PLAN VIEW

FLOW

45° ELBOW

BACK OF PUBLIC UTILITY EASEMENT

AIR-TIGHT PLUG

UNYIELDING PIPE BEDDING OF COMPACTED ROCK OR LEAN CONCRETE

COMPACTED GRANULAR MATERIAL

SERVICE WYE

PVC UNDERDRAIN PIPE

EASEMENT LINE

4"x4" WOOD MARKER BURIED 1' DEEP WITH MAGNETIC TAPE ON END

TRENCH

#67 ROCK

PVC UNDERDRAIN PIPE AT 3/4" MIN. PER FOOT

CROSS SECTION

AIR-TIGHT PLUG

UNYIELDING PIPE BEDDING OF COMPACTED ROCK OR LEAN CONCRETE

ADOPTED DETAIL SOURCE: LCUASS DETAIL 713.1L

STANDARD UNDERDRAIN SERVICE CONNECTION

DETAIL NO. 400.01

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LOWER LIMIT OF TRENCH WALL SLOPING

INITIAL LIFT SHALL NOT EXCEED 3 FEET IN DEPTH.

NOTE:
ALL UNDERDRAIN MAINS WILL BE PRESSURE TESTED AND VIDEO TAPE BY CONTRACTOR.

* INITIAL LIFT SHALL NOT EXCEED 3 FEET IN DEPTH.

ADOPTED DETAIL SOURCE: LCUASS DETAIL 713.2L
NOTES:
1. CASTING SPECIFICATIONS ASTM A-48 CLASS 35.
2. ALL CASTINGS TO BE FINISHED WITH BLACK BITUMINOUS PAINT.
3. TOWN MAY REQUIRE LARGER RING & COVER SIZINGS (30"+) DEPENDING ON APPLICATIONS.
4. CASTINGS AS SPECIFIED OR APPROVED EQUAL.
5. FOR USE IN ALL LOCATIONS OTHER THAN SIDEWALKS, WHERE SMOOTH LIDS ARE REQUIRED.
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MINIMUM MANHOLE BARREL DIAMETER SHALL CONFORM TO THE FOLLOWING TABLE:

<table>
<thead>
<tr>
<th>PIPE I.D.</th>
<th>MH I.D.</th>
<th>RING &amp; COVER</th>
</tr>
</thead>
<tbody>
<tr>
<td>18&quot; &amp; SMALLER</td>
<td>4'-0&quot;</td>
<td>24&quot;</td>
</tr>
<tr>
<td>21&quot; TO 30&quot;</td>
<td>*5'-0&quot;</td>
<td>30&quot;</td>
</tr>
<tr>
<td>33&quot; TO 42&quot;</td>
<td>6'-0&quot;</td>
<td>30&quot;, 36&quot; w/ 24&quot; INNER COVER</td>
</tr>
<tr>
<td>60&quot; &amp; LARGER</td>
<td>SPECIAL DESIGN</td>
<td></td>
</tr>
</tbody>
</table>

* 5'-0" DIAMETER MH IS REQUIRED FOR PIPE DEPTHS 15' AND GREATER.

**KEY:**

1. **5" COPPER GROUNDING ROD CAST IN OR CORE IN MH 1" BELOW STEP IN ε OF STEP. GROUNDING ROD SHALL NOT PROTRUDE MORE THAN 6" INSIDE THE MH. CONNECT TRACER WIRE TO GROUNDING ROD w/ GROUND ROD CLAMP WITH STAINLESS STEEL SCREWS. WRAP ALL EXPOSED METAL w/ RUBBER ELECTRICAL SPLICING TAPE.**

2. **SET EACH RING IN FULL BED OF BITUMINOUS MASTIC OR PLASTIC SEALING COMPOUND. IN GROUND WATER AREAS, GROUT ALL OUTSIDE JOINTS.**

3. **NO. 10 GAUGE SOLID COPPER TRACER WIRE - GREEN FOR SEWER, BLACK FOR STORMWATER.**

4. **WRAP TRACER WIRE AROUND OUTSIDE OF MH & CONNECT TO GROUNDING ROD.**
"STUB-OUT" OPENING FORMED BY A SHORT PIECE OF SPLIT PIPE

SHORT SPLIT PIPE FORM EQUAL OR LARGER DIA. THAN DISCHARGE LINE

O-RING OR GASKET FOR STUB-OUT PIPE

6" MIN 8" MAX

SECTION A-A

DISCHARGE LINE STUB OUT 12" OUTSIDE MH BASE CAP
NOTES:
1. SEE TOWN STANDARD SPECS FOR MIN. MH DIAMETER (D) AND MATERIALS.
2. INSTALL DROP BOWL AND FASTENERS PER MANUFACTURERS RECOMMENDATIONS.
3. PRECAST BASE IS REQUIRED (CAST-IN-PLACE WILL BE ON A CASE-BY-CASE BASIS.)
1. RING & COVER ELEVATION SHALL BE IN ACCORDANCE WITH THE JOHNSTOWN REQUIREMENTS.
2. SET ACCESS INTO MANHOLE ON BENCH SIDE OF MAIN AS SHOWN.
3. ROTATE ECCENTRIC CONE AND STEPS AS NEEDED TO AVOID THE WHEEL PATH.
4. FOR INSTALLATIONS DEEPER THAN 15' PLANS MUST BE CONFIRMED BY A DESIGN PROFESSIONAL.
24" OPENING HINGE MESH

24"X18" GRATE ON HINGES PLACED SO THAT IT ADEQUATELY CLEARS THE STEP ABOVE

ALIGN STEPS ABOVE AND BELOW PLATFORM OPENING AS SHOWN.

STAINLESS GRATING 3/16"X1 1/4" BEARING BARS. SERRATED GRATING OPTIONAL.

SET IN FULL BED OF BITUMINOUS MASTIC OR PLASTIC SEALING COMPOUND.

STANDARD PRECAST FLAT TOP WITH 4X4 4/4 MESH w/ 24" OPENING. THICKNESS SIZED BY MFG.

NOTE:
REQUIRED IN MANHOLES WHERE DEPTH MEASURED FROM RING TO INVERT EXCEEDS 15 FEET. CENTER PLATFORM BETWEEN THE RING AND INVERT. MINIMUM 5-FOOT DIAMETER MANHOLE.
Manhole Base Deflector

Through Pipe
One Collection Line
Two Collection Lines

Curved Deflector

Intermediate Angle

Sharp Angle

Details shown are typical only for installations with a maximum of up to 18" difference in inverts. (Inside drop)

NOTE:

D1 = U/2
30° < U < 90°

0 = 45°
U = 90°

0 ≥ 15°
U ≥ 30°

NOTE:

Details shown are typical only for installations with a maximum of up to 18" difference in inverts. (Inside drop)
NOTE:

STEPS SHALL BE SPACED 12" TO 16" ON CENTER AND ALIGNED AWAY FROM THE INVERT OVER LARGEST BENCH.

SECTION A-A

1/2" GRADE 60 STEEL REINFORCEMENT
CONCRETE CONNECTION

- INSTALL TRACER WIRE PER TYP DETAIL IF NOT EXISTING, OR CONNECT WIRE BY SPLICE IF EXISTING.
- 12" NEW PIPE
- (2) #4 REBAR AROUND PIPE
- REBAR DOWELS
- WATERSTOP GASKET
- REBAR DOWELS
- EX INVERT BENCH

CORE AND SEAL BOOT CONNECTION

- INSTALL TRACER WIRE PER TYP DETAIL IF NOT EXISTING, OR CONNECT WIRE BY SPLICE IF EXISTING.
- EXPANSION RING NONSHRINK GROUT
- STAINLESS STEEL CLAMP
- FLEXIBLE SLEEVE
- NEW PIPE
- GROUT AROUND PIPE w/ NONSHRINK GROUT

NOTES:
1. USE CONCRETE BONDING AGENT BETWEEN NEW CONCRETE AND EXISTING PRECAST CONCRETE.
2. CORE DRILL DIAMETER IN EXISTING MANHOLE TO ONE STANDARD PIPE SIZE (DIAMETER) LARGER THAN THE PROPOSED TIE-IN PIPE.
3. RESHAPE INVERTS AND BENCHES IN GENERAL ACCORDANCE WITH TYPICAL NEW CONSTRUCTION DETAILS AS POSSIBLE TO ACHIEVE PROPER FLOW THROUGH THE MANHOLE.

CONNECTION TO EXISTING MANHOLE

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NOTES:

1. MAXIMUM TRENCH WIDTH AT SERVICE CONNECTIONS IS 12 FEET.
2. INSTALL TRACER WIRE IN GENERAL ACCORDANCE WITH STANDARD DETAILS.
EX PIPE

PLUG PIPE

PENETRATIONS
WITH CONCRETE.

FILL IN LOWER
REMAINING BARREL
SECTIONS W/ SQUEEGEE

NOTE:

1. FOR MANHOLES ABANDONED IN STREET SECTIONS, DRIVES, OR PARKING AREAS, REMAINING BARREL
SECTIONS SHALL BE FILLED IN WITH FLOW FILL.
A STANDARD "T" MAY BE USED IF THE SEWER MAIN IN BEING INSTALLED AT THE SAME TIME AS THE SERVICE.

NOTES:

1. IN NO CASE SHALL THE SEWER SERVICE PROTRUDE INTO THE SEWER MAIN.
2. 4" SEWER SERVICES SHALL HAVE A MIN SLOPE OF 2% AND A MAX SLOPE OF 8%.
3. 6" SEWER SERVICES SHALL HAVE A MINIMUM SLOPE OF 1% AND A MAX SLOPE OF 8%.
4. SERVICES SHALL NOT BE MADE CLOSER THAN 5 FT FROM EACH OTHER ON THE MAIN.
5. SERVICES LARGER THAN 6" SHALL BE MADE AT A MANHOLE.
6. SERVICES SHALL EXTEND TO PROPERTY LINE UNLESS OTHERWISE SHOWN ON TOWN ACCEPTED PLANS.
7. TAPS SHALL BE MADE AT THE 10 OR 2 POSITIONS ON THE PIPE.
NOTES:
1. THE MINIMUM DISTANCE FROM THE BELL OR SPIGOT END OF A PIPE SHALL BE 3'.
2. THE MINIMUM DISTANCE BETWEEN SERVICES SHALL BE 3'.
3. WHEN TAPPING INTO AN EXISTING MAIN, A SADDLE CONNECTION AND APPROVED CORING METHOD SHALL BE USED.
4. MAINTAIN 10' MIN SEPARATION FROM WATER SERVICE LINES, INSTALL DOWNHILL FROM WATER SERVICE.
5. TAPPING SLEEVE IS AN ACCEPTABLE ALTERNATIVE CONNECTION METHOD FOR 4" SERVICES. REFERENCE ALTERNATIVE SANITARY SEWER SERVICE DETAIL.

SECTION

EXISTING GRAVITY MAIN

FASTEN TRACER WIRE TO TOP OF PIPE WITH ZIP TIES OR TAPE AROUND CIRCUMFERENCE OF PIPE AT 5' INTERVALS (TYP)

NO. 10 GAUGE SOLID COPPER TRACER WIRE - GREEN (TYP)

CONNECT SERVICE WIRE TO EXISTING SANITARY SEWER MAIN TRACER WIRE

EXTEND TRACER WIRE TO JUST ABOVE CLEANOUT PLUG. NEATLY COIL 3' OF WIRE IN BOX.

ALL VERTICAL WIRE SHALL BE IN 1/4" OR 3/8" CONDUIT

PROPERTY/EASEMENT LINE

30" MIN BELOW LOWEST GROUND ELEVATION

VALVE BOX ASSEMBLY WITH TEST STATION

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SANITARY SEWER SERVICE

DETAIL NO. 413
NOTES:

1. WHEN SANITARY SEWER LINES ARE DAMAGED, THE TOWN SHALL BE NOTIFIED IMMEDIATELY BY THE CONTRACTOR.
2. CONTRACTOR SHALL PROVIDE BYPASS PUMPING UNTIL THE REPAIR IS CONSTRUCTED, REVIEWED, INSPECTED, AND APPROVED BY THE TOWN.
3. SEE THE STANDARD SPECIFICATIONS FOR ALLOWABLE PIPE MATERIAL. THE TOWN MAY REQUIRE OTHER MATERIALS AND REPAIR TECHNIQUES OR METHODS ON A CASE BY CASE BASIS. THE NEW PIPE SHALL BE CONNECTED TO THE EXISTING MAIN USING WATER TIGHT FLEXIBLE COUPLINGS MEETING ASTM C-425 BANDED AS NOTED.
4. SANITARY SEWER LINE REPAIR SHALL NOT BE BACKFILLED UNTIL THEY ARE INSPECTED AND APPROVED BY THE TOWN.
5. ANY EXISTING SUB-DRAIN UNDER THE SEWER SHALL BE REPLACED IN LIKE MANNER SUCH THAT NO FLOW SHALL ENTER THE TRENCH.
6. THIS STANDARD APPLIES ONLY FOR NON-PRESSURIZED SANITARY SEWERS.
7. THE TOWN MAY REQUIRE FLOW FILL OR FULL CONCRETE ENCASEMENT TO BE PLACED AROUND THE PIPE FOR SUPPORT & PROTECTION PARTICULARLY IN AREAS SUBJECT TO TRAFFIC.
NOTE:

CUT-OFF WALLS ARE REQUIRED AT ALL INTERFACED BETWEEN PUBLIC AND PRIVATE PROPERTY.
NOTES:

1. UNDERDRAIN CLEANOUTS SHALL BE LOCATED ADJACENT TO EVERY MANHOLES.
2. UNDERDRAIN CLEANOUTS SHALL BE IN A STREET VALVE BOX WITH A Plain Lid.
3. A POLYESTER KNITTED FILTER SOCK SHALL BE INSTALLED AROUND THE PERFORATED UNDERDRAIN PIPE.
4. SEWER MAINS INSTALLED WITH UNDERDRAINS SHALL HAVE ALL MANHOLE BASES PLACED ON STABILIZATION MATERIAL PER TOWN CONSTRUCTIONS SPECIFICATIONS.
5. MANHOLES AND UNDERDRAIN INSTALLATION AND TRENCH/BEDDING REQUIREMENTS SHALL BE PER WATER AND SEWER STANDARD DRAWINGS AND CONSTRUCTION SPECIFICATIONS.
6. FLOW FILL AS NECESSARY THE VOID SPACE BETWEEN THE CLEANOUT RISER AND EDGE OF MANHOLE.
7. UNDERDRAIN SYSTEM SHALL BE MAINTAINED BY HOMEOWNERS ASSOCIATION. DEVELOPER SHALL ACCEPT ALL LIABILITY/RESPONSIBILITY FOR UNDERDRAIN INSTALLATION.

FLOW FILL AS NECESSARY THE VOID SPACE BETWEEN THE CLEANOUT RISER AND EDGE OF MANHOLE.

UNDERDRAIN SYSTEM SHALL BE MAINTAINED BY HOMEOWNERS ASSOCIATION. DEVELOPER SHALL ACCEPT ALL LIABILITY/RESPONSIBILITY FOR UNDERDRAIN INSTALLATION.
NOTES:
1. REFER TO THE WATER AND SANITARY SEWER DEVELOPMENT STANDARDS.
2. TRAFFIC RATED INTERCEPTOR IS REQUIRED IN TRAFFIC AREAS.
3. ACTUAL CONFIGURATION OF INTERCEPTOR MAY VARY BETWEEN MANUFACTURERS.
4. DESIGNER SHOULD CHECK WITH SUPPLIER FOR EXACT DIMENSIONS.
5. DESIGN PROFESSIONAL IS RESPONSIBLE FOR SIZING AND PLACEMENT OF ALL SAND AND OIL INTERCEPTORS.
CONCRETE ENCASE PLUGGED END OF EXISTING MAIN

SEE NOTE 1

NOTE:

1. RESHAPE BENCH & INVERT USING CONCRETE. PLUG INVERT TO BE ABANDONED WITH CONCRETE.