**HORIZONTAL WALL REINFORCING SCHEDULES (TABLE 4)**

<table>
<thead>
<tr>
<th>WALL DEPTH SCHEDULE</th>
<th>AREA (in²/ft)</th>
<th>MAX. SPACING BARS</th>
<th>WWF</th>
</tr>
</thead>
<tbody>
<tr>
<td>0'-3'</td>
<td>0.24</td>
<td>1/2</td>
<td>3'</td>
</tr>
<tr>
<td>0'-7'</td>
<td>0.37</td>
<td>6/10</td>
<td>6'</td>
</tr>
<tr>
<td>0'-10'</td>
<td>0.53</td>
<td>41/2</td>
<td>4'</td>
</tr>
</tbody>
</table>

**TYPE H (2 & 3-GRATE INLET)**

Recommended Maximum Pipe Size:
- 3'-0" Wall - 24" Pipe
- 6'-7" Wall - 1-60" Pipe
- Or 2-24" Pipe (5'-3"-5')

---

**HORIZONTAL WALL REINFORCING SCHEDULES (TABLE 5)**

<table>
<thead>
<tr>
<th>WALL DEPTH SCHEDULE</th>
<th>AREA (in²/ft)</th>
<th>MAX. SPACING BARS</th>
<th>WWF</th>
</tr>
</thead>
<tbody>
<tr>
<td>0'-7'</td>
<td>0.37</td>
<td>3/10</td>
<td>3'</td>
</tr>
<tr>
<td>0'-10'</td>
<td>0.53</td>
<td>4/10</td>
<td>4'</td>
</tr>
</tbody>
</table>

**TYPE H (4-GRATE INLET)**

Recommended Maximum Pipe Size:
- 3'-0" Wall - 24" Pipe
- 8'-9" Wall - 1-30" Pipe
- Or 2-30" Pipe (5'-4"-3')

---

**GENERAL NOTES**

See Sheet 3 of 7.
TYPE C (3-GRATE INLET)
Approx. Weight 190 Lbs.

TYPE E (3-GRATE INLET)
Approx. Weight 215 Lbs.

TYPE H (4-GRATE INLET)
Approx. Weight 235 Lbs.

TYPE H (4-GRATE INLET)
Approx. Weight 255 Lbs.

TYPE H (4-GRATE INLET)
Approx. Weight 275 Lbs.

TYPE H (4-GRATE INLET)
Approx. Weight 295 Lbs.

TYPE H (4-GRATE INLET)
Approx. Weight 315 Lbs.

TYPE H (4-GRATE INLET)
Approx. Weight 335 Lbs.

TYPE H (4-GRATE INLET)
Approx. Weight 355 Lbs.

TYPE H (4-GRATE INLET)
Approx. Weight 375 Lbs.

TYPE H (4-GRATE INLET)
Approx. Weight 395 Lbs.

TYPE H (4-GRATE INLET)
Approx. Weight 415 Lbs.

TYPE H (4-GRATE INLET)
Approx. Weight 435 Lbs.

TYPE H (4-GRATE INLET)
Approx. Weight 455 Lbs.

TYPE H (4-GRATE INLET)
Approx. Weight 475 Lbs.

TYPE H (4-GRATE INLET)
Approx. Weight 495 Lbs.

TYPE H (4-GRATE INLET)
Approx. Weight 515 Lbs.

TYPE H (4-GRATE INLET)
Approx. Weight 535 Lbs.

TYPE H (4-GRATE INLET)
Approx. Weight 555 Lbs.

TYPE H (4-GRATE INLET)
Approx. Weight 575 Lbs.

TYPE H (4-GRATE INLET)
Approx. Weight 595 Lbs.

TYPE H (4-GRATE INLET)
Approx. Weight 615 Lbs.

TYPE H (4-GRATE INLET)
Approx. Weight 635 Lbs.

TYPE H (4-GRATE INLET)
Approx. Weight 655 Lbs.

TYPE H (4-GRATE INLET)
Approx. Weight 675 Lbs.

TYPE H (4-GRATE INLET)
Approx. Weight 695 Lbs.

TYPE H (4-GRATE INLET)
Approx. Weight 715 Lbs.

TYPE H (4-GRATE INLET)
Approx. Weight 735 Lbs.

TYPE H (4-GRATE INLET)
Approx. Weight 755 Lbs.

TYPE H (4-GRATE INLET)
Approx. Weight 775 Lbs.

TYPE H (4-GRATE INLET)
Approx. Weight 795 Lbs.

TYPE H (4-GRATE INLET)
Approx. Weight 815 Lbs.

TYPE H (4-GRATE INLET)
Approx. Weight 835 Lbs.

TYPE H (4-GRATE INLET)
Approx. Weight 855 Lbs.

TYPE H (4-GRATE INLET)
Approx. Weight 875 Lbs.

TYPE H (4-GRATE INLET)
Approx. Weight 895 Lbs.

TYPE H (4-GRATE INLET)
Approx. Weight 915 Lbs.

TYPE H (4-GRATE INLET)
Approx. Weight 935 Lbs.

TYPE H (4-GRATE INLET)
Approx. Weight 955 Lbs.

TYPE H (4-GRATE INLET)
Approx. Weight 975 Lbs.

TYPE H (4-GRATE INLET)
Approx. Weight 995 Lbs.

NOTE: Steel Grates Are Required On Inlets With Traversable Slots And On Inlets where Bicycle Traffic Is Anticipated.

GENERAL NOTES

1. These inlets are suitable for bicycle traffic and are to be used in ditches, medians and other areas subject to frequent traffic loadings but are not to be used in areas subject to heavy wheel loads. These inlets may be placed in areas subject to occasional pedestrian traffic such as landscaped areas and pavement areas where pedestrians can walk around the inlet.

2. Inlets subject to minimal debris should be constructed without slots. Where debris is a problem inlets should be constructed with slots. Slotted inlets located within roadway clear zones and areas subject to pedestrian shall have traversable slots. The traversable slot modification is not adaptable to inlet Type H. Slots may be constructed at either or both ends as shown on plans. Traversable slots shall not be used in areas subject to occasional bicycle traffic.

3. Steel grates are to be used on all inlets where bicycle traffic is anticipated. Steel grates are to be used on inlets with traversable slots. Either cast iron or steel grates may be used on inlets without slots where bicycle traffic is not anticipated. Either cast iron or steel grates may be used on all inlets with non-traversable slots. Subject to the selection described above, when Alternates 6 grate is specified in the plans, either the steel grate, hot dip galvanized after fabrication, or the cast iron grate may be used, unless the plans stipulate the particular type.

4. Recommended maximum pipe sizes shown are for concrete pipe. Size for other types of pipe must be checked for fit.

5. All exposed edges and corners shall be 1/8" chamfer or tooled to 1/4" radius.

6. Concrete inlet pavement to be used on inlets without slots and inlets with non-traversable slots only when called for in the plans; but required on all traversable slot inlets. Cost to be included in contract unit price for inlets. Quantities shown are for information only.

7. Traversable slots constructed in existing inlets shall be paid for as inlets partial. For conversion work and method of payment see TRAVERSABLE SLOT INLETS (PARTIAL) FOR EXISTING INLETS.

8. Soldering to be used on all inlets not located in paved areas and paid for under contract unit price for Performance Turf, SY.

9. For supplementary details see Index 425-001.

10. All reinforcing is Grade 60 bars with 2" min. cover unless otherwise noted. Bars to be cut or bent for 1½" clearance around pipe opening. Provide one additional #4 bar above and at each side of pipe opening.

Steel Grates

Steel Grates Are Required On Inlets With Traversable Slots And On Inlets where Bicycle Traffic Is Anticipated.
FOR TRAVERSABLE SLOTS

PAVEMENT AND SODDING QUANTITIES
FOR TRAVERSABLE SLOTS

<table>
<thead>
<tr>
<th>Inlet</th>
<th>Pavement</th>
<th>Sod</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Single Slot</td>
<td>Double Slot</td>
</tr>
<tr>
<td></td>
<td>SY</td>
<td>CY</td>
</tr>
<tr>
<td>C</td>
<td>4.82</td>
<td>0.77</td>
</tr>
<tr>
<td>D</td>
<td>3.99</td>
<td>0.91</td>
</tr>
<tr>
<td>E</td>
<td>3.88</td>
<td>0.91</td>
</tr>
</tbody>
</table>

TRAVERSABLE SLOTS

DITCH BOTTOM INLET TYPES C, D, E AND H

SHEET 425-052
INDEX 4 of 7

REVISED 01/01/17

DESCRIPTION:

FY 2018-19
STANDARD PLANS
For payment see General Notes Nos. 6 and 7, Sheet 3 of 7.

For plan view and additional details see Sheet 4 of 7.

NOTE: See General Notes Nos. 6 and 7, Sheet 3 of 7.

NOTE: For plan view and additional details see Sheet 4 of 7.
DESIGN NOTES FOR TRAVERSABLE SLOT INLETS (PARTIAL) FOR EXISTING INLETS

1. The general purpose of these conversions is to remove the hazard of the protruding inlet top, while not creating a hazard by depressing the top too deeply.

2. The corrective procedure depends on the approach ditch grade and hydraulic requirements of the site. The selection of the appropriate case depends on the relationship between inlet top and ditch elevation, and, on the vertical clearance between the top of the uppermost pipe(s) and the grate. The purpose for the Case 1 conversion is to add the traversable slot to an existing inlet where top removal, change in grate elevation and ditch transitions are not required. Case 2 will normally be applicable to ditches with steeper grades adjoining the inlet. Case 3 will normally be applicable to ditches with steeper grades adjoining the inlet where build up of the existing ditch is acceptable.

3. The designer shall stipulate in the plans which case is to be constructed at each individual inlet location.

Where the existing inlet top is above the existing ditch (Case 2) but bore material will be required to adjust the ditch (Case 3) and, vertical clearance or other conditions do not prevent removal of the inlet top, the designer should call for Case 3. The designer shall determine whether ditch reconstruction is required more than 35 feet beyond any traversable slot side and shall include separate pay items in the plans to cover the cost for that portion of required ditch reconstruction exceeding the 35 foot limit. The designer shall also determine whether ditch pavement is required for ditch restoration within the 35 foot limit and include that pavement under a pay item separate from the inlets partial.

When the detention ditch concept is to be used with Case 3, the designer shall stipulate 'Case 3 (Detention)' in the plans.

The designer shall determine whether the soil or other conditions at each individual inlet indicates the need for underdrain in Case 3 conversions and shall call for Underdrain, Type I in the plans.

METHOD OF PAYMENT FOR TRAVERSABLE SLOT INLETS (PARTIAL) FOR EXISTING INLETS

1. Existing inlets converted to traversable slot tops under Cases 1, 2 and 3 shall be paid for as inlets partial, each. Case shall not be included in the pay item description.

2. All ditch reconstruction work within 35 feet of each traversable slot conversion, whether required by these details or as a direct result of the conversion, shall be included as a part of the partial cost. Reconstruction work shall include excavation and removal of surplus materials or borrow materials in place, grading, compaction, shaping and restoration of disturbed turf. Sodding, ditch pavement and underdrain are not included as part of the partial cost and are to be paid for separately.

3. Concrete inlet pavement and sodding shall be paid in accordance with the sections on this detail and with the Plan on Sheet 4 and Sections AA, BB and CC (as Case 1) and tabular quantities on Sheet 5.

4. Unit price and payment shall constitute full compensation for inlet conversion (including concrete inlet paving and replacement grate(s)), ditch reconstruction, restoration of disturbed turf, and shall be paid for under the contract price for inlets (DT Bid/Type _ ) (Partial), each.

Sodding shall be paid under the contract unit price for Performance Turf, SY. Ditch pavement shall be paid for separate from the inlet by pavement type(s) and units as called for in the plans.

TRAVERSABLE SLOT INLETS (PARTIAL) FOR EXISTING INLETS

SINGLE SLOT SHOWN (DOUBLE SLOTS SYMMETRICAL ABOUT CENTERLINE) SECTION CC (CASE 2)

SINGLE SLOT SHOWN (DOUBLE SLOTS SYMMETRICAL ABOUT CENTERLINE) SECTION CC (CASE 3)

INDEX SHEET

SY 2019-19 STANDARD PLANS

DITCH BOTTOM INLET TYPES C, D, E AND H

INDEX 425-052 6 of 7

LAST REVISION 01/01/17 DESCRIPTION:
ALT. B STRUCTURE BOTTOM FOR INLETS TYPE C, D & E

See Index 425-010 for structure bottom details and hole reinforcement.

SECTION AA

ALT. A STRUCTURE BOTTOM FOR INLETS TYPE C, D & E

SECTION BB

DITCH BOTTOM INLET TYPES C, D, E AND H

INDEX 7 of 7

FY 2018-19

STANDARD PLANS

DITCH BOTTOM INLET TYPES C, D & E

3'-0" x 4'-6"

≤0.5' - 30'

≥0.5' - 40'

(Except Shown)

≥0.5' - 30'

MIN. DIAMETER

MIN. LENGTH

CENTERED OPENING

TOP SLAB OPENINGS

DIAMETER

MIN

MAX

TOP SLAB REINFORCING SCHEDULE

SCHEDULE

GRADE 43 (BAR)

70 KSI (WIRE FABRIC)

In.-ft.

A

0.20

B

0.24

C

0.27

D

0.31

E

1.06

F

1.25

#6 Bars

TOP SLAB REINFORCING DIAGRAM

REINFORCING (2 WAYS)

SIZE: 4'-0"

SIZE: 5'-0"

SIZE: 6'-0"

SIZE: 8'-0"

#4 Bar Each Corner

#4 Bars Each Corner

2" C.L.

2 Way Reinforcement See Tables

3" C.L.

2" C.L.

30'-40'

33'-40'

37'-40'

≥0.5'-40'

0.5' < 8'

9' < 15'

15' < 33'

9' < 15'

15' < 33'

3'-0"

6'-0"

3'-0"

6'-0"

2'-0"

3'-0"

#5 Hoop Bar

(Peripheral Reinforcement)

#8 Bars @ 5" Spacing

See Tables

2 Way Reinforcement See Tables

9½" For 4'-0'/5'-0'/6'-0' Structure Bottoms

11½" For 8'-0' Structure Bottoms

#5 Hoop Bar

Round Structure Bottom

See Index No. 425-010 For Structure Bottom Details and Hole Reinforcement.

Top Slab With Centered Opening

MINIMUM DIAMETER

UNLESS OTHERWISE SHOWN IN THE PLANS

MINIMUM LENGTH

UNLESS OTHERWISE SHOWN ON PLANS

#4 Bar Each Corner

(2'-0" Min. Length)

#5 Hoop Bar

(Peripheral Reinforcement)

2 Way Reinforcement See Tables

SECTION BB

CENTERED OPENING

TOP SLAB WITH CENTERED OPENING

REINFORCING SCHEDULE

G

115°

G

115°

D

115°

E

115°

F

115°

E

115°

G

115°

D

115°

C

115°

B

115°

A

115°

#4 Bar Each Corner

#5 Hoop Bar

Each Corner

2" C.L.

#6 Bars @ 5" Spacing

2 Way Reinforcement See Tables

DIAMETER

OPENING SIZE

MIN.

MAX.

30' < 37'

30' < 37'

23' < 33'

9' < 15'

15' < 23'

23' < 33'

15' < 23'

23' < 33'

9' < 15'

SIZE: 8'-0"

SIZE: 7'-0"

SIZE: 6'-0"

SIZE: 5'-0"

SIZE: 4'-0"

SIZE: 4'-0"

SIZE: 5'-0"

SIZE: 6'-0"

SIZE: 7'-0"

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