

**GENERAL NOTES**

- ALL WATER AND SANITARY SEWER FACILITIES TO BE DESIGNED AND CONSTRUCTED SHALL CONFORM TO THE REQUIREMENTS LISTED AND DETAILED IN THE GEORGETOWN MUNICIPAL WATER AND SEWER SYSTEM (GMWSS) WATER SYSTEM AND SEWAGE SYSTEM IMPROVEMENT SPECIFICATION MANUALS (LATEST EDITIONS). THESE GENERAL NOTES AND STANDARD DETAILS ATTACHED HEREIN REFLECT THE SAME REQUIREMENTS LISTED AND DETAILED IN THE GMWSS SPECIFICATION MANUALS. IN CASE OF CONFLICTS WITH THE PROJECT WRITTEN SPECIFICATION OR STANDARD DETAILS, GMWSS STANDARDS SHALL GOVERN. SUBSTITUTIONS AND DEVIATIONS SHALL BE PERMITTED ONLY WHEN WRITTEN APPROVAL HAS BEEN ISSUED BY GMWSS OR THE ENGINEER. ALL CONSTRUCTION AND INSTALLATION OF MATERIALS BEING USED SHALL BE IN CONFORMANCE WITH THE PLANS PREPARED BY THE ENGINEER, UNLESS MODIFIED HEREIN. GMWSS WILL MAKE THE FINAL DECISION IN ANY DISCREPANCY.
- FAILURE TO CONFORM TO STANDARDS:** FAILURE TO CONFORM TO GMWSS STANDARDS, OR FOLLOW PLANS AND WORK SCHEDULES AS DESIGNED BY THE ENGINEER WILL RESULT IN RECONSTRUCTION OF AFFECTED SECTION(S) OF THE PROJECT AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- CONTRACTOR SHALL MAINTAIN A CURRENT SET OF CONSTRUCTION PLANS ON THE JOB SITE DURING ALL PHASES OF CONSTRUCTION.
- SAFETY:** ALL CONSTRUCTION MUST COMPLY WITH ALL LOCAL SAFETY CODES AND OSHA REGULATIONS. THE CONTRACTOR SHALL BE LIABLE FOR ALL INJURIES OCCURRING TO WORKERS OR OTHERS DUE TO MISHANDLING OR SUBSTANDARD SAFETY PROCEDURES DURING CONSTRUCTION.
- LICENSING AND PERMITTING:** CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL LOCAL BUSINESS LICENSING AND PERMITS REQUIRED FOR WORKING AND CONSTRUCTION IN SCOTT COUNTY. ANY STATE LEVEL PERMITS NOT OBTAINED BY THE ENGINEER SHALL BE OBTAINED BY THE CONTRACTOR. COPIES OF THE APPROVED PERMITS SHALL BE MAINTAINED AT THE SITE AND AVAILABLE FOR REVIEW BY RESIDENT INSPECTOR.
- LIMITS OF CONSTRUCTION:** DISTURBANCE OF AREAS BEYOND THE LIMITS OF CONSTRUCTION OR EASEMENTS AS SHOWN ON THE DESIGN PLANS SHALL NOT BE DISTURBED UNLESS AUTHORIZED BY GMWSS OR THE ENGINEER. THE CONTRACTOR SHALL BE SOLELY LIABLE FOR ANY WORK PERFORMED OUTSIDE OF LEGAL CONSTRUCTION OR EASEMENTS LIMITS.
- EXISTING UTILITIES:** THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES PRIOR TO ANY EXCAVATION OR WORK NEAR THEIR LINES. WHETHER SHOWN OR NOT, IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD LOCATE ALL EXISTING UTILITIES WITHIN THE CONSTRUCTION LIMITS BEFORE BEGINNING CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES TO UTILITIES RESULTING FROM THEIR CONSTRUCTION ACTIVITIES. THE CONTRACTOR, AT NO ADDITIONAL EXPENSE TO GMWSS, SHALL REPAIR OR REPLACE ANY EXISTING UTILITIES THAT ARE DISTURBED OR DAMAGED DURING CONSTRUCTION.
- THE CONTRACTOR SHALL PROVIDE TEMPORARY COVER OR EROSION CONTROL TO ALL AREAS DISTURBED BY CONSTRUCTION AND SHALL GRADE AND SEED UPON COMPLETION OF THAT WORK.
- THE CONTRACTOR SHALL IMPLEMENT ADEQUATE SOIL STABILIZATION PROCEDURES AND MULCHING TO SLOPES EXCEEDING 4:1 TO PREVENT EROSION OR LANDSLIDE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY UNEXPECTED DAMAGES TO EXISTING AND PROPOSED STRUCTURES AND ROADWAY DURING CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADEQUATE TRAFFIC CONTROL AND SAFETY DURING CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF TRAFFIC IN ACCORDANCE WITH CITY, COUNTY, AND STATE REQUIREMENTS.
- ROCK EXCAVATION:** ALL EXCAVATION IS UNCLASSIFIED AND THERE SHALL BE NO ADDITIONAL PAY ITEM FOR ROCK EXCAVATION.
- FILL AREAS:** ANY WATER OR SEWER LINES TO BE INSTALLED IN FILL AREAS SHALL REQUIRE THE CONTRACTOR/DEVELOPER TO PROVIDE INSPECTION AND TESTING SERVICES BY A REGISTERED GEOTECHNICAL ENGINEER TO ENSURE THAT EACH LIFT IN THE PROPOSED TRENCH AREA WAS CONSTRUCTED AND COMPACTED TO 95% STANDARD PROCTOR DENSITY FROM BOTTOM OF FILL TO 30 INCHES ABOVE TOP OF PIPE. COPIES OF ALL TEST AND INSPECTION REPORTS SHALL BE CERTIFIED BY THE GEOTECHNICAL ENGINEER AND SUBMITTED TO GMWSS PRIOR TO PIPE INSTALLATION.
- EXCESS MATERIALS AND DIRT RESULTING FROM CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DISPOSE OF OR REMOVE.

**WATER AND SEWER TESTING NOTE:**

- ALL WATER AND SEWER TESTING SHALL BE SCHEDULED WITH GMWSS RESIDENT INSPECTORS AND THE ENGINEERS/DEVELOPERS FIELD INSPECTORS A MINIMUM OF 48 HOURS PRIOR TO TESTING.

**CONTAMINATION PREVENTION REQUIREMENTS:**

- ALL PIPING, VALVES, FITTINGS, ETC. DELIVERED TO THE JOB SITE SHALL BE STORED ELEVATED ABOVE THE GROUND AND SHALL BE COVERED WITH PLASTIC, TARPS OR SIMILAR MEANS TO PROTECT FROM EXPOSURE TO DUST AND DEBRIS.
- ALL PIPING, FITTINGS AND VALVES SHALL BE THOROUGHLY CLEANED OF DUST, DIRT AND DEPOSITS BY SWABBING OR OTHER MEANS ACCEPTABLE TO GMWSS. EACH COMPONENT SHALL BE CLEANED ON THE SAME DAY IT IS TO BE INSTALLED.
- ALL OPENINGS IN THE PIPELINE SHALL BE CLOSED WITH AN APPROVED WATERTIGHT PLUG AT THE END OF EACH DAY WHEN PIPE LAYING HAS STOPPED, OR FOR OTHER REASONS SUCH AS REST OR MEAL BREAKS.

**WATER LINE CONSTRUCTION NOTES**

- CONNECTION TO EXISTING SYSTEM:** ALL CONNECTIONS TO THE EXISTING SYSTEM MUST BE STRICTLY COORDINATED WITH GMWSS.
- CONTRACTORS SHALL NOTIFY GMWSS WHEN THERE IS A NEED TO FILL OR ISOLATE WATER LINES. WATER DISTRIBUTION SYSTEM VALVES SHALL ONLY BE OPERATED BY GMWSS PERSONNEL.
- DEPTH OF BURY:** PROVIDE 30" MINIMUM COVER FOR ALL WATER LINES. UNDER NO CIRCUMSTANCES SHALL COVER DEPTHS BE GREATER THAN 5 FEET WITHOUT GMWSS APPROVAL.
- TRENCH DEPTH:** INCREASED TRENCH DEPTH WHEN WATER LINES ARE REQUIRED TO CROSS UNDER AN EXISTING UTILITY, CULVERT, OR DRAINAGE DITCH IS NOT A SEPARATE PAY ITEM. CONTRACTOR SHALL INCLUDE THE COST OF INCREASED DEPTH IN HIS UNIT PRICE.
- PIPING:**
  - DUCTILE IRON PIPE 12" IN DIAMETER AND LESS SHALL BE PRESSURE CLASS 350 CONFORMING TO AWWA C151, BE CEMENT-MORTAR LINED AND SEAL COATED IN ACCORDANCE WITH AWWA C104, AND HAVE PUSH-ON JOINTS IN ACCORDANCE WITH AWWA C111.
  - PVC PIPE SHALL CONFORM TO ASTM 2241 AND HAVE A MINIMUM THICKNESS OF SDR 21 PRESSURE CLASS 200 WITH PUSH-ON JOINTS.
- FITTINGS:** FITTINGS FOR BOTH DUCTILE IRON PIPE AND PVC PIPE SHALL BE PRESSURE CLASS 350 COMPACT DUCTILE IRON MECHANICAL-JOINT CONFORMING TO AWWA C153, AWWA C104, AND AWWA C111.
- FIRE HYDRANTS:** THE CONTRACTOR SHALL FURNISH AND INSTALL FIRE HYDRANTS WHERE SHOWN ON THE PLANS. HYDRANTS SHALL CONFORM IN ALL RESPECTS TO THE REQUIREMENTS OF AWWA C502. HYDRANTS SHALL BE MUELLER SUPER CENTURION OR KENNEDY K81D. HYDRANTS SHALL BE DESIGNED FOR 250 PSI WORKING PRESSURE AND SHOP TESTED TO 500 PSI PRESSURE WITH MAIN VALVE BOTH OPENED AND CLOSED. UNDER TEST THE VALVE SHALL NOT LEAK. FINAL LOCATION & ORIENTATION SETTING OF HYDRANTS WILL BE APPROVED IN THE FIELD BY GMWSS.
- SERVICE METERS:** FOR NEW SERVICE, GMWSS WILL SET THE TUB, SETTER, AND METER WHEN CUSTOMERS CALL FOR SERVICE. FOR EXISTING SERVICES BEING RELOCATED, THE CONTRACTOR WILL SET A NEW TUB, NEW SETTER, AND NEW METER WITH MATERIALS INCLUDED IN THE UNIT BID PRICE. THE FINAL LOCATION OF NEW AND RELOCATED CUSTOMER SERVICES WILL BE APPROVED IN THE FIELD BY GMWSS.
- SERVICE LINES:**
  - FOR SINGLE METER SERVICES CROSSING TO THE OPPOSITE SIDE OF THE STREET, THE SERVICE LINES ARE TO BE ¾" PE TUBING ENCASED IN 2" PVC CASING PIPE.
  - FOR DOUBLE METER SERVICES CROSSING TO THE OPPOSITE SIDE OF THE STREET, THE SERVICE LINES ARE TO BE 1" PE TUBING ENCASED IN 2" PVC AND SET ON THE PROPERTY LINE TO SERVE TWO LOTS.
  - SERVICE LINES CROSSING THE STREET MUST HAVE A CURB VALVE ON THE CUSTOMER END AND CORPORATION STOP TURNED ON.
- TRACER WIRE:** ALL DUCTILE IRON AND PVC WATER MAINS AND 2" PVC SERVICE CASINGS SHALL HAVE A TRACER WIRE (COPPER-SINGLE STRAND INSULATED WIRE, 12 GAUGE) TAPED TO THE TOP OF THE LINE. SPLIT BOLT CONNECTORS, OR WIRE NUT FILLED WITH SILICONE SHALL BE USED AT EACH SPLICE AND WRAPPED WITH ELECTRICAL TAPE.
- SEWER CROSSING:** WHEN A WATER LINE RUNNING PARALLEL TO OR CROSSING A SANITARY SEWER IS UNABLE TO OBTAIN AN 18" VERTICAL SEPARATION OR 10-FOOT HORIZONTAL SEPARATION, THE SANITARY SEWER SHALL BE ENCASED IN LOW STRENGTH CONCRETE MATERIAL PER ASTM D5971. THE CONCRETE SHALL EXTEND 10 FEET BEYOND THE POINT OF INTERFERENCE, BOTH DIRECTIONS. COMPREHENSIVE STRENGTH TESTS SHALL BE IN ACCORDANCE WITH ASTM D4832.
- CURBS:** ON STREETS WHERE CURBS ARE REQUIRED, WATER LINES SHALL NOT BE INSTALLED UNTIL CURBS ARE CONSTRUCTED
- LOCATION POST:** THE CONTRACTOR SHALL INSTALL A 2"x4" BY 5-FOOT TALL ABOVE GRADE, WOOD LOCATION POST AT THE ENDS OF ALL WATER LINES, INCLUDING WATER MAINS AND WATER SERVICE CONNECTIONS, SO AS TO IDENTIFY THE TERMINATION POINT OF THE LINE. THE LOCATION POST SHALL BE PAINTED BLUE AND MARKED SO AS TO IDENTIFY THE PIPE AS A WATER LINE. THE BOTTOM OF STAKES SHALL BE AT THE DEPTH OF STUB.
- PIGGING:** AFTER INSTALLATION AND PRIOR TO TESTING, THE COMPLETE WATER SYSTEM (INCLUDING ALL MAINS, SERVICE LINES, HYDRANTS, BLOW-OFFS, AIR RELEASE VALVES AND ALL OTHER APPURTENANCES) SHALL BE THOROUGHLY CLEANED TO REMOVE ALL FOREIGN MATTER. GMWSS SHALL BE NOTIFIED AT LEAST 48 HOURS PRIOR TO CLEANING ACTIVITIES. THE CLEANING OF THE PIPING SYSTEM SHALL BE ACCOMPLISHED BY THE CONTROLLED AND PRESSURIZED PASSAGE THROUGH THE SYSTEM WITH A CYLINDRICAL 1-2 LBS PER CU.FT. NON-COATED POLYURETHANE PLUGS (LIGHT DUTY SWAB). A PIGGING PLAN SHALL BE APPROVED BY GMWSS AND ALL PIGGING OF LINES MUST BE WITNESSED BY THE GMWSS INSPECTOR. THE POLY PIGS SHALL BE REMOVED AND DISCHARGED FROM THE SYSTEM AT A POINT NEAR TO THE END OF THE SYSTEM. THE CONTRACTOR MUST DEMONSTRATE TO GMWSS THAT THIS WORK WILL BE PERFORMED BY EXPERIENCED SUPERVISORS AND PERSONNEL WHO HAVE PROVIDED THE CLEANING SERVICE OF COMPARABLE SYSTEMS.
- PRESSURE TESTING:** WATER MAINS SHALL BE TESTED AT A MINIMUM OF 150 PSI FOR 24 HOURS. LOSS OF PRESSURE DURING THE TEST SHALL NOT EXCEED 0 PSI IN 4 HOUR PERIOD AND 5 PSI IN 24 HOURS AS SET FORTH IN THE LATEST EDITION OF THE GMWSS SPECIFICATIONS MANUAL.
- DISINFECTION:** PRIOR TO PLACING INTO SERVICE ALL WATER LINES SHALL BE DISINFECTED IN STRICT ACCORDANCE WITH 401 KAR 8:150 SECTION 4: ALL NEW WATER DISTRIBUTION SYSTEMS, INCLUDING STORAGE DISTRIBUTION TANKS AND REPAIRED PORTIONS OF OR ALL EXTENSIONS TO EXISTING SYSTEMS, SHALL BE THOROUGHLY DISINFECTED BEFORE BEING PLACED IN SERVICE. DISINFECTION SHALL BE BY THE USE OF CHLORINE OR CHLORINE COMPOUNDS IN SUCH AMOUNTS TO INSURE A CONCENTRATION OF AT LEAST 50 PPM HAS BEEN OBTAINED THROUGHOUT THE PIPE. THE CHLORINATED WATER SOLUTION SHALL REMAIN IN THE PIPE FOR 24 HOURS AND HAVE A MINIMUM RESIDUAL OF AT LEAST 25 PPM. THE DISINFECTION PROCEDURE SHALL BE REPEATED UNTIL THE MINIMUM RESIDUAL OF 25 PPM HAS BEEN OBTAINED, THEN FOLLOWED BY THOROUGH FLUSHING."
- BACI:** NEW OR REPAIRED WATER DISTRIBUTION LINES SHALL NOT BE PLACED INTO SERVICE UNTIL BACTERIOLOGICAL SAMPLES TAKEN AT THE POINTS SPECIFIED IN 401 KAR 8:150 SECTION 4 ARE EXAMINED AND ARE SHOWN TO BE NEGATIVE FOLLOWING DISINFECTION.

**SANITARY SEWER CONSTRUCTION NOTES**

- PIPING:**
  - GRAVITY SEWER PIPE 12" DIAMETER AND LESS:
    - DEPTH UP TO 15 FEET, PIPE AND FITTINGS SHALL BE PVC CONFORMING TO THE REQUIREMENTS OF ASTM 3034, SDR 35.
    - DEPTH GREATER THAN 15 FEET:
      - PIPE SHALL BE DUCTILE IRON PRESSURE CLASS 350 CONFORMING TO AWWA C151, AND HAVE PUSH-ON JOINTS IN ACCORDANCE WITH AWWA C111. LINING SHALL BE PROTECTO 401 CERAMIC EPOXY.
      - FITTINGS SHALL BE DUCTILE IRON PRESSURE CLASS 350 COMPACT MECHANICAL-JOINT CONFORMING TO AWWA C153, AND AWWA C111. LINING SHALL BE PROTECTO 401 CERAMIC EPOXY.
    - STREAM CROSSING: GRAVITY SEWERS CROSSING A CREEK OR STREAM SHALL BE DUCTILE IRON FROM MANHOLE TO MANHOLE AND CONFORM TO ITEM A.2 ABOVE.
  - FORCE MAINS SHALL BE PVC AND CONFORM TO ASTM 2241 AND HAVE A MINIMUM THICKNESS OF SDR 21 PRESSURE CLASS 200 WITH PUSH-ON JOINTS.
  - SEWER LATERALS SHALL BE 6" PVC CONFORMING TO ITEM A.1 ABOVE. SEWER LATERALS CROSSING STREET OR LATERALS OVER 6 FEET IN LENGTH SHALL HAVE A CLEAN-OUT LOCATED ON THE PROPERTY. CLEAN-OUT HUBS AND BRASS CAPS TO BE SUPPLIED BY CONTRACTOR AND BROUGHT TO A MINIMUM OF FIVE (5') OF FINISHED GRADE.
- GRAVITY SEWER INSTALLATION:** ALL GRAVITY SEWER LINES SHALL BE INSTALLED USING A PIPE LASER INSTRUMENT FOR THE VERTICAL AND HORIZONTAL ALIGNMENT.
- LOCATOR TAPE:** ALL BURIED PVC GRAVITY PIPE SHALL HAVE A NON-METALLIC LOCATOR TAPE LAID 18" ABOVE THE PIPE LINE. THE TAPE SHALL HAVE THE WORD "CAUTION" PRINTED ON IT AND SHALL IDENTIFY THE PIPE AS A SEWER LINE.
- TRACER WIRE:** ALL PVC FORCE MAINS SHALL HAVE A TRACER WIRE (COPPER-SINGLE STRAND INSULATED WIRE, 12 GAUGE) TAPED TO THE LINE. SPLIT BOLT CONNECTORS SHALL BE USED AT EACH SPLICE AND WRAPPED WITH ELECTRICAL TAPE.
- MANHOLES:**
  - SHALLOW MANHOLES SHALL BE LESS THAN 5 FEET IN DEPTH AND CONSTRUCTED WITH A FLAT TOP.
  - STANDARD MANHOLE SHALL BE GREATER THAN 5 FEET IN DEPTH AND CONSTRUCTED WITH A CONE TOP.
  - ALL NEW MANHOLES SHALL BE INSTALLED WITHOUT STEPS.
  - DROPS SHALL BE CONSTRUCTED INSIDE THE MANHOLE AND FITTED WITH AN INSIDE DROP SYSTEM AS MANUFACTURED BY RELINER/DURAN INC., OR APPROVED EQUAL.
- DROPS SHALL BE INSTALLED WHEN THE INCOMING PIPE IS GREATER THAN 15" ABOVE THE INVERT OF THE MANHOLE.
- FORCE MAINS ENTERING MANHOLES SHALL BE INSTALLED WITH THE INSIDE DROP SYSTEM ALONG WITH THE FORCE LINE HOOD.
- INVERTS SHALL BE PRECAST WITH A 0.10 FOOT DROP ACROSS THE INVERT. PRECAST APRON SHALL NOT BE TALLER THAN THE SPRINGLINE OF THE PIPE.
- MANHOLE SECTION JOINTS:**
  - JOINTS SHALL HAVE A FLEXIBLE PREFORMED BUTYL RUBBER SEALANT MEETING THE REQUIREMENTS OF ASTM C990 INSTALLED ON THE INSIDE LIP OF THE JOINT AND AN EXTERIOR BUTYL RUBBER JOINT WRAP MEETING THE REQUIREMENTS OF ASTM C877 TYPE I INSTALLED AROUND THE EXTERIOR BARREL.
- PIPE CONNECTORS:**
  - PIPE OPENINGS SHALL HAVE A RESILIENT RUBBER CONNECTOR INTEGRALLY CAST INTO THE MANHOLE AND CONFORM TO THE REQUIREMENTS OF ASTM C923.
  - RESILIENT RUBBER CONNECTORS SHALL BE A-LOK OR Z-LOK BY A-LOK PRODUCTS, OR CAST-A-SEAL BY PRESS-SEAL CORPORATION, OR APPROVED EQUAL.
  - CONNECTORS REQUIRING EXPANSION RINGS TO COMPRESS THE RUBBER CONNECTOR TO THE CONCRETE OPENING WILL NOT BE APPROVED.
- EXISTING MANHOLES SHALL BE CORE DRILLED BY MACHINE PROCESS ONLY. PIPE SHALL BE FITTED WITH A FERNO CONCRETE MANHOLE ADAPTER AND ANNULAR SPACE FILLED WITH GROUT.
- DOWNSTREAM MANHOLE RIM ELEVATIONS SHALL BE ONE (1) FOOT BELOW THE LOWEST FINISHED FLOOR ELEVATION OF ANY STRUCTURES CONNECTED TO THE UPSTREAM SEWER LINE.
- AS-BUILT INFORMATION:** CONTRACTOR/ENGINEER SHALL EMPLOY A SURVEYOR TO SURVEY THE FINAL MANHOLE HORIZONTAL COORDINATES, INVERTS, AND TOP OF RIM ELEVATIONS AFTER GRADING IS COMPLETED. AS-BUILT DRAWING PLAN AND PROFILE SHEETS SHALL BE UPDATED TO REFLECT THE FINAL SURVEY.
- DRAINS:** ROOF DRAINS, FOUNDATION DRAINS, SUMP PUMP DRAINS AND ALL OTHER CLEAN WATER TO THE SANITARY SEWER ARE PROHIBITED. NO BUILDING SHALL BE CONNECTED TO A SEWER LATERAL UNTIL THE BUILDING IS UNDER ROOF.
- BACKWATER VALVE:** A BACKWATER VALVE SHALL BE INSTALLED ON HOUSES WITH A SEWAGE PUMP INSTALLED AND AS DIRECTED BY GMWSS.
- GREASE TRAPS:** ALL RESTAURANTS, FOOD PREPARATION SERVICES, OR ANY OTHER SIMILAR OPERATIONS WITH COMMERCIAL KITCHENS ARE REQUIRED TO HAVE AN EXTERIOR GREASE TRAP TANK INSTALLED. THE TANK MUST MEET GMWSS REQUIREMENTS AS SHOWN IN STANDARD DETAIL SHEETS. ALL GREASE TRAPS WILL BE A MINIMUM OF 1000 GALLONS UNLESS GMWSS DETERMINES THAT A LARGER VOLUME IS REQUIRED.
- LOCATION POST:** THE CONTRACTOR SHALL INSTALL A 2"x4" BY 5-FOOT TALL ABOVE GRADE, WOOD LOCATION POST AT ALL SANITARY SEWER PLUGS, INCLUDING SEWER MAIN AND SEWER SERVICE LATERAL CONNECTIONS, SO AS TO IDENTIFY THE TERMINATION POINT OF THE LINE. THE LOCATION POST SHALL BE PAINTED GREEN AND MARKED SO AS TO IDENTIFY THE SANITARY SEWER LINE. THE BOTTOM OF STAKES SHALL BE AT THE DEPTH OF THE STUB. STUBS SHALL BE LOCATED WITHIN A MINIMUM OF 5 FEET OF FINISHED GRADE.

- SEWER LINE TESTING AND VIDEO INSPECTION SHALL NOT BE PERFORMED UNTIL NEW WATER LINES HAVE BEEN INSTALLED.
- VIDEO INSPECTION:** PRIOR TO VIDEO INSPECTIONS, ALL SEWER LINES SHALL BE CLEANED WITH A PRESSURE JET NOZZLE. ONCE CLEANED, ALL SEWER LINES ARE TO BE VIDEO INSPECTED TO ENSURE PROPER INSTALLATION OF SEWER LINES AND CORRECT LOCATIONS OF ALL TAPS. ALL VIDEO RECORDINGS OF SANITARY SEWERS SHALL BE IN DIGITAL VIDEO FORMAT. THIS INCLUDES A PDF FORMAT INSPECTION REPORT AND THE FULL MPEG VIDEO ON A DVD OR THUMB DRIVE. THE REPORT SHALL HAVE COLOR CODED SEVERITY RATINGS FOR EACH OBSERVATION ALONG WITH AUTOMATIC VIDEO INDEXING. THIS FORMAT IS REQUIRED FOR ACCEPTANCE AND TO INSURE COMPATIBILITY WITH GMWSS GIS SYSTEM.
  - VIDEO INSPECTIONS SHALL BE REQUIRED ON SEWER LATERALS LONGER THAN 20 FEET, UNDER ROADS, OR AS REQUESTED BY GMWSS ENGINEER AND/OR GMWSS RESIDENT INSPECTOR.
- TESTING:** CONTRACTOR IS RESPONSIBLE FOR ALL TESTING. TESTING SHALL BE CONDUCTED IN THE PRESENCE OF A GMWSS RESIDENT INSPECTOR. TESTING SHALL MEET REQUIREMENTS OF THE LATEST EDITION OF THE GMWSS SEWAGE SYSTEM IMPROVEMENTS SPECIFICATION MANUAL.
  - DEFLECTION TESTS SHALL BE PERFORMED ON ALL FLEXIBLE PIPE. THE TEST SHALL BE PERFORMED AFTER FINAL BACKFILL HAS BEEN IN PLACE FOR AT LEAST 30 DAYS. A RIGID BALL OR MANDREL THAT IS NOT LESS THAN 95% OF THE INSIDE PIPE DIAMETER SHALL BE USED AND BE PULLED BY HAND IN THE DEFLECTION TEST. NO EQUIPMENT WILL BE ALLOWED TO PUSH OR PULL THE TEST BALL THROUGH THE PIPE. PIPE SHALL NOT EXCEED A DEFLECTION OF 5 PERCENT OR IT SHALL BE REPLACED. VIDEO INSPECTION CANNOT BE SUBSTITUTED FOR DEFLECTION TEST.
  - LOW PRESSURE AIR TESTS SHALL CONFORM TO ASTM F1417. LOW PRESSURE TESTS OF GRAVITY SEWER SHALL BE TESTED AT 5 PSI FOR A PERIOD OF 5 MINUTES, WITH A ZERO (0) ALLOWED PRESSURE DROP.
  - ALL MANHOLES SHALL BE TESTED USING A NEGATIVE AIR PRESSURE (VACUUM) TEST METHOD TO DEMONSTRATE THE INTEGRITY OF THE INSTALLED MANHOLE AFTER BACKFILLING. ALL TESTING PROCEDURES SHALL BE IN ACCORDANCE WITH ASTM C1244. A VACUUM OF 10" OF MERCURY SHALL BE DRAWN ON THE MANHOLE, THE VALVE ON THE VACUUM LINE OF THE TEST HEAD SHALL BE CLOSED, AND THE VACUUM PUMP SHUT OFF. THE TEST SHALL LAST 1 MINUTE WITH A 1" ALLOWED VACUUM DROP.
  - FORCE MAINS SHALL BE TESTED AT 150 PSI FOR 24 HOURS. LOSS OF PRESSURE DURING THE TEST SHALL NOT EXCEED 0 PSI IN 4 HOUR PERIOD AND 5 PSI IN 24 HOURS.

**LIST OF GMWSS APPROVED MANUFACTURER OF WATER AND SEWER PARTS & SUPPLIES**

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|---|--|
| 1. HYDRANTS – MUELLER AND KENNEDY   | 12. DI DOUBLE STRAP SERVICE SADDLES – SMITH & BLAIR, MUELLER, FORD, JCM, ROMAC                               |
| 2. METERS – SENSUS  | 13. BRASS SERVICE SADDLES – FORD and MUELLER   |
| 3. VALVES – MUELLER, KENNEDY, AMERICAN FLOW CONTROL, CLOW   | 14. BOLTED CAST COUPLINGS – SMITH & BLAIR, FORD, VIKING-JOHNSON, DRESSER, JCM, POWERSEAL, ROMAC              |
| 4. MJ FITTINGS COMPACT OR FULL BODY, MJ PACKS – McWAYNE (TYLER/UNION, CLOW), US PIPE, SIGMA                 | 15. FULL CIRCLE REPAIR CLAMPS(All Stainless Steel) – SMITH & BLAIR, MUELLER, FORD, POWERSEAL, CASCADE, ROMAC |
| 5. DI PIPE CLASS 350 – SIGMA, CLOW, US PIPE, AMERICAN DI PIPE   | 16. ALL BRASS FITTINGS(AWWA Brass) – FORD and MUELLER  |
| 6. PVC PIPE CLASS 200 OR C900 – JM MANUFACTURING, NAPCO, BRISTOL, VULCAN, DIAMOND                           | 17. BRASS NIPPLES & PIPE – STATE ORIGIN  |
| 7. PVC COUPLINGS – HARRINGTON, MULTI-FITTINGS   | 18. METER BOXES – HANCOR, ADS (WHITE), SPRINGFIELD   |
| 8. PE SERVICE PIPING – ENDOT ENDOPURE – BLUE W/CLEAR CORE. ASTM-D2737 SDR 9 WITH STAINLESS STEEL INSERTS    | 19. METER BOX LIDS – 2 PIECE TOP 18" AND 18"x24", 18"x30" EXTENSION RING – VESTAL & RUSSCO                   |
| 9. EPOXY COATED OR STAINLESS STEEL TAPPING SLEEVES – FORD, SMITH & BLAIR, JCM, POWERSEAL, ROMAC "SST"       | 20. MANHOLES FRAMES, COVERS & RINGS – J.R. HOE & SONS  |
| 10. GALVANIZED COMPRESSION COUPLINGS – SMITH & BLAIR, DRESSER, JCM POWERSEAL                                | 21. PRESSURE REGULATOR VALVE – WILKINS, WATTS, HONEYWELL   |
| 11. MECHANICAL JOINT RESTRAINTS W/BREAKAWAY WEDGE BOLTS REQUIRED (NO GRIP RINGS) – FORD, EBBA, SIGMA, ROMAC | 22. AIR RELEASE VALVE (water) – A.R.I. AND G.A. INDUSTRIES   |
|   | 23. AIR/VACUUM RELEASE VALVE (sewer) – A.R.I.  |
|   | 24. ALUMINUM LID – US FABRICATION  |

**RESIDENT INSPECTION NOTE:**  
THE DESIGN ENGINEER SHALL PROVIDE, TO THE SATISFACTION OF GMWSS, A FULL-TIME REPRESENTATIVE ON SITE TO OVERSEE ALL WATER AND SEWER CONSTRUCTION. THE ENGINEERS REPRESENTATIVE SHALL ENSURE THAT THE PROJECT WORK CONFORMS TO THE APPROVED DESIGN PLANS OF THE ENGINEER AND GOOD CONSTRUCTION PRACTICES. THE FIELD REPRESENTATIVE WILL COORDINATE AS NECESSARY WITH GMWSS INSPECTORS.

**UTILITIES**  
BUD – Before You Dig  
TELEPHONE:1-800-752-6007  
OR DIAL 811

**LOCATOR WIRE POST OR FLUSH MOUNT WIRE STATION:**  
LOCATOR POSTS OR FLUSH MOUNT WIRE STATIONS WITH WIRE CONNECTIONS SHALL BE INSTALLED ON WATER LINES AND SANITARY SEWER FORCE MAINS AS REQUIRED OR AS SHOWN ON THE PLANS AND PLACED AS DIRECTED IN THE FIELD. POSTS SHALL BE USED AT FENCE LOCATIONS AND FLUSH MOUNTS SHALL BE USED IN YARDS AND SUBDIVISIONS. LOCATIONS SHALL BE SHOWN ON RECORD DRAWINGS. SHOP DRAWINGS FOR WIRE STATIONS SHALL BE SUBMITTED AND MUST BE APPROVED PRIOR TO INSTALLATION.



DRAWING INFORMATION	SCALE : AS NOTED	BY: _____	DATE: _____	NO. _____
	DESIGNED BY : _____			
	DRAWN BY : DDM			
	CHECKED BY : AAB			
	PROJECT NO : _____			
	DATE : APR 2020			
	CADD DWG ID : _____			
<b>Georgetown Municipal Water &amp; Sewer Service</b>				
<b>SCOTT COUNTY, KENTUCKY</b>				
<b>GENERAL NOTES FOR WATER &amp; SEWER CONSTRUCTION</b>				
<b>REVISED FEBRUARY 2021</b>				
<b>Sheet No.</b>				
<b>G1</b>				