SPECIFICATIONS FOR SEWAGE LIFT STATION
CITY OF WILMINGTON

PUMP CONTROL CENTER NEMA 3R

4'-0" X 2'-6" BILCO, ALUMINUM ACCESS COVER, OR EQUAL

VENT PIPE

4'-0" X 2'-6" BILCO, ALUMINUM ACCESS COVER, OR EQUAL

4" CHECK VALVE

4" PLUG VALVE

NEENAH DRAIN R-4934-B

5'-0"
PRECAST MANHOLE

INTERMEDIATE GUIDE BAR BRKT.

GUIDE BAR 2' NOM. PIPE STAINLESS STEEL (2) REQ'D.

4" DISCHARGE D.C.I.PIPE

LIQUID LEVEL SENSOR (4X) INFLUENT PIPE INVERT ALARM ON & LAG PUMP ON LEAD PUMP ON.

PUMPS: OFF

BASE ELEVATION 3/4" ANCHOR BOLT (2' PROJECTION)

4'-0"
PRECAST MANHOLE

MIN. LIQUID LEVEL MUST NOT FALL BELOW TOP OF VOLUTE

NOTE: EACH PUMP DISCHARGE LINE IN THE VALVE PIT SHALL BE FITTED WITH A PIPE NIPPLE AND BALL VALVE TO ACCEPT A 1/2" PRESSURE GAUGE TO BE PROVIDED BY THE CITY.

DUPLEX PUMP STATION
SANITARY LINE TRENCH & BEDDING DETAIL

SOIL PLACEMENT

1/2 TRENCH DEPTH MIN.

UNDISTURBED SOIL

- EARTH BACKFILL UNDER GRASSED AREAS (COMPACTED TO 90% PROCTOR)
- COMPACTED #57 AGGREGATE UNDER PAVED AREAS (COMPACTED TO 95% PROCTOR)

COMPACTED #57 AGGREGATE

6" MIN PIPE 6" MIN.

12" MAX WIDTH 12" MAX

VARIIES

FINAL BACKFILL

12"

INITIAL BACKFILL

BEDDING 6" MIN.

TRENCH AND BEDDING NOTES:

1. BELL HOLES SHALL BE PROVIDED AND THE TRENCH PREPARED SO THAT THE BARREL SEGMENT IS PROPERLY SUPPORTED THROUGHOUT ITS LENGTH.

2. SLOPE TRENCH WALLS IN ACCORDANCE WITH OSHA STANDARDS 29 CFR PART 1926.

3. COMPACTED GRANULAR MATERIAL SHALL BE #57 AGGREGATE IN ACCORDANCE WITH THE LATEST REVISION OF THE ODOT CONSTRUCTION & MATERIAL SPECIFICATIONS.

4. THE TOP OF GRANULAR MATERIAL BACKFILL SHALL EXTEND 3 FEET BEYOND THE PAVEMENT EDGE WHERE THE TRENCH CROSSES PAVEMENT.

5. COMPACTION OF HAUNCHING & INITIAL BACKFILL SHALL BE ACCOMPLISHED BY CAREFULLY PLACING THE GRAVEL AROUND THE PIPE AND HAND TAMPING FOR COMPACT
MONITORING MANHOLE SPECIFICATIONS

MANHOLE MUST BE WATERTIGHT

5 FEET INSIDE DIAMETER DURACRETE OR EQUAL

ALL MANHOLE SECTIONS IN ACCORDANCE WITH ASTM C-478-72

ALL MANHOLE JOINTS IN ACCORDANCE WITH ASTM C-443

TOP OF MANHOLE MUST EXTEND A MINIMUM OF 3 INCHES ABOVE CURRENT GRADE

DOOR MUST BE BILCO J-4AL OR EQUAL

DIAMOND PATTERN LEAVES AND FRAMES OF 1/4 INCH THICK ALUMINUM. HINGES OF FORGED BRASS FITTED WITH STAINLESS STEEL PINS. COMPRESSION SPRING OPENING WITH POSITIVE HOLD-OPEN ARM THAT ENGAGES AUTOMATICALLY WHEN DOOR REACHES FULL OPEN.

DOOR MUST PRECAST INTO CONCRETE TOP

STEPS MUST CONFORM WITH CITY OF WILMINGTON SPECIFICATIONS 900-6

ALUMINUM OR POLYPROPYLENE WITH DEFORMED STEEL REINFORCEMENT

STEPS MUST BE SET 12 INCHES APART

PIPING MUST BE OF PVC SDR 35

CONNECTORS MUST BE FERNSCO FLEXIBLE COUPLER OR EQUAL (#1002-66 PROVIDED EXISTING LINE IS 6 INCH CLAY PIPE)

CONSTRUCTION PRACTICES MUST CONFORM WITH CITY OF WILMINGTON ENGINEER SPECIFICATIONS

6 TO 8 INCHES OF #57 STONE UNDER MANHOLE BASE.
#57 STONE FROM 6 INCHES UNDER TO 12 INCHES ABOVE PIPING

NOTE: SEE ATTACHED DRAWING FOR PLACEMENT OF LID, STEPS, & CHANNEL.
MONITORING MANHOLE

115 VAC 20 AMP CIRCUIT
LADDER
HINGED LID
SHOWN AS DOTTED LINE

SWITCH AND DUPLEX
RECEPTACLE HOUSED
IN WATER TIGHT BOXES

PRECAST MANHOLE

NOTES:
DIMENSIONS
INSIDE DIAMETER - 5'
LID - 3' X 3'
ELECTRIC
MINIMUM 3' ABOVE FLOOR
READY-MIX CONCRETE
TYPE "A" SANITARY MANHOLE

<table>
<thead>
<tr>
<th>PIPE SIZE</th>
<th>T</th>
<th>D</th>
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<tr>
<td>18&quot; &amp; UNDER</td>
<td>5&quot;</td>
<td>48&quot;</td>
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<tr>
<td>21&quot; &amp; 24&quot;</td>
<td>6&quot;</td>
<td>60&quot;</td>
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SEE STD. DRAWING FOR TYPICAL CONSTRUCTION AROUND MANHOLE

PRECAST ADJUSTING RING (MAX. ADJUSTMENT 12")

CONE SHALL BE CONCENTRIC OR ECCENTRIC AS DIRECTED BY THE ENGINEER

MIN. 2% TAPER

SEE STD. DRAWING FOR MANHOLE STEP DETAILS

NOTE: THE FLEXIBLE JOINTS SHOWN FOR PIPES 24" AND UNDER SHALL BE THE EQUAL OF "PRESS WEDGE II" AS MANUFACTURED BY PRESS SEAL GASKET CORPORATION OR "LINK SEAL" AS MANUFACTURED BY THE THUNDERLINE CORPORATION.
NOTE: CHANGES IN PIPE SIZES SHALL BE MADE BY INSTALLATION OF AN ECCENTRIC REDUCER. CHANGES IN ALIGNMENT SHALL BE MADE BY INSTALLATION OF A BEND, OF SUITABLE DIAMETER AND DEFLECTION, INSTALLED ON THE LOW SIDE AND IMMEDIATELY ADJACENT TO MANHOLE T-SECTION OR ECCENTRIC REDUCER.

PRECAST OPENING

FOR SEWERS 27" THRU 33"

5' - 0"

3' MIN.

SECTION C - C

48" DIA.

SECTION D - D

FOR 42" SEWERS

REINFORCING FOR CONCRETE BEDDING SHALL BE NO. 5 BARS @ 8" CENTERS, BOTH WAYS, 5" BELOW LOWERMOST DIMENSION OF THE "T" SECTION.

5"

4 1/2" (T)

48" DIA.

SECTION D - D

FOR 42" SEWERS

5"
TYPE "D" SANITARY MANHOLE AND PRECAST ADJUSTING RING

SEE STD. DRAWING FOR TYPICAL CONSTRUCTION AROUND MANHOLE

NOTE:
CONCRETE SHALL BE CONCENTRIC OR ECCENTRIC AS DIRECTED BY THE ENGINEER

SECTION PLAN
LIFTING LOOPS

CONCRETE ENCASEMENT

DROPPED CONNECTION SCHEDULE

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<th>&quot;A&quot;</th>
<th>&quot;B&quot;</th>
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<tr>
<td>8'</td>
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<tr>
<td>10' &amp; 12'</td>
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<td>15' &amp; 18'</td>
<td>12'</td>
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NOTE:
TYPE "D" MANHOLE SHALL BE USED WHERE THE DIFFERENCE IN INVERT ELEVATIONS IS GREATER THAN 2' - 0'.

PRECAST ADJUSTING RING

CLASS "A" CONCRETE

APPROXIMATELY 1' - 0"
TYPE "E" MANHOLE

FOR SEWERS 24" DIA. AND LARGER
FOR SEWERS 18" AND SMALLER USE A STANDARD TYPE "A" MANHOLE BASE WITH A PRECAST FLAT SLAB TOP.

NOTE: ECCENTRIC CONE MAY BE USED IN PLACE OF CONCENTRIC CONE AT DIRECTION OF THE ENGINEER.

SEE STD. DRAWINGS FOR TYPICAL CONST. AROUND MANHOLE

PRECAST FLAT SLAB TOP

FLAT SLAB TRANSITION SECTION

NOTE: IN PLACE OF FLAT SLAB TRANSITION SECTION, MAY USE ECCENTRIC REDUCER AT DIRECTION OF THE ENGINEER.

STEPS MAY BE OMITTED IN SHALLOW MANHOLE AT DIRECTION OF ENGINEER.

TYPICAL CONSTRUCTION AROUND MANHOLE

TYPE "E" SANITARY MANHOLE AND CONST. AROUND MANHOLE
NOTE: SANITARY MANHOLE FRAMES AND COVERS SHALL BE EQUAL OF NEENAH CATALOG NO. R-1787 OR EAST JORDAN IRON WORKS NO. 1800. WATERTIGHT MANHOLES SHALL BE THE EQUAL OF NEENAH CATALOG NO. R-1816-D. OR EAST JORDAN IRON WORKS NO. 1800 PT.

STANDARD LID

STANDARD BOLTED LID

ABS MANHOLE FRAME & LID

1/4" MESH - HARDWARE CLOTH & 2-GASKETS
FLOD. 90\(^\circ\) ELBOW
FLOD. 90\(^\circ\) ELBOW
GRADE
Rise
Provided waterproof seal
90\(^\circ\) ELBOW M.J. @ EACH END
4" C.I. - M.J.
CONC. BLOCKING

SANITARY MANHOLE FRAMES & LIDS

SECTION - FRAME & LID

SECTION - FRAME & LID

SANITARY MANHOLE FRAMES & LIDS

NOTE: ECCENTRIC REDUCER SHALL BE USED WHERE THE SECTION OF MANHOLE IS LARGER THAN 48" DIA. AND SHALL BE INSTALLED DIRECTLY ABOVE THE BASE SECTION.

ECCECENTRIC REDUCER

FLAT SLAB MANHOLE TOP
FOR TYPE "E" MANHOLE

VENTED WATER TIGHT MANHOLE

SANITARY MANHOLE FRAMES AND LIDS

VENTED WATERTIGHT MANHOLE
POLYPROPYLENE PLASTIC STEP

NO. 3 DEFORMED STEEL ROD

SECTION A-A

STEP SECTION
NON-SKID TREAD

STEP SECTION
ALTERNATE DROP STEP

STANDARD SECTION
THRU MANHOLE

ALUMINUM BAR TYPE STEP

3/32 X 1/8 GROOVES

FORGED ALUMINUM STEP

STEPS SHALL BE PLACED INTO WET CONCRETE WALL DURING MANUFACTURE, OR MORTARED INTO HOLES AFTER CONCRETE HAS SET.

MANHOLE STEPS
NOTE: RISER PIPE TO BE BEDDED SOLIDLY AGAINST UNDISTURBED GROUND. ALSO TEE MAY BE SUBSTITUTED FOR WYE BRANCH IF SPECIFIED.

RISER PIPE TO BE INSTALLED SO THAT CONNECTING SERVICE SHALL HAVE A MINIMUM DEPTH OF 7 FEET AT THE PROPERTY LINE UNLESS A GREATER DEPTH IS DIRECTED. IF SANITARY SERVICES ARE SPECIFIED THEY SHALL BE A MINIMUM OF 7 FEET DEEP AT THE PROPERTY LINE UNLESS DIRECTED TO BE AT A GREATER DEPTH.

NOTE: SADDLE MAY BE USED WHERE A TEE OR WYE IS NOT PRESENT FOR LATERAL CONNECTION.

NOTE: CONCRETE BLOCKING REQUIRED IF DEPTH OF CONNECTION IS 12" OR GREATER.

SERVICE RISER

HOUSE CONNECTION

SERVICE RISER AND HOUSE CONNECTION
SECTION A-A

NOTE: SADDLE TO BE USED WHERE WYE IS NOT PRESENT FOR LATERAL CONNECTION.

OFF-ROAD MANHOLE CONSTRUCTION

PLAN

SADDLE DETAIL

CONCRETE QAUNTITIES

<table>
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<th>(IN) DIA.</th>
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NOTE: O.D. OF PIPE SHOWN IS THAT OF PIPE BARREL ONLY.

CONCRETE ENCASEMENT DETAIL