

GENERAL NOTES:

1. WATER CONSTRUCTION IS AUTHORIZED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY (NCDEQ) AND THE CITY OF HENDERSONVILLE. THE WORK IS SUBJECT TO INSPECTIONS AT ALL TIMES BY REPRESENTATIVES OF NCDEQ, THE CITY OF HENDERSONVILLE, THE OWNER, OR THE ENGINEER. THE PERMITS REQUIRE CERTIFICATION OF COMPLETION OF THE WATER SYSTEMS BY THE ENGINEER AND THE APPLICANT BEFORE FINAL OPERATING APPROVAL IS ISSUED.
2. MATERIALS AND INSTALLATION FOR WATER CONSTRUCTION SHALL CONFORM TO THE LATEST VERSIONS OF CITY OF HENDERSONVILLE SPECIFICATIONS AND DETAILS, APPROVED MATERIALS LIST, AND AWWA STANDARDS AND REQUIREMENTS.
3. THE CONTRACTOR SHALL NOTIFY NC811 & APPROPRIATE UTILITIES AGENCIES PRIOR TO PERFORMING ANY WORK.
4. REGULAR WORKING HOURS SHALL BE FROM 7:00 AM TO 5:00 PM, MONDAY THROUGH FRIDAY, EXCEPT IN CASES OF EMERGENCY OR OTHERWISE APPROVED IN WRITING BY THE CITY OR AUTHORIZED REPRESENTATIVES. THE CONTRACTOR SHALL KEEP THE CONSTRUCTION SITE SAFE FOR ANY PERSONS WHO MAY BE ON SITE DURING NON-WORKING HOURS. AT TIMES, THE ENGINEER MAY DETERMINE THAT THESE HOURS SHALL BE MODIFIED TO ACCOMMODATE SPECIAL NEEDS OF IMPACTED CUSTOMERS.
5. ALL PERSONS SHALL BE COURTEOUS AND RESPECTFUL TO THE PUBLIC. CURSING OUR FOUL LANGUAGE IS NOT PERMITTED AND WILL NOT BE TOLERATED.
6. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING TRAFFIC CONTROL ON ALL ROADWAYS DURING THE PROJECT. THE CONTRACTOR SHALL NOTIFY LOCAL EMERGENCY, SCHOOL AND OTHER NECESSARY AUTHORITIES PRIOR TO ANY STREET CLOSING OR TRAFFIC CHANGE.
7. THE CONTRACTOR, AT THEIR OWN EXPENSE, SHALL KEEP THE CONSTRUCTION SITE AND ADJACENT PUBLIC AND PRIVATE ROADWAYS CLEAN DURING THE PROJECT. THE CONTRACTOR IS ALSO RESPONSIBLE FOR CONTROLLING, SUPPRESSING, AND MITIGATING DUST WITHIN THE PROJECT AREA.
8. THE CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION IN ACCORDANCE WITH THE LINES, GRADES, AND ELEVATIONS SHOWN ON THE PLANS OR AS GIVEN BY THE ENGINEER IN THE FIELD.
9. THE CONTRACTOR SHALL VERIFY EXACT LOCATIONS AND ELEVATIONS FOR ALL UTILITIES, DRAINAGE, AND OTHER UNDERGROUND FACILITIES BOTH EXISTING AND PROPOSED. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR CONFLICTS PRIOR TO CONSTRUCTION.
10. THE CONTRACTOR SHALL PROTECT EXISTING UTILITIES DURING CONSTRUCTION. REPAIRS TO CONTRACTOR DAMAGED UTILITIES SHALL BE MADE IN ACCORDANCE WITH APPLICABLE STANDARDS OF APPROPRIATE AGENCIES AT THE CONTRACTOR'S EXPENSE.
11. THE CONTRACTOR SHALL MAINTAIN THE OPERATION OF EXISTING UTILITIES WITH THE LEAST AMOUNT OF SERVICE INTERRUPTION POSSIBLE. WATER AND SEWER INTERRUPTIONS SHALL BE MADE IN COORDINATION WITH THE CITY OF HENDERSONVILLE. CONTINUOUS SERVICE, PUBLIC HEALTH, AND SAFETY CONSIDERATIONS SHALL EXCEED ALL OTHERS. THE CONTRACTOR'S SCHEDULE, PLANS, AND WORK SHALL AT ALL TIMES BE SUBJECT TO ALTERATION AND REVISION IF NECESSARY FOR THESE CONSIDERATIONS.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE TEMPORARY OR PERMANENT RELOCATION OF STRUCTURES AND UTILITIES, INCLUDING BUT NOT LIMITED TO POLES, SIGNS, FENCES, HYDRANTS, VALVES, PIPING, CONDUITS AND DRAINS THAT INTERFERE WITH THE POSITIONING OF THE WORK AS SHOWN ON THE DRAWINGS.
13. THE CONTRACTOR SHALL BE REQUIRED TO CONFORM AND COMPLY WITH ALL RESTRICTIONS AND EASEMENT CONDITIONS AND IS RESPONSIBLE FOR ALL RELATED INCIDENTAL COSTS INVOLVED.
14. EXISTING WATER SERVICES SHALL BE REPLACED TO THE EXISTING METER UNLESS OTHERWISE APPROVED OR DIRECTED IN WRITING BY THE CITY. SPLICING THE WATER SERVICE ON THE DOWNSTREAM SIDE OF THE METER IS NOT PERMITTED.
15. ALL DISTURBED AREAS, INCLUDING BUT NOT LIMITED TO ASPHALT, CONCRETE, DRIVEWAYS, ROADS, AND LANDSCAPING, SHALL BE REPAIRED TO A CONDITION EQUAL OR BETTER THAN THE ORIGINAL SITE. GRASS AND LANDSCAPED AREAS FILL MATERIAL MUST BE REPLACED IN TRENCH TO GRADE AS SOON AS WATERLINE CONSTRUCTION ALLOWS. ADEQUATE SEEDING AND STRAW OR MULCH SHALL THEN BE APPLIED TO THE DISTURBED TRENCH AREA. ADDITIONAL FILL AND SITE RESTORATION MAY BE REQUIRED WITHIN THE WARRANTY PERIOD AT THE CITY'S DISCRETION.
16. CONTRACTOR SHALL PROVIDE EROSION CONTROL DEVICES TO CONTROL RUNOFF AS REQUIRED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY FINES THAT MAY BE INCURRED DUE TO EROSION AND/OR SEDIMENTATION.
17. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FOLLOW ALL APPLICABLE FEDERAL, STATE, AND LOCAL HEALTH AND SAFETY REGULATIONS PERTAINING TO CONSTRUCTION OPERATIONS.
18. ALL WATER MAINS SHALL HAVE 3 FEET MINIMUM COVER.
19. INSTALL FERROUS PIPING FOR BOTH WATER AND SEWER WITHIN 10 FT. OF A CROSSING IF:
  - 19.1. SEWER LINE CROSSES OVER WATER, OR
  - 19.2. VERTICAL CLEARANCE BETWEEN WATER AND SEWER IS LESS THAN 18 INCHES.
  - 19.3. MAINTAIN 10 FEET HORIZONTAL SEPARATION BETWEEN SEWER AND WATER MAINS

UNLESS LAID IN SEPARATE TRENCHES WITH THE BOTTOM OF THE WATER LINE AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER LINE OR USE FERROUS MATERIAL FOR BOTH WATER AND SEWER.

20. WHERE CONFLICT OF WATER AND SEWER MAIN OCCURS, MAINTAIN 10 FEET HORIZONTAL SEPARATION BETWEEN SEWER AND WATER MAINS UNLESS LAID IN SEPARATE TRENCHES WITH THE BOTTOM OF THE WATER LINE AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER LINE, OR ALTERNATIVELY, THE INSTALLATION MUST COMPLY WITH RULE .0904(C) AND .0906(F)"
21. MAINTAIN 18 INCHES VERTICAL SEPARATION BETWEEN STORM DRAIN AND WATER, OR INSTALL FERROUS MATERIAL WATER LINE WITHIN 10 FEET EACH SIDE OF CROSSING.
22. TAPS GREATER THAN ONE-INCH IN DIAMETER ON EXISTING, ACTIVE WATER MAINS SHALL BE PERFORMED BY THE CITY UNLESS OTHERWISE APPROVED IN WRITING BY THE CITY. TAPS IN NEW CONSTRUCTION ARE TO BE PERFORMED BY THE CONTRACTOR IN ACCORDANCE WITH CITY REQUIREMENTS.
23. ALL WATER METERS WILL BE SET BY CITY STAFF UNLESS THE CONTRACTOR IS GRANTED WRITTEN PERMISSION BY THE CITY.
  - 23.1. THE CONTRACTOR WILL PROVIDE THE CITY NOTICE OF 10 WORKING DAYS MINIMUM PRIOR TO THE DATE OF METER INSTALLATION.
  - 23.2. THE CONTRACTOR WILL PROVIDE A LICENSED PLUMBER DURING THE METER INSTALLATION TO VERIFY LINE SERVICES IN ALL MULTI-METER BOXES.
24. ALL PUBLIC WATER MAIN CONSTRUCTION SHALL BE PERFORMED BY A NORTH CAROLINA LICENSED UTILITY CONTRACTOR.
25. ALL WATER APPURTENANCES ARE TO BE MADE USING LEAD-FREE MATERIALS. PIPE, FITTINGS, VALVES, HYDRANTS, PIPE CLAMPS, RESTRAINTS, FLANGES, CASTINGS, REBAR, HATCHES, INLETS, METER BOXES, AND ALL OTHER CAST IRON COMPONENTS SHALL BE MANUFACTURED IN THE USA.
26. RESTRAINED JOINTS BY AN APPROVED PIPE MANUFACTURER ARE TO BE USED FOR ALL PUBLIC WATER LINES WHERE THRUST RESTRAINING IS REQUIRED IN ACCORDANCE WITH THE PLANS AND MANUFACTURER'S SPECIFICATIONS. WHERE RESTRAINING GASKETS ARE UTILIZED, THE GASKET AND PIPE SHALL BE MADE BY THE SAME MANUFACTURER. CONCRETE THRUST BLOCKS ARE PERMITTED ONLY WHERE CONNECTIONS ARE MADE TO EXISTING WATER LINES OR WHERE THE USE OF MECHANICAL RESTRAINT IS NOT FEASIBLE.
27. ALL FIRE HYDRANTS, VAULTS, BACKFLOW PREVENTERS, HOT BOXES, AND WATER METERS ARE TO BE INSTALLED ON FLAT AREAS OUTSIDE OF PAVEMENT.
28. TAMPERING WITH OR ILLEGAL USE OF THE PUBLIC WATER SUPPLY WILL RESULT IN SUSPENSION OF WATER SERVICE, INCLUDING DOMESTIC AND COMMERCIAL, UNTIL FINAL APPROVAL BY THE CITY IS ISSUED. A PERSON FOUND TO BE USING WATER ILLEGALLY SHALL BE SUBJECT TO PENALTIES OR FINES, AS PRESCRIBED AND APPROVED BY CITY COUNCIL.

TESTING & INSPECTION:

1. NOTIFY THE CITY OF HENDERSONVILLE AND ENGINEER AT LEAST 5 WORKING DAYS BEFORE STARTING CONSTRUCTION OF WATER FACILITIES AND AFTER ALL MATERIAL IS ON SITE TO SCHEDULE A FIELD PRE-CONSTRUCTION CONFERENCE. THE ENGINEER SHALL PERIODICALLY INSPECT THE PROGRESS OF INSTALLATION AT A MINIMUM AND SHALL COMPLETE A FINAL WATER CERTIFICATION.
2. THE BACKFLOW PREVENTION ASSEMBLY (JUMPER) SHALL BE INSPECTED BY A CITY INSPECTOR PRIOR TO INSTALLATION. THE JUMPER INSTALLATION SHALL BE APPROVED IN WRITING BY THE CITY INSPECTOR. THE JUMPER SHALL BE INSTALLED AND UTILIZED FOR TESTING AND VERIFICATION PURPOSES ONLY. ANY DELAY IN THE PLANNED VERIFICATION SCHEDULE MAY RESULT IN THE JUMPER BEING DISCONNECTED. ANY UNAUTHORIZED USE OF WATER WHILE THE JUMPER IS INSTALLED SHALL RESULT IN THE REMOVAL OF THE JUMPER UNTIL SUCH TIME AS THE CITY ENGINEER IS SATISFIED THAT THE CONTRACTOR SUITABLY UNDERSTANDS AND CAN CONTROL THE USE OF THE WATER. ALL CHANGES TO THE APPROVED CONSTRUCTION PLANS AND SUBMITTALS MUST BE APPROVED IN WRITING BY THE CITY PRIOR TO IMPLEMENTATION IN THE FIELD.
3. THE CONTRACTOR SHALL FURNISH SECURE AND PROVIDE ALL NECESSARY TESTING MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO PROPERLY COMPLETE REQUIRED VERIFICATIONS. THE CONTRACTOR SHALL COORDINATE HYDROSTATIC TESTING, FLUSHING, DISINFECTION, AND BACTERIOLOGICAL SAMPLING WITH CITY INSPECTOR.
4. CITY CONSTRUCTION INSPECTORS SHALL BE NOTIFIED AT LEAST 72 HOURS PRIOR TO ANY TESTING OPERATIONS. CITY INSPECTORS SHALL VERIFY TAPPING PITS, FLUSHING, HYDROSTATIC TESTING, DISINFECTION, AND SAMPLING. REQUESTS SHOULD BE MADE USING THE CITY'S ONLINE INSPECTION REQUEST FORMS.
5. HYDROSTATIC PRESSURE TEST WATER MAINS TO 200 PSI MINIMUM FOR A MINIMUM OF TWO HOURS IN ACCORDANCE WITH AWWA C600 AS MODIFIED TO CITY REQUIREMENTS.
6. FLUSH WATER LINES IN ACCORDANCE WITH AWWA C600 (AT A MINIMUM FLUSHING VELOCITY OF 3.0 FEET PER SECOND) PRIOR TO DISINFECTION. THE FLOW RATE NEEDED TO ACHIEVE THE REQUIRED VELOCITY SHALL BE DETERMINED BY THE DESIGN ENGINEER AND VERIFIED BY THE CITY ENGINEER.
- 6.1 DISINFECT WATER LINES AND PROVIDE ACCEPTABLE BACTERIOLOGICAL TEST FROM A CERTIFIED TESTING LABORATORY IN ACCORDANCE WITH CITY REQUIREMENTS AND AWWA C651. THE CONTRACTOR MAY ELECT TO USE THE CITY'S CERTIFIED TESTING LABORATORY.

DATE: 07/14/2025

WD DWG. NO. 1-1

SCALE: NOT TO SCALE

City of Hendersonville Engineering Department  
305 Williams Street  
Hendersonville, NC 28792  
(828) 697-3000 (office)

[www.cityofhendersonville.org](http://www.cityofhendersonville.org)

## WATER DETAILS

## GENERAL NOTES



7. PRIVATELY OWNED FIRE SYSTEMS SHALL BE APPROVED BY THE APPROPRIATE LOCAL PERMITTING AUTHORITY. THE CITY ENGINEERING OR WATER AND SEWER DEPARTMENTS ARE NOT RESPONSIBLE FOR ENSURING COMPLIANCE WITH APPROPRIATE FIRE PROTECTION REGULATIONS. THE CITY DOES NOT PROVIDE ANY GUARANTEE OF ITS WATER SYSTEM'S CAPABILITY TO DELIVER WATER FLOW AND RESIDUAL PRESSURE THE FIRE PERMITTING AUTHORITY MAY REQUIRE.
8. ALL PERMANENT BACKFLOW PREVENTION ASSEMBLIES SHALL BE USC APPROVED AND REVIEWED BY THE CITY'S ENVIRONMENTAL COMPLIANCE COORDINATOR. PROTECTION OF THE PUBLIC WATER DISTRIBUTION SYSTEM SHALL BE ASSURED BY INSPECTION OF THE INSTALLATION AND TESTING OF BACKFLOW PREVENTION DEVICES IN ACCORDANCE WITH APPROPRIATE LOCAL, STATE, AND FEDERAL REGULATIONS.
9. CONSTRUCTION WATER SOURCING MUST BE APPROVED IN WRITING BY THE CITY. CONSTRUCTION WATER CONNECTIONS SHALL BE PAIRED WITH AN IRRIGATION METER AND APPROVED BACKFLOW PREVENTION ASSEMBLY. THIS ASSEMBLY INSTALLATION MUST BE TESTED BY A LICENSED PLUMBER AND TEST RESULTS SUBMITTED TO THE CITY BEFORE USE OF CONSTRUCTION WATER.
10. SECURE FINAL WRITTEN ACCEPTANCE FROM THE CITY OF HENDERSONVILLE PRIOR TO ACTIVATION OF THE SYSTEM. WATER SERVICE WILL NOT BE PROVIDED UNTIL WRITTEN ACCEPTANCE OF THE SYSTEM IS ISSUED BY THE CITY.
11. THE ENGINEER SHALL SUPPLY THE CITY WITH FINAL AS-BUILT DRAWINGS AND COMPLETE ALL PROJECT CLOSE OUT REQUIREMENTS.

**DISCLAIMER:**

STANDARD WATER DETAILS ARE FOR THE SOLE USE OF PROJECTS THAT ARE OWNED BY, OR WILL BE TRANSFERRED TO, THE CITY OF HENDERSONVILLE. STANDARD WATER DETAILS ARE INTENDED TO SHOW THE CITY OF HENDERSONVILLE'S EXPECTATIONS FOR THE GENERAL LAYOUT AND ARRANGEMENT FOR WATER DISTRIBUTION SYSTEM ITEMS AND THEIR RELATED APPURTENANCES. IT REMAINS THE SOLE RESPONSIBILITY OF THE ENGINEER IN RESPONSIBLE CHARGE (ERC) OF EACH APPLICATION TO DETERMINE, DESIGN TO, AND CERTIFY TO, THE DESIGN PARAMETERS FOR EACH INSTALLATION. THE ERC MUST ALSO ENSURE THE DESIGN COMPLIES WITH THE MINIMUM DESIGN CRITERIA OF NC DIVISION OF ENVIRONMENTAL QUALITY AND ALL LOCAL AND STATE LAWS AND REGULATIONS.

**DATE: 07/14/2025**

WD DWG. NO. 1-2

**SCALE: NOT TO SCALE**

City of Hendersonville Engineering Department  
305 Williams Street  
Hendersonville, NC 28792  
(828) 697-3000 (office)

[www.cityofhendersonville.org](http://www.cityofhendersonville.org)

## WATER DETAILS

## GENERAL NOTES

