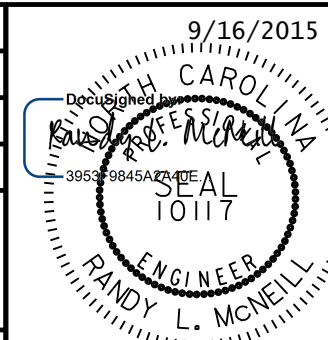


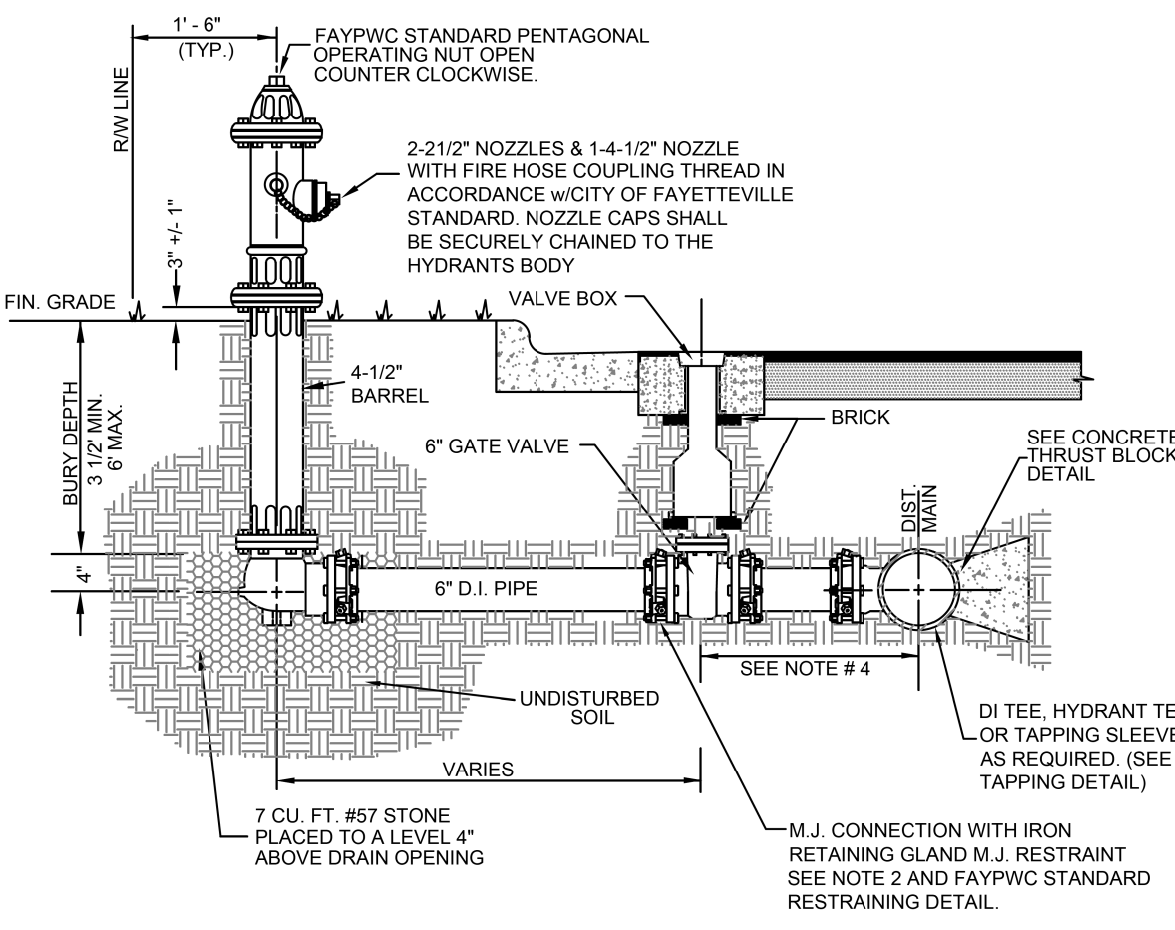
PROJECT REFERENCE NO.	SHEET NO.
W-5519	UC-3D
DESIGNED BY: DMP	9/16/2015
DRAWN BY: DMP	
CHECKED BY: DMP	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

(TYPICAL - NEW FIRE HYDRANTS CONNECTED TO EXISTING WATER MAINS)

- PROPOSED FIRE HYDRANTS SHALL BE INSTALLED IN ADVANCE OF SEWER MAIN CONSTRUCTION. THE CONTRACTOR SHALL SEQUENCE THE HYDRANT INSTALLATION TO PROVIDE AND/OR SUPPLEMENT WATER MAIN FLUSHING IF BREAKS OCCUR.
- FIRE HYDRANT CONNECTIONS TO EXISTING WATER MAINS SHALL BE MADE USING A TAPPING SLEEVE AND VALVE BY WET TAP CONNECTION. THE TAPPING SLEEVE AND VALVE SHALL BE HYDROSTATICALLY TESTED PRIOR TO THE COMPLETION OF THE TAP IN THE PRESENCE OF THE OWNER.
- THE CONTRACTOR SHALL HAVE THE EXISTING UTILITIES LOCATED IN THE VICINITY OF THE PROPOSED FIRE HYDRANT PRIOR TO REQUESTING CONSTRUCTION STAKES. THE PROPOSED LOCATION MAY BE SHIFTED OR RELOCATED BY THE OWNER IF CONFLICTS EXIST (I.E. GAS SERVICES, UGE, TELEPHONE, ETC.).
- THE CONTRACTOR SHALL VERIFY (BY DIGGING), IN ADVANCE OF INSTALLATION AND MATERIAL PROCUREMENT, THE EXISTING WATER MAIN MATERIAL, SIZE, CLASS, DEPTH AND LOCATION FOR EACH INDIVIDUAL FIRE HYDRANT LOCATION IN ORDER TO SUPPLY PROPER SLEEVE TYPES, BARREL LENGTHS AND OTHER REQUIRED MATERIALS TO ACCOMMODATE EXISTING MATERIALS ENCOUNTERED AND SITE CONDITIONS.
- THE INFORMATION CONTAINED IN THE "FIRE HYDRANT DATA CHART" WAS PRODUCED USING EXISTING FAYPWC RECORDS AND AVAILABLE FIELD INFORMATION. THE INFORMATION IS INTENDED TO ASSIST THE CONTRACTOR, BUT IS NOT GUARANTEED. THE CONTRACTOR IS ENCOURAGED TO VERIFY ALL THE PROVIDED INFORMATION. THIS INFORMATION IS APPROXIMATE AND MAY NOT BE ACCURATE.
- THE CONTRACTOR WILL BE REQUIRED TO SUPPLY VARIOUS LENGTHS OF BARRELS AND HYDRANT EXTENSIONS (NO MORE THAN ONE HYDRANT EXTENSION MAY BE USED PER HYDRANT) TO ADJUST FOR WATER MAIN DEPTHS IN RELATION TO TOP OF EXISTING CURB GRADE, TOP OF PAVEMENT, EXISTING DITCH GRADE AND/OR RIGHT-OF-WAY GROUND ELEVATIONS AS NECESSARY. ADDITIONAL FITTINGS AND/OR HYDRANT EXTENSIONS OR OFFSET CONNECTORS MAY BE REQUIRED TO MAINTAIN PROPER COVER AS APPROVED BY THE FAYPWC PROJECT COORDINATOR. (NO SEPARATE PAYMENT).
- EXISTING VALVE DEPTHS ARE MEASURED FROM EXISTING ASPHALT AND/OR VALVE COVER TO THE TOP OF THE OPERATING NUT. THE BARREL INFORMATION SHOWN IS CALCULATED USING AN INTERPOLATION BETWEEN THE TWO NEAREST VALVES. THE GROUND ELEVATION AND/OR CURB FOR THE PROPOSED FIRE HYDRANT IS INTERPOLATED FROM CROSS SECTIONS AND THE FLANGE ELEVATION SHOWN IS APPROXIMATE. FIRE HYDRANT SHALL BE INSTALLED IN ACCORDANCE WITH THE FIRE HYDRANT AND VALVE INSTALLATION DETAIL.
- THE CONTRACTOR SHALL SUBSTITUTE VARIOUS BARREL DEPTHS WITHIN THE PROJECT (I.E. FIRE HYDRANT NO. 1 INDICATES A 5'-0" DEPTH OF BURY. ACTUAL CONDITIONS CALL FOR A 6'-0" DEPTH OF BURY. FIRE HYDRANT NO. 2 INDICATES A 6'-0" DEPTH OF BURY, ACTUAL CONDITIONS REQUIRE A 5'-0" DEPTH OF BURY, THEN A SUBSTITUTION WILL BE REQUIRED). ALL EXTENSIONS SHALL BE APPROVED BY THE FAYPWC PROJECT COORDINATOR PRIOR TO INSTALLATION AND ONLY AFTER ALL EFFORTS OF SUBSTITUTION ARE EXHAUSTED.
- WHERE INDICATED TO TIE EXISTING FIRE HYDRANT TO NEW MAIN, CONTRACTOR SHALL PROVIDE ALL LABOR, TOOLS, EQUIPMENT, MATERIALS, ETC. NECESSARY TO PROVIDE A COMPLETE INSTALLATION. FIRE HYDRANT SHALL BE TRANSFERRED TO NEW MAIN BRANCH LINE AFTER MAIN IS ACCEPTED. HYDRANTS SHALL NOT BE OUT OF SERVICE FOR GREATER THAN 24 HOURS. CONTRACTOR SHALL NOTIFY THE APPROPRIATE FIRE DEPARTMENT OF OUT OF SERVICE FIRE HYDRANTS PRIOR TO CONSTRUCTION.
- SOD SHALL BE REPLACED WHERE APPLICABLE. DAMAGE TO PROPERTY OWNERS LANDSCAPING, FENCES, ETC. SHALL BE REPAIRED OR REPLACED TO THE PROPERTY OWNER'S SATISFACTION, TO INCLUDE WITHIN RIGHT-OF-WAY. (NO SEPARATE PAYMENT).

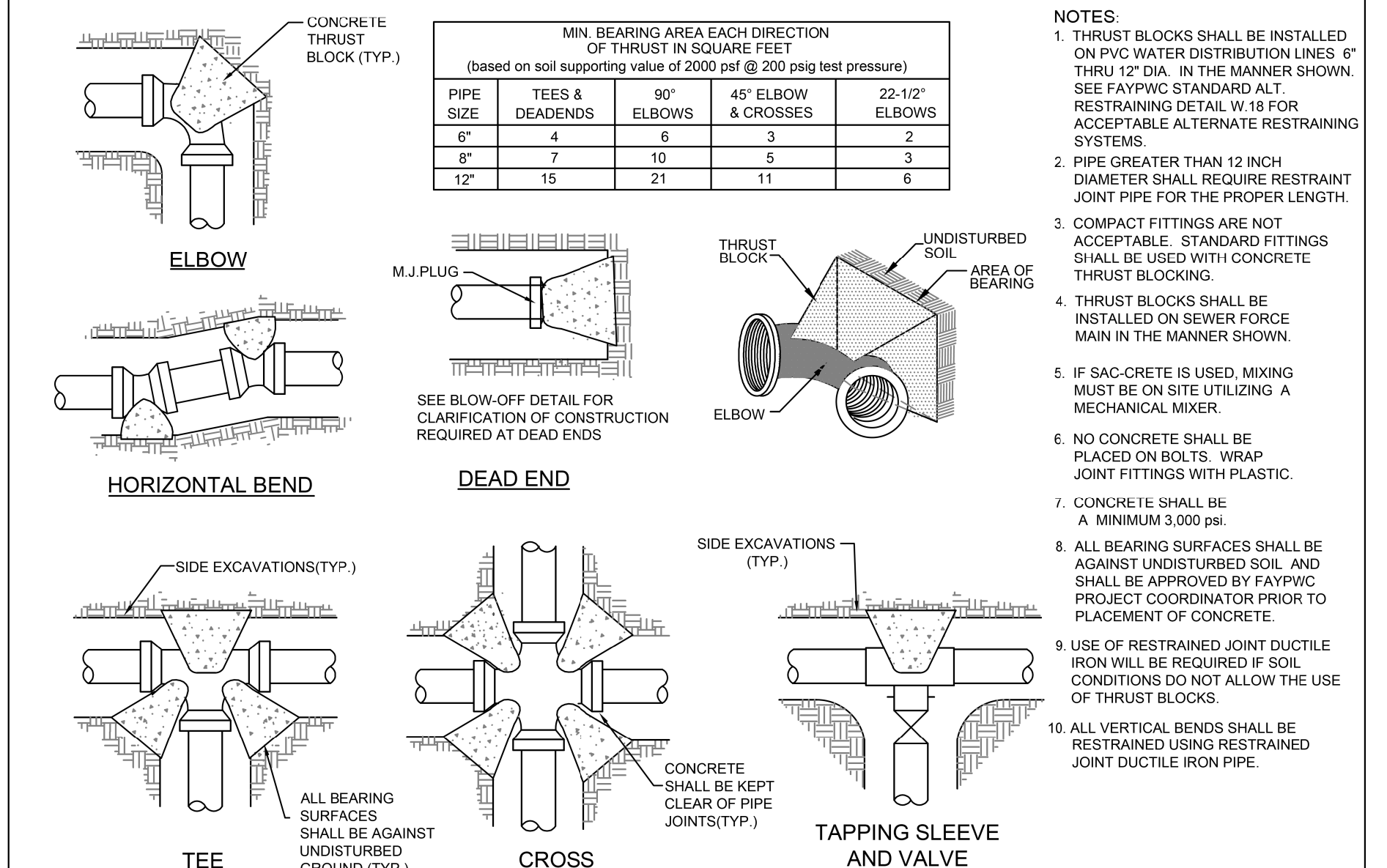
FIRE HYDRANT ADDITIONAL GENERAL NOTES		PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO. DATE REVISION	
SHEET NO. 1 OF 1		DWG. NO. W.12		DWG. BY: FAYPWC	
DATE: JULY 01, 2015		APPROVED BY: J.E.G.		WATER RESOURCES ENGINEERING DEPARTMENT	
				2015-W12 FH NOTES.dwg	



FIRE HYDRANT AND VALVE INSTALLATION N.T.S.

- FIRE HYDRANT SHALL BE MODELS MANUFACTURED BY MUELLER CO. (CENTURIAN), AMERICAN VALVE AND HYDRANT CO. (MODEL MARK 73), CLOW MEDALLION OR APPROVED EQUAL.
- ALL VALVES AND HYDRANTS SHALL HAVE M.J. CONNECTIONS WITH IRON RETAINING GLAND M.J. RESTRAINT.
- FIRE HYDRANT SHALL BE FIELD PAINTED IN ACCORDANCE WITH FAYPWC STANDARDS, BEFORE PROJECT IS ACCEPTED.
- HYDRANT VALVE SHALL BE PLACED AS CLOSE AS POSSIBLE TO THE MAIN, BUT DO NOT PLACE VALVE IN PROPOSED OR EXISTING CURB AND GUTTER. IF THE STREET IS SOIL AND NO PAVING IS TO BE DONE AT THIS TIME, THE LOCATION OF THE VALVE IS TO BE DETERMINED BY THE FAYPWC PROJECT COORDINATOR.
- FIRE HYDRANTS SHALL BE PLACED AS DIRECTED BY THE FAYPWC PROJECT COORDINATOR.
- HYDRANT BRANCH SHALL NOT BE BACK FILLED UNTIL INSPECTED AND APPROVED BY FAYPWC PROJECT COORDINATOR.
- GATE VALVE AND BOX SHALL BE IN ACCORDANCE WITH FAYPWC STANDARD DETAIL.
- HYDRANT EXTENSIONS AND/OR OFFSETS SHALL BE APPROVED BY FAYPWC PROJECT COORDINATOR.

FIRE HYDRANT AND VALVE INSTALLATION N.T.S.		PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO. DATE REVISION	
SHEET NO. 1 OF 1		DWG. NO. W.13		DWG. BY: FAYPWC	
DATE: JULY 01, 2015		APPROVED BY: J.E.G.		WATER RESOURCES ENGINEERING DEPARTMENT	
				2015-W13 FHCC.dwg	

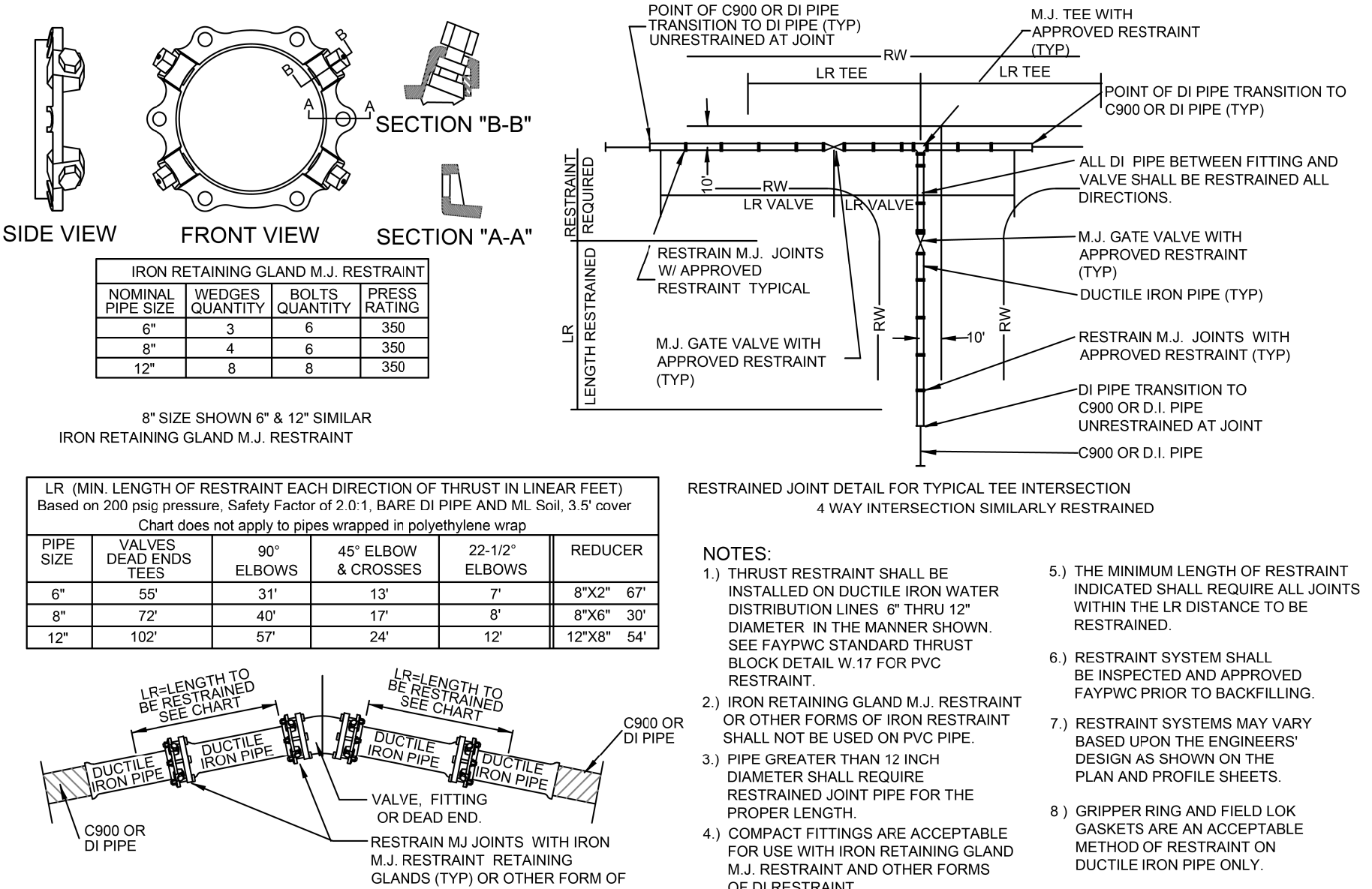


CONCRETE THRUST BLOCK DETAIL N.T.S.

PIPE SIZE	TEES & DEAD ENDS	90° ELBOWS	45° ELBOW & CROSSES	22-1/2" ELBOWS
6"	4	6	3	2
8"	7	10	5	3
12"	15	21	11	6

- THRUST BLOCKS SHALL BE INSTALLED ON PVC WATER DISTRIBUTION LINES 8" THRU 12" DIA. IN THE MANNER SHOWN. SEE FAYPWC STANDARD ALTERNATE RESTRAINING SYSTEMS.
- PIPE GREATER THAN 12 INCH DIAMETER SHALL REQUIRE RESTRAINT JOINT PIPE FOR THE PROPER LENGTH.
- COMPACT FITTINGS ARE NOT ACCEPTABLE. STANDARD FITTINGS SHALL BE USED WITH CONCRETE THRUST BLOCKING.
- THRUST BLOCKS SHALL BE INSTALLED ON SEWER FORCE MAIN IN THE MANNER SHOWN.
- IF SAC-RETE IS USED, MIXING MUST BE ON SITE UTILIZING A MECHANICAL MIXER.
- NO CONCRETE SHALL BE PLACED ON BOLTS. WRAP JOINT FITTINGS WITH PLASTIC.
- CONCRETE SHALL BE A MINIMUM 3,000 PSI.
- ALL BEARING SURFACES SHALL BE AGAINST UNDISTURBED SOIL AND SHALL BE APPROVED BY FAYPWC PROJECT COORDINATOR PRIOR TO PLACEMENT OF CONCRETE.
- USE OF RESTRAINED JOINT DUCTILE IRON WILL BE REQUIRED IF SOIL CONDITIONS DO NOT ALLOW THE USE OF THRUST BLOCKS.
- ALL VERTICAL BENDS SHALL BE RESTRAINED USING RESTRAINED JOINT DUCTILE IRON PIPE.

CONCRETE THRUST BLOCK DETAIL N.T.S.		PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO. DATE REVISION	
SHEET NO. 1 OF 1		DWG. NO. W.17		DWG. BY: FAYPWC	
DATE: JULY 01, 2015		APPROVED BY: J.E.G.		WATER RESOURCES ENGINEERING DEPARTMENT	
				2015-W17 THRUSTBLOCK.dwg	



ALTERNATE RESTRAINT DETAIL (DUCTILE IRON PIPE ONLY) N.T.S.

NOMINAL PIPE SIZE	WEDGES QUANTITY	BOLTS QUANTITY	PRESS RATING
6"	3	6	350
8"	4	8	350
12"	8	8	350

- THRUST RESTRAINT SHALL BE INSTALLED ON DUCTILE IRON WATER DISTRIBUTION LINES 8" THRU 12" DIAMETER IN THE MANNER SHOWN. SEE FAYPWC STANDARD THRUST BLOCK DETAIL W.17 FOR PVC RESTRAINT.
- IRON RETAINING GLAND M.J. RESTRAINT OR OTHER FORMS OF IRON RESTRAINT SHALL NOT BE USED ON PVC PIPE.
- PIPE GREATER THAN 12 INCH DIAMETER SHALL REQUIRE RESTRAINED JOINT PIPE FOR THE PROPER LENGTH.
- COMPACT FITTINGS ARE ACCEPTABLE FOR USE WITH IRON RETAINING GLAND M.J. RESTRAINT AND OTHER FORMS OF DI RESTRAINT.
- THE MINIMUM LENGTH OF RESTRAINT INDICATED SHALL REQUIRE ALL JOINTS WITHIN THE LR DISTANCE TO BE RESTRAINED.
- RESTRAINT SYSTEM SHALL BE INSPECTED AND APPROVED FAYPWC PRIOR TO BACKFILLING.
- RESTRAINT SYSTEMS MAY VARY BASED UPON THE ENGINEERS' DESIGN AS SHOWN ON THE PLAN AND PROFILE SHEETS.
- GRIPPER RING AND FIELD LOK GASKETS ARE AN ACCEPTABLE METHOD OF RESTRAINT ON DUCTILE IRON PIPE ONLY.

ALTERNATE RESTRAINT DETAIL (DUCTILE IRON PIPE ONLY) N.T.S.		PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO. DATE REVISION	
SHEET NO. 1 OF 1		DWG. NO. W.18		DWG. BY: FAYPWC	
DATE: JULY 01, 2015		APPROVED BY: J.E.G.		WATER RESOURCES ENGINEERING DEPARTMENT	
				2015-W18 RESTRAINT DETAIL.dwg	