NOTES

GENERAL: Catch Basins 2-2A and 2-2B are not intended for use in roadway applications. Catch Basin 2-2C is intended for parking lot use only.


GRATE AND FRAME: Furnish a design essentially the same and equally as strong as the one shown here (see Construction Information below, or sheet). Meet the requirements of CMS 706. Provide grate openings and dimensions as shown here unless otherwise shown at the plans.

Cast the following text into the top of the grate:

"DUMP NO WASTE" and "DRAINS TO WATERWAY"

Print text in bold, capital letters at least 1/2" high. "WATERWAY" may be substituted with "STREAM", "RIVER", "LAKE", etc. Actual placement and color may vary per manufacturer.

WALLS: Construct brick or cast-in-place walls with a nominal 8" thickness. Provide precast walls of 8" thick with sufficient reinforcing to permit shipping and handling without damage. Do not use brick above the flow line of the side opening for Type 2-2A.

CONCRETE: Use 4000 psi compressive strength for cast-in-place concrete. Meet the requirements of CMS 706.15 for all precast concrete and mark with the catch basin number.

PRECAST BASE: If a precast base is used, set it deep enough so that the top can be placed on the base to provide the grate elevation specified in the plans. Do not use brick layers to adjust the top elevation.

LOCATION AND ELEVATION: When given on the plans, location and elevation are of the top center of the grate.

MINIMUM DEPTH: The minimum depth of CB No. 2-2A is the outside diameter (O.D.) of the outlet pipe plus 1".

OPENINGS: Ensure pipe openings are the O.D. of the pipe being supplied plus 2" when fabricated or field cut. Fill any voids per CMS 611.

2-2A SIDE INLETS: Provide inlets on both sides of the No. 2-2A catch basin in sags and on upstream side only where the ditch has a continuous downhill past the catch basin. Do not use CB 2-2A within the Clear Zone. The flow line should be 10' to 15' below normal ditch returning to normal 30' to 10' each side of the inlet.

PAYMENTS: All materials and labor, including excavation and backfilling, are paid for under Item 611 - Catch Basin, No. 2-2A.

CONSTRUCTION INFORMATION

Minimum weight of grate, 90 lbs. minimum weight of frame, 40 lbs.

CATCH BASIN OUTLET PIPE SIZE

2-2A, 2-2B, 2-2C 12" to 21"

SECTION THRU ANGLE FRAME

FOR STANDARD No. 2-2A CATCH BASIN
NOTES

CATCH BASINS 2-2A, 2-2B & 2-2C: This sheet depicts Catch Basin 2-2B & 2-2C. See Sheet 1 of 2 for catch basin 2-2A.

CB-2-2B GRADE: Furnish a design essentially the same and equally as strong as the one shown here. Construction Information Table, or meet the requirements of CMS 711.14. Provide grate openings and dimensions as shown here unless otherwise shown on the plans.

If necessary, bicycle-safe grates will be specified in the plans. Furnish Neenah No. R-4859-S or EJ No. 5110M3 (00511043) grates or approved equals. Place grate elevation 4" to 6" below normal ditch and return to normal 10' to 15' each side of inlet.

CB-2-2C FRAME & GRATE: Where the catch basin is specified for use in a parking lot, furnish Neenah No. R-1878-A5G or EJ No. V-5622 (45622010) frame and V-5622 (45622030) grates or approved equals. If necessary, bicycle-safe grates will be specified in the plans. Furnish Neenah No. R-3608 grate or EJ No. 125001055030 grate or approved equals.

Prepare the base and grate units, provide a level surface on the catch basin 4" below the top grate elevation for setting the frame and grate assembly. Provide a concrete apron to encase and secure the frame and grate assembly. Provide a concrete apron to encase and secure the frame of a width not less than the thickness of the catch basin walls and grate assembly. Provide a concrete apron to provide local depression.

GRATE TEXT: Cast the following text into the top of the grate:

"DRAINS TO WATERWAY" and "DUMP NO WASTE"

Print text in bold, capital letters at least 1/2" high. "WATERWAY" may be substituted with "STREAM", "RIVER", "LAKE", etc. Actual placement and size may vary per manufacturer.

WALLS: Construct brick or cast-in-place walls with a nominal 8" thickness. Provide precast grates of least 8" thick with sufficient reinforcing to permit shipping and handling without damage.

CONCRETE: Use 4000 psi compressive strength for cast-in-place concrete. Meet the requirements of CMS 706.13 for all precast concrete and mark with the catch basin number.

PRECAST BASE: If a precast base is used, set it deep enough so that the top can be placed at the base to provide the grate elevation specified in the plans. Do not use brick layers to adjust the top elevation.

LOCATION AND ELEVATION: When given on the plans, location and elevation are of the top center of the grate.

MINIMUM DEPTH: The minimum depth of CB No. 2-2B is the outside diameter of the outlet pipe plus 4". The minimum depth of CB No. 2-2C is the outside diameter of the outlet pipe plus 6".

OPENINGS: Ensure pipe openings are the O.D. of the pipe being supplied plus 2" when fabricated or field cut. Fill any voids per CMS 500.

PAYMENTS: All materials and labor, including excavation and backfilling, are paid for under Item 60 - Catch Basin, No. 2-2B or 2-2C.

CONSTRUCTION INFORMATION

Minimum weight of grate, 35 lbs.
GENERAL: Catch basins 2-3 & 2-4 are not intended for traffic bearing applications.

GRATE: See details on SCD CB-1.1.

If necessary, bicycle safe grates will be specified on the plans. Furnish Neenah No. R-4859-C or East Jordan No. 5110 Type "STREAM" bicycle safe grates or approved equals.

Cost the following text into the top of the grate:

"DUMP NO WASTE" and "DRAINS TO WATERWAY"

Print text in bold, capital letters at least 1" high. "WATERWAY" may be substituted with "STREAM", "RIVER", "LAKE", etc. Actual placement and logo may vary per manufacturer.

WALLS: Construct brick or cast-in-place walls with a nominal 8" thickness. Provide precast walls at least 8" thick with sufficient reinforcing to permit shipping and handling without damage.

STEPS: Provide steps where the depth exceeds 6'. Meet the requirements of SCD MH-1.1.

CONCRETE: Use 4000 psi compressive strength for construction grade. Meet the requirements of SCD MH-1.1. If a precast base is used, set it in-place concrete; reinforce with #4 bars on 12" center to center for top reinforcement. For Catch Basin No. 2-3 use eight bars, and for Catch Basin No. 2-4 use twelve bars.

OPENINGS: Provide #4 bars spaced at 6" center to center for top reinforcing. For Catch Basin No. 2-3 use eight bars, and for Catch Basin No. 2-4 use twelve bars.

INLETS OVER 12 FEET DEEP: Use precast or cast-in-place concrete; reinforce with #4 bars on 12" centers both vertically and horizontally with 2" clearance from inside wall face.

OCCUPANCY: If a precast base is used, set it deep enough so that the top can be placed on the base. To provide the grade elevation specified in the plans, do not use brick layers to adjust the top elevation.

LOCATION AND ELEVATION: When given on the plans, the location and the elevation are at the top center of the grate. When side openings are provided, the elevation is at the flow line of the side inlet.

MINIMUM DEPTH: The minimum depth of CB No. 2-3 and CB No. 2-4 is the outside diameter (O.D.) of the outlet pipe plus 1".

OPENINGS: Four pipe openings are the O.D. of the pipe being supplied plus 3" when fabricated or field cut. Fill any voids per CMS 611.

SIDE INLETS: Provide grates on both sides of the No. 2-3 and No. 2-4 catch basin in ovals on an 8" radius. Providing grates on both sides of the catch basin is optional. Flattening the continuous oval grate on the catch basin. Do not use catch basins with side inlets within the Clear Zone.

PAYMENT: All materials and labor, including excavation and backfill, are paid for under Item 611 - Catch Basin, No. 2-3 or Item 67 - Catch Basin No. 2-4.

CATCH BASIN OUTLET PIPE SIZE

<table>
<thead>
<tr>
<th>CATCH BASIN</th>
<th>OUTLET PIPE SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-3</td>
<td>2'-3&quot; to 3'&quot;</td>
</tr>
<tr>
<td>2-4</td>
<td>2'-4&quot; to 3'&quot;</td>
</tr>
</tbody>
</table>

NOTES:

"DUMP NO WASTE" and "DRAINS TO WATERWAY"

Print text in bold, capital letters at least 1" high. "WATERWAY" may be substituted with "STREAM", "RIVER", "LAKE", etc. Actual placement and logo may vary per manufacturer.

WALLS: Construct brick or cast-in-place walls with a nominal 8" thickness. Provide precast walls at least 8" thick with sufficient reinforcing to permit shipping and handling without damage.

STEPS: Provide steps where the depth exceeds 6'. Meet the requirements of SCD MH-1.1.

CONCRETE: Use 4000 psi compressive strength for construction grade. Meet the requirements of SCD MH-1.1. If a precast base is used, set it in-place concrete; reinforce with #4 bars on 12" center to center for top reinforcement. For Catch Basin No. 2-3 use eight bars, and for Catch Basin No. 2-4 use twelve bars.

OPENINGS: Provide #4 bars spaced at 6" center to center for top reinforcing. For Catch Basin No. 2-3 use eight bars, and for Catch Basin No. 2-4 use twelve bars.

OCCUPANCY: If a precast base is used, set it deep enough so that the top can be placed on the base. To provide the grade elevation specified in the plans, do not use brick layers to adjust the top elevation.

LOCATION AND ELEVATION: When given on the plans, the location and the elevation are at the top center of the grate. When side openings are provided, the elevation is at the flow line of the side inlet.

MINIMUM DEPTH: The minimum depth of CB No. 2-3 and CB No. 2-4 is the outside diameter (O.D.) of the outlet pipe plus 1".

OPENINGS: Four pipe openings are the O.D. of the pipe being supplied plus 3" when fabricated or field cut. Fill any voids per CMS 611.

SIDE INLETS: Provide grates on both sides of the No. 2-3 and No. 2-4 catch basin in ovals on an 8" radius. Providing grates on both sides of the catch basin is optional. Flattening the continuous oval grate on the catch basin. Do not use catch basins with side inlets within the Clear Zone.

PAYMENT: All materials and labor, including excavation and backfill, are paid for under Item 611 - Catch Basin, No. 2-3 or Item 67 - Catch Basin No. 2-4.

CATCH BASIN OUTLET PIPE SIZE

<table>
<thead>
<tr>
<th>CATCH BASIN</th>
<th>OUTLET PIPE SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-3</td>
<td>2'-3&quot; to 3'&quot;</td>
</tr>
<tr>
<td>2-4</td>
<td>2'-4&quot; to 3'&quot;</td>
</tr>
</tbody>
</table>
The bottom may be precast separately and the outlet pipe placed on top of it with the bottom shaped to drain.

**SECTION A-A**

- Curb casting
- Curb & grates
- Outlet pipe location to meet project requirements
- Permissible construction joint
- Top of curb
- 1'-0" exp. joint
- 1" Dowel
- 2'-0" Gutter
- 12" Steel Beam

**SECTION B-B**

- Location of grate, elevation, station and offset
- Normal gutter elevation
- Depressed gutter
- Permissible constr. joint
- Top of curb & coating
- 1" Dowel
- 12" Steel Beam
- 1'-0" exp. joint
- 1" exp. joint
- 4'-9"
- 8"
- 3" min.
- 2'
- 2'-0" Gutter
- 9"
- 1" Dowel
- 9"
- 1" exp. joint
- 2'-5"
- 12" Steel Beam
- 1'-0"
- 8"
- 3" min.
- 2'

**SECTION B-B WITH CURB (2" DEPRESSION)**

- Location of grate, elevation, station and offset
- Normal gutter elevation
- Depressed gutter
- Permissible constr. joint
- Top of curb & coating
- 1" Dowel
- 12" Steel Beam
- 1'-0" exp. joint
- 1" exp. joint
- 4'-9"
- 8"
- 3" min.
- 2'
- 2'-0" Gutter
- 9"
- 1" Dowel
- 9"
- 1" exp. joint
- 2'-5"

**SECTION B-B WITH CURB & GUTTER (9" DEPRESSION)**

- Location of grate, elevation, station and offset
- Normal gutter elevation
- Depressed gutter
- Permissible constr. joint
- Top of curb & coating
- 1" Dowel
- 12" Steel Beam
- 1'-0" exp. joint
- 1" exp. joint
- 4'-9"
- 8"
- 3" min.
- 2'
- 2'-0" Gutter
- 9"
- 1" Dowel
- 9"
- 1" exp. joint
- 2'-5"

**PLAN OF CATCH BASIN AND PAVEMENT JOINTS**

- Catch Basin No. 3
- See Sh. 2/2 for NOTES
NOTES

**GRADES:** Two required. For details, see SCD CR-2.2. Provide grate "V" unless the plans specifically require the diagonal grate. If the diagonal grate is specified, place it so that the diagonal bars direct drainage flow toward the curb.

**CASTINGS:** Provide a design essentially the same and equally as strong as the one shown. Minimum weight:
- Curb Casting: 305 lbs.
- Two Grates: 254 lbs.
- Frame: 590 lbs.
- Two Grates: 210 lbs.

Lighter weight frames and grates that meet the requirements of CMS 711.14 may also be provided. Provide grate openings and dimensions as shown here unless otherwise shown in the plans.

Cast the following text into the top of the curb casting:

"DUMP NO WASTE" and "DRAINS TO WATERWAY" must be cast in bold, capital letters of least 1" high. See example on Plan & Section. "WATERWAY" may be substituted with "STREAM", "RIVER", "LAKE", etc. Actual placement and logo may vary per manufacturer.

**BEARING AREAS:** Fit and finish the frame and grate to provide a firm and even seat. No projections are permitted on bearing areas, and the grate must seat in its frame without rocking.

**WALLS:** When used in place of concrete, construct brick side walls with 8" nominal thickness.

**PRECAST CONCRETE:** Permitted, except for the precast walls of at least 8" thick with sufficient reinforcing to permit shipping and placement without damage. Reduce the wall thickness from the outside.

**MINIMUM DEPTH:** The minimum depth is per the cover requirements for that pipe type.

**OPENINGS:** Ensure pipe openings are the O.D. of the pipe being supplied plus 2" when fabricated or field cut. Fill any voids per C&MS 611.

**DOWELS:** Furnish four 1" x 18" dowels for concrete pavement or gutter blockout. See SCD BP-2.2 for dowel details.

**BLOCKOUTS:** Furnish blockouts with 4000 psi compressive strength concrete in PCC pavement or gutter. Blockouts for use as part of the pavement or gutter with no deduction in pavement, curb or gutter quantities because of the castings. Cost a 4000 psi compressive strength concrete groove, the size of the 2'-0" gutter blockout, in place in a pavement or gutter cast as required with the cost included in the catch basin bid price. No deduction is made in curb quantities.

**PAYMENTS:** All materials and labor, including excavation and backfilling, are paid for under Item 61 - Catch Basin, No. 3.
As shown in the plans.

**Drains to Waterway**

1'-0" (Typ.)

**Catch Basin No. 3A**

**Frame & grate**

S6x12.5x3'-6"(Typ.)

Location of grate, elev., sta. and offset

Location of grate, elev., station and offset

Frame & grate

Location of grate elevation,
Location of grate, elev., sta. and offset

Location of grate, elev., sta. and offset

Combination curb & gutter

Depressed gutter

Depressed pavement

Grate

Curb & gutter

**Notes**

**Grates:** Provide Grate "R" unless the plans specifically require the diagonal grate. If the diagonal grate is specified, place it so that the diagonal bars direct the drainage toward the curb.

**Casting:** Provide a design essentially the same and equally as strong as the one shown. Minimum weight:

- Curb Casting . . . . 170 lbs.
- Standard Grate . . . . 127 lbs.
- Grate "V" . . . . . . . 105 lbs.

Lighter weight frames and grates that meet the requirements of CMS 711.4 may also be provided. Provide grate openings and dimensions as shown here unless otherwise shown in the plans.

Cost the following text into the top of the curb casting:

"Dump No Waste" and "Drains to Waterway"

Print text in bold, capital letters at least 1/8" high.

**BEARING AREAS**

Finish and finish the frame and grate to provide a firm and even seat. No projections are permitted on bearing areas, and the grate must seat in the frame without rocking.

**Walls:** When used in place of concrete, construct brick sides with 8" nominal thickness.

**Precast Construction:** Permitted, except for the apron. Meet CMS 106.13 concrete requirements. Provide precast walls at least 6" thick with sufficient reinforcing to permit shipping and placement without damage. Reduce the wall thickness from the outside.

**Mudmat Depth:** The minimum depth is per the cover requirements for that pipe type.

**Openings:** Ensure pipe openings are the O.D. of the pipe being supplied. Use fabricated or 1/8" O.D. Fill only voids per CMS 605.

**Dowels:** Furnish Four 1/2" dowels for concrete pavement or gutter blockout. See SCD BP-2.2 for detail details.

**Blockout:** Pour blockouts with 4000 psi compressive strength concrete in RCC pavement or gutter blockouts are placed as part of the pavement or gutter, with no deduction in pavement, curb or gutter quantities. For concrete castings, 4000 psi concrete placed in RCC pavement or gutter blockouts. Blockouts are specified per CMS 711.4.

**Payment:** All materials and labor, including excavation and backfilling, are paid for under Item 65 - Catch Basin, No. 3A.

**Dowel Details:**

- 1" Dowel
- 1/2" Dowel
- 1/4" Dowel

**NOTES**

- Lighter weight frames and grates that meet the requirements of CMS 711.4 may be substituted with "STREAM", "RIVER", "LAKE", etc. Actual placement and logo may vary per manufacturer.

- Permitted, except for the apron. Meet CMS 106.13 concrete requirements. Provide precast walls at least 6" thick with sufficient reinforcing to permit shipping and placement without damage. Reduce the wall thickness from the outside.

- The minimum depth is per the cover requirements of that pipe type.

- Ensure pipe openings are the O.D. of the pipe being supplied. Use fabricated or 1/8" O.D. Fill only voids per CMS 605.

- Furnish Four 1/2" dowels for concrete pavement or gutter blockout. See SCD BP-2.2 for details.

- Pour blockouts with 4000 psi compressive strength concrete in RCC pavement or gutter blockouts are placed as part of the pavement or gutter, with no deduction in pavement, curb or gutter quantities. For concrete castings, 4000 psi concrete placed in RCC pavement or gutter blockouts.

- All materials and labor, including excavation and backfilling, are paid for under Item 65 - Catch Basin, No. 3A.

- Actual placement and logo may vary per manufacturer.
NOTES

GRATE AND FRAME: Provide a design essentially the same and equally as strong as the one shown (see construction information table), or meet the requirements of CMS 711.14. Provide grate openings and dimensions as shown here unless otherwise shown in the plans.

SLUMP NO WASTE and DRAINS TO WATERWAY

Print text in bold, capital letters at least 1" high. "WATERWAY" may be substituted with "STREAM", "RIVER", "LAKE", etc. Actual placement and logo may vary per manufacturer.

BEARING AREAS: Fit and finish frame and grate to provide a firm and even seat for all portions of the grate. No projections are permitted on bearing areas of either casting. When the grate is placed in position, the frame and grate must be complete. Fit, match and mark frame and grate before delivery to the project.

WALLS: Construct brick or cast-in-place walls with a nominal thickness of 8". Provide precast walls at least 6" thick with sufficient reinforcing to permit shipping and handling without damage.

CONCRETE: Use 4000 psi concrete. Meet the requirements of CMS 711.14 for precast concrete and mark with the catch basin number. Reduce the wall thickness from the outside.

MINIMUM DEPTH: The minimum depth is the outside diameter of the outlet pipe plus 18".

OPENINGS: Ensure pipe openings are the O.D. of the pipe being supplied plus 2" when fabricated or field cut. Fill any voids per CMS 611.

DOWELS: Furnish four 1" dowels for pavement and curb. See CMS 611 for dowel detail.

BLOCKOUT APRONS: Furnish four 1½" dowels for pavement and curb. See CMS 611 for dowel detail.

CONSTRUCTION INFORMATION

Minimum weight of grate, 210 lbs.

Minimum weight of frame, 265 lbs.
CATCH BASIN No. 6

SECTION A-A
(See Sht. 1/2.)

SECTION B-B
(See Sht. 1/2.)

CAST-IN-PLACE CONCRETE
REINFORCED PRECAST CONCRETE

Minimum pipe dia. 6" (Typ.)

1" expansion joint (Typ.)

Permissible construction joint

Normal gutter
flowline

Top of curb

Location of grate, elev.,
station and offset?

Gutter frame
and grate

1" Dowel

Normal pavement slope

Permissible
construction joint

Permissible
constr. joint

1" Dowel

Butt joint

Reinforcing steel
per SCD BP-1.1

Reinforcing steel
per SCD BP-1.1

Permissible

Any type curb

Construction joint

Mortar

Minimum pipe dia. 6"

1" expansion joint (Typ.)

Mortar

Permissible

Mortar

Permissible

Mortar

Permissible

Location of grate, elev.,
station and offset?

Normal gutter
flowline

Top of curb

Gutter frame
and grate

1" Dowel

Normal pavement slope

Permissible
construction joint

Permissible
constr. joint

1" Dowel

Butt joint

Reinforcing steel
per SCD BP-1.1

Reinforcing steel
per SCD BP-1.1

Permissible

Any type curb

Construction joint

Mortar

Minimum pipe dia. 6"

1" expansion joint (Typ.)

Mortar

Permissible

Mortar

Permissible

Mortar

Permissible

Location of grate, elev.,
station and offset?

Normal gutter
flowline

Top of curb

Gutter frame
and grate

1" Dowel

Normal pavement slope

Permissible
construction joint

Permissible
constr. joint

1" Dowel

Butt joint

Reinforcing steel
per SCD BP-1.1

Reinforcing steel
per SCD BP-1.1

Permissible

Any type curb

Construction joint

Mortar

Minimum pipe dia. 6"

1" expansion joint (Typ.)

Mortar

Permissible

Mortar

Permissible

Mortar

Permissible

Location of grate, elev.,
station and offset?

Normal gutter
flowline

Top of curb

Gutter frame
and grate

1" Dowel

Normal pavement slope

Permissible
construction joint

Permissible
constr. joint

1" Dowel

Butt joint

Reinforcing steel
per SCD BP-1.1

Reinforcing steel
per SCD BP-1.1

Permissible

Any type curb

Construction joint

Mortar

Minimum pipe dia. 6"

1" expansion joint (Typ.)

Mortar

Permissible

Mortar

Permissible

Mortar

Permissible

Location of grate, elev.,
station and offset?
SECTION A-A

See Sht. 2/2 for Notes

PLAN OF CATCH BASIN

SECTION B-B

SECTION C-C

END GRAVE STRAP

DETAIL "C"

(See SECTION A-A)

(See SECTION B-B)

(See SECTION C-C)
CONSTRUCTION INFORMATION

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Typical weight of grate = 375 lbs.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Typical weight of frame = 100 lbs.</td>
<td></td>
</tr>
</tbody>
</table>

NOTES

**Grate and Frame:** Use structural steel according to CMS 710.02 and 710. Provide a design essentially the same and equally as strong as the one shown.

**Grate:** Depress the grate 3" below the upstream end of the concrete apron of theCatch Basin at the centerline of the grate. Furnish and cast concrete grates 6" unless grate 6" is specifically required by the plans.

**Walls:** Construct brick or cast-in-place walls with a nominal thickness of 8" from the bottom slab to the upper box.

**Precast Construction:** Permitted, except for the apron. Meet the concrete requirements of CMS 706. Provide precast walls of at least 6" thick with sufficient reinforcing to permit shipping and placement without damage. Reduce the wall thickness from the outside.

**Steps:** Provide steps meeting the requirements of SCD MH-1.1. If stated where the depth exceeds 6'.

**Basins over 2 feet deep:** Use precast or cast-in-place concrete reenforced with #4 bars on 12" centers both vertically and horizontally with 2" clearance from inside wall face.

**Location and Elevation:** When given on the plans, location is the center of the grate. The elevation is the lowest point on the grate.

**Openings:** Ensure pipe openings are the O.D. of the pipe being supplied plus 2" when fabricated or field cut. Fill any voids per CMS 601.01.

**Concrete Apron:** Construct aprons in such a manner that the outside edges are of equal elevations.

1. If specified in the plans, grouted riprap may be used in place of the concrete apron.
2. Ditch Protection: Provide a 150' length of ditch erosion protection as shown. Installation and payment for the ditch erosion protection are per CMS 606.
3. Basins in Sag: When in a sag, omit the earth dike and longitudinal slope of the grate, and provide concrete apron and ditch protection on each side of the basin.
4. Payment: The concrete apron with cutoff wall or grouted riprap and dike are incidental to Item 611 - Catch Basin, No. 4. However, the apron is not required when Item 611 - Catch Basin, No. 6. Without Apron, is specified.

...
CATCH BASIN No. 5

PLAN OF CATCH BASIN

SECTION A-A

See Sh. 2/2 for NOTES

SECTION B-B

SECTION C-C

NOTE: *1"x1"x*' pedestal angles not shown
ROADSIDE DITCH GRADING AT CATCH BASIN

NOTES

GRATE AND FRAME: Use structural steel according to CMS 711.01 and 513. Provide a design essentially the same and equally as strong as the one shown.

GRADE: Depress the grate 3" below the upstream end of the concrete apron at the centerline of the ditch, Furnish and install grate "A" unless grate "B" is specifically required by the plans.

WALLS: Construct brick or cast-in-place walls with a nominal thickness of 8" from the bottom side to the upper face.

PRECAST CONSTRUCTION: Permitted, except for the grate, Meet the concrete requirements of CMS 700.1. Provide precast walls at least 6" thick with sufficient reinforcing to permit shipping and placement without damage. Reduce the wall thickness from the outside.

STEPS: Provide steps meeting the requirements of SCD BP-1 where the depth exceeds 6'.

BASINS OVER 12 FEET DEEP: Use precast or cast-in-place concrete; Reinforce with A6 bars on 9" centers both vertically and horizontally with 3" clearance from inside wall flow.

LOCATION AND ELEVATION: When given on the plans, the location is the center of the grate. The elevation is the lowest point on the grate.

OPENINGS: Ensure pipe openings shall be the O.D. of the pipe being supplied plus 3" when fabricated or field cut. Fill any voids per CMS 650.

CONCRETE APRON: Construct aprons in such a manner that the outside edges are at equal elevations. If specified in the plans, grouted riprap may be used in place of the concrete apron.

DITCH PROTECTION: Provide a 50' length of ditch erosion protection as shown. Installation and payment for ditch erosion protection are per CMS 650.

BASINS IN SAGS: When in a sag, and the earth dike and longitudinal slope of the grate, and provide concrete apron and ditch protection on each side of the basin.

PAYMENT: The concrete apron with cutoff wall or grouted riprap shall be in accordance to Item 61 - Catch Basin, No. 5. However, the apron is not required when Item 60 - Catch Basin, No. 5 Without Apron, is specified.

When itemized separately, payment for Item 61 riprap using 6" Reinforced Concrete Slab includes the cost of the cutoff wall.

As per CMS 601.04.D, reinforce the slab approximately 1' inside the top and bottom of the slab; typically equals fabricated reinforcement equivalent to #3 round bars, at 24" o.c. in two directions, or wire fabric according to SCD BP-3.
SECTION A-A

See Sh. 2/2 for NOTES

OUTLET PIPE

8" Bedding of #57 Aggregate

Upper box may be precast or cast-in-place. If precast, set in a bed of mortar.

Permissible construction joint

Bottom slab may be precast separately and the outlet placed on top of it with the bottom shaped to drain

PLAN OF CATCH BASIN

CATCH BASIN No. 8

SECTION B-B

SECTION THRU HALF OF GRATE "C"

NOTE: 1"x1"x1" pedestal angles not shown

OUTLET PIPE

2\(\frac{\pi}{2}\)"x\(\frac{\pi}{2}\)" Strap

4 Bars at 4" c/c

2\(\frac{\pi}{2}\)"x\(\frac{\pi}{2}\)" Bar

2\(\frac{\pi}{2}\)"x\(\frac{\pi}{2}\)" Strap
NOTES

GRATE AND FRAME: Use structural steel according to CMS 711.01 and 711.02. Provide a design essentially the same and equally as strong as the one shown.

GRATES: Decrease the grate 3" below the upstream end of the concrete apron at the centerline of the ditch.

WALLS: Construct brick or cast-in-place walls with a nominal thickness of 8" from the bottom slab to the upper box.

PRECAST CONSTRUCTION: Permitted, except for the apron. Meet the concrete requirements of CMS 706.13. Provide precast walls of at least 6" thick with sufficient reinforcing to permit shipping and placement without damage. Reduce the wall thickness from the outside.

STEPS: Provide steps meeting the requirements of SCD MH-1.1 where the depth exceeds 8'.

BASINS OVER 12 FEET DEEP: Use precast or cast-in-place concrete walls reinforced with 4 bars as 2" centers both vertically and horizontally with 2" clearance from inside wall face.

LOCATION AND ELEVATION: When given on the plans the location is at the center of the grate. The elevation is the lowest point on the grate.

OPENINGS: Insure pipe openings are the O.D. of the pipe being supplied plus 2" when fabricated or field cut. Fill any voids per CMS 611.

CONCRETE APRONS: Construct aprons in such a manner that the outside edges are at equal elevations.

If specified in the plans, grouted riprap may be used in place of the concrete apron.

DITCH PROTECTION: Provide a 10' length of ditch erosion protection as shown. Installation and payment for the ditch erosion protection are per CMS 611.

BASINS IN SAG: When in a sag, build the earth dike and longitudinal slope of grate, and provide concrete apron and ditch protection on each side of the basin.

PAYMENT: The concrete apron with cutoff wall or grouted riprap and dike are incidental to Item 611 - Catch Basin, No. 8. However, the apron is not required when Item 611 - Catch Basin, No. 8, Without Apron, is specified.

When itemized separately, payment for Item 611 riprap using 6" reinforced concrete slab includes the cost of the cutoff wall.

CONSTRUCTION INFORMATION

Typical weight of grate = 245 lbs.
Typical weight of frame = 36 lbs.

Ditch Erosion Protection

As per CMS 611.04.0, reinforce the slab approximately midway between the top and bottom of the slab, with steel bars 3/16" fabricated reinforcement equivalent to #3 round bars, at 24" o.c. in two directions, or wire fabric according to SCD BP-13.
CATCH BASINS No. 4A, No. 5A, and No. 8A

DESIGN: The lower box, shown here, is designed for use with the upper boxes of SCD CB-3.1, CB-3.2, and CB-3.3 (shown). See the appropriate drawing for specific details.

WALLS: Construct brick or cast-in-place walls with a nominal thickness of 8" from the bottom slab to the upper box.

PRECAST CONSTRUCTION: Permitted, except for the apron. Meet the concrete requirements of CMS 611. Provide prestressed walls at least 8" thick with sufficient reinforcing to permit shipping and placement without damage. Reduce the wall thickness from the inside.

STEPS: Provide steps meeting the requirements of SCD MH-1.1 where the depth exceeds 8'.

BASINS OVER 12 FEET DEEP: Use precast or cast-in-place concrete, reinforce with #4 bars on 12" centers both vertically and horizontally with 2" clearance from inside wall face.

LOCATION AND ELEVATION: When given on the plans, the location is the center of the grate. The elevation is the lowest point on the grate.

OPENINGS: Ensure pipe openings are the O.D. of the pipe being supplied pipe 3' when fabricated or field cut. Fill any voids per CMS 811.

CONCRETE APRONS: Construct aprons in such a manner that the outside edges are at equal elevations.

If specified in the plans, grouted riprap may be used in place of the concrete apron.

DITCH PROTECTION: Provide a 150' length of ditch erosion protection as shown. Installation and payment for ditch erosion protection are per CMS 670.

BASINS IN SAG: When in a sag, the earth dike and longitudinal slope of the grate, and provide concrete aprons and ditch protection on each side of the basin.

PAYMENT: The concrete apron with cutoff wall or grouted riprap and dike are incidental to Item 611 = Catch Basin. However, the apron is not required when Item 611 = Catch Basin, Without Apron, is specified.
NOTES

GENERAL: Exercise care to construct the catch basin to the proper grade and in a true vertical position. Do not cut holes while of pipe.

GRATE: Provide Grate "A" unless the plans specify Grate "B".

Cost the following text into the top of the grate:

"DUMP NO WASTE" and "DRAINS TO WATERWAY"

Print text in bold, capital letters at least ½" high.

"WATERWAY" may be substituted with "STREAM", "RIVER", "LAKE", etc. Actual placement and logo may vary per manufacturer.

CASTINGS: Meet the requirements of CMS 611. Provide a design essentially the same and equally as strong as the one shown. Minimum weight is 70 lbs. for Grate "A" and 75 lbs. for Grate "B".

Lighter weight grates that meet the requirements of CMS 711.4 may also be provided. Provide grate openings and dimensions as shown here unless otherwise shown on the plans.

PRECAST CONSTRUCTION: Permitted. Meet the concrete requirements of CMS 706.13. Provide sufficient reinforcing to prevent shipping and placement without damage.

LOCATION AND ELEVATION: When given on the plans the location is at the center of the grate. The elevation is at the lowest point on the grate.

CONCRETE BASE: Use 4000 psi compressive strength concrete for bases.

CROSS: Where the sewer line is not continuous through a catch basin, plug the upstream opening of the cross properly using a vitrified or concrete stopper and a sealed joint.

RISER AND CROSS: Use standard strength vitrified clay pipe, standard strength non-reinforced concrete pipe having bell and spigot ends, or precast as noted above.

RISER PIPES: Diameter is 18" regardless of size of sewer pipe.

PAYMENTS: All materials and labor, including excavation and backfilling, are paid for under Item 611 - Catch Basin, No. 7.
**NOTES**

**GRADES:** Provide Grate "A" unless the plans specify Grate "B".

Cost the following text into the top of the grate:

"SUMP NO WASTE" and "DRAINS TO WATERWAY"

Print text in bold, capital letters at least 3" high. "WATERWAY" may be substituted with "STREAM", "RIVER", "LAKE", etc. Actual placement and size may vary per manufacturer.

**CASTINGS:** Meet CMS 611 requirements.

Provide a design essentially the same and equally as strong as the one shown.

Minimum weight is:
- 30 lbs. for Grate "A"
- 20 lbs. for Grate "B"

Lighter weight grates that meet the requirements of CMS 611-1 may also be provided. Provide grate openings and dimensions as shown here unless otherwise shown in the plans.

**CASTING ANCHOR:** Anchor is to be a 1/2" radius 3 long bent around grate as shown and anchored into concrete casing.

**PRECAST CONSTRUCTION:** Permitted. Meet the concrete requirements of 106.13.

Provide sufficient reinforcing to permit shipping and placement without damage.

**LOCATION AND ELEVATION:** When given on the plans the location is at the center of the grate. The elevation is at the lowest point on the grate.

**CONCRETE CASING:** Casing for riser may be square, round or hexagonal in shape. Use 4000 psi compressive strength concrete.

**RISER PIPE:** Riser is 12" in diameter regardless of size of sewer line.

**TEE:** Where sewer line is not continuous through inlet, plug the upstream opening using a preformed stopper and sealed joint.

**RISER AND TEE:** Meet the requirements of CMS 611 Type B Pipe Material or furnish precast as noted above.

**PAYMENT:** All materials and labor, including excavation and backfilling, are paid for under Item 611 - Inlet, Side Ditch.