

EXISTING DRAINAGE SUMMARY				
STRUCTURE ID	TYPE	TOP ELEV	INVERT ELEV	PIPE SIZE, TYPE
D 10	GRATE INLET (48" ID)	1093.0	1090.9	12" CMP
D 11	STD ENDWALL	1106.3 (CONC. WALL)	1103.9	15" RCP
D 12	GRATE INLET (48" ID)	1106.9	1104.3	15" RCP

THE PROPOSED STORM DRAINAGE SYSTEM IS PRIVATE, OWNED AND MAINTAINED BY THE "MEADOWBROOK VILLAGE PHASE V TOWNHOUSE ASSOCIATION" OR EQUIVALENT NAME. THE STORMWATER MANAGEMENT POND IS TO BE ACCESSED BY THE COMMON ACCESS ENTRANCE. AN AREA HAS BEEN DEDICATED FOR THE STORMWATER MANAGEMENT POND.

PROPOSED DRAINAGE NOTES

- REFERENCE IS DIRECTED TO THE "DEMOLITION PLAN" FOR ADJUSTMENTS / REPLACEMENTS TO STRUCTURES "H" AND "J".
- REFERENCE IS DIRECTED TO THE "DRAINAGE PROFILES" FOR STRUCTURE AND PIPE MATERIALS, INVERTS, AND TOP ELEVATIONS.
- THE PROPOSED DRAINAGE SYSTEM LOCATED WEST OF NORTH BROOK DRIVE (STRUCTURES K, L, M, N, O, P, AND Q) REQUIRE A LARGE AMOUNT OF EXCAVATION PRIOR TO PLACEMENT OF THE PRIVATE DRAINAGE SYSTEM.
- THE PROPOSED DRAINAGE SYSTEM LOCATED EAST OF NORTH BROOK DRIVE (STRUCTURES D, E, F, AND G) REQUIRE SOME FILL MATERIAL PRIOR TO THE PLACEMENT OF THE DRAINAGE SYSTEM. THIS PRIVATE DRAINAGE SYSTEM REQUIRES PROPER GRADE TO CONTROL TO ALLOW FOR ADEQUATE UTILITY SEPARATION WITH SEWER AND WATER LATERALS. REFERENCE IS DIRECTED TO ALL PROFILE SHEETS SHOWING CRITICAL GRADE CONTROL.
- THE PLANS CALL FOR ALL DRAINAGE PIPE TO BE CONSTRUCTED OF REINFORCED CONCRETE PIPE (RCP); HOWEVER, THE DRAINAGE SYSTEM IS PRIVATE AND THE OWNER HAS REQUESTED BID PRICES FOR CONSTRUCTION OF THE DRAINAGE PIPE UTILIZING HIGH DENSITY POLYETHYLENE PIPE (HDPE). THE CONTRACTOR SHALL NOTE MINIMUM COVER OVER THE DRAINAGE PIPES AT FINAL GRADES. THE CONTRACTOR SHALL AVOID CROSSING THE DRAINAGE LINES WITH HEAVY CONSTRUCTION EQUIPMENT DURING CONSTRUCTION.
- THE STORMWATER MANAGEMENT POND SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF "DESIGN, CONSTRUCTION, AND MAINTENANCE STANDARDS FOR ACCEPTANCE OF STORMWATER MANAGEMENT FACILITIES", INCLUDING BUT NOT LIMITED TO THE FOLLOWING SPECIFICATIONS: 1) ALL TOPSOIL, ROOTS, STUMPS, ORGANICS, AND DEBRIS SHALL BE REMOVED FROM THE SITE. 2) THE FILL MATERIAL SHALL BE WITHIN AN ACCEPTABLE RANGE OF MOISTURE CONTENT (1.5%), SHALL NOT BE HIGHLY SUSCEPTIBLE TO VOLUME CHANGE, AND SHALL CONTAIN NO ROCKS LARGER THAN 6 INCHES IN DIAMETER (2 INCH MAX WITHIN UPPER TWO FEET). 3) PLACED IN 8 INCH MAXIMUM LIFTS. 4) THE CONTRACTOR SHALL OBTAIN FIELD DENSITY TESTS BY AN INDEPENDENT SOILS TESTING FIRM. THE CONTRACTOR IS REQUIRED TO OBTAIN 95% STANDARD DENSITY COMPACTION.
- THE STORMWATER MANAGEMENT POND SHOULD BE FENCED IN ACCORDANCE WITH THE ROANOKE COUNTY REQUIREMENTS (6 FOOT, NINE GAGE CHAIN LINK FENCE, MINIMUM 1 GATE WITH 10 FOOT OPENING FOR ACCESS), OR APPROVED EQUAL BY THE ROANOKE COUNTY DEPARTMENT OF ENGINEERING. SEE "DETAILS & PROFILES" SHEET, SHEET C16.

UTILITY SYMBOL	ITEM	REFERENCED RKE, CO WATER DETAIL
W-1	6-INCH OR 8-INCH WATER VALVE & BOX	WDD-08 (4 - 6" & 3 - 8")
W-2	CONCRETE PIER	DD-18 (5 TOTAL)
W-3	8-INCH TEMPORARY END OF LINE ASSEMBLY	WDD-10 (1 TOTAL)
W-4	SINGLE RESIDENTIAL WATER SERVICE	WDD-01 (12 TOTAL)
W-5	DOUBLE RESIDENTIAL WATER SERVICE	WDD-05 (7 TOTAL)
W-6	6" - 45' HORIZ. BEND	WDD-19 (4 TOTAL)
W-7	6" - 11.25' HORIZ. BEND	WDD-19 (1 TOTAL)
W-8	VERT. BENDS - SEE PROFILE FOR ANGLE	WDD-19 (3 TOTAL)
W-9	AUTOMATIC AIR RELEASE ASSEMBLY	WDD-12 (1 TOTAL)
W-10	8" X 8" X 6" TEE OR 6" X 6" X 6" TEE	(2 TOTAL AT FIRE HYDRANTS)
W-11	FIRE HYDRANT ASSEMBLY	WDD-18 (2 TOTAL)
W-12	8" - 22.5' HORIZ. BEND	WDD-19 ((1 TOTAL)
W-13	8" - 47' HORIZ. BEND	WDD-19 (1 TOTAL)

SEE WATERLINE PROFILES, SHEET C15 FOR ADDITIONAL WATERLINE NOTES

THE MINIMUM SEPARATION BETWEEN WATER AND SANITARY SEWER SHALL BE 10 FEET HORIZONTAL FROM EDGE OF PIPE TO EDGE OF PIPE

SEE SANITARY SEWER PROFILES FOR ADDITIONAL SANITARY SEWER NOTES

THE DEVELOPER SHALL HAVE A PLUMBER INSTALL EACH SANITARY SEWER SERVICE FROM EACH UNIT TO THE CLEANOUT AT THE PUBLIC EASEMENT EDGE. AT THE PRECONSTRUCTION CONFERENCE, THE CONTRACTOR SHALL DISCUSS WITH ROANOKE COUNTY, THE POSSIBILITY OF EXTENDING EACH LATERAL TO A POINT OUTSIDE OF THE PAVEMENT DURING CONSTRUCTION.

LINE SS 30 TO SS 31
CONTRACTOR TO DEWATER EXISTING SAN. SEWER LINE AND COORDINATE PRESSURE TESTING OF SAN. SEWER LINE PRIOR TO INSTALLING PROPOSED SAN. SEWER

ST. PHILLIPS EVANGELICAL LUTHERAN CHURCH IS CURRENTLY CONNECTED TO PUBLIC SEWER BY MEANS OF A PRIVATE PUMP STATION.

THE PROPOSED SANITARY SEWER MAINS (8-INCH) ARE TO BE CONSTRUCTED BY THE DEVELOPER AND DEDICATED TO ROANOKE COUNTY FOR PUBLIC USE. REFERENCE IS DIRECTED TO THE UTILITY PLANS AND PROFILES FOR SEWER. PROPOSED LATERALS TO THE ADJACENT PROPERTIES (ST. PHILLIPS, WESLEYAN, PARCEL 1, AND PARCEL 6) HAVE BEEN INCLUDED. CONNECTION OF THE LATERALS TO EXISTING DWELLINGS WILL BE PERFORMED UNDER SEPARATE CONTRACT.

EXISTING SANITARY SEWER SUMMARY			
STRUCTURE ID	TOP ELEV (FIELD VERIFIED)	INVERT ELEV	WITHIN FLOODWAY
SS 22	1084.4	1074.4	YES
SS 23	1086.3	1075.4	YES
SS 24	1086.8	1075.6	YES
SS 25	1084.7	1076.0	YES
SS 30	1106.9	1098.1	NO
SS 31	1107.4	1098.7	NO

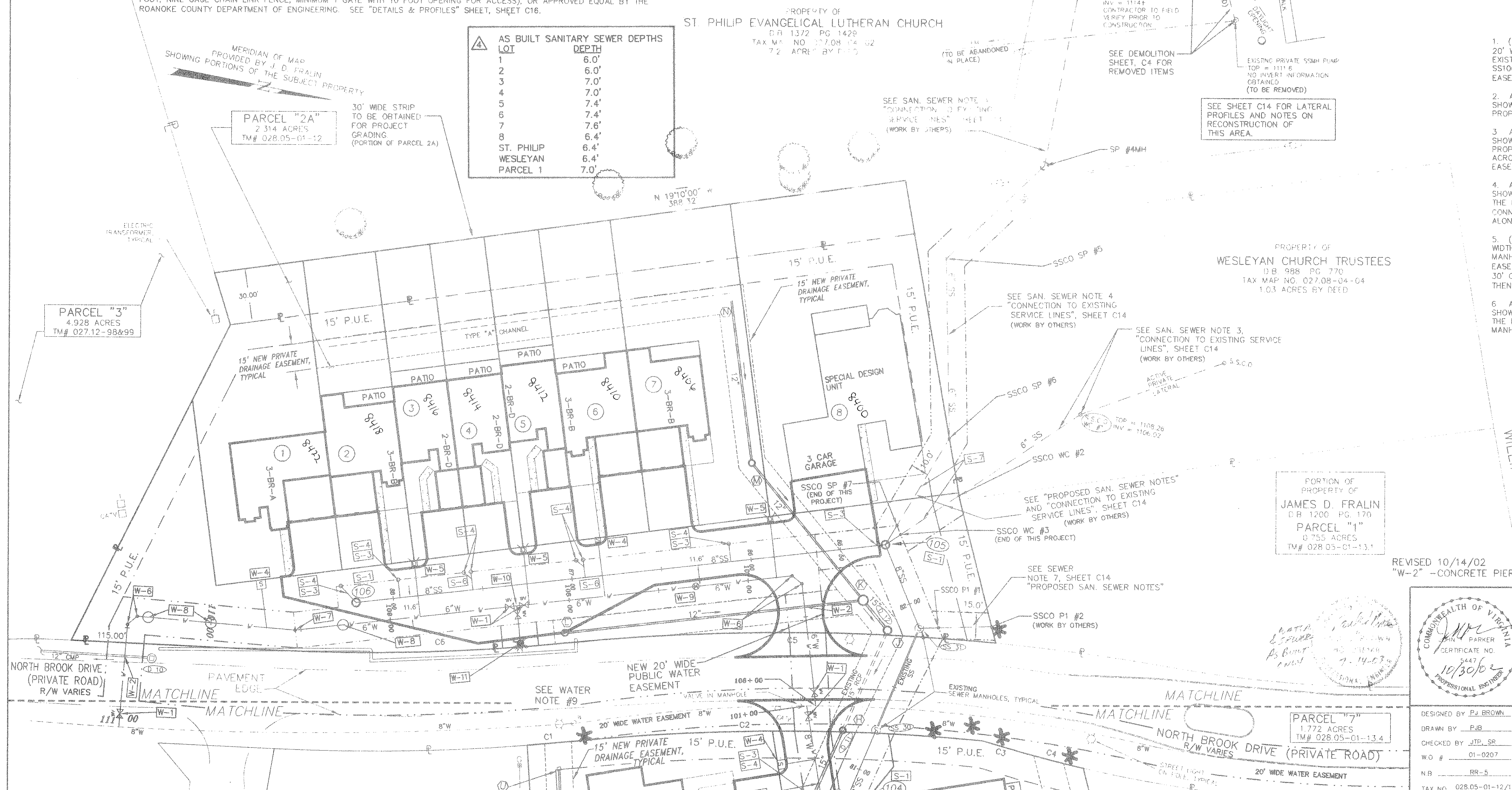
UTILITY SYMBOL	ITEM	REFERENCED RKE, CO SEWER DETAIL
S-1	4' STD. SEWER MANHOLE, FRAME, & COVER	DD-01 (5 TOTAL)
S-2	WATERTIGHT MANHOLE, FRAME, AND COVER	DD-05 (1 TOTAL)
S-3	SAN. SEWER LATERAL- 4" SINGLE LATERAL	DD-07 (8 TOTAL)
S-4	TRAFFIC BEARING CLEANOUT BOX	DD-13 (25 WITHIN EASEMENT)
S-5	STONE BEDDING	DD-15 (TYPICAL)
S-6	SAN. SEWER LATERAL- 6" COMBINATION LAT.	DD-10 (9 TOTAL)
S-7	SAN. SEWER LATERAL- 6" SINGLE LAT.	(4 TOTAL)

SAN. SEWER LINE BEARING TABLE			
FROM STRUCT NO	TO STRUCT NO	BEARING	DISTANCE
SS 24	SS 101	N 36°38'04" W	76.94
SS 101	SS 102	S 80°47'27" W	168.57
SS 102	SS 103	S 00°03'09" W	123.58
SS 103	SS 104	S 69°32'46" W	205.85
SS 104	SS 30	N 78°33'54" W	47.15
SS 30	SS 31	N 78°33'54" W	61.84
SS 31	SS 105	S 56°26'06" W	50.04
SS 105	SS 106	S 17°47'31" E	295.74

THE PROPOSED WATER MAIN (8-INCH & 6-INCH) SHALL BE CONSTRUCTED BY THE DEVELOPER AND DEDICATED TO ROANOKE COUNTY. REFERENCE IS DIRECTED TO THE WATERLINE UTILITY PLAN AND PROFILE SHEETS FOR CONSTRUCTION.

NOTES TO ROANOKE COUNTY UTILITY DEPARTMENT

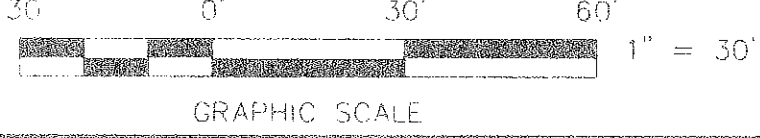
- (PARCEL 2A) A PROPOSED PUBLIC SANITARY SEWER EASEMENT, 20' WIDTH, IS SHOWN ALONG THE 8" SANITARY SEWER LINE, FROM EXISTING MANHOLE SS31 TO PROPOSED MANHOLE SS105 AND TOWARD SS106, THEN BECOMING A COMBINATION WATER AND SEWER PUBLIC EASEMENT, 31.56' WIDTH TO SS106.
- A PROPOSED PRIVATE SANITARY SEWER EASEMENT, 20' WIDTH, IS SHOWN CROSSING PARCEL 2A TO SERVICE THE WESLEYAN CHURCH PROPERTY.
- A PROPOSED PRIVATE SANITARY SEWER EASEMENT, 20' WIDTH, IS SHOWN CROSSING PARCEL 2A TO SERVICE THE ST. PHILLIPS CHURCH PROPERTY. NOTE THAT A PRIVATE EASEMENT WILL BE REQUIRED ACROSS THE WESLEYAN PROPERTY FOR SERVICE AS WELL. EASEMENT PLAT HAS BEEN PREPARED FOR THE WESLEYAN CHURCH.
- A PROPOSED PRIVATE SANITARY SEWER EASEMENT, 15' WIDTH, IS SHOWN CROSSING PARCEL 2A TO SERVICE PARCEL 1. THE WIDTH OF THE EASEMENT IS LIMITED TO ALLOW FOR A POSSIBLE DRAINAGE LINE CONNECTION FROM STRUCTURE "J" (FUTURE), AND THE PROPERTY LINE ALONG NORTH BROOK DRIVE.
- (PARCEL 5) A PROPOSED PUBLIC SANITARY SEWER EASEMENT, 20' WIDTH, IS SHOWN FROM EXISTING MANHOLE SS24 TO PROPOSED MANHOLE SS102, THEN BECOMING A COMBINED WATER AND SEWER EASEMENT, 32' WIDTH, FROM SS102 TO SS103, THEN BECOMING A 30' COMBINED WATER AND SEWER EASEMENT FROM SS103 TO SS104, THEN A 20' WIDE SEWER EASEMENT TO EXISTING MANHOLE SS30.
- A PROPOSED PRIVATE SANITARY SEWER EASEMENT, 15' WIDTH, IS SHOWN CROSSING PARCEL 5 TO SERVICE PARCEL 6. THE WIDTH OF THE EASEMENT IS LIMITED BY ANGLE OF CONNECTION TO PROPOSED MANHOLE SS102 AND A PROPERTY LINE WITH LCP SUMMERVIEW, INC.



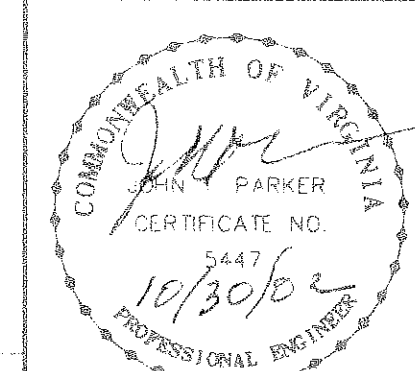
AS BUILT SANITARY SEWER DEPTHS	
LOT	DEPTH
1	6.0'
2	6.0'
3	7.0'
4	7.0'
5	7.4'
6	7.4'
7	7.6'
8	6.4'
ST. PHILIP WESLEYAN PARCEL 1	6.4'
	7.0'

PORTION OF PROPERTY OF JAMES D. FRALIN D.B. 1200 PG. 170 PARCEL "1" 0.755 ACRES TM# 028 05-01-13.1

7/14/03 AS BUILT
WATER AND SEWER
INFORMATION ONLY



REVISED 10/14/02
"W-2" - CONCRETE PIER



UTILITY PLAN - PARCEL 2A FOR MEADOWBROOK VILLAGE TOWNHOUSES PHASE V BARRENS DEVELOPMENT CORPORATION NORTH BROOK DRIVE & U.S. ROUTE 11, HOLLINS MAGISTERIAL DISTRICT ROANOKE COUNTY, VIRGINIA
REVISED: 18 SEPT 2002 SCALE: 1" = 30'

DESIGNED BY P.J. BROWN
DRAWN BY PJB
CHECKED BY JTP, SP
WD # 01-0207
N.B. RR-5
TAX NO. 028.05-01-12/13

T. P. PARKER & SON
810 Boulevard
Post Office Box 39
Salem, Virginia 24153
Telephone: 540-387-1153
FAX: 540-389-5767
01-0207-12.DWG