

**WATER CONSTRUCTION**

1. ONLY CITY PERSONNEL MAY OPERATE VALVES.
2. THE CONTRACTOR SHALL DEVELOP A PLAN TO ADDRESS TEMPORARY WATER SUPPLY DURING CONSTRUCTION. THE PLAN SHALL BE PRESENTED TO THE CITY FOR REVIEW AND ACCEPTANCE AT LEAST TWO WEEKS PRIOR TO PLANNED IMPLEMENTATION. NO MORE THAN 1000 LF OF CONTIGUOUS TEMPORARY WATER SUPPLY PIPE SHALL BE IN SERVICE. THE PLAN SHALL PROVIDE FOR CONTINUOUS FIRE PROTECTION EQUAL TO THAT AVAILABLE PRIOR TO CONSTRUCTION. THE EFFORT TO PREPARE AND SUBMIT THE PLAN SHALL BE CONSIDERED INCIDENTAL TO ITEM 629.42 TRANSFER TO NEW SYSTEM, WATER SYSTEM.
3. THE CONTRACTOR SHALL SUPPLY A TIE-CARD TO THE OWNER AND THE WATER CUSTOMER DOCUMENTING THE LOCATION OF EACH INSTALLED SERVICE CONNECTION (CORPORATION AND CURB STOP).
4. WATER MAIN INSTALLATION SHALL COMPLY WITH AWWA C-600 AND THE VERMONT WATER SUPPLY RULE. LEAKAGE AND HYDROSTATIC TESTING PER AWWA C-600 SHALL BE PERFORMED IN THE PRESENCE OF THE ENGINEER AND CITY DPW PERSONNEL. THE OWNER RESERVES THE RIGHT TO REJECT WORK NOT COMPLYING WITH THIS REQUIREMENT. A SECTION BEING TESTED SHALL BE SUBJECTED TO A HYDROSTATIC PRESSURE OF AT LEAST 150 PERCENT OF WORKING PRESSURE FOR A TWO HOUR DURATION. WORKING PRESSURE IS 100 PSI.
5. PERMANENT AND TEMPORARY WATER MAIN SHALL BE FLUSHED AND DISINFECTED PER SECTION 629. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO ITEM 900.640 SPECIAL PROVISION (DUCTILE IRON PIPE, CEMENT LINED, ALL-INCLUSIVE) (10" WATER). NOTE THE FOLLOWING:
  - A. THE VERMONT WATER SUPPLY RULE, APPENDIX A, SUBSECTION 8.5.7, STATES THAT THE TABLET FORM OF DISINFECTION IS NOT ACCEPTABLE. PROVIDE PLAN AND PROPOSED METHOD FOR DISINFECTION TWO WEEKS PRIOR TO INTENDED WORK.
  - B. AFTER DISINFECTION, CHLORINATED WATER SHALL BE PUMPED INTO THE CITY SEWER SYSTEM. PROVIDE CITY WASTEWATER TREATMENT PLANT WITH TWO WEEKS NOTICE BEFORE DISCHARGE.
6. WATER MAIN SHALL HAVE 5.5 FT COVER MIN. (TYP.). ITEM 622.10, INSULATION BOARD SHALL BE INSTALLED OVER WATER MAIN WHERE LESS THAN 5.5 FT COVER IS PROVIDED (BASED ON FINAL GRADE). WHERE SEPARATION DISTANCE OF WATER MAIN IS CLOSER THAN 1.5 FT TO DRAINAGE PIPE OR SEWER LINE, CONTRACTOR SHALL INSULATE WATER MAIN FOR FROST PROTECTION WITH ITEM 622.10, INSULATION BOARD. REFER TO WATER DETAILS FOR ADDITIONAL INFORMATION. AT CROSSINGS, ONE FULL LENGTH OF WATER PIPE SHALL BE LOCATED SO BOTH JOINTS WILL BE AS FAR FROM THE SEWER AS POSSIBLE. IF A SEWER MAIN IS LOCATED OVER A WATER MAIN, THE FIRST SEWER PIPE JOINTS ON EITHER SIDE OF THE WATER MAIN MUST BE CONCRETE-ENCASED. WATER MAINS SHALL NOT PASS THROUGH SEWER MANHOLES OR BE SUBMERGED IN BASINS CONTAINING SEWAGE OR OTHER GROSSLY CONTAMINATED OR HAZARDOUS MATERIALS
7. ALL DUCTILE IRON (DI) PIPE SHALL BE CLASS 52, DOUBLE CEMENT LINED AND SEAL COATED
8. ALL WATER SERVICE PIPE TO BE TYPE K COPPER.
9. THRUST RESTRAINT REQUIREMENTS:
  - RETAINER GLANDS WITHIN THREE PIPE LENGTHS ON EACH SIDE SHALL BE USED IN LIEU OF THREADED ROD OR GRIP RINGS AT ALL PIPE BENDS, FITTINGS, VALVES, AND APPURTENANCES.
  - CONTRACTOR SHALL IDENTIFY SELECTION OF RESTRAINT, SIZE, AND DESIGN BASIS IN WORKING DRAWINGS PROVIDED TO ENGINEER FOR REVIEW.
  - ALL TEES, BENDS, PLUGS, AND HYDRANTS SHALL BE PROVIDED WITH THRUST RESTRAINT DESIGNED TO PREVENT MOVEMENT.
  - ALL AIR SHALL BE REMOVED FROM THE PIPES BEFORE WATER AT TEST PRESSURE LEVELS IS ADDED.
10. REPLACEMENT WATER SERVICE SIZES SHALL BE SAME SIZE AS EXISTING UNLESS OTHERWISE DIRECTED BY THE ENGINEER. CONTRACTOR SHALL CONFIRM EXISTING SERVICE SIZES AT ALL LOCATIONS PRIOR TO LAYING WATER MAIN. CONTRACTOR SHALL COORDINATE WITH WATER CUSTOMERS AND OWNER.
11. ALL HYDRANTS TO OPEN LEFT AND VALVES TO OPEN RIGHT.
12. DURING PERIODS OF DELAY AND AT THE CONCLUSION OF THE DAY'S WORK, LENGTHS OF PIPE WITH OPEN ENDS SHALL BE TIGHTLY CLOSED WITH WATERTIGHT PLUGS, SPECIAL SEALS, OR BY OTHER SUITABLE MEANS ACCEPTED BY THE ENGINEER TO PREVENT THE ENTRY OF ANIMALS, FOREIGN MATTER AND TRENCH WATER. TRENCH WATER SHALL BE PUMPED OUT BEFORE THE SEALS, PLUGS, OR OTHER TEMPORARY CLOSURES ARE REMOVED. PAYMENT FOR THIS WORK WILL BE CONSIDERED INCIDENTAL TO ITEM 629.42 TRANSFER TO NEW SYSTEM, WATER SYSTEM.
13. PROVIDE BRONZE CONDUCTIVE WEDGES ON WATER MAIN INSTALLATION.
14. PERFORM WATER TRANSITION WORK AT NIGHT (10 P.M. TO 5 A.M.) MONDAY THROUGH THURSDAY. NOTIFY CITY AND PROPERTY OWNERS TWO WEEKS PRIOR TO PLANNED WORK.
15. EXTENSIONS TO TEMPORARY HYDRANT TO ACCOMMODATE RAISED ROADWAY PROFILE SHALL BE CONSIDERED INCIDENTAL TO ITEM 629.42 TRANSFER TO NEW SYSTEM, WATER SYSTEM. CONTRACTOR TO PROVIDE WORKING DRAWING FOR THIS CONSTRUCTION ELEMENT.


**SEWER CONSTRUCTION**

1. EXISTING HOUSE SERVICES SHALL BE CONNECTED TO THE NEW SANITARY SEWER. NEW SEWER CLEANOUT SHALL BE INSTALLED AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL REMOVE AND REPLACE ALL EXISTING PIPE TO THE CLEANOUT. SEE TYPICAL SEWER SERVICE CONNECTION DETAIL. IF CLEANOUT NOT SPECIFIED, THE CONTRACTOR SHALL EXCAVATE, REMOVE AND REPLACE ALL EXISTING PIPE THAT IS DAMAGED BACK TO SOLID PIPE OR TO THE RIGHT-OF-WAY, WHICHEVER IS LESS AS APPROVED BY THE ENGINEER.
2. NO SEWER SURCHARGING WILL BE PERMITTED. WASTEWATER FLOW SHALL BE MAINTAINED BY BYPASS PUMPING OR OTHER METHODS AS APPROVED BY THE ENGINEER. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO ITEM 628.42 TRANSFER TO NEW SYSTEM, SANITARY SEWER.
3. CONTRACTOR TO VERIFY INVERTS ON CONNECTING MANHOLES PRIOR TO LAYING SEWER PIPE.
4. THE CONTRACTOR SHALL SUPPLY A TIE-CARD TO THE TOWN AND BUILDING OWNER FOR DOCUMENTING THE LOCATION OF EACH SERVICE CONNECTION.
5. THE CONTRACTOR SHALL EXCAVATE, REMOVE, AND REPLACE ALL EXISTING PIPE THAT IS DAMAGED AS A RESULT OF CONSTRUCTION ACTIVITIES AT NO COST TO THE STATE. THE NEW PIPE SHALL BE THE SAME SIZE AS THE EXISTING PIPE AND SHALL BE CONNECTED TO THE EXISTING PIPE WITH APPROVED REPAIR COUPLINGS.
6. UNLESS OTHERWISE SPECIFIED, MINIMUM PIPE COVER SHALL BE 5 FT.
7. ALL PIPE LENGTHS ARE MEASURED FROM INSIDE MANHOLE WALL TO INSIDE MANHOLE WALL. SLOPES ARE SHOWN IN PERCENT.
8. SEWER LINES SHALL BE LOCATED A MINIMUM OF 10 FT HORIZONTALLY FROM ALL PROPOSED AND EXISTING WATER MAINS, AS MEASURED FROM OUTSIDE PIPE WALLS.
9. ALL NEW SANITARY MANHOLES SHALL PASS LEAKAGE TESTING CRITERIA OUTLINED IN SECTION 628 OF THE SPECIFICATIONS. AS AN ALTERNATIVE, THE CONTRACTOR MAY ELECT TO PERFORM VACUUM TESTING ON MANHOLES PRIOR TO BACK FILLING AS FOLLOWS:
  - ALL LIFT HOLES AND INVERT HOLES SHALL BE PLUGGED.
  - THE INITIAL VACUUM GAUGE TEST PRESSURE SHALL BE 10 INCHES Hg.
  - THE MINIMUM ACCEPTABLE TEST HOLD TIME FOR A 1-INCH Hg DROP TO 9 INCHES Hg SHALL BE:
    - a) NOT LESS THAN 1 MINUTE FOR MANHOLES LESS THAN 14 FT DEEP;
    - b) NOT LESS THAN 2 MINUTES FOR MANHOLES DEEPER THAN 14 FT.
  - THE MANHOLE SHALL BE REPAIRED AND RETESTED IF THE TEST HOLD TIMES FAIL TO ACHIEVE THE CRITERIA LISTED ABOVE.

THIS WORK SHALL BE CONSIDERED INCIDENTAL TO ITEM 900.620 SPECIAL PROVISION (SANITARY MANHOLE, ALL-INCLUSIVE) (4' DIA).
10. ALL SMHs TO BE 4 FT DIAMETER UNLESS NOTED OTHERWISE.
11. CONTRACTOR SHALL FLUSH INSTALLED SEWER AND VIDEOTAPE FOR ENGINEER'S REVIEW PRIOR TO FINAL ACCEPTANCE AND APPLICATION OF WEARING COURSE PAVEMENT.
12. SEWER PIPE SHALL BE SDR 35 PVC OR DUCTILE IRON CLASS 52 AS INDICATED ON PLANS. 6" FORCE MAIN SHALL BE DUCTILE IRON CLASS 52.
13. NEW FORCE MAIN SHALL BE PRESSURE TESTED TO 100 PSI.
14. A QUANTITY OF 5.5 CY OF ITEM 204.21 TRENCH EXCAVATION OF ROCK AND ITEM 203.31 SAND BORROW HAVE BEEN ESTABLISHED FOR REMOVAL OF BACKFILL OF EACH SANITARY MANHOLE WHERE SPECIFIED.

**RECORD DRAWING WATER AND SEWER ELEMENTS**  
 SOME OF THE CONTENT SHOWN ON THESE RECORD DRAWINGS HAS BEEN PREPARED BASED ON INFORMATION FURNISHED BY OTHERS. THE LOCATION OF ITEMS SHOWN WITHOUT LABELED DIMENSIONS SHALL BE CONSIDERED AS APPROXIMATE. MODIFICATIONS TO BRIDGE ELEMENTS ARE NOT ADDRESSED ON THESE RECORD PLANS. THE SITE WAS NOT RE-SURVEYED AFTER CONSTRUCTION, SO RECORD LOCATIONS, ELEVATIONS AND FINISH GRADES ARE APPROXIMATE AND SHALL BE CONSIDERED "SCHEMATIC." DETAILS AND CROSS SECTIONS MAY NOT REFLECT "AS-BUILT" CONDITIONS.

- PLAN REVISIONS
- ① 5/23/14: REVISIONS TO WATER CONSTRUCTION NOTE 5.
  - ② 7/3/14: CORRECTIONS PER VTRANS.

WATER AND SEWER PLANS		PROJECT NAME: RUTLAND CITY	
		PROJECT NUMBER: BRF 3000(16)	
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