

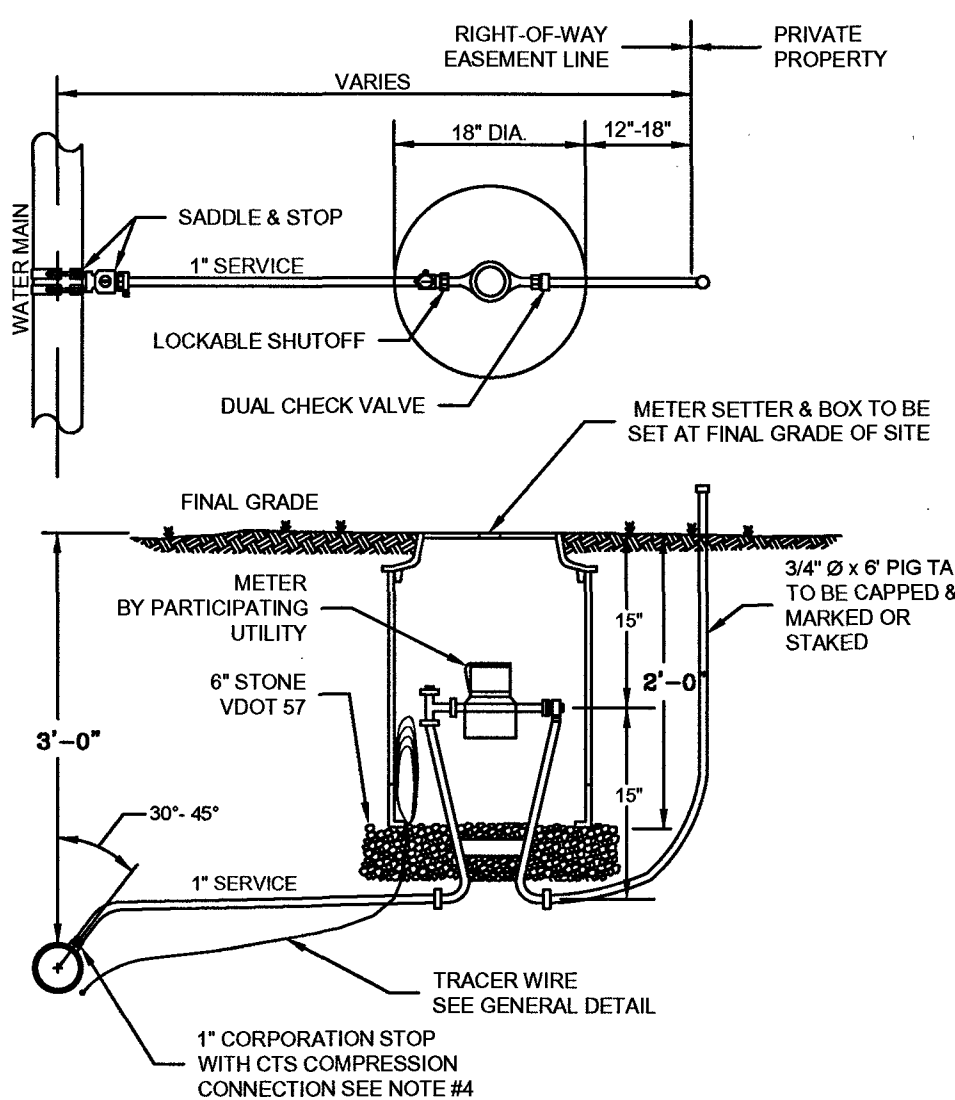
W.V.W.A. SERVICE LATERAL INFORMATION

LOT	DOWNSIDE MANHOLE	DIST.	INV. OF S.S. MAIN	MIN. SEWERABLE F.F. ELEVATION	APPROX. WATER PRESSURE
1	ex.	0'	1275.1	1278.1	109 psi
2	ex.	27'	1265.2 (APPROX.)	1268.2 (APPROX.)	109 psi

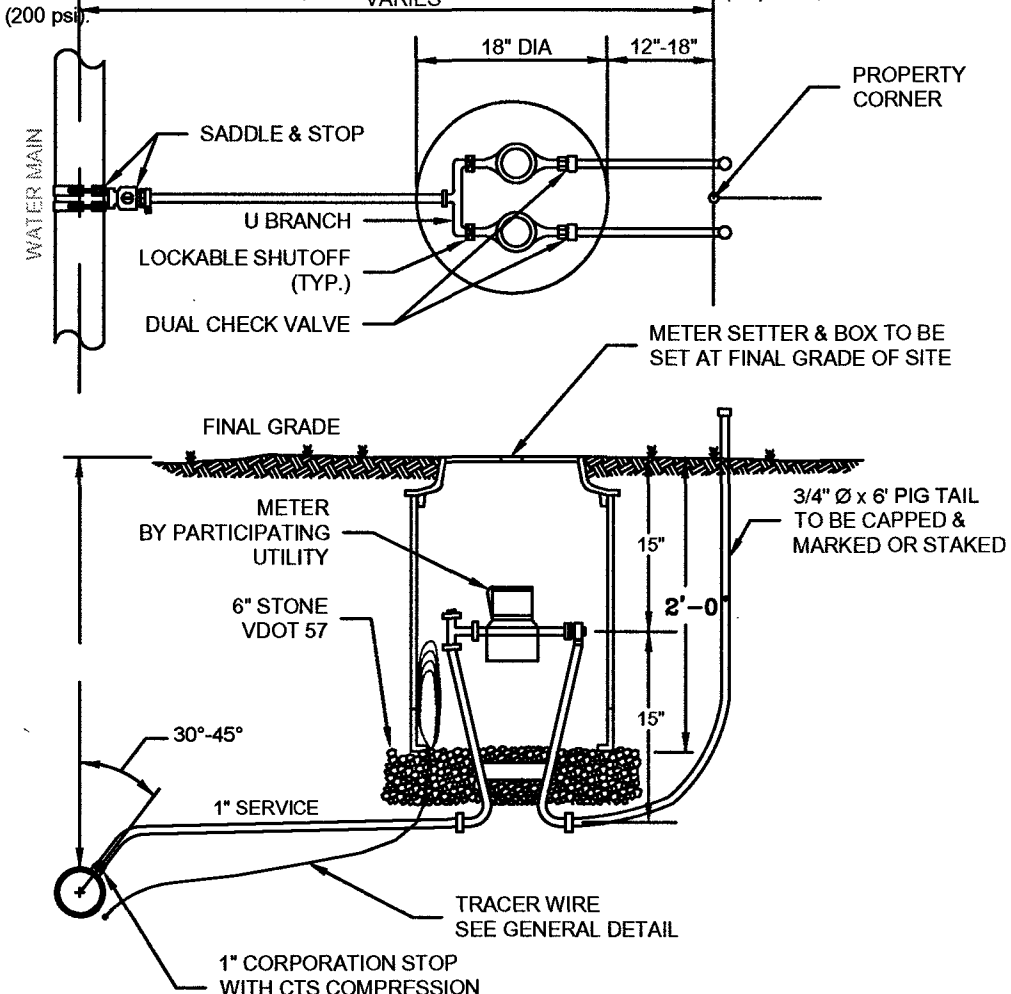
NOTES:

1. THE MIN. FLOOR ELEVATION IS BASED ON SEC. 200.02-2-G-1-h OF THE WESTERN VIRGINIA WATER AUTHORITY WATER & SEWER REGULATIONS. LOT OWNERS REQUESTING A LOWER SERVICE ELEVATION WILL REQUIRE THE USE OF A PRIVATE SEWAGE PUMP FACILITY, INSTALLED AND MAINTAINED BY THE HOMEOWNER.

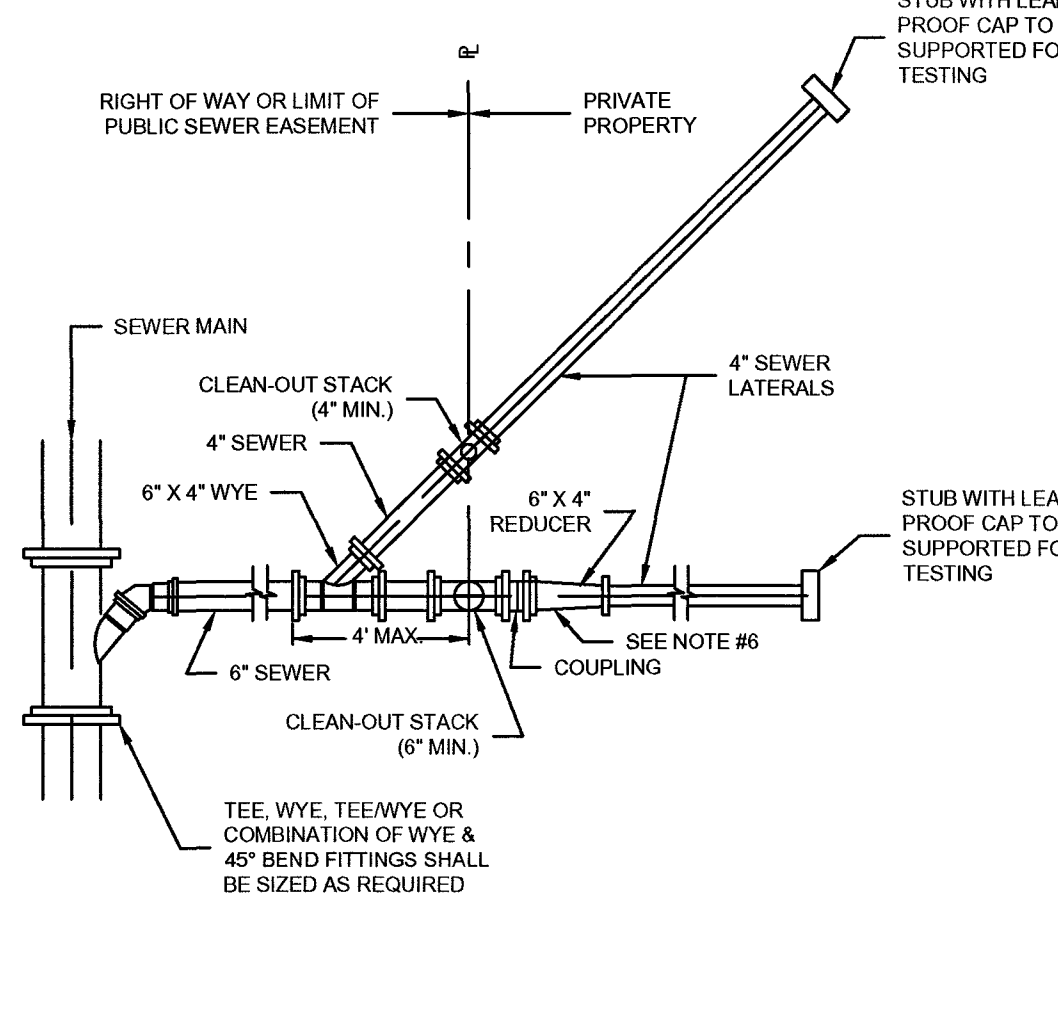
- SETTER TO BE A.Y. McDONALD 720-215WDD33, FORD VBHH72-15W-11-33 OR APPROVED EQUAL.
- SADDLES MUST BE USED WITH ALL PLASTIC DUCTILE IRON PIPE. SERVICE SADDLES SHALL BE USED IN ACCORDANCE WITH WATER DISTRIBUTION PIPING SPECIFICATION. SERVICE SADDLES FOR PLASTIC PIPE SHALL BE POWERSEAL 3417, OR 3412AS, ROMAC 202, OR 3412AS, ROMAC 202, OR FORD METER F202. FOR DUCTILE IRON PIPE USE THE ABOVE OR POWERSEAL 3413, ROMAC 202 OR FORD METER F202.
- METER BOX SHALL BE CARSON MID-STATES PLASTICS, INC. PLASTIC BOX WITH FORD A32-1 (ELECTRONIC READ LID), ADS CORRUGATED HDPE BOX WITH FORD A32-1 (ELECTRONIC READ LID), OR A Y. McDONALD MODEL 74M32AT CAST IRON BASE & COVER OR APPROVED EQUAL. METER BOX SHALL NOT BE PLACED IN AREAS SUBJECT TO VEHICULAR TRAFFIC. IF TRAFFIC BEARING BOX IS REQUIRED, DESIGN ENGINEER SHALL CONSULT WITH PARTICIPATING UTILITY TO DETERMINE SITE SPECIFIC REQUIREMENTS.
- CORPORATION STOP SHALL BE FORD FB1000-4-G-NL, MUELLER B-2500B OR APPROVED EQUAL.
- SERVICE SHALL BE "K" TYPE COPPER, OR COPPER TUBE SIZE POLYETHYLENE (PE) 4710, SODR-9 (200 PSI).
- WHENEVER SIDEWALK EXISTS OR IS PROPOSED, MODIFY METER LOCATION AS DIRECTED.



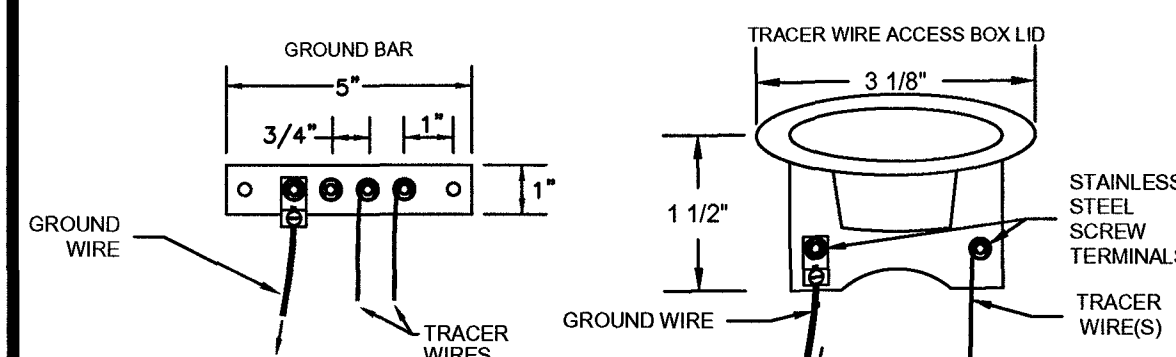
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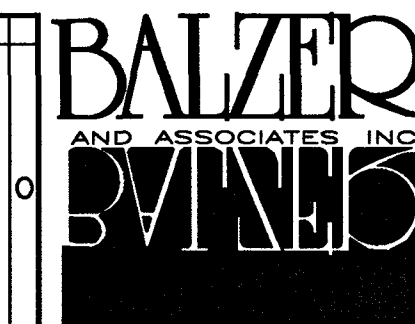
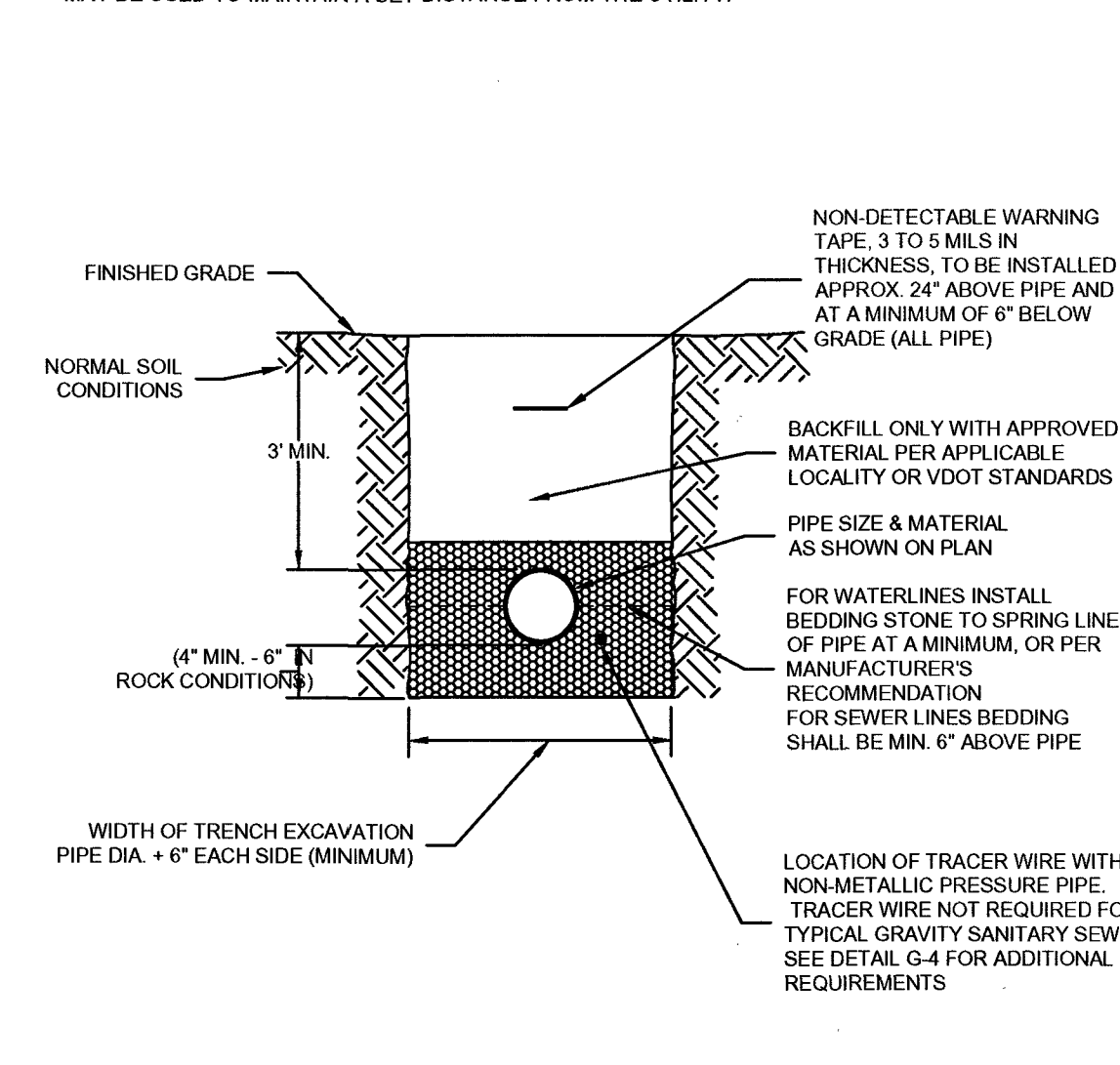
- TRAFFIC BEARING BOX REQUIRED IN TRAFFIC AREAS.
- SEWER LATERAL AND CLEANOUT PIPING SHALL BE ASTM D3034 SDR 26, SEWER LATERAL FITTINGS SHALL BE OF SAME SDR RATING AS THE SEWER MAIN. SCHEDULE 40 SOLVENT WELD PIPE AND FITTINGS MAY BE USED FOR THE SEWER LATERAL AND CLEANOUT ASSEMBLY WITH APPROVAL FROM THE PARTICIPATING UTILITY.
- ALL PIPE SHALL BE OF SIZE SHOWN.
- NO BENDS ARE ALLOWED IN THE LATERAL FROM THE MAIN TO THE CLEAN-OUT STACK WYE. (EXCEPT AS NOTED.)
- ALL MAIN LINE TAPS ON ACTIVE MAIN SHALL BE PERFORMED BY PARTICIPATING UTILITY.
- PIPING ON PRIVATE SIDE OF CLEANOUT TO BE INSTALLED PER GOVERNING JURISDICTION REQUIREMENTS.
- MINIMUM COVER FOR ALL SEWER LATERALS SHALL BE THREE (3) FEET.
- PROPERTY OWNER RESPONSIBLE FOR INSTALLING CLEANOUT ON PROPERTY LINE WHEN MAINTENANCE OCCURS, IN ACCORDANCE WITH THIS DETAIL.
- LOWEST SERVED FINISHED FLOOR ELEVATION SHALL BE A MINIMUM OF THREE FEET (3') ABOVE THE TOP OF THE MAIN AT THE POINT WHERE THE SERVICE LATERAL CONNECTS TO THE MAIN.
- WHEN CONNECTING TO EXISTING LATERAL USE FERNCO FLEXIBLE COUPLINGS.



- TRACER WIRES SHALL BE INSTALLED USING MANHOLES, TRACER WIRE ACCESS BOXES, VALVE BOXES OR VAULTS, WATER METERS AND FIRE HYDRANTS AS ACCESS POINTS.
- FOR WATER AND SEWER INSTALLED BY OPEN TRENCHING, HORIZONTAL DIRECTIONAL DRILLING, OR PIPE BURSTING, TRACER WIRE SHALL BE NEPTCO TRACE-SAFE WATER-BLOCKING TRACER WIRE OR APPROVED EQUAL. TRACER WIRE SHALL BE A 19 AWG SOLID COPPER CONDUCTOR WITH POLYETHYLENE INSULATION SURROUNDED BY A CORE MATERIAL COMPOSED OF HIGH-TENSILE, WOVEN POLYESTER WITH WATER-BLOCKING YARNS ENCAPSULATED IN AN ABRASION-RESISTANT (GREEN OR BLUE) 30 MIL HDPE JACKET. TRACER WIRE SHALL HAVE A MINIMUM TENSILE STRENGTH OF 1,800 LBS. AND SHALL NOT CONDUCT AN ELECTRICAL CURRENT IF STRUCK BY LIGHTNING. SPLICES SHALL ONLY BE MADE WITH GEL-FILLED CONNECTORS DESIGNED FOR WIRE WITH A WOVEN POLYESTER FIBER CORE SUCH AS NEPTCO TRACE-SAFE WATER-BLOCKING CONNECTORS OR APPROVED EQUAL. SPLICES SHALL BE MADE IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- SPLICES AT THE ENDS OF TRACER WIRE, INTERMEDIATE ACCESS POINTS, SHALL BE MADE USING NEPTCO TS-19-1L WATER-BLOCKING BUTT SPLICE CONNECTORS OR APPROVED EQUAL.
- AT ALL ACCESS POINTS, TRACER WIRE SHALL BE SPLICED USING NEPTCO TS-12-19-1L WATER-BLOCKING BUTT SPLICE CONNECTORS OR APPROVED EQUAL. 12 AWG COPPER TRACER WIRE WITH 30 MIL HDPE JACKET SHALL BE CONNECTED IN THE 12 AWG GROUNDING OF THE BUTT SPLICE CONNECTOR, EXTENDED UP INTO THE ACCESS POINT STRUCTURE, AND ATTACHED TO THE GROUND BAR PER NOTE #12 OR LID TERMINALS PER NOTE #13. AT ALL ACCESS POINTS, EACH DIRECTION OF PIPE SHALL HAVE AN INDEPENDENT TRACER WIRE FEED EXTENDED TO GROUND BAR OR LID TERMINALS TO ALLOW FOR DIRECTIONALLY INDICATING CURRENT DURING LOCATING. THE 12 AWG COPPER TRACER WIRE SHALL BE OF ADEQUATE LENGTH TO EXTEND FIVE (5) FEET ABOVE THE TOP OF STRUCTURE.
- WHERE HOPE PIPE IS INSTALLED WITHOUT STEEL CASING PIPE, SUCH AS A DIRECTIONALLY DRILLED CROSSINGS, AND CONNECTED TO DUCTILE IRON PIPE ON EACH END, TRACER WIRE SHALL BE INSTALLED ALONG FULL LENGTH OF HOPE PIPE WITH AN ACCESS POINT INSTALLED AT EACH HOPE/DUCTILE IRON TRANSITION. TRACER WIRE SHALL BE CONNECTED TO THE ACCESS POINT IN ACCORDANCE WITH THIS DETAIL.
- AS-BUILTS SHALL SHOW TRACER WIRE(S) LOCATION AND ACCESS POINT(S).
- THE TRACER WIRE SHALL BE PLACED ALONG THE LOWER QUADRANT OF THE PIPE. THE WIRE SHALL NOT TOUCH THE PIPE, BUT SHALL BE A MAXIMUM OF 6" FROM THE PIPE. NON-METALLIC SPACERS MAY BE USED TO MAINTAIN A SET DISTANCE FROM THE UTILITY.
- WHERE LINES ARE GREATER THAN SIX (6) FEET IN DEPTH, WIRE SHALL BE BROUGHT TO THE SURFACE EVERY FIVE-HUNDRED (500) FEET AND PLACED IN A WATER METER BOX OR A DRAINAGE & WATER SOLUTIONS, INC. (OR APPROVED EQUAL) ALL CAST IRON TRACER WIRE ACCESS BOX.
- THE TRACER WILL BE TESTED BY THE PARTICIPATING UTILITY AS PART OF THE PROJECT'S FINAL ACCEPTANCE.
- THE GROUND WIRE SHALL BE 19 AWG COPPER WIRE AND SHALL BE OF ADEQUATE LENGTH TO EXTEND A MINIMUM OF (5) FEET BEYOND THE TOP OF THE STRUCTURE. THE END OF THE GROUND WIRE SHALL CONNECT TO THE GROUND BAR OR LID TERMINAL USING A BURNDY KABU MECHANICAL TERMINAL LUG.
- A GROUND ROD SHALL BE INSTALLED AT EACH LOCATION WHERE GROUND WIRE SURFACES AND CONNECTS TO GROUND BAR OR LID TERMINAL. GROUND ROD SHALL BE COPPER COATED WITH A MINIMUM DIAMETER OF 3/8" AND SHALL BE BURIED A MINIMUM OF FOUR (4) FEET INTO THE GROUND.
- THE GROUND BAR SHALL BE STAINLESS STEEL AND SHALL BE ATTACHED USING SS 3" X 1/8" SS HEX TAPCON. THE FOLLOWING SHALL BE INSTALLED IN (4) FOUR CENTER HOLES: 10-28SS NUTS, #10 SS WASHERS AND 10-32 X 1/8" SS PHILLIPS. THE FOURTH HOLE SHALL HAVE A BURNDY KABU MECHANICAL TERMINAL LUG FOR THE 19 AWG GROUND WIRE. THE ASSEMBLY CAN BE ACQUIRED AT RGS INDUSTRIAL SUPPLY, INC. (840-333-0883). CLAMP RFC-11. THE ENDS OF THE TRACER WIRES SHALL BE PLACED IN THE GROUND BAR AS SHOWN BELOW.
- IF USING TRACER WIRE ACCESS BOX AS ACCESS POINT, GROUND BAR WILL NOT BE REQUIRED. THE REMOVABLE LID ON THE ACCESS BOX SHALL CONTAIN TWO SCREW TERMINALS. THE 12 AWG COPPER TRACER WIRE SHALL BE BROUGHT UP IN ACCESS BOX AND CONNECTED TO ONE OF THE SCREW TERMINALS. IF MORE THAN ONE TRACER WIRE IS NECESSARY TO ACCOUNT FOR TOTAL NUMBER OF PIPE DIRECTIONS AT ACCESS BOX, MULTIPLE TRACER WIRES SHALL BE CONNECTED TO THAT SAME SCREW TERMINAL. THE 19 AWG COPPER GROUND WIRE SHALL BE CONNECTED FROM THE GROUND ROD TO THE REMAINING SCREW TERMINAL WITH THE USE OF A BURNDY KABU MECHANICAL TERMINAL LUG. WIRES SHALL BE CONNECTED AS SHOWN BELOW. TRACER WIRE AND GROUND WIRE SHALL BOTH BE OF ADEQUATE LENGTH TO EXTEND FIVE (5) FEET ABOVE THE TOP OF ACCESS BOX.
- TWO WRAPS OF TRACER WIRE SHALL BE WRAPPED SNUGGLY AROUND BASE OF HYDRANT. WIRE SHALL NOT BE LEFT IN A WAY THAT WOULD INTERFERE WITH MOVING AROUND HYDRANT.



- BEDDING, HAUNCHING AND INITIAL BACKFILL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THIS DETAIL AND MANUFACTURER'S RECOMMENDATION.
- ALL PVC PIPE SHALL BE BEDDED IN COMPACTED VDOT #57 OR #68 STONE, OR CRUSHER RUN.
- IN AREAS SUBJECT TO VEHICULAR TRAFFIC, BEDDING STONE AND FILL SHALL BE PLACED IN 6" LIFTS FROM BOTTOM OF TRENCH TO 1' ABOVE THE PIPE AND THE REMAINING SHALL BE PLACED IN 10" LIFTS AND SHALL BE COMPACTED TO AT LEAST 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D 688.
- BEDDING REQUIREMENTS FOR DUCTILE IRON WATER LINE ARE DEPENDENT ON MANUFACTURER'S BEDDING CRITERIA.
- ALL EXCAVATIONS SHALL COMPLY WITH OSHA TECHNICAL MANUAL, CHAPTER 2, TITLED "EXCAVATIONS: HAZARD RECOGNITION IN TRENCHING AND SHORING."
- THE TRACER WIRE SHALL BE PLACED ALONG THE LOWER QUADRANT OF THE PIPE. THE WIRE SHALL NOT TOUCH THE PIPE, BUT SHALL BE A MAXIMUM OF 6" FROM THE PIPE. NON-METALLIC SPACERS MAY BE USED TO MAINTAIN A SET DISTANCE FROM THE UTILITY.

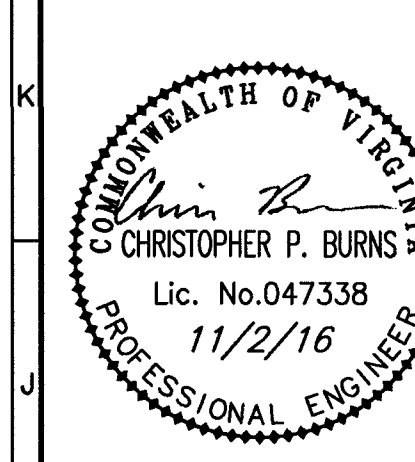


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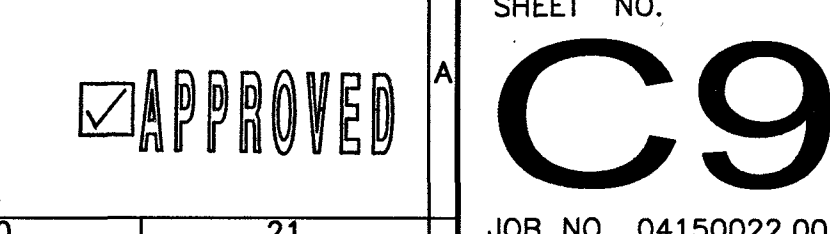
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Roanoke, VA 24018
540-772-9580
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HANGING ROCK ESTATES
SECTION 2
SITE DETAILS
CATAWBA
ROANOKE COUNTY, VIRGINIA

DRAWN BY LAR
DESIGNED BY CPB
CHECKED BY BTC
DATE 4/22/2016
SCALE AS NOTED

REVISIONS:
6/17/2016
7/28/2016
8/15/2016



SHEET NO.
C9
JOB NO. 04150022.00