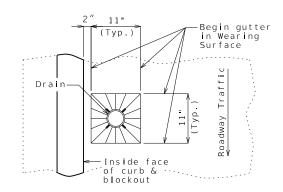
### PART SECTION SHOWING BRACKET ASSEMBLY



PART PLAN OF SLAB AT DRAIN

of slab and epoxy inject from the top.

(Min ĺ

PART SECTION NEAR DRAIN

(1) Use backer rod around drain @ bottom

This Bridge Standard Drawing is meant to be used as a starting point. Modify details as needed.

Standard Drawing Guidance (Do not show on plans):

- 1 Modify as needed.
- (2) Approximately one sixth of girder/beam height; 5" minimum
- Add Note H7.8.2 when attaching to weathering steel girders or beams (See EPG 751.50)

– Existing

Exterior

or Beam

-Ç 9/16"Ø hole (field drill in web) for 1/2"Ø

bolt with lock

washer and nut

× 2

(4) Omit underlined portion for prestressed girders.

PART PLAN SHOWING CORED SLAB DRAIN LOCATIONS

CORED SLAB DRAINS

Detailed

Fill with epoxy

mortar See Sec 623 20 (1) -

Note: This drawing is not to scale. Follow dimensions. Sheet No. of

#### General Notes:

- Botton

of Slab

ELEVATION OF DRAIN

PLAN OF DRAIN

PLAN OF OPTIONAL FRP DRAIN

Rod 3/8"Ø x 3" (ASTM A709 Grade 36)

or Shear Connector 3/8"Ø x 3"± (Typ.)

(Equally spaced)

Тур.

1/4"Ø Galv. Carriage

Bolt with Hex Nut and Lock Washer (Typ.) (Equally spaced)

Contractor shall have the option to construct either steel or FRP slab drains. All drains shall be of same type.

Slab drain bracket assembly shall be ASTM A709 Grade 36 steel.

The bracket assembly shall be galvanized in accordance with ASTM A123.

All bolts, hardened washers, lock washers and nuts shall be galvanized in accordance with AASHTO M232 (ASTM A153), Class C.

All 1/2-inch diameter bolts shall be ASTM A307, except as noted

Shop drawings will not be required for the slab drains and the bracket assembly.

Cost of cored slab drains, complete in place, will be considered completely covered by the contract unit price for Cored Slab Drain per each.

Holes for slab drains shall be cored. Percussion drilling will not be permitted.

Slab drain locations may be shifted the minimum extent necessary to avoid slab reinforcement <u>and to allow for field</u> <u>drilling bolt hole in web of existing beam</u> for bracket assembly attachment (4)

Cored slab drains shall be placed vertically.

For details of plugging existing curb outlets, see Sheet No \_

#### Notes for Steel Drain:

Slab drains shall be fabricated from 1/4-inch structural steel tubing ASTM A500 or A501.

The drains shall be galvanized in accordance with ASTM A123.

Drains shall be inserted through slab such that damage to galvanized coating is minimized

#### Notes for FRP Drain:

Drains shall be machine filament wound thermosetting resin tubing meeting the requirements of ASTM D2996 with the following exceptions:

Minimum reinforced wall thickness shall be

The resin used shall be ultraviolet (UV) resistant and/or have UV inhibitors mixed throughout. Drains may have an exterior coating for additional UV resistance. Care shall be taken to avoid damage to exterior coating during installation.

The color of the slab drain shall be gray (Federal Standard 26373). The color shall be uniform throughout the resin and any coating

The combination of materials used in the manufacture of the drains shall be tested for UV resistance in accordance with ASTM D4329 Cycle A. The representative material shall withstand at least 500 hours testing with only minor discoloration and without any physical deterioration. The contractor shall furnish the results of the required ultraviolet testing prior to acceptance of the slab drains.

At the contractor's option, drains may be field cut. The method of cutting FRP slab drains shall be as recommended by the manufacturer to ensure a smooth, chip-free 8/21/2023 MO SHEET NO 000 COUNT LOB NO CONTRACT ID PROJECT NO. BRIDGE NO

# RHB18\_Cored\_Slab\_Drains Alternate Details Sh. 1 of 2 $\mathbb{Q}$ 9/16"Ø hole in angle for 1/2"Ø bolt with 2 hardened € Ç Existing Exterior washers, lock washer, and nut-Girder Angle (1/4" min. -1/2" max. thickness) (3" min. legs) x 2" long L2x2x1/4-© 9/16"Ø holes for 1/2"Ø bolt - Ç 9/16" slot in L2x2x1/4 © 4 1/2"Ø O.D. Drain with lock washer & C 5 1/2"Ø Hole Drain and nut -Top of Existing Slab (after removals) Bent strip-10 gage (Min.) x 2"--2 1/2" (Min.) Latex Modified Concrete Wearing Surface (1) Attach angle to existing prestressed girder web using an approved epoxy adhesive $\frac{1}{2}$ " (Min.) PART SECTION SHOWING BRACKET ASSEMBLY Fill with epoxy mortar. See Sec 623.20 (1) — PRESTRESSED GIRDER, EXISTING CURB BLOCKOUT -Existing Exterior Girder Attach angle to existing prestressed girder web using an approved epoxy adhesive-(Min.) (1) Use backer rod around drain @ bottom of slab and epoxy inject from the top. PART SECTION NEAR DRAIN – Symm.abt. Ç. Structure Fill Face of End Bent No. 1— Ç Int. Bent No. 2− € Int. Bent No. 3— 13½"± Roadway Face of Existing Curb--⊊ Existing Exterior Girder © Cored Slab Drain (Typ.)– └─Edge of Slab 9'-0" 7'-0" 5 Drains @ 9'-0" cts. SPAN (1-2) SPAN (2-3) SPAN (3-4) PART PLAN SHOWING CORED SLAB DRAIN LOCATIONS EXAMPLE PLAN

## RHB18\_Cored\_Slab\_Drains Alternate Details Sh. 2 of 2 ∙Ç Slab Drain 1/4" bar (ASTM A709 © 9/16"Ø hole in angle for 1/2"Ø bolt with 2 hardened washers, lock washer, and nut— Grade 36) -Bottom Angle (1/4" min. -1/2" max. thickness) (3" min. legs) x 2" longflange — Plug existing curb outlets L2x2x1/4 € 9/16"Ø holes for 1/2"Ø bolt with lock washer and nut −Ç 9/16**"**Ø hole for 1/2"Ø bolt with lock washer and nut Drain-Bent strip-10 gage (Min.) x 2" 9/16" slot in L2x2x1/4 $\frac{1}{2}$ " (Min.) Epoxy inject to make tight fit and to seal Exist. Exterior Girder or Beam PART SECTION SHOWING BRACKET ASSEMBLY (Typ.)(1) -© 4 1/2" O.D. Drain and 4 3/4"Ø Cored Hole (Tight fit) ELEVATION OF DRAIN -1/4" bar (ASTM A709 Grade 36) — Inside face of (2) existing barrier Extend 1/2" into existing concrete (Notch existing concrete to accept) PART PLAN OF SLAB AT DRAIN PLAN OF DRAIN <min.) PART SECTION NEAR DRAIN -1/4"Ø Galv. Carriage Bolt with Hex Nut and Lock Washer (Typ.) (1) Use backer rod around drain @ bottom of slab and epoxy inject from the top. Extend 1/2" into existing concrete (Notch existing ANCHOR TO EXISTING SLAB, STEEL GIRDER concrete to accept)

PLAN OF OPTIONAL FRP DRAIN

(Based on A02015 & A46301)