# Bank of Botetourt



# At Daleville Town Center Botetourt County - Virginia

December 19, 2014

Revised: February 3, 2015

# CONTACTS



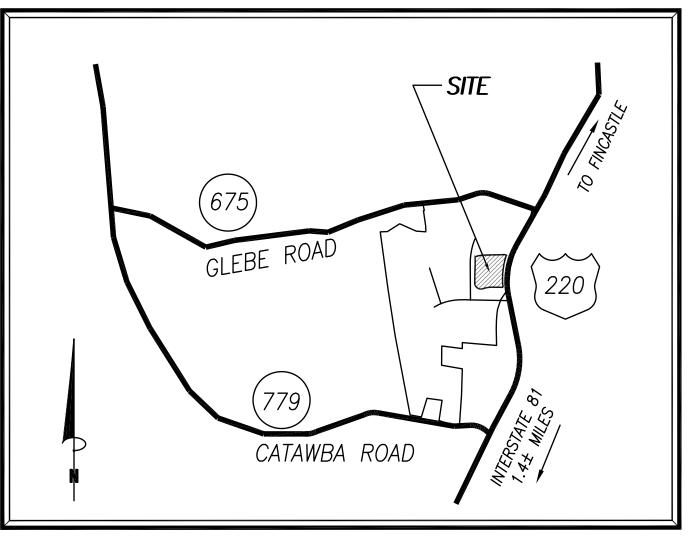
### ENGINEERING CONCEPTS, INC.

Robert H. Wampler
Vice President
P.O. Box 619 20 S. Roanoke Street
Fincastle, VA 24090
via e-mail: BWampler@EngineeringConcepts.com

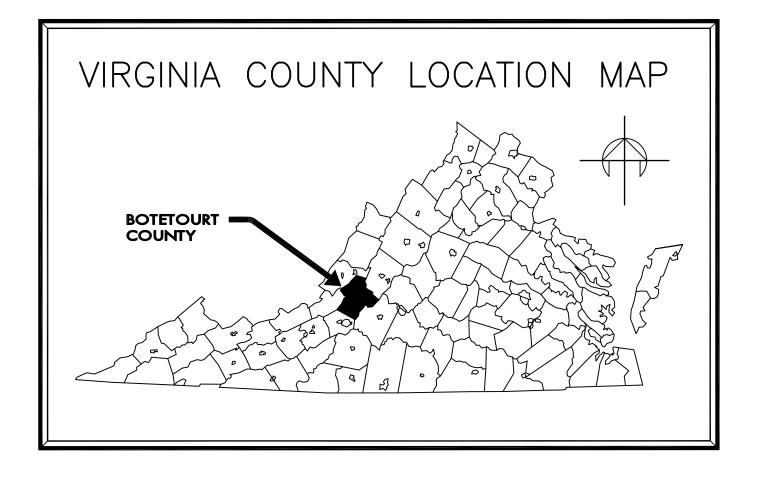


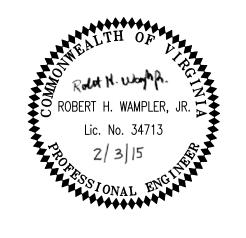
### BANK OF BOTETOURT

Andy Shotwell (540) 591-5010 via e-mail: AShotwell@bankofbotetourt.com



 $\frac{\text{VICINITY MAP}}{\text{NOT TO SCALE}}$ 





# SHEET INDEX

- C1 COVER SHEET
- C2 GENERAL NOTES
- C3 EXISTING CONDITIONS & DEMOLITION PLAN
- C4 SITE DIMENSIONAL & UTILITY PLAN
- C5 GRADING PLAN
- C6 EROSION CONTROL PLAN
- C7 LANDSCAPE PLAN
- C8 PROFILES
- C9 UTILITY DETAILS
- C10 MISCELLANEOUS SITE DETAILS
- C11 SITE & EROSION CONTROL DETAILS
- C12 DRAINAGE MAP
- C13 EROSION CONTROL NARRATIVE
- C14 ELECTRICAL SERVICE ROUTING
- C15 LIGHTING AND PHOTOMETRICS PLAN

## ABBREVIATIONS

	WSE O.D.	WATER SURFACE ELEVATION OUTSIDE DIAMETER
	MH	MANHOLE
	XING	
	GPM	
		POUNDS PER SQUARE INCH
		POST INDICATOR VALVE
		STANDARD DIMENSION RATIO
	MIN	
	LAT.	
		STORM DRAIN
		VERTICAL
		HORIZONTAL
, [	RI DG	BUILDING
		SEPERATION
	D.I.	
(	0.0	CLEANOUT
ľ	MAX.	MAXIMUM
	F.F.	MAXIMUM FINISHED FLOOR
	FIN.	FINISHED
		FOUNDATION
	0	DIAMETER
		CLEARANCE
		TOP OF FOOTING
		ON CENTER
		REINFORCEMENT
		SANITARY SEWER MANHOLE
Į	L.P.	LOW POINT
	FD	FOUNDATION DRAIN
F	F	FIRE SERVICE LINE
[	D	DOMESTIC SERVICE LINE

ELECTRIC (UNDERGROUND) SANITARY SEWER AIR RELEASE VALVE ELECTRIC (OVERHEAD) CHESAPEAKE & POTÓMAC WATER VALVE UNDERGROUND COMPUTER CABLE CONCRETE TERRA COTTA UNDERGROUND SATELLITE V.D.O.T. VIRGINIA DEPARTMENT OF TRANSPORTATION ELEV. ELEVATION HIGH DENSITY POLYVINYL CHLORIDE FIRE HYDRANT TELEPHONE CORRUGATED METAL PIPE HIGH POINT EXIST/EX EXISTING HIGH DENSITY POLYETHYLENE VIRGINIA MILITARY INSTITUTE AIR ENTRAINED TCxx.xx TOP OF CURB ELEVATION PAVEMENT ELEVATION

STORM WATER MANAGEMENT





20 S. ROANOKE ST., PO BOX 619 FINCASTLE, VIRGINIA 24090 540.473.1253 FAX: 540.473.1254 ATTN: Bobby Wampler, PE GENERAL SITE NOTES:

. TOPOGRAPHIC INFORMATION FROM FIELD RUN TOPOGRAPHY BY ENGINEERING CONCEPTS IN MAY.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS.

3. THE CONTRACTOR SHALL BEAR SOLE RESPONSIBILITY FOR THE CHARACTER AND ACTUAL LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES, STRUCTURES, OTHER FACILITIES, AND OBSTRUCTIONS WITHIN THE PROJECT AREA. THE CONTRACTOR SHALL, AT NO ADDITIONAL COST TO THE OWNER, CONTACT THE OWNERS/OPERATORS OF ALL UTILITIES AND ARRANGE FOR THE VERIFICATION AND MARKING OF UTILITY LOCATIONS BY SAID OWNERS/OPERATORS. THE CONTRACTOR SHALL ASSIST THE UTILITY OWNERS/OPERATORS BY EVERY MEANS POSSIBLE TO DETERMINE THE LOCATION OF UTILITIES. THE CONTRACTOR SHALL BEAR SOLE RESPONSIBILITY FOR ALL DISTURBANCE OF ANY DAMAGE TO UTILITIES RESULTING FROM THE CONTRACTOR'S FAILURE TO ARRANGE FOR THE LOCATION OF UTILITIES BY THE OWNERS/ OPERATORS OF THE UTILITIES. CONTACT MISS UTILITY (800) 552-7001.

4. SITE CONDITIONS MAY NECESSITATE SLIGHT DEVIATIONS IN ALIGNMENT, GRADE, AND/OR LOCATION OF NEW FACILITIES FROM THE PLAN ALIGNMENT, GRADE, AND/OR LOCATION. THE CONTRACTOR SHALL CONSTRUCT THE NEW FACILITIES TO SUCH DEVIATIONS AS DIRECTED BY THE ENGINEER WITHOUT ADDITIONAL COST OR FINE TO THE OWNER. SHOULD PLAN DEVIATIONS BE REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO UNDER TAKING ANY

5. ALL CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE CURRENT BOCA AND/OR STATE AND LOCAL BUILDING CODES AS WELL AS THE CONSTRUCTION STANDARDS AND SPECIFICATIONS OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION AND ALL APPLICABLE STATE AND FEDERAL OSHA REGULATIONS.

6. THE CONTRACTOR SHALL MAINTAIN THE CONSTRUCTION AREA IN A SAFE AND ACCEPTABLE MANNER AND SHALL BE RESPONSIBLE FOR REMEDIATING ANY DAMAGES RESULTING FROM HIS FAILURE TO DO SO.

7. THE CONTRACTOR SHALL MAINTAIN LIMITS OF CONSTRUCTION WITHIN THE PROPERTY BOUNDARIES OR EASEMENTS AS INDICATED.

8. AN APPROVED SET OF PLANS SHALL BE KEPT ON THE SITE AT ALL TIMES.

9. ALL CONSTRUCTION DEBRIS SHALL BE CONTAINERIZED IN CONFORMANCE WITH THE VIRGINIA LITTER CONTROL ACT AND DISPOSED OF IN A MANNER AND LOCATION ACCEPTABLE TO THE GOVERNING JURISDICTION. AT LEAST ONE TRASH RECEPTACLE SHALL BE ONSITE DURING

10. TEMPORARY TOILETS SHALL BE PROVIDED ONSITE AT A RATIO OF ONE TOILET PER 30 WORKERS DURING THE CONSTRUCTION PERIOD.

11. GRADE STAKES SHALL BE SET FOR CURB & GUTTER, WATER LINES, SANITARY SEWER AND STORM SEWER.

12. THE CONTRACTOR SHALL MAINTAIN A CLEAR FLOW PATH TO AND THROUGH ALL SURFACE WATER AND STORM WATER DRAINAGE FACILITIES AT ALL TIMES.

13. THE CONTRACTOR SHALL GRADE, SEED, AND/OR SOD, AND MULCH THE ENTIRE AREA(S) DISTURBED BY CONSTRUCTION ACTIVITIES.

14. CONSTRUCTION AND START-UP OF ALL WORK SHALL NOT INTERFERE WITH THE OPERATION OF WATER AND SEWERAGE FACILITIES. THE CONTRACTOR SHALL COORDINATE AND SCHEDULE ALL

15. MINIMUM COVER ON ALL PIPE SHALL BE 3.0 FEET, UNLESS OTHERWISE SPECIFICALLY INDICATED ON THESE DRAWINGS. ALL PIPE SHALL BE INSTALLED WITH COATED TRACER WIRE TO FACILITATE FUTURE LOCATION OF PIPE AFTER CONSTRUCTION IS COMPLETED.

16. WHERE IT IS NECESSARY TO DEFLECT PIPE EITHER HORIZONTALLY OR VERTICALLY, PIPE JOINT DEFLECTION OR BARREL BEND RADIUS SHALL NOT EXCEED 75% OF THE MANUFACTURER'S RECOMMENDED DEFLECTION ANGLE OR BEND RADIUS.

17. ALL PIPING SHALL BE PROPERLY SUPPORTED. ALL PIPING WHICH WILL BE PRESSURIZED

18. ALL HDPE PIPE SHALL CONFORM TO THE CURRENT VDOT SPECIFICATIONS AND BE BEDDED IN ACCORDANCE WITH THE CURRENT VDOT STANDARDS.

19. CONSTRUCTION TRAFFIC SHALL USE THE CONSTRUCTION ENTRANCE.

WATER AND SEWER SYSTEM CONVEYANCE NOTE

WORK WITH THE OWNERS AS REQUIRED.

1. SUBMIT ALL INFORMATION AS OUTLINED UNDER BOTETOURT COUNTY UTILITY NOTES AND PROVIDE WRITTEN REQUEST THAT BOTETOURT COUNTY ACCEPT OWNERSHIP AND OPERATION OF

2. SCHEDULE A PRE FINAL INSPECTION OF THE SYSTEM.

3. ADDRESS ANY INSPECTION/PUNCH LIST ITEMS.

4. SCHEDULE A FINAL INSPECTION OF THE SYSTEM.

5. BOTETOURT COUNTY PUBLIC WORKS MAKES A FORMAL RECOMMENDATION TO BOTETOURT COUNTY BOARD OF SUPERVISORS THAT THE SYSTEM IS COMPLETE AND READY FOR THE OWNERSHIP AND OPERATION BY BOTETOURT COUNTY.

6. BOTETOURT COUNTY BOARD OF SUPERVISORS TAKES OFFICIAL ACTION TO EITHER ACCEPT OR REJECT OWNERSHIP AND OPERATION OF THE SYSTEM.

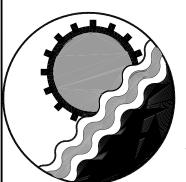
#### **GRADING NOTES:**

PRIOR TO BEGINNING EARTHWORK OPERATIONS, THE CONTRACTOR SHALL EMPLOY A QUALIFIED, PROFESSIONAL GEOTECHNICAL ENGINEER LICENSED IN THE STATE OF VIRGINIA. AS A RESULT OF ONSITE TESTING. THE GEOTECHNICAL ENGINEER SHALL MAKE RECOMMENDATIONS REGARDING THE ONSITE PLACEMENT OF FILL MATERIAL AND PROPER COMPACTION METHODS. NO WARRANTIES ARE MADE BY THE OWNER OR ENGINEER FOR ANY SUBSURFACE CONDITIONS ON THE PROPERTY.

2. FILL SHALL BE PLACED ONLY ON FIRM SUBGRADES APPROVED BY THE GEOTECHNICAL ENGINEER. SUBGRADES SHALL BE SCARIFIED TO A DEPTH OF 4 INCHES PRIOR TO FILL PLACEMENT TO ASSURE BONDING BETWEEN THE TWO SOILS. ALL FILL AREAS SHALL BE COMPACTED TO A DRY DENSITY OF AT LEAST 95% DRY DENSITY (ASTM D698), UNLESS NOTED OTHERWISE. THE COMPACTION SHALL BE ACCOMPLISHED BY PLACING FILL IN 6 TO 8 INCH LIFTS AND MECHANICALLY COMPACTING EACH LIFT TO THE REQUIRED DENSITY. THE GEOTECHNICAL ENGINEER SHALL PERFORM FIELD DENSITY TEST ON EACH LIFT OR AS NECESSARY TO ASCERTAIN THAT ADEQUATE COMPACTION HAS BEEN ACHIEVED. CALIFORNIA BEARING RATIO TESTS SHALL BE PERFORMED IN MATERIAL PROPOSED FOR USE BENEATH PAVEMENT WHETHER CUT OR FILL. THE UPPER 2 FEET OF MATERIAL BELOW STRUCTURES SHALL BE COMPACTED TO 98% DRY DENSITY (ASTM D698).

3. CLEAR SITE WITHIN LIMITS OF GRADING WORK. DO NOT DISTURB AREAS OUTSIDE OF GRADING LIMITS OR PROPERTY BOUNDARY.

4. REMOVE TREES. SHRUBS. GRASS AND OTHER VEGETATION. IMPROVEMENTS OR OBSTRUCTIONS AS REQUIRED TO PERMIT INSTALLATION OF NEW CONSTRUCTION. ALL UNSUITABLE MATERIAL SHALL BE DISPOSED OF IN A MANNER AND LOCATION ACCEPTABLE TO THE GOVERNING AUTHORITY. REMOVE TREES AND OTHER VEGETATION, INCLUDING STUMPS AND ROOTS. COMPLETELY IN AREAS REQUIRED FOR SUBSEQUENT SEEDING. CUT OFF TREES AND STUMPS IN AREAS TO RECEIVE FILL MORE THAN THREE FEET IN DEPTH TO WITHIN EIGHT INCHES OF THE ORIGINAL GROUND SURFACE.



ENGINEERING CONCEPTS, INC.

20 S. ROANOKE ST., PO BOX 619 FINCASTLE, VIRGINIA 24090 540.473.1253 FAX: 540.473.1254 5. BARRICADE OPEN EXCAVATIONS OCCURRING AS PART OF THIS WORK AND OPERATE WARNING LIGHTS AS RECOMMENDED BY AUTHORITIES HAVING JURISDICTION.

6. EXCAVATION FOR STRUCTURES:

A. CONFORM TO ELEVATIONS AND DIMENSIONS SHOWN WITHIN A TOLERANCE OF PLUS OR B. PROVIDE TRUE AND STRAIGHT FOOTING EXCAVATIONS WITH UNIFORM LEVEL BOTTOMS OF THE WIDTH INDICATED TO ENSURE PROPER PLACEMENT AND COVER OF ALL

C. REMOVE ALL LOOSE MATERIALS FROM THE EXCAVATION PRIOR TO PLACEMENT OF

CONCRETE. D. PROVIDE A MINIMUM OF 2'-0" FROM THE FINISHED GRADE TO TOP OF ALL EXTERIOR

E. FOOTINGS WHICH SUPPORT CONCRETE MASONRY UNITS MAY BE STEPPED PROVIDED THE VERTICAL STEP DOES NOT EXCEED ONE HALF OF THE HORIZONTAL DISTANCE BETWEEN STEPS AND HORIZONTAL DISTANCE BETWEEN STEPS IS NOT LESS THAN TWO FEET.

F. IF ROCK IS ENCOUNTERED IN A FOOTING EXCAVATION. UNDERCUT IT A MINIMUM OF 12" BELOW THE BOTTOM OF THE FOOTINGS AND FILL THE RESULTING OVER-EXCAVATION WITH CONTROLLED FILL.

7. CUT SURFACE UNDER PAVEMENTS TO COMPLY WITH CROSS SECTIONS, ELEVATIONS, AND GRADES AS INDICATED.

8. EXCAVATE TRENCHES TO UNIFORM WIDTH CONFORMING TO VDOT STANDARD PB-1 FOR STORM DRAINAGE PIPING AND UB-1 FOR SANITARY SEWER AND WATER. BACKFILL TRENCHES WITH CONTROLLED FILL.

9. PREVENT SURFACE WATER AND SUBSURFACE OR GROUND WATER FROM FLOWING INTO EXCAVATIONS AND FROM FLOODING PROJECT SITE AND SURROUNDING AREA. DO NOT ALLOW WATER TO ACCUMULATE IN EXCAVATIONS. REMOVE WATER TO PREVENT SOFTENING OF FOUNDATION BOTTOMS. UNDERCUTTING FOOTINGS. AND SOIL CHANGES DETRIMENTAL TO STABILITY OF SUBGRADES AND FOUNDATIONS. CONVEY WATER REMOVED FROM EXCAVATIONS AND RAIN WATER TO COLLECTING OR RUNOFF AREAS. ESTABLISH AND MAINTAIN TEMPORARY DRAINAGE DITCHES AND OTHER DIVERSIONS OUTSIDE EXCAVATION LIMITS FOR EACH STRUCTURE. DO NOT USE TRENCH EXCAVATIONS AS TEMPORARY DITCHES.

10. PROTECT EXCAVATED BOTTOMS OF ALL FOOTINGS AND TRENCHES AGAINST FREEZING WHEN ATMOSPHERIC TEMPERATURE IS LESS THAN 35 F (1 C).

A. COMPACT THE BACKFILL AROUND THE OUTSIDE OF BUILDING TO A MINIMUM OF 95% OF MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D 698 STANDARD PROCTOR. DO NOT ALLOW HEAVY COMPACTION EQUIPMENT SUCH AS ROLLERS, ETC., CLOSER TO ANY FOOTING THAN THE HORIZONTAL DISTANCE SUBTENDED BY A 45 ANGLE WITH THE TOP EDGE OF THE FOOTINGS AND THE SURFACE OF THE GROUND.

BACKFILL BEHIND WALLS AFTER PERMANENT CONSTRUCTION WHICH BRACES THE WALL IS IN PLACE OR TEMPORARY BRACING OF THE WALL IS PROPERLY INSTALLED, AND AFTER ACCEPTANCE OF CONSTRUCTION BELOW FINISH GRADE INCLUDING DAMP—PROOFING, REMOVAL OF CONCRETE FORMWORK, AND REMOVAL OF TRASH AND DEBRIS.

12. UNIFORMLY GRADE AREAS WITHIN LIMITS OF GRADING INCLUDING ADJACENT TRANSITION AREAS. SMOOTH FINISHED SURFACES WITHIN SPECIFIED TOLERANCES, COMPACT WITH UNIFORM LEVELS OR SLOPES BETWEEN POINTS WHERE ELEVATIONS ARE SHOWN, OR BETWEEN SUCH POINTS AND EXISTING GRADES. GRADE AREAS ADJACENT TO BUILDING LINES TO DRAIN AWAY FROM STRUCTURES TO PREVENT PONDING.

13. FINISH LAWN AREAS TO WITHIN ONE INCH ABOVE OR BELOW REQUIRED SUBGRADE ELEVATIONS. SHAPE SURFACE UNDER WALKS AND PAVEMENTS TO LINE, GRADE, AND CROSS SECTION, WITH NOT MORE THAN 1/2" ABOVE OR BELOW REQUIRED SUBGRADE ELEVATION.

14. GRADE SURFACE UNDER BUILDING SLABS SMOOTH AND EVEN, FREE OF VOIDS. PROVIDE FINAL GRADES WITHIN 1/2" OF THOSE INDICATED WHEN TESTED WITH A 10' STRAIGHT EDGE.

15. PROTECT GRADED AREAS FROM TRAFFIC AND EROSION. REPAIR AREAS WHICH HAVE SETTLED, ERODED, OR BECOME DAMAGED DUE TO CONSTRUCTION ACTIVITIES AT NO ADDITIONAL COST TO

16. UNDER FOUNDATIONS, SIDEWALKS, AND PAVEMENTS COMPACT EACH LAYER TO 95% MAXIMUM DRY DENSITY ASTM D 698 (STANDARD PROCTOR). FOR FURTHER SUPPORT COMPACT 2 FEET BELOW STRUCTURES TO 98% MAXIMUM DRY DENSITY ASTM D 698 (STANDARD PROCTOR).

17. UNDER LAWN OR UNPAVED AREAS, COMPACT SUBGRADE AND EACH LAYER TO 90% MAXIMUM DRY DENSITY ASTM D 698 (STANDARD PROCTOR).

18. ALL SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE CAPPED AND PIPED TO THE NEAREST STORM SEWER SYSTEM OR NATURAL WATERCOURSE. THE PIPE SHALL BE A MINIMUM OF 6" DIAMETER AND CONFORM TO V.D.O.T. STANDARD SB-1

#### **GENERAL UTILITY NOTES:**

1. VERIFY LOCATION, SIZE, AND ELEVATION FOR ALL UTILITIES IN AREAS OF CONSTRUCTION PRIOR TO STARTING WORK. CONTACT ENGINEER IMMEDIATELY IF LOCATION, SIZE, OR ELEVATION IS DIFFERENT FROM THAT SHOWN ON PLAN. IF THERE APPEARS TO BE A CONFLICT, OR UPON DISCOVERY OF ANY UTILITY NOT SHOWN ON PLAN.

2. PROVIDE CONSTRUCTION METHODS AND MATERIALS IN ACCORDANCE WITH THE COMMONWEALTH OF VIRGINIA SEWAGE AND WATERWORKS REGULATIONS AND BOTETOURT COUNTY, VIRGINIA REGULATIONS WHERE APPLICABLE.

3. A MINIMUM OF THREE (3.0) FEET OF COVER IS REQUIRED OVER PROPOSED WATER AND SEWER LINES.

4. ALL EXISTING UTILITIES MAY NOT BE SHOWN IN EXACT LOCATION. THE CONTRACTOR SHALL COMPLY WITH THE STATE WATERWORKS REGULATIONS, SECTION 12.05.03, WHERE LINES CROSS.

5. ALL LINES SHALL BE STAKED PRIOR TO CONSTRUCTION.

6. REFER TO DETAIL SHEETS FOR BEDDING DETAILS. AFTER THE PIPE HAS BEEN PLACED IN THE TRENCH, THE TRENCH SHALL BE BACKFILLED WITH SELECT MATERIAL AND THOROUGHLY

7. ALL WATER MAINS SHALL BE PROPERLY RESTRAINED WITH MECHANICALLY RESTRAINED JOINTS OR APPROVED ALTERNATIVE.

8. ALL WATER MAINS SHALL BE TESTED IN ACCORDANCE WITH BOTETOURT COUNTY STANDARDS. COORDINATE INSPECTIONS FOR TESTING WITH BOTETOURT COUNTY.

9. ALL WATER PIPE TO BE DUCTILE IRON PIPE, PRESSURE CLASS 350, MINIMUM IN ACCORDANCE WITH AWWA C151.

10. PROPOSED STORM DRAINS TO BE FLUSHED PRIOR TO REMOVING SEDIMENT TRAPPING MEASURES.

SANITARY SEWER NOTES

COMPACTED PER SPECIFICATIONS.

1.<u>PIPE & FITTINGS</u>: ALL SANITARY SEWER PIPE AND FITTINGS SHALL BE POLYVINYL CHLORIDE (PVC), SDR 35, AND SHALL CONFORM WITH ASTM D-3034.

2.<u>INSTALLATION</u>: THE SANITARY SEWER PIPE SHALL BE INSTALLED IN ACCORDANCE WITH THE PIPE MANUFACTURER'S RECOMMENDATIONS AND THESE SPECIFICATIONS. THE PIPE SHALL BE LAID IN TRUE STRAIGHT LINES WITH THE BELL ENDS UPSTREAM AND WITH THE INVERT OF THE PIPE BEING THE TRUE ELEVATION AND GRADE OF THE SYSTEM. THE PIPE SHALL BE VISUALLY INSPECTED FOR DEFECTS BEFORE LOWERING THE PIPE IN THE TRENCH. FIELD CUTTING OF THE PIPE SHALL BE DONE SO IN A NEAT AND WORKMANLIKE MANNER, SO AS TO LEAVE A SMOOTH END AT RIGHT ANGLES TO THE AXIS OF THE PIPE.

3.<u>TRENCH\_EXCAVATION</u>: TRENCHES SHALL BE EXCAVATED IN STRAIGHT LINES AND SHALL BE OF SUFFICIENT WIDTH TO PERMIT THE PROPER INSTALLATION OF BRACING, SHORING OR SHEETING. TRENCH WIDTH SHALL NOT EXCEED MANUFACTURER'S RECOMMENDATION. THE BOTTOM OF THE PIPE TRENCH SHALL BE EXCAVATED TO A MINIMUM COVER DEPTH OF FOUR (4) INCHES BELOW THE BOTTOM OF THE PIPE, TO PROVIDE FOR THE COMPACTED BEDDING MATERIAL

4.<u>BEDDING</u>: BEDDING MATERIAL SHALL BE COARSE AGGREGATE SIZE NUMBER 57 AND SHALL CONFORM WITH VDOT SECTION 203 AND/OR ASTM C33. BEDDING MATERIAL SHALL BE PLACED AND COMPACTED IN FOUR (4) INCHES BELOW THE PIPE AND AS A MINIMUM UP TO 6" ABOVE THE TOP OF THE BELLS OF ALL PIPES. CARE SHALL BE TAKEN TO ENSURE THE BEDDING MATERIAL FULLY SUPPORTS THE SIDE AND BOTTOM OF THE PIPE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

5.BACKFILL: BACKFILL MATERIAL SHALL BE EITHER APPROVED EXCAVATED MATERIAL OR APPROVED SUITABLE MATERIAL FROM OTHER SOURCES THAT IS FREE OF ORGANIC MATERIAL, LOAM, DEBRIS, OR MINIMUM TWO (2) FEET ABOVE THE TOP OF PIPE SHALL BE FREE OF STONES LARGER THAN ONE (1) INCH AND SHALL BE PLACED IN SIX (6) INCH LAYERS AND COMPACTED WITH HAND TAMPERS. BACKFILL FROM THIS POINT TO TOP OF TRENCH SHALL BE FREE OF STONES LARGER THAN FOUR (4) INCHES AND SHALL BE PLACED IN LAYERS NOT TO EXCEED EIGHT (8) INCHES AND COMPACTED WITH MECHANICAL TAMPERS. BACKFILL BELOW UNPAVED AREAS SHALL BE COMPACTED TO 90%. BACKFILL BELOW PAVED AREAS SHALL BE COMPACTED TO 95%. BACKFILL COMPACTION TESTING SHALL BE IN ACCORDANCE WITH ASTM D-698.

6.<u>TESTING OF SANITARY SEWER</u>: TESTING FOR WATER TIGHTNESS SHALL BE MADE UTILIZING A LOW PRESSURE AIR TEST. THE TESTING EQUIPMENT, PROCEDURE AND RESULTS WILL ALL BE SUBJECT TO THE APPROVAL OF THE COUNTY ENGINEER. THE AIR TEST SHALL BE IN ACCORDANCE WITH ASTM F1417-92, CURRENT REVISION. THE CONTRACTOR SHALL DEFLECTION TEST THE ENTIRE LENGTH OF PIPE BY MEANS OF A GO-NO-GO MANDREL TO ASSURE THAT A 5.0% DEFLECTION HAS NOT BEEN EXCEEDED. MANDREL SHALL BE SIZED AT 5% LESS THAN ASTM DIMENSION FOR

MANHOLE TESTING. MANHOLES SHALL BE TESTED AFTER ASSEMBLY AND PRIOR TO BACKFILLING IN ACCORDANCE WITH ASTM C1244. STUB-OUTS, MANHOLE BOOTS AND PIPE PLUGS SHALL BE SECURED TO PREVENT MOVEMENT WHILE THE VACUUM IS DRAWN. INSTALLATION AND OPERATION OF VACUUM EQUIPMENT AND INDICATING DEVICES SHALL BE IN ACCORDANCE WITH EQUIPMENT SPECIFICATIONS FOR WHICH PERFORMANCE INFORMATION HAS BEEN PROVIDED BY THE MANUFACTURER AND ACCEPTED BY THE ENGINEER. A MEASURED VACUUM OF TEN INCHES OF MERCURY SHALL BE ESTABLISHED IN THE MANHOLE. THE TIME FOR THE VACUUM DROP TO NINE INCHES OF MERCURY SHALL BE RECORDED. ACCEPTANCE STANDARDS FOR LEAKAGE SHALL BE ESTABLISHED FROM THE ELAPSED TIME. FOR A NEGATIVE PRESSURE CHANGE FROM TEN INCHES TO NINE INCHES OF MERCURY. THE MAXIMUM ALLOWABLE RATE FOR A FOUR-FOOT DIAMETER MANHOLE SHALL BE IN ACCORDANCE WITH THE FOLLOWING: 4' DIA. MANHOLE DEPTH 10' OR LESS = 60 SECONDS PER CHANGE OF ONE INCH OF MERCURY. 4' DIA. MANHOLE DEPTH GREATER THAN 10' BUT LESS THAN 15' = 75 SECONDS PER CHANGE OF ONE INCH OF MERCURY. 4' DIA. MANHOLE GREATER THAN 15' BUT LESS THAN 25' = 90 SECONDS PER CHANGE OF ONE INCH OF MERCURY. FOR MANHOLES FIVE FEET IN DIAMETER, ADD AN ADDITIONAL 15 SECONDS AND FOR MANHOLES SIX FEET IN DIAMETER, ADD AN ADDITIONAL 30 SECONDS TO THE TIME REQUIREMENTS FOR FOUR FOOT DIAMETER MANHOLES. IF THE MANHOLE FAILS THE TEST, NECESSARY REPAIRS SHALL BE MADE AND THE VACUUM TEST SHALL BE REPEATED UNTIL THE MANHOLE PASSES THE TEST. IF THE MANHOLE JOINT MASTIC IS COMPLETELY PULLED OUT DURING THE VACUUM TEST, THE MANHOLE SHALL BE DISASSEMBLED AND THE MASTIC REPLACED. THE ENGINEER SHALL OBSERVE THE MANHOLE TESTING. APPROPRIATE DOCUMENTATION SHALL BE INCLUDED IN THE FINAL DOCUMENTATION. MANHOLE TOLERANCES SHALL BE PLUS OR MINUS 0.1 FEET HORIZONTAL AND VERTICAL.

7. A MINIMUM COVER OF THREE (3.0) FEET IS REQUIRED OVER PROPOSED LINES UNLESS OTHERWISE INDICATED.

8. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND UNCOVERING ALL MANHOLES AFTER PAVING. MANHOLE TOPS SHALL BE ADJUSTED TO GRADE IF NECESSARY.

9. ALL SANITARY SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST REVISION OF THE BOTETOURT COUNTY SANITARY SEWER STANDARDS.

#### BOTETOURT COUNTY UTILITY NOTES

 BOTETOURT COUNTY SEWER CONNECTION FEES WILL BE BASED UPON THE FEE STRUCTURE CURRENTLY IN PLACE AT THE TIME THE CONNECTION APPLICATION FORM IS SUBMITTED. OWNER / DEVELOPER MUST MAKE APPLICATION AND PAY ALL APPLICABLE CONNECTION FEES PRIOR TO

2. ALL TESTS ARE TO BE PERFORMED IN THE PRESENCE OF AND PROPERLY DOCUMENTED BY A PROFESSIONAL ENGINEER REGISTERED IN THE COMMONWEALTH OF VIRGINIA WITH ASSOCIATED RECORD DRAWINGS TO BOTETOURT COUNTY PRIOR TO CONVEYANCE TO BOTETOURT COUNTY. TESTS AND SUBMITTALS DOCUMENTED BY ANYONE OTHER THAN A PROFESSIONAL ENGINEER REGISTERED IN THE COMMONWEALTH OF VIRGINIA (I.E. THE CONTRACTOR) WILL NOT BE ACCEPTABLE AS PROOF OF COMPLIANCE.

3. 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 BOARD OF SUPERVISORS.

4. 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 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

5. ALL WATER AND 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 FOUR (4) COMPLETE SETS OF SHOP DRAWINGS FOR REVIEW.

6. 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 OR SUBCONTRACTORS THE CONTRACTOR FEELS NECESSARY.

7. ALL SEWER PIPES (MAINS AND SERVICE LINES) SHALL HAVE NON-DETECTIBLE WARNING TAPE AND MAGNETICALLY DETECTABLE LOCATION WIRE INSTALLED AT SAME ELEVATION OF SPRING LINE OF PIPE. WARNING TAPE (CAUTION!! BURIED SEWER / WATER PIPE BELOW) SHALL BE INSTALLED NO MORE THAN 18 INCHÈS ABOVE TOP OF PIPE. DUCTILE WATER LINES SHALL REQUIRE THE NON-DETECTIBLE WARNING TAPE ONLY.

8. 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.

9. PRIOR TO CONVEYANCE OF THE WATER AND SEWER SYSTEM (MAIN LINES AND ASSOCIATED STRUCTURES) BOTETOURT COUNTY SHALL REQUIRE ONE COMPLETE PAPER (BLUELINE) SET AND ONE COMPLETE DIGITAL (AUTOCAD VERSION) SET OF WATER AND SEWER AS-BUILTS, SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE COMMONWEALTH OF VIRGINIA.

10. PRIOR TO CONVEYANCE OF THE WATER AND SEWER SYSTEM (MAIN LINES AND ASSOCIATED STRUCTURES) BOTETOURT COUNTY SHALL REQUIRE: A) A LETTER OF DOCUMENTATION 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

C) A PLAT SHOWING ALL WATER AND SEWER EASEMENTS.

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 THE MANHOLE FRAME.

4) MAIN LINE WATER LINE WATER PRESSURE TESTING.

5) MAIN LINE WATER LINE ACCEPTABLE BACTERIOLOGICAL

TESTING RESULTS.

11. ALL AS—BUILT / RECORD DRAWINGS SHALL SHOW ACTUAL FIELD SURVEYED LOCATIONS (HORIZONTAL AND VERTICAL) OF STRUCTURES (MANHOLES, CLEAN-OUTS, SERVICE STUB-OUTS, FIRE HYDRANTS, VALVE BOXES, WATER METER BOXES, AIR RELEASE VALVES, ETC.) AND SHOW RECOMPUTED PIPE LENGTHS AND SLOPES BASED UPON ACTUAL FIELD LOCATIONS.

12. BOTETOURT COUNTY WILL OWN, OPERATE AND MAINTAIN THE PORTION OF THE SEWER SERVICE LATERAL LINE FROM THE MAIN LINE TO THE PROPERTY LINE OR EDGE OF THE EASEMENT. A SERVICE LATERAL CLEAN OUT STACK SHALL BE INSTALLED AT THE PROPERTY EDGE

13. NO PLANTINGS SHALL BE PERMITTED IN WATER OR SEWER EASEMENTS.

14. NO PLANTINGS SHALL BE PERMITTED WITHIN TEN (10) FEET OF WATER METER BOXES.

15. OWNER/DEVELOPER MUST MAKE APPLICATIONS AND PAY ALL APPLICABLE BOTETOURT COUNTY WATER AND SEWER CONNECTION FEES PRIOR TO ISSUANCE OF ANY BUILDING PERMITS OR MAINLINE EXTENSIONS OR CONNECTIONS TO ANY BOTETOURT COUNTY MAINLINES.

16. USE TRENCH ADAPTER ON ALL VALVES AT DEPTHS OF FIVE (5) FEET OR MORE.

17. CONTRACTOR SHALL INSTALL SANITARY SEWER CLEAN OUTS ON ALL LATERAL LINES SUCH THAT THE CLEANOUT IS NO FURTHER THAN 10 FEET FROM THE EXISTING SEWER MANHOLE OR MAINLINE TO WHICH YOU WILL BE CONNECTING OR AT THE EDGE OF THE SEWER EASEMENT.

18. ALL UTILITY CROSSINGS SHALL BE CONCRETE ENCASED WHERE VERTICAL SEPARATION BETWEEN UTILITY LINES IS 18 INCHES OR LESS.

19. CONTRACTOR SHALL FIELD VERIFY STATIC WATER PRESSURE AT SERVICE LOCATION PRIOR TO INSTALLING METER. METER LOCATIONS THAT INDICATE A STATIC PRESSURE ABOVE 80 PSI SHALL BE INSTALLED WITH A PRESSURE REDUCING VALVE IN ACCORDANCE WITH BOTETOURT COUNTY UTILITY DEPARTMENT STANDARDS. PROVIDE ENGINEER DOCUMENTATION OF PRESSURE READINGS FOR ALL WATER SERVICE METER LOCATIONS.

#### BOTETOURT COUNTY EROSION AND SEDIMENT CONTROL NOTES 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 <u>VIRGINIA</u> <u>EROSION</u> <u>AND</u> <u>SEDIMENT</u> <u>CONTROL</u> <u>HANDBOOK</u>, LATEST EDITION, AND VIRGINIA REGULATIONS VR 625-02-00 EROSION AND SEDIMENT CONTROL

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.

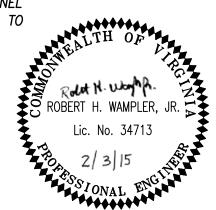
ES-5: PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO. OFF—SITE BORROW OR WASTE AREAS). THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND APPROVAL BY THE PLAN APPROVING AUTHORITY.

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.

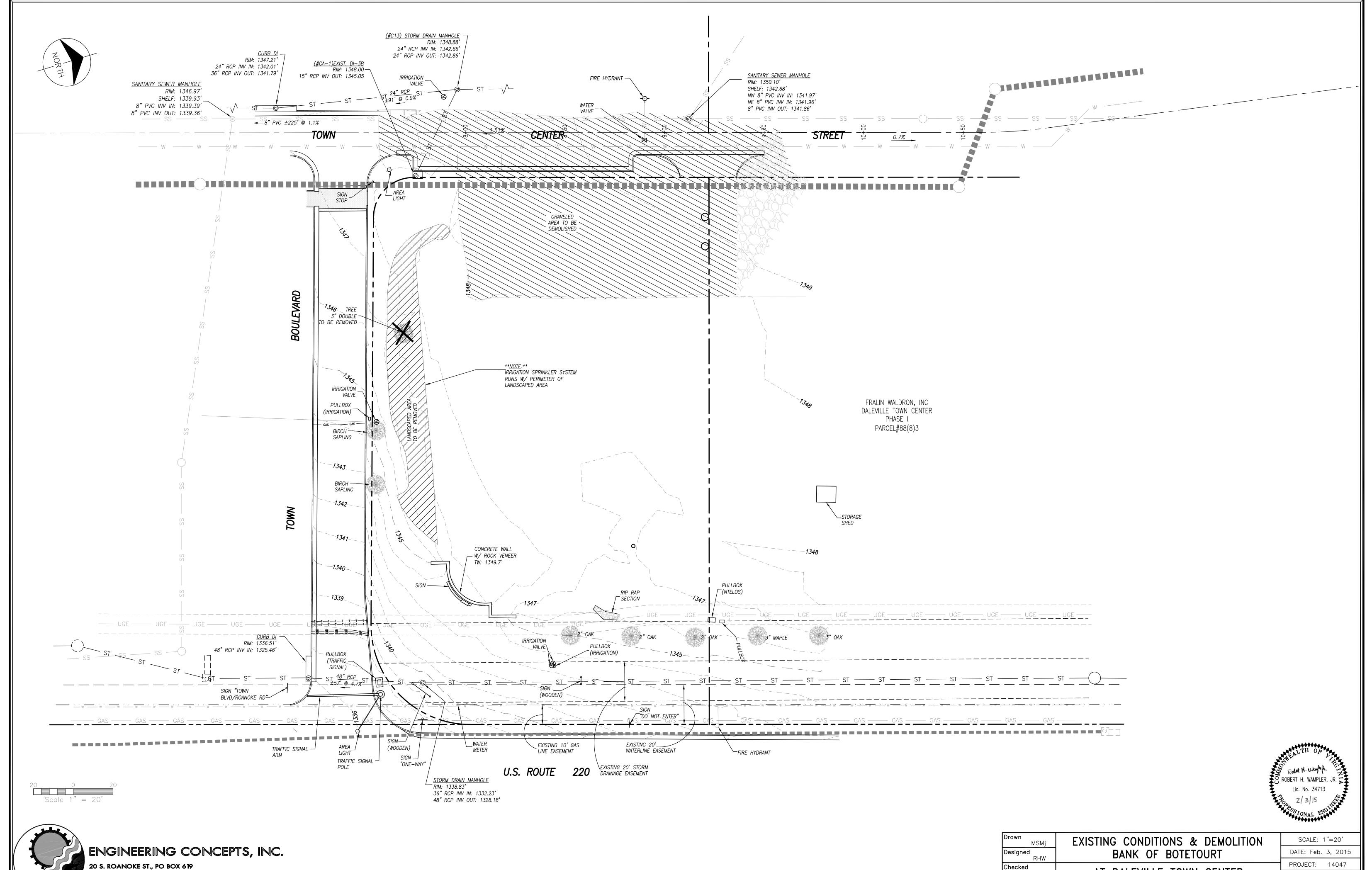
ES-7: ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING THE LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.

ES-8: DURING DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO AN APPROVED FILTERING

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).

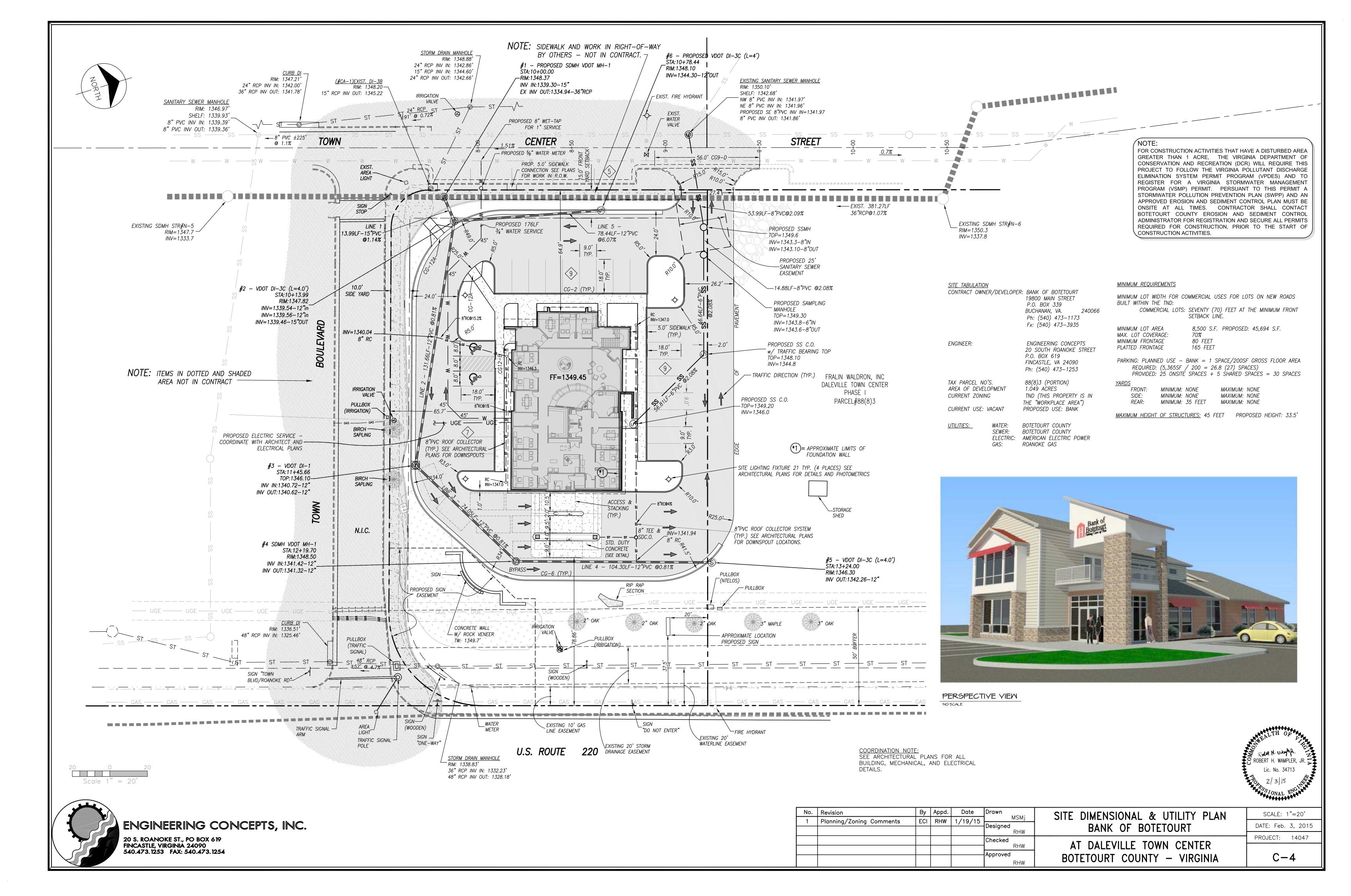


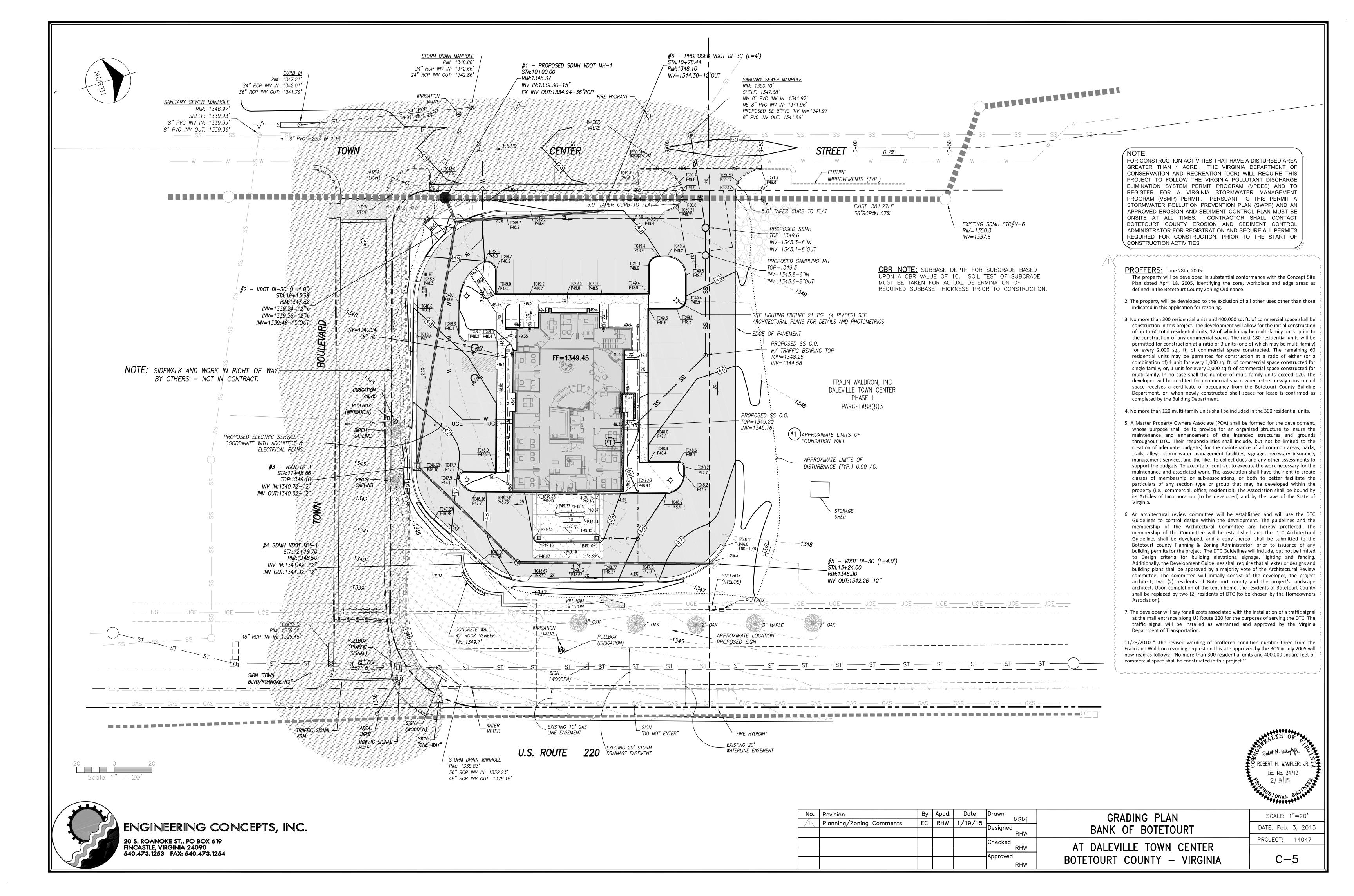
rawn MSMj	GENERAL NOTES	SCALE: NONE	
Pesigned RHW	BANK OF BOTETOURT	DATE: Feb. 3, 2015	
Checked	DALEVULE TOWAL OFFITED	PROJECT: 14047	
RHW	DALEVILLE TOWN CENTER		
pproved	BOTETOURT COUNTY - VIRGINIA	C-2	

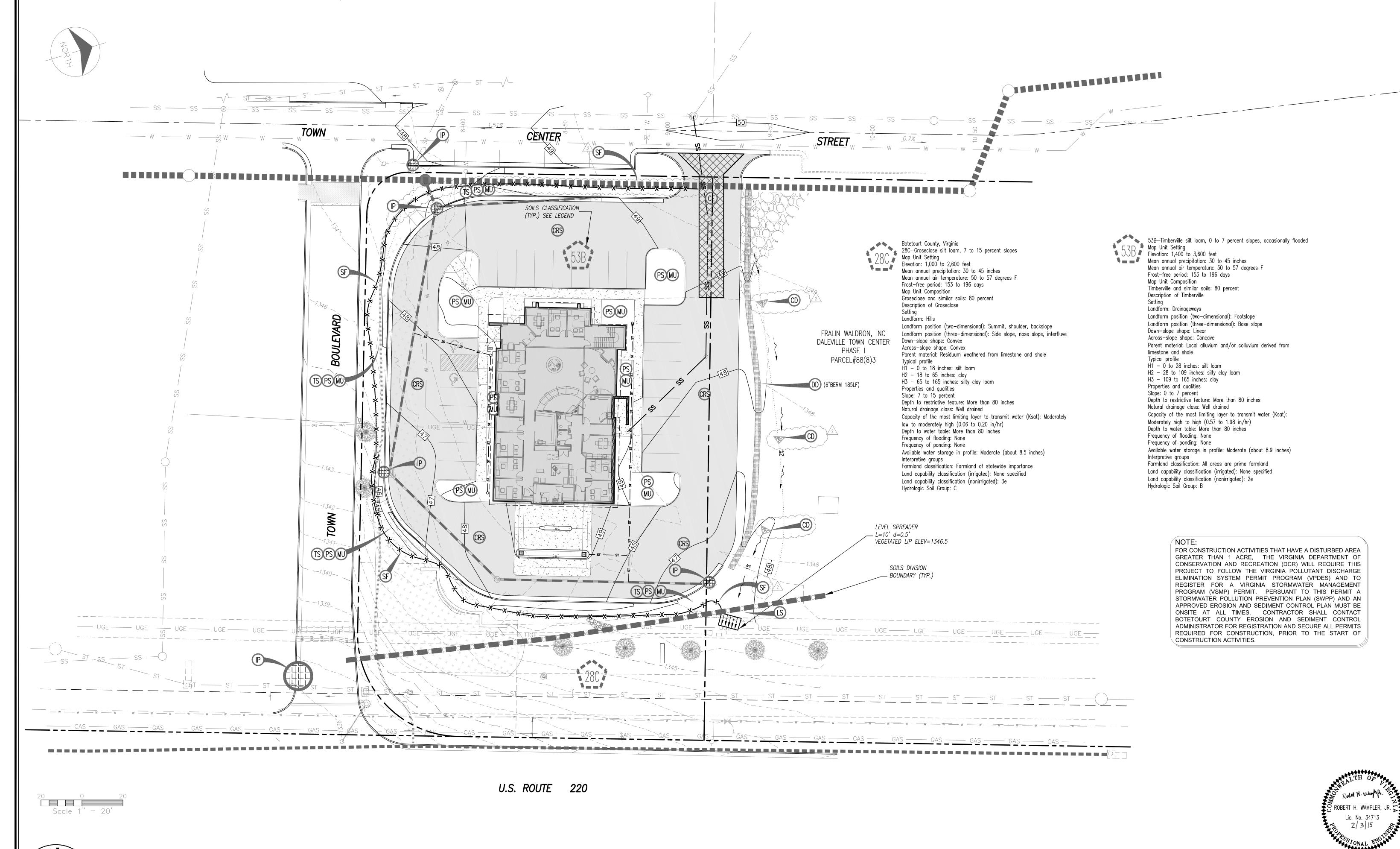


20 S. ROANOKE ST., PO BOX 619 FINCASTLE, VIRGINIA 24090 540.473.1253 FAX: 540.473.1254

Drawn MSMj	EXISTING CONDITIONS & DEMOLITION	SCALE: 1"=20'
Designed RHW	BANK OF BOTETOURT	DATE: Feb. 3, 2015
Checked	AT DALEVULLE TOWAL CENTED	PROJECT: 14047
Approved RHW	AT DALEVILLE TOWN CENTER BOTETOURT COUNTY — VIRGINIA	C-3







ENGINEERING CONCEPTS, INC.

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

No.	Revision	By	Appd.	Date	Drawn
2	BotCo E&S recommendations	ECI	RHW	1/29/15	MSMj
					Designed RHW
					Checked
					RHW
					Approved RHW

EROSION & SEDIMENT CONTROL PLAN
BANK OF BOTETOURT

AT DALEVILLE TOWN CENTER

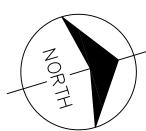
BOTETOURT COUNTY - VIRGINIA

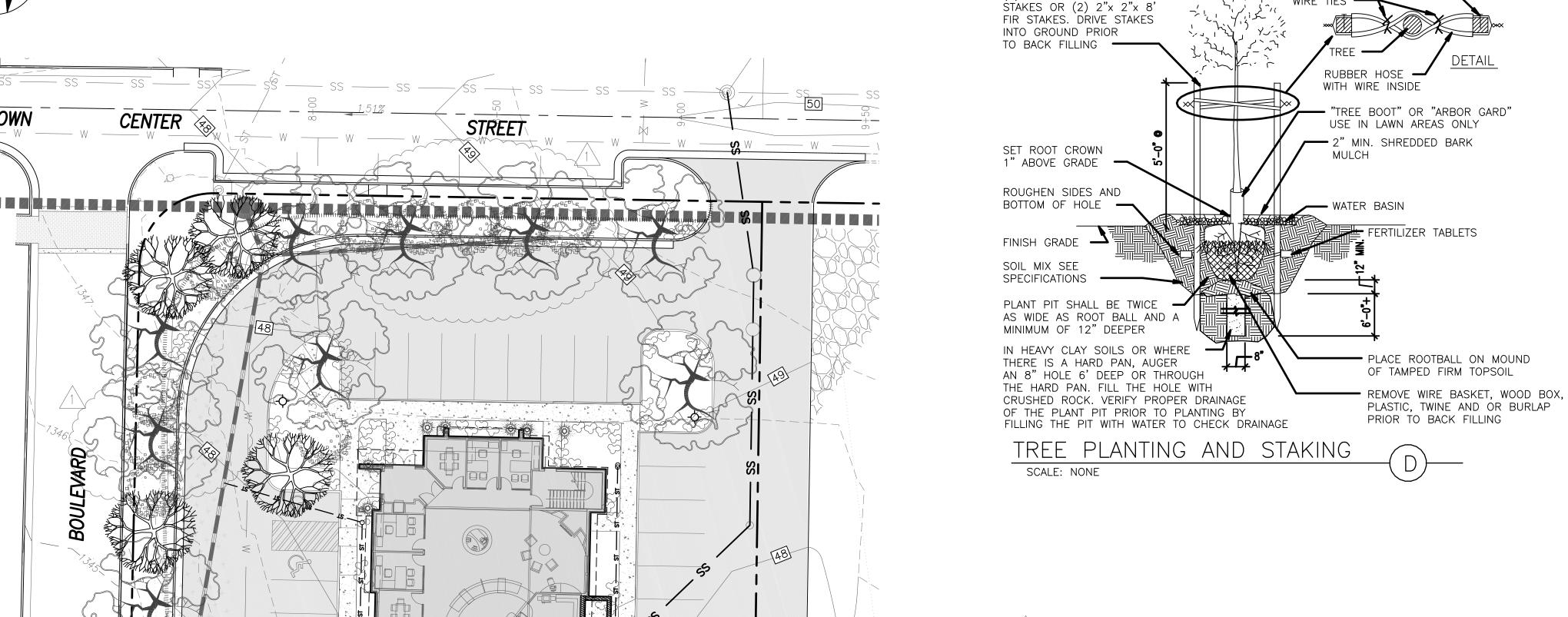
SCALE: 1"=20'

DATE: Feb. 3, 2015

PROJECT: 14047

C-6





PERIPHERAL REQUIREMENTS ALONG TOWN BLVD., U.S. RTE 220 & TOWN CENTER STREET) (605LF FRONTAGE) REQUIRED PROVIDED 1 DEC. CANOPY TREE / 50LF = 12 TREES **12 TREES** 1 UNDER-STORY TREE / 30LF = 20 TREES 14 TREES (6-EXIST 1 EVERGREEN TREE / 30LF = 20 TREES 20 TREES 1 DECIDUOUS SHRUB / 10LF = 61 SHRUBS LANDSCAPE REQUIREMENTS INTERIOR PARKING LOT (25 PARKING SPACES)

R E Q U I R E D

1 CANOPY TREES/10 SPACES = 3 TREES PROVIDED 3 TREES 2 EVGR. TREES 9 EVGR. SHRUBS 83 DEC. SHRUBS **CANOPY REQUIREMENTS** REQUIRED (10%) 1.049 Ac. (45,694 SF) x 10% = 4,570 P R O V I D E D DECIDUOUS CANOPY TREES (15) x 1,000 SF = 15,000 SF EVERGREEN TREE (22) x 800 SF =

TOTAL =

34,700 SF (75%)

SMALL DECIDUOUS TREE (14) x 150 SF =

(2)2" LODGE POLE PINE

FRALIN WALDRON, INC

DALEVILLE TOWN CENTER

PHASE I

PARCEL#88(8)3

- SIGHT LIGHTING TYP. (4 PLACES)

#### LANDSCAPE NOTES:

- 1. Site Preparation and Planting Schedule: Contractor shall be responsible for inspecting site and determining site preparation requirements prior to planting. Soils tests are recommended. Indicate beginning and ending dates of planting for each material.
- Maintenance Instructions: Written instructions for the owner's maintenance of landscaping. Include initial maintenance recommendations, 12 month, and long term recommendations. Submit prior to acceptance of landscaping.
- 3. Substitutions of plant materials will only be considered by the project Landscape Architect in the unlikely event the specified material is unavailable, or of unacceptable quality. The contractor shall make every effort to provide the specified material. The contractor shall inform, and seek approval by, the project Landscape Architect prior to acquisition or installation of potential substitutions.
- 4. Provide plant materials complying with ANSI Z60.1 American Standard for Nursery Stock; 1996.
  5. The project Landscape Architect retains the right to inspect planting materials at any time for compliance with the contract documents including but not limited to latent defects and lack of protection or maintenance
- 6. Deliver stock only after soil has been prepared. Schedule harvesting and delivery in quantities suitable for immediate planting upon arrival. Plant immediately if planting cannot be accomplished immediately, provide shade, protect from wind, protect balls or roots from drying by covering at all times with moist saw dust, wood chips, shredded bark, peat moss, or other similar mulching material.
  7. Schedule and coordinate with work of other sections and local seasons. Locate and avoid damage to underground utilities.
- 8. Notify the project Landscape Architect of any unforeseen conditions affecting plant growth (i.e., buried debris, limited soil depth, rock, etc.).

#### 9. Planting Time: Plant only in thawed ground.

- 10. Warranties shall be in addition to, and not a limitation of, other rights the owner may have against the contractor under the contract documents.
- 11. Replace unsatisfactory landscape materials (those dead or lacking vigor) with healthy, vigorous materials. At the direction of the project Landscape Architect, either replace materials in borderline condition or extend the warranty covering such materials for one full growing season. Another inspection will be conducted at the end of the extended warranty period, if any, to determine acceptance or rejection. Only one
- replacement (per tree, shrub, plant, etc.) will be required at the end of the warranty period, except for losses or replacements due to failure to comply with specified requirements.

  12. Lawns Establishment, Warranty and Maintenance: All disturbed areas shall be prepared for planting by spreading a four (4) inch layer of topsoil over the rough graded ground surface. Lawn areas shall be seeded with a mixture of 95% Turf Type Tall Fescue and 5% Kentucky Bluegrass. Seed all disturbed areas at a rate of 7-9 pounds/1000 square feet. Each grass type shall be comprised of
- the following seed mix or a seed mix of equal composition based upon seasonal availability:
- a. Turf Type Tall Fescue Equal mix of Tarheel, Apache II, Wolfpack and Olympic Gold b. Kentucky Bluegrass - Equal mix of Midnight, Washington, Blackstone, Blacksburg, Unique and Apollo
- Immediately following seeding, spread a one (1) inch layer of straw mulch over seeded areas.

and to reject defective material. Immediately dispose of rejected materials off the site.

- Maintain lawns from immediately after planting until the latest of: substantial completion of the project, acceptance after the first cutting / mowing by the Contractor, or until an acceptable lawn is established and
- approved by the project Landscape Architect. The Owner shall maintain lawn areas after final acceptance and approval.

  Basis of acceptance, seeded lawns: At end of maintenance period, lawns shall be uniform in texture, density, and color; substantially weed-free; without gaps or bare spots; and with vigorous growth of proper species and variety.
  - Mulch: Replace mulch in areas where mulch has been displaced and secure against displacement.
  - Watering: Water regularly and at such times and rates as necessary for optimum growth and to avoid wilting, puddling, runoff, or erosion.
- Fertilizing: After one month of growth, apply 10:10:10 slow release fertilizer at the rate of 1/2 pound per 1000 square feet.
- Control growth of weeds: Apply herbicides in accordance with manufacturer's instructions. Remedy any damage resulting from use of herbicides. Do not allow foot or vehicular traffic over new lawn

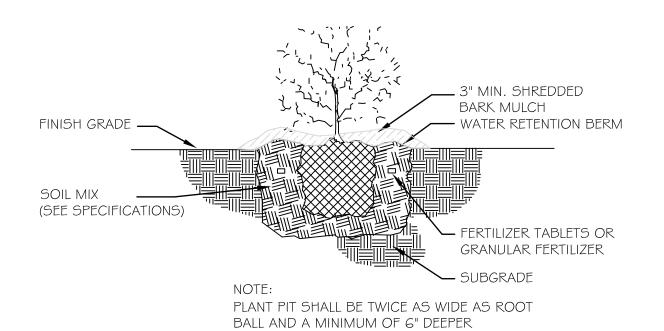
#### Provide effective barricades or warning signs, or both if necessary. Regrade and replant areas if necessary to correct rutted, damaged, or improperly graded areas.

- 13. Trees and Shrubs Warranty and Maintenance: Maintain trees and shrubs from immediately after planting until the latest of: the period required to establish acceptable healthy plant growth, substantial completion of the project, or 12 months after date of substantial completion of planting.
- Provide all maintenance necessary to achieve healthy plant growth. Water regularly, and on a timely basis, to ensure healthy establishment.
- Remove weeds, replace mulch, and restore eroded watering basins around trunks if needed.
- Adjust stakes and guys to provide proper support and replant trees and shrubs to vertical position if necessary.

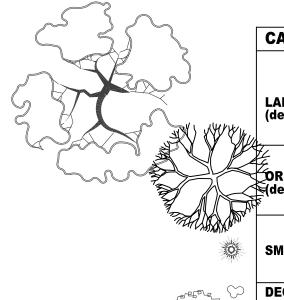
  Apply insecticides or funcioides if necessary to prevent or correct insect infestation and disease.
- 14. Planting Soil: Mix native soil, topsoil, and amendments thoroughly to provide uniform mixture, using powered rotary tiller, hand-shovel, or other means acceptable to the project Landscape Architect. Planting soil mix:

  One-third (1/3) native soil from excavated hole.

One-third (1/3) imported topsoil.
One-third (1/3) mixed soil amendments (manure & peat humus).
Commercial fertilizer: 0.25 pounds per 100 square feet of surface area.



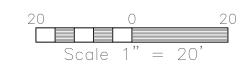
#### TYPICAL SHRUB PLANTING



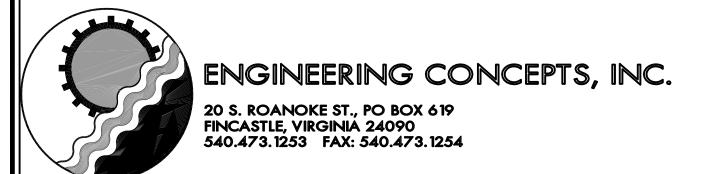
CATEGORY	COMMON NAME	BOTANICAL NAME	MIN. SIZE
LARGE SHADE TREE (deciduous)	HACKBERRY	celtis occidentalis	2" CALIPER
ORNAMENTAL TREE (deciduous understory)	EASTERN REDBUD	cercis canadensis	1.5" CALIPER
SMALL EVERGREEN SHRUB	KOREAN BOXWOOD	buxus microphylla koreana	1' HEIGHT
DECIDUOUS SHRUB	BARBERRY	berberis thunbergii bogozam	2' HEIGHT
EVERGREEN TREE	NORWAY SPRUCE	picea abies	4' HEIGHT

ROBERT H. WAMPLER, Lic. No. 34713

C-7



70WN



U.S. ROUTE 220

No. Revision

Planning/Zoning Comments

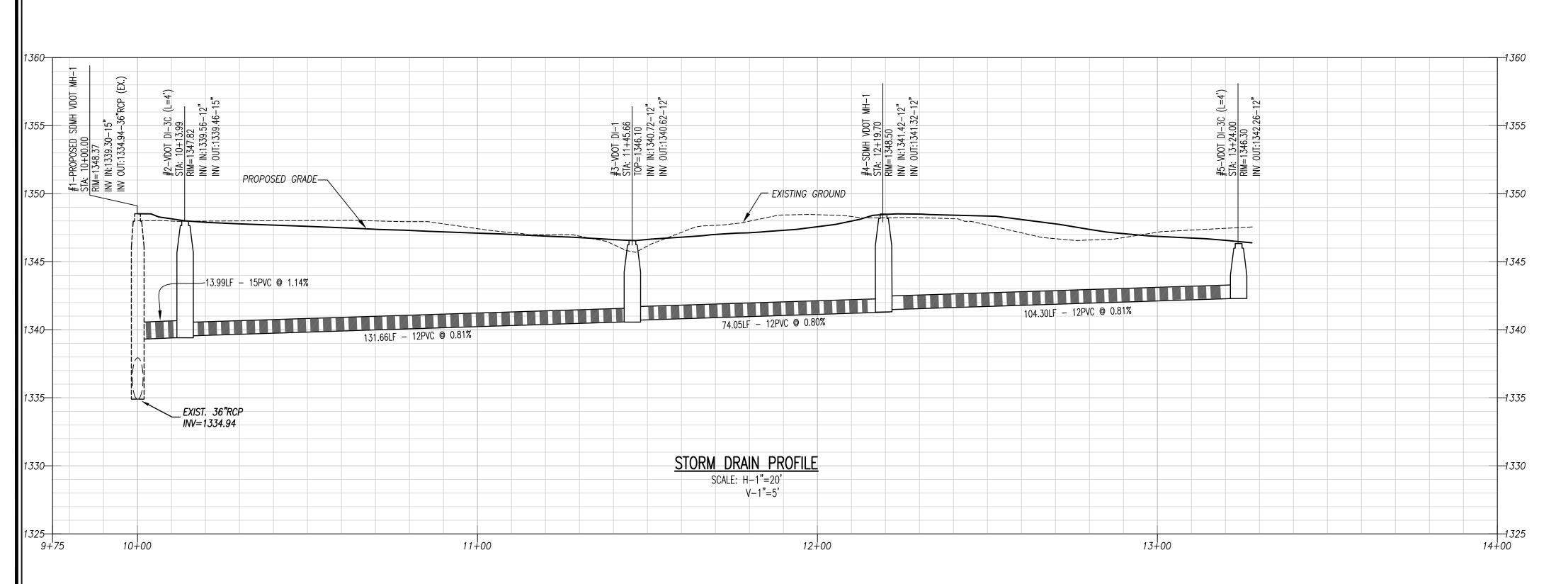
ECI RHW 1/19/15

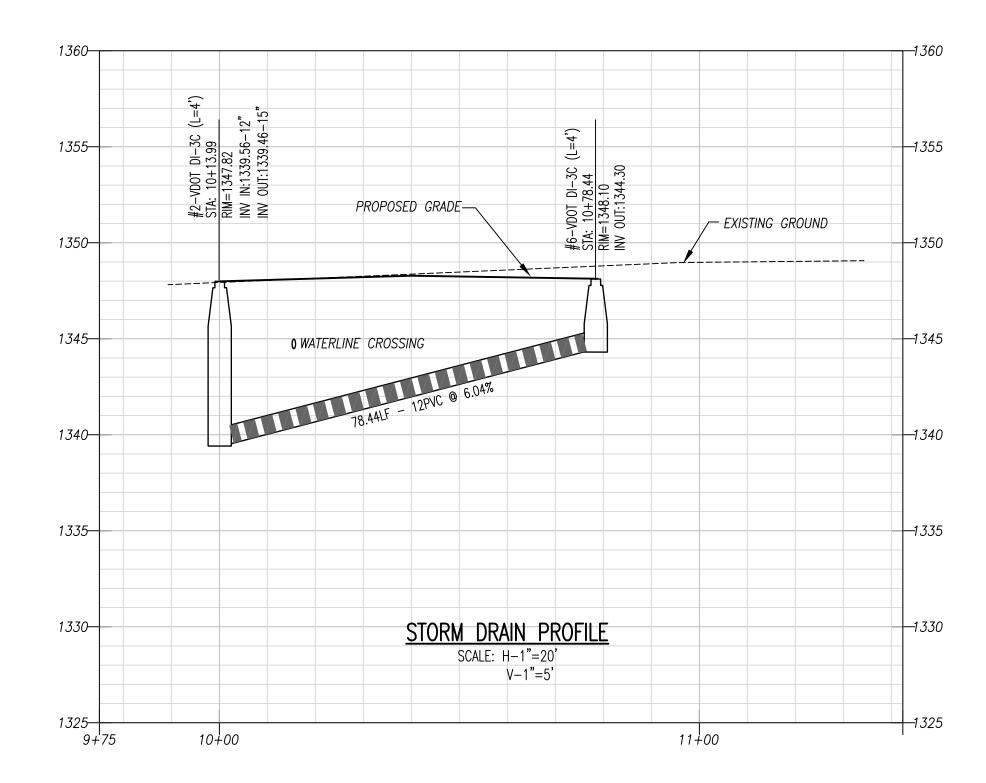
Designed RHW

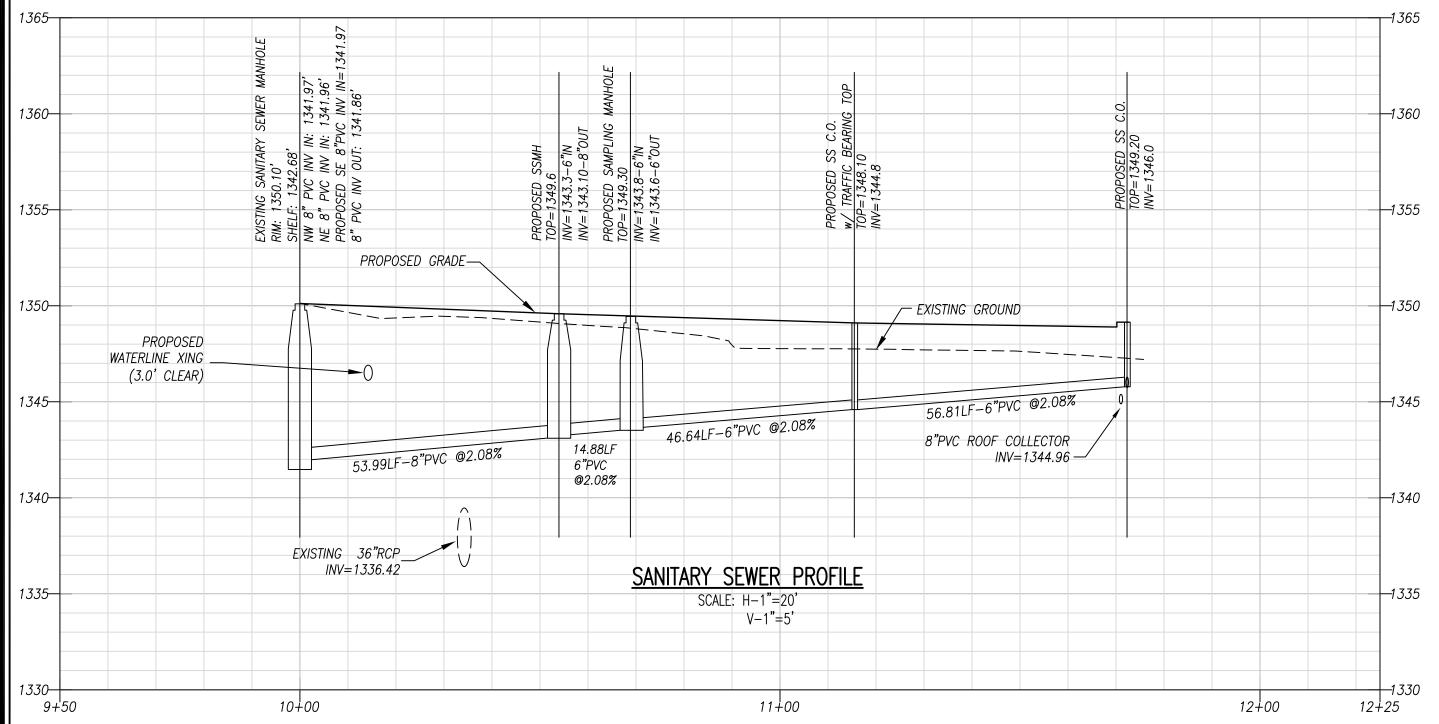
Checked RHW

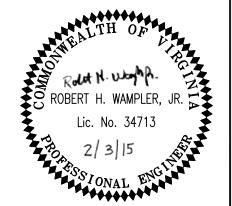
Approved

AT DALEVILLE TOWN CENTER BOTETOURT COUNTY - VIRGINIA



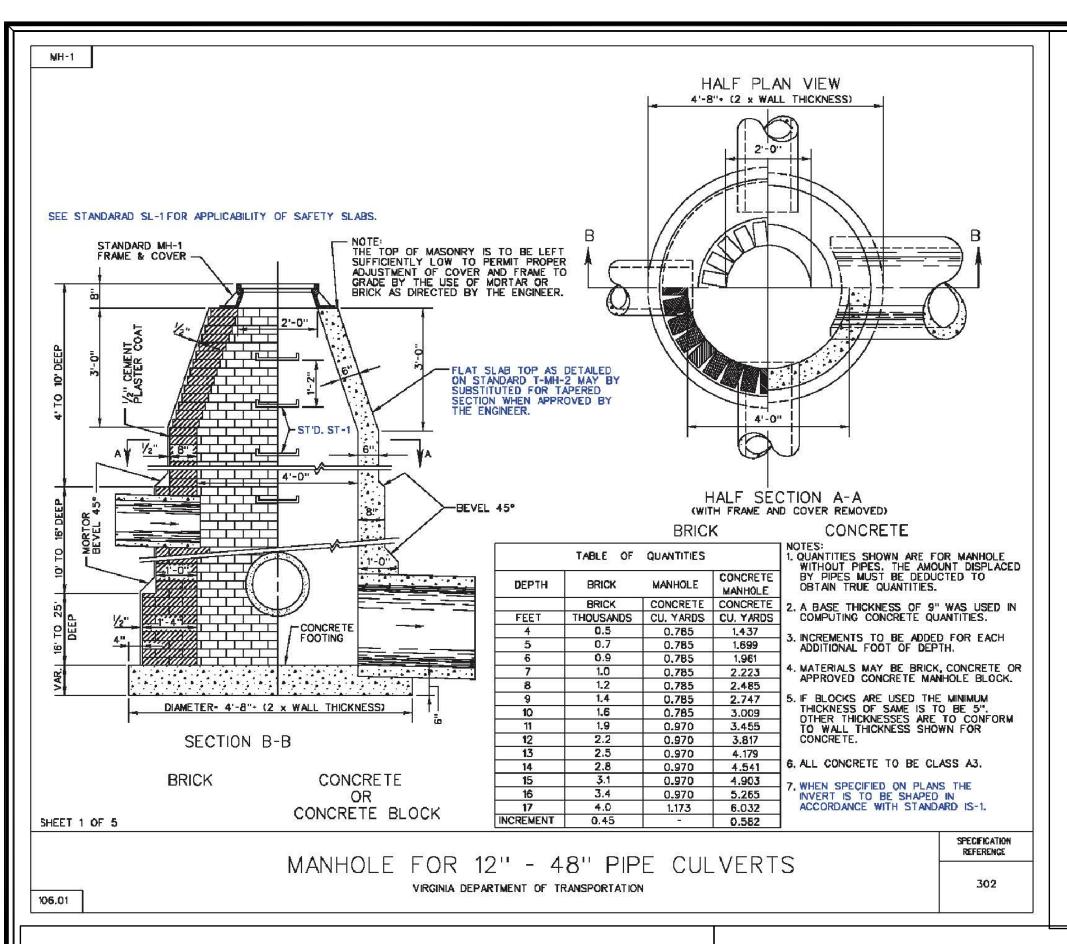


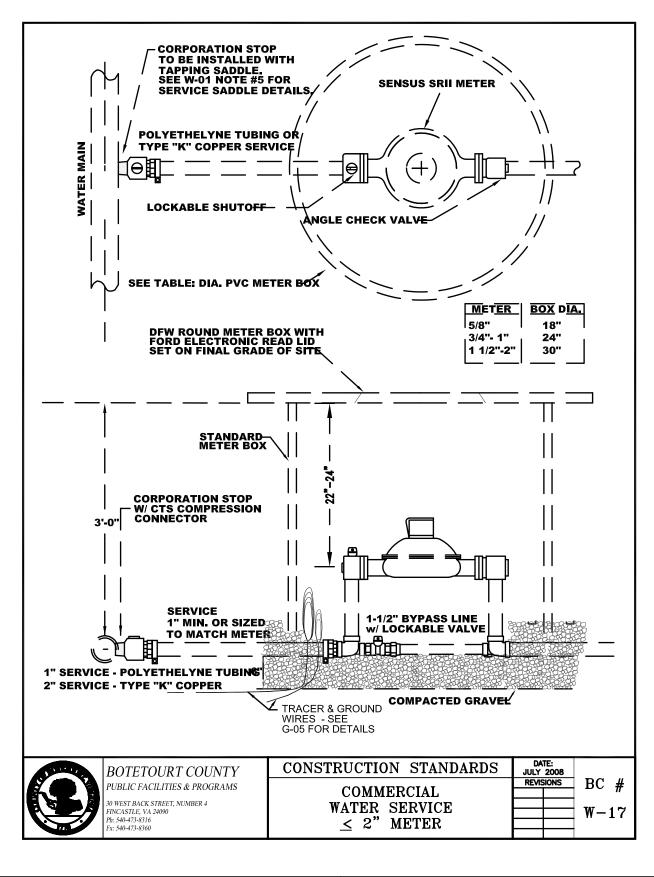


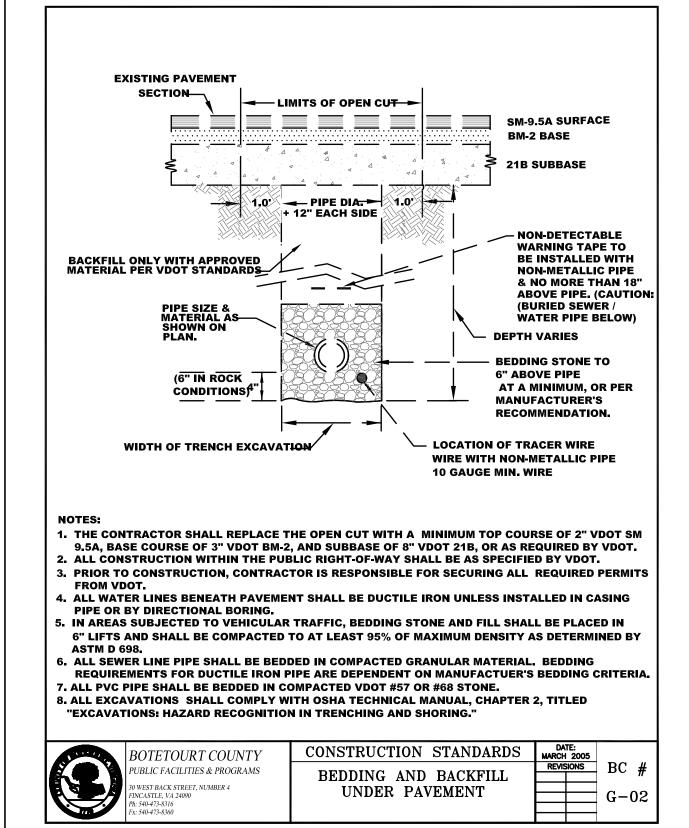


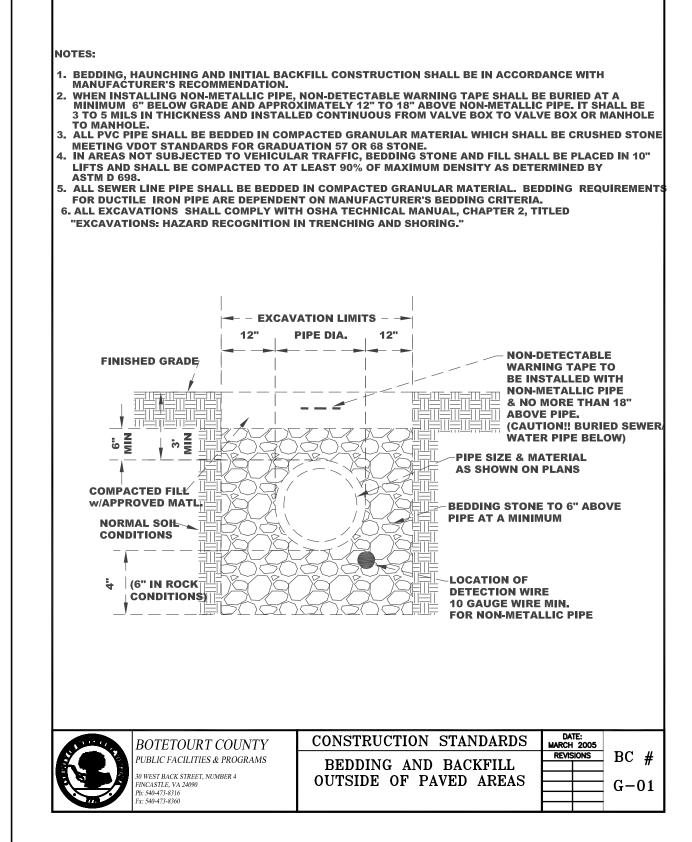
THE STATE OF THE S		
	ENGINEERING CONCEPTS, INC	) ) o
	20 S. ROANOKE ST., PO BOX 619 FINCASTLE, VIRGINIA 24090 540.473.1253 FAX: 540.473.1254	

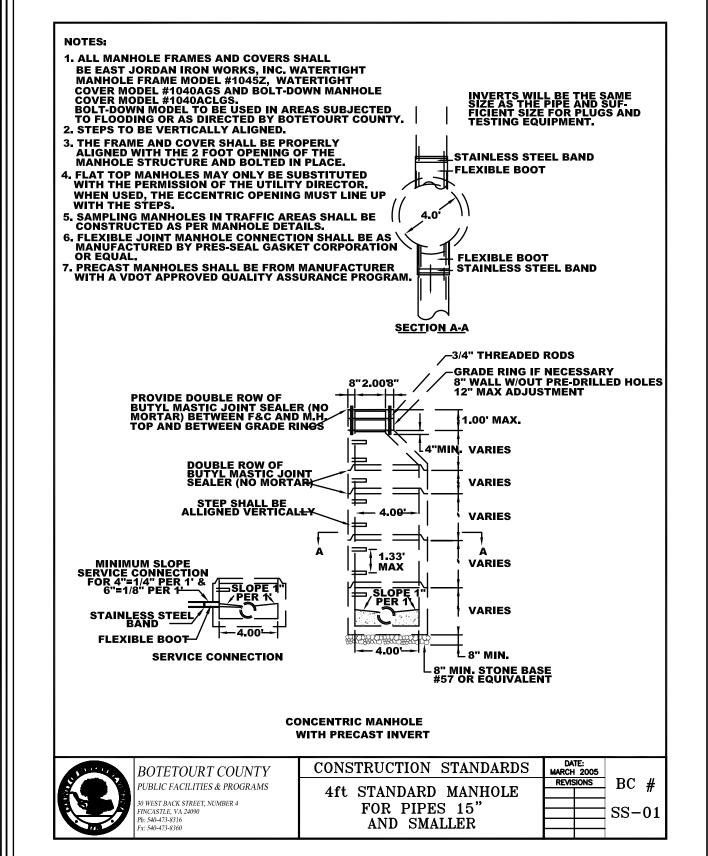
Drawn MSMj	PROFILES	SCALE: AS SHOWN	
Designed RHW	BANK OF BOTETOURT	DATE: Feb. 3, 2015	
Checked RHW	AT DALEVILLE TOWN CENTER	PROJECT: 14047	
Approved RHW	BOTETOURT COUNTY - VIRGINIA	C-8	

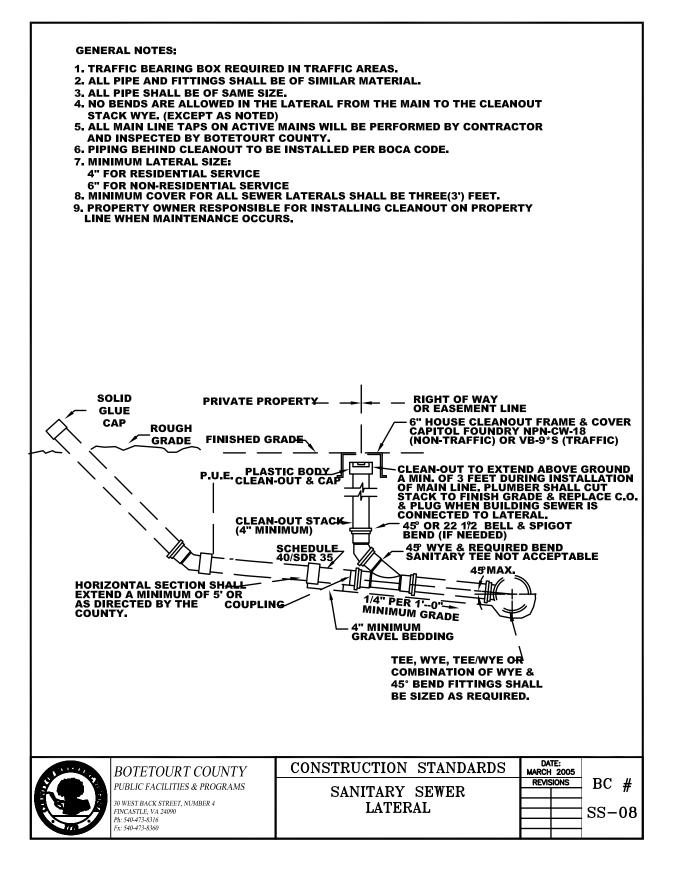


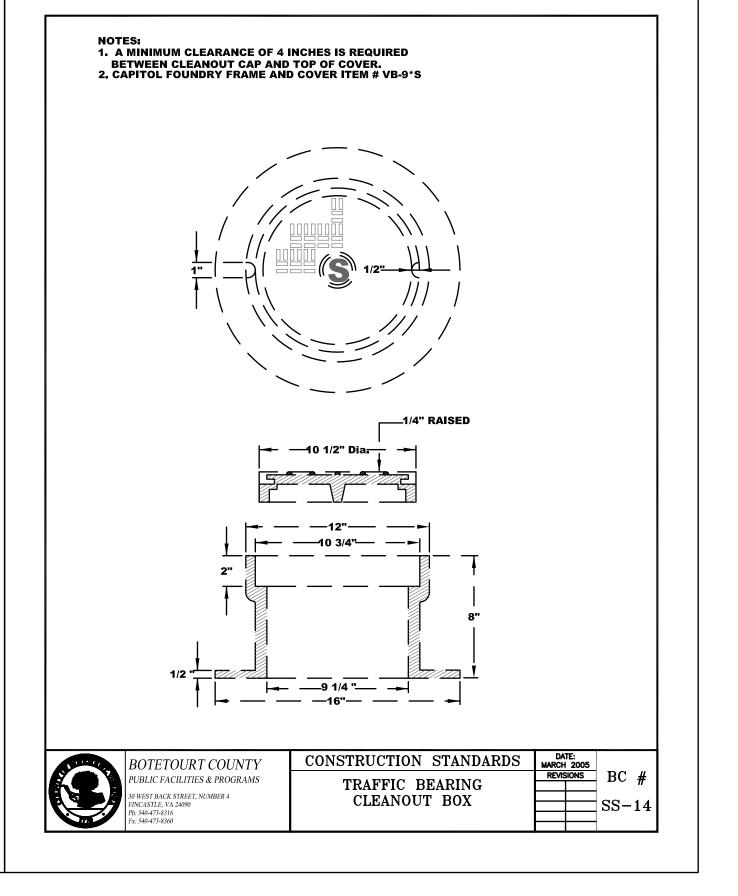


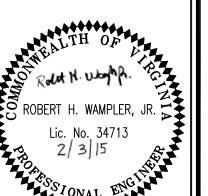






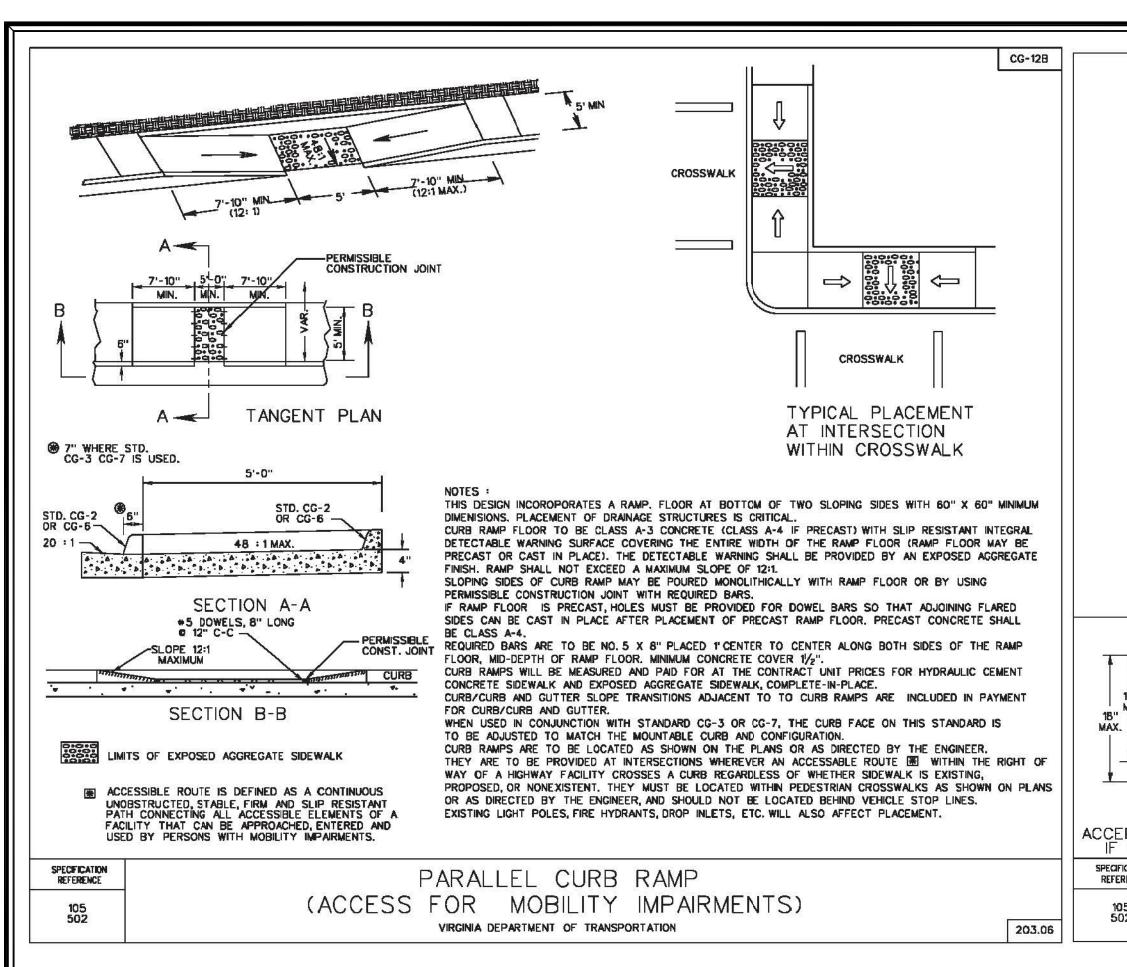


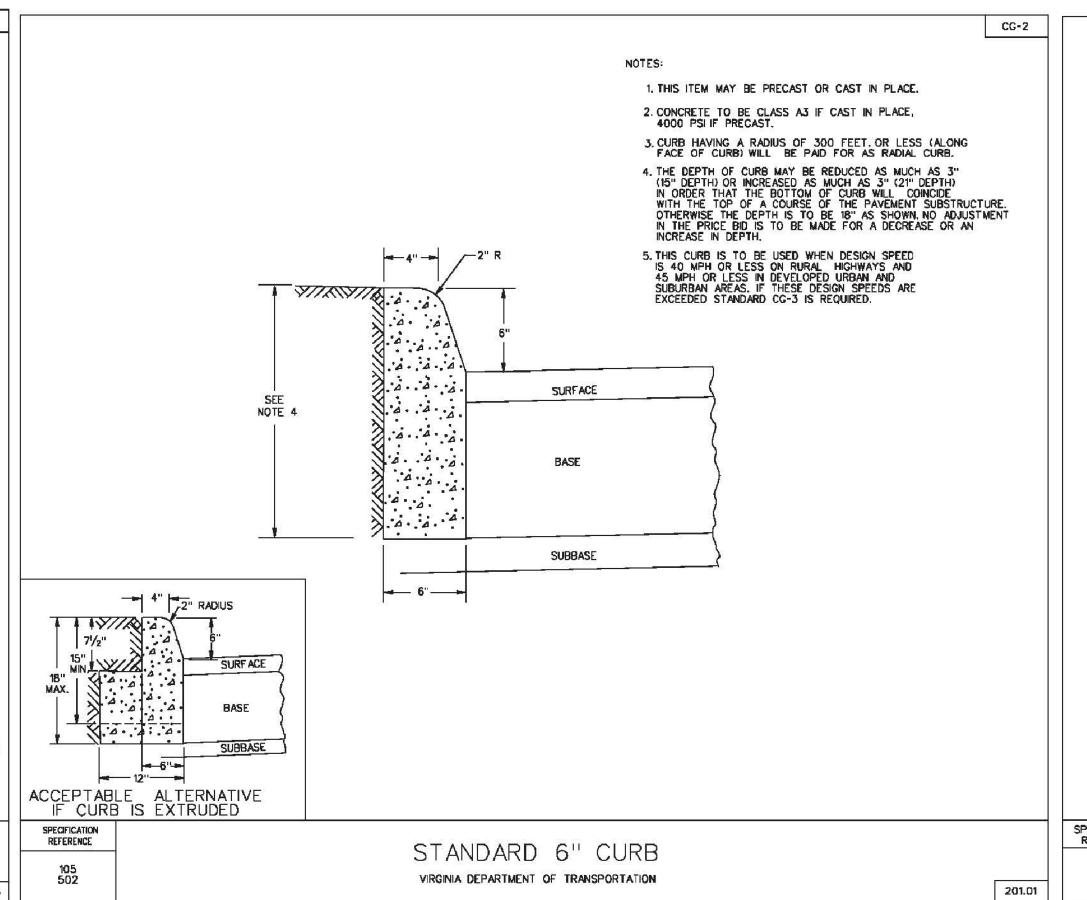


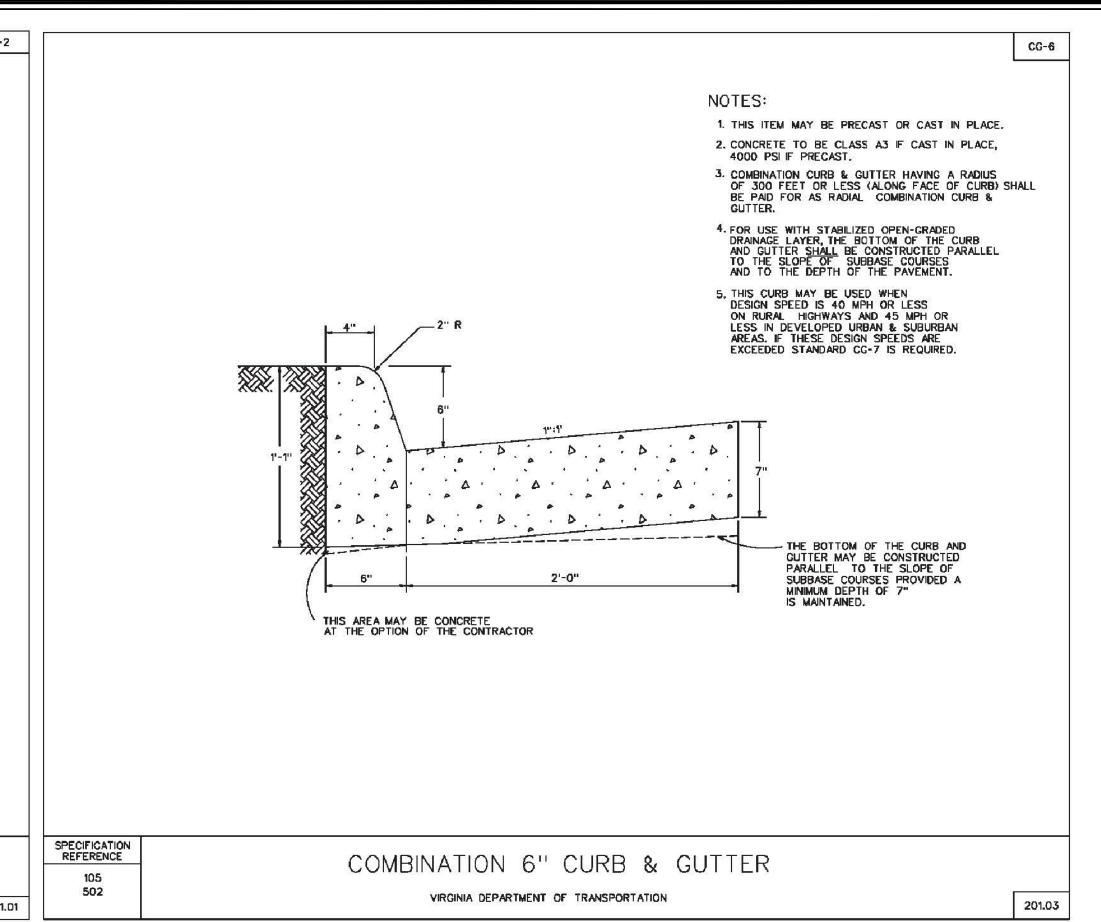


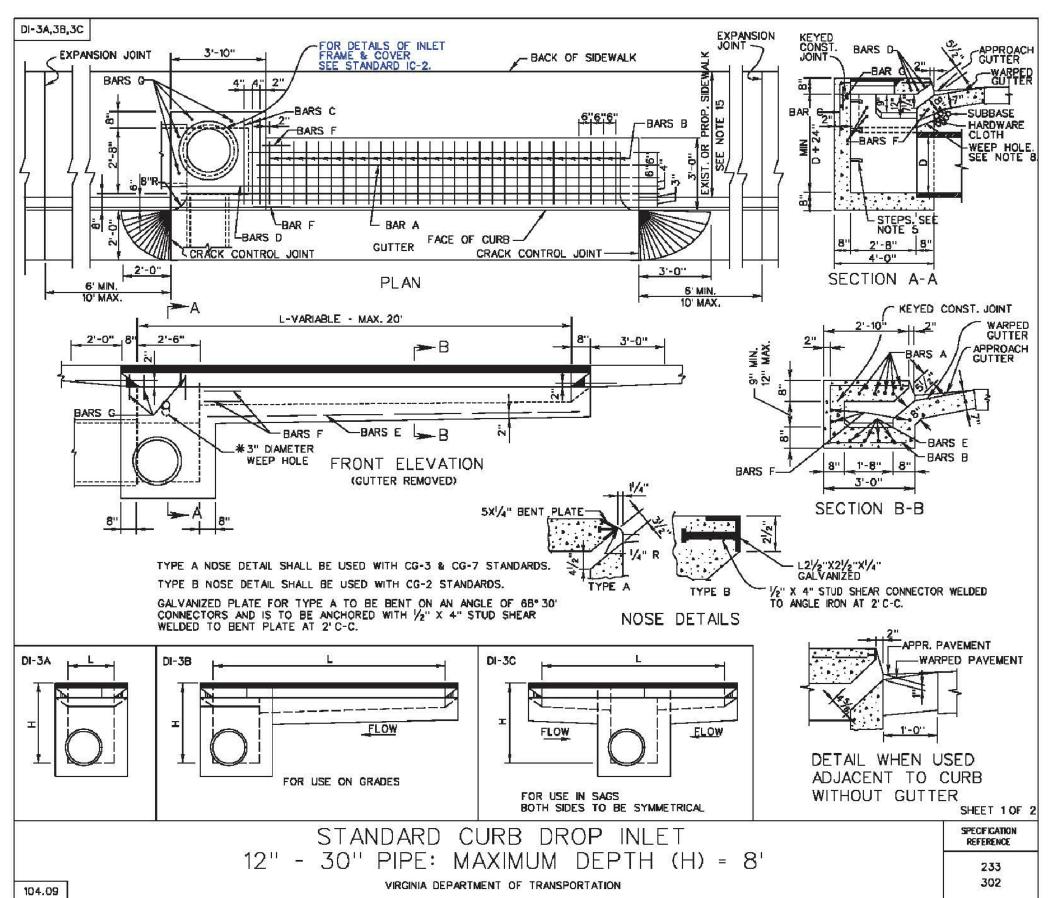
THE STATE OF THE S	
	ENGINEERING CONCEPTS, INC.
	20 S. ROANOKE ST., PO BOX 619 FINCASTLE, VIRGINIA 24090 540.473.1253 FAX: 540.473.1254
	5-15-17 5. 1255 17M. 5-15-17 5. 125-1

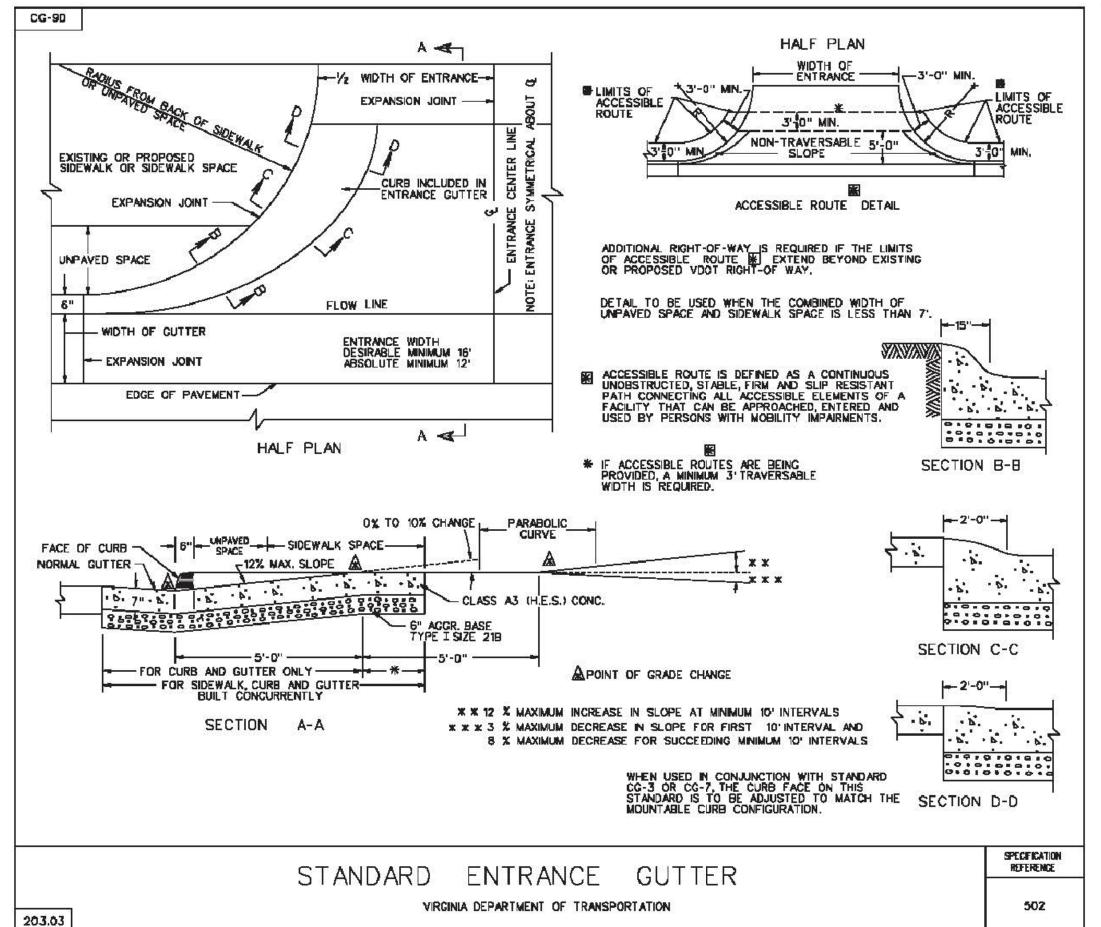
Drawn MSMj		SCALE: NONE
Designed RHW	BANK OF BOTETOURT	DATE: Feb. 3, 2015
Checked	AT DALEVULE TOWAL OFFITED	PROJECT: 14047
RHW Approved RHW	AT DALEVILLE TOWN CENTER BOTETOURT COUNTY — VIRGINIA	C-9

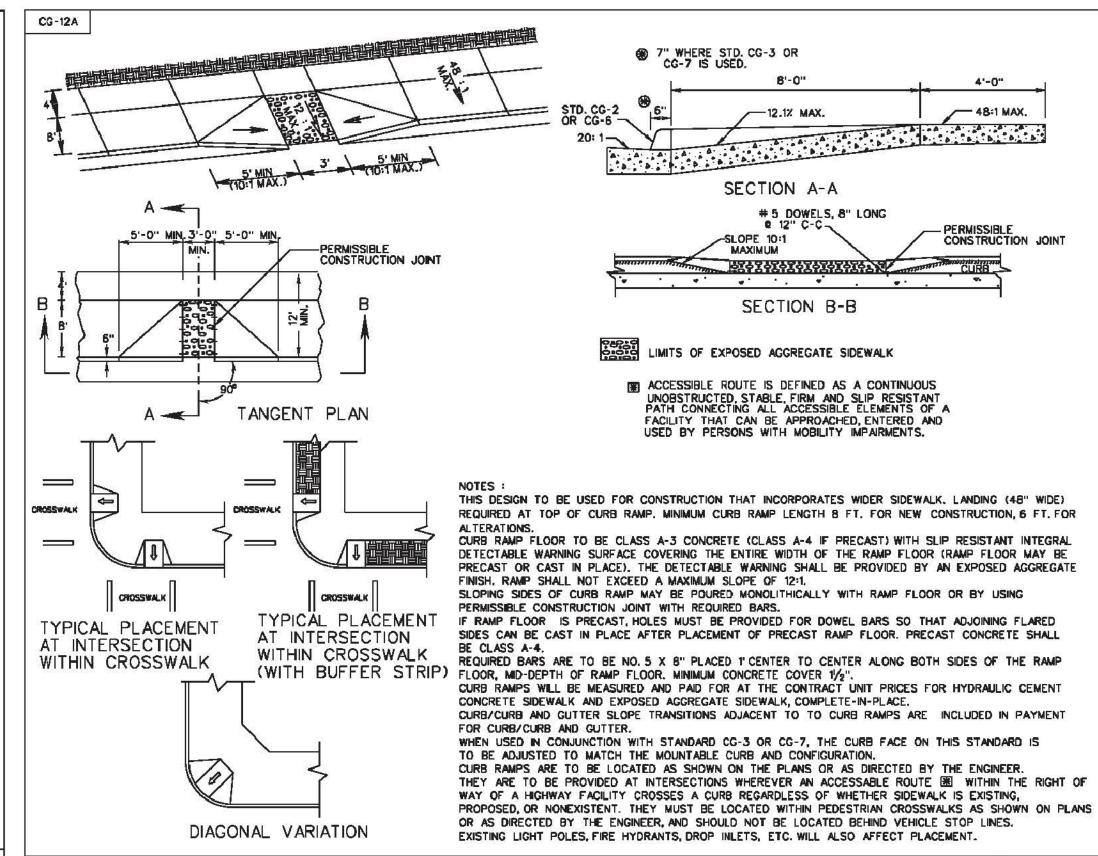




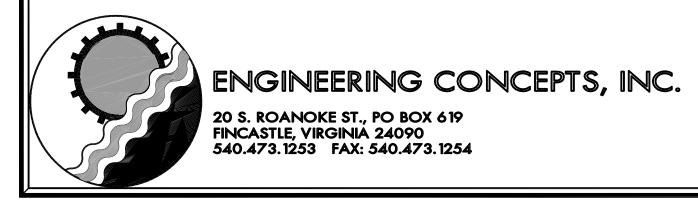








ROBERT H. WAMPLER, JR. Lic. No. 34713



Drawn MSMi	MISCELANEOUS SITE DETAILS	SCALE: NONE
Designed RHW	BANK OF BOTETOURT	DATE: Feb. 3, 2015
Checked	AT DALEVILLE TOWN CENTER	PROJECT: 14047
Approved RHW	BOTETOURT COUNTY - VIRGINIA	C-10

PERPENDICULAR CURB RAMP

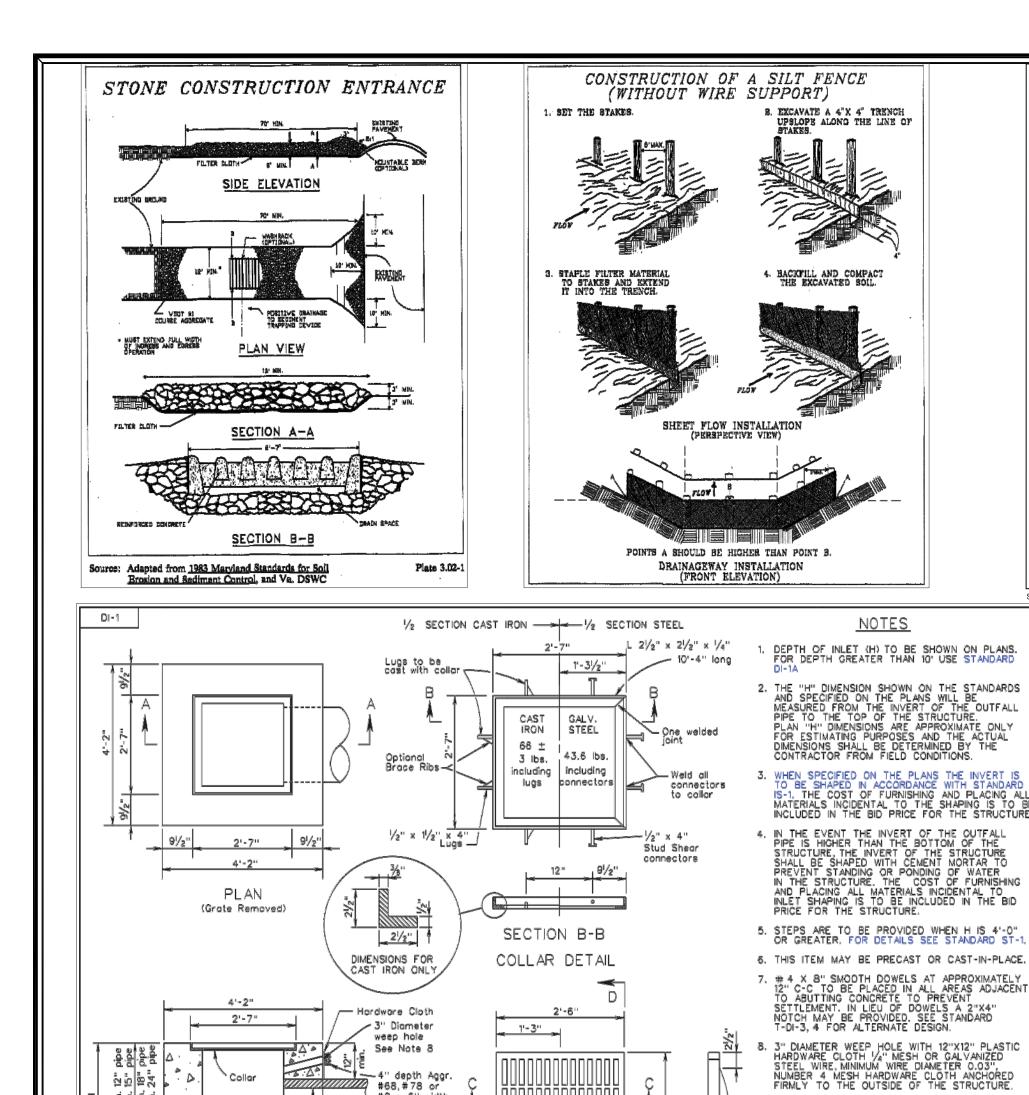
(ACCESS FOR MOBILITY IMPAIRMENTS)

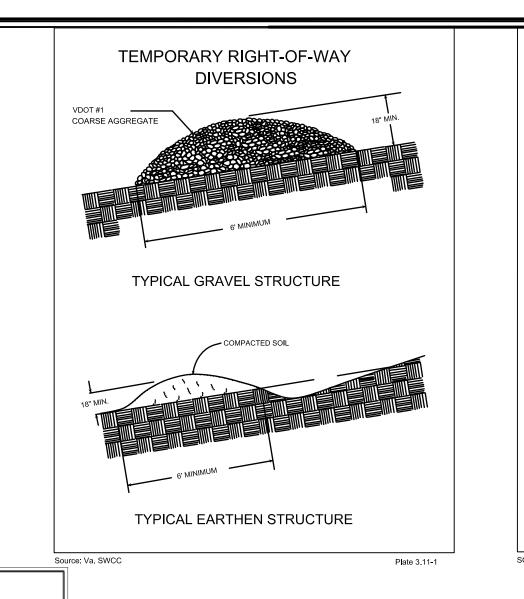
VIRGINIA DEPARTMENT OF TRANSPORTATION

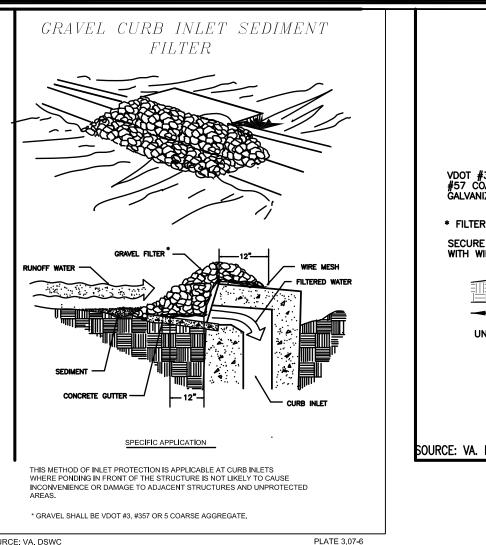
\_\_\_ 48:1 MAX.

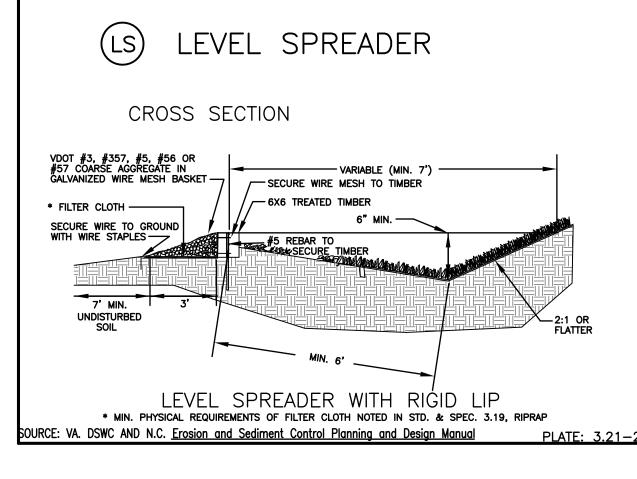
- PERMISSIBLE CONSTRUCTION JOINT

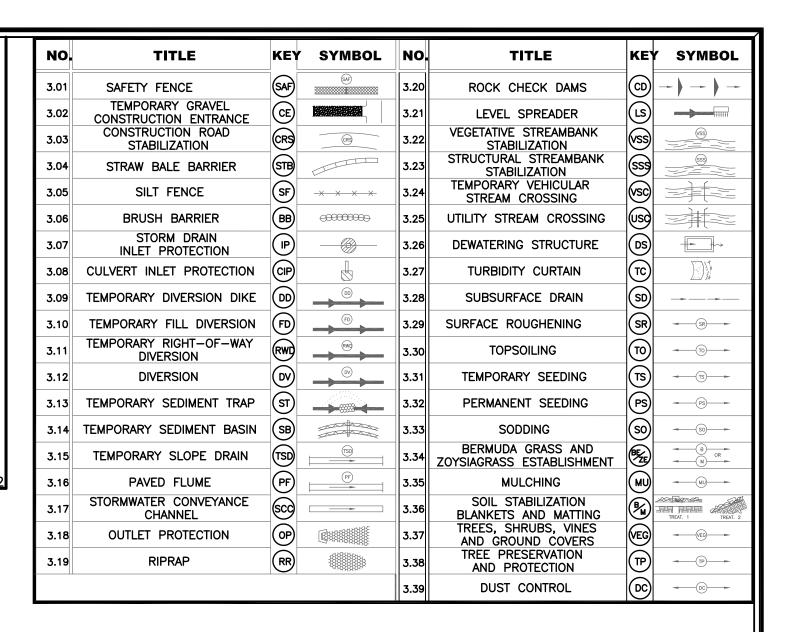
REFERENCE

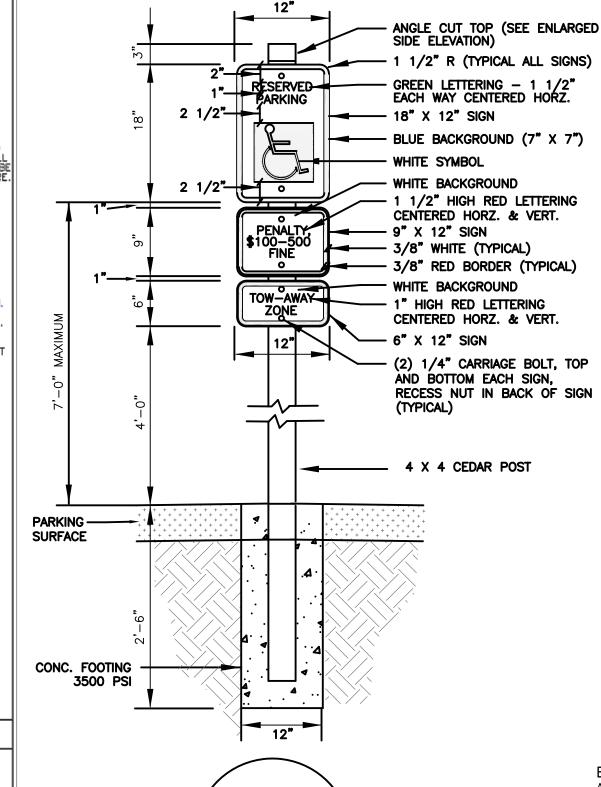


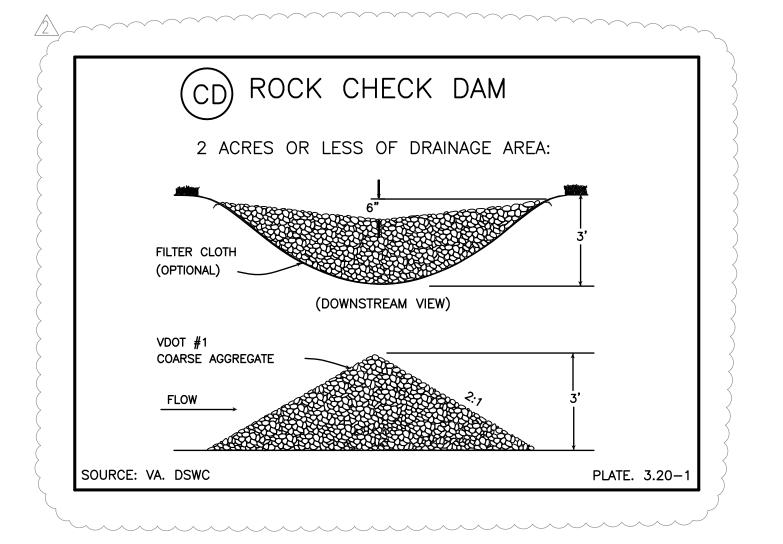












AUTHORITY.

INSPECTOR(S).

-1 1/2" SM-9.5A WEARING COURSE 1/2" BM-25.0 BASE COURSE 6" 21-B SUB-BASE COMPACTED SUB GRADE TO 95%MAX. DENSITY PER ASTM

STANDARD DUTY ASPHALT PAVEMENT DETAIL

#68,#78 or

12" أَوْ الْوَا الْوَا الْوَا

104,01

CENTERED

SECTION A-A

Add 0.469 Cu. Yds. per additional foot of depth.

CONCRETE QUANTITIES FOR MIN. DEPTH

12" concrete pipe - 1.440 Cu. Yds. Concrete 15" concrete pipe - 1.528 Cu. Yds. Concrete 18" concrete pipe - 1.620 Cu. Yds. Concrete 24" concrete pipe - 1.817 Cu. Yds. Concrete

#8 x 6" width

<del>- 9 9 9 9 9 9 9 9 9 9 9 9 9</del>

SECTION C-C

STANDARD DROP INLET

VIRGINIA DEPARTMENT OF TRANSPORTATION

SCALE: N.T.S.

12" - 24" PIPE: MAXIMUM DEPTH (H) = 10"

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 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

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

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 AND 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. THE PROVISION IN NO WAY WAIVES THE RIGHTS OF BOTETOURT COUNTY PERSONNEL TO CONDUCT SITE INSPECTIONS, NOR DOES IT DENY THE RIGHT OF THE PERMITTEE(S) TO ACCOMPANY THE

## PERMANENT SEEDING MIXTURE

TYPE A 15 OCTOBER TO 1 FEBRUARY K-31 FESCUE @ 5 LB / 1000 SF

TYPE B (SLOPES 3:1 OR STEEPER) 15 MARCH TO 1 MAY CROWN VETCH @ 1/2 LB / 1000 SF BORZY WINTER RYE @ 1/2 LB / 1000 SF PERENNIAL RYEGRASS @ 1/2 LB / 1000 SF

RED TOP @ 1/8 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

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

\$ *3,928* 

\$ *43,203* 

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

LIME: 140 LB / 1000 SF PULVERIZED AGRICULTURAL LIMESTONE

FERTILIZER: 5-20-10 @ 25 LB / 1000 SF 38-0-0 @ 7 LB / 1000 SF

IF REQUIRED, SHALL BE USED OVER ALL SEEDED AREAS AND SHALL BE MULCH: APPLIED IN ACCORDANCE WITH SECTION 1.75 OF THE VIRGINIA EROSION

AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.

SOIL CONDITIONING

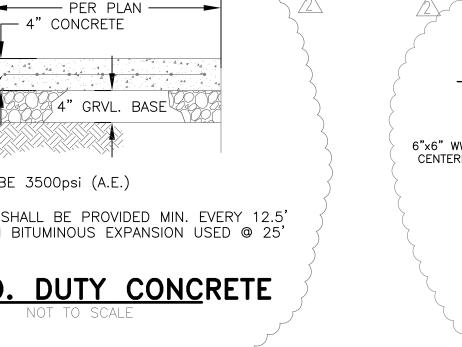
INCORPORATION OF LIME AND FERTILIZER, SELECTION OF CERTIFIED SEED, MULCHING, MAINTENANCE OF NEW SEEDLINGS, AND RESEEDING SHALL BE IN ACCORDANCE WITH SPECIFICATIONS CONTAINED WITHIN

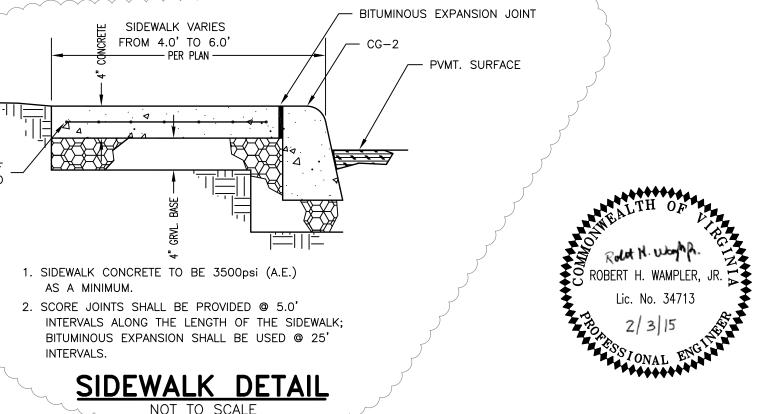
DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTA COS
CONSTRUCTION ENTRANCE	EA	1	\$ 1,000	\$ 1,00
SILT FENCE	LF	500	6	3,00
INLET PROTECTION	EA	5	625	3,12
DIVERSION DIKE	LF	185	2.50	4,62
LEVEL SPREADER	LS	1	650	650
TS - PS - MU	LS	1	300	300
CRITICAL ROAD STABILIZATION	SY	3,200	8	25,6
CHECK DAM	EA	3	325	973
SUB-TOTAL		1		\$ 39,2

TOTAL DISTURBED AREA: 0.90 ACRES

10% CONTINGENCY

TOTAL PROJECT COST





REFERENCE

233

302

4" GRVL. BASE CENTERED 1. CONCRETE TO BE 3500psi (A.E.) AS A MINIMUM. . SCORE JOINTS SHALL BE PROVIDED MIN. EVERY 12.5' INTERVALS WITH BITUMINOUS EXPANSION USED @ 25' INTERVALS. STD. DUTY CONCRETE

SECTION D-D

GRATE DETAIL

APPROXIMATE WEIGHT

Cast Iron

Grate 363 ± 18 lbs

SITE	Drawn	Date	Appd.	Ву	Revision	No.
JUL	MSMj Designed	1/23/15	RHW	ECI	CLARIFICATION DETAILS ADDED	2
	RHW					
۸.	Checked RHW					
A						
BO1	Approved					
	RHW					

& EROSION CONTROL DETAILS SCALE: NOT TO SCALE BANK OF BOTETOURT DATE: Feb. 3, 2015 PROJECT: 14047 AT DALEVILLE TOWN CENTER C - 11DTETOURT COUNTY - VIRGINIA

ENGINEERING CONCEPTS, INC.

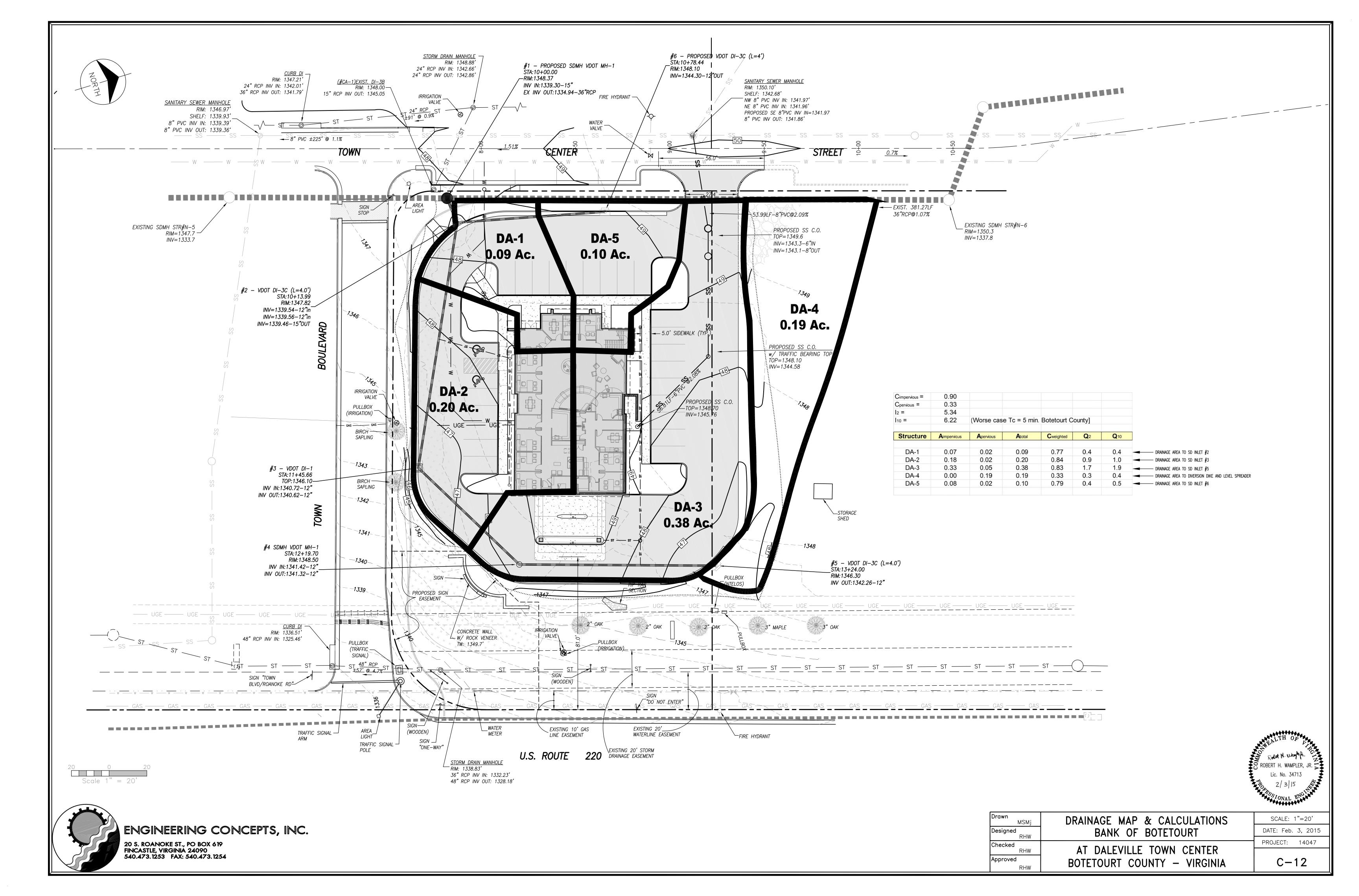
20 S. ROANOKE ST., PO BOX 619

540.473.1253 FAX: 540.473.1254

FINCASTLE, VIRGINIA 24090

POST TOP SIDE ELEVATION

HANDICAPPED PARKING SIGN



#### EROSION AND SEDIMENT CONTROL NARRATIVE

Bank of Botetourt at Daleville Town Center site development

#### PROJECT DESCRIPTION

This project consists of a new 5,300SF, single-story building and associated parking to support a new branch banking facility on this parcel. This site will be located in an out-parcel of Daleville Town Center and will consist of an entrance from Town Center Street and will have 24 paved parking spaces with sidewalks. The total disturbed area for this project is 0.93 Acres. The site drains to an existing stormwater management area designed and approved during the development of The Daleville Town Center that has been sized to compensate for this development.

The existing site consists of a parcel that was previously graded as part of the Daleville Town Center mass grading project. It has a general northeast to southwest drainage pattern toward the existing stormwater management area.

#### ADJACENT AREAS

The parcel for this site is bounded by public roads on three sides; Roanoke Road, U.S. Route 220 to the east, Town Boulevard (the main entrance for the Daleville Town Center) is to the south and Town Center Street to the north. The site entrance is at the temporary north terminus of Town Center Street designed as part of the Daleville Town Center project.

#### OFFSITE AREAS

No off site areas will be impacted or used as host for stockpiles, etc., by the construction of this project.

Source of soils information is SSURGO Database (USDA) and NWI GIS Data (Chart Tiff).

## Map unit: 28C--Groseclose silt loam, 7 to 15 percent slopes

Map Unit Setting Elevation: 1,000 to 2,600 feet Mean annual precipitation: 30 to 45 inches

Mean annual air temperature: 50 to 57 degrees F Frost-free period: 153 to 196 days Map Unit Composition

Groseclose and similar soils: 80 percent

Description of Groseclose Setting

Landform: Hills Landform position (two-dimensional): Summit, shoulder, backslope

Landform position (three-dimensional): Side slope, nose slope, interfluve

Down-slope shape: Convex Across-slope shape: Convex

Parent material: Residuum weathered from limestone and shale

Typical profile H1 - 0 to 18 inches: silt loam

H2 - 18 to 65 inches: clay

H3 - 65 to 165 inches: silty clay loam Properties and qualities

Slope: 7 to 15 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Well drained Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None Available water storage in profile: Moderate (about 8.5 inches)

Interpretive groups Farmland classification. Farmland of statewide importance

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: C

#### Map unit: 53B-Timberville silt loam, 0 to 7 percent slopes, occasionally flooded

Map Unit Setting

Elevation: 1,400 to 3,600 feet

Mean annual precipitation: 30 to 45 inches

Mean annual air temperature: 50 to 57 degrees F Frost-free period: 153 to 196 days

Map Unit Composition Timberville and similar soils: 80 percent

Description of Timberville

Setting Landform: Drainageways

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Base slope Down-slope shape: Linear

Across-slope shape: Concave Parent material: Local alluvium and/or colluvium derived from limestone and shale

Typical profile

H1 - 0 to 28 inches: silt loam H2 - 28 to 109 inches: silty clay loam

H3 - 109 to 165 inches: clay

Properties and qualities Slope: 0 to 7 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Well drained Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Moderate (about 8.9 inches)

Interpretive groups Farmland classification: All areas are prime farmland

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: B

#### CRITICAL AREAS

Critical erosion areas are areas where slopes are 2:1 or steeper and areas of proposed ditches. No critical areas exist within the bounds of this

#### EROSION AND SEDIMENT CONTROL MEASURES

Unless otherwise indicated, all vegetative and structural erosion and sediment control practices shall be constructed and maintained according to minimum standards and specifications of the 1992 Virginia Erosion and Sediment Control Handbook, or latest edition. The minimum standards of the Virginia Erosion and Sediment Control Regulations shall be adhered to unless otherwise waived or approved by a variance. The following order of erosion control practices shall be adhered to in preparing this site for construction:

- Install the construction entrance per the plans.
- 2. The diversion dike shall be constructed to prevent clean runoff from traversing across the site. (This item shall remain in place throughout construction and until the adjoining parcel is developed.)
- Install level spreader.
- Install silt fence.
- 5. Perform the grading operations. 6. Prepare site and apply temporary seeding. 7. Install storm drain system and inlet protection.

#### STRUCTURAL PRACTICES

#### 1. CE - TEMPORARY STONE CONSTRUCTION ENTRANCE - 3.02

A stabilized stone pad with a filter fabric under liner located at points of vehicular ingress and egress on a construction site. This pad reduces the amount of mud transported onto paved public roads by motor vehicles or runoff.

#### 2. CRS - CONSTRUCTION ROAD STABILIZATION - 3.03

The temporary stabilization of access roads, subdivision roads, parking areas and other on-site vehicle transportation routes with stone immediately after grading. This reduces the erosion of temporary roadbeds by construction traffic during wet weather and the erosion and subsequent regarding of permanent roadbeds between the time of initial grading and final stabilization.

3. SF - SILT FENCE BARRIER - 3.05

Silt fence barriers will be installed down slope of areas with minimal grade to filter sediment laden runoff from sheet flow.

#### 4. IP-STORM DRAIN INLET PROTECTION - 3.07

A sediment filter or an excavated impounded area around a storm drain drop inlet or curb inlet. This filter prevents sediment from entering storm drainage systems prior to permanent stabilization of the disturbed area.

#### 5. DD - TEMPORARY DIVERSION DIKE - 3.09

A temporary ridge of compacted soil constructed at the top or base of a sloping disturbed area. This ridge will divert storm runoff from upslope drainage areas away from unprotected disturbed areas and slopes to a stabilized outlet. Furthermore, this will also divert sediment-laden runoff from a disturbed area to a sediment-trapping facility such as a sediment trap or sediment basin.

#### 6. 3.20 - CD - ROCK CHECK DAMS

Rock Check Dams are small temporary stone dams constructed across a swale or drainage ditch. They are designed to reduce the velocity of concentrated stormwater flows, thereby reducing erosion of the swale or ditch. This practice also traps sediment generated from adjacent areas or the ditch itself, mainly by ponding of the stormwater runoff. Field experience has shown it to perform more effectively than silt fences or straw bales in the

#### 7. LS - LEVEL SPREADER - 3.21

effort to stabilize "wet-weather" ditches.

A Level Spreader is an outlet for dikes and diversions consisting of an excavated depression constructed at zero grade across a slope. The Level Spreader converts concentrated runoff to sheet flow and releases it uniformly onto areas stabilized by

#### **VEGETATIVE PRACTICES**

#### 1. TS - TEMPORARY SEEDING - 3,31

All denuded areas, which will be left dormant for more than 7 days, shall be seeded with fast germinating temporary vegetation immediately following

#### 2. PS - PERMANENT SEEDING - 3.32

All final-graded areas where permanent cover is desired or rough-graded areas that will not be brought to final grade for a year or more shall be seeded with perennial vegetation within 7 days of reaching final grade.

#### 3. MU - MULCHING - 3.35 Application of plant residues or other suitable materials to the soil surface to prevent erosion by protecting the soil surface from raindrop impact and

reducing the velocity of overland flow. Mulching also fosters the growth of vegetation by increasing available moisture and providing insulation against extreme heat and cold. PERMANENT STABILIZATION

All areas disturbed by construction shall be stabilized with permanent seeding within 7 days of reaching final grades. Seeding shall be done with Kentucky 31 Tall Fescue according to Std. and Spec. 3.32, PERMANENT SEEDING, of the 1992 Virginia Erosion and Sediment Control Handbook, latest edition. Mulch (straw or fiber) will be used on all seeded areas. In all seeding operations, seed, fertilizer and lime will be applied prior to mulching. Erosion control blankets may be installed over fill slopes which have been brought to final grade and have been seeded to protect the slopes properly.

#### MAINTENANCE

In general, all erosion and sediment control measures will be checked daily and after each significant rainfall. The following items will be checked in

- 1. The sediment trapping devices such as silt fence, inlet protection check dams and level spreader will be checked regularly for sediment
- 2. The silt fence barriers will be checked regularly for undermining or deterioration of the fabric. Sediment shall be removed when the level of sediment deposition reaches half way to the top of the barrier.
- 3. The seeded areas will be checked regularly to ensure that a good stand of grass is maintained. Areas shall be fertilized and re-seeded as needed.

#### STORMWATER RUNOFF

The development of this site and the corresponding runoff was analyzed and compensated for during the design of the existing stormwater management facility to which it drains.

#### INLET CALCULATIONS

_ine	Inlet ID	Area	Inlet	Int.	Runoff	Q =	Q Carry-	Q	Q	Junct	Curb	Curb	Grate	Grate	Grate	Gutter	Gutter	Cross	Cross	Local	Inlet	Inlet	Gutter	Gutter	Bypass
		(ac)	(min)	(in/hr)	(C)	(cfs)	(cfs)	(cfs)	(cfs)		(in)	(ft)	(sqft)	(ft)	(ft)	(ft/ft)	(ft)	(ft/ft)	(ft/ft)	(in)	(ft)	(ft)	(ft)	(ft)	
1	DI#2- DI-3C	0.00	0.0	0.00	0.00	0.40	0.00	0.40	0.00	Curb	4.0	4.00				Sag	2.00	0.083	0.020	2.0	0.25	0.97	0.08	0.97	Sag
2	DI#3 - DI-3C	0.00	0.0	0.00	0.00	1.00	0.00	1.00	0.00	Curb	4.0	4.00				Sag	2.00	0.083	0.020	2.0	0.31	1.79	0.15	1.79	Sag
3	SDMH - MH-1	0.00	0.0	0.00	0.00	0.00				MH															
4	DI#5 - DI-1	0.00	0.0	0.00	0.00	1.90	0.00	1.90	0.00	Grate			3.10	1.55	2.00	Sag	2.00	0.083	0.040	2.0	0.48	5.80	0.32	5.80	Sag
5	DI#6 - DI-3C	0.00	0.0	0.00	0.00	0.50	0.00	0.50	0.00	Curb	4.0	4.00				Sag	2.00	0.050	0.020	0.0	0.12	3.00	0.12	3.00	Sag

#### PIPE CALCULATIONS

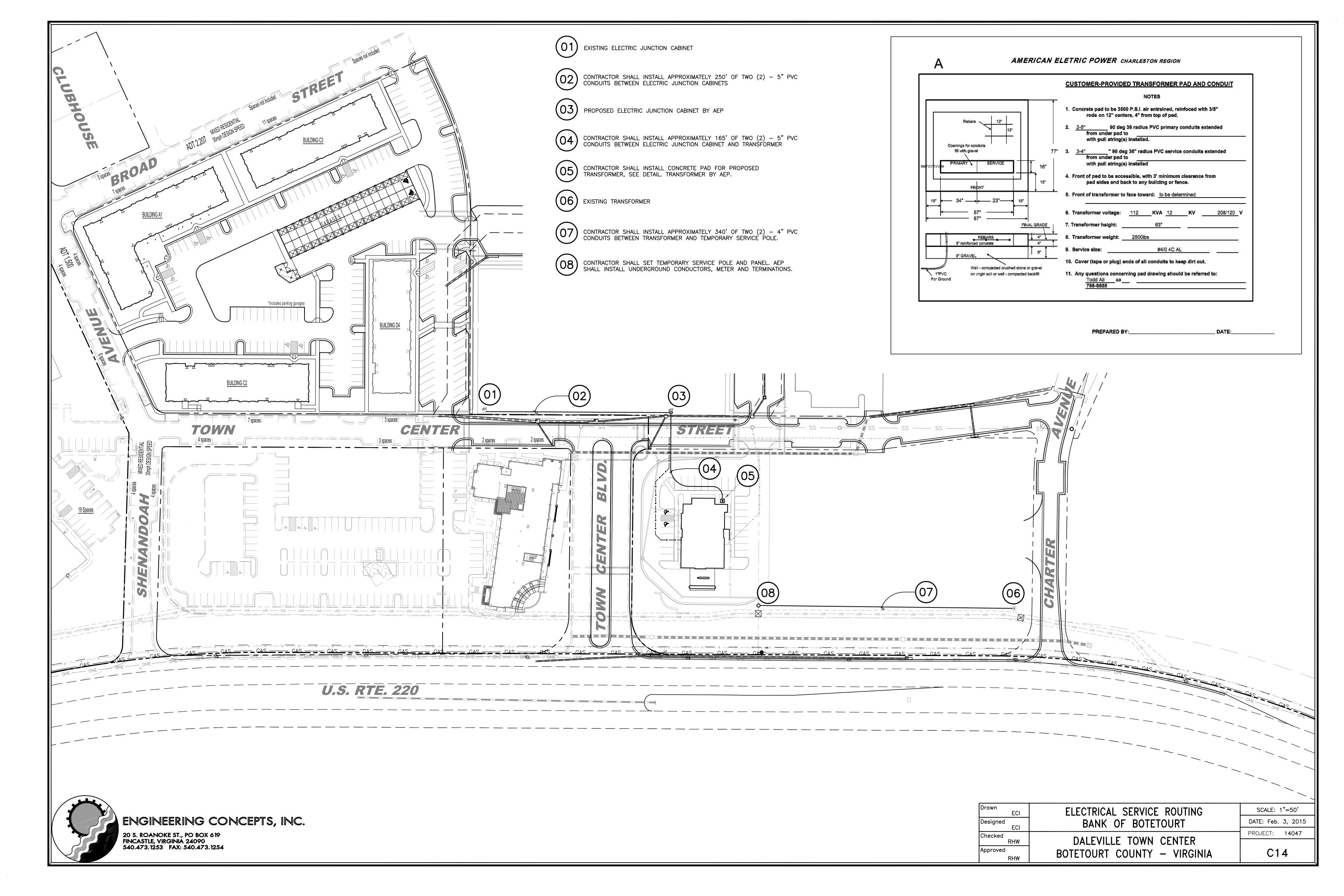
ne	Pipe	Q	Inv Elev	HGL	Depth	Area	Veloc	Vel Hd	EGL	Sf	Line	Inv Elev	HGL	Depth	Area	Veloc	Vel Hd	EGL	Sf	Sf	Energy	JLC	Minor	Line I
	(in)	(cfs)	(ft)	(ft)	(ft)	(sqft)	(ft/s)	(ft)	(ft)	(%)	(ft)	(ft)	(ft)	(ft)	(sqft)	(ft/s)	(ft)	(ft)	(%)	(%)	(ft)	(K)	(ft)	
1	15	3.80	1339.30	1340.16	0.86	0.81	4.22	0.34	1340.50	0.000	14.000	1339.44	1340.23 j	0.79**	0.81	4.67	0.34	1340.57	0.000	0.000	0.000	1.50	n/a	
)	12	2.90	1339.54	1340.74	1.00	0.79	3.69	0.21	1340.95	0.663	132.350	1340.60	1341.54	0.94	0.77	3.78	0.22	1341.77	0.573	0.618	0.818	1.30	0.29	
}	12	1.90	1340.70	1341.83	1.00	0.79	2.42	0.09		0.285	77.130	1341.32	1342.03	0.71	0.59	3.21	0.16	The state of the s		0.341	0.263	0.70	0.11	
1	12	1.90	1341.42		0.72	0.48	3.15	0.24	1342.38		104.300	1342.26		0.59**	0.48	3.97	0.24	1343.09		0.000	0.000	1.00	n/a	
5	12	0.50	1339.54	1340.23	0.69	0.19	0.87	0.11	1340.33	0.000	78.440	1344.30	1344.59 j	0.29**	0.19	2.61	0.11	1344.70	0.000	0.000	0.000	1.00	n/a	
-																								

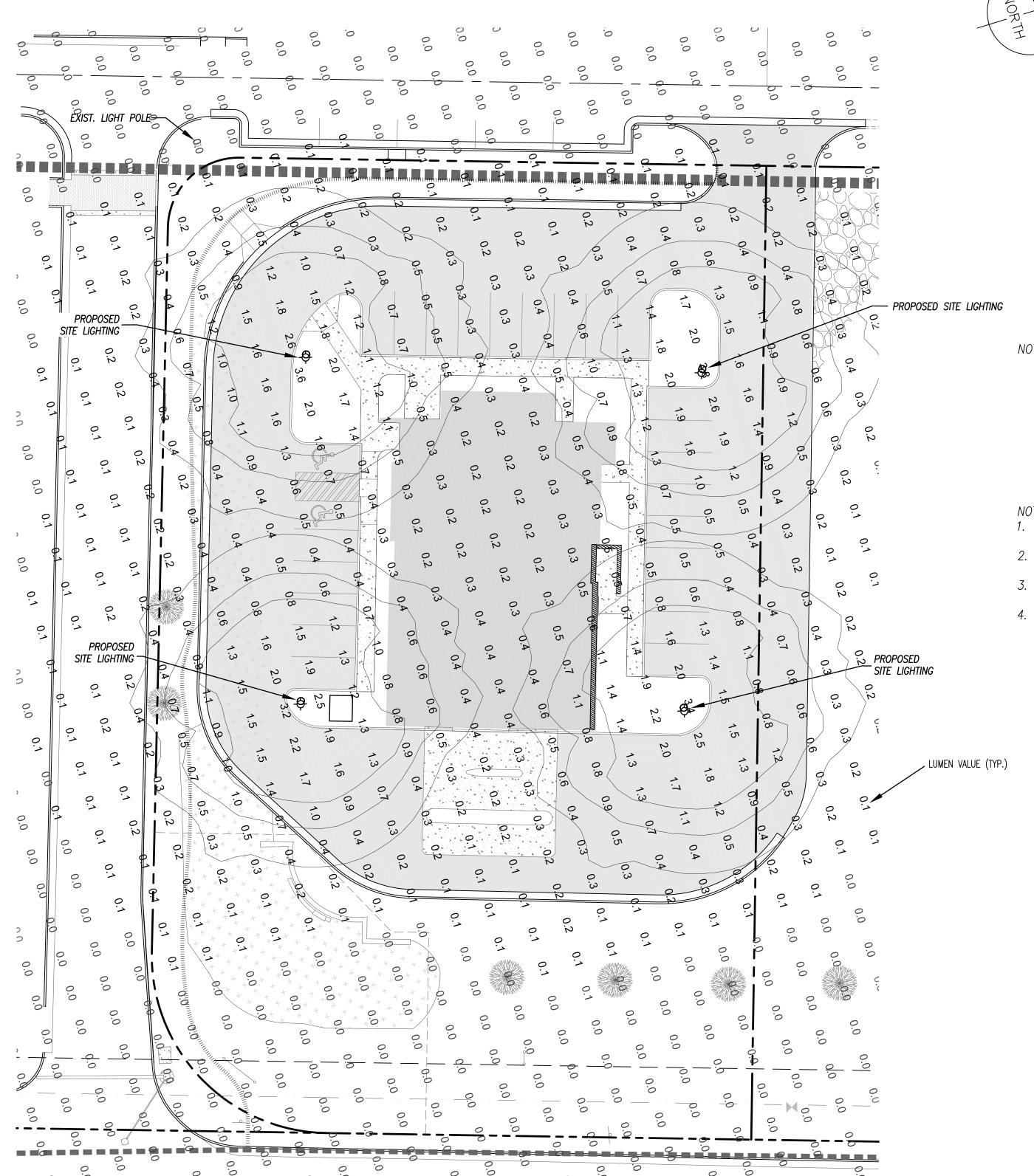


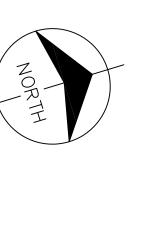
540.473.1253 FAX: 540.473.1254

							******
No.	Revision	Ву	Appd.	Date	Drawn MCM:	EROSION CONTROL NARRATIVE	SCALE: NONE
2	BotCo E&S comments	ECI	RHW	1/29/15	MSMj Designed	BANK OF BOTETOURT	DATE: Feb. 3, 2015
					RHW	BANK OF BOTETOOKT	PROJECT: 14047
					Checked RHW	AT DALEVILLE TOWN CENTER	
					Approved	BOTETOURT COUNTY - VIRGINIA	C-13
		1			RHW		

2/3/15







NOTE: THE EXISTING STREET LIGHT AT THE INTERSECTION OF TOWN CENTER DRIVE AND TOWN BOULEVARD (BY DEVELOPER) WAS NOT INCLUDED IN THIS ANALYSIS.

- 1. NO WALLPACKS SHALL BE PLACED ON BUILDING UNLESS FULLY SHIELDED
- 2. PROPOSED SITE LIGHTING TO BE KING LUMINAIRE MODEL K803-FASA-V-165-SSL-16000-120-BK.

  3. MOUNTING HEIGHT FOR ALL PROPOSED SITE
- LIGHTING SHALL BE 25 FEET.

  4. PROPOSED SITE LIGHTING TO BE L.E.D.



NOTE: SINGLE ARM LUMINAIRE IN THE MODEL SHOWN WAS USED IN THE CALCULATIONS FOR PREPARATION OF THIS SITE LIGHTING PLAN.



KING LUMINAIRE

		77444444			
Drawn MSMj	LIGHTING & PHOTOMETRICS PLAN	SCALE: 1"=20'			
Designed RHW	BANK OF BOTETOURT	DATE: Feb. 3, 2015			
Checked		PROJECT: 14047			
RHW	AT DALEVILLE TOWN CENTER				
Approved RHW	BOTETOURT COUNTY - VIRGINIA	C-15			

