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<td>203-03</td>
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**LATEST CHANGES HIGHLIGHTED**

**BOOK 4 of 4**
GENERAL NOTES:
3. THESE TYPICAL SECTIONS APPLY TO THE EXCAVATION OF ALL UNSUITABLE MATERIAL DEPOSITS THAT AVERAGE 10' OR LESS IN DEPTH AND AT NO LOCATION EXCEED 20' IN DEPTH.
4. ALL UNSUITABLE MATERIAL SHALL BE REMOVED FROM WITHIN THE EXCAVATION PAYMENT LINES. THE COST OF SUCH REMOVAL SHALL BE INCLUDED IN THE PRICE BID FOR EXCAVATION.
5. WHERE THE REMOVAL OF UNSUITABLE MATERIAL IS REQUIRED IN ADJACENT AREAS AND THE ADJACENT LATERAL LIMITS OF EXCAVATION ARE TAPERED CLOSER THAN THE DEPTH OF EXCAVATION, OR LESS THAN 10' APART, THE LATERAL LIMITS OF EXCAVATION AND BACKFILL SHALL BE EXTENDED TO INCLUDE THE MATERIAL BETWEEN THE ADJACENT EXCAVATIONS.
6. THE OUTER PAYMENT LINES FOR ACCEPTABLE UNDERWATER BACKFILL MATERIAL SHALL BE 2' ABOVE THE WATER LEVEL EXISTING IN THE EXCAVATION AT THE TIME OF BACKFILLING, UNLESS SHOWN ON THE PLANS.

LIMITS OF UNSUITABLE MATERIAL EXCAVATION AND BACKFILL SHALL BE EXTENDED 10' OUTSIDE THE PLAN DIMENSIONS OF ANY CULVERT OR STRUCTURE.


LIMITS OF UNSUITABLE MATERIAL EXCAVATION AND BACKFILL SHALL BE EXTENDED 10' OUTSIDE THE PLAN DIMENSIONS OF ANY CULVERT OR STRUCTURE.
SLOPE PROTECTION - BLANKET

1. THE PURPOSE OF SLOPE PROTECTION PIPE DRAIN IS TO CONVEY SUBSURFACE WATER FROM THE SLOPE TO A LOWER LEVEL WHERE IT CAN BE DRAINED OR USED.

2. THE SLOPE PROTECTION PIPE DRAIN TREATMENT SHALL ONLY BE USED AS ORDERED BY THE ENGINEER IN CHARGE BASED UPON THE RECOMMENDATIONS OF THE REGIONAL GEOTECHNICAL ENGINEER.

3. THE UNDERDRAIN PIPE MUST BE PLACED BELOW THE PHYSICAL SOIL SURFACE TO PREVENT FREEZING. THE SLOPE PROTECTION MATERIAL SHALL BE IN DIRECT CONTACT WITH THE UNDERDRAIN FILTER.

4. TO AVOID POTENTIAL DISRUPTIONS TO THE SLOPE PROTECTION SYSTEM, THE PIPE UNDERDRAIN SHOULD HAVE A MINIMUM DIAMETER OF 4".

5. THE DRAIN LINE SHOULD BE LOGICAL AND PRACTICAL TO KEEP THE DRAIN LINE SHORT AND DIRECT.

6. FLOWAGE, IF REQUIRED, MAY BE APPLIED ON THE FINISHED SLOPE USING THE THICKNESS OF SLOPE PROTECTION PIPE DRAIN INSTALLATION.

7. THE 1:1 SLOPE PROTECTION BLANKET SHALL INCLUDE THE WHOLE EXTENT OF THE SLOPE AND BE APPLIED AS ORDERED BY THE ENGINEER IN CHARGE BASED UPON THE RECOMMENDATIONS OF THE REGIONAL GEOTECHNICAL ENGINEER.

8. THE DIMENSIONS INDICATED ON THESE TYPICAL SECTIONS MAY BE INCREASED AT THE DISCRETION OF THE ENGINEER IN CHARGE.

9. THE UNDERDRAIN INSTALLATION SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPROPRIATE STANDARD CONSTRUCTION DETAIL SHEET. HOWEVER, WHERE POSSIBLE, THE PIPE UNDERDRAIN CAN BE REDUCED TO AS LOW AS THE DRAIN LINE TO PREVENT FREEZING. THE SLOPE PROTECTION MATERIAL SHALL BE IN DIRECT CONTACT WITH THE UNDERDRAIN FILTERS.

10. UNDERDRAIN INSTALLATION SHALL BE Omitted WHEN ORDERED BY THE ENGINEER IN CHARGE BASED UPON RECOMMENDATIONS OF THE REGIONAL GEOTECHNICAL ENGINEER.
CLEARANCE REQUIREMENTS FOR MULTIPLE INSTALLATIONS

**Notes:**

3. Construction requirements for select circular fill or crushed stone shall conform to 203-4.08, "Construction."  
4. Where the foundation soil requires a layer of material to support the pipeline, select suitable fill or crushed stone for pipeline installation.  
5. At any point in the pipeline installation where a stable "working platform" must first be established, the depth of sheathing adequate to stabilize trench, the sheathing from shall be as specified on the plans of as A.O.B.E.

**Installation Details for Circular and Pipe-Arches**

1. Where the distance between the top of pipe elevation and the top of embankment is less than 2', the embankment shall be at the thickness of the material as specified on the plans of A.O.B.E.  
2. If the embankment is required to extend beyond the lateral and fill or crushed stone shall conform to 203-4.08, "Construction."  
3. For lightweight pipe installations, it may be necessary to counteract the buoyancy of the pipe during the compaction process by using supplementary fill or crushed stone, prepared surface A.O.B.E. or as recommended by the engineer, with an estimated density not less than 95% of the standard compaction value of the fill or crushed stone.  
4. Protection of embankment from subsidence is necessary in locations where unsuitable material exists at or below invert elevation.  
5. Where general excavation of unsuitable or unstable material is required for pipeline installation, select suitable fill or crushed stone for pipeline installation, select suitable fill or crushed stone for pipeline installation.  
6. Where unsuitable material, not anticipated in design, is encountered at or below invert elevation, the treatment of such condition shall be A.O.B.E. or as recommended by the engineer, engineering data, See Notes 11 and 12.

**Other Details:**

- Depth of sheathing adequate to stabilize trench, the sheathing from shall be as specified on the plans of as A.O.B.E.
- Maximum embankment design shall be as specified on the plans of as A.O.B.E.
- Pipelines shall be installed at the thickness of the material as specified on the plans of A.O.B.E.
- Protective cover of embankment material, ramps shall be installed at the thickness of the material as specified on the plans of A.O.B.E.
**SILT FENCE - TEMPORARY**

**LINEAR MEASURES**

**SECOND POST**

**FIRST POST**

**18" MIN.**

**U.S. CUSTOMARY STANDARD SHEET**

**SILT FENCE PLACEMENT**

**EXAMPLE LAYOUT OF SILT FENCE OR SEDIMENT FILTER LOG**

**SECTION A-A**

**SEDIMENT FILTER LOG**

**PLAN**

**APPLICATION NOTES**

4. The primary purpose of a silt fence or sediment filter log is to intercept sediment laden runoff in ephemeral, low velocity sheet flow or log so that sediment falls out of suspension.

5. Identify areas on construction project that will require a silt fence or sediment filter log for erosion control. Erosion control measures, such as silt fence, are used to reduce the potential for erosion and sedimentation. Silt fences are typically used with erosion or sediment control measures, such as silt fence, to provide additional erosion control.

6. A silt fence or sediment filter log shall not be installed in or across a flowing channel or areas of concentrated flow. In lieu of silt fence or sediment filter log as a permanent control, to reduce property levels or to delineate a resource, use appropriate erosion control measures.

**GENERAL NOTES**

1. Silt fence or sediment filter log shall be installed on a line of equal elevation control. It may be installed at intermediate points of levels as well as at the bottom.

2. For locations that warrant placement of silt fence or sediment filter log at the base of slopes, the fence or sediment filter log shall be placed a minimum of 10 feet downslope from the toe of the slope, to provide adequate area for sediment storage and facilitate maintenance of the sediment containment area.

3. The length of a row of silt fence or sediment filter log shall be limited to 200 feet in length.

4. Posts for silt fence shall have a cross-sectional area of 3.5 square inches. The posts shall be driven into the ground, butt joints and other openings for silt fence posts shall be overlapped and spaced no more than 10 feet apart.

5. The bottom edge of silt fence shall be buried a minimum of 36 inches below ground. The fence shall be installed with the posts on the downslope side of the fence.

6. The ends of a row of silt fence or sediment filter log shall be angled up slope to prevent sediment bypass, or the end posts of two sections shall be wrapped as shown in the detail.

7. The ends of silt fence or sediment filter log shall be left open to allow the fence to move with the slope.

8. The following table indicates the distance between rows for silt fence installation:

<table>
<thead>
<tr>
<th>Silt Fence Minimum Slope Length (Feet)</th>
<th>Slope</th>
<th>Steepness</th>
<th>Standard</th>
<th>Reinforced</th>
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<tr>
<td>10-20%</td>
<td>100 to 150</td>
<td>125</td>
<td>250</td>
<td>25</td>
</tr>
<tr>
<td>20-30%</td>
<td>150 to 250</td>
<td>150</td>
<td>300</td>
<td>30</td>
</tr>
<tr>
<td>30-50%</td>
<td>250 to 500</td>
<td>200</td>
<td>500</td>
<td>50</td>
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9. Installation of silt fence or sediment logs, including excavation, backfill, and compaction of soil shall be performed by the most efficient method.

10. Silt fence or sediment filter log poles shall be spaced no more than 10 feet apart. Ends of log shall be staggered by 2 feet and ends spaced no more than 5 feet. The maximum slope length between rows shall not exceed the following limits:

<table>
<thead>
<tr>
<th>Silt Fence Minimum Slope Length (Feet)</th>
<th>Slope</th>
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<tbody>
<tr>
<td>10%</td>
<td>2</td>
</tr>
<tr>
<td>20%</td>
<td>5</td>
</tr>
<tr>
<td>30%</td>
<td>10</td>
</tr>
<tr>
<td>40%</td>
<td>15</td>
</tr>
<tr>
<td>50%</td>
<td>20</td>
</tr>
<tr>
<td>60%</td>
<td>25</td>
</tr>
<tr>
<td>70%</td>
<td>30</td>
</tr>
<tr>
<td>80%</td>
<td>35</td>
</tr>
<tr>
<td>90%</td>
<td>40</td>
</tr>
<tr>
<td>100%</td>
<td>45</td>
</tr>
</tbody>
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11. Installation of silt fence or sediment logs, including excavation, backfill, and compaction of soil shall be performed by the most efficient method.
**Application Notes:**

- **A.** The primary purpose of a check dam is to reduce erosion in a channel by reducing flow velocity in the channel.
- **B.** Check dams will capture sediment that falls out of suspension behind the check dam due to decreased velocity.
- **C.** Check dams are not intended to be fully effective in capturing sediment.
- **D.** Check dams are designed to be used in areas where sediment is not expected to be deposited.
- **E.** Check dams are intended to be temporary structures that can be easily removed or modified as necessary.

**General Notes:**

1. **I.** The check dam slopes should be designed using a standard of 1:2 or 1:3 to minimize the amount of sediment that is captured.
2. **J.** Check dams should be designed using a standard of 1:4 to minimize the amount of sediment that is captured.
3. **K.** Check dams should be designed using a standard of 1:6 to minimize the amount of sediment that is captured.

**Check Dam Volumes:**

- **A.** Check dam volumes should be calculated based on the average water level and the area of the check dam.
- **B.** Check dam volumes should be calculated based on the average water level and the area of the check dam.
- **C.** Check dam volumes should be calculated based on the average water level and the area of the check dam.

**Check Dam Placement Interval:**

- **D.** Check dam placement intervals should be calculated based on the average water level and the area of the check dam.
- **E.** Check dam placement intervals should be calculated based on the average water level and the area of the check dam.
- **F.** Check dam placement intervals should be calculated based on the average water level and the area of the check dam.

**Check Dam Items Suffixes:**

- **G.** Check dam items should be marked with a unique suffix to identify the specific check dam.
- **H.** Check dam items should be marked with a unique suffix to identify the specific check dam.
- **I.** Check dam items should be marked with a unique suffix to identify the specific check dam.

**Check Dam Check Dam Volumes:**

- **J.** Check dam volumes should be calculated based on the average water level and the area of the check dam.
- **K.** Check dam volumes should be calculated based on the average water level and the area of the check dam.
- **L.** Check dam volumes should be calculated based on the average water level and the area of the check dam.

**Check Dam Check Dam Placement Interval:**

- **M.** Check dam placement intervals should be calculated based on the average water level and the area of the check dam.
- **N.** Check dam placement intervals should be calculated based on the average water level and the area of the check dam.
- **O.** Check dam placement intervals should be calculated based on the average water level and the area of the check dam.

**Check Dam Items Suffixes:**

- **P.** Check dam items should be marked with a unique suffix to identify the specific check dam.
- **Q.** Check dam items should be marked with a unique suffix to identify the specific check dam.
- **R.** Check dam items should be marked with a unique suffix to identify the specific check dam.

**Check Dam Check Dam Volumes:**

- **S.** Check dam volumes should be calculated based on the average water level and the area of the check dam.
- **T.** Check dam volumes should be calculated based on the average water level and the area of the check dam.
- **U.** Check dam volumes should be calculated based on the average water level and the area of the check dam.

**Check Dam Check Dam Placement Interval:**

- **V.** Check dam placement intervals should be calculated based on the average water level and the area of the check dam.
- **W.** Check dam placement intervals should be calculated based on the average water level and the area of the check dam.
- **X.** Check dam placement intervals should be calculated based on the average water level and the area of the check dam.

**Check Dam Items Suffixes:**

- **Y.** Check dam items should be marked with a unique suffix to identify the specific check dam.
- **Z.** Check dam items should be marked with a unique suffix to identify the specific check dam.
- **[.]** Check dam items should be marked with a unique suffix to identify the specific check dam.
DRAINAGE STRUCTURE INLET PROTECTION - TEMPORARY (GRAVEL BAG)

APPLICATION NOTES:
A. The primary purpose of drainage structure inlet protection is to prevent sediment from entering a drainage system by trapping runoff, thereby allowing sediment to fall out of suspension.

B. Gravel bags are filled with clean stone to prevent erosion from entering the drainage system if bags are damaged during use.

C. The top of the inlet protection shall be set to allow overflow into the inlet and not damages to unprotected resources.

D. Drainage structure inlet protection—temporary silt fence shall not be used along the active travel lane or sidewalks.

E. Drainage structure inlet protection shall not be used without upstream erosion control.

F. Maximum drainage area to the practice shall not exceed one acre.

GENERAL NOTES:
1. Approved silt fence geotextiles, 317-01, are listed on the Department's approved lists. Silt fence geotextile shall be a single continuous piece to eliminate joints. Shovel and sable ends of the next post.

2. Space posts, fence, and fence posts with a maximum spacing of 2'. Wire mesh may be secured with geotextile to prevent support. Post shall be spaced close to the inlet to minimize exposure soil between the inlet and the structure. Center posts a minimum of 12" into ground (silt fence) or a minimum of 18" (sediment filter log).

3. Silt fence geotextile shall be mounted 18" and backfilled. Geotextile shall be securely fastened to posts and fence.

4. Silt fence geotextile shall be properly sized to ensure proper visibility. Sound bags shall be properly sized to the height. Sound bags shall be tied to fence to be made to withstand exposure soil between the inlet and the structure.

5. Silt fence geotextile shall be installed in the soil. A minimum of 18" shall be left between fence geotextile and a protective slurry. The bag ends shall be fastened with plastic ties or in accordance with manufacturer's recommendations.

6. Measures shall be inspected after every runoff event and repaired as necessary. Sediment shall be removed from its sedimentation area out of the drainage system.

APPROVED JANUARY 26, 2017
/S/ RICHARD WILDER, P.E.
THE OUTLET.

PRACTICE SHALL BE INSTALLED AS CLOSE AS PRACTICAL TO THE OUTSIDE DIMENSIONS OF THE ROADWAY'S CLEAR ZONE. EXCESSIVE PONDING AROUND THE STRUCTURE. THIS PRACTICE SHOULD NOT BE PLACED WHERE AN OVERFLOW CAPACITY IS NECESSARY TO PREVENT FLOWS ARE EXPECTED AND WHERE AN OVERFLOW CAPACITY IS NECESSARY TO PREVENT CONCRETE BLOCK INLET PROTECTION OR AN APPROVED EQUAL IS APPLICABLE WHEN HEAVY WAY. CONCRETE BLOCK INLET PROTECTION SHALL NOT BE USED WITHIN THE ACTIVE RIGHT OF THESE PRACTICES SHALL NOT BE USED WITHOUT UPSLOPE EROSION CONTROL.

AND NOT BYPASS. THE TOP OF THE INLET PROTECTION SHALL BE SET TO ALLOW OVERFLOW INTO THE INLET SEDIMENT TO FALL OUT OF SUSPENSION. SEDIMENT FROM ENTERING A DRAINAGE SYSTEM BY TRAPPING WATER THEREBY ALLOWING THE PRIMARY PURPOSE OF DRAINAGE STRUCTURE INLET PROTECTION IS TO PREVENT APPLICATION NOTES:

A. THE PRIMARY PURPOSE OF DRAINAGE STRUCTURE INLET PROTECTION IS TO PREVENT SEDIMENT FROM ENTERING A DRAINAGE SYSTEM BY TRAPPING WATER THEREBY ALLOWING SEGMENT TO FALL OUT OF SUSPENSION.

B. THE TOP OF THE INLET PROTECTION SHALL BE SET TO ALLOW OVERFLOW INTO THE INLET AND NOT BYPASS.

C. THESE PRACTICES SHALL NOT BE USED WITHOUT UPSLOPE EROSION CONTROL.

D. CONCRETE BLOCK INLET PROTECTION SHALL NOT BE USED WITHIN THE ACTIVE RIGHT OF WAY.

E. CONCRETE BLOCK INLET PROTECTION ON AN APPROVED EQUAL IS APPLICABLE WHEN HEAVY WAY.

F. PRACTICE SHALL BE INSTALLED AS CLOSE AS PRACTICAL TO THE OUTSIDE DIMENSIONS OF THE OUTLET.

GENERAL NOTES:

1. SECURE THE ENDS OF THE APRON FOR THE PREFABRICATED DRAINAGE STRUCTURE INLET PROTECTION AS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER. DRAINAGE INLET PROTECTION - EXCAVATED, SHALL BE INSTALLED AT DRAINAGE LOW POINTS NEEDED TO ENSURE THAT IT FUNCTIONS AS ORIGINALLY INTENDED.

2. MAINTENANCE SHALL INCLUDE REPAIR AND RE-BUILDING INLET PROTECTION AS NECESSARY.

3. MAINTENANCE SHALL INCLUDE REPAIR AND RE-BUILDING INLET PROTECTION AS NECESSARY.

4. MAINTENANCE SHALL INCLUDE REPAIR AND RE-BUILDING INLET PROTECTION AS NECESSARY.

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8. MAINTENANCE SHALL INCLUDE REPAIR AND RE-BUILDING INLET PROTECTION AS NECESSARY.

APPLICATION NOTES:

1. SECURE THE ENDS OF THE APRON FOR THE PREFABRICATED DRAINAGE STRUCTURE INLET PROTECTION AS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER. DRAINAGE INLET PROTECTION - EXCAVATED, SHALL BE INSTALLED AT DRAINAGE LOW POINTS NEEDED TO ENSURE THAT IT FUNCTIONS AS ORIGINALLY INTENDED.

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8. MAINTENANCE SHALL INCLUDE REPAIR AND RE-BUILDING INLET PROTECTION AS NECESSARY.
The purpose of a pipe slope drain is to prevent erosion of embankment or sides of embankment by transporting water through a pipe from a higher elevation to a lower elevation.

General Notes:
1. Approved soil erosion control materials are listed on the Department's Approved List.
2. Measures shall be inspected every seven (7) calendar days and after every runoff event. Measures shall be cleaned and repaired as required.
3. Pipe may be smooth interior or corrugated plastic pipe or corrugated metal pipe of other material as approved by Engineer. The pipe shall have soil-tight connections.
4. The pipe slope drain shall relieve a segment trapping device when the drainage area is disturbed. A stone fill apron and new shall be installed at the pipe outlet location where water is being discharged.
5. Crushed stone or stone filling for the pipe slope drain shall meet the requirements of light stone filling on section 733-21.
6. Pipe slope drain shall be 12 inches greater than the pipe diameter.
7. Locate pipe inlets at low points along the top of slope. The entrance of the pipe slope drain shall be 12 inches greater than the pipe diameter.
8. Every runoff from sheet flowing over the embankment with a slope of gravel, rocks, sediment filter loss or manufactured silty one at the top of slope.
9. Steeper slopes may require corrugated interior pipe and/or medium stone at outlet to dissipate energy at the outlet.
10. Posts for sediment filter loss shall be nominal 2 x 4 wood.

<table>
<thead>
<tr>
<th>Pipe Slope Drain</th>
<th>Max. Drainage Area/Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>XX-03 12&quot;</td>
<td>0.50</td>
</tr>
<tr>
<td>XX-05 18&quot;</td>
<td>1.0</td>
</tr>
<tr>
<td>XX-06 24&quot;</td>
<td>1.5</td>
</tr>
<tr>
<td>XX-07 30&quot;</td>
<td>3.0</td>
</tr>
<tr>
<td>XX-08 36&quot;</td>
<td>4.5</td>
</tr>
<tr>
<td>XX-09 42&quot;</td>
<td>6.5</td>
</tr>
<tr>
<td>XX-10 48&quot;</td>
<td>8.0</td>
</tr>
<tr>
<td>XX-11 54&quot;</td>
<td>10.0</td>
</tr>
</tbody>
</table>

Application Notes:
A. The purpose of a pipe slope drain is to prevent erosion of embankment or sides of embankment by transporting water through a pipe from a higher elevation to a lower elevation.

Stainless Steel Sheet
GENERAL NOTES:

1. MODIFICATIONS MAY BE REQUIRED TO MATCH FIELD CONDITIONS.
2. PROVIDES DRAINAGE PIPES SHALL BE SIZED WITH SUFFICIENT CAPACITY TO CARRY DITCH FLOWS (12" MIN.) ALTERNATIVES MAY BE PROPOSED BY THE CONTRACTOR FOR APPROVAL BY THE ENGINEER.
3. DRAINAGE PIPES OVER 20" DIA. THAT ARE NOT BEHIND A ROADSIDE BARRIER SHALL BE INDICATED ON THE DESIGN.
4. THE CONTRACTOR SHALL GRADE TO PREPARE AND SMOOTH ORIGINAL GRAVEL SURFACE THEN PLACE UP TO 6" CRUSHED STONE OR GRAVEL STABILIZATION MATERIAL UP TO THE EDGE OF PAVEMENT.
5. LAYOUT STABILIZATION SHEETS PER TYPICAL METHOD OF LAYOUT FOR A MINOR COMMERCIAL ENTRANCE/EXIT.
6. DETERMINE DRIVEWAY WIDTH "W" FROM THE MINOR COMMERCIAL DRIVEWAY CLASSIFICATION (SEE NOTE 1).

APPLICATION NOTES:

1. THE PURPOSE OF A STABILIZED CONSTRUCTION ENTRANCE/EXIT IS TO REDUCE OR ELIMINATE THE TRACKING OF SEDIMENT INTO PUBLIC RIGHTS OF WAY.

STRENGTH CLASS 1
GEOTEXTILE STABILIZATION

TABLE 1

<table>
<thead>
<tr>
<th>HIGHWAY SPEED CONDITION</th>
<th>A.</th>
<th>B.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL SPEEDS - PROTECTED BY BARRIER</td>
<td>30</td>
<td>50</td>
</tr>
<tr>
<td>30 MPH</td>
<td>50</td>
<td>70</td>
</tr>
<tr>
<td>50 MPH</td>
<td>70</td>
<td>90</td>
</tr>
<tr>
<td>0 MPH</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

TYPICAL CONSTRUCTION ENTRANCE / EXIT PLAN

TYPICAL CONSTRUCTION ENTRANCE / EXIT PROFILE

TYPICAL CONSTRUCTION ENTRANCE / EXIT SECTION A - A

NEW YORK
DEPARTMENT OF TRANSPORTATION

U.S. CUSTOMARY STANDARD SHEET

CONSTRUCTION ENTRANCE / EXIT
Typical Turbidity Curtain Layouts

**Application Notes:**

A. The purpose of a Turbidity Curtain is to separate work areas in or adjacent to embayments to prevent turbidity from entering the embayment.

B. Turbidity Curtain shall not be placed across a flowing embayment.

C. Concentrated flow outlets such as culvert outlets, washes etc., shall not be located behind Turbidity Curtain.

**General Notes:**

1. The Turbidity Curtain shall be placed as close to the water as possible without interfering with construction operations.

2. Turbidity Curtain shall be a minimum of 10' long for each section of Turbidity Curtain. End sections shall terminate 10' beyond the limits of disturbance.

3. The Turbidity Curtain shall be placed as close to the water as possible without interfering with construction operations.

4. The contractor shall periodically monitor the installation, taking into account weather patterns and prevailing wind directions that may affect water levels, velocity and movement of the Turbidity Curtain.

5. The Turbidity Curtain shall be removed by pulling towards the shore to minimize escape of sediments into the embayment.

6. The Turbidity Curtain shall be removed by pulling towards the shore to minimize escape of sediments into the embayment.

7. For flow velocities > 5 ft/sec, use a Redirection Barrier such that flow expands at 20° from the barrier will reach the curtain at a point where the curtain is essentially parallel to stream flow.

8. The Turbidity Curtain shall consist of concrete barriers, planking or other material that can be quickly removed or washed out so the effect on embayments is minimal. It should not be such that it will remain in place and be overtopped.

**Plan and/or Heavy Wind and Wave Action**

**General Notes:**

1. The Turbidity Curtain shall be placed as close to the water as possible without interfering with construction operations.

2. Turbidity Curtain shall be a minimum of 10' long for each section of Turbidity Curtain. End sections shall terminate 10' beyond the limits of disturbance.

3. The Turbidity Curtain shall be placed as close to the water as possible without interfering with construction operations.

4. The contractor shall periodically monitor the installation, taking into account weather patterns and prevailing wind directions that may affect water levels, velocity and movement of the Turbidity Curtain.

5. The Turbidity Curtain shall be removed by pulling towards the shore to minimize escape of sediments into the embayment.

6. The Turbidity Curtain shall be removed by pulling towards the shore to minimize escape of sediments into the embayment.

7. For flow velocities > 5 ft/sec, use a Redirection Barrier such that flow expands at 20° from the barrier will reach the curtain at a point where the curtain is essentially parallel to stream flow.

8. The Turbidity Curtain shall consist of concrete barriers, planking or other material that can be quickly removed or washed out so the effect on embayments is minimal. It should not be such that it will remain in place and be overtopped.
TEMPORARY SEDIMENT TRAP

1. GENERAL SPECIFICATIONS:
   - SEDIMENT TRAPS SHALL BE LOCATED SO THAT THEY CAN BE INSTALLED PRIOR TO GRADING OR FILLING IN THE DRAINAGE AREA THEY ARE TO PROTECT.
   - SEDIMENT TRAP FROM SEDIMENTATION.

2. EFFECTIVE DATE:
   - 09/02/2010

3. APPLICATION NOTES:
   - A SEDIMENT TRAP IS USUALLY INSTALLED IN A DRAINAGE WAY, AT A STORM DRAIN INLET, OR OTHER POINTS OF DISCHARGE FROM A DISTURBED AREA.
   - THE PURPOSE OF A SEDIMENT TRAP IS TO INTERCEPT SEDIMENT LADEN RUNOFF AND TRAP THE SEDIMENT IN THE DRAINAGE AREA, PROTECTING AND ILLUMINATING THE SEDIMENT TRAP FROM DESTRUCTION.

4. GENERAL NOTES:
   - CLEANING AND SHADING, AREA UNDER TRAP SHALL BE CHECKED AND STOTTED UP OF ANY MATERIAL AND IN THE TRAP. THE TRAP AREA SHALL BE CLEAR, BUT NOT GROUNDED.

5. RISER DETAIL:
   - THE RISER SHALL BE ANCHORED WITH A STEEL PLATE BASE TO PREVENT FLOATATION. A 1'-0" X 1'-0" STEEL PLATE SHALL BE ATTACHED AND SEALED TO THE RISER BY A CONTINUOUS WELD AROUND THE BOTTOM TO FORM A WATERTIGHT CONNECTION. 24" OF TAMPED GEOTEXTILE BEDDING WILL BE USED IN THE CONCRETE PORTION OF THE PIPE. NO HOLES WILL BE ALLOWED IN THE OUTLET PIPE.

6. OUTLET PIPE:
   - THE RISER SHALL BE WRAPPED WITH "" HARDWARE CLOTH WIRE THEN WRAPPED WITH "" WIDE hardware CLOTH WIRE. THE OUTLET PIPE SHALL BE HAND COMPACTED IN FOUR 4"" LAYERS. A MINIMUM OF 24"" OF LIGHT STONE FILLING SHALL BE PLACED ON THE PLATE.

7. EXCAVATION:
   - THE CONCAVE PORTION OF THE PIPE. NO HOLES WILL BE ALLOWED WITHIN 6"" OF THE HIGHEST HOLE AND 6"" BELOW THE LOWEST HOLE. THE ENDS OF THE GEOTEXTILE COME TOGETHER, THEY SHALL BE OVERLAPPED, FOLDED, AND STAPLED TO PREVENT BYPASS.

8. GEOTEXTILE DRAINAGE :
   - SEE NOTES 5, 6, 7 AND 8

9. WATER ELEVATION AT TOP OF TRAP:
   - APPLY TEMPORARY SEED, MULCH, AND APPLY CLASS II ROLLED EROSION CONTROL PRODUCT TO THE WATER ELEVATION AT TOP OF BERM.

10. OUTLET PIPE DIAMETER SIZES:
    - MINIMUM VOLUME OF SEDIMENT STORAGE SHALL BE 130 CUBIC YARDS PER ACRE OF CONTRIBUTORY DRAINAGE AREA.

11. LIGHT STONE FILLING:
    - MINIMUM THICKNESS STEEL PLATE SHALL BE ATTACHED AND SEALED TO THE RISER BY A CONTINUOUS WELD AROUND THE BOTTOM TO FORM A WATERTIGHT CONNECTION.

12. SANDS:
    - SANDS SHALL BE PUMPED TO A VEGETATED AREA AWAY FROM ALL WETLANDS, WATER COURSES, AND OTHER BODIES OF WATER.

13. BOTTOM POOL:
    - SHALL BE REPLACED AS NEEDED. IF DEWATERING OF THE TRAP BECOMES NECESSARY, WATER PERFORMS AS ORIGINALLY INTENDED. TORN, PUNCTURED, OR CLOGGED FILTER FABRIC REQUIRES REPAIR AND REBUILDING AS REQUIRED.

14. EXCAVATION LINE:
    - EXCAVATION LINE WILL BE HAND COMPACTED IN FOUR 4"" LAYERS. A MINIMUM OF 24"" OF LIGHT STONE FILLING SHALL BE PLACED OVER THE OUTLET PIPE BEFORE CROSSING IT WITH CONSTRUCTION EQUIPMENT.

15. SIZING OF POOL AREA RISER AND OUTLET IN ACCORDANCE WITH BLUE BOOK.

16. GENERAL NOTES:
    - CLEANING AND SHADING, AREA UNDER TRAP SHALL BE CHECKED AND STOTTED UP OF ANY MATERIAL AND IN THE TRAP. THE TRAP AREA SHALL BE CLEAR, BUT NOT GROUNDED.
LATERAL RESTRAINING CABLES
ANCHOR BRAKING ELEMENT
ANCHOR

ELEVATION VIEW

WIRE ROPE NET DETAIL

SEAM ROPE TO BE WRAPPED LOOSELY
AROUND BRAKING ELEMENT

†" DIA. TOP SUPPORT ROPE
Š" DIA. SEAM ROPE
(ONE WRAP PER 16" MIN.)

†" DIA. BOTTOM SUPPORT ROPE

CLIP TOP AND BOTTOM SEAM
ROPES TOGETHER, 6" OVERLAP AT
END OF EACH ROPE

TIE-BACK RESTRAINING CABLE DETAIL

†" DIA. TIE-BACK ROPE
LOOP AROUND COLUMN, SECURE
WITH CABLE GUIDE

TYPICAL CROSS SECTION

COLUMN (W8 X 48)

TIE-BACK RESTRAINING CABLE
WITH BRAKING ELEMENT
(SEE TIE-BACK RESTRAINING
CABLE DETAIL)

WIRE ROPE CLIPS
(SEE WIRE ROPE CLIP
ASSEMBLY DETAIL)

Š" DIA. WIRE ROPE ANCHOR
SEE WIRE ROPE ANCHOR FOUNDATION
DETAIL ON STANDARD SHEET TITLED
"WIRE ROPE CATCHMENT - SHEET 2 OF 3"

CLASS A CONCRETE
CHAIN LINK FENCE MATERIAL TO
BE FASTENED TO WIRE ROPE NET

BREAK-AWAY ASSEMBLY
SEE BREAK-AWAY ASSEMBLY
DETAIL ON STANDARD SHEET TITLED
"WIRE ROPE CATCHMENT - SHEET 2 OF 3"

WIRE ROPE CLIP ASSEMBLY DETAIL
WIRE ROPE CLIPS TO BE TIGHTENED TO 95 LBF-FT.

†" THIMBLE
†" DIA. WIRE ROPE
†" WIRE ROPE CLIPS (4)
GALVANIZED
6"

STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION

WIRE ROPE ROCK CATCHMENT FENCE
(SHEET 1 OF 3)

FOR THE DEPUTY

EFFECTIVE DATE: 05/06/2010

STANDARD SHEETS (USC), January 01, 2017
STEEL BEAM (W8 X 48)

PERPENDICULAR TIE-BACK ANCHOR FOUNDATION

SEE WIRE ROPE ANCHOR FOUNDATION DETAIL

PERPENDICULAR TIE-BACK ANCHOR FOUNDATION DETAIL

SEE WIRE ROPE ANCHOR FOUNDATION DETAIL ON STANDARD SHEET TITLED "WIRE ROPE ROCK CATCHMENT FENCE SHEET 1 OF 3"

SUPPORT ROPE - PLAN VIEW

TOP AND BOTTOM PERIMETER SUPPORT ROPE

LATERAL RESTRAINING CABLE

SUPPORT ROPE - ELEVATION VIEW

CABLE GUIDE

PRESS LOOP (PREFORMED)

BREAK AWAY ANGLE

CABLE GUIDE

BOTTOM SUPPORT ROPE

PRESS LOOPS (PREFORMED)

COLUMN BASE DETAIL

NOTE: SUPPORT ROPE WITH BRAKING ELEMENTS TO BE PRE-ASSEMBLED BY MANUFACTURER

LATERAL RESTRAINING CABLE DETAIL

CENTRALIZERS

CENTRALIZERS

CLASSES "A" CONCRETE LEVELING PAD

CLASSES "A" CONCRETE LEVELING PAD

BEDROCK FOUNDATION DETAIL

NOTE:
1. THE SUITABILITY OF THE BEDROCK AND BEDROCK SURFACE SHALL BE DETERMINED BY A DEPARTMENTAL ENGINEERING GEOLOGIST.
2. AN IRREGULAR ROCK SURFACE MAY REQUIRE A CONCRETE LEVELING PAD.
3. THE THICKNESS "AB" SHALL BE A MINIMUM OF 6".
4. DISTANCE "BC" SHALL BE 3'-0" MINIMUM.

CLASS "A" CONCRETE

LEVELING PAD

NOTE: SUPPORT ROPE WITH BRAKING ELEMENTS TO BE PRE-ASSEMBLED BY MANUFACTURER

LATERAL RESTRAINING CABLE DETAIL

CENTRALIZERS

CENTRALIZERS

CLASSES "A" CONCRETE LEVELING PAD

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CLASS "A" CONCRETE

LEVELING PAD

NOTE: SUPPORT ROPE WITH BRAKING ELEMENTS TO BE PRE-ASSEMBLED BY MANUFACTURER

LATERAL RESTRAINING CABLE DETAIL

CENTRALIZERS

CENTRALIZERS

CLASSES "A" CONCRETE LEVELING PAD

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4. DISTANCE "BC" SHALL BE 3'-0" MINIMUM.

CLASS "A" CONCRETE

LEVELING PAD

NOTE: SUPPORT ROPE WITH BRAKING ELEMENTS TO BE PRE-ASSEMBLED BY MANUFACTURER
CABLE GUIDES

TOP SUPPORT PLATE

AS SPECIFIED

BREAK-AWAY ANGLES

1" MIN. DIA. ANCHOR BOLT

GRADE 60, 30" LONG

FRONT VIEW

SIDE VIEW

BOTTOM SUPPORT PLATE

STRUCTURAL COLUMNS

NOTE 1. COLUMN AS SUPPLIED BY THE MANUFACTURER WILL NOT REQUIRE ANY WELDING FOR INSTALLATION IN THE FIELD.

ITEM

DESCRIPTION

A1 PLATE, 3/16" X 3" X 4" THICK

A2 BOLT, 3/8"/16" WITH NUTS AND WASHERS TO BE FITTED WHEN ALIGNED

A3 PLATE, 3/16" X 6/32" X 4" THICK

A4 COLUMN PLATE, 3 1/2" X 3 1/2" X 4/4" THICK

A5 ANCHOR BOLTS, 1" DIA. X 30" LONG WITH NUTS AND WASHERS

A6 BOLT, 1/4" DIA. X WITH NUTS (NO WASHERS)

A7 BREAKAWAY ANGLES, 3/16" X 1 1/2" X 3/8" THICK

PLATE FOR BOTTOM CABLE GUIDE

PLATE FOR TOP CABLE GUIDE

COLUMN PLATE

PLATE FOR BOTTOM ROPE

TOP SUPPORT ROPE

1/16" THICK, 7/16" DEEP HOE

CABLE GUIDES

CABLE GUIDES

SPEAK-WAY ANGLE

1" MIN. SCA, MINIMUM DEG. 60, 10" LONG

TOP SUPPORT PLATE
VINYCOATED ROCK CATCHMENT FENCE POST

DETAILS "C1"

(U.S. CUSTOMARY STANDARD SHEET)

DEPARTMENT OF TRANSPORTATION

STATE OF NEW YORK

DEPARTMENT OF TRANSPORTATION

USG CUSTOMARY STANDARD SHEET

CHAIN LINK ROCK CATCHMENT FENCE
(SHEET 1 OF 2)

GENERAL NOTES:

1. ALL CABLE SPLICES ARE TO BE MADE AT 10'-0" INTERVALS WITH A MINIMUM OF TWO (2) CABLE ENDS BEING SPACED NOT TO EXCEED 20'-0" OF EACH OTHER.

2. ALL CABLE ENDS AND SPLICES ARE TO BE DESIGNED TO USE THE WEDGE SHOWN IN DETAIL "A" ON THE STANDARD SHEET TITLED "CHAIN LINK ROCK CATCHMENT FENCE - SHEET 2 OF 2".

3. ALL CABLE ENDS SHOULD BE DEVELOPED TO USE THE WEDGE SHOWN IN DETAIL "A" ON THE STANDARD SHEET TITLED "CHAIN LINK ROCK CATCHMENT FENCE - SHEET 2 OF 2".

4. THE TIE-BACK WEDGE SHOWN IN DETAIL "A" IS DESIGNED TO FIT INTO THE TOP CABLE SPLICE AND SHALL BE LOCATED AT THE CABLE SPLIT."A" ON THE STANDARD SHEET TITLED "CHAIN LINK ROCK CATCHMENT FENCE - SHEET 2 OF 2".

5. ALL CABLE ENDS AND SPLICES ARE TO BE DESIGNED TO USE THE WEDGE SHOWN IN DETAIL "A" ON THE STANDARD SHEET TITLED "CHAIN LINK ROCK CATCHMENT FENCE - SHEET 2 OF 2".

6. ALL CABLE ENDS AND SPLICES ARE TO BE DESIGNED TO USE THE WEDGE SHOWN IN DETAIL "A" ON THE STANDARD SHEET TITLED "CHAIN LINK ROCK CATCHMENT FENCE - SHEET 2 OF 2".

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8. ALL CABLE ENDS AND SPLICES ARE TO BE DESIGNED TO USE THE WEDGE SHOWN IN DETAIL "A" ON THE STANDARD SHEET TITLED "CHAIN LINK ROCK CATCHMENT FENCE - SHEET 2 OF 2".

9. ALL CABLE ENDS AND SPLICES ARE TO BE DESIGNED TO USE THE WEDGE SHOWN IN DETAIL "A" ON THE STANDARD SHEET TITLED "CHAIN LINK ROCK CATCHMENT FENCE - SHEET 2 OF 2".

10. ALL CABLE ENDS AND SPLICES ARE TO BE DESIGNED TO USE THE WEDGE SHOWN IN DETAIL "A" ON THE STANDARD SHEET TITLED "CHAIN LINK ROCK CATCHMENT FENCE - SHEET 2 OF 2".

11. THE TIE-BACK WEDGE SHOWN IN DETAIL "A" IS DESIGNED TO FIT INTO THE TOP CABLE SPLICE AND SHALL BE LOCATED AT THE CABLE SPLIT."A" ON THE STANDARD SHEET TITLED "CHAIN LINK ROCK CATCHMENT FENCE - SHEET 2 OF 2".

12. ALL CABLE ENDS AND SPLICES ARE TO BE DESIGNED TO USE THE WEDGE SHOWN IN DETAIL "A" ON THE STANDARD SHEET TITLED "CHAIN LINK ROCK CATCHMENT FENCE - SHEET 2 OF 2".

13. ALL CABLE ENDS AND SPLICES ARE TO BE DESIGNED TO USE THE WEDGE SHOWN IN DETAIL "A" ON THE STANDARD SHEET TITLED "CHAIN LINK ROCK CATCHMENT FENCE - SHEET 2 OF 2".

14. ALL CABLE ENDS AND SPLICES ARE TO BE DESIGNED TO USE THE WEDGE SHOWN IN DETAIL "A" ON THE STANDARD SHEET TITLED "CHAIN LINK ROCK CATCHMENT FENCE - SHEET 2 OF 2".
#9 Hook bar anchor typical sections (varying overburden depths)

- For overburden depths less than 6'-0":
  - 1'-0"
  - 2'-0"
  - 4"
  - 6'-0"

Concrete grout

Tamped backfill

Guide rail cable loop

Cable clips to be tightened to 65 lbf-ft.

(4) 1/8" cable clips

See note 3 on standard sheet titled "Chain Link Rock Catchment Fence - Sheet 1 of 2"

Guide rail cable

See note 1 on standard sheet titled "Chain Link Rock Catchment Fence - Sheet 1 of 2"

Typical steel turnbuckle cable end assembly

To include wedge (shown in detail "X")

Typical wedge for all cable splices and cable ends (do not galvanized)

Typical anchor angle installation

Cable end cast steel or malleable for wrapping

See note 5 on standard sheet titled "Chain Link Rock Catchment Fence - Sheet 1 of 2"

Anchor nut

Inox washer

Concrete grout

Reinforcement 5" - 1" long for angular leg

Anchor plate

Guide rail

Rock

Steel turnbuckle

Flatten for wrench

Square 1/8" A.S.H.

Square nut (Galvanized)

2-12N-2 thread (TYP.)

See note 3, 4, and 5 on standard sheet titled "Chain Link Rock Catchment Fence - Sheet 1 of 2"

1/4" S.H. X 6" X 1" angle (ASTM A-36 Galvanized)

1/2" dia.

3/4" dia.

1/2" to 2"
WIRE ROPE LOOP DETAIL
FOR 3/8" AND 1/2" WIRE ROPE AS NOTED

(4) 1/2" CABLE CLIPS
6"

3/8" THIMBLE

1/2" CABLE GUIDE RAIL
1' 0"

1'-0" ROCK BOLT

TYPICAL SECTION

CONTINUOUS WEAVE ON OUTER MESH PANEL (ONE EDGED)

STAGGERED 6" PATTERN HOG RINGS OR CLIPS (BOTH EDGES)

1" X 4" STEEL SLEEVE

1/2" S/S ROCK BOLT

1/12" DIA. TIE WIRE

6' 6"

MAY 6 MIN.

1 4 - NOV - 2013 09:00

FILE NAME =
DATE /TIME =
USER =

STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION
(TECHNICAL SERVICES)

ISSUED UNDER EB 10-004
U.S. CUSTOMARY STANDARD SHEET
APPROVED: OCTOBER 23, 2013

DEPUTY CHIEF ENGINEER
TECHNICAL SERVICES

WIRE MESH DRAPE

ERRATA 1 EFF. 01/09/2014
ISSUED WITH EB 13-042
/S/ ROBERT L. SACK, P.E.

STANDARD SHEETS (USC), January 01, 2017

212-04
HOT MIX ASPHALT OVERLAY SPLICE (PAVEMENT TERMINATION DETAIL)

SECTION A-A

HOT MIX ASPHALT OVERLAY SPLICE (PAVEMENT TERMINATION DETAIL)

K VALUE TABLE FT/IN

<table>
<thead>
<tr>
<th>POSTED SPEED MPH</th>
<th>30</th>
<th>35</th>
<th>40</th>
<th>45</th>
<th>50</th>
<th>55</th>
<th>60</th>
<th>65</th>
<th>70</th>
</tr>
</thead>
<tbody>
<tr>
<td>K VALUE</td>
<td>2.67</td>
<td>2.97</td>
<td>3.27</td>
<td>3.57</td>
<td>3.87</td>
<td>4.17</td>
<td>4.47</td>
<td>4.77</td>
<td>5.07</td>
</tr>
</tbody>
</table>

NOTE:
3. HOT MIX ASPHALT OVERLAY SPLICES SHALL BE USED AT ENDS OF HMA OVERLAY HIGHWAY SECTIONS, MAJOR INTERSECTIONS, AND OTHER LOCATIONS INDICATED IN THE PLANS.

4. THE TRANSITION LENGTH IN FEET SHALL NOT BE LESS THAN THE VALUE OBTAINED BY DIVIDING THE EFFECTIVE OVERLAY THICKNESS IN INCHES BY THE K VALUE FROM THE TABLE FOR THE POSTED SPEED OF THE HIGHWAY. THE MINIMUM TRANSITION LENGTH IS 30 FT.

EXAMPLE: IF THE POSTED SPEED IS 55 MPH, EFFECTIVE OVERLAY THICKNESS = 2 INCHES, THEN THE MINIMUM TRANSITION LENGTH = 2 INCHES x 30 FT/IN = 60 FEET

5. ALL SURFACES OF THE HMA OVERLAY SPLICE TRANSITION AREA SHALL BE CLEANED AND TACK-COATED PRIOR TO HMA PLACEMENT. THE COST OF MILLING REBATES AND TACK-COATS IN THE HMA OVERLAY SPLICE TRANSITION AREA SHALL BE PAID FOR UNDER THE RESPECTIVE ITEMS.

6. THE COST OF LEAVING A NEAT EDGE SHALL BE INCLUDED IN THE MILLING ITEM. SAW CUTS SHALL BE MADE SO THAT SURFACE RUNOFF IS DIRECTED TO THE EDGE OF PAVEMENT.

7. IN THE TRANSITION AREA, PAVEMENT COURSES OTHER THAN THE TOP COURSE SHALL BE FEATHERED OUT USING TOP COURSE OR OTHER APPROPRIATE MATERIAL. PAYMENT SHALL BE MADE UNDER THE APPROPRIATE ITEM.
WELDED WIRE FABRIC SHALL BE SHEETS OF A NOMINAL 6" X 12" GRID PATTERN AND THE WIRES SHALL CONFORM TO THE SIZE AND GAUGE DESIGNATIONS IN THE TABLE.

SHEETS MAY BE HINGED AS SHOWN IN THE DETAIL. HINGED SHEET SHALL BE HINGED AT LEAST TWO LONGITUDINAL MEMBERS OFF CENTER, AND EACH ADJOINING SHEET SHALL BE REVERSED IN PLACING, IN ORDER THAT THE HINGES SHALL NOT OVERLAY EACH OTHER AT THE LAPS.

THE METAL REINFORCEMENT SHALL BE PLACED IN A MANNER APPROVED BY THE ENGINEER AT A NOMINAL DEPTH OF 4" BELOW THE SLAB SURFACE, THE MINIMUM ALLOWABLE DEPTH SHALL BE SUCH THAT 3" OF CONCRETE COVER IS PROVIDED. THE MAXIMUM ALLOWABLE DEPTH SHALL BE THE MID-PONT OF THE SLAB.

METAL REINFORCEMENT FURNISHED FOR CONCRETE PAVEMENT SLABS LESS THAN 10' IN WIDTH WILL BE PAID FOR UNDER AN APPROPRIATE ITEM.

GENERAL NOTES:
1. WELDED WIRE FABRIC SHALL BE SHEETS OF A 6" X 12" GRID PATTERN AND THE WIRES SHALL CONFORM TO THE SIZE AND GAUGE DESIGNATIONS IN THE TABLE.
2. SHEETS MAY BE HINGED AS SHOWN IN THE DETAIL. HINGED SHEET SHALL BE HINGED AT LEAST TWO LONGITUDINAL MEMBERS OFF CENTER, AND EACH ADJOINING SHEET SHALL BE REVERSED IN PLACING, IN ORDER THAT THE HINGES SHALL NOT OVERLAY EACH OTHER AT THE LAPS.
3. THE METAL REINFORCEMENT SHALL BE PLACED IN A MANNER APPROVED BY THE ENGINEER AT A NOMINAL DEPTH OF 4" BELOW THE SLAB SURFACE, THE MINIMUM ALLOWABLE DEPTH SHALL BE SUCH THAT 3" OF CONCRETE COVER IS PROVIDED. THE MAXIMUM ALLOWABLE DEPTH SHALL BE THE MID-PONT OF THE SLAB.
4. METAL REINFORCEMENT FURNISHED FOR CONCRETE PAVEMENT SLABS LESS THAN 10' IN WIDTH WILL BE PAID FOR UNDER AN APPROPRIATE ITEM.

**TABLE**

<table>
<thead>
<tr>
<th>SIZE / GAUGE DESIGNATION</th>
<th>NOMINAL DIAMETER (IN.)</th>
<th>NOMINAL AREA (SQ. IN.)</th>
<th>SIZE / GAUGE DESIGNATION</th>
<th>NOMINAL DIAMETER (IN.)</th>
<th>NOMINAL AREA (SQ. IN.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTM-A82 W8</td>
<td>0.300</td>
<td>0.098</td>
<td>ASTM-A82 W5</td>
<td>0.250</td>
<td>0.065</td>
</tr>
</tbody>
</table>

**SECTION A-A**

LONGITUDINAL WIRE
TRANSVERSE WIRE

**SECTION B-B**

TRANSVERSE WIRE
LONGITUDINAL WIRE

**NOTE:** CRIMP TO LIMIT MOVEMENT OF HINGE
**Typical PCC Pavement Plan**

**Table 3 - Longitudinal Joint Tie Spacing for Tied Portland Cement Concrete Shoulders**

<table>
<thead>
<tr>
<th>Slab Thickness</th>
<th>Tie Spacing</th>
<th>Tie Spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td>11&quot; - 13&quot; PCC</td>
<td>10&quot; - 18&quot;</td>
<td>10&quot; - 18&quot;</td>
</tr>
<tr>
<td>12&quot; - 15&quot; PCC</td>
<td>10&quot; - 18&quot;</td>
<td>10&quot; - 18&quot;</td>
</tr>
<tr>
<td>16&quot; - 20&quot; PCC</td>
<td>10&quot; - 18&quot;</td>
<td>10&quot; - 18&quot;</td>
</tr>
</tbody>
</table>

**Table 4 - Dowel Bar Diameter**

<table>
<thead>
<tr>
<th>Slab Thickness</th>
<th>Dowel Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>10&quot; - 15&quot; PCC</td>
<td>1/2&quot;</td>
</tr>
<tr>
<td>16&quot; - 20&quot; PCC</td>
<td>1/2&quot;</td>
</tr>
</tbody>
</table>

**Table 5 - Joint Reinforcement**

<table>
<thead>
<tr>
<th>Property</th>
<th>Concrete Shoulder</th>
<th>PCC Travel Lane</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
<td>Standard</td>
<td>Modified</td>
</tr>
<tr>
<td>Surface</td>
<td>Smooth</td>
<td>Smooth</td>
</tr>
<tr>
<td>Coating</td>
<td>Epoxy</td>
<td>Epoxy</td>
</tr>
<tr>
<td>Spacing</td>
<td>1/4&quot;</td>
<td>1/4&quot;</td>
</tr>
</tbody>
</table>

**Notes:**
- The maximum tie bar spacing from Tables 1 and 2 (SC) must be corrected for shorter ties as follows:
  \[ SC = \left( \frac{S}{LS} \right) \times (LS/36) \]
- The required number of longitudinal joint ties is based on the slab length and the maximum tie spacing, see Tables 1 and 2.
- When approved by the engineer, the contractor may use shorter longitudinal joint ties than those shown in the figure. The corrected maximum tie spacing for the shorter tie is calculated as follows:
  \[ SC = \left( \frac{S}{L-30} \right) \times (L-30) \]

**Diagram Notes:**
- The maximum tie length is 24". No additional payment will be made for the number of ties placed.
- In a fixed form paving operation, the contractor may use shorter longitudinal joint ties than those shown in the figure. The required number of ties is based on the slab length and the maximum tie spacing, see Tables 1 and 2.
- When longitudinal joint ties are placed across a joint containing a break in cross slope, the minimum tie length is 20". The maximum tie length is 36". No additional payment will be made for the number of ties placed.
- Construct the longitudinal joint between the travel lane and the outside shoulder. The minimum tie length is 24". No additional payment will be made for the number of ties placed.
- Longitudinal joint ties are specified. The outside shoulder must be tied Portland cement concrete if the 24" travel lane widening cannot be achieved due to project constraints.
- When longitudinal joint ties are placed across a joint containing a break in cross slope, the minimum tie length is 20". The maximum tie length is 36". No additional payment will be made for the number of ties placed.

**General Notes:**
- When longitudinal joint ties are placed across a joint containing a break in cross slope, the minimum tie length is 20". The maximum tie length is 36". No additional payment will be made for the number of ties placed.
- The required number of longitudinal joint ties is based on the slab length and the maximum tie spacing, see Tables 1 and 2.
- When approved by the engineer, the contractor may use shorter longitudinal joint ties than those shown in the figure. The corrected maximum tie spacing for the shorter tie is calculated as follows:
  \[ SC = \left( \frac{S}{L-30} \right) \times (L-30) \]

**State of New York Department of Transportation**

**Typical Plan Cross Section and Joint Layout**

**Effective Date:** 01/08/09

**Approved:**
- October 31, 2008

**Issued Under:** 502-02

**Department's Technical Services:**
- 502-02

**Standard Sheets (USC), January 01, 2017**

**5'-0" View of Trip Location**

**Appendix D:**
- Standard Sheet 502-02

**Figure 1:**
- Standard Sheet 502-03

**Figure 2:**
- Standard Sheet 502-04

**Figure 3:**
- Standard Sheet 502-05

**Figure 4:**
- Standard Sheet 502-06

**Figure 5:**
- Standard Sheet 502-07

**Figure 6:**
- Standard Sheet 502-08
DETAIL "A1" SAWED LONGITUDINAL JOINT BETWEEN LAKES PLACED SIMULTANEOUSLY (SNAP JOINT)

DETAIL "B1" FORMED LONGITUDINAL JOINT BETWEEN LAKES PLACED SEPARATELY (BUTT JOINT - SEE NOTE 2)

GENERAL NOTES:
1. PLACE THE FEMALE END OF THE REBAR FIRST.
2. BUSH JOINTS ARE ONLY USED BETWEEN LAKES PLACED SEPARATELY. IN THIS CASE, THE SUPPORTS MAY NOT EXTEND A BUTT JOINT, IF A BUTT JOINT IS DESIRED, THE CONTRACTOR IS REQUIRED TO PLACE THE SUPPORTS AT THE JOINED END OF THE LAKES.
3. A BUTT JOINT OF THE ENTIRE CONCRETE Width CAN NOT BE HORIZONTALLY CONSIDERED IN THE PROPOSED SPREAD. BUTT JOINTS MAY BE USED WITHIN THE CONCRETE.
4. Refer to Standard Sheets CS-10 through SC-20 for more detailed information regarding isolation elements.
5. A TYPICAL SHEAR KEY IS A SHEAR KEY DEPTH OF 10%, WHILE A DEEPLY SHEAR KEY DEPTH DEPENDS ON THE FORMED CONCRETE SPEC PLAN PROJECT.
6. SEND TENDER TO PER CONTRACT DOCUMENTS.
GENERAL NOTES:

1. PAVEMENT SLAB THICKNESS PER CONTRACT DOCUMENTS.

STAGE 1 SAWCUTS ARE NOT REQUIRED BETWEEN LANES PLACED SEPARATELY.

USE OF SILICONE OR PREFORMED ELASTIC LONGITUDINAL JOINT SEALER IS THE CONTRACTOR'S OPTION UNLESS MATERIAL TYPE IS SPECIFIED IN THE CONTRACT DOCUMENTS.

LONGITUDINAL JOINT SAWCUTTING

STAGE 1 SAWCUT

TWO STAGE SAWCUT BETWEEN LANES PLACED SIMULTANEOUSLY

LONGITUDINAL JOINT SEALING

STAGE 2 SAWCUT

DETAIL "A"

REMAINING PORTION OF STAGE 1 SAWCUT

DETAIL "B"

SAWCUT BETWEEN LANES PLACED SIMULTANEOUSLY

DETAIL "C"

PREFORMED ELASTIC LONGITUDINAL JOINT SEALER OPTION (HT05-101) (SEE NOTE 3)

DETAIL "D"

SILICONE SEAL OPTION (SEE NOTE 3)
GENERAL NOTES:

1. SLAB THICKNESS PER CONTRACT DOCUMENTS.

2. EXPANSION, CONSTRUCTION, AND ISOLATION JOINTS DO NOT REQUIRE STAGE 1 SAWCUTS.

3. PERFORM STAGE 2 SAWCUTS WITH BEVEL ON CONSTRUCTION JOINTS.

4. SEAL CONSTRUCTION JOINTS EXACTLY LIKE CONTRACTION JOINTS.

5. ROUT AND BEVEL EXPANSION AND ISOLATION JOINTS TO THE STAGE 2 SAWCUT DIMENSIONS.

6. SEAL EXPANSION AND ISOLATION JOINTS EXACTLY LIKE CONTRACTION JOINTS.

7. USE OF SILICONE OR PREFORMED ELASTIC JOINT SEALER IS THE CONTRACTOR'S OPTION UNLESS MATERIAL TYPE IS SPECIFIED IN THE CONTRACT DOCUMENTS.

8. THE STAGE 2 SAWCUT DOWN THE SIDE OF THE SLAB IS ONLY REQUIRED FOR THE PREFORMED ELASTIC SEALER OPTION, NOT THE SILICONE SEAL OPTION.

9. CONSTRUCT TRANSVERSE JOINTS ACROSS TIED PORTLAND CEMENT CONCRETE (PCC) SHOULDERS. ALIGN TRANSVERSE JOINTS IN THE SHOULDER WITH TRANSVERSE JOINTS IN THE ADJACENT TRAVEL LANE.

10. CRACK INDUCED BY THE SAWCUT

11. PREFORMED ELASTIC JOINT SEALER INSTALLATION AT EDGE OF PAVEMENT (SAWCUT THE JOINT DOWN THE SIDE OF THE SLAB) (SEE NOTE 6)

12. STAGE 2 SAWCUT DEPTH 1" TO 1½" (SEE NOTE 1)
UTILITY ISOLATION AND JOINT LAYOUT GENERAL NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR THE FINAL JOINT LAYOUT BASED ON THE ACTUAL LOCATION OF UTILITIES AND DRAINAGE STRUCTURES WITHIN THE PAVEMENT. CONSTRUCTION JOINTS MUST BE LOCATED IN CONJUNCTION WITH A PERMITS JOINT LAYOUT SENT TO THE ENGINEER AT LEAST 10 DAYS BEFORE WORK BEGINS, THE CONTRACTOR WILL REVIEW THE PLAN WITH THE CONTRACTING ENGINEER PRIOR TO THE FINAL PROJECT PERFORMANCE AGREEMENT SHALL NOT BE HINDERED SINCE THE JOINT LAYOUT IS APPROVED BY THE ENGINEER.

2. JOINT LAYOUT METHODOLOGY
   a. LOCATE LONGITUDINAL JOINTS
   b. LOCATE UTILITIES AND DRAINAGE STRUCTURES, THINK POSSIBLE, POSITION UTILITIES AND DRAINAGE STRUCTURES IN THE MOST APPROPRIATE LOCATION TO MINIMIZE CRACKING AND MOVEMENT. UTILITIES AND DRAINAGE STRUCTURES ARE ISOLATED PERPENDICULAR TO THE LONGITUDINAL Joints. THEジョINTS ARE LOCATED TO PROVIDE VIDEO CONNECTIVITY FROM TRANSPORTATION STRUCTURES TO THE UTILITIES AND DRAINAGE STRUCTURES. EXPANSION JOINTS SHOULD BE USED SPARINGLY. THEY ISOLATE AND PROTECT PAVEMENTS AND STRUCTURES FROM CONCRETE MOVEMENT AND VOLUME CHANGES. EXPANSION JOINTS ARE USED AT PAVING INTERRUPTIONS. THEY ARE AS WIDE AS THE SPACE OR CONTRACTOR DESIGN REQUIREMENTS.
   c. DESIGN AND LOCATE THE TRANSVERSE JOINTS, TRANSVERSE JOINT SUPPORTS, AND CONSTRUCT THE TRANSVERSE AND LONGITUDINAL JOINTS.

3. PCC SLAB ASPECT RATIOS AND SLAB GEOMETRY
   a. THE ASPECT RATIO (A) IS THE RATIO OF SLAB WIDTH TO SLAB LENGTH (L/ W). SLOPE DESIGN IS DIRECTED TO CONFORM TO THE FOLLOWING GEOMETRIC CRITERIA.
      1. A = 2.0, L/W = 3.5
   b. TRANSVERSE JOINT TYPE SELECTION
      1. TRANSVERSE EXPANSION JOINT
      2. TRANSVERSE ISOLATION JOINT
      3. TRANSVERSE DOWEL BAR
      4. TRANSVERSE SHOULDER BAR
   c. LONGITUDINAL JOINT SELECTION
      1. TIED LONGITUDINAL JOINT
      2. UNTIED LONGITUDINAL JOINT
      3. NON-TELESCOPING MANHOLE CASTING
      4. TELESCOPING MANHOLE CASTING
   d. TRANSVERSE JOINT SUPPORTS
      1. SIMPLE SUPPORT FOR TRANSVERSE JOINTS IS RECOMMENDED.
      2. TRANSVERSE JOINT SUPPORTS ARE REQUIRED TO BE USED AT EXPANSION JOINTS AND STRUCTURES SUCH AS THE WATER MAINS, DRAINAGE STRUCTURES, AND UTILITIES.
      3. TRANSVERSE JOINT DOWEL BAR
      4. TRANSVERSE SHOULDER BAR

4. JOINT LAYOUT DESIGN AND DETAILS
   a. TRANSVERSE EXPANSION JOINT
      1. TRANSVERSE EXPANSION JOINT IS USED AT JOINTS BETWEEN STRUCTURES SUCH AS WATER MAINS, DRAINAGE STRUCTURES, AND UTILITIES.
      2. TRANSVERSE EXPANSION JOINTS ARE USED AT JOINTS BETWEEN STRUCTURES SUCH AS WATER MAINS, DRAINAGE STRUCTURES, AND UTILITIES.
   b. TRANSVERSE ISOLATION JOINT
      1. TRANSVERSE ISOLATION JOINTS ARE USED AT JOINTS BETWEEN STRUCTURES SUCH AS WATER MAINS, DRAINAGE STRUCTURES, AND UTILITIES.
      2. TRANSVERSE ISOLATION JOINTS ARE USED AT JOINTS BETWEEN STRUCTURES SUCH AS WATER MAINS, DRAINAGE STRUCTURES, AND UTILITIES.
   c. TRANSVERSE DOWEL BAR
      1. TRANSVERSE DOWEL BAR IS USED AT JOINTS BETWEEN STRUCTURES SUCH AS WATER MAINS, DRAINAGE STRUCTURES, AND UTILITIES.
      2. TRANSVERSE DOWEL BAR IS USED AT JOINTS BETWEEN STRUCTURES SUCH AS WATER MAINS, DRAINAGE STRUCTURES, AND UTILITIES.
   d. TRANSVERSE SHOULDER BAR
      1. TRANSVERSE SHOULDER BAR IS USED AT JOINTS BETWEEN STRUCTURES SUCH AS WATER MAINS, DRAINAGE STRUCTURES, AND UTILITIES.
      2. TRANSVERSE SHOULDER BAR IS USED AT JOINTS BETWEEN STRUCTURES SUCH AS WATER MAINS, DRAINAGE STRUCTURES, AND UTILITIES.

5. CONSTRUCTION SEQUENCE AT ISOLATED UTILITIES AND DRAINAGE STRUCTURES
   a. CONSTRUCTION SEQUENCE AT ISOLATED UTILITIES AND DRAINAGE STRUCTURES IS DEPENDED ON THE FOLLOWING CRITERIA.
      1. FOR DETAIL SEE STANDARD SHEET 502-10, DETAILS "A", "B", AND "C".
      2. FOR DETAIL SEE STANDARD SHEET 502-11, DETAILS "D", "E", AND "F".
      3. FOR DETAIL SEE STANDARD SHEET 502-12, DETAILS "G", "H", AND "I".
      4. FOR DETAIL SEE STANDARD SHEET 502-13, DETAILS "J", "K", AND "L".
      5. FOR DETAIL SEE STANDARD SHEET 502-14, DETAILS "M", "N", AND "O".
      6. FOR DETAIL SEE STANDARD SHEET 502-15, DETAILS "P", "Q", AND "R".
   b. TRANSVERSE EXPANSION JOINTS ARE USED AT JOINTS BETWEEN STRUCTURES SUCH AS WATER MAINS, DRAINAGE STRUCTURES, AND UTILITIES.
   c. TRANSVERSE ISOLATION JOINTS ARE USED AT JOINTS BETWEEN STRUCTURES SUCH AS WATER MAINS, DRAINAGE STRUCTURES, AND UTILITIES.
   d. TRANSVERSE DOWEL BARS ARE USED AT JOINTS BETWEEN STRUCTURES SUCH AS WATER MAINS, DRAINAGE STRUCTURES, AND UTILITIES.
   e. TRANSVERSE SHOULDER BARS ARE USED AT JOINTS BETWEEN STRUCTURES SUCH AS WATER MAINS, DRAINAGE STRUCTURES, AND UTILITIES.

6. SPECIAL REQUIREMENTS FOR TRANSVERSE JOINTS
   a. TRANSVERSE JOINTS ARE USED AT JOINTS BETWEEN STRUCTURES SUCH AS WATER MAINS, DRAINAGE STRUCTURES, AND UTILITIES.
   b. TRANSVERSE JOINTS ARE USED AT JOINTS BETWEEN STRUCTURES SUCH AS WATER MAINS, DRAINAGE STRUCTURES, AND UTILITIES.
   c. TRANSVERSE JOINTS ARE USED AT JOINTS BETWEEN STRUCTURES SUCH AS WATER MAINS, DRAINAGE STRUCTURES, AND UTILITIES.
   d. TRANSVERSE JOINTS ARE USED AT JOINTS BETWEEN STRUCTURES SUCH AS WATER MAINS, DRAINAGE STRUCTURES, AND UTILITIES.
   e. TRANSVERSE JOINTS ARE USED AT JOINTS BETWEEN STRUCTURES SUCH AS WATER MAINS, DRAINAGE STRUCTURES, AND UTILITIES.
   f. TRANSVERSE JOINTS ARE USED AT JOINTS BETWEEN STRUCTURES SUCH AS WATER MAINS, DRAINAGE STRUCTURES, AND UTILITIES.
   g. TRANSVERSE JOINTS ARE USED AT JOINTS BETWEEN STRUCTURES SUCH AS WATER MAINS, DRAINAGE STRUCTURES, AND UTILITIES.
   h. TRANSVERSE JOINTS ARE USED AT JOINTS BETWEEN STRUCTURES SUCH AS WATER MAINS, DRAINAGE STRUCTURES, AND UTILITIES.
TYPICAL UTILITY ISOLATION GUIDELINES

TABLE NOTES:
1. WHEN THE PRECAST CONCRETE PAVES OF A NON-TELESCOPING MANHOLE CASTING OR THE MASONRY PORTION OF A SHALLOW UTILITY IS.keyword not resolved...
2. FOR SHALLOW UTILITIES, THE 12" OFFSET CRITERIA IS BASED ON THE DISTANCE BETWEEN THE LONGITUDINAL JOINT AND THE MASONRY PORTION OF THE STRUCTURE, NOT THE CASTING OR PRECAST CONCRETE PAVERS.
3. PAVEMENT NOT ROUTINELY EXPOSED TO TRAFFIC IS NOT HEAVILY REINFORCED.

TELESCOPING MANHOLE SUBSTITUTIONS

GENERAL NOTES:
1. SEE GENERAL NOTES AND LEGEND ON STANDARD SHEET 502-08.

SHEET NOTES:
- SEE LEGEND ON STANDARD SHEET 502-08 FOR PLAN VIEW DETAILS SYMBOLOGY.

STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION
U.S. CUSTOMARY STANDARD SHEET
UTILITY ISOLATION GUIDELINES

APPROVED OCTOBER 30, 2008
ISSUED UNDER EM-156
CERTIFY SHEET ENGINEER
TECHNICAL SERVICES

EFFECTIVE DATE: 01/08/09
502-09
NOTE: VALID FOR EITHER EXPOSED OR NOT EXPOSED TO TRAFFIC CONDITIONS

DETAIL "C" - PLAN VIEW

JOINT AND TIE BAR LAYOUT
FOR TELESCOPING MANHOLE CASTING
< 1'-0" FROM A LONGITUDINAL JOINT

SECTION A-A
TELESCOPING MANHOLE COVER

APPLY CAULK BEAD AT THE INTERFACE BETWEEN THE TOP AND BOTTOM PORTIONS OF THE CASTING

NOTE: VALID FOR EITHER EXPOSED OR NOT EXPOSED TO TRAFFIC CONDITIONS

GENERAL NOTES:
1. SEE GENERAL NOTES AND LEGEND ON STANDARD SHEET 502-09.
2. THE USE OF TELESCOPING CASTINGS REQUIRED
   a. THE CASTING MUST BE CENTERED LONGITUDINALLY BETWEEN TRANSVERSE JOINTS (1'-0"
   b. THE ROOF OF THE UTILITY STRUCTURE MUST BE A MINIMUM OF 16" BELOW THE PAVEMENT SURFACE.
   c. THE CASTING TYPE AND SIZE MUST BE AVAILABLE WITH THE TELESCOPING FEATURE. SEE CURRENT 655 STANDARD SHEETS.
   3. THE ROOF OF THE UTILITY STRUCTURE MUST BE A MINIMUM OF 16" BELOW THE PAVEMENT SURFACE.
   4. IF THE MANHOLE CASTING INTERFERES WITH NORMAL LONGITUDINAL JOINT TIE SPACING SEE DETAIL "B" (CONDITION "A" ON STANDARD SHEET 502-09)
   5. IF THE MANHOLE CASTING INTERFERES WITH NORMAL LONGITUDINAL JOINT TIE SPACING SEE DETAIL "C" (CONDITION "B" ON STANDARD SHEET 502-09)
   6. THE "D" DIMENSION MUST BE BETWEEN 16" AND 18". WHEN "D" IS GREATER THAN 18", PRECAST CONCRETE PAVERS AND\ OR ADJUSTMENT RINGS ARE REQUIRED. THE SLOT IN THE TELESCOPING MANHOLE CASTING PROVIDES 2" OF ELEVATION ADJUSTMENT TO MATCH THE PCC PAVEMENT FINISHED GRADE.

STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION
U.S. CUSTOMARY STANDARD SHEET
TELESCOPING MANHOLE CASTING LAYOUT

APPROVED OCTOBER 15, 2008
ISSUED UNDER EB 08-036
DEPUTY CHIEF ENGINEER
TELESCOPING MANHOLE CASTING LAYOUT

EFFECTIVE DATE: 01/08/09

NOTE: VALID FOR EITHER EXPOSED OR NOT EXPOSED TO TRAFFIC CONDITIONS

CONDITION "A" ON STANDARD SHEET 502-09
1. See general notes and legends in Standard Sheet 502-DL.
2. Center the manhole casting longitudinally between the transverse joints at 12".
3. Maintain 12" slab lengths. Slabs may be lengthened to 16" to resolve conflicts per structures in adjacent lanes. See requirements on Standard Sheet 502-DL, Note 3A, as are satisfied.
4. Use #6, Grade 60 steel, epoxy coated, deformed bars placed at a depth of half the isolation slab thickness for reinforcement. For rectangular structures, place a 3'-0" long bar at each corner. For round structures, encircle the structure with 6 bars, overlapping a minimum of 3". Maintain a horizontal clearance of 3" between the bars and the joints, joint bars, and utilities. The bars may be bent to achieve clearances.
5. Use welded wire mesh, W4 4"x4". Maintain a 3" clearance between the wire mesh and all joints, joint bars, and utilities.
6. If slab is 12" or less, extend the bottom of the isolation slab and the top of the manhole structure, until the surface and place complete in the structure. See details C-B.
7. If a utility with a non-telescoping casting falls within 12" of the projected longitudinal joint, offset the longitudinal joint flush with the structure. See Standard Sheet 502-DL, Note 3A. For circular structures, place a 3'-0" long bar at each corner. For round structures, encircle the structure with 6 bars, overlapping a minimum of 3". Maintain a horizontal clearance of 3" between the bars and the joints, joint bars, and utilities. The bars may be bent to achieve clearances.
8. Substitute isolation joints for expansion joints when the utility or drainage structure to be isolated is not exposed to traffic, such as in a shoulder, median, or gore area.
9. Form as flat as possible, while maintaining a 12" clearance between the manhole structure and the majority of freight concrete paving. Minimum slope is 1:30.

GENERAL NOTES:

STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION
U.S. CUSTOMARY STANDARD SHEET

DEPUTY CHIEF ENGINEER
(TECHNICAL SERVICES)

NON-TELESCOPING MANHOLE CASTING
LAYOUT

EFFECTIVE DATE: 01/08/09
APPROVED OCTOBER 31, 2008
ISSUED UNDER EB 08-036

IP_PWP:d0109553\502-11.dgn
STANDARD SHEETS (USC), January 01, 2017

20-NOV-2008 14:02
FILE NAME =
DATE/TIME =
USER =
1. SEE GENERAL NOTES AND LEGEND ON STANDARD SHEET 502-08.
2. CENTER THE MASONRY PORTION OF THE STRUCTURE WITHIN PCC SLAB.
3. MAINTAIN 12" ISOLATION JOINTS. SLABS MAY BE LENGTHENED TO 16'-0" TO RESOLVE CONFLICTS WITH STRUCTURES IN ADJACENT LANES PROVIDING THE GEOMETRIC REQUIREMENTS OF STANDARD SHEET 502-08, NOTE 3A IS SATISFIED.
4. USE #6 GRADE 60 STEEL, EPOXY COATED, DEFORMED BARS PLACED AT A DEPTH OF HALF THE ISOLATION JOINT THICKNESS FOR REINFORCEMENT. PLACE A 4'-0" LONG BAR AT EACH CORNER. PLACE A 6" LONG BAR OVERLAPPED A MINIMUM OF 3". MAINTAIN A HORIZONTAL CLEARANCE OF 12" BETWEEN THE JOINTS AND THE JOINT BARS. USE WELDED WIRE MESH, W4 4"X4". MAINTAIN A 3" CLEARANCE BETWEEN THE WIRE MESH AND ALL JOINTS, JOINT BARS, AND UTILITIES.
5. IF THE MASONRY PORTION OF A SHALLOW UTILITY FALLS WITHIN 12" OF THE EXPOSED TO TRAFFIC CONDITIONS SHOWN (SEE NOTE 7) OFFSET THE LONGITUDINAL JOINT SUCH THAT A 12" CLEARANCE IS ACHIEVED BETWEEN THE MASONRY AND THE LONGITUDINAL JOINT. THE WIDENED SLAB CONTAINING THE STRUCTURE AND THE NARROWED ADJACENT SLAB MUST BOTH MEET THE GEOMETRIC REQUIREMENTS OF STANDARD SHEET 502-08, NOTE 3A. IF THESE REQUIREMENTS CANNOT BE MET, USE A W2 8'-0" EXPANSION JOINT BAR TO ACHIEVE A 30\textdegree\, MAXIMUM ANGLE IS 30\textdegree. USE THESE DETAILS IF THE TOP OF THE STRUCTURE PROTRUDES INTO THE PCC SLAB.
GENERAL NOTES:

1. SEE GENERAL NOTES AND LEGEND ON STANDARD SHEET 502-06.
2. MAINTAIN 10'-0" SLAB LENGTH. SLABS MAY BE LENGTHENED TO 16'-0" TO RESOLVE CONFLICTS WITH STRUCTURES IN ADJACENT LANES, PROVIDED THE GEOMETRIC REQUIREMENTS ON STANDARD SHEET 502-08, NOTE 3A ARE SATISFIED. THE GEOMETRIC REQUIREMENTS OF STANDARD SHEET 502-08, NOTE 3A, DO NOT APPLY TO THE SLAB CONTAINING THE DRAINAGE STRUCTURE.
4. USE WELDED WIRE MESH, W4 4"X4". MAINTAIN A 3" CLEARANCE BETWEEN THE WIRE MESH AND ALL JOINTS, JOINT BARS, AND UTILITIES.
5. IF THE DRAINAGE STRUCTURE WILL NOT BE ROUTINELY EXPOSED TO TRAFFIC (FOR EXAMPLE: SHOULDER, GORE AREA, OR MEDIAN), REPLACE THE TRANSVERSE EXPANSION JOINTS WITH ISOLATION JOINTS.
6. ENSURE THE END DOWELS ARE EVENLY SPACED BETWEEN THE LONGITUDINAL JOINTS. DO NOT SPAN AN UNTIED LONGITUDINAL JOINT WITH A TRANSVERSE JOINT SUPPORT. USE SEPARATE SUPPORTS ON EITHER SIDE OF THE UNTIED LONGITUDINAL JOINT.

SECTION A-A

- DETAIL "A" - PLAN VIEW
- DRAINAGE STRUCTURE ISOLATION
- EXPOSED TO TRAFFIC CONDITIONS SHOWN SEE NOTE 6
- CONDITION "F" ON STANDARD SHEET 502-09

SECTION B-B

- EXPANSION JOINT
- TOP SLAB
- DRAINAGE STRUCTURE
- FRAME AND GRATE
- PAVERS AND ADJUSTMENT RING
- DRAINAGE STRUCTURE TOP SLAB

STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION
U.S. CUSTOMARY STANDARD SHEET

DRainage Structure isolation

APPROVED OCTOBER 15, 2008
ISSUED UNDER EB 08-036
502-13

EFFECTIVE DATE: 01/08/09
TELESCOPING MANHOLE CASTING CONDITIONS "A" AND "L" ON STANDARD SHEET 502-09

1. Use these details when the telescoping joints surround the manhole with fall a minimum of 12" outside the maximum position of the drainage structure.

2. Use these details when the telescoping joints surround the manhole falls within 12" of the maximum position of the drainage structure.

3. Use these details when the telescoping joints surround the manhole falls within 12" outside the maximum position of the drainage structure.

4. Supply isolation joints for expansion joints if the utility or drainage structure to be isolated is not exposed to traffic such as on the shoulder, median, or curb area.

5. Evenly space the end joints between the longitudinal joint, and do not use any one-dimensional joint with a telescoping joint support. Use adequate supports on either side of the unlined joint.

6. If a telescoping manhole casting falls within 12" of a longitudinal joint, cut the joint to create a flange at the top and bottom. Supply isolation joints as depicted on standard sheet 502-09. If the unlined joint is an inside longitudinal joint, supply an edge piece with the isolation joint as depicted on standard sheet 502-09.

7. If the manhole portion of a non-telescoping manhole casting falls within 12" of the inside longitudinal joint, cut the joint to create a flange at the top and bottom. Supply isolation joints as depicted on standard sheet 502-09.

8. Supply isolation joints for expansion joints if the utility or drainage structure to be isolated is not exposed to traffic such as on the shoulder, median, or curb area.

9. Use standard sheets 502-10, 502-11, and 502-15 for telescoping Manhole casting, non-telescoping Manhole central drainage structure cross sections, and reinforcement detail, respectively.

GENERAL NOTES:

1. Use general notes and legends on standard sheet 502-08.

2. Center the manhole casting longitudinally between telescoping joints (A) and (L).

3. Maintain ID slab lengths, slab may be extended to 16'. Use these details when the utility or drainage structure to be isolated is not exposed to traffic such as on the shoulder, median, or curb area.

4. Use these details when the telescoping joints surround the manhole with fall a minimum of 12" outside the maximum position of the drainage structure.

5. Use these details when the telescoping joints surround the manhole falls within 12" of the maximum position of the drainage structure.

6. Use these details when the telescoping joints surround the manhole falls within 12" outside the maximum position of the drainage structure.

7. Supply isolation joints for expansion joints if the utility or drainage structure to be isolated is not exposed to traffic such as in the shoulder, median, or curb area.

8. Evenly space the end joints between the longitudinal joint, and do not use any one-dimensional joint with a telescoping joint support. Use adequate supports on either side of the unlined joint.
Typical Multiple Utilities Isolation

Plan View

General Notes:

1. See General Notes and Legends on Standard Sheet 502-08. The geometric requirements of Standard Sheet 502-08, Note 14, do not apply to heavily reinforced slabs.

2. Use of heavily reinforced slabs in lanes exposed to traffic above is greater than 10'-0".

3. The slab length required to isolate a utility or utilities is greater than 20'-0".

4. A slab less than 10'-0" long contains two or more utilities, except for the conditions described on Standard Sheet 502-14.

5. Construct heavily reinforced slabs such that the slab is in accordance with the requirements specified on Standard Sheet 502-08, Note 3A. Do not apply to heavily reinforced slabs.

6. Geometric requirements of Standard Sheet 502-08, Note 3A, do not apply to heavily reinforced slabs.

7. Maintain a clearance between the reinforcement bars and the utilities. Place the wire mesh 4" from the pavement surface.

8. Use of heavily reinforced slabs in lanes exposed to traffic above is greater than 10'-0".

9. Maintain a clearance between the reinforcement bars and the utilities. Place the wire mesh 4" from the pavement surface.

10. Use of heavily reinforced slabs in lanes exposed to traffic above is greater than 10'-0".

11. Maintain a clearance between the reinforcement bars and the utilities. Place the wire mesh 4" from the pavement surface.

12. Use of heavily reinforced slabs in lanes exposed to traffic above is greater than 10'-0".

13. Maintain a clearance between the reinforcement bars and the utilities. Place the wire mesh 4" from the pavement surface.

14. Use of heavily reinforced slabs in lanes exposed to traffic above is greater than 10'-0".

15. Maintain a clearance between the reinforcement bars and the utilities. Place the wire mesh 4" from the pavement surface.

16. Use of heavily reinforced slabs in lanes exposed to traffic above is greater than 10'-0".

17. Maintain a clearance between the reinforcement bars and the utilities. Place the wire mesh 4" from the pavement surface.

18. Use of heavily reinforced slabs in lanes exposed to traffic above is greater than 10'-0".

19. Maintain a clearance between the reinforcement bars and the utilities. Place the wire mesh 4" from the pavement surface.

20. Use of heavily reinforced slabs in lanes exposed to traffic above is greater than 10'-0".

21. Maintain a clearance between the reinforcement bars and the utilities. Place the wire mesh 4" from the pavement surface.

22. Use of heavily reinforced slabs in lanes exposed to traffic above is greater than 10'-0".

23. Maintain a clearance between the reinforcement bars and the utilities. Place the wire mesh 4" from the pavement surface.

24. Use of heavily reinforced slabs in lanes exposed to traffic above is greater than 10'-0".

25. Maintain a clearance between the reinforcement bars and the utilities. Place the wire mesh 4" from the pavement surface.

26. Use of heavily reinforced slabs in lanes exposed to traffic above is greater than 10'-0".

27. Maintain a clearance between the reinforcement bars and the utilities. Place the wire mesh 4" from the pavement surface.

28. Use of heavily reinforced slabs in lanes exposed to traffic above is greater than 10'-0".

29. Maintain a clearance between the reinforcement bars and the utilities. Place the wire mesh 4" from the pavement surface.

30. Use of heavily reinforced slabs in lanes exposed to traffic above is greater than 10'-0".

31. Maintain a clearance between the reinforcement bars and the utilities. Place the wire mesh 4" from the pavement surface.

32. Use of heavily reinforced slabs in lanes exposed to traffic above is greater than 10'-0".

33. Maintain a clearance between the reinforcement bars and the utilities. Place the wire mesh 4" from the pavement surface.

34. Use of heavily reinforced slabs in lanes exposed to traffic above is greater than 10'-0".

35. Maintain a clearance between the reinforcement bars and the utilities. Place the wire mesh 4" from the pavement surface.

36. Use of heavily reinforced slabs in lanes exposed to traffic above is greater than 10'-0".

37. Maintain a clearance between the reinforcement bars and the utilities. Place the wire mesh 4" from the pavement surface.

38. Use of heavily reinforced slabs in lanes exposed to traffic above is greater than 10'-0".

39. Maintain a clearance between the reinforcement bars and the utilities. Place the wire mesh 4" from the pavement surface.

40. Use of heavily reinforced slabs in lanes exposed to traffic above is greater than 10'-0".

41. Maintain a clearance between the reinforcement bars and the utilities. Place the wire mesh 4" from the pavement surface.

42. Use of heavily reinforced slabs in lanes exposed to traffic above is greater than 10'-0".

43. Maintain a clearance between the reinforcement bars and the utilities. Place the wire mesh 4" from the pavement surface.

44. Use of heavily reinforced slabs in lanes exposed to traffic above is greater than 10'-0".

45. Maintain a clearance between the reinforcement bars and the utilities. Place the wire mesh 4" from the pavement surface.

46. Use of heavily reinforced slabs in lanes exposed to traffic above is greater than 10'-0".

47. Maintain a clearance between the reinforcement bars and the utilities. Place the wire mesh 4" from the pavement surface.

48. Use of heavily reinforced slabs in lanes exposed to traffic above is greater than 10'-0".

49. Maintain a clearance between the reinforcement bars and the utilities. Place the wire mesh 4" from the pavement surface.

50. Use of heavily reinforced slabs in lanes exposed to traffic above is greater than 10'-0".

51. Maintain a clearance between the reinforcement bars and the utilities. Place the wire mesh 4" from the pavement surface.

52. Use of heavily reinforced slabs in lanes exposed to traffic above is greater than 10'-0".

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54. Use of heavily reinforced slabs in lanes exposed to traffic above is greater than 10'-0".

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56. Use of heavily reinforced slabs in lanes exposed to traffic above is greater than 10'-0".

57. Maintain a clearance between the reinforcement bars and the utilities. Place the wire mesh 4" from the pavement surface.

58. Use of heavily reinforced slabs in lanes exposed to traffic above is greater than 10'-0".

59. Maintain a clearance between the reinforcement bars and the utilities. Place the wire mesh 4" from the pavement surface.

60. Use of heavily reinforced slabs in lanes exposed to traffic above is greater than 10'-0".

61. Maintain a clearance between the reinforcement bars and the utilities. Place the wire mesh 4" from the pavement surface.
THE CONTRACT DOCUMENTS.

ALTERNATE TREATMENTS ARE REQUIRED, ADDITIONAL DETAILS WILL BE PROVIDED IN THE SPECIFICATION. ADDRESSES STANDARD DEFAULT AESTHETIC TREATMENTS. IF U.S. CUSTOMARY STANDARD SHEET 12.

OR DETRACTS FROM THE APPEARANCE OF THE WALL SHALL BE CORRECTED BY THE STATE OF NEW YORK WALL CONSTRUCTION:

COMPACTION REQUIREMENTS FOR INFILL (IF REQUIRED) AND BACKFILL MATERIAL INSTALLATION SHALL FOLLOW THE MANUFACTURER'S INSTALLATION MANUAL. WHEN THE THIRD ROW OF PRECAST FACING PANEL UNITS ARE SET, THE BOTTOM ROW DOCUMENTS WHEN WALLS ARE TO BE LOCATED IN AREAS WHERE UNSUITABLE MATERIAL FILL) TO ASSURE CORRECT FINAL VERTICAL ALIGNMENT AFTER BACKFILL PLACEMENT FACING UNITS SHALL BE SET AT A SLIGHT BACKWARD BATTER (TOWARD THE REINFORCING ELEMENTS).

INSTALLMENT OF THE FACING UNITS SHALL BE IN ACCORDANCE WITH THE FOLLOWING:

1. VERTICAL JOINT PATTERN IS DESCRIBED FOR ILLUSTRATIVE PURPOSES.

2. OPEN FACE UNITS:

3. UNITS ABOVE THE FIRST COURSE SHALL INTERLOCK WITH THE LOWER COURSE.

4. JOIN, ALTERNATING SIZES, ETC.), DEPENDING ON THE WALL SYSTEM MANUFACTURER.

5. ELEVATION OF THE INFILL MATERIAL PLACED WITHIN THE WALL UNITS.

6. WHEN REINFORCEMENT IS INTRODUCED INTO A PREFABRICATED WALL SYSTEM, IT SHALL BE COMPRESSED TO THE ENGINEER, AND AT THE LOCATION SHOWN IN THE CONTRACT DOCUMENTS. THE FILL TYPE CLASSIFICATION REFERS TO THE CONSTRUCTION METHOD USED FOR THE FILL TYPE RETAINING WALL NOTES:

7. THE FILL TYPE CLASSIFICATION REFERS TO THE CONSTRUCTION METHOD USED FOR THE FILL TYPE RETAINING WALL NOTES:

8. INTERNAL STABILIZED EARTH WALL SYSTEMS, MECHANICALLY STABILIZED WALL SYSTEMS, AND PREFABRICATED WALL SYSTEMS.

9. THE FILL TYPE CLASSIFICATION REFERS TO THE CONSTRUCTION METHOD USED FOR THE FILL TYPE RETAINING WALL NOTES:

10. INSTALLATION OF THE WALL. FILL TYPE RETAINING WALLS ARE RETAINING STRUCTURES INSTALLED ONTO THE WALL UNITS.

11. INSTALLATION OF THE PreCAST LEVELING PAD:

12. attach the vertical joint pattern, adding to the stability of the system.

13. INTERNAL STABILIZED EARTH WALL SYSTEMS, MECHANICALLY STABILIZED WALL SYSTEMS, AND PREFABRICATED WALL SYSTEMS.

14. INTERNAL STABILIZED EARTH WALL SYSTEMS, MECHANICALLY STABILIZED WALL SYSTEMS, AND PREFABRICATED WALL SYSTEMS.

15. INTERNAL STABILIZED EARTH WALL SYSTEMS, MECHANICALLY STABILIZED WALL SYSTEMS, AND PREFABRICATED WALL SYSTEMS.
GRANULAR LEVELING PAD
BACKFILL WITH SUITABLE EXCAVATED MATERIAL

PROVIDE UNDERDRAIN WITH POSITIVE OUTLET. FOR PIPES LARGER THAN 6", MAINTAIN MINIMUM COVER REQUIREMENTS AS SHOWN.

6" DIA. MIN.

UNDERCUT WHERE REQUIRED (SEE NOTE 8 ON SHEET 1 OF 5)

SEEPAGE ZONE (SEE NOTE 6 ON SHEET 1 OF 5)

6" DIA. MIN.

18" MIN.

(REDUCE WHERE REQUIRED WHERE LARGER UNDERDRAIN TYPE IS SPECIFIED)

CONCRETE LEVELING PAD (SEE NOTES 3 AND 4 ON SHEET 1 OF 5)

UNDERDRAIN FILTER MATERIAL, TYPE 1.

STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION

ISSUED UNDER EB 10-041

U.S. CUSTOMARY STANDARD SHEET

APPROVED OCTOBER 28, 2010

PROPRIETARY FILL TYPE RETAINING WALLS
(SHEET 2 OF 5)

EFFECTIVE DATE: 05/05/11

ATTACH LIMIT OF CHARGE ENGINEER

EFFECTIVE DATE: 25/05/11
EXISTING GROUND SURFACE

FINISHED GRADE AT FACE OF WALL

PAYMENT LINES FOR UNCLASSIFIED EXCAVATION (SECTION 203).

EXCAVATION PHASE

GEOSYNTHETICALLY REINFORCED SOIL SYSTEM WALL SECTION IN CUT

BACKFILL PHASE

PAYMENT LINES FOR EMBANKMENT IN PLACE (SECTION 203).

OVERCUT WHERE REQUIRED (SEE NOTE 22 ON SHEET 1 OF 6)

GEOSYNTHETICALLY REINFORCED SOIL SYSTEM WALL SECTION IN FILL

PAYMENT LINES FOR SELECT STRUCTURAL FILL (SECTION 203).

(SEE NOTE 22 ON SHEET 1 OF 6)

CONTACT MANUFACTURER FOR SPECIFIC REQUIREMENTS OF UNDERDRAIN FILTER MATERIAL, TYPE 1.

MINIMUM LIMITS OF EMBANKMENT IN PLACE - TO BE PLACED CONCURRENT WITH GEOSYNTHETICALLY REINFORCED SOIL SYSTEM BACKFILL DURING WALL CONSTRUCTION.

MINIMUM LIMITS OF EMBANKMENT IN PLACE - TO BE PLACED CONCURRENT WITH GEOSYNTHETICALLY REINFORCED SOIL SYSTEM BACKFILL DURING WALL CONSTRUCTION.
TYPICAL EXCAVATION SECTION

EXCAVATION PHASE

TYPICAL GRSS SECTION

SLOPES - TYPICAL SECTIONS

STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION

GEOSYNTHETICALLY REINFORCED SOIL SYSTEMS
(SHEET 4 OF 6)

EFFECTIVE DATE: 05/05/11

554-02

ISSUED UNDER OR TO: EB 10-041

ACTING DEPUTY CHIEF ENGINEER

03 - DEC - 2010

FILE NAME = 554-0204.dgn

DATE/TIME =

USER = jturtle
TREATED TIMBER FACING TO BE PAID FOR UNDER ITEM 554.3003, GEOSYNTHETICALLY REINFORCED SOIL SYSTEM WALL - TREATED TIMBERS.

1. TREATED TIMBERS ARE TO BE GRADED FOR AN EXTREME FIBER STRESS OF AT LEAST 1000 PSI CONFORMING TO THE PROVISIONS OF ASTM D1415. STRESS GRADED TIMBERS AND TIMBERS WITH THE FULL CONSTRUCTION THICKNESS SHOWN ON THE PLANS, TIMBERS ARE TO BE TREATED IN ACCORDANCE WITH ASTM D1415. MOIST PRECIPITATION - PRETREATMENT TREATMENT TO BE APPLIED IN CONFORMANCE WITH ASTM D1415. PRETREATMENT AND ASHWOOD TIMBERS ARE TO BE TREATED IN ACCORDANCE WITH THE CATEGORY DESIGNATION SHOWN ON THE PLANS.

2. TREATED TIMBERS SHALL BE SET AT A SLIGHT BACKWARD BATTER (TOWARD THE REINFORCED FILL) TO AVOID CORRECT VERTICAL ALIGNMENT AFTER PLACEMENT AND COMPACTION.

3. PLACE ALL GEOGRID REINFORCEMENTS PERPENDICULAR TO THE WALL FACE.

4. PULL AND HOLD TREATED TIMBERS AND GEOGRID/TIMBER CONNECTIONS UNTIL SUFFICIENT FILL IS PLACED OVER THE GRID TO MAINTAIN TENSION.

5. THE MAXIMUM COMPACTED LIFT THICKNESS IS 6".

6. CLADROCK MAY BE PLACED OR ABLED PROGRESS-RELATED.

7. PRIMARY REINFORCEMENT WILL BE GEOTEXTILE; THE GEOSTEEL OPTION WILL NOT BE ACCEPTED.

FACING DETAILS
STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION
U.S. CUSTOMARY STANDARD SHEET

GEOSYNTHETICALLY REINFORCED SOIL SYSTEMS
(SHEET 6 OF 6)

554-02

EFFECTIVE DATE: 05/05/11

STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION

APPROVED OCTOBER 28, 2010

U.S. CUSTOMARY STANDARD SHEET

554-02

FACING DETAILS

PRIMARY REINFORCEMENT MEETING THE REQUIREMENTS OF ASTM D7241(00), USE CATEGORIES:

TREATED TIMBER FACINGS

TREATED TIMBER FACINGS

TREATED TIMBER FACINGS

TREATED TIMBER FACINGS

GEOGRID (737-07)
GEOGRID (737-07)
GEOGRID (737-07)
GEOGRID (737-07)

BACKFILL (733-14)
BACKFILL (733-14)
BACKFILL (733-14)
BACKFILL (733-14)

SUBGRADE SURFACES

SUBGRADE SURFACES

SUBGRADE SURFACES

SUBGRADE SURFACES

PONDS SHOULDERS

PONDS SHOULDERS

PONDS SHOULDERS

PONDS SHOULDERS

ELEVATION

ELEVATION

ELEVATION

ELEVATION

NOTES:

1. TREATED TIMBER FACINGS TO BE PAID FOR UNDER ITEM 554.3003, GEOSYNTHETICALLY REINFORCED SOIL SYSTEM WALL - TREATED TIMBERS.

2. TREATED TIMBERS ARE TO BE GRADED FOR AN EXTREME FIBER STRESS OF AT LEAST 1000 PSI CONFORMING TO THE PROVISIONS OF ASTM D1415. STRESS GRADED TIMBERS AND TIMBERS WITH THE FULL CONSTRUCTION THICKNESS SHOWN ON THE PLANS, TIMBERS ARE TO BE TREATED IN ACCORDANCE WITH ASTM D1415. MOIST PRECIPITATION - PRETREATMENT TREATMENT TO BE APPLIED IN CONFORMANCE WITH ASTM D1415. PRETREATMENT AND ASHWOOD TIMBERS ARE TO BE TREATED IN ACCORDANCE WITH THE CATEGORY DESIGNATION SHOWN ON THE PLANS.

3. TREATED TIMBERS SHALL BE SET AT A SLIGHT BACKWARD BATTER (TOWARD THE REINFORCED FILL) TO AVOID CORRECT VERTICAL ALIGNMENT AFTER PLACEMENT AND COMPACTION.

4. PLACE ALL GEOGRID REINFORCEMENTS PERPENDICULAR TO THE WALL FACE.

5. PULL AND HOLD TREATED TIMBERS AND GEOGRID/TIMBER CONNECTIONS UNTIL SUFFICIENT FILL IS PLACED OVER THE GRID TO MAINTAIN TENSION.

6. THE MAXIMUM COMPACTED LIFT THICKNESS IS 6".

7. CLADROCK MAY BE PLACED OR ABLED PROGRESS-RELATED.

8. PRIMARY REINFORCEMENT WILL BE GEOTEXTILE; THE GEOSTEEL OPTION WILL NOT BE ACCEPTED.
A1 = AREA OF NOMINAL DIAMETER
A2 = AREA THRU SECTION B-B

BASIC DIMENSIONS

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<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
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NOTES:
1. THE GENERAL SPECIFICATION FOR REINFORCED CONCRETE PIPE, CLASS IV, SHALL APPLY EXCEPT AS MODIFIED BELOW.
2. REINFORCING TO BE AS SPECIFIED FOR REINFORCED CONCRETE PIPE, CLASS II, WHERE TWO CAGES OF REINFORCING ARE SPECIFIED IN CLASS III PIPE, IT SHALL APPLY TO THE BARREL OF THE END SECTION ONLY. REINFORCING FOR THE APRON SECTION SHALL BE ONE CAGE EQUAL TO THE INNER CAGE REQUIRED IN THE BELL AS AN ALTERNATE AS SPECIFIED IN SECTION "CUT-OFF WALLS FOR END SECTIONS." AS AN ALTERNATE FOR REINFORCING FOR REINFORCED CONCRETE PIPE CLASS III, BAR REINFORCEMENT MAY BE SUPPLIED. THE BARS SHALL CONFORM TO THE REQUIREMENTS OF BAR REINFORCEMENT FOR CEMENT CONCRETE AND SHALL BE SUPPLIED IN THE AMOUNT NEEDED TO MEET THE REQUIRED MAXIMUM REINFORCEMENT IN SQUARE INCHES PER LINEAR FOOT OF PIPE CHAMBER.
3. JOINTS SHALL BE THE SAME AS REQUIRED FOR REINFORCED CONCRETE PIPE.
4. THE DIMENSIONS INDICATED IN THE TABLE ENTITLED "BASIC DIMENSIONS" ARE APPROXIMATE. REFER TO INDIVIDUAL PRODUCER APPROVED SHOP DRAWINGS FOR THE ACTUAL DIMENSIONS.
5. PLAN AND SECTION A-A INDICATE SQUARE TYPE JOINT ONLY. OTHER TYPES OF JOINTS (TONGUE, BELL, SPIGOT) SHALL BE FURNISHED AS REQUIRED.
Corrugated Metal Pipe

**NOTES:**
1. All pipes and pipe-arches whose dimensions are larger than those listed below shall have 12-ga. sides and 10-ga. center panels.

**Table:**

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<th>Diameter</th>
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<th>10&quot;</th>
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**Plan:**
- See page 2 for figure 1.

**Elevation:**
- See page 2 for figure 1.

**Aluminum and Steel End Sections for Corrugated Pipe and Pipe Arch**

**Notes:**
1. For pipes and pipe-arches, whose dimensions are equal to or smaller than those listed above, which are allowed to be assembled from 3 pipes, shall have 12-ga. sides and 10-ga. center panels.
2. The plate or cut-off walls shall be made under approval contract items.
3. The plate or cut-off walls shall be made under approval contract items.
4. The plate or cut-off walls shall be made under approval contract items.
5. The plate or cut-off walls shall be made under approval contract items.
6. The plate or cut-off walls shall be made under approval contract items.
7. The plate or cut-off walls shall be made under approval contract items.
NOTES:

1. ALL DIMENSIONS ARE NOMINAL.

2. USE 12 GAUGE THICK PLATE FOR ALL MULTI-PLATE CATTLE UNDERPASSES UNDER FILLS OF LESS THAN 30'-0", FOR FILLS 30'-0", A SPECIAL DESIGN SHALL BE USED.

3. INSTALLATION FOR MULTI-PLATE CATTLE UNDERPASSES SHALL COMPLY WITH THE INSTALLATION DETAILS FOR STRUCTURAL PLATE PIPE AND PIPE ARCHES.

JOINT DETAIL

REINFORCED CONCRETE CATTLE PASS

STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION

CATTLE PASS

EFFECTIVE DATE: 01/08/09

CATTLE PASS
REINFORCED CONCRETE PIPE END SECTIONS
CUT-OFF WALL

SECTION A-A
CONCRETE FOR STRUCTURES - CLASS A
(SEE NOTE 1)

SECTION B-B
CONCRETE FOR STRUCTURES - CLASS A
(SEE NOTE 1)

ELEVATION

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NOTES:
1. CUT-OFF WALL SHALL BE CAST IN PLACE. THE PORTION OF THE CONCRETE CUT-OFF WALL BELOW THE FINISH GRADE LINE SHALL BE CAST AGAINST UNDISTURBED SOIL IF FEASIBLE.
2. VARIOUS DEPEND ON CONSTRUCTION OF SPECIFIED END SECTION.

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NOTES:

1. CORRUGATED POLYETHELENES UTILIZE METAL END SECTIONS WHICH ARE ONE STANDARD PIPE DIAMETER LARGER THAN CORRUGATED STEEL TYPE. THEREFORE, A SAFETY GRATE FOR A 36" DIA. CORRUGATED POLYETHYLENE PIPE WOULD HAVE DIMENSIONS OF 10'-0" X 7'-0".

2. BARS SHALL BE grade 60, FULL LENGTH, WITH NO SPLICES OR BUTT WELDS. VERTICAL BARS SHALL BE ON TOP.


4. J-BAR HOOKS SHOWN INSTALLED PERPENDICULAR TO SLOPE. HOOKS MAY ALSO BE INSTALLED VERTICALLY. HOOKS SHALL BE WITH LONG LEGS ON THE DOWNHILL SIDE.

5. PAYMENT AREA OF SAFETY GRATES FOR PIPE DIMENSIONS OTHER THAN THOSE LISTED IN THE TABLE WILL BE BASED ON THE PRODUCT OF THE OVERALL LENGTH AND WIDTH.

6. EARTH SLOPE

7. THE GRATE SHALL LAY FLAT ON EACH SIDE AND AT THE TOP OF THE EMBANKMENT, AND COMPLETE THE GRADE AT ALL SIDES. HOOKS AND HORIZONTAL BARS SHALL BE EXTENDED A MINIMUM OF 1-1/2" ON EACH SIDE TO ENSURE PROPER GRATE SUPPORT AND SMOOTH TRANSITION SLOPES IN THE AREA SURROUNDING THE EMBANKMENT.

8. NO. 8 BARS 1-1/2" MIN.

9. FOR HEAVY DUTY GRAVES SEE NOTES 2 AND 3

10. J-BAR HOOK TYPE, SEE NOTES 5 AND 6

11. J-BAR HOOKS TYP. (SEE NOTES 5 AND 6)

12. THE HORIZONTAL BARS SHALL BE NO. 11 FOR THE HEAVY-DUTY GRATES.

13. BARS SHALL BE WELDED AT EACH INTERSECTION WITH A DOUBLE FLARE BEVEL GROOVE WELD, AT THE CONTRACTOR'S OPTION. WELDING SHALL MEET THE REQUIREMENTS OF THE NYS STEEL CONSTRUCTION MANUAL, EXCEPT THAT RADIOGRAPHIC INSPECTION WILL NOT BE REQUIRED.

14. BARS SHALL BE GRADE 60, FULL LENGTH, WITH NO SPLICES OR BUTT WELDS. VERTICAL BARS SHALL BE ON TOP.


16. J-BAR HOOKS SHOWN INSTALLED PERPENDICULAR TO SLOPE. HOOKS MAY ALSO BE INSTALLED VERTICALLY. HOOKS SHALL BE WITH LONG LEGS ON THE DOWNHILL SIDE.

17. PAYMENT AREA OF SAFETY GRATE FOR PIPE DIAMETERS OTHER THAN THOSE LISTED IN THE TABLE WILL BE BASED ON THE PRODUCT OF THE OVERALL LENGTH AND WIDTH.
**Top Slab Dimensions**

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**Top Slab Reinforcement Notes**

1. The top slab edge bars are placed 1" from the outside edge for top slabs on 8" walls, and 3" from the outside edge for 6" walls.
2. The edge bars are placed using the dimensions and the mm bars are placed using the inches. The mm bars shall be placed at a 45° angle. The min bar on L and a casting edge bar shall not exceed 100.
3. Top slabs for type E, L, K, G, F, E, E, G, F, E, and G are made with drainage structures and reinforcement bars. All other bars are filled with a sealant. The construction and the placement of these bars and the mm bars on 8" and 6" walls shall not exceed 100.

**Bar List**

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**Figure Legends**

- **Standard AC3 Holes**
- **Standard AC3 Hole**
- **Top Slab, W Bar, L Bar, or D Bar**
- **Typical Edge Bar**
- **Typical Edge Bar**

**State of New York**

**Department of Transportation**

**U.S. Customary Standard Sheet**

**Drainage Structure Details**

**Sheet 3 of 4**

**Effective Date:** 01/01/09

**Approved September 30, 2008**

**Drafted Under Contract**

[Signature]

[Stamp] 604-02