**Cast-In-Place Pipe Headwall**

**42" to 84" Diameter**

---

**PLAN "A"**

**SECTION D–D**

**SECTION C–C**

---

**NOTES:**

CHART CONTINUED ON SHEET 2 OF 2

* ONE WALL

---

### Cast-In-Place Pipe Headwall

**TYPE "A"**

**2:1 SLOPE FROM POINT "K"**

**SLOPE AS SHOWN ON CROSS SECTIONS**

---

**INLET END**

**OUTLET END**

**RIGID PIPE**

**CORRUGATED PIPE**

**END TREATMENT OF HEADWALL**

---

<table>
<thead>
<tr>
<th>PIPE DIA.</th>
<th>H</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>BAR &quot;d&quot;</th>
<th>L2</th>
<th>h2</th>
<th>C.Y. CONC. C.M.P.</th>
<th>C.Y. CONC. R.C.P.</th>
<th>STEEL LBS.</th>
<th>L1</th>
<th>L2</th>
<th>h1</th>
<th>h2</th>
<th>C.Y. CONC. C.M.P.</th>
<th>C.Y. CONC. R.C.P.</th>
<th>STEEL LBS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>42&quot;</td>
<td>4'-11&quot;</td>
<td>3' -3&quot;</td>
<td>1'-6&quot;</td>
<td>2'-6&quot;</td>
<td>#5</td>
<td>3'-7&quot;</td>
<td>3'-1&quot;</td>
<td>7.0</td>
<td>6.7</td>
<td>598</td>
<td>8'-0&quot;</td>
<td>4'-6&quot;</td>
<td>3'-8&quot;</td>
<td>3'-2&quot;</td>
<td>7.3</td>
<td>7.1</td>
<td>619</td>
</tr>
<tr>
<td>48&quot;</td>
<td>4'-5&quot;</td>
<td>3'-6&quot;</td>
<td>1'-6&quot;</td>
<td>2'-9&quot;</td>
<td>#5</td>
<td>4'-4&quot;</td>
<td>3'-4&quot;</td>
<td>8.5</td>
<td>8.2</td>
<td>793</td>
<td>10'-0&quot;</td>
<td>5'-4&quot;</td>
<td>4'-1&quot;</td>
<td>3'-5&quot;</td>
<td>9.0</td>
<td>8.7</td>
<td>776</td>
</tr>
<tr>
<td>54&quot;</td>
<td>5'-11&quot;</td>
<td>3'-9&quot;</td>
<td>1'-6&quot;</td>
<td>3'-0&quot;</td>
<td>#5</td>
<td>5'-2&quot;</td>
<td>3'-8&quot;</td>
<td>10.3</td>
<td>10.0</td>
<td>1069</td>
<td>11'-4&quot;</td>
<td>6'-3&quot;</td>
<td>4'-6&quot;</td>
<td>3'-8&quot;</td>
<td>10.9</td>
<td>10.5</td>
<td>1026</td>
</tr>
<tr>
<td>60&quot;</td>
<td>6'-6&quot;</td>
<td>4'-0&quot;</td>
<td>1'-6&quot;</td>
<td>3'-3&quot;</td>
<td>#5</td>
<td>5'-11&quot;</td>
<td>3'-11&quot;</td>
<td>12.3</td>
<td>11.8</td>
<td>1149</td>
<td>12'-7&quot;</td>
<td>7'-2&quot;</td>
<td>4'-10&quot;</td>
<td>4'-0&quot;</td>
<td>12.9</td>
<td>12.4</td>
<td>1174</td>
</tr>
<tr>
<td>72&quot;</td>
<td>7'-7&quot;</td>
<td>4'-6&quot;</td>
<td>1'-7&quot;</td>
<td>3'-9&quot;</td>
<td>#7</td>
<td>7'-5&quot;</td>
<td>4'-5&quot;</td>
<td>17.0</td>
<td>16.2</td>
<td>1783</td>
<td>15'-1&quot;</td>
<td>8'-11&quot;</td>
<td>5'-7&quot;</td>
<td>4'-6&quot;</td>
<td>17.8</td>
<td>17.1</td>
<td>1811</td>
</tr>
<tr>
<td>84&quot;</td>
<td>8'-8&quot;</td>
<td>5'-0&quot;</td>
<td>1'-10&quot;</td>
<td>4'-3&quot;</td>
<td>#8</td>
<td>9'-0&quot;</td>
<td>5'-0&quot;</td>
<td>23.7</td>
<td>22.8</td>
<td>2595</td>
<td>17'-7&quot;</td>
<td>10'-9&quot;</td>
<td>6'-4&quot;</td>
<td>5'-1&quot;</td>
<td>24.8</td>
<td>23.9</td>
<td>2596</td>
</tr>
</tbody>
</table>

---

**Date:** 3/14/2018

**Standard Construction Drawing**

**Cast-In-Place Pipe Headwall**

**42" to 84" Diameter**

---

**Drawing No.**

**STS-12**

**Sheet 1 of 2**

---

**City of Marysville**

**Engineering**
Cast-In-Place Pipe Headwall
42" to 84" Diameter

LOCATION AND GRADING PLAN
FOR SKewed PIPE CULVERT – TYPE "B"

1. HEADWALL WHERE REQUIRED WILL BE PROVIDED FOR SKewed AND NONSKewed CULVERTS HAVING A DIAMETER OR RISE OF 43° TO 84°. TYPE "A" IS USED WHEN SKew ANGLE is 10° OR LESS AND TYPE "B" WHEN ANGLE IS 11° OR OVER.

2. REINFORCING STEEL SHALL BE #5 BAR.

3. DIMENSIONS AND QUANTITIES ARE SHOWN FOR CIRCULAR SECTIONS ONLY. CALCULATE REINFORCEMENT FOR ELLIPTICAL CONCRETE OR CORRUGATED PIPE ARCHES IN ACCORDANCE WITH NEAREST SIZE CIRCULAR PIPE. EMBANKMENT DIMENSIONS FOR VERTICAL DIAMETER SHALL APPLY FOR RISE AND DIMENSIONS FOR HORIZONTAL DIAMETER SHALL APPLY TO SPAN.

4. CONCRETE SHALL BE CLASS "C".

5. FOUNDATION: INCREASE WIDTH OF BASE WHERE SOIL BORINGS INDICATE A BEARING CAPACITY LESS THAN 2600 LBS. PER SQ. FT. IT WILL BE NECESSARY TO INCREASE THE WIDTH OF THE FOOTING.

6. WHEN SLOPES OTHER THAN 2:1 ARE USED ADJUST LENGTH "L_1" & "L_2" AND HEIGHT "h_1" & "h_2" AS REQUIRED.


8. THE CONTRACTOR MAY PROPOSE TO USE PRECAST IN LIEU OF CAST IN PLACE BUT MUST SUBMIT DETAILED DRAWINGS OF THE PROPOSED STRUCTURE WITH AN OHIO REGISTERED PROFESSIONAL ENGINEER'S STAMP OF APPROVAL.

**ONE WALL**

<table>
<thead>
<tr>
<th>PIPE DIA.</th>
<th>H</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>BAR DIA</th>
<th>L_1</th>
<th>L_2</th>
<th>h_1</th>
<th>C.Y. CONC. C.M.P.</th>
<th>C.Y. CONC. R.C.P.</th>
<th>STEEL LBS.</th>
<th>L_1</th>
<th>L_2</th>
<th>h_1</th>
<th>h_2</th>
<th>C.Y. CONC. C.M.P.</th>
<th>C.Y. CONC. R.C.P.</th>
<th>STEEL LBS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>42&quot;</td>
<td>4&quot;-11&quot;</td>
<td>3&quot;-3&quot;</td>
<td>1&quot;-6&quot;</td>
<td>2&quot;-6&quot;</td>
<td>#5</td>
<td>7&quot;-10&quot;</td>
<td>5&quot;-9&quot;</td>
<td>3&quot;-2&quot;</td>
<td>3&quot;-3&quot;</td>
<td>7.5</td>
<td>7.3</td>
<td>633</td>
<td>7&quot;-10&quot;</td>
<td>7&quot;-9&quot;</td>
<td>3&quot;-2&quot;</td>
<td>3&quot;-3&quot;</td>
<td>8.7</td>
<td>8.5</td>
</tr>
<tr>
<td>48&quot;</td>
<td>5&quot;-5&quot;</td>
<td>3&quot;-6&quot;</td>
<td>1&quot;-6&quot;</td>
<td>2&quot;-9&quot;</td>
<td>#5</td>
<td>8&quot;-9&quot;</td>
<td>6&quot;-10&quot;</td>
<td>3&quot;-5&quot;</td>
<td>3&quot;-6&quot;</td>
<td>9.1</td>
<td>8.8</td>
<td>801</td>
<td>8&quot;-9&quot;</td>
<td>9&quot;-2&quot;</td>
<td>3&quot;-5&quot;</td>
<td>3&quot;-7&quot;</td>
<td>10.6</td>
<td>10.3</td>
</tr>
<tr>
<td>54&quot;</td>
<td>5&quot;-11&quot;</td>
<td>3&quot;-9&quot;</td>
<td>1&quot;-6&quot;</td>
<td>3&quot;-0&quot;</td>
<td>#5</td>
<td>9&quot;-8&quot;</td>
<td>7&quot;-11&quot;</td>
<td>3&quot;-6&quot;</td>
<td>3&quot;-9&quot;</td>
<td>10.8</td>
<td>10.5</td>
<td>1024</td>
<td>9&quot;-8&quot;</td>
<td>10&quot;-7&quot;</td>
<td>3&quot;-8&quot;</td>
<td>3&quot;-10&quot;</td>
<td>12.6</td>
<td>12.2</td>
</tr>
<tr>
<td>60&quot;</td>
<td>6&quot;-6&quot;</td>
<td>4&quot;-0&quot;</td>
<td>1&quot;-6&quot;</td>
<td>3&quot;-3&quot;</td>
<td>#5</td>
<td>10&quot;-7&quot;</td>
<td>9&quot;-0&quot;</td>
<td>3&quot;-10&quot;</td>
<td>4&quot;-1&quot;</td>
<td>12.7</td>
<td>12.3</td>
<td>1,157</td>
<td>10&quot;-7&quot;</td>
<td>12&quot;-0&quot;</td>
<td>3&quot;-10&quot;</td>
<td>4&quot;-1&quot;</td>
<td>14.8</td>
<td>14.3</td>
</tr>
<tr>
<td>72&quot;</td>
<td>7&quot;-7&quot;</td>
<td>4&quot;-6&quot;</td>
<td>1&quot;-7&quot;</td>
<td>3&quot;-9&quot;</td>
<td>#7</td>
<td>12&quot;-5&quot;</td>
<td>11&quot;-2&quot;</td>
<td>4&quot;-3&quot;</td>
<td>4&quot;-7&quot;</td>
<td>17.3</td>
<td>16.8</td>
<td>1,788</td>
<td>12&quot;-5&quot;</td>
<td>14&quot;-10&quot;</td>
<td>4&quot;-3&quot;</td>
<td>4&quot;-8&quot;</td>
<td>20.2</td>
<td>19.6</td>
</tr>
<tr>
<td>84&quot;</td>
<td>8&quot;-8&quot;</td>
<td>5&quot;-10&quot;</td>
<td>1&quot;-10&quot;</td>
<td>4&quot;-3&quot;</td>
<td>#8</td>
<td>14&quot;-7&quot;</td>
<td>13&quot;-4&quot;</td>
<td>4&quot;-10&quot;</td>
<td>5&quot;-2&quot;</td>
<td>24.1</td>
<td>23.3</td>
<td>2,511</td>
<td>14&quot;-3&quot;</td>
<td>17&quot;-8&quot;</td>
<td>4&quot;-8&quot;</td>
<td>5&quot;-2&quot;</td>
<td>27.9</td>
<td>27.0</td>
</tr>
</tbody>
</table>

Date: 3/14/2018

Standard Construction Drawing

Drawing No. STS-12

Sheet 2 of 2