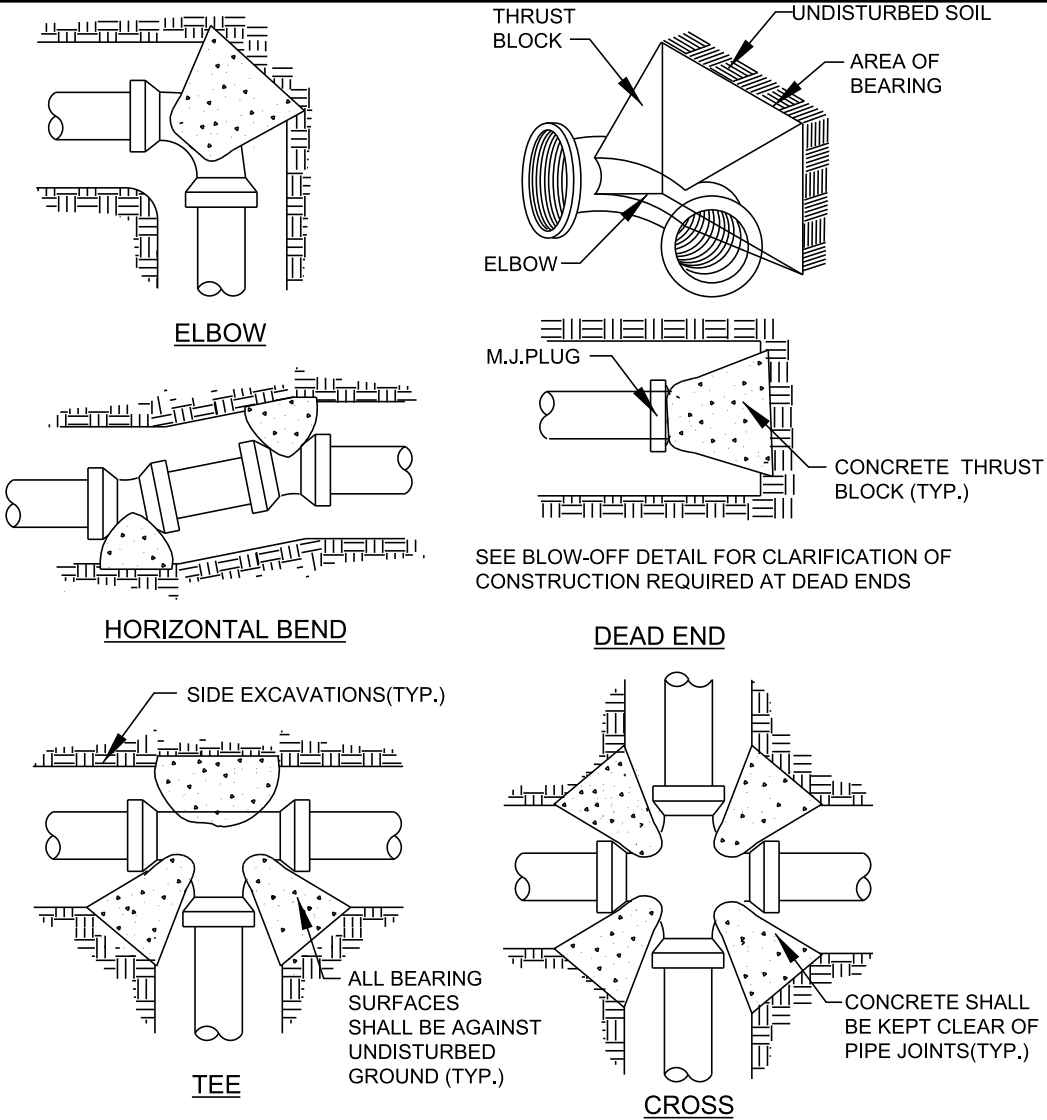


8/17/99

REVISIONS

NOTES

1. ALL WORK ASSOCIATED WITH THE RELOCATION OF WATER MAINS SHALL BE COMPLETED IN ACCORDANCE WITH THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES, LATEST EDITION, SUPPLEMENTED AS REQUIRED WITH THE FACILITY'S OWNER STANDARDS AS DESCRIBED IN THE PROJECT SPECIFIC SPECIAL PROVISIONS.
2. ALL WATER MAINS SHALL BE INSTALLED WITH A MINIMUM OF 36 INCHES OF COVER.
3. VERIFY ALL UTILITY CROSSINGS PRIOR TO CONSTRUCTION AND NOTIFY THE ENGINEER IF CONFLICTS ARE ENCOUNTERED.
4. CONTRACTOR SHALL COORDINATE UTILITY RELOCATION WITH LOCAL UTILITY COMPANIES AS REQUIRED.
5. ALL CONNECTIONS TO EXISTING WATER MAINS SHALL BE MADE WITH THRUST COLLAR IN ACCORDANCE WITH THE DETAIL OF THESE PLANS.
6. FILL LINE WITH WATER AND ALLOW TO SIT IN PLACE FOR 24 HOURS BEFORE TIE IN TO EXISTING LINE.

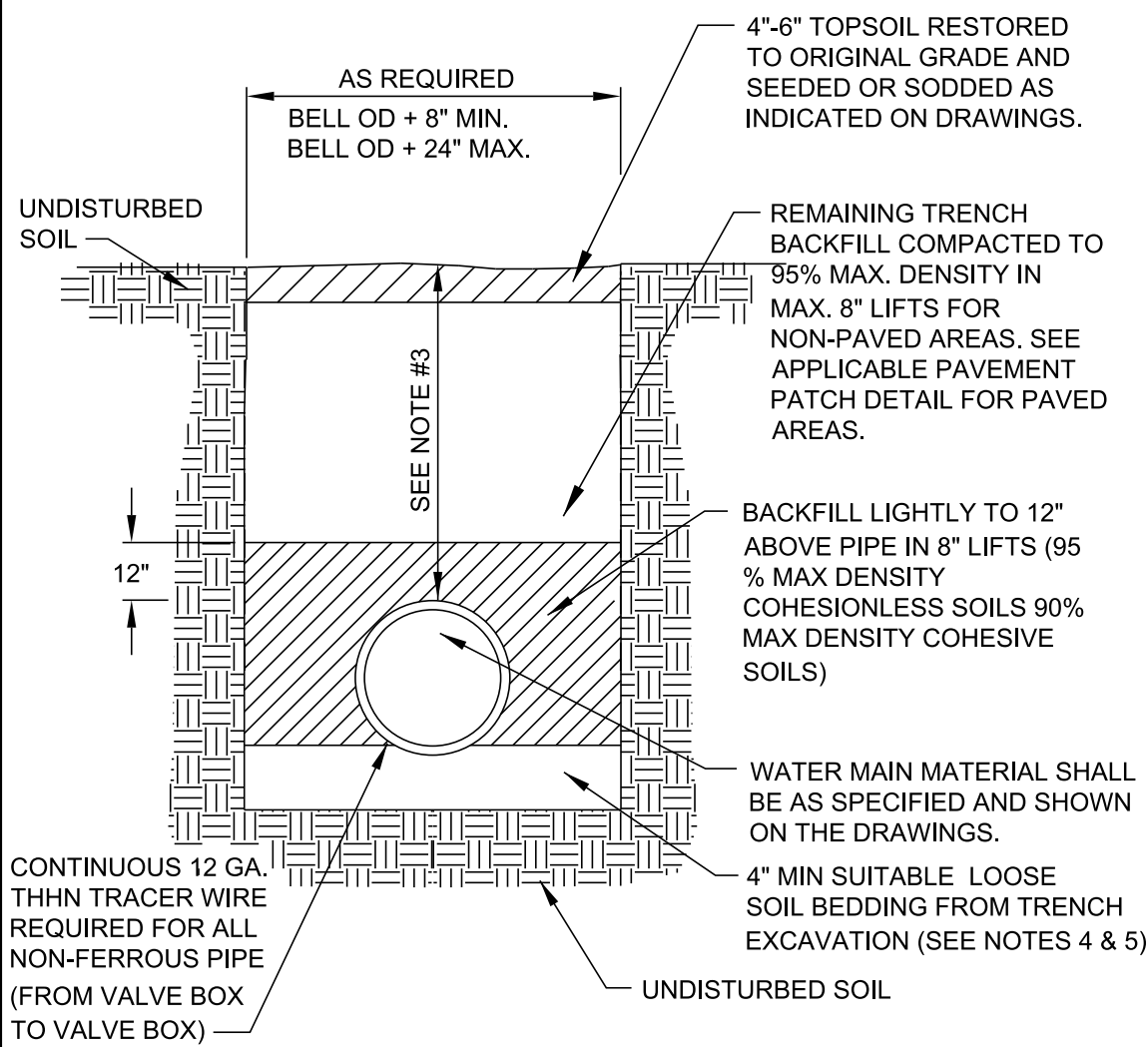


MINIMUM CONCRETE BLOCKING (C.Y.) *					
NOM. PIPE DIA. IN.	TEES & DEAD ENDS	90° BEND	45° BEND	22-1/2° BEND	11-1/4° BEND
4	1/3	1/3	1/3	1/3	1/3
6	1/3	1/3	1/3	1/3	1/3
8	1/3	1/2	1/3	1/3	1/3
10	2/3	3/4	1/2	1/3	1/3
12	3/4	1.0	2/3	1/3	1/3
14	1.0	1-1/2	3/4	1/2	1/3
16	1-1/3	2.0	1.0	1/2	1/3
18	1-2/3	2-1/3	1-1/3	2/3	1/3
20	2.0	3.0	1-2/3	3/4	1/2
24	3.0	4-1/3	2-1/3	1-1/3	2/3

NOTES

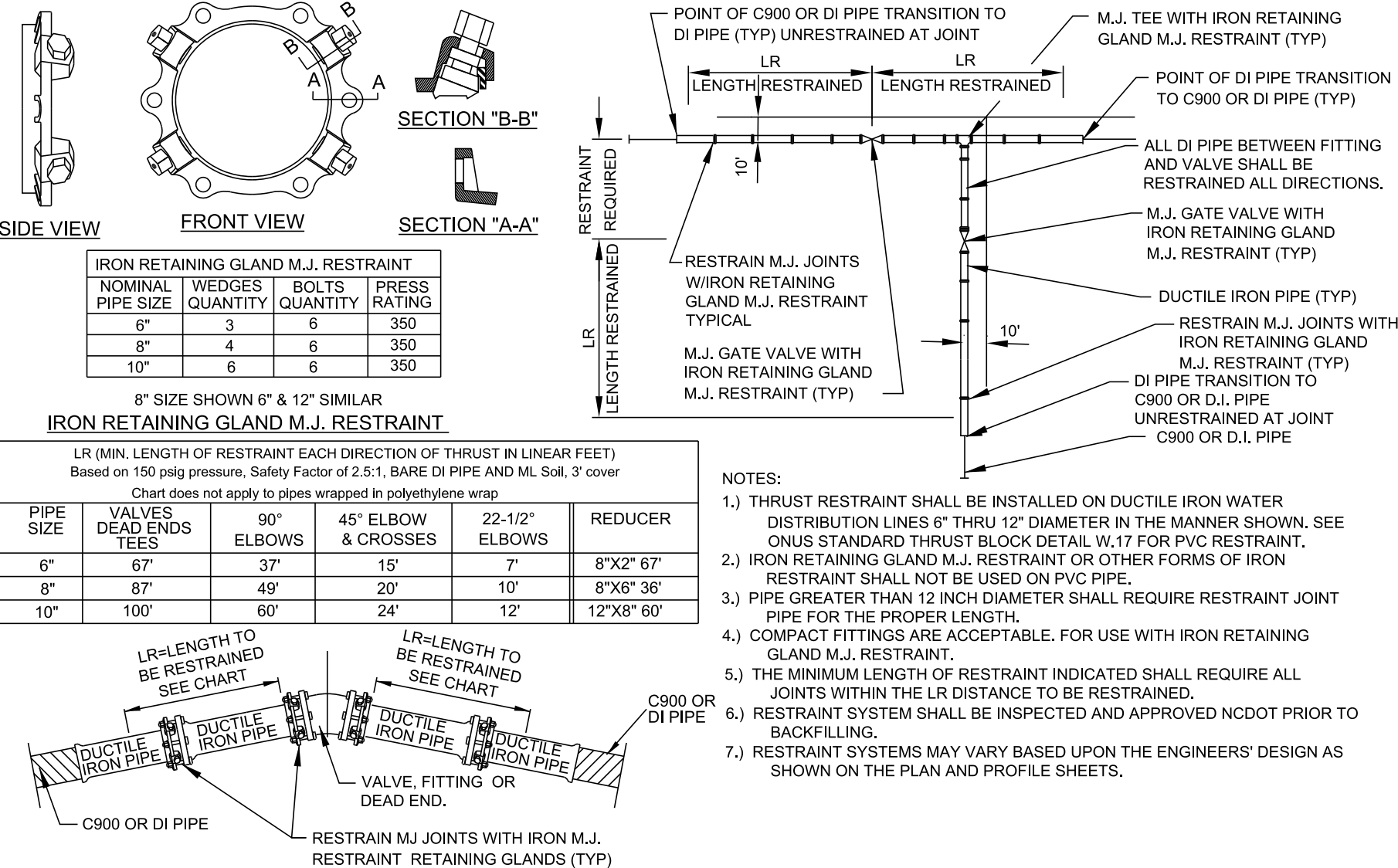
- 1.) THRUST BLOCKS SHALL BE INSTALLED ON WATER DISTRIBUTION LINES 6" THRU 12" DIA. IN THE MANNER SHOWN.
- 2.) PIPE GREATER THAN 12 INCH DIAMETER SHALL REQUIRE RESTRAINED JOINT PIPE FOR THE PROPER LENGTH.
- 3.) COMPACT FITTINGS ARE NOT ACCEPTABLE. STANDARD FITTINGS SHALL BE USED WITH CONCRETE THRUST BLOCKING.
- 4.) THRUST BLOCKS SHALL BE INSTALLED ON SEWER FORCE MAIN IN THE MANNER SHOWN.
- 5.) IF SAC-CRETE IS USED, MIXING MUST BE ON SITE UTILIZING A MECHANICAL MIXER.
- 6.) NO CONCRETE SHALL BE PLACED ON BOLTS, WRAP JOINT FITTINGS WITH PLASTIC.
- 7.) CONCRETE SHALL BE A MINIMUM 3,000 psi.
- 8.) ALL BEARING SURFACES SHALL BE AGAINST UNDISTURBED SOIL AND SHALL BE APPROVED BY NORTHAMPTON COUNTY PUBLIC WORKS DEPT. COORDINATOR PRIOR TO PLACEMENT OF CONCRETE.
- 9.) USE OF RESTRAINED JOINT DUCTILE IRON WILL BE REQUIRED IF SOIL CONDITIONS DO NOT ALLOW THE USE OF THRUST BLOCKS
- 10.) ALL VERTICAL BENDS SHALL BE RESTRAINED USING RESTRAINED JOINT DUCTILE IRON PIPE.

THRUST BLOCK DETAILS



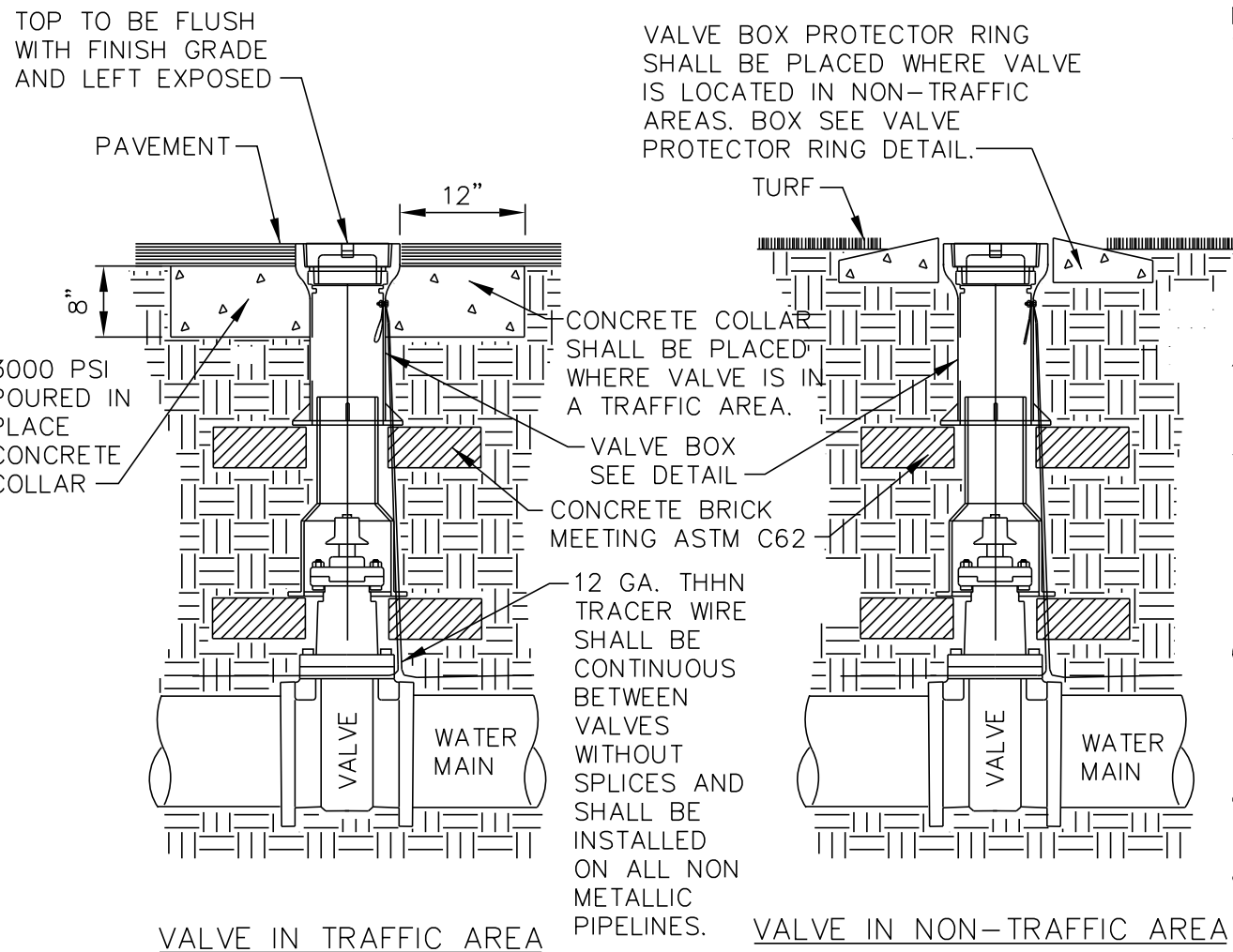
NOTES:

1. ALL EXCAVATIONS SHALL COMPLY WITH THE TERMS AND CONDITIONS OF THE CONSTRUCTION STANDARDS FOR EXCAVATIONS IN OSHA "SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION", CHAPTER XV11 OF TITLE 29, CFR, PART 1926. THE CONTRACTOR SHALL HAVE A COMPETENT PERSON ON SITE AT ALL TIMES DURING EXCAVATION AND BACKFILLING.
2. CONTRACTOR SHALL USE TRENCH BOX SHORING IN ALL OPEN CUTS IN PAVED AREAS. TRENCH WIDTH SHALL BE MAINTAINED AT THE MINIMUM PRACTICAL WIDTH.
3. TYPE 3 TRENCH CONDITIONS AND A MINIMUM OF 4' OF COVER MUST BE MAINTAINED WHERE RESTRAINT JOINT PIPE IS SPECIFIED AND 3.5' OF COVER IN ALL OTHER LOCATIONS UNLESS SHOWN OTHERWISE ON THE PLAN PROFILE.
4. LOOSE SOIL OR SELECT MATERIAL IS DEFINED AS "NATIVE" SOIL EXCAVATED FROM THE TRENCH, FREE OF ROCKS, FOREIGN MATERIAL, AND FROZEN EARTH.
5. BEDDING MATERIAL SHALL EXTEND TO UNDISTURBED TRENCH WALLS AND TRENCH BOTTOM. BEDDING MATERIAL WILL NOT BE PAID FOR UNLESS SPECIFICALLY APPROVED BY THE PROJECT REPRESENTATIVE AND ONLY FOR THE AUTHORIZED QUANTITY. & BEDDING MATERIAL SHALL BE PROPERLY RODDED AND COMPACTED AROUND THE PIPE HAUNCHES. TEST FOR DENSITY OF COMPACTION MAY BE MADE AT THE OPTION OF THE ENGINEER AND DEFICIENCIES SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO NCDOT. THE ENGINEER MAY HAVE COMPACTION TEST PERFORMED AFTER THE BACKFILL IS COMPLETE. CONTRACTOR SHALL BE REQUIRED TO EXCAVATE TO VARIOUS ELEVATIONS FOR DENSITY TESTING EXCAVATION, BACKFILL AND RECOMPACTION SHALL BE PERFORMED AT NO ADDITIONAL COSTS TO NCDOT.



NOTES:

- 1.) THRUST RESTRAINT SHALL BE INSTALLED ON DUCTILE IRON WATER DISTRIBUTION LINES 6" THRU 12" DIAMETER IN THE MANNER SHOWN. SEE ONUS STANDARD THRUST BLOCK DETAIL W.17 FOR PVC RESTRAINT.
- 2.) IRON RETAINING GLAND M.J. RESTRAINT OR OTHER FORMS OF IRON RESTRAINT SHALL NOT BE USED ON P.V.C. PIPE.
- 3.) PIPE GREATER THAN 12 INCH DIAMETER SHALL REQUIRE RESTRAINT JOINT PIPE FOR THE PROPER LENGTH.
- 4.) COMPACT FITTINGS ARE ACCEPTABLE. FOR USE WITH IRON RETAINING GLAND M.J. RESTRAINT.
- 5.) THE MINIMUM LENGTH OF RESTRAINT INDICATED SHALL REQUIRE ALL JOINTS WITHIN THE LR DISTANCE TO BE RESTRAINED.
- 6.) RESTRAINT SYSTEM SHALL BE INSPECTED AND APPROVED NCDOT PRIOR TO BACKFILLING.
- 7.) RESTRAINT SYSTEMS MAY VARY BASED UPON THE ENGINEERS' DESIGN AS SHOWN ON THE PLAN AND PROFILE SHEETS.



NOTES

1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH NCDOT & NORTHAMPTON COUNTY STANDARDS.
2. RESILIENT WEDGE GATE VALVE SHALL BE AS MANUFACTURED BY MUELLER CORP., OR NCDOT OR NORTHAMPTON CO. APPROVED EQUAL.
3. ALL VALVES SHALL HAVE 2" SQUARE OPERATING NUT AND SHALL OPEN COUNTER-CLOCKWISE.
4. VALVE BODY, BONNET & GATE SHALL BE DUCTILE IRON CONFORMING TO ASTM A-536.
5. VALVE BODY AND BONNET SHALL BE COATED ON ALL INTERIOR AND EXTERIOR SURFACES WITH A FUSION BONDED EPOXY IN ACCORDANCE WITH AWWA C-550-90.
6. ALL VALVES 24" AND SMALLER SHALL HAVE A SAFE WORKING PRESSURE OF 250 PSI.
7. SEE VALVE BOX DETAIL FOR ADDITIONAL INFORMATION.
8. SEE VALVE BOX PROTECTOR RING DETAIL FOR ADDITIONAL INFORMATION.
9. CONCRETE COLLAR ONLY TO BE INSTALLED ON STREETS, AND ON VALVES INSTALLED ON EXISTING MAINS (INCLUDING TAPPING SLEEVES AND VALVES) LOCATED IN PAVED AREAS.

