



FINISHED GRADE -

SCHEDULE 40

DETECTION TAPE

-MINIMUM 5' STUB

W\ LEAK PROOF CAP.
CAP TO BE SUPPORTED
FOR TESTING.
WHERE P.U.E. ADJOINS

PROPERTY LINE, LATERAL MUST BE EXTENDED FULL WIDTH OF P.U.E.

## SANITARY SEWER NOTES:

1. ALL CONSTRUCTION SHALL COMPLY WITHTHE CURRENT EDITION OF THE BOTETOURT COUNTY WATER AND SEWER STANDARDS

Brass or cast Iron cap with 1"

\_45° WYE & REQUIRED BEND

BEND (IF NEEDED)

SANITARY SEWER LATERAL

∠SCHEDULE 48 PPE

COMBINED 6" BY TWO 4" LATERALS

Combination of Wy 45 Bend Fittings

A MIN. OF 3 FEET DURING INSTALLATION OF MAIN LINE, PLUMBER SHALL CUT STACK TO FINISH GRAND & REPLACE C.O. & PLUG WHEN BUILDING SEWER IS

45° BEND FITTINGS SHALL

BE SIZED AS REQUIRED.

GENERAL NOTES:

TRAFFIC BEARING BOX
 REQUIRED IN TRAFFIC AREAS.

2. ALL PIPE AND FITTINGS SHALL BE OF SIMILAR MATERIAL.

4. NO BENDS ARE ALLOWED IN

3. ALL PIPE SHALL BE OF SIZE SHOWN

5. PIPING BEHIND CLEANOUT TO BE INSTALLED PER BOCA CODE.

6. MINIMUM COVER FOR ALL SEWER LATERALS SHALL BE THREE (3') FEET

- 2. DEFLECTION TESTING: ALL PIPE SHALL BE TESTED FOR DEFLECTION. DEFLECTION TESTS SHALL BE PERFORMED NO SOONER THAN 30 DAYS AFTER FINAL FULL BACKFILL HAS BEEN PLACED. THE CONTRACTOR SHALL TEST THE PIPE BY MEANS OF A GO-NO-GO MANDREL TO ASSURE THAT A DEFLECTION OF 5 PERCENT HAS NOT BEEN EXCEEDED. THE MANDREL, ONE FOR EACH PIPE SIZE, SHALL BE A NINE ARM MANDREL, WITH PROVING RING SIZED AT 5 PERCENT LESS THAN THE ASTM DIMENSION FOR THE PIPE AND A LENGTH EQUAL TO THE NOMINAL DIAMETER OF THE PIPE BEING TESTED. THE MANDREL SHALL BE PULLED THROUGH THE SEWER LINE MANUALLY. ANY SEWER NOT PASSING THE MANDREL TEST SHALL BE CORRECTED UNTIL THE TEST IS PASSED.
- 3. ALL SANITARY SEWER TESTS ARE TO BE PERFORMED IN THE PRESENCE OF THE DESIGN ENGINEER AND PROPERLY DOCUMENTED BY THE DESIGN ENGINEER FOR SUBMITTAL WITH RECORD DRAWINGS TO BOTETOURT COUNTY PRIOR TO CONVEYANCE TO BOTETOURT COUNTY, TEST SUBMITTALS DOCUMENTED BY ANYONE OTHER THAN THE DESIGN ENGINEER (i.e. THE CONTRACTOR) WILL NOT BE ACCEPTABLE AS PROOF OF COMPLIANCE.
- 4. BOTETOURT COUNTY SEWER CONNECTION FEES WILL BE BASED UPON THE FEE STRUCTURE IN PLACE AT THE TIME OF SERVICE APPLICATION REQUEST. OWNER / DEVELOPER MUST MAKE APPLICATION AND PAY ALL APPLICABLE CONNECTION FEES PRIOR TO ISSUANCE OF BUILDING PERMITS.
- 5. ALL TESTING OF UTILITIES SHALL BE DOCUMENTED BY THE DESIGN ENGINEER.
- 6. DEVELOPER SHALL PROVIDE A ONE-YEAR WARRANTY FOR ALL LINES PRIOR TO CONVEYANCE TO BOTETOURT COUNTY WITH WARRANTY DATE BEGINNING AT THE DATE OF SYSTEM ACCEPTANCE BY BOTETOURT COUNTY.
- 7. DEVELOPER SHALL PROVIDE VIDEO CAMERA INSPECTION DOCUMENTATION PRIOR TO CONCLUSION OF ONE YEAR WARRANTY PERIOD. VIDEO CAMERA INSPECTION WORK TO BE PERFORMED NO SOONER THAN SIX MONTHS AND NO LATER THAN EIGHT MONTHS AFTER THE DATE OF SYSTEM ACCEPTANCE BY BOTETOURT COUNTY. ONE (1) COPY OF THE VIDEO TAPE SHALL BE PROVIDED TO BOTETOURT COUNTY. VIDEO CAMERA INSPECTION WORK SHALL BE COORDINATED WITH BOTETOURT COUNTY SUCH THAT COUNTY PERSONNEL CAN BE PRESENT DURING VIDEO INSPECTION OPERATIONS.
- 8. SEWER SHOP DRAWINGS SHALL BE SUBMITTED BY THE CONTRACTOR TO BOTH THE DESIGN ENGINEER AND BOTETOURT COUNTY FOR APPROVAL PRIOR TO INSTALLATION / CONSTRUCTION. BOTETOURT COUNTY WILL REQUIRE THREE (3) COMPLETE SETS OF SHOP DRAWINGS FOR REVIEW.
- 9. THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING TO BE ATTENDED BY THE CONTRACTOR'S SITE SUPERINTENDENT, DESIGN ENGINEER'S FIELD REPRESENTATIVE / INSPECTOR, BOTETOURT COUNTY UTILITY DEPARTMENT, BOTETOURT COUNTY ENGINEERING DEPARTMENT AND ANY MATERIALS SUPPLIERS THE CONTRACTOR FEELS NECESSARY.
- 10. ALL SEWER PIPES (MAINS AND SERVICE LINES) SHALL HAVE BOTH MAGNETICALLY LOCATABLE DETECTION WIRE AND OR TAPE AND WARNING TAPE INSTALLED AT SAME ELEVATION OF SPRING LINE OF PIPE. WARNING TAPE (CAUTION!! BURIED SEWER / WATER PIPE BELOW) SHALL BE INSTALLED NO MORE THAN 18 INCHES ABOVE TOP OF PIPE.
- 11. CONTRACTOR SHALL OBTAIN A COPY OF THE MOST CURRENT EDITION OF THE BOTETOURT COUNTY WATER SEWER CONSTRUCTION STANDARDS AND SPECIFICATIONS AND PROVIDE PROOF (A LETTER) THAT THE CONTRACTOR HAS BEEN AND IS FAMILIAR WITH THE REQUIREMENTS THEREIN.
- 12. PRIOR TO CONVEYANCE OF THE SEWER SYSTEM (MAIN LINES AND ASSOCIATED STRUCTURES) BOTETOURT COUNTY SHALL REQUIRE ONE COMPLETE REPRODUCIBLE (MYLAR) SET, ONE COMPLETE PAPER (BLUELINE) SET AND ONE COMPLETE DIGITAL (AUTOCAD 2000 VERSION) SET OF SEWER AS-BUILTS, PREPARED BY THE DESIGN ENGINEER AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE COMMONWEALTH OF VIRGINIA.

- 13. ALL SANITARY SEWER LATERALS SHALL BE PRIVATE SEWER LATERALS OWNED, OPERATED AND MAINTAINED BY THE SEWER CUSTOMER. BOTETOURT COUNTY WILL NOT OWN, OPERATE OR MAINTAIN ANY PROTION OF ANY SEWER LATERALS.
- 14. THERE SHALL BE NO PLANTINGS WITHIN THE SANITARY SEWER EASEMENT OR WITHIN 10 FEET OF SANITARY SEWER SERVICE CLEANOUTS.
- 15. MONTHLY BILLING METHODS FOR THE PURPOSES OF PREPARING MONTHLY SEWER BILLS BOTETOURT COUNTY REQUESTS THAT THE CUSTOMERS SUBMIT TO BOTETOURT COUNTY COPIES OF ACTUAL WATER METER READINGS AS READ BY THE TOWN OF TROUTVILLE. SEWER BILLS WILL BE PREPARED BASED UPON ACTUAL WATER USAGE RECORDS FOR THE CUSTOMER AND THE ASSUMPTION WILL BE THAT EVERY GALLON OF WATER INTO THE UNIT ALSO GOES OUT AS SEWAGE FOR SEWER BILLING PURPOSES.
- 16. PRIOR TO CONVEYANCE OF THE SEWER SYSTEM (MAIN LINES AND ASSOCIATED STRUCTURES) **BOTETOURT COUNTY SHALL REQUIRE:**
- A) A LETTER OF DOCUMENTATION BY THE DESIGN ENGINEER, SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE COMMONWEALTH OF VIRGINIA, STATING THAT THE SYSTEM HAS BEEN BUILT IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS.
- B) A DEED OF CONVEYANCE FROM THE OWNER TO BOTETOURT COUNTY.
- C) A PLAT SHOWING ALL SANITARY SEWER EASEMENTS.

**GENERAL NOTES:** 

1. TRAFFIC BEARING BOX

REQUIRED IN TRAFFIC AREAS.

3. ALL PIPE SHALL BE OF SAME SIZE

5. PIPING BEHIND CLEANOUT TO BE

INSTALLED PER BOCA CODE.

6. MINIMUM LATERAL SIZE:
4' FOR RESIDENTIAL SERVICE

. MINIMUM COVER FOR ALL SEWER

A HALF (3.5') FEET

2. ALL PIPE AND FITTINGS SHALL BE OF SIMILAR MATERIAL.

4. NO BENDS ARE ALLOWED IN THE LATERAL FROM THE MAIN TO THE CLEAN-OUT

- D) WARRANTY TO BOTETOURT COUNTY FOR ONE YEAR FOLLOWING DATE OF ACCEPTANCE BY THE BOTETOURT COUNTY BOARD OF SUPERVISORS.
- E) TWO COMPLETE COPIES OF DOCUMENTATION PREPARED BY THE DESIGN ENGINEER, SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE COMMONWEALTH OF VIRGINIA, OF ALL SEWER AND WATER TESTING TO INCLUDE THE FOLLOWING:
- 1) MAIN LINE SEWER LINE AIR PRESSURE TESTING UP TO AND AGAINST THE FIRST CLEAN-OUT ON SERVICE LINES. 2) MAIN LINE SEWER LINE DEFLECTION MANDREL TESTING. 3) SEWER MANHOLE VACUUM TESTING UP TO AND INCLUDING
- 17. ALL AS-BUILT / RECORD DRAWINGS SHALL SHOW ACTUAL FIELD SURVEYED LOCATIONS (HORIZONTAL AND VERTICAL) OF STRUCTURES (MANHOLES, CLEAN-OUTS, SERVICE STUB-OUTS, ETC.) AND SHOW RECOMPUTED PIPE LENGTHS AND SLOPES BASED UPON ACTUAL FIELD LOCATIONS.
- 18. THE PROCESS OF CONVEYANCE IS AS FOLLOWS: A. SUBMIT ALL INFORMATION AS OUTLINED ABOVE AND PROVIDE WRITTEN REQUEST THAT BOTETOURT COUNTY ACCEPT OWNERSHIP AND OPERATION OF THE SYSTEM. B. SCHEDULE A PRE-FINAL INSPECTION OF THE SYSTEM. C. ADDRESS ANY INSPECTION / PUNCH-LIST ITEMS.
- D. SCHEDULE A FINAL INSPECTION OF THE SYSTEM E. BOTETOURT COUNTY DEPARTMENT OF PUBLIC WORKS MAKES FORMAL RECOMMENDATION TO BOTETOURT COUNTY BOARD OF SUPERVISORS THAT THE SYSTEM IS COMPLETE
- BY BOTETOURT COUNTY. F. BOTETOURT COUNTY BOARD OF SUPERVISORS TAKES OFFICIAL ACTION TO EITHER ACCEPT OR REJECT OWNERSHIP AND OPERATION OF THE SYSTEM

AND READY FOR OWNERSHIP AND OPERATION

## HAL T. BAILEY No. 0402 021859

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 | 11:24 | 14:15 | 17:05 | 19:56 | 22:47 | 25:38 15 | 14:10 | 159 | 5.342 L | 14:10 | 14:10 | 17:48 | 22:15 | 26:42 | 31:09 | 35:36 | 40:04

18 | 17:00 | 133 | 7.692 L | 17:00 | 19:13 | 25:38 | 32:03 | 38:27 | 44:52 | 51:16 | 57:41

21 | 19:50 | 114 | 10.470 L | 19:50 | 26:10 | 34:54 | 43:37 | 52:21 | 61:00 | 69:48 | 78:31

24 22:40 99 13.674 L 22:47 34:11 45:34 56:58 68:22 79:46 91:10 102:33

27 | 25:30 | 88 | 17.306 L | 28:51 | 43:16 | 57:41 | 72:07 | 86:32 | 100:57 | 115:22 | 129:48

30 | 28:20 | 80 | 21.366 L | 35:37 | 53:25 | 71:13 | 89:02 | 106:50 | 124:38 | 142:26 | 160:15

33 31:10 72 25.852 L 43:05 64:38 86:10 107:43 129:16 150:43 172:21 193:53

36 34:00 66 30.768 L 51:17 76:55 102:34 128:12 153:50 179:29 205:07 230:46

MINIMUM SPECIFIED TIME REQUIRED

FOR A 1.0 PSIG PRESSURE DROP

SANITARY SEWER AIR PRESSURE TEST

FOR SIZE AND LENGTH OF PIPE INDICATED FOR Q = 0.0015.

NOT TO SCALE



ENGINEERING CONCEPTS, INC.

20 S. ROANOKE ST., PO BOX 619 FINCASTLE, VIRGINIA 24090 540.473.1253 FAX: 540.473.1254

GRAVEL TO -\
SPRING LINE -\

2'X 2' CONCRETE -

REFERENCE DETAIL DRAWINGS IN SPECS FOR

DROP CONNECTION USING DUCTILE IRON PIPE.

PVC PIPE 8" MIN.

VARIES # 57 STONE -

\_\_\_\_JT MATERIAL (NO MORTAR)

MIN.

**OUTSIDE DROP MANHOLE** 

NOT TO SCALE

By Appd. Date Drawn No. | Revision WTR 1 Botco. San. Rev COMMENTS |WTR| MPC |06/03/03 MSMJ RHW | 7-22-03 2 CO. SANITARY COMMENTS Checked JDE/PSN Approved

SPICKARD TOWNHOMES SCALE: NONE BOTETOURT COUNTY, VIRGINIA JANUARY 2001 PROJECT: 00023 SANITARY SEWER STANDARD DETAIL SHEET of 10