Source: (3) Storage Piles

CONTROL MEASURES	DESCRIPTION
(L) Wind sheltering	(1) Enclose in silos. (2) Install three-sided barriers equal to height of material, with no more than 50 percent porosity.
(M) Watering	(1) Application methods include: spray bars, hoses and water trucks. (2) Frequency of application will vary on site-specific conditions.
(N) Chemical stabilizers	(1) Best for use on storage piles subject to infrequent disturbances.
(O) Altering load-in/load-out procedures	(1) Confine load-in/load-out procedures to leeward (downwind) side of the material. (2) May need to be used in conjunction with wind sheltering to prevent visible emissions from crossing the property line.
(P) Coverings	(1) Tarps, plastic, or other material can be used as a temporary covering. (2) When used, these should be anchored to prevent wind from removing coverings.

HIGH WIND MEASURE

(f) Apply chemical stabilizers (to meet the specifications established by the Rule) prior to wind events; or
(g) Apply water once per hour; or
(h) Install temporary covers.

Source: (4) Paved Road Track-Out

CONTROL MEASURES	DESCRIPTION
(Q) Chemical stabilization	(1) Most effective when used on areas where active operations have ceased. (2) Vendors can supply information on methods for application and required concentrations.
(R) Sweep/clean roadways	(1) Either sweeping or water flushing may be used.
(S) Cover haul vehicles	(1) Entire surface area should be covered once vehicle is full.
(T) Bedliners in haul vehicles	(1) When feasible, use in bottom dumping vehicles.
(U) Site access improvement	(1) Pave internal roadway system. (2) Most important segment, last 100 yards from the connection with paved public roads

HIGH WIND MEASURE

(i) Cover all haul vehicles; and
(j) Clean streets with water flushing, unless prohibited by the Regional Water Quality Control Board.

Source: (5) Disturbed Surface Areas/ Inactive Construction Sites

CONTROL MEASURES	DESCRIPTION
(Q) Chemical stabilization	(1) Most effective when used on areas where active operations have ceased. (2) Vendors can supply information on methods for application and required concentrations.
(R) Watering	(1) Requires frequent applications unless a surface crust can be developed.
(S) Wind fencing	(1) Three- to five-foot barriers with 50% or less porosity adjacent to roadways or urban areas can be effective in reducing the amount of wind blown material leaving a site.
(T) Vegetation	(1) Establish as quickly as possible when active operations have ceased. (2) Use of drought tolerant, native vegetation is encouraged.

HIGH WIND MEASURES

(k) Apply chemical stabilizers (to meet the specifications established by the Rule); or
(l) Apply water to all disturbed surface areas 3 times per day.

BEST AVAILABLE CONTROL MEASURES

Rule 403, paragraph (d)(2) requires active operations [defined in Rule 403, paragraph (c)(1)] within the South Coast Air Basin (see Figure 2-1) to implement at least one best available control measure for each fugitive dust source type on site. Additionally, as specified by subparagraph (f)(3)(D) of Rule 403, any person seeking approval of a fugitive dust emissions control plan for projects within the South Coast Air Basin must demonstrate to the satisfaction of the AQMD that the given activity is employing all best available fugitive dust control measures.

The AQMD has prepared the attached listing of best available fugitive dust control measures for a variety of source categories. This list is based on the U.S. Environmental Protection Agency's reference document entitled, "Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures," Office of Air and Radiation, September 1992.

The AQMD encourages the use of those dust control measures that minimize the use of potable water. When water is needed, reclaimed water should be utilized to the greatest extent feasible.

BEST AVAILABLE CONTROL MEASURES

The left column contains a listing of the sources of fugitive dust which are intended for emission control under District Rule 403 and a listing of control measures and high-wind measures. The right column contains a description of the best available fugitive dust control measures for each of the sources.

Source: (1) Land Clearing/Earth-Moving

CONTROL MEASURES	DESCRIPTION
(A) Watering (pre-grading)	(1) Application of water by means of trucks, hoses and/or sprinklers prior to conducting any land clearing. This will increase the moisture content of the soils; thereby increasing its stability. (2) Pre-application of water to depths of proposed cuts.
(A-1) Watering (post-grading)	(1) In active earth-moving areas water should be applied at sufficient frequency and quantity to prevent visible emissions from extending more than 100 feet from the point of origin.
(A-2) Pre-grading planning	(1) Grade each phase separately, timed to coincide with construction phase; or (2) Grade entire project, but apply chemical stabilizers or ground cover to graded areas where construction phase begins more than 60 days after grading phase ends.
(B) Chemical stabilizers	(1) Only effective in areas which are not subject to daily disturbances. (2) Vendors can supply information on product application and required concentrations to meet the specifications established by the Rule.
(C) Wind fencing	(1) Three- to five-foot barriers with 50% or less porosity located adjacent to roadways or urban areas can be effective in reducing the amount of windblown material leaving a site. Must be implemented in conjunction with either measure (A-1) or (B).
(D) Cover haul vehicles	(1) Entire surface area of hauled earth should be covered once vehicle is full.
(E) Bedliners in haul vehicles	(1) When feasible, use in bottom-dumping haul vehicles.

HIGH WIND MEASURE

(a) Cease all active operations; or
(b) Apply water within 15 minutes to any soil surface which is being moved or otherwise disturbed.

Source: (2) Unpaved Roads

CONTROL MEASURES	DESCRIPTION
(F) Paving	(1) Requires street sweeping/cleaning if subject to material accumulation.
(G) Chemical stabilization	(1) Vendors can supply information as to application methods and concentrations to meet the specifications established by the Rule (2) Not recommended for high volume or heavy equipment traffic use.
(H) Watering	(1) In sufficient quantities to keep surface moist. (2) Required application frequency will vary according to soil type, weather conditions, and vehicular use.
(I) Reduce speed limits	(1) 15 mile per hour maximum. May need to be used in conjunction with watering or chemical stabilization to prevent visible emissions from crossing the property line.
(J) Reduce vehicular trips	(1) Access restriction or redirecting traffic to reduce vehicle trips by a minimum of 60 percent.
(K) Gravel	(1) Gravel maintained to a depth of four inches can be an effective measure. (2) Should only be used in areas where paving, chemical stabilization or frequent watering is not feasible.

HIGH WIND MEASURE

(a) Apply a chemical stabilizer (to meet the specifications established by the Rule) prior to wind events; or
(b) Apply water once each hour; or
(c) Stop all vehicular traffic.

Source: **(3) Storage Piles**

CONTROL MEASURES	DESCRIPTION
(L) Wind sheltering	(1) Enclose in silos. (2) Install three-sided barriers equal to height of material, with no more than 50 percent porosity.
(M) Watering	(1) Application methods include: spray bars, hoses and water trucks. (2) Frequency of application will vary on site-specific conditions.
(N) Chemical stabilizers	(1) Best for use on storage piles subject to infrequent disturbances.
(O) Altering load-in/load-out procedures	(1) Confine load-in/load-out procedures to leeward (downwind) side of the material. Must be used in conjunction with either measure (L), (M), (N), or (P).
(P) Coverings	(1) Tarps, plastic, or other material can be used as a temporary covering. (2) When used, these should be anchored to prevent wind from removing coverings.

HIGH WIND MEASURE

(a) Apply chemical stabilizers (to meet the specifications established by the Rule) prior to wind events; or
(b) Apply water once per hour; or
(c) Install temporary covers.

Source: (4) Paved Road Track-Out

CONTROL MEASURES	DESCRIPTION
Compliance with District Rule 403.	Paragraph (d)(5).

Source: (5) Disturbed Surface Areas/ Inactive Construction Sites

CONTROL MEASURES	DESCRIPTION
(Q) Chemical stabilization	(1) Most effective when used on areas where active operations have ceased. (2) Vendors can supply information on methods for application and required concentrations.
(R) Watering	(1) Requires frequent applications unless a surface crust can be developed.
(S) Wind fencing	(1) Three- to five-foot barriers with 50% or less porosity adjacent to roadways or urban areas can be effective in reducing the amount of wind blown material leaving a site. Must be used in conjunction with either measure (Q), (R), or (T).
(T) Vegetation	(1) Establish as quickly as possible when active operations have ceased.*

HIGH WIND MEASURES

(a) Apply chemical stabilizers (to meet the specifications established by the Rule); or
(b) Apply water to all disturbed surface areas 3 times per day.

* Use of drought tolerant, native vegetation is encouraged.

TABLE 1

BEST [REASONABLY]* AVAILABLE CONTROL MEASURES FOR HIGH WIND CONDITIONS

FUGITIVE DUST SOURCE CATEGORY	CONTROL MEASURES
Earth-moving	(1A) Cease all active operations; OR (2A) Apply water to soil not more than 15 minutes prior to moving such soil.
Disturbed surface areas	(0B) On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than four consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than 1/20 of the concentration required to maintain a stabilized surface for a period of six months; OR (1B) Apply chemical stabilizers prior to wind event; OR (2B) Apply water to all unstabilized disturbed areas 3 times per day. If there is any evidence of wind driven fugitive dust, watering frequency is increased to a minimum of four times per day; OR (3B) Take the actions specified in Table 2, Item (3c); OR (4B) Utilize any combination of control actions (1B), (2B), and (3B) such that, in total, these actions apply to all disturbed surface areas.
Unpaved roads	(1C) Apply chemical stabilizers prior to wind event; OR (2C) Apply water twice [once] per hour during active operation; OR (3C) Stop all vehicular traffic.
Open storage piles	(1D) Apply water twice [once] per hour; OR (2D) Install temporary coverings.
Paved road track-out	(1E) Cover all haul vehicles; OR (2E) Comply with the vehicle freeboard requirements of Section 23114 of the California Vehicle Code for both public and private roads.
All Categories	(1F) Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 1 may be used.

* Measures in [brackets] are reasonably available control measures and only apply to sources not within the South Coast Air Basin.

TABLE 2
DUST CONTROL ACTIONS FOR EXEMPTION FROM PARAGRAPH (d)(4)*

FUGITIVE DUST SOURCE CATEGORY	CONTROL ACTIONS	
Earth-moving (except construction cutting and filling areas, and mining operations)	(1a)	Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations each subsequent four-hour period of active operations; OR
	(1a-1)	For any earth-moving which is more than 100 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 100 feet in length in any direction.
Earth-moving: Construction fill areas:	(1b)	Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. For areas which have an optimum moisture content for compaction of less than 12 percent, as determined by ASTM Method 1557 or other equivalent method approved by the Executive Officer and the California Air Resources Board and the U.S. EPA, complete the compaction process as expeditiously as possible after achieving at least 70 percent of the optimum soil moisture content. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations during each subsequent four-hour period of active operations.

* Measures in [brackets] are reasonably available control measures and only apply to sources not within the South Coast Air Basin.

TABLE 2 (Continued)*

FUGITIVE DUST SOURCE CATEGORY		CONTROL ACTIONS
Earth-moving: Construction cut areas and mining operations:	(1c)	Conduct watering as necessary to prevent visible emissions from extending more than 100 feet beyond the active cut or mining area unless the area is inaccessible to watering vehicles due to slope conditions or other safety factors.
Disturbed surface areas (except completed grading areas)	(2a/b)	Apply dust suppression in sufficient quantity and frequency to maintain a stabilized surface. Any areas which cannot be stabilized, as evidenced by wind driven fugitive dust must have an application of water at least twice per day to at least 80 [70] percent of the unstabilized area.
Disturbed surface areas: Completed grading areas	(2c)	Apply chemical stabilizers within five working days of grading completion; OR
	(2d)	Take actions (3a) or (3c) specified for inactive disturbed surface areas.
Inactive disturbed surface areas	(3a)	Apply water to at least 80 [70] percent of all inactive disturbed surface areas on a daily basis when there is evidence of wind driven fugitive dust, excluding any areas which are inaccessible to watering vehicles due to excessive slope or other safety conditions; OR
	(3b)	Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR
	(3c)	Establish a vegetative ground cover within 21 [30] days after active operations have ceased. Ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter; OR
	(3d)	Utilize any combination of control actions (3a), (3b), and (3c) such that, in total, these actions apply to all inactive disturbed surface areas.

* Measures in [brackets] are reasonably available control measures and only apply to sources not within the South Coast Air Basin.

TABLE 2 (Continued)*

FUGITIVE DUST SOURCE CATEGORY	CONTROL ACTIONS	
Unpaved Roads	(4a)	Water all roads used for any vehicular traffic at least once per every two hours of active operations [3 times per normal 8 hour work day]; OR
	(4b)	Water all roads used for any vehicular traffic once daily and restrict vehicle speeds to 15 miles per hour; OR
	(4c)	Apply a chemical stabilizer to all unpaved road surfaces in sufficient quantity and frequency to maintain a stabilized surface.
Open storage piles	(5a)	Apply chemical stabilizers; OR
	(5b)	Apply water to at least 80 [70] percent of the surface area of all open storage piles on a daily basis when there is evidence of wind driven fugitive dust; OR
	(5c)	Install temporary coverings; OR
	(5d)	Install a three-sided enclosure with walls with no more than 50 percent porosity which extend, at a minimum, to the top of the pile.
All Categories	(6a)	Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 2 may be used.

* Measures in [brackets] are reasonably available control measures and only apply to sources not within the South Coast Air Basin.

AQMD Recommendations

TABLE 3

TRACK-OUT CONTROL OPTIONS

PARAGRAPH (d)(5)(B)

CONTROL OPTIONS

(1)	Pave or apply chemical stabilization at sufficient concentration and frequency to maintain a stabilized surface starting from the point of intersection with the public paved surface, and extending for a centerline distance of at least 100 feet and a width of at least 20 feet.
(2)	Pave from the point of intersection with the public paved road surface, and extending for a centerline distance of at least 25 feet and a width of at least 20 feet, and install a track-out control device immediately adjacent to the paved surface such that exiting vehicles do not travel on any unpaved road surface after passing through the track-out control device.
(3)	Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 3 may be used.

Appendix B

Standard Plans and Reference Drawings

Standard Plans and Reference Drawings
List and Table of Contents

2010 Caltrans Standard Plans

ES7E
A20A, A20B, A20C, A20D, A24A, A24C, A24D, A24E
A85, A85A, A85B
A88A, A88B
ES1A, ES1B, ES1C
ES5B, ES5D
ES7N, ES7P
ES8
RS4
Files can be downloaded from County website.
http://www.dot.ca.gov/hq/esc/oe/construction_standards.html

County of Riverside Transportation Department Standard Plans

201, 202, 204, 205, 207, 209, 401, 403-Case B, 1201, 1202, 1204
Files can be downloaded from County website.
http://www.rctlma.org/trans/land_dev_ord_461.html

Riverside County Flood Control and Water Conservation District Standard Plans

MH253, MH256, MH257, MH259, MH260 & TS302
Files can be download at URL:
http://www.floodcontrol.co.riverside.ca.us/Engineering.aspx

City of La Quinta Standard Plans

201, 202, 210, 230, 240, 250, 300, 310, 330, 352, 415, 720
Attached

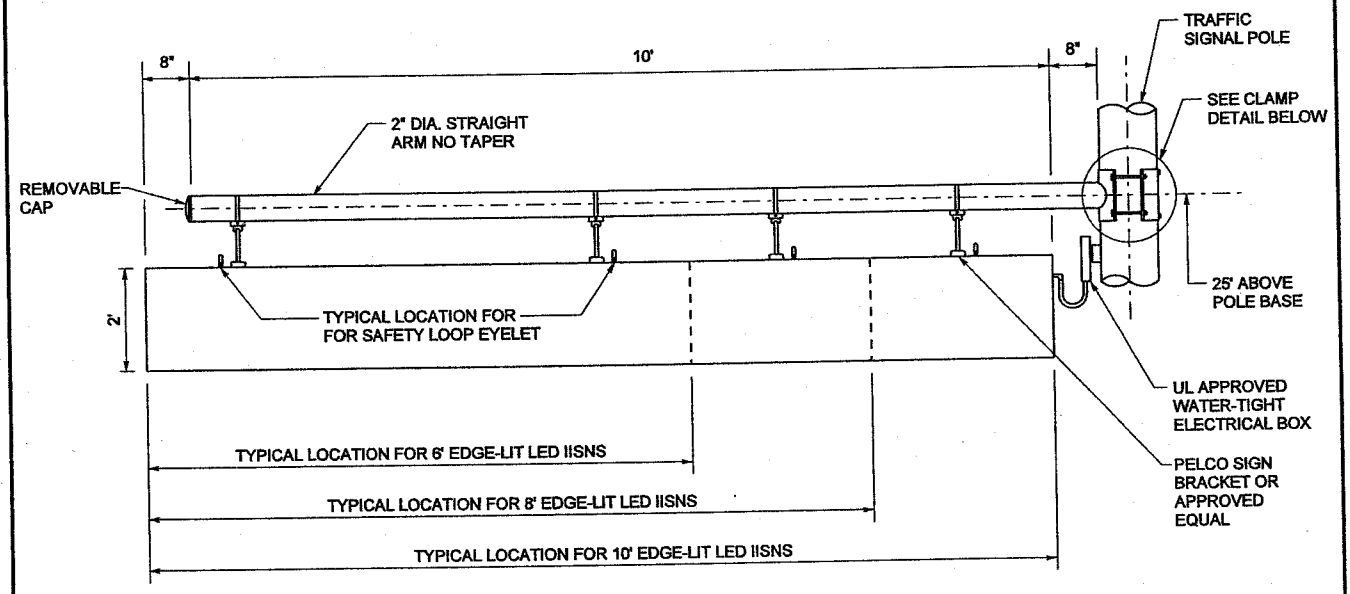
CVWD Standard Plans

S-1B, S-5, W-17A
Attached

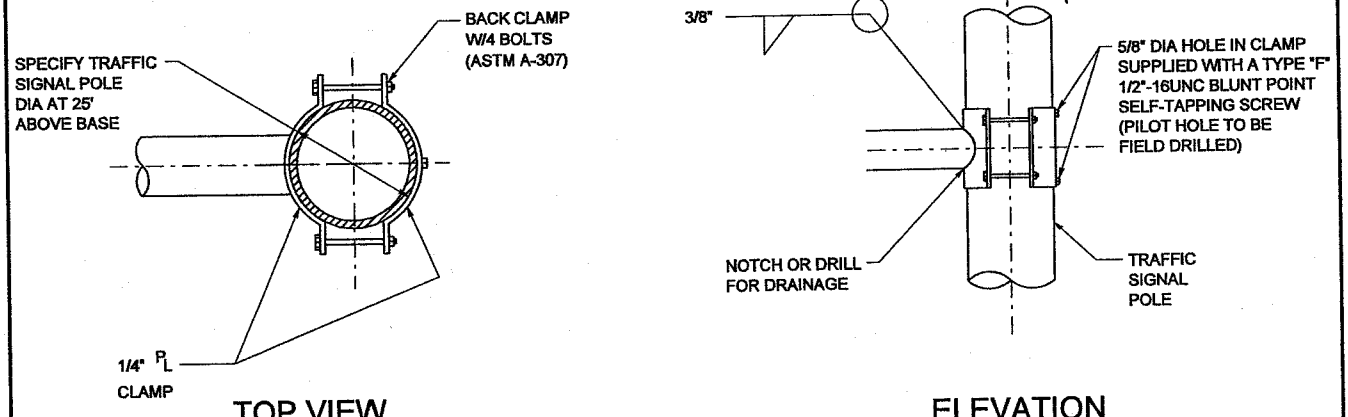
SPPWC 2009 Standard Plans
141-2, 151-2, 361-2, 601-3, 615-4, 618-3
Attached

Note: If a plan number is omitted from this list, it does not relieve the Contractor to meet the requirements of the Standard Plans and Specifications, Special Provisions and Plans Sheets.

NOTE:
SIGN LOCATION MAY VARY DEPENDING
ON HEIGHT OF SIGNAL MAST ARM.



IISNS STRAIGHT ARM MOUNTING



TOP VIEW

ELEVATION

CLAMP DETAIL

APPROVED BY:

DIRECTOR OF TRANSPORTATION
JUAN C. PEREZ, RCE 49568

DATE

REGISTERED PROFESSIONAL ENGINEER
No.
Exp.
CIVIL
STATE OF CALIFORNIA

COUNTY OF RIVERSIDE

IISNS STRAIGHT ARM

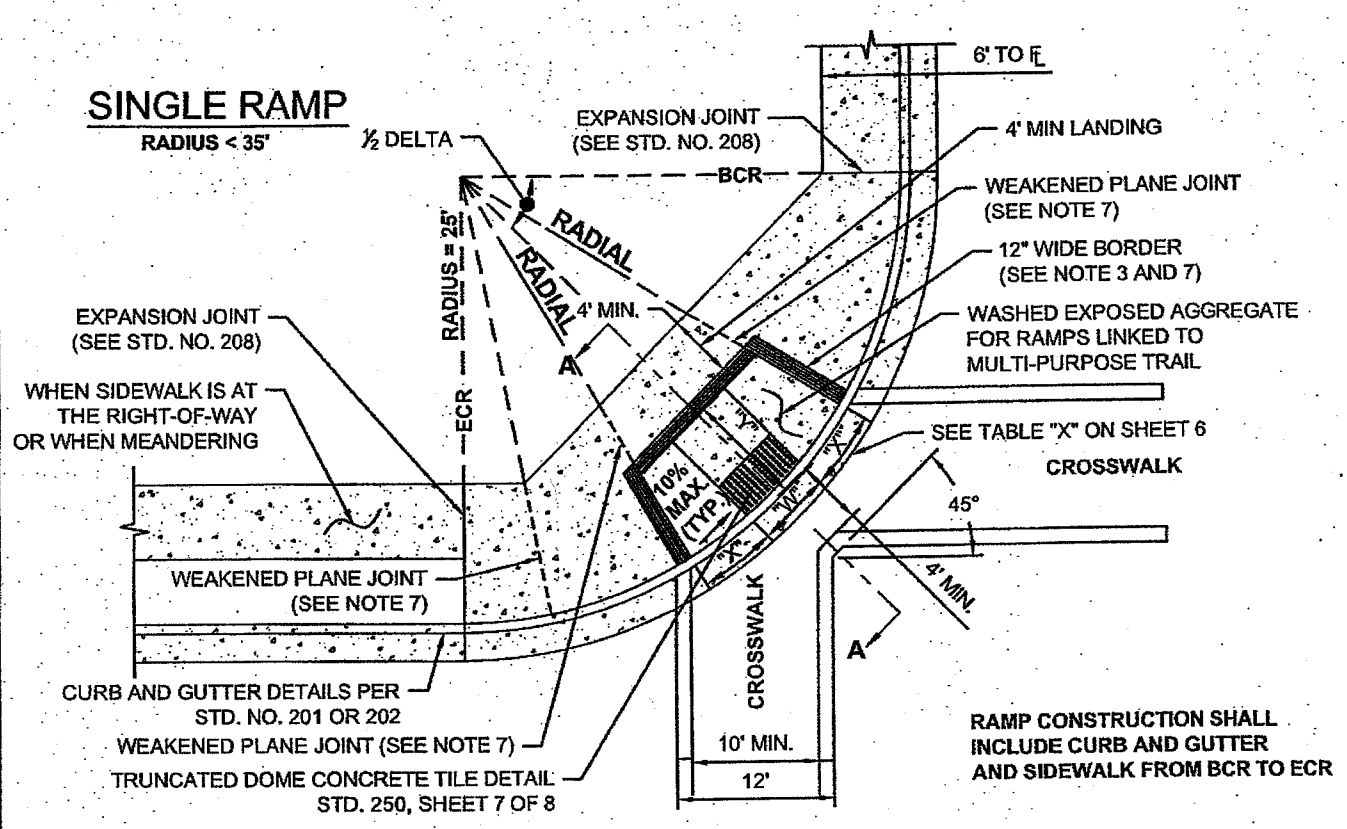
NO SCALE

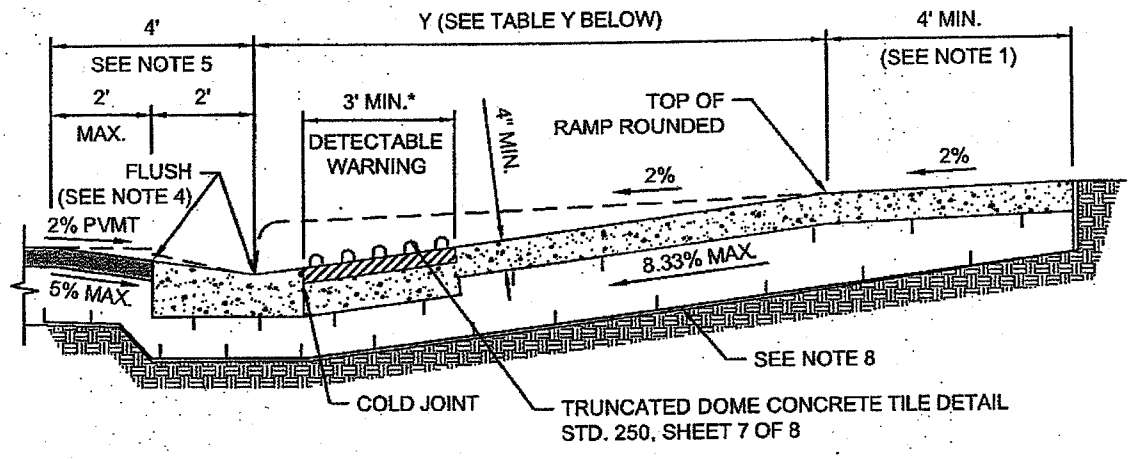
STANDARD No. 1200

REVISIONS		REV	BY:	APR'D	DATE	REV	BY:	APR'D	DATE
		1	JK	JP	08-05-10				
		2							
		3							

SINGLE RAMP

RADIUS < 35'





SECTION A - A

SEE SHEET 8 OF 8 FOR NOTES.

TABLE Y

CF	Y*
6"	7.90'
8"	10.53'

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

* 'Y' SHALL NOT EXCEED 10.53', UNLESS APPROVED BY THE CITY ENGINEER

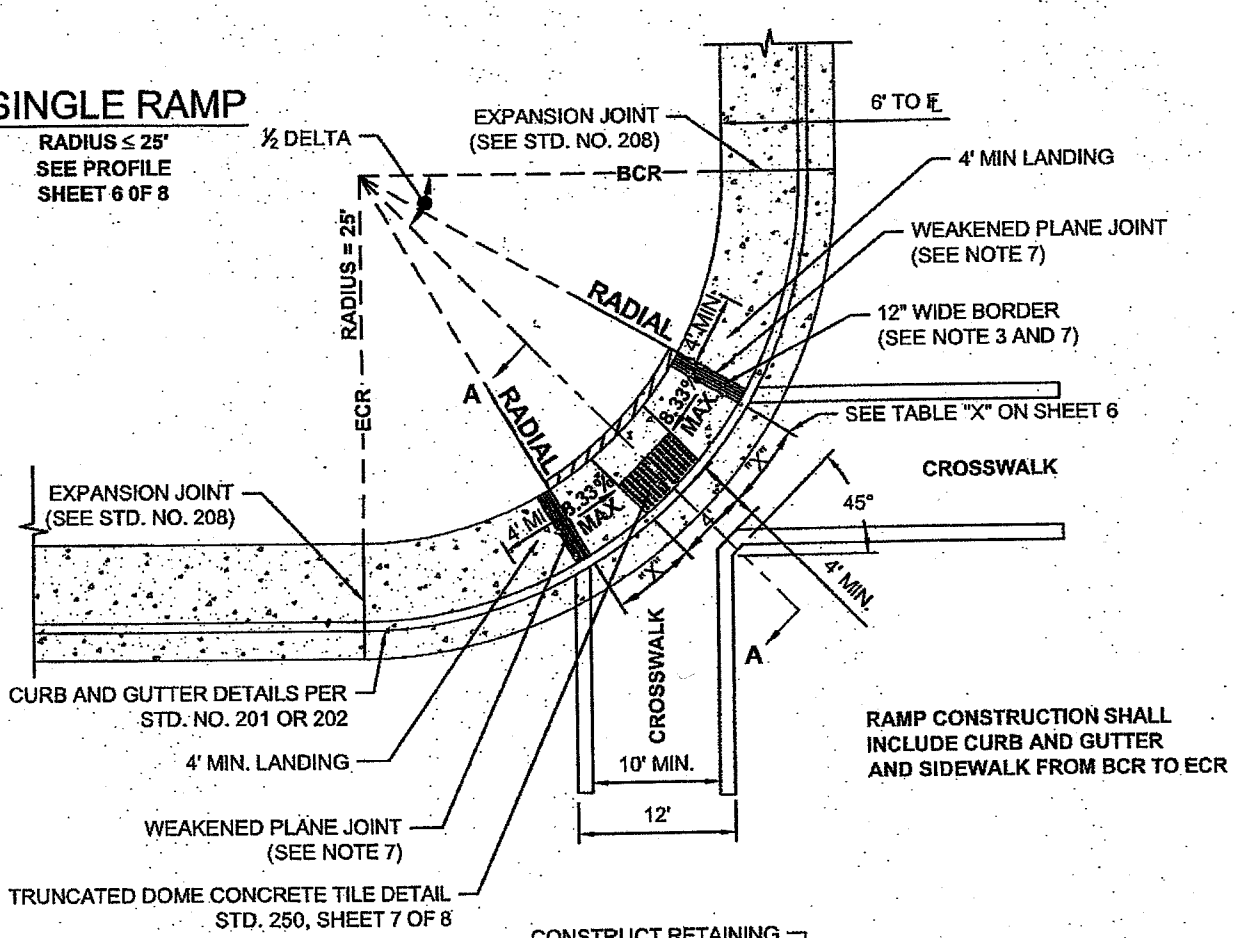
APRON WIDTH TABLE - W

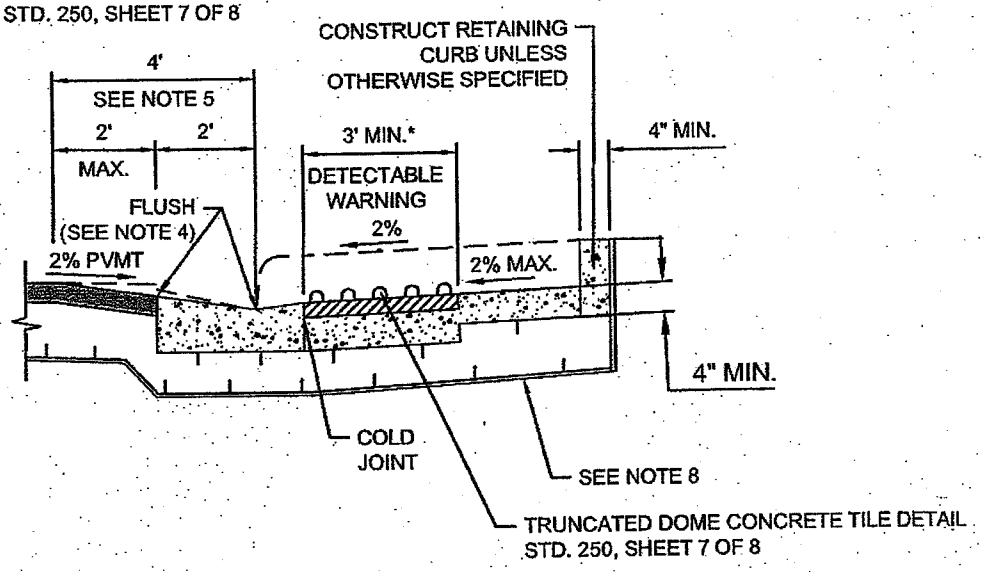
W	RAMP TYPE
4'	STANDARD PEDESTRIAN
6'	LINKED TO MULTI-PURPOSE TRAIL

REVISIONS		DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION	City of La Quinta	STANDARD PLAN No.
No.	DATE	APPROVED BY: Timothy R. Jonasson 9/21/09 TIMOTHY R. JONASSON, P.E. DATE Public Works Director/ City Engineer R.C.E. No. 45843	CURB RAMP CASE A LIMITED USE - SUBJECT TO CITY ENGINEER APPROVAL	250
				SHEET 1 OF 8

SINGLE RAMP

RADIUS ≤ 25'
SEE PROFILE SHEET 6 0F 8





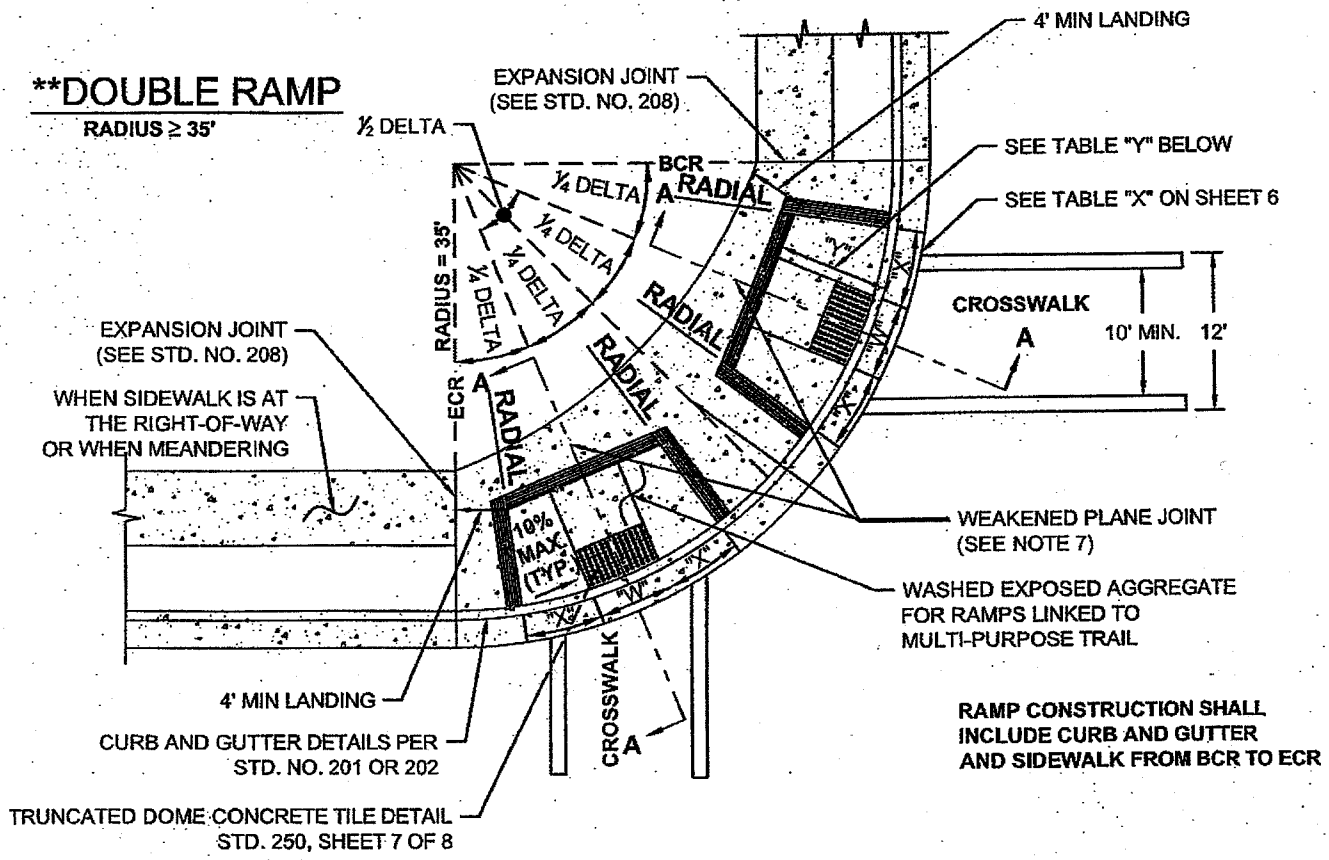
SECTION A - A

SEE SHEET 8 OF 8 FOR NOTES.

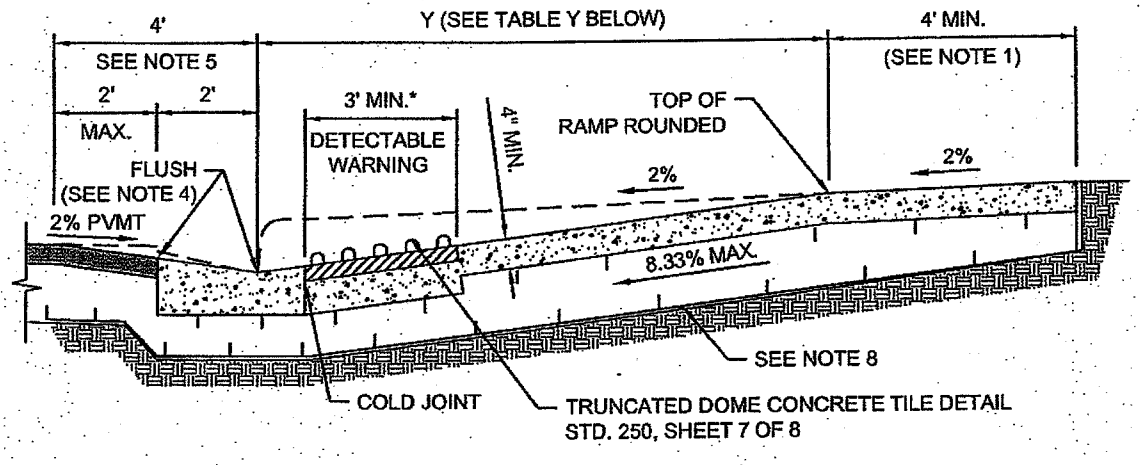
REVISIONS		DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION	City of La Quinta	STANDARD PLAN No.
No.	DATE	APPROVED BY: Timothy R Jonasson 4/21/09	CURB RAMP CASE B	250
		TIMOTHY R. JONASSON, P.E. DATE *Public Works Director / City Engineer* *R.C.E. No. 45843*	*LIMITED USE - SUBJECT TO CITY ENGINEER APPROVAL*	SHEET 2 OF 8

**DOUBLE RAMP

RADIUS ≥ 35'



RAMP CONSTRUCTION SHALL INCLUDE CURB AND GUTTER AND SIDEWALK FROM BCR TO ECR



SECTION A - A

SEE SHEET 8 OF 8 FOR NOTES.

TABLE - Y

CF	Y*
6"	7.90'
8"	10.53'

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

APRON WIDTH TABLE - W

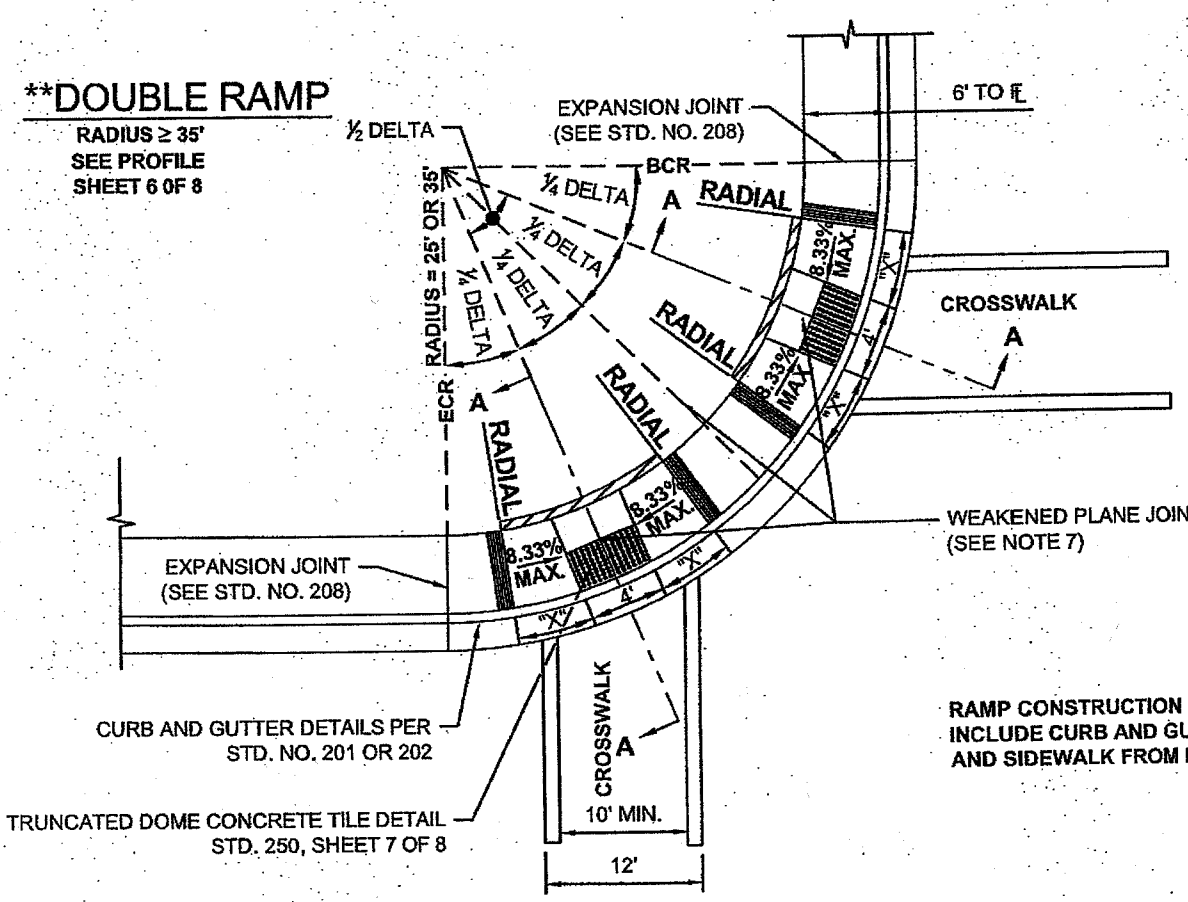
W	RAMP TYPE
4'	STANDARD PEDESTRIAN
6'	LINKED TO MULTI-PURPOSE TRAIL

* 'Y' SHALL NOT EXCEED 10.53', UNLESS APPROVED BY THE CITY ENGINEER
** ELIMINATE ONE RAMP IF NO FUTURE PATH OF TRAVEL EXIST

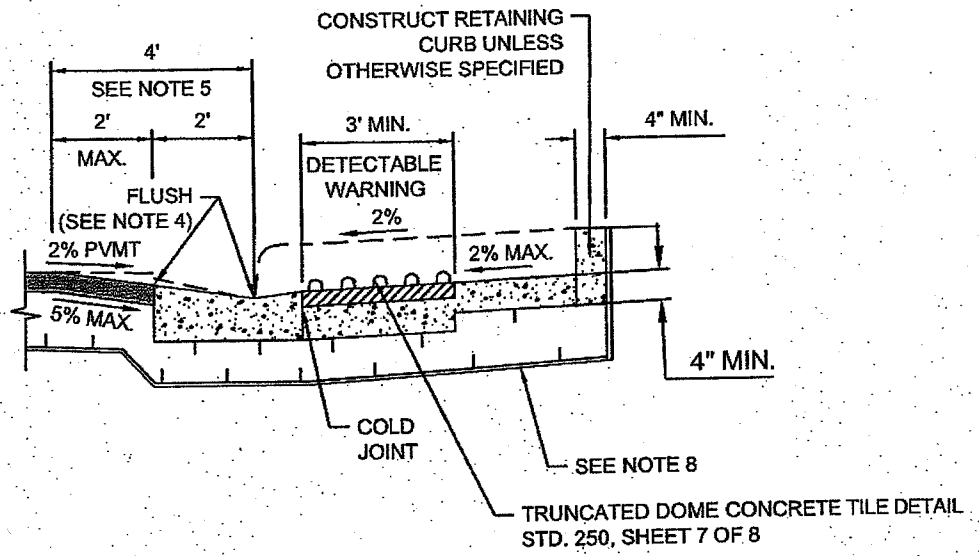
REVISIONS		DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION	City of La Quinta	STANDARD PLAN No.
No.	DATE	APPROVED BY: Timothy R. Jonasson 4/21/09	CURB RAMP CASE C	250
		TIMOTHY R. JONASSON, P.E. DATE *Public Works Director / City Engineer* *R.C.E. No. 45843*		SHEET 3 OF 8

**DOUBLE RAMP

RADIUS ≥ 35'
SEE PROFILE
SHEET 6 0F 8



RAMP CONSTRUCTION SHALL INCLUDE CURB AND GUTTER AND SIDEWALK FROM BCR TO ECR

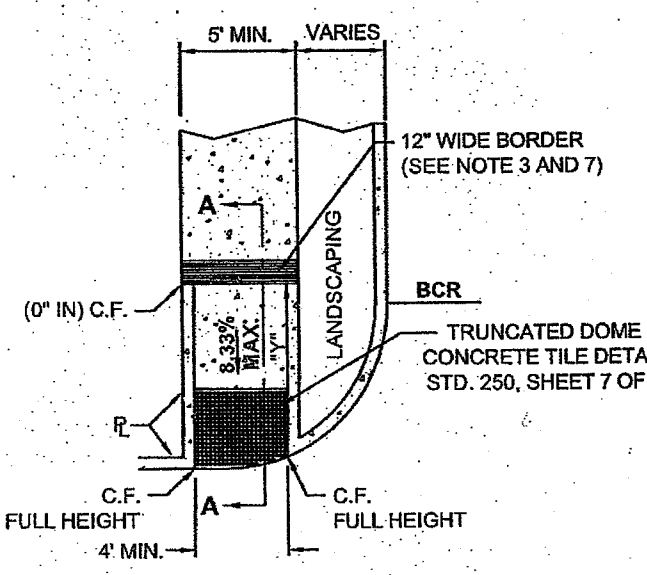


SECTION A - A

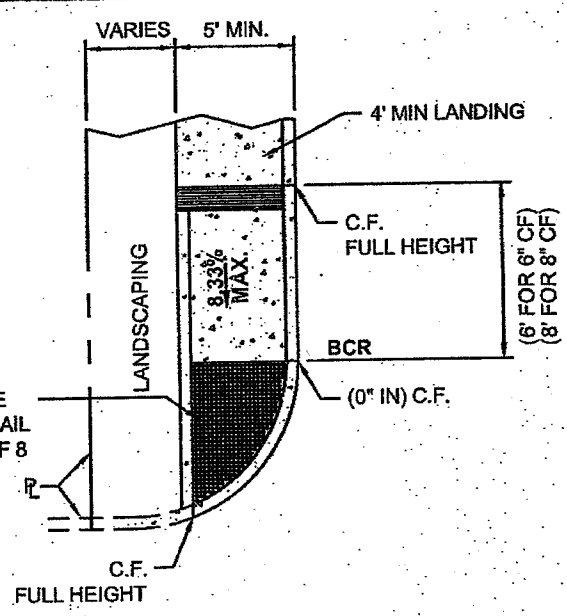
SEE SHEET 8 OF 8 FOR NOTES.

** ELIMINATE ONE RAMP IF NO FUTURE PATH OF TRAVEL

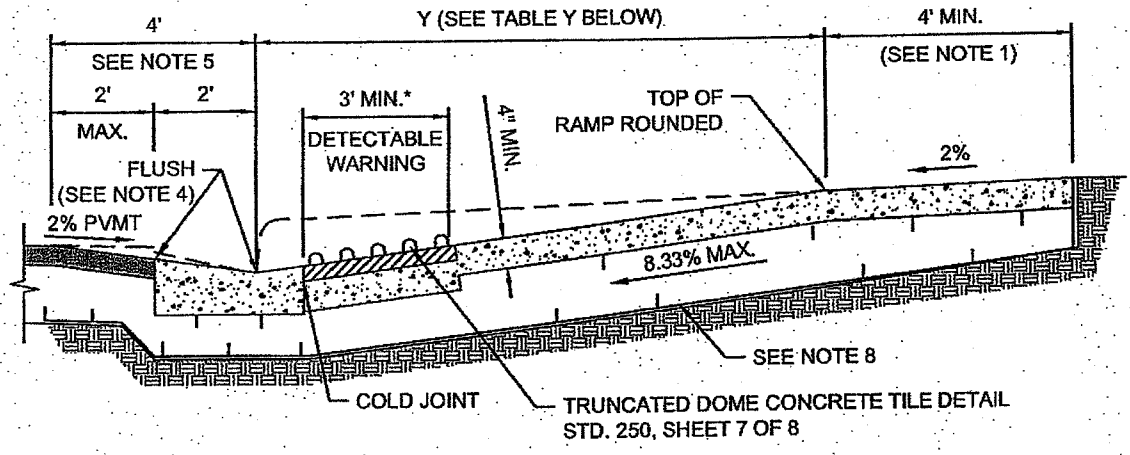
REVISIONS		DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION	City of La Quinta	STANDARD PLAN No.
No.	DATE	APPROVED BY: Timothy R Jonasson 4/21/09	CURB RAMP CASE D	250
		TIMOTHY R. JONASSON, P.E. DATE Public Works Director / City Engineer R.C.E. No. 45843		SHEET 4 OF 8



CASE E



CASE F



SECTION A - A

SEE SHEET 8 OF 8 FOR NOTES.

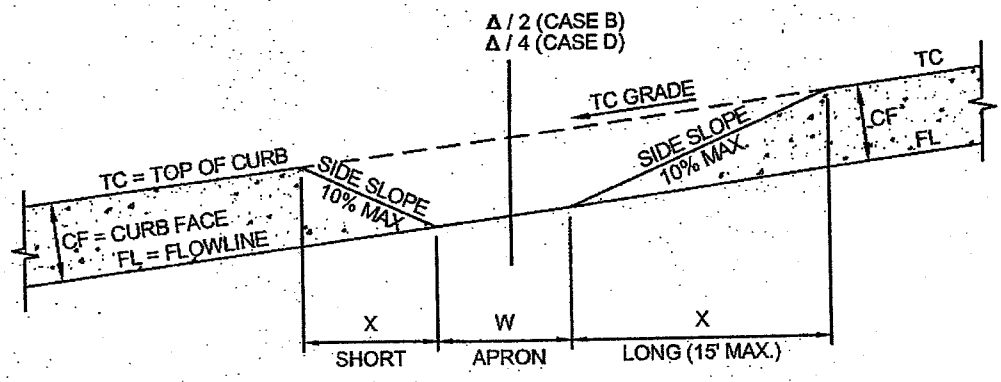
$$Y = \frac{\text{CURB FACE (FT.)}}{6.33\%}$$

TABLE - Y

CF	Y*
6"	7.90'
8"	10.53'

* 'Y' SHALL NOT EXCEED 10.53', UNLESS APPROVED BY THE CITY ENGINEER

REVISIONS		DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION	City of La Quinta	STANDARD PLAN No.
No.	DATE	APPROVED BY: Timothy R Jonasson 11/21/09 TIMOTHY R. JONASSON, P.E. DATE Public Works Director / City Engineer R.C.E. No. 45843	CURB RAMP CASE E & CASE F	250
				SHEET 5 OF 8



PROFILE

CASE B & D

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

TABLE - X

TO CALCULATE "X" DIMENSION

SHORT SIDE (DOWN SLOPE):

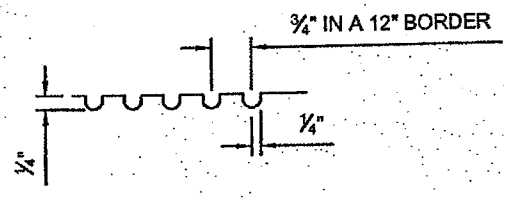
$$X_S\ (FT) = \frac{\text{CURBFACE (FT)}}{\text{SIDE SLOPE + TC GRADE}}$$

LONG SIDE (UP SLOPE):

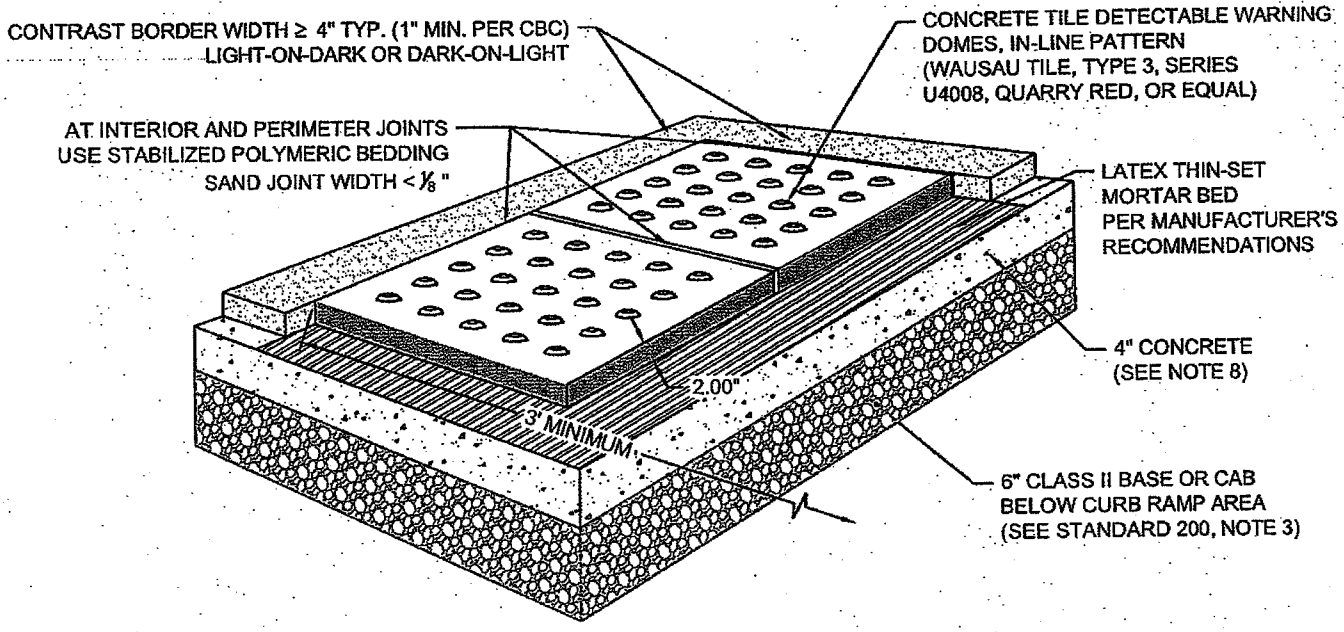
$$X_L\ (FT) = \frac{\text{CURBFACE (FT)}}{\text{SIDE SLOPE - TC GRADE}}$$

ENGINEER TO SHOW X_S AND X_L ON IMPROVEMENT PLANS

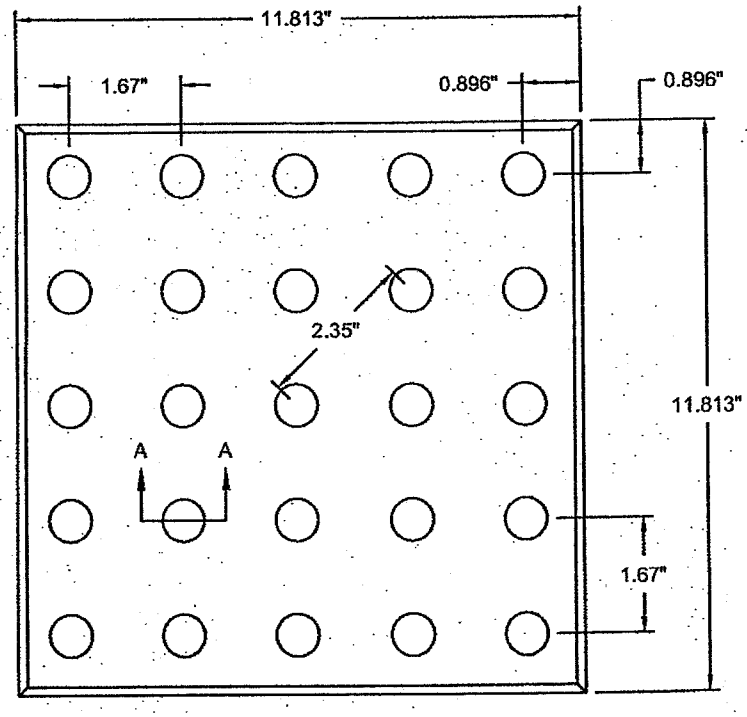
GROOVE DETAIL

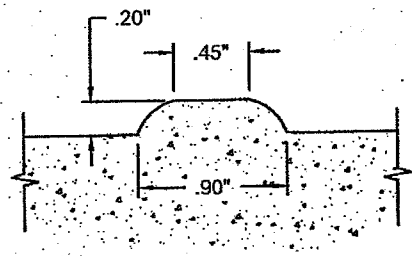


REVISIONS		DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION	City of La Quinta	STANDARD PLAN No.
No.	DATE	APPROVED BY: Timothy R Jonasson 4/21/09	CURB RAMP	250
		TIMOTHY R. JONASSON, P.E. DATE Public Works Director / City Engineer R.C.E. No. 45843		SHEET 6 OF 8



ISOMETRIC VIEW





SECTION A - A

CONCRETE TILE DETECTABLE WARNING DOMES

IN-LINE PATTERN
(WAUSAU TILE, TYPE 3, SERIES U4008, QUARRY RED, OR EQUAL)

REVISIONS		DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION	City of La Quinta	STANDARD PLAN No.
No.	DATE			
1	10 / 09	APPROVED BY: Timothy R. Jonasson 10/26/09 TIMOTHY R. JONASSON, P.E. DATE Public Works Director / City Engineer R.C.E. No. 45843	TRUNCATED DOME CONCRETE TILE DETAIL	250
				SHEET 7 OF 8

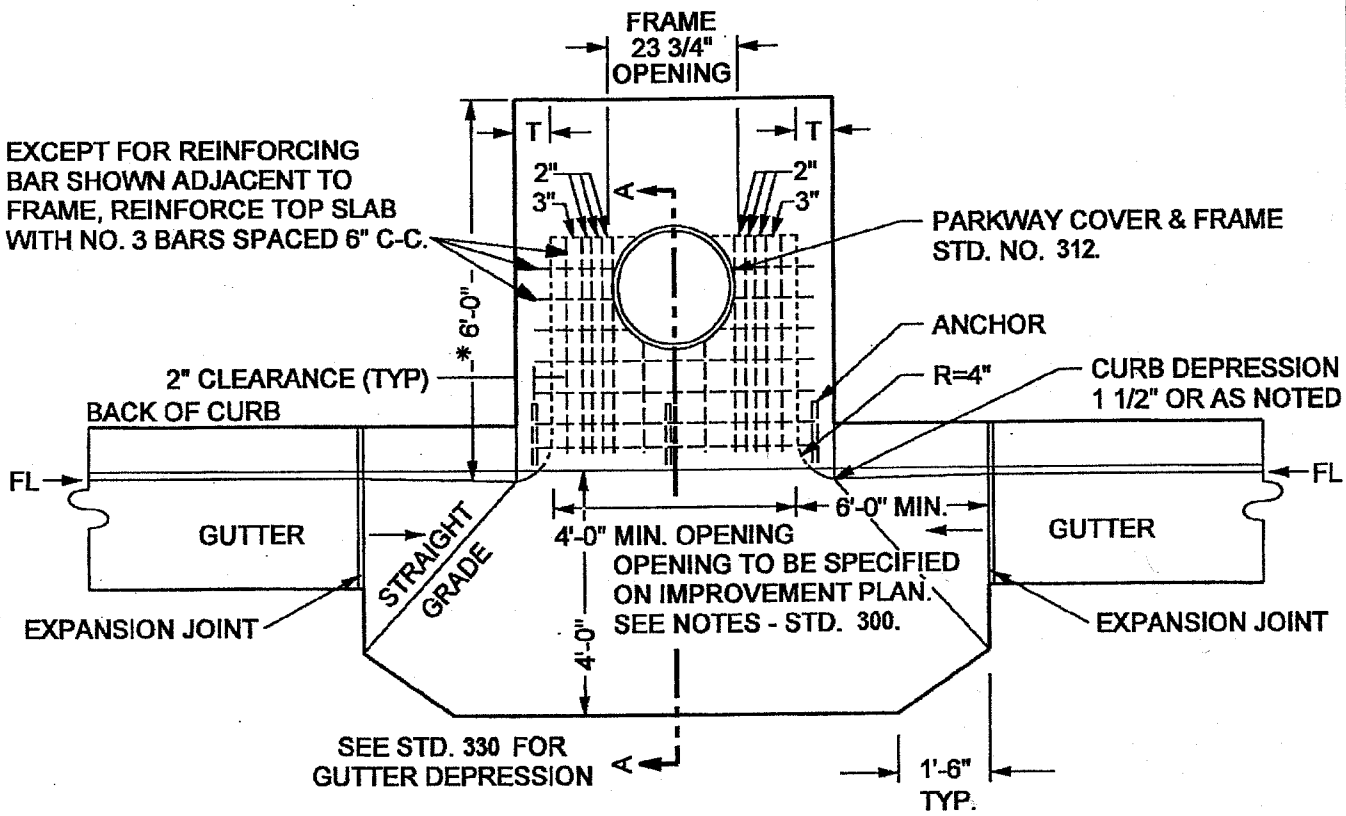
CONSTRUCTION NOTES:

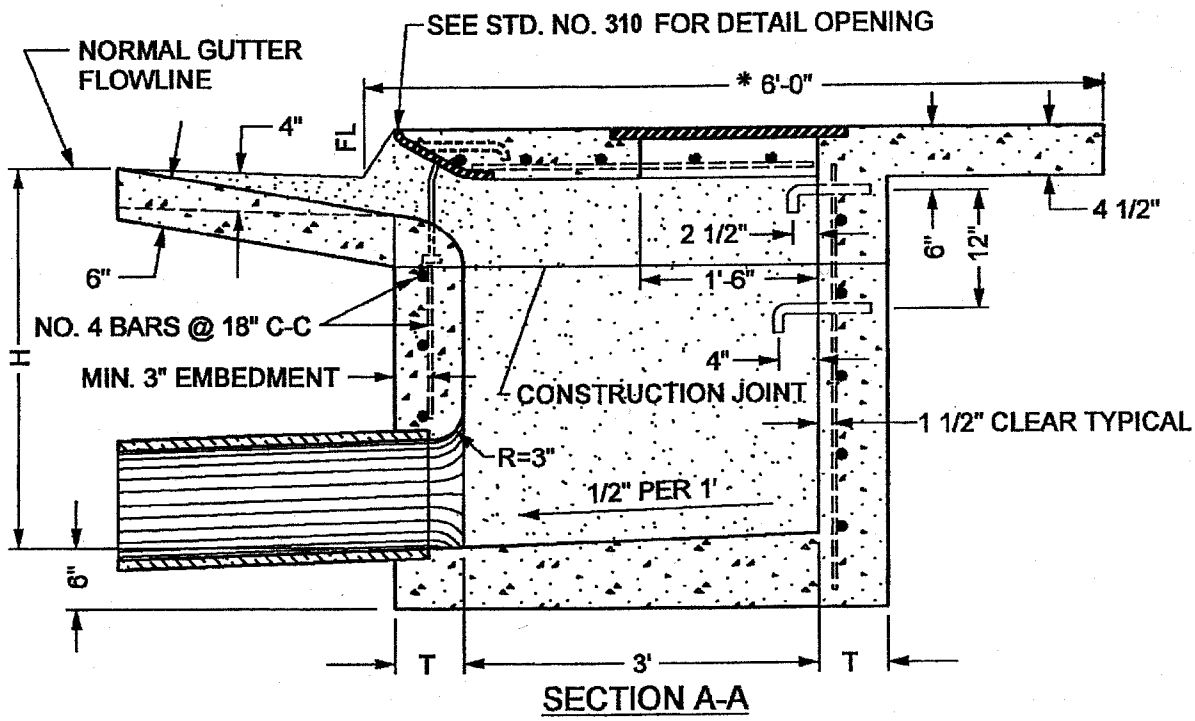
1. IF DISTANCE FROM CURB TO BACK OF SIDEWALK IS TOO SHORT TO ACCOMMODATE RAMP AND 4 FOOT LANDING, THEN USE THE CASE "B" RAMP.
2. IF SIDEWALK IS LESS THAN 6 FEET WIDE, THE FULL WIDTH OF THE SIDEWALK SHALL BE DEPRESSED AS SHOWN IN CASE B. MINIMUM SIDEWALK WIDTH IS 4 FEET FROM BACK OF CURB.
3. THE RAMP SHALL HAVE A 12 INCH WIDE BORDER WITH GROOVES ¼" WIDE AND ¼" DEEP APPROXIMATELY ¾" ON CENTER. SEE GROOVING DETAIL ON SHEET 6 OF 8.
4. TRANSITIONS FROM RAMPS TO WALKS, GUTTERS, OR STREETS SHALL BE FLUSH AND FREE OF ABRUPT CHANGES.
5. 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 FEET OF THE BOTTOM OF THE CURB RAMP.
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 EXPANSION JOINTS AT ¼ AND ¾ DELTAS WHEN RADIUS EQUALS 35 FEET, AT INSIDE EDGE OF GROOVED BORDER WHEN RADIUS EQUALS 25 FEET, AND RADIALLY IF ANGLE POINT OCCURS.
8. CONCRETE SPECIFICATION PER CITY STANDARD 200 - CONCRETE SPECIFICATIONS.

DETECTABLE WARNING NOTES:

1. TRUNCATED DOMES SHALL BE WAUSAU TILE, TYPE 3, SERIES U4008 OR EQUAL (QUARRY / BRICK RED), IN LINE, PRE-CAST CONCRETE TILES AND GROUTED IN PLACE. NO SURFACE APPLIED DOME MATS ARE ALLOWED. USE STABILIZED POLYMERIC BEDDING SAND AT TRUNCATED DOME TILES AT INTERIOR AND PERIMETER JOINTS. JOINT WIDTH < ⅛ ".
2. CURB RAMPS REQUIRE DETECTABLE WARNING DOMES FOR THE FULL WIDTH AND THREE (3) FEET IN DEPTH OF THE CURB RAMP SLOPE FROM THE CURB LINE WITHIN THE PUBLIC RIGHT-OF-WAY.
3. PRIVATE (ONSITE) TRUNCATED DOME INSTALLATION TO EXTEND FULL WIDTH AND DEPTH OF RAMP PER CALIFORNIA BUILDING CODE, EXCLUDING PRIVATELY FUNDED SINGLE FAMILY RESIDENCES.
4. THREE RUNNING FEET OF TRUNCATED DOMES AT FLUSH CURB INSTALLATIONS ARE REQUIRED FOR HAZARDOUS VEHICULAR AREAS. BOLLARDS ARE UTILIZED FOR PEDESTRIAN PROTECTION AT FLUSH CURB RETURNS OR EQUIVALENT FACILITIES AS APPROVED BY THE CITY ENGINEER.
5. SUBMIT CONCRETE DOME TILE AND POLYMERIC BEDDING SAND SPECIFICATIONS OR SAMPLES TO THE CITY FOR APPROVAL PRIOR TO INSTALLATION.
6. THE DETECTABLE WARNING SURFACE SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS 6" FROM THE CURB FACE.
7. MATCH ALL TILE CORNERS SUCH THAT ALL TRUNCATED DOME TILES ALIGN AND MAINTAIN DOME DIMENSIONAL SPACING. TRUNCATED DOME TILES SHALL BE ALIGNED PARALLEL WITH RAMP SLOPE DIRECTION. TRUNCATED DOME TILES CUT TO MATCH CURB RETURN RADIUS. GRIND EDGE TO AVOID TRIP HAZARD, AS REQUIRED.

REVISIONS		DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION	City of La Quinta	STANDARD PLAN No.
No.	DATE			
1	10 / 09	APPROVED BY: Timothy R Jonasson 10/26/09	CURB RAMP CONSTRUCTION NOTES	250
		TIMOTHY R. JONASSON, P.E. DATE Public Works Director / City Engineer R.C.E. No. 45843		SHEET 8 OF 8





SECTION A-A

CATCH BASIN SHALL BE CLASS "A" P.C.C.
*TOP OF CATCH BASIN TO BE POURED MONOLITHIC WITH SIDEWALK, 6 FT.

R.C.T.D. STD. No. 300

REVISIONS:

APPROVED 08/21/01	City of La Quinta	STANDARD
CHRIS A. VOGT CITY ENGINEER RCE 44250	**CURB INLET CATCH BASIN NO.1**	300
		SHEET 1 OF 2

CONNECTION PIPES MAY BE PLACED ANY POSITION AROUND THE WALLS, PROVIDED THEY POINT IN THE PROPER DIRECTION AND THE POSITION IS OTHERWISE CONSISTENT WITH THE IMPROVEMENT PLAN.

CURVATURE OF THE LIP AND SIDEWALLS AT GUTTER OPENING SHALL BE FORMED BY CURVED FORMS AND SHALL NOT BE MADE BY PLASTERING.

DIMENSIONS:

T = 6" IF H IS 8 FEET OR LESS.

T = 8" IF H IS GREATER THAN 8 FEET AND LESS THAN 20 FEET.

H = 3 FEET 6 INCHES, UNLESS OTHERWISE SPECIFIED.

FLOOR OF BASIN SHALL BE GIVEN A STEEL - TROWELLED FINISH.

MANHOLE SHALL BE PLACED AS SHOWN ON STANDARD NO. 300, UNLESS NOTED DIFFERENTLY ON IMPROVEMENT PLANS.

OUTLET PIPE SHALL BE TRIMMED TO THE FINAL SHAPE AND LENGTH BEFORE CONCRETE IS POURED.

OPENING SHALL BE 4'-0" UNLESS OTHERWISE SPECIFIED.

REINFORCING STEEL SHALL BE NO. 3 ROUND DEFORMED BARS IN TOP SLAB AND NO. 4 BARS AT 18" CENTERS IN THE SIDES OF BOX.

STEPS: 3/4 INCH PLAIN ROUND GALVANIZED STEEL STEPS (ALHAMBRA FDY. A-3320 OR EQUAL) ARE REQUIRED AS FOLLOWS:

IF H IS 3.5 FEET OR LESS, NO STEPS ARE REQUIRED.

IF H IS MORE THAN 3.5 FEET, AND NOT MORE THAN 5 FEET, INSTALL 1 STEP 16" ABOVE FLOOR OF BASIN.

IF H IS MORE THAN 5 FEET, INSTALL STEPS 12 INCHES APART, WITH THE TOP STEP 6 INCHES BELOW THE SURFACE OF THE BASIN.

ALL STEPS SHALL BE 4 INCHES FROM THE WALL, EXCEPT THE TOP STEP, WHICH SHALL BE 2 1/2 INCHES (CLEAR) FROM THE WALL, AND ANCHORED NOT LESS THAN 5 INCHES IN THE WALL OF THE BASIN.

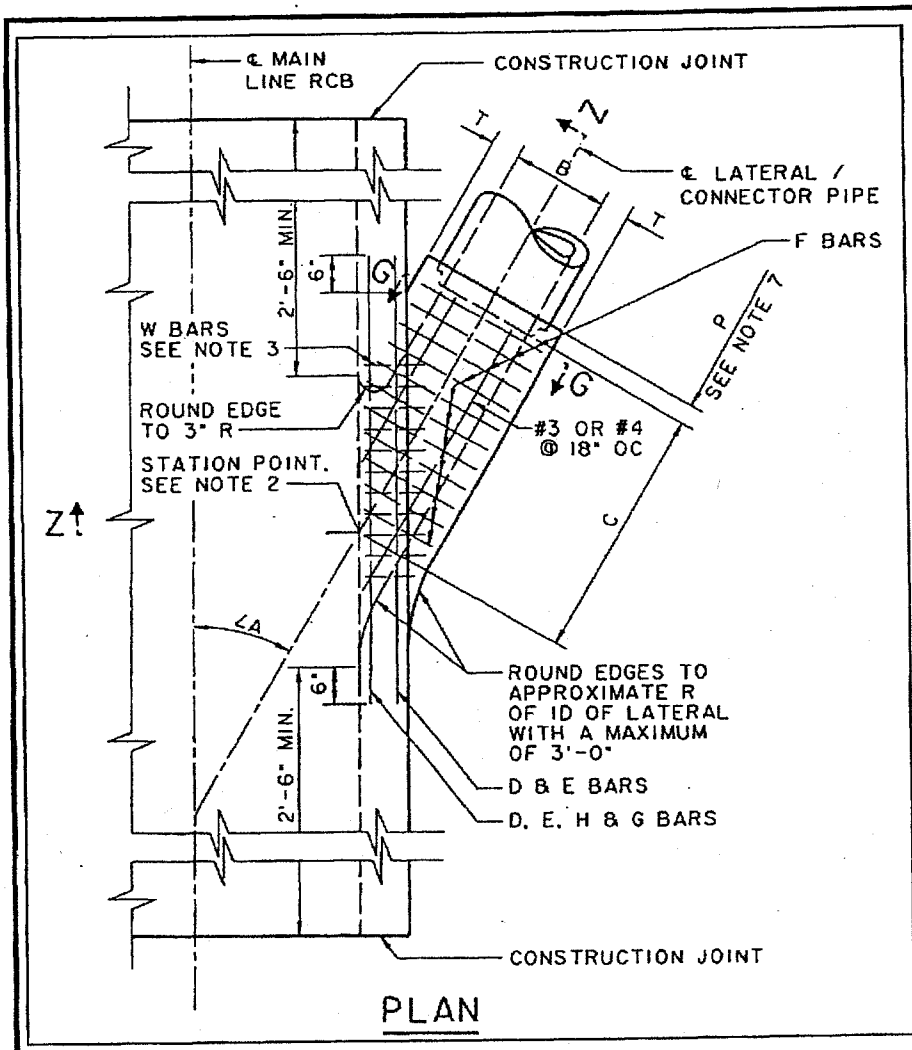
SURFACE OF ALL EXPOSED CONCRETE IN BASIN SHALL CONFORM IN SLOPE, GRADE, COLOR, FINISH AND SCORING TO EXISTING OR PROPOSED CURB AND WALL ADJACENT TO THE BASIN.

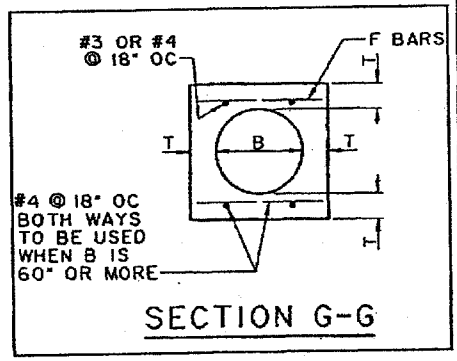
CONCRETE SHALL BE CLASS "A" WHEN THE BASIN IS TO BE CONSTRUCTED WITHIN THE LIMITS OF A PROPOSED SIDEWALK OR IS CONTIGUOUS TO SUCH A SIDEWALK. THE TOP OF THE BASIN SHALL BE POURED MONOLITHIC WITH THE SIDEWALK, USING USING CLASS "A" CONCRETE IN THE SIDEWALK AND THE TOP OF THE CATCH BASIN FINISHED PER SIDEWALK STANDARDS.

R.C.T.D. STD. No. 300 (A)

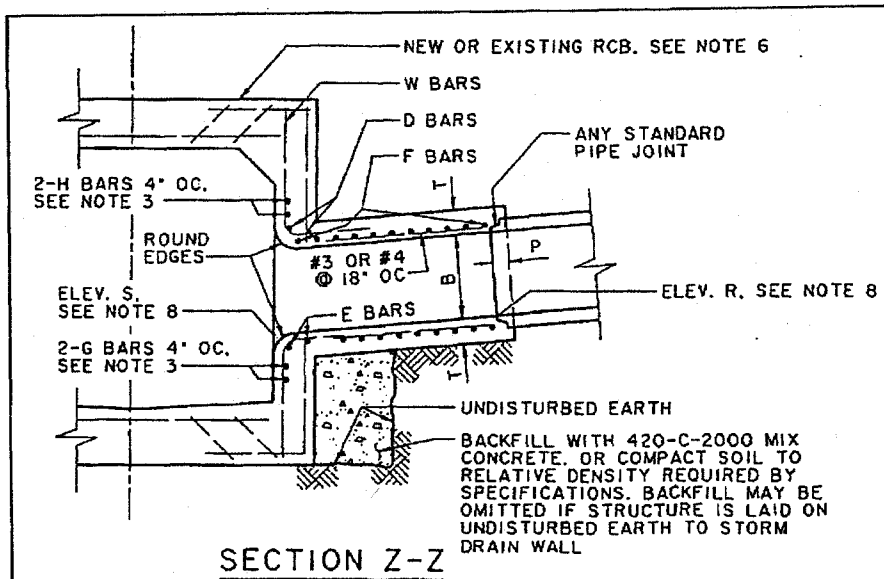
REVISIONS:

APPROVED 08/21/01		STANDARD
CHRIS A. VOGT CITY ENGINEER RCE 44250	**CURB INLET CATCH BASIN NO. 1**	300
		SHEET 2 OF 2





B (INCHES)	T (INCHES)	D.E.H & G BARS	F BARS
12	5	#5	#4 @ 6" OC
15	5		
18	5		
21	5		
24	5 1/4		
27	5 1/2		
30	6		
33	6 1/4		
36	6 1/2		
39	7		
42	7 1/2	#6	#5 @ 6" OC
45	7 3/4		
48	8		
51	8 1/2		
54	9		
57	9 1/4		
60	9 1/2		
63	10		
66	10 1/4		
69	10 3/4		
72	11		
78	11 3/4		
84	12 1/2		
90	13 1/4	#7	#6 @ 6" OC
96	14		
102	15 1/2		
108	16		
114	16 1/2		
120	17		
126	17		
132	17 1/2		
138	17 1/2		
144	18		



A.P.W.A. STD. No. 333-0

REVISIONS:

APPROVED 08/21/01

CHRIS A. VOGT
CITY ENGINEER
RCE 44250

City of La Quinta

JUNCTION STRUCTURE-PIPE TO RCB

STANDARD

352

NOTES

1. VALUES FOR A, B AND C SHALL BE SHOWN ON THE PROJECT DRAWINGS. ELEVATION R AND ELEVATION S SHALL BE SHOWN WHEN REQUIRED PER NOTE 8.

2. STATIONS SPECIFIED ON THE PROJECT DRAWINGS APPLY AT THE INTERSECTION OF CENTER LINES OF MAIN LINE AND LATERALS. EXCEPT THAT STATIONS FOR CATCH BASIN CONNECTOR PIPES APPLY AT INSIDE WALL OF STRUCTURE.

3. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 40, AND SHALL TERMINATE 1 1/2" CLEAR OF CONCRETE SURFACES UNLESS OTHERWISE SHOWN.

   a. W BARS ARE OF SIZE AND SPACING SPECIFIED FOR WALL STEEL ON PROJECT DRAWINGS, AND SHALL BE CUT IN CENTER OF OPENING AND BENT INTO TOP AND BOTTOM OF JUNCTION STRUCTURE.
   b. OMIT H BARS WHEN SOFFIT OF SPUR IS 12" OR LESS BELOW SOFFIT OF MAIN LINE, AND OMIT G BARS WHEN INVERT OF SPUR IS 12" OR LESS ABOVE FLOOR OF MAIN LINE.

4. JUNCTION STRUCTURE SHALL BE POURED MONOLITHICALLY WITH MAIN LINE, MANHOLE OR TRANSITION STRUCTURE.

5. FLOOR OF STRUCTURE SHALL BE STEEL-TROWELED TO THE SPRING LINE.

6. WHEN CONNECTING TO EXISTING RCB, BREAKOUT LIMITS AND DETAILS SHALL BE SHOWN ON THE PROJECT DRAWINGS.

7. EMBEDMENT, P, SHALL BE 5" FOR B = 96" OR LESS AND 8" FOR B OVER 96".

8. IF ELEVATION R AND ELEVATION S ARE NOT SHOWN ON THE PROJECT DRAWINGS THEN THE INLET OPENING SHALL FALL 6" BELOW THE SOFFIT OF THE MAIN LINE WITH THE INLET PIPE LAID ON A STRAIGHT GRADE FROM MAIN LINE TO CATCH BASIN OR TO GRADE BREAK IN INLET LINE. ELEVATION S SHALL BE SHOWN ON THE PROJECT DRAWINGS IF THE INLET OPENING FALLS MORE THAN 6" BELOW THE SOFFIT OF THE MAIN LINE WITH THE INLET PIPE LAID ON A STRAIGHT GRADE AS STATED ABOVE.
   ELEVATION R SHALL BE SHOWN ON THE PROJECT DRAWINGS ONLY WHEN A STUB IS TO BE PROVIDED FOR A FUTURE CONNECTION.

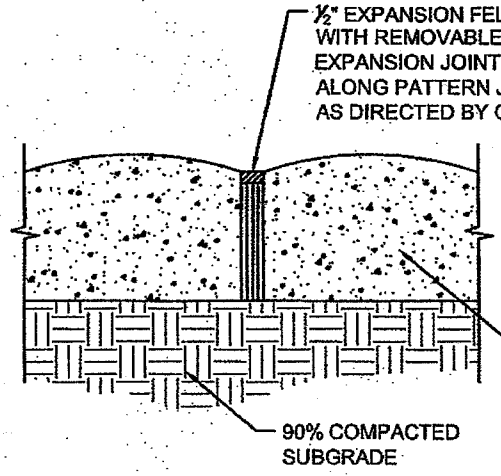
9. LATERALS OR CONNECTOR PIPES 24" OR LESS IN DIAMETER SHALL BE NO MORE THAN 5' ABOVE THE INVERT. LATERALS OR CONNECTOR PIPES 27" OR LARGER IN DIAMETER SHALL BE NO MORE THAN 18" ABOVE THE INVERT, WITH THE EXCEPTION THAT CATCH BASIN CONNECTOR PIPES LESS THAN 50' IN LENGTH SHALL NOT BE MORE THAN 5' ABOVE THE INVERT.

10. THE NEED FOR AN EDGE BEAM AND/OR ADDITIONAL REINFORCEMENT SHALL BE INVESTIGATED BY THE ENGINEER FOR ANY ONE OF THE FOLLOWING CONDITIONS:
    a. ANGLE A IS LESS THAN 30°
    b. TOP OF INLET PIPE IS LESS THAN 6" BELOW THE SOFFIT
    c. FLOW LINE OF INLET PIPE IS LESS THAN 7" ABOVE THE FLOOR OF THE RCB AT THE INSIDE FACE

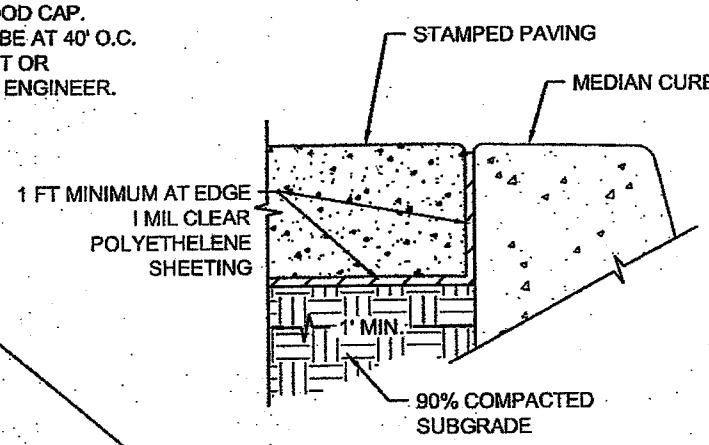
A.P.W.A. STD. No. 333-0

REVISIONS:

APPROVED 08/21/01	City of La Quinta	STANDARD
CHRIS A. VOGT CITY ENGINEER RCE 44250	**JUNCTION STRUCTURE-PIPE TO RCB**	352
		SHEET 2 OF 2

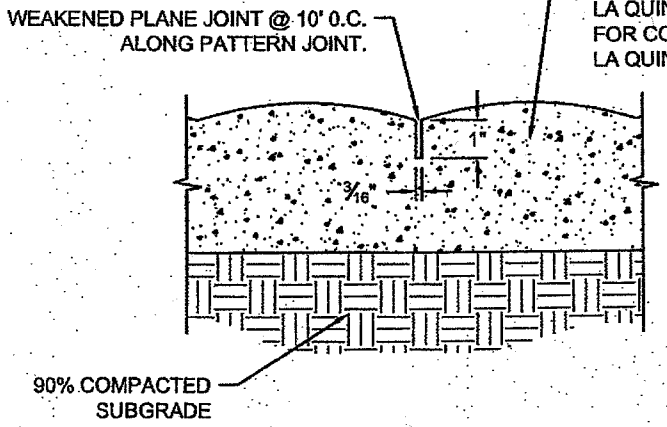


EXPANSION JOINT

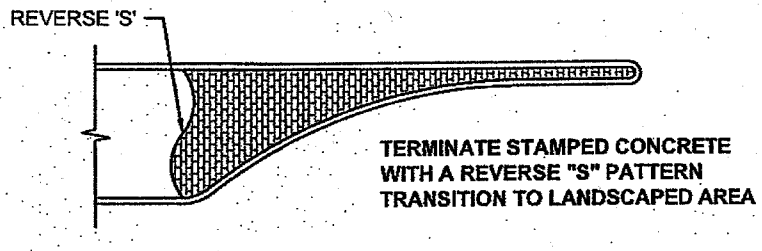


PAVING-CURB INTERFACE

STAMPED COLORED CONCRETE PAVING WITH RUNNING BOND BRICK (4" x 8") PATTERN, PERPENDICULAR TO CURB FACE, ROUNDED TOP, MINIMUM 4" DEPTH, ¼" RADIUS AT EDGES. (INTEGRAL COLOR, L.M. SCOFIELD, C-32, LA QUINTA QUARRY RED OR EQUAL.) FOR CONCRETE SPECIFICATIONS SEE CITY OF LA QUINTA STD. 200.

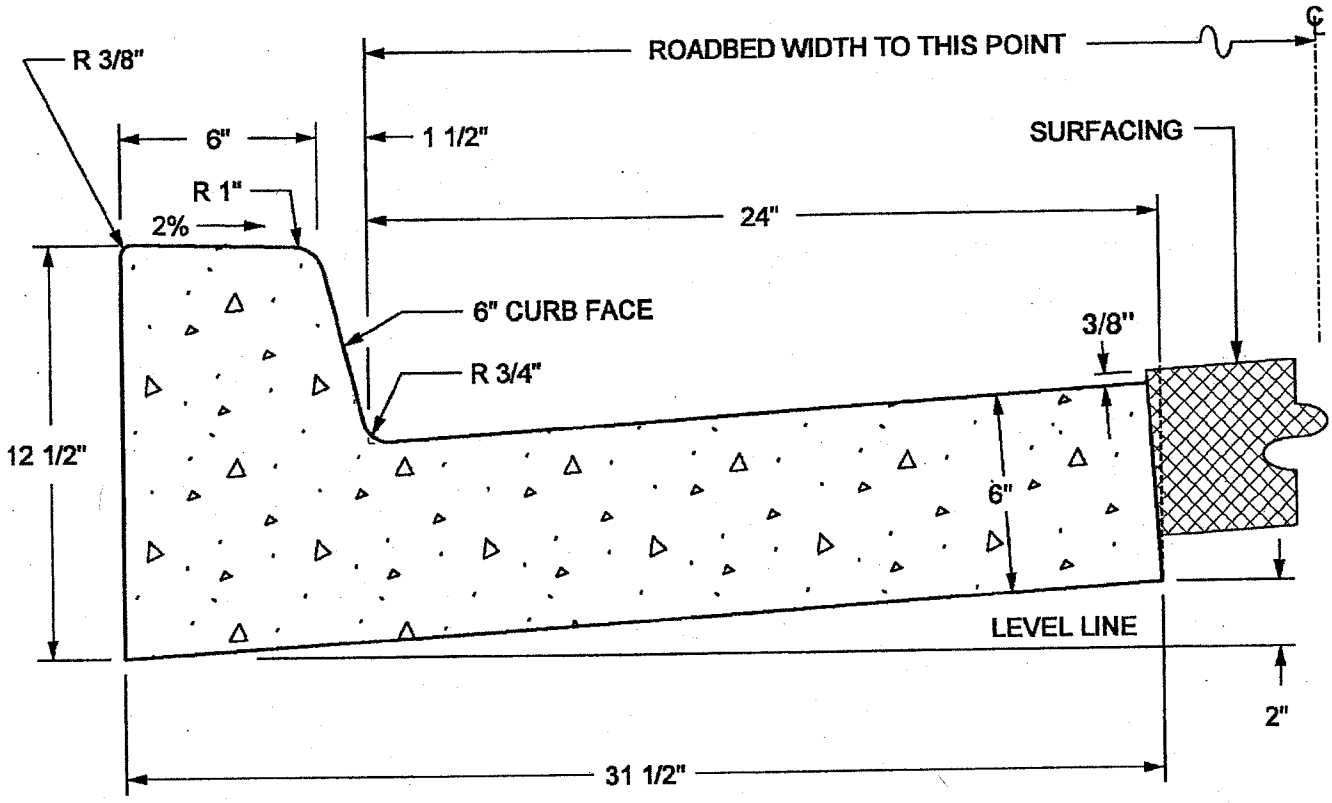


CONTROL JOINT



PLAN VIEW PATTERN DETAIL

REVISIONS		DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION	City of La Quinta	STANDARD PLAN No.
No.	DATE	APPROVED BY: Timothy R Jonasson 4/21/09 TIMOTHY R. JONASSON, P.E. DATE *Public Works Director / City Engineer* *R.C.E. No. 45843*	STAMPED CONCRETE FOR MEDIAN HARDSCAPE	720
				SHEET 1 OF 1



CLASS "C" CONCRETE

1.601 CU. FT. / L.F.

1 CU. YD. = 16.86 L.F.

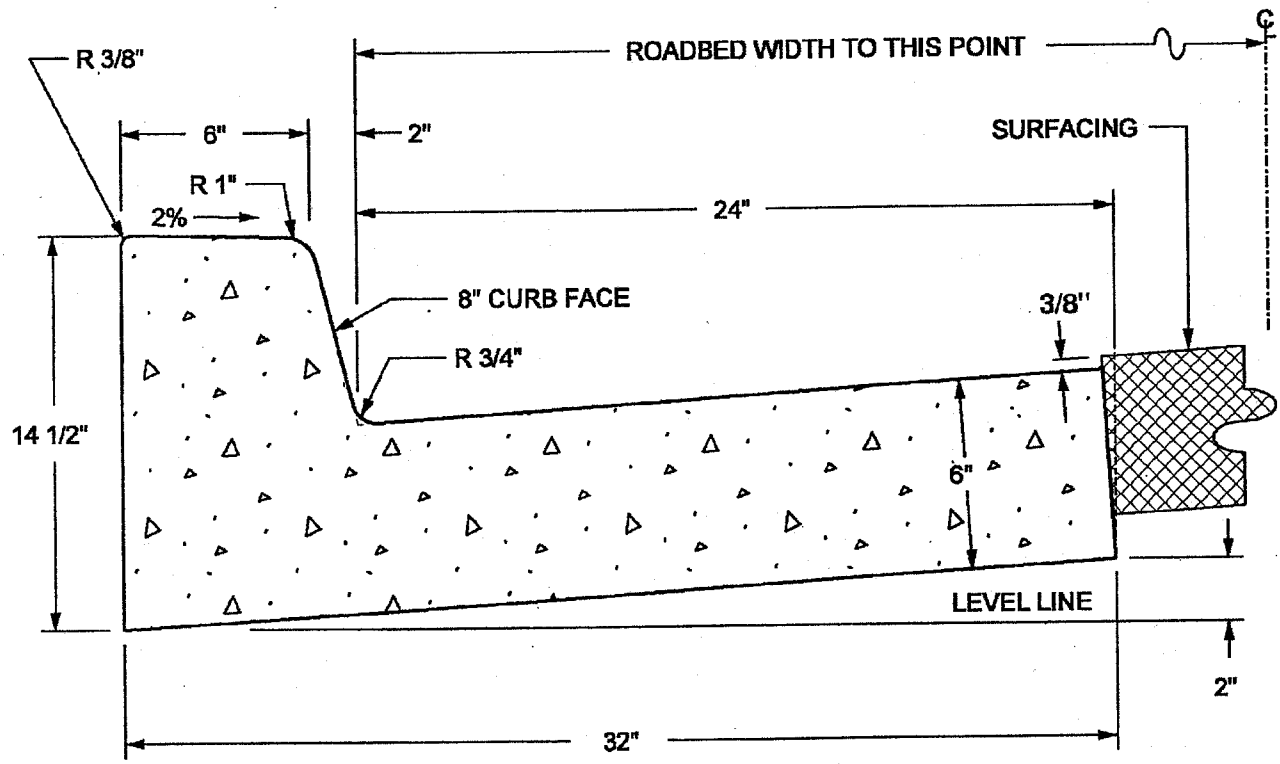
MINIMUM PERMISSIBLE GRADE IS 0.50% UNLESS SPECIFIC APPROVAL IS GIVEN BY THE CITY ENGINEER PRIOR TO DESIGN.

NOTE: IF AN EXIST. EXPANSION JOINT IS 10' OR LESS AWAY FROM THE DIMENSIONED JOINT, REMOVE EXIST. CURB TO THE EXIST. EXPANSION JOINT IN LIEU OF THE SAW CUT.

R.C.T.D. STD. No. 200

REVISIONS:

APPROVED 08/21/01	City of La Quinta	STANDARD
CHRIS A. VOGT CITY ENGINEER RCE 44250	**6" CURB AND GUTTER**	201
		SHEET 1 OF 1



CLASS "c" CONCRETE

1.73 CU. FT. / L.F.

1 CU. YD. = 15.60 L.F.

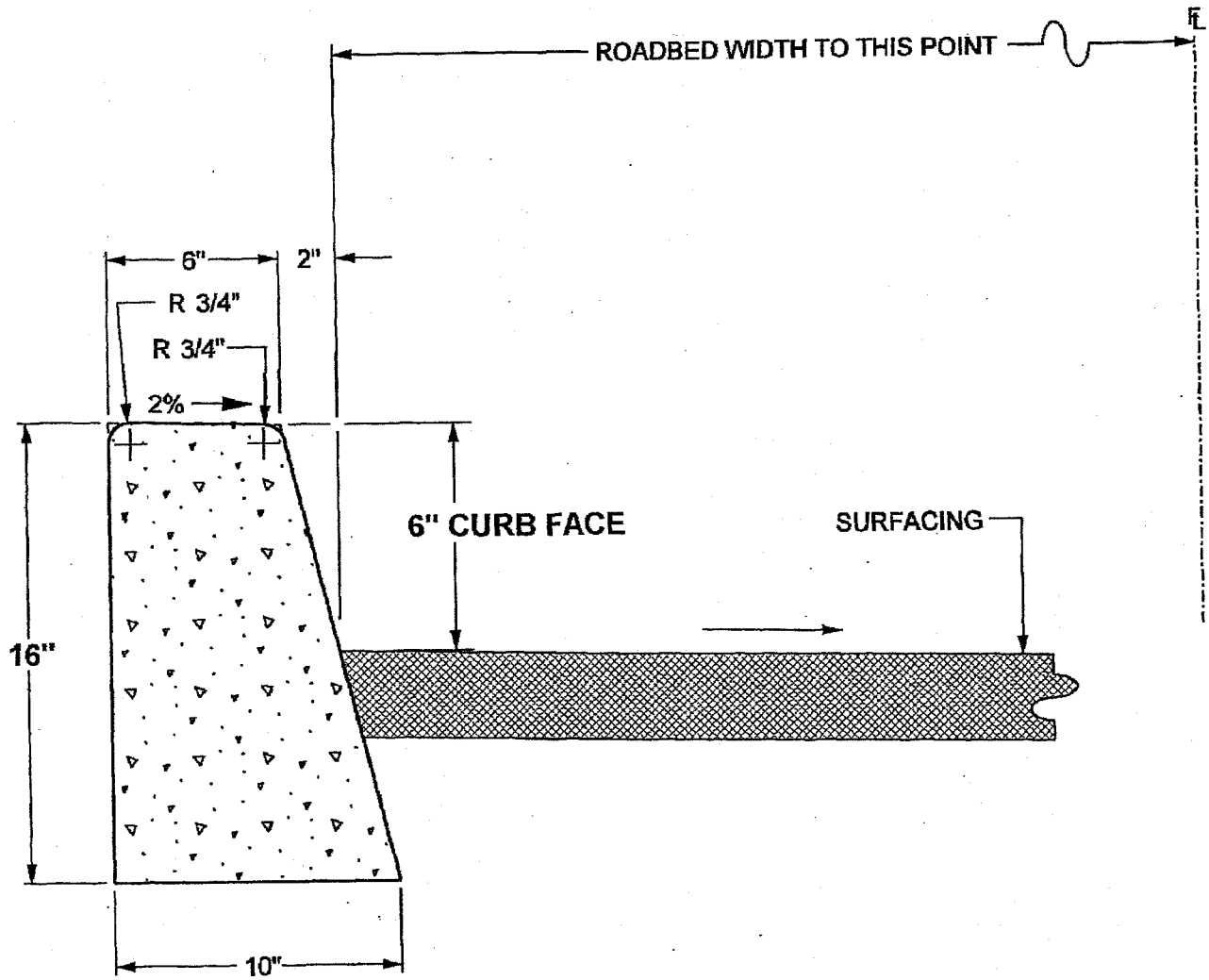
MINIMUM PERMISSIBLE GRADE IS 0.50% UNLESS SPECIFIC APPROVAL IS GIVEN BY THE CITY ENGINEER PRIOR TO DESIGN.

NOTE: IF AN EXIST. EXPANSION JOINT IS 10' OR LESS AWAY FROM THE DIMENSIONED JOINT, REMOVE EXIST. CURB TO THE EXIST. EXPANSION JOINT IN LIEU OF THE SAW CUT.

R.C.T.D. STD. No. 201

REVISIONS:

APPROVED 08/21/01	City of La Quinta	STANDARD
CHRIS A. VOGT CITY ENGINEER RCE 44250	**8" CURB AND GUTTER**	202
		SHEET 1 OF 1



Concrete shall be Class C (520 - C - 2500)

0.888 CU. FT./ L.F.

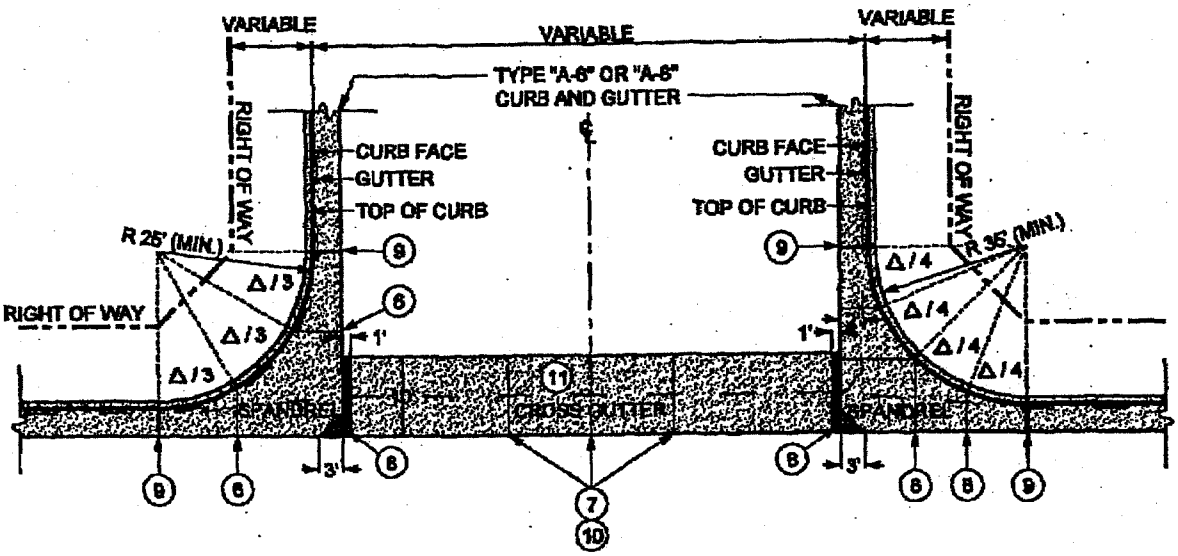
1 CU. YD. = 30.41 L.F.

MINIMUM PERMISSIBLE GRADE IS 0.50 % UNLESS SPECIFIC APPROVAL IS GIVEN BY THE CITY ENGINEER PRIOR TO DESIGN.

R.C.T.D. STD. No. 204

REVISIONS: 7/8/05 - corrected curb height, roadbed width, & clarified concrete spec

APPROVED 08/21/01	City of La Quinta	STANDARD
CHRIS A. VOGT CITY ENGINEER RCE 44250	6" MEDIAN CURB	210
		SHEET 1 OF 1

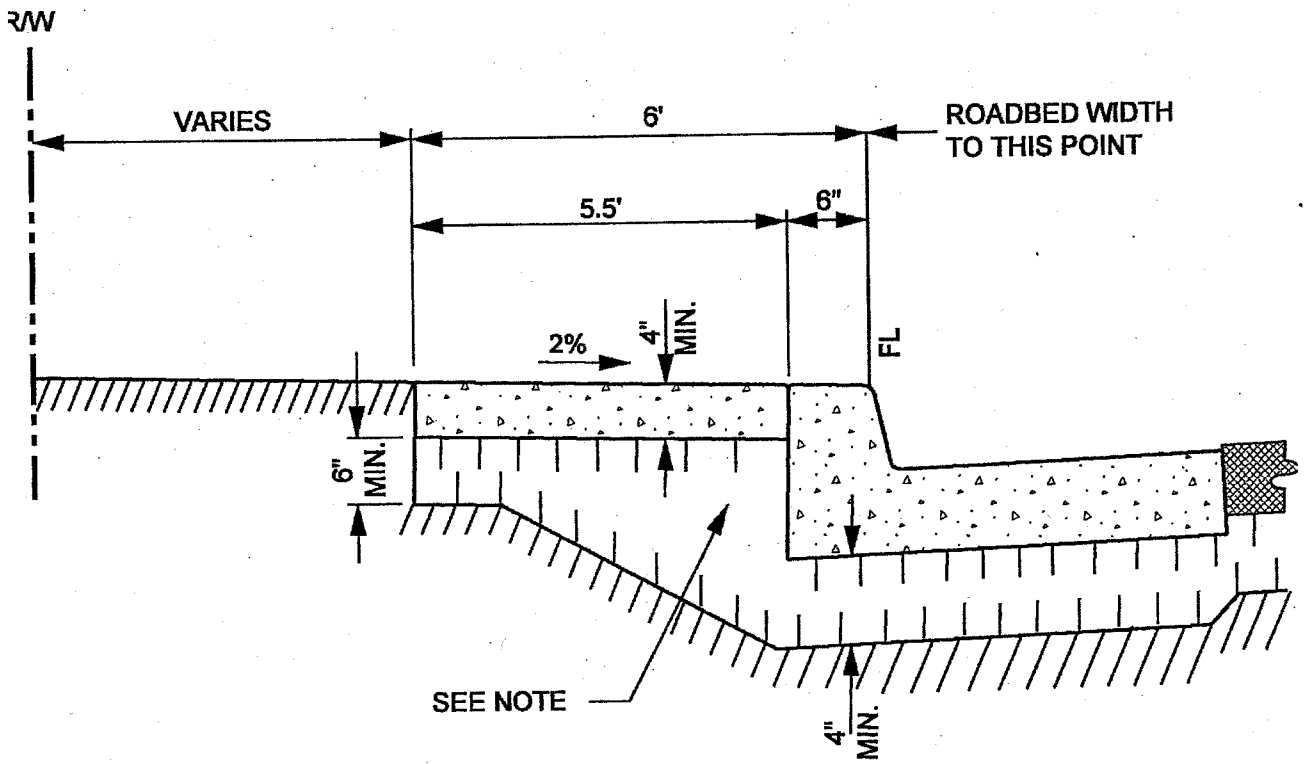


1. CROSS GUTTER FOR USE WITH TYPES "A-6" AND "A-6" CURB.
2. APRON THICKNESS TO BE 8" MINIMUM.
3. CROSS GUTTER THICKNESS TO BE 5" MINIMUM.
4. CLASS "C" CONCRETE.
5. PLACE 6" BASE UNDER ENTIRE SPANDREL AREA.
6. WEAKENED PLANE JOINTS TO BE CONSTRUCTED AT 1/3 POINTS ON 25' RADIUS SPANDRELS, AND AT 1/4 POINTS ON 35' RADIUS SPANDRELS.
7. CONSTRUCT WEAKENED PLANE JOINT(S) PER STANDARD # 208 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 HAVE AN ADDITIONAL 6 INCHES OF CLASS "B" CONCRETE.
9. CONSTRUCT EXPANSION JOINT PER STANDARD # 208.
10. CONSTRUCT WEAKENED PLANE JOINT PER STANDARD # 208.
11. CONSTRUCT CROSS GUTTER PER STANDARD # 231.

R.C.T.D. STD. No. 209

REVISIONS:

APPROVED 08/21/01	City of La Quinta	STANDARD
CHRIS A. VOGT CITY ENGINEER RCE 44250	CROSS GUTTER LAYOUT	230
		SHEET 1 OF 1



SIDEWALK

ALL CONSTRUCTION SHALL BE CLASS "C" CONCRETE.

NOTE:

AGGREGATE BASE OR APPROVED SELECT MATERIAL WHEN SOILS REPORT INDICATES PRESENCE OF EXPANSIVE SOIL CONDITIONS.

R.C.T.D. STD. No. 401

REVISIONS:

APPROVED
08/21/01

CHRIS A. VOGT
CITY ENGINEER
RCE 44250

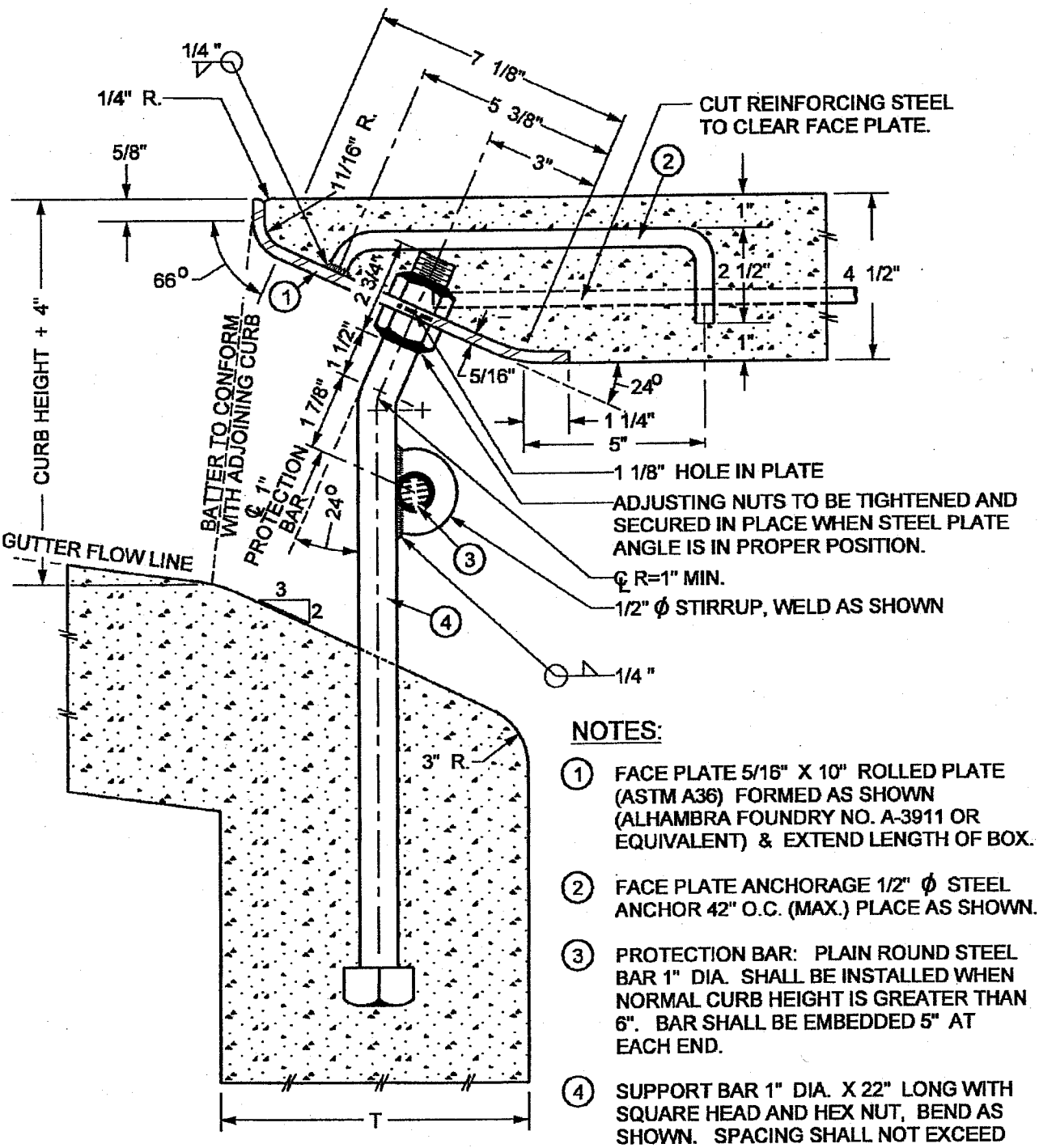
City of La Quinta

SIDEWALK AND CURB

STANDARD

240

SHEET 1 OF 1



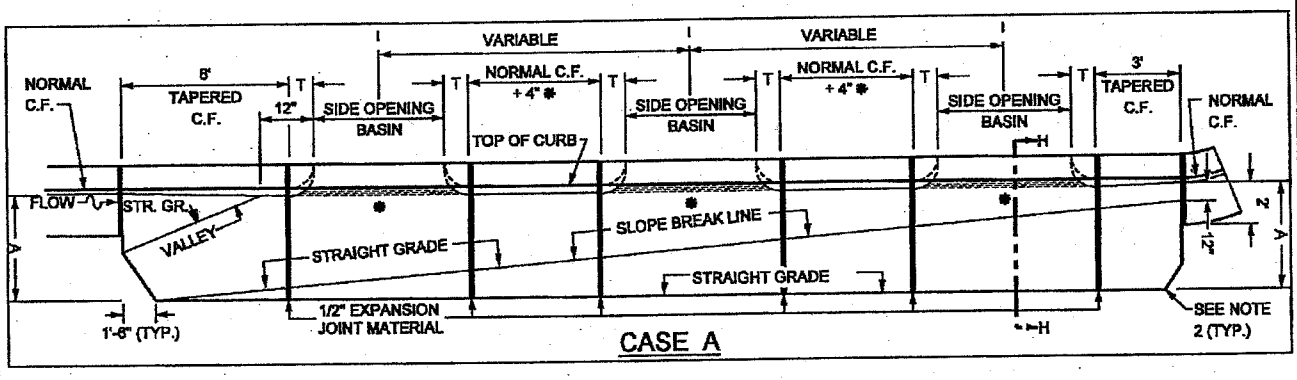
NOTES:

1. FACE PLATE 5/16" X 10" ROLLED PLATE (ASTM A36) FORMED AS SHOWN (ALHAMBRA FOUNDRY NO. A-3911 OR EQUIVALENT) & EXTEND LENGTH OF BOX.
2. FACE PLATE ANCHORAGE 1/2" ϕ STEEL ANCHOR 42" O.C. (MAX.) PLACE AS SHOWN.
3. PROTECTION BAR: PLAIN ROUND STEEL BAR 1" DIA. SHALL BE INSTALLED WHEN NORMAL CURB HEIGHT IS GREATER THAN 6". BAR SHALL BE EMBEDDED 5" AT EACH END.
4. SUPPORT BAR 1" DIA. X 22" LONG WITH SQUARE HEAD AND HEX NUT, BEND AS SHOWN. SPACING SHALL NOT EXCEED 4 FEET.
5. ALL EXPOSED METAL PARTS SHALL BE GALVANIZED.

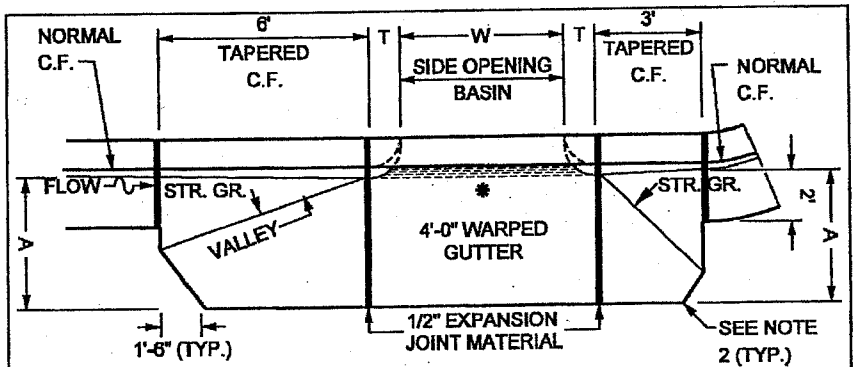
R.C.T.D. STD. No. 304

REVISIONS:

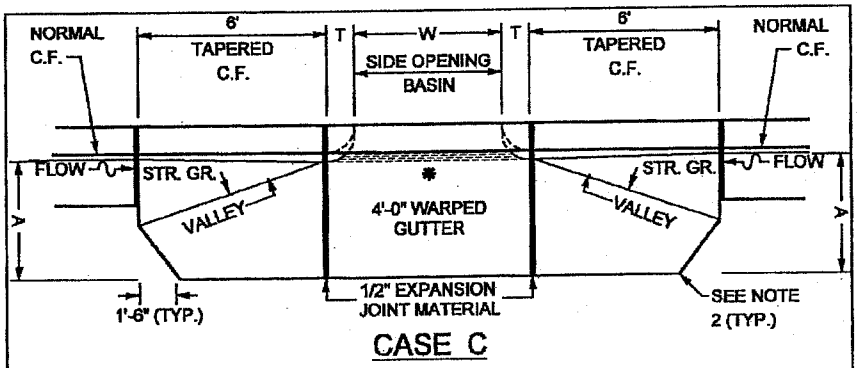
APPROVED 08/21/01	City of La Quinta	STANDARD
CHRIS A. VOGT CITY ENGINEER RCE 44250	**CURB SUPPORT DETAIL**	310
		SHEET 1 OF 1



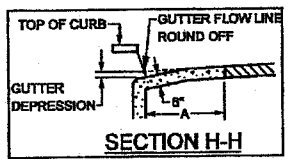
CASE A



CASE B
(CONTINUOUS GRADE)



CASE C
(SAG)



SECTION H-H

R.C.T.D. STD. No. 311

REVISIONS:

APPROVED
08/21/01

CHRIS A. VOGT
CITY ENGINEER
RCE 44250

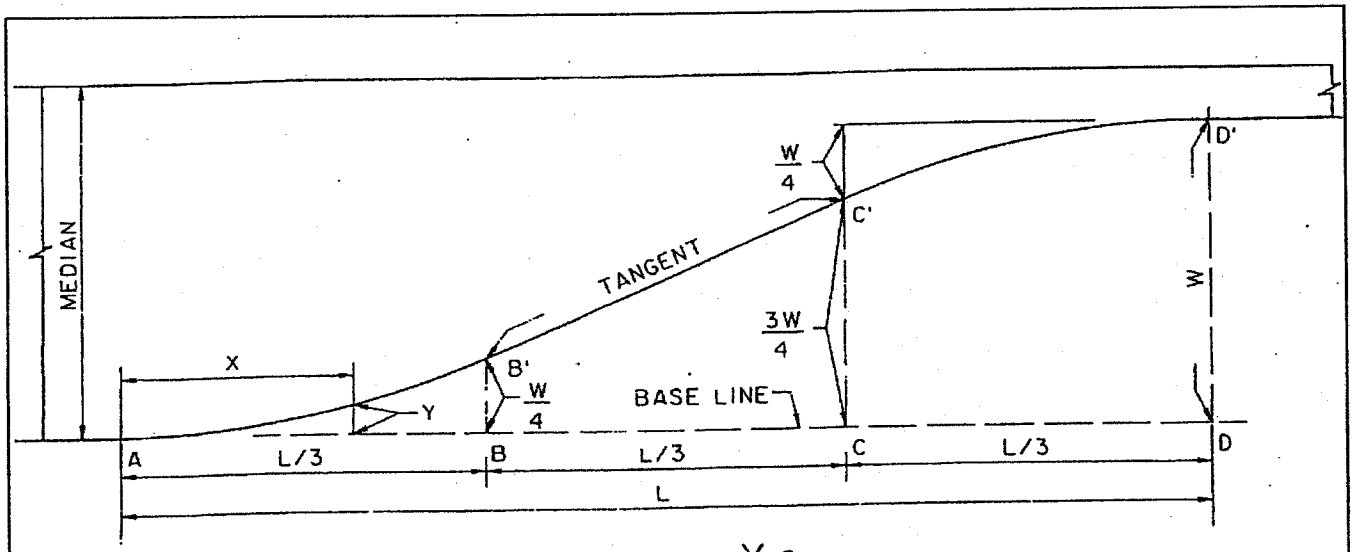
City of La Quinta

GUTTER DEPRESSION FOR CURB OPENING CATCH BASIN

STANDARD

330

SHEET 1 OF 1



$$Y = 2.25W\left(\frac{X}{L}\right)^2$$

L = LENGTH OF TAPER
W = MAXIMUM OFFSET DISTANCE
X = DISTANCE ALONG BASELINE
Y = OFFSET FROM BASELINE

L	DISTANCE X											
60'	5'	10'	15'	20'	25'	30'	35'	40'	45'	50'	55'	60'
72'	6'	12'	18'	24'	30'	36'	42'	48'	54'	60'	66'	72'
90'	7.5'	15'	22.5'	30'	37.5'	45'	52.5'	60'	67.5'	75'	82.5'	90'
120'	10'	20'	30'	40'	50'	60'	70'	80'	90'	100'	110'	120'
150'	12.5'	25'	37.5'	50'	62.5'	75'	87.5'	100'	112.5'	125'	137.5	150'
W	OFFSET Y											
10'	0.16'	0.62'	1.41'	2.50'	3.75'	5.00'	6.25'	7.50'	8.59'	9.38'	9.84'	10.00'
11'	0.17'	0.69'	1.55'	2.75'	4.13'	5.50'	6.88'	8.25'	9.45'	10.31'	10.83'	11.00'
12'	0.19'	0.75'	1.69'	3.00'	4.50'	6.00'	7.50'	9.00'	10.31'	11.25'	11.81'	12.00'
19'	0.30'	1.19'	2.67'	4.75'	7.13'	9.50'	11.88'	14.25'	16.33'	17.81'	18.70'	19.00'
20'	0.31'	1.25'	2.81'	5.00'	7.50'	10.00'	12.50'	15.00'	17.19'	18.75'	19.69'	20.00'
21'	0.33'	1.31'	2.95'	5.25'	7.88'	10.50'	13.13'	15.75'	18.05'	19.69'	20.67'	21.00'
22'	0.34'	1.38'	3.09'	5.50'	8.25'	11.00'	13.75'	16.50'	18.91'	20.62'	21.66'	22.00'

NOTE:

TO DETERMINE OFFSET DISTANCE FOR ANY LENGTH OF TAPER USE THE FORMULA $Y = 2.25W\left(\frac{X}{L}\right)^2$ FOR THE PORTIONS AB' AND C'D' WHICH ARE PARABOLIC CURVES. THE PORTION B'C' IS A TANGENT. WHEN THE BASELINE IS CURVED, THE OFFSETS ARE APPLIED TO THE CURVED BASELINE AND B'C' IS NO LONGER A TANGENT.

A.P.W.A. STD. No. 140-1

REVISIONS:

APPROVED
08/21/01

CHRIS A. VOGT
CITY ENGINEER
RCE 44250

City of La Quinta

MEDIAN TAPER

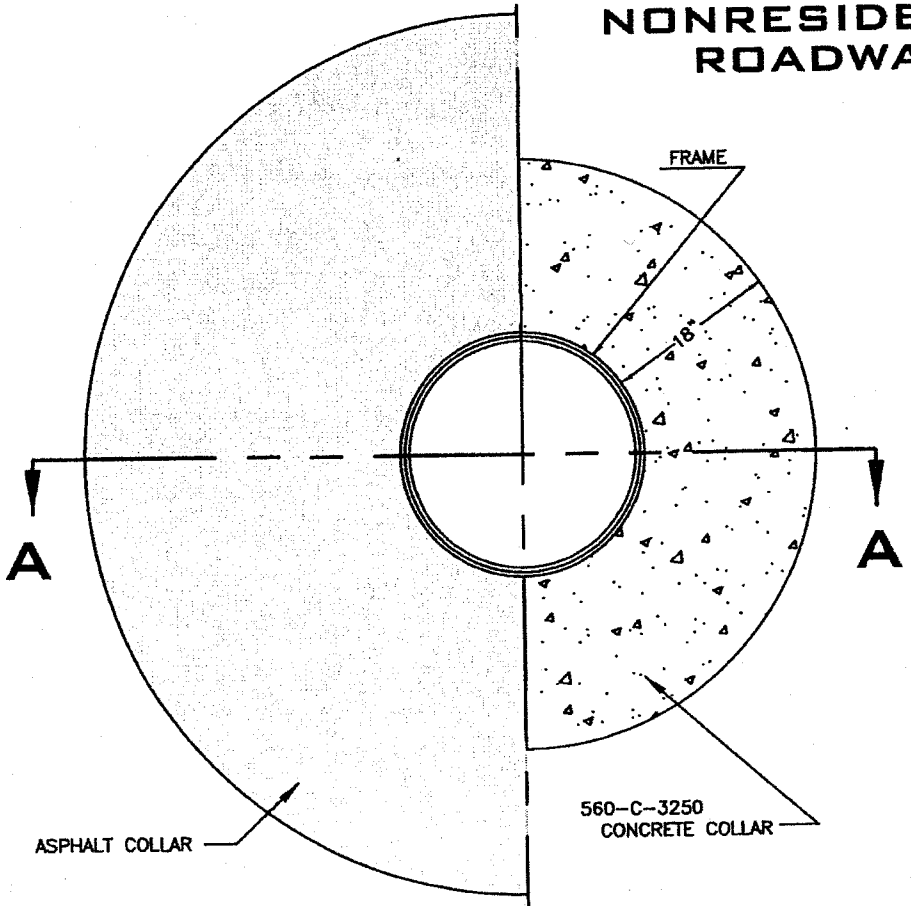
STANDARD

415

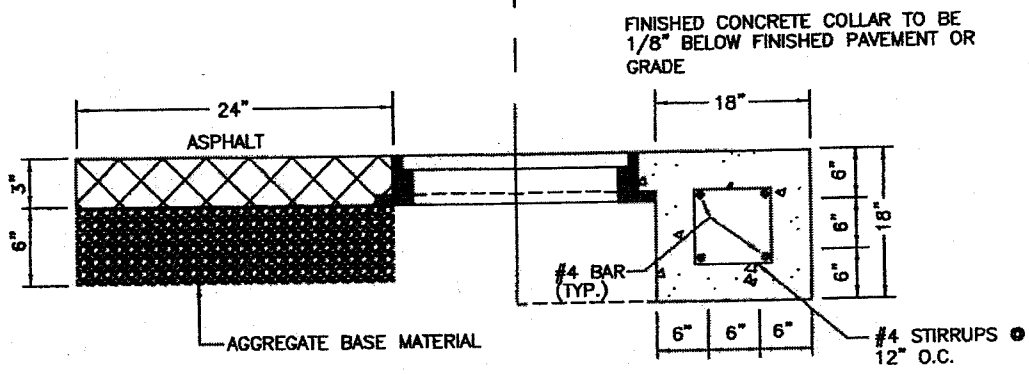
SHEET 1 OF 1

OUT OF PAVEMENT

IN PAVEMENT
NONRESIDENTIAL
ROADWAYS



FRAME & COLLAR



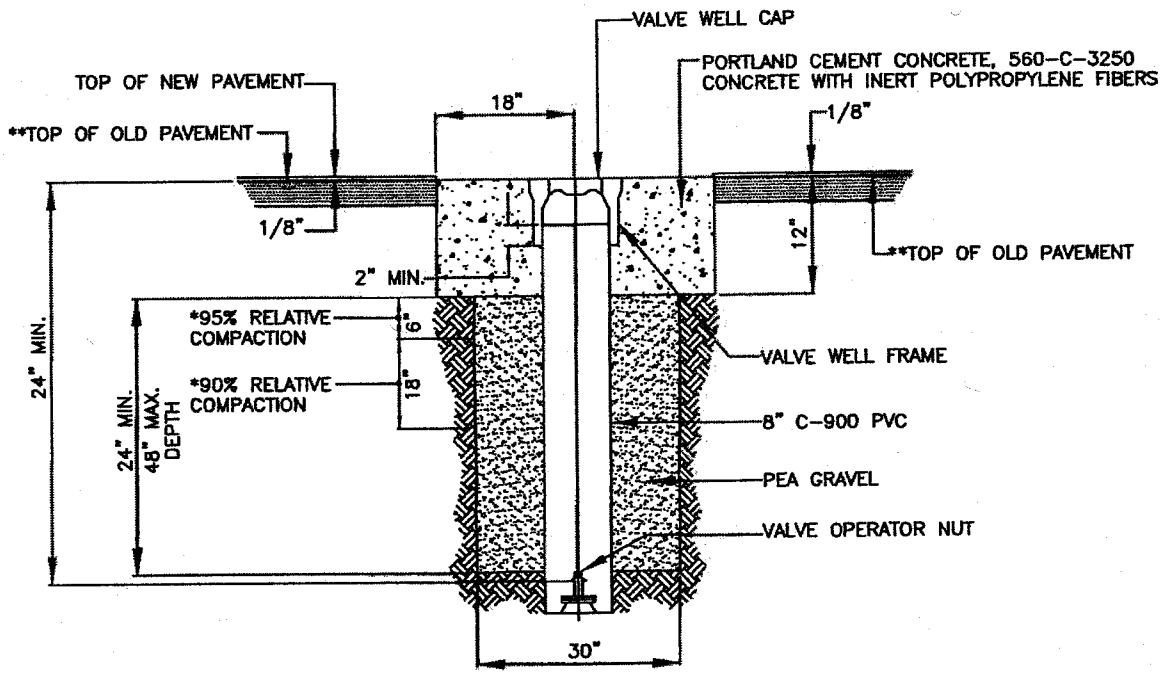
SECTION A-A

COACHELLA VALLEY WATER DISTRICT

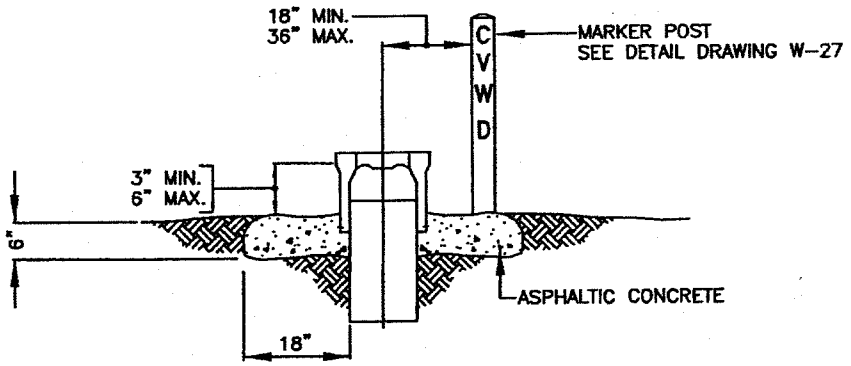
MANHOLE COLLAR IN HEAVY TRAFFIC AREA

APPROVAL DATE: OCT 2005 | S-1B

TYPICAL INSTALLATION (STREET OR ALLEY)



TYPICAL INSTALLATION (UNTRAVELED AREAS)



NOTE:

WHERE VALVE OPERATING NUT IS GREATER THAN 48" BELOW THE SURFACE AN EXTENSION ROD FOR VALVE OPERATION, WITH CIRCULAR CENTERING GUIDE, SHALL BE REQUIRED. THE TOP OF THE EXTENSION ROD SHALL BE MIN. 24" AND MAX. 48" BELOW THE SURFACE.

FOR VALVE OPERATOR WELL CAP SEE DETAIL DRAWING W-18A

FOR MARKER POST SEE DETAIL DRAWING W-27

*PER COUNTY OF RIVERSIDE STANDARD No. 818 TRENCH BACKFILL

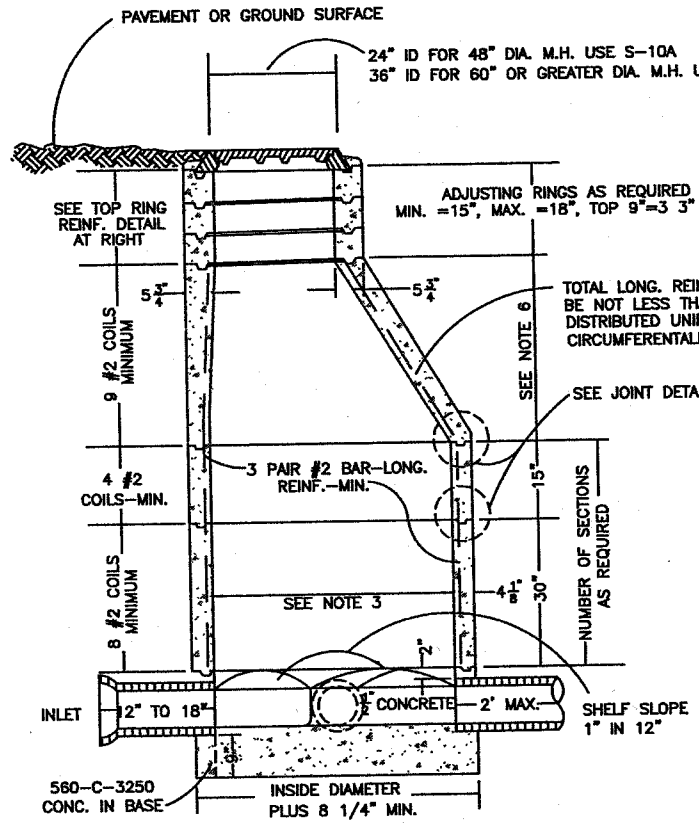
**DEFINED AS 6 MONTHS OR OLDER

REF: SEE ARTICLE TC-5

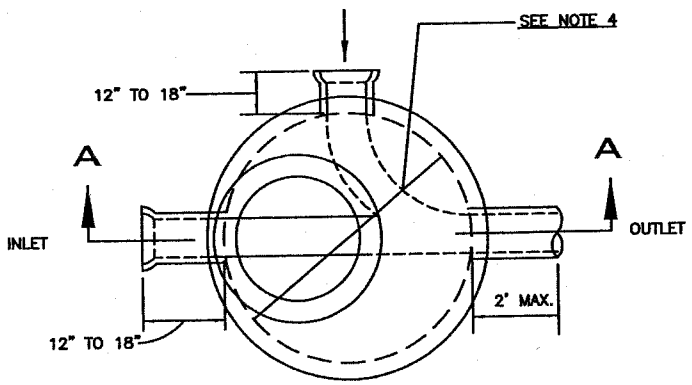
COACHELLA VALLEY WATER DISTRICT

DETAIL OF DOMESTIC WATER VALVE OPERATOR WELL INSTALLATION

APPROVAL DATE: OCT 2005 | W-17A

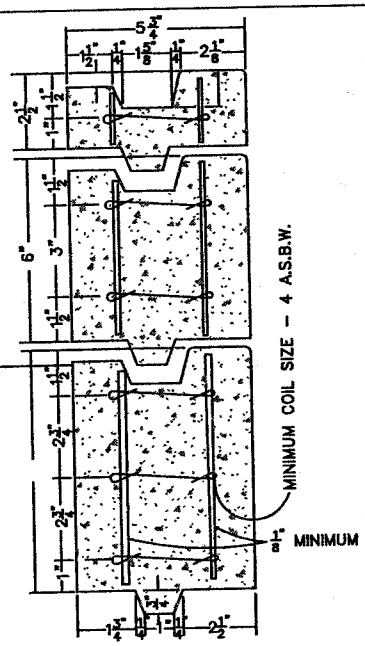


SECTIONAL ELEVATION A-A



PLAN OF BASE

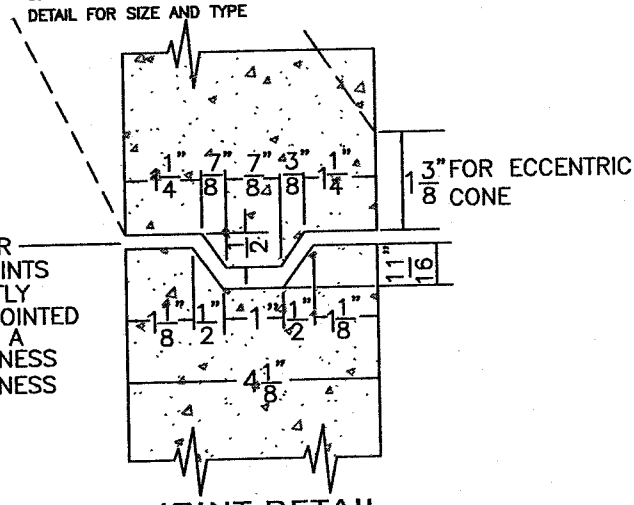
PIPE SIZE (DIA.)	MIN. SLOPE
8"	.0033
10"	.0024
12"	.0019
15"	.0014
18"	.0014
21"	.0014
24"	.0014
27"	.0014
30"	.0014
33"	.0014
36"	.0014



TOP RING DETAIL

NOTES

1. THE DEPTH OF CHANNEL SHALL EQUAL THE PIPE DIAMETER FOR ALL SIZES OF PIPE. FOR SPECIAL CHANNELS IN TRAP OR GAUGING MANHOLES, SEE SPECIAL PLANS.
2. WHENEVER PRACTICABLE THE FRAME AND COVER SHALL BE PLACED DIRECTLY OVER THE INLET OF THE STRUCTURE EXCEPT AS OTHERWISE NOTED ON PLANS.
3. 48" DIA. FOR 21" DIA. OR SMALLER PIPE. (MINIMUM SIZE) 60" DIA. FOR 24" DIA. OR LARGER PIPE. (MINIMUM SIZE)
4. LARGER DIAMETER MANHOLES MAY BE REQUIRED FOR 27" DIA. OR LARGER PIPE. CHECK WITH ENGINEER.
5. MANUFACTURING METHODS AND MATERIALS FOR PRE CAST UNITS SHALL CONFORM TO ASTM C-478.
6. TAPERED HEIGHT 30" MIN. FOR 48" DIA. TAPERED HEIGHT 24" MIN. FOR 60" DIA. OR GREATER.
7. STRUCTURAL ELEMENTS OF MANHOLE SHALL MEET ALL APPROPRIATE ASTM STANDARDS.
8. SEE MANHOLE FRAME AND COVER STD. DETAIL FOR SIZE AND TYPE

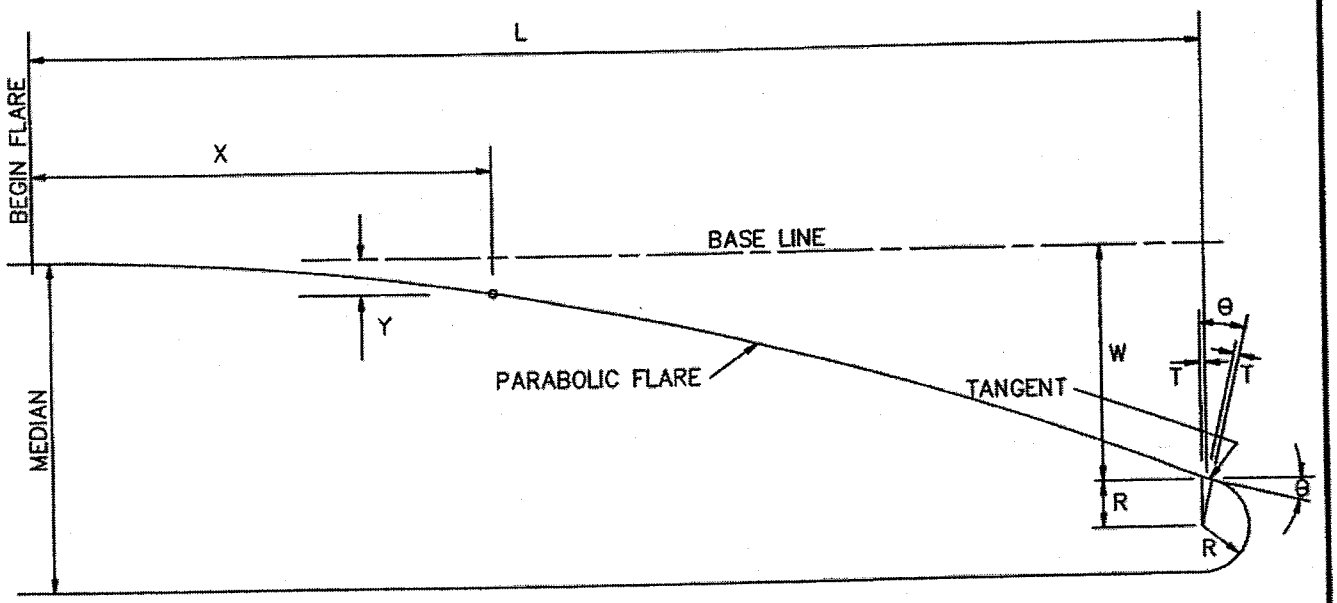


JOINT DETAIL

COACHELLA VALLEY WATER DISTRICT

REINFORCED PRECAST CONCRETE MANHOLE

APPROVAL DATE: OCT 2005 | S-5



L = LENGTH OF FLARE
W = MAXIMUM OFFSET DISTANCE
X = DISTANCE ALONG BASE LINE
Y = OFFSET FROM BASE LINE
T = TANGENT LENGTH
R = RADIUS OF NOSE
Θ = MAXIMUM FLARE DEFLECTION ANGLE

$$Y = W\left(\frac{X}{L}\right)^2$$

$$\tan\Theta = \frac{2W}{L}$$

$$T = R \tan\frac{\Theta}{2}$$

IF STATION OF RADIUS POINT IS NOT GIVEN ON PLAN, TANGENT DISTANCE T MAY BE IGNORED

OFFSET Y, ft (mm)

L, ft (m)	W, ft (mm)	X, ft (m) 10' (3.0)	15' (4.5)	20' (6.0')	25' (7.5)	30' (9.0')	40' (12.0)	45' (13.5')	50' (15.0)	60' (18.0')	70' (21.0)	75' (22.5')	80' (24.0)	90' (27.0)	100' (30.0)
W/L = 1:5															
25' (7.5)	5' (1500)	0.80' (240)	1.80' (540)	3.20' (960)	5.00' (1500)										
50' (15.0)	10' (3000)	0.40' (120)	0.90' (270)	1.60' (480)	2.50' (750)	3.60' (1080)	6.40' (1920)	8.10' (2430)	10.00' (3000)						
W/L = 1:10															
50' (15.0)	5' (1500)	0.20' (60)	0.45' (135)	0.80' (240)	1.25' (375)	1.80' (540)	3.20' (960)	4.05' (1215)	5.00' (1500)						
100' (30.0)	10' (3000)	0.10' (30)	0.23' (68)	0.40' (120)	0.63' (188)	0.90' (270)	1.60' (480)	2.03' (608)	2.50' (750)	3.60' (1080)	4.90' (1470)	5.63' (1688)	6.40' (1920)	8.10' (2430)	10.00' (3000)
W/L = 1:15															
45' (13.5)	3' (900)	0.15' (44)	0.33' (100)	0.59' (178)	0.93' (278)	1.33' (400)	2.37' (711)	3.00' (900)							
75' (22.5)	5' (1500)	0.09' (27)	0.20' (60)	0.36' (107)	0.56' (167)	0.80' (240)	1.42' (427)	1.80' (540)	2.22' (667)	3.20' (960)	4.36' (1307)	5.00' (1500)			
90' (27.0)	6' (1800)	0.07' (22)	0.17' (50)	0.30' (89)	0.46' (139)	0.67' (200)	1.19' (356)	1.50' (450)	1.85' (555)	2.67' (800)	3.63' (1089)	4.17' (1250)	4.74' (1422)	6.00' (1800)	

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

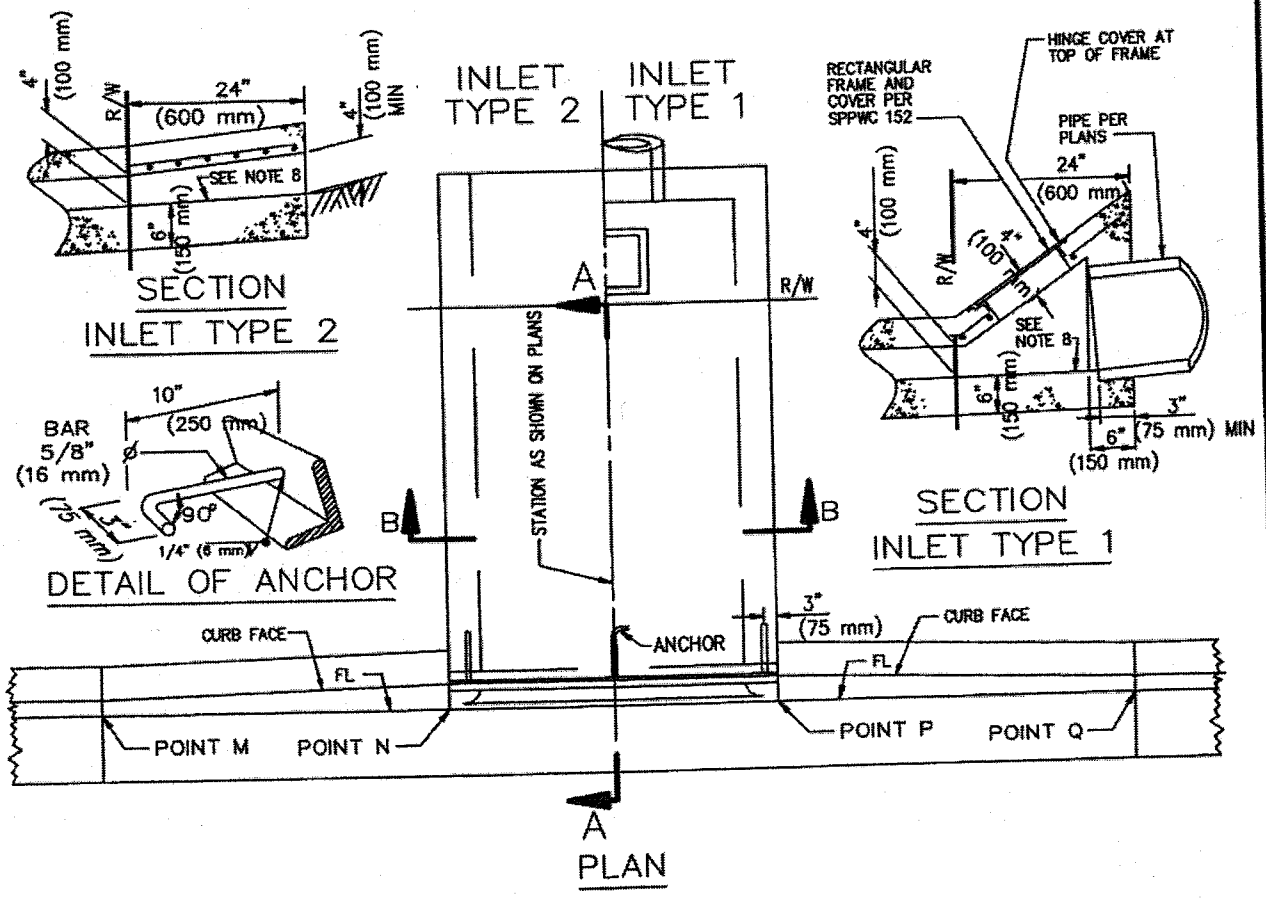
PROMULGATED BY THE PUBLIC WORKS STANDARDS INC. GREENBOOK COMMITTEE 1964 REV. 1995, 2009

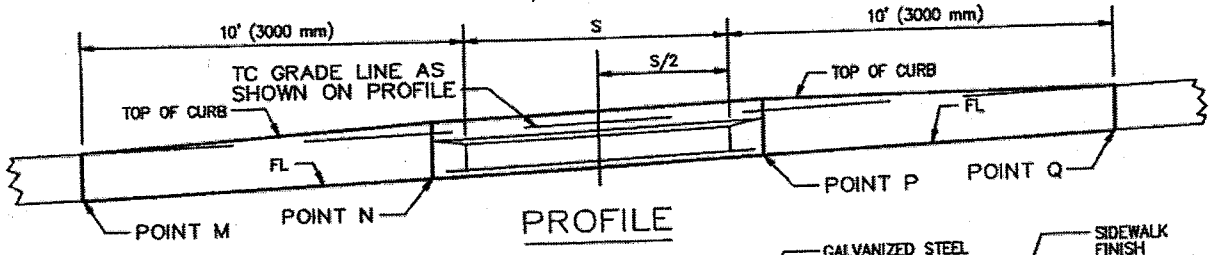
MEDIAN FLARE

USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

STANDARD PLAN 141-2

SHEET 1 OF 1





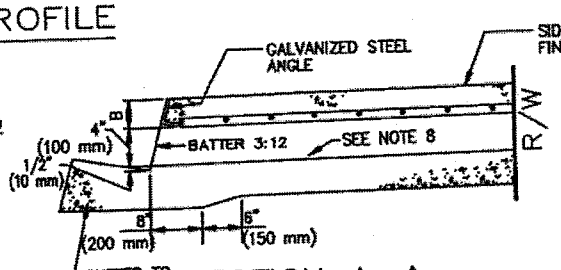
S, INCHES (mm)	J BAR SPACING
12" (300)	7" (240)
18" (450)	7" (240)
24" (600)	7" (240)
30" (750)	7" (240)
36" (900)	7" (240)
42" (1050)	6" (210)
48" (1200)	5" (180)
54" (1350)	6-1/2" (225)
60" (1500)	5" (180)
66" (1650)	4" (180)
72" (1800)	3-1/2" (120)

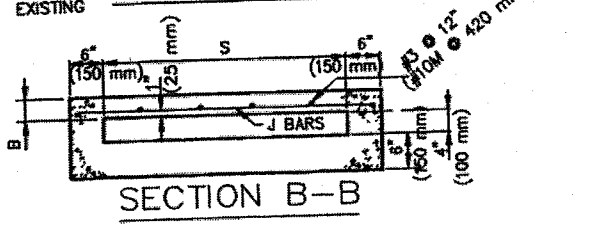
FOR S = 30" (750 mm) AND LESS, USE 2 ANCHORS. OTHERWISE, USE 3 ANCHORS.

FOR S = 48" (1200 mm) AND LESS, B = 3" (75 mm) USE 2-1/2"x2"x3/8" (64x51x9.5) GALVANIZED STEEL ANGLE.

OTHERWISE, B = 4" (100 mm).USE 3-1/2"x3"x1/2" (89x76x12.7) GALVANIZED STEEL ANGLE.

J BARS ARE #3 (#10M).





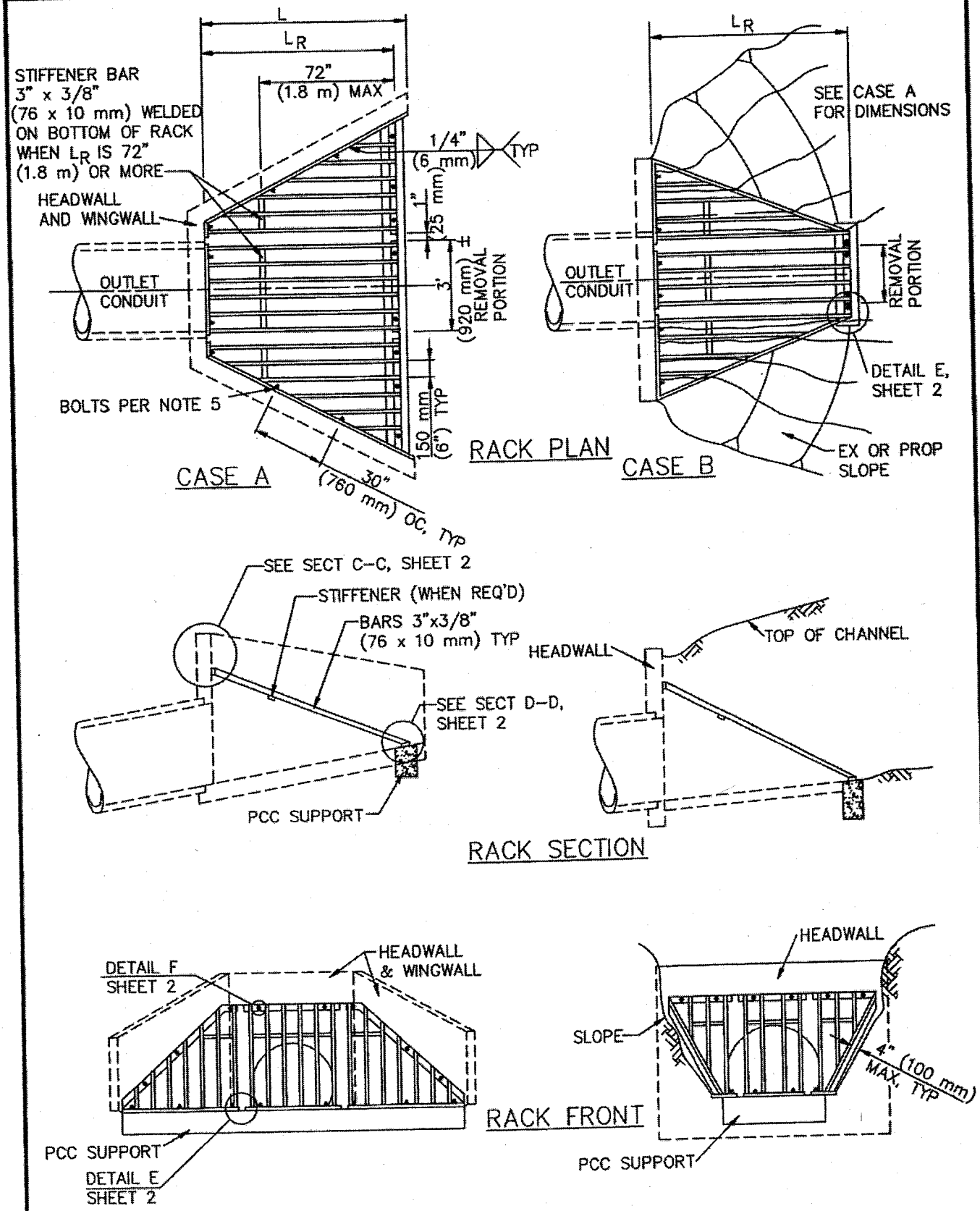
STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

PROMULGATED BY THE PUBLIC WORKS STANDARDS INC. GREENBOOK COMMITTEE 1993 REV. 1996, 2009

PARKWAY DRAIN

STANDARD PLAN 151-2

USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION



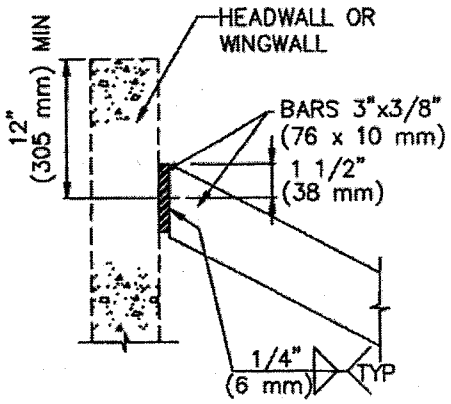
STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

PROMULGATED BY THE
PUBLIC WORKS STANDARDS INC.
GREENBOOK COMMITTEE
1993
REV. 2005, 2009

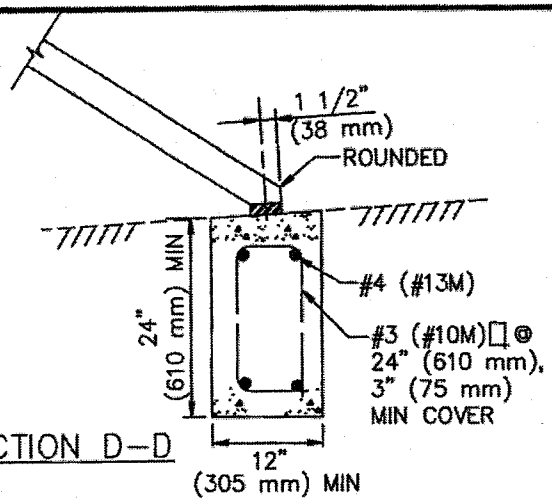
TRASH RACK (INCLINED)

USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

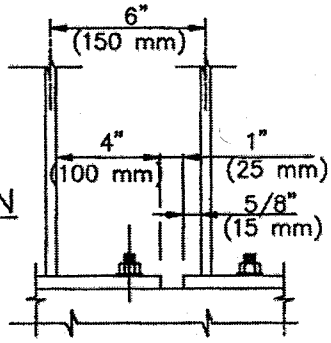
STANDARD PLAN
361-2
SHEET 1 OF 2



SECTION C–C

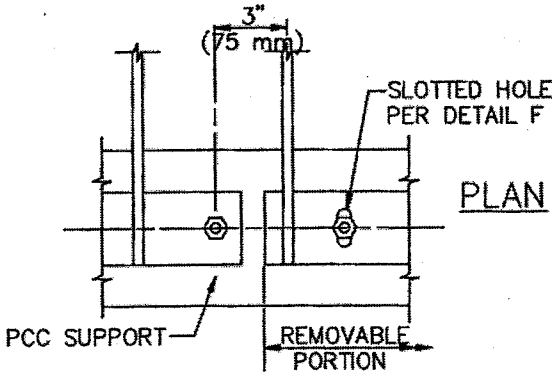


SECTION D–D

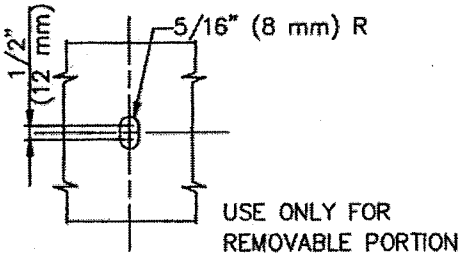


ELEVATION

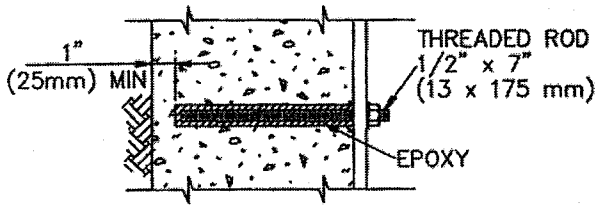
DETAIL E



PLAN



DETAIL F

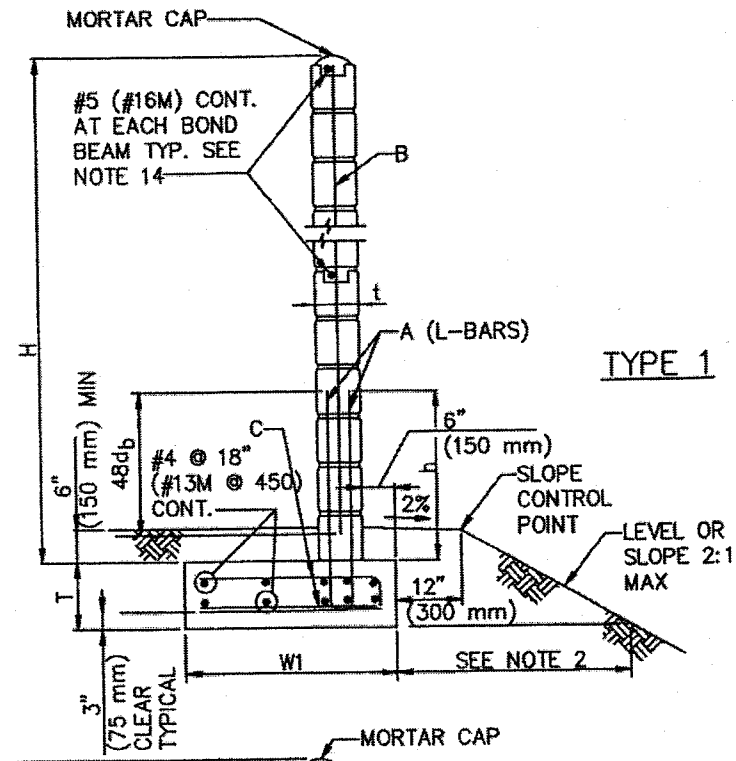


RETROFIT ATTACHMENT

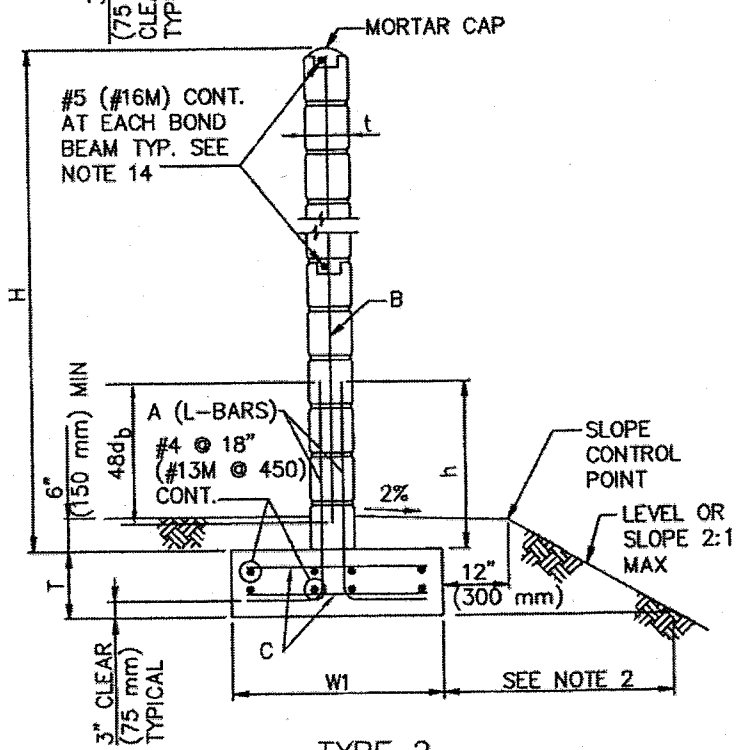
NOTES

1. MAXIMUM SIZE OF OUTLET FOR THIS RACK IS 48" (1200 mm) PIPE OR 48" (1.2 m) WIDE RCB. MAXIMUM LENGTH OF RACK L_R IS 10'–0" (3 m).
2. ADJUST L_R SO THAT THE SLOPE OF THE RACK IS APPROXIMATELY 2 HORIZONTAL TO 1 VERTICAL.
3. THE PCC SUPPORT IS NOT NEEDED IF THE INLET STRUCTURE HAS A SUITABLE CUTOFF WALL. THE PCC SUPPORT SHALL NOT REPLACE THE CUTOFF WALL.
4. GALVANIZE RACK AFTER FABRICATION.
5. BOLTS SHALL BE 1/2"x7" (13 x 175 mm). BOLTS FOR REMOVABLE PORTION SHALL BE STAINLESS STEEL. PROVIDE WASHERS AT EACH BOLT.
6. SUBMIT SHOP DRAWINGS PER SSPWC 2–5.3.3. FOR RETROFIT WORK, INCLUDE DETAILS FOR ATTACHMENT TO EXISTING STRUCTURE.

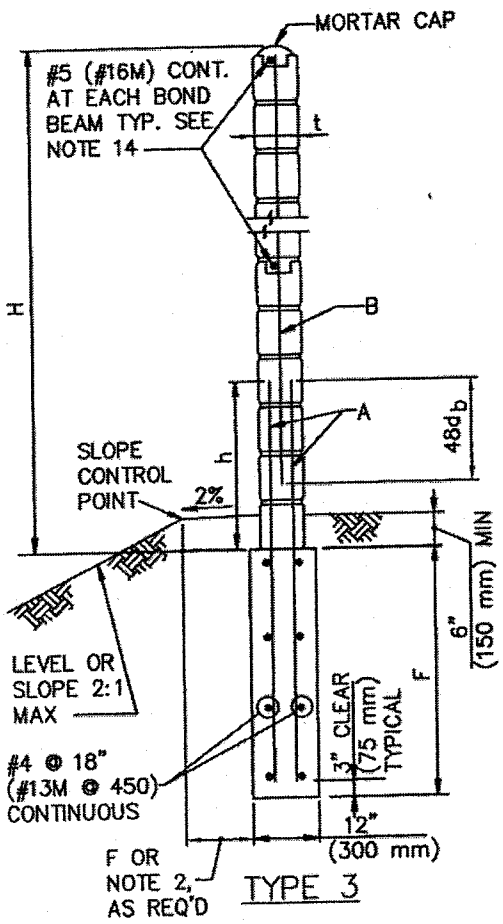
STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION	STANDARD PLAN
TRASH RACK (INCLINED)	**361–2**
	SHEET 2 OF 2



TYPE 1



TYPE 2



TYPE 3

DETAILS FOR DOUBLE REINFORCEMENT

SEE REINFORCING SCHEDULES FOR REQD USE

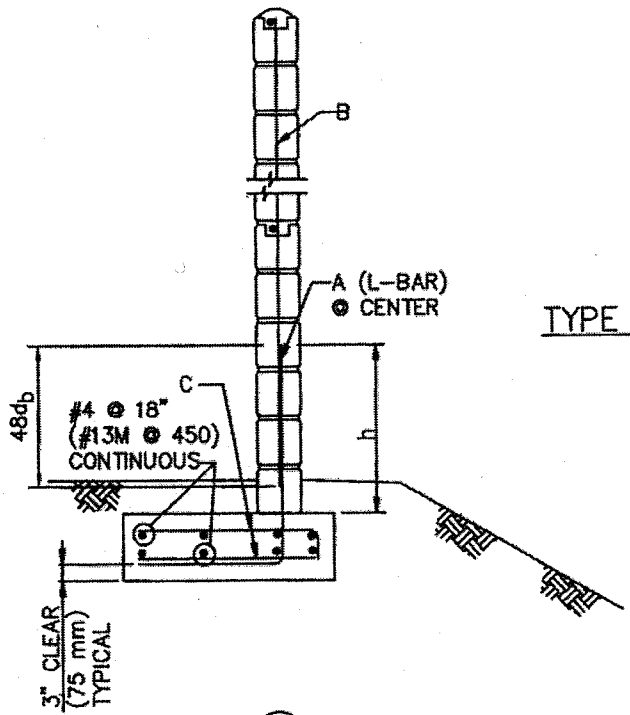
STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

PROMULGATED BY THE PUBLIC WORKS STANDARDS INC. GREENBOOK COMMITTEE 1993 REV. 1996, 2005, 2009

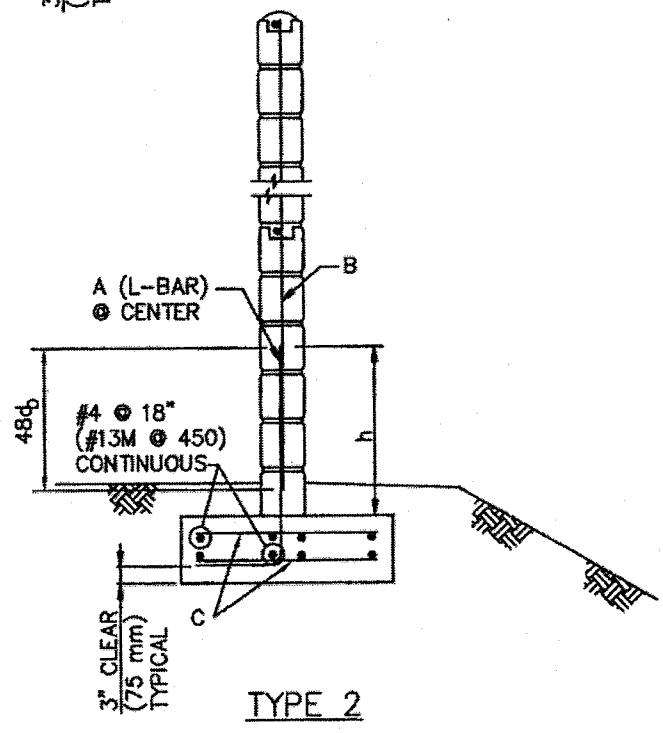
REINFORCED CONCRETE BLOCK WALL

USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

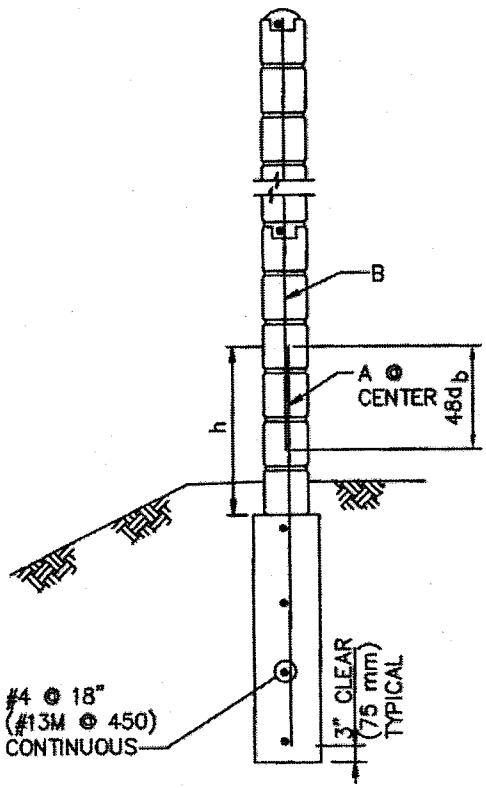
STANDARD PLAN 601-3



TYPE 1



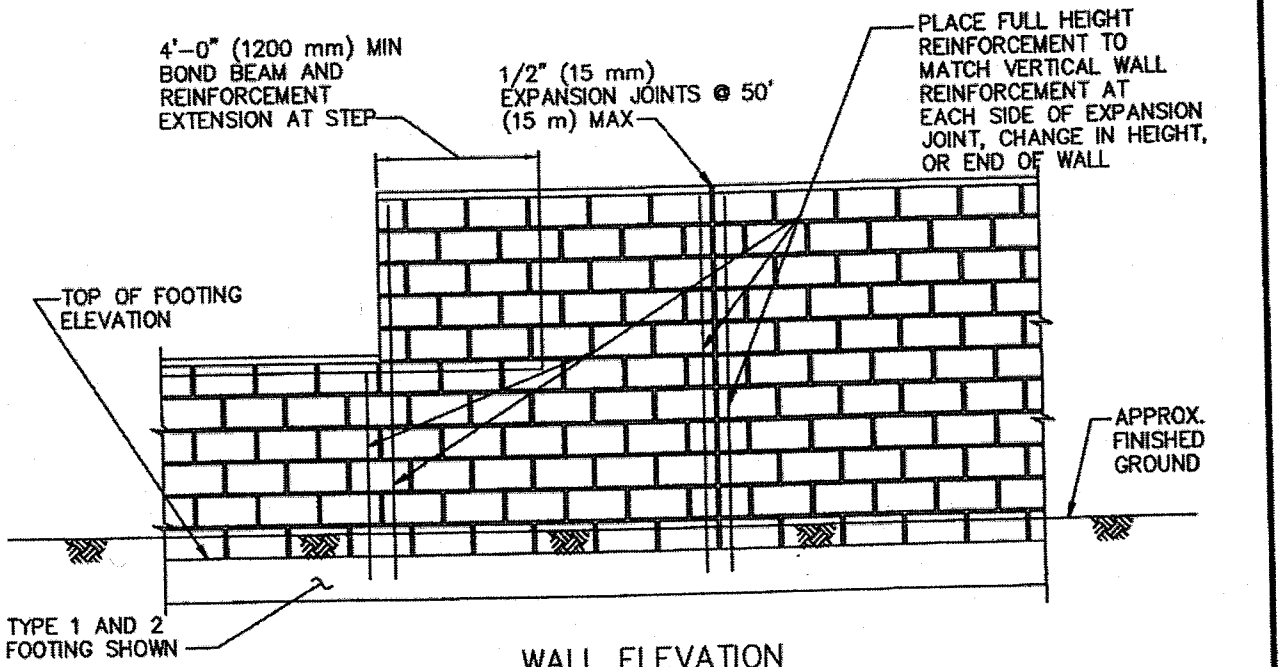
TYPE 2



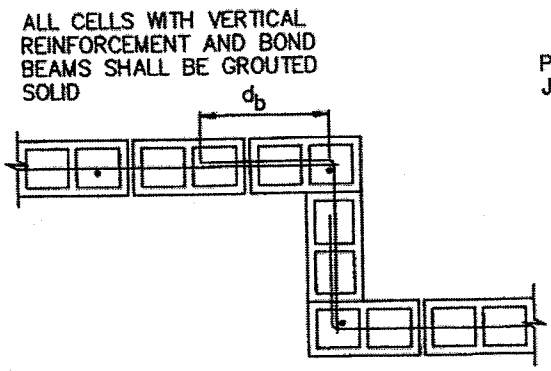
TYPE 3

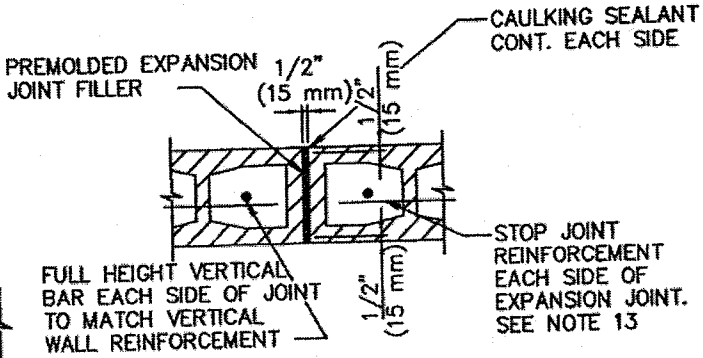
DETAILS FOR SINGLE REINFORCEMENT

SEE REINFORCING SCHEDULES FOR ALLOWED USE
SEE SHEET 1 FOR OTHER DIMENSIONS AND DETAILS



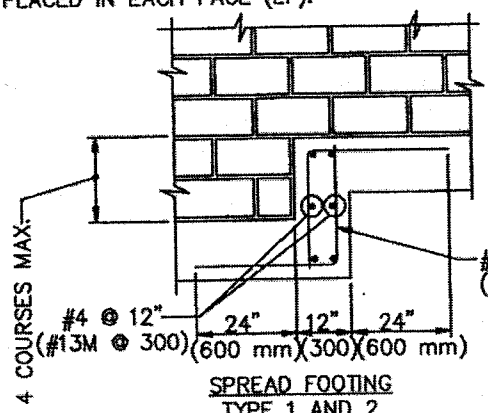
WALL ELEVATION





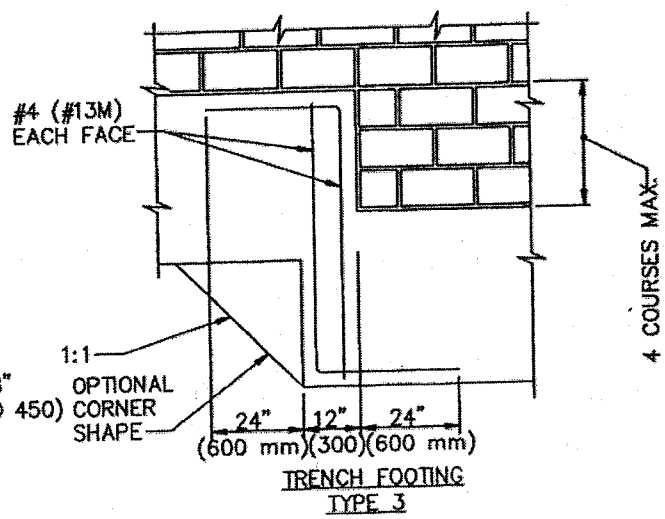
CORNER DETAIL

NOTE:
SINGLE VERTICAL REINFORCING BARS SHALL BE CENTERED IN CELLS. DOUBLE ROWS OF VERTICAL REINFORCING BARS SHALL HAVE THE REINFORCEMENT PLACED IN EACH FACE (EF).



SPREAD FOOTING
TYPE 1 AND 2

EXPANSION JOINT DETAIL



TRENCH FOOTING
TYPE 3

FOOTING STEP DETAILS

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

REINFORCED CONCRETE BLOCK WALL

STANDARD PLAN
601-3
SHEET 3 OF 6

LATERAL LOAD = 15 PSF (720 Pa)									
STEM		FOOTING				REINFORCING BARS			
						CUTOFF	SPACING, O.C.		
H	t	T	W1 (TYPE 1)	W2 (TYPE 2)	F (TYPE 3)	h	A	B	C
6'-0" (1.8 m)	6" (150 mm)	12" (300 mm)	2'-3" (675 mm)	2'-3" (675 mm)	2'-9" (825 mm)	30" (750 mm)	#4 @ 48"* (#13M@1200*)	#4 @ 48" (#13M@1200)	#4 @ 48"* (#13M@1200*)
8'-0" (2.4 m)	8" (200 mm)	12" (300 mm)	2'-9" (825 mm)	2'-6" (750 mm)	3'-3" (975 mm)	30" (750 mm)	#4 @ 32"* (#13M@800*)	#4 @ 32" (#13M@800)	#4 @ 32"* (#13M@800*)
10'-0" (3.0 m)	8" (200 mm)	12" (300 mm)	3'-9" (1125 mm)	3'-0" (900 mm)	3'-9" (1125 mm)	30" (750 mm)	#4 @ 32"EF (#13M@800EF)	#4 @ 32" (#13M@800)	#4 @ 32" (#13M@800)

LATERAL LOAD = 20 PSF (960 Pa)									
STEM		FOOTING				REINFORCING BARS			
						CUTOFF	SPACING, O.C.		
H	t	T	W1 (TYPE 1)	W2 (TYPE 2)	F (TYPE 3)	h	A	B	C
6'-0" (1.8 m)	6" (150 mm)	12" 300 mm	2'-9" (825 mm)	2'-6" (750 mm)	3'-3" (975 mm)	30" (750 mm)	#5 @ 32"* (#16M@800*)	#4 @ 32" (#13M@800)	#4 @ 32"* (#13M@800*)
8'-0" (2.4 m)	8" (200 mm)	12" 300 mm	3'-3" (975 mm)	3'-0" (900 mm)	3'-9" (1125 mm)	30" (750 mm)	#4 @ 32"EF (#13M@800EF)	#4 @ 32" (#13M@800)	#4 @ 32" (#13M@800)
10'-0" (3.0 m)	8" (200 mm)	12" 300 mm	4'-3" (1275 mm)	3'-6" (1050 mm)	4'-3" (1275 mm)	42" (1050 mm)	#5 @ 32"EF (#16M@800EF)	#4 @ 32" (#13M@800)	#5 @ 32" (#16M@800)

LATERAL LOAD = 25 PSF (1200 Pa)									
STEM		FOOTING				REINFORCING BARS			
						CUTOFF	SPACING, O.C.		
H	t	T	W1 (TYPE 1)	W2 (TYPE 2)	F (TYPE 3)	h	A	B	C
6'-0" (1.8 m)	6" (150 mm)	12" (300 mm)	3'-0" (900 mm)	2'-9" (825 mm)	3'-6" (1050 mm)	30" (750 mm)	#5 @ 16"* (#16M@400*)	#4 @ 32" (#13M@800)	#4 @ 32" (#13M@800)
8'-0" (2.4 m)	8" (200 mm)	12" (300 mm)	3'-9" (1125 mm)	3'-3" (975 mm)	4'-0" (1200 mm)	30" (750 mm)	#4 @ 16"EF (#13M@400EF)	#4 @ 32" (#13M@800)	#4 @ 32" (#13M@800)
10'-0" (3.0 m)	8" (200 mm)	12" (300 mm)	4'-9" (1425 mm)	4'-0" (1200 mm)	4'-9" (1425 mm)	50" (1250 mm)	#5 @ 16"EF (#16M@400EF)	#4 @ 32" (#13M@800)	#5 @ 32" (#16M@800)

NOTE

SINGLE VERTICAL REINFORCING BARS SHALL BE CENTERED IN CELL.
* FOR SINGLE A-BARS IN FOUNDATION, SEE SHEET 2.
DOUBLE ROWS OF VERTICAL REINFORCING WHERE INDICATED SHALL BE PLACED AT EACH FACE (EF).

DESIGN CRITERIA:

MATERIALS DESIGN DATA:

REINFORCING STEEL ..... fy = 60 KSI (400 MPa)

CONCRETE 28TH-DAY STRENGTH:
FOOTING ..... f 'c = 2,500 PSI (17 MPa)

CONCRETE MASONRY:
PARTIALLY GROUTED ..... f 'm = 1,500 PSI (10 MPa)

DESIGN CODE: ..... GOVERNING BUILDING CODE

DESIGN METHOD:

CONCRETE ..... ULTIMATE STRENGTH METHOD
CONCRETE MASONRY ..... WORKING STRESS METHOD

FOUNDATION:

ALLOWABLE SOIL BEARING PRESSURE ..... 1,000 PSF (48 kPa)
ALLOWABLE LATERAL SOIL BEARING PRESSURE ..... 100 PSF / FT OF DEPTH
(157 kPa / m OF DEPTH)
LATERAL SLIDING RESISTANCE AT CONTACT AREA..... 130 PSF (6.2 kPa)
BUT NOT TO EXCEED 0.40 X DL
SOIL DENSITY ..... 110 PCF (1760 kg/m^3)
FACTORS OF SAFETY FOR SPREAD FOOTING (BASED ON SERVICE LOAD CONDITIONS):
OVERTURNING ..... 1.75 MINIMUM
SLIDING ..... 1.5 MINIMUM

1/3 INCREASE IS ALLOWED FOR SHORT TERM LOADS.

GENERAL NOTES:

1. CONSULT WITH LOCAL GOVERNING AGENCY FOR DETERMINATION OF LATERAL LOAD AND WALL TYPE LISTED IN TABLES, FOR PROJECT-SPECIFIC USE.

2. DISTANCE OF THE FOOTING FROM DESCENDING SLOPE SHALL BE PER LATEST GOVERNING BUILDING CODE OR PER AGENCY REQUIREMENTS.

3. SPECIAL INSPECTION IS NOT REQUIRED FOR WALLS.

4. GROUND LINE TO BE AT THE SAME ELEVATION ON BOTH SIDES OF THE WALL. WALL SHALL NOT BE USED TO RETAIN EARTH.

5. USE TABULAR INFORMATION FOR THE NEXT HIGHER H FOR INTERMEDIATE WALL HEIGHTS THAT ARE BETWEEN THE H'S GIVEN.

6. CONCRETE SHALL BE 500-C-2500 (295-C-17) PER SSPWC 201-1.1.2.

7. REINFORCING SHALL BE LAPPED A MINIMUM 48 BAR DIA. GRADE 60 UNLESS NOTED OTHERWISE PER SSPWC SECTION 201-2, 303-4.1.3, JOINT REINFORCING WIRE: ASTM A82.

8. ALL REINFORCED CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH SSPWC 303.

9. FOR TYPE OF BLOCKS, BOND PATTERN AND JOINT FINISH, SEE PROJECT PLANS.

10. ALL MASONRY CONSTRUCTION TO BE IN ACCORDANCE WITH SSPWC 303-4.

11. HOLLOW MASONRY UNITS...ASTM C-90. TYPE I. NORMAL WEIGHT UNITS.

    MORTAR ...1:1/2:3, PORTLAND CEMENT - LIME - SAND RATIO, 1800 PSI (13 MPa) PER SSPWC 202-2.2.1.

    GROUT .....1:3:2 PORTLAND CEMENT - SAND - PEA GRAVEL RATIO, 2,000 PSI (14 MPa) PER SSPWC 202-2.2.2.

12. PROVIDE FULL MORTAR BED AT THE BOTTOM OF THE FIRST COURSE AND OMIT MORTAR BETWEEN VERTICAL JOINTS OF LOWEST EXPOSED COURSE.

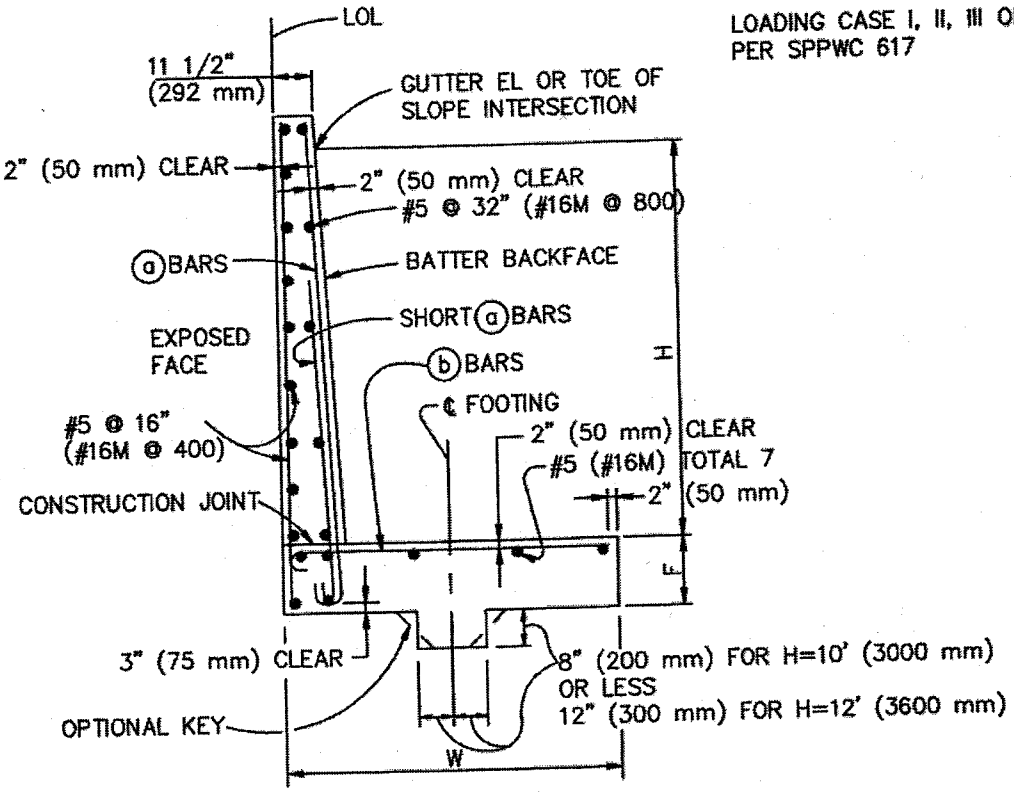
13. WHEN BLOCKS ARE LAID IN STACKED BOND, CONTINUOUS HORIZONTAL JOINT REINFORCEMENT SPACED AT 4'-0" (1200 mm) OC SHALL BE PROVIDED IN ADDITION TO THE BOND BEAM REINFORCEMENT PER SSPWC 303-4.1.2, LOCATE REINFORCEMENT IN JOINTS THAT ARE APPROXIMATE MIDPOINT BETWEEN BOND BEAMS.

14. BOND BEAMS SHALL BE PLACED AT TOP OF WALL AND SUBSEQUENTLY SPACED NOT TO EXCEED 4'-0" (1200 mm) O.C. BELOW.

15. ONLY CELLS WITH REINFORCING BARS SHALL BE GROUTED PER SSPWC 303-4.1.3.

16. HORIZONTAL JOINTS SHALL BE TOOLED CONCAVE OR WEATHERED. VERTICAL JOINTS SHALL BE TOOLED CONCAVE OR RAKED. WEATHERED AND RAKED JOINTS ARE NOT PERMITTED FOR SLUMPED BLOCKS.

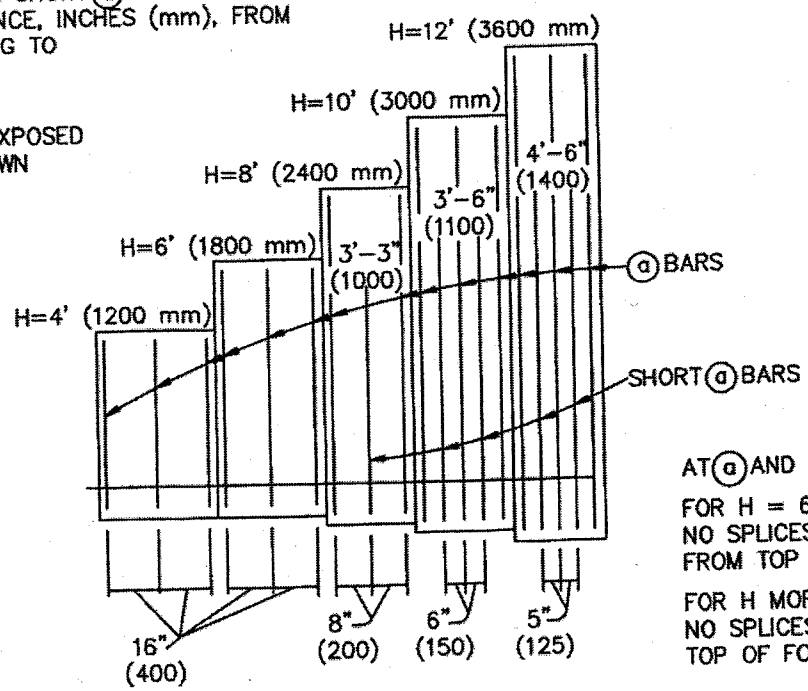
LOADING CASE I, II, III OR IV
PER SPPWC 617



SECTION

NUMBER ABOVE SHORT ⓐ BARS IS DISTANCE, INCHES (mm), FROM TOP OF FOOTING TO END OF BARS

BARS ALONG EXPOSED FACE NOT SHOWN



AT ⓐ AND SHORT ⓐ BARS:

FOR H = 6' (1800 mm) OR LESS, NO SPLICES WITHIN 20" (500 mm) FROM TOP OF FOOTING.

FOR H MORE THAN 6' (1800 mm), NO SPLICES WITHIN H/4 FROM TOP OF FOOTING.

ELEVATION

SIMILAR TO CALTRANS TYPE 5

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

PROMULGATED BY THE PUBLIC WORKS STANDARDS INC. GREENBOOK COMMITTEE 1984 REV. 1991, 1996, 2005, 2009

REINFORCED CONCRETE RETAINING WALL TYPE 6

USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

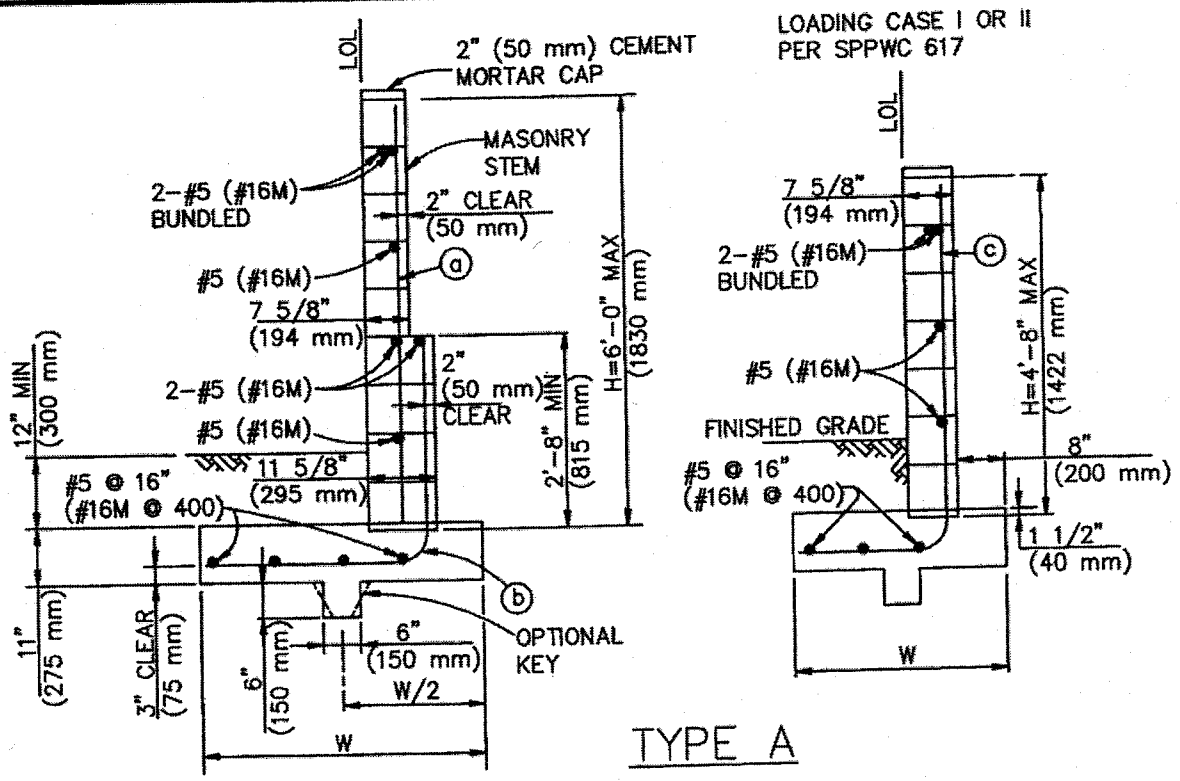
STANDARD PLAN
615-4
SHEET 1 OF 2

TABLE OF REINFORCING STEEL, DIMENSIONS AND DATA

DESIGN H		4' (1200 mm)	6' (1800)	8' (2400)	10' (3000)	12' (3600)
W		4'-0" (1250)	5'-0" (1550)	6'-6" (2000)	8'-0" (2450)	9'-6" (2900)
F		16" (400)	16" (400)	18" (450)	18" (450)	22" (550)
BATTER		NONE	NONE	NONE	100:3	100:6
ⓐ BARS		#5 @ 16" (#16M @ 400)	#5 @ 16" (#16M @ 400)	#5 @ 16" (#16M @ 400)	#5 @ 12" (#16M @ 300)	#5 @ 10" (#16M @ 250)
SHORT ⓐ BARS		———	———	#5 @ 16" (#16M @ 400)	#5 @ 12" (#16M @ 300)	#5 @ 10" (#16M @ 250)
ⓑ BARS		#5 @ 16" (#16M @ 400)	#5 @ 16" (#16M @ 400)	#5 @ 8" (#16M @ 200)	#5 @ 6" (#16M @ 150)	#5 @ 5" (#16M @ 125)
TOE PRESSURE	CASE I psf (kPa)	1600 (80)	2200 (105)	2500 (120)	3000 (145)	3500 (170)
	CASE II psf (kPa)	1500 (75)	2100 (100)	2700 (130)	3400 (165)	4100 (195)
	CASE III psf (kPa)	1600 (80)	2300 (110)	2900 (140)	3800 (185)	4400 (210)
	CASE IV psf (kPa)	2000 (95)	3200 (155)	4200 (200)	5300 (255)	6500 (310)

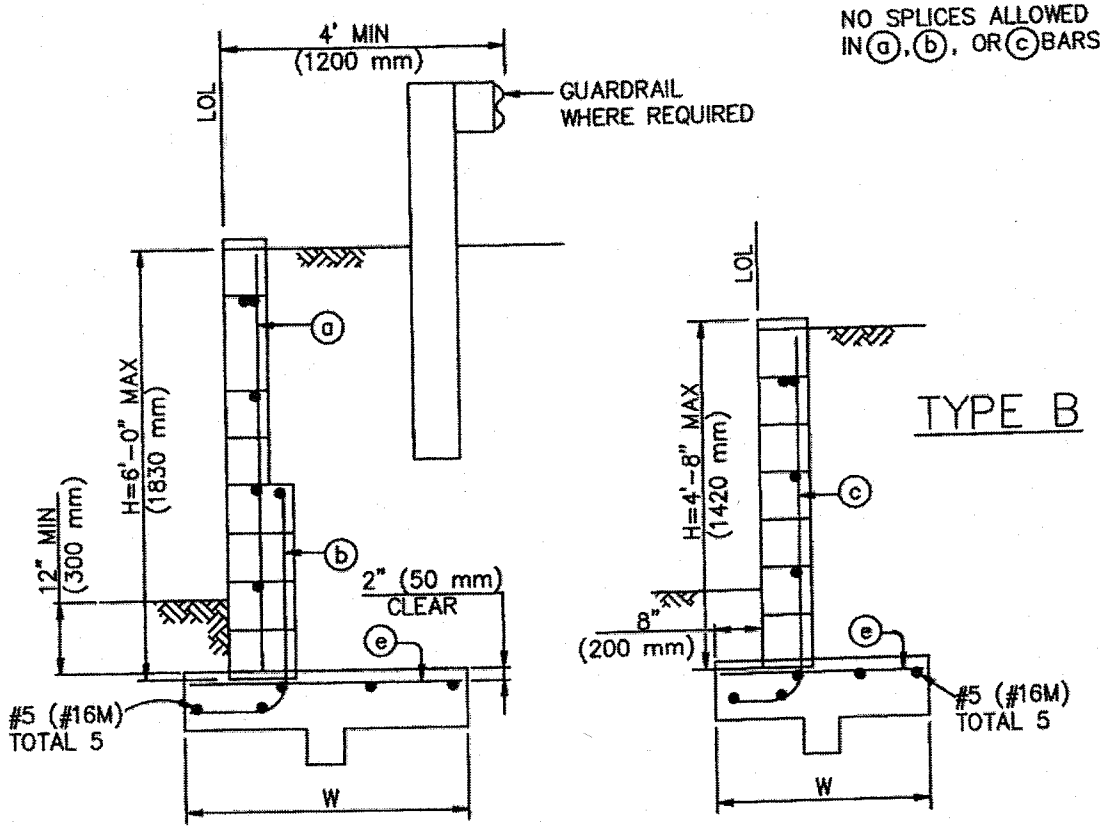
NOTES:

1. SEE SPPWC 617 FOR STANDARD WALL DETAILS.
2. METRIC REINFORCING BAR SPACING IS IN MILLIMETERS.



TYPE A

NO SPLICES ALLOWED IN ⓐ, ⓑ, OR ⓒ BARS



TYPE B

SIMILAR TO CALTRANS TYPE 6

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

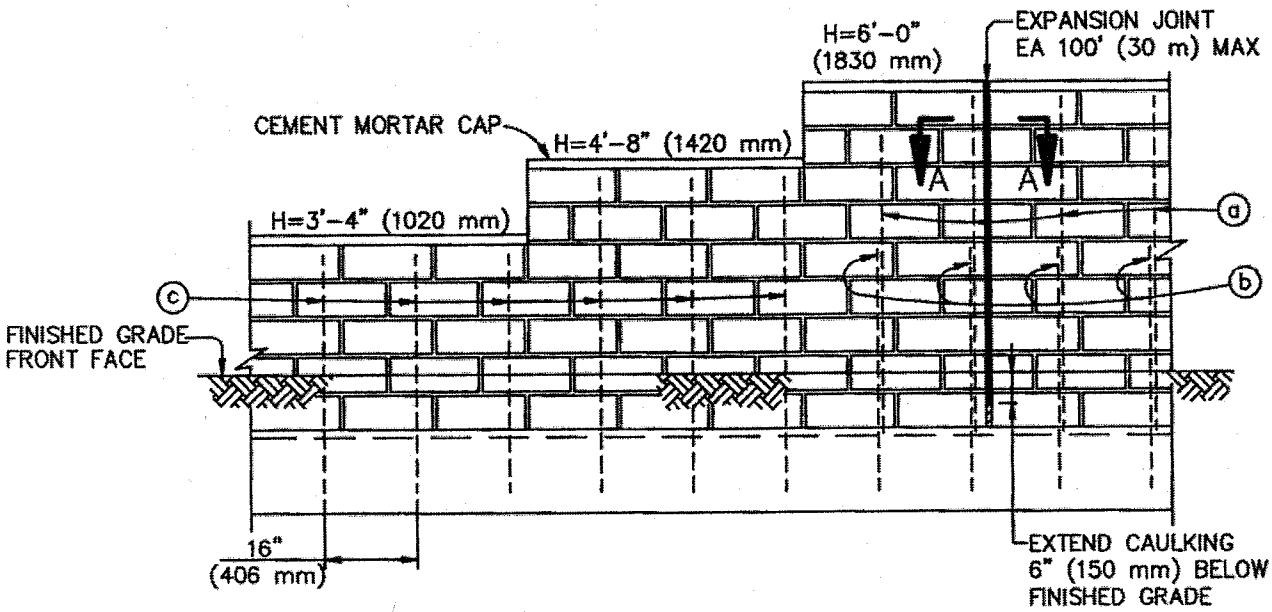
PROMULGATED BY THE PUBLIC WORKS STANDARDS INC. GREENBOOK COMMITTEE 1993 REV. 1996, 2005, 2009

MASONRY RETAINING WALL

USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

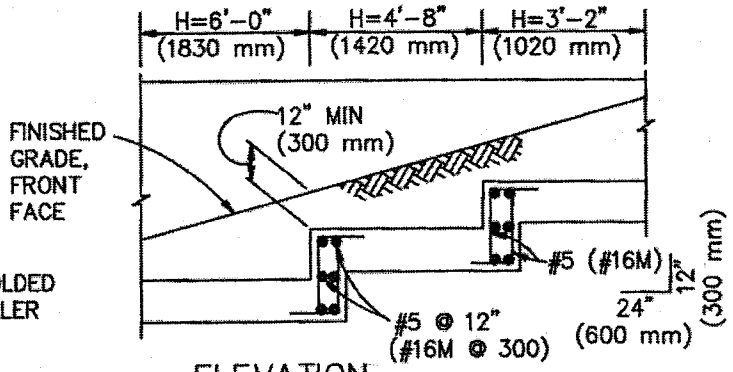
STANDARD PLAN 618-3

SHEET 1 OF 3

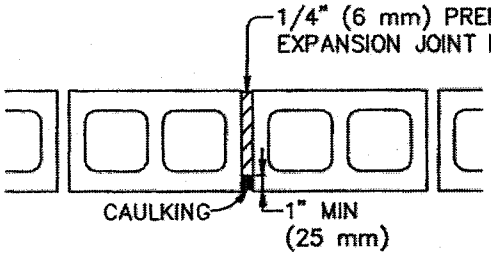


OMIT MORTAR FROM VERTICAL JOINT IN FIRST COURSE ABOVE FINISHED GRADE AT 2'-8" (813 mm) CENTERS FOR WEEP HOLES. FILL ALL CELLS WITH GROUT.

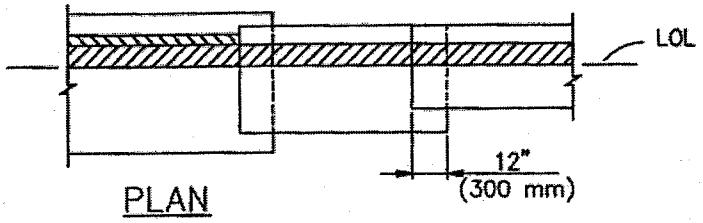
ELEVATION



ELEVATION



SECTION A–A



PLAN

FOOTING STEP DETAILS

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION	STANDARD PLAN
MASONRY RETAINING WALL	**618–3**
	SHEET 2 OF 3

TYPE A WALL

DESIGN H	3'–4" (1020)	4'–0" (1220)	4'–8" (1420)	5'–4" (1630)	6'–0" (1830)
W	3'–2" (1000 mm)	3'–6" (1100)	3'–10" (1200)	4'–2" (1300)	4'–6" (1400)
ⓐ BARS	———	———	———	#5 @ 16" (#16M @ 406)	#5 @ 16" (#16M @ 406)
ⓑ BARS	———	———	———	#5 @ 16" (#16M @ 406)	#5 @ 16" (#16M @ 406)
ⓒ BARS	#5 @ 16" (#16M @ 406)	#5 @ 16" (#16M @ 406)	#5 @ 16" (#16M @ 406)	———	———

TYPE B WALL

DESIGN H	3'–4" (1020 mm)	4'–0" (1220)	4'–8" (1420)	5'–4" (1630)	6'–0" (1830)
W	2'–8" (850)	3'–0" (950)	3'–4" (1050)	3'–8" (1150)	4'–0" (1250)
ⓐ BARS	———	———	———	#5 @ 15" (#16M @ 375)	#5 @ 15" (#16M @ 375)
ⓑ BARS	———	———	———	#5 @ 15" (#16M @ 375)	#5 @ 15" (#16M @ 375)
ⓒ BARS	#5 @ 15" (#16M @ 375)	#5 @ 15" (#16M @ 375)	#5 @ 15" (#16M @ 375)	———	———
ⓔ BARS	#5 @ 15" (#16M @ 375)	#5 @ 15" (#16M @ 375)	#5 @ 15" (#16M @ 375)	#5 @ 15" (#16M @ 375)	#5 @ 12" (#16M @ 300)

DESIGN DATA (SEE SPPWC 617 FOR PCC, STEEL, AND OTHER SOIL DATA)

f_m = 500 psi (3.5 MPa) f'_m = 1500 psi (10.5 MPa)

REQUIRED SOIL BEARING CAPACITY 2000 psf (95 kPa)

NOTES:

1. SEE SPPWC 617 FOR STANDARD WALL DETAILS.
2. METRIC REINFORCING BAR SPACING IS IN MILLIMETERS.

Form: ml.jmf.1

COUNTY OF RIVERSIDE

TRANSPORTATION AND LAND MANAGEMENT AGENCY

Transportation Department

Materials Laboratory

CONTRACTOR JOB MIX FORMULA PROPOSAL

FOR *HOT MIX ASPHALT*

CONTRACTOR NAME, ADDRESS, PHONE NO. & FAX NO:	CONTRACT NO. / TRACT NO. / PERMIT NO. / OTHER: PROJECT INFORMATION (LOCATION, NAME AND PHASE NO):
SUBMITTED BY CONTRACTOR (PRINT NAME AND SIGN):	DATE:
HOT MIX ASPHALT (HMA) TYPE:	ASPHALT BINDER, ASPHALT MODIFIER AND CRUMB RUBBER MODIFIER (CRM) SUPPLIER / ASPHALT RUBBER BINDER PRODUCER:
HMA PRODUCER NAME, ADDRESS AND PHONE NO:	
PRODUCER MIX IDENTIFICATION NUMBER / NOTES:	GRADE OF ASPHALT BINDER / NOTES:

JOB MIX FORMULA (JMF)

Sieve Size	JMF Target Value (TV) (% passing)	TV Limits (% passing)	Project Specification Limits (TV± Tolerance)
1.50"			
1.00"			
0.75"			
0.50"			
0.375"			
No. 4			
No. 8			
No. 16			
No. 30			
No. 50			
No. 100			
No. 200			
RAP percentage (dwa)			
Asphalt binder percentage (dwa)			

Aggregate sources and California Mine and SMARA identification numbers for each *bin:*

Reclaimed asphalt pavement (RAP) source:

Note to Contractor:
Please include with your submittal all supporting HMA design data.

2950 Washington StreetRiverside, CA 92504-phone (951) 955-6876 / fax (951) 955-6806

Appendix C

Attachment "C" for Risk Level 1 Requirements

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 Inspection					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.

Appendix D

Electrical System Specifications

Table of Contents

86 ELECTRICAL SYSTEMS

Add following to Section 86-1 General

SIGNAL AND HIGHWAY LIGHTING SYSTEM

A. General

Furnishing and installing traffic signal and highway lighting systems, and payment shall conform to the provisions in Section 86, "Electrical Systems", of the latest edition Standard Specifications, amendments to the Standard Specifications, and these Special Provisions.

B. Start of Work

Location where signalization and highway lighting work is to be performed:

	Location	Area
1.	Fred Waring Drive at Adams Street Intersection	County of Riverside/City of La Quinta
2.	Fred Waring Drive at Dune Palms Road Intersection	County of Riverside/City of La Quinta

C. Equipment Orders

The Contractor shall furnish all equipments and materials specified in the plans and these special provisions that are not furnished by the County. All equipment shall be new and purchased by the Contractor for this project only.

Submittals and issuance of Notice to Proceed
Within twenty one (21) calendar days after the award of the contract, the Contractor shall submit equipment and materials submittals to the Engineer for review and approval. The Contractor shall allow fourteen (14) calendar days for the Engineer to review the equipment and materials submittals. If revisions are required as determined by the Engineer, the Contractor shall revise and resubmit the equipment and materials submittals within seven (7) calendar days of receipt of the Engineer's comments and shall allow seven (7) working days for the Engineer to review the revisions. Once the submittals are approved by the Engineer, the Contractor must order equipment and materials and then submit a copy of each vendor Equipment and Material Purchase Order within (7) calendar days to the Engineer.

The Contractor must have copies of approved Equipment and Material submittal(s) and Purchase Order(s) prior to the coordination and issuance of the Notice to Proceed. Delay in equipment delivery shall not be considered as justification for the suspension of the construction contract.

Liquidated Damages:
In addition to the liquidated damages set forth elsewhere in these contract documents, the Contractor shall pay to the County of Riverside the sum of $800 same as project LD per day for each and every calendar day delay in receiving all of the below listed equipment, onto the job site or the contractors storage facility, and available for installation, within one hundred (100) calendar days of the contract award:

1. Traffic Signal and Pedestrian Signal heads
2. LED Modules
3. Edge Lit LED Internally Illuminated Street Name Signs and mounting brackets
4. Service Equipment Enclosure

D. Equipment List and Drawings

Equipment list and drawings shall conform to the provisions in Section 86-1.04, "Equipment List and Drawings", of the Standard Specifications and these Special Provisions.

The Contractor shall furnish four complete cabinet wiring diagrams for each furnished controller assembly, battery backup system, video detection system, and emergency vehicle preemption system. The cabinet wiring diagram shall include an approximately 6 inches x 8 inches or larger schematic drawing of the project intersection on a separate 8 ½" x 11" sheet of paper, which shall include the following information, at a minimum:

1. North arrow
2. Street names
3. Pavement delineation and markings
4. Signal poles
5. Traffic signal heads with phase designations
6. Pedestrian signal heads with phase designations
7. Loop detectors with input file designations

E. Warranties, Guaranties, Instruction Sheets, and Manuals

Warranties, guaranties and instruction sheets shall conform to these Special Provisions.

1. LED modules shall have five (5) years of manufacturer warranty.

2. Battery Backup System (BBS) shall have five (5) years of manufacturer warranty. The first three (3) years shall be termed the "Advanced Replacement Program". Under this program, the manufacturer will send out a replacement within two business days of the call notifying them of an issue. The replacement unit may be either a new unit or a re-manufactured unit that is up to the latest revision. The last two years of the warranty will be factory-repair warranty for parts and labor on the BBS.

3. Video Detection System shall have three (3) years of manufacturer warranty. During the warranty period, technical support from factory-certified personnel or factory-certified installers shall be available via telephone within four (4) hours of the time when a service call is made.

4. Edge Lit LED internally illuminated street name sign shall have two (2) year of manufacturer warranty.

5. All other equipment and systems shall have at least one (1) year of manufacturer warranty.

Furnish the manufacturer's standard written warranty pertaining to defects in materials and workmanship for all equipment, and two (2) sets of user, operation, and maintenance manuals, written in English, on all equipments and components for the traffic signal and highway lighting system to the Engineer.

F. Maintaining Existing and Temporary Electrical Systems

Maintaining existing and temporary electrical systems shall conform to the provisions in Section 86-1.06 "Maintaining Existing and Temporary Electrical Systems", of the Standard Specifications and these Special Provisions.

Authorization and coordination from the Engineer is required for each traffic signal system shutdown. Traffic signal system shutdowns shall be limited to periods between the hours of 9:00 A.M. and 3:00 P.M.

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

Equip existing flashing beacons with portable flashing beacons during flashing beacon shutdown. Portable flashing beacons shall conform to the provisions in Section 12-3.05, "Portable Flashing Beacons" of the Standard Specifications or as directed by the Engineer.

If directed by the Engineer, a generator shall be furnished, connected, and maintained to keep traffic signal or flashing beacon system running in normal operation. All matters pertaining to the operation of existing traffic signal equipment shall be coordinated and cooperated with City of La Quinta traffic signal operation division.

Temporary "Stop" signs furnished and installed shall be 48 inches in size.

Temporary "Stop Ahead" signs furnished and installed shall be equipped with portable flashing beacons. The traffic signal maintenance staff are:

City of La Quinta
78-495 Calle Tampico
La Quinta, CA 92253
Contact: Kris Gunterson
(760) 250-0571

G. Remove, Reinstalling or Salvaging Electrical Equipment

Removing, reinstalling or salvaging shall conform to provisions in Section 86-7 "Removing, Reinstalling or Salvaging Electrical Equipment", of the Standard Specifications.

H. Foundations

Foundations shall conform to the provisions in Section 51, "Concrete Structures", and Section 86-2.03, "Foundations", of the Standard Specifications and these Special Provisions. Salvaged traffic signal and equipments shall be delivered to City of La Quinta maintenance yard.

Portland cement concrete shall conform to Section 90-2, "Minor Concrete", of the Standard Specifications and shall be Class 3 except pole foundations shall be Class 2.

Construct Type 332 controller cabinet foundation per Standard Plans ES-3C.

Vibrate all foundation concrete to eliminate air pockets.

I. Standards, Poles, Steel Pedestals and Posts

Standards, poles, steel pedestals, and posts shall conform to the provisions in Section 86-2.04, "Standards, Poles, Steel Pedestals and Posts", of the Standard Specifications and these Special Provisions.

Type 1A pole material shall be spun aluminum unless otherwise specified.

Poles installed at the near-right approach of each intersection shall be banded conforming to the strap and saddle method per Standard Plans RS4 for the emergency installation of stop signs.

Signal mast arms shall be installed in accordance with the "Signal Arm Connection Details" of the Standard Plans unless otherwise specified.

Internally Illuminated Street Name Sign (IISNS) mast arm shall be 10-foot long galvanized steel pole in accordance with County Standard No. 1200. The IISNS mast arm shall be constructed to prevent deformation or failure when subjected to 100 mph wind loads while carrying a 10' long and 2' height Edge-Lit LED IISNS.

If required by the serving electric utility, and confirmed by the Engineer, State Certified Electric Workers shall be utilized for the installation of standards, steel pedestals, and posts in accordance with State of California High Voltage Safety Orders.

J. Conduits

Conduit shall conform to the provisions in Section 86-2.05, "Conduit", of the Standard Specifications and these Special Provisions.

Conduits shall be Type 3, Schedule 80 Polyvinyl Chloride (PVC) conforming to UL Publication 651 requirements for Rigid Non-Metallic Conduit, for underground installation only.

Conduit depth shall not exceed 60 inches below finish grade.

Conduit size shall be 2 inches minimum unless otherwise specified. New conduit shall not pass through foundations or standards.

Conduit bends shall be factory bends. Bend radius for signal interconnect conduits shall be 3 feet minimum.

A pull rope and a bare #12 AWG wire shall be installed in conduits intended for future use.

Bell bushings are required for all conduit ends. The ends of conduits terminating in pull boxes and controller cabinets shall be sealed with sealing compound approved by the Engineer after conductors have been installed.

Conduits shall be installed via jacking or drilling method per Section86-2.05C, "Installation", of the Standard Specifications.

Trenching Installation

The Engineer shall approve trenching installation on a case-by-case basis where conduit cannot be installed by jacking or drilling. Jacking or Drilling shall be attempted a minimum of three times prior to requesting trenching installation.

If ordered by the Engineer, all pavements shall be cut to a depth of 3 inches with an abrasive type saw or with a rock cutting excavator specifically designed for this purpose. Cuts shall be neat and true with no shatter surface outside the removal area.

Trench shall be 2 inches wider than the outside diameter of the conduit being installed however not exceeding 6 inches in total width. The conduit shall be placed in the bottom of the trench. Conduit depth shall be at a minimum of 30 inches below finished grade, with a minimum of 26 inches cover over the conduit.

The trench shall be backfilled with two-sack slurry to the finish grade before final paving. Prior to final paving, grind pavement centered along the length of the trench a minimum width of 3 feet and depth of 0.10 feet, and excavate backfilled to a depth of 0.30 feet below the final pavement surface. Final paving with commercial Type A ½" PG64-10 asphalt concrete.

If directed by the Engineer, the two-sack slurry backfill can be installed to a depth of 0.30 feet below the final pavement surface and cured for a minimum of two days prior to final paving if the trench area is not open to traffic.

K. Pull Boxes

Pull boxes shall conform to the provisions in Section 86-2.06, "Pull Boxes", of the Standard Specifications and these Special Provisions.

Traffic pull boxes shall conform to the provisions in Section 86-2.06, "Traffic Pull Boxes", of the Standard Specifications and these Special Provisions.

Pull boxes shall have a "Fibrelyte" or equivalent cover and bolt down design. Cover shall have a non-skid surface.

Pull box covers shall be marked in accordance with Standard Plans ES-8 without the word "CALTRANS" unless the project is on State of California right of way.

Pull boxes shall be placed with their tops flush with surrounding finish grade or as directed by the Engineer.

Pull boxes shall be installed behind the curb or as shown on the plans and shall be spaced at no more than 500 feet intervals. The Engineer shall determine the exact locations.

Pull boxes installed in unimproved areas, locations not protected by concrete curb and gutter, shall be traffic pull box and marked with Type L markers.

L. Conductors, Cables and Wiring

Conductors and Cables shall conform to the provisions in Section 86-2.08, "Conductors and Cables", of the Standard Specifications and these Special Provisions.

Wiring shall conform to the provisions in Section 86-2.09, "Wiring", of the Standard Specifications and these Special Provisions.

Specific cabling and wiring requirements for various systems or components shall be in accordance with the Special Provisions entitled to each herein.

Signal cable shall be installed continuously without splicing from the controller cabinet to each traffic signal pole. Traffic signal conductors, multiple circuit conductors, and signal cable conductors shall not be spliced unless otherwise shown

All outer cable jacket for 12 conductor cable shall be removed from the traffic signal standard hand hole to the terminal block located at the side mount traffic signal head.

Where splice is required, Type C or Type T splice shall be used and insulated as shown in the Standard Plans, ES-13A.

Where splice is required, "Liquid Electrical Tape" or equivalent in black color shall be used to provide a watertight electrical insulating coating with "Method B" as shown in the Standard Plans, ES-13A.

Minimum luminaire wiring shall be No. 10 AWG, including wiring within poles and mast arms.

M. Not Used

N. Bonding and Grounding

Bonding and grounding shall conform to the provisions in Section 86-2.10, "Bonding and Grounding", of the Standard Specifications and these Special Provisions.

Grounding jumper shall be attached by a 3/16 inch or larger brass bolt in the signal standard or controller pedestal and shall be run to the conduit, ground rod or bonding wire in the adjacent pull box.

Grounding jumper shall be visible after cap has been poured on foundation.

For equipment grounding jumper a No. 8 bare copper wire shall run continuously in all circuits except a No. 12 bare copper wire shall run continuously in conduits that contain only signal interconnect cable and/or loop detector cable.

O. Service

Service shall conform to the provisions in Section 86-2.11, "Service", of the Standard Specifications and these Special Provisions.

Service equipment enclosure shall be Type III-CF, as shown on the Standard Plans, ES-2F, and shall conform to the following:

1. 120 / 240 volt, 2 meter service unless otherwise shown on the plans.
2. Circuit breakers required:
   - 2 - 100 Amp 2 pole (signal main and lighting main)
   - 1 - 30 Amp 1 pole (luminaires)
   - 1 - 20 Amp 1 pole (illuminated street name signs)
   - 1 - 30 Amp 1 pole (signals)
   - 1 - 15 Amp 1 pole (luminaire photoelectric control)
   - 1 - 15 Amp 1 pole (street name sign photoelectric control)
   - 1 - 20 Amp 1 pole (for each beacon, if applicable)
3. Cabinet shall be fabricated from aluminum sheeting and finish shall be anodic coating in accordance with Section 86-3.04A "Cabinet Construction".
4. Circuit breakers shall be marked with identifying labels for each circuit breaker.

Type V photoelectric control contactor and test switch assembly shall be installed in the service cabinet. Photoelectric control contactors shall be as follows:

1. Luminaires - 60 Amp electrically held contact
2. Street name signs - 30 Amp electrically held contact

A GFCI outlet shall be installed on the interior side of service cabinet door.

Photo Electric Control assembly shall be installed within the circuit breaker compartment of the service equipment enclosure, and accessible to the County after installation of electrical meters.

Direct burial service conductors are not allowed.

The Contractor shall be responsible for contacting the power company, arranging and providing for the electrical service connection, and ensuring that adequate notice is provided to the serving electric company in advance of need. *The County of Riverside will pay all electric company fees required.*

The service equipment enclosure shall be a minimum of 15 feet from the controller cabinet, and a minimum of 10 feet from all utility poles, unless otherwise directed by the Engineer.

P. Testing

Testing and Field Testing shall conform to the provisions in Section 86-2.14, "Testing", of the Standard Specifications and these Special Provisions.

Specific testing requirements for various systems and components shall be in accordance with the Special Provisions entitled to each herein.

The complete controller assembly and Battery Backup System shall be delivered to the following location or location as directed by the Engineer for testing:

City of La Quinta
78106 Francis Hack Lane
La Quinta, CA 92253
Contact: Kris Gunterson
(760) 250-0571

A minimum of 15 working days for operational testing and adjustment is required. An additional 15 working days period shall be allowed for retesting should the equipment fail.

The conflict monitor unit shall be tested in the field before signal turn on.

Q. Not Used

R. Vehicle Signal Assemblies

Vehicle signal assemblies and auxiliary equipment shall conform to the provisions in Section 86-4, "Traffic Signal Faces and Fittings", of the Standard Specifications and these Special Provisions.

Signal sections, backplates, visors and signal mounting assemblies shall be the metal type and shall be made from the same manufacturer. The section assemblies shall be uniform in appearance and alignment.

Backplates shall be louvered. Visors shall be the "tunnel" type. Top opening of signal sections shall be sealed with neoprene gaskets.

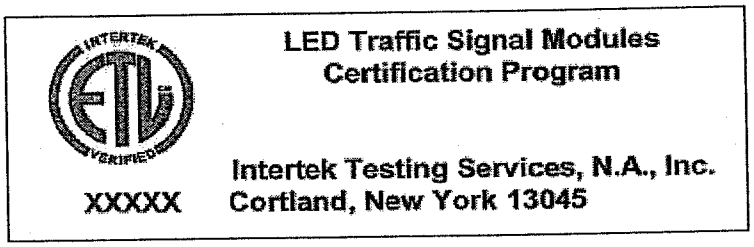
Vehicle signal indications shall be 12-inch diameter Light Emitting Diode (LED) modules in accordance with the following:

1. All circular LED modules shall comply with Institute of Transportation Engineers (ITE) Vehicle Traffic Control Signal Heads (VETCH) - LED Circular Supplement, Adopted June 27, 2005.

2. All arrow LED modules shall comply with ITE VETCH - LED Vehicle Arrow Traffic Signal Supplement, Adopted July 1, 2007.

3. All modules shall fit in existing signal housings without the use of special tools.

4. All modules shall be certified in the Intertek LED Traffic Signal Modules Certification Program and be labeled with the ETL Verified Label as follows:



5. Luminous intensity requirements of the VTCSH must be met across the entire temperature range from -40°C to + 74°C, (-40°F to +165°F).

6. The following cable colors shall be used for the AC power leads on all modules: white for common, red for the red module line, yellow for the yellow module line, and brown for the green module line.

7. The AC power leads shall exit the module via a rubber grommet strain relief, and shall be terminated with quick connect terminals with spade tab adapters. The leads shall be separate at the point at which they leave the module.

8. All external wiring used in the module shall be anti-capillary type cable to prevent the wicking of moisture to the interior of the module.

9. All power supplies shall be coated for additional moisture and thermal protection.

10. The module shall have an incandescent, non-pixilated appearance when illuminated.

11. Nominal power usage is measured at 25°C, 120 VAC. For the 8 inch modules, it shall not exceed 8 watts for Red, 8 watts for Yellow, and 8 watts for Green modules. For the 12 inch modules, it shall not exceed 10 watts for Red, 19 watts for Yellow, and 11 watts for Green modules. For the arrows, it shall not exceed 6 watts for any color.

12. All modules shall use LEDs that have been manufactured with materials that have industry acceptance as being suitable for uses in outdoor applications. At no time is the use of LEDs that utilize AlGaAs technology acceptable.

13. The external lens shall have a smooth outer surface to prevent the buildup of dirt and dust and shall be designed to minimize the potential for sun phantom signals.

14. The circular LED module lens material must be tinted . A tinted transparent film or coating is not permitted.

15. A module shall be sealed against dust and moisture intrusion, including rain and blowing rain per Mil-Std-810F Method 506.4, Procedure 1.

16. Arrow modules shall be clearly marked with the phrase "Suitable for mounting in any orientation".

17. Modules shall be repaired or replaced if the module fails to function as intended due to workmanship or material defects within warranty period.

18. Modules shall be repaired or replaced if the module exhibit luminous intensities less than the minimum specified values within 60 months of the date of delivery.

19. The Manufacturer shall clearly disclose the country in which the factory of module origin is located, the name of the company or organization that owns the factory including all of its parent companies and/or organizations, and their respective country of corporate citizenship.

S. Pedestrian Signal Assemblies

Pedestrian signals assemblies shall conform to the provisions in Section 86-4.03, "Pedestrian Signal Faces", of the Standard Specifications and these Special Provisions.

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

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

Pedestrian signals shall be equipped with light emitting diode countdown pedestrian module in accordance to the following:

1. It shall comply with ITE specification: Pedestrian Traffic Control Signal Indications (PTCSI) Part 2: LED Pedestrian Traffic Signal Modules, Adopted March 19, 2004.

2. All modules shall fit in existing signal housings without the use of special tools.

3. All modules shall be certified in the Intertek LED Traffic Signal Modules Certification Program and be labeled with the ETL Verified Label as follows:

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

1. Fully compliant to NEMA TS-1, NEMA TS-2, Type 170, and Type 2070 traffic signal controller specifications.

2. The countdown portion of the pedestrian (ped) module shall have a high off-state input impedance so as not to provide a load indication to conflict monitors and interfere with the monitoring of the pedestrian signal. The input impedance of the countdown circuitry shall maintain a voltage reading above 25 VAC to the conflict monitor for up to four units connected on the same channel.

3. The countdown drive circuitry shall not be damaged when subjected to defective load switches providing a half wave signal input.

4. The countdown ped module shall have an internal conflict monitor circuit preventing any possible conflicts between the Hand, Person, and Countdown signal indications. It shall be impossible for the display to countdown during a solid Hand indication.

5. Per CA MUTCD Manual section 4E.07: "The countdown pedestrian signal shall display the number of seconds remaining until the termination of the pedestrian change interval. Countdown displays shall not be used during the walk interval or during the red clearance interval of a concurrent vehicular phase".

6. The countdown ped module shall have a micro-processor capable of recording its own time when connected to a traffic controller. It shall be capable of displaying the digits 0 through 99.

7. When power is first applied or restored to the ped module, the countdown display will be blank during the initial cycle while it records the countdown time using the walk (person) and don't walk (flashing hand) signal indications. The normal hand and person icons shall be displayed during this cycle.

8. The countdown ped module shall continuously monitor the traffic controller for any changes to the pedestrian phase time and re-program itself automatically if needed.

9. The countdown ped module shall register the time for the walk and clearance intervals individually and shall begin counting down at the beginning of the pedestrian clearance interval. The digits shall not flash during the countdown.

10. When the flashing hand becomes solid, the ped module shall display 0 for one second and then blank-out. The display shall remain dark until the beginning of the next countdown.

11. In the event of a pre-emption, the countdown ped module shall skip the remaining time, reach 0 at the same time as the flashing Hand becomes solid, and remain dark until the next cycle.

12. In the cycle following preemption call, the signal shall display the correct time and not be affected by the reduced previous cycle. The countdown shall remain synchronized with the signal indications and always reach 0 at the same time as the flashing Hand becomes solid.

13. If a pedestrian button is activated during the clearance interval, some controllers can change to a second walk cycle without a don't walk phase. The countdown module shall also be capable of consecutive walk cycles. The display digits will be blank during the second walk and countdown properly during the second flashing hand.

14. The countdown ped module shall not display an erroneous or conflicting time when subjected to defective load switches. Should there be a short power interruption during the ped clearance interval or if voltage is applied to both the hand and person simultaneously the display will go to "0" then blank.

15. The countdown ped module shall have accessible dip-switches for the user selectable options. The unit shall have a removable plug on the rear allowing easy access to control the user selectable functions. The countdown is disabled when all the switches are in the "ON" position. The unit shall be shipped from the factory with the specified default setting.

16. Switch 1 – Blank Cycle Following a Timing Change – Factory default is "OFF". When this switch is "OFF" the unit will allow the time to be displayed normally during the cycle following a truncated timing such as a preemption call. The countdown shall be capable of displaying the correct time and not affected by the previous reduced cycle. The unit will require 2 consecutive reduced cycles of identical value to validate and record a new time setting. If the timing is extended, the unit will record it immediately. In the "ON" position when a change in timing is detected the unit

will blank out during the following cycle while the new cycle time is measured and recorded if confirmed.

17. Switch 2 – Disables Auto-sync Mode- Factory default setting is "OFF". When this switch is in the "OFF" position the auto-sync is enabled. When the clearance interval begins and the initial flash of the hand is not in sync with the walk signal the unit will measure the offset and reduce the duration of the first second by the value of the offset. This will ensure the countdown reached zero at the same time as the flashing hand becomes solid. In the "ON" position there is no time correction when the flashing hand is in offset with the walk signal. The duration of the first second will not be reduced and the hand will appear solid shortly before the countdown reaches zero.

18. Switch 3 – Countdown Starts with Flashing Hand Signal – Factory default setting is "ON". When this switch is "ON" the countdown begins when the hand signal is turned on. With this switch "ON" and the auto-sync mode enabled a short power interruption will have no effect on the countdown display. With switch 3 in the "OFF" position the countdown begins when the walk signal is turned off. This eliminates the effect of an offset hand signal. When switch 3 is in the "OFF" position the auto-sync switch 2 has no effect on the countdown. In this mode if the power to the walk signal is interrupted, the unit will interpret this as the start of the clearance interval and will display the countdown time for 2 seconds before the operation is cancelled. The countdown will resume with the normal ending of the walk signal.

19. Switch 4 – Stores Time Value in Memory, Immediate. Restart. - Factory default setting is "OFF". When this switch is in the "OFF" position and power is removed from the unit, the time value stored in the unit is erased. The unit will need to run a dark cycle before it can display the countdown again. In the "ON" position the countdown timing is stored in memory. Following a power interruption, the unit will restart with the stored value and not remain dark during the learning cycle. If the value is different after restart, it will be recorded and displayed correctly at the following cycle.

20. Switch 5 – All LEDs "ON", Test Mode – Factory default setting is "OFF". With this switch in the "ON" position all LEDs are turned on simultaneously. With both switches 4 and 5 in the "ON" position the LED test mode will also scan the 7 individual segments of both digits.

21. The countdown shall be disabled when all switches are placed in the "ON" position.

22. Nominal power usage for Ped Modules at 25°C (77°F), 120 VAC input shall not exceed the values shown in Table 1.

Table 1 -- Nominal Power of Pedestrian Signals

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

[1] Wattage for the countdown is measured when the digits 18 are displayed.

23. All wiring shall meet the requirements of Section 13.02 of the VTCSH standard. Secured, color coded, 600V, 18 AWG jacketed wires, 1 meter (39 in) in length, conforming to the NFPA 70, National Electrical Code, and rated for service at +105°C, shall be provided.

24. The following color scheme shall be used for the ped module's AC power leads: Orange for the upraised hand, Blue for the walking person, and White for common. The countdown portion of the LED ped module shall be internally wired to the hand and walking person power.

25. The AC power leads shall exit the ped module via a rubber grommeted strain relief, and shall be terminated with insulated female quick connect terminals with spade / tab adapters. The leads shall be separate at the point at which they leave the ped module.

26. All external wiring utilized in the ped modules shall be anti-capillary type wire to prevent the wicking of moisture to the interior of the ped module.

27. The Hand and Person Icons shall utilize separate power supplies. On countdown products, the countdown ped module must have its own power supply but may take the incoming AC power from the hand / person AC signal lines. All power supplies shall be located inside the ped module.

28. All power supplies shall be conformally coated for additional protection.

29. Off State Voltage Decay: When the hand or person icon is switched from the On state to the Off state the terminal voltage shall decay to a value less than 10 VAC RMS in less than 100 milliseconds when driven by a maximum allowed load switch leakage current of 10 milliamps peak (7.1 milliamps AC).

30. For a minimum period of 60 months, measured at 80 to 135 VAC RMS and over the ambient temperatures of -40°C to +74°C (-40°F to +165°F), the minimum maintained luminance values for the ped modules, when measured normal to the plane of the icon surface, shall not be less than:
    - Walking Person, White: 2,200 cd/m^2
    - Upraised Hand, Portland Orange: 1,400 cd/m^2
    - Countdown Digits, Portland Orange: 1,400 cd/m^2

31. The external lens shall have a textured outer surface to reduce glare.

32. Icons that are printed on the lens shall be on the interior surfaces in order to prevent scratching and abrasion to the icons.

33. All icons and numbers shall have a uniform incandescent non-pixilated appearance.

34. All exposed components of a ped module shall be suitable for prolonged exposure to the environment, without appreciable degradation that would interfere with function or appearance. As a minimum, selected materials shall be rated for service for a period of a minimum of 60 months in a south-facing Arizona Desert installation.

35. All LEDs used to illuminate the ped module shall use material that has industry acceptance for use in outdoor applications. At no time is the use of LEDs that utilize AlGaAs technology acceptable.

36. The countdown display shall consist of two 7 segment digits as shown below. All countdown display digits shall be 9 inches in height for use in all size crosswalks in compliance with MUTCD recommendations.

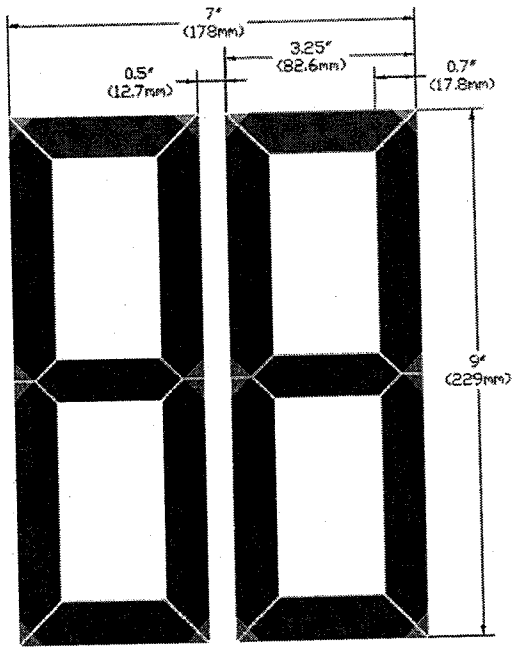


Figure 2: Countdown Display

37. Ped modules shall be repaired or replaced if the ped module fails to function as intended due to workmanship or material defects within warranty period.

38. Ped modules shall be repaired or replaced if the ped module exhibit luminous intensities less than the minimum specified values within 60 months of the date of delivery.

39. The manufacturer shall clearly disclose the country in which the factory of ped module origin is located, the name of the company or organization that owns the factory including all of its parent companies and organizations, and their respective country of corporate citizenship.

T. Pedestrian, Bicycle and Equestrian Push Buttons

Pedestrian, bicycle, and equestrian push buttons shall conform to the provisions in Section 86-5.02, "Pedestrian Push Button Assemblies", of the Standard Specifications and these Special Provisions.

Push button assembly shall be Type B per Standard Plans ES-5C.

Push button housing shall be die-cast or permanent mold cast aluminum powder coated frame with stainless steel inserts and sign screws.

Push button sign shall be white powder coat base with black heat cured ink. Right and left arrow signs shall be doubled sided.

Push button shall be Polara Engineering, Inc. model BDLM2-Y or approved equal.

Push button shall utilize solid-state Piezo switch technology, pressure activated, two-tone audible, visual LED confirmation of actuation and shall be ADA compliant.

The equestrian push buttons (EPB) shall be installed at 6 feet above finish grade or as directed by the Engineer. The Engineer shall approve the EPB placement on each pole prior to installation.

U. Detectors

Detectors shall conform to the provisions in Section 86-5, "Detectors", of the Standard Specifications and these Special Provisions.

Delay timers shall delay calls only during display of the associated red or yellow indications. If a vehicle departs the area of detection prior to expiration of the assigned delay period, the timer shall reset and no call shall be placed upon the controller. During display of the associated green indication, detectors shall operate in the present mode and calls shall not be delayed.

Inductive Loops

Detector loop configuration shall be Type E per Standard Plans ES-5B unless otherwise shown on the construction plan, in the Special Provisions, or as directed by the Engineer.

Limit Line detector loop configuration shall be modified Type E with diagonal saw cuts and wire winding conforming to Type D loop configuration.

Detector loop wire shall be Type 2.

Detector loop lead-in cable shall be Type B.

Detector loop curb terminations shall be Type A in accordance with Standard Plans ES-5D.

Loop sealant shall be the Hot-Melt Rubberized Asphalt sealant type, unless otherwise directed by the Engineer. Loop conductors and sealant shall be installed on the same day the loop slots are cut.

All detector loops shall be tested sequentially by the following methods:

- impedance (measured by megaohms)
- resistance (measured by ohms)
- inductance (measured in microhenries)

Video Detection

The contractor shall furnish and install video detection cameras (VDC), video detection processors (VDP), extension modules (EM), access module (AM), an industry standard 3-button USB mouse, a drawer mounted 17 inch LCD monitor, surge suppressors, and all necessary cabling and auxiliary equipment to make the video detection systems fully functional for the intended operation.
All equipment supplied shall come from and qualified by the VDP supplier to ensure proper system operation.

The VDC shall attach to the top of luminaire mast arm using mounting bracket provided by manufacturer, or the backside of signal mast arm using Pelco Astrobrac with 6' extension or approved equal. The Engineer shall approve the final camera placements.

The video detection systems shall be installed by supplier factory certified installers per recommended method provided in the supplier's installation manuals. Proof of factory certification shall be provided.

Video Detection Zones:

Placement of detection zones shall be done by using the supplied USB mouse connected to the VDP. Detection zones are drawn on the video image from the video camera displayed on a video

monitor using the menu and graphical interface built into the VDP. The menu shall facilitate placement of detection zones and setting of zone parameters or to view system parameters.

Detection zone setup shall not require site-specific information such as latitude, longitude, date and time to be entered into the system. No separate computer shall be required to program the detection zones.

Each detection zone shall be user definable in size and shape to suit the site and the desired vehicle detection region. A detection zone shall be approximately the width and length of one car.

A single detection zone shall be able to replace multiple inductive loops and the detection zones shall be OR'ed as the default or may be AND'ed together to indicate vehicle presence on a single phase of traffic movement.

The VDP shall provide a minimum of 24 channels of vehicle presence detection/detection zones per camera through a standard detector rack edge connector and one or more EMs.

Functional Capabilities:

System must have a single point access to multiple rack-mounted video detection units. The access device shall provide interface capabilities to enable multiple rack-mounted video detection processors to be locally and remotely accessed from a single point via one set of user interface devices.

The camera shall be able to transmit the composite video signal, with minimal signal degradation, up to 1000 feet under ideal conditions.

The EM shall be plugged into the appropriate slot in the detector rack to avoid the need of rewiring the detector rack. The extension module shall be connected to the VDP by an 8-wire cable with modular connectors.

The EM and VDP communications shall be accommodated by methods using differential signals to reject electrically coupled noise. The EM shall be available in both 2 and 4 channel configurations programmable from the VDP.

The VDP shall have video input in NTSC composite video format and shall be digitized and analyzed in real time.

The VDP shall have a nine-pin RS232 port that is multi-drop compatible for communications with an external computer. The VDP shall be able to accept new detector patterns from and send its detection patterns to an external computer through this RS-232 port. A Windows™ based software designed for local or remote connection for uploading and downloading data, and providing video capture, real-time detection indication and detection zone modification capability shall be provided with the system.

The VDP shall store up to three different detection zone patterns within the VDP memory. The VDP's memory shall be non-volatile to prevent data loss during power outages. The VDP shall continue to operate (e.g. detect vehicles) using the existing zone configurations even when the operator is defining/modifying a zone pattern. The new zone configuration shall not go into effect until the operator saves the configuration. Each configuration can be uniquely labeled for identification and the current configuration letter is displayed on the monitor. The selection of the detection zone pattern for current use shall be done through a local menu selection or remote computer via RS-232 port. It shall be possible to activate a detection zone pattern for a camera from VDP memory and have that detection zone pattern displayed within 1 second of activation.

The VDP shall provide dynamic zone reconfiguration to enable normal detector operation of existing channels except the one where a zone is being added or modified during the setup process. The VDP shall output a constant call on any detection channel corresponding to a zone being modified.

The VDP shall detect vehicles in real time as they travel across each detector zone.

The VDP shall output a constant call for each enabled detector output channel if a loss of video signal occurs. The VDP shall output a constant call during the background learning period. The background learning period shall be not more than three minutes.

The VDP shall be capable of detecting a low-visibility condition automatically, such as fog, and place all defined detection zones in a constant call mode. The VDP shall automatically revert to normal detection mode when the low-visibility condition no longer exists. A user-selected output shall be active during the low-visibility condition that can be used to modify the controller operation if connected to the appropriate controller input modifier(s).

Detection shall be at least 98% accurate in good weather conditions and at least 96% accurate under adverse weather conditions (rain, snow, or fog). Detection accuracy is dependent upon site geometry; camera placement, camera quality and detection zone location, and these accuracy levels do not include allowances for occlusion or poor video due to camera location or quality.

Detection zone outputs shall be configurable to allow the selection of presence, pulse, extend, and delay outputs. Timing parameters of pulse, extend, and delay outputs shall be user definable between 0.1 to 25.0 seconds.

Up to six detection zones shall be capable to count the number of vehicles detected. The count value shall be internally stored for later retrieval through the RS-232 port. The data collection interval shall be user definable in periods of 5, 15, 30 or 60 minutes.

System software shall

- Utilize a dual redundant hybrid tracking algorithm to enhance vehicle presence detection and data collection.
- Include a moving shadow and occlusion rejection algorithm that is activated by selection of a drop down menu tab.
- Include a menu selectable zone type labeled "Bike" that is specifically designed to detect bicycles.
- Include a virtual QWERTY keyboard that is present when performing any labeling functions for the detection zones and cameras.
- Include the ability to copy completed zones with one mouse click, drag and drop single zones, rows of zones together and entire detection configurations.

VDP & EM Hardware:

The VDP and EM shall be specifically designed to mount in a standard NEMA TS-1, TS-2, 2070 ATC, 170 type detector rack, using the edge connector to obtain power and provide contact closure outputs. No adapters shall be required to mount the VDP or EM in a standard detector rack. Detector rack rewiring shall not be required or shall be minimized.

Both VDP and EM shall operate in a temperature range from -34°C to +74°C and a humidity range from 0% RH to 95% RH, non-condensing.

Both VDP and EM shall be powered by 12 or 24 volts DC. These modules shall automatically compensate for the different input voltages.

Both VDP and EM shall include detector output pin out compatibility with industry standard detector racks.

Both VDP and EM shall have a detector test switch on the front panel to allow the user to place calls on each channel. The test switch shall be able to place either a constant call or a momentary call depending on the position of the switch.

The VDP power consumption shall not exceed 300 milliamps at 24 VDC. The EM power consumption shall not exceed 120 milliamps at 24 VDC.

The VDP shall utilize flash memory technology to enable the loading of modified or enhanced software through the RS232 port without modifying the VDP hardware.

The VDP shall include the following on the front panel:

- A multi-drop compatible RS232 port, a 9-pin "D" subminiature connector, for serial communications with a remote computer.
- Detection indication such as LED for each channel of detection that display detector outputs in real time when the system is operational.
- One or two BNC video input connection suitable for RS170 video inputs as required. The video input shall include a switch selectable 75-ohm or high impedance termination to allow camera video to be routed to other devices, as well as input to the VDP for vehicle detection. Video must be inputted via a BNC connector on the front face of the processor. RCA type connectors/jacks for video input are not allowed. Video shall not be routed via the edge connectors of the processor.
- One BNC video output providing real time video output that can be routed to other devices. A RCA type connector/jack for video output is not allowed.

Video Detection Camera:

The camera shall be housed in a weather-tight sealed enclosure consists of the following:

1. The enclosure shall be made of 6061 anodized aluminum.

2. The enclosure shall be field rotatable to allow proper alignment between the camera and the traveled road surface.

3. The enclosure shall be equipped with a sunshield. The sunshield shall include a provision for water diversion to prevent water from flowing in the camera's field of view. The camera enclosure with sunshield shall be less than 6" diameter, less than 18" long, and shall weigh less than 6 pounds when the camera and lens are mounted inside the enclosure.

4. The enclosure shall be design so that the pan, tilt and rotation of the camera assembly can be accomplished independently without affecting the other settings.

5. The enclosure shall include a proportionally controlled Indium Tin Oxide heater design that maximizes heat transfer to the lens. The output power of the heater shall vary with temperature, to assure proper operation of the lens functions at low temperatures and prevent moisture condensation on the optical faceplate of the enclosure.

6. The glass face on the front of the enclosure shall have:
    a. An anti-reflective coating to minimize light and image reflections.

b. A special coating to minimize the buildup of environmental debris such as dirt and water.

The camera shall produce a useable video image of the bodies of vehicles under all roadway lighting conditions, regardless of time of day. The minimum range of scene luminance over which the camera shall produce a useable video image shall be the minimum range from nighttime to daytime, but not less than the range 1.0 lux to 10,000 lux.

The imager luminance signal to noise ratio shall be more than 50 dB. In harsh backlit conditions, vehicles can be detected flawlessly with >100dB of dynamic range.

The camera shall be digital signal processor based and shall use a CCD sensing element and shall output color video with resolution of not less than 540 TV lines. The CCD imager shall have a minimum effective area of 811(h) x 508(v) pixels.

The camera shall include an electronic shutter control based upon average scene luminance and shall be equipped with an auto-iris lens that operates in tandem with the electronic shutter.

The camera shall utilize automatic white balance.

The camera shall include a variable focal length lens with variable focus that can be adjusted, without opening up the camera housing, to suit the site geometry by means of a portable interface device designed for that purpose and manufactured by the detection system supplier.

The horizontal field of view shall be adjustable from 5.4 to 50.7 degrees. This camera configuration may be used for the majority of detection approaches in order to minimize the setup time and spares required by the user. The lens shall have a 27x zoom.

The lens shall also have an auto-focus feature with a manual override to facilitate ease of setup.

The camera shall incorporate the use of preset positioning that store zoom and focus positioning information. The camera shall have the capability to recall the previously stored preset upon application of power.

The camera electronics shall include automatic gain control to produce a satisfactory image at night.

When mounted outdoors in the enclosure, the camera shall operate satisfactorily in a temperature range from -34 °C to +60 °C and a humidity range from 0% RH to 100% RH. Measurement of satisfactory video shall be based upon VDP system operation.

The camera shall be powered by120-240 VAC 50/60 Hz. Power consumption shall be 30 watts or less under all conditions.

The camera shall view approaching vehicles at a distance not to exceed 350 feet for reliable detection (height to distance ratio of 1:10). Camera placement and field of view shall be unobstructed and as noted in the installation documentation provided by the supplier.

There shall be at least 2 options for camera set up, diagnostic testing, and viewing video when it is mounted on mast arm or pole using lens adjustment module supplied by the VDP supplier:

1. Connected directly to the camera.
2. Connected to the coaxial cable from the cabinet.

The video signal shall be fully isolated from the camera enclosure and power
Cable terminations at the camera for video and power shall not require crimping tools.

No BNC or other connector shall be used for the coaxial video cable termination at the camera.

The power connection at the camera shall use connector terminations that only require the use of wire strippers and a standard screwdriver. No special crimping tools or other types of terminations shall be used.

A weather-proof protective cover shall be provided shall be provided to protect all terminations at the camera. No special tooling shall be required to remove or install the protective cap.

Cabling and Cable Connections:

The coaxial cable to be used between the camera and the VDP in the traffic cabinet shall be Belden 8281. The coax cable shall be a continuous unbroken run from the camera to the VDP. This cable shall be suitable for installation in conduit or overhead with appropriate span wire. A BNC plug connector shall be used at the cabinet end. The coaxial video cable shall be stripped and terminated at the camera and cabinet per manufacturers' instructions (no BNC or other connector shall be used at the camera). The coaxial cable, BNC connector used at the cabinet termination, and crimping tool shall be approved by the supplier of the video detection system and the manufacturer's instructions must be followed to ensure proper connection.

The power cable shall be three 16 AWG conductor cable with a minimum outside diameter of 0.325 inch and a maximum diameter of 0.490 inch. The power cable shall be terminated at the camera per manufacturers' instructions and shall only require standard wire strippers and a screw driver for installation (no special connectors or crimping tools shall be used for installation). The cabling shall comply with the National Electric Code, as well as local electrical codes. Cameras shall not acquire power from the luminaire.

A Din Rail mounted AC power panel assembly shall be supplied by the video detection manufacturer that will include a minimum of one convenience receptacle, four camera chassis ground connections, four camera AC neutral (AC-) connections, four 2 amp camera circuit breakers for hot (AC+) connections, and one AC source connection for Line, Neutral and Ground wires. A Din Rail video surge suppression protection panel assembly shall also be supplied by the video detection manufacture. One panel shall accommodate up to six EDCO surge suppressors. This equipment shall be installed, including termination of all necessary wiring, per the video detection manufacturer requirments for the intended use.

Maintenance and Support:

The supplier shall maintain an adequate inventory of parts to support maintenance and repair of the system. These parts shall be available for delivery within 30 days of placement of an acceptable order at the supplier's then current pricing and terms of sale for said parts.

The supplier shall maintain an ongoing program of technical support for the access unit and video detection system. This technical support shall be available via telephone, or via personnel sent to the installation site upon placement of an acceptable order at the supplier's then current pricing and terms of sale for on-site technical support services.

Installation or training support shall be provided by factory-authorized representative.

All product documentation shall be written in the English language.

V. Luminaires

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

Luminaires shall be of the cutoff type and shall be 200, 250 or 400 Watt High Pressure Sodium Vapor as shown on the plans. The fixtures shall be constructed with flat lenses, integral ballasts, and detachable power unit assemblies. The power unit assemblies shall contain the ballast, starter board, capacitors, and a heavy-duty terminal block.

Each luminaire shall be furnished without the photoelectric unit receptacle.

Each luminaire shall have a 5-amp inline fuse installed inside the standard's hand hole.

W. Not Used

X. Internally Illuminated Street Name Signs

Internally illuminated street name signs (IISNS) shall conform to the provisions in Section 86-6.09, "Internally Illuminated Street Name Signs", of the Standard Specifications and these Special Provisions.

The sign fixture, panels, and mounting assemblies shall be designed and constructed to prevent deformation, warp or failure when subjected to a minimum of 100 mph wind loads, as set forth in the latest AASHTO publication, "Standard Specifications for Structural Supports of Highway Signs, Luminaires, and Traffic Signals", and amendments thereto. The IISNS manufacturer shall submit a certificate of compliance conforming to the provisions in Section 6-3.05E , "Certificates of Compliance", with each lot of IISNSs delivered.

The IISNS shall be double-faced Edge-lit LED sign with white translucent diamond grade reflective border, arrows, and lettering using 12" uppercase and 9" lowercase Clearview Series 5-W fonts. The background shall be green match color no. 14109 of FED-STD-595.

The standard IISNS height shall be 2' and length shall be 6', 8' or 10' attached to the 10 feet IISNS mast arm with Pelco SE-5015 mast arm sign bracket, or approved equal, per County Standard No. 1200.

Y. Photoelectric Controls

Photoelectric controls shall conform to the provisions in Section 86-6.11, "Photoelectric Controls", of the Standard Specifications and these Special Provisions.

Photoelectric controls shall be a dual Type V for luminaires and internally illuminated street name signs conforming to the County Standard No. 1207.

Photoelectric units shall be the delay type.

Z. Emergency Vehicle Preemption System

Furnish and install complete and functioning emergency vehicle preemption (EVP) system as intended per plans, the manufacturer, and these special provisions.

The EVP system shall consist of the following equipments or components:

- Optical detector for each approach, as shown on the plans
- Rack-mounted 24-channel phase selectors for 8-phase operation
- Detector cable

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

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

At locations where optical detectors are not to be installed, EVP cable shall be installed for future use. The following also apply:

1. EVP cable shall be installed, without splices, between the controller cabinet and each mast arm traffic signal pole.
2. EVP cable shall be connected to the EVP rack terminals within the controller cabinet.
3. Each mast arm EVP detector mounting shall be drilled and tapped in its ultimate location. In lieu of the detector, install approved water tight UL listed electrical box. EVP cable shall be installed to terminate within the mast arm mounted electrical box. Excess cable shall be coiled within the electrical box sufficient for future installation of the EVP system.

Optical Detector

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

Each optical detector shall be waterproof unit capable of receiving optical energy from a ~~single~~ dual directions and have an adjustable turret configuration. The reception angle for each optical detector unit shall be a minimum of eight (8) degrees in all directions about the aiming axis of the unit.

Dual detectors shall utilize only one optical cable per detector.

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

Each optical detector unit shall have a minimum of a ~~½~~ 3/4 inch NPT opening used for mounting and for bringing the connecting cable into the terminal block located within the assembly. The housing shall be provided with weep holes to permit drainage of condensed moisture.

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

Cable

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

1. The cable shall contain 3 conductors, each of which shall be AWG# 20 (7 x 28) stranded, tinned copper. Insulation of individual conductors shall be color-coded: 1-Yellow, 1-Orange, and 1-Blue.

2. The shield shall be either tinned copper braid or aluminized polyester film with a nominal 20% overlap. When film is used, an AWG# 20 (7 x 28) stranded, tinned, bare drain wire shall be placed between the insulated conductors and the shield and in contact with the conductive surface of the shield.

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

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

Phase Selector

Each phase selector shall be compatible and usable with a Model 170E or 2070 controller unit, and shall be mounted in the input file of a Model 332 or Model 333 JP controller cabinet.

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

Phase Selector shall be a four-channel, dual priority, Mulitimode encoded signal device designed for use with both infrared and GPS emitters and optical detectors.

Phase Selectors and Optical detectors shall me manufactured by a single manufacturer

Phase Selector shall recognize and discriminate among three distinct frequency rates via high priority, low priority and probe priority infrared and GPS signals.

Phase selector shall further discriminate among 254 agency ID's, 15 classes of vehicle identification codes and 10,000 individual vehicle codes per class, for more than 38 million total per priority level.

Phase selector shall be capable of operating unlimited intersections and directions.

Phase selector shall have on the front panel, USB, serial and Ethernet capabilities

Phase selector shall be capable of accepting infrared signals from LED and or strobe technologies

Phase selector shall store the following records:

Intersection name
Date and time of activity
Vehicle class and code of activating vehicle
Activating vehicle's ID number
Agency ID
Channel called
Priority of the activity
Final green activity displayed at end of call
Time spent in the final greens
Duration of the activity
Turn signal status
Relative priority level
Capability to playback up to the last 250 seconds of the 100 most recent calls

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

1. Receive Class I and Class II signals.

2. Decode the signals based on optical frequency, at 9.639 Hz + or -0.119 Hz for Class I signals and 14.035 Hz + or –0.255 Hz for Class II signals.

3. Establish the validity of received signals based on optical frequency and length of time received. A signal shall be considered valid only when received for more than 0.50 second. No combination of Class I signals shall be recognized as a Class II signal regardless of the number of signals being received, up to a maximum of 10 signals. Once a valid signal has been recognized, the effect shall be held by the module, in the event of temporary loss of signal for a minimum period of 4.0 seconds.

4. Provide an output for each channel that will result in a "low" or grounded condition of the appropriate input of a Model 170 controller unit. For a Class I signal, the output shall be a 6.25 Hz + or – 0.1 %, rectangular waveform with a 50 % duty cycle. For Class II signal, the output shall be steady.

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

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

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

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

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

1. Range adjustments for both class I and Class II signals.

2. A 3-position, center off, momentary contact switch, one position (down) labeled for test operation of Class I signals, and one position (up) labeled for test operation of Class II signals.

3. A "signal" indication and a "call" indication each for Class I and for Class II signals. The "signal" indications denote that a signal, which is not valid, has been received; a "call" indication denotes a steady, valid signal has been received. These 2 indications may be accomplished with a single indication lamp.

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

Cabinet Wiring

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

1. Slots 12 and 13 of input file "J" shall be wired to accept either a 2 channel or a 4 channel module.

2. Field wiring for the primary detectors, except the 24 VDC power, shall terminate on either terminal block TB-9 in the controller cabinet or on the rear of input file "J", depending on cabinet configuration. Where TB-9 is used, position assignments shall be as follows:

   a. TB-9 – 1 = Not Used
   b. TB-9 – 2 = + 24 VDC Out (Orange)
   c. TB-9 – 3 = + 24 VDC Out (Orange)
   d. TB-9 – 4 = EVA Detector (Yellow)
   e. TB-9 – 5 = EVC Detector (Yellow)
   f. TB-9 – 6 = DC Common Out (Blue)
   g. TB-9 – 7 = EVB Detector (Yellow)
   h. TB-9 – 8 = EVD Detector (Yellow)
   i. TB-9 – 9 = DC Common Out (Blue)

Assuming TB9 – 2 and TB9 – 3 are unused on the "J" File, move wires on J11-J & J11-K (Twisted Pair) to J12-E & J13-E, respectively.

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

System Operation

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

1. Each system to be used for testing shall consist of an optical detector, an optical detector cable and a phase selector module.

2. The phase selector shall be installed in the proper input file slot of the Model 332 or 333 controller cabinet assembly.

3. Two tests shall be conducted; one using a Class I signal emitter and a distance of 1000 feet between the emitter and the detector, the other using a Class II signal emitter and a distance of 1800 feet between the emitter and the detector. Range adjustments on the phase selector shall be set to "Maximum" for each test.

4. During the tests of the Class I and Class II emitters, the proper response from the Model 170E and 2070 controller unit during the "ON" interval and there shall be no improper operation of the Model 170E or 2070 controller unit or the monitor during the "OFF" interval.

Arrange for a technician from the EVP manufacturer, to be present for the first day of the traffic signal and lighting function test to insure proper installation and functioning of the EVP equipment.

Arrange for a technician from the controller assembly manufacturer to perform any controller modifications required for the installation, or operation, of the EVP equipment.

AA. Method of Payment

See Signal and Lighting subsection O, "Service" for payment of all electric company fees required.

The contract price paid **per Lump Sum** for Signal and Lighting shall include full compensation for furnishing all labor, materials, tools, equipment, foundations, pole and mast arm mounted regulatory signs, documents, programming, testing, potholing required for utility verification prior to all conduit installation and incidents and for doing all the work specified herein, elsewhere in these Special Provisions, and plans including the complete installation of an operational traffic signal and lighting system, removing and salvaging existing traffic signal and equipments, excavation and backfilling where needed and no additional compensation shall be allowed therefor.

Appendix E

Landscape Technical Specifications

SECTION 1500
SUPPLEMENTAL GENERAL CONDITIONS

1.0 CITY ENGINEER

The City Engineer for the City of La Quinta is:

Timothy R. Jonasson, P.E.
Public Works Director/City Engineer
78-495 Calle Tampico
La Quinta, CA 92247-1504
(760) 777-7051

2.0 CONSULTANTS

2.1 Landscape Architect

The Landscape Architect for this project is:

Harry Clarke, L.A. 3911
AECOM Technical Services, Inc.
999 Town & Country Road
Orange, CA 92868
Phone: (714) 567-2500
Fax: (714) 567-2441

2.2 Construction Surveyor

If required, the construction surveyor for this project will be provided by the City.

The Contractor's requests for surveying shall be made to the Engineer a minimum of forty-eight (48) hours prior to the time requested for said work.

If construction staking is provided and subsequently removed whether accidentally or otherwise, or the contractor desires additional staking from the above sets, the Contractor will be charged for re-staking at a fee of $185.00 per hour (4 hour minimum).

2.3 Materials Testing

Materials testing for this project will be provided by the City. The City inspector will notify the Contractor when materials will be tested.

3.0 LIQUIDATED DAMAGES

It is agreed by the parties to the Contract that time is of the essence; and that in the case all work is not completed before or upon the expiration of the time limit set forth within Section 1300 Contract; Subsection 4, damage will be sustained by the City and it is,

therefore, agreed that the Contractor will pay to the City an amount of $1,200.00 per work day. The damages described above will be deducted from any money due the Contractor under this Contract; the Contractor and his sureties shall be liable for any such excess cost.

The Contractor shall not be deemed in breach of its Contract and no forfeiture due to delay shall be made because of any delays in the completion of the work due to unforeseeable causes beyond the control and without the fault or negligence of the Contractor, provided the Contractor requests an extension of time in accordance with the procedures set forth in Section 3 of the Standard Specifications. Unforeseeable causes of delay beyond the control of the Contractor shall include acts of God, acts of a public enemy, acts of the government, or acts of another contractor in the performance of a contract with the City, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, weather, or delays caused by failure of the City or the owner of a utility to provide for removal or relocation of existing utility facilities. Delays caused by actions or neglect of the Contractor, its agents, employees, officers, subcontractors, or suppliers shall not be excusable. Excusable delays (those beyond Contractor's control) shall not entitle the Contractor to any additional compensation. The sole remedy of the Contractor shall be to seek an extension of contract time.

4.0 SUBMITTALS

1. Definitions

   A. Shop Drawings, Product Data and Samples: Instruments prepared and submitted by Contractor, for Contractor's benefit, to communicate to Engineer the Contractor's understanding of the design intent, for review and comment by Engineer on the conformance of the submitted information to the general intent of the design. Shop drawings, product data and samples are not Contract Documents.

   B. Shop Drawings: Drawings, diagrams, schedules and illustrations, with related notes, specially prepared for the Work of the Contract, to illustrate a portion of the Work.

   C. Product Data: Standard published information ("catalog cuts") and specially prepared data for the Work of the Contract, including standard illustrations, schedules, brochures, diagrams, performance charts, instructions and other information to illustrate a portion of the Work.

   D. Samples: Physical examples that demonstrate the materials, finishes, features, workmanship and other characteristics of a portion of the Work. Accepted samples shall serve as quality basis for evaluating the Work.

   E. Other Submittals: Technical data, test reports, calculations, surveys, certifications, special warranties and guarantees, operation and maintenance data, extra stock and other submitted information and products shall also not be considered to Contract Documents but shall be information from Contractor to Engineer to illustrate a potion of the Work for confirmation of understanding of design intent.

2. Review of Submittals

A. Submittals shall be a communication aid between Contractor and the Engineer by which interpretation of Contract Documents requirements may be confirmed in advance of construction.

1. Reviews by Engineer and other design professionals shall be only for general conformance with the design concept of the Project and general compliance with the Drawings and Specifications.

2. Engineer will review submittals as originally submitted and the first resubmission. Costs for additional reviews shall be reimbursed by Contractor to Owner by deductive Change Order.

3. All submittals shall be approved by the Engineer and/or City prior to installation

3a. Required Submittals – Product specifications and cut sheets for all irrigation and electrical items, samples and / or photographs for decomposed granite fines and decorative rock (Arizona Cobble), photographs of boulders and plant materials, product sample and cut sheet for Permaloc edging material, and import soil source for berm construction.

END OF SECTION 1500

SECTION 2000
DIVISION 2 - GENERAL PROJECT REQUIREMENTS

1.0 STANDARD SPECIFICATIONS

The **"Standard Specifications"** of the City of La Quinta are contained in the latest edition of the Standard Specifications for Public Works Construction, including all supplements, popularly known as the **Green Book**, as written and promulgated by the Joint Cooperative Committee of the Southern California Chapter of the American Public Works Association and the Southern California District of the Associated General Contractors of California. Copies of the Standard Specifications are available from the publisher, Building News Inc., as follows:

Bookstore Locations: see website for Southern California locations
Website: www.bnibooks.com

The Standard Specifications shall prevail in all cases except where a Contract Document of a higher order, as defined in Section 1400-1.2 **Discrepancies and Omissions**, provides a different requirement on a given topic or topic aspect. All language in the Standard Specifications that is not in conflict with the language in the prevailing Contract Documents on a given topic or topic aspect shall remain in full force and effect, unless the language in the prevailing Contract Document specifically cites the section number in the Standard Specification and says said provision is in lieu that Standard Specification section.

1.1 Alternative Specifications – The Standard Specifications shall apply to this project unless specifically referenced otherwise in the Contract Documents. Wherever **"State Standard Specifications"** are referenced, it shall mean the Standard Specifications, May 2006, edition, published by the State of California Department of Transportation, and wherever the **"State Standard Plans"** are referenced in the Contract Documents, it shall mean the Standard Plans, May 2006, edition, published by the State of California Department of Transportation.

The Contractor may request bound copies of these documents from Caltrans at:

California Department of Transportation
Publication Distribution Unit
1900 Royal Oaks Drive
Sacramento, CA 95815-3800
(916) 263-0822, (916) 263-0865

Or, download these documents at no cost from the Caltrans website:

www.dot.ca.gov/hq/esc/oe/specs_html/2006_specs.html

Wherever the State Standard Specifications reference, Section 4-1.03d "Extra Work," it shall mean Paragraph 1400-7.0 **Changes in the Scope of Work** of these project Specifications.

2.0 STANDARD PLANS

The Standard Plans of the City of La Quinta adopted by the City Council on August 21, 2001, shall apply to this project unless specifically stated otherwise in the Contract Documents.

3.0 PRE-CONSTRUCTION CONFERENCE

3.1 Attendees

The City and its consultants, and the Contractor and its superintendent, invited subcontractors, and other concerned parties shall each be represented at the conference by persons familiar with and authorized to conclude matters relating to the work.

3.2 Agenda

The City Engineer will prepare an agenda for discussion of significant items relative to contract requirements, procedures, coordination and construction.

4.0 PROGRESS SCHEDULES

4.1 General

Prior to commencing work, the Contractor shall provide a Construction Schedule and Cash Flow Projection. During the course of construction, the Contractor shall provide a Weekly Activities Plan.

4.2 Construction Schedule

4.2.1 The schedule shall be submitted within five (5) days of Notice to Proceed and accepted by the City Engineer before the first partial payment can be made.

4.2.2 The Contractor shall submit the schedule based on the Critical Path Method (CPM). The schedule shall indicate preceding activity relationships and/or restraints where applicable and a controlling path shall be indicated. The schedule shall be time scaled and shall be drafted to show a continuous flow from left to right. The construction schedule shall clearly show the sequence of construction operations and specifically list:

a. The start and completion dates of all work items.

b. The dates of submittals, procurement, delivery, installation and completion of each major equipment and material requirement.

c. Progress milestone events or other significant stages of completion.

d. The lead time required for testing, inspection and other procedures required prior to acceptance of the work.

Activities shall be no longer than 10 workdays, except for submittals and delivery items. If an activity takes longer, it shall be broken into appropriate segments of work for measurement of progress. This limitation may be waived, upon approval of the City Engineer, for repetitious activities of longer durations for which progress can be easily monitored.

4.2.3 Any activity that cannot be completed by its original completion date shall be considered to be "behind schedule."

4.2.4 At not less than monthly intervals and when requested by the City Engineer, the Contractor shall submit a revised schedule for all work remaining. If, at any time, the City Engineer considers the project completion date to be in jeopardy because of activities "behind schedule," the Contractor shall submit additional schedules and diagrams indicating how the Contractor intends to accomplish the remaining work to meet the Contract completion date.

4.2.5 All change orders, regardless of origin, shall be reflected in the schedule.

4.3 Time Impact Analysis

4.3.1 When change orders are initiated, delays are experienced, or the Contractor desires to revise the schedule logic, the Contractor shall submit to the City Engineer a written Time Impact Analysis illustrating the influence of each change, delay, or Contractor request on the current contract schedule completion date.

4.4 Weekly Activities Plan

On the last working day of every week the Contractor shall submit to the City Engineer the Contractor's Plan of Activities for the following two weeks. The Plan of Activities shall describe the activity and location of the activity.

4.5 Cash Flow Projection

A cash flow projection shall be submitted with the Construction Schedule. This cash flow projection shall be revised and resubmitted when revisions of the Construction Schedule will result in changes to the projected cash flow.

4.6 Lump Sum Price Breakdown

For work to be performed for a lump sum price, the Contractor shall submit a price breakdown to the City Engineer prior to the first payment and within twenty (20) calendar days after award of the Contract. The price breakdown, as agreed upon by the Contractor and the City Engineer, shall be used for preparing future estimates for partial payments to the Contractor, and shall list the major items of work with a price fairly apportioned to each item. Mobilization, overhead, bond, insurance, other general costs and profit shall be prorated to each item so that the total of the prices for all items equal the lump sum price. At the discretion of the City Engineer, mobilization, bond and insurance costs may be provided for separately if accompanied by invoices to verify actual expenses.

The price breakdown will be subject to the approval of the City Engineer, and upon request, the Contractor shall substantiate the price for any or all items and provide additional level of detail, including quantities of work. The price breakdown shall be sufficiently detailed to permit its use by the City Engineer as one of the bases for evaluating requests for payments. The City Engineer shall be the sole judge of the adequacy of the price breakdown.

5.0 SPECIAL CONTROLS

The Contractor shall take all reasonable means to minimize inconvenience and injury to the public by dust, noise, diversion of storm water, or other operations under its control.

5.1 Dust Control

The Contractor at its expense shall take whatever steps, procedures, or means as are required to comply with Section 3000-4.2 and prevent abnormal dust conditions being caused by its operations in connection with the execution of the Work.

5.2 Noise Abatement

Operations shall be performed so as to minimize unnecessary noise. Special measures shall be taken to suppress noise during night hours. Noise levels due to construction activity shall not exceed the levels specified by local ordinance.

Internal combustion engines used on the Work shall be equipped with a muffler of a type recommended by the manufacturer. No internal combustion engine shall be operated without said muffler.

5.3 Working Hours

Construction operations and maintenance of equipment within one half mile of human occupancy shall be performed only during the time periods as follows:

October 1 to April 30:	Monday - Friday	7:00 AM to 5:30 P.M.
May 1 to September 30:	Monday - Friday	6:00 AM to 7:00 P.M.

The Contractor shall be responsible for any inspection and additional administration costs incurred by the City for work by the Contractor after the hours defined above on weekdays, or any work on weekends or holidays recognized by the City. Such costs shall be withheld from the succeeding monthly progress payment. Any work in Section 3000, SPECIFIC PROJECT REQUIREMENTS, specifically required to be performed outside the normal working hours are excluded from the provisions of this paragraph.

The Contractor shall notify the City Engineer at least 72 hours prior to any work outside the normal working hours defined above, on weekends or holidays.

5.4 Drainage Control

In all construction operations, care shall be taken not to disturb the existing drainage pattern whenever possible. Particular care shall be taken not to direct drainage water onto private property. Drainage water shall not be diverted to streets or drainage ways inadequate for the increased flow. Drainage means shall be provided to protect the Work and adjacent facilities from damage to water from the site or due to altered drainage patterns from construction operations.

Temporary provisions shall be made by the Contractor to insure the proper functioning of gutters, storm drain inlets, drainage ditches, culverts, irrigation ditches, and natural water courses.

5.5 Construction Cleaning

The Contractor shall, at all times, keep property on which work is in progress and the adjacent property free from accumulations of waste material or rubbish caused by employees or by the

Work. All surplus material shall be removed from the site immediately after completion of the work causing the surplus materials. Upon completion of the construction, the Contractor shall remove all temporary structures, rubbish, and waste materials resulting from his operations.

5.6 Disposal of Material

The Contractor shall make arrangements for disposing of materials outside the right-of-way and the Contractor shall pay all costs involved. The Contractor shall first obtain permission from the property owner on whose property the disposal is to be made and absolve the City from any and all responsibility in connection with the disposal of material on said property. When material is disposed of as above provided, the Contractor shall conform to all required codes pertaining to grading, hauling, and filling of earth.

5.7 Parking and Storage Areas

All stockpiled materials and parked equipment at the job site shall be located to avoid interference with private property and to prevent hazards to the public. Locations of stockpiles, parking areas, and equipment storage must be approved by the City Engineer.

6.0 PROTECTION AND RESTORATION OF EXISTING IMPROVEMENTS

The Contractor shall be responsible for the protection of public and private property at and adjacent to the Work and shall exercise due caution to avoid damage to such property.

The Contractor shall repair or replace all existing improvements within the right-of-way, which are not designated for removal (e.g., curbs, sidewalks, survey points, fences, walls, signs, utility installations, pavements, structures, etc.) which are damaged or removed as a result of its operations. Repairs and replacements shall be at least equal to existing improvements and shall match them in finish and dimension.

Trees, lawns, and shrubbery that are not to be removed shall be protected from damage or injury. If damaged or removed because of the Contractor's operations, they shall be restored or replaced in as nearly the original conditions and location as is reasonably possible. Lawns shall be re-seeded and covered with suitable mulch.

The Contractor shall give reasonable notice to occupants or owners of adjacent property to permit them to salvage or relocate plants, trees, fences, irrigation, sprinklers, and other improvements within the right-of-way which are designated for removal and would be destroyed because of the work.

7.0 EXISTING UTILITIES

7.1 General

Existing utilities shown on the drawings are as exact as can be prepared, but their accuracy is not guaranteed. The Contractor shall verify exact location of all utilities prior to the start of construction. Pursuant to Government Code Section 4216, et. seq., the Contractor shall notify the appropriate required notification center. The notification center for La Quinta can be reached by contacting UNDERGROUND SERVICE ALERT (USA) at 1-800-422-4133 or dial 811. USA member utilities will provide the Contractor with the precise locations of their substructures in the construction area when the Contractor gives at least 48 hours notice.

7.2 Notification and Location

At least two (2) working days before performing any excavation work, the Contractor shall request the utility owners to mark or otherwise indicate the location of their service.

It shall be the Contractor's responsibility to determine the exact location and depth of all utilities, including service connections, which have been marked by the respective owners and which he believes may affect or be affected by his operations. If no pay item is provided in the Contract for this work, full compensation for such work shall be considered as included in the prices bid for other items of work.

The Contractor shall notify the following agencies at least 48 hours in advance of excavating around any of their structures. The following utility companies provide service to the La Quinta area and can be contacted via the USA telephone number or the number list below.

1. The Gas Company, (800) 427-2200
2. Imperial Irrigation District, (760) 398-5811
3. Verizon Telephone Company, (800) 483-4000
4. Coachella Valley Water District, (760) 398-2651
5. Time Warner Cable, (760) 340-2225

7.3 Damage and Protection

The Contractor shall immediately notify the City Engineer and utility owner of any damage to a utility.

7.4 Utility Relocation and Rearrangement

The right is reserved to the City and the owners of utilities or their authorized agents to enter upon the Work area for the purpose of making such changes as are necessary for the rearrangement of their facilities or for making necessary connections or repairs to their properties. The Contractor shall cooperate with forces engaged in such work and shall conduct his operations in such a manner as to avoid any unnecessary delay or hindrance to the work being performed by such forces and shall allow the respective utilities time to relocate their facility.

The Contractor assumes responsibility for the removal, relocation, or protection of existing facilities wherein said facilities are identified by the Plans, field located by a utility company, or as provided for in the General Requirements. The Contractor shall coordinate with the owner of utility facilities for the rearrangement of said facilities.

In the event that underground utilities are found that are not shown in the Contract Documents or are found to exist in a different location than shown in the Contract Documents, the Contractor shall: (1) notify the City Engineer of the existence of said facilities immediately; and (2) take steps to ascertain the exact location of all underground facilities prior to doing work that may damage such facilities.

Requests for extensions of time arising out of utility rearrangement delays shall be determined by City Engineer. In accordance with Government Code Section 4215 the Contractor shall not be assessed liquidated damages for delay in completion of the project, when such delay is caused by the failure of the City or utility company to provide for the removal or relocation of facilities for which they are the responsible party as defined in Paragraph 2000-7.3, Damage and Protection.

Where it is determined by the City Engineer that the rearrangement of an underground main, the existence of which is not shown on the Plans, Specifications, or in the General Requirements, is essential in order to accommodate the contemplated improvement, the City Engineer will provide for the rearrangement of such facility by other forces or by the Contractor in accordance with the provisions of Paragraph 1400-7.1, Change Orders.

When the General Requirements, Specifications, or Plans indicate that a utility is to be relocated, altered or constructed by others, the City will conduct all negotiations with the utility company and the work will be done at no cost to the Contractor.

Temporary or permanent relocation or alteration of utilities desired by the Contractor for its own convenience shall be the Contractor's responsibility and it shall make arrangements and bear all costs.

7.5 Underground Facilities

The Contractor is responsible for coordinating all project documentation, including but not necessarily limited to, the Contract Documents and existing record drawings for the determination of the location of all underground facilities.

The Contractor shall exercise care in all excavations to avoid damage to existing underground facilities. This shall include potholing or hand digging in those areas where underground facilities are known to exist until they have been sufficiently located to avoid damage to the facilities.

Prior to fabrication, the Contractor shall verify the location and elevations of existing underground facilities, which the Contractor is connecting to.

No additional compensation shall be provided the Contractor for compliance with the provisions of this section or for the damage and repair of facilities due to the lack of such care.

The California Public Utilities Commission mandates that, in the interest of public safety, main line gas valves be maintained in a manner to be readily accessible and in good operating condition. The Contractor shall notify The Gas Company's Headquarters Planning Office at least 2 working days prior to the start of construction.

END OF SECTION 2000

SECTION 4000
DIVISION 4 - TECHNICAL SPECIFICATIONS

1.0 GENERAL REQUIREMENTS

The Standard Specifications as defined in Section 2000 shall govern the work for this project. All language in the Standard Specifications shall remain in full force and effect, unless the language in the prevailing Contract Document specifically cites the section number in the Standard Specification and says said provision is in lieu of that Standard Specification section.

The project drawings and details are considered as part of these specifications, and any work or materials shown on the drawings and not mentioned in the specifications, or vice versa, are executed as if specifically mentioned in both.

2.0 MOBILIZATION

Mobilization shall conform to the provisions in Section 9-3.4, "Mobilization" of the Standard Specifications. Mobilization includes expenditures for all preparatory work and operations, including but not limited to, those costs necessary for the movement of personnel, equipment, supplies, and incidental to the project site; for the establishment of all facilities necessary for work on the project; and for all other work and operations which must be performed or costs incurred prior to beginning work on the various contract items on the project site as well as the related demobilization costs anticipated at the completion of the project.

Mobilization shall be paid for at the Contract **Lump Sum** Price as shown on the Bid Schedule. Fifty percent (50%) of the lump sum price will be paid upon successful move in and completion of mobilization. The remaining fifty percent (50%) shall be paid after the contractor is completely demobilized and all project sites have satisfactorily been restored and the project clean up is completed.

3.0 TRAFFIC CONTROL

Delete the provisions of Sections 7-10.1 and 7-10.3. Traffic Control shall comply with Section 3000-4.1

Traffic Control shall be paid for at the Contract **Lump Sum** Price as shown on the Bid Schedule. Monthly payments will be made on a pro-rata basis.

4.0 DUST CONTROL

Dust Control shall comply with Section 3000-4.2.

Dust Control shall be paid for at the Contract **Lump Sum** Price as shown on the bid schedule. Monthly payments will be made on a pro-rata basis.

5.0 GRADING / FILL MATERIAL

Fill material and fine grading for the landscape berms shall comply with the latest version of the Standard specifications for Public Works Construction.

Grading / Fill material shall be paid for in the respective unit price as shown in the bid schedule and in conformance with Section 300-4 of the Standard Specification Public Work Construction (Green Book).

PART 2 CONSTRUCTION MATERIALS

The provisions of the "Standard Specifications for Public Works Construction" (latest edition) shall apply except as modified herein.

SECTION 200 - ROCK MATERIALS

200-3 Boulders

Decorative boulders shall be "California Gold" boulders as designated on the plans, and shall range in size from approximately 2 feet to 4 feet wide with no more than one fractured face. Boulders are available from Southwest Boulder and Stone or approved equal. Boulders shall conform to the requirements of 200-1.1 and shall be placed in excavated depressions to give the appearance that the rock is native to the location and shall not be closer than 24" from back of curb of medians. Boulders shall be approved by project landscape architect and /or City Engineer during installation at project site.

Work includes, but is not limited to, furnishing and installing 2 foot through 4 foot diameter "California Gold" decorative boulders. This item shall include all labor, materials, tools, equipment, transportation, and incidentals for performing the work involved per plans, details and specifications. Full compensation for complying with these requirements shall be at a unit cost "per each" as indicated in the bid schedule.

200-4 Decomposed Granite

Decomposed granite "fines", shall meet the requirement of Section 200-2.7 for Disintegrated Granite. Maximum particle size shall be 3/8". Color shall be "Autumn Gold" and "Sangria". Contractor shall confirm Decomposed Granite samples with City Engineer prior to ordering and placement of material.

Decomposed granite shall be 2-inches thick, after 90% compaction. It shall be placed over 90% relative compacted soil.

Work includes, but is not limited to, furnishing and installing decomposed granite material per plans and specifications, or approved equal. This item shall include all labor, materials, tools, equipment, transportation, and incidentals for performing the work involved per plans, details and specifications. Full compensation for complying with these requirements shall be at a unit cost "per square foot" as indicated in the bid schedule.

200-5 Decorative Rock

Decorative rock for Jefferson Street shall be natural multi-colored stone which ranges in size from 4" to 8" diameter and classified as "Arizona Cobble" or "Sun Pebbles", depending on the chosen supplier. Decorative Rock shall be placed in designated areas to give the appearance of a "river wash" with free form edges and sitting approximately flush with adjacent grades. All

material shall be loose and overlap shall occur so as not to see the ground below. The grade below decorative surface is to drain at 1% minimum to avoid standing water conditions. Contractor shall confirm rock samples with City Engineer prior to placement of material.

Work includes, but is not limited to, furnishing and installing 4" and 8" diameter "Arizona Cobble" or "Sun Pebbles" decorative boulders. This item shall include all labor, materials, tools, equipment, transportation, and incidentals for performing the work involved per plans, details and specifications. Full compensation for complying with these requirements shall be at a unit cost "per square foot" as indicated in the bid schedule

SECTION 209 – ELECTRICAL MATERIALS

209-1.1 General

The contractor shall furnish and install all electrical equipment and materials required for a complete electrical system.

All equipment and materials shall comply with the requirements of the governing code and the serving utility and shall be approved and identified by Underwriters Laboratories, Inc. (UL).

Work includes, but is not necessarily limited to the following.

1. Examine all other sections for work related to those other sections and required to be included as work under this section.
2. General provisions and requirements for electrical work.

The drawings indicate diagrammatically the desired locations or arrangements of conduit runs, pull boxes, light fixtures, equipment, etc., and are to be followed as closely as possible. Proper judgment must be exercised in executing the work so as to secure the best possible installation in the available space and to overcome local difficulties due to space limitations or interference of structure conditions encountered. At no time shall the placement of equipment or devices create a condition that is not allowed by the California Electrical Code or local jurisdiction.

In the event changes of locations for equipment or devices are necessary due to field conditions the change shall be made without cost. This assumes that the change is ordered before conduit runs or cables have been installed and work directly connected to same is installed and no extra materials are required.

The contractor shall coordinate the location of all utility vaults, pull boxes, transformer pad or slab box with the service utility agencies and city prior to construction.

Main line for electrical shall be installed on the opposite side of the median from the irrigation main line.

Coordinate and cooperate in every way with other trades in order to avoid interference and assure a satisfactory job.

Prior to starting any underground work the contractor shall notify DIGALERT at 811 and request an underground infrastructure search and identify report.

Perform cutting and patching of the construction work which may be required for the proper installation of the electrical work. Patching shall be per city of La Quinta Standard Detail #600. Match the surrounding work to the satisfaction of the Landscape Architect and/or City Project Manager. Trenches shall be in accordance with City of La Quinta Std. detail #600.

Work includes, but is not limited to, furnishing and installing all electrical components **(except fixtures and mark up)** per plans, specifications and bid schedule. This item shall include all labor, materials, tools, equipment, transportation, and incidentals for performing the work. Full compensation for complying with these requirements shall be at a unit cost **"lump sum"** to provide a complete and fully operational electrical lighting system **(except fixtures and mark up)** including transformers and pedestals, pathway structures and branch circuiting, etc., as indicated on the plans and in the bid schedule.

209-1.2 Conduit and Conductors

209-1.2.1 Conduit

Conduit shall be Polyvinyl chloride, Schedule 40 for all underground applications, or schedule 80 as required per IID or project requirements.

209-1.2.2 Conductors

Line voltage conductors shall be supplied in the sizes and types shown on the Plans and shall be THW or THWN, 600-volt insulation rating, conforming to the applicable provisions of ASTM D 2219 and D 2220.

Low voltage control conductors shall be Type UF and supplied in the sizes shown on the Plans or in accordance with the control equipment manufacturer's recommendation, and shall be UL approved for direct burial installation.

209-1.2.3 Relays and Contactors

Contactors and relays for control of lighting, feeders and panels shall be 600 volt A.C., electrically operated, and mechanically held units, open type for panel mounting with number of poles and of size as indicated on the drawings. Provide auxiliary control relay for operation of each contactor or relay with a control circuit as described on the plans.

Contactors and relays shall be Automatic Switch Co. (ASCO) Bulletin #920 series for 2 and 3 pole and Automatic Switch Co. Bulletin 917 Series for contactors and relays containing 4 or more poles. Coil control circuit shall be independently fused, sized to protect coil.

Contactors and relays shall be equipped with a switch, in the proper configuration, to disconnect the control circuit controlling the coil of the respective device. Control circuit disconnect switch shall be labeled showing function of device.

209-1.3 Pullboxes

209-1.3.1 Pullboxes

Pullboxes shall be reinforced concrete with base and drainage sump. Provide concrete lid with steel bolts or locking device cover permanently marked indicating the system installed.

209-1.4 Meter Pedestals and Panels

209-1.4.1 Pedestals

The meter pedestal shall be by Milbank CP3B 'SL' series or an approved equal.

The meter pedestal shall be made entirely of stainless steel, #4 brushed aluminum finish, utilizing all welded construction providing vandal and weather resistance. No fasteners except sealing screws shall be removable by external access.

The metering section shall be a top swing style and must be pad-lockable and sealable and have an integral hinged viewing window for access to meter. The top side swing top shall fully expose the meter compartment for ease of setting the meter and access to the test blocks.

Meter socket type shall meet the requirements of by the serving utility company.

The service pedestal shall be rated for operation at 10K minimum (AIC) amps interrupting capacity. Verify the maximum available fault current with the serving utility company and notify the Engineer if it exceeds this value.

Panelboard shall be 100 amp, 120/240 volt, single phase, 3 wire, S/N. or as specified on the drawings.

Pedestal enclosure shall provide space provisions to house relays, time clocks or other control devices.

Panelboards shall be stainless steel with a #4 brushed aluminum finish.

209-1.4.2 Circuit Breakers

Breakers shall have a minimum short circuit interrupting rating of 10,000A symmetrical for panelboard voltages thru 240 volt or as specified on the drawings. In no case shall the interrupting rating be less than the bus's withstand rating unless noted otherwise on the drawings or the maximum available fault current with the serving utility company.

Panelboards and circuit breakers shall be products of the same manufacturer.

Circuit numbers of breakers shall be black-on-white micarta tabs or other previously approved method. Circuit number tabs which can readily be changed from front of panel will not be accepted. Circuit number tabs shall not be attached to or be a part of the breaker.

Where two or three pole breakers occur in the panels, they shall be common trip units. Single pole breakers with tie-bar between handles will not be accepted.

Panelboard circuit breakers shall be plug on type.

Provide engraved nameplate on each panelboard indicating its designation and system voltage.

209-1.4.3 Bussing

Bussing shall be rectangular cross section copper or tin-plated aluminum. Bussing shall be the full length of the panel.

Bussing shall be braced to withstand symmetrical short circuit ratings as follows or as noted on drawings. In no case shall bus short circuit bracing be less than specified circuit breakers: Panelboards: 10,000 amp.

Each panelboard shall be equipped with a ground bus secured to the interior of the enclosure. The bus shall have a separate lug for each ground conductor. No more than one conductor shall be installed per lug.

Provide space and all hardware and mounting attachments for future devices as indicated on the drawings.

209-1.5 Lighting Fixtures

209-1.5.1 Lighting Fixtures

Provide light fixtures complete including lamps, drivers and housings.

Lighting fixtures shall be of types as indicated in fixture schedule on the drawings.

Lighting fixtures shall have all parts and fittings necessary to complete and properly install the fixture. All fixtures shall be equipped with lamps of size and type specified.

The fixture to bear Underwriters' label of approval for the wattage indicated.

Light fixtures installed outdoors in damp or wet locations shall be U.L. labeled for said location and shall be sealed and gasketed to prevent light leaks, insect and dust accumulation and water entry.

Work includes furnishing **light fixtures only** (including mark up and / or profit). Labor to install said fixtures is included in the payment item shown above. Full compensation for complying with these requirements shall be at a unit cost per 'each' as indicated in the bid schedule.

SECTION 212 - LANDSCAPE AND IRRIGATION MATERIALS

212-1.1 Topsoil / Unclassified Fill For Berming

Top soil shall be Class "A". Contractor shall submit agricultural suitability recommendations for imported topsoil to Landscape Architect and City Engineer for review and approval prior to installation.

212-1.2.3 Commercial Fertilizer

Comply with the results of agronomic soils testing, section 308.1.

212-1.2.4 Organic Soil Amendment

Comply with the results of agronomic soils testing, section 308.1.

212-1.2.5 Mulch

Mulch as defined as "bark" or "Wood chipped" mulch shall not be used on this project.

212-1.4.1 General

Plant varieties are as shown on the plans. Quantities shall be verified by an actual count on the plans. In the case of discrepancies between quantity tables and actual count, actual count shall govern.

Plants, including trees, shrubs, ground covers and desert accent plantings, shall have been grown in nurseries inspected by the State Department of Agriculture. Inspection and approval of plants by the City Engineer is required. Upon approval, photos or representative plants with a person in the photo will be sent to the City Engineer for review prior to installation. The City representative shall go to the nursery to inspect the plants and trees chosen by the contractor. Where trademark names have been called out in the plant legend, tags must remain on the plants at the time of inspection by the owners authorized representative. Planting shall be laid out in its designated location prior to the installation of the irrigation system in order to properly place the emitter heads. Plant layout to be approved by City Engineer.

The importation of plants from the genus Phoenix from outside the Coachella Valley is prohibited by the Riverside County Agriculture Commissioner under the authority of California Agricultural Code sections 5311, 6300, 6400 and 6500. The contractor shall purchase plants in the genus Phoenix from W.D. Young and Sons, or equal, and shall have these plants available for inspection at the supplier's site.

Work includes, but is not limited to, furnishing and installing plants per plans and specifications. This item shall include all labor, materials, tools, equipment, transportation, and incidentals for performing the work involved per plans, details and specifications. Full compensation for complying with these requirements shall be at a unit cost "each" as indicated in the bid schedule.

212-1.4.2 Trees

All trees shall be of the specific height and crown to the last division of the terminal leader and diameter. The height shall be measured from the root crown. The diameter shall be measured 6 inches (150 mm) above the root crown. The height of palm trees shall be measured from the groundline to the base of the growing bud. The tree shall stand reasonably erect without support.

212-1.4.3 Shrubs

Shrubs shall be of the specified type and size, selected from high quality, well shaped nursery stock. Contractor shall arrange site visit with City representative.

212-1.5.3 Tree Stakes

The type of tree stake shall be as designated in the plan details. The tree support stakes shall be 10 feet (3.1 m) long by 3 inch (75 mm) diameter lodge pole pine. Plastic ribbon tie material shall be 1 inch (25 mm) wide with a minimum tensile strength of 500 pounds (2 kN).

212-1.6 Herbicide

Post emergent herbicide shall be "Roundup" as manufactured by Monsanto or approved equal. Pre-emergent herbicide shall contain Simazine as the primary active ingredient, and shall be granular "Princep 4-G" as manufactured by Ciba-Geigy or approved equal.

212-1.8 Aluminum Restraint Header

Header to separate decomposed granite colors and/or rock cobble to be "AsphaltEdge" by Permaloc Corporation, 800-356-9660. Provide 4 inch (101.6 mm) high by 3 inches wide (76.2 mm) header with holes spaced 12 inches (102 mm) apart along its length to receive anchors.

Section ends shall splice together with horizontal sliding connector. Anchors shall be 3/8 inch x 10 inch (9.5 mm x 254 mm) bright spiral steel spikes. Finish: "Black", complying with AAMA 2603 for electrostatically baked on paint.

Full compensation for complying with these requirements shall be at a unit cost "per linear foot" as indicated in the bid schedule.

212-2 Irrigation System Materials

Work includes, but is not limited to, furnishing and installing a complete and fully automatic irrigation system as shown and described on the plans, details and specifications. This item includes all permit and installation fees including cost for the trenching, backfill, grading, materials, removals, adjustments, installation of all equipment including furnishing and installation of the irrigation controller and enclosure as described on the plans. **This item does not include the placement of water meter or backflow unit which shall be provided by CVWD at said cost to city.** Full compensation for complying with these requirements shall be at a "lump sum" unit cost as indicated in the bid schedule.

212-2.1 Pipe and Fittings

212-2.1.1 General

The type of pipe materials and fittings shall be as designated on the Plans or in the Specifications and shall comply with the following:

212-2.1.3 Plastic Pipe for Use with Solvent Weld Socket or Threaded Fittings

Plastic pipe shall be rigid unplasticized polyvinyl chloride PVC 1220 (Type 1, Grade 2), conforming to ASTM D 1785. Plastic pipe marked with product standard PS-21-70 conforms to the ASTM requirements. The minimum gaskets shall be rigid unplasticized polyvinyl chloride pressure rating shall not be less than the working pressures indicated therein for the schedule and sizes listed.

Schedule 40 PVC pipe shall be used for all irrigation mainline, lateral line and pipe sleeves. All PVC pipe fittings and risers shall be Schedule 80 PVC.

Fittings and couplings for plastic pipe shall be threaded or slip-fitted tapered socket solvent weld type. Threaded adapters shall be provided with socket pipe for connections to threaded pipe. Plastic pipe fittings and couplings shall be PVC I or PVC I/II material supplied in the same

schedule size specified for the pipe. The type of plastic material and schedule size shall be indicated on each fitting or coupling. Fittings and couplings shall comply with the following specifications:

TABLE 212-2.1.3 (A)

Socket Fittings	
Schedule 40	ASTM D 2466
Schedule 80	ASTM D 2467
Threaded Fittings	
Schedule 80	ASTM D 2464

212-2.2 Valves and Valve Boxes

212-2.2.1 General

Valves shall be of the size, type, and capacity designated on the Plans or in the Specifications and shall comply with the requirements specified herein.

All valves shall be capable of satisfactory performance at a working pressure of 200 psi (1380 kPa). Valves shall be designed to permit disassembly to replace sealing components without removal of the valve body from the pipeline.

212-2.2.2 Ball Valves

Ball valves in sizes 2 inches (50 mm) and smaller shall be all bronze and chrome plated bronze ball with reinforced seats and bronze stem.

212-2.2.4 Remote Control Valves

Remote control valves shall be electrically or hydraulically operated. They shall be brass / bronze or plastic with accurately machined valve seat surfaces, equipped with flow control adjustment and capability for manual operation. They shall be made so that they may be readily disassembled for servicing.

212-2.2.6 Quick-coupling Valves and Assemblies

Quick-coupling valves shall be brass or bronze with built-in flow control and self-closing valve and supplied in 25 mm (1 inch) size unless otherwise required. When a quick-coupler assembly is specified, it shall consist of the valve, quick coupler connection and hose swivel.

212-2.2.7 Valve Boxes

Valve boxes and covers shall be fabricated from a durable plastic material resistant to weather, sunlight and chemical action of soils. They shall be desert tan in color. The cover shall be capable of sustaining a load of 1,500psi. Valve boxes for remote control valves shall have locking covers with heat branded lettering indicating the number of the valve station and the type of valve (RCV for remote control valve; BV for ball valve, etc.).

212-2.4 Irrigation Emitter Equipment

Bubbler heads and emitters shall be of the types, sizes and materials shown on the Plans. Equipment of one type and flow characteristic shall be from the same manufacturer and all equipment shall bear the manufacturer's name and identification code in a position where they can be identified in the installed position. Bubbler heads shall be adjustable from full flow to shutoff.

212-3 ELECTRICAL MATERIALS

212-3.1 General

The contractor shall furnish and install all electrical equipment and materials required for a complete electrical system.

All equipment and materials shall comply with the requirements of the governing code and the serving utility and shall be approved and identified by Underwriters Laboratories, Inc. (UL).

212-3.2 Conduit and Conductors

212-3.2.1 Conduit

Conduit shall be Conduit shall be Polyvinyl chloride, Schedule 40 or schedule 80 as per IID or local requirements for all underground applications.

212-3.2.2 Conductors

Line voltage conductors shall be supplied in the sizes and types shown on the Plans and shall be THW or THWN, 600-volt insulation rating, conforming to the applicable provisions of ASTM D 2219 and D 2220.

Low voltage control conductors shall be Type UF and supplied in the sizes shown on the Plans or in accordance with the control equipment manufacturer's recommendation, and shall be UL approved for direct burial installation.

212-3.3 Controller Unit

The type of control unit shall be as called for on the Plans. It shall be fully automatic, with provisions for manual operation, sized to accommodate the number of stations or control valves included in the system. Outdoor models shall be housed in vandal-proof and weatherproof enclosure with locking cover.

PART 3 CONSTRUCTION METHODS

The provisions of the "Standard Specifications for Public Works Construction" (latest edition) shall apply except as modified herein.

SECTION 301 - TREATED SOIL, SUBGRADE PREPARATION, AND PLACEMENT OF BASE MATERIALS

301-6 Boulder Placement

Boulder placement shall be approved by City's representative. Boulders to be placed to appear as "natural" as feasible. Flat and broken faces of boulders or cobble shall be placed face down. Boulders or cobble shall be embedded to the extent necessary to secure in place and as shown in Plans.

303-5 Aluminum Restraint Header Installation

Restraint header shall be formed as indicated on the plans, and installed per manufacturers written recommendations for an aggregate base installation.

SECTION 308 - LANDSCAPE AND IRRIGATION INSTALLATION

308-1 General

All work shall be reviewed and approved by the City Engineer.

Substitutions shall not be allowed unless previously approved in writing by the City Engineer.

308-1.1 Agronomic Soil Testing

Agronomic soil testing will be performed by soil testing agency approved by the City Engineer and paid for by the Contractor. Testing facility shall be approved by the engineer.

1. Samples of the native soil shall be submitted to the agronomic soils testing laboratory after rough grading and prior to soil preparation.

2. Two samples shall be taken of site soil, at a depth of 6 to 12 inches, within proposed planting areas, after completion of grading and prior to weed control and soil preparation.

    a. There shall be two sampling areas per island area located throughout the site as selected by City Engineer.

    b. Take one core sample at each sampling area.

    c. Suitability and fertility analysis with comments and recommendations will be provided for each sample.

    d. Testing laboratory's interpretation, recommendations, and comments will be submitted to the City Engineer within 14 days after the completion of rough grading.

3. Testing will be performed for fertility and suitability analysis, with written recommendations for soil amendment, fertilizer and chemical conditioners, application rates for soil preparation, planting backfill mix and post-maintenance fertilization programs.

4. Agronomic soils analysis and report recommendations shall take precedence over the amendment and fertilizer application rates specified in this Section.

5. On receipt of a soils analysis and recommendations, a Change Order will be issued if revision to soil treatment is required which results in a substantial change in Contract Sum or Contract Time.

6. At Owner's option, additional soil testing will be conducted for organic suitability after completion of soil preparation in planting areas.

308-2.3 Topsoil Preparation and Conditioning

308-2.3.1.1 Soil Preparation

Cross-rip on-grade planting areas to a depth of 10 to 12 inches in two perpendicular directions.

Unless otherwise indicated in the agronomic soils analysis, native soil shall be used with no organic amendment.

The above specification is for bidding purposes only. Final soil test recommendation shall prevail.

308-2.3.3 Weed Control

Contractor shall apply pre-planting herbicide to visible weeds before and after topsoil placement, and remove weeds.

Immediately after planting, Contractor shall apply pre-emergent weed control to planted areas.

308-2.4 Finish Grading

Prior to commencement of planting operations, complete finish grading.

Soil areas shall be compacted and settled by application of heavy irrigation to a depth of 12 inches, in combination with mechanical means of compaction.

308 - 4 Planting

308-4.3 Layout and Plant Location

Plantings areas shown on the plan are diagrammatic and are placed in accordance with known topographic information at the time these drawings were made. It shall be the responsibility of the contractor to verify that the placement of designated plant material is appropriate and clear of obstructions. Plantings can be placed from reference to stationing along the street centerline. Final plant locations to be approved by project landscape architect/city engineer.

308-4.5 Tree and Shrub Planting

Plants will be re-inspected on the site of work prior to installation. Plants under stress will not be approved for planting and are to be removed from site immediately and replaced with suitable plants.

Shrub planting holes shall be backfilled with a prepared backfill mix per the soils engineer's report.

Work includes, but is not limited to, furnishing and installing plant varieties and sizes as shown on the plans and details. Full compensation for complying with these requirements shall be at a unit cost per "each" as indicated in the bid schedule.

308-5 Irrigation System Installation

308-5.1 General

The Contractor shall furnish all necessary materials, labor, and equipment required to complete the work of installing the irrigation system in accordance with the Specifications.

Large specimen plants shall be planted after installing the irrigation system, as required by 308-4.4 but only if location has been staked and approved by city authorized representative.

Unless otherwise provided, the irrigation system layout shown on the Plans shall be considered schematic. With the Engineer's approval, the Contractor may make adjustments where necessary to conform to actual field conditions. The irrigation system shall be operational, with uniform and adequate coverage of the areas to be irrigated, prior to planting.

Service connections shall be as shown on the Plan or designated by the utility company and will be installed by others at no cost to the Contractor. The Contractor shall notify the City Engineer at least 3 weeks prior to the time electrical and water services are required. The Contractor shall be responsible for furnishing the labor and materials to connect to the service connection.

Trenches through paved areas shall be resurfaced in accordance with 306-1.5.

After completing the irrigation system, the Contractor shall submit drawings showing the location of pipe, valves, tubing, wiring, controllers, and electrical services as constructed.

308-5.2 Irrigation Pipeline Installation

308-5.2.1 General

Trench excavation and backfill including the depth of cover over the pipeline shall be in accordance with requirements of 308-2.2. Irrigation mainline shall be installed on the opposite side of the median from the electrical mainline.

Pipe fittings shall be installed in accordance with the manufacturer's recommendations and these specifications. When requested by the City Engineer, the Contractor shall furnish the manufacturer's printed installation instructions before pipe installation.

Pipe shall be bedded in at least 2 inches (50 mm) of finely divided material to provide a firm, uniform bearing. After laying, the pipe shall be surrounded with additional finely divided material to at least 2 inches (50 mm) over the top of the pipe. Trenches to be backfilled, if directed by the City Engineer, for safety. Trench backfill, sufficient to anchor the pipe, may be deposited before the pipeline pressure testing, except that joints shall remain exposed until satisfactory completion of testing.

Pressure testing: mainline shall be pressure tested prior to lateral lines and valves being installed. Mainline shall be tested at 150 psi for 4 hours without exhibiting any loss of pressure or leaks. Any leaks shall be repaired, and the mainline must be retested at 150 psi for 4 hours. This process will be repeated until there are no leaks in the mainline.

When two or more pipelines are installed in the same trench, they shall be separated by a minimum horizontal clear distance of 6 inches (150 mm) and they shall be installed so that each pipeline, valve, or other pipeline component may be serviced or replaced without disturbing the other.

All assemblies shall be assembled as specified and in accordance with the manufacturer's directions.

During installation of pipe, fittings, valves, and other pipeline components, foreign matter shall be prevented from entering the system. All open ends shall be temporarily capped or plugged during cessation of installation operations.

Changes in pipeline size shall be accomplished with reducer fittings.

308-5.2.3 Plastic Pipeline

Plastic pipe shall be jointed by socket-type solvent-welded fittings, threaded fittings, rubber-ring fittings, or by other means specified. When plastic pipe is joined to steel pipe, the steel pipe shall be installed first.

Plastic pipe shall be cut square, externally chamfered approximately 10 to 15 degrees, and all burrs and fins removed.

Solvent welded joints shall be made in accordance with ASTM D 2855. The solvent recommended by the manufacturer shall be used.

Plastic pipe installation shall be in accordance ASTM D 2774 and the requirements herein.

Care shall be exercised in assembling a pipeline with solvent welded joints so that stress on previously made joints is avoided. Handling of the pipe following jointing, such as lowering the assembled pipeline into the trench, shall not occur prior to the set times specified in ASTM D 2855.

Solvent shall be applied to pipe ends in such a manner that no material is deposited on the interior surface of the pipe or extruded into the interior of the pipe during jointing. Excess cement on the exterior of the joint shall be wiped clean immediately after assembly.

Threads for plastic pipe shall be as specified in 308-5.2.2. A plug shall be installed in the bore of the pipe to prevent distortion prior to threading.

Threaded pipe joints shall be made using teflon tape or other approved jointing material. Solvent shall not be used with threaded joints.

Pipe shall be protected from tool damage during assembly. Vises shall have pleated jaws and strap wrenches shall be used for installation of fittings and nipples.

Plastic pipe which has been nicked, scarred, or otherwise damaged shall be removed and replaced. Plastic pipe shall be snaked from side to side in the trench to allow 1 foot (1 meter) of expansion and contraction per 100 feet (30 m) of straight run.
The pipeline shall not be exposed to water for 24 hours after the last solvent welded joint is made.

308-5.3 Installation of Valves, Valve Boxes, and Special Equipment

Valves, pressure regulators, and related accessories shall be furnished and installed as specified.

All valves and other equipment shall be installed in a normal upright position unless otherwise recommended by the manufacturer, and shall be readily accessible for operation, maintenance, and replacement. Sectional control valves shall not be located within range of sprinklers they control.

Valves shall be same size as the pipeline in which they are installed.

Ball valves and sectional control valves shall be installed below ground. Ball valves shall be housed in a covered plastic box that will permit access for servicing. Sectional control valves shall be equipped with a sleeve and cap centered on the valve stem.

Quick-coupler valves shall be installed in round plastic boxes; color: tan, in planting areas, set to finish grade. Quick-coupler valves shall be installed on a double-swing-joint riser assembly as described in 308-5.4.3 and secured to a driven No. 4 (No. 13M) reinforcing steel rod as described in 308-5.4.3.

All valve boxes, pipe sleeves, and caps shall be set to finish grade, and valves shall be set at sufficient depth to provide clearance between the cover and the cap, valve handle, or key when the valve is in the fully open position.

Backflow preventers and water meters will be provided and installed by CVWD, and paid for by the City. Contractor shall coordinate installation with CVWD as needed.

305-5.5 Automatic Control System Installation

Wiring shall be continuous unless otherwise authorized. Connections at remote control valves and in pullboxes shall be soldered and encapsulated in epoxy-filled Rainbird "Snap Tite" containers or 3M "Scotchlok" containers or equal. Two "wires" shall be run to each drip remote control valve. Contractor shall make any and all necessary provisions to ensure he has communicated with the City Engineer and all utility agencies prior to commencing work on any irrigation.

308-6 Maintenance and Plant Establishment

The remaining portion of this subsection has been copied from the "City of La Quinta Maintenance Guidelines".

1.0 Scope of Work

The work shall include furnishing all labor and equipment necessary to maintain landscaped median islands. Duties include, but are not limited to, trash collection, cleaning, maintaining ground cover, shrubs, and trees, maintaining and repairing sprinkler systems, landscape lighting systems and providing weed and pest control. Contractor shall be responsible to maintain site for 1 year.

2.0 Service To Be Performed

2.1 General

A. The removal of all trash such as paper, cans, bottles, broken glass, and any out-of-place or discarded items on a weekly basis.

B. The removal of dried plant material such as hanging or fallen tree limbs, leaves, branches, dried up plants, and wood pieces.

C. All material which is picked up during cleaning shall be legally disposed of by the Contractor. All green waste must be disposed of in accordance with Division 2 Section 2000 No. 19.7.

2.2 Trash Collection, Cleaning and Maintenance

All cleaning shall be done by 5:00 P.M on designated weekly day. The City will designate priority areas due to high use or programmed events.

2.3 Weeding

A. Planters, decomposed granite areas, expansion joints, underneath shrubs, and trees shall be kept free of grass and weeds.

B. When requested by the City, the Contractor shall spray weeds with herbicide for weed control at no additional cost to the City if control is not maintained as specified. Preventive weed control is the responsibility of the Contractor. Any pre-emergent herbicide used will be considered a management tool and the cost will not be paid as extra by the City.

C. Monthly, the Contractor shall complete and furnish copies of an herbicide spray log to the City.

D. The Contractor shall submit a letter naming the herbicide proposed for use, where and how it is to be applied, and a copy of the product label to the City before use begins.

E. The Contractor shall be responsible for the results of application of all herbicides and chemicals. Plants killed or severely damaged by the use of herbicides shall be replaced at no cost to the City, with the nearest size nursery stock available to the size of the dead or severely damaged plant. The soil in the area of the affected plant(s) and planting pit shall be treated with activated charcoal and other soil amendments that may be required to enhance the potential survival and growth of the existing or replacement plants. The treatment and materials must be approved by the City and shall be furnished at no cost to the City.

2.4 Vegetation Maintenance

A. Shrubs

1. All shrubs and hedges shall be routinely trimmed in such a manner that they present a pleasing and natural appearance and do not obstruct the vision of vehicle drivers. Power trimmers shall not be used, and shrubs shall not be hedged or trimmed into geometric shapes.

2. All shrubs, hedges, and ground vegetation shall be maintained so the vegetation does not overgrow its designated growth perimeter.

3. Whenever ground cover, shrubs, or trees die, the Contractor shall call the City to confirm the vegetation is dead, request authorization for replanting, replant it. The City reserves the right to furnish the required plant, shrub, or tree. The City will use the quoted extra labor charges and unit prices submitted with the proposal for reimbursement.

4. Remove any spent blossoms or dead flower stalks as required to present a neat and clean appearance.

5. Shrub and ground cover mounding shall not exceed 18 inches in height within areas required for vehicular sight distance depending upon roadway topography. (City representative to be informed by Contractor if plant material is placed in areas where this will continually be a problem.)

B. Groundcover

General

1. Trim ground cover adjacent to walks, walls, and/or fences as required for general containment to present a neat, clean appearance.

2. Cultivate and/or spray approved herbicide to remove broad-leafed and grass weeds as required. Weeds shall be controlled and not allowed to reach an objectionable height. City representative shall be responsible for determining objectional height. Remove weeds by chemical or mechanical means as approved by City representative.

3. Prevent soil compaction by cultivating regularly all ground cover areas.

4. Any paper or litter that accumulates in ground cover areas shall be picked up on a weekly basis (to the satisfaction of City).

5. Keep ground cover trimmed back from all controller units, valve boxes, quick couplers, or other appurtenances or fixtures. Do not allow ground covers to grow up trees, into shrubs, or on structures or walls. Keep trimmed back approximately 4 inches from structure or walls. Coordinate trimming around base of shrubs/trees with City representative.

2.5 Pest Control of Plant Material

A. General

1. The Contractor shall provide complete and continuous control and/or eradication of all plant pests or diseases. The Contractor shall obtain any necessary permits to comply with City, County, State, or Federal regulations or laws.

2. Contractor will assume responsibility and liability for the use of all chemical controls. Pests and diseases to include, but not limited to, all insects, aphids, mites, other invertebrates, pathogens, and nematodes. Controls to include necessary use of integrated pest control systems involving the use of life history information and extensive monitoring. Control through prevention, cultural practices, pesticide applications, exclusion, natural enemies, biological control, and host resistance.

3. All material used shall be in strict accordance and applied within the most current EPA regulations and the California Food and Agricultural Code.

4. City shall be notified prior to the application of pesticides and other chemicals. Pesticide applications shall be recorded on the Maintenance Schedule and coordinated with City representative. Material use reports for all pesticides shall be filed with the City no later than the 10th of every month for the preceding month.

5. Application of Pesticides

a. Timing: Pesticides shall be applied at times which limit the possibility of contamination from climatic or other factors and at the proper life cycle of the pests. Early morning application shall be used when possible to avoid contamination from draft. Applicator shall monitor forecast weather conditions to avoid making application prior to inclement weather to eliminate potential runoff of treated areas.

Irrigation water applied after treatment shall be reduced to eliminate runoff. When water is required to increase pesticide efficiency, it shall be applied only in quantities of which each area is capable of receiving without excessive runoff.

b. Handling of Pesticides: Care shall be taken in transferring and mixing pesticides to prevent contaminating areas outside the

target area. Application methods shall be used which ensure that materials are confined to the target area. Spray tanks containing leftover materials shall not be drained on the site to prevent any contamination. Disposal of pesticides and tank rinsing materials shall be within the guidelines established in the State of California Food and Agricultural Code or EPA regulations.

c. Equipment and Methods: Spray equipment shall be in good operating conditions, quality, and design to efficiently apply materials to the target area. Drift will be minimized by avoiding high-pressure applications and using water-soluble drift agents.

d. Selection of Materials: Pesticides shall be selected from those materials which characteristically have the lowest residual persistence. Use of emulsifiable concentrates shall be used when possible to limit windblown particles. The use of adjuvants will be to increase pesticide efficiency thereby reducing the total amount of technical material required to gain control.

e. Substitution: Wherever a specific type of material is specified, no substitutions shall be allowed without the written consent of the City representative.

f. Certification of Materials: All materials shall be delivered on the site in original unopened containers. Materials shall be subject to inspection by the City representative.

6. All areas of the landscape shall be inspected for infestations of harmful pests such as ants, insects, mites, snails, and sowbugs. Plants shall be observed closely for leaves that may be blotched, blighted, deformed, mildewed, rusted, scorched, discolored, defoliated, or wilted.

7. Identify the cause of injury and consult a Pest Control Advisor before application of chemical treatments.

a. The State of California Agricultural Code requires that toxic pest control chemicals may be used only after a written recommendation by a State of California licensed Pest Control Advisor is obtained. A recommendation consists of all the applicator should know for an accurate and safe usage. The recommendation must be time and site specific.

b. Application of all pesticides shall be only by a properly State Licensed Pest Control Operator or a Certified Applicator of Pesticides.

c. There shall be no application of a pesticide without written permission of the City.

d. In case a Restricted Use Pesticide is recommended, the City must have a use permit issued only by the County of Riverside Agricultural Commissioner.

8. Start preventative cultural methods before a pest is visible. At certain times of the year, and with certain environmental conditions, the presence of certain pests can be anticipated. Look at new growth for the presence of aphids, leaf hoppers, scale, mealy bugs, and mites. Use a 10-power magnifying glass to see mites. Look for ants on soil, along walks, and trunks of shrubs and trees.

    a. When ants are present, there will be sucking insects. Control of ants will aid in the control of plant feeding insects. Do not use toxic pesticides to control pests when predatory or parasitic insects are present.

9. Dusty foliage and warm temperatures are indicators of mites. So long as foliages are washed, mite populations are low. Keep mite populations low to prevent plant injury.

10. Bark beetles feed in the cambium of scaffold branches and trunks. Older and weaker trees are the first to be infested. Any cause of stress is cause to inspect trees. Look for ants on the ground or in crotches of branches. Also, there may be branches dying.

    a. Control adult beetles before they lay eggs on bark in the spring. All trees near one infested the previous year should be sprayed in March and again in May. On-going inspections are necessary to determine if there is a summer brood.

11. Snails shall be controlled before becoming epidemic. They can be anticipated as a menace from spring until the advent of high temperatures, wherever moist soil prevails.

    a. Control with weekly applications of toxic bait until the youngest brood is gone. The City will not tolerate epidemics of snails.

12. Pruning is an effective prevention of an epidemic of insects and diseases. Pruning away infected parts and disposing of them off-site separates the pest or pathogen from the host. Examples are Pine tree tip moth, Juniper twig girdler, Verticillium wilt, fireblight, and some other blights of foliage.

    a. Thinning of tree foliage, to provide light and aeration for ground cover, is a type of disease prevention.

    b. Use care when pruning not to spread disease by keeping all cutting edges sterile by dipping in an alcohol or bleach solution after each cut.

13. Weeds must be removed upon appearance. Selective post emergence herbicides shall be used to kill weeds without permanent injury to other plants. Do not proceed with a treatment except as recommended by a Pest Control Advisor in writing.

a. All creeping grasses, as well as broadleaf weeds, shall be kept out of shrubs and ground covers.

b. Broadleaf weeds in turf shall be removed selectively, without injury to the lawn grass other than slight, temporary discoloration.

14. Weeds not killed with herbicides shall be removed manually. However, manual weed control shall not be substituted for herbicide applications.

15. Plants killed by weeds, chemicals, etc., shall be replaced at the Contractor's expense. All replacements must be made within 10 days after receiving notice from the City.

16. The Contractor shall establish a continuing program to control insects and rodents.

17. With the program, the following information shall be included:

a. The pest to be controlled
b. Method of control
c. The product labels
d. A schedule as to frequency of control

18. Monthly, the Contractor shall complete a pesticide spray log for any pesticides used. (Failure to submit this log to City representative will result in a Performance Deficiency Reduction.)

19. When using pesticides, the instructions on the label shall be followed explicitly and special care shall be exercised in application.

2.6 Drainage Facilities

The Contractor shall be responsible for continual inspection of surface drains (i.e., bench drains, flow structures), located within the landscaped areas. Surface drains shall be checked and maintained free of obstruction and debris at all times to assure proper drainage. Remove any debris or vegetation that might accumulate to prevent proper flow of water.

2.7 Fertilization

A. Scheduling: Fertilization will be applied in accordance with FERTILIZER SCHEDULE A, or as otherwise directed by the City representative. All applications shall be recorded and specifically identified on the weekly schedule, indicating the fertilizer used and frequency applied and the landscape material applied to (i.e., turf, trees, shrubs, ground cover, etc.).

B. General: Fertilizers shall be inorganic, dry, pelletized formulation. Application shall be in accordance with manufacturer specifications.

C. Method of Application: In making application of fertilizer granules, precautions shall be taken to contain these materials in the planting areas. Caution should

be used when using a cyclone spreader which tends to throw material onto paved areas. The use of constant flow P.T.O. driven spreaders will keep materials contained in planting areas, eliminating sidewalk stains. The Contractor will be responsible for removing all fertilizer stains from concrete caused by this application. Fertilizer shall be applied at manufacturer's recommended rate.

D. Timing of Application: When climatic factors cause problems of the general use of fertilizers, an adjustment of the fertilizer schedule may be necessary. After fertilizer application, monitor watering schedule to eliminate runoff or leaching of fertilizer materials.

E. Trees and Shrubs: Fertilizers, pre-approved by a City representative, shall be applied to trees and shrubs that require supplemental feeding. Annual spring feeding shall be done in accordance with the rate indicated by the manufacturer. Fertilization may require deep root feeding or foliar applications to correct iron chlorosis and other micro-nutrient deficiencies.

2.8 Plant Additions and/or Replacements

As part of this agreement, the Contractor may be requested to replace damaged or destroyed trees, shrubs, vines, ground cover, or flowers. Such work will be covered by plant warranty and included in contract unit cost for maintenance.

2.9 Clean-Up

A. At no time will grass cuttings/debris be permitted to blow into public streets or gutters without being swept or vacuumed clean. Debris generated from adjacent maintained landscape areas shall be the responsibility of the Contractor to remove, (i.e., sidewalks, streets, gutters).

B. Contractor shall remove all debris resulting from the maintenance operations and dispose of it off-site at the time of occurrence. All grass clippings shall be picked up after each mowing or trimming operation.

C. All debris resulting from any of the Contractor's operations shall be removed and disposed of legally at the Contractor's expense. No debris will be allowed to remain at the end of the workday. All municipal Green Waste generated from Contractor's operations shall be diverted from County landfill to an approved reclamation site and processed for recycling.

D. All walkways will be kept clean/clear of debris and plant growth. Care shall be taken not to create necessary hazards to foot traffic.

E. All shrub areas not inter-planted with ground cover will be raked clean a minimum of once a month.

F. The Contractor shall provide a general clean-up operation on a weekly basis for the purpose of picking up papers, trash, or debris which may accumulate in the landscape areas, caused by winds or normal conditions.

Work included in this item consists of providing project maintenance and plant establishment for a period of 1 year in accordance with City requirements. Full compensation for complying with these requirements shall be at a "lump sum" unit cost as indicated in the bid schedule.

3.0 SPRINKLER MAINTENANCE DETAILS

Irrigation

A. General

The controlling factor in the performance of water management within the City landscape maintenance area is the application of water to landscape plants at a rate which closely matches the actual demands of plant material with little or no runoff. Roadway safety and maintenance is the first and foremost reason why water must be strictly controlled within the City. Other important water management considerations include: safe and dry turf areas for community use, water costs, and plant health.

Verification of Supply System Pressure: The system was designed for 50 psi at quick couplers and 20-25 psi for drip emitter systems. Static pressure at P.O.C. should be checked periodically. If pressure is substantially higher than design pressure, adjust pressure regulator accordingly.

B. Reports

See Reports and Schedules, and Forms, Sections 4000 and 8000.

C. Irrigation/Operation and Maintenance

Irrigation shall be accomplished in accordance with City-provided schedules. The following irrigation times shall be applied to various types of public facilities.

1. Medians/Parkways 11:00 PM - 5:00 AM

Failure to adjust irrigation controllers to comply with designated watering windows and City-provided schedules will result in a Performance Deficiency Reduction.

D. Operation/Repair

1. The entire irrigation system to include all components from connection at meters shall be maintained in an operational state at all times. This coverage shall include but not be limited to the following: all controllers and remote control valves; gate valves and backflow devices. Contractor responsibility for mainlines shall consist of continual monitoring and any necessary repairs not to exceed one mainline failure per controller each month. Contractor is required to notify City representative of mainline failures within twelve (12) hours of occurrence.

2. All irrigation systems shall be tested and inspected a minimum of once per week and a written report (see Section 4000) submitted weekly in accordance with the schedule submitted at the start of the contract showing the location, day of week, and time of day that each system will be tested. Any changes shall be submitted for approval prior to enactment.

3. All systems shall be adjusted in order to:

   a. Provide adequate coverage of all landscape areas

   b. Prevent excessive runoff and/or erosion

   c. Prevent watering roadways, trails, fences, and private property

   d. Match precipitation rates

   e. Limit hazardous conditions

4. All system malfunctions, damage, and obstructions shall be recorded and timely corrective action taken.

5. In addition to weekly testing, all irrigation systems shall be tested and inspected as necessary when damage is suspected, observed, or reported; daily if necessary.

   a. Repair malfunctioning controllers, quick couplers, manual or automatic valves and sprinkler heads within twelve (12) hours of receipt of written or verbal notice.

   b. Correct deficient irrigation systems and equipment as necessary following written or verbal notification from the City representative.

      The Contractor shall turn off irrigation system immediately **as directed** during periods of rainfall and times when suspension of irrigation is desirable to conserve water while remaining within the guidelines of good horticulturally acceptable maintenance practices.

   c. Once the City representative acknowledges the necessity to turn on the water once again, all controllers shall be activated within twelve (12) hours.

6. The entire irrigation system to include all components from connection at meters shall be maintained in an operational state at all times. This coverage applies to all controllers and remote control valves, gate valves and backflow devices, main and lateral lines, sprinkler heads, moisture-sensing devices, and all related equipment.

7. Contractor shall provide personnel fully trained in all phases of landscaping and irrigation systems operation, maintenance, adjustment,

and repair; in all types of components to include irrigation control clocks, valves, and sprinkler heads; and with all brands and models of irrigation equipment.

8. Adjustment, damage, and repairs shall be divided into the following categories and actions:

   a. All sprinkler heads shall be adjusted to maintain proper coverage. Adjustment shall include, but not be limited to, actual adjustments to heads, cleaning and flushing heads and lines, and removal of obstructions. Costs for adjustment shall be included in costs for operation and maintenance of the irrigation system.

   b. All damage resulting from the Contractor's operations shall be repaired or replaced prior to the end of the workday at the Contractor's expense.

   c. Damage and repairs shall be divided as follows:

      Minor repairs shall include, but not be limited to, all irrigation components from, and including, the valve to lateral line and heads/emitters, replacement of adjusting pins, friction collars, washers, trip assemblies, tubing, and other small parts. The cost for minor repairs shall be included in the costs for operations and maintenance of the irrigation system.

      Major repairs shall include all items before the automatic control valve including but not limited to backflow, pressure regulators, and mainline control wire (except as previously noted). The cost for major repairs, except as noted, will be considered included services based on the one year plant maintenance period.

   d. Repairs to the irrigation system shall be completed within 12 hours after notice by the City representative on major component damage such as broken irrigation mainlines.

   e. All replacements shall be with original type and model materials unless a substitute is approved by the City representative.

   f. Contractor shall maintain an adequate stock of medium and high usage items for repair of the irrigation system.

   g. Contractor shall implement repairs in accordance with all effective warrants and no separate payment will be made for repairs on equipment covered by warranty.

   h. Contractor shall pay for all excessive utility usage due to failure to repair malfunctions on a timely basis for unauthorized increases in the frequency of irrigation. Costs will be determined from comparisons of usage with historical usage for the same time period. Costs to be deducted from payments will be presented to the Contractor by the City.

i. The City will do spot inspections to check the accuracy of the Contractor's maintenance reports. If discrepancies are found, the Contractor will have twenty-four (24) consecutive hours to correct problems. While the Contractor is correcting problems in unsatisfactory areas, the specified level of service will be maintained in all other aspects of this contract.

j. Under the direction of the City, the Contractor will repair sprinklers, control valves, and control clocks.

j. The Contractor shall adjust sprinkler heads and valve boxes to the level of the ground surface.

l. Control valves, sprinklers, and direct burial control wires shall be located and repaired by the Contractor.

m. The Contractor shall be responsible for properly removing control clocks needing repair, marking station wires, making said repairs, and reinstalling the control clock with station wires in the original order as found. If repairs encountered will take more than two working days to correct, a temporary controller, supplied by the contractor, will be installed until the permanent controller can be repaired.

n. When sprinkler systems are out of service due to the Contractor's neglect, the Contractor shall be required to water by hand or other means in accordance with plant and vegetation needs. This shall not be an extra labor charge.

o. When rain occurs or is in the forecast with some certainty, all sprinkler system controllers shall be turned off by the Contractor's personnel. The Contractor will notify the City before the turn-off process starts and when the turn-off process is completed. The City will notify the Contractor when the sprinkler system controllers are to be turned back on. (For notification after work hours or on weekends call the City Project Manager (760) 777-7048.

p. The Contractor shall be held responsible for damage done to sprinkler heads and valves due to careless operations

q. Personnel

1) The Contractor shall provide personnel fully trained in all phases of landscape irrigation system operation, maintenance, adjustments, and repair; in all types of components to include irrigation controllers, valves, moisture sensing devices, and sprinkler heads; and with all brands and models of irrigation equipment used within the City.

2) The Contractor shall provide personnel knowledgeable of, and proficient in, current water management concepts, with the capability of working with City staff in implementing more advanced water management strategies.

3) **The Contractor shall provide personnel capable of verbal and written communication in a professional level of English.**

r. Materials

1) All replacement materials are to be with original types and model materials, unless a substitute is approved by the City representative.

2) Contractor shall maintain an adequate inventory of medium to high usage stock items for repair of the irrigation systems.

3) Contractor shall implement repairs in accordance with all effective warranties, and no separate payment shall be made for repairs on equipment covered by warranty.

4) All materials are to be new and identical to existing materials, unless directed otherwise by the City Inspector.

s. Water Management

1) All systems shall be programmed weekly and/or as needed to maintain healthy plant material and landscape.

2) All program changes shall be recorded on the Irrigation Management Form. See section 8000 Forms.

3) Water meter reading for each system may be submitted on a monthly report the first working day of each month.

4.0 Measurement and Payment

Payment for "Provide 1 Year Maintenance Period" will be made on a per "lump sum" basis, as specified in the bid schedule, which shall include all costs for furnishing all labor, materials, tools, and equipment, and performing all the work involved and required in providing maintenance including but not limited to, planting and irrigation, in accordance with the plans, details and specifications.

SECTION 309 – ELECTRICAL INSTALLATION

309-1.1 General

All work shall be reviewed and approved by the City.

Substitutions shall not be allowed unless previously approved in writing by the City.

309-1.2 Grounding

Grounding shall be executed in accordance with all applicable codes and regulations, both of the State of California and local authorities having jurisdiction.

Each pull box or any other enclosure in which several ground wires are terminated shall be equipped with a ground bus secured to the interior of the enclosure. The bus shall have a separate lug for each ground conductor. No more than one conductor shall be installed per lug.

The maximum resistance to ground shall not exceed 5 ohms.

309-1.3 Concrete Pullboxes

Excavate for installation of pre-cast structures and remove excess excavated material from the site. Saw cut existing paving and concrete as required for excavation.
Provide a minimum of 6" deep bedding base of crushed rock 3/8" - 1/2" size in the bottom of the excavation. Bedding shall be level and well compacted by a minimum of four passes with a plate type mechanical vibrator.

Back fill and compact earth around pre-cast structure after installation of the structure to 90% minimum compaction in 12" lifts. Replace paving concrete, landscaping above structure to match existing.

Install pre-cast structures per manufacturer's recommendations to provide a dry watertight installation. Set covers flush with existing grade or finish surface.

Install structures to avoid surface water drainage flow lines, and existing utilities.

Entrances of conduits/ducts shall terminate with end-bells inside the pre-cast structure.

309-1.4 Trenching

Provide trenching, concrete encasement of conduits, backfilling, and compaction for the underground electrical work, in accordance with applicable sections of this specification.

309-1.5 Conduit

The sizes of the conduits for the various circuits shall be as indicated on the drawings and as required by code for the size and number of conductors to be pulled therein. Conduits to be concealed except as noted otherwise.

PVC Schedule 40 nonmetallic conduit shall be used for all underground runs unless specifically noted or specified otherwise. Nonmetallic conduit shall not be run exposed. End bells shall be provided at conduit terminations.

Conduit Installation:

1. Underground conduits entering concrete pullboxes shall enter from the bottom of the pullbox unless indicated otherwise. Provide end bell fitting on the end of each conduit 2" or larger entering the pullbox. Provide waterproof sealant "Duct Seal" after conductors have been installed.

2. Provide metallic or plastic caps on all conduits during construction until installation of conductors.

3. Provide all trenching, excavation, shoring and backfilling required for the proper installation of underground conduits. Make trenches a minimum of 6 inches wider than the duct bank.

4. Install underground conduit, not less than 18" below finished grade in non-traffic areas and 24" below finished grade in traffic areas, including roads. Install long radius bends in all underground conduits in excess of 100 feet long.

5. **Provide a yellow magnetic detector tape over the entire length of all underground conduits.** Place tape in backfill at a depth not to exceed 12 inches below finish grade or as required by the manufacturer.

6. From each new pedestal cabinet that is installed, stub out underground from the pedestal a minimum of four 3/4" conduits to the nearest open landscape space or other accessible location and cap for future use.

7. **Conduits which are installed at this time and left empty for future use shall have polyvinyl rope left in place for future use.**

309-1.6 Wire and Cable

Branch circuit and fixture joints for #10 AWG and smaller wire shall be made with UL-approved connectors listed for 600 volts, approved for use with copper and/or aluminum wire. Connector to consist of a cone-shaped, expandable coil spring insert, insulated with a nylon shell and 2 wings placed opposite each other to serve as a built-in wrench or shall be molded one-piece as manufactured by "Scotchlok."

Branch circuit joints of #8 AWG and larger shall be made with screw pressure connectors made of high strength structural aluminum alloy and UL-approved for use with both copper and/or aluminum wire as manufactured by Thomas & Betts. Joints shall be insulated with plastic splicing tape, half-lapped and at least the thickness equivalent to the conductor insulation. Tapes shall be fresh and of quality equal to Scotch.

Use U.L. listed pulling compound for installation of conductors in conduits.

All splices in exterior pull boxes and landscape light fixtures shall be cast resin encapsulated. Power conductor splices - 3M Scotchcast Series 82/85/90; Plymouth or equal. No underground splices shall be made in control or signal circuits.

Neatly group and lace all wiring in panelboards with plastic ties at 3" on centers. Tag all spare conductors.

309-1.7 Pedestal

Meter Pedestal with panelboard shall be mounted to a 6" minimum thick poured concrete base that extends 6" beyond outside dimensions of enclosure with a ½" slope for drainage.

Panelboards shall be supplied with the meter pedestal.
All branch circuits shall exit out of the bottom of the pedestal. No conduits shall exit from the side or rear of the pedestal.

309-1.8 Lighting Fixtures

The Contractor shall aim the exterior adjustable lighting fixtures after dark in the presence of, and at a time convenient to the Landscape Architect and Electrical Engineer.

SECTION 4.0 WEED CONTROL OF PAVED SURFACES

Contractor shall be responsible for controlling weeds by mechanical or chemical means, weeds growing in cracks, or expansion joints, and areas contiguous to the City landscape.

SECTION 5.0 GUARANTEE AND/OR REPLACEMENT POLICY

All new plant material and irrigation installations shall be guaranteed for a period of one calendar year except due to "Acts of God", i.e., damage or death of plant material due to wind or storm, or vandalism, theft, or other willful acts over which the maintenance contractor has no control. Existing plants shall be replaced by Contractor, if it is determined by City representative that they died due to Contractor's negligence.

SECTION 6.0 REPORTS AND SCHEDULES

The Contractor, as part of this agreement, will submit reports and schedules as requested. Failure to submit reports and schedules in the time specified will result in a delay of monthly payments or a Performance Deficiency Deduction. Such reports must be detailed and thorough and may include but not be limited to the following:

A. Suggestions for improving problem areas.

B. Reports of work planned.

C. Cost information to perform extra work for upgrading specific areas.

D. Weekly Maintenance Schedule(s).

1. Contractor shall provide a weekly maintenance schedule to the City.

2. Notification of change in scheduled work must be received by the City at least 12 hours prior to the scheduled time for the work.

E. Weekly Irrigation Management Schedule Form(s).

The following forms are to be filled out by the water management personnel for the previous week and turned in on the Friday of each week (unless otherwise noted).

1. Irrigation Material Purchase Request (Form 2), if applicable.

2. Irrigation Controller Programming Confirmation turned in monthly (Form 5).

3. Irrigation Management Form (Form 3).

4. An Analysis of Repair Data and Recommendations for Reducing Repair Costs (form provided by Contractor) is to be turned in bi-monthly.

F. Pesticide Use Reports (use Weekly Schedule Form 6).

G. Accident Reports (use Weekly Schedule Form 6).

H. Incident Reports (use Weekly Schedule Form 6).

I. Landfill Diversion Reports (Form 4).

J. Contract Maintenance Incident Report (Form 8)

SECTION 7.0 GROUND COVER/SHRUBS/SLOPES

Fertilization Schedule A

2x/yr	40-10-10	February - October 15	Slow WIN	4-1-1 w/iron or Approved Equal

Note: Avoid fertilization between October 15 and end of January.

Trees

Trees shall be fertilized and aerated in accordance with the National Arborist Association Standard for Fertilizing Shade and Ornamental Trees, National Arborist Association Standards current edition.

Compliance with fertilization specification will be enforced by application inspections, bag counts, and periodic soil analyses by independent soils laboratory.

SECTION 8.0 PERIODIC SERVICES

8.1 Services Due

8.2 Services Due December - February

A. Turf areas that have one of the following weed grasses shall receive a long lasting broad-spectrum pre-emergence herbicide between January 20th and February 10th:

Crabgrass Dallisgrass
Goosegrass Kikuyugrass

The herbicide must be registered for use on the turfgrasses and weeds to be treated.

1. Follow directions on label of the herbicide. Apply evenly. Split the total application into opposite directions. Calibrate spreader or sprayer before treatment to apply the right dosage.

B. Prune deciduous trees before buds emerge. Quality of pruning shall be as directed by the City.

C. Prune ground covers back to established edge. Cut off and dispose of dead flower stems.

8.3 Services Due March - May

A. Unturfed vegetation, (i.e., slopes, planters), with residues of weed seeds made last year, will receive a broad spectrum pre-emergence herbicide registered for target weed species. Check label to be sure the chemical is safe for use on the ornamental species in the area.

1. Growing weeds shall be removed by any method before a pre-emergence herbicide is applied.

B. Prune all plants overgrowing boundaries. One situation is vegetation impeding traffic both horizontally and vertically.

C. Pruning of the following shall be for size and shape control:

Lantana in early March.

Acacia after flowering; cuts must be at a leafy bud. Naked stubs die back. Remove flush at origin.

Unlisted species as specified by the City.

D. A broad spectrum pre-emergence type herbicide shall be applied in May for the prevention of weed seed germination in turfgrasses and ornamentals.

1. Apply only in areas that had seeding of weeds the previous year.

2. The herbicide must be registered for use on turfgrasses, ornamental plants, and weeds to be treated.

E. In May, fertilize all plants except lawns. Evenly distribute 8 lbs./M of 37-0-0, sulphur coated urea, or approved equal.

1. Immediately following fertilization, sprinkle irrigate long enough to wash particles off foliage, without displacing fertilizer on soil.

F. Any plant that does not produce new leaves before April 15, or new leaves at stem terminals that are yellow between veins, shall be treated as follows: evenly apply soil sulphur on soil under foliage at rate of 5 lbs./M. Apply a chelate ferrous compound on soil under foliage at rate on product label. An injection kit shall be provided by Contractor for trees with chlorotic or sparse foliage. Prevent stains. Wash iron off hard surfaces.

8.4 Services Due June - August

A. Remove grass weeds with the proper selective post-emergence herbicide. Look for and kill any crabgrass, dallisgrass, goosegrass, kikuyugrass, etc. A combination of two herbicides is very effective for use in Bermuda grass lawns. Contractor shall determine which herbicides shall be used and communicate to the City before application.

B. Prune all plants, overgrowing boundaries. Provide for clearance of traffic.

8.5 Services Due September - November

A. Prune all plants overgrowing edges. Prune for traffic clearance in height.

SECTION 9.0 PRUNING AND TRAINING QUALITY STANDARDS

9.1 Pruning And Training Quality Standards

A. Shrubs, herbaceous plants, and ground covers shall be pruned soon after the completion of a flowering and fruiting cycle, if fruits are desired.

1. Remove flower stems to point of origin.

2. Remove branches growing beyond perimeter of foliage. It is an outline of a plant's shape. Cuts shall be inside of outer foliage, and flush with branch of origin. Leave no butts or stubs. Do not trim off all foliage on one plane with hedge shears. Shearing is only for hedges, after thinning out big, long shoots.

B. Prune trees to maintain their characteristic shape, density, and texture. The natural appearance is an open, light textured perimeter or new foliage. The greatest density is in the interior and lower half. The center of gravity, or location of mass, is close to the center and close to the ground. This distribution fits a tree to withstand strong winds. Do not thin or "lace out" dense foliage except the outside branches. This is defoliation. Roots could die and create a weak tree that may die or blow over.

C. Prune out branches extending beyond the shape (foliage perimeter) of a tree. Prune to control size and shape. Bare scaffold branches with foliage only at ends will break in wind.

1. Cuts shall be inside perimeter of foliage almost flush with a parent branch. No butts or stubs are permitted. Old stubs with an outgrowth of multiple shoots shall be removed.

D. Prune off lower branches high enough for traffic clearance.

E. Cut out dead, crossing, rubbing branches, and v-shaped crotches.

F. Undercut branches over 2" in diameter before final cut is made close to a scaffold (main) branch. Shredded, torn, or ripped branches shall be recut cleanly.

G. An exposed wound, as where a branch was removed, shall remain exposed. Do not paint or apply any substance on a wound. It heals faster, with less disease, than a covered wound.

H. Trees close together shall be separated by removal of intermingling branches.

I. A young tree unable to stand upright in a seasonal wind shall be double staked. A tree too heavy for support by stakes shall have three equally spaced guy wire ties to immoveable stakes. The wire shall be on a 45-degree angle with the tree trunk.

1. Ties and guys shall always be tight and in place between stakes or tree trunk.

2. Loosen ties that are so tight they are almost starting to girdle a branch or trunk.

3. An immoveable trunk in wet soil is an indication it can stand without support. Remove stakes or guy wires.

Subsection 308-6 Maintenance and Plant Establishment

308-6.1 General

A. The Contractor will maintain all landscaped areas for a maintenance period of one year from the date of written acceptance of the project with respect to the original construction work. The project will not be accepted by the City as complete with respect to the original construction work until all elements of the project are completed in accordance with the contract documents. The project will not be segmented into phases, or accepted in phases.

B. It is the City's desire to avoid the complication of assessing responsibility for loss of plant life that frequently occurs after a short plant establishment period concludes and the landscaping is subsequently maintained by a third party not associated with the original construction contractor. Thus, this project includes a 1 year maintenance period in which the plant establishment period is included in the 1 year maintenance period. The 1 year maintenance period begins upon acceptance of the construction work by the City Council.

C. The Contractor is cautioned to take note, that the quality of care and the staffing of personnel necessary to fulfill the ongoing maintenance requirements specified within these specifications for the 1 year maintenance period exceeds the quality of ongoing care commonly delivered by contractors specializing in construction work only. Thus, the City encourages the Bidder to evaluate its staffing availability and personnel experience, along with the equipment necessary to satisfactorily perform the ongoing maintenance work, if it intends to fulfill the 1 year maintenance obligation with its own forces.

308-6.1.1 Prorated Monthly Payment

The lump sum amount submitted by the Contractor in its bid will be evenly prorated on a monthly basis over a 1 year period provided the Contractor satisfactorily fulfills its ongoing week by week maintenance obligation, including the submittal of paper work specified herein. Failure to fully comply with the paper work requirements, and or, failure to fulfill the ongoing maintenance obligations specified herein, will prompt the City to reduce the prorated payment amount in accordance with the schedule of deductions listed on Form 1 of the Maintenance Forms in Appendix C for the month concluded. Each month, the Contractor's maintenance work will be judged on its own merit with respect to whether a reduced prorated payment is justified. In all cases the City will provide written notification to a contact person and mailing address, plus a fax number, or email address for timelier notification, designated by the Contractor as its receptacle for notification of deficient work, prior to withholding funds from the prorated monthly payment.

308-6.1.2 Irrecoverable Funds; Quality of Care Not Delivered

This contract specifies a certain quality of ongoing care during the maintenance period with respect to the appearance of the median island landscaping. If the appearance suffers because the Contractor has not provided sufficient manpower and or equipment as required to fulfill the ongoing quality of care specified herein, the prorated payment for landscape maintenance for that month will be reduced per the schedule of deductions on Form 1 of the Maintenance Forms found in Appendix C, and the withheld funds are deemed irrecoverable for the benefit of the

Contractor, because the citizens of La Quinta did not receive the quality of care benefit for which the City funds were intended.

308-6.1.3 Contract Termination

If the City issues reduced prorated payments to the Contractor three times in any consecutive three-month period pursuant to deficiencies noted by the City in writing, the third reduced payment, even if additional time remains in the three-month period, shall be considered sufficient evidence and cause for the City to deem the contract work defective, unacceptable, and thereby at its discretion may terminate the contract without penalty or liability for payment to the Contractor for loss of profit, and submit a claim to the surety company that issued the Contractor's performance bond. The Contractor and its surety are responsible for all costs incurred by the City pursuant to enforcing the unfulfilled obligations of the Contractor including but not limited to loss of plant life, city staff time, alternative sources of landscape maintenance acquired by the City and legal fees. The course of action for the surety to resolve the contract default and fulfill its landscape maintenance obligation is negotiable with the City.

308-6.2 Maintenance Tasks

During maintenance period the Contractor will maintain the planted areas which are within the work limits of the contract including, but not limited to: 1) watering; weeding; fertilizing and cultivating; and spraying to keep the plants in a healthy, growing condition and keeping the planted areas neat and attractive; 2) removing trash a minimum of once a week; 3) checking and repairing irrigation systems weekly; 4) pruning trees and shrubs planted under the contract only removing dead, dying or broken branches; 5) removing wilted flowers. Note: Do not prune without first advising the City.

308-6.3 Replacement Plantings

After planting and during the 1 year maintenance period in the event any plant should die, is missing, weak or displays the appearance of necrosis, the plant will be immediately removed and replaced at the Contractor's expense. All replacements must occur within five (5) days of notice. At the end of the 1 year maintenance period, all plants shall be in a healthy, growing condition and located as indicated on the plan or as approved by the City.

Subsection 308-6.4 Fertilizing

For non-arid plant material, the Contractor will fertilize the plants one (I) month prior to the end of the 1-year maintenance period. Follow manufacturer's application rate guide and water into planting immediately after applying fertilizers. Arid plant material will not be fertilized.

Subsection 308-6.5 Weekly Reports

1. The Contractor, as part of this contract, will submit reports and schedules as requested. Failure to submit reports and schedules in the time specified may result in a Performance Deficiency Deduction. See Appendix C for the City maintenance forms. Such reports must be filled out in detail. The following is a breakdown of required forms and schedules.

2. The contractor shall submit these reports as they are completed. Weekly reports shall be filled out by Friday of every week. Payments due shall not be disbursed unless all reports have been submitted to the City.

308-6.5.1 Schedule of Weekly Maintenance

1. Contractor shall provide a schedule of weekly maintenance identifying areas to be maintained and a breakdown of when each function shall be performed.

2. The City will assume that the Contractor will adhere to the schedule. The City must receive notification of changes at least 12 hours in advance.

308-6.5.2 Weekly Irrigation Inspection Report

This will be turned in every Friday throughout the maintenance period

308-6.5.3 Weekly Activity Report

Indicating the following:

a. Litter pick
b. Weed control
c. Chemical maintenance - herbicides and pesticide applications
d. Incident/Accident

Subsection 308-6.7 End of Maintenance Period

One week prior to the end of the maintenance period, the City will conduct a walk-through of the area, noting deficiencies and problems to be resolved. The Contractor will be required to resolve all noted items. If the items cannot be resolved within the time remaining, the maintenance period will be extended, without cost to the City, until the items are corrected.

Subsection 308-6.8 Close-out

1. Final Completion Submittals

A. Final Completion Submittals: Prior to application for Final Payment, Contractor shall submit the following.

B. Agency Document Submittals: Submit to City Representative all documents required by authorities having jurisdiction, including serving utilities and other agencies. Submit original versions of all permit cards, with final sign-off by inspectors. Submit all certifications of inspections and tests.

C. Final Specifications Submittals: Submit to City Representative all documents and products required by Specifications to be submitted, including the following:

1. Project record drawings and specifications.

2. Operating and maintenance data.

3. Guarantees, warranties and bonds.

4. Keys and keying schedule.

5. Spare parts and extra stock.

6. Test reports and certificates of compliance.

D. Certificates of Compliance and Test Report Submittals: Submit to City Representative certificates and reports as specified and as required by authorities having jurisdiction, including the following:

1. Irrigation system pressure, and operation and coverage tests.

2. Lighting, power and signal system tests.

E. Lien and Bonding Company Releases: Submit to City Representative evidence of satisfaction of encumbrances on Project by completion and submission of The American Institute of Architects Forms G706 – CONTRACTOR'S AFFIDAVIT OF PAYMENT OF DEBTS AND CLAIMS, G706A – CONTRACTOR'S AFFIDAVIT OF RELEASE OF LIENS, and (if applicable) G707 – CONSENT OF SURETY, or equivalent forms as provided by City Representative. Signatures shall be notarized.

F. Subcontractor List: Submit five copies to City Representative of updated Subcontractor and Materials Supplier List.

G. Warranty Documents: Prepare and submit to City Representative all warranties and bonds as specified in Section 1220, 1310 and 1320.

2. Final Payment

A. Final Payment: After completion of all items listed for completion and correction, after submission of all documents and products and after final cleaning, submit final Application for Payment, identifying total adjusted Contract Sum, previous payments and sum remaining due. Payment will not be made until the following are accomplished:

1. All Project Record Documents have been transferred and accepted by City Representative.

2. All extra materials and maintenance stock have been transferred and received by City.

3. All warranty documents and operation and maintenance data have been received and accepted by City Representative.

4. All liens have been released or bonded by Contractor

5. Contractor's surety has consented to Final Payment

INTERPRETATION OF ANALYSIS

NAME: David Evans & Associates **LAB NO.: 51044** **DATE: 03/15/12**

PROJECT: Fred Waring Drive, Street Median Improvements

TEXTURES*					
[X]	SANDY SOILS	[ ]	LOAM SOILS	[ ]	CLAY SOILS
Coarse textured, low water retention, infertile; fertilizer leaches easily and needs frequent irrigation. Organic matter benefits water and nutrient retention.		Have desirable properties of clay and sand, good moisture and fertilizer retention, not too sticky or droughty.		Sticky: high water retention, slow water penetration, compacts easily; high fertilizer retention. Need organic matter to keep workable.	
Sand, Loamy Sand		Sandy Loam, Loam, Silt Loam, Silty Clay Loam, Sandy Clay Loam, Clay Loam		Sandy, Clay, Silty Clay, Clay	

***Texture estimate derived from CEC value. For more precise texture information, further testing is required. Contact lab for information.**

LIME (amount of solid lime distributed in soil)		
[ ]	HIGH	Plants sensitive to "Lime-induced Iron Chlorosis", (i.e. azalea, gardenia, liquid amber, roses, etc.) must have corrective chemical added to soil.
[ ]	MODERATE	Plants sensitive to "Lime-induced Iron Chlorosis", affected but not as severely as "high" readings. Corrective chemical may be added.
[X]	LOW	Plants sensitive to "Lime-induced Iron Chlorosis", not affected. No corrective chemical needed.

pH	
7.5	Normal pH values for this area vary from 6.5 to 8.0, however variations in either direction may exist. Soil amendments may be recommended to help bring the soil pH into a more optimal range. To lower pH, soil sulfur or an equivalent acid-forming chemical recommended. To raise pH, lime is usually recommended.

EC			BORON (ppm)		
Electrical Conductivity of the soil saturation extract is a measure of the total salts in the soil. This can be related to plant growth as follows: (Units are mmhos/cm @ 25 degrees C)			Is expressed as ppm in the saturation extract. A small amount of boron is essential for plant growth, but a concentration slightly above the optimum is toxic for plants.		
[X]	0 – 1.9	No damage from salts.	[X]	0.0 - .6	Not toxic for any, but may be too low for some.
[ ]	2 - 3.9	Sensitive plants may be damaged.	[ ]	.7 - 1.4	Sensitive plants restricted.
[ ]	4 - 7.9	Many plants affected.	[ ]	1.5 - 4.9	Many plants restricted.
[ ]	8 - 16	Most plants damaged.	[ ]	5.0 - 10.0	Only tolerant plants satisfactory.
[ ]	over 16	Few plants survive.	[ ]	10.0 - over	Few plants survive.

Page 2 of 2 **PROJECT: Fred Waring Drive, Street Median Improvements** **LAB NO.: 51044**

PERCENT SODIUM SATURATION		
Is the degree to which the soil exchange complex is saturated with sodium. Exchangeable sodium has two effects: (1) Reduced permeability and (2) Toxicity of sensitive plants.		
[ ]	Below 5	Generally no permeability problem due to sodium. However, sodium sensitive plants may show leaf burn.
[X]	5 - 15	Possible permeability problems with clay loams and clays. (C.E.C. 15 – 30)
[ ]	Above 15	Permeability problems are likely on all mineral soil except some sands and loam sands.

NUTRIENTS						
NITROGEN (N)	[ ]	LOW	[X]	MODERATE	[ ]	HIGH
PHOSPHORUS (P_2O_5)	[X]	LOW	[ ]	MODERATE	[ ]	HIGH
POTASSIUM (K_20)	[ ]	LOW	[X]	MODERATE	[ ]	HIGH
	Definite need for fertilizer nutrient add at recommended rate for plant soil in question		Fertilizer nutrients are present in adequate amounts; maintain at this level.		There is no need for adding fertilizer nutrients at this time.	

ORGANIC MATTER (Percent as designated on the soil analysis)*		
[X]	VERY LOW	0.0 – 0.7
[ ]	LOW	0.8 – 1.7
[ ]	MODERATE	1.8 – 3.2
[ ]	HIGH	3.3 – 4.2
[ ]	VERY HIGH	4.3 – .....
*Variables may exist depending upon the soil type and the source of organic matter that is being measured, however the above table will give a good estimate of the percentage of organic matter present.		

WATER PERCOLATION RATE		(INCHES/HOUR)*
[ ]	VERY RAPID	MORE THAN 20.00
[X]	RAPID	6.00 – 20.00
[ ]	MODERATELY RAPID	2.00 – 6.00
[ ]	MODERATE	.60 – 2.00
[ ]	MODERATELY SLOW	.20 - .60
[ ]	SLOW	.06 - .20
[ ]	VERY SLOW	LESS THAN .06
*Variables may exist depending upon the soil type and the source of organic matter that is being measured, however the above table will give a good estimate of the percentage of organic matter present.		

Percolation rate is an estimate derived from texture. For more specific rates, further testing is required. Contact lab for information.

Rev. 8/04

A & L WESTERN AGRICULTURAL LABORATORIES

1311 WOODLAND AVE #1 • MODESTO, CALIFORNIA 95351 • (209) 529-4080 • FAX (209) 529-4736

REPORT NUMBER: 12-072-051 CLIENT NO: 1358

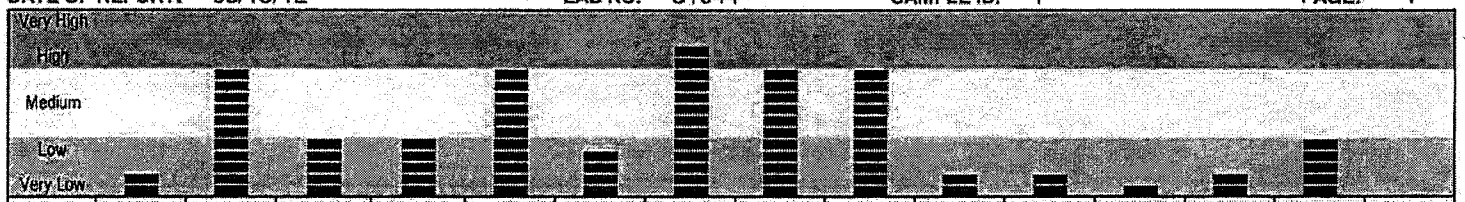
SEND TO: GRO-POWER INC
15065 TELEPHONE AVENUE
CHINO, CA 91710-9614

GROWER: DAVID EVAND & ASSOC/CLAQ-0039

SUBMITTED BY:

Graphical Soil Analysis Report

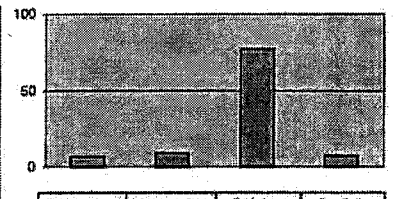
DATE OF REPORT: 03/15/12 LAB NO: 51044 SAMPLE ID: 1 PAGE: 1



Analyte	Organic Matter %	Nitrogen NO_3-N ppm	Phosphorus Weak Bray ppm	Phosphorus $NaHCO_3$-P ppm	Potassium K ppm	Magnesium Mg ppm	Calcium Ca ppm	Sodium Na ppm	Sulfur SO_4-S ppm	Zinc Zn ppm	Manganese Mn ppm	Iron Fe ppm	Copper Cu ppm	Boron B ppm	Chloride Cl ppm
Results	0.3	34	17	7	104	43	603	64	29	0.4	1	2	0.3	0.5	

LOW AVERAGE HIGH

Percent Cation Saturation (computed)



Potassium K %	Magnesium Mg %	Calcium Ca %	Sodium Na %
6.8	9.0	77.0	7.1

ACIDIC BASIC

ECe dS/m	CEC meq/100g	Ex. Lime	pH
0.2	3.9	L	7.5

INCREASING SALINITY →

← INCREASING NEED FOR LIME

Buffer pH:

Soil Fertility Guidelines

CROP: LANDSCAPE RATE: lb/1000 sq ft NOTES:

Dolomite (70 score)	Lime (70 score)	Gypsum	Elemental Sulfur	Nitrogen N	Phosphate P_2O_5	Potash K_2O	Magnesium Mg	Sulfur SO_4-S	Zinc Zn	Manganese Mn	Iron Fe	Copper Cu	Boron B	
			15	2.1	2.5	2.0	0.7		*	*	*	*		

COMMENTS

C ORGANIC MATTER levels maintained above 2.0 percent will provide an improved soil structure and a more
O sustained release of nutrients. Follow supplier's instructions where levels are low.
M * ACIDIFICATION of high pH soils could improve soil environment. Compare different sources of acidifying
M materials, but be aware that sulfate-sulfur (as shown on report) has NO acidifying power.
E SOIL TEXTURE: "Available water capacity" (plant-available water) may vary between less than one inch per
N foot of soil in sands/loamy sands to over two inches in clays. Apply water accordingly.
T YOUR SUPPLIER will recommend to you choice, rate and method of application of fertilizer materials and
S amendments.

Mike Buttress, CPAg
A & L WESTERN LABORATORIES, INC

CITY OF LA QUINTA
PERFORMANCE DEFICIENCY DEDUCTION

FORM 1
Notification to:
Date: _____ Time: _____ Method:
The following performance deficiency(ies) has been observed and requires immediate attention to correct.

Location/Description:

Value of Deduction: $

City representative to check deficient items and comment (if applicable) below.

___ 1. Performance deficiency up to $100.00 per instance.
___ 2. Failure to comply with minimum contract defined manpower requirements. Deduction of $100.00 per employee per work day.
___ 3. Failure to provide adequate equipment. Deduction of up to $100.00 per instance/per work day.
___ 4. Failure to protect public health and/or correct safety concerns.
___ 5. Failure to comply with water restrictions.
___ 6. Major irrigation deficiencies not corrected in time frame.
___ 7. Failure to submit weekly schedule.
___ 8. Failure to program controllers per City-provided schedule.
___ 9. Failure to manage the City-approved quality control program.
___ 10. Failure to correct minor irrigation deficiency in time frame.
___ 11. Other

Please initiate the necessary corrective action(s) and notify the City Inspector when complete for re-inspection.

_____ _____
City Inspector City Maintenance Manager

Director of Public Works/City Engineer
(See attached Contract Maintenance Incident Report for additional correctional information.)

IRRIGATION MATERIAL PURCHASE REQUEST

CITY OF LA QUINTA - FORM 2

DATE

ITEM	QUANTITY	DESCRIPTION	USE LOCATION	CONTROLLER/VALVE #	USE DATE
1.					
2.					
3.					
4.					
5.					
6.					
7.					
7.					
8.					
10.					
11.					
12.					
13.					
14.					
15.					

Maintenance Area _____ Requested By

Contractor _____ Inspector Approval

Purchase Date: _____ Invoice/Order No.

Note: All old parts must be turned back to City Public Works Supervisor with copy of this form

IRRIGATION MANAGEMENT FORM

Controller No. _____

Location _____ Date

Contractor _____ Time In: _____ Time Out:

City of La Quinta - Form 3

Stations 1 - 24

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
OK																								
Head Broken																								
Plugged Nozzle																								
Adjust Head																								
Low Head																								
Broken Lat.																								
Solenoid																								
Valve																								
Other																								

LANDSCAPE CONDITION

Good																								
Fair																								
Poor																								
Too Wet																								
Stress																								

CITY OF LA QUINTA
LANDFILL DIVERSION REPORT FORM

FORM 4

DATE

SOURCE (LANDSCAPE MAINTENANCE AREA)

MATERIAL TYPE

___ HERBACEOUS

___ SEMI-HERBACEOUS

___ HARDWOOD

GROSS WEIGHT (Tons)

DIVERSION SITE (Co. Name)

DIVERSION SITE ADDRESS

WASTE BI-PRODUCT

___ MULCH

___ SOIL CONDITIONER

___ OTHER

BI-PRODUCT VOLUME/WEIGHT

(If Known)

CITY OF LA QUINTA

IRRIGATION CONTROLLER PROGRAM SCHEDULE VERIFICATION FORM

FORM 5

DATE CONTROLLER REVIEWED

LOCATION OF CONTROLLER &
MAINTENANCE AREA (REFER TO CITY-I.D. MAINTENANCE AREA NUMBERS)

DOES LANDSCAPE APPEAR TO BE GETTING ENOUGH WATER? YES _____ NO

RECOMMENDATIONS FOR MODIFICATIONS TO CURRENT SCHEDULE:

CONTROLLER REVIEWER:

NAME TITLE DATE

CITY OF LA QUINTA

WEEKLY MAINTENANCE SCHEDULE

FORM 6

Landscape Maintenance Area No. & Description	Day of Week	Fertilizer Used/ Frequency	Number of Personnel	Type of Work	Current or Make-up Work
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					

Report Comments:

WEEKLY MANPOWER ALLOCATION PROJECTIONS

CITY OF LA QUINTA

FORM 7

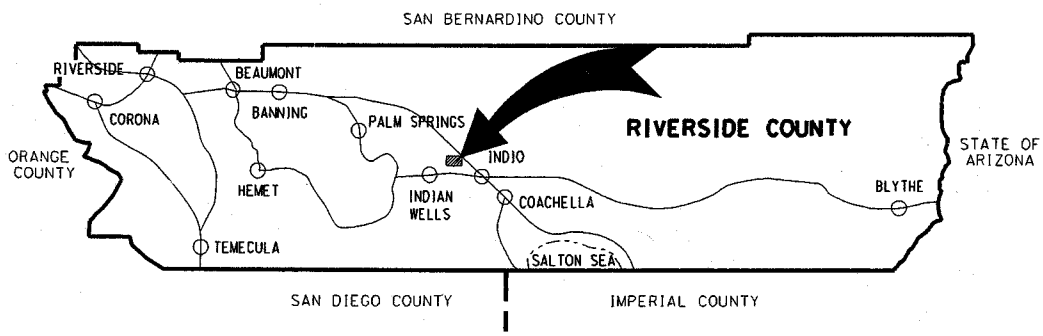
Pursuant to the Specifications, the contractor will be required to submit a weekly manpower projection form. This form will be used to compare against the Contract Labor Summary, on a weekly basis, and to determine if a sufficient quantity of personnel will be scheduled to complete the current week and any make-up work from previous weeks. This form shall be submitted on Friday, each week, for the upcoming week's work.

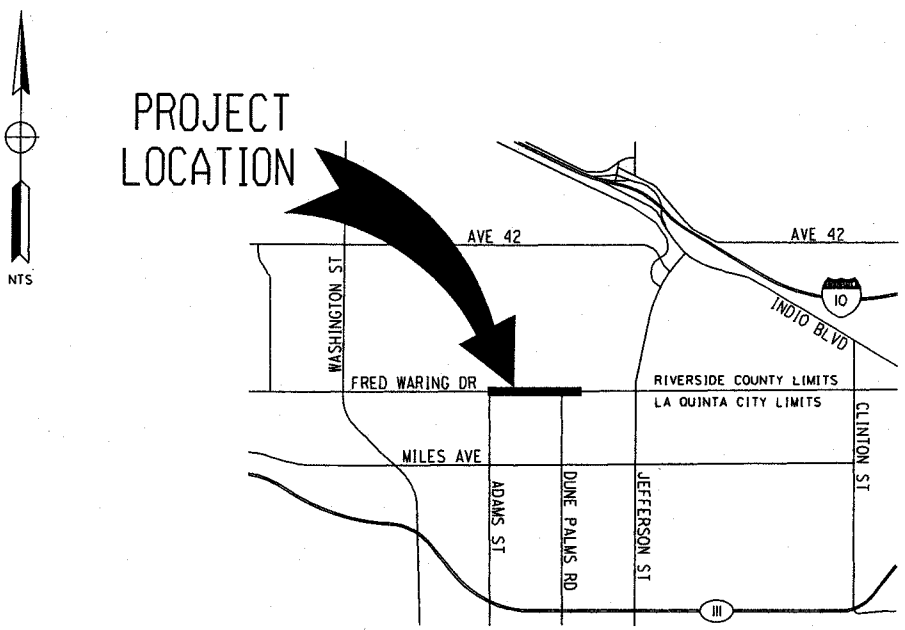
Personnel Classification	NUMBER OF PEOPLE USED PER DAY							Performance Location
	Mon.	Tues.	Wed.	Thurs	Fri.	Sat.	Sun.	
Week's Total Number of Personnel								

COUNTY OF RIVERSIDE

TRANSPORTATION DEPARTMENT

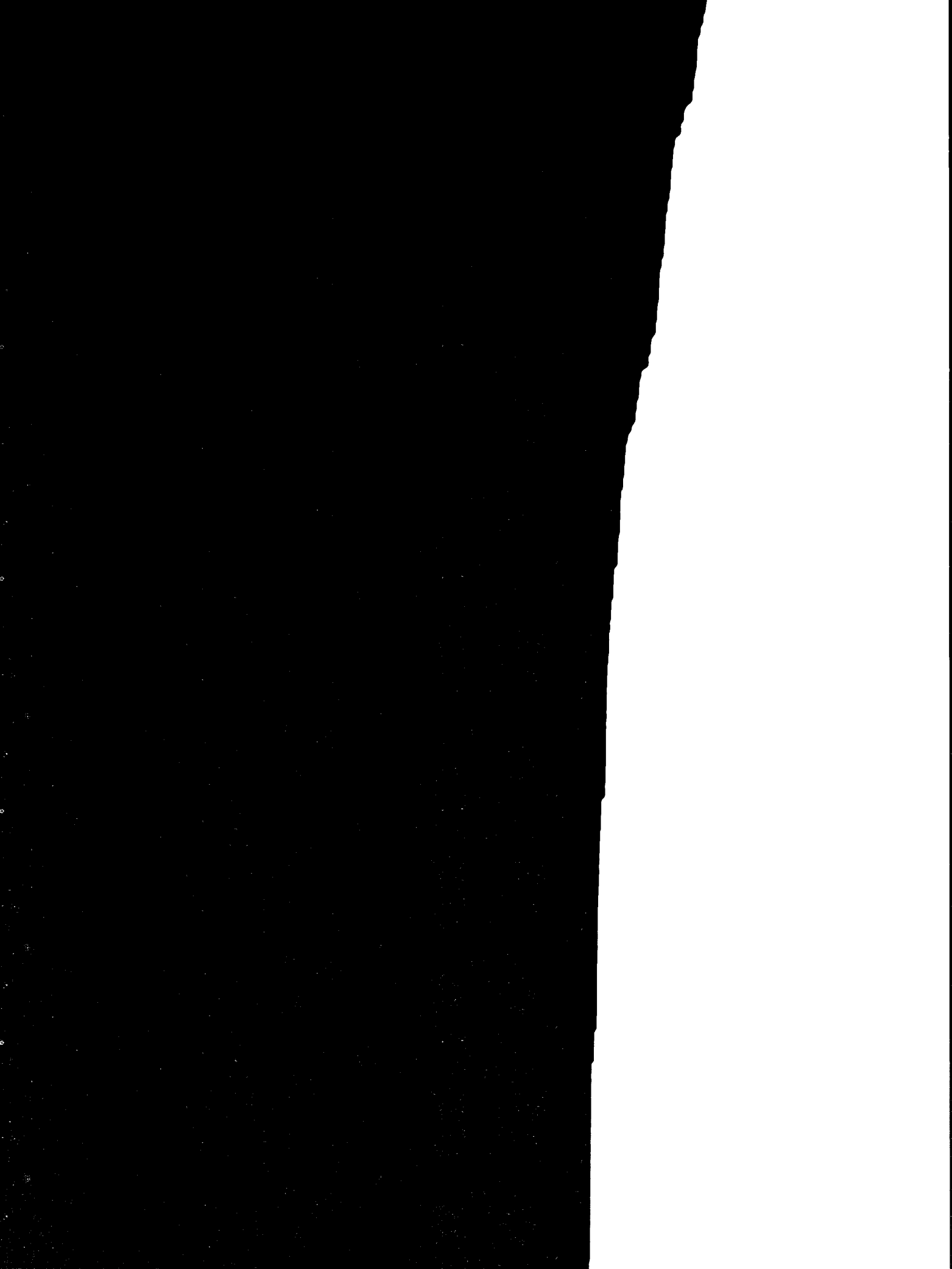
Fred Waring Drive
Roadway Improvements
from Adams Street to Port Maria Road
in the City of La Quinta and Bermuda Dunes area
Project No. B5-0689
State Aid No. SLPPCL13-5956(220)





VICINITY MAP

TOWNSHIP 5S RANGE 7E SECTION 17 & 20
COUNTY ROAD BOOK PAGE No. 207



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

July 31, 2013

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

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

RE: NOTICE INVITING BIDS: FRED WARING DRIVE B5-0689

To Whom It May Concern:

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

Friday	- August 2, 2013	Wednesday	- August 7, 2013
Saturday	- August 3, 2013	Thursday	- August 8, 2013
Sunday	- August 4, 2013	Friday	- August 9, 2013
Monday	- August 5, 2013	Saturday	- August 10, 2013
Tuesday	- August 6, 2013	Sunday	- August 11, 2013

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,

Cecilia Gil

Board Assistant to:
KECIA HARPER-IHEM, CLERK OF THE BOARD

Gil, Cecilia

From: mtinajero@pe.com on behalf of Master, PEC Legals <legalsmaster@pe.com>
Sent: Wednesday, July 31, 2013 11:04 AM
To: Gil, Cecilia
Subject: Re: [Legals] FOR PUBLICATION: Bids: Fred Waring Drive B5-0689

Received for publication from Aug. 2 to Aug. 11. Proof with cost to follow.

Thank You!

Publisher of The Press-Enterprise
Inland Southern California's News Leader
Legal Advertising
Phone:1.800.880.0345
Fax: 951.368.9018
E-mail: 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

On Wed, Jul 31, 2013 at 10:18 AM, Gil, Cecilia <CCGIL@rcbos.org> wrote:

One more Notice Inviting Bids for publication on Aug. 2 to Aug. 11, 2013. Please confirm. THANK YOU!

Cecilia Gil

Board Assistant

Clerk of the Board

951-955-8464

MS# 1010

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

July 31, 2013

THE DESERT SUN
ATTN: LEGALS
PO BOX 2734
RIVERSIDE, CA 92519

FAX (760) 778-4731
E-MAIL: legals@thedesertsun.com

RE: NOTICE INVITING BIDS: FRED WARING DRIVE B5-0689

To Whom It May Concern:

Attached is a copy for publication in your newspaper for **FIVE (5) TIMES:**

Wednesday	- August 7, 2013
Thursday	- August 8, 2013
Friday	- August 9, 2013
Saturday	- August 10, 2013
Sunday	- August 11, 2013

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,

Cecilia Gil

Board Assistant to:
KECIA HARPER-IHEM, CLERK OF THE BOARD

Gil, Cecilia

From: Moeller, Charlene <CMOELLER@palmspri.gannett.com>
Sent: Wednesday, July 31, 2013 10:55 AM
To: Gil, Cecilia
Subject: RE: FOR PUBLICATION: Bids for Fred Waring Dr B5-0689

Ad received and will publish on date(s) requested.

Charlene Moeller | Media Sales Legal Notice Coordinator

The Desert Sun Media Group
750 N. Gene Autry Trail, Palm Springs, CA 92262
t 760.778.4578 | f 760.778.4731
legals@thedesertsun.com / dpwlegals@thedesertsun.com

From: Gil, Cecilia [mailto:CCGIL@rcbos.org]
Sent: Wednesday, July 31, 2013 10:19 AM
To: tds-legals
Subject: FOR PUBLICATION: Bids for Fred Waring Dr B5-0689

Good morning! Attached is a Notice Inviting Bids for publication from Aug. 7 to Aug. 11, 2013. Please confirm. THANK YOU!!

Cecilia Gil
Board Assistant
Clerk of the Board
951-955-8464
MS# 1010

Notice to Bidders

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

Fred Waring Drive
Road Improvements
from Adams Street to Port Maria Road
in the City of La Quinta and Bermuda Dunes area
Project No. B5-0689
State Aid No. SLPPCL13-5956(220)

Bid shall be delivered to the County of Riverside Transportation Department, 14th Street Annex, 3525 14th Street, Riverside, California 92501, telephone (951) 955-6780 not later than 2:00 p.m., on Wednesday, **August 28, 2013** to be promptly opened in public at said address. Each bid shall be in accordance with plans, specifications, and other contract documents, dated **July 2013**, and prepared by County of Riverside, whose address is same as the above, from whom they may be obtained upon deposit of **$80.00** per set with 24" x 36" plans (or **$40.00** with 11"x17" plans), plus mailing costs. 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 at the time of bid submission.

Engineering Estimate:	$5,800,000 - $6,800,000	(Base Bid)
	$ 142,000 - $ 166,000	(Alternate Schedule 1)
	$ 1,400 - $ 1,700	(Alternate Schedule 2)
Bid Bond	10 %	
Performance Bond	100 %	
Payment Bond	100 %	
Working Days	120 Working Days (Base Bid with Alternates)	
Website:	http://www.rctlma.org/trans/con_bid_advertisements.html	

Dated: July 31, 2013

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