Total Thickness Shown on Plans	Minimum No. of Layers	Top Layer Thickness (foot)		Next Lower Layer Thickness (foot)		All Other Lower Layer Thickness (foot)	
		Min.	Max.	Min.	Max.	Min.	Max.
0.24-foot or less[a]	1	-	-	-	-	-	-
0.25-foot	2[b]	0.12	0.13	0.12	0.13	-	-
0.26 - 0.46 foot	2	0.12	0.21	0.14	0.25	-	-
0.47-foot or more	3 or more	0.15	0.21	0.15	0.25	0.17	0.25

Footnotes to asphalt thickness table are revised as follows:

a. No Change.
b. One layer of 0.25 foot thick may be placed as approved by the Engineer. When the Traffic Index specified is 5.5 or below, two layers shall be placed.

Asphalts:

Asphalt shall conform to the provisions in this Section, ``Asphalts''. Section 92, ``Asphalts'' of the Standard Specifications shall not apply.

Asphalt shall consist of refined petroleum or a mixture of refined liquid asphalt and refined solid asphalt, prepared from crude petroleum. Asphalt shall be:

1. Free from residues caused by the artificial distillation of coal, coal tar, or paraffin;
2. Free from water;
3. Homogeneous.

General:

The Contractor shall furnish asphalt in conformance with the State of California Department of transportation's Certification Program for Suppliers of Asphalt''. The Department maintains the program requirements, procedures, and a list of approved suppliers at http://www.dot.ca.gov/hq/esc/Translab/fpmcoc.htm.

The Contractor shall ensure the safe transportation, storage, use, and disposal of asphalt.

The Contractor shall prevent the formation of carbonized particles caused by overheating asphalt during manufacturing or construction.

Grade:

Performance graded (PG) asphalt binder shall conform to the following:

Property	AASHTO Test Method	Specification Grade		
		PG 64-10	PG 64-16	PG 70-10
Original Binder				
Flash Point, Minimum °C	T48	230	230	230
Solubility, Minimum %[b]	T44	99	99	99
Viscosity at 135 °C, Maximum, Pa·s	T316	3.0	3.0	3.0
Dynamic Shear, Test Temp. at 10 rad/s, °C Minimum G*/sin(delta), kPa	T315	64 1.00	64 1.00	70 1.00
RTFO Test[e], Mass Loss, Maximum, %	T240	1.00	1.00	1.00
RTFO Test Aged Binder				
Dynamic Shear, Test Temp. at 10 rad/s, °C Minimum G*/sin(delta), kPa	T315	64 2.20	64 2.20	70 2.20
Ductility at 25 °C Minimum, cm	T51	75	75	75
PAV[f] Aging, Temperature, °C	R28	100	100	110
RTFO Test and PAV Aged Binder				
Dynamic Shear, Test Temp. at 10 rad/s, °C Maximum G*/sin(delta), kPa	T315	31[d] 5000	28[d] 5000	34[d] 5000
Creep Stiffness, Test Temperature, °C Maximum S-value, Mpa Minimum M-value	T313	0 300 0.300	-6 300 0.300	0 300 0.300

Notes:

a. Not used.

b. The Engineer will waive this specification if the supplier is a Quality Supplier as defined by Department's ''Certification Program for Suppliers of Asphalt''.

c. The Engineer will waive this specification if the supplier certifies the asphalt binder can be adequately pumped and mixed at temperatures meeting applicable safety standards.

d. Test the sample at 3 °C higher if it fails at the specified test temperature. G*sin(delta) shall remain 5000 kPa maximum.

e. ''RTFO Test'' means the asphaltic residue obtained using the Rolling Thin Film Oven Test, AASHTO Test Method T240 or ASTM Designation: D2827.

f. ''PAV'' means Pressurized Aging Vessel.

Performance graded polymer modified asphalt binder (PG Polymer Modified) is:

Performance Graded Polymer Modified Asphalt Binder [a]

Property	AASHTO Test Method	Specification Grade		
		PG 58-34 PM	PG 64-28 PM	PG 76-22 PM
Original Binder				
Flash Point, Minimum °C	T 48	230	230	230
Solubility, Minimum % [b]	T 44[c]	98.5	98.5	98.5
Viscosity at 135°C, [d] Maximum, Pa·s	T 316	3.0	3.0	3.0
Dynamic Shear, Test Temp. at 10 rad/s, °C Minimum G*/sin(delta), kPa	T 315	58 1.00	64 1.00	76 1.00
RTFO Test , Mass Loss, Maximum, %	T 240	1.00	1.00	1.00
RTFO Test Aged Binder				
Dynamic Shear, Test Temp. at 10 rad/s, °C Minimum G*/sin(delta), kPa	T 315	58 2.20	64 2.20	76 2.20
Dynamic Shear, Test Temp. at 10 rad/s, °C Maximum (delta), %	T 315	Note e 80	Note e 80	Note e 80
Elastic Recovery[f], Test Temp., °C Minimum recovery, %	T 301	25 75	25 75	25 65
PAV[g] Aging, Temperature, °C	R 28	100	100	110
RTFO Test and PAV Aged Binder				
Dynamic Shear, Test Temp. at 10 rad/s, °C Maximum G*sin(delta), kPa	T 315	16 5000	22 5000	31 5000
Creep Stiffness, Test Temperature, °C Maximum S-value, MPa Minimum M-value	T 313	-24 300 0.300	-18 300 0.300	-12 300 0.300

Notes:

a. Do not modify PG Polymer Modifier using acid modification.

b. The Engineer waives this specification if the supplier is a Quality Supplier as defined by the Department's ''Certification Program for Suppliers of Asphalt''.

c. The Department allows ASTM D5546 instead of AASHTO T44.

d. The Engineer waives this specification if the supplier certifies the asphalt binder can be adequately pumped and mixed at temperatures meeting applicable safety standards.

e. Test temperature is the temperature at which G*/sin(delta) is 2.2 kPa. A graph of log G*/sin(delta) plotted against temperature may be used to determine the test temperature when G*/sin(delta) is 2.2 Kpa. A graph of (delta) versus temperature may be used to determine delta at the temperature when G*/sin(delta) is 2.2 kPa. The Engineer also accepts direct measurement of (delta) at the temperature when G*/sin(delta) is 2.2 kPa.

f. Test without a force ductility clamp may be performed.

g. ''PAV'' means Pressurized Aging Vessel.

Sampling:

The Contractor shall provide a sampling device in the asphalt feed line connecting the plant storage tanks to the asphalt weighing system or spray bar. The sampling device shall be accessible between 24 and 30 inches above the platform. The Contractor shall provide a receptacle for flushing the sampling device.

The sampling device shall include a valve:

1. With a diameter between 1/2 and 3/4 inches;

2. Manufactured in a manner that a one-quart sample may be taken slowly at any time during plant operations;

3. Maintained in good condition.

The Contractor shall replace failed valves.

In the presence of the Engineer, the Contractor shall take 2 one-quart samples per operating day. The Contractor shall provide round friction top containers with one-quart capacity for storing samples.

Applying Asphalt:

Unless otherwise specified, the Contractor shall heat and apply asphalt in conformance with the provisions in Section 93, ``Liquid Asphalts'' of the Standard Specifications.

Section 39-2.01, ``Asphalts'' is replaced in its entirety with the followings:

Asphalt binder to be mixed with aggregate shall conform to the provisions in ``Asphalts'' of these Special Provisions.

The grade of asphalt binder shall be 64-10.

Liquid asphalt for prime coat shall conform to the provisions in Section 93, ``Liquid Asphalts'' of the Standard Specifications and shall be Grade 64-10 unless otherwise designated by the contract item or otherwise specified in the Special Provisions.

Asphaltic emulsion for paint binder (tack coat) shall conform to the provisions in Section 94, ``Asphaltic Emulsion'' of the Standard Specifications for the rapid-setting or slow-setting type and grade approved by the Engineer.

Section 39-3.01B (1) shall be amended to include:

Aggregate of the 3/4 inch or 1/2 inch maximum size and aggregate for asphalt concrete base shall be separated into 3 or more sizes and each size shall be stored in separate bins. If 3 sizes are used, one bin shall contain that portion of the material which will pass the maximum size specified and be retained on a 3/8 inch sieve; one bin shall contain that portion of the material which will pass a 3/8 inch sieve and be retained on a No. 8 sieve; and one bin shall contain that portion of the material which will pass a No. 8 sieve.

Aggregate of 3/8 inch maximum size shall be separated into 2 sizes and each size shall be stored in separate bins. One bin shall contain that portion of the material which will pass the maximum size specified and be retained on a No. 8 sieve and one bin shall contain that portion of the material which will pass a No. 8 sieve.

The bin containing the fine material shall not contain more than 15 percent of material retained on the No. 8 sieve. The material in any of the other bins shall not contain more than 15 percent of material passing a No. 8 sieve. Failure to comply with this requirement shall be corrected immediately, and the material in the bins not meeting these requirements shall be re-screened or wasted.

All asphalt concrete for this project shall be supplied from one source unless approved by the Engineer. Said source shall be listed on the Contractors Source of Materials List as required in Section 6 of the Standard Specifications.

Asphaltic emulsion shall be furnished and applied as provided in Section 39-4.02.

The Contractor shall adjust to finish grade any valve covers encountered within the project limits, as required, for those utility valves that are provided with slip cans and are

adjustable without the replacement of parts or the removal of concrete collars. In cases where the owning utility company insists upon upgrades in the standards, or when additional parts or the removal of concrete collars are required for the adjustment, said adjustment will be the responsibility of the owning utility company.
For public safety, traffic shall not be allowed on temporary or permanent pavement until all manholes are either adjusted to grade or otherwise protected, as approved by the Engineer. The Contractor shall adjust to grade manholes and valves when and as necessary for the protection of the traveling public during construction, and shall coordinate all work on said facilities with the owning utility companies. This requirement is intended for traffic that is to be allowed on temporary surfaces during the course of construction. Final adjustment to grade will be the responsibility of the owning utility company, except as provided herein.

Said work shall be performed in accordance with Section 15-2.05A, ``Frames, Covers, Grates, and Manholes'' of the Standard Specifications. Full compensation for adjustment of valve covers, including initial lowering of valves and manholes when required, shall be considered as included in the contract price paid for asphalt concrete.

In addition to the provisions in Section 39-5.01, ``Spreading Equipment'' of the Standard Specifications, asphalt paving equipment shall be equipped with automatic screed controls and a sensing device or devices.

When placing asphalt concrete to the lines and grades established by the Engineer, the automatic controls shall control the longitudinal grade and transverse slope of the screed. Grade and slope references shall be furnished, installed, and maintained by the Contractor. Should the Contractor elect to use a ski device, the minimum length of the ski device shall be 30 feet. The ski device shall be a rigid one piece unit and the entire length shall be utilized in activating the sensor.

When placing the initial mat of asphalt concrete on existing pavement, the end of the screed nearest the centerline shall be controlled by a sensor activated by a ski device not less than 30 feet. The end of the screed farthest from centerline shall be controlled by an automatic transverse slope device set to

reproduce the cross slope designated by the Engineer, by a sensor activated by a similar ski device or as directed by the Engineer.

When paving contiguously with previously placed mats, the end of the screed adjacent to the previously placed mat shall be controlled by a sensor that responds to the grade of the previously placed mat and will reproduce the grade in the new mat within a 0.12 inch tolerance. The end of the screed farthest from the previously placed mat shall be controlled in the same way it was controlled when placing the initial mat.
Should the methods and equipment furnished by the Contractor fail to produce a layer of asphalt concrete conforming to the provisions, including straightedge tolerance, of Section 39-6.03, ``Compacting'' of the Standard Specifications or elsewhere in these Special Provisions, the paving operations shall be discontinued and the Contractor shall modify the equipment or methods, or furnish substitute equipment.

Should the automatic screed controls fail to operate properly during a day's work, the Contractor may manually control the spreading equipment for the remainder of that day. However, the equipment shall be corrected or replaced with alternative automatically controlled equipment conforming to the provisions in this section before starting another day's work.

General Criteria For Profiling:

In addition to the straightedge provisions in Section 39-6.03, ``Compacting'' of the Standard Specifications, asphalt concrete pavement shall conform to the surface tolerances specified herein.

The uppermost layer of asphalt concrete surfacing shall be profiled in the presence of the Engineer using a California Profilograph or equivalent in conformance with California Test 526 and as specified in these Special Provisions.

The California Profilograph or equivalent will not be required for the following areas of the pavement surface but shall conform to the straightedge requirements in Section 39-6.03, ``Compacting'' of the Standard Specifications:

1. Pavement with a total thickness less than 0.24 foot;

2. Pavement on horizontal curves with a centerline curve radius of less than 1,000 feet and the pavement within the superelevation transition on those curves;

3. Pavement placed in a single lift when required by the Special Provisions;

4. Pavement with extensive grade or cross slope correction which does not receive advance leveling operations in conformance with the provisions in Section 39-6.02, ``Spreading'' of the Standard Specifications;

5. Pavement for ramps and connectors with steep grades and high rates of superelevation, as determined by the Engineer;

6. Shoulders and miscellaneous areas.

The Contractor shall conform to California Test 526, except a zero (null) blanking band shall be used for determining the Profile Index. Prior to beginning profiles, the profilograph shall be calibrated in the presence of the Engineer. Two profiles shall be obtained within each traffic lane, 3 feet from and parallel with the edges of the lane.

Pavements profiled shall conform to the following Profile Index requirements:

1. Pavement on tangent alignment and pavement on horizontal curves having a centerline curve radius of 2,000 feet or more shall have a Profile Index of 0.16 foot or less for each 330 feet section profiled;

2. Pavement on horizontal curves having a centerline curve radius of 1,000 feet or more but less than 2,000 feet, including the pavement within the superelevation transition of these curves, shall have a Profile Index of 0.32 foot or less for each 330 feet section profile;

3. Pavement within any 330 feet section, containing high point areas with deviations in excess of 0.025 foot in a length of 25 feet or less, when tested in conformance with the requirements in California Test 526, shall be corrected by the Contractor regardless of the Profile Index.

The Contractor shall complete initial runs of the profilograph prior to opening the pavement to public traffic. If initial profiles can not made prior to opening the pavement to public traffic, the initial runs of the profilograph shall be made the next day that traffic control is permitted for the area to be profiled.

Areas of the top surface of the uppermost layer of asphalt concrete pavement that do not meet the specified surface tolerances shall be brought within tolerance by abrasive grinding.

Abrasive grinding shall be performed to reduce individual deviations in excess of 0.025 foot, and to reduce the Profile Index of the pavement to be within the specified tolerance. Areas which have been subjected to abrasive grinding shall receive a seal coat. Deviations in excess of 0.025 foot which cannot be brought into specified tolerance by abrasive grinding shall be corrected by either (1) removal and replacement or (2) placing an overlay of asphalt concrete. The corrective method for each area shall be selected by the Contractor and shall be approved by the Engineer prior to beginning the corrective work. Replacement or overlay pavement not meeting the specified tolerances shall be corrected by the methods specified above. Corrective work shall be at the Contractor's expense. The Contractor shall run profilograms on the areas that have received abrasive grinding or corrective work until the final profilograms indicate the Profile Index of the area is within the specified tolerance.

When abrasive grinding is used to bring the top surface of the uppermost layer of asphalt concrete surfacing within the specified surface tolerances, additional abrasive grinding shall be performed as necessary to extend the area ground in each lateral direction so that the lateral limits of grinding are at a constant offset from, and parallel with, the nearest lane line or pavement edge, and in each longitudinal direction so that the grinding begins and ends at lines normal to the pavement centerline, within a ground area. Ground areas shall be neat rectangular areas of uniform surface appearance.

The original of the final profilograms that indicate the pavement surface is within the Profile Index specified shall become the property of the County and shall be delivered to the Engineer prior to acceptance of the contract.

Payment:

Asphalt Concrete for road pavement, driveway tie-ins, and asphalt concrete dike will be paid for at a unit price per ton as a combined item, including mineral aggregate and asphalt binder in place on the roadbed.

The contract bid price paid per ton for Hot mix Asphalt shall include full compensation for furnishing all labor, tools, materials, equipment, and incidentals, and for doing all the work involved including the furnishing and applying asphaltic emulsion (paint binder).

COMPENSATION ADJUSTMENTS FOR PRICE INDEX FLUCTUATIONS:

The provisions of this section shall apply only to the following contract items:

ITEM CODE	ITEM
390130	Hot Mix Asphalt

The compensation payable for asphalt concrete will be increased or decreased in conformance with the provisions of this section for paving asphalt price fluctuations exceeding 10 percent (Iu/Ib is greater than 1.10 or less than 0.90) which occur during performance of the work.

The adjustment in compensation will be determined in conformance with the following formulae when the item of asphalt concrete and asphalt rubber hot mix are included in a monthly estimate:

A. Total monthly adjustment = AQ

B. For an increase in paving asphalt price index exceeding 10 percent:

$$A = 0.90\ (Iu/Ib - 1.10)\ Ib$$

C. For a decrease in paving asphalt price index exceeding 10 percent:

$$A = 0.90\ (Iu/Ib - 0.90)\ Ib$$

D. Where:

A = Adjustment in dollars per ton of paving asphalt used to produce asphalt rubber hot mix rounded to the nearest $0.01.

Iu = The California Statewide Paving Asphalt Price Index which is in effect on the first business day of the month within the pay period in which the quantity subject to adjustment was included in the estimate.

Ib = The California Statewide Paving Asphalt Price Index for the month in which the bid opening for the project occurred.

Q = Quantity in tons of paving asphalt that was used in producing the quantity of asphalt concrete shown under "This Estimate" on the monthly estimate using the amount of asphalt determined by the Engineer.

The adjustment in compensation will also be subject to the following:

A. The compensation adjustments provided herein will be shown separately on payment estimates. The Contractor shall be liable to the State for decreased compensation adjustments and the Department may deduct the amount thereof from moneys due or that may become due the Contractor.

B. Compensation adjustments made under this section will be taken into account in making adjustments in conformance with the provisions in Section 4-1.03B, "Increased or Decreased Quantities" of the Standard Specifications.

C. In the event of an overrun of contract time, adjustment in compensation for paving asphalt included in estimates during the overrun period will be determined using the California Statewide Paving Asphalt Price Index in effect on the first business day of the month within the pay period in which the overrun began.

The California Statewide Paving Asphalt Price Index is determined each month on the first business day of the month by the Department using the median of posted prices in effect as posted

by Chevron, Mobil, and Unocal for the Buena Vista, Huntington Beach, Kern River, Long Beach, Midway Sunset, and Wilmington fields.

In the event that the companies discontinue posting their prices for a field, the Department will determine an index from the remaining posted prices. The Department reserves the right to include in the index determination the posted prices of additional fields.

ASPHALT RUBBER HOT MIX - GAP GRADED (ARHM-GG) (Wet Process):

ARHM-GG, shall conform to the provisions for Type "A" asphalt concrete in Section 39, "Asphalt Concrete" of the Standard Specifications and these Special Provisions with the exception that ARHM-GG shall be spread at a temperature of not less than 285° F and not more than 350° F, measured in the hopper of the paving machine.

Binder for ARHM-GG shall be Type 2 asphalt-rubber binder with an asphalt modifier as specified in these Special Provisions.

The grade of asphalt-rubber binder shall be PG 64-16.
The asphalt modifier will be a resinous, high flash point, aromatic hydrocarbon compound and shall conform to the requirements following:

REQUIREMENTS FOR ASPHALT MODIFIER

Property	ASTM Test Method	Value
Flash Point, C.L.O.C., *°C (*°F)	D92	207 (405) min
Viscosity,cSt @ 100°C (212°F)	D445	X±3*
Molecular Analysis Asphaltenes, percent by mass	D2007	0.1 max
Aromatics, percent by mass	D2007	55 min

*The symbol ``X'' is the viscosity of the asphalt modifier the Contractor proposes to furnish. The value ``X'' which the Contractor proposes shall be between the limits of 19 and 36 and shall be submitted in writing to the Engineer. Any proposed change requested by the Contractor in the value ``X'' shall require a new asphalt-rubber binder design.

The amount of asphalt-rubber binder to be added to the aggregate shall be between 6.7% and 8.7% by dry weight of the aggregate. The exact amount will be determined by the Engineer. The temperature of the aggregate at the time the asphalt-rubber binder is added shall be not more than 350° F.

Rubber for use in asphalt-rubber binder shall be free of loose fabric, wire and other contaminants except that up to 3% (by weight of rubber) calcium carbonate or talc may be added to prevent rubber particles from sticking together. The rubber shall be sufficiently dry so as to be free flowing and not produce foaming when blended with the hot asphalt.

A sample of the asphalt-rubber binder proposed for use on the project, consisting of four one-quart cans, together with the proposed formulation of the binder shall be furnished to the Engineer at least two weeks before ARHM-GG pavement construction is scheduled to begin.

The method and equipment for combining the rubber and the asphalt shall be so designed and accessible that the Engineer can readily determine the percentage by weight for each material being incorporative into the mixture.

Equipment utilized in the production and proportioning of the asphalt-rubber binder shall include the following:

An asphalt heating tank with hot oil heat transfer to heat the asphalt to the necessary temperature before blending with the granulated rubber. This unit shall be equipped with a thermostatic heat control device.

A mechanical blender for proper proportioning and thorough mixing of the asphalt and rubber. This unit shall have both an asphalt totalizing meter (gallons or liters) and a flow rate meter (gallons per minute or liters per minute).

An asphalt-rubber storage tank equipped with a heating system to maintain the proper temperature of the binder and an internal mixing unit capable of maintaining a homogeneous mixture of asphalt and rubber.

An asphalt-rubber supply system equipped with a pump and metering device capable of adding the binder by volume to the aggregate at the percentage specified or ordered.

The equipment utilized in the manufacture of asphalt rubber binder shall keep the mix in a continuous blend state. The batch method is not acceptable.

The swell, moisture vapor susceptibility, and the stabilometer value requirement in Section 39-2.02, "Aggregate" of the Standard Specifications shall not apply to ARHM-GG.

Before opening a traffic lane to public traffic, when directed by the Engineer, a sand cover shall be spread uniformly over areas where ARHM-GG has been placed.

Sand shall be free from clay or organic material and shall be of such size that from 90% to 100% will pass a No. 4 sieve and not more than 5% will pass a No. 200 sieve.

Sand shall be spread at the approximate rate of from one to two pounds per square yard.

Traffic shall not be allowed on the ARHM-GG for at least one hour after final rolling operations have been completed.

Pneumatic tired rollers shall not be used to compact ARHM-GG.

The asphalt-rubber mixture shall not be used as a binder after it has been retained for more than 48 hours.

Type 2 Asphalt-Rubber Binder

Type 2 asphalt-rubber binder shall be a uniform and reacted mixture of compatible paving grade asphalt, extender oil, and reclaimed vulcanized rubber.

Extender oil shall be a resinous, high flash point aromatic hydrocarbon conforming to the following:

Viscosity, SUS @ 100° F (ASTM D 88)	2500 minute
Flash Point, COC, Degree F (ASTM D 92)	405 minute
Molecular Analysis (ASTM D 2007)	
Asphaltenes, % by weight	0.1 maximum
Aromatics, % by weight	55 minimum

The asphalt and extender oil, when combined shall form a material that is chemically compatible with the rubber.

The rubber used in Type 2 asphalt-rubber binder shall be reclaimed vulcanized rubber and shall contain between 22 percent and 39 percent by weight, natural rubber when tested in accordance with ASTM D 297. The rubber shall conform to the following grading when tested in accordance with ASTM C 136:

Sieve Size	Percentage Passing
No. 8	100
No. 10	98-100
No. 16	45-75
No. 30	2-20
No. 50	0-6
No. 100	0-2

The rubber shall contain no particles longer than 3/16 inch in length.

The extender oil shall be added to the asphalt at a rate between 2 percent and 6 percent by weight of the asphalt, the exact amount shall be determined by the asphalt-rubber supplier. The asphalt shall be at a temperature of not less than 350° F nor more than 425° F when the extender oil is added.

The asphalt-extender oil blend and rubber shall be combined and mixed together in the blender unit to produce a homogeneous mixture.

The amount of rubber to be added to the asphalt-extender oil blend shall be 18 percent and 22 percent by weight of the total combined mixture of asphalt, extender oil, and rubber. The exact amount shall be determined by the asphalt-rubber supplier. The asphalt-extender oil blend shall be at a temperature of not less

than 350° F nor more than 425° F when the rubber is added. After the material has reacted for at least 45 minutes, the asphalt-rubber shall be metered into the mixing chamber of the asphalt concrete production plant at the percentage specified or ordered.

The asphalt-rubber mixture shall be reacted for a minimum of 45 minutes from the time the rubber is added to the asphalt-extender oil blend. The temperature of the asphalt-rubber mixture shall be maintained between 375° F and 425° F during the reaction period.

The asphalt-rubber mixture shall possess the following physical property after the reaction period:

Viscosity at 400° F (ASTM D 2196) (Brookfield)	600-2000 cp

Asphalt-rubber shall consist of the following:

After reacting the PG 64-16, asphalt modifier and rubber, the asphalt-rubber binder shall conform to the following requirements:

Test Parameter	Specification Limits
Field Viscosity, Haake at 375° F in centipoise ASTM D 2669	1500-4000
Penetration, Cone at 77° F in 1/10 MM ASTM D 217	45 ± 25
Resilience 77° F in percent rebound ASTM D 3407	18 Minimum
Field Softening Point in degree F ASTM D 36	145 ± 20

Contractor shall have available a Haake Viscometer conforming to ASTM D 2669.

The asphalt-rubber mixture after reaching the desired consistency shall not be held at temperatures over 375° F for more than 4 hours.

General Requirements

The aggregate for ARHM-GG shall conform to the following grading and shall meet the quality requirements for "Type A" as specified in Section 39-2.02, "Aggregate" of the Standard Specifications.

For ½" maximum size aggregate, use the following grading:

Sieve Size	Limits of Proposed Gradation	Operating Range	Contract Compliance
¾''		100	100
½''		90-100	90-100
3/8''	78-92	X±5	X±7
#4	28-42	X±5	X±7
#8	15-25	X±4	X±7
#30	5-15	X±4	X±7
#200		2-7	0-8

The Los Angeles Rattler requirement in Section 39-2.02, "Aggregate" of the Standard Specifications shall be amended to read "40 percent maximum loss at 500 revolutions".

ARHM-GG shall be spread at a temperature of not less than 285° F and not more than 350° F, measured in the hopper of the paving machine, with ambient temperature of not less than 55° F.

Measurement

The mixture of ARHM-GG will be measured by the ton in the same manner specified for asphalt concrete in Section 39-8.01, "Measurement" of the Standard Specifications.

Payment:

The contract price paid per ton for ARHM-GG shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in placing ARHM-GG complete in place, including header cutting as directed by the Engineer, furnishing and applying asphalt binder, furnishing and spreading sand cover if directed by the Engineer,

as shown on the plan, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer.

ASPHALT CONCRETE DIKE, MISCLLANEOUS AREA, TRANSITION RAMPS, AND DRIVEWAY TIE-INS:

Asphalt concrete dikes, transition ramps, and driveway tie-ins shall conform to the County Road Improvement Standards and Specifications, Caltrans Standard Plans as specified and as directed by the Engineer.

The pay quantity of asphalt concrete dikes, transition ramps, and driveway tie-ins shall be for placement, and shall be paid for as a separate item of work in addition to the price paid for the asphalt concrete material.

Asphalt binder to be mixed with the aggregate shall be PG 64-10 in accordance with the Special Provision for Asphalt, or as directed by the Engineer.

Payment:

The contract unit prices paid per lineal foot for dikes and per square foot for transition ramps and driveway tie-ins shall include full compensation for furnishing all labor, materials(other than asphalt concrete), tools, and equipment and for doing all work involved in placing and compacting the dikes, transition ramps, and driveway tie-ins and no additional compensation will be allowed therefor.

CONCRETE CURB, GUTTER, CROSS-GUTTER, DRIVEWAY APPROACH/TIE-IN, SIDEWALK, AND CURB RAMPS:

Concrete curb, gutter, cross-gutter, driveway approach/tie-in, sidewalk, and curb ramps shall be constructed in accordance with the County Road Improvement Standards And Specifications, or as directed by the Engineer and in conformance with Section 51, 73 and 90 of Standard Specifications, except as herein modified:

Class 2 concrete shall be used for curb and gutter, cross-gutter, driveway approach, driveway tie-ins.

Class 3 concrete shall be used for curb ramps and sidewalk.

Preparation of subgrade for the concrete structures shall be done in conformance with the requirements of Section 73-1.02 of the Standard Specifications.

The placement of aggregate base material is required under all concrete in accordance with County Road Improvement Standards and Specifications.

Excess material resulting from the excavation of the subgrade shall be disposed of as elsewhere provided in these Special Specifications. Full compensation for the removal of existing concrete and/or asphalt concrete structures within public right-of-way shall be included in the contract bid prices for such items.

The Contractor is responsible for meeting all requirements of the Americans with Disability Act (ADA).

Construction of sidewalk, curb, gutter, driveways, and curb ramps shall include, but not be limited to, the following:

1) Removal and disposal of existing sidewalk, curb, and/or curb and gutter, and existing soil and aggregate as required;
2) Establishing grades, and assuring that all grades are met;
3) Performing all grading and compaction - including all required aggregate import, as directed by the Engineer and in accordance with County Standard 403;
4) Construction of new sidewalk, curb, and/or curb and gutter, driveways and curb ramps;
5) All scoring/grooving and required saw cutting;
6) Repair of existing asphalt and PCC surfacing;
7) Installing 1/2'' wide expansion joints;
8) All landscaping, and related work, to return the area adjacent to the curb ramp to its original condition and to conform the area to the new improvements;

At a minimum, the area from the BCR to ECR shall meet all required ADA standards. Therefore, to conform to existing conditions and/or to achieve the required four-foot level area (maximum of 2.0% crossfall) at the top potion of the curb ramp, it may be necessary to extend the work beyond the BCR/ECR in certain instances.

The area behind and along the sidewalk shall be filled and compacted with native or select material and graded to match and provide a smooth transition from the back of sidewalk, to the satisfaction of the Engineer.

Payment:

The contract unit bid prices paid per linear foot for Curb And Gutter, square foot for Cross-Gutter, Sidewalk, Driveway, and Driveway Tie-In, each for Curb Ramps, shall include full compensation for furnishing all labor, equipment, materials and tools, and incidentals, and for doing all the work involved in the construction and complete in place including the furnishing and placing of expansion joints within the right of way and as directed by the Engineer on private property and no additional compensation will be allowed therefor.

REMOVE/REPLACE FENCE/GATE AND RELOCATE FENCE/GATE:

Existing fence/gate shall be removed and replaced in kind, or with similar suitable material for the fence/gate as determined by the Engineer, outside the public right-of-way as shown on the construction plans and as directed by the Engineer.

Existing fence/gate shall be relocated outside the public right-of-way as shown on the construction plans and as directed by the Engineer.

The excess materials from the removals shall become the property of the Contractor. If during construction operations the Contractor damages the existing fencing/gates and the material is determined to be damaged or not suitable for relocation or replacement, the Contractor shall provide fencing/gates in a similar suitable material (and color) as determined by the Engineer at no additional cost to the County.

Payment:

The contract bid prices paid per linear foot for Remove/Replace Existing Fencing and Gates and Relocate Existing Fence/Gate shall include full compensation for furnishing all labor, tools, material, equipment, and incidentals, and for doing all work involved including all driveway/pedestrian gates as shown on the

plans and/or as directed by the Engineer, all reworking and adjustments to finish grade of existing fence/gate which may include portions beyond fence/gate opening or any other method of construction and/or construction materials (i.e. retaining curb) used to accomplish replacing fence/gate in working condition as directed by the Engineer and no additional compensation will be allowed therefor.

THERMOPLASTIC CROSSWALK AND PAVEMENT MARKING:

Thermoplastic crosswalk and pavement markings shall conform to the provisions in Sections 84-1, "General," and 84-2, "Thermoplastic Traffic Stripes and Pavement Markings," of the Standard Specifications and these Special Provisions.

Payment:

The contract unit bid price paid per square foot for Thermoplastic Crosswalk And Pavement Marking shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals and doing all the work necessary to place the crosswalk and pavement markings complete in place and no additional compensation will be allowed therefor.

PAINT TRAFFIC STRIPE:

Painting traffic stripe shall conform to the provisions in Sections 84-1, ``General'' and 84-3, ``Painted Traffic Stripes and Pavement Markings'' of the Standard Specifications and these Special Provisions.

Traffic striping shall be applied in two coats with airless equipment and shall be performed with a roadliner truck mounted striping machine. Where the configuration or location of a traffic stripe is such that the use of a roadliner truck mounted striping machine is unsuitable, traffic striping and glass spheres may be applied by other methods and equipment approved by the Engineer.

Newly painted traffic striping shall be protected from damage by public traffic or other causes until the paint is thoroughly dry. Any newly painted traffic striping which are damaged as a result of the construction, including wheel markings by public traffic

and the construction equipment, shall be repainted by the Contractor and any associated removals shall be performed as called for in these Special Provisions.

Payment:

The contract price paid per linear foot for Paint Traffic Stripe (2 Coats) shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in painting traffic stripe (regardless of the number, widths, and types of individual stripes involved in each traffic stripe) including any necessary cat tracks, dribble lines any layout work, complete in place as shown on the plans, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer.

PAVEMENT MARKERS (REFLECTIVE):

Pavement markers shall conform to the provisions in Section 85, "Pavement Markers" of the Standard Specifications and these Special Provisions.

Pavement markers shall be placed to the line established by the Engineer. All additional work necessary to establish satisfactory lines for markers shall be performed by the Contractor.

Pavement markers (blue reflective) shall be installed where required in the roadway for all existing fire hydrants per CVWD Standards and per County Standards and Specifications as directed by the Engineer.

Markers and adhesive removal shall be performed by a method approved by the Engineer. Any pavement scarring resulting from the markers removal shall be repaired to the satisfaction of the Engineer.

Payment:

Payment for furnishing and placing Pavement Markers will be at the unit price bid and shall include full compensation for furnishing all labor, materials, tools, equipment and no additional compensation will be allowed therefor.

ROADSIDE SIGNS (RELOCATE):

Roadside signs (relocate) shall conform to the provisions in Section 56-2, ``Roadside Signs'' of the Standard Specifications, and in accordance with Standard Plans RS2 and as directed by the Engineer.

Roadside signs shall be installed at the locations shown on the construction plans or where directed by the Engineer.

Roadside signs furnished by the Contractor shall be of the standard size specified in the State of California Department of Transportation Sign Specification Sheets, unless otherwise indicated on the construction plans.

Sheeting shall be guaranteed against defects for a period of ten years from the date of fabrication.

The base metal shall be new aluminum, 0.08 gauge, of alloys 6061-T6 or 5052-H38 conforming to the requirements of ASTM Designation: B209.

Any reflective sheeting supplied as a part of this contract, whether as a legend or background, shall be FHWA FP-85 Type IIA or AASHTO M268 Type III.

Reflective sheeting shall be applied to the sign by a method approved by the manufacturer of the sheeting and shall produce a durable bond equal to or greater than the strength of the reflective sheeting. No air pockets or bubbles shall exist between the sheeting and aluminum backing.

The reflective material and screening inks or overlay film shall be graffiti proof. The graffiti proofing method shall be supplied by and/or approved by the sheeting manufacturer. Neither the color nor the reflective intensity of the finished sign shall be significantly diminished by the use of graffiti remover when used in a manner approved by the Transportation Department in conjunction with the sheeting manufacturer. Any signs graffitied by over the counter spray paint or marking pens, which fail to be restored, shall be replaced by the sign sheeting manufacturer.

All letters and numerals shall be in accordance with the ``Standard Alphabet of Highway Signs'' as used by the State of California, Department of Transportation.

All signs shall be installed using hex head bolts, washers, nuts and jam nuts in accordance with Standard Plans RS2 or as directed by the Engineer.

Payment:

The contract unit prices paid per each for Roadside Signs (Relocate) shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work including all necessary concrete, excavation and backfill as specified in the Standard Specification and these Special Provisions and no additional compensation will be allowed therefor.

MISCELLANEOUS DIRECTED WORK:

Miscellaneous directed work shall consist of necessary work that is not included in other contract bid items, as determined by the Engineer. Miscellaneous directed work shall be performed as directed by the Engineer and in accordance with the applicable standards and specifications. Payment for implementing miscellaneous directed work will be paid for on a force account basis, with an allowable 15% maximum mark up for labor, equipment, and material and no other applicable mark ups will be allowed, in accordance with Caltrans Labor Surcharge and Equipment Rental Rates, latest edition, up to the fixed bid price, for the work performed.

Payment:

Payment for implementing miscellaneous directed work will be paid for on a force account basis, in accordance with Section 9-1.03 of the Standard Specifications, up to the fixed bid price, for the work performed

OBSTRUCTIONS:

Attention is directed to Sections 8-1.10, "Utility and Non-Highway Facilities", and 15, "Existing Highway Facilities" of the Standard Specifications and these Special Provisions.

Existing utility and privately owned facilities shall be protected in accordance with Section 7-1.11, ``Preservation of Property'' and these Special Provisions. The Contractor is also responsible to protect those facilities that are to be relocated by others prior to or during construction, and shall protect those facilities in both their existing and their ultimate locations. The Contractor shall cooperate with owners and their Contractors of utility and privately owned facilities, for the relocation of said facilities, in accordance with Section 7-1.14, ``Cooperation'' of the Standard Specifications.

All water valves and covers, gas valves and covers, sewer manholes, survey monuments, survey markers and any other utility appurtenances shall be protected in place.

The Contractor's attention is directed to the existence of certain underground facilities that may require special precautions be taken by the Contractor to protect the health, safety and welfare of workmen and the public. Facilities requiring special precautions include, but are not limited to: conductors of petroleum products, oxygen, chlorine, and toxic or flammable gases; natural gas in pipe lines greater than 6 inches in diameter or pipe lines operating at pressures greater than 60 psi (gage); underground electric supply system conductors or cables either directly buried or in duct or conduit which do not have concentric neutral conductors or other effectively grounded metal shields or sheaths; and underground electrical conductors with potential to ground of more than 300 volts. The Contractor shall notify the Engineer at least twenty-four hours prior to performing any work in the vicinity of such facilities.

Attention is directed to the requirements of Government Code Sections 4216-4216.9 pertaining to existing utility facilities.

The Contractor shall assume that every house, building and lot within the project limits has utility service pipes and conductors (laterals), and that utility main and trunk facilities exist within the project limits. The Contractor shall determine if it is warranted to determine the exact location of these utility service laterals and existing main lines, unless directed by the Engineer to pot-hole at specific locations, or as otherwise required herein. The Contractor will not be directly reimbursed for determining the exact location of the utility main lines or services laterals but shall include any compensation for this work in the contract price paid for the various items of

work. Any damage to existing main lines or service laterals for which pot-holing was not performed shall be considered damage due to not using reasonable care and the damage shall be repaired at the Contractor's expense.

The Contractor shall conduct his operations with the assumption that underground utility facilities exist within the project limits. The Contractor shall exercise caution and best construction practices for safety and for protection of underground facilities. The approximate locations of underground utility facilities, as shown on the plans, are based on information provided by the respective owners, listed below. The Contractor shall also utilize the markings of the regional notification center (Underground Service Alert), and above-ground utility appurtenances to determine the existence and approximate location of underground utilities.

No excavation shall be made within 4 feet of any underground utilities, as shown on the plans and/or marked by Underground Service Alert, unless and until such utilities have been positively located as to horizontal and vertical position. This requirement applies to all underground electric, natural gas, toxic or flammable gas, chlorine, oxygen or petroleum facilities.

Forty-eight hours prior to beginning construction, the Contractor shall notify the following agencies:

Underground Service Alert	800-227-2600
Southern California Edison Company	909-357-6221
Southern California Gas Company	909-335-7561
Eastern Municipal Water District	951-928-6107
Western Municipal Water District	951-928-6107
City of Riverside	951-826-5866
Sprint Communication	909-873-8022
Verizon Communications	951-925-6253
Adelphia Communications	951-975-3402
Charter Communication	951-343-5100
MCI network Services	972-729-6016
Santa Ana Watershed	951-354-4220
AT & T California	714-666-5401
Time Warner Telecom	925-953-7093

Payment:

Full compensation for all costs, including labor, equipment, materials and incidentals, required to comply with the requirements of this section above, including protection of water valves and covers, gas valves and covers, sewer manholes, survey monuments, survey markers and any other utility appurtenances, shall be considered as included in the various items of work, and no additional compensation will be allowed therefor.

Adjustments to Grade for Obstructions

The Contractor shall adjust to finish grade any valve covers encountered within the project limits, as required, for those utility valves that are provided with slip cans and are adjustable without the replacement of parts or the removal of concrete collars. In cases where the owning utility company insists upon upgrades in the standards, or when additional parts or the removal of concrete collars are required for the adjustment, said adjustment will be the responsibility of the owning utility company.

Communication and coordination with the owning utility company shall be the responsibility of the contractor.

For public safety, traffic shall not be allowed on temporary or permanent pavement until all manholes are either adjusted to grade or otherwise protected, as approved by the Engineer. The Contractor shall adjust to grade manholes and valves when and as necessary for the protection of the traveling public during construction, and shall coordinate all work on said facilities with the owning utility companies. This requirement is intended for traffic that is to be allowed on temporary surfaces during the course of construction. Final adjustment to grade will be the responsibility of the owning utility company, except as provided herein.

Said work shall be performed in accordance with Section 15-2.05A, ``Frames, Covers, Grates, and Manholes'' of the Standard Specifications. Full compensation for adjustment of valve covers shall be considered as included in the contract price paid for asphalt concrete, or applicable items of work in the event that there is no asphalt concrete bid item, and no additional compensation will be allowed therefor.

All existing utility facilities shall be protected from damage by the Contractor's operations.

Unless otherwise provided herein, the owning utility companies will not be obligated to lower their surface utilities (manholes and valve covers) for Contractor's grading, grinding and/or paving operations. The contractor shall lower surface facilities, including manholes and valve covers, to facilitate construction, and the following shall apply:

1. Contractor shall coordinate all work with the utility owner.

2. Contractor shall be responsible for all costs and shall be responsible for any damage caused to the owner's facilities. If the Contractor observes any pre-existing damage to the utility facilities, the Contractor shall notify the Engineer and the utility owner of that damage prior to performing additional work on the facility.

3. Contractor shall, after removing grade rings and covers, arrange for pickup by, or delivery to, the owner's yard. Any and all concrete collars removed by the Contractor shall become the property of the Contractor, and shall be disposed of as specified elsewhere in these special provisions.

4. The Contractor is advised that he is responsible for ensuring that construction materials do not enter the utility owner's facilities. The Contractor shall install traffic bearing steel plates for this purpose, and provide all coordination and transportation necessary. It is recommended that the Contractor request the utility owner to provide such steel plates. If the Contractor provides steel plates, it shall be the Contractor's responsibility to coordinate with the utility owner for the return of the steel plates to the Contractor after final adjustment to grade. If the Contractor utilizes utility owner's steel plates, and if the Contract items of work include adjustment to final grade, the Contractor shall return the steel plates to the Utility owner's yard, or as otherwise arranged with the Utility owner.

5. Prior to paving or covering the plated utility facility, the Contractor shall tie-out the facility utilizing a

method acceptable to the utility owner and provide notes and data of all covered facilities to both the utility owner and the Engineer.

6. The Contractor shall notify the utility owner, upon completion of the Contractor's work, when the utility owner may move in to make the final adjustments to grade.

7. The requirements for lowering of surface facilities shall not apply to vaults. The Contractor shall notify the utility owner of the need to make adjustments to such major facilities.

8. The Contractor is reminded that the utility facilities are owned by public and private utility companies that operate their facilities within public rights of way. The utility owner's preferences with regards to the handling of its facilities shall be complied with to the greatest extent feasible.

Payment:

Full compensation for initial lowering of surface utilities facilities shall be considered as included in the contract price paid for asphalt concrete, or applicable items of work in the event that there is no asphalt concrete bid item, and no additional compensation will be allowed therefor.

ADJUST MANHOLE TO GRADE:

If the alternate bid schedule for the adjustment of sewer manhole covers is awarded by the County of Riverside, those facilities will be adjusted to grade as provided herein.

Existing manholes (Jurupa Community Services District) shall be adjusted to finish grade with materials similar in quality to those in the original structure in accordance with the applicable provisions of Sections 15-2 and 71 of the Standard Specifications, the requirements of the owning utility company and these Special Provisions. Jurupa Community Services District Drawing No. S23 is attached and is made a part hereof.

After the manhole frame has been removed, the top of the structure shall be carefully trimmed to provide a suitable foundation for the new material.

Steel plates shall be used to prevent asphalt and debris from entering the sewer system.

Additionally, a ``False Bottom'' shall be fabricated and placed in the manhole cone as a second barrier to prohibit foreign objects from entering the sewer system. Said ``false bottom'' shall be made from plywood of suitable thickness (3/4'' minimum) or stronger material to prohibit heavy objects from breaking the barrier. ``False Bottom'' shall be fabricated and installed in accordance with the requirements and standards of the Jurupa Community Services District, the attached "Standard No. 11" of the Lake Hemet Municipal Water District, or as otherwise approved by the Engineer.

The Jurupa Community Services District shall furnish replacement manhole covers as required for ones that are damaged. The Contractor shall be responsible for transporting the new manhole lids from the District Yard to the construction site, off-loading and installing the new covers, and disposal of the damaged manhole covers.

Coordination and communication shall be maintained between the Contractor and the owning utility company:

Jurupa Community Services District
11201 Harrel Street
Mira Loma, CA 91752
Nemesciano "Nem" Ochoa
(951) 685-7434

The Contractor shall adjust to final grade all manhole covers owned by the Riverside County Flood Control and Water Conservation District.

If the alternate bid schedule is chosen for award, the Contractor's Certificate of Insurance and endorsements for the project shall name the sewer system owner, its officers, directors, agents and employees as additionally insured under the Contractor's general liability, excess liability, and auto liability insurance policies, and the sewer system owner shall be

named on the Waiver of Subrogation for the Contractor's Workers Compensation policy.

If the alternate bid schedule is not chosen for award, the Contractor shall coordinate with the owner of the sewer facilities and provide access and sufficient time for the sewer owner to adjust the facilities. Attention is directed to Section 8-1.10 ``Utility and Non-Highway Facilities'' of the Standard Specifications.

The adjustment to grade of other manhole covers, such as those owned by phone and electric companies, will be performed by the utility owner.

Water and gas valve covers shall be adjusted by the Contractor as provided elsewhere in these Special Provisions.

Payment:

Payment shall be on a unit price basis per manhole and shall include full compensation for furnishing all labor, equipment, materials except as provided herein, and doing all work required to adjust the manholes to grade and no additional compensation shall be allowed therefor.

ADJUST WATER METER BOX TO GRADE

Existing water meter boxes (Jurupa Community Services District) shall be adjusted to finish grade with materials similar in quality to those in the original structure in accordance with the applicable provisions of the Standard Specifications, the requirements of the owning utility company and these Special Provisions. Jurupa Community Services District Drawing Nos. D-1 thru D-3 are attached and are made a part hereof.

Coordination and communication shall be maintained between the Contractor and the owning utility company:

Jurupa Community Services District
11201 Harrel Street
Mira Loma, CA 91752
Nemesciano "Nem" Ochoa
(951) 685-7434

The Jurupa Community Services District shall furnish replacement water meter boxes or lids as required for ones that are damaged.

Payment:

Payment shall be on a unit price basis per water meter box and shall include full compensation for furnishing all labor, equipment, materials except as provided herein, and doing all work required to adjust the water meter boxes to grade and no additional compensation shall be allowed therefor.

REMOVE AND REPLACE MAILBOX

Remove and replace mailboxes shall conform to the approved plans and as directed by the Engineer.

Private mail and newspaper boxes shall be removed and salvaged as directed by the Engineer, and reset on temporary portable mounts consisting of timber posts supported in five gallon cans or buckets, in accordance with Section 15 of the Standard Specifications and these Special Provisions.

During construction operations, the portable mount shall be moved as necessary to clear the Contractor's operations, but at all times shall be easily accessible for mail delivery.

When construction is complete, new mailboxes white in color with address numbers attached shall be furnished and set in a final position behind new curb and gutter as directed by the Engineer and per United States Postal Service (USPS) Standards. New wood posts white in color shall also be furnished and installed in concrete foundation. The shape and size of the new mailbox and post shall be per USPS Standards and approved by the Engineer.

Groups of mailboxes, on single-post or multiple post supports, shall be set on two-post portable mounts as herein specified for single-post mountings and shall be provided with a supporting cross member between the tops of the portable mounts.

Payment:

The contract unit bid price paid per each for remove, reset and replace mailboxes shall include full compensation for furnishing all labor, material, tools, equipment, and incidentals and for

doing all the work involved in removing the boxes, constructing and maintaining the portable mounts, installing the boxes on the mounts, moving and setting up the portable mounts as required, and replacing existing and installing new mailboxes in final position, including all necessary concrete, excavation, and backfill, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer.

APPENDIX A

Attachment "C" for Risk Level 1 Requirements

Of Water Pollution Control

ATTACHMENT C
RISK LEVEL 1 REQUIREMENTS

A. Effluent Standards

[These requirements are the same as those in the General Permit order.]

1. Narrative – Risk Level 1 dischargers shall comply with the narrative effluent standards listed below:

   a. Storm water discharges and authorized non-storm water discharges regulated by this General Permit shall not contain a hazardous substance equal to or in excess of reportable quantities established in 40 C.F.R. §§ 117.3 and 302.4, unless a separate NPDES Permit has been issued to regulate those discharges.

   b. Dischargers shall minimize or prevent pollutants in storm water discharges and authorized non-storm water discharges through the use of controls, structures, and management practices that achieve BAT for toxic and non-conventional pollutants and BCT for conventional pollutants.

2. Numeric – Risk Level 1 dischargers are not subject to a numeric effluent standard.

B. Good Site Management "Housekeeping"

1. Risk Level 1 dischargers shall implement good site management (i.e., "housekeeping") measures for construction materials that could potentially be a threat to water quality if discharged. At a minimum, Risk Level 1 dischargers shall implement the following good housekeeping measures:

   a. Conduct an inventory of the products used and/or expected to be used and the end products that are produced and/or expected to be produced. This does not include materials and equipment that are designed to be outdoors and exposed to environmental conditions (i.e. poles, equipment pads, cabinets, conductors, insulators, bricks, etc.).

   b. Cover and berm loose stockpiled construction materials that are not actively being used (i.e. soil, spoils, aggregate, fly-ash, stucco, hydrated lime, etc.).

c. Store chemicals in watertight containers (with appropriate secondary containment to prevent any spillage or leakage) or in a storage shed (completely enclosed).

d. Minimize exposure of construction materials to precipitation. This does not include materials and equipment that are designed to be outdoors and exposed to environmental conditions (i.e. poles, equipment pads, cabinets, conductors, insulators, bricks, etc.).

e. Implement BMPs to prevent the off-site tracking of loose construction and landscape materials.

2. Risk Level 1 dischargers shall implement good housekeeping measures for waste management, which, at a minimum, shall consist of the following:

a. Prevent disposal of any rinse or wash waters or materials on impervious or pervious site surfaces or into the storm drain system.

b. Ensure the containment of sanitation facilities (e.g., portable toilets) to prevent discharges of pollutants to the storm water drainage system or receiving water.

c. Clean or replace sanitation facilities and inspecting them regularly for leaks and spills.

d. Cover waste disposal containers at the end of every business day and during a rain event.

e. Prevent discharges from waste disposal containers to the storm water drainage system or receiving water.

f. Contain and securely protect stockpiled waste material from wind and rain at all times unless actively being used.

g. Implement procedures that effectively address hazardous and non-hazardous spills.

h. Develop a spill response and implementation element of the SWPPP prior to commencement of construction activities. The SWPPP shall require that:

i. Equipment and materials for cleanup of spills shall be available on site and that spills and leaks shall be cleaned up immediately and disposed of properly; and

ii. Appropriate spill response personnel are assigned and trained.

i. Ensure the containment of concrete washout areas and other washout areas that may contain additional pollutants so there is no discharge into the underlying soil and onto the surrounding areas.

3. Risk Level 1 dischargers shall implement good housekeeping for vehicle storage and maintenance, which, at a minimum, shall consist of the following:

   a. Prevent oil, grease, or fuel to leak in to the ground, storm drains or surface waters.

   b. Place all equipment or vehicles, which are to be fueled, maintained and stored in a designated area fitted with appropriate BMPs.

   c. Clean leaks immediately and disposing of leaked materials properly.

4. Risk Level 1 dischargers shall implement good housekeeping for landscape materials, which, at a minimum, shall consist of the following:

   a. Contain stockpiled materials such as mulches and topsoil when they are not actively being used.

   b. Contain fertilizers and other landscape materials when they are not actively being used.

   c. Discontinue the application of any erodible landscape material within 2 days before a forecasted rain event or during periods of precipitation.

   d. Apply erodible landscape material at quantities and application rates according to manufacture recommendations or based on written specifications by knowledgeable and experienced field personnel.

   e. Stack erodible landscape material on pallets and covering or storing such materials when not being used or applied.

5. Risk Level 1 dischargers shall conduct an assessment and create a list of potential pollutant sources and identify any areas of the site where additional BMPs are necessary to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges. This potential pollutant list shall be kept with the SWPPP and shall identify

all non-visible pollutants which are known, or should be known, to occur on the construction site. At a minimum, when developing BMPs, Risk Level 1 dischargers shall do the following:

a. Consider the quantity, physical characteristics (e.g., liquid, powder, solid), and locations of each potential pollutant source handled, produced, stored, recycled, or disposed of at the site.

b. Consider the degree to which pollutants associated with those materials may be exposed to and mobilized by contact with storm water.

c. Consider the direct and indirect pathways that pollutants may be exposed to storm water or authorized non-storm water discharges. This shall include an assessment of past spills or leaks, non-storm water discharges, and discharges from adjoining areas.

d. Ensure retention of sampling, visual observation, and inspection records.

e. Ensure effectiveness of existing BMPs to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges.

6. Risk Level 1 dischargers shall implement good housekeeping measures on the construction site to control the air deposition of site materials and from site operations. Such particulates can include, but are not limited to, sediment, nutrients, trash, metals, bacteria, oil and grease and organics.

C. Non-Storm Water Management

1. Risk Level 1 dischargers shall implement measures to control all non-storm water discharges during construction.

2. Risk Level 1 dischargers shall wash vehicles in such a manner as to prevent non-storm water discharges to surface waters or MS4 drainage systems.

3. Risk Level 1 dischargers shall clean streets in such a manner as to prevent unauthorized non-storm water discharges from reaching surface water or MS4 drainage systems.

D. Erosion Control

1. Risk Level 1 dischargers shall implement effective wind erosion control.

2. Risk Level 1 dischargers shall provide effective soil cover for inactive[1] areas and all finished slopes, open space, utility backfill, and completed lots.

3. Risk Level 1 dischargers shall limit the use of plastic materials when more sustainable, environmentally friendly alternatives exist. Where plastic materials are deemed necessary, the discharger shall consider the use of plastic materials resistant to solar degradation.

E. Sediment Controls

1. Risk Level 1 dischargers shall establish and maintain effective perimeter controls and stabilize all construction entrances and exits to sufficiently control erosion and sediment discharges from the site.

2. On sites where sediment basins are to be used, Risk Level 1 dischargers shall, at minimum, design sediment basins according to the method provided in CASQA's Construction BMP Guidance Handbook.

F. Run-on and Runoff Controls

Risk Level 1 dischargers shall effectively manage all run-on, all runoff within the site and all runoff that discharges off the site. Run-on from off site shall be directed away from all disturbed areas or shall collectively be in compliance with the effluent limitations in this General Permit.

G. Inspection, Maintenance and Repair

1. Risk Level 1 dischargers shall ensure that all inspection, maintenance repair and sampling activities at the project location shall be performed or supervised by a Qualified SWPPP Practitioner (QSP) representing the discharger. The QSP may delegate any or all of these activities to an employee trained to do the task(s) appropriately, but shall ensure adequate deployment.

2. Risk Level 1 dischargers shall perform weekly inspections and observations, and at least once each 24-hour period during extended

[1] Inactive areas of construction are areas of construction activity that have been disturbed and are not scheduled to be re-disturbed for at least 14 days.

storm events, to identify and record BMPs that need maintenance to operate effectively, that have failed, or that could fail to operate as intended. Inspectors shall be the QSP or be trained by the QSP.

3. Upon identifying failures or other shortcomings, as directed by the QSP, Risk Level 1 dischargers shall begin implementing repairs or design changes to BMPs within 72 hours of identification and complete the changes as soon as possible.

4. For each inspection required, Risk Level 1 dischargers shall complete an inspection checklist, using a form provided by the State Water Board or Regional Water Board or in an alternative format.

5. Risk Level 1 dischargers shall ensure that checklists shall remain onsite with the SWPPP and at a minimum, shall include:

   a. Inspection date and date the inspection report was written.

   b. Weather information, including presence or absence of precipitation, estimate of beginning of qualifying storm event, duration of event, time elapsed since last storm, and approximate amount of rainfall in inches.

   c. Site information, including stage of construction, activities completed, and approximate area of the site exposed.

   d. A description of any BMPs evaluated and any deficiencies noted.

   e. If the construction site is safely accessible during inclement weather, list the observations of all BMPs: erosion controls, sediment controls, chemical and waste controls, and non-storm water controls. Otherwise, list the results of visual inspections at all relevant outfalls, discharge points, downstream locations and any projected maintenance activities.

   f. Report the presence of noticeable odors or of any visible sheen on the surface of any discharges.

   g. Any corrective actions required, including any necessary changes to the SWPPP and the associated implementation dates.

   h. Photographs taken during the inspection, if any.

   i. Inspector's name, title, and signature.

H. Rain Event Action Plan

Not required for Risk Level 1 dischargers.

I. Risk Level 1 Monitoring and Reporting Requirements

Table 1- Summary of Monitoring Requirements

Risk Level	Visual Inspections					Sample Collection	
	Quarterly Non-storm Water Discharge	Pre-storm Event		Daily Storm BMP	Post Storm	Storm Water Discharge	Receiving Water
		Baseline	REAP				
1	X	X		X	X		

1. Construction Site Monitoring Program Requirements

a. Pursuant to Water Code Sections 13383 and 13267, all dischargers subject to this General Permit shall develop and implement a written site-specific Construction Site Monitoring Program (CSMP) in accordance with the requirements of this Section. The CSMP shall include all monitoring procedures and instructions, location maps, forms, and checklists as required in this section. The CSMP shall be developed prior to the commencement of construction activities, and revised as necessary to reflect project revisions. The CSMP shall be a part of the Storm Water Pollution Prevention Plan (SWPPP), included as an appendix or separate SWPPP chapter.

b. Existing dischargers registered under the State Water Board Order No. 99-08-DWQ shall make and implement necessary revisions to their Monitoring Programs to reflect the changes in this General Permit in a timely manner, but no later than July 1, 2010. Existing dischargers shall continue to implement their existing Monitoring Programs in compliance with State Water Board Order No. 99-08-DWQ until the necessary revisions are completed according to the schedule above.

c. When a change of ownership occurs for all or any portion of the construction site prior to completion or final stabilization, the new discharger shall comply with these requirements as of the date the ownership change occurs.

2. Objectives

The CSMP shall be developed and implemented to address the following objectives:

a. To demonstrate that the site is in compliance with the Discharge Prohibitions;

b. To determine whether non-visible pollutants are present at the construction site and are causing or contributing to exceedances of water quality objectives;

c. To determine whether immediate corrective actions, additional Best Management Practice (BMP) implementation, or SWPPP revisions are necessary to reduce pollutants in storm water discharges and authorized non-storm water discharges; and

d. To determine whether BMPs included in the SWPPP are effective in preventing or reducing pollutants in storm water discharges and authorized non-storm water discharges.

3. **Risk Level 1 - Visual Monitoring (Inspection) Requirements for Qualifying Rain Events**

a. Risk Level 1 dischargers shall visually observe (inspect) storm water discharges at all discharge locations within two business days (48 hours) after each qualifying rain event.

b. Risk Level 1 dischargers shall visually observe (inspect) the discharge of stored or contained storm water that is derived from and discharged subsequent to a qualifying rain event producing precipitation of ½ inch or more at the time of discharge. Stored or contained storm water that will likely discharge after operating hours due to anticipated precipitation shall be observed prior to the discharge during operating hours.

c. Risk Level 1 dischargers shall conduct visual observations (inspections) during business hours only.

d. Risk Level 1 dischargers shall record the time, date and rain gauge reading of all qualifying rain events.

e. Within 2 business days (48 hours) prior to each qualifying rain event, Risk Level 1 dischargers shall visually observe (inspect):

i. All storm water drainage areas to identify any spills, leaks, or uncontrolled pollutant sources. If needed, the discharger shall implement appropriate corrective actions.

ii. All BMPs to identify whether they have been properly implemented in accordance with the SWPPP. If needed, the discharger shall implement appropriate corrective actions.

iii. Any storm water storage and containment areas to detect leaks and ensure maintenance of adequate freeboard.

f. For the visual observations (inspections) described in e.i and e.iii above, Risk Level 1 dischargers shall observe the presence or absence of floating and suspended materials, a sheen on the surface, discolorations, turbidity, odors, and source(s) of any observed pollutants.

g. Within two business days (48 hours) after each qualifying rain event, Risk Level 1 dischargers shall conduct post rain event visual observations (inspections) to (1) identify whether BMPs were adequately designed, implemented, and effective, and (2) identify additional BMPs and revise the SWPPP accordingly.

h. Risk Level 1 dischargers shall maintain on-site records of all visual observations (inspections), personnel performing the observations, observation dates, weather conditions, locations observed, and corrective actions taken in response to the observations.

4. **Risk Level 1 – Visual Observation Exemptions**

a. Risk Level 1 dischargers shall be prepared to conduct visual observation (inspections) until the minimum requirements of Section I.3 above are completed. Risk Level 1 dischargers are not required to conduct visual observation (inspections) under the following conditions:

i. During dangerous weather conditions such as flooding and electrical storms.

ii. Outside of scheduled site business hours.

b. If no required visual observations (inspections) are collected due to these exceptions, Risk Level 1 dischargers shall include an explanation in their SWPPP and in the Annual Report documenting why the visual observations (inspections) were not conducted.

5. **Risk Level 1 – Monitoring Methods**

Risk Level 1 dischargers shall include a description of the visual observation locations, visual observation procedures, and visual observation follow-up and tracking procedures in the CSMP.

6. **Risk Level 1 – Non-Storm Water Discharge Monitoring Requirements**

a. Visual Monitoring Requirements:

i. Risk Level 1 dischargers shall visually observe (inspect) each drainage area for the presence of (or indications of prior) unauthorized and authorized non-storm water discharges and their sources.

ii. Risk Level 1 dischargers shall conduct one visual observation (inspection) quarterly in each of the following periods: January-March, April-June, July-September, and October-December. Visual observation (inspections) are only required during daylight hours (sunrise to sunset).

iii. Risk Level 1 dischargers shall ensure that visual observations (inspections) document the presence or evidence of any non-storm water discharge (authorized or unauthorized), pollutant characteristics (floating and suspended material, sheen, discoloration, turbidity, odor, etc.), and source. Risk Level 1 dischargers shall maintain on-site records indicating the personnel performing the visual observation (inspections), the dates and approximate time each drainage area and non-storm water discharge was observed, and the response taken to eliminate unauthorized non-storm water discharges and to reduce or prevent pollutants from contacting non-storm water discharges.

7. **Risk Level 1 – Non-Visible Pollutant Monitoring Requirements**

a. Risk Level 1 dischargers shall collect one or more samples during any breach, malfunction, leakage, or spill observed during a visual inspection which could result in the discharge of pollutants to surface waters that would not be visually detectable in storm water.

b. Risk Level 1 dischargers shall ensure that water samples are large enough to characterize the site conditions.

c. Risk Level 1 dischargers shall collect samples at all discharge locations that can be safely accessed.

d. Risk Level 1 dischargers shall collect samples during the first two hours of discharge from rain events that occur during business hours and which generate runoff.

e. Risk Level 1 dischargers shall analyze samples for all non-visible pollutant parameters (if applicable) - parameters indicating the

presence of pollutants identified in the pollutant source assessment required (Risk Level 1 dischargers shall modify their CSMPs to address these additional parameters in accordance with any updated SWPPP pollutant source assessment).

f. Risk Level 1 dischargers shall collect a sample of storm water that has not come in contact with the disturbed soil or the materials stored or used on-site (uncontaminated sample) for comparison with the discharge sample.

g. Risk Level 1 dischargers shall compare the uncontaminated sample to the samples of discharge using field analysis or through laboratory analysis.[2]

h. Risk Level 1 dischargers shall keep all field /or analytical data in the SWPPP document.

8. **Risk Level 1 – Particle Size Analysis for Project Risk Justification**

Risk Level 1 dischargers justifying an alternative project risk shall report a soil particle size analysis used to determine the RUSLE K-Factor. ASTM D-422 (Standard Test Method for Particle-Size Analysis of Soils), as revised, shall be used to determine the percentages of sand, very fine sand, silt, and clay on the site.

9. **Risk Level 1 – Records**

Risk Level 1 dischargers shall retain records of all storm water monitoring information and copies of all reports (including Annual Reports) for a period of at least three years. Risk Level 1 dischargers shall retain all records on-site while construction is ongoing. These records include:

a. The date, place, time of facility inspections, sampling, visual observation (inspections), and/or measurements, including precipitation.

b. The individual(s) who performed the facility inspections, sampling, visual observation (inspections), and or measurements.

c. The date and approximate time of analyses.

d. The individual(s) who performed the analyses.

[2] For laboratory analysis, all sampling, sample preservation, and analyses must be conducted according to test procedures under 40 CFR Part 136. Field discharge samples shall be collected and analyzed according to the specifications of the manufacturer of the sampling devices employed.

e. A summary of all analytical results from the last three years, the method detection limits and reporting units, and the analytical techniques or methods used.

f. Rain gauge readings from site inspections.

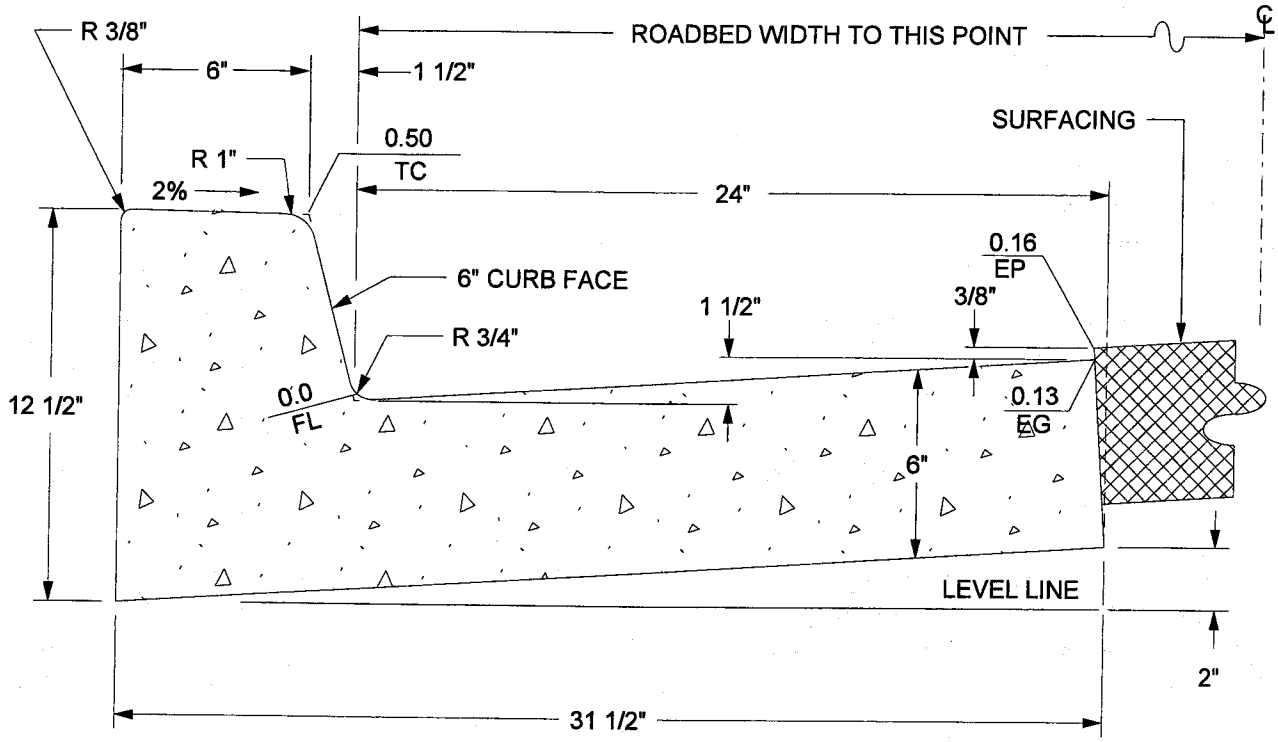
g. Quality assurance/quality control records and results.

h. Non-storm water discharge inspections and visual observation (inspections) and storm water discharge visual observation records (see Sections I.3 and I.6 above).

i. Visual observation and sample collection exception records (see Section I.4 above).

j. The records of any corrective actions and follow-up activities that resulted from analytical results, visual observation (inspections), or inspections.

REFERENCE DRAWINGS



CLASS "B" CONCRETE

1.601 CU. FT. / L.F.

1 CU. YD. = 16.86 L.F.

ABBREVIATIONS:

TC = TOP OF CURB
FL = FLOWLINE
EG = EDGE OF GUTTER
EP = EDGE OF PAVEMENT

APPROVED BY:

DATE: 05/01/07

DIRECTOR OF TRANSPORTATION
GEORGE A. JOHNSON, RCE 42328

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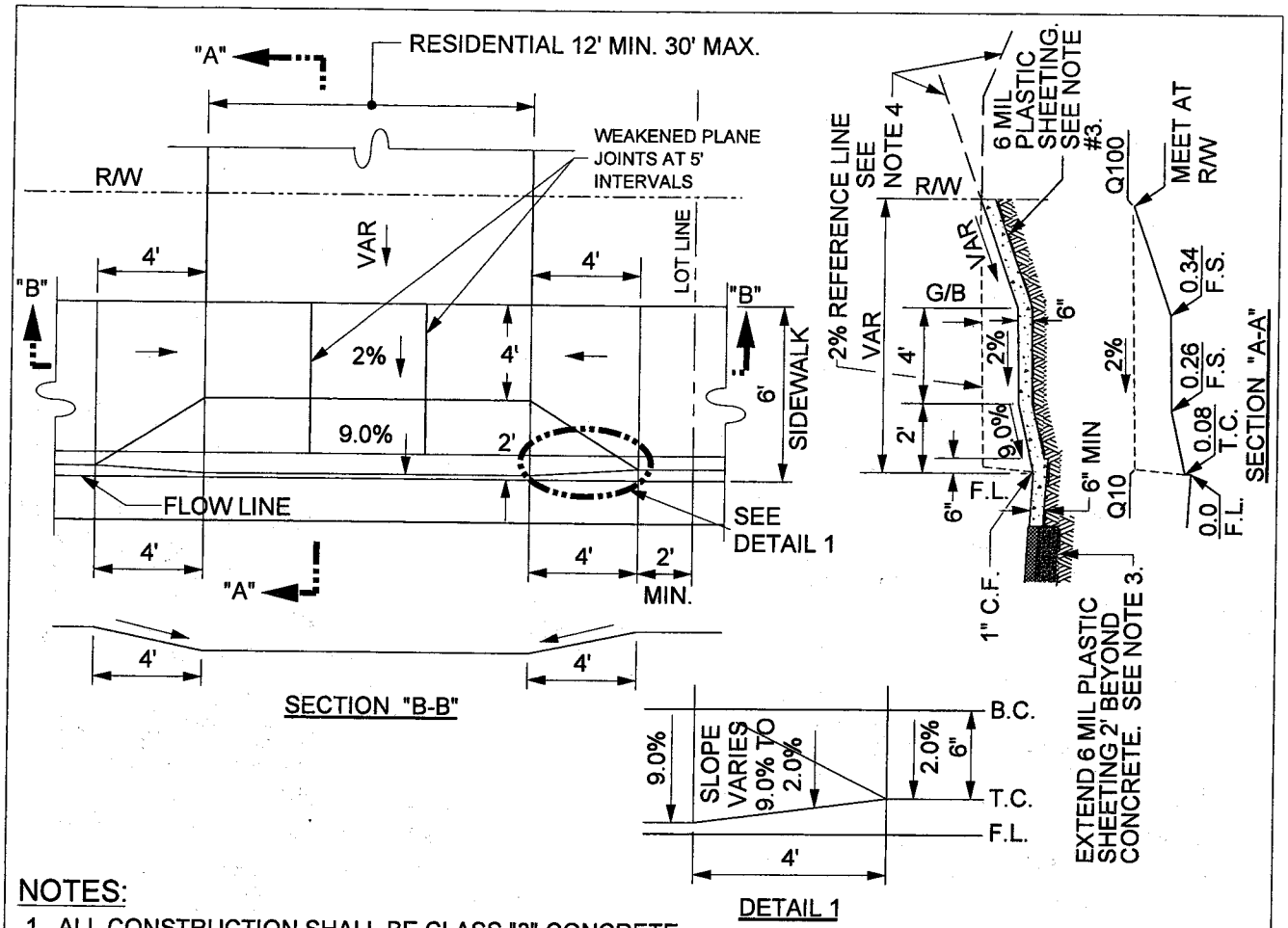
COUNTY OF RIVERSIDE

TYPE A-6 CURB

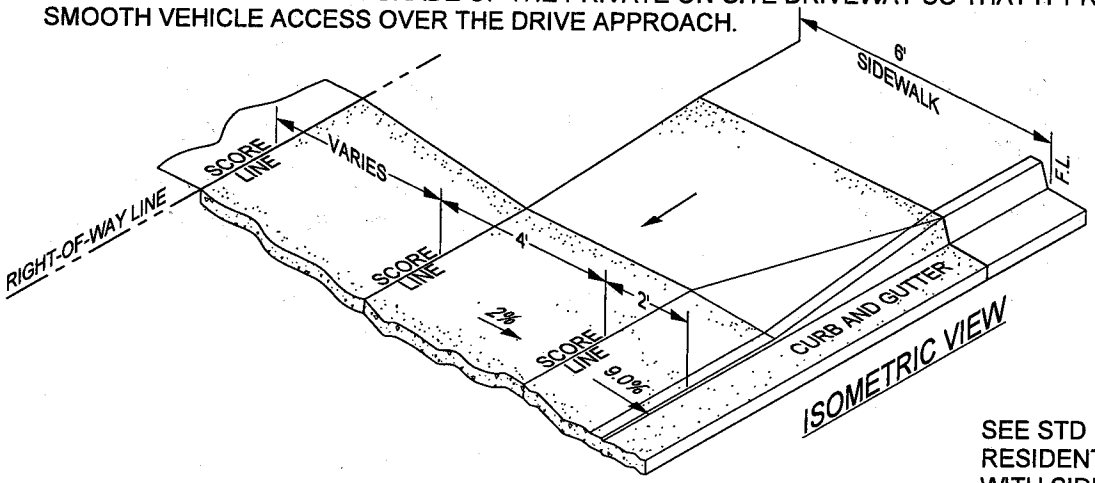
STANDARD NO. 200

REVISIONS		REV.	BY:	APR'D	DATE	REV.	BY:	APR'D	DATE
8-71, 9-88		1				4			
2-90, 11-04		2				5			
		3				6			



NOTES:

1. ALL CONSTRUCTION SHALL BE CLASS "3" CONCRETE.
2. 20' OF FULL-HEIGHT CURB REQUIRED BETWEEN DRIVEWAYS WITHIN ANY ONE PROPERTY FRONTAGE.
3. USE 6 MIL PLASTIC SHEETINGWHEN ABUTTING SOIL HAS A HIGH SULFATE CONTENT, SPECIAL CONSIDERATIONS ARE REQUIRED. SEE SPECIFICATIONS (SECTION 16.04).
4. CONSTRUCT THE PROFILE GRADE OF THE PRIVATE ON-SITE DRIVEWAY SO THAT IT PROVIDES SMOOTH VEHICLE ACCESS OVER THE DRIVE APPROACH.



SEE STD NO. 213 FOR RESIDENTIAL DRIVEWAY WITH SIDEWALK AT R/W

NOT TO SCALE

APPROVED BY:

DATE: 11/15/04

DIRECTOR OF TRANSPORTATION
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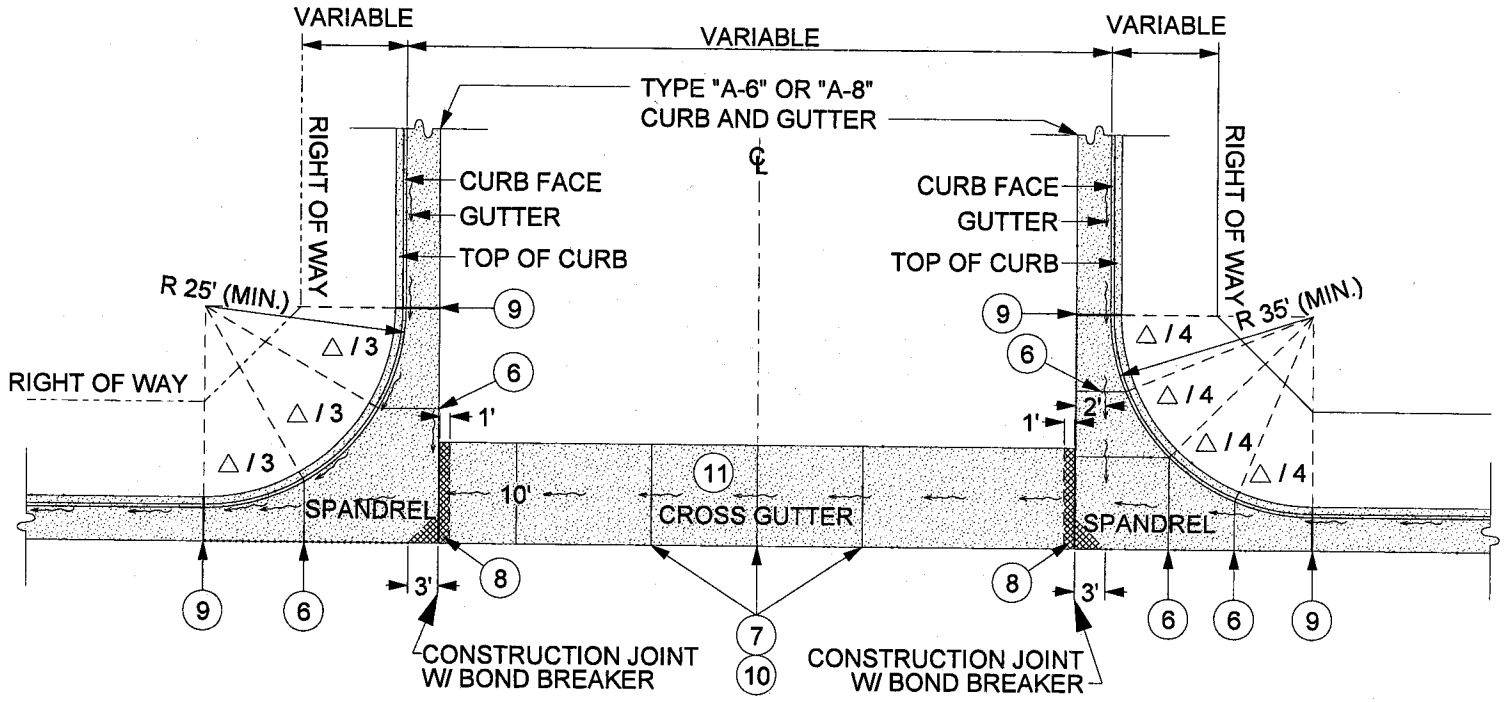
COUNTY OF RIVERSIDE

RESIDENTIAL DRIVEWAY WITH SIDEWALK AT CURB

STANDARD NO. 207

REVISIONS		REV.	BY:	APR'D	DATE	REV.	BY:	APR'D	DATE
8-71, 8-77	11-04	1				4			
5-80, 2-82		2				5			
2-90, 12-97		3				6			



NOT TO SCALE

1. CROSS GUTTER FOR USE WITH TYPES "A-6" AND "A-8" CURB.
2. APRON THICKNESS TO BE 8" MINIMUM.
3. CROSS GUTTER THICKNESS TO BE 8" MINIMUM.
4. CLASS "A" CONCRETE.
5. PLACE MIN. 6" BASE UNDER ENTIRE SPANDREL AND CROSS GUTTER AREA.
6. WEAKENED PLANE JOINTS TO BE CONSTRUCTED AT 1/3 POINTS ON 25' RADIUS SPANDRELS, AND AT 1/4 POINTS ON 35' RADIUS SPANDRELS.
7. CONSTRUCT WEAKENED PLANE JOINT(S) PER STANDARD #205 AT MIDPOINT OF CROSS GUTTERS LESS THAN 40' LONG, OR AT 1/3 POINTS OF CROSS GUTTERS OF 40' OR LONGER.
8. THIS PORTION OF SPANDREL AND CROSS GUTTER SHALL BE CONSTRUCTED WITH 12 INCH THICK, CLASS "A" CONCRETE.
9. CONSTRUCT EXPANSION JOINT PER STANDARD # 205.
10. CONSTRUCT WEAKENED PLANE JOINT PER STANDARD # 205.
11. CONSTRUCT CROSS GUTTER PER TYPICAL SECTION ON SHEET 2.
12. WHEN ABUTTING SOIL HAS A HIGH SULFATE CONTENT, SPECIAL CONSIDERATIONS ARE REQUIRED. SEE SPECIFICATIONS (SECTION 16.04).

APPROVED BY:

DIRECTOR OF TRANSPORTATION
GEORGE A. JOHNSON, RCE 42328

DATE: 05/01/07

REVISIONS	REV.	BY:	APR'D	DATE	REV.	BY:	APR'D	DATE
11-77, 8-82	1				4			
9-88, 2-90	2				5			
11-04	3				6			

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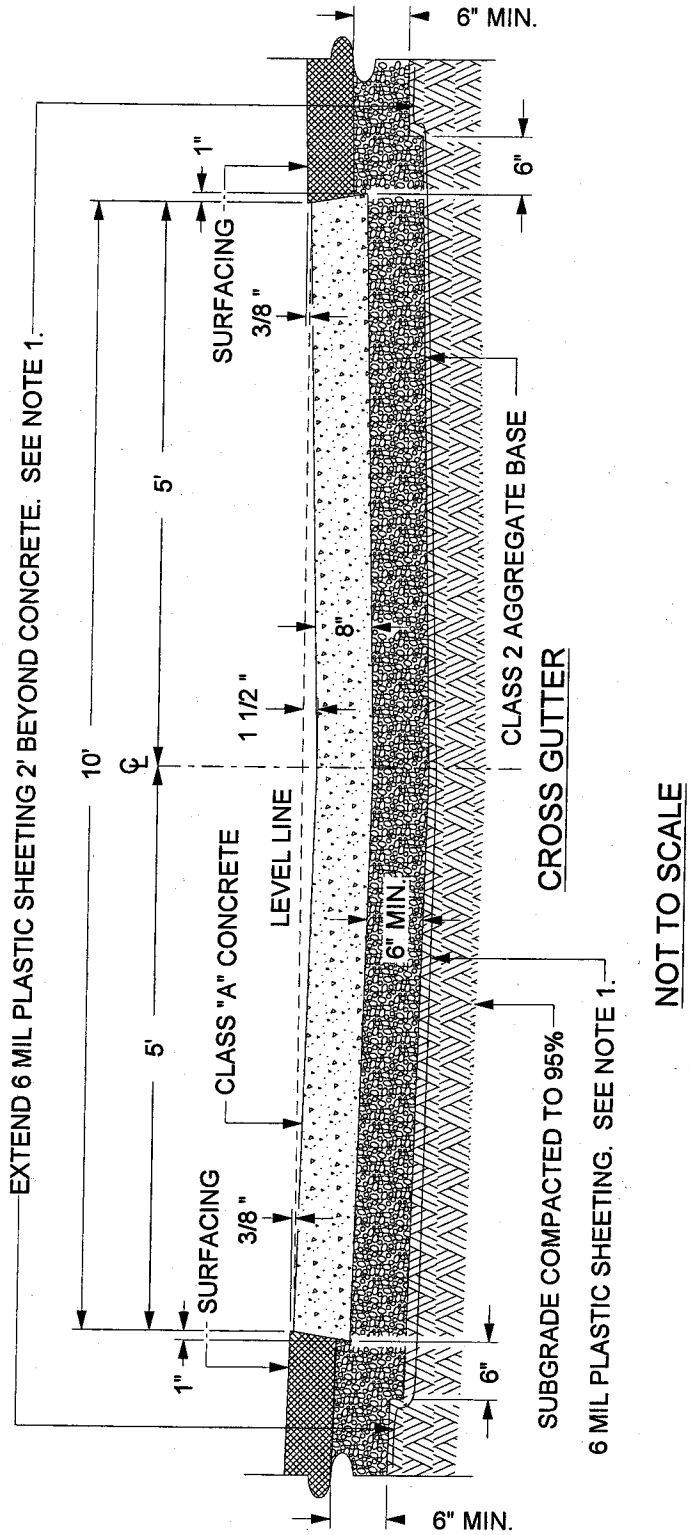
STATE OF CALIFORNIA

COUNTY OF RIVERSIDE

CROSS GUTTER (LAYOUT)

STANDARD NO. 209 (1 OF 2)



CROSS GUTTER

NOT TO SCALE

NOTE

1. WHEN ABUTTING SOIL HAS A HIGH SULFATE CONTENT, SPECIAL CONSIDERATIONS ARE REQUIRED. SEE SPECIFICATIONS (SECTION 16.04).

APPROVED BY:

DATE: 05/01/07

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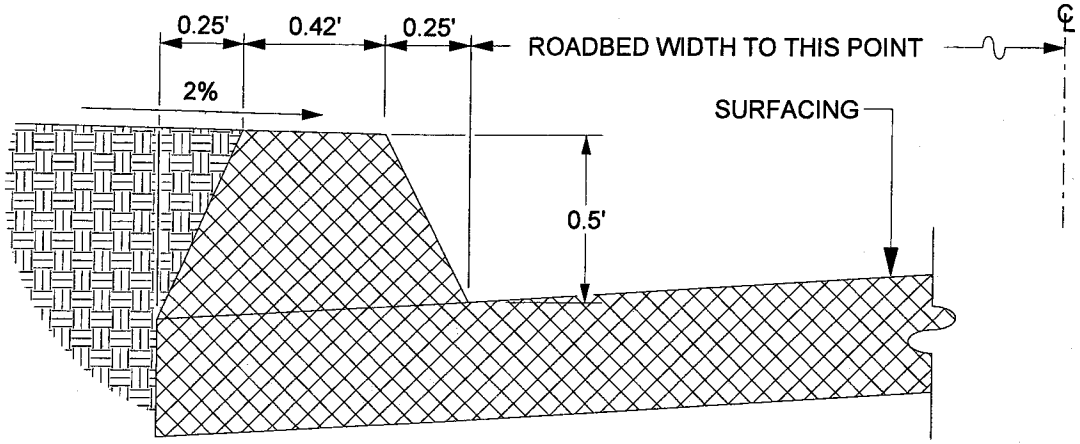
CIVIL
STATE OF CALIFORNIA

COUNTY OF RIVERSIDE

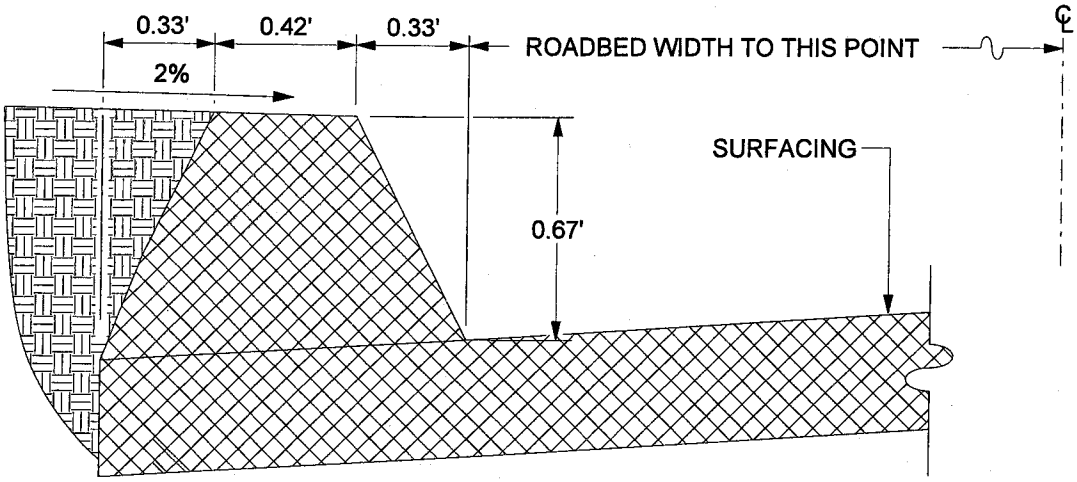
CROSS GUTTER (TYPICAL SECTION)

STANDARD NO. 209 (2 OF 2)

REVISIONS		REV.	BY:	APR'D	DATE	REV.	BY:	APR'D	DATE
8-71, 9-88		1				4			
2-90, 12-97		2				5			
11-04		3				6			



6" A.C. DIKE



8" A.C. DIKE

NOT TO SCALE

NOTE: A.C. DIKE REQUIRED WHERE FILL SLOPES ARE STEEPER THAN 4:1, MATERIAL IS SUSCEPTIBLE TO EROSION, OR WHERE ROADWAY GRADIENT EXCEEDS 3%.

APPROVED BY:

DATE: 05/01/07

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COUNTY OF RIVERSIDE

ASPHALT CONCRETE DIKES

STANDARD NO. 212

REVISIONS		REV.	BY:	APR'D	DATE	REV.	BY:	APR'D	DATE
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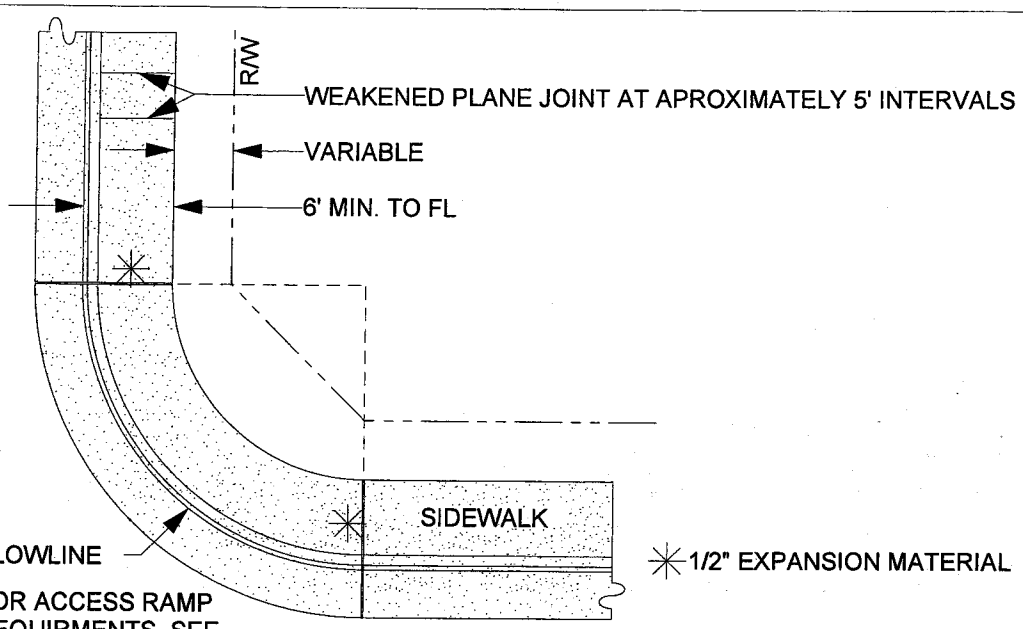
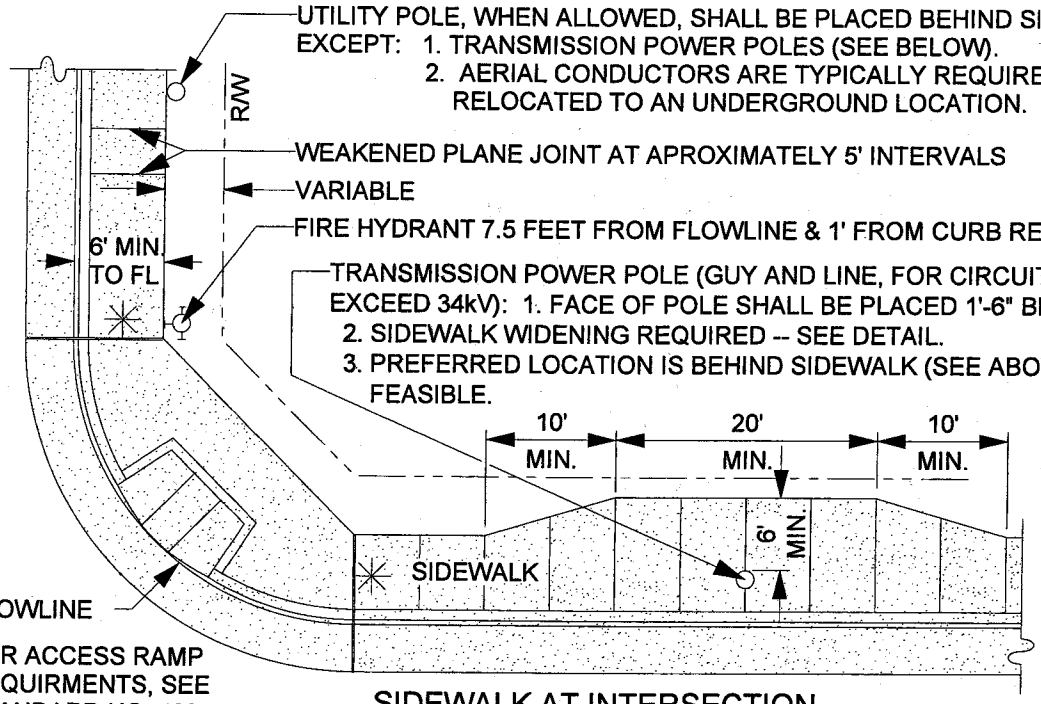
		2				5			
		3				6			



FOR ACCESS RAMP REQUIRMENTS, SEE STANDARD NO. 403

SIDEWALK ON INSIDE OF KNUCKLE



FOR ACCESS RAMP REQUIRMENTS, SEE STANDARD NO. 403

SIDEWALK AT INTERSECTION

1/2" EXPANSION MATERIAL

NOT TO SCALE

NOTE:

1. VARIABLE DISTANCES TO BE SHOWN ON APPLICABLE TYPICAL ROAD SECTION STANDARD.
2. CONSTRUCTION TO BE OF CLASS "B" CONCRETE 4" MINIMUM THICKNESS.

APPROVED BY:

DATE: 05/01/07

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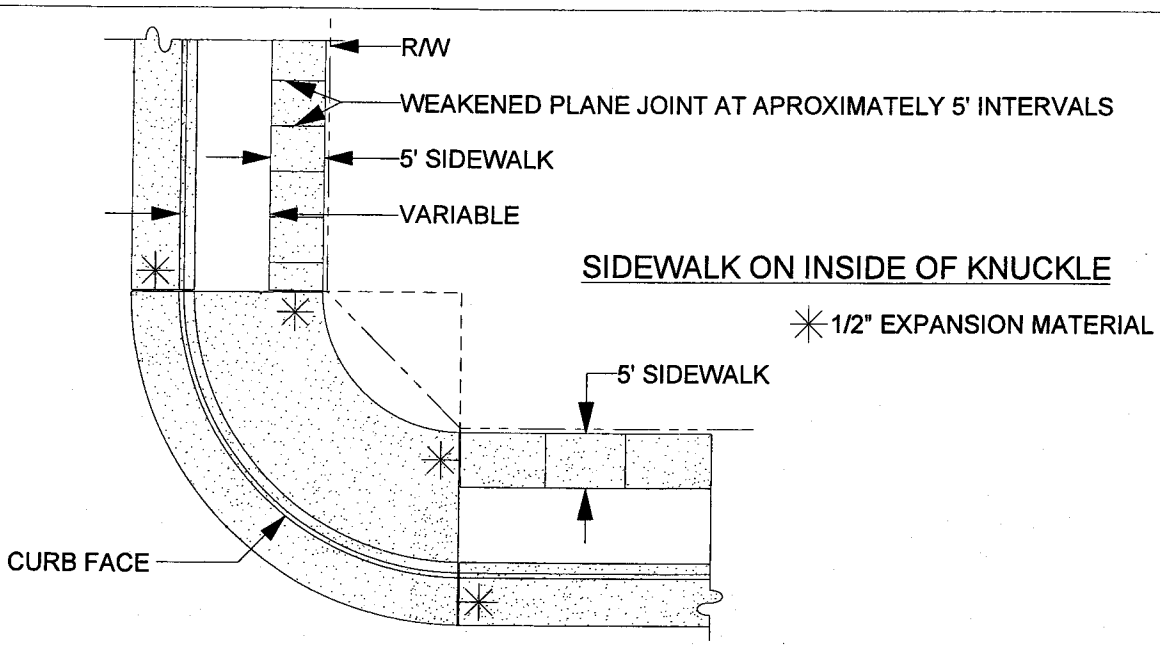
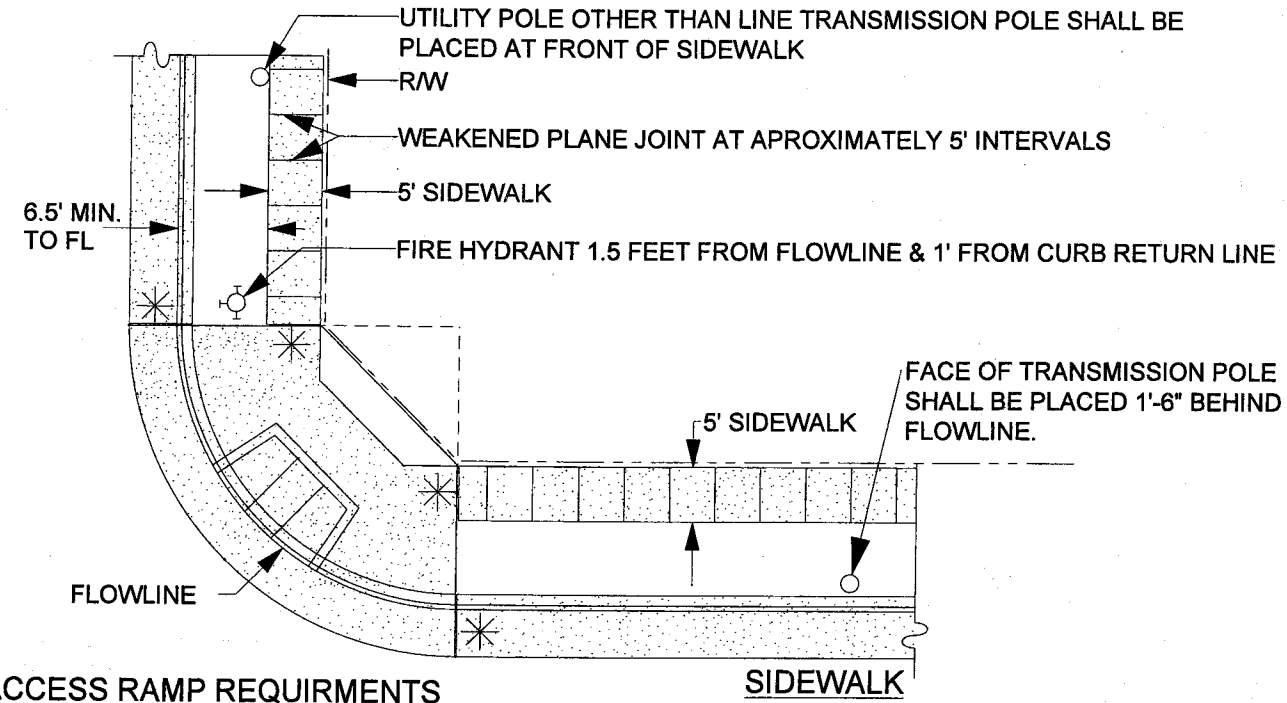
COUNTY OF RIVERSIDE

SIDEWALK, FIRE HYDRANT, & UTILITY POLE LOCATION (SIDEWALK AT CURB)

STANDARD NO. 400 (1 OF 2)

REVISIONS		REV.	BY:	APR'D	DATE	REV.	BY:	APR'D	DATE
8-71, 8-77		1				4			
11-77, 8-82		2				5			
9-88, 11-04		3				6			





ACCESS RAMP REQUIRMENTS
SEE STANDARD NO.403

SIDEWALK
1/2" EXPANSION MATERIAL

NOT TO SCALE

NOTE:

1. VARIABLE DISTANCES TO BE SHOWN ON APPLICABLE TYPICAL ROAD SECTION STANDARD.
2. CONSTRUCTION TO BE OF CLASS "B" CONCRETE 4" MINIMUM THICKNESS.

APPROVED BY:

DATE: 05/01/07

DIRECTOR OF TRANSPORTATION
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REGISTERED PROFESSIONAL ENGINEER GEORGE A. JOHNSON No. CE 42328 Exp. 3-31-08 CIVIL STATE OF CALIFORNIA

COUNTY OF RIVERSIDE

SIDEWALK, FIRE HYDRANT, & UTILITY POLE LOCATION (SIDEWALK AT R/W)

STANDARD NO. 400 (2 OF 2)

REVISIONS		REV.	BY:	APR'D	DATE	REV.	BY:	APR'D	DATE
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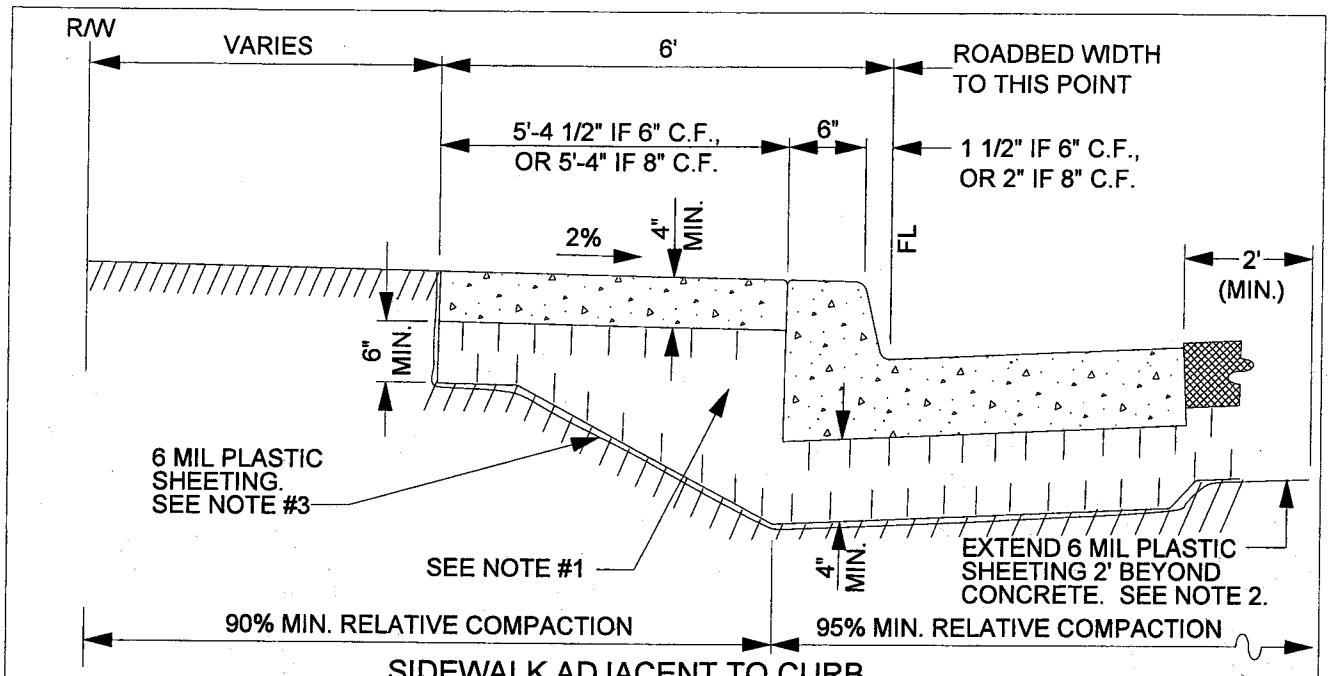
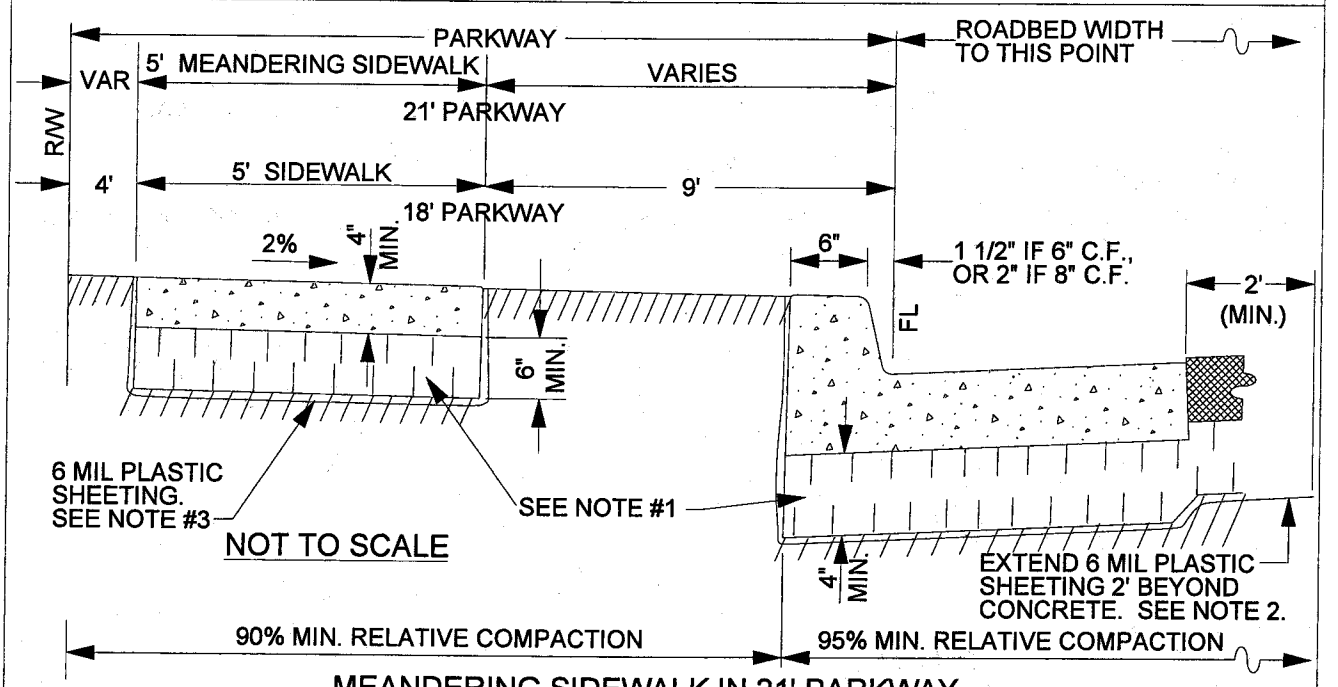
11-77, 8-82		2				5			
9-88, 2-90		3				6			



SIDEWALK ADJACENT TO CURB



MEANDERING SIDEWALK IN 21' PARKWAY
SIDEWALK NOT ADJACENT TO CURB IN 18' PARKWAY

NOTE:

1. AGGREGATE BASE OR APPROVED SELECT MATERIAL WHEN SOILS REPORT INDICATES PRESENCE OF EXPANSIVE SOIL CONDITIONS.
2. ALL CONSTRUCTION SHALL BE CLASS "B" CONCRETE.
3. WHEN ABUTTING SOIL HAS A HIGH SULFATE CONTENT, SPECIAL CONSIDERATIONS ARE REQUIRED. SEE SPECIFICATIONS (SECTION 16.04).

APPROVED BY:

DATE: 05/01/07

DIRECTOR OF TRANSPORTATION
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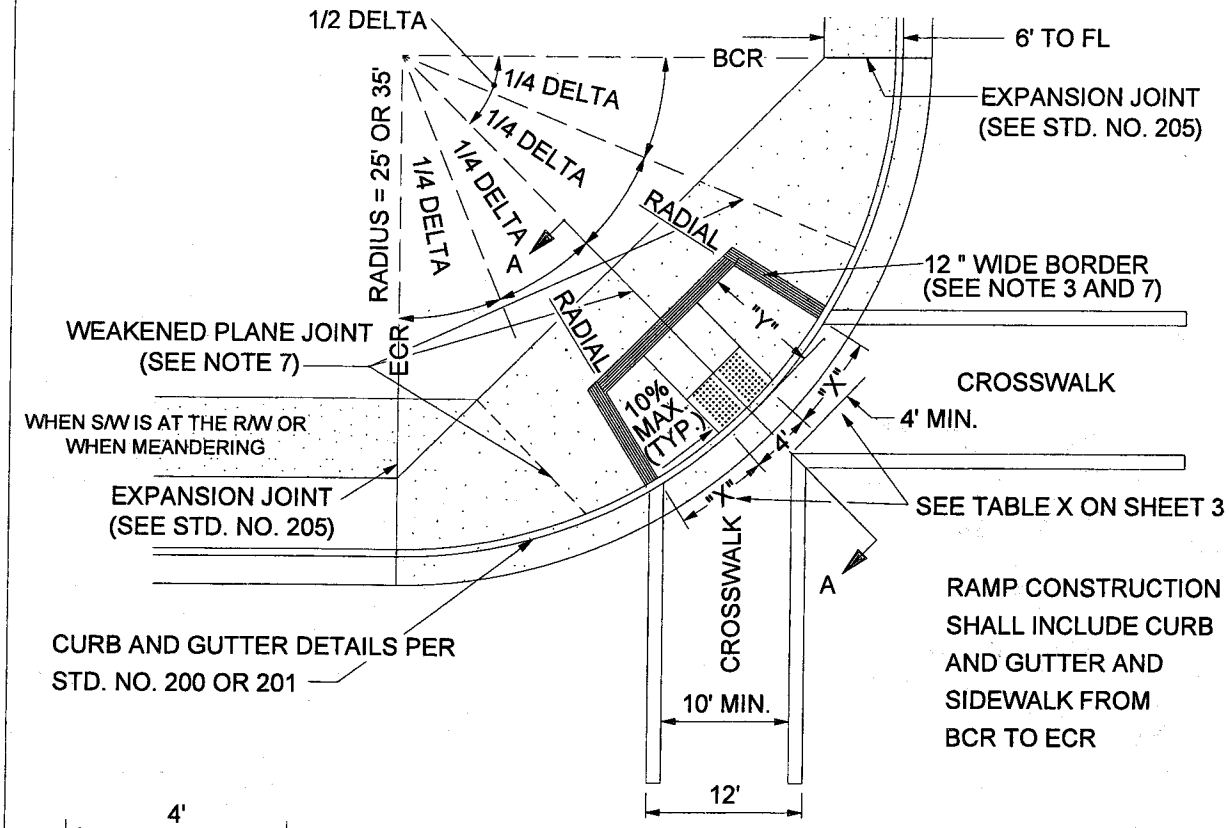
No. CE 42328
Exp. 3-31-08
CIVIL
STATE OF CALIFORNIA

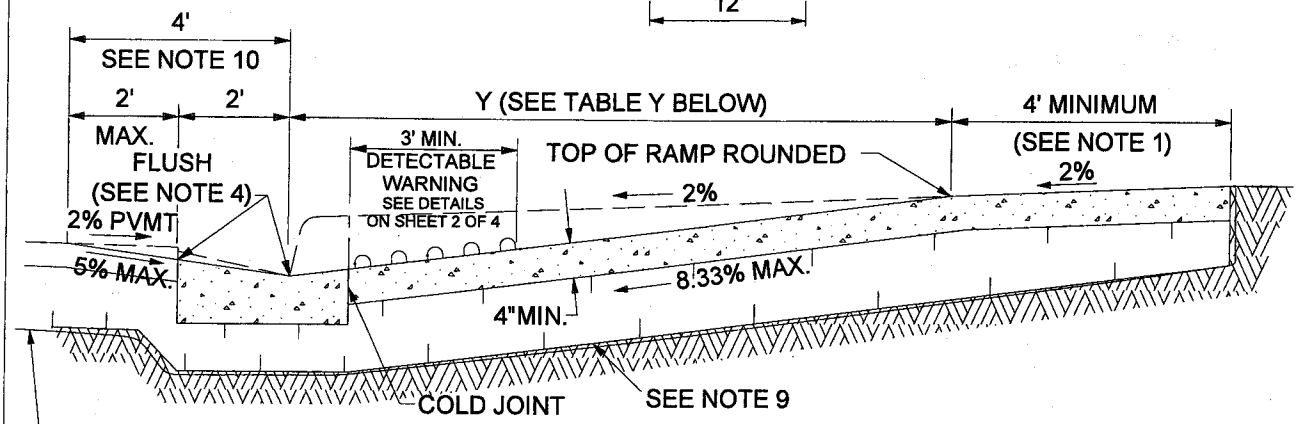
COUNTY OF RIVERSIDE

SIDEWALK AND CURB

STANDARD NO. 401

REVISIONS		REV.	BY:	APR'D	DATE	REV.	BY:	APR'D	DATE
8-71, 11-77		1				4			
8-82, 9-88		2				5			
4-90, 11-04		3				6			





SECTION A-A

TABLE Y

CF	Y
6"	7.90'
8"	10.53'

$$Y = \frac{\text{CURB FACE (FT.)}}{6.33\%}$$

NOT TO SCALE

SEE SHEET 4 OF 4 FOR NOTES.

APPROVED BY:

DATE: 11/15/04

DIRECTOR OF TRANSPORTATION
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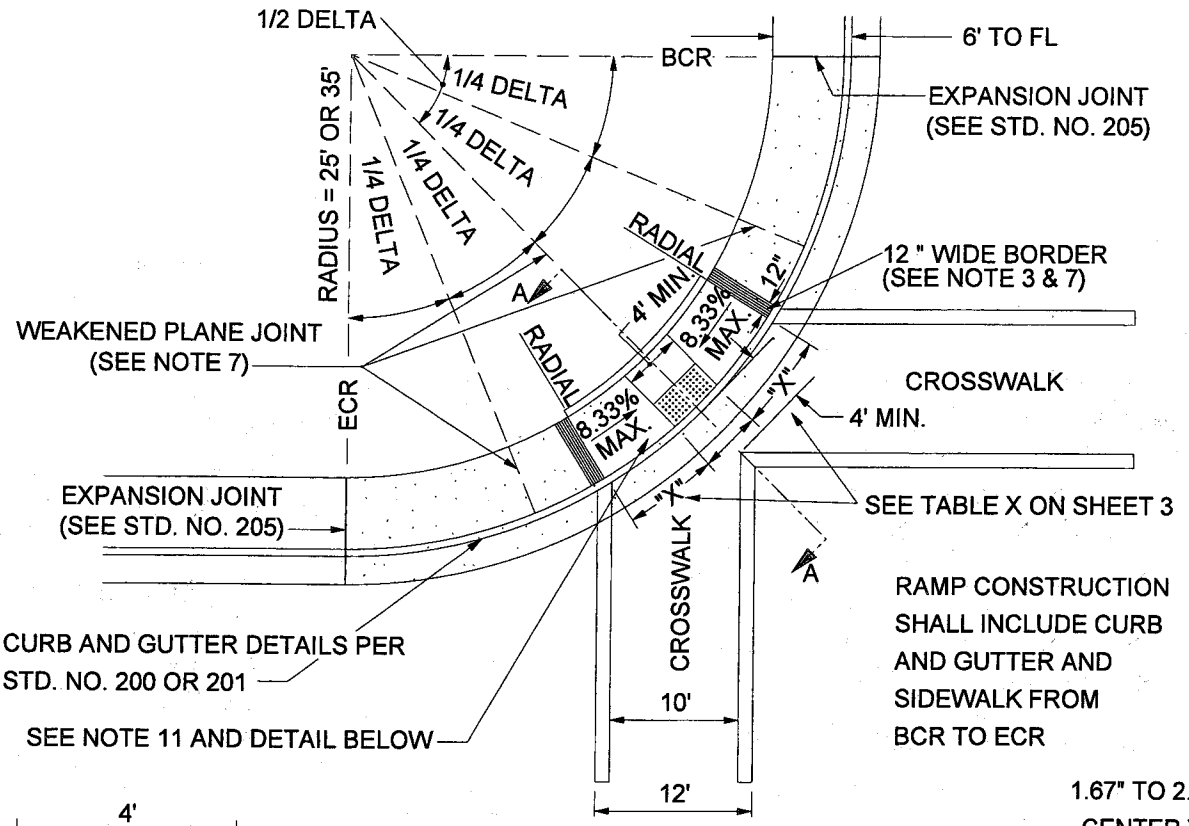
REGISTERED PROFESSIONAL ENGINEER GEORGE A. JOHNSON No. CE 42328 Exp. 3-31-08 CIVIL STATE OF CALIFORNIA

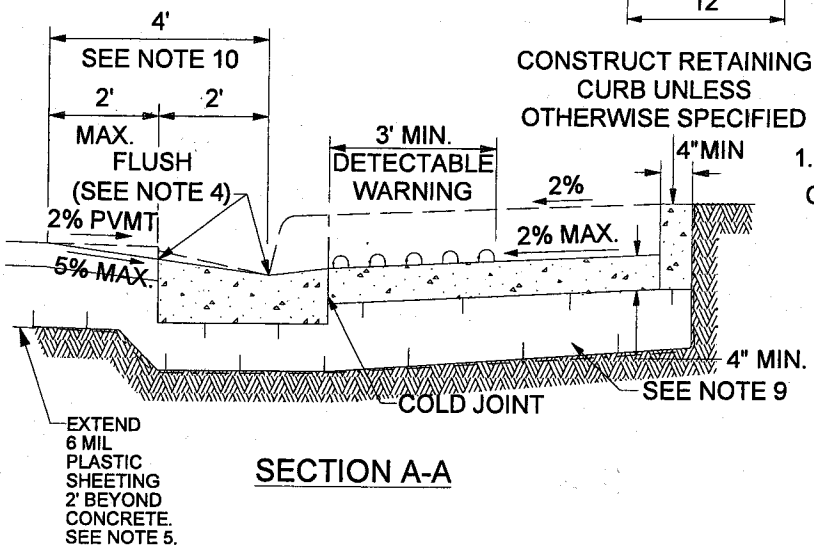
COUNTY OF RIVERSIDE

CURB RAMP CASE A

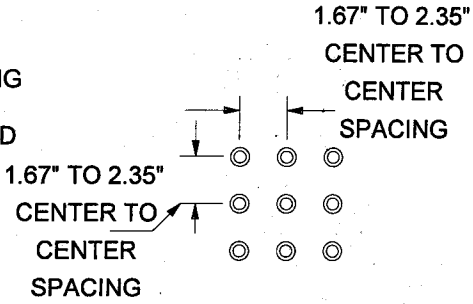
STANDARD NO. 403 (1 OF 4)

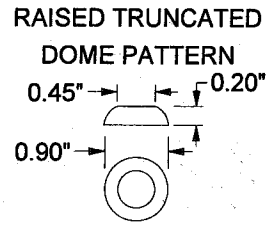
REVISIONS		REV.	BY:	APR'D	DATE	REV.	BY:	APR'D	DATE
8-77, 5-80	11-04	1				4			
10-81, 6-82		2				5			
9-88, 2-90		3				6			





SECTION A-A





RAISED TRUNCATED DOME
DETECTABLE WARNING SURFACE
SEE NOTE 11

SEE SHEET 4 OF 4 FOR NOTES.

NOT TO SCALE

APPROVED BY:

DATE: 11/15/04

DIRECTOR OF TRANSPORTATION
GEORGE A. JOHNSON, RCE 42328

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No. CE 42328
Exp. 3-31-08
CIVIL
STATE OF CALIFORNIA

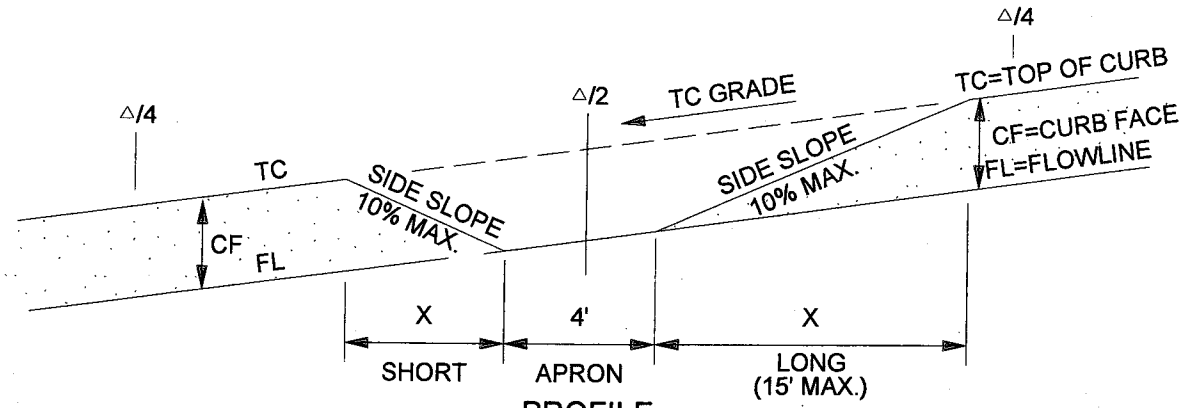
COUNTY OF RIVERSIDE

CURB RAMP CASE B

STANDARD NO. 403 (2 OF 4)

12-97

REVISIONS		REV.	BY:	APR'D	DATE	REV.	BY:	APR'D	DATE
8-77, 5-80	11-04	1				4			
10-81, 6-82		2				5			
9-88, 2-90		3				6			



PROFILE

TABLE X

CF (IN)	RADIUS (FT)	SIDE SLOPE	X	TC GRADE (ALONG CURB RETURN)					
				1%	2%	3%	4%	5%	6%
6"	35'	10%	X_S	4.6	4.2	3.9	3.6	3.4	3.2
			X_L	5.6	6.3	7.2	8.4	10.0	12.5
8"	35'	10%	X_S	6.1	5.6	5.2	4.8	4.5	4.2
			X_L	7.5	8.4	9.6	11.2	13.4	15.0

TO CALCULATE "X" DIMENSION:

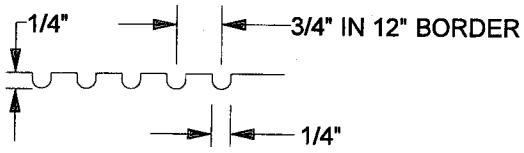
SHORT SIDE (DOWN SLOPE):

$$X_S\ (FT) = \frac{\text{CURB FACE (FT)}}{\text{SIDE SLOPE + TC GRADE}}$$

LONG SIDE (UP SLOPE):

$$X_L\ (FT) = \frac{\text{CURB FACE (FT)}}{\text{SIDE SLOPE - TC GRADE}}$$

ENGINEER TO SHOW X_S AND X_L ON IMPROVEMENT PLANS



GROOVING DETAIL

APPROVED BY:

DATE: 05/05/04

DIRECTOR OF TRANSPORTATION
GEORGE A. JOHNSON, RCE 42328

REGISTERED PROFESSIONAL ENGINEER GEORGE A. JOHNSON No. CE 42328 Exp. 3-31-08 CIVIL STATE OF CALIFORNIA

COUNTY OF RIVERSIDE

CURB RAMP

STANDARD NO. 403 (3 OF 4)

REVISIONS		REV.	BY:	APR'D	DATE	REV.	BY:	APR'D	DATE
8-77, 5-80	11-04	1				4			
10-81, 6-82		2				5			
9-88, 2-90		3				6			

CONSTRUCTION NOTES:

1. IF DISTANCE FROM CURB TO BACK OF SIDEWALK IS TOO SHORT TO ACCOMODATE RAMP AND 4' LANDING, THEN USE THE CASE "B" RAMP.
2. IF SIDEWALK IS LESS THAN 6' WIDE, THE FULL WIDTH OF THE SIDEWALK SHALL BE DEPRESSED AS SHOWN IN CASE B. MINIMUM SIDEWALK WIDTH IS 4' FROM BACK OF CURB.
3. THE RAMP SHALL HAVE A 12" WIDE BORDER WITH GROOVES 1/4" WIDE AND 1/4" DEEP APPROXIMATELY 3/4" ON CENTER. SEE GROOVING DETAIL.
4. TRANSITIONS FROM RAMPS TO WALKS, GUTTERS, OR STREETS SHALL BE FLUSH AND FREE OF ABRUPT CHANGES.
5. WHEN ABUTTING SOIL HAS A HIGH SULFATE CONTENT, SPECIAL CONSIDERATIONS ARE REQUIRED. SEE SPECIFICATIONS (SECTION 16.04).
6. RAMP SIDE SLOPE VARIES UNIFORMLY FROM A MAXIMUM OF UP TO 10% AT CURB TO CONFORM WITH LONGITUDINAL SIDEWALK SLOPE ADJACENT TO TOP OF THE RAMP (EXCEPT IN CASE B).
7. CONSTRUCT WEAKENED PLANE JOINTS AT 1/4 DELTAS WHEN RADIUS EQUALS 35' AND AT INSIDE EDGE OF GROOVED BORDER WHEN RADIUS EQUALS 25'.
8. IF EXPANSIVE SOIL IS ENCOUNTERED, THEN RAMP SHALL BE CONSTRUCTED OVER CLASS 2 AGGREGATE MATERIAL.
9. CONCRETE SHALL BE CLASS B.
10. MAXIMUM SLOPES OF ADJOINING GUTTERS: THE ROAD SURFACE IMMEDIATELY ADJACENT TO THE CURB RAMP AND CONTINUOUS PASSAGE TO THE CURB RAMP SHALL NOT EXCEED 5% WITHIN 4' OF THE BOTTOM OF THE CURB RAMP.
11. DETECTABLE WARNING SURFACES ARE REQUIRED ON ALL CURB RAMPS THAT ENTER INTO A VEHICULAR TRAVEL WAY.

APPROVED BY:

DATE: 11/15/04

DIRECTOR OF TRANSPORTATION
GEORGE A. JOHNSON, RCE 42328

REGISTERED PROFESSIONAL ENGINEER GEORGE A. JOHNSON No. CE 42328 Exp. 3-31-08 CIVIL STATE OF CALIFORNIA

COUNTY OF RIVERSIDE

CURB RAMP CONSTRUCTION NOTES

STANDARD NO. 403 (4 OF 4)

12-97

REVISIONS		REV.	BY:	APR'D	DATE	REV.	BY:	APR'D	DATE
8-77, 5-80	11-04	1				4			
10-81, 6-82		2				5			
9-88, 2-90		3				6			

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER

May 1, 2006
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Donald E. Howe No. C46402 Exp. 3-31-07 CIVIL STATE OF CALIFORNIA

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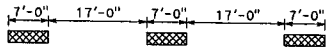
CENTERLINES
(2 LANE HIGHWAYS)

DETAIL 1



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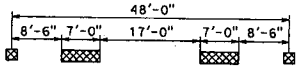
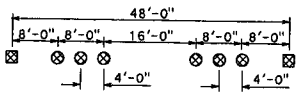


~~DETAIL 3~~

Detail 3 deleted

DETAIL 4



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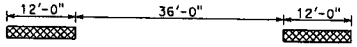

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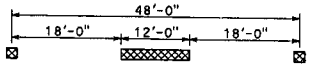

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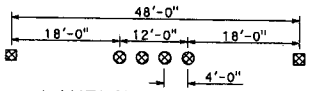
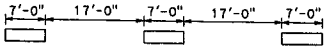
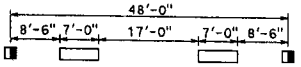


LANELINES
(MULTILANE HIGHWAYS)

DETAIL 8



DETAIL 9



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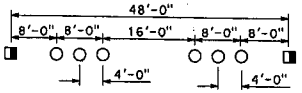

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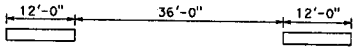
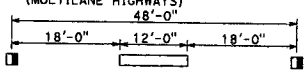
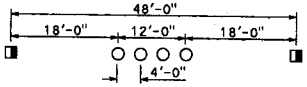


LANELINES (CONT)
(MULTILANE HIGHWAYS)

DETAIL 12



DETAIL 13



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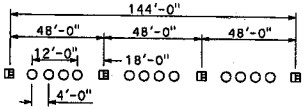
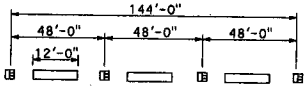
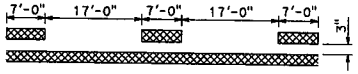


DETAIL 14A

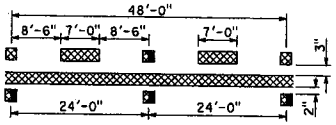


NO PASSING ZONES-ONE DIRECTION

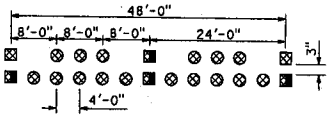
DETAIL 15



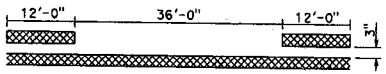
DETAIL 16



DETAIL 17



DETAIL 18



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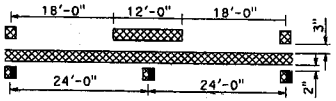
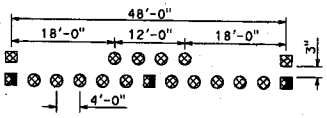


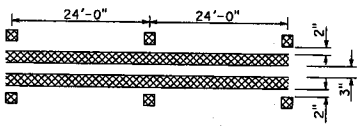
DETAIL 20



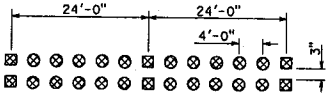
NO PASSING ZONES-TWO DIRECTION

DETAIL 21

DETAIL 22



DETAIL 23



LEGEND

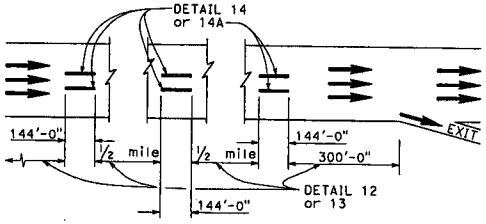
MARKERS

- TYPE A White Non-reflective
- TYPE AY Yellow Non-reflective
- TYPE C Red-clear Retroreflective
- TYPE D Two-way Yellow Retroreflective
- TYPE G One-way Clear Retroreflective
- TYPE H One-way Yellow Retroreflective

LINES

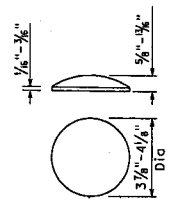
- 4" White
- 4" Yellow
- Direction of Travel

TYPICAL LANE LINE DELINEATION IN ADVANCE OF EXIT RAMP

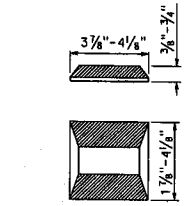


NOTE:
Detail 14 is to be used in combination with Detail 13. Detail 14A is to be used in combination with Detail 12.

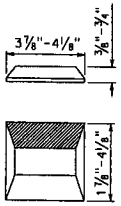
MARKER DETAILS



TYPE A & TYPE AY



TYPE C & TYPE D



TYPE G & TYPE H

Retroreflective Face

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKERS AND TRAFFIC LINES TYPICAL DETAILS

NO SCALE

A20A

10-3-05

2006 STANDARD PLAN A20A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER

May 1, 2006
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Donald E. Howe — No. C46402 — Exp. 3-31-07 — CIVIL — STATE OF CALIFORNIA

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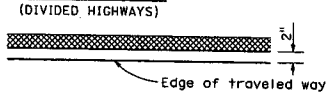
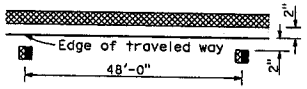
LEFT EDGELINES
(DIVIDED HIGHWAYS)

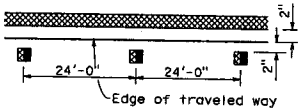
DETAIL 24



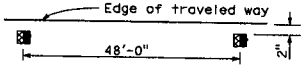
DETAIL 25



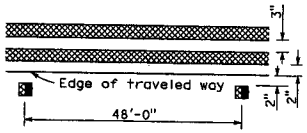
DETAIL 25A



DETAIL 26



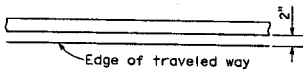
DETAIL 27



RIGHT EDGELINES

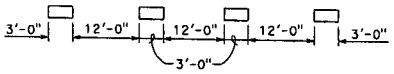
~~DETAIL 27A~~ Detail 27A deleted

DETAIL 27B



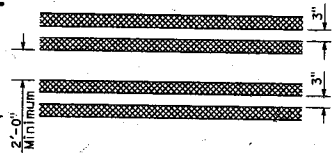
RIGHT EDGELINE EXTENSION THROUGH INTERSECTIONS

DETAIL 27C

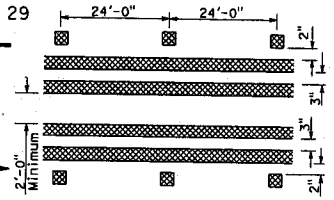


MEDIAN ISLANDS

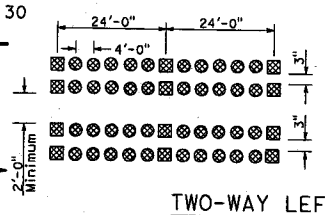
DETAIL 28



DETAIL 29

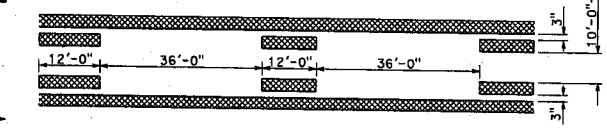


DETAIL 30

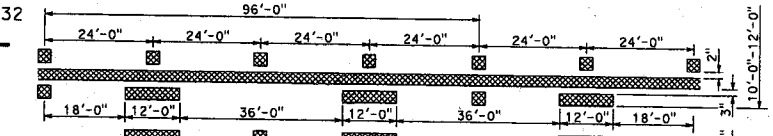


TWO-WAY LEFT TURN LANES

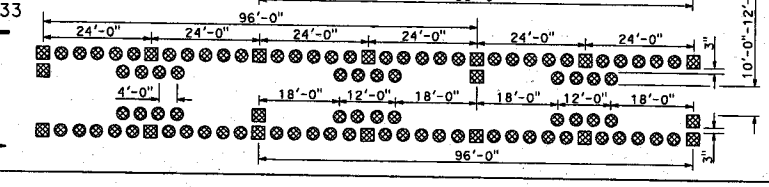
DETAIL 31



DETAIL 32



DETAIL 33



LEGEND

MARKERS

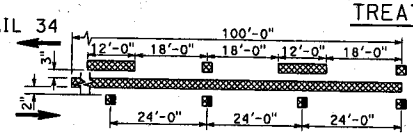
- TYPE AY Yellow Non-reflective
- TYPE D Two-way Yellow Retroreflective
- TYPE H One-way Yellow Retroreflective

LINES

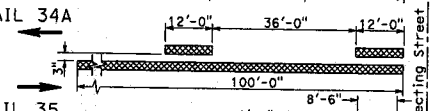
- 4" White
- 4" Yellow
- Direction of Travel

INTERSECTION TREATMENTS

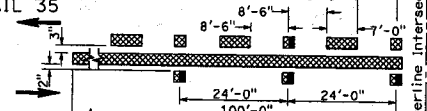
DETAIL 34



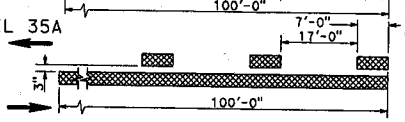
DETAIL 34A



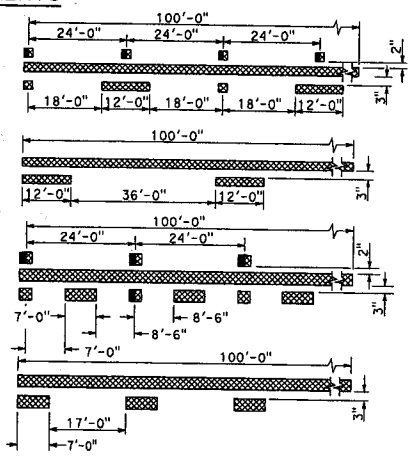
DETAIL 35



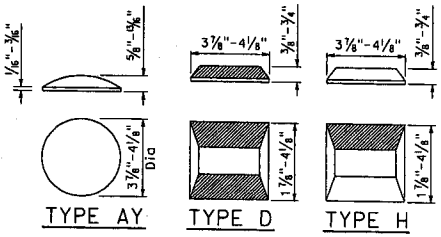
DETAIL 35A



Centerline Intersecting Street



MARKER DETAILS



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

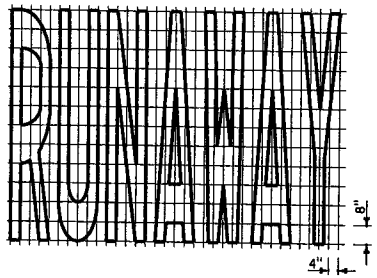
PAVEMENT MARKERS AND TRAFFIC LINES TYPICAL DETAILS

NO SCALE

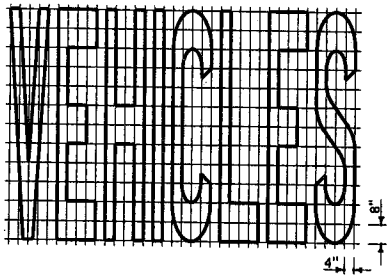
A20B

2006 STANDARD PLAN A20B

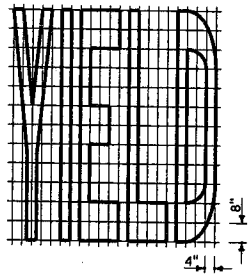
3-6-06



A=43 sq ft



A=42 sq ft



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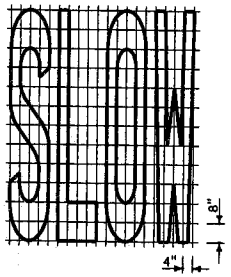

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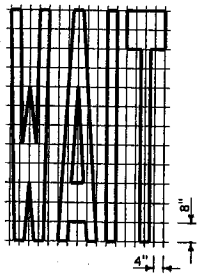

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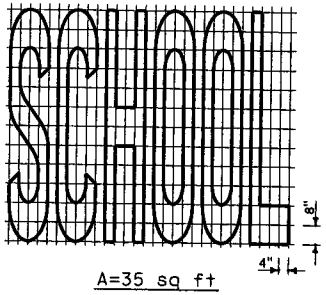

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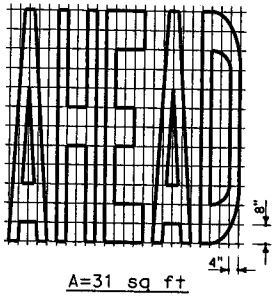

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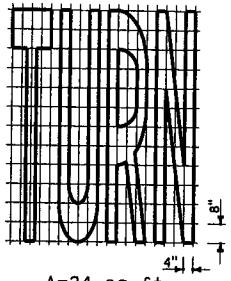

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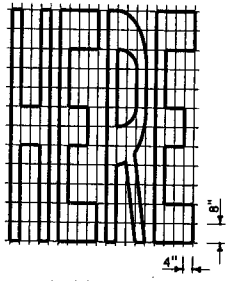

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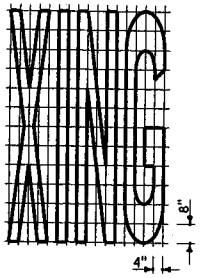

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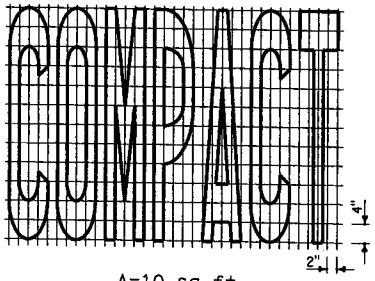
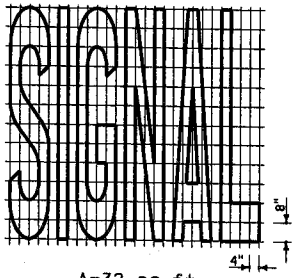


A=10 sq ft



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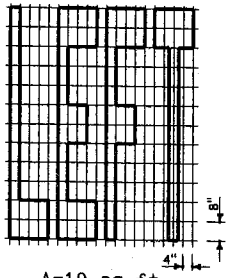

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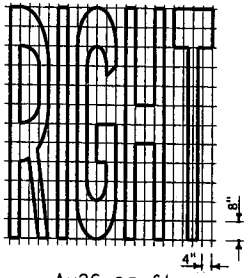

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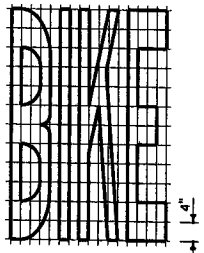
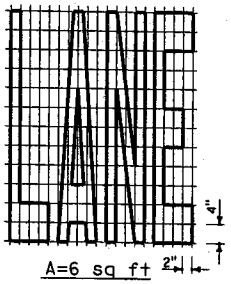
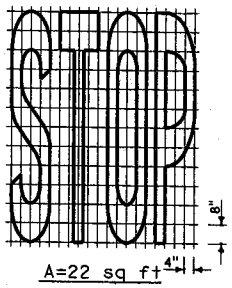


A=5 sq ft



A=6 sq ft



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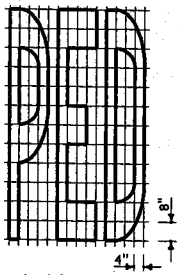


A=18 sq ft

NOTES:

1. If a message consists of more than one word, it should read "UP", i.e., the first word should be nearest the driver.
2. The space between words should be at least four times the height of the characters for low speed roads, but not more than ten times the height of the characters. The space may be reduced appropriately where there is limited space because of local conditions.
3. Minor variations in dimensions may be accepted by the Engineer.
4. Portions of a letter, number or symbol may be separated by connecting segments not to exceed 2" in width.

WORD MARKINGS

ITEM	sq ft	ITEM	sq ft	ITEM	sq ft	ITEM	sq ft
XING	21	YIELD	24	BIKE	5	PED	18
AHEAD	31	SCHOOL	35	SLOW	23	COMPACT	10
WAIT	19	SIGNAL	32	STOP	22	RUNAWAY	43
LANE	6	TURN	24	LEFT	19	VEHICLES	42
RIGHT	26	HERE	26				

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKINGS WORDS

NO SCALE

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER

May 1, 2006
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Donald E. Howe No. C46402 Exp. 3-31-07 CIVIL STATE OF CALIFORNIA

To get to the Caltrans web site, go to: http://www.dot.ca.gov

A24D

9-19-05

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS

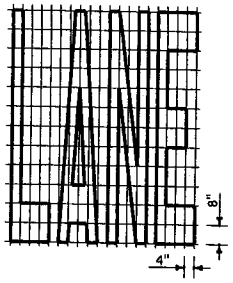
REGISTERED CIVIL ENGINEER

May 1, 2006
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Donald E. Howe No. C46402 Exp. 3-31-07 CIVIL STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To get to the Caltrans web site, go to: http://www.dot.ca.gov



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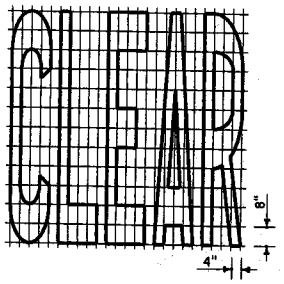

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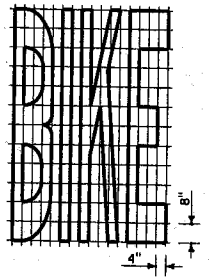
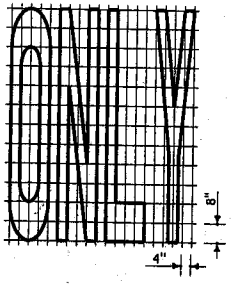
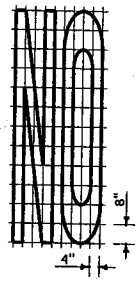


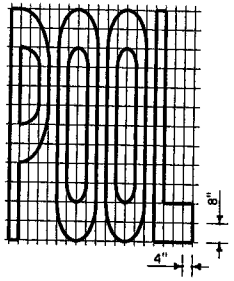
A=21 sq ft



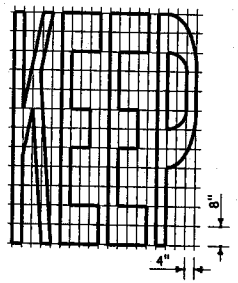
A=22 sq ft



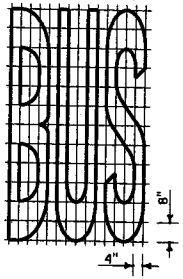
A=14 sq ft



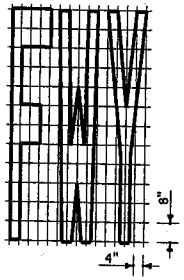
A=23 sq ft



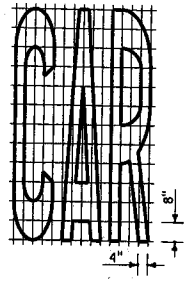
A=24 sq ft



A=20 sq ft

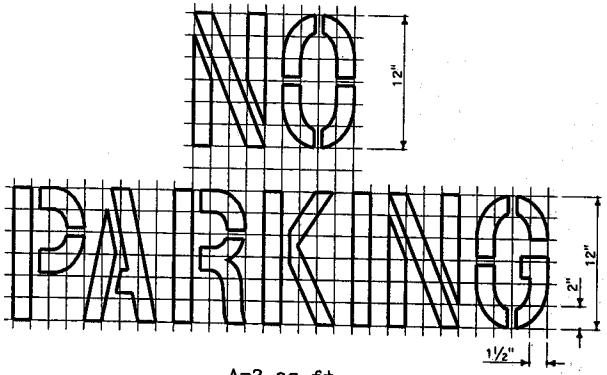


A=16 sq ft

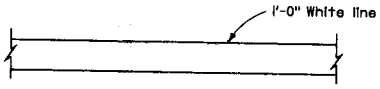


A=17 sq ft

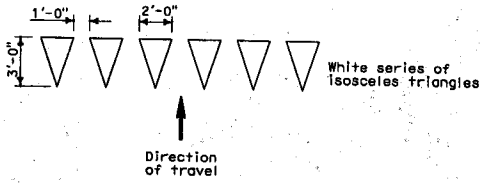
WORD MARKINGS			
ITEM	sq ft	ITEM	sq ft
LANE	24	NO	14
POOL	23	BIKE	21
CAR	17	BUS	20
CLEAR	27	ONLY	22
KEEP	24	FWY	16



A=2 sq ft
See Notes 6 and 7



CROSSWALK AND LIMIT LINE
See Note 5



YIELD LINE

NOTES:

1. If a message consists of more than one word, it should read "UP", i.e., the first word should be nearest the driver.
2. The space between words should be at least four times the height of the characters for low speed roads, but not more than ten times the height of the characters. The space may be reduced appropriately where there is limited space because of local conditions.
3. Minor variations in dimensions may be accepted by the Engineer.
4. Portions of a letter, number or symbol may be separated by connecting segments not to exceed 2" in width.
5. Crosswalks contiguous to school grounds are to be 1'-0" yellow lines in place of 1'-0" white shown.
6. The words "NO PARKING" pavement marking is to be used for parking facilities. For typical locations of markings, see Standard Plans A90A and A90B.
7. The words "NO PARKING", shall be painted in white letters no less than 1'-0" high on a contrasting background and located so that it is visible to traffic enforcement officials.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

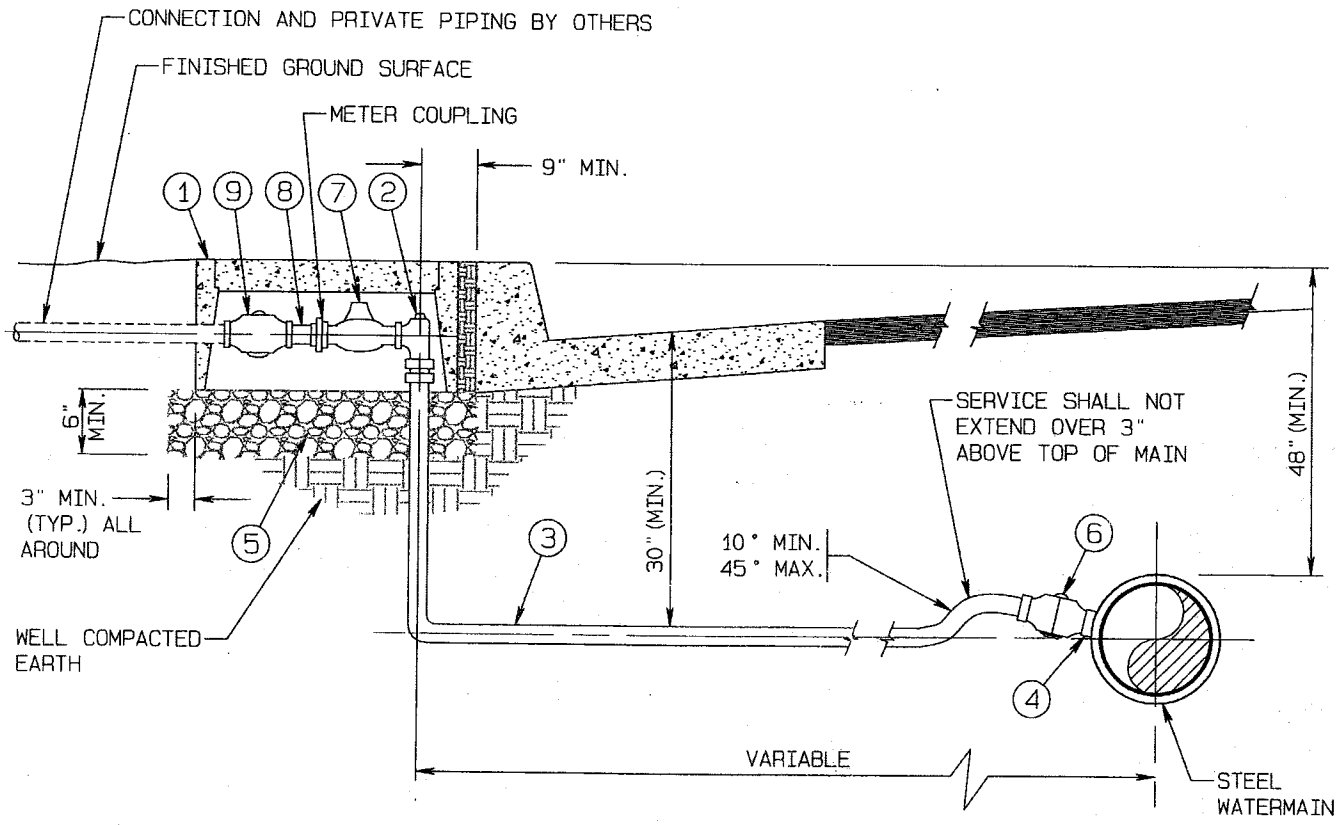
PAVEMENT MARKINGS WORDS AND CROSSWALKS

NO SCALE

A24E

2006 STANDARD PLAN A24E

10-5-05



NOTES:

1. WHERE SIDEWALK EXISTS, LOCATE METER BOX 3" BEHIND SIDEWALK.
2. PIPE THREADS SHALL BE CLEAN AND SHARP AND SEALED WITH AN APPROVED JOINT COMPOUND.
3. METER SHALL NOT BE PLACED IN DRAINAGE AREA, DEPRESSIONS OR WITHIN TWO FEET OF A DRIVEWAY APPROACH.

ITEM	DESCRIPTION
1	POLYMER CONCRETE METER BOX AND COVER PER DISTRICT SPECIFICATIONS.
2	1" x 3/4" ANGLE METER STOP.
3	1" COPPER WATER SERVICE, TYPE 'K', SOFT TEMPER, PER A.S.T.M. B-88 PROVIDE PROTECTIVE WRAP PER SPECIFICATIONS AS REQUIRED BY DISTRICT.
4	1" BLK. STL. STD. COUPLING TO PIPE W/COLLAR PER STD. D-6.
5	3/4" DIA. CRUSHED ROCK.
6	1" DIA. CORP. STOP, I.P.T. INLET.
7	3/4" METER W/RADIOREAD, FURNISHED BY THE DISTRICT.
8	3/4" SINGLE CHECK, JAMES JONES J-5931 OR APPROVED EQUAL.
9	1" x 3/4" BALL VALVE.

JURUPA COMMUNITY SERVICES DISTRICT

SCALE: NONE

DATE: JULY, 2010

APPROVED BY: R.C.E. 26979

REV.

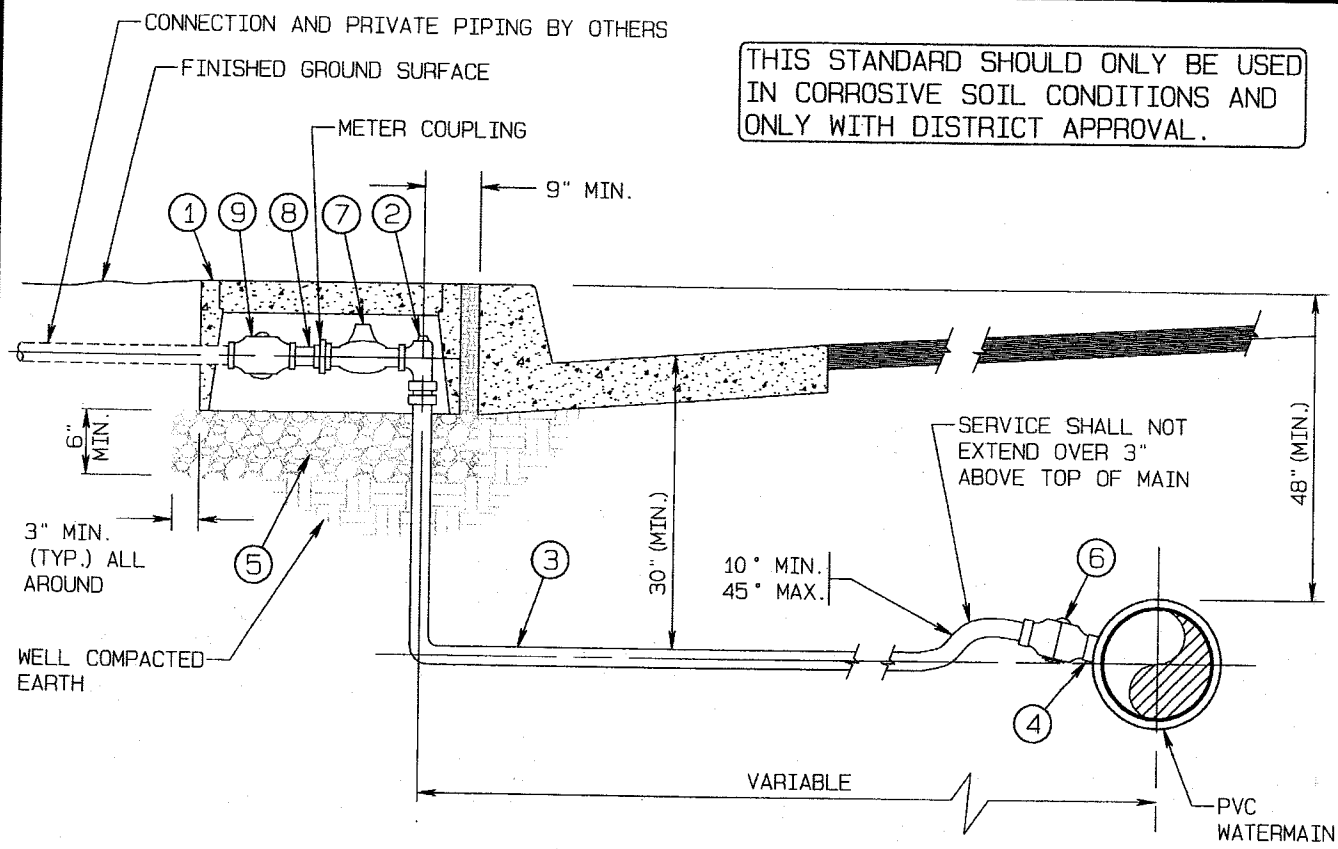
3/4" METER, 1" WATER SERVICE DETAIL

ALBERT A. WEBB ASSOCIATES
CONSULTING ENGINEERS
RIVERSIDE CALIFORNIA

DRAWING NO.

D-1

W.O. 04-0358



THIS STANDARD SHOULD ONLY BE USED IN CORROSIVE SOIL CONDITIONS AND ONLY WITH DISTRICT APPROVAL.

NOTES:

1. WHERE SIDEWALK EXISTS, LOCATE METER BOX 3" BEHIND SIDEWALK.
2. PIPE THREADS SHALL BE CLEAN AND SHARP AND SEALED WITH AN APPROVED JOINT COMPOUND.
3. METER SHALL NOT BE PLACED IN DRAINAGE AREA, DEPRESSIONS OR WITHIN TWO FEET OF A DRIVEWAY APPROACH.

ITEM	DESCRIPTION
1	POLYMER CONCRETE METER BOX AND COVER PER DISTRICT SPECIFICATIONS
2	1" DIA. BRONZE ANGLE METER STOP WITH LOCK RING, (PE (IPS) x METER COUPLING NUT).
3	1" DIA. PE TUBING (IPS) SDR 7 WITH LOCATOR WIRE PER DISTRICT SPECIFICATIONS.
4	WATERMAIN DIA. x 1", SERVICE SADDLE PER DISTRICT SPECIFICATIONS.
5	3/4" DIA. CRUSHED ROCK.
6	1" DIA. BRONZE CORP. STOP (MIPT x MIPT WITH FIPT x PE (IPS)).
7	3/4" OR 1" METER W/RADIOREAD, FURNISHED BY THE DISTRICT.
8	3/4" OR 1" SINGLE CHECK, JAMES JONES J-5931 OR APPROVED EQUAL.
9	1"x3/4" OR 1" BALL VALVE.

JURUPA COMMUNITY SERVICES DISTRICT

SCALE: NONE

DATE: JULY, 2010

APPROVED BY: R.C.E. 26979

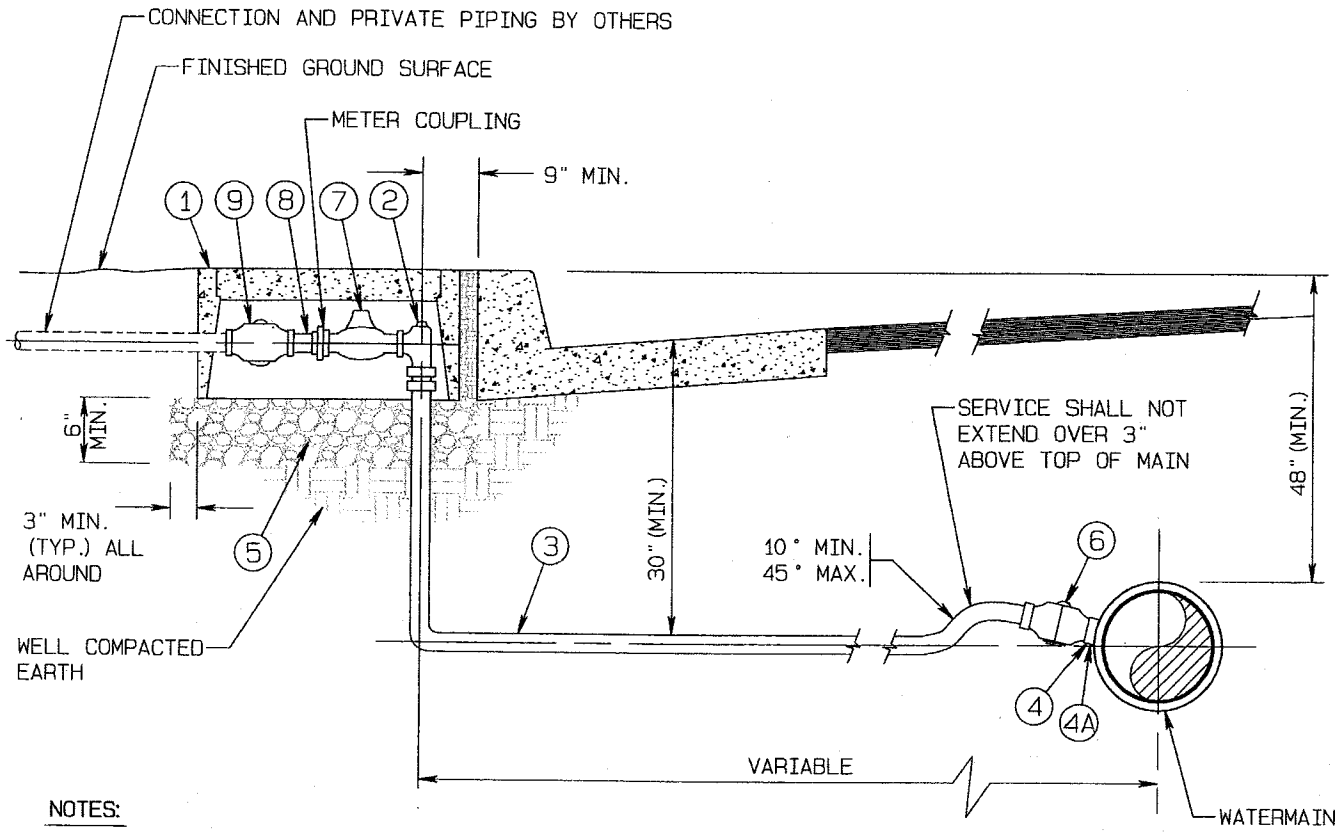
3/4" OR 1" METER, 1" WATER SERVICE DETAIL (PE TUBING)

ALBERT A. WEBB ASSOCIATES
CONSULTING ENGINEERS
RIVERSIDE CALIFORNIA

DRAWING NO. D-1A

W.O. 04-0358

REV.



NOTES:

1. WHERE SIDEWALK EXISTS, LOCATE 3" BEHIND SIDEWALK.
2. PIPE THREADS SHALL BE CLEAN AND SHARP AND SEALED WITH AN APPROVED JOINT COMPOUND.
3. METER SHALL NOT BE PLACED IN DRAINAGE AREA, DEPRESSIONS OR WITHIN TWO FEET OF A DRIVEWAY APPROACH.

ITEM	DESCRIPTION
1	POLYMER CONCRETE METER BOX AND COVER PER DISTRICT SPECIFICATIONS
2	1" ANGLE METER STOP.
3	1" COPPER WATER SERVICE, TYPE 'K', SOFT TEMPER, PER A.S.T.M. B-88 PROVIDE PROTECTIVE WRAP PER SPECIFICATIONS AS REQUIRED BY DISTRICT.
4	1" BLK. STL. STD. COUPLING TO PIPE W/COLLAR PER STD. D-6 (FOR STEEL WATERMAIN).
4A	WATERMAIN DIA. x 1", SERVICE SADDLE PER DISTRICT SPECIFICATIONS (FOR PVC WATERMAIN).
5	3/4" DIA. CRUSHED ROCK.
6	1" DIA. CORP. STOP, I.P.T. INLET.
7	1" METER W/RADIOREAD, FURNISHED BY THE DISTRICT.
8	1" SINGLE CHECK, JAMES JONES J-5931 OR APPROVED EQUAL.
9	1" BALL VALVE. NOTE: NOT REQUIRED IF BACKFLOW ASSEMBLY IS REQUIRED.

JURUPA COMMUNITY SERVICES DISTRICT

SCALE: NONE

DATE: JULY, 2010

APPROVED BY: Walbat
R.C.E. 26979

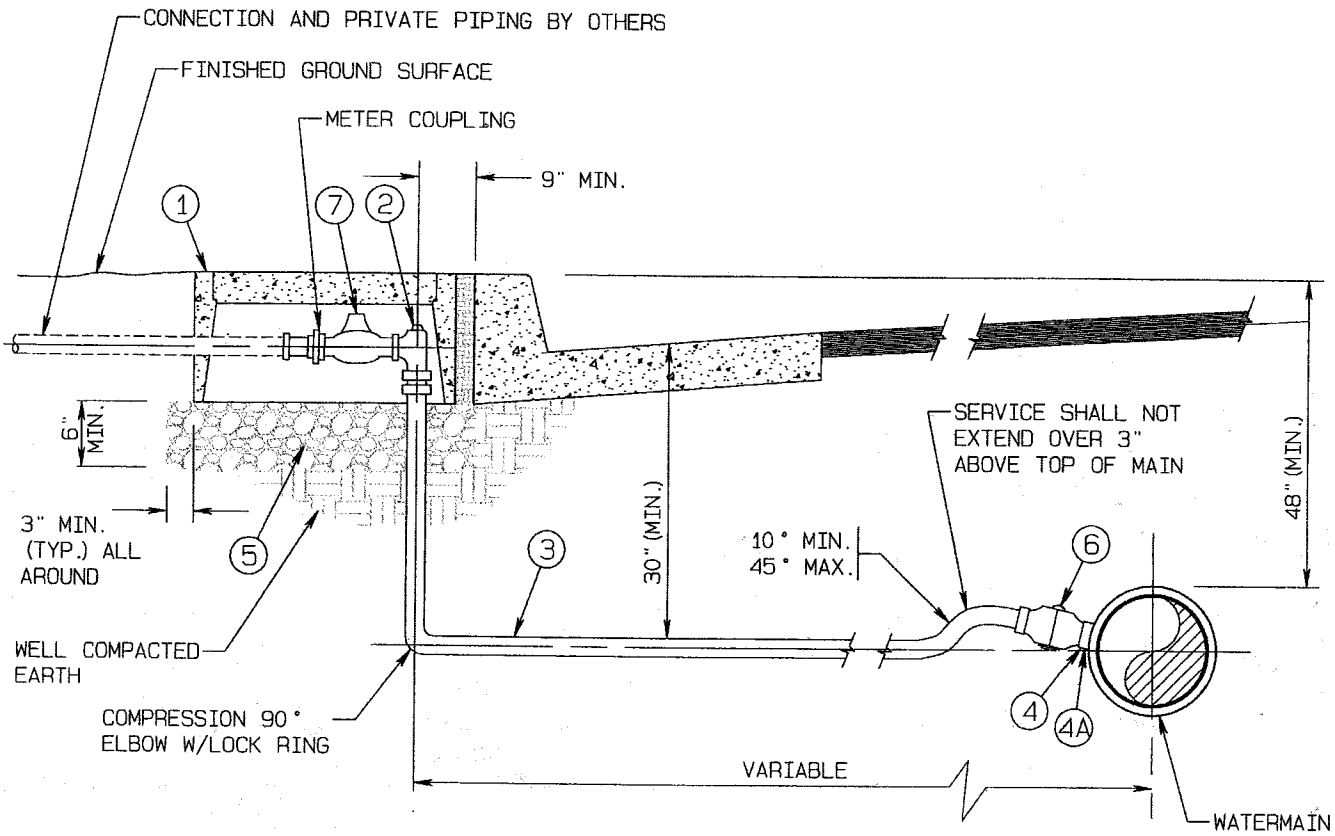
REV.

1" METER, 1" WATER SERVICE DETAIL

ALBERT A. WEBB ASSOCIATES
CONSULTING ENGINEERS
RIVERSIDE CALIFORNIA

DRAWING NO.
D-2

W.O. 04-0358



NOTES:

1. WHERE SIDEWALK EXISTS, LOCATE 3" BEHIND SIDEWALK.
2. PIPE THREADS SHALL BE CLEAN AND SHARP AND SEALED WITH AN APPROVED JOINT COMPOUND.
3. METER SHALL NOT BE PLACED IN DRAINAGE AREA, DEPRESSIONS OR WITHIN TWO FEET OF A DRIVEWAY APPROACH.

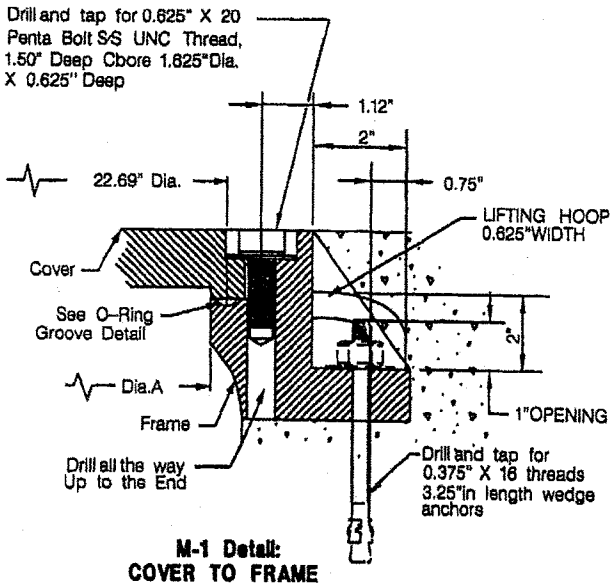
ITEM	DESCRIPTION
1	POLYMER CONCRETE METER BOX AND COVER PER DISTRICT SPECIFICATIONS
2	2" ANGLE METER STOP.
3	2" COPPER WATER SERVICE, TYPE 'K', SOFT TEMPER, PER A.S.T.M. B-88 PROVIDE PROTECTIVE WRAP PER SPECIFICATIONS AS REQUIRED BY DISTRICT.
4	2" BLK. STL. STD. COUPLING TO PIPE W/COLLAR PER STD. D-6 (FOR STEEL WATERMAIN).
4A	WATERMAIN DIA. x 2", SERVICE SADDLE PER DISTRICT SPECIFICATIONS (FOR PVC WATERMAIN).
5	3/4" DIA. CRUSHED ROCK.
6	2" DIA. CORP. STOP, I.P.T. INLET.
7	2" METER W/RADIOREAD, FURNISHED BY THE DISTRICT.

NOTE: FOR 1-1/2" INSTALLATION, SUBSTITUTE 1-1/2" DIMENSION WHERE 2" IS INDICATED.

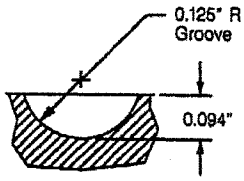
JURUPA COMMUNITY SERVICES DISTRICT

SCALE: NONE	1-1/2" OR 2" METER, 1-1/2" OR 2" WATER SERVICE DETAIL	DRAWING NO. D-3
DATE: JULY, 2010	ALBERT A. WEBB ASSOCIATES CONSULTING ENGINEERS	
APPROVED BY: R.C.E. 26979	RIVERSIDE CALIFORNIA	W.O. 04-0358

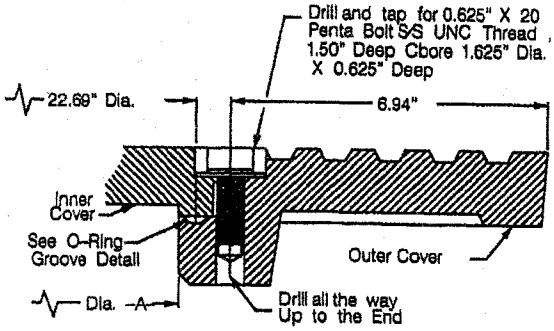
REV.



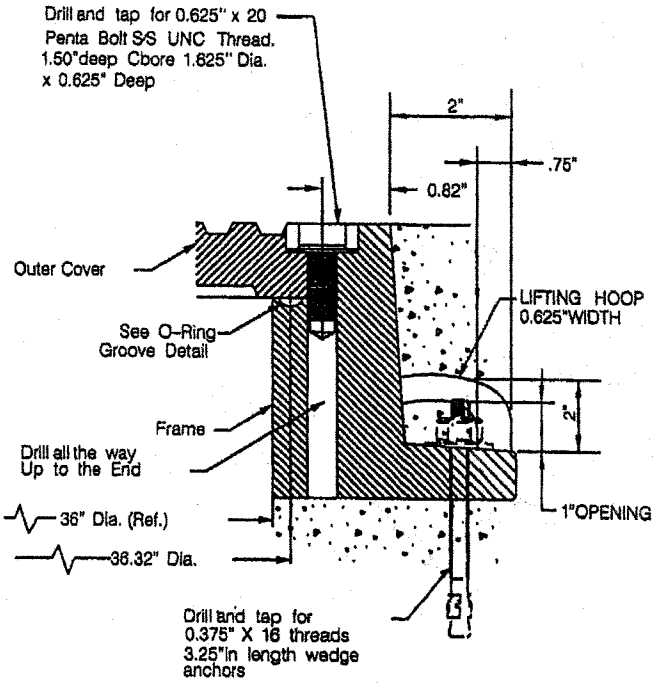
M-1 Detail: COVER TO FRAME



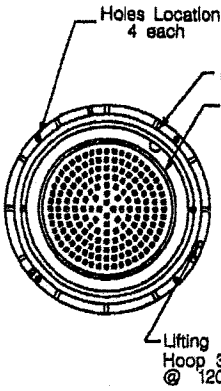
NEOPRENE O-RING GROOVE DETAIL



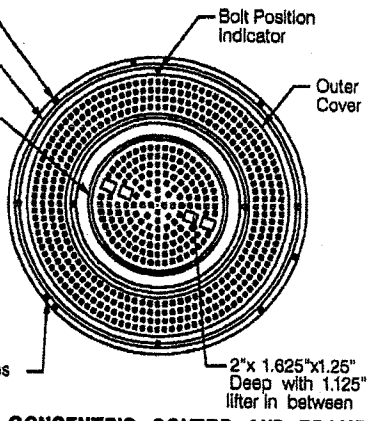
M-3A Detail: INNER COVER TO OUTER COVER



M-3B Detail: OUTER COVER TO FRAME



M-1 COVER AND FRAME BOLT PLACEMENT (See Note 3)



M-3 CONCENTRIC COVERS AND FRAME BOLT PLACEMENT (See Note 3)

NOTES:

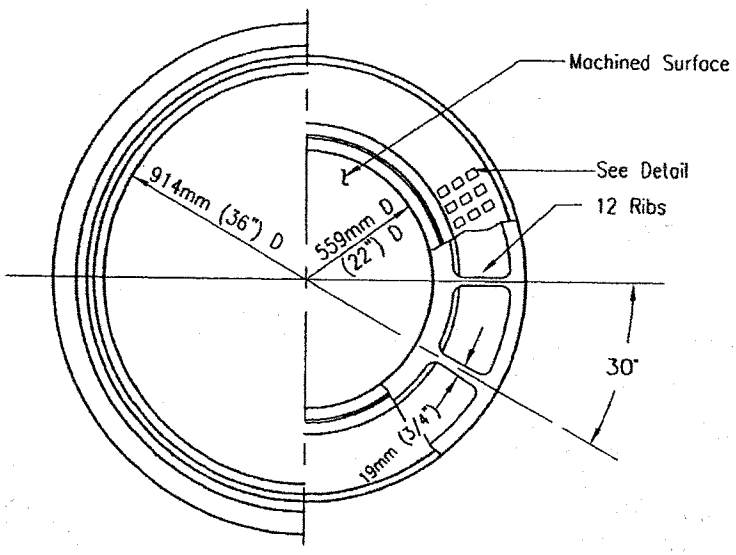
1. 0.625" X 20 PENTA BOLT S/S UNC THREAD, 316 STAINLESS STEEL SOCKET HEAD CAP SCREW AND 1.50" O.D. x 0.687" I.D. X 0.078 THICK 316 STAINLESS STEEL WASHER.
2. 0.25" NEOPRENE O-RING GASKET SHALL BE GLUED INTO MACHINED GROOVE. GLUE SHALL MEET THE REQUIREMENTS OF MIL-M-81288
3. BOLTDOWN PATTERNS:
   - M-1 DETAIL (24" COVER & FRAME): INSTALL TWO (2) BOLTS AT 180 DEGREES.
   - M-3A DETAIL (CONCENTRIC COVERS): BETWEEN INNER AND OUTER COVERS INSTALL TWO (2) BOLTS AT 180 DEGREES.
   - M-3B DETAIL (OUTER COVER & FRAME): BETWEEN OUTER COVER & FRAME INSTALL FOUR (4) BOLTS AT 90 DEGREES.

   FOR M-1 AND M-3 OUTER COVER FRAME DRILL 4 HOLES FOR 0.375"x16 STAINLESS STEEL WEDGE ANCHORS 3.75"IN LENGTH AT 90 DEGREES.

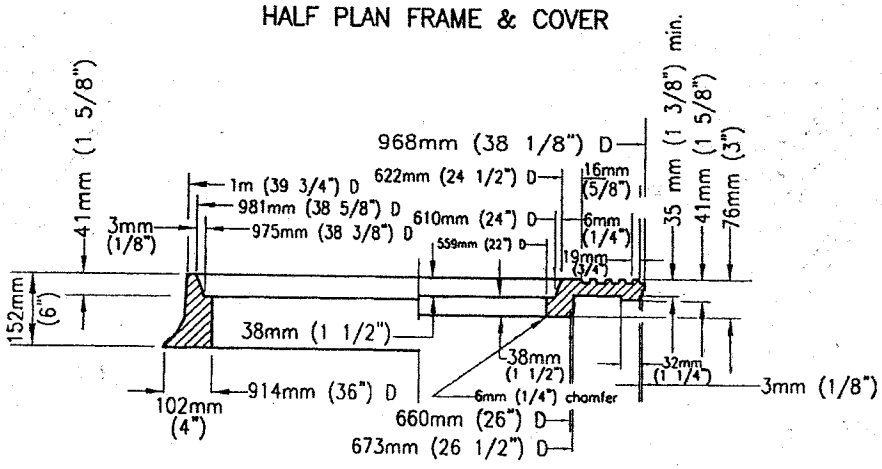
JURUPA COMMUNITY SERVICES DISTRICT

SCALE: NONE	MANHOLE COVER – LOCKING DEVICE	DRAWING NO. S-23
DATE: JULY, 2010		SHEET 1 OF 3
APPROVED BY: R.C.E. 26979	ALBERT A. WEBB ASSOCIATES CONSULTING ENGINEERS RIVERSIDE CALIFORNIA	W.O. 04-0358

REV.



HALF PLAN FRAME & COVER



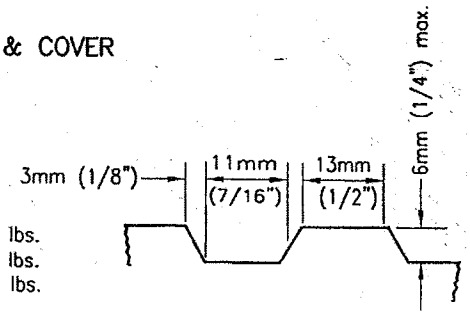
HALF SECTION FRAME & COVER

NOTES

1. Frame and cover shall be cast iron. Cast iron shall conform to ASTM 48, Class 35B.
2. Weights:

Frame	142.4kg (314)	-	164.6kg (363) lbs.
Outer Cover	129.3kg (285)	-	149.7kg (330) lbs.
Inner Cover	66.7kg (147)	-	77.5kg (171) lbs.

3. Machine all matching surfaces and seats of frame and cover to prevent rocking.
4. Imported frames and covers shall have the country of origin marked in compliance with federal regulations.

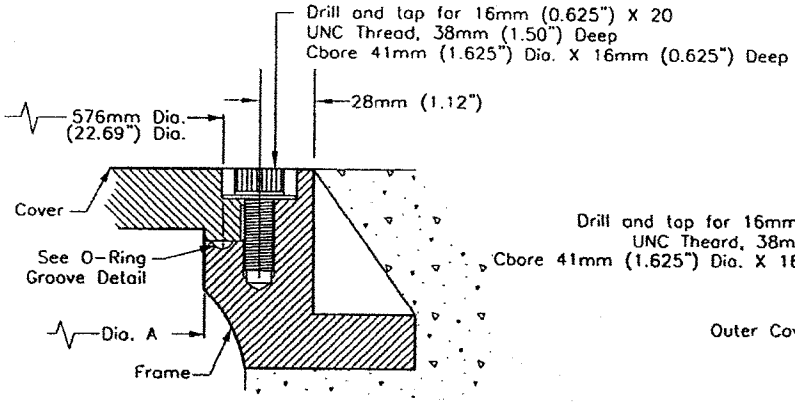


DETAIL

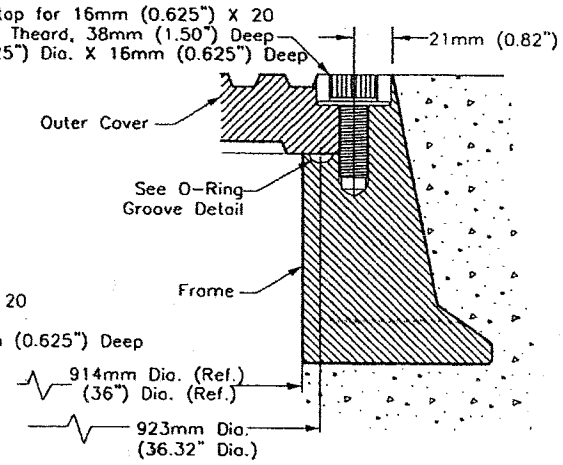
JURUPA COMMUNITY SERVICES DISTRICT

SCALE: NONE	36" MANHOLE FRAME & TWO CONCENTRIC COVERS HEAVY DUTY	DRAWING NO. S-23 (M-3)
DATE: JULY, 2010		SHEET 2 OF 3
APPROVED BY: R.C.E. 26979	ALBERT A. WEBB ASSOCIATES CONSULTING ENGINEERS RIVERSIDE CALIFORNIA	W.O. 04-0358

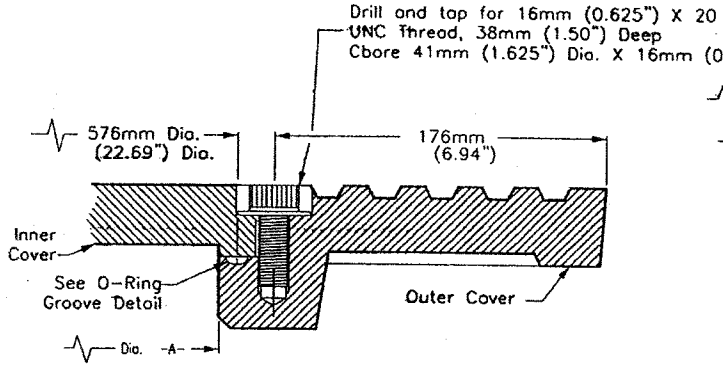
REV.



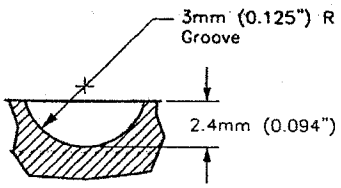
M-1 Detail:
COVER TO FRAME



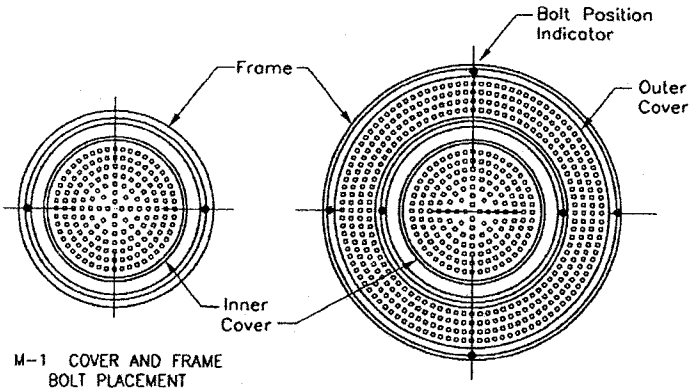
M-3B Detail:
OUTER COVER TO FRAME



M-3A Detail:
INNER COVER TO OUTER COVER



NEOPRENE O-RING
GROOVE DETAIL



M-1 COVER AND FRAME
BOLT PLACEMENT
(See Note 3)

M-3 CONCENTRIC COVERS AND FRAME
BOLT PLACEMENT
(See Note 3)

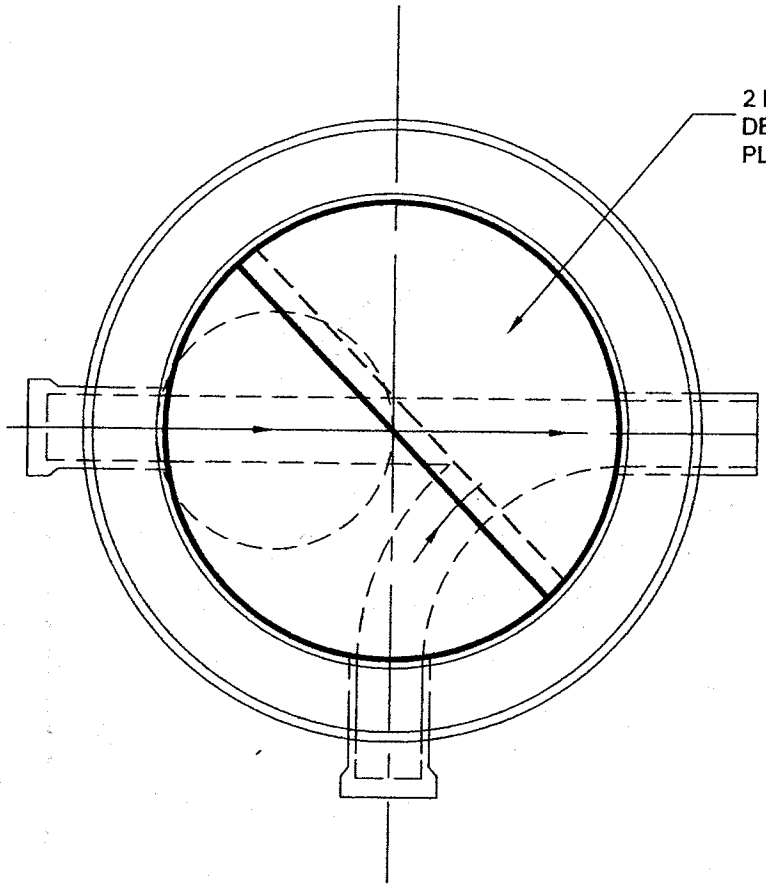
NOTES:

1. 16mm (0.625") X 20 UNC THREAD, 316 STAINLESS STEEL SOCKET HEAD CAP SCREW AND 38mm (1.50") O.D. X 17mm (0.687") I.D. X 0.078 THICK 316 STAINLESS STEEL WASHER.
2. 6mm (0.25") NEOPRENE O-RING GASKET SHALL BE GLUED INTO MACHINED GROOVE. GLUE SHALL MEET THE REQUIREMENTS OF MIL-M-81288 (AMEND. 1)
3. BOLTDOWN PATTERNS:
   - M-1 DETAIL (610mm (24") COVER & FRAME): INSTALL TWO (2) BOLTS AT 180 DEGREES.
   - M-3A DETAIL (CONCENTRIC COVERS): BETWEEN INNER AND OUTER COVERS INSTALL TWO (2) BOLTS AT 180 DEGREES.
   - M-3B DETAIL (OUTER COVER & FRAME): BETWEEN OUTER COVER & FRAME INSTALL FOUR (4) BOLTS AT 90 DEGREES.

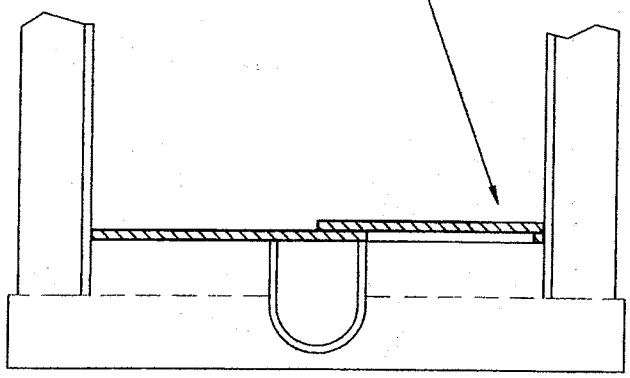
JURUPA COMMUNITY SERVICES DISTRICT

SCALE: NONE	MANHOLE COVER - LOCKING DEVICE	DRAWING NO. S-23 (M-4)
DATE: JULY, 2010		SHEET 3 OF 3
APPROVED BY: R.C.E. 26978	ALBERT A. WEBB ASSOCIATES CONSULTING ENGINEERS RIVERSIDE CALIFORNIA	W.O. 04-0358

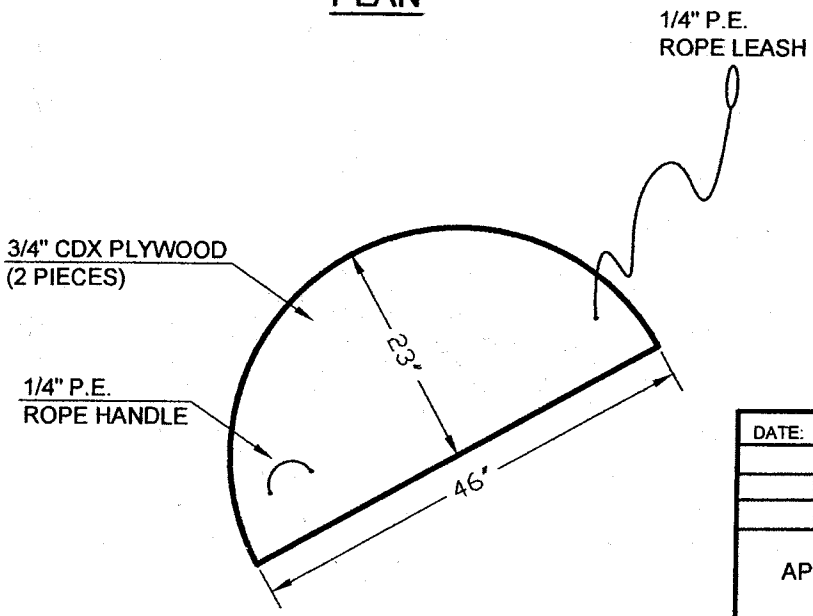
REV.



PLAN



SECTION



DETAIL "A"

DATE:	REVISION	BY

APPROVED BY _____
GENERAL MANAGER DATE:

CHIEF ENGINEER DATE: 6/5/09

SCALE: NONE | DRAWN BY: S.R.W.

LAKE HEMET MUNICIPAL WATER DIST.
WATER IMPROVEMENT

TEMPORARY FALSE BOTTOM / DEBRIS CATCH FOR STANDARD SEWER MANHOLE

STANDARD NO.11

OFFICE OF
CLERK OF THE BOARD OF SUPERVISORS
1st FLOOR, COUNTY ADMINISTRATIVE CENTER
P.O. BOX 1147, 4080 LEMON STREET
RIVERSIDE, CA 92502-1147
PHONE: (951) 955-1060
FAX: (951) 955-1071

KECIA HARPER-IHEM
Clerk of the Board of Supervisors

KIMBERLY A. RECTOR
Assistant Clerk of the Board

March 24, 2011

THE PRESS ENTERPRISE
ATTN: LEGALS
PO BOX 792
RIVERSIDE, CA 92501

FAX (951) 368-9018
E-MAIL: legals@pe.com

RE: NOTICE INVITING BIDS: BEN NEVIS BOULEVARD SIDEWALK PROJ. C0-0534

To Whom It May Concern:

Attached is a copy for publication in your newspaper for **TEN (10) TIMES:**

Sunday	- March 27, 2011	Friday	- April 1, 2011
Monday	- March 28, 2011	Saturday	- April 2, 2011
Tuesday	- March 29, 2011	Sunday	- April 3, 2011
Wednesday	- March 20, 2011	Monday	- April 4, 2011
Thursday	- March 31, 2011	Tuesday	- April 5, 2011

We require your affidavit of publication immediately upon completion of the last publication.

Your invoice must be submitted to this office in duplicate, WITH TWO CLIPPINGS OF THE PUBLICATION.

NOTE: PLEASE COMPOSE THIS PUBLICATION INTO A SINGLE COLUMN FORMAT.

Thank you in advance for your assistance and expertise.

Sincerely,

Mcgil
Cecilia Gil, Board Assistant to
KECIA HARPER-IHEM, CLERK OF THE BOARD

Gil, Cecilia

From: PE Legals [legals@pe.com]
Sent: Thursday, March 24, 2011 8:17 AM
To: Gil, Cecilia
Subject: RE: FOR PUBLICATION: Ben Nevis Blvd. Sidewalk Proj.

Received for publication from March 27 to April 5

Thank You!

Publisher of the Press-Enterprise
Maria G. Tinajero · Legal Advertising Department
1-800-880-0345 · Fax: 951-368-9018 · email: legals@pe.com

Please Note: Deadline is 10:30 AM two (2) business days prior to the date you would like to publish.
Additional days required for larger ad sizes

From: Gil, Cecilia [mailto:CCGIL@rcbos.org]
Sent: Thursday, March 24, 2011 7:47 AM
To: PE Legals
Subject: FOR PUBLICATION: Ben Nevis Blvd. Sidewalk Proj.

Good Morning! Attached is a Notice Inviting Bids, for publication from March 27 to April 5, 2011. Please confirm. THANK YOU!

Cecilia Gil
Board Assistant to the
Clerk of the Board of Supervisors
951-955-8464

THE COUNTY ADMINISTRATIVE CENTER IS CLOSED EVERY FRIDAY UNTIL FURTHER NOTICE.
PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING.

OFFICE OF
CLERK OF THE BOARD OF SUPERVISORS
1st FLOOR, COUNTY ADMINISTRATIVE CENTER
P.O. BOX 1147, 4080 LEMON STREET
RIVERSIDE, CA 92502-1147
PHONE: (951) 955-1060
FAX: (951) 955-1071

KECIA HARPER-IHEM
Clerk of the Board of Supervisors

KIMBERLY A. RECTOR
Assistant Clerk of the Board

March 24, 2011

RIVERSIDE COUNTY RECORD
ATTN: LEGALS
PO BOX 3187
RIVERSIDE, CA 92519

FAX (951) 685-2961
E-MAIL: recordmde@aol.com

RE: NOTICE INVITING BIDS: BEN NEVIS BOULEVARD SIDEWALK PROJ. C0-0534

To Whom It May Concern:

Attached is a copy for publication in your newspaper for **TWO (2) TIMES:**

Thursday - March 31, 2011 Thursday - April 7, 2011

We require your affidavit of publication immediately upon completion of the last publication.

Your invoice must be submitted to this office in duplicate, WITH TWO CLIPPINGS OF THE PUBLICATION.

NOTE: PLEASE COMPOSE THIS PUBLICATION INTO A SINGLE COLUMN FORMAT.

Thank you in advance for your assistance and expertise.

Sincerely,

Mcgil
Cecilia Gil, Board Assistant to
KECIA HARPER-IHEM, CLERK OF THE BOARD

3.28 of 03-22-11

Gil, Cecilia

To: recordmde@aol.com
Subject: RE: FOR PUBLICATION: Ben Nevis Blvd. Sidewalk Project

---

From: recordmde@aol.com [mailto:recordmde@aol.com]
Sent: Thursday, March 24, 2011 11:59 AM
To: Gil, Cecilia
Subject: Re: FOR PUBLICATION: Ben Nevis Blvd. Sidewalk Project

Good Afternoon,
Hope you are having a nice day.
I have received the notice for publication.
Thanks, Mike

-----Original Message-----
From: Gil, Cecilia <CCGIL@rcbos.org>
To: recordmde <recordmde@aol.com>
Sent: Thu, Mar 24, 2011 3:48 am
Subject: FOR PUBLICATION: Ben Nevis Blvd. Sidewalk Project

Good Morning! Attached is a Notice Inviting Bids for publication on March 31 and April 7, 2011. Please confirm. THANK YOU!

Cecilia Gil
Board Assistant to the
Clerk of the Board of Supervisors
951-955-8464

THE COUNTY ADMINISTRATIVE CENTER IS CLOSED EVERY FRIDAY UNTIL FURTHER NOTICE.
PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING.

NOTICE INVITING BIDS

County of Riverside, herein called Owner, invites sealed proposals for:

BEN NEVIS BOULEVARD
SIDEWALK PROJECT

PROJECT No. C0-0534

Proposal shall be delivered to the Riverside County Transportation Department, 14th Street Annex, 3525 14th Street, Riverside, California 92501, telephone (951) 955-6780 not later than 2:00 p.m., on Wednesday, April 13, 2011, to be promptly opened in public at said address. Each proposal shall be in accordance with plans, specifications, and other contract documents, dated February 2011, and prepared by County of Riverside, whose address is same as the above, from whom they may be obtained upon deposit of $30.00 per set plus mailing. No refund. Prospective bidders may preview the plans, specifications and other contract documents, at no charge prior to purchase, at the above noted location.

The Contractor is required to have a Class "A" license or C-12 license at the time of bid submission.

Engineer Estimate:	$255,000 - $298,000 (Base Bid)
	$ 1,350 - $ 1,600 (Alternate 1)
	$ 2,400 - $ 2,800 (Alternate 2)
Bid Bond	10 %
Performance Bond	100%
Payment Bond	100%
Working Days	20

www.tlma.co.riverside.ca.us/trans

Dated: March 24, 2011

Kecia Harper-Ihem, Clerk of the Board
By: Cecilia Gil, Board Assistant

The Riverside County Record Newspaper

Western Riverside County's Only Hometown Newspaper

Since 1955

Post Office Box 3187 • Riverside, California 92519

951685-6191 • FAX 951685-2961

e-mail: recorddhb@aol.com

INVOICE

March 30, 2011

Riverside County
Clerk of the Board
4080 Lemon Street, 1st Floor
P.O. Box 1147
Riverside, CA 92502- 1147

Legal Advertising

Notice Inviting Bids

Your: Ben Nevis Boulevard Sidewalk Proj. C0-0534
Our #0226

7.00 column inches x $8. 94 = $62.58 x 2 = $125.16

Publish two (2) week: March 31, 2011;
April 7, 2011

Amount Due: $125.16

Thank You,

Cathy Sypin-Barnes

Transp.
3.28 of 03/22/11

2011 APR -7 PM 12:44

Affidavit of Publication

(2015.5 C.C.P.)

County of Riverside

State of California

Catherine Sypin-Barnes, being first duly sworn, deposes and says: That at all times hereinafter, mentioned that she was a citizen of the United States, over the age of eighteen years, and a resident of said County, and was at and during all said times the principal clerk of the printer and publisher of The Riverside County Record-News, a newspaper of general circulation, adjudicated by court decree, printed and published weekly in said County of Riverside, State of California, that said Riverside County Record-News is and was at all times herein mentioned, a newspaper of general circulatio as that term is defined in section 4460 of the Political Code, and, as provide by that section, is published for the dissemination of local and telegraphi news and intelligence of a general character, having a bona fide subscriptio list of paying subscribers, and is not devoted to nor published for the interes entertainment or instruction of a particular class, profession, trade, callin race of denominations; that at all said time said newspaper has been estal lished, printed and published in said County and State at regular intervals f more than one year preceding the date of publication of the notice hereinaft mentioned; that said notice was set in type not smaller than nonpareil and w preceded with words printed in black face type not smaller than nonpare describing and expressing in general terms the purport and character of t notice intended to be given; that the

RIVERSIDE COUNTY RECORD NEWSPAPER

of which the annexed is a printed copy, published and printed in said newspaper in at least 2 weekly issues, as follows:

March 31, 2011;
April 7, 2011

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

Signature

Dated: April 7
, 2011 at
Riverside, California

NOTICE INVITING BIDS

County of Riverside, herein called Owner, invites sealed proposals for:

BEN NEVIS BOULEVARD
SIDEWALK PROJECT
PROJECT No. C0-0534

Proposal shall be delivered to the Riverside County Transportation Department, 14th Street Annex, 3525 14th Street, Riverside, California 92501, telephone (951) 955-6780 not later than 2:00 p.m., on Wednesday, April 13, 2011, to be promptly opened in public at said address. Each proposal shall be in accordance with plans, specifications, and other contract documents, dated February 2011, and prepared by County of Riverside, whose address is same as the above, from whom they may be obtained upon deposit of $30.00 per set plus mailing. No refund. Prospective bidders may preview the plans, specifications and other contract documents, at no charge prior to purchase, at the above noted location.

The Contractor is required to have a Class "A" license or C-12 license at the time of bid submission.

Engineer Estimate:	$255,000 - $298,000 (Base Bid)
	$ 1,350 - $ 1,600 (Alternate 1)
	$ 2,400 - $ 2,800 (Alternate 2)
Bid Bond	10 %
Performance Bond	100%
Payment Bond	100%
Working Days	20

www.tlma.co.riverside.ca.us/trans

Dated: March 24, 2011 — Kecia Harper-Ihem, Clerk of the Board
By: Cecilia Gil, Board Assistant

Published: March 31, 2011; April 7, 2011 — RCR0226

enterprise media
THE PRESS-ENTERPRISE PE.com
THE BUSINESS PRESS SoCal
LA PRENSA WEEKLY
waves LANDSOCAL

Legal Advertising Invoice

① BILLING PERIOD: 04/05/11 - 04/05/11
② ADVERTISING/CLIENT NAME: BOARD OF SUPERVISORS
⑤ BILLING DATE: 04/05/11
FOR BILLING INFORMATION CALL: (951) 368-9713
④ PAGE NO: 1
㉓ TOTAL AMOUNT DUE: 980.10
|* UNAPPLIED AMOUNT|③ TERMS OF PAYMENT: Due Upon Receipt

⑨ REMITTANCE ADDRESS
POST OFFICE BOX 12009
RIVERSIDE, CA 92502-2209

⑧ BILLED ACCOUNT NAME AND ADDRESS
BOARD OF SUPERVISORS
COUNTY OF RIVERSIDE
P.O. BOX 1147
RIVERSIDE CA 92502

⑥ BILLED ACCOUNT NUMBER: 045202
REP NO: LE04

Statement #: 56590417 Amount Paid $_____ Your Check #_____

PLEASE DETACH AND RETURN UPPER PORTION WITH YOUR REMITTANCE

⑩ DATE	⑪ REFERENCE	⑫ ⑬ ⑭ DESCRIPTION-OTHER COMMENTS/CHARGES	⑮ SAU SIZE ⑯ BILLED UNITS	⑰ RATE	⑲ GROSS AMOUNT	⑳ NET AMOUNT
03/27	4284425 CO	NIB - BEN NEVIS BLVD. Class : 10 Ctext Ad# 1059839/ Placed By : Cecilia Gil	81 L	1.30		105.30
03/28	4284425 CO	NIB - BEN NEVIS BLVD. Class : 10 Ctext Ad# [illegible] Placed By : Cecilia Gil	81 L	1.20		97.20
03/29	4284425 CO	NIB - BEN NEVIS BLVD. Class : 10 Ctext Ad# 10598397 Placed By : Cecilia Gil	81 L	1.20		97.20
03/30	4284425 CO	NIB - [redacted] Class : 10 Ctext Ad# 10598397 Placed By : Cecilia Gil	81 L	1.20		97.20
03/31	4284425 CO	NIB - [redacted] Class : 10 Ctext Ad# 10598397 Placed By : Cecilia Gil	81 L	1.20		97.20
04/01	4284425 CO	NIB - [redacted] Class : 10 Ctext Ad# 10598397 Placed By : Cecilia Gil	81 L	1.20		97.20
04/02	4284425 CO	NIB - [redacted] Class : 10 Ctext Ad# 10598397 Placed By : Cecilia Gil	81 L	1.20		97.20
04/03	4284425 CO	NIB - [redacted] Class : 10 Ctext Ad# 10598397 Placed By : Cecilia Gil	81 L	1.20		97.20
04/04	4284425 CO	NIB - [redacted] Class : 10 Ctext Ad# 10598397 Placed By : Cecilia Gil	81 L	1.20		97.20
04/05	4284425 CO	NIB - [redacted] Class : 10 Ctext Ad# 10598397 Placed By : Cecilia Gil	81 L	1.20		97.20

Transp.
3.28 ea 03/22/11
1 hr

2011 APR 11 PM 4:37

㉑ *CURRENT NET AMOUNT DUE	㉒ 30 DAYS	60 DAYS	OVER 90 DAYS	* UNAPPLIED AMOUNT	㉜ PLEASE PAY THIS AMOUNT
					980.10

enterprise media
THE PRESS-ENTERPRISE PE.com
P.O. BOX 12009
RIVERSIDE, CA 92502-2209
FAX (951) 368-9026

ADVERTISING STATEMENT/INVOICE

sai™

* UNAPPLIED AMOUNTS ARE INCLUDED IN TOTAL AMOUNT DUE

㉔ STATEMENT NUMBER	㉕ ADVERTISER INFORMATION ① BILLING PERIOD	⑥ BILLED ACCOUNT NUMBER	⑦ ADVERTISER/CLIENT NUMBER	② ADVERTISER/CLIENT NAME
56590417	04/05/11 - 04/05/11	045202		BOARD OF SUPERVISORS

THE PRESS-ENTERPRISE

3450 Fourteenth Street
Riverside CA 92501-3878
951-684-1200
951-368-9018 FAX

PROOF OF PUBLICATION
(2010, 2015.5 C.C.P.)

Press-Enterprise

PROOF OF PUBLICATION OF

Ad Desc.: BEN NEVIS PROJECT No. C0-0534

I am a citizen of the United States. I am over the age of eighteen years and not a party to or interested in the above entitled matter. I am an authorized representative of THE PRESS-ENTERPRISE, a newspaper of general circulation, printed and published daily in the County of Riverside, and which newspaper has been adjudicated a newspaper of general circulation by the Superior Court of the County of Riverside, State of California, under date of April 25, 1952, Case Number 54446, under date of March 29, 1957, Case Number 65673 and under date of August 25, 1995, Case Number 267864; that the notice, of which the annexed is a printed copy, has been published in said newspaper in accordance with the instructions of the person(s) requesting publication, and not in any supplement thereof on the following dates, to wit:

03-27-11
03-28-11
03-29-11
03-30-11
03-31-11
04-01-11
04-02-11
04-03-11
04-04-11
04-05-11

I Certify (or declare) under penalty of perjury that the foregoing is true and correct.

Date: Apr. 5, 2011
At: Riverside, California

NE

BOARD OF SUPERVISORS

P.O. BOX 1147
COUNTY OF RIVERSIDE
RIVERSIDE CA 92502

Ad #: 10598397

PO #:

Agency #: _____

Ad Copy:

NOTICE INVITING BIDS

County of Riverside, herein called Owner, invites sealed proposals for:

BEN NEVIS BOULEVARD
SIDEWALK PROJECT
PROJECT No. C0-0534

Proposal shall be delivered to the Riverside County Transportation Department, 14th Street Annex, 3525 14th Street, Riverside, California 92501, telephone (951) 955-6780 not later than 2:00 p.m., on Wednesday, April 13, 2011, to be promptly opened in public at said address. Each proposal shall be in accordance with plans, specifications, and other contract documents, dated February 2011, and prepared by County of Riverside, whose address is same as the above, from whom they may be obtained upon deposit of $30.00 per set plus mailing. No refund. Prospective bidders may preview the plans, specifications and other contract documents, at no charge prior to purchase, at the above noted location.

The Contractor is required to have a Class "A" license or C-12 license at the time of bid submission.

Engineer Estimate: ..... $255,000 - $298,000 (Base Bid)
$1,350 - $1,600 (Alternate 1)
$2,400 - $2,800 (Alternate 2)

Bid Bond ..... 10 %
Performance Bond 100%
Payment Bond 100%
Working Days 20

www.tlma.co.riverside.ca.us/trans

Dated: March 24, 2011
Kecia Harper-Ihem, Clerk of the Board
By: Cecilia Gil, Board Assistant 3/27-4/5