ROUND MANHOLE ASSEMBLY

NOTE: ROUND MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH AASHTO M 199.
1. COVER SLABS SHALL BE PRE-CAST.
2. ALL BARS SHALL BE #5 (#16) SPACED AT 6" (150) UNLESS NOTED OTHERWISE.
3. MINIMUM BAR COVER = 1" (38).
- DIMENSIONS TO MATCH OUTSIDE TO OUTSIDE DIMENSIONS OF BOX.

**NOTES:**

**SECTION A-A**

**SECTION B-B**

**BOX MANHOLE COVER SLAB DETAILS**

DATE: 08/01/2007

DELAWARE DEPARTMENT OF TRANSPORTATION

MANHOLE DETAILS

STANDARD NO. D-6 (2007) SHT. 4 OF 4

APPROVED

RECOMMENDED

08/01/2007
JUNCTION BOX DETAILS

SECTION A-A

- SEE OPTIONAL PIPE OPENING DETAIL ON STANDARD NO. D-4, SHEET 1 OF 1.

SECTION B-B

- SEE NOTE 6 ON DETAIL D-4, SHEET 1 OF 1.

COVER SLAB (PRE-CAST)

CAST IN PLACE CONCRETE FLOW CHANNEL (TYP.)

LENGTH

WIDTH

JUNCTION BOX ASSEMBLY

COVER SLAB (PRE-CAST)

TYPE 3 JOINT DETAIL

CAST IN PLACE CONCRETE FLOW CHANNEL (TYP.)

SECTION A-A

SECTION B-B

DELAWARE DEPARTMENT OF TRANSPORTATION

STANDARD NO. D-7 (2007) SHT. 1 OF 2

APPROVED

RECOMMENDED

09/18/2007 10/23/07

DATE DATE
JUNCTION BOX DETAILS

NOTES:
1. COVER SLABS ARE TO BE PRE-CAST.
2. ALL BARS ARE TO BE #5 (#16) SPACED @ 12" (305) UNLESS NOTED OTHERWISE.
3. MINIMUM BAR COVER = 1" (38).
4. DIMENSIONS TO MATCH OUTSIDE TO OUTSIDE DIMENSIONS OF BOX.

SECTION A-A

SECTION B-B

JUNCTION BOX COVER SLAB DETAILS

DATE: 08/01/2007

CHIEF ENGINEER
DESIGN ENGINEER
RECOMMENDED
APPROVED

DELAWARE DEPARTMENT OF TRANSPORTATION

STANDARD NO. D-7 (2007) SHT. 2 OF 2
APPROVED
DATE: 10/23/2007

SCALE: 1/4" = 1'-0"
LIMIT OF PAY FOR EXCAVATION OF PIPE TRENCHES = O.D. + 24" (600)

1/4 (O.D.) 16" (400) MIN. IN ROCK

CONCRETE 2000 P.S.I., 15 MPa (MIN.)

CLASS A BEDDING

FINISHED GRADE

LIMIT OF PAY ITEMS 206 AND/OR 208

12" (300) MIN.

EARTH CUSHION

CLASS C BEDDING

NOTE: USE CLASS C BEDDING UNLESS OTHERWISE INDICATED

DELTA
DEPARTMENT OF TRANSPORTATION

PIECE BEDDING

STANDARD NO. D-8 (2001)

SHT. 1 OF 1

APPROVED

RECOMMENDED

05/30/2001
NOT TO SCALE

NOTES:
0. THE PERFORATED PIPE UNDERDRAIN SHALL BE LOCATED AS SHOWN ON THE TYPICAL SECTIONS OF THE CONSTRUCTION PLANS.
1. GEOTEXTILE FILTER FABRIC SHALL BE PLACED ENTIRELY OVER THE TOP OF UNDERDRAIN TRENCH AND LAIRED AS SHOWN.
2. SLOPE OF UNDERDRAINS SHALL MATCH ROADWAY GRADE, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
3. OUTLET PIPE CONFIGURATIONS SHALL USE 45 DEGREE ELBOWS OR SHALL USE STRAIGHT PIPE WITH A MINIMUM RADIUS OF 3'.
4. PIPE TO DIRECT UNDERDRAIN PIPE INTO SIDE OF DRAINAGE INLET OR TO POSITIVE GRADE. PIPE SHALL ALSO BE NON-PERFORATED AND HAVE A SMOOTH INTERIOR.
5. RODENT SCREEN SHALL SNUGLY FIT THE PROVIDED SLOT WITH THE SCREEN UP FITTING TIGHT TO THE BOTTOM FLOW LINE.
6. A 4" X 20' FLEXIBLE DELIMITER SHALL BE FURNISHED AND INSTALLED AT THE DIRECTION OF THE ENGINEER TO MARK THE LOCATION OF THE CONCRETE HEADWALL. COST INCIDENTAL TO DOWNSPOUT SPLASH APRONS ITEM.
7. WHEN TWO LINES OF PIPE UNDERDRAIN DRAIN TO A LOW POINT, EACH PIPE MUST HAVE ITS OWN OUTLET.
8. PERFORATED PIPE UNDERDRAIN SHALL NOT BE PLACED UNDER GUARDRAIL IN ORDER TO AVOID PUNCTURING.

DELTA
DEPARTMENT OF TRANSPORTATION

PERFORATED PIPE UNDERDRAIN DETAIL

PERF. PIPE NO. D-9 (2006)
SHT. 1 OF 1

APPROVED

RECOMMENDED

08/04/2006
The contractor shall furnish material and plug abandoned drainage pipes with concrete as directed by the engineer.

**NOTE:**

THE CONTRACTOR SHALL FURNISH MATERIAL AND PLUG ABANDONED DRAINAGE PIPES WITH CONCRETE AS DIRECTED BY THE ENGINEER.
NOTES:
1) EDGE BERM AND TEMPORARY SLOPE DRAINS SHALL BE CONSTRUCTED ALONG THE Top OF ALL SLOPES TO INTERCEPT RUNOFF AND CONVEY IT DOWN THE SLOPE WITHOUT CREATING GULLIES OR WASHOUTS.

2) SLOPE FACES SHALL BE TRIMMED WITH CLEATED EQUIPMENT SUCH THAT THE CLEAT MARKS ARE ORIENTED HORIZONTALLY.

3) ALL CUT AND FILL SLOPES OF THE HIGHWAY EMBANKMENT SHALL BE PERMANENTLY STABILIZED AS THE WORK PROGRESSES IN INCREMENTS NOT TO EXCEED 10' (3000) MEASURED ALONG THE SLOPE.

4) CROSS SLOPES SHALL BE 2% MINIMUM, 6% MAXIMUM.
1. This device is intended to control sheet flow only; it shall not be used in areas of concentrated flow.
2. Silt fence ends shall be turned upslope to contain runoff.
3. Reinforcing strip is to be one complete strip covering all geotextile fabric at post.
NOTE: IF THE INLET IS NOT IN A LOW POINT, CONSTRUCT A SEDIMENT CONTROL EARTH DIKE IN THE DITCHLINE DOWNSTREAM FROM IT. SEE STANDARD SHEET FOR ADDITIONAL INFORMATION.
NOTE:
1. For ditches less than 30" (750) in depth, place dam as directed by the engineer.
2. The check dam height must not exceed 2' (600) at the center of the weir.
3. The check dam is to be constructed so that the center is 6' (1800) min.
4. The overbank flow shall be designed so that the flow does not exceed 300 cfs.
5. The maximum spacing between dams shall be the distance in the ditch where the top of the upstream dam is at the same elevation as the top of the downstream dam at the center of the weir.

SCALE: 1:100

DELTA CHECK DAM

DEPARTMENT OF TRANSPORTATION

STANDARD NO. E-6 (2006) SHT. 1 OF 1

APPROVED

RECOMMENDED

08/14/2006
NOTES:
1. SEDIMENT TRAPS ARE INTENDED FOR USE IN EXISTING, PROPOSED, AND
   TEMPORARY DITCHES OF ALL TYPES WITH A MAXIMUM DRAINAGE AREA OF
   16 ACRES (6.5 HECTARES). AS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER.
2. SIDE SLOPES SHALL BE STABILIZED WITH "TEMPORARY GRASS SEEDING, DRY GROUND"
   AND STRAW MULCH.
3. AN OUTLET STRUCTURE IS REQUIRED. STONE CHECK DAMS, PERFORATED RISER
   PIPES, SWIMMER DEWATERING DEVICES, OR DRAINAGE PILETS MAY BE USED. SEE
   APPROPRIATE STANDARD SHEET FOR ADDITIONAL INFORMATION.
4. FOR SIZE, LOCATION, ETC. OF SEDIMENT TRAP, SEE CONSTRUCTION PHASING,
   M.O.T., AND EROSION CONTROL PLANS.
5. ALL SLOPES SHALL BE 2:1.
6. A 2:1 LENGTH TO WIDTH RATIO SHOULD BE ACHIEVED WHERE POSSIBLE. IF THIS IS
   NOT POSSIBLE, THE USE OF BAFFLES OR OTHER SPECIAL DESIGNS SHOULD BE
   INCORPORATED TO INCREASE FLOW TIME.

PLAN SYMBOL

S.T.
NOTES:
1. THE WORK SHALL CONSIST OF THE CONSTRUCTION OF A SEDIMENT TRAP AROUND A DRAINAGE INLET TO ALLOW SEDIMENTATION TO OCCUR BEFORE RUNOFF ENTERS THE DRAINAGE INLET.

2. DRAINAGE INLET SEDIMENT TRAPS SHALL BE LIMITED TO A THREE (3) ACRE 0.2 HECTARE MAXIMUM DRAINAGE AREA.

3. THE DIMENSIONS OF THE DRAINAGE INLET SEDIMENT TRAP ARE TO BE AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
ELEVATION

For Sediment Trap, see Standard No. E-6 or E-7

TRASH HOOD

5" (125) Min. Dia Riser Pipe

Metal Base Plate 1/2" (13) Thick

Riser Pipe Diameter

NOTES:

1. This device is intended to be used as an outlet for Sediment Traps.

2. The pipe outlet shown shall only be used with sediment traps with drainage areas of 5 acres (20 hectares) or less. Larger drainage areas require an engineered design.

3. The height of the skimmer dewatering device shall be specified by the engineer in the field.
TRASH HOOD CHART

<table>
<thead>
<tr>
<th>RISER PIPE DIA.</th>
<th>D</th>
<th>H</th>
<th>TRASH HOOD SUPPORT BAR</th>
<th>MINIMUM SIZE SUPPORT BAR</th>
<th>MINIMUM TOP THICK.</th>
</tr>
</thead>
<tbody>
<tr>
<td>10&quot; (255)</td>
<td>2&quot;</td>
<td>7&quot;</td>
<td>16 (1.6)</td>
<td>Ø 19 (0.75)</td>
<td>16 (0.6)</td>
</tr>
<tr>
<td>12&quot; (310)</td>
<td>2.5&quot;</td>
<td>8&quot;</td>
<td>16 (1.6)</td>
<td>Ø 20.5 (0.8)</td>
<td>16 (0.6)</td>
</tr>
<tr>
<td>15&quot; (380)</td>
<td>3&quot;</td>
<td>9&quot;</td>
<td>16 (1.6)</td>
<td>Ø 26 (1.0)</td>
<td>16 (0.6)</td>
</tr>
<tr>
<td>24&quot; (600)</td>
<td>5&quot;</td>
<td>13&quot;</td>
<td>16 (1.6)</td>
<td>Ø 31 (1.2)</td>
<td>16 (0.6)</td>
</tr>
<tr>
<td>36&quot; (900)</td>
<td>6.25&quot;</td>
<td>14&quot;</td>
<td>16 (1.6)</td>
<td>Ø 38.5 (1.5)</td>
<td>16 (0.6)</td>
</tr>
</tbody>
</table>

TRASH HOOD DETAILS

- Tack weld top to trash hood in three places.
- Tack weld support bar to riser pipe (Typ) at four locations.

DELWARE DEPARTMENT OF TRANSPORTATION

RISER PIPE ASSEMBLY FOR SEDIMENT TRAP

STANDARD NO. E-8 (2006) SHT. 2 OF 2

APPROVED

RECOMMENDED

10/02/2006
STABILIZATION OF EMBANKMENTS

NOTES:
1. STAPLES TO BE STAGGERED AT 18" (450) SPACING.
2. TOPSOIL UNDER EROSION CONTROL BLANKET IS TO BE TRACKED AND SEEDED.
3. WHEN OFFSITE RUNOFF OCCURS, ADDITIONAL MEASURES AS DIRECTED BY THE ENGINEER SHALL BE USED TO ENSURE STABILITY OF EMBANKMENT.

STABILIZATION OF DITCHES

PLAN

NOTES:
1. ADDITIONAL STAPLES NOT SHOWN ARE REQUIRED AT OVERLAPS.
   SEE OVERLAP DETAIL FOR STAPLE PLACEMENT.
2. STAPLES ARE TO BE STAGGERED.
3. TOPSOIL UNDER EROSION CONTROL BLANKET IS TO BE TRACKED AND SEEDED.

EROSION CONTROL BLANKET APPLICATIONS

DELAWARE DEPARTMENT OF TRANSPORTATION

STANDARD NO. E-9 (2001)
SHT. 1 OF 1
APPROVED
RECOMMENDED
SECTION A-A

SECTION B-B

PLAN

NOTES:
1. SECURING PINS ARE TO BE PLACED AT LOCATIONS SHOWN
   AND AT 24" (600) LONGITUDINAL AND LATERAL SPACING.
2. SEE PLANS FOR LOCATION, DIMENSIONS, GRADES, ETC.
3. USE OF R-7 RIPRAP WILL REQUIRE A SEPARATE
   PROFESSIONAL ENGINEERING DESIGN FOR SIGHT
   SPECIFIC CONDITIONS.

DELMARVA
DEPARTMENT OF TRANSPORTATION

RIPRAP DITCH

STANDARD NO. E-10 (2001) SHT. 1 OF 1

APPROVED

RECOMMENDED
CHART A - STABILIZATION

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>SWALE GRADE</th>
<th>TYPE OF TREATMENT</th>
<th>DRAINAGE AREA A</th>
<th>DRAINAGE AREA B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.5-2.0X</td>
<td>SEED USED WITH</td>
<td>SEED USED WITH</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>EROSION CONTROL</td>
<td>EROSION CONTROL</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>BLANKET</td>
<td>BLANKET</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2X-8.0X</td>
<td>R-4 RRRA P</td>
<td>R-4 RRRA P</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>8.0-20X</td>
<td>ENGINEERED DESIGN</td>
<td>ENGINEERED DESIGN</td>
<td></td>
</tr>
</tbody>
</table>

CHART B - SWALE DIMENSIONS

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>SWALE A</th>
<th>SWALE B</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>1' (3000 MIN.)</td>
<td>1' (3000 MIN.)</td>
</tr>
<tr>
<td>D</td>
<td>4' (12000 MIN.)</td>
<td>6' (18000 MIN.)</td>
</tr>
</tbody>
</table>

NOTES:
1. Diverted runoff from a disturbed area shall be conveyed to a sediment trapping device.
2. Diverted runoff from an undisturbed area shall outlet directly into an undisturbed stabilized area at non-erosive velocity.
3. If temporary swales or clean water diversions are to be operational for more than 4 days, they shall be stabilized in accordance with Chart A prior to becoming operational.
4. If temporary swales or clean water diversions are to be operational for less than 4 days, they shall be stabilized with geotextile in accordance with the standard detail "geotextile lined channel diversion.

PLAN SYMBOL

A - 2 (COND)  B - 3 (COND)

CLEAN WATER DIVERSION

A - 2  B - 3

TEMPORARY SWALE

DELaware
DEPARTMENT OF TRANSPORTATION

TEMPORARY SWALE

STANDARD NO. E-11 (2001)  SHT. 1 OF 1

APPROVED

RECOMMENDED

04/17/2001
SEED AND MULCH
DOES NOT NEED TO BE COMPACTED
STABILIZE IN ACCORDANCE WITH NOTES 3 AND 4
FLOW
7'-600 MIN.
36'-000 MIN. AT TIME=http://www.123drinks.com/
STABILIZATION

SECTION A-A

OUTLET AS REQUIRED
SEE NOTES 1 & 2.

NOTES:
0. DIVERTED RUNOFF FROM A DISTURBED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE.

2. DIVERTED RUNOFF FROM AN UNDISTURBED AREA SHALL OUTLET INTO AN UNDISTURBED STABILIZED AREA AT NON-EROSIVE VELOCITY.

3. IF PERIMETER DIKE SWALES ARE TO BE OPERATIONAL FOR MORE THAN 90 DAYS, THEY SHALL BE STABILIZED IN ACCORDANCE WITH CHART A PRIOR TO BECOMING OPERATIONAL.

4. IF TEMPORARY SWALES OR CLEAN WATER DIVERSIONS ARE TO BE OPERATIONAL FOR LESS THAN 90 DAYS, THEY SHALL BE STABILIZED WITH GEOTEXTILE IN ACCORDANCE WITH THE STANDARD DETAIL "GEOTEXTILE-LINED CHANNEL DIVERSION".

CHART A - SWALE STABILIZATION

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>SWALE GRADE</th>
<th>TYPE OF TREATMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-1</td>
<td>0.5-2.0%</td>
<td>SEED AND EROSION CONTROL BLANKET</td>
</tr>
<tr>
<td>A-2</td>
<td>2.1-8.0%</td>
<td>LINED R-4 RIPRAP</td>
</tr>
<tr>
<td>A-3</td>
<td>8.1-20%</td>
<td>ENGINEERED DESIGN</td>
</tr>
</tbody>
</table>

MAXIMUM DRAINAGE AREA: 2 ACRES (0.8 ha)

PLAN SYMBOL

A-1
A-1 (CWD)
CLEAN WATER DIVERSION

DELWARE DEPARTMENT OF TRANSPORTATION

PERIMETER DIKE / SWALE

STANDARD NO. E-12 (2001) SHT. 1 OF 1

APPROVED

RECOMMENDED
SECTION A-A

CHART A - FLOW CHANNEL STABILIZATION

<table>
<thead>
<tr>
<th>TYPE</th>
<th>CHANNEL GRADE</th>
<th>TYPE OF TREATMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.5-2.0%</td>
<td>SEED AND EROSION CONTROL BLANKET</td>
</tr>
<tr>
<td>2</td>
<td>2.0-6.0%</td>
<td>R-4 RIPRAP</td>
</tr>
<tr>
<td>3</td>
<td>8.0-20%</td>
<td>ENGINEERED DESIGN</td>
</tr>
</tbody>
</table>

CHART B - EARTH DIKE DIMENSIONS

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>DIKE A (5 ac/2 hdi or less)</th>
<th>DIKE B (5-10 ac/2-4 hdi)</th>
</tr>
</thead>
<tbody>
<tr>
<td>c-DIKE HEIGHT</td>
<td>2&quot; (500mm)</td>
<td>18&quot; (450mm)</td>
</tr>
<tr>
<td>b-DIKE WIDTH</td>
<td>12&quot; (300mm)</td>
<td>24&quot; (600mm)</td>
</tr>
<tr>
<td>c-FLOW WIDTH</td>
<td>48&quot; (1200mm)</td>
<td>72&quot; (1800mm)</td>
</tr>
<tr>
<td>c-FLOW DEPTH</td>
<td>48&quot; (1200mm)</td>
<td>24&quot; (600mm)</td>
</tr>
</tbody>
</table>

NOTES:
1. IF DESIRED, TOP WIDTH MAY BE WIDER AND SIDE SLOPES MAY BE FLATTER TO FACILITATE CROSSING BY CONSTRUCTION TRAFFIC.
2. FIELD LOCATION SHOULD BE ADJUSTED AS NEEDED TO INSURE A STABILIZED OUTFALL.

PLAN SYMBOL

DELAWARE
DEPARTMENT OF TRANSPORTATION

EARTH DIKE

STANDARD NO. E-15 (2001) SHT. 1 OF 1

APPROVED

RECOMMENDED

04/17/2001
**Temporary Slope Drain**

**Notes:**
1. All temporary slope drains shall discharge into the back of sediment traps, into sediment basins or ditches discharging into traps or basins.
2. Temporary slope drains shall be used at the top of fill slopes as embankment is constructed, to prevent excessive erosion until shoulders are constructed and the slopes are seeded and mulched.

**Plan Symbol**

T.S.D.
1. The work shall consist of constructing a stilling well for the purpose of pumping clean water around a disturbed construction area to a stabilized outfall.

2. The dimensions of the stilling well shall be as shown on the plans or as directed by the engineer.
**SUMP PIT CHART**

<table>
<thead>
<tr>
<th>TYPE</th>
<th>PIPE 1</th>
<th>PIPE 2</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PERFORATED 2&quot; (50mm) CMP WITH PERFORATED CAP WELDED ON BOTTOM AND COMPLETELY WRAPPED WITH GEOTEXTILE.</td>
<td>N/A</td>
<td>4&quot; (100mm) MIN.</td>
<td>2&quot; (50mm)</td>
</tr>
<tr>
<td>2</td>
<td>PERFORATED 4.&quot; (100mm) CMP WITH PERFORATED CAP WELDED ON BOTTOM</td>
<td>REMOVABLE PERFORATED 36&quot; (900mm) CMP WITH PERFORATED CAP WELDED ON BOTTOM AND COMPLETELY WRAPPED WITH GEOTEXTILE.</td>
<td>8&quot; (200mm) MIN.</td>
<td>24&quot; (600mm)</td>
</tr>
</tbody>
</table>

**NOTES:**

1. THE WORK SHALL CONSIST OF CONSTRUCTING A SUMP PIT FOR THE PURPOSE OF FILTERING AND PUMPING WATER TO A STABILIZED OUTFALL.

2. GEOTEXTILE FOR THE 36" (900mm) CMP SHALL BE REPLACED WHEN CLOGGED WITH SEED.

3. 1/2" x 1/4" x 3/8" GAGE WIRE MESH SHALL BE PLACED AROUND THE REMOVABLE 36" (900mm) CMP BEFORE ATTACHING THE GEOTEXTILE TO INCREASE FLOW THROUGH THE GEOTEXTILE.

4. ALL PERFORATIONS SHALL BE 1.25" IN DIAMETER AND 12" (300mm) ON CENTER IN ALL DIRECTIONS.

5. TYPE 1 SUMP PIT SHALL BE USED ONLY WHEN PUMPING IS NEEDED FOR LESS THAN 7 DAYS.

**PLAN SYMBOL**

- SP-1
- SP-2

**DELAWARE DEPARTMENT OF TRANSPORTATION**

**SUMP PIT, TYPE 1 & 2**

**STANDARD NO.** E-16 (2001)  **SH. 1 OF 1**

**APPROVED**

**RECOMMENDED**

05/2/2001
NOTES:

1. A Dewatering Basin (DB) is used to remove sediment from sediment-laden water pumped from a construction site before the water re-enters the waterway. The DB shall have a minimum top width of 5' (1.524m) and a minimum depth of 3' (0.914m). The minimum top length shown in the plan is used only for quantity calculations by the Engineer. The actual top length in the field shall be calculated by the equation:

US Customary: Top Length (feet) = 26' + \( \frac{24}{2} \times Y \)

Metric: Top Length (mm) = 7930 + 4830 \( \times Y \)

where \( Y \) is the maximum capacity in gallons per minute (cubic meters per second) of the dewatering pump.

2. The outfall from the Basin to the receiving waters shall be stabilized. Pumping into the DB shall cease when the effluent from the Basin becomes sediment-laden.

3. A Sump Pit or Stilling Well (see Standard Sheets) shall be used in conjunction with a DB. The basin may be bypassed into the stabilized outfall if the water being pumped is non-sediment-laden. Direct discharge to the receiving waters shall cease and be redirected to the DB when effluent from the pump becomes sediment-laden.

4. Maintenance must be performed for the DB to function properly. Accumulated sediment shall be removed and disposed of in an approved disposal area when the Basin is filled to within 0' (0.0m) from the crest.

5. When used in conjunction with a cofferdam, dewatering shall begin no sooner than 12 hours after cofferdam installation in order to allow sediment produced during installation to settle completely.
OBRIQUE VIEW

STONE TRENCH

FLOW

2" (500) OVERLAP

2×3" (500×1000) MAX. LATERAL SPACING

1/2×14" (12×350) MAX. LONGITUDINAL SPACING

PINS

SAND BAG Dike

(SEE STANDARD SHEET)

EXISTING CHANNEL

WORK AREA

A

FLOW

STONE TRENCHES

GEOTEXTILE

TEMPORARY DIVERSION CHANNEL

PLAN

STONE TRENCHES

TRENCHING DETAIL

DEL. NO. 3 STONE

GEOTEXTILE

FLOW

3/4" (190) DIA. WASHER

8" (200)

1/4×15" PINS

FASTENING DETAIL

SECTION A-A

NOTE: SEE PLANS FOR LOCATION, DIMENSIONS, GRADATIONS, ETC.
NOTES:

1. The work shall consist of installing flow diversions for the purpose of erosion control when construction activities take place within the stream channel such as bridge abutment construction.

2. The diversion structure shall be installed from upstream to downstream.

3. The effective channel width shall be sized to pass a one year storm event peak flow, or 1/3 of stream width, whichever is greater.

4. The sandbag diversion height (h) shall be 1' (300) above the peak elevation of the one year storm.

Plan Symbol: 5-B
NOTES:
1. THE WORK SHALL CONSIST OF INSTALLING A SANDBAG DIKE FOR THE PURPOSE OF EROSION CONTROL.
   WHEN CONSTRUCTION ACTIVITIES TAKE PLACE WITHIN THE STREAM CHANNEL SUCH AS BANK STABILIZATION OR BRIDGE ABRUTMENT CONSTRUCTION.
2. THE SANDBAG DIKE SHALL BE INSTALLED AT THE UPSTREAM LOCATION FIRST.
3. THE HEIGHT OF THE SANDBAG DIKE SHALL BE IF 3000 ABOVE THE PEAK ELEVATION OF THE ONE YEAR STORM OR EQUAL WITH THE TOP OF BANK, WHICHER IS LESS, SEE PLANS FOR INFORMATION.
4. THE SPILLWAY SHALL BE SIZED TO PASS A 1:1 ONE YEAR STORM EVENT PEAK FLOW, SEE PLANS.
5. THE PIPE, WHEN UTILIZED, SHALL BE SIZED TO PASS THE STREAM BASE FLOW.
NOTES:
1. ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED UNDER THE ENTRANCE, IF NECESSARY. A MOUNTABLE BERM WITH 5:1 SLOPES SHALL BE ALLOWED TO FACILITATE PLACEMENT OF PIPES IN SHALLOW CONDITIONS.

2. THE LOCATION AND NUMBER OF STABILIZED CONSTRUCTION ENTRANCES SHALL BE AS INDICATED ON THE PLANS. ANY CHANGE IN LOCATION, ADDITION, OR DELETION OF AN ENTRANCE SHALL BE APPROVED IN ADVANCE BY THE ENGINEER.

3. DRAINAGE PIPE, IF UTILIZED, SHALL BE PAID FOR SEPARATELY UNDER THE APPROPRIATE BID ITEM.

4. THE TOP 2" (50) OF STONE SHALL BE REMOVED AND REPLACED WITH 2" (50) OF CLEAN STONE WHEN VODS ARE FILLED OR AS DIRECTED BY THE ENGINEER.
NOTES:

1. ALL P.V.C. PIPES ARE TO BE 4" 000-00, SCHEDULE 40.

2. ALL JOINTS OF THE FLOATATION SECTION SHALL BE SOLVENT WELDED, JOINTS OF SKIMMER SECTION NEED NOT BE WATER-TIGHT.

3. 4"000 HOPE FLEXIBLE DRAIN PIPE IS TO BE ATTACHED TO THE POND OUTLET STRUCTURE WITH WATER-TIGHT CONNECTIONS.

4. ORifice IS TO BE SIZED ACCORDING TO STORAGE VOLUME AND TO SLOWLY RELEASE 4"025 RUNOFF FOR AT LEAST 24 HOURS.

DELWARE
DEPARTMENT OF TRANSPORTATION

SKINNER Dewatering Device

STANDARD NO. E-22 (2006) SHT. 1 OF 1

APPROVED

RECOMMENDED

10/02/2006
FLOATING TURBIDITY CURTAIN

NOTE: 1) ADDITIONAL PANEL REQUIRED FOR DEPTHS GREATER THAN 5' (05000)
2) FLOATING TURBIDITY CURTAIN SHALL REACH BOTTOM UP TO DEPTHS OF 10' (02000) BY USING TWO PANELS. DEPTHS GREATER THAN 10' (02000) MAY REQUIRE SPECIAL DEPTH CURTAINS SPECIFICALLY CALLED FOR IN THE PLANS OR AS DIRECTED BY THE ENGINEER.
NOTES:

8. THE PORTABLE SEDIMENT TANK SHOWN MAY BE USED IN SITES WHERE SPACE IS LIMITED TO CONSTRUCT A DEWATERING BASIN.

2. THE MAXIMUM PUMP DISCHARGE INTO THIS TYPICAL PORTABLE SEDIMENT TANK SHALL BE 425 GALLONS PER MINUTE (95 LITERS PER SECOND). THE FILTER FABRIC SHALL BE REPLACED WHEN THE PORTABLE SEDIMENT TANK CAN NO LONGER ALLOW THIS FLOW RATE, WHEN THERE IS A TRENCH OR WHEN DIRECTED BY THE ENGINEER.

3. SEVERAL SET-UP OR CONNECTED IN PARALLEL PORTABLE SEDIMENT TANKS MAY BE USED WHEN A HIGHER FLOW RATE IS NEEDED TO DE-WATER THE JOB.

4. OTHER DESIGNS MAY BE USED PROVIDED THE HYDRAULIC DESIGN IS SUBMITTED TO AND APPROVED BY THE STORMWATER ENGINEER.

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**DELAWARE DEPARTMENT OF TRANSPORTATION**

**PORTABLE SEDIMENT TANK**

**STANDARD NO.** E-24 (2000)

**SHT.** 1 OF 1

**APPROVED**

**RECOMMENDED**

05/2/2001