SECTION 6

LOW PRESSURE
NOTE:

1. COMMERCIAL DEVELOPMENTS MORE THAN 2 UNITS MAY REQUIRE 2 TANK DUPLEX SYSTEMS.
4. Control panel will be mounted within sight of the tank installation and with access available for maintenance.

ELECTRICAL NOTES:
1. 1 - Designated 120 Volt 20 Amp Circuit is required:

2. Wiring connections shall be furnished by electrical contractor.

3. Electrical installation shall comply with the NEC, NECS, and local codes.

4. Control panel will be mounted within sight of the tank installation and with access available for maintenance.

5. Electrical source shall be supplied through existing building service unless otherwise specified.

Use copper wires rated 60° C insulation, min. torque screws: 10.5-14.1 lb-in.
LOW PRESSURE PUMP CURVES

CHARLOTTE COUNTY UTILITIES

DATE: 1/1/2008
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LOW HEAD CONDITIONS

HIGH HEAD CONDITIONS

BARNES PUMP (OR APPROVED EQUAL) SERIES: EHV 412 PERFORMANCE CURVE

NUMBER: LPS 1-5

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**PUMP CHAMBER DETAIL**

**BUILDING WALL LINE**
- ELECTRICAL JUNCTION BOX AND ALARM SYSTEM

**P.V.C. ADAPTER MALE**

**1 1/2" P.V.C. ELECTRICAL CONDUIT SCH. 40**

**EXISTING GROUND**

**1 1/2" CONDUIT FOR FLOAT AND PUMP CORDS**

**STAINLESS STEEL SCREW & NYLON CLIP**

**TAP 90° ELBOW WITH 1/4" PIPE THREAD INSTALL BRASS PLUG**

**DRILL 1/8" VENT HOLE**

**ALARM FLOAT TO BE INSTALLED ON OPPOSITE SIDE OF DISCHARGE LINE**

**SIDE VIEW PUMP CHAMBER**

**NOTES:**
1. BRASS PLUG NEEDS TO BE TAPPED INTO PVC AND WRAPPED WITH TEFLOM TAPE.
2. CONTRACTOR IS TO SUPPLY ALL PVC PIPE AND FITTINGS.

**TOP VIEW PUMP CHAMBER**

**CHARLOTTE COUNTY UTILITIES**

**NUMBER: LPS 1-6**

**PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN CCU APPROVAL.**
LOAD FLOAT W/ 50' CORD

1/8" HOLE FOR SCREW

DRILL 1/8" VENT HOLE

ALARM FLOAT TO BE INSTALLED ON OPPOSITE SIDE OF DISCHARGE LINE

STAINLESS STEEL SCREW & NYLON CLIP

TAP 90° ELBOW WITH 1/4" PIPE THREAD INSTALL BRASS PLUG

1 1/2"

CONDUIT FOR FLOAT AND PUMP CORDS

50' POWER CORD

4" HOLES WITH SCREENS

SIDE VIEW

PUMP CHAMBER

LOW PRESSURE SEWER

PUMP CHAMBER

FLOAT LOCATIONS

NUMBER: S-06-FLOATS

CHARLOTTE COUNTY UTILITIES

DATE: 1/1/2008

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1. Wrap all fittings with plastic before pouring thrust blocks. All thrust blocks must be left open for inspection by the engineer & owner.
2. All bearing surface to be carried to undisturbed soil.
3. These tables show minimum size thrust blocks for good soil with a 2,000 P.S.F. soil bearing (A-1 thru A-3 clean sand and gravels).
4. Poor soil (A-1 thru A-8, silty soils, clays, muck & peat) will require larger thrust blocks.
5. Thrust block sizes based on 100 P.S.I. hydrostatic test pressure.
6. All thrust blocking to be 2500 PSI-28 day concrete.
7. Concrete shall be ready-mixed to ASTM C94, Alternate2, no hand mixing will be allowed.
8. Vertical bends only - 1/2" tie rods to be anchored to reaction block and coated with 2 coats of bituminous epoxy (16 mils dry thickness).
9. Vertical bends only - formed concrete to be sized by engineer.
10. No thrust block required when restrained mechanical joint fitting utilized. All pipe connected to mechanical joint fitting must be full 20' lengths.

### Thrust Block Bearing Area Table (S.Q. Ft.)

<table>
<thead>
<tr>
<th>Size of Pipe</th>
<th>Tee &amp; Plugs</th>
<th>90° Bends</th>
<th>45° Bends</th>
<th>22 1/2° Bends</th>
<th>11 1/4° Bends</th>
</tr>
</thead>
<tbody>
<tr>
<td>4&quot;</td>
<td>2.5</td>
<td>2.5</td>
<td>1.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>6&quot;</td>
<td>5.0</td>
<td>5.0</td>
<td>3.0</td>
<td>1.5</td>
<td>1.0</td>
</tr>
</tbody>
</table>

### Low Pressure Sewer Thrust Blocking Detail

Provided for informational purposes only. No modifications without written CCU approval.

Charlotte County Utilities
LOW PRESSURE CLEAN-OUT ASSEMBLY
CHARLOTTE COUNTY UTILITIES

F.D.O.T. No. 57 CRUSHED STONE 6" DEEP
2" BRONZE BALL VALVE (CENTERED IN BOX)
2" P.E. (SDR9)
PE MALE ADAPTER MIPT x COMPRESSION
4" MA CAP W/EPOXY BONDED 2" FEMAL IPT OUTLET "MEG-LUGGED" TO VALVE
1'-0"
4" MJ VALVE (SEE VALVE DETAIL)
FULL LENGTH OF PIPE

SIDE VIEW
TOP VIEW

CONCRETE METER BOX WITH TRAFFIC BEARING LID FOR PERMANENT INSTALLATIONS (MARKED "SEWER")

FINAL GRADE

6"

BELL RESTRAINT

MAIN

MAIN

BELL RESTRAINT

"MEG-LUG"

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NUMBER: S-24-LPSCO
NOTES:
1. BACKFILL SHALL BE PLACED IN 6 INCH LIFTS AND COMPACTED TO 95% MAXIMUM DENSITY (MODIFIED PROCTOR).
2. TANK SHALL BE SECURED DURING INSTALLATION BY FILLING 1/2 FULL WITH WATER PRIOR TO BACKFILLING.
3. NOMINAL DIMENSIONS:
4. TANK SHALL BE "DOH" APPROVED AND MEET THE FOLLOWING MECHANICAL REQUIREMENTS:
   A. ULTIMATE TENSILE STRENGTH - MINIMUM 12,000 psi, WHEN TESTED IN ACCORDANCE WITH ASTM D638-89.
   B. FLEXURAL STRENGTH - MINIMUM 19,000 psi, WHEN TESTED IN ACCORDANCE WITH ASTM D790-86.
   C. FLEXURAL MODULUS OF ELASTICITY - MINIMUM 800,000 psi, WHEN TESTED IN ACCORDANCE WITH ASTM D790-86.
5. TANK SHALL BE SUPPLIED, INSTALLED, MAINTAINED AND OWNED BY CHARLOTTE COUNTY UTILITIES, UNLESS OTHERWISE SPECIFIED.
6. TANK SHALL HAVE A MINIMUM OF 24 HOUR RESERVE CAPACITY AFTER ALARM CONDITIONS OCCUR.
7. CONCRETE SURFACE SHALL BE SLOPED TO PROMOTE WATER RUN-OFF.
8. TANK TO BE MANUFACTURED FOR ADDITIONAL LOADING.
9. TANK CAN BE A CONVERTED SEPTIC TANK IF APPROVED BY CHARLOTTE COUNTY UTILITIES.

DATE: 1/1/2008
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LPS TANK INSTALLATION TRAFFIC BEARING APPLICATION
CHARLOTTE COUNTY UTILITIES
NUMBER: S-23-TBLPS
PIPE SUPPORT 2 MINIMUM. FOR DROPS GREATER THAN TEN FEET ADD ONE BRACKET PER 3 FOOT DROP (SEE DETAIL).

LP SAN. SEWER

ELASTOMERIC GASKET

FINAL GRADE

TRAFFIC AREA

MATCH EXIST. SURFACE

EXISTING CONC. MANHOLE

EXISTING GRAVITY SEWER LINE

NOTE:
DIRECT FLOW OF SPILLWAY TO BLEND WITH EXISTING FLOW.

PROFILE VIEW

EXISTING MANHOLE

FLOW

3" MIN.

36"

6" MIN.

3" MAX

EXISTING CONC. MANHOLE

GLUED TEE

PVC DROP PIPE

GLUED 90° BEND

PIPE SUPPORT 2 MINIMUM. FOR DROPS GREATER THAN TEN FEET ADD ONE BRACKET PER 3 FOOT DROP (SEE DETAIL)

CONSTRUCT INVERT TO DIRECT FLOW TOWARD DOWNSTREAM SIDE. (SHOP DRAWING TO BE APPROVED BY C.C.U. PRIOR TO CONSTRUCTION)

INSTALL DUCK BILL CHECK VALVE WITH TWO (2) S.S. BANDS.

DETAIL NOTE:
1. 1/2" x 6" 316 S.S. RED HEAD WITH WASHER AND NUT. (2 REQUIRED)
2. 1-5/8" x 1-5/8" CHANNEL STRUT C/W TYPE 316 S.S. NUTS, BOLTS AND U-BOLT.

NOTE:
DIRECT FLOW OF SPILLWAY TO BLEND WITH EXISTING FLOW.

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CHARLOTTE COUNTY UTILITIES

INSIDE DROP MANHOLE (LPS FORCE MAIN)

NUMBER: S-19-ISDMH

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