NOTES:

1. BIO-BAGS ONLY REQUIRED WHEN DISCHARGING SEDIMENT LADEN WATER. STAKING OF BAGS REQUIRED WITH EITHER METHOD USING (2) 1"x2" WOOD STAKES OR APPROVED EQUAL PER BAG.

2. RIP-RAP SIZING GOVERNEO BY THE SIDE SLOPES ON THE OUTLET CHANNEL, ASSUMED TO BE 3:1.

3. PLACE WOVEN GEOTEXTILE ALONG BOTTOM AND SIDE SLOPES TO CROWN OF PIPE, AND INSTALL ROCK TO 1' ABOVE PIPE CROWN ALONG BOTH SIDES OF CHANNEL.

4. RIP-RAP SHALL BE IN ACCORDANCE WITH SECTION 9-13.1 OF THE WSDOT STANDARD SPECIFICATIONS. RIP-RAP ROCK SIZE SHALL BE AS SHOWN IN THE TABLE BELOW.

5. RIP-RAP SHALL BE HAND LAYED AND REASONABLY GRADED.

6. INSPECT ONCE PER WEEK ON ACTIVE SITES, ONCE EVERY TWO WEEKS ON INACTIVE SITES, AND WITHIN 24 HOURS FOLLOWING A 0.5 INCH RAIN EVENT.

7. IF THERE IS SCOURING AT THE OUTLET, PROTECT THE ERODED AREA BY INCREASING THE SIZE OF THE ENERGY DISSIPATOR FACILITY.

8. REMOVE ACCUMULATED SEDIMENT FREQUENTLY.

9. USE THIS DETAIL FOR OUTLET PROTECTION AS A MINIMUM. CONSIDER SITE CONDITIONS TO DETERMINE IF A MORE COMPLEX ENERGY DISSIPATOR MAY BE REQUIRED.

<table>
<thead>
<tr>
<th>DISCHARGE VELOCITY AT DESIGN FLOW (FPS)</th>
<th>REQUIRED PROTECTION</th>
<th>MINIMUM DIMENSIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TYPE</td>
<td>LENGTH (L)</td>
</tr>
<tr>
<td>0 TO &lt;5</td>
<td>RIP-RAP*</td>
<td>8' OR 3D (WHICHEVER IS GREATER)</td>
</tr>
<tr>
<td>6 TO &lt;10</td>
<td>RIP-RAP**</td>
<td>12' OR 4D (WHICHEVER IS GREATER)</td>
</tr>
<tr>
<td>11 TO &lt;20</td>
<td>GABION</td>
<td>AS REQUIRED</td>
</tr>
<tr>
<td>&gt;20</td>
<td>ENGINEERED ENERGY DISSIPATOR REQUIRED</td>
<td></td>
</tr>
</tbody>
</table>

* 8" MAXIMUM, 6" MEDIAN, 2" MINIMUM
** 24" MAXIMUM, 16" MEDIAN, 4" MINIMUM

Department of Public Works
CLARK COUNTY WASHINGTON
proud past, promising future

OUTLET PROTECTION
RIP-RAP
APPROVED

E7

5/23/08

PETER CAPPEN
COUNTY ENGINEER

DATE

STANDARD

DESIGN

DRAWN
Date: 05/23/08