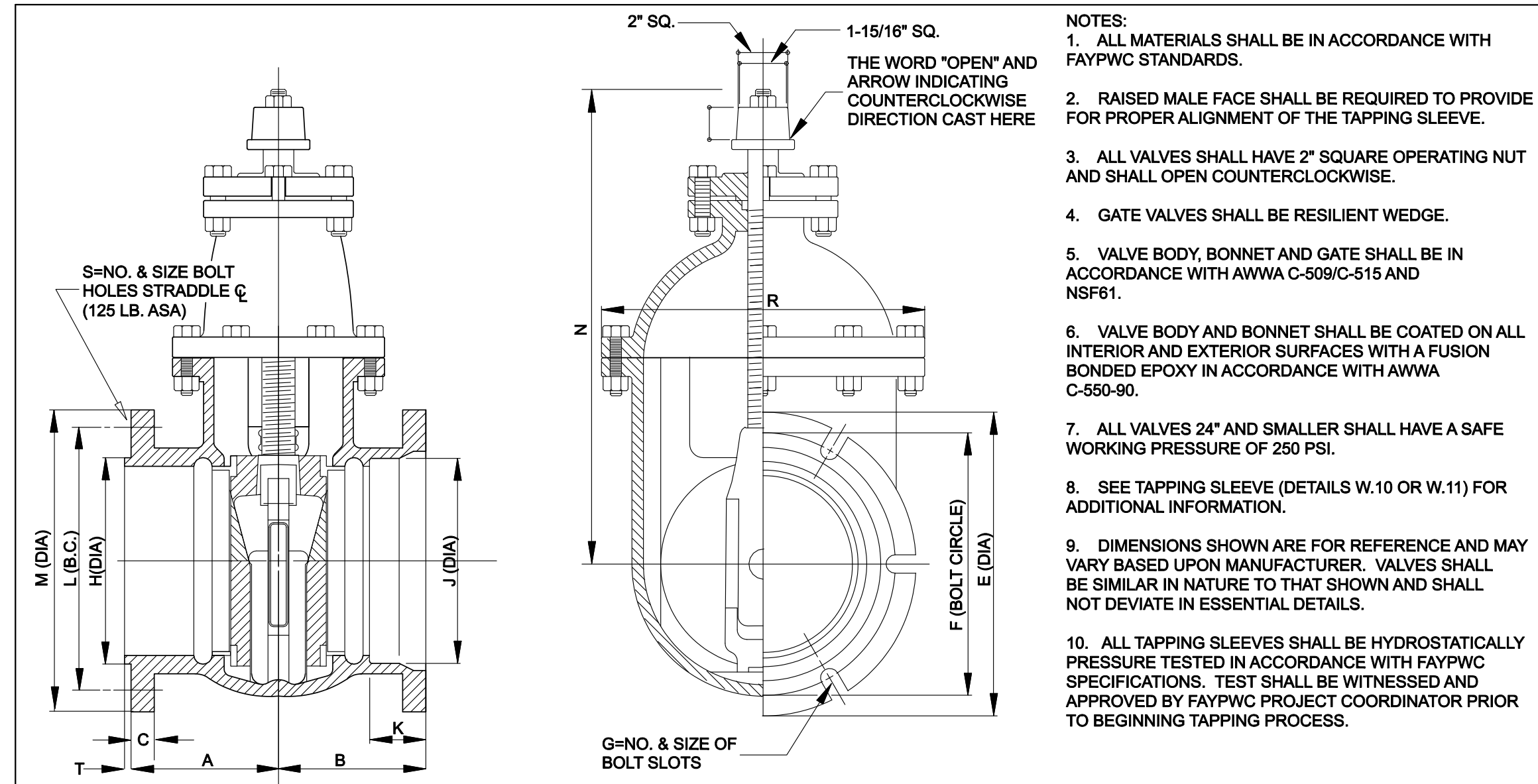


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UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO. B-4490	SHEET NO. UC-3D
DESIGNED BY:	
DRAWN BY: NONE	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

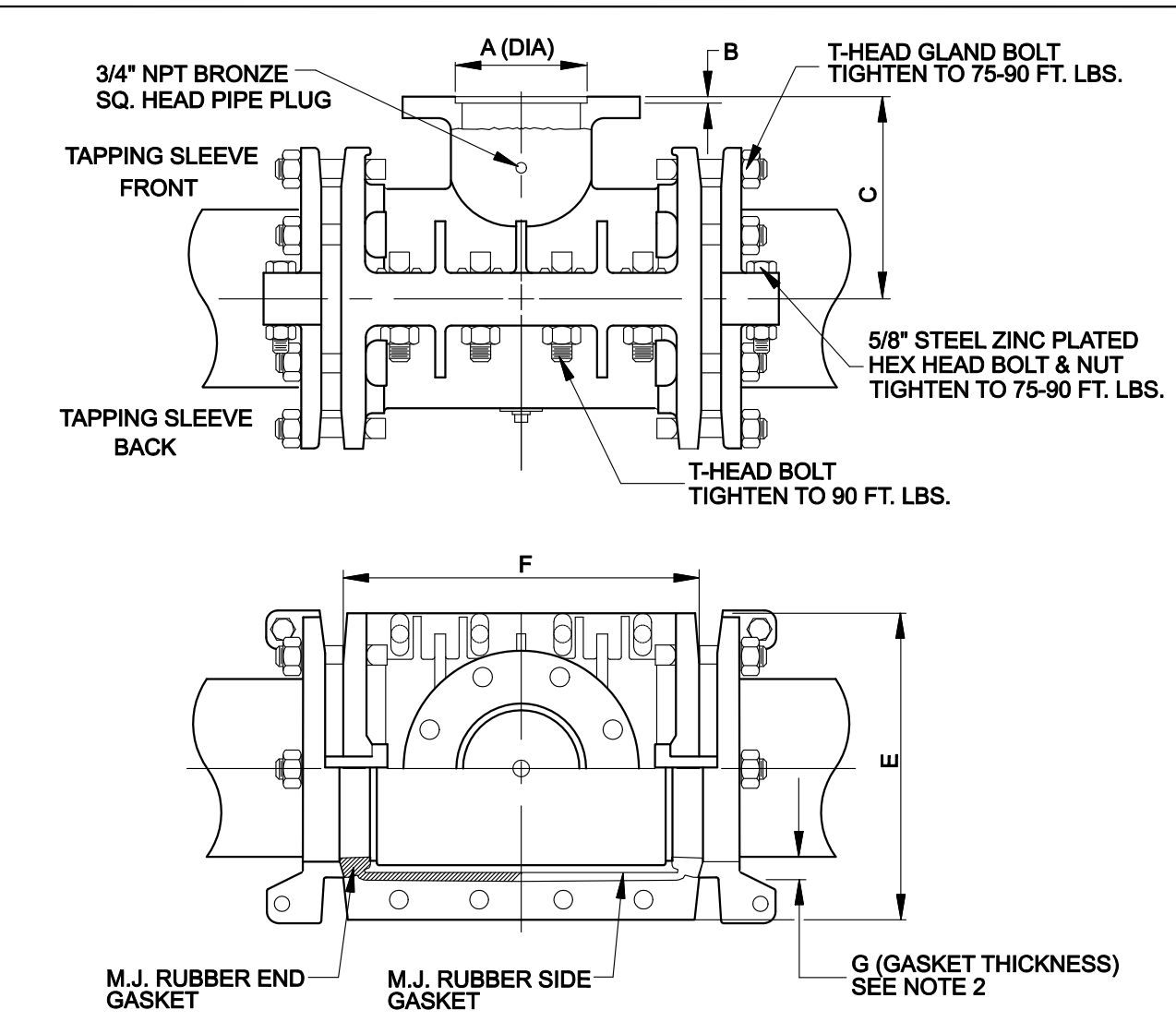
UTILITY CONSTRUCTION



- NOTES:
1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH FAYPWC STANDARDS.
 2. RAISED MALE FACE SHALL BE REQUIRED TO PROVIDE FOR PROPER ALIGNMENT OF THE TAPPING SLEEVE.
 3. ALL VALVES SHALL HAVE 2" SQUARE OPERATING NUT AND SHALL OPEN COUNTERCLOCKWISE.
 4. GATE VALVES SHALL BE RESILIENT WEDGE.
 5. VALVE BODY, BONNET AND GATE SHALL BE IN ACCORDANCE WITH AWWA C-509/C-515 AND NSF61.
 6. 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.
 7. ALL VALVES 24" AND SMALLER SHALL HAVE A SAFE WORKING PRESSURE OF 250 PSI.
 8. SEE TAPPING SLEEVE (DETAILS W.10 OR W.11) FOR ADDITIONAL INFORMATION.
 9. DIMENSIONS SHOWN ARE FOR REFERENCE AND MAY VARY BASED UPON MANUFACTURER. VALVES SHALL BE SIMILAR IN NATURE TO THAT SHOWN AND SHALL NOT DEVIATE IN ESSENTIAL DETAILS.
 10. ALL TAPPING SLEEVES SHALL BE HYDROSTATICALLY PRESSURE TESTED IN ACCORDANCE WITH FAYPWC SPECIFICATIONS. TEST SHALL BE WITNESSED AND APPROVED BY FAYPWC PROJECT COORDINATOR PRIOR TO BEGINNING TAPPING PROCESS.

VALVE SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	R	S	T	URNS TO OPEN	WEIGHT W/ACC
4	4-3/8	5-7/8	15/16	1-1/2	9	7-1/2	4-7/8	4-63/64	4-29/32	2-1/2	7-1/2	9	14-1/8	9	8-3/4	1/4	14	118
6	6-7/8	6-1/4	1	1-5/8	11	9-1/2	6-7/8	6-63/64	7	2-1/2	9-1/2	11	17-5/8	11-3/4	8-7/8	1/4	21	175
8	6-1/2	7-1/4	1-1/8	1-3/4	13-1/4	11-3/4	6-7/8	6-63/64	9-5/32	2-1/2	11-3/4	13-1/2	21	14-1/4	8-7/8	1/4	28	274
12	7	8-1/4	1-1/4	1-3/4	17-7/8	16-1/4	8-7/8	12-63/64	13-5/16	2-1/2	17	19	28-1/4	19-1/8	12-1	1/4	39	570
16	8-1/2	9-1/8	1-7/16	2-1/16	23	21	12-7/8	16-15/16	17-35/64	3-1/2	21-1/4	23-1/2	38-5/8	26-1/8	16-1 1/8	1/4	55	1140
24	10-1/2	14-1/4	1-7/8	2-1/2	31-3/4	30	16-7/8	24-15/16	25-15/16	3-1/2	29-1/2	32	54-5/8	37-5/8	20-1 3/8	5/16	79	3225

TAPPING VALVE (N.T.S.)		PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO. DATE REVISION	
DWG. NO. W.9		DWG. BY: FAYPWC		1 7/09 ADDED NOTE 10, REVISED 4 & 5	
DATE: JULY 01, 2015		APPROVED BY: J.E.G.		2 7/13 REVISED NOTES 4, 8, 10	
SHEET NO. 1 OF 1		WATER RESOURCES ENGINEERING DEPARTMENT		2015-W9 M.J. TAPPING VALVE.dwg	

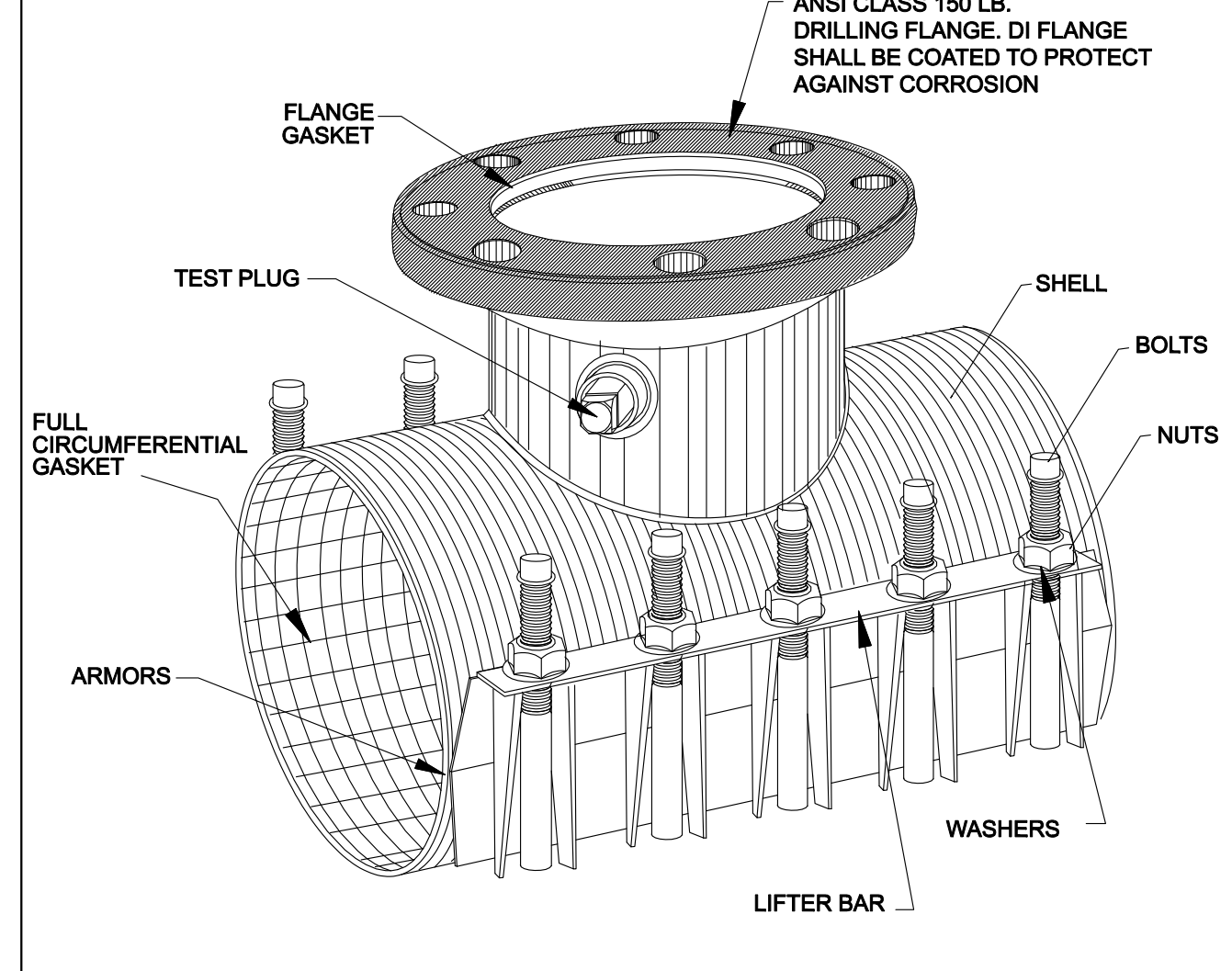


- NOTES:
1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH FAYPWC STANDARDS. SLEEVE BODY SHALL BE DUCTILE IRON ASTM A536.
 2. MECHANICAL JOINT TAPPING SLEEVES SHALL BE FURNISHED WITH SPLIT GLANDS, SPLIT END GASKET BOLTS, ETC. THE OUTLET FLANGE SHALL BE CL 125 PER ANSI B16.1 COMPATIBLE WITH APPROVED TAPPING VALVES.
 3. DIMENSIONS SHOWN ARE FOR REFERENCE AND MAY VARY BASED UPON MANUFACTURER. SLEEVES SHALL BE SIMILAR IN NATURE TO THAT SHOWN AND SHALL NOT DEVIATE IN ESSENTIAL DETAILS.
 4. PIPE SURFACES SHALL BE CLEANED THOROUGHLY TO PERMIT FOR A GOOD SEAL PRIOR TO INSTALLATION.
 5. EXTERIOR OF TAPPING SLEEVE SHALL BE COATED w/2 COATS ASPHALTIC VARNISH MIL-C450.
 6. ALL TAPPING SLEEVES SHALL BE HYDROSTATICALLY PRESSURE TESTED IN ACCORDANCE WITH FAYPWC SPECIFICATIONS. TEST SHALL BE WITNESSED AND APPROVED BY FAYPWC PROJECT COORDINATOR PRIOR TO BEGINNING TAPPING PROCESS.
 7. SEE DETAILS W.9 AND W.17 FOR ADDITIONAL REQUIREMENTS.

SLEEVE SIZE PIPE X BRANCH	6X6	8X6	8X8	12X6	12X8	12X12	16X6	16X8	16X12	24X6	24X8	24X12	24X16	24X24	30X6	30X8	30X12	30X16	30X24
A DIA	7.016	7.016	9.016	7.016	9.016	13.016	7.016	9.016	13.016	11.00	13.5	19.0	23.5	32.0	11.00	13.5	19.0	23.5	32.0
B	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31
C	7-7/8	9-1/16	9	11-5/8	11-7/8	12-7/8	14-1/8	14-1/2	14-7/8	19.5	19.5	20.5	20.5	23.25	23.25	23.25	23.75	23.75	23.75
E	11-3/4	13-7/8	13-7/8	18-1/2	18-1/2	18-1/2	23-1/2	23-1/2	23-1/2	35.5	35.5	35.5	35.5	35.5	43.37	43.37	43.37	43.37	43.37
F	13-1/2	15	15	19-1/2	19-1/2	19-1/2	22-1/2	22-1/2	22-1/2	18.0	18.0	24.0	30.0	36.0	24.0	24.0	24.0	36.0	36.0

DUCTILE IRON TAPPING SLEEVE		PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO. DATE REVISION	
DWG. NO. W.10		DWG. BY: FAYPWC		1 7/09 REVISED NOTE 6/REMOVED NOTE 8.	
DATE: JULY 01, 2015		APPROVED BY: J.E.G.		2 7/13 REVISED NOTES 6, 7.	
SHEET NO. 1 OF 1		WATER RESOURCES ENGINEERING DEPARTMENT		2015-W10 TAPPING SLEEVE.dwg	

NOMINAL PIPE SIZE (INCH)	BRANCH SIZE	APPROX. WT. LBS.
4"	3", 4"	28.30
6"	3", 4", 6"	36.38, 45
8"	3", 4", 6", 8"	42.44, 48.66
10"	3", 4", 6", 8", 10"	45.48, 55.70, 80
12"	3", 4", 6", 8", 10", 12"	50.52, 60.81, 96, 143
16"	3", 4", 6", 8", 10", 12"	78.80, 85.100, 115, 172
24"	3", 4", 6", 8", 10", 12"	85.87, 90.100, 145, 230



- NOTES:
1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH FAYPWC STANDARDS.
 2. TAPPING SLEEVES MANUFACTURER SHALL BE AS APPROVED BY FAYPWC.
 3. STAINLESS STEEL TAPPING SLEEVE MAY BE UTILIZED FOR ALL TAPPING OF MAINS UP TO AND INCLUDING 24" DIAMETER WITH 12" OR LESS BRANCH. BRANCH GREATER THAN 12" SHALL REQUIRE FULL BODY D.I. M.J. TAPPING SLEEVE (SEE DETAIL W.10).
 4. SHELL AND LUGS SHALL BE STAINLESS STEEL PER ASTM A 240, TYPE 304 AND 304L.
 5. BOLTS SHALL BE 5/8" UNC ROLL THREAD, STAINLESS STEEL PER ASTM A 193 TYPE 304 4" NOM. PIPE SIZE SHALL HAVE MIN. 1/2" BOLTS.
 6. NUTS SHALL BE HEAVY HEX STAINLESS STEEL PER ASTM A-194, TYPE 304.
 7. WASHERS SHALL BE STEEL AND PLASTIC LUBRICATING WASHER.
 8. GASKETS SHALL BE VIRGIN SBR PER ASTM D 2000 MAA 610, COMPOUNDED FOR WATER AND SEWER SERVICE.
 9. FLANGE SHALL BE DUCTILE IRON PER ASTM 536, GRADE 65-45-12, OR STAINLESS STEEL PER ASTM A-240, TYPE 304.
 10. DIMENSIONS SHOWN ARE FOR REFERENCE AND MAY VARY BASED UPON MANUFACTURER. SLEEVES SHALL BE SIMILAR IN NATURE TO THAT SHOWN AND SHALL NOT DEVIATE IN ESSENTIAL DETAILS.
 11. PIPE SURFACES SHALL BE CLEANED THOROUGHLY TO PERMIT A GOOD SEAL PRIOR TO INSTALLATION.
 12. ALL TAPPING SLEEVES SHALL BE HYDROSTATICALLY PRESSURE TESTED IN ACCORDANCE WITH FAYPWC SPECIFICATIONS. TEST SHALL BE WITNESSED AND APPROVED BY FAYPWC PROJECT COORDINATOR PRIOR TO BEGINNING TAPPING PROCESS.
 13. THE NUMBER OF BOLTS, NUTS AND WASHERS SHOWN ARE FOR ILLUSTRATION ONLY; ACTUAL QUANTITY SHALL BE AS RECOMMENDED BY THE SLEEVE MANUFACTURER FOR THE REQUIRED SERVICE.
 14. SEE DETAILS W.9 AND W.17 FOR ADDITIONAL REQUIREMENTS.

STAINLESS STEEL TAPPING SLEEVE (N.T.S.)		PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO. DATE REVISION	
DWG. NO. W.11		DWG. BY: FAYPWC		1 7/09 ADDED NOTES 2, 12 & CLARIFIED NOTES	
DATE: JULY 01, 2015		APPROVED BY: J.E.G.		2 7/13 REVISED NOTES 3, 12, 14	
SHEET NO. 1 OF 1		WATER RESOURCES ENGINEERING DEPARTMENT		2015-W11 SSTAPPING SLEEVE.dwg	

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

1. 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.
2. 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.
3. 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.).
4. 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.
5. 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.
6. 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).
7. 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.
8. 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.
9. 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.
10. 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	
DWG. NO. W.12		DWG. BY: FAYPWC		1 7/09 REVISED NOTES 2, 3, 6, & 9. REMOVED NOTE 11.	
DATE: JULY 01, 2015		APPROVED BY: J.E.G.			
SHEET NO. 1 OF 1		WATER RESOURCES ENGINEERING DEPARTMENT		2015-W12 FH NOTES.dwg	

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