

Section 1412

1 Place the top of the box on the same grade as the surrounding area. Perform backfilling with
2 sufficient care that no part of the junction box, conduit or duct is displaced or moved out of
3 alignment. Backfill beneath and around the box to at least 12" using #67 washed stone
4 aggregates in conformance with Section 545 and Section 1005.

5 Locate junction boxes for best routing of conduit and duct and to minimize drainage
6 problems. Do not locate boxes in useable shoulders or pavements or other areas where they
7 may be subjected to traffic loadings.

8 Stub the ends of conduit and duct up vertical as near the top of the box as practical and seal.
9 Arrange wiring so that it will not lay in the bottom of the box.

10 Install cast-metal (BR) boxes and arrange conduits and ducts to best fit field conditions.
11 During the construction of the median barrier reinforcement, accurately space and securely
12 attach Type BR junction boxes and conduits inside the reinforcement. Bond junction box to
13 the reinforcement in accordance with NEC Article 250.52. Place boxes with covers flush
14 with surface of concrete (generally traffic side of median barrier).

15 Place mastic between the cast metal box frame and the cast concrete barrier, as shown on
16 plans to allow easy replacement of the frame.

17 **1411-4 MEASUREMENT AND PAYMENT**

18 *Electrical Junction Boxes* ____ will be measured and paid as the actual number of the
19 appropriate type and size junction boxes installed and accepted. Payment for the conduit,
20 duct and wiring will be paid under other contract items. Items used for splicing are incidental
21 to the junction boxes.

22 Payment will be made under:

Pay Item	Pay Unit
Electrical Junction Boxes ____	Each

23 **SECTION 1412**
24 **UNDERPASS LIGHTING**

25 **1412-1 DESCRIPTION**

26 Furnish and install wall mounted and/or pendant mounted luminaires with electrical circuitry,
27 for underpass lighting at locations shown in the plans. Work includes, but is not limited to,
28 furnishing and installing underpass luminaires with lamp, ballast and mounting hardware as
29 well as furnishing and installing circuit breakers and enclosure, pull boxes, conduit,
30 conductors, expansion fittings, anchors, straps and ground rod.

31 **1412-2 MATERIALS**

32 Refer to Division 10.

Item	Section
Conduit	1091-3
Wire and Cable	1091-2

33 Use luminaires that are listed as "Suitable for Wet Locations" according to UL Standard 1572,
34 with sealed and filtered optical assemblies. Use high power factor ballasts that are completely
35 pre-wired integral units, for reliable starting and operating of high pressure sodium lamps
36 at -40°F ambient temperature. Use heavy-duty mogul base lamp sockets, with split shell
37 tempered brass lamp grips and a free-floating, spring-loaded center contact. Use the
38 luminaire type, wattage, voltage and IES illumination distribution pattern as shown in the
39 plans.

1 Provide Type WM luminaires that are wall mounted, with cast aluminum housing painted
 2 with premium quality gray or dark bronze paint. Provide a prewired ballast and terminal
 3 board assembly and cast aluminum side-hinged door with glass refractor. Use the same color
 4 Type WM luminaires throughout the project. Provide factory installed mounting holes in the
 5 back and conduit entrances in the sides and top. Provide a formed aluminum reflector and
 6 socket assembly, with a chemically-bonded, lightweight, non-breakable glass finish, which is
 7 removable with only a screwdriver.

8 Provide Type PM luminaires that are a pendant mounted assembly of ballast, optical and
 9 mounting components, including a safety chain and hanging hardware. Provide a die-cast
 10 aluminum ballast housing with gray paint finish, with a prewired ballast assembly and
 11 an external quick electrical disconnect receptacle for attachment of hanging hardware.
 12 Provide a faceted aluminum reflector with a hard glasslike highly reflective corrosion
 13 resistant finish and a lightly diffused refractor made of UV stabilized, injection molded,
 14 prismatic, heat-resistant acrylic. Provide hinges and stainless steel, over-center, vibration-
 15 resistant spring latches for easy access to the lamp and clamping of the gasket between the
 16 refractor and ballast housing.

17 Use a 3/4" rigid galvanized steel conduit with a hook and power cord entrance as the pendant.
 18 Provide a 3-conductor Type SO power cord and a 3/4" female threaded wiring compartment
 19 with quick electrical disconnects, to attach the ballast housing to the pendant as shown in the
 20 plans.

21 Use galvanized weldless forged steel eye-nuts that comply with Federal
 22 Specification WW-H-171E (Type 17), or Manufacturers Standardization Society SP-69-2003
 23 (Type 17). Attach eye nuts to galvanized steel or stainless steel threaded rod anchored to the
 24 bridge deck with adhesive anchors. Use galvanized steel or stainless steel safety chain,
 25 S-hooks and lock nuts.

26 Use conduit and wire in accordance with Article 1400-2 and gasketed PVC junction boxes as
 27 shown in the plans.

28 Use a 2-pole, 480 VAC, 20 A circuit breaker with an interrupting capacity of at least
 29 14,000 A, installed in a NEMA 3R enclosure. The enclosure should be primed and painted
 30 with a premium grade exterior paint before installation to increase corrosion resistance.
 31 Install an equipment ground bar and provide a lock in accordance with Article 1400-8.

32 **1412-3 CONSTRUCTION METHODS**

33 Mount luminaires as shown in the plans. Use galvanized steel or stainless steel clamps and
 34 attachment hardware.

35 Install circuitry in accordance with Article 1400-4.

36 **1412-4 MEASUREMENT AND PAYMENT**

37 *Underpass Luminaires* ____ will be measured and paid as the actual number installed and
 38 accepted.

39 *Underpass Circuitry at* ____ will be paid at the contract lump sum price for underpass
 40 circuitry at the appropriate location.

41 Payment will be made under:

Pay Item	Pay Unit
Underpass Luminaires ____	Each
Underpass Circuitry at ____	Lump Sum