

SUPPLEMENTAL SPECIFICATIONS

1.

THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL CHARGES RELATING TO THE REQUIRED PERMITS AND SHALL CONFORM TO THE RESPECTIVE PERMIT REQUIREMENTS. PERMITS MAY BE REQUIRED FROM (BUT NOT LIMITED TO) LENOX TOWNSHIP, MCOPWC, MCDR, MDOT, MDEQ.
2.

DETERMINING THE EXISTENCE AND LOCATIONS OF UNDERGROUND AND OVERHEAD UTILITIES AND THEIR PROTECTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE EXACT LOCATION AND DEPTH OF EXISTING UNDERGROUND UTILITIES ARE UNKNOWN. THE CONTRACTOR SHALL VERIFY THEIR LOCATION AND DEPTH PRIOR TO CONSTRUCTION AND SHALL MAINTAIN A MINIMUM 18" VERTICAL CLEARANCE.
3.

THE CONTRACTOR SHALL PROVIDE ADEQUATE TRAFFIC CONTROL MEASURES AND TAKE ALL NECESSARY PRECAUTIONS FOR THE PROTECTION OF WORK AND SAFETY OF THE PUBLIC. ALL BARRICADES AND OBSTRUCTIONS SHALL BE PROTECTED AT NIGHT BY SIGNAL LIGHTS WHICH SHALL BE KEPT LIGHTED FROM SUNSET TO SUNRISE. TRAFFIC CONTROL DEVICES SHALL BE IN CONFORMANCE WITH THE CURRENT ISSUE OF THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. THE CONTRACTOR SHALL MAINTAIN ACCESS TO PROPERTIES AFFECTED BY THE CONSTRUCTION.
4.

THE CONTRACTOR SHALL FIELD VERIFY SITES, LOCATIONS, ELEVATIONS, AND DETAILS OF ALL EXISTING CONSTRUCTION AND CONDITIONS THAT MAY AFFECT THE WORK BEFORE PROCEEDING WITH THIS PROJECT. THE CONTRACTOR SHALL INFORM THE ENGINEER OF ANY DISCREPANCIES IN DIMENSIONS, SIZES, LOCATIONS AND CONDITIONS BEFORE PROCEEDING WITH THE WORK.
5.

MAIL BOXES, FIRE HYDRANTS, WATER SUPPLY VALVES, GAS VALVES AND OTHER APPURTENANCES ON OR ADJACENT TO THE WORK SHALL BE ACCESSIBLE AT ALL TIMES. TEMPORARY PROVISIONS SHALL BE MADE BY THE CONTRACTOR TO INSURE THE USE OF MAIL BOXES, SIDEWALKS AND THE PROPER FUNCTIONING OF ALL SEWERS, SEPTIC FIELDS, SEWER INLETS, GUTTERS, DRAINAGE DITCHES, SUMP PUMP DRAINS, UTILITIES, SERVICES AND FACILITIES. ANY EXISTING LANDSCAPING, FEATURES AND FACILITIES WHICH ARE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO AN EQUAL OR BETTER CONDITION, AND IN ACCORDANCE WITH ANY EASEMENT CONDITIONS WHICH MAY EXIST. TURF SHALL BE ESTABLISHED IN ALL NON-GRAVEL AND UNPAVED AREAS. THE CONTRACTOR SHALL VERIFY AND RECORD THE LOCATIONS AND DETAILS OF EXISTING FEATURES AND FACILITIES TO BE RESTORED PRIOR TO THEIR REMOVAL IN ORDER TO RESTORE THEM PROPERLY.
6.

ALL EXCAVATION UNDER OR WITHIN 3' OF EXISTING OR PROPOSED PUBLIC PAVEMENT SHALL BE BACKFILLED WITH COMPACTED MDOT CLASS II SAND BACKFILL OR BETTER.
7.

THE CONTRACTOR SHALL PROVIDE ALL SHORING, BRACING AND OTHER MEANS REQUIRED TO PROTECT AND MAINTAIN THE SAFETY, INTEGRITY AND STABILITY OF ALL EXISTING AND NEW CONSTRUCTION THAT MAY BE AFFECTED BY THE WORK. THE SIDES OF EXCAVATIONS SHOULD BE ADEQUATELY SLOPED OR STRUCTURALLY SUPPORTED. MIOSHA REQUIREMENTS MUST BE FOLLOWED DURING CONSTRUCTION. CONSTRUCTION TRAFFIC, STOCKPILED SOILS AND CONSTRUCTION MATERIALS SHALL BE STORED IN A MANNER THAT WILL NOT ENDANGER THE BANK OF THE TRENCH BY IMPOSING TOO GREAT A LOAD THEREON. WHEN BORING SANITARY SEWERS UNDER EXISTING ROADS PITS SHOULD BE LOCATED A MINIMUM OF 10' FROM THE ROAD BUT NO CLOSER THAN AS REQUIRED BY THE AGENCY HAVING JURISDICTION OVER THE ROW.
8.

THE CONTRACTOR SHALL PROVIDE APPROPRIATE POSITIVE GROUND WATER CONTROL MEASURES BEFORE EXCAVATION. THE DEWATERING SYSTEM SHOULD HAVE PROPERLY DESIGNED FILTER MEDIA AROUND THE WELL SCREENS IN ORDER TO PREVENT SUBSOILS FROM BEING PUMPED OUT OF THE SUBSURFACE. THE CONTRACTOR SHALL MONITOR THE DISCHARGE WATER FROM THE DEWATERING SYSTEM TO VERIFY THAT THIS CONDITION DOES NOT DEVELOP. APPROPRIATE DEWATERING AND TUNNELING TECHNIQUES WILL BE REQUIRED FOR BORING AND JACKING OPERATIONS TO MINIMIZE SETTLEMENT OF THE OVERLYING GROUND SURFACE.
9.

THE CONTRACTOR SHOULD ESTABLISH AND MONITOR A BENCH MARK ABOVE THE PIPE CENTERLINE DURING PIPE INSTALLATION TO EVALUATE POSSIBLE GROUND LOSS OR SURFACE ELEVATION CHANGES DURING PIPE INSTALLATION.
10.

IF ORGANIC SOILS (PEAT OR MARL) ARE ENCOUNTERED AT THE BOTTOM OF TRENCH THEY MUST BE REMOVED ENTIRELY AND REPLACED WITH ENGINEERED FILL CONSISTING OF CLEAN WELL GRADED GRANULAR FILL MATERIALS.
11.

ALL SOIL EROSION AND SEDIMENTATION MUST BE CONTROLLED WITHIN THE WORK AREA.
12.

PARCEL LINES HAVE BEEN APPROXIMATELY LOCATED ON THE PLANS. PARCEL LINES MAY NOT REFLECT PRECISE ALIGNMENT AND MAY BE MODIFIED DUE TO RECENT PARCEL SPLITS.
13.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PRESERVING ALL EXISTING PUBLIC LAND SURVEY CORNERS AND PROPERTY CONTROLLING CORNERS. ALL WORK NECESSARY TO MAINTAIN THE CORNERS SHALL BE DONE BY A PROFESSIONAL SURVEYOR LICENSED IN THE STATE OF MICHIGAN. THE CONTRACTOR SHALL ARRANGE TO HAVE THE AFFECTED CORNERS WITNESSED PRIOR TO THE START OF CONSTRUCTION. THEY SHALL BE WITNESSED AND REMONUMENTED ACCORDING TO PUBLIC ACT 74 OF 1970 AS AMENDED. UPON COMPLETION OF THE REQUIREMENTS OF ACT 74, THE LICENSED SURVEYOR SHALL PREPARE AND RECORD A LAND RECORDATION CERTIFICATE WITH THE REGISTER OF DEEDS.
14.

CONTRACTOR SHALL PREPARE AND SUBMIT RECORD DRAWINGS OF THE CONSTRUCTED WORK TO THE LENOX TOWNSHIP WATER AND SEWER DEPARTMENT FOR APPROVAL. OTHERWISE, THE CONTRACTOR SHALL DEPOSIT THE APPROPRIATE FEE (DETERMINED BY THE TOWNSHIP ENGINEER) WITH LENOX TOWNSHIP FOR THE ENGINEER TO PREPARE THE RECORD DRAWINGS.
15.

CONTRACTOR SHALL MAINTAIN DITCH TO ALLOW DRAINAGE WATER FLOW AT ALL TIMES.
16.

ANY DAMAGE TO DRAIN TILES MUST BE REPAIRED IMMEDIATELY.
17.

CONTRACTOR SHALL RESTORE ROAD DRAINAGE DITCH TO EXISTING ELEVATIONS W/ 2:1 SIDE SLOPES UNLESS OTHERWISE INDICATED. DITCH RESTORATION SHALL BE INCIDENTAL TO THE WATERMAIN INSTALLATION.

LENOX TOWNSHIP STANDARD NOTES

1.

NOTIFY THE LENOX TOWNSHIP DEPARTMENT OF PUBLIC WORKS (586-749-0230) A MINIMUM OF 48-HOURS PRIOR TO THE START OF CONSTRUCTION.
2.

CONTACT THE OFFICE OF THE MACOMB COUNTY PUBLIC WORKS COMMISSIONER AT (586-469-5325) 48-HOURS BEFORE CONSTRUCTION.
3.

CALL MISS DIG (1-800-482-7171) A MINIMUM OF 72-HOURS PRIOR TO THE START OF CONSTRUCTION.
4.

ALL CONSTRUCTION MUST CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS ADOPTED BY LENOX TOWNSHIP.
5.

ALL SOIL EROSION AND SILT MUST BE CONTROLLED AND CONTAINED ONSITE.
6.

ALL EXCAVATION UNDER OR WITHIN 3- FEET OF PUBLIC PAVEMENT, EXISTING OR PROPOSED, SHALL BE BACKFILLED AND COMPACTED WITH SAND (CLASS II MDOT -MINIMUM).
7.

THE CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGE TO EXISTING UTILITIES.
8.

THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL LENOX TOWNSHIP PERMITS INCLUDING A PERMIT TO OCCUPY PUBLIC UTILITY EASEMENTS AND PUBLIC RIGHTS-OF-WAY.
9.

TRENCH BACKFILL IN COUNTY RIGHTS-OF-WAY SHALL CONFORM TO MACOMB COUNTY DEPARTMENT OF ROADS REQUIREMENTS AND BE SUBJECT TO THE APPROVAL OF THE SAME.
10.

ALL WATER & SANITARY TAPS SHALL BE PERFORMED BY A PRE-QUALIFIED CONTRACTOR APPROVED BY THE TOWNSHIP.
11.

THE DEVELOPER SHALL BE RESPONSIBLE FOR PROVIDING POSITIVE DRAINAGE TO STORM WATER OUTLETS ON SITE TO ELIMINATE STANDING WATER IN VACANT AREAS DURING CONSTRUCTION OF THE DEVELOPMENT.
12.

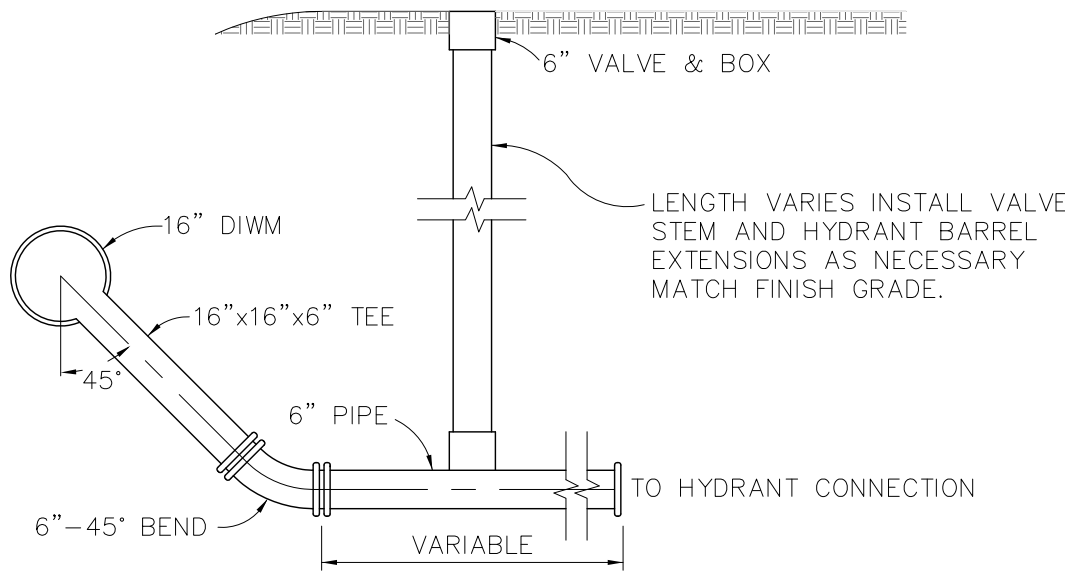
IF ANY DISCREPANCY BETWEEN THESE PLANS AND THE JURISDICTIONAL AGENCY STANDARDS OCCURS, THE AGENCY STANDARDS SHALL GOVERN.

STANDARD SPECIFICATIONS

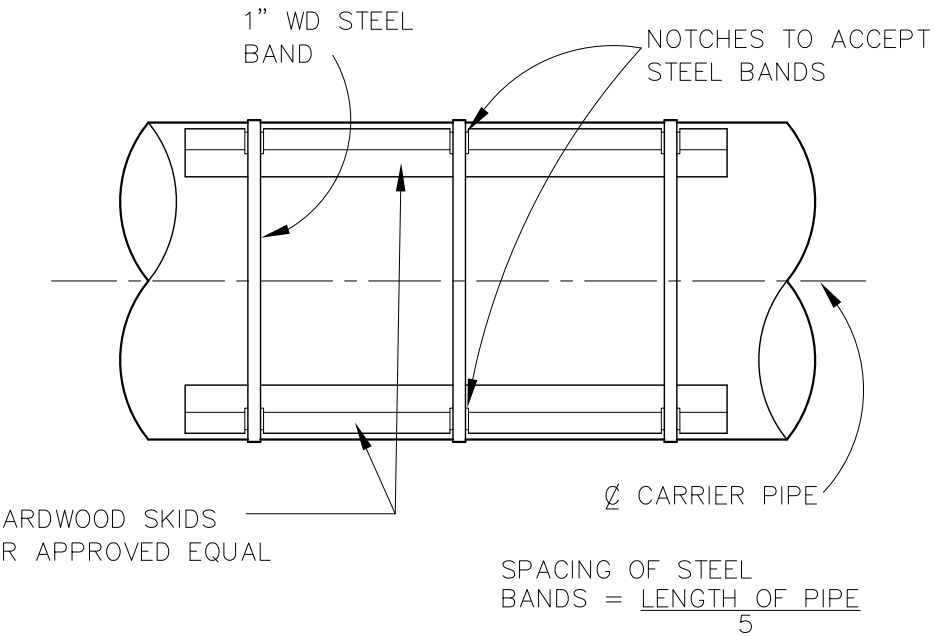
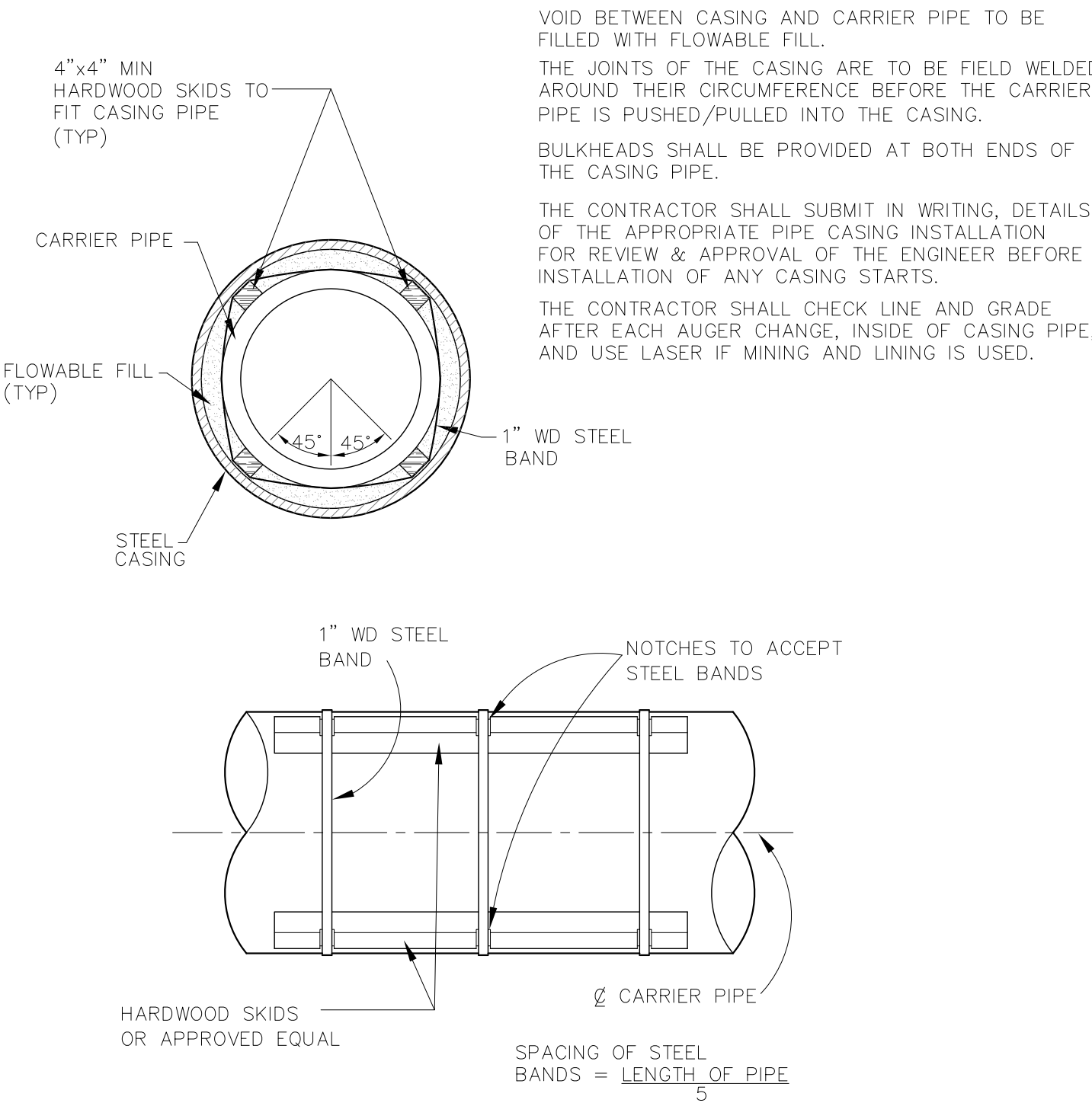
ALL WORK SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF LENOX TOWNSHIP, MACOMB COUNTY DEPARTMENT OF ROADS, MICHIGAN DEPARTMENT OF TRANSPORTATION AND THE MACOMB COUNTY OFFICE OF PUBLIC WORKS COMMISSIONER, AS APPLICABLE.

LENOX TOWNSHIP STANDARD SPECIFICATIONS ARE AVAILABLE FROM THE OFFICE OF THE ENGINEER, TRI-COUNTY ENGINEERING CONSULTANTS (810) 394-7887, WHICH INCLUDE THE APPLICABLE SECTIONS OF THE FOLLOWING:

DIVISION 1	GENERAL REQUIREMENTS
DIVISION 2	EXISTING CONDITIONS
DIVISION 3	CONCRETE
DIVISION 22	UTILITIES/ WATER SANITARY
DIVISION 31	EARTHWORK
DIVISION 32	SITE WORK



HYDRANT DETAIL TO BLOW-OFF SEDIMENT  
(NTS)




RCP UNDER HIGHWAY OR STREETS SHALL BE ASTM DESIGNATION C76, CLASS 4.  
RCP UNDER RAILROADS SHALL BE ASTM DESIGNATION C76, CLASS 5.


STEEL CASING PIPE SHALL BE UNCOATED PIPE MEETING THE REQUIREMENTS OF EITHER ASTM A53, (TYPE E OR S, GRADE B) OR ASTM A139 (GRADE B) AND SHALL CONFORM TO THE FOLLOWING TABLE:

NOMINAL SIZE OF CASING PIPE (INCHES)	MIN. WALL THICKNESS UNDER HIGHWAY OR STREET (INCHES)	MIN. WALL THICKNESS UNDER RAILROAD (INCHES)
12	0.250	0.281
18	0.250	0.312
20	0.250	0.344
24	0.250	0.406
30	0.312	0.469
36	0.312	0.531
42	0.531	0.562
48	0.609	0.609
54	0.687	0.687

CASING DETAILS

(NTS)

**LENOX TOWNSHIP**  
**Water and Sanitary Sewer Lead Standards**

**TRI-COUNTY**  
Engineering Consultants

**General Standards**

1. Notify the Lenox Township Department of Public Works (586-749-0230) a minimum of 48-hours prior to the start of construction.
2. All excavation under or within a 1 on 1 influence of public pavement, existing or proposed shall be backfilled and compacted with sand (Class II MDOT - minimum).
3. All pipe material, construction and testing shall conform to the current standards and specifications of the Township, the manufacturer and the appropriate ASTM requirements.
4. Provide 10 feet minimum separation between adjacent utilities and 15 inches between crossing utilities.
5. All building lead work and pipe trenches shall be performed under the Township's DPW inspection. All trenches shall not be covered until inspected and accepted.
6. Filed verify existing public line depth and location prior to start.
7. All public line taps shall be made by Lenox Township contractor.
8. Bidding will start immediately after connection is constructed.

**Water Service Standards**

1. All water pipes shall be 1" type K Copper with 5-1/2" minimum cover.
2. Stop and Waste Cook shall be installed on influent and effluent side of meter setting.
3. Meter Jumper shall be installed for testing purposes only.
4. Meter setting shall be in basement or utility room on an easily accessible place.
5. Meter shall not be set under house without basement.

**Sanitary Sewer Service Standards**

1. Minimum sewer or diameter is 8-inch SDR 23.6 or Schedule 40 PVC with glued joints. Minimum pipe slope shall be of 1% or 1/8" per 1 foot (4% or 1/2" per 1 foot max). For 8-inch and larger diameter sewers, use PVC SDR 26 w/ 4" diameter inspection manhole. Minimum pipe slope shall be of 0.8% or 1/10" per 1 foot (3% or 1/2" per 1 foot max).
2. All sewer leads shall be constructed with wyes at connection to main unless otherwise directed by the Township's DPW.
3. All sewers shall be constructed with 9 feet minimum cover at the building.
4. Cleanouts shall be provided at all bends and every 100 feet of pipe runs.
5. No ground water, storm water, construction water, downspout drainage, weep tile drainage shall be allowed to enter any sanitary sewer installation.
6. Dissimilar types and sizes of pipes shall be joined using an approved adaptor per the current State plumbing code.

Lenox Township  
Department of Public Works  
59960 Grafton Avenue  
Lenox Twp, MI 48048  
Mr. Cameron Trombly  
Tel (586) 749-0230  
ctrombly@lenoxwp.org

Lenox Township  
Building Department  
63870 Grafton Ave  
Lenox Twp, MI 48050  
Mrs. Cindy Heston  
Tel (586) 727-2085  
cheston@lenoxwp.org

**Plastic Water Service Standards**  
Only allowed with special approval by the Township Board and as recommended by the Township DPW and Engineer

**Requirements for Tracer Wire**  
Wire shall be a minimum of 18 gauge, insulated, single-conductor copper wire  
Tracer wire insulation color for non-metallic sewer pipe shall be green  
Tracer wire insulation color for non-metallic, potable water pipe shall be blue  
Exterior access location shall include a means of protecting the tracer wire

**Installation**  
The water tracer wire shall start in a tracer box located at grade, then be brought down to a grounding clamp which must be attached to the copper service stub (clamp shall be bronze or stainless steel). From there it must run above and parallel to the plastic water pipe to the house foundation and grounded.

The sewer tracer wire shall start in a tracer box located at grade (the same box as noted above), then be brought down to the sewer lateral. This line is not attached to the copper service stub. From there it must run above and parallel to the plastic sewer pipe to the house foundation and grounded.

**Tracing the Wire**  
In order to trace the wire, it needs a return path to ground. Therefore the wire must be attached to an approved grounding conductor (such as copper or copper coated steel) at the point where the pipe enters the footing/foundation. The tracer is to be attached to the grounding rod with a brass or stainless steel clamp. A 2 foot grounding rod is adequate. Rebar is not acceptable. Tracing wire shall not be bonded to the grounding system inside the home or grounded to the homes foundation. Do not loop tracing wire. When a locating signal is sent down looped lines, which are close together, the tracer signal down the wire will be canceled out by the return signal.

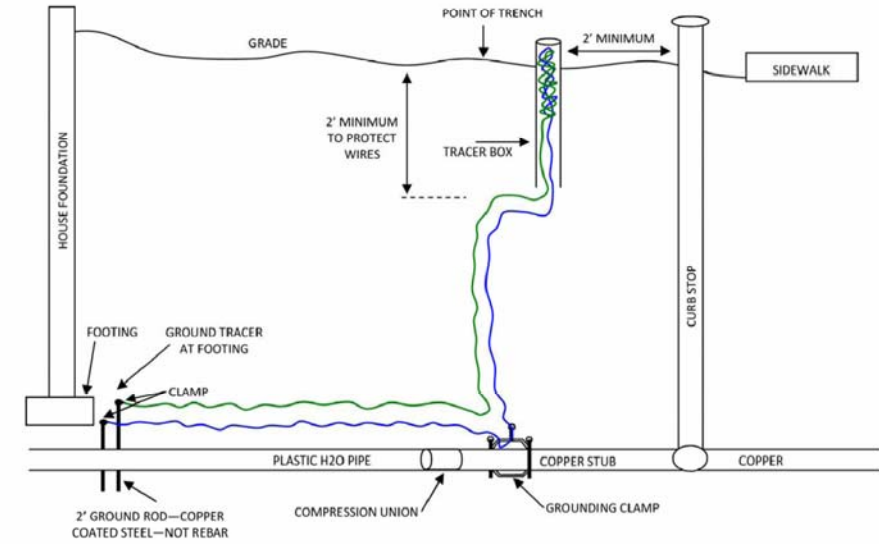
**Location**  
The box shall be installed a minimum of 2 feet from the curb stop, toward the home. This convention will help when using a metal detector to find a curb stop or trace box. Wires need to be a minimum of 2 feet-deep to protect from irrigation and landscaping. Leave extra (slack) wire in the tracer box to allow for shift due to frost, and for removal of the tracer cover. Just as with a curb stop, the box shall not be paved over in the driveway or sidewalk.

Maintenance, repair, and adjustments to final grade shall be the owners or contractors responsibility. See the Tracer Wire Diagram (PDF) for more information.

**Tracer Box**  
The tracer box shall have a metal cover to aid in locating. Though the box cover does not have to be labeled, it is preferred that it say "Tracer Wire." It cannot be labeled "Electric."

**Grounding Clamp for Copper Stub**  
The clamp shall be bronze or stainless steel to prevent corrosion.

Tracer Wire Diagram



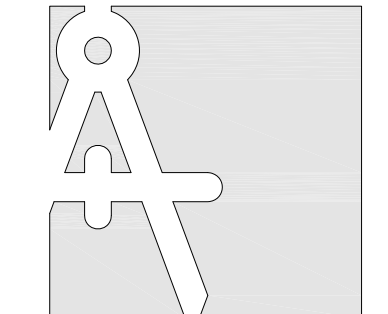
Both tracer wires (water & sanitary) are to be grounded at the footing. Rebar is not allowed due to rusting. Separate grounds are required to prevent the trace wire from being looped. Tracer is to be attached to the ground rod with a brass or stainless steel clamp.

Only the water tracer is to be clamped to the copper service stub. (This clamp must be brass or stainless steel.)

The tracer box is to be a minimum of 2' from the curb stop (toward the home). This should avoid utilities that run along the front lot line and aid in locating with a metal detector.

Extra tracer wire should be brought up into the tracer box to allow for frost shift and removal of the tracer cover.

Tracer wires on the street side of the trench must be a minimum of 2' deep to prevent damage from irrigation



**TRI-COUNTY**  
Engineering Consultants

48701 Hayes Road  
Shelby Twp, MI 48315  
TEL: (810) 394-7887  
FAX: (586) 666-4642

info@Tri-CountyEng.com  
www.Tri-CountyEng.com



CLIENT NAME:  
**LENOX TOWNSHIP**  
MACOMB COUNTY

3 WORKING DAYS  
800-482-7171



**Know what's below.**  
**Call before you dig.**

PRIOR TO CONSTRUCTION, ALL EXISTING UTILITIES, LOCATION AND DEPTH WITHIN THE PROJECT AREA SHALL BE FIELD VERIFIED. CALL MISS DIG SYSTEM 3 WORKING DAYS PRIOR TO CONSTRUCTION.

UTILITY INFORMATION SHOWN ON THIS DRAWING ARE APPROXIMATE AND MAY BE ACCORDING TO AVAILABLE RECORD OR DISCLOSED INFORMATION BY VARIOUS UTILITY COMPANIES, PUBLIC AGENCIES, OR OTHER SOURCES AND THIS MAY NOT NECESSARILY REFLECT ACTUAL FIELD LOCATIONS AND NO GUARANTEE IS GIVEN TO COMPLETENESS OR ACCURACY.

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PROJECT NAME:

**LENOX TOWNSHIP**

**WATER & SANITARY**  
**SUPPLEMENTAL DETAILS**

PROJECT LOCATION:

SEC ., T04N, R13E  
LENOX TOWNSHIP  
MACOMB COUNTY

Drawn By: TCCE  
Checked By: LEDPW  
Approved By: LENOX

REVISIONS:

1.

9/28/18
2.

10/22/19
3.

02/27/20
4.

01/12/25



SCALE VERIFICATION:

0 0.5 1  
BAR IS ONE-INCH  
ADJUST SCALES ACCORDINGLY IF NOT

SCALE:

NONE

DRAWING NO:

LenoxStdWM-DEV

Sheet of