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CONSTRUCTION SPECIFICATIONS FOR WATER FACILITIES

VALVES AND VALVE BOXES:

VALVE BOXES SHALL BE SO SET AND ADJUSTED THAT THE COVERS SHALL BE EXPOSED AND FLUSH WITH THE STREET SURFACE. IF THE STREET SURFACES ARE RENEWED OR REPLACED BY THE DEVELOPER OR OWNER AFTER THE WATER SYSTEM HAS BEEN APPROVED BY THE ENGINEER, BUT WHILE SUCH STREETS ARE STILL THE OBLIGATION OF THE DEVELOPER OR OWNER, THE VALVE BOXES THEREIN SHALL BE RE-ADJUSTED TO PROPER LOCATION RELATIVE TO THE NEW STREET SURFACING. VALVE BOXES LOCATED IN SODDED OR OTHER OFF-STREET AREAS SHALL BE SO SET AND ADJUSTED THAT THE COVERS SHALL BE EXPOSED AND FLUSH WITH THE IMMEDIATE SURFACE.

GENERAL REQUIREMENTS:

PIPE, FITTINGS, VALVES, HYDRANTS AND ACCESSORIES SHALL BE LOADED AND UNLOADED BY LIFTING WITH HOISTS, OR SKIDDING SO AS TO AVOID SHOCK OR DAMAGE. UNDER NO CIRCUMSTANCES SHALL SUCH BE DROPPED. PIPE SHALL NOT BE SKIDDED OR ROLLED AGAINST PIPE ALREADY ON THE GROUND. PIPE SHALL BE HANDLED SO THAT THE COATING AND LINING SHALL NOT BE DAMAGED.

LAYING:

THE TRENCH SHALL BE DUG SO THAT THE PIPE CAN BE LAID TO THE ALIGNMENT AND DEPTH REQUIRED AND IT SHALL BE EXCAVATED NO MORE THAN 200 FEET IN ADVANCE OF THE COMPLETE PIPE LAYING OPERATION. THE WIDTH OF THE TRENCH SHALL BE AMPLE TO PERMIT THE PIPE TO BE LAID AND JOINTED PROPERLY AND THE BACKFILL TO BE PLACED AND THOROUGHLY COMPACTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE VIRGINIA DEPARTMENT OF HIGHWAYS & TRANSPORTATION AND/OR ENGINEER.

BELL HOLES SHALL BE PROVIDED AT EACH JOINT TO PERMIT THE JOINTING TO BE MADE PROPERLY.

LEDGE ROCK, BOULDERS AND LARGE STONES SHALL BE REMOVED TO PROVIDE A CLEARANCE OF AT LEAST 6 INCHES BELOW AND ON EACH SIDE OF ALL PIPE, VALVES AND FITTINGS FOR PIPES 24 INCHES IN DIAMETER OR LESS, AND 9 INCHES FOR PIPE LARGER THAN 24 INCHES IN DIAMETER. THE AREA SHALL BE BACKFILLED WITH GRAVEL OR SELECT BACKFILL AND PROPERLY COMPACTED.

THE TRENCH SHALL BE EXCAVATED TO THE DEPTH REQUIRED SO AS TO PROVIDE A UNIFORM AND CONTINUOUS BEARING AND SUPPORT FOR THE PIPE OR SOLID AND UNDISTURBED GROUND AT EVERY POINT BETWEEN BELL HOLES. ANY PART OF THE BOTTOM OF THE TRENCH EXCAVATED BELOW THE SPECIFIED GRADE SHALL BE CORRECTED WITH APPROVED MATERIAL AND THOROUGHLY COMPACTED.

WHEN INSTALLING PIPE IN THE TRENCH, PROPER IMPLEMENTS, TOOLS AND FACILITIES AS RECOMMENDED BY THE MATERIAL MANUFACTURER SHALL BE PROVIDED AND USED BY THE CONTRACTOR FOR THE SAFE AND CONVENIENT PROSECUTION OF THE WORK. ALL PIPE, VALVES, FITTINGS, HYDRANTS AND ACCESSORIES SHALL BE CAREFULLY LOWERED INTO THE TRENCH PIECE BY PIECE BY MEANS OF A DERRICK, ROPES, SLINGS OR OTHER SUITABLE TOOLS OR EQUIPMENT IN SUCH A MANNER AS TO PREVENT DAMAGE TO THE WATER MAIN MATERIALS AND ANY PROTECTIVE COATINGS AND LININGS. UNDER NO CIRCUMSTANCES SHALL WATER MAIN MATERIALS BE DROPPED OR DUMPED INTO THE TRENCH.

ALL LUMPS, BLISTERS AND EXCESS COATLAR COATING SHALL BE REMOVED FROM THE ENDS OF EACH PIPE, AND THE OUTSIDE OF THE SPIGOT AND THE INSIDE OF THE BELL SHALL BE WIRE-BRUSHED AND WIPED CLEAN AND DRY AND FREE FROM OIL AND GREASE BEFORE THE PIPE IS LAID.

EVERY PRECAUTION SHALL BE TAKEN TO PREVENT FOREIGN MATERIAL FROM ENTERING THE PIPE WHILE IT IS BEING PLACED IN THE LINE. DURING LAYING OPERATIONS, NO DEBRIS, TOOLS, CLOTHING OR OTHER MATERIALS SHALL BE PLACED IN THE PIPE. WATER LINES WILL BE PLUGGED AT THE END OF EACH CONSTRUCTION DAY TO PREVENT FOREIGN MATTER FROM ENTERING THEM.

AFTER PLACING A LENGTH OF PIPE IN THE TRENCH, THE SPIGOT END SHALL BE CENTERED IN THE OPEN BELL OF THE PIPE LINE AND THE PIPE PUSHED HOME SO THAT THE FACE OF THE SPIGOT IS IN CLOSE CONTACT WITH THE SHOULDER OF THE BELL. PIPE SHALL BE LAID IN FLAT BOTTOM TRENCHES AND THE PIPE SHALL BE LAID WITH BELLS FACING THE DIRECTION OF LAYING.

THE CUTTING OF PIPE FOR INSERTING VALVES, FITTINGS OR CLOSURE PIECES SHALL BE DONE IN A NEAT AND WORK-MANLIKE MANNER WITHOUT DAMAGE TO THE PIPE OR CEMENT LINING AND SO AS TO LEAVE A SMOOTH END AT RIGHT ANGLES TO THE AXIS OF THE PIPE.

THE FLAME CUTTING OF PIPE BY MEANS OF AN OXACETYLENE TORCH SHALL NOT BE ALLOWED.

WHEREVER IT IS NECESSARY TO DEFLECT PIPE FROM A STRAIGHT LINE, EITHER IN THE VERTICAL OR HORIZONTAL PLANE, TO AVOID OBSTRUCTIONS OR PLUMB STEMS, OR WHERE LONG-RADIUS CURVES ARE PERMITTED, THE AMOUNT OF DEFLECTION ALLOWED SHALL NOT EXCEED APPROVED AWWA STANDARDS.

NO PIPE SHALL BE LAID IN WATER OR WHEN TRENCH CONDITIONS ARE UNSUITABLE, AS DETERMINED BY THE ENGINEER.

ALL TEES, BENDS, PLUGS, CAPS, AND FIRE HYDRANTS SHALL BE SUBSTANTIALLY BRACED, BLOCKED AND/OR ANCHORED TO PREVENT ANY MOVEMENT BY PROVIDING ADEQUATE REACTION BACKING. BACKING SHALL BE PLACED BETWEEN SOLID UNDISTURBED EARTH AND THE FITTING TO BE ANCHORED AND SHALL BE SO PLACED THAT PIPE AND FITTING JOINTS WILL BE ACCESSIBLE FOR REPAIR.

HYDRANTS, VALVES AND VALVE BOXES SHALL BE SET PLUMB, AND CENTERED, WITH VALVE BOXES PLACED DIRECTLY OVER THE VALVES. VALVE BOXES SHALL, IF POSSIBLE, BE LOCATED OUTSIDE THE AREA OF ROADS AND STREETS. HYDRANTS SHALL BE SET WITH THE INVERT OF THE PUMPER CONNECTION 18 INCHES ABOVE GRADE. THE BACK OF THE HYDRANT, OPPOSITE THE THE PIPE CONNECTION, SHALL BE FIRMLY BLOCKED AGAINST THE VERTICAL FACE OF THE TRENCH WITH A POURED-IN-PLACE CONCRETE ANCHOR.

SEPARATION OF WATER AND SEWER LINES:

PARALLEL INSTALLATION

- NORMAL CONDITIONS- WATER LINES SHALL BE LAID AT LEAST TEN FEET HORIZONTALLY FROM A SEWER OR SEWER MANHOLE WHENEVER POSSIBLE, THE DISTANCE SHALL BE MEASURED EDGE-TO-EDGE.
- UNUSUAL CONDITIONS-WHEN LOCAL CONDITIONS PREVENT A HORIZONTAL SEPARATION OF TEN FEET, THE WATER LINE MAY BE LAID CLOSER TO A SEWER OR SEWER MANHOLE PROVIDED THAT:

- THE BOTTOM (INVERT) OF THE WATER MAIN SHALL BE AT LEAST EIGHTEEN INCHES ABOVE THE TOP (CROWN) OF THE SEWER.
- WHERE THIS VERTICAL SEPARATION CANNOT BE OBTAINED, THE SEWER SHALL BE CONSTRUCTED OF AWWA APPROVED WATER PIPE, PRESSURE TESTED IN PLACE WITHOUT LEAKAGE PRIOR TO BACKFILLING.
- THE SEWER MANHOLE SHALL BE OF WATER-TIGHT CONSTRUCTION AND TESTED IN PLACE.

CROSSING:

- NORMAL CONDITIONS-WATER LINES CROSSING SEWERS SHALL BE LAID TO PROVIDE A SEPARATION OF AT LEAST 18 INCHES BETWEEN THE BOTTOM OF THE WATER LINE AND THE TOP OF THE SEWER WHENEVER POSSIBLE.
- UNUSUAL CONDITIONS-WHEN LOCAL CONDITIONS PREVENT A VERTICAL SEPARATION DESCRIBED IN 12.05.03a, THE FOLLOWING CONSTRUCTION SHALL BE USED:
 - SEWERS PASSING OVER OR UNDER WATER LINES SHALL BE CONSTRUCTED OF THE APPROVED AWWA WATER PIPING AS NOTED IN B-2 ABOVE.
 - WATER LINES PASSING UNDER SEWERS SHALL, IN ADDITION, BE PROTECTED BY PROVIDING:
 - A VERTICAL SEPARATION OF AT LEAST 18 INCHES BETWEEN THE BOTTOM OF THE SEWER AND THE TOP OF THE WATER LINE.
 - ADEQUATE STRUCTURAL SUPPORT FOR THE SEWERS TO PREVENT EXCESSIVE DEFLECTION OF THE JOINTS AND THE SETTLING ON AND BREAKING OF THE WATER LINE.
 - THAT THE LENGTH OF THE WATER LINE BE CENTERED AT THE POINT OF THE CROSSING SO THAT JOINTS SHALL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE SEWER.

BACKFILLING:

- WITHIN VIRGINIA DEPARTMENT OF HIGHWAYS & TRANSPORTATION RIGHT-OF-WAYS REFER TO SHEET 3 FOR PERMIT REQUIREMENTS AND DEPARTMENT REGULATIONS ON COMPACTION.
- OUTSIDE VIRGINIA DEPARTMENT OF HIGHWAYS & TRANSPORTATION RIGHT-OF-WAYS
 - PIPE SHALL BE BACKFILLED TO 2"-4" ABOVE THE CROWN, THE MATERIAL HANDWORKED AROUND PIPE AND COMPACTED. GRAVEL OR SELECT MATERIAL SHALL BE USED. THE HANDWORKING BACKFILL SHALL BE MACHINE PLACED AND COMPACTED IN MAXIMUM ONE FOOT LAYERS. MATERIAL SHALL BE CLEAN, COMPACTABLE, AND FREE OF ROCKS LARGER THAN 3" IN DIAMETER. ALL LAYERS SHALL BE COMPACTED TO MINIMUM 90% THEORETICAL DENSITY.

DEVELOPMENT PLANS

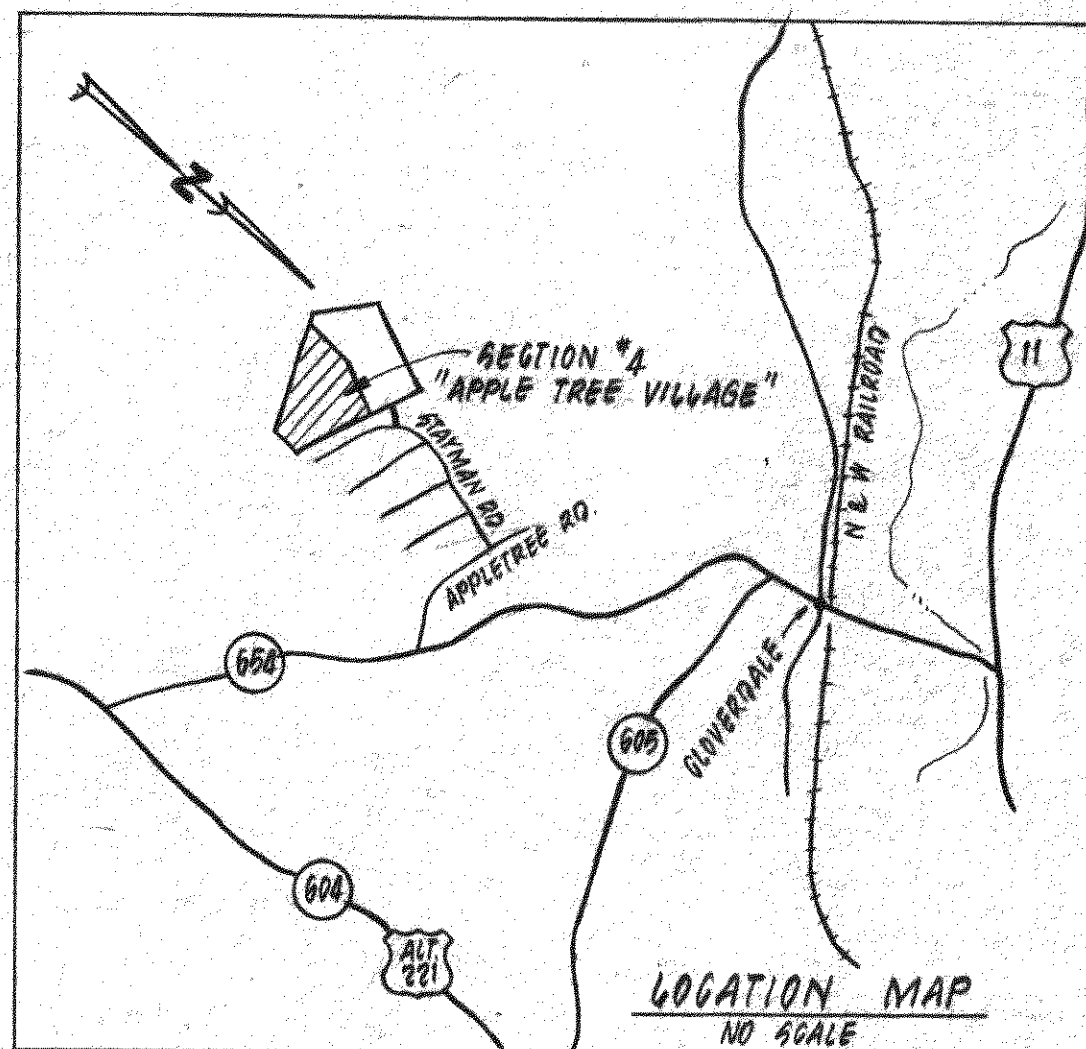
FOR

SECTION 4 APPLE TREE VILLAGE BOTETOURT CO. VIRGINIA

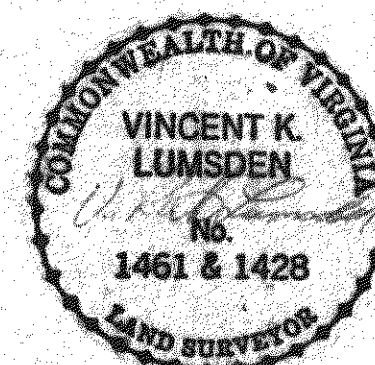
DATE: 25 MAY 1988

PROPERTY OF:

FRUITWOOD DEVELOPERS INCORPORATED



BUFORD T. LUMSDEN & ASSOCIATES, P.C.
ENGINEERS - SURVEYORS
ROANOKE, VIRGINIA



APPROVED:

BOTETOURT COUNTY

DATE

RESIDENT ENGINEER, VIRGINIA DEPARTMENT
OF HIGHWAYS AND TRANSPORTATION

DATE

DESIGN DATA AND SPECIFICATIONS

1. DESIGN DATA

WELL YIELDS (48 HOUR TEST)
WELL #1 55 GPM @ STATIC WATER LEVEL - 285'
WELL #2 TO BE DEVELOPED

NUMBER OF LOTS

SECTION #111 - 20 LOTS (ESTIMATED CONSUMPTION - 8,000 GALLONS PER DAY)
FUTURE # - TO BE DEVELOPED (ESTIMATED MAX. OF 55 LOTS TOTAL)

NOTE: SECOND WELL TO BE DEVELOPED FOR FUTURE DEVELOPMENT GREATER THAN TOTAL OF 50 LOTS.

2. PUMPS

WELL #1 - JACUZZI SUBMERSIBLE PUMP - 15 STAGES MODEL - 7586A15 7.5 H.P.
50 GPM FOR 282 DEPTH TO WATER AND DISCHARGE PRESSURE OF 55 PSI
MOTOR - 460 VOLT THREE PHASE 60 CYCLE

3. STORAGE TANKS

- 22,000 GALLON STORAGE (10' 6" DIA. X 32' HIGH) AWWA STD. D100 (CONSTRUCTION)
- WATER LEVEL CONTROL - ALLEN BRADLEY PRESSURE CONTROL SWITCH MODEL 836 C3J, 0.4 TO 4.0 PSI DIFFERENTIAL, NEMA TYPE 4 ENCLOSURE
- PAINTING (AWWA STD. D102-78) - PENNSBURY PAINTS
INTERIOR - PRIMER - 60-9-1; COAT #2 - GRAY 61-G-149; COAT #3 - ALUMINUM 60-A-1 (TOTAL MIN. THICKNESS 4.5 MIL)
EXTERIOR - MULTIPRIME - WHITE #97-684; FINISH - SILON ALKYD - MEDIUM GREEN #97-500 (TOTAL MIN. THICKNESS 3.5 MIL)

4. DISINFECTION

A. STORAGE TANK

WATER CONTAINING 50 PPM CHLORINE SHALL BE PLACED IN THE TANK TO SUCH A DEPTH THAT WHEN THE TANK IS FILLED THE RESULTANT CHLORINE CONCENTRATION SHALL BE 1.0 LESS THAN 2 PPM. THE WATER CONTAINING 50 PPM CHLORINE SHALL BE HELD IN THE TANK FOR 24 HOURS BEFORE THE TANK IS FILLED. THE FULL TANK, IN TURN, SHALL BE ALLOWED TO STAND FOR 24 HOURS, AFTER WHICH THE TANK MAY BE PUT INTO SERVICE WITHOUT DRAINING THE WATER USED TO DISINFECT IT. TWO OR MORE SUCCESSIVE SAMPLES, TAKEN AT 24 HOURS INTERVALS, AND ANALYZED BY A CERTIFIED LABORATORY, SHALL INDICATE BACTERIOLOGICALLY SATISFACTORY WATER BEFORE THE FACILITY IS RELEASED FOR USE.

B. WATER MAINS

DISINFECTION IN ACCORDANCE TO AWWA C601-81: APPLICATION OF 5 GRAM CALCIUM HYPO CHLORITE TABLET PER JOINT OF PIPE AND 1 OUNCE OF HYPO CHLORITE GRANULES PER 500 FEET OF PIPE; FILLING PIPE AT WATER FLOW RATE OF 1.0 F.P.S. OR LESS; ELIMINATION OF AIR POCKETS AND 24 HOUR CONTACT PERIOD; COLLECTION AND TESTING OF 2 WATER SAMPLES (BACTERIOLOGICAL TESTING) AT 24 HOUR INTERVALS AND MAXIMUM SPACING ALONG WATER LINE OF 2000 FEET. ALL TESTING MUST BE SATISFACTORY OR TOTAL TESTING REPEATED.

5. CONTROLS

WELL PUMPS TO BE CONTROLLED BY PRESSURE CONTROL SWITCH LOCATED AT STORAGE TANK.
14/8 CABLE TO BE BURIED WITH WATER LINES FROM TANK TO WELL.

WELL #1
12
DROP CABLE SIZE (STARTER TO PUMP)
SUPPLY WIRE SIZE (TRANSFORMER TO STARTER) 12 (FOR MAX. 100' RUN)

6. PIPING (MEETING AWWA STANDARD FOR POTABLE WATER USE)

WELL PIPING AND FITTINGS AND BLOWOFFS LESS THAN 4" IN DIAMETER TO BE SCHEDULE 80 P.V.C. PIPE OR STANDARD STRENGTH GALVANIZED STEEL
EXTERIOR PIPING 1" OR LESS IN DIAMETER TO BE TYPE "K" COPPER OR POLYETHYLENE P.E. 3408 (160PSI)
EXTERIOR PIPING SHALL BE AS FOLLOWS:
2" - PVC PIPE SDR 21 (200) MEETING STANDARD ASTM D2241
4" - 6" - PVC PIPE P.C. 150, MEETING AWWA C900 OR CLASS 51 DUCTILE IRON WATER LINE
VALVES, TEES, BENDS AND FIRE HYDRANTS TO BE MECHANICAL JOINT CAST IRON CONSTRUCTION MEET AWWA STANDARDS FOR A PRESSURE CLASS FOR 150 PSI.
WATER SERVICES SHALL USE A.V. McDONALD MODEL 3801, BRASS SADDLE OR APPROVED EQUAL WITH AWWA THREADS FOR 3/4" AND 1" CONNECTIONS TO 2, 4 AND 6" MAIN.
PRESSURE AND LEAKAGE TESTING OF ALL WATER MAINS PER AWWA STANDARD: PRESSURE TEST @ 150 PSI FOR ONE HOUR; LEAKAGE TEST @ 150 PSI FOR TWO HOURS FOR MAXIMUM ALLOWABLE LEAKAGE OF 28.3 GPD, PER MILE OF PIPE, PER INCH OF DIAMETER.

7. WATER PRESSURE:

MAXIMUM PRESSURE - 73 PSI; MINIMUM DESIGN PRESSURE (METER) - 28 PSI; MINIMUM DESIGN PRESSURE (HOMES) - 21 PSI

- SCREENS FOR OUTLET ENDS OF OVERFLOW, BLOWOFF AND DRAIN PIPES SHALL BE 1/2" X 1/2" MESH, MINIMUM 17 GAUGE, GALVANIZED HARDWARE CLOTH. THE HARDWARE CLOTH SHALL BE CRIMPED AROUND END OF PIPE AND SECURED WITH GALVANIZED STEEL WIRE.
- A MINIMUM COVER OF THREE (3) FEET OVER THE PROPOSED LINE IS REQUIRED.
- NO WORK SHALL BEGIN WITHOUT NOTIFYING BOTETOURT COUNTY 24 HOURS IN ADVANCE. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY AND ALL NECESSARY PERMITS.
- NO WORK SHALL BEGIN WITHOUT WRITTEN APPROVAL OF CONSTRUCTION PLANS.
- WORK SHALL BE SUBJECT TO INSPECTION BY THE COUNTY INSPECTORS AND DESIGN ENGINEER.
- CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND UNCOVERING ALL VALVE BOXES AFTER SURFACE TREATMENT OF ROADS AND ADJUSTING BOXES TO FINAL ROAD GRADES, IF NECESSARY.
- ALL EXISTING UTILITIES MAY BE SHOWN OR MAY NOT BE SHOWN IN THE EXACT LOCATION. THE CONTRACTOR SHALL COMPLY WITH THE STATE WATER WORKS REGULATIONS, SECTION 12.05.03, WHERE LINES CROSS.
- THE CONTRACTOR SHALL NOTIFY THE COUNTY OF ANY FIELD CORRECTIONS TO THE APPROVED PLANS PRIOR TO SUCH CONSTRUCTION.
- ALL TRENCHES WITHIN THE EXISTING OR FUTURE VIRGINIA STATE DEPARTMENT OF HIGHWAYS AND TRANSPORTATION RIGHTS-OF-WAY MUST BE COMPACTED IN SIX INCH LAYERS.
- ALL LINES TO BE STAKED PRIOR TO CONSTRUCTION.
- CONTRACTOR TO COORDINATE WITH THE ENGINEER TO PROVIDE AS-BUILT PLANS.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE TO APPROVED CONSTRUCTION PRACTICES OF THE APPLICABLE TRADES (REF. #12).
- COMMONWEALTH OF VIRGINIA WATERWORKS REGULATIONS PROVIDING FOR MINIMUM 10 FEET HORIZONTAL OR 18 INCHES VERTICAL SEPARATION BETWEEN WATER AND SEWER LINE SHALL BE PROVIDED (WATER LINE TO BE ABOVE SEWER LINE). ALSO WATER LINES SHALL BE MINIMUM OF 30 FEET FROM ANY SUBSURFACE DRAINFIELD.
- UNLESS NOTED OTHERWISE HEREIN ALL CONSTRUCTION SHALL BE IN ACCORDANCE TO THE LATEST EDITION OF AWWA STANDARDS.

VIRGINIA DEPARTMENT OF TRANSPORTATION

1. QUALITY CONTROL

STREETS TO BE GRADED, PAVED AND ALL STRUCTURAL COMPONENTS ERECTED IN ACCORDANCE WITH THE VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE SPECIFICATIONS AND ROAD DESIGN STANDARDS DATED JANUARY 1987. ALL MATERIALS USED SHALL BE TESTED IN ACCORDANCE WITH STANDARD POLICIES. THE DEVELOPER MUST CONTACT THE OFFICE OF THE RESIDENT ENGINEER, PRIOR TO BEGINNING ANY CONSTRUCTION AT WHICH TIME AN INSPECTION AND TESTING PROCEDURE POLICY WILL BE DRAWN. THE DEVELOPER WILL PRODUCE TEST REPORTS FROM APPROVED INDEPENDENT LABORATORIES AT THE DEVELOPER'S EXPENSE.

THE PAVEMENT DESIGNS SHOWN ARE BASED ON A SUBGRADE RATING OF CBR10 OR GREATER. THE SUBGRADE SOIL IS TO BE TESTED BY AN INDEPENDENT LABORATORY AND THE RESULTS SUBMITTED TO THE VIRGINIA DEPARTMENT OF TRANSPORTATION PRIOR TO PAVEMENT CONSTRUCTION. SHOULD THE SUBGRADE CBR VALUES BE LESS THAN CBR10, THEN ADDITIONAL BASE MATERIAL WILL BE REQUIRED IN ACCORDANCE WITH DEPARTMENTAL SPECIFICATIONS. THE SUBGRADE MUST BE APPROVED BY VIRGINIA DEPARTMENT OF TRANSPORTATION PRIOR TO PLACEMENT OF THE BASE. BASE MUST BE APPROVED BY VIRGINIA DEPARTMENT OF TRANSPORTATION FOR DEPTH, TEMPLATE AND COMPACTION BEFORE SURFACE IS APPLIED.

2. UTILITIES

ALL NECESSARY UTILITY LATERALS WILL BE PLACED PRIOR TO PAVEMENT BASE AND CONDUIT PROVISIONS MADE FOR THE SAME (I.E. WATER, SEWER, GAS AND TELEPHONE).

GAS OR PETROLEUM TRANSMISSION LINES WILL NOT BE PERMITTED WITHIN THE PAVEMENT OR SHOULDER ELEMENT (BACK OF CURB TO BACK OF CURB) OF THIS DEVELOPMENT. SERVICE LATERALS CROSSING AND PIPE LINES LOCATED OUTSIDE THE PAVEMENT BUT INSIDE THE RIGHT OF WAY WILL BE CONSTRUCTED IN CONFORMITY WITH ASA B 31.8 SPECIFICATIONS AND SAFETY REGULATIONS. DISTRIBUTION LINES WITH PRESSURES LESS THAN 120 LBS. ARE UNAFFECTED BY THE ABOVE.

PERMITS WILL BE REQUIRED FOR ALL UTILITIES WITHIN STREET RIGHT OF WAY PRIOR TO ACCEPTANCE INTO THE SECONDARY HIGHWAY SYSTEM.

ANY EASEMENTS GRANTED TO A UTILITY COMPANY FOR PLACEMENT OF POWER, TELEPHONE, ETC. MUST BE RELEASED PRIOR TO ACCEPTANCE.

3. PRIVATE ENTRANCES

STANDARD CG-8 GUTTER WILL BE PROVIDED AT ALL ENTRANCES TO PRIVATE LOTS WHERE STANDARD CG-6 CURB AND GUTTER IS APPROVED FOR USE.

PERMITS WILL BE REQUIRED FOR ALL PRIVATE ENTRANCES CONSTRUCTED ON STREET RIGHTS OF WAY PRIOR TO ACCEPTANCE INTO THE SECONDARY HIGHWAY SYSTEM.

4. EROSION CONTROL AND LANDSCAPING

CARE MUST BE TAKEN DURING CONSTRUCTION TO PREVENT EROSION, DUST AND MUD FROM DAMAGING ADJACENT PROPERTY, CLOGGING DITCHES, TRACKING PUBLIC STREETS AND OTHERWISE CREATING A PUBLIC OR PRIVATE NUISANCE TO SURROUNDING AREAS.

THE ENTIRE CONSTRUCTION AREA BACK OF CURBS AND OR PAVEMENT TO BE BACKFILLED AND SEEDED TOGETHER WITH DITCHES AND CHANNELS, AT THE EARLIEST POSSIBLE TIME AFTER FINAL GRADING.

DRAINAGE EASEMENTS MUST BE DEFINED BY EXCAVATED DITCHES OR CHANNELS FOR THEIR FULL LENGTH TO WELL DEFINED EXISTING NATURAL WATERCOURSES.

THIS ROAD WILL BE REVIEWED DURING CONSTRUCTION FOR THE NEED OF PAVED GUTTERS. IF EROSION IS ENCOUNTERED IN ANY DRAINAGE EASEMENT, IT WILL BE THE RESPONSIBILITY OF THE DEVELOPER TO SOD, RIP RAP, GROUT, PAVE, OR TO DO WHATEVER IS NECESSARY TO CORRECT THE PROBLEM.

ALL VEGETATION AND OVERBURDEN TO BE REMOVED FROM SHOULDER TO SHOULDER PRIOR TO THE CONDITIONING (CUTTING AND/OR PREPARATION) OF THE SUBGRADE.

5. MINIMUM PAVEMENT RADIUS OF 25 FEET REQUIRED AT ALL STREET INTERSECTIONS.

6. WHILE THESE PLANS HAVE BEEN APPROVED, SUCH APPROVAL DOES NOT EXEMPT CONNECTIONS WITH EXISTING STATE-MAINTAINED ROADS FROM CRITICAL REVIEW AT THE TIME PERMIT APPLICATIONS ARE MADE. THIS IS NECESSARY IN ORDER THAT THE PREVAILING CONDITIONS BE TAKEN INTO CONSIDERATION REGRADING SAFETY ACCOMPANIMENTS SUCH AS TURNING LANES.

7. STANDARD GUARDRAIL WITH SAFETY END SECTIONS IS REQUIRED ON ALL FILLS IN EXCESS OF 19 FEET IN HEIGHT. THE SECTIONS OF PROPOSED GUARDRAIL WILL BE STAKED BY THE DEVELOPER AFTER COMPLETION OF ROUGH GRADING OPERATIONS, AND THE OFFICE OF THE RESIDENT ENGINEER, VIRGINIA DEPARTMENT OF TRANSPORTATION, NOTIFIED SO THAT A FIELD REVIEW MAY BE MADE OF THE PROPOSED LOCATIONS.

FIELD REVIEW WILL BE MADE DURING CONSTRUCTION TO DETERMINE THE NEED AND LIMITS OF PAVED GUTTER AND/OR DITCH STABILIZATION TREATMENTS, TO DETERMINE THE NEED AND LIMITS OF ADDITIONAL DRAINAGE EASEMENTS. ALL DRAINAGE EASEMENTS MUST BE CUT AND MADE TO FUNCTION TO A NATURAL WATERCOURSE. ANY EROSION PROBLEMS ENCOUNTERED IN AN EASEMENT MUST BE CORRECTED BY WHATEVER MEANS NECESSARY PRIOR TO SUBDIVISION ACCEPTANCE.

8. CONTRACTOR SHALL OBTAIN ENTRANCE PERMIT TO THE EXISTING VIRGINIA DEPARTMENT OF TRANSPORTATION RIGHT OF WAY FROM RESIDENT ENGINEER PRIOR TO ROAD CONSTRUCTION.

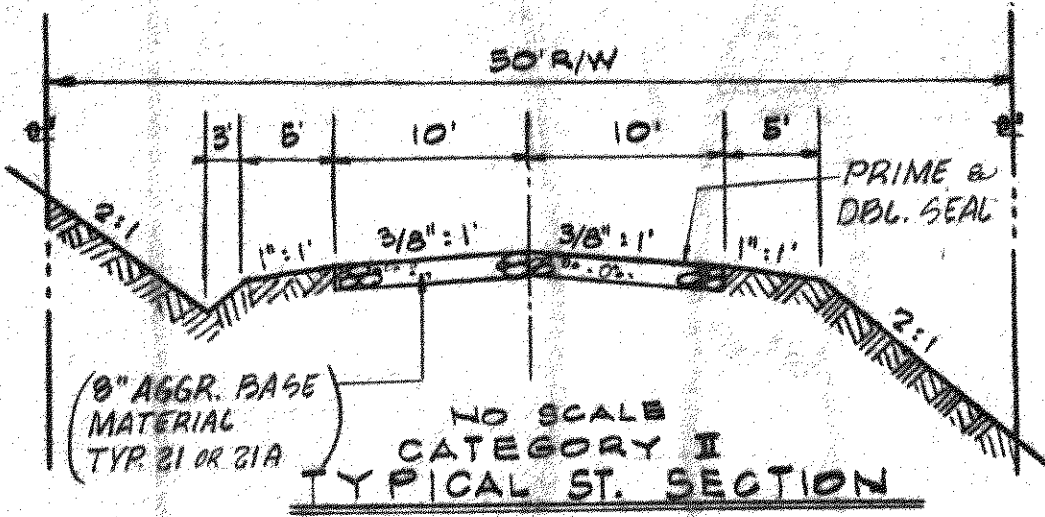
9. AN INSPECTOR WILL NOT BE FURNISHED EXCEPT FOR PERIODIC PROGRESS INSPECTION, THE ABOVE MENTIONED FIELD REVIEWS AND CHECKING FOR REQUIRED STONE DEPTHS. THE DEVELOPER WILL BE REQUIRED TO POST A SURETY TO GUARANTEE THE ROAD FREE OF DEFECTS FOR ONE YEAR AFTER ACCEPTANCE BY THE DEPARTMENT OF TRANSPORTATION.

10. THE STREETS MUST BE PROPERLY MAINTAINED UNTIL ACCEPTANCE. AT SUCH TIME AS ALL REQUIREMENTS HAVE BEEN MET FOR ACCEPTANCE, ANOTHER INSPECTION WILL BE MADE TO DETERMINE THAT THE STREET HAS BEEN PROPERLY MAINTAINED.

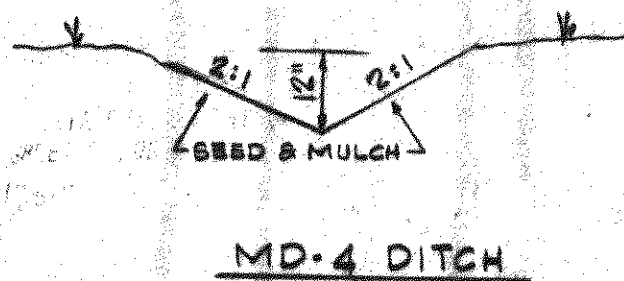
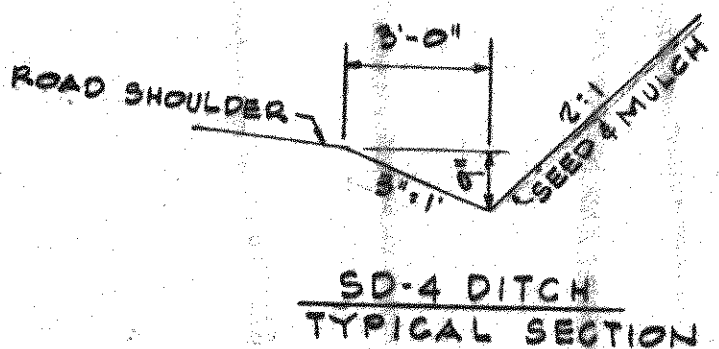
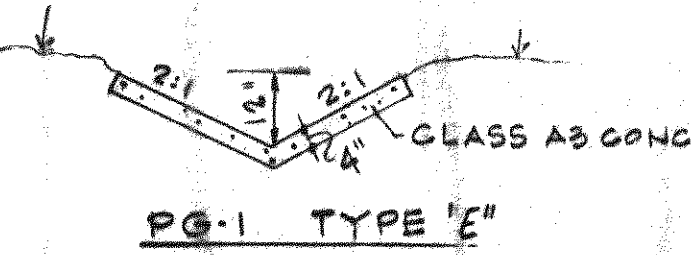
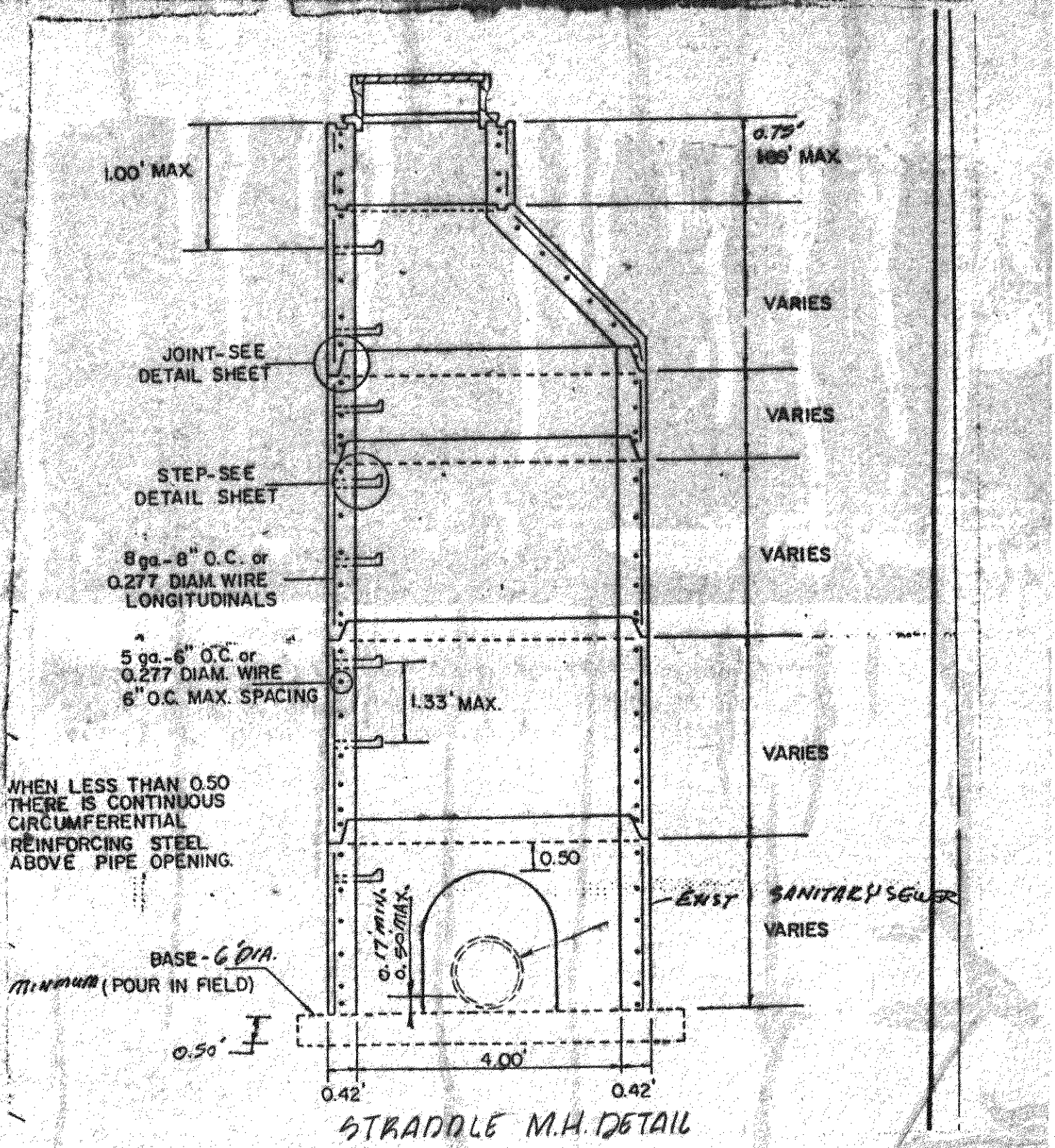
11. IN ORDER TO MEET PUBLIC SERVICE REQUIREMENTS, ALL STREETS MUST SERVE A MINIMUM OF THREE OCCUPIED DWELLINGS PRIOR TO ACCEPTANCE.

12. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES SHOWN ON THE PLANS IN AREAS OF CONSTRUCTION PRIOR TO STARTING WORK. CONTACT ENGINEER IMMEDIATELY IF LOCATION OR ELEVATION IS DIFFERENT FROM THAT SHOWN ON THE PLAN. IF THERE APPEARS TO BE A CONFLICT, AND UPON DISCOVERY OF ANY UTILITY NOT SHOWN ON THIS PLAN, CALL "MISS UTILITY" OF CENTRAL VIRGINIA AT 1-800-552-7001.

13. APPROVAL OF THESE PLANS WILL BE BASED ON SPECIFICATIONS AND STANDARDS IN EFFECT AT THE TIME OF APPROVAL AND WILL BE SUBJECT, UNTIL COMPLETION OF THE ROADWAY AND ACCEPTANCE BY THE DEPARTMENT, TO FUTURE REVISIONS OF THE SPECIFICATIONS AND STANDARDS.



YORK STREET 10+00.00 TO CUL-DE-SAC
PIPPIN STREET 20+00.00 TO CUL-DE-SAC
SUPERELEVATION OF .03 TO BE USED ON CURVE
'A & B' PIPPIN ST. AND CURVE 'A' YORK ST.



NOTES & DETAILS

SECTION No. 4

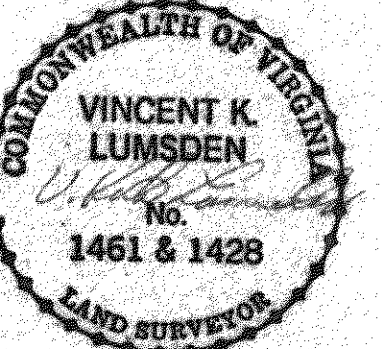
"APPLE TREE VILLAGE"

AMSTERDAM MAGISTERIAL DISTRICT
BOTETOURT COUNTY, VIRGINIA

PROPERTY OF
FRUITWOOD DEVELOPERS INCORPORATED

SCALE: AS SHOWN DATE: 26 MAY 1988

BUFORD T. LUMSDEN & ASSOCIATES, P.C.
ENGINEERS - SURVEYORS
ROANOKE, VIRGINIA



KNOW ALL MEN BY THESE PRESENTS, TO WIT:

THAT FRUITWOOD DEVELOPERS, INCORPORATED, IS THE FEE SIMPLE OWNER AND PROPRIETOR OF THE LAND SHOWN HEREON TO BE SUBDIVIDED, KNOWN AS SECTION #4, "APPLE TREE VILLAGE" SUBDIVISION, BOUNDED AS SHOWN HEREON IN DETAIL BY OUTSIDE CORNERS 1 THROUGH TO 1 INCLUSIVE, WHICH COMPRISES A PORTION OF THE LAND CONVEYED TO SAID OWNER BY DEED FROM LUCILLE BROWN LAKES DATED FEBRUARY 19, 1985, RECORDED IN THE CLERK'S OFFICE OF THE CIRCUIT COURT OF BOTETOURT COUNTY IN DEED BOOK 301, PAGE 725, WHICH LAND IS SUBJECT TO A CERTAIN DEED OF TRUST TO CLAUDE D. CARTER AND WILLIAM J. LEMON, TRUSTEES, SECURING LUCILLE BROWN LAKES, BENEFICIARY DATED FEBRUARY 21, 1985, AND RECORDED IN THE AFORESAID CLERK'S OFFICE IN DEED BOOK 301, PAGE 729, AND ALSO INCLUDES PART OF THE LAND CONVEYED TO SAID OWNER BY DEED FROM COLONIAL AMERICAN NATIONAL BANK DATED DECEMBER 12, 1983, RECORDED IN THE AFORESAID CLERK'S OFFICE OF THE CIRCUIT COURT IN DEED BOOK 290, PAGE 404, WHICH LAND IS SUBJECT TO TWO (2) DEEDS OF TRUST; ONE TO CLAUDE D. CARTER AND WILLIAM R. RAKES, TRUSTEES, SECURING COLONIAL AMERICAN NATIONAL BANK, DATED DECEMBER 16, 1983 RECORDED IN DEED BOOK 290, PAGE 407, THE SECOND DEED OF TRUST TO CLAUDE D. CARTER, TRUSTEE, SECURING COLONIAL AMERICAN NATIONAL BANK, BY DEED DATED FEBRUARY 27, 1985 RECORDED IN DEED BOOK 301, PAGE 760.

THE SAID OWNER CERTIFIES THAT IT HAS SUBDIVIDED THIS LAND, AS SHOWN THEREON, ENTIRELY WITH ITS OWN FREE WILL AND CONSENT AND PURSUANT TO AND IN COMPLIANCE WITH SECTIONS 15.1-465 THRU 15.1-485 OF THE VIRGINIA CODE OF 1950, AS AMENDED TO DATE, AND FURTHER PURSUANT TO AND IN COMPLIANCE WITH THE COUNTY OF ROANOKE "LAND SUBDIVISION ORDINANCES". THE SAID OWNER DOES, BY VIRTUE OF THE RECORDATION OF THIS PLAT, DEDICATE IN FEE SIMPLE TO THE COUNTY OF BOTETOURT ALL THE LAND EMBRACED WITHIN THE STREETS OF THIS SUBDIVISION AND ALL THE EASEMENTS ARE HEREBY DEDICATED FOR PUBLIC USE.

THE SAID OWNER DOES AS A CONDITION PRECEDENT TO THE APPROVAL OF THIS PLAT AND SUBDIVISION AND THE ACCEPTANCE OF THE DEDICATION OF THE STREETS SHOWN HEREON BY THE BOARD OF SUPERVISORS OF BOTETOURT COUNTY, ON ITS OWN BEHALF AND FOR AND ON ACCOUNT OF ITS HEIRS, SUCCESSORS, DEVISEES AND ASSIGNS, SPECIFICALLY RELEASES THE COUNTY AND THE VIRGINIA DEPARTMENT OF TRANSPORTATION FROM ANY AND ALL CLAIM OR CLAIMS FOR DAMAGES WHICH SUCH OWNERS, ITS HEIRS, SUCCESSORS, DEVISEES AND ASSIGNS MAY OR MIGHT HAVE AGAINST THE COUNTY AND THE VIRGINIA DEPARTMENT OF TRANSPORTATION BY REASON OF ESTABLISHING PROPER GRADE LINES ON AND ALONG SUCH STREETS AS SHOWN ON THIS PLAT OF THE LAND SUBDIVIDED (OR SUCH CHANGED STREETS AS MAY BE AGREED UPON IN THE FUTURE) AND BY REASON OF DOING NECESSARY GRADING, CUTTING OR FILLING FOR THE PURPOSE OF PLACING SUCH STREETS UPON THE PROPER GRADE AS MAY, FROM TIME TO TIME, BE ESTABLISHED BY SAID COUNTY OR VIRGINIA DEPARTMENT OF TRANSPORTATION, AND SAID COUNTY OR VIRGINIA DEPARTMENT OF TRANSPORTATION SHALL NOT BE REQUIRED TO CONSTRUCT AND RETAINING WALL OR WALLS ALONG THE STREET AND PROPERTY LINES THEREOF.

IN WITNESS WHEREOF ARE HEREBY PLACED THE FOLLOWING SIGNATURES AND SEAL THIS ____DAY OF _____, 1987.

FRUITWOOD DEVELOPERS, INCORPORATED

BY: _____ BY: _____ BY: _____
W. DAVID HALE, PRESIDENT COLONIAL AMERICAN NATIONAL BANK CLAUDE D. CARTER, TRUSTEE

BY: _____
LUCILLE BROWN LAKES, BENEFICIARY

STATE OF _____
OF _____

I, _____, A NOTARY PUBLIC IN AND FOR THE AFORESAID _____AND STATE DO HEREBY CERTIFY THAT CLAUDE D. CARTER, TRUSTEE AND LUCILLE BROWN LAKES, BENEFICIARY, HAVE PERSONALLY APPEARED BEFORE ME IN MY JURISDICTION AND ACKNOWLEDGED THE SAME ON _____, 1987.

MY COMMISSION EXPIRES _____.

NOTARY PUBLIC

STATE OF _____
OF _____

I, _____, A NOTARY PUBLIC IN AND FOR THE AFORESAID _____AND STATE DO HEREBY CERTIFY THAT W. DAVID HALE, PRESIDENT OF FRUITWOOD DEVELOPERS, INCORPORATED, HAS PERSONALLY APPEARED BEFORE ME IN MY JURISDICTION AND ACKNOWLEDGED THE SAME ON _____, 1987.

MY COMMISSION EXPIRES _____.

NOTARY PUBLIC

STATE OF _____
OF _____

I, _____, A NOTARY PUBLIC IN AND FOR THE AFORESAID _____AND STATE DO HEREBY CERTIFY THAT _____, WITH COLONIAL AMERICAN NATIONAL BANK, HAS PERSONALLY APPEARED BEFORE ME IN MY JURISDICTION AND ACKNOWLEDGED THE SAME ON _____, 1987.

MY COMMISSION EXPIRES _____.

NOTARY PUBLIC

BOTETOURT COUNTY SUBDIVISION AGENT

DATE

IN THE CLERK'S OFFICE OF THE CIRCUIT COURT OF BOTETOURT COUNTY, VIRGINIA, THIS PLAT WITH THE CERTIFICATE OF ACKNOWLEDGEMENT THERETO ANNEXED IS ADMITTED TO RECORD ON _____, 1987, AT O'CLOCK ____ .M.

TESTEE: _____, CLERK

DEPUTY CLERK

TOTAL AREA = 14.565 AC.

PLAT SHOWING

SECTION No. 4

"APPLE TREE VILLAGE"

AMSTERDAM MAGISTERIAL DISTRICT
BOTETOURT COUNTY, VIRGINIA

PROPERTY OF

FRUITWOOD DEVELOPERS INCORPORATED

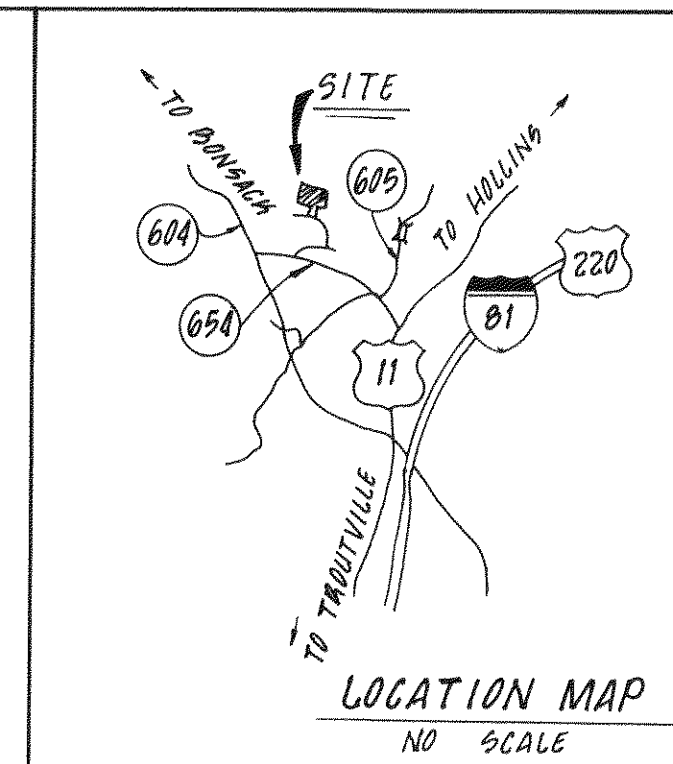
SCALE: 1" = 100' DATE: 25 MAY 1988

BUFORD T. LUMSDEN & ASSOCIATES, P.C.
ENGINEERS - SURVEYORS
ROANOKE, VIRGINIA

#907H

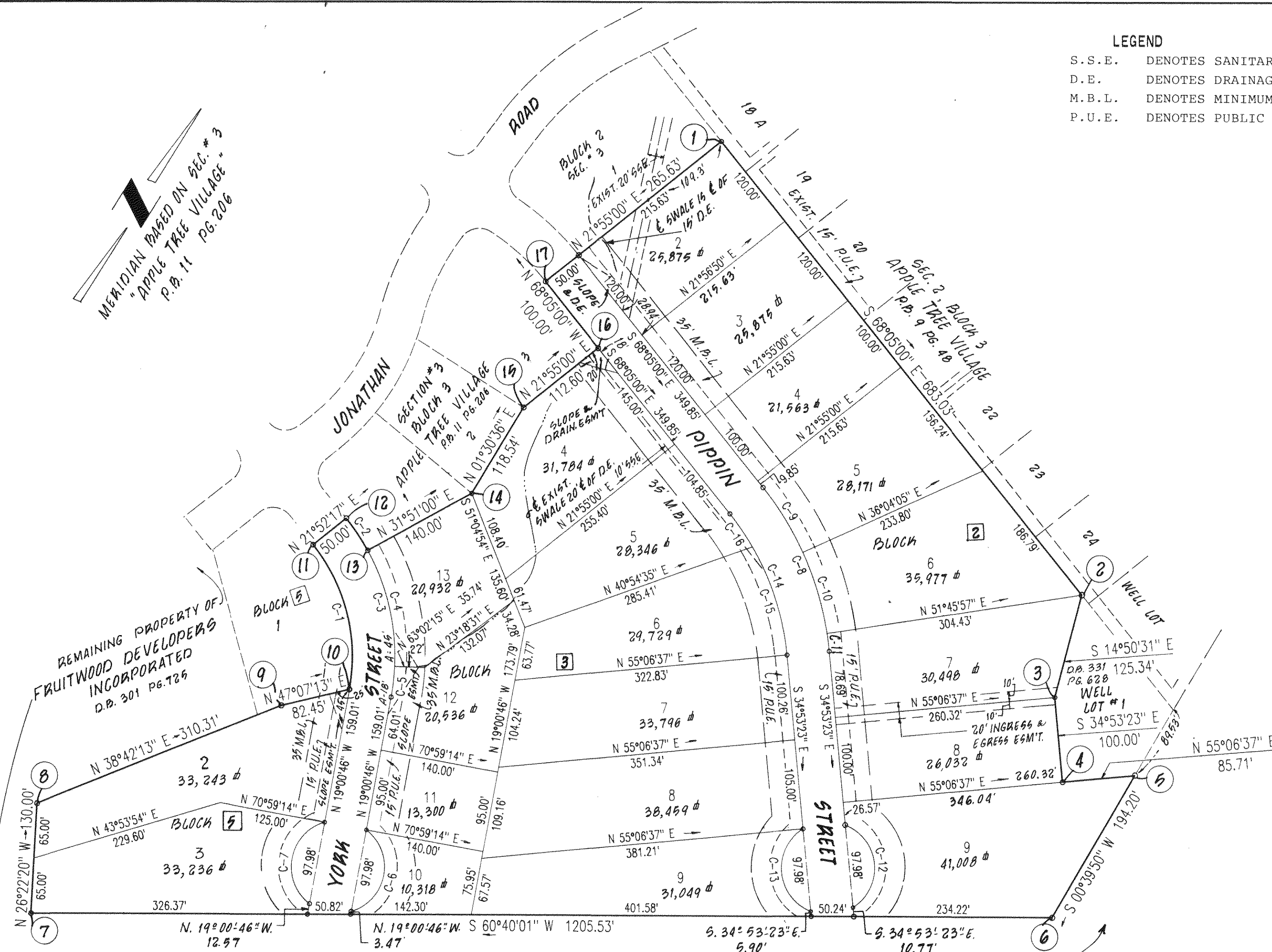
SHEET # 1 OF 2

LEGEND
S.S.E. DENOTES SANITARY SEWER EASEMENT
D.E. DENOTES DRAINAGE EASEMENT
M.B.L. DENOTES MINIMUM BUILDING LINE
P.U.E. DENOTES PUBLIC UTILITY EASEMENT



NOTES:

1. THIS PROPERTY IS NOT LOCATED IN A SPECIAL FLOOD HAZARD AREA AS DESIGNATED BY THE SECRETARY OF HOUSING AND URBAN DEVELOPMENT.
2. THE SEGMENTS OF THE TURN-A-ROUND OUTSIDE OF THE 50' WIDTH OF PIPPIN STREET AND YORK STREET SHALL REVERT TO ADJOINING OWNERS WHEN SAID STREETS ARE EXTENDED.



CURVE TABLE						
NAME	ANGLE	RADIUS	LENGTH	BEARING	CHORD	TANGENT
C-1	49°06'57"	212.00	181.73	S 43°34'15" E	176.22	96.87
C-2	09°58'43"	262.00	45.63	S 63°08'21" E	45.57	22.87
C-3	49°06'57"	262.00	224.59	S 43°34'15" E	217.78	119.72
C-4	31°11'15"	262.00	142.61	S 42°33'22" E	140.86	73.12
C-5	07°56'59"	262.00	36.35	N 22°59'16" W	36.32	18.21
C-6	125°55'43"	55.00	120.88	N 19°00'46" W	97.98	107.78
C-7	125°55'43"	55.00	120.88	N 19°00'46" W	97.98	107.78
C-8	33°11'37"	365.00	211.46	S 51°29'11" E	208.51	108.79
C-9	14°09'05"	365.00	90.15	S 61°00'27" E	89.92	45.31
C-10	15°41'51"	365.00	100.00	S 46°04'59" E	99.69	50.32
C-11	03°20'41"	365.00	21.31	S 36°33'43" E	21.30	10.66
C-12	125°55'43"	55.00	120.88	S 34°53'23" E	97.98	107.78
C-13	125°55'43"	55.00	120.88	S 34°53'23" E	97.98	107.78
C-14	33°11'37"	315.00	182.49	S 51°29'11" E	179.95	93.89
C-15	24°38'41"	315.00	135.49	S 47°12'43" E	134.45	68.81
C-16	08°32'56"	315.00	47.00	S 63°48'32" E	46.96	23.54

PROPERTY OF
FRIENDSHIP MANOR APARTMENT VILLAGE CORP.
D.B. 207 PG. 869

TOTAL AREA = 14.565 AC.

PLAT SHOWING

SECTION No. 4

"APPLE TREE VILLAGE"AMSTERDAM MAGISTERIAL DISTRICT
BOTETOURT COUNTY, VIRGINIAPROPERTY OF
FRUITWOOD DEVELOPERS INCORPORATED

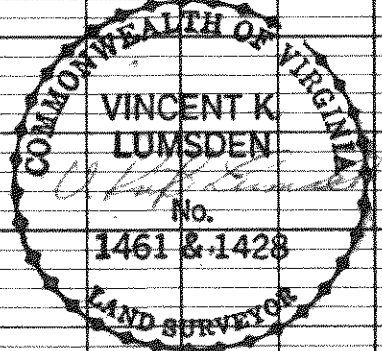
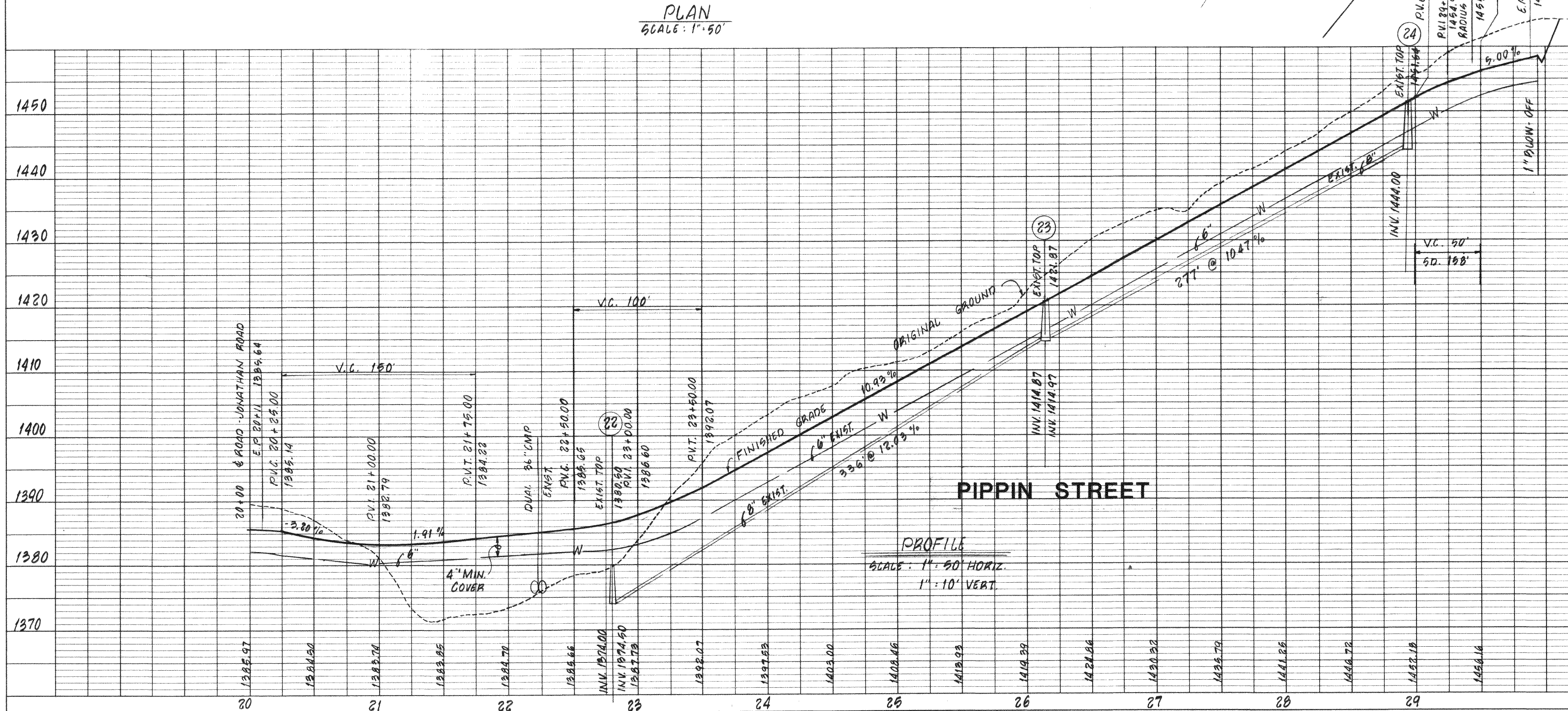
SCALE: 1" = 100' DATE: 25 MAY 1988

BUFORD T. LUMSDEN & ASSOCIATES, P.C.
ENGINEERS - SURVEYORS
ROANOKE, VIRGINIA# 907.H
SHEET # 2 OF 2

PLAN	DATE	
	BY	
	SURVEYED	
	NOTE BOOK	

PROFILE	DATE	
	BY	
	SURVEYED	
	NOTE BOOK	

CUR	Δ	TAN.	RAD.	ARC	CHD. BEARING	CHD. DIST.
A	17°10'50"	46.32	300.00	89.96	S. 76° 40' 25" E.	89.63
B	33°11'37"	101.34	340.00	196.97	S. 51° 29' 11.2" E.	194.23



PLAN & PROFILE
SECTION No. 4
"APPLE TREE VILLAGE"
AMSTERDAM MAGISTERIAL DISTRICT
BOTETOURT COUNTY, VIRGINIA
PROPERTY OF
FRUITWOOD DEVELOPERS INCORPORATED
SCALE: AS SHOWN DATE: 26 MAY 1988
BUDFORD T. LUMSDEN & ASSOCIATES, P.C.
ENGINEERS - SURVEYORS
ROANOKE, VIRGINIA

PLAN	SURVEYED	DATE
	NOTE BOOK	BY
	ALIGNMENT CHECKED	
	BT. OF WAY CHECKED	

PROFILE	SURVEYED	DATE
	NOTE BOOK	BY
	GRADES CHECKED	
	STRUCTURE NOTATIONS CHECKED	

