<table>
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<td>Main Sewer Connection to Trunk Sewers</td>
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<tr>
<td>Pipe Anchor Detail</td>
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<td>Multiple-User, Low-Pressure Sewer System Flushing Inlet</td>
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<td>Multiple-User, Low-Pressure Sewer System Connection at Gravity Manhole</td>
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<td>Multiple-User, Low-Pressure Sewer System Miscellaneous Details</td>
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<td>DWG-52</td>
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<td>Manhole: False Bottom</td>
<td>DWG-53</td>
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CENTRAL CONTRA COSTA SANITARY DISTRICT
MARTINEZ, CALIFORNIA

STANDARD TRUNK MANHOLE
FOR 15" TO 45" LINES

NOTES:
1. LAY PIPE THRU MH WHEN POSSIBLE OR FORM CHANNEL TO MAINTAIN PIPE SECTION. TRUNK SEWER PIPES ENTERING OR LEAVING THE MH BASE SHALL HAVE A STANDARD JOINT LOCATED 12" TO 24" FROM THE BASE.
2. ALL STEEL REINF. SHALL HAVE 3" MINIMUM CONCRETE COVER.
3. SQUARE TOP BLOCKS SHALL BE USED IN EASEMENTS.
4. ROUND TOP BLOCKS SHALL BE USED IN STREETS.
5. FOR CONNECTION OF MAIN OR SIDE SEWERS BELOW SHEDL, SEE DWG-1.

CONCRETE BLOCK PARALLEL TO OR AT RIGHT ANGLES TO EDGE OF PAVEMENT

ROUND BLOCK SQUARE BLOCK
(4"-6" DIAMETER X 4"-6" SQUARE)

CAST IRON FRAME & COVER (SEE DWG-81)

#4 HOOP TIES @ 18"

#4 TIES @ 18"

ROAD BLOCK 9'-1/2"

EASEMENT
GROUND SURFACE

POUR CONCRETE TO WITHIN 1" OF ROAD SURFACE

#4 HOOPS

TIES @ 18"

CLEAN & DRY JOINT AND INSTALL PREFORMED PLASTIC SEALING GASKET PRIOR TO SETTING BARREL UP CONE SECTION, TYP.

PRIMER AND SEALANT TAPE AT OUTSIDE SURFACE OF ALL JOINTS

USE NON-SHRINK GROUT TO FINISH ALL INSIDE JOINTS

SLOPE SHELF TO CHANNEL 2"/FT

JOINT REQUIRED

OPTIONAL SQUARE BASE

OPTIONAL ROUND BASE

#4 OVER ALL INLET/OUTLET Pipes

 tahap

SHALLOW GROUT

TYPICAL CONNECTION TO MANHOLES (SIDE SEWER OR MAIN)

STANDARD MANHOLE

SHALLOW GROUT

SHELF

SAYUP HALF OF PIPE FOR ACCESS OPENING

PIPE CHANNEL

TAPER 1/2 PER FOOT

TAPER 1/2 PER FOOT

FORM RECESS WITH APPROVED METAL FORMING RING TO RECEIVE PRECAST BARREL JOINT. INSTALL PREFORMED PLASTIC SEALING GASKET BEFORE PLACING FIRST BARREL SECTION.

BASE SHALL BE POURED TO A LEVEL 3" ABOVE CROWN OF HIGHEST PIPE

BASE GRID E.W.

WATERSTOP

REBAR

FORM OR POUR AGAINST UNDISTURBED SOIL

SEE DWG-1 FOR BEDDING & FOUNDATION DETAILS

BASE SECTION

BASE SECTION A-A

UPPER SECTION

CENTRAL CONTRA COSTA SANITARY DISTRICT
MARTINEZ, CALIFORNIA

STANDARD TRUNK MANHOLE
FOR 15" TO 45" LINES

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CONCRETE BLOCK PARALLEL TO OR AT RIGHT ANGLES TO EDGE OF PAVEMENT

ROUND BLOCK SQUARE BLOCK
(4"-6" DIAMETER X 4"-6" SQUARE)

CAST IRON FRAME & COVER (SEE DWG-81)

#4 HOOP TIES @ 18"

#4 TIES @ 18"

ROAD BLOCK 9'-1/2"

EASEMENT
GROUND SURFACE

POUR CONCRETE TO WITHIN 1" OF ROAD SURFACE

#4 HOOPS

TIES @ 18"

CLEAN & DRY JOINT AND INSTALL PREFORMED PLASTIC SEALING GASKET PRIOR TO SETTING BARREL UP CONE SECTION, TYP.

PRIMER AND SEALANT TAPE AT OUTSIDE SURFACE OF ALL JOINTS

USE NON-SHRINK GROUT TO FINISH ALL INSIDE JOINTS

SLOPE SHELF TO CHANNEL 2"/FT

JOINT REQUIRED

OPTIONAL SQUARE BASE

OPTIONAL ROUND BASE

#4 OVER ALL INLET/OUTLET Pipes

 tahap

SHALLOW GROUT

TYPICAL CONNECTION TO MANHOLES (SIDE SEWER OR MAIN)

STANDARD MANHOLE

SHALLOW GROUT

SHELF

SAYUP HALF OF PIPE FOR ACCESS OPENING

PIPE CHANNEL

TAPER 1/2 PER FOOT

TAPER 1/2 PER FOOT

FORM RECESS WITH APPROVED METAL FORMING RING TO RECEIVE PRECAST BARREL JOINT. INSTALL PREFORMED PLASTIC SEALING GASKET BEFORE PLACING FIRST BARREL SECTION.

BASE SHALL BE POURED TO A LEVEL 3" ABOVE CROWN OF HIGHEST PIPE

BASE GRID E.W.

WATERSTOP

REBAR

FORM OR POUR AGAINST UNDISTURBED SOIL

SEE DWG-1 FOR BEDDING & FOUNDATION DETAILS

BASE SECTION

BASE SECTION A-A

UPPER SECTION

CENTRAL CONTRA COSTA SANITARY DISTRICT
MARTINEZ, CALIFORNIA

STANDARD TRUNK MANHOLE
FOR 15" TO 45" LINES

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1. LAY PIPE THRU MH WHEN POSSIBLE OR FORM CHANNEL TO MAINTAIN PIPE SECTION. TRUNK SEWER PIPES ENTERING OR LEAVING THE MH BASE SHALL HAVE A STANDARD JOINT LOCATED 12" TO 24" FROM THE BASE.
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3. SQUARE TOP BLOCKS SHALL BE USED IN EASEMENTS.
4. ROUND TOP BLOCKS SHALL BE USED IN STREETS.
5. FOR CONNECTION OF MAIN OR SIDE SEWERS BELOW SHEDL, SEE DWG-1.

CONCRETE BLOCK PARALLEL TO OR AT RIGHT ANGLES TO EDGE OF PAVEMENT

ROUND BLOCK SQUARE BLOCK
(4"-6" DIAMETER X 4"-6" SQUARE)

CAST IRON FRAME & COVER (SEE DWG-81)

#4 HOOP TIES @ 18"

#4 TIES @ 18"

ROAD BLOCK 9'-1/2"

EASEMENT
GROUND SURFACE

POUR CONCRETE TO WITHIN 1" OF ROAD SURFACE

#4 HOOPS

TIES @ 18"

CLEAN & DRY JOINT AND INSTALL PREFORMED PLASTIC SEALING GASKET PRIOR TO SETTING BARREL UP CONE SECTION, TYP.

PRIMER AND SEALANT TAPE AT OUTSIDE SURFACE OF ALL JOINTS

USE NON-SHRINK GROUT TO FINISH ALL INSIDE JOINTS

SLOPE SHELF TO CHANNEL 2"/FT

JOINT REQUIRED

OPTIONAL SQUARE BASE

OPTIONAL ROUND BASE

#4 OVER ALL INLET/OUTLET Pipes

 tahap

SHALLOW GROUT

TYPICAL CONNECTION TO MANHOLES (SIDE SEWER OR MAIN)

STANDARD MANHOLE

SHALLOW GROUT

SHELF

SAYUP HALF OF PIPE FOR ACCESS OPENING

PIPE CHANNEL

TAPER 1/2 PER FOOT

TAPER 1/2 PER FOOT

FORM RECESS WITH APPROVED METAL FORMING RING TO RECEIVE PRECAST BARREL JOINT. INSTALL PREFORMED PLASTIC SEALING GASKET BEFORE PLACING FIRST BARREL SECTION.

BASE SHALL BE POURED TO A LEVEL 3" ABOVE CROWN OF HIGHEST PIPE

BASE GRID E.W.

WATERSTOP

REBAR

FORM OR POUR AGAINST UNDISTURBED SOIL

SEE DWG-1 FOR BEDDING & FOUNDATION DETAILS

BASE SECTION

BASE SECTION A-A

UPPER SECTION
NOTES:
1. ALL STEEL REINFORCING SHALL BE #4 WITH 3' MINIMUM CONCRETE COVER
2. FOR CONNECTION BELOW SHELF SEE DWG-1 BASE SECTION
3. 2'-6" PIPE ID FOR < 36" D/2 FOR ≥ 36"
CENTRAL CONTRA COSTA SANITARY DISTRICT
MARTINEZ, CALIFORNIA

SHALLOW MANHOLES
(SPECIAL APPROVAL REQUIRED)

SECTION (TYPE 1)

SECTION (TYPE 2)
SHALLOW MANHOLES
(SPECIAL APPROVAL REQUIRED)

SECTION (TYPE 3)
FOR 6 & 8 INCH PIPE ONLY
ALLOWABLE DROP IN MANHOLE

REFER TO DWG-21 FOR JOINT REQUIREMENTS

INLET PIPE (SIDE SEWER OR MAIN)

NON-SHRINK GROUT SHELF

WATERSTOP

MAX

OUTLET PIPE

NON-SHRINK GROUT

WATERSTOP

SEE DWG-1 FOR MANHOLE BASE, BEDDING & FOUNDATION DETAILS.

SECTION
NOTES:
1. NO LATERAL CONNECTIONS SHALL BE MADE IN DOWNSTREAM HALF OF MANHOLE.
2. MAXIMUM NUMBER OF SIDE SEWERS ALLOWED = 5.
3. TOP OF SIDE SEWERS SHALL BE NO LOWER THAN TOP OF OUTLET PIPE.
4. SEE DWG-21 FOR REQUIRED JOINT LOCATIONS.
CENTRAL CONTRA COSTA SANITARY DISTRICT
MARTINEZ, CALIFORNIA

STANDARD MANHOLE FRAME & COVER

SECTION B-B
TYPICAL COVER PATTERN

MFGR.'S NAME

1"

PRY HOLE
SEE NOTE 3

2" LETTERING
("CCCSD" FOR PUBLIC
APPLICATIONS, AND
"SANITARY SEWER" FOR
PRIVATE). OTHER
AGENCIES USING THIS
DETAIL SHALL NOT USE
COVER INSRIPTION
"CCCSD".

PICK HOLE - 1 1/8" WIDTH
SEE NOTE 2

SECTION A-A

NOTES:
1. COVER SHALL BE DESIGNED FOR HS-20 HIGHWAY LOADING.
2. PICK HOLE SHALL BE OPEN AND FIT A STANDARD PICK.
3. PRY HOLE SHALL BE LOCATED AT TOP CENTER
   OF THE MANHOLE COVER AS SHOWN.
CENTRAL CONTRA COSTA SANITARY DISTRICT  
MARTINEZ, CALIFORNIA  

BOLT - DOWN MANHOLE FRAME & COVER  

SCORE TOP EDGE OF FRAME RADIAL IN LINE WITH TAPPED HOLES IN FRAME. 

PRY HOLE SEE DWG-11 FOR DETAILS 

TOP OF FRAME & COVER 

UNDERSIDE OF COVER 

SEE DWG-B FOR LETTERING REQUIREMENTS 

NOTES: 
1. 2" LETTERING ("CCCSO") FOR PUBLIC APPLICATIONS, AND "SANITARY SEWER" FOR PRIVATE. OTHER AGENCIES USING THIS DETAIL SHALL NOT USE COVER INSCRIPTION "CCCSO". 
2. 4-7/16" X 1-1/4" STAINLESS STEEL MACHINE BOLTS WITH 1-1/4" 13 GA. FLAT WASHERS. ATT 1/4 POINTS. INSTALL WITH ANTI-SEIZE COMPOUND. 

PLAN 

MACHINED SURFACE 

NEOPRENE GASKET 

SECTION A-A 

DETAIL OF TAPPED & SLOTTED HOLES  

SLOTTED HOLES IN COVER 

28 1/16" MIN - 28 1/16" MAX  
27 1/16" MIN - 27 7/8" MAX  
1 1/2" 2 3/4" 1/8" COVER - 1/8" CROWN  
1/8" 1/2" 

11 1/4" 12 5/8" 

2 3/4"  

34 1/8" MIN - 34 7/8" MAX  

3/4" 1 1/8" NEOPRENE GASKET  

1 1/4" 1 1/4" 

1/8" 1/8" 1/8" 

3/8" DRILL X 5/8" DEEP  

11/32" DRILL X 1" DEEP, 7/16" NC X 1 1/4", 3 REQUIRED  

WASHER
NOTES:

1. NO SIDE SEWER WYE OR TAP CONNECTIONS WILL BE PERMITTED IN RISER PIPE.
2. RISER PIPE SHALL BE THE SAME MATERIAL AS THE REST OF THE LINE & SHALL BE IN A VERTICAL PLANE.
3. NO LATERALS SHALL BE INSTALLED WITHIN 24" OF THE 45" FITTING.
4. SEE SECTION 5 - PLAN PREPARATION FOR STATIONING REQUIREMENTS OF A RODDING INLET STRUCTURE.
5. ALL STEEL REINFORCEMENT SHALL HAVE A MIN. OF 3" CONCRETE COVER.
NOTE:
1. COVER SHALL BE DESIGNED FOR HS-20 HIGHWAY LOADING.
2. PICK HOLE SHALL BE OPEN AND FIT A STANDARD PICK.
3. PRY HOLE SHALL BE LOCATED AT TOP CENTER OF THE RODDING INLET COVER AS SHOWN.
MANHOLE ADJUSTMENT TO FINISH GRADE
PAVED AREAS

GREATER THAN 13% GRADE

13% GRADE OR LESS

NOTE:
1. SEE DWG-1 FOR TOP BLOCK DETAILS
MANHOLE PROTECTION WALL & TOP BLOCK
(REQUIRED FOR CROSS SLOPE STEEPER THAN 3:1)

PLAN

SECTION A-A

NOTES:
1. ¼" CHAMFER OR ROUND WITH 1½" RADIUS AT ALL EXPOSED CORNERS.
2. WALLS MAY BE CONSTRUCTED USING CONCRETE MASONRY UNITS OR INTERLOCKING UNITS IF DESIGNED BY A REGISTERED ENGINEER.
CENTRAL CONTRA COSTA SANITARY DISTRICT
MARTINEZ, CALIFORNIA

TRENCH STRUCTURAL DETAIL 1

TRENCH SECTION IN EXISTING PAVED STREETS & PARKING AREAS
(PUBLIC & PRIVATE)

NOTES:

1. TRENCH WIDTH, PIPE BEDDING & BACKFILL SHALL CONFORM TO THE APPLICABLE REQUIREMENTS AND PROVISIONS OF SECTION 15.02205 OF THESE SPECIFICATIONS.

2. THESE ARE MINIMUM REQUIREMENTS. IF OTHER JURISDICTIONAL AGENCY REQUIREMENTS EXCEED THOSE SHOWN, THE GREATER REQUIREMENTS SHALL BE MET.

3. 100% AB REQUIRED FOR SIDEWALK OR DRIVEWAY.
NOTES:

1. TRENCH WIDTH, PIPE BEDDING & BACKFILL SHALL CONFORM TO THE APPLICABLE REQUIREMENTS AND PROVISIONS OF SECTION 15.02205 OF THESE SPECIFICATIONS.

2. THESE ARE MINIMUM REQUIREMENTS. IF OTHER JURISDICTIONAL AGENCY REQUIREMENTS EXCEED THOSE SHOWN, THE GREATER REQUIREMENTS SHALL BE MET.
CENTRAL CONTRA COSTA SANITARY DISTRICT
MARTINEZ, CALIFORNIA

STANDARD TRUNK SEWER TRENCH DETAILS
FOR 12" AND LARGER PIPE

FOR D.I. PIPE INSTALLATIONS ONLY
(N.T.S.)

FOR ALL V.C., P.V.C., PIPE INSTALLATIONS
(N.T.S.)

FOR R.C. AND STEEL PIPE INSTALLATIONS UP TO 42"
(N.T.S.)

FOR R.C. PIPE INSTALLATIONS 48" AND LARGER
(N.T.S.)

NOTES:
1. PIPE BEDDING AND BACKFILL SHALL CONFORM TO THE REQUIREMENTS OF SECTION 15.02205.
2. WARNING TAPE REQUIRED AT TOP OF THE PIPE ZONE.
NOTES:

1. TRENCH WIDTH, PIPE BEDDING AND BACKFILL SHALL CONFORM TO THE REQUIREMENTS OF SECTION 15.02205.

2. IN THE EVENT THAT SIDE SEWERS ARE TO BE CONNECTED TO A V.C. MAIN BY TAPPING, SUCH TAPS SHALL BE SPACED A MINIMUM OF 5 FEET APART.
NOTES:

1. PIPE BEDDING AND BACKFILL SHALL CONFORM TO THE REQUIREMENTS OF SECTION 15.0220S.

2. REFER TO DWG-19 OF THE STANDARD DRAWINGS FOR PIPE COVER REQUIREMENTS.

3. THESE ARE MINIMUM REQUIREMENTS. CONTRACTOR SHALL CONTACT UTILITY AGENCIES TO CONFIRM REQUIRED SEPARATION REQUIREMENTS.
# PIPE COVER LIMITATION TABLE

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<thead>
<tr>
<th>PIPE SPECIFICATIONS</th>
<th>MATERIAL</th>
<th>TYPE AND MINIMUM CLASS</th>
<th>W/Jn. - MAX. COVER IN FT.</th>
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</tr>
<tr>
<td>4&quot;-6&quot; CI</td>
<td>SOIL PIPE</td>
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<td></td>
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<tr>
<td>4&quot;-6&quot; DI</td>
<td>CLASS 52</td>
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<td></td>
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<tr>
<td>4&quot;-6&quot; ABS</td>
<td>SCHEDULE 40</td>
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<td></td>
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<tr>
<td>4&quot;-6&quot; PVC</td>
<td>SDR 26</td>
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<tr>
<td>4&quot;-6&quot; HDPE</td>
<td>SDR 17</td>
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<td><strong>LATERAL SEwers</strong></td>
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<td>8&quot;-10&quot; C900</td>
<td>DR 14</td>
<td></td>
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<tr>
<td><strong>SMALL TRUNK SEwers</strong></td>
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<tr>
<td>12&quot; VC</td>
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<td>15&quot; VC</td>
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<tr>
<td>12&quot; DI</td>
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<td>CLASS 52</td>
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<td>14&quot;-24&quot; C900</td>
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<td>DR 24.5</td>
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<td>14&quot;-24&quot; C900</td>
<td>DR 21</td>
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<td>14&quot;-24&quot; C900</td>
<td>DR 18</td>
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</table>
CRITERIA FOR THE SEPARATION OF WATER MAIN AND GRAVITY SANITARY SEWERS

ZONE "A": SEWER LINES NOT PERMITTED WITHOUT APPROVAL OF WATER AGENCY

ZONE "B": PERMITTED MATERIALS
- PVC PIPE WITH COMPRESSION JOINTS
- PVC PIPE WITH RUBBER RING JOINTS (ASTM 3034)
- CI OR DI PIPE WITH COMP. JOINTS
- RC PRESSURE PIPE WITH COMP. JOINTS
- HDPE PIPE WITH FUSION WELDED JOINTS (AWWA C906-99)
- SPIRALLY-REINFORCED HDPE PIPE WITH GASKETED JOINTS (ASTM F-984)

ZONE "C": PERMITTED MATERIALS
- DI PIPE WITH HOT DIP BITUMINOUS COATING
- C-300 PVC (OR 14), CONTINUOUS SECTION CENTERED OVER PIPE BEING CROSSED
- RC PRESSURE PIPE, CONTINUOUS SECTION CENTERED OVER PIPE BEING CROSSED
- ANY SEWER PIPE WITHIN A CONTINUOUS SLEEVE
- HDPE PIPE WITH FUSION WELDED JOINTS (AWWA C906-99)

ZONE "D": PERMITTED MATERIALS
- DI PIPE WITH HOT DIP BITUMINOUS COATING AND MECHANICAL JOINTS
- HDPE PIPE WITH FUSION-WELDED JOINTS (AWWA C906-99)
- C-300 PVC (OR 14) CONTINUOUS SECTION CENTERED OVER PIPE BEING CROSSED
- RC PRESSURE PIPE CONTINUOUS SECTION CENTERED OVER PIPE BEING CROSSED
- ANY SEWER PIPE WITHIN A CONTINUOUS SLEEVE

ZONE "P": NOT PERMITTED
NOTE: 1. JOINT LOCATIONS APPLICABLE TO ALL INCOMING AND OUTGOING PIPELINES, EXCEPT THAT THE 24" MAXIMUM DIMENSION SHALL NOT APPLY TO PVC PIPE LAID THROUGH A MANHOLE.
FUTURE CONNECTION AT MANHOLE

NOTE:
1. WHERE MANHOLE IS IN PAVED AREA AND FUTURE EXTENSION IS IN AN UNPAVED AREA, CONTINUE PIPE @ DESIGN SLOPE BEYOND EDGE OF EXISTING PAVEMENT AND TERMINATE PER DWG-32.

MANHOLE BASE DETAIL
OVERFLOW PROTECTION DEVICES

TYPE 1

TYPE 2

NOTES:

1. AN OVERFLOW PROTECTION DEVICE, PER CCCSD’S APPROVED MATERIALS LIST, IS REQUIRED ON ALL SIDE SEWERS. SPECIFIC LOCATION SHALL BE DETERMINED BY THE CONTRACTOR AND THE PROPERTY OWNER.

2. SEE APPROVED MATERIALS LIST FOR TRAFFIC AND NON-TRAFFIC AREA PRECAST UTILITY BOXES AND GRATED LIDS.
CENTRAL CONTRA COSTA SANITARY DISTRICT
MARTINEZ, CALIFORNIA

SIDE SEWER LAYOUT
(CONNECTION TO EXISTING MAIN)

PLAN VIEW

EXISTING MAIN
FACE OF CURB OR EDGE OF PAVING
ROAD GRADE
SUBGRADE

LATERAL SEWER
HOUSE SEWER

CURB+CUTTER
SADDLE CONNECTION

CLEANDOUT
SEE DWG-26

OVERFLOW PROTECTION
DEVICE

12-24" TYP
1 1/2'' MIN
18'' MIN

LONGITUDINAL SECTION

SEWER MAIN
SADDLE
COUPLING

45° MIN
45° MAX
MIN. SLOPE 2% WITHOUT SPECIAL APPROVAL

SEWER MAIN
COUPLING

SADDLE CONNECTION DETAIL

CONNECTIO AT MAIN

NOTES:
1. WHEN A LATERAL SEWER IS INSTALLED IN ADVANCE OF THE BUILDING SEWER, IT SHALL BE TERMINATED WITH A CAP OR PLUG 5' PAST THE PROPERTY LINE. EASEMENT LINE OR LAST IMPROVEMENT AND THE CONTRACTOR SHALL MARK THE LOCATION OF THE CAPPED/PLUGGED END WITH A 2X4 PRESSURE TREATED STAKE PAINTED GREEN.
2. REFER TO SECTION 15.02205 FOR BEDDING AND BACKFILL REQUIREMENTS.
3. SEE NOTE 2 ON DWG-26 FOR COVER REQUIREMENTS.
NOTES:
1. REFER TO SECTION 15.02205 FOR BEDDING AND BACKFILL REQUIREMENTS.

2. MINIMUM COVER FROM THE POINT OF CONNECTION TO THE BUILDING WASTE PLUMBING (WITHIN TWO FEET OF THE FOUNDATION) SHALL BE 18 INCHES. COVER REQUIREMENTS FROM THE PROPERTY LINE TO A POINT WITHIN 8 FEET OF THE BUILDING WASTE SHALL BE IN CONFORMANCE WITH DWG-19.
CLEANOUT RISERS

NOTES:
1. CLEANOUT SHALL BE THE SAME SIZE AS THE SIDE SEWER. SEE DWG-23 FOR OVERFLOW PROTECTION DEVICE DETAILS.
2. CLEANOUT RISER PIPE SIZE SHALL MATCH CLEANOUT SIZE.

ANGLE POINT CLEANOUT

PLAN VIEW

NOTES:
1. ANGLE POINT CLEANOUT REQUIRED IF SIDE SEWER DEFLECTIONS EQUALS OR EXCEEDS 90°.
2. SEE APPROVED MATERIALS LIST FOR TRAFFIC AND NON-TRAFFIC AREA PRECAST UTILITY BOXES AND GRATED LIDS.
3. 6" SEWER LINES REQUIRE 6" CLEANOUTS

CLEANOUT RISER IN PAVED AREA
SIDE SEWER REPAIRS

SIDE SEWER BREAK
NO CONFLICT IN GRADE

BREAK

EXISTING SIDE SEWER
NEW UTILITY PIPE
EXISTING SIDE SEWER

COUPLING
NEW UTILITY PIPE
COUPLING WITH PROPER ADAPTER.

18" MIN

TYPE 1 BACKFILL SHALL BE USED FOR ENTIRE REPAIR AREA.

4"X4" RUBBER PAD
35-45 DURO. FIT BETWEEN PIPES WHEN 1" OR LESS CLEARANCE.

NOTES: 1. REFER TO SECTION 15.02600 LATERALS AND BUILDING SEWERS FOR SIDE SEWER DETAILS.
2. ALL EXCAVATIONS FOR REPAIRS SHALL BE EQUAL TO THE REQUIRED TRENCH WIDTH PLUS 18" ON EACH SIDE.

SIDE SEWER WITH CONFLICT IN GRADE

REPAIR

EXISTING PIPE
FITTINGS/COUPLINGS

REPAIR

EXISTING PIPE
FITTINGS/COUPLINGS

MIN. SLOPE 2% WITHOUT SPECIAL APPROVAL
6" MIN

EXISTING PIPE
FITTINGS/COUPLINGS

EXHAUST FUMES NON-ENVIRONMENTAL DECONTAMINATION

4"X4" RUBBER PAD
35-45 DURO. FIT BETWEEN PIPES WHEN 1" OR LESS CLEARANCE.

MIN. SLOPE OF 2% WITHOUT SPECIAL APPROVAL
4" MIN

EXISTING PIPE
FITTINGS/COUPLINGS

COUPLINGS

MIN. SLOPE 2% WITHOUT SPECIAL APPROVAL
6" MIN

EXISTING PIPE
FITTINGS/COUPLINGS

COUPLINGS

MIN. SLOPE 2% WITHOUT SPECIAL APPROVAL
4" MIN
# Air Test Chart

**Central Contra Costa Sanitary District**  
*Martinez, California*

## Air Test Chart

**Gravity Sewers Only**

<table>
<thead>
<tr>
<th>Diameter of Pipe (Inches)</th>
<th>Length of Line (Feet)</th>
<th>Length of Test (Minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>All</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>All</td>
<td>4</td>
</tr>
<tr>
<td>8</td>
<td>All</td>
<td>4</td>
</tr>
<tr>
<td>10</td>
<td>0 to 215</td>
<td>4</td>
</tr>
<tr>
<td>10</td>
<td>215 and Greater</td>
<td>5</td>
</tr>
<tr>
<td>12</td>
<td>0 to 155</td>
<td>4</td>
</tr>
<tr>
<td>12</td>
<td>155 to 190</td>
<td>5</td>
</tr>
<tr>
<td>12</td>
<td>190 and Greater</td>
<td>6</td>
</tr>
<tr>
<td>15 &amp; 16</td>
<td>0 to 120</td>
<td>5</td>
</tr>
<tr>
<td>15 &amp; 16</td>
<td>120 to 165</td>
<td>7</td>
</tr>
<tr>
<td>15 &amp; 16</td>
<td>165 and Greater</td>
<td>8</td>
</tr>
</tbody>
</table>

**Notes:**

1. **All tests to be performed at 4 psi using a 5 lb. cage.**

2. **All pipe greater than 16 inches in diameter shall be hydrostatically tested in accordance with provisions contained in Section 15.02730.**
NOTES:

1. ALWAYS USE IN DOWNSTREAM MANHOLE DURING CLEANING OPERATIONS.

2. WHEN DEBRIS BUILDS UP TO THE LEVEL OF THE TOP OF THE TRAP, STOP OPERATIONS AND REMOVE THE DEBRIS FROM THE MANHOLE.

3. FABRICATE FROM 16 GAUGE GALVANIZED SHEET METAL.

INSTALLATION

DETAIL
CENTRAL CONTRA COSTA SANITARY DISTRICT
MARTINEZ, CALIFORNIA

JUNCTION SUPPORT
EXPANSION BLOCK
(SPECIAL APPROVAL REQUIRED)

VERTICAL SECTION

NOTES:
1. ENGINEERED DESIGN FOR PIER REINFORCEMENT SHALL BE SUBMITTED TO CCCSD.
2. ALL STEEL REINFORCEMENT SHALL HAVE 3" MINIMUM CONCRETE COVER.
NOTES:

1. ALL GUARD FENCE PARTS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION.

2. EACH GUARD FENCE SHALL HAVE A 12" x 14" 20 GAUGE MINIMUM SIGN PERMANENTLY ATTACHED IN LOCATION SHOWN (FURNISHED BY CCCSD).

2" MESH x #9 GAUGE CHAIN LINK TYPE FENCE FABRIC - GALVANIZED

SEE SECTION C

FENCE BOLT LOCATIONS (16)

1/2" CLEAR

3'-4" MIN.

6 - 1/2" BOLTS (4 REG'D PER CLAMP)

CLAMP - 1/4" x 6" STRAP

RADIUS OF PIPE O.D. + 1/4"

1/4" PURE GUM RUBBER (35-45 DUROMETER) BETWEEN PIPE AND CLAMP

ELEVATION

SECTION A-A

SECTION B-B

SECTION C

FENCE BOLT & WIRE ATTACHMENT DETAIL

(16 MIN. BOLT ASSEMBLIES REQUIRED)

PLACES AS SHOWN
TRENCH DAMS
LOCATED AS SHOWN ON THE PLANS
OR AS DIRECTED BY THE ENGINEER

SECTION

NOTES:
1. SEE SECTIONS 15.03310 FOR CAST-IN-PLACE CONCRETE & CLSM REQUIREMENTS.
2. TRENCH DAM TO HAVE 12" MIN. THICKNESS (ALONG TRENCH).
NOTE:

1. FABRICATE FROM 5/16" STEEL PLATE USING 1/4"
   FILLET WELDS TO BOTH SIDES OF EACH JOINT.
NOTES:

1. CROSS SLOPE WITHIN TURNAROUND SHALL NOT EXCEED 8% GRADE.

2. SEE SECTION 15.02702 FOR ACCESS ROAD REQUIREMENTS.
CENTRAL CONTRA COSTA SANITARY DISTRICT
MARTINEZ, CALIFORNIA

RV/TRAILER HOLDING TANK DISPOSAL FACILITY

PLAN
NOT TO SCALE

DRAIN HOLE COVER DETAIL
NOT TO SCALE

NOTE:
1. REQUIREMENTS FOR SIGN TO BE ESTABLISHED BY CCCSD PRIOR TO INSTALLATION.
1. INTERCEPTOR SHALL BE PLACED ON A MINIMUM OF 6" TYPE I BEDDING MATERIAL, COMPACTED TO 95% FC.

2. ALL ELEVATIONS SHALL BE APPROVED BY CCCSD PRIOR TO INSTALLATION.

3. GREASE INTERCEPTORS ARE NOT INTENDED FOR THE INTRODUCTION OF DOMESTIC SEWAGE. LOCATION AND TRIBUTARY DISCHARGE SOURCES SHALL BE APPROVED BY CCCSD PRIOR TO INSTALLATION.

4. INTERCEPTOR LOCATED IN AN AREA SUBJECT TO TRAFFIC MUST BE HS-20 TRAFFIC RATED. NON-PRECAST INTERCEPTORS ACCEPTED UPON SPECIAL APPROVAL.

5. ALL INLET AND OUTLET PIPES SHALL BE 6" DIAMETER.

6. THE USE OF CAST IRON SOIL PIPE FOR GREASE INTERCEPTOR APPLICATIONS IS PROHIBITED.

7. SEE APPROVED MATERIALS LIST FOR TRAFFIC AND NON-TRAFFIC AREA PRECAST UTILITY BOXES AND GRATED LIDS. SEE DWG-B & 9 FOR COVER REQUIREMENTS.
CENTRAL CONTRA COSTA SANITARY DISTRICT
MARTINEZ, CALIFORNIA

SAND-OIL INTERCEPTOR
(TYPICAL; 320 GALLON MINIMUM)

PLAN VIEW
(MH FRAMES, COVERS & RINGS NOT SHOWN)

SECTION A-A

NOTES:
1. INTERCEPTOR SHALL BE PLACED ON A MINIMUM OF 6" TYPE I BEDDING MATERIAL, COMPACTED TO 95% RC.
2. ALL ELEVATIONS SHALL BE APPROVED BY CCCSD PRIOR TO INSTALLATION.
3. SAND-OIL INTERCEPTORS ARE NOT INTENDED FOR THE INTRODUCTION OF DOMESTIC SEWAGE. LOCATION AND TRIBUTARY DISCHARGE SOURCES SHALL BE APPROVED BY CCCSD PRIOR TO INSTALLATION.
4. INTERCEPTOR LOCATED IN AN AREA SUBJECT TO TRAFFIC MUST BE HS-20 TRAFFIC RATED. NON-PRECAST INTERCEPTORS ACCEPTED UPON SPECIAL APPROVAL.
5. ALL INLET AND OUTLET PIPES SHALL BE 6" DIAMETER.
6. SEE APPROVED MATERIALS LIST FOR TRAFFIC AND NON-TRAFFIC AREA PRECAST UTILITY BOXES AND GRATED LIDS. SEE DWG-8 & 9 FOR COVER REQUIREMENTS.
CENTRAL CONTRA COSTA SANITARY DISTRICT
MARTINEZ, CALIFORNIA

CONCRETE TRAFFIC SLABS FOR GREASE INTERCEPTORS OR SAND - OIL INTERCEPTORS WITHIN TRAFFIC AREAS
(REQUIRED FOR NON-TRAFFIC RATED INTERCEPTORS)

CASE "A"
CAR/SMALL DELIVERY
TRUCK ONLY

CASE "B"
SEMI-TRUCK & GARBAGE
TRUCK

MANHOLE AREA REINFORCING DETAILS
CENTRAL CONTRA COSTA SANITARY DISTRICT
MARTINEZ, CALIFORNIA

PRECAST SAMPLING STRUCTURES
(SEE APPROVED MATERIALS LIST)

SAMPLING MANHOLE
(OUTSIDE)

24" CAST IRON BOLT-DOWN FRAME & COVER WITH GASKET (GASTIGHT) STANDARD

3", 6", OR 12" ADJUSTMENT RINGS AS NEEDED

NON-SHRINK GROUT

6" MIN. 12" MAX.

PLAN

SECTION A-A

NOTE: 1. CAST IRON COVER SHALL READ "SANITARY SEWER".

SAMPLING BOX
(INSIDE ONLY)

PLAN

SECTION B-B

SEE DWG-1 FOR BEDDING & FOUNDATION DETAILS.
NOTES:

1. ROOF REQUIRED OVER ENTIRE ENCLOSURE WITH DOWNSPOUTS DIRECTED AWAY FROM ENCLOSURE.

2. VENTS SHALL BE INSTALLED PER LOCAL JURISDICTION REQUIREMENTS.

3. A P-TRAP SHALL BE INSTALLED IMMEDIATELY DOWNSTREAM OF AREA DRAIN IF NO GREASE TRAP REQUIRED.

4. GREASE TRAP SHALL BE INSTALLED IF TRASH ENCLOSURE SERVES ANY COMMERCIAL FOOD SERVICE USE & AS DETERMINED BY SOURCE CONTROL FOR ALL OTHER APPLICATIONS.

5. ALL PIPING TO BE 4" MIN. SIZE INCLUDING INLET/OUTLET OF GREASE TRAP.

6. LOCATION OF GREASE TRAP & C/O VARIES WITH APPLICATION.
MAIN SEWER CONNECTION TO TRUNK SEWERS

48" AND LARGER
(SPECIAL APPROVAL REQUIRED)

PLAN
(N.T.S.)

NOTES:
1. TAP SHALL BE CORE DRILLED.
   RECOVER CORED PLUG.
2. USE CLSM BACKFILL WITHIN 5' OF TRUNK.

CONNECTION DETAIL
NOTES:

1. PIPE ANCHORS SHALL BE CONSTRUCTED AT 40° HORIZONTAL INTERVALS ON ALL SLOPES ≥ 30%.

2. REINFORCING STEEL SHALL BE AS SPECIFIED IN SECTION 15.03200.

3. ANCHORS SHALL BE CAST-IN-PLACE CONCRETE PER SECTION 15.03310.
CENTRAL CONTRA COSTA SANITARY DISTRICT
MARTINEZ, CALIFORNIA

INDIVIDUAL LOT PUMPING SYSTEM
(CCCSD REVIEW AND APPROVAL REQUIRED)

NOTES:

1. SEE APPROVED MATERIALS LIST FOR PRE-APPROVED PUMP PACKAGES.

2. CLEANOUT WITH OVERFLOW PROTECTION DEVICE SHALL BE INSTALLED AT BUILDING CONNECTION.

3. PUMP INSTALLATION SHALL BE IN ACCORDANCE WITH SECTION 15.13100.

4. SEE SECTION 15.02205 FOR BEDDING AND BACKFILL REQUIREMENTS.

5. SEE APPROVED MATERIALS LIST FOR TRAFFIC AND NON-TRAFFIC AREA PRECAST UTILITY BOXES AND GRATED LIDS.

DETAIL A
CENTRAL CONTRA COSTA SANITARY DISTRICT
MARTINEZ, CALIFORNIA

LAYOUT OF CURVED ALIGNMENT
USING STRAIGHT PIPE SEGMENTS WITH
JOINT DEFLECTIONS OR FITTINGS

PLAN
(FITTINGS REMOVED FOR CLARITY)

The laying length (L), radius (R), and included angle (Δ) are computed by the equations:

\[ L = 2 \times R \times \tan(\Delta/2N) \]
\[ R = L / (2 \times \tan(\Delta/2N)) \]
\[ \Delta = 2 \times N \times \tan^{-1}(L/2R) \]

Where:

R = Radius of curvature, feet
L = Laid length of each pipe segment measured along the centerline, feet
\( \Delta \) = Total deflection angle of curve, degrees
N = Number of deflected joints
\( \Delta/N \) = Total deflection at each joint, degrees

Note: "L" shall be equal to or greater than 5 feet.
CONCRETE PIER SUPPORT
FOR USE WHERE HEIGHT IS 1 TO 20 FEET
(SPECIAL APPROVAL REQUIRED)

NOTE:
SET A36 STEEL BASE PLATE TO PROVIDE 2" CLEARANCE FOR FIELD ADJUSTMENTS OF PIPE SADDLE TO GRADE. METAL SHIMS FOR ADJUSTMENT SHALL BE 3" MINIMUM WIDE AND PLACED AS SHOWN IN BASE PLATE PLAN.
FILL ENTIRE VOID BETWEEN BASE PLATE AND PIPE SADDLE WITH NON-SHRINK GROUT.

90 DEGREE ROTATED SECTION

BASE PLATE PLAN

VERTICAL SECTION
CENTRAL CONTRA COSTA SANITARY DISTRICT
MARTINEZ, CALIFORNIA

PIPE SADDLE
FOR USE ON CONCRETE PIER
SUPPORT AND TRESTLE BENT

TOP VIEW OF CLAMP

3/8" PLATE WHERE I.D. = 12" OR LESS
1/2" PLATE WHERE I.D. = 15" OR MORE

3/8" X 3 1/2" MACHINE
SCREW AND HEX NUT

NOTE:
FABRICATE BY WELDING,
WITH CONTINUOUS 3/8"
FILLET WELD, ALL
JOINTS, BOTH SIDES.

5/8" X 3" MACHINE
BOLT AND HEX NUT

1/2" BASE PLATE
11/16" DRILLED HOLES

NOTE:
PIPE SADDLE PARTS SHALL
BE A36 STEEL, HOT-DIP
GALVANIZED AFTER FABRICATION.

SIDE VIEW
3" SCHEDULE 40 PVC DRAIN TO
VALVE AND SPLASH BLOCK AT
DAYLIGHT WHERE SHOWN ON PLANS

12" x 4" DEEP
SUMP, AS REQUIRED

4" PVC PIPE: AWWA
C-900 (OR 14), IF
3' TO 4', COVER; OR
18 IF OVER 4' MIN,
COVER.

SCHEDULE 40 1"
BRASS PIPE (AT
FLUSHING INLETS
ONLY)

TYPICAL SERVICE
CONNECTION (PRIVATE)
11" HDPE (SDR 11)
(4 CONNECTIONS MAX.)
(SEE DWG-51)

NOTE:
1. (x) REFERS TO DWG-52 MATERIAL LIST
SANITARY SEWER FORCE MANHOLE AND FLUSHING MANHOLE

NOT TO SCALE

NOTES:

1. IF WATER OR SOFT GROUND IS PRESENT, PLACE COARSE BEDDING MATERIAL IN GEOTEXTILE WRAP (12" OVERLAP AT FABRIC ENDS)

2. ☑️ REFER TO DWG-52 MATERIAL LIST
NOTES:

1. STANDARD MANHOLE DETAILS ARE SHOWN ON DWG-1

2. X REFER TO DWG-52 MATERIAL LIST

CONNECTION MANHOLE

NOT TO SCALE
CENTRAL CONTRA COSTA SANITARY DISTRICT
MARTINEZ, CALIFORNIA

MULTIPLE-USER, LOW-PRESSURE SEWER SYSTEM
MISCELLANEOUS DETAILS

TYPICAL PROFILE
AT MANHOLE
NOT TO SCALE

NOTE:
1. ☑️ REFER TO DWG-52 MATERIAL LIST

TRACER WIRE
3 TERMINAL BOARD
NOT TO SCALE

TYPICAL SERVICE
CONNECTION DETAIL
NOT TO SCALE

TRENCH DETAIL
NOT TO SCALE
# MATERIALS LIST

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>1 ½'' X 1 ½'' UNISTRUT P1000T-HG PIPE SUPPORTS, OR EQUAL; FASTENED TO CONCRETE FLOOR WITH ½'' ZINC PLATED EXPANSION ANCHORS (3'' Embedded-2 each strut) AND ATTACH PIPES TO STRUTS WITH &quot;CRUSH-A-CLAMP&quot; ASSEMBLIES (UNISTRUT PART NO. 027NO32 FOR 1¼'', OR EQUAL).</td>
</tr>
<tr>
<td>2</td>
<td>1 ½'' X 1 ½'' X 16'' UNISTRUT P1000T-HG PIPE SUPPORTS, OR EQUAL; FASTENED TO CONCRETE FLOOR WITH ½'' ZINC PLATED EXPANSION ANCHORS (3'' Embedded-2 each strut) AND ATTACH PIPES TO STRUTS WITH &quot;CRUSH-A-CLAMP&quot; ASSEMBLIES (UNISTRUT PART NO. 027NO32 FOR 1¼'', PART NO. 030NL34 FOR 1¼'', PART NO. 030NL44 FOR 2'', OR EQUAL); THRUST RESTRAINT STRUTS; ATTACH TO ADJACENT PIPE SUPPORT STRUTS WITH ANGLE FITTINGS AND CHANNEL NUTS.</td>
</tr>
<tr>
<td>3</td>
<td>1¼'' COMPRESSION (BNS) X 1½'' FIPT, MULTI FITTINGS WITH WHITE COLLET &amp; RED INSERT, OR EQUAL</td>
</tr>
<tr>
<td>4</td>
<td>TW #10 COPPER TRACER WIRE, EXTEND TO TERMINAL BOARD IN EACH MANHOLE.</td>
</tr>
<tr>
<td>5</td>
<td>1½'' X 1 ½'' X 1 ½'' SCHEDULE 80 PVC (FIPT X FIPT X FIPT), OR EQUAL</td>
</tr>
<tr>
<td>6</td>
<td>60'' DIAMETER x 36'' PRECAST MANHOLE BASE, OR CAST-IN-PLACE BASE AND 60'' DIAMETER X 24'' PRECAST MANHOLE BARREL.</td>
</tr>
<tr>
<td>7</td>
<td>BLACK HDPE 3408, JPS CD, SDR-11 (160psi); 1¼'' CHEVRON PHILLIPS PERFORMANCE PIPE MUNICIPAL &amp; INDUSTRIAL SERIES, OR EQUAL.</td>
</tr>
<tr>
<td>8</td>
<td>60'' DIAMETER X 18'' PRECAST MANHOLE BARREL</td>
</tr>
<tr>
<td>9</td>
<td>60'' DIAMETER CONCENTRIC REDUCER SLAB</td>
</tr>
<tr>
<td>10</td>
<td>24'' DIAMETER X 3'' PRECAST GRAGE RING</td>
</tr>
<tr>
<td>11</td>
<td>1 ½'' TRUE UNION PVC BALL VALVE (FIPT X FIPT)</td>
</tr>
<tr>
<td>12</td>
<td>1 ½'' TRUE UNION PVC SWING CHECK VALVE (FIPT X FIPT)</td>
</tr>
<tr>
<td>13</td>
<td>13'' TRUE UNION PVC COMBINATION CHECK VALVE, VALVE/BALL VALVE FLOW CONTROL P/N 2200-15TU, OR EQUAL</td>
</tr>
<tr>
<td>14</td>
<td>TRACER WIRE TERMINAL BOARD (SEE DETAIL ON DWG-50).</td>
</tr>
<tr>
<td>15</td>
<td>1 ½'' MIPT X 1'' FIPT BRASS REDUCING BUSHING</td>
</tr>
<tr>
<td>16</td>
<td>1'' BRASS BALL VALVE WITH STAINLESS STEEL HANDLE (FIPT X FIPT)</td>
</tr>
<tr>
<td>17</td>
<td>1½'' SCHEDULE 80 PVC PIPE NIPPLES, MIPT X MIPT (TYP)</td>
</tr>
</tbody>
</table>
MANHOLE: FALSE BOTTOM

INSTALLATION
FALSE MANHOLE BOTTOM SHALL BE FURNISHED AND INSTALLED IN ALL MANHOLES CONSTRUCTED IN ADVANCE OF PAVING. THESE FALSE MANHOLE BOTTOMS WILL BE INSTALLED AT A TIME DIRECTED BY THE ENGINEER BUT WILL USUALLY BE AFTER ALL WORK IS COMPLETED ON THE WASTEWATER SYSTEM INCLUDING THE AIR TEST, BUT PRIOR TO THE FINAL INSPECTION.

REMOVAL
FALSE MANHOLE BOTTOM SHALL BE REMOVED AFTER THE FINAL APPURTENANCE ADJUSTMENT INSPECTION. THE PAVING CONTRACTOR AND OWNER'S REPRESENTATIVE WILL COORDINATE THE REMOVAL OF THE FALSE MANHOLE BOTTOMS.

INSTALLATION AND REMOVAL POSITION
NOT TO SCALE

PLAN VIEW
NOT TO SCALE