CONCRETE CYLINDER

NO. 6 REBARS, TIE ANCHOR BOLTS TO REBAR CAGE.

3/4" SCH. 40 PVC

NO. 4 TIE BARS, SEE NOTE 6.

W

TOP VIEW

ANCHOR BOLTS

TOP FLUSH WITH SIDEWALK

MINIMUM (2)-2" CONDUIT ELL(S) (SEE NOTE 5)

FORMED TOP

BOLT CIRCLE

3" CLEAR

CAP UNUSED CONDUIT

(2)-2" CONDUIT ELLS (SEE NOTE 5)

24"

WALK

SIDE VIEW

VERTICAL REBARS. SEE VERTICAL REBAR DIAGRAM FOR SIZE AND NUMBER. (SEE NOTE 11)

3-1/2" ± 1/2"

GROUNDING CONDUCTOR

GROUND ROD (1"x10")

24"

18"

12"

ANCHOR BOLTS

CONDUIT TO EXTEND 2" TO 3" ABOVE FOUNDATION

ROUND CORNERS (SEE NOTE 9)

8" MIN.

8" CLEAR

SIDE VIEW

VERTICAL REBAR

36" DIA. DRILLED SHAFT

42" - 48" DIA. DRILLED SHAFT

14 #8's

20 #9's (48")

18 #8's (42")

WALK

ANCHOR BOLTS

TOP VIEW

MINIMUM (2)-2" CONDUIT ELL(S) (SEE NOTE 5)

FORMED TOP

BOLT CIRCLE

3" CLEAR

CAP UNUSED CONDUIT

(2)-2" CONDUIT ELLS (SEE NOTE 5)

24"

WALK

SIDE VIEW

VERTICAL REBARS. SEE VERTICAL REBAR DIAGRAM FOR SIZE AND NUMBER. (SEE NOTE 11)

3-1/2" ± 1/2"

GROUNDING CONDUCTOR

GROUND ROD (1"x10")

24"

18"

12"

ANCHOR BOLTS

CONDUIT TO EXTEND 2" TO 3" ABOVE FOUNDATION

ROUND CORNERS (SEE NOTE 9)

8" MIN.

8" CLEAR

SIDE VIEW

VERTICAL REBAR

36" DIA. DRILLED SHAFT

42" - 48" DIA. DRILLED SHAFT

14 #8's

20 #9's (48")

18 #8's (42")

WALK

ANCHOR BOLTS

TOP VIEW

MINIMUM (2)-2" CONDUIT ELL(S) (SEE NOTE 5)

FORMED TOP

BOLT CIRCLE

3" CLEAR

CAP UNUSED CONDUIT

(2)-2" CONDUIT ELLS (SEE NOTE 5)

24"

WALK

SIDE VIEW

VERTICAL REBARS. SEE VERTICAL REBAR DIAGRAM FOR SIZE AND NUMBER. (SEE NOTE 11)

3-1/2" ± 1/2"

GROUNDING CONDUCTOR

GROUND ROD (1"x10")

24"

18"

12"

ANCHOR BOLTS

CONDUIT TO EXTEND 2" TO 3" ABOVE FOUNDATION

ROUND CORNERS (SEE NOTE 9)

8" MIN.

8" CLEAR

SIDE VIEW

VERTICAL REBAR

36" DIA. DRILLED SHAFT

42" - 48" DIA. DRILLED SHAFT

14 #8's

20 #9's (48")

18 #8's (42")
ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED

**CITY OF COLUMBUS 4120 & 4121 TYPE SUPPORTS**

<table>
<thead>
<tr>
<th>DESIGN NO.</th>
<th>D (feet)</th>
<th>W</th>
<th>ANCHOR BOLTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>SIZE</td>
</tr>
<tr>
<td>4</td>
<td>10</td>
<td>36</td>
<td>1.75 X 62</td>
</tr>
<tr>
<td>12</td>
<td>11</td>
<td>36</td>
<td>2 X 62</td>
</tr>
<tr>
<td>13</td>
<td>15</td>
<td>36</td>
<td>2 X 62</td>
</tr>
<tr>
<td>14</td>
<td>15</td>
<td>36</td>
<td>2 X 62</td>
</tr>
<tr>
<td>C15</td>
<td>15</td>
<td>36</td>
<td>2 X 62</td>
</tr>
<tr>
<td>C16</td>
<td>15</td>
<td>36</td>
<td>2 X 62</td>
</tr>
</tbody>
</table>

**CITY OF COLUMBUS 4170 TYPE SUPPORTS**

<table>
<thead>
<tr>
<th>DESIGN NO.</th>
<th>D (feet)</th>
<th>W</th>
<th>ANCHOR BOLTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>SIZE</td>
</tr>
<tr>
<td>5</td>
<td>9</td>
<td>36</td>
<td>1.75 X 62</td>
</tr>
<tr>
<td>6</td>
<td>9</td>
<td>36</td>
<td>1.75 X 62</td>
</tr>
<tr>
<td>7</td>
<td>10</td>
<td>36</td>
<td>2 X 62</td>
</tr>
<tr>
<td>8</td>
<td>10</td>
<td>36</td>
<td>2 X 62</td>
</tr>
<tr>
<td>9</td>
<td>10</td>
<td>36</td>
<td>2 X 62</td>
</tr>
<tr>
<td>10</td>
<td>11</td>
<td>36</td>
<td>2.25 X 63</td>
</tr>
<tr>
<td>11</td>
<td>11</td>
<td>36</td>
<td>2.25 X 63</td>
</tr>
<tr>
<td>12</td>
<td>12</td>
<td>36</td>
<td>2.5 X 64</td>
</tr>
<tr>
<td>13</td>
<td>16</td>
<td>42 or 48</td>
<td>3 X 66</td>
</tr>
<tr>
<td>14</td>
<td>17</td>
<td>48</td>
<td>3 X 72</td>
</tr>
</tbody>
</table>

**ANCHOR BOLTS**

<table>
<thead>
<tr>
<th>DIA.</th>
<th>TOP THREAD LENGTH</th>
<th>THREADS PER INCH</th>
<th>PLATE WASHER DIAMETER</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.25</td>
<td>8</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>1.5</td>
<td>9</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>1.75</td>
<td>9</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>9</td>
<td>4.5</td>
<td>4</td>
</tr>
<tr>
<td>2.25</td>
<td>10</td>
<td>4.5</td>
<td>5</td>
</tr>
<tr>
<td>2.5</td>
<td>10</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>12</td>
<td>4</td>
<td>6</td>
</tr>
</tbody>
</table>

**SIGNAL SUPPORT/ STRAIN POLE FOUNDATIONS**

CITY OF COLUMBUS, OHIO  
DEPARTMENT OF PUBLIC SERVICE  
DIVISION OF DESIGN AND CONSTRUCTION  
STD DWG 4160  
10/01/2018  
SHT 2 OF 3
NOTES:

1. USE 1/2" PREFORMED JOINT FILLER AS PER 705.03 BETWEEN FOUNDATIONS AND ADJACENT PAVED AREAS.

2. A SPECIAL FOUNDATION DESIGN WILL BE REQUIRED WHEN COHESIVE SOIL WITH UNDRAINED SHEAR STRENGTH OF LESS THAN 2000 LB/FT² OR GRANULAR SOIL WITH AN ANGLE OF INTERNAL FRICTION LESS THAN 30° AND A WET DENSITY LESS THAN 120 LB/FT³ IS ENCOUNTERED. THE CONTRACTOR SHALL NOTIFY THE ENGINEER WHEN THESE CONDITIONS ARE IDENTIFIED.

3. PROVIDE ALL ANCHOR BOLTS WITH STANDARD STEEL HEX NUTS, LEVELING NUTS, AND PLAIN WASHERS. THE NUTS SHALL BE CAPABLE OF DEVELOPING THE FULL STRENGTH OF THE ANCHOR BOLTS.


5. THE SIZE, NUMBER (MINIMUM OF 2), TYPE, AND ORIENTATION OF CONDUIT ELLS SHALL BE AS SHOWN IN THE PLAN, EXCEPT THAT A 3/4" SCHEDULE 40 PVC CONDUIT SHALL BE INSTALLED IN EACH FOUNDATION. UNUSED CONDUIT ELLS SHALL BE CAPPED.

6. TIE SPACING, STARTING FROM THE TOP OF THE DRILLED SHAFT, SHALL BE 3" BETWEEN THE FIRST TWO TIES AND 12" SPACING THEREAFTER.

7. THE ANCHOR BASE POLE FOUNDATION SIDES SHALL BE ORIENTED PARALLEL TO THE SIDEWALK OR BACK-OF-CURB OR EDGE-OF-PAVEMENT.

8. THE TOP OF THE FOUNDATION SHALL BE SET BASED ON THE FOLLOWING GUIDELINES:

   FOUNDATION LOCATED ENTIRELY IN WALK OR CONCRETE AREA
   TOP OF FOUNDATION SHALL BE AS PER CITY OF COLUMBUS STANDARD DRAWING 4161.

   FOUNDATION LOCATED BEHIND CURB ASSOCIATED WITH CURB RAMP
   TOP OF FOUNDATION SHALL BE FLUSH WITH TOP OF CURB AT BACK OF RAMP FOR A PARALLEL RAMP.

   FOUNDATION LOCATED ADJACENT TO WALK OR CONCRETE AREA
   TOP OF FOUNDATION SHALL BE FLUSH WITH WALK OR CONCRETE AREA FOR A PERPENDICULAR RAMP.

   FOUNDATION LOCATED ADJACENT TO WALK OR CONCRETE WITH STEEP GRADE CHANGE (RISES STEEPLY BEHIND WALK)

9. THE POLE FOUNDATION TOP SHALL BE EDGED USING A 1/2" SIDEWALK EDGER AND NOT CHAMFERED.

10. ANCHOR BOLT LENGTH SHALL BE INCREASED WHEN FOUNDATION IS INSTALLED IN BRICK SIDEWALK. SEE CITY OF COLUMBUS STANDARD DRAWING 4161 AND 2301 FOR INCREASED LENGTH REQUIREMENTS.

11. ALL REINFORCING STEEL SHALL BE EPOXY COATED AND COMPLY WITH AND BE PLACED IN ACCORDANCE WITH CMSC 590. REBAR CAGE SHALL EXTEND TO WITHIN 3 1/2" ± 1/2" OF TOP AND BOTTOM OF FOUNDATION.

12. IF SHALLOW BEDROCK IS ENCOUNTERED, THE FOUNDATION LENGTH MAY BE DECREASED BY EMBEDDING THE SHAFT A MINIMUM OF 5 FT INTO BEDROCK. FIELD CUT THE VERTICAL REBAR TO FIT THE SHORTENED FOUNDATION.

13. IF EXCAVATING WITHIN 8 FEET OF, BUT GREATER THAN 5 FEET FROM THE EDGE OF AN EXISTING SIGNAL SUPPORT OR STRAIN POLE FOUNDATION, PROVIDE TEMPORARY SUPPORT OF THE POLE (DOWN GUY, HEAD GUY, BASE GUY, MECHANICAL/CRANE SUPPORT, ETC.) DURING EXCAVATION AND CONSTRUCTION ACTIVITIES.

14. IF A UTILITY IS WITHIN 5 FEET OF THE FOUNDATION, INCREASE THE FOUNDATION LENGTH (D) TO THE LENGTH SHOWN IN THE TABLE BELOW.

<table>
<thead>
<tr>
<th>4120 &amp; 4121 TYPE SUPPORTS</th>
<th>4170 TYPE SUPPORTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DESIGN NO.</td>
<td>DEPTH OF ADJACENT UTILITY EXCAVATION</td>
</tr>
<tr>
<td>3 FT</td>
<td>6 FT</td>
</tr>
<tr>
<td>4</td>
<td>D=18</td>
</tr>
<tr>
<td>12</td>
<td>D=18</td>
</tr>
<tr>
<td>13</td>
<td>D=18</td>
</tr>
<tr>
<td>14</td>
<td>D=18</td>
</tr>
<tr>
<td>C15</td>
<td>D=18</td>
</tr>
<tr>
<td>C16</td>
<td>SEE BELOW</td>
</tr>
</tbody>
</table>

SPECIAL FOUNDATION REQUIRED FOR UTILITY EXCAVATIONS ADJACENT TO C16.

11. D=20       | D=24       |
12. D=20       | D=24       |
13. D=20       | D=24       |
14. D=20       | D=24       |

SIGNAL SUPPORT/STRAIN POLE FOUNDATIONS

CITY OF COLUMBUS, OHIO
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF DESIGN AND CONSTRUCTION

STD DWG 4160

10/01/2018
SHT 3 OF 3