

II J. STREET IMPROVEMENT SPECIFICATIONS

Asphalt Concrete – Type A or Type B shall conform to Section 39, “Asphalt Concrete” of the Caltrans Standard Specification, most current edition accepted by County.

Aggregate Base – Class 2 Aggregate Base shall conform to Section 26, “Aggregate Bases” of the Caltrans Standard Specifications, most current edition accepted by County and these specifications.

Aggregate for Class 2 Aggregate base shall be 1 ½” maximum or at option of the Contractor, ¾” maximum. No Class 2 Aggregate Base utilizing recycled materials shall be permitted for road classification of Minor Collector or above. Recycled Base material may be considered for use in local road with advance permission by the Road Commissioner. All Class 2 Aggregate base shall also comply with the following:

1. A Certificate of Compliance shall be provided to the Engineer prior to use ensuring the Class 2 Aggregate Base Material complies with the provisions of Section 26 of the Standard Specifications.
2. Class 2 Aggregate Base Material for use in this project shall be tested by the contractor at his expense prior to approval for use on the project site by the engineer. Stockpile locations shall also be made available to the engineer to perform his own independent testing. Testing by the contractor shall include R-value, sand equivalent and durability index tests as per the standard Specifications.

Any base material that does not comply with the provisions for testing, gradation, compaction or any other requirement in Section 26 of the Standard Specification or these special provisions shall not be used and if already in place shall be removed by the contractor at his sole expense. Under no circumstances will any material not meeting these specifications be permitted to remain in place.

Concrete Sidewalk – to be added

Concrete Driveways – to be added

Underground Pipe Materials

1. All pipes in road right-of-way shall meet or exceed standards for schedule 40 PVC wall thickness and SDR values. Thirty inches (30”) minimum cover depth is required, except for water lines. Waterlines shall have thirty-six inches (36”) minimum cover depth.
2. Storm drain in road right-of-way shall be either rubber gasket reinforced concrete pipe (RCP) Class III or PVC schedule 40 wall thickness and SDR value minimum. Class IV RCP would be required for applications with less than 30 inches of cover.
3. For all gravity flow PVC applications:
 - 4” diameter PVC – SDR 18 minimum
 - 6” diameter PVC – SDR 21 minimum
 - 8”, 10”, 12” diameter PVC – SDR 26 minimum
 - 18” and greater diameter PVC – SDR 35 minimum
4. For pressure water and pressure sewer applications:
 - *up to and including 12” diameter PVC – Class 150 (DR18) minimum.
 - *greater than 12” diameter PVC – Class 235 (DR 14) minimum.
 - * unless otherwise accepted by appropriate water utility agency (CSA)
5. For other non conveyance PVC applications:
 - 4” Diameter PVC – SDR 18 minimum
 - 6” Diameter PVC – SDR 21 minimum
 - 8”, 10” and 12” Diameter PVC – SDR 26 minimum

18" and greater diameter PVC – SDR 35 minimum

6. Any applications for any underground pipe, which will result in less than 30 inches of cover will require structural assistance. This could include concrete cradle caps or slurry backfill depending upon circumstances. Approval by the County Engineer will be required prior to covering of pipes with insufficient cover.
7. Use of High Density Polyethylene Pipe (HDPE) storm drain may be considered in lieu of PVC or RCP as follows:
 - HDPE pipe shall conform to current American Association of State Highway and Transportation Officials (AASHTO). Pipes with a diameter of 12 inches through 60 inches shall conform to AASHTO designation M-294, Type S (Smooth Interior). Pipe joints to be watertight (WT) conforming to ASTM D 3212 on all publicly maintained drainage facilities.
 - The last 16 feet (typically two sections) at each exposed end of a culvert shall be constructed of reinforced concrete pipe (RCP). A concrete log connection at transition is required.
 - **HDPE is not permitted in areas with running ground water or in areas with unstable trench walls.** An accompanying letter signed by a geotechnical engineering stating HDPE use will not be located within these conditions are required for approval.
 - 30 inches of minimum cover over the top of pipe.
 - Conduit must be encased by one of the following:
 - A. 6 inches minimum thickness envelope of 6-sack concrete.
 - B. Trench restored to road sub-grade with 3 sack sand slurry and 1 foot minimum thickness encasing the pipe.
 - C. Installation of a ¾" crushed rock envelope that shall have a minimum of 8 inches of crushed rock beneath the pipe invert and between the pipe and trench walls with 12 inches of crushed rock on the top of the pipe. The crush rock shall be encapsulated in a geo-textile filter fabric envelope to prevent migration of soil fines into the void spaces in the crushed rock. The fabric shall cover the trench bottom, sidewalls, and shall be folded over the top of the crushed rock to create a double layer of material. The remaining backfill shall be suitable backfill meeting material as described as follow:

BACKFILL FOR HDPE TRENCHES: All backfill for trenches opened to place HDPE pipe shall be compacted. Backfill material shall be either suitable job excavated material or suitable material furnished by the Contractor as described as follow:

Compacted backfill material under road surfaces, road shoulders, parking areas and lawn areas shall be finely divided and free from debris, organic material and stones larger than 3 inches in greater dimension. Compacted backfill material shall be placed in uniform layers not exceeding 8-inches in uncompacted thickness. Increased layer thickness may be permitted for noncohesive material if the Contractor demonstrates to the satisfaction of the County that the specified compacted density will be obtained. The method of compaction and the equipment used shall be appropriate for the material to be compacted and shall not transmit damaging shocks to the pipe.

Trenching across or within the County of Imperial Road R/W shall be backfilled using Class II base (as described in the May, 2006 edition of California Department of Transportation Standard Specification Section 26).

Specific backfill gradation requirements are as follows:

100 percent passing 3" sieve
90-100 percent passing 2" sieve
40-90 percent passing No. 4 sieve
0-25 percent passing No. 200 sieve
Sand equivalent must be 21 Min.

No native soil removed from trenches shall be used for backfill purposed without approval of the County of Imperial Director of Public Works. Backfill shall be compacted to 90 percent of maximum density. Finished surface shall be as described in Detail DWG No. 505 and should meet minimum road structural section as per road classification.

- Any deviation from above conditions may be considered on a case-by-case basis, subject to Director of Public Works' approval.

II K. **MISCELLANEOUS STANDARDS**

1. Roadway lighting
 - a. All developments shall provide street lighting as required by the Utility Agency and/or the County Director of Public Works. Additionally all street lighting electrical appurtenances shall have Imperial Irrigation District (IID) written approvals.
2. Intersections – to be added

END OF SECTION II K