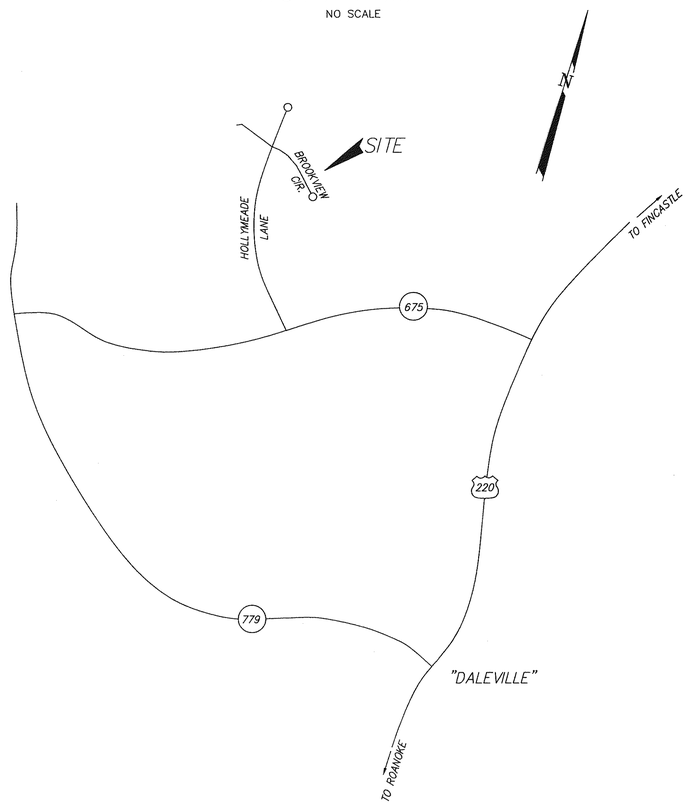
VICINITY MAP

NO SCALE



GENERAL NOTES

ALL CONSTRUCTION METHODS AND MATERIALS SHALL CONFORM TO THE CONSTRUCTION STANDARDS AND SPECIFICATIONS OF BOTETOURT COUNTY AND/OR THE VIRGINIA DEPARTMENT OF TRANSPORTATION.

THE CONTRACTOR OR DEVELOPER IS REQUIRED TO NOTIFY THE COUNTY OF BOTETOURT ENGINEERING DIVISION AND UTILITY DEPARTMENT IN WRITING AT LEAST THREE (3) DAYS PRIOR TO ANY CONSTRUCTION, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

A. INSTALLATION OF APPROVED EROSION CONTROL DEVICES.
B. CLEARING AND GRUBBING.
C. INSTALLING SANITARY SEWER LINES.

A PRECONSTRUCTION CONFERENCE SHALL BE SCHEDULED WITH THE BOTETOURT COUNTY ENGINEERING DIVISION, TO BE HELD AT LEAST ONE DAY PRIOR TO ANY CONSTRUCTION.

A PERMIT MUST BE OBTAINED FROM THE VDOT RESIDENCY OFFICE, SALEM, PRIOR TO CONSTRUCTION IN THE HIGHWAY RIGHT OF WAY.

PLAN APPROVAL BY THE COUNTY OF BOTETOURT DOES NOT GUARANTEE THE ISSUANCE OF ANY PERMITS BY VDOT.

AN APPROVED SET OF PLANS AND ALL PERMITS MUST BE AVAILABLE AT THE CONSTRUCTION SITE.

FIELD CONSTRUCTION SHALL HONOR PROPOSED DRAINAGE DIVIDES AS SHOWN ON PLANS.

CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AT THE JOB SITE.

ALL SPRINGS SHALL BE CAPPED AND PIPED TO THE NEAREST STORM SEWER OR NATURAL WATERCOURSE. THE PIPE SHALL BE MINIMUM OF 6" DIAMETER AND CONFORM TO VDOT STANDARD SB-1.

CONSTRUCTION DEBRIS SHALL BE CONTAINED IN ACCORDANCE WITH THE VIRGINIA LITTER CONTROL ACT. NO LESS THAN ONE LITTER RECEPTACLE SHALL BE PROVIDED ON-SITE.

THE CONTRACTOR SHALL PROVIDE ADEQUATE MEANS OF CLEANING MUD FROM TRUCKS AND/OR OTHER EQUIPMENT PRIOR TO ENTERING PUBLIC STREETS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSURE THAT THE STREETS ARE IN A CLEAN, MUD AND DUST FREE CONDITION AT ALL TIMES.

CONTRACTORS SHALL NOTIFY UTILITIES OF PROPOSED CONSTRUCTION AT LEAST TWO, BUT NOT MORE THAN TEN WORKING DAYS IN ADVANCE. AREA PUBLIC UTILITIES MAY BE NOTIFIED THROUGH MISS UTILITY AT (800) 552-7001.

THE DEVELOPER OR CONTRACTOR SHALL PROVIDE THE COUNTY OF BOTETOURT WITH CORRECT FIELD SURVEYED AS-BUILT PLANS BEFORE FINAL ACCEPTANCE.

ALL WORK SHALL BE SUBJECT TO INSPECTION BY BOTETOURT COUNTY AND/OR VDOT INSPECTORS.

FIELD CORRECTIONS SHALL BE APPROVED BY THE COUNTY OF BOTETOURT ENGINEERING DIVISION PRIOR TO SUCH CONSTRUCTION.

GRADE STAKES SHALL BE SET FOR ALL SANITARY SEWER.

LOCATION OF UNDERGROUND UTILITIES IS BASED ON FIELD SURVEYS, AS SHOWN BY AVAILABLE RECORDS, AND AS LOCATED BY THE UTILITY LOCATOR SERVICE. CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.

THE SITE WORK AND LANDSCAPING CONTRACTOR(S) SHALL COMPLY WITH LOCAL CODES IN OBSERVING EROSION CONTROL MEASURES, BOTH ON AND OFF THE SITE. REFER TO THE VIRGINIA UNIFORM CODING SYSTEM CONTAINED IN THE VIRGINIA SOIL EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION, FOR DETAILS AND SPECIFICATIONS OF EROSION CONTROL ITEMS SHOWN ON THESE PLANS.

SHEET INDEX

ANY VARIATION FROM APPROVED PLANS MUST BE APPROVED BY BOTETOURT COUNTY

Hollymeade Section IV
Sanitary Sewer Extension
PROJECT NAME:
DATE: Nov. 14, 2001
TYPE: Sewer
LOCATION: RTE 675
TOTAL # SHEETS: 5
A/E FIRM: CWA
OF SETS: 1

LEGEND

ABBREVIATIONS

AHFH	ARROW HEAD TOP OF FIRE HYDRANT	MIN	MINIMUM
APPROX	APPROXIMATE	MON	MONUMENT
ASPH	ASPHALT	NBL	NORTH BOUND LANE
BC	BOTTOM OF CURB	PROP	PROPOSED
BIT	BITUMINOUS	PVE	PUBLIC UTILITY EASEMENT
BLDG	BUILDING	PVMT	PAVEMENT
BLK	BLOCK	R	RADIUS
BM	BENCHMARK	RT	RIGHT
BW	BOTTOM OF WALL	R/W	RIGHT OF WAY
CB	CINDER BLOCK	REQD	REQUIRED
C&G	CURB & GUTTER	RR	RAILROAD
CMP	CORRUGATED METAL PIPE	RYS	REAR YARD SETBACK
CONC	CONCRETE	SAN	SANITARY
COR	CORNER	SBL	SOUTH BOUND LANE
DBL	DOUBLE	SD	STORM DRAIN
DEFL	DEFLECTION	SECT	SECTION
DI	DROP INLET	SE	SLOPE EASEMENT
DIA	DIAMETER	SS	SANITARY SEWER
DE	DRAINAGE EASEMENT	SSE	SANITARY SEWER EASEMENT
EBL	EAST BOUND LINE	STA	STATION
ELEC	ELECTRIC	STD	STANDARD
ELEV	ELEVATION	STO	STORAGE
ENTR	ENTRANCE	SYS	SIDE YARD SETBACK
EP	EDGE OF PAVEMENT	TBM	TEMPORARY BENCHMARK
EW	ENDWALL	TC	TOP OF CURB
EXIST	EXISTING	TEL	TELEPHONE
FDN	FOUNDATION	TRANS	TRANSFORMER
FF	FINISHED FLOOR	TW	TOP OF WALL
FG	FINISH GRADE	TYP	TYPICAL
GC	GENERAL CONTRACTOR	VDOT	VIRGINIA DEPARTMENT OF TRANSPORTATION
HPT	HIGH POINT	VERT	VERTICAL
INV	INVERT	WBL	WEST BOUND LANE
IP	IRON PIN	YD	YARD
LT	LEFT		
MH	MANHOLE		

SYMBOLS

EXISTING	NEW	
100.5 E	100.5	SPOT ELEVATION
----- 100 -----	100	CONTOURS
===8"SS===	8"SS	SANITARY SEWER LINE
——4"W——	4"W	WATERLINE
===8"SD===		STORM DRAIN
——2"G——	2"G	GAS LINE
—— E ——	E	OVERHEAD ELECTRIC LINE
—— T ——	T	OVERHEAD TELEPHONE LINE
—— CATV ——	CATV	OVERHEAD CABLE TELEVISION LINE
— UE — UT—	UE UT	UNDERGROUND TEL OR ELEC LINE
M	M	WATER OR GAS METER
		VALVE
F.H.	F.H.	FIRE HYDRANT
		MANHOLE
C.O.	C.O.	CLEANOUT
		DROP INLET (CURB OR GRATE)
		UTILITY POLE, GUY & ANCHOR
		DITCH OR SWALE
		CENTERLINE OR BASELINE
		PROPERTY LINE
		SURVEY TRAVERSE POINT
		DEFLECTION ANGLE
		DIRECT ANGLE
Y.L.	Y.L.	YARD LIGHTING
Y.H.	Y.H.	YARD HYDRANT
		WELL
		BENCHMARK
— x — x —		FENCE
		TREE LINE
		RAILROAD
		HANDICAPPED SPACE

STD. COUNTY OF BOTETOURT SEWER NOTES

ALL SANITARY SEWER CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE COUNTY OF BOTETOURT 'WATER AND SEWER CONSTRUCTION STANDARDS AND SPECIFICATIONS', DATED AUGUST 17, 2001.

A PRECONSTRUCTION MEETING SHALL BE SCHEDULED A MINIMUM OF FORTY-EIGHT (48) HOURS PRIOR TO BEGINNING CONSTRUCTION WITH THE COUNTY OF BOTETOURT, ENGINEERING DIVISION, (540) 473-8316.

SHOP DRAWINGS FOR ALL SANITARY SEWER PRODUCTS SHALL BE SUBMITTED BY THE CONTRACTOR TO BOTH THE DESIGN ENGINEER AND BOTETOURT COUNTY FOR APPROVAL PRIOR TO INSTALLATION.

LINES SHALL BE STAKED PRIOR TO BEGINNING CONSTRUCTION.

ALL EXISTING UTILITIES MAY NOT BE SHOWN, OR MAY NOT BE SHOWN IN THE EXACT LOCATION. THE CONTRACTOR SHALL COMPLY WITH THE STATE WATER WORKS REGULATIONS, SEC. 12.05.03, WHERE LINES CROSS.

ALL TRENCHED IN EXISTING OR FUTURE RIGHT-OF-WAYS SHALL BE COMPACTED ACCORDING TO VIRGINIA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.

A SANITARY SEWER CLEANOUT SHALL BE PROVIDED ON EACH LATERAL SERVICE NO FURTHER THAN 10' FROM THE SEWER MAIN OR SEWER MANHOLE. THIS CLEANOUT SHALL BE POINT OF DEMARCATION BETWEEN SERVICE RESPONSIBILITIES OF BOTETOURT COUNTY AND THE SEWER CUSTOMER.

ALL SEWER MAINS AND SERVICE LINES SHALL HAVE BOTH MAGNETICALLY LOCATABLE DETECTION WIRE OR TAPE AND WARNING TAPE. MAGNETICAALY LOCATABLE DETECTION WIRE AND/OR TAPE SHALL BE INSTALLED AT SAME ELEVATION OF SPRING LINE OF PIPE. WARNING TAPE (CAUTION!! BURIED SEWER/WATER PIPE BELOW) TO BE INSTALLED NO MORE THAN 18 INCHES ABOVE TOP OF THE PIPE.

THE DESIGN ENGINEER SHALL DOCUMENT ALL TESTING PROCEDURES FOR FINAL ACCEPTANCE.

AS-BUILT/RECORD DRAWINGS SHALL BE SUBMITTED PRIOR TO FINAL ACCEPTANCE THAT SHOW ACTUAL FIELD SURVEYED LOCATIONS (HORIZONTAL AND VERTICAL) OF STRUCTURES (MANHOLES, CLEANOUTS, SERVICE STUB-OUTS, ETC) AND SHOW RECOMPUTED PIPE LENGTHS AND SLOPES BASED ON UPON ACTUAL FIELD LOCATIONS.

ENGINEER'S NOTES

CALDWELL WHITE ASSOCIATES ASSUMES NO RESPONSIBILITY FOR ADEQUACY OF PLANS OR FOR INFORMATION ON PLANS UNTIL SUCH PLANS HAVE BEEN APPROVED BY THE REQUIRED PUBLIC AGENCIES.

ANY WORK COMMENCED ON A PROJECT PRIOR TO PLAN APPROVAL IS AT SOLE RISK OF THE DEVELOPER.

CALDWELL WHITE ASSOCIATES DOES NOT GUARANTEE THE COMPLETION OR QUALITY OF PERFORMANCE OF THE CONTRACTS BY CONTRACTORS OR OTHER THIRD PARTIES.

SOURCE OF TOPOGRAPHIC MAPPING IS CALDWELL WHITE ASSOCIATES, DATED 2001.

BOUNDARY SURVEY WAS PERFORMED BY CALDWELL WHITE ASSOCIATES, DATED 1999.

NAME OF DEVELOPMENT: **SANITARY SEWER EXTENSION**

LOCATION: HOLLYMEADE SECTION IV
BROOKVIEW CIRCLE
AMSTERDAM MAGISTERIAL DISTRICT
COUNTY OF BOTETOURT, VIRGINIA

OWNER: J.D. FRALIN
2518 WILLIAMSON ROAD
ROANOKE, VIRGINIA 24012
(540) 366-7629

DEVELOPER: SAME AS OWNER

AS-BUILT CONDITIONS NOVEMBER 14, 2001

TAX MAP #(S) 87 BLOCK #(S) A PARCEL #(S) 155

Designed: J.V.Judy
Ckecked: F.B.Caldwell
Date: July 2, 2001
W.O. # 01-0069
N.B. # JW-13

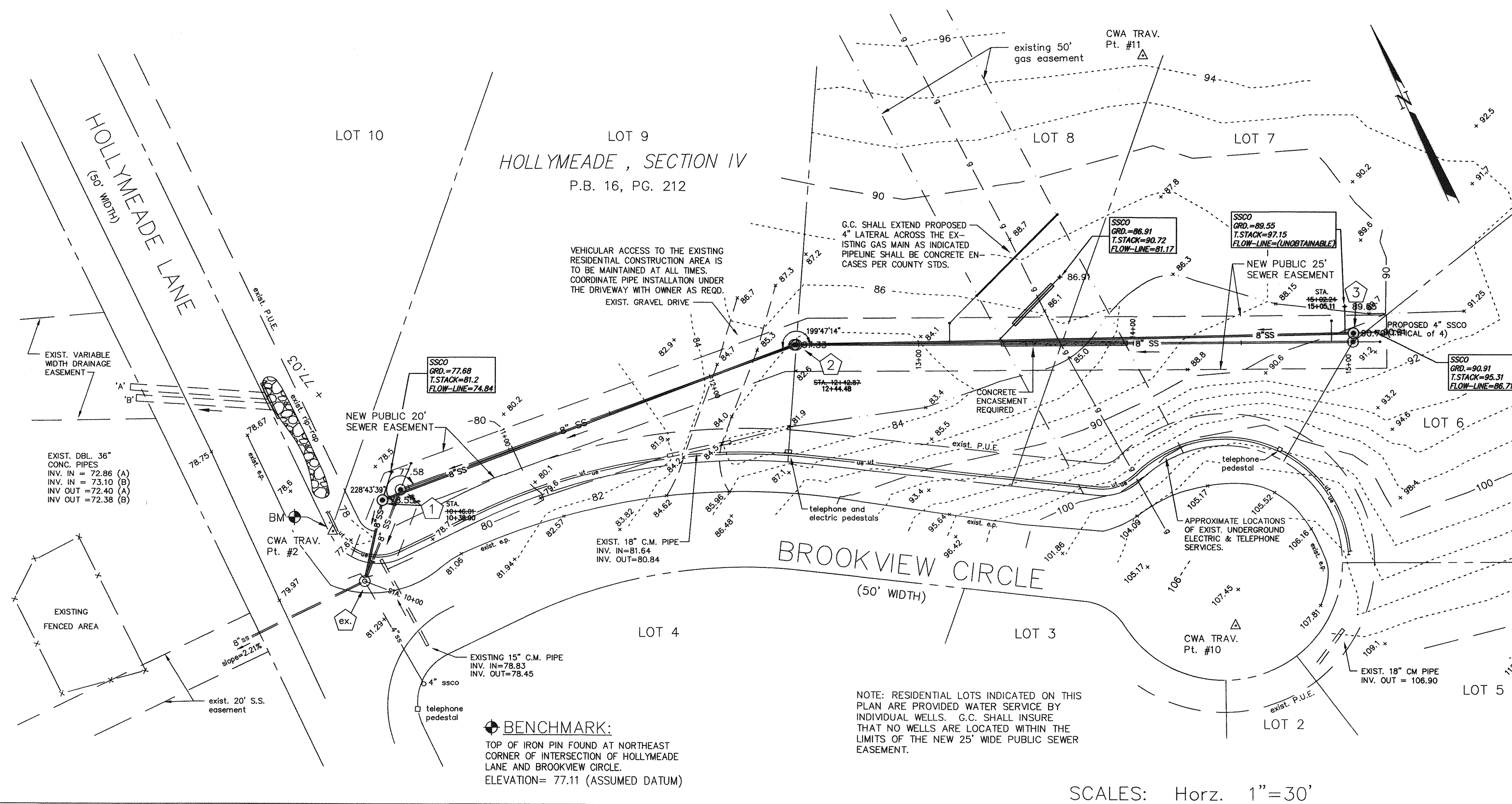
REVISIONS

No.	Date	Remarks	By
1	10/04/01	PER COUNTY OF BOTETOURT 1st REVIEW	JVJ

COMMONWEALTH OF VIRGINIA
FRANK B. CALDWELL, III
NO. 1335
LAND SURVEYOR

COMMONWEALTH OF VIRGINIA
FRANK B. CALDWELL, III
NO. 9184
PROFESSIONAL ENGINEER

CWA
CALDWELL WHITE ASSOCIATES
ENGINEERS / SURVEYORS / PLANNERS
1054 OLD COUNTRY CLUB ROAD
P.O. BOX 6340
ROANOKE, VIRGINIA 24017
(540) 342-7094
FAX: (540) 981-0699
E-Mail: CWAROANOKE @ AOL.COM



CONSTRUCTION GUIDELINES FOR WORK WITHIN THE EXISTING 50' WIDE GAS EASEMENT

THE INTENT OF THESE GUIDELINES ARE TO PRESERVE THE INTEGRITY OF ROANOKE GAS'S FACILITIES AND TO INSURE THE SAFETY OF THE GENERAL PUBLIC. IN AN EFFORT TO MINIMIZE CONFLICTS AND DELAYS, THE CONTRACTOR SHALL COORDINATE A PRE-CONSTRUCTION MEETING WITH MR. PETE ORR, (540)983-3800 A MINIMUM OF FORTY-EIGHT (48) HOURS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION IN THE EASEMENT.

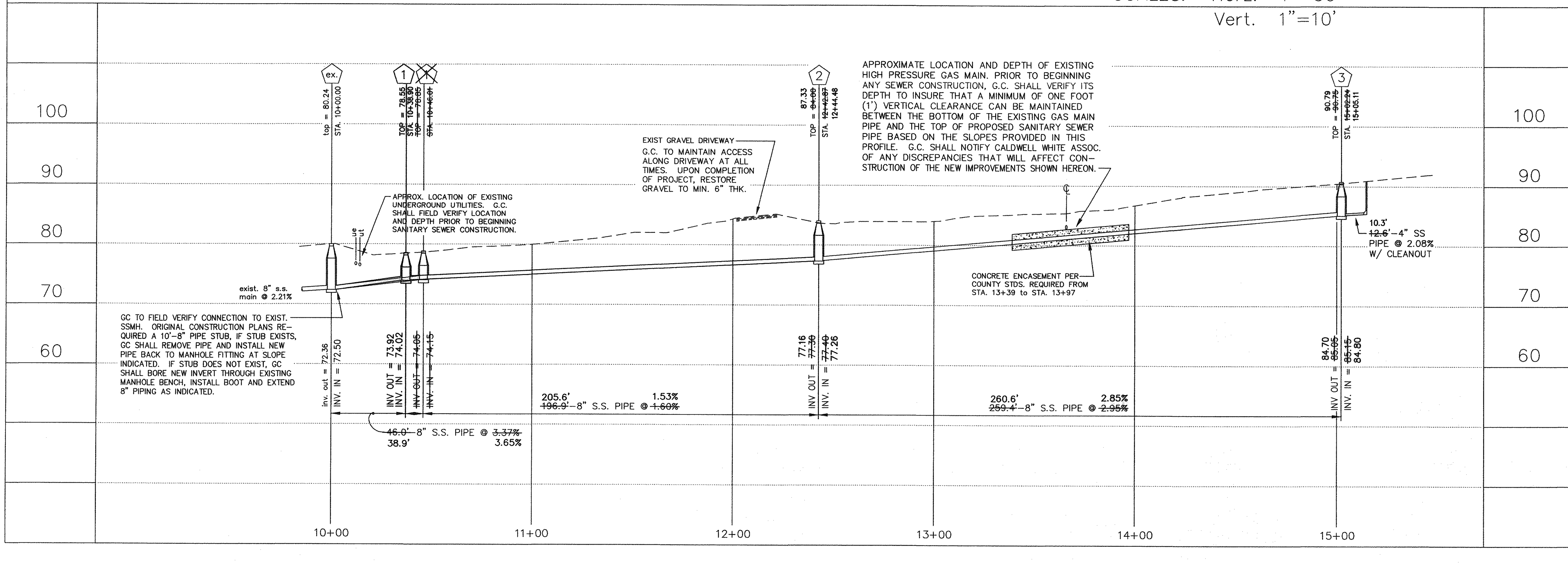
EXCAVATION THAT ARE DONE ABOVE, BELOW OR WITHIN THREE (3) FEET OF EITHER SIDE OF THE PIPELINE SHALL BE HAND DUG UNTIL THE PIPELINE IS EXPOSED.

DURING CONSTRUCTION, TO ADEQUATELY PROTECT ROANOKE GAS COMPANY'S PIPELINES FROM DAMAGE WHICH COULD BE CAUSED BY THE CROSSING OF HEAVY EQUIPMENT, MATS DIRT PADS OR OTHER PROTECTIVE MATERIALS APPROVED BY THE COMPANY MAY BE REQUIRED. ROANOKE GAS COMPANY SHALL BE CONTACTED FOR SUGGESTED PROTECTIVE METHODS. NO HEAVY EQUIPMENT IS TO BE MOVED ACROSS THE RIGHT-OF-WAYS AND EASEMENTS PRIOR TO NOTIFYING THE LOCAL ROANOKE GAS COMPANY SUPERVISOR.

ANY BLASTING PROPOSED WITHIN THREE HUNDRED (300) FEET OF ROANOKE GAS COMPANY'S FACILITIES MUST HAVE PRIOR WRITTEN CONSENT.

A MINIMUM OF TWELVE (12) INCHES OF VERTICAL CLEARANCE BETWEEN THE BOTTOM OF THE EXISTING GAS PIPE AND THE TOP OF ANY PROPOSED PIPELINE.

SCALES: Horz. 1"=30'
Vert. 1"=10'



STAKEOUT INFORMATION

PT. No.	NORTHING	EASTING
CWA Pt. 2	5000.000	5000.000
CWA Pt. 10	4789.968	5367.413
CWA Pt. 11	5051.854	5435.598
CWA Pt. 12	4760.433	5514.036
SSMH #1	~~5005.077~~	~~5036.578~~
SSMH #2	~~4992.631~~	~~5233.040~~
SSMH #3	~~4889.570~~	~~5471.060~~

AS-BUILT INFORMATION

PT. No.	NORTHING	EASTING
SSMH #1	5003.990	5026.921
SSMH #2	4993.054	5232.207
SSMH #3	4893.173	5472.937

AS-BUILT CONDITIONS NOVEMBER 14, 2001

REVISED 10/04/2001 per COUNTY OF BOTETOURT 1st REVIEW

SANITARY SEWER PLAN & PROFILE

HOLLYMEADE SECTION IV

Situate Brookview Circle
BOTETOURT COUNTY, VIRGINIA

Designed:	J.V. Judy
Drawn:	J.V. Judy
Checked:	F.B. Caldwell
Date:	July 2, 2001
Scale:	1" = 30'
Work Order:	01-0069
Field Book:	JW-13

CWA
CALDWELL WHITE ASSOCIATES
ENGINEERS / SURVEYORS / PLANNERS
1054 OLD COUNTRY CLUB ROAD
P.O. BOX 6340
ROANOKE, VIRGINIA 24017
(540) 342-7094
FAX: (540) 981-0699

COUNTY OF BOTETOURT SANITARY SEWER SPECIFICATIONS

1. PROTECTION OF WORK, PROPERTY AND PERSONS

1.1 THE CONTRACTOR WILL BE RESPONSIBLE FOR INITIATING, MAINTAINING AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. HE WILL TAKE ALL NECESSARY PRECAUTIONS FOR THE SAFETY OF, AND WILL PROVIDE THE NECESSARY PERSONS WHO MAY BE AFFECTED THEREBY, ALL THE WORK AND ALL THE MATERIALS OR EQUIPMENT TO BE INCORPORATED THEREIN, WHETHER IN STORAGE ON OR THE SITE, AND OTHER PROPERTY AT THE SITE ADJACENT THERETO, INCLUDING TREES, SHRUBS, LAWNS, WALKS, PAVEMENTS, ROADWAYS, STRUCTURES, AND UTILITIES NOT DESIGNATED FOR REMOVAL, RELOCATION, OR REPLACEMENT IN THE COURSE OF CONSTRUCTION.

1.2 THE CONTRACTOR WILL COMPLY WITH ALL APPLICABLE LAWS, ORDINANCES, RULES, REGULATIONS, AND ORDERS OF ANY PUBLIC BODY HAVING JURISDICTION. HE WILL ERECT AND MAINTAIN, AS REQUIRED BY THE CONDITIONS AND PROGRESS OF THE WORK, ALL NECESSARY SAFEGUARDS FOR SAFETY AND PROTECTION. HE WILL NOTIFY OWNERS OF ADJACENT UTILITIES WHEN PROSECUTION OF THE WORK MAY AFFECT THEM. THE CONTRACTOR WILL REMEDY ALL DAMAGE, INJURY, OR LOSS TO ANY PROPERTY CAUSED, DIRECTLY OR INDIRECTLY, IN WHOLE OR IN PART, BY THE CONTRACTOR, ANY SUBCONTRACTOR OR ANYONE DIRECTLY OR INDIRECTLY EMPLOYED BY ANY OF THEM OR ANYONE FOR WHOSE ACTS OF THEM BE LIABLE, EXCEPT DAMAGE OR LOSS ATTRIBUTABLE TO THE FAULT OF THE CONTRACT DOCUMENTS OR TO THE ACTS OF THE DEVELOPER OR THE ENGINEER OR ANYONE EMPLOYED BY EITHER OF THEM OR ANYONE FOR WHOSE ACTS EITHER OF THEM MAY BE LIABLE, AND NOT ATTRIBUTABLE, DIRECTLY OR INDIRECTLY, IN WHOLE OR IN PART, TO THE FAULT OR NEGLIGENCE OF THE CONTRACTOR.

1.3 IN EMERGENCIES AFFECTING THE SAFETY OF PERSONS OR THE WORK OR PROPERTY AT THE SITE OR ADJACENT THERETO, THE CONTRACTOR, WITHOUT SPECIAL INSTRUCTION OR AUTHORIZATION FROM THE ENGINEER OR DEVELOPER, SHALL ACT TO PREVENT THREATENED DAMAGE, INJURY OR LOSS. HE WILL GIVE THE ENGINEER PROMPT WRITTEN NOTICE OF ANY SIGNIFICANT CHANGES IN THE WORK OR DEVIATION FROM THE CONTRACT DOCUMENTS CAUSED THEREBY, AND A CHANGE ORDER SHALL THEREUPON BE ISSUED COVERING THE CHANGES AND DEVIATIONS INVOLVED.

2. EXISTING UTILITIES

2.1 EXISTING UTILITIES ARE INDICATED ON THE DRAWINGS IN ACCORDANCE WITH AVAILABLE RECORDS. THE DRAWINGS MAY NOT REPRESENT ALL UTILITIES THAT MAY BE ENCOUNTERED OR THE EXACT LOCATIONS OF THE UTILITY SYSTEMS.

2.2 BEFORE ANY WORK IS STARTED, THE CONTRACTOR SHALL CONTACT "MISS UTILITY LOCATOR SERVICE", 1–800–552–7001, SO THAT ALL CORPORATIONS, COMPANIES, INDIVIDUALS OWNING AND LOCAL AUTHORITIES OWNING, MAINTAINING, OR REGULATING CONDUITS, WIRES, AND PIPES RUNNING TO OR ON THE WORK SITE MAY MAKE ADJUSTMENTS TO THE EXISTING UTILITY AS MAY BE REQUIRED.

2.3 POWER POLES, TELEPHONE POLES, AND GAS LINES SHALL BE PROTECTED FROM DAMAGE BY THE CONTRACTOR IN ACCORDANCE WITH THE UTILITY OWNER'S INSTRUCTION. ANY DAMAGE CAUSED BY THE CONTRACTOR OR THE CONTRACTORS CONSTRUCTION OPERATIONS WILL BE CORRECTED AT THE CONTRACTORS EXPENSE.

3. SITE PREPARATION AND SOIL EROSION

3.1 THE CONTRACTOR SHALL FURNISH ALL EQUIPMENT, TOOLS, MATERIAL, ACCESSORIES, AND LABOR REQUIRED TO CLEAR THE SITE OF ALL SURFACE MATERIALS, STRUCTURES, TREES AND VEGETATION TO ALLOW THE COMPLETION OF THE WORK

3.2 THE CONTRACTOR SHALL CLEAR THE WORK AREA OF ALL TREES, BRUSH, AND OTHER DEBRIS PROTRUDING THROUGH THE GROUND SURFACE. ALL DEBRIS SHALL BE COMPLETELY REMOVED FROM THE SITE AND DISPOSED OF IN AN APPROVED MANNER AT A SITE PROVIDED BY THE GENERAL CONTRACTOR.

3.3 ALL ORNAMENTAL TREES AND SHRUBS WITHIN THE WORK AREA SHALL BE CAREFULLY UPROOTED, STORED, AND REPLANTED AFTER CONSTRUCTION IS COMPLETE, UNLESS OTHERWISE DIRECTED. ORNAMENTAL TREES AND SHRUBS WHICH DO NOT SURVIVE FOR A PERIOD OF AT LEAST ONE (1) YEAR SHALL BE REPLACED AT THE CONTRACTORS EXPENSE.

3.4 ALL EROSION CONTROL AND SEDIMENTATION CONTROL DEVICES SHALL BE INSTALLED AND MAINTAINED BY THE CONTRACTOR AS REQUIRED TO ASSURE PROPER EROSION AND SEDIMENTATION CONTROL. ALL EROSION CONTROL METHODS AND DETAILS SHALL COMPLY WITH THE LATEST EDITION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK.

3.5 DURING THE CONSTRUCTION AND WARRANTY PERIOD AND PRIOR TO THE REMOVAL OF THE EROSION CONTROL DEVICES, THE CONTRACTOR SHALL AT ALL TIMES MAINTAIN SUCH DEVICES BY AT LEAST DAILY INSPECTION. ADDITIONALLY, THE CONTRACTOR SHALL VISIT THE SITE DURING AND IMMEDIATELY AFTER A PERIOD OF PRECIPITATION TO INSPECT, CORRECT, MAINTAIN AND OTHERWISE ENSURE THE EFFECTIVE OPERATION OF THE EROSION CONTROL PLAN.

3.6 UPON COMPLETION OF THE FINAL GRADING THE CONTRACTOR SHALL SEED THE ENTIRE AREA WITHIN SEVEN (7) DAYS IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND THESE SPECIFICATIONS.

3.7 FOLLOWING COMPLETION OF ALL WORK AND STABILIZATION OF ALL AREAS AND AFTER IT HAS BEEN DETERMINED THAT EROSION OR SEDIMENTATION IS NO LONGER OCCURRING ON THE SITE OR AT ITS BOUNDARIES AND THAT DRAINAGE FLOWS ARE FUNCTIONING ACCORDING TO ORIGINAL CONDITIONS, THE CONTRACTOR MAY THEN BEGIN TO REMOVE THE TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES. THIS WORK SHALL BE DONE IN A CAREFUL, NEAT, AND ORGANIZED MANNER.

4. PIPE MATERIALS

4.1 DUCTILE IRON PIPE SHALL BE CENTRIFUGALLY CAST MANUFACTURED IN ACCORDANCE WITH ANSI SPECIFICATION A21.51, LATEST REVISION, AND SHALL BE CEMENT MORTAR LINED IN ACCORDANCE WITH ANSI SPECIFICATION A21.4–80. SLIP JOINT OR MECHANICAL JOINT PIPE SHALL BE USED FOR GRAVITY SEWERS. SLIP JOINT PIPE SHALL BE DESIGNED IN ACCORDANCE WITH ANSI SPECIFICATION A21–50 AND SPECIFIED TO ANSI SPECIFICATION A21–11. CLASS 50 PIPE SHALL BE MINIMUM STRENGTH USED IN ALL SEWER APPLICATIONS.

4.2 PVC SEWER PIPE SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM DESIGNATION 3034–77 (SDR–35). GRAVITY SEWER PIPE SHALL BE UNPLACTICIZED POLYVINYL CHLORIDE WITH INTEGRAL RUBBER RING WALL BELL AND SPIGOT JOINTS FURNISHED IN 12.5' AND 20' NOMINAL LENGTHS. INSTALLATION OF PVC GRAVITY SEWER PIPE AND FITTINGS SHALL BE IN ACCORDANCE WITH ASTM DESIGNATION 2321 AND MANUFACTURERS RECOMMENDATIONS. PVC SEWER PIPE SHALL BE STORED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS ON FLAT, EVEN SURFACES AND SHALL REMAIN RACKED ON THE PALLETS AS DELIVERED TO THE JOB SITE UNTIL SUCH TIME AS THE TRENCH IS READY FOR PLACEMENT OF THE PIPE: I.E. PVC PIPE SHALL NOT BE STRUNG OUT ON THE JOB SITE.

4.3 SERVICE CONNECTIONS SHALL BE POLYVINYL CHLORIDE (PVC) SEWER PIPE CONFORMING TO ASTM DESIGNATION 3034–77 (SDR–35) OR SCHEDULE 40 PVC PIPE CONFORMING TO ASTM DESIGNATION 1785–76 AND SHALL BE USED BETWEEN THE SEWER MAIN AND THE CLEAN–OUT. THE PVC SDR–35 JOINTS SHALL BE MADE WITH BONDED–IN–BELL ELASTOMERIC SEAL. THE SCHEDULE 40 PVC JOINTS SHALL BE MADE WITH A SOLVENT WELD BELL AND SPIGOT JOINT USING PVC PIPE CLEANER AND GLUE AS SUPPLIED BY THE MANUFACTURER. NO–HUB PIPE SHALL NOT BE PERMITTED.

5. EXCAVATION

5.1 EXCAVATION SHALL CONFORM TO THE LINES AND GRADES SHOWN ON THE PLANS. THE WIDTH OF EXCAVATION FOR TRENCHES SHALL BE A MINIMUM OF 24" WIDER THAN THE OUTSIDE DIAMETER OF THE PIPE. EXCAVATION SHALL NOT BE CARRIED BELOW THE ESTABLISHED GRADE AND ANY EXCAVATION BELOW THE REQUIRED LEVEL SHALL BE BACKFILLED WITH GRANULAR MATERIAL AND THOROUGHLY TAMPED, ALL AT THE CONTRACTORS EXPENSE. THE CONTRACTOR SHALL DO ALL SHEETING, BRACING, AND SHORING NECESSARY TO PERFORM THE WORK, TO PROTECT EXISTING STRUCTURES AND TO PROTECT EXCAVATIONS AS REQUIRED UNDER THE VIRGINIA OSHA REGULATIONS. COMPLIANCE WITH THE PROVISIONS OF THE OVERHEAD HIGH VOLTAGE LINE SAFETY ACT IS REQUIRED.

5.2 DEWATERING EQUIPMENT SHALL BE SIZED TO MAINTAIN THE TRENCH IN A DE–WATERED CONDITION FOR PIPE LAYING AND BACKFILLING. PIPE LAYING WILL BE PERMITTED ONLY WHEN THE DEPTH OF WATER IS MAINTAINED BELOW THE BEDDING MATERIAL.

5.3 NOT MORE THAN FIVE HUNDRED FEET (500') OF TRENCH SHALL BE OPENED IN ADVANCE OF THE COMPLETED PIPE LAYING. THE TRENCH WALLS SHALL BE KEPT VERTICAL WHENEVER POSSIBLE BUT THE TRENCH WALL MAY BE SLOPED ABOVE THE TOP OF THE PIPE FOR SAFETY REASONS. EXCAVATION AT MANHOLES AND SIMILAR STRUCTURES SHALL BE SUFFICIENT TO HAVE A MINIMUM OF TWELVE INCHES (12") IN THE CLEAR BETWEEN THEIR OUTER SURFACE AND THE EMBANKMENT OR SHEETING.

5.4 ALL BLASTING OPERATIONS MUST BE IN ACCORDANCE WITH EXISTING ORDINANCES AND REGULATIONS. AFTER BLASTING OR OTHER APPROVED METHODS OF REMOVAL, NO PROJECTION OF ROCK SHALL REMAIN NEARER THAN SIX INCHES (6") OF ANY PART OF THE SEWER PIPE WHEN LAID, NOR SHALL PROJECT BEYOND THE LINES AND GRADES OF MASONRY STRUCTURES. NO BLASTING SHALL BE DONE WITHIN FORTY FEET (40') OF A TESTED OR COMPLETED SEWER. THE ENDS OF SEWERS ADJACENT TO BLASTING SHALL BE COVERED TO AVOID RECEIVING DEBRIS.

5.5 WHENEVER THE FOUNDATION MATERIAL IS UNSUITABLE, IT SHALL BE EXCAVATED TO A STABLE FOUNDATION AND GRANULAR MATERIAL WITH A MAXIMUM SIZE OF ONE AND ONE HALF INCHES (1–1/2") SHALL BE PLACED IN SIX INCH (6") LAYERS UNTIL THE TRENCH BOTTOM HAS BEEN STABILIZED. THEN THE STANDARD GRANULAR BEDDING MATERIAL SHALL BE PLACED AS HEREIN BEFORE SPECIFIED.

6. BACKFILL

6.1 BACKFILL SHALL BEGIN AT THE TOP OF THE STANDARD GRANULAR BEDDING AND SHALL BE PLACED IN TWO (2) ONE FOOT (1') LAYERS OVER THE PIPE AND SHALL BE THOROUGHLY TAMPED TO NINETY–FIVE PERCENT (95%) OF THE MAXIMUM THEORETICAL COMPACTION AS DETERMINED BY A STANDARD PROCTOR ON THE MATERIAL, THE REMAINDER OF THE BACKFILL SHALL BE IN TWO FOOT (2') LAYERS PROPERLY TAMPED. BACKFILL MATERIAL SHALL BE FREE OF PERISHABLE MATERIAL, FROZEN CLODS, STICKY MASSES OF CLAY AND OTHER UNSUITABLE MATTER. ROCK LARGER THAN TWO PIECES INCHES (2") SHALL NOT BE USED IN THE BACKFILL WHICH IS WITHIN TWO FEET (2') OF THE PIPE.

6.2 BACKFILL IN AREAS NOT SUBJECTED TO VEHICULAR TRAFFIC SHALL NOT BE COMPACTED TO SUCH A DEGREE THAT ANY SUBSIDENCE WILL NOT BE OBJECTIONABLE NOR DETRIMENTAL TO NORMAL USE. BACKFILL AND REPLACEMENT IN EXISTING OR PROPOSED ROADS SHALL BE EXECUTED IN FULL ACCORDANCE WITH THE REQUIREMENTS OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION STANDARDS. ALL SURPLUS MATERIALS SHALL BE DISPOSED OF IN APPROVED AREAS PROVIDED BY THE CONTRACTOR. NO STONE OR ROCK LARGER THAN EIGHT INCHES (8") IN ITS GREATEST DIMENSION WILL BE USED IN THE BACKFILLING OF SEWER LINES OR MANHOLES.

7. PIPE INSTALLATION

7.1 ALL PIPE AND FITTINGS SHALL BE CAREFULLY HANDLED WITH NON–METALLIC SLINGS OR OTHER DEVICES TO PREVENT DAMAGE TO PROTECTIVE COATINGS OR JOINTS. LIFTING EQUIPMENT SHALL BE SATISFACTORILY RATED TO HANDLE THE PIPE SIZES USED. PIPE SHALL NOT BE DUMPED OR DROPPED INTO THE TRENCH. EACH SECTION OF PIPE SHALL BE THOROUGHLY INSPECTED FOR DEFECTS BEFORE BEING LOWERED INTO THE TRENCH. PIPE SHALL BE LAID TRUE TO LINE AND GRADE WITH BELLS UPSTREAM AND SHALL BE JOINTED TOGETHER SUCH THAT THE COMPLETED PIPE WILL HAVE A SMOOTH INVERT. THE STANDARD BEDDING SHALL BE SHAPED TO THE CURVATURE OF BOTH THE BELL AND BARREL OF THE PIPE. THE TRENCH SHALL BE KEPT FREE OF WATER WHILE THE WORK IS IN PROGRESS. THE ENDS OF THE PIPES SHALL BE CLEANED SO THAT PROPER JOINTS CAN BE MADE. AS THE WORKS PROGRESSES, THE INTERIOR OF THE PIPE SHALL BE CLEARED OF DIRT, CEMENT, OR OTHER SUPERFLUOUS MATERIAL. EXCEPT AS REQUIRED FOR USE OF A LASER LEVEL, THE EXPOSED END OF ALL PIPE AND FITTINGS SHALL BE FULLY CLOSED TO PREVENT EARTH, WATER OR OTHER SUBSTANCES FROM ENTERING THE PIPE.

8. SERVICE CONNECTIONS

8.1 SDR 35 AND SCHEDULE 40 PVC PIPE CONNECTIONS FOR THIS PROJECT SHALL BE MADE TO TO THE MANHOLE USING INSIDE DROP CONNECTIONS WHEN INDICATED. A SEWER CLEANOUT THE SAME SIZE AS THE SERVICE LINE SHALL BE INSTALLED AS INDICATED ON THE PLANS.

8.2 SEWER SERVICE CONNECTIONS FROM THE MANHOLE TO THE CLEANOUT SHALL BE INSTALLED WITH THE SAME CARE AS THE SEWER MAIN. PROPER EXCAVATION, SLOPE OF PIPE AND STANDARD GRANULAR BEDDING SHALL BE PROVIDED THROUGHOUT. ALL SEWER PIPE JOINTS SHALL BE CAPABLE OF RESISTING A HYDROSTATIC PRESSURE OF FIFTEEN (15) PSI.

9. MANHOLES

9.1 MANHOLES SHALL BE CONSTRUCTED WITH MANHOLE FRAMES, COVERS AND STEPS. THE FRAMES AND COVERS SHALL BE DEWEY BROTHERS, INC., MH–RCR–3000W WATERTIGHT. LOCATIONS AND TYPE OF MANHOLE VENTS WILL BE A INDICATED ON THE PLANS. CASTING SHALL BE BEST QUALITY TOUGH, GRAY IRON, FREE FROM DEFECTS, BLOW HOLES, AND OTHER IMPERFECTIONS AND SHALL MEET THE REQUIREMENTS OF ASTM DESIGNATION A–48, CLASS 20. THE CASTINGS SHALL BE SOUND, FREE TO FORM AND THICKNESS, CLEANED BY MEANS OF SAND BLAST AND AND NEATLY FINISHED. THE MATERIAL BEARING SURFACES SHALL BE MACHINE GROUND AND FINISHED TO INSURE SATISFACTORY SEATING. COVERS SHALL HAVE THE WORDS "SANITARY SEWER" CAST INTO THE TOP. CASTINGS SHALL RECEIVE ONE COAT OF BLACK ASPHALTUM PAINT AT THE FACTORY.

9.2 COVERS SHALL BE FURNISHED WITH MEANS OF LIFTING. COVERS THAT ROCK UNDER NORMAL LOAD, WILL BE REJECTED. FRAMES SHALL BE BOLT–DOWN TYPE, WITH A COLD APPLIED JOINT SEALER PLACED BETWEEN FRAME AND MANHOLE. CARE SHALL BE TAKEN SO AS NOT TO DAMAGE THE GASKET DURING CONSTRUCTION.

9.3 STEPS FOR MANHOLES SHALL BE MADE OF FIBERGLASS CONSTRUCTION, CAST IRON OR STEEL AND SHALL HAVE A PLASTIC COATING. STEPS SHALL BE SPACED TWELVE INCHES (12") APART. FIRST AND LAST STEP TO BE WITHIN TWENTY FOUR INCHES (24") OF COVER OR BOTTOM OF MANHOLE. PRECAST CONCRETE MANHOLES SHALL CONSIST OF PRECAST REINFORCED BASE SECTION WITH POURED UNIFORM BOTTOM INVERTS. THE BOTTOM INVERT SHALL BE THE SAME SIZE OF THE CONNECTING PIPE AND OF SUCH SHAPE TO PERMIT TESTING PLUGS TO BE INSTALLED IN THE PIPE.

9.4 THE PRECAST BASE SECTION SHALL BE INSTALLED ON A COMPACTED STABILIZED FOUNDATION OF BEDDING MATERIAL AT LEAST SIX INCHES (6") IN DEPTH. THE PRECAST MANHOLE SECTIONS SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM DESIGNATION C478, LATEST EDITION. EACH SECTION SHALL HAVE NOT MORE THAN TWO (2) HOLES FOR THE PURPOSE OF HANDLING AND SETTING. THESE HOLES SHALL BE TAPERED AND SHALL BE PLUGGED UP WITH RUBBER STOPPERS AND AN APPROVED NON–SHRINK GROUT AFTER INSTALLATION.

9.5 A COLD APPLIED JOINT SEALER SHALL BE USED TO MAKE A UNIFORM WATERTIGHT JOINT AND BE PLACED ON THE INTERIOR AND EXTERIOR OF EACH JOINT. NO MORTAR JOINTS ARE PERMITTED. IN ADDITION, MANHOLE SECTIONS SHALL BE COATED ON THE EXTERIOR WITH KOPPERS BITU–MASTIC NUMBER 300–M TAR EPOXY, MINIMUM DRY FILM THICKNESS OF 16 MILS, AS MANUFACTURED BY THE KOPPERS COMPANY, INC., PITTSBURGH, PENNSYLVANIA, OR EQUAL. THE BITUMINOUS WATERPROOFING MAY BE SHOP OR FIELD APPLIED.

9.6 WHERE ADJUSTING RINGS ARE REQUIRED TO MEET SPECIFIED GRADE, THE MAXIMUM HEIGHT/THICKNESS AND MINIMUM NUMBER OF RINGS SHALL BE USED. ADJUSTING RINGS SHALL NOT BE USED FOR ADJUSTMENTS OVER TWELVE INCHES (12").

10. ACCEPTANCE TESTS

10.1 TESTS FOR DISPLACEMENT OF BURIED SANITARY SEWERS: AFTER THE TRENCH HAS BEEN BACK–FILLED AND COMPACTED AND COVER OVER THE PIPELINE HAS BEEN BROUGHT TO FINISH GRADE, PIPELINES WILL BE TESTED AS FOLLOWS: LIGHT WILL BE FLASHED BETWEEN MANHOLES, OR IF MANHOLES HAVE NOT BEEN YET BEEN CONSTRUCTED, BETWEEN THE LOCATIONS OF THE MANHOLES, BY MEANS OF A FLASHLIGHT OR BY REFLECTING SUNLIGHT WITH A MIRROR. POOR ALIGNMENT, DISPLACED PIPE, OR OTHER DEFECTS SHALL BE REMEDIED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

10.2 TESTS FOR DEFLECTION OF FLEXIBLE GRAVITY PIPES:

A. FLEXIBLE GRAVITY DRAINS ARE DRAINS CONSTRUCTED OF PVC GRAVITY PIPES. PIPE–LINES SHALL BE MEASURED FOR VERTICAL RING DEFLECTION WITHIN FIFTEEN (15) DAYS

B. 'AFTER COMPLETION OF BACKFILL. MAXIMUM RING DEFLECTION OF THE PIPELINE UNDER LOAD SHALL BE LIMITED TO FIVE PERCENT (5%) OF THE VERTICAL INTERNAL PIPE DIAMETER. PIPE EXCEEDING THIS DEFLECTION SHALL BE RE–LAID OR REPLACED, AND RETESTED BY THE CONTRACTOR , AT NO ADDITIONAL COST TO THE OWNER.

C. TESTS FOR DEFLECTION SHALL BE MADE WITH A DEFLECTOMETER THAT PRODUCES A CONTINUOUS RECORD OF PIPE DEFLECTION, OR BY PULLING A MANDREL, SPHERE, OR PIN–TYPE GO/NO–GO DEVICE THROUGH THE PIPELINE. THE DIAMETER OF THE GO/NO–GO DEVICE SHALL BE NINETY–FIVE PERCENT (95%) OF THE UNDEFLECTED INSIDE OF THE PIPE

10.3 AIR TESTING SHALL BE USED. TEST METHODS AND ACCEPTABILITY CRITERIA SHALL BE IN ACCORDANCE WITH THE UNI–BELL LOW PRESSURE AIR TEST. AIR TESTING OF GRAVITY LINES SHALL BE REQUIRED FOR ALL TYPES AND OF ALL PIPE AND MATERIALS.

10.4 MANHOLES SHALL BE TESTED BY EXFILTRATION OR VACUUM TESTING. INFLATABLE STOPPERS SHALL BE USED TO PLUG ALL LINES INTO AND OUT OF THE MANHOLE BEING TESTED INCLUDING ANY VENT LINE. THE STOPPERS SHALL BE POSITIONED IN THE LINES FAR ENOUGH FROM THE MANHOLE TO INSURE TESTING TO THOSE PORTIONS OF THE LINES NOT AIR TESTED. THE MANHOLE SHALL THE BE FILLED TO THE TOP OF THE MANHOLE COVER FRAME WITH WATER. A TWENTY–FOUR (24) HOUR SOAK SHALL BE ALLOWED PRIOR TO EXFILTRATION TESTING. THERE SHALL BE NO LEAKAGE DETECTED DURING A ONE (1) HOUR TEST PERIOD. VACUUM TESTS SHALL BE MADE WITH A VACUUM OF 10" HG. THE TIME FOR THE VACUUM TO DROP FROM 10" TO 9" HG MUST BE LESS THAN SIXTY (60) SECONDS FOR ALL SIZE AND DEPTH OF MANHOLES.

10.5 THE CONTRACTORS WILL FURNISH WEIRS, STAND PIPES, PIPE PLUGS, WATER, PRESSURE GAUGES, STOP WATCHES, AIR COMPRESSORS, VACUUM PUMP, HOSE AND SUCH MATERIALS AND ASSISTANCE AS REQUIRED TO PERFORM THESE TESTS. ALL ACCEPTANCE TESTS SHALL BE CONDUCTED BY THE CONTRACTOR IN THE PRESENCE OF A PROFESSIONAL ENGINEER.

10.6 ACCEPTANCE TESTS SHALL NOT BE MADE UNTIL THE SANITARY SEWER, MANHOLES AND PROPOSED SEWER SERVICE CONNECTIONS, AS SHOWN ON THE APPROVED SEWER PLANS, HAVE BEEN INSTALLED, THE SEWER TRENCHES BACKFILLED AND COMPACTED TO FINISH SUBGRADE. THE CONTRACTOR MAY MAKE ANY OTHER TESTS AT ANY TIME HE DEEMS NECESSARY TO SELF CHECK HIS WORK.

10.7 ALL SANITARY SEWERS, INCLUDING MANHOLES, SHALL BE INSPECTED PRIOR TO ACCEPTANCE TESTING, AND ANY WATER LEAKAGE INTO THE SYSTEM SUFFICIENT TO CONSTITUTE ANY NOTICEABLE TRICKLE OR DRIBBLE, SHALL FIRST BE CORRECTED AND ELIMINATED PRIOR TO UNDERTAKING THE ACCEPTANCE TEST.

10.8 WHENEVER IT HAS BEEN NECESSARY TO CONSTRUCT UNDERDRAINS OR PLACE GRAVEL UNDER PIPE LINES IN ORDER TO DEWATER THE TRENCH DURING CONSTRUCTION OF THE SEWERS, THE ACCEPTANCE TEST WILL NOT BE MADE UNTIL ANY PUMPS (WHICH HAVE BEEN USED IN THE DE–WATERING PROCESS) HAVE BEEN DISCONNECTED OR DRAINS HAVE BEEN TAKEN OUT OF SERVICE.

10.9 THE CONTRACTOR SHALL SCHEDULE ALL ACCEPTANCE TESTS WITH A PROFESSIONAL ENGINEER AT LEAST FORTY–EIGHT (48) HOURS IN ADVANCE. EACH SECTION OF COMPLETED SEWER SHALL BE TESTED FROM MANHOLE TO MANHOLE. NO SEWERS OR SEWER SERVICE CONNECTIONS ARE TO BE EXCLUDED FROM THIS TESTING PROCEDURE.

10.10 THE TEST PROCEDURE SHALL BE CONDUCTED IN THE FOLLOWING MANNER: (VACUUM TESTS OF MANHOLES IS GENERALLY THE INVERSE OF THE LOW PRESSURE AIR TEST OF SEWER LINES)

A. LOW PRESSURE AIR TESTING PROCEDURE:

1. THE CONTRACTOR SHALL THOROUGHLY CLEAN AND REMOVE ALL DEBRIS, SILT, EARTH OR OTHER MATERIALS FROM THE SEWER PRIOR TO ACCEPTANCE TESTING.
2. PREPARED TEST PLUGS SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR WITHIN THE PIPE AT EACH MANHOLE. EACH PLUG MUST BE SELF SUSTAINING AND NO BRACING WILL BE PERMITTED
3. IF THE PIPE TO BE TESTED IS EXPECTED TO BE BELOW THE GROUND WATER TABLE, THE CONTRACTOR SHALL EITHER :
   A. INSTALL A SMALL DIAMETER PERFORATED VERTICAL PIPE FROM INVERT ELEVATION OF THE SEWER TO THE SURFACE PRIOR TO BACKFILLING.
   B. INSERT A PIPE PROBE BY BORING OR DRIVING INTO THE BACKFILLING MATERIAL ADJACENT TO THE INVERT ELEVATION OF THE PIPE, AND DETERMINE THE DEPTH OF THE GROUND WATER LEVEL ABOVE THE PIPE INVERT IMMEDIATELY PRIOR TO ACCEPTANCE TESTING THE SEWER.
   C. ALL GAUGE PRESSURES IN THE TEST SHALL BE INCREASED BY THE AMOUNT OF THIS BACK PRESSURE DUE TO GROUND WATER OVER THE INVERT OF THE PIPE
   D. IN LIEU OF THE ABOVE WATER DEPTH DETERMINATION, THE CONTRACTOR MAY ADD THREE (3) PSI TO THE GAUGE PRESSURE IN THE TESTS.
4. THE CONTRACTOR SHALL ADD AIR SLOWLY TO THE PORTION OF THE PIPE UNDER TEST UNTIL THE INTERNAL AIR PRESSURE IS RAISED TO 4.0 PSI. GAUGE PLUS THE GROUND WATER PRESSURE.
5. AS A SAFETY PRECAUTION, NO ONE SHALL BE ALLOWED IN THE MANHOLE AFTER THE AIR PRESSURE IS INCREASED IN THE SEWER LINE. IF THE INSPECTOR SUSPECTS THAT THE THE TEST PLUG MAY BE LEAKING, THE PRESSURE FIRST SHALL BE RELIEVED BEFORE ANY ADJUSTMENTS ARE MADE TO ELIMINATE AIR LEAKAGE AT THE PLUG
6. THE CONTRACTOR SHALL ALLOW THE AIR TEMPERATURE TO STABILIZE FOR AT LEAST TWO TWO (2) MINUTES WITH THE PIPE SUBJECTED TO AN INTERNAL PRESSURE OF 4.0 PSI BY ADDING ONLY THE AMOUNT OR AIR TO MAINTAIN THE PRESSURE.
7. AFTER THE TEMPERATURE STABILIZATION, THE TEST WILL BEGIN. IF THE INTERNAL AIR PRESSURE DECREASES, THE TIME REQUIRED FOR THE PRESSURE TO DROP FROM 3.5 TO 2.5 PSI GAUGE WILL BE OBSERVED AND RECORDED. THE TIME INTERVAL SHALL BE COMPARED WITH THE ESTABLISHED STANDARDS IN ACCORDANCE WITH TABLE I OF TIME AND LENGTH FOR VARIOUS DIAMETERS OF THE SEWER.
8. PIPE WHICH FAILS TO MAINTAIN THE STIPULATED PRESSURE FOR A PERIOD EQUAL TO OR GREATER THAN THE HOLDING TIME SHOWN IN TABLE I SHALL BE DEEMED NOT TO HAVE PASSED THE LOW AIR PRESSURE AIR TEST AND IS UNSATISFACTORY FOR ACCEPTANCE BY THE COUNTY. ANY SEWER THAT FAILS TO PASS THIS TEST SHALL BE REPLACED BY THE CONTRACTOR. A SINGLE REPAIR CLAMP SHALL BE ALLOWED BETWEEN MANHOLES TO FACILITATE THE REPLACEMENT PIPE TO CORRECT DEFECTIVE MATERIALS OR WORKMANSHIP.

TABLE 1

PIPE SIZE	TEST TIME
3 inches	0.2 MIN./100 L.F.
4 inches	0.3 MIN./100 L.F.
6 inches	0.7 MIN./100 L.F.
8 inches	1.2 MIN./100 L.F.

11. SEEDING AND RESTORATION

11.1 THE CONTRACTOR SHALL PROVIDE ALL EQUIPMENT, LABOR, MATERIALS, AND SERVICES TO SEED AND RESTORE ALL AREAS DESIGNATED ON THE PLANS OR OTHERWISE DISTURBED DURING THE PROJECT CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING ALL AREAS DISTURBED BY HIS OPERATIONS TO AN ORIGINAL OR BETTER CONDITION.

11.2 ALL MATERIALS SHALL BE AS SHOWN BELOW, UNLESS DIRECTED OTHERWISE

LIME – LIME SHALL BE AGRICULTURAL GRADE LIMESTONE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL AND STATE LIME LAW

FERTILIZER – FERTILIZER SHALL BE STANDARD COMMERCIAL BRAND WITH A 10–10–10 PERCENTAGE OF NITROGEN, PHOSPHATE, POTASH NUTRIENTS. FERTILIZER SHALL BE DELIVERED IN LABELED CONTAINERS CONFORMING TO ALL FEDERAL AND STATE FERTILIZER LAWS.

SEED – GRASS SEED SHALL BE 100 PERCENT KENTUCKY 31 FESCUE. SEED SHALL BE FRESH AND CLEAN WITH A PURITY OF 90 PERCENT AND GERMINATION OF 85 PERCENT

MULCH – MULCH SHALL BE CLEAN WHEAT OR OAT STRAW.

11.3 PRIOR TO SEEDING, THE TOPSOIL SHALL BE DISCED TO A MINIMUM DEPTH OF FOUR INCHES (4") AND CONTINUED UNTIL IT IS IN A LOOSE FRIABLE CONDITION. ALL DEBRIS AND ROCK OVER TWO INCHES (2") IN DIAMETER SHALL BE REMOVED.

11.4 LIME AND FERTILIZER SHALL BE APPLIED AT A RATE OF 3,500 AND 1,500 POUNDS PER ACRE RESPECTIVELY. WITH AN APPROVED SPREADER, LIME AND FERTILIZER SHALL BE MIXED INTO THE TOPSOIL BY TILLING, DISCING AND HARROWING.

11.5 AFTER THE TOPSOIL IS PREPARED, SEED SHALL BE APPLIED WITH MECHANICAL SPREADERS AT A RATE OF 150 POUNDS PER ACRE. FOLLOWING APPLICATION, SEED SHALL BE WORKED INTO THE SOIL TO A DEPTH OF 1/4 INCH BY APPROVED METHODS. CARE SHOULD BE TAKEN TO ASSURE THAT ALL AREAS ARE PROPERLY SEEDED. ANY BARREN AREAS SHALL BE RESEEDED UNTIL A UNIFORM STAND OF GRASS IS OBTAINED.

11.6 IMMEDIATELY AFTER SEEDING, MULCH SHALL BE UNIFORMLY APPLIED AT THE RATE OF 2000 POUNDS PER ACRE.

11.7 IN LIEU OF THE ABOVE SEEDING APPLICATION, THE PROPER MIXTURE MAY BE APPLIED BY THE HYDROSEED METHOD.

11.8 DEVELOPED PROPERTY SUCH A WALKS, STEPS, MAILBOXES, FENCES, AND THE LIKE DISTURBED BY THE WORK SHALL BE RESTORED OR REPLACED TO THEIR ORIGINAL CONDITION. DITCHES SHALL BE RESTORED TO THEIR ORIGINAL SHAPE AND SLOPE. TEMPORARY AND/OR DAILY REPLACEMENT/RESTORATION SHALL BE ACCOMPLISHED IN ORDER THAT RESIDENTS AND THE PUBLIC WILL BE LEAST AFFECTED BY THIS CONSTRUCTION.

AS–BUILT CONDITIONS
NOVEMBER 14, 2001

FRANK B. CALDWELL,III
NO. 9184

REVISED 10/04/2001 per COUNTY OF BOTETOURT 1st REVIEW

SANITARY SEWER SPECIFICATIONS
HOLLYMEADE
SECTION IV
for
PROPOSED SANITARY SEWER EXTENSION
Situate Brookview Circle
BOTETOURT COUNTY, VIRGINIA

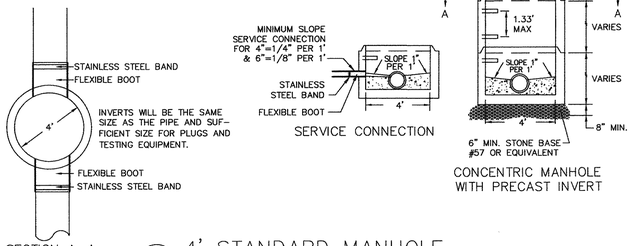
Designed: J.V. Judy
Drawn: J.V. Judy
Checked: F.B. Caldwell
Date: July 2, 2001
Scale: 1" = 30'
Work Order: 01–0069
Field Book: JW–13

CWA
CALDWELL WHITE ASSOCIATES
ENGINEERS / SURVEYORS / PLANNERS
1054 OLD COUNTRY CLUB ROAD
P.O. BOX 6340
ROANOKE, VIRGINIA 24017
(540) 342–7094
FAX: (540) 981–0699

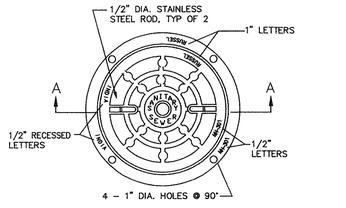
STANDARD COUNTY OF BOTETOURT SANITARY SEWER DETAILS

NOTES:

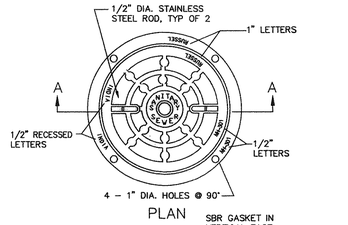
1. ALL MANHOLE FRAMES AND COVERS SHALL BE RUSSELL PIPE & FOUNDRY MH-301 IN NON-PAVED AREAS REQUIRING WATERTIGHT FRAME & COVERS AND MH-300 IN PAVED AREAS.
2. STEPS TO BE VERTICALLY ALIGNED.
3. THE FRAME AND COVER SHALL BE PROPERLY ALIGNED WITH THE 2 FOOT OPENING OF THE MANHOLE STRUCTURE AND BOLTED IN PLACE.
4. ALL SAMPLING MANHOLES SHALL BE CONSTRUCTED AS PER MANHOLE DETAILS. WHEN NECESSARY, THE FLAT TOP MANHOLE MAY BE SUBSTITUTED. WITH ECCENTRIC OPENING AT STEPS.



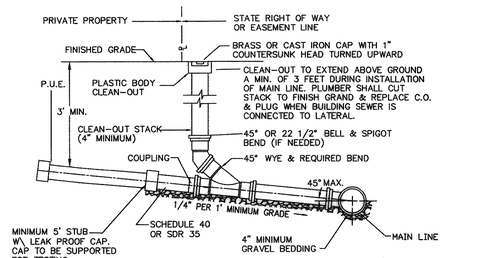
DD 01 — 4' STANDARD MANHOLE FOR PIPE 15" OR SMALLER



DD 05 — MANHOLE FRAME & COVER STANDARD



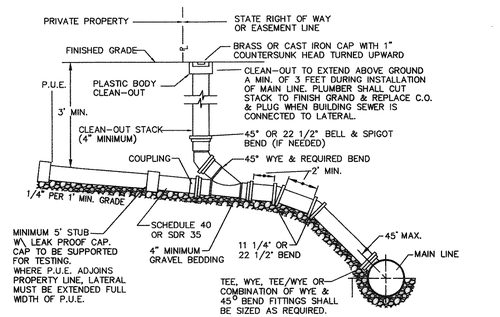
DD 06 — MANHOLE FRAME & COVER WATERTIGHT



DD 08 — SANITARY SEWER LATERAL

GENERAL NOTES:

1. TRAFFIC BEARING BOX REQUIRED IN TRAFFIC AREAS.
2. ALL PIPE AND FITTINGS SHALL BE OF SIMILAR MATERIAL.
3. ALL PIPE SHALL BE OF SAME SIZE.
4. NO BENDS ARE ALLOWED IN THE LATERAL FROM THE MAIN TO THE CLEAN-OUT STACK WYE. (EXCEPT AS NOTED)
5. ALL MAIN LINE TAPS ON ACTIVE MAINS WILL BE PERFORMED BY CONTRACTOR AND INSPECTED BY BOTETOURT CO. UTILITY DEPT.
6. PIPING BEHIND CLEANOUT TO BE INSTALLED PER BOCA CODE.
7. MINIMUM LATERAL SIZE: 4" FOR RESIDENTIAL SERVICE 6" FOR NON-RESIDENTIAL SERVICE
8. MINIMUM COVER FOR ALL SEWER LATERALS SHALL BE THREE (3') FEET



DD 08 — SANITARY SEWER LATERAL FOR DEEP LATERALS

GENERAL NOTES:

1. TRAFFIC BEARING BOX REQUIRED IN TRAFFIC AREAS.
2. ALL PIPE AND FITTINGS SHALL BE OF SIMILAR MATERIAL.
3. ALL PIPE SHALL BE OF SAME SIZE.
4. NO BENDS ARE ALLOWED IN THE LATERAL FROM THE MAIN TO THE CLEAN-OUT STACK WYE. (EXCEPT AS NOTED)
5. ALL MAIN LINE TAPS ON ACTIVE MAINS WILL BE PERFORMED BY CONTRACTOR AND INSPECTED BY BOTETOURT CO. UTILITY DEPT.
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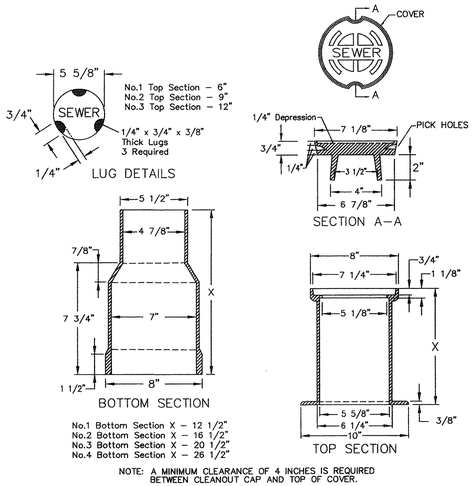
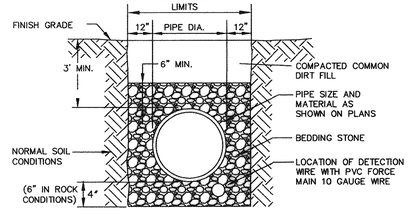
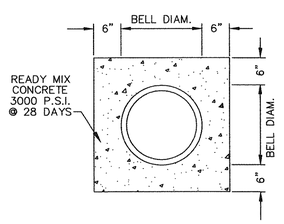


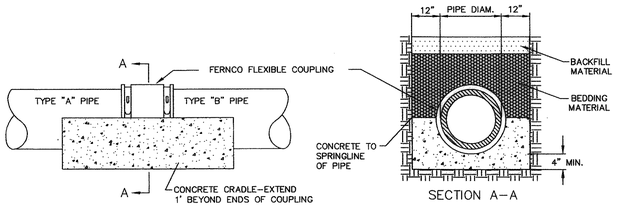
DD 13 — TRAFFIC BEARING CLEANOUT BOX



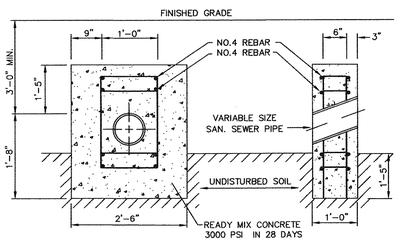
DD 14 — STONE BEDDING



DD 15 — CONCRETE ENCASED PIPE



DD 16 — JOINING DISSIMILAR PIPE



DD 18 — ANCHOR BLOCK

Pipe Pipe Diameter (in.)	Min. Time (min: sec)	Length for Min. Time (ft.)	Time for Longer Length (sec)	Specified Time for Length (L) Shown (min: sec)							
				100 ft.	150 ft.	200 ft.	250 ft.	300 ft.	350 ft.	400 ft.	450 ft.
4	3: 46	597	.380 L	3: 46	3: 46	3: 46	3: 46	3: 46	3: 46	3: 46	3: 46
6	5: 40	398	.854 L	5: 40	5: 40	5: 40	5: 40	5: 40	5: 40	5: 42	6: 24
8	7: 34	298	1.520 L	7: 34	7: 34	7: 34	7: 34	7: 36	8: 52	10: 08	11: 24
10	9: 26	239	2.374 L	9: 26	9: 26	9: 26	9: 53	11: 52	13: 51	15: 49	17: 48
12	11: 20	199	3.418 L	11: 20	11: 20	11: 24	14: 15	17: 05	19: 56	22: 47	25: 38

DD 30 — TESTING STANDARDS 1.0 psig DROP

AS-BUILT CONDITIONS NOVEMBER 14, 2001

SANITARY SEWER DETAILS

HOLLYMEADE SECTION IV

for

PROPOSED SANITARY SEWER EXTENSION

Situate Brookview Circle

BOTETOURT COUNTY, VIRGINIA

Designed: ..... J.V. Judy
Drawn: ..... J.V. Judy
Checked: ..... F.B. Caldwell
Date: ..... Oct. 4, 2001
Scale: ..... As Shown
Work Order: 01-0069
Field Book: JW-13

CWA
CALDWELL WHITE ASSOCIATES
ENGINEERS / SURVEYORS / PLANNERS
1054 OLD COUNTRY CLUB ROAD
P.O. BOX 6340
ROANOKE, VIRGINIA 24017
(540) 342-7094
FAX: (540) 981-0699

SUMMARY OF REQUIRED MINIMUM STANDARDS

PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN (7) DAYS AFTER FINAL GRADE HAS BEEN REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN (7) DAYS TO DENUDED AREAS THAT MAY BE AT FINAL GRADE BUT WILL REMAIN DORMANT (UNDISTURBED) FOR LONGER THAN THIRTY (30) DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE (1) YEAR.

DURING CONSTRUCTION OF THE PROJECT, SOIL STOCK PILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.

A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT, IN THE OPINION OF THE LOCAL PROGRAM ADMINISTRATOR OR AGENT, IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.

SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN THE LAND-DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCES TAKES PLACE.

STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES, AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.

CUT AND FILL SLOPES SHALL BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITH ONE (1) YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZING MEASURES UNTIL THE PROBLEM IS CORRECTED.

CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE.

WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.

ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.

BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.

WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PUBLIC ROAD SURFACE, THE ROAD SHALL BE CLEANED THOROUGHLY AT THE END OF THE DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.

ALL EROSION AND SEDIMENT CONTROL STRUCTURES AND SYSTEMS SHALL BE MAINTAINED, INSPECTED AND REPAIRED AS NEEDED TO INSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. AN INSPECTION SHALL BE MADE AT LEAST ONCE IN EVERY TWO-WEEK PERIOD AND WITHIN 48 HOURS OF EVERY SIGNIFICANT RAINFALL EVENT.

ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN THIRTY (30) DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE LOCAL PROGRAM ADMINISTRATOR. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.

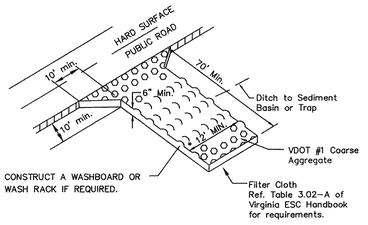
THE BED AND BANKS OF ANY WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.

UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:

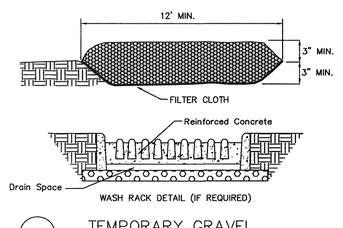
A. NO MORE THAN 100 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME
B. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES
C. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THRU AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY.
D. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS.
E. APPLICABLE SAFETY REGULATIONS SHALL BE COMPLIED WITH.

VIRGINIA UNIFORM CODING SYSTEM for Erosion and Sediment Control Practices

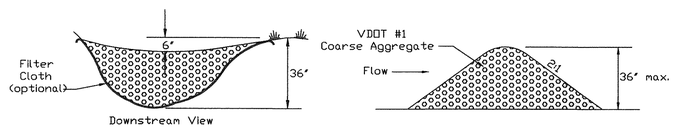
NO.	TITLE	KEY	SYMBOL
3.01	SAFETY FENCE	SAF	
3.02	TEMPORARY GRAVEL CONSTRUCTION ENTRANCE	CE	
3.03	CONSTRUCTION ROAD STABILIZATION	CRS	
3.04	STRAW BALE BARRIER	STB	
3.05	SILT FENCE	SF	xxxxxxxxxxxx
3.06	BRUSH BARRIER	BB	
3.07	STORM DRAIN INLET PROTECTION	IP	
3.08	CULVERT INLET PROTECTION	CIP	
3.09	TEMPORARY DIVERSION DIKE	DD	
3.10	TEMPORARY FILL DIVERSION	FD	
3.11	TEMPORARY RIGHT-OF-WAY DIVERSION	RWD	
3.12	DIVERSION	DV	
3.13	TEMPORARY SEDIMENT TRAP	ST	
3.14	TEMPORARY SEDIMENT BASIN	SB	
3.15	TEMPORARY SLOPE DRAIN	TSD	
3.16	PAVED FLUME	PF	
3.17	STORMWATER CONVEYANCE CHANNEL	SCC	
3.18	OUTLET PROTECTION	OP	
3.19	RIPRAP	RR	
3.20	ROCK CHECK DAMS	CD	
3.21	LEVEL SPREADER	LS	
3.22	VEGETATIVE STREAMBANK STABILIZATION	VSS	
3.23	STRUCTURAL STREAMBANK STABILIZATION	SSS	
3.24	TEMPORARY VEHICULAR STREAM CROSSING	VSC	
3.25	UTILITY STREAM CROSSING	USC	
3.26	DEWATERING STRUCTURE	DS	
3.27	TURBIDITY CURTAIN	TC	
3.28	SUBSURFACE DRAIN	SD	
3.29	SURFACE ROUGHENING	SR	
3.30	TOPSOILING	TO	
3.31	TEMPORARY SEEDING	TS	
3.32	PERMANENT SEEDING	PS	
3.33	SODDING	SO	
3.34	BERMUDA GRASS AND ZOYSIAURASS ESTABLISHMENT	B / M	B OR M
3.35	MULCHING	MU	
3.36	SOIL STABILIZATION BLANKETS AND MATTING	BE / EC	TREAT. 1, TREAT. 2
3.37	TREES, SHRUBS, VINES AND GROUND COVERS	VEG	
3.38	TREE PRESERVATION AND PROTECTION	TP	
3.39	DUST CONTROL	DC	



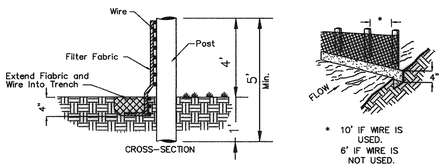
* MUST EXTEND FULL WIDTH OF INGRESS & EGRESS OPERATION.



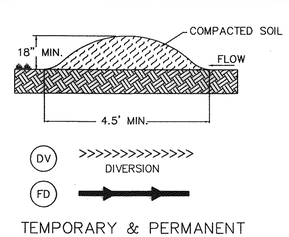
(CE) TEMPORARY GRAVEL CONSTRUCTION ENTRANCE



(CD) STONE CHECK DAM

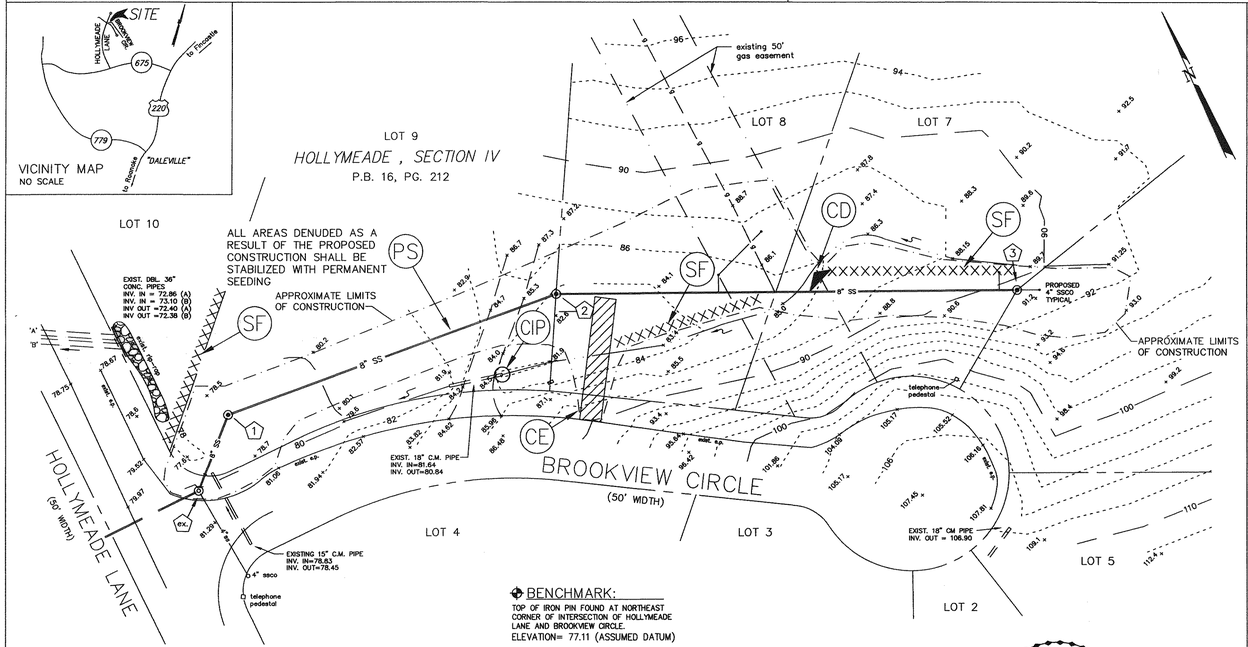


(SF) SILT FENCE BARRIER



TEMPORARY & PERMANENT FILL DIVERSIONS

VICINITY MAP
NO SCALE



BENCHMARK:
TOP OF IRON PIN FOUND AT NORTHEAST CORNER OF INTERSECTION OF HOLLYMEADE LANE AND BROOKVIEW CIRCLE.
ELEVATION= 77.11 (ASSUMED DATUM)

STD. GRADING LEGEND

BC = BOTTOM OF CURB	LP = LOW POINT
BD = BOTTOM OF DOCK	MG = MATCH GRADE
BS = BOTTOM OF STEP	P = PAVEMENT
BW = BOTTOM OF WALL	SG = SUBGRADE
CL = CENTERLINE	TC = TOP OF CURB
EG = EDGE OF GUTTER	TD = TOP OF DOCK
FF = FINISH FLOOR	TS = TOP OF STEP
FG = FINISH GRADE	TW = TOP OF WALL
HPT= HIGH POINT	

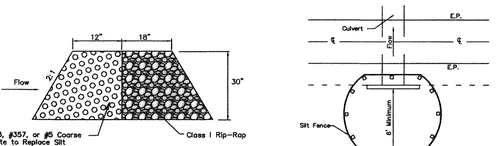
40' 20' 0' 40' 80'
1" = 40'
GRAPHIC SCALE

SOIL EROSION PLAN

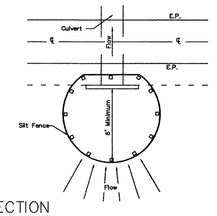
SCALE: 1"=40'

COMMONWEALTH OF VIRGINIA
FRANK B. CALDWELL,III
NO. 9184
PROFESSIONAL ENGINEER

THE PHYSICAL IMPROVEMENTS AND GRADING INDICATED ARE FOR SCHEMATICS ONLY. REFER TO THE RELATED CIVIL DRAWINGS FOR THE ACTUAL CONSTRUCTION REQUIREMENTS.



OPTIONAL STONE COMBINATION



(CIP) CULVERT INLET PROTECTION

TYPE A

15 OCTOBER TO 1 FEBRUARY
K-31 FESCUE @ 5 LB / 1000 SF
BORZY WINTER RYE @ 1/2 LB / 1000 SF

1 FEBRUARY TO 1 JUNE
K-31 FESCUE @ 5 LB / 1000 SF
ANNUAL RYE @ 1/2 LB / 1000 SF

1 JUNE TO 1 SEPTEMBER
K-31 FESCUE @ 5 LB / 1000 SF
GERMAN MILLET @ 1/2 LB / 1000 SF

1 SEPTEMBER TO 15 OCTOBER
K-31 FESCUE @ 5 LB / 1000 SF
ANNUAL RYE @ 1/2 LB / 1000 SF

TYPE B (SLOPES 3:1 OR STEEPER)

15 MARCH TO 1 MAY
CROWN VETCH @ 1/2 LB / 1000 SF
PERENNIAL RYEGRASS @ 1/2 LB / 1000 SF
RED TOP @ 1/8 LB / 1000 SF

15 AUGUST TO 1 OCTOBER
CROWN VETCH @ 1/2 LB / 1000 SF
PERENNIAL RYEGRASS @ 1/2 LB / 1000 SF
RED TOP @ 1/8 LB / 1000 SF

LIME: 140 LB / 1000 SF PULVERIZED AGRICULTURAL LIMESTONE

FERTILIZER: 5-20-10 @ 25 LB / 1000 SF
36-0-0 @ 7 LB / 1000 SF

MULCH: IF REQUIRED, SHALL BE USED OVER ALL SEEDED AREAS AND SHALL BE APPLIED IN ACCORDANCE WITH SECTION 1.75 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.

SOIL CONDITIONING: INCORPORATION OF LIME AND FERTILIZER, SELECTION OF CERTIFIED SEED, MULCHING, MAINTENANCE OF NEW SEEDLINGS, AND RESEEDING SHALL BE IN ACCORDANCE WITH SPECIFICATIONS CONTAINED WITHIN THE VIRGINIA SOIL EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION. ADDITIONAL SEEDING TO BE PERFORMED AS REQUIRED BY THE INSPECTOR.

SEED APPLICATION: APPLY SEED UNIFORMLY WITH A CYCLONE SEEDER, DRILL, CULTIPACKER SEEDER, OR HYDROSEEDER ON A FIRM, FRIABLE, SEEDBED. MAXIMUM SEEDING DEPTH SHALL BE 1/4 INCH.

(PS) PERMANENT SEEDING MIXTURE

GENERAL EROSION & SEDIMENT CONTROL NOTES

ES-1: Unless otherwise indicated, all vegetative and structural erosion and sediment control practices will be constructed and maintained according to minimum standards and specifications of the Virginia Erosion and Sediment Control Handbook, latest edition, and Virginia Regulations VR 625-02-00 Erosion and Sediment Control Regulations.

ES-2: The plan approving authority must be notified one week prior to the onsite preconstruction conference, one week prior to the commencement of land disturbing activity, and one week prior to the final inspection.

ES-3: All erosion and sediment control measures are to be placed prior to or as the first step in clearing.

ES-4: A copy of the approved erosion and sediment control plan & narrative, as well as a copy of the Land Disturbing Permit, shall be maintained on the site at all times. The Erosion and Sediment Control Administrator will deliver these materials at the onsite preconstruction conference.

ES-5: Prior to commencing land disturbing activities in areas other than indicated on these plans (including, but not limited to, off-site borrow or waste areas), the contractor shall submit a supplementary erosion control plan to the owner for review and approval by the plan approving authority.

ES-6: The contractor is responsible for installation of any additional erosion control measures necessary to prevent erosion and sedimentation as determined by the plan approving authority.

ES-7: All disturbed areas are to drain to approved sediment control measures at all times during the land disturbing activities and during site development until final stabilization is achieved.

ES-8: During dewatering operations, water will be pumped into an approved filtering device.

ES-9: The contractor shall inspect all erosion control measures periodically and after each runoff-producing rainfall event. Any necessary repairs or cleanup to maintain the effectiveness of the erosion control devices shall be made immediately. An inspection report must be filed with the Botetourt County Erosion & Sediment Control Administrator once every two weeks, beginning with commencement of the land disturbing activity, and within 48 hours of any runoff-producing rainfall event. Failure to submit a report will be grounds for immediate revocation of the Land Disturbing Permit. Reports must be postmarked within 24 hours of the deadline. A standard inspection report form will be supplied, which should be copied as necessary. This provision in no way waives the right of Botetourt County personnel to conduct site inspections, nor does it deny the right of the permittee(s) to accompany the inspector(s).

AS-BUILT CONDITIONS NOVEMBER 14, 2001

REVISED 10/19/2001 per COUNTY OF BOTETOURT ESC REVIEW
REVISED 10/04/2001 per COUNTY OF BOTETOURT 1st REVIEW

SOIL EROSION PLAN & DETAILS

HOLLYMEADE SECTION IV

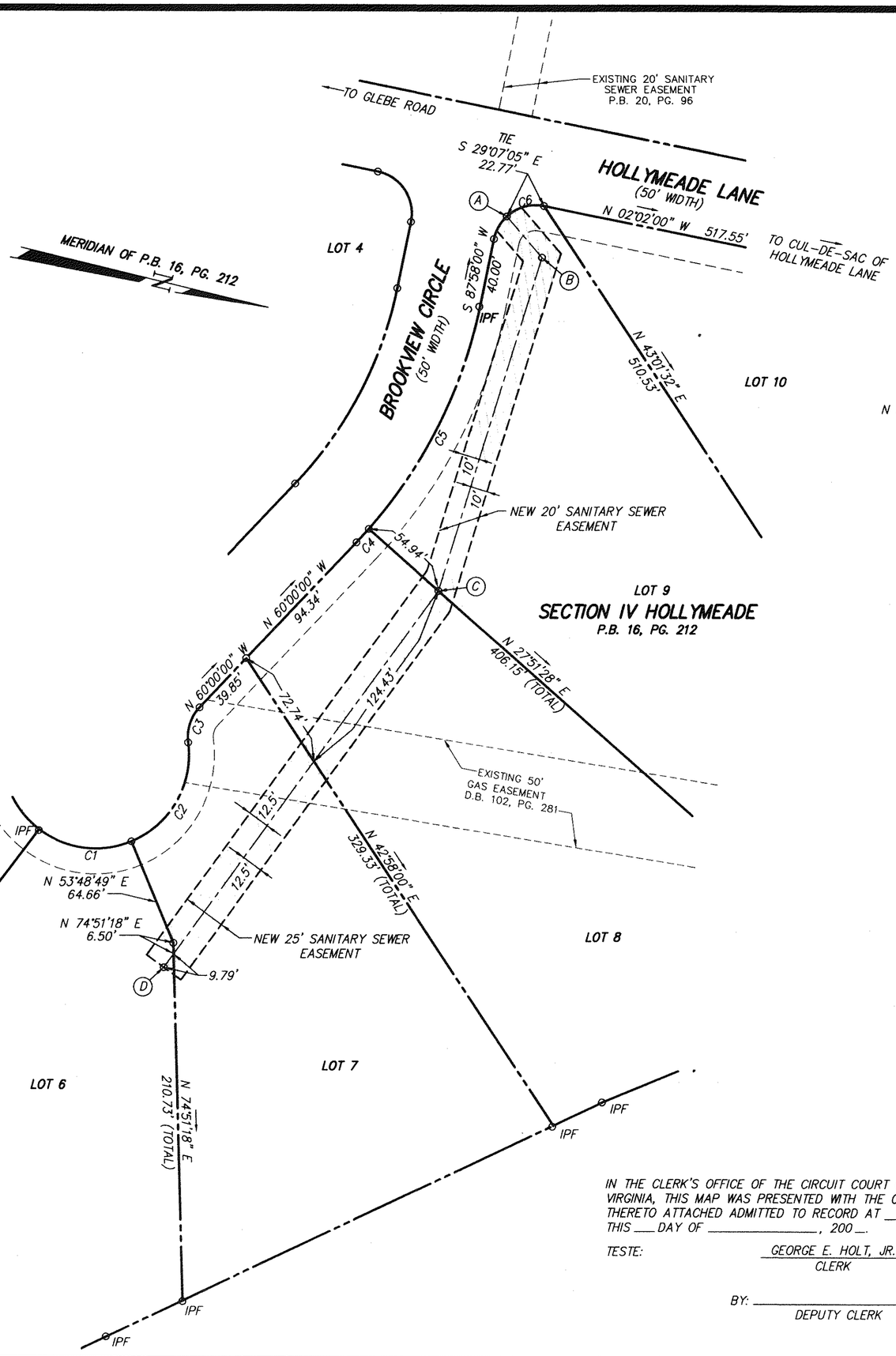
for

PROPOSED SANITARY SEWER EXTENSION
Situate Brookview Circle
BOTETOURT COUNTY, VIRGINIA

Designed:	J.V. Judy
Drawn:	J.V. Judy
Checked:	F.B. Caldwell
Date:	June 29, 2001
Scale:	1" = 40'
Notebook	JW #13
Work Order	01-0069

CWA
CALDWELL WHITE ASSOCIATES
ENGINEERS / SURVEYORS / PLANNERS
1054 OLD COUNTRY CLUB ROAD
P.O. BOX 6340
ROANOKE, VIRGINIA 24017
(540) 342-7004
FAX: (540) 981-0899

P.B._____, PG._____

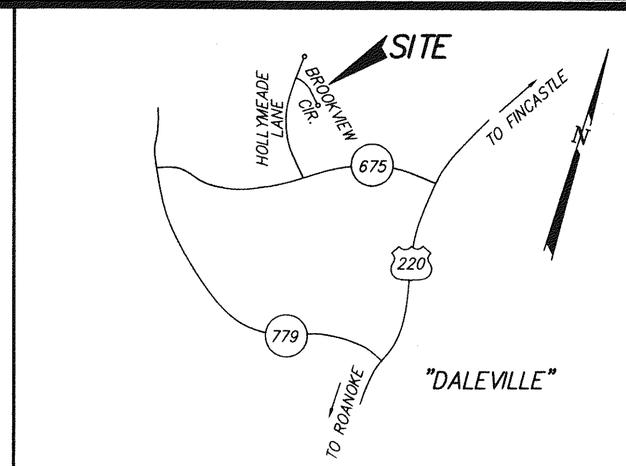


CENTERLINE OF NEW PUBLIC SANITARY SEWER EASEMENT

A TO B	B TO C	C TO D
N 35°54'53" E 32.02'	S 86°22'30" E 205.35'	S 67°27'57" E 274.28'

BOUNDARY CURVE DATA

CURVE C1	CURVE C2	CURVE C3	CURVE C4	CURVE C5	CURVE C6
R=55.00'	R=55.00'	R=25.00'	R=285.00'	R=285.00'	R=25.00'
L=57.41'	L=72.12'	L=22.39'	L=10.66'	L=148.68'	L=39.27'
Tan=31.63'	Tan=42.30'	Tan=12.01'	Tan=5.33'	Tan=76.07'	Tan=25.00'
Delta=59°48'33"	Delta=75°07'53"	Delta=51°19'04"	Delta=02°08'36"	Delta=29°53'24"	Delta=90°00'00"
CH: N 06°16'54" W 54.84'	CH: N 73°45'08" W 67.06'	CH: N 85°39'32" W 21.65'	CH: N 61°04'18" W 10.66'	CH: N 77°05'18" W 147.00'	CH: N 47°02'00" W 35.36'



VICINITY MAP
NO SCALE

NOTES:

1. THIS PLAT IS FOR THE SOLE PURPOSE OF CREATING A NEW VARIABLE WIDTH PUBLIC SANITARY SEWER EASEMENT. THIS MAP DOES NOT CONSTITUTE A FULL AND ACCURATE BOUNDARY SURVEY OF THE PARCELS SHOWN.
2. THIS PLAT WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND THEREFORE MAY NOT INDICATE ALL ENCUMBRANCES UPON THE PROPERTIES.

SYMBOLS & ABBREVIATIONS

D.B.	DEED BOOK
EXIST.	EXISTING
FND.	FOUND
IPF	IRON PIN FOUND
PG.	PAGE
P.B.	PLAT BOOK
———	PROPERTY LINE

SANITARY SEWER EASEMENT PLAT
FOR

JAMES D. & LORETTA M. FRALIN

SHOWING A NEW VARIABLE WIDTH PUBLIC SANITARY SEWER EASEMENT THROUGH

HOLLYMEADE SECTION 4

(P.B. 16, PG. 212)

SITUATE HOLLYMEADE LANE AND BROOKVIEW CIRCLE
AMSTERDAM MAGISTERIAL DISTRICT
COUNTY OF BOTETOURT, VIRGINIA

IN THE CLERK'S OFFICE OF THE CIRCUIT COURT OF THE COUNTY OF BOTETOURT, VIRGINIA, THIS MAP WAS PRESENTED WITH THE CERTIFICATE OF ACKNOWLEDGMENT THERETO ATTACHED ADMITTED TO RECORD AT _____ O'CLOCK ___ .M. ON THIS ___ DAY OF _____, 200__.

TESTE: GEORGE E. HOLT, JR.
CLERK

BY: _____
DEPUTY CLERK

COMMONWEALTH OF VIRGINIA
FRANK B. CALDWELL, III
NO. 1335
11 DEC '01
LAND SURVEYOR

CWA
CALDWELL WHITE ASSOCIATES
ENGINEERS / SURVEYORS / PLANNERS
4203 MELROSE AVENUE, N.W.
P.O. BOX 6260
ROANOKE, VIRGINIA 24017-0260
(540) 366-3400
FAX: (540) 366-8702

Calculated: C.L. White
Drawn: C.L. White
Checked: F.B. Caldwell, III
Date: December 11, 2001

Scale: 1" = 50'
Field Book: JW-13
W.O. No.: 01-0069

CLOSED: C.L. White

P.B._____, PG._____