NOTE:
1. INSTALL GREEN TRACER WIRE, 12 GA. MINIMUM DIA. ON ALL SANITARY SERVICES. ATTACH SECURELY TO PIPE WITH DUCT TAPE OR EQUAL.
2. INSTALL BLUE TRACER WIRE, 12 GA. MINIMUM DIA. ON ALL WATER SERVICES. ATTACH SECURELY TO PIPE WITH DUCT TAPE OR EQUAL.
SERVICE RISER
4" DIP OR PVC SCH. 40

MINIMUM 4" THICK
CONCRETE ENCASEMENT

SEWER MAIN

PAYMENT
1. SERVICE PAY LENGTH = TOTAL LENGTH INSTALLED, INCLUDING RISER. (BENDS AND FITTINGS INCIDENTAL)
2. EXCESSIVE SAN. SEWER MAINLINE DEPTH MUST BE REVIEWED AND APPROVED BY THE CITY ENGINEER.
3. INSTALL TRACER WIRE OF 12GA. MINIMUM DIAMETER ON ALL SANITARY SERVICES. ATTACH TRACER WIRE SECURELY TO PIPE WITH DUCT TAPE OR EQUAL. TAPE EXCESS WIRE ON PVC CAP AT END OF SERVICE.
4. SANITARY SERVICE TO BE BEDDED ON 6" SAND MINIMUM AND 6" OVER THE PIPE.
5. INSTALL WATER SERVICE UPSTREAM OF SANITARY SERVICE.
6. PLACE CURB STOP AT PROPERTY LINE. END COPPER AND SANITARY SERVICE 10' BEYOND PROPERTY LINE.
7. SERVICE RISE OFF MAIN SHALL BE USED TO BRING SANITARY SERVICE TO THE 15' DEPTH.
8. PLUG END OF SANITARY SERVICE.
9. A METAL FENCE POST SHALL BE PLACED AT THE END OF EACH SANITARY SERVICE SO THAT IT IS A MAXIMUM OF 1' BELOW GRADE ON ALL LOTS.
10. TRACER WIRE SHALL BE GROUNDED AT THE END THAT IS BELOW GRADE.
11. TRACER WIRE SHALL BE PLACED IN A VALVCO TSAB TRACER WIREBOX AND PLACED NEXT TO THE CURB STOP.

NOTE:
SERVICE PIPE TO PRESSURE RATED AT 150 PSI (MIN.)

STANDARD DETAILS
SANITARY SEWER SERVICE

Revised 1/2019
Standard Plate No. SER-3
NOTES:
1. CITY WATER SERVICE & PLUMBING PERMITS REQUIRED FOR WORK BY PRIVATE CONTRACTORS.
2. ANNUAL TESTING OF RPZ REQUIRED.
3. REQUIRED EQUIPMENT MUST BE ENCLOSED AND SUPPORTED.
4. SLEEVES FOR PIPES IN CONCRETE SLABS SHALL BE 4" DIAMETER PVC OR SIMILAR.
NOTES:
1. WATER SERVICE SHUTOFF TO BE LOCATED A MINIMUM OF 5' OUTSIDE OF THE DRIVEWAY EDGE, OR A MINIMUM OF 3' INSIDE OF THE DRIVEWAY EDGE.
2. SHUT OFFS LOCATED IN THE DRIVEWAY WILL REQUIRE A NEENAH R-1914-A CASTING WITH A LOCKING COVER OR APPROVED EQUAL.
NOTE:
CORE DRILL HOLE IN RCP FOR TEE BRANCH. SEAL VOID AROUND TEE W/PREFORMED RUBBER GASKET OR NON-SHRINK GROUT. 

TEE BRANCH - FOR SIZE AND TYPE SEE SPECIFICATIONS. TEE NOT TO INTRUDE INTO RCP PIPE 

IF SERVICE IS NOT REQUIRED INSTALL A WATERTIGHT PLUG 

REINFORCE WITH WATERTIGHT GROUT
NOTE:
1. CLEANOUTS ARE REQUIRED AT 100LF INTERVALS, INCLUDING THE RISER FROM THE MAIN.
2. BRING TRACER WIRE OF 12 GAUGE OR EQUIVALENT TO SURFACE WITH CLEANOUT. FIRMLY ATTACH TRACER WIRE TO PIPE WITH DUCT TAPE MATERIAL OR APPROVED EQUAL.
3. METER BOX AND COVER (FORD A-1 OR APPROVED EQUAL) SHALL BE 6" TO 12" BELOW SURFACE IN GREEN AREAS AND SHALL BE ¾" TO ½" BELOW ALL PAVEMENT SURFACES.
NOTE:
1. 6" GRANULAR MATERIAL SHALL BE WELL COMPACTED AND LEVELLED TO PERMIT PROPER BEARING FOR THE INSULATION BOARD.
2. INSULATION SHALL BE OF 1" OR 2" THICK BOARDS HIGH DENSITY POLYETHYLENE RIGID INSULATION SPECIFICALLY DESIGNED FOR USE IN UNDERGROUND CONSTRUCTION AND HAVING A MINIMUM COMPRESSIVE STRENGTH OF 35 PSI.
3. THESE BOARDS ARE DIFFERENT THAT THE TYPE USED IN ORDINARY BUILDING CONSTRUCTION. THE INSULATION BOARD SHALL COMPLY WITH ASTM-D 1621.

REQUIREMENTS FOR WIDTH AND THICKNESS OF HIGH DENSITY POLYETHYLENE RIGID INSULATION PLACED 6" ABOVE TOP OF PIPE FOR VARIOUS PIPE DEPTHS.

<table>
<thead>
<tr>
<th>&quot;D&quot; DEPTH TO TOP OF PIPE</th>
<th>&quot;W&quot; COMPUTER WIDTH OF INSULATION REQUIRED</th>
<th>&quot;T&quot; THICKNESS OF INSULATION REQUIRED</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 FT. TO 3 FT.</td>
<td>d + 15 FT. = _________</td>
<td>4 IN.</td>
</tr>
<tr>
<td>3 FT. TO 4 FT.</td>
<td>d + 13 FT. = _________</td>
<td>3 IN.</td>
</tr>
<tr>
<td>4 FT. TO 5 FT.</td>
<td>d + 11 FT. = _________</td>
<td>3 IN.</td>
</tr>
<tr>
<td>5 FT. TO 6 FT.</td>
<td>d + 6 FT. = _________</td>
<td>2 IN.</td>
</tr>
<tr>
<td>6 FT. TO 7 FT.</td>
<td>d + 4 FT. = _________</td>
<td>2 IN.</td>
</tr>
<tr>
<td>7 FT. (ASSUMED FROST LINE)</td>
<td></td>
<td>0 IN.</td>
</tr>
</tbody>
</table>

"D" DEPTH TO TOP OF PIPE
"W" COMPUTER WIDTH OF INSULATION REQUIRED
"T" THICKNESS OF INSULATION REQUIRED

NOTE:
1. 6" GRANULAR MATERIAL SHALL BE WELL COMPACTED AND LEVELLED TO PERMIT PROPER BEARING FOR THE INSULATION BOARD.
2. INSULATION SHALL BE OF 1" OR 2" THICK BOARDS HIGH DENSITY POLYETHYLENE RIGID INSULATION SPECIFICALLY DESIGNED FOR USE IN UNDERGROUND CONSTRUCTION AND HAVING A MINIMUM COMPRESSIVE STRENGTH OF 35 PSI.
3. THESE BOARDS ARE DIFFERENT THAT THE TYPE USED IN ORDINARY BUILDING CONSTRUCTION. THE INSULATION BOARD SHALL COMPLY WITH ASTM-D 1621.

CHISAGO CITY
STANDARD DETAILS
SHALLOW SANITARY SEWER SERVICES
INSULATION REQUIREMENTS
Revised 1/2019
Standard Plate No. SER-9
NOTE:
1. WATER SERVICE TAPPING SADDLE FOR DIP SHALL BE A FORD F1 OR APPROVED EQUAL. CITY ENGINEER SHALL PRE-APPROVE ALL TAPPING SADDLES PRIOR TO INSTALLATION.
2. THE CITY ENGINEER MUST APPROVE ALL SADDLE INSTALLATIONS. SADDLES MAY ONLY BE USED ON ³⁄₈" TO 2" SERVICES. ANY LARGER SERVICES MUST BE CUT-INS OR WET TAPPED TO WATERMAIN.
3. TAPPING SADDLES SHALL BE USED ON ALL SERVICE TAPS INTO WATERMAIN 4 INCHES IN DIAMETER OR SMALLER AND FOR ALL TAPS LAGER THAN 1", UNLESS APPROVED BY THE CITY ENGINEER.
NOTE:

1. THE CITY ENGINEER MUST APPROVE ALL SADDLE INSTALLATIONS. SADDLES MAY ONLY BE USED ON 3/4" TO 2" SERVICES. ANY LARGER SERVICES MUST BE CUT-INS OR WET TAPPED TO WATERMAIN.

2. ONE OF THE FOLLOWING SADDLES SHALL BE USED FOR TAPPING INTO HDPE WATERMAIN UNLESS APPROVED BY THE CITY ENGINEER:

   A. SIDE FUSING TAPPING SADDLE AS MANUFACTURED BY POLY-CAM, INC. OR APPROVED EQUAL.

   B. ELECTROFUSION CORP, SADDLE AS MANUFACTURED BY CENTRAL PLASTICS COMPANY OR APPROVED EQUAL.

SIDE FUSING TAPPING SADDLE AS MANUFACTURED BY POLY-CAM, INC. OR APPROVED EQUAL.

ELECTROFUSION CORP. SADDLE AS MANUFACTURED BY CENTRAL PLASTICS COMPANY OR APPROVED EQUAL.
NOTE:
ALL WATER SERVICES SHALL BE DISCONNECTED AT THE WATERMAIN. TURN CORPORATION STOP OFF AND ENCASE IN CONCRETE. REMOVE 10 FEET OF SERVICE LINE FROM THE MAIN.
NOTE:
1. IF WATER SERVICE IS LESS THAN 5' DEEP, RELAY THE WATER SERVICE AS DIRECTED BY THE CITY ENGINEER.
2. INSULATION SEAMS SHALL BE STAGGERED IF MORE THAN ONE LAYER IS INSTALLED.

STORM SEWER CROSSING

2 LAYERS (MIN) OF 2" INSULATION 4' X 8' HIGH DENSITY POLYETHYLENE RIGID INSULATION SHEETS UNDERNEATH THE WATER SERVICE, CENTERED OVER THE STORM SEWER PIPE. WIDTH OF INSULATION TO BE 4 TIMES THE DIAMETER OF STORM PIPE OR AS DIRECTED BY THE CITY ENGINEER.
NEENAH R-1914 OR APPROVED EQUAL
NOTE:
1. TRACER WIRE ACCESS BOX SHALL BE OF DOMESTIC MANUFACTURE AND BE EQUAL TO VALVCO TWAB. TSAB FOR SANITARY SEWER.
2. TRACER WIRE SHALL BE TERMINATED AT EACH END IN FLUSH MOUNT ACCESS BOX.
3. ACCESS BOX SHALL HAVE A CAST IRON LID THAT CAN BE LOCKED AND OPENED WITH A STANDARD PENTAGON HEAD KEY WRENCH.
4. TRACER WIRES SHALL BE STRIPPED AND ATTACHED TO STAINLESS STEEL SCREWS MOUNTED TO THE UNDERSIDE OF THE LID. SUFFICIENT SLACK SHALL BE LEFT IN WIRE LENGTH SO COVER CAN BE LIFTED WITH WIRE INTACT.
5. TRACER WIRE ACCESS BOX SHALL BE LOCATED DIRECTLY IN FRONT OF FIRE HYDRANTS, CURB STOPS OR WHERE INDICATED ON DRAWINGS AND BE SET TO GRADE.