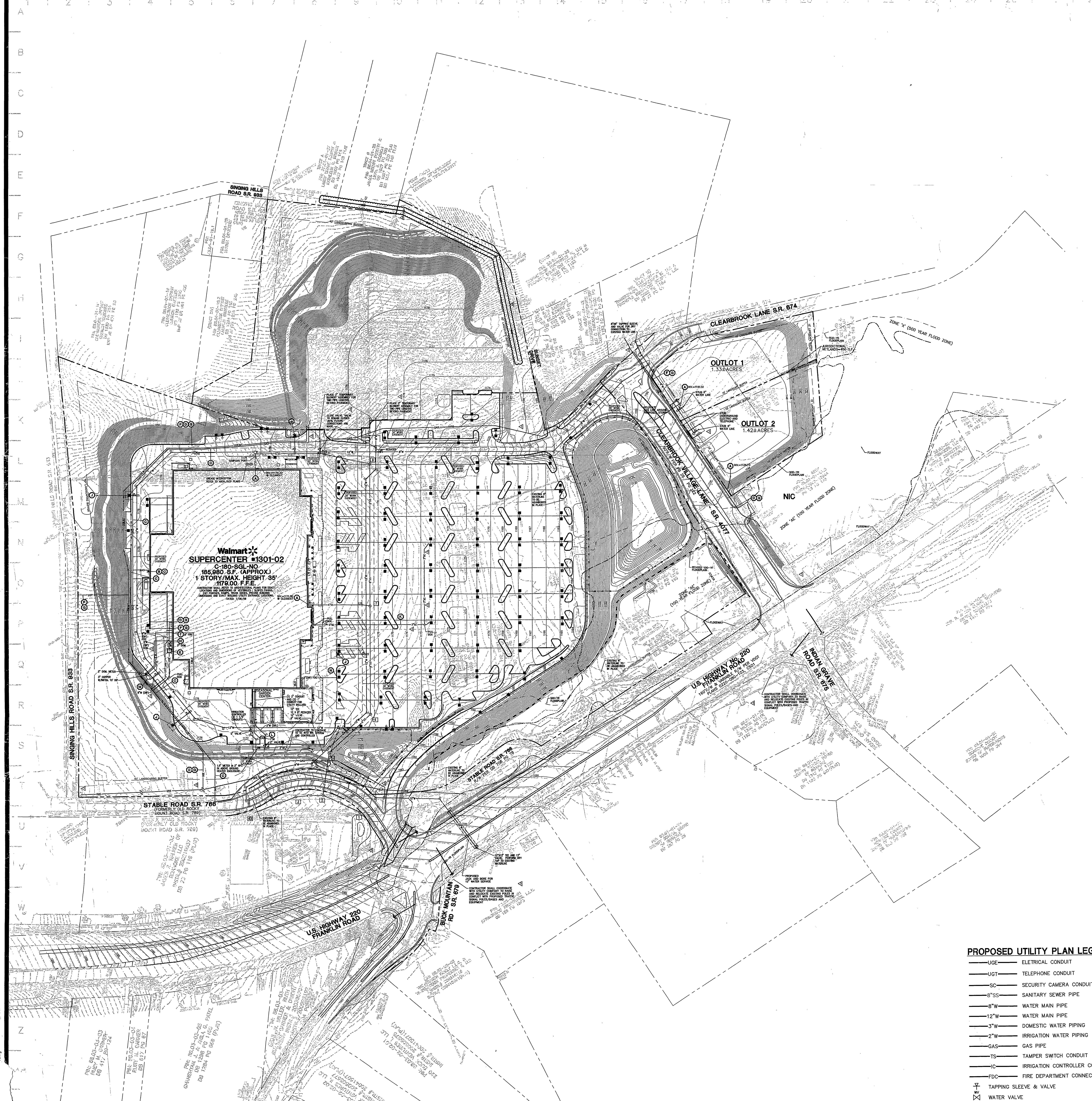

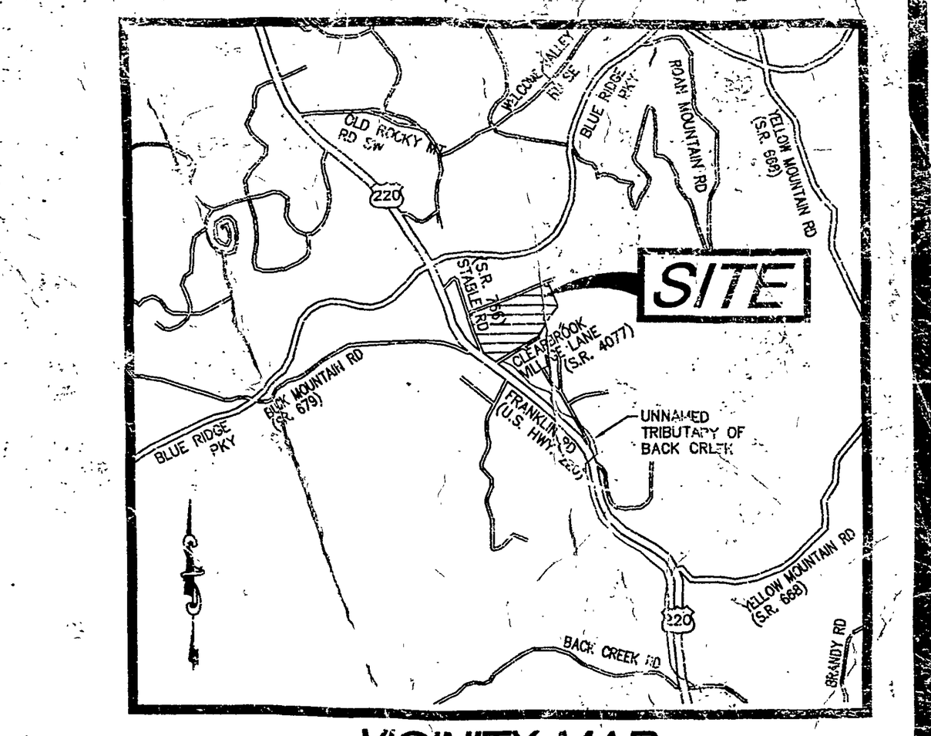

VICINITY MAP
N.T.S.

SITE UTILITY NOTES

1. ALL FILL MATERIAL IS TO BE IN PLACE, AND COMPACTED BEFORE INSTALLATION OF PROPOSED UTILITIES.
2. CONTRACTOR SHALL NOTIFY THE UTILITY AUTHORITIES INSPECTORS 72 HOURS BEFORE CONNECTING TO ANY EXISTING LINE.
3. SANITARY SEWER PIPE SHALL BE AS FOLLOWS:
   8" PVC SDR35 PER ASTM D 3034, FOR PIPES LESS THAN 12' DEEP
   8" PVC SDR26 PER ASTM D 3034, FOR PIPES MORE THAN 12' DEEP
   6" PVC SCHEDULE 40 FOR LATERALS
   DUCTILE IRON PIPE PER AWWA C150, CLASS 51.
4. WATER LINES SHALL BE AS FOLLOWS:
   A. PIPE SIZES LESS THAN 3-INCHES THAT ARE INSTALLED BELOW GRADE AND OUTSIDE BUILDING SHALL COMPLY WITH ONE OR A COMBINATION OF THE FOLLOWING:
      1. SEAMLESS COPPER TUBING: TYPE "K" SOFT COPPER. ASTM B 88.
         A. FITTINGS: WROUGHT COPPER (95–5 TIN ANTIMONY SOLDER JOINT), ASME B 16.22.
      2. POLYVINYL CHLORIDE (PVC) WATER PIPE: PIPE, AWWA C900, CONTINUALLY MARKED WITH MANUFACTURER'S NAME, PIPE SIZE, CELL CLASSIFICATION, RATING, AND MATERIAL CLASSIFICATION.
         A. PIPE JOINTS: INTEGRALLY MOLDED BELL ENDS, ASTM D 2672.
         B. CEMENT PRIMER: ASTM – F656.
         C. SOLVENT CEMENT: ASTM – D 2564.
   B. PIPE SIZES 3-INCHES TO 4-INCHES THAT ARE INSTALLED BELOW GRADE AND OUTSIDE BUILDING SHALL COMPLY WITH ONE OR A COMBINATION OF THE FOLLOWING:
      1. DUCTILE IRON WATER PIPE: AWWA C151, THICKNESS CLASS 350.
         A. FITTINGS: EITHER MECHANICAL JOINT OR PUSH–ON JOINT, AWWA C110 OR AWWA C111.
         B. ELASTOMERIC GASKETS AND LUBRICANT: ASTM – F477.
      2. POLYVINYL CHLORIDE (PVC) WATER PIPE: PIPE, AWWA C900, RATED DR 14 (CLASS 150), CONTINUALLY MARKED AS REQUIRED.
         A. ELASTOMERIC GASKETS AND LUBRICANT: ASTM – F477 FOR SMALLER PIPES.
         B. PIPE JOINTS: INTEGRALLY MOLDED BELL ENDS, ASTM D 3139.
   C. PIPE SIZES 6-INCHES AND LARGER THAT ARE INSTALLED BELOW GRADE AND OUTSIDE BUILDING SHALL COMPLY WITH THE FOLLOWING:
      1. DUCTILE IRON WATER PIPE: AWWA C151, THICKNESS CLASS 350.
         A. FITTINGS: EITHER MECHANICAL JOINT OR PUSH–ON JOINT, AWWA C110 OR AWWA C111.
         B. ELASTOMERIC GASKETS AND LUBRICANT: ASTM – F477. POLYVINYL CHLORIDE (PVC) WATER PIPE: PIPE, AWWA C900, RATED DR 14 (CLASS 150), CONTINUALLY MARKED AS REQUIRED.
5. MINIMUM TRENCH WIDTH SHALL BE 2 FEET.
6. WATER JOINTS ARE TO BE MECHANICAL JOINTS WITH THRUST BLOCKING AS CALLED OUT IN SPECIFICATIONS. WATERLINE IN CASING TO BE RESTRAINED JOINT TYPE WITH MEGALUG FITTINGS.
7. ALL UTILITIES SHOULD BE KEPT TEN (10') APART (PARALLEL) OR WHEN CROSSING 18" APART (OUTSIDE EDGE OF PIPE TO OUTSIDE EDGE OF PIPE).
8. CONTRACTOR SHALL MAINTAIN A MINIMUM OF 3'–0" COVER ON ALL WATERLINES.
9. IN THE EVENT OF A VERTICAL CONFLICT BETWEEN WATERLINES, SANITARY LINES, STORM LINES AND GAS LINES (EXISTING AND PROPOSED), THE SANITARY LINE SHALL BE DUCTILE IRON PIPE WITH MECHANICAL JOINTS AT LEAST 10 FEET ON BOTH SIDES OF CROSSING, THE WATERLINE SHALL HAVE MECHANICAL JOINTS WITH APPROPRIATE THRUST BLOCKING AS REQUIRED TO PROVIDE A MINIMUM OF 18" CLEARANCE MEETING REQUIREMENTS OF ANSI A21.10 OR ANSI 21.11 (AWWA C–151) (CLASS 50).
10. LINES UNDERGROUND SHALL BE INSTALLED, INSPECTED AND APPROVED BEFORE BACKFILLING.
11. TOPS OF EXISTING MANHOLES SHALL BE RAISED AS NECESSARY TO BE FLUSH WITH PROPOSED ELEVATIONS, AND TO BE ONE FOOT ABOVE FINISHED GROUND ELEVATIONS WITH WATER TIGHT LIDS.
12. ALL CONCRETE FOR ENCASEMENTS SHALL HAVE A MINIMUM 28 DAY COMPRESSION STRENGTH AT 3000 P.S.I.
13. DRAWINGS DO NOT PURPORT TO SHOW ALL EXISTING UTILITIES.
14. EXISTING UTILITIES SHALL BE VERIFIED IN FIELD PRIOR TO INSTALLATION OF ANY NEW LINES.
15. REFER TO INTERIOR PLUMBING DRAWINGS FOR TIE–IN OF ALL UTILITIES.
16. CONTRACTOR IS RESPONSIBLE FOR COMPLYING TO THE SPECIFICATIONS OF WESTERN VIRGINIA WATER AUTHORITY WITH REGARDS TO MATERIALS AND INSTALLATION OF THE WATER AND SEWER LINES.
17. ALL NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY CODE AND/OR UTILITY SERVICE COMPANIES SHALL BE PERFORMED PRIOR TO ANNOUNCED BUILDING POSSESSION AND THE FINAL CONNECTION OF SERVICE.
18. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES FOR INSTALLATION REQUIREMENTS AND SPECIFICATIONS.
19. CONTRACTOR TO PROVIDE TRENCHING, CONDUIT, PULL WIRE AND BACKFILL FOR TELEPHONE AND ELECTRIC LINES.
20. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING THE EXACT LOCATION, SIZE, AND MATERIAL OF ANY EXISTING WATER OR SEWER FACILITY PROPOSED FOR CONNECTION OR USE BY THIS PROJECT. THE RELOCATION OF ANY WATER/SEWER FACILITY REQUIRED TO AVOID ANY PART OF THIS DEVELOPMENT IS THE RESPONSIBILITY OF THE DEVELOPER.
21. ALL CONSTRUCTION TO CONFORM TO APPLICABLE ROANOKE COUNTY & WESTERN VIRGINIA WATER AUTHORITY SPECIFICATIONS AND IN ACCORDANCE WITH ROANOKE COUNTY ORDINANCES.
22. TRENCHES OF 20 FEET OR GREATER REQUIRES SHORING, DESIGN TO BE CERTIFIED BY A PROFESSIONAL ENGINEER. TRENCH SAFETY REQUIREMENTS WELL BE STRICTLY ENFORCED. CONTRACTOR TO MEET OR EXCEED ALL OSHA STANDARDS.
23. REFER TO ARCHITECTURAL PLANS FOR SITE LIGHTING AND ELECTRICAL PLANS.
24. APPROVAL OF SITE PLAN DOES NOT INCLUDE THE DESIGN OF THE FIRE SPRINKLER SYSTEM UNDERGROUND PIPING FROM BACKFLOW PREVENTION DEVICE TO ONE FOOT ABOVE FINISHED FLOOR. PRIOR TO INSTALLATION, SHOP DRAWINGS AND A SEPARATE PERMIT APPLICATION AND MUST BE SUBMITTED THROUGH THE DEPARTMENT OF BUILDING INSPECTIONS FOR REVIEW AND APPROVAL.

UTILITY LEGEND

(A) 6" SANITARY SEWER LATERAL AT MINIMUM 1.00% SLOPE. COORDINATE WITH ARCHITECTURAL PLANS.

(B) GAS ENTRY WITH GAS METER AT BUILDING. CONTRACTOR RESPONSIBLE FOR INSTALLING PIPE BOLLARD PROTECTION AT METER. CONTRACTOR SHALL COORDINATE WITH GAS COMPANY FOR TYING OF INDIVIDUAL METER.

(C) CONTRACTOR IS RESPONSIBLE FOR COORDINATION WITH GAS COMPANY REGARDING THE SIZE AND INSTALLATION OF GAS SERVICE LINE.

(D) UNDERGROUND ELECTRIC SERVICE FROM POLE TO BUILDING, CONTRACTOR IS RESPONSIBLE FOR ALL TRENCHING, BEDDING, CONDUIT, CABLES, PULL WIRES, SECONDARY CONDUCTORS, TRACE TAPE, BACKFILL, ETC., WHICH MAY BE REQUIRED BY ELECTRIC COMPANY. CONTRACTOR SHALL COORDINATE SAID WORK WITH POWER COMPANIES. THE CONTRACTOR IN CONJUNCTION WITH THE UTILITY COMPANIES SHALL DETERMINE THE AMOUNT OF UTILITY LINE HE IS TO PROVIDE OUTSIDE THE UTILITY COMPANY'S ALLOWANCE.

(E) PROPOSED LOCATION OF TRANSFORMER PAD. CONTRACTOR TO VERIFY EXACT LOCATION AND SIZE WITH POWER COMPANY PRIOR TO INSTALLATION. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION OF CONCRETE PAD, CONDUIT AND PIPE BOLLARDS AS REQUIRED BY THE ELECTRIC COMPANY. CONTRACTOR SHALL COORDINATE SAID WORK WITH THE ELECTRIC COMPANY.

(F) UNDERGROUND TELEPHONE FROM POLE TO BUILDING TO BE EXTENDED BY TELEPHONE COMPANY. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY TRENCHING, BEDDING, CONDUIT, PULL WIRES, TRACE TAPE, BACKFILL, ETC., WHICH MAY BE REQUIRED BY TELEPHONE COMPANY. CONTRACTOR SHALL COORDINATE WITH TELEPHONE COMPANY FOR SAID WORK. PROVIDE CONDUITS AS SHOWN.

(G) CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH THE UTILITY COMPANIES FOR THE INSTALLATION OF OVERHEAD/UNDERGROUND ELECTRIC AND TELEPHONE LINES TYPICAL. CONTRACTOR SHALL COORDINATE THE TYING OF INDIVIDUAL METER WITH THE ELECTRIC COMPANY. SEE NOTE D, E, & F FOR ADDITIONAL NOTES PERTAINING TO ELECTRIC AND TELEPHONE LINES.

(H) DOMESTIC WATERLINE ENTRY WITH METER PER LOCAL WATER COMPANY REQUIREMENTS. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ANY APPURTENANCES ON THE DOMESTIC LINE SUCH AS BACKFLOW PREVENTION DEVICES, GATE VALVES, ETC., WHICH MAY BE REQUIRED. CONTRACTOR TO COORDINATE WITH WATER COMPANY.

(I) SPRINKLER ENTRY. CONTRACTOR SHALL BE REQUIRED TO INSTALL ANY APPURTENANCES ON THE SPRINKLER LINE SUCH AS, BUT NOT LIMITED TO, A DOUBLE DETECTOR CHECK BACKFLOW PREVENTION DEVICE, IN SERIES WITH A CHECK VALVE, GATE VALVES, ETC., MEETING WATER COMPANY SPECIFICATIONS. CONTRACTOR SHALL COORDINATE WITH ARCHITECTURAL PLANS.

(J) PROPOSED FIRE HYDRANT, AND ASSEMBLY, TYPICAL AS INDICATED. CONTRACTOR TO PROVIDE PIPE BOLLARD PROTECTION WHEN FIRE HYDRANT IS LOCATED IN PAVED AREA OR WHERE SHOWN. ALL HYDRANTS SHALL BE SUPPLIED BY A MINIMUM 8" WATER LINE.

(K) CONDUIT FOR FIBER POLE MOUNTED SECURITY CAMERAS:
A PULL BOX SHALL BE LOCATED WITHIN THE SIDEWALK AREA OR AS CLOSE TO THE BUILDING AS POSSIBLE. THE CONDUIT FROM THE BUILDING TO THE FIRST PULL BOX SHALL BE 3" DIAMETER CARLON TYPE "DB" DIRECT BURIAL TELEPHONE DUCT OR 3" SCHEDULE 40 PVC. INSTALL GALVANIZED PULL WIRE OR PURPLE PROPYLPOLYETHYLENE ROPE WITH A MINIMUM PULLING TENSION OF 100 POUNDS. THE MINIMUM BURIAL DEPTH SHALL BE 24". INSTALL AN ORANGE DETECTABLE HAZARD TAPE WITH INTEGRAL "BURIED CABLE" WORDING, 12" ABOVE CONDUIT. WHEN THE SECURITY CAMERA LIGHT POLES ARE LOCATED FURTHER THAN 400 FEET FROM THE FIRST PULL BOX, WHICH IS NEXT TO THE BUILDING, EXTEND THE 3" CONDUIT FROM THE FIRST PULL BOX TO A SECOND PULL BOX.

EACH SECURITY CAMERA LIGHT POLE SHALL HAVE A DEDICATED 2" CONDUIT FROM THE NEAREST PAVED AREA PULL BOX TO THE LIGHT POLE BASE JUNCTION BOX. THE CONDUIT SHALL BE CARLON TYPE "DB" DIRECT BURIAL TELEPHONE DUCT OR SCHEDULE 40 PVC. INSTALL GALVANIZED PULL WIRE OR PURPLE PROPYLPOLYETHYLENE ROPE WITH A MINIMUM PULLING TENSION OF 100 POUNDS. THE MINIMUM BURIAL DEPTH SHALL BE 24". INSTALL AN ORANGE DETECTABLE HAZARD TAPE WITH INTEGRAL "BURIED CABLE" WORDING, 12" ABOVE CONDUIT. THE 2" LP CAMERA CONDUIT SHALL BE SEPARATED FROM THE 480VAC LIGHT FIXTURE POWER BY A DIVIDER PLACED IN THE LIGHT POLE BASE JUNCTION BOX.

ALL CHANGES IN DIRECTION OF THE CONDUIT SHALL UTILIZE STANDARD SWEEPS WITH A MINIMUM BENDING RADIUS LISTED IN THE NEC. NO MORE THAN (2) 90–DEGREE BENDS WILL BE ALLOWED BETWEEN PULLING POINTS, OR A TOTAL OF 180 DEGREES COMBINED IN SEVERAL BENDS. PULL BOXES SHALL BE LOCATED EVERY 400 FEET UNLESS THE COMBINED TOTAL OF BENDS REQUIRES ADDITIONAL BOXES.

ALL PULL BOXES LOCATED IN PAVED AREAS SUBJECT TO TRUCK TRAFFIC SHALL BE "H–20" LOAD RATED. THE TYPICAL PULL BOX SIZE WILL BE 17" X 30" X 28" "QUAZITE" PG1730BA28 BOX WITH PG1730HH00 LID, OR APPROVED EQUAL. DEEPER BOXES MAY BE REQUIRED WHEN THE CONDUIT ALIGNMENT IS AFFECTED BY OTHER UTILITIES. THE PULL BOX SHALL BE INSTALLED PER THE MANUFACTURER'S SPECIFICATION WITH A CONCRETE COLLAR AND A MINIMUM OF 8" OF GRAVEL COMPACTED PER PROJECT SPECIFICATIONS.

(L) UTILITY BOLLARD.

(M) CONTRACTOR SHALL CONTACT WESTERN VIRGINIA WATER AUTHORITY (WVWA) TO PAY ALL METER AND TAP FEE'S. AFTER TAP FEE'S ARE PAID TO WVWA, CONTRACTOR SHALL CALL CLEAR FLOW AT 540–942–3300 TO COORDINATE AND ORDER METER VAULT. VAULT COMES PRE–ASSEMBLED WITH METER AND BACKFLOW PREVENTER. CONTRACTOR SHALL INSTALL PRE–ASSEMBLED VAULT AND CONNECT TO PROPOSED WATERLINES ENTERING AND EXITING VAULT. THE CONTRACTOR SHALL PAY ALL FEE'S REQUIRED FOR THE DELIVERY AND INSTALLATION OF VAULT, METER, AND BACKFLOW PREVENTER.

(N) REMOTE FIRE DEPARTMENT CONNECTION (FDC).
SEE DETAIL SHEET.

PROPOSED UTILITY PLAN LEGEND

—UGE—	ELETRICAL CONDUIT
—UGT—	TELEPHONE CONDUIT
—SC—	SECURITY CAMERA CONDUIT
—8"SS—	SANITARY SEWER PIPE
—8"W—	WATER MAIN PIPE
—12"W—	WATER MAIN PIPE
—3"W—	DOMESTIC WATER PIPING
—2"W—	IRRIGATION WATER PIPING
—GAS—	GAS PIPE
—TS—	TAMPER SWITCH CONDUIT
—IC—	IRRIGATION CONTROLLER CONDUIT
—FDC—	FIRE DEPARTMENT CONNECTION
	TAPPING SLEEVE & VALVE
WV	WATER VALVE
	FIRE HYDRANT
	THRUST BLOCK
(S)	SANITARY SEWER MANHOLE
	POWER POLE
GM	GAS METER

NO ACCESS TO SITE FOR STAGING OR WORK WILL BE ALLOWED FROM STABLE ROAD OR SINGING HILLS ROAD.

AREA OUTLINED AS PHASE II CONSTRUCTION SHALL BE MASS GRADED TO FINAL GRADE AS SHOWN. STUB UTILITIES TO 5 L.F. BEYOND PROPERTY LINE AND PLUG. PLACE AND CLOSE GATE VALVE FOR ALL WATERLINES AND IRRIGATION LINES EXTENDING INTO AREA FOR FUTURE USE. AREA MUST BE PERMANENTLY STABILIZED WITH FULL E&S MEASURES PER SEDIMENT AND EROSION CONTROL PLAN.

APPROVED

OVERALL UTILITY PLAN

GRAPHIC SCALE
100 0 50 100 200 400
(IN FEET)
1 inch = 100 ft.

IF YOU DIG IN VIRGINIA... CALL US FIRST!
811 OR 1-800-552-7001
DIG WITH C.A.R.E. CALL MISS UTILITY KEEP VIRGINIA SAFE
THE CONTRACTOR OR HIS REPRESENTATIVE SHALL ENSURE HE HAS A VALID LOCATOR TICKET AT ALL TIMES.

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COMMONWEALTH OF VIRGINIA
DAVID MARK WOODRIDGE
Lic. No. 031301
9-21-2009
PROFESSIONAL ENGINEER

Project Title
Walmart SUPERCENTER #1301-02
@ CLEARBROOK VILLAGE SHOPPING CENTER
ROANOKE COUNTY, VIRGINIA
BY: WAL-MART REAL ESTATE BUSINESS TRUST
BENTONVILLE, AR

REVISIONS	BY
1 ADDENDA 5 10/14/09	BGL
2 VDOT & COUNTY COMMENTS, CCD #1 10/27/09	BGL

DRAWN BY RD
CHECKED BY
DATE