

Photovoltaic Panel Structure  
and Parking Lot Addition  
Shasta Community Health Center  
Redding, CA

SECTION 02630 - STORM DRAINAGE

**PART 1 - GENERAL**

1.01 SUMMARY

- A. Contractor shall furnish and install gravity-flow, nonpressure storm drainage, with the following components, including all accessories for a complete installation:

1. Storm drainage piping, fittings, and accessories.
2. Connection of building subdrainage system to site storm drainage system.
3. Catch basin, paved area drainage, manhole access, site surface drainage, and miscellaneous concrete structures.
4. Site drainage system for planting areas.

1.02 RELATED SECTIONS

- A. Section 02300 – Earthwork

1.03 REFERENCES

- A. Standard Specifications for Public Works Construction (SS) dated 2006, Green Book
- B. City of Redding Construction Standards.

1.04 DEFINITIONS

- A. HDPE: High density polyethylene.
- B. PVC: Polyvinyl chloride plastic.

1.05 SUBMITTALS

- A. Submit documents showing materials to be used.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Do not store plastic pipe and fittings in direct sunlight.
- B. Protect pipe, pipe fittings, and seals from dirt and damage.

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- C. Handle manholes according to manufacturer's written rigging instructions.
- D. Handle catch basins according to manufacturer's written rigging instructions.

1.07 PROJECT CONDITIONS

- A. Interruption of Existing Storm Drainage Service: Do not interrupt service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary service according to requirements indicated:
  - 1. Notify Project Manager no fewer than two days in advance of proposed interruption of service.
  - 2. Do not proceed with interruption of service without Owner's written permission.

**PART 2 - PRODUCTS**

2.01 STORM DRAIN PIPE MATERIALS

- A. All storm drain materials shall conform to City of Redding Construction Standards.

2.02 AREA DRAINS – As specified on the plans.

2.03 CLEANOUTS

- A. Cleanouts: As shown on the plans.

2.04 MANHOLES

- A. Standard Precast Concrete Manholes shall conform to City of Redding Construction Standards

2.05 CATCH BASINS

- A. Standard Precast Concrete Catch Basins:
  - 1. Required: 4-inch (minimum) thick cast-in-place concrete base, with minimum slope of 2 percent slope toward outlet.
- B. Catch basins shall conform to City of Redding Construction Standards as specified on the plans.

## 2.06 STORMWATER INLETS

- A. Curb Inlets: Made with vertical curb opening, of materials and dimensions according to City of Redding Construction Standards.
- B. Gutter Inlets: Made with horizontal gutter opening, of materials and dimensions according to City of Redding Construction Standards. Include heavy-duty frames and grates.
- C. Combination Inlets: Made with vertical curb and horizontal gutter openings, of materials and dimensions according to City of Redding Construction Standards. Include heavy-duty frames and grates.
- D. Frames and Grates: Heavy-duty frames and grates according to City of Redding Construction Standards.

## **PART 3 - EXECUTION**

### 3.01 EARTHWORK

- A. Excavation, trenching, and backfilling are specified in Division 2 Section "Earthwork."

### 3.02 PIPING INSTALLATION

- A. General Locations and Arrangements: Drawing plans and details indicate general location and arrangement of underground storm drainage piping. Location and arrangement of piping layout take design considerations into account. Install piping as indicated, to extent practical. Where specific installation is not indicated, follow piping manufacturer's written instructions.
- B. Install piping beginning at low point, true to grades and alignment indicated with unbroken continuity of invert. Place bell ends of piping facing upstream. Install gaskets, seals, sleeves, and couplings according to manufacturer's written instructions for use of lubricants, cements, and other installation requirements.
- C. Install manholes for changes in direction unless fittings are indicated. Use fittings for branch connections unless direct tap into existing sewer is indicated.
- D. Install proper size increasers, reducers, and couplings where different sizes or materials of pipes and fittings are connected. Reducing size of piping in direction of flow is prohibited.
- E. Install gravity-flow, nonpressure drainage piping according to the following:
  - 1. Install piping pitched down in direction of flow, at minimum slope of 1 percent, unless

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- otherwise indicated.
2. Install piping 18-inch and larger with restrained joints at tee fittings and at changes in direction. Use corrosion-resistant rods, pipe or fitting manufacturer's proprietary restraint system, or cast-in-place concrete supports or anchors.
  3. Install piping with 36-inch minimum cover.
  4. Install PVC sewer piping according to ASTM D 2321 and ASTM F 1668.

3.03 CLEANOUT INSTALLATION

- A. Install cleanouts and riser extension from storm drain pipe to cleanout at grade.
- B. Set cleanout frames and covers in concrete pavement with tops flush with pavement surface.

3.04 DRAIN INSTALLATION

- A. Install type of drains in locations indicated.
- B. Embed drains in 4-inch minimum depth of concrete around bottom and sides.
- C. Set drain frames and covers with tops flush with pavement surface.

3.05 MANHOLE INSTALLATION

- A. General: Install manholes, complete with appurtenances and accessories indicated.
- B. Install precast concrete manhole sections according to ASTM C 891.
- C. Set tops of frames and covers flush with finished surface of manholes that occur in pavements.

3.06 CATCH BASIN INSTALLATION

- A. Construct catch basins to the grades shown on the plans.

3.07 CLEANING

- A. Clean interior of piping of dirt and superfluous materials.

END OF SECTION 02630