcing steel, exclusive of earthwork and the miscellaneous iron and steel.

The manhole rings are required and shall conform to ASTM Designation: C-478, and the drawings. The rings shall be laid up, using Type II modified cement with a 1:2 mix mortar and with 1/2-inch minimum thickness pointed joints. On completion, vertical wall section shall not be out of plumb by more than 1/2-inch in 10 feet of vertical height. The manhole rings shall also be accurately aligned. The cast iron manhole frame and cover shall be installed, with frame accurately set to finished grade of pavement, in mortar well tamped around the perimeter of frame to ensure full bearing.

16.25 Reinforcing Steel, Grade 60 - The contract item Reinforcing Steel, Grade 60 includes all reinforcing steel, with accessories, required for the construction of the reinforced concrete structures described in Section(s) \_\_\_\_\_.

16.26 Measurement - Measurement for payment for the contract items Class "A" Concrete, Reinforced Concrete Box; Class "A" Concrete, Channel Wall; Class "A" Concrete, Channel Footing; Class "A" Concrete, Bridge; Class "A" Concrete, Minor Structures; Class "A" Concrete, Channel Invert; Class "A" Concrete, Channel Paving; and Class "B" Concrete, Miscellaneous will be the number of cubic yards placed as specified, measured to the neat lines as shown on the drawings.

Measurement for payment for the contract items Manhole No. 1, Manhole No. 2, Manhole No. 3, Manhole No. 4, Transition Structure No. 1, Junction Structure No. 2 will be the number of each type constructed as specified.

No measurement or payment will be made for Junction Structure Nos. 3, 4 and 7.

No Measurement for payment will be allowed for the contract item Reinforcing Steel. Payment for this item shall be included as part of the Contract Bid Items requiring Reinforcing Steel. No measurement or payment will be made for dowels, tie bars, tie wires, blocks, chairs and other accessories.

16.27 Payment - The contract prices paid for the various Concrete items and reinforcing steel items shall include full compensation for all costs incurred under this section.

## **SECTION 17 - CONCRETE PIPE**

17.1 Description - This section covers the contract item Reinforced Concrete Pipe of the various sizes as required for the work.

17.2 General Pipe Requirement - Pipe materials, manufacture and quality, shall conform to ASTM Designation: C-76 or C-655. The Engineer shall be furnished a "Certificate of Compliance" signed by the manufacturer of the pipe certifying that the pipe conforms to the ASTM requirements. All pipe and pipe material supplied by the Contractor shall be new.

The District will also require the D-load bearing strength test conforming to ASTM C497 for new pipe 48" or greater, in conformance with Sections 207-2.9.1(1) and 207-2.9.2 of the Standard Specifications as a basis for acceptance of the pipe. The test shall be performed in the presence of the Engineer.

Pipe shall be laid in a trench free of ponded water in conformance with Section 306-1.2.2, with joints in conformance with Section 306-1.2.4 of the Standard Specifications.

Pipe ends shall be cleaned and moistened prior to making up joint.



17.3 Reinforced Concrete Pipe - The contract items for the various Reinforced Concrete Pipe include the furnishing and installing of the various pipe as specified, exclusive of earthwork.

17.4 Pipe on Curves - Unsymmetrical closure of pipe joints shall not exceed 1 inch pull on the outside of the curve when pull is measured at the springline on the inside of the pipe. Mortar joints on curves shall conform in strength, texture of mortar finish and tightness to the joints for straight ended pipe.

When beveled pipe is used the maximum deflection angle shall not exceed 6 degrees unless shown on the plans or approved by the Engineer.

17.5 Video Inspection – All concrete pipe (cast-in-place and reinforced) with inside diameters of 30 inches or less shall be videotaped prior to final inspection. Copies of the videotapes shall be provided to the Engineer. For pipe placed within roadway area, video inspection shall be performed and the results approved by the Engineer prior to paving.

17.6 Measurement - Measurement for payment of the contract items Reinforced Concrete Pipe of the various sizes and classes will be the number of lineal feet of each class installed as specified measured along the centerline of the pipe in place including curves.

17.7 Payment - The contract prices paid for the Reinforced Concrete Pipe shall include full compensation for all costs incurred under this section.

## **SECTION 18 - AIR-PLACED CONCRETE**

18.1 Air-Placed Concrete – Air-placed concrete may be used for construction of channel transition walls only when specifically allowed elsewhere in these Detailed Specifications or on the drawings. At the Contractor's expense, one inch of concrete shall be added to the channel transition walls to obtain three inches of clear cover for steel reinforcement on the dirt side.

Air-placed concrete shall be installed only by subcontractors with a minimum of 5 years experience specializing in construction of reinforced concrete structures by air-placed methods. Only personnel skilled in the techniques of air placement of concrete shall be utilized for air-placed concrete construction, and nozzle operators shall have a minimum of 3 years experience in air placement of concrete in reinforced concrete structures.

Air-placed concrete shall be applied only by Method B (shotcrete) in conformance with Section 303-2.1.3 of the Standard Specifications.

Equipment used for air placement of concrete shall be in conformance with Section 303-2.2 of the Standard Specifications for "Method B", except that only "positive displacement piston" type pumps shall be allowed to convey the premixed concrete. So called "rotating roller squeeze" pumps or "ball valve" pumps will not be allowed. In addition, two air compressors

the finish coat. The limit of lift height (when the in place material begins to sag) shall not be exceeded. Immediately after the lift has been allowed to take its initial set, all surfaces shall be cleaned of rebound and other loose material by rodding or brooming.

Construction joints shall be in conformance with Section 303-2.8 of the Standard Specifications and these Special Provisions. Before applying air-placed concrete, construction joints and adjacent steel and forms shall be cleaned by sand, air and water blast of all laitance, overspray and rebound materials, and the surface of the joint thoroughly wetted.

Finishing shall be in accordance with Section 303-2.9 of the Standard Specifications and these Special Provisions. The finished surface on exposed portions of transition walls with side slopes steeper than 1:1 (run to rise) shall have a Class 1 surface finish in conformance with Section 51-1.18B of the State Standard Specifications. Remaining portions of the transition shall have a broomed finish to match the adjacent trapezoidal channel surface. Prior to placing the finish coat, all laitance shall be removed from the existing surface, and the surface thoroughly cleaned and wetted by air and water blast. The finished coat shall be applied no more than 8 hours after the placement of the structural section, and the surface of the structural section shall be kept continuously moist until the finished coat is placed.

Curing of air-placed concrete shall be in accordance with the requirements of these Detailed Specifications.

19.4 Temporary Resurfacing - The contract item Temporary Resurfacing is required for short reaches of the mainline and connector pipe trenches whenever excavation is made through pavement on which traffic must be allowed immediately after backfilling, only as directed by the Engineer. Otherwise the leveling course of the asphalt concrete paving may be used to open the work area to traffic until the final paving is completed. Measurement and payment of the leveling course will be made as an Asphalt Concrete item, not Temporary Resurfacing.

Temporary resurfacing shall be 2" (0.17') and in conformance with Section 306-1.5 of the Standard Specifications.

19.5 Measurement -

Measurement for payment of the contract item Temporary Resurfacing will be the number of tons placed as specified in Section 19.4 and as directed by the Engineer.

19.6 Payment - Temporary Resurfacing shall include full compensation for all costs incurred under this section.

## **SECTION 20 - FENCES AND GATES**

20.1 Description - This section covers the contract items Remove and Replace Block Wall

20.2 Remove and Replace Block Wall - The contract item Remove and Replace Block Wall includes removing and disposing of the existing block wall and furnishing and installing the material required for this portion of the work as shown on the drawings and as directed by the Engineer. Included in this item is all earthwork, concrete work and other items necessary for the complete installation of the block wall.

All materials shall be new and shall match the color and dimensions of the existing block wall.

20.6 Measurement - Measurement for payment for the contract item Remove and Replace Block Wall will be the number of lineal feet of new and relocated fence installed measured along the top of the fence parallel to the ground.

20.7 Payment - The contract price paid for Remove and Replace Block Wall shall include full compensation for all costs incurred under this section.

## **SECTION 21 - MISCELLANEOUS**

21.1 Description - This section covers the contract items Miscellaneous Iron and Steel; Corrugated Metal Pipe,  $t=0.0747$  Inches; Subdrain; Delineators; Street Light Conduit Relocation; Traffic Loop Detector Replacement; Traffic Signal Conduit Relocation; Remodel 4-Inch Vitrified Clay Pipe (VCP) House Connection; Inlet Type IX; Adjust Manhole to Grade; and Adjust Valve to Grade.

21.2 Miscellaneous Iron and Steel - The contract item Miscellaneous Iron and Steel covers all ferrous metal used in the various hydraulic structures. Materials, parts and fittings shall conform with the following:

- (a) Manhole Frames and Covers - Per ASTM Designation: A-48, Class 35B. Manhole frames and covers shall be minimum weight as shown on the plans, and the weight of each frame and cover shall be indicated thereon in white paint. Style and markings shall be approved by the Engineer. The castings shall be free from cracks, blowholes or other imperfections, straight, true to pattern and have a uniform finish. The castings for manholes in streets shall be thoroughly cleaned and coated with asphaltum paint of approved composition; all other castings for frames and covers shall be cleaned and galvanized. The cover shall fit firmly into the frame without rocking, with the frame accurately placed so that cover is flush with finish paving. (*Engineer to check with City for special requirements*).
- (b) All other Miscellaneous Metal - Per ASTM Designation: A-36.
- (c) Galvanizing - Except for manhole frames and covers described above, all exposed ferrous metal shall be galvanized per Section 210.3 of the Standard Specifications.

21.3 Corrugated Metal Pipe, t=0.0747 Inches - The contract item Corrugated Metal Pipe, t=0.0747 inches covers the corrugated metal pipe complete with coupling bands, hardware, and other parts and fittings and including earthwork as required at locations shown on the drawings.

Pipe materials and dimensions shall conform to AASHTO Designation: M-36. The Engineer shall be furnished a "Certificate of Compliance" signed by the manufacturer stating that pipe conforms to the designated specifications.

Separate sections of corrugated metal pipe shall be laid in the trench with outside laps of circumferential joints facing up grade. Pipe shall have full bearing, and variation from slope between the sections after assembly shall not exceed 1/2 inch.

Steel thickness noted on the plans are after galvanizing. Galvanizing shall conform to Section 75-1.05 of the State Standard Specifications.

21.4 Subdrain - The contract item Subdrain covers trenching and the furnishing of the subdrain pipe, all fittings, galvanized screen, filter material and filter fabric.

The filter material shall be wrapped in filter fabric as shown on the drawings. Filter material and filter fabric shall conform to the material specifications as specified in Section 16.10, Weepholes, of these Detailed Specifications.

Filter Fabric shall be furnished in a protective wrapping which shall protect the fabric from ultraviolet radiation and from abrasion due to shipping and handling. The fabric shall also be ultraviolet stabilized.

The fabric shall be placed in the manner and at the locations shown on the drawings. The surface to receive the fabric shall be prepared to a smooth condition free of obstructions and debris.

The fabric shall be covered within 72 hours of its placement. Should the fabric be damaged during construction, the torn or punctured section shall be repaired by placing a piece of fabric that is large enough to cover the damaged area and to meet the overlap requirement. Adjacent borders of the fabric shall be overlapped a minimum of twelve (12) inches or sewn. Upstream sections of fabric shall overlap downstream sections.

Perforated subdrain pipe shall be vitrified clay pipe, concrete pipe, ABS Pipe or PVC Pipe, at the option of the Contractor. Vitrified clay pipe shall meet the requirements of ASTM Designation: C-700, for extra strength pipe. Concrete pipe shall meet the requirements of ASTM Designation: C-14 Class 3 and C-444 Type I. ABS pipe shall meet the requirements of ASTM Designation: D-2751, SDR 23.5, and PVC pipe shall meet the requirements of ASTM Designation: D2665, and perforations shall be that as described in ASTM Designation: C-700.

21.5 Delineators - The contract item Delineators includes the material, equipment and labor necessary to install each delineator as shown on the drawings.

The delineators shall be in accordance with State of California, Department of Transportation Standard Plan A73-A, Class 1, Type L-1 and shall conform to Section 82 of the State Standard Specifications.

21.6 Street Light Conduit Relocation - The contract item Street Light Conduit Relocation includes all equipment, material and labor required to relocate the street light conduit around the catch basins or connector pipe. The City of \_\_\_\_\_ Public Utilities Department, Telephone: \_\_\_\_\_, shall be contacted prior to working on any existing street light system. Relocating or replacement shall conform to Section 86 of the State Standard Specifications and the requirements of the City of \_\_\_\_\_ Electrical Department. No splicing of conductors will be allowed unless a pull box is installed at the splice location. *(Engineer to check with City or County for special requirements).*

21.7 Traffic Loop Detector Replacement - Traffic Loop Detector Replacement shall be required whenever a detector separation occurs due to the Contractor's work or when new loops are required. Loop installation shall be in accordance with State of California, Department of Transportation Standard Plan ES-5A and shall conform to Section 86 of the State Standard Specifications. *(Engineer to check with City or County for special requirements).*

The installation of traffic loops is required within 24 hours of final paving of the affected area.

21.8 Traffic Signal Conduit Relocation - The contract item Traffic Signal Conduit Relocation includes all equipment, material and labor required to relocate the traffic signal conduit around the catch basins or connector pipe. Relocating or replacement shall conform to Section 86 of the State Standard Specifications. No splicing of conductors will be allowed unless a pull box is installed at the splice location. *(Engineer to check with City or County for special requirements).*

21.9 Remodel 4-Inch Vitrified Clay Pipe (VCP) House Connection - The contract item Remodel 4-Inch Vitrified Clay Pipe (VCP) House Connection pertains to the removing of interfering portions of house connections and replacing with new pipe and any mainline modification required. The remodeling shall be done in accordance with the drawings, including excavation, backfill and any concrete encasement but excluding asphalt concrete or aggregate base in this item of work. Only the VCP house connections interfering with the RCB or pipe conduit to be constructed will be measured for payment. *(Engineer to check with City or Water District for special requirement or use their standard if available).*

21.10 Inlet Type IX - The contract item Inlet Type IX covers the furnishing and installation of the various inlets. Included shall be all materials, parts, fittings, earthwork and concrete invert and pipe collar.

21.11 Adjust Manhole to Grade – The contract item Adjust Manhole to Grade covers all labor, equipment, materials and incidentals required for the complete adjustment of all manholes within the limits of the street improvements to meet the finished street grade. Adjustments shall be performed in accordance with Section 301.1.6 of the Standard Specifications.

21.12 Adjust Valve to Grade – The contract item Adjust Valve to Grade covers all labor, equipment, materials and incidentals required for the complete adjustment of all valves within the limits of the street improvements to meet the finished street grade.

21.13 Measurement - Measurement for payment for the contract item Miscellaneous Iron and Steel will be the number of pounds used in the work as specified. Should manhole frames and covers exceed the minimum weights as shown on the drawings by more than two percent (2%) that weight in excess of the allowable two percent (2%) increase will not be measured for payment. Manhole frames and covers to be salvaged and reused will not be measured for payment.

Measurement for payment for the contract item Corrugated Metal Pipe,  $t=0.0747$  Inches will be the number of lineal feet installed as specified measured along the centerline of the pipe.

Measurement for payment for the contract item Subdrain will be the number of lineal feet installed as specified. No measurement will be made of the gravel filter material required for this portion of the work.

Measurement for payment for the contract item Delineators will be for each installation.

Measurement for payment for Street Light Conduit Relocation will be the number of lineal feet installed as specified.

Measurement for payment for the contract item Traffic Loop Detector Replacement will be the lineal feet of sawcut necessary for the traffic loops. Conductors and pullboxes will not be measured for payment and shall be included in the bid items.

Measurement for payment for Traffic Signal Conduit Relocation will be the number of lineal feet installed as specified.

Measurement for payment for the contract item Remodel 4-Inch VCP House Connection will be the number of lineal feet of 4-inch vitrified clay pipe installed. There will be no separate payment for special fittings or joint materials and modification to the main line.

Measurement for payment for the contract item Inlet Type IX will be for each inlet installed.

Measurement for payment for the contract item Adjust Manhole to Grade shall be the number of manholes that are adjusted to meet the finished street grade.

Measurement for payment for the contract item Adjust Valve to Grade shall be the number of valves that are adjusted to meet the finished street grade.

21.14 Payment - The contract prices paid for Miscellaneous Iron and Steel; Corrugated Metal Pipe, t=0.0747 Inches; Subdrain; Delineators; Street Light Conduit Relocation; Traffic Loop Detector Replacement; Traffic Signal Conduit Relocation; Remodel 4-Inch VCP House Connection; Inlet Type IX; Adjust Manhole to Grade; and Adjust Valve to Grade shall include full compensation for all costs incurred under this section.

## **SECTION 27 - DUST ABATEMENT**

27.1 Description - This section covers the implementation of dust control measures necessary to prevent harm and nuisance from dust. Supplementing Section 8.06 of the General Provisions, the Contractor shall comply with all the provisions of the South Coast Air Quality Management District (SCAQMD) Rule 403 as described in Appendix "A".

27.2 Dust Abatement - The contract item Dust Abatement includes the action necessary to prevent, reduce or control dust within the work area as required to complete the work. The Contractor shall carry out proper and efficient measures to prevent his operations from producing dust in amounts damaging to property or causing a nuisance, or harm to persons living nearby or occupying buildings in the vicinity of the work. The methods to be used for controlling dust in the construction area and along haul roads shall be approved by the Engineer prior to starting any work included in this contract. The Rule 403 Implementation Handbook published by the SCAQMD contains a detailed listing of reasonably available dust control measures and is available for inspection at the District office.

27.3 Payment - The contract lump sum price paid for Dust Abatement shall include full compensation for all direct and indirect costs incurred under this section.

This payment will be made on a basis of the percentage of work completed on the entire project.

## **SECTION 29 – STORMWATER AND NON-STORMWATER POLLUTION CONTROL**

### **1. Santa Ana Watershed**

29.1 Description – This section covers the contract items Stormwater and Non-Stormwater Pollution Control; and Non-Stormwater Discharge or Dewatering. The contract item Stormwater and Non-Stormwater Pollution Control shall include amending and implementing the Permit Registration Documents (PRDs) as required by the State Water Resources Control Board (SWRCB) and the California Regional Water Quality Control Board (CRWQCB) - Santa Ana Region. The contract item Non-Stormwater Discharge or Dewatering shall include compliance with the Santa Ana Regional Water Quality Board Order No. R8-2009-2003.

29.2 General Requirements – All activities performed by the Contractor for this project shall conform to the requirements of the State-wide National Pollutant Discharge Elimination System (NPDES) General Permit (Board Order No. 2009-0009-DWQ, NPDES No. CAS000002) for Stormwater Discharges Associated with Construction and Land Disturbance Activities, hereafter referred to as the "General Permit", issued by the SWRCB. This General Permit regulates both stormwater and non-stormwater discharges associated with Contractor's construction activities. This General Permit can be downloaded at [http://www.swrcb.ca.gov/water\\_issues/programs/stormwater/constpermits.shtml](http://www.swrcb.ca.gov/water_issues/programs/stormwater/constpermits.shtml).

The PRDs mentioned above consist of:

1. Risk Assessment (Section VIII of the General Permit)
2. Site Map
3. Stormwater Pollution Prevention Plan (Section XIV of General Permit)
4. Signed Certification Statement

Stormwater Pollution Prevention Plan (SWPPP) – The SWPPP identifies site specific Best Management Practices (BMPs) to be implemented during and after construction to minimize the potential pollution of stormwater runoff and downstream receiving waters. The identified BMPs are practices designed to minimize or eliminate the discharge of pollutants from the construction site and Contractor's construction activities, including, but not limited to:

1. Good housekeeping practices for solid and sanitary/septic waste management, vehicle and equipment cleaning/maintenance, and material handling and storage.
2. Construction procedures such as stabilized construction access points, scheduling/phasing to minimize areas of soil disturbance, soil stabilization and erosion/sediment control.

The SWPPP shall stipulates an ongoing program for monitoring and maintenance of all BMPs.

The SWPPP addresses the following objectives:

1. All pollutants and their sources, including sources of sediment associated with construction, construction site erosion and all other activities associated with construction activity are controlled;
2. Where not otherwise required to be under a Regional Water Board permit, all non-stormwater discharges are identified and either eliminated, controlled, or treated;
3. Site BMPs are effective and result in the reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater discharges from



- construction activity to the Best Available Technology/Best Conventional Technology (BAT/BCT) standard;
4. Calculations and design details as well as BMP controls for site run-on are complete and correct; and
  5. Stabilization BMPs, installed to reduce or eliminate pollutants after construction, are completed.

The Contractor shall make the SWPPP available at the construction site during working hours while construction is occurring and shall be made available upon request by a State or Regional Board inspector. When the original SWPPP is retained by a crewmember in a construction vehicle and is not currently at the construction site, current copies of the BMPs and map/drawing will be left with the field crew and the original SWPPP shall be made available via a request by radio/telephone.

**In the event the Agency incurs any Administrative Civil Liability or Mandatory Minimum (fine) imposed by the CRWQCB - Santa Ana Region, as a result of Contractor's failure to fully implement the provisions of this section and permit requirements, "Stormwater and Non-Stormwater Pollution Control", the Engineer may, in the exercise of his sole judgment and discretion, withhold from payments otherwise due Contractor a sufficient amount to cover the Civil Liability. Liability for "Negligent Violations" may be in an amount up to \$50,000 per day per deemed occurrence while "Knowing Violations" can result in fines as high as \$250,000 and imprisonment.**

Stormwater and Non-Stormwater Pollution Control work shall conform to the requirements in the latest version of the California Stormwater Quality Association (CASQA) Handbook, entitled "**California Stormwater BMP Handbook – Construction**" updated November 2009. A copy of the "California Stormwater BMP Handbook – Construction", updated November 2009, hereafter referred to as the "CASQA Handbook", may be obtained from CASQA, Post Office Box 2105, Menlo Park, California 94026-2105. Telephone: 650.366.1042. Copies of the handbook can also be downloaded from the CASQA Internet site at <http://www.cabmphandbooks.com/construction.asp>.

The Contractor shall be responsible for all costs and for any liability imposed by law as a result of the Contractor's failure to comply with the requirements set forth in this section, "Stormwater and Non-Stormwater Pollution Control", including but not limited to, compliance with the applicable provisions of the CASQA Handbook, General Permit, General De Minimus Permit, Federal, State and local regulations. For the purpose of this paragraph, costs and liabilities include, but are not limited to, fines, penalties and damages whether assessed against the District or the Contractor, including those levied under the Federal Clean Water Act and the State Porter-Cologne Water Quality Act.

The Contractor shall become fully informed of and comply with the applicable provisions of the CASQA Handbook, General Permit, General De Minimus Permit, and Federal, State and local regulations that govern the Contractor's activities and operation pertaining to both stormwater

and non-stormwater discharges from both the project site and areas of disturbance outside the project limits during construction. The Contractor shall, at all times, keep copies of the General Permit, General De Minimus Permit, approved SWPPP and all amendments at the project site. The SWPPP shall be made available upon request of a representative of the SWRCB, CRWQCB, United States Environmental Protection Agency (USEPA) or local stormwater management agency. Requests by the public shall be directed to the Engineer.

The Contractor is solely and exclusively responsible for any arrangements made between the Contractor and other property owners or entities that result in disturbance of areas or construction activities being conducted outside limits of the designated rights-of-way and temporary construction easements as shown on the project drawings.

The Contractor shall, at reasonable times, allow authorized agents of the CRWQCB, SWRCB, USEPA or local stormwater management agency, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the construction site and the Contractor's facilities pertinent to the work;
2. Have access to and copy any records required to be kept as specified in the General Permit;
3. Inspect the construction site, including any offsite staging areas or material storage areas, and related soil stabilization practices and sediment control BMPs; and
4. Sample or monitor for the purpose of ensuring compliance with the General Permit.

The Contractor shall notify the Engineer immediately upon request from regulatory agencies to enter, inspect, sample, monitor or otherwise access the project site or the Contractor's records.

29.4 Permit Registration Document (PRD) and Rain Event Action Plan (REAP) Amendments - If the scope or schedule of the project changes, the Contractor shall immediately notify the Engineer. The Engineer will determine if the Contractor will be required to recalculate the Risk Assessment. If it is determined by the Engineer that a new Risk Assessment is required, the Engineer will notify the Contractor to resubmit amended PRDs and in the case that the risk level increases, the Contractor shall comply with additional applicable requirements of the General Permit, including preparation and implementation of REAPs, Construction Site Monitoring Program (CSMP), Numeric Action Level (NAL) Exceedance Reports, and annual reporting requirements. The Contractor shall also prepare amendments to the PRDs, both graphically and in narrative form, whenever there is a change in Contractor's construction activities or operations which may result in the discharge of pollutants to surface waters, groundwaters, municipal storm drain systems, or as deemed necessary by the Engineer. The Contractor shall also amend the PRDs if they are in violation of any condition of the General Permit, or has not

effectively achieved the objective of reducing pollutants in stormwater discharges. Amendments shall show additional BMPs, revised Contractor's construction activities or operations, including those in areas not shown in the initially approved SWPPP, which are required on the project to effectively control water pollution.

Amendments to the PRDs shall be submitted for review and approval by the Engineer in the same manner specified for the initial approval of the PRDs. The Contractor shall date and attach all approved amendments to any of the PRDs. Upon approval of the amendment, the Contractor shall implement the approved changes, revised construction activities or operations.

29.5 Non-Compliance Reporting - If the project is in non-compliance at any time, the Contractor shall make a written report to the Engineer within two (2) calendar days of identification of non-compliance activities.

29.6 SWPPP Implementation - The Contractor shall be responsible throughout the duration of the project for placing, installing, constructing, inspecting and maintaining the BMPs as well as conducting the Construction Site Monitoring Program as included in the SWPPP and any amendments thereto, and for removing and disposing of temporary BMPs. Unless otherwise directed by the Engineer or specified in these Detailed Specifications, the Contractor's responsibility for SWPPP implementation shall continue throughout any temporary suspension of work ordered in accordance with Section 6.05, "TEMPORARY SUSPENSION OF THE WORK", of the General Provisions. Requirements for installation, construction, inspection, maintenance, removal and disposal of BMPs are specified in the Caltrans Handbooks and these Detailed Specifications.

**The Engineer may order the suspension of construction operations if the Contractor fails to comply with the requirements of this section, "Stormwater and Non-Stormwater Pollution Control", as determined by the Engineer.**

**The Contractor will not be compensated for sampling and analysis work because of the Contractor's failure to properly implement, inspect, maintain and repair BMPs in the approved SWPPP and any amendments thereto, or for failing to store construction materials or wastes in watertight containers.**

- (a) Stormwater Pollution Control - **The Contractor shall implement soil stabilization practices and sediment control BMPs, including minimum requirements as presented in the Caltrans Handbooks, on all disturbed areas of the project site during the rainy season, defined as between October 1<sup>st</sup> and May 31<sup>st</sup>.**

Implementation of soil stabilization practices and sediment control BMPs for soil-disturbed areas, including but not limited to, rough graded access roads, slopes, channel inverts, operational inlets and outlets of the project shall be completed no later than ten (10) calendar days prior to the start of the rainy season or upon start of applicable Contractor's construction

The Contractor shall ensure a QSP ensure that the REAP include, at a minimum, the following site information:

- a. Site Address
- b. Calculated Risk Level
- c. Site Storm Water Manager Information including the name, company and 24-hour emergency telephone number
- d. Erosion and Sediment Control Provider information including the name, company and 24-hour emergency telephone number
- e. Storm Water Sampling Agent information including the name, company and 24-hour emergency telephone number

29.8 Water Quality Monitoring, Sampling and Analysis – **The Water Quality Monitoring, Sampling and Analysis is applicable to Risk Level 2 construction sites only.** The Contractor shall be responsible for preparing a Construction Site Monitoring Program (CSMP) and implementing the monitoring, sampling and analysis requirements as described in Attachment D of the General Permit. Records of all visual observations and sampling results required by the General Permit shall be kept using the forms contained in Appendix "F" and Appendix "G", respectively. Copies of the forms shall be maintained in the SWPPP and submitted to the Engineer within 24 hours of the visual observation or sampling event.

29.9 Numeric Action Level (NAL) Exceedance Report - **The NAL Exceedance Report is applicable to Risk Level 2 construction sites only.** The Contractor shall be responsible for submitting a NAL Exceedance Report to the Engineer in the event that any effluent sample exceeds an applicable NAL.

- a. The Contractor shall submit all storm event sampling results using the form in Appendix "G" for each discharge point to the Engineer no later than 24 hours after the conclusion of the storm event.
- b. The Contractor shall certify each NAL Exceedance Report in accordance with the Special Provisions for Construction Activity.
- c. The Contractor shall retain an electronic or paper copy of each NAL Exceedance Report for a minimum of three years after the date the annual report is filed.
- d. The Contractor shall use the reporting form contained in Appendix "G" and include in the NAL Exceedance Report:

- i. The analytical method(s), method reporting unit(s) and method detection limit(s) of each analytical parameter (analytical results that are less than the method detection limit shall be reported as "less than the method detection limit").
- ii. The date, place, time of sampling, visual observation (inspections) and/or measurements, including precipitation.
- iii. A description of the current BMPs associated with the effluent sample that exceeded the NAL and the proposed corrective actions taken.

29.10 Non-Stormwater Discharge or Dewatering - **Dewatering activity should only be considered after other methods have been determined to be inadequate for storm drain construction by the Engineer.** If groundwater will be encountered during the project activities, the dewatering activity must be covered by the General Waste Discharge Requirements for Discharges to Surface Waters that Pose an Insignificant Threat to Water Quality (De Minimus Permit), Santa Ana Regional Water Quality Control Board Order No. R8-2009-0003. The Contractor shall comply with this Order, and notify and obtain approval from the Engineer fifteen (15) days prior to any non-stormwater discharging of groundwater dewatering. If an emergency or unforeseen dewatering activity that will discharge to Waters of the United States occurs, the Contractor shall contact the Engineer immediately.

When discharging groundwater from dewatering activities to surface waters, the Contractor shall comply with and implement the Monitoring and Reporting Program required under Order No. R8-2009-0003. This Order can be downloaded at [http://www.waterboards.ca.gov/santaana/board\\_decisions/adopted\\_orders/orders/2009\\_orders.shtml](http://www.waterboards.ca.gov/santaana/board_decisions/adopted_orders/orders/2009_orders.shtml). Under the Monitoring and Reporting Program, the Contractor shall prepare the monitoring report in accordance with the template included in Appendix "H". The Contractor must submit the Monitoring Reports to the Engineer by the 15<sup>th</sup> day of each month following the monitoring period. The District will submit the Monitoring Reports to the Santa Ana Regional Water Quality Control Board. The Monitoring Reports shall cover the previous month's monitoring activities.

If there is any other form of non-stormwater discharge from the project to surface waters, the Contractor shall immediately contact the Engineer to determine appropriate actions required for coverage under the De Minimus Permit.

**Failure of the Contractor to fully comply with this requirement may result in the suspension of construction operations and liability for any associated monitoring, fines, penalties and remediation activities related to the discharge.**

## 29.11 Reports –

- (a) Annual Report - The Contractor shall be responsible for preparing an Annual Report to meet the requirements of Section XVI of the General Permit covering the preceding period of construction from July 1<sup>st</sup> to June 30<sup>th</sup>. The Annual Report shall be structured in accordance with the template included in Appendix "I". The Contractor shall submit two (2) copies of the Annual Report to the Engineer by July 15<sup>th</sup> of each year for review and approval. The Contractor shall allow ten (10) working days for the Engineer to review the Annual Report. If revisions are required as determined by the Engineer, the Contractor shall revise and resubmit the Annual Report within three (3) working days of receipt of the Engineer's comments. The Contractor shall submit four (4) copies of the approved Annual Report to the Engineer prior to August 15<sup>th</sup> of each year. **The Contractor shall be responsible for providing an Annual Report to the Engineer for any construction occurring for part of the year after July 1<sup>st</sup> prior to receiving final payment on the project.**
- (b) Monthly Report – The Contractor shall prepare and submit to the Engineer a Monthly Report within five (5) working days of the end of the month including:
1. All visual observation reports;
  2. All sampling and analysis reports;
  3. All NAL Exceedance Reports;
  4. Summary of changes to the SWPPP and or REAP based on inspection results for the preceding month.

29.12 Payment - The contract lump sum price paid for Stormwater and Non-Stormwater Pollution Control work shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals for doing all the work involved in developing, preparing, obtaining approval of, revising and amending the PRDs, and installing, constructing, maintaining, removing and disposing of BMPs as shown in the SWPPP, as specified in the CASQA Handbooks and Sample Contractor's Water Quality CSMP, General Permit and these Detailed Specifications, and as directed by the Engineer.

The contract lump sum price paid for Non-Stormwater Discharge or Dewatering shall include full compensation for compliance of Section 29.10 "Non-Stormwater Discharge or Dewatering". **Contractor shall not be paid any portion of the contract lump sum if discharge of groundwater from dewatering activities to surface waters is avoided.**

Monthly payment will be made on a basis of the percentage of work completed on the entire project and subject to the submittal of a complete Monthly Report as specified in Section 29.11(b). Failure to complete or report required visual inspections, monitoring, sampling and analysis requirements, NAL Exceedance Reports, and/or other necessary follow-up actions to ensure that the project stays in compliance with the General Permit can be the basis for

reducing monthly progress payments for the project. Monthly progress payments will be reduced by the amount of direct costs, overhead costs and engineering costs incurred by the Engineer to address compliance deficiencies, including costs to conduct inspections, monitoring, reporting and supplemental BMP implementation necessary to comply with the General Permit and costs incurred by the Engineer to address complaints, additional State inspections and violations and/or fines issued by the State or US EPA associated with failure to properly comply with the General Permit. Progress Payment reductions can exceed the monthly percentage or total contract lump sum price for Stormwater and Non-Stormwater Pollution Control work.

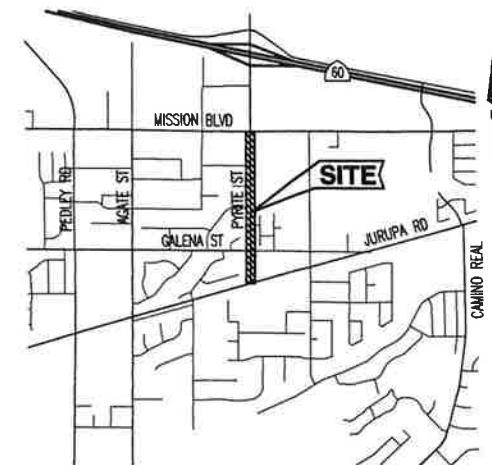
Payment will be made on a basis of the percentage of work completed on the entire project.

31.6 Measurement and Payment - The contract lump sum prices paid for each of the following: Relocate 8-Inch Sewer Line; Relocate 15-Inch Sewer Line; and Relocate 8-Inch Waterline shall include full compensation for all costs incurred under this section except that Aggregate Base, and Asphalt Concrete used for resurfacing the street will be measured and paid for under the contract items Aggregate Base, Class 2 and Asphalt Concrete, Type B.

**GENERAL NOTES:**

- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO APPLY TO THE RIVERSIDE COUNTY TRANSPORTATION DEPARTMENT, PERMIT SECTION, FOR AN ENCROACHMENT PERMIT FOR ALL WORK PERFORMED WITHIN PUBLIC RIGHT-OF-WAY, DEDICATED AND ACCEPTED FOR PUBLIC USE; AND TO BE RESPONSIBLE FOR SATISFACTORY COMPLIANCE FOR ALL CURRENT ENVIRONMENTAL REGULATIONS DURING THE LIFE OF CONSTRUCTION ACTIVITIES FOR THIS PROJECT. ADDITIONAL STUDIES AND/OR PERMITS MAY BE REQUIRED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CLEARING OF THE WORK AREA, AND RELOCATION COSTS OF ALL EXISTING UTILITIES. PERMITEE MUST INFORM COUNTY OF CONSTRUCTION SCHEDULE AT LEAST 48 HOURS PRIOR TO BEGINNING OF CONSTRUCTION. PH. NO. 951-955-6790.
- THE CONTRACTOR WILL INSTALL STREET NAME SIGNS CONFORMING TO COUNTY STANDARD NO. 816.
- ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE RIVERSIDE COUNTY TRANSPORTATION DEPARTMENT IMPROVEMENT STANDARDS AND SPECIFICATIONS, LATEST EDITION, COUNTY ORDINANCE NO. 461 AND SUBSEQUENT AMENDMENTS.
- ALL UNDERGROUND FACILITIES, WITH LATERALS, SHALL BE IN PLACE PRIOR TO PAVING THE STREET, INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING: SEWER, WATER, ELECTRIC, GAS, STORM DRAINS.
- CURB DEPRESSIONS AND DRIVEWAY APPROACHES WILL BE INSTALLED AND CONSTRUCTED ACCORDING TO COUNTY STANDARD NO. 206 AND/OR NO. 207, AS DIRECTED IN THE FIELD.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL AND MAINTAIN ALL CONSTRUCTION, REGULATORY, GUIDE AND WARNING SIGNS WITHIN THE PROJECT LIMITS AND ITS SURROUNDINGS TO PROVIDE SAFE PASSAGE FOR THE TRAVELING PUBLIC AND WORKERS UNTIL THE FINAL COMPLETION AND ACCEPTANCE OF THE PROJECT BY THE COUNTY.
- ALL STREET SECTIONS ARE TENTATIVE. ADDITIONAL TESTS MAY BE TAKEN BY THE COUNTY AFTER ROUGH GRADING TO DETERMINE THE EXACT STREET SECTION REQUIREMENTS. USE STANDARD NO. 401 IF EXPANSIVE SOILS ARE ENCOUNTERED.
- ASPHALTIC EMULSION (FOG SEAL) SHALL BE APPLIED NOT LESS THAN FOURTEEN DAYS FOLLOWING PLACEMENT OF THE ASPHALT SURFACING. FOG SEAL AND PAINT BINDER SHALL BE APPLIED AT A RATE OF 0.05 AND 0.03 GALLON PER SQUARE YARD RESPECTIVELY. ASPHALTIC EMULSION SHALL CONFORM TO SECTION 37, 39 AND 94 OF THE STATE STANDARD SPECIFICATIONS.
- AS DETERMINED BY THE TRANSPORTATION DIRECTOR, THE CONTRACTOR IS RESPONSIBLE AS A MINIMUM FOR ROAD IMPROVEMENTS TO CENTERLINE, AND MAY BE REQUIRED TO RECONSTRUCT EXISTING PAVEMENT, INCLUDING BASE, AND MATCHING OVERLAY REQUIRED TO MEET THE STRUCTURAL STANDARDS FOR THE CURRENT ASSIGNED TRAFFIC INDEX.
- ONLY LANDSCAPING CONSISTING OF GRASS AND PARKWAY TREES MAY BE INSTALLED WITHIN PARKWAYS ON LOCAL RESIDENTIAL STREETS WITHOUT SEPARATE LANDSCAPE PLANS. ALL OTHER TYPES OF LANDSCAPING IN THESE AREAS, AND ALL LANDSCAPING ON ALL OTHER STREETS, SHALL REQUIRE SEPARATE LANDSCAPE PLANS. ALL LANDSCAPING ENCROACHMENTS SHALL CONFORM TO RIVERSIDE COUNTY "STANDARDS RELATING TO THE ADMINISTRATION OF LANDSCAPE ENCROACHMENTS" DATED JUNE 1990.
- ANY PRIVATE DRAINAGE FACILITIES SHOWN ON THESE PLANS ARE FOR INFORMATION ONLY. BY SIGNING THESE IMPROVEMENT PLANS, NO REVIEW OR APPROVAL OF THOSE PRIVATE FACILITIES IS IMPLIED OR INTENDED BY THE RIVERSIDE COUNTY TRANSPORTATION DEPARTMENT.
- A CONSTRUCTION PROJECTS DISTURBING MORE THAN ONE ACRE MUST OBTAIN A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT. OWNERS ARE REQUIRED TO FILE A NOTICE OF INTENT (NOI) WITH THE STATE WATER RESOURCES CONTROL BOARD (SWRCB), PREPARE A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND MONITORING PLAN FOR THE SITE.  
B PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE THE COUNTY A COPY OF THE NOI WITH A VALID WQID NUMBER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF ADDITIONAL SIGNS AND MARKINGS NOT INCLUDED IN THE SIGNING AND STRIPING PLAN WITHIN THE PROJECT AREAS, OR ON ROADWAYS ADJACENT TO THE PROJECT BOUNDARIES, UPON THE REQUEST OF THE DIRECTOR OF TRANSPORTATION OR HIS DESIGNEE TO IMPROVE TRAFFIC SAFETY ON THE ROADS UNDER THE JURISDICTION OF THE CONTRACTOR.
- EXISTING STORM DRAIN PIPES / CULVERTS (WHETHER TO BE CONNECTED TO, EXTENDED, ADJUSTED, DRAINED TO, OR JUST IN THE PROJECT VICINITY) MUST BE REPAIRED OR REPLACED AND /OR CLEANED TO MAKE THEM FUNCTIONAL AND ACCEPTABLE AS DIRECTED BY THE TRANSPORTATION DEPARTMENT.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO APPLY TO RIVERSIDE COUNTY FLOOD CONTROL (RCFC) FOR PERMITS WHEN ANY STORM DRAIN PIPE NEEDS TO BE CONNECTED WITH A RCFC FACILITY AND ADD PERMIT # \_\_\_\_\_ ON THE PLAN.
- FOR ALL DRIVEWAY RECONSTRUCTION BEYOND THE RIGHT-OF-WAY, PROOF OF DRIVEWAY OWNER NOTIFICATION IS REQUIRED PRIOR TO CONSTRUCTION.

# COUNTY OF RIVERSIDE STREET IMPROVEMENT PLANS FOR PYRITE STREET FROM JURUPA ROAD TO MISSION BLVD. MS 4253



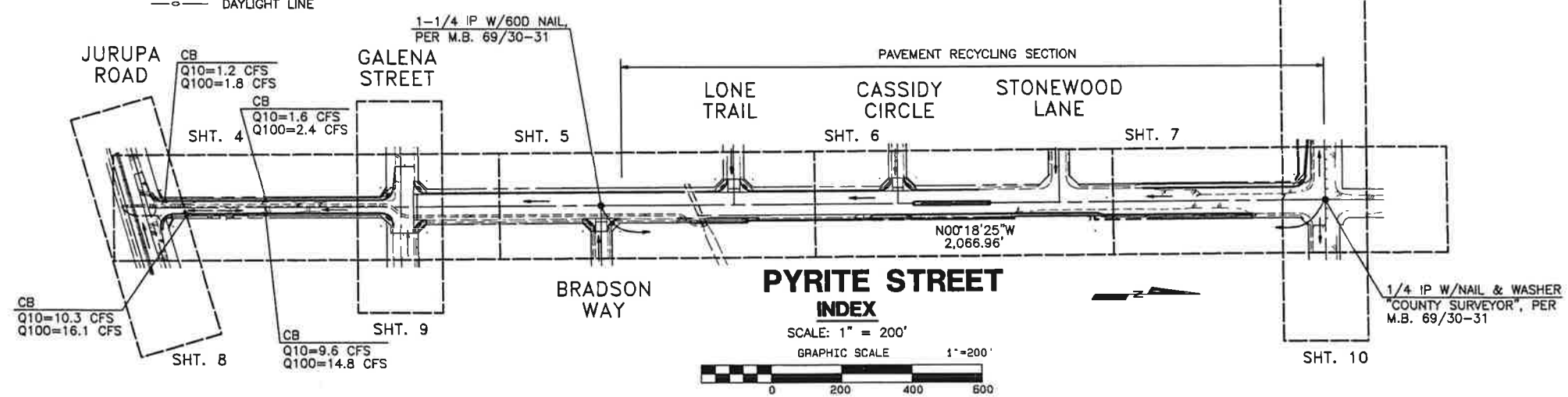
**VICINITY MAP**  
SECTION 11-13, T. 2 S., R. 6 W.

**LEGEND:**

- CONSTRUCT AC OVER BASE (SECTION PER PLAN)
- REMOVE EXISTING AC PAVEMENT
- CONSTRUCT 4" THICK CONCRETE SIDEWALK
- CONSTRUCT 4" THICK ASPHALT CONCRETE SIDEWALK
- CONSTRUCT CONCRETE PAVEMENT SECTION
- REMOVE EXISTING CONCRETE
- SAWCUT EXISTING PAVEMENT
- PROPOSED CURB & GUTTER
- PROPOSED EDGE OF PAVEMENT
- FLOWLINE
- RIGHT OF WAY
- EXISTING ELEVATION (1420.75)
- DESIGN ELEVATION (1420.75)
- CURVE CALLOUT
- DAYLIGHT LINE

**ABBREVIATIONS:**

- AB AGGREGATE BASE
- AC ASPHALT CONCRETE
- BC BEGIN CURVE
- BCR BEGIN CURVE RETURN
- BVC BEGIN VERTICAL CURVE
- C&G CURB & GUTTER
- CL CENTERLINE
- EC END CURVE
- ECR END CURVE RETURN
- EP EDGE OF PAVEMENT
- ETW EDGE OF TRAVELED WAY
- EVC END VERTICAL CURVE
- EX EXISTING
- FS FINISH SURFACE
- LT LEFT
- MVC MIDDLE VERTICAL CURVE
- NTS NOT TO SCALE
- PI POINT OF INTERSECTION
- PP POWER POLE
- PR PROPOSED
- R/W RIGHT OF WAY
- RT RIGHT
- STA STATION
- SW SIDEWALK
- TD TOP OF CURB
- TD TOP OF DIKE
- HMA HOT MIX ASPHALT
- RAD RADIAL
- MWD METROPOLITAN WATER DISTRICT



**BASIS OF BEARINGS:**

BASIS OF BEARINGS IS THE CENTERLINE OF TYROLITE STREET TAKEN AS NORTH 00°13'30" WEST, AS SHOWN BY PARCEL MAP 9214 PER P.M. 37/87, RECORDS OF RIVERSIDE COUNTY, CA.

**PAVEMENT RECYCLING NOTE (FROM BRADSON WAY TO MISSION BOULEVARD)**

THE CONTRACTOR SHALL PULVERIZE EXISTING HMA PAVEMENT, BASE, AND NATIVE SOIL 12" DEEP. THE PULVERIZED MATERIAL WOULD THEN BE MIXED WITH ASPHALT FOAM EMULSION TO CREATE BASE. THE CONTRACTOR SHALL REMOVE AND DISCARD 5" OF NATIVE SOIL BEFORE INSTALLATION OF ASPHALT TREATED BASE AT 95 PERCENT COMPACTION. THE CONTRACTOR SHALL INSTALL 5" OF HOT MIX ASPHALT ON TOP OF THE ASPHALT TREATED BASE.

**NOTICE TO CONTRACTOR:**

THE EXISTENCE AND LOCATIONS OF ALL UNDERGROUND UTILITIES (UTILITY PIPES, STRUCTURES, ETC.) SHOWN ON THESE PLANS (MAIN LINES ONLY - NO SERVICE LATERALS) WERE ASCERTAINED BY A REVIEW OF RECORDS PROVIDED BY THESE MEMBER AGENCIES AND ARE APPROXIMATE. NEITHER THE OWNER, THE ENGINEER NOR THE COUNTY OF RIVERSIDE ASSUMES ANY RESPONSIBILITY FOR UTILITIES NOT SHOWN OR NOT IN THE LOCATION SHOWN.

THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN AND ANY OTHER LINES NOT OF RECORD OR NOT SHOWN ON THESE PLANS. LOCATIONS OF UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF CONSTRUCTION. CALL UNDERGROUND SERVICE ALERT (U.S.A.) 1-800-227-2600 AT LEAST 2 WORKING DAYS PRIOR TO EXCAVATION.

THE QUANTITY ESTIMATE SHOWN HEREON IS FOR THE USE OF GOVERNING AGENCIES IN DETERMINING BOND AMOUNTS AND/OR FEES AND IS NOT TO BE USED FOR BID PURPOSES.

WHERE DAMAGE IS CAUSED BY THE CONTRACTOR'S OPERATION, THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, REPAIR OR REPLACE DAMAGED FACILITIES PROMPTLY IN ACCORDANCE WITH STATE SPECIFICATIONS AND/OR AS DIRECTED BY THE STATE REPRESENTATIVE.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY ALL UTILITY COMPANIES OF ANY PROPOSED MODIFICATIONS FOR RELOCATIONS BEING MADE TO THEIR FACILITIES. METHODS FOR MODIFICATIONS AND RELOCATIONS SHOULD BE DISCUSSED WITH THE UTILITY INSPECTOR PRIOR TO CONSTRUCTION.

**METROPOLITAN WATER DISTRICT (MWD) NOTES**

CONTACT: NOTIFY JOHN OSORNIA, MWD WATER SYSTEM OPERATIONS GROUP, AT LEAST TWO WORKING DAYS PRIOR TO STARTING ANY WORK IN THE VICINITY OF MWD FACILITIES. PHONE NUMBER 951-776-2664.

PIPE LOADING RESTRICTIONS: METROPOLITAN'S PIPELINES AND CONDUITS VARY IN STRUCTURAL STRENGTH, AND SOME ARE NOT ADEQUATE FOR AASHTO H-20 LOADING. THEREFORE, SPECIFIC LOADS OVER THE SPECIFIC SECTIONS OF PIPE OR CONDUIT MUST BE REVIEWED AND APPROVED BY METROPOLITAN. HOWEVER, METROPOLITAN'S PIPELINES ARE TYPICALLY ADEQUATE FOR AASHTO H-20 LOADING PROVIDED THAT THE COVER OVER THE PIPELINE IS NOT LESS THAN FOUR FEET OR THE COVER IS NOT SUBSTANTIALLY INCREASED. IF THE TEMPORARY COVER OVER THE PIPELINE DURING CONSTRUCTION IS BETWEEN THREE AND FOUR FEET, EQUIPMENT MUST BE RESTRICTED TO THAT WHICH IMPOSES LOADS NO GREATER THAN AASHTO H-10. IF THE COVER IS BETWEEN TWO AND THREE FEET, EQUIPMENT MUST BE RESTRICTED TO THAT OF A CATERPILLAR D-4 TRACTOR-TYPE TRACTOR. IF THE COVER IS LESS THAN TWO FEET, ONLY HAND EQUIPMENT MAY BE USED. ALSO, IF THE CONTRACTOR PLANS TO USE ANY EQUIPMENT OVER METROPOLITAN'S PIPELINE WHICH WILL IMPOSE LOADS GREATER THAN AASHTO H-20, IT WILL BE NECESSARY TO SUBMIT THE SPECIFICATIONS OF SUCH EQUIPMENT FOR METROPOLITAN'S REVIEW AND APPROVAL AT LEAST ONE WEEK PRIOR TO ITS USE. CONTACT METROPOLITAN FOR LOADING RESTRICTIONS ON ALL OF METROPOLITAN'S PIPELINES AND CONDUITS.

THE EXISTING COVER OVER THE PIPELINE SHALL BE MAINTAINED UNLESS METROPOLITAN DETERMINES THAT THE PROPOSED CHANGES DO NOT POSE A HAZARD TO THE INTEGRITY OF THE PIPELINE OR AN IMPEDIMENT TO ITS MAINTENANCE.

**BENCHMARK:**

RIVERSIDE COUNTY BM #2 ML 47-1, BRASS DISK, RESET 1968, ELEVATION=827.43 FT, DATUM=NGVD29  
RIVERSIDE COUNTY BM #3 ML 47-2-64, BRASS DISK IN CONCRETE POST ELEVATION=789.537 FT, DATUM=NGVD29

**BONDING NOTE:**

THIS PROJECT IS NOT BONDED. IT IS TO BE INSPECTED BY PERMITS DIVISION UNDER W.O. 6100014.

INDEX OF SHEETS:	
SHEET NO.(S)	DESCRIPTION
1	TITLE SHEET
2-3	STREET SECTIONS AND QUANTITIES
4-10	STREET PLAN & PROFILE
11	DETAILS AND APWA STANDARD PLANS



**NOTE:** WORK CONTAINED WITHIN THESE PLANS SHALL NOT COMMENCE UNTIL AN ENCROACHMENT PERMIT AND/OR A GRADING PERMIT HAS BEEN ISSUED.  
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MARK	BY	DATE	REVISIONS	APPR. DATE	COUNTY

SEAL - ENGINEER

**ALBERT A. WEBB**  
CIVIL ENGINEERS  
3788 McCRAV STREET  
RIVERSIDE, CA. 92506  
PH: (951) 686-1070  
FAX: (951) 788-1256

PREPARED BY: \_\_\_\_\_ R.C.E. NO. C65078  
DATE: \_\_\_\_\_

BENCHMARK: SEE ABOVE

SCALE: H: 1"=200' V: N/A

FOR: RIV. CO. EDA W.O. 10-0153 COUNTY FILE NO. \_\_\_\_\_

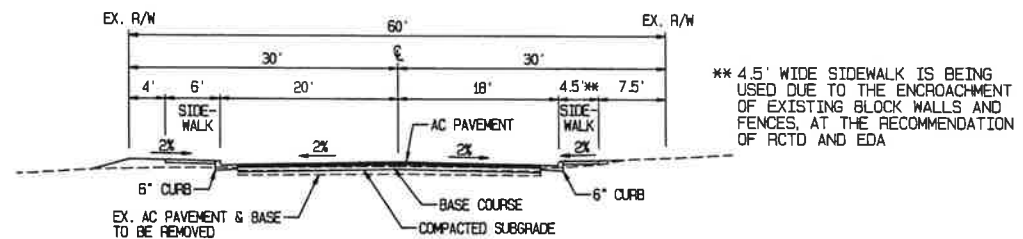
MS 4253 IP 100066 SHEET NO. **1** OF 11 SHEETS

**COUNTY OF RIVERSIDE  
STREET IMPROVEMENT PLANS  
TITLE SHEET**

PLAN CHECK OVERSIGHT ENGINEER  
 DATE SIGNED  
 REGISTRATION NUMBER  
 APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.

4.7  
 6/18/2011

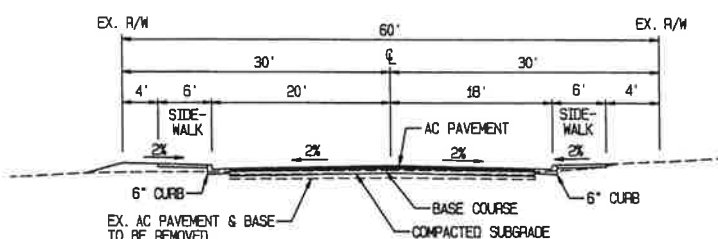




TYPICAL SECTION

MAJOR HIGHWAY - STD. NO. 93 - MODIFIED PER EDA AND RCTD AGREEMENT

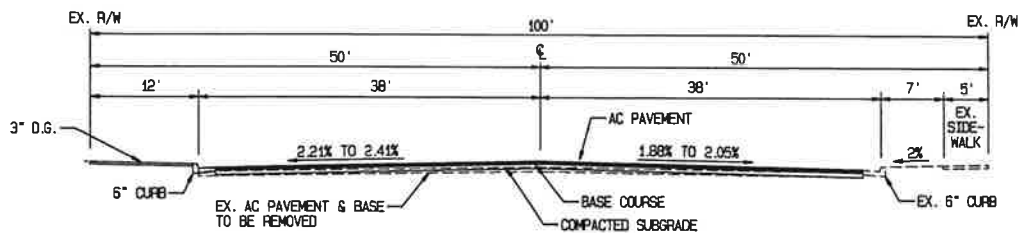
**PYRITE STREET**  
 STA. 10+00.00 TO STA. 13+22.00  
 PRELIMINARY R-VALUE=6  
 TI=7.0, AC=0.30', BASE=1.25'  
 NTS



TYPICAL SECTION

MAJOR HIGHWAY - STD. NO. 93 - MODIFIED PER EDA AND RCTD AGREEMENT

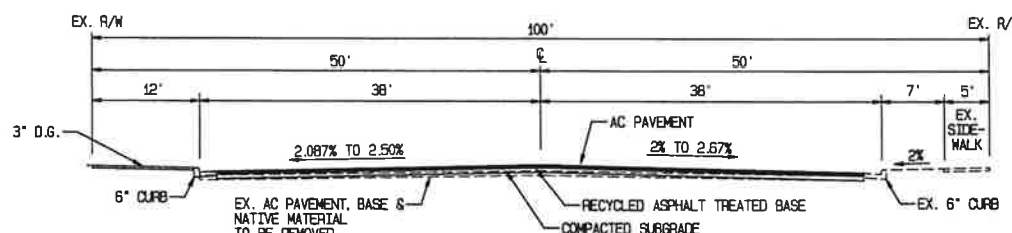
**PYRITE STREET**  
 STA. 13+22.00 TO STA. 17+18.00  
 PRELIMINARY R-VALUE=6  
 TI=7.0, AC=0.30', BASE=1.25'  
 NTS



TYPICAL SECTION

MAJOR HIGHWAY - STD. NO. 92 - MODIFIED PER EDA AND RCTD AGREEMENT

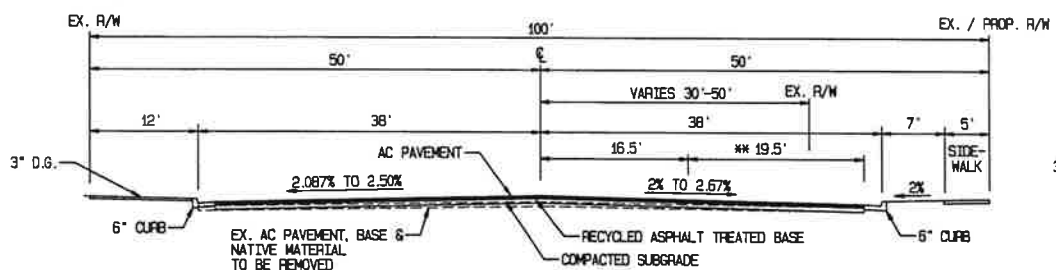
**PYRITE STREET**  
 STA. 17+18.00 TO STA. 23+43.04  
 PRELIMINARY R-VALUE=6  
 TI=7.0, AC=0.30', BASE=1.25'  
 NTS



TYPICAL SECTION

MAJOR HIGHWAY - STD. NO. 92 - MODIFIED PER EDA AND RCTD AGREEMENT

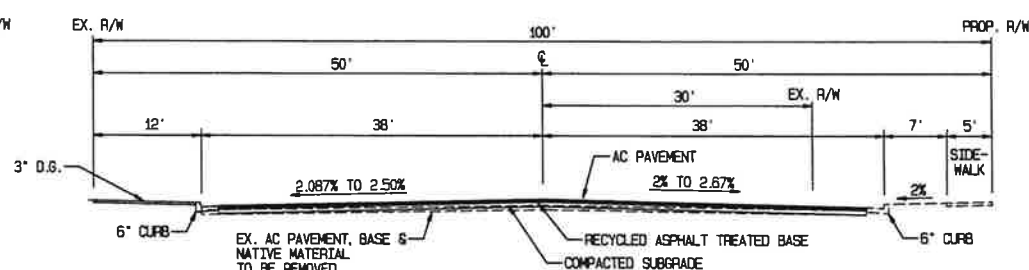
**PYRITE STREET**  
 STA. 23+43.04 TO STA. 25+05.00  
 PRELIMINARY R-VALUE=6  
 TI=9.0, AC=0.42', BASE=1.00'  
 NTS



TYPICAL SECTION

MAJOR HIGHWAY - STD. NO. 92 - MODIFIED PER EDA AND RCTD AGREEMENT

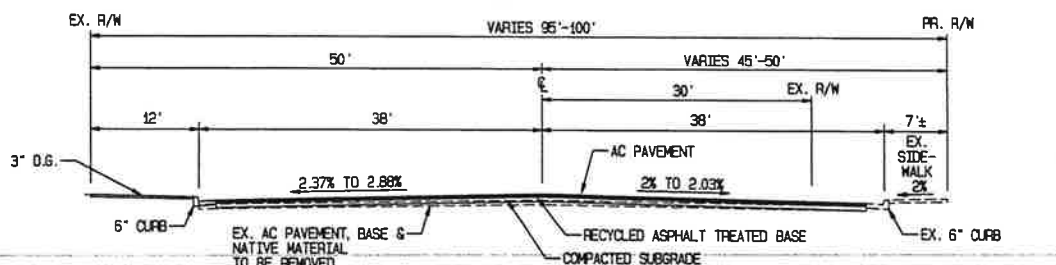
**PYRITE STREET**  
 STA. 25+05.00 TO STA. 26+00.00  
 PRELIMINARY R-VALUE=6  
 TI=9.0, AC=0.42', BASE=1.00'  
 NTS



TYPICAL SECTION

MAJOR HIGHWAY - STD. NO. 92 - MODIFIED PER EDA AND RCTD AGREEMENT

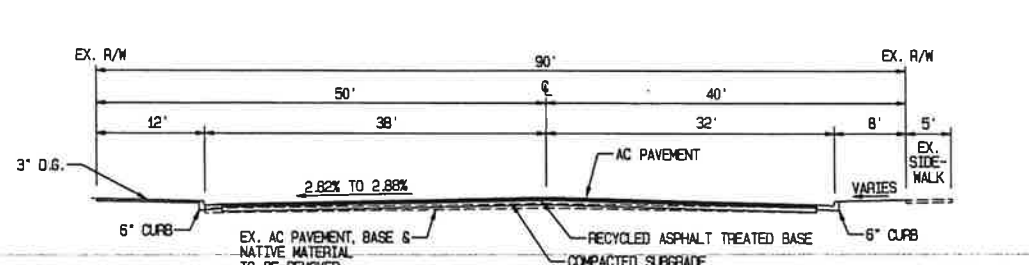
**PYRITE STREET**  
 STA. 26+00.00 TO STA. 27+02.70  
 PRELIMINARY R-VALUE=6  
 TI=9.0, AC=0.42', BASE=1.00'  
 NTS



TYPICAL SECTION

MAJOR HIGHWAY - STD. NO. 92 - MODIFIED PER EDA AND RCTD AGREEMENT

**PYRITE STREET**  
 STA. 27+02.70 TO STA. 30+36.63  
 PRELIMINARY R-VALUE=6  
 TI=9.0, AC=1.42', BASE=1.00'  
 NTS



TYPICAL SECTION

MAJOR HIGHWAY - STD. NO. 92 - MODIFIED PER EDA AND RCTD AGREEMENT

**PYRITE STREET**  
 STA. 30+36.63 TO STA. 31+77.76  
 PRELIMINARY R-VALUE=6  
 TI=9.0, AC=1.42', BASE=1.00'  
 NTS

**SOILS R-VALUE**  
 PER - GEOTECHNICAL INVESTIGATION  
 PREPARED BY C.H.J. INC.  
 DATE - AUG. 27, 2010

**CONSTRUCTION NOTES AND QUANTITY ESTIMATES:**

1	CONSTRUCT 0.42' A.C. OVER 1.00' BASE (SEE P/W/T NOTE)	160,864 SF	4,855 TON / 5,958 CY
2	CONSTRUCT TYPE "A-8" CURB & GUTTER PER RIV. CO. STD. NO. 200		5,060 LF
3	CONSTRUCT TYPE "D" (8") CURB PER RIV. CO. STD. NO. 204		212 LF
4	CONSTRUCT ASPHALT CONCRETE DIKE (6") PER RIV. CO. STD. NO. 212		312 LF
5	CONSTRUCT 4" THICK SIDEWALK PER RIV. CO. STD. NO. 400 & 401 (W=PER PLAN)		14,400 SF
6	CONSTRUCT CURB RAMP PER RIV. CO. STD. 403, CASE A		11 EA
7	CONSTRUCT CURB RAMP PER RIV. CO. STD. 403, CASE B		2 EA
8	CONSTRUCT RESIDENTIAL DRIVEWAY APPROACH PER RIV. CO. STD. NO. 207		1,150 SF
9	CONSTRUCT RESIDENTIAL DRIVEWAY APPROACH PER RIV. CO. STD. NO. 207 (MODIFIED PER DETAIL ON SHT. 2)		375 SF
10	CONSTRUCT COMMERCIAL DRIVEWAY APPROACH PER RIV. CO. STD. NO. 207A		694 SF
11	CONSTRUCT CROSS GUTTER AND SPANDRELS PER RIV. CO. STD. 209		3,800 SF
12	SAWCUT MINIMUM 2' AND JOIN EXISTING PAVEMENT PER DETAIL ON SHEET 3		750 LF
13	SAWCUT EXISTING CONCRETE DRIVEWAY		52 LF
14	CONSTRUCT RESIDENTIAL DRIVEWAY APPROACH PER RIV. CO. STD. NO. 213		108 SF
15	REMOVE/REPLACE EXISTING FENCE IN KIND		500 LF
16	PROTECT IN PLACE (ITEM NOTED ON PLAN)		
17	REMOVE AND DISPOSE OF EXISTING AC PAVEMENT		226,285 SF
18	REMOVE EXISTING CURB RAMP		3 EA
19	REMOVE EXISTING DRIVEWAY		310 SF
20	REMOVE EXISTING SIDEWALK		2,550 SF
21	REMOVE EXISTING CROSS-GUTTER		3,250 SF
22	REMOVE EXISTING CURB/CURB & GUTTER		900 LF
23	REMOVE EXISTING AC DIKE		2,505 LF
24	REMOVE EXISTING CONCRETE		120 SF
25	REMOVE EXISTING DRAINAGE INLET		2 EA
26	REMOVE EXISTING AC SIDEWALK		2,600 SF
27	REMOVE EXISTING TREE		11 EA
28	REMOVE/RELOCATE EXISTING TRAFFIC SIGNAL POLE BY CONTRACTOR		2 EA
29	REMOVE/RELOCATE EXISTING TRAFFIC SIGNAL PULLBOX BY CONTRACTOR		7 EA
30	REMOVE/RELOCATE EXISTING POWER POLE BY EDISON		3 EA
31	REMOVE/RELOCATE EXISTING GUY ANCHOR BY EDISON		2 EA
32	RELOCATE EXISTING AIR VALVE BY JCSD		1 EA
33	RELOCATE EXISTING FIRE HYDRANT BY JCSD		1 EA
34	RELOCATE EXISTING BOLLARDS BY JCSD		2 EA
35	RELOCATE EXISTING WATER METER TO BACK OF SIDEWALK OR TO R/W, EX. LATERAL TO BE REMOVED AND RE-CONSTRUCTED FROM MAIN TO METER BY JCSD		1 EA
36	RELOCATE EXISTING STREET LIGHT BY EDISON		2 EA
37	RELOCATE EXISTING ELECTRIC PULLBOX BY EDISON		1 EA
38	RELOCATE EXISTING TELEPHONE RISER BY PAC BELL		1 EA
39	RELOCATE EXISTING COMMUNICATION BOX BY CHARTER		2 EA
40	RELOCATE EXISTING MAILBOX		6 EA
41	ADJUST EXISTING WATER VALVE TO GRADE BY JCSD		15 EA
42	ADJUST EXISTING WATER METER TO GRADE BY JCSD		4 EA
43	ADJUST EXISTING SEWER MANHOLE TO GRADE BY JCSD		11 EA
44	ADJUST EXISTING SEWER CLEANOUT TO GRADE BY JCSD		1 EA
45	ADJUST EXISTING SEWER MANHOLE TO GRADE BY SAWPA		1 EA
46	ADJUST EXISTING SEWER MANHOLE TO GRADE BY DTSC		5 EA
47	ADJUST EXISTING FLOW METER TO GRADE BY DTSC		1 EA
48	ADJUST EXISTING MONITORING WELL TO GRADE BY DTSC		4 EA
49	ADJUST EXISTING ISOLATION VALVE TO GRADE BY DTSC		1 EA
50	PROTECT IN PLACE EXISTING MWD WATER MANHOLE		1 EA
51	REMOVE/RELOCATE EXISTING SIGN		18 EA
52	RELOCATE/REPLACE EXISTING GATE IN KIND (CONTRACTOR TO COORDINATE WITH PROPERTY OWNER)		5 EA
53	CONSTRUCT CURB RAMP PER APWA STD. PLAN 111-4, TYPE 5 (SEE PLAN ON SHT. 11)		1 EA
54	RELOCATE EX. WROUGHT IRON FENCE/GATE TO PROPOSED R/W		460 LF
55	CONSTRUCT AC SIDEWALK (W=5', D=4")		1,135 SF
56	CONSTRUCT CURB INLET CATCH BASIN PER RIV. CO. STD. NO. 300 (SIZE PER PLAN) AND GUTTER DEPRESSION PER RIV. CO. STD. NO. 311 (CASE C)		4 EA
57	RELOCATE EXISTING 8" WATER LINE (IN CONFLICT WITH PROP. CATCH BASIN) BY JCSD		2 EA
58	RELOCATE EXISTING 3" GAS LINE (IN CONFLICT WITH PROP. CATCH BASIN) BY SO. CAL. GAS		2 EA
59	INSTALL 4" RED CONCRETE		874 SF
60	CONSTRUCT UNDER SIDEWALK DRAIN PER RIV. CO. STD. NO. 309		1 EA
61	CONSTRUCT 0.30' A.C. OVER 1.25' A.B. CL. II		83,400 SF 1,798 TON / 3,861 CY
62	CONSTRUCT 0.42' A.C. OVER BASE, VARIES 0.33' TO 1.00' (SEE P/W/T NOTE)		576 SF 18 TON / 15 CY
63	INSTALL 3" DECOMPOSED GRANITE		200 CY
64	REMOVE/RELOCATE EXISTING POWER POLE BY AT&T		3 EA
65	REMOVE/RELOCATE EXISTING POWER POLE BY OWNER (BECHTEL CORP.)		1 EA
66	RELOCATE EXISTING ELECTRIC PULLBOX BY BECHTEL		1 EA
67	RELOCATE EXISTING ELECTRIC METER BY EDISON		1 EA
68			

PLAN CHECK OVERSIGHT ENGINEER  
 REGISTRATION NUMBER  
 DATE SIGNED  
 APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.

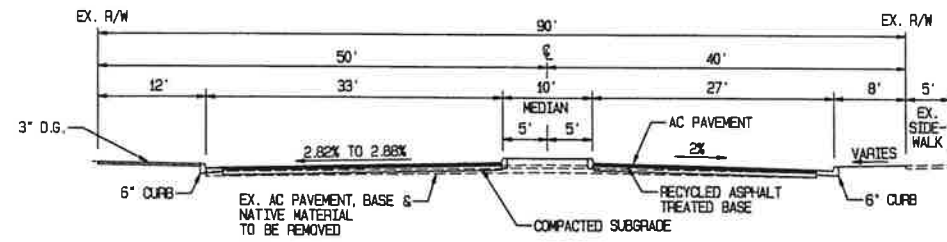


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MARK	BY	DATE	REVISIONS
ENGINEER			
APPR	DATE	COUNTY	

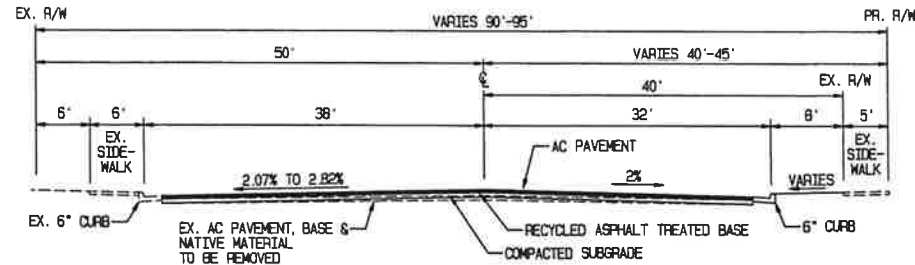
SEAL - ENGINEER  
 ALBERT A. WEBB ASSOCIATES  
 CIVIL ENGINEERS  
 3788 McCRAY STREET  
 RIVERSIDE, CA. 92506  
 PH: (951) 686-1070  
 FAX: (951) 788-1256  
 PREPARED BY: R.C.E. NO. C65078  
 DATE

BENCHMARK: SEE SHEET 1  
 MS 4253 IP 100066  
 COUNTY OF RIVERSIDE  
 STREET IMPROVEMENT PLANS  
 SECTIONS, DETAILS AND QUANTITIES  
 FOR: RIV. CO. EDA W.O. 10-0153 COUNTY FILE NO.  
 SHEET NO. 2 OF 11 SHEETS



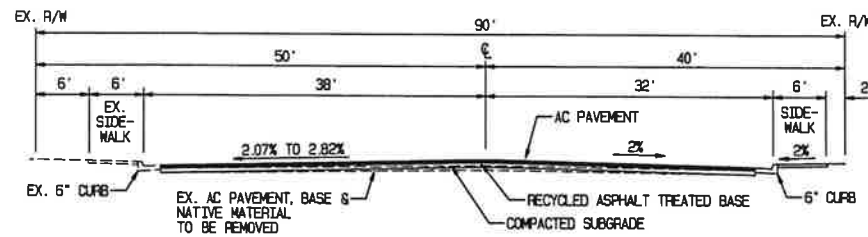
**TYPICAL SECTION**

MAJOR HIGHWAY - STD. NO. 92 - MODIFIED PER EDA AND RCTD AGREEMENT  
**PYRITE STREET**  
 STA. 31+77.75 TO STA. 34+00.00  
 PRELIMINARY R-VALUE=6  
 TI=9.0, AC=1.42', BASE=1.00'  
 NTS



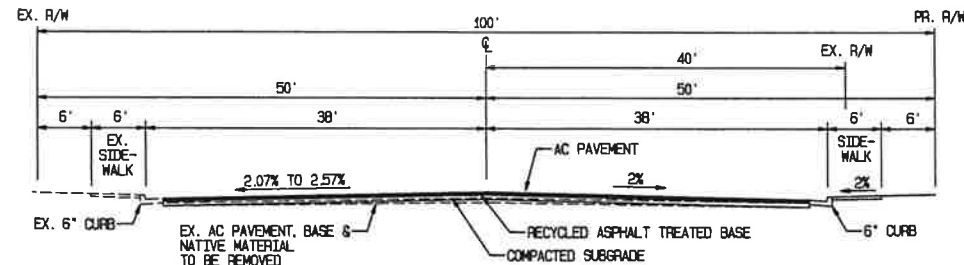
**TYPICAL SECTION**

MAJOR HIGHWAY - STD. NO. 92 - MODIFIED PER EDA AND RCTD AGREEMENT  
**PYRITE STREET**  
 STA. 34+00.00 TO STA. 34+67.42  
 PRELIMINARY R-VALUE=6  
 TI=9.0, AC=0.42', BASE=1.00'  
 NTS



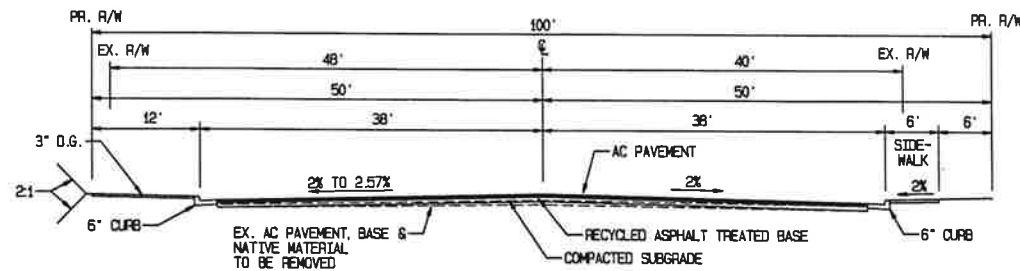
**TYPICAL SECTION**

MAJOR HIGHWAY - STD. NO. 92 - MODIFIED PER EDA AND RCTD AGREEMENT  
**PYRITE STREET**  
 STA. 34+67.42 TO STA. 36+97.60  
 PRELIMINARY R-VALUE=6  
 TI=9.0, AC=0.42', BASE=1.00'  
 NTS



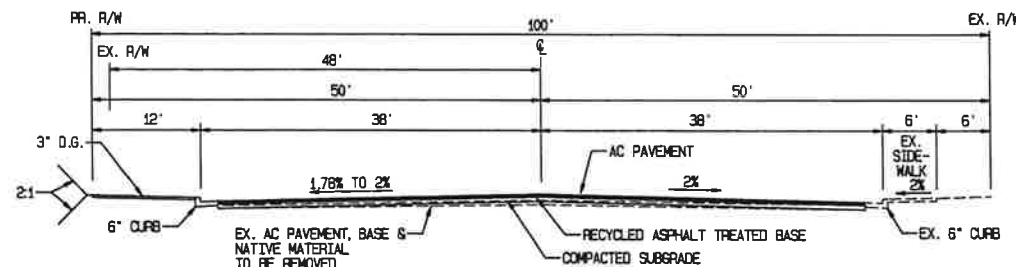
**TYPICAL SECTION**

MAJOR HIGHWAY - STD. NO. 92 - MODIFIED PER EDA AND RCTD AGREEMENT  
**PYRITE STREET**  
 STA. 36+97.60 TO STA. 38+35.56  
 PRELIMINARY R-VALUE=6  
 TI=9.0, AC=0.42', BASE=1.00'  
 NTS



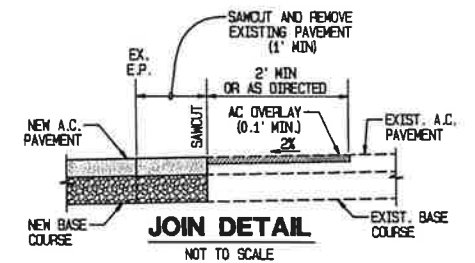
**TYPICAL SECTION**

MAJOR HIGHWAY - STD. NO. 92 - MODIFIED PER EDA AND RCTD AGREEMENT  
**PYRITE STREET**  
 STA. 38+35.56 TO STA. 41+46.98  
 PRELIMINARY R-VALUE=6  
 TI=9.0, AC=0.42', BASE=1.00'  
 NTS



**TYPICAL SECTION**

MAJOR HIGHWAY - STD. NO. 92 - MODIFIED PER EDA AND RCTD AGREEMENT  
**PYRITE STREET**  
 STA. 41+46.98 TO STA. 43+56.95  
 PRELIMINARY R-VALUE=6  
 TI=9.0, AC=0.42', BASE=1.00'  
 NTS



**SOILS R-VALUE**  
 PER - GEOTECHNICAL INVESTIGATION  
 PREPARED BY C.H.J. INC.  
 DATE - AUG. 27, 2010

C:\2010\10-0153\DWG\PRO\Design\10-015351.dwg/28/28/2011 11:26:49AM

DATE SIGNED  
 REGISTRATION NUMBER  
 PLAN CHECK OVERSIGHT ENGINEER  
 APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.



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SEAL - ENGINEER

**ALBERT A. WEBB**  
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 PH: (951) 686-1070  
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 PREPARED BY: \_\_\_\_\_ R.C.E. NO. C65078  
 DATE: \_\_\_\_\_

BENCHMARK:  
 SEE SHEET 1  
 SCALE:  
 H: N/A V: N/A

MS 4253	IP 100066	SHEET NO.
COUNTY OF RIVERSIDE		<b>3</b>
STREET IMPROVEMENT PLANS		OF 11 SHEETS
<b>SECTIONS</b>		
FOR: RIV. CO. EDA	W.O. 10-0153	COUNTY FILE NO.



EMERGENCY ESCAPE NOTE:  
THE OVERFLOW FOR THE CATCH BASIN  
AT ST. STA. 10+47.89 WILL ESCAPE  
SOUTH AROUND THE SOUTHWEST  
CURB RETURN (772.70 FL)  
PRIOR TO PONDING TO R/W AT ST.  
STA. 10+47.89 (773.27 FS)

EMERGENCY ESCAPE NOTE:  
THE OVERFLOW FOR THE CATCH BASIN  
AT ST. STA. 13+33.93 WILL ESCAPE  
SOUTH AT ST. STA. 11+95.28 (773.99 FL)  
PRIOR TO PONDING TO R/W AT ST.  
STA. 13+33.93 (774.15 FS)

EMERGENCY ESCAPE NOTE:  
THE OVERFLOW FOR THE CATCH BASIN  
AT ST. STA. 11+10.00 WILL ESCAPE  
OVER THE ST. C/L AT ST. STA.  
10+18.72 (773.31 FS) PRIOR TO  
PONDING TO R/W AT ST.  
STA. 11+10.00 (773.87 FS)

EMERGENCY ESCAPE NOTE:  
THE OVERFLOW FOR THE CATCH BASIN  
AT ST. STA. 13+33.93 WILL ESCAPE  
SOUTH AT ST. STA. 11+95.28 (774.04 FL)  
PRIOR TO PONDING TO R/W AT ST.  
STA. 13+33.93 (774.19 FS)

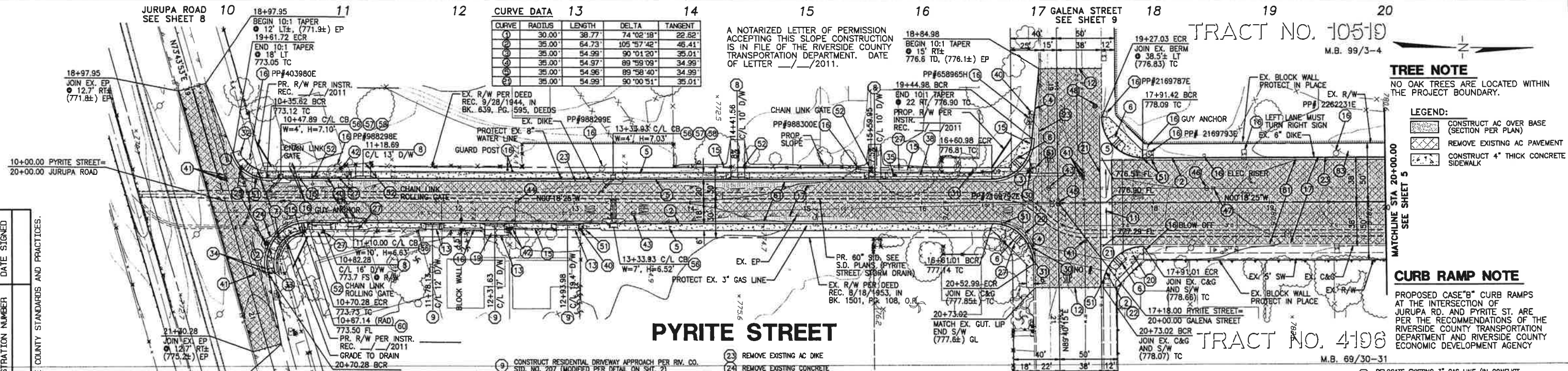
PROFILE SCALES  
HORIZ. 1"=40'  
VERT. 1"=4'

DESIGN SPEED = 60 MPH

DESIGN SPEED = 55 MPH

CURVE	RADIUS	LENGTH	DELTA	TANGENT
1	30.00	38.77	74°02'18"	22.82
2	35.00	64.73	105°57'42"	46.41
3	35.00	54.99	90°01'20"	35.01
4	35.00	54.97	89°59'09"	34.99
5	35.00	54.96	89°58'40"	34.99
6	35.00	54.99	90°00'51"	35.01

A NOTARIZED LETTER OF PERMISSION  
ACCEPTING THIS SLOPE CONSTRUCTION  
IS IN FILE OF THE RIVERSIDE COUNTY  
TRANSPORTATION DEPARTMENT. DATE  
OF LETTER 11/20/11.



**TREE NOTE**  
NO OAK TREES ARE LOCATED WITHIN  
THE PROJECT BOUNDARY.

**LEGEND:**

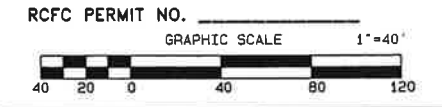
**CURB RAMP NOTE**  
PROPOSED CASE "B" CURB RAMPS  
AT THE INTERSECTION OF  
JURUPA RD. AND PYRITE ST. ARE  
PER THE RECOMMENDATIONS OF THE  
RIVERSIDE COUNTY TRANSPORTATION  
DEPARTMENT AND RIVERSIDE COUNTY  
ENVIRONMENTAL DEVELOPMENT AGENCY

- CONSTRUCTION NOTES**
- CONSTRUCT TYPE "A-6" CURB & GUTTER PER RV. CO. STD. NO. 200
  - CONSTRUCT ASPHALT CONCRETE DIKE (6") PER RV. CO. STD. NO. 212
  - CONSTRUCT 4" THICK SIDEWALK PER RV. CO. STD. NO. 400 & 401 (W=PER PLAN)
  - CONSTRUCT CURB RAMP PER RV. CO. STD. 403, CASE A
  - CONSTRUCT CURB RAMP PER RV. CO. STD. 403, CASE B
  - CONSTRUCT RESIDENTIAL DRIVEWAY APPROACH PER RV. CO. STD. NO. 207

- CONSTRUCT RESIDENTIAL DRIVEWAY APPROACH PER RV. CO. STD. NO. 207 (MODIFIED PER DETAIL ON SHIT. 2)
- CONSTRUCT CROSS GUTTER & SPANDRELS PER RV. CO. STD. 209 PER DETAIL ON SHEET 3
- SAW CUT EXISTING CONCRETE DRIVEWAY
- REMOVE/REPLACE EXISTING FENCE IN KIND
- PROTECT IN PLACE (ITEM NOTED ON PLAN)
- REMOVE AND DISPOSE OF EXISTING AC PAVEMENT
- REMOVE EXISTING SIDEWALK
- REMOVE EXISTING CROSS-GUTTER
- REMOVE EXISTING CURB/CURB & GUTTER

- REMOVE EXISTING AC DIKE
- REMOVE EXISTING CONCRETE
- REMOVE EXISTING DRAINAGE INLET
- REMOVE EXISTING TREE
- REMOVE/RELOCATE EXISTING POWER POLE BY EDISON
- REMOVE/RELOCATE EXISTING GUY ANCHOR BY EDISON
- RELOCATE EXISTING AIR VALVE BY JCSO
- RELOCATE EXISTING FIRE HYDRANT BY JCSO
- RELOCATE EXISTING BOLLARDS BY JCSO
- RELOCATE EXISTING WATER METER TO BACK OF SIDEWALK OR TO R/W, EX. LATERAL TO BE REMOVED AND RE-CONSTRUCTED FROM MAIN TO METER BY JCSO
- RELOCATE EXISTING TELEPHONE RISER BY PAC BELL
- RELOCATE EXISTING MAILBOX
- ADJUST EXISTING WATER VALVE TO GRADE BY JCSO
- ADJUST EXISTING WATER METER TO GRADE BY JCSO
- ADJUST EXISTING SEWER MANHOLE TO GRADE BY JCSO
- ADJUST EXISTING SEWER CLEANOUT TO GRADE BY JCSO
- ADJUST EXISTING SEWER MANHOLE TO GRADE BY SAMPA
- ADJUST EXISTING SEWER MANHOLE TO GRADE BY DTSC

- ADJUST EXISTING FLOW METER TO GRADE BY DTSC
- ADJUST EXISTING MONITORING WELL TO GRADE BY DTSC
- REMOVE/RELOCATE EXISTING SIGN
- RELOCATE/REPLACE EXISTING GATE IN KIND (CONTRACTOR TO COORDINATE WITH PROPERTY OWNER)
- CONSTRUCT CURB INLET CATCH BASIN PER RV. CO. STD. NO. 300 (SIZE PER PLAN) AND GUTTER DEPRESSION PER RV. CO. STD. NO. 311 (CASE C)
- RELOCATE EXISTING 8" WATER LINE (IN CONFLICT WITH PROP. CATCH BASIN) BY JCSO



**NOTE:**  
WORK CONTAINED WITHIN THESE PLANS SHALL NOT COMMENCE UNTIL AN ENCROACHMENT PERMIT AND/OR A GRADING PERMIT HAS BEEN ISSUED.

THE PRIVATE ENGINEER SIGNING THESE PLANS IS RESPONSIBLE FOR ASSURING THE ACCURACY AND ACCEPTABILITY OF THE DESIGN HEREON. IN THE EVENT OF DISCREPANCIES ARISING AFTER COUNTY APPROVAL OR DURING CONSTRUCTION, THE PRIVATE ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING AN ACCEPTABLE SOLUTION AND REVISING THE PLANS FOR APPROVAL BY THE COUNTY.

MARK BY	DATE	REVISIONS	APPR. DATE	COUNTY
ENGINEER				

SEAL - ENGINEER

ALBERT A. CIVIL ENGINEERS  
**WEBB ASSOCIATES**  
 3788 McCRAY STREET  
 RIVERSIDE, CA. 92506  
 PH: (951) 686-1070  
 FAX: (951) 788-1256

PREPARED BY: R.C.E. NO. C65078  
 DATE

BENCHMARK:  
 SEE SHEET 1

SCALE:  
 H: 1"=40' V: 1"=4'

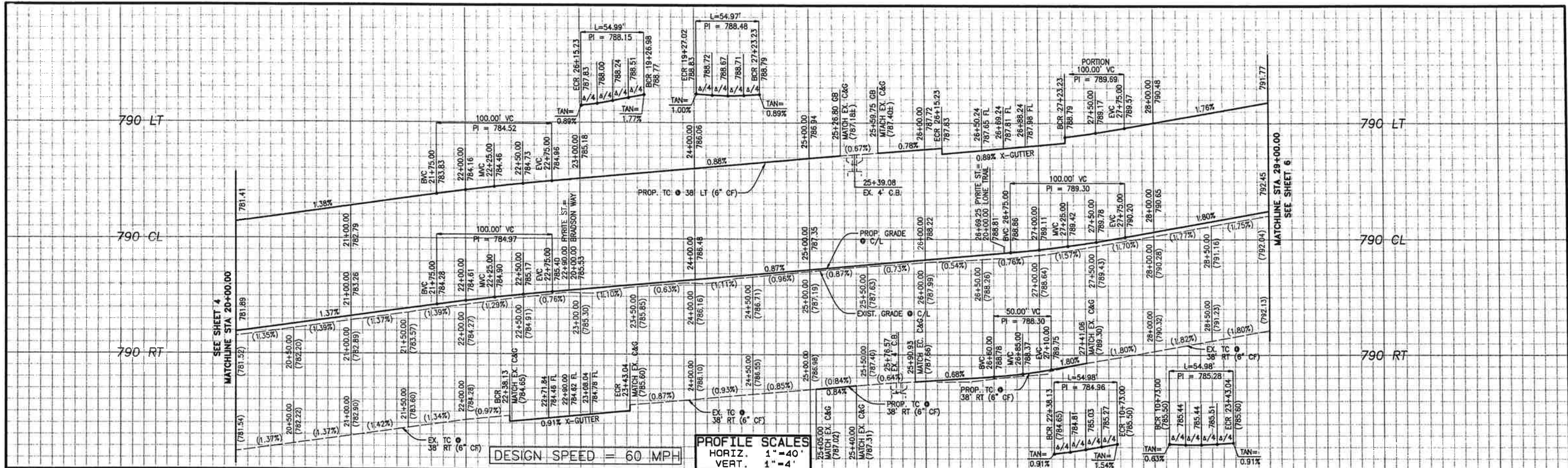
MS 4253 IP 100066 SHEET NO. 4 OF 11 SHEETS

COUNTY OF RIVERSIDE  
**STREET IMPROVEMENT PLANS**  
**PYRITE STREET**  
 STA. 10+00.00 TO STA. 18+00.00

FOR: RIV. CO. EDA W.O. 10-0153 COUNTY FILE NO.

PLAN CHECK OVERSIGHT ENGINEER  
 REGISTRATION NUMBER  
 DATE SIGNED  
 APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.

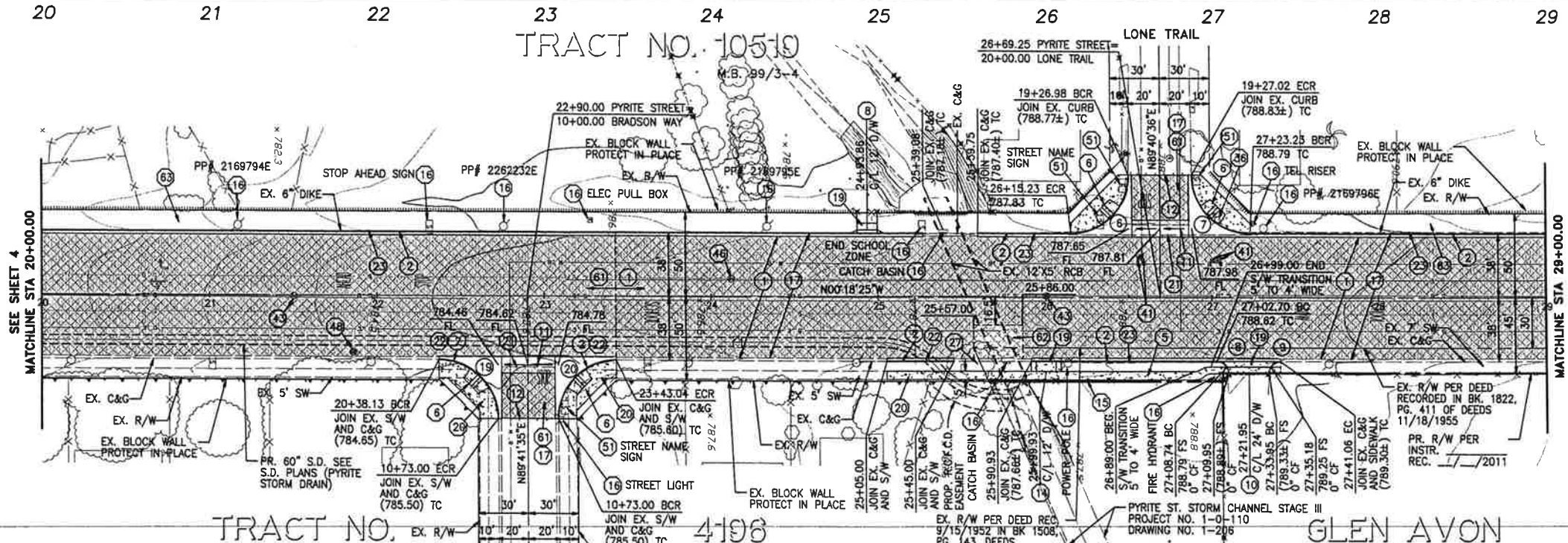




DESIGN SPEED = 60 MPH  
 HORIZ. 1" = 40'  
 VERT. 1" = 4'

**TREE NOTE**

NO OAK TREES ARE LOCATED WITHIN THE PROJECT BOUNDARY.



**NOTE**

EXISTING FINISH SURFACE FOR LONE TRAIL AND BRADSON WAY IS A.C. PAVEMENT

**LEGEND:**

- CONSTRUCT AC OVER BASE (SECTION PER PLAN)
- REMOVE EXISTING AC PAVEMENT
- CONSTRUCT 4" THICK CONCRETE SIDEWALK
- CONSTRUCT CONCRETE PAVEMENT SECTION

**CURVE DATA**

CURVE	RADIUS	LENGTH	DELTA	TANGENT
1	35.00'	54.99'	90°00'59"	35.01'
2	35.00'	54.97'	89°59'01"	34.99'
3	7.25'	11.39'	90°00'00"	7.25'
4	7.09'	11.16'	90°11'08"	7.11'
5	35.00'	54.98'	90°00'00"	35.00'
6	35.00'	54.98'	90°00'00"	35.00'

**CONSTRUCTION NOTES**

- 1 CONSTRUCT 0.42' A.C. OVER 1.00' BASE (SEE PAVEMENT NOTE)
- 2 CONSTRUCT TYPE "A-6" CURB & GUTTER PER RIV. CO. STD. NO. 200
- 3 CONSTRUCT 4" THICK SIDEWALK PER RIV. CO. STD. NO. 400 & 401 (W=PER PLAN)
- 4 CONSTRUCT CURB RAMP PER RIV. CO. STD. 403, CASE A
- 5 CONSTRUCT RESIDENTIAL DRIVEWAY APPROACH PER RIV. CO. STD. NO. 207
- 6 CONSTRUCT COMMERCIAL DRIVEWAY APPROACH PER RIV. CO. STD. NO. 207A
- 7 CONSTRUCT CROSS GUTTER & SPANDRELS PER RIV. CO. STD. 209
- 8 SAWCUT MINIMUM 2" AND JOIN EXISTING PAVEMENT PER DETAIL ON SHEET 3
- 9 CONSTRUCT RESIDENTIAL DRIVEWAY APPROACH PER RIV. CO. STD. NO. 213
- 10 PROTECT IN PLACE (ITEM NOTED ON PLAN)
- 11 REMOVE AND DISPOSE OF EXISTING AC PAVEMENT
- 12 REMOVE EXISTING DRIVEWAY
- 13 REMOVE EXISTING SIDEWALK
- 14 REMOVE EXISTING CROSS-GUTTER
- 15 REMOVE EXISTING CURB/CURB & GUTTER
- 16 REMOVE EXISTING AC DIKE
- 17 REMOVE EXISTING TREE
- 18 RELOCATE EXISTING STREET LIGHT BY EDISON
- 19 ADJUST EXISTING WATER VALVE TO GRADE BY JCSO
- 20 ADJUST EXISTING SEWER MANHOLE TO GRADE BY JCSO
- 21 ADJUST EXISTING SEWER MANHOLE TO GRADE BY DTSC
- 22 ADJUST EXISTING MONITORING WELL TO GRADE BY DTSC
- 23 REMOVE/RELOCATE EXISTING SIGN
- 24 CONSTRUCT 0.30' A.C. OVER 1.25' A.B. CL II
- 25 CONSTRUCT 0.42' A.C. OVER BASE, VARIES 0.33' TO 1.00' (SEE PAV'T NOTE)
- 26 INSTALL 3" DECOMPOSED GRANITE

**NOTE:**

WORK CONTAINED WITHIN THESE PLANS SHALL NOT COMMENCE UNTIL AN ENCROACHMENT PERMIT AND/OR A GRADING PERMIT HAS BEEN ISSUED.

THE PRIVATE ENGINEER SIGNING THESE PLANS IS RESPONSIBLE FOR ASSURING THE ACCURACY AND ACCEPTABILITY OF THE DESIGN HEREON. IN THE EVENT OF DISCREPANCIES ARISING AFTER COUNTY APPROVAL OR DURING CONSTRUCTION, THE PRIVATE ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING AN ACCEPTABLE SOLUTION AND REVISING THE PLANS FOR APPROVAL BY THE COUNTY.

MARK	BY	DATE	REVISIONS	APPR.	DATE

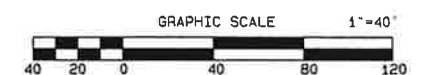
SEAL - ENGINEER



**ALBERT A. WEBB ASSOCIATES**  
 CIVIL ENGINEERS  
 3788 McCRAY STREET  
 RIVERSIDE, CA. 92506  
 PH: (951) 686-1070  
 FAX: (951) 788-1256  
 PREPARED BY: R.C.E. NO. C65078  
 DATE: \_\_\_\_\_

BENCHMARK: SEE SHEET 1  
 SCALE: H: 1"=40' V: 1"=4'

MS 4253 IP 10066 SHEET NO. 5  
 COUNTY OF RIVERSIDE  
 STREET IMPROVEMENT PLANS  
 PYRITE STREET  
 STA. 10+00.00 TO STA. 18+00.00  
 OF 11 SHEETS  
 FOR: RIV. CO. EDA W.O. 10-0153 COUNTY FILE NO.

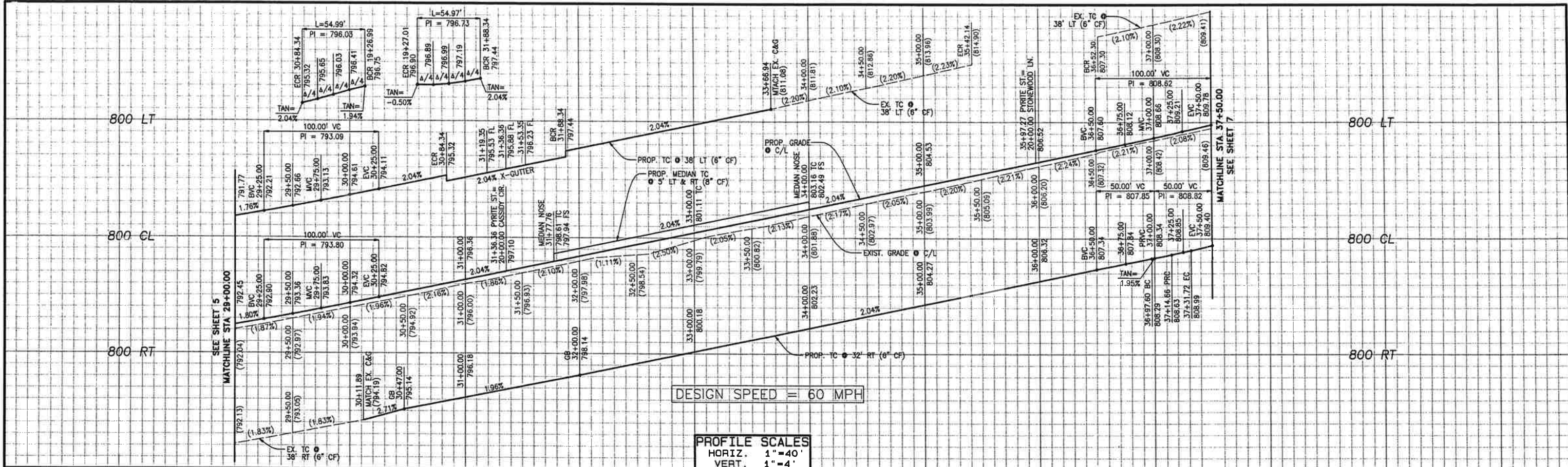


PLAN CHECK OVERSIGHT ENGINEER DATE SIGNED  
 APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.  
 REGISTRATION NUMBER  
 DATE SIGNED

**DIG ALERT**  
 DIAL BEFORE YOU DIG  
 TWO WORKING DAYS BEFORE YOU DIG  
 TOLL FREE 1-800-227-2600  
 A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

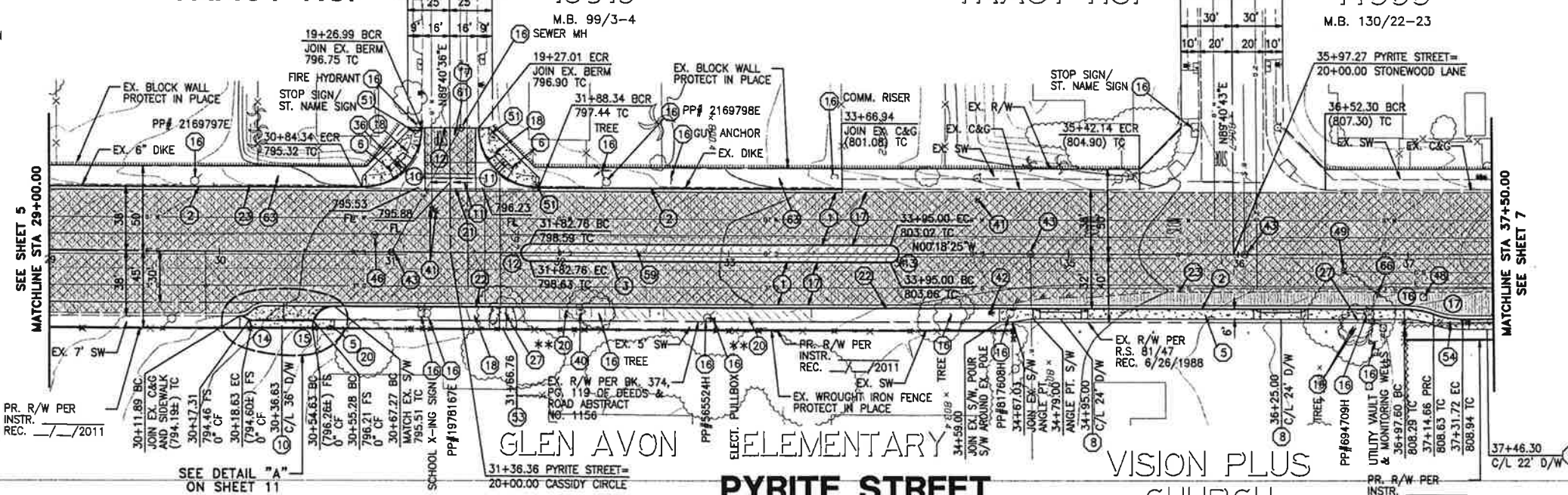
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TRACT NO. 10519 M.B. 99/3-4  
 TRACT NO. 14060 M.B. 130/22-23

**TREE NOTE**  
 NO OAK TREES ARE LOCATED WITHIN THE PROJECT BOUNDARY.



\*\* THE EXISTING CONCRETE BETWEEN THE SIDEWALK AND CURB IS TO BE REMOVED AND NOT REPLACED AT THE REQUEST OF THE EDA IN ORDER TO DETOUR VEHICULAR DROP OFFS IN FRONT OF THE SCHOOL.

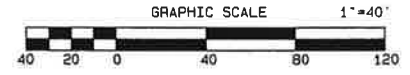
**LEGEND:**

- Construct AC over base (section per plan)
- Remove existing AC pavement
- Construct 4" thick concrete sidewalk
- Remove existing concrete

**CURVE DATA**

CURVE	RADIUS	LENGTH	DELTA	TANGENT
(10)	35.00'	54.99'	90°00'59"	35.01'
(11)	35.00'	54.97'	89°59'01"	34.99'
(12)	5.00'	15.71'	180°00'00"	
(13)	5.00'	15.71'	180°00'00"	
(14)	6.73'	10.58'	90°04'22"	6.74'
(15)	12.64'	19.86'	90°00'00"	12.64'
(16)	50.00'	17.41'	19°56'50"	8.79'
(17)	50.00'	17.41'	19°56'50"	8.79'

- CONSTRUCTION NOTES**
- (1) CONSTRUCT 0.42' A.C. OVER 1.00' BASE (SEE PAVEMENT NOTE)
  - (2) CONSTRUCT TYPE "A-6" CURB & GUTTER PER RIV. CO. STD. NO. 200
  - (3) CONSTRUCT TYPE "D" (8") CURB PER RIV. CO. STD. NO. 204
  - (4) CONSTRUCT ASPHALT CONCRETE DIKE (6") PER RIV. CO. STD. NO. 212
  - (5) CONSTRUCT 4" THICK SIDEWALK PER RIV. CO. STD. NO. 400 & 401 (W-PER PLAN)
  - (6) CONSTRUCT CURB RAMP PER RIV. CO. STD. 403, CASE A
  - (8) CONSTRUCT RESIDENTIAL DRIVEWAY APPROACH PER RIV. CO. STD. NO. 207
  - (10) CONSTRUCT COMMERCIAL DRIVEWAY APPROACH PER RIV. CO. STD. NO. 207A
  - (11) CONSTRUCT CROSS GUTTER & SPANDRELS PER RIV. CO. STD. 208
  - (12) SAWCUT MINIMUM 2' AND JOIN EXISTING PAVEMENT PER DETAIL ON SHEET 3
  - (16) PROTECT IN PLACE (ITEM NOTED ON PLAN)
  - (17) REMOVE AND DISPOSE OF EXISTING AC PAVEMENT
  - (18) REMOVE EXISTING CURB RAMP
  - (20) REMOVE EXISTING SIDEWALK
  - (21) REMOVE EXISTING CROSS-GUTTER
  - (22) REMOVE EXISTING CURB/CURB & GUTTER
  - (23) REMOVE EXISTING AC DIKE
  - (27) REMOVE EXISTING TREE
  - (36) RELOCATE EXISTING STREET LIGHT BY EDISON
  - (40) RELOCATE EXISTING MAILBOX
  - (41) ADJUST EXISTING WATER VALVE TO GRADE BY JCSJ
  - (42) ADJUST EXISTING WATER METER TO GRADE BY JCSJ
  - (43) ADJUST EXISTING SEWER MANHOLE TO GRADE BY JCSJ
  - (46) ADJUST EXISTING SEWER MANHOLE TO GRADE BY DTSC
  - (48) ADJUST EXISTING MONITORING WELL TO GRADE BY DTSC
  - (49) ADJUST EXISTING ISOLATION VALVE TO GRADE BY DTSC
  - (51) REMOVE/RELOCATE EXISTING SIGN
  - (53) CONSTRUCT CURB RAMP PER APWA STD. PLAN 111-2, TYPE 5 (SEE PLAN ON SHT. 10)
  - (54) RELOCATE EX. WROUGHT IRON FENCE/GATE TO PROPOSED R/W
  - (59) INSTALL 4" RED CONCRETE
  - (61) CONSTRUCT 0.30' A.C. OVER 1.25' A.B. CL. II
  - (63) INSTALL 3" DECOMPOSED GRANITE
  - (66) RELOCATE EXISTING ELECTRIC PULLBOX BY BECHTEL



DATE SIGNED \_\_\_\_\_  
 REGISTRATION NUMBER \_\_\_\_\_  
 PLAN CHECK OVERSIGHT ENGINEER \_\_\_\_\_

APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.

**DIGALERT**  
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 TWO WORKING DAYS BEFORE YOU DIG  
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 A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

**NOTE:**  
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MARK	BY	DATE	REVISIONS	APPR. DATE	COUNTY

SEAL - ENGINEER

**ALBERT A. WEBB ASSOCIATES**  
 CIVIL ENGINEERS  
 3788 MCCRAY STREET  
 RIVERSIDE, CA. 92506  
 PH: (951) 686-1070  
 FAX: (951) 788-1256

PREPARED BY: \_\_\_\_\_ R.C.E. NO. C65078  
 DATE: \_\_\_\_\_

BENCHMARK: SEE SHEET 1  
 SCALE: H: 1"=40' V: 1"=4'

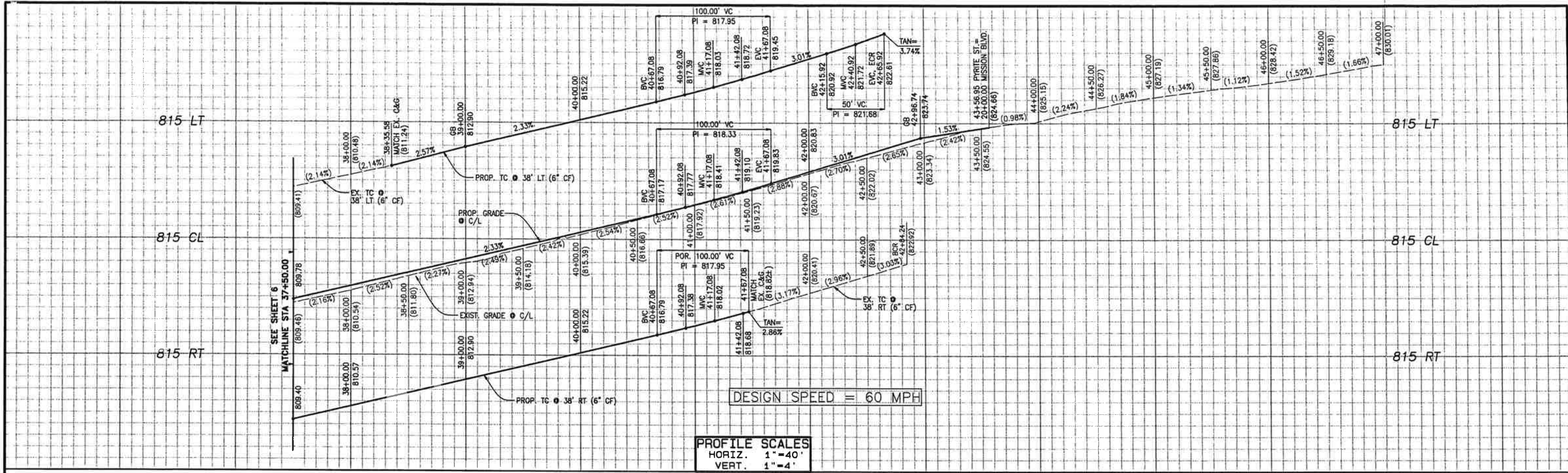
MS 4253 IP 100066  
 COUNTY OF RIVERSIDE  
**STREET IMPROVEMENT PLANS**  
**PYRITE STREET**  
 STA. 10+00.00 TO STA. 18+00.00

SHEET NO. **6**  
 OF 11 SHEETS

FOR: RIV. CO. EDA W.O. 10-0153 COUNTY FILE NO.

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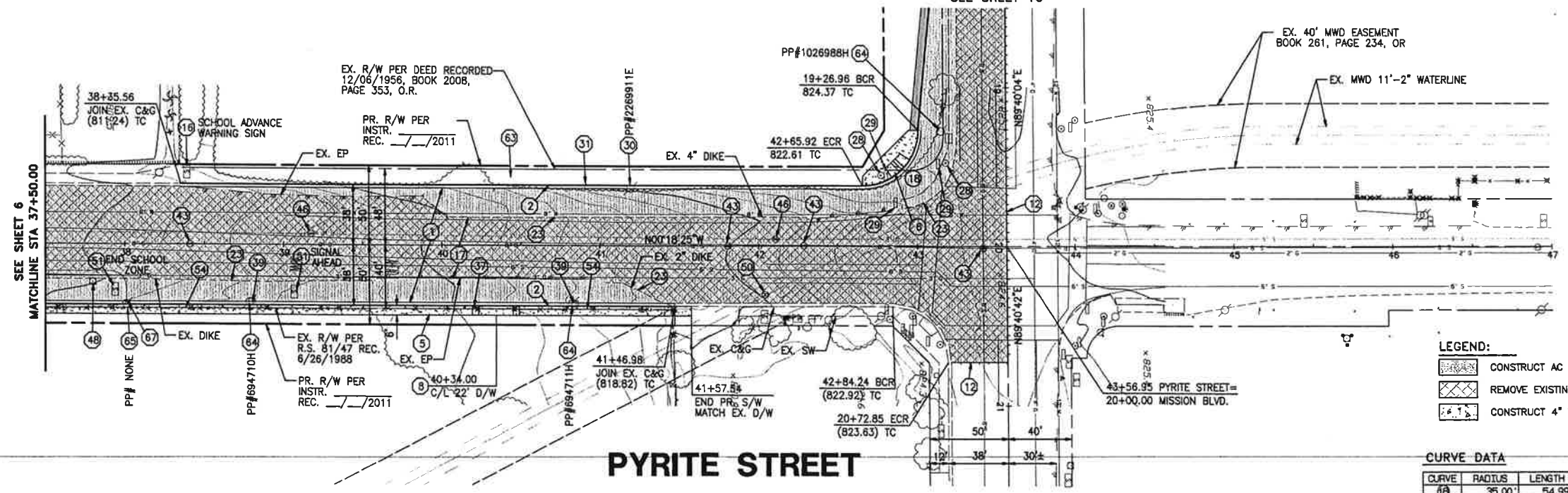


DESIGN SPEED = 60 MPH

PROFILE SCALES  
 HORIZ. 1"=40'  
 VERT. 1"=4'

37 38 39 40 41 42 43 44 45 46 47

**TREE NOTE**  
 NO OAK TREES ARE LOCATED WITHIN THE PROJECT BOUNDARY.



**PYRITE STREET**

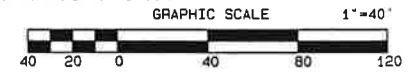
**LEGEND:**

- CONSTRUCT AC OVER BASE (SECTION PER PLAN)
- REMOVE EXISTING AC PAVEMENT
- CONSTRUCT 4" THICK CONCRETE SIDEWALK

**CURVE DATA**

CURVE	RADIUS	LENGTH	DELTA	TANGENT
63	35.00'	54.99'	90°01'31"	35.02'

- CONSTRUCTION NOTES**
- 1 CONSTRUCT 0.42' A.C. OVER 1.00' BASE (SEE PAVEMENT NOTE)
  - 2 CONSTRUCT TYPE "A-6" CURB & GUTTER PER RIV. CO. STD. NO. 200
  - 3 CONSTRUCT 4" THICK SIDEWALK PER RIV. CO. STD. NO. 400 & 401 (W=PER PLAN)
  - 4 CONSTRUCT CURB RAMP PER RIV. CO. STD. 403, CASE A
  - 5 SAWCUT MINIMUM 2" AND JOIN EXISTING PAVEMENT PER DETAIL ON SHEET 3
  - 6 PROTECT IN PLACE (ITEM NOTED ON PLAN)
  - 7 REMOVE AND DISPOSE OF EXISTING AC PAVEMENT
  - 8 REMOVE EXISTING AC DIKE
  - 9 REMOVE/RELOCATE EXISTING TRAFFIC SIGNAL POLE BY CONTRACTOR
  - 10 REMOVE/RELOCATE EXISTING TRAFFIC SIGNAL PULLBOX BY CONTRACTOR
  - 11 REMOVE/RELOCATE EXISTING POWER POLE BY EDISON
  - 12 RELOCATE EXISTING ELECTRIC PULLBOX BY EDISON
  - 13 RELOCATE EXISTING COMMUNICATION BOX BY CHARTER
  - 14 ADJUST EXISTING SEWER MANHOLE TO GRADE BY JCSD
  - 15 ADJUST EXISTING SEWER MANHOLE TO GRADE BY DTSC
  - 16 ADJUST EXISTING MONITORING WELL TO GRADE BY DTSC
  - 17 PROTECT IN PLACE EXISTING MWD WATER MANHOLE
  - 18 REMOVE/RELOCATE EXISTING POWER POLE BY OWNER (BECHTEL CORP.)
  - 19 RELOCATE EXISTING SIGN
  - 20 RELOCATE EX. WROUGHT IRON FENCE/GATE TO PROPOSED R/W
  - 21 RELOCATE EXISTING ELECTRIC METER BY EDISON
  - 22 INSTALL 3" DECOMPOSED GRANITE



PLAN CHECK OVERSIGHT ENGINEER REGISTRATION NUMBER DATE SIGNED

APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.

**NOTE:**  
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MARK	BY	DATE	REVISIONS	APPR. DATE	COUNTY

SEAL - ENGINEER

**ALBERT A. WEBB ASSOCIATES**  
 3788 McCRAY STREET  
 RIVERSIDE, CA. 92506  
 PH: (951) 686-1070  
 FAX: (951) 788-1256

PREPARED BY: R.C.E. NO. C65078  
 DATE: \_\_\_\_\_

BENCHMARK: SEE SHEET 1  
 SCALE: H: 1"=40' V: 1"=4'

MS 4253	IP 100066	SHEET NO. 7
COUNTY OF RIVERSIDE		
STREET IMPROVEMENT PLANS		
PYRITE STREET		
STA. 37+50.00 TO STA. 43+56.95		
FOR: RIV. CO. EDA	W.O. 10-0153	COUNTY FILE NO.



775 LT

775 LT

775 CL

775 CL

775 RT

775 RT

DESIGN SPEED = 55 MPH

PROFILE SCALES  
HORIZ. 1"=40'  
VERT. 1"=4'

**TREE NOTE**

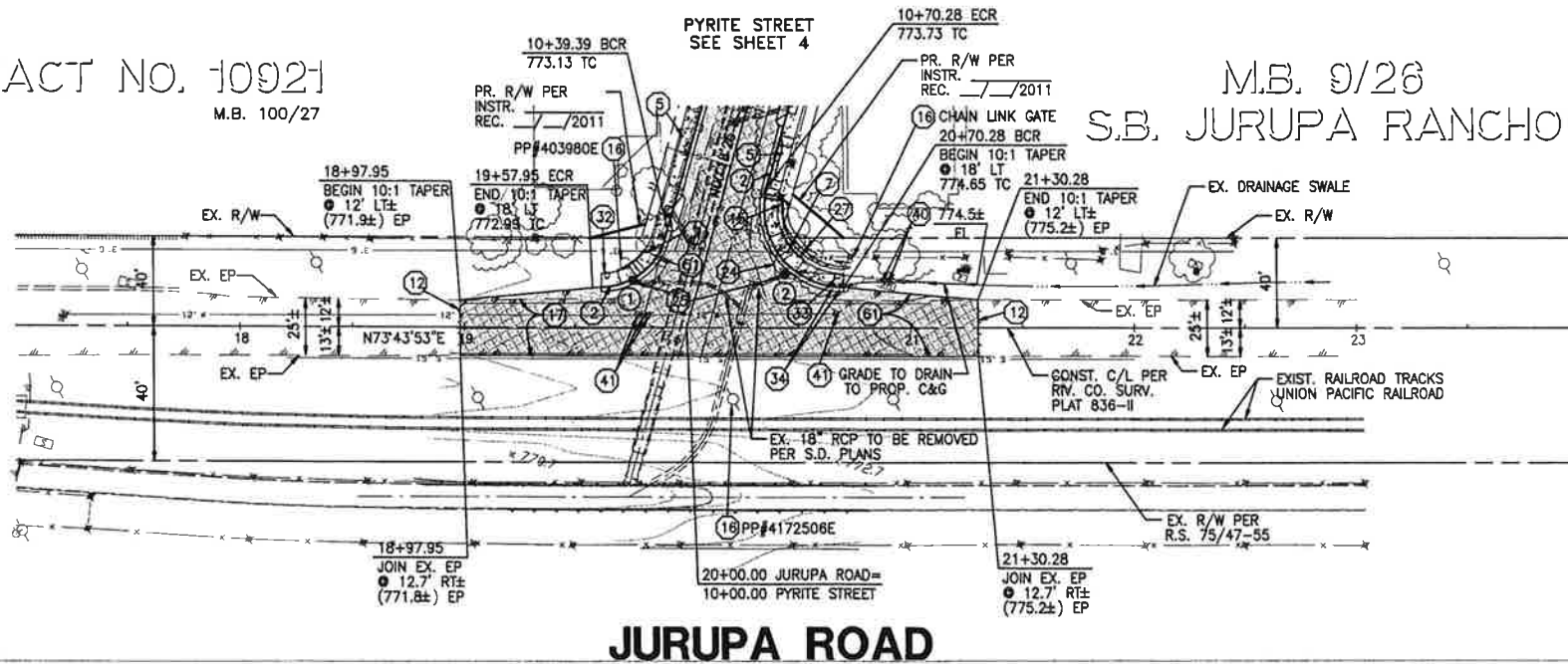
NO OAK TREES ARE LOCATED WITHIN THE PROJECT BOUNDARY.

TRACT NO. 10921  
M.B. 100/27

M.B. 9/26  
S.B. JURUPA RANCHO

**CURB RAMP NOTE**

PROPOSED CASE "B" CURB RAMPS AT THE INTERSECTION OF JURUPA RD. AND PYRITE ST. ARE PER THE RECOMMENDATIONS OF THE RIVERSIDE COUNTY TRANSPORTATION DEPARTMENT AND RIVERSIDE COUNTY ECONOMIC DEVELOPMENT AGENCY



**CURVE DATA**

CURVE	RADIUS	LENGTH	DELTA	TANGENT
1	30.00'	38.77'	74°02'18"	22.62'
2	35.00'	64.73'	105°57'42"	46.41'

**CONSTRUCTION NOTES**

- 2 CONSTRUCT TYPE "A-6" CURB & GUTTER PER RIV. CO. STD. NO. 200
- 5 CONSTRUCT 4" THICK SIDEWALK PER RIV. CO. STD. NO. 400 & 401 (W=PER PLAN)
- 7 CONSTRUCT CURB RAMP PER RIV. CO. STD. 403, CASE B
- 12 SAWCUT MINIMUM 2' AND JOIN EXISTING PAVEMENT PER DETAIL ON SHEET 3
- 15 REMOVE/REPLACE EXISTING FENCE IN KIND
- 16 PROTECT IN PLACE (ITEM NOTED ON PLAN)
- 17 REMOVE AND DISPOSE OF EXISTING AC PAVEMENT
- 24 REMOVE EXISTING CONCRETE
- 25 REMOVE EXISTING DRAINAGE INLET
- 27 REMOVE EXISTING TREE
- 32 RELOCATE EXISTING AIR VALVE BY JCSD
- 33 RELOCATE EXISTING FIRE HYDRANT BY JCSD
- 34 RELOCATE EXISTING BOLLARDS BY JCSD
- 40 RELOCATE EXISTING MAILBOX
- 41 ADJUST EXISTING WATER VALVE TO GRADE BY JCSD
- 51 REMOVE/RELOCATE EXISTING SIGN
- 61 CONSTRUCT 0.30' A.C. OVER 1.25' A.B. CL II

**LEGEND:**

- CONSTRUCT AC OVER BASE (SECTION PER PLAN)
- REMOVE EXISTING AC PAVEMENT
- CONSTRUCT 4" THICK CONCRETE SIDEWALK

**NOTE:**

WORK CONTAINED WITHIN THESE PLANS SHALL NOT COMMENCE UNTIL AN ENCROACHMENT PERMIT AND/OR A GRADING PERMIT HAS BEEN ISSUED.

THE PRIVATE ENGINEER SIGNING THESE PLANS IS RESPONSIBLE FOR ASSURING THE ACCURACY AND ACCEPTABILITY OF THE DESIGN HEREON. IN THE EVENT OF DISCREPANCIES ARISING AFTER COUNTY APPROVAL OR DURING CONSTRUCTION, THE PRIVATE ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING AN ACCEPTABLE SOLUTION AND REVISING THE PLANS FOR APPROVAL BY THE COUNTY.

MARK	BY	DATE	REVISIONS	APPR. DATE	COUNTY

SEAL -- ENGINEER



ALBERT A. CIVIL ENGINEERS  
**WEBB**  
 ASSOCIATES  
 3788 McCRAY STREET  
 RIVERSIDE, CA. 92506  
 PH: (951) 686-1070  
 FAX: (951) 798-1256

PREPARED BY: R.C.E. NO. C65078  
 DATE: \_\_\_\_\_

BENCHMARK:  
SEE SHEET 1

SCALE:  
H: 1"=40' V: 1"=4'

MS 4253 IP 100066  
 COUNTY OF RIVERSIDE  
**STREET IMPROVEMENT PLANS**  
**JURUPA ROAD**  
 STA. 18+97.95 TO STA. 21+30.28

FOR: RIV. CO. EDA W.O. 10-0153 COUNTY FILE NO.

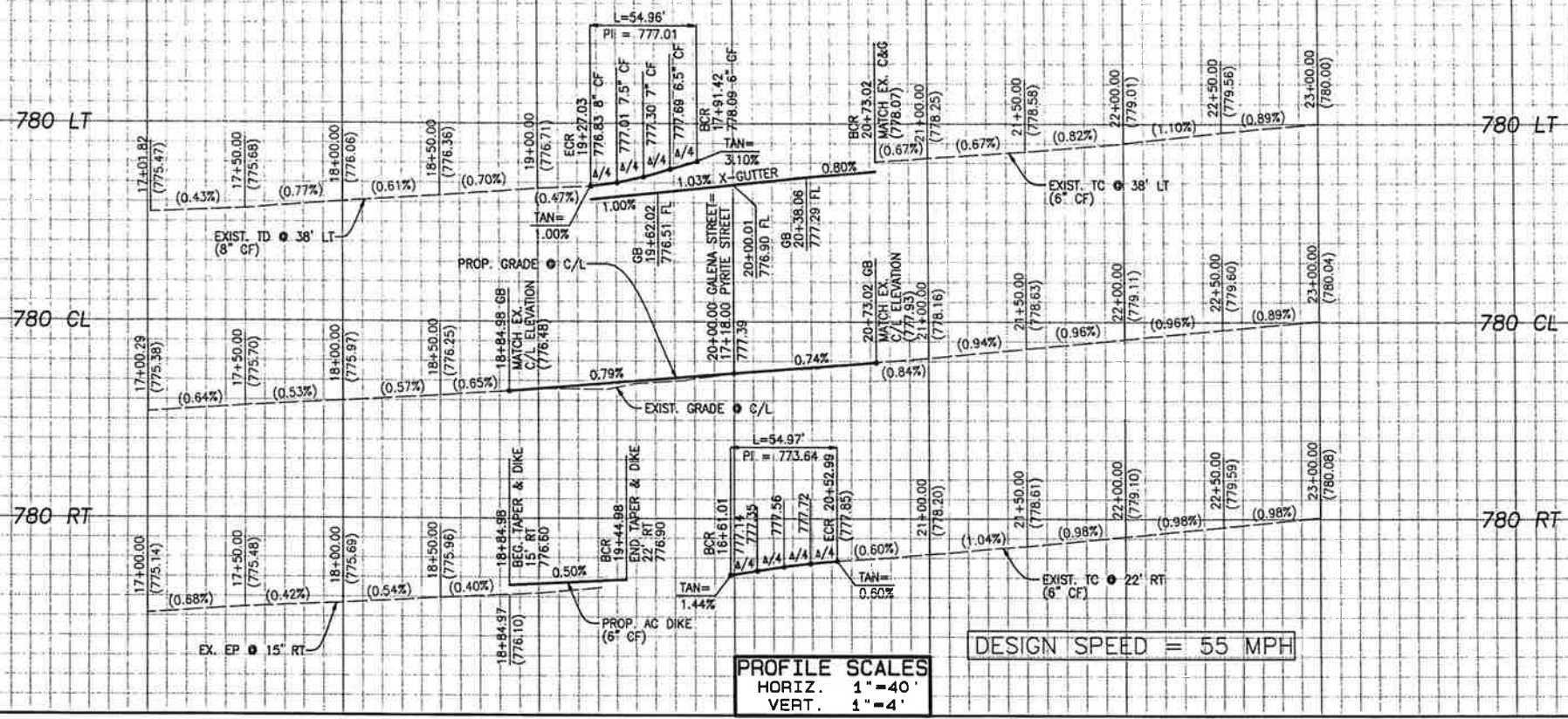
SHEET NO.  
**8**  
 OF 11 SHEETS



PLAN CHECK OVERSIGHT ENGINEER  
 REGISTRATION NUMBER  
 DATE SIGNED  
 APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.

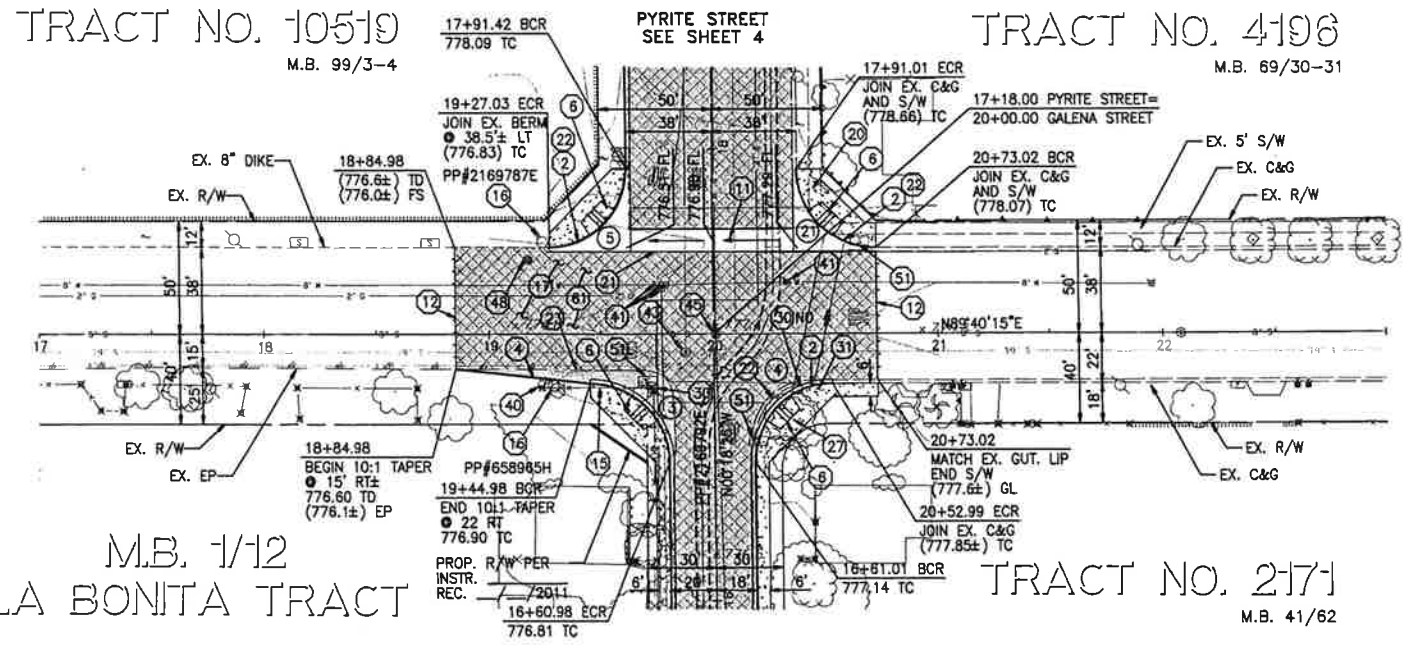


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**TREE NOTE**  
NO OAK TREES ARE LOCATED WITHIN THE PROJECT BOUNDARY.

17 18 19 20 21 22 23



**CURVE DATA**

CURVE	RADIUS	LENGTH	DELTA	TANGENT
③	35.00'	54.99'	90°01'20"	35.01'
④	35.00'	54.97'	89°59'09"	34.99'
⑤	35.00'	54.96'	89°58'40"	34.99'
⑥	35.00'	54.99'	90°00'51"	35.01'

- LEGEND:**
- CONSTRUCT AC OVER BASE (SECTION PER PLAN)
  - REMOVE EXISTING AC PAVEMENT
  - CONSTRUCT 4" THICK CONCRETE SIDEWALK

**CONSTRUCTION NOTES**

- ② CONSTRUCT TYPE "A-6" CURB & GUTTER PER RV. CO. STD. NO. 200
- ④ CONSTRUCT ASPHALT CONCRETE DIKE (6") PER RV. CO. STD. NO. 212
- ⑥ CONSTRUCT CURB RAMP PER RV. CO. STD. 403, CASE A
- ⑪ CONSTRUCT CROSS GUTTER & SANDRELS PER RV. CO. STD. 209
- ⑫ SAWCUT MINIMUM 2" AND JOIN EXISTING PAVEMENT PER DETAIL ON SHEET 3
- ⑮ REMOVE/REPLACE EXISTING FENCE IN KIND
- ⑯ PROTECT IN PLACE (ITEM NOTED ON PLAN)
- ⑰ REMOVE AND DISPOSE OF EXISTING AC PAVEMENT
- ⑳ REMOVE EXISTING SIDEWALK
- ㉑ REMOVE EXISTING CROSS-GUTTER
- ㉒ REMOVE EXISTING CURB/CURB & GUTTER
- ㉓ REMOVE EXISTING AC DIKE
- ㉔ REMOVE EXISTING TREE
- ㉕ REMOVE/RELOCATE EXISTING POWER POLE BY EDISON
- ㉖ REMOVE/RELOCATE EXISTING GUY ANCHOR BY EDISON
- ㉗ RELOCATE EXISTING MAILBOX
- ㉘ ADJUST EXISTING WATER VALVE TO GRADE BY JCSO
- ㉙ ADJUST EXISTING SEWER MANHOLE TO GRADE BY JCSO
- ㉚ ADJUST EXISTING SEWER MANHOLE TO GRADE BY SANWA
- ㉛ ADJUST EXISTING MONITORING WELL TO GRADE BY DTSC
- ㉜ REMOVE/RELOCATE EXISTING SIGN
- ㉝ CONSTRUCT 0.30' A.C. OVER 1.25' A.B. CL. II

**NOTE:**  
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MARK	BY	DATE	REVISIONS	APPR. DATE	COUNTY

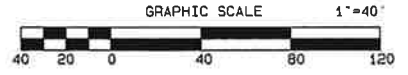
SEAL - ENGINEER

ALBERT A. CIVIL ENGINEERS  
**WEBB ASSOCIATES**  
3788 McCRAY STREET  
RIVERSIDE, CA. 92506  
PH: (951) 686-1070  
FAX: (951) 788-1256

PREPARED BY: R.C.E. NO. C65078  
DATE: \_\_\_\_\_

BENCHMARK: IP 100066  
SEE SHEET 1  
SCALE: H: 1"=40' V: 1"=4'

MS 4253 IP 100066 SHEET NO. 9 OF 11 SHEETS  
COUNTY OF RIVERSIDE  
**STREET IMPROVEMENT PLANS**  
GALENA STREET  
STA. 18+84.97 TO STA. 20+72.88  
FOR: RIV. CO. EDA W.O. 10-0153 COUNTY FILE NO.



DATE SIGNED \_\_\_\_\_  
REGISTRATION NUMBER \_\_\_\_\_  
PLAN CHECK OVERSIGHT ENGINEER \_\_\_\_\_  
APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.



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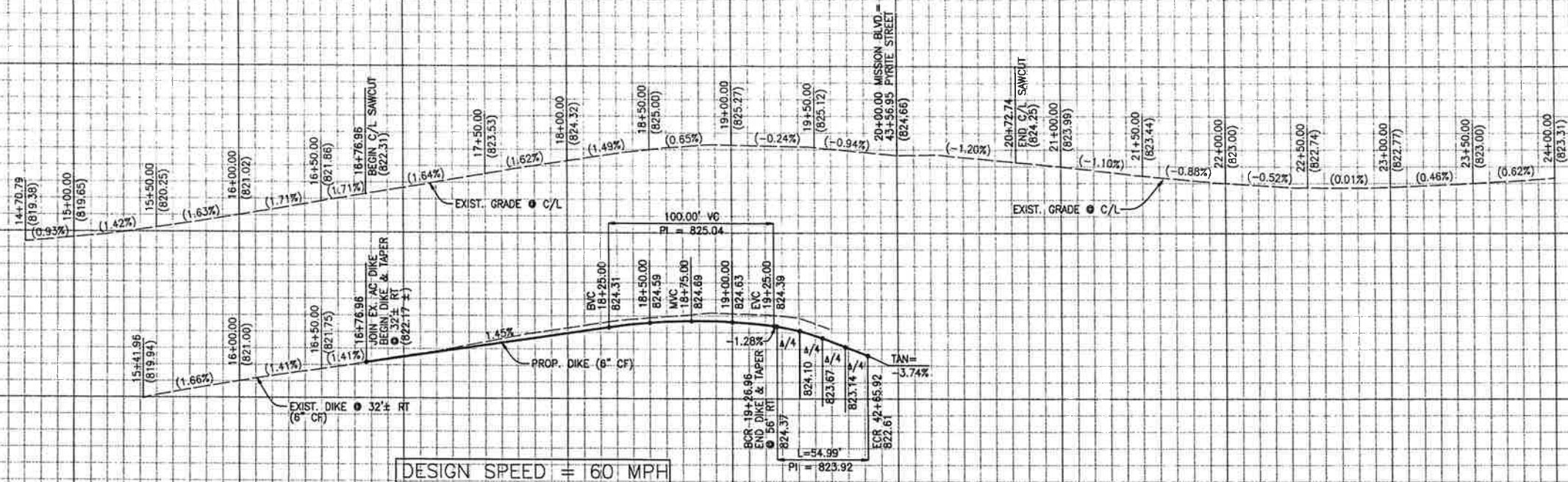
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DESIGN SPEED = 60 MPH

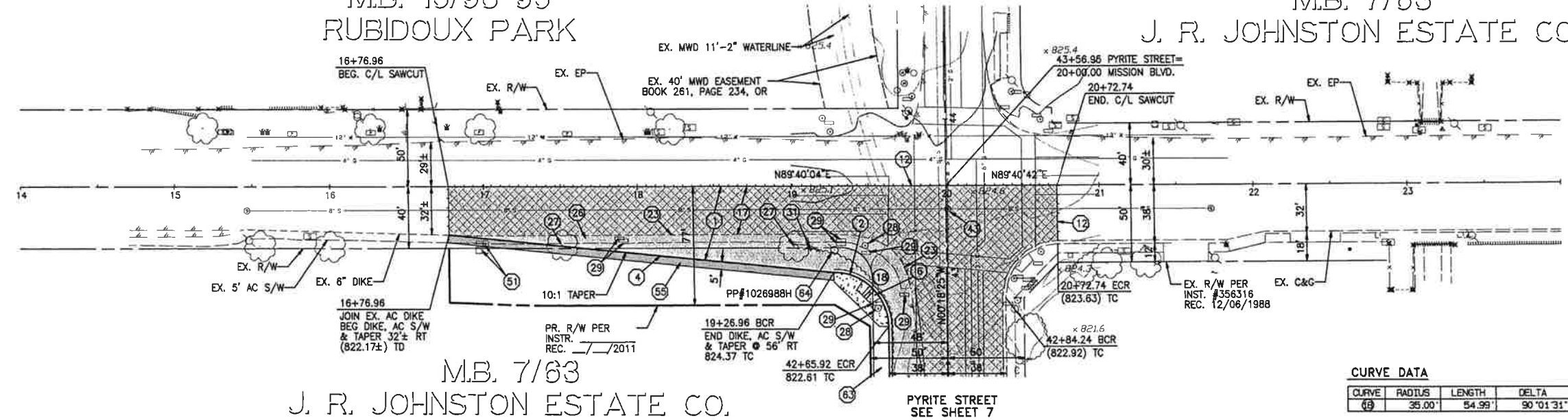
PROFILE SCALES  
 HORIZ. 1"=40'  
 VERT. 1"=4'

14 15 16 17 18 19 20 21 22 23 24

**TREE NOTE**  
 NO OAK TREES ARE LOCATED WITHIN THE PROJECT BOUNDARY.

M.B. 15/93-95  
 RUBIDOUX PARK

M.B. 7/63  
 J. R. JOHNSTON ESTATE CO.



**CURVE DATA**

CURVE	RADIUS	LENGTH	DELTA	TANGENT
(9)	35.00'	54.99'	90°01'31"	35.02'

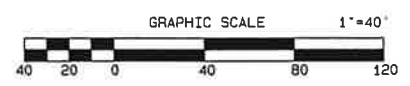
### MISSION BOULEVARD

#### CONSTRUCTION NOTES

- 1 CONSTRUCT 0.42' A.C. OVER 1.00' BASE (SEE PAVEMENT NOTE)
- 2 CONSTRUCT TYPE "A-6" CURB & GUTTER PER RIV. CO. STD. NO. 200
- 4 CONSTRUCT ASPHALT CONCRETE DIKE (6") PER RIV. CO. STD. NO. 212
- 6 CONSTRUCT CURB RAMP PER RIV. CO. STD. 403, CASE A
- 12 SAWCUT MINIMUM 2' AND JOIN EXISTING PAVEMENT PER DETAIL ON SHEET 3
- 17 REMOVE AND DISPOSE OF EXISTING AC PAVEMENT
- 23 REMOVE EXISTING AC DIKE
- 26 REMOVE EXISTING AC SIDEWALK
- 27 REMOVE EXISTING TREE
- 28 REMOVE/RELOCATE EXISTING TRAFFIC SIGNAL POLE BY CONTRACTOR
- 29 REMOVE/RELOCATE EXISTING TRAFFIC SIGNAL PULLBOX BY CONTRACTOR
- 31 REMOVE/RELOCATE EXISTING GUY ANCHOR BY EDISON
- 51 REMOVE/RELOCATE EXISTING SIGN
- 55 CONSTRUCT AC SIDEWALK (W=5', D=4")
- 63 INSTALL 3" DECOMPOSED GRANITE
- 64 REMOVE/RELOCATE EXISTING POWER POLE BY AT&T

#### LEGEND:

- CONSTRUCT AC OVER BASE (SECTION PER PLAN)
- REMOVE EXISTING AC PAVEMENT
- CONSTRUCT 4" THICK CONCRETE SIDEWALK
- CONSTRUCT 4" THICK ASPHALT CONCRETE SIDEWALK



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MARK	BY	DATE	REVISIONS	APPR. DATE	COUNTY

SEAL - ENGINEER

ALBERT A. CIVIL ENGINEERS  
 3788 McCRAY STREET  
 RIVERSIDE, CA. 92506  
 PH: (951) 886-1070  
 FAX: (951) 788-1256

PREPARED BY: R.C.E. NO. C65078  
 DATE: \_\_\_\_\_

BENCHMARK: SEE SHEET 1

MS 4253 IP 100066

COUNTY OF RIVERSIDE  
**STREET IMPROVEMENT PLANS**  
**MISSION BOULEVARD**  
 STA. 16+76.96 TO STA. 20+72.74

SHEET NO. **10** OF 11 SHEETS

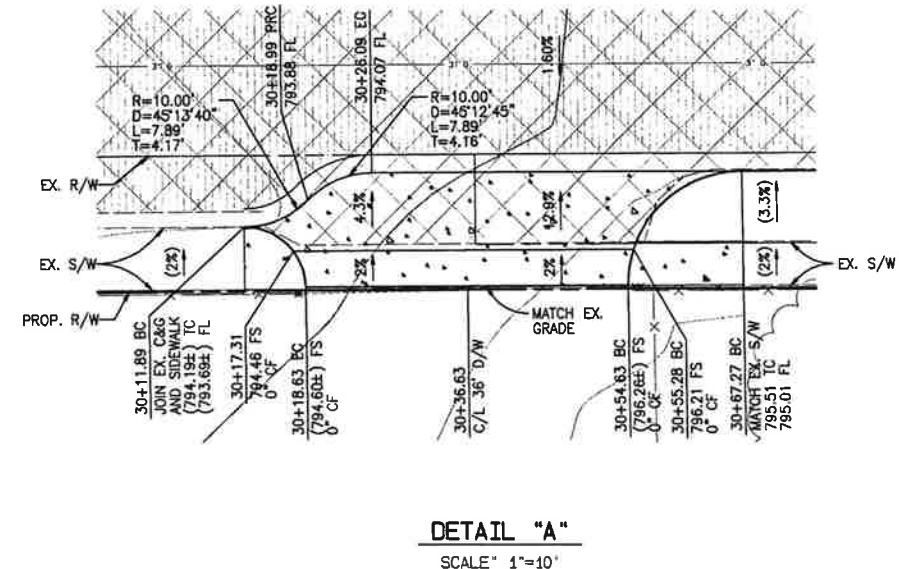
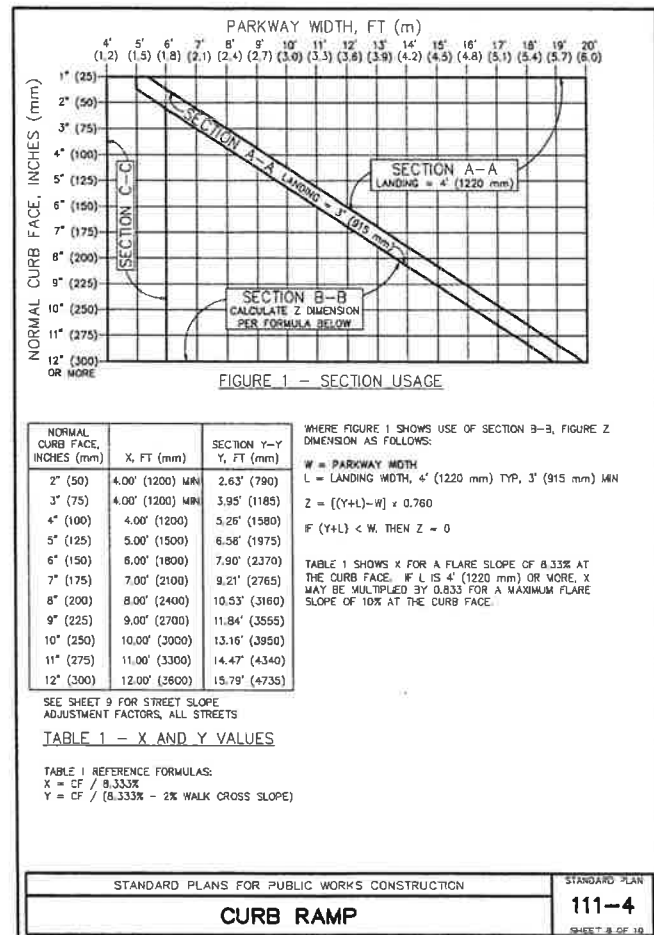
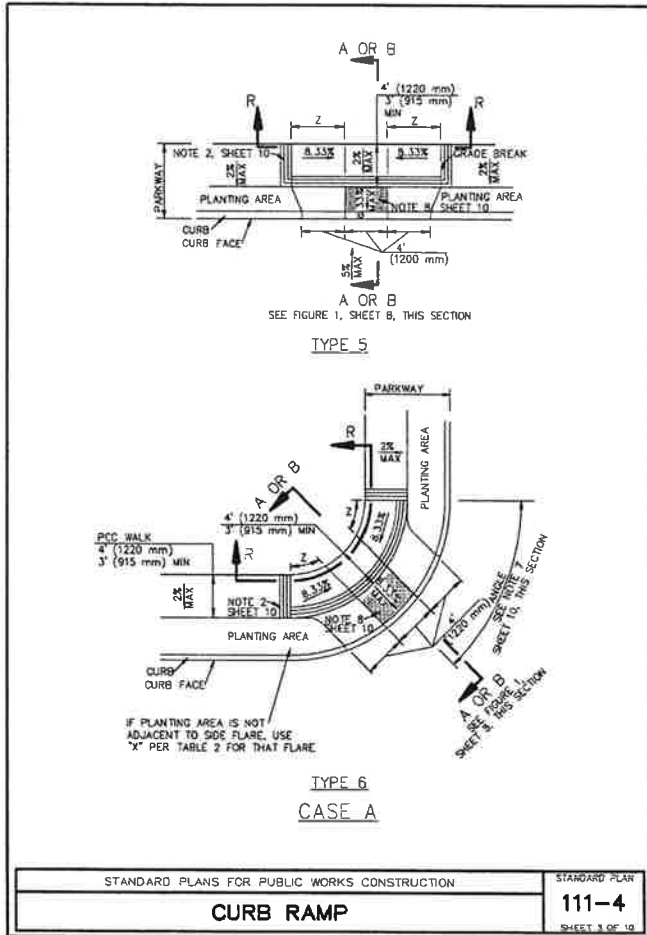
FOR: RIV. CO. EDA W.O. 10-0153 COUNTY FILE NO. \_\_\_\_\_

**DIGALERT**  
 DIAL BEFORE YOU DIG  
 TWO WORKING DAYS BEFORE YOU DIG  
 TOLL FREE 1-800-227-2600  
 A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

PLAN CHECK OVERSIGHT ENGINEER  
 REGISTRATION NUMBER  
 DATE SIGNED  
 APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.  
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DATE SIGNED  
REGISTRATION NUMBER  
ENGINEER  
APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.

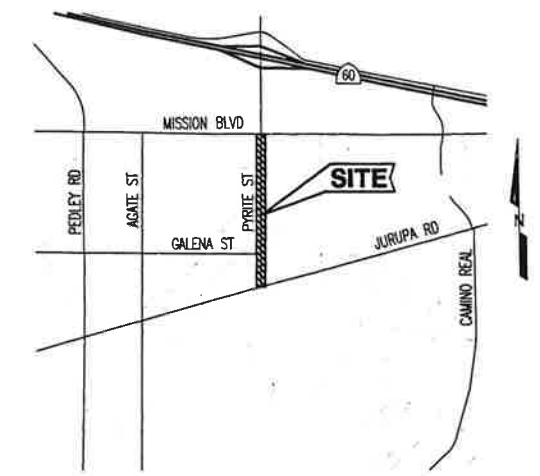


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MARK	BY	DATE	REVISIONS	APPR. DATE	COUNTY

SEAL - ENGINEER	<b>ALBERT A. WEBB ASSOCIATES</b>	CIVIL ENGINEERS 3788 McCRAY STREET RIVERSIDE, CA. 92506 PH: (951) 686-1070 FAX: (951) 788-1256	BENCHMARK: SEE SHEET 1	MS 4253 IP 100066	SHEET NO. <b>11</b>
PREPARED BY:	R.C.E. NO. C65078	SCALE: H: N/A V: N/A	FOR: RIV. CO. EDA	W.O. 10-0153	COUNTY FILE NO.
<p>APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.</p>			<p>STREET IMPROVEMENT PLANS DETAILS AND APWA STANDARD PLANS</p>		

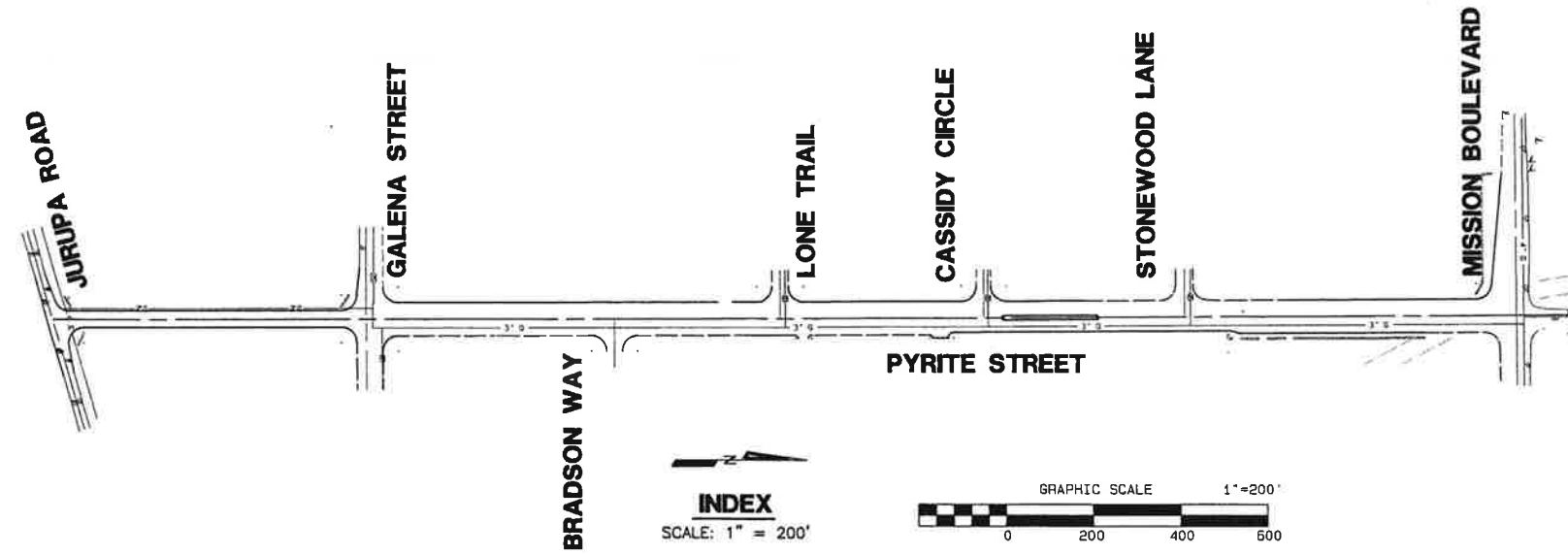
# COUNTY OF RIVERSIDE SIGNING & STRIPING PLAN AND TRAFFIC SIGNAL MODIFICATION PLAN FOR PYRITE STREET FROM JURUPA ROAD TO MISSION BLVD.



**VICINITY MAP**  
NTS  
SECTION 11-13, T. 2 S., R. 6 W.

**GENERAL TRAFFIC SIGNAL NOTES:**

1. ALL MATERIAL AND WORK SHALL CONFORM TO THE LATEST EDITION OF COUNTY OF RIVERSIDE STANDARD PLANS, CALTRANS STANDARD PLANS AND STANDARD SPECIFICATIONS, AND CALIFORNIA MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
2. ALL PULL BOXES SHALL BE #5 UNLESS OTHERWISE INDICATED OR APPROVED BY THE ENGINEER. MAXIMUM SPACING SHALL BE 500'.
3. ALL SPACE CONDUCTORS SHALL BE CONTINUOUS, WITH 6' OF SLACK IN EACH PULL BOX.
4. DETECTOR LOOP CURB TERMINATIONS SHALL BE TYPE "A" PER STANDARD PLAN ES-5E.
5. A MINIMUM OF 2 FEET OF CLEARANCE SHALL BE MAINTAINED BETWEEN TELEPHONE CONDUIT AND ELECTRICAL CONDUITS.
6. A MINIMUM OF 15 FEET OF CLEARANCE SHALL BE MAINTAINED BETWEEN THE CONTROLLER CABINET AND THE SERVICE EQUIPMENT ENCLOSURE.
7. ALL PULL BOXES IN UNIMPROVED AREAS SHALL BE TRAFFIC BEARING. UNIMPROVED AREAS ARE DEFINED AS LOCATIONS NOT PROTECTED BY CURB AND GUTTER.
8. OBTAIN APPROVAL FOR EXACT EQUIPMENT LOCATIONS PRIOR TO FINAL PLACEMENT. STRIPING LAYOUT (CAT-TRACKING) SHALL BE APPROVED PRIOR TO LOOP DETECTOR INSTALLATION.
9. ALL DETECTOR LOOPS SHALL BE ROUND (6" DIA.) WITH 10' MINIMUM SPACING BETWEEN LOOPS IN THE DIRECTION OF TRAVEL AND CENTERED IN THE LANE UNLESS OTHERWISE INDICATED. INSTALL DETECTOR LOOPS 1' BEHIND LIMIT LINE OR CROSSWALK UNLESS OTHERWISE INDICATED. LOOPS SHALL BE TESTED AND APPROVED PRIOR TO FILLING SAWCUTS.
10. ALL CONDUIT SHALL BE 2 INCH RIGID STEEL UNLESS OTHERWISE INDICATED. ALL CONDUIT PLACED UNDER PAVING SHALL BE INSTALLED WITHOUT OPEN CUTTING.
11. A MINIMUM OF 6 FEET OF SLACK SHALL BE PROVIDED AT EACH PULL BOX, AND 20 FEET OF SLACK SHALL BE PROVIDED AT EACH CONTROLLER CABINET FOR SIGNAL INTERCONNECT CABLE.
12. ALL VEHICLE INDICATIONS SHALL BE 12". ALL SIGNAL HEADS AND BACKPLATES SHALL BE METAL WITH LOUVERS. ALL LENSES SHALL BE GLASS.
13. ALL 12" RED, YELLOW AND GREEN VEHICLE SIGNAL FACES SHALL UTILIZE LIGHT EMITTING DIODE SIGNAL MODULES.
14. ALL PEDESTRIAN SIGNAL FACES (COMBINATION PEDESTRIAN SIGNAL) SHALL UTILIZE LIGHT EMITTING DIODE SIGNAL MODULES.
15. ALL UNUSED TENONS SHALL BE CAPPED IN A WATERPROOF METHOD AS DIRECTED BY THE RESIDENT ENGINEER.



**CONSTRUCTION NOTES**

1. PAINT 4" DASHED WHITE LANELINE PER CALTRANS STANDARD PLANS, PLAN NO. A20A, DETAIL 9.
2. PAINT 4" SOLID/4" DASHED YELLOW STRIPE PER CALTRANS STANDARD PLANS, PLAN NO. A20A, DETAIL 19.
3. PAINT 4"/4" DOUBLE SOLID YELLOW STRIPE PER CALTRANS STANDARD PLANS, PLAN NO. A20A, DETAIL 22.
4. PAINT 4" SOLID WHITE EDGELINE PER CALTRANS STANDARD PLANS, PLAN NO. A20B, DETAIL 27B.
5. PAINT TWO-WAY LEFT TURN LANE PER CALTRANS STANDARD PLANS, PLAN NO. A20B, DETAIL 32.
6. PAINT 8" DASHED WHITE LANE DROP LINE PER CALTRANS STANDARD PLANS, PLAN NO. A20C, DETAIL 37B.
7. PAINT 8" SOLID WHITE CHANNELIZING LINE PER CALTRANS STANDARD PLANS, PLAN NO. A20D, DETAIL 38.
8. APPLY THERMOPLASTIC ARROW MARKING PER CALTRANS STANDARD PLANS, PLAN NO. A24A.
9. APPLY THERMOPLASTIC PAVEMENT LEGEND PER CALTRANS STANDARD PLANS, PLAN NO. A24D.
10. APPLY THERMOPLASTIC 12" SOLID WHITE STRIPE PER CALTRANS STANDARD PLANS, PLAN NO. A24E.
11. APPLY THERMOPLASTIC 12" SOLID YELLOW STRIPE PER CALTRANS STANDARD PLANS, PLAN NO. A24E.
12. SANDBLAST CONFLICTING STRIPING AS SHOWN ON PLANS.
13. PROTECT EXISTING STRIPING, MARKING OR SIGN.
14. INSTALL SIGN (STANDARD SIZE OR AS INDICATED) PER CALIFORNIA M.U.T.C.D. (2010).
15. RELOCATE EXISTING SIGN PER CALIFORNIA M.U.T.C.D. (2010).
16. REMOVE AND SALVAGE EXISTING SIGN TO COUNTY YARD.
17. PAINT RED CURB "NO PARKING ZONE"
18. FURNISH AND INSTALL A TYPE 9A FLASHING BEACON POLE AND MAST ARM PER CALTRANS STD. PLAN ES-7K WITH A SCHOOL ASSEMBLY "D" SIGN PACKAGE PER THE CA-MUTCD, EXACT LOCATION TO BE DETERMINED IN THE FIELD BY THE COUNTY INSPECTOR.
19. FURNISH AND INSTALL A CARMANAH R247 (OR COUNTY-APPROVED EQUAL) DUAL 12" LED SOLAR POWERED FLASHING BEACON SYSTEM WITH INTEGRATED SOLAR PANEL, BATTERY AND FLASHER UNIT.
20. INSTALL STREET NAME SIGN ON TRAFFIC SIGN POST PER COUNTY OF RIVERSIDE COUNTY STANDARD NO. 1220
21. INSTALL STREET NAME SIGN COMPLETE IN PLACE PER COUNTY OF RIVERSIDE COUNTY STANDARD NO. 1220
23. PAINT MEDIAN ISLAND PER CALTRANS STANDARD PLANS, PLAN NO. A20B, DETAIL 24

**GENERAL CONSTRUCTION NOTES:**

1. ALL MATERIAL AND WORK SHALL CONFORM TO THE STANDARD PLANS AND SPECIFICATIONS (MAY 2006) OF THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION.
2. LOCATIONS OF ALL UNDERGROUND UTILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATIONS AND VERIFY ALL CONDITIONS ON THE JOB SITE PRIOR TO COMMENCING WORK. THE CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. THE CONTRACTOR SHALL NOTIFY ALL CONCERNED UTILITY COMPANIES AT LEAST 48 HOURS IN ADVANCE OF EXCAVATION. CALL UNDERGROUND SERVICE ALERT AT (800) 277-2600. HAND DIG UNTIL CLEAR OF OBSTRUCTION AS DIRECTED BY THE ENGINEER.
3. SEE CALTRANS STANDARD PLANS ES-1A AND ES-1B FOR SYMBOL AND ABBREVIATION LEGEND.
4. EXISTING PRIVATELY OWNED IMPROVEMENTS ON PUBLIC RIGHT-OF-WAY SHALL BE PROTECTED OR REPLACED, AS DIRECTED BY THE ENGINEER.
5. THE COUNTY RIGHT-OF-WAY SHALL BE KEPT CLEAN OF DEBRIS, WITH DUST AND OTHER NUISANCES BEING CONTROLLED AT ALL TIMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY CLEAN UP ON COUNTY RIGHT-OF-WAY AFFECTED BY HIS CONSTRUCTION. METHOD OF STREET CLEANING SHALL BE DRY SWEEPING OF ALL PAVED AREAS. THERE SHALL BE NO STOCKPILING OF CONSTRUCTION MATERIALS WITHIN THE COUNTY RIGHT-OF-WAY WITHOUT THE PERMISSION OF THE INSPECTOR.

**GENERAL SIGNING AND STRIPING NOTES:**

1. ALL NEW SIGNS, TRAFFIC STRIPES, PAVEMENT MARKINGS AND RAISED PAVEMENT MARKINGS SHALL CONFORM TO CALIFORNIA MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (CA-MUTCD), AND STANDARD PLANS AND SPECIFICATIONS, LATEST EDITIONS.
2. ALL SIGNS SHALL BE STANDARD SIZE UNLESS OTHERWISE NOTED ON PLANS. SIGNS SHALL BE INSTALLED ON 4" x 4" WOOD POSTS WITH ANCHOR BLOCKS UNLESS OTHERWISE NOTED ON THE PLAN.
3. ALL EXISTING RAISED PAVEMENT MARKERS WITHIN THE PROJECT AREA SHALL BE REPLACED IN KIND AS DETAILED ON THE SIGNING AND STRIPING PLAN AND AS DIRECTED BY THE ENGINEER.
4. ALL CONFLICTING STRIPES AND PAVEMENT MARKINGS SHALL BE REMOVED BY SANDBLASTING OR GRINDING, AS DIRECTED BY THE ENGINEER. CONFLICTING SIGNS AND RAISED PAVEMENT MARKERS SHALL BE REMOVED. SALVAGED SIGNS SHALL BE DELIVERED TO THE RIVERSIDE COUNTY MAINTENANCE YARD, 2950 WASHINGTON STREET, RIVERSIDE, CA.
5. ALL REQUIRED STRIPING, PAVEMENT MARKINGS AND SIGNAGE SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTORS.
6. THE LOCATION OF ALL SIGNS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
7. DOUBLE YELLOW STRIPES SHALL HAVE A 3 INCH PAINTED BLACK LINE SEPARATING 4 INCH YELLOW LINES.
8. THERMOPLASTIC CROSSWALKS SHALL HAVE 10 FEET BETWEEN 12 INCH WHITE STRIPES.
9. TURN ARROWS SHALL BE LOCATED AS SHOWN ON THE PLANS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
10. STRIPING LAYOUT (CAT-TRACKING) SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION OF STRIPING.

**NOTICE TO CONTRACTOR:**

THE EXISTENCE AND LOCATIONS OF ALL UNDERGROUND UTILITIES (UTILITY PIPES, STRUCTURES, ETC.) SHOWN ON THESE PLANS (MAIN LINES ONLY - NO SERVICE LATERALS) WERE ASCERTAINED BY A REVIEW OF RECORDS PROVIDED BY THESE MEMBER AGENCIES AND ARE APPROXIMATE. NEITHER THE OWNER, THE ENGINEER NOR THE COUNTY OF RIVERSIDE ASSUMES ANY RESPONSIBILITY FOR UTILITIES NOT SHOWN OR NOT IN THE LOCATION SHOWN.

THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN AND ANY OTHER LINES NOT OF RECORD OR NOT SHOWN ON THESE PLANS. LOCATIONS OF UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF CONSTRUCTION. CALL UNDERGROUND SERVICE ALERT (U.S.A.) 1-800-227-2600 AT LEAST 2 WORKING DAYS PRIOR TO EXCAVATION.

THE QUANTITY ESTIMATE SHOWN HEREON IS FOR THE USE OF GOVERNING AGENCIES IN DETERMINING BOND AMOUNTS AND/OR FEES AND IS NOT TO BE USED FOR BID PURPOSES.

WHERE DAMAGE IS CAUSED BY THE CONTRACTOR'S OPERATION, THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, REPAIR OR REPLACE DAMAGED FACILITIES PROMPTLY IN ACCORDANCE WITH COUNTY SPECIFICATIONS AND/OR AS DIRECTED BY THE COUNTY REPRESENTATIVE.

**INDEX OF SHEETS:**

SHEET NO.(S)	DESCRIPTION
1	TITLE SHEET
2-3	SIGNING & STRIPING PLAN
4	TRAFFIC SIGNAL MODIFICATION PLAN

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DATE SIGNED	
REGISTRATION NUMBER	
ENGINEER	

APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.



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MARK	BY	DATE	REVISIONS	APPR. DATE	COUNTY

SEAL - ENGINEER

**ALBERT A. WEBB ASSOCIATES**  
CIVIL ENGINEERS  
3788 McCRAY STREET  
RIVERSIDE, CA. 92506  
PH: (951) 686-1070  
FAX: (951) 788-1256

PREPARED BY: R.C.E. NO. C65078  
DATE: \_\_\_\_\_

**BENCHMARK:**  
REV. CO. BM# 2 HL 47-1,  
BRASS DISK, RESET 1968,  
ELEVATION=827.43 FT.,  
DATUM=NGVD=29

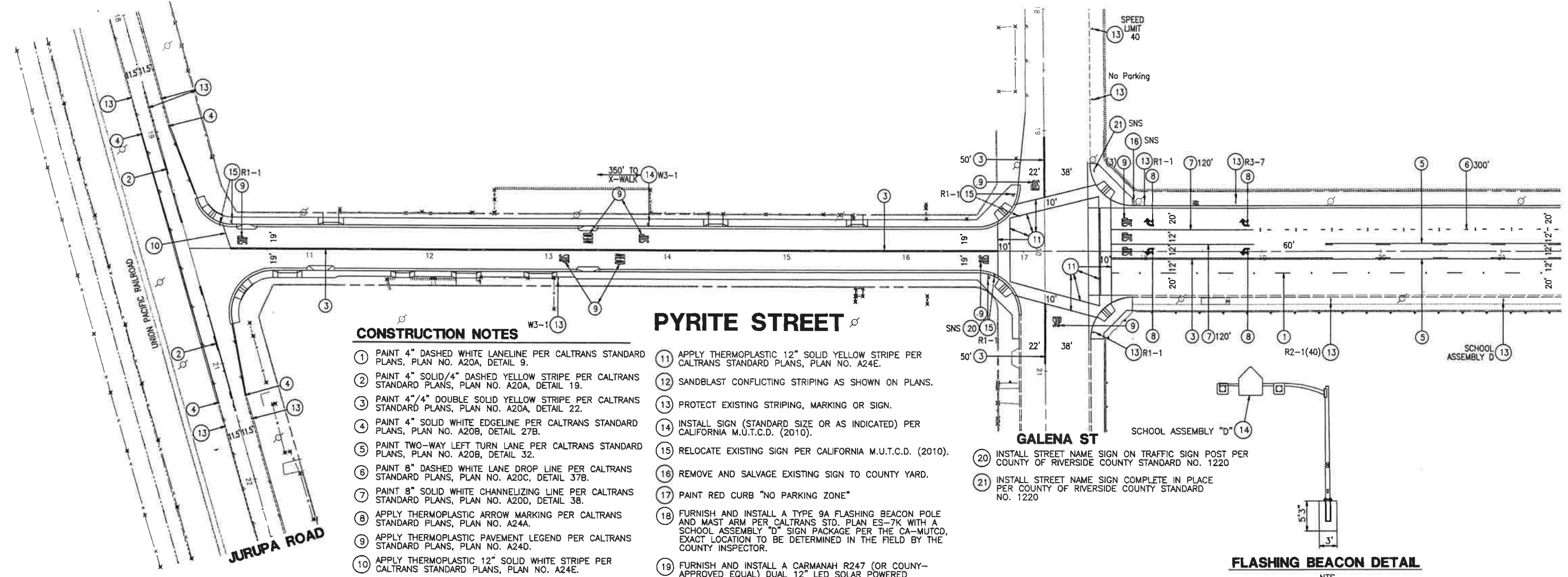
SCALE: \_\_\_\_\_ V: \_\_\_\_\_

MS 4253	IP 100066	SHEET NO.
COUNTY OF RIVERSIDE <b>SIGNING &amp; STRIPING AND TRAFFIC SIGNAL MODIFICATION PLANS</b> TITLE SHEET		<b>1</b>
FOR: RIV. CO. EDA	W.O. 10-0153	COUNTY FILE NO.



C:\2010\10-0153\0153\DWG\DR0\Design\10-0153\SS\115.prof\28/201111.123.39M

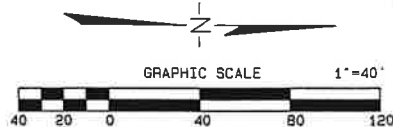
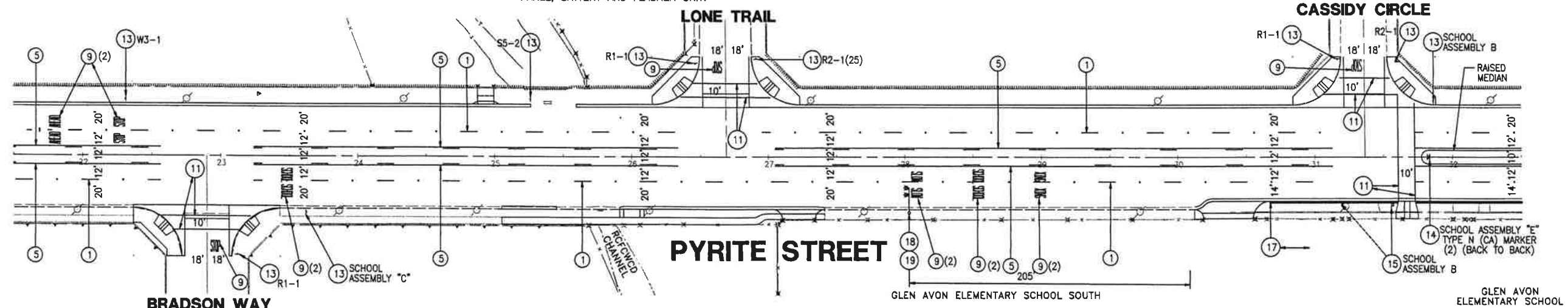
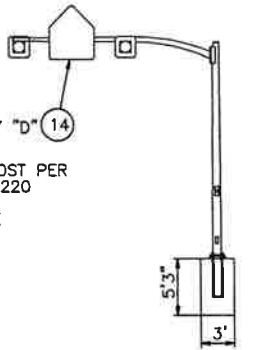
PLAN CHECK OVERSIGHT ENGINEER	DATE SIGNED
REGISTRATION NUMBER	
APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.	



**CONSTRUCTION NOTES**

- ① PAINT 4" DASHED WHITE LANELINE PER CALTRANS STANDARD PLANS, PLAN NO. A20A, DETAIL 9.
- ② PAINT 4" SOLID/4" DASHED YELLOW STRIPE PER CALTRANS STANDARD PLANS, PLAN NO. A20A, DETAIL 19.
- ③ PAINT 4" 4" DOUBLE SOLID YELLOW STRIPE PER CALTRANS STANDARD PLANS, PLAN NO. A20A, DETAIL 22.
- ④ PAINT 4" SOLID WHITE EDGELINE PER CALTRANS STANDARD PLANS, PLAN NO. A20B, DETAIL 27B.
- ⑤ PAINT TWO-WAY LEFT TURN LANE PER CALTRANS STANDARD PLANS, PLAN NO. A20B, DETAIL 32.
- ⑥ PAINT 8" DASHED WHITE LANE DROP LINE PER CALTRANS STANDARD PLANS, PLAN NO. A20C, DETAIL 37B.
- ⑦ PAINT 8" SOLID WHITE CHANNELIZING LINE PER CALTRANS STANDARD PLANS, PLAN NO. A20D, DETAIL 38.
- ⑧ APPLY THERMOPLASTIC ARROW MARKING PER CALTRANS STANDARD PLANS, PLAN NO. A24A.
- ⑨ APPLY THERMOPLASTIC PAVEMENT LEGEND PER CALTRANS STANDARD PLANS, PLAN NO. A24D.
- ⑩ APPLY THERMOPLASTIC 12" SOLID WHITE STRIPE PER CALTRANS STANDARD PLANS, PLAN NO. A24E.
- ⑪ APPLY THERMOPLASTIC 12" SOLID YELLOW STRIPE PER CALTRANS STANDARD PLANS, PLAN NO. A24E.
- ⑫ SANDBLAST CONFLICTING STRIPING AS SHOWN ON PLANS.
- ⑬ PROTECT EXISTING STRIPING, MARKING OR SIGN.
- ⑭ INSTALL SIGN (STANDARD SIZE OR AS INDICATED) PER CALIFORNIA M.U.T.C.D. (2010).
- ⑮ RELOCATE EXISTING SIGN PER CALIFORNIA M.U.T.C.D. (2010).
- ⑯ REMOVE AND SALVAGE EXISTING SIGN TO COUNTY YARD.
- ⑰ PAINT RED CURB "NO PARKING ZONE"
- ⑱ FURNISH AND INSTALL A TYPE 9A FLASHING BEACON POLE AND MAST ARM PER CALTRANS STD. PLAN ES-7K WITH A SCHOOL ASSEMBLY "D" SIGN PACKAGE PER THE CA-MUTCD, EXACT LOCATION TO BE DETERMINED IN THE FIELD BY THE COUNTY INSPECTOR.
- ⑲ FURNISH AND INSTALL A CARMANAH R247 (OR COUNTY-APPROVED EQUAL) DUAL 12" LED SOLAR POWERED FLASHING BEACON SYSTEM WITH INTEGRATED SOLAR PANEL, BATTERY AND FLASHER UNIT.

**FLASHING BEACON DETAIL**



**DIGALERT**  
 DIAL BEFORE YOU DIG  
 TWO WORKING DAYS BEFORE YOU DIG  
 TOLL FREE 1-800-227-2600  
 A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

**NOTE:**  
 WORK CONTAINED WITHIN THESE PLANS SHALL NOT COMMENCE UNTIL AN ENCROACHMENT PERMIT AND/OR A GRADING PERMIT HAS BEEN ISSUED.  
 THE PRIVATE ENGINEER SIGNING THESE PLANS IS RESPONSIBLE FOR ASSURING THE ACCURACY AND ACCEPTABILITY OF THE DESIGN HEREON. IN THE EVENT OF DISCREPANCIES ARISING AFTER COUNTY APPROVAL OR DURING CONSTRUCTION, THE PRIVATE ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING AN ACCEPTABLE SOLUTION AND REVISIONS TO THE PLANS FOR APPROVAL BY THE COUNTY.

MARK	BY	DATE	REVISIONS	APPR. DATE	COUNTY

SEAL - ENGINEER

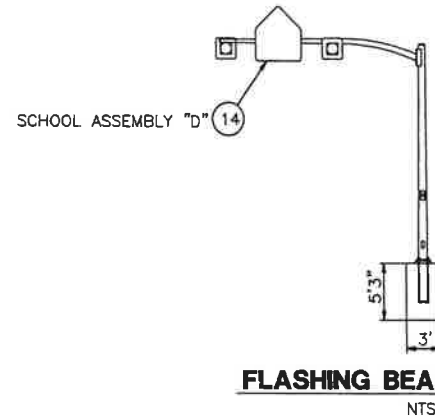
**ALBERT A. WEBB ASSOCIATES**  
 CIVIL ENGINEERS  
 3788 McCRAY STREET  
 RIVERSIDE, CA. 92506  
 PH: (951) 686-1070  
 FAX: (951) 788-1256  
 PREPARED BY: \_\_\_\_\_ R.C.E. NO. C65078  
 DATE: \_\_\_\_\_

**BENCHMARK:**  
 RIV. CO. BM# 2 WL 47-1,  
 BRASS DISK, RESET 1968,  
 ELEVATION=827.43 FT,  
 DATUM=NGVD=29  
 SCALE: H: \_\_\_\_\_ V: 1"=40'

MS 4253 IP 100066  
 COUNTY OF RIVERSIDE  
**SIGNING & STRIPING PLAN**  
**PYRITE STREET**  
 STA. 10+00 TO STA. 32+50  
 SHEET NO. **2** OF 4 SHEETS  
 FOR: RIV. CO. EDA W.O. 10-0153 COUNTY FILE NO. \_\_\_\_\_

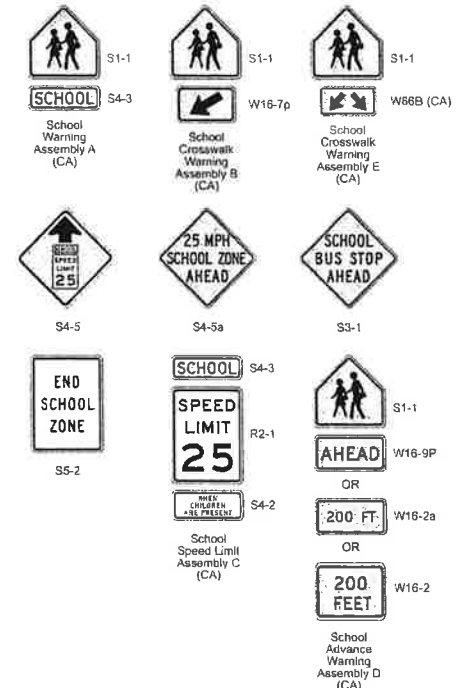
**CONSTRUCTION NOTES**

- 1 PAINT 4" DASHED WHITE LANELINE PER CALTRANS STANDARD PLANS, PLAN NO. A20A, DETAIL 9.
- 2 PAINT 4" SOLID/4" DASHED YELLOW STRIPE PER CALTRANS STANDARD PLANS, PLAN NO. A20A, DETAIL 19.
- 3 PAINT 4"/4" DOUBLE SOLID YELLOW STRIPE PER CALTRANS STANDARD PLANS, PLAN NO. A20A, DETAIL 22.
- 4 PAINT 4" SOLID WHITE EDGELINE PER CALTRANS STANDARD PLANS, PLAN NO. A20B, DETAIL 27B.
- 5 PAINT TWO-WAY LEFT TURN LANE PER CALTRANS STANDARD PLANS, PLAN NO. A20B, DETAIL 32.
- 6 PAINT 8" DASHED WHITE LANE DROP LINE PER CALTRANS STANDARD PLANS, PLAN NO. A20C, DETAIL 37B.
- 7 PAINT 8" SOLID WHITE CHANNELIZING LINE PER CALTRANS STANDARD PLANS, PLAN NO. A20D, DETAIL 38.
- 8 APPLY THERMOPLASTIC ARROW MARKING PER CALTRANS STANDARD PLANS, PLAN NO. A24A.
- 9 APPLY THERMOPLASTIC PAVEMENT LEGEND PER CALTRANS STANDARD PLANS, PLAN NO. A24D.
- 10 APPLY THERMOPLASTIC 12" SOLID WHITE STRIPE PER CALTRANS STANDARD PLANS, PLAN NO. A24E.
- 11 APPLY THERMOPLASTIC 12" SOLID YELLOW STRIPE PER CALTRANS STANDARD PLANS, PLAN NO. A24E.
- 12 SANDBLAST CONFLICTING STRIPING AS SHOWN ON PLANS.
- 13 PROTECT EXISTING STRIPING, MARKING OR SIGN.
- 14 INSTALL SIGN (STANDARD SIZE OR AS INDICATED) PER CALIFORNIA M.U.T.C.D. (2010).
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- 23 PAINT MEDIAN ISLAND PER CALTRANS STANDARD PLANS, PLAN NO. A20B, DETAIL 24



**FLASHING BEACON DETAIL**

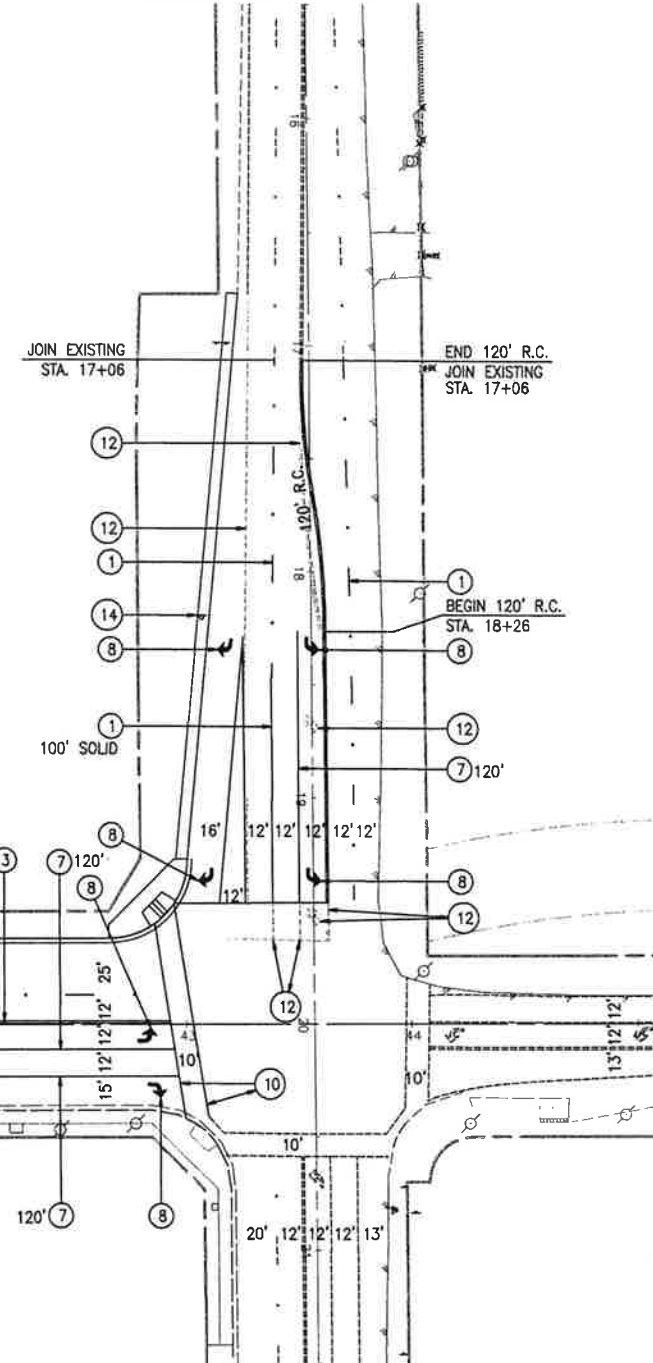
NTS



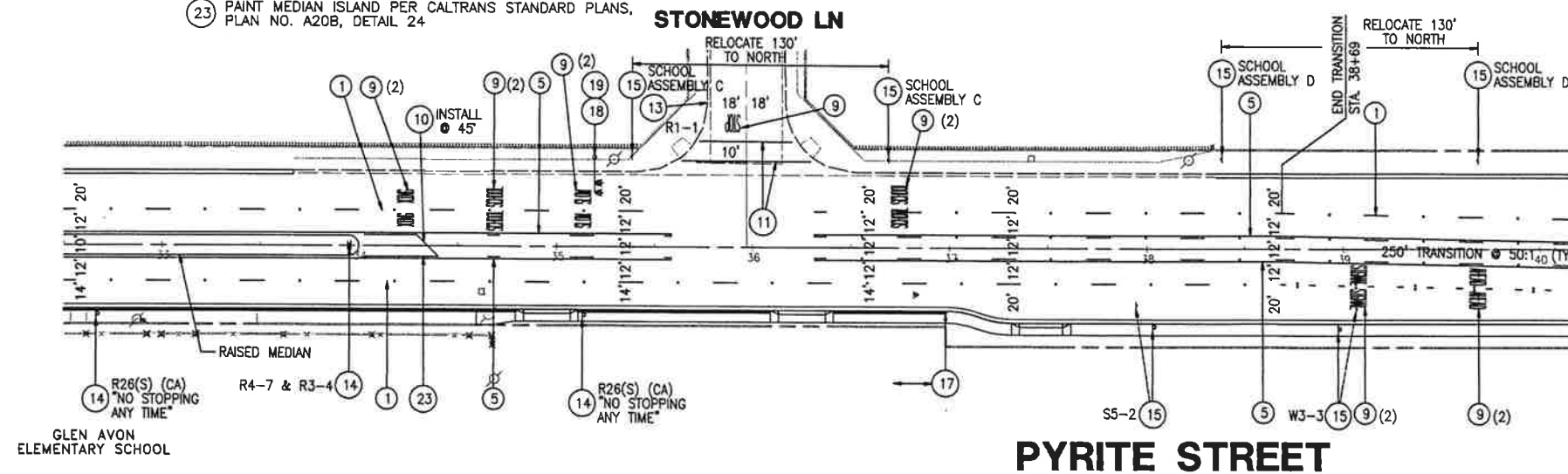
**SCHOOL AREA SIGNS**

NTS  
ALL SCHOOL WARNING SIGNS SHALL BE FLUORESCENT YELLOW

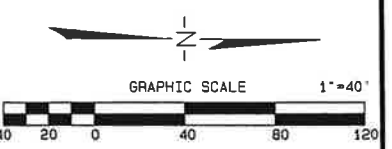
**MISSION BLVD**



**STONWOOD LN**



**PYRITE STREET**



PLAN CHECK OVERSIGHT ENGINEER  
 REGISTRATION NUMBER  
 DATE SIGNED  
 APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.  
 CA\2010\10-0153\DWG646PR0\Design\10-0153SS+TS.prd\4/28/2011\11:23:45AM

**DIGALERT**  
 DIAL BEFORE YOU DIG  
 TWO WORKING DAYS BEFORE YOU DIG  
 TOLL FREE 1-800-227-2600  
 A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

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MARK	BY	DATE	REVISIONS	APPR. DATE	COUNTY

SEAL - ENGINEER  
**ALBERT A. WEBB ASSOCIATES**  
 CIVIL ENGINEERS  
 3788 McCRAY STREET  
 RIVERSIDE, CA. 92506  
 PH: (951) 688-1070  
 FAX: (951) 788-1256  
 PREPARED BY: R.C.E. NO. C65078  
 DATE: \_\_\_\_\_

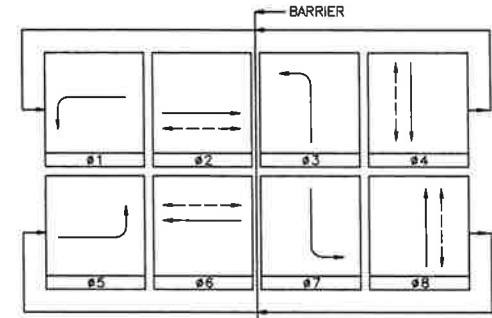
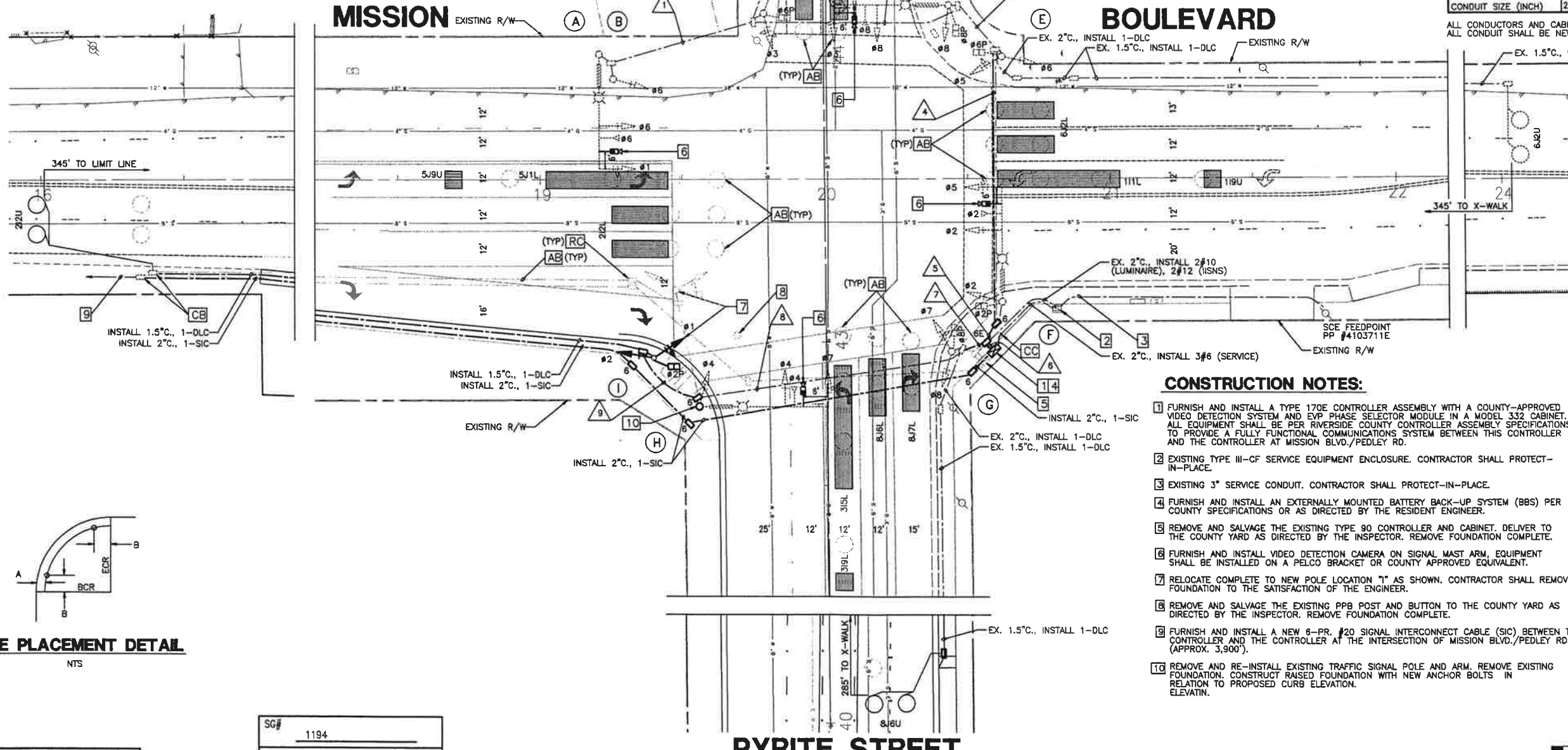
BENCHMARK: RIV. CO. BM# 2 ML 47-1, BRASS DISK, RESET 1988, ELEVATION=827.43 FT, DATUM=NGVD=29  
 MS 4253 IP 100066  
 COUNTY OF RIVERSIDE  
**SIGNING & STRIPING PLAN**  
**PYRITE STREET**  
 STA. 32+50 TO STA. 43+50  
 SCALE: H: \_\_\_\_\_ V: 1"=40'  
 FOR: RIV. CO. EDA W.O. 10-0153 COUNTY FILE NO.  
 SHEET NO. **3** OF 4 SHEETS

POLE SCHEDULE													
NO.	TYPE	STANDARD			LUM. HPSV	SIGNAL MOUNTING			PPB PHASE	I.I.S.N.S. LEGEND	DIMS		DIST.
		HGT	SIG. M.A.	LUM. M.A.		M.A.	VEHICLE	PED.			A	B	
A	26-4-80	30'	40'	15'	200W	2-MAS			Pyrite	EXISTING	F=15'		
B	1-A	10'				TV-1-T				EXISTING			
C	1-A	10'				TV-1-T	SP-1-T	6		EXISTING			
D	26-4-80	30'	40'	15'	200W	2-MAS	SV-1-T	SP-1-T	6	Mission	EXISTING	F=15'	
E	1-A	10'				TV-2-T	SP-1-T	8		EXISTING			
F	26-4-80	30'	40'	15'	200W	2-MAS	SV-1-T	SP-1-T	8	Pyrite	EXISTING	F=15'	
G	1-A	10'				TV-1-T	SP-1-T	2		EXISTING			
H	26-4-80	30'	45'	15'	200W	2-MAS	SV-1-T	SP-1-T	2 (N)	Mission	EXISTING	F=15'	
I	1-A (R)	10' (R)				TV-2-T (R)	SP-1-T (R)				4' 12'		

EQUIPMENT IS EXISTING UNLESS SPECIFIED OTHERWISE; (N) = NEW; (R) = RELOCATE  
 ALL NEW EQUIPMENT SHALL BE PER THE 2006 CALTRANS STANDARD PLANS UNLESS SPECIFIED OTHERWISE

CONDUCTOR SCHEDULE											
A.W.G.	CIRCUIT	RUNS									
		1	2	3	4	5	6	7	8	9	
12 C.C.	POLE A	1/-	1/-	1/-	1/-	1/-	1/-				
	POLE B	-1	-1	-1	-1	-1	-1				
	POLE C	1/1	1/1	1/1	1/1	1/1	1/1				
	POLE D			1/1	1/1	1/1	1/1				
	POLE E				1/1	1/1	1/1				1/1
	POLE F					1/1	1/1				
	POLE G						1/1	1/1	1/1		
	POLE H							1/1	1/1	1/1	
	POLE I								1/1	1/1	1/1
	TOTAL		1/1	2/2	3/3	4/4	5/5	8/8	3/3	2/2	1/1
12	I.I.S.N.S.	2	2	2	2	2	2	2	2	2	
	TOTAL	2	2	2	2	2	2	2	2	2	
10	LUMINAIRE	2	2	2	2	2	2	2	2	2	
	TOTAL	2	2	2	2	2	2	2	2	2	
DLC	#2 DETECTOR						1	1	1	1	
	#4 DETECTOR		1	1	1	1	1	1	1	1	
	#6 DETECTOR					1	1	1	1	1	
	#8 DETECTOR							1	1	1	
TOTAL		1	1	1	2	2	4	2	1	1	
VIDEO DETECTION	CABLE	1	1	2	2	3	4	1	1	1	
	POWER	1	1	1	1	1	2	1	1	1	
TOTAL		2	2	3	3	4	6	2	2	2	
EVP CABLE (4#20)		1	1	2	2	3	4	4	1	1	
CONDUIT SIZE (INCH)		2" (E)	3" (E)	3" (E)	4"	4"	2-4"	3"	3"	2"	

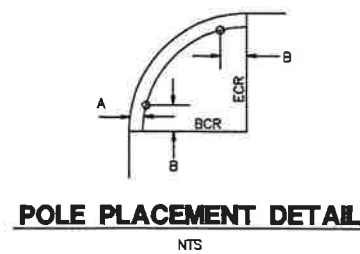
ALL CONDUCTORS AND CABLES SHALL BE NEW; ALL CONDUIT SHALL BE NEW UNLESS SPECIFIED OTHERWISE; (E) = EXISTING



PHASE DIAGRAM

CONSTRUCTION NOTES:

- FURNISH AND INSTALL A TYPE 170E CONTROLLER ASSEMBLY WITH A COUNTY-APPROVED VIDEO DETECTION SYSTEM AND EVP PHASE SELECTOR MODULE IN A MODEL 332 CABINET. ALL EQUIPMENT SHALL BE PER RIVERSIDE COUNTY CONTROLLER ASSEMBLY SPECIFICATIONS TO PROVIDE A FULLY FUNCTIONAL COMMUNICATIONS SYSTEM BETWEEN THIS CONTROLLER AND THE CONTROLLER AT MISSION BLVD./PEDLEY RD.
- EXISTING TYPE III-CF SERVICE EQUIPMENT ENCLOSURE. CONTRACTOR SHALL PROTECT-IN-PLACE.
- EXISTING 3" SERVICE CONDUIT. CONTRACTOR SHALL PROTECT-IN-PLACE.
- FURNISH AND INSTALL AN EXTERNALLY MOUNTED BATTERY BACK-UP SYSTEM (BBS) PER COUNTY SPECIFICATIONS OR AS DIRECTED BY THE RESIDENT ENGINEER.
- REMOVE AND SALVAGE THE EXISTING TYPE 90 CONTROLLER AND CABINET. DELIVER TO THE COUNTY YARD AS DIRECTED BY THE INSPECTOR. REMOVE FOUNDATION COMPLETE.
- FURNISH AND INSTALL VIDEO DETECTION CAMERA ON SIGNAL MAST ARM, EQUIPMENT SHALL BE INSTALLED ON A PELCO BRACKET OR COUNTY APPROVED EQUIVALENT.
- RELOCATE COMPLETE TO NEW POLE LOCATION "I" AS SHOWN. CONTRACTOR SHALL REMOVE FOUNDATION TO THE SATISFACTION OF THE ENGINEER.
- REMOVE AND SALVAGE THE EXISTING PPB POST AND BUTTON TO THE COUNTY YARD AS DIRECTED BY THE INSPECTOR. REMOVE FOUNDATION COMPLETE.
- FURNISH AND INSTALL A NEW 6-PR. #20 SIGNAL INTERCONNECT CABLE (SIC) BETWEEN THIS CONTROLLER AND THE CONTROLLER AT THE INTERSECTION OF MISSION BLVD./PEDLEY RD. (APPROX. 3,900').
- REMOVE AND RE-INSTALL EXISTING TRAFFIC SIGNAL POLE AND ARM. REMOVE EXISTING FOUNDATION. CONSTRUCT RAISED FOUNDATION WITH NEW ANCHOR BOLTS IN RELATION TO PROPOSED CURB ELEVATION.



POLE PLACEMENT DETAIL

SG# 1194  
 SERVICE ADDRESS:  
 8194 MISSION BLVD.

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MARK	BY	DATE	REVISIONS	APPR. DATE	COUNTY

SEAL - ENGINEER

ALBERT A. CIVIL ENGINEERS  
 3788 McCRA Y STREET  
 RIVERSIDE, CA. 92506  
 PH: (951) 686-1070  
 FAX: (951) 788-1256

PREPARED BY: R.C.E. NO. C65078  
 DATE: \_\_\_\_\_

BENCHMARK:  
 RV. CO. BM# 2 ML 47-1,  
 BRASS DISK, RESET 1968,  
 ELEVATION=827.43 FT,  
 DATUM=NGVD=29

MS 4253 IP 100066 SHEET NO. 4  
 COUNTY OF RIVERSIDE  
 TRAFFIC SIGNAL  
 MODIFICATION PLAN  
 PYRITE STREET & MISSION BOULEVARD OF 4 SHEETS

SCALE: H: \_\_\_\_\_ V: 1"=20'  
 FOR: RIV. CO. EDA W.O. COUNTY FILE NO. 10-0153

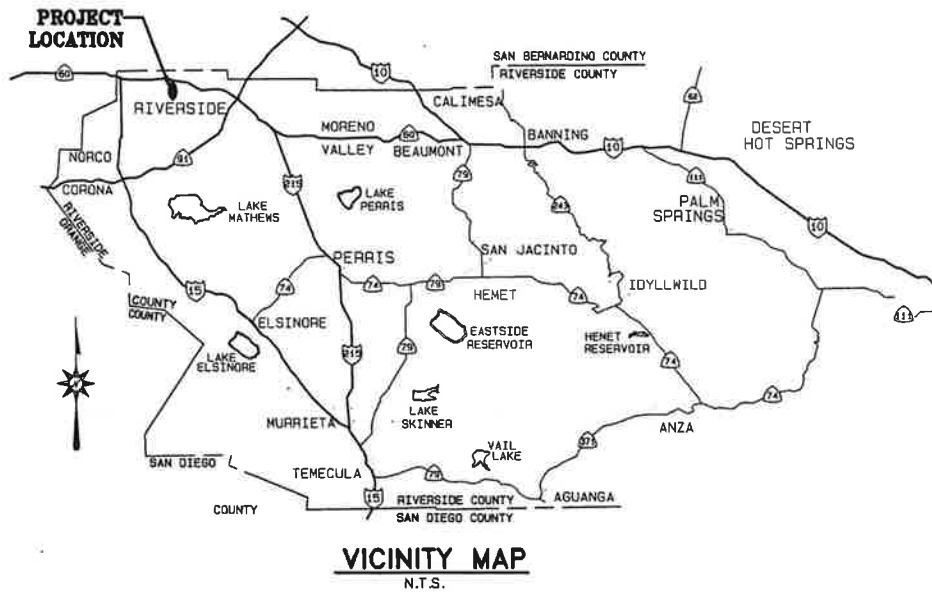
PLAN CHECK OVERSIGHT ENGINEER REGISTRATION NUMBER DATE SIGNED  
 APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.



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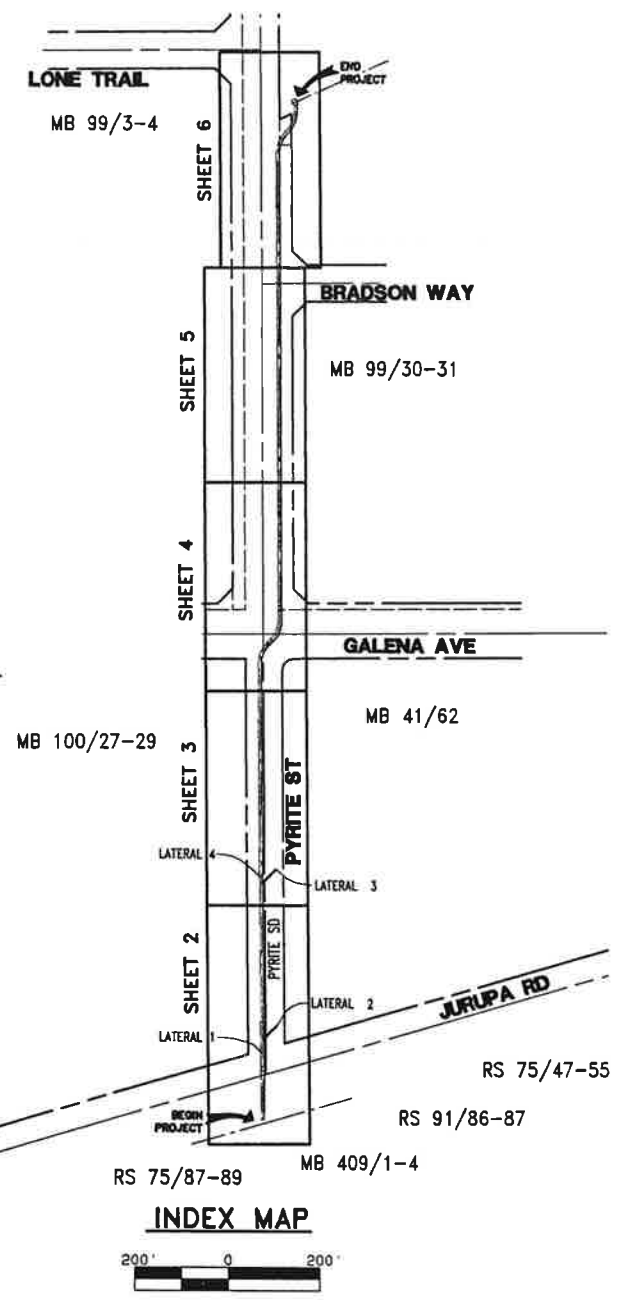


# RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT



### SHEET INDEX

TITLE SHEET	SHEET NO.
PLAN & PROFILE - PYRITE SD	1
PLAN & PROFILE - LATERAL P1 & PYRITE LATERAL	2-6
PLAN & PROFILE - LATERAL P4, P5,	7
BOX DETAIL SHEET	8
JUNCTION DETAIL SHEET	9
	10



### GENERAL NOTES

- BEDDING AND PAYLINES ARE SHOWN ON RCFC STANDARD DRAWING MB15 UNLESS SHOWN OTHERWISE ON THESE PLANS.
- ALL STATIONING REFERS TO CENTERLINE OF CONSTRUCTION.
- ALL CHANNEL/STORM DRAIN REFERENCES AND CROSS SECTIONS ARE TAKEN LOOKING DOWNSTREAM.
- TOPOGRAPHY BY DIGITAL PHOTOGRAMMETRIC METHODS. AERIAL PHOTOGRAPHS TAKEN AT AN ALTITUDE NOT TO EXCEED A FLYING HEIGHT TO CONTOUR INTERVAL RATIO OF 1800. PHOTOGRAPHY DATED 06-19-2009
- THE VERTICAL DATUM IS DERIVED FROM NGVD 29. THE HORIZONTAL DATUM IS DERIVED FROM NAD 83.
- STANDARD DRAWINGS CALLED FOR ON THE PLAN & PROFILE SHALL CONFORM TO RCFC & WCD STD DRAWINGS, OR CALTRANS/CITY/COUNTY STANDARD PLANS.
- ELEVATIONS AND LOCATIONS OF UTILITIES WERE OBTAINED FROM AVAILABLE INFORMATION AND ARE SHOWN APPROXIMATELY ON THESE PLANS. 48 HOURS BEFORE EXCAVATION CALL UNDERGROUND SERVICE ALERT AT 1-800-227-2600. ALL UTILITIES SHALL BE PROTECTED IN PLACE EXCEPT AS NOTED ON PLANS AND SPECIFICATIONS.
- THE CONTRACTOR IS REQUIRED TO CONTACT ALL UTILITY AGENCIES REGARDING TEMPORARY SUPPORT AND SHORING REQUIREMENTS FOR THE VARIOUS UTILITY LINES SHOWN ON THESE PLANS.
- ALL OPENINGS RESULTING FROM CUTTING OR PARTIAL REMOVAL OF EXIST. CULVERTS, PIPES, OR SIMILAR STRUCTURES TO BE ABANDONED, SHALL BE SEALED AT BOTH ENDS WITH 6" MIN CLASS "B" CONCRETE.
- UNLESS OTHERWISE SPECIFIED, MINIMUM STREET RECONSTRUCTION SHALL BE 0.25' TYPE "B" ASPHALT CONCRETE OVER 6" CLASS 2 AGGREGATE BASE OR AS SPECIFIED BY THE ENGINEER.
- ALL RECONSTRUCTION, RESURFACING AND PAVEMENT DELINEATION, CURBS, SIDEWALKS AND OTHER IMPROVEMENTS ARE TO BE RECONSTRUCTED IN KIND AT THE SAME LOCATIONS AND ELEVATIONS AS THE EXISTING IMPROVEMENTS, UNLESS OTHERWISE NOTED.
- ⊙ INDICATED APPROX. SOIL BORING LOCATION PER SOILS REPORT BY C.H.J., INC. DATED 12/10/08..

### R.C.F.C. & W.C.D. STD. DWGS.

JS226	JUNCTION STRUCTURE NO. 1
JS227	JUNCTION STRUCTURE NO. 2
JS228	JUNCTION STRUCTURE NO. 3
JS229	JUNCTION STRUCTURE NO. 4
MB16	CONCRETE BULKHEAD
MH252	MANHOLE NO. 2
MH253	MANHOLE NO. 3
TS301	TRANSITION STRUCTURE NO. 1
M814	ABBREVIATIONS AND SYMBOLS
M815	BEDDING AND PAY LINES
M816	CONCRETE BULKHEAD

### CALTRANS STD. DWGS.

D80	REINFORCED CONCRETE SINGLE BOX CULVERT
-----	--

### RIVERSIDE CO. STD. DWGS.

301	COMBINATION INLET CATCH BASIN NO. 1
312	GUTTER DEPRESSION FOR GRATE OPENING CATCH BASIN

MS 4253 IP 100066

RIVERSIDE COUNTY  
**TRANSPORTATION DEPARTMENT**  
APPROVED BY:

ALAN D. FRENCH, P.E. R.C.E. 45702 EXP. 12-31-12	DATE
RECOMMENDED BY:	DATE

PLANCHHECK NO. 2 MARCH 2011

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Don't Dig...Until You Call U.S.A. Toll Free  
**1-800-227-2600**  
for the location of buried utility lines.  
Don't disrupt vital services.  
THE WORKING DAYS BEFORE YOU DIG

BENCH MARK: ELEVATION = 827.43'  
RIVERSIDE COUNTY BENCHMARK, BM ML 47-1  
BRASS DISK, RESET 1988  
DATUM = NGVD29  
HORIZONTAL DATUM = NAD83  
BASIS OF BEARINGS: THE CENTERLINE OF TYROLITE STREET, AS SHOWN BY PARCEL MAP 9214 PER P.M. 38/87

REF.	DESCRIPTION	APPR.	DATE



**ALBERT A. WEBB**  
ASSOCIATES  
3788 McCRAY STREET, RIVERSIDE, CA. 92506  
PH. (951) 886-1070 FAX (951) 788-1256

DESIGNED BY: MLA PREPARED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
DRAWN BY: MLA R.C.E. NO. C67239 EXP. DATE 9-30-12  
CHECKED BY: JCC

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

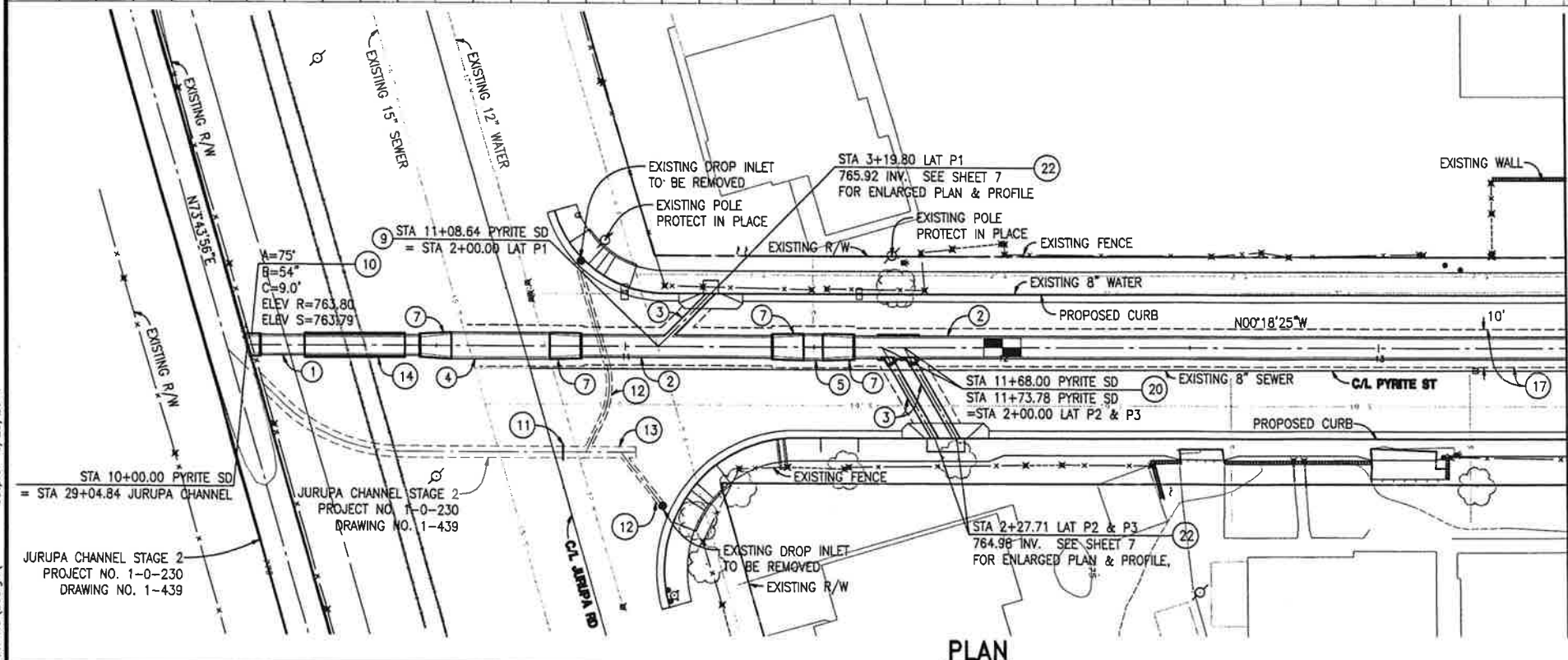
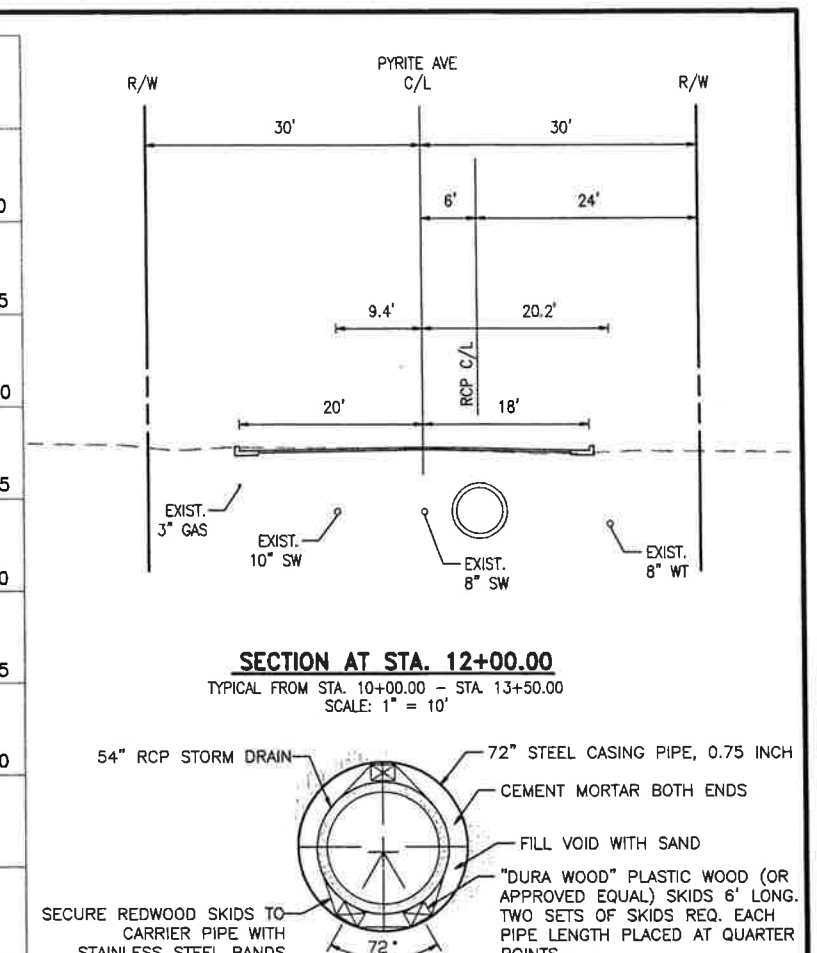
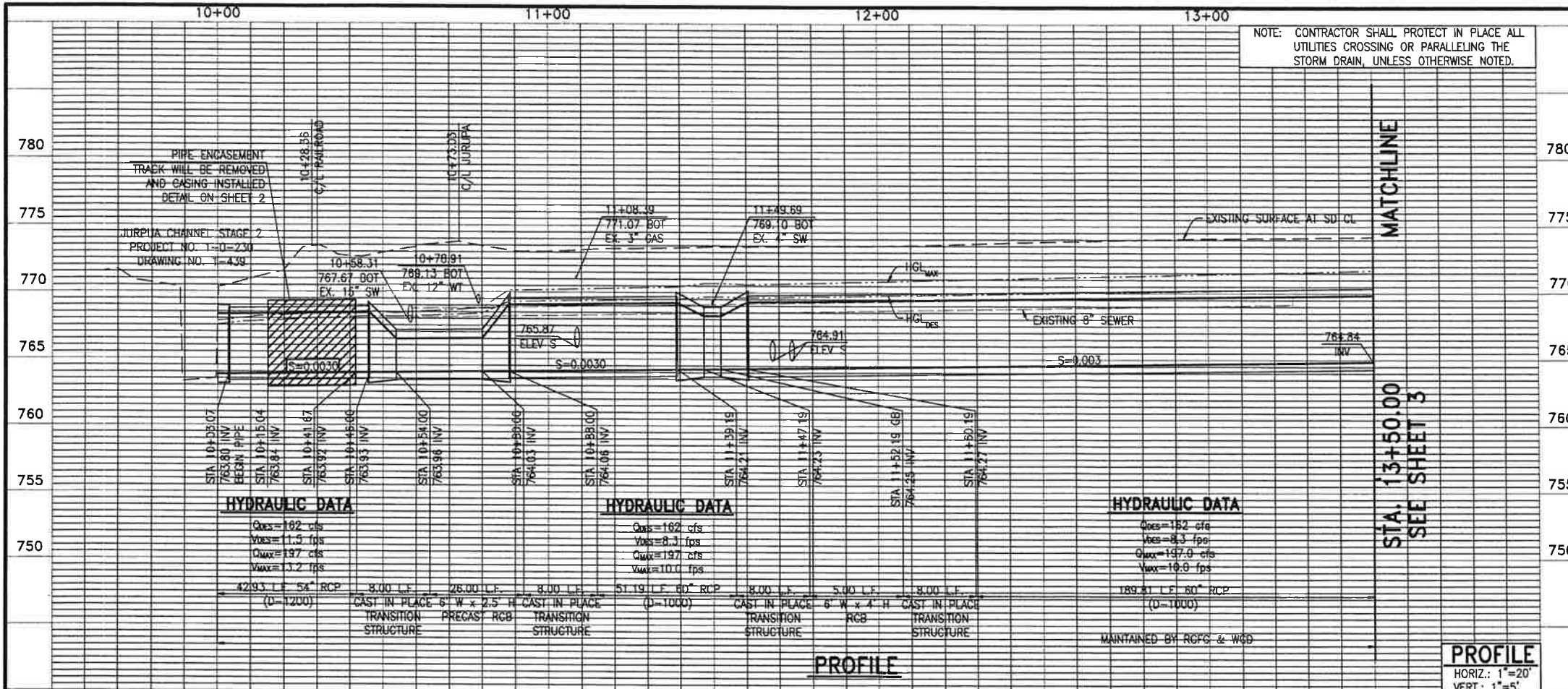
RECOMMENDED BY:	APPROVED BY:
CHIEF OF DESIGN AND CONSTRUCTION	CHIEF ENGINEER
DATE: _____	DATE: _____

**PYRITE STREET STORM DRAIN**  
TITLE SHEET

PROJECT NO.	X-XXXX-XX
DRAWING NO.	X-XXX
SHEET NO.	1 OF 10

PLANCHUCK NO. 2 MARCH 2011)

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STA. 13+50.00  
SEE SHEET 3

- CONSTRUCTION NOTES**
- INSTALL 54" RCP (D-LOAD PER PLAN)
  - INSTALL 60" RCP (D-LOAD PER PLAN)
  - INSTALL 18" RCP (CLASS IV)
  - CONSTRUCT 6'W x 2.5'H PRECAST BOX PER A.P.W.A. STD. PLAN 390-0
  - CONSTRUCT 6'W x 4'H SINGLE CELL RCB (CAST-IN-PLACE) PER CALTRANS STD. NO. D80
  - CONSTRUCT TRANSITION STRUCTURE NO. 1 PER R.C.F.C. & W.C.D. STD. TS301
  - CONSTRUCT JUNCTION STRUCTURE NO. 4 (CASE 3) PER R.C.F.C. & W.C.D. STD. JS229
  - CONSTRUCT MODIFIED JUNCTION STRUCTURE NO. 1 PER R.C.F.C. & W.C.D. STD. JS226, DETAILS SHEET 10
  - INSTALL CONCRETE BULKHEAD PER R.C.F.C. & W.C.D. STD. M816
  - REMOVE EXISTING 18" RCP
  - REMOVE EXISTING 36" RCP
  - INSTALL STEEL ENCASUREMENT. DETAILS THIS SHEET
  - LIMITS OF TRENCHING
  - CONSTRUCT JUNCTION STRUCTURE NO. 2 PER R.C.F.C. & W.C.D. STD. JS227
  - CONSTRUCT CATCH BASIN PER RIV. CO. STD. NO. 300 AND LOCAL DEPRESSION PER RIV. CO. STD. NO. 311 (CASE C). HEIGHT AND WIDTH PER PROFILE

Don't Dig...Until You Call U.S.A. Toll Free 1-800-227-2800 for the location of buried utility lines. Don't disrupt vital services.

BENCH MARK: ELEVATION = 827.43'  
RIVERSIDE COUNTY BENCHMARK, BM ML 47-1  
BRASS DISK, RESET 1988  
DATUM = NAVD29  
HORIZONTAL DATUM = NAD83  
BASIS OF BEARINGS: THE CENTERLINE OF TYROLITE STREET, AS SHOWN BY PARCEL MAP 9214 PER P.M. 36/87

NO.	DESCRIPTION	DATE



**ALBERT A. WEBB**  
ASSOCIATES  
4788 McCRAY STREET, RIVERSIDE, CA. 92506  
PH. (951) 686-1070 FAX (951) 788-1256

DESIGNED BY: MLA  
DRAWN BY: MLA  
CHECKED BY: JCC

PREPARED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
R.C.E. NO. C67239 EXP. DATE 9-30-12

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

RECOMMENDED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

RIVERSIDE COUNTY  
**TRANSPORTATION DEPARTMENT**  
APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

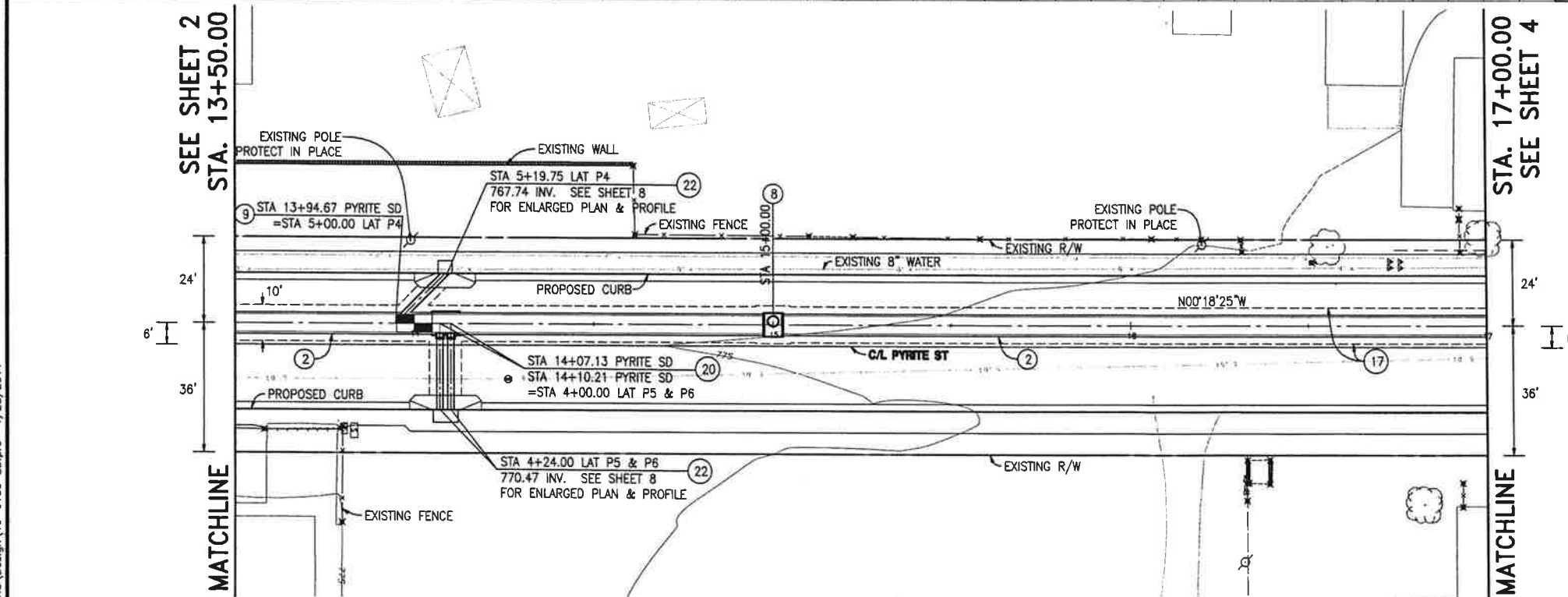
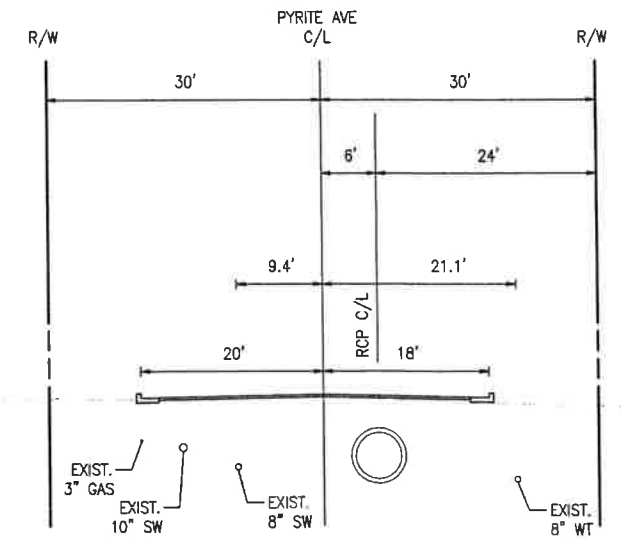
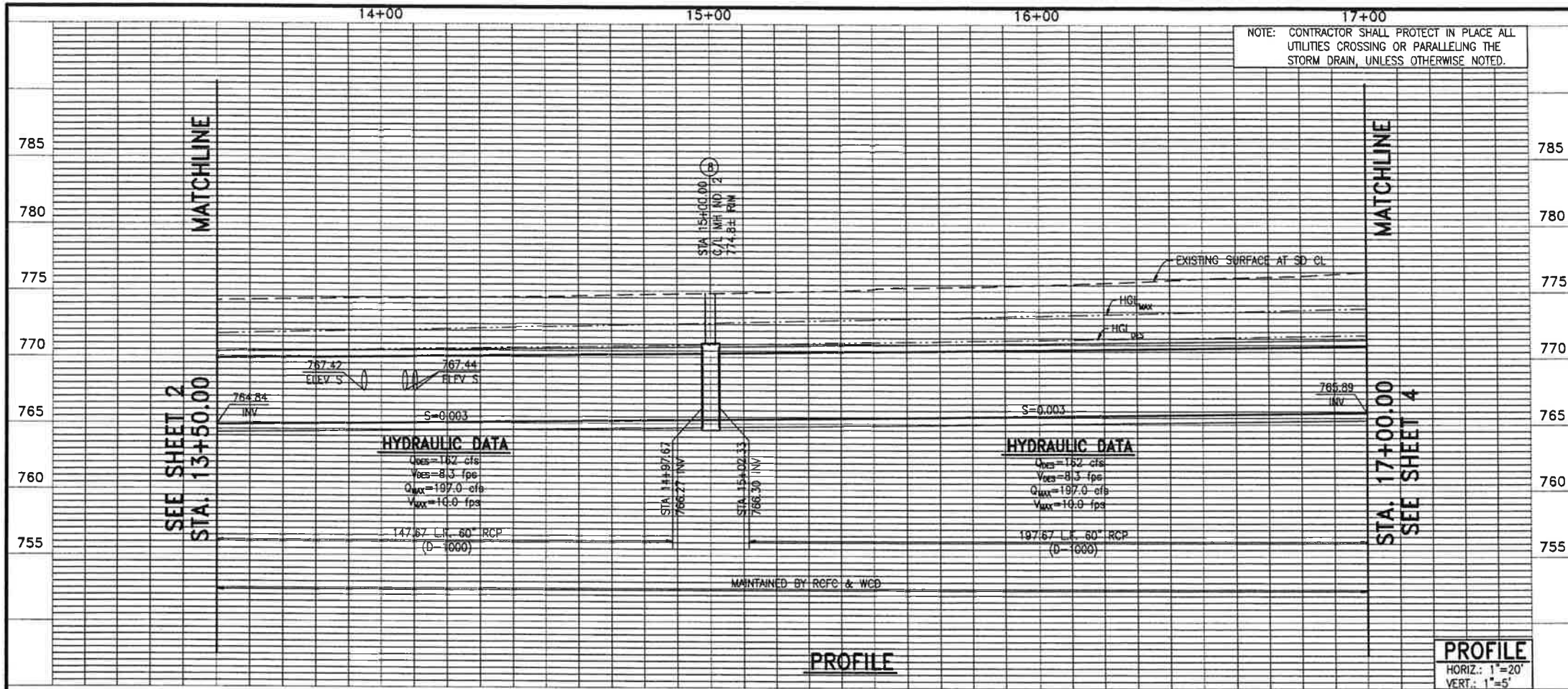
ALAN D. FRENCH, P.E.  
R.C.E. 45702 EXP. 12-31-12

RECOMMENDED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

**PYRITE STREET STORM DRAIN**  
STA. 10+00.00 - STA. 13+50.00

PROJECT NO. X-XXXX-XX  
DRAWING NO. X-XXX  
SHEET NO. 2 OF 10





**CONSTRUCTION NOTES**

- ② INSTALL 60" RCP (D-LOAD PER PLAN)
- ⑧ CONSTRUCT MANHOLE NO. 2 PER R.C.F.C. & W.C.D. STD. MH252
- ⑨ CONSTRUCT JUNCTION STRUCTURE NO. 4 (CASE 3) PER R.C.F.C. & W.C.D. STD. JS229
- ⑰ LIMITS OF TRENCHING
- ⑳ CONSTRUCT JUNCTION STRUCTURE NO. 2 PER R.C.F.C. & W.C.D. STD. JS227
- ㉒ CONSTRUCT CATCH BASIN PER RIV. CO. STD. NO. 300 AND LOCAL DEPRESSION PER RIV. CO. STD. NO. 311 (CASE C). HEIGHT AND WIDTH PER PROFILE



RIVERSIDE COUNTY  
**TRANSPORTATION DEPARTMENT**  
 APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 ALAN D. FRENCH, P.E.  
 R.C.E. 45702 EXP. 12-31-12  
 RECOMMENDED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

Don't Dig...Until You Call U.S.A. Toll Free  
**1-800-227-2800**  
 for the location of buried utility lines.  
 Don't disrupt vital services.  
 TWO WORKING DAYS BEFORE YOU DIG

BENCH MARK: ELEVATION = 827.43'  
 RIVERSIDE COUNTY BENCHMARK, BM ML 47-1  
 BRASS DISK, RESET 1958  
 DATUM = NGVD29  
 HORIZONTAL DATUM = NAD83  
 BASIS OF BEARINGS: THE CENTERLINE OF TYROLITE STREET, AS SHOWN BY PARCEL MAP 9214 PER P.M. 38/87

REF.	DESCRIPTION	APPR.	DATE



**ALBERT A. WEBB ASSOCIATES**  
 3788 McCRAY STREET, RIVERSIDE, CA. 92506  
 PH. (951) 686-1070 FAX (951) 788-1256  
 DESIGNED BY: MLA PREPARED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 DRAWN BY: MLA R.C.E. NO. C67239 EXP. DATE 9-30-12  
 CHECKED BY: JCC

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT  
 RECOMMENDED BY: \_\_\_\_\_ APPROVED BY: \_\_\_\_\_  
 DATE: \_\_\_\_\_ DATE: \_\_\_\_\_

**PYRITE STREET STORM DRAIN**  
 STA. 13+50.00 - STA. 17+00.00

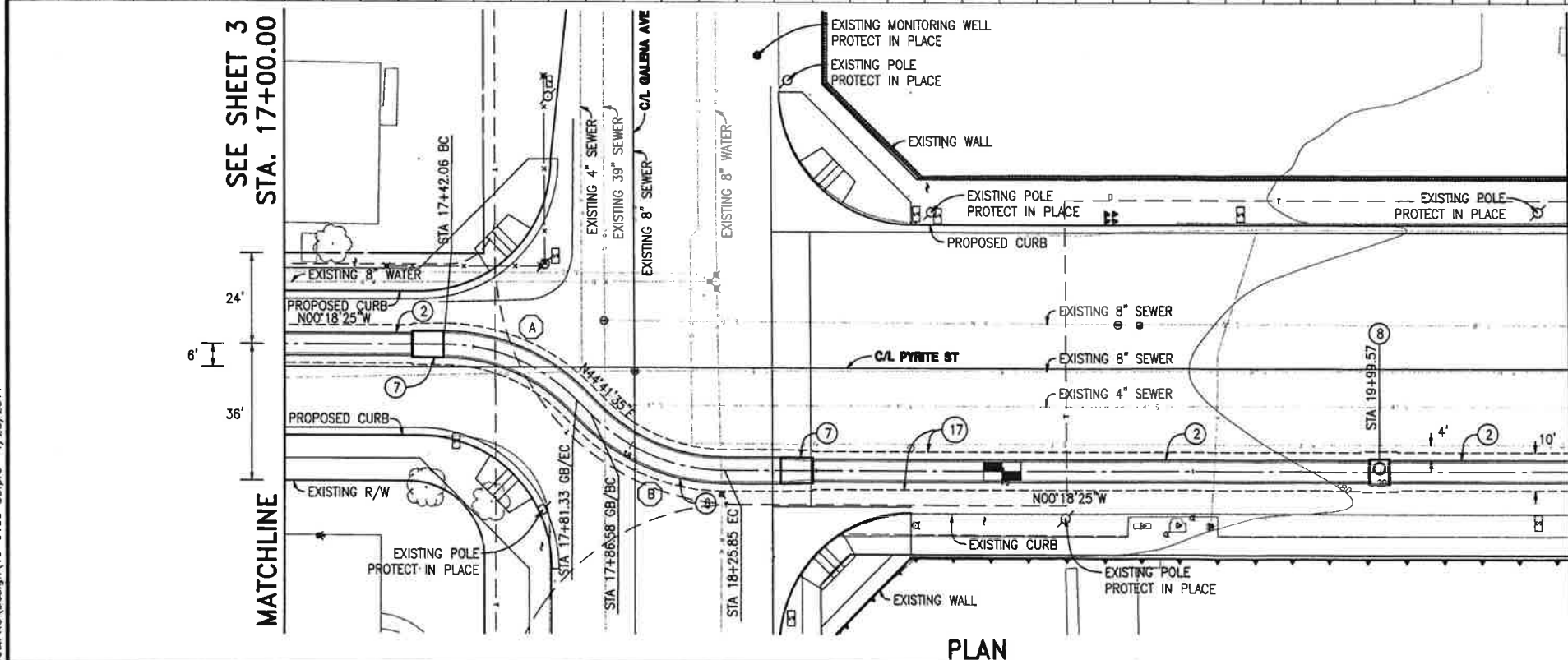
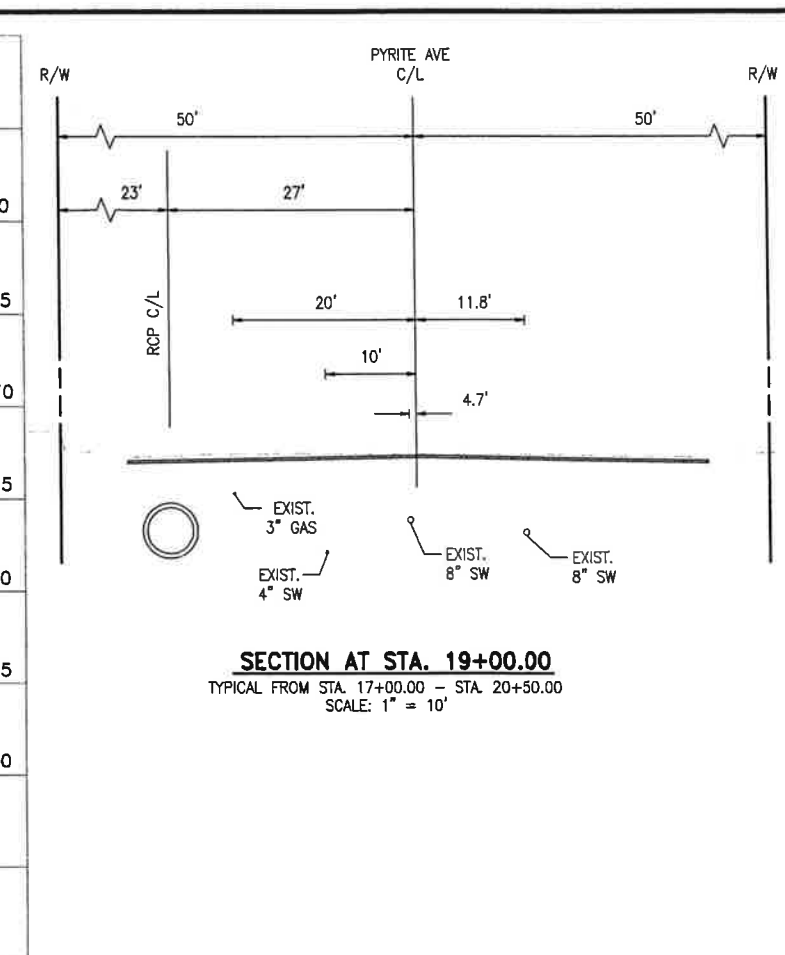
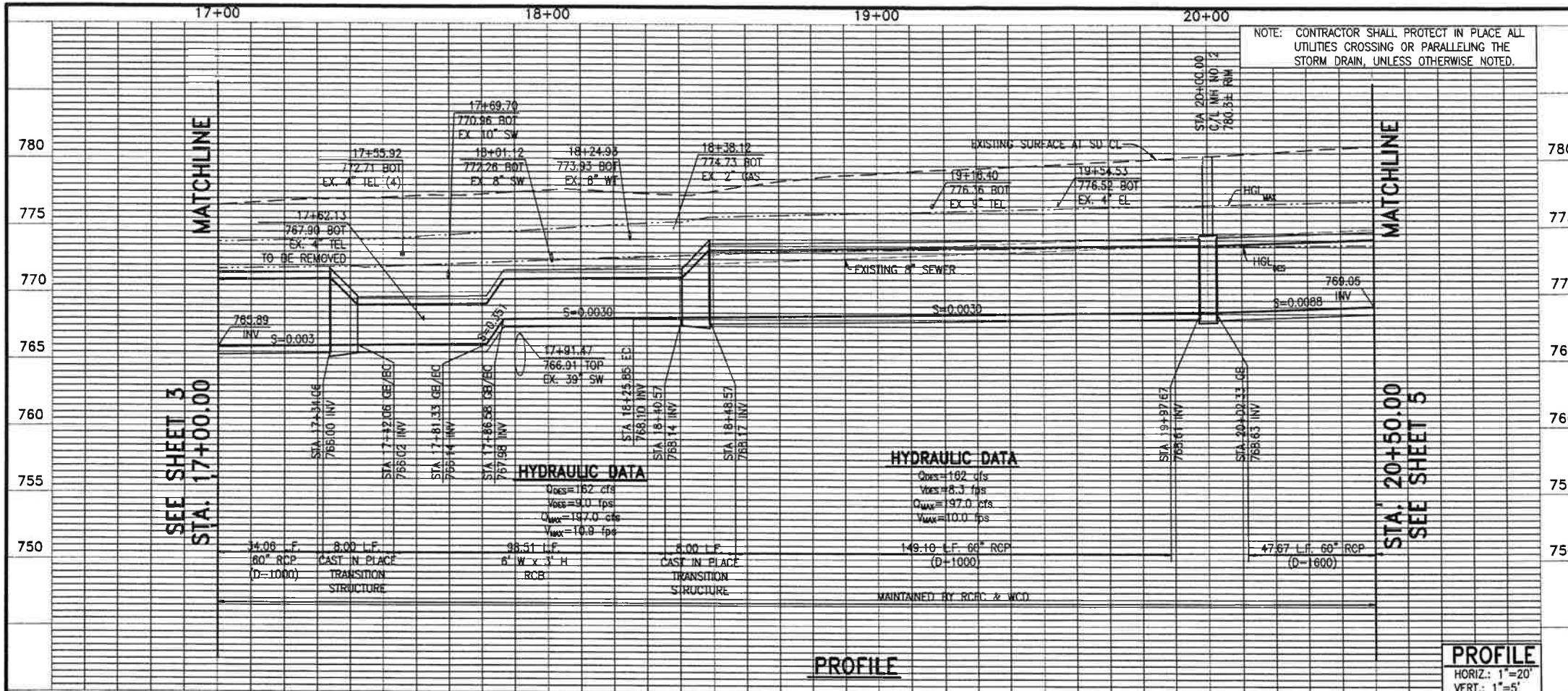
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 DRAWING NO. X-XXX  
 SHEET NO. 3 OF 10

PLANCHUCK NO. 2 MARCH 2011

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PLANCHICK NO. 2 MARCH 2011)

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**CONSTRUCTION NOTES**

- INSTALL 60" RCP (D-LOAD PER PLAN)
- CONSTRUCT 6'W x 3'H SINGLE CELL RCB (CAST-IN-PLACE) PER CALTRANS STD. NO. D80
- CONSTRUCT TRANSITION STRUCTURE NO. 1 PER R.C.F.C. & W.C.D. STD. TS301
- CONSTRUCT MANHOLE NO. 2 PER R.C.F.C. & W.C.D. STD. MH252
- LIMITS OF TRENCHING

**Curve Data**

Curve	Delta	Radius	Length	Tangent	BC Station	EC Station	PI Station
A	45°00'00"	50.00'	39.27'	20.71'	17+42.06	17+81.33	N 8985.06, E 7689.98
B	45°00'00"	50.00'	39.27'	20.71'	17+86.58	17+25.85	N 9018.24, E 7722.81

**TRANSFORMATION DEPARTMENT**  
APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
ALAN D. FRENCH, P.E.  
R.C.E. 45702 EXP. 12-31-12

RECOMMENDED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

DESIGNED BY: MLA  
DRAWN BY: MLA  
CHECKED BY: JCC

4788 McCRAY STREET, RIVERSIDE, CA 92506  
PH. (951) 686-1070 FAX (951) 788-1256

PREPARED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
R.C.E. NO. C67239 EXP. DATE 9-30-12

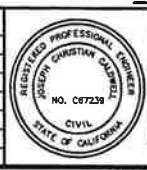
DATE: \_\_\_\_\_

APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

Don't Dig...Until You Call U.S.A. Toll Free 1-800-227-2800 for the location of buried utility lines. Don't disrupt vital services. TWO WORKING DAYS BEFORE YOU DIG

BENCH MARK: ELEVATION = 827.43'  
RIVERSIDE COUNTY BENCHMARK, BM ML 47-1  
BRASS DISK, RESET 1988  
DATUM = NGVD29  
HORIZONTAL DATUM = NAD83  
BASIS OF BEARINGS: THE CENTERLINE OF TYROLITE STREET, AS SHOWN BY PARCEL MAP 9214 PER P.M. 38/87

REF.	DESCRIPTION	APPR.	DATE



**ALBERT A. WEBB**  
ASSOCIATES  
4788 McCRAY STREET, RIVERSIDE, CA 92506  
PH. (951) 686-1070 FAX (951) 788-1256

DESIGNED BY: MLA  
DRAWN BY: MLA  
CHECKED BY: JCC

PREPARED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
R.C.E. NO. C67239 EXP. DATE 9-30-12

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

RECOMMENDED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

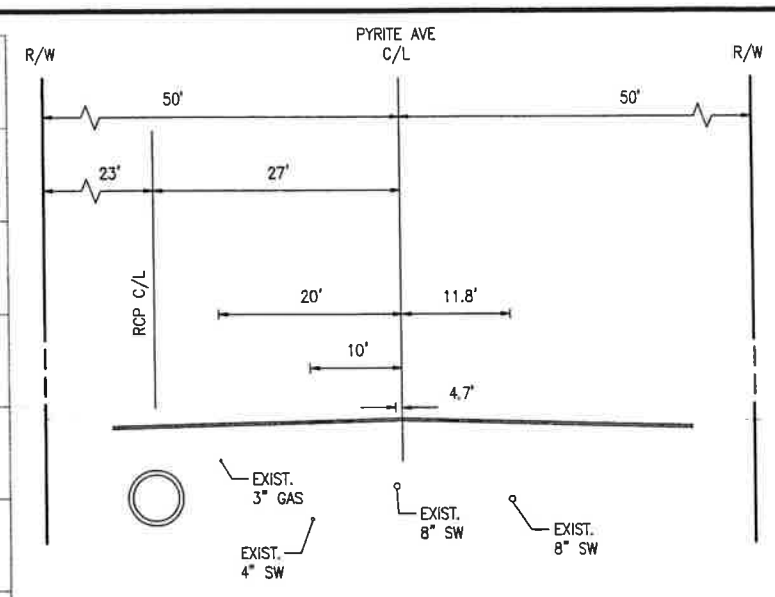
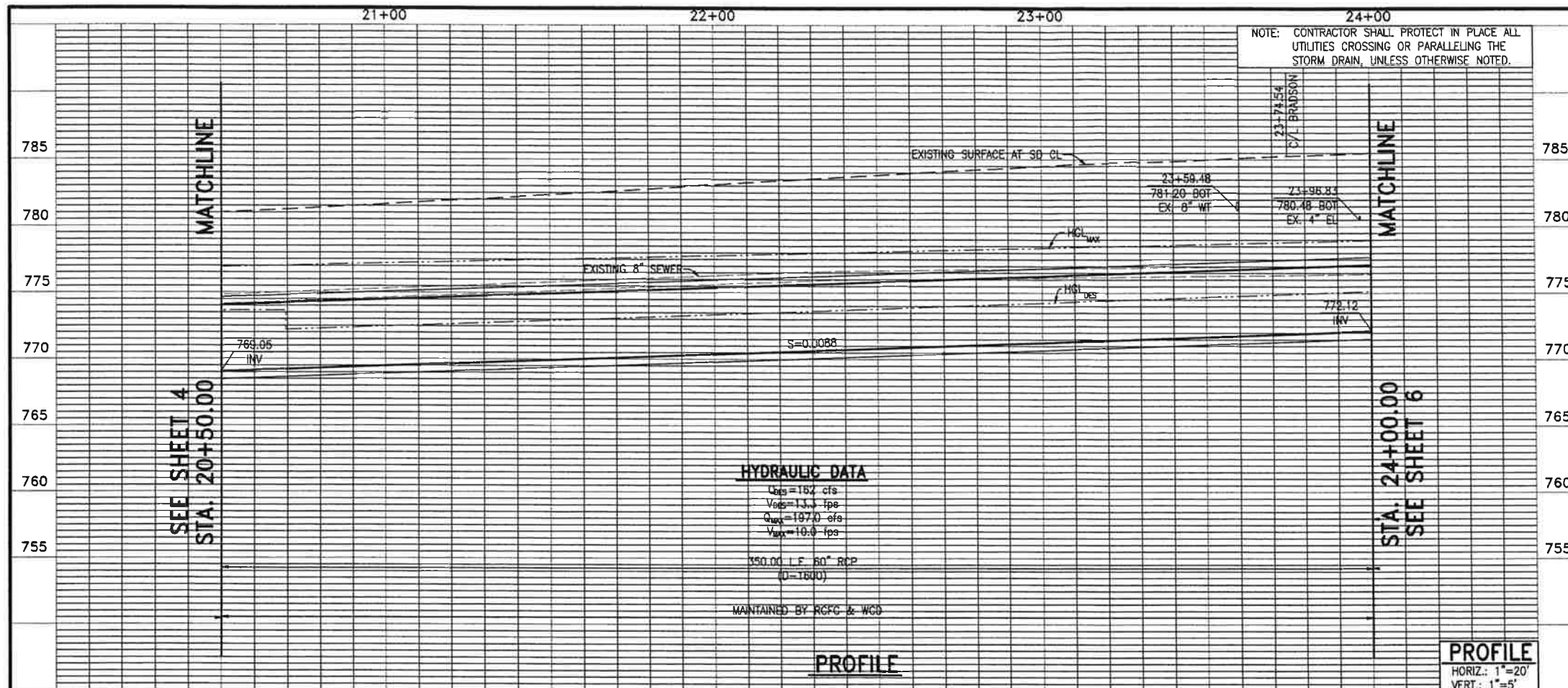
PROJECT NO. X-XXXX-XX  
DRAWING NO. X-XXX  
SHEET NO. 4 OF 10

**PYRITE STREET STORM DRAIN**  
STA. 17+00.00 - STA. 20+50.00



PLANCHICK NO. 2 MARCH 2011)

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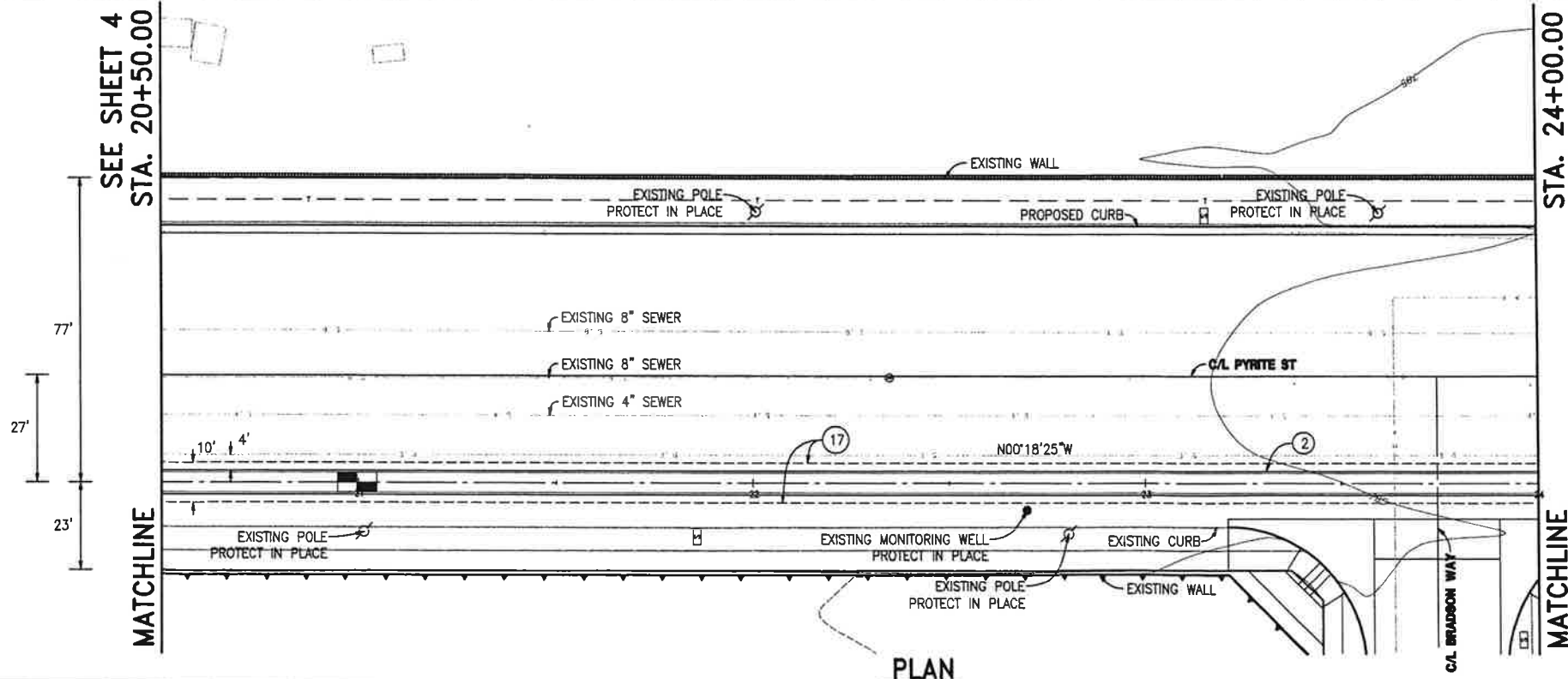


SECTION AT STA. 21+00.00  
TYPICAL FROM STA. 20+50.00 - STA. 24+00.00  
SCALE: 1" = 10'

**HYDRAULIC DATA**  
 $V_{avg} = 18.2$  cfs  
 $V_{max} = 13.3$  fps  
 $Q_{max} = 197.0$  cfs  
 $V_{max} = 10.0$  fps  
 350.00 I.F. 60" RCP  
 (D=1600)  
 MAINTAINED BY RCFC & WCD

**PROFILE**  
 HORIZ.: 1"=20'  
 VERT.: 1"=5'

- CONSTRUCTION NOTES**
- ② INSTALL 60" RCP (D-LOAD PER PLAN)
  - ⑰ LIMITS OF TRENCHING



**PLAN**



RIVERSIDE COUNTY  
**TRANSPORTATION DEPARTMENT**  
 APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 ALAN D. FRENCH, P.E.  
 R.C.E. 45702 EXP. 12-31-12  
 RECOMMENDED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

Don't Dig...Until You Call U.S.A. Toll Free  
 1-800-227-2600  
 for the location  
 of buried  
 utility lines.  
 Don't disrupt  
 vital services.  
 TWO WORKING DAYS BEFORE YOU DIG

BENCH MARK: ELEVATION = 827.43'  
 RIVERSIDE COUNTY BENCHMARK, BM ML 47-1  
 BRASS DISK, RESET 1988  
 DATUM = NGVD29  
 HORIZONTAL DATUM = NAD83  
 BASIS OF BEARINGS: THE CENTERLINE OF  
 TYROLITE STREET, AS SHOWN BY PARCEL  
 MAP 3214 PER P.M. 38/87

REF.	DESCRIPTION	APPR.	DATE

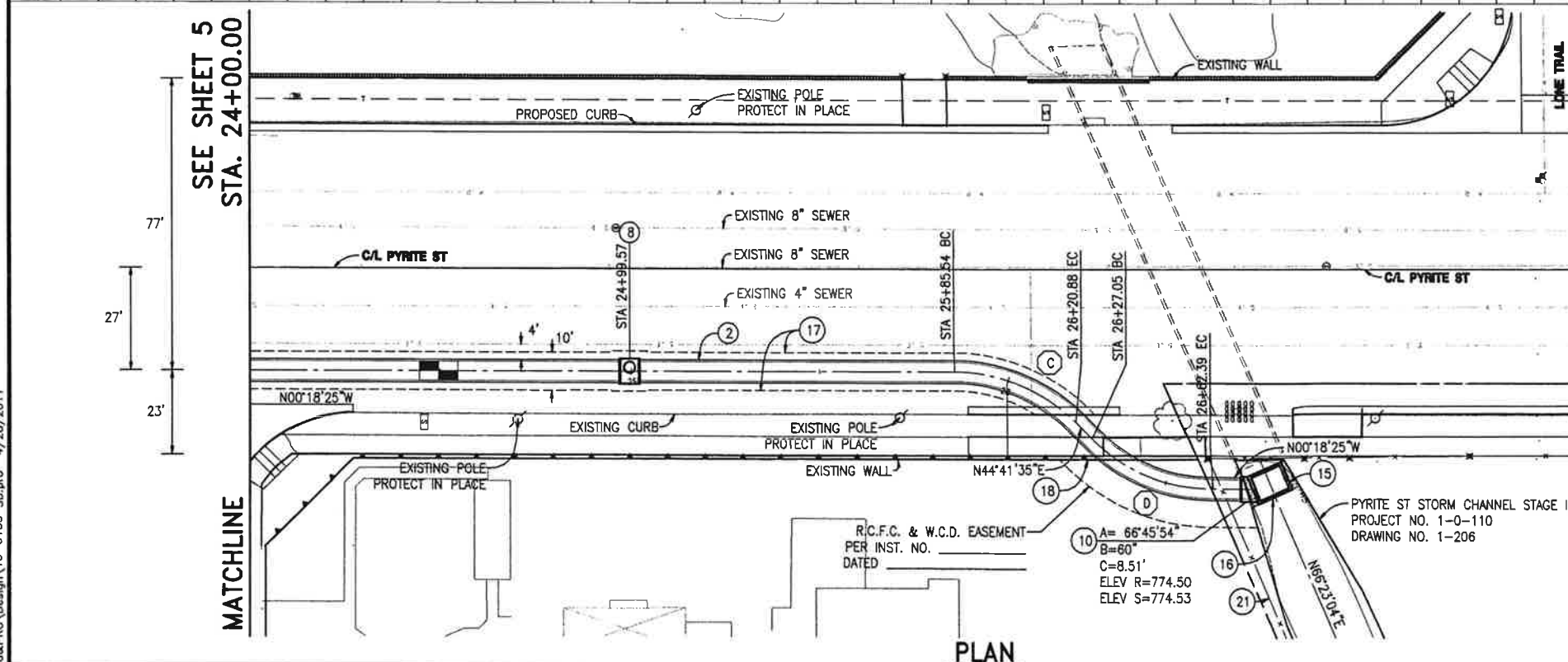
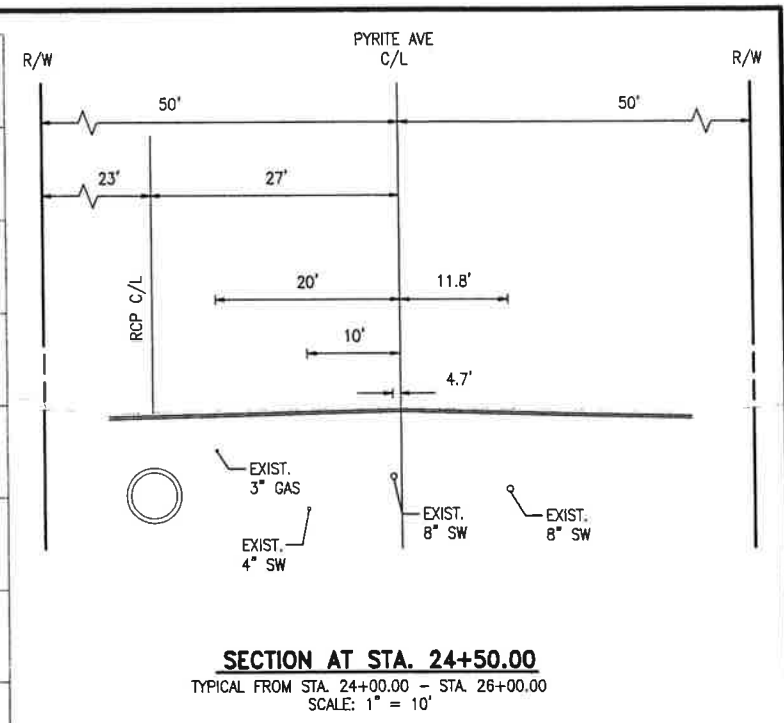
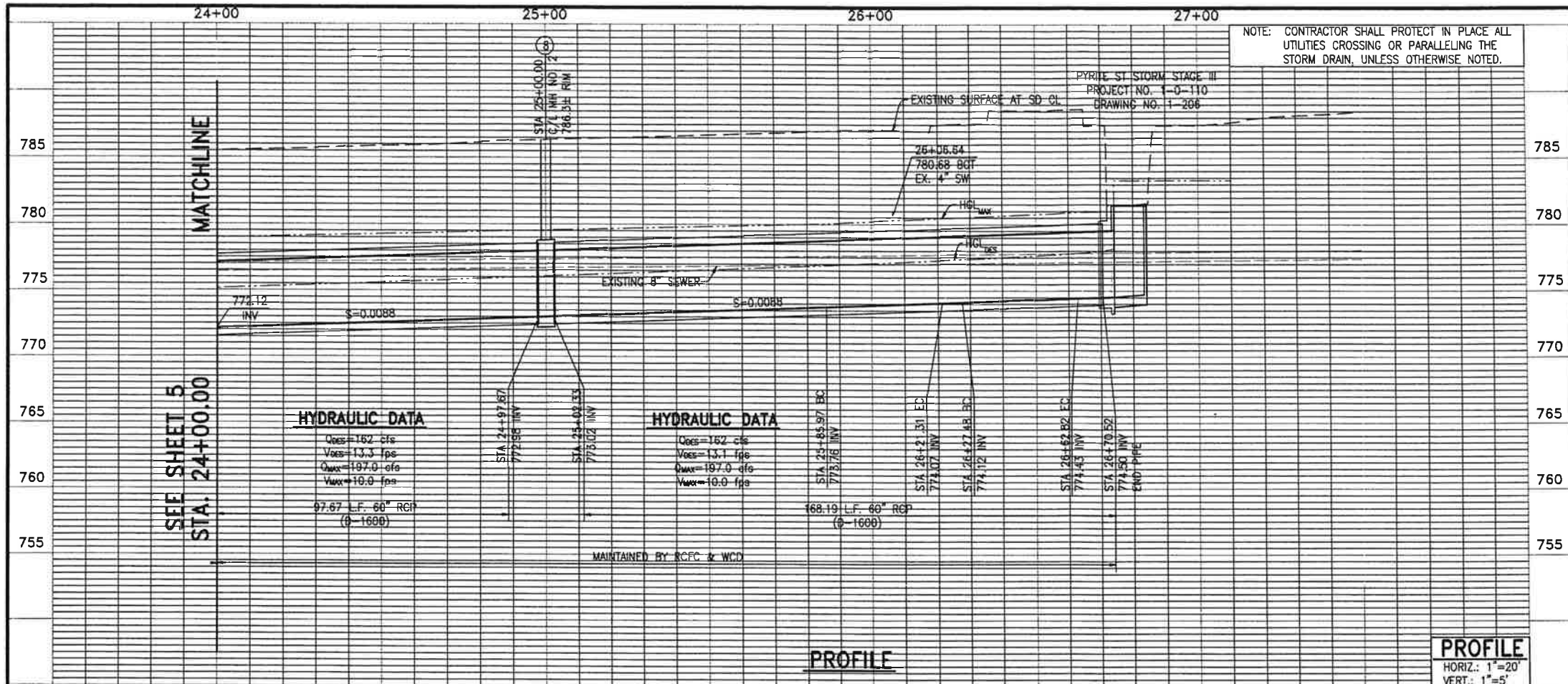


**ALBERT A. WEBB**  
 ASSOCIATES  
 3788 McCRAY STREET, RIVERSIDE, CA. 92506  
 PH. (951) 686-1070 FAX (951) 788-1256  
 DESIGNED BY: MLA  
 DRAWN BY: MLA  
 CHECKED BY: JCC  
 PREPARED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 R.C.E. NO. C67239 EXP. DATE 9-30-12

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT  
 RECOMMENDED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

**PYRITE STREET STORM DRAIN**  
 STA. 20+50.00 - STA. 24+00.00

PROJECT NO. X-XXXX-XX  
 DRAWING NO. X-XXX  
 SHEET NO. 5 OF 10



- CONSTRUCTION NOTES**
- ② INSTALL 60" RCP (D-LOAD PER PLAN)
  - ⑧ CONSTRUCT MANHOLE NO. 2 PER R.C.F.C. & W.C.D. STD. MH252
  - ⑩ CONSTRUCT MODIFIED JUNCTION STRUCTURE NO. 1 PER R.C.F.C. & W.C.D. STD. JS226, DETAILS SHEET 9
  - ⑮ CONSTRUCT INLET AND BOX PER DETAILS ON SHEET 9
  - ⑯ REMOVE AND REPLACE EXISTING TRANSITION STRUCTURE PER DETAIL ON SHEET 9
  - ⑰ LIMITS OF TRENCHING
  - ⑱ REMOVE AND REPLACE EXISTING BLOCK WALL IN KIND
  - ㉑ REMOVE AND REPLACE EXISTING FENCE
- Ⓒ CURVE DATA**  
 Δ=45°00'00"  
 R=45.00'  
 L=35.34'  
 T=18.64'  
 BC=STA 25+85.54  
 EC=STA 26+20.88  
 PI= N 9817.25, E 7718.53
- Ⓓ CURVE DATA**  
 Δ=45°00'00"  
 R=45.00'  
 L=35.34'  
 T=18.64'  
 BC=STA 26+27.05  
 EC=STA 26+62.39  
 PI= N 9848.15, E 7747.08

<p>Don't Dig...Until You Call U.S.A. Toll Free 1-800-227-2600 for the location of buried utility lines. Don't disrupt vital services. THREE WORKING DAYS BEFORE YOU DIG</p>	<p>BENCH MARK: ELEVATION = 827.43' RIVERSIDE COUNTY BENCHMARK, BM ML 47-1 BRASS DISK, RESET 1988 DATUM = NGVD29 HORIZONTAL DATUM = NAD83 BASIS OF BEARINGS: THE CENTERLINE OF TYROLITE STREET, AS SHOWN BY PARCEL MAP 9214 PER P.M. 38/87</p>	REVISIONS	<p>ALBERT A. WEBB ASSOCIATES DESIGNED BY: MLA DRAWN BY: MLA CHECKED BY: JCC</p>	<p>3788 McCRAV STREET, RIVERSIDE, CA. 92506 PH. (951) 886-1070 FAX (951) 788-1256 PREPARED BY: _____ DATE: _____ R.C.E. NO. C87239 EXP. DATE 9-30-12</p>	RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT		<p>PROJECT NO. X-XXXX-XX DRAWING NO. X-XXX SHEET NO. 6 OF 10</p>
		REF. DESCRIPTION			APPR. DATE	RECOMMENDED BY: _____ DATE: _____	

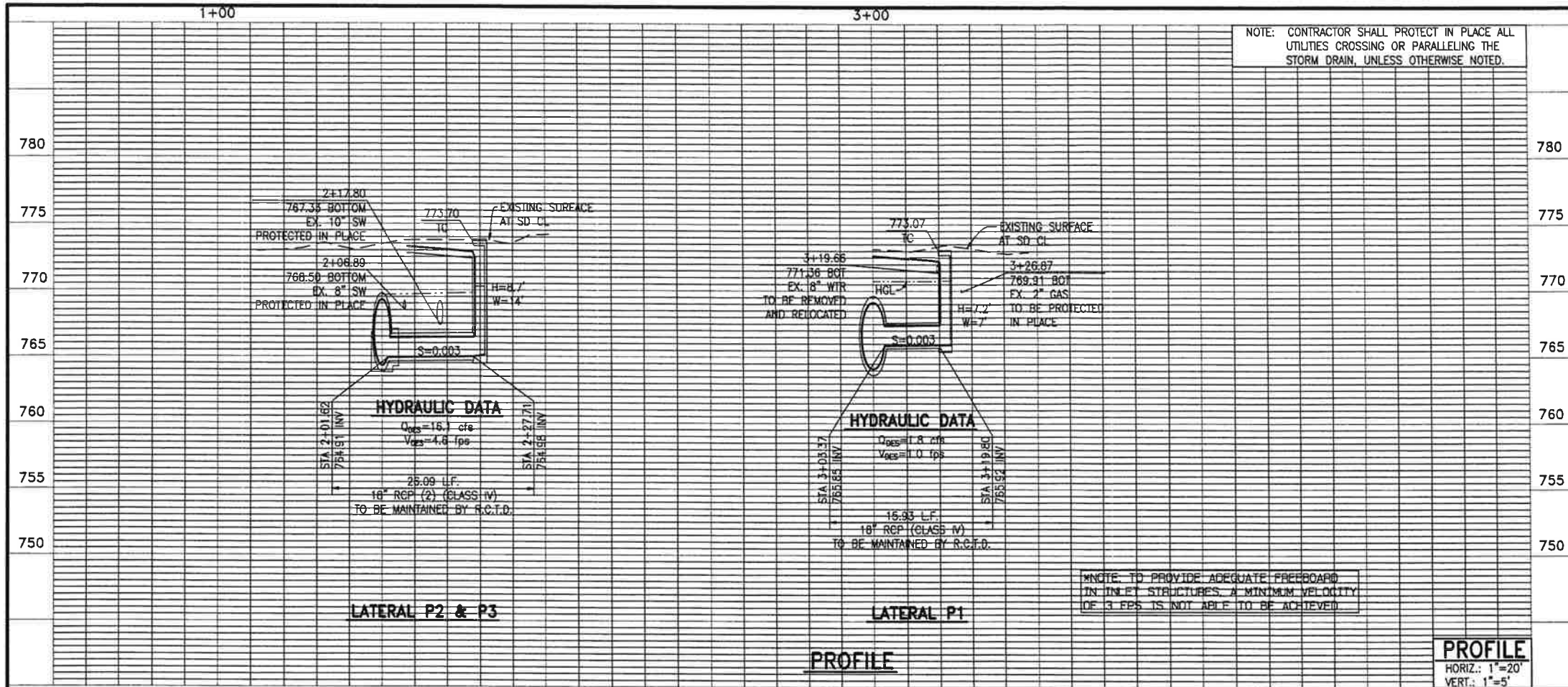
PLANCHCK NO. 2 MARCH 2011

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PLANCHICK NO. 2 MARCH 2011

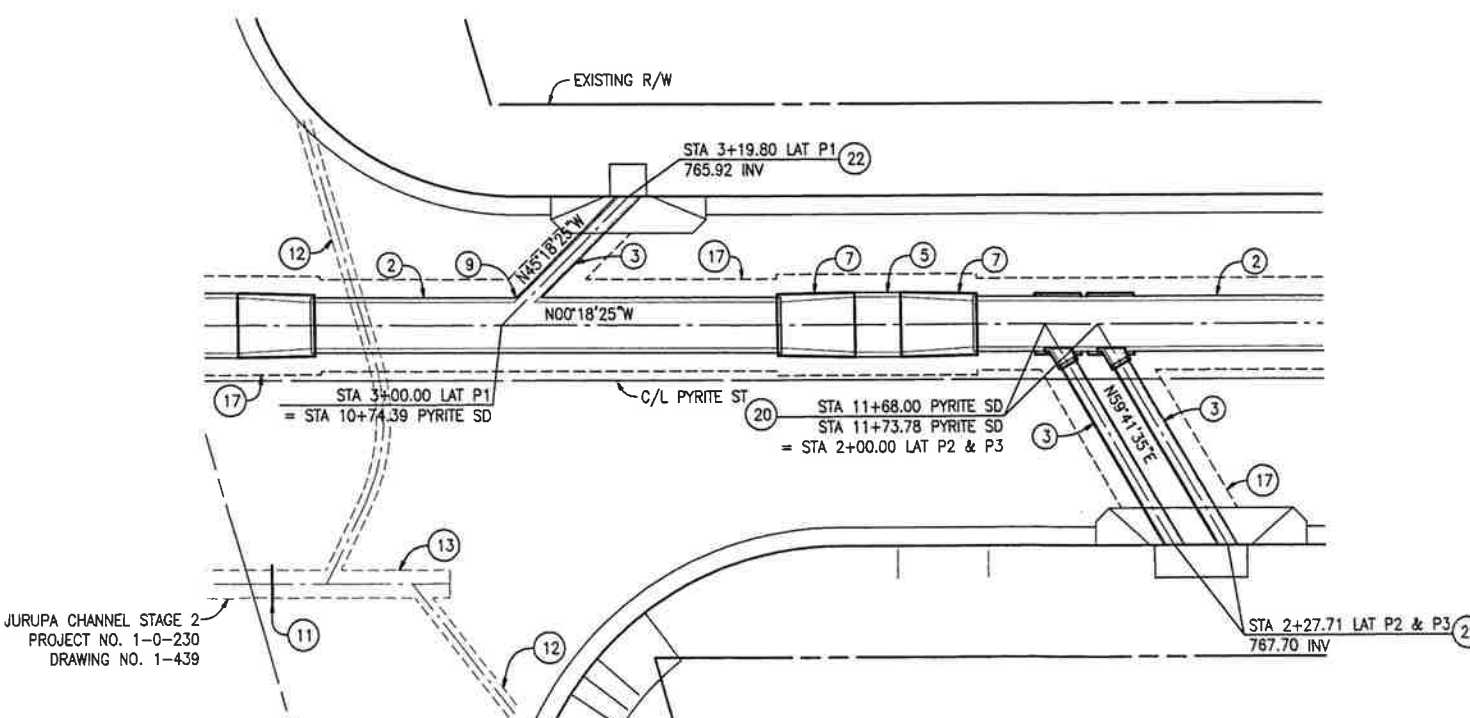
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**JS #2 DESIGN VALUES**

A=	60"
B=	18"
C=	5.1'
D=	60"
E=	3.0'
F=	3.0'
G=	1.5'
L=	3.1'
ELEV R=	764.92
ELEV S=	764.91

NOTE: TO PROVIDE ADEQUATE FREEBOARD IN INLET STRUCTURES, A MINIMUM VELOCITY OF 3 FPS IS NOT ABLE TO BE ACHIEVED



**CONSTRUCTION NOTES**

- ② INSTALL 60" RCP (D-LOAD PER PLAN)
- ③ INSTALL 18" RCP (CLASS IV)
- ⑤ CONSTRUCT 6'W x 4'H PRECAST BOX PER A.P.W.A. STD. PLAN 390-0
- ⑦ CONSTRUCT TRANSITION STRUCTURE NO. 1 PER R.C.F.C. & W.C.D. STD. TS301
- ⑨ CONSTRUCT JUNCTION STRUCTURE NO. 4 (CASE 3) PER R.C.F.C. & W.C.D. STD. JS229
- ⑪ INSTALL CONCRETE BULKHEAD PER R.C.F.C. & W.C.D. STD. M816
- ⑫ REMOVE EXISTING 18" RCP
- ⑬ REMOVE EXISTING 36" RCP
- ⑰ LIMITS OF TRENCHING
- ⑳ CONSTRUCT JUNCTION STRUCTURE NO. 2 PER R.C.F.C. & W.C.D. STD. JS227 (VALUES ABOVE)
- ㉑ CONSTRUCT CATCH BASIN PER RIV. CO. STD. NO. 300 AND LOCAL DEPRESSION PER RIV. CO. STD. NO. 311 (CASE C). HEIGHT AND WIDTH PER PROFILE
- ㉒ CONSTRUCT TRANSITION STRUCTURE NO. 3 PER R.C.F.C. & W.C.D. STD. TS303



RIVERSIDE COUNTY <b>TRANSPORTATION DEPARTMENT</b>	
APPROVED BY:	
ALAN D. FRENCH, P.E. R.C.E. 45702 EXP. 12-31-12	DATE
RECOMMENDED BY:	DATE

Don't Dig...Until You Call U.S.A. Toll Free  
**1-800-227-2800**  
for the location of buried utility lines.  
Don't disrupt vital services.  
TWO WORKING DAYS BEFORE YOU DIG

BENCH MARK: ELEVATION = 827.43'  
RIVERSIDE COUNTY BENCHMARK, BM ML 47-1  
BRASS DISK, RESET 1988  
DATUM = NGVD29  
HORIZONTAL DATUM = NAD83  
BASIS OF BEARINGS: THE CENTERLINE OF TYROLITE STREET, AS SHOWN BY PARCEL MAP 9214 PER P.L.M. 38/87

REF.	DESCRIPTION	APPR.	DATE



**ALBERT A. WEBB**  
ASSOCIATES

3788 McCray Street, Riverside, CA. 92506  
PH. (951) 686-1070 FAX (951) 788-1256

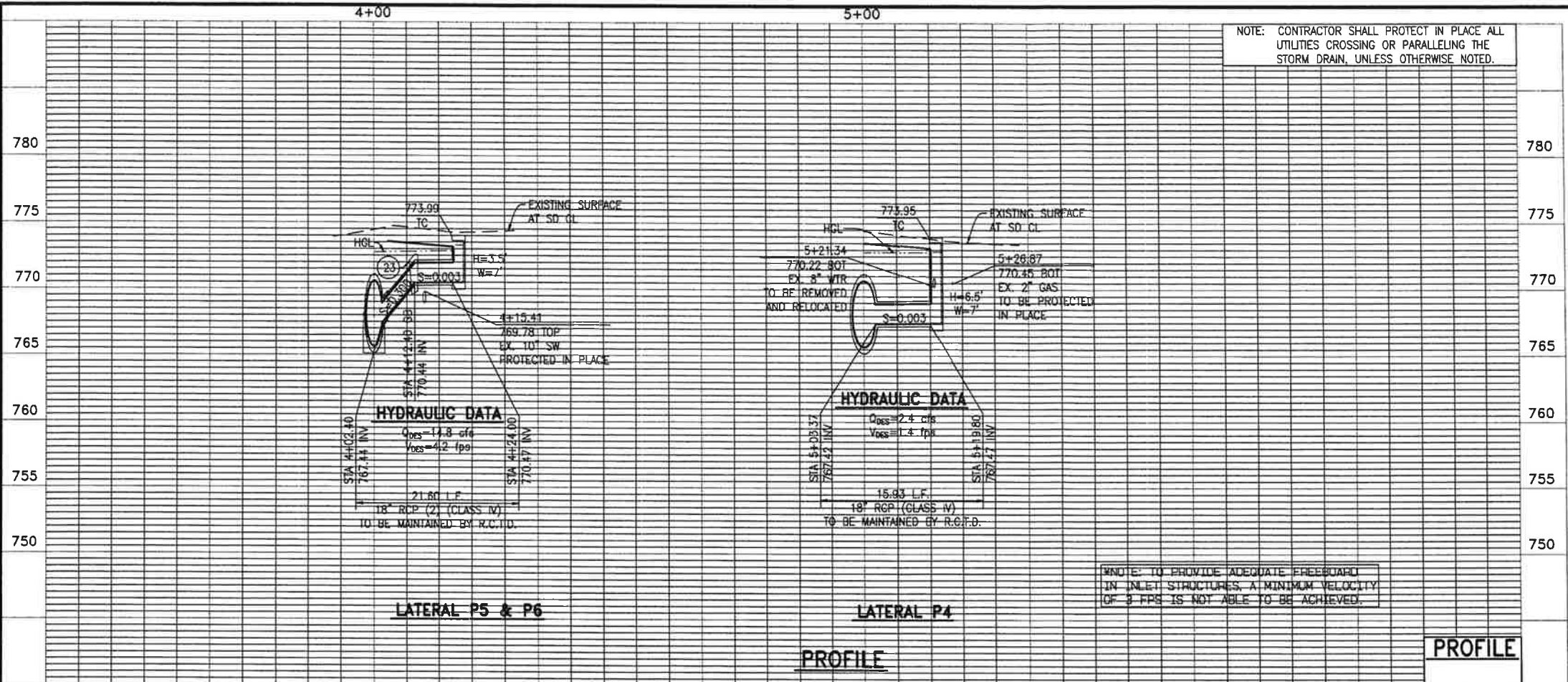
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DRAWN BY: MLA R.C.E. NO. C67239 EXP. DATE 9-30-12  
CHECKED BY: JCC

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	
RECOMMENDED BY:	APPROVED BY:
DATE: _____	DATE: _____

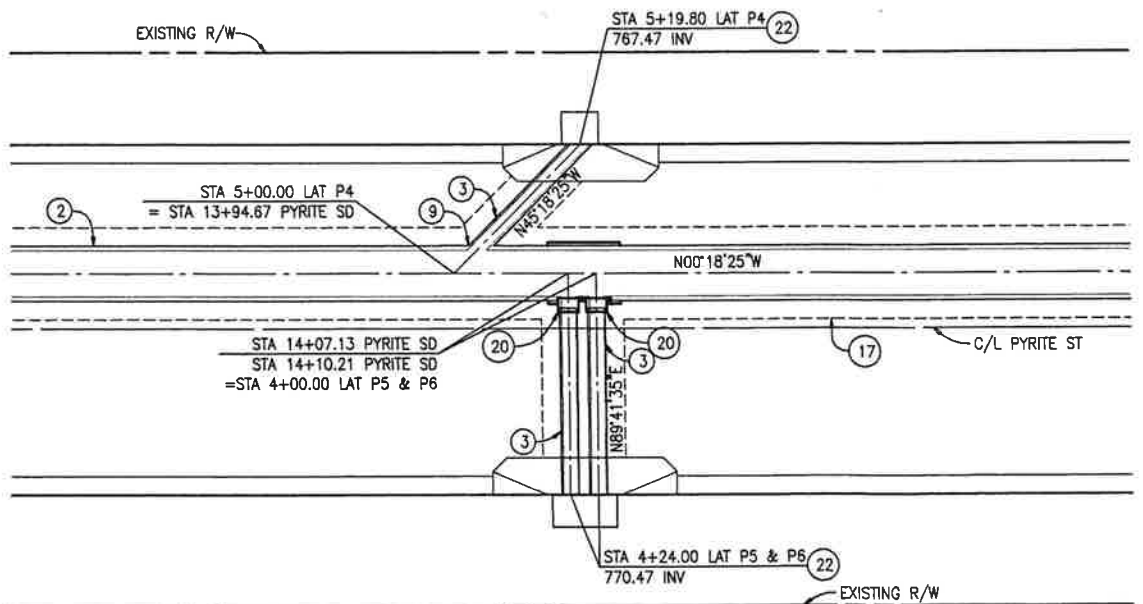
<b>PYRITE STREET STORM DRAIN</b>	
<b>LATERAL P1 &amp; P2</b>	
PROJECT NO. <b>X-XXXX-XX</b>	DRAWING NO. <b>X-XXX</b>
SHEET NO. <b>7 OF 10</b>	

PLANCHICK NO. 2 MARCH 2011

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JS #2 DESIGN VALUES  
 A= 60"  
 B= 18"  
 C= 4.2'  
 D= 60"  
 E= 1.6'  
 F= 2.7'  
 G= 2.4'  
 L= 2.8'  
 ELEV R= 767.97  
 ELEV S= 767.44



**CONSTRUCTION NOTES**

- ② INSTALL 60" RCP (D-LOAD PER PLAN)
- ③ INSTALL 18" RCP (CLASS IV)
- ⑨ CONSTRUCT JUNCTION STRUCTURE NO. 4 (CASE 3) PER R.C.F.C. & W.C.D. STD. JS229
- ⑰ LIMITS OF TRENCHING
- ⑳ CONSTRUCT JUNCTION STRUCTURE NO. 2 PER R.C.F.C. & W.C.D. STD. JS227 (VALUES ABOVE)
- ㉒ CONSTRUCT CATCH BASIN PER RIV. CO. STD. NO. 300 AND LOCAL DEPRESSION PER RIV. CO. STD. NO. 311 (CASE C). HEIGHT AND WIDTH PER PROFILE
- ㉓ CONSTRUCT CONCRETE COLLAR PER R.C.F.C. & W.C.D. STD. M803

**PLAN**

Don't Dig...Until You Call U.S.A. Toll Free 1-800-227-2600 for the location of buried utility lines. Don't disrupt vital services. TWO WORKING DAYS BEFORE YOU DIG

BENCH MARK: ELEVATION = 827.43'  
 RIVERSIDE COUNTY BENCHMARK, BM ML 47-1  
 BRASS DISK, RESET 1988  
 DATUM = NOV29  
 HORIZONTAL DATUM = NAD83  
 BASIS OF BEARINGS: THE CENTERLINE OF TYROLITE STREET, AS SHOWN BY PARCEL MAP 9214 PER P.L.M. 38/87

REF.	DESCRIPTION	APPR.	DATE



ALBERT A. WEBB ASSOCIATES  
 3788 McCRAY STREET, RIVERSIDE, CA. 92506  
 PH. (951) 886-1070 FAX (951) 788-1256

DESIGNED BY: MLA PREPARED BY: DATE:  
 DRAWN BY: MLA R.C.E. NO. C67239 EXP. DATE 9-30-12  
 CHECKED BY: JCC

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

RECOMMENDED BY: \_\_\_\_\_ APPROVED BY: \_\_\_\_\_  
 DATE: \_\_\_\_\_ DATE: \_\_\_\_\_

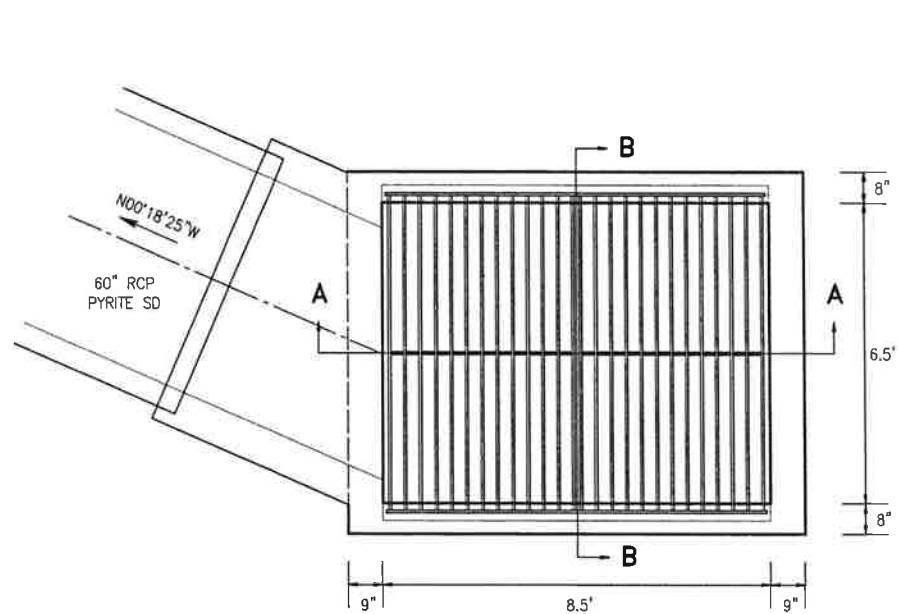
**PYRITE STREET STORM DRAIN  
 LATERAL P3 & P4**

PROJECT NO. X-XXXX-XX  
 DRAWING NO. X-XXX  
 SHEET NO. 8 OF 10

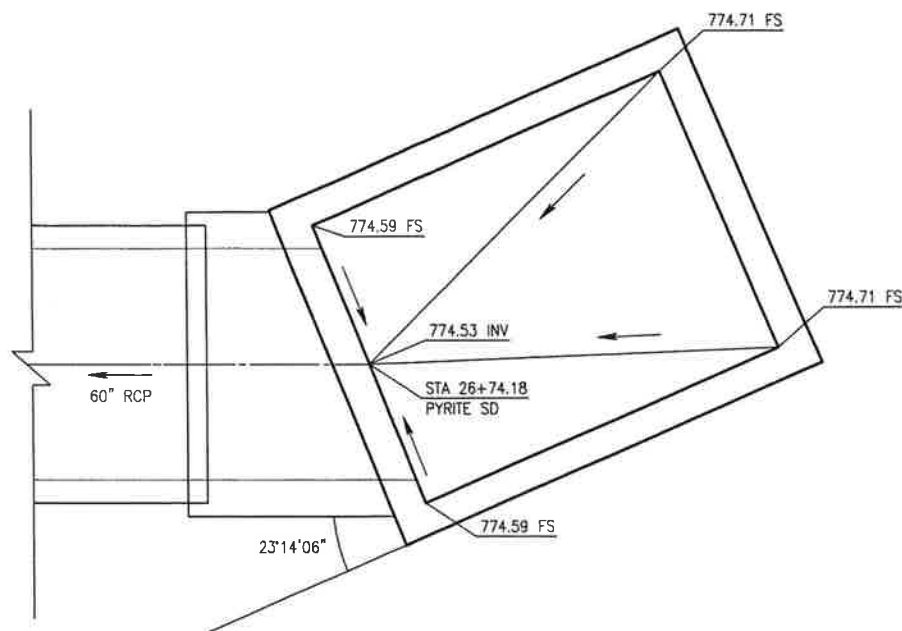
RIVERSIDE COUNTY  
**TRANSPORTATION DEPARTMENT**  
 APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 ALAN D. FRENCH, P.E.  
 R.C.E. 45702 EXP. 12-31-12  
 RECOMMENDED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

PLANCHICK NO. 2 MARCH 2011

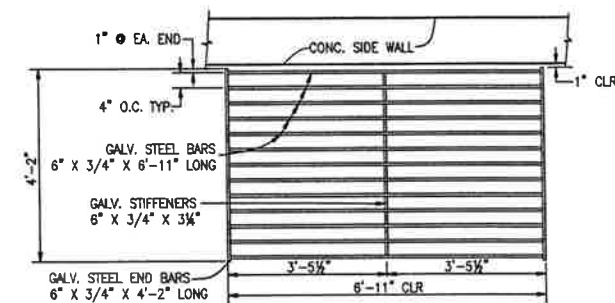
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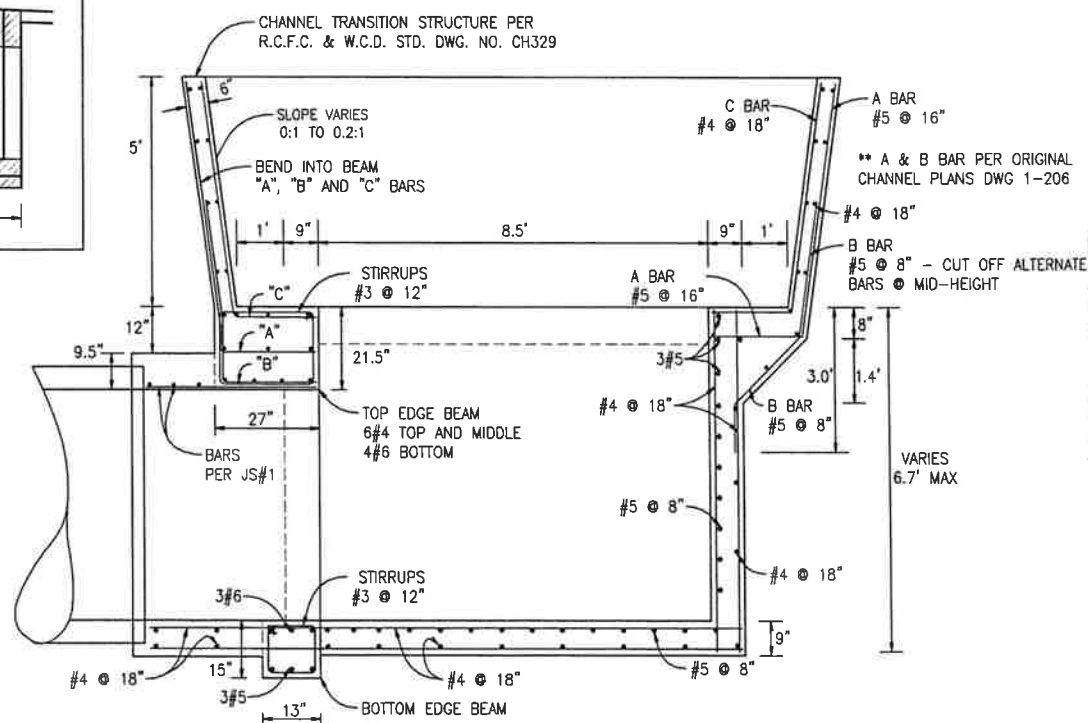
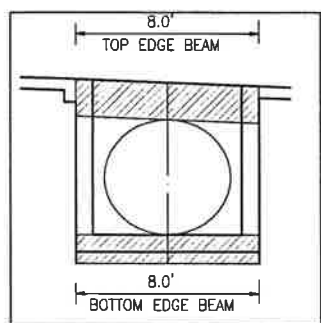
**PLAN VIEW DETAIL**  
1" = 2"



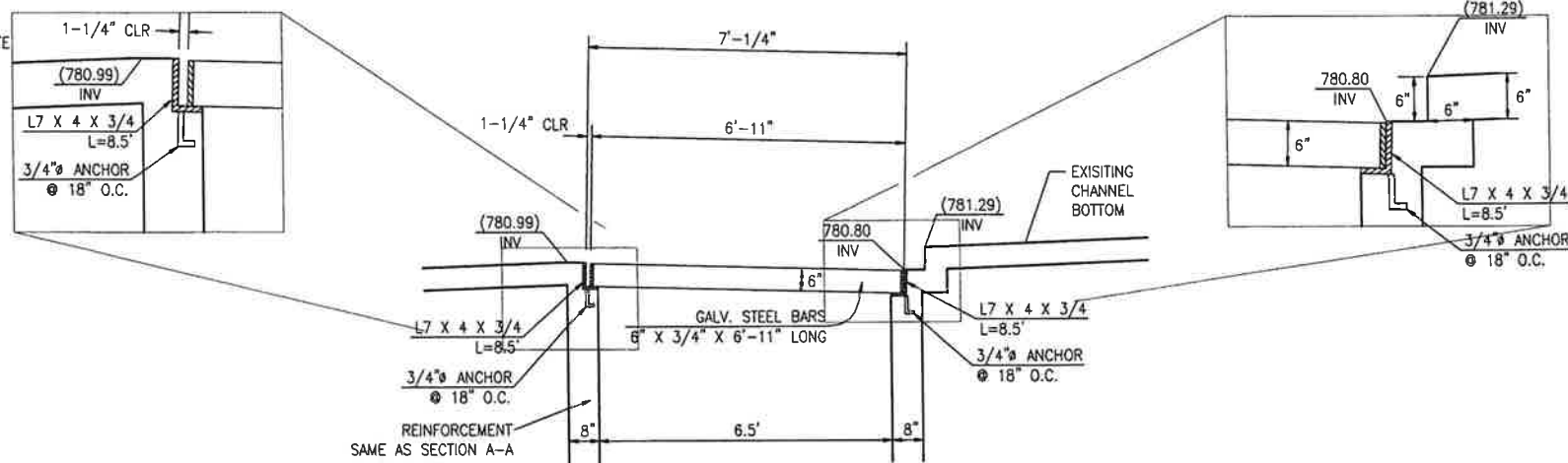
**BOX BOTTOM GRADING**  
1" = 2"



**GRATE DETAIL**  
1" = 2"



**CROSS SECTION A-A**  
1" = 2"



**CROSS SECTION B-B**  
1" = 2"

RIVERSIDE COUNTY  
**TRANSPORTATION DEPARTMENT**  
APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
ALAN D. FRENCH, P.E.  
R.C.E. 45702 EXP. 12-31-12  
RECOMMENDED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

Don't Dig...Until You Call U.S.A. Toll Free  
1-800-227-2600  
for the location  
of buried  
utility lines.  
Don't disrupt  
vital services.  
NO WORKING DAYS BEFORE YOU DIG

BENCH MARK: ELEVATION = 827.43'  
RIVERSIDE COUNTY BENCHMARK, BM ML 47-1  
BRASS DISK, RESET 1988  
DATUM = NOV29  
HORIZONTAL DATUM = NAD83  
BASIS OF BEARINGS: THE CENTERLINE OF  
TYROLITE STREET, AS SHOWN BY PARCEL  
MAP 9214 PER P.M. 38/87

REF.	DESCRIPTION	APPR.	DATE



**ALBERT A. WEBB**  
ASSOCIATES  
3788 McCRAY STREET, RIVERSIDE, CA. 92506  
PH. (951) 686-1070 FAX (951) 788-1256  
DESIGNED BY: MLA  
DRAWN BY: MLA  
CHECKED BY: JCC  
PREPARED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
R.C.E. NO. C87239 EXP. DATE 9-30-12

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT  
RECOMMENDED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

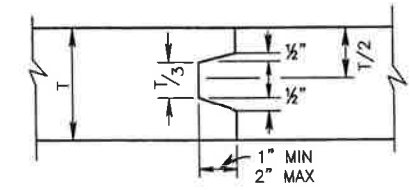
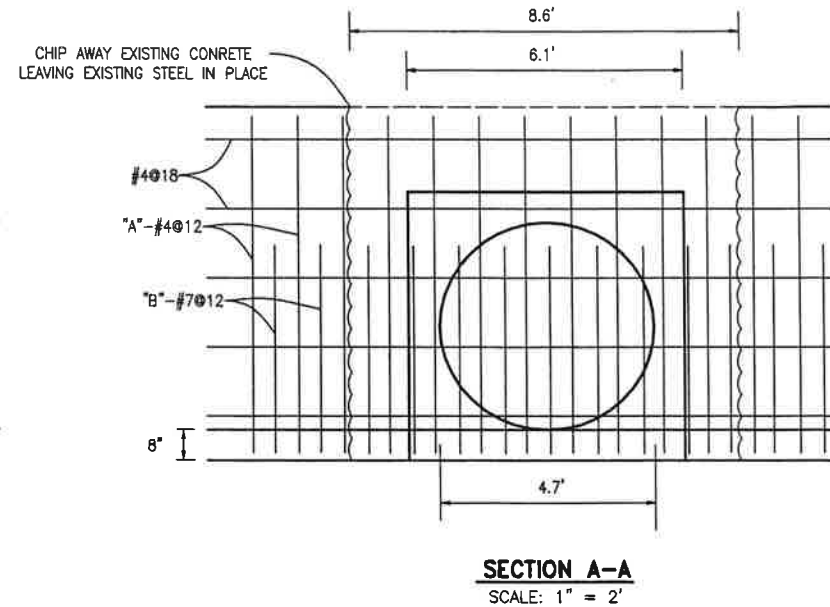
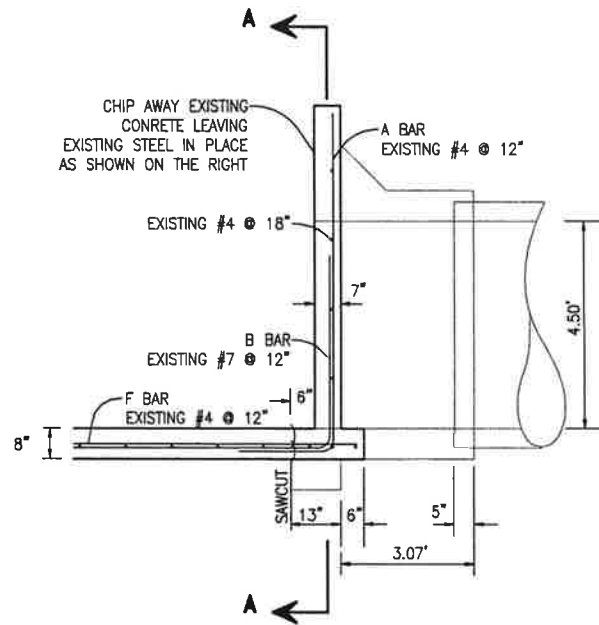
**PYRITE STREET STORM DRAIN**  
BOX DETAIL SHEET

PROJECT NO. X-XXXX-XX  
DRAWING NO. X-XXX  
SHEET NO. 9 OF 10

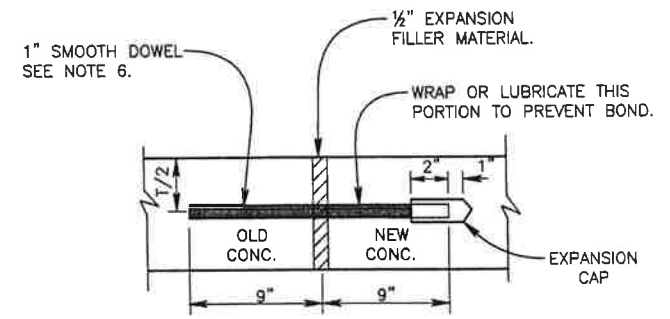


PLANCHICK NO. 2 MARCH 2011

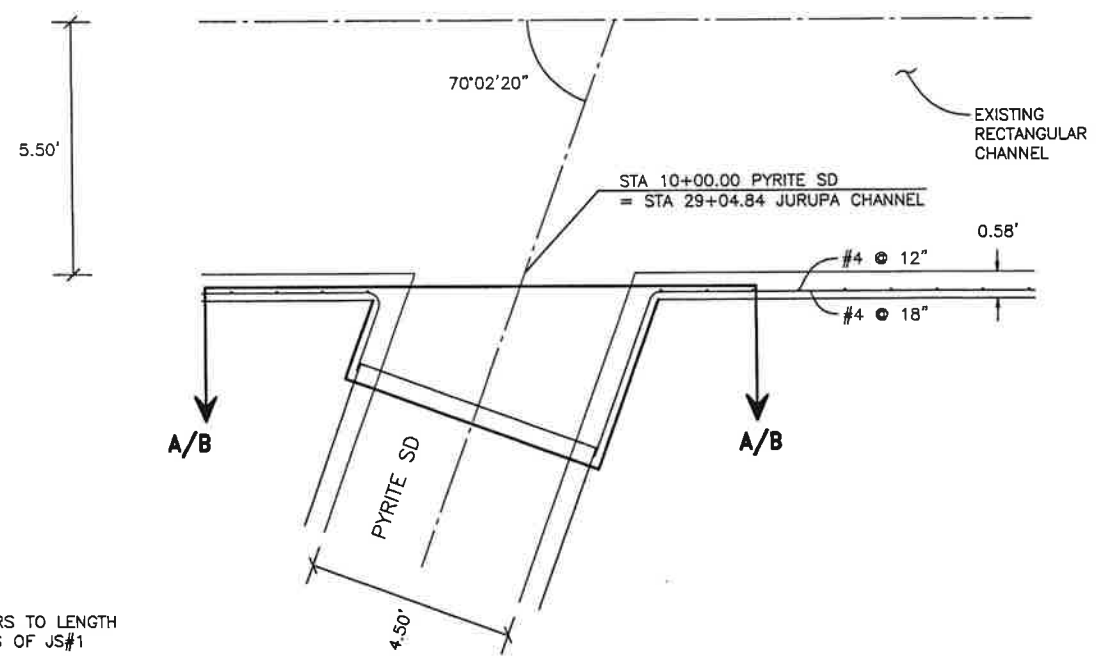
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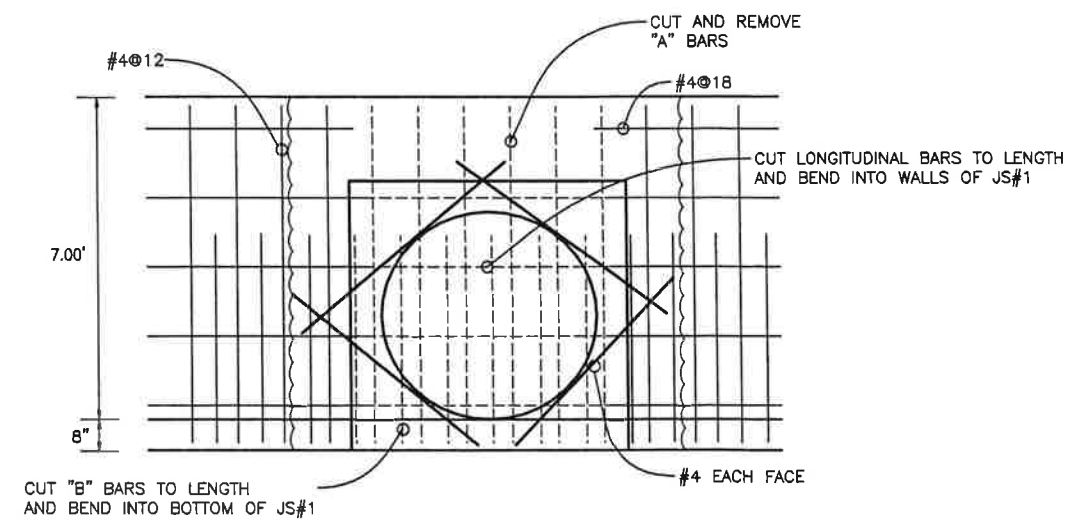
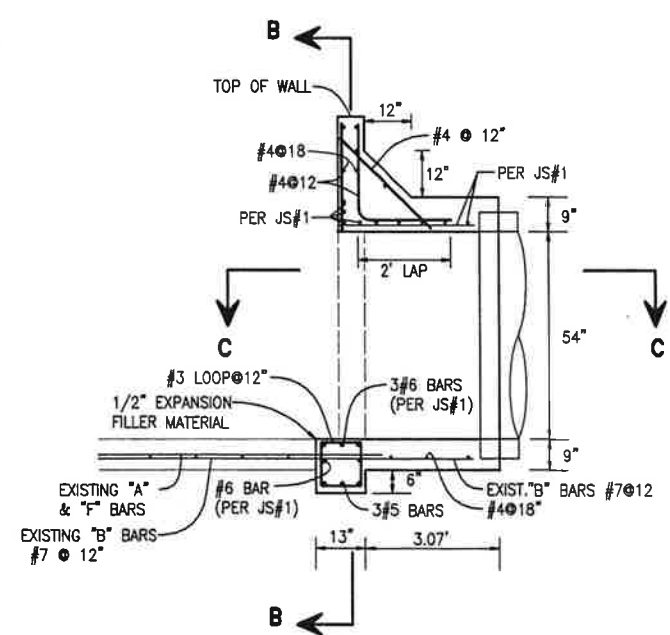
**DETAIL A**  
TRANSVERSE CONSTRUCTION JOINT



**DETAIL B**  
TRANSVERSE EXPANSION JOINT



**SECTION C-C**  
SCALE: 1" = 2'



**SECTION B-B**  
SCALE: 1" = 2'

RIVERSIDE COUNTY <b>TRANSPORTATION DEPARTMENT</b>	
APPROVED BY: _____	
ALAN D. FRENCH, P.E. R.C.E. 45702 EXP. 12-31-12	DATE _____
RECOMMENDED BY: _____	DATE _____

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TWO WORKING DAYS BEFORE YOU DIG

BENCH MARK: ELEVATION = 827.43'  
RIVERSIDE COUNTY BENCHMARK, BM ML 47-1  
BRASS DISK, RESET 1968  
DATUM = NAD83  
HORIZONTAL DATUM = NAD83  
BASIS OF BEARINGS: THE CENTERLINE OF  
TYROLITE STREET, AS SHOWN BY PARCEL  
MAP 9214 PER P.M. 36/87

REF.	DESCRIPTION	APPR.	DATE



**ALBERT A. WEBB**  
ASSOCIATES  
3788 McGRAY STREET, RIVERSIDE, CA. 92506  
PH. (951) 686-1070 FAX (951) 788-1256  
DESIGNED BY: MLA PREPARED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
DRAWN BY: MLA R.C.E. NO. C87239 EXP. DATE 9-30-12  
CHECKED BY: JCC

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	
RECOMMENDED BY: _____	APPROVED BY: _____
DATE: _____	DATE: _____

**PYRITE STREET STORM DRAIN  
JUNCTION DETAIL SHEET**

PROJECT NO. <b>X-XXXX-XX</b>
DRAWING NO. <b>X-XXX</b>
SHEET NO. <b>10 OF 10</b>