PART 1 - GENERAL PROVISIONS

The Standard Specifications of the City are contained in the Standard Specifications for Public Works Construction ("Green Book"), 2015 Edition 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 these Standard Specifications are available from the publisher:

Building News, Incorporated
990 Park Center Drive, Suite E
Vista, CA 92081
(760) 734-1113

The Standard Specifications set forth above will control the general provisions, construction materials and construction methods for this contract except as amended by the Plans, Special Provisions, or other contract documents.

The Section Numbers of the following Special Provisions coincide with those of the Standard Specifications for Public Works Construction ("Green Book"), 2015 Edition. Only those sections requiring amendment or elaboration, or specifying options, are called out.

The Standard Specifications shall prevail in all cases except where a Contract Document of a higher order, 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 states that said provision is in lieu of that Standard Specification section.

References in the Special Provisions to "CALTRANS Standard Specifications" shall mean the Standard Specifications (2015 Edition or any updates thereof) of the State of California, Department of Transportation. Copies of these specifications may be obtained from the internet at dot.ca.gov/hq/esc/techpubs/, or:

State of California – Department of Transportation
1820 Alhambra Blvd.
MS 9/101
Sacramento, California 95816-8041
(916) 227-4132

References in the Special Provisions to Standard Plans shall mean the most recent Standard Plans of the City of Indio and where applicable, the Riverside County and the State Department of Transportation, 2015 edition, or any updates thereof. Applicable Standard Plans for this project are contained in the Appendix of the Specifications.

Where the Plans or Specifications describe portions of the work in general terms, but not in complete detail, it is understood that the item is to be furnished and installed complete and in place and that only the best general practice is to prevail and that only materials and workmanship of the first quality are to be used. Unless otherwise specified, the CONTRACTOR shall furnish all labor, materials, tools equipment and incidentals, and do all the work involved in executing the contract.

PROJECT SCOPE OF WORK

In general, this project is Phase I of the offsite improvements for John J. Benoit Detention Center, consists of roadway improvements, which include the roadway widening at the intersection of Highway 111 and Arabia Street, signing & striping and traffic signal modifications; Storm drain improvements, which include installation of storm drain Line B and its laterals, and retention basin improvements.

The project will also include, but not limited to:

1). Construction of approximately 260 linear feet of roadway improvements on Highway 111 at intersection of Arabia Street, and approximately 320 linear feet of roadway improvements on Arabia Street. The roadway improvement includes but not limited to construction of curb, curb and gutter, sidewalk, cross-gutter, driveway, curb ramp, asphalt pavement over class II aggregate base and misc. removal and relocation.

2). Provision and installation of approximately 3,270 linear feet of storm drain main (24" to 48" RCP), catch basins and laterals, and all appurtenances from intersection of Highway 111 and Arabia Street that continues southerly along Arabia Street for approximately 2,370 feet then turns easterly approximately 900 feet to a retention basin located on the southeasterly corner of the John J. Benoit Detention Center site.

3). Construction of an on-site retention basin. The work includes but not limited to excavation and disposing of excess soil material, installation of fence and gate, construction of access road, ramp, and overflow spillway.

4). Construction of Traffic Signal Modifications of the Intersection of Highway 111 and Arabia Road. Install traffic signs, pavement parkers, and striping.

5). The Work shall consist of all traffic control (including furnishing and installing all arrowboards, barricades, signs, delineators, and flagmen); all utility location and verification (excavating, exposing, and verifying top, bottom, and side of utility facilities); all pavement removal and disposal; all earthwork (including trenching, shoring, sloping, bedding, and backfilling including select imported material or select native material); compacting; furnishing and installing all pipe, manholes, laterals, and appurtenances; protecting in place or removing and replacing all existing utilities, replacing all asphalt concrete pavement including asphalt concrete overlays; testing of all pipelines; replacing destroyed survey monuments; disposing of excess soil and rock material and restoring all areas and improvements to pre-construction conditions

The removal work includes, but not limited to, removal of; existing curb, curb & gutter, curb ramp, sidewalk, driveway, cross gutter & spandrel, existing fence, drainage inlet, drainage pipe, AC pavement and base, and etc.

SECTION 1 - TERMS, DEFINITIONS, ABBREVIATIONS AND SYMBOLS

1-2 DEFINITIONS

Agency/Owner/County	- County of Riverside
Board/Council	- County of Riverside Board of Supervisor
Caltrans	- California Department of Transportation
City	- City of Indio
Federal	- United States of America
State	- State of California
Engineer	- County Project Manager or Designated Representative
Laboratory	-The designated laboratory authorized by the County of Riverside to test materials and work involved in the contract.
Standard Specifications	- Standard Specifications for Public Works Construction (Green Book)

SECTION 2 - SCOPE AND CONTROL OF THE WORK

2-1 AWARD AND EXECUTION OF THE CONTRACT.

(Replace with the following:)

Within three (3) working days after the date of the Notice of Award, the CONTRACTOR shall execute and return the following contract documents to the AGENCY:

Contract Documents
Performance Bond
Payment Bond
Commercial General Liability, Vehicle, Property Damage, and builders all risk Insurance Certificate
Worker's Compensation Insurance Certificate
Proposed Construction Schedule
Source and submittals of all contract materials, including proof of availability

Failure to comply with the above will result in annulment of the award and forfeiture of the Proposal Guarantee. The Contract Agreement shall not be considered binding upon the agency until executed by the authorized AGENCY officials.

A corporation to which an award is made may be required, before the Contract Agreement is executed by the AGENCY, to furnish evidence of its corporate existence, of its right to enter into contracts in the State of California, and that the officers signing the contract and bonds for the corporation have the authority to do so.

2-3 SUBCONTRACTS

The Bidder's attention is directed to the provision in Section 2-3 of the Standard Specifications for the Requirements and Conditions that he must observe in the preparation of the proposal form and the submission of the bid.

REQUIRED LISTING OF PROPOSED CONTRACTORS--In accordance with the subletting and Subcontracting Fair Practices Act, commencing with Section 4100 of the Public Contract Code:

The bidder's attention is directed to other provisions of said Act related to penalties for failure to observe the provisions by using unauthorized Subcontractors or by making unauthorized substitutions.

A sheet for listing Subcontractors, as required, is included in the Bid Proposal.

2-4 CONTRACT BONDS

Both the Performance Bond and the Payment Bond shall each be for not less than one-hundred percent (100%) of the total contract amount. The Payment Bond shall remain in force for (6) six months after date of recordation of the Notice of Completion. The Performance date shall be released immediately after date of recordation of the Notice of Completion.

2-5 PLANS AND SPECIFICATIONS

2-5.1 General (Replace the first paragraph with the following:)
The CONTRACTOR shall maintain a control set of plans and specifications on the project site at all times. All final locations determined in the field, and any deviations from the plans and specifications, shall be marked in red on this control set to show the record conditions. Upon completion of all work, the CONTRACTOR shall return the control set to the Engineer. Final payment shall not be made until this requirement is met.

2-5.3.3 Submittals. [Replace the last two sentences of the first paragraph with the following]:
One (1) original of each product or construction document submittal shall be transmitted to the Engineer, along with a sequentially numbered Submittal Response Form (see Appendix). One (1) photocopy of the submittal shall be returned to the CONTRACTOR with the Submittal Response Form appropriately marked.

2-5.3.3 Submittals. [Add the following]:
Except as otherwise specified herein, the CONTRACTOR shall furnish for approval, within fifteen (15) working days following award of the Contract, all submittals as required on the Plans or in the Specifications. This provision shall not authorize any extension of time for performance of the Contract. The Engineer will check and approve such submittals, within ten (10) working days from receipt of same, only for conformance with design concept of work and for compliance with information and regulatory documents given in Contract Documents. Work shall be in accordance with approved submittals.

Unless specified otherwise, sampling, preparation of samples, and tests shall be in accordance with the latest standards of the American Society for Testing and Materials.
Samples of materials and/or articles shall, upon demand, be submitted for tests or examinations and consideration before incorporation of same in work started. The CONTRACTOR shall be solely responsible for delays due to submittals not being submitted in time to allow for proper time to make tests. Acceptance or rejection will be expressed in writing. The Engineer shall have sole discretion as to the acceptance or rejection of submittals. Rejection of submittals and any demand for re-submittal for review and approval by the Engineer shall not entitle the CONTRACTOR to additional time or costs caused by the rejection.

Materials furnished must be equal to approved samples in every respect. Samples which are of value after testing will remain the property of the CONTRACTOR.

2-8 RIGHT OF WAY [Add the following]:
The Agency reserves the right to prohibit the CONTRACTOR to work on property where right of way or right of entry has not been obtained prior to issuing the notice to proceed.

2-9 SURVEYING

2-9.1 Permanent Survey Markers. The Contractor shall notify the Engineer, at least 7 days before starting work to allow for the preservation of survey monuments, lot stakes (tagged), and bench marks. The Contractor shall not disturb survey monuments, lot stakes (tagged), or bench marks without the consent of the Engineer. The Contractor shall bear the expense of replacing any that may be disturbed without permission. Replacement shall be done only under the direction of the Engineer by a Registered Land Surveyor or a Registered Civil Engineer authorized to practice land surveying within the State of California.

When a change is made in the finished elevation of the pavement of any roadway in which a permanent survey monument is located, the Contractor shall adjust the monument cover to the new grade within 7 days of finished paving unless otherwise specified in the Special Provisions.

Full compensation for conforming to these requirements shall be considered as included in the various contract items and no separate payment will be allowed therefore.

2-9.2 Surveying Service. [Replace the first two paragraphs with the following]:
The Agency will provide surveying and construction staking required for the construction of this project, consistent with industry standards and as determined by the Engineer.

The cost of any additional surveying and/or construction staking primarily for the convenience of the CONTRACTOR, not in conformance with usual and customary practices, and for replacement of stakes lost as a result of the CONTRACTOR'S operations will be the responsibility of the CONTRACTOR. The cost of said additional surveying shall be deducted from the CONTRACTOR'S progress payments. The CONTRACTOR shall make all requests for construction stakes in writing at least 48 hours in advance of the day required. The CONTRACTOR shall dig all holes necessary for line and grade stakes, or to determine locations of any utility or structure.

The CONTRACTOR shall establish his own finish elevation control from the offset construction staking provided. Payment for setting additional control shall be considered as included in the price bid for the applicable items of work.

If construction staking is provided and subsequently removed, destroyed or impacted, whether accidentally or otherwise, or the CONTRACTOR desires additional staking from the above sets, the CONTRACTOR will be charged for replacement staking and survey control at a fee of $250.00 per hour (4 hour minimum).

SECTION 3 - CHANGES IN WORK

3-3.1 **General** (Add the following):
(a) No CONTRACTOR claims for extra work shall be accepted or approved by the Agency that are submitted more than 10 days after the work was performed unless the work has been authorized in writing by the Engineer.

3-3.2.3 Markup (Replace with the following):

(a) **Work by Contractor**. The following percentages shall be added to the CONTRACTOR'S costs and shall constitute the markup for all overhead and profit.

1)	Labor	15%
2)	Materials	10%
3)	Equipment Rental	10%
4)	Other Items and Expenditures	5%

To the sum of the costs and markups provided for in this subsection, 1 percent shall be added as compensation for bonding.

(b) **Work by Subcontractor.** When a Subcontractor performs all or any part of the extra work, the markup established in 3-3.2.3(a) shall be applied to the Subcontractor's actual cost of such work. **The Contractor may add a markup of 5 percent of the subcontracted portion of the extra work**.

SECTION 5 - UTILITIES

5-1 LOCATION (Add the following paragraphs:)
The CONTRACTOR shall notify the utilities at least 48 hours in advance of excavating around any of their structures.

The existence and locations of utilities shown on the drawings have been determined by a search of the available records as provided by the respective utility owner. The exact locations have not been determined by potholing unless so indicated on the drawings. **The CONTRACTOR shall determine the exact location of all existing utilities prior to commencing work.** He/She agrees to be fully responsible for any and all damages which may be occasioned by his failure to exactly locate and preserve any and all underground utilities, whether shown on the plans or not. **In the event the CONTRACTOR encounters underground utilities not shown on the plans, he/she shall verify the exact location of the utility and immediately notify the Engineer, regardless of whether the unknown utility conflicts with the proposed construction or not.** In the event of such a previously unknown conflict, the CONTRACTOR shall immediately notify the Engineer as to the extent, if any, of delays or additional costs resulting from said conflict.

The CONTRACTOR shall perform work and provide necessary materials to disconnect or relocate existing utilities as indicated. The CONTRACTOR shall document on record drawings all existing utility termination points before disconnecting.

The CONTRACTOR shall protect in place all existing power poles and overhead lines in the work area.

Where underground main distribution conduits such as water, gas, sewer, electric power, telephone, or cable television are shown on the Plans, the CONTRACTOR shall assume that every property parcel will be served by a service connection for each type of utility.

When uncharted or incorrectly charted underground piping or other utilities and services are encountered during site work operations, notify the applicable utility company immediately to obtain procedure directions. Cooperate with the applicable utility company in maintaining active services in operation.

The CONTRACTOR is advised of the existence of the utility notification service provided by UNDERGROUND SERVICE ALERT (USA). 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 to the Underground Service Alert by calling 1-800-227-2600. CONTRACTOR shall provide the AGENCY with proof of contact with USA upon request.

1. Southern California Gas Company
   USA Member Utility, Phone 1-800-422-4133
   Protection of existing facilities by Contractor.

2. Imperial Irrigation District
   Local Telephone (760) 339-9232
   USA Member Utility, Phone 1-800-422-4133
   Protection of existing facilities by Contractor.

3. Frontier –Telephone
   Local Telephone (800) 921-8101
   USA Member Utility, 1-800-422-4133
   Protection of existing facilities by Contractor.

4. Coachella Valley Water District (Water, Sewer and Flood Control)
   USA Member Utility, Phone 1-800-422-4133
   Protection of existing facilities by Contractor.

5. Time Warner Cablevision
   Local Telephone (760) 340-2225
   Protection of existing facilities by Contractor.

6. City of Indio, Public Works Department
   Local Telephone (760) 391-4017
   Protection of existing facilities by Contractor.

7. Indio Water Authority
   Local Telephone (760) 391-4140
   Protection of existing facilities by Contractor.

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 Southern California Gas Company's Headquarters Planning Office at (714) 369-0680 at least two (2) working days prior to the start of construction.

The CONTRACTOR shall exercise extreme care to protect all existing utilities in place whether shown on the plans or not, and shall assume full responsibility for all damage resulting from his operations. The CONTRACTOR shall coordinate with each utility company as to the requirements and methods for the duration of protection, and shall be responsible for preparation and processing of any required plans or permits. The CONTRACTOR shall assume full responsibility to maintain uninterrupted service for all utilities.

By submitting a bid, the CONTRACTOR acknowledges the above referenced utility work to be completed in conjunction with this project. The CONTRACTOR shall schedule his work and conduct his operations so as to permit access and time for the required utility work to be accomplished during the progress of the work.

The CONTRACTOR shall coordinate with each utility company as to the extent of required work and the time required to do so. The CONTRACTOR shall include this time in his/her schedule. Payment for the above, if any, shall be deemed as included in the items of work, and no additional compensation as will be allowed.

5-4 RELOCATION. [Delete the Second and Fourth Paragraphs and add the following paragraph]:
Except as otherwise directed or called out on the approved plans, the alteration or temporary relocation of all service connections (including but not limited to: water, irrigation water, sewer, natural or manufactured gas, underground and/or overhead telephone and electrical) to any adjacent property or landscaped medians shall be the responsibility of the CONTRACTOR. The CONTRACTOR shall restore the service connections immediately after any disruption in service. No attempt has been made to show all service connections on the Plans. The CONTRACTOR shall make all arrangements with the utility owners regarding such work. The costs for such work on service connections, except when specified in the detailed specifications that the utility owners will make no charges for the work, shall be absorbed in the unit prices or included in the lump sum amounts bid for the various other contract items.

SECTION 6 - PROSECUTION, PROGRESS AND ACCEPTANCE OF WORK

6-1 CONSTRUCTION SCHEDULE AND COMMENCEMENT OF WORK
(Replace with the following):

The CONTRACTOR'S proposed construction schedule shall be submitted to the Engineer within ten (10) working days after the date of the Notice of Award of Contract. The schedule shall be supported by written statements from each supplier of materials or equipment indicating that all orders have been placed and acknowledged, and setting forth the dates that each item will be delivered.

Prior to issuing the Notice to Proceed, the Engineer will schedule a preconstruction meeting with the CONTRACTOR to review the proposed construction schedule and delivery dates, arrange the utility coordination, discuss construction methods, and clarify inspection procedures.

The CONTRACTOR shall submit periodic progress reports to the Engineer by the tenth day of each month. The report shall include an updated construction schedule. Any deviations from the original schedule shall be explained. Progress payments will be withheld pending receipt of any outstanding reports.

6-7 TIME OF COMPLETION

6-7.1 General (Add the following):
The time for completion shall be as set forth in Paragraph C.3 of the Standard Agreement, Section 00312-2 "Time For Completion", and Paragraph 3, Section 00700-1, "Time For Completion", of the General Conditions.

6-7.2 Working Day (Add the following):
The CONTRACTOR'S activities shall be confined to the hours between 7:00 A.M. and 5:00 P.M., Monday through Friday, excluding holidays. Deviation from these hours will not be permitted without the prior consent of the Engineer, except in emergencies involving immediate hazard to persons or property.

In the event of either a requested or emergency deviation where additional time, days or inspectors are deemed necessary, inspection service charges will be charged against the CONTRACTOR. The service charges will be calculated at overtime rates including benefits, overhead, and travel time. The service charges will be deducted from any amounts due the CONTRACTOR.

6-9 LIQUIDATED DAMAGES
(Replace last sentence of the first paragraph and the entire second paragraph with the following):

For each consecutive calendar day in excess of the time specified, as adjusted in accordance with Subsection 6-6, for completion of the work the CONTRACTOR shall pay to the AGENCY, or have withheld from monies due it, the sum of $2,000.

Execution of the Contract shall constitute agreement by the Agency and CONTRACTOR that $2,000 per day is the minimum value of the costs and actual damage caused by the failure of the CONTRACTOR to complete the Work within the allotted time. Such sum is liquidated damages and shall not be construed as a penalty, and may be deducted from payments due the CONTRACTOR if such delay occurs.

SECTION 7 - RESPONSIBILITIES OF THE CONTRACTOR

7-1 CONTRACTOR'S EQUIPMENT AND FACILITIES (Add the following):
A noise level limit of 86 dba at a distance of fifty feet (50') shall apply to all construction equipment on or related to the job whether owned by the CONTRACTOR or not. The use of excessively loud warning signals shall be avoided except in those cases required for the protection of personnel.

7-2 LABOR

7-2.1 Laws (Add the following):
The CONTRACTOR, and all subcontractors, suppliers and vendors, shall comply with all AGENCY, State, and Federal orders to ensure equal employment opportunities and fair employment practices.

7-3 LIABILITY INSURANCE
(Replace the entire Subsection with the following):

7-3.1 Indemnification
The CONTRACTOR shall indemnify and save harmless the County of Riverside, the State of California, the City of Indio, and/or any incorporated County for all claims or suits for damages arising from his/her prosecution of the contract work, as more fully described in Subsection 7-3.2 "Contractor's Liability."

7-3.2 Contractor's Liability
The County of Riverside, its Board of Supervisor, or its Engineer, shall not be answerable or accountable in any manner for any loss or damage that may happen to the work or any part thereof; or for any of the materials or other things used or employed in performing the work; or for injury to any person or persons, either workmen or the public; or for damage to adjoining property from any cause which might have been prevented by the CONTRACTOR or his/her workmen or any one employed by him, against all of which injuries or damages to persons and property the CONTRACTOR, having control over such work, must properly guard. The CONTRACTOR shall be responsible for any damage to any person or property resulting from defects or obstructions or any time before its completion and final acceptance, and shall indemnify and save harmless the County of Riverside, its Board of Supervisor, and the Engineer from all suits or actions of every name and description brought for, or on account of, any injuries or damages received or sustained by any person or persons, by the CONTRACTOR, his/her servants or agents, in the construction of the work or by or in consequence of any negligence in guarding the same, in improper materials used in its construction, or by or on account of any act or omission of the CONTRACTOR or has agents, and so much of the money due the CONTRACTOR under and by virtue of the contract as shall be considered necessary by the CITY may be retained by the CITY until disposition has been made of such suits or claims for damages aforesaid.

If, in the opinion of the Engineer, the precautions taken by the CONTRACTOR are not safe or adequate at any time during the life of the contract, he may order the CONTRACTOR to take further precautions, and if the CONTRACTOR shall fail to do so, the Engineer may order the work done by others and charge the CONTRACTOR for the cost thereof, such cost to be deducted from any money due or becoming due the CONTRACTOR. Failure of the Engineer to order such additional precautions, however, shall not relieve the CONTRACTOR from his/her full responsibility for public safety.

7-5 PERMITS (Replace the first sentence with the following):
Prior to the start of any work, the CONTRACTOR shall take out the applicable CITY permits and make arrangements for CITY inspections. The CONTRACTOR and all subcontractors shall each obtain any and all other permits, state licenses, CITY Business licenses, inspections, certificates, or authorizations required by any governing body or public utility. The City of Indio encroachment permit fee is listed in the Bid Proposal. The permit shall be obtained by the contractor prior to the start of work. Payment for this work shall be included in the bid item of work "Encroachment Permit" and no additional compensation will be allowed.

7-8 PROJECT SITE MAINTENANCE (Add the following):

7-8.1 Cleanup and Dust Control.
The CONTRACTOR shall read and abide by the requirements set out in the **Local Air Quality Management Plan** attached to the Plans. In particular this has provisions for: control of the site construction dust through **daily watering** of all disturbed areas and/or treatment of said areas with an approved "Dust Palliative" as described under Section 7-9, "Protection and Restoration of Existing Improvements", any requirements for all hauled materials to be appropriately covered with tarps; and a provision for street sweeping to remove sand and dust from traffic zones. Any sandblasting must be done by the "wet" method, and all residues must be cleaned up by street sweepers as soon as possible. Any substance other than water to be used for dust control for this project must be pre-approved by both the Engineer and the Regional Water Quality Control Board.

Costs for maintaining dust control measures, including hydromulch, fiber and other palliatives during construction and obtaining and applying construction water for dust control shall be paid for in the listed Bid Item "Clearing and Grubbing".

7-8.1.1 Demolition and Construction Material Recycling.
CONTRACTOR shall recycle demolition and construction materials from the job site. For example, asphalt, concrete, metals, glass, and green waste are all recyclable materials. CONTRACTOR shall provide the City with verification, including name and address, of the company hauling the recyclable materials. Weight tickets shall be submitted to the City from the facility receiving the materials.

7-8.6 Water Pollution Control [Add the following]:
The CONTRACTOR shall be responsible for complying with all requirements of Caltrans Standard Specifications Section 7-1.01G, "Water Pollution," and the "Caltrans Storm Water Quality Handbook, Construction Contractor's Guide and Specifications," latest edition, for development and implementation of the Storm Water Pollution Prevention Plan (SWPPP). The SWPPP shall also be in full conformance with the latest requirements of the Regional Water Quality Control Board, the Whitewater River Region Storm Water Management Plan (SWMP), the County of Riverside Local Implementation Plan (LIP), and the project specific requirements of the City Engineer. The most stringent current requirements shall be in effect.

The CONTRACTOR is hereby notified that specific construction practices in the Caltrans Standard Specifications, Section 7, "Responsibilities of the Contractor," are considered to be the Best Management Practices, and are in some cases subject to amendments and updates from regulatory agencies and ordinances. Applicable construction practices in the Standard Specifications and other current relevant sources shall be incorporated into the SWPPP. Additionally, at a minimum, the CONTRACTOR'S work will be in compliance with the Caltrans Statewide National Pollutant Discharge Elimination System (NPDES) Storm Water Permit, Order No. 99-06 DWQ, and NPDES No. CAS000003, adopted by the State Water Resources Control Board (SWRCB) on July 15, 1999, in addition to the BMP's specified in the Caltrans Storm Water Management Plan (SWMP), the Whitewater River Region SWMP, the County of Riverside LIP and the Regional Water Quality Control Board Permit for Linear Projects. When applicable, the Permittee will also conform to the requirements of the General NPDES Permit for Construction Activities, Order No. 2009-0009-DWQ, NPDES No. CAS000002, and any subsequent General Permit in effect at the time of issuance of this Encroachment Permit.

At the time of the preconstruction meeting the CONTRACTOR must have the SWPPP completed and signed by the responsible parties, and it shall be reviewed and accepted by the City prior to submittal to the Regional Board and the start of any work. The CONTRACTOR shall name himself as the "responsible party" in the permit.

The CONTRACTOR shall be responsible for conducting all required monitoring inspections and shall file original copies of the inspections and all other reports, certifications or records as required by the SWPPP with the City. All fines levied as a result of the CONTRACTOR's failure to comply with the requirements of the SWPPP, shall be the CONTRACTOR's responsibility.

Time extensions will not be allowed for any suspension of work as a result of the CONTRACTOR's noncompliance with the SWPPP.

Payment for preparing and gaining approval of the SWPPP, complying with the SWPPP, and implementation of the SWPPP, shall be paid for in the bid item Clear and Grub, and no additional compensation shall be allowed.

7-8.7 Drainage Control (Add the following):

Flow, Acceptance and Removal of Water

It is anticipated that storm, surface or other waters will be encountered at various times during the work herein contemplated. The CONTRACTOR, by submitting a bid acknowledges that he/she has investigated the risk arising from such waters and has prepared his/her bid accordingly, and CONTRACTOR submitting a bid, assumes all said risk.

The CONTRACTOR shall conduct his/her operations in such a manner that storm or other existing waters may proceed uninterrupted along their existing street or drainage courses. Diversions of water for short reaches to protect construction in progress will be permitted if public and/or private properties, in the opinion of the Engineer, are not subject to probability of damage. The CONTRACTOR shall obtain written permission from the applicable public agency or property owner before any diversion of water outside of public right-of-way will be permitted.

The CONTRACTOR shall provide and maintain at all times during construction ample means and devices to promptly remove and properly dispose of all water entering the excavations or other parts of the work. No concrete footing or structure shall be laid in water nor shall water be allowed to rise over them until the concrete or mortar has set at least eight (8) hours. Water shall not be allowed to rise unequally against a wall for a period of twenty-eight (28) days. Dewatering for the structures and pipelines shall commence when ground water is first encountered, and shall be continuous until such time as water can be allowed to rise in accordance with the above paragraph. Dewatering shall be accomplished by well points or some other method which will insure a dry hold and preservation of final lines and grade of the bottoms of excavation, all subject to the approval of the Engineer.

7-9 PROTECTION AND RESTORATION OF EXISTING IMPROVEMENTS (Add the following):

If any irrigation facilities are encountered they shall be preserved in place or repaired quickly so no serious disruption in watering takes place.

Restoration of other landscape items shall follow the Standard Specifications except as modified by these Special Provisions. If questions arise about how the finished products should look, the CONTRACTOR should anticipate allowing direction from the residents and the Engineer. If resident requests appear to be beyond the scope of the plans and specifications, the CONTRACTOR shall get written clearance from the Engineer to proceed prior to doing the work. However, the City is not opposed to the CONTRACTOR setting up separate construction agreements outside this contract if they do not interfere with this project. If such "side-jobs" require City Permits, the CONTRACTOR is responsible for getting them prior to the work being done.

At the end of the project, and/or prior to stopping the daily watering routine, all non-traffic disturbed areas shall be sealed with a wood fiber or recycled paper "hydromulch" containing a natural or chemical binding agent acceptable to the City and the Regional Water Quality Control Board per Caltrans Standard Specifications 20-2.07 "Fiber". Formulations and application should be aimed at stabilizing the soil until such time as native plants re-establish themselves. Alternately, such areas may be treated by seeding them with a grass or flower seed and continuing the watering operations until the plants are at least 2" high.

Fiber shall be produced from natural or recycled (pulp) fiber, such as wood chips or similar wood materials or from newsprint, chipboard, corrugated cardboard or a combination of these processed materials, and shall be free of synthetic or plastic materials. Fiber shall not contain more than 7 percent ash as determined by the Technical Association of the Pulp and Paper Industry (TAPPI) Standard T413, shall contain less than 250 parts per million boron and shall be otherwise nontoxic to plant or animal life.

Fiber shall have a water-holding capacity by mass of not less than 1200 percent as determined by the procedure designated in the Caltrans Final Report, CA-DOT-TL-2176-1-76-36, "Water-Holding Capacity for Hydromulch," available from the Caltrans Laboratory.

Fiber shall be of such character that the fiber will disperse into a uniform slurry when mixed with water. Water content of the fiber before mixing into slurry shall not exceed 15 percent of the dry mass of the fiber. The percentage of water in the fiber shall be determined by California Test 226. Fiber shall have the moisture content of the fiber marked on the package. Fiber shall be colored to contrast with the area on which the fiber is to be applied, and shall not stain concrete or painted surfaces.

A certificate of Compliance for fiber shall be furnished to the Engineer in conformance with the provisions in Section 6-1.07, "Certificates of Compliance," in the Caltrans Standard Specifications.

The hydromulch shall have a binder material that is safe for the environment; such as may be created from natural substances like lignin or cellulose, or chemical binders that have been approved by the Regional Water Quality Control Board such as Acrylic Polymer. The binder shall be of sufficient strength when combined with the hydromulch that weeds will be able to re-establish themselves before the hydromulch breaks down. An application rate shall be chosen that leaves a layer approximately ¼ inch thick on all surfaces. A neutral colorant (typically green or brown) shall be added to the hydromulch so that it contrasts slightly with the sand, so that application thoroughness can be readily checked. The colorant shall not stain concrete or other materials that it may come in contact with, and it should be designed to fade after application.

Payment for disturbed area sealant shall be included in the **Lump Sum** unit price bid for Clearing and Grubbing, and no additional payment will be made therefore.

7-10 PUBLIC CONVENIENCE AND SAFETY

7-10.1 Traffic and Access [Add the following paragraphs]:
When entering or leaving roadways carrying public traffic, the CONTRACTOR'S equipment, whether empty or loaded, shall in all cases yield to public traffic. Construction access shall only be as allowed by the City Engineer and as set forth in these Special Provisions and as shown on the approved Storm Water Pollution Control Plans and the approved Traffic Control Plan.

To the extent possible, access shall be maintained to all properties, businesses and residences by use of temporary ramps and/or detours. Driveway construction shall be phased to allow access during construction. Any closures shall be approved by the City Engineer prior to occurrence.

The CONTRACTOR shall notify all affected property owners of the proposed schedule a minimum of 48 hours, but not more than 72 hours, in advance of any limitation or closure of access to their property. Form of said notice shall be as approved by the Engineer and shall contain the date and time of the closure. In the event of delay, whether beyond the control of the CONTRACTOR or not, the CONTRACTOR shall notify all affected property owners as to the extent of the delay and his revised schedule. In the event of delay over 72 hours, the CONTRACTOR shall re-notify the property owners as described above. Payment for notification and coordination shall be included in the compensation paid for the various items of work and no additional compensation will be allowed.

7-10.1.1 Traffic Control System [Add the following section]:
A traffic control system shall consist of closing traffic lanes in accordance with the current California Department of Transportation California Manual on Traffic Control Devices, Latest Edition.

The provisions in this section will not relieve the CONTRACTOR from his responsibility to provide such additional devices or take such measures as may be necessary to comply with the provisions in Section 7-1.09, "Public Safety," of the Standard Specifications.

The CONTRACTOR shall submit a detailed traffic control plan (for each phase of construction), signed by a Registered Civil Engineer, to the County of Riverside and City of Indio 15 days prior to start of construction.

All traffic signals shall remain in operation during the entire construction period. Any temporary modification of existing traffic signals shall be approved by the ENGINEER.

The CONTRACTOR shall furnish, install and maintain temporary construction signs, delineators, barricades, and other safety devices that are clean, in good condition, and are highly reflective as required for public safety

as or directed by the ENGINEER. Attention is directed to Section 7, "Responsibilities of the CONTRACTOR" of the Standard Specifications and these Special Provisions. This work shall conform to the Standard Specifications, these special provisions and the APWA "Work Area Traffic Control Handbook" (Watch Manual). This includes but is not limited to:

A. Mobilization
B. Furnish, install and maintain temporary signs, flashers, barricades, delineators, etc.
C. Remove temporary facilities upon completion of the project.

The CONTRACTOR shall place advance warning signs approved by the ENGINEER on both HIGHWAY 111 AND ARABIA STREET in all directions one week (minimum) prior to start of construction, to remain in place during the work, that notify public of construction period and possible delays. Changeable message signs shall be placed on HIGHWAY 111 AND ARABIA STREET in both directions at locations approved by the ENGINEER during the first 10 working days of the project, after which the changeable signs may be removed.

The CONTRACTOR shall provide at all times:

- **Highway 111** - One (1) 12-foot wide lanes of traffic and one (1) 11-foot wide left turn lane in each direction for use by public traffic during construction (to the extent possible) and at all times outside of working hours.
- **Arabia Street** – Street closure will be permitted for one block at a time. The Contractor shall be required not to close more than one block of Arabia Street at a time. The Contractor shall be required to provide safe and convenient detour for each closure. The Contractor shall be required to provide access to all properties all the time.
- Extra effort to facilitate flow of traffic at intersection.

Portions of the work at or near the project intersection may cause major disruptions to the flow of traffic or cause excessive delays that may require a City Police to direct traffic at the discretion of the County/City Inspector. Prior to work at the intersection, the CONTRACTOR shall alert the Inspector to the upcoming work and the proposed traffic control. If a Deputy is required, the CONTRACTOR shall make arrangements with the Riverside County Sheriff's Department and pay for the services.

CONTRACTOR shall notify adjacent businesses 48 hours prior to construction that will provide limited access to their business. Access to existing businesses shall be maintained at all times outside of working hours.

CONTRACTOR shall provide access to all existing bus stop locations outside the travel way. Any deviations requirements shall be approved by Sunline Transit Agency and shall be submitted to the CITY for approval.

CONTRACTOR shall provide minimum 10' wide pedestrian access along Highway 111 across the intersection during the work.

Each vehicle used to place, maintain, and remove components of a traffic control system shall be equipped with a Type II flashing arrow sign which shall be in operation when the vehicle is being used for placing, maintaining, or removing said components. The sign shall be controllable by the operator of the vehicle while the vehicles in motion. The flashing arrow sign shown on the plans shall not be used on the vehicles which are doing the placing, maintaining, and removing of components of a traffic control system, and shall be in place before a lane closure requiring its use is completed.

If any component in the traffic control system is displaced, or ceases to operate or function as specified, from any cause, during the progress of the work, the CONTRACTOR shall immediately repair said component to its location.

When lane closures are made for work periods only, at the end of each work period, all components of the traffic control system, except portable delineators placed along open trenches or excavation adjacent to the traveled way, shall be removed from the traveled way and shoulder. If the CONTRACTOR so elects, said components may be stored at selected central locations, approved by the ENGINEER, within the limits of the highway right of way.

7-10.1.2 Payment
Full compensation for providing the **Traffic Control** system (including signs) shall be considered as included in the Bid Item for Traffic Control and no additional payment will be made thereof.

7-10.2 Storage of Equipment and Materials in Public Streets. [Add the following]
The CONTRACTOR may, at his/her own expense, maintain and operate a work and storage area outside of the public right-of-way. In such case the CONTRACTOR shall submit to Agency written authorization from the owners of the subject property prior to occupation. Occupation of site without written authorization shall be grounds for immediate suspension of work. The Location of site is to be approved by Agency prior to usage. Condition and operation of yard shall conform to these specifications. The CONTRACTOR shall assume full responsibility for all damage to the site resulting from his/her operations and shall repair and or replace same at his/her own expense to the satisfaction of the owner of the subject property. The CONTRACTOR shall vacate site and clean it and seal it with a "hydromulch" or fiber per Section 7-9, "Protection and Restoration of Existing Improvements" noted above and as approved by the City Engineer within five (5) working days following application for Notice of Completion. The CONTRACTOR shall obtain a written release from the property owner specifying the condition of the vacated site and releasing the CONTRACTOR from any further clean-up or restoration work and shall submit a copy of such release to Agency. The Notice of Completion will not be issued until said release is submitted. Work areas and storage areas shall be included in and subject to the project Storm Water Pollution Prevention Plan (SWPPP).

Payment for the performance of any work, use or lease of property, maintenance and cleanup during occupation and following completion of all work shall be included in the compensation paid for the various items of work, and no additional compensation will be allowed.

7-10.3 Street Closures, Detours and Barricades. [Add the following]:
The CONTRACTOR shall maintain the minimum traffic requirements designated in the General Conditions.

No street or access closure to through traffic will be allowed without the express approval of the Agency.

The CONTRACTOR shall be responsible for providing temporary access to all driveways at the end of each work day and as much as possible during the construction day.

The CONTRACTOR shall provide and maintain all other signs, barricades pedestals, flashers, delineators and other necessary facilities for the protection of the public within the limits of the construction area. The CONTRACTOR shall also post proper signs to notify the public regarding detours and the condition of the roadway, all in accordance with the provisions of the Vehicle Code and the current California Department of Transportation California Manual on Traffic Control Devices, 2014 Edition. Should the CONTRACTOR appear to be neglectful or negligent in furnishing warning and protective measures as provided, the Engineer may direct attention to the existence of a hazard and the necessary warning and protective measures shall be furnished and installed by the CONTRACTOR at his expense. Should the Engineer point out the inadequacy of warning and protective measures, such action on the part of the Engineer shall not relieve the CONTRACTOR from responsibility for public safety or abrogate his obligation to furnish and pay for these devices.

When lane closures are made for work periods only, at the end of each work period, all components of the traffic control system, except portable delineators placed along open trenches or excavation adjacent to the traveled way, shall be removed from the traveled way and shoulder. If the CONTRACTOR so elects, said components may be stored at selected central locations, approved by the Engineer, within the limits of the highway right of way.

Full compensation for conforming to this article shall be considered as included in the various items of work involved, and no additional compensation will be allowed therefore.

All existing stop signs, street name signs and regulatory signs shall be maintained in visible locations during construction and permanently relocated or removed as directed by the plans and the Engineer.

7-10.4.1 Safety Orders. [Add the following paragraph]:
The CONTRACTOR shall comply with the provisions of any Agency ordinances or regulations regarding requirements for the protection of excavations and the nature of such protection.

7-10.5 Truck Haul Route. [Add as a new section]:
A truck haul route plan will be prepared and submitted to the County for all trucks transporting materials to and from the project site.

7-10.5.1 General Requirements. [Add as a new section]:
A Proposed truck haul route is to be submitted to the County for review. Upon approval, an approved copy shall be returned to the CONTRACTOR. The CONTRACTOR shall post an approved copy on the job site. All trucks working that project shall also carry a copy. If a truck is found not to be carrying an approved copy, the CONTRACTOR shall be subject to a Notice of Noncompliance (stop work order).

All trucks must cover the dirt with an acceptable tarp during transport for dust containment. Provisions for street sweeping and watering will also be required unless an active wheel washing facility proves that they are un-necessary to the satisfaction of the City Engineer.

All truck haul routes, as approved, are good only for the project time period, and trucks shall have to comply with the approved route only. If during the progress of the project an alternate route is needed, the CONTRACTOR shall submit a new plan. The haul route application shall contain the following information:

1. Map showing the proposed route
2. Project name
3. Owner's name, address and phone number
4. Grading Contractor's name, address and phone number
5. Type of material being hauled
6. Tract or Project Number involved
7. Grading, construction or Encroachment Permit number.

SECTION 9 - MEASUREMENT AND PAYMENT

9-1 MEASUREMENT OF QUANTITIES FOR UNIT PRICE WORK

9-3.2 Partial and Final Payment (Replace the last paragraph with the following):
The closure date for periodic progress payments shall be five (5) working days prior to the first Monday of each month. The final progress payment shall not be released until the CONTRACTOR returns the control set of plans and specifications showing the record conditions, and provides any other documentation or submittals required by these specifications.

The full five percent (5%) retention shall be deducted from all payments. The final retention shall be authorized for payment thirty-five (35) days after the date of recordation of the Notice Completion and Acceptance of the work.

In conformance with the State of California Public Contract Code Part 5, Section 22300, the CONTRACTOR may substitute securities for any monies withheld by the COUNTY to ensure performance under the contract.

9-3.3 Delivered Materials (Replace with the following):
Materials and equipment delivered but not incorporated into the work will not be included in the estimate for progress payment, subject to the discretion of the Engineer.

9-3.4 Mobilization (Replace with the following):
Mobilization shall consist of preparatory work and operations, including but not limited to those necessary for the movement of personnel, equipment, supplies and incidentals to the project site; for the establishment of all portable offices, buildings and other facilities necessary for the work on this project; and for all other work and operations which must be performed or cost incurred prior to beginning work on the various contract items on the project site.

Mobilization shall also include, but not be limited to, temporary power, construction water (including meter acquisition and fees), scheduling, progress reports, invoicing, permits (except as otherwise provided in these specifications), staging areas, special inspection, mobilizing equipment, personnel and materials, and all other indirect costs associated with completing the work and not covered or compensated under relevant bid items.

The compensation paid for mobilization shall be included in accordance with the Standard Specifications and paid for under the **lump sum** mobilization bid item and shall be full compensation for all costs incurred by the CONTRACTOR for doing all the work involved in mobilization as specified herein. Payment for mobilization will be included with the first month progress payment and shall be considered full compensation for the cost of such mobilization and administered for the entire contract period.

PART 2 - CONSTRUCTION MATERIALS

SECTION 200 - ROCK MATERIALS

200-1 ROCK PRODUCTS

200-1.1 General. [Add the following]:
Crushed Aggregate Base shall be per Section 26, Class 2 Aggregate Base, of the State Standard Specifications (Caltrans), ¾" maximum.

Subsection 26-1.02A "Class 2 Aggregate Base," of the Caltrans Specifications, shall be revised to include the following:

"Disintegrated granite, glass, porcelain, brick, wood, steel (reinforcing nails, etc.) or slag shall not be used for aggregate base. If any detrimental material or deleterious substance is found in the base material, it shall be cause for rejection and be removed from the site."

"Grading or blending of the material shall be done through a screening process."

Subsection 26-1.04, "Spreading" of the Caltrans Specifications, shall be revised to include the following:

"Tailgate spreading by dump truck will not be permitted except for spot dumping and in areas not readily accessible to spreading equipment."

SECTION 201 - CONCRETE, MORTAR, AND RELATED MATERIALS

201-1 PORTLAND CEMENT CONCRETE

201-1.1 Requirements
201-1.1.2 Concrete Specified by Class (Add the following as minimums for this project:)

Construction	Concrete Class	Maximum Slump
Street surface improvements (curb and gutter, curb, gutter, drive approach, spandrels, cross gutters):	560-C-3250	4"
Sidewalks, and access ramps	560-C-3250	4"
Concrete surrounding manhole, cleanouts, and vault frames.	560-C-3250	4"

201-1.2 Materials

201-1.2.1 Portland Cement (Add the following:)
The cement to be used or furnished shall be Type V Portland Cement conforming to ASTM C150, unless otherwise specified.

Portland Cement Concrete for structures shall conform to the provisions in Section 201 of the Standard Specifications except as modified herein.

All cast in place concrete structures shall be cured by the water method except where curing compound method is approved by the Engineer.

201-1.2.4 Chemical Admixtures (Add the following)

Admixtures may be used by the CONTRACTOR if approved by the Engineer and shall conform to Section 201-1.2.4 - Admixtures.

201-1.2.5 Fly Ash (Add the following)
Fly ash shall not be used in the concrete for this project.

SECTION 203 - BITUMINOUS MATERIALS

203-6.1 General. [Add the following to the end of the subsection]:
Asphalt concrete shall conform to the provisions of Subsection 400-1, "Rock Products," and Subsection 400-4, "Asphalt Concrete", except shall be in accordance with the Caltrans Aggregate Grading Requirement and performance grade as indicated.

The following aggregate size and performance grade of paving asphalt shall be used.

Asphalt Base Course	¾" Max., Medium	PG 70-10
Leveling and Final Course	½" Max., Medium	PG 70-10

The CONTRACTOR shall submit final asphalt mix designs to the Agency for review prior to paving.

203-14.2.1 Tire Rubber Modified Paving Asphalt [Revise section as shown below]:

Tire rubber modified paving asphalt shall be designed as MAC-15TR and requirements shown in Table 203-14.2.1 (A).

203-14.3 Composition and Grading (revise first paragraph as shown below]:

TRMAC will be designed by class and tire rubber content for type for gap-graded mixes (TRMAC-15-GG-C).

The CONTRACTOR shall submit final asphalt mix designs to the Agency for review prior to paving.

SECTION 210 – PAINT AND PROTECTIVE COATINGS

210-1 PAINT

210-1.1 General Requirements. [Add the following]:
Coatings and finishes on signal pole standards, poles, mast arms and other fixtures shall be protected from damage. Scratches, scrapes and other blemishes caused by the CONTRACTOR shall be repaired or refinished in kind and with the same color finish or coating to match existing.

SECTION 211 - MATERIAL TESTS

211-1.1 Laboratory Maximum Density. [Replace with the following]:
Laboratory maximum density tests shall be performed in accordance with Test Method No. Calif. 216G, Part II. The correction for oversized material as stated in Test Method No. Calif. 216 shall be replaced with Note 2 of ASTM D1557.

211-1.2 Field Density. [Add the following Paragraph]:
The Engineer will make field density tests during the course of construction at the expense of the Agency. If field density tests indicate that any portion of the compacted subgrade has density lower than that specified, the CONTRACTOR shall rework that portion until the specified density is obtained. Retest of areas which have failed compaction will be performed by the Engineer at the CONTRACTOR'S expense.

SECTION 214 – TRAFFIC STRIPING, CURB AND PAVEMENT MARKINGS, AND PAVEMENT MARKERS

214-1 General [Add the following]:
Raised pavement markers shall conform to the provisions in Section 82, "Markers and Delineators," of the State Standard Specifications and these special provisions.

All reflective raised pavement markers shall be Apex Universal Inc., Model 921AR (No Equal).

Raised Reflective Pavement Markers at fire hydrants shall be Type-I two-way blue reflective markers conforming to the requirements to section 214-6 of the Standard Specifications.

Raised Reflective Pavement Markers shall be installed with Henry HE184 Flexible Dot Stick Adhesive.

214-4 Paint for Striping and Markings

214-4.1 General. [Add the following]:
Paint for traffic striping and marking shall conform to Caltrans Specification 84-3.

Materials - Materials shall conform to the provisions in Section 84- "Materials," of the State Standard Specifications and these Special Provisions and contained on the list of "pre-qualified and tests signing and delineation materials".

Painted striping shall have a minimum of two coats.

Paint and glass beads shall conform to the following State Specifications:

Paint	State Specifications No.
Rapid Dry water borne white, Yellow and black	8010-91D-30
Glass beads	8010-11E-22 Type 11

214-5 Thermoplastic Material for Traffic Striping and Markings. [Add the following]:
214-5.1 Thermoplastic materials shall conform to the provisions in Section 84-2.02 "Materials" of the State Standard Specifications and these Special Provisions and as contained on the list of "pre-qualified and tests signing and delineation materials."

214-5.1.1 Scope. [Add the following section]:

This specification covers a reflectorized pavement striping material of the type that is applied to the road surface in a molten state by "SCREENED/EXTRUSION" means with a surface application of glass beads at a specified rate. Upon cooling to normal pavement temperature, the material produces an adherent reflectorized stripe of specified thickness and width, capable of resisting deformation by traffic.

214-5.1.2 Materials. [Add the following section]:
The Thermoplastic material shall be available in white, yellow and black.

The thermoplastic material shall be homogeneously composed of pigment, fillers, resins and glass reflectorizing spheres. The vendor shall have the option of formulating the material according to his own specifications. However, the solid resin shall be "maleic-modified glycerol ester resin" (alkyd binder). The physical and chemical properties, as specified below, shall apply regardless of the type of formulation.

Glass beads shall be uncoated and conform to AASHTO M247-81 Type 1.

The thermoplastic material shall not deteriorate on contact with sodium chloride, calcium chloride or other de-icing chemicals or because of oil content of paving materials or oil droppings.

214-5.1.3 Requirements of the Thermoplastic Mixture. [Add the following section]:
The Specific Gravity of the white and yellow thermoplastic traffic line material shall not exceed 2.15.

The pigment, beads and fillers shall be uniformly dispersed in the resin. The material shall be free from all skins, dirt and foreign objects and shall comply with the requirements according to the table below.

COMPOSITION (Percent by Weight)

COMPONENT	WHITE	YELLOW	BLACK
Binder – See Note (b)	18.0 min.	18.0 min.	18.0 min.
Glass Beads30-40 min.	30-40 min.	30-40 min.	0.0 max
Titanium Dioxide	10.0 min.	----------	0.0 max.

Calcium Carbonate & Inert Fillers	42.0 max.	50.0 max.	52.0 max.
Yellow and Black Pigments	----------	See Note (a)	See Note (a)

Note (a) Amount of yellow and black pigment, calcium carbonate and inert fillers shall be at the option of the manufacturer, providing that all other requirements of this specification are met.

Note (b) Alkyd binder shall consist of a mixture of synthetic resins, at least once of which is solid at room temperature, and high boiling point plasticizers. At least one-third of the binder composition shall be solid aleic-modified glycerol ester resin and shall be no less than 8 percent by weight of the entire material formulation. The binder shall not contain petroleum based hydrocarbon resins.

The color of the thermoplastic material, after heating for four hours + five minutes at 425 + 3 (218 + C) underagitation, shall meet with the following requirements:

White: Daylight reflectance at 45 degrees – 0 degrees – 75% minimum.

Yellow: Daylight reflectance at 45 degrees – 0 degrees – 45% minimum.
(For highway use, the yellow color shall reasonably match Color Chip Number 13538 of the Federal Standard Number 595 – Test performed at 77F)

Set Time. When applied at a temperature range of 412.5 + 12.5F (211 + 7C) and thickness of 0.060 to 0.125 inch (1.524 to 4.736 mm), the material shall set to bear traffic in not more than 2 minutes.

214-6 Pavement Markers

214-6.1 Types of Markers [Replace the following section]:
The description, type of markers, sampling, tolerances, packaging, and storage of non-reflective and reflective pavement markers shall be as specified in CALTRANS Specification Section 85 "Pavement Markers". The description, sampling, testing, packaging, labeling and storing of epoxies shall be as specified in CALTRANS Specification Section 95 "Epoxy".

214-6.7 Measurement and Payment. [Add the following section]:
Payment for the installation of pavement markers will be paid for at the contract **lump sum** price bid for Traffic Striping, Markings, Markers & Signs. The price bid shall be considered to include full payment for all materials, labor, equipment and incidentals required to construct the improvements in accordance with the Plans and Specifications, and no additional compensation will be made therefore.

PART 3 - CONSTRUCTION METHODS

SECTION 300 - EARTHWORK

300-1.1 General. [Add the following]:

Miscellaneous

1. CONTRACTOR shall supply and apply an approved soil sterilant prior to installing new paving.

2. CONTRACTOR shall protect existing asphalt concrete pavement within the travelways of the project streets unless specifically indicated to be removed. The CONTRACTOR shall exercise extreme care with his operations so as to not damage the existing pavement. The CONTRACTOR shall repair, at his own expense, all pavement deemed solely by the Agency to have been damaged during the project by the CONTRACTOR.

3. CONTRACTOR shall be responsible for the removal and replacement in kind of all disturbed landscape irrigation and electrical lighting systems and the removal and disposal of any and all trees/landscaping necessary to complete the planned improvements shown or not shown on the plans. Existing irrigation facilities are to be plugged by the CONTRACTOR until the replacement system is constructed. To ensure the remainder landscaping irrigation still functions as it exists, temporary facilities will be constructed at the CONTRACTOR'S expense to allow the protection of the existing foliage. Palm trees that are designated to be removed shall be disposed of by the CONTRACTOR.

4. CONTRACTOR shall protect pipelines, curbs, sidewalks, pavements and facilities from damage caused by settlement, lateral movement, undermining, washout and other hazards created by the demolition operations. Any damage to existing improvements shall be replaced in kind as approved by the Engineer at the CONTRACTOR'S own expense.

5. Complete compliance with the Local Air Quality Management Plan (LAQMP) for this project, and all other items of work as directed in these Special Provisions. The CONTRACTOR shall be responsible for the procurement and application of a City approved "hydromulch" dust palliative. The City PM10 ordinance and local water quality control Best Management Practices. The CONTRACTOR shall place this approved "hydromulch" on all unimproved areas which have been disturbed by their operations. Unimproved areas shall include as a minimum the disturbed areas behind the curb and gutter and the select fill areas within the raised median islands.

6. CONTRACTOR shall provide for watering, including developing a water supply and furnishing and placing all water required for work done in the contract, including water used for extra work. CONTRACTOR shall obtain a temporary water meter or supply.

7. CONTRACTOR shall protect existing utilities, paving, curb and gutter, plant material, and irrigation not indicated on plans to be removed or otherwise made known to the CONTRACTOR prior to or during demolition work. If damaged, immediately notify the Agency's Representative. If existing active facilities encountered are not indicated or otherwise made known to the CONTRACTOR and require protection or relocation, the CONTRACTOR shall be responsible for taking whatever immediate steps are necessary to ensure that the service provided is not interrupted. If services are interrupted as a result of the CONTRACTOR'S operation, immediately notify the Agency's Representative. If existing utilities are found to interfere with the permanent facilities under construction under this Contract, immediately notify the Agency's Representative, in writing, requesting instructions on their disposition. Do not proceed until written instructions are received from the Agency's Representative.

8. CONTRACTOR shall be responsible for cleanup of the job site. CONTRACTOR shall leave the site in a clean and orderly manner. This item shall also be interpreted to include the removal or relocation of any additional items not specifically mentioned herein or covered by specific bid item, which may be found within the work limits whether shown or not shown on the plans to be removed or relocated.

9. Measurement and payment for all of the items of work noted above and for the supply and application of any AGENCY approved material shall be included in the CONTRACTOR'S bid item for Clearing and Grubbing and no additional compensation shall be allowed.

300-1.3.2(a) [Add the following]:
Removal of bituminous pavement shall be made to a sawcut at the designated lines of removal shown on the Plans or as designated by the Engineer. A wheel cut may be used at the discretion of the Engineer. Location of sawcut and width of existing pavement to be removed shall be as shown on the plans or as determined by the Engineer in the field. Minimum laying depth of new pavement material shall be 0.12 foot at join lines.

The areas and quantities shown on the plans or specifications are given only for the CONTRACTOR'S aid in planning the work and/or preparing bids. The Engineer shall designate the limits to be removed and these designated areas shall be considered to take precedence over the areas shown on the plans. No guarantee is made that areas or quantities shown will equal the areas or quantities designated by the Engineer. Spalled or loose blocks of pavement and pavement cracks wider than 3/8 inch will be deemed justification for extending or adding to the removal and replacement of asphalt concrete pavement.

The areas indicated for removal and replacement shall be excavated to the full depth of the proposed pavement section (asphalt and base), or as shown on the plans, regardless of thickness.

300-1.4 Payment. [Replace the first paragraph with the following]:
Compensation for **Clearing and Grubbing** shall be paid for at the **Lump Sum** contract price and no additional compensation will be allowed. Payment shall include full compensation for furnishing all labor, materials, tools, equipment, and doing all work involved in clearing and grubbing as specified. Payment for removal of bituminous pavement and base will be paid in the Sawcut and Remove A.C. Pavement and Base bid item. Existing curb and gutters, sidewalks, and other items of removal necessary for construction of the improvements will be considered included in their respective bid items. Items not covered under respective bid items shall be paid for under the bid item for Clearing and Grubbing, and no additional compensation shall be allowed.

300-2 UNCLASSIFIED EXCAVATION

Payment for unclassified excavation shall be included in the compensation paid for the various items of work and no additional compensation will be allowed.

300-4 UNCLASSIFIED FILL

300-4.1 General. [Add the following]:
Unclassified Fill shall be placed to the lines and grades shown on the plans, incorporated exhibits or detail drawings and in accordance with the methods of Section 300-4 of the Standard Specifications. Median islands, once constructed, shall be filled to four (4) inches below top of curb. **Any imported soil for the median island fill must have a soil test conducted to verify agricultural suitability.**

Soil testing for agricultural suitability will include but is not limited to the following analysis: soil ph; EC; Boron, Calcium and Magnesium content and N, P, and K levels. A minimum of one composite sample will be taken for every five acres.

Payment for unclassified fill shall be included in the compensation paid for the various items of work and no additional compensation will be allowed.

300-6.4 Basin Excavation [Add the following]:

The Contractor shall regrade existing basin located at the northwest corner of Oasis Street/Dr. Carreon Boulevard intersection as shown the plans. The Contractor shall locate existing drywells located within the basin and protect them during construction. The basin excavation shall include grading, regrading, excavation, clearing, stripping, excavation, fill, backfill, disposal of excess material, construction of access road and perimeter maintenance roadway.

300-6.6 Payment. [Replace the Second paragraph with the following]:
Compensation for Basin Excavation, Export, and Fine Grading shall be paid for at the **Lump Sum** contract price and no additional compensation will be allowed. Payment shall include full compensation for furnishing all labor, materials, tools, equipment, and doing all work including involved in grading, regrading, excavation, clearing, stripping, excavation, fill, backfill, disposal of excess material, construction of access road and perimeter maintenance roadway. There shall be no separate measurement or payment made for Class 2 Base used for access road and perimeter maintenance roadway and considered included in lump sum price for Basin Excavation.

SECTION 301 TREATED SOILS, SUBGRADE PREPARATION AND PLACEMENT OF BASE MATERIALS

301-1 SUBGRADE PREPARATION.

Preparation of the pavement subgrade shall conform to the provisions of Section 301-1 of the Standard Specifications and these provisions.

301-1.3 Relative Compaction. [Add the following]:
Exposed subgrade to receive new pavement shall be scarified to a depth of 4", moisture conditioned, and recompacted. The top 12" of subgrade under pavement shall be compacted to 95% relative compaction.

301-1.3 Payment. Compensation for subgrade preparation shall be deemed to be included in the bid price of other items, and no additional compensation will be allowed.

301-2 UNTREATED BASE

301-2.1 General. [Add the following]:
Untreated base material shall conform to Section 200-1.1 of these specifications.

Preparation of the pavement subgrade shall conform to the provisions of Section 301-1 of the Standard Specifications and these provisions.

301-2.3.1 Compacting. [Add the following]:
Aggregate Base shall be compacted to 95% relative compaction.

301-2.4 Measurement and Payment. [Add the following]:
Payment for **Construct Class II Aggregate Base** shall be included in the contract price per **Cubic Yard**. Payment shall be full compensation for furnishing all labor, materials, tools, equipment, and incidentals and all work involved in subgrade preparation, scarification, and compaction, and placement of untreated base and no additional compensation will be allowed therefore.

301-6 SOIL STERILANT. [Add the following sections]:

301-6.1 General.
All areas indicated on the Plans to receive P.C.C., stamped concrete or Asphalt Concrete Pavement over base material shall be prepared in accordance with applicable sections of the Standard Specifications concerning subgrade preparation. In addition, after the compaction is completed, the CONTRACTOR shall apply a soil sterilant to the subgrade. Application shall be by spray equipment which provides good mechanical agitation and even coverage of the area to be treated. Spray equipment shall be calibrated before material is applied, and the Engineer's decision as to the effectiveness of the spray equipment shall be final. Great care shall be taken to apply soils sterilant to the designated areas only. Concrete or asphalt may be placed immediately after placement of soil sterilant.

301-6.2 Operator's License.
The CONTRACTOR'S operator applying the soil sterilant shall be licensed by the State of California, Department of Food and Agricultural Affairs and registered with the Office of the Agricultural Commissioner of Orange County as a pest control officer.

301-6.3 Application.
Any soil sterilant, which is approved in writing by a licensed pest control advisor (for the purpose to which it will apply) may be used upon acceptance by the Engineer. The dye shall not stain concrete or masonry. Certification shall be furnished to the Engineer showing the purchase receipt and manufacturer's recommended rate of application of the material.

301-6.4 Payment.
The CONTRACTOR shall supply all labor, materials and equipment to apply the soil sterilant and shall include the cost for application in the unit price quoted for the related items of work.

SECTION 302 - ROADWAY SURFACING

302-1 COLD MILLING

302-1.12 Payment. [Add the following section]

Cold Milling (Cold Plane or Grinding) for the specified pavement area shall be measured and paid for at the contract unit price bid per square foot and shall include full compensation for all labor, materials, tools, and equipment and for doing all work involved in cold milling existing asphalt concrete for pavement.

302-5 ASPHALT CONCRETE PAVEMENT

302-5.2.1.1 Localized Full Depth Pavement Repair [Add the following section]:
Full depth Pavement Repair shall be done in the areas indicated in the project plans prior to overlay and shall consist of the sawcut and removal of the full AC pavement section, scarification and recompaction of the top 4" of base material, and placement of Asphalt Concrete to existing finish surface.

302-5.2.3 Removal and Disposal of Material [Add the following]:
Removal shall consist of planing and cutting the pavement where indicated and removing loosened material. No aggregate shall remain on the project at the end of each work day. Aggregate material loosened and directed removed shall become the property of the CONTRACTOR and shall be disposed of off the site in accordance with Subsection 300-2.6 as amended by these Special Provisions.

The CONTRACTOR shall divert from the landfill all Portland Cement Concrete material and Asphalt Grindings removed from this project. The CONTRACTOR shall keep accurate weight tickets for material removed from this project to be reused as recycled material. Copies of weight tickets shall be provided to the City.

302-5.4 Tack Coat [Replace with the following]:
Prior to paving over existing asphalt concrete, the surface shall be cleaned, cracks shall be sealed as shown below, and the surface shall have a tack coat of SS-1h emulsion at a rate of 0.10 gallon per square yard applied. The surface shall be free of water, foreign material, or dust, when the tack coat is applied. To minimize public inconvenience, no greater area shall be treated in any one day than is planned to be covered by asphalt concrete during the same day unless otherwise authorized by the Engineer.

A similar tack coat shall be applied to the surface of any course if the surface is such that a satisfactory bond cannot be obtained between it and the succeeding course. The contact surfaces of all cold pavement joints, curbs, gutters, and manholes shall be painted with grade SS-1h emulsified asphalt immediately before the adjoining asphalt concrete or ARHM is placed.

All pavement cracks 1/8" to 1" in width shall be cleaned with a heat lance and sealed with crafco polyflex type III crack sealant, or approved equal. Crack sealant shall be applied with a wand such that finish surface of the crack seal shall be left ¼" low in the crack with no sealant at the surface. All cracks 1" or greater shall be cleaned with compressed air and broom to remove all loose material from the crack. Asphalt emulsion tack coat shall be applied to the crack faces. The CONTRACTOR shall fill the crack with ½" maximum medium hot mix and tamp. Any voids

beneath the pavement must be filled with compacted hot mix prior to the asphalt overlay. Finish surface of the crack seal shall be flush with the surface in preparation of the asphalt overlay.

Payment for crack sealing, patching and tack coating shall be included in the payment for Hot Mix Asphalt and tire Rubber Modified Paving Asphalt overlay and shall include full compensation for all labor, materials, tools, and equipment and for doing all work involved in crack sealing, patching, and tack coating, complete in place.

302-5.5 Distribution and Spreading. [Add the following]:
The base course, final course, and overlay shall be in conformance with Section 203-6.1 of these specifications.
At those locations where new asphalt concrete pavement joins existing asphalt pavement, the CONTRACTOR shall provide by cold milling or cold planning a 0.125' minimum header cut such that a butt joint can be achieved. No "feathering" or overlay of asphalt less than 0.125' will be allowed.

The Asphalt Concrete delivered to the site during paving operations may be deposited from bottom-dump trucks into a uniformly sized windrow, then pick up the material and convey it to the spreading machine with loading equipment provided that all Greenbook requirements are met.

302-5.8 Manholes (and other structures). [Add the following]:
Adjustment of Sewer Manholes, Cleanouts and Water Valve Covers

All water valve covers and manhole covers shall be lowered by the Contractor prior to paving, and will be raised after paving is completed by Coachella Valley Water District.

Water valves shall be protected in a place and shall be accessible at all times during construction.

The CONTRACTOR shall notify the Coachella Valley Water District forty-eight (48) hours prior to beginning of work.

Other Utility Vaults and Valves
The CONTRACTOR shall check with the utility companies shown in Section 5-1 to confirm whether the CONTRACTOR is responsible for readjusting vault covers and valves or if it is to be done by the utility company. If such facilities must be lowered for the CONTRACTOR to prepare the roadway, the CONTRACTOR shall make any arrangements for the utility company to temporarily lower and place suitable steel plates and/or caps over said facilities. The time for such preparation should be included in the CONTRACTOR'S scheduling. For emergency purposes, gas valves shall be kept readily accessible at all times. **Payment for any such utility preparation shall be included with the clearing and grubbing bid item.**

302-5.9 Measurement and Payment. [Add the following]:
Asphalt Concrete for pavement sections shall be measured by the ton. Payment shall be made at the contract unit price bid per ton and shall include full compensation for all labor, materials, tools, and equipment and for doing all work involved in placing asphalt concrete, complete in place. **The CONTRACTOR will not be paid for more than ten percent (10%) additional tonnage without the prior approval of the Engineer.**

Lower Water Valve Covers and Manhole Covers including all appurtenant work will be included in the contract price per each.

SECTION 303 - CONCRETE AND MASONRY CONSTRUCTION

303-1 CONCRETE STRUCTURES.

303-1.1 General. [Add the following paragraphs]:
Catch Basins, Local Depression, Manholes, Transition Structure, and Concrete Overflow Structure shall conform to the provisions of the Standard Specifications as modified herein.

Reinforcing steel shall be Grade 60 billet steel conforming to ASTM A615.

Catch Basins, Local Depression, Manholes, Transition Structure, and Concrete Overflow Structure shall be constructed in accordance with the provisions of Section 303-1 Concrete Structures of the Standard Specifications.

303-1.11 Payment. [Add the following]:
Payment for concrete structures shall be made at the contract unit bid price as noted in the bid schedule for each item and shall include full compensation for providing this item of work, complete in place, including structure excavation, structure backfill, reinforcing, forming, finishing, drainage and filter material, and all provisions of the standard plans as depicted in the contract documents and no additional compensation will be allowed.

303-5 CONCRETE CURBS, WALKS, GUTTERS, CROSS GUTTERS, ALLEY INTERSECTIONS, ACCESS RAMPS, AND DRIVEWAYS

303-3.1 General. [Add the following paragraph]:
Concrete curbs, walks, gutters, access ramps, and driveways shall conform to the Standard Specifications as modified herein.

303-3.2 Gutter. [Add the following]:
Prior to acceptance of the curb and gutter constructed by the CONTRACTOR, a flow test shall be conducted by the CONTRACTOR in the presence of the Engineer. Any new work found to be defective shall be repaired or replaced by the CONTRACTOR in accordance with Subsection 303-5.7 of the Standard Specifications.

303-3.3 Measurement and Payment. [Add the following to this section]:
Payment for **Curb, Curb and Gutter, Sidewalks, Drive Approaches, Residential Driveways, Commercial Driveways, Access Ramps, and Cross Gutters with Spandrels** shall be made at the contract unit bid price as noted in the bid schedule for each item and shall include full compensation for providing this item of work, complete in place, and no additional compensation will be allowed. The integral/monolithic curb on curb returns at cross gutters/spandrels will be included in the cost of the related items and will not be measured for payment. Payment for the landing area at access ramps will be included in the cost of sidewalks.

Payment for **access ramps** shall be made at the contract bid price as noted on the bid schedule. The landing area and PC Concrete is considered in the cost of the sidewalk. The ramp pay item shall include only the portion of the ramp within the distinctive scoring markings shown on the standard plans, and **shall not** include concrete surfaces between curb returns as indicated on the standard drawings. **The 3' x 4' truncated dome panel required (yellow "Castin Tact" or equivalent set-in-concrete style) shall be included in the ramp contract bid price.**

Contractor shall construct concrete pavement according to the Caltrans Standard Plan No. P1. The concrete pavement shall be 8" thick with 4000 psi concrete over 6" Class II Aggregate base. Payment for Portland Concrete Pavement (PCC) will be at the unit price bid and shall include full compensation for furnishing concrete, steel, joints, all labor, materials, equipment, and no additional compensation will be allowed therefor.

The aggregate base required under curb and gutters, cross gutters, concrete pavement, and spandrels, and driveway approaches shall be included in the cost for the related items of work and no additional compensation will be allowed.

SECTION 304 – METAL FABRICATION AND CONSTRUCTION

Measurement and Payment. [Remove and add the following to this section]:

Payment for **Wrought Iron Fence, Wrought Iron Gate, Chain Link Fence, and Chain Link Gate** shall be made at the contract unit bid price as noted in the bid schedule for each item and shall include full compensation for providing this item of work, complete in place, and no additional compensation will be allowed. Streel, posts, concrete, will be included in the cost of the related items and will not be measured for payment. Removal and disposal of existing wrought fence, chain link fence, gates will included in the cost of the related items and will not be measured for payment.

SECTION 306 – OPEN TRENCH CONDUIT CONSTRUCTION

306-3.5 Maximum Length of Open Trench. [Revise the paragraph with Following]:

The maximum length of open trench shall not be more than 200 feet. For non-working hours, the contractor shall backfill the trench or install steel plates prior to finishing the work.

306-15 Payment [Add the following to this section]:

2-sack concrete slurry over pipe, spring line to spring line shall be paid by linear feet and no additional measurement and compensation will be made for concrete.

307 STREET LIGHTING AND TRAFFIC SIGNALS

307-1 General [Add the following]:
The CONTRACTOR shall furnish all tools, equipment, materials, supplies and manufactured articles and shall perform all operations necessary to construct traffic signal and street lighting facilities as shown on the drawings and as specified herein.

Reference Specifications, Standard Plans and Agencies [Add the following]:

Standard Specifications - Materials and installation for the traffic signal and safety lighting facilities shall conform to the Caltrans Standard Specifications (CSS), Latest Edition. All references in this section to "Standard Specifications" shall be understood to be referenced to the Caltrans Standards Specifications unless otherwise specified. Control of the project shall be observed under the requirements of the "Green Book," and as modified by these special provisions.

Standard Plans – For the Traffic Signal and Safety Lighting Facilities all references in this section to "Standard Plans" shall be understood to be referenced to the Caltrans Standards Plans (CSP), Latest Edition, except as otherwise modified by the special provisions.

Codes, Ordinances, and Regulations - All electrical materials and equipment furnished and installed under this section shall conform to the referenced regulations and codes specified in Section 86-1.02 of the Standard Specifications, and to all other ordinances, specifications, standards and regulations of the authorities having jurisdiction.

City Standard Plans – The details and standards for street lighting and traffic signals within the scope of this section are referenced to the County of Riverside Standards, as noted on the project plans.

City Specifications – The contractor shall procure and install traffic signal equipment per City of Indio Standard Special Provisions for Installation and Modification of Traffic Signals, Traffic Signal Interconnect Systems, Roadway Signs, Striping, and Pavement Markings (see Appendix A).

314 Traffic Striping, Curb and Pavement Markings and Pavement Markers

Section 210 and Section 310 of the Standard Specifications for Public Works Construction are hereby replaced with following:

Traffic signs, stripes, legends, and raised pavement markers shall conform to California Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD) 2014 Edition.

City Specifications – The contractor shall install roadway signs, striping, and pavement marking per City of Indio Standard Special Provisions for Installation and Modification of Traffic Signals, Traffic Signal Interconnect Systems, Roadway Signs, Striping, and Pavement Markings (see Appendix A).

RELOCATE AND ADJUST EXISTING UTILITIES

Contractor's attention is directed to the presence of various utility facilities within the roadbed. The facilities constitute various manholes, valves and other similar facilities. Contractor shall undertake the adjustment of the water valve covers to the proper finish grade as shown on the plans, as required by the utility owner (Indio Water Authority (IWA)), as specified in the Standard Specifications for Public Works Construction and these special provisions, and as directed by the Engineer.

Provisions for placing and adjusting the water valve covers to the proper grade shall be in accordance with the specifications set forth herein and those set forth by the owner of the facility as may be requested in the field. Contractor shall be responsible for confirming with the Engineer the proper method for placement of the facilities to grade prior to undertaking the final the work involved. Said work shall be performed in accordance with Section 301-1.6 and 302-5.8 of the Standard Specifications for Public Works Construction.

Water valve covers shall be adjusted at the locations and to the lines and grades shown on the plans and shall comply with the provisions set forth in City of Indio's Water Authority (IWA) Standard Drawing 713A, 713B, and 713C and Section 301-1.6 and 302-5.8 of the Standard Specifications for Public Works Construction. They shall first be lowered so they do not interfere with the pulverization and asphalt paving operations, and then shall be adjusted per grade once paving is completed.

Work to comply with IWA Standard Drawing 713 shall include, but is not limited to, furnishing all materials, including valve covers, removing and disposing the existing pipe (typically transite pipe), replacing with PVC pipe per drawing, replacing valve cover and lid (and painting blue), and pouring new concrete collar. Adjusting the water valve cover to grade shall include continued protection of the valves (and covers) for the duration of the project and adjustment to final grade upon completion of the street surface construction.

The Contractor shall obtain any permits required from utility owners.
The contract unit price paid for each "Adjust Water Valve Covers to Grade Adjust Water Valve Cover" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in adjusting the valve cover to grade, complete in place, including setting finished grade in concrete, as shown on the plans, as specified in the Standard Specifications for Public Works Construction and these special provisions, and as directed by the Engineer.

Adjust VSD Sewer Manhole to Grade

Contractor's attention is directed to the presence of various utility facilities within the roadbed. The facilities constitute various manholes, valves and other similar facilities. Contractor shall undertake the adjustment of the sewer manholes to the proper finish grade as shown on the plans, as required by the utility owner (Valley Sanitation District (VSD)), as specified in the Standard Specifications for Public Works Construction and these special provisions, and as directed by the Engineer.

Provisions for placing and adjusting the sewer manholes to the proper grade shall be in accordance with the specifications set forth herein and those set forth by the owner of the facility as may be requested in the field. Contractor shall be responsible for confirming with the Engineer the proper method for placement of the facilities to grade prior to undertaking the final the work involved. Said work shall be performed in accordance with Section 301-1.6 and 302-5.8 of the Standard Specifications for Public Works Construction.

Sewer manhole covers shall be adjusted at the locations and to the lines and grades shown on the plans and shall comply with the provisions set forth in by Valley Sanitation District (VSD). All manhole covers shall be double adjusted. They shall first be lowered so they do not interfere with the pulverization and asphalt paving operations, and then shall be adjusted per grade once paving is completed.

Work to comply with VSD requirements include, but is not limited to, furnishing all materials, and pouring a new concrete collar. Adjusting manhole covers to grade shall also include continued protection of the sewer covers and manholes for the duration of the project and adjustment to final grade upon completion of the street surface construction. The Contractor shall attempt to have no debris fall into the sewer ipe; however, if this should occur, the Contractor is responsible for the debris removal.

The Contractor shall obtain any permits required from utility owners.
The contract unit price paid for each "Adjust VSWD Sewer Manhole to Grade" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in adjusting the VSD sewer manhole to grade, complete in place, including setting finished grade in concrete, as shown on the plans, as specified in the Standard Specifications for Public Works Construction and these special provisions, and as directed by the Engineer.

END OF SECTION

Appendix

City of Indio Standards
Installation and Modification of Traffic Signals, Traffic Signal Interconnect Systems, Roadway Signs, Striping, and Pavement Markings

City of Indio
Standard Special Provisions for
Installation and Modification of Traffic Signals,
Traffic Signal Interconnect Systems,
Roadway Signs, Striping, and Pavement Markings

Installation of new or modification of existing traffic signals, highway lighting, associated equipment, foundations, traffic signal interconnect systems including wireless communications, traffic striping, pavement markings, roadside signs and all associated work and material required to provide operation as shown on the plans, and payment therefore, shall conform to the provisions in the State of California Department of Transportation (Caltrans) Standard Plans (CSP) and Standard Specifications (CSS), 2010 edition, and all addendums thereto, these Special Provisions, and the project plans.

The City of Indio City Traffic Engineer, through his designee, shall be the sole arbiter of the prevailing specification should a conflict arise between the CSP, CSS, the National Electrical Code, the current City of Indio Standard Drawings, these special provisions, and the project plans for any installation or modification of traffic signal equipment, traffic signal interconnect cable and conduit, highway lighting systems, traffic striping, pavement markings, and roadside signs within the City of Indio.

Such other items or details not mentioned, that are required by the plans, these special provisions, CSP, or CSS shall be performed, placed, constructed, or installed to provide the intended configuration and installation of traffic signal(s), highway lighting, associated equipment, signal interconnect systems, traffic striping, pavement markings, curb painting, raised pavement markers, and roadside signs.

The following items are modifications to specific portions of Sections 1, 12, 56, 82, 84, 85, and 86 of the CSS.

DIVISION 1 GENERAL PROVISIONS

§1-1.07 DEFINITIONS

§1-1.07B Glossary

The following terms and definitions shall be amended to read as follows:

"Department" – City of Indio Public Works Department for all contract administration and inspection issues. Technical references shall refer to the State of California Department of Transportation.

"Director" – City of Indio Public Works Director.

"Engineer" – City of Indio City Traffic Engineer, acting either directly or through properly authorized agents, the agents acting within the scope of the particular duties assigned to them.

The following terms and definitions shall be added:

"Manual of Traffic Controls" – Part 6, Temporary Traffic Control of the November 7, 2014 edition of the State of California Department of Transportation California Manual on Uniform Traffic Control Devices, and all amendments and additions thereto.

"Owner"- The City of Indio shall be the Owner for publicly-funded projects, acting either directly or through properly authorized agents, the agents acting within the scope of the particular duties assigned to them. The project proponent (as shown on the appropriate City of Indio Encroachment Permit or City of Indio development entitlement) shall be the Owner for privately funded construction, acting either directly or through properly authorized agents, the agents acting within the scope of the particular duties assigned to them.

"Agency-supplied" – Materials supplied by the City of Indio Public Works Department.

"State-supplied" – Materials supplied by the City of Indio Public Works Department.

"State-furnished"- Materials supplied by the City of Indio Public Works Department.

"Agency-approved equal" – Approval in writing by the Engineer of a requested substitution of materials or methods following a written request for substitution by the Contractor with the required supporting information for the substitution of the materials or methods. The written request for substitution shall be submitted no less than 10 working days prior to the need for the requested substitution. The Engineer reserves the right to reject any and all proposed substitutions of materials and methods.

"State Forces" - Contractor's forces working under the direction of the Engineer.

"State Expense" - Costs borne by the City of Indio.

"State-owned" – Owned or to be owned by the City of Indio.

SECTION 12 TEMPORARY TRAFFIC CONTROL

§12-1 General

The following paragraphs shall be added to §12-1.01:

Nothing in these special provisions shall relieve the Contractor of the responsibility for job site conditions during the course of construction of the project; including safety of all persons and property, and that this requirement shall apply continuously and not be limited to working hours.

At least two weeks prior to starting work, the Contractor shall notify Sunline Transit (Ms. Connie Garcia, Route Planning, telephone (760) 343-3456, Ext. 154) of the approximate starting date and completion date for all temporary closures of bus stops, bus shelters, and street or lane closures.

§12-3.03 FLASHING ARROW SIGNS

The following paragraph shall be added to §12-3.03:

All Flashing Arrow Signs (FAS) used on this project shall be Type I or II and shall be operated in the Sequential Left Chevron or Sequential Right Chevron display mode, as shown on the plans, unless directed otherwise by the Engineer. All Flashing Arrow Signs (FAS) used on this project shall be powered by a combination of battery and solar power. The use of generator-powered FAS shall not be allowed.

SECTION 56 SIGNS

§56-2 FURNISH SIGN PANELS

§56-2.01B (4) Sign Panels and Fastening Hardware

The following paragraphs shall replace §56-2.01(B) 4:

All new signs shall be furnished and installed by the Contractor. The sign sizes, messages, and colors shall conform to the January 13, 2012 edition of the State of California Department of Transportation California Manual on Uniform Traffic Control Devices and the current edition of the Caltrans Sign Specifications. All sign sizes shall be the standard sizes shown in their respective publications. The sign backing material shall be anodized rolled sheet aluminum and shall be one piece with drilled holes for mounting. Roadside signs shall be fabricated using 0.080-inch thick aluminum sheeting and traffic signal mast arm mounted signs shall be fabricated using 0.10-inch thick aluminum sheeting. The reflective sheeting material for all signs shall be 3M Diamond Grade DG3 with 3M Premium Protective Overlay Film 1160.

Street name signs and mounting brackets shall comply with the City of Indio Standard Plan 160 and 161.

All new straps, saddle brackets, nuts, bolts, and washers shall be stainless steel and City of Indio-approved tamper proof. All new rivets shall be City of Indio-approved for installation in perforated steel posts.

§56-4 ROADSIDE SIGNS

§56-4.01 GENERAL

The following modifications to §56-4.02B Metal Posts, §56-4.02C Wood Posts, §56-4.02D Laminated Wood Box Posts, §56-4.02E Sign Panel Fastening Hardware, §56-4.03 Construction, and §56-4.03B Sign Panel Installation shall apply to all new roadside sign installations within the City of Indio public right-of-way.

§56-4.02B Metal Posts

§56-4.02B shall be deleted. The following paragraph shall replace §56-4.02B:

New sign posts shall be Zumar Qwik Punch™ or Agency-approved equal sign posts, anchors and anchor sleeves. Anchors and sleeves shall be embedded with no more than four holes exposed and no less than two holes exposed. The sign post, anchor and anchor sleeve shall be perforated galvanized square 12-gauge steel tubing. The sign post shall be 2-inch square, the signpost anchor shall be 2.25-inch square and the sign post anchor sleeve shall be 2.5-inch square (all dimensions are nominal). New sign post anchors shall be embedded in Portland cement concrete to the depth of the sign post anchor.

§56-4.02C Wood Posts

§56-4.02C shall be deleted for any sign posts installed within the City of Indio public right-of-way.

§56-4.02D Laminated Wood Box Posts

§56-4.02D shall be deleted for any sign posts installed within the City of Indio public right-of-way.

§56-4.02E Sign Panel Fastening Hardware

The third paragraph of §56-4.02E shall be amended to read as follows for any sign installation within the City of Indio public right-of-way:

All new straps, saddle brackets, nuts, bolts, and washers shall be stainless steel and Agency-approved tamper-proof. All new rivets shall be Agency approved for installation in perforated steel posts.

The fourth and fifth paragraphs of §56-4.02E shall be deleted.

§56-4.03 CONSTRUCTION

The first paragraph of §56-4.03 shall be amended to read as follows:

New sign posts shall be installed in breakaway sign post anchors embedded in Portland cement concrete to the depth of the sign post anchor.

The third, seventh, eighth, and eleventh paragraphs shall be deleted.

The following paragraph shall be added to §56-4.03A:

New signs shall be installed on 10 foot posts, except a longer post shall be used if necessary to maintain a 7-foot vertical clearance from the bottom of the lowest sign to the top of the surrounding surface in pedestrian areas. Signposts shall be installed a minimum of 6 feet from power poles, fire hydrants, and other obstructions. If the anchor and sleeve are installed in a median island with decorative paving, or a decorative concrete sidewalk area, a 4-inch diameter Schedule 40 PVC sleeve shall be installed in the decorative paving area prior to placement of the decorative paving. The length of the sleeve shall be the same as the thickness of the decorative paving or up to 1 inch greater. The sleeve shall be installed flush with the finish grade of the surrounding decorative paving. The annular void between the sleeve and signpost anchor shall be grouted following installation of the decorative paving and signpost anchor, signpost sleeve, and signpost.

§56-4.03B Sign Panel Installation

The following shall be added to §56-4.03B:

Sign panels to be mounted on streetlight or traffic signal poles shall be installed using the strap and saddle bracket method as shown on Caltrans Standard Plan RS4. Sign panels on traffic signal mast arms shall be installed per Caltrans Standard Plan ES-7N; Detail U. Signs mounted on streetlight poles (electroliers) shall be mounted so as not to cover electrolier identification tags.

All signs installed in parkways, sidewalks or pedestrian areas shall have a minimum of 7 feet (2.13 meters) of vertical clearance from the bottom of the lowest sign to the surrounding surface. All signs installed in raised median areas shall have a minimum vertical clearance of 4 feet (1.22 meters) from the existing surface unless shown otherwise on the plans. When two signs are installed on one post, the signs shall be installed in the proper standard vertical positions unless shown otherwise on the plans.

If signposts are not long enough to provide standard clearance for all signs, a longer post shall be furnished and installed. Signs shall be installed at right angles to approaching traffic unless shown otherwise on the plans. In no case shall signs be

installed on wood utility poles or on wood street light poles.

§56-4.04 PAYMENT

§56-4.04 shall be replaced with the following:

All roadside sign panels, posts, anchors, hardware, and any other materials, labor, and equipment to provide the intended installation, shall be considered to be included within the lump sum bid for "Traffic Signs" and no additional payment will be made therefore.

SECTION 82 MARKERS AND DELINEATORS

§82-1.04 PAYMENT

§82-1.04 shall be replaced with the following:

All marker panels, delineators, marker posts, anchors, hardware, and any other materials, labor, and equipment to provide the intended installation, shall be considered to be included within the lump sum bid for "Traffic Signs" and no additional payment will be made therefore.

SECTION 84 TRAFFIC STRIPES AND PAVEMENT MARKINGS

§84-1 GENERAL

The following paragraphs shall be added to §84-1.03D: Any existing painted striping, legend, pavement marking, or curb painting, which are in conflict with proposed striping, shall be removed by wet sandblasting. Thermoplastic striping or pavement markings shall be removed by grinding. Grinding operations and raised pavement marker and adhesive removals shall be conducted in a fashion to minimize damage to the existing roadway surface. Raised pavement markers and adhesive shall be removed by manual methods or by grinding.

Existing pavement markings that are removed by sandblasting or grinding shall be completely removed. The Contractor shall immediately and continuously remove blasting sand or grinding residue from the roadway during sandblasting or grinding operations and no residue shall be allowed to accumulate. All water used in wet sandblasting shall be recovered and shall not be allowed to enter any public or private storm drain system.

§84-2 THERMOPLASTIC TRAFFIC STRIPES AND PAVEMENT MARKINGS

The following paragraph shall be added to §84-2.01:

Unless otherwise shown on the project plans, all traffic stripes, crosswalks, limit lines, pavement markings and curb painting shall be paint, not thermoplastic (see §84-3).

§84-2.04 PAYMENT

§84-2.04 shall be replaced with the following:

All traffic striping and pavement markings, curb painting, paint, sandblasting, grinding, clean up, and any other labor, materials, equipment to provide the intended installation, shall be considered to be included within the lump sum bid for "Traffic Striping" and no additional payment will be made therefore.

§84-3 PAINTED TRAFFIC STRIPES AND PAVEMENT MARKINGS

The following paragraphs shall be added to §84-3.01A:

All traffic stripes, pavement markings and curb painting within the City of Indio public right-of-way shall be paint and shall have 2 coats of paint unless noted otherwise on the project plans.

§84-3.02 MATERIALS

The first paragraph of §84-3.02A shall be amended to read as follows:

Paint for traffic stripes and pavement markings shall be PervoStripe 6000 series paint as manufactured by the Pervo Paint Company, or Agency-approved equal, and shall meet all requirements of South Coast Air Quality Management District. Proposed substitutions of paint shall be submitted in writing to the City Traffic Engineer for evaluation and approval a minimum of 15 working days prior to the first use of the proposed substituted material. The City Traffic Engineer shall not allow use of the proposed substitution without prior written request for substitution. The City Traffic Engineer reserves the right to reject any and all proposed substitutions.

§84-3.03 CONSTRUCTION

The following paragraph shall be added to §84-3.03:

The Contractor shall notify the City of Indio Public Works Inspector a minimum of two working days prior to beginning the work to coordinate the work. A schedule of the

streets to have striping, pavement markings, pavement legends, or curb painting applied shall be provided to the City of Indio Public Works Inspector a minimum of one full workday prior to re-striping the streets shown on the schedule. Failure to provide the proper advance notice will require postponement of painting until the next mutually convenient day. The Contractor shall begin each striping workday by meeting with the City of Indio Public Works Inspector to test the application rate of paint for striping.

§84-3.04 PAYMENT

§84-3.04 shall be replaced with the following:

All traffic striping and pavement markings, curb painting, paint, sandblasting, grinding, clean up, and any other labor, materials, equipment to provide the intended installation, shall be considered to be included within the lump sum bid for "Traffic Striping" and no additional payment will be made therefore.

SECTION 85 PAVEMENT MARKERS

§85-1.02B Non-Reflective Pavement Markers

§85-1.02B shall be amended to read as follows:

Non-reflective pavement markers (Types A and AY) shall be plastic conforming to these specifications.

§85-1.03 CONSTRUCTION

Replace §85-1.03A with the following paragraph:

Pavement markers shall be cemented to the pavement with hot melt bituminous adhesive.

§85-1.04 PAYMENT

§85-1.04 shall be replaced with the following paragraph:

Raised non-reflective and reflective pavement markers, sandblasting, marker and adhesive removal, adhesives, clean up, and any other labor, materials, equipment to provide the intended installation, shall be considered to be included within the lump sum bid for "Traffic Striping" and no additional payment will be made therefore.

SECTION 86 ELECTRICAL SYSTEMS

§86-1 GENERAL

§86-1.01 SUMMARY

The paragraph below shall be added to §86-1.01:

This work consists of installation of new or modified traffic signals, highway lighting systems, traffic signal wireless communication system, striping, markings, curb painting, reflective and raised pavement markers, and roadside signs within the City of Indio public right-of-way.

§86-1.03 SCHEDULE OF VALUES

The successful bidder shall provide a cost break-down to the Owner complying with §86-1.03 within two calendar weeks of notification of project award.

§86-1.04 EQUIPMENT LIST AND DRAWINGS

The following paragraphs shall be added to §86-1.04:

The CONTRACTOR shall retain one copy of all approved material lists and samples at the job site, readily accessible for inspection by the Engineer, the Owner, or City of Indio Public Works Inspector. Said materials lists and samples shall be the basis for approval or rejection of work. **The CONTRACTOR shall retain one copy of the 2010 Caltrans Standard Plans and Standard Specifications, these Project Special Provisions, and the Project plans at the job site at all times that work on the project is being prosecuted. Failure to keep a copy of these documents at the job site shall be grounds for stopping all work shown on the Project plans until a complete set of these documents are brought to the job site by the Contractor and shown to the Engineer, Owner, or City of Indio Public Works Inspector, as appropriate.**

§86-1.05 CERTIFICATE OF COMPLIANCE

The following paragraphs shall be added to §86-1.05:

The Contractor shall guarantee the entire work constructed by him/her under this contract and will fully meet all requirements as to quality of workmanship and materials furnished by the Contractor. The Contractor shall make, at their own expense, any repairs or replacements made necessary by defects in workmanship or materials furnished by him/her that become evident within twelve months after filing of the Notice

of Completion of the work and to restore to full compliance with the requirements of these Specifications, any part of the work which during the twelve-month period is found to be deficient with respect to any provision of the plans and specifications. The Contractor shall make all repairs and replacements promptly upon receipt of written work orders from the Engineer.

If the Contractor fails to make the repairs and replacements promptly, the City of Indio may do the work and the Contractor's surety shall be liable to the City of Indio for the cost.

The Contractor shall furnish to the Engineer a completed Caltrans Form CEM-3101 "Notice of Materials Used", and approval of the material used shall be obtained prior to its installation.

§86-1.06 MAINTAINING EXISTING AND TEMPORARY ELECTRICAL SYSTEMS

The following paragraphs shall be added to Section 86-1.06:

Traffic signal system shutdowns at signalized intersections shall be limited to 4-hour periods between the hours of 9:00 AM and 3:00 PM on weekdays. No other periods of traffic signal system shutdown shall be permitted.

"STOP AHEAD" and "STOP" signs shall be furnished by the contractor and shall conform to the provisions in Section 12-3.06, "Construction Area Signs," of the Standard Specifications except that the base material for the signs shall not be plywood. Two "STOP AHEAD" signs and two "STOP" signs shall be placed for each direction of traffic. Locations of the signs shall be as directed by the Engineer.

Full compensation for furnishing, installing, maintaining, and removing temporary "STOP AHEAD" and "STOP" signs, and for covering signs not in use shall be considered as included in the contract lump sum price paid for "Traffic Signal Modification" and no additional compensation will be allowed therefore.

All existing signal indications, pedestrian push buttons, detectors, and control equipment shall be maintained in operation, except during shutdown hours as specified above.

Temporary overhead wiring may be required to maintain signal operation during the AM and PM peak periods and night hours as required. Any temporary overhead wiring crossing the traveled way shall be securely suspended by an Agency-approved method from existing traffic signal mast arm poles. A minimum vertical clearance of 18 feet (5.5m) between the roadway surface and the temporary overhead wiring shall be maintained at all times. All temporary wiring must be secure from interference or access by pedestrians. Cost for minor temporary wiring, which may be required on a

day-to-day basis, shall be considered as part of the lump sum bid price for "Traffic Signal Modification" and no additional compensation shall be allowed therefore.

§86-1.07 SCHEDULING OF WORK

The following paragraphs shall be added to §86-1.07:

The Contractor shall initiate traffic signal equipment acquisition within one (1) week of issuance of the "Notice to Proceed for Material Procurement" by placing orders for all necessary equipment and supplies which cannot be manufactured and delivered to the Contractor's possession within 28 calendar days. **Written proof of equipment order(s) by the Contractor shall be provided to the Owner within 2 weeks of the Notice to Proceed for material procurement.**

It is the intent of the Owner that the Contractor starts construction activity at a reasonable length of time prior to delivery of equipment and following receipt of written notice to proceed. This will permit excavations, installation of conduits, pull boxes and foundations in a most expedient manner, and minimize the disruption and inconvenience of an extended construction schedule. Construction, once started, shall be pursued until completion.

No materials or equipment shall be stored at the job site (outside of the public right-of-way) until the Owner issues a Notice to Proceed with Construction. The job sites shall be maintained in a neat and orderly condition at all times.

The City of Indio Public Works Inspector shall be notified a minimum of five working days in advance of beginning of modifications to channelization, signing, traffic signal and lighting systems. The City of Indio Public Works Inspector shall be notified 48 hours prior to performing any work on any new traffic signal(s), or modified traffic signal(s), including the cutting of asphalt paving for any trench in the area of existing traffic signal detector loops.

All permanent striping, pavement markings, and signing shall be in place prior to beginning of the Functional Test Period for the new or modified traffic signal system. The Contractor shall complete all sandblasting/grinding, striping, pavement markings, and roadside signing installations and modifications shown on the plans.

§86-2 MATERIALS AND INSTALLATION

§86-2.01 Excavating and Backfilling

This section shall be deleted and replaced with the following paragraph:

All excavated material shall be removed from the site and backfilled with compacted crushed aggregate base material topped with temporary asphalt concrete on the same

working day as removed. A temporary alternative to backfilling, with permission of the Engineer, shall be the placement of non-skid steel plates with temporary asphalt concrete placed at the edges of the steel plates. The non-skid steel plates shall be installed flush with the surrounding pavement. Such temporary steel plating shall not be allowed for more than five (5) working days, after which aggregate backfill topped with temporary asphalt concrete shall be required. The temporary asphalt concrete may remain up to 2 working days, after which the temporary asphalt concrete paving shall be removed and hot mix asphalt paving conforming to City of Indio requirements shall be placed. Backfill shall be compacted to 95% relative compaction unless shown otherwise on the plans.

§86-2.02 REMOVING AND REPLACING IMPROVEMENTS

The following sentence(s) shall be added:

Stompers (pavement breakers) will not be allowed for any portion of the work.

§86-2.03 FOUNDATIONS

The following sentences shall be added to §86-2.03: All material removed for pole foundations shall become the property of the Contractor and shall be disposed of outside the site of work by and at the expense of the Contractor.

Foundation concrete shall be vibrated to eliminate air pockets.

The Contractor shall define exact location of all utilities in the vicinity of the new foundations, by hand digging if necessary. After all utilities are established, Contractor shall contact the Engineer for authorization of specific foundation location. Foundations shall be hand-dug until clear of obstructions.

Foundations for traffic signal and luminaire mast arm poles shall be constructed to ensure that the traffic signal or luminaire mast arm is perpendicular (with a tolerance of 2° from perpendicular) to the adjacent tangent curb face or to the alignment as shown on the plans. Foundations that do not provide the proper alignment of the traffic signal or luminaire mast arm (as specified above) shall be completely removed and reconstructed at the Contractor's expense. **The Contractor is strongly encouraged to verify the proper alignment of the traffic signal pole or electrolier foundation anchor bolts prior to placement of Portland cement concrete.**

§86-2.04 STANDARDS, POLES, STEEL PEDESTALS, AND POSTS

The following paragraph shall be added to §86-2.04:

Contractor shall furnish all new nuts, bolts, washers, foundation anchors, pole caps,

hand hole covers, mast arm tenon caps, and other hardware, as required to provide the intended installation, for all Contractor-furnished or relocated equipment. Nuts, bolts, washers, foundation anchors, and other hardware shall comply with the CSS, CSP, these special Provisions, and the plans.

§86-2.05 CONDUIT

§86-2.05A Material

The following paragraph shall be added to §86-2.05A:

Conduit to be installed underground shall be Type 3, Schedule 80 PVC, unless otherwise specified. Detector termination conduits shall be Type 3. The conduit in a foundation and between a foundation and the nearest pull box shall be Type 3.

§86-2.05B Use

The following paragraph shall be added to §86-2.05B:

When Type 3 conduit is placed in a trench (not in pavement or under Portland cement concrete sidewalk), after bedding material is placed and the conduit is installed, the trench shall be backfilled with commercial quality concrete, containing not less that 250kg of Portland cement per cubic meter (420 pounds per cubic yard), not less than 4 inches (100 mm) above the conduit before additional backfill material is placed. After conductors have been installed, the ends of the conduits terminating in pull boxes, service equipment enclosures, and controller cabinets shall be sealed with an approved type of sealing compound.

The following shall replace the third numbered item of the third paragraph of §86-2.05B:

From a mast arm signal standard to the adjacent pull box shall be Size 78 (3-inch) and from a Type 1 or Type 15 signal standard to the adjacent pull box shall be Size 53 (2inch).

The following shall replace the sixth numbered item of the third paragraph of §86-2.05B:

All new conduits installed between pull boxes shall be two-inch (53 mm) nominal diameter, unless shown otherwise on the plans.

§86-2.05C Installation

The following shall amend §86-2.05C:

Conduit installation by "Trenching in Pavement Method" shall not be allowed within the traveled way of any public street without prior written authorization by the Engineer. Authorization for trenching within the traveled way of a public street may be granted by the Engineer if three unsuccessful attempts to jack or bore the conduit have been made or existing underground utility installations preclude the safe installation of conduit by boring or jacking methods.

Imperial Irrigation District (IID) may require trenching instead of boring. If boring is allowed, IID may require potholing at the direction of the IID inspector. IID may also require installation of a small diameter, red conduit to be installed above the service conduit for utility identification purposes. Full compensation for compliance with these IID requirements is considered incidental to the contract pay item for TRAFFIC SIGNAL INSTALLATION, and no additional compensation will be allowed therefore.

§86-2.06 PULL BOXES

The following paragraphs shall be added to §86-2.06:

All new pull boxes shall be Number 5 unless shown otherwise and shall be plastic lined.

No new pull boxes shall be installed in or within one foot of any curb access ramp or driveway.

§86-2.08 CONDUCTORS AND CABLES

The following paragraph shall be added to §86-2.08:

Video detection camera signal output cable shall be RG-59/U coaxial cable, Belden Cable Company Model No. 8281, or Agency-approved equal. Video detection camera power supply cable shall be 16-3 SJT cable.

§86-2.08E Signal Interconnect Cable (SIC)

§86-2.08E shall be replaced with the following paragraph:

Traffic signal interconnect cables (SIC) shall not be spliced and shall be run continuous from terminal block to terminal block. The number of pairs to be provided shall be as shown on the plans. SIC shall be AWG#19 and conform to Rural Electrification Administration Specification PE-22. A minimum of 3-feet of slack shall be provided at each pull box and 6 feet of slack at each traffic signal controller cabinet. The ends of unused SIC conductors shall be folded back and taped securely to the cable.

§86-2.09 WIRING

§86-2.09A Circuitry

The following paragraph shall be added to §86-2.09A:

Un-grounded traffic signal conductors and signal cables shall not be spliced and shall run continuously from terminal block to terminal block.

§86-2.09E Splice Insulation

The following paragraph shall be added to §86-2.09E:

Splices shall be insulated by Method "B", or, at the Contractor's option; splices of conductors shall be insulated with heat-shrink tubing of the appropriate size after thoroughly painting the spliced conductors with electrical insulating coating. The minimum insulation thickness, at any point, for Type USE, RHH, or RHW wire shall be 1.0 mm for conductor sizes No. 14 to No. 10, inclusive, and 1.3 mm for No. 8 to No. 2, inclusive. The minimum insulation thickness, at any point, for Type THW and TW wires shall be 0.69 mm for conductor sizes No. 14 to No. 10, inclusive, 1.02 mm for No. 8, and 1.37 mm for No. 6 to No. 2, inclusive.

§86-2.10 BONDING AND GROUNDING

The following paragraph shall replace the second paragraph of §86-2.10:

Bonding jumpers in standards with hand holes and traffic pull box lid covers shall be attached by a UL-listed lug using 4.5-mm diameter or larger brass or bronze bolts and shall run to the conduit or bonding wire in the adjacent pull box. The grounding jumper shall be visible after the standard has been installed and the mortar pad and cap have been placed on the foundation.

The following paragraph shall replace the third paragraph of §86-2.10:

Standards without hand holes shall have bonding accomplished by jumpers attached to UL-listed ground clamps on each anchor bolt, or a UL-listed lug attached to the bottom slip base plate with a 4.5mm-diameter or larger brass or bronze bolt. Where slip base standards or slip base inserts are installed, the bonding jumper shall not intrude into the slip plane.

The first sentence of the sixth paragraph of §86-2.10 shall be replaced with the following sentences:

Equipment bonding and grounding conductors are required in all galvanized rigid steel conduits (Type 1 and 2) and rigid non-metallic conduits (Type 3). Install AWG#8 bare copper grounding conductors in all conduits that contain traffic signal conductors.

Install AWG#10 grounding conductors in conduits that contain only loop detector lead-in cable, signal interconnect cable, or telephone cable. Install a continuous AWG#6 bare copper grounding conductor in all series lighting circuits. Install a continuous AWG#8 bare copper grounding conductor in all other circuits.

The third sentence of the sixth paragraph of §86-2.10 shall be replaced with the following sentence:

Conduits to be installed for future conductors may omit the copper grounding wire.

The last paragraph of §86-2.10 shall be replaced with the following paragraph:

Bonding of metallic conduits in metal pull boxes shall be by means of bonding bushings and bonding jumpers connected to the bonding wire running in the adjacent conduit system.

§86-2.11 SERVICE

The following will be added to §86-2.11:

New traffic signal electrical service equipment enclosures shall be Type III-CF as shown on CSS ES-2F. The electrical service equipment enclosure shall be configured and supplied with the following circuit breakers and labels:

Circuit Breaker	Label	Meter No.	Service
100A, 240V, 2 Pole	Main Breaker	N/A	N/A
50A, 120V, 1 Pole	Traffic Signal	1	TC-1
15A, 120V, 1 Pole	IISNS Control	1	TC-1
15A, 120V, 1Pole	IISNS	1	TC-1
15A, 120V, 1 Pole	Video Detection	1	TC-1
15A, 120V, 1Pole	Safety lighting control	2	LS-3
30A, 120V, 1Pole	Safety lighting	2	LS-3

Type III-CF Service Equipment Enclosures shall be fabricated from aluminum and shall have a brushed exterior finish. Myers Power Products, Inc. Model MEUG24-A is the preferred manufacturer and model. Dual Type V Photoelectric controls (PEC) shall be furnished and installed in the service equipment enclosure. The Type V PECs shall control the luminaires and Internally Illuminated Street Name Signs.

The Contractor shall be responsible for arranging the connection of the electrical service equipment enclosure to the serving utility's facilities and all costs and processing associated with this connection. The electrical service equipment enclosure shall have 2-inch black adhesive address numbers and letters affixed showing the

service address of the electrical service equipment enclosure.

§86-2.14 TESTING

The following paragraphs shall be added to §86-2.14C:

The Contractor shall arrange for the controller cabinets and controller assemblies to be tested at Republic ITS Test & Repair Services, 1266 N. La Loma Circle, Anaheim, California (714-630-2100). Republic shall test the traffic signal controller cabinet and controller assemblies per California Test Method No. 658. The Contractor shall furnish the Engineer with original test results showing satisfactory performance for the controller cabinets and controller assemblies before the controller cabinets and controller assemblies may be installed in the field.

The Contractor shall at his own expense, arrange to have a technician, qualified to work on the equipment listed below and employed by the equipment manufacturer, or the equipment manufacturer's representative, present at the time the equipment is turned on:

A. Traffic signal controller assembly
B. Emergency Vehicle Preemption System
C. Video detection system
D. Battery Back Up System
E. All other electronic equipment installed in association with the traffic signal to provide the intended operation

The Engineer shall be notified at least two working days prior to the beginning of the functional test period.

Full compensation for conforming to the requirements of this section shall be considered as included in the contract bid lump price for "Traffic Signal Modification" or "Traffic Signal Installation" (as appropriate), and no additional compensation will be allowed therefore.

The Functional Testing Period of the modified traffic signal system shall not be made on Friday or the day preceding or following a Federal holiday. The Engineer shall be notified at least two working days prior to the beginning of the Functional Testing Period. The Functional Testing Period will not be allowed to begin without prior authorization by the Engineer.

The Engineer shall be notified a minimum of two work days in advance of planned connection of the modified traffic signal to the traffic signal communications system, if the modified traffic signal is to be connected to the traffic signal communications system.

Upon completion of installation of new SIC (if shown on the plans), the Contractor shall perform the following tests:

1. A continuity measurement shall be performed for each conductor and the cable shield. Conductor resistance shall not be more than 10 ohms per 1000-feet for each cable conductor and shield of the communications cable. The resistance shall be measured with an ohmmeter having minimum impedance of 1-megaohms per volt. The resistance of each pair shall be recorded and furnished to the Engineer.

2. An insulation resistance measurement shall be performed for each conductor and the cable shield. The insulation resistance shall be measured with all connections to the conductor or shield under test removed and all other conductors in the cable grounded. The measurement shall be made with a DC potential of not less than 360 volts and not more than 550 volts, applied for one minute. Insulation resistance of each cable conductor and the shield shall exceed 1000 meg-ohm miles. The insulation resistance of each conductor shall be recorded and shall be furnished to the Engineer.

3. A signal attenuation test shall be performed on each cable pair of each cable in the system. The signal attenuation shall be measured with all connections to the system in place. The attenuation test shall consist of a measurement of circuit loss of the cable pair under test when a 2200-Hertz electrical signal at 0.0 dBm is applied to one of the pair and the signal level is measured at the end points. The Contractor shall perform the tests and document the results. At the Contractor's option, a Time Domain Reflectometer (TDR) may be used to test the cable in lieu of the test method described above.

Whether successful or not, the test results and the test data shall be furnished to the Engineer.

Furnishing all materials, labor, and equipment for the testing of the SIC, video detection system, and wireless Ethernet radio interconnect system, recording of the data, and transmittal to the Engineer is considered part of the lump sum bid for "Traffic Signal Installation" or "Traffic Signal Modification" (as appropriate) and no additional costs will be allowed therefore.

§86-3 CONTROLLER ASSEMBLIES

§86-3.01 CONTROLLER ASSEMBLIES

The following paragraphs shall be added to §86-3.01:

All new controller cabinets, controller assemblies, and ancillary equipment shall be furnished and installed by the Contractor unless noted otherwise on the plans.

All new traffic signal controller assemblies shall be type ATC eX 2070 controller as manufactured by McCain Traffic Supply. The controller assembly must be fully compliant with Advanced Transportation Controller Standard (ATC) version 5.2b, or newer. The controller assembly must also fully support NTCIP 1201 and 1202 standards and be fully backwards compatible with the City's existing traffic cabinet hardware. At a minimum, the complete controller assembly shall be supplied with the following components:

I. 2070 ATC CPU Module
II. 2070-2B or 2070-2E Field I/O Module
III. 2070-3B LCD front panel module
IV. 2070-4A power supply
V. Options:
    a. 2070-6A 1200 baud modem
    b. 2070 Data Key

The traffic signal controller assembly shall be furnished with the latest version of *Omni eX* intersection control software. The *Omni eX* control software must use a Linux open-architecture operating system and shall support the following local intersection functions; 16 vehicle phases, 16 pedestrian phases, 4 rings, 250 coordination patterns and 128 local detectors. The local control software shall be configured to interface with the City's existing centralized traffic control software complete.
All new solid-state switching devices shall be Eberle Design Inc. iPack 2202 series High Density Switch Pack-Flasher Units (HDSP-FU). The iPack 2202 HDSP-FU shall be a modular PCB-based plug-in load switch device providing two RYG channels to drive LED field signal loads in an ATC controller cabinet.

Conflict Monitor Unit shall be Model CMUip-2212, including the Auxiliary Display Unit (ADU) manufactured by Eblerle Design, Inc. A technician employed by the traffic signal controller cabinet manufacturer or the conflict monitor manufacturer on their respective representatives shall configure and program the ATC cabinet monitor. A copy of EDI ECcom Signal Monitor Communications software shall be supplied to the City for monitoring of the system.

§86-3.02 BATTERY BACK UP SYSTEM

The following paragraphs shall be added to §86-3.02:

The Contractor shall furnish and install a Myers model MP2000-CA Battery Back Up System (BBS). The BBS shall include, but not be limited to the following: inverter/charger, power transfer relay, 79AH batteries, a separate manually operated non-electronic bypass switch. The contractor shall furnish a Myers BC100HZ-LH externally mounted BBS storage cabinet shall have a 30-amp generator hookup with

lockable, weatherproof cover and be made of Aluminum, have an anodized finish, have a brushed finish, and shall be furnished with a Corbin No. 2 lockset.

The website for the Caltrans Pre-Qualified Products List for BBS units and external storage cabinets is http://www.dot.ca.gov/hq/esc/ttsb/electrical/bbsabljul04.pdf

§86-3.04 CONTROLLER CABINETS

The following paragraph shall be added to §86-3.04:

All new controller cabinets shall be Type 352i Advanced Transportation Controller (ATC) Cabinet manufactured by McCain Traffic Supply. ATC Type 352i controller cabinets shall have no exposed AC power, serial-based design and allow hot swappable output assembly for improved intersection safety. At a minimum, the 352i ATC cabinet shall be supplied with the following; 24 channel input assembly, 16 channel output assembly, 48 channel detection and 32 channel CMU and all ancillary equipment necessary to provide the intended operation. The controller cabinet must meet or exceed Chapter 6 of the latest edition of the Caltrans Traffic Signal Control Equipment Specification (TSCES) for Model 332 Cabinets. The controller cabinet shall be made of extruded aluminum, natural finish with anti-graffiti coating, furnished with handles on both doors and with Corbin No. 2 locksets.

§86-4 TRAFFIC SIGNAL FACES AND FITTINGS

The following sentences shall be added to §86-4:

All new vehicle indications shall be nominal 12-inch diameter (300 mm), furnished with all new Light Emitting Diode (LED) indications, full circle visors, and louvered back plates. All new vehicle indications, visors, back plates and fittings shall be metal. Top openings of vehicle indications shall be sealed with neoprene gaskets.

§86-4.01D Light Emitting Diode (LED) Signal Module

The following paragraphs shall replace §86-4.01D(1)(a) in its entirety:

This specification provides the minimum performance requirements for Light Emitting Diode (LED) circular traffic signal modules hereafter called modules. This includes 200mm (8in) and 300mm (12in), circular vehicle traffic signal modules and 300 mm (12 in) omni-directional arrows. All modules will comply with either the **Vehicle Traffic Control Signal Heads - Light Emitting Diode (LED) Circular Supplement, Adopted June 27, 2005**, or **Vehicle Traffic Control Signal Heads - Light Emitting Diode (LED) Vehicle Arrow Traffic Signal Supplement, Adopted July 1, 2007**, hereafter called VTCSH published by the Institute of Transportation Engineers, ITE. The following requirements are in addition to, or clarification of the VTCSH.

1. All modules must fit in existing signal housings without the use of special tools.

2. 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).

3. 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.

4. The AC power leads shall exit the module via a rubber grommet strain relief or "over molded connector" design, and shall be terminated with quick connect terminals with spade tab adapters. The leads shall be separate at the point when they leave the module.

5. All external wiring used in the module shall be anti-capillary type cable or shall use "over molded connectors" to prevent the wicking of moisture to the interior of the module.

6. All power supplies shall be conformal coated for additional moisture and thermal protection, or shall use "over molded connector" design.

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

8. Nominal power usage is measured at 25° C, 120 VAC. For the 200 mm (8") modules it shall not exceed 6 watts for Red, 9 watts for Yellow, and 9 watts for Green modules. For the 300 mm (12") modules it shall not exceed 11 watts for Red, 18 watts for Yellow, and 12 watts for Green modules. For the arrows, it shall not exceed 7 watts for any color.

9. 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.

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

11. The module lens material must be tinted for bids that require tinted lens. A tinted transparent film or coating is not permitted. Individual bids may require clear, non-tinted lenses.

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

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

14. An Intertek ETL Test Report demonstrating compliance to the design qualification requirements section 6.4 of the VTCSH must be submitted with the bid documents for each product.

15. All modules must be certified in the **Intertek LED Traffic Signal Modules Certification Program** and be labeled with the ETL Verified Label shown below.

16. Manufacturers shall provide a written warranty issued by the factory located in the NAFTA country of module origin with the following minimum provisions.

17. Modules shall, at the manufacturer's option, be repaired or replaced if the module fails to function as intended due to workmanship or material defects within the first 60 months from the date of delivery.

18. Modules shall, at the manufacturer's option, be repaired or replaced if the module exhibit luminous intensities less than the minimum specified values within the first 60 months of the date of delivery.

§86-4.03 PEDESTRIAN SIGNAL FACES

The following paragraphs shall replace §86-4.03 in its entirety:

This specification provides the minimum performance requirements for LED pedestrian signal modules, hereafter called Ped Modules. All Pedestrian Modules will comply with the most current ITE specification: **Pedestrian Traffic Control Signal Indications Part 2: Light Emitting Diode (LED) Pedestrian Traffic Signal Modules, Adopted March 19, 2004,** hereafter called PTCSI which is published in the Equipment and Materials Standards of the Institute of Transportation Engineers, hereafter called ITE. The PTCSI does not cover the countdown features of Pedestrian Modules so this specification contains additional requirements for countdowns, for long term reliability and for performance. All Pedestrian Modules without the countdown feature must be certified in the Intertek LED Traffic Signal Modules Certification Program and be labeled with the ETL Verified Label shown above.

1. All Pedestrian Modules must fit in existing signal housings without the use of special tools.

2. The countdown pedestrian module shall be compatible with all traffic signal controllers that are fully compliant to NEMA TS-1, NEMA TS-2, Type 170, and Type 2070 traffic signal controller specifications.

3. The countdown portion of the pedestrian 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.

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

5. The countdown pedestrian 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.

6. The countdown pedestrian 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 pedestrian module, the countdown display will be blank during the initial cycle while it records the countdown time using the walk (person) & don't walk (flashing hand) signal indications. The normal hand and person icons shall be displayed during this cycle.

8. The countdown pedestrian 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 pedestrian 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 pedestrian 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 pedestrian 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 learning cycle following initial installation, a return from a power failure greater than 2 seconds, a repeated demand to change programming, or after a pre-emption call, the signal shall either display the correct time and not be affected by the reduced previous cycle or the countdown display shall remain blank for a maximum of two complete cycles. 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 pedestrian module shall not display an erroneous or conflicting time when subjected to defective load switches.

15. If the countdown pedestrian module has 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 these default settings:

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.

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.

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.

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.

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.

16. If the countdown Pedestrian Module does not have dip-switches, then a module that allows the digits to be disabled or all LEDs in the digits turned on by the use of a jumper with over molded connectors.

17. Nominal power usage for Pedestrian Modules at 25°C (77°F), 120 VAC input shall not exceed the values shown in the table below.

Nominal Power of Pedestrian Signals

Size	Description	Wattage @ 25°C		
		Hand	Person	Countdown[1]
9"x9"	Person Only	N/A	6	N/A
9"x9"	Hand Only	6	N/A	N/A
12"x12"	Overlay Hand & Person	8	6	N/A
12"x12"	Person Only	N/A	7	N/A
12"x12"	Hand Only	8	N/A	N/A
12"x12"	Countdown Only	N/A	N/A	7
16"x18"	Overlay Hand & Person	12	9	N/A
16"x18"	Side by Side Hand & Person	8	7	N/A
16"x18"	Hand & Person Overlay with Countdown	12	9	7

18. 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.

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

19. The following color scheme shall be used for the pedestrian 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 pedestrian module shall be internally wired to the hand and walking person power.

20. The AC power leads shall exit the pedestrian module via a rubber grommet strain relief or use "over molded connector" design, 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 pedestrian module.

21. All external wiring utilized in the pedestrian modules shall be anti-capillary type cable or shall use "over molded connectors" to prevent the wicking of moisture to the interior of the pedestrian module.

22. The Hand and Person Icons shall utilize separate power supplies. On countdown products, the countdown pedestrian 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 pedestrian module.

23. All power supplies shall be conformal coated for additional protection, or shall use "over molded connector" design.

24. 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).

25. 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 pedestrian modules, when measured normal to the plane of the icon surface, shall not be less than 2,200 cd/m^2 for the Walking Person (White), and 1,400 cd/m^2 for the Upraised Hand and the Countdown Digits (Portland Orange).

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

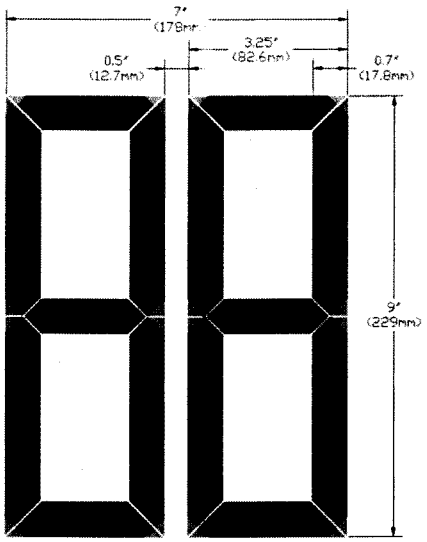
27. Icons that are printed on the lens shall be on the interior surfaces in order to prevent scratching and abrasion to the icons.

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

29. All exposed components of a pedestrian 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.

30. All LEDs used to illuminate the pedestrian 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.

31. The countdown display shall consist of two 7 segment digits as shown in the figure below. All countdown display digits shall be 9 inches in height (225mm) for use in all size crosswalks in compliance with MUTCD recommendations.



Countdown Display

32. Each pedestrian module shall be labeled on the back side with the manufacturer's name, model number, operating characteristics and serial number or date code. The operating characteristics identified shall include the nominal operating voltage and stabilized power consumption, in Watts and Volt-Amperes. All pedestrian module labels shall be attached using polyester or vinyl self-adhesive labels. The use of paper labels is not acceptable.

33. Manufacturers shall provide a written warranty issued by the factory located in the NAFTA country of pedestrian module origin with the following minimum provisions.

34. Pedestrian modules shall, at the manufacturer's option, be repaired or replaced if the pedestrian module fails to function as intended due to workmanship or material defects within the first 60 months from the date of delivery.

35. Pedestrian modules shall, at the manufacturer's option, be repaired or replaced if the pedestrian module exhibit luminous intensities less than the minimum specified values within the first 60 months of the date of delivery.

§86-5 DETECTORS

The following paragraphs shall be added to §86-5:

Video Detection Systems

Where shown on the project plans, the Contractor shall furnish and install all Video Detection equipment, mounts, cables, connectors, and any other items necessary to provide local and remote operation of the video detection system. Video detection system shall be Iteris Vector Hybrid with Vantage Edge Connect module complete. The Vantage Vector Hybrid system shall utilize both video and radar capabilities for stop bar and advanced detection up to 600 feet in advance of the intersection. At locations where bicycle detection is required, the Vector Hybrid system shall clearly separate bicycle from vehicle detection via SmartCycle with output to the controller assembly. Video detection processing modules shall be Vantage Vector, rack type. Remote video detection and management to the City Traffic Management Center (TMC) shall be configured per Vantage Edge Connect module. Video detection equipment shall be included in the functional testing period discussed elsewhere in these special provisions.

§86-5.01A Inductive Loop Detectors

Where shown on the project plans, the Contractor shall furnish and install inductive loop detectors and detector sensor amplifiers as discussed in §86-5.01 of these Special Provisions.

§86-5.01A (1) General

The following sentences shall be added to §86-5.01A (1):

Loop wire shall be Type 2. Loop detector lead-in cable shall be Type B. All new inductive loop detectors shall be Type E as shown on CSP ES-5B. All new inductive loop curb terminations shall be Type A as shown on CSP ES-5D. All new loop curb termination conduits shall be 2 inch (53mm) nominal diameter.

§86-5.01A (2) Sensor Unit Construction

The second paragraph of §86-5.01 will be replaced with the following sentence:

All new vehicle detector sensor units shall be Reno A&E Model C-1100 or Agency-approved equal.

§86-5.01A (4) Installation Details

The following paragraphs shall be added to §86-5.01A (4):

Loop detector saw cut slots shall be filled with hot-melt rubberized asphalt sealant. For Type E detector loops, the sides of the loop detector saw cut slot shall be vertical and the minimum radius of the slot entering the circular part of the loop shall be 40 mm. Maximum loop detector saw cut slot width shall be 20 mm.

All new inductive loops shall be centered in the travel lane with 10-foot clear spacing between the loops. The front loop of any lane group shall be located 1 foot outside of the crosswalk or limit line. All loops in a lane group shall be connected in series in the adjacent pull box unless shown otherwise on the plans.

§86-5.01D Emergency Vehicle Detector System

Replace with the following:

Where shown on the plans, the Contractor shall furnish and install the Global Traffic Technologies (GTT) Opticom Preemption System. All GTT Opticom equipment shall be new and obtained from the local authorized GTT Opticom dealer to secure the ten (10) year warranty. EVP equipment shall be included in the functional testing period discussed elsewhere in these special provisions.

The multimode priority control system shall operate in a manner that allows Infrared and GPS/Radio priority control technologies to interoperate and activate one another in a consistent manner. The priority control system shall consist of a matched system of vehicle equipment and intersection equipment capable of employing both data-encoded radio communications to identify the presence of designated priority vehicles, as well as data-encoded infrared signaling communications. In priority vehicle mode, the data-encoded communication shall request the traffic signal controller to advance to and/or hold a desired traffic signal display selected from phases normally available. A record of system usage by agency identification number, vehicle classification and vehicle identification number shall be created. The system software shall support call history analysis and reporting across any subset of intersections and/or vehicles independent of activation method. System software shall also support both onsite and remote programming and monitoring of the priority control system. The Contractor shall provide and install the following:

GTT M -764 (MMPS) Multi Mode Phase Selector
GTT M-768 (MMPS) Green Sense Panel and Harness
GTT M-711, M-721, M-722 IR Opticom Detectors
GTT GPS Radio Unit
GTT M-138 IR Opticom Cable
GTT GPS Installation Cable

Intersection detection equipment will consist of either a GPS receiver and radio transceiver or an infrared detector or both connected to a multimode phase selector

located in the intersection controller cabinet. The GPS radio unit receives the data-encoded radio signal from the GPS radio equipped vehicle and transfers the decoded information through detector cable to the multimode phase selector for processing. The intersection radios also communicate to vehicles and other intersection radios at distances of up to at least 2,500 feet with no obstructions. The infrared detector receives the data-encoded infrared signal from the infrared equipped vehicle and transfers information through detector cable designed to convert infrared light energy at the proper wavelength into analog voltage signals that can be evaluated and decoded by the multimode phase selector.

The multimode phase selector shall be capable of receiving data encoded signals from either or both infrared and GPS radio detection equipment and combine the detection signals into a single set of tracked vehicles requesting priority activation. The multimode phase selector will process the vehicle information to ensure that the vehicle is (1) in a predefined approach corridor, (2) heading toward the intersection, (3) requesting priority, and (4) within user-settable range. The multimode phase selector shall treat the combined, single set of tracked calls with first come first served priority methodology within a given priority level. Arbitration between infrared signal intensity and GPS radio distance/ETA shall be first come first served methodology based on time of detection as each equipped vehicle reaches its programmed threshold.

When these conditions are met, the phase selector shall generate a priority control request to the traffic controller for the approaching priority vehicle. If the approaching vehicle has an active turn signal, the approach intersection shall relay the priority request to the next nearest in-range intersection in the direction of the approaching vehicle's turn signal. The output of the phase selector may also be varied depending on the state of the approaching vehicle's turn signal.

To ensure priority control system integrity, operation and compatibility, all components shall be from the same manufacturer. The system shall offer compatibility with most signal controllers, e.g. NEMA (National Electrical Manufacturers Association), 170. The system can be interfaced with most globally available controllers using the controller's preemption inputs. RS-232, USB and Ethernet interfaces shall be provided to allow management by on-site interface software and central software.

The Opticom system shall be comprised of matched system components as follows:

1) Opticom GPS Components
   a) *Vehicle/Intersection radio/GPS module, Radio/GPS Antenna with factory terminated SMA connectors, and vehicle control unit.* The radio/GPS module shall obtain the vehicle position, speed and heading information and transmit this information only when within range of a GPS intersection. The vehicle control unit shall communicate with the radio/GPS module and provide the interface to the vehicle in order to monitor the vehicle's turn signal status, provide activation and

disable inputs as well as regulate the vehicle power provided to the radio/GPS module.

b) *Intersection Radio/GPS Module.* The intersection radio/GPS module shall transmit a beacon every second and receive the data transmitted by the vehicle equipment and relay this information to the phase selector as well as other system-equipped intersections. It shall also obtain position information from the GPS satellites.

c) *Radio/GPS Cable*. The radio/GPS cable shall carry the data received from the intersection radio/GPS unit to the phase selector. It shall also carry the power for the radio and GPS components provided by the phase selector. The same cable shall be used to carry the data between the vehicle radio/GPS unit and the vehicle control unit. The cable used to connect the radio/GPS unit to the phase selector shall be a shielded 10 conductor data cable; the use of coax cable is not permitted.

2) Opticom Infrared Components

a) *Data-Encoded LED Infrared Emitter.* The data-encoded emitter shall trigger the system. It shall send the encoded infrared signal to the detector. It shall be located on the priority or probe vehicle.

b) *Remote Coding Unit.* The remote coding unit shall be capable of remotely program the data-encoded LED infrared emitter without the use of a computer. The remote coding unit will not be available for use with the OEM version of the data-encoded LED emitter.

c) *Infrared Detector.* The detector shall change the infrared signal to an electrical signal. It shall be located at or near the intersection. It shall send the electrical signal via the detector cable to the phase selector.

d) *Detector Cable.* The detector cable shall carry the electrical signal from the detector to the phase selector.

3) Opticom System Multimode Components

a) *Multimode Phase Selector.* The multimode phase selector shall recognize inputs from both infrared and GPS/radio activation methods at the intersection and supplies coordinated inputs to the controller. The multimode phase selector shall process the data in order to validate that all parameters required for granting a priority request are met. It shall be located within the controller cabinet at the intersection. It shall request the controller to provide priority to a valid priority vehicle by connecting its outputs to the traffic controller's preemption inputs. The multimode phase selector:

i) Be designed to be installed in the traffic controller cabinet and is intended for use directly with numerous controllers. These include California/New York Type 170/2070 controllers with compatible software, NEMA controllers, or other controllers along with the system card rack and suitable interface equipment and controller software.

ii) Will be a plug-in, four-channel, multiple-priority multi-modal device intended to

be installed directly into a card rack located within the controller cabinet. The multi-mode phase selector shall be capable of using existing Opticom IR or Opticom GPS card racks.

iii) May be powered from either +24 VDC or 120VAC.

iv) Shall support front-panel RS-232, USB and Ethernet interfaces to allow management by on-site interface software and central software. An RS-232 port shall be provided on the rear card edge of the unit. Additional RS-232 communication ports shall be available using the Auxiliary Interface Panel.

v) Shall include the ability to directly sense the green traffic controller signal indications through the use of dedicated sensing circuits and wires connected directly to field wire termination points in the traffic controller cabinet. This connection shall be made using the auxiliary interface panel.

vi) Shall have the capability of storing a minimum of 10,000 priority control calls. When the log is full, the phase selector shall drop the oldest entry to accommodate the new entry. The phase selector shall store each call record in non-volatile memory and shall retain the record if power terminates. Each preemption record entry shall include points of information about the priority call.

b) *Card Rack*. The card rack shall provide simplified installation of a phase selector into controller cabinets that do not already have a suitable card rack.

The Contractor shall have the authorized dealer of the emergency vehicle preemption equipment present for the traffic signal function test. To insure installation and functioning of the GTT Opticom equipment, the representative from the dealer shall be certified and factory trained on the latest edition of GTT Opticom equipment and software. The dealer's representative shall provide a test vehicle with the latest Opticom IR and GPS emitter as required for the testing. Please contact DDL Traffic Inc., the Authorized Dealer for Southern California @ 714-321-7513.

Substantiated Warranty

GTT will warrant, provided the priority control system has been properly installed and tested by a GTT certified technician and operated and maintained component parts of a matched system to be defective in workmanship or material during the first ten (10) years from date of shipment from the manufacturer.

§86-5.02 PEDESTRIAN PUSH BUTTON ASSEMBLIES

The following paragraph shall be added to §86-5.02:

All new pedestrian and bicycle push button assemblies shall be Polara Engineering, Inc., Bulldog pedestrian pushbutton assemblies (Model BDLM-Y) or Agency-approved equal. Pedestrian and bicycle push buttons shall be furnished with stainless steel tamper-proof screws. Pedestrian push button assemblies shall be furnished with a 2012 California MUTCD R10-3e sign (right or left arrow, as appropriate) and the sign

shall be installed on the Pedestrian push button assembly with stainless steel tamper-proof screws.

§86-6 LIGHTING

§86-6.01 LIGHT EMITTING DIODE (LED) LUMINAIRES

The following paragraph shall replace §86-6.01:

New luminaires shall be Light Emitting Diodes (LED), IES Type III, full cutoff, Die Cast Aluminum Housing as manufactured by LEOTEK Electronics, or Agency-approved equal. The lighting output of 133 watts shall be as shown on the plans. 133 watt luminaires shall be LEOTEK Model No. GC1-80F-MV-NW-3-GY-530-PCR7. Photoelectric controls shall not be provided with the luminaire, however; a socket for a Type IV photoelectric control unit shall be provided with a shorting cap installed.

§86-6.09 LIGHT EMITTING DIODE (LED) INTERNALLY ILLUMINATED STREET NAME SIGNS

The following paragraph shall replace §86-6.09:

All new Internally Illuminated Street Name Signs (IISNS) shall be Temple Edge-Lit RAZOR LED Edge-Lit Internally Illuminated LED Street Name Signs. The under-hang mounting brackets shall be Pelco-5146 or Pelco-5015. All new LED IISNS shall be installed per County of Riverside Standard No. 1200, Traffic Signal Pole IISNS Straight Arm Mounting Detail.

LED IISNS shall conform to City of Indio Standard Plan No. 210 (October 2014). Block numbers to be included on the Internally Illuminated Street Name Sign shall be as shown on Standard Plan No. 211 (June 2010) and approved street suffixes shall be as shown on Standard Plan No. 212 (June 2010).

§86-6.11B (2) Contactor

The following sentence shall replace the first sentence of the second paragraph of §86-6.11B (2):

Contactors shall be the mechanical armature type.

§86-7 REMOVING, REINSTALLING OR SALVAGING ELECTRICAL EQUIPMENT

The following paragraphs shall be added to §86-7:

Existing traffic signal poles and signal mast arms shall be salvaged and delivered to

the City of Indio Maintenance Yard, 83101 Avenue 45, Indio, California 92201. The City of Indio Traffic Signal Supervisor (Ricardo Mercado at 760-625-1817) shall be notified a minimum of two working days prior to delivery of salvaged equipment. The Contractor shall supply all labor, materials, and equipment to deliver and neatly stack the salvaged materials in the locations as directed by the City of Indio Traffic Signal Supervisor or his designee.

Existing equipment removed and not reused shall become the property of the Contractor and shall be removed from the site by the Contractor. The Contractor shall provide all labor, equipment, and materials necessary to remove, salvage, transport, and dispose of equipment not reused.

All labor, materials, equipment and other incidental items and expenses to remove, salvage, deliver, stack or dispose of salvaged traffic signal equipment and materials shall be provided by the Contractor and shall be considered to be included within the lump sum bid price for "Traffic Signal Installation" or "Traffic Signal Modification" (as appropriate) and no additional compensation shall be allowed therefore.

§86-8 PAYMENT

The following paragraphs shall replace §86-8:

All equipment, labor, materials, and incidental expenses required to perform the work shown on the Plans, discussed within these Special Provisions for "Traffic Signal Installation" or "Traffic Signal Modification", to provide the intended configuration and operation, including highway lighting modifications shall be included in the lump sum bid price for "Traffic Signal Installation" or "Traffic Signal Modification" (as appropriate) and no additional payment shall be allowed therefore.

The lump sum price bid for "Traffic Signal Installation" or "Traffic Signal Modification" (as appropriate) shall include all work as specified in the CSS, as modified in these Special Provisions, and shall also include all the work arising during construction such as repair and/or replacement of conflicting existing conduits, pipes, irrigation lines, sprinkler heads, poles, and wires which may or may not be shown on plans or specifications.

It is the Contractor's responsibility to verify all existing facilities and shall notify the Engineer or any conflicts found during the pre-construction inspection, prior to commencement of any work. Payment for this work shall be included in the lump sum price bid for "Traffic Signal Installation" or "Traffic Signal Modification" and no additional compensation will be allowed therefore.

Material shown on the plans or designated in the Special Provisions which is to be used in the reconstructed work and which has been damaged or destroyed as a result

of the Contractor's operations shall be repaired or replaced at the option of the Engineer by the Contractor at the Contractor's expense. Full compensation for conforming to these requirements shall be considered as included in the lump sum bid price for "Traffic Signal Installation" or "Traffic Signal Modification" (as appropriate) and no additional compensation will be allowed therefore.

WIRELESS ETHERNET RADIO INTERCONNECT SYSTEM

Where shown on the plans, the Contractor shall furnish and install all labor, equipment, and material required to install a 5 GHZ Broadband Wireless Interconnect System. The work shall include all labor, equipment, and material required to install a wireless Ethernet bridge, including two (2) Encom ENERGY 300mbps outdoor Integrated Radio units (GPS enabled), mounting brackets, PoE injectors, industrial edge switch(s), terminal server(s), six (6) outlet power strip(s), extension pipe(s), hardware, grounding, cable to controllers, cable(s), connectors and all other material required to complete the work.

MATERIALS

The ENERGY radios units shall be suitable for use of two-way real-time traffic data, video streaming or backhaul applications in either a point-to-point or point-to-multipoint configuration. The proposed ENERGY wireless bridge shall fully integrate with Encom's STRATOS+ software GUI for easy monitoring and maintenance of the system. A copy of the latest STRATOS+ software program and each radio's configuration shall be supplied to the City. The ENERGY wireless bridge shall conform to the following specifications:

WIRELESS INTERFACE

Frequency Range
5GHz: 5.150 – 5.825 GHz
2GHz: 2.412 – 2.472 GHz
4.9GHz: 4.940 – 4.990 GHz

Peak Transmit Power
30 dBm (1000mW)

Receive Sensitivity
-94 dBm (MCS0) to -76 dBm (MCS15)

Channel Widths
5MHz, 10MHz, 20MHz, and 40MHz

Modulations
OFDM with BPSK, QPSK, 16QAM, 64QAM

Protocol
802.11a/n, E-MAX (proprietary) and 802.11g

Data Rate
Up to 300Mbps @ 802.11n / Up to 54Mbps @ 802.11a/b/g

MIMO
2x2

Topology
Point-to-point and Point-to-Multipoint

NETWORKING FEATURES
802.11e WMM and QOS, 802.11h DFS and TPC, 802.1d Ethernet Bridging, 802.1p Traffic Prioritization, 802.1q VLAN, 802.1s Spanning Tree, 802.1w Rapid Spanning Tree, 802.3-1998 Ethernet, 802.3ab Gigabit Ethernet, 802.3ac Extended Frame Size for 802.1q & 802.1p support, 802.3ad Link Aggregation/Port Bonding/Port Trunking, 802.3i 10 Mbps Ethernet, 802.3u 100 Mbps Ethernet and Auto-Negotiation, 802.3x Full Duplex and Flow Control.

INTEGRATED ANTENNA UNIT
Dimensions: 13"x13"x3.5"
Weight: 5 lb.
Environmental: IP67 Weatherproof rating
Antenna Type: 23 dBi Panel Antenna
Operating Temperature: -40°C to +85°C
Radio Units: Up to 2

The furnishing and installation of Wireless Ethernet Radio Interconnect system shall be as indicated on plans. The Contractor shall install the radio units at the location as designated on the plans or as directed by the Engineer. All work shall comply with the manufacturer's specifications and these special provisions. Remote monitoring and management of the system shall be configured at the City Traffic Management Center (TMC). Wireless Ethernet Radio Interconnect system shall be included in the functional testing period discussed elsewhere in these special provisions.

Warranty:
The manufacturer shall guarantee that all material supplied shall be free from all defects in materials and workmanship for a period of three (3) years from date of shipment.

CONSTRUCTION

The furnishing and installation of the Wireless Interconnect, Ethernet, Master, Repeater, and/or Remote shall be as indicated on the plans. All work shall comply with Sections 819 and 820 of the Standard Specifications for Construction, the applicable "typical" signal construction detail(s), and this Special Provision. The Contractor shall install the radio antennas at the spot designated on the plans or as directed by the Engineer. The radio antennas shall be installed after the rest of the signal equipment (signal heads, poles, case signs, etc.) has been installed. Premature installation, prior to the approval of the Engineer, which is found to be non-optimal placement of the radio antennas shall be corrected by the Contractor at his cost. Any reorientation or movement of the radio antennas shall not be considered for extra payment or time extensions.

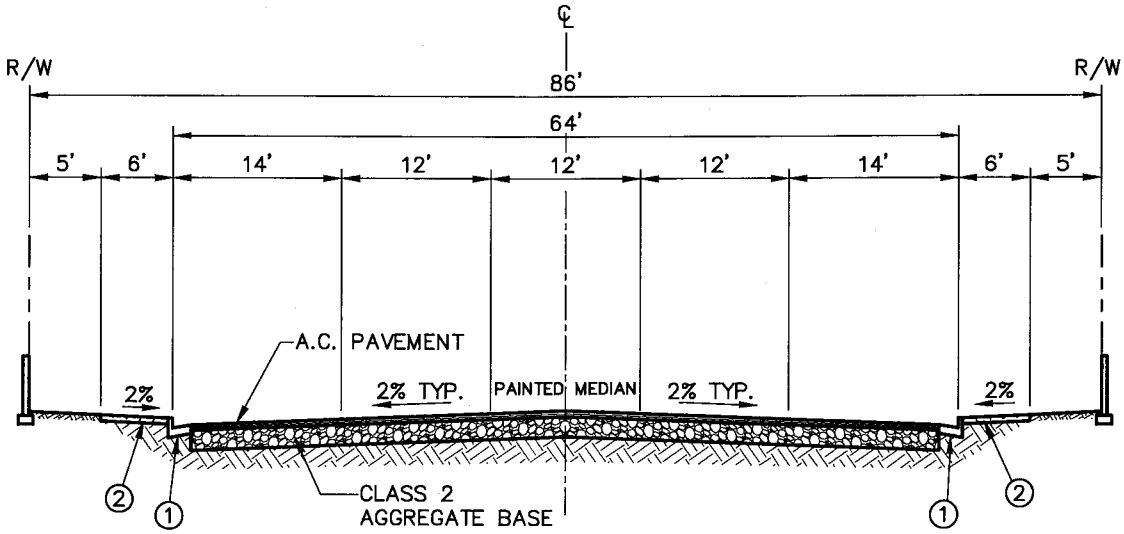
PRODUCT SELECTION

The City of Indio reserves the right to accept a product of equal performance, as solely determined by the Engineer.

MEASUREMENT AND PAYMENT

The work shall include furnishing all labor, equipment, and material required to install the wireless Ethernet radio interconnect system complete as indicated on the plans.

Full compensation for conforming to these requirements shall be considered as included in the lump sum bid price for "Traffic Signal Installation" or "Traffic Signal Modification" (as appropriate) and no additional compensation will be allowed therefore.



4D NO SHOULDERS

① 6" CURB & GUTTER PER STD. 120

② 6' SIDEWALK PER STD. 132

NOTES:

1. SEE STD. 170 FOR "ROADWAY DESIGN GUIDELINES".
2. SEE STD. 171 FOR "STREET STRUCTURAL SECTION DESIGN REQUIREMENTS". MINIMUM SECTION = 5" AC OVER 8" CL. 2 AGGREGATE BASE.
3. SEE STD. 147 FOR "UNDERGROUND UTILITY LOCATIONS".
4. SEE STD. 175 FOR "EXPANSIVE AND/OR HIGH SULFATE SOIL".

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CITY OF INDIO

GRANT D. EKLUND
CITY ENGINEER
RCE 61559
DATE

CITY OF INDIO

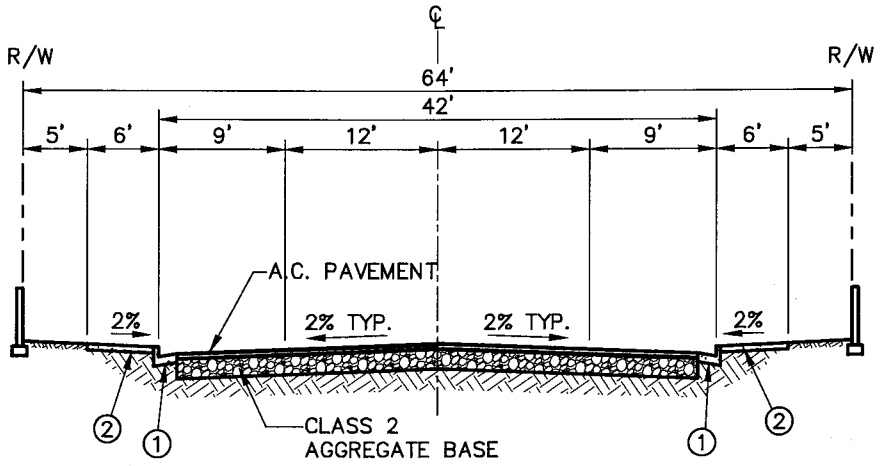
SECONDARY
86' R / W

JUNE 2010

STANDARD PLAN NUMBER

103

REVISION	DRAWN BY	DATE



2U WITH SHOULDERS OR 2D (10' LT. 16' OUTSIDE)

① 6" CURB & GUTTER PER STD. 120

② 6' SIDEWALK PER STD. 132

NOTES:

1. SEE STD. 170 FOR "ROADWAY DESIGN GUIDELINES".
2. SEE STD. 171 FOR "STREET STRUCTURAL SECTION DESIGN REQUIREMENTS". MINIMUM SECTION = 4" AC OVER 6" CL. 2 AGGREGATE BASE.
3. SEE STD. 147 FOR "UNDERGROUND UTILITY LOCATIONS".
4. SEE STD. 175 FOR "EXPANSIVE AND/OR HIGH SULFATE SOIL".

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CITY OF INDIO

GRANT D. EKLUND
CITY ENGINEER
RCE 61559
DATE

CITY OF INDIO

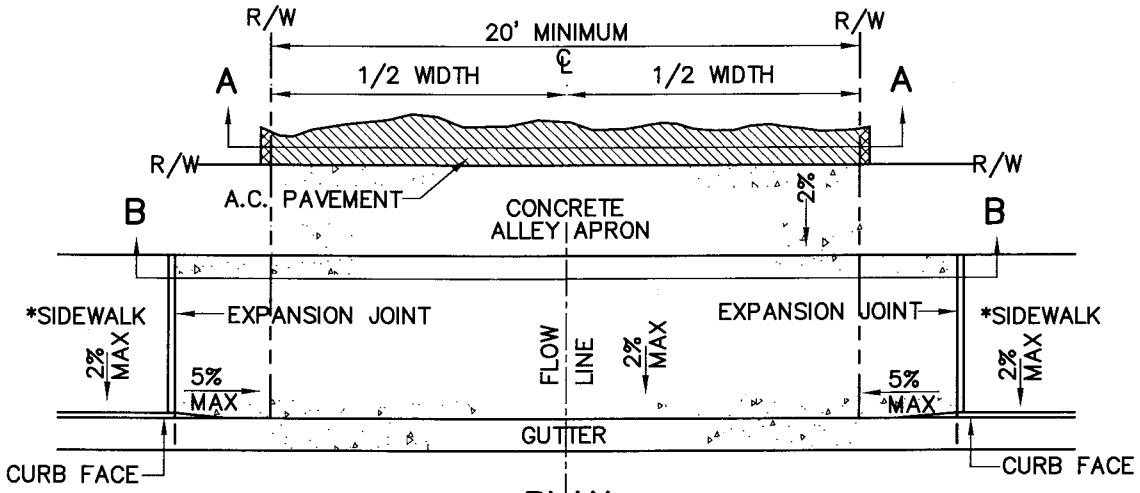
COLLECTOR
64' R / W

JUNE 2010

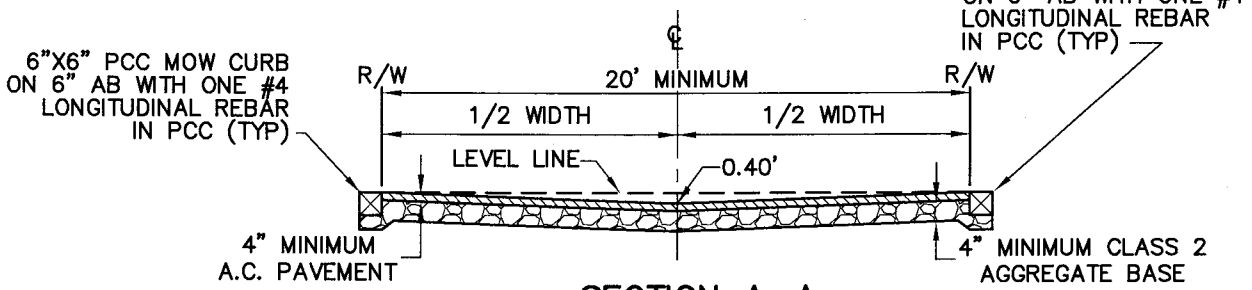
STANDARD PLAN NUMBER

104

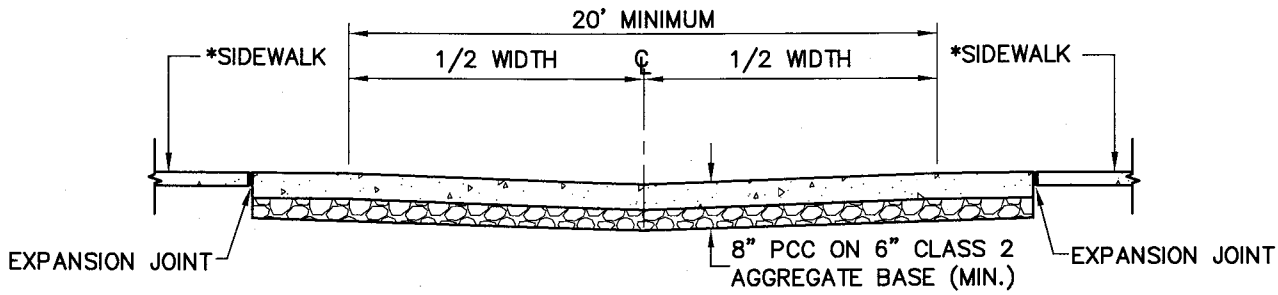
REVISION	DRAWN BY	DATE



PLAN



SECTION A–A



SECTION B–B

NOTES:

ALLEY WIDTH AS SPECIFIED BY THE CITY ENGINEER
PCC SHALL BE 560–C–3250
* WHEN REQUIRED OR PERMITTED

NOT TO SCALE

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CITY OF INDIO

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CITY ENGINEER
RCE 61559
DATE

ALLEY WITH APRON

JUNE 2010

STANDARD PLAN NUMBER

106

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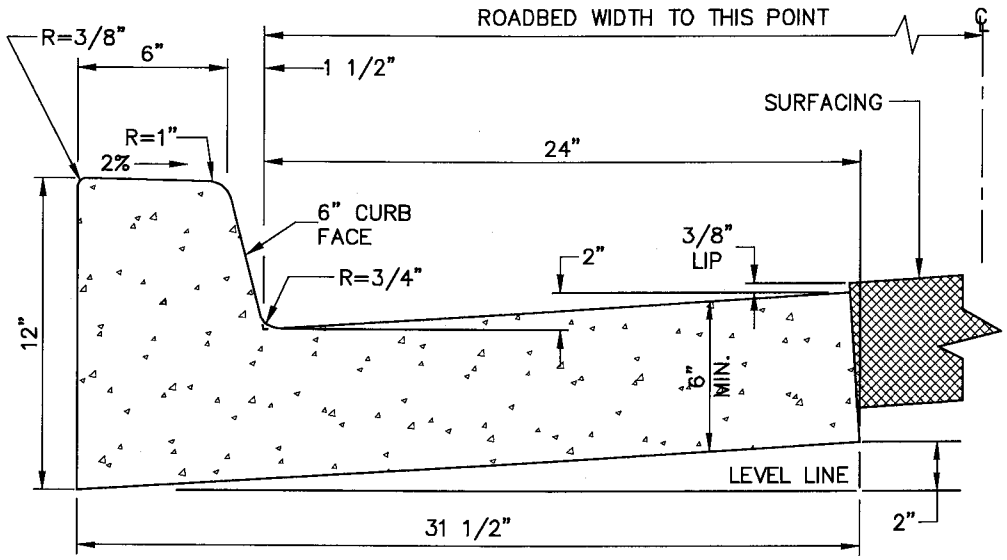

NOTES:

CLASS 560-C-3250 CONCRETE

1.579 CU. FT. / L.F.

1 CU. YD. = 17.10 L.F.

MINIMUM PERMISSIBLE GRADE 0.50%

PROVIDE 3/8" LIP AT EDGE OF ASPHALT WITH 1/8" TOLERANCE

MINIMUM SUBGRADE COMPACTION 95% RELATIVE TO MAXIMUM (TOP 12-INCHES)

ALL GUTTER TO BE "FLOW TESTED" PRIOR TO FINAL PAVING

SEE STANDARD 126 FOR JOINT DETAILS

*ADA NOTE:

1. SEE STANDARD 136 FOR REQUIREMENTS AT CURB RAMPS.

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CITY OF INDIO

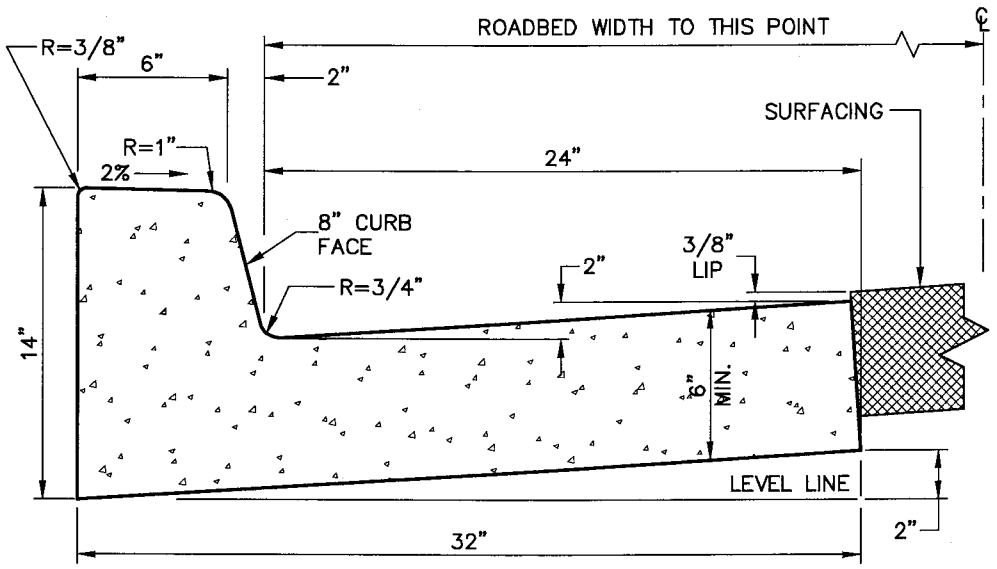
6" CURB AND GUTTER

JUNE 2010

STANDARD PLAN NUMBER

120

REVISION	DRAWN BY	DATE



NOTES:

CLASS 560-C-3250 CONCRETE

1.715 CU. FT. / L.F.

1 CU. YD. = 15.74 L.F.

MINIMUM PERMISSIBLE GRADE 0.50%

PROVIDE 3/8" LIP AT EDGE OF ASPHALT WITH 1/8" TOLERANCE

MINIMUM SUBGRADE COMPACTION 95% RELATIVE TO MAXIMUM (TOP 12-INCHES)

ALL GUTTER TO BE "FLOW TESTED" PRIOR TO FINAL PAVING

SEE STANDARD 126 FOR JOINT DETAILS

*ADA NOTE:

1. SEE STANDARD 136 FOR REQUIREMENTS AT CURB RAMPS.

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CITY OF INDIO

8" CURB AND GUTTER

JUNE 2010

STANDARD PLAN NUMBER

121

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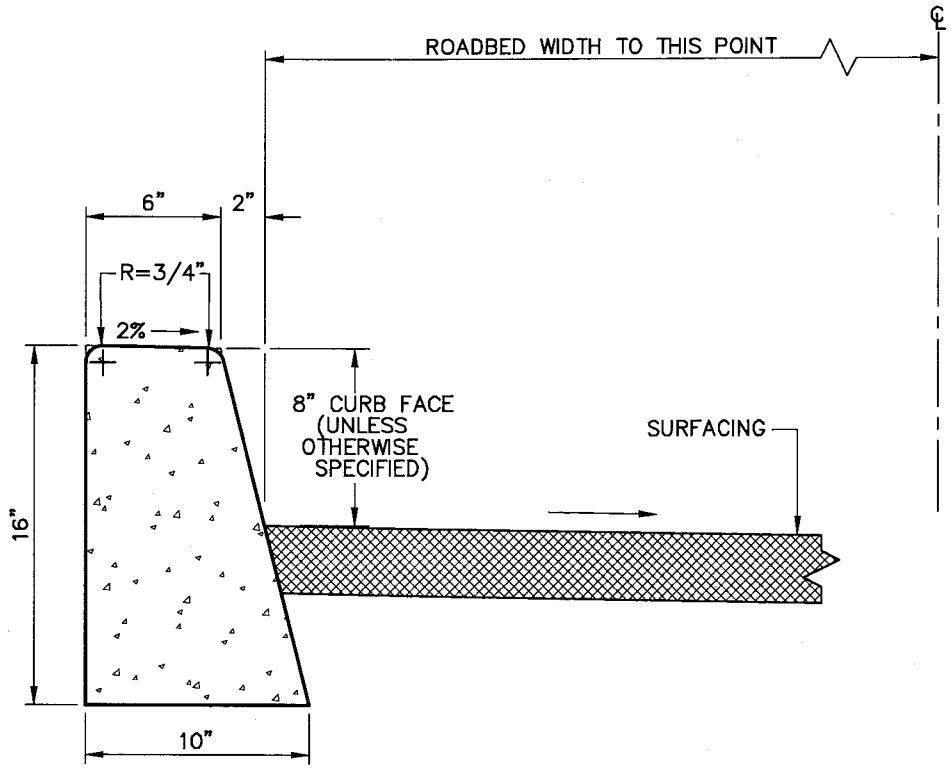

NOTES:

CLASS 560-C-3250 CONCRETE

0.879 CU. FT. / L.F.

1 CU. YD. = 30.72 L.F.

MINIMUM SUBGRADE COMPACTION 95% RELATIVE TO MAXIMUM (TOP 12-INCHES)

MAX. GRADE BREAK ON ROADWAYS SHALL NOT EXCEED 0.50%

SEE STANDARD 126 FOR JOINT DETAILS

DESIGN NOTES:

1. 8" CURB FACE SHALL BE USED ON ALL ROADWAY MEDIAN CURBS.
2. 6" CURB FACE SHALL BE USED IF CARS ARE TO OVERHANG CURB (i.e. parking lots).

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CITY OF INDIO

MEDIAN CURB

JUNE 2010

STANDARD PLAN NUMBER

123

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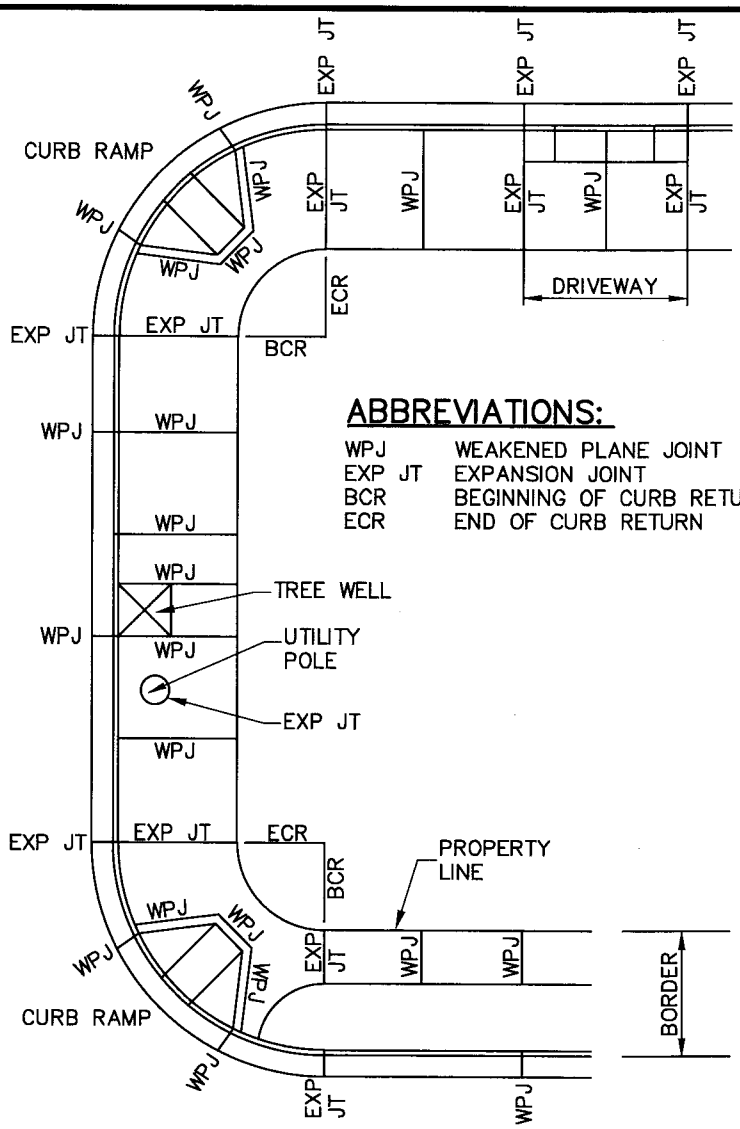
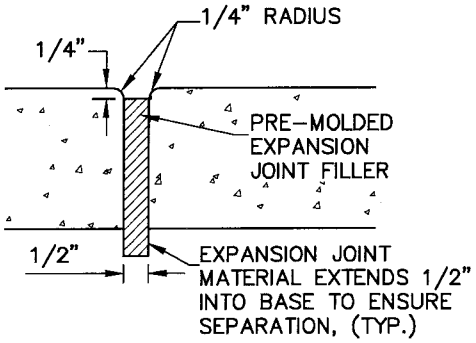
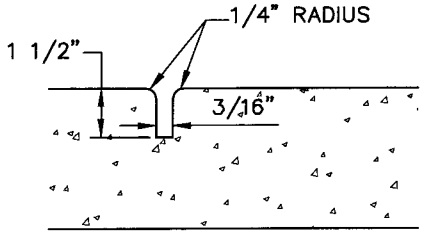


ABBREVIATIONS:

WPJ	WEAKENED PLANE JOINT
EXP JT	EXPANSION JOINT
BCR	BEGINNING OF CURB RETURN
ECR	END OF CURB RETURN



EXPANSION JOINT



WEAKENED PLANE JOINT

NOTES:

1. WEAKENED PLANE JOINTS SHALL BE USED FOR ALL JOINTS, EXCEPT WHERE EXPANSION JOINTS ARE REQUIRED.
2. WEAKENED PLANE JOINTS SHALL BE CONSTRUCTED AT REGULAR INTERVALS NOT EXCEEDING 5' IN WALKS AND 10' IN CURB AND GUTTER, DRIVEWAYS AND CROSS GUTTERS. JOINTS IN CURB AND WALK SHALL BE ALIGNED.
3. EXPANSION JOINTS ARE REQUIRED AT:
   A. BCR AND ECR IN CURB, GUTTER AND SIDEWALK.
   B. AT EACH SIDE OF DRIVEWAY FOR CURB, GUTTER AND SIDEWALK.
   C. AROUND UTILITY POLES, ETC, LOCATED IN CONCRETE AREAS.
   D. AT INTERVALS NOT EXCEEDING 200' IN CURB, GUTTER AND SIDEWALKS.
   E. AT EACH SIDE OF CATCH BASINS.
4. CURB AND GUTTER SHALL BE CONSTRUCTED SEPARATELY FROM SIDEWALK.

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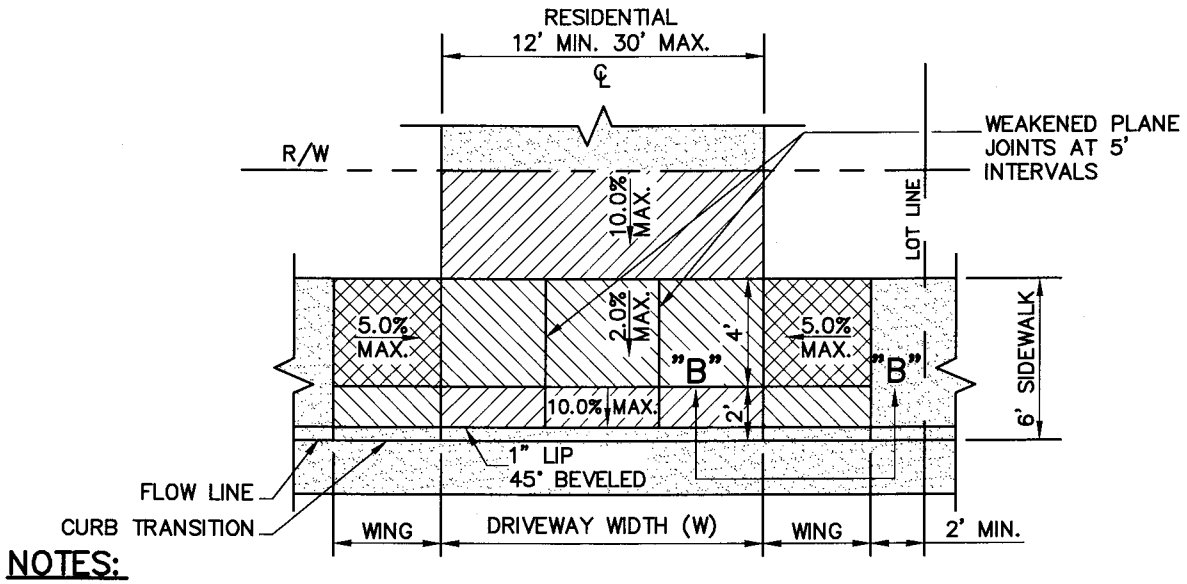
JOINTING FOR CONCRETE IMPROVEMENTS IN R / W

JUNE 2010

STANDARD PLAN NUMBER

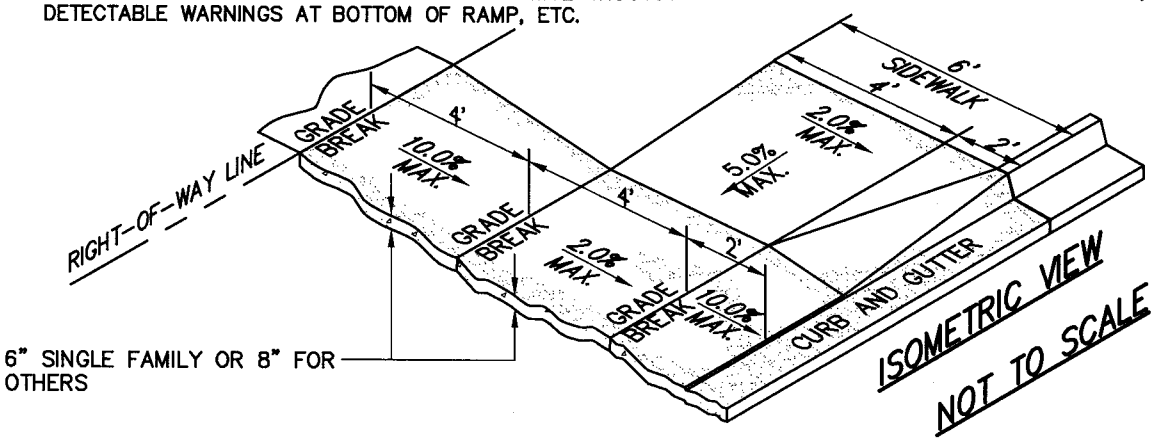
126

REVISION	DRAWN BY	DATE



NOTES:

1. ALL CONCRETE CONSTRUCTION SHALL BE CLASS 560-C-3250 CONCRETE.
2. 20' OF FULL-HEIGHT CURB REQUIRED BETWEEN DRIVEWAYS WITHIN ANY ONE PROPERTY FRONTAGE. 2.0' MINIMUM OF FULL-HEIGHT CURB REQUIRED BETWEEN DRIVEWAYS AND LOT LINE.
3. CONSTRUCT THE PROFILE GRADE OF THE PRIVATE ON-SITE DRIVEWAY SO THAT IT PROVIDES SMOOTH VEHICLE ACCESS OVER THE DRIVE APPROACH. (10.0% GRADE)
4. THIS DESIGN SHALL ONLY BE USED FOR A 6.0" CURB FACE. ADJUSTMENTS WILL BE NEEDED FOR OTHER CURB HEIGHTS.
5. DRIVEWAYS TO HAVE EXPANSION JOINTS AT BOTH ENDS.
6. "W" DIMENSION SHALL MATCH WIDTH OF GARAGE(S), UNLESS APPROVED OTHERWISE BY CITY ENGINEER.
7. DRIVEWAYS FOR CORNER LOTS SHALL BE LOCATED ADJACENT TO PROPERTY LINE AWAY FROM THE INTERSECTION.
8. FOR NEW DRIVEWAYS ON EXISTING STREETS, A MINIMUM 12" WIDTH OF ASPHALT CONCRETE (A.C.) SHALL BE REMOVED AND REPLACED TO PCC GUTTER DEPTH.
9. IF RAMP GRADE IS BETWEEN 5.0% AND 8.33%, THE DRIVEWAY SHALL COMPLY WITH APPLICABLE "ADA" STANDARDS FOR A "RAMP" INCLUDING A 12" WIDE GROOVED BORDER AT LEVEL AREA AT TOP OF RAMP, AND DETECTABLE WARNINGS AT BOTTOM OF RAMP, ETC.



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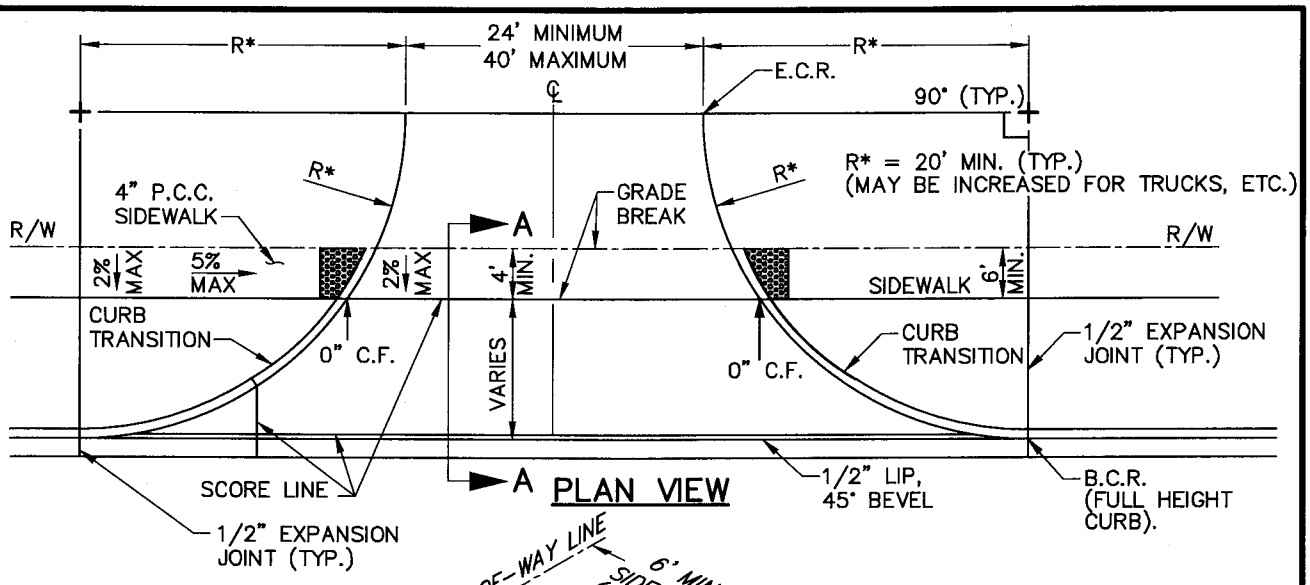
RESIDENTIAL DRIVEWAY WITH SIDEWALK AT CURB

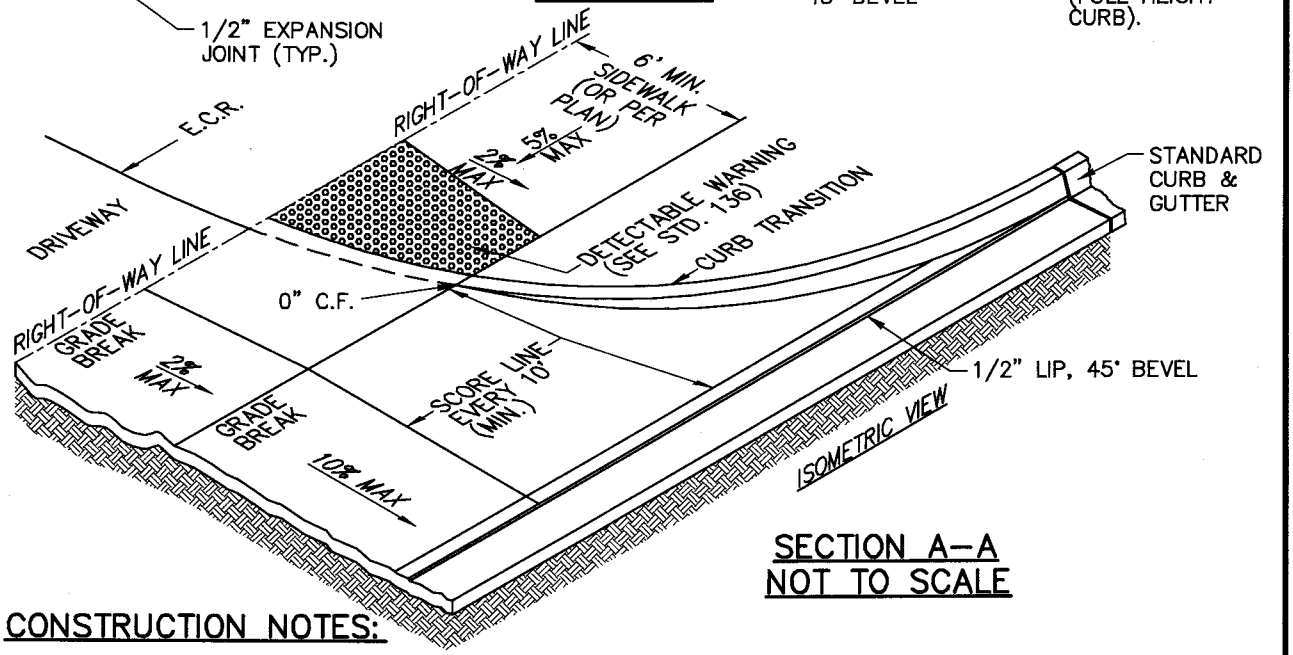
JUNE 2010

STANDARD PLAN NUMBER

129

REVISION	DRAWN BY	DATE





SECTION A–A
NOT TO SCALE

CONSTRUCTION NOTES:

COMMERCIAL DRIVEWAY APPROACH DETAILS TYPES A AND B:

1. DRIVEWAY APPROACHES INCLUDE ALL IMPROVEMENTS SHOWN ON DETAILS FROM BEGINNING OF APPROACH TO END OF APPROACH WITHIN THE PUBLIC R/W.
2. ALL CONCRETE TO BE CLASS 560–C–3250. DRIVEWAYS TO BE 8" (MINIMUM) CONCRETE ON 6" (MINIMUM) CLASS 2 AGGREGATE BASE.
3. THE TOP 12–INCHES OF SUBGRADE SHALL BE 95% (MINIMUM) RELATIVE COMPACTION.
4. EXPANSION JOINTS ARE REQUIRED AT THE BEGINNING AND END OF THE DRIVEWAY APPROACH AND AT THE RIGHT OF WAY. WEAKENED PLANE JOINTS (1.5" DEEP) ARE REQUIRED AT 10' O.C. (MAX.) PERPENDICULAR TO STREET FLOWLINE FOR REMAINDER OF DRIVEWAY APPROACH. SIDEWALK AND CURBS WITHIN DRIVEWAY APPROACH SHALL BE SCORED PER THEIR RESPECTIVE DETAILS.
5. ALL CONCRETE TO RECEIVE A MEDIUM BROOM FINISH.
6. IT IS RECOMMENDED THAT THE "DRIVEWAY APPROACH" BE BUILT PRIOR TO THE "DRIVEWAY" AS THE HEIGHT OF THE IMPROVEMENTS AT THE RIGHT–OF–WAY LINE WILL BE DETERMINED BY THE "DRIVEWAY APPROACH".

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COMMERCIAL DRIVEWAY APPROACH (TYPE A) (SIDEWALK NOT @ CURB)

JUNE 2010

STANDARD PLAN NUMBER

130

SHEET 1 OF 2

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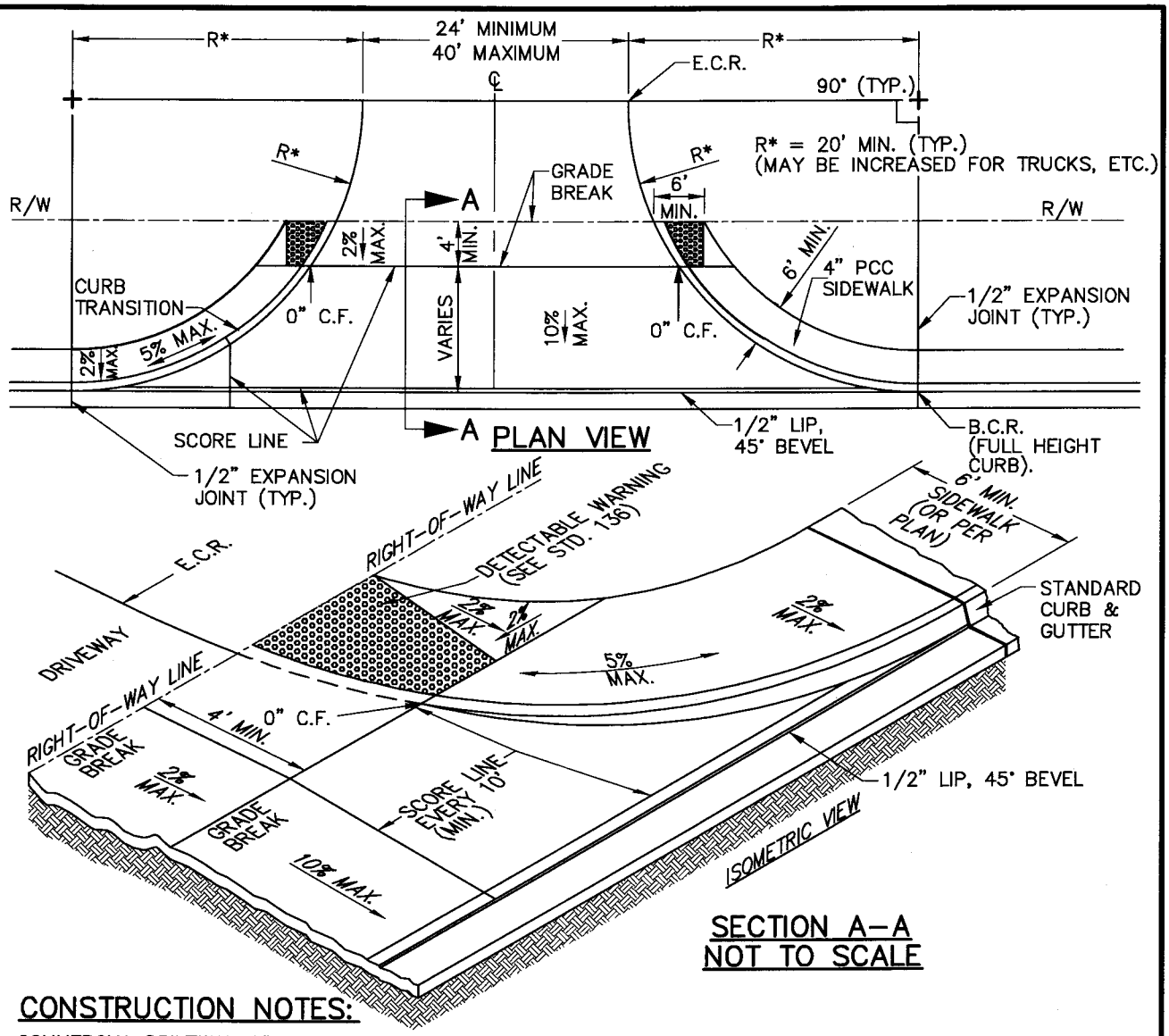

SECTION A–A
NOT TO SCALE

CONSTRUCTION NOTES:

COMMERCIAL DRIVEWAY APPROACH DETAILS TYPES A AND B:

1. DRIVEWAY APPROACHES INCLUDE ALL IMPROVEMENTS SHOWN ON DETAILS FROM BEGINNING OF APPROACH TO END OF APPROACH WITHIN THE PUBLIC R/W.
2. ALL CONCRETE TO BE CLASS 560–C–3250. DRIVEWAYS TO BE 8" (MINIMUM) CONCRETE ON 6" (MINIMUM) CLASS 2 AGGREGATE BASE.
3. THE TOP 12–INCHES OF SUBGRADE SHALL BE 95% (MINIMUM) RELATIVE COMPACTION.
4. EXPANSION JOINTS ARE REQUIRED AT THE BEGINNING AND END OF THE DRIVEWAY APPROACH AND AT THE RIGHT OF WAY. WEAKENED PLANE JOINTS (1.5" DEEP) ARE REQUIRED AT 10' O.C. (MAX.) PERPENDICULAR TO STREET FLOWLINE FOR REMAINDER OF DRIVEWAY APPROACH. SIDEWALK AND CURBS WITHIN DRIVEWAY APPROACH SHALL BE SCORED PER THEIR RESPECTIVE DETAILS.
5. ALL CONCRETE TO RECEIVE A MEDIUM BROOM FINISH.
6. IT IS RECOMMENDED THAT THE "DRIVEWAY APPROACH" BE BUILT PRIOR TO THE "DRIVEWAY" AS THE HEIGHT OF THE IMPROVEMENTS AT THE RIGHT–OF–WAY LINE WILL BE DETERMINED BY THE "DRIVEWAY APPROACH".

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COMMERCIAL DRIVEWAY APPROACH (TYPE B) (SIDEWALK @ CURB)

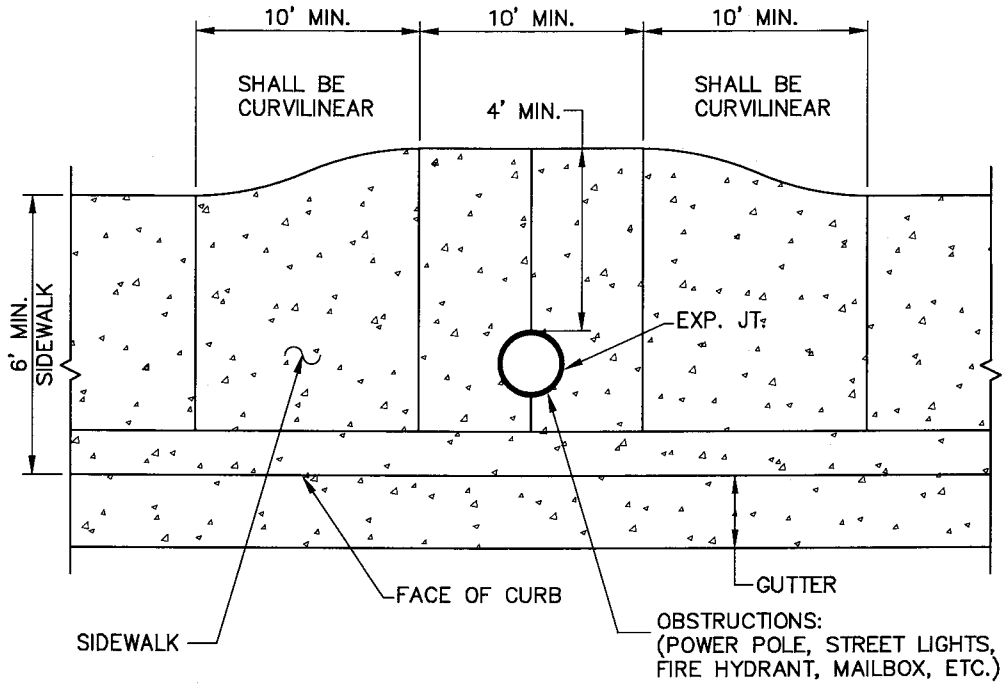
JUNE 2010

STANDARD PLAN NUMBER

130

SHEET 2 OF 2

REVISION	DRAWN BY	DATE



PLAN

NOTES:

1. SIDEWALK SHALL BE WIDENED TO MINIMUM 4' CLEARANCE FOR A MINIMUM LENGTH OF 10'.
2. MINIMUM TRANSITION LENGTH SHALL BE 10'.

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SIDEWALK PLACEMENT AROUND OBSTRUCTIONS

JUNE 2010

STANDARD PLAN NUMBER

135

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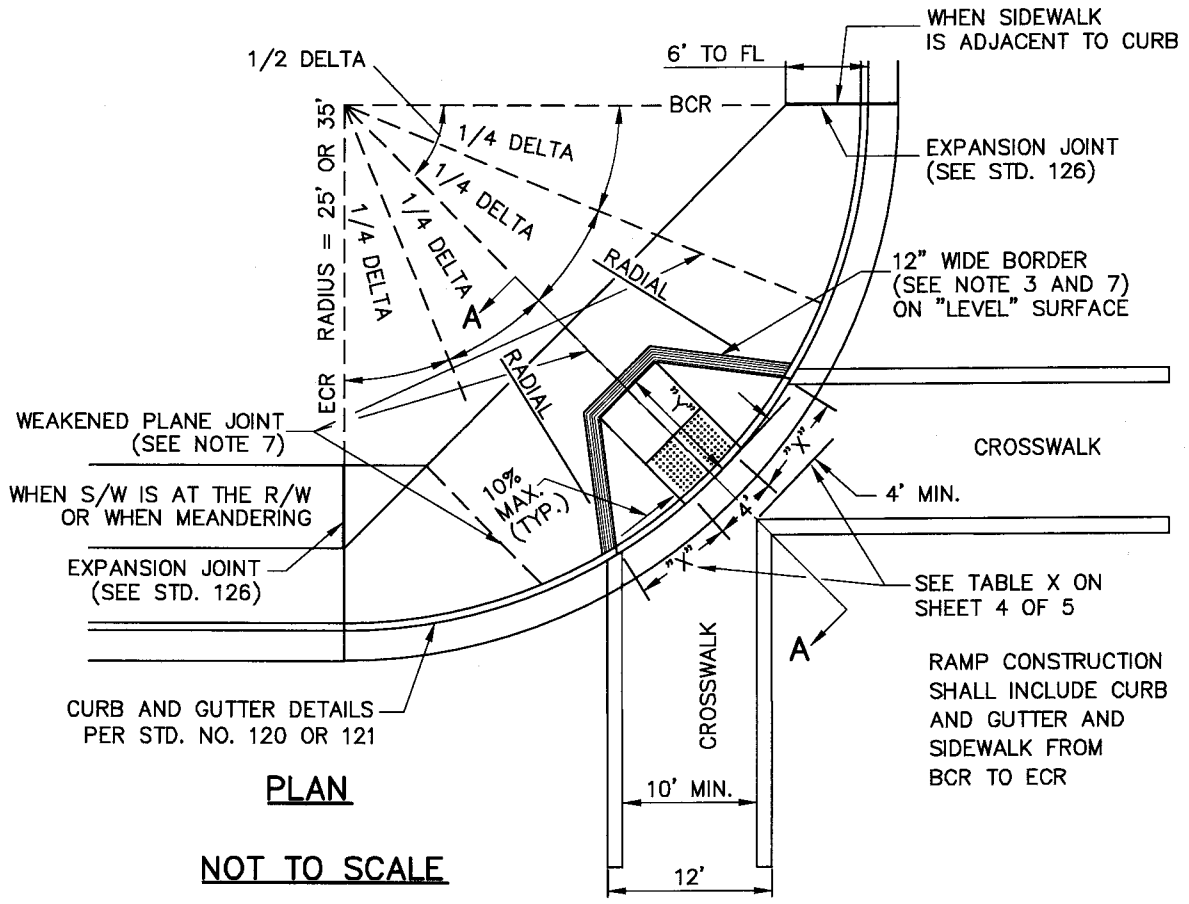

PLAN

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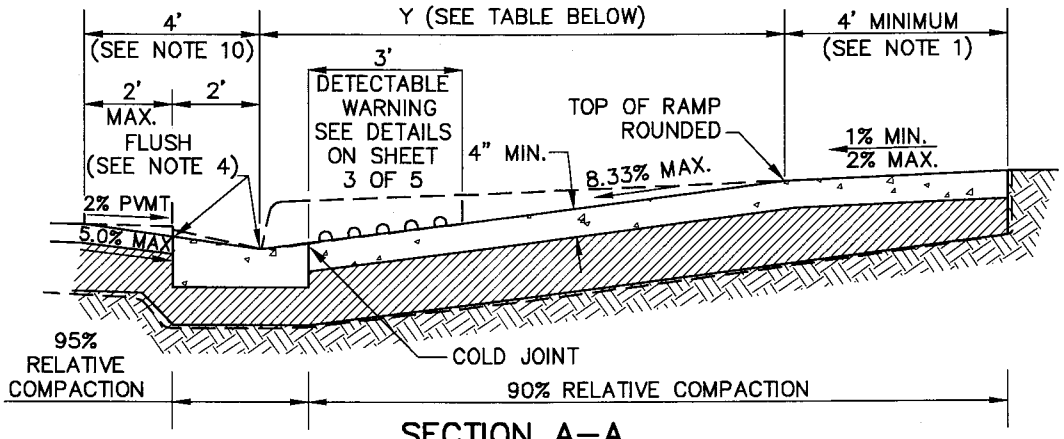

SECTION A–A

TABLE Y*

CF	Y
6"	6'
8"	8'

$$Y^* = \frac{\text{CURB FACE (FT.)}}{8.33\%}$$

* THIS DISTANCE IS APPROXIMATE, GRADE SHALL CONTROL, SEE NOTE 5 ON SHEET 5 OF 5.

CURB RAMP "CASE A" SHALL ALWAYS BE USED EXCEPT WITH PRIOR APPROVAL OF THE CITY ENGINEER.

SEE SHEET 5 OF 5 FOR NOTES.

CITY OF INDIO

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CURB RAMP CASE A

JUNE 2010

STANDARD PLAN NUMBER

136

SHEET 1 OF 5

REVISION	DRAWN BY	DATE

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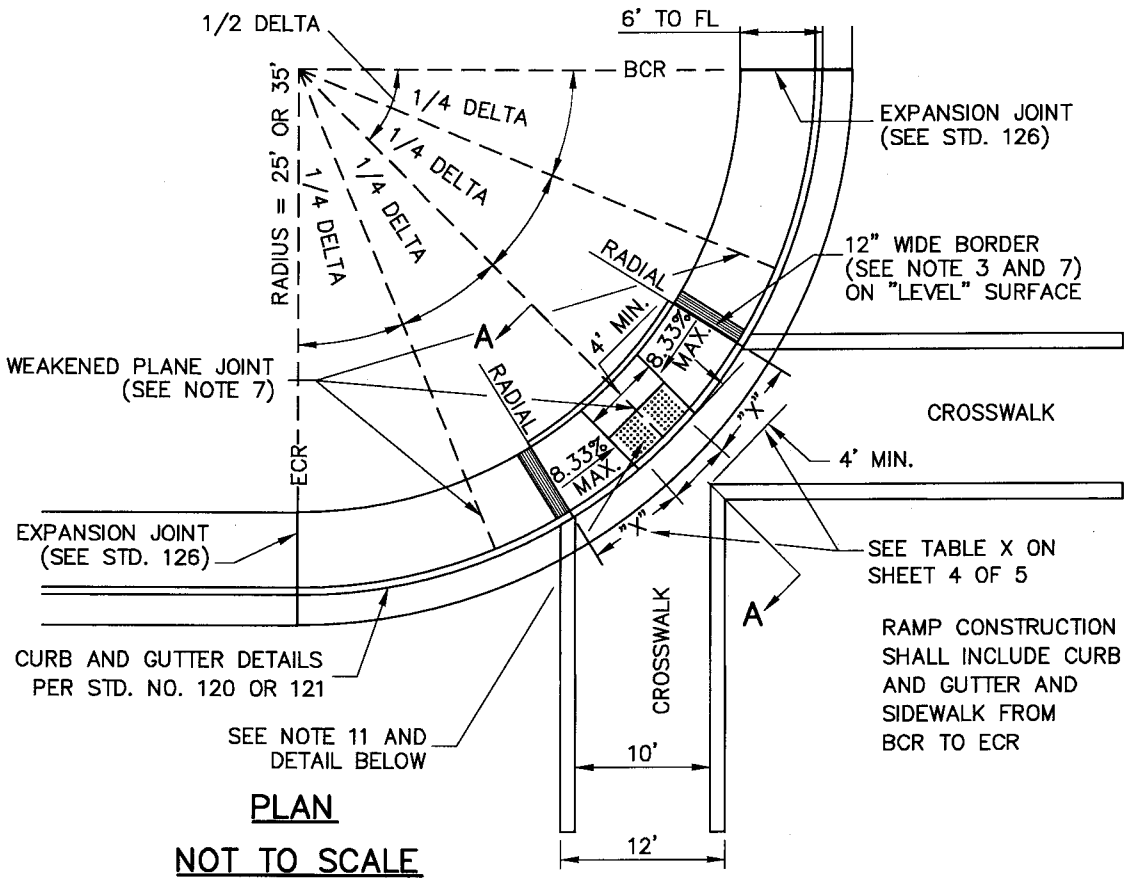
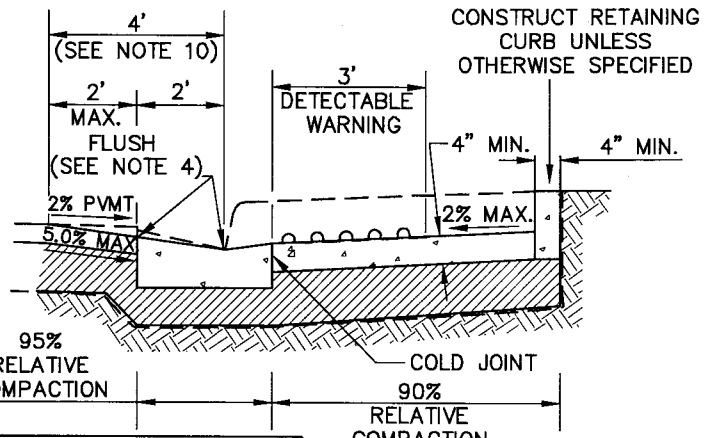


PLAN

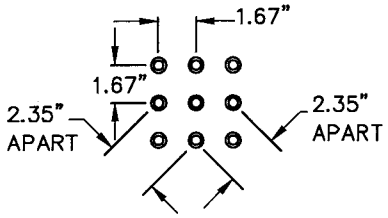
NOT TO SCALE



SECTION A–A

USE OF CURB RAMP "CASE C" SHALL REQUIRE PRIOR APPROVAL OF CITY ENGINEER (GENERALLY THIS IS ONLY USED WHERE R/W IS RESTRICTED).

SEE SHEET 5 OF 5 FOR NOTES.



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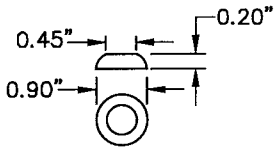

RAISED TRUNCATED DOME
DETECTABLE WARNING SURFACE
SEE NOTE 11

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CITY OF INDIO

CURB RAMP
CASE C

JUNE 2010

STANDARD PLAN NUMBER

136

SHEET 3 OF 5

REVISION	DRAWN BY	DATE

CONSTRUCTION NOTES:

1. IF DISTANCE FROM CURB TO BACK OF SIDEWALK IS TOO SHORT TO ACCOMMODATE RAMP AND 4' LANDING, THEN USE THE CASE "C" RAMP WITH APPROVAL FROM THE CITY ENGINEER; OTHERWISE, CASE "A" RAMP SHALL BE USED.
2. IF SIDEWALK IS LESS THAN 6' WIDE, THE FULL WIDTH OF THE SIDEWALK SHALL BE DEPRESSED AS SHOWN IN CASE C. MINIMUM SIDEWALK WIDTH IS 4' FROM BACK OF CURB.
3. THE RAMP SHALL HAVE A 12" WIDE BORDER WITH GROOVES 1/4" WIDE AND 1/4" DEEP APPROXIMATELY 3/4" ON CENTER. SEE GROOVING DETAIL ON SHEET 4 OF 5. GROOVED BORDER SHALL BE IN "LEVEL" AREA.
4. TRANSITIONS FROM RAMPS TO WALKS, GUTTERS OR STREETS SHALL BE FLUSH AND FREE OF ABRUPT CHANGES.
5. CONTRACTOR SHALL USE "SMART" LEVEL OR OTHER GRADE MEASURING DEVICE(S) DURING CONSTRUCTION AS ACTUAL GRADES WILL CONTROL OVER SPECIFIED DISTANCES.
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 C).
7. CONSTRUCT WEAKENED PLANE JOINTS AT CENTERLINE AND AT QUARTER DELTA WHEN INSIDE RADIUS EQUALS 35', AND AT CENTERLINE AND INSIDE GROOVED BORDER WHEN RADIUS EQUALS 25'. EXPANSION JOINTS ARE REQUIRED AT BCR AND ECR.
8. ALL WORK SHALL MEET LATEST ADA AND STATE OF CALIFORNIA STANDARDS.
9. CONCRETE SHALL BE CLASS 560-C-3250.
10. MAXIMUM SLOPES OF ADJOINING GUTTERS: THE ROAD SURFACE IMMEDIATELY ADJACENT TO THE CURB RAMP AND CONTINUOUS PASSAGE TO THE CURB RAMP SHALL NOT EXCEED 5% WITHIN 4' OF THE BOTTOM OF THE CURB RAMP.
11. DETECTABLE WARNING SURFACES SHALL BE FEDERAL COLOR NUMBER 20109 (COLONIAL RED) AND ARE REQUIRED ON ALL CURB RAMPS THAT ENTER INTO A VEHICULAR TRAVEL WAY.

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CURB RAMP CONSTRUCTION NOTES

JUNE 2010

STANDARD PLAN NUMBER

136

SHEET 5 OF 5

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CITY OF INDIO

STANDARD CROSS GUTTER (LAYOUT)

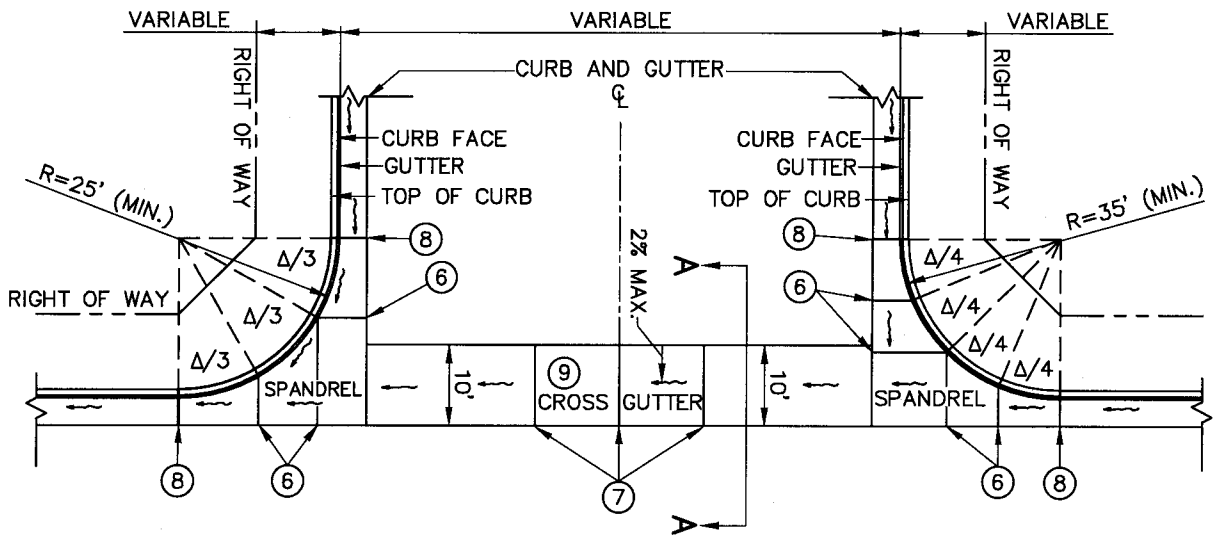
JUNE 2010

STANDARD PLAN NUMBER

137

SHEET 1 OF 2

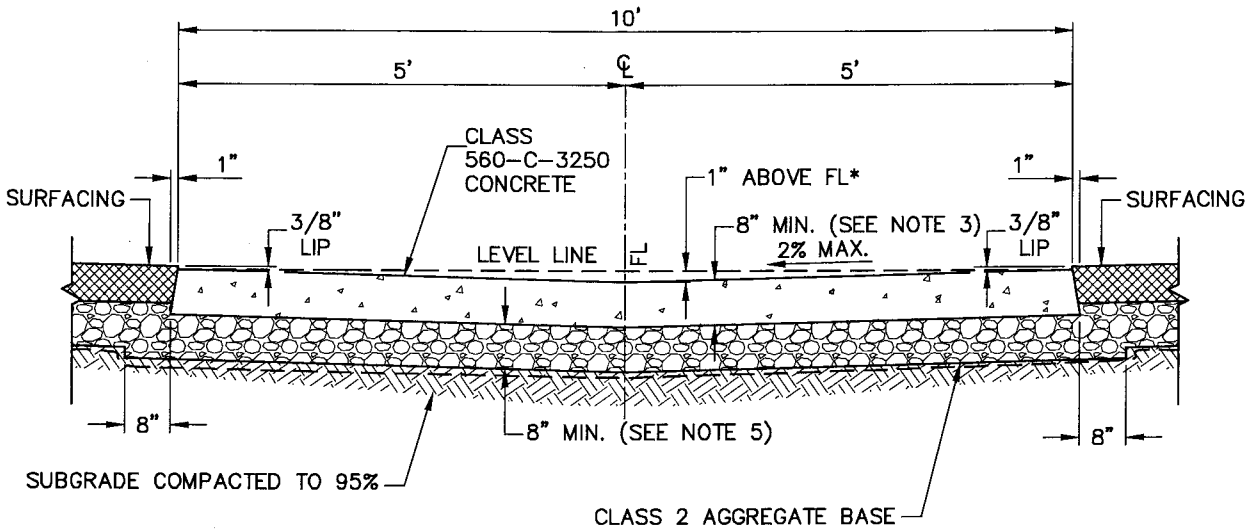
REVISION	DRAWN BY	DATE



NOT TO SCALE

NOTES:

1. THIS CROSS GUTTER STANDARD TO BE USED EXCEPT FOR SPECIAL CIRCUMSTANCES (SEE STANDARD 138).
2. SPANDREL THICKNESS TO BE 8" MINIMUM FOR RESIDENTIAL STREETS AND 10" MINIMUM FOR OTHERS.
3. CROSS GUTTER THICKNESS TO BE 8" MINIMUM FOR RESIDENTIAL STREETS AND 10" MINIMUM FOR OTHERS.
4. ALL CONCRETE CONSTRUCTION SHALL BE CLASS 560-C-3250 CONCRETE.
5. PLACE MINIMUM 8" BASE UNDER ENTIRE SPANDREL AND CROSS GUTTER AREA.
6. WEAKENED PLANE JOINTS PER STANDARD 126 TO BE CONSTRUCTED AT 1/3 POINTS ON 25' RADIUS SPANDRELS, AND AT 1/4 POINTS ON 35' RADIUS SPANDRELS.
7. WEAKENED PLANE JOINTS PER STANDARD 126 AT 10' ON CENTER, MAXIMUM, THRU CROSS GUTTER.
8. CONSTRUCT EXPANSION JOINT AT BCRS AND ECRS.
9. CONSTRUCT CROSS GUTTER PER TYPICAL SECTION ON STD. 137 SHEET 2 OF 2.



* THIS HEIGHT IS APPROXIMATE,
2% MAX. GRADE SHALL CONTROL

CROSS GUTTER (SECTION A-A)
NOT TO SCALE

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DATE

STANDARD CROSS GUTTER (TYPICAL SECTION)

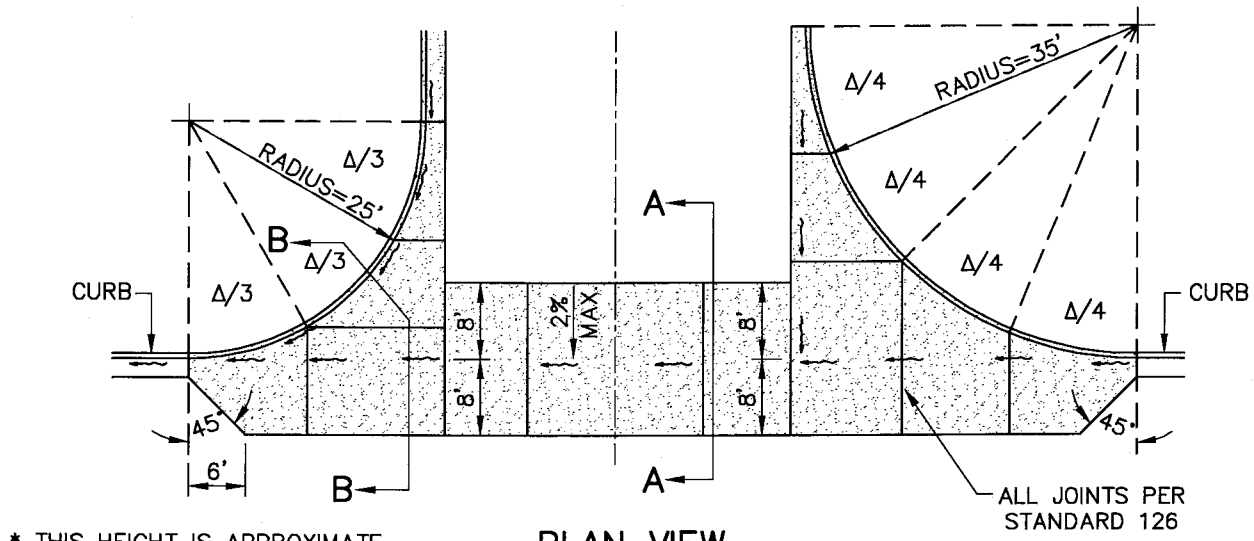
JUNE 2010

STANDARD PLAN NUMBER

137

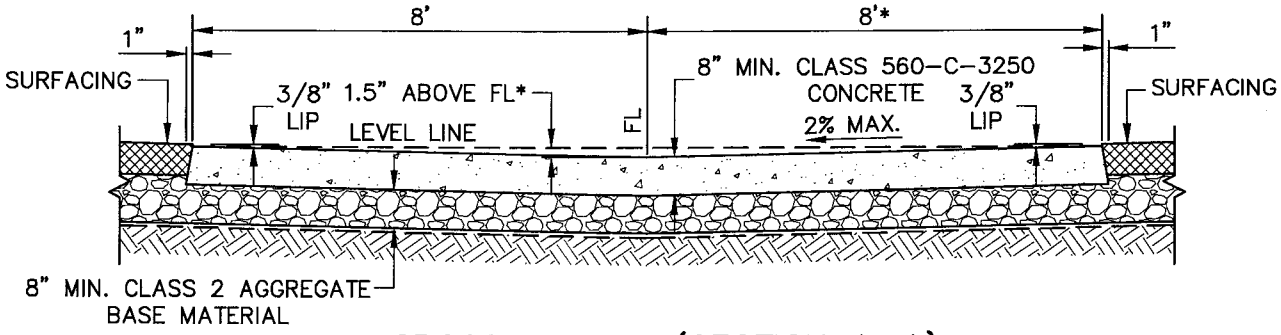
SHEET 2 OF 2

REVISION	DRAWN BY	DATE

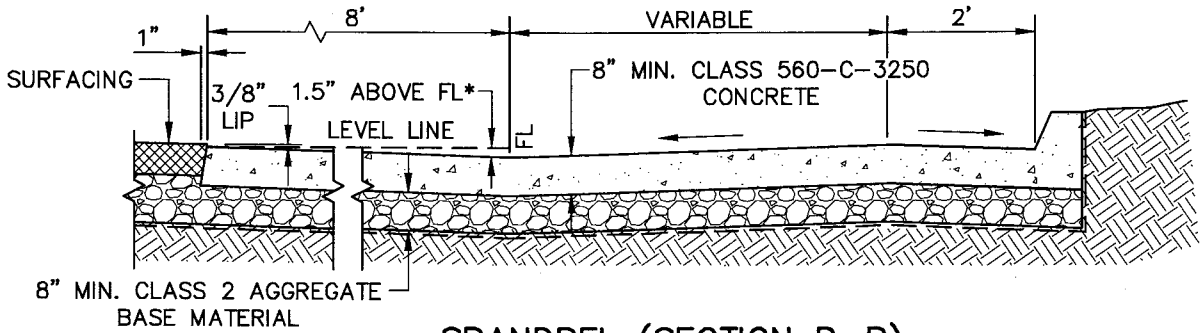


* THIS HEIGHT IS APPROXIMATE, 2% MAX. GRADE SHALL CONTROL

PLAN VIEW



CROSS GUTTER (SECTION A-A)
NOT TO SCALE



SPANDREL (SECTION B-B)
NOT TO SCALE

NOTES:

1. THIS CROSS GUTTER STANDARD TO BE CONSTRUCTED IN AREAS WHERE STREET GUTTERS WILL HAVE CONSTANT OR FREQUENT FLOWS FROM LANDSCAPED PARKWAYS AND MEDIANS, GOLF COURSES, AND AGRICULTURAL RUNOFF AND WHEN STREET GRADIENT IS LESS THAN 0.8%, HOWEVER THIS STANDARD SHALL NOT BE USED WHEN IT WILL CAUSE THROUGH TRAFFIC (PARRALLEL WITH THE CROSS GUTTER FLOW LINE) TO TRAVEL OVER THE CROSS GUTTER. IN THIS SITUATION, A "STANDARD CROSS GUTTER AND SPANDREL" PER STANDARD 137 SHALL BE USED.

2. ALL NOTES FOR STANDARD 137 SHALL APPLY TO THIS STANDARD.

CITY OF INDIO

GRANT D. EKLUND
CITY ENGINEER
RCE 61559
DATE

CITY OF INDIO

SPLASH AREA CROSS GUTTER AND SPANDREL

JUNE 2010

STANDARD PLAN NUMBER

138

REVISION	DRAWN BY	DATE

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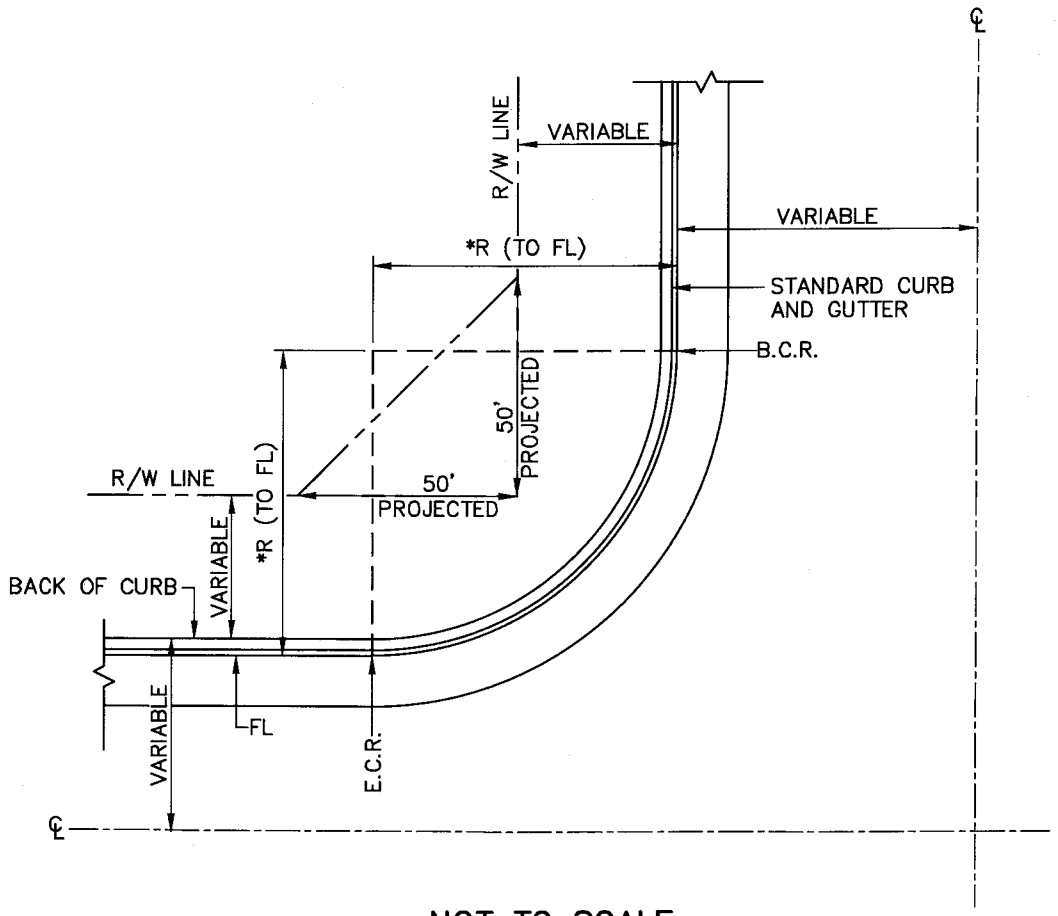

NOT TO SCALE

NOTES:

1. CURB RETURN RADIUS TO FLOWLINE (*R) SHALL BE 25' IF BOTH STREETS HAVE A PROPOSED CURB–TO–CURB WIDTH LESS THAN OR EQUAL TO 40'.
2. CURB RETURN RADIUS TO FLOWLINE (*R) SHALL BE 35' IF EITHER STREET HAS A PROPOSED CURB–TO–CURB WIDTH GREATER THAN 40'.
3. PROPERTY LINE CORNER CUT–BACK SHALL APPLY WHEN CURB RETURN RADIUS TO FLOWLINE (*R) IS 35'.

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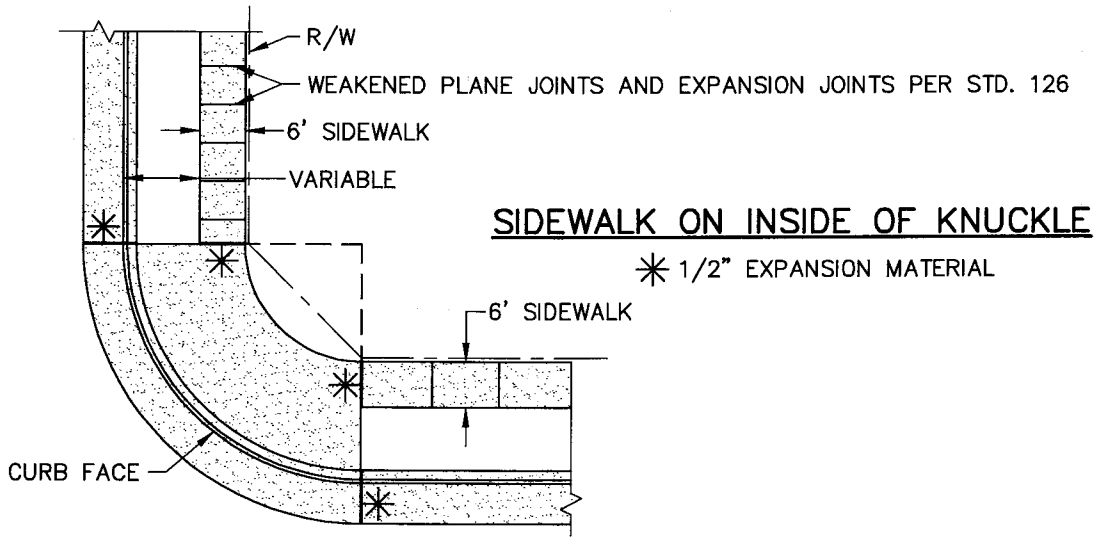
PROPERTY LINE-CORNER CUT-BACK, CURB RETURN RADIUS

JUNE 2010

STANDARD PLAN NUMBER

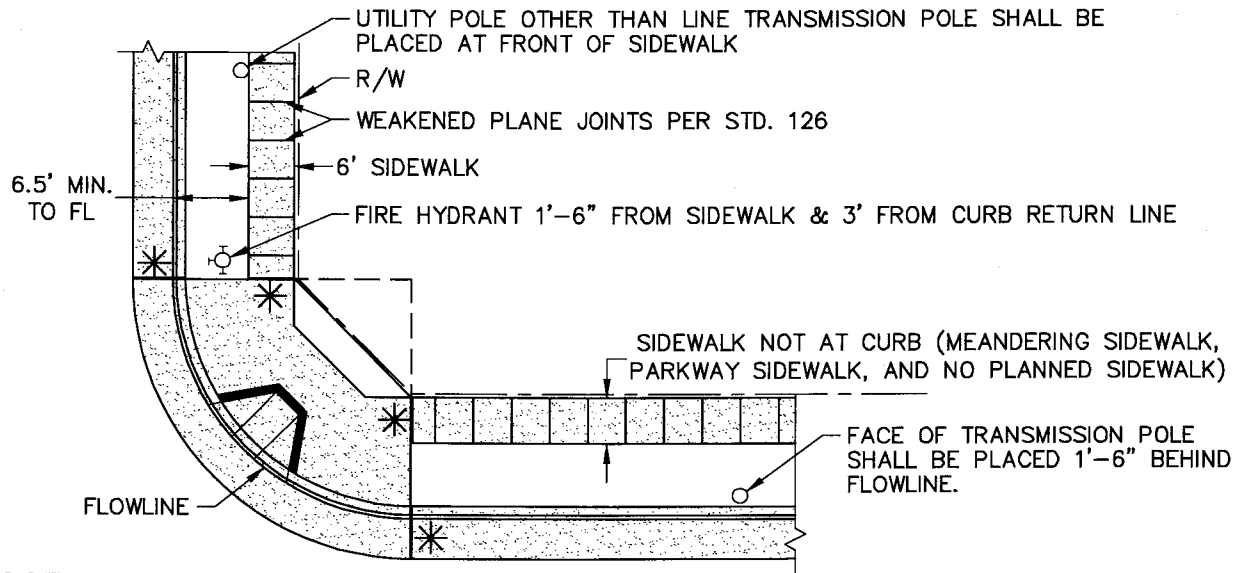
143

REVISION	DRAWN BY	DATE



SIDEWALK ON INSIDE OF KNUCKLE

✳ 1/2" EXPANSION MATERIAL



ACCESS RAMP REQUIREMENTS

SEE STANDARD NO. 136

SIDEWALK

✳ EXPANSION JOINTS PER STD. 126

NOT TO SCALE

NOTE:

1. VARIABLE DISTANCES TO BE SHOWN ON APPLICABLE TYPICAL ROAD SECTION STANDARD.

\Public Works - Engineering Standards\INDIO-149 5/24/2013 3:04 PM

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CITY ENGINEER
RCE 61559 DATE

CITY OF INDIO

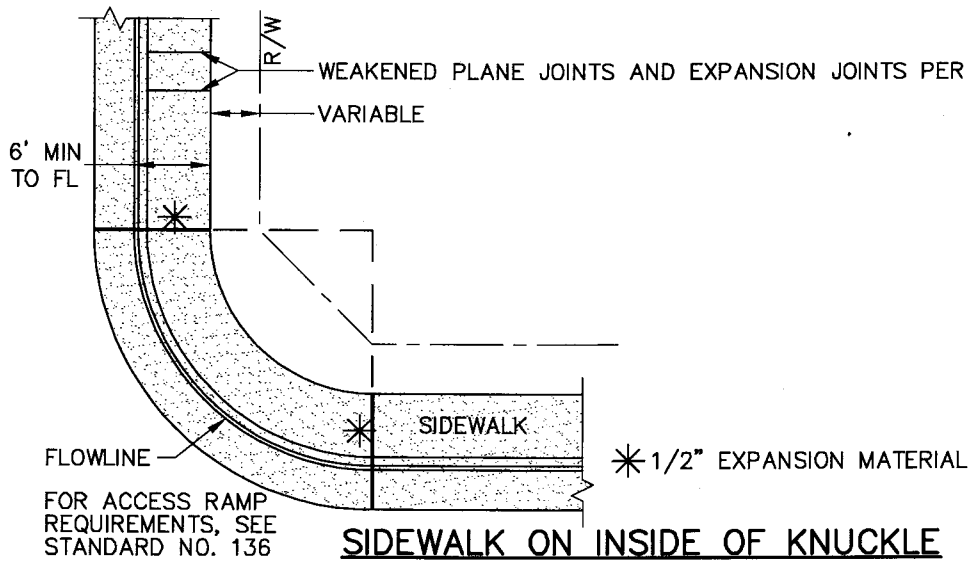
SIDEWALK, FIRE HYDRANT, & UTILITY POLE LOCATION (SIDEWALK AT R/W)

JUNE 2010

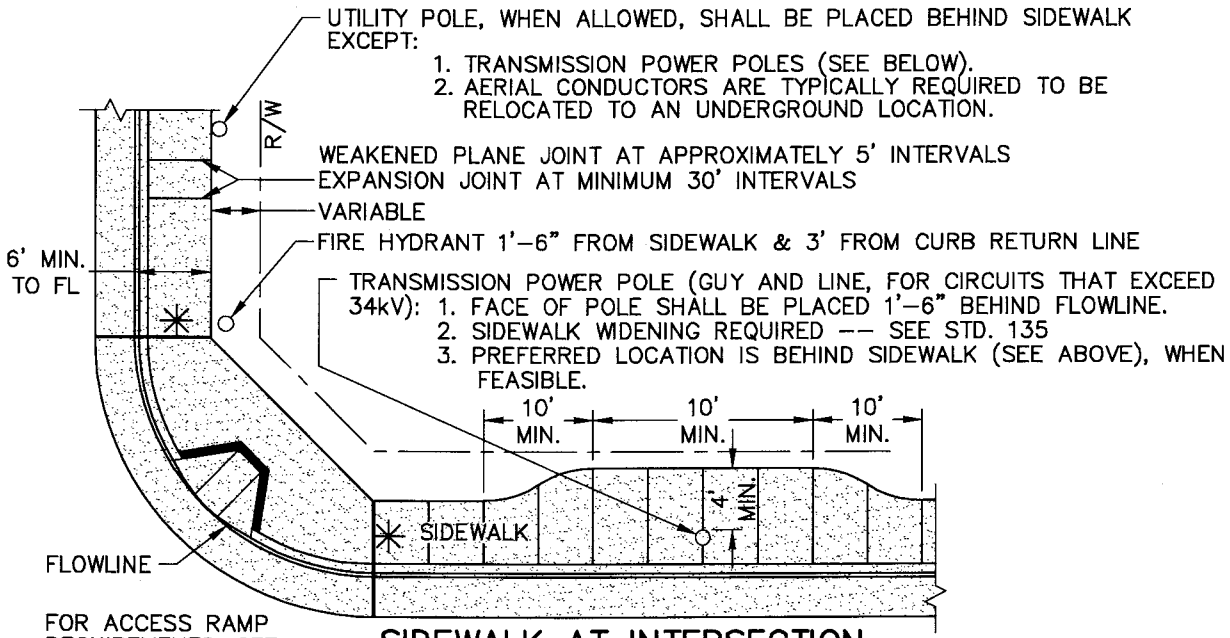
STANDARD PLAN NUMBER

149

REVISION	DRAWN BY	DATE



SIDEWALK ON INSIDE OF KNUCKLE



SIDEWALK AT INTERSECTION

NOT TO SCALE

NOTE:

1. VARIABLE DISTANCES TO BE SHOWN ON APPLICABLE TYPICAL ROAD SECTION STANDARD.

CITY OF INDIO

GRANT D. EKLUND
CITY ENGINEER
RCE 61559

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CITY OF INDIO

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

JUNE 2010

STANDARD PLAN NUMBER

150

REVISION	DRAWN BY	DATE

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STREET STRUCTURAL SECTION

DESIGN REQUIREMENTS FOR PRIVATE AND PUBLIC STREETS

STREET STRUCTURAL SECTIONS SHALL BE DETERMINED BY USING THE CALTRANS METHOD PUBLISHED IN CHAPTER 6 OF THE HIGHWAY DESIGN MANUAL (APPLYING THE FACTOR OF SAFETY (F.S.) TO THE ASPHALT CONCRETE (A.C.) LAYER FOR ALL TRAFFIC INDICES) AND COMPARED AGAINST THE MINIMUM STRUCTURAL SECTION REQUIRED BY THE CITY (SHOWN BELOW). THE MORE STRINGENT REQUIREMENT SHALL APPLY. UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER, ALL STREET SECTIONS SHOWN ON THE IMPROVEMENT PLANS ARE TENTATIVE. SOILS TEST SHALL BE TAKEN AFTER ROUGH GRADING TO DETERMINE THE R-VALUE TO USE IN THE CALCULATION. THE CITY WILL SUPPLY THE TRAFFIC INDEX (T.I.) TO USE. ALL PROPOSED STRUCTURAL SECTIONS (WITH BACK-UP MATERIAL USED IN CALCULATIONS) SHALL BE SUBMITTED TO THE CITY ENGINEER FOR HIS REVIEW AND APPROVAL.

THE FOLLOWING ARE THE CITY'S MINIMUM REQUIREMENTS TO USE IN DETERMINATION OF THE STREET STRUCTURAL SECTION:

STREET CLASSIFICATION	MIN. T.I.	MIN. A.C.	MIN. CL 2 AB	AC LAYER THICKNESSES (TOP/MIDDLE/BOTTOM)
ALLEY	5.5	4.0"	4.0"	1.5" / 2.5"
RESIDENTIAL (PRIVATE)	5.5	4.0"	4.0"	1.5" / 2.5"
COLLECTOR	7.0	4.0"	6.0"	1.5" / 2.5"
SECONDARY	7.5	5.0"	8.0"	2.0" / 3.0"
ARTERIAL	9.0	6.0"	12.0"	1.5" / 2.0" / 2.5"
WIDENED ARTERIAL	9.5	6.0"	14.0"	1.5" / 2.0" / 2.5"

NOTES:

1. FIRST NUMBER SHOWN UNDER AC LAYER THICKNESS COLUMN IS THE SURFACE LAYER.
2. MAXIMUM A.C. LAYER THICKNESS MAY NOT EXCEED 3.0-INCHES.
3. ALL A.C. SECTIONS GREATER THAN 5" SHALL BE PLACED IN AT LEAST THREE (3) LIFTS.
4. BASE: BASE MATERIAL SHALL CONFORM TO CLASS 2 AGGREGATE BASE (AB) SPECIFICATIONS PER SECTION 26 OF CALTRANS STANDARDS SPECIFICATIONS, LATEST EDITION.
5. A.C. LAYERS: ASPHALT CONCRETE (A.C.) SHALL CONFORM TO SECTION 39 OF CALTRANS STANDARD SPECIFICATIONS, LATEST EDITION. ALL BASE LAYER(S) OF A.C. SHALL CONFORM TO THE GRADING FOR 3/4-INCH MAXIMUM, MEDIUM MATERIAL; AND THE SURFACE A.C. LAYER SHALL CONFORM TO THE GRADING FOR 1/2-INCH MAXIMUM, MEDIUM MATERIAL. BITUMINOUS BINDER TO BE MIXED WITH THE MINERAL AGGREGATE SHALL BE STEM REFINED PAVING ASPHALT, PERFORMANCE GRADE (PG) ASPHALT BINDER PG 70-10 CONFORMING TO SECTION 92 OF THE CALTRANS' STANDARD SPECIFICATIONS, LATEST EDITION.
6. THE STRUCTURAL SECTION FOR A PARKING LOT, PRIVATE OR PUBLIC, SHALL BE A MINIMUM OF 4" OF ASPHALT CONCRETE OVER 4" OF CLASS 2 AGGREGATE BASE.

CITY OF INDIO

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CITY ENGINEER
RCE 61559

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STREET STRUCTURAL SECTION DESIGN REQUIREMENTS

JUNE 2010

STANDARD PLAN NUMBER

171

REVISION	DRAWN BY	DATE

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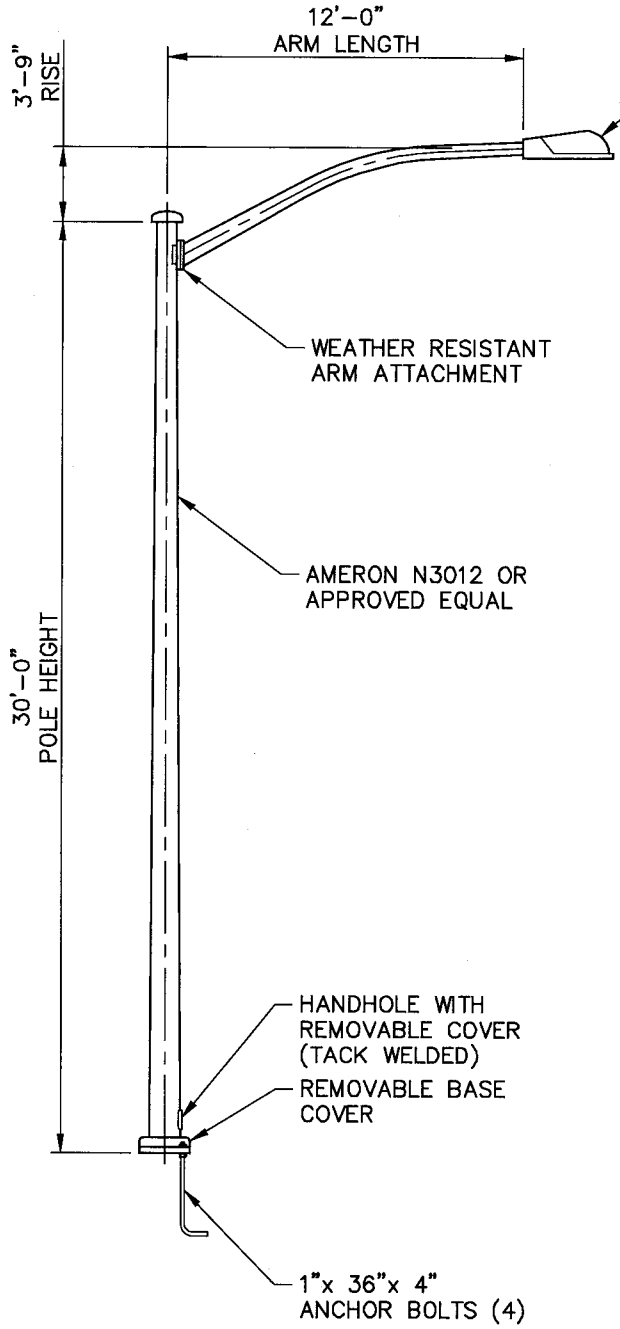

PROFILE

NOTES:

1. ELECTRICAL DISTRICT REQUIREMENTS: THE CITY OF INDIO IS WITHIN THE IMPERIAL IRRIGATION DISTRICT'S (IID) ELECTRICAL SERVICE AREA. CONTACT IID FOR THE SERVICE CONNECTION AND ANY ADDITIONAL DETAILS.

2. POLE SPECIFICATIONS: THE STREET LIGHT POLE, ARM, AND RELATED HARDWARE SHALL BE AMERON N3012, OR APPROVED EQUAL, FOR THE STREET LIGHTS IN NONRESIDENTIAL AREAS.

3. DESIGN PARAMETERS FOR POLE, LAMP, AND RELATED HARDWARE:

   - 100 MPH WIND FACTOR
   - 1.3 GUST FACTOR
   - LUMINAIRE EPA OF 2.0 SQ. FT.
   - LUMINAIRE TO BE FULL CUT-OFF
   - ANCHOR BOLTS SHALL COME WITH TWO NUTS AND TWO WASHERS AND SHALL MEET ASTM F1554 GRADE 55 SPECIFICATION.
   - POLE AND ARM SHALL BE TAPERED AND SHALL BE GALVANIZED IN CONFORMANCE WITH ASTM A123
   - HANDHOLE WITH LOCKING REMOVABLE COVER (4.0" x 6.5" MIN), BASE COVER, AND REMOVABLE POLE CAP REQUIRED WITH THE POLE

4. WIRE AND CONDUIT REQUIREMENTS:

   A. FROM TRANSFORMER TO POLE BASE

      i. GRAY PVC SCH 40, 1-1/2" DIAMETER CONDUIT REQUIRED
      ii. TWO #6 THHN SOLID CONDUCTORS (ONE BLACK AND ONE WHITE) REQUIRED IN CONDUIT FROM TRANSFORMER TO POLE BASE

   B. POLE BASE TO TOP OF POLE

      i. NO CONDUIT REQUIRED
      ii. TWO #8 THHN SOLID CONDUCTORS (ONE BLACK AND ONE WHITE) REQUIRED FROM POLE BASE TO TOP OF POLE

CITY OF INDIO

GRANT D. EKLUND
CITY ENGINEER
RCE 61559
DATE

STREET LIGHT NONRESIDENTIAL AREA

JUNE 2010

STANDARD PLAN NUMBER

201

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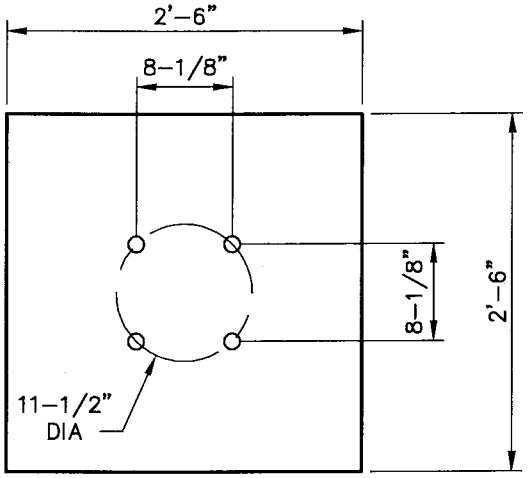
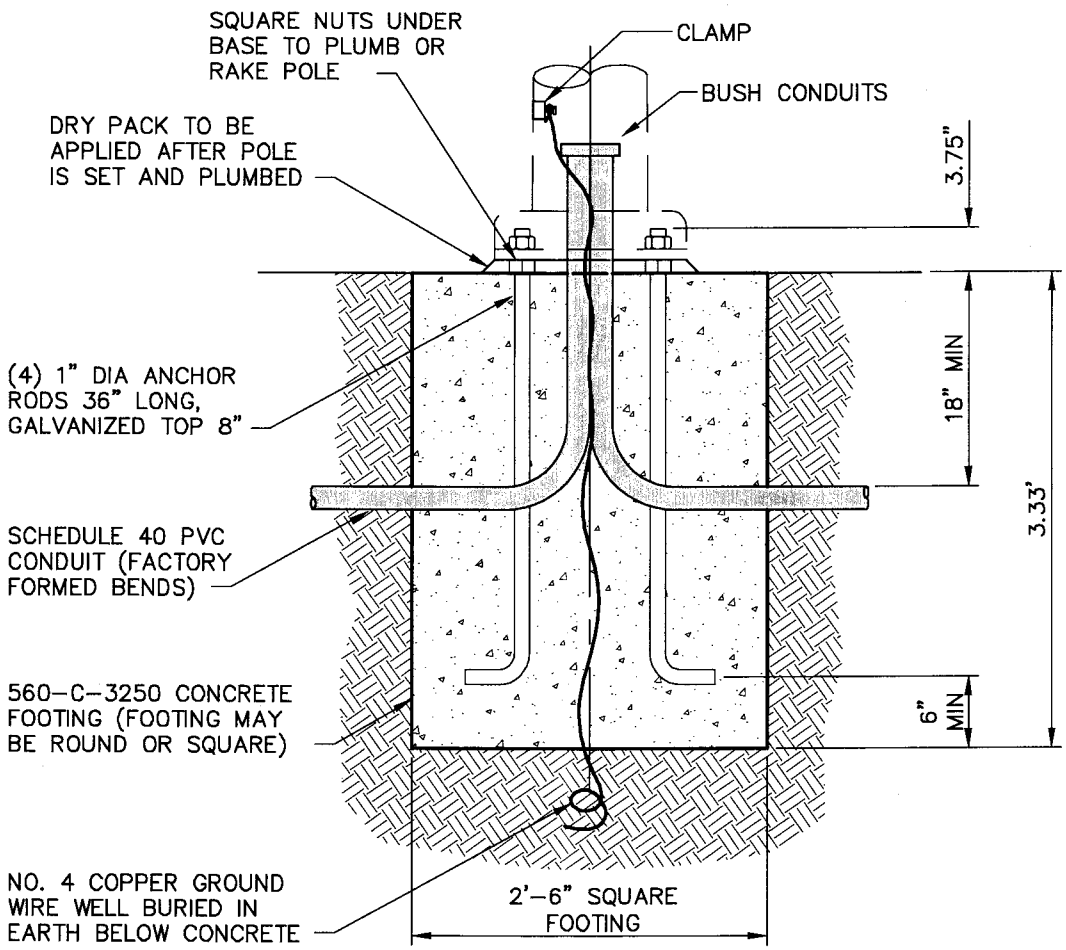
NOTE:

THIS DETAIL APPLIES TO BOTH RESIDENTIAL AND NONRESIDENTIAL STREET LIGHTS



BOLT PATTERN FOR AMERON N308 OR N3012 POLE

PLAN VIEW



PROFILE

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CITY OF INDIO

GRANT D. EKLUND
CITY ENGINEER
RCE 61559

DATE

CITY OF INDIO

FOOTING AND MOUNTING BASE FOR STREET LIGHT

JUNE 2010

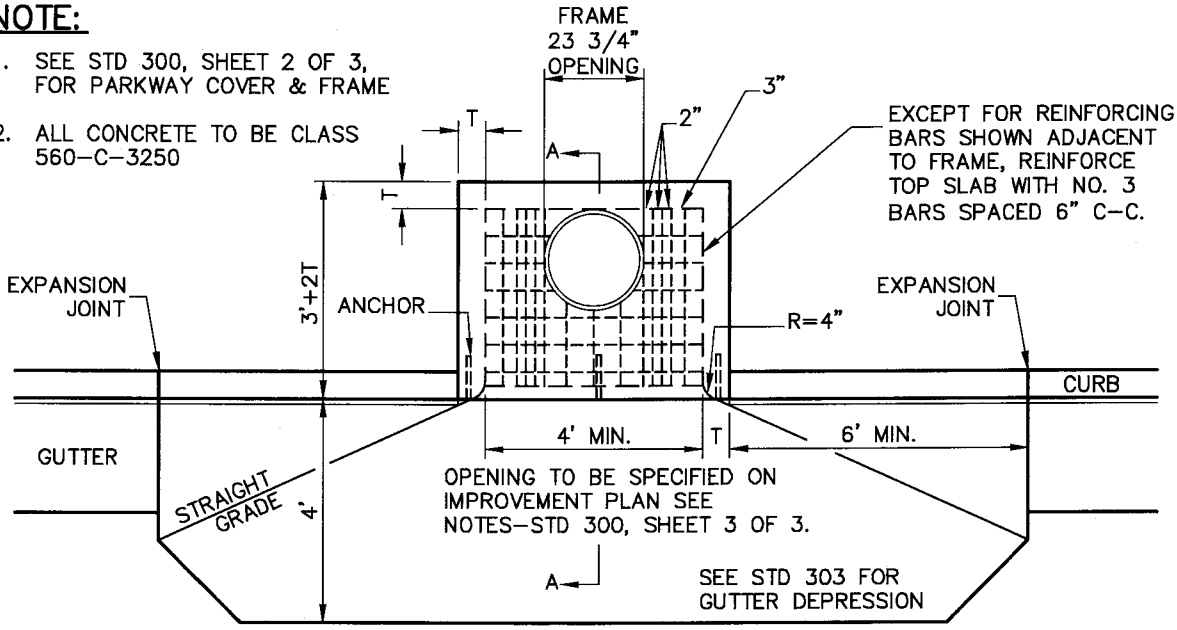
STANDARD PLAN NUMBER

202

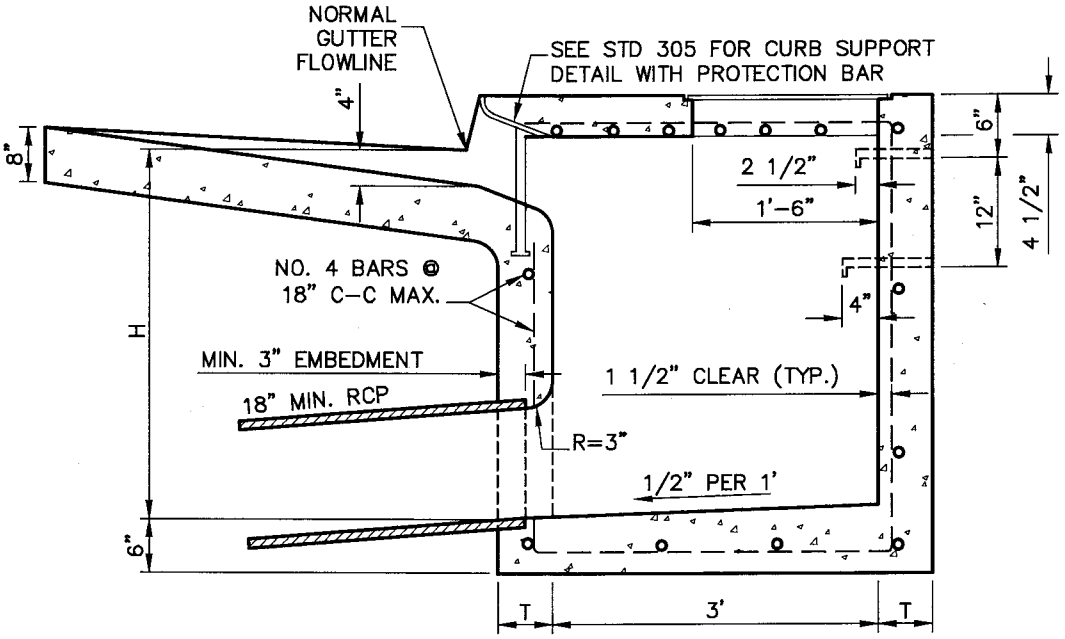
REVISION	DRAWN BY	DATE

NOTE:

1. SEE STD 300, SHEET 2 OF 3, FOR PARKWAY COVER & FRAME
2. ALL CONCRETE TO BE CLASS 560-C-3250



COMPACT BACKFILL TO 90% MIN., WITH THE TOP 12" COMPACTED TO 95% MIN. UNDER PAVING.



SECTION A-A

CITY OF INDIO		STANDARD PLAN NUMBER
GRANT D. EKLUND CITY ENGINEER RCE 61559 DATE	**CURB INLET CATCH BASIN** JUNE 2010	**300** SHEET 1 OF 3

REVISION	DRAWN BY	DATE

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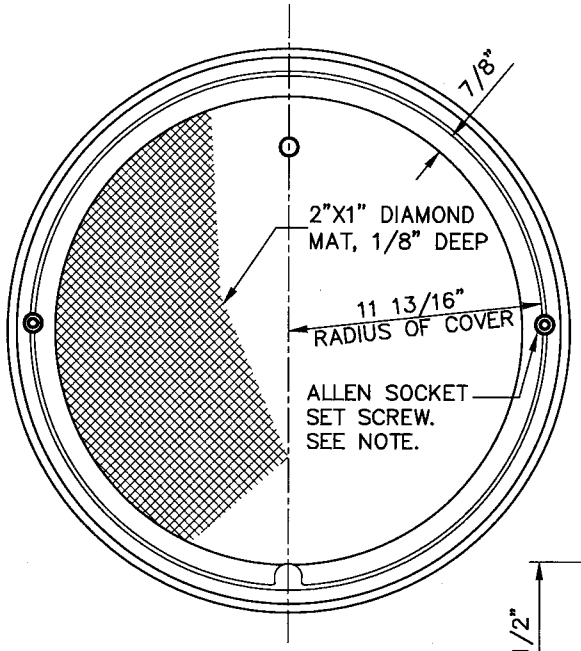
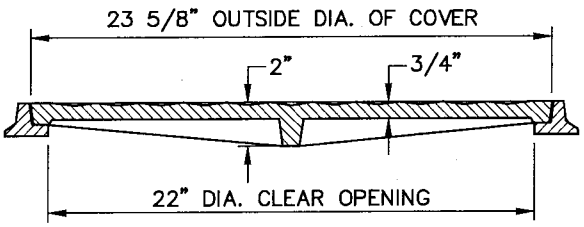
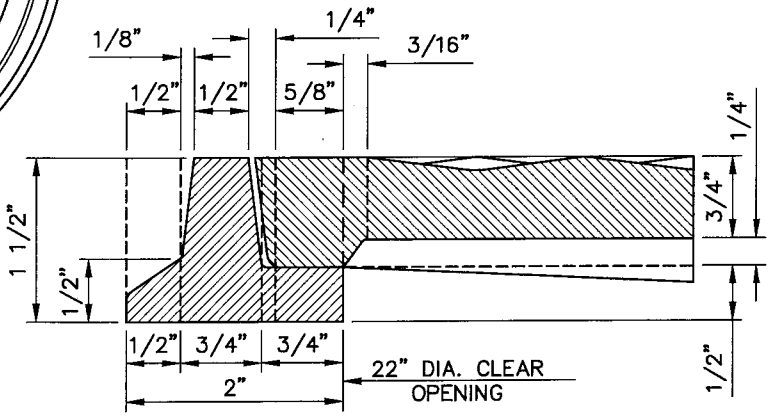


TOP OF MANHOLE FRAME AND COVER

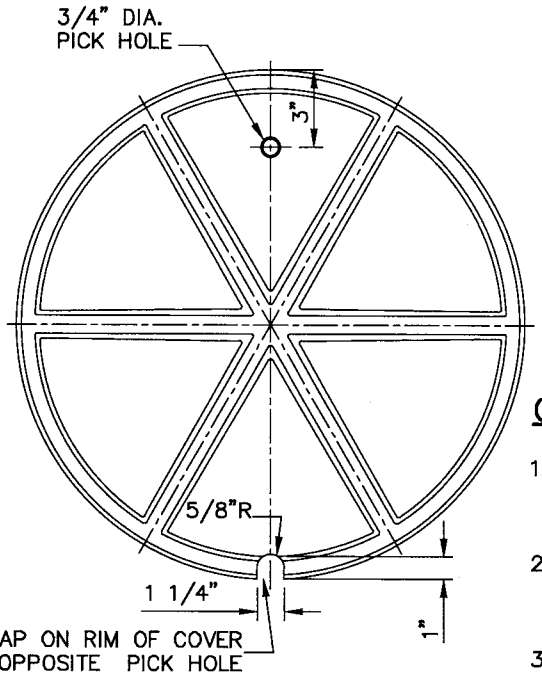
TOTAL WT. = 130 LBS.



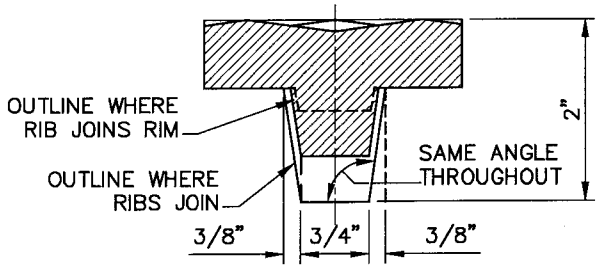
CROSS SECTION THRU FRAME AND COVER



CROSS SECTION THRU RIM



BOTTOM OF MANHOLE COVER



CROSS SECTION THRU RIB AT MID RADIUS

1. FRAME AND COVER SHALL BE GRAY CAST IRON CONFORMING TO THE LATEST A.S.T.M. STANDARD A48, CLASS 30 OR BETTER. GALVANIZE PER A.S.T.M. A385.
2. INSTALL TWO 3/4"X3/4" ALLEN SOCKET SET SCREWS, 90° TO PICK HOLE, IN HOLES DRILLED AND TAPPED 1" IN DEPTH. GALVANIZE PER A.S.T.M. 153.
3. FRAME AND COVER SHALL BE TESTED FOR ACCURACY OF FIT AND SHALL BE MARKED IN SETS BEFORE DELIVERY. RE-TAP FRAME AS REQUIRED TO SUIT SET SCREWS.

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CITY OF INDIO

GRANT D. EKLUND
CITY ENGINEER
RCE 61559
DATE

CITY OF INDIO

CURB INLET CATCH BASIN MANHOLE FRAME AND COVER

JUNE 2010

STANDARD PLAN NUMBER

300

SHEET 2 OF 3

REVISION	DRAWN BY	DATE

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 PLANS.

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' OR LESS

T = 8" IF H IS GREATER THAN 8' AND LESS THAN 20'

H = 3' 6", UNLESS OTHERWISE SPECIFIED

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

MANHOLE SHALL BE PLACED AS SHOWN ON STD 300, SHEET 1 OF 3, 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' MINIMUM UNLESS OTHERWISE SPECIFIED.

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

STEPS SHALL BE 3/4" PLAIN ROUND GALVANIZED STEEL AND SHALL BE ALHAMBRA FDY. A–3320 OR EQUAL.

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', INSTALL 1 STEP 16" ABOVE FLOOR OF BASIN.

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

ALL STEPS SHALL BE 4" FROM THE WALL, EXCEPT THE TOP STEP, WHICH SHALL BE 2 1/2" (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, GRADES, COLOR, FINISH AND SCORING TO EXISTING OR PROPOSED CURB AND WALL ADJACENT TO THE BASIN.

CONCRETE SHALL BE CLASS 560–C–3250. WHEN THE BASIN IS CONTIGUOUS TO A SIDEWALK, THE TOP OF THE BASIN SHALL BE POURED MONOLITHIC WITH THE SIDEWALK USING CLASS 560–C–3250 CONCRETE FOR THE SIDEWALK AND THE TOP OF THE CATCH BASIN FINISHED PER SIDEWALK STANDARDS.

L:\Public Works – Engineering Standards\INDIO–300 (Sheet 3 of 3) 3/15/2011 3:03 PM

CITY OF INDIO

GRANT D. EKLUND
CITY ENGINEER
RCE 61559
DATE

CITY OF INDIO

CURB INLET CATCH BASIN NOTES

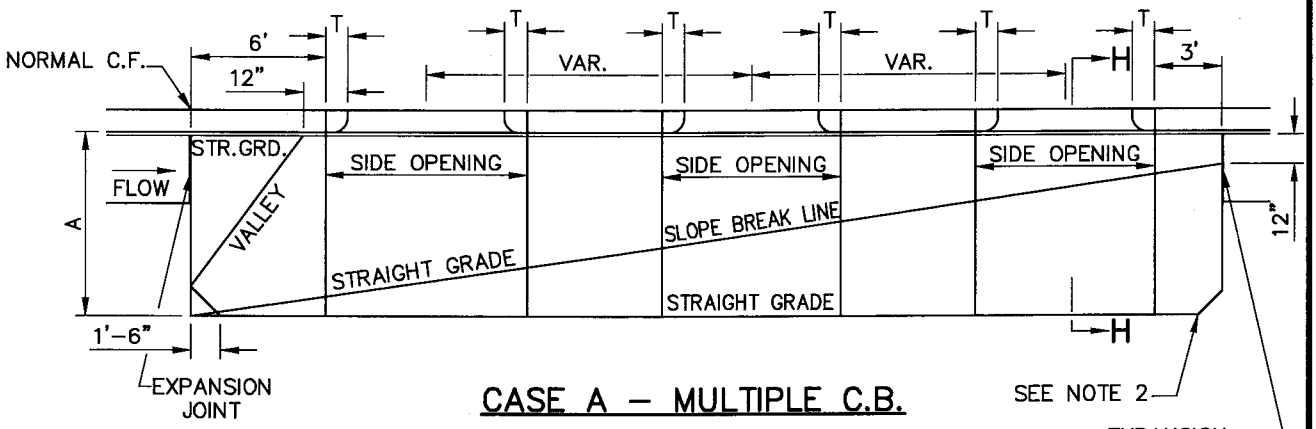
JUNE 2010

STANDARD PLAN NUMBER

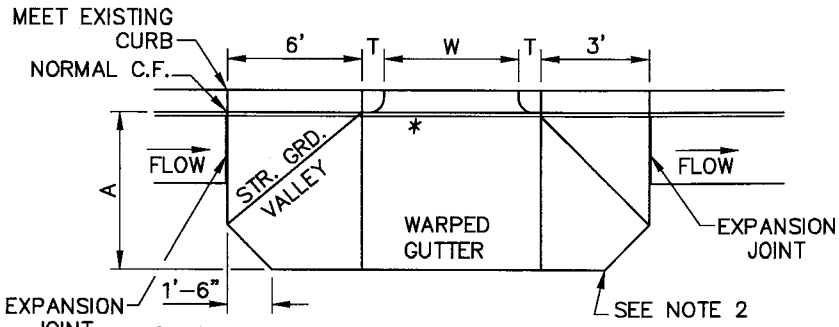
300

SHEET 3 OF 3

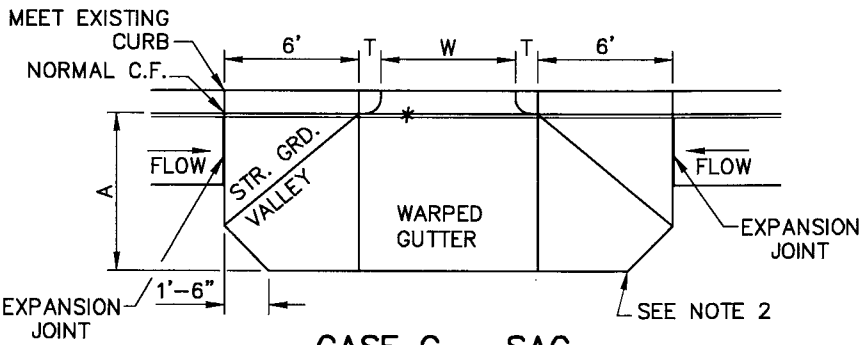
REVISION	DRAWN BY	DATE



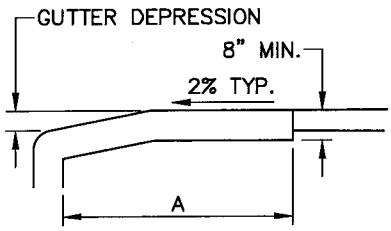
CASE A – MULTIPLE C.B.



CASE B – CONTINUOUS GRADE



CASE C – SAG



SECTION H–H

NOTES:

1. GUTTER DEPRESSION SHALL BE CASE B UNLESS OTHERWISE NOTED ON PROJECT DRAWINGS.
2. ELEVATION OF OUTER CORNERS SHOWN ON PROJECT. IF NO ELEVATIONS ARE SPECIFIED, THE OUTER EDGE GUTTER DEPRESSION SHALL CONFORM TO FINISHED STREET SURFACE.
3. A=4 FEET UNLESS OTHERWISE SPECIFIED. T= (SEE STD 300, SHEET 3 OF 3)
4. WHERE NO CURB EXISTS, CURBS SHALL BE CONSTRUCTED BETWEEN ENDS OF GUTTER DEPRESSION. CURB SECTION SHALL CONFORM TO A STANDARD CURB APPROVED BY THE CITY ENGINEER.
5. DEPRESSION SHALL BE CLASS 560-C-3250 P.C. CONCRETE, PLACED OVER COMPACTED NATIVE OR AGGREGATE BASE MATERIALS. COMPACTION SHALL BE 90% RELATIVE TO MAXIMUM, EXCEPT IN THE TOP 12" WHERE THE RELATIVE COMPACTION SHALL BE 95%, MINIMUM.

* CATCH BASIN OPENING = NORMAL CURB HEIGHT + 4 INCHES UNLESS OTHERWISE SPECIFIED.

CITY OF INDIO

GRANT D. EKLUND
CITY ENGINEER
RCE 61559
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GUTTER DEPRESSION FOR CURB OPENING CATCH BASIN

JUNE 2010

STANDARD PLAN NUMBER

303

REVISION	DRAWN BY	DATE

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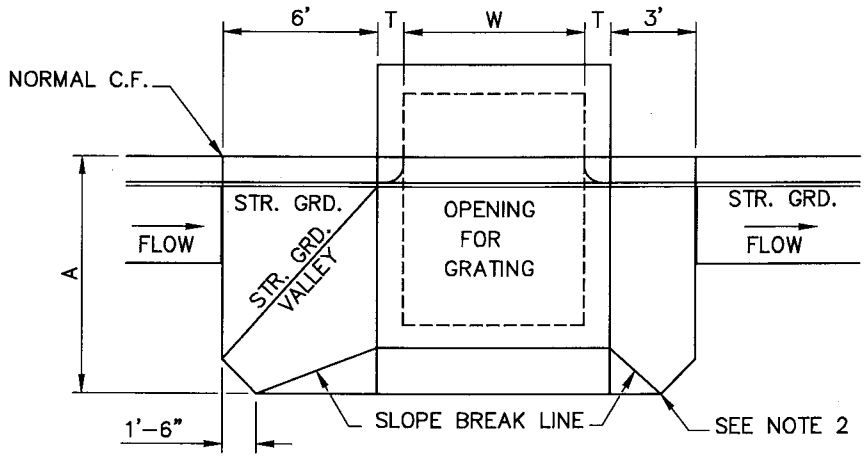
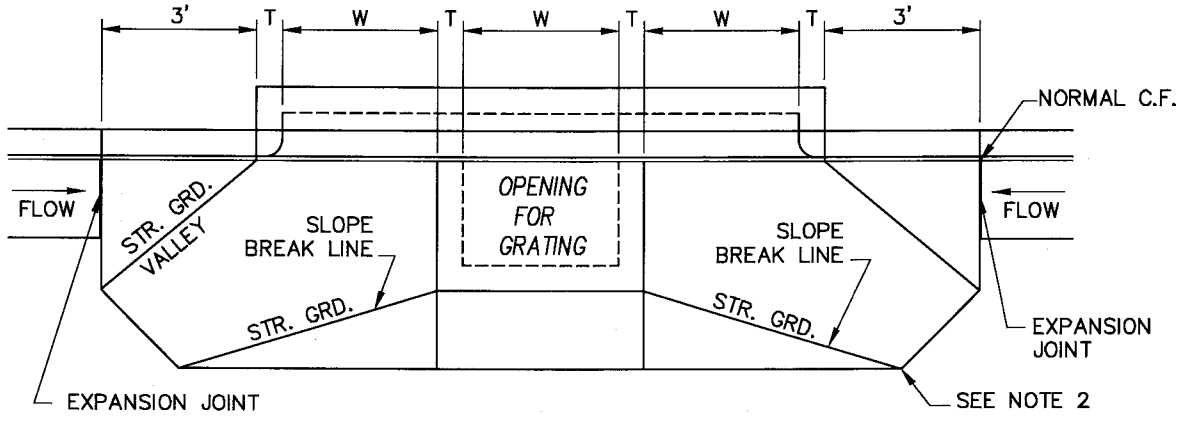


CASE A



CASE B – SAG

NOTES:

1. GUTTER DEPRESSIONS SHALL BE CASE "A" UNLESS OTHERWISE SPECIFIED.
2. ELEVATIONS AT OUTER CORNERS SHOWN ON THE PROJECT DRAWINGS. IF NO ELEVATIONS ARE SPECIFIED, THE OUTER EDGE OF THE GUTTER DEPRESSION SHALL CONFORM TO THE FINISHED STREET SURFACE.
3. A = 4 FEET UNLESS OTHERWISE SPECIFIED.
   T = SEE STD 302B
   W = SEE STD 302B
4. WHERE NO CURB EXISTS, CURB SHALL BE CONSTRUCTED BETWEEN ENDS OF GUTTER DEPRESSION. CURB SECTION SHALL CONFORM TO A STD CURB APPROVED BY THE CITY ENGINEER.
5. DEPRESSION SHALL BE CLASS 560-C-3250 P.C. CONCRETE, PLACED OVER COMPACTED NATIVE OR AGGREGATE BASE MATERIALS. COMPACTION SHALL BE 90% RELATIVE TO MAXIMUM, EXCEPT IN THE TOP 12" WHERE THE RELATIVE COMPACTION SHALL BE 95%, MINIMUM.

CITY OF INDIO

GRANT D. EKLUND
CITY ENGINEER
RCE 61559
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GUTTER DEPRESSION FOR GRATE OPENING CATCH BASIN

JUNE 2010

STANDARD PLAN NUMBER

304

REVISION	DRAWN BY	DATE

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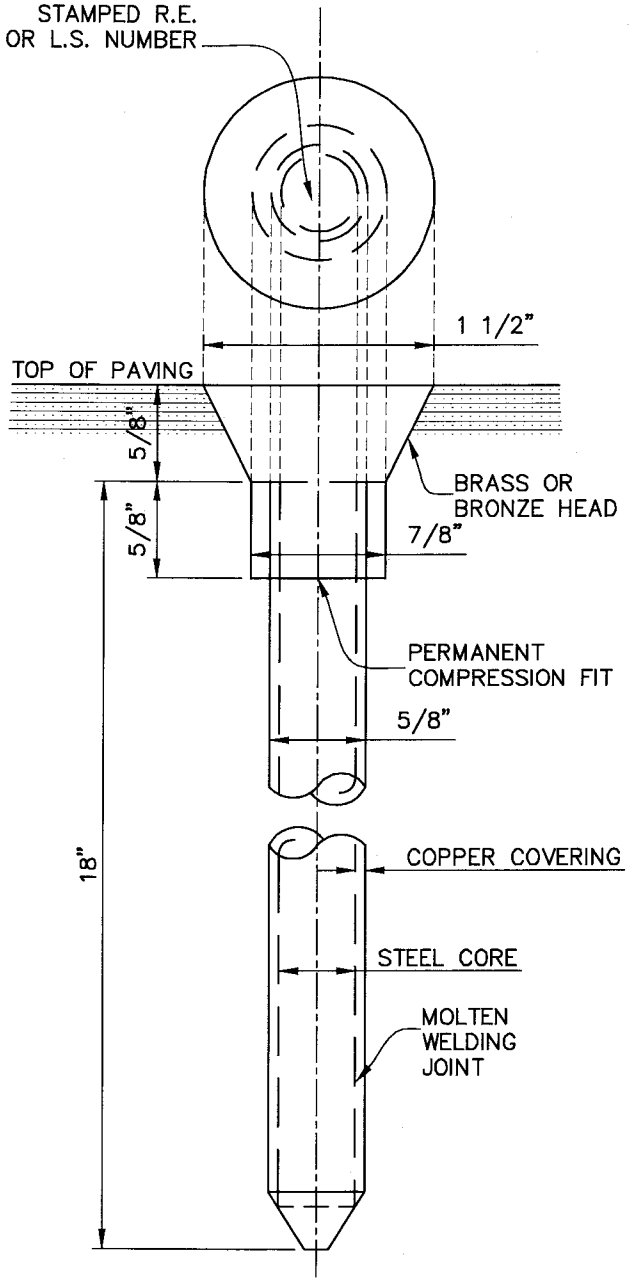

TYPE "1" MONUMENT

NOTE: SEE STD 512, SHEET 2 OF 2, FOR MONUMENT DESCRIPTION AND SCHEDULE

\Public Works – Engineering Standards\INDIO-512 (Sheet 1 of 2) 2/9/2012 3:02 PM

CITY OF INDIO

GRANT D. EKLUND
CITY ENGINEER
RCE 61559

DATE

CITY OF INDIO

MONUMENT DETAILS AND STANDARDS

JUNE 2010

STANDARD PLAN NUMBER

512

SHEET 1 OF 2

REVISION	DRAWN BY	DATE

MONUMENT DESCRIPTION AND SCHEDULE

TYPE "1": TYPE "1" MONUMENTS SHALL BE OF THE TYPE SHOWN ON STD 512, SHEET 1 OF 2. TYPE "1" MONUMENTS SHALL BE USED FOR STREET INTERSECTIONS, CENTERLINE CONTROL INCLUDING ANGLE POINTS AND BEGINNINGS AND ENDINGS OF CURVES, OR ANY OTHER LOCATION WHERE PERMANENT SURVEY POINTS ARE IN PAVED SURFACES.

TYPE "2": TYPE "2" MONUMENTS ARE TO BE TWO INCH (INSIDE DIAMETER) IRON PIPE THIRTY INCHES (30") LONG. A METAL DISC OR BRASS CAP BEARING THE REGISTERED CIVIL ENGINEER OR LAND SURVEYOR NUMBER SHALL BE SECURELY AFFIXED TO THE TOP OF THE PIPE. THE TOP SURFACE OF THE MONUMENT SHALL BE SET AT OR WITHIN 12 INCHES OF THE FINISH SURFACE. TYPE "2" MONUMENTS SHALL BE USED FOR MAP BOUNDARY CONTROL UNLESS TYPE "1" WOULD BE MORE APPROPRIATE.

TYPE "3": TYPE "3" MONUMENTS ARE TO BE ONE INCH (INSIDE DIAMETER) IRON PIPE THIRTY INCHES (30") LONG. A METAL DISC OR BRASS CAP BEARING THE REGISTERED CIVIL ENGINEER OR LAND SURVEYOR NUMBER SHALL BE SECURELY AFFIXED TO THE TOP OF THE PIPE. THE TOP SURFACE OF THE MONUMENT SHALL BE SET AT OR WITHIN 12 INCHES OF THE FINISH SURFACE. TYPE "3" MONUMENTS SHALL BE USED FOR INTERIOR SUBDIVISION LOT CORNERS.

TYPE "4": TYPE "4" MONUMENTS SHALL CONSIST OF A LEAD PLUG OR A STEEL PIN WITH A METAL I.D. DISK SET IN THE TOP OF PERMANENT CONCRETE STRUCTURES SUCH AS CURB, OR MASONRY WALL. COMMONLY CALLED "LEAD & TAG" MONUMENTS, THEY MAY BE USED IN LIEU OF THE FRONT LOT CORNERS, SET IN THE TOP OF CURB ON THE PROLONGATION OF THE SIDE LOT LINES. THEY ALSO MAY BE USED IN LIEU OF REAR PROPERTY CORNERS WHERE THERE IS A MASONRY WALL CLOSE TO THE REAR PROPERTY LINE. THE TAGS WOULD BE SET ON BOTH SIDES OF THE WALL AND NOTED ON THE SUBDIVISION MAP AS "POINTS ON LINE", UNLESS THE TRUE CORNER IS COEXISTENT WITH THE WALL AND THE TAG CAN GO ON TOP OF THE WALL.

ALTERNATIVE MONUMENTS: WITH ADVANCE PERMISSION FROM THE CITY ENGINEER, SOME ALTERNATIVE MONUMENTS MAY BE ACCEPTABLE IF THEY MEET THE FOLLOWING CRITERIA:

1.) MONUMENT MUST BE LOCATABLE WITH A STANDARD FERROUS METAL DETECTOR

2.) LICENSE NUMBERS MUST BE ON AN ATTACHED BRASS DISK OR STAMPED INTO BRASS CAP (PLASTIC CAPS OR PLUGS ARE NOT ACCEPTABLE)

3.) MONUMENT MUST BE A DURABLE METAL, RUST RESISTANT, AND ABLE TO RESIST ANY CASUAL MOVEMENT OR WITHDRAWAL ATTEMPTS.

NOTE: SEE STANDARD 512, SHEET 1 OF 2, FOR MONUMENT DETAILS.
SEE STANDARD 510 FOR TIE-OUT STANDARDS AND STANDARD 511 FOR MONUMENTATION LOCATIONS.