Design
Detail Sheets
### Drainage

<table>
<thead>
<tr>
<th>NO.</th>
<th>DATE</th>
<th>TITLE</th>
</tr>
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<tbody>
<tr>
<td>500-5</td>
<td>10-20-15</td>
<td>Precast Concrete Drain Extension</td>
</tr>
<tr>
<td>500-6</td>
<td>10-20-15</td>
<td>Median Culvert Extensions with Beveled Pipe and Guard</td>
</tr>
<tr>
<td>500-10</td>
<td>10-17-17</td>
<td>Outlets for Longitudinal, Transverse and Backslope Subdrains</td>
</tr>
</tbody>
</table>

### Fencing

<table>
<thead>
<tr>
<th>NO.</th>
<th>DATE</th>
<th>TITLE</th>
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</thead>
<tbody>
<tr>
<td>510-1</td>
<td>04-20-10</td>
<td>Chain Link Fence on Concrete Retaining Wall</td>
</tr>
<tr>
<td>510-2</td>
<td>03-28-95</td>
<td>Temporary Slope Drain</td>
</tr>
<tr>
<td>510-3</td>
<td>04-20-10</td>
<td>Supplemental Details of Field Fence (Small Animal Barrier)</td>
</tr>
<tr>
<td>510-4</td>
<td>04-21-15</td>
<td>Precast Stock Pass Extension</td>
</tr>
<tr>
<td>510-5</td>
<td>10-19-10</td>
<td>Small Animal Barrier for Gated Entrance</td>
</tr>
</tbody>
</table>
## Traffic Control - Two Lane - Stationary

<table>
<thead>
<tr>
<th>NO.</th>
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<tbody>
<tr>
<td>520-54</td>
<td>10-17-06</td>
<td>Traffic Control Layout for Unpaved On-Site Detour w/ One-Lane Traffic</td>
</tr>
<tr>
<td>520-55</td>
<td>10-17-06</td>
<td>Traffic Control Layout for Unpaved On-Site Detour w/ Two-Way Traffic</td>
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</table>
### ROADWAY PAVEMENT

#### SECTION 531

<table>
<thead>
<tr>
<th>NO.</th>
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<tbody>
<tr>
<td>531-2</td>
<td>04-21-20</td>
<td>Median Crossover at Interchange (50' Median)</td>
</tr>
<tr>
<td>531-3</td>
<td>04-21-20</td>
<td>Median Crossover at Interchange (64' Median)</td>
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#### SECTION 533

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>533-1</td>
<td>04-21-20</td>
<td>Parallel Deceleration Taper for 16' Ramp (60MPH Design Speed)</td>
</tr>
<tr>
<td>533-2</td>
<td>04-21-20</td>
<td>Parallel Acceleration Taper for 16' Ramp (60MPH Design Speed)</td>
</tr>
<tr>
<td>533-3</td>
<td>04-21-20</td>
<td>Parallel Deceleration Taper for 18' Exit Loop (60MPH Design Speed)</td>
</tr>
<tr>
<td>533-4</td>
<td>04-21-20</td>
<td>Parallel Deceleration Taper for 24' Exit Loop (60MPH Design Speed)</td>
</tr>
<tr>
<td>533-5</td>
<td>04-21-20</td>
<td>Parallel Acceleration Taper for 24' Ramp (60MPH Design Speed)</td>
</tr>
</tbody>
</table>
### ROADWAY SHOULDERS

<table>
<thead>
<tr>
<th>NO.</th>
<th>DATE</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>535-3</td>
<td>04-16-13</td>
<td>Paved Shoulder Hot Mix Asphalt with 6&quot; Sloped Curb and Gutter Unit</td>
</tr>
</tbody>
</table>

### TRAFFIC BARRIERS AND APPURtenances

<table>
<thead>
<tr>
<th>NO.</th>
<th>DATE</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>540-13</td>
<td>10-19-10</td>
<td>Barricade at Crossover</td>
</tr>
</tbody>
</table>
### MISCELLANEOUS

<table>
<thead>
<tr>
<th>NO.</th>
<th>DATE</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>560-2</td>
<td>03-28-95</td>
<td>Mailbox Turnouts (Granular Surfaced)</td>
</tr>
<tr>
<td>560-3</td>
<td>10-16-12</td>
<td>Grading Blister at Light Pole Footing</td>
</tr>
<tr>
<td>560-4</td>
<td>10-21-14</td>
<td>HMA Wedge for Superelevation</td>
</tr>
<tr>
<td>560-5</td>
<td>04-21-20</td>
<td>Painted Islands</td>
</tr>
<tr>
<td>560-6</td>
<td>10-18-16</td>
<td>Shared-use Trail or Sidewalk Behind Steel Beam Guardrail at Bridge Approach</td>
</tr>
<tr>
<td>560-7</td>
<td>10-15-19</td>
<td>Temporary Barrier Rail (Steel)</td>
</tr>
<tr>
<td>560-8</td>
<td>10-15-19</td>
<td>Water Service Curb Stop Cover Located in Sidewalk</td>
</tr>
</tbody>
</table>

### EROSION CONTROL

<table>
<thead>
<tr>
<th>NO.</th>
<th>DATE</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>570-1</td>
<td>10-18-16</td>
<td>Slash Mulch Berm</td>
</tr>
<tr>
<td>570-5</td>
<td>04-18-17</td>
<td>Erosion Control for Intake or Manhole Well</td>
</tr>
<tr>
<td>570-7</td>
<td>04-21-20</td>
<td>Grate Intake Sediment Filter Bag</td>
</tr>
<tr>
<td>570-8</td>
<td>10-17-17</td>
<td>Temporary Rock Berm for Sediment Control</td>
</tr>
<tr>
<td>570-11</td>
<td>10-15-19</td>
<td>Temporary Sediment Control for Culvert Extension with Exposed Soil</td>
</tr>
<tr>
<td>570-12</td>
<td>10-15-19</td>
<td>Temporary Sediment Control for Shoulder Widening with Exposed Soil</td>
</tr>
</tbody>
</table>
Minimum clear distance of 3 inches from the face of concrete to near reinforcing bar unless noted otherwise.

All reinforcing steel Grade 60

Concrete $f'_c = 4.0$ ksi

Galvanize 8a1 and 8a2 bars after bending. Ensure the 8a1 and 8a2 bars bear against each other during placement.

### Reinforcing Bar List

<table>
<thead>
<tr>
<th>Bar</th>
<th>Location</th>
<th>Shape</th>
<th>No.</th>
<th>Length</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>8a1 Drain Cover Bars - Top Layer</td>
<td>3</td>
<td>6-4&quot;</td>
<td>34</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8a2 Drain Cover Bars - Bottom Layer</td>
<td>2</td>
<td>6-2&quot;</td>
<td>35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5b1 Circular Tie Bars - Outside Face</td>
<td>3</td>
<td>18-0&quot;</td>
<td>50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5b2 Circular Tie Bars - Inside Face</td>
<td>5</td>
<td>13-2&quot;</td>
<td>42</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Reinforcing Steel: Epoxy Coated - Total (lbs.) 67

Reinforcing Steel: Galvanized - Total (lbs.) 87

### Bent Bar Details

- $D = 8"$
- $R_{(to\ E\ of\ bar)}$
- $R_{(8a1\ R = 2'}$ 3'-11/4"
- $R_{(8a2\ R = 1'-10")}$
- Rotate Lap 90\degree each layer when placing bar.

Note: All dimensions are out to out.

### Estimated Quantities

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structural Concrete Misc.</td>
<td>cu. yds.</td>
<td>0.64</td>
</tr>
<tr>
<td>Reinforcing Steel, Epoxy Coated</td>
<td>lbs.</td>
<td>131</td>
</tr>
<tr>
<td>Reinforcing Steel, Galvanized</td>
<td>lbs.</td>
<td>67</td>
</tr>
</tbody>
</table>

### Intake Adjustment Ring

For bedding and backfill purposes, use crushed rock or crushed gravel material complying with Article 4120.04 of the Standard Specifications for all bedding and backfill. Place and compact the material according to Article 2435.03. Use 100% crushed gravel produced by crushing material retained on a 1.5 inch or larger screen.

### Remarks

- Chamfer on all edges
- Galvanize 8a1 and 8a2 bars after bending
Construct the extension by placing the appropriate size of Unclassified Pipe into the existing culvert and apron. After the Unclassified pipe has been assembled at the proper angle and placed into the culvert, some adjusting may be required by rotating the Unclassified Pipe to fit the new flow line. Seal the area between the existing apron and Unclassified Pipe with concrete.

Construct the extension using Class 'C' concrete.

Excavating silt for pipe placement is incidental to pipe items.

Place a silt fence ditch check immediately upstream from the inlet of the culvert. See EC-201 for construction details.

For details of Beveled Pipe and Guard, see DR-212.

Contract Items:
- Unclassified Roadway Pipe
- Beveled Pipe and Guard

CASE 'A'
Guardrail Installation between Dual Bridges

SECTION A-A

CASE 'B'
Maintenance Turnaround

CASE 'C'
Median Culvert

Unclassified Roadway Pipe
Beveled Pipe and Guard

Concrete Pipe
Concrete Pipe Apron

P.C. Concrete Seal

SECTION B-B

For details of Beveled Pipe and Guard, see DR-212.
Perforated Subdrain (Polyethylene Corrugated Tubing). On projects where existing shoulder material is removed, replace the shoulder material according to Article 2502.03, C of the Standard Specifications.

"Y" or "T" connection will not be allowed. Place subdrain on 1 foot minimum radius.

Direction of flow.

6 inch minimum drop in elevation between longitudinal subdrain and outlet. 12 inch minimum drop for projects using recycled PCC subbase.

Corrugated metal pipe outlet 2 inches larger than subdrain pipe or corrugated double-walled PE or PVC pipe of the same diameter as the subdrain pipe with an appropriate coupler. If metal pipe is used, the pipes should be coupled in one of the following ways: (1) Use an inside fit reducer coupler (insert coupler a minimum of 12 inches into CMP), or (2) Insert 1 inch of the 4 inch subdrain into the 6 inch metal outlet pipe, then fully seal the entire opening with grout.

Bevel the trench to provide a minimum of 3 inches of porous backfill surrounding all portions of subdrain pipe.

Corrugated metal pipe outlet 2 inches larger than existing subdrain pipe, or corrugated double-walled PE or PVC pipe of the same diameter as the existing subdrain pipe.

Place class 'A' crushed stone or Special Backfill over outlet and carefully compact to avoid damaging outlet pipe.

Possible Contract Item:
Subdrain Outlet, 500-10

Possible Tabulations:
104-5C
104-6
Possible Contract Items:
- Beveled Pipe and Guard
- Culvert, Unclassified Entrance Pipe, 18" Dia.
- Embankment-In-Place
- Excavation, Class 10, Roadway and Borrow
- Special Backfill

Possible Tabulation:
- 112-8

TABLE OF QUANTITIES

<table>
<thead>
<tr>
<th>Standard Road Plan No</th>
<th>PV-501</th>
<th>PV-502</th>
<th>PV-503</th>
<th>PV-504</th>
<th>PV-505</th>
<th>PV-506</th>
<th>PV-507</th>
<th>PV-508</th>
<th>PV-510</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median Width</td>
<td>50.0'</td>
<td>64.0'</td>
<td>16.0'</td>
<td>16.0'</td>
<td>16.0'</td>
<td>64.0'</td>
<td>50.0'</td>
<td>64.0'</td>
<td>68.24'</td>
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<tr>
<td>Crossover Pavement Width</td>
<td>28.0'</td>
<td>28.0'</td>
<td>28.0'</td>
<td>28.0'</td>
<td>28.0'</td>
<td>28.0'</td>
<td>28.0'</td>
<td>28.0'</td>
<td>28.0'</td>
</tr>
<tr>
<td>Road Rain</td>
<td>14.0'</td>
<td>14.0'</td>
<td>14.0'</td>
<td>14.0'</td>
<td>14.0'</td>
<td>14.0'</td>
<td>14.0'</td>
<td>14.0'</td>
<td>14.0'</td>
</tr>
<tr>
<td>18'' dia. Unclassified Entrance Pipe Culvert</td>
<td>25'</td>
<td>344'</td>
<td>112'</td>
<td>196'</td>
<td>82'</td>
<td>162'</td>
<td>58'</td>
<td>74'</td>
<td>148'</td>
</tr>
</tbody>
</table>
GENERAL NOTES:

Details indicated herein are for the installation of a temporary slope drain on the foreslopes of the roadway fill. The intent of the temporary slope drain is to prevent foreslope erosion during construction and to redistribute the water pollution which might be caused by shallowing from the project.

At the completion of each day’s grading, temporary terraces will be constructed on both sides of the subgrades. At points of minimum of 500 feet of low points of vertical curve, and as determined by the engineer, temporary intercepting drainage shall be graded and slope drains installed. All grading work shall be considered incidental to other grading work on the project.

Foretrenches with a vertical height of ten feet or less shall not have temporary slope drains installed.

The temporary slope drain shall consist of a length of pipe capable of extending to the top of foreslope when all grading has been completed. The pipe shall be moved up the foreslope to the new temporary top of slope and the completion of each day’s work. The pipe shall be solid tubing, complying with all requirements of ASTM F 495, Standard Duty Tubing.

Methods of measurement shall be along the centerline of pipe in its final position.

The price bid for “Temporary Slope Drain, As Per Plan,” measured in linear feet, shall be considered full compensation for the construction of all required temporary top of slope drains and for installing and maintaining the slope drain for the duration of the contract.

1. Typical length of 10'0"/10'0" wall above height
2. Staples may be horizontal or vertical, as determined, or otherwise agreed upon by the engineer.
Small Animal Barrier is used for preventing small animals, rodents and amphibians from migrating onto the highway right-of-way.

Contrast Item: "Small Animal Barrier" includes chain link fence fabrics, galvanized tie wires, 12 inch trench excavation, backfill and compaction around fence fabrics, all materials, tools and labor required to construct barrier as detailed.


Stretch Small Animal Barrier and mount on Field Fence using Galvanized Wire. Tie and welded in Standard Specification Section 4184. Fasten the bottom 12 inches of the barrier below the finished grade to prevent increasing under the barrier. Do not damage or attach the barrier fabric when backfilling and compaction trench material around the fabric. Overlap the ends of the barrier fabric a minimum of 6 inches and tie both ends to the Field Fence, leaving no gap between the fabric ends.

Measurement will be in linear feet of installed Small Animal Barrier and paid for at the contract unit price per linear foot.

1) Place galvanized Tie Wire at the following three vertical locations: top of chain link fence fabric, bottom of field fence, approximately one point between the top and bottom line. Reinstall attachment locations at 1'-6" intervals along the length of the barrier.

Possible Contract Items:
- Field Fence
- Field Fence Bamboo Panel
- Small Animal Barrier

Possible Submittals:
- 100-7

Iowa Department of Transportation
Highway Division

DETAIL SHEET 510-3

SUPPLEMENTAL DETAIL 8
OF FIELD FENCE
(SMALL ANIMAL BARRIER)
Furnish Precast Stock Pass complying with Section 2415 of the Standard Specifications. Install according to Section 2416 of the Standard Specifications.

Seal joints and install joint ties according to the manufacturer's recommendations.

Details indicated are typical. Alternate designs or methods may be submitted to the Engineer for approval.

Payment is full compensation for furnishing and installing stock pass and apron.

1. Perform excavation below ground line using a template conforming to the shape of the stock pass.

### APRON LONGITUDINAL SECTION

- Stock Pass Apron, 4' x 6' Precast Concrete
- Stock Pass Apron, 5' x 7' Precast Concrete
- Stock Pass, 4' x 6' Precast Concrete
- Stock Pass, 5' x 7' Precast Concrete

### POSSIBLE CONTRACT ITEMS:

- Stock Pass Apron, 5' x 7' Precast Concrete
- Stock Pass Apron, 4' x 6' Precast Concrete
- Stock Pass, 5' x 7' Precast Concrete
- Stock Pass, 4' x 6' Precast Concrete

### DIMENSIONS FOR APRON

<table>
<thead>
<tr>
<th>Structure</th>
<th>6' x 7'</th>
<th>5' x 7'</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>7'</td>
<td>7'</td>
</tr>
<tr>
<td>W</td>
<td>4'</td>
<td>5'</td>
</tr>
<tr>
<td>R</td>
<td>2'</td>
<td>2'-6''</td>
</tr>
<tr>
<td>X</td>
<td>3'-2''</td>
<td>2'-6''</td>
</tr>
<tr>
<td>Y</td>
<td>7'</td>
<td>7'</td>
</tr>
<tr>
<td>Z</td>
<td>7'</td>
<td>7'</td>
</tr>
<tr>
<td>Z1</td>
<td>2'-11''</td>
<td>3'-6''</td>
</tr>
</tbody>
</table>

### DIMENSIONS FOR INTERMEDIATE UNIT

<table>
<thead>
<tr>
<th>Structure</th>
<th>6' x 7'</th>
<th>5' x 7'</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>7'</td>
<td>7'</td>
</tr>
<tr>
<td>H1</td>
<td>4'</td>
<td>4'-6''</td>
</tr>
<tr>
<td>W</td>
<td>4'</td>
<td>5'</td>
</tr>
<tr>
<td>R</td>
<td>2'</td>
<td>2'-6''</td>
</tr>
<tr>
<td>X</td>
<td>3'-2''</td>
<td>2'-6''</td>
</tr>
<tr>
<td>Y</td>
<td>7'</td>
<td>7'</td>
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<tr>
<td>Z</td>
<td>7'</td>
<td>7'</td>
</tr>
<tr>
<td>Z1</td>
<td>2'-11''</td>
<td>3'-6''</td>
</tr>
</tbody>
</table>

### DESIGNER

INFO

DESIGNER
Construct "Small Animal Barrier for Gated Entrance" at specified location to provide access through the "Small Animal Barrier".

Place "Preformed Cement Concrete Driveway" to elevation specified on the plans.

Each "Small Animal Barrier for Gated Entrance" correctly installed will be counted for payment.

Payment will be the contract unit price for each "Small Animal Barrier for Gated Entrance" installed correctly.

Payment includes all materials, tools and labor required to construct "Small Animal Barrier for Gated Entrance" as detailed.

1. P.C. Concrete Driveway, Gate Width + 12 inches by 4'-0" along centerline of entrance by 8 inches thick.
2. Rubber Setting: 12 inches wide by 1 inch thick (min.) Fabric Reinforced Rubber Setting installed to Gates as shown in Detail A. Lengths in Gates Width + 12 inches.
3. Transition into natural ground.

Possible Contract Items:
- Small Animal Barrier for Gated Entrance
- Delivery/Buried, Class V Crushed Stone
- Embankment in Place
- Portland Cement Concrete Driveway, 6 inch
- Rubber Setting
- Special Rebars

Possible Transitions:
- 90°

Iowa Department of Transportation
Highway Division

DETAIL SHEET 510-5

SMALL ANIMAL BARRIER
FOR GATED ENTRANCE
The Contractor shall be responsible for the placement and removal of temporary white delineators and yellow "No Passing" lines. The Contractor shall also be responsible for the removal and replacement of the existing dashed yellow centerline and white delineators as required for the Traffic Control Layout.

The Engineer may change the advisory speed if deemed appropriate. If reduced below 35 mph, the Reverse Curve sign shall be changed to Reverse Turn sign (WY-31A or WY-39A).

**LEGEND**

- Traffic Sign
- Drum
- Type III Barricade
- Orange Plastic Safety Fence
- Traffic Signal
- Single white delineators (安装 back to back)
- Temporary Floodlighting
- Type 3: Low-Intensity Flashing Warning Light
- Type 5: High-Intensity Flashing Warning Light
The intent of this plan is to show the construction requirements for a median crossover where the median width is 50' and located adjacent to ramp tapers.

The Engineer will determine the header location to accommodate the required staging activities.

Price bid for contract items shall be considered full compensation for furnishing all necessary materials and labor to construct the median crossover as detailed herein.

Possible Contract Items:
- Removal of pavement
- Special Backfill
- Detour Pavement
- 18'' Unclassified

** Quantities are based on the assumption that the existing median ditch is 4' deep and foreslopes are 4:1.

Possible location of staging header
- 8" PCC Pavement, Class 'C', with required joints, or 10" HMA Pavement, HMA mixture (15,000,000 ESAL)
- Intermediate Course 3/4" mix, with PG64-22 binder and Class 1B compaction. The surface lift requires L-4 friction.

** The removal of subbase material is considered incidental to the removal of pavement.

NOTE: Changed Special Backfill amount to 1740 Tons, Detail 500-12 reference to DR-212, 15" pipe to 18" pipe, and pipe length to 332 LF.
For joint detail, see mainline pavement.

Construct ramp exit pavement the same thickness as mainline pavement.

For header construction detail at the end of taper, see Typical 7101 or Typical 7102.

Construct subbase for ramp exit pavement the same thickness as mainline subbase.

Table of Shoulder Transition Lengths with 6' Shoulder on Ramp

<table>
<thead>
<tr>
<th>Shoulder Width beyond Edge of Mainline Pavement</th>
<th>12'</th>
<th>10'</th>
<th>8'</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>NA</td>
<td>100'</td>
<td>150'</td>
</tr>
</tbody>
</table>

Note: W is the width of the outside lane to the Edge of Pavement.
16' EXIT RAMP WITH PARALLEL DECELERATION LANE

3. CD Joints at 10' spacing.
4. BT-2' or KT-2' Joint.
5. C Joint.
6. B Joint. 10' minimum or equal to mainline shoulder width.
7. L-2' Joint.
8. B or C Joint. 10' minimum or equal to mainline shoulder width.
For joint detail, see mainline pavement.

Construct ramp exit pavement the same thickness as mainline subbase.

For header construction detail at the end of taper, see Typical 7101 or Typical 7102.

Construct subbase for ramp exit pavement the same thickness as mainline subbase.

### TABLE OF OFFSETS AND DROPS FOR 16' RAMP TAPER

<table>
<thead>
<tr>
<th>Offset (Ft)</th>
<th>Slope (%)</th>
<th>Drop (Ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>From Line A To Line B</td>
<td>Constant 1% Slope</td>
<td>4.30</td>
</tr>
<tr>
<td>From Line B To Line C</td>
<td>Constant 1% Slope</td>
<td>3.90</td>
</tr>
<tr>
<td>From Line A To Line C</td>
<td>Constant 1% Slope</td>
<td>3.50</td>
</tr>
</tbody>
</table>

### TABLE OF OFFSETS AND DROPS FOR 16' RAMP TAPER

<table>
<thead>
<tr>
<th>Offset (Ft)</th>
<th>Slope (%)</th>
<th>Drop (Ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>From Line A To Line B</td>
<td>Constant 1% Slope</td>
<td>4.30</td>
</tr>
<tr>
<td>From Line B To Line C</td>
<td>Constant 1% Slope</td>
<td>3.90</td>
</tr>
<tr>
<td>From Line A To Line C</td>
<td>Constant 1% Slope</td>
<td>3.50</td>
</tr>
</tbody>
</table>

### TABLE OF SHOULDER TRANSITION LENGTHS WITH 6' SHOULDER ON RAMP

<table>
<thead>
<tr>
<th>Offset (Ft)</th>
<th>Slope (%)</th>
<th>Drop (Ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>From Line A To Line B</td>
<td>Constant 1% Slope</td>
<td>4.30</td>
</tr>
<tr>
<td>From Line B To Line C</td>
<td>Constant 1% Slope</td>
<td>3.90</td>
</tr>
<tr>
<td>From Line A To Line C</td>
<td>Constant 1% Slope</td>
<td>3.50</td>
</tr>
</tbody>
</table>

### TABLE OF OFFSETS AND DROPS FOR 16' RAMP TAPER

<table>
<thead>
<tr>
<th>Offset (Ft)</th>
<th>Slope (%)</th>
<th>Drop (Ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>From Line A To Line B</td>
<td>Constant 1% Slope</td>
<td>4.30</td>
</tr>
<tr>
<td>From Line B To Line C</td>
<td>Constant 1% Slope</td>
<td>3.90</td>
</tr>
<tr>
<td>From Line A To Line C</td>
<td>Constant 1% Slope</td>
<td>3.50</td>
</tr>
</tbody>
</table>
Transverse Joints Perpendicular to Mainline Pavement

Reference point for 15' joint spacing

315'

1000' min (12' width) Refer to plans for length of acceleration lane

CD' Joints at 15' Max Spacing along Mainline

Transverse Joints Perpendicular to Ramp Baseline

MODIFIED 533-02
REVISION

REVISIONS:

Added TABLE OF SHOULDER TRANSITION LENGTHS WITH 6' SHOULDER ON RAMP and modified circle note 11.

ROAD DESIGN DETAIL (60 MPH DESIGN SPEED)

PARALLEL ACCELERATION TAPER FOR 16' RAMP

1. "CD" Joints at 15' spacing.
2. "BT-2" or "KT-2" Joint.
3. "C" Joint.
4. "B" Joint, 2' minimum, 4' maximum.
5. 10' minimum or equal to mainline shoulder width.
6. "L-2" Joint.
7. "C" Joint parallel to mainline pavement.
8. "B" or "C" Joint, 2' minimum, 4' maximum.

07-01-19 SHEET 2 of 2
18' EXIT LOOP WITH PARALLEL DECELERATION LANE

1. 'CD' Joints at 17' spacing.
2. 'BT-2' or 'KT-2' Joint.
3. 'C' Joint.
4. 'B' Joint. 2' minimum, 4' maximum.
5. 'L-2' Joint.
6. 10' minimum or equal to mainline shoulder width.
7. 'B' or 'C' Joint. 2' minimum, 4' maximum.

Transverse Joints Perpendicular to Mainline Pavement
Reference Point for 15' Joint Spacing
Reference Point for 15' Joint Spacing
Transverse Joints Perpendicular to Loop Baseline
'CD' Joints at 15' Max. Spacing along Mainline
'CD' Joints at 15' Max. Spacing along Ramp
300' Taper

600' min. (12' wide)
Refer to plans for length of deceleration lane.
Construct ramp exit pavement the same thickness as mainline pavement.

For joint detail, see PV-101.

Construct subbase for ramp exit pavement the same thickness as mainline subbase.

For header construction detail at the end of taper See Typical 7101 or Typical 7102.

Note: The algebraic difference between the profile grade for ramp base line at \( P \) and relative profile grade of mainline at \( C \) is 0.20%.

**PROFILE**

**TABLE OF OFFSETS AND DROPS FOR 24' RAMP TAPER**

<table>
<thead>
<tr>
<th>Distance from Point</th>
<th>Along Line A (Ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>360</td>
<td>300</td>
</tr>
<tr>
<td>350</td>
<td>312.5</td>
</tr>
<tr>
<td>300</td>
<td>262.5</td>
</tr>
<tr>
<td>265</td>
<td>202.5</td>
</tr>
<tr>
<td>225</td>
<td>150</td>
</tr>
<tr>
<td>200</td>
<td>125</td>
</tr>
<tr>
<td>150</td>
<td>75</td>
</tr>
<tr>
<td>100</td>
<td>25</td>
</tr>
<tr>
<td>50</td>
<td>0</td>
</tr>
</tbody>
</table>

**OFFSET (Ft)**

- \( 2.5 \) to \( 12.6 \)
- \( 6.09 \) to \( 17.32 \)
- \( 9.62 \) to \( 15.23 \)
- \( 13.83 \) to \( 19.80 \)
- \( 19.80 \) to \( 23.37 \)
- \( 23.37 \) to \( 24.91 \)

**DROP (Ft)**

- \( 0.38 \) to \( 0.12 \)
- \( 0.17 \) to \( 0.22 \)
- \( 0.27 \) to \( 0.37 \)
- \( 0.42 \) to \( 0.57 \)
- \( 0.62 \) to \( 0.72 \)

**SLOPE (%)**

- \( 3\% \)
- \( 2.5\% \)
- \( 2\% \)
- \( 1.5\% \)
- \( 1\% \)
- \( 0.5\% \)

**Taper Ratio**

- \( 0.99 \) to \( 1.04 \)
- \( 1.14 \) to \( 1.19 \)
- \( 1.24 \) to \( 1.29 \)
- \( 1.39 \) to \( 1.44 \)

Construct ramp exit pavement the same thickness as mainline pavement.

For joint detail, see PV-101.

For header construction detail at the end of taper See Typical 7101 or Typical 7102.

Construct subbase for ramp exit pavement the same thickness as mainline subbase.

For header construction detail at the end of taper See Typical 7101 or Typical 7102.
24' EXIT RAMP WITH PARALLEL DECELERATION LANE

- Transverse Joints Perpendicular to Mainline Pavement
- Transverse Joints Perpendicular to Ramp Baseline

300' Taper

1500' min. (12' wide)
Refer to plans for length of deceleration lane.

400' min. (24' wide)
Refer to plans for length of deceleration lane.

360'
"B" Joint, 2' minimum, 4' maximum.
10' minimum or equal to mainline shoulder width.
"C" Joint parallel to mainline pavement.

- 'CD' Joints at 17' spacing.
- 'BT-2' or 'KT-2' Joint.
- 'C' Joint.
- "B" Joint, 2' minimum, 4' maximum.
- "L-2" Joint.
- Construct transverse joints on the exit ramp taper perpendicular to the ramp baseline where the gore area is 4 feet or greater.
- "C" Joint parallel to mainline pavement.
- 10' minimum or equal to mainline shoulder width.
- "B" or "C" Joint, 2' minimum, 4' maximum.

MODIFIED ROAD DESIGN DETAIL
533-04 SHEET 2 of 2

PARALLEL DECELERATION TAPER FOR 24' RAMP
(60 MPH DESIGN SPEED)
For joint detail, see mainline pavement. Construct ramp entrance pavement the same thickness as mainline subbase. Construct subbase for ramp entrance pavement the same thickness as mainline subbase. For header construction detail at the end of taper See Typical T101 or Typical T102.

Construct subbase for ramp entrance pavement the same thickness as mainline subbase.

Table of offsets and drops for 1/8' ramp taper:

**SECTION A-A**

**SECTION B-B**

**SECTION C-C**

**SECTION D-D**

**SECTION E-E**

**SECTION F-F**

**TABLE OF OFFSETS AND DROPS FOR 1/8' RAMP TAPER**

<table>
<thead>
<tr>
<th>DISTANCE FROM POINT ALONG LINE 'A' (Ft.)</th>
<th>OFFSET (Ft.)</th>
<th>SLOPE (%)</th>
<th>DROP (Ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>310.8</td>
<td>24.50</td>
<td>5.40</td>
<td>2.01</td>
</tr>
<tr>
<td>320.2</td>
<td>22.50</td>
<td>4.00</td>
<td>1.81</td>
</tr>
<tr>
<td>330.8</td>
<td>17.50</td>
<td>3.36</td>
<td>1.47</td>
</tr>
<tr>
<td>340.2</td>
<td>12.50</td>
<td>2.62</td>
<td>1.04</td>
</tr>
<tr>
<td>350.8</td>
<td>7.50</td>
<td>1.87</td>
<td>0.56</td>
</tr>
<tr>
<td>360.2</td>
<td>2.50</td>
<td>1.07</td>
<td>0.15</td>
</tr>
</tbody>
</table>

**NOTE:** The algebraic difference between ramp profile grade at point F and relative profile grade of mainline at point F is 0.99%.

**TABLE OF SHOULDER TRANSITION LENGTHS WITH 6' SHOULDER ON RAMP**

<table>
<thead>
<tr>
<th>TABLE OF SHOULDER TRANSITION LENGTHS WITH 6' SHOULDER ON RAMP</th>
</tr>
</thead>
<tbody>
<tr>
<td>WIDTH OF SHOULDERS</td>
</tr>
<tr>
<td>6' SLAB ON RAMP</td>
</tr>
<tr>
<td>12'</td>
</tr>
<tr>
<td>6'</td>
</tr>
</tbody>
</table>

**NOTE:** W is the width of the outside lane to the Edge of Pavement.

**MODIFIED ROAD DESIGN DETAIL**

**REVISIONS:**

**533-05**

**SHEET 1 of 2**

**PARALLEL ACCELERATION TAPER**

**FOR 24' RAMP**

(60 MPH DESIGN SPEED)
Transverse Joints Perpendicular to Mainline Pavement

Refer to plans for length of acceleration lane.

400' min. (24' wide)

500' min. (12' wide)

310.8' 600' Taper

CD ' Joints at 17' spacing.

BT-2' or KT-2' Joint.

'C' Joint.

'B' Joint, 2' minimum, 4' maximum.

'B' Joint, 4' minimum or equal to mainline shoulder width.

Construct transverse joints through the gore perpendicular to mainline pavement.

1-2' Joint.

'C' Joint parallel to mainline pavement.

'B' or 'C' Joint, 2' minimum, 4' maximum.

MODIFIED

PARALLEL ACCELERATION TAPER
FOR 24' RAMP
(60 MPH DESIGN SPEED)
Special Backfill
Form Grade Elevation
Variable Thickness
Earth Fill

Pavement
Edge of

TYPE 'B' HOT MIX ASPHALT PAVED SHOULDER, 8 Inch
P. C. Concrete
Design Quantity Table

<table>
<thead>
<tr>
<th>Sq. Yds.</th>
<th>Feet</th>
<th>Tons</th>
<th>Cu. Yds.</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>44.44</td>
<td>19.33</td>
<td>1.987</td>
</tr>
<tr>
<td>8</td>
<td>66.67</td>
<td>29.00</td>
<td>2.320</td>
</tr>
</tbody>
</table>

Area
Surface
Binder
Asphalt

Tons

1.160
1.740
2.320

Cu. Yds.

0.05 gal. per sq. yd.

Asphalt
Hot Mix
WITH 6'' SLOPED CURB AND GUTTER UNIT
HOT MIX ASPHALT PAVED SHOULDER TYPICAL SECTION
Hot Mix Asphalt
See PV-102.
6" Sloped Curb.

Engineer. Dispose of material removed due to this special shaping as directed by the Engineer.

Payment for special backfill will be based on a nominal 6 inch thickness. The thickness may be exceeded at the Contractor's option. However, the Contractor will not be compensated for any additional amount.

① Quantities shown are for one shoulder per station. Rates of application may be adjusted at the time of construction as directed by the Engineer.

② Quantities shown are based on a design weight of 145 lbs / cu. ft. for Hot Mix Asphalt Mixture (1,000,000 ESAL), Base Course, 3/4" mix, with an asphalt content of 6 percent.

③ Includes quantities for tack coating vertical face of adjacent pavement prior to placement of any base material. Tack cost estimated at one (1) application at 0.05 gal. per sq. yd.

Slopes, dimensions, and quantities indicated herein are for a normal section as shown and are for design purposes. Shoulder construction details may be modified through superelevated curves or other areas specifically designated by the Engineer. Refer to Typical Cross Sections and Standard Road Plans for superelevation.

Accomplish any special shaping of subgrade necessary, prior to construction of paved shoulds, as directed by the Engineer. Refer to Typical Cross Sections and Standard Road Plans for superelevation.

Shoulder construction details may be modified through superelevated curves or other areas specifically designated by the Engineer. Refer to Typical Cross Sections and Standard Road Plans for superelevation.
The price bid for "Crossing Barricades", each, is considered full supervision for removing all materials and their necessary to construct the barricade as detailed herein.

1. 8" x 8" x 11 gauge yellow reflector, attached to sign panel with 1/4" x 2" flat headed pin head screw.
2. Embed the barricade to within 2 feet from the top end of the concrete barrier.
3. 6" diameter panel with Type III or IV reflector attached to both sides.
4. Reflectors not stripe yet both sides shall slope from top to lower right of panel.
5. Embed all delinators post a minimum of 20'-6".
6. 1/4" thick diameter steel cable.

Plan View

Typical Section

Center of Median

TYPICAL HOLE LOCATION DETAIL 'A'

Delineator Post Attachment Details

Sign Post Attachment Details

Panel Attachment Details

List of Materials for Barricade at Median Crossovers

<table>
<thead>
<tr>
<th>Description</th>
<th>Standard Road Panel PV-600</th>
<th>Standard Road Panel PV-602</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 2 Steel Delineator Post</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>2 x 6' (Nominal) Sign Post</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3/4&quot; Steel Delineator Post</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>.180 x .306 Steel Plate Head Bolt</td>
<td>20</td>
<td>18</td>
</tr>
<tr>
<td>Cable Clamp</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Edge of Pavement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glass - Detail 'A'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/4&quot; Plastic with self-locking nut and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- reflector washer.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

DETAILED SHEET 540-13

Details of Barricade at Crossover

Iowa Department of Transportation
Highway Division
GENERAL NOTES:

Mailbox turnouts shall be full shoulder width with a minimum width of 8 feet. On shoulders less than 8 feet, build fills to obtain a minimum width of 8 feet.

For multiple mailbox installations in one turnout, the taper dimensions will remain the same. The dimensions from centerline of mailbox located on either side remain the same and 2 feet will be allowed for each mailbox in the installation.

When the mailbox owner's driveway is on the right-hand side of the road, as the mail carrier travels the box would preferably be placed near the driveway on that side. With these types of placement, this driveway will serve as part of the mailbox turnout.

Requests by the property owner for the location of mailbox turnouts other than at driveways shall be approved by the Engineer in charge of construction and the U.S. Postal Authority.

Mailboxes shall be installed with the face (door) no closer than the shoulder line. Support post shall be in the foreslope with the inside edge of each one (1) foot outward from the shoulder line.

SURFACING QUANTITY
Surfacing of mailbox turnouts is based on a 5 inch design depth (base material) which will, under normal conditions, compact to 3.5" to 4" actual depth. A width of 8 feet will require approximately 19.3 cubic yards and 10 foot width will require approximately 27.5 cubic yards of surfacing.

Quantities are given for a single mailbox installation 275 to 340 feet in length. Where multiple installations or installations of driveways are encountered, quantities will vary as directed by the Engineer.

Payment for construction of mailbox turnouts will be as specified elsewhere in the contract documents.

1. 6" to 12" preferred, 6" minimum.
2. Material to be delivered at owner's expense, pre-inspection, etc.
3. Power pole for U.S. Postal Regulation (10" x 14" above ground and at least 8 feet from centerline of street).

Project Development Division

DETAIL SHEET 560-2

DETAILED MAILBOX TURNOVER (GRANULAR SURFACED)
GRADING BLISTER AT LIGHT POLE FOOTING

UNDIVIDED ROADWAY

DIVIDED ROADWAY

SECTION A-A
Refer to curve data contained in the project plans for tangent runout length (x), runoff length (L), transition applied within curve length (m), rotation width (w), total thickness of wedge and surface mat (Y), normal cross-slope (g), existing cross slope at PC/PT (E), and full superelevation (e).

1. See other drawings for shoulder details.

2. If the existing cross slope at the PC/PT exceeds 70% of the proposed 'e', determine the value of 'm' using the following formula:

   \[ m = L - \left( \frac{(L)(E)}{(0)} \right) \]

Possible Contract Items:
- Base Widening, various HMA Mixture, Wedge, Leveling or Strengthening Course

Possible Tabulation:
- 101-8

Possible Tabulation:
- 101-8
For pavement marking line types, see PM-110.
For stop line information, see PM-120.

Possible Contract Item:
Pavement Marking Line Items

Possible Tabulations:
101-10
108-22

PAINTED ISLANDS
Refer to table below for minimum distance between face of guardrail and edge of Shared-use Trail or Sidewalk.

<table>
<thead>
<tr>
<th>Posted Speed Limit (mph)</th>
<th>Minimum Distance (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;45</td>
<td>4</td>
</tr>
<tr>
<td>45 or greater</td>
<td>5</td>
</tr>
</tbody>
</table>

Bridge

Shared-use Trail or Sidewalk

10:1 taper

Extension of Bridge Rail (length varies)

Steel Beam Guardrail

End of Bridge Wing

2'-0" min.
Use steel meeting the requirements of ASTM A36.

Use an Iowa DOT Construction Specification mix or a commercial ready-mix with a minimum F'c = 2500 psi. Deposit by a method approved by the Engineer. Limits of the fill shown are approximate and may be rough or slumped depending on the method of bulkheading.

Provide for an approved monitoring schedule with a person on call and available 24 hours a day, each day of the week, to realign barrier which has been struck. Initiate within one hour of notification of need.

Unless stated otherwise, the barrier rail sections remain the property of the Contractor. Remove from the site upon completion of work.

Anchorage for use on bridge decks or PCC pavement only. When installed in one-way traffic situations use and install anchorage on traffic side of barrier only. Anchorage consisting of a washer plate as shown, a 3/4" dia x 1 3/4" long ASTM A397 Grade B heavy hex bolt, and a 3/4" Red Head Multi-Set II drop-in anchor (or approved equivalent). Following removal of anchorage, fill all holes with an approved non-shrink grout. The cost of anchorage, when required, is to be in the price bid for "Temporary Barrier Rail, Steel."

Furnish and install Barrier Markers. Place Markers as shown on this sheet and attach to the barrier in a manner approved by the manufacturer. Place Markers to face oncoming traffic. Use a color to match the adjacent edge line. Maintain the markers and promptly repair or replace damaged or missing units. Include all costs for furnishing, installing and maintaining markers in the price bid for "Temporary Barrier Rail, Steel."
### Connection Rod Assembly

- **Connection Rod**: Diagram shows a vertical connection rod with dimensions and annotations indicating its placement within the barrier connection.
- **Top Plate**: Attached to the connection rod, marked with dimensions and annotations for its placement.
- **Washer Plate**: Located beneath the connection rod, with annotations for its dimensions and placement.

### Barrier Connection Top Section

- **Splice Plates**: Diagram shows two splice plates with dimensions and annotations for their placement.
- **Traffic Side**: Annotations indicate the side designated for traffic flow.

### Barrier Connection Side Section

- **Connection Rod**: Diagram shows the connection rod with annotations for its dimensions and placement.
- **Splice Plates**: Diagram shows the splice plates with annotations for their dimensions and placement.

### Table A: Anchorage Requirements

<table>
<thead>
<tr>
<th>Obstacle</th>
<th>Dropoff Depth</th>
<th>Min. Offset where BRB is Uanchored</th>
<th>Min. Offset where BRB is Anchored</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dropoff* from pavement</td>
<td>≤ 24&quot;</td>
<td>10&quot;</td>
<td>6&quot;</td>
</tr>
<tr>
<td></td>
<td>&gt; 24&quot;</td>
<td>18&quot;</td>
<td>6&quot;</td>
</tr>
<tr>
<td>Dropoff* from bridge</td>
<td>≤ 2&quot;</td>
<td>1&quot;</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>&gt; 2&quot;</td>
<td>18&quot;</td>
<td>N/A</td>
</tr>
<tr>
<td>Fixed vertical object</td>
<td>N/A</td>
<td>10&quot;</td>
<td>6&quot;</td>
</tr>
</tbody>
</table>

* A dropoff is a slope of 2H:1V or steeper.
For a double curb stop cover, use the same cover shown.

The elevation of the shut-off cover may need to be staggered in order to pass heads through the lower flange or supporting seat.

**CASE 1**

- Sawcut Standard Valve Box
- Covers 2” +/- Below Bottom of Sidewalk

**CASE 2**

- Water Service Curb Stop, Cover Only

Possible Contract Item:

Water Service Curb Stop, Cover Only
Slash mulch consists of waste material from clearing and grubbing. Use material with a maximum length of 20 inches and maximum width of 3 inches for individual pieces. Material will be accepted based on visual inspection.

Dispose of the slash mulch berm material off the project unless the Engineer approves a suitable site within the project limits.
**Detail A**

- **Tube Riser**
- **Overlap Joint**
- **Sediment Control Device**
- **Perimeter and Slope**

**Steps:**
1. Wrap fabric sock around tube riser. Use fabric complying with Article 4196.01, B, 1 with a minimum flow rate of 90 gallons per minute per square foot. Ensure top of sock is below form grade elevation.
2. Tube riser may be such that it can be pushed down and pulled up.
3. Place Perimeter and Slope Sediment Control Devices around all intake or manhole wells. Use 20 inch diameter device.
4. Extra material required to install overlaps will not be included in the installation length.

**Possible Contract Items:**
- Temporary Intake or Manhole Cover Assembly
- Maintenance of Temporary Intake or Manhole Cover Assembly
- Removal of Temporary Intake or Manhole Cover Assembly
- Perimeter and Slope Sediment Control Device

**Possible Tabulations:**
- 100-11
- 100-19

**Method of Measurement for Temporary Intake or Manhole Cover Assembly:**
- By count.

**Basis of Payment for Temporary Intake or Manhole Cover Assembly:**
- At the contract unit price for each device installed.

**Method of Measurement for Maintenance of Temporary Intake or Manhole Cover Assembly:**
- By count.

**Basis of Payment for Maintenance of Temporary Intake or Manhole Cover Assembly:**
- At the contract unit price for each occurrence. Payment is full compensation for inspecting fabric sock and replacing when flow capacity has been reduced to 50%.

**Method of Measurement for Removal of Temporary Intake or Manhole Cover Assembly:**
- By count.

**Basis of Payment for Removal of Temporary Intake or Manhole Cover Assembly:**
- At the contract unit price for each device removed.

**Erosion Control for Intake or Manhole Well**
Remove sediment filter bag upon stabilization of sediment sources.

Measurement for Grate Intake Sediment Filter Bag will be by count.

Basis of Payment for Grate Intake Sediment Filter Bag will be at the contract unit price for each device installed. Payment is full compensation for furnishing all equipment, labor, and materials required to install the Grate Intake Sediment Filter Bag as shown.

Method of Measurement for Maintenance of Grate Intake Sediment Filter Bag will be by count.

Basis of Payment for Maintenance of Grate Intake Sediment Filter Bag will be at the contract unit price for each occurrence. Payment is full compensation for clean out and disposal of material when capacity reaches 50%, and for any other repair needed during the project.

Measurement for Removal of Grate Intake Sediment Filter Bag will be by count.

Basis of Payment for Removal of Grate Intake Sediment Filter Bag will be at the contract unit price for each device removed. Payment is full compensation for all labor and equipment required for removal.

Possible Contract Items:
- Grate Intake Sediment Filter Bag
- Maintenance of Grate Intake Sediment Filter Bag
- Removal of Grate Intake Sediment Filter Bag

Possible Tabulation:
- 100-37

Woven material meeting the requirements of Table 4196.01-1 of the Standard Specifications, except a maximum apparent opening size US Sieve No. 10 and a minimum flow rate of 145 gallons per minute per square foot.

Possible Contract Items:
- Grate Intake Sediment Filter Bag
- Maintenance of Grate Intake Sediment Filter Bag
- Removal of Grate Intake Sediment Filter Bag
Place Erosion Stone as near to the five year high water mark as possible while not allowing it to enter the stream bed. Remove Erosion Stone after project completion.

Possible Contract Item: Erosion Stone
Possible Tabulation: 15G-23
See Standard Road Plans EC-201, EC-204, and EC-301 for installation details.

Silt Fence for Ditch Check may be substituted at no additional cost to the Contracting Authority.
See Standard Road Plans EC-201 and EC-204 for installation details.

Possible Contract Items:
- Silt Fence for Ditch Check
- Silt Fence
- Perimeter and Slope Sediment Control Device

Possible Tabulations:
- 100-15
- 100-17
- 100-19
- 100-34

Silt Fence for Ditch Check may be substituted at no additional cost to the Contracting Authority.

NON-CONTINUOUS FLOW CULVERT
REVISIONS:
New.

EXPOSED SOIL FOR SHOULDER WIDENING WITH TEMPORARY SEDIMENT CONTROL

Silt Fence for Erosion Check may be substituted at no additional cost to the Contracting Authority.

CONTINUOUS FLOW CULVERT